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OFFICIAL GAZETTE

OF THE

UNITED STATES PATENT OFFICE.

VOLUME CXX.

JANUARY 2 TO FEBRUARY 27, INCLUSIVE.

1906.

WASHINGTON:

GOVERNMENT PRINTING OFFICE.

1907.

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DIGEST OF DECISIONS OF THE COMMISSIONER OF PATENTS AND OF THE UNITED STATES COURTS IN PATENT CASES.

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ERRATA.

800,128, page 222, in heading, residence of patentee, for "Ailey, Ala." read *Ailey, Ga.*

809,327, page 351, in heading, assignment, after the word "assignor" insert the words *of one-half.*

809,663, page 500, fifth claim, line 4, for the word "protecting" read *projecting.*

809,698, page 517, second claim, line 3, for the word "protected" read *protective.*

809,760, page 545, in heading, title of invention, for "Swingletree" read *Singletree.*

809,907, page 598, in heading, after residence of inventor, insert *assignor of one-third to John H. Allen, Chicago, Ill.*

810,303, page 834, in heading, assignment, name of assignee, for "Charles Malden-Ercale" read *Charles Malden-Ercole.*

810,377, page 870, in heading, after residence of last-mentioned patentee, insert *assignors, by mesne assignments, to The International Register Company, Columbus, Ohio, a Corporation of Ohio.*

810,577, page 1003, in heading, assignment, for "assignor of one-fourth to William P. Coffman and one-fourth to John I. Coffman" read *assignor of one-third to William P. Coffman and one-third to John I. Coffman.*

810,707, page 1055, in heading, assignment, for "assignors, by mesne assignments, of one-half to Bernard Siani," read *assignors, by direct and mesne assignment, of one-half to said Brazier and one-half to Bernard Siani.*

811,515, page 1424, in heading, after residence of patentee, insert *assignor to Joseph Middleby, Jr., Malden, Mass.*

811,863, page 1616, in heading, title of invention, for "Air-Brake" read *Car-Brake.*

812,211, page 1848, in heading, name of patentee, for "Constantin Künz" read *Constantin Kunz.*

812,279, page 1882, third claim, lines 2–3; fourth claim, line 2, and seventh claim, line 2, for the word "controlling" read *connecting.*

812,291, page 1927, in heading, residence of patentee, for "Montgomery" read *Montgomery City.*

812,731, page 2592, in heading, name of patentee, for "John Murmans" read *John Meermans.*

48,931, [(Trade-Mark,) page 897, in heading, residence of registrant, for "Philadelphia, Pa.," read *Camden, N. J.*

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Anson Gardner Betts 1169

OFFICIAL GAZETTE

OF THE

UNITED STATES PATENT OFFICE.

JANUARY—FEBRUARY, 1906.

Patents Nos. 808,618 to 809,275.

THE OFFICIAL GAZETTE OF THE United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

VOL. 120—No. 1. TUESDAY, JANUARY 2, 1906. PRICE—$5 per year.

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Labels	6	No. 12,598 to No. 12,598, inclusive.
Prints	22	No. 1,539 to No. 1,561, inclusive.
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Total issue	872	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	3	.....	Nevada	.....	.....
Alaska, District of	.....	.....	New Hampshire	3	1
Arizona Territory	.....	.....	New Jersey	35	5
Arkansas	4	.....	New Mexico Ter'ty	.....	.....
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Connecticut	26	2	North Dakota	2	.....
Delaware	1	1	Ohio	48	26
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Illinois	61	16	South Carolina	.....	.....
Indian Territory	2	.....	South Dakota	1	.....
Indiana	17	5	Tennessee	4	2
Iowa	10	1	Texas	14	1
Kansas	9	.....	Utah	.....	.....
Kentucky	7	7	Vermont	.....	1
Louisiana	4	.....	Virginia	6	3
Maine	6	.....	Washington	5	1
Maryland	7	5	West Virginia	.....	.....
Massachusetts	33	11	Wisconsin	11	2
Michigan	24	4	Wyoming	.....	.....
Minnesota	14	10	U. S. Revenue Cutter Service	1	.....
Mississippi	1	1			
Missouri	17	10			
Montana	6	1	Total to citizens of the United States	605	197
Nebraska	6	.....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina	.....	.....	Netherlands	.....	.....
Austria-Hungary	4	.....	Newfoundland	.....	.....
Belgium	.....	.....	New South Wales	.....	.....
Brazil	.....	.....	New Zealand	.....	.....
British West Indies	.....	.....	Norway	.....	.....
Canada	14	.....	Perak	.....	.....
Cape Colony	1	.....	Queensland	.....	.....
Chile	.....	.....	Roumania	.....	.....
China	.....	.....	Russia	.....	.....
Costa Rica	.....	.....	San Salvador	.....	.....
Cuba	.....	.....	Scotland	2	.....
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Ecuador	.....	.....	Spain	.....	.....
England	13	.....	Sweden	1	.....
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Germany	20	.....	Transvaal, South Africa	1	.....
Haiti	1	.....	Victoria	.....	.....
Ireland	.....	.....	Western Australia	.....	.....
Italy	1	.....			
Japan	.....	.....			
Java	.....	.....			
Mexico	.....	.....	Total to citizens of foreign countries	64	.....

Amendments.

RULE 73. In every amendment the exact word or words to be stricken out or inserted in the application must be specified and the precise point indicated where the erasure or insertion is to be made. All such amendments must be on sheets of paper separate from the papers previously filed, and written on but one side of the paper. Erasures, additions, insertions, or mutilations of the papers and records must not be made by the applicant.

Regulations in Relation to Mail-Matter.

In order to insure the ready identification of the division from which mail-matter emanating from this Office was sent, and the prepayment of any foreign postage thereon, as well as to prevent the retention for general delivery in the post-office of the city of any wrongly-addressed letter when this Office could supply a fuller or more accurate address, it is directed that the following regulations be observed with reference to all mail-matter forwarded from this Office:

Each envelop forwarded from any division will be stamped or marked in the upper left-hand corner with the division number or letter, as the case may be.

Each envelop addressed to a foreign country must be forwarded to the mail-room and the proper stamps affixed thereto before mailing.

Such mail as is to be delivered in this city shall be directed "Washington, D. C." If a letter addressed to a person in this city and not marked for general delivery be returned to this Office, it will be promptly remailed with an accurate and full local address supplied, if possible. In remailing, the envelop should be marked or stamped "Held in General Delivery," but no envelop should be thus marked until the address thereon is as full and accurate as the Office can supply. A letter to a person in this city will not be filed "Unclaimed," until it is returned to this Office in an envelop thus addressed and marked.

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business December 26, 1905.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
	Under one month.			
128	II. Bee Culture, Dairy, Label-Affixers, Paper Files and Binders, Presses, Store-Service, Tobacco, etc.	Dec. 14	Sept. 18	227
134	XXXIII. Canes, Canopies, Cutlery, Domestic Cooking Vessels, Electricity, Medical and Surgical, Electric Signaling, Fireproof Buildings, Harness, Masonry, Tents, and Umbrellas.	Dec. 14	July 6	708
209	XVII. Linotyping, Printing, Matrix-Making, Nut and Bolt Locks.	Dec. 13	Sept. 22	312
202	XXXVI. Curtains, Shades, and Screens, Drafting, Driers, Measuring Instruments, and Wind-Wheels.	Dec. 12	Nov. 16	218
378	XXXVIII. Artesian and Oil Wells, Bottles and Jars, Care of Live Stock, Fishing and Trapping, Stationery, Stone-Working.	Dec. 12	Oct. 19	375
220	X. Carriages and Wagons.....	Dec. 9	Sept. 6	712
135	III. Annealing and Tempering, Coating with Metal, Electrochemistry, Metal-Founding, Metallurgy, Shaping Fluid Metal.	Dec. 8	Nov. 28	226
207	XXXVII. Electricity, Conductors, Lighting, Special Apparatus.	Dec. 8	Apr. 14	669
146	XXIV. Apparel, Apparel Apparatus, Sewing-Machines, Surgery, Toilet.	Dec. 7	Sept. 21	539
216	VI. Bleaching and Dyeing, Chemicals, Explosives, Fertilizers, Medicines, Preserving, Sugar and Salt.	Dec. 6	Oct. 18	308
197	V. Fine Arts, Bookbinding, Harvesters, Jewelry, and Music.	Dec. 5	Oct. 14	364
128	XXII. Air-Guns, Ammunition and Explosive Devices, Boats and Buoys, Catapults and Targets, Firearms, Marine Propulsion, Ordnance, Ships.	Dec. 5	Sept. 11	245
224	XXXIV. Railways, Railway-Bonding, Rolling-Stock.	Dec. 4	Nov. 6	385
203	XV. Bread, Pastry, and Confections, Making, Coating, Laminated Sheets and Fabrics, Fuel, Glass, Hydraulic Lime and Cement, Paper-Making, Paving, and Plastics.	Dec. 4	Oct. 19	396
124	XI. Boot and Shoe Making, Boots, Shoes, and Leggings, Button, Eyelet, and Rivet Setting, Leather Manufacturing, Nailing and Stapling, Check-Controlled Apparatus, Whips and Whip Apparatus.	Dec. 4	July 11	414
165	XXVI. Electricity, Generation, Electric Heaters, Electric Railways, Motive Power.	Dec. 4	June 19	650
205	I. Tillage, etc., Fences, and Railway Draft Appliances.	Dec. 1	Nov. 6	199
214	XXXV. Bandage, Dentists, Dutchmen, and Coin, Card, Picture, and Sign Exhibiting, Deposit and Collection Receptacles, Package and Article Carriers, Packing and Storing Vessels, Typewriting.	Dec. 1	Nov. 1	408
138	XVI. Telegraphy and Telephony..	Dec. 1	Oct. 30	215
218	XII. Elevators, Journal-Boxes, Lubricators, Machine Elements and Shafting.	Dec. 1	Sept. 20	433
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[illegible]	[illegible]	Dec. 1	Aug. 26	883

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Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
421	XXXII. Carbonating Beverages, Dispensing Beverages, Dispensing-Cans, Metallic Shipping and Storing Vessels, Packaging Liquids, Paper Receptacles, Refrigeration, Wooden Receptacles.	Dec. 1	Aug. 12	608
122	XIX. Stoves and Furnaces and Steam-Boiler Furnaces.	Dec. 1	June 15	629
112	XXI. Textiles, Carding, Knitting, Spinning, Weaving, etc.	Dec. 1	June 8	564
222	IV. Bridges, Conveyers, Cranes and Derricks, Excavating, Hoisting, Hydraulic Engineering, Loading and Unloading, and Towers.	Nov. 27	Nov. 27	249
312	VII. Velocipedes, Clutches, Fire-Escapes, Games and Toys, Ladders, Mechanical Motors, and Paper Manufactures.	Nov. 27	July 10	510
	Between one and two months.			
188	XXX. Fluid-Pressure Regulators, Lamps and Gas-Fittings, Type-Writing Machines.	Nov. 25	May 8	583
172	XXXI. Alcohol, Charcoal and Coke, Distillation, Gas, Heating and Illuminating, Hides, Skins, and Leather, Liquid Coating Compositions, Oils, Fats, and Glue, Water Purification.	Nov. 24	Nov. 9	222
307	XIV. Cutting and Punching Sheets and Bars, Farriery, Metal-Bending, Metal-Ornamenting, Metal Personal Wear, Making, Sheet-Metal Ware, Making, Tools, Wire-Working.	Nov. 10	Aug. 7	294
375	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, Washing Apparatus.	Nov. 9	July 13	549
179	XX. Artificial Limbs, Builders' Hardware, Dentistry, Locks and Latches, Safes, Undertaking.	Nov. 2	July 3	413
	Between two and three months.			
382	XXVIII. Air and Gas Engines, Air and Gas Pumps, Pneumatics.	Oct. 20	May 26	821
330	XIII. Arms, Projectiles, and Explosive Charges, Making, Metal-Working, Needle and Pin Making.	Oct. 5	Aug. 10	603
142	IX. Baths and Closets, Fire-Extinguishers, Hydraulic Motors, Pumps, Sewerage, and Water Distribution.	Sept. 26	June 6	1037
	Between four and five months.			
315	XXV. Butchering, Mills, Threshing, and Vegetable Cutters and Crushers.	Aug. 18	July 20	484
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189	TRADE-MARKS, DESIGNS, LABELS AND PRINTS.			
	Between one and two months.			
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	Under one month.			
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	Labels and Prints.....	Dec. 21	Dec. 20	19

Trade-Marks.

The publication of trade-marks under the act of February 20, 1905, in the OFFICIAL GAZETTE, commenced May 2, 1905, and will appear in each weekly number of the GAZETTE thereafter.

Extra copies of the trade-mark portion of the GAZETTE, which will be sold separately, may be obtained single or in quantities for five cents each. Coupons will be taken in payment therefor.

PATENTS

GRANTED JANUARY 2, 1906.

808,618. **METHOD OF CONVERTING MATTE.** CHARLES M. ALLEN, Lolo, Mont., assignor to Ralph Baggaley, Pittsburg, Pa. Filed Jan. 23, 1905. Serial No. 242,255.

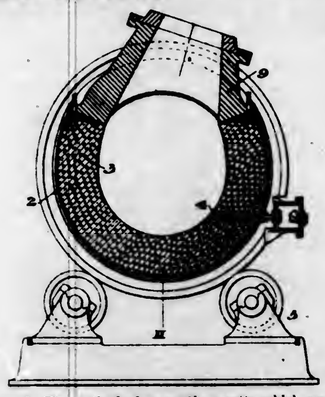

Claim.—1. The method of converting matte which consists in bessemerizing it in a vessel having a non-siliceous interior, and thereafter transferring it into an acid-lined vessel and bessemerizing it; substantially as described.

2. The method of converting matte which consists in bessemerizing it in a basic-lined vessel up to practically the grade of white-metal, thereafter transferring it into an acid-lined vessel and bessemerizing it to blister-copper; substantially as described.

3. The method of converting matte which consists in bessemerizing in a converting vessel a charge of molten matte until it reaches substantially the grade of white-metal, then transferring it to a smaller converter and finishing the bessemerizing therein; substantially as described.

4. The method of converting matte which consists in bessemerizing in a converting vessel having a non-siliceous interior, a charge of molten matte until it reaches substantially the grade of white-metal, then transferring it to a smaller silica-lined converter and finishing the bessemerizing therein; substantially as described.

808,619. **MACHINE FOR BENDING METAL BARS, &c.** WILLIAM S. ARTHUR, Glasgow, Scotland. Filed Dec. 1, 1904. Serial No. 234,902.

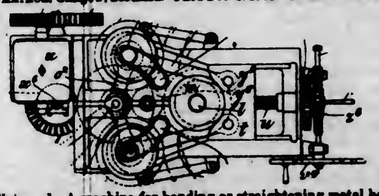

Claim.—1. A machine for bending or straightening metal bars and beams comprising; in combination, a frame, three rollers carried by the frame, one of the rollers being fixed in position and the other two being movable about a common center which center does not coincide with the axis of the fixed roller, means for revolving the three rollers and means for moving the two movable rollers.

2. A machine for bending or straightening metal bars and beams comprising, in combination, a frame, three rollers carried by the frame, one of the rollers being fixed in position and the other two being movable radially about a common center which center is in line with the axis of the fixed roller but does not coincide with said axis, means for revolving the three rollers and means for moving the two movable rollers.

3. A machine for bending or straightening metal bars and beams comprising, in combination, a frame, three rollers carried by the frame, one of the rollers being fixed in position and being intermediate of the other two rollers which are movable radially about a common center which center is in line with the axis of the fixed roller and coincides with the center of a shaft, means for revolving this shaft, means whereby the rotary movement of the shaft is communicated to the two movable rollers and also to the fixed roller and means for moving the two movable rollers radially about their common center.

4. A machine for bending or straightening metal bars and beams comprising, in combination, a frame, three spindles in the frame, rollers on the spindles, means for revolving the spindles, a slide, links for connecting two of the spindles to the slide, a screw, worm-gear for operating the screw and means for operating the worm-gear, substantially as described.

5. A machine for bending or straightening metal bars and beams comprising, in combination, a frame, three spindles in the frame, rollers on the spindles, means for revolving the spindles, a slide, links for connecting two of the spindles to the slide, a screwed spindle connected with the slide, a worm-wheel on the screwed spindle, a worm-shaft and a hand-wheel for operating the worm-shaft, substantially as described.

6. A machine for bending or straightening metal bars and beams comprising, in combination, a frame, three spindles in the frame, rollers on the spindles, means for revolving the spindles, a slide, links for connecting two of the spindles to the slide, a screwed spindle connected with the slide, a worm-wheel on the screwed spindle, a worm-shaft, a hand-wheel on the worm-shaft, means whereby the worm-shaft can be thrown out of gear, and a handle on the worm-wheel, substantially as described.

7. A machine for bending or straightening metal bars and beams comprising, in combination, a frame, three spindles in the frame, rollers on the spindles, means for revolving the spindles, two slides, links for connecting two of the spindles to the slides, two screwed spindles, toothed wheels on each spindle, an intermediate pinion, and worm-gear for driving one of the screwed spindles, substantially as described.

8. A machine for bending or straightening metal bars and beams comprising, in combination, a frame, three rollers carried by the frame, one of the rollers being fixed in position and the other two being movable radially about a common center which center is in line with the axis of the fixed roller but does not coincide with the said axis, spindles for the rollers, a shaft whose axis coincides with the common center of the two movable rollers, means for rotating said shaft and gearing connected with the shaft and with the spindles of the rollers for the purpose of revolving the same, curved guides for guiding the movable rollers and means for moving the movable rollers about their common center and near to or away from the fixed roller.

9. A machine for bending or straightening metal bars and beams comprising, in combination, a frame, three vertical spindles in the frame, rollers on the spindles, a vertical shaft, means for rotating the shaft, means whereby the rotation of the shaft is communicated to the spindles, links connecting two of the spindles to the shaft, a slide, links connecting the said two spindles to the slide, and means for moving the slide, substantially as described.

10. A machine for bending or straightening metal bars and beams comprising, in combination, a frame, three spindles in the frame, a flanged roller on each spindle, a cap on the roller, a spring

bearing on the cap, a screw for adjusting the position of the cap, means for revolving the spindles, a slide, links for connecting two of the spindles to the slide, and means for moving the slide, substantially as described.

808,620. **TUBE-DRAWING APPARATUS.** GEORGE RAMER, McKeesport, Pa., assignor to National Tube Company, Pittsburg, Pa., a Corporation of New Jersey. Filed Sept. 17, 1904. Serial No. 224,894.

Claim.—1. In apparatus for forming tubing, the combination of drawing mechanism, and means for actuating said mechanism, said actuating means being arranged to run at two substantially constant speeds and to automatically change from the one speed to the other by the drawing strain.

2. In apparatus for forming tubing, the combination of drawing mechanism, and means for actuating said mechanism, said actuating means being arranged to run at two substantially constant speeds and to automatically change from the one speed to the other by the drawing strain, and manually-operated means for varying the higher speed.

808,621. **TOY PISTOL.** FRANKLIN M. BALL, Falls Church, Va. Filed Jan. 25, 1905. Serial No. 242,691.

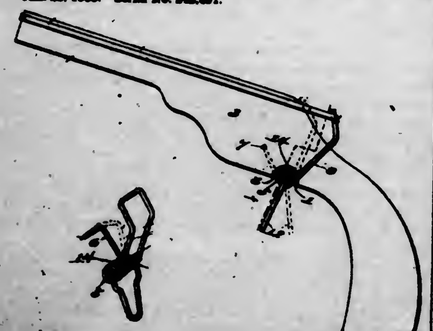

Claim.—1. A device for operating elastic bands of toy pistols, comprising a single piece of wire having a coil-spring, a portion of the wire extending from each end of the coil over the piston to form a holding-arm, said wire portion being extended from the coil ends and looped below the pistol to form a trigger.

2. A device for operating elastic bands of toy pistols, comprising a single piece of wire having a coil-spring, an anchor projecting from the coil, a holding-arm extending above the coil, and a trigger depending from the coil.

3. A device for operating elastic bands of toy pistols, comprising a single piece of wire having a coil-spring, a holding-arm extended over the coil, a trigger depending from the coil, a fulcrum-eye at one end of the coil, and an anchor projecting from the coil.

4. In a toy pistol, the combination, with an elastic band adapted to be cast from the pistol, of a device for operating the band, comprising a single piece of wire having a coil-spring through which one end of the wire extends to form a fulcrum-eye, an anchor formed by the other end of the wire, a trigger looped below the coil, and arms projecting from the coil and extending forwardly over the coil to form a band-holding arm.

808,622. **FRICTION-CLUTCH.** FRANK H. BALL, Plainfield, N. J. Filed June 20, 1903. Serial No. 162,608.

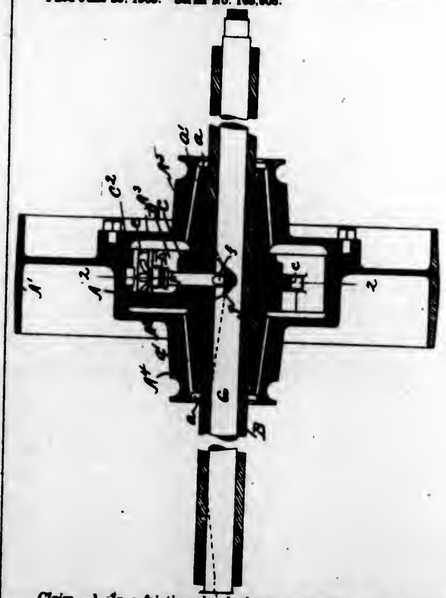

Claim.—1. In a friction-clutch the combination of an annular friction-surface a split friction-ring adapted to act on said surface; a carrier for said split ring, the ends of said ring having a limited circumferential movement on said carrier; and mechanism for actuating the free end of the ring to set the clutch, each end of the ring being adapted to become either the driving or free end according to the direction of movement of the clutch the ring being driven with a clutch moving in one direction from its end.

2. In a friction-clutch, the combination of an annular friction-surface, a split ring adapted to act on said surface, a carrier for said split ring the ends of said ring having a limited circumferential movement on said carrier, and mechanism for actuating the free end of the ring to set the clutch, each end of the ring being adapted to become either the driven or free end according to the direction of movement of the clutch, the ring being driven with the clutch moving in either direction from its end.

3. In a friction-clutch the combination of an annular friction-surface; a split friction-ring adapted to act on said surface; a carrier for said split ring, the ends of said ring having a limited movement on said carrier said ring being driven from its end; and a toggle-joint between the ends of the ring and arranged to actuate the free end thereof.

4. In a friction-clutch the combination of an annular friction-surface a split friction-ring adapted to act on said surface; a carrier for said split ring, the ends of said ring having a limited movement on said carrier said ring being driven from its end; a toggle-joint free to move with the ring arranged between the ends of the ring and adapted to actuate the free end thereof.

5. In a clutch the combination of a friction-surface; a split ring adapted to operate against said surface; a carrier for said split ring, said split ring being adapted to spring on the said carrier and to be normally free from the annular friction-surface, and said carrier having a projection extending between the ends of the split ring and adapted to form an abutment against either end of the split ring as said end may be the driving end of the ring; and means for actuating the free end of the ring.

6. In a clutch the combination of a friction-surface; a split ring adapted to operate against said surface; a carrier for said split ring, said split ring being adapted to spring on the said carrier and to be normally free from the annular friction-surface, and said carrier having a projection extending between the ends of the split ring and adapted to form an abutment against either end of the split ring as said end may be the driving end of the ring; means for actuating the free end of the ring; the hollow shaft B; the rod G having the cam-surface thereon in said shaft; the pin F extending from said cam-surface against the means for actuating the free end of the split ring.

7. In a friction-clutch the combination of a friction-surface A; the split ring D arranged to engage said surface; the carrier C on which said split ring is sprung, said carrier having the projection C^3 extending between the ends of the split ring; the toggle-joint E also extending between the ends of said split ring, said split ring with the toggle-joint having a limited movement on the carrier; the hollow shaft B on which said carrier is mounted; the rod G arranged in said hollow shaft and having a cam-surface thereon; and the pin F extending from said cam-surface against the toggle E.

8. In a friction-clutch, the combination with the driving member thereof having within itself a completely-inclosed oil-retaining clutch-cavity; a clutch mechanism arranged in said cavity; a hollow shaft on which said mechanism is mounted; and means within said shaft for operating said clutch.

9. In a friction-clutch, the combination of an annular friction-surface; a hub thereon forming with the friction-surface a clutch-cavity; a clutch device within said cavity, said clutch device being provided with passages extending from the outer part of the clutch toward the axis, the hub for the annular friction-surface being provided with passages leading from the inner part of the hub to the clutch-cavity.

10. In a friction-clutch the combination with an annular friction-ring having hubs for the same forming with the annular surface a clutch-cavity, said hubs being provided with passages leading from the inner part of the hub to the clutch-cavity; a clutch mechanism comprising a split ring; and a carrier therefor, said split ring and carrier being provided with passages in register leading from the ring through the carrier toward the axis of the clutch.

11. In a friction-clutch, the combination with the clutch members having friction-surfaces adapted to be brought into engagement; a shaft on which said members are mounted, one of said members being fixed on said shaft and the other journaled thereon, the member journaled on the shaft having passages leading from the shaft to the clutch-surfaces, and the member fixed on the shaft having passages leading from the clutch-surfaces to the shaft.

12. In a friction-clutch the combination with the friction-surface A; the hubs secured thereon, and forming with the friction-surface a clutch-cavity; the split ring D; the carrier C on which said split ring is sprung, said carrier having the projection C^3 between the ends of the carrier; means for actuating said split ring, said split ring and carrier being provided with the passages d^3 and c' through which oil passes by gravity; the rod B on which said carrier is fixed one of said hubs being provided with the grooves a and passages a' leading from the grooves a to the clutch-cavity whereby oil may be carried from the journal to the clutch-cavity by centrifugal force.

13. In a friction-clutch, the combination with the clutch members, one of which is loose relatively to the other when the clutch is released, said clutch mechanism comprising friction-surfaces adapted to be brought into engagement; an oiling device arranged to carry oil from the friction-surfaces toward the axis of the clutch mechanism by gravity, and to return it to the surfaces at the outer part of the clutch by centrifugal force after its passage through the bearing of the loose member whereby a circulation of oil through the loose member is accomplished.

808,623. **CARRIER FOR PNEUMATIC TUBES.** BENNET C. BATCHELLER, Philadelphia, Pa., assignor to The Pneumatic Tube and Power Company, New York, N. Y., a Corporation of New York. Filed Mar. 21, 1905. Serial No. 251,210.

Claim.—1. A pneumatic carrier having buffer-heads at its ends and a flat flexible disk of greater diameter than the buffers or than the tube in which the carrier is to travel, secured between one end of the carrier and the buffer at that end.

2. A pneumatic carrier having buffer-heads at its ends and a flat flexible disk of greater diameter than the buffers or than the tube in which the carrier is to travel secured between one end of the carrier and the buffer at that end, said buffer being rounded at C', to permit the edge of the disk to turn freely over it.

808,624. **SANITARY NAPKIN.** PERRY S. BAUER, Chicago, Ill., assignor to Bauer & Black, Chicago, Ill., a Corporation of Illinois. Filed Feb. 11, 1905. Serial No. 245,269.

Claim.—1. A sanitary napkin comprising an absorbent pad, a fabric holder inclosing said pad and sealed at the ends of the pad, and a strip of moisture-proof material interposed between one side of the pad and the holder to render the pad impervious to moisture at that side.

2. A sanitary napkin comprising an absorbent pad, a fabric holder inclosing said pad, and a strip of adhesive material interposed between one side of the pad and the holder and incorporated therewith to render the pad impervious to moisture at that side.

3. A sanitary napkin comprising an absorbent pad, a fabric holder inclosing said pad, and adhesive material interposed between one side of the pad and the holder and incorporated with the holder to seal the holder at the ends of the pad and render the pad impervious to moisture at that side.

4. A sanitary napkin comprising an absorbent pad, a fabric holder inclosing the pad, and adhesive material interposed between one side of the pad and the holder and extending beyond the ends of the pad and incorporated with the pad and the holder to render the pad impervious to moisture at that side.

5. A sanitary napkin comprising an absorbent pad, a fabric holder inclosing the pad, and a strip of gutta-percha tissue interposed between one side of the pad and the holder and extending beyond the ends of the pad, said strip being incorporated by heat and pressure with the pad and the holder to render the pad impervious to moisture at that side.

6. A sanitary napkin comprising an absorbent pad, a sheet of fabric folded upon and inclosing the pad with its edges overlapping and its ends extending beyond the ends of the pad, and a strip of adhesive material interposed between one side of the pad and the inclosing fabric to render the pad impervious to moisture at that side and incorporated by heat and pressure with the pad and the fabric to fasten together the overlapping edges of the fabric upon the pad.

808,625. **CONSTRUCTION OF WHEELS.** THOMAS R. BEARMONT, Park Place, London, England. Filed Nov. 29, 1904. Serial No. 234,778.

Claim.—1. In a wheel in which a segmental wooden felly is surmounted by a metal tire, a wedge-shaped plug between adjacent segments of the felly, removable adjustment-liners between the outer end of the plug and the tire, a bolt countersunk in the tire and threading the said liners and plug, and a nut on said bolt engaging over said plug; substantially as described.

2. In a wheel such as herein described in which the spoke-tenons are let into the felly, a loose non-rotatable cap closely surrounding the tenon and slipped over the end of the spoke, said cap extending inwardly beyond the inner periphery of the felly and being externally screw-threaded on its inner end for the reception of a tighten-

leg-cut adapted to engage the inner periphery of the felly and draw the crown of the cap against the end of the spoke; substantially as described.

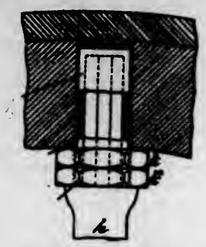

808,626. HORSESHOE. JAMES T. BELL, Washington, N. J. Filed Jan. 4, 1905. Serial No. 239,859.

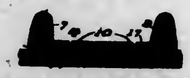

Claim.—1. A horseshoe comprising a body portion and a toe-calk secured thereto, said toe-calk comprising a plate conforming in curvature to the curvature of the body portion and provided with side flanges to snugly fit the edges of the body portion throughout the length of the plate, calks projecting in spaced relation from said plate and arranged in alinement at right angles to the longitudinal dimension of the body portion, and duplicate securing means for attaching the plate to the body portion, the surface of the plate next the body portion being cut away at an incline from each securing means to the free end of the plate.

2. A horseshoe comprising a body portion and a toe-calk secured thereto, said toe-calk comprising a plate conforming in curvature to the curvature of the body portion and provided with side flanges to snugly fit the edges of the body portion throughout the length of the plate, calks projecting in spaced relation from said plate and arranged in alinement at right angles to the longitudinal dimension of the body portion, and duplicate securing means for attaching the plate to the body portion, the surface of the plate next the body portion being cut away at an incline from each securing means to the free end of the plate, the surface of the plate between the securing means resting squarely against the surface of the body portion.

808,627. KNOB. KRAFT BOOTH, Philadelphia, Pa., assignor to Gilinder & Sons, Inc., Philadelphia, Pa. Filed Apr. 10, 1905. Serial No. 254,697.

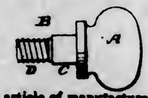

Claim.—1. As an article of manufacture a transparent drawer or door knob having an integral attaching-stem formed with means for preventing turning of the knob and also with means for the application of a device for securing the knob in place, substantially as described.

2. As an article of manufacture a transparent drawer or door knob having an integral attaching-stem which for a portion of its length is angular in cross-section to prevent turning, and also having a threaded portion for the application of a securing-nut, substantially as described.

808,628. ROUGH-ROUNDING AND CHANNELING MACHINE. WILLIAM S. BRADBURN, West Bridgewater, Mass., assignor to United Shoe Machinery Company, Paterson, N. J., a Corporation of New Jersey. Filed Mar. 6, 1905. Serial No. 248,446.

Claim.—1. A rough-rounding and channeling machine, having, in combination, a trimming-knife, a channeling-knife, a fore-part guide, and common means for throwing the fore-part guide into and the channeling-knife out of operation, substantially as described.

2. A rough-rounding and channeling machine, having, in combination, a trimming-knife, a channeling-knife, a fore-part guide, common means for throwing the fore-part guide into, and the channeling-knife out of, operation, and independent means for throwing the channeling-knife out of operation, substantially as described.

3. A rough-rounding and channeling machine, having, in combination, a trimming-knife, a channeling-knife, a fore-part guide, a channeling-knife guard, connected means for throwing the fore-part guide and channeling-knife guard into operation, substantially as described.

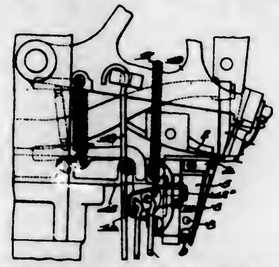

4. A rough-rounding and channeling machine, having, in combination, a trimming-knife, a channeling-knife, a fore-part guide, a channeling-knife guard, connected means for throwing the fore-part guide and channeling-knife guard into operation, and independent means for throwing the channel-knife guard into operation, substantially as described.

808,629. BOTTLE-CLOSURE. CLARENCE M. BRONSON and PHILIP F. KING, New York, N. Y. Filed Apr. 11, 1905. Serial No. 254,911.

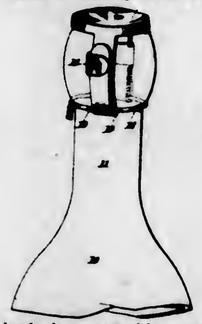

Claim.—1. A bottle-closure comprising a cap, arms extending therefrom, means adapted to embrace a bottle-neck and said arms, and means for securing the free ends of said arms, substantially as specified.

2. A bottle-closure comprising a cap, arms extending therefrom, means adapted to embrace a bottle-neck and said arms intermediate their ends, and means for securing the free ends of said arms, substantially as specified.

3. A bottle-closure comprising a cap, arms extending therefrom, means adapted to embrace a bottle-neck, and said arms, and means arranged upon said arms adapted to engage and hold the free ends thereof, substantially as specified.

4. A bottle-closure comprising a cap, arms extending therefrom having their ends folded upon the remainder of said arms, a wire adapted to embrace a bottle-neck extending through said looped arms, and locking devices for engaging and holding the folded ends of said arms, substantially as specified.

5. A bottle-closure comprising a cap having a plurality of arms extending therefrom, having their ends folded upon the remainder of said arms, a wire adapted to embrace a bottle-neck extending through said looped arms, and locking devices arranged upon said arms adapted to engage and hold the folded ends of said arms, substantially as specified.

6. A bottle-closure comprising a cap having a plurality of arms extending therefrom, having their ends folded upon the remainder of said arms to form looped portions, a wire adapted to embrace a bottle-neck extending through the looped portions of said arms, and locking devices provided upon said arms intermediate the cap and looped portions adapted to engage and hold the free ends of said arms locked to their folded position, substantially as specified.

7. A bottle-closure comprising a cap having a plurality of arms extending therefrom having their ends folded upon the remainder of said arms to form looped portions, a wire adapted to embrace a bottle-neck extending through said looped portions, and laterally-projecting portions or ears upon said arms adapted to engage and hold the free ends of said arms to their folded positions, substantially as specified.

8. A bottle-closure comprising a dished cap having a plurality of arms extending therefrom having their ends folded upon the remainder of said arms to form looped portions, a wire adapted to embrace a bottle-neck extending through said looped portions, and laterally-projecting ears arranged upon the edges of said arms intermediate the dished cap and the looped portions of said arms, adapted to engage and hold the free ends of said arms locked to their folded positions, substantially as specified.

9. A bottle-closure comprising a dished cap having a plurality of arms extending therefrom having their ends folded upon the remainder of said arms to form looped portions, a disk of packing arranged in said cap, a wire adapted to embrace a bottle-neck extending through said looped portions, and laterally-projecting ears arranged upon the edges of said arms adjacent to the edge of said cap adapted to engage and hold the free ends of said arms locked to their folded positions, substantially as specified.

808,630. GRAB-BUCKET. ALEXANDER B. BROWN, Cleveland, Ohio, assignor to The Brown Hoisting Machinery Company, Cleveland, Ohio. Filed Aug. 8, 1905. Serial No. 273,302.

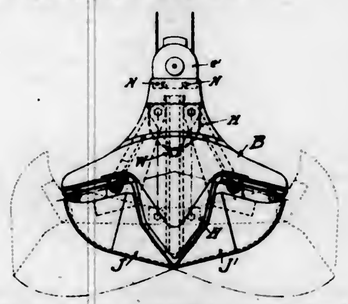

Claim.—1. A two-rope grab-bucket connectively related to its top block in such manner that the spread of the bucket-blades shall tend to coincide with or to be opposite to that of the strands of the hoist-rope as may be predetermined.

2. A two-rope grab-bucket detachably connected to its top block with the plane of the spread of the blades or jaws coincident with or opposite to that of the hoist-rope, substantially as shown and described.

3. The combination of a two-rope grab-bucket, having its top block rotatively connected with the sliding cross-head of the same, and suitable means of detachedly uniting said block and bucket together when the planes of the hoist-rope, and the bucket's jaws are either coincident, or opposite, substantially as shown and described.

4. The combination of a two-rope grab-bucket and a top block connectively related to the cross-head of said bucket or to a separate hook or clevis, substantially as shown and described.

808,631. CHRONOMETER-ESCAPEMENT. AUGUSTUS BROWN, Elgin, Ill. Filed July 13, 1904. Renewed Nov. 13, 1905. Serial No. 282,089.

Claim.—1. An escapement of the class described in which is combined a balance-arm, a balance-staff, an unlocking-spring mounted upon the balance-arm substantially parallel with the balance-staff, an escapement-wheel, a detent interposed longitudinally between said spring and the locking-tooth of said wheel, and yielding means for maintaining said detent in a normal position.

2. The combination in an escapement of the class described, of a balance-staff, an escapement-wheel, a detent interposed longitudinally between the balance-staff and the locking-tooth of the wheel, the staff of which detent is in a line substantially tangential to the circumference of the wheel, a locking-jewel upon one end and an unlocking-jewel upon the opposite end of said detent, means for yieldingly maintaining said detent in a normal position, a balance-arm and an unlocking-spring mounted upon said balance-arm in position to engage said unlocking-jewel.

3. A chronometer-escapement in which is combined a balance-staff, a balance-arm mounted thereon, an escapement-wheel having teeth adapted to act as locking-teeth, a pivoted detent interposed longitudinally between said balance-staff and such one of said locking-teeth as may be in immediate proximity thereto, means for yieldingly maintaining said detent in a normal position, a locking-jewel upon one end of said detent in position to successively engage said locking-teeth, an unlocking-jewel upon the opposite end, and a flat unlocking-spring having one end thereof attached to the balance-arm, said spring being arranged substantially parallel to the balance-staff.

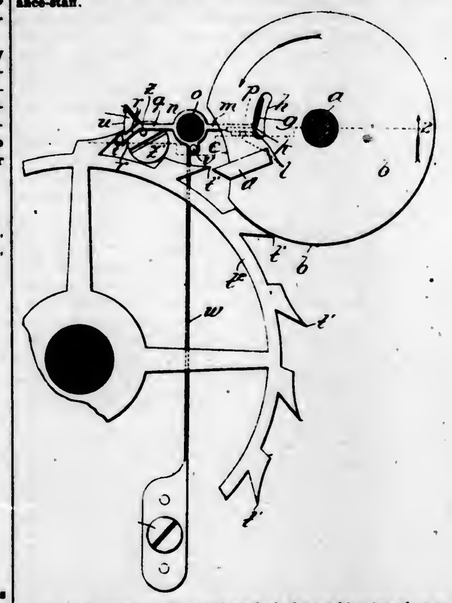

4. In a device of the class described, the combination of an escapement-wheel, a pivoted detent, a balance-staff, a balance-arm mounted upon said balance-staff, and an unlocking-spring mounted upon the balance-arm parallel to said balance-staff and adapted to oscillate therewith.

5. In a device of the class described, the combination of an escapement-wheel having teeth upon its periphery adapted to act as locking-teeth, a balance-staff, a pivoted detent having its body located in a line substantially tangential to the circumference of the wheel, a balance-arm, an unlocking-spring mounted upon the balance-arm, a locking-jewel upon one end and an unlocking-jewel upon the other end of said detent, the former being normally in the path of movement of said teeth and the latter in the path of movement of the unlocking-spring.

6. In a device of the class described, the combination of an escapement-wheel, a pivoted detent, a balance-staff, a balance-arm thereon, a roller having a curved slot therein, said slot being concentric with the axis of the balance-staff, and an unlocking-spring having one end attached to the balance-arm, said spring being extended through said slot with the edges in normal contact with the outer edge of the slot.

7. In a device of the class described, the combination of an escapement-wheel, a pivoted detent, a balance-staff, a balance-arm mounted thereon, a roller having a curved slot therein, the curve of which is concentric with the axis of the balance-staff, and a wide flat unlocking-spring having one end attached to the balance-arm, said spring being extended through said slot, which serves as a banking therefor, the lower or contact portion of said spring being cut away from one edge, whereby but a single contact or interference can occur between the spring and the unlocking-jewel with each oscillation of the balance-arm.

8. In a device of the class described, the combination with a balance-staff, a balance-arm thereon, an escapement-wheel and an unlocking-spring mounted on the balance-arm, of a pivoted detent having arms of substantially equal length, a locking-jewel, and an

unlocking-jewel, said locking-jewel being upon one end and said unlocking-jewel upon the other end of said detent.

808,632. HOISTING-MACHINE. WILLIAM M. BROWN, Gibsonburg, Ohio. Filed June 9, 1905. Serial No. 264,389.

Claim.—1. In a hoisting-machine, a mast having telescoping sections, means for longitudinally adjusting said sections, and means for automatically locking the sections in adjusted position when strain is applied to the top section, said means being adapted to permit the sections to have a relative turning movement to adjust the top section to the line of pull of the hoisting-cable before locking the sections in adjusted position.

2. In a hoisting-machine, a mast comprising relatively adjustable telescoping sections, means for adjusting the sections, and means coacting with the opposing surfaces of the sections for automatically locking the sections in rigid adjusted position when a hoisting strain is applied to the top section.

3. In a hoisting-machine, a sectional longitudinally-extensible mast, means for extending the mast adapted to permit the top section to adjust itself to the line of pull of the hoisting-cable, and means operated by the strain on the top section for causing the sections to be locked in adjusted position and against independent rotary movement.

4. In a hoisting-machine, a mast comprising a base-section and a movable top section, means for elevating the movable section adapted to permit it to adjust itself to the line of pull of the hoisting-cable, and means actuated by a lowering movement of the top section for locking it both in elevated position, and adjusted position relative to the line of pull of the hoisting-cable.

5. In a hoisting-machine, a mast comprising a plurality of telescoping adjustable sections, and means inclosed within the sections and operated from without the same for causing an adjustment thereof said means comprising an element fixed within the lower section and projecting within the upper section and a cable operating on said element and in connection with the upper section whereby a tightening thereof causes the top section to be elevated.

6. In a hoisting-machine, a mast comprising a plurality of telescoping adjustable sections, means inclosed within the sections and operated from without the same for causing an adjustment thereof, and means coacting with the opposing surfaces of the sections for automatically locking the sections in adjusted position.

7. In a hoisting-machine, a mast comprising a hollow base-section and a top telescoping section, an elevating-pole inclosed within the base-section, and projecting within the top section, a cable supported by said pole and having connection with the lower end of the top section whereby a tightening thereof causes said top section to be elevated.

8. In a hoisting-machine, a mast comprising a hollow base-section and a top telescoping section, an elevating element fixed within the base-section and projecting within the top section, a cable supported by said element and having connection with the lower portion of the top section whereby the top section is permitted to turn within the lower section and be elevated by a shortening of said cable.

9. In a hoisting-machine, a mast comprising a plurality of telescoping sections, means for adjusting said sections, and means for locking the sections in adjusted position, said means comprising a tapered member fixed to the upper end of each inclosing section, a movable gripping member suspended above said fixed member and having a tapered surface to coact with the tapered surface of the fixed members whereby to cause the inclosed section to be gripped on a slight lowering movement thereof, and trip means associated with said movable gripping member.

10. In a hoisting-machine, a sectional telescoping mast, means for adjusting the sections thereof, and means for locking the sections in adjusted position, said means comprising a collar fixed to the upper end of the inclosing section and having its inner surface partially tapered, a movable member suspended above said collar having a serrated mast-engaging surface and a tapered surface for coacting with the tapered surface of said collar whereby to cause it to grip the inclosed section as it is lowered, and a yoke from which said movable member is suspended having means whereby a release of said member with the inclosed section may be effected.

11. In a portable hoisting-machine, a vehicle-frame, a mast having pivotal connection with said frame whereby it may be placed in reclining or erect position, and means to which said mast is pivoted adapted to be moved to cause a movement of the mast longitudinally of the vehicle-frame.

12. In a machine of the class described, a vehicle-frame, members mounted to have a movement longitudinally of said frame, means for causing such movement, and a mast having pivotal connection with said members whereby it may have an adjustment longitudinally of the vehicle-frame.

13. In a hoisting-machine, a mast comprising longitudinally-adjustable telescoping sections, one section being permitted to turn within the other, means for effecting a longitudinal adjustment of the mast-sections, and means for automatically locking the sections against relative turning and longitudinal movements when a lowering strain is applied to the top section.

14. In a machine of the class described, a vehicle, racks mounted at one end and movable longitudinally of the vehicle-frame, means for imparting movement to said racks, and a mast pivoted to the outer ends of said racks whereby it is permitted to have a movement longitudinally of the vehicle-frame or be placed in reclining or erect position.

808,633. HAY-PRESS POWER. WARREN S. BRYANT, Adhall, Tex., assignor of one-half to C. C. Dockery, Cameron, Tex. Filed Sept. 29, 1904. Serial No. 226,567.

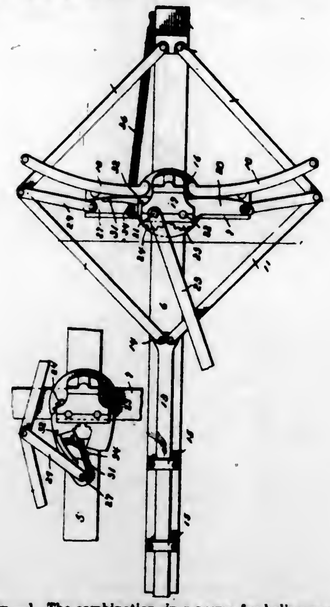

Claim.—1. The combination, in a power for baling-presses, of a toggle connected to the plunger, a shaft to which the power is applied, having a ratchet thereon, a cylinder around the ratchet and connected to the toggle-arms, and having a pawl engageable with the ratchet, and means to disengage the pawl.

2. The combination, in a power for baling-presses, of a pair of opposite toggles connected to the plunger, a shaft to which the power is applied, having a ratchet thereon, a pair of meshing gears having arms connected to the respective toggles, one of the gears being mounted around the ratchet and having a pawl engageable therewith, and means to disengage the pawl.

3. The combination, in a power for baling-presses, of a shaft to which the power is applied, having a ratchet thereon, a cylinder extending around the ratchet having an arm connected to the plunger of the press and a pawl engageable with the ratchet, means to disengage the pawl, and keys which may be inserted in the notches of the ratchet, to prevent the pawl engaging therein.

4. The combination, in a power for baling-presses, of a reciprocating plunger, a rotary shaft, and connecting means between the shaft and plunger to convert the rotation of the former into strokes of the latter, including a pawl and ratchet, and means to prevent the engagement of the pawl with part of the ratchet-teeth, to vary the number of strokes delivered during each rotation of the shaft.

808,634. VESSEL-PROPELLING DEVICE. PERY CARLSON, Manor, Tex. Filed July 10, 1905. Serial No. 269,012.

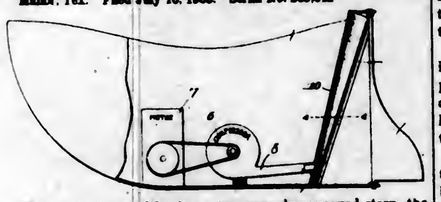

Claim.—1. A vessel having a transversely-concaved stern, the side walls of the vessel being extended rearward to form flanges at the opposite sides of said concaved stern, said flanges being arranged on convergent lines that taper from the upper portion of the stern to a point of convergence adjacent to or below the keel, a discharge-port formed in the stern at a point adjacent to the keel, and means for forcing a stream of compressed air through said port.

2. A vessel having a transversely-concaved stern, the side walls of the vessel being extended to form flanges at the opposite sides of the stern, said flanges being arranged on tapered lines toward a point of convergence adjacent to or below the keel, a port arranged in the stern of the vessel, means for forcing a stream of compressed air through said port, and a rudder mounted aft the concaved stern, and in the vertical plane of the keel, substantially as specified.

808,635. APPARATUS FOR TREATING DISEASED TISSUES. ANTONINO CIOLFI and ROLLAND A. CASE, Cleveland, Ohio, assignors to The American Specialty Company, Cleveland, Ohio, a Corporation. Filed Sept. 21, 1904. Serial No. 225,343.

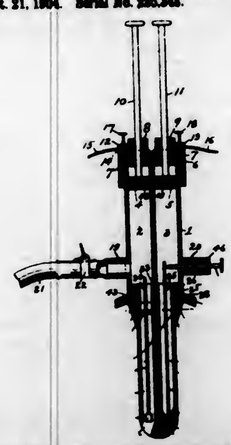

Claim.—1. In an apparatus for treating diseased tissues, the combination of a casing having two compartments therein, an electrode for each of said compartments, connections between each of said electrodes and a source of electric energy, and means for introducing an electrolyte into said compartments, one of said compartments having an opening for the discharge of the liberated gas adjacent to the tissue to be treated.

2. In an apparatus for treating diseased tissues, the combination of a casing having two compartments therein, an electrode for each of said compartments, connections between each of said electrodes and a source of electric energy, and means for introducing an electrolyte into said compartments, one of the compartments having an inclined outlet to permit the liberated gas to more readily contact with the tissue adjacent thereto.

3. In an apparatus for treating orificial diseases, the combination of a casing having therein two compartments, an electrode for each of said compartments, a piston for introducing an oxygen-producing electrolyte into said compartments and the orifice to be treated, the compartment for one of said electrodes having an outlet adapted to discharge the liberated gas into the orifice to be treated, and means for supplying electric current to said electrodes.

4. In a syringe, the combination of a pair of cylinders, a piston in each of said cylinders, each of said cylinders being provided with an extension, an electrode for each of said extensions, one of said extensions having an outlet, and means for supplying electric current to said electrodes.

5. In a syringe, the combination of a body portion having therein a pair of cylinders, pistons for said cylinders, a tip for said body portion having therein two compartments communicating with said cylinders, an electrode for each of said compartments having an outlet near the end of said trip, and means for applying electric current to said electrodes.

6. In a syringe, the combination of a body portion, having therein a pair of cylinders, pistons for said cylinders, a tip for said body portion having therein two compartments communicating with said cylinders, an electrode for each of said compartments, one of said compartments having an outlet near the end of said tip, and means including said pistons for supplying electric current to said electrodes.

7. In a syringe, the combination of a casing having therein a pair of cylinders, a tip secured to said casing and having therein compartments or channels communicating with said cylinders, pistons in said cylinders, and electrodes removably fitted in the compartments of said tip.

8. As a means for treating orificial diseases, a syringe having in combination a casing, said casing having a pair of cylinders therein, a tip secured to said casing, said tip being provided with a tapered portion adapted to fit the external portion of the orifice to close the same and having therein compartments or channels communicating with said cylinders, and electrodes fitted in said compartments or channels.

9. As a means for treating orificial diseases, a syringe having in combination a casing, said casing having a pair of cylinders therein, a tip secured to said casing, said tip being provided with a tapered portion adapted to fit the external portion of the orifice to close the same and having therein compartments or channels communicating with said cylinders, and pistons in said cylinders.

10. A syringe for the treatment of orificial diseases comprising a pair of cylinders, a piston for each of said cylinders, an extension common to said cylinders and having adjacent its point of connection with said cylinders a rounded tapered surface adapted to fit and close the orifice to be treated and being provided with channels communicating with said cylinders.

11. A syringe for the treatment of orificial diseases, said syringe comprising a casing having therein a pair of longitudinally-extending cylinders, pistons in said cylinders, a tip or extension secured to said casing and having therein channels communicating with said cylinders, said tip having a tapered portion adapted to fit the external portion of the orifice to be treated and a flange at the enlarged end of said tapered portion to limit the penetration of said tip.

12. A syringe for the treatment of orificial diseases comprising a casing having a pair of cylinders therein, pistons for said cylinders, an extension or tip for said casing having channels communicating with said cylinders, the discharge ends of said channels being outwardly inclined, said syringe having a rounded tapered portion adapted to engage and close the external portion of the orifice to be treated.

808,636. EXCAVATOR. FRANK F. COLLATH, Milwaukee, Wis. Filed June 11, 1904. Serial No. 212,978.

Claim.—1. In a portable excavator, a movable platform, a motor carried thereby, a pair of winding-drums driven by the motor, cables wound upon the winding-drums, a scoop connected to the cables, an anchored pulley at a distance from the platform around which one of the cables passes, a receptacle carried by the platform into which the scoop is adapted to be discharged, a conveyer for lifting the material from the receptacle, an elevated hopper into which the conveyer discharges, and a valve for the hopper through which the contents thereof may be discharged into any suitable vehicle.

2. In a portable excavator, a movable platform, a motor carried thereby, a pair of winding-drums driven by the motor, cables wound upon the winding-drums, a scoop connected to the cables, an anchored guide-pulley at a distance from the platform around which one of the cables passes, a receptacle carried by the platform into which the scoop is adapted to be emptied, a conveyer for lifting the material from the receptacle and operated by the motor, an elevated

hopper into which the conveyer discharges, and a spout for the hopper adapted to discharge the contents thereof into any suitable vehicle.

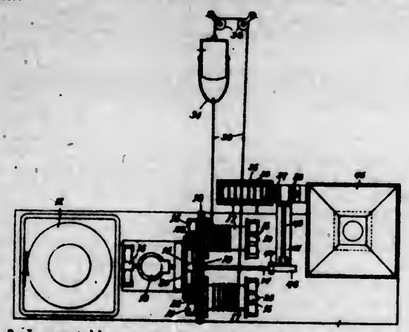

3. In a portable excavator, a movable platform, a motor carried thereby, a pair of winding-drums operated from the drive-shaft of the motor, means for connecting the winding-drums with the drive-shaft of the motor alternately, cables wound upon the winding-drums, a scoop connected to the cables, a guide-pulley suitably anchored at a distance from the platform around which one of the cables is passed, a receptacle carried by the platform, a drum journaled therein, a chain conveyer carried by the drum, buckets on the chain conveyer, a sprocket-wheel supported from the platform at an elevation and by which the chain conveyer is driven, a pulley mounted on the shaft of the sprocket-wheel, a pulley on the drive-shaft of the motor, a belt connecting said pulleys, an elevated hopper into which the conveyer is adapted to discharge, and a valved spout therefor capable of discharging the contents of the hopper into any suitable vehicle.

4. In a portable excavator, a pair of winding-drums, cables wound upon the drums, a scoop connected to the cables, a guide-pulley anchored at a distance from the drums and around which one of the cables passes, a motor, a pinion on the shaft thereof, a pair of gear-wheels meshing with the pinion, friction-shoes in slots of the gear-wheels, and means for forcing the friction-shoes of each winding-drum into frictional engagement therewith comprising sleeves slidable on the shafts of the winding-drums, links connecting said sleeves with the friction-shoes, screws threaded in the shaft-bearings for sliding the sleeves on the shafts, levers connected with the screws by which said screws may be turned, and a link connecting the levers whereby the friction-shoes of one drum are released as the friction-shoes of the other drum are brought into active engagement with said drum.

5. In a portable excavator, a platform mounted on wheels, a boiler carried thereby, a steam-engine mounted on the platform and supplied with steam by the boiler, a pinion on the drive-shaft of the engine, a pair of gear-wheels meshing with the pinion, a pair of winding-drums, friction-clutches between the winding-drums and the gear-wheels, means for connecting the drums alternately with their gear-wheels, cables wound upon the drums, a scoop connected to the cables, a guide-pulley suitably anchored at a distance from the platform and around which one of the cables is passed, a receptacle carried by the platform into which the scoop is adapted to be emptied, a conveyer adapted to lift the material from the receptacle, a shaft suitably mounted at an elevation from the platform and adapted to drive the conveyer, a pulley on said shaft, a pulley on the drive-shaft, a belt connecting said pulleys, a hopper supported from the platform at an elevation into which the conveyer is adapted to discharge, and a valved adjustable spout on the hopper for discharging the contents thereof into any suitable vehicle.

808,637. ELEVATOR MECHANISM. WILLIAM CROMBLEY, West Haven, Conn. Filed Jan. 19, 1903. Serial No. 139,741.

Claim.—1. The combination of a chain of link-connected conveyer-scoops, provided at their ends with bearing-seats, a rotatable sprocket-drum comprising a pair of disks, a hub connecting the disks, forming the shaft-support thereof, a series of carrier-teeth secured to the outer faces of the disks and a series of brackets secured to the inner faces of the disks, adapted to engage with the bearing-seats of the scoops, substantially as and for the purpose specified.

2. In sprocket-drum construction the combination of the disks, a hub connecting the disks, a series of carrier-teeth on the outer faces of the disks, and the series of angle-iron bars secured to the inner faces of the disks to form brackets for engaging the scoops of a conveyer-chain, substantially as and for the purpose specified.

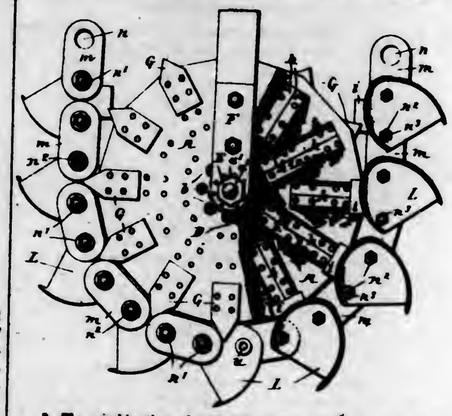

3. The combination of a sprocket-drum comprising a pair of disks connected by a hub or shaft, a series of brackets arranged on the inner faces of the disks, a series of carrier-teeth arranged on the outer faces of the disks, a series of scoops adapted to fit and be conveyed between the disks of the sprocket-drum provided with bearing-seats to engage the brackets of the disks and having a pair of cylindrical bosses or journals at their ends in the traveling plane of the carrier-teeth of the drum, a series of links received on the journals of the scoops connecting them in an endless conveyer-chain, and means for holding the links in place on their journals substantially in the manner, and for the purpose specified.

4. In a sprocket-drum for a chain of conveyer-scoops the combination of the disks A the hub D having the oil-reservoir *f* and connecting the disks, a shaft received through the hub, the carrier-teeth *g* arranged on the outer faces of the disks and the brackets h arranged on the inner faces thereof substantially as and for the purpose specified.

5. In a dredging-machine or digger the combination with a sprocket-drum for conveying a chain of scoops, and the holding arms or frames for supporting the drum, of a shaft secured in the frames and having the drum mounted thereon, the collars *r* mounted on the shaft between the drum and frame and secured respectively to said parts, and a divided case or band *t* having its sections clamped upon and inclosing the collars to form a water-tight joint between the drum and its stationary supports, substantially in the manner and for the purpose specified.

808,638. FLOATING CAISSON FOR REPAIRING FLOATING DRY-DOCK BOTTOMS. ANDREW C. CUNNINGHAM, Annapolis, Md. Filed Mar. 10, 1905. Serial No. 249,206.

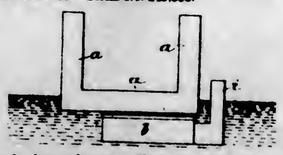

Claim.—1. An under-water-floating caisson for repairing the bottoms of floating dry-docks, the same comprising an open-topped working chamber having a bottom and closed on all sides, said chamber being adapted to be entirely submerged and floated under the dock, and provided with means for exhausting the water therefrom, and having a shaft extending above water to permit workmen to enter the chamber after it is in place.

2. An under-water-floating caisson for repairing the bottoms of floating dry-docks, the same comprising an open-topped working chamber having a bottom and closed on all sides, said chamber having a supplemental flotation-chamber and means for admitting and exhausting water from said flotation-chamber.

3. An under-water-floating caisson for repairing the bottoms of floating dry-docks, the same comprising an open-topped working chamber having a bottom and closed on all sides, a supplemental flotation-chamber, means for admitting water to the flotation-chamber to give the working chamber the required submersion, means for exhausting the water from the flotation-chamber to cause the open top of the working chamber to fit water-tight against the bottom of the dock, and means for exhausting the water from the working chamber to permit the workmen to enter and work therein.

808,639. IMPLEMENT-HOLDER FOR SEWING-MACHINES. MARTHA J. DAVIS, St. Joseph, Mo. Filed July 11, 1905. Serial No. 269,235.

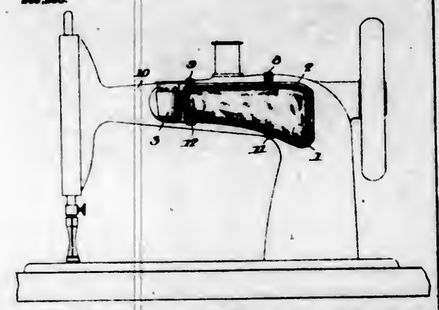

Claim.—1. In a sewing-companion, a plate, clasps carried upon the plate, means whereby the clasps may be adjusted relative to each other, and an implement-holder mounted upon the plate.

2. In a sewing-companion, a plate, clasps carried upon the plate, means whereby the clasps may be adjustably moved longitudinally of the plate and an implement-holder mounted upon the plate.

3. In a sewing-companion, a plate, a strip upon the plate, a clasp adjustably secured to the plate by a strip and an implement-holder mounted upon the plate.

4. A sewing-companion, a plate, a plurality of clasps mounted upon the back of the plate, means for adjusting the clasps relative to each other and an implement-holder mounted upon the plate.

5. A sewing-companion, a plate, a penetrable material secured to the front of the plate, a thimble-socket secured to the front of the plate, a strip mounted upon the back of the plate, a plurality of clasps secured to the back of the plate by the strip and means for adjusting the clasps relative to each other and to the plate.

808,640. AIR-STOP FOR WINDOWS. WILLIAM A. DAVIS and WILLIAM H. SARELIUS, Chicago, Ill. Filed Feb. 18, 1905. Serial No. 246,200.

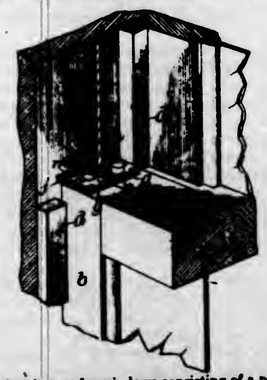

Claim.—An air-stop for windows consisting of a plate provided with tongues or tangs and a slot or aperture extending from the middle of the rear edge to about the central portion thereof, a fabric piece held by said tongues or tangs provided with a slit coincident with said slot or aperture of said plate for accommodating the counterbalancing means whereby when the plate is screwed in position a continuous unbroken reinforced fabric edge is presented to the frictional wear against the jamb and guides of the window and the slit in the rear edge of said fabric is closed by compression as herein described.

808,641. WIRELESS TELEGRAPHY. PATRICK B. DELANY, South Orange, N. J. Filed May 14, 1903. Serial No. 157,137.

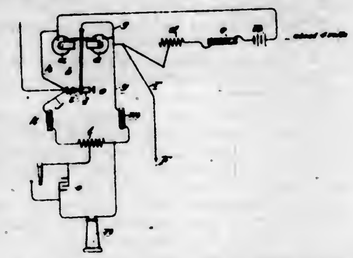

Claim.—1. In a wireless-telegraph system, a microphonic contact, in the path of the received waves or impulses, electromagnetic means, for variably maintaining the microphonic contact at a high periodicity, comprising a local circuit controlled at said contact, and a receiver whose circuit is controlled at such contact, modification of the contact by the received waves or impulses effecting manifestation of the signals by the receiver.

2. In a wireless-telegraph system, a receiver comprising the combination of a relay whose winding is in closed circuit with a battery, a shunt-circuit around the relay-winding, completed at the contact of the relay, a second shunt-circuit around the relay-winding divided at the same contact, one division including the local battery and a resistance, and the other division a receiving instrument.

3. In a wireless-telegraph system, a receiver comprising the combination of a relay whose winding is in closed circuit with a battery, a shunt-circuit around the relay-winding, including the battery and a receiver which is cut in and out of said shunt-circuit at the contact of the relay to which the armature-lever is attracted.

4. In wireless telegraphy, a receiving apparatus comprising a normally maintained contact constantly varied locally by shunting at a high rate or periodicity, the modification of such contact by received signal waves or impulses causing a manifestation of the received signals.

5. A system of wireless transmission of signals, comprising a receiver apparatus having a normally maintained path for the received waves or oscillations, means, comprising an electric circuit completed through such path, acting to vary the latter at a high rate of periodicity, the modification of such path by such waves or oscillations causing manifestation of the signals.

6. In wireless telegraphy, a receiving apparatus comprising a normally maintained variable contact, variations of which are automatically self-effected at a high rate of periodicity and controlled at said contact, through which latter the circuit of a receiver is affected by the action upon said contact of received signal impulses.

7. In wireless telegraphy, a receiving apparatus comprising a normally maintained contact, means controlled at such contact for automatically rapidly varying it, and a receiving instrument in a circuit controlled by said contact which is affected by received signal impulses to make the latter manifest by the receiver.

8. In wireless telegraphy, a receiving apparatus comprising a normally maintained contact, means controlled at such contact for automatically electromagnetically varying it at a high rate of speed, and a receiving instrument in a circuit controlled at said contact, the contact being affected by received signal impulses to thereby make the signals manifest in the receiving instrument.

9. In wireless telegraphy, a receiving apparatus comprising a receiving instrument the circuit of which is divided, one branch thereof containing a source of current, and the other not, and a contact automatically normally maintained and constantly varied by shunting at which the branches of the receiver-circuit are controlled and which are so affected by received signal impulses as to make the latter manifest by the receiving instrument.

10. In wireless telegraphy, a receiving apparatus comprising an electromagnetic instrument having a movable part automatically maintained in vibration by variation of its circuit at its contact-points, a circuit containing a receiver and controlled at said contact-points which are affected by received signal impulses so that the latter are made manifest by the receiver.

11. In wireless telegraphy, a receiving apparatus comprising a part automatically normally vibrated, normally maintaining a variable electrical contact and normally producing a continuous sound or note, said variable contact controlling the vibration of the normally self-vibrated part and being in the path of received signal impulses which so affect the contact as to make the signals manifest by changes in the sound or note.

12. In wireless telegraphy, a receiving apparatus comprising a normally maintained microphonic contact in the path of received oscillations, an electromagnetic automatic vibrator acting to vary, and controlled by said microphonic contact, and an electrical circuit containing a receiver controlled at said contact.

13. In wireless telegraphy, a receiving apparatus comprising a normally maintained microphonic contact in the path of received oscillations through which contact an undulatory local current is normally passed, means for automatically varying said contact and a receiver whose operation is controlled at the contact.

14. In wireless telegraphy, a normally maintained contact comprising a vibrating member, means controlled by such member and acting to vary the contact at a high rate of periodicity, and a receiving instrument in a circuit controlled by said contact.

808,642. **TELEGRAPHIC KEYBOARD APPARATUS.** PATRICK B. DELANY, South Orange, N. J. Filed Apr. 11, 1904. Serial No. 202,899.

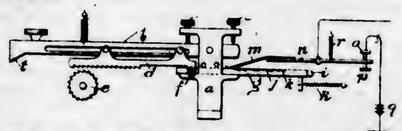

Claim.—1. In an electric keyboard-transmitter, the combination of two parts one of which is movable relatively to the other from and to normal position in the same path, one of such parts having projecting surfaces corresponding with the component parts of a code-signal and the other part having a portion bearing on said projections, and one of such parts being vibrated by contacting with said portion and said projecting surfaces as one of the parts is moved from normal position, to thereby form electrical contacts corresponding with said projecting surfaces, the speed of return of said movable part to normal position and the inertia of the vibratile part being so related that on such return the vibratile part is not actuated to form said electrical contacts in reverse order.

2. In an electric keyboard-transmitter, the combination of two parts, means whereby one of them is automatically moved from its normal position on the depression of the corresponding finger-piece in the keyboard and is automatically returned by the same path to normal position when the finger-piece is released, the other of said parts being a vibratory contact-maker part, one of said parts having surfaces upon it corresponding with the component parts of a code-signal and the other part having a portion in contact with said surfaces during the movement of one of the parts from and to normal position; the organization being such that in the movement of the movable part from normal position, the vibratile part is actuated to make electric contacts corresponding with said surfaces, and that on the return of the movable part to normal position, the speed of movement and inertia of the vibratile part are of such character that the latter will not be vibrated to form the electrical contacts in reverse order.

3. In a telegraphic keyboard-transmitter, the combination of two parts one of which is vibratile to form electrical contacts and the other of which has projecting surfaces corresponding with the component parts of a code-signal and one of such parts having a portion bearing on said surfaces, means for moving one of said parts relatively to the other at such speed that the projecting surfaces on one part produce corresponding vibrations of the other part, and means for returning such movable part to normal position at such rate of speed that the vibratile part is not actuated to produce in reverse order electrical contacts corresponding with said projecting surfaces.

4. In an electric keyboard-transmitter, the combination with a key, of a sliding bar having fashioned upon it designs corresponding with the component parts of a telegraphic signal, a rotating driver for engagement with said bar, a vibratile contact-maker controlled by said character-designs, a contact against which said contact-maker strikes, and means for returning the bar in contact with the contact-maker at such speed as not to vibrate the latter to form the signals in reverse order.

5. In an electric keyboard-transmitter the combination with a reciprocal signal-former, a contact-maker controlled by said former, a contact for said contact-maker, means for making telegraph characters by vibration of said contact-maker when said contact-former moves in one direction, and means for returning the former in contact with the contact-maker at such speed as not to vibrate the latter to form the signals in reverse order.

808,643. **CEMENT-BLOCK MACHINE.** MATTHEW BOKLEY, Archbold, Ohio. Filed June 21, 1905. Serial No. 266,363.

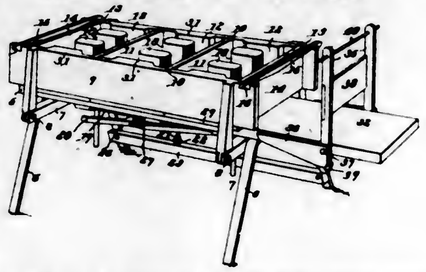

Claim.—1. In a machine for making hollow concrete blocks, the combination with a mold, of a bed-plate having one end thereof extended beyond the mold, and a block-supporting frame mounted for tilting movement on said extension.

2. In a machine for making hollow concrete blocks, the combination with a mold, of a bed-plate having one end thereof extended beyond the mold, and a block-supporting frame pivoted to said extension and mounted for tilting movement thereon.

3. In a machine for making hollow concrete blocks, the combination with a mold, of a bed-plate having one end thereof extended beyond the mold, and a tilting block-supporting frame pivotally mounted on said extension and provided with angularly-disposed arms for changing the position of the blocks.

4. In a machine for making hollow concrete blocks, the combination with a mold, of a bed-plate having one end thereof extended beyond the mold, and a tilting block-supporting frame pivotally mounted on said extension for changing the position of the blocks, the horizontal arms of said frame being normally disposed in the same longitudinal plane with the bed-piece.

5. In a machine for making hollow concrete blocks, the combination with a mold, of a bed-plate having one end thereof extended beyond the mold, a tilting block-supporting frame pivotally mounted on said extension and provided with angularly-disposed arms for changing the position of the blocks, and laterally-extending spring-clips secured to one of said arms and engaging the pivoted end of the adjacent arm.

6. In a machine for making hollow concrete blocks, the combination with a mold, of a bed-plate having one end thereof extended beyond the mold, a block-supporting frame mounted for tilting movement in the extension and comprising angularly-disposed arms pivoted to said extension on each side thereof, and a rod connecting said arms and constituting a handle for operating the frame.

7. In a machine for making hollow concrete blocks, a mold comprising a bed-plate having side walls pivoted thereto, detachable end walls engaging the side walls, locking-bars for securing said walls in closed position, vertically-reciprocating cores movable to operative position within the mold, an operating member pivotally connected with the cores, and means for locking the operating member in elevated position.

8. In a machine for making hollow concrete blocks, a mold comprising a bed-plate, side walls pivoted thereto and provided with spaced vertical grooves, detachable end walls engaging the side walls, removable partitions seated in the grooves of said side walls and dividing the mold into a plurality of molding compartments or chambers, vertically-reciprocating cores movable to operative position within the molding compartment, an operating member pivotally connected with the cores, a loop secured to the bed-plate, and a locking-bolt carried by the operating member for securing the latter in elevated position.

9. In a machine for making hollow blocks, a mold comprising a bed-plate, side walls pivoted thereto, detachable end walls engaging the side walls, partitions dividing the mold into a plurality of molding compartments or chambers, a removable pallet seated on the bed-plate in each compartment, vertically-reciprocating cores movable to operative position within the mold, an operating member pivotally connected with the cores, and means for locking said operating member in elevated position.

10. In a machine for making hollow blocks, a supporting-frame, a bed-plate secured thereto, side walls pivoted to the bed-plate, detachable end walls engaging the side walls, vertically-reciprocating cores movable to operative position within the mold, an operating member pivotally connected with the cores, a bar extending longitudinally of the supporting-frame, a link pivoted to said bar and to one end of the operating member, a pivoted connection between the intermediate portion of said operating member and the cores, a loop secured to the bed-plate, and a bolt slidably mounted on one end of the operating member and adapted to engage said loop for locking the operating member in elevated position.

808,644. **ADJUSTING MECHANISM FOR SCREW-THREADED NEEDLE-POINT INSERTIONS OF COMPASSES.** JOHANN EICHMÜLLER, Nuremberg, Germany, assignor to The Firm of Eugene Dietzgen Co., New York, N. Y. Filed Apr. 11, 1905. Serial No. 255,027.

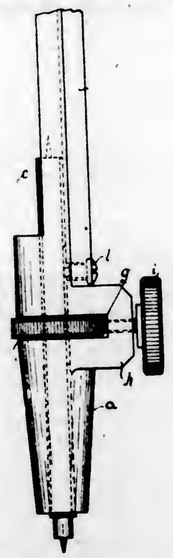

Claim.—1. In combination in a compass having a needle-foot having a longitudinal bore therein, a screw-threaded needle adapted to fit in said bore, said foot having a lateral recess therein, a disk fitting in said recess and having a screw-threaded central opening through which the needle passes, and means for preventing the needle from rotating when the disk is turned, substantially as described.

2. In combination in a compass having a needle-foot provided with a smooth longitudinal bore, a screw-threaded needle fitting in said bore, said needle having a longitudinal recess therein, a screw in said foot having its end engaging in said recess so as to prevent the needle from turning, said foot having a lateral recess and a disk fitting in said recess and having a central screw-threaded hole through which the needle passes.

3. In combination in a compass having a needle-foot provided with a smooth longitudinal bore, a screw-threaded needle fitting in said bore, means for preventing the needle from rotating, said foot having a lateral recess, a disk fitting in said recess and having a central screw-threaded hole through which said needle passes, a stirrup-shaped enlargement connected to the needle-foot and inclosing on one side the said recess and a pressure-screw mounted in said enlargement and having its end adapted to engage with the disk so as to prevent movement of the same.

808,645. **HAIR-DRIER.** FANNIE S. HUNTER, Richmond, Ind. Filed Apr. 12, 1905. Serial No. 255,212.

Claim.—1. A hair-drier of the character described having in combination a body portion, a U-shaped spring member attached to the same forming fingers and a handle portion, a rubber-covered roller mounted on each finger, antifriction-bearings therefor, a lever pivoted to the body portion and bearing on one of the fingers to separate the fingers, and a hand-plate attached to one member of the handle, substantially as described.

2. A hair-drier of the character described having in combination a body portion, a spring member extending through the body portion forming fingers and a handle portion, a rubber-covered roller mounted revolubly on each finger, antifriction-bearings therefor, means for admitting lubricants to the interior parts, a lever pivoted to the body portion and bearing on one of the fingers to separate the fingers when desired, and a hand-plate attached to one member of the handle, all substantially as described.

3. A hair-drier of the character described having a body portion, a spring member formed U-shaped and extending through said body portion, one arm thereof secured in the body portion and the other arm thereof having a limited movement in the body portion, said spring member forming two parallel fingers on one side of the body and a handle on the opposite side of the body, a hand-plate secured to the handle, a rubber-covered roller revolubly mounted on each of said fingers, and a pair of antifriction-bearings for each of said rollers, all substantially as shown and described.

4. A hair-drier comprising a body portion, a U-shaped member forming a handle a movable finger and a stationary finger, a pair of sleeves—having facing bevel ends—secured on the extremities of each finger, a pair of thimbles for each finger having faces corresponding to the faces of the sleeves, a tube surrounding each finger and connecting the respective pairs of thimbles, a plurality of balls located between the bevel-faces of the sleeves and the thimbles, a rubber sleeve—having an outer acuminated end—for each finger covering the said tubes and inclosing its respective finger portion, all substantially as and for the purposes set forth.

808,646. **MAIL-BAG CATCHER.** LEWIS J. EVANS, Riverside, N. Y., assignor of one-fourth to Coe Tyler and three-eighths to John M. Davidge, Binghamton, N. Y. Filed Apr. 12, 1905. Serial No. 255,136.

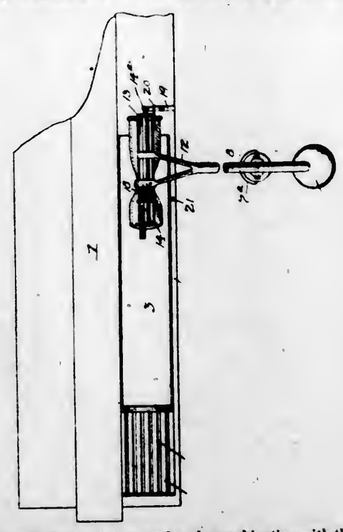

Claim.—1. In a mail-bag catcher the combination with the car having a chute on the roof thereof provided with an open side and having a part extending within the car, of a bag having a permanently-attached suspending-loop near each end, a rock-shaft having projections designed to engage said loops, and tripping means

whereby said shaft is rotated by the car to release the bag, substantially as described.

2. In combination a car, a bag-receiving chute carried thereby, a bag having suspending-loops at or near each end, a supporting device having retaining devices for engaging said loops, and means actuated by the passage of the car for releasing the loops from said retaining devices, substantially as described.

3. In combination a car, a bag-receiving chute carried thereby, a bag having suspending-loops near each end, a pivotally-supported sweep, a pair of retaining devices carried at the end of said sweep for supporting the bag, and means tripped by the passage of the car for actuating said retaining devices, substanitally as described.

4. The combination with a car having a bag-receiving device, of a bag-supporting device comprising a pivoted sweep, a frame carried on the outer end thereof, a rock-shaft journaled in said frame, bag-retaining devices carried by said rock-shaft, means for holding said rock-shaft with said retaining devices in bag-holding position, and tripping means actuated by the passage of the car for tripping said rock-shaft, substantially as described.

5. The combination with a car having a bag-receiving device, of a post at the side of the track, a sweep pivoted on said post to swing vertically and horizontally, a fork carried by the post for holding the sweep elevated, bag-retaining means carried by said sweep, and means for automatically releasing the bag and disengaging the sweep from the fork, substantially as described.

6. The combination with a car having a bag-receiving device, of a bag-holding device comprising a suitable frame, a rock-shaft journaled therein, bag-retaining pins carried by said rock-shaft, a spring exerting tension on said shaft, a bag-depressing lever pivoted in the frame and adapted to be held elevated by one of said pins, a spring for exerting tension on said depressing-lever, a locking-lever for holding said rock-shaft against rotation, and means tripping said locking-lever, substantially as described.

7. In a bag-holding device, a frame, a rock-shaft journaled therein, projections on said rock-shaft adapted to engage loops at the ends of a bag, tripping means for holding said shaft with said projections extending horizontally, and pivoted retaining devices in proximity to said projections for holding the loops thereon, substantially as described.

808,647. **HYDRAULIC TOOL-CLAMP.** ROLLIN D. FILBEN, Chicago, Ill., assignor of one-half to Le Grand Parish, Chicago, Ill. Filed Dec. 7, 1904. Serial No. 235,269.

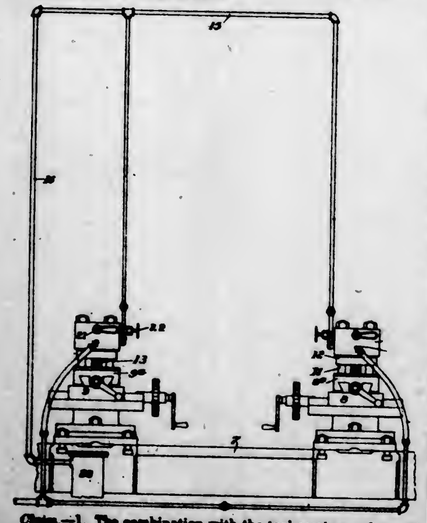

Claim.—1. The combination with the tool carriage, of a vertically reciprocating jaw for clamping the tool thereon, and hydraulic means for moving said jaw, and the connecting pipe to supply high pressure fluid thereto, comprising a rigidly jointed pipe having a very long stem, whereby the tool carriage may move by the flexibility of said pipe without requiring the use of movable joints, substantially as described.

2. The combination with a pair of movable tool carriages and the hydraulically operated clamping jaws 12, of a pair of long vertical steel pipes attached by regular screw joints to the hydraulic clamp and to the feed pipe 15 from overhead, substantially as described.

3. The combination of a tool carriage movable in two directions a cylinder fixed thereon, a plunger in the cylinder adapted to clamp a tool on the carriage, and a hydraulic metal feed pipe for the cylinder screwed fixedly thereto and extending for a relatively great distance approximately perpendicular to the plane of movement of the carriage, substantially as, and for the purpose, described.

4. A hydraulic clamping device comprising in combination a movable carriage, a hydraulic cylinder thereon, a plunger in said cylinder adapted to actuate a clamping mechanism, and a hydraulic metal feed-pipe for said cylinder extending for a relatively great distance approximately perpendicular to the plane of movement of the carriage, substantially as described.

808,648. **ANTICREEPING DEVICE FOR RAILS.** JESSE J. O. FRUEHM, Racine, Wis., assignor to himself and Martin J. Goepfert, Racine, Wis. Filed June 24, 1905. Serial No. 266,717.

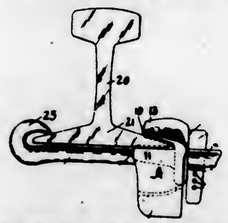

Claim.—1. In an anticreeping device for rails, the combination of a jaw having upper and lower members adapted to grip over the edge of a rail-flange, a piece set in said jaw transversely to said flange adapted to bite thereinto, and means for holding said jaw against longitudinal motion.

2. An anticreeping device for railway-rails comprising a jaw having upper and lower members adapted to grip over the edge of a rail-flange, one or more separate pieces having sharpened, hardened edges set in one or both of said members in such manner that said edges project from the inner face or faces thereof transversely to the rail, and means for drawing said jaw transversely over the edge of the rail-flange whereby said edges are caused to bite thereinto.

3. An anticreeping device for rails comprising a hooked bar, a jaw sliding on said bar and adapted to grip over the edge of a rail-flange, said bar having a slot therein, and a tapered cotter passing through said slot.

4. An anticreeping device for rails comprising a hooked bar, a jaw sliding on said bar and adapted to grip over the edge of a rail-flange, said bar having a slot therein, a tapered cotter passing through said slot, and one or more adjustment-pieces 33, 34 inserted between said cotter and said jaw.

5. In an anticreeping device for rails, a jaw having upper and lower members adapted to grip over the edge of a rail-flange, hardened edges set transversely to the flange and adapted to bite thereinto, and means for holding said jaw against longitudinal motion.

6. In an anticreeping device for rails, a jaw having upper and lower members adapted to grip over the edge of a rail-flange, a piece set in said jaw transversely to the flange and having an edge adapted to bite thereinto, and an abutment-flange adapted to transfer the longitudinal thrust of the rail to the side of a tie.

7. In an anticreeping device for rails, a clamping-jaw having upper and lower members adapted to grip over the edge of a rail-flange and having an abutment-face at the side thereof, and hardened knife-blocks set transversely in the faces of said jaw so that their edges project therefrom and bite into the metal of the rail-flange.

8. An anticreeping device for rails comprising a clamping-jaw having upper and lower members adapted to grip over the edge of a rail-flange and having an abutment-face at the side thereof, and hardened knife-blocks set transversely in the faces of said jaw so that their edges project therefrom and bite into the metal of the rail-flange, in combination with a member passing under the rail and one end passing through a hole in said jaw, the other end being provided with means for gripping the opposite edge of the flange; and means for forcing said jaw along the shank of said member.

9. An anticreeping device for rails comprising a clamping-jaw having upper and lower members adapted to grip over the edge of a rail-flange and having an abutment-face at the side thereof, and hardened knife-blocks set transversely in the faces of said jaw so that their edges project therefrom and bite into the metal of the rail-flange, in combination with a member passing under the rail and one end passing through a hole in said jaw, the other end being provided with means for gripping the opposite edge of the flange; a tapered cotter passing through a slot in the first-named end of said member, and means for preventing said cotter from being loosened in said slot when driven thereinto.

10. An anticreeping device for rails comprising a clamping-jaw having two members each provided with means for biting into one side of the rail-flange, a third member midway between the other two and having means for biting into the other side of the rail-flange, and means for preventing a longitudinal motion of said clamping-jaw.

11. An anticreeping device for rails comprising a clamping-jaw having two projecting members abutting on the lower face of the rail and having means adapted to bite thereinto, a third member abutting on the upper face of the rail and midway between the other two, and means for preventing a longitudinal movement of said clamping-jaw.

12. An anticreeping device for rails comprising a clamping-jaw having a wedge-shaped recess adapted to receive the edge of the rail-flange, a pair of knife-edges set transversely in one face of said recess, and a third knife-edge set transversely in the other face of said recess, said blades being adapted to bite into the opposite faces of the rail-flange when said jaw is forced thereover; and means for holding said jaw in position on said flange.

13. In an anticreeping device for rails, a jaw having upper and lower members adapted to grip over the edge of a rail-flange, and one or more rectangular bars set in one of the jaws and having one edge projecting on the inner face thereof and transversely to the rail whereby to bite into the rail-flange when the jaw is drawn thereover.

14. In an anticreeping device for rails, a gripping-jaw comprising upper and lower members adapted to grip over the edge of a rail-flange, a pair of rectangular bars set in the lower jaw transversely to the rail, and a single rectangular bar similarly set in the upper jaw, said bars each having one edge projecting, and said single bar being midway between the other two.

808,649. **METHOD OF DISTILLING AND CONDENSING.** JOHN S. FORBES, Philadelphia, Pa. Filed Aug. 30, 1905. Serial No. 276,188.

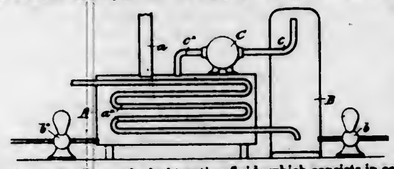

Claim.—1. The method of treating fluids which consists in condensing a body of vapor from an external source of supply by means of a cooler-body of fluid, exhausting vapor from said fluid after it has been used for condensing, compressing said vapor and then condensing the same, substantially as described.

2. The method of treating fluid, the same consisting in raising the temperature of a body of liquid by causing it to condense a vapor, vaporizing and then compressing the vapor from a portion only of said heated fluid thereby raising the temperature of the vapor and condensing said vapor by bringing it into contact with surfaces at a relatively lower temperature, substantially as described.

3. The method of obtaining distilled water, the same consisting in continuously delivering steam to a container, condensing said steam by bringing it into contact with water-cooled surfaces within said container, exhausting vapor from the vessel receiving the said water, and compressing the vapor so obtained in the said first container thereby condensing said vapor, substantially as described.

4. The method of treating fluid, the same consisting in condensing within a container a body of vapor obtained from a source of supply external to the same, exhausting vapor from a vessel containing the liquid employed in condensing said first body of vapor, compressing the same, and condensing said compressed vapor within said first container, substantially as described.

5. The method of treating fluid, the same consisting in passing liquid through a series of pipes, heating said liquid, simultaneously condensing a body of vapor by bringing the same into contact with said pipes, exhausting vapor from the liquid after it has passed through said series of pipes, compressing said vapor and forcing it into contact with the outside surface of said pipes, substantially as described.

808,650. **GAS-GENERATOR.** NELSON GOODYEAR, Flushing, N. Y., assignor to J. B. Colt Company, a Corporation of New York. Filed June 24, 1901. Serial No. 65,811.

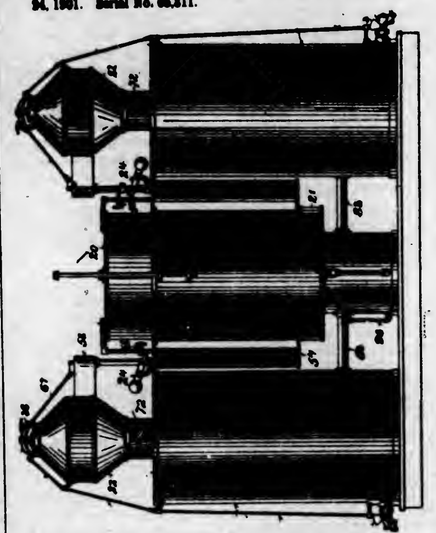

Claim.—1. In a carbid-feed generator, the combination with carbid-feeding mechanism for dropping the carbid into the water, of carbid-charging and flushing-out devices, and operative connections so constructed that each of said devices controls some of the operations of the other in such manner that in certain positions of one device when said device is locked, the other may be operated independently thereof, without unlocking said first-named device.

2. In a carbid-feed generator, the combination with carbid-feeding mechanism for dropping the carbid into the water, of carbid-charging and flushing-out devices, and operative connections so constructed that said devices, at least in part, reciprocally control each other in such manner that in certain positions of one device when said device is locked, the other may be operated independently thereof, without unlocking said first-named device.

3. In a carbid-feed generator, the combination with carbid-feeding mechanism for dropping the carbid into the water, of carbid-charging and flushing-out devices, and interlocking connections between the same, whereby movement of each controls some of the movements of the other in such manner that in certain positions of one device when said device is locked, the other may be operated independently thereof, without unlocking said first-named device, for substantially the purposes set forth.

4. In a carbid-feed generator, the combination of carbid-charging and flushing-out devices, and interlocking connections between the same for locking the carbid-charging device closed when the flush-out is closed and for locking the flush-out open when the carbid-charging device is opened, substantially for the purposes set forth.

5. In a carbid-feed generator, the combination of carbid-charging and flushing-out devices, and interlocking connections between the same, whereby the charging device cannot be opened except when the flush-out is open, and the flush-out cannot be closed except when the charging device is closed, substantially for the purposes set forth.

6. In a carbid-feed generator, the combination of carbid-charging and flushing-out devices, and interlocking connections between the same for preventing charging when the flush-out is closed, substantially for the purposes set forth.

7. In a generator, the combination of charging and flushing-out devices, and interlocking connections between the same for locking the flush-out open at all positions of the charging device between

its open and closed positions, substantially for the purposes set forth.

9. In a generator, the combination of a hopper, a feeding mechanism therefor, provided with a pivoted operating-lever extending substantially horizontally within the hopper, and a casing within the hopper and extending over said pivoted lever thereby preventing the contents of the hopper from interfering with said mechanism, substantially for the purposes set forth.

9. In a generator, the combination of a hopper, a feeding mechanism extending within the hopper and having a rocking lever, and means for preventing the contents of said hopper from interfering with the feeding mechanism, substantially for the purposes set forth.

10. In a feeding mechanism for a generator, the combination of a hopper, a movable valve or stop, a valve-rod connected thereto, a lever connected to the valve-rod, a gas-tight tubular extension external to the hopper and extending outwardly from the walls of the hopper continuous therewith and arranged outside of said hopper and water-sealed at its outward end, said tubular extension communicating freely with the hopper, an actuating-rod connected to the said lever and extending through said gas-tight extension, and gas-actuated means arranged externally to the hopper and gas-tight and water-sealed extension, and connected to operate the rod extending through the water-sealed tube, for operating the said actuating connections to control the valve or stop.

11. The combination with the feeding mechanism of a generator, of a passage-way through which the material is fed, an auxiliary valve or stop therefor normally inactive, and means for holding said stop and releasing it when the gas pressure or volume exceeds a predetermined amount, substantially for the purposes set forth.

12. The combination with the feeding mechanism of a generator, of a passage-way through which the material is fed, an auxiliary valve or stop therefor normally inactive, and means for holding the said stop and releasing it when the water-level falls in the generator, said means comprising a float and connections between said float and said auxiliary valve or stop, substantially for the purposes set forth.

13. The combination with the hopper, the feeding mechanism, and the passage-way through which the material is fed, of means additional to the feeding mechanism for stopping the feeding of material when the water-level falls, substantially for the purposes set forth.

14. In a generator, the combination with the feeding mechanism, of an auxiliary valve adapted to be released when the gas pressure or volume exceeds a predetermined amount, substantially for the purposes set forth.

15. In a generator, the combination with the feeding mechanism, of feed-actuating mechanism having coöperating members forming a part thereof, a charging device movable independently of said members, and means for locking the coöperating members of the feed-actuating mechanism out of operative relation except when the charging device is shut, and for locking the charging device except when the said members of the feed-actuating mechanism are out of operative relation, for substantially the purposes set forth.

16. In an acetylene-generator, the combination with the feeding mechanism, of a charging device, feed-actuating mechanism movable independently of the charging device, means controlled by the charging device for preventing the engagement of the operative connections of the feed-actuating mechanism when the parts of the apparatus are in a position to permit the charging device to be opened, and means for preventing the opening of the charging device without moving the connections of the feed-actuating mechanism out of operative engagement.

17. In a generator, the combination with the feeding mechanism, of feed-actuating mechanism having coöperating connections forming a part thereof, a charging device movable independently of said connections, and means for preventing the opening of the charging device until the said coöperating connections of the feed-actuating mechanism are out of operative relation, for substantially the purposes set forth.

18. In a generator, the combination with the feeding mechanism, of feed-actuating mechanism having coöperating connections forming a part thereof, a charging device movable independently of said connections, and means for preventing the movement of the coöperating connections into operative relation as long as the charging device is in a position to permit charging, for substantially the purposes set forth.

19. In a generator, the combination with the feeding mechanism, of feed-actuating mechanism having coöperating connections forming a part thereof, a charging device movable independently of said connections, provision for permitting the opening and closing of the charging device as long as the coöperating connections of the feed-actuating mechanism are out of operative relation, and provision for preventing the charging of carbid except when said connections are out of operative relation, for substantially the purposes set forth.

20. In a generator, the combination with the feeding mechanism, of feed-actuating mechanism having coöperating members forming a part thereof, a charging device having a member coöperating with said first-named members, with provision for locking the first-named coöperating members of the feed-actuating mechanism out of operative relation except when the charging device is shut, and for locking the charging device except when the said members of the feed-actuating mechanism are out of operative relation, for substantially the purposes set forth.

21. In an acetylene-generator, the combination with the feeding mechanism, of a charging device, means for causing the lowering of the water-level when the charging device is opened, and means controlled by the water-level for preventing the feeding of carbid, whereby when the charging device is opened, feeding of carbid is prevented.

22. In an acetylene-generator, the combination with the feeding mechanism, of a charging device, means for varying the water-level when the charging device is opened, and means operated by the water-level for controlling the feeding of carbid, whereby when the charging device is opened, the feeding of carbid is prevented.

23. In a carbid-feeding mechanism for an acetylene-generator, the combination with a hopper, of a feed-valve and a protective casing over said valve movable therewith, the said casing being adapted to agitate the carbid around the valve on rising and thereby start the flow of carbid from the hopper.

24. In a carbid-feeding mechanism for an acetylene-generator, the combination with a hopper, of a feed-valve and a protective casing over said valve movable therewith, the said casing being provided with a flaring lower edge for agitating the carbid around the valve on rising and thereby starting the flow of carbid from the hopper.

25. In an acetylene-gas generator, the combination of a carbid-hopper and removable cover, a generating-chamber, means for feeding the carbid to the generating-chamber, operative means between the carbid-feeding means and the gasometer for automatically controlling the feeding of carbid, means for disconnecting said automatic controlling means from the feeding means, and means between the cover of the hopper and said automatic controlling means for maintaining said disconnection as long as the cover is open.

26. A gas-generator comprising a generating-chamber, a movable gas-holder, means for introducing water into the generating-chamber, a valve for controlling the admission of carbid to the said generating-chamber, and a safety means for closing said valve, the said means being operable by the water in the generating-chamber.

808,651. **CAR-COUPLING DEVICE.** EDWARD GRAFSTROM, Topeka, Kans.; Dorothy Beach Grafstrom administratrix of said Edward Grafstrom, deceased. Filed May 27, 1905. Serial No. 261,823.

Claim.—1. The combination with a coupler bar having a hinged extension carrying a locking coupler, of a lever mounted upon said extension for operating the coupler lock, and a second lever attached to the body of the car or engine for operating said first mentioned manipulating lever from outside the car line.

2. The combination with a pivoted coupler bar, of a pair of levers one of which is borne on the pivoted bar and one of which is borne on the car and designed to coöperate with the pivoted coupler bar when it is in alinement and to be out of operative position when the same is folded against the car body, substantially as described.

3. In a car coupler the combination with a coupler head and an extension carrying the same mounted pivotally to swing sidewise out of operative position, a coupler lock operating mechanism carried on said swinging head, and means for operating said locking mechanism from outside the car comprising levers which are in an engagement when the extension is in operative alinement with the car and is out of engagement when the said coupler head is swung sidewise out of position.

4. The combination with a coupler head extension pivoted to swing sidewise out of operative position, an automatic coupler and a coupler lock thereon, a lever mounted on the swinging extension, a lever mounted on the car and provided with a fork engaging the first mentioned lever to operate the coupler lock, said connection of the two levers being adapted to engage when the coupler bar is in alinement and to disengage when it is swung sidewise out of position.

5. The combination with a pivoted extension coupler bar having a coupler lock operating mechanism thereon, of an actuating lever on the extension and an operating lever on the car provided with a forked end loosely engaging said lever on the extension, substantially as described.

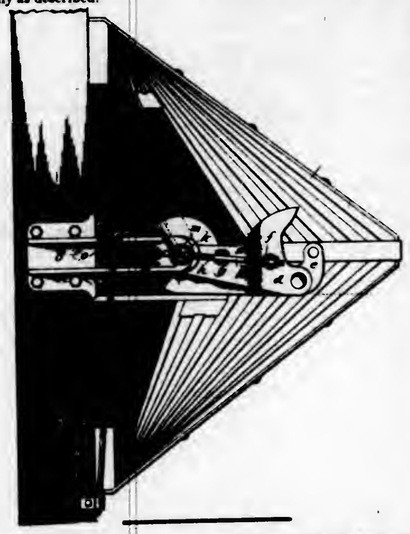

808,652. **NOTE-BOOK.** JOHN C. HACKMANN and WILLIAM H. PALMER, St. Paul, Minn. Filed Jan. 15, 1902. Serial No. 89,795.

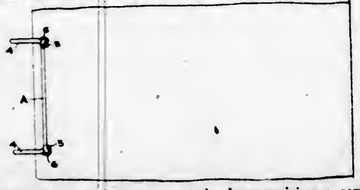

Claim.—In combination a note-book comprising a series of loose leaves and a binder consisting of a single piece of wire bent to form a straight portion and at each end to form a complete circle standing at a right angle with said straight portion whereby the leaves will swing freely upon said circular portions from end to end thereof so as to always lie flat.

808,653. **GARMENT-HANGER.** WILLIAM F. HALL and WALTER DONALDSON, Washington, D. C. Filed Oct. 11, 1900. Renewed Dec. 17, 1904. Serial No. 237,283.

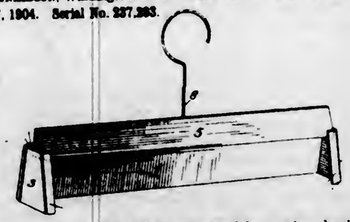

Claim.—1. A garment-hanger comprising a piece having slits in its ends, extending from edge to edge of the piece and of the same size throughout, wedge-shaped guides having plain flat base-flanges fitted to said slits and held therein with the end wall of the guides extending from the slit up across the end of the slitted piece, and a piece arranged to slide in the guides to hold the garment.

2. In combination in a garment-hanger, a piece having slits at its ends, guide-pieces having a base-flange fitted to the slit, the metal of said base-flange being upset into the material of the slitted piece adjacent to the slit and a clamping-piece movable in the guide-pieces, substantially as described.

3. In combination in a garment-hanger, a piece having slits at its ends, guide-pieces having a flange fitted to the slit with the edge of the flange bearing against the bottom of the slit, said flange being upset into the wood forming the wall of the slit intermediate of its side edges, substantially as described.

4. In combination in a garment-hanger, a back-piece having slitted ends, guides having base-flanges inserted in the slits, the metal of the base-flange being punched through the wooden back-piece from one side of the slit into the wood on the opposite side of the slit and a clamping member movable in the guides on the back-piece to clamp the garment between itself and the said back-piece, substantially as described.

5. In combination in a garment-hanger, a back-piece guides presenting wedge-shaped guideways and having a portion driven into the back-piece at or near its ends and a wedge member movable in the guides to hold the garment.

6. In combination in a garment-hanger, a back-piece, guides presenting wedge-shaped guideways and having a portion inserted in the back-piece intermediate the thickness thereof and a wedging member movable in the said guides, substantially as described.

808,654. **VALVE.** ELLIS E. HARTGRAVE, Wyndmere, N. D. Filed Nov. 15, 1904. Serial No. 232,880.

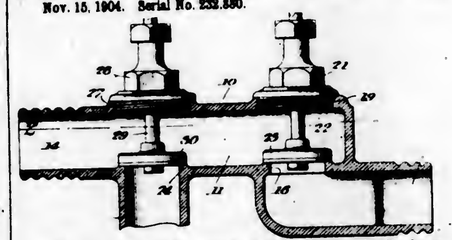

Claim.—1. In a valve, a casing divided into longitudinal compartments, connected into a single outlet at one end and with each compartment provided with an independent inlet at the other end, and with a branch outlet connected to said compartments intermediately of the ends, and valves independently operating between said compartments and said single outlet, and valves operating between said compartments and said branch outlets.

2. In a valve, a casing divided into longitudinal compartments, connected into a single outlet at one end and with each compartment provided with an independent inlet at the other end, valve-seats between said compartments and said single outlet, threaded apertures in said casing in alinement with said valve-seats, valve-stem packing members engaging said threaded apertures and valves operating upon said valve-seats and having stems passing through said packing members.

808,655. **HYDRAULIC HOIST.** URBAN HARVEY, U. S. Revenue-Cutter Service. Filed Aug. 22, 1904. Serial No. 221,737.

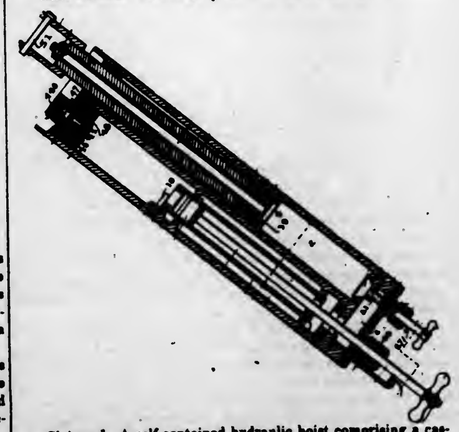

Claim.—1. A self-contained hydraulic hoist comprising a casing having therein a pair of parallel communicating cylindrical

bores, a hoisting-piston in one of said bores, a pump in the other of said bores, the cylinder of said pump being of considerably less volume than the said bore to provide an adequate reservoir therein for motive fluid, a check-valve between said bores, means for unseating the same, and trunnions on said casing.

2. In a hydraulic hoist, the combination of a cylinder, a motor-piston therein, a receptacle for motive fluid, a passage-way between said receptacle and said cylinder, a reciprocating cylinder within and of considerably less length than said receptacle, said cylinder adapted by its movement to close and establish communication between the receptacle and the passage-way, a pump-piston in said cylinder, and a stop intermediate the ends of the receptacle for limiting the movement of the cylinder.

3. In a self-contained hydraulic hoist, the combination of a cylinder, a motor-piston therein, a fluid-receptacle adjacent said cylinder, a passage-way connecting said receptacle and said cylinder, a cylinder of considerably less length than said receptacle and of sufficiently smaller diameter than the inner diameter of said receptacle to provide an adequate reservoir for motive fluid, said cylinder reciprocating within said receptacle, and adapted to close communication between said passage-way and said receptacle when at the end of a stroke, a piston within said last-mentioned cylinder and frictionally engaging the inner wall thereof, an operating-rod for said piston extending through said casing, means carried by said casing for engaging said rod to support the cylinder in a position to establish communication between the passage-way and the receptacle, a check-valve arranged to prevent the flow of fluid from the first-mentioned cylinder into the receptacle, and means for unseating said valve.

4. In a hydraulic hoist, the combination of a cylinder, a motor-piston in said cylinder, a receptacle for motive fluid, a passage-way between said receptacle and said cylinder, a reciprocating cylinder within the receptacle adapted by its movement to establish and cut off communication between the receptacle and the first-mentioned cylinder, a piston in said reciprocating cylinder, and a bushing adjacent each end of said cylinder.

5. In a hydraulic hoist, the combination of a cylinder, a motor-piston therein, a receptacle for motive fluid, a passage-way between said receptacle and said cylinder, a reciprocating cylinder in said receptacle, a piston in said cylinder, lugs projecting inwardly from said receptacle to form a guide for the cylinder, an inwardly-projecting boss above said lugs, the projection of the boss being no greater than that of the lugs, and a stop-pin fitted within said boss.

6. A self-contained hydraulic hoist consisting of a casing having therein a cylinder, a piston in said cylinder, a receptacle for motive fluid adjacent said cylinder, one end of said casing being hollow to form a part of the passage-way between said receptacle and said cylinder, a plate secured to said end of the casing and completing the passage-way, a reciprocating cylinder in said receptacle, said cylinder adapted to close and establish communication between the receptacle and the passage-way, a piston in said last-mentioned cylinder, said piston having a rod extending through the plate on the end of the casing, a bracket supported by said plate, a pin on the piston-rod adapted to engage said bracket to hold the cylinder in position to establish communication between the passage-way and receptacle, a check-valve between the passage-way and the first-mentioned cylinder, and an operating-pin for unseating said valve, said pin being fitted in the plate at the end of the casing.

7. In a self-contained hydraulic hoist, the combination of a cylinder, a motor-piston therein, a receptacle for motive fluid, a passage-way between said receptacle and said cylinder, a check-valve between said passage-way and said cylinder, said valve having a slotted stem, a pin projecting into the slot in said stem, an operating-pin for unseating said check-valve, a reciprocating cylinder in the receptacle, said cylinder adapted to establish and to close communication between the receptacle and the passage-way, a piston in said cylinder, a piston-rod connected with said piston and extending adjacent to the operating-pin for the check-valve, and means for supporting said last-mentioned piston and the cylinder in a position to establish communication between the passage-way and the receptacle.

8. In a self-contained hydraulic hoist, the combination of a cylinder, a piston therein having its rod extending through the upper end of the casing, a receptacle for motive fluid adjacent said cylinder and communicating with the bottom thereof, a pump in said receptacle, a plug for the upper end of said receptacle, said plug having a valved passage-way therethrough, and a concave receptacle surrounding said rod and the upper end of said plug and communicating with the passage-way therethrough.

808,656. CUT-OFF SOCKET. DANIEL H. HAYWOOD, New York, N. Y., assignor to William B. Wadsworth, Plainfield, N. J. Filed May 11, 1905. Serial No. 260,081.

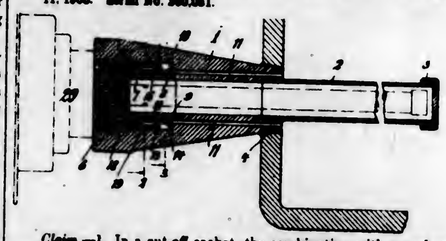

Claim.—1. In a cut-off socket, the combination with a socket member arranged to removably support a regulator, of means for controlling admission of fluid to the socket, operated by the insertion and removal of the regulator.

2. A cut-off socket comprising a socket member having means for securing same to a tank, and means for removably receiving a regulator therein, and means operated by the insertion and removal of the regulator for controlling admission of fluid to the socket from the tank.

3. A cut-off socket having a portion adapted to enter a tank, and provided with means for securing it to the tank, said socket adapted and arranged to removably support a thermostatic device, and provided with means operated by the insertion and removal of the thermostatic device for controlling admission to the socket of fluid from the tank.

4. A cut-off socket comprising a shell adapted to be secured to the wall of a tank, and a tube adapted to extend inward within the tank, said socket adapted and arranged to removably support a regulator, and provided with means operated by the insertion and removal of the regulator for controlling admission to the socket of fluid from the tank.

5. A cut-off socket comprising a shell adapted to be secured to the wall of a tank, and a tube adapted to extend therefrom inward within the tank when in position therein, said shell having an internally-screw-threaded portion adapted for engagement with the correspondingly-screw-threaded portion of the temperature-regulator; and means operated by the insertion and removal of the temperature-regulator for controlling admission to the socket of fluid from the tank.

6. The combination with a tank and a thermostatic device extending therein, of a cut-off socket surrounding the portion of the thermostatic device in the tank, and means operated by the insertion and removal of the thermostatic device for controlling admission of fluid to the socket from the tank.

7. The combination with a tank of a socket extending within same, a thermostatic device removably fitted to said socket, and means operated by the insertion and removal of the thermostatic device for controlling admission to the socket of fluid from the tank.

8. In a cut-off socket, the combination with a shell arranged to receive a thermostatic device, and a valve arranged to control admission of fluid to the interior of the shell, said valve having a portion arranged in the path of the thermostatic device, when same is being inserted.

9. In a cut-off socket, the combination with a shell arranged to receive a thermostatic device, of a valve-casing fitted thereto, a valve in said casing arranged to control admission of fluid to within the socket, and an operating member for said valve arranged to be engaged by said thermostatic device while it is being inserted.

10. In a cut-off socket, the combination with a socket member or shell arranged to removably support a regulator, said shell provided with a plurality of circulating-passages, of valve mechanism controlling said passages, and operated by the insertion and removal of the said regulator.

808,657. SOCKET-WELDING APPARATUS. DAVID HOUSTON, McKeesport, Pa., assignor to National Tube Company, Pittsburg, Pa., a Corporation of New Jersey. Filed Nov. 22, 1902. Serial No. 149,102.

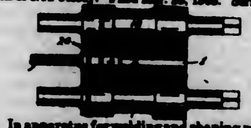

Claim.—1. In apparatus for welding and shaping pipe-couplings or similar articles, the combination of a central mandrel and a cluster

of rolls surrounding the same, said rolls having flanges at each end adapted to contact with the mandrel and confine the blank, said mandrel corresponding in diameter to the interior of the article to be formed and having a portion of enlarged diameter at one end projecting into the pass of the rolls, and coöperating annular shoulders on the mandrel and rolls to prevent endwise movement of the mandrel during the welding and shaping operation.

2. In apparatus for welding and shaping pipe-couplings or similar articles, the combination of a central mandrel and a cluster of rolls surrounding the same, said rolls having flanges at each end adapted to contact with the mandrel and confine the blank, said mandrel corresponding in diameter to the interior of the article to be formed and having a portion of enlarged diameter at one end projecting into the pass of the rolls, and coöperating annular grooves and ribs on the mandrel and rolls for preventing endwise movement of the mandrel during the welding and shaping operation.

3. In apparatus for welding and shaping pipe-couplings or similar articles, the combination of a central mandrel and a cluster of rolls surrounding the same, said rolls having flanges at each end adapted to contact with the mandrel and confine the blank, said mandrel corresponding in diameter to the interior of the article to be formed and having a portion of enlarged diameter at one end projecting into the pass of the rolls, square inwardly-facing shoulders on the rolls, and a square outwardly-facing shoulder on the mandrel contacting with the shoulders on the rolls and adapted to prevent endwise movement of the mandrel during the welding and shaping operation.

4. In apparatus for welding and shaping pipe-couplings or similar articles, the combination of a central mandrel, and a cluster of rolls surrounding the same, said rolls having flanges at each end adapted to contact with the mandrel and confine the blank, said mandrel corresponding in diameter to the interior of the article to be formed and having a portion of enlarged diameter at one end projecting into the pass of the rolls, a plurality of annular grooves formed in the mandrel, and a single annular bead formed on each of the rolls and adapted to coöperate with the grooves in the mandrel to prevent endwise movement thereof.

808,658. TENSION DEVICE FOR LOOMS. EDUARD HERZOG, West Hoboken, N. J. Filed Dec. 16, 1904. Serial No. 237,080.

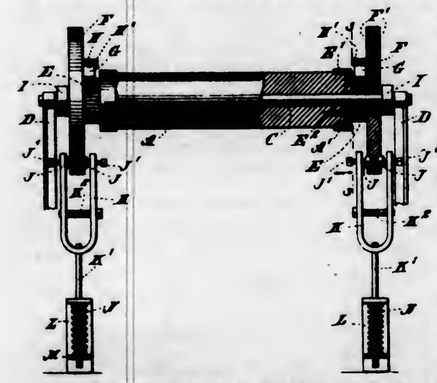

Claim.—The combination of the warp-beam A carrying the ratchet-teeth, with the grooved disk F concentric to the warp-beam and carrying spring-pressed pawl into engagement with the ratchet-teeth of the warp-beam and with the tension-adjusting arm K, having collars J, entering the annular grooves of disk F, and spring N as described.

808,659. HOLDER AND HANDLE FOR SAFETY-RAZORS. CHARLES L. HOLLAND, Boston, Mass., assignor of one-half to Charles H. Holland, Boston, Mass. Filed Dec. 29, 1904. Serial No. 238,703.

Claim.—1. As an improved article of manufacture, a holder and handle for safety-razor blades, comprising a razor-handle of the style constructed to receive the blade of an ordinary razor; a tang hinged in the ordinary manner to the razor-handle, and a holder extending from the tang and adapted to receive and hold a safety-razor blade.

2. A razor-handle; a tang connected with and extending therefrom and comprising the portion *b* and the outer portion *d* smaller in thickness than said portion *b*; and a hollow holder adapted to embrace and clamp said portion *d* of the tang, said holder being of suitable shape to receive and hold the upper or thick edge of a safety-razor blade, for the purpose set forth.

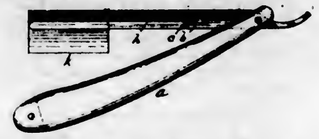

808,660. BRACING FOR VAULT-LIGHTS, FLOORS, &c. JACOB JACOBS, New York, N. Y. Filed Oct. 11, 1904. Serial No. 228,068.

Claim.—1. A vault-light, consisting of the combination of main braces having flanges, cross-braces having slots adapted to receive said flanges, said slots having contracted openings whereby both the upper and lower surfaces of said flanges are engaged in said slots, lenses having flanges adapted to rest upon said main braces, and concrete filling.

2. A vault-light consisting of the combination of main braces having flanges, cross-braces having slots adapted to receive said flanges, lenses having flanges in different planes adapted to rest both upon said main braces and upon said cross-braces, and a concrete filling.

3. A vault-light consisting of the combination of ⊥-shaped bars, cross-braces formed of T-shaped bars, said cross-braces having ⊥-shaped slots formed in and beneath the flanges thereof, said slots being adapted to receive the flanges of said main braces, lenses having lower flanges adapted to rest upon the flanges of the main braces, upper flanges adapted to rest upon the flanges of the cross-braces, and a concrete filling around the lenses and covering the braces.

808,661. PERFORATING-MACHINE. HENRY D. JACOBSON, Atlantic, Iowa. Filed June 22, 1905. Serial No. 266,495.

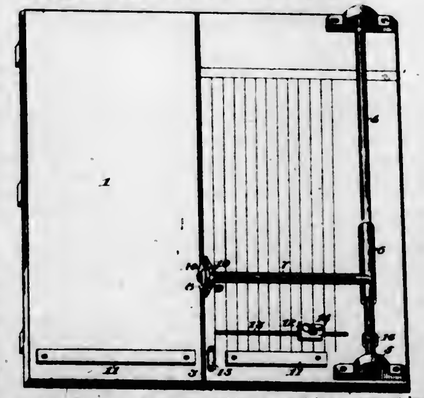

Claim.—1. A perforating-machine, comprising a support having a longitudinal recess and a guide, a slide having a lateral arm, and a toothed disk revolubly supported on the end of said arm in alinement with said recess, as set forth.

2. A perforating-machine, comprising a support having a longitudinal recess and a guide, a slide having a lateral arm, a toothed disk revolubly supported on the end of said arm in alinement with said recess, and a transversely-adjustable gage, as set forth.

3. A perforating-machine, comprising a support having a longitudinal recess, a guide-rod mounted above said support, a slide surrounding said rod and having a lateral arm, a perforator jour-

nailed on the end of said arm, consisting of a thin toothed disk and clamping members, a fixed gage, and a transversely-adjustable gage, as set forth.

4. A perforating-machine, comprising a support, a guide having an adjustable stop, a slide having a lateral arm, and a perforator at the end of said arm, as set forth.

5. A perforating-machine, comprising a support having a longitudinal recess, a guide-rod mounted above said support, an adjustable stop-collar on said rod, a slide surrounding said rod and having a lateral arm, a perforator journaled on the end of said arm, consisting of a thin toothed disk and clamping members, a fixed gage, and a transversely-adjustable gage, as set forth.

808,662. **AUTOMATIC WATER-SUPPLY SYSTEM.** JOHN JOHNSON, Overland Park, Mo., assignor to The Country Hydrant Company, St. Louis, Mo., a Corporation of Missouri. Filed Oct. 22, 1904. Serial No. 229,612.

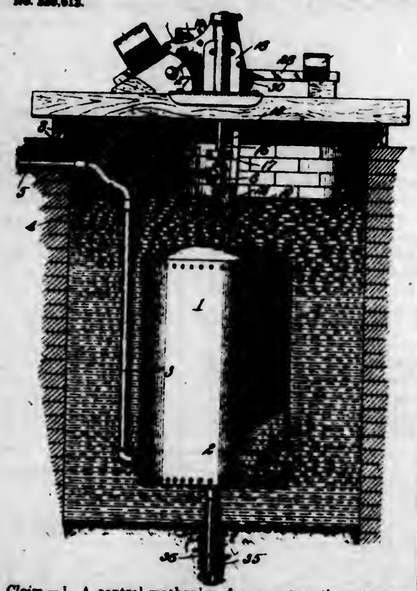

Claim.—1. A control mechanism for an automatic water-supply system which employs a vertically-movable member comprising a frame, a rod arranged to move with said vertically-movable member and provided with two projections, a lever pivotally mounted on said frame and having a bifurcated end adjacent to said rod, a dog pivotally mounted on said lever and projecting into the path of one of said projections of said rod, said dog having lateral projections resting on the upper side of the bifurcations of said lever, means to oppose downward movement of the end of said lever adjacent to said rod, a lever pivotally mounted on said frame and having a part projecting into the path of the other of said projections on said rod, and means to oppose upward movement of the end of said lever adjacent to said rod.

2. An automatic water-supply system comprising a vertically-movable submerged tank having means for admitting and discharging water and means for admitting and discharging air under pressure, a cock to control the supply of air under pressure provided with an arm, a platform, a link pivotally mounted on said platform and connected to said arm, a frame mounted on said platform, a rod connected with said tank to move therewith and extending through said frame, separated trip-collars on said rod, a lever pivotally mounted in said frame and provided with an adjustable poise, a second lever pivotally mounted on said frame bearing at one end on the free end of said first-mentioned lever and carrying at its opposite end a pivoted dog projecting into the path of the upper one of said trip-collars, and a lever pivotally mounted in said frame having on its outer end an adjustable poise and on its inner end a dog projecting into the path of the lower one of said trip-collars.

3. A control mechanism for an automatic water-supply system which employs a vertically-movable member, comprising a frame, a rod connected to said vertically-movable member and provided with two projections, a lever pivotally mounted on said frame and having a bifurcated inner end, a dog having lateral projections projecting over the bifurcations of said lever pivotally mounted on said lever and projecting into the path of one of said projections on said rod, means to resist downward movement of the inner end of said lever, a lever pivotally mounted on said frame and having a bifurcated inner end, a dog having lateral projections projecting under the bifurcations of said second-mentioned lever pivotally mounted on said second-mentioned lever and projecting into the path of the other of said projections on said rod, and means to resist upward movement of the inner end of said second-mentioned lever.

4. A control mechanism for an automatic water-supply system, which employs a vertically-movable member, comprising a frame, a rod connected to said vertically-movable member, provided with two projections and passing through and guided by said frame, a lever pivoted in said frame and provided with an adjustable weight and having a pivoted dog in position to engage one of said projections, a lever pivoted on said frame and provided with a pivoted dog in position to engage the other of said projections, and a lever pivoted on said frame and having an adjustable weight on one end and engaging said second-mentioned lever at its other end, said dogs being arranged to move their respective levers in one direction and to move with respect to their respective levers in the other direction.

808,663. **PRINTER'S REGISTER-HOOK.** JAMES E. LEE, Grand Haven, Mich. Filed Nov. 19, 1904. Serial No. 233,286.

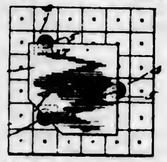

Claim.—1. In a printer's register-hook, the combination of a body or block, a second block rotatable in said first block on a vertical axis, and a clutch member mounted on and movable in said second block in a longitudinal direction.

2. In a printer's register-hook, the combination of a body or block having a recess therein provided with a flange at one end, a second block journaled in said recess and having a rabbet at one edge receiving said flange, a ring secured in the opposite end of the recess engaging and holding said second block, and a clutch device mounted on said second block and movable longitudinally.

3. In a printer's register-hook, the combination of a body or block having a recess, a second block journaled in said recess and having its faces flush with the faces of said first block respectively, and a clutch device mounted in said second block and movable longitudinally.

808,664. **SHEET-METAL BUILDING STRUCTURE.** THOMAS LEE, Home City, Ohio. Filed Oct. 30, 1905. Serial No. 284,958.

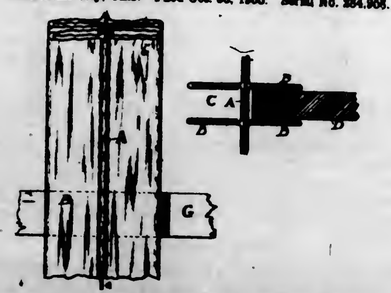

Claim.—1. A building structure, consisting of a central web having projecting from each side of it and between the edges thereof, two spaced ribs, all of said members consisting of layers of sheet metal and held together by parts of the layers of one member engaging with and overlapping parts of the layers of the other member.

2. A building structure, consisting of a central web having projecting from each side of it and between the edges thereof, two spaced ribs, said parts consisting of tripled layers of sheet metal.

3. A sheet-metal building structure, consisting of an inner stiffening member, U-shaped members on each side thereof projecting with their free edges outwardly therefrom and outer connecting members, one on each side, engaging simultaneously one of the edges of the inner member and one of the edges of each of the U-shaped members, all as shown and described.

808,665. **HEAD-BLOCK.** HARRY C. LEDERLY, Kansas City, Mo. Filed Feb. 20, 1904. Serial No. 194,004.

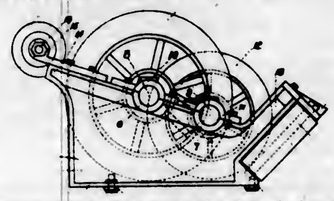

Claim.—1. In a head-block, a series of standards, means for joining said standards to form a frame and pulleys carried by said frame.

2. In a head-block, a series of standards, means for joining said standards to form a skeleton frame, a shaft mounted in boxings on said standards, and a pulley mounted on said shaft between two of said standards.

3. In a head-block, a series of standards, bars joining said standards and securing same together to form a frame, cut-out portions in said standards, a shaft mounted in said cut-out portions, plates, having semicircular portions therein, secured to said standards and forming, with the cut-out portions in said standards, boxings for said shaft, and a pulley mounted on said shaft.

4. In a head-block, a series of standards, means for joining said standards to form a frame, arms on the ends of said standards, means on said arms for carrying rollers, rollers carried by said means, and pulleys mounted in said frame.

5. In a head-block, a series of standards, means for joining said standards to form a frame, arms on the ends of said standards, seats on said standards adjacent to and extending at an angle with said arms, a plate secured to the outer ends of said arms, and rollers mounted between said seats and said plate.

6. In a head-block, a series of standards, means for joining said standards to form a frame, arms on, and extending at an angle with said standards, seats on said standards, at the bases of and extending at an angle with said arms, a plate secured to the tops of said arms, shafts mounted between said seats and said plate, and rollers mounted on said shafts.

7. In a head-block, a series of standards forming a suitable frame, arms on said standards, a plate secured to said arms, an ear on said plate, shafts having one of their upper ends carried by said ear and the other by a suitable base on said standard, and rollers mounted on said shafts.

8. In a head-block, a series of standards forming a suitable frame, arms on said standards, a plate secured on said arms, an ear having a concaved portion, on said plate, and rollers mounted between said ear and a base on said standard.

9. In a head-block, a series of standards forming a suitable frame, arms on said standards extending upwardly and outwardly therefrom, a seat on said standards extending from said arms and in a plane parallel with the upper faces of said arms, a plate secured to the upper faces of said arms, an ear on said plate, a series of shafts mounted in said ear and in said seats, and rollers carried by said shafts.

10. In a head-block, a suitable frame, pulleys journaled on said frame, plates having slots therein adjustably mounted on the rear of said frame by means of bolts passing through said slots and into said frame, means on the outer ends of said plates for carrying a shaft, a shaft carried by said means, and a pulley mounted on said shaft.

808,666. **PROTECTOR FOR BOOTS AND SHOES.** CHARLES W. LITTLETON, Baltimore, Md., assignor to George S. Littleton, Baltimore, Md. Filed Nov. 5, 1904. Serial No. 231,854.

Claim.—The combination of a shoe, the upper of said shoe slitted at the front thereof, a fastening joining the slitted parts of said upper together, a lagging extending upwardly from said shoe, a protector fast to said lagging and projecting over the top of said shoe, said protector consisting of a strip of sheet material and a piece of elastic fabric joining the two ends of said sheet material, said elastic fabric extending downwardly below the top edge of said shoe and engaging said fastening.

808,667. **SPRING-BED.** GEORGE C. LOCKLIN, Hammond, Ind. Filed Feb. 27, 1905. Serial No. 247,485.

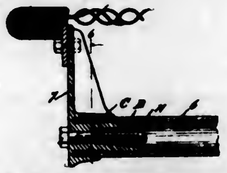

Claim.—1. The combination with an end rail and a side rail of a spring-bed, of a bracket secured to said end rail and provided with a socket to receive the end of the side rail, means integral with said bracket for clamping said side rail into position, and means for operating said clamping device.

2. The combination with a bracket provided with a socket, of a member adapted to fit within said socket, means integral with said bracket for supporting said member, and means for spreading one of said elements into clamping contact with the other of said elements.

3. The combination with a bracket provided with a divided lug and with a socket surrounding said lug, of means adapted to fit over said lug and to be seated in said socket, and means for spreading said lug so as to clamp said bracket into permanent engagement with said member.

4. The combination with an end rail of a spring-bottom, of a side rail, a bracket secured to one of said members and adapted to engage the other of said members, said bracket being provided with a divided lug, over which one of said members is adapted to fit, and with a socket surrounding said lug and arranged to receive the end of one of said members, and means for spreading said lug so as to lock the parts together.

5. The combination with an end rail, of a bracket secured thereto, said bracket being provided with a divided lug and with a socket surrounding said lug, a tubular side rail adapted to fit over said lug and into said socket, and means for spreading said lug so as to secure said side rail to said bracket.

6. As a new article of manufacture, a corner-casting comprising a body portion adapted to be secured to one rail of a bed-frame and provided with an integral divided lug constructed and arranged to be inserted in the end of another rail of a bed-frame and to be expanded therein, and a flange surrounding said divided lug so as to provide a socket arranged to receive the end of the rail within which said lug may be inserted.

7. As a new article of manufacture, a corner-bracket for a bed-frame, comprising a body portion, and an integral divided lug extending at right angles thereto, said lug being arranged and constructed to be inserted within one end of a hollow rail and to be expanded therein.

808,668. **PROCESS OF PASTEURIZING BEER.** CHARLES H. LOUP, Lakewood, Ohio. Filed Feb. 8, 1905. Serial No. 244,889.

Claim.—1. The process of pasteurizing beer in bottles which

comprises subjecting the bottles contained in a suitable chamber to a spray of water of progressively-increasing temperature until a predetermined temperature is arrived at.

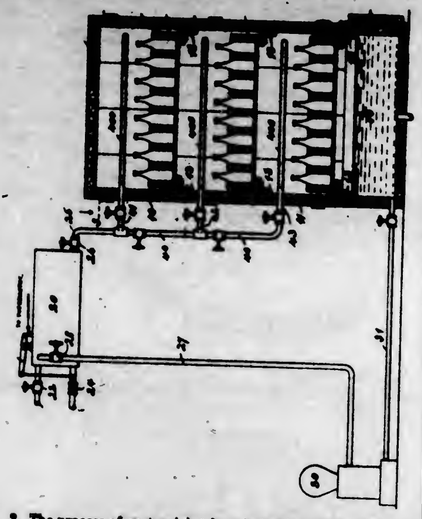

2. The process of pasteurizing beer in bottles which consists in subjecting the bottles contained in a suitable chamber to a spray of water of progressively-increasing temperature until a predetermined temperature is arrived at and maintaining the spray at the chosen temperature for a sufficient time to pasteurize the beer in the bottles.

3. The process of pasteurizing beer in bottles which consists in subjecting the bottles contained in a suitable chamber to a spray of water of progressively-increasing temperature until a predetermined temperature is arrived at, maintaining the spray at the chosen temperature for a sufficient time to pasteurize the beer in the bottles, and finally subjecting the bottles to a spray of a gradually-decreasing temperature.

4. The process of pasteurizing beer in bottles which comprises subjecting the bottles contained in a suitable chamber to a spray of water of progressively-increasing temperature until a predetermined temperature is arrived at, and securing said increasing temperature by repeatedly passing the water so used for the steam-heating medium.

5. The process of pasteurizing beer in bottles which comprises subjecting the bottles contained in a suitable chamber to a spray of water of progressively-increasing temperature until a predetermined temperature is arrived at, and securing said increase of temperature by repeatedly passing the water so used through a water-tempering chamber provided with a suitable source of heat.

6. The process of pasteurizing beer in bottles which comprises subjecting the bottles contained in a suitable chamber to a spray of water of progressively-increasing temperature until a predetermined temperature is arrived at, and securing said increase of temperature by repeatedly passing the water so used through a water-tempering chamber provided with a suitable source of heat, and providing means for governing the admission of heat energy to the tempering-chamber.

7. The process of pasteurizing beer in bottles which consists in subjecting the same to the action of a spray of water at or near the normal temperature, heating the water-supply to the spray gradually to a predetermined temperature, maintaining the temperature of the water a predetermined suitable time, and withdrawing the heat therefrom after the lapse of said time.

8. The process of pasteurizing beer in bottles which consists in placing the same in a suitable closed chamber, subjecting the same to the action of a spray of water, which water has previously been heated in a tempering-chamber, returning the water after it has been brought into contact with the bottles to the tempering-chamber, gradually raising the temperature of said tempering-chamber until the spray falls upon the bottles at a predetermined temperature and maintaining that temperature a suitable length of time at such degree of warmth that the beer within the bottles will be pasteurized.

808,669. TABLET-BOARD. CHARLES B. HAMPLAIR, Waltham Mass. Filed Feb. 28, 1905. Serial No. 247,799.

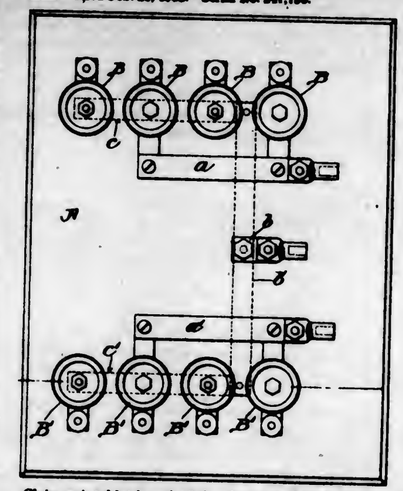

Claim.—A tablet-board of the character described comprising a tablet; three terminals fixed to the tablet; a pair of bus-bars fixed to the top face of the tablet and connected with two of the terminals, each bar being branched and each branch adapted to be connected with a fuse; a bus-bar on the opposite side of the tablet and connected with the other terminal, said bar being branched and each branch adapted to be connected with a fuse, all of the bars and terminals being separated and insulated so as to adapt the board for use under different conditions of voltage.

808,670. WINDLASS. THOMAS F. MASON, Colonial Beach, Va., assignor of one-half to Thomas Parry Watson, Colonial Beach, Va. Filed Feb. 17, 1905. Serial No. 246,168.

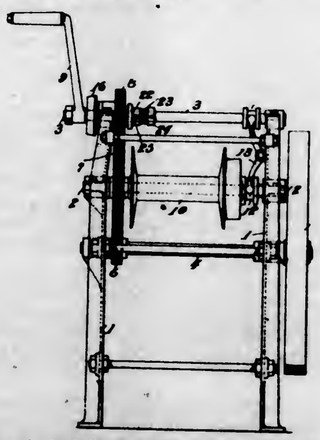

Claim.—1. A windlass comprising a drum, a shaft therefor, a clutch for locking said drum to its shaft, means for operating the latter, a fly-wheel actuated by the revolution of the drum-shaft, and means for releasing and reapplying said clutch without interfering with the revolutions of the drum-shaft and fly-wheel, whereby the momentum of the latter may be utilized in renewing the winding operation after the drum has been released from its shaft.

2. A windlass comprising a drum, a shaft therefor, a clutch for locking said drum to its shaft, means for operating the latter, a second shaft geared to the drum-shaft, a fly-wheel on said second shaft, and means for releasing and reapplying said clutch without interfering with the revolutions of the drum-shaft and fly-wheel, whereby

the momentum of the latter may be utilized in renewing the winding operation after the drum has been released from its shaft.

3. A windlass comprising a drum, a shaft therefor, a clutch for locking said drum to its shaft, means for operating the latter, a second shaft geared to the drum-shaft, a fly-wheel on said second shaft, a counter-shaft also geared to said drum-shaft, means for operating said counter-shaft, and means actuated by the latter for releasing and reapplying said clutch without interfering with the revolutions of the drum-shaft and fly-wheel.

4. The combination with the drum-shaft, the drum thereon, and a clutch for securing said drum to its shaft, of a counter-shaft geared to the drum-shaft, said counter-shaft being capable of being moved longitudinally, to apply and release said clutch, means actuated thereby for operating the latter, and means for aiding the initial winding operation after a temporary cessation thereof.

5. The combination with the drum-shaft, the drum thereon, and a clutch for securing said drum to its shaft, of a counter-shaft geared to the drum-shaft, said counter-shaft being capable of being moved longitudinally, means actuated thereby for operating said clutch, and a fly-wheel actuated by the revolution of said drum-shaft.

6. The combination with the drum-shaft, the drum thereon, and a clutch for securing said drum to its shaft, of a counter-shaft, a gear-wheel therefor having an interiorly-threaded hub, an exteriorly-threaded sleeve on said shaft working in the thread of said hub, means for locking said sleeve to and disengaging it from said shaft and also locking it to said gear-wheel, said shaft being movable longitudinally, and means actuated thereby for operating said clutch.

7. The combination with the drum-shaft, the drum thereon, and a clutch for securing said drum to its shaft, of a counter-shaft, a gear-wheel therefor having an interiorly-threaded hub, an exteriorly-threaded sleeve on said shaft working in the thread of said hub, means for locking said sleeve to and disengaging it from said shaft and also locking it to said gear-wheel, said shaft being movable longitudinally, means actuated thereby for operating said clutch, and a fly-wheel actuated by the revolution of said drum-shaft.

8. The combination with the longitudinally-movable shaft, of the gear-wheel having a fixed bearing, said gear-wheel having its hub interiorly threaded, an exteriorly-threaded sleeve working in said hub, means carried by said shaft for locking it to said sleeve when moved in one direction, said sleeve being then locked to said gear-wheel, and means for allowing said sleeve to turn with said gear-wheel independently of said shaft when the latter is unlocked therefrom.

9. The combination with the longitudinally-movable shaft, of the gear-wheel having a fixed bearing, said gear-wheel having its hub interiorly threaded, an exteriorly-threaded sleeve working in said hub, means carried by said shaft for locking it to said sleeve when moved in one direction, said sleeve being then locked to said gear-wheel, and a spring-pressed collar movable on and carried by said shaft and with which said sleeve is designed to engage when locked to said gear-wheel, said collar being disengaged from said sleeve when the latter and the shaft are moved longitudinally and said collar is brought into frictional engagement with such wheel.

808,671. GANG-SAW FOR MANUFACTURING LUMBER. GEORGE B. MILLER, Parry Sound, Canada. Filed Mar. 27, 1905. Serial No. 252,575.

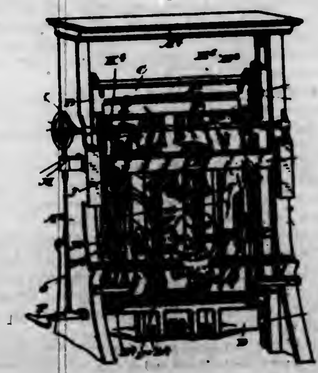

Claim.—1. In a gang-sawing machine, the combination with the gate and top and bottom rails thereof deriving a reciprocating movement as specified, of the harps provided with the side recess and a bridging-bar for the same and means connected to such bar for adjusting the harps laterally as and for the purpose specified.

2. In a gang-sawing machine, the combination with the gate and top and bottom rails thereof deriving a reciprocating movement as specified, of the harps provided with the side recess and a bridging-bar for the same, a bracket straddling such bar and provided with a depending portion, a guide-bar secured to the standard and extending through an opening in such bar and means for adjusting the straddle-bracket as and for the purpose specified.

3. In a gang-sawing machine, the combination with the gate and top and bottom rails thereof deriving a reciprocating movement as specified, of the harps provided with the side recess and a bridging-bar for the same, a bracket straddling such bar and provided with a depending portion, a guide-bar secured to the standard and extending through an opening in such bar, means for adjusting the straddle-bracket and set-screws for taking up the wear of the bracket on the supporting-bar as and for the purpose specified.

4. In a gang-sawing machine, the combination with the gate and top and bottom rails thereof deriving a reciprocating movement as specified, of the harps provided with the side recess and a bridging-bar for the same, a bracket straddling such bar and provided with a depending portion, a guide-bar secured to the standard and extending through an opening in such bar, a lever suitably pivoted on the frame and provided with a forked end engaging with a pin on the depending portion of the straddle-bracket and means for tilting each lever simultaneously oppositely as and for the purpose specified.

5. In a gang-sawing machine, the combination with the gate and top and bottom rails thereof deriving a reciprocating movement as specified, of the harps provided with the side recess and a bridging-bar for the same, a bracket straddling such bar and provided with a depending portion, a guide-bar secured to the standard and extending through an opening in such bar, a lever suitably pivoted on the frame and provided with a forked end engaging with a pin on the depending portion of the straddle-bracket, a worm formed on the one end of the lever, a cross-shaft journaled in the frame and provided with worms one a right-hand and the other a left-hand worm engaging with the worm-racks on the end of the lever and means for turning the shaft and holding it in the position to which it is turned as and for the purpose specified.

6. In a gang-sawing machine, the combination with the gate and top and bottom rails thereof deriving a reciprocating movement as specified, of the harps provided with the side recess and a bridging-bar for the same, a bracket straddling such bar and provided with a depending portion, a guide-bar secured to the standard and extending through an opening in such bar, a lever suitably pivoted on the frame and provided with a forked end engaging with a pin on the depending portion of the straddle-bracket, a worm formed on the one end of the lever, a cross-shaft journaled in the frame and provided with worms one a right-hand and the other a left-hand worm engaging with the worm-racks on the end of the lever, a hand-wheel on the end of the shaft provided with notches and a spring-pressed plunger manipulated to engage such notches as and for the purpose specified.

808,672. BENDING-MACHINE. RICHARD MOSLEY, St. Louis, Mo., assignor of one-half to D. B. Ridpath, St. Louis, Mo. Filed May 8, 1905. Serial No. 259,266.

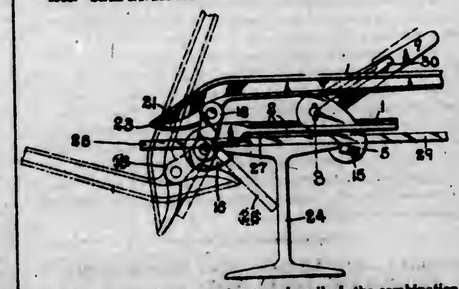

Claim.—1. In a device of the class described, the combination with a base having a rack thereon, a fixed flange-engaging means

carried by said base, an adjustable flange-engaging means coöperating with the rock, and a tie-rod-bending member carried by said base; substantially as described.

2. The combination with a base having a hooked portion at one end, means for anchoring the base to a beam and adjustable on said base, a pawl-and-rock mechanism for holding said means in an adjustable position, and a bending element carried by said base; substantially as described.

3. In a device of the class described, the combination with a base, an anchor member carried by said base, links connected to the respective sides of the base, and a bender secured to the ends of the links distant from the base and movable on the arc of a circle from a position above the base to a position below the base; substantially as described.

4. In a device of the class described, the combination with a base having a hooked portion at one end for engagement with a flange, and adjustably-movable flange-engaging hooks coöperating with the base near the other end, and a pivoted tie-rod-bending means carried by the base; substantially as described.

5. The combination with a base having a fixed hooked portion and an adjustable hooked portion, of a pivoted tie-rod-bending element carried by said base and movable in the arc of a circle; substantially as described.

6. The combination with a base, of a fixed anchor member on the base, said base having elongated slots, hooked members guided in said slots for engagement with the flange of a girder or beam, and a pivoted member carried by said base at one end thereof; substantially as described.

808,673. DOOR-BOLT AND MEANS FOR OPERATING THE SAME. WILLIAM B. MORRWOOD, Elizabeth, N. J. Filed Oct. 31, 1904. Serial No. 230,669.

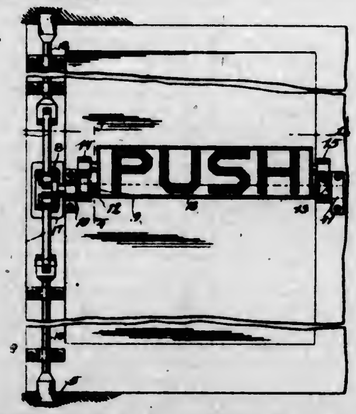

Claim.—1. In a door-lock, the combination of a shaft parallel to and extending across the door; said shaft rotatably mounted in bearings which are fixed to the door; a push-plate to rotate the shaft extending across the door and carried by outwardly and upwardly extending arms fixed to said shaft; a circular plate rigidly fixed to the end of the shaft; one or more links pivotally connected to said circular plate outside the axis of the shaft; a bolt pivotally connected with each of said links; and guides on said door for said bolts.

2. In a door-lock, the combination of a shaft parallel to and extending across the door; said shaft rotatably mounted in bearings which are fixed to the door; a push-plate to rotate the shaft extending across the door and carried by outwardly and upwardly extending arms fixed to said shaft; a circular plate rigidly fixed to the end of the shaft and having its rim extending within the face of the door into a countersunk opening provided therefor; one or more links pivotally connected to said circular plate outside the axis of the shaft; a bolt pivotally connected with each of said links; and guides on said door for said bolts.

808,674. HAT-FASTENER. JOHN C. MONTGOMERY, Louisville, Ky. Filed Apr. 11, 1905. Serial No. 255,619.

Claim.—1. A hat-fastener having a band, and two pairs of opposing crossing pins associated with the band and movable inwardly and outwardly across the space bounded by the band said pins engaging at their place of intersection.

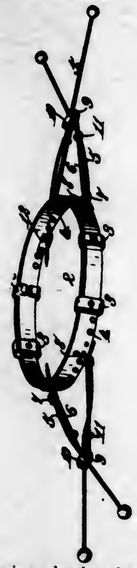

2. A hat-fastener having a band, and two pairs of opposing crossing pins associated with the band and movable inwardly and outwardly across the space bounded by the band said pins engaging at their place of intersection, the latter being circumferentially adjustable.

3. A hat-fastener having a band, a pin arranged to be projected across the space bounded by the band, and guiding devices for the pin, separated from each other longitudinally of said pin, one of said guiding devices being located at a point outward from and separated from the band.

4. A hat-fastener having a band, a pin arranged to be projected across the space bounded by the band, and guiding devices for the pin, separated from each other longitudinally of said pin, one of said guiding devices being located at a point outward from and separated from the band, and the pin having a head outward beyond said outer guiding device.

5. A hat-fastener having a band, two pairs of opposing crossing pins associated with the band and movable inwardly and outwardly across the space bounded by the band, and each having a curved inner end, and means for positively causing the pins to turn as they are moved inward.

6. A hat-fastener having a band, and a pin movable inwardly and outwardly across the space bounded by the band, the inner portion of the pin being curved, and means for causing the pin to positively turn as it is moved inward.

7. A hat-fastener having a band, a pin mounted to have its inner end drawn back to be substantially flush with the inner surface of the band and to be projected across the space bounded by said band from a point outside the latter, and means for supporting the pin for endwise movement.

8. A hat-fastener having a foundation, and two pairs of opposing crossing pins supported by the foundation and arranged to be moved into and out of the hair, and means for positively causing the pins to turn as they are moved inward.

9. A hat-fastener having a band, two pairs of opposing crossing engaging pins, arranged to be moved into and out of the hair, and guiding devices for each pair of pins in which they respectively cross and are supported at a point outward beyond the band.

10. A hat-fastener having a band, two pairs of wires attached to the band at opposite sides thereof and having coiled portions near the band, said pairs of wires converging outward, upper and lower stripe joining the said wires, crossing pins passing through the stripe and through said coils and arranged to be projected across the space bounded by the band.

11. A hat-fastener having a band, two pairs of wires attached to the band at opposite sides thereof and having coiled portions near the band, said pairs of wires converging outward, upper and lower stripe joining the said wires, crossing pins passing through the stripe and through said coils and arranged to be projected across the space bounded by the band, said pins having eyes between their ends, slidable upon the wires.

808,675. LEACHING-TANK. ANDREW B. MOOCK, Twisp, Wash., assignor of two-thirds to Robert S. Lewis and Treadwell Twichell, Fargo, N. D. Filed Dec. 15, 1904. Serial No. 236,967.

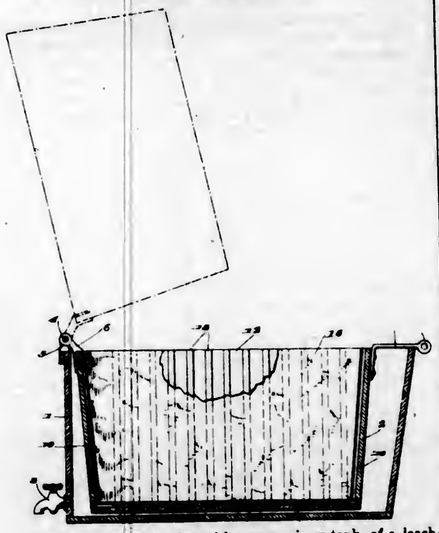

Claim.—The combination with a reservoir or tank, of a leaching-tank pivotally suspended therein and held out of contact therewith and adapted for dumping movement, said tank comprising a plurality of compartments each having a perforated bottom, slats or spacers secured to the four walls and bottom of each compartment, and a filtering medium disposed within each compartment and held out of contact with the walls and bottom thereof by the slats.

808,676. WORK-REST FOR LATHES. WILLIAM F. PARSONS, Beverly, Mass. Filed May 10, 1905. Serial No. 259,732.

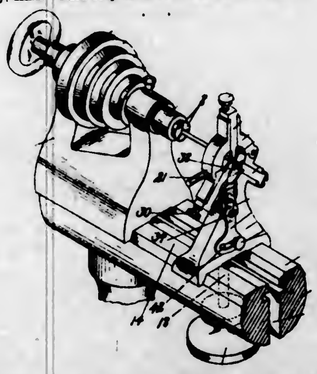

Claim.—In a work-rest, a standard provided with a plurality of adjustable work-engaging members, a stud fastened to said standard and provided with a ball-shaped head, a support having a split socket which receives the head of said stud, an adjusting-screw for causing the members comprising said socket to bind upon the head of said stud, a tool-rest vertically and rotatably mounted in said support, and means for holding said tool-rest in adjusted position.

808,677. COUPLING FOR AGRICULTURAL IMPLEMENTS, &c. WILLIAM L. PAUL, Bradley, Ill., assignor to David Bradley Manufacturing Company, Bradley, Ill., a Corporation of Illinois. Filed Apr. 17, 1905. Serial No. 256,023.

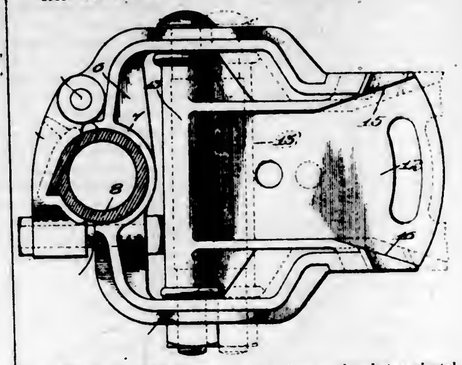

Claim.—1. A coupling, comprising a frame, a bracket, a pivotal connection between said frame and bracket, and means for rigidly connecting said frame and bracket.

2. A coupling, comprising a frame, a bracket, a pivotal connection between said frame and bracket, and means carried by said frame for rigidly connecting said frame and bracket.

3. A coupling, comprising a frame, a bracket, and a pivotal connection between said frame and bracket, said bracket being movable into or out of position to rigidly engage said frame.

4. A coupling, comprising a frame, a bracket adapted to fit therein and movable into and out of locking engagement therewith, and a pivotal connection between said frame and bracket.

5. A coupling, comprising a U-shaped frame, a bracket adapted to fit therein and movable into and out of locking engagement therewith, and a pivotal connection between said frame and bracket.

6. A coupling, comprising a U-shaped frame having notches in one or both ends thereof, a bracket adapted to fit in said frame and movable into and out of said notches, and a pivotal connection between said frame and bracket.

7. A coupling, comprising a U-shaped frame having notches in one or both ends thereof, a bracket adapted to fit therein, said bracket having inclined edges movable into or out of said notches, and a pivotal connection between said frame and bracket.

8. A coupling, comprising a frame, a bracket, a swinging arm pivotally connected with said frame and coacting therewith to form a latch, and means for connecting the free end of said arm with said frame.

808,678. HAY AND MANURE GATHERER AND LOADER. JOHN PETERSON, St. Paul, Minn. Filed June 13, 1904. Serial No. 212,317.

Claim.—1. The combination, with the base-plate, of an upright mast supported thereon, a boom for said mast, base-timbers connected to said base-plate upon each side of said boom, the connection of one of said timbers allowing it to be swung back and forth toward and from the other timber, bracing-beams connecting the outer ends of said base-timbers and the top of said boom, and a cross-bar connecting said base-timbers intermediate to their ends, for the purpose specified.

2. The combination, with a gathering-fork, of a pulley-block connected therewith, jaws pivoted on said block and having notched upper ends, a spring yieldingly holding said jaws together, a hoisting-boom, a block carried by said hoisting-boom and arranged to enter the notches in said jaws and support said pulley-block, means for separating said jaws, and a hoisting-cable.

3. The combination, with a gathering-fork, of a pulley-block thereon, jaws pivoted on said block and having notched upper ends, a hoisting-boom, means carried by said boom and adapted to enter said notches and support said pulley-block in its raised position, means for separating said jaws to disengage them from said supporting means, and a hoisting-cable.

4. The combination, with a hoisting-boom, of a jaw-support thereon, a hoisting-cable, a pulley-block carried thereby, jaws pivoted at their lower ends on said pulley-block and having ends pro-

vided with notches adapted to receive said support and lock said pulley-block in its raised position, means for yieldingly holding said jaws together, and a trip-lever for separating them.

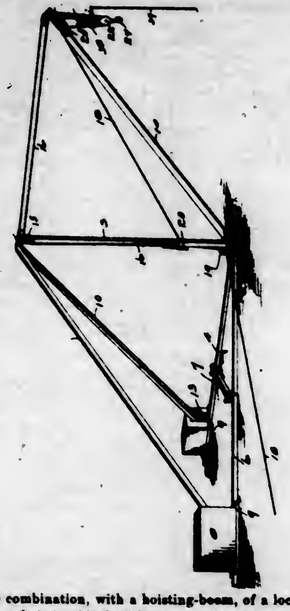

5. The combination, with a hoisting-boom, of a locking-block 27, thereon, a hoisting-block 22 having a cable 18, jaws pivoted on said hoisting-block and engaging said block 27, a spring 32 normally holding said jaws together, and a trip-lever.

6. The combination, with a hoisting-boom, of a hoisting-block and its cable, a support having a fixed pivot on said boom, jaws pivoted on said hoisting-block and having notched upper ends to engage said support and automatically lock said hoisting-block in its raised position, means for yieldingly holding said jaws together, and means for separating them.

7. The combination, with a suitable handle, of the bars secured thereon, a fork pivoted between said bars and comprising cross-bars 44 and 46, a suitable bail for said fork, and trucks pivoted between the tines of said fork on each side thereof, for the purpose specified.

8. The combination, with the fork-tines, of depending straps secured thereon and provided with a series of holes, trucks provided between said straps, and pins passing through said holes and said trucks and said pins being adapted to fit either of the holes in said straps to allow the adjustment of the trucks between them, for the purpose specified.

9. The combination, with the cross-bars 44 and 46 and the tines 45 secured thereto and provided with upwardly-curved inner ends, and the guard-plates 56 secured to the curved ends of the outer tines upon each side of said fork.

10. The combination, with the bars 41 and the fork pivoted between, of a bail 50 also pivoted between said bars, and stops 51 pivoted on said fork and adapted to be swung out into the path of said bail, for the purpose specified.

11. The combination, with a fork having a series of gathering-tines and a suitable bail, of carrying-trucks adjustably secured on said fork and arranged to be raised or lowered to vary the height of said tines from the ground, for the purpose specified.

12. The combination, with a hoisting-boom, of a pulley-block, a hoisting-cable therefor, a locking device interposed between said pulley-block and said boom and comprising a catch or stop that is fixed with respect to said boom, and spring-pressed arms arranged to be operated automatically to engage said stop and lock said pulley-block when it has been raised to a certain predetermined point, and mechanism for tripping said jaws to release said block.

13. The combination, with a fork having a series of gathering-tines, of carrying-trucks mounted on said fork and capable of vertical adjustment to vary the height of said tines from the ground, substantially as described.

14. The combination, with a hoisting-boom, of a hoisting block and cable, a support, jaws pivoted on said hoisting-block and having notches or recesses extending partially through their contiguous faces and adapted to engage said support when said block is raised, and means for separating said jaws to release said block.

15. The combination, with a hoisting-boom, of a jaw-support thereon, a block having a cable and locking-jaws to engage said support, and a trip-lever mounted on one of said jaws and arranged to actuate the other jaw to separate them, substantially as described.

808,679. DISAPPEARING SEAT. CHARLES K. PICKLES, Philadelphia, Pa., assignor to John A. Brill, Philadelphia, Pa. Filed Feb. 9, 1905. Serial No. 244,883.

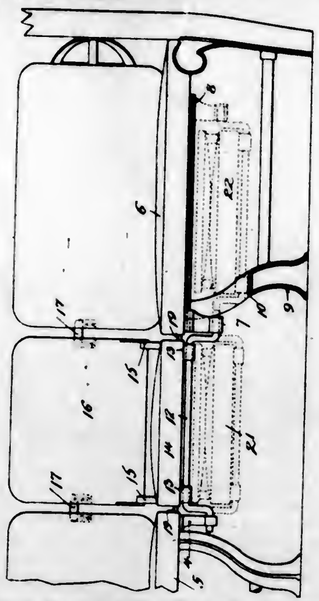

Claim.—1. In a device of the class described, a cushion, a seat at each end of said cushion, suspended and pivoted means for supporting said cushion between said seats, and means for lowering said cushion and storing it under one of said seats.

2. In a device of the class described, a seat-cushion, seats at each end of said cushion, brackets suspended from said seats, crank-shafts journaled in said brackets and means for supporting said cushion on said crank-shafts.

3. In a device of the class described, a cushion, a seat at each end of said cushion, a back hinged to said cushion, latches adapted to engage parts of said seats and secure said back in its proper position, crank-shafts journaled in parts of said seats and means for uniting said cushion and crank-shafts.

4. In a device of the class described, a cushion, seats at each end of said cushion, fixed brackets suspended from one of such seats, movable brackets suspended from the other of said seats, crank-shafts journaled in said brackets and means for supporting said cushion on said crank-shafts.

5. In a device of the class described, a cushion, seats at each end of said cushion, fixed brackets suspended from one of said seats, movable brackets suspended from the other of said seats, crank-shafts adapted to be journaled in said brackets, means for uniting said cushion and crank-shafts and a bifurcated support at one end of the seat having movable brackets.

808,680. AIR-GUN. DAVID F. POLLEY, Plymouth, Mich., assignor to Markham Air Rifle Company, Plymouth, Mich. Filed Dec. 19, 1904. Serial No. 237,573.

Claim.—1. A spring air-gun comprising a false barrel formed in two sections of different diameter, the rear section inclosing the piston and its actuating-spring and the forward section inclosing the true barrel, said sections being telescoped at their adjoining ends and rigidly secured to each other and a piston-abutment within said barrel bearing against the inner end of said forward section and provided with a socket for receiving the true barrel and a tapering bore in rear of said socket, the forward end of said plug being concaved to direct said true barrel into its socket.

2. A spring air-gun comprising a false barrel formed in two sections of different diameter having their adjoining ends telescoped, a tubular open-ended bushing fitting between said tubes and being rigidly secured thereto, and a piston-abutment fitting within the larger tube and seated against the annular shoulder, formed by the smaller tube and said bushing.

3. A spring air-gun comprising a false barrel formed in two sections of different diameter, telescopically engaged at their adjoining ends and rigidly secured to each other, and a piston-abutment within said barrel seated against the annular shoulder formed by the inner end of the smaller tube, said abutment having a forward extension of reduced diameter fitting within the smaller tube.

4. A spring air-gun comprising a false barrel formed in two sections of different diameter, telescopically engaged at their adjoining ends, a bushing between the engaged portions of said tubes and rigidly secured to each, a piston-abutment within said barrel seated against the annular shoulder formed by the inner end of the smaller tube and the bushing, said abutment having a forward extension fitting within the smaller tube and underlapping the joint.

808,681. COLLAPSIBLE WINDOW-PLATFORM. ERNEST G. RAFF, New York, N. Y. Filed Aug. 20, 1904. Serial No. 221,483.

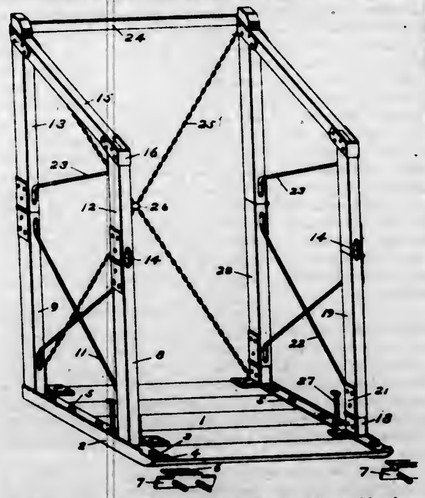

Claim.—1. In a device of the class described, in combination, a floor, rigid frames connected to the same upon either side thereof, rigid extensions mounted upon each of said frames, and a rigid bar pivotally connecting said extensions, said extensions being hinged to said frames and said frames having a hinged connection with said floor.

2. In a device of the class described, in combination, a floor, rigid frames having a hinged connection with the same upon either side thereof, rigid extensions having a hinged connection with said rigid frames, and flexible members connecting the rear portions of said extensions and said floor.

3. In a device of the class described, in combination, a floor, rigid frames having a hinged connection with the same upon either side thereof, rigid extensions having a hinged connection with each of said frames, flexible members connecting the rear portions of said frames and said extensions, and a rigid bar pivotally connecting the upper portions of said extensions, said bar being adapted to swing in a plane substantially parallel to the rear or outer edge of said floor.

4. In a device of the class described, in combination, a floor, channel-shaped end members within which the ends of said floor are embraced, retaining devices upon said end members formed integral therewith, bolts passing through said floor and the upper and lower portions of said channel-shaped members, rigid frames mounted upon said floor at either side thereof and adapted to collapse with reference thereto, rigid extensions mounted upon said frames and having a hinged connection therewith, and a rigid bar pivotally connected to the upper end of said extensions.

5. In a device of the class described, in combination, a floor having channel-shaped end members, retaining devices formed integral with said end members, rigid frames having a hinged connection with said floor and mounted thereon at either side thereof, extensions mounted upon said rigid frames, flexible connecting members diagonally connecting the rear portions of said floor with said extensions, and a rigid bar pivotally connecting said extensions.

6. In a device of the class described, in combination, a floor, channel-shaped end members having retaining means formed integral therewith, rigid frames hinged to said floor at unequal distances from the plane of the lower surface thereof, rigid extensions mounted upon said frames, and means whereby the rear portions of said floor and said extensions are connected.

7. In a device of the class described, in combination, a floor, channel-shaped end members within which the ends of said floor are secured, retaining devices formed integral with said channel-shaped end members, rigid frames having a hinged connection with said floor at unequal distances from the plane of the lower surface thereof, rigid extensions mounted upon said frames and having a hinged connection therewith, a rigid member pivotally connecting said extensions, and flexible means whereby the rear portions of said extensions and said floor are connected.

8. In a device of the class described, in combination, a floor, channel-shaped end members embracing the same and resting in contact with the upper and lower surfaces thereof, retaining means formed integral with said end members, adjustable screws passing through said floor and the upper and lower portions of said channel-shaped members substantially at right angles thereto, rigid frames hinged to the opposite sides of said floor, rigid extensions hinged to said frames, and a rigid bar pivoted to said extensions.

9. In a device of the class described, in combination, a floor, a rigid frame hinged thereto at one side thereof, a pair of blocks rigidly secured to said floor at the opposite side thereof, a rigid frame hinged to said blocks, rigid extensions mounted upon each of said frames and having hinged connection therewith, a rigid bar pivoted to the upper end of each of said extensions, and flexible means adapted to connect the rear portions of each of said extensions with the floor at the opposite side from said extensions.

808,682. CENTRIFUGAL, TURBINE, OR SIMILAR PUMP. FREDERICK RAY, East Orange, N. J., assignor to Henry R. Worthington, New York, N. Y., a Corporation of New Jersey. Filed Jan. 25, 1905. Serial No. 242,600.

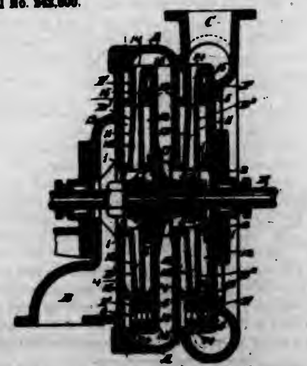

Claim.—1. A centrifugal, turbine or similar pump having an inclosed impeller and a pressure-equalizing connection between the opposite sides of the impeller.

2. A multistage centrifugal, turbine or similar pump having a plurality of inclosed impellers and a pressure-equalizing connection between the opposite sides of each impeller.

3. A centrifugal, turbine or similar pump having an inclosed impeller and diffusing-vanes outside the impeller and a pressure-equalizing connection between the opposite sides of the impeller formed through the diffusing-vanes.

4. A multistage centrifugal, turbine or similar pump having a plurality of inclosed impellers and diffusing-vanes outside the impellers, and a pressure-equalizing connection between opposite sides of each impeller formed through the diffusing-vanes.

5. In a centrifugal, turbine or similar pump, the combination with an inclosed impeller taking suction on one side of the impeller, of a pressure-equalizing connection between the opposite sides of the impeller, and suction-balancing means.

6. In a centrifugal, turbine or similar pump, the combination with an inclosed impeller taking suction on one side of the impeller, of a pressure-equalizing connection between the opposite sides of the impeller, and a suction-balancing chamber on the back of the impeller communicating with the impeller-suction.

7. In a multistage centrifugal, turbine or similar pump, the combination with a plurality of inclosed impellers, of a pressure-equalizing connection between the opposite sides of each impeller, and suction-balancing means.

8. In a multistage centrifugal, turbine or similar pump, the combination with a plurality of inclosed impellers, of a pressure-equalizing connection between the opposite sides of each impeller, and a suction-balancing chamber on the back of each impeller communicating with the impeller-suction.

9. A centrifugal, turbine or similar pump having an inclosed liquid-impeller and a pressure-equalizing connection permitting the passage of liquid between the opposite sides of the impeller.

10. A multistage centrifugal, turbine or similar pump having a plurality of inclosed liquid-impellers, and a pressure-equalizing connection permitting the passage of liquid between the opposite sides of each impeller

11. A centrifugal, turbine or similar pump having an inclosed liquid-impeller taking suction on one side of the impeller, a pressure-equalizing connection permitting the passage of liquid between the opposite sides of the impeller, and a suction-balancing chamber on the back of the impeller communicating with the impeller-suction.

808,683. GOLF-BALL. FRANCIS H. RICHARDS, Hartford, Conn. Filed Apr. 11, 1903. Serial No. 152,268.

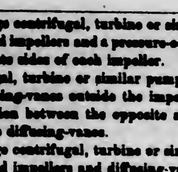

Claim.—1. A playing-ball comprising a filling, a shell and a locking device having an outwardly-extending portion.

2. A playing-ball comprising a filling, a plurality of shell-segments, and a locking device having an outwardly-extending portion adapted to be placed between the edges of the shell-segments.

3. A playing-ball comprising a filling, a shell, and a locking device having an outwardly-extending rib.

4. A playing-ball comprising a filling, a plurality of shell-segments, and a locking device having an extending rib.

5. In a playing-ball, a locking device consisting of a strip surrounding the core and having an outwardly-extending rib.

6. In a playing-ball, a locking device consisting of a flexible strip surrounding the core and having an outwardly-extending rib.

7. In a playing-ball, a locking device, consisting of a body portion surrounding a core and having a rib extending outwardly at right angles to the body portion.

8. In a playing-ball, a locking device consisting of a body portion having an outwardly-extending molded and patterned rib.

9. In a playing-ball, a locking device consisting of a body portion surrounding a core and having an outwardly-extending rib adapted to be placed between the abutting edges of the shell of the ball.

10. In a playing-ball, a locking device consisting of a body portion between the core of the ball and the joints of the shell, and a rib extending between the edges of the joints.

11. In a playing-ball, a locking device, consisting of a body portion between the filling of the ball and the joints of the shell, and integrally with the body portion a rib extending between the edges of the joint.

12. In a playing-ball, a locking device having a body portion adapted to fasten the joints of the shell to the filling, and a rib extending between the edges of the joint and adapted to unite the same.

808,684. CAR-AXLE BOX. WILLARD F. RICHARDS, Buffalo, N. Y., assignor to The Gould Coupler Company, New York, N. Y., a Corporation of West Virginia. Filed Apr. 14, 1900. Serial No. 13,883.

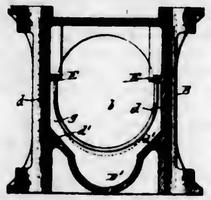

Claim.—1. A railway-car journal-box of standard type, provided with substantially upright side wall portions, a bottom forming an oil well or receptacle, and downwardly-converging side wall portions which join the bottom and upright portions of the side walls and are so disposed as to form spaces between the sides of the box and the journal which extend substantially the length of the box and decrease in width toward the oil-well, whereby the lubricating-packing is wedged between the journal and the converging portions of the walls of the box by the jarring of the latter, substantially as set forth.

2. A railway-car journal-box of standard type, having an integral bottom forming an oil well or receptacle, and integral side walls having substantially upright upper portions and downwardly-converging lower portions which join the bottom and are so disposed as to form spaces between themselves and the journal which extend substantially the length of the box and are narrower than the spaces between the journal and the upright upper portions of the side walls of the box, whereby the lubricating-packing is wedged between the journal and the converging portions of the walls of the box by the jarring of the latter, substantially as set forth.

3. A railway-car journal-box of standard type, having an integral bottom forming an oil well or receptacle, and integral side walls having substantially upright upper portions and downwardly-converging lower portions which join the bottom and are so disposed as to form spaces between themselves and the journal which extend substantially the length of the box and are narrower than the spaces between the journal and the upright upper portions of the side walls of the box, and integral flanges projecting inwardly from the side walls of the box above said converging portions, substantially as set forth.

4. A journal-box provided in its front wall with a filling-opening, and in its rear wall with an opening for the passage of the journal, and having an inwardly-extending guard-flange arranged at the lower edge of said filling-opening, an internal semicircular guard-flange arranged at the lower and side edges of rear opening of the journal-box, and horizontal inwardly-extending flanges formed integral with the side walls of the box and arranged about on a level with the upper ends of said semicircular guard-flange, substantially as set forth.

5. The combination with a journal-box and a journal therein, of waste-supporting means at each side of the journal, said supporting means extending from the sides of the box downwardly and toward each other, the lower longitudinal edges of said supporting means being spaced apart and at least below the center of revolution of the journal and being the portions of said means nearest to the journal, and the uppermost portions of said supporting means being at a higher elevation than the bottom of the journal and lower than the axis of the journal.

6. A journal-box adapted to receive a horizontal journal, said box having waste-supporting means arranged at each side of the journal-receiving portion, said supporting means converging downwardly of the box and having such location that their lowermost portions will lie at least below the center of revolution of the journal and closest to the journal when the latter is in position, while their uppermost portions will lie farthest from and above the bottom of the journal and below the axis of the journal when the latter is in position.

808,685. LOCOMOTIVE-ENGINE. JOHN B. ROGERS, Oneida, Ky., assignor of one-half to B. Carnahan, Jr., Oneida, Ky. Filed Apr. 13, 1905. Serial No. 255,445.

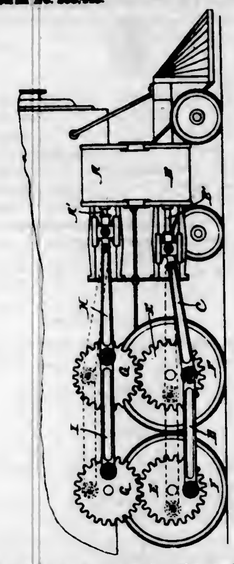

Claim.—1. In a locomotive-engine, the combination with the front and rear driving-wheels thereof, of two cylinders arranged upon each side of the locomotive, one above the other, a piston working in each cylinder, pitmen connected at their forward ends, one to each piston-rod, the rearward end of the lower pitmen being pivoted eccentrically to the forward driving-wheel, a connecting-rod connecting the forward driving-wheel with the rearward driving-wheel, gears secured to and adapted to revolve with the driving-wheels, gears arranged above the first-named gears and meshing with the same and journaled to the framework of the locomotive, the upper pitmen being pivoted eccentrically to the forward upper gears, connecting-rods connecting all of the upper gears together, the wrist-pins of the driving-wheels and the wrist-pins of the upper gears being so disposed relative to one another as to be one-quarter revolution removed relatively, as and for the purpose specified.

2. In a locomotive-engine, the combination with the front and rear driving-wheels thereof, of two cylinders arranged upon each side of the locomotive, said cylinders being arranged one above the other, piston-rods extending from said cylinders, two pitmen upon each side of the locomotive connected one to each piston-rod, the lower pitmen being connected at their rearward ends eccentrically to the forward driving-wheels, wheels arranged above the driving-wheels and adapted to mesh therewith, the upper pitmen connected at their rearward ends to the forward one of these wheels, connecting-rods connecting the driving-wheels together and also the wheels in mesh with the driving-wheel, the wrist-pins upon the driving-wheels being so disposed that the pistons in each pair of cylinders will always be at a distance apart equal to half of a complete stroke in either direction to cause the pistons at one side of the engine to move in the same direction for half of the stroke of any one piston, while during the next half-stroke the piston will move in opposite directions.

808,686. WINDOW-SCREEN FASTENING. BYRD C. ROCKWELL, Paris, Ark., assignor to Rockwell Manufacturing Co., a Corporation of Arkansas. Filed Apr. 27, 1904. Serial No. 205,145.

Claim.—1. In an adjustable screen, a pair of longitudinally-adjustable rails having oppositely-divergent kerfs, the kerfs of each rail terminating in a pair of slots extending through the rail and separated by a tongue, and a clip seated in said slots in engagement with the tongue and having divergent portions for engagement with the corresponding kerfs of the adjacent rail.

2. In an adjustable screen, a pair of longitudinally-adjustable rails having opposing faces adapted to contact with each other, said rails being provided with oppositely-diverging kerfs and with slots extending through the rails at the ends of said kerfs, in combination with clips bodily seated in said slots, secured against rocking movement, and provided each with divergent portions engaging the kerfs of the adjacent rail.

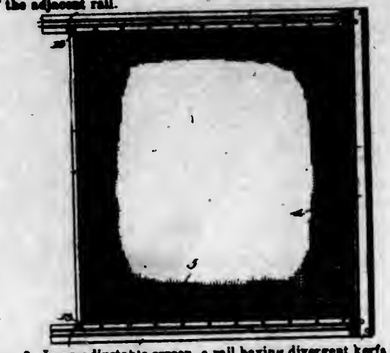

3. In an adjustable screen, a rail having divergent kerfs in the face thereof, an engaging rail having a clip-seat extending therethrough, and a clip engaging said seat, secured against rocking movement, and having divergent portions engaging the kerfs of the opposite rail.

4. In an adjustable screen, a pair of relatively movable screen-sections each comprising a frame and a sheet of reticulated material, and sheet-metal binding members for the inner edges of the reticulated material, said binding members having transverse incisions adjacent to their ends and the latter attached to the screen-frame, the body portions of the members between the incisions being angularly extended to lie in the path of each other to form stops and having their outer edges overriding the surface of the material of the adjacent screen-section

5. In a screen, a frame and a sheet of reticulated material carried thereby, a binding member for one edge of the material, longitudinal kerfs formed in a pair of the frame-bars and constituting seats for the adjacent edges of the material, said kerfs terminating in seats for the ends of the binding member, and means for securing the latter in place.

6. In an adjustable screen, a pair of relatively and longitudinally adjustable rails, one of said rails having a pair of divergent longitudinal kerfs and the other a longitudinal clip-seat extending through the body of the rail, a clip having a body portion engaging said seat and projecting divergent portions for engagement with the kerfs, and means for securing said clip against rocking movement.

7. In an adjustable screen, a pair of relatively and longitudinally adjustable rails, one of said rails having a pair of divergent longitudinal kerfs and the other a pair of slots producing an intermediate tongue, and a clip having a body portion engaging said tongue and divergent portions for engagement with the kerfs.

8. In an adjustable screen, a rail having a pair of divergent kerfs terminating in a clip-seat extending through the body of the rail, a clip having a body portion engaging the seat and divergent portions projecting beyond one face of the rail, and means for securing said clip against rocking movement.

808,687. CLOTHES-PIN. DAVID B. ROSENBOOM, Carey, Ill. Filed Nov. 23, 1904. Serial No. 234,074.

Claim.—A clothes-fastener comprising a wire which is bent at its longitudinal center forming a V-shaped shank portion, the opposite strands forming the longitudinal edges of which are slightly curved, the strands of wire at the flaring ends of said V-shaped portion being curved away from said V-shaped portion and having parallel portions which are spaced apart a short distance, theses twisted together, and flaring arms extending over the strands forming said V-shaped portion and the extreme ends of said arms laterally bent and turned into eyes, as set forth.

808,688. WAVE-MOTOR. CARL A. SAHLSTRÖM, Chicago, Ill. Filed Apr. 24, 1905. Serial No. 257,212.

Claim.—A surf-motor consisting of the combination with a pier

2. A multistage centrifugal, turbine or similar pump having a plurality of inclosed impellers and a pressure-equalizing connection between the opposite sides of each impeller.

3. A centrifugal, turbine or similar pump having an inclosed impeller and diffusing-vanes outside the impeller and a pressure-equalizing connection between the opposite sides of the impeller formed through the diffusing-vanes.

4. A multistage centrifugal, turbine or similar pump having a plurality of inclosed impellers and diffusing-vanes outside the impellers, and a pressure-equalizing connection between opposite sides of each impeller formed through the diffusing-vanes.

5. In a centrifugal, turbine or similar pump, the combination with an inclosed impeller taking suction on one side of the impeller, of a pressure-equalizing connection between the opposite sides of the impeller, and suction-balancing means.

6. In a centrifugal, turbine or similar pump, the combination with an inclosed impeller taking suction on one side of the impeller, of a pressure-equalizing connection between the opposite sides of the impeller, and a suction-balancing chamber on the back of the impeller communicating with the impeller-suction.

7. In a multistage centrifugal, turbine or similar pump, the combination with a plurality of inclosed impellers, of a pressure-equalizing connection between the opposite sides of each impeller, and suction-balancing means.

8. In a multistage centrifugal, turbine or similar pump, the combination with a plurality of inclosed impellers, of a pressure-equalizing connection between the opposite sides of each impeller, and a suction-balancing chamber on the back of each impeller communicating with the impeller-suction.

9. A centrifugal, turbine or similar pump having an inclosed liquid-impeller and a pressure-equalizing connection permitting the passage of liquid between the opposite sides of the impeller.

10. A multistage centrifugal, turbine or similar pump having a plurality of inclosed liquid-impellers, and a pressure-equalizing connection permitting the passage of liquid between the opposite sides of each impeller

11. A centrifugal, turbine or similar pump having an inclosed liquid-impeller taking suction on one side of the impeller, a pressure-equalizing connection permitting the passage of liquid between the opposite sides of the impeller, and a suction-balancing chamber on the back of the impeller communicating with the impeller-suction.

808,683. GOLF-BALL. FRANCIS H. RICHARDS, Hartford, Conn. Filed Apr. 11, 1903. Serial No. 152,268.

Claim.—1. A playing-ball comprising a filling, a shell and a locking device having an outwardly-extending portion.

2. A playing-ball comprising a filling, a plurality of shell-segments, and a locking device having an outwardly-extending portion adapted to be placed between the edges of the shell-segments.

3. A playing-ball comprising a filling, a shell, and a locking device having an outwardly-extending rib.

4. A playing-ball comprising a filling, a plurality of shell-segments, and a locking device having an extending rib.

5. In a playing-ball, a locking device consisting of a strip surrounding the core and having an outwardly-extending rib.

6. In a playing-ball, a locking device consisting of a flexible strip surrounding the core and having an outwardly-extending rib.

7. In a playing-ball, a locking device, consisting of a body portion surrounding a core and having a rib extending outwardly at right angles to the body portion.

8. In a playing-ball, a locking device consisting of a body portion having an outwardly-extending molded and patterned rib.

9. In a playing-ball, a locking device consisting of a body portion surrounding a core and having an outwardly-extending rib adapted to be placed between the abutting edges of the shell of the ball.

10. In a playing-ball, a locking device consisting of a body portion between the core of the ball and the joints of the shell, and a rib extending between the edges of the joints.

11. In a playing-ball, a locking device, consisting of a body portion between the filling of the ball and the joints of the shell, and integrally with the body portion a rib extending between the edges of the joint.

12. In a playing-ball, a locking device having a body portion adapted to fasten the joints of the shell to the filling, and a rib extending between the edges of the joint and adapted to unite the same.

808,684. CAR-AXLE BOX. WILLARD P. RICHARDS, Buffalo, N. Y., assignor to The Gould Coupler Company, New York, N. Y., a Corporation of West Virginia. Filed Apr. 14, 1900. Serial No. 13,883.

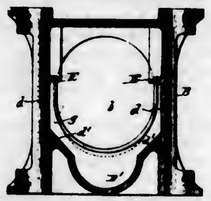

Claim.—1. A railway-car journal-box of standard type, provided with substantially upright side wall portions, a bottom forming an oil well or receptacle, and downwardly-converging side wall portions which join the bottom and upright portions of the side walls and are so disposed as to form spaces between the sides of the box and the journal which extend substantially the length of the box and decrease in width toward the oil-well, whereby the lubricating-packing is wedged between the journal and the converging portions of the walls of the box by the jarring of the latter, substantially as set forth.

2. A railway-car journal-box of standard type, having an integral bottom forming an oil well or receptacle, and integral side walls having substantially upright upper portions and downwardly-converging lower portions which join the bottom and are so disposed as to form spaces between themselves and the journal which extend substantially the length of the box and are narrower than the spaces between the journal and the upright upper portions of the side walls of the box, whereby the lubricating-packing is wedged between the journal and the converging portions of the walls of the box by the jarring of the latter, substantially as set forth.

3. A railway-car journal-box of standard type, having an integral bottom forming an oil well or receptacle, and integral side walls having substantially upright upper portions and downwardly-converging lower portions which join the bottom and are so disposed as to form spaces between themselves and the journal which extend substantially the length of the box and are narrower than the spaces between the journal and the upright upper portions of the side walls of the box, and integral flanges projecting inwardly from the side walls of the box above said converging portions, substantially as set forth.

4. A journal-box provided in its front wall with a filling-opening, and in its rear wall with an opening for the passage of the journal, and having an inwardly-extending guard-flange arranged at the lower edge of said filling-opening, an internal semicircular guard-flange arranged at the lower and side edges of rear opening of the journal-box, and horizontal inwardly-extending flanges formed integral with the side walls of the box and arranged about on a level with the upper ends of said semicircular guard-flange, substantially as set forth.

5. The combination with a journal-box and a journal therein, of waste-supporting means at each side of the journal, said supporting means extending from the sides of the box downwardly and toward each other, the lower longitudinal edges of said supporting means being spaced apart and at least below the center of revolution of the journal and being the portions of said means nearest to the journal, and the uppermost portions of said supporting means being at a higher elevation than the bottom of the journal and lower than the axis of the journal.

6. A journal-box adapted to receive a horizontal journal, said box having waste-supporting means arranged at each side of the journal-receiving portion, said supporting means converging downwardly of the box and having such location that their lowermost portions will lie at least below the center of revolution of the journal and closest to the journal when the latter is in position, while their uppermost portions will lie farthest from and above the bottom of the journal and below the axis of the journal when the latter is in position.

808,685. LOCOMOTIVE-ENGINE. JOHN B. ROGERS, Oneida, Ky., assignor of one-half to R. Carnahan, Jr., Oneida, Ky. Filed Apr. 13, 1905. Serial No. 255,445.

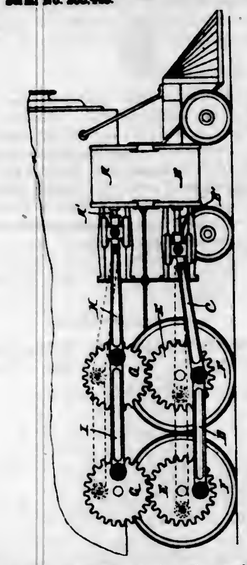

Claim.—1. In a locomotive-engine, the combination with the front and rear driving-wheels thereof, of two cylinders arranged upon each side of the locomotive, one above the other, a piston working in each cylinder, pitmen connected at their forward ends, one to each piston-rod, the rearward end of the lower pitmen being pivoted eccentrically to the forward driving-wheel, a connecting-rod connecting the forward driving-wheel with the rearward driving-wheel, gears secured to and adapted to revolve with the driving-wheels, gears arranged above the first-named gears and meshing with the same and journaled to the framework of the locomotive, the upper pitmen being pivoted eccentrically to the forward upper gears, connecting-rods connecting all of the upper gears together, the wrist-pins of the driving-wheels and the wrist-pins of the upper gears being so disposed relative to one another as to be one-quarter revolution removed relatively, as and for the purpose specified.

2. In a locomotive-engine, the combination with the front and rear driving-wheels thereof, of two cylinders upon each side of the locomotive, said cylinders being arranged one above the other, piston-rods extending from said cylinders, two pitmen upon each side of the locomotive connected one to each piston-rod, the lower pitmen being connected at their rearward ends eccentrically to the forward driving-wheels, wheels arranged above the driving-wheels and adapted to mesh therewith, the upper pitmen connected at their rearward ends to the forward one of these wheels, connecting-rods connecting the driving-wheels together and also the wheels in mesh with the driving-wheel, the wrist-pins upon the driving-wheels being so disposed that the pistons in each pair of cylinders will always be at a distance apart equal to half of a complete stroke in either direction to cause the pistons at one side of the engine to move in the same direction for half of the stroke of any one piston, while during the next half-stroke the piston will move in opposite directions.

808,686. WINDOW-SCREEN FASTENING. BYRD C. ROCKWELL, Paris, Ark., assignor to Rockwell Manufacturing Co., a Corporation of Arkansas. Filed Apr. 27, 1904. Serial No. 205,145.

Claim.—1. In an adjustable screen, a pair of longitudinally-adjustable rails having oppositely-divergent kerfs, the kerfs of each rail terminating in a pair of slots extending through the rail and separated by a tongue, and a clip seated in said slots in engagement with the tongue and having divergent portions for engagement with the corresponding kerfs of the adjacent rail.

2. In an adjustable screen, a pair of longitudinally-adjustable rails having opposing faces adapted to contact with each other, said rails being provided with oppositely-diverging kerfs and with slots extending through the rails at the ends of said kerfs, in combination with clips bodily seated in said slots, secured against rocking movement, and provided each with divergent portions engaging the kerfs of the adjacent rail.

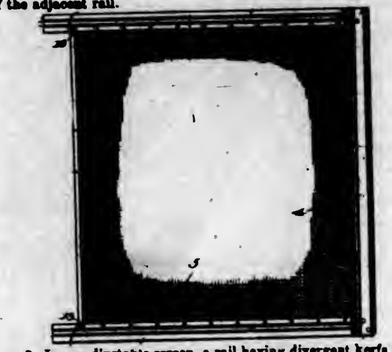

3. In an adjustable screen, a rail having divergent kerfs in the face thereof, an engaging rail having a clip-seat extending therethrough, and a clip engaging said seat, secured against rocking movement, and having divergent portions engaging the kerfs of the opposite rail.

4. In an adjustable screen, a pair of relatively movable screen-sections each comprising a frame and a sheet of reticulated material, and sheet-metal binding members for the inner edges of the reticulated material, said binding members having transverse incisions adjacent to their ends and the latter attached to the screen-frame, the body portions of the members between the incisions being angularly extended to lie in the path of each other to form stops and having their outer edges overriding the surface of the material of the adjacent screen-section

5. In a screen, a frame and a sheet of reticulated material carried thereby, a binding member for one edge of the material, longitudinal kerfs formed in a pair of the frame-bars and constituting seats for the adjacent edges of the material, said kerfs terminating in seats for the ends of the binding member, and means for securing the latter in place.

6. In an adjustable screen, a pair of relatively and longitudinally adjustable rails, one of said rails having a pair of divergent longitudinal kerfs and the other a longitudinal clip-seat extending through the body of the rail, a clip having a body portion engaging said seat and projecting divergent portions for engagement with the kerfs, and means for securing said clip against rocking movement.

7. In an adjustable screen, a pair of relatively and longitudinally adjustable rails, one of said rails having a pair of divergent longitudinal kerfs and the other a pair of slots producing an intermediate tongue, and a clip having a body portion engaging said tongue and divergent portions for engagement with the kerfs.

8. In an adjustable screen, a rail having a pair of divergent kerfs terminating in a clip-seat extending through the body of the rail, a clip having a body portion engaging the seat and divergent portions projecting beyond one face of the rail, and means for securing said clip against rocking movement.

808,687. CLOTHES-PIN. DAVID R. ROBINSCOUR, Casey, Ill. Filed Nov. 23, 1904. Serial No. 234,874.

Claim.—A clothes-fastener comprising a wire which is bent at its longitudinal center forming a V-shaped shank portion, the opposite strands forming the longitudinal edges of which are slightly curved, the strands of wire at the flaring ends of said V-shaped portion being curved away from said V-shaped portion and having parallel portions which are spaced apart a short distance, thence twisted together, and flaring arms extending over the strands forming said V-shaped portion and the extreme ends of said arms laterally bent and turned into eyes, as set forth.

808,688. WAVE-MOTOR. CARL A. SAHLSTRÖM, Chicago, Ill. Filed Apr. 24, 1905. Serial No. 257,213.

Claim.—A surf-motor consisting of the combination with a pier

or like, support of arms or bars b pivoted to the pier, a buoyant paddle-wheel a mounted to rotate in said arms and to rise and fall with the tide, and means b to prevent back movement of the paddle-wheel.

808,689. CUT-OFF SOCKET. CLAY SADDLER, Plainfield, N. J., assignor to William B. Wadsworth, Plainfield, N. J. Filed May 18, 1905. Serial No. 260,791.

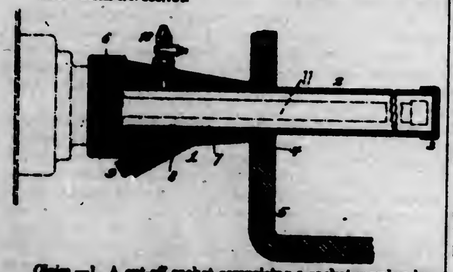

Claim.—1. A cut-off socket comprising a socket member having means for securing same to a tank, means for removably receiving a regulator therein, and means for controlling admission of fluid to the socket from the tank.

2. A cut-off socket having a portion adapted to enter a tank, and provided with means for securing it to the tank, said socket having means for controlling admission thereto of fluid from the tank, and adapted and arranged to removably support a thermostatic device.

3. A cut-off socket comprising a shell adapted to be secured to the wall of a tank, and a tube adapted to extend inward within the tank, said socket provided with means for controlling admission thereto of fluid from the tank, and adapted and arranged to removably support a temperature-regulator.

4. A cut-off socket comprising a shell adapted to be secured to the wall of a tank, and a tube adapted to extend therefrom inward within the tank, when in position therein, said shell having an internally-screw-threaded portion adapted for engagement with the correspondingly-screw-threaded portion of a temperature-regulator, said socket provided with means for controlling admission thereto of fluid from the tank.

5. The combination with a tank and a thermostatic device controlling therein, of a cut-off socket surrounding the portion of the thermostatic device in the tank, said socket provided with means controlling admission of fluid thereto from the tank.

6. The combination with a tank, of a socket extending within same, and a thermostatic device removably fitted to said socket, said socket having means for controlling admission thereto of fluid from the tank.

808,690. DENTAL-SILK BOX. OTTO C. SCHULZ, Chicago, Ill., assignor to Bauer & Black, Chicago, Ill., a Corporation of Illinois. Filed Sept. 20, 1904. Serial No. 225,426.

Claim.—A dust-proof dental-silk pocket-package comprising a shallow cylindrical box consisting of two members, one member comprising the top of the box and a narrow peripheral flange thereon, and the other member comprising the bottom of the box and a similar flange thereon, said flanges being constructed to lap one over the other and lock together, one of said members being provided with a central opening, and a flat coil of thread or yarn held in place within said box between the top and bottom thereof, said coil being made to unwind from the center through the opening in the box, whereby the coil reduces in thickness but not in length or diameter and remains held in place between the top and bottom of the box until practically exhausted.

808,691. METHOD OF PLANISHING SHEETS OF METAL. AMMON RIDD, Newport, Ky. Filed Aug. 1, 1905. Serial No. 272,208.

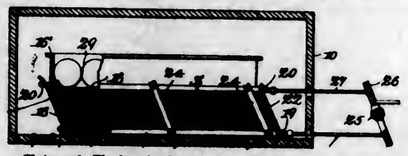

Claim.—1. The herein-described method of treating sheet metal, said method consisting in causing sliding movement of oxid-coated sheets on one another, while the sheets are exposed to the action of heat.

2. The herein-described method of simultaneously planishing and annealing oxid-coated sheet metal, said method consisting in sliding the sheets on each other while in an annealing-oven.

3. The herein-described method of simultaneously planishing and annealing sheet metal, said method consisting in causing sliding movement of oxid-coated sheets on each other while the sheets are held together, under pressure in an annealing-oven.

4. The herein-described method of planishing oxid-coated sheets, said method consisting in sliding the sheets one on the other while the sheets are held together by a mobile weight.

5. The herein-described method of planishing oxid-coated sheets, such method consisting in sliding the sheets one on the other while the sheets are held together by a mobile weight, and are exposed to the action of heat.

808,692. WATER-COOLER. GEORGE B. SAVAGE, Meriden, Conn. Filed Sept. 10, 1904. Serial No. 223,954.

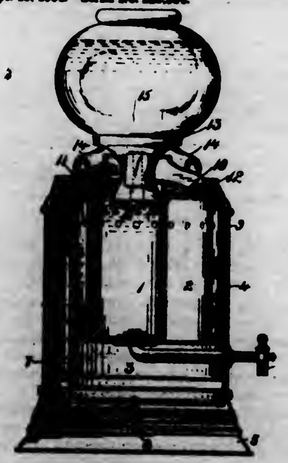

Claim.—1. In a water-cooler, the combination of a main casing forming an ice-chamber 2, a water-tank 1 mounted therein, a double-walled cover 10 for said ice-chamber and said water-tank, supported by said water-tank and having a central opening, an auxiliary cover 11 supported by the main casing and having a passage for free communication of the air between said covers with the outer air, and means for supporting an inverted water-bottle with its neck within the opening in cover 10.

2. In a water-cooler, the combination of a main casing forming an ice-chamber 2, a water-tank 1 mounted therein, a cover extending over said ice-chamber and said water-tank but having a central opening, a frame supported by the casing and formed of rings 12 and 13, with arms 14 14, connecting the same, and an inverted water-bottle having a shoulder resting upon and vertically supported by said ring 13 and having its neck extending freely into the opening in said cover, but leaving a free communication with the outer air.

808,693. CALORIMETER. LOUIS SCHUTTE, Philadelphia, Pa., and ERNST KÖRTING, Pegli, Italy, assignors to Schutte and Korting Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed July 7, 1904. Serial No. 215,896.

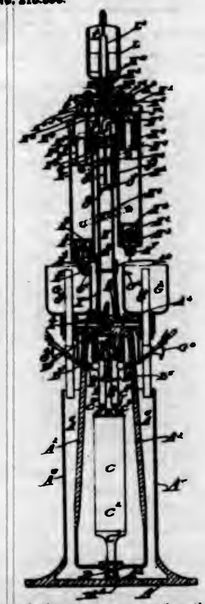

Claim.—1. A calorimeter for measuring the heating value of gases having in combination a heater for water or other liquid and a gas-burner for heating the same, means for measuring the heat imparted to the liquid in the heater, means for feeding liquid through the heater, and means for forcing gas to the gas-burner, said means controlling the liquid and gas supply being so interconnected that the volumes of liquid and gas are delivered to the heater and burner in automatically-fixed proportion to each other.

2. A calorimeter for measuring the heating value of gases having in combination a heater for water or other liquid and a gas-burner for heating the same, means for measuring the heat imparted to the liquid in the heater, means for feeding liquid through the heater, means for forcing gas to the gas-burner, said means controlling the liquid and gas supply being so interconnected that the volumes of liquid and gas are delivered to the heater and burner in automatically-fixed proportion to each other, and means for adjusting the interconnected mechanism for supplying liquid and gas to vary the proportional relationship of the liquid and gas.

3. A calorimeter for measuring the heating value of gases having in combination a heater for water or other liquid and a gas-burner for heating the same, means for measuring the heat imparted to the liquid in the heater, means for feeding liquid through the heater, means for forcing gas to the gas-burner, said means controlling the liquid and gas supply being interconnected so that the volumes of liquid and gas are delivered to the heater and burner in automatically-fixed proportion to each other, and means for adjusting the interconnected mechanism for supplying liquid and gas to vary the proportionate supply of water without affecting the actual volume of gas supplied to the burner.

4. A calorimeter for measuring the heating value of gases having in combination a heater for water or other liquid, said heater having inlet and outlet ports and a gas-burner for heating the same, means for feeding liquid through the heater, means for forcing gas to the burner, said means controlling the liquid and gas supply being so interconnected that the volumes of liquid and gas are delivered in automatically-fixed proportion to each other, two thermostats, one connected to the inlet-port and the other to the outlet-port of the heater, and an indicator actuated by the relative movements of said thermostats for indicating the heat imparted to the liquid.

5. A calorimeter for measuring the heating value of gases having in combination a heater for water or other liquid, said heater having inlet and outlet ports and a gas-burner for heating the same, means for feeding liquid through the heater, means for forcing gas to the burner, said means controlling the liquid and gas supply being so interconnected that the volumes of liquid and gas are delivered in automatically-fixed proportion to each other, two thermostats, one connected to the inlet-port and the other to the outlet-port of the heater, an indicator actuated by the relative movements of said thermostats for indicating the heat imparted to the liquid, and two thermometers, one connected to the inlet and the other to the outlet of the heater for setting and verifying the thermostatic indicator.

6. A calorimeter for measuring the heating value of gases having in combination a heater for water or other liquid, said heater having inlet and outlet ports, and a gas-burner for heating the same, means for feeding liquid through the heater, means for forcing gas to the burner, said means controlling the liquid and gas supply being so interconnected that the volumes of liquid and gas are delivered in automatically-fixed proportion to each other, two thermostats, one connected to the inlet-port and the other to the outlet-port of the heater, a rocking arm E^{10} actuated by the thermostats as described and an indicator actuated by the rocking arm E^{10}, and having an adjustable pivot.

7. In a calorimeter for measuring the heating value of gases, a heater C, having two sets of gas and water conduits the one set placed above the other and the gas-conduits in both sets connected in series, a water-inlet conduit leading to the bottom of the upper set, a conduit leading from the top of the upper to the bottom of the lower set and an outlet-conduit leading from the top of the lower set, a gas-burner situated below the lower set of conduits, means for feeding water through the heater and forcing gas to the burner in automatically-regulated proportionate volumes, and means connected with the inlet and outlet conduits of the heater for measuring the heat imparted to the water.

8. In a calorimeter for ascertaining the heating value of gases, and having a heater for water or other liquid, a gas-burner for heating the same and means for measuring the heat imparted to the water, the combination of the vessels N, N', and means for supporting said vessels so that one moves up as the other moves down, a latch for securing said vessels in their extreme up-and-down positions valves in the bottoms of vessels N, and N', for permitting the outflow of water therefrom into receptacles connected with the heater, means for automatically opening said valves when the vessel is in its lower position, water and gas supply conduits leading into each vessel, means whereby water is supplied therethrough to the vessels when in their upper positions, and means actuated by the filling of the vessels with water for releasing the latch holding the vessels in fixed position and permitting their positions to shift by gravity.

9. In a calorimeter for ascertaining the heating value of gases, and having a heater for water or other liquid, a gas-burner for heating the same and means for measuring the heat imparted to the water, the combination of the vessels N, N', and means for supporting said vessels so that one moves up as the other moves down, a latch for securing said vessels in their extreme up-and-down positions, valves in the bottoms of vessels N, and N', for permitting the outflow of water therefrom, into receptacles connected with the heater, means for automatically opening said valves when the vessel is in its lower position, water and gas supply conduits leading into each vessel, means whereby water is supplied therethrough to the vessels when in their upper positions, means whereby gas is supplied to the vessels in their lower positions and exhausted therefrom to the burner in their upper positions, means actuated by the filling of the vessels with water for releasing the latch holding the vessels in fixed position and permitting their positions to shift by gravity, receptacles

arranged to receive the water from vessels N, N', said receptacles being connected to the heater, means whereby said receptacles are alternately connected to supply the heater and adjustable waste-conduits leading from each said receptacles whereby the volume of water supplied to the heater can be reduced in any desired proportion.

808,694. PRESS. CORNELIS SMITS, Bridgeton, N. J. Filed Oct. 24, 1903. Serial No. 178,622.

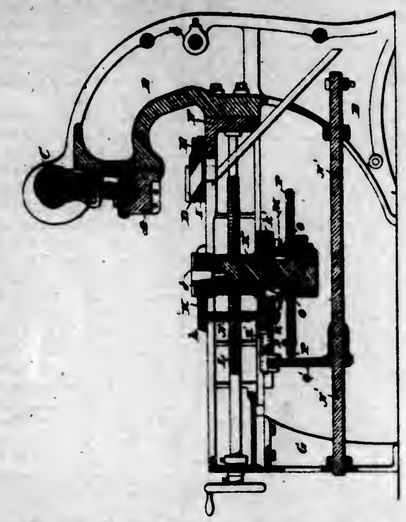

Claim.—1. The combination of a work-holder, a punch, a die-holder, a bed supporting both work-holder and die-holder, and means for adjusting the die-holder and work-holder relatively to each other in a direction transverse to the line of movement of the punch.

2. The combination of a rotatable work-holder, comprising means for supporting the work, a shaft that is rigid with said means, a gear-wheel on said shaft, a second shaft to which power is applied, and a removable pinion on said second shaft and meshing with the gear-wheel.

3. The combination of a rotatable work-holder comprising means for supporting the work, a shaft rigid with said means, a gear-wheel on the shaft, a shaft that is intermittently actuated and a removable pinion on said shaft meshing with the gear-wheel.

4. The combination of a rotatable work-holder comprising means for supporting the work, a shaft rigid with said means, a gear-wheel on the shaft, a shaft having a ratchet-wheel, a pinion on said shaft, said ratchet-wheel and pinion being removable from the shaft, and a suitably-operated pawl for operating the ratchet-wheel.

5. The combination of a rotatable work-holder comprising means for supporting the work, a shaft, a gear-wheel on the shaft, a shaft for imparting motion to said gear-wheel, having a removable wheel, and a screw-ring having interrupted thread, for securing said wheel to its shaft.

6. The combination of a rotatable work-holder, means for revolving the same comprising a pawl and ratchet-wheel, a brake, and means to disengage the pawl and ratchet-wheel and to release the brake.

7. The combination of a rotatable work-holder, means for revolving the same comprising a pawl and ratchet-wheel, a brake and means to simultaneously disengage the pawl from the ratchet-wheel and release the brake.

8. The combination of a rotatable work-holder comprising means for supporting the work, a shaft, a gear-wheel on said shaft, a friction-brake to act on the gear-wheel, pawl-and-ratchet mechanism for revolving said gear-wheel and means to release the brake and to disengage the pawl.

9. The combination of a rotatable work-holder comprising means for supporting the work, a shaft, a gear-wheel on the shaft, a driving-shaft, mechanism for transmitting motion from the latter to said gear-wheel, a treadle-shaft for connecting the driving-shaft to the source of power, an arm on the treadle-shaft, a latch for said arm and a part carried by the gear-wheel to operate the latch.

10. The combination of a rotatable work-holder, means for rotating said work-holder comprising a gear-wheel and a pawl-and-ratchet mechanism, a friction-brake for the gear-wheel, a driving-shaft, a treadle-shaft for connecting the latter with a source of power, an arm on the treadle-shaft, a latch for said arm, a part carried by the gear-wheel to actuate the latch, and arms on the treadle-shaft to release the friction-brake and disengage the pawl of the pawl-and-ratchet mechanism.

11. The combination of punching mechanism, a rotatable work-holder, pawl-and-ratchet mechanism for rotating the work-holder, a pawl-operating device and an adjustable connection between the pawl and said device whereby the position of the work-holder relative to the punching mechanism may be adjusted.

12. The combination of punching mechanism, a rotatable work-holder, a pawl-and-ratchet mechanism for operating the work-holder, a pawl-operating device, and an eccentric connection between the pawl and said device.

13. The combination of a rotatable work-holder comprising means for supporting the work a shaft, a saddle for supporting the work-holder, cone-bearings for the shaft in the saddle, a bed and means for clamping the saddle to the bed.

808,695. WINDOW-SCREEN. SIDNEY F. SMITH, Freeport, and STEPHEN S. SWEET, New York, N. Y. Filed Oct. 10, 1904. Serial No. 227,780.

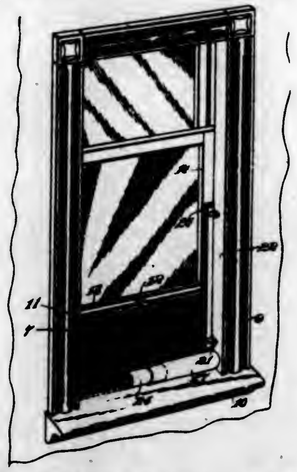

Claim.—The combination with a window embodying casing and sill, of a sash movable therein, fixture members each struck up from a single sheet-metal blank and one of these secured to each side of the casing by means of integral lugs and having a portion adjacent to the sill affording a bearing for a roller and a portion affording a guard at the end of the roller and a portion affording a guideway and protector for the screen-shade, a roller mounted in said bearing, a screen-shade upon such roller and traversing such guide and protector, and means for securing the end of such shade to the sash, and a guard surrounding the roller to protect the roll of the screen-shade thereon, such guard embodying telescopic body portions having a hook at its top and having a portion adapted to rest upon the sill, and hook portions upon the fixture members for engaging said hook upon the guard.

808,696. ADDING-MACHINE. WILLIAM F. SMITH, Jackson, Miss., assignor of one-half to Arthur Cecil Jones, Jackson, Miss. Filed Nov. 14, 1903. Serial No. 181,207.

Claim.—1. In an adding-machine, the combination with a carriage, a platen mounted thereon and type-bars with numerals thereon coacting with said platen, of arms pivotally mounted in said carriage, a plurality of totaling-wheels carried by said arms and adapted to be swung by said arms against said platen, and means for operating said type-bars and said totaling-wheels simultaneously, substantially as shown and described.

2. In an adding-machine, the combination with a carriage, a platen mounted thereon, and type-bars with numerals thereon coacting with said platen, of arms pivotally mounted in said carriage, a handle extending upward from one of said arms, a shaft carried by the free ends of said arms, a plurality of totaling-wheels mounted on said shaft and adapted to be swung by said arms against said platen, and means for operating said type-bars and said totaling-wheels simultaneously, substantially as shown and described.

3. In an adding-machine, the combination with a carriage, a platen mounted thereon, and type-bars with numerals thereon coacting with said platen, of arms pivotally mounted in said carriage, a handle extending upward from one of said arms, a shaft carried by the free ends of said arms, a plurality of totaling-wheels mounted on said shaft and adapted to be swung by said arms against said platen, and means for operating said type-bars and said totaling-wheels simultaneously, substantially as shown and described.

4. In an adding-machine, the combination with a carriage, a platen mounted thereon and type-bars with numerals thereon coacting with said platen, of arms pivotally mounted in said carriage, a plurality of totaling-wheels carried by said arms and adapted to be swung by said arms against said platen, number-keys operating said type-bars, and gears connecting said number-keys and said totaling-wheels, substantially as shown and described.

5. In an adding-machine, the combination with a carriage, a platen mounted thereon, and type-bars with numerals thereon coacting with said platen, of arms pivotally mounted in said carriage, a plurality of totaling-wheels carried by said arms and adapted to be swung by said arms against said platen, a master-gear engaging each of said totaling-wheels successively as said carriage moves, and number-keys operating said type-bars and said master-gear, substantially as shown and described.

6. In an adding-machine, the combination with a carriage, a platen mounted thereon, and type-bars with numerals thereon coacting with said platen, of arms pivotally mounted in said carriage, a plurality of totaling-wheels carried by said arms and adapted to be swung by said arms against said platen, a master-gear engaging each of said totaling-wheels successively as said carriage moves, number-keys operating said type-bars, and means operated by said keys for rotating said master-gear a predetermined amount and means for reversing the direction of rotation.

7. In an adding-machine, the combination with a carriage, a platen mounted thereon, and type-bars with numerals thereon coacting with said platen, of arms pivotally mounted in said carriage, a plurality of totaling-wheels carried by said arms and adapted to be swung by said arms against said platen, a master-gear engaging each of said totaling-wheels successively as said carriage moves, a shaft carrying said master-gear, a pinion on said shaft, a gear meshing with said pinion a shaft carrying said gear, a ratchet-wheel on said second shaft, oppositely-disposed racks, means for engaging either of said racks with, and for disengaging the other from said ratchet-wheel, number-keys operating said type-bars, and means operated by said number-keys for depressing said racks to operate said master-gear, substantially as described.

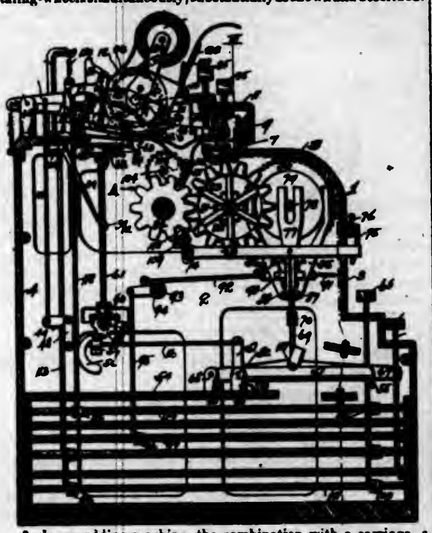

8. In an adding-machine, the combination with a carriage, a platen mounted on said carriage, arms pivoted to said carriage and a plurality of totaling-wheels carried by said arms, and a handle extending upward from one of said arms to swing same and bring said totaling-wheels against said platen.

9. In an adding-machine, the combination with a carriage, a platen mounted on said carriage, arms pivoted to said carriage, a plurality of totaling-wheels carried by said arms, and a handle extending upward from one of said arms to swing same and bring said totaling-wheels against said platen, of a master-gear mounted in a fixed frame and meshing directly with each of said totaling-wheels in succession as the carriage moves, substantially as described.

10. In an adding-machine, the combination with totaling-wheels carried in a movable frame, a master-wheel in mesh with said wheels, mounted on a shaft, a pinion fastened to said shaft, a driving-gear meshing with said pinion a shaft carrying said driving-gear, a pin-gear carried on said shaft, a rack engaging said gear and means of operating said rack.

11. In an adding-machine, the combination with totaling-wheels carried in a movable frame, a master-wheel in mesh with said wheels, mounted on a shaft in a fixed frame, a pinion fastened to said shaft, a driving-gear meshing with said pinion, a shaft carrying said driving-gear, a pin-gear carried on said shaft, a rack engaging said gear, a second rack and means of disengaging one rack and simultaneously engaging the other with the opposite face of said gear and means of depressing said racks a predetermined amount.

12. In an adding-machine, the combination with a set of totaling-wheels, a master-gear engaging said wheels successively, a shaft carrying said master-gear, a pinion mounted on said shaft, a driving-gear meshing with said pinion, a shaft carrying said driving-gear, a pin-wheel, a rack engaging said pin-wheel, a cross-arm pivoted at one end, a link depending from said rack and attached to said cross-arm near its center, a plurality of number-keys and levers operated thereby, arranged in numerical order and links connecting said levers with said cross-arm at proportionate distances from said pivoted end, whereby said rack is depressed proportionate amounts when said number-keys are depressed.

13. In an adding-machine, the combination with a plurality of totaling-wheels, of a master-gear engaging successively each of said totaling-wheels, means of moving said totaling-wheels to bring each successively into engagement with said master-wheel, a train of gearing actuating said master-gear, racks one of which is normally in engagement with said gearing and means of disengaging one rack and engaging the other to reverse the direction of motion.

14. In an adding-machine, the combination with totaling-wheels carried in a movable frame, a master-gear in mesh with said wheels and means of advancing said wheels to bring each successively into mesh with said master-wheel, of a ratchet-wheel, and gearing connecting said wheel with said master-wheel, oppositely-disposed racks and means of engaging either of said racks with said ratchet-wheel and of simultaneously disengaging the other of said racks, substantially as shown and described.

15. In an adding-machine, the combination with totaling-wheels carried in a movable frame, a master-gear in mesh with said wheels mounted in a fixed frame and means of advancing said totaling-wheels to bring each successively into mesh with said master-gear, gearing actuating said master-gear, racks, one of which normally engages said gearing and means of disengaging same and simultaneously engaging the other of said racks to reverse the direction of motion.

16. In an adding-machine, the combination with totaling-wheels carried in a movable frame, a master-gear in mesh with said wheels mounted on a shaft in a fixed frame, a pinion fastened to said shaft, a driving-gear meshing with said pinion, a shaft carrying said driving-gear, a pin-gear carried on said shaft, a forked link guided by said pin-gear shaft, a rack engaging said gear and carried by said link an oppositely-disposed rack carried by said link, a shift-key and a connection between said shift-key and said link.

17. In an adding-machine, the combination with totaling-wheels carried in a movable frame, a master-gear in mesh with said wheels mounted on a shaft in a fixed frame, a pinion fastened to said shaft, a driving-gear meshing with said pinion, a shaft carrying said driving-gear, a pin-gear carried on said shaft, a forked link guided by said pin-gear shaft, a rack engaging said gear and carried by said link an oppositely-disposed rack carried by said link, a tension-spring connecting said racks, a space-bar, a shift-key, and levers and links connecting said shift-key and said space-bar with said racks.

18. In an adding-machine, the combination with totaling-

wheels carried in a movable frame, a master-gear in mesh with said wheels mounted on a shaft in a fixed frame, a pinion fastened to said shaft, a driving-gear meshing with said pinion, a shaft carrying said driving-gear, a pin-gear carried on said shaft, a rack engaging said gear, a link connecting said rack with a cross-arm, a plurality of number-keys, a lever for each key and a link connecting each of said levers with said cross-arm.

19. In an adding-machine, the combination with a frame, number-keys mounted in said frame, key-rods extending downward therefrom, levers engaged by said rods, a U-shaped piece beneath said levers, a bell-crank lever on said U-piece, a second bell-crank lever a link connecting said bell-crank levers, a step-by-step mechanism, a link connecting said step-by-step mechanism to said bell-crank levers, a set of totaling-wheels and means of operating said wheels from said levers, of a set of type-bars mounted in said frame and a set of levers and rods connecting each of said bars with one of said key-rods.

20. In an adding-machine, the combination with a frame, number-keys mounted in said frame, key-rods extending downward therefrom, levers engaged by said rods, a U-shaped piece beneath said levers, a bell-crank lever on said U-piece, a second bell-crank lever, a link connecting said bell-crank levers, a ratchet-pawl on said link, a shaft mounted in said frame, a ratchet-wheel mounted on said shaft and engaged by said pawl, a pinion on said shaft, a crown-wheel in engagement therewith, a shaft extending upward therefrom, a ribbon-reel on said shaft, a step-by-step mechanism a link connecting said step-by-step mechanism and said bell-crank levers, a set of totaling-wheels, and means of operating said wheels from said levers, of a set of type-bars mounted in said frame and a set of levers and rods connecting each of said bars with one of said key-rods.

21. In an adding-machine, the combination with a frame, number-keys mounted in said frame, key-rods extending downward therefrom, levers engaged by said key-rods, a set of totaling-wheels, links and gearing connecting said wheels and said levers, bell-crank levers on opposite sides of said frame, a bar beneath said key-levers connecting said bell-crank levers, a second bell-crank lever, a link connecting said bell-crank levers, a pawl on said link, a ratchet-wheel engaged by said pawl, ribbon-spools and means operated by said ratchet of operating said spools, of a set of type-bars mounted in said frame and a set of levers and rods connecting each of said bars with one of said key-rods.

22. In an adding-machine, the combination with a frame, number-keys mounted in said frame, key-rods extending downward therefrom, levers engaged by said key-rods, a set of totaling-wheels, and means of operating said wheels from said levers, a carriage on said frame, a platen mounted on said carriage, bell-crank levers pivoted to said carriage, a cross-bar connecting the ends of said bell-crank levers and links extending from said bell-crank levers and embracing the ends of said platen, of a set of type-bars mounted in said frame, a set of levers and rods connecting each of said bars with one of said key-rods and means operated by said key-levers of depressing the end of said bell-crank levers to shift the platen.

23. In an adding-machine, the combination with a frame, number-keys mounted in said frame, key-rods extending downward therefrom, levers engaged by said key-rods, a cross-bar above said levers and pivoted in said frame, a link extending upward from each of said levers and engaging said bar, a set of totaling-wheels, a master-gear meshing with said wheels, gearing driving said master-wheel, oppositely-disposed racks, one normally engaging said gearing and a link connecting said racks and said cross-levers, of a set of type-bars mounted in said frame and a set of levers and rods connecting each of said bars with one of said key-rods.

24. In combination in a calculating-machine, a series of number-wheels, a carrier therefor, a series of order-keys arranged on the carrier, means controlled by the operation of the order-keys for shifting the carrier, a stop to be struck by the operated order-key to arrest the carrier with the appropriate number-wheel in proper position to be turned, digit-keys and connections therefrom to the number-wheels for turning the same.

808,697. TRUSS. MARCUS B. SEVIER, Halton, Kans. Filed Aug. 14, 1905. Serial No. 274,189.

Claim.—1. The combination in a truss, of a brace, the forward end of which is bent to form a pad-supporting bar in parallel relation with the front of the brace, and thence is bent upward to form waist-strap connection distant from the forward end of the brace.

2. The combination in a truss, of a brace member arranged to extend around one side and a portion of the rear of the body, the front of the brace being bent into parallel relation with itself to form a pair of pad-supporting members, and being thence bent upward and provided with a strap connection at a point above the pad-support, and distant from the forward end of the brace.

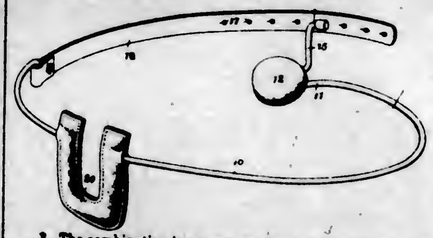

3. The combination in a truss, of a brace formed of spring-wire designed to encircle one side and a portion of the rear of the body, the rear of said brace being bent to form an open loop, the side members of which are disconnected or spaced in the plane of the brace proper and are free to spread and yield to the movements of the body, and a covering extending over said loop.

808,698. CANDLE. CHARLES A. SPIES, Menominee, Mich. Filed May 22, 1905. Serial No. 261,554.

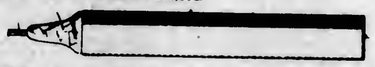

Claim.—1. A candle enveloped in a non-inflammable sheath destructible by the flame of the candle and extending from the base portion to a point higher than would be necessary to retain the melted candle-stock when the candle is entirely melted by the consumption of the stock.

2. A candle enveloped in a non-inflammable sheath destructible by the flame of the candle at a lower rate of speed than that at which the candle is consumed in burning, the sheath being constructed to envelop substantially the whole of the body portion of the candle.

3. A candle enveloped in a non-inflammable sheath, destructible by the flame of the candle at a lower rate of speed than that at which the candle is consumed when burning, the said sheath extending from the base of the tip to the butt of the candle.

4. A candle having a sheath of inorganic material, destructible by the flame of the candle, and extending from the base of the tip to the butt of the candle.

5. A candle enveloped in a non-inflammable vaporizable sheath, destructible by the flame of the candle, and extending from the base of the tip to the butt of the candle.

6. A candle enveloped in a sheath of metal having a low fusing-point and destructible by the flame of the candle, and extending from the base of the tip to the butt.

808,699. ADJUSTING MECHANISM FOR ROPE-DRIVES. RICHARD H. STEVENS, Mumball, Pa. Filed June 19, 1905. Serial No.

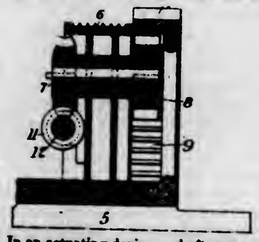

Claim.—1. In an actuating device, a shaft, a gear-wheel thereon, a drum loose on the shaft, and an adjustable locking means pivoted eccentric to said shaft securing the drum to the gear-wheel; substantially as described.

2. In a rope-actuating device, a shaft, a gear-wheel thereon, an internal gear on the shaft, a drum loose on the shaft, and a worm-gear device mounted on the drum and having a gear-wheel engaging with the internal gear on the shaft; substantially as described.

3. In rope-actuating mechanism, a shaft, a drum, and a gear-wheel mounted thereon, one of said parts being loose on the shaft while the other part is secured thereto, and an adjustable lock between the two elements pivoted eccentric to said shaft and arranged to shift one of said parts angularly relative to the other part; substantially as described.

4. In rope-driving mechanism, a shaft, a drum and internal gear-wheel mounted thereon, at least one of said parts being loose on the shaft, and a worm-gear mechanism mounted on the drum and having a gear-wheel engaging with the internal gear; substantially as described.

5. In rope-driving mechanism, a shaft, a gear-wheel and a drum mounted thereon, one of said parts being loosely mounted on the shaft, and the other secured thereto, an internal gear on one of said parts and a worm-gear on the other part having a pinion engaging the internal gear; substantially as described.

808,700. HEAD-REST FOR BEDS. JASPER D. SHOCK, Terre Haute, Ind. Filed Jan. 9, 1905. Serial No. 240,226.

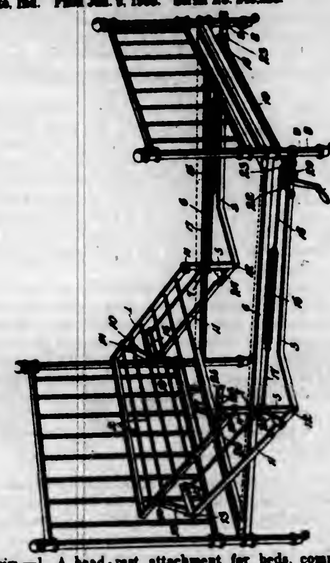

Claim.—1. A head-rest attachment for beds, comprising a hinged head-rest, a lever arranged in parallelism with the head-rest and connected with the same, and yieldable means connected with the lever for supporting the head-rest in an inclined position.

2. A head-rest attachment for beds, comprising a hinged head-rest, a lever spaced throughout the entire length from the head-rest and connected therewith and provided with an arm, and yieldable means connected with the arm for supporting the head-rest.

3. A head-rest attachment for beds, comprising a hinged head-rest, a lever arranged in spaced relation therewith and provided with an angularly-disposed arm extending upwardly from the lever, a link connecting the lever with the head-rest, and yieldable means connected with the arm of the lever for supporting the head-rest

4. A head-rest attachment for beds, comprising a hinged head-rest, a lever located beneath and arranged in spaced relation with the head-rest and provided at one end with an arm, a guide connected with the lever and located near the other end of the same, means for connecting the lever with the head-rest, and a yieldable device having a flexible connection passing through the guide and attached to the arm of the lever.

5. A head-rest attachment for beds, comprising a support, a hinged head-rest mounted on the support, a lever fulcrumed on the support and arranged in spaced relation with the head-rest and provided at its outer end with an arm, a link connecting the outer end of the lever with the head-rest, a guide extending upwardly from the inner portion of the lever, a flexible connection attached to the arm of the lever and passing through the guide, a spring connected with the said flexible connection, and a tension device.

6. A head-rest attachment for beds, comprising a support having an upwardly-extending arm, a head-rest hinged to the arm between the ends thereof, and a locking-bar pivoted to the head-rest and provided at intervals with means for engaging the arm.

7. A head-rest attachment for beds, comprising supports, consisting of longitudinal bars having upwardly-extending arms, means for securing the supports to a bed, a hinged head-rest mounted on the arms of the support, operating-levers arranged in spaced relation with the head-rest and located beneath the same, means for connecting the levers with the head-rest, springs, flexible connections extending from the springs to the levers and a tension device mounted on the support and connected with the springs.

8. A head-rest attachment for beds, comprising a head-rest hinged at one end, a lever arranged in spaced relation with the head-rest and pivoted at one end beneath the hinged end of the said head-rest, a link located at the other end of the lever and connecting the same with the head-rest, and means connected with the lever for supporting the head-rest.

808,701. STEAM-SEPARATOR AND AUTOMATIC SHUT-OFF. DANIEL H. STREBEIGH and JOHN W. OELSCHLAGER, Norristown, Pa. Filed July 6, 1905. Serial No. 268,416.

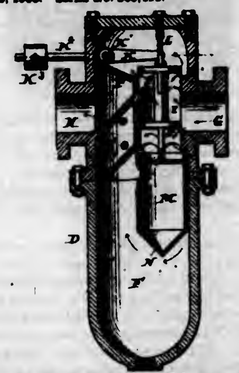

Claim.—1. In an automatic shut-off for controlling the supply of steam and water, the combination of a steam-passage, a normally open valve to control the said passage, and means operated by the mass of water passing through the inlet side of the valve for automatically closing the valve when said water is in excess.

2. In an automatic shut-off for controlling the supply of steam and water, the combination of a steam-passage, a normally open valve to control said passage, and means operated by the mass of water passing through the inlet side of the valve for automatically closing the valve when said water is in excess consisting of a bucket connected to and arranged below the valve to receive the water passing through the valve.

3. In an automatic shut-off for controlling the supply of steam and water, the combination of a steam-passage, a normally open valve to control said passage, means operated by the mass of water passing through the inlet side of the valve for automatically closing the valve when said water is in excess consisting of a bucket connected to and arranged below the valve to receive the water passing through the valve and having a drainage-aperture for permitting the water collected in the bucket to gradually escape therefrom, and means to open the valve when the water is sufficiently drained from the bucket.

4. In an automatic shut-off for controlling the supply of steam, the combination of a steam-passage, a valve to control said steam-passage, a counterweight for normally holding the valve in an open position, and means operating by an accumulation of water on the inlet side of the valve for automatically closing the valve.

5. In an automatic shut-off for controlling the supply of steam, the combination of a steam-passage containing baffle-plates to separate the water from the steam, a valve to control said steam-passage, a counterweight for normally holding the valve in an open position, and means operating by an accumulation of water on the inlet side of the valve for automatically closing the valve.

6. In an automatic shut-off for controlling the supply of steam, the combination of a steam-passage, a valve to control said steam-passage, a counterweight for normally holding the valve in an open position, means operating by an accumulation of water on the inlet side of the valve for automatically closing the valve, and means for draining and removing the excessive water accumulations from the steam-passage whereby they are gradually removed.

7. The combination with the engine and steam-pipes B and E, of the automatic water-shut-off device D of the character described, the drain-pipe R from the bottom of the said automatic shut-off device, and a steam-trap S connected to said drain-pipe.

8. In an automatic shut-off for controlling the supply of steam and water, the combination of a steam-passage, a normally open balanced valve to control the said passage and means operated by the mass of water passing through the inlet side of the valve for automatically closing the valve when said water is in excess.

808,702. ATTACHMENT FOR WASHTUBS. MILTON W. STORY, Indianapolis, Ind., assignor of one-half to Emma De Witt, Indianapolis, Ind. Filed Feb. 25, 1905. Serial No. 247,236.

Claim.—1. A device of the kind described comprising parallel curved wire members, means for attaching said members to a tub, and adjustable blocks movable along said members.

2. A device of the kind described comprising a curved wire member having hook members formed at its ends and adapted to engage the upper edge of a tub, and adjustable blocks carried by said wire member.

3. A device of the kind described comprising parallel wire members, vertical hook members carried by one of the wire members and adapted to engage the upper edge of a tub, and blocks carried by the wire members, said blocks being cut away on their inner faces adjacent their upper ends, as and for the purpose set forth.

4. A device of the kind described comprising a wire member curved and having hooks formed at each end, a second wire member having its end portions bent upwardly and in engagement with the first mentioned wire member, and blocks adjustably carried by said wire members, said blocks being cut away on their inner faces, as and for the purpose set forth.

808,703. LOAD-BRAKE APPARATUS. WALTER V. TURNER, Wilkinsburg, Pa., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a Corporation of Pennsylvania. Filed Apr. 1, 1904. Serial No. 201,167.

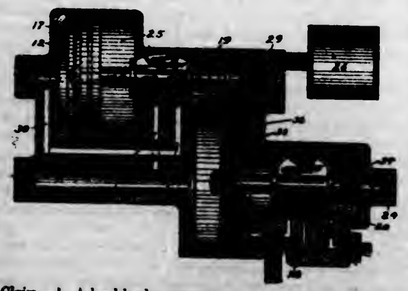

Claim.—1. A load brake apparatus comprising in combination with a train pipe, auxiliary reservoir, cylinder, and triple valve, a valve mechanism having a casing provided with connections leading from the triple valve to the cylinder and a connection to the train pi;e, a valve controlling said connections from the triple to the cylinder to cut off the flow of pressure on a light car, a movable abutment for actuating said controlling or throttling valve, said abutment being actuated by differential pressures on its opposite sides the one side being exposed to the pressure in the brake cylinder, substantially as described.

2. A load brake apparatus comprising in combination with a train pipe, auxiliary reservoir, cylinder, and triple valve, a valve mechanism having a casing provided with connections leading from the triple valve to the cylinder and a connection to the train pipe, a valve controlling said connections from the triple to the cylinder to cut off the flow of pressure on a light car, a movable abutment for actuating said controlling or throttling valve, said abutment being actuated by differential pressures on its opposite sides the one side being exposed to the pressure in the brake cylinder, substantially as described.

3. A load brake apparatus comprising in combination with a train pipe, auxiliary reservoir, cylinder, and triple valve, a valve mechanism having a casing provided with connections leading from the triple valve to the cylinder and a connection to the train pipe, a valve controlling said connections from the triple to the cylinder to cut off the flow of pressure on a light car, a movable abutment for actuating said controlling or throttling valve, said abutment being actuated by differential pressures on its opposite sides the one side being exposed to the pressure in the brake cylinder, and means for reducing the excess of pressure in the auxiliary reservoir when the load brake is in operation for light car service, whereby to secure prompt release of the brakes, substantially as described.

4. A load brake mechanism for automatic air brakes comprising in combination, means for throttling the flow of air from the triple to the brake cylinder, and mechanism whereby to reduce the excess of pressure remaining in the auxiliary reservoir when the flow from the triple to the cylinder is thus throttled, so as to secure prompt release of the brakes, substahtially as described.

5. A load brake apparatus comprising in combination with a train pipe, auxiliary reservoir, cylinder, and triple valve, a valve mechanism having a casing provided with connections leading from the triple valve to the cylinder and a connection to the train pipe, a valve controlling said connections from the triple to the cylinder to cut off the flow of pressure on a light car, a movable abutment for actuating said controlling or throttling valve, said abutment being actuated by differential pressures on its opposite sides the one side being exposed to the pressure in the brake cylinder plus that of a spring, substantially as described.

6. A load brake apparatus comprising in combination with a train pipe auxiliary reservoir, cylinder, and triple valve, the valve mechanism having a casing provided with connections leading from the triple valve to the cylinder and a connection to the train-pipe, a valve controlling said connection from the triple to the cylinder to cut off the flow of pressure on the light car, a movable abutment for actuating said throttling valve, said abutment being subject to differential fluid pressures on its opposite sides, the pressure on one side being that of the brake cylinder, substantially as described.

808,704. FENCE ANCHOR AND DRIVER. JAMES M. VAN METER, Cambridge City, Ind., assignor of one-half to Frank W. Marson, Cambridge City, Ind. Filed Sept. 26, 1904. Serial No. 225,897.

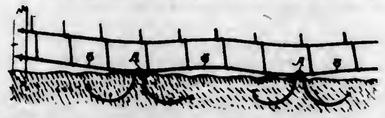

Claim.—A fence-anchor driver comprising a hollow open-ended sheath, the interior walls of which are straight and uncorrugated, one end of the sheath being slotted to receive a fence-wire, the sheath further provided intermediate its ends with registering apertures in the opposite walls thereof a solid blade receivable in and of a contour corresponding to the interior area of the sheath, an enlarged tamping-head on one end of the blade for limiting its inward movement, the blade being also provided intermediate its ends with an aperture therethrough which aperture, when the blade is wholly received in the sheath is brought into alinement with the apertures in the sheath and which aperture is of the same size as the apertures in the sheath, and a resilient split pin of a size equal to the diameter of the apertures, the pin receivable in and frictionally engaging the walls of the apertures to effectually prevent any movement of the blade relative to the sheath.

808,705. RAILWAY-RAIL JOINT. EDWARD B. VERMEUIL, Batson, Tex. Filed May 17, 1905. Serial No. 260,891.

Claim.—1. Railway-rails divided longitudinally at the ends and swaged laterally in the webs and with the terminals of the divided portion reversely inclined, spaced bolt-apertures in the swaged portion with one of the apertures surrounded by an annular stud and the other aperture provided with an elongated socket for receiving the annular stud of the other rail when the divided portions are overlapped, and clamp-bolts operating through said apertures.

2. Railway-rails divided longitudinally at the ends and swaged laterally in the webs and with the terminals of the divided portion reversely inclined, spaced bolt-apertures in the swaged portion with one of the apertures surrounded by an annular stud and the other aperture provided with an elongated socket for receiving the annular stud of the other rail when the divided portions are overlapped, and clamp-bolts operating through said apertures, and formed with square sections next their heads for engaging said square sockets, and with nuts on the threaded ends for bearing against the opposite face of the rail.

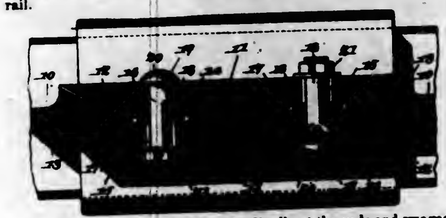

3. Railway-rails divided longitudinally at the ends and swaged laterally in the webs and with the terminals of the divided portion reversely inclined, spaced bolt-apertures in the swaged portion with one of the apertures surrounded by an annular stud and the other aperture provided with an elongated socket for receiving the annular stud of the other rail when the divided portions are overlapped, clamp-bolts operating through said apertures, clamp-plates bearing over the tie-flange portions of the overlapping rail-sections and extending beneath the same and provided with depending flanges, and clamp-bolts operating through said flanges.

808,706. DUMB-BELL AND INDIAN CLUB. SAINT C. VILLEBROUIN, Jeremie, Haiti. Filed Aug. 4, 1905. Serial No. 272,730.

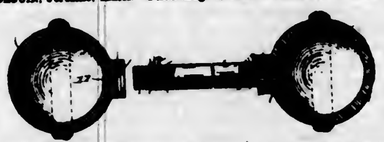

Claim.—1. An implement of the class described comprising two hollow spherical bodies each having a threaded aperture leading through one side, and with recesses in the apertures near the outer ends, a connecting-bar having threaded ends for detachably engaging said threaded apertures, and a spring-controlled catch member carried by said bar and yieldably engaging said recesses, to form a locking means between the bar and spherical members.

2. An implement of the class described comprising two hollow spherical bodies each having a threaded aperture leading through one side, and with recesses in the apertures near the outer ends, a connecting-bar having threaded ends for detachably engaging said threaded apertures, and with longitudinal cavities adjacent to the threads on the bar, pawls movably disposed in said cavities for engagement with said recesses when the bar is connected to the spherical bodies, and springs operating to maintain said pawls yieldably distended.

3. An implement of the class described comprising a hollow spherical member having a threaded aperture leading through one side and with a recess within the aperture near the outer end, a bar threaded to engage said aperture, a pawl spring supported and connected to said bar for engagement with said recess, and a filler member between said bar and spherical body and merging at the ends respectively into said bar and spherical body.

808,707. TEMPERATURE-REGULATING MEANS. WILLARD WADSWORTH, Plainfield, N. J., assignor to William B. Wadsworth, Plainfield, N. J. Filed Aug. 11, 1905. Serial No. 273,765.

Claim.—1. In temperature-regulating means, a socket member having means for securing it to a tank, and means for removably supporting a regulator therein, said socket, closed to admission of liquid from within the tank but provided with means admitting liquid thereto from an outside source.

2. In temperature-regulating means, a cut-off socket arranged to be secured to a tank, and having a portion adapted to be received within the tank, said socket provided with means for removably supporting a regulator, and means for supplying to the socket liquid other than that contained within the tank.

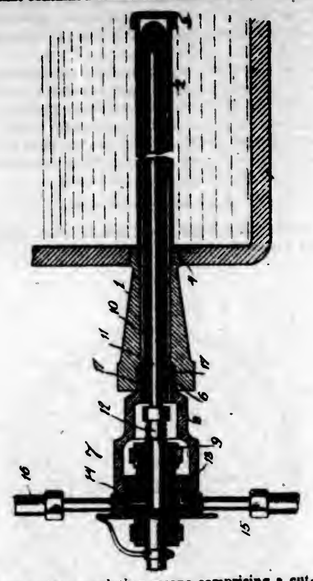

3. Temperature-regulating means comprising a cut-off socket arranged to be secured to a tank and closed to admission of liquid from within said tank, said socket having means for removably supporting a regulator, and a regulator supported thereby, provided with a thermostatic device received within said socket, said temperature-regulating means provided with means for supplying liquid to the socket, other than that contained within the tank.

4. The combination with a cut-off socket arranged to be secured to a tank, and having means for removably supporting a regulator, of a regulator supported thereby, provided with a thermostatic device received within said socket, and means admitting liquid to said regulator for control thereby, said regulator having a passage for supplying liquid to within said socket.

5. In temperature-regulating means, the combination with a cut-off socket arranged to be secured to a tank, and having a portion adapted to be received within the tank but closed to admission of liquid therefrom, of a thermostatic device removably supported within said socket, a regulating-valve controlled by said thermostatic device, means for supplying liquid to be controlled by said valve, and a branch connection for supplying liquid to within said socket, around said thermostatic device.

6. In temperature-regulating means, the combination with a cut-off socket comprising a socket member 1 arranged to be secured to a tank, and a closed tube 2 adapted to extend within the tank, said socket having means for removably supporting a regulator, of a regulator so supported, said regulator having a passage 17 communicating with the interior of the socket.

808,708. CLAMP. RAMSEY R. WHEATS, Spokane, Wash. Filed Sept. 20, 1905. Serial No. 279,207.

Claim.—1. An angular clamp of the class described, composed of a single piece of suitable material having longitudinal grooves formed therein, one of said grooves extending along the bottom and forming a continuation of the other groove.

2. An angular clamp of the class described, composed of a sin-

gle piece of metal having longitudinal grooves formed therein, one of said grooves being shallow and wide and the other groove being relatively narrow and rounded in cross-section, said second groove extending from the bottom of the first groove and forming a continuation thereof.

3. An angular clamp of the class described, composed of a single piece of metal having side flanges with holes therein, and between said flanges, provided with two longitudinal grooves, one of said grooves being wide and shallow and adapted to slidably receive and house a flat strap, and the other groove extending along the bottom of the first-named groove and adapted to slidably receive and house a rope or cord, substantially as described.

808,709. **TURBINE-ENGINE.** EDGAR J. WOOD, New York, N. Y. Filed Jan. 26, 1905. Serial No. 242,886.

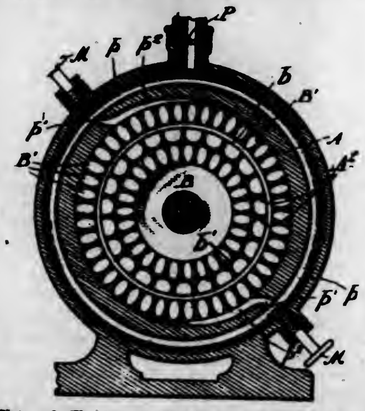

Claim.—1. The steam-turbine described having its buckets hollow-faced on each side and two independent belts, *p* and *q*, arranged side by side in the periphery with connections for keeping them filled with steam, adapted to serve substantially as herein specified.

2. The steam-turbine described having two or more annular series of buckets hollow-faced on each side in combination with fixed buckets hollow on each face arranged annularly between with a clear space for the same to traverse around in each of the spaces thus provided and with a casing having provisions for discharging jets of steam to act on either face.

3. The steam-turbine described having hollow-faced buckets adapted to receive the current in either direction in combination with two valves and connected passages or belts extending separately quite around the wheel arranged to supply steam at full pressure and having contracted discharge from each arranged for driving in either direction at will all substantially as herein specified.

4. In a steam-turbine having moving buckets delivering steam into fixed buckets and fixed buckets delivering steam into moving buckets the deep annular spaces *b* adapted to allow a continuous rearward current of steam between the delivery edges of the buckets B' and the receiving edges of the fixed buckets A^2 two continuous channels or belts *p* and *q*, arranged independently around, the perforations *p'*, and passages p^3, leading from each in opposite directions, and valves Q arranged to control the admission of steam into the belts, and valves M arranged to control the flow of steam from each belt through such perforations and connected passages beyond adapted to serve substantially as herein specified.

5. In a steam-turbine having moving buckets delivering steam into fixed buckets delivering steam into moving buckets, the deep annular spaces *b* adapted to allow a continuous rearward current of steam between the delivery edges of the buckets B' and the receiving edges of the fixed buckets A^2 and also the deep annular spaces *b'* adapted to allow a continuous forward current of steam between the delivery edges of the fixed buckets and the receiving edges of the moving buckets all substantially as herein specified.

808,710. **FALL-ROPE CARRIER.** EDWARD K. YOUNG, Middle Port, Ohio. Filed May 17, 1905. Serial No. 260,782.

Claim.—1. In a device for gathering and distributing fall-rope carriers, a carriage provided with a shoe adapted to receive the carriers, means associated with the shoe for moving the carriers backward or forward thereon, and means for intermittently imparting motion to the moving means.

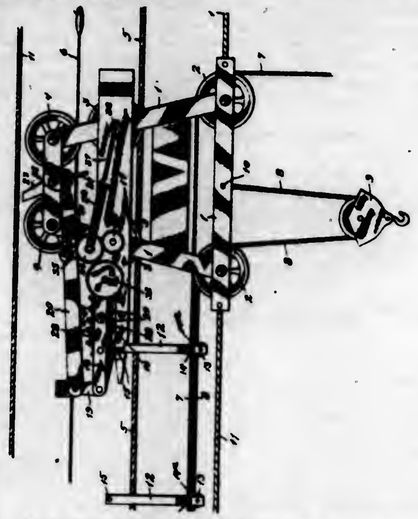

2. In a device for gathering and distributing fall-rope carriers, a carriage provided with a shoe adapted to receive the carriers, a movable device for retaining the carriers on the shoe, means for intermittently operating the movable device to allow the carriers to be removed from the shoe, and means for moving the carriers onto and off of the shoe.

3. In a device for gathering and distributing fall-rope carriers, a carriage provided with a shoe adapted to receive the carriers, a movable device for retaining the carriers on the shoe, means for intermittently operating the movable device to allow the carriers to be removed from the shoe, means for moving the carriers onto and off of the shoe, and means for intermittently imparting motion to the carrier-moving means.

4. In a device for gathering and distributing fall-rope carriers, a carriage provided with a shoe adapted to receive the carriers, a latch supported over the shoe for retaining the carriers thereon, and tripping device connected to the latch for intermittently moving the same out of the path of the carriers.

5. In a device for gathering and distributing fall-rope carriers, a carriage provided with a shoe adapted to receive the carriers, and an endless device associated with the shoe for moving the carriers therealong.

6. In a device for gathering and distributing fall-rope carriers, a carriage provided with a shoe adapted to receive the carriers, an endless device associated with the shoe for moving the carriers therealong, and means for intermittently imparting motion to the endless device.

7. In a device for gathering and distributing fall-rope carriers, a carriage provided with a shoe adapted to receive the carriers, means for moving the carriers along the shoe, means for imparting motion to the said moving means normally out of engagement therewith, and means for throwing the parts into engagement to transmit motion to the moving means.

8. In a device for gathering and distributing fall-rope carriers, a carriage provided with a shoe adapted to receive the carriers, a latch device for retaining the carriers on the shoe, means for moving the carriers along the shoe, and means for simultaneously operating the latch device and setting the moving means to operate.

9. In a device for gathering and distributing fall-rope carriers, a carriage provided with a shoe adapted to receive the carriers, means associated with the shoe for moving the carriers therealong, and means for locking said moving means against operation.

808,711. **COMBINED AIR-BRAKE-SETTING DEVICE AND ALARM.** ROBERT B. ADDISON and FRANCIS M. STAMBAUGH, St. Louis, Mo.; said Stambaugh assignor to said Addison. Filed Apr. 14, 1905. Serial No. 255,694.

Claim.—1. In a device of the class described, a valve-casing having inlet and exhaust ports; a valve normally closing the inlet-port; a second valve operating through the first-mentioned valve and adapted to seat on either end of said first-mentioned valve; and an operating-handle for said valves; substantially as specified.

2. In a device of the class described, a valve-casing; a whistle attached thereto, there being inlet and exhaust ports in the valve-casing, and there being ports into the whistle-casing, a valve operating in the valve-casing and normally closing the inlet-port; a second valve operating through the first-mentioned valve for controlling the flow of air to the ports in the whistle; and a single operating-handle for both valves; substantially as specified.

3. In a device of the class described; a valve-casing provided with inlet and exhaust ports; a whistle attached to said valve-casing; a valve located in said valve-casing and normally closing the passage between the inlet and exhaust ports; a second valve operated through the first-mentioned valve and which second valve is adapted to seat at each end of the first-mentioned valve, there being an aperture formed in the upper end of said second valve; and a valve-operating finger passing through said aperture; substantially as specified.

4. In a device of the class described, the combination with the air-brake mechanism of a train, of a tubular connection from one end of the air-brake pipes; a valve-casing connected to said tubular connection in which valve-casing is formed inlet and exhaust ports; an alarm connected to said valve-casing; a suitable connection from said valve-casing to the alarm; a valve closing the passage from the inlet-port to the exhaust-port; a second valve operating through the first-mentioned valve and adapted to seat at each end thereof, and a handle for actuating both valves; substantially as specified.

808,712. **MACHINE FOR PUNCHING METAL.** GEORGE C. ANDREWS, Minneapolis, Minn. Filed Mar. 22, 1904. Serial No. 199,243.

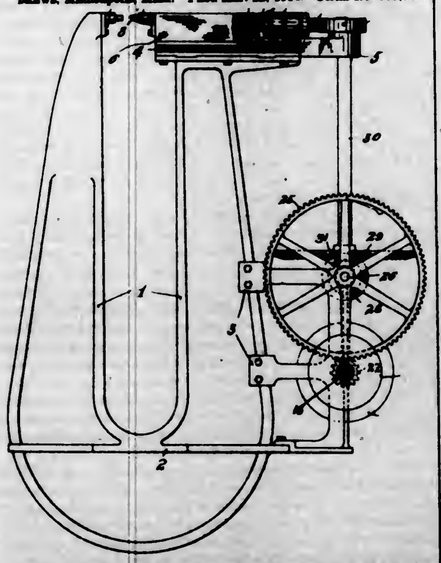

Claim.—1. In a machine of the character described, the combination with a pair of coöperating tools for action on the work under pressure, of supports for said tools, a perforated anvil-block in one of said supports back of the tool held thereby, and a puncturable safety-plate seated in said latter-noted support between said anvil-block and the adjacent end of the tool, whereby said safety-plate will be punctured by the said tool and coöperating anvil-block under excessive pressure.

2. In a machine of the character described, the combination with a pair of tools for action on the work under pressure, of supports for said tools, one thereof being movable with respect to the other, a plate-receiving pocket in one of said supports, a puncturable safety-plate fitting in said pocket, back of the stem of one of the tools, an annular anvil seated in the said support, back of said pocket, and an open second pocket in the said support connected with the former pocket by a passage forming an extension of the passage through said anvil, substantially as described.

808,713. **BALL.** ROLLO APPLEYARD, Silvertown, England. Filed June 20, 1904. Serial No. 213,280.

Claim.—1. A new article of manufacture consisting of a ball, the wound portion of which is formed of a winding of elastic cord composed of three or more longitudinal threads or strands cross-connected, all parts of the cord being composed entirely of caoutchouc, substantially as set forth.

2. A new article of manufacture consisting of a ball, the wound portion of which is formed of a winding of elastic cord of flattened cross-section composed of three or more longitudinal threads or strands cross-connected, all parts of the cord being composed entirely of caoutchouc, substantially as set forth.

3. A new article of manufacture consisting of a ball, the wound portion of which is formed of a winding of elastic cord composed of three or more threads or strands plaited together, the whole being formed of caoutchouc, substantially as set forth.

808,714. **TYPE-WRITING MACHINE.** HORACE L. ARNOLD, Brooklyn, N. Y., assignor to Union Typewriter Company, Jersey City, N. J., a Corporation of New Jersey. Filed Oct. 3, 1897. Serial No. 654,808.

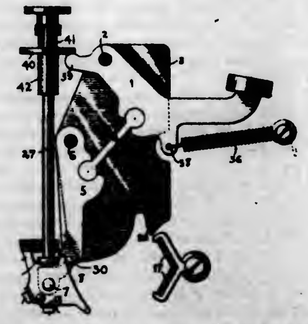

Claim.—1. In a type-writing machine, the combination of a pivoted type-carrier carrying a plurality of types, a stationary guiding-surface coacting with a sliding surface on said carrier for positively controlling the position of the carrier while moving radially from the non-printing toward the printing position, and means for positively controlling the type-carrier to bring any desired type to the printing position.

2. In a type-writing machine, the combination of a key-lever, a carrying-lever connected thereto and having at its free end a pivoted type-carrier provided with a sliding surface, and a stationary guiding-surface to coact therewith to control the position of the type-carrier in its movements to and from the printing position, said stationary guiding-surface being arranged between said type-carrier and the fulcrum of said carrying-lever.

3. In a type-writing machine, the combination of a pivoted lever connected to an actuating-key, a type-carrier pivoted upon said lever and provided with a curved sliding surface, and a stationary curved guiding-surface to match said sliding surface on the type-carrier, the curve of said stationary guiding-surface being substantially concentric to the pivot of said lever.

4. In a type-writing machine, the combination of a pivoted type head or carrier having two characters thereon, a movable device adapted to directly engage with said type head or carrier to cause a partial revolution of the same at the will of the operator, so as to bring the second character thereon to the printing position, and independent fixed means on the framework of the machine for directly engaging said type head or carrier on its return stroke and restoring it to normal position.

5. In a type-writing machine, the combination of a pivoted type-carrier having two types thereon, a movable abutment adapted to be projected into the path of travel of said carrier and cause it to make a partial revolution so as to bring the second type thereon to the printing position, and a cam for restoring said carrier to normal position on its return stroke.

6. In a type-writing machine, the combination of a pivoted type head or carrier having two types thereon, a movable abutment in line with the printing-point for turning said carrier to bring the second character thereon to the printing position, and independent means adapted to engage said carrier on its return stroke and restore it to normal position.

7. In a type-writing machine, the combination of a pivoted type-carrier having two types, the first of which is by means on the framework of the machine normally guided always to the printing-point, and means for turning said carrier while in transit to the printing-point so as to bring the second character thereon into the printing position when desired.

8. In a type-writing machine, the combination of a pivoted type head or carrier having two types thereon and having also a rigid projection, an abutment adapted to be moved into the path of said projection to cause a partial revolution of the said type head or carrier to bring the second type thereon to the printing position, and a fixed projection adapted to engage another rigid projection on said type-head carrier and restore the latter to normal position on its return stroke.

9. In a type-writing machine, the combination of a pivoted type-carrier having two types thereon and also a projection, and a spring-pressed rod carrying an abutment adapted to engage said projection, to turn the carrier to bring the upper-case type to printing position, and said abutment being also constructed to guide and support said carrier when the lower-case type is approaching and when it is at the printing position.

10. In a type-writing machine, the combination of a pivoted type-carrier having two types thereon and also a projection and a finger, a movable abutment to engage said projection, and a fixed abutment for said finger to strike against so as to limit the turning action of said type-carrier.

11. In a type-writing machine, the combination of a pivoted type-carrier having two types, a projection, and a finger, a seat between said last-mentioned devices, a fixed abutment and a spring-pressed rod provided with a disk which is shaped on its under side to fit said seat.

12. In a type-writing machine, the combination of a pivoted type-carrier having two types thereon and also a projection and a finger, means coacting with said projection for turning said carrier, and a stationary abutment coacting with said finger to accurately define the position of the second type while printing therewith.

13. In a type-writing machine, the combination of a lever connected to a finger-key, a type-carrier pivoted at the free end of said lever and having two types thereon and formed with a guiding-surface and a projection, a stationary guiding-surface, and a movable abutment for engaging said projection.

14. In a type-writing machine, the combination of a lever connected to the finger-key, a type-carrier pivoted to said lever and having two types and also a curved guiding-surface, a projection, and a finger, a stationary guiding-surface, a movable abutment to cooperate with said projection, and a fixed abutment to cooperate with said finger.

15. In a type-writing machine, the combination of a lever connected to the finger-key, a type-carrier pivoted thereon and having two types and also a curved guiding-surface, a stationary guiding-surface, and a movable abutment having a guiding-surface to cooperate with that on the said carrier.

16. In a type-writing machine, the combination of a pivoted type-carrier carrying a plurality of types having their faces the same distance from the pivot of said carrier, and stationary means for guiding said type-carrier as it swings toward the center and independent shiftable means for turning said carrier whereby either of the types carried thereby may be brought into operative position at the will of the operator.

17. In a type-writing machine, the combination of a pivoted type-carrier carrying a plurality of types having their faces the same distance from the pivot of the carrier and provided with suitable projections, and suitable coacting stationary and movable engaging surfaces whereby either of the types on said carrier may be brought into the printing position at the will of the operator.

18. In a type-writing machine, the combination of a lever and a type head or carrier pivoted thereto and carrying a plurality of types, the face of each of which types is arranged at right angles to a radius drawn through the center of the type and through the axis on which said carrier is pivoted, and a stationary device constructed to directly engage and intercept said carrier and cause the latter to turn upon its pivot and to positively guide the head in its turning movement.

19. In a type-writing machine, a pivoted type head or carrier provided with two type characters located in radial seats formed in said carrier, and a stationary device constructed to directly engage and intercept said carrier and cause the latter to turn upon its pivot and to positively guide the carrier in its turning movement.

20. In a type-writing machine, a type head or carrier bearing two type characters located on plane faces tangent to the same inscribed circle which has its axis coincident with the pivot on which the said carrier turns, and a stationary device constructed to directly engage and intercept said carrier and cause the latter to turn upon its pivot and to positively guide the carrier in its turning movement.

21. In a type-writing machine, a type-carrier comprising two cheek-plates forming seats therebetween for the shanks of two radially-arranged types, and a single clamping-screw engaging said cheek-plates for securing said types in their seats.

22. In a type-writing machine, the combination of an inking-pad, a pivoted type-carrier provided with an extension, and a single projection for engaging said extension and causing the carrier to turn and present its types to the said inking-pad.

23. In a type-writing machine, the combination of an inking-pad, a type arm or lever, a type-carrier pivoted to said type-arm to swing in the general direction of movement of the type-lever and having two types, and means for controlling the position of the two types at their idle or non-printing position, said controlling means including an intercepting device arranged in the path of said type-carrier.

24. In a type-writing machine, the combination of an inking-pad, a type arm or lever, a type-carrier pivoted to said type-arm to swing in the general direction of movement of the type-lever and having two types, and means for turning said carrier as it approaches said inking-pad and causing the faces of both said types to be brought thereagainst, said turning means including an intercepting device arranged in the path of said type-carrier.

25. In a type-writing machine, the combination of an inking-pad, a type-carrier provided with two types and with an extension, and stationary means for positively turning said carrier in the movement thereof toward and from the printing position and so as to bring said types against the inking-pad.

26. In a type-writing machine, the combination of an inking-pad, a type-carrier provided with two types, an extension and a guiding-surface, a fixed guiding-surface, and a fixed cam or abutment.

27. In a type-writing machine, the combination of a pivoted type-carrier having two radially-arranged types, an inking-pad having two angularly-arranged surfaces, and means for turning said type-carrier to present both of said types to said inking-surfaces said type-carrier being pivoted upon and wholly operated by a single swinging arm and having a pivotal movement on said arm in the general direction of the plane of movement of the arm.

28. In a type-writing machine, the combination of a pivoted type-carrier having two radially-arranged types and an extension, an inking-pad having two angularly-arranged inking-surfaces, and a fixed cam or abutment for turning said carrier.

29. In a type-writing machine, the combination of a pivoted type-carrier having two types and adapted to travel from an inking-pad to the printing-point, means for turning said carrier as it approaches said inking-pad so as to bring both type-faces thereagainst, means for guiding said type-carrier to the printing-point, and means adapted to be projected into the path of travel of the said type-carrier to turn the same, whereby either of the inked types may be presented to the paper at the will of the operator.

30. In a type-writing machine, the combination of a pivoted type-carrier having two radially-arranged types, a guiding-surface, an extension, a projection, and a finger, an inking-pad, a fixed guiding-surface, a fixed cam, a movable abutment, and a fixed abutment.

31. In a type-writing machine, the combination of a lever connected to the finger-key, a type-carrier pivoted on said lever and provided with two radially-arranged types, a guiding-surface, an extension, a projection and a finger, an inking-pad, a fixed cam, stationary guiding-surfaces, a movable abutment, and a fixed abutment.

32. In a type-writing machine, the combination of a type-carrier-supporting lever, a finger-key operatively connected thereto, a type-carrier pivoted on the free end of said lever and having radially-arranged upper and lower case types, an inking-pad constructed to simultaneously ink both of said types, means for guiding said carrier to the printing-point for printing the lower-case character, and means controlled by a separate finger-key for turning said carrier while in transit so as to bring the upper-case character into printing position.

33. In a type-writing machine, the combination of a key-lever, a retaining-spring, a type-carrier-supporting lever, a connection between said levers, a type-carrier pivoted at the free end of said supporting-lever and having two radially-arranged types, an inking-pad, means for guiding said type-carrier in its movements from said pad to the printing position and back, means for turning said carrier as it arrives at the inking position, and means controlled by a separate key for turning said carrier as it arrives at the printing position.

34. In a type-writing machine, the combination of a vibratory lever, a type-carrier pivoted thereon, an inking-pad, an intercepting device for causing said type-carrier to turn to present the type to the pad, and a separate intercepting device for causing said carrier to turn to bring the type to printing position.

35. In a type-writing machine, the combination of a vibratory lever, a type-carrier pivoted thereon, and having radially-arranged upper and lower case types, an inking-pad constructed to simultaneously ink both of said types, an intercepting device for causing said type-carrier to turn to present the types to the pad, and a separate device for causing said carrier to turn to bring the upper-case character into printing position.

36. In a type-writing machine, the combination of a vibratory lever, a type-carrier pivoted thereon and having radially-arranged upper and lower case types, an inking-pad constructed to ink both of said types simultaneously, an intercepting device for causing said type-carrier to turn to present the types to the pad, a separate intercepting device for causing the carrier to turn to bring the lower-case type into printing position, and a separate device for causing said type-carrier to turn to bring the upper-case type into printing position.

37. In a type-writing machine, the combination with a vibratory lever, of a finger-key operatively connected thereto, a type-carrier pivoted upon said vibratory lever and having radially-arranged upper and lower case types, an inking-pad constructed to ink both of said types simultaneously, an intercepting device for causing said type-carrier to turn to present the types to the pad, a separate intercepting device for causing the carrier to turn to bring the lower-case type into printing position, and a device operated by a separate finger-key for causing said type-carrier to turn to bring the upper-case type into printing position.

38. In a type-writing machine, the combination of a vibratory lever, a type-carrier pivoted thereon and having a lower-case type which swings with said carrier in the general direction of the plane of movement of said lever, and fixed means for causing said type-carrier to positively turn on its pivot during a vibration of said lever toward the printing position to guide it in such movement, and so as to cause said lower-case type to turn to the printing position.

39. In a type-writing machine, the combination of a vibratory lever, a type-carrier pivoted thereon and having a lower-case type, fixed means for causing said type-carrier to turn on its pivot during a vibration of said lever toward the printing position and so as to cause said lower-case type to turn to the printing position and additional means for causing said type-carrier to be turned on its pivot during the return stroke of said lever and so as to bring said lower-case type back to normal position.

40. In a type-writing machine, the combination of a vibratory lever, a type-carrier pivoted thereon and having a lower-case and an upper-case type, fixed means coacting to turn said type-carrier and bring the lower-case type to printing position, and independent movable means adapted to coact with said carrier to cause the latter to be turned and the upper-case type to be brought to printing position, at the will of the operator.

41. In a type-writing machine, the combination of a vibratory lever, a type-carrier pivoted thereon and having a lower-case and an upper-case type, fixed means coacting to turn said type-carrier and bring the lower-case type to printing position, independent movable means adapted to coact with said carrier to cause the latter to be turned and the upper-case type to be brought to printing position at the will of the operator, and independent means coacting with said carrier on its return stroke for restoring it to normal position.

42. In a type-writing machine, the combination of a vibratory lever, a type-carrier pivoted thereon and having radially-arranged upper and lower case types, an intercepting device for causing the carrier to turn to bring the lower-case type into printing position, and a separate intercepting device for causing said carrier to turn to bring the upper-case type into printing position.

43. In a type-writing machine the combination of a vibratory lever, a type-carrier pivoted thereon and having radially-arranged upper and lower case types, an intercepting device for causing the carrier to turn to bring the lower-case type into printing position, a separate device for causing said carrier to turn to bring the upper-case type into printing position, and an additional intercepting device for causing said type-carrier to turn back to normal position on the return stroke of said vibratory lever.

44. In a type-writing machine, the combination of a vibratory lever, a type-carrier pivoted thereon, a guiding-plate having a curved edge, and a coacting curved edge on the type-carrier.

45. In a type-writing machine, the combination of a vibratory lever, a type-carrier pivoted thereon, and a guiding-plate having a curved edge, a cam or projection 20 and a notch 21; and said type-carrier having a coacting curved edge and an extension 19.

46. In a type-writing machine, the combination of a vibratory lever, a type-carrier pivoted thereon and having an extension 19, a curved guiding edge 24, a projection 30, a finger 34, and an upper and a lower case type, a guiding-plate having a curved edge, a cam or projection 20 and a notch 21, and a movable abutment as 26.

47. In a type-writing machine, the combination of a vibratory lever, a type-carrier pivoted thereon and having an extension 19, a curved guiding edge 24, a projection 30, a finger 34, upper and lower case types, and a notch or seat 35, a guiding-plate having a curved edge, a cam or projection 20 and a notch 21, and a key-actuated head 26 having a surface adapted to coact with the curved edge 24 and with the notch or seat 35.

48. In a type-writing machine, the combination of a vibratory lever, a type head or carrier pivoted thereon and having an upper and a lower case type, an inking-pad on which said types normally rest, a movable device adapted to directly engage one rigid part of said type head or carrier to turn the upper-case type to printing position on the inward stroke of said lever, and another fixed device adapted to directly engage another rigid part of said type-carrier during the return stroke of said lever and cause said type-carrier to turn back to normal position with the types resting on the inking-pad.

49. In a type-writing machine, the combination of a pivoted type head or carrier, an inking-pad on which the type or types on said head normally bear, and means for positively and directly engaging said type head or carrier during its printing movement to turn it from the inking-pad and to bring it to the printing position and to guide it during such movement.

50. In a type-writing machine, the combination of a pivoted type head or carrier, an inking-pad on which the type or types on said head normally bear, means for positively and directly engaging said type head or carrier throughout or substantially throughout its movements to and from the printing position to turn it away from the inking-pad during the movement of the carrier in one direction and to turn it toward the ink-pad during movement of the carrier in the opposite direction and to guide the carrier during such movements.

51. In a type-writing machine, the combination of a pivoted type head or carrier, an inking-pad on which the type or types on said head normally bear, and means for positively and directly engaging said type head or carrier during its printing movement to turn it from the inking-pad and to bring it to the printing position and to guide it during such movement and to hold it fixed against lateral movement or vibration when in the printing position.

52. In a type-writing machine, the combination of a pivoted key-actuated type head or carrier, and a fixed guide with which said head contacts throughout or substantially throughout its movement to and from the normal position and by which the type-head is positively turned and guided to the printing position.

53. In a type-writing machine, the combination of a pivoted key-actuated type head or carrier carrying a plurality of types, a fixed guide with which said head contacts throughout or substantially throughout its movement to and from the normal position and by which the type-head is positively turned and guided to the printing position, and independent means within the control of the operator for determining the particular type on the carrier to be presented to the printing position.

54. In a type-writing machine, the combination of a pivoted type head or carrier having a plurality of types thereon, an inking-pad on which the type or types on said head normally bear, means for positively and directly engaging said type head or carrier during its printing movement to turn it from the inking-pad and to bring it to the printing position and to guide it during such movement, and controlling means independent of said guiding and turning means for determining which type on the carrier shall be presented in position to print.

55. In a type-writing machine, the combination of a pivoted type head or carrier having a plurality of types thereon, an inking-pad on which the type or types on said head normally bear, means for positively and directly engaging said type head or carrier throughout or substantially throughout its movements to and from the printing position to turn it away from the inking-pad during the movement of the carrier in one direction and to turn it toward the ink-pad during the movement of the carrier in the opposite direction and to guide the carrier during such movements, and controlling means independent of said guiding and turning means for determining which type on the carrier shall be presented in position to print.

56. In a type-writing machine, the combination of a pivoted type head or carrier having a plurality of types thereon, an inking-pad on which the type or types on said head normally bear, means for positively and directly engaging said type head or carrier throughout or substantially throughout its movements to and from the printing position to turn it away from the inking-pad during the movement of the carrier in one direction and to turn it toward the ink-pad during the movement of the carrier in the opposite direction and to guide the carrier during such movements, and controlling means independent of said guiding and turning means for determining which type on the carrier shall be presented in position to print, said controlling and guiding and turning means coöperating with said type-carrier to maintain it fixed against lateral vibration or movement when it is in the printing position.

57. In a type-writing machine, the combination of a pivoted type head or carrier, an inking-pad against which the type or types on said carrier normally rest, and a fixed slide on which said type-carrier slides throughout or substantially throughout the movements of the carrier to and from the printing position and which is effective to turn the carrier toward and away from the inking-pad and toward and away from the printing position.

808,715. **PRINTER'S COMPOSING-STICK.** FRANK M. BARKER, Chicago, Ill., assignor to Harry B. Rouse, Chicago, Ill. Filed July 19, 1904. Serial No. 217,201.

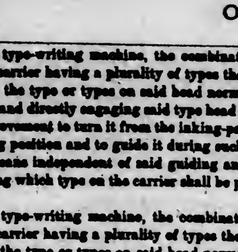

Claim.—1. A composing-stick including a knee carrying a tooth and a back wall provided with teeth, the rear edge of the tooth carried by the knee sloping upwardly and rearwardly away from the end wall of the stick while the front edges of the teeth upon the back wall slope downwardly toward the end wall of the stick, substantially as described.

2. A composing-stick including a knee carrying a tooth and a back wall provided with teeth, the rear edge of the tooth carried by the knee sloping upwardly and rearwardly away from the end wall of the stick while the front edges of the teeth upon the back wall slope downwardly toward the end wall of the stick, the remaining edge of the tooth upon the knee being adapted for engagement with any of the remaining edges of the teeth upon the back wall, substantially as described.

3. A composing-stick including a knee carrying a tooth movably mounted with respect to the knee and a back wall provided with teeth, the rear edge of the tooth carried by the knee sloping upwardly and rearwardly away from the end wall of the stick while the front edges of the teeth upon the back wall slope downwardly toward the end wall of the stick, substantially as described.

4. A composing-stick including a knee carrying a tooth movably mounted with respect to the knee and a back wall provided with teeth, the rear edge of the tooth carried by the knee sloping upwardly and rearwardly away from the end wall of the stick while the front edges of the teeth upon the back wall slope downwardly toward the end wall of the stick, the remaining edge of the tooth upon the knee being adapted for engagement with any of the remaining edges of the teeth upon the back wall, substantially as described.

5. A composing-stick including a knee carrying a tooth having spring anchorage upon the knee and a back wall provided with teeth, the rear edge of the tooth carried by the knee sloping upwardly and rearwardly away from the end wall of the stick while the front edges of the teeth upon the back wall slope downwardly toward the end wall of the stick, substantially as described.

6. A composing-stick including a knee carrying a tooth having spring anchorage upon the knee and a back wall provided with teeth, the rear edge of the tooth carried by the knee sloping upwardly and rearwardly away from the end wall of the stick while the front edges of the teeth upon the back wall slope downwardly toward the end wall of the stick, the remaining edge of the tooth upon the knee being adapted for engagement with any of the remaining edges of the teeth upon the back wall, substantially as described.

7. A composing-stick including a knee carrying a tooth movably mounted with respect to the knee and a back wall provided with teeth, the rear edge of the tooth carried by the knee sloping upwardly and rearwardly away from the end wall of the stick while the front edges of the teeth upon the back wall slope downwardly toward the end wall of the stick, and locking mechanism for maintaining engagement between the teeth, substantially as described.

8. A composing-stick including a knee carrying a tooth movably mounted with respect to the knee and a back wall provided with teeth, the rear edge of the tooth carried by the knee sloping upwardly and rearwardly away from the end wall of the stick while the front edges of the teeth upon the back wall slope downwardly toward the end wall of the stick, the remaining edge of the tooth upon the knee being adapted for engagement with any of the remaining edges of the teeth upon the back wall, and locking mechanism for maintaining engagement between said tooth and any of said teeth, substantially as described.

9. A composing-stick including a knee carrying a tooth having spring anchorage upon the knee and a back wall provided with teeth, the rear edge of the tooth carried by the knee sloping upwardly and rearwardly away from the end wall of the stick while the front edges of the teeth upon the back wall slope downwardly toward the end wall of the stick, and locking mechanism for maintaining engagement between the teeth, substantially as described.

10. A composing-stick including a knee carrying a tooth having spring anchorage upon the knee and a back wall provided with teeth, the rear edge of the tooth carried by the knee sloping upwardly and rearwardly away from the end wall of the stick while the front edges of the teeth upon the back wall slope downwardly toward the end wall of the stick, the remaining edge of the tooth upon the knee being adapted for engagement with any of the remaining edges of the teeth upon the back wall, and locking mechanism for maintaining engagement between the teeth, substantially as described.

11. A composing-stick including a clamp carried by and movable with respect to the knee and provided with a cam formation fixed with respect to the clamp, and a coöperating cam provided upon the back wall of the stick with which the aforesaid cam formation may engage, substantially as described.

12. A composing-stick including a clamp carried by and movable with respect to the knee and provided with a toothed formation fixed with respect to the clamp, and coöperating teeth provided upon the back wall of the stick with which the aforesaid toothed formation may engage, substantially as described.

808,716. **BRAKE SYSTEM.** CHARLES H. BARRY, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Aug. 13, 1903. Serial No. 169,249.

Claim.—1. In an air-brake system, a brake-shoe, a brake-cylinder controlling said shoe, a passage from said cylinder to atmosphere, a valve controlling said passage, operative connections between said valve and said brake-shoe, and means for rendering said valve inoperative when the pressure in said cylinder is below a definite value.

2. In an air-brake system, a brake-shoe associated with a wheel of the vehicle, a brake-cylinder controlling said shoe, an exhaust-passage from said cylinder to atmosphere, a valve in said passage, operative connections between said brake-shoe and said valve whereby said valve is moved to open said passage when the friction between said shoe and the wheel exceeds a definite amount, and means independent of said valve for closing said passage when the pressure in said cylinder is below a definite value.

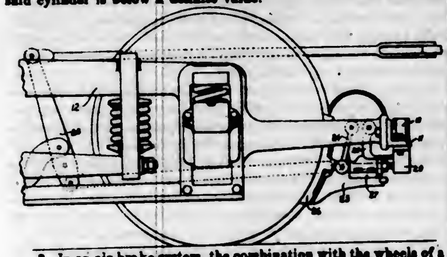

3. In an air-brake system, the combination with the wheels of a vehicle to which the system is applied, of a plurality of brake-shoes associated therewith, a brake-cylinder and brake-rigging by which pressure may be applied to said shoes, a valve controlling an exhaust-passage from said brake-cylinder, means connected to one of said brake-shoes and operable thereby when the friction between it and its wheel exceeds a definite amount to exhaust said brake-cylinder, and means for cutting off said exhaust when the brake-cylinder pressure falls to a definite point.

4. In an air-brake system, the combination with a car-truck, brake-shoes and rigging, of a valve-casing secured to said truck and provided with a central inlet-port and upper and lower exhaust-ports and having a valve yieldingly mounted so as to remain normally in a position to close said inlet-port, and connecting means between said valve and one of said brake-shoes operative upon the movement of said brake-shoe peripherally of its wheel in either direction to move said valve either up or down to establish communication between said valve inlet-port and one of said exhaust-ports.

5. In an air-brake system, the combination of a brake-cylinder, a valve arranged to control an exhaust-passage leading from said cylinder, a pressure-retaining valve located in said passage, a brake-shoe associated with one of the wheels of the vehicle, and means operated by said shoe to actuate said controlling-valve.

808,717. **ELECTRIC LOCOMOTIVE.** ASA F. BATCHELDER, Schenectady N. Y., assignor to General Electric Company, a Corporation of New York. Filed Nov. 13, 1903. Renewed June 14, 1905. Serial No. 265,940.

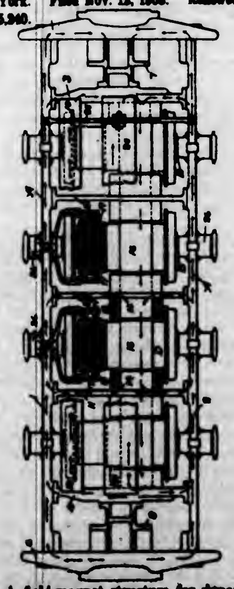

Claim.—1. A field-magnet structure for dynamo-electric machines, comprising an inclosing frame, one or more transverse members joining opposite sides of said frame, a plurality of pole-pieces secured to said inclosing frame and said transverse member or members, and field-windings arranged to produce a magnetic flux in a magnetic circuit common to all of said pole-pieces.

2. A field-magnet structure for dynamo-electric machines, comprising an inclosing frame with one or more transverse members joining opposite sides of said frame, the ends of the said frame and the transverse members being provided with pole-pieces, in combination with armatures operatively related to said pole-pieces, and means for producing a magnetic flux in a magnetic circuit common to all of said armatures and pole-pieces.

3. In an electric vehicle, the combination of a truck consisting of a frame having members composed of magnetic material and having pole-pieces for a plurality of armatures, motor-armatures operatively located with reference to said pole-pieces, said pole-pieces and frame members being so located and arranged that a magnetic circuit extends through said pole-pieces and thence through said frame members, and field-windings arranged to produce a magnetic flux in said magnetic circuit.

4. In an electric vehicle, the combination of a truck consisting of a frame composed of magnetic material and having pole-pieces for a plurality of armatures, said pole-pieces being so located and arranged with reference to said frame that a magnetic circuit extends through said pole-pieces and thence through said frame, motor-armatures operatively located with reference to said pole-pieces, and field-windings arranged to produce a magnetic flux in said magnetic circuit.

5. A truck for an electric vehicle, comprising an inclosing frame constituting the field-magnet structure for a plurality of armatures, one or more transverse members joining opposite sides of said frame, a plurality of pole-pieces secured to said inclosing frame and said transverse member or members, and motor-armatures operatively located with reference to said pole-pieces.

6. A truck for an electric vehicle, comprising an inclosing frame constituting the field-magnet structure for a plurality of armatures, transverse members joining opposite sides of said frame, a plurality of pole-pieces secured to said transverse members, and motor-armatures operatively located with reference to said pole-pieces.

7. A truck for an electric vehicle, comprising a frame constituting the field-magnet structure for a plurality of armatures and comprising side bars, end bars, a plurality of transverse members joining said side bars, a plurality of pole-pieces secured to said transverse members, and one or more motor-armatures operatively located with reference to said pole-pieces.

8. In an electric vehicle, the combination of a truck consisting of a frame composed of magnetic material and having pole-pieces for a plurality of armatures, driving-axles journaled in said frame, motor-armatures mounted upon said axles and operatively located with reference to said pole-pieces, said pole-pieces being so located and arranged with reference to said frame that a magnetic circuit extends through said pole-pieces and thence through said frame, and field-windings arranged to produce a magnetic flux in said magnetic circuit.

9. In an electric vehicle, the combination of a truck comprising an inclosing frame constituting the field-magnet structure for a plurality of armatures, one or more transverse members joining opposite sides of said frame, driving-axles journaled in said frame, a plurality of pole-pieces secured to said inclosing frame and said transverse member or members, and motor-armatures mounted upon said axles and operatively located with reference to said pole-pieces.

10. In an electric vehicle, the combination of a truck comprising an inclosing frame constituting the field-magnet structure for a plurality of armatures, transverse members joining opposite sides of said frame, driving-axles journaled in said frame, a plurality of pole-pieces secured to said transverse members, and motor-armatures mounted upon said axles and operatively located with reference to said pole-pieces.

11. In an electric vehicle, the combination of a truck comprising a frame constituting the field-magnet structure for a plurality of armatures, said frame comprising side bars, end bars, a plurality of transverse members joining said side bars, driving-axles journaled in said side bars, a plurality of pole-pieces secured to said transverse members, and motor-armatures mounted upon said axles and operatively located with reference to said pole-pieces.

12. In an electric vehicle, the combination of a truck consisting of a frame constituting the field-magnet structure for a plurality of armatures, driving-axles yieldingly journaled in said frame, motor-armatures mounted upon said axles, and pole-pieces secured to said frame and arranged in operative relation to said armatures.

13. In a dynamo-electric machine having a plurality of armatures, the combination of a field-magnet structure having its pole-pieces and frame arranged so as to provide a magnetic circuit common to said armatures, field-windings arranged to produce a magnetic flux in said common magnetic circuit, and means for confining any differences of flux in the different armature-fields to their respective fields.

14. In a dynamo-electric machine having a plurality of armatures, the combination of a field-magnet structure having its pole-pieces and frame arranged so as to provide a magnetic circuit common to said armatures, field-windings arranged to produce a magnetic flux in said common magnetic circuit, and means for providing local magnetic circuits whereby any differences of flux in the different armature-fields will be confined to their respective fields.

15. In a dynamo-electric machine, the combination with a frame composed of magnetic material, of pole-pieces for a plurality of armatures, said pole-pieces being so located with reference to said frame that a magnetic circuit extends through said pole-pieces and thence through said frame, field-windings arranged to produce a magnetic flux in said common magnetic circuit, and members composed of magnetic material connecting said pole-pieces and said frame.

16. In an electric vehicle, the combination with a truck consisting of a frame composed of magnetic material, of pole-pieces for a plurality of armatures, said pole-pieces being so located with reference to said frame that a magnetic circuit common to said armatures extends through said pole-pieces and thence through said frame, field-windings arranged to produce a magnetic flux in said common magnetic circuit, and means for confining any differences of flux in the different armature-fields to their respective fields.

17. In an electric vehicle, the combination with a truck consisting of a frame composed of magnetic material, of pole-pieces for a plurality of armatures, said pole-pieces being so located with reference to said frame that a magnetic circuit common to said armatures extends through said pole-pieces and thence through said frame, field-windings arranged to produce a magnetic flux in said common magnetic circuit, and means for providing local magnetic circuits whereby any differences of flux in the different armature-fields will be confined to their respective fields.

18. In an electric vehicle, the combination with a truck consisting of a frame composed of magnetic material, of pole-pieces for a plurality of armatures, said pole-pieces being so located with reference to said frame that a magnetic circuit common to said armatures extends through said pole-pieces and thence through said frame, field-windings arranged to produce a magnetic flux in said common magnetic circuit, and members composed of magnetic material connecting said pole-pieces and said frame.

19. A dynamo-electric machine comprising a field-magnet structure having pole-pieces, and an armature rotatable in the plane of the pole-pieces and movable transversely in said plane.

20. A dynamo-electric machine comprising a field-magnet structure having pole-pieces, and an armature rotatable in the plane of, and elastically mounted with relation to, said pole-pieces.

21. A dynamo-electric machine comprising a field-magnet structure having pole-pieces, and an armature rotatable in the plane of the pole-pieces and movable transversely in said plane in a path substantially parallel to the polar faces.

22. A dynamo-electric machine comprising a field-magnet structure having pole-pieces with plane polar surfaces, and an armature operatively rotatable in the plane of said pole-pieces and movable in a plane substantially parallel to said surfaces.

23. In an electric vehicle, the combination of a truck, wheeled driving-axles upon which said truck is yieldingly mounted, a motor-armature for driving one of said axles and mounted so as to partake of the movement of said axle relative to the truck, and a field-magnet structure mounted on said truck and having pole-pieces lying in the plane of rotation of, and operatively related to, said armature and movable relative thereto.

24. A dynamo-electric machine comprising a field-magnet structure having pole-pieces, an armature elastically mounted with relation to and rotatable in the plane of said pole-pieces, and brushes mounted so as to partake of the elastic movement of said armature.

25. A dynamo-electric machine comprising a field-magnet structure having pole-pieces, an armature elastically mounted with relation to and rotatable in the plane of said pole-pieces, a commutator, brushes in operative relation therewith, and means connecting said brushes and armature so as to maintain a fixed relation therebetween.

26. A dynamo-electric machine comprising a field-magnet structure having pole-pieces, yielding-mounted boxes in said structure, an armature having its shaft journaled in said boxes, a commutator for said armature, and brushes mechanically connected to said boxes so as to partake of their movement.

27. A dynamo-electric machine comprising a field-magnet structure having pole-pieces, yielding-mounted boxes in said structure, an armature having its shaft journaled in said boxes, a commutator for said armature, brushes therefor, and a yoke connected to one of said boxes and mechanically supporting said brushes in operative relation to said commutator.

28. A dynamo-electric machine comprising a field structure having pole-pieces and an armature removably journaled in said structure, said pole-pieces being so shaped that the armature may be removed transversely in the plane of the pole-pieces.

29. A dynamo-electric machine comprising a field structure having pole-pieces and an armature removably journaled in said structure, said pole-pieces being so shaped that the armature may be removed transversely in the plane of the pole-pieces and in a path substantially parallel to the polar faces of said pole-pieces.

30. In an electric vehicle, the combination of a frame or truck, a plurality of wheeled axles removably journaled therein, motor-armatures mounted directly upon said axles, and pole-pieces operatively located adjacent to said armatures and so shaped as to permit the ready removal of any axle with its wheels and armature.

31. In an electric vehicle, the combination of a frame or truck, a plurality of wheeled axles journaled therein and removable from its under side, motor-armatures mounted directly upon said axles, and pole-pieces located adjacent to said armatures and so shaped as to permit the ready removal of any axle with its wheels and armature.

32. In an electric vehicle, the combination of a truck or frame an armature yieldingly journaled in said frame, and pole-pieces secured to said frame in the plane of rotation of, and in operative relation to, said armature and so shaped as to permit a movement of said armature relative to said pole-pieces.

33. In an electric vehicle, the combination of a truck or frame, one or more wheeled axles yieldingly journaled in said frame, one or more armatures mounted on said axles, and pole-pieces secured to said frame in the plane of rotation of, and in operative relation to, said armatures and so shaped as to permit a movement of said armatures relative to said pole-pieces.

34. In an electric vehicle, the combination of a truck or frame, axle-boxes yieldingly mounted in said frame, wheeled axles journaled in said boxes, armatures mounted upon said axles, and pole-pieces secured to said frame in the plane of rotation of, and in operative relation to, said armatures and so shaped as to permit a movement of said armatures relative to said pole-pieces.

35. In an electric vehicle, the combination of a truck or frame of magnetic material, axle-boxes yieldingly mounted in said frame, wheeled axles journaled in said boxes, one or more armatures mounted on said axles, and pole-pieces secured to said frame and having their magnetic circuit or circuits completed therethrough, the said pole-pieces being operatively related to said armatures and so shaped as to permit a free movement thereof with reference to the said armatures as the axle-boxes move in the frame.

36. In an electric vehicle, the combination of a truck-frame, a plurality of wheeled axles yieldingly journaled therein, motor-armatures mounted on said axles, and pole-pieces for said armature located in the plane of rotation of the armatures and carried by the said truck.

37. In an electric vehicle, the combination of a truck-frame, a plurality of wheeled axles yieldingly journaled therein, motor-armatures mounted on said axles, and pole-pieces for said armatures located in the plane of rotation of the armatures and carried by the said truck, the said pole-pieces being constructed to permit a free movement thereof with reference to the said armatures.

38. In an electric vehicle, the combination of a truck-frame, a plurality of wheeled axles removably journaled therein, motor-armatures mounted on said axles, and pole-pieces for the said armatures located in the plane of rotation of the armatures and carried by the said truck, the said pole-pieces being constructed to permit the removal of the said armatures with the axles on which they are mounted in said plane and transversely to said pole-pieces.

39. In an electric vehicle, the combination of a truck-frame, axle-boxes yieldingly mounted in said frame and removable in a downward direction therefrom, wheeled axles journaled in said boxes, armatures mounted on said axles, and pole-pieces for the said armatures located in the plane of rotation of the armatures and carried by the said frame, the said pole-pieces being constructed to permit the removal of the said armatures with the axles on which they are mounted in said plane and transversely to said pole-pieces.

40. In an electric vehicle, a truck-frame constituting the field-magnet structure for a plurality of dynamo-electric machines, a plurality of wheeled axles yieldingly journaled in said frame, and motor-armatures mounted upon one or more of said axles in operative relation to said field-magnet structure.

41. In an electric vehicle, a truck-frame constituting the field-magnet structure for a plurality of dynamo-electric machines, a plurality of wheeled axles yieldingly journaled in said frame, and motor-armatures mounted upon said axles and operatively related to said field-magnet structure.

42. In an electric vehicle, a truck-frame constituting a field-magnet structure for a plurality of dynamo-electric machines, one or more transverse members joining opposite sides of said frame, pole-pieces secured to said transverse members, a plurality of wheeled axles yieldingly journaled in said frame, and motor-armatures mounted on said axles and operatively related to said pole-pieces, the said pole-pieces being constructed to permit free movement thereof with respect to the said armatures as the axles move with reference to the frame.

43. In an electric vehicle, the combination of a truck comprising an inclosing frame constituting the field-magnet structure for a plurality of armatures, one or more transverse members joining opposite sides of said frame, driving-axles yieldingly journaled in said frame, a plurality of pole-pieces secured to said inclosing frame and said transverse member or members, motor-armatures mounted upon said axles and operatively located with reference to said pole-pieces, and field-windings arranged to produce a magnetic flux in a magnetic circuit common to all of said pole-pieces and motor-armatures.

44. In an electric vehicle, a wheeled axle, a motor-armature on said axle, a truck-frame constituting the field-magnet structure for said armature, springs located between said axle and said frame to permit a relative vertical movement between said axle and said frame, and polar surfaces on said frame arranged vertically and parallel to the axle.

808,718. **REGULATING-TRANSFORMER.** HENRY J. BLAKESLEE, Hartford, Conn. Filed Apr. 8, 1905. Serial No. 254,479.

Claim.—1. A regulating-transformer, having a cylindrical magnetic frame, a stationary primary coil, a stationary secondary coil, and a core with its axis extending perpendicular to the plane of the primary coil and movable within the frame and the primary and secondary coils, substantially as specified.

2. A regulating-transformer having a magnetic frame, polar projections on the interior of the frame, a stationary primary coil in the interior of the frame, a stationary secondary coil encircling polar projections from the interior of the frame, and a magnetic core movable within the frame and the coils, substantially as specified.

3. A regulating-transformer having a magnetic frame, polar projections on the interior of the frame, a stationary primary coil encircling the interior of the frame, a stationary secondary coil encircling polar projections from the interior of the frame, a magnetic core movable within the frame and the coils, and a counterbalance connected with the core, substantially as specified.

4. A regulating-transformer having a magnetic frame, a stationary primary coil, a stationary secondary coil, and a core always having the same magnetic relation to the primary coil but adapted to be moved to vary its magnetic relation with the secondary coil, substantially as specified.

5. A regulating-transformer having a stationary magnetic frame and a movable core, a fixed primary coil arranged to always encircle the total flux through the core, and a fixed secondary coil so arranged that the flux through it varies from maximum to minimum according to the position of the core, substantially as specified.

6. A regulating-transformer having a cylindrical magnetic frame, polar projections on the interior of the frame, an annular primary coil fixed in the interior of the frame, a fixed secondary coil embracing polar projections from the interior of the frame, a core extending through the frame within the primary and secondary coils, and means for counterbalancing the magnetic torque of the core, substantially as specified.

7. A regulating-transformer having a cylindrical magnetic frame, polar projections on the interior of the frame, a primary coil fixed in a recess in the middle of the frame, a secondary coil wound in reverse directions about polar projections from the interior of the frame, and a magnetic core extending through the frame and the primary and stationary coils, substantially as specified.

8. A regulating-transformer having a stationary magnetic frame, a fixed primary coil encircling the interior of the frame, a fixed secondary coil in the interior of the frame, and a magnetic core movable within the frame and the primary coil, the axis of the core extending perpendicular to the plane of the primary coil, and the said coils being arranged so that the primary always encircles the total flux through the core while the secondary varies from maximum to minimum according to the position of the core, substantially as specified.

9. A regulating-transformer having a stationary magnetic frame, a fixed primary coil encircling the interior of the frame, a fixed secondary coil in the interior of the frame, a magnetic core within the frame and the primary coil, the axis of the core extending perpendicular to the plane of the primary coil, and non-magnetic conductors attached to the core in such manner as to lie opposite inactive sections of the magnetic frame, substantially as specified.

10. A regulating-transformer having a stationary magnetic frame, a fixed primary coil encircling the interior of the frame, a fixed secondary coil in the interior of the frame, a magnetic core within the frame and the primary coil, the axis of the core extending perpendicular to the plane of the primary coil, and a counterbalance connected with and tending to rotate the core on its axis in a direction opposite to the magnetic torque, substantially as specified.

808,719. **ROLL-REMOVING DEVICE.** CHARLES W. BRAY, Pittsburg, Pa., assignor to American Sheet & Tin Plate Company, Pittsburg, Pa., a Corporation of New Jersey. Filed Feb. 1, 1905. Serial No. 243,693.

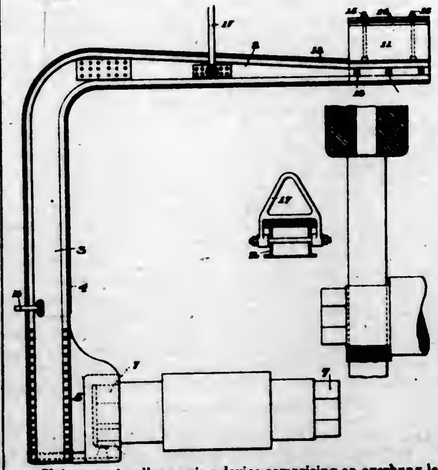

Claim.—1. A roll-removing device comprising an overhung lever having a socket in its lower portion arranged to receive the end portion of the roll; substantially as described.

2. A roll-removing device comprising an overhung lever having a socket in its lower portion, and a suspending device attached at an intermediate point of the upper arm over the intermediate part of the roll, when the roll is engaged; substantially as described.

3. A roll-removing apparatus comprising an overhung lever, the upper arm of which is provided with an intermediate supporting device, the leg having a socket with a wedge device to clamp the roll-neck in place; substantially as described.

4. A roll-removing device comprising an overhung lever with a suspending device intermediate of its upper arm, the end portion of said arm having a counterbalancing-weight, and the leg portion having a socket to receive the end portion of the roll; substantially as described.

5. A roll-removing apparatus comprising an overhung lever device, the lower portion of which is provided with a socket arranged to receive the end portion of the roll, the upper portion having an

intermediate supporting device arranged vertically over the central portion of the roll when in the apparatus; substantially as described.

6. A roll-removing device comprising an overhung lever having a socket in its lower portion arranged to receive the end portion of a roll, and a suspending device connected to the upper lever-arm at a point outside the socket, whereby said suspending device will be over the intermediate part of the roll when engaged; substantially as described.

808,720. BOW-FACING OAR. FRANK L. BUFF, Baton, Ill. Filed May 3, 1905. Serial No. 258,945.

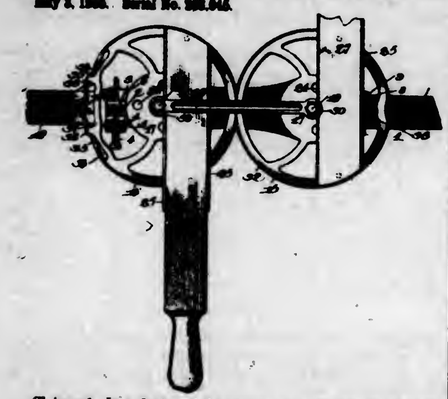

Claim.—1. In a device of the class described, the combination with a supporting-bracket, of a base mounted to tilt vertically thereon and provided with a pair of spaced openings, drums having hubs disposed concentrically with the respective openings and provided with pendent spindles rotatably passing through said openings, peripheral flanges pendent from the hubs and working upon the base-plate, the spaces between the hubs and the base-plate constituting oil-reservoirs, retaining-heads detachably carried by the lower ends of the spindles, means connecting the two drums for simultaneous movement in opposite directions, and means for connecting a handle-section and a blade-section to the respective drums

2. In a device of the class described, the combination with a supporting-bracket, of a base-plate mounted to tilt vertically thereon and provided with a pair of spaced openings, a pair of drums having hubs disposed concentrically with respect to the openings and provided with pendent peripheral flanges working upon the base-plate, spindles pendent from the hub and rotatably passing through the openings, retaining-heads detachably carried by the lower ends of the spindles, the annular spaces between the hubs and the base-plate constituting oil-chambers, posts rising centrally from the hubs, a tie-bar connecting the upper ends of the posts, and means for connecting a handle-section and a blade-section to the respective drums.

808,721. NON-SKIDDING DEVICE FOR TIRES. CHARLES R. DOLLARD, St. Ives, county of Huntingdon, England. Filed July 6, 1905. Serial No. 268,688.

Claim.—In combination, a tire, a continuous strip comprising a plurality of straight portions at each side of the tread of the tire, connected by angular portions; and separate bars arranged parallel with the straight portions at one side of the tread of the tire.

808,722. SHADE-ROLLER. LOUIS T. DUSSAT, New Haven, Conn. Filed Dec. 10, 1904. Serial No. 236,709.

Claim.—1. In a shade-roller, the combination with a roller; of a spring-bar mounted therein; a spear-bar fixed to said spring-bar and having a notched collar thereon; a cam-plate fixed to the end of said roller, said cam-plate having a substantially L-shaped cam-recess therein; a ball operative therein; and means, as a plate, for preventing the accidental displacement of said ball.

2. In a shade-roller, the combination with a roller; of a spring-bar mounted therein; a spear-bar fixed within the end of said spring-bar and having a collar thereon provided with a notch having parallel sides and a recess in the periphery thereof; a cam-plate, having a substantially L-shaped cam-recess therein; a ball movably mounted within said cam-recess; and a plate opposite said cam-plate.

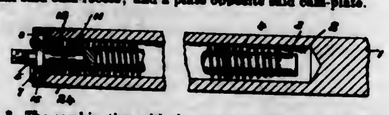

3. The combination with the spear-bar, having a collar thereon provided with a radial notch and a peripheral recess adjacent to said notch; of a cam-plate, having a substantially L-shaped cam depression therein, said cam depression being rounded at both ends and having sides concentric with each other; a ball within said cam depression of substantially the same diameter as the width thereof; and a plate opposite said cam-plate.

4. The combination with a spear-bar 5, having the collar 7 thereon provided with a notch having parallel sides and a peripheral recess adjacent to said notch; a cam-plate 13, having a substantially L-shaped cam depression 15 therein; a ball 16 operative within said depression; and a plate 19 opposite said cam-plate.

5. In a shade-roller, the combination with a roller; of a spring-bar mounted therein; a spear-bar fixed within the end of said spring-bar and having a collar thereon provided with a notch in the periphery thereof; a cam-plate having a cam-recess therein, which during its rotation passes the bottom of the recess in said collar; a ball within said cam-recess; and a plate opposite said cam-plate.

6. In a shade-roller, the combination with a roller; of a spring-bar mounted therein; a spear-bar fixed within the end of said spring-bar and having a collar thereon provided with a parallel-sided notch in the periphery thereof; a cam-plate upon one side of said collar having a cam-recess therein, which during a portion of its rotation registers with the recess in said collar; a ball within said cam-recess; and a plate upon the side of said collar opposite said cam-plate.

808,723. ANNUNCIATOR. ALBERT CARLES, Chicago, Ill., assignor to American Electric Telephone Company, Chicago, Ill., a Corporation. Filed May 26, 1901. Serial No. 61,961.

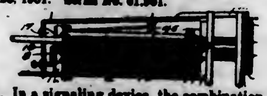

Claim.—1. In a signaling device, the combination with a magnet having a coil, insulating-supports at each end of the coil, a core therefor, end pieces affixed to said core, an armature extending longitudinally of the coil and coöperating with the end pieces, electrical contacts carried by said insulating-supports, one of said contacts being of spring material to return the armature to normal position, means to close the said contacts in the initial movement of the armature, and a signal-indicating device operated by said armature in its forward movement together with indicating means normally concealed or covered by said device.

2. In an annunciator, the combination with a magnet of a core and end pieces therefor, insulating-blocks between the end pieces and the coil, longitudinal stripe secured to said insulating-pieces, stationary contact on one strip, a spring-contact on the other strip and adapted to coöperate with the stationary contact, an armature extending longitudinally of the coil pivoted at one end and adapted to be retracted by said spring-contact, and a signaling device operated by said armature together with indicating means normally concealed or covered by said device.

3. In a magnet, an armature, a supporting-plate therefor, another plate having integral rivets formed thereon by which said supporting-plate is secured thereto.

4. In an annunciator, a front supporting-plate, a shutter or drop pivoted to said plate, said plate having apertures so located as to be closed by the drop or shutter beneath the drop or shutter, and an indicating-plate having lugs on its rear face to fit within said apertures and secure the same in place.

5. In an annunciator, the combination with a drop or shutter, of a pintle or pivot-pin therefor having a central upward bend, and a lever to actuate said drop or shutter and extending beneath said upward bend.

6. In an annunciator, the combination of a magnet-core having a relatively flat pole-piece disposed in the plane of one end and having its other end extended, an armature mounted upon the extended end of the core and having its free end overlying the pole-piece, normally open circuit-closing contacts underlying said armature and adapted to be operated thereby, one of said contacts consisting of a spring tending to keep the armature normally raised, and a shutter normally in a vertical position and in operative relation to said armature.

7. In an annunciator, the combination of a magnet-core having a relatively flat pole-piece disposed in the plane of one end, an armature mounted at the other end of the magnet and overlying the pole-piece, normally open circuit-closing contacts underlying the armature, one of said contacts consisting of a spring tending to keep the armature normally raised, and a shutter hung in a suitable support secured to the forward end of the magnet, said shutter being normally in a vertical position and having a finger or projection underlying the free end of the armature.

8. The combination of an electromagnet, an armature-mounting secured to the rear end of the magnet, a swinging armature mounted on said mounting and extending over and to the forward end of the magnet, a pair of terminal stripe mounted at either side of said armature, said terminal stripe being rigidly connected by blocks of insulation secured to the opposite ends of the electromagnet, normally open circuit-closing contacts carried by said terminal stripe, one of said contacts consisting of a spring tending to keep the armature normally raised, and a normally vertical shutter hung on the forward end of the magnet structure and operated by said armature.

9. The combination of an electromagnet, flat pole-pieces secured to the opposite ends of said magnet, an armature-mounting secured to the rear end of the magnet, an armature pivotally mounted on said mounting and overlying both pole-pieces, a normally vertical shutter hung on the forward end of the magnet structure and adapted to be raised to a horizontal position by the downward movement of the armature, and a spring-switch tending to keep the armature normally raised and the shutter in its vertical position.

10. In an annunciator, the combination of an electromagnet, pieces of insulation secured to the opposite ends of said magnet, pole-pieces also secured to opposite ends of said magnet, parallel terminal stripe secured to said pieces of insulation at opposite sides of the magnet, an armature pivotally mounted upon one end of the magnet structure, the said armature overlying both pole-pieces, a vertical indicator hung at the other end of the magnet structure and operated by the armature, and switch-contacts carried by said terminal stripe and adapted to be opened and closed by the armature.

11. An annunciator, comprising a magnetic core having a relatively flat pole-piece disposed in the plane of one end and having its other end extended, an armature provided with a rear vertical portion suitably mounted on the extended rear end of the core and having its horizontal portion overlying the pole-piece, a finger on the forward end of the armature, a spring tending normally to keep the armature raised, and a target hung on the forward end of the magnet structure and held in a normally lowered position, said target having a rearwardly-extending projection underlying the said finger, whereby said target is raised when the armature is attracted together with indicating means normally concealed or covered by said target.

12. An annunciator comprising a magnetic core having a relatively flat pole-piece disposed in the plane of one end, an armature provided with a rear vertical portion suitably mounted at the other end of the magnet and having its horizontal portion overlying the pole-piece, the forward end of said armature being provided with a finger, a target hung from the forward end of the magnet structure, and a spring-switch tending normally to keep the armature raised, said target being normally down and having a rear projection underlying the said finger, whereby the target is raised when the armature is attracted together with indicating means normally concealed or covered by said target.

13. An annunciator, comprising an electromagnet, pieces of insulation secured to the opposite ends of said magnet, pole-pieces also secured to the opposite ends of said magnet, an armature mounted upon the rear end of the magnet structure and having its horizontal portion overlying both pole-pieces, parallel terminal stripe rigidly secured to said pieces of insulation at opposite sides of the magnet, a shutter carried by the forward end of the magnet structure and operated by said armature, and switch-contacts carried by said terminal stripe beneath the armature and operated by the latter together with indicating means normally concealed or covered by said target.

14. An annunciator comprising an electromagnet, pieces of insulation secured to opposite ends of said magnet, an armature suitably mounted upon the rear end of the magnet structure and having its horizontal portion overlying the magnet, a shutter engaged and operated by the forward end of the armature, terminal stripe secured to said pieces of insulation at opposite sides of the magnet, and switch-contacts carried by the said terminal stripe beneath the armature and opened and closed by the latter together with indicating means normally concealed or covered by said target.

808,724. BOLTING-MACHINE. JOHN M. CASE, Cincinnati, Ohio. Filed Mar. 21, 1903. Serial No. 148,945.

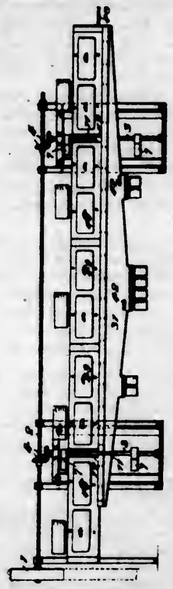

Claim.—1. The combination with a series of bolts arranged end to end in a single gyratory structure, of a conveyer disposed beneath and movable with the bolts, having its bottom inclined from the ends toward the center and comprising a plurality of parallel rows of troughs having their tops in the same horizontal plane, the length of the troughs in any one row differing from the length of the troughs in any other row.

2. A bolting-machine comprising a series of complete bolts arranged end to end and in a horizontal line in a single gyratory structure and each bolt having a plurality of sieves arranged one above the other and inclined longitudinally of the structure; and a series of transverse pockets between adjacent ends of adjacent bolts, each sieve of each bolt opening into one of the pockets of the series, and troughs common to the pockets of a plurality of bolts.

3. A bolting-machine comprising a series of complete bolts arranged end to end and in a horizontal line in a single gyratory structure and each bolt having a plurality of sieves arranged one above the other and inclined longitudinally of the structure; and a series of transverse pockets between adjacent ends of adjacent bolts, each sieve of each bolt opening into one of the pockets of the series, and a conveyer movable with the structure having a plurality of troughs common to a plurality of different bolts.

4. A bolting-machine comprising a series of complete bolts arranged end to end and in a horizontal line in a single gyratory structure and each bolt having a plurality of sieves arranged one above the other, a series of pockets transverse of the structure between adjacent ends of adjacent bolts, each sieve of each bolt delivering one of its products into one of the pockets, and each pocket having an opening to the exterior of the bolt structure to provide a discharge, and a plurality of troughs common to a plurality of the pocket discharge-openings.

5. A bolting-machine comprising a series of complete bolts arranged in a horizontal line in a single gyratory structure and having a plurality of sieves arranged one above the other, a series of pockets transverse of the structure separating adjacent bolts, each sieve of each bolt delivering one of its products into one of the pockets, and each pocket having an opening to the exterior of the bolt structure

to provide a discharge, and a plurality of troughs common to a plurality of pocket discharge-openings and having discharges for the material received, some of said troughs having a plurality of said discharge-openings some of which are connected with the discharge-opening of other troughs.

6. A bolting-machine comprising a gyratory structure, a plurality of complete bolts arranged in said structure end to end and in a horizontal line, unconnected with one another within said structure and having a plurality of sieves, separate intakes for each bolt for material from without the structure, and a plurality of series of vertical pockets extending transversely of the structure and between adjacent ends of adjacent bolts, and each pocket receiving one of the products of one of the sieves of one bolt and having a discharge-opening in its bottom.

7. In a bolting-machine, the combination with a single gyratory structure, and a plurality of bolts unconnected with one another within said structure, having separate intakes for each bolt for material from without the structure, and a plurality of discharge-openings from each bolt, of a conveyer movable with the bolt structure, inclined downwardly from its ends to its center and divided into a plurality of troughs some of which are common to a plurality of bolts.

8. In a bolting-machine, the combination with a single gyratory structure, and a plurality of bolts unconnected with one another within said structure, having separate intakes for each bolt for material from without the structure, and a plurality of discharge-openings from each bolt, of a conveyer movable with the bolt structure, and divided into a plurality of troughs one of which is common to all the bolts, and the others being common to various numbers of the bolts.

9. In a bolting-machine, the combination with a single gyratory structure, and a plurality of bolts unconnected with one another within said structure, having separate intakes for each bolt for material from without the structure, and a plurality of discharge-openings from each bolt, of a plurality of conveyers movable with the bolt structure, having discharge-openings, and means on the conveyer for connecting the discharge of one of the troughs with the discharge of another of the troughs.

10. In a bolting-machine, the combination with a plurality of bolts unconnected with one another and each having a plurality of discharge-openings, of means for collecting and separately discharging material separated by the several bolts which consists of the series of longitudinal conveyer-troughs extending beneath all of the bolts, receiving all the material from all the bolts and made up of a box sloping from the ends to the center and having longitudinal partitions and transverse partitions inserted at suitable points in the respective troughs to confine the material and permit the use of one conveyer for a plurality of grades of material.

11. In a bolting-machine, the combination with a plurality of bolts unconnected with one another and each having a plurality of discharge-openings, of means for collecting and separately discharging material separated by the several bolts which consists of the series of longitudinal conveyer-troughs extending beneath all of the bolts, receiving all the material from all the bolts and made up of a box having longitudinal partitions and transverse partitions inserted at suitable points in the respective troughs to confine the material and permit the use of one conveyer for a plurality of grades of material, discharge-openings being provided for the respective compartments thus formed, and a transverse discharge-trough being arranged beneath each discharge-opening.

12. In a bolting-machine, the combination with a plurality of bolts unconnected with one another and each having a plurality of discharge-openings, of means for collecting and separately discharging material separated by the several bolts which consists of the series of longitudinal conveyer-troughs extending beneath all of the bolts, receiving all the material from all the bolts and made up of a box having longitudinal partitions and transverse partitions inserted at suitable points in the respective troughs to confine the material and permit the use of one conveyer for a plurality of grades of material, discharge-openings being provided for the respective compartments thus formed, and a transverse discharge-trough arranged beneath each discharge-opening; some of said compartments having a plurality of discharge-openings and valves for determining through which of said discharge-openings the material shall pass.

13. In a horizontal bolting-machine, suitably mounted for oscillating or gyratory action, means for imparting motion, consisting of an eccentric having means for rotating it, a box in which said eccentric works, connected to the bolt by means of clamping-plates on opposite sides of the bolting-machine, securing-bolts passed through said plates and holding them together whereby the structure is sustained in addition to being rigidly connected with the driving parts brackets carried by the clamping-plates, on one side of the bolting-machine, and a standard suitably stopped at its lower end and supporting the bolt by its connection with said bracket

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808,725. LIGHTER. ALBERT B. CAPERNY, Omaha, Nebr., assignor of one-half to John Preuss and Seth W. Creal, Council Bluffs, Iowa. Filed Aug. 1, 1905. Serial No. 272,231.

Claim.—1. In a lighter of the class described, the combination of a magazine for holding ignitible charges, a percussor or igniter for igniting charges fed from the magazine, feeding means separate from the percussor for feeding charges from the magazine thereof, and means connected with the percussor and the feeding mechanism for positive simultaneous actuation thereof.

2. In a lighter of the class described, the combination of a magazine adapted to receive ignitible charges, a percussor, a feeding member adapted to feed charges from the magazine to the percussor, and a lever operably connected with the feeding member and the percussor for actuation thereof.

3. In a lighter of the class described, the combination of a magazine adapted to receive ignitible charges, a feeding-chamber, a flame-chamber, a percussor separating the flame-chamber from the feeding-chamber, a flame-opening for the flame-chamber, a wick at the mouth of said opening, feeding mechanism in the feeding-chamber adapted to feed charges from the magazine to the percussor, and means for actuating the feeding mechanism and the percussor.

4. In a lighter of the class described, the combination of a magazine adapted to receive ignitible charges, a feeding-chamber, a flame-chamber, a percussor separating the flame-chamber from the feeding-chamber, a flame-opening for the flame-chamber, a wick at the mouth of said opening, feeding mechanism in the feeding-chamber adapted to feed charges from the magazine to the percussor, a percussion-plate in the flame-chamber coacting with the percussor, a lever operably connected with the percussor and the feeding mechanism aforesaid, and means for actuating said lever.

5. In a lighter of the class described, the combination of a magazine adapted to receive ignitible charges, a pivoted percussor, a feeding member for feeding charges from the magazine to the percussor comprising a lever, spaced feeding-fingers carried by the lever to engage a charge received from the magazine, and an operating-lever connected with the feeding member and with the pivoted percussor for actuating the same.

6. In a lighter of the class described, the combination of a magazine adapted to receive ignitible charges, a pivoted percussor, a feeding member for feeding charges from the magazine to the percussor comprising a lever, spaced feeding-fingers carried by the lever to engage a charge received from the magazine, a percussion-plate coacting with the percussor, a spring-actuated lever, connections between the spring-actuated lever and the feeding member and percussor for simultaneously actuating the feeding member and percussor, and a finger-piece operably connected with the spring-actuated lever, as specified.

808,726. SHOW OR DISPLAY CASE. GEORGE H. CLAPP, Kalamazoo, Mich. Filed Jan. 13, 1904. Serial No. 189,063.

Claim.—1. The combination of a suitable casing; an outwardly and downwardly opening door therefor; a removable bottom for said casing; supporting-standards arranged in pairs pivotally secured to said removable bottom; tray or shelf supports pivotally secured to said standards in a manner to permit the same being collapsed; forwardly-inclined tray-rests on said tray-supports; a rod carried by the rear pair of standards; a bracket having a way therein adapted to receive said rod secured to said door; and a latch for retaining said rod in said way, for the purpose specified.

2. The combination of a suitable casing; an outwardly and downwardly opening door therefor; a removable bottom for said casing; supporting-standards arranged in pairs pivotally secured to said removable bottom; tray or shelf supports pivotally secured to said standards in a manner to permit the same being collapsed; forwardly-inclined tray-rests on said tray-supports; a rod carried by the rear pair of standards; and a bracket having a way therein adapted to receive said rod secured to said door; for the purpose specified.

adapted to receive said rod secured to said door; and a latch for retaining said rod in said way, for the purpose specified.

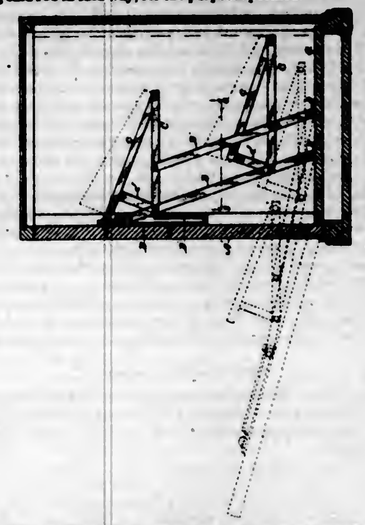

3. The combination of a suitable casing; an outwardly and downwardly opening door therefor; a removable bottom for said casing; supporting-standards arranged in pairs pivotally secured to said removable bottom; tray or shelf supports pivotally secured to said standards in a manner to permit the same being collapsed; forwardly-inclined tray-rests on said tray-supports; a rod carried by the rear pair of standards; a bracket having a way therein adapted to receive said rod, secured to said door; for the purpose specified.

4. The combination of a suitable casing; an outwardly and downwardly opening door therefor; a removable bottom for said casing; supporting-standards arranged in pairs pivotally secured to said removable bottom; tray or shelf supports pivotally secured to said standards in a manner to permit the same being collapsed; a rod carried by the rear pair of standards; and a bracket having a way therein adapted to receive said rod secured to said door, for the purpose specified.

5. The combination of a suitable casing; an outwardly and downwardly opening door therefor; a removable bottom for said casing; supporting-standards arranged in pairs pivotally secured to said removable bottom; tray or shelf supports pivotally secured to said standards in a manner to permit the same being collapsed; forwardly-inclined tray-rests on said tray-supports; and a connection for said standards to said door, for the purpose specified.

6. The combination of a suitable casing; an outwardly and downwardly opening door therefor; a removable bottom for said casing; supporting-standards arranged in pairs pivotallysecured to said removable bottom; tray or shelf supports pivotally secured to said standards in a manner to permit the same being collapsed; and a connection for said standards to said door, for the purpose specified.

7. The combination of a suitable casing; an outwardly and downwardly opening door therefor; a removable bottom for said casing; supporting-standards arranged in pairs pivotally secured to said removable bottom; tray or shelf supports pivotally secured to said standards in a manner to permit the same being collapsed; and forwardly-inclined tray-rests on said tray-supports, for the purpose specified.

8. The combination of a suitable casing; an outwardly and downwardly opening door therefor; a removable bottom for said casing; supporting-standards arranged in pairs pivotally secured to said removable bottom; tray or shelf supports pivotally secured to said standards in a manner to permit the same being collapsed, for the purpose specified.

9. The combination of a suitable casing; an outwardly and downwardly opening door therefor; supporting-standards arranged in pairs supported in said casing; tray or shelf supports pivotally secured to said standards in a manner to permit the same being collapsed; forwardly-inclined tray-rests on said tray-supports; and a connection for said standards to said door, for the purpose specified.

10. The combination of a suitable casing; an outwardly and downwardly opening door therefor; supporting-standards arranged in pairs supported in said casing; tray or shelf supports pivotally secured to said standards in a manner to permit the same being collapsed; and forwardly-inclined tray-rests on said tray-supports, for the purpose specified.

11. The combination of a suitable casing; an outwardly and downwardly opening door therefor; standards pivotally supported in said casing; tray or shelf supports pivotally secured to said standards; forwardly-inclined tray-rests on said tray-supports; and a suitable connection for said standards to said door, for the purpose specified.

12. The combination of a suitable casing; an outwardly and downwardly opening door therefor; standards pivotally supported in said casing; tray or shelf supports pivotally secured to said standards; and forwardly-inclined tray-rests on said tray-supports, for the purpose specified.

13. The combination of a suitable casing; standards arranged in pairs pivotally supported in said casing; tray or shelf supports pivotally secured to said standards in a manner to permit the same being collapsed; and forwardly-inclined tray-rests on said tray-supports, for the purpose specified.

808,727. PLOW. WALTER CONNOR, Toledo, Ohio. Filed Mar. 13, 1905. Serial No. 249,963.

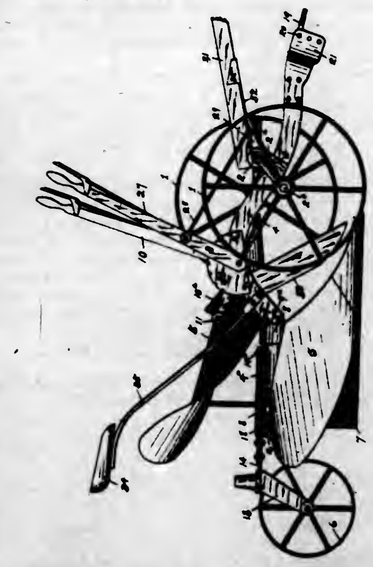

Claim.—1. In a plow, a beam, forward supporting-wheels and a caster-wheel for said beam, a pair of plows movably carried by said beam, means for moving either of the plows to operative position, and means for causing the caster-wheel to be automatically moved to the right or left as the plows are moved whereby it may follow in the furrow of the operative plow.

2. In a plow, a beam, forward and rear supporting-wheels therefor, a pair of connected plows carried in spaced position by said beam, means for adjusting the plows to turn a right or left furrow-slice, and means for causing a lateral movement of the rear supporting-wheel when the plows are adjusted whereby it is caused to follow the operative plow.

3. The combination with the beam of a tricycle-plow, of a pair of rigidly-spaced adjustable plows adapted to be moved to turn a right or left furrow-slice, a caster-wheel for supporting the rear end of said beam, and means operative by the adjustment of the plows for causing the caster-wheel to be moved laterally to follow the operative plow.

4. The combination with the beam of a plow, and a pair of connected plows movably carried thereby to permit of their adjustment to turn a right or left furrow-slice, of a caster-wheel having an arm

pivotally connected to the beam, and means operative by the adjusting of the plows for causing said caster-wheel to be moved to the right or left to travel in the furrow of the operative plow.

5. The combination with the beam of a wheeled plow, of a pair of rigidly-connected plows having their landsides disposed in different planes and mounted to turn on said beam, a caster-wheel having its fork provided with an arm the free end of which is pivoted to a portion of the beam, means on said arm having engagement with a portion of said beam adapted to permit a lateral movement and prevent a vertical movement of the caster-wheel independent of the beam, and means on said arm having connection with the connection between the plows and adapted to cause the caster-wheel to swing in the direction the plows are turned when adjusted.

6. In a plow, a beam, two plows movably carried by said beam, a clevis secured to and movable transversely of the end of the beam, a bell-cranked lever pivoted to the beam and having one arm in engagement with the clevis, whereby a movement of the lever imparts a movement to the clevis, means for moving either plow into operative position, and connection between said lever and means for imparting an oscillatory movement to the lever as the means is moved to adjust the plows.

7. In a plow, a beam, two plows adjustably carried by said beam, a clevis secured to and movable transversely of the beam, a bell-cranked lever pivoted to said beam and having connection with the clevis, an operating-lever having connection with and adapted to move either plow into operative position, connection between the bell-cranked lever and operating-lever whereby a movement of the operating-lever imparts a movement to the bell-cranked lever and clevis, and means for adjusting the connection between the levers to regulate the throw of the clevis.

8. The combination in a plow, of a beam, a plurality of plows, adjustably carried by the beam, a caster-wheel for supporting the rear end of said beam and adjustable to the right or left thereof by the adjustment of the plows, a lever for adjusting the plows, and a clevis movable by said lever to change the draft-line to suit the adjusted position of the plows.

9. In a plow, a beam, a laterally-adjustable caster-wheel for supporting the rear end of said beam, two rigidly-connected plows mounted to rotate on said beam and having connection with the caster-wheel adapted to cause it to move laterally to follow the operative plow when the plows are turned, an operating-lever having connection with the plows for imparting rotation thereto, and means movable by said lever for causing the draft-line of the machine to be changed to cause the plows when adjusted to each take the same width of furrow-slice.

808,728. FLOATING CAISSON. ANDREW C. CUNNINGHAM, Washington, D. C. Filed Sept. 20, 1905. Serial No. 279,247.

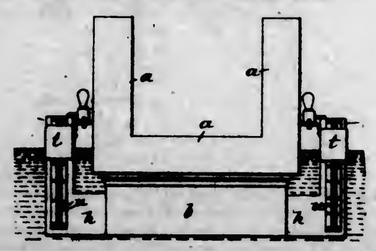

Claim.—1. An under-water floating caisson for the purposes described, comprising an open-topped working chamber having a bottom and closed on all sides, said chamber being adapted to be entirely submerged and to be floated under the structure to be repaired, means for gaining access to the chamber from above the water after it is in place and for exhausting the water therefrom, and floats exterior to the chamber for suspending or maintaining it at the desired depth of submergence while being moved into place; substantially as described.

2. An under-water floating caisson for the purposes described, comprising an open-topped working chamber having a bottom and closed on all sides, said chamber being adapted to be entirely submerged and to be floated under the structure to be repaired, means for gaining access to the chamber from above the water after it is in place and for exhausting the water therefrom, and floats exterior to the chamber for suspending or maintaining it at the desired depth of submergence while being moved into place, said floats being vertically adjustable with respect to the chamber; substantially as described.

3. An under-water floating caisson for the purposes described, comprising an open-topped working chamber having a bottom and closed on all sides, said chamber being adapted to be entirely submerged and to be floated under the structure to be repaired, means for gaining access to the chamber from above the water after it is in place and for exhausting the water therefrom, and floats exterior to the chamber for suspending or maintaining it at the desired depth of submergence while being moved into place, said floats being vertically adjustable with respect to the chamber by worm and rack gear; substantially as described.

4. An under-water floating caisson for the purposes described, comprising an open-topped working chamber having a bottom and closed on all sides, said chamber being adapted to be entirely submerged and to be floated under the structure to be repaired, means for gaining access to the chamber from above the water after it is in place and for exhausting the water therefrom, and floats exterior to the chamber for suspending or maintaining it at the desired depth of submergence while being moved into place, said floats being connected to opposite ends of the chamber; substantially as described.

808,729. SYSTEM OF CONTROL FOR ELECTRIC MOTORS. MAXWELL W. DAY, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed May 15, 1905. Serial No. 260,627.

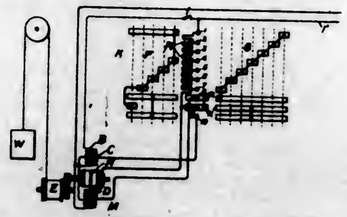

Claim.—1. In a system of control, a motor having a shunt field-winding and a plurality of series field-windings, and means for connecting said motor to a source of current-supply in such a manner that the effective excitation of the series windings assists that of the shunt-winding both when the motor is propelling a load and when it is overhauled by the load and acting as a generator.

2. In a system of control, a motor having a shunt field-winding and a plurality of series field-windings, means for connecting said motor to a source of supply in such a manner that the motor will run in one direction and the field-windings will assist each other and the shunt-winding in exciting the field, and means for connecting the motor for operation in the reverse direction in such a manner that the effective excitation of the series windings is cumulative to that of the shunt-winding both when the motor is operating as a motor and when it is overhauled by the load and made to operate as a generator.

3. In a system of motor control, a motor having a shunt field-winding and a plurality of series field-windings, means for connecting the motor to a source of current-supply in such a manner that the shunt and series windings assist each other, and means for connecting the motor for operation in the reverse direction in such a manner that the currents flowing through the series windings are unequal and have opposing effects which in the aggregate assist the shunt-winding, the arrangement being such that when the load overhauls the motor and causes it to run as a generator the aggregate effect of the series windings is cumulative to that of the shunt-winding.

4. In a system of control, a motor having a plurality of series windings, means for connecting the motor to a source of current-supply so that the said field-windings assist each other when the motor runs in one direction, and means for connecting said motor for operation in the reverse direction in such a manner that the field-windings oppose each other when the motor is acting as a motor and assist each other when the motor is overhauled by the load and is acting as a generator.

5. In a system of control, a motor having a shunt field-winding and a plurality of series field-windings, means for connecting the motor to a source of current-supply so that the said series field-windings assist each other and the shunt-winding when the motor is operated in one direction, and means for connecting said motor for

operation in the reverse direction in such a manner that the series field-windings oppose each other when the motor is acting as a motor and assist each other and the shunt-winding when the motor is overhauled by the load and acts as a generator.

6. In a system of control, a motor having a shunt field-winding and a plurality of series field-windings, means for connecting the motor to a source of current-supply so that the series windings assist said shunt-winding when the motor runs in one direction, and means for connecting a portion of said series field-windings to the source of current-supply and short-circuiting the motor-armature through the remainder of the series windings when the motor is connected for operation in the reverse direction, whereby the shunt-winding is assisted by one or more of the series windings both when the motor is acting as a motor and when it is overhauled by the load and acts as a generator.

7. In a system of motor control, a motor having a shunt field-winding and a plurality of series field-windings, means for connecting said motor to a source of current-supply for rotation in one direction in such a manner that the series field-windings assist each other and the shunt-winding, and means for connecting the motor for rotation in the opposite direction in such a manner that the relative effects of the windings are changed.

8. In a system of control, a motor having a plurality of field-windings, and a controller having contacts constructed and arranged to connect said motor to a source of current-supply with the field-windings arranged in series with each other and with the armature, the contacts being also constructed and arranged to connect a portion of said field-windings as a shunt-winding and short-circuit the armature through the remaining portion of the field-windings.

9. In a system of control, a motor having a plurality of field-windings, a resistance, and a controller having contacts and connections constructed and arranged to connect said motor to a source of current-supply so that the field-windings are in series with each other and with the armature when the motor runs in one direction, or so that the motor tends to run in the opposite direction and the armature is short-circuited through a portion of the windings while the other portion is connected with the source of current-supply through the resistance.

10. In a system of control, a motor having a shunt field-winding and a plurality of series field-windings, and a controller having contacts and connections arranged to connect said motor to a source of current-supply for rotation in one direction, said controller also having contacts constructed and arranged to connect the motor for rotation in the opposite direction with one of its series windings connected to the source of current-supply and with the armature short-circuited through the remainder of the series windings.

11. In a system of control, a motor having a plurality of field-windings, a resistance, and a controller having contacts and connections constructed and arranged to connect said motor to a source of current-supply so that the field-windings are in series with each other and with the armature when the motor runs in one direction, and also having contacts arranged to connect a portion of said series windings to the source of current-supply in series with said resistance and to connect the armature and the remainder of the field-windings in shunt with a portion of said resistance.

12. In a system of control, a motor having a plurality of series field-windings and a shunt field-winding, a resistance, and a controller for connecting said motor to a source of current-supply with the armature in series with the series winding and in parallel with the shunt-winding for rotation in one direction, said controller having contacts constructed and arranged to connect the motor for rotation in the opposite direction with a portion of the series windings connected to the source of supply in series with the resistance and the motor-armature and the remainder of the series windings connected in shunt to variable portions of said resistance.

13. In a system of control, a motor having two field-windings, a resistance, and a controller having contacts constructed and arranged to connect said motor to a source of current-supply with the field-windings in series with the armature, said contacts being also constructed and arranged to connect one of said field-windings to the source of current-supply in series with the resistance and to short-circuit the armature through the other field-winding in one position of the controller and to connect the armature and the latter field-winding in shunt with successively-varying portions of said resistance in subsequent positions of the controller.

14. In a system of control, a motor having a shunt field-winding and two series field-windings, a resistance, and a controller having contacts and connections constructed and arranged to connect said motor to a source of current-supply with the armature and series field-windings in series with each other and in parallel with the shunt field-winding, said controller also having contacts arranged to connect said motor to a source of current-supply with one series winding in series with the resistance and in parallel with the shunt-winding and the armature short-circuited through the other series winding in one position of the controller and with the armature and said latter field-winding shunted across varying portions of said resistance in subsequent positions of the controller.

808,730. COFFEE-POT. MARTIN M. DE GROOT, St. Louis, Mo. Filed Mar. 27, 1905. Serial No. 252,118.

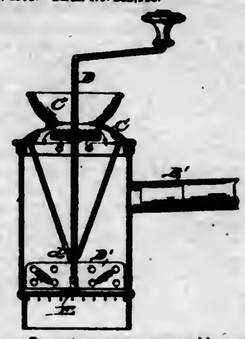

Claim.—In a coffee-pot, an upper removable section, a screen located within and adjacent to its lower edge, a removable cover provided with a funnel having a plurality of contracted openings discharging into said upper section, and stirring-blades located within said upper section and supported from said removable cover, said stirring-blades operated by a suitable crank-arm, substantially as described.

808,731. CLAMP. PATRICK F. DENNING, Newark, N. J. Filed Oct. 18, 1904. Serial No. 229,000.

Claim.—1. A clamp of the class described, having a movable spring-controlled clamping-jaw for yieldably engaging the object to be held, and independently-movable gripping mechanism carried by the clamping-jaw and arranged to clamp the article against the said jaw.

2. A clamp of the class described, provided with a movable clamping-jaw arranged to engage the article to be held, and gripping mechanism movably mounted on and carried by the clamping-jaw and also arranged to clamp the article independently of and simultaneously with the clamping of the same by the said jaw.

3. A clamp of the class described provided with a movable clamping-jaw having an opening and adapted to engage the article to be held, and a gripping device operating within the opening of the jaw and carried by the latter and arranged to clamp the article against the said jaw.

4. A clamp of the class described, provided with a clamping-jaw arranged to engage the article to be held, said clamping-jaw having an opening, and a hinged dog mounted within the opening of the jaw and arranged to grip a portion of the article and clamp the same against the jaw.

5. A clamp of the class described, having a clamping-jaw provided at its engaging portion with a loop, a dog operating within the loop and carried by the same and arranged to clamp an article against the said jaw, and means for limiting the movement of the dog.

6. A clamp of the class described, having a clamping-jaw provided with a loop, said loop being bifurcated and having eyes at opposite sides of the bifurcation, a movable dog arranged within the loop and having an eye, a lug carried by the dog and movable into and out of engagement with the loop, and a pivot passing through the said eyes and hinging the dog to the jaw, the forward movement of the said dog being limited by the said lug.

7. A clamp of the class described, comprising a casing open at

opposite ends and provided with a pivot, a pair of clamping-jaws mounted on the pivot and extending from the open ends of the casing, and a spring mounted on the pivot and engaging each of the jaws for holding the same in their engaging positions.

8. A clamp of the class described, comprising a casing open at opposite ends and having a pivot, jaws extending from the open ends of the casing and having shanks extending into the same, said shanks being provided at opposite sides with eyes, one of the shanks being extended beyond one of the eyes and provided at its extended portion with a lug, and a spring mounted on the pivot and having an intermediate portion engaging the lug of one of the shanks, and the ends of the spring being engaged with the other shank.

9. A clamp of the class described, comprising a casing having a housing and an attachment-plate, said casing being divided transversely and having interlocking portions, and movable jaws mounted on the casing and extending from the housing.

10. A clamp of the class described, comprising a casing composed of an attachment-plate and a housing, said casing being divided transversely to form two sections, one of the sections being provided with a flange extending into the other section, and movable jaws mounted within the casing and extending therefrom.

11. A clamp of the class described, comprising a movable jaw arranged to engage the article to be held, and a dog carried by the free portion of the jaw and operating within the same and arranged to engage a portion of the article clamped by the jaw.

12. A clamp of the class described, comprising a movable jaw arranged to engage the article to be held, and a dog carried by the free portion of the jaw and operating within the same and arranged to engage a portion of the article clamped by the jaw, said dog having its free end provided with teeth.

808,782. CHANGE-GEARING. CASTOR H. A. DEHNBOSTEL, Wrightsville, Pa. Filed Oct. 1, 1903. Serial No. 175,209.

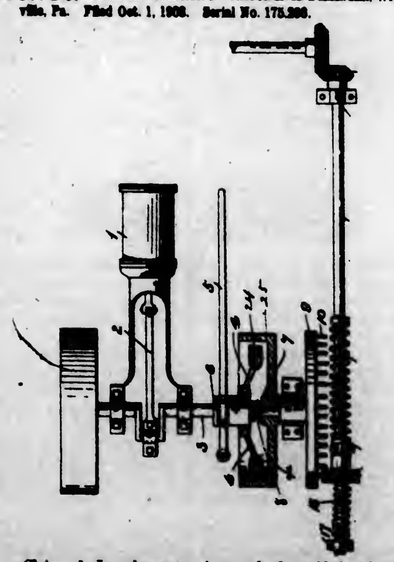

Claim.—1. In a change-gearing, a wheel provided with a series of concentric pins, an engine-shaft, a clutch-drum and clutch member on said shaft, said clutch-drum having connection with the pin-provided wheel, a pinion adapted to engage the pins, a lever for shifting the pinion, and springs to automatically throw the device out of operation when the lever is released.

2. In a change-gearing, a driving-shaft, a wheel provided with a series of concentric pins, a clutch to throw the same into or out of operation, a pinion to engage the pins, a shaft upon which the pinion is journaled, a lever for operating the pinion, and springs to throw the device out of operation when the lever is released.

808,783. POCKETKNIFE STANDARD. GEORGE W. DU BOIS, New Orleans, La. Filed Sept. 26, 1905. Serial No. 280,249.

Claim.—1. The combination with a car-body, of standard hinged on the sides of the same and provided with pivoted hooks adapted to extend inward, a rotary shaft arranged in bearings parallel to the side of the car and adapted for engagement with said hooks, gears fixed to said shaft, a transverse shaft having a worm which engages each gear and is adapted to rotate or lock the same, and means for rotating the transverse shaft, substantially as described.

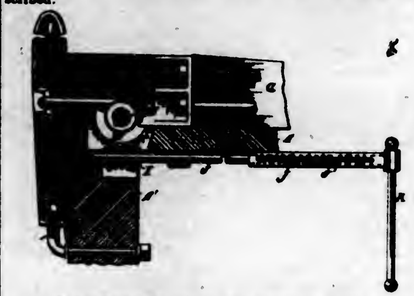

2. The combination with the car-body, of standards pivoted on the sides of the same, hooks hinged to the standards and adapted to extend inward therefrom, a shaft arranged parallel to the side edge of the car adjacent to the standards and provided with flattened portions with which the hooks are adapted to engage, a segmental gear keyed on the shaft, a worm engaging the segment, and a transverse shaft on which the worm is keyed, the same having a slidable extension provided with a handle, substantially as described.

3. The combination with a car-body, standards pivoted on the sides of the same, hooks pivoted to the standards and a shaft arranged along the edge of the car-body and provided with a gear, of means for operating and locking the latter consisting of a worm and a shaft on which the same is mounted, the shaft extending transversely beneath the car, a sliding tubular shaft applied to the worm-shaft, and a slidable handle applied to the outer end of the tubular extension, substantially as described.

4. The combination with a car-body of devices attached to the side thereof, and consisting of U-bolts having the curved central portion bent upward, standards mounted loosely on such curved portions, and means for locking and releasing the standards, substantially as described.

5. The combination with the car-body and standards therefor, of supports for the standards having curved portions arranged parallel to the side of the car, and the convex side of the curve being uppermost, and means for locking and releasing the standards, substantially as described.

808,784. CORN-POPPER. HERBERT W. HAKINS, Springfield, Ohio, assignor to Walter S. Long, Springfield, Ohio. Filed July 31, 1903. Serial No. 167,669.

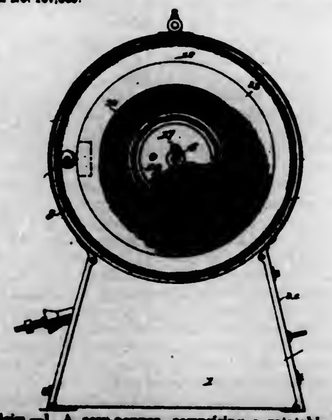

Claim.—1. A corn-popper, comprising a rotatable popping-cylinder having a body composed of a relatively long outer portion consisting of a cylindrical screen of relatively fine mesh, a relatively short central portion consisting of a hollow drum closed at one end, open at the other end, and having an opening in its body-wall, and heads or ends converging inwardly from the outer cylinder to the inner drum, and an internal volute screen of relatively large mesh, connected with the outer cylinder at one end, extending around the central drum, and connected with said drum at a point adjacent to the opening in the body-wall thereof, substantially as described.

2. A corn-popper, comprising a rotatable popping-cylinder having a body composed of a relatively long outer portion consisting of a cylindrical screen of relatively fine mesh, a relatively short central portion consisting of a hollow fruste-conical drum closed at its smaller end, open at its larger end and having an opening in its body-wall, and heads or ends converging inwardly from the outer cylinder to the inner drum, and an internal volute screen of relatively large mesh, connected with the outer cylinder at one end, extending around the central drum, and connected with said drum at a point adjacent to the opening in the body-wall thereof, substantially as described.

3. A corn-popper, comprising a rotatable popping-cylinder having a body composed of a relatively long outer portion consisting of a cylindrical screen of relatively fine mesh provided with a peripheral opening, a relatively short central portion consisting of a hollow drum closed at one end, open at the other end, and having an opening in its body-wall, and heads or ends converging inwardly from the outer cylinder to the inner drum, and an internal volute screen of relatively large mesh, having one of its ends connected with the outer cylinder at the forward margin of the opening therein, said screen extending around the central drum and being connected therewith at a point adjacent to the rear margin of the opening in the body-wall thereof, substantially as described.

4. In a corn-popper, a popping-cylinder comprising heads and an outer cylindrical screen, an internal volute screen, and a trash-outlet frame or casing having a mouth or opening, said frame being provided with outer flanges extending in opposite directions from said mouth or opening to receive the ends of the outer screen, and said frame being also provided with an inwardly-extending portion provided with a flange to receive the outer end of the volute screen, substantially as described.

5. In a corn-popper, a popping-cylinder comprising heads and an outer cylindrical screen, an internal volute screen, and a trash-outlet frame or casing having a mouth or opening, said frame being provided with outer flanges extending in opposite directions from said mouth to receive the ends of the outer screen, said frame being also provided with an inwardly-extending portion to which is connected the outer end of the volute screen, said frame being further provided with lateral grooved flanges to fit over the margins of the heads, substantially as described.

808,785. METAL AXLE. EMIL BENFELDT, Davenport, Iowa, assignor to Bettendorf Metal Wheel Company, a Corporation of Iowa. Filed Nov. 9, 1904. Serial No. 232,055.

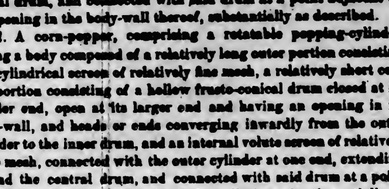

Claim.—1. A metal axle comprising a body portion and integral bearing-spindles, the body portion being composed of a web and flat longitudinal flanges, and the bearing-spindles being composed of a web of greater thickness and of less height than that of the body portion, and forming an integral continuation of the latter, and curved flanges forming integral continuations of the flat flanges of the body portion.

2. A metal axle consisting of a single section of commercial I-beam, comprising a main body portion and integral bearing-spindles, the body portion having flat flanges and a longitudinal connecting-web, and the bearing-spindles having a thickened web and inwardly-curved flanges with longitudinal spaces between the flanges and the web, and two bearing-shoulders at opposite sides of the bearing-spindle at its inner end, said shoulders being formed wholly of the metal of the flanges and presenting projections at two sides only of the spindle.

3. An axle embodying a section of I-beam having the web at the end of the section thickened, condensed and reduced in height, and the flanges at the end curved inward toward each other to present a rounded bearing-surface with longitudinal spaces between the curved curved flanges and the web.

4. An axle embodying a section of flanged bar having the flanges at the end curved to form a bearing-spindle, and integral shoulders at the inner end of the bearing-spindle, said shoulders being formed of the upset metal of the flanges.

5. A metal axle comprising a section of I-beam, with the web at the end condensed and thickened, and the ends of the flanges curved inward to form a bearing and spindle, and shoulders at the inner end of the spindle, consisting of the upset metal of the flanges

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808,786. METHOD OF SHAPING METAL BARS. EMIL BENFELDT, Davenport, Iowa, assignor to Bettendorf Metal Wheel Company, a Corporation of Iowa. Original application filed Nov. 9, 1904, Serial No. 232,054. Divided and this application filed Mar. 17, 1905. Serial No. 250,949.

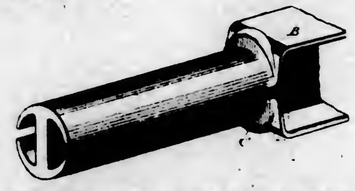

Claim.—1. The method of shaping flanged bars which consists in subjecting the bar to a lateral pressure to reduce its height locally, and rounding the flanges of the reduced portion.

2. The method of shaping flanged bars which consists in subjecting the same to lateral pressure at the end to reduce its height, rounding the flanges of the reduced portion of the bar, and subjecting the same to endwise pressure to form a shoulder.

3. The method of making metal axles which consists in selecting a bar having longitudinal flanges and a connecting-web, reducing the height of the web at the end of the bar and thereby increasing the thickness of said web, and bending the flanges of the thickened portion of the web inward to form a rounded surface and to leave longitudinal spaces between the web and the bent flanges.

808,787. HANDLE OR GRIP OF DUMB-BELLS OR OTHER EXERCISING APPARATUS. HENRY FARNBOTHER, London, England. Filed Mar. 31, 1905. Serial No. 253,130.

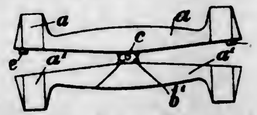

Claim.—1. A grip formed in sections pivoted together centrally, and buffers near the ends of certain of the sections.

2. A grip comprising a body-section provided with ears, and sections pivoted to the ears of the body-section, buffers near the ends of the pivoted sections to contact with the body-section.

3. A grip comprising a body-section, and parallel sections pivoted to the body-section, buffers near the ends of the pivoted sections to contact with the body-section.

4. A grip comprising sections secured together centrally in such a manner as to permit a rocking movement of the sections, buffers carried by the sections.

808,788. COLLAPSIBLE TRUCK. CHARLES H. FISCHER, West Harrison, Ind. Filed Sept. 3, 1904. Serial No. 223,194.

Claim.—In a collapsible truck, the combination of the lengthwise pieces A A' respectively having the grooves *a a'*, the cross-piece B pivotally connected to both said lengthwise pieces at one end of the latter, said cross-piece having the groove *b*, a caster at each of said latter ends, and a caster at each of the other ends of said lengthwise pieces, said pieces folding by being swung on their pivots with said lengthwise pieces relatively reversed lengthwise and the outer side of one of said lengthwise pieces facing the inner side of the other of said lengthwise pieces, substantially as described.

808,738.

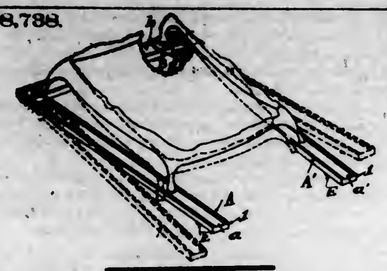

808,739. STREET-SWEEPER'S CART. GEORGE POCHT, Hoboken, N. J. Filed Feb. 24, 1905. Serial No. 247,186.

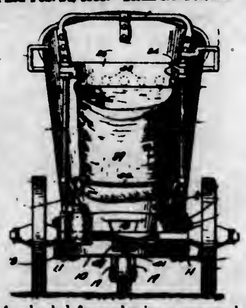

Claim.—1. A wheeled frame having upper and lower spaced supports for a main receptacle, the upper support being arranged to partly encircle the rear portion of said receptacle, and a clamping means carved to conform to said upper support and coacting therewith to hold an auxiliary receptacle.

2. A wheeled frame having a plurality of spaced supports for a main receptacle, one of said supports constituting a bag-clamping bar, and a second bar coacting therewith, said bars being provided with interfitting projections and recesses for engagement with a bag.

3. The combination with a wheeled frame arranged for the reception of a main receptacle, of an elevated bar supported by the frame and shaped to conform to the contour of the receptacle, and a second clamping-bar coacting therewith, the bars being provided with interfitting projections and recesses for engagement with a bag.

4. A cart having a flanged frame for the support of a receptacle, and a receptacle-locking means carried by the flange of said frame and engaging the lower portion of the receptacle.

5. The combination with a frame including an annular flange arranged for the reception of a receptacle, locking devices carried by said annular flange, an auxiliary receptacle-support arranged in a plane above the flange, and a pivotally-mounted clamping-bar serving in connection with said auxiliary support to clamp and hold the bag.

6. In apparatus of the class described, the combination with a wheeled frame including an annular flange arranged for the support of a receptacle, receptacle-locking devices at the front and rear of said flange, axle-boxes formed integral with the flange and provided with axle-receiving slots, axles extending through said slots, springs arranged within the boxes and bearing on the axle, wheels carried by the axle, inclined bars extending upward from points adjacent to the axle-boxes, a combined clamping and supporting bar carried by the upper ends of said bars, an auxiliary clamping member pivoted to one of said bars and coacting with said clamping and supporting bar to engage with and hold the bag.

7. In a device of the class specified, a wheeled frame, a detachable receptacle carried thereby, means for interlocking the frame and receptacle, and an operating-handle rigidly secured to and extending rearward from the receptacle to permit tilting of the wheeled frame and receptacle, and for propelling and guiding the same, the handle serving, also, as a means for manipulating the receptacle when the latter is detached.

808,740. TRANSPORTER. JOHN J. FRANK, Schenectady, N. Y., assignor to Grondal Electric Company, a Corporation of New York. Filed Mar. 27, 1903. Serial No. 149,174.

Claim.—1. A magnetic core formed of a number of similar units, each of which is composed of a plurality of bundles of laminæ, the laminæ in the different bundles being successively displaced so that each bundle is an oblique prism, the laminæ in some of the different bundles in each unit being displaced in opposite directions so that the acute solid angles of one bundle correspond to the obtuse solid angles of the other.

2. A magnetic core formed of three laminated units, the planes of lamination intersecting each other at one hundred and twenty degrees, each unit being formed of a plurality of bundles, some of said bundles overlapping the others to form tenons which interlock with the other bundles.

3. In a magnetic core, a body of magnetic material formed of three units or portions, each of which is laminated in planes intersecting the planes of lamination of the other units at angles of one hundred and twenty degrees, each unit being formed of two or more bundles of laminæ, the edges of the laminæ in one bundle of each unit being parallel to the planes of lamination of another unit, and the corresponding edges of another bundle terminating in a plane parallel to the planes of lamination of the other unit.

4. In a magnetic core, a portion formed of three units, each unit being formed of two or more bundles of laminæ, the planes of lamination of each unit being at one hundred and twenty degrees angle with the planes of lamination of the other units, one bundle in each unit projecting by another bundle in said unit, the laminæ in each unit being so arranged that the plane in which the edges of one bundle in each unit terminate is parallel to the plane of lamination of one of the other units, while the corresponding edges of another bundle in the same unit terminate in a plane parallel to the plane of lamination of the second of said other units.

5. In combination, a winding substantially annular, a plurality of magnetic core-sections linked about said winding, each of said core-sections being in the form of a body composed of laminæ each of which has an opening in it through which the winding is passed, the laminæ in each body being so arranged that the opening through the body is not straight but has one portion inclined at an angle to another portion.

6. In combination, a winding substantially annular, a plurality of magnetic core-sections linked about said winding, each of said core-sections being in the form of a body composed of laminæ, each of which has an opening in it through which the winding is passed, the laminæ in each of said bodies being arranged so that the passage through the body is not straight but is formed with one portion which is substantially tangential to the portion of the winding in proximity to it, and another portion removed from the first which is substantially tangential to the portion of the winding in proximity with it.

7. In a transformer, a core comprising a prism-shaped leg or part polygonal in cross-section and one or more outer legs, the surface adjacent said prism-shaped leg formed in two parts, one of said parts being substantially parallel to one side of the prism-shaped central leg and the other part being parallel to a second side of said prism-shaped central leg.

8. In a transformer, a core comprising a prism-shaped leg or branch polygonal in cross-section, and one or more other legs, the surface adjacent said prism-shaped leg of each of the other legs being formed in two parts, one of said parts being substantially parallel to one side of the prism-shaped central leg and the other part being parallel to an adjacent side of said prism-shaped leg.

9. In a transformer, a core comprising a prism-shaped leg or branch polygonal in cross-section, and one or more other legs, the surface adjacent said prism-shaped leg of each of the other legs being formed in two parts, one of said parts being substantially parallel to one side of the prism-shaped central leg and the other part being parallel to an adjacent side of said prism-shaped leg, a winding surrounding said prism-shaped leg, the inner and outer surface of said winding being substantially similar to the surface of said prism-shaped leg or branch.

808,741. COKE-HANDLING APPARATUS. GEORGE G. PETER, Syracuse, N. Y. Filed Mar. 24, 1902. Serial No. 99,955.

Claim.—1. The combination in a coke-handling apparatus with a coke-oven; of a device for discharging the body of coke from the oven, and a platform for receiving the body of coke, said platform being movable on an axis arranged in a plane at an angle to the path of the body of coke during the passage of said coke through the oven, substantially as and for the purpose described.

2. The combination in a coke-handling apparatus with a coke-oven; of a device for discharging the body of coke from the oven, and a platform for receiving the body of coke, said platform being movable on an axis substantially crosswise of the path of the body of coke during its passage through the oven, substantially as and for the purpose specified.

3. The combination in a coke-handling apparatus with a coke-oven; of a device for discharging the body of coke from the oven, and a platform for receiving the body of coke, said platform being movable on an axis substantially crosswise of the path of the body of coke during its passage through the oven, and being arranged with its axis at the side of said path of the coke, substantially as and for the purpose set forth.

4. The combination in a coke-handling apparatus with a coke-oven; of a device for discharging the body of coke in a substantially horizontal plane from the oven, and a platform for receiving the body of coke, said platform being movable on a substantially upright axis crosswise of the path of the body of coke during its passage through the oven, substantially as and for the purpose described.

5. The combination in a coke-handling apparatus with a coke-oven; of a device for discharging the body of coke from the oven, and a platform for receiving the body of coke, said platform being movable on an axis substantially crosswise of the path of the body of coke during its passage through the oven, and being movable on an axis disposed at an angle to the first-mentioned axis for discharging the coke, substantially as and for the purpose specified.

6. The combination in a coke-handling apparatus with a coke-oven; of a device for discharging the body of coke from the oven, a frame, a platform for receiving the body of coke, said platform being journaled in the frame on axes disposed at an angle to each other and being movable relatively to the frame on one axis substantially crosswise of the path of the body of coke during its passage through the oven, and being movable relatively to the frame on the other axis for discharging the coke, and means for moving the platform relatively to the frame, substantially as and for the purpose set forth.

7. The combination in a coke-handling apparatus with a coke-oven; of a device for discharging the body of coke from the oven, and a platform for receiving and retaining the body of coke, said platform, for discharging the coke, being movable on an axis arranged substantially parallel to the path of the body of coke during its passage through the oven, substantially as and for the purpose specified.

8. The combination in a coke-handling apparatus with a coke-oven; of a device for discharging the body of coke from the oven, a platform for receiving the body of coke, said platform being movable on an axis arranged in a plane at an angle to the path of the body of coke during the passage of said coke through the oven, and means for additionally moving the platform for discharging the coke therefrom, substantially as and for the purpose described.

9. The combination in a coke-handling apparatus with a coke-oven; of a device for discharging the body of coke from the oven, a platform for receiving and retaining the body of coke, said platform being movable on an axis substantially crosswise of the path of the body of coke during its passage through the oven and being movable on a second axis for discharging the coke from the platform, and means for moving the platform on said second axis, substantially as and for the purpose specified.

10. The combination in a coke-handling apparatus with a coke-oven; of a device for discharging the body of coke from the oven, a platform for receiving and retaining the body of coke, said platform being movable on an axis arranged in a plane at an angle to the path of the body of coke during the passage of said coke through the oven, a retaining-wall for preventing the escape of the coke from the platform, and means for changing the position of the platform relatively to the retaining-wall and thereby discharging the coke from the platform, substantially as and for the purpose set forth.

11. The combination in a coke-handling apparatus with a coke-oven; of a device for discharging the body of coke from the oven, a platform for receiving and retaining the body of coke, said platform being movable on an axis substantially crosswise of the path of the body of coke during its passage through the oven, a retaining-wall for preventing the escape of the coke from the platform, said retaining-wall being formed with an opening arranged at the side of the axis, and means for moving the platform and thereby discharging the coke therefrom, substantially as and for the purpose described.

12. In a coke-handling apparatus and in combination, a coke-oven having an exit-opening for the coke, means for discharging the coke from the oven in a compact mass or body, and movably-mounted receiving means therefor arranged to have movement imparted thereto by the coke in the discharge movement of the same to carry the surface which has received a body of coke out of register with the exit-opening of the oven and to bring other surfaces of said receiving means into register with said exit-opening, substantially as described.

13. In a coke-handling apparatus and in combination, a rotatable receiving-surface, a coke-oven, and means for discharging a body of coke from said oven in a compact body or mass onto said surface, substantially tangentially of the latter, substantially as described.

14. In a coke-handling apparatus, the combination with a coke-oven, and means for discharging coke therefrom in a compact mass or body, of a rotatable receiving-surface arranged substantially tangentially in relation to the line of movement of said body of coke, substantially as described.

15. In a coke-handling apparatus, the combination with a coke-oven, and means for discharging the coke therefrom in a compact mass or body, of a rotatable receiving-surface arranged to receive said body of coke substantially tangentially of the same, substantially as described.

16. In a coke-handling apparatus, the combination with a coke-oven, and means for discharging the coke therefrom in a compact mass or body, of a receiving-surface movable transversely of the line of movement of the discharged coke, and having an additional movement in the line of formation of the discharged body of coke to bring all portions of its surface into register with said coke-chamber with a minimum breakage of the discharged body of coke, substantially as described.

17. In a coke-handling apparatus, the combination with a plurality of parallel coke-ovens, and means for discharging the coke therefrom along substantially parallel paths, of receiving means having movement transversely of said paths to successively register with each of the same and having an additional movement to successively bring different parts of the receiving-surface thereof substantially in tangential relation to said paths of movement, substantially as described.

808,742. MACHINE FOR FORMING BOX-SHOOKS. HENRY A. GALE, Hartford, Conn., assignor to Georgiana C. Gale, Hartford, Conn. Filed July 29, 1905. Serial No. 271,791.

Claim.—1. A machine for forming box-shooks having a stationary jaw, a movable jaw, a movable bed for supporting and advancing the shooks lengthwise between the jaws, means for moving the movable jaw toward the stationary jaw and squeezing the shooks between the jaws, means which automatically arrest this movement of the movable jaw and release the squeeze when the required pressure is obtained, and coöperating mechanism for actuating these means, substantially as specified.

2. A machine for forming box-shooks having a stationary jaw, a movable jaw, a movable bed for supporting and advancing the shooks lengthwise between the jaws, means for moving the movable jaw toward the stationary jaw and squeezing the shooks between the jaws, means which automatically arrest this movement of the movable jaw and release the squeeze when the required pressure is obtained, means for moving the movable jaw away from the stationary jaw, and coöperating mechanism for actuating these means, substantially as specified.

3. A machine for forming box-shooks having a stationary jaw, a movable jaw, a movable bed for supporting and advancing the shooks lengthwise between the jaws, means for moving the movable jaw toward the stationary jaw and squeezing the shooks between the jaws, means which automatically arrest this movement of the movable jaw and release the squeeze when the required pressure is obtained, means for moving the movable jaw away from the sta-

tionary jaw, means for trimming the edges of the shooks, and co-operating mechanism for actuating these means, substantially as specified.

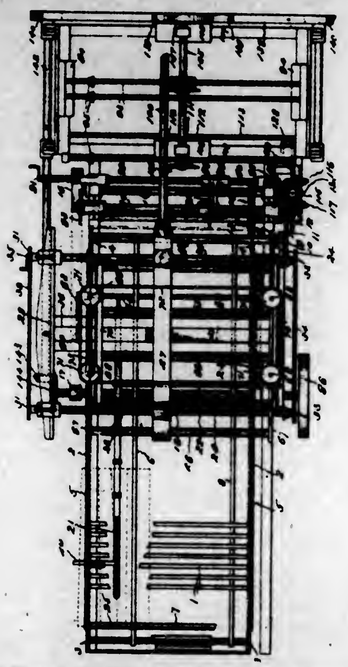

4. A machine for forming box-shooks having a stationary jaw, a movable jaw, a movable bed for supporting and advancing the shooks lengthwise between the jaws, means for moving the movable jaw toward the stationary jaw and squeezing the shooks between the jaws, means which automatically arrest this movement of the movable jaw and release the squeeze when the required pressure is obtained, means for moving the movable jaw away from the stationary jaw, means for trimming the edges of the shooks, means for trimming the ends of the shooks, and coöperating mechanism for actuating these means, substantially as specified.

5. A machine for forming box-shooks having a stationary jaw, a movable jaw, a movable bed for supporting and advancing the shooks lengthwise between the jaws, means for moving the movable jaw toward the stationary jaw and squeezing the shooks between the jaws, means which automatically arrest this movement of the movable jaw and release the squeeze when the required pressure is obtained, means for moving the movable jaw away from the stationary jaw, means for trimming the ends of the shooks, and coöperating mechanism for actuating these means, substantially as specified.

6. A machine for forming box-shooks having a jaw adjustably fixed near the back of the bed, a jaw near the front of the bed and movable toward and from the stationary jaw, a movable bed for supporting and advancing the shooks lengthwise between the jaws, means for moving the movable jaw toward the stationary jaw and squeezing the shooks between the jaws, means which automatically arrest this movement of the movable jaw and release the squeeze when the required pressure is obtained, means for moving the movable jaw away from the stationary jaw, means for trimming the edges of the shooks, means for trimming the ends of the shooks, and coöperating mechanism for actuating these means, substantially as specified.

7. A machine for forming box-shooks having a stationary jaw, a movable jaw, means for moving the movable jaw toward the stationary jaw and squeezing the shooks between the jaws, means which automatically arrest this movement of the movable jaw and release the squeeze when the required pressure is obtained, and means for moving the movable jaw away from the stationary jaw, substantially as specified.

8. A machine for forming box-shooks having a stationary jaw, a movable jaw, a movable bed for supporting and advancing the shooks lengthwise between the jaws, means for moving the movable jaw toward the stationary jaw and squeezing the shooks between the jaws, means which automatically arrest this movement of the movable jaw and release the squeeze when the required pressure is obtained, means for moving the movable jaw away from the stationary jaw, two saws adjustable toward the front and back of the machine for trimming the edges of the shooks, two saws adjustable toward and from the ends of the machine for trimming the ends of the shooks, and coöperating mechanism for actuating these means, substantially as specified.

9. A machine for forming box-shooks having chains movable longitudinally of the machine, slats attached to and movable with the chains and forming a bed for supporting and advancing the shooks, rolls for holding the shooks down on the bed, a stationary jaw, a movable jaw, means for moving the movable jaw toward the stationary jaw and squeezing the shooks between the jaws, means which automatically arrest this movement of the movable jaw and release the squeeze when the required pressure is obtained, means for moving the movable jaw away from the stationary jaw, saws for trimming the edges of the shooks, saws for trimming the ends of the shooks, and mechanism for actuating the chains, the jaws and the saws, substantially as specified.

10. A machine for forming box-shooks having a stationary jaw, a movable jaw, a movable bed for supporting and advancing the shooks lengthwise between the jaws, means for moving the movable jaw toward the stationary jaw and squeezing the shooks between the jaws, means which automatically arrest this movement of the movable jaw and release the squeeze when the required pressure is obtained, means for moving the movable jaw away from the stationary jaw, saws rotatable in longitudinal planes and supported by fixed bearings, and saws rotatable in transverse planes and supported by movable bearings, substantially as specified.

11. A machine for forming box-shooks having a movable bed, rolls for holding the shooks down upon the bed, vertically-adjustable frames supporting said rolls, means for adjusting the frames vertically, a stationary jaw, a movable jaw, means for moving the movable jaw toward the stationary jaw and squeezing the shooks between them, means which automatically arrest this movement of the movable jaw and release the squeeze when the required pressure is obtained, and means for moving the movable jaw away from the stationary jaw, substantially as specified.

12. A machine for forming box-shooks having chains, mechanism for moving the chains, slats attached to the chains, feeding-ribs attached to the slats at intervals, mechanism for stopping the feeding of the bed, a stationary jaw, a movable jaw, means for moving the movable jaw toward the stationary jaw and squeezing the shooks between the jaws, means which automatically arrest this movement of the movable jaw and release the squeeze when the required pressure is obtained, means for moving the movable jaw away from the stationary jaw, rolls for holding the shooks down upon the bed, saws for trimming the edges of the shooks, feed-rolls for advancing the shooks, and saws for trimming the ends of the shooks, substantially as specified.

13. In a machine for forming box-shooks the combination of supporting-rods, a stationary jaw carried by the rods, feed-screws engaging and holding the stationary jaw, means for rotating the feed-screws and adjusting the stationary jaw longitudinally of the supporting-rods, a slide supported by the frame, means for moving the slide toward and from the stationary jaw, and a movable jaw pivoted on the slide, substantially as specified.

14. In a machine for forming box-shooks the combination of supporting-rods, a stationary jaw carried by the rods, means for adjusting the jaw on the rods, a slide movable on the frame, a movable jaw pivoted on the slide, gearing for moving the slide toward the stationary jaw, mechanism for disconnecting the gearing when the pressure between the jaws reaches the predetermined degree, and mechanism for moving the slide away from the stationary jaw, substantially as specified.

15. In a machine for forming box-shooks the combination of an adjustable stationary jaw, a movable jaw, gearing for moving the movable jaw toward the stationary jaw, and a spring mechanism for holding the gearing in engagement and adapted to yield and permit the disengagement of the gearing when the pressure between the jaws overcomes the tension of the spring, substantially as specified.

16. A machine for forming box-shooks having a stationary jaw, a movable jaw, a movable bed for supporting and advancing the shooks lengthwise between the jaws, means for moving the movable jaw toward the stationary jaw and squeezing the shooks between the jaws, means which automatically arrest this movement of the movable jaw and release the squeeze when the required pressure is obtained, means for moving the movable jaw away from the stationary jaw, a carriage movable toward and from the back of the machine, means for moving the carriage toward and from the back of the machine, and means for rotating the saws while they are being carried toward and from the back of the machine, substantially as specified.

17. In a machine for forming box-shooks the combination of a carriage movable toward and from the back of the machine, means for moving the carriage toward and from the back of the machine, a shaft borne by the carriage, a saw fixed to the shaft, a saw adjustable on the shaft, means for rotating the shaft while it is being carried toward and from the back, a carriage movable toward and from the side of the machine, and means connecting the sidewise-moving carriage and the adjustable saw borne by the backward-moving carriage whereby when one is adjusted the other is also adjusted, substantially as specified.

808,743. **CHURN-DASHER.** WILLIAM L. HART, Mansfield, Mo., assignor of one-half to J. B. Hart, Mansfield, Mo. Filed June 27, 1904. Serial No. 214,389.

Claim.—1. A device of the kind described comprising a dasher-rod, winged, cup-shaped dashers carried by the said rod, the wings of the upper dasher extending upwardly, and those of the lower dasher downwardly, and a dasher having inclined blades arranged on the rod between the cup-shaped dashers.

2. The combination with a dasher-rod, of oppositely-arranged cup-shaped dashers, having wings formed with a radial torsional twist, said dashers being arranged in vertical alinement, the upper dasher rotates in one direction on a downstroke and in an opposite direction on the upstroke and the lower dasher rotates in an opposite direction on an upstroke to what it does on a downstroke, and a dasher having inclined blades arranged between the first-mentioned dashers and adapted to rotate in reverse direction of the up and down strokes, respectively.

3. The combination with a dasher-rod, of oppositely-arranged cup-shaped dashers having wings formed with a radial torsional twist, said dashers being secured to the end of the said rod in vertical alinement by a screw passing through the openings in the dashers, the dashers rotating in reverse directions on their up and down strokes, and a dasher having inclined blades arranged between said dashers on the screw and adapted to rotate in reverse directions of the up and down stroke, respectively.

808,744. **ENAMELED ORNAMENT.** OTTO L. HEINTZ, Buffalo, N. Y. Filed Feb. 15, 1905. Serial No. 245,668.

Claim.—The herein-described method of producing enameled ornaments which consists in placing face upward a pattern bearing a design in relief, then applying a coat of powdered enamel upon the upturned face of said pattern, then applying an adhesive to the article to be ornamented, then bringing said adhesive coated surface while the same is turned downward in contact with the powdered enamel on the high parts of the pattern whereby said enamel is lifted off from the high parts of the pattern and transferred to the adhesive coated surface of said article, and then heating said article and the enamel thereon for melting and hardening the enamel and causing the same to adhere to said article, substantially as set forth.

808,745. **WRAPPER-TRANSFERRING MECHANISM.** FREDERICK L. HEMMINGWAY, New York, N. Y., and HARRY KNIGHT, Jersey City, N. J., assignors to International Cigar Machinery Company, New York, N. Y., a Corporation of New Jersey. Filed Apr. 3, 1905. Serial No. 253,253.

Claim.—1. The combination with a wrapping mechanism, of a wrapper-support on which a wrapper is held, and a device operating to positively engage one end of the wrapper on the support, transfer it to and hold it against the article to be wrapped in the wrapping mechanism at the beginning of the wrapping operation, substantially as described.

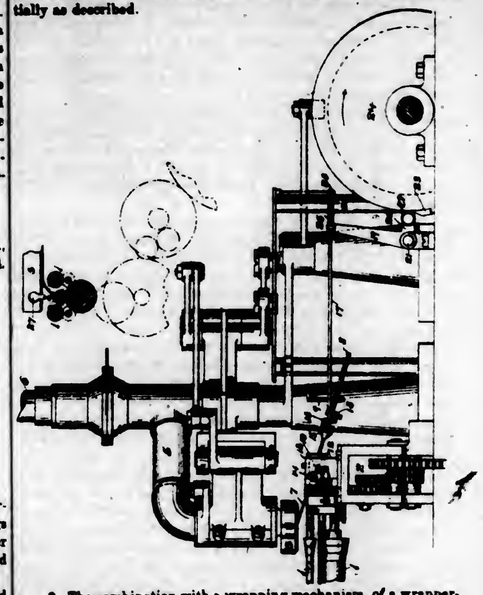

2. The combination with a wrapping mechanism, of a wrapper-support on which a wrapper is held, means for effecting a relative movement between the wrapping mechanism and the support to deliver the wrapper to the wrapping mechanism, and a device operating to positively engage one end of the wrapper on the support, transfer it to and hold it against the article to be wrapped in the wrapping mechanism at the beginning of the wrapping operation, substantially as described.

3. The combination with a wrapping mechanism, of a wrapper-support lying in a plane which does not intersect the wrapping mechanism, means for effecting a relative movement between the wrapping mechanism and the support for causing the wrapper to be delivered to the article to be wrapped in the wrapping mechanism, and a transferring device operating to positively engage one end of the wrapper on the support, transfer it to and hold it against said article to be wrapped at the beginning of the wrapping operation, substantially as described.

4. The combination with a wrapping mechanism, of a suction wrapper-support lying in a plane which does not intersect the wrapping mechanism, means for effecting a relative movement between the wrapping mechanism and the support for causing the wrapper to be delivered to the article to be wrapped in the wrapping mechanism, and a transferring device operating to positively engage one end of the wrapper on the support, transfer it to and hold it against said article to be wrapped at the beginning of the wrapping operation, substantially as described.

5. The combination with a support on which a wrapper is held, of a wrapping mechanism, a finger, and means for operating the finger to engage the wrapper on the support, transfer it to and hold it against the article to be wrapped in the wrapping mechanism at the beginning of the wrapping operation, substantially as described.

6. The combination with a suction wrapper-support on which the wrapper is held, of a wrapping mechanism, a finger, and means for operating the finger to engage the wrapper on the support, transfer it to and hold it against the article to be wrapped in the wrapping mechanism at the beginning of the wrapping operation, substantially as described.

7. The combination with a recessed wrapper-support, of a wrapping mechanism, a finger, and means for operating the finger to cause it to enter the recess in the support and take the wrapper and then transfer it to the article to be wrapped in the wrapping mechanism, substantially as described.

8. The combination with a suction wrapper-support having a recessed face, of a wrapping mechanism, a finger, and means for operating the finger to cause it to enter the recess in the support and take the wrapper and then transfer it to the article to be wrapped in the wrapping mechanism, substantially as described.

9. The combination with a recessed wrapper-support, of a wrapping mechanism comprising suitable rollers, a transferring-finger, and means for operating the finger to cause it to enter the recess in the support and take the wrapper and then transfer it from the support to the article to be wrapped in the wrapping mechanism, substantially as described.

10. The combination with a recessed suction wrapper-support, of a wrapping mechanism comprising suitable rollers, a transferring-finger, and means for operating the finger to cause it to enter the recess in the support and take the wrapper and then transfer it from the support to the article to be wrapped in the wrapping mechanism, substantially as described.

11. The combination with a wrapper-support having a recess therein, of a wrapping mechanism, a transfer-finger, means for adjusting the finger to cause it to register with the support, and means for operating the finger to cause it to enter the recess in the support and take the wrapper and then transfer it from the support to the article to be wrapped in the wrapping mechanism, substantially as described.

12. The combination with a suction wrapper-support having a recess therein, of a wrapping mechanism, a transfer-finger, means for adjusting the finger to cause it to register with the support, and means for operating the finger to cause it to enter the recess in the support and take the wrapper and then transfer it from the support to the article to be wrapped in the wrapping mechanism, substantially as described.

13. The combination with a roller wrapping mechanism, of a recessed suction wrapper-support, means for giving the support a movement to deliver the wrapper to the wrapping mechanism, means for reciprocating the finger, and a guide operating to direct the finger into the recess in the support and to move the finger from the support to the wrapping mechanism, substantially as described.

14. The combination with a roller wrapping mechanism, of a suction wrapper-support having a recessed face, means for effecting a relative movement between the support and the wrapping mechanism, whereby the wrapper is delivered to the article in the wrapping mechanism, a finger, a conical collar on the finger, a guide-block having a conical recess therein, and means whereby the block may be adjusted, substantially as described.

15. The combination with a roller wrapping mechanism, of a suction wrapper-support having a recessed face, means for effecting a relative movement between the support and the wrapping mechanism, whereby the wrapper is delivered to the article in the wrapping mechanism, a finger, a conical collar on the finger, a circular block having a conical recess eccentrically located therein, and a holder in which the block is adjustably mounted, substantially as described.

16. The combination with a wrapping mechanism, of a wrapper-support having a recessed face, means for effecting a wrapper-delivery movement between the wrapping mechanism and the support, a finger, a conical collar mounted therein, a circular guide-block having a conical recess eccentrically located therein, a bearing in which the block may be adjusted, and means for reciprocating the finger, substantially as described.

808,746. POTATO-DIGGER. JOHN HAY, Orange township, Cuyahoga county, Ohio. Filed Feb. 11, 1905. Serial No. 245,206.

Claim.—1. In a potato-digger, in combination, a main frame having a gage-wheel at the front end, a vertically-swinging frame pivoted on said frame and having a shovel at its front end, the shovel being adjustable vertically with respect to the main frame and gage-wheel, a tongue hinged to the main frame, and a lever fulcrumed on the main frame and connected to the tongue and adapted to lift the front end of the main frame, which lever swings free when the main frame is lowered.

2. In a potato-digger, in combination, a tilting frame comprising upper and lower side bars, the inclined bars 13 extending therebetween, and an arch-bar fixed to the upper side bars and having angular branches which fit upon and are secured to the said inclined bars, and carrying stub-axles for the wheel.

3. In a potato-digger, in combination, a tilting and adjustable frame comprising upper side bars, inclined bars rigid therewith and extending downwardly and backwardly therefrom, lower shovel-supporting bars pivoted at the rear ends to the inclined bars and projecting forwardly therefrom, and a lever fulcrumed on the upper bars and connected to the front ends of said lower bars.

808,746.

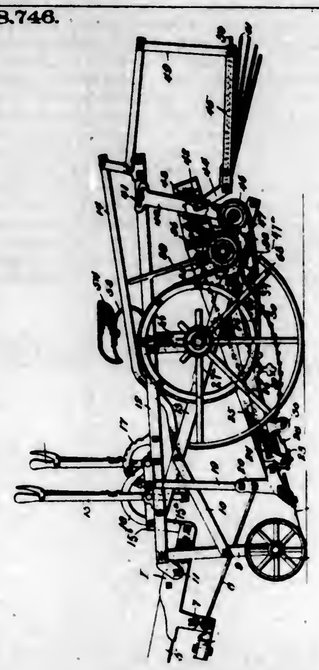

808,747. BETA-SUBSTITUTED ESTER OF DIAMINOGLYCERIN AND PROCESS OF MAKING SAME. FRITZ HOFMANN, Elberfeld, Germany, assignor to Farbenfabriken of Elberfeld Co., New York, N. Y., a Corporation of New York. Filed July 17, 1905. Serial No. 270,106.

Claim.—1. The herein-described new beta-substituted esters of diaminoglycerin produced from beta-substituted diaminoglycerins which compounds are oils and on prolonged boiling, preferably with dilute acids, split off organic acids under the formation of beta-hydroxy compounds of the following general formula:

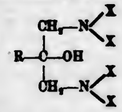

in which X represents hydrogen atoms, any of them may be replaced by hydrocarbon radicals and the latter R represents a hydrocarbon radical and which compounds, being of a dibasic character, form two series of salts with acids, substantially as hereinbefore described.

2. The herein-described new benzoyl derivative of beta-ethyltetramethyldiaminoglycerin having the formula:

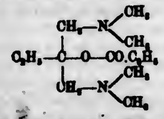

being an oil boiling at 165° centigrade under a pressure of ten millimeters and being split up into benzoic acid and beta-ethyltetramethyldiaminoglycerin on being boiled with hydrochloric acid and being of a dibasic character forms two series of salts with acid, substantially as hereinbefore described.

808,748. BENZOYL CHLORID DERIVATIVE OF BETA-ETHYLTETRAMETHYLDIAMINOGLYCERIN. FRITZ HOFMANN, Elberfeld, Germany, assignor to Farbenfabriken of Elberfeld Co., New York, N. Y., a Corporation of New York. Filed June 24, 1905. Serial No. 266,866.

Claim.—The herein-described new hydrochlorid of the benzoyl derivative of beta-ethyltetramethyldiaminoglycerin having the formula:

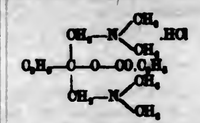

forming white crystals melting at 169° centigrade which are soluble in water and in acetone, and being a valuable local anesthetic, substantially as described.

808,749. SUPPORT FOR SLIDING DOORS. LARS HOLMER, Limhamn, Sweden. Filed Sept. 23, 1904. Serial No. 225,023.

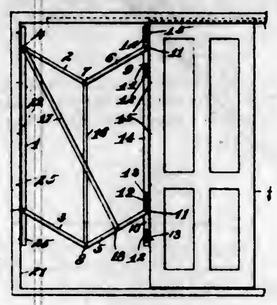

Claim.—1. In a support for sliding doors, in combination, a supporting member; a pair of arms pivotally connected with said supporting member; an arm connecting said pair of arms for maintaining them in parallel relation; a link pivotally connected with the outer end of each one of said pair of arms; means for pivotally attaching said links to a door; and a carrying-link pivotally connected with said supporting member and one of said links.

2. In a support for sliding doors, in combination, a supporting-member; a pair of arms pivotally connected with said supporting member; an arm connecting said pair of arms for maintaining them in parallel relation; a link pivotally connected with the outer end of each one of said pair of arms; a plate pivotally connected with the outer end of each of said links; means for adjustably connecting said plates to a door; and a carrying-link pivotally connected with said supporting member and one of said links.

3. In a support for sliding doors, in combination, a supporting member; a pair of arms pivotally connected with said supporting member; an arm connecting said pair of arms for maintaining them in parallel relation; a link pivotally connected with the outer end of each one of said pair of arms; an angular bar, one flange of which is adapted to be attached to a door; means for adjustably connecting the outer ends of said links to said angular bar; and a carrying-link pivotally connected with said supporting member and one of said links.

808,750. DUMPING-CAR. FRED M. HUBBARD and CHARLES R. TAYLOR, Chicago, Ill., assignors, by mesne assignments, to National Coal Dump Car Company, Rapid City, S. D., a Corporation of South Dakota. Filed Nov. 23, 1903. Serial No. 183,231.

Claim.—1. In a dumping-car, the combination with the side and end walls of a car-body and a suitable supporting-underframing, of a car-bottom composed of floor-sections hinged to the underframing along the longitudinal median line of the car-bottom, displaceable strut members hinged to and supporting the outer side margins of said hinged floor-sections in a horizontal load-carrying position, means for tripping and throwing inwardly the lower ends of said hinged strut members, and means for raising and lowering the outer side margins of said hinged floor-sections between load-carrying and load-discharging positions, substantially as described.

2. In a dumping-car, the combination with a suitable supporting-underframing, of a car-floor composed wholly of a plurality of sections hinged to the underframing along the longitudinal median line of the car-floor, depending strut members hinged to the outer margins of said hinged floor-sections, shoes supporting the lower ends of said strut members, and means for rocking said shoes to trip and displace said strut members from supporting position, substantially as described.

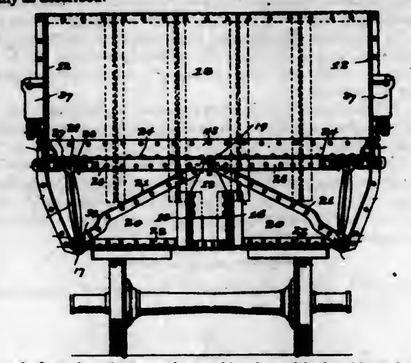

3. In a dumping-car, the combination with the side and end walls of a car-body and a suitable supporting-underframing, of a car-bottom composed of floor-sections hinged to the underframing along the longitudinal median line of the car-bottom, manually-operable suspension devices mounted on the side walls of the car-body and connected to the outer margins of said hinged floor-sections, displaceable strut members hinged to and supporting the outer side margins of said floor-sections in a horizontal or load-carrying position, pivoted shoes having sockets adapted to seat the lower ends of said strut members, and means for rocking said shoes to trip said strut members, substantially as described.

4. In a dumping-car, the combination with the side and end walls of a car-body and a suitable supporting-underframing, of a car-bottom composed of floor-sections hinged to the underframing along the longitudinal median line of the car-bottom, a series of pulleys mounted on the side walls of the car-body, flexible connections between said pulleys and the outer margins of said hinged floor-sections, and gearing connected to and actuating said pulleys, substantially as described.

5. In a dumping-car, the combination with the side and end walls of a car-body and a suitable supporting-underframing, of a car-bottom composed of floor-sections hinged to the underframing along the longitudinal median line of the car-bottom, said floor-sections having a series of extension members projecting outwardly beneath the side walls of the car-body, a series of pulleys mounted on the side walls of the car-body, flexible connections between said pulleys and said extension members, devices carried by the latter engaging and laterally bonding the lower margins of the side walls of the car-body when said floor-sections are in load-carrying position, and gearing connected to and actuating said pulleys, substantially as described.

6. In a dumping-car, the combination with the side and end walls of a car-body and a suitable supporting-underframing, of a car-bottom composed of floor-sections hinged to the underframing along the longitudinal median line of the car-body, a series of hangers rigidly secured to and depending from the side walls of the car-body, a longitudinally-extending inverted angle-iron secured to the lower ends of said hangers on each side of the car-body, a plurality of struts pivoted to the outer side margins of said hinged floor-sections, a series of oscillatory shoes carried by said angle-irons beneath said struts, respectively, and an actuating-rod extending through the series of shoes on each side of the car whereby said shoes may be simultaneously rocked to trip and displace the lower ends of said strut members supported thereby to permit the fall of the floor-sections, substantially as described.

7. In a dumping-car, the combination with a suitable underframing, of a car-floor composed of a plurality of sections hinged to the underframing along the longitudinal median line of the car-floor, the floor-section on one side of said longitudinal median line being provided with a downwardly-offset upwardly-convexed marginal extension overlying said median line, and the floor-section on the opposite side of said longitudinal median line having a downwardly-turned marginal portion overlying said downwardly-offset convex marginal portion of the other floor-section, substantially as described.

8. In a dump-car of the class described, the combination of a supporting-framework, a drop-bottom therefor formed of a plurality of swinging sections pivotally secured to the framework of the car, a

plurality of pulleys with their axes transversely arranged and rotatably mounted on the supporting-frame of the car, chain mechanism securing such pulleys and swinging sections of the drop-bottom together, and mechanism extending longitudinally of the car at right angles to the axes of the pulleys and operatively connected with such pulleys for operating or rotating such pulley mechanisms, substantially as described.

9. In a dump-car of the class described, the combination of a supporting-framework, a drop-bottom portion formed of a plurality of swinging sections pivotally secured at their inner edges thereto, a plurality of pulley mechanisms rotatably mounted on the frame of the car transversely thereof, chain mechanism securing the pulleys to the swinging bottom-sections, an operating-bar, and means connecting each operating-bar to each and every pulley to rotate the same, substantially as described.

808,751. **STRAIGHTENING-TABLE.** SIGMUND V. HUMMEL, Pittsburg, Pa. Filed Aug. 23, 1905. Serial No. 275,496.

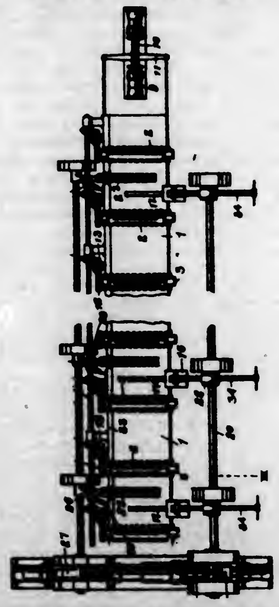

Claim.—1. A straightening-table having in combination a sectional bed provided with a longitudinal abutment, a series of positively-driven rollers, means for raising and lowering the rollers, presser-blocks movable toward and from the abutment, and clamping-arms extending transverse of the bed and movable toward and from the same.

2. A straightening-table having in combination a bed provided with a longitudinal abutment, presser-blocks movable transverse of the bed, arms extending transverse of the bed and movable toward and from the same, and means for moving the arms laterally.

3. A straightening-table having in combination a sectional bed provided with a longitudinal abutment, a series of positively-driven rollers, means for raising and lowering the rollers, presser-blocks movable toward and from the abutment, arms extending transverse of the bed and movable toward and from the same, and means for swinging the arms laterally.

808,752. **HELICALLY-RIFFLED FLUID PIPE-LINE.** JOHN D. ISAAC, Oakland, and JAMES B. STONE, Berkeley, Cal., assignors to Riffel Pipe Company, San Francisco, Cal., a Corporation of California. Filed June 23, 1905. Serial No. 266,870.

Claim.—1. A pipe-line the interior wall of which is provided with a helically-directed obstruction, said line having within it at intervals helically-twisted diaphragms.

2. In an apparatus for the method stated and in combination with means for supplying the lighter and heavier fluids to the pipe-line, a pipe-line the interior wall of which is provided with a helically-directed obstruction, said line having within it at intervals helically-twisted diaphragms.

808,753. **VAPOR ELECTRIC APPARATUS.** ALEXANDER M. JACKSON, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed June 24, 1904. Serial No. 213,230.

Claim.—1. In a vapor electric apparatus, the combination of a container, an anode of non-vaporizable material, and a body of vaporizable material in the container in which the anode is nearly submerged.

2. In a vapor electric apparatus, the combination of a container, a body of mercury therein, and a carbon electrode projecting from said body of mercury and so connected in circuit as to operate as an anode.

3. In a vapor electric apparatus, the combination of a container, a body of mercury therein, a hollow electrode of solid material projecting from said body of mercury and having an opening in its wall to permit access of mercury to the interior of said electrode.

4. In a vapor electric apparatus, the combination of a container, a cathode of fluid material, an anode of solid material, a starting device consisting of a conductor adapted to connect said electrodes electrically and to break connection therewith simultaneously, and fluid material surrounding a portion of the solid electrode.

808,754. **METHOD OF APPLYING HEAT FOR THE TREATMENT OF ORES AND METALLIFEROUS SANDS.** WILLIAM J. JACKSON, San Francisco, Cal. Filed Mar. 30, 1905. Serial No. 253,579.

Claim.—1. The method of applying heat for the treatment of ores or metalliferous sands which consists in adding to said ores or metalliferous sands a suitable exothermic material capable of developing heat when the aqueous solution of the extracting reagent is applied thereto, substantially as described.

2. The method of applying heat for the treatment of ores or metalliferous sands which consists in adding thereto calcium oxid and an agent cooperating with the calcium oxid to liberate heat, substantially as described.

808,755. **ELECTRICAL BATTERY.** CARL JÄGER, Rock Island, Ill., assignor, by direct and mesne assignments, to Rock Island Battery Company, a Corporation of New Jersey. Filed Feb. 27, 1904. Serial No. 195,618.

Claim.—1. A battery-cell having a zinc cup, a carbon pencil within the cup, a compound of dioxid of manganese, iron-filings, and powdered graphite surrounding the carbon pencil, and a filling of flour and plaster-of-paris between the cup and the inclosed body.

2. A battery-cell consisting of a zinc cup, a carbon pencil centrally located in said cup and extending above the same, a porous compound of dioxid of manganese, iron-filings, and powdered graphite surrounding said pencil and containing in solution "ammonia caleidium," ferrocyanid of potash, alcohol, and chlorid of zinc.

3. In a battery-cell, a carbon pencil, a body of graphite, dioxid of manganese, and iron-filings surrounding the same, and an inclosing envelop of porous fabric secured to the same.

4. The combination, in a dry battery, of a series of zinc cups in form of sectors of a cylinder, non-conducting partitions separating the same, a porous carbon pencil at the middle part of each cup, and a filling of porous material saturated with an acid solution between the pencil and cup, and metallic connections between the cup of one cell and the carbon of the next cell, all combined.

5. In a dry battery, an inclosing cylindrical casing, a series of zinc cups in form of sectors of a cylinder inclosed in said casing, insulating-partitions between the cups, a carbon pencil centrally supported in each cup and a porous body saturated with said filling the interval, metallic connections from the zinc of one cup to the carbon of the next cell in series, a non-conducting plastic covering for each of the cells, and suitable terminals, all combined.

808,756. **COMPO-BOARD MACHINE.** CHARLES J. JOHNSON and WILLIAM B. PORTER, Minneapolis, Minn. Filed June 21, 1905. Serial No. 266,266.

Claim.—1. In a machine of the character described, the combination with means for feeding the slats, of a press for action on said slats at the assembling-point, a surfacing-roller operative on said slats, and means for automatically moving said surfacing-roller into an inoperative position, when said press is thrown into action, substantially as described.

2. In a machine of the character described, the combination with means for feeding the slats and the paper strips, of a press for pressing said strips into said slats, a surfacing-roller operative on said slats, and means for automatically moving said roller into an operative position, when said press is thrown into action, substantially as described.

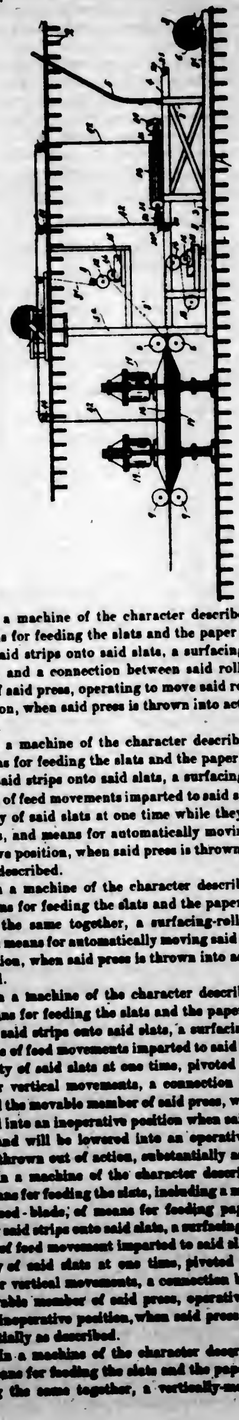

3. In a machine of the character described, the combination with means for feeding the slats and the paper strips, of a press for pressing said strips onto said slats, a surfacing-roller operative on said slats, and a connection between said roller and the movable member of said press, operating to move said roller into an inoperative position, when said press is thrown into action, substantially as described.

4. In a machine of the character described, the combination with means for feeding the slats and the paper strips, of a press for pressing said strips onto said slats, a surfacing-roller set obliquely to the line of feed movements imparted to said slats and operating on a plurality of said slats at one time while they are on their way to said press, and means for automatically moving said roller into an inoperative position, when said press is thrown into action, substantially as described.

5. In a machine of the character described, the combination with means for feeding the slats and the paper strips, of a press for pressing the same together, a surfacing-roller operative on said slats, and means for automatically moving said roller into an inoperative position, when said press is thrown into action, substantially as described.

6. In a machine of the character described, the combination with means for feeding the slats and the paper strips, of a press for pressing said strips onto said slats, a surfacing-roller set obliquely to the line of feed movements imparted to said slats and operative on a plurality of said slats at one time, pivoted arms supporting said roller for vertical movements, a connection between said pivoted arms and the movable member of said press, whereby said roller will be raised into an inoperative position when said press is thrown into action, and will be lowered into an operative position when said press is thrown out of action, substantially as described.

7. In a machine of the character described, the combination with means for feeding the slats, including a magazine and a reciprocating feed-blade, of means for feeding paper strips, a press for pressing said strips onto said slats, a surfacing-roller set obliquely to the line of feed movement imparted to said slats and operating on a plurality of said slats at one time, pivoted arms supporting said roller for vertical movements, a connection between said arms and the movable member of said press, operative to throw said roller into an inoperative position, when said press is thrown into action, substantially as described.

8. In a machine of the character described, the combination with means for feeding the slats and the paper strips, of a press for pressing the same together, a vertically-movable surfacing-roller

operative on the slats while they are on their way to the assembling position, adjustable means for limiting the downward movement of said roller, and means for automatically raising said roller into an inoperative position when said press is thrown into action, substantially as described.

9. In a machine of the character described, the combination with means for feeding the slats and the paper strips, of a press for pressing the same together, a surfacing-roller operative on said slats while they are on their way to the assembling position, pivoted arms supporting said roller for vertical movements, and means for automatically raising said roller into an inoperative position when said press is thrown into action, and for lowering the same into an operative position when said press is thrown out of action, substantially as described.

808,757. GATE-HINGE. JOHN A. JOHNS, Mitchell, Mont. Filed June 17, 1904. Serial No. 212,984.

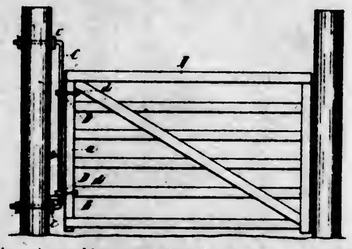

Claim.—A gate-hinge consisting of a continuous pintle directly attachable to a post and hinge-eyebolts, rotatively mounted on the pintle and attachable to a gate, in combination with a guide and brace piece, having a collar closely fitting upon the pintle below the lower hinge-bolt, and vertically adjustable thereon by means of a set-screw, and of such length as to have the free end in contact with the post.

808,758. CARRIER MECHANISM. LOUIS C. KARL, Waterbury, Conn., assignor to The Waterbury Machine Company, Waterbury, Conn., a Corporation of Connecticut. Filed Apr. 26, 1904. Serial No. 205,627.

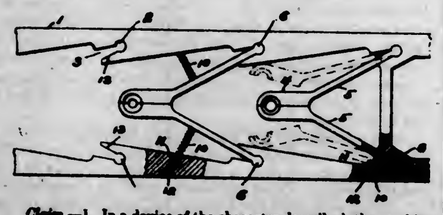

Claim.—1. In a device of the character described, the combination with a slide; of fingers pivotally mounted therein and movable between opposing stop-faces.

2. In a device of the character described, the combination with a slide; of fingers pivotally mounted therein and movable between stop-faces; and spring mechanism for moving said fingers in one direction.

3. In a device of the character described, the combination with a slide; of fingers rigid throughout their length pivotally mounted therein and movable between opposing stop-faces; and spring mechanism engaging said slide and fingers for moving said fingers in one direction.

4. In a device of the character described, the combination with a slide; of fingers movable between stop-faces and having a die portion at one end and a knuckle at the other end, said knuckle having a movable engagement with said slide.

5. In a device of the character described, the combination with a slide; of fingers movable between stop-faces and having a die portion at one end and a knuckle at the other end, said knuckle having a movable engagement with said slide; and spring mechanism connected with said slide and engaging said fingers between said die portion and knuckle.

6. In a device of the character described, the combination with a slide; of fingers pivotally mounted therein and movable between opposing stop-faces; and coil-springs engaging said slide at one end and said fingers at the other end for moving said fingers in one direction.

7. In a device of the character described, the combination with a slide; of fingers pivotally mounted therein and movable between opposing stop-faces; and means for preventing the endwise movement of said fingers in said slide.

8. In a device of the character described, the combination with a slide; of fingers pivotally mounted therein; and a pin in said slide for preventing the endwise movement of said fingers in said slide.

9. In a device of the character described, the combination with a slide; of fingers pivotally mounted therein and having a recess in the pivot ends thereof; and a pin in said slide passing through said recess to prevent the endwise movement of said fingers.

10. In a device of the character described, the combination with a slide having semicircular holes therein; outwardly-flaring slots leading into said holes; and fingers pivotally mounted in said holes.

11. In a device of the character described, the combination with a slide having semicircular holes therein; outwardly-flaring slots leading into said holes, the inner faces thereof forming stops; fingers pivotally mounted in said holes; and means for moving said fingers against said stop-faces.

12. In a device of the character described, the combination with a slide having the holes 2 therein at the inner ends of the outwardly-flaring slots 3; studs 8 in said slide and crossing said holes; fingers having a knuckle 6 upon one end thereof rotatably mounted in said holes; and springs 10 engaging said slide and fingers.

808,759. WIRE-STRETCHER. DAVID K. KIRKLAND, Schell City, Mo. Filed Apr. 7, 1905. Serial No. 254,357.

Claim.—In a wire-stretcher, the combination of a lever, an arm pivoted thereto, a second arm pivoted to said lever at a distance from the first arm, the free ends of said arms being bent outward at an angle thereto and having an approximately square cross-section, and claws at the end of said arms formed by first twisting them so as to get a corner or sharp edge upward and then bending the end upward and back so as to form a V-shaped recess, the sides of which are formed by a sharp edge of the bar.

808,760. JEWELRY-CATCH. ROBERT KOLLMAR, Newark, N. J. Filed May 10, 1905. Serial No. 259,796.

Claim.—1. A jewelry-catch, comprising a hook portion, a spring-wire arranged to close the hook portion, the said wire then being bent to project through the hook, the hook portion having a perforation through which the wire passes and a finger-piece on the end of the spring-wire.

2. The combination with a piece of jewelry and its pin, of a catch arranged to receive the pin, a spring-wire normally closing the catch, a bridge portion on the spring-wire, the back of the hook having a perforation, said bridge passing through the perforation, and a finger-piece on the end of the spring-wire.

3. A jewelry-catch, comprising a hook portion, and a spring-wire secured to the catch and projecting across the open portion of the hook, then bridging the hook portion, the back of the hook portion having a perforation, the free end of the wire passing through the perforation and engaging the outside of the back of the hook to limit the forward movement of the spring-wire.

4. A jewelry-catch comprising a hook portion and a spring-wire secured to the catch and projecting across the open portion of the hook, then being bent to bridge the hook portion and having its end bent to engage the outside of the back of the hook to limit the forward movement of the spring-wire.

808,761. TIE-PRESERVING CYLINDER-CAR. ERNST B. B. KUCKUCK, Charlottenburg, Germany. Filed Aug. 31, 1905. Serial No. 276,557.

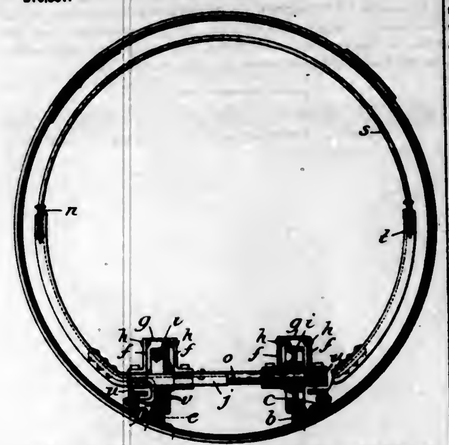

Claim.—1. In a car of the class described, the combination of a car-frame consisting of a pair of hollow longitudinally-extending side sills, transverse frame members extending across the opposite ends of such hollow longitudinal side sills connecting them and forming therewith a car-frame, and car-supporting wheels extending into the hollow portion of the side sills for supporting such sills and thereby the car.

2. In a car of the class described, the combination of a car-frame consisting of a pair of longitudinally-extending sills each formed of a pair of angle-irons having upwardly-extending flange portions forming a space therebetween, a top member extending over such space and secured to the upper edges of such flanges, transverse frame members connecting such longitudinal sills, and car-supporting wheels extending into the hollow portions of such longitudinal sills for supporting the car-frame.

3. In a car of the class described, a car-frame having longitudinal sill members provided with spaces therebetween for receiving car-supporting wheels, car-supporting wheels journaled upon and extending between such longitudinal sill members of the car-frame and housed thereby, and channel-beams extending transversely across the car connecting such longitudinal sill members and having upwardly-curved portions at their opposite ends forming side supports for the contents of the car.

4. In a car of the class described, a car-frame having longitudinal side sill members provided with spaces therebetween and having channel-beams secured along the upper edges thereof forming hollow side sills, car-supporting wheels extending into the hollow portion of such side sills, and axles upon which such car-supporting wheels are mounted.

5. In a car of the class described, a car-frame having angle-irons arranged in pairs on opposite sides thereof forming longitudinal sill members and forming spaces between the upwardly-extending flange portions of such angle-irons, channel-irons mounted between and secured to the upwardly-extending flange portions of such angle-irons and forming therewith hollow longitudinal sills having openings at the bottoms thereof, and car-supporting wheels mounted beneath and extending into the hollow portions of such sills.

6. In a car of the class described, the combination of a car-frame consisting of a plurality of hollow longitudinal side sills open at the under side thereof, channel-beams extending transversely of the car secured to and connecting such side sills and each provided with integral upwardly-extending end portions forming side supports for the contents of the car, and supporting car-wheels rotatably mounted and extending into the hollow portions of such hollow side sills.

7. In a car of the class described, the combination of a car-frame consisting of hollow longitudinal side sills, transverse frame members connecting such side sills and provided with integral upwardly-extending end portions forming side supports for the contents of the car, axles rotatably mounted upon the longitudinal side sills, and car-supporting wheels mounted upon such axles and extending into the hollow portions of the side sills and housed thereby.

8. In an apparatus of the class described, the combination of a metallic cylinder, track-rails extending longitudinally along the inner surface thereof, a car having a plurality of hollow longitudinal side sills open at the under side thereof, channel-beams extending transversely of the car secured to and connecting such side sills and each provided with integral upwardly-extending end portions curved to correspond with the curvature of the inner surface of the cylinder, and supporting car-wheels mounted upon the track-rails of the cylinder and extending into the hollow portions of such hollow side sills.

808,762. YELLOW ANTHRACENE DYE. MAX KUSS, Wiesdorf, near Cologne, Germany, assignor to Farbenfabriken of Elberfeld Co., New York, N. Y., a Corporation of New York. Filed Sept. 18, 1905. Serial No. 278,943.

Claim.—The herein-described new brownish-yellow dyestuff which can be obtained from 1-3-dibromo-2-amidoanthraquinone, which is a yellow substance soluble in concentrated sulfuric acid with a yellowish-orange color; giving a blue vat with hydrosulfite and caustic-soda lye, which vat dyes unmordanted cotton blue shades, which shades become brownish yellow when exposed to the air, substantially as hereinbefore described.

808,763. AUTOMATIC HOLDFAST FOR ELECTRIC-HOISTER DRUMS. ADRIEN LAMBERT, Newark, N. J. Filed Apr. 13, 1905. Serial No. 255,369.

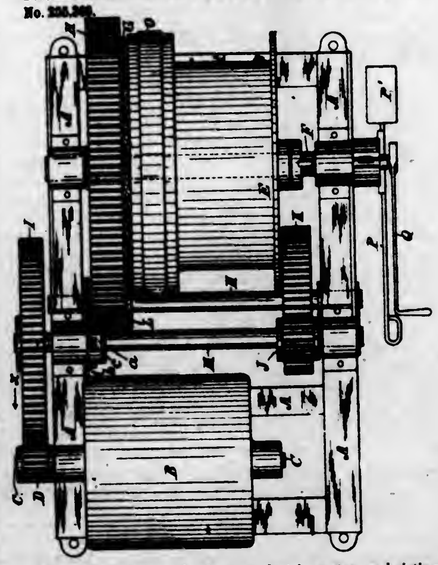

Claim.—1. A hoister having an electric motor, a hoisting-drum and gearing connecting the electric motor with the drum by a friction-clutch, with one of the intermediate gears revolved upon a stationary shaft, the shaft and hub of the gear having one of them, longitudinally-grooved eccentric seats, and the other having a contiguous cylindrical seat with rolls fitted between the said seats, as and for the purpose set forth.

2. In an electric hoister having the motor connected with the drum by gearing, the combination, with one of the intermediate gear-wheels, of the fixed shaft M' supporting the same, the casing attached rigidly to the shaft and extended over the hub of the gear-wheel, one of the said parts having longitudinally-grooved eccentric seats, and the other having a contiguous cylindrical seat with rolls fitted between the said seats, as and for the purpose set forth.

3. In an electric hoister having the motor connected with the drum by gearing, the combination, with the hoister-frame having the stationary shaft M', of one of the intermediate gear-wheels mounted to turn thereon, the casing a' attached rigidly to the shaft and extended over the hub of the gear-wheel, the bushing f' fitted within the gear-wheel hub to ride upon the shaft and carrying the eccentric seats d' extended within the casing, and the rolls c' fitted between the seats and the casing, as and for the purpose set forth.

4. In an electric hoister having the motor connected with the drum by gearing, the combination, with the hoister-frame having the stationary shaft M', of one of the intermediate gear-wheels mounted to turn thereon, the casing g' extended over the hub of the gear-wheel and having a boss fitted to the end of the shaft, the boss and shaft being grooved transversely, the cap I having the tongue n fitted to said groove and attached to the casing to hold the same from turning, and the rolls c' fitted between the seats and the casing, as and for the purpose set forth.

5. In an electric hoister, the combination, with an electric motor, of two hoisting-drums E' and E², provided respectively with the gear-wheels H' and H², the pinion L' meshing with both of the said gear-wheels, and an intermediate gear connecting the said pinion with the electric motor and a holdfast applied to the hub of the intermediate gear, whereby each holdfast arrests both of the said drums when the electric motor is stopped.

808,764. BULLETIN FOR MAIL-BOXES. JOHN M. LARSH, Indianapolis, Ind., assignor of one-half to Samuel D. Kiger, Indianapolis, Ind. Filed Feb. 7, 1905. Serial No. 244,631.

Claim.—A post, means for anchoring same, a bulletin-board fastened to the top of the post, a pair of metal bars bolted to the post and a second pair also bolted to the post but lower down than the first pair, and the opposite ends of a bar of each pair being bolted together and to the back of said bulletin-board.

808,765. WHEEL STRUCTURE. JOSEPH LEBWISKA, Detroit, Mich., assignor of one-half to Charles Berg, Cleveland, Ohio. Filed Sept. 10, 1904. Serial No. 223,926.

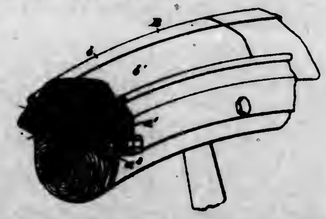

Claim.—1. In a wheel structure, the combination with a suitable rim, of a tire secured thereto and consisting of fibrous material divided into two sections in a plane transverse relatively to the wheel-axis, the fibers of the one portion being inclined, with reference to said plane, in one direction and the fibers of the other portion being inclined in the other direction, said two sections forming the complete tire.

2. In a wheel structure, the combination with a rim having a base-surface consisting of two inwardly-inclined surfaces, of a tire secured thereto resting against said surfaces and consisting of fibrous material divided into two sections on a plane transverse relatively to the wheel-axis, the fibers of each section being substantially perpendicular to the contiguous inclined surfaces of the rim respectively.

3. The wheel structure shown and described consisting of the combination with a suitable rim, of the fibrous tire consisting of the two sections forming the complete tire and separated from each other in a plane transverse relatively to the wheel-axis, said sections having their fibers converging in an outward direction.

808,766. JOINT FOR SHEET METAL AND THE LIKE. ERNST P. LEHMANN, Brandenburg-on-the-Havel, Germany. Filed Oct. 5, 1904. Serial No. 227,516.

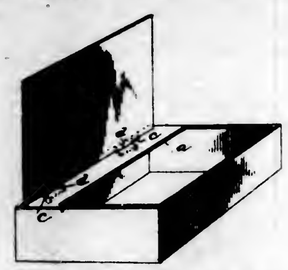

Claim.—1. In a joint for sheet-metal bodies and the like, the combination, with a piece provided with lugs projecting from its edges, and a tongue projecting from each lug, of a second piece provided with slots of an extent at least equal to that of the lugs and tongues, the lugs extending through the slots and each tongue occupying a position out of alinement with its respective portion of the slot.

2. In a joint for sheet-metal bodies and the like, the combination, with a piece provided with lugs projecting from its edge, in the same plane, and tongues projecting laterally from the lugs, of a second piece provided with slots of an extent at least equal to that of the lugs and tongues, the lugs extending through the slots and the tongues occupying positions out of alinement with their respective portions of the slots.

3. In a joint for sheet-metal bodies and the like, the combination, with a piece provided with lugs projecting from its edge, and tongues projecting laterally from the lugs, of a second piece provided with slots of an extent at least equal to that of the lugs and tongues, the lugs extending through the slots and the tongues occupying positions out of alinement with their respective portions of the slots and substantially perpendicular to the plane of the second piece.

4. In a joint for sheet-metal bodies and the like, the combination, with a piece provided with lugs projecting from its edge, and tongues projecting laterally from the lugs and in the same plane, of a second piece provided with angular slots of a total extent at least equal to that of the lugs and tongues, the lugs extending through the slots and the tongues occupying positions out of alinement with their respective portions of the slots.

5. In a joint for sheet-metal bodies and the like, the combination, with a piece provided with lugs projecting from its edge, and resilient tongues projecting laterally from the lugs, of a second piece provided with angular slots of a total extent at least equal to that of the lugs and tongues, the lugs extending through the slots and the tongues occupying positions out of alinement with their respective portions of the slots.

6. In a joint for sheet-metal bodies and the like, the combination, with a piece provided with lugs projecting from its edge in the same plane, and resilient tongues projecting laterally from the lugs and in the same plane, of a second piece provided with angular slots of a total extent at least equal to that of the lugs and tongues, the lugs extending through the slots and the tongues occupying positions out of alinement with their respective portions of the slots and substantially perpendicular to the plane of the second piece.

808,767. AUTOMATIC MATCH-MAKING MACHINE. GEORGE P. LOCKE, Schenectady, N. Y. Filed Mar. 13, 1905. Serial No. 249,769.

Claim.—1. In a machine of the character described, the combination of a plurality of match-holders, a plurality of track-sections over which the holders are moved, vibrating and swinging supports for transferring the holders from one track-section to another, and a conveyer which receives the holders after they leave the last track-section and automatically conveys them to the beginning of the first section.

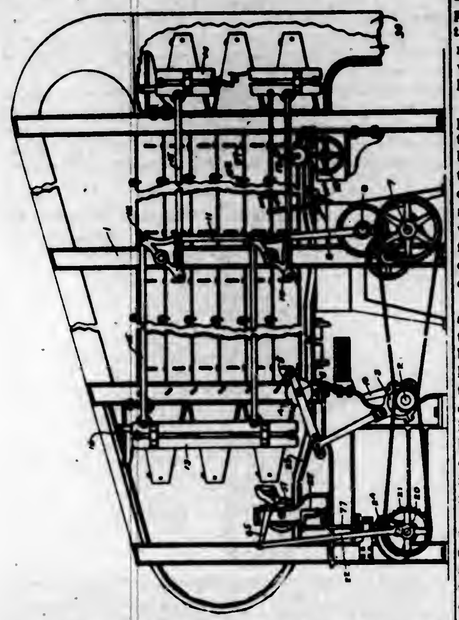

2. In a machine of the character described, the combination of a plurality of match-holders, a plurality of track-sections over which the holders are moved, vibrating and swinging supports for transferring the holders from one track-section to another, and a plurality of independent chambers through which the track-sections extend for drying or curing the matches.

3. In a machine of the character described, the combination of a plurality of match-holders, a plurality of track-sections over which the holders are moved, means for transferring the holders from one track-section to another, independent chambers arranged in parallel relation through which the track-sections extend for drying or curing the matches, means common to the chambers for forcing a drying medium through them, and devices in the different chambers for regulating the amount of the drying medium passing through them.

4. In a machine of the character described, the combination of a plurality of match-holders, a plurality of track-sections over which the holders are moved, independent pivoted and vibrating transfer-supports located at the ends of the track-sections and in staggered relation for transferring the holders from one track-section to another, and means for moving the transfer devices.

5. In a machine of the character described, the combination of a plurality of match-holders, a plurality of track-sections over which the holders are moved, a plurality of independent pivotally-supported and vibrating transfer devices located at the ends of each two adjacent sections for transferring the holders from one section to another, and an actuator for each of the transfer devices located at the ends of the track-sections.

6. In a machine of the character described, the combination of a plurality of match-holders, a plurality of track-sections over which the holders are moved, a plurality of independent pivotally-supported and vibrating transfer devices located at the ends of the two sections for transferring the holders from one section to another, an actuator for the transfer devices located at each end of the track-sections, and a driving means common to the actuators.

7. In a machine of the character described, the combination of a plurality of match-holders, a plurality of relatively short track-sections extending in the same general direction, a transfer device for each pair of track-sections, each of said devices comprising a pivotally-supported carriage adapted to receive the holders one at a time and transfer them from one section to another, and a means for rocking each of the carriages about its support to and from one track-section of its pair to the other.

8. In a machine of the character described, the combination of a plurality of match-holders, a plurality of track-sections located one above the other, pivotally supported and vibrating transfer-supports located adjacent to the ends of the pairs of track-sections for transferring the holders from one section to another, means for simultaneously operating all of the transfer devices, and a conveyer which conveys the holders from the upper track-section to the lowest.

9. In a machine of the character described, the combination of a plurality of match-holders, a plurality of relatively short track-sections over which the holders are adapted to move, pivoted and vibrating means located at the ends of the sections for transferring the holders from one to another, a stationary conveyer which receives the holders after they leave the last track-section and automatically conveys them to the beginning of the first section, a device located in the path of the conveyer for discharging the matches from the holders, and a driving mechanism which moves the holders over the track-section and into the conveyer and actuates the match-discharging means.

10. In a machine of the character described, the combination of a plurality of match-holders, a plurality of relatively short track-sections over which the holders are adapted to move, pivoted and vibrating means located at the ends of the sections for transferring the holders from one to another, a stationary conveyer which receives the holders after they leave the last track-section and automatically conveys them to the beginning of the first section, a device located in the path of the conveyer for discharging the matches from the holders, a means located between the said device and the beginning of the first section for reloading the holders, and a driving mechanism which is common to the holders, the discharging device and the reloading means.

11. In a machine of the character described, the combination of track-sections with a device for transferring match-holders from one section to another, the said device comprising a pivotally-supported and vibrating carriage, guides thereon to retain the holder in place while being transferred from one section to another, a projection on the carriage for moving it, and an actuator which engages the projection and swings the carriage about its pivot.

12. In a machine of the character described, the combination of separate track-sections with a device for transferring match-holders from one section to another, comprising a pivotally-supported carriage, a latch for holding the carriage in a raised position until the holder is discharged, and a means for swinging the carriage about its support and for moving the latch to release the carriage after the holder has moved off of it.

13. In a machine of the character described, the combination of separate track-sections, with a device for transferring the match-holders from one section to another, comprising a pivotally-supported carriage having a track thereon to receive the holders, an actuator for swinging the carriage about its pivot to transfer the holders from one track to another, and a means movable with the actuator which engages the holders and moves them forward.

14. In a machine of the character described, the combination of separate track-sections, with a device for transferring the match-holders from one section to another, comprising a pivotally-supported carriage having a track thereon to receive the holders, an actuator for swinging the carriage about its pivot to transfer the holders from one track to another, a means movable with the actuator which engages the holders and moves them forward, and a means which retains one holder while the actuator returns for another holder.

15. In a machine of the character described, the combination of separate track-sections, with a device for transferring match-holders from one section to another comprising short pieces of track inclined to the sections, movable members which slide to and fro, a carriage which is pivotally supported between the ends of the adjacent pieces of track, a means for swinging the carriage about its pivot, and means for first moving the holders toward and then away from the point of support of the carriage.

16. In a machine of the character described, the combination of separate track-sections with a device for transferring match-holders from one section to another, comprising a pivotally-supported carriage, a means for vibrating the carriage about its pivot, means which first move a holder upon the carriage and then move it off, a device for holding the carriage in one of its positions until the match-holder has been moved, and releasing mechanism for the said device which is actuated by the holder-moving means.

17. In a machine of the character described, the combination of a plurality of relatively short independent track-sections, match-holders that move over the sections in end-to-end contact and are

provided with feeding-orifices, pivoted and vibrating supports for transferring the holders from one section to another, and means for positively urging the holders along the track-sections, comprising toothed wheels, the teeth of the wheels entering the orifices in the holders.

28. In a machine of the character described, the combination of perforated match-holders, a plurality of closely-associated pivoted hoppers for receiving the finished matches and discharging them into boxes, swinging doors for the hoppers which are inclined to the walls thereof to cause the matches to align and also to give quick opening, and means for turning the hoppers on their support and opening all of the doors of the hoppers.

29. In a machine of the character described, the combination of a perforated match-holder, a pivotally-supported hopper located under the holder to receive the finished matches, a swinging door for the hopper through which the matches are discharged, the said door being arranged at an angle to the opposite wall of the hopper to cause the matches to fall out at one place and to give a quick opening, and means for swinging the hopper about its pivot and opening the door.

30. A match-making machine comprising perforated match-holders, a plurality of closely-associated pivoted hoppers for receiving the finished matches and discharging them into boxes, swinging doors for the hoppers which are inclined to the walls thereof to collect the matches and open quickly, means for turning the hoppers and their support and opening all of the doors of the hoppers, a conveyer for carrying the match-receiving boxes which is located below the hoppers, and a driving means for advancing the conveyer step by step.

31. In a machine of the character described, the combination of a double tank containing material in a fluid state for treating the match-sticks, a dam in the upper tank for determining the level of the fluid therein, a dipper carried by a pivoted arm for conveying fluid from the lower to the upper tank in excess of that required, a lever for raising the arm and dipper, and a means for moving the arm about its longitudinal axis to empty the contents of the dipper.

32. A match-making machine comprising a plurality of track-sections, holders for the matches arranged to move over the sections, thin partitions for separating the sections and forming chambers one above the other, and supports for the partitions of + shape in section and located at their intersections, to prevent fire from working from one compartment into another.

33. A match-making machine comprising a plurality of track-sections, holders for the matches arranged to move over the sections, a framework for supporting the track-sections comprising + bars, horizontal partitions secured to the inside horizontal webs of the frame-bars, and vertically-disposed removable doors that are secured to the outside of the vertically-disposed webs.

34. In a machine of the character described, the combination of a plurality of track-sections over which the match-holders pass while the matches are being dried, independent chambers for the track-sections, means for supplying drying-currents to the chambers, and means for successively proportioning the strength of the current to the progressive state of the match-heads as to dryness and hardness.

35. In a machine of the character described, the combination of holders for the match-sticks, a plurality of track-sections arranged one above the other over which the holders pass as the matches dry, independent and pivotally-supported devices for transferring the holders from one section to another, parallel-motion actuators, and means for changing the parallel motion of the actuators to vibrating motion of the transfer devices.

36. A match-making machine comprising a pair of track-sections which are inclined toward each other at the ends, a vibrating support or carriage pivotally supported between said sections, holders for the matches, means causing the holders to move onto the carriage one after the other, a device for vibrating the carriage from one track-section to the other, and means for causing the holders to be discharged one after the other from the carriage.

37. A match-making machine comprising track-sections arranged in a pair, match-holders moving over the sections, a pivotally-supported and vibrating carriage for transferring the match-holders from one section to the other, a means for vibrating the carriage from one section to the other, a latch for retaining the carriage in one of its positions until a holder has made its movement, and a means for releasing the latch when it is desired to move the carriage.

38. A match-making machine comprising a plurality of track-sections, match-holders thereon arranged in end-to-end contact, rollers on the holders arranged to engage with and move over the sections, pivotally-supported vibrating carriages for shifting the holders from one section to another, and a means for vibrating the carriages to shift the holders from one track-section to another.

39. A match-making machine comprising a plurality of straight track-sections, match-holders carried by the sections and arranged in end-to-end contact, pivotally-supported vibrating carriages for transferring the holders from one section to another, a conveyer having curved receiving and discharge portions which receives the holders from the last track-section and conveys them to the first, the holders passing over the conveyer in end-to-end relation with the match-heads extending outwardly so that those on one holder will not strike those on another, and a means for vibrating the carriages and advancing the holders along the track-section and conveyer.

808,768. COMBINED DOOR, LOCK, AND INDICATOR FOR CARRIERS USED IN PNEUMATIC TUBES. PATRICK J. MADIGAN, Chicago, Ill. Filed Feb. 26, 1903. Serial No. 145,209.

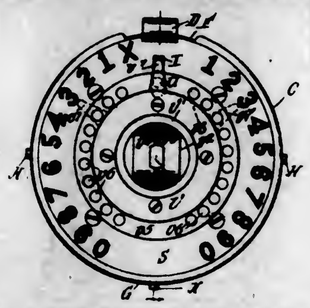

Claim.—1. In combination with a carrier of the kind described, a door C pivotally attached thereto; a locking mechanism in said door consisting of the bolts H, levers J, sliding bar L, a handle V attached to said bar and a lug T on the cover of said door; an indicator mechanism on said door consisting of a handle V revolubly supported on the post M on the sliding bar L; a series of holes V^4 in the base of said handle, and a locking-pin U on the cover of said door adapted to be engaged in said holes, a pointer V^7 extending radially from the base of said handle, and a cover S having a series of figures thereon, substantially as described and for the purposes specified.

2. In a device of the kind described, the combination of a door C having parts E and S and being adapted to be pivotally attached to a carrier A; bolts H, connecting-levers J and operating-bar L having a post M, supported in said door; a handle V revolubly supported on said post; a base V^3 forming part of said handle and having a slot V^5, a lug T on the part S of said door adapted to be engaged by said base and to enter said slot; a series of holes in said base and a pin U on the part S adapted to enter said holes and a pointer V^7 forming part of said base of said handle, substantially as described and for the purposes specified.

3. In a device of the kind described, the combination of a door C pivotally attached to a carrier A said door being formed of a main body E and a cover S; with a pair of bolts H, connecting-levers J, sliding bar L having a post M and a handle V revolubly attached to said post; said handle having a base provided with a slot and series of holes; a lug on said cover adapted to engage said base, and a pin adapted to enter said holes in said base, substantially as described and for the purposes specified.

4. In a device of the kind described the combination of a door C pivotally attached to a carrier A, said door being formed of the parts E and S; and bolts H, levers J and a sliding bar L having a post M; with a handle adapted to be attached to said post and revolubie thereon, said handle having a base with a slot and series of holes therein; and a lug T, and pin U adapted to be engaged by said base; and a pointer V^7, substantially as described and for the purposes specified.

5. In a device of the kind described, the combination of a door C formed of parts E and S, the part S having a lug T, lock-pin U and series of radial figures; and bolts H, lever J, sliding bar L having a post M and handle V; with a base V^3 forming part of said handle, said base having a slot and series of holes and a pointer substantially as described and for the purposes specified.

808,769. POWER-TRANSMISSION DEVICE. GEORGE W. MARSH, Chicago, Ill. Filed Dec. 15, 1904. Serial No. 237,611.

Claim.—1. The combination with a motor-shaft, of a plurality of pairs of shafts driven therefrom, the shafts of each pair being driven oppositely, a plurality of driving friction members on said shafts, a driven friction member adapted to be engaged by either of the driving friction members of one pair of shafts in driving and of another pair in reversing, a driven shaft, and an operative connection between the same and the driven friction member.

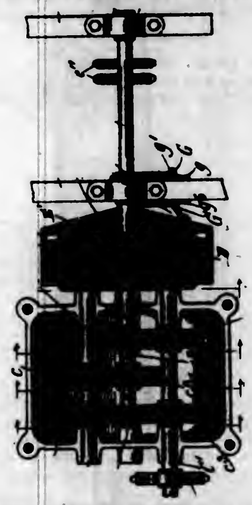

2. In a machine of the class described, the combination with a driving-shaft and an oppositely rotative shaft driven thereby, of a friction-wheel on each of said shafts, a driven friction member inclosing the same and adapted to be engaged and driven by either and mechanism for adjusting the driven friction member into engagement with either of said wheels.

3. In a transmission device the combination with parallel shafts of intermeshing gears thereon, a motor-shaft, positive connection between one of said shafts and said motor-shaft, a driving friction-wheel on each of said parallel shafts, a driven friction member comprising a shell or drum extending over the driving friction-wheels and mechanism adapted to shift the same into engagement with any of the driving friction-wheels.

4. In a transmission device the combination with a plurality of parallel shafts one of which is motor-driven, of intermeshing gears on said shafts rotating the same oppositely, a driving friction-wheel on each shaft, a driven friction member adapted to engage the same, means adjusting the driven friction member into engagement with any driving friction-wheel and operative connection between the driven friction member and the mechanism to be operated.

5. In a transmission device the combination with a motor-shaft and a plurality of shafts geared to rotate oppositely in pairs, of a driving friction-wheel on each of said last-named shafts, one of each pair operating at high speed and the other at low speed, a transmission-shaft, a friction drum or shell rigidly secured thereon and partly inclosing the driving friction-wheels, operative connections between the transmission-shaft and the mechanism to be operated and means adapted to adjust the shell or drum into engagement with any driving friction-wheel.

6. In a device of the class described the combination with parallel shafts of operative connections between the same whereby two of said shafts rotate oppositely from one another at a high and at a low speed respectively, driving friction-wheels on the extremity of each shaft, that on the low-speed shaft being smaller than that on the high, a transmission-shaft, a driven friction member secured thereon and partly inclosing the driving friction-wheels and mechanism adapted to bring any of the driving friction-wheels into operative engagement with the driven friction member and one or more chain-and-sprocket connections between the transmission-shaft and the mechanism to be operated.

7. A transmission device comprising a motor-shaft, parallel shafts driven therefrom, inter-meshing gears acting to drive two of said shafts in one direction and two in the opposite direction and one of each pair at high speed and the other of each pair at relatively low speed, a driving friction-wheel on each of said shafts, those on the low-speed shafts being the smaller, a transmission-shaft, a driven friction member thereon which partly inclosses the driving friction-wheels, adjusting means adapted to shift the driven friction member into engagement with any of the driving friction-wheels whereby the transmission-shaft is driven in either direction and at high or low speed.

8. In a machine of the class described parallel rotatable shafts, a motor-shaft acting to drive one of said shafts, operative connections between the shafts adapted to drive two in one direction and two in the opposite direction, one of the shafts of each pair rotating at slow speed, a small driving friction-wheel on each of the latter shafts, a larger driving friction-wheel on each of the other shafts, a transmission-shaft, a friction shell or drum thereon adapted to extend over and partly inclose the driving friction-wheels, and an adjustable bearing for the transmission-shaft adjacent the friction-shell whereby said shaft is afforded an orbital movement in adjusting the friction-shell to the selected driving friction-wheel and one or more locking-levers adapted to hold said shaft in its adjusted position.

9. In a frictional transmission, the combination with a transmission friction-shell, of a plurality of driving friction-wheels arranged to engage the same, said driving friction-wheels comprising independent low and high speed driving and reverse friction-wheels and mechanism adapted to engage any of said friction-wheels with the friction-shell.

10. In a machine of the class described, high and low speed driving friction-wheels and high and low speed reversing friction-wheels, a driven friction-shell adapted for adjustment into engagement with any selected friction-wheel and adjusting mechanism acting positively to engage the parts in driving relation.

11. The combination with a hollow driven element of continuously-rotating high and low speed driving elements and high and low speed reversing elements engaging within said driven element and adjusting means adapted to engage the driven element with any selected driving element independently.

12. The combination with high and low speed driving friction-wheels and corresponding reversing friction-wheels of a drum adapted to engage any of the same, a shaft driven thereby, a bearing adjacent the drum and means affording an orbital adjustment of said shaft independent of its rotation adapted to adjust said drum into engagement with any selected driving or reversing friction-wheel.

13. The combination with parallel shafts arranged in planes approximately at right angles with each other, of intermeshing gears driving two of said shafts oppositely from the others, a driving friction-wheel on the outer end of each shaft, two of the oppositely-rotating friction-wheels having a low and two a high peripheral speed, a friction-shell partly inclosing all of said friction-wheels, a transmission-shaft secured axially therein, a bearing for said shaft adjacent the shell and means associated therewith adapted to afford an orbital movement for said shaft independent of its rotation and adapting the shell for engagement with any of the friction-wheels and means communicating the motion of the transmission-shaft to the mechanism to be driven.

14. A transmission device comprising rotatable shafts, friction-wheels on corresponding ends thereof, a friction-shell partly inclosing the same, a transmission-shaft axially engaged therein and means adjusting said friction-shell into engagement with any of the driving friction-wheels comprising a bearing for the transmission-shaft, an adjustably-slotted sleeve in which the bearing slides, a lever for rotating said sleeve and means adjusting the shaft in said slot, thereby affording an orbital adjustment of the shaft and shell.

15. In a device of the class described a positively-acting driving friction-wheel, a drum adapted to engage the same and be driven thereby, means adapted to adjust the drum into engagement with the driving friction-wheel comprising a rotatable bearing and a transversely-movable block therein, affording an orbital adjustment for the drum.

16. In a device of the class described, a driving friction element, a driven element, a transmission-shaft engaged thereon, a rotatable diametrically-slotted sleeve on said shaft, a sliding bearing-block in said sleeve, a lever adapted to rotate the sleeve, a lever adapted to move said shaft horizontally in the sleeve and mechanism adapted to vary the altitude of the shaft independently or simultaneously with the partial rotation of the sleeve.

17. The combination with a driven friction member and its transmission-shaft, of means adjusting the friction member and shaft comprising an adjustable bearing at one end of the shaft, orbitally-adjustable bearing near the other end of the same and adjacent

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the friction member and comprising a rotatable slotted sleeve, bearing-blocks slidable therein in which the shaft is journaled, a lever engaged thereon and acting to adjust the sleeve, a horizontally and a vertically acting shifting-lever for the bearing-block, all of said levers being capable jointly of affording an orbital adjustment of the shaft and friction member.

18. In a transmission device, driving friction members comprising high and low speed drive and high and low speed reverse wheels, a transmission-shaft, a friction-shell engaged thereon and partly inclosing said wheels and adapted to be adjusted into driving engagement with either of said wheels.

808,770. LAMP-BURNER. WILLIAM H. MERCHANT, Grinnell, Iowa. Filed May 26, 1905. Serial No. 262,471.

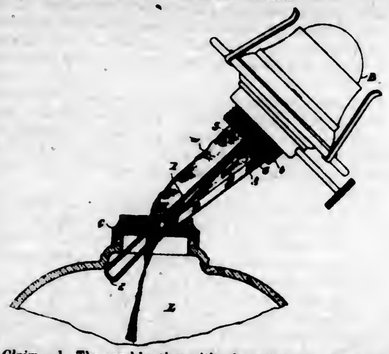

Claim.—1. The combination with a lamp-burner, of supporting members permanently combined therewith and having their free terminals provided with stops, and a channeled wick-support also permanently combined with the burner.

2. The combination with a lamp-burner, of a pair of resilient supporting members permanently combined therewith and provided at their free ends with stops, and a combined gutter and wick support also permanently secured to the lamp-burner and having its free end transversely flattened.

808,771. TYPE-WRITING MACHINE. HENRY W. MERRITT, Syracuse, N. Y., assignor to The Monarch Typewriter Company, Syracuse, N. Y., a Corporation of New York. Filed June 28, 1904. Serial No. 213,227.

Claim.—1. In a type-writing machine, the combination of a platen, an erasing-plate and a paper-finger provided with a latch, said paper-finger being mounted on said erasing-plate, and said latch contacting with said erasing-plate.

2. In a type-writing machine, the combination of a platen, an erasing-plate, and a paper-finger provided with a spring-pressed latch, said paper-finger being mounted on said erasing-plate and said latch being pressed by its spring against said erasing-plate.

3. In a type-writing machine, the combination of a platen, an erasing-plate, a paper-finger mounted on said erasing-plate, and means for positively maintaining a fixed relation between said paper-finger and said erasing-plate.

4. In a type-writing machine, the combination of a platen, an erasing-plate, a rack, and a paper-finger, said paper-finger being mounted on said erasing-plate and having a latch engaging said rack.

5. In a type-writing machine, the combination of a platen, an erasing-plate, a rack, and a paper-finger, said paper-finger being mounted on said erasing-plate and having a spring-pressed latch engaging with said rack.

6. In a type-writing machine, the combination of a platen, an erasing-plate provided with a rack, and a paper-finger mounted on said erasing-plate and having a latch engaging with the rack of the latter.

7. In a type-writing machine, the combination of a platen, a toothed member, and a paper-finger provided with a pivoted latch having a spring-pressed finger-piece, said paper-finger being movable longitudinally of said toothed member and being held positively in a fixed relation with said toothed member by the latch of the paper-finger until the latter is swung out of engagement with said toothed member.

8. In a type-writing machine, the combination of a platen, a toothed member and a paper-finger provided with a pivoted latch, said paper-finger being movable longitudinally of and upon said toothed member and being held positively engaged with said toothed member by the latch until said latch is revolved out of the rack.

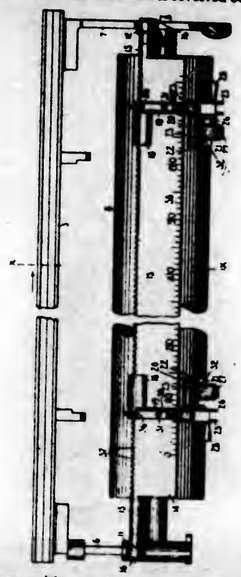

9. In a type-writing machine, the combination of a platen, an erasing-plate and a paper-finger mounted on said erasing-plate, said paper-finger comprising a supporting part, a feed-roll part and a holding and guiding part.

10. In a type-writing machine, the combination of a platen, an erasing-plate and a paper-finger mounted on said erasing-plate, said paper-finger comprising a supporting part, a feed-roll part and a holding and guiding part, the last two parts being independently pivoted on the first part.

11. In a type-writing machine, the combination of a platen, an erasing-plate and a paper-finger mounted on said erasing-plate, said paper-finger comprising a supporting part, a feed-roll part and a holding and guiding part, the last two parts being independently spring-mounted.

12. In a type-writing machine, the combination of a paper-feeding device and an erasing-plate formed with a blade portion and a toothed portion with which last portion the paper-feeding device coöperates.

13. In a type-writing machine, the combination of a platen, a platen-frame, a paper-finger mounted in said platen-frame, said paper-finger comprising a supporting part, a feed-roll part and a guiding part, the last two parts being independently mounted on the first part, and springs, one of which is associated with each of said last two parts, each spring affecting only the part with which it is associated.

14. In a type-writing machine, the combination of a platen, a platen-frame and a paper-finger rigidly mounted transversely in said platen-frame, said paper-finger carrying an independently-pivoted roll-holder and an independently-pivoted guiding member.

15. In a type-writing machine, the combination of a platen, a supporting-arm, as 19, slidably mounted longitudinally of said platen, a roll-holder pivoted on said supporting-arm and provided with a lug, a spring coacting with said lug, a guiding member, as 21, pivoted on said supporting-arm independently of said roll-holder, and a spring acting solely on said guiding member.

16. In a type-writing machine, the combination of a platen, a platen-frame, a supporting-arm, as 19, slidably mounted longitudinally of said platen, a retaining-latch pivoted on said supporting-arm, a spring coacting with said retaining-latch, a roll-holder pivoted on said supporting-arm and provided with a lug, a spring coacting with said lug, a guiding member, as 21, pivoted on said supporting-arm independently of said roll-holder, and a spring acting solely on said guiding member.

17. In a type-writing machine, the combination of a platen, a platen-frame, a supporting-arm, as 19, slidably mounted longitudinally of said platen, a retaining-latch pivoted on said supporting-arm, a spring, as 36, coacting with said retaining-latch, a roll-holder pivoted on said supporting-arm and provided with a lug, a spring, as 30, coacting with said lug, said spring 30 being integral with said spring 36, and a spring-mounted guiding member, as 21, pivoted on said supporting-arm independently of said roll-holder.

808,772. LINOTYPE-MACHINE. MELVIN W. MOSHMOOSE, Brooklyn, N. Y., assignor to Mergenthaler Linotype Company, a Corporation of New York. Filed Sept. 12, 1903. Serial No. 173,163.

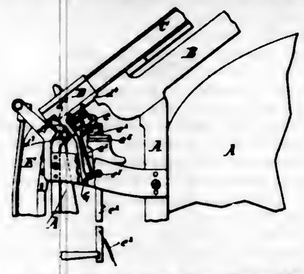

Claim.—1. In a typographic machine, the combination of a main frame, a magazine thereon, a channeled front plate fixed to the frame to receive the released matrices, and an intermediate independently-removable escapement-bar seated on the main frame and provided with escapements and with a depending flange carrying the escapement-spring.

2. In combination, the main frame, the magazine, the coöperating escapement mechanism independently removable, and means distinct from the escapement mechanism to retain the matrices when said mechanism is removed.

3. In combination, the main frame, the magazine seated thereon, and the escapement-bar provided with the escapement mechanism and with the channels, forming continuations of those in the magazine, said bar being independently removable at will, substantially as described.

4. The main frame provided with the magazine, the front channel-plate E and the reeds e^9, in combination with the escapement-bar removably seated on the main frame and provided with the escapements and with the spring-sustaining flange G extended downward between the reeds and the channel-plate, whereby the independent removal of the entire escapement mechanism is permitted.

5. In a linotype-machine, the main frame provided with the magazine and with bearings d^4 and d^5, in combination with the detachable escapement-bar seated on said bearings

6. The escapement-bar channeled for the passage of the matrices and provided with depending flange G, in combination with the escapement-levers having depending arms e^9, and the springs e' secured to the flange and seated on the arms, substantially as shown.

808,773. SURFACE-CONTACT ELECTRIC RAILWAY. GEORGE H. MCFEATERS, Johnstown, Pa., assignor to The Lorain Steel Company, a Corporation of Pennsylvania. Filed Aug. 15, 1904. Serial No. 220,730.

Claim.—1. In an electric contact-box, the combination with an upper fixed electrode, a lower movable electrode, and a flexible conductor connecting the movable electrode with the supply side of the system, of an arc guard or shield, in the form of a thin plate or disk of insulating material, below the movable contact and covering the flexible conductor.

2. In an electric contact-box, the combination with an upper fixed electrode, a lower movable electrode, an armature by which the movable electrode is carried, and a flexible conductor connecting the movable electrode with the supply side of the system, of a thin disk or plate of insulating material secured between the movable contact and the armature, and overlying both the armature and the flexible conductor.

3. In an electric contact-box, the combination with an upper fixed electrode, a lower movable electrode, an armature carrying said movable electrode, and a flexible conductor which connects the movable electrode with the supply side of the system, of an arc guard or shield, in the form of a light plate or disk of insulating material below the movable contact and covering the flexible conductor, together with means for insulating the said armature from the conductor and also from the movable electrode.

808,774. PIANO-PLAYING ATTACHMENT. HUGH MCPHAILL, Visalia, Cal., assignor of one-fourth to Alta McPhaill, one-fourth to Lewis L. Clark, and one-twentieth to Carl H. Holley, Tulare county, Cal. Filed Apr. 12, 1905. Serial No. 255,266.

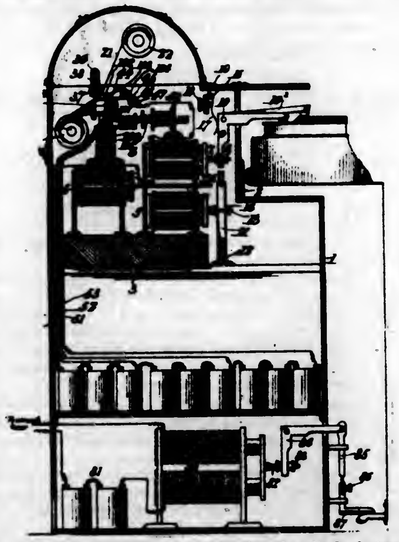

Claim.—1. In mechanism of the class described, electromagnets for actuating the keys of the instrument, a perforated music-sheet, pivotally-mounted circuit-closers, each having its center of gravity to the rear of the pivot-point, the forward end of each circuit-closer bearing against the strip, and the rear end controlling one of the circuits, a bar extending over the front ends of all of the circuit-closers, and an electromagnetically-operated means for depressing the bar and moving the front ends of all of the circuit-closers down out of contact with the strip.

2. In mechanism of the class described, electromagnets for actuating the keys of the instrument, a perforated music sheet or strip, circuit-closers having their front ends bearing against the strip, and having their rear ends arranged to engage the terminals of the circuits in which said electromagnets are connected, a bar extending over all of the circuit-closers, an electromagnet having a core member connected to said bar, and a circuit in which said electromagnet is connected, said circuit being under the control of the strip.

3. In mechanism of the class described, a perforated music sheet or strip, key-actuating electromagnets, energizing-circuits for said magnets, circuit-closers forming the terminals of said circuits and under the control of said strip, a bar arranged above and normally out of contact with the circuit-closers, an electromagnet having operative connection with said bar, and an energizing-circuit for said electromagnet, the terminals of said circuit being under the control of said strip.

4. In mechanism of the class described, the combination with a perforated music sheet or strip, of key-actuating electromagnets, circuits for such magnets, strip-operated circuit-closers forming the terminals of said circuits, a bar normally held above and out of contact with said circuit-closers, an electromagnet connected to said bar and disposed in a circuit the terminals of which are under the control of the strip, a catch for holding the bar and circuit-closers in depressed

position, and electromagnetically-operated means under the control of the strip for withdrawing the catch and permitting the bar and circuit-closers to assume normal position.

5. In mechanism of the class described, the combination with a perforated music sheet or strip, of key-actuating electromagnets, circuits for said magnets, strip-operated circuit-closers forming the terminals of said circuits, a bar normally held above and out of contact with said circuit-closers, an electromagnet connected to said bar and disposed in a circuit, the terminals of which are under the control of the strip, a spring-pressed catch for holding the bar and circuit-closers in depressed position, out of contact with the strip, a solenoid-core carrying the catch, and a solenoid, the winding of which surrounds said core and is disposed in a circuit also under the control of the strip.

6. In mechanism of the class described, key-actuating electromagnets, circuit-closers connected thereto, a perforated music sheet or strip, strip-carrying rollers arranged one above and the other in front of the circuit-closers, a stationary guide-bar for the strip, and a roller serving in connection with the guide-bar to guide the strip at a point adjacent to the circuit-closers.

808,775. PACKING. JAMES GUTHRIDGE, Indianapolis, Ind. Filed May 26, 1905. Serial No. 262,143.

Claim.—1. A packing composed of alternately-arranged laminæ of corrugated fabric and pliable binding.

2. A packing composed of a multiplicity of alternately-arranged fabric and pliable binding laminæ, each fabric lamina of which has a plurality of transversely-displaced portions which, when subjected to compression in the direction of displacement, will tend to straighten.

3. A packing composed of alternately-arranged laminæ of fabric and rubber, each fabric lamina having portions transversely displaced to form a plurality of corrugations.

4. A packing composed of alternately-arranged laminæ of fabric and rubber, each fabric lamina having portions transversely displaced to form a plurality of corrugations, and the tops and bottom laminæ surfaced with a pliable filling.

5. A packing composed of alternately-arranged laminæ of fabric and pliable binding, each fabric lamina having portions transversely displaced to form a plurality of corrugations, and the top and bottom laminæ surfaced with a pliable filling.

6. A packing composed of a multiplicity of alternately-arranged laminæ of fabric and pliable binding, each lamina having portions transversely displaced to form a plurality of corrugations and the laminæ arranged with intermeshing corrugations.

7. A packing composed of a multiplicity of alternately-arranged laminæ of fabric and rubber, each lamina having portions transversely displaced to form a plurality of corrugations and the laminæ arranged with intermeshing corrugations, and the top and bottom laminæ surfaced with a pliable filling.

8. A packing composed of a multiplicity of alternately-arranged laminæ of fabric and rubber, each lamina having portions transversely displaced to form a plurality of corrugations and the laminæ arranged with intermeshing corrugations.

9. A packing composed of a multiplicity of alternately-arranged laminæ of fabric and rubber, each lamina having portions transversely displaced to form a plurality of corrugations and the laminæ arranged with intermeshing corrugations, and the top and bottom laminæ surfaced with a rubber filling.

808,776. PROCESS AND PRESS FOR PRESSING PULVEROUS MATERIAL. CARL von PITTLER and JOHANN TEUBERT, Brunn, Germany. Filed Sept. 8, 1904. Serial No. 223,393.

Claim.—1. In a press, in combination, a pressing-die, actuating means for said die, coupling means connecting said die and said actuating means, and means for bringing said coupling means into inoperative position while the die is resting on a support inclusive of the material to be pressed.

2. In a press, in combination, a pressing-die, actuating means for said die, coupling means connecting said die and said actuating means, and automatically-operated means for bringing said coupling means into inoperative position while the die is resting on a support inclusive of the material to be pressed.

3. In a press, in combination, a pressing-die, means for actuating said die, automatically-operated means for coupling said die and said actuating means when the die is supported at a certain point, and means for automatically bringing said coupling means into inoperative position when the die is resting at a point above that first named.

4. In a press, in combination, a pressing-die, an actuating member for said die, means for alternately applying low-pressure and high pressure to said die, and automatically-operated means for coupling said die and said actuating member during the ascent of the actuating member after each high-pressure stroke and for holding said parts uncoupled after each low-pressure stroke.

5. In a press, in combination, a pressing-die, a screw-spindle for actuating said die, coupling means connecting said die and said spindle, and means for bringing said coupling means into inoperative position while the die is resting on a support inclusive of the material to be pressed.

6. In a press, in combination, a pressing-die, a screw-spindle for actuating said die, coupling means connecting said die and said spindle, and automatically-operated means for bringing said coupling means into inoperative position while the die is resting on a support inclusive of the material to be pressed.

7. In a press, in combination, a pressing-die, a screw-spindle for actuating said die, means for automatically coupling said die and said screw-spindle while the die is resting at a certain point and for automatically uncoupling said parts when the die is resting at a higher point.

8. In a press, in combination, a pressing-die, a screw-spindle for actuating said die, means for alternately applying low pressure and high pressure to said die through said screw-spindle, and automatically-operated means for coupling said die and said screw-spindle during the ascent of said spindle after each high-pressure stroke and for holding said parts uncoupled after each low-pressure stroke.

9. In a press the combination of a pressing-die, a screw-spindle for actuating same, a hollow in said die adapted to receive the end of said spindle, recesses in said spindle and said die, a coupling member adapted to enter said recesses and means adapted to automatically withdraw said coupling member from the spindle-recesses on depositing the die on a support inclusive of the material to be pressed and on further descending of the spindle.

10. In a press the combination of a pressing-die, a screw-spindle for actuating same, a hollow in said die adapted to receive the end of said spindle, recesses in said spindle and said die, a coupling device adapted to enter said recesses, a controlling member for said coupling device pivotally mounted on the frame of the press and adapted to gradually withdraw said coupling device from the recesses of the spindle on descending of said die and means to turn the controlling member on its pivot on continuation of the descending movement of the die substantially for the purpose described.

11. In a press the combination of a pressing-die, a screw-spindle for actuating same, a hollow in said die adapted to receive the end of said spindle, recesses in said spindle and said die, the recesses in the die being so positioned that the distance between the recesses and the bottom of the hollow exceeds the distance between the recesses in the spindle and the end of the spindle and a coupling member adapted to simultaneously enter said recesses in the spindle and in the die.

12. In a press the combination of a pressing-die, a screw-spindle for actuating same, a hollow in said die adapted to receive the end of said spindle, recesses in said spindle and said die, the recesses in the die being so positioned that the distance between the recesses and the bottom of the hollow exceeds the distance between the recesses in the spindle and the end of the spindle, a coupling member adapted to simultaneously enter said recesses in the spindle and in the die and means adapted to automatically withdraw said coupling member from the spindle-recesses on depositing the die on a support inclusive of the material to be pressed and on further descending of the spindle.

13. In a press the combination of a pressing-die, a screw-spindle for actuating same and coupling means adapted to throw said die and actuating-spindle at will into engagement and out of engagement while the die is resting on a support inclusive of the material to be pressed a mold, a bottom plate movable in the mold, an ejector-rod pivotally mounted on the under side of the bottom plate, an ejector, connections between the ejector and the spindle, other connections between said ejector-rod and said die, said last-named connections being adapted to hold said ejector-rod out of operative position when the die is in operative position, substantially for the purpose described.

14. In a press the combination of a pressing-die, a screw-spindle for actuating same and coupling means adapted to throw said die and actuating-spindle at will into engagement and out of engagement while the die is resting on a support inclusive of the material to be pressed, a mold, a bottom plate movable in the mold, an ejector-rod pivotally mounted on the under side of the bottom plate, an ejector, connections between the ejector and the spindle, other connections between said ejector-rod and said die, said last-named connections being adapted to hold said ejector-rod out of operative position when the die is in operative position and a guide for said ejector adapted to bring it gradually out of contact with the ejector-rod on rising of the press-spindle substantially for the purpose described.

808,777. TELEGRAPH-KEY. ANDREW B. PETTERSEN, Repton, Ala. Filed Oct. 12, 1905. Serial No. 282,574.

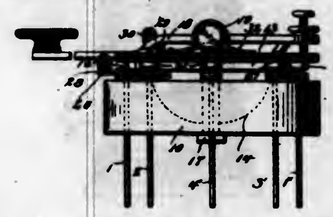

Claim.—1. A telegraph-key comprising a base having a plurality of contacts representing different lines; a turn-table mounted on the base and carrying a key-lever to operate any one of the lines; and means carried by the turn-table to hold the other lines closed.

2. A telegraph-key comprising a base having a plurality of contacts arranged in pairs, and each pair representing a different line; a turn-table mounted on the base and carrying a key-lever to operate any one of the lines; and contacts carried by the turn-table and bearing on those on the base, one of the contacts on the turn-table being in electrical connection with the key-lever, and the others being arranged in electrically-connected pairs.

3. A telegraph-key comprising a base having a plurality of contacts arranged in pairs, each pair representing a different line and the members of each pair being disposed diametrically opposite each other; a turn-table mounted on the base and carrying a key-lever to operate any one of the lines; a switch carried by the turn-table and arranged to engage one of the contacts on the base; a contact on the turn-table opposite the switch and bearing on one of the contacts on the base, and electrically connected to the key-lever; and a plurality of contacts carried by the turn-table and bearing on the other contacts of the base, and arranged in pairs each member thereof being diametrically opposite each other and electrically connected.

808,778. MOTOR-CONTROL SYSTEM. WILLIAM B. POTTER, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Aug. 10, 1904. Serial No. 220,161.

Claim.—1. In combination, a plurality of groups of motors, each group comprising a plurality of motors permanently connected in series, said motors being adapted for operation on either direct or alternating current, means for supplying alternating or direct current to said motors, a switch adapted to connect said groups in series and in parallel and to vary the amount of resistance in the motor-circuit, and a switch adapted to vary the field strength of the motors.

2. In combination, a plurality of groups of motors adapted for operation on either direct or alternating current, means for supplying alternating current or direct current to said motors, a switch for connecting said groups in series and in parallel, and a switch for varying the field strength of the motors.

3. In combination, a plurality of groups of motors adapted for operation on either direct or alternating current, means for supplying direct or alternating current to said motors, a switch for connecting said groups in series and in parallel and for varying the amount of resistance in the motor-circuit, and means for producing a relative variation in the field strength of the motors when running on direct and on alternating current.

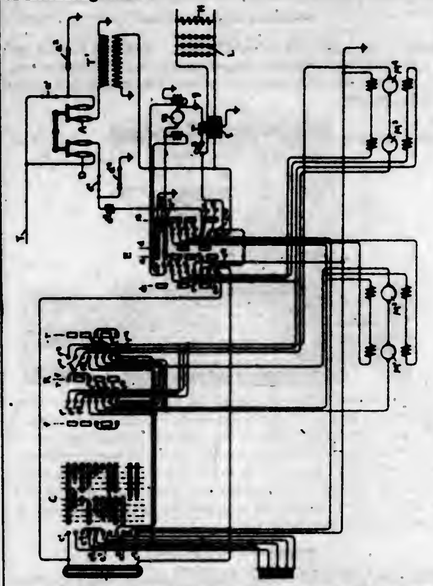

4. In combination, a plurality of groups of motors adapted for operation on either direct or alternating current, and means for supplying direct or alternating current to said motors, said means including a switch for varying the field strength of said motors and a switch for connecting said groups in series and in parallel and for determining the amount of resistance in the motor-circuit.

5. In a vehicle, a plurality of motors adapted for operation on either alternating or direct current, a transformer, two switches adapted to connect the source of current to said motors and to the primary of said transformer respectively, and a third switch adapted to vary the field strength of the motors and to connect said motors to the secondary of said transformer.

6. In a vehicle, driving-motors therefor, an auxiliary motor, all of said motors being adapted for operation on alternating or direct current, means for connecting the motors for operation on alternating or direct current, and a switch adapted to connect portions of the fields of all the motors in series and in parallel.

7. In a vehicle, driving-motors therefor adapted for operation on alternating or direct current, means for supplying the motors with alternating and direct currents of different voltages, lamps connected in shunt to the power-circuit, a voltage-changing device, and means for connecting said device in the lamp-circuit when the motors are connected for operation on alternating current.

8. In a vehicle, driving-motors therefor adapted for operation on direct or alternating current, means for supplying direct and alternating current of different voltages to said motors, a voltage-compensator having a point on its winding intermediate its terminals grounded, a lamp-circuit having one terminal connected to the source and the other to one terminal of said compensator, and means for connecting the other terminal of said compensator to the source when the motors are connected for operation on alternating currents.

9. In a vehicle, driving-motors therefor adapted for operation on alternating or direct current, means for supplying the motors with alternating and direct currents of different voltages, lamps connected in shunt to the power-circuit, a voltage-changing device, and a switch for decreasing the field strength of the motors and including said compensating coil in the lamp-circuit for operation on alternating current.

10. In combination, a plurality of motors adapted for operation on either alternating or direct current, a controlling-switch for said motors, a blow-out coil therefor, and means for cutting said coil out

of circuit when the motors are connected for operation on alternating-current.

11. In combination, a plurality of motors adapted for operation on either alternating or direct current, a controlling-switch for said motors, a blow-out coil therefor, and a switch arranged to vary the field strength of the motors and to cut said coil out of circuit.

808,779. ELECTRIC GENERATOR. BENJAMIN P. REMY and FRANK I. REMY, Anderson, Ind., assignors to Remy Electric Company, Anderson, Ind., a Corporation of Indiana. Filed May 27, 1905. Serial No. 262,602.

Claim.—In an electric generator, the combination, with stationary poles, of a pair of annular segmental poles journaled within said stationary poles and provided at the ends with journal-bearings, an armature mounted within said annular poles and having shaft-sections journaled and supported in the journal-bearings of the annular poles, means by which the armature may be angularly moved within the annular poles, and means by which the annular poles may be shifted within the stationary poles.

808,780. BALING-PRESS. JAMES R. ROBINSON, Dublin, Ga. Filed July 26, 1904. Serial No. 218,015.

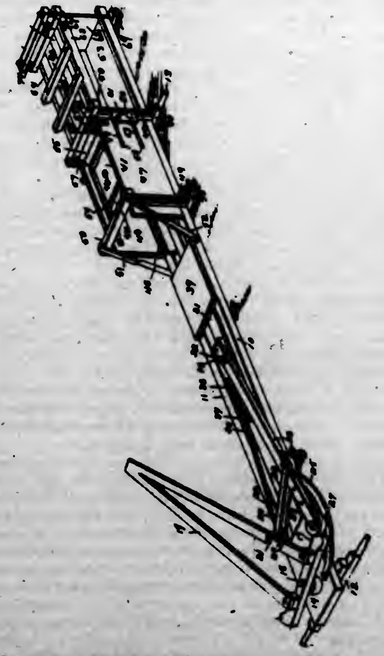

Claim.—In a baling-press, the combination of a baling-chamber having sills fixed with respect thereto, a reciprocatory plunger having a cross-head disposed between the sills, a power-stand, a horizontally-swinging pitman pivoted to the plunger and having an anti-friction-roller extending beyond its forward end, a tractile spring connecting the power-stand and the pitman, a horizontally-rotatable cross-head mounted on the power-stand and having rounded ends arranged to engage the roller of the pitman and also having a sweep, a curved track fixed with respect to the power-stand, a horizontally-swinging arm pivotally connected with the power-stand and the pitman and movable on said track, a leaf-spring connected at its rear end to one of the sills and having its forward portion disposed between the sills in position to be engaged by the cross-head, and a coiled spring interposed and supported between the forward portion of the leaf-spring and the sill to which said leaf-spring is connected.

808,781. WATER-COOLER. GEORGE B. SAVAGE, Meriden, Conn. Filed May 2, 1904. Serial No. 206,869.

Claim.—1. In a water-cooler, the combination of a body portion having thermally-insulated side walls and forming an ice-chamber, a double bottom, a glazed or enameled reservoir, an outlet-pipe from the body portion having an upwardly-turned inner end extending upward through the inner bottom and the bottom of said reservoir, means for centering said reservoir and a set-nut for coacting with the upwardly-turned end of said outlet-pipe for securing said reservoir in place, a cover for said body portion having an opening and an inverted bottle supported with its outlet within said reservoir.

2. A water-cooler comprising the combination of a body portion with insulated side walls having a shoulder near the top and an opening, a wide-mouthed water-reservoir mounted in said body, a single separate cover for said body portion and said reservoir having double metallic walls spaced apart with insulating material filled therein, said cover rising in the form of an arch from a shoulder of said body portion and having an annular flange or rim surrounding a central opening and an inverted water-bottle having a shoulder supported by said flange, the neck of said bottle protruding freely and unsupported within the mouth of said water-reservoir, the weight of said water-bottle being borne by said arched cover.

808,782. FLUID PIPE-LINE. JAMES B. STRAUB, Berkeley, Cal., assignor to Riffed Pipe Company, San Francisco, Cal., a Corporation of California. Filed June 23, 1905. Serial No. 266,567.

Claim.—1. A pipe-line having an interior helically-directed obstruction for the piping of a fluid, according to the method stated, said line, when laid on a grade, having traps at intervals in its bottom, for the collection of the heavier fluid of the pipe content, when the pumping is discontinued.

2. A pipe-line having an interior helically-directed obstruction for the piping of a fluid, according to the method stated, said line, when laid on a grade, being depressed below its general grade, at intervals, to form traps for the collection of the heavier fluid of the pipe content, when the pumping is discontinued.

3. In an apparatus for the method stated and in combination with means for supplying the pipe-line with the two fluids, a pipe-line laid on a grade and having traps for the collection of the heavier fluid of the pipe content, when the pumping is discontinued.

4. In an apparatus for the method stated and in combination with means for supplying the pipe-line with the two fluids, a pipe-

line laid on a grade and depressed below its general grade, at intervals, to form traps for the collection of the heavier fluid of the pipe content, when the pumping is discontinued.

808,783. TRAILING FENDER. ERNST G. SOLOMON, Omaha, Nebr., assignor of one-half to Harrison B. Shedd, Ashland, Nebr. Filed Nov. 20, 1903. Serial No. 183,006.

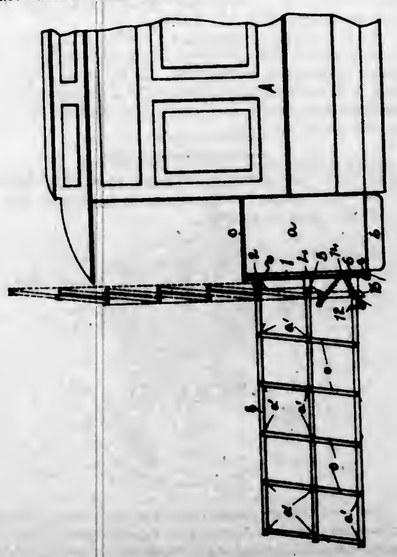

Claim.—1. A car-fender adapted to be secured to the rear end of a car, comprising a pivotally-held supporting-bar, of a plurality of fender-bars pivotally secured to said supporting-bar, said fender-bars being normally adapted to be held in a horizontal position, a plurality of vertical bars pivotally securing said fender-bars to provide an approximately rectangular frame, and a spring to normally hold said frame in alinement with the car, all arranged substantially as and for the purpose set forth.

2. A car-fender adapted to be secured to the rear end of the car, comprising a pivotally-held supporting-bar, of a plurality of fender-bars pivotally secured to said supporting-bar said fender-bars being adapted to be normally held in a horizontal position, means to connect said fender-bars, and a spring to normally hold said frame in alinement with the car.

808,784. KNITTING-MACHINE. BERNARD T. STERER, Utica, N. Y. Filed Oct. 15, 1904. Serial No. 228,669.

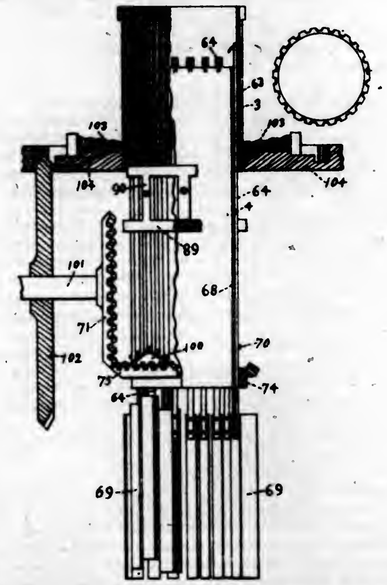

Claim.—1. In a knitting-machine the combination of a series of web-holding hooks, a cam having an inclined surface for directly raising them, and an annular revoluble holder for carrying said cam, beneath a portion of the needle-cam cylinder opposite the needle-actuating cam, substantially as specified.

2. In a knitting-machine the combination of a series of web-holding hooks, a cam having an inclined cam-surface for raising them, and a beveled gear for carrying said cam underneath projecting lugs reaching outward from the web-holders located beneath a portion of the needle-cam cylinder opposite the needle-actuating cam.

3. In a knitting-machine the combination of a series of web-holding hooks, a cam having an inclined surface for raising them by direct contact, and a miter-gear for carrying said cam, a main driving-shaft employing a beveled gear to transmit motion to the needle-operating cam-ring and a miter-gear to transmit motion to the web-holder cam, substantially as specified.

4. In a knitting-machine the combination with a series of web-holding hooks, said hooks having portions to reach over the path of their actuating-cam, of an actuating-cam mounted upon the upper surface of an annular cam-holder, and means for moving said actuating-cam in such a manner that it will raise first one hook then its immediate neighbor and so on continually raising the hooks in consecutive succession, substantially as specified.

5. A web-holding mechanism for knitting-machines comprising a series of web-holders, means for normally pulling them downwardly and a cam engaging said holders, and capable of lifting them consecutively.

6. In a knitting-machine a web-holder comprising hooks capable of engaging the web, means for pulling them downwardly, and means for lifting them consecutively.

808,785. INVALID-LIFT. OSMER B. THOMPSON, Jenny, Ohio. Filed July 20, 1904. Serial No. 217,516.

Claim.—1. In an invalid-lift, the combination with a raising device and a supporting-frame connected to the raising device, of a plurality of cloth bottom sections disposed across the frame, stripe about which the opposite ends of the sections are folded, and means engaged about the strips and folded ends of the sections for connecting the same to the sides of the frame and placing the sections under tension.

2. In an invalid-lift, the combination with a raising device and a supporting-frame connected to the raising device, of a plurality of cloth bottom sections disposed across the frame, stripe about which the opposite ends of the sections are folded, and hooks engaged about the strips and folded ends of the sections for connecting the same to the sides of the frame and placing the sections under tension.

3. In an invalid-lift, the combination with a raising device and a supporting-frame connected to the raising device, of a plurality of cloth bottom sections disposed across the frame, non-flexible strips about which the opposite ends of the cloth sections are folded, and hooks formed to receive the strips and folded ends of the sections and adapted to engage over the sides of the supporting-frame so as to stretch the sections across the same.

4. In an invalid-lift, the combination with a raising device and a supporting-frame connected to the raising device, of a plurality of cloth bottom sections disposed across the frame, strips about which the opposite ends of the cloth sections are folded, the said strips adapted to be engaged with the sections at different points so as to vary their length between their folded portions, and means engaged about the strips and folded ends of the sections for connecting the same to the sides of the supporting-frame.

5. In an invalid-lift, the combination with a supporting-frame, a textile bottom section disposed across the frame, and means for supporting one end of the section from the frame, of means for supporting the opposite end of the section from the frame comprising a strip about which the said end portion of the section is closely folded, and a supporting device having one end snugly engaged about the folded end of the section and the strip and its opposite end in engagement with the frame.

808,786. POLISHING-MACHINE FOR SAD-IRONS. OLE TYRDAHL, Mineral City, Ohio, assignor of one-half to Thomas J. Rittenhouse, Coshocton, Ohio. Filed Feb. 3, 1905. Serial No. 243,866.

Claim.—1. In a polishing-machine, in combination, a polishing-wheel, a traveling holder for the article to be polished, and means to move the holder laterally and longitudinally across the wheel.

2. In a polishing-machine, in combination, a polishing-wheel, a belt carrying holders for the articles to be polished, and means to press said articles against the wheel, said belt having a reciprocating lateral motion, in addition to its longitudinal run.

3. In a polishing-machine, in combination, a frame, a series of polishing-wheels overhanging the same, a belt which travels over the frame and under said wheels, article-holders carried by the belt, and means to lift the holders to press the articles against the wheels.

4. In a polishing-machine, in combination, a frame, a series of polishing-wheels overhanging the same, a track on the frame, under the wheels, a belt which travels along said track, holders carried by the belt, and means beside the track, under each wheel, to lift the holders, to press the articles carried thereby against the wheels.

5. In a polishing-machine, in combination, a series of polishing-wheels, a track thereunder, laterally-reciprocating carriages which support the track, a belt which runs along the track and moves laterally therewith, and holders for the articles to be polished, attached to the belt and movable therewith under the wheels.

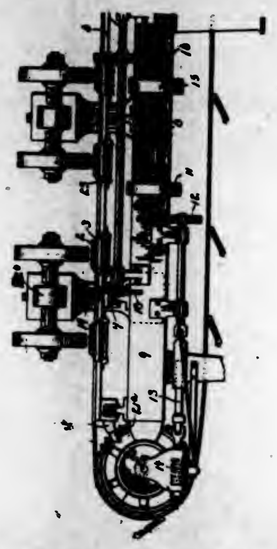

6. In a polishing-machine, the combination of the polishing-wheel, the belt which travels thereunder, the holders carried by the belt, and means to yieldingly lift the holders as they pass under the wheel, to press the articles therein against said wheel.

7. In a polishing-machine, in combination, a frame, laterally-movable wheels at the ends thereof, a belt which runs around said wheels and over the frame, means to reciprocate the belt and wheels laterally, a series of polishing-wheels mounted over the frame and belt, and holders carried by the belt and constructed to carry articles under and against the polishing-wheels.

8. In a polishing-machine, the combination with a polishing-wheel, of a track thereunder, a belt which travels along the track, holders supported on the belt, lifting-slides arranged beside the track, upon which the holders ride as they pass under the wheel, to press the articles carried thereby against the wheel, and weighted levers supporting said slides.

808,787. APPARATUS FOR TREATING AND AMALGAMATING METALS. GEORGE P. TYARS, Cape Town, Cape Colony. Filed Aug. 8, 1904. Serial No. 219,892.

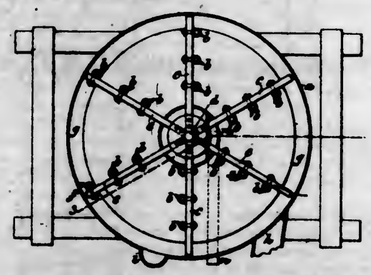

Claim.—1. The combination of a vessel for treating and amalgamating ores, a shaft in the vessel carrying arms, paddles depending from the arms and arranged in a spiral around the vessel, the blades of the paddles being set at the same angle to the radii of the arms and so arranged that the leading edge of any blade traces out the same path as the outer rear edge of the preceding one, and a channel extending around the outer edge of the bottom of the vessel.

2. A vessel for treating and amalgamating ores, a shaft in the vessel carrying arms, paddles arranged in a spiral on the arms the blades of the paddles being set at the same angle to their radii and so arranged that the leading edge of any blade traces out the same path as the outer rear edge of the preceding one except the outermost blade which is turned toward the outer wall of the vessel, and a channel extending round the outer edge of the bottom of the vessel.

3. A vessel for treating and amalgamating ores, a shaft in the vessel carrying arms, paddles arranged in a spiral on the arms the blades of the paddles being set at the same angle to their radii and so arranged that the leading edge of any blade traces out the same path as the outer rear edge of the preceding one except the outermost blade which is turned toward the outer wall of the vessel, and a channel extending round the outer edge of the bottom of the vessel the two outermost blades protruding into the channel.

808,788. GARMENT-MARKER FOR LAUNDRIES AND THE LIKE. DUTLEY C. VOSS, Somerville, Mass., assignor to John B. Bartlett, Chelsea, Mass. Filed Apr. 26, 1905. Serial No. 257,247.

Claim.—1. A garment-marker, comprising a flexible strip of woven fabric, having at its opposite ends eyelets permanently secured thereto, and provided with securing prongs or clamps for piercing the fabric and being bent back into the holes of the eyelets.

2. A garment-marker, comprising a flexible strip of woven fabric cut on the bias and comprising a plurality of folds secured to each other, having at its opposite ends eyelets permanently secured thereto, and provided with securing prongs or clamps for piercing the fabric and being bent back into the holes of the eyelets.

3. A garment-marker, comprising a flexible strip of woven fabric cut on the bias and comprising a plurality of folds secured to each other by waterproof cement, having at its opposite ends eyelets permanently secured thereto, and provided with securing prongs or clamps for piercing the fabric and being bent back into the holes of the eyelets.

4. A garment-marker, comprising a multifolded bias strip cemented with waterproof cement, and having at each end a prong-carrying eyelet, said eyelet having an outwardly-curved annular pocket at one end of its central hole, and a rolled-over edge at the opposite end of said central hole, said edge inclosing the material and pinching the same into said pocket.

5. A garment-marker, comprising a cloth portion for receiving the writing or laundry-mark, and an eyelet provided with opposite prongs, said eyelet having a flat peripheral rim, an outturned annular pocket adjacent thereto, converging into a central tubular portion terminating at the opposite side in a rolled-over edge, said edge interlocking with the cloth and pinching the same into said annular pocket.

808,789. METALLIC STUDDING. FREDERICK VOSS, Chicago, Ill. Filed Feb. 11, 1905. Serial No. 245,269.

Claim.—1. The combination in a stud of a central web, a loop thereon and a corrugated rib adjacent said loop.

2. A stud comprising a central web, a loop offset from the plane thereof and a corrugated portion adjacent said loop and directed toward the same.

3. A metallic studding comprising a web, a laterally-directed flange thereon, a loop adjacent said flange and directed oppositely therefrom and a deflecting-rib adjacent said loop having the adjacent portion thereof turned out of the plane of the web toward the loop.

4. A metallic studding comprising a central web, laterally-directed flanges thereon, integral loops in said web projecting outwardly from the plane thereof and a deflecting-rib adjacent said loops.

5. A device of the class described comprising a central web, a plurality of oppositely-directed loops therein arranged in pairs and a deflecting-rib intermediate said loops.

6. In a device of the class described the combination with a central web of oppositely-directed flanges thereon, a plurality of loops adjacent each flange and directed oppositely therefrom and a corrugated deflecting-rib intermediate laterally-adjacent loops.

7. A device of the class described comprising a central web, laterally-directed flanges thereon, means on said web adapted to receive fastening means and means adjacent thereto adapted to direct the fastening means on the proper side of said web.

8. A device of the class described comprising a central web, a laterally-directed flange thereon, a loop integral with said web adapted to firmly grip a nail or the like and a corrugated portion adjacent said loop.

9. In a device of the class described the combination with a central web of lateral, oppositely-directed flanges thereon, a row of longitudinally-alined loops adjacent each flange and directed oppositely therefrom and a rib intermediate laterally-adjacent loops having the edges thereof turned oppositely out of the plane of the web.

10. A metallic stud comprising a central web having outwardly-directed loops extending longitudinally thereof at closely-arranged intervals along its length affording means for attaching grounds and a longitudinal corrugation in the web adjacent said loops.

808,790. WOVEN FEATHER FABRIC. EDWARD K. WARREN and JONAS H. HOLDEN, Three-oaks, Mich., assignors to The Warren Featherbone Company, Three-oaks, Mich. Filed Sept. 12, 1903. Serial No. 173,016.

Claim.—A fabric made up of an open-mesh base fabric, into the meshes of which down or feathers are incorporated and felted or compacted together.

808,791. FELTED FEATHER FABRIC. EDWARD K. WARREN and JONAS H. HOLDEN, Three-oaks, Mich., assignors to The Warren Featherbone Company, Three-oaks, Mich. Filed Sept. 12, 1903. Serial No. 173,911.

Claim.—A felt fabric consisting of the down or plumage of feathers felted together.

808,792. FELTED FEATHER FABRIC. EDWARD K. WARREN and JONAS H. HOLDEN, Three-oaks, Mich., assignors to The Warren Featherbone Company, Three-oaks, Mich. Filed Sept. 12, 1903. Serial No. 173,912.

Claim.—1. A felt fabric consisting of feather plumage felted together, and having rows of stitching through the same.

E. A felt fabric consisting of feathers felted together, having crossed rows of stitching through the same.

808,793. TEMPORARY BINDER. CHARLES WHITHAM, Sheffield, Canada. Filed Oct. 14, 1904. Serial No. 228,431.

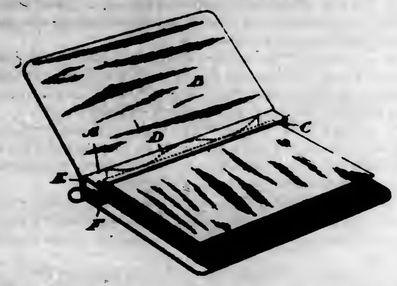

Claim.—1. In a binder, provided with a retaining-bar, a lock for the said bar, comprising a plate having a bayonet-slot formed therein; and a locking-piece hinged on a stationary part and adapted to close the main part of the slot and releasably retain the end of the retaining-bar in engagement with the shoulder of the slot, whereby the bar is held down by engagement with the said shoulder and not by the locking-piece substantially as described.

2. In a binder, provided with a retaining-bar, a lock for the said bar, comprising a plate having a bayonet-slot formed therein, with a downwardly-facing notch in its shoulder; and a locking-piece hinged on a stationary part and adapted to releasably retain the end of the retaining-bar in engagement with the shoulder, whereby the bar is held down by engagement with the said shoulder and not by the locking-piece substantially as described.

3. In a binder, provided with a retaining-bar, a lock for the said bar, comprising a plate having a bayonet-slot formed therein; and a locking-piece hinged on a stationary part and adapted to close the main part of the slot; a stem longitudinally movable in the locking-piece, and having an enlargement thereon; a spring tending to maintain the stem in its normal position, the plate having a slot cut therein for the passage of the stem and an enlargement of the slot to receive and engage the enlargement of the stem when the locking-piece is in its locking position, substantially as described.

4. In a binder, provided with a retaining-bar, a lock for the said bar, comprising a plate having a bayonet-slot formed therein and a keyhole-slot below the bayonet-slot; a locking-piece pivoted behind the plate and shaped to close the vertical part of the bayonet-slot; a stem longitudinally movable in the locking-piece and having an enlargement near its outer end; and a spring tending to maintain the stem with its enlargement in position to engage the enlargement of the keyhole-slot when the locking-piece is swung to close the bayonet-slot, substantially as described.

5. In a binder, provided with a retaining-bar, a lock for the said bar, comprising a plate having a bayonet-slot formed therein and a keyhole-slot below the bayonet-slot; a locking-piece pivoted behind the plate and shaped to close the vertical part of the bayonet-slot; a stem longitudinally movable in the locking-piece and having an enlargement near its outer end; a spring tending to maintain the stem extended with its enlargement in position to engage the enlargement of the keyhole-slot when the locking-piece is swung to close the bayonet-slot; and a ring secured to the end of the stem, substantially as described.

808,794. SHOE-RACK. EDWARD F. WHITE, Quincy, Mass. Filed Jan. 26, 1905. Serial No. 242,488.

Claim.—1. A shoe-rack having a plurality of independent pivoted reversible shelves and means for maintaining either face of each shelf in supporting position.

2. A shoe-rack provided with a plurality of independent shelves having shoe-holding compartments upon opposite faces and adapted to present either face in supporting position.

3. A shoe-rack comprising a supporting-frame having a plurality of pivotally-reversible shelves and means to engage said shelves when in normal position to maintain them therein and to prevent them from warping.

4. A shoe-rack comprising a supporting-frame having a plurality of reversible shelves pivoted thereto and means extending from the frame and adapted to engage each of the opposite ends of each shelf at a plurality of points to maintain said ends in the same plane.

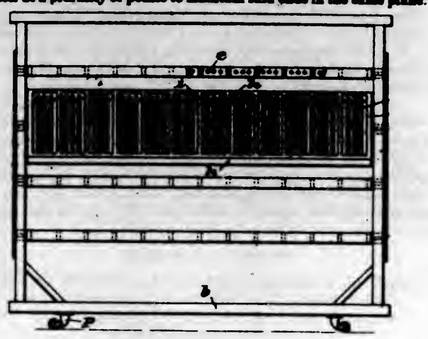

808,795. BALING-PRESS. EDGAR L. WHITE, Waco, Tex. Filed June 30, 1903. Serial No. 163,782.

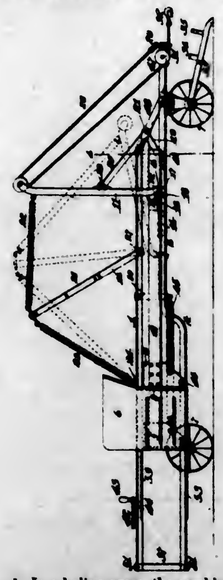

Claim.—1. In a baling-press, the combination with a plunger, plunger-rod, and plunger-operating mechanism; of a main frame including a baling-chamber, a frame extension comprising opposite-flanged metallic beams, rollers supporting the plunger, and other rollers supporting the plunger-rod and disposed to travel along the bottom flanges of said beams.

2. In a baling-press, the combination with a press-box and plunger; of plunger-operating mechanism including a lever and lever-retracting mechanism including a pair of springs having their remote ends connected to the lever and to a fixed part respectively, and a swinging arm connecting the proximate ends of said springs.

3. In a baling-press, the combination with a press-box, plunger and plunger-rod; of a swinging fulcrum-support, a plunger-operating lever fulcrumed in said support and disposed to engage the plunger-rod, a swinging arch, a spring connecting said arch with the lever, and a second spring extending between the arch and a fixed part.

4. In a baling-press, the combination with the top members 1, 1 bent outward intermediate their ends for the reception of the baling-chamber, of bottom members 2, 2, bent outward intermediate their ends, for the reception of the baling-chamber and upward near the front ends to form a base or platform for the baling-tongue, substantially as and for the purposes set forth.

5. In a baling-press, the combination with the top members 1, 1 bent outward intermediate their ends for the reception of the baling-chamber, of bottom members 2, 2, bent outward intermediate their ends, for the reception of the baling-chamber and upward near the front ends to form a base or platform for the baling-tongue and brought into close relation at the front extremity to form a sheave-bearing, substantially as and for the purposes set forth.

6. In a baling-press, the combination with the top members 1, 1 bent outward intermediate their ends for the reception of the baling-chamber, of bottom members 2, 2, bent outward intermediate their ends, for the reception of the baling-chamber and upward near the front ends to form a base or platform for the baling-tongue and the inclined members 48 and braces 49, substantially as and for the purposes set forth.

7. In a baling-press, the combination with the top members 1, 1 bent outward intermediate their ends, for the reception of the baling-chamber, of bottom members 2, 2, bent outward intermediate their ends, for the reception of the baling-chamber and upward near the front ends to form a base or platform for the plunger-beam and brought into close relation at the front ends to form a sheave-bearing, and the inclined members 48 and braces 49 with the bearing 21 at the meeting-point thereof, substantially as and for the purposes set forth.

8. In a baling-press, the combination with the framework, plunger-actuating lever and retracting-springs therefor, of the bridge pivoted to the framework, and engaging with the springs intermediate the frame and plunger-actuating lever whereby the angle of lead of the springs will automatically change as the plunger-actuating lever moves, substantially as and for the purposes set forth.

9. In a baling-press, the combination with the framework, plunger-actuating lever and retracting-springs therefor, of a bridge with bifurcated ends pivoted to the framework, and engaging with the springs intermediate the frame and plunger-actuating lever whereby the angle of lead of the springs will automatically change as the plunger-actuating lever moves, substantially as and for the purposes set forth.

10. In a baling-press, the combination with a plunger-beam and actuating-lever, of a spring-detent on the plunger-beam adapted to engage with the plunger-actuating lever, substantially as and for the purposes set forth.

11. In a baling-press, the combination with the plunger-beam and actuating-lever, of a spring-detent upon the beam, and an anti-friction-roller on the lower extremity of the actuating-lever, and adapted to engage with the detent, substantially as and for the purposes set forth.

12. In a baling-press, the combination with the plunger-beam and actuating-lever, supporting-links for the latter, a spring-detent upon the beam and an antifriction-roller on the lower extremity of the actuating-lever and adapted to engage with the detent, substantially as and for the purposes set forth.

13. The combination with the plunger and plunger-beam of a baling-press, of a frame with side members of angle-irons forming a central portion larger in cross-section than the plunger, and contracted inwardly and upwardly adjacent to one end, to form a support for the beam, substantially as and for the purposes set forth.

14. The combination with the plunger and plunger-beam of a baling-press, of a frame with side members of angle-iron forming a central portion larger in cross-section than the plunger, and contracted inwardly and upwardly adjacent to one end, to form a support for the beam, and means for adjustably contracting the other end of the frame, substantially as and for the purposes set forth.

15. In a baling-press, the combination with a press-box and plunger, of a plunger-rod in the form of a channel-beam having a bottom and parallel side flanges, a seat formed between the flanges and an operating-lever having its end extending between the flanges of the plunger-rod and engaging the seat.

808,796. AMUSEMENT DEVICE. THEODORE WHITE, Hartford, Conn. Filed July 9, 1904. Serial No. 215,998.

Claim.—1. In a merry-go-round, in combination, a fixed support, a bearing-plate secured upon the upper end thereof and having a flange, a supporting-plate for a platform mounted on the bearing-plate and having a projection extending about, and underlying the flange, ball-bearings located between said flange and projection, ball-bearings located between the upper surface of the plate and the under surface of the platform-support, and a platform mounted on the support, the plane of the platform and each of the sets of bearings being parallel.

2. In a merry-go-round, in combination, a fixed support to receive a bearing-plate in proximity to the surface of the ground, the bearing-plate secured thereto and having a flange, a support for a platform mounted on the bearing-plate and having a projection underlying the flange, ball-bearings located between said flange and projection, ball-bearings located between the upper surface of the plate and the under surface of the platform-support and a running-board platform dependent from the support in proximity to the ground and a lattice intermediate the platform-support and running-board, providing a casing encircling and guarding the other movable parts.

3. In a merry-go-round, in combination, a fixed support, a plurality of bearings arranged thereon, a rotatable platform mounted upon said bearing, and a dependent running-board extending about the platform whereby a person may gain and retain position upon the platform.

4. In a merry-go-round, in combination, a fixed support, a plurality of bearings operatively arranged thereon, a rotatable platform mounted upon said bearings and provided with a foot or running board extending thereabout and handles projecting from said platform in position to be grasped by a user.

5. In a merry-go-round, in combination, a fixed support, a bearing-plate secured thereto, and having a flange, a platform mounted on the bearing-plate and having a projection underlying the flange, balls located between said flange and projections, and balls located between the upper surface of the plate and the under surface of the platform, a rim depending from the platform and entirely surrounding and inclosing said bearing and supports, and a running-board secured to the lower edge of said rim.

6. In a merry-go-round, in combination, a fixed support, a bearing-plate mounted on the support and having a flange, a rotatable platform having a dependent bearing member with a lip underlying said flange, balls located between said lip and flange, balls located on the upper surface of the plate and between it and the rotatable platform, a supporting-spider forming a part of said platform, radial arms extending from the spider, a rim depending from said platform and entirely inclosing the bearing parts of the device and a running-board secured to the lower edge of said rim.

7. In a merry-go-round, in combination, a support, a bearing-plate fixed to the upper part of said support and having a circular flange, a spider having a depending part with a lip underlying said flange, balls located between said lip and flange, balls located between the upper surface of the plate and spider, radial arms secured at the inner ends in recesses in the spider, a platform mounted on said arms, supports depending from the outer end of the arms, and a running-board secured to the lower end of said supports.

8. In a merry-go-round comprising a fixed support, a plurality of bearings operatively arranged thereon, a rotatable platform mounted upon said bearings and provided with a foot or running board extending thereabout, a seat extending about the entire platform above the running-board, and handles projecting from said platform in position to be grasped and pushed whereby the operator may start the platform in motion and mount the running-board and seat.

9. In a merry-go-round, in combination, a fixed support, a bearing-plate secured to the support and having a circular flange, a spider mounted on the support and having a depending part with a lip underlying the flange, balls secured between said lip and flange, balls located between the under surface of the spider and upper surface of the plate, radial arms with their inner ends located in sockets in said spider, a platform mounted on said radial arms, a rim secured to the outer ends of said arms and extending entirely around the device and entirely inclosing the bearings and a running-board secured at the lower edge of said rim.

10. In a merry-go-round, in combination, a fixed support, a bearing-plate mounted on said support and having a flange, a spider having a depending portion with a lip underlying said flange, balls located between said flange and lip, balls located between the under surface of the spider and upper surface of said bearing-plate, radial arms with their inner ends located in sockets in said spider, a plat-

form located on said arms, supports depending from the outer ends of said arms, a rim extending entirely around the platform and completely guarding the bearings against access and a running-board secured to said supports at the lower edge of the rim.

808,797. TRACK-SANDING APPARATUS. FREDERICK W. WITTENBERG, Des Moines, Iowa. Filed Feb. 27, 1905. Serial No. 247,897.

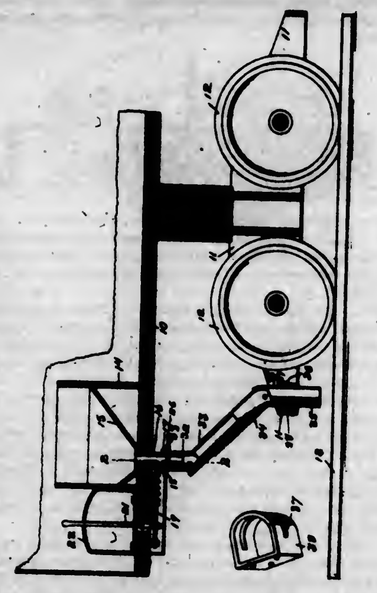

Claim.—1. In a device of the class described a car-floor, a swinging truck connected with the floor, a sand-box mounted adjacent to the floor, a sand-pipe rotatably mounted and communicating with the sand-box, and also rotatably connected with the forward end of the truck, so that the lower end of the sand-pipe is immediately in front of the forward wheels of the truck, and a telescoping portion in the sand-pipe, so arranged that the pipe will be allowed to swing with the swinging of the truck.

2. In a device of the class described a car-floor, a swinging truck connected with the floor, a sand-box mounted adjacent to the floor, a sand-pipe rotatably mounted and communicating with the sand-box, and also rotatably connected with the forward end of the truck, so that the lower end of the sand-pipe is immediately in front of the forward wheels of the truck, and a telescoping portion in the sand-pipe, so arranged that the pipe will be allowed to swing with the swinging of the truck means for regulating the flow of sand from the sand-box through the sand-pipe.

3. In a device of the class described a car-floor, a swinging truck, connected with the floor, a sand-box mounted adjacent to the floor, a sand-pipe rotatably mounted and communicating with the sand-box and also rotatably connected with the forward end of the truck, so that the lower end of the sand-pipe is immediately in front of the forward wheels of the truck means for regulating the flow of sand from the sand-box through the sand-pipe, and a lever and a ratchet-faced portion, to be engaged by said lever for cutting and maintaining the means for regulating the flow of sand through the sand-pipe.

4. In a device of the class described a car-floor, a swinging truck connected with the floor, a sand-box mounted adjacent to the floor, a sand-pipe rotatably mounted and communicating with the sand-box, and also rotatably connected with the forward end of the truck, so that the lower end of the sand-pipe is immediately in front of the forward wheels of the truck, a telescoping portion in the sand-pipe, so arranged that the pipe will be allowed to swing with the swinging of the truck means for regulating the flow of sand from the sand-box through the sand-pipe, a lever and a ratchet-faced portion to be engaged by said lever for cutting and maintaining the means for regulating the flow of sand through the sand-pipe.

808,798. APPARATUS FOR THE AGITATION OF SOLUTIONS USED IN ELECTRODEPOSITION OF METALS. WILLIAM C. WORB and ERNEST GARDNER, London, England, assignors to W. Canning & Co., Birmingham, England. Filed Aug. 31, 1905. Serial No. 276,022.

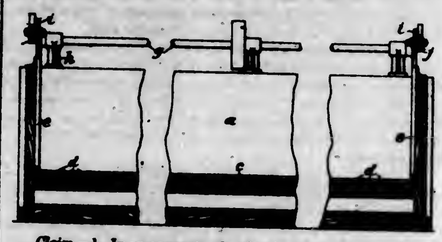

Claim.—1. In an apparatus for the electrodeposition of metals, the combination with the tank for containing the electrolyte of a trough arranged within the same, the said trough having within it a plunger designed for drawing the electrolyte into the trough and ejecting it therefrom, substantially as, and for the purpose, described.

2. In an apparatus for the electrodeposition of metals, the combination with the tank for containing the electrolyte of a trough fixed within the said tank, the said trough containing a plunger provided with holes or apertures through which the electrolyte can enter and be discharged from the trough, substantially as described.

3. In an apparatus for the electrodeposition of metals the combination with the tank adapted to contain the electrolyte, of a trough fixed within said tank adjacent to the bottom of the same and extending substantially from one end of the tank to the other, a plunger fitting said trough, means for admitting the electrolyte to said tank and permitting its escape therefrom, and operating devices for reciprocating said plunger, substantially as described.

4. In an apparatus for the electrodeposition of metals the combination with the tank adapted to contain the electrolyte, of a plurality of troughs fixed in said tank adjacent to the bottom of the same, and extending substantially from one end of the tank to the other, a plunger fitting in each trough, each trough and piston being provided with a series of holes for admitting and expelling the electrolyte, an operating-lever connected with said plungers for operating the same, an operating-shaft, and connections between said shaft and lever, substantially as described.

808,799. FERTILIZER-DISTRIBUTER. ALBERT J. WOOLMAN, Urbana, Ill. Filed May 25, 1905. Serial No. 262,514.

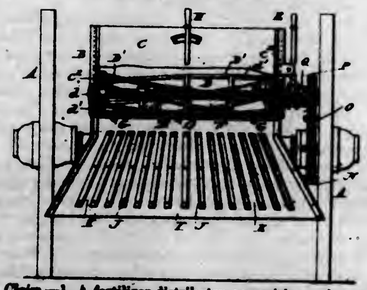

Claim.—1. A fertilizer-distributer comprising a hopper provided with distributing devices and formed with ribs *a* adapted to fit the end-gate groove in the wagon and having standards *a'* adapted to rest on the bottom of the wagon and gearing for connecting distributing devices with a wheel of the wagon.

2. A fertilizer-distributer comprising a hopper having adjustable feed-openings at the bottom and a rotary agitator within the hopper comprising a skeleton frame and diagonally-arranged blades thereon for conveying the material to the feed-openings and for collidding the lumps of material at one end of the hopper.

3. A fertilizer-distributer comprising a hopper, a plate in the bottom thereof having oval or elliptical feed-openings the longer axes of which are arranged crosswise of and diagonally to the longer axis of the hopper and an agitator arranged above the plate and having blades which convey the material to the plate.

4. A fertilizer-distributer comprising a hopper, an agitator therein provided with diagonal blades, a plate in the bottom of the hopper having oval openings the longer axes of which are arranged crosswise of and diagonal to the axis of the agitator and an adjustable sliding plate having corresponding openings for varying the size of the feed-openings.

808,800. LEVEE-BUILDING SUCTION-DREDGE. FRANK V. WRIGHT, San Francisco, Cal. Filed Oct. 9, 1905. Serial No. 281,966.

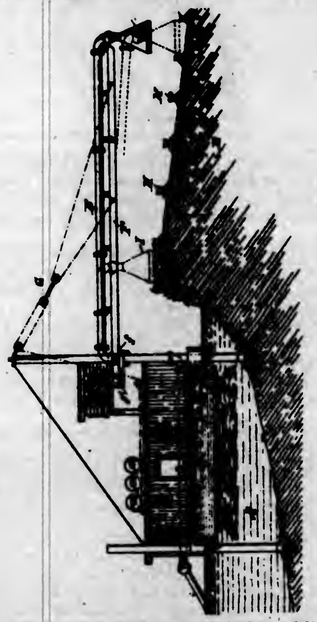

Claim.—1. In a levee-building suction-dredge, a delivery-pipe disposed above the levee, and suspended from the dredge by connections which enable its discharge end to be swung over the levee in a horizontal arc.

2. In a levee-building suction-dredge, a delivery-pipe disposed above the levee and suspended from the dredge by connections which enable its discharge end to be swung toward or raised from the levee in a vertical arc.

3. In a levee-building suction-dredge, a delivery-pipe disposed above the levee, and suspended from the dredge by connections which enable its discharge end to be swung over the levee in a horizontal arc, and to be swung toward or raised from the levee in a vertical arc.

4. In a levee-building suction-dredge, and in combination with its delivery-pipe, a means in connection with the outlet of said pipe for reducing the velocity of the material at the outlet.

5. In a levee-building suction-dredge, and in combination with its delivery-pipe, a means in connection with the outlet of said pipe for reducing the velocity of the material at the outlet and spreading it at said outlet to a delivery area greater than that of the pipe itself.

6. In a levee-building suction-dredge, and in combination with its delivery-pipe, obstructions in the outlet of said pipe for reducing the velocity of the material at said outlet.

7. In a levee-building suction-dredge, and in combination with its delivery-pipe, obstructions in the outlet of said pipe for reducing the velocity of the material at said outlet consisting of a revolubly-mounted wheel with radial blades rotatable under the pressure of said material.

8. In a levee-building suction-dredge, and in combination with its delivery-pipe, a flaring spreader fitted to the outlet end of said pipe, and obstructions in said spreader for reducing the velocity of the material discharging therefrom.

9. In a levee-building suction-dredge, and in combination with its delivery-pipe, a flaring spreader fitted to the outlet end of said pipe, and obstructions in said spreader for reducing the velocity of the material discharging therefrom consisting of a revolubly-mounted wheel with radial blades rotatable under the pressure of said material.

10. In a levee-building suction-dredge, and in combination with its delivery-pipe, a flaring spreader fitted to the outlet end of said pipe, and obstructions in said spreader for reducing the velocity of the material discharging therefrom consisting of a series of independently revolubly mounted wheels with radial blades, the blades of one wheel being inclined oppositely to those of the adjacent wheel, whereby adjacent wheels are rotated in relatively opposite directions by the pressure of the discharging material.

11. In a levee-building suction-dredge, a delivery-pipe disposed above the levee and suspended from the dredge by connections which enable its discharge end to be swung horizontally and vertically over the levee, in combination with a spreader fitted to the outlet of said pipe, and obstructions in the spreader for reducing the velocity of the discharging material.

12. In a levee-building suction-dredge, a delivery-pipe disposed above the levee and suspended from the dredge by connections which enable its discharge end to be swung horizontally and vertically over the levee, in combination with a spreader fitted to the outlet of said pipe, and obstructions in the spreader for reducing the velocity of the discharging material consisting of a revolubly-mounted wheel with radial blades rotatable under the pressure of said material.

13. In a levee-building suction-dredge, a delivery-pipe disposed above the levee and suspended from the dredge by connections which enable its discharge end to be swung horizontally and vertically over the levee, in combination with a spreader fitted to the outlet of said pipe, and obstructions in the spreader for reducing the velocity of the discharging material consisting of a revolubly-mounted wheel with radial blades rotatable under the pressure of said material, consisting of a series of independently revolubly mounted wheels with radial blades, the blades of one wheel being inclined oppositely to those of the adjacent wheel, whereby adjacent wheels are rotated in relatively opposite directions by the pressure of the discharging material.

808,801. PIPE-WRENCH. RICHARD ADAMS, Toronto, Canada. Filed Mar. 7, 1905. Serial No. 248,948.

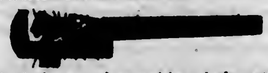

Claim.—1. A pipe-wrench comprising a body portion having at one end an apertured offset with one of its inner faces serrated and a transversely-disposed chamber extending from the aperture of the offset to the opposite side of the body portion, a movable jaw having a shank with a serrated face to engage with the serrated face of the offset, a spring-tensioned plunger slidable in said chamber to engage said shank, a trigger to actuate the plunger and a fixed jaw for the body portion opposed to the movable jaw.

2. A pipe-wrench comprising a body portion having at one end an apertured offset with one of its inner faces serrated and a transversely-disposed chamber extending from the aperture of the offset to the opposite side of the body portion, a movable jaw having a shank with a serrated face to engage with the serrated face of the offset, an annular shoulder in said chamber, a plunger slidably movable in said chamber and through the annular shoulder, a tension-spring engaging said shoulder and plunger to press its head against the shank of the movable jaw, a trigger to actuate the plunger and a fixed jaw for the body portion opposed to the movable jaw.

3. A pipe-wrench comprising a body portion having at one end an apertured offset with one of its inner faces serrated and a transversely-disposed chamber extending from the aperture of the offset to the opposite side of the body portion, a movable jaw having a shank with a serrated face to engage with the serrated face of the offset, a spring-tensioned plunger slidable in said chamber to engage said shank, a trigger to actuate the plunger, a fixed jaw for the body portion opposed to the movable jaw having a rocker contained in a corresponding recess in the adjacent end of the body portion, a lug for the rocker, a tension-spring contained within an extension of said recess engaging said lug and body portion and a rocker-pin passing through the body portion and rocker.

4. A pipe-wrench comprising a body portion having at one end an apertured offset with one of its inner faces serrated and a transversely-disposed chamber extending from the aperture of the offset to the opposite side of the body portion, a movable jaw having a shank with a serrated face to engage with the serrated face of the

chest, an annular shoulder in said chamber, a plunger slidably movable in said chamber and through the annular shoulder, a tension-spring engaging said shoulder and plunger to press its head against the shank of the movable jaw, a trigger to actuate the plunger, a fixed jaw for the body portion opposed to the movable jaw, having a rocker contained in a corresponding recess in the adjacent end of the body portion, a lug for the rocker, a tension-spring contained within an extension of said recess engaging said lug and body portion, and a rocker-pin passing through the body portion and rocker.

808,802. **STRING MUSICAL INSTRUMENT.** FRANK P. ALEXANDER, Lustrgton, Mich. Filed Jan. 20, 1905. Serial No. 242,212.

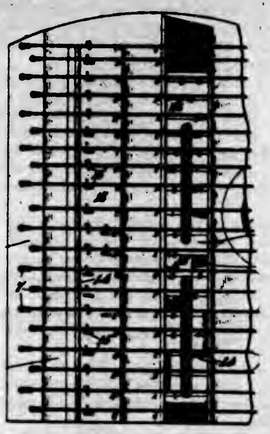

Claim.—1. The combination of a sounding-board, a plurality of strings stretched thereover between fixed bridges, and a plurality of removable individual bridges or frets for said strings, said individual bridges or frets comprising a wire finger-loop, a laterally-projecting portion and a shank or lower portion, the latter being pivotally mounted intermediate said stationary bridges and said laterally-projecting portions adapted to be swung under said strings for the purpose of varying the length of their vibratory portions and thereby changing their tones.

2. A musical instrument comprising a hollow body having a sounding-board, hitch-pins at one end of said body, tuning-pins or keys at its other end, stationary bridges adjacent to each end of said body, strings stretched over said sounding-board and said bridges and engaged with said tuning and hitch pins, and a plurality of removable pivotally-mounted individual bridges or frets for said strings disposed intermediate said stationary bridges said frets consisting of wire finger-loops, a lower pivoted portion, and laterally-projecting portions adapted to be swung under said strings to vary the lengths of their vibratory portions, substantially as described.

3. A musical instrument comprising a hollow body having a sounding-board, hitch-pins at one end of said body, tuning-pins or keys at its other end, stationary bridges adjacent to each end of said body, strings stretched over said sounding-board and said bridges and engaged with said tuning and hitch pins, a plurality of removable pivotally-mounted individual bridges or frets for said strings said bridges or frets each comprising a wire finger-loop, and a lower portion adapted to fit a hole in the sounding-board, said bridges or frets being disposed intermediate said stationary bridges and having portions adapted to be swung under said strings to vary the length of their vibratory portions and a movable chord-indicating chart upon said body, substantially as described.

4. The combination with a stringed musical instrument having adjustable means for varying the length of the vibratory portion of one or more of its strings for the purpose of changing their tone or pitch, of a chart transversely slidable with respect to and under the strings of said instrument, said chart having means for indicating the chords of the major and the minor keys, substantially as described.

808,803. **HORSE-BLANKET.** PETER ANDERSEN, Seattle, Wash., assignor to Ole Hanson, Seattle, Wash. Filed Feb. 15, 1905. Serial No. 245,703.

Claim.—1. A covering for live stock formed with an opening, a cover extending over said opening and being spaced therefrom, and guards arranged at opposite sides of said cover and extending above the same to prevent the reins from catching under said cover.

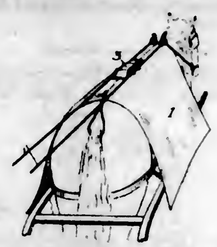

2. A covering for live stock formed with a ventilator-opening, opposite legs secured to said covering, cross-bars secured to said legs and being arranged below the upper ends thereof, and a cover supported on said cross-bars and extending over the opening in said covering.

3. A blanket formed with a ventilator-opening, a cover extending over said opening and having its opposite end portions secured to the blanket, and a frame for supporting the cover, having guards projecting above the edges of said cover.

4. A blanket provided with a ventilator-opening, a cover, and an open frame for supporting said cover over said ventilator-opening, said frame comprising arched wires having their ends secured to the blanket on opposite sides of said ventilator-opening, and stay-wires secured to said arched wires and having their ends secured to the blanket.

5. A blanket provided with a ventilator-opening, arched wires extending over said ventilator-opening and having their ends secured to the blanket, wires secured and extending at an angle to said first wires and having their end portions inclined downwardly and secured to the blanket, and a cover supported by said wires and having its ends resting on the end portions of the last-named wires.

6. A blanket provided with a ventilator-opening, a cover therefor, and means for supporting said cover over the opening, said means comprising spaced-apart arched wires formed with leg portions secured to the blanket and having their upper portions bent inwardly and downwardly and merging in cross-bars on which said cover rests.

7. A blanket provided with a ventilator-opening, a plurality of spaced-apart arched wires formed with leg portions having their upper portions bent inwardly and downwardly and continuing in cross-bars, and a cover supported on said bars and having its ends secured to the blanket.

8. A blanket provided with a ventilator-opening, a cover therefor, and a frame for supporting said cover comprising lateral arched wires secured to the blanket and being formed with seats in which said cover is engaged, and longitudinal wires secured to the lateral wires and having their end portions inclined downwardly and secured to the blanket, said cover extending down over the inclined portions of the longitudinal wires and being secured to the blanket.

808,804. **GLASS-FURNACE.** WILLIAM M. ANDERSON, Pittsburg, Pa. Filed Aug. 9, 1905. Serial No. 273,369.

Claim.—1. In a glass-furnace, the combination of an open melting-chamber and an inclosed melting-chamber separated from the open chamber and so situate as to be capable of absorbing heat from the open melting-chamber, substantially as specified.

2. In a glass-furnace, the combination of one or more open melting-chambers and one or more inclosed melting-chambers separated from the open melting-chambers and so situate as to be protected from the loss of heat by the outer open melting-chambers; substantially as specified.

808,805. **BRACELET.** JOSEPH RANDALL, North Attleboro, Mass. Filed May 13, 1905. Serial No. 260,946.

Claim.—1. In an article of the class described, a pair of curved sections, one of which is tubular, a hinge portion beveled on its inner side on the other of said sections and pivoted with its beveled end within said tubular section, a block in said tubular section having a rounded end, and a spring for holding said block with said rounded end in contact with said beveled end.

2. In an article of the class described, a pair of curved tubular sections, a hinge-block attached to one section and pivoted within the other section, said block being beveled inward on its end, a curved block within the other of said sections having a rounded end adjacent to and in the line of the end of said hinge, and a spring behind said block for pressing it against said hinge for closing and maintaining closed said hinged section.

3. In an article of the class described, a pair of curved sections, tubular throughout, a hinge-block attached to the end of one section and pivoted within the other section, the end of said block being beveled inwardly, a bent block in said other section having a curved end adjacent to and in the line of said hinged block, a stop in said last-named tubular section and a spring between said stop and block for pressing said block against said hinge to close and maintain closed said hinged section.

4. In an article of the class described, a pair of curved sections, one of said sections being tubular, a hinge-block attached to one section and pivoted within the other section, said block being beveled inward on its end, a curved block within the other of said sections having a rounded end adjacent to the end of said hinge-block, and a spring behind said curved block for pressing it against said hinge-block for closing and maintaining closed said hinged section.

5. In an article of the class described, a pair of curved sections, one of said sections being tubular throughout, a hinge-block attached to the end of one section and pivoted within the other section, the end of said block being beveled inwardly, a bent block in said other section having a curved end adjacent to said hinge-block, a stop in said last-named tubular section and a spiral spring between said stop and curved block for pressing said curved block against said hinge-block to close and maintain closed said hinged section.

808,806. **BED-AND-CYLINDER MOTION FOR PRINTING-PRESSES.** MONTGOMERY J. RAMSEY, San Francisco, Cal., assignor, by mesne assignments, to Whitman Autopress Company, a Corporation of New York. Filed Apr. 3, 1904. Serial No. 201,267.

Claim.—1. In a printing-press, in combination, a frame, a bed reciprocating on said frame, the sides of said bed being unrestrained by said frame against upward movement thereon, a shaft, a crank thereon, and a Y-shaped connection between the crank and the bed, the arms of the Y being connected to the sides of the bed, whereby pressure at any point of the platen is received between the two supporting-points, substantially as described.

2. In a printing-press, in combination, a frame having on each side a guide, a cylinder and boxes therefor sliding under said guides, a stationary rack on each side of the frame, said racks being between the guides, a bed, a rack secured at each side thereof, a large and a small gear-wheel at each end of the cylinder, said gear-wheels and cylinder being all secured together, the large gear-wheels engaging the racks on the bed, and the small gear-wheels engaging the racks on the frame, and means for directly reciprocating the bed in continuous engagement with the cylinder, substantially as described.

3. In a printing-press, in combination, a frame having on each side a guide, a cylinder and boxes therefor sliding under said guides, a stationary rack on each side of the frame, a bed, a rack secured at each side thereof, a large and a small gear-wheel at each end of the cylinder, said gear-wheels and cylinder being all secured together, the large gear-wheels engaging the racks on the bed, and the small gear-wheels engaging the racks on the frame, and means for directly reciprocating the bed in continuous engagement with the cylinder, substantially as described.

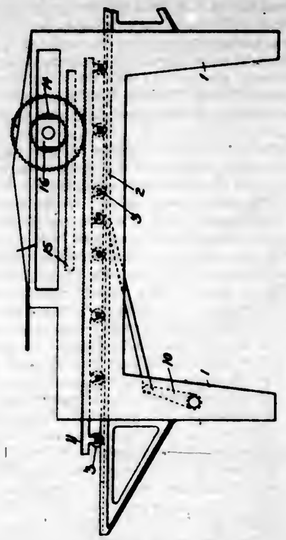

808,807. **SHOE-SOLE FASTENER.** WILLIAM BECK, St. Paul, Minn., assignor of one-tenth to Frank Brahs, one-tenth to William Brahs, one-tenth to John McGrann, one-tenth to Charles Joyce, one-tenth to Fred Johnson, and one-tenth to Thomas Welch, Henderson, Minn. Filed May 11, 1905. Serial No. 259,951.

Claim.—1. A device of the class described comprising a substantially U-shaped body portion having one end thereof inclined or beveled to form a cutting edge and its opposite end provided with a plurality of depending attaching-spurs.

2. A device of the class described comprising a substantially U-shaped body portion having its inner walls at one end thereof inclined or beveled to form a cutting edge, said body portion being provided with a plurality of attaching-spurs.

808,808. **BROODER.** CHARLES J. BROOKS, Los Angeles, Cal. Filed Jan. 3, 1905. Serial No. 239,853.

Claim.—1. A brooder consisting of an upper and lower chamber formed into a series of compartments by means of adjustable flexible slitted partitions, said partitions forming unobstructed communication with the other chambers; heat-generating means located in said lower chamber communicating with heat-radiating means in said upper chamber to heat the same.

2. A brooder consisting of an upper and lower chamber, adjustable flexible slitted partitions in said upper chamber dividing it into a series of compartments consisting of a central compartment and end compartments, said end compartments having hinged roofs and provided with air-outlets and communicating means, said central compartment having in its front and rear walls hinged adjustable doors and containing the heat-distributing means, said lower chamber having heat-generating means, consisting of a spring-adjusted lamp having a metal chimney extending upwardly into said central compartment and provided with heat-distributing outlets, said outlets communicating by means of metal tubes with heat-radiating tubes having outlet-vents terminating outside the central chamber.

3. A brooder consisting of an upper and lower chamber, adjustable flexible slitted partitions in said upper chamber dividing the same into a series of compartments consisting of a central compartment and end compartments, said end compartments having hinged roofs and provided with air-outlets and communicating means; said central compartment having in its front and rear walls hinged adjustable doors and containing the heat-distributing means; a spring-supported lamp in the lower chamber; a metal chimney having heat-distributing outlets at the top thereof seated on said lamp and extending upwardly into said upper compartment and closed at its upper end; a closed cylindrical fresh-air drum open at its lower end and closed at its upper end and having near the upper end a series of heat-outlets; said fresh-air drum forming means to supply heated fresh air for the central and end compartments; metal tubes extending through the fresh-air drum and communicating with the chimney, heat-radiating tubes having outlet-vents terminating outside the central chamber, said radiating tubes being in communication with the tubes leading from the chimney.

4. In a brooder heat-generating means, said means consisting of a spring-supported lamp exposed to cool-air currents, in combination with a metal chimney closed at its upper end having heat-outlet openings located near the top of said metal chimney; a cylindrical fresh-air drum surrounding said chimney closed at its upper end, said fresh-air drum having a series of heat-outlets at its upper end, metal tubes communicating with said chimney and extending through the air-drum; radiating tubes having outlet-vents terminating outside the roof of the central compartment, said radiating tubes communicating with the tubes leading from the chimney.

808,809. **ICE-CAN FILLER.** GEORGE S. BOWLING, Clarksville, Tenn. Filed June 19, 1905. Serial No. 265,919.

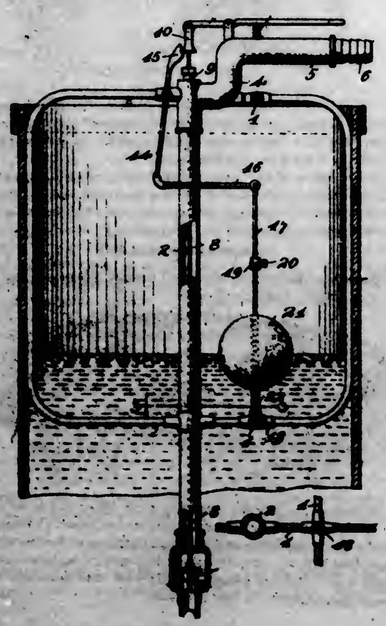

Claim.—1. A device of the character described comprising a frame adapted to fit within the end of an ice-can, a filling-tube supported in said frame, a valve arranged in the lower end of the tube to close the same, a stem connected to said valve and projecting upwardly through an elbow on the upper end of the tube, a head arranged on the upper end of said valve-stem, a spring to close said valve, a pivotally-mounted latch-bar adapted to engage the head on said valve-stem and hold said valve open, a trip-rod slidably mounted in said frame and connected to said latch-bar, a float arranged on said rod, means whereby said float will engage and lift said rod when raised by the water in the tank, thereby tripping said latch-bar, and releasing said valve, substantially as described.

2. A device of the character described comprising a frame, adapted to fit within the end of an ice-can, a filling-tube supported in said frame, a valve arranged in the lower end of the tube to close the same, a stem connected to said valve and projecting upwardly through an elbow on the upper end of the tube, a head arranged on the upper end of said valve-stem, a lever pivotally mounted on the right-angularly-formed offset end of said tube, said lever being pivotally connected at one end to the head on said valve-stem, a spring arranged under the opposite end of said lever to force said valve-stem downwardly and normally hold the valve closed, a latch-bar pivotally mounted on said frame to engage the head on said valve-rod and thereby to hold said valve open, a right-angularly-projecting arm arranged on the lower end of said latch-bar, sockets arranged in said frame, a trip-rod slidably mounted in said sockets and pivotally connected with the arm on said latch-bar, a collar adjustably mounted on said rod, a float slidably mounted on said rod and adapted to be raised into engagement with the collar on said rod by the rising of the water in said can, thereby lifting said rod and releasing the valve, substantially as described.

808,810. **GLASS-FURNACE.** HENRY M. BROOKFIELD, New York, N. Y. Filed Mar. 3, 1902. Serial No. 96,268.

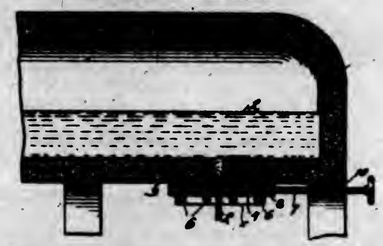

Claim.—1. A furnace for molten glass provided with a discharge-orifice passing directly through the bottom of the furnace, a valve for said orifice consisting of a plate provided with an opening and provided with solid parts on both sides of the opening adapted to close the orifice, rollers located below the valve-plate upon which the latter is adapted to move, and means for moving the valve-plate, whereby molten glass may be discharged directly from the interior of the furnace and whereby the valve is made durable.

2. A furnace for molten glass provided with a discharge-orifice passing directly through the bottom of the furnace, a valve for said orifice consisting of a plate provided with an opening and provided with solid parts on both sides of the opening adapted to close the orifice, rollers located below the valve-plate upon which the latter is adapted to move, and means for moving the valve-plate, consisting of a screw-threaded rod secured to the valve-plate so as to be free to rotate and provided with a hand-wheel and a support for said rod through which the same passes interiorly screw-threaded, whereby molten glass may be discharged directly from the interior of the furnace in accurately-graduated amounts, and the valve for controlling the same will be made durable.

808,811. **AUTOMATIC PRESSURE-RETAINER.** JAMES W. BROWN, Minneapolis, Minn. Filed Aug. 27, 1904. Serial No. 222,266.

Claim.—1. A pressure-retainer comprising a casing connected with the exhaust of a triple valve and with the train service-pipe, and having a valve operating to close said exhaust when the pressure in the train-pipe is raised above a certain predetermined point preparatory to reducing the train-pipe pressure to set the brakes, and to remain in such position and allow successive reductions of train-pipe pressure without opening the exhaust, until the pressure in the train-pipe is reduced to a certain predetermined point below normal braking pressure.

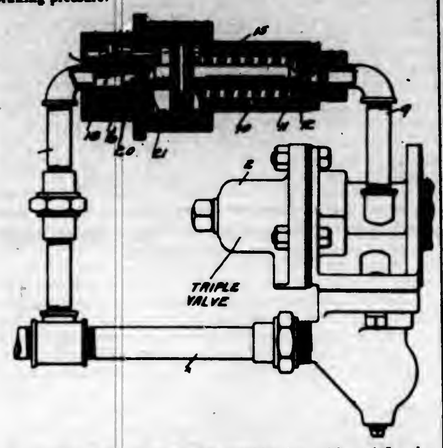

2. In an air-brake system, the combination, with a triple valve and the train service-pipe, of a casing connected with the exhaust of said valve and with the train-pipe, a spring-actuated valve provided in said casing and normally closing the passage to said train-pipe and opening the passage to the exhaust, a cylinder having its piston connected with said valve and a second valve operating at a higher pressure than said first-named valve, and normally closing a passage leading from said train-pipe to said cylinder.

3. The combination, with a train service-pipe, and a triple valve, of a retainer-casing connected with the exhaust of said valve and with said pipe, and provided with a cylinder and piston arranged in said cylinder and having valves on its opposite sides arranged to close respectively the passages to the exhaust and to said train-pipe, a spring arranged to normally hold the train-pipe valve in its closed position and open the passage to the exhaust, until the pressure on said piston exceeds a predetermined number of pounds, said casing being provided with a passage leading from said train-pipe to said cylinder around said train-pipe valve, and a valve provided in said passage and having a spring that normally holds said passage-valve in its closed position, but is adapted to yield and open the passage to said cylinder when the pressure in the train-pipe exceeds a predetermined number of pounds, substantially as described.

4. The combination, with a triple valve and the train service-pipe, of means operating to close the exhaust of said valve when the pressure in the train-pipe is raised above a certain predetermined point preparatory to reducing the train-pipe pressure to set the brakes and allow successive reductions of train-pipe pressure without opening the exhaust until the pressure in the train-pipe is reduced to a certain predetermined point below normal braking pressure.

808,812. **STAMP.** TAYLOR S. BUCK, New York, N. Y. Filed Feb. 21, 1905. Serial No. 246,787.

Claim.—1. In a stamp, a main head, a toothed wheel and a transverse shaft for rotating said wheel, a printing-surface mounted on said head and formed with a recess coincident with said wheel, and a printing-disk secured to said wheel and working in said recess, substantially as described.

2. A stamp comprised of a main head having a wheel mounted in a recess formed in the head, a transverse shaft for rotating said wheel, a recessed cushion mounted on said head and having a circular printing-surface bearing figures denoting the days of the month, a printing-disk mounted on said wheel and formed with one or more recesses to receive removable type-blocks and bearing an index-pointer the face of the index-pointer and the type-blocks being on a level with the permanent printing matter, substantially as described.

3. In a stamp the main head formed with a main recess and with a transverse recess joining said main recess in combination with a toothed wheel held to rotate in said main recess and a worm-shaft held in said transverse recess to engage with the said toothed wheel, a printing-surface mounted on said head and formed with a recess coincident with said wheel and a printing-disk secured to said wheel and working in the last-mentioned recess substantially as described.

808,813. **PORTABLE STARTING-GATE FOR RACE-COURSES.** MARK CASSIDY, Washington, D. C. Filed Feb. 6, 1905. Renewed Dec 4, 1905. Serial No. 290,908.

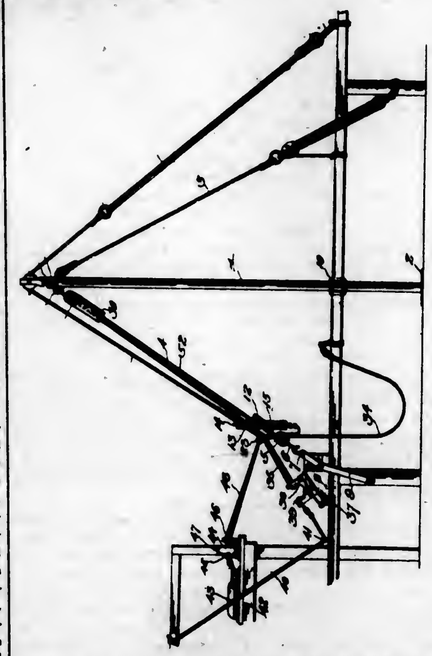

Claim.—1. In a mechanically-operated gate of the character described, the combination with suitably-braced portable, supporting-standards, of inclined guide-rods connected thereto, gate-carrying blocks slidably mounted on said rods, swiveled pulleys arranged in the upper ends of said standards, a rope passing over said pulleys and secured at one end to said blocks, an elastic connection secured to the opposite end of said rope, gate-holding mechanisms to hold said gate down against the tension of said elastic connection, a gong having a spring-actuated clapper, a clapper-holding mechanism to hold said clapper in position to strike said gong, a flexible connection between said gate-carrying blocks and said clapper-holding mechanism whereby when the gate is released said clapper will be simultaneously released and caused to strike said gong, and a releasing-cord connected to said gate-holding mechanism, substantially as described.

2. In a mechanically-operated gate of the character described, the combination with suitably-braced, portable, supporting-standards, of inclined guide-rods connected thereto, gate-carrying blocks slidably mounted on said rods, swiveled pulleys arranged in the upper ends of said standards, a rope passing over said pulleys and secured at one end to said blocks, elastic-rubber tubing secured to the opposite end of said rope and connected to a fixed support, gate holding and releasing mechanisms arranged on each side of the track, the mechanism on one side comprising a pivoted releasing-dog to which said adjacent gate-carrying block is connected, and a pivoted spring-projected latch to hold said dog in operative position, a releasing-cord secured to said dog-holding latch, the holding and releasing mechanism on the opposite side of the track comprising a pivotally-

mounted hook-plate, with which is adapted to be connected the gate-carrying block on this end of the gate, a cord to hold said hook-plate in operative position, said cord passing through pulleys to the gate-carrying block on the opposite end of the gate whereby when the latter is released the slackening of said cord will release said hook-plate and disengage the gate-carrying block at this end of the gate, substantially as described.

808,814. PROPELLER-WHEEL. FRANK CHINNAR, Ely, Minn. Filed Apr. 13, 1905. Serial No. 255,466.

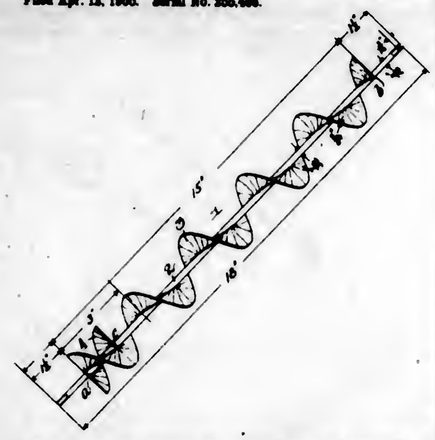

Claim.—The herein-described screw-propeller comprising a shaft, the long blade forming a continuous spiral blade of low pitch, having its convolutions extending from end to end of the shaft, and a short blade opposite to and starting at a point abreast of the front end of the first convolution of the long blade, making one-half a convolution around the shaft and terminating with the first half-convolution of the long blade.

808,815. LOCK FOR SASHES. CHARLES B. COHANT, Adrian, Mich., assignor of one-half to Oliver M. Whitmore, Adrian, Mich. Filed July 15, 1905. Serial No. 269,846.

Claim.—1. A lock comprising a casing consisting of semicylindrical members one of which is provided with laterally-extending anchoring-flanges, diaphragms extending transversely of the casing and serving to lock said members together, and a bolt eccentrically mounted for sliding movement in said diaphragms.

2. A lock-casing comprising semicylindrical members one of which is provided with a plurality of openings, spaced diaphragms secured to the opposite member and provided with lugs adapted to engage the openings in the adjacent member, one of said members being provided with lateral flanges along its longitudinal edges forming diametrically-disposed longitudinal beads externally of the casing.

3. A lock comprising a sectional casing secured together by spaced diaphragms provided with eccentric registering openings, a bolt slidably mounted in the eccentric openings and having a rigid disk, and a key arranged to exert pressure between one of the diaphragms and the disk to move the bolt.

4. A lock comprising semicylindrical casing members secured together by spaced diaphragms provided with registering eccentric openings, diametrically-disposed longitudinal beads formed externally of the casing, a bolt slidably mounted in the eccentric openings and having a rigid collar and disk, a spring arranged to hold the bolt normally at the outward extreme and the collar in contact with one of the diaphragms, and a key arranged to exert a pressure between one of the diaphragms and disk to move the bolt.

5. A lock comprising semicylindrical casing members one of which has outturned flanges along its longitudinal edges and provided with a keyhole and spaced openings, diaphragms provided with eccentric openings and rigidly secured to one casing member and having lugs engaged within the spaced openings of the other member, a bolt slidably mounted in the eccentric openings and having a rigid disk at one end and an axial spur at the other with a rigid collar disposed intermediate the ends, a spring surrounding the bolt and bearing against the collar and one of the diaphragms and arranged to hold the bolt normally at its outward extreme with the collar in contact with one of the diaphragms and a key having a bit proportioned to pass through the keyhole and exert a pressure between one of the diaphragms and the disk and to move and retain the bolt at its inward extreme and with the spur within the lines of the casing.

808,816. COLLAR-PROTECTOR. JAMES F. CONNELL, Beaine, Kans. Filed May 11, 1905. Serial No. 260,965.

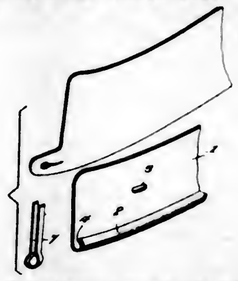

Claim.—1. In combination a lining for collars having a suitable opening therein, and a spring-clip for attaching the lining to the collar, the inner member of the clip being adapted to pass through the before-mentioned opening in the lining.

2. The combination of a lining for collars having a suitable opening therein and having an edge rolled back upon itself and inward to clasp an edge of the collar, and a spring-clip for attaching the lining to the collar, the inner member of the clip being adapted to pass through the before-mentioned opening in the lining.

808,817. RAILWAY-CAR. JOHN C. COTTRELL, Kingsley, Iowa. Filed June 1, 1904. Serial No. 210,687.

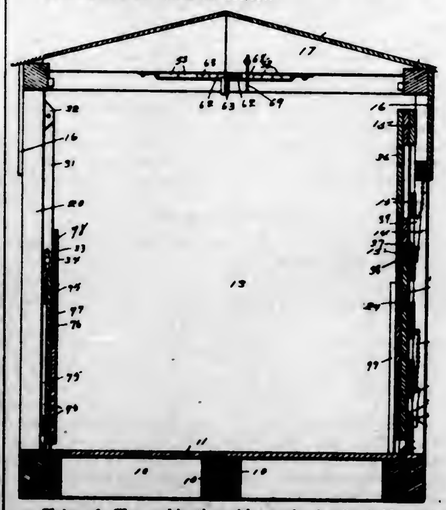

Claim.—1. The combination with a car having fixed sides and a doorway in each car side, of two hinged car sides on the inner surfaces of each side of the car extending from the doorway to the adjacent end of the car and capable of swinging from position parallel with the fixed car sides upwardly and inwardly to a horizontal position, and partition-pieces for filling the space between the hinged car sides when in their horizontal position.

2. The combination with a car having fixed sides, of two car side pieces hinged to the inner faces of the car sides to swing from position parallel with the car sides upwardly and inwardly to form a horizontal partition, a strip to enter between the adjacent edges of the hinged car sides when in their horizontal positions, and a strip on top of said strip to overlap the tops of the adjacent edges of the hinged sides.

3. The combination with a car having fixed sides, of two car side pieces hinged to the inner faces of the car sides to swing from position parallel with the car sides upwardly and inwardly to form a horizontal partition, a strip to enter between the adjacent edges of the hinged car sides when in their horizontal positions, a strip on top of said strip to overlap the tops of the adjacent edges of the hinged sides, and means for securing said strips in position between the adjacent edges of the hinged car sides.

4. The combination with a car having fixed car sides, of two hinged car sides capable of swinging from position parallel with the fixed car sides upwardly and inwardly to form a horizontal partition, a strip to enter between the adjacent edges of the hinged car sides when in their horizontal position, and hooks secured to the under surface of the said strip to engage the under surface of the adjacent portions of the hinged car sides to prevent the strip from moving upwardly.

5. the combination with a car having fixed sides, of two hinged car sides capable of swinging from a position parallel with the fixed car sides upwardly and inwardly to form a horizontal partition, a strip to enter between the adjacent edges of the hinged car sides when in their horizontal position, hooks secured to the under surface of said strip to engage the under surface of the adjacent portions of the hinged car sides to prevent the strip from moving upwardly, said car provided with roof-beams, blocks secured to one of the roof-beams spaced apart to receive said strip and supporting devices adjacent to the blocks to engage and hold said strip.

6. The combination of a car, of blocks spaced apart and secured to the top of the car, a strip designed to enter between the blocks and supports adjacent to the blocks designed to engage and hold the strip in position.

7. The combination with a car having fixed slatted sides, of a solid car side piece hinged to the inner portion of the car to swing from a position parallel with one of the fixed slatted car sides upwardly and inwardly, and a strip secured to the outer face of the hinged car side near its lower end to enter between the lower slats of the fixed slatted car side.

8. The combination with a car having a fixed slatted side, the upper edge of the lower slat thereof beveled outwardly and downwardly, of a solid car side portion hinged to the inner face of the slatted car side to move from position adjacent to the slatted car side upwardly and inwardly, and a strip secured to the outer surface of the hinged car side near its lower edge, said strip having its lower edge beveled downwardly and outwardly to fit the top of the lower slat and to direct water thrown against the solid car side downwardly and outwardly over the lower slat.

9. The combination with a car having a fixed slatted side, the upper edge of the lower slat thereof beveled outwardly and downwardly, of a solid car side portion hinged to the inner face of the slatted car side to move from position adjacent to the slatted car side upwardly and inwardly, a strip secured to the outer surface of the hinged car side near its lower edge, said strip having its lower edge beveled downwardly and outwardly to fit the top of the lower slat and to direct water thrown against the solid car side downwardly and outwardly over the lower slat, and a metal strip on top of the beveled strip with one edge inserted in the hinged car side, said metal strip extended downwardly and outwardly over the beveled strip.

10. The combination with a car having a slatted car side, of a hinged solid car side arranged to swing from position adjacent to the car side upwardly and inwardly, a slotted eye fixed to the hinged solid car side to project through the slatted car side, and a wedge-shaped pin to engage the outer surface of the slatted car side and to pass through said eye.

11. The combination with a car having a slatted side, of a solid side hinged to the slatted side to swing from a position adjacent to the slatted side upwardly and inwardly, a strip on the outer surface of the solid side to project between the slats of the slatted side, a slotted eye fixed to said strip to project between the slats and a wedge-shaped pin to engage the outer surface of the slatted side and to pass through said eye.

12. The combination with a car having a slatted side and a doorway in the slatted side, of a solid side hinged to the slatted side to swing from position adjacent to the slatted side upwardly and inwardly and a weather-strip secured to the outer surface of the hinged solid side to engage the adjacent portion of the doorway.

13. The combination with a car having uprights at its sides and horizontal slats secured to the inner surfaces of the uprights, the central horizontal slats notched at the uprights, of a central horizontal partition for the car, and beams to enter the notches in the slats with their ends in engagement with the inner faces of said uprights to support the horizontal partition.

14. The combination with a car having uprights at its sides and horizontal slats secured to the inner surfaces of the uprights, the central horizontal slats notched at the uprights, of a central horizontal partition for the car, and beams to enter the notches in the slats with their ends in engagement with the inner faces of said uprights to support the horizontal partition, said car also provided with notched roof-beams to receive the horizontal partition-beams, and means for securing them in position in said notched roof-beams.

15. The combination with a car having uprights at its sides and horizontal slats secured to the inner surfaces of the uprights, the central horizontal slats notched at the uprights, of a central horizontal partition for the car, beams to enter the notches in the slats with their ends in engagement with the inner faces of said uprights to support the horizontal partition, said car also provided with notched roof-beams to receive the horizontal partition-beams, and pivoted plates overlapping said notches in the roof-beams.

16. The combination with a car having notched roof-beams and a block on one end of the car, of a number of horizontal partition-beams having notches in their ends, said horizontal partition-beams designed to enter the notches in the roof-beams and to receive said block in the notches in their ends and means for securing the horizontal partition-beams in the notches of the roof-beams.

17. The combination with a car having notched roof-beams and a block on one end of the car, of a number of horizontal partition-beams having notches in their ends, said horizontal partition-beams designed to enter the notches in the roof-beams and to receive said block in the notches in their ends, and pivoted plates secured to the roof-beams to pass under the horizontal partition-beams in the said notches, and a lock for said plates.

18. The combination with a car having fixed slatted car sides, of two hangers pivoted near the top inner surfaces of the slatted car side to move upwardly and inwardly, a solid car side pivotally and slidingly supported on said hangers, said solid car side formed with a strip at the lower portion of its outer face to enter between the lower slats of the fixed car side, the under surface of said strip inclined downwardly and outwardly.

19. The combination with a car having fixed car sides, of a solid upper side piece spaced apart from the roof of the car, a pair of hangers pivoted to the fixed car side, a solid lower car side pivotally and slidingly supported by said hangers and movable from position parallel with the fixed car side to a horizontal position supported at its outer end by the hangers and also movable to a substantially horizontal position with one edge supported on top of the upper side piece.

20. The combination with a car having fixed car sides, of a solid upper side piece spaced apart from the roof of the car, a pair of hangers pivoted to the fixed car side, a solid lower car side pivotally and slidingly supported by said hangers and movable from position parallel with the fixed car side to a horizontal position supported at its outer end by the hangers and also movable to a substantially horizontal position with one edge supported on top of the upper side piece, and hooks supported adjacent to the car-roof to engage the inner end of the lower side piece when in position adjacent to the roof.

21. The combination with a car having fixed car sides, of a solid upper side piece spaced apart from the roof of the car, a pair of hangers pivoted to the fixed car side, a solid lower car side pivotally and slidingly supported by said hangers and movable from position parallel with the fixed car side to a horizontal position supported at its outer end by the hangers and also movable to a substantially horizontal position with one edge supported on top of the upper side piece, hooks supported adjacent to the car-roof to engage the inner end of the lower side piece when in position adjacent to the roof.

22. The combination with a car having fixed car sides and doorways in the car sides, of a horizontal partition inside of the car extending from points near the doorway to the adjacent ends of the car, and door-pieces shaped to rest against the inside of the doorway in one position and to fill the space between the horizontal partitions in another position.

23. The combination with a car having fixed car sides and doorways in the car sides, of a horizontal partition inside of the car extending from a point near the doorways to the adjacent ends of the

car, and a door-piece formed of two layers, one layer having its ends projected beyond the other and the other layer having its top projected above the first, the layer with its ends projected beyond the other designed to overlap the adjacent portions of the horizontal partition in one position and the layer having its top projecting above the other designed to rest against the inner surface of the doorway in its other position.

34. The combination with a car having fixed car sides and doorways in the car sides, of a horizontal partition inside of the car extending from points near the doorway to the adjacent ends of the car, door-pieces shaped to rest against the inside of the doorway in one position and to fill the space between the horizontal partitions in another position, and hooks secured to the top of the car to support said door-pieces in a horizontal position near the roof of the car.

35. The combination with a car having a fixed side, of an upper side piece hinged to the inner face of the fixed car side near its top to swing from position parallel with the fixed side upwardly and inwardly, and a folding hay-rack on the inner face of said upper car side.

36. The combination with a car having a slatted side, of an upper solid car side hinged to the slatted side at its upper inner portion and designed to swing from a position adjacent to the slatted car side upwardly and inwardly, and means for detachably securing the solid side to the slatted side.

37. The combination with a car having a slatted side, of an upper solid car side hinged to the slatted side at its upper inner portion and designed to swing from a position adjacent to the slatted car side upwardly and inwardly, means for detachably securing the solid side to the slatted side, and means for detachably securing the solid side piece to the roof of the car.

38. The combination with a car having a fixed side, of an upper car side hinged to the upper inner portion of the fixed car side, a pair of hangers hinged to the upper inner portion of the fixed car side at the ends of the upper car side, and a lower car side pivotally supported on said hangers.

39. The combination with a car having a fixed slatted car side, of an upper solid car side pivotally and slidingly connected with the inner upper portion of the slatted car side, and a strip secured to the outer lower portion of the hinged upper car side to project between two of the slats of the slatted car side, the lower edge of said strip inclined downwardly and outwardly.

40. The combination with a car having a fixed slatted car side, of an upper solid car side pivotally and slidingly connected with the inner upper portion of the slatted car side, a strip secured to the outer lower portion of the hinged upper car side to project between two of the slats of the slatted car side, the lower edge of said strip inclined downwardly and outwardly, a slotted eye on said strip to project between the slats of the car side, and a wedge-shaped pin to engage the outer portions of the slats and enter the slotted eye.

41. The combination with a car having a fixed slatted side, of a solid upper car side pivotally, slidingly and detachably connected with the upper inner portion of the slatted car side.

42. The combination with a car having a fixed car side, of an upper hinged car side having its lower inner edge projected below the lower outer edge, and a lower pivoted car side having its outer top edge projected above its inner top edge to fit the lower edge portion of the upper side.

43. The combination with a car having a fixed car side, of an upper hinged car side having its lower inner edge projected below the lower outer edge, and a lower pivoted car side having its outer top edge project above its inner top edge to fit the lower edge portion of the upper side, and means for securing both of said hinged side pieces to the adjacent fixed side.

808,818. COMBINED TABLE AND FOLDING BED. CHARLES P. DEVERS, Oakland, Cal. Filed Sept. 14, 1905. Serial No. 278,268.

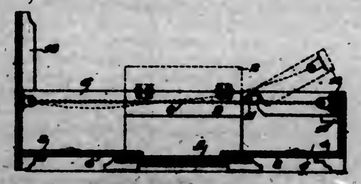

Claim.—1. The combination of a central base-section having a bottom and vertical end portions, box-sections hinged to the central section and foldable relative thereto to form a table or to form a bed, and one of said box-sections carrying the table-top which also forms the headboard, the other of said sections having a footboard folding beneath the table-top when the parts are arranged in the form of a table, hinged members carried by the base to lock the box-sections when opened out into bed form, and an elastic mattress carried by the sections, said box-sections having hinged back portions operating inside of the end portions of the base and cooperating with the bottom of said base to inclose a containing-chamber.

2. The combination of a central base-section having a bottom and vertical end portions, box-sections hinged to the central section and foldable relative thereto to form a table or to form a bed, said box-sections having hinged back portions operable between the end portions of the base and cooperating with the bottom of said base to inclose a containing-chamber and one of said box-sections carrying the table-top which also forms the headboard, the other of said sections having a footboard folding beneath the table-top when the parts are arranged in the form of a table, hinged members carried by the base to lock the box-sections when opened out into bed form, an elastic mattress carried by the sections, and means operated independently of the opening movements of the box-sections to stretch the mattress.

3. The combination of a central base-section, box-sections hinged thereto cooperating therewith to form a table or a bed, hinged members carried by the base to prevent the box-sections from closing up when extended as a bed, said hinged box-sections provided with hinged back portions operable between the ends of the base and cooperating therewith and with the bottom of said base to inclose a containing-chamber, an elastic mattress secured at one end to one of said box-sections, the other end of the mattress to a frame pivoted to the other box-section, said frame arranged to describe an arc to stretch the mattress to carry the plane of the latter below the pivots of said frame, and stop means to limit the downward movement of said frame.

4. The combination of a central base-section having a bottom portion and vertical end portions, said end portions provided with foldable sections, box-sections hinged to said central section and cooperating therewith to form a bed or table, said box-sections arranged to have their ends pass inside of the end portions of the base when folded up into a table, said foldable sections of said base end forming stops to prevent said box-sections closing up when opened out into the form of a bed, a mattress carried by the sections, and said box-sections having hinged back portions cooperating with the bottom of the base-section to inclose a containing box or chamber.

808,819. TRACKING DEVICE FOR SLAUGHTER-HOUSE TRAVELERS. CHARLES R. DE MOSS, Indianapolis, Ind., assignor of one-half to Miles P. Barker, Franklin, Ind. Filed Apr. 26, 1905. Serial No. 257,513.

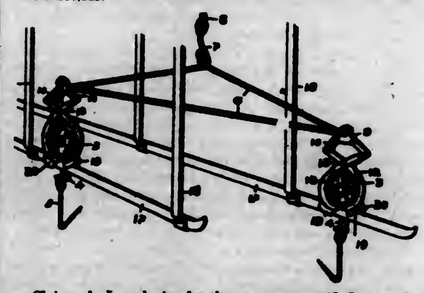

Claim.—1. In a device for the purposes specified, a track, removable travelers mounted thereon, a tree, plates pivotally secured to the ends of the tree lazy-tongs supported by the plates and adapted to temporarily hold said travelers, means for raising and lowering the tree, and means on said lazy-tongs for directing the travelers into operative position upon their respective tracks.

2. In a device for the purposes specified, a tree, plates pivotally secured to the ends of the tree, tongs secured by links to said plates the lower ends of said tongs being curved inwardly toward each other, and provided with outwardly-diverging flanges in pairs for each jaw of the tongs, means for raising and lowering the tree, a track or tracks, and travelers having wheels to roll upon said tracks said wheels fitting the bent jaws of the tongs and adapted to be removably held by the latter.

3. In a device for the purposes specified, a track or tracks, travelers adapted to be placed thereon having grooved wheels to roll upon said tracks, a vertically-movable tree, lazy-tongs supported by the ends of said tree, the jaws of said tongs being adapted to open to receive and closed to hold the grooved wheels of the travelers, said lazy-tongs having diverging flanges in pairs, for the purpose of locating the grooved wheels upon said track, said tongs opening when pressed downwardly against said track, and means for automatically locking them in their open position.

4. In a device for the purposes specified, a tree, and lazy-tongs carried by said tree one of the jaws of said lazy-tongs having a hook to hook into a portion of the other jaw when the two are opened, to hold the tongs in open adjustment.

5. Means for placing travelers on tracks, comprising a tree, tongs suspended from the ends of the tree said tongs having pairs of diverging flanges as guides in placing the device on the track, means for opening and closing the tongs, and a lock for automatically locking the tongs in open position.

6. In a device for the purposes specified, tracks, removable travelers operating upon said tracks said travelers including a peripherally-grooved wheel, a tree, means for raising and lowering the tree, plates through which the ends of the tree are passed to secure the plates to the tree, tongs, links connecting the tongs with the plates, one jaw of said tongs being slotted for the passage of the other jaw therethrough the lower jaws of said tongs being curved to fit the grooved peripheries of the traveler-wheels the lower ends of said tongs having oppositely-divergent flanges for guides in placing the wheels of the travelers on their tracks, and a lock for holding the jaws of the tongues in their open position.

808,820. ROAD-GRADER. FERDINAND B. DREVER, Grenada, Miss. Filed June 15, 1905. Serial No. 265,346.

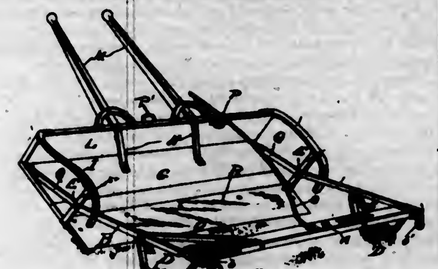

Claim.—1. In a road-grader, a suitable frame, runners for supporting the frame at the front, a scraper pivotally connected to the rear end of the frame, runners attached to the scraper and adapted to support the scraper when said scraper is inverted.

2. In a road-grader, a suitable frame, runners on the forward end of the frame, a scraper, cross-arms pivotally attached to the rear of the frame, a scraper secured to the lower ends of the arms, links attached to the scraper and pivotally connected to the pivots of the cross-arms, runners attached to the scraper, and to the opposite ends of the cross-arms, and suitable handles for manipulating the scraper.

3. In a road-grader, a suitable frame, runners on the forward end of the frame, cross-arms pivotally attached to the rear of the frame, a scraper attached to the ends of the cross-arms, runners attached to the scraper and extending over the opposite ends of the cross-arms, the ends of the runners being curved, whereby the said runners support the scraper in its inverted position.

4. In a road-grader, a suitable frame, runners on the forward end of the frame, cross-arms pivotally attached to the rear of the frame, a scraper attached to ends of the cross-arms, runners attached to the scraper and extending over the opposite ends of the cross-arms, the ends of the runners being curved, whereby the said runners support the scraper in its inverted position, an arm attached to forward end of the frame, and a hook slidable on the arm, and means whereby the hook supports the scraper.

808,821. COPY-HOLDER. JOHN S. DUDLEY, Marion, Ohio. Filed May 8, 1905. Serial No. 259,504.

Claim.—1. In a copy-holder, a roller, a paper-clamp pivotally secured thereto and having its ends extending outside the ends of the roller, and springs secured to the extended ends of the clamp and the ends of the roller to normally hold said clamp in a clamping position, substantially as shown and described.

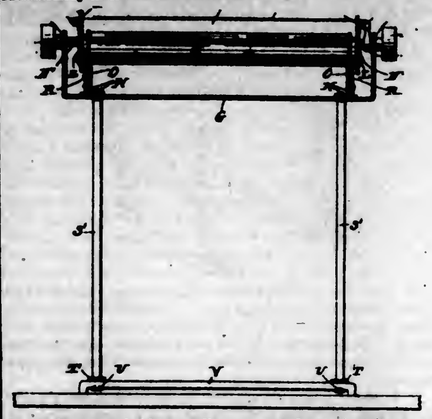

2. In a copy-holder, a roller, a paper-clamp pivotally secured thereto and having its ends extending outside the ends of the roller, springs secured to the extended ends of the clamp and the ends of the roller to normally hold said clamp in a clamping position, and a spring-actuated roller bearing against the first-mentioned roller, substantially as shown and described.

3. In a copy-holder, a roller having a longitudinal groove therein, a spring-actuated shaft in said groove having its ends extending beyond the ends of the roller, springs secured to the extended ends of the clamp and the ends of the roller to normally hold said clamp in a clamping position, and a plate secured to said shaft, substantially as shown and described.

4. In a copy-holder, a roller having a longitudinal groove, a crease adjacent to said groove and a depression connecting said groove and crease, a spring-actuated shaft mounted in said groove having its ends extending beyond the ends of the roller, springs secured to the extended ends of the clamp and the ends of the roller to normally hold said clamp in a clamping position, and a plate secured to said shaft and adapted to lie in said depression and having a turned edge to seat in said crease, substantially as shown and described.

5. In a copy-holder, a roller having a longitudinal groove, a crease adjacent to said groove and a depression connecting said groove and crease, a spring-actuated shaft mounted in said groove having its ends extending beyond the ends of the roller, springs secured to the extended ends of the clamp and the ends of the roller to normally hold said clamp in a clamping position, a plate secured to said shaft and adapted to lie in said depression and having a turned edge to seat in said crease, and a spring-actuated roller bearing against the first-mentioned roller, substantially as shown and described.

6. In a copy-holder, an angular frame having slots in its ends, a roller journaled in said slots having a longitudinal groove, a crease adjacent to said groove and a depression connecting said groove and crease, a spring-actuated shaft mounted in said groove having its ends extending beyond the ends of the roller, springs secured to the extended ends of the clamp and the ends of the roller to normally hold said clamp in a clamping position, a plate secured to said shaft and adapted to lie in said depression and having a turned edge to seat in said crease, rods secured to said frame, levers pivoted on said rods, a roller journaled in the free ends of said levers, and springs connecting said levers and hooks on said frame, substantially as shown and described.

808,832. CONVERTIBLE FURNITURE. CHARLES W. DUNN, Cleveland, Ohio. Filed Apr. 4, 1905. Serial No. 253,702.

Claim.—1. In a combined chair and crib, a main frame and a pivotally-supported seat therein adapted to be inverted in front of said main frame and locked therewith, and rocking supports rigid with said main frame and said seat-frame, respectively, constructed to carry the structure when reversed to form a crib.

2. A main frame, a seat-frame pivoted in the front of the main

frame and invertibly supported in the front of the main frame and provided with a rocker at its edge, and the main frame provided with a rocker forming the upper portion of its back corresponding to the rocker on the seat-frame, whereby rocker-supports are provided when the structure is inverted and a crib is formed.

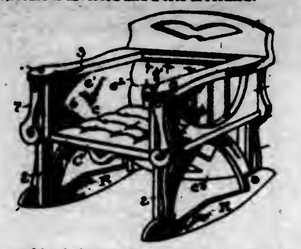

3. In a combined chair and crib, a main frame and a seat-frame having side and end walls and pivoted in the main frame, means to lock said seat-frame rigidly with the main frame in an inverted position, and a bottom-section for the crib suspended upon the main frame and adapted to be moved into horizontal position on a plane with the said seat when the parts are inverted.

4. In a combined chair and crib, the main frame and a pivotally-supported seat-frame therein constructed to form a portion of the crib, and a section of crib-bottom suspended upon the main frame behind the said seat and adapted to be brought into a horizontal position, and rests on the main frame for said section.

5. The combination of the main frame and the seat-frame pivoted therein at its front, a pivotally-supported member at the rear of said seat-frame constructed to rest the seat thereon, and means to temporarily lock the said seat and member together.

6. The combination of the main frame and the seat-frame having a back rigid therewith, a support for the said seat-frame pivoted on the main frame behind said back, and the said seat-frame provided with a depending portion locked with said support, whereby the seat-frame is carried at the rear when used for a chair.

7. The combination of the main frame and the seat-frame pivoted at its front within the sides of the main frame and provided with a rigid back on its top and a rocker on its bottom, and a support for the rear of the seat-frame hinged at its top to the main frame, and said main frame having a rocker to correspond to the rocker on the seat-frame when the parts are inverted.

8. In a combined chair and crib, a main frame having chair arms and sides and an extension on its back having a rounded edge, a seat-frame having a back portion and sides between the sides of the main frame and pivoted to swing into inverted position at the front of the main frame and form one-half of the crib, means to lock said frames rigidly together in inverted position, and a bottom-section to fill out the other half of the crib-bottom hinged at one edge to the back of the main frame.

9. In a combined chair and crib, the invertible main frame and the separately-invertible seat-frame pivoted therein, and means locking said frames together, a rocker on each frame and a bottom-section for the crib adapted to fill the space between said seat-frame and the rear of the main frame, said bottom-section hinged at one edge and constructed to provide a support for the seat-frame when the structure is used as a chair.

10. In a combined chair and crib, an invertible main frame having a rocker on its top and rear, in combination with a seat-frame pivoted in the front of said main frame and provided with side and rear walls on its top and a rocker at its bottom and front, and a bottom-section for the crib separately supported on the main frame and having a shouldered portion to engage the seat when the parts are used as a chair.

808,823. DRAFT-EQUALIZER. HIRAM H. BOOK, Johnstown, Iowa. Filed Jan. 9, 1905. Serial No. 240,267.

Claim.—1. In a draft-equalizing device, the combination of a main evener-bar, a supplemental evener-bar fulcrumed thereon, a draft connection extending rearwardly from the main evener-bar independently of the supplemental evener-bar, a cross-head fulcrumed intermediate of its ends upon the draft connection, a connection between one end of the cross-head and the supplemental evener-bar, and a draft connection at the other end of the cross-head.

2. In a draft-equalizing device, the combination of a main evener-bar, a supplemental evener-bar fulcrumed intermediate of its ends upon the inner end portion of the main evener-bar, a draft connection extending rearwardly from the main evener-bar, a cross-head fulcrumed intermediate of its ends upon the draft connection, a connection between one end of the cross-head and the inner end of the supplemental evener-bar, and a draft connection carried by the other end of the cross-head.

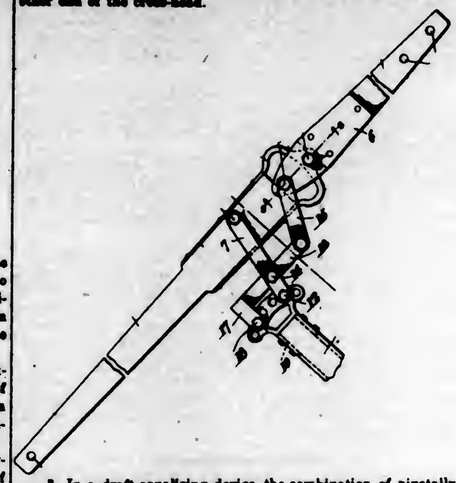

3. In a draft-equalizing device, the combination of pivotally-connected main and supplemental evener-bars, a draft connection extending rearwardly from and carried solely by the main bar, and another draft connection extending rearwardly from and carried solely by the supplemental bar and having a portion crossing and pivotally connected to the draft connection of the main bar.

4. In a draft-equalizing device, the combination of a main evener-bar having a transverse slot adjacent its inner end, a supplemental evener-bar having its inner end bifurcated and straddling the slotted portion of the main evener-bar, said supplemental bar being fulcrumed upon the inner extremity of the main bar, a draft connection extending rearwardly from the inner end portion of the main bar, a cross-head fulcrumed intermediate of its ends upon the draft connection, links extending between one end of the cross-head and the inner end of the supplemental bar, a pivot-pin connecting the links and the inner end of the supplemental bar and working in the slot of the main bar, and a draft connection at the opposite end of the cross-head.

5. In a draft-equalizing device, the combination of a main evener-bar having a substantially U-shaped loop embracing the inner end of the bar, a supplemental bar having its inner end bifurcated and straddling the loop to which it is pivotally connected at the inner end of the bifurcation, a draft connection extending rearwardly from the inner end portion of the main bar, a cross-head fulcrumed intermediate of its ends upon the draft connection, links connected to one end of the cross-head and embracing the bifurcated inner end of the supplemental bar, a pivot-pin piercing the links and the supplemental bar and working in the loop of the main bar, and a draft connection carried by the other end of the cross-head.

808,824. BOTTLE-HOLDING RACK. OTTO ECK, Baltimore, Md. Filed Aug. 10, 1905. Serial No. 273,611.

Claim.—1. A bottle-holding rack, comprising a member provided with openings to receive the bottle-necks, and a second member spaced therefrom, said second member being provided with a series of openings, and fingers extending inwardly into the openings.

2. A bottle-holding rack having a plate provided with a series of openings therein, with fingers extending inwardly into said openings and capable of being flexed.

3. A bottle-holding rack provided with a plate having a series of rectangular openings therein, a series of fingers extending diagonally into said openings and capable of being flexed.

4. A bottle-holding rack having a member provided with a series of substantially rectangular openings, with a finger extending inwardly from each corner of each of said openings toward the center thereof.

5. A bottle-holding rack having a member provided with a series of openings substantially rectangular in shape, with a finger extending inwardly from each corner of each of said openings, the outer ends or faces of the fingers being curved

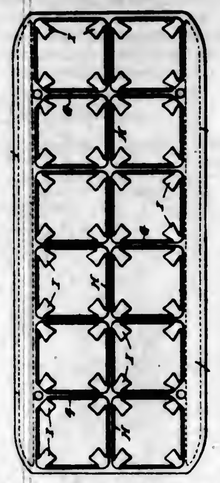

6. A bottle-holding rack having a member provided with a series of substantially rectangular openings, a finger extending inwardly from each corner of each of said openings, the outer end of each finger being curved, while the neck thereof is reduced, substantially as described.

7. In a bottle-holding rack, the combination of a member provided with a series of circular openings adapted and designed to receive the bottle-necks, a second member spaced from the first member and secured thereto, said second member being provided with a series of substantially rectangular openings the centers of which are coincident with the centers of the circular openings in the first-named member, and a finger extending inwardly from each corner of each of said rectangular openings toward the center thereof.

808,825. SAFETY GAS-BURNER. SIGURD W. EKROOS, New York, N. Y. Filed Dec. 1, 1904. Serial No. 234,895.

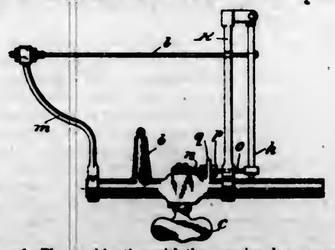

Claim.—1. The combination with the gas-pipe, burner and gas-cock, of the valve located in the gas-pipe and at one side of the burner, means to open said valve and temporarily hold it open through the instrumentality of the gas-cock when the latter is opened, an exterior thermostat subject to the gas-flame and connected with the valve for maintaining the open condition of said valve while the flame continues, and means for automatically closing said valve when the flame is extinguished.

2. The combination with the gas-pipe, burner, and gas-cock, of the valve located in the gas-pipe and at one side of the burner, means to open said valve and temporarily hold it open through the instrumentality of the gas-cock when the latter is opened, an exterior thermostat subject to the gas-flame and connected with the valve for maintaining the open condition of said valve while the flame continues, and a spring for automatically closing said valve when the flame is extinguished.

3. The combination with the gas-pipe, burner, and the gas-cock, of the valve located in the gas-pipe and at one side of the burner, an exterior thermostat subject to the gas-flame for maintaining the open condition of said valve while the flame continues, means to open said valve and temporarily hold it open through the instrumentality of the gas-cock when the latter is opened, and means for automatically closing said valve when the flame is extinguished, the said means for opening said valve and temporarily holding it open comprising the cam on the gas-cock, thrust-rod, and the valve-opening lever which is connected with the thermostat.

4. The combination with the gas-pipe, burner and the gas-cock, of the valve located in the gas-pipe and at one side of the burner, an exterior thermostat subject to the gas-flame for maintaining the open condition of said valve while the flame continues, means to open said valve and temporarily hold it open through the instrumentality of the gas-cock when the latter is opened, and means for automatically closing said valve when the flame is extinguished, the said means for opening said valve and temporarily holding it open comprising the cam on the gas-cock, thrust-rod, and the valve-opening lever which is connected with the thermostat, and the spring for releasing the cam from the thrust-rod.

808,826. PIPE-CLEANER. FRED A. FALT, West Medford, Mass. Filed Apr. 7, 1905. Serial No. 254,304.

Claim.—1. A pipe-cleaner comprising in its construction two wires joined together at one end thereof, the free ends of said wires beveled outwardly away from each other to form chisel-points.

2. A pipe-cleaner comprising in its construction two wires joined together at one end thereof, the free ends of said wires beveled in opposite directions to form cutting edges, each of said wires provided with a corrugation upon its outer face for the purpose specified.

3. A pipe-cleaner consisting of a wire bent midway of its length, the two halves thereof brought into juxtaposition and connected together for a portion of their length, the free ends of said wire beveled outwardly away from each other to form chisel-points.

4. A pipe-cleaner consisting of a wire bent midway of its length, the two halves thereof brought into juxtaposition and connected together for a portion of their length, thence diverging one from the other, each provided upon its outer edge with a tooth for the purpose specified.

5. A pipe-cleaner consisting of a wire having a flattened side and bent midway of its length to bring the flattened sides of the two halves thereof into juxtaposition, said halves connected together for a portion of their length and beveled outwardly away from each other to form chisel-points.

808,827. AUTOMATIC RAILROAD-SWITCH. JAMES M. FAULK, St. John, Kans., assignor, by direct and mesne assignments, of one-sixth to William Frame, St. John, Kans., and one-sixth to D. J. Smith, Cuervo, N. Mex. Filed Mar. 21, 1905. Serial No. 251,366.

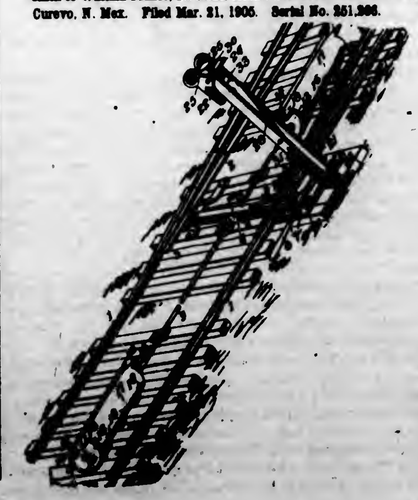

Claim.—1. In a railway-switch, the combination of an automatically-operated switch-bar, a manually-operated switch-bar, means for actuating the manually-operated switch-bar independent of the automatically-operated switch-bar, and means for locking the manually-operated switch-bar-actuating means to the automatically-operated switch-bar for movement therewith.

2. In a railway-switch, the combination of an operating-shaft, a switch-bar operably connected therewith, cylinders mounted upon the operating-shaft, housings for the cylinders embodying movable sections normally closed together, and means for limiting the separating movement of the sections aforesaid.

3. In a railway-switch, the combination of an automatically-operated switch-bar, a hand-operated switch-bar, an operating-lever for the hand-operated switch-bar, and means for interlocking the said lever and the automatically-operated switch-bar.

4. In a railway-switch, the combination of an automatically-operated switch-bar, a hand-operated switch-bar, an operating-lever for the hand-operated switch-bar, and a member projected from the automatically-operated switch-bar and adapted to interlock with the lever aforesaid.

808,828. **COVER FOR VEHICLES.** WILLIAM FINDLAY, Edinburgh, Scotland. Filed Dec. 6, 1904. Serial No. 235,085.

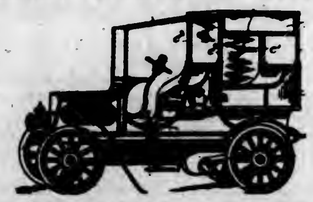

Claim.—In a device of the character described, the combination of a plurality of stationary tubular pillars, tubes telescoping in said pillars and adapted to be raised and lowered therein, a casing connecting a pair of said tubes and permanently secured thereto, a pair of supplementary casings hinged to opposite ends of said first-named casing and adapted to be swung out from said casing, spring-actuated rollers in each of said casings, and covers wound on said rollers and adapted to be unwound therefrom.

808,829. **HORSESHOE-PAD.** ADOLPH FISCHER, Milwaukee, Wis. Filed Sept. 26, 1903. Serial No. 174,855.

Claim.—1. A horseshoe-pad comprising a block of felt having an outer margin conforming in shape and size substantially to a metallic horseshoe, and provided with a thick central portion adapted to fit the open central portion of the metallic horseshoe and projecting through the same; said pad being also provided with a connecting porous tissue of hard cement permeating all portions of the felt.

2. The combination with a metallic horseshoe, of a block of felt covering said shoe and having a thick central portion projecting through the central portion of the shoe, and a connecting porous tissue of hard cement permeating the felt.

808,830. **APPARATUS FOR PERMITTING THE SUCCESSIVE EXHIBITION OF PHOTOGRAPHS.** CHARLES FOURNIAT, Lyon, France. Filed Nov. 10, 1904. Serial No. 232,139.

Claim.—1. In apparatus for exhibiting photographs, the combination with a series of articulated alternate photographs and rigid plates, of a cage for holding said series, means for supporting the series therein and for releasing the plates one by one, a receiver placed with its rear wall substantially alined with the front wall of the cage so that the dropped plate holds the photograph next above in one and the same vertical plane, substantially as described.

2. In apparatus for exhibiting photographs, the combination with a series of articulated alternate photographs and rigid plates, of a cage for holding said series, means for supporting the series therein and for releasing the plates one by one, a receiver placed with its rear wall substantially alined with the front wall of the cage so that the dropped plate holds the photograph next above in one and the same plane said receiver comprising a table for supporting the dropped photographs and plates in a folded condition when shown, and means for causing said table to descend according to the fall of plates from the cage, substantially as described.

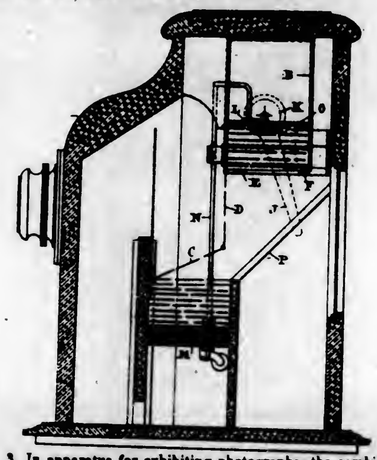

3. In apparatus for exhibiting photographs, the combination with a series of articulated alternate photographs and rigid plates, of a cage adapted to contain said series, means in conjunction with said cage for supporting said plates and photographs and releasing the plates one by one to permit the photographs to drop, a receiver for the dropped plates and photographs with its rear wall substantially alined with the front wall of the cage so that the last dropped plate in the receiver holds the photograph next above it in a predetermined focal plane, a vertically-movable table forming the floor of said receiver and a support for said table comprising a rod deriving its support from the series in the cage for the purpose set forth.

808,831. **STAND-PIPE AND CONNECTION FOR GAS-RETORTS.** SAMUEL J. FOWLER, Cambridge, Mass. Filed Aug. 31, 1905. Serial No. 276,530.

Claim.—1. A bench of retorts for the manufacture of coal-gas, comprising a lower, an upper, an upper and a lower intermediate horizontal group of retorts, means for connecting the lower group of retorts, a stand-pipe to one side of the bench of retorts and communicating with an outer retort of the lower group, means for connecting the retorts of the lower intermediate group, a stand-pipe at the other side of the bench and communicating with the outer retort of the intermediate group on the same side as the said stand-pipe, means for connecting the retorts of the upper intermediate group, a stand-pipe interposed between the stand-pipes on the outer sides of the bench and communicating with the upper intermediate group, a stand-pipe interposed between the stand-pipes communicating with the upper and lower intermediate groups and connected with a portion of the retorts in the upper group and means interposed between the stand-pipes communicating with the lower, and the upper intermediate groups for conveying the gas from the remaining portion of retorts in the upper group.

2. An apparatus for the manufacture of coal-gas comprising a bench of retorts arranged in four separate and superposed groups, each group having a plurality of retorts in horizontal alinement, means for connecting the interior of the retorts on the same horizontal line with each other in each of the three lower groups, thereby forming three independently-connected and superposed groups of retorts in three horizontal planes, means for separately connecting each of the three independently-connected groups with a hydraulic main, means for connecting a portion of the retorts in the upper horizontal group with a hydraulic main and a separate means for connecting the remaining portion of the retorts in the upper group with a main.

3. An apparatus for the manufacture of coal-gas comprising a bench of retorts arranged in separate and superposed groups and each group having a plurality of retorts in horizontal alinement and directly over or under the adjacent retort in the next group, a mouthpiece attached to each of said retorts, a vertical strut interposed between the top and bottom of each of the adjacent mouthpieces, means for connecting the interiors of the mouthpieces on the same horizontal line with each other and forming independent groups of retorts in the same plane, and means for independently connecting each group of retorts with a hydraulic main.

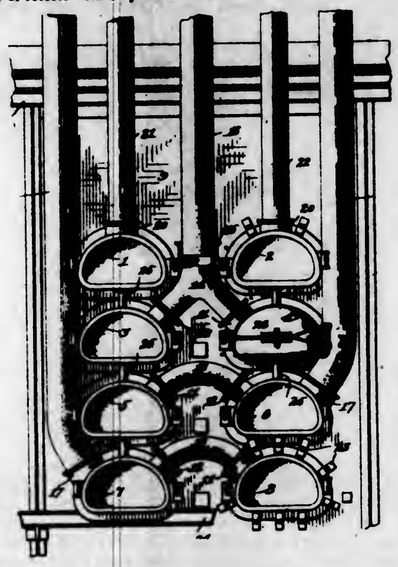

808,832. **RECEIVER AND RECORDER FOR WIRELESS AND OTHER TRANSMISSIONS.** FRED B. GALLAGHER, San Francisco, Cal., assignor of one-third to Simeon L. Phillips and one-third to Walter D. Valentine, San Francisco, Cal. Filed June 15, 1905. Serial No. 265,378.

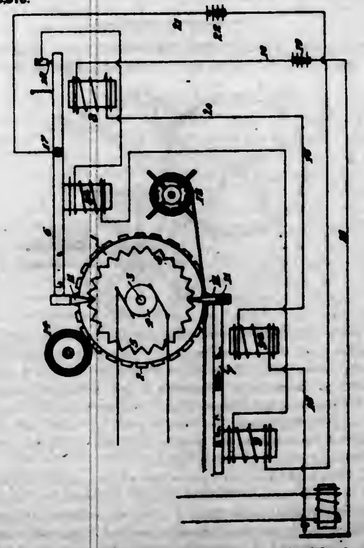

Claim.—In a receiver and recorder, a type-wheel having constantly-operative impelling means, a pivoted armature carrying means for locking the type-wheel, another pivoted armature carrying a striking hammer, a pair of magnets for each armature arranged respectively at opposite sides of its pivot, a controller-circuit which includes one magnet of each armature, and a striker-circuit which includes the other magnet of each armature, all substantially as and for the purposes set forth.

808,833. **BOTTLE-SEALING MECHANISM.** EWALD GOLDSTEIN, Cologne, Germany. Filed Feb. 26, 1902. Serial No. 95,669.

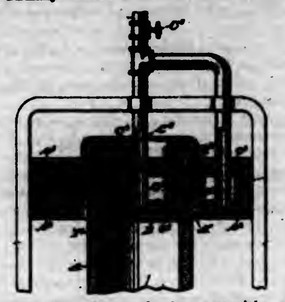

Claim.—A bottle-sealing mechanism, comprising an inner and outer member spaced from each other to receive a bottle-neck between them, each of said members having two spaced heads or plates forming spaces open entirely only on the side near the bottle-neck, the outer member also having a backing extending from the outer edge of one head to the outer edge of the other head, and expansible bodies located in said spaces, and adapted to expand toward each other, and therefore toward the bottle-neck.

808,834. **RELAY.** CHARLES L. GOODSELL, Rochester, N. Y. Filed Nov. 11, 1905. Serial No. 286,905.

Claim.—1. In a relay, the combination with a core, of a coil thereon, an armature, front and rear pole-pieces, one of which forms a support for the relay, the other forming a support for the armature, contact-springs, and means removably securing the core to the supporting pole-piece.

2. In a relay, the combination with a core, of a coil thereon, an armature, front and rear pole-pieces, one of which forms a support for the relay, the other forming a support for the armature, contact-springs mounted on said supporting pole-piece, and means removably securing said core to the supporting pole-piece.

3. In a relay, the combination with a core, of a coil thereon, a rear pole-piece, a front pole-piece, and means operated from the front for securing both of the pole-pieces to the core.

4. In a relay, the combination with a core, of a coil thereon, a rear pole-piece adapted to support the relay, a front pole-piece, and means operable from the front securing both of the pole-pieces to the core.

5. In a relay, the combination with a core, of a coil thereon, a rear pole-piece adapted to support the relay, contact-springs, a front pole-piece, an armature mounted thereon, and means passing through the core adapted to secure the pole-pieces to said core.

6. In a relay, the combination with a core, of a coil thereon, a rear pole-piece adapted to support the relay, contact-springs mounted on said pole-piece, a front pole-piece, an armature mounted thereon, and a screw passing through the core adapted to secure the pole-pieces to the core.

7. A relay having a rear pole-piece adapted to form a support for said relay, and means operable from the front for removably securing the relay to said pole-piece.

8. A relay having a hollow core, a rear pole-piece to form a support for said relay, and means passing through the core to secure the relay to the pole-piece.

9. A relay having a hollow core, a rear pole-piece adapted to form a support for said relay, a front pole-piece, and a screw passing

through said core and having threaded engagement with said rear pole-piece to hold it removably secured to said core, the head of said screw holding said front pole-piece in place.

10. In a relay, the combination with a core, of a coil thereon, a rear pole-piece secured to the core and extending along the top of the coil, a front pole-piece secured to the other end of the core and extending rearwardly a distance toward the rear pole-piece to leave an air-gap between the pieces, means for removably securing the core to said pole-pieces, a plate pivoted over the end of the front pole-piece, the rear part of said plate forming an armature and overlapping the end of the rear pole-piece, and switch-springs secured to the rear pole-piece and extending forwardly over said plate and having engagement with the front part of said plate, current-flow through said coil causing attraction of the armature part of the plate to cause actuation of said springs.

11. In a relay, the combination with a core, of a coil thereon, a rear pole-piece secured to the core and extending along the top of the coil, a front pole-piece secured to the other end of the core and extending rearwardly a distance toward the rear pole-piece to leave an air-gap between the pieces, means for removably securing the core to said pole-pieces, a plate pivoted over the end of the front pole-piece, the rear part of said plate forming an armature and overlapping the end of the rear pole-piece, and switch-springs secured to the rear pole-piece and extending forwardly over said plate and having engagement with the front part of said plate, current-flow through said coil causing attraction of the armature part of the plate to cause actuation of said springs, said switch-springs serving to hold said plate on its pivot.

12. In a relay, the combination with a core, of a coil thereon, a rear L-shaped pole-piece secured to the rear end of the core and extending forwardly a distance along the top of the coil, an L-shaped front pole-piece secured to the front end of the core and extending rearwardly a distance to leave a non-magnetic gap between the pole-pieces, means passing through the core for securing the pole-pieces to the core, a pivot edge at the end of the front pole-piece, a plate of magnetic material pivoted on said edge along an intermediary line, the part of said plate to the rear of said pivot forming an armature, the part of said plate in front of said pivot forming an actuating-lever, and circuit-changing springs mounted at their rear ends on the rear pole-piece and being connected at their front ends with the actuating-lever, said springs normally causing pressure against said lever to hold the armature part away from the rear pole-piece, current-flow through said coil causing attraction of the armature part, whereby said circuit-changing springs are actuated.

13. In a relay, the combination with a hollow core, of a coil thereon, a rear L-shaped pole-piece secured to the rear end of the core and extending forwardly a distance along the top of the coil, a front L-shaped pole-piece secured to the front end of the core and extending rearwardly a distance along the top of the coil to leave a non-magnetic gap between the ends of the pole-pieces, means passing through said core connecting said pole-pieces and removably securing them to the core, the end of the front pole-piece offering a pivot edge, a magnetic plate pivoted on said edge at an intermediary line, the rear part of said plate forming an armature, the front part of said plate forming an actuating-lever, and switching mechanism mounted on the rear pole-piece and having connection with the actuating-lever, said switching mechanism serving normally to depress said actuating-lever to retain the armature out of contact with the rear pole-piece, current-flow through said coil causing said armature to be attracted to complete the magnetic circuit through the pole-pieces and causing switching mechanism to be actuated, said switching mechanism serving also to retain said plate in position on said pivot edge.

14. In a relay, the combination with a hollow core, of a coil thereon, an L-shaped rear pole-piece secured to the rear end of the core and extending forwardly a distance along the top of the coil, a front L-shaped pole-piece secured to the front end of the core and extending rearwardly a distance along the top of the coil, a screw passing through said core adapted to removably hold said pole-pieces on said core, a non-magnetic gap between the ends of the pole-pieces, the end of the front pole-piece being shaped to form a pivot edge, a plate of magnetic material pivoted at an intermediary line on said edge, the rear part of said plate forming an armature and the front part thereof forming an actuating-lever, and actuating and contact switch-springs mounted at their rear ends on the rear pole-piece and extending forwardly therefrom, the front end of the actuating-springs having connection with said actuating-lever and tending normally to depress said lever to retain the armature away from the rear pole-piece and out of engagement with the contact-springs, current-flow through said coil causing energization of the relay, whereby the armature is attracted toward the rear pole-piece, said actuating-lever being raised to carry the actuating-springs into engagement with the contact-springs.

808,835. RIVET-HOLDER. ROBERT J. GORDON, Detroit, Mich. Filed Dec. 24, 1904. Serial No. 238,389.

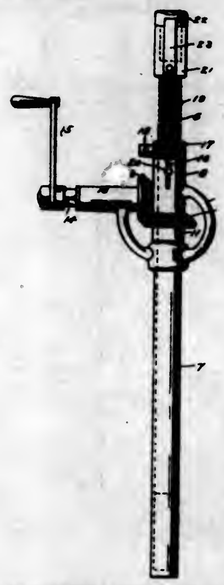

Claim.—An extensible bucking-bar for riveting, comprising a telescoping tube and screw, the latter having means at the head to hold a rivet, a nut which may be turned, on the screw and against the tube, and a split sleeve carried on the tube and extending around the screw, having a clamp connecting the split portions of the sleeve to hold the screw at adjustment.

808,836. METHOD OF MIXING CONCRETE. PETER C. HAINS, Washington, D. C. Filed Apr. 11, 1903. Serial No. 254,910.

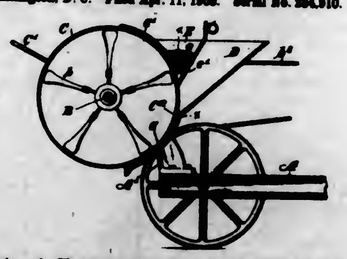

Claim.—1. The improved method of mixing concrete which consists in wetting the inert material and then subjecting the wet inert material to the action of a cloud of dry powder cement to cause the particles of inert material to become covered with cement paste.

2. The improved method of mixing concrete which consists in wetting the inert material and moving the wet inert material in a cloud of dry powder cement to cause the particles of inert material to become covered with cement paste.

3. The method of mixing concrete which consists in forming a cloud of powder cement, wetting the inert material, and moving the wet inert material in the cloud of dry powder cement to cause the particles of inert material to become covered with cement paste.

4. The method of mixing concrete which consists in forming a cloud of dry powder cement, and agitating a mass of wet inert material in said cloud of dry powder cement to cause the particles of wet inert material to become covered with cement paste.

5. The method of mixing concrete which consists in wetting the inert material, moving the wet inert material and simultaneously forcing a cloud of dry powder cement across the path of movement of the wet inert material to cause the particles of inert material to become covered with cement paste.

808,837. ROCK AND COAL DRILL. LESTER C. HAMMOND, Ottumwa, Iowa. Filed May 17, 1905. Serial No. 260,706.

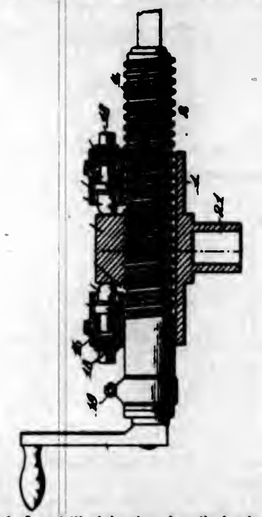

Claim.—1. In a drill of the class described, a housing, a longitudinally-movable block, a hammer mounted in said housing and movable with and adjustable with respect to said block, and means for cushioning the movement of said block in either direction.

2. In a drill of the class described, a housing, a hammer mounted therein, a block mounted to move longitudinally of the drill and having a screw-threaded engagement with said hammer, and buffers for receiving opposite end impacts of said block.

3. In a drill of the class described, a housing, a hammer mounted therein and provided with exterior screw-threads, a slidably-mounted block having screw-threaded engagement with said hammer, means for cushioning said block and means for turning said hammer.

4. In a drill of the class described, in combination with a housing, a hammer mounted therein, a hinged block slidably mounted on the housing having screw-threaded engagement with said hammer, and means for turning said hammer.

5. In a drill of the class described, a housing, a hammer mounted therein and provided with exterior screw-threads, a slidably-mounted block having screw-threaded engagement with said hammer, resilient buffers located at opposite ends of said block, and means for turning said hammer.

6. In a drill of the class described, a housing, a hammer mounted therein and provided with exterior screw-threads, a slidably-mounted block having screw-threaded engagement with said hammer, spring-controlled plungers located at opposite ends of said block for cushioning the movements of the same, and means for turning said hammer.

7. In a drill of the class described, a housing, a hammer mounted therein and provided with exterior screw-threads, a slidably-mounted hinged block having screw-threaded engagement with said hammer, spring-pressed plungers located at opposite ends of said block for cushioning the movements of the same, means for adjusting the tension of the springs of said plungers, and means for turning said hammer.

808,838. METAL FILING. JAMES J. HANSEN, Jersey City, N. J., assignor, by mesne assignments, to Emma Hansen, Jersey City, N. J. Filed Dec. 22, 1904. Serial No. 238,372.

Claim.—1. In piling, beam members provided with flanges on opposite sides of one face thereof, planks adapted to engage the channels formed by said flanges, one of the flanges on one beam member adapted to slide between a flange on another beam member and its plank, a plate at the outer edge of each of said planks extending over the back of the adjoining beam member, and said plate secured to said plank by bolts passing through its beam member.

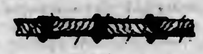

2. In piling, beam members provided with flanges on opposite sides of one face thereof, planks adapted to engage the channels formed by said flanges, one of the flanges on one beam member adapted to slide between a flange on another beam member and its plank, a plate at the outer edge of each of said planks extending over the back of the adjoining beam member, a plate on the opposite side of the piling extending over the adjoining plank, and said plate secured by bolts passing through said planks and said beam members.

808,839. PROCESS OF TREATING ORES. JUSTUS H. HAYNES and WILBUR D. RIDDLE, Denver, Colo., assignors to The Dolores Refining Company, Denver, Colo. Filed Mar. 20, 1905. Serial No. 251,000.

Claim.—1. The herein-described process of treating ores containing uranium, consisting in boiling the crushed ore with a solution of alkaline carbonate until the uranium contained in the ore is brought into solution.

2. The herein-described process of separating uranium and vanadium from ore, consisting in first crushing the ore to be treated; second, boiling the ore with a solution of alkaline carbonate until the metal to be extracted is placed in solution; third, drawing off the solution containing the dissolved metals; and finally precipitating the said metals, the uranium being precipitated by the addition of sodium hydroxid as sodium uranate, while the vanadium is precipitated as calcium vanadate by the addition of water-slaked lime.

808,840. HAME AND TRACE CONNECTOR. FREDERICK F. HOMANS, Battlecreek, Mich. Filed May 5, 1905. Serial No. 259,013.

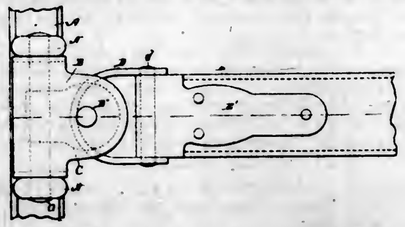

Claim.—1. The combination of a plate having outwardly-projecting perforated ears adapted to be secured to a hame; a swinging plate formed of sheet metal, having inwardly-projecting perforated ears adapted to be embraced by the said hame-plate ears; a pivot-pin arranged through the perforated ears of said plates for securing them together; an inwardly-projecting pin carried by said swinging plate; a loop formed of sheet metal arranged to engage the pivot-pin of said plates, the arms of which are perforated to receive said pin carried by said swinging plate; a curved clevis-like strap formed of sheet metal, having a slot therein to receive the inner arm of said loop; and a pivot-pin carried by said curved strap for connecting the same to a trace, for the purpose specified.

2. The combination of a plate having outwardly-projecting perforated ears adapted to be secured to a hame; a swinging plate formed of sheet metal, having inwardly-projecting perforated ears; a pivot-pin arranged through the perforated ears of said plates for securing them together; an inwardly-projecting pin carried by said swinging plate; a loop formed of sheet metal arranged to engage the pivot-pin of said plates, the arms of which are perforated to receive said pin carried by said swinging plate; a curved clevis-like strap formed of sheet metal; and a pivot-pin carried by said curved strap for connecting the same to a trace, for the purpose specified.

3. The combination of a plate having outwardly-projecting perforated ears adapted to be secured to a hame; a swinging plate formed of sheet metal, having inwardly-projecting perforated ears; a pivot-pin arranged through the perforated ears of said plates for securing them together; an inwardly-projecting pin carried by said swinging plate; a loop formed of sheet metal arranged to engage the pivot-pin of said plates, the arms of which are perforated to receive

said pin carried by said swinging plate; and means for pivotally connecting a trace to said pin carried by said swinging plate, for the purpose specified.

4. The combination of a plate having outwardly-projecting perforated ears adapted to be secured to a hame; a swinging plate having inwardly-projecting perforated ears adapted to be embraced by said hame-plate ears; a pivot-pin arranged through the perforated ears of said plates for securing them together; an inwardly-projecting pin carried by said swinging plate; a loop arranged to engage the pivot-pin of said plates, the arms of which are perforated to receive said pin carried by said swinging plate; a curved clevis-like strap, having a slot therein to receive the inner arm of said loop; and a pivot-pin carried by said curved strap for connecting the same to a trace, for the purpose specified.

5. The combination of a plate having outwardly-projecting perforated ears adapted to be secured to a hame; a swinging plate having inwardly-projecting perforated ears; a pivot-pin arranged through the perforated ears of said plates for securing them together; an inwardly-projecting pin carried by said swinging plate; a loop arranged to engage the pivot-pin of said plates, the arms of which are perforated to receive said pin carried by said swinging plate; a curved clevis-like strap; and a pivot-pin carried by said curved strap for connecting the same to a trace, for the purpose specified.

6. The combination of a plate having outwardly-projecting perforated ears adapted to be secured to a hame; a swinging plate having inwardly-projecting perforated ears; a pivot-pin arranged through the perforated ears of said plates for securing them together; an inwardly-projecting pin carried by said swinging plate; a loop arranged to engage the pivot-pin of said plates, the arms of which are perforated to receive said pin carried by said swinging plate; and means for pivotally connecting a trace to said pin carried by said swinging plate, for the purpose specified.

7. The combination of a swinging plate; a pivot-pin for connecting said plate to a hame; a transversely-projecting pin carried by said swinging plate; a loop arranged to engage the pivot-pin of said plates, the arms of which are perforated to receive said pin carried by said swinging plate; a curved clevis-like strap having a slot therein to receive the inner arm of said loop; and a pivot-pin carried by said clevis-like loop for connecting the same to a trace, for the purpose specified.

8. The combination of a swinging plate; a pivot-pin for connecting said plate to a hame; a transversely-projecting pin carried by said swinging plate; a loop arranged to engage the pivot-pin of said plates, the arms of which are perforated to receive said pin carried by said swinging plate; and means for pivotally connecting a trace to said pin carried by said swinging plate, for the purpose specified.

808,841. APPARATUS FOR THE MANUFACTURE OF TOOTH-PICKS. HENRY S. HOOVER, Detroit, Mich. Filed Jan. 27, 1905. Serial No. 242,965.

Claim.—1. A machine for forming toothpicks, comprising a holder for a tubular blank, a tapering reamer for engaging the end of said tube while secured by said holder, means for ejecting the reamed tube from said holder, and a cutter for severing the tube into splints during ejection from said holder.

2. A machine for forming toothpicks comprising means for assorting tubular blanks of varying diameters and arranging the different sizes in parallelism, a work-holder having sockets for the various sizes of tubes adapted to be alined therewith, and means for feeding the tubes into the sockets.

3. A machine for forming toothpicks, comprising means for assorting the tubular blanks of varying diameters, means for feeding the tubes of the various assorted sizes longitudinally and in parallelism, an intermittently-rotating work-holder, having a series of sockets for the respective sizes of tubes, adapted to be successively alined for engagement therewith, reamers for engaging said tubes while in said sockets to sharpen the ends thereof, means for ejecting said tubes from their sockets, and cutters for severing said tubes longitudinally into separate splints during ejection.

4. A machine for forming toothpicks comprising a work-holder provided with a socket for receiving the tubular blank, reamers arranged on opposite sides of said holder and rotating in opposite directions, and means for simultaneously inserting said opposite reamers into the ends of the tube to sharpen the ends thereof.

5. In a machine for forming toothpicks, the combination with a tubular blank-holder, having a series of open-sided, cylindrical socket-chambers, of means for feeding tubular blanks into engagement with said sockets, reamers for engaging opposite sides of said holder, which reamers are mounted to be registered at one point in the rotation of said holder, said reamers rotating in opposite directions, means for simultaneously inserting said opposite reamers into the ends of said tubes to sharpen the same, splitting-knives arranged to register with said tubes at another point in the movement of said holder, and ejectors simultaneously actuated with the actuation of said reamers to move the sharpened tubes longitudinally out from their sockets, and to simultaneously sever the same into separate splints by engagement with said cutters.

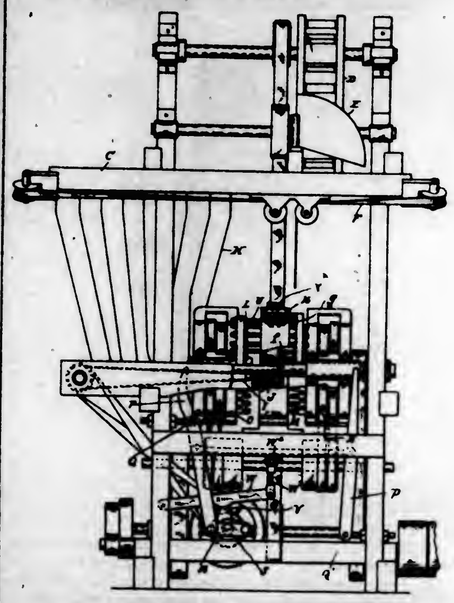

6. In a machine for forming toothpicks, the combination with a traveling holder for the tubular blanks, of means for ejecting said tube longitudinally from said holder, and a cutter comprising a circular series of radial blades, arranged in a position to aline with said tube at the point of ejection, whereby said tube will be severed into separate splints during the ejection.

7. A machine for forming toothpicks, comprising means for assorting the tubular blanks of varying diameters, means for feeding said blanks of the assorted sizes longitudinally and in parallelism, an intermittently-rotating work-holder having a series of sockets for the respective sizes of tubes, adapted to be successively alined for engagement therewith, reamers for engaging said tubes while in said sockets to sharpen the ends thereof, and means for ejecting said tubes from their sockets.

8. The combination of a trough, having discharge-openings of varying widths in one side thereof, and a traveling belt adjacent to the opposite side of said trough, adapted to feed cylindrical blanks of varying sizes longitudinally thereof, whereby said blanks are discharged through said openings from different points in the trough, according to their respective sizes.

9. The combination with a trough, having discharge-openings of varying widths in one side thereof, of means for feeding cylindrical blanks of varying sizes into said trough, and a traveling belt adjacent to the opposite side of said trough, upon which said blanks are deposited, whereby the movement of said belt will aline the blanks and carry the same longitudinally of the said trough, to discharge them through their respective discharge-openings.

10. The combination with a series of chutes, for the feeding of cylindrical blanks of varying sizes, of a traveling belt upon which said blanks are discharged through their respective tubes in parallel arrangement, and a stationary guide above said belts for separating the blanks from the different chutes.

808,842. MANUFACTURE OF SOUND-RECORDS. WILLIAM H. HOTT and WILLIAM J. GAVIN, Bridgeport, Conn., assignors to The Bart Company, Hackensack, N. J., a Corporation of New Jersey. Filed June 11, 1904. Serial No. 212,240.

Claim.—1. The process of making pressed sound-records which consists in forming a sheet or tablet of a layer of earth material containing a glaze of hard resisting material which softens under heat, and a layer of similar material containing little or no glaze, heating the two layers together, and pressing the record in the face containing the glaze.

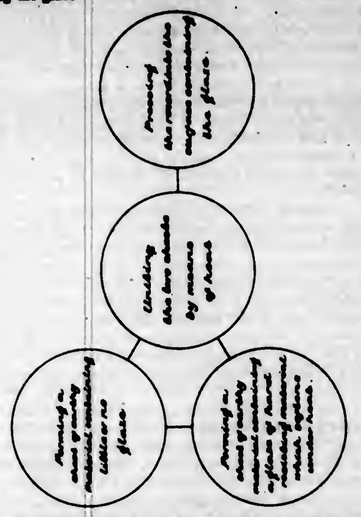

2. The process of making pressed sound-records which consists in forming a sheet of earthy material containing shellac, and another sheet of like material containing little or no shellac, uniting the two layers by means of heat, and pressing the record into the surface containing the shellac.

808,843. METHOD OF MANUFACTURING SOUND-RECORDS. WILLIAM H. HOTT and WILLIAM J. GAVIN, Bridgeport, Conn., assignors to The Bart Company, Hackensack, N. J., a Corporation of New Jersey. Filed Dec. 8, 1904. Serial No. 236,574.

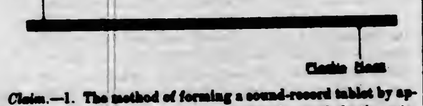

Claim.—1. The method of forming a sound-record tablet by applying upon the surface of the die or matrix a layer of plastic material in a dry and finely-divided state, and a layer of similar material in a plastic state, and uniting the two by heat and pressure.

2. The method of forming a sound-record tablet by applying pressure to two batches or layers of plastic material, one layer being in the form of a dry powder, the other in a plastic condition.

3. The method of forming a compressed sound-record by applying upon the surface of a suitable matrix or die a layer of finely-divided material containing a glaze, applying to said layer a batch of similar material essentially free from glaze, and uniting the two layers by means of heat and pressure.

808,844. VEHICLE-AXLE. Otto Hueck, St. Louis, Mo. Filed July 13, 1905. Serial No. 270,190.

Claim.—A vehicle-axle having a terminal spindle, lobes or arms radiating therefrom at the base thereof, a sleeve passed loosely over the spindle, an enlarged base on the sleeve forming an annular shoulder with the peripheral surface of the sleeve, and having suitable sockets formed therein for the reception of the lobes of the spindle, a key for retaining the sleeve upon the spindle, and a retaining-nut at the outer end of the spindle, the boxing of the wheel-hub being rotatably mounted on the sleeve and confined between the nut and the shoulder formed at the base of the sleeve, substantially as set forth.

808,845. MEDICINE-SPOON. WILLIAM L. JERKINS, Moultrie, Ga. Filed June 20, 1905. Serial No. 265,896.

Claim.—1. A medicine-spoon embodying a bowl and a handle, the under side of the deepest portion of the bowl and the under side of the handle being in the same plane, and the bowl being provided with interior graduation-marks and with a spout, the under side of which is serrated.

2. A medicine-spoon having its bowl provided with a spout, the under side of which is serrated.

3. A medicine-spoon embodying a bowl and a handle, the bowl being provided with an elongated spout covered throughout a greater portion of its length and having its under side serrated.

808,846. MOLD. JAMES H. JOHNSON and HENRY MEYER, Fort Recovery, Ohio. Filed Sept. 7, 1905. Serial No. 277,269.

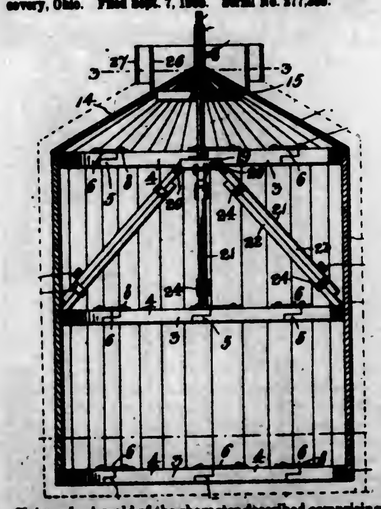

Claim.—1. A mold of the character described comprising a plurality of side mold-sections, a pulrality of brace-sections engaged with said mold-sections and having their abutting recessed ends overlapping, latches connecting said abutting ends of the brace-sections, an extension-plate or brace-section pivoted to one of said brace-sections, and a clamp for securing the other end of said extension-section to the adjoining brace-section, substantially as described.

2. A mold of the character described comprising a plurality of side mold-sections, an extension side mold-section closing the space between two of the latter and overlapping the same, and a plurality of substantially scanlor supports or braces, each of the latter comprising a plurality of sections, latches detachably connecting the adjoining ends of said brace-sections, an extension-plate pivoted upon one of said said brace-sections, and a clamp for securing the said plate to the adjoining brace-section, substantially as described.

3. A mold of the character described comprising a plurality of

side mold-sections, a support arranged within said mold-sections, an upright, swinging braces upon said upright and adapted to engage said support, a plurality of top mold-sections, and means upon said upright for supporting said top mold-sections.

4. A mold of the character described comprising a plurality of side mold-sections, a support arranged within said mold-sections, an upright, swinging braces upon said upright and adapted to engage said support, a plurality of top mold-sections, and a head adjustable upon said upright for supporting said top mold-sections.

5. A mold of the character described comprising side mold-sections, a substantially annular support within said mold-sections, an upright, a plurality of longitudinally-adjustable braces carried by said upright and engaged with said support, a head slidable upon said upright, and top mold-sections having their lower ends supported by said side mold-sections and their upper portions supported by said head, substantially as described.

6. A mold of the character described comprising side mold-sections, a substantially annular support arranged within said mold-sections, an upright, a plurality of braces pivotally connected to said upright at their upper ends and having their lower ends engaged with said support, each of said braces consisting of slidably-engaged sections, means for securing said brace-sections in an adjusted position, a head slidable upon said upright, a sleeve carried by said head, a stud secured in said sleeve and adapted to engage said upright, a plurality of top mold-sections having their lower ends engaged with said side mold-sections and their upper portions with said head, and an annular band upon said top mold-sections, substantially as described.

808,847. UPDRAFT-KILN. EDWIN A. KING, Philadelphia, Pa. Filed June 5, 1905. Serial No. 263,790.

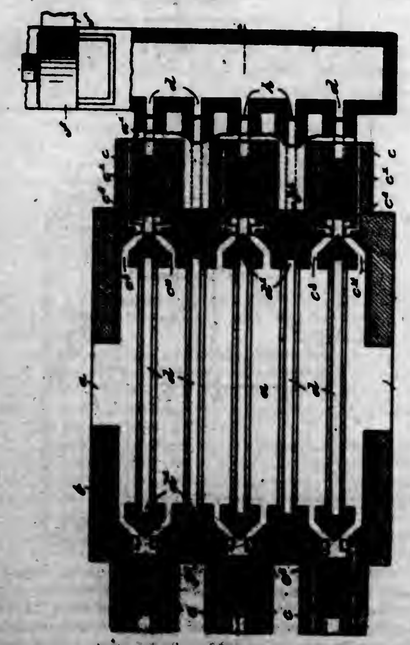

Claim.—1. An updraft-kiln having a floor or kiln-seat, a series of flues arranged therein, said flues arranged below and opposite the benches of brick placed in said kiln and terminating at the level of the floor so as to be formed by the floor and to be covered at their upper ends by the brick placed on the floor.

2. An updraft-kiln having a floor or kiln-seat, a series of flues arranged therein, said flues arranged below and centrally to the benches of brick placed in the kiln and terminating at the level of the floor so as to be formed by the floor and to be closed at their upper ends by the brick, and a damper arranged in each of said flues and adapted to render the same inoperative, when closing said flues.

3. An updraft-kiln having a floor or kiln-seat, a series of flues arranged therein, flues arranged opposite said floor-flues in the walls of said kiln and forming the continuation thereof, said floor-flues and wall-flues adapted to collect heat from brick placed therein and to conduct the same to the exterior of said kiln.

4. An updraft-kiln having a floor or kiln-seat, a series of flues arranged therein, said flues arranged below and opposite the benches of bricks placed in said kiln and terminating at the level of the floor so as to be formed by the floor and to be closed at their upper ends by the brick, and a main flue communicating with said floor-flues adapted to withdraw and collect heat entering said flues from said kiln.

5. An updraft-kiln having a floor or kiln-seat, a series of flues arranged therein, said flues arranged below and opposite the benches and intermediate the arches of brick therein, flues arranged in the walls of said kiln and forming the continuation of said floor-flues, and a damper arranged in each of said floor-flues adapted to render the same and the wall extensions inoperative, when closing said floor-flues.

6. An updraft-kiln having a floor or kiln-seat, a series of flues arranged therein, said flues arranged below and opposite the benches and intermidate of the arches of brick placed therein, flues extending upwardly from said floor-flues in certain of said walls of said kiln and forming the continuation thereof, said floor-flues and wall extensions adapted to be covered by the brick in said kiln, a damper arranged in each of said floor-flues and adapted to render the same and their wall extensions inoperative, when closing said floor-flues, and a main flue communicating with said floor-flues and adapted to withdraw and conduct heat entering said flues to a place for utilization.

7. An updraft-kiln having a floor or kiln-seat, a series of flues arranged therein, said flues arranged below and opposite the benches and intermediate of the arches of brick placed therein and terminating in the walls of said kiln, flues extending upwardly from said floor-flues in certain of the walls of said kiln and forming the continuation thereof, said floor-flues and their wall extensions adapted to be covered by the brick placed in said kiln, a damper arranged in each of said floor-flues and adapted to render the same and their wall extensions inoperative, when closing said floor-flues, a main flue communicating with said floor-flues and their wall extensions, and exhaust means adapted when actuated to withdraw the heat of said kiln and the brick therein by said floor-flues and their wall extensions and to collect and force the same out of said main flue.

8. An updraft-kiln having a floor or kiln-seat, a series of flues arranged therein, said flues arranged below and opposite the benches and intermediate of the arches of brick placed therein and terminating in the walls of said kiln, flues extending upwardly from said floor-flues in certain of the walls of said kiln and forming the continuation thereof, said floor-flues and their wall extensions adapted to be covered by the brick in said kiln, a damper arranged in each of said floor-flues and adapted to render the same and their wall extensions inoperative, when closing said flues, a main flue communicating with said floor-flues and their wall extensions and exhaust means arranged at the end of said main flue and adapted, when actuated, to withdraw the heat of said kiln and the brick therein by said floor-flues and their wall extensions and to collect and force the same out of said main flue to a place for utilization.

9. An updraft-kiln having a floor or kiln-seat, a series of flues arranged therein, a main flue communicating with said series of flues and exhaust means adapted to withdraw heat from said kiln and to collect the same by said floor-flues in said main flue and to force the heat collected in said main flue to a place for utilization.

808,848. NURSING-BOTTLE HOLDER. PERRY A. A. KILLAM, Ellsworth, Me. Filed May 26, 1905. Serial No. 262,240.

Claim.—1. A device of the class described comprising a base, means carried by the base for holding a bottle, and means pivotally mounted on said base for tilting the latter.

2. A device of the class described comprising a base, and means pivotally mounted on the base for tilting the same both longitudinally and laterally.

3. A device of the class described comprising a base, supporting members pivotally mounted on the base, and means carried by the latter for holding a bottle.

4. A device of the class described comprising a base and a reversible supporting-member pivotally associated with the base for tilting the latter.

5. A device of the class described comprising a base, means carried by the base for holding a bottle, and a plurality of wedge-shaped supporting members pivotally mounted on the base for tilting the said base both longitudinally and laterally.

6. A device of the class described comprising a base, means carried by the base for holding a bottle, and a plurality of supporting members pivotally mounted on the base and pivotally connected to each other.

7. A device of the class described comprising a base, means carried by the base for holding a bottle, and a plurality of supporting members pivotally mounted on the base and having different centers of movement.

8. A device of the class described comprising a base, and a plurality of independently-movable supporting members pivotally mounted on the base and having different centers of movement.

9. A device of the class described comprising a base, and a wedge-shaped supporting member pivotally mounted on the base for tilting the latter.

10. A device of the class described comprising a base, and means pivotally mounted on the base for tilting the same both longitudinally and laterally, said means being reversible to tilt the base either to the right or left.

11. A device of the class described comprising a base provided with a transversely-disposed bottle-receiving compartment, and means carried by the base for tilting the same both longitudinally and laterally.

12. A device of the class described comprising a base provided with a transversely-disposed bottle-receiving compartment, means for retaining the bottle in said compartment, and means secured to the bottom of the base for tilting the same both longitudinally and laterally.

13. A device of the class described comprising a base provided with a bottle-receiving compartment, a strap extending across the compartment for retaining the bottle therein, and supporting members pivotally mounted on the bottom of the base for tilting said base both longitudinally and laterally.

14. A device of the class described comprising a base having one end thereof reduced to form a handle and provided with a bottle-receiving compartment, means for retaining the bottle in said compartment, and a plurality of wedge-shaped supporting members pivotally mounted on the bottom of said base and pivotally connected to each other.

15. A device of the class described comprising a base, a strap secured to the top of the base and defining a bottle-receiving compartment, an elastic strap extending across said compartment for retaining the bottle therein, and means for tilting said base both longitudinally and laterally.

16. A device of the class described comprising a base provided with a bottle-receiving compartment one wall of which is arranged at an angle to the other, means for retaining the bottle in said compartment, and means for tilting the base both longitudinally and laterally.

17. A device of the class described comprising a base provided with a bottle-receiving compartment, and means pivotally mounted on the base for tilting the latter.

18. A device of the class described comprising a base, means carried by the base for holding a bottle, and a plurality of independently-movable supporting members pivotally mounted on the base for tilting the same both longitudinally and laterally.

808,849. METHOD OF TREATING MOLTEN MATTE. WALTER H. KOEN, Pittsburg, Pa. Filed Feb. 10, 1903. Serial No. 144,026.

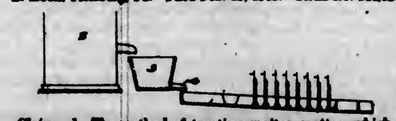

Claim.—1. The method of treating molten mattes, which consists in forcing gases into a stream of molten matte, and electrolyzing said matte; substantially as described.

2. The method of treating molten mattes, consisting in flowing a stream of molten matte between electrodes, and electrolyzing the matte and simultaneously forcing gases into the stream of matte; substantially as described.

3. The method of treating molten mattes, consisting in electrolyzing the matte by passing a stream of it between electrodes and passing an electric current therethrough, forcing gases into the stream through the electrodes, and splitting the stream to separate one metal from the other; substantially as described.

4. The method of treating molten mattes containing copper and iron, consisting in electrolyzing the matte while flowing a stream of the matte between electrodes, and simultaneously forcing gases into the flowing stream; substantially as described.

5. The method of treating molten mattes containing copper and iron, consisting in electrolyzing the matte while flowing a stream of the matte between electrodes and separating the product into portions containing the iron and the copper; substantially as described.

808,850. CHECK-LOOP. WILLIAM C. LARD, Mendota, Ill. Filed Mar. 24, 1904. Serial No. 199,897.

Claim.—A check-loop comprising a metal loop member having its ends disposed in parallel relation with each other, a leather loop member having its ends pressed tightly together and inserted between the ends of said metal loop member, and a metal strap lying close around the leather loop member and having its ends inserted between the ends of said metal loop member, the inner portions of the ends of said metal strap being serrated, so as to bite into the ends of the leather loop member and a plurality of fastening devices extending through the ends of the metal loop member, strap, and leather loop member, substantially as described.

808,851. APPLIANCE FOR CUTTING OFF AND CREASING CIGARETTES. FRANK J. LUDINGTON, Waterbury, Conn. Filed Mar. 14, 1905. Serial No. 249,877.

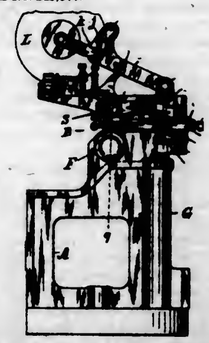

Claim.—1. In a continuous-cigarette machine, the means for dividing the cigarette-rod, consisting of a standard supporting a driving-shaft with crank-plate upon the shaft, a carriage movable longitudinally upon the standard, a cam-slide movable transversely upon the carriage and provided with a cam-groove, a crank-slide freely movable transversely upon the crank-plate and having a crank-pin fitted to the cam-slide to reciprocate the cam-slide and carriage transversely to one another, a cigarette-cutter mounted upon the carriage, means actuated by the cam-slide for moving the cutter to and from the cigarette-rod, and means fixed upon the standard for governing the transverse movement of the crank-slide.

2. In a continuous-cigarette machine, the means for dividing the cigarette-rod, consisting of a standard supporting a driving-shaft with crank-plate upon the shaft, a carriage movable longitudinally upon the standard, a cam-slide movable transversely upon the carriage, a block adjustable upon the cam-slide and provided with a cam-groove, a crank-slide freely movable transversely upon the crank-plate and having a crank-pin fitted to the cam-slide to reciprocate the cam-slide and carriage transversely to one another, a cigarette-cutter mounted upon the carriage, means actuated by the cam-slide for moving the cutter to and from the cigarette-rod, and means fixed upon the standard for governing the transverse movement of the crank-slide.

3. In a continuous-cigarette machine having a cutter-carriage reciprocated for cutting the cigarette-rod while in motion, the combination, with the carriage, of a slide movable transversely thereon, a crank-plate having a crank-slide with crank-pin fitted to such transverse slide, and a cam for governing the motion of the crank-slide and thereby controlling the velocity of the cutter-carriage at the moment of cutting.

4. In a continuous-cigarette machine having a cutter-carriage reciprocated for cutting the cigarette-rod while in motion, the combination, with the carriage, of a slide transverse to its movement, a crank-plate adjacent to such slide, a crank-slide movable transversely upon the crank-plate with crank-pin journaled to the slide and a cam-stud projected from the opposite side of the crank-slide, and a cam-ring fitted to the stud and held adjustably adjacent to the crank-plate to guide the stud and control the movement of the crank-pin.

5. In a continuous-cigarette machine, the means for dividing the cigarette-rod, consisting of a standard supporting a driving-shaft with crank-plate upon the shaft, a carriage movable longitudinally upon the standard, a cam-slide movable transversely upon the carriage and provided with a cam-groove, a cigarette-cutter mounted upon the carriage, means actuated by the cam-slide for moving the cutter to and from the cigarette-rod, a crank-slide movable transversely upon the crank-plate and having a crank-pin fitted to the cam-slide to reciprocate the slide and carriage transversely to one another, a cam-ring attached to the standard adjacent to the crank-plate, and a stud upon the crank-slide fitted to the cam-groove to control the movement of the crank-pin.

6. In a continuous-cigarette machine, the means for dividing the cigarette-rod, consisting of a standard supporting a driving-shaft, with crank-plate upon the shaft, a carriage movable longitudinally upon the standard, a cam-slide movable transversely upon the carriage and provided with a cam-groove, a cigarette-cutter mounted upon the carriage and means actuated by the cam-slide for moving the cutter to and from the cigarette-rod, a crank-slide movable transversely upon the crank-plate and having a crank-pin fitted to the cam-slide to reciprocate the slide and carriage transversely to one another, a cam-ring secured adjustably upon the standard adjacent to the crank-plate, and a stud upon the crank-slide fitted to the cam-ring to control adjustably the movement of the crank-pin.

7. In a continuous-cigarette machine, the combination, with means for forming the cigarette-rod and dividing the same into cigarettes, of crossing-dies having a channel adapted to clear the body of the cigarette with longitudinal edges adapted to cross the opposite edges of the cigarette-wrapper, and means for operating the crossing-dies.

8. In a continuous-cigarette machine, the combination, with means for forming the cigarette-rod, of a cutter for dividing the cigarette-rod, a carriage for the cutter traversed longitudinally with the cigarette-rod, a cam-slide movable transversely upon the carriage and provided with a cam-groove, a crank having pin fitted to the slide to reciprocate the slide and carriage transversely to one another, means actuated by the cam-slide for moving the cutter to and from the cigarette-rod, a guide upon the carriage to support the cigarette when divided by the cutter, a crossing-die fixed upon the carriage adjacent to such guide to receive the cigarettes successively, a crossing-die movable to and from the same and means actuated by the cam-slide for moving such crossing-die.

9. In a continuous-cigarette machine, the combination, with means for forming the cigarette-rod and dividing the same into cigarettes, of a cutter for dividing the cigarette-rod, a carriage for the cutter traversed longitudinally with the cigarette-rod, a cam-slide movable transversely upon the carriage and provided with a cam-groove, a crank having pin fitted to the slide to reciprocate the slide and carriage transversely to one another, means actuated by the cam-slide for moving the cutter to and from the cigarette-rod, a guide upon the carriage to support the cigarette when divided by the cutter, a crossing-die fixed upon the carriage adjacent to such guide to receive the cigarettes successively, a crossing-die movable to and from the same, a lever *r* pivoted upon the carriage and moved by the cam-slide to actuate such die, and an adjustable connection between such die and the lever to operate the die as desired.

10. In a continuous-cigarette machine, the combination, with means for forming the cigarette-rod, of a cutter for dividing the cigarette-rod, a carriage for the cutter traversed longitudinally with the cigarette-rod, a slide movable transversely upon the carriage and provided with a cam-groove, a crank having pin fitted to the slide to reciprocate the slide and carriage transversely to one another, a rocker-dog journaled upon the carriage with arm oscillated with the cam-groove, a cutter-frame pivoted on the carriage with a cutter having spindle journaled therein, a guide upon the carriage to support the cigarette when divided by the cutter, a crossing-die supported upon the carriage adjacent to such guide to receive the cigarette successively, a crossing-die movable to and from the same, a toe upon the rocker-dog to actuate such movable die, and an adjustable connection between such die and the toe, to adjust the movable die as desired.

11. In a continuous-cigarette machine, the combination, with the means for forming the cigarette-rod, of a cutter-carriage traversed longitudinally with the cigarette-rod, a cutter-frame pivoted upon the carriage, a cutter-spindle journaled upon the cutter-frame with rotary cutter thereon, a slide movable transversely upon the carriage and provided with a cam-groove, a crank having pin fitted to the slide to reciprocate the slide and carriage transversely to one another, a rocker-dog journaled upon the carriage with arm oscillated by the cam-groove; the toe c^3 upon the rocker-dog, and an adjustable connection between the toe and the cutter-frame to compensate for the wear and gradual reduction of the cutter.

12. In a continuous-cigarette machine, the combination, with the means for forming the cigarette-rod, of a cutter-carriage having a cigarette-guide traversed longitudinally with the cigarette-rod, the cutter-frame J journaled to the pivot H upon the carriage and pressed normally toward the cigarette-guide, a cutter-spindle journaled upon the cutter-frame with rotary cutter thereon, a cam-slide movable transversely upon the carriage and provided with a cam-groove, a crank having a pin fitted to the cam-slide to reciprocate the cam-slide and carriage transversely to one another, a rocker-dog journaled upon the carriage with arm oscillated by the cam-groove, the toe c^3 upon the rocker-dog, and the arm I′ hinged upon the pivot H and having roll I² to contact with the toe c^3 and connected adjustably with the cutter-frame, as and for the purpose set forth.

13. In a continuous-cigarette machine, the combination, with means for forming and propelling the cigarette-rod, of a cutter for dividing the cigarette-rod, a carriage for the cutter, the guide M provided with ledger-plate tube N adjacent to the path of the cutter, the ledger-plate tube having in the bottom the slot *n* to discharge any chips received with the cut cigarettes, and dies arranged adjacent to the ledger-plate tube to crease the cigarettes received therefrom, the guide M, the ledger-plate tube N and the dies being supported by the cutter-carriage and reciprocated therewith, substantially as herein described.

14. In a continuous-cigarette machine, the combination, with a suitable standard, of a cutter-carriage having a cigarette-guide traversed longitudinally with the cigarette-rod, a cutter mounted upon the carriage, means for reciprocating the carriage upon the standard and for actuating the cutter, a double-ended plunger movable with the carriage, and the air-chambers F arranged upon the standard to continuously engage the ends of the plunger and regulate the movements of the carriage throughout its entire stroke, substantially as herein set forth.

15. In a continuous-cigarette machine, the combination, with a suitable standard, of a cutter-carriage having a cigarette-guide traversed longitudinally with the cigarette-rod, a cutter mounted upon the carriage, means for reciprocating the carriage upon the standard and for actuating the cutter, the carriage having the ears D projected toward the top of the standard and provided with the double-ended plunger E, and the standard having the lugs F′ projected toward the carriage and provided with the air-chambers F in continuous engagement with the ends of the plunger E, to regulate the movements of the carriage throughout its entire stroke.

16. In a continuous-cigarette machine, the combination, with a suitable standard, of a cutter-carriage having a cigarette-guide traversed longitudinally with the cigarette-rod, a cutter mounted upon the carriage, means for reciprocating the carriage upon the standard and for actuating the cutter, the carriage having the ears D projected toward the top of the standard and provided with the double-ended plunger E having recesses *e* in the ends, and the standard having the lugs F′ projected toward the carriage and provided with the air-chambers F in continuous engagement with the ends of the plunger E, to regulate the movements of the carriage throughout its entire stroke.

17. In a continuous-cigarette machine the means for dividing the cigarette-rod and crossing the wrapper, consisting of a carriage, a cutter supported movably upon the carriage, crossing-dies supported upon the carriage in the path of the cigarette, a slide fitted transversely upon the carriage with adjustable connections to the cutter and to the movable crossing-die, a crank-plate having crank-slide fitted transversely thereon with a crank-pin engaging the transverse slide upon the carriage, and means for adjusting the movement of the crank-pin, whereby the operation of the crank-pin, the cutter and the crossing-die may all be adjusted in relation to one another.

808,852. **TROLLEY DEVICE.** FRANK J. LINDOLPH, Rochester, N. Y. Filed July 15, 1905. Serial No. 270,217.

Claim.—1. A trolley device comprising, in combination with the pole, a harp in two separable parts or sections for holding the wheel, the two parts of the harp having mutually-interlocking elements between the wheel-bearing and the outer end of the harp for preventing their separation.

2. A trolley device comprising, in combination with the pole, a harp in two separable parts or members for holding the wheel, the two parts of the harp being divided along the axis of the wheel and having mutually-interlocking elements between the wheel-bearing and the outer end of the harp, and means for holding the two parts together.

3. A trolley device comprising a divided harp for holding the wheel, with half the axle bearing of the wheel in each part of the harp, one part of the harp having cavities and the other part having spurs to enter said cavities, and means for holding the parts of the harp together to act as a single piece, said cavities and spurs being disposed between the wheel-bearing and the outer end of the harp.

4. A trolley device comprising a two-part harp with wheel, each part having both an opening and a projecting portion, said opening and projecting part being between the wheel-bearing and the outer end of the harp, the projecting portion of each part of the harp occupying the opening in the other, and means for holding said parts of the harp together.

5. A trolley device comprising a bifurcated harp in two separable parts divided through the axle of the wheel, the axle of the wheel having a bearing in the branches of the harp on either side of the wheel, one of said parts of the harp having cavities adjacent to the axle, between the wheel-bearing and the outer end of the harp, and movable bearing-blocks for the axle in said cavities.

6. A trolley device comprising a bifurcated harp in two separable parts divided through the axle of the wheel, and having mutually-interlocking elements between the wheel-bearing and the outer end of the harp, the axle of the wheel having a bearing in the branches of the harp on either side of the wheel, one of said parts of the harp having removable bearing-blocks, and the other part having cavities adjacent to the axle for holding an absorbent.

808,853. **BOILER-SETTING AND BLOCKS THEREFOR.** HENRY S. HARRIS, Reading, England. Filed Aug. 10, 1904. Serial No. 220,220.

Claim.—1. A removable covering or seating for steam-boilers, capable of removal without necessitating interference with the adjacent structure, comprising series of blocks having means for effecting temporary joints between their adjacent edges and recesses in some of the blocks for the reception of a key, substantially as and for the purpose hereinbefore described.

2. A removable covering or seating for steam-boilers, capable of removal without necessitating interference with the adjacent structure, comprising series of blocks having rabbeted adjacent edges and recesses in some of the blocks for a key, substantially as and for the purpose hereinbefore described.

3. A removable covering for steam-boilers, capable of removal without necessitating interference with the adjacent structure comprising series of blocks *b* having rabbeted adjacent edges *i* with lips *j*, and key-recesses *f*, substantially as and for the purpose described.

808,854. **AMMUNITION-PACKAGE.** WILHELM HAYER, Rotthausen, near Essen-on-the-Ruhr, Germany, assignor to Fried. Krupp, Aktiengesellschaft, Essen-on-the-Ruhr, Germany. Filed Feb. 20, 1905. Serial No. 246,052.

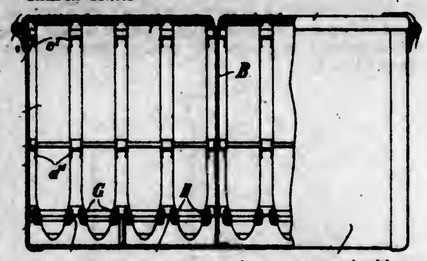

Claim.—1. An ammunition-package constructed with a seat and having an elastic cushion in said seat conforming to the projectile to be inserted therein.

2. An ammunition-package comprising a suitable receptacle, bearings in said receptacle into which cartridges are introduced, seats in said receptacle, receiving the projectiles of said cartridges, and cushions in said seats.

3. An ammunition-package comprising a suitable receptacle, bearings in said receptacle into which cartridges are introduced, seats in said receptacle, receiving the projectiles of said cartridges, and cushions in said seats; said cushions being provided with metallic linings conforming to the portion of the projectile resting therein.

4. An ammunition-package comprising a suitable receptacle, bearings in said receptacle into which cartridges are introduced, seats in said receptacle, receiving the projectiles of said cartridges, and cushions in said seats; said cushions being formed to engage beneath portions of the seats to retain the cushions in position.

5. An ammunition-package comprising a suitable receptacle, bearings in said receptacle into which cartridges are introduced, seats in said receptacle, receiving the projectiles of said cartridges, and cushions in said seats; said cushions being provided with metallic linings conforming to the portion of the projectile resting therein and said cushions and linings being secured in relative position by concave and convex faces.

6. An ammunition-package comprising a suitable receptacle, bearings in said receptacle into which cartridges are introduced, seats in said receptacle, receiving the projectiles of said cartridges, and cushions in said seats; said cushions being provided with metallic linings conforming to the portion of the projectile resting therein and said linings being provided with collars overlapping the cushions.

7. In a package for ammunition, the combination with the receptacle; of a partition having seats pressed therein to receive the projectiles of the ammunition, and elastic gaskets fitted in said seats to cushion the projectiles, and formed with shoulders engaging beneath the lower edges of the seats to retain the gaskets in place.

8. In an ammunition-package, the combination of a receptacle, partitions therein formed respectively with bearings, through which the cartridges are inserted and seats in which the projectiles are supported; said seats being provided with cushions.

9. In an ammunition-package, the combination of a receptacle, upper, lower and intermediate partitions therein, bearings formed in the upper and intermediate partitions, through which cartridges are introduced, and cushioned seats formed in the lower partition, to receive the ends of the projectiles; the intermediate partition being located below the upper ends of the projectiles, to sustain said projectiles laterally.

10. An elastic non-metallic cushion for ammunition-packages constructed to receive the end of the projectile, and having a metallic lining conforming to a face of a projectile.

11. An elastic cushion for ammunition-packages constructed to receive the end of a projectile and having compressible means adapted to expand after compression and to engage a seat in an ammunition-package to hold it in place within a package.

12. An elastic cushion for ammunition-packages constructed to receive the end of a projectile and having an annular shoulder

adapted to be compressed and to expand after compression to hold it within a seat in an ammunition-package.

13. An elastic cushion for ammunition-packages comprising a gasket constructed to receive the end of a projectile, having means for holding it within a seat in the package, and a metallic lining for the gasket, having a face conforming to an inclined face on a projectile, the lining being concave on one face and the gasket being convex on one of its faces to hold the two parts together.

808,855. **TILTING AMMUNITION-WAGON.** WILHELM MAYER, Essen-on-the-Ruhr-Rüttenscheid, Germany, assignor to Fried. Krupp Aktiengesellschaft, Essen-on-the-Ruhr, Germany. Filed May 8, 1905. Serial No. 259,481.

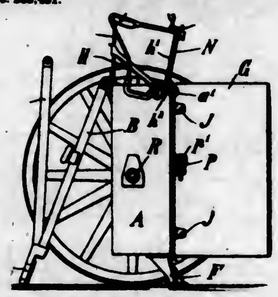

Claim.—1. In an ammunition-wagon, the combination with the tilting box movable to a vertical position, and having hinged doors, of a seat swingingly mounted on the front end of the box and adapted to rest on the upper ends of the doors to protect the serving crew against steep-falling projectiles.

2. In an ammunition-wagon, the combination with the box having a door, of a seat swingingly mounted on the front end of the box and adapted to rest upon the door, and means for securing the door and the seat to one another.

3. In an ammunition-wagon, the combination with the tilting box movable to a vertical position, of a seat normally resting upon the box and swingingly mounted on the front end of the same to be thrown upwardly when the box is in a vertical position to enlarge the protected space behind the wagon.

4. In an ammunition-wagon, the combination of a tilting box having a door, of a seat normally resting on said door to close the same and capable of being swung relatively to the box to permit of the door being opened.

808,856. **FERTILIZER AND SEED DISTRIBUTER.** HENRY C. HELTON, Wharnboro, Tex., assignor of four-ninths to James F. Turner, Wharnboro, Tex., and three-ninths to Robert S. Bass, Greenville, Tex. Filed May 24, 1905. Serial No. 261,300.

Claim.—1. In a fertilizer and seed distributer, a funnel-shaped casing having a cylindrical exit-tube, in combination with a plunger comprising a rod having a conical piston.

2. In a fertilizer and seed distributer, a funnel-shaped casing having a cylindrical exit-tube, in combination with a plunger comprising a rod having a piston and provided with a spirally-disposed flange adjacent to said piston.

3. In a fertilizer and seed distributer, a funnel-shaped casing having an exit-tube and a plunger comprising a rod, a conical piston at the end of said rod, and a spiral flange upon said rod adjacent to the piston.

4. In a device of the class described, a funnel-shaped casing having an exit-tube and a plunger comprising a rod having a conical piston, a wire wound upon said rod adjacent to the piston and constituting a spiral flange, and transversely-disposed agitating members.

5. In a device of the class described, a conical casing having a cylindrical discharge-tube, a supporting-bail and a handle; in combination with a plunger comprising a rod having a conical piston provided with a covering of flexible material, a spiral flange adjacent to said piston, and transverse agitating members.

808,857. **PUMP.** ARTHUR K. MILLER, Peekskill, N. Y. Filed Apr. 14, 1903. Serial No. 152,552.

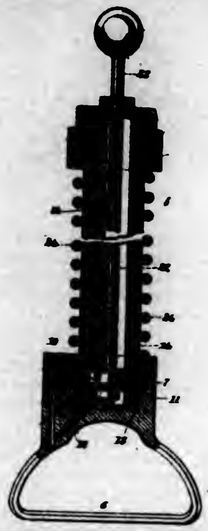

Claim.—1. A pump comprising a casing open at its ends, a piston and rod, a support for said casing having a socket therein and adapted for securement to the lower end of said casing, and having an annular recess at its upper edge, a cap adapted for securement to the upper end of said casing having an annular recess at its lower edge, and a volute spring disposed about said casing and having its ends bearing against and confined by the recesses in said cap and socket, substantially as specified.

2. A pump comprising a casing open at its ends, a piston and rod, a support for said casing having a socket therein and adapted for securement to said casing; a shoulder in said socket above the lower end of said casing, a cap adapted for securement to the upper end of said casing, a shoulder in said socket below the upper edge of said casing, and a volute spring disposed about said cylinder and having its ends confined within the sockets of said support and cap and bearing against the shoulders therein, substantially as specified.

3. A pump comprising a casing open at its ends, screw-threads upon said casing at its ends, a piston and rod, a support for said casing having a socket therein consisting of a screw-threaded portion adapted to engage the threaded end of said casing, and a larger unthreaded portion adjoining the same, an annular packing in the base of said socket, a cap having a socket in its under side consisting of a screw-threaded portion adapted to engage the threaded upper end of said casing, and an unthreaded larger portion adjoining the same, and a volute spring disposed about said casing, having its ends disposed within the larger opposing portions of the sockets in the cap and support, and bearing upon the shoulders therein, substantially as specified.

4. A pump comprising a casing open at its ends, screw-threads upon the outer surface of said casing at the ends thereof, a piston and rod, a support for said casing having a socket therein comprising a screw-threaded portion adapted to engage the screw-threads at the lower end of the casing, a larger portion adjoining said screw-threaded portion, and a shoulder intermediate said socket portions, an annular packing disposed in the base of the threaded portion of said socket, a cap having a socket in its under side comprising a screw-threaded portion adapted to engage the threaded upper end of the casing, and a larger portion adjoining said threaded portion, a shoulder provided intermediate said socket portions, and a volute spring disposed under compression about said cylinder and having its ends confined by said enlarged socket portions of said cap and support and bearing against the shoulders thereon, substantially as specified.

5. A pump comprising a casing open at its ends, screw-threads upon the outer surface of said casing at its ends an outlet-port for said casing, a piston and rod, a support for said casing having a socket therein comprising a threaded portion of substantially the diameter of the casing, adapted to engage the threaded house end thereof, and a smooth portion of greater diameter than said casing adjoining said threaded portion, an annular packing disposed in the base of the threaded portion, a cap having a socket therein comprising a threaded portion of substantially the diameter of the casing, adapted to engage the screw-threaded upper end thereof, and a smooth portion of greater diameter than said casing adjoining said threaded portion, and a volute spring disposed about said casing having its ends confined by the sockets in said support and cap, and bearing against the portion intermediate the smooth and threaded portions thereof, substantially as specified.

808,858. **CONVEYER.** THOMAS S. MILLER, South Orange, and JAMES H. DOUGHERTY, Montclair, N. J. Filed Feb. 20, 1904. Serial No. 194,726.

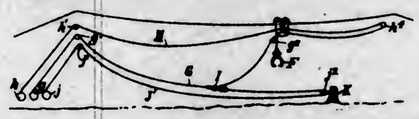

Claim.—1. In a conveying device, in combination, a load-pulling rope, a carriage, carriage-traversing means, a stationary anchorage, an outhaul-rope actuator and an outhaul-rope extension from said actuator to said anchorage and thence to a point of attachment with the load-pulling rope back of said carriage.

2. In a conveying device, in combination, a load-pulling rope, a carriage, carriage-traversing means, a clamp for detachably securing said load-pulling rope back of the carriage, and an outhaul-rope extending from said clamp downwardly and an outhaul-rope actuator.

3. In a conveying device, in combination, a load-pulling rope, a carriage, carriage-traversing means, an outhaul-rope extending from a point of said load-pulling rope back of the carriage downwardly and an outhaul-rope actuator.

4. In a conveying device, in combination, a load-pulling rope, a carriage, carriage-traversing means, an outhaul-rope, a clamp detachably securing said outhaul-rope to said load-pulling rope back of the carriage, a sheave supported independently of the carriage over which said outhaul-rope extends and an outhaul-rope actuator.

808,859. **HYDRANT.** VIRGIL H. MILLS, Hubbard, Tex. Filed Dec. 14, 1904. Serial No. 236,838.

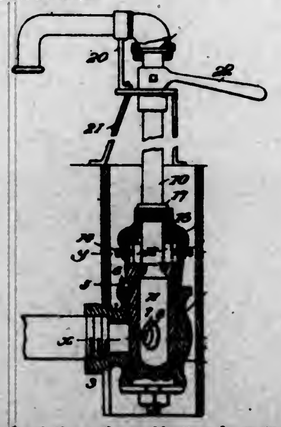

Claim.—1. In a hydrant, the combination of a waste-cock having a turn-plug provided with a recess in its upper end in communication with the interior of said plug, a pipe having its lower end inserted in said recess, clamp-blocks at opposite sides of the recess, set-screws threaded to the plug and adapted to force the clamp-blocks in engagement with the pipe to grip the latter, and a fitting for securing a tight joint between the pipe and plug.

2. In a hydrant, the combination of a waste-cock provided with a turn-plug having a recess in its upper end provided with guides at opposite points, clamp-blocks held in place by said guides, set-screws for forcing the clamp-blocks inward, a pipe having its lower end inserted in said recess and held fast by the clamp-blocks, and means for maintaining a tight joint between said pipe and plug, substantially as set forth.

808,860. **GRAB-HOOK.** FREDERICK J. MORRISON, Emporium, Pa. Filed Apr. 20, 1905. Serial No. 256,290.

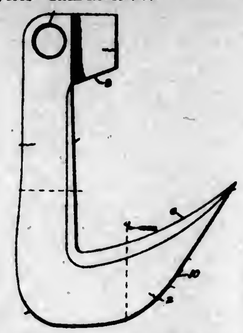

Claim.—1. A grab-hook comprising a shank having an eye in one end and a bill at the opposite end, the outer end of the bill being formed into a chisel-point from which the bill decreases in width and then increases in width until it merges into the shank.

2. A grab-hook comprising a shank having an eye in one end and a bill at the other end thereof, the inner edge of the bill being beveled to form a longitudinal cutting edge.

3. A grab-hook comprising a shank having an eye at one end and a bill at the other end, the outer end of the bill terminating in a chisel-point from which the bill decreases in width and then increases in width until it merges into the shank, the inner edge of the bill being beveled to form a longitudinal cutting edge terminating at the point where the end of the bill is flattened to form the chisel-point.

4. A grab-hook comprising a shank having an eye at one end and a bill at the other end thereof, the inner edge of the bill and the front edge of the shank being beveled to form cutting edges extending one into the other.

5. A grab-hook comprising a shank provided at one end with an eye and a tapered blade projecting forwardly of the front edge of the shank in alinement with the eye, the opposite end of the shank being provided with a bill with the heel portion between the bill and the shank laterally enlarged, the outer end of the bill terminating in a chisel-point from which it decreases in width and then increases in width until it merges into the shank, the front edge of the shank and the inner edge of the bill being beveled to form longitudinal cutting edges extending one into the other and the bill being beveled outwardly to form an outer cutting edge, the inner and outer cutting edges of the bill terminating at the point where the extremity of the bill is flattened to form the chisel-point.

808,861. **FRUIT-SQUEEZER.** DENNIS H. MOUTRAIE, Chicago, Ill., assignor to Moutrie Manufacturing Company, Chicago, Ill., a Corporation of Illinois. Filed July 25, 1905. Serial No. 271,171.

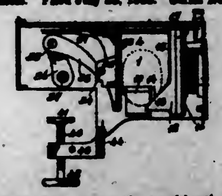

Claim.—1. In a fruit-squeezer, the combination of a casing, a squeezer-plate within the casing, a resilient mounting for the squeezer-plate, a presser-plate in parallel relation to the squeezer-plate and relatively movable with respect thereto, and means for moving the presser-plate, substantially as described.

2. In a fruit-squeezer, the combination of a casing, a squeezer-plate, a knife secured to the squeezer-plate and terminating in a forwardly-projecting sloping toe having a dull edge, a presser-plate provided in its front face with a slot adapted to register with the knife, and means for moving the presser-plate with respect to the squeezer-plate, substantially as described.

3. In a fruit-squeezer, the combination of a casing, two plates within the casing, one of the plates being movable with respect to the other, a knife secured to the face of one of the plates and provided at its lower end with an inwardly-projecting beveled toe having a dull edge, said knife being adapted to register with a slot in the face of the other plate, and means for moving one of the plates relatively with respect to the other, substantially as described.

4. In a fruit-squeezer, the combination of a casing, a squeezer-plate slidably mounted within the casing, vertically-extending flanges adapted to bear against the acting face of the squeezer-plate, blocks of resilient material bearing against the rear face of the squeezer-plate, a presser-plate slidably mounted with respect to the squeezer-plate, a link pivoted to the presser-plate, an arm to which the link is pivoted, a shaft to which the arm is secured, and a handle for moving the shaft, substantially as described.

5. In a fruit-squeezer, the combination of a casing, a squeezer-plate slidably mounted within the casing, vertically-extending flanges adapted to bear against the acting face of the squeezer-plate, blocks of resilient material bearing against the rear face of the squeezer-plate, a presser-plate slidably mounted with respect to the squeezer-plate, a link pivoted to the presser-plate, an arm to which the link is pivoted, a shaft to which the arm is secured, a handle for moving the shaft, and a knife on the squeezer-plate terminating in a forwardly-projecting beveled toe provided with a dull edge and adapted to register with a slot in the face of the presser-plate, substantially as described.

6. In a fruit-squeezer, the combination of a casing provided along its side walls with longitudinally-extending flanges, a cover for the casing adapted in combination with the flanges to form channels or guideways, a presser-plate provided with side flanges adapted to enter the channels or guideways, said presser-plate being provided in its front face with a slot having the adjacent walls of the plate inwardly beveled to the slot, means for reciprocating the presser-plate, a squeezer-plate, a knife secured to the squeezer-plate and provided with a forwardly-extending beveled toe having a dull edge and adapted to register with the slot in the presser-plate, substantially as described.

7. In a fruit-squeezer, the combination of a casing provided along its side walls with longitudinally-extending flanges, a cover for the casing adapted in combination with the flanges to form channels or guideways, a presser-plate provided with side flanges adapted to enter the channels or guideways, said presser-plate being provided in its front face with a slot having the adjacent walls of the plate inwardly beveled to the slot, means for reciprocating the presser-plate, a squeezer-plate, a knife secured to the squeezer-plate and provided with a forwardly-extending beveled toe having a dull edge and adapted to register with the slot in the presser-plate, and downwardly-converging plates or rests secured to the side walls of the casing and adapted in combination with the toe of the knife to form a support for the fruit prior to the cutting operation, substantially as described.

8. In a fruit-squeezer, the combination of a casing, a squeezer-plate within the casing, a cutter-plate relatively movable with respect thereto, a sloping trough below the plates, and a squeezer-plate within the trough provided with a series of transversely-extending slots, each slot having at its upper edge a downwardly-turned flange for directing the juice through the slots, substantially as described.

808,862. SPIRIT-LEVEL. JOHN A. MCCABE, Atlanta, Ga., assignor of one-half to LOUIS J. GUNSTE, Decatur, Ga. Filed Apr. 8, 1905. Serial No. 254,877.

Claim.—1. A leveling and plumbing instrument consisting of a bar having a chamber therein, a bevel pivoted within said chamber, a shaft extending transversely through said chamber and through the bar, a cam on the shaft below the level, and a pointer on said shaft outside the bar, the latter having a graduated scale adjacent to the pointer, substantially as described.

2. The combination of the chambered bar, a level pivoted therein, a shaft extending through the bar and provided with a cam on which the level rests, with a pointer, and with a shoulder opposite the inner wall of the chamber, and a nut on the shaft whereby said shoulder may be brought into frictional contact with the said wall, substantially as described.

808,863. UMBRELLA. REUBEN G. MCGUIRE, Chicago, Ill. Filed Mar. 11, 1905. Serial No. 249,647.

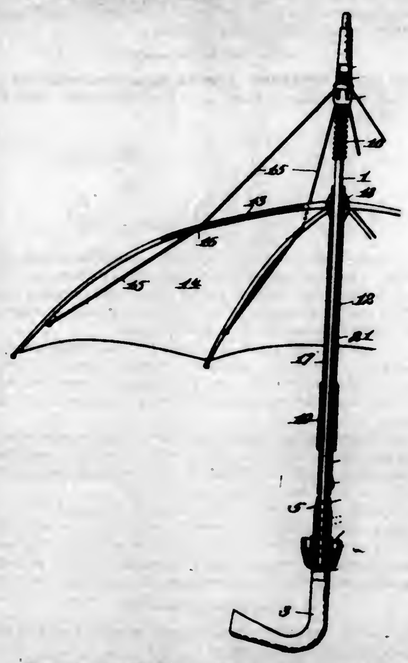

Claim.—1. An umbrella comprising a stick, a support fixed to one end thereof, a slidable sleeve mounted upon said stick, ribs connected to one end of said sleeve, flexible braces connected to the ribs and to the said support, said ribs adapted to be spread when the sleeve is moved toward the handle end of the stick, and a spring mounted upon said stick and interposed between said support and that end of the sleeve to which the ribs are connected.

2. An umbrella comprising a stick, a support fixed to one end thereof, a slidable sleeve mounted upon said stick, ribs connected to one end of said sleeve, flexible braces connected to the ribs and to the said support, said ribs adapted to be spread when the sleeve is moved toward the handle end of the stick, a spring mounted upon said stick and interposed between said support and that end of the sleeve to which the ribs are connected, and a latch carried by the stick near the handle end thereof and adapted to project through the sleeve for retaining the umbrella in an extended position.

3. An umbrella comprising a stick, a support fixed to one end thereof, a slidable sleeve mounted upon the stick and when moved toward the other end thereof adapted to open the umbrella, ribs connected to one end of said sleeve, flexible braces having one end connected to the ribs at a point intermediate the ends thereof and the other end connected to said support, and a spring interposed between said support and that end of the sleeve to which the ribs are connected.

4. An umbrella comprising a stick, a support fixed to one end thereof, a slidable sleeve mounted upon the stick and when moved toward the other end thereof adapted to open the umbrella, ribs connected to one end of said sleeve, flexible braces having one end connected to the ribs at a point intermediate the ends thereof and the other end connected to said support, a spring interposed between said support and that end of the sleeve to which the ribs are connected, and a latch carried by the stick and adapted to project through the sleeve for retaining the umbrella in an extended position.

5. An umbrella comprising a stick provided at one end with a ferrule and at its other end with a handle, an elongated sleeve mounted upon said stick and movable toward the handle end of the stick for opening the umbrella, a latch carried by the stick near the handle end thereof and adapted to project through the sleeve for retaining the umbrella in an extended position, a support fixed to said stick in close proximity to the ferrule, ribs pivotally connected to one end of the sleeve, and braces having one end connected to said support and the other end secured to the ribs at a point intermediate the ends thereof.

808,864. PAPER-FILE. LUTHER B. MCLAUGHLIN, Prisoberg, Pa. Filed Apr. 20, 1905. Serial No. 256,577.

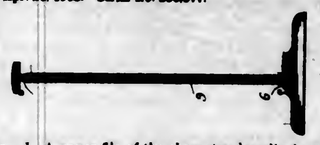

Claim.—1. A paper-file of the character described, comprising a bore having formed therein a vertically and an obliquely disposed aperture, and a filing element adapted to be removably engaged with one or the other of the apertures in said base, substantially as described.

2. A paper-file of the character described, comprising a base having formed therein vertically and obliquely disposed apertures, a filing-tube adapted to be engaged with one or the other of the apertures in said base, and a holding-pin adapted to be removably inserted in and engaged with said filing-tube, substantially as described.

3. A paper-file of the character described, comprising a base having formed therein vertically and obliquely disposed threaded apertures, a filing-tube having exterior screw-threads formed on one end thereof to engage the threads in one or the other of the apertures in said base, interior screw-threads formed in the opposite end of said tube, a holding-pin adapted to be inserted in said tube, threads formed on said pin to engage the interior threads in the end of said filing-tube and a head formed on the outer end of said pin, substantially as described.

808,865. SALES-CHECK BOOK. ARCHIBALD L. MCLEESE, Glenco, Ill. Filed Apr. 17, 1905. Serial No. 256,057.

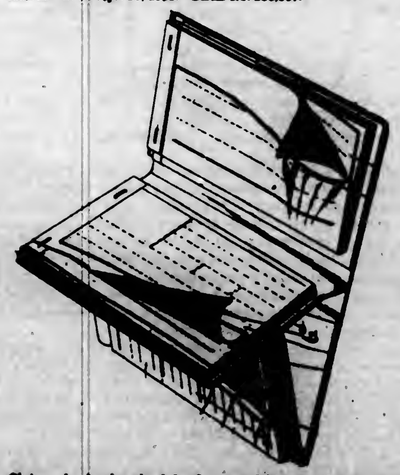

Claim.—1. A sales-check book, comprising a section or support having a second section flexibly connected to one edge thereof and having two other sections each flexibly connected with the first section at the opposite edge thereof, three of said sections being provided with blank-retaining means, and pads of blanks detachably secured to said sections.

2. A sales-check book, comprising a leaf or section provided with a marginal flange extending in a plane substantially perpendicular to the face of said leaf, a second leaf flexibly connected with one edge of said first leaf and provided with means for retaining a pad of blanks, and two other sections or leaves flexibly connected with another edge of said first-named leaf, said two other sections being provided respectively with means for retaining pads of blanks.

3. A sales-check book, comprising a support having a second support connected with one edge thereof, said second support being provided with means for removably retaining a pad of blanks, two other supports, each connected with the opposite edge of said first-named support and provided, respectively, with means for removably retaining pads of blanks.

4. A sales-check book, comprising a leaf or support having another leaf or support connected with one margin thereof and having two other leaves or supports connected with another margin thereof, said two last-named leaves being connected with each other at their respective edges, which are adjacent to one edge of said first-named leaf, and each having means for removably holding a pad of blanks.

5. A sales-check book, comprising a section provided with a marginal flange extending in a plane substantially perpendicular to the face of said section, a second section flexibly connected with one edge of said first section and also provided with a marginal flange and with means for receiving and holding a pad of blanks, two other sections flexibly connected with another edge of said first-named section, both of said last-named sections being provided with means for retaining pads of blanks and with marginal flanges extending in a plane substantially perpendicular to the faces of said sections.

6. A sales-check book, comprising a series of sections, provided with marginal flanges extending in a plane substantially perpendicular to the faces of said sections, one of said sections being provided with means for retaining a pad of blanks, a pad of blanks detachably secured thereto, said pad comprising a series of sheets in triplicate and having secured thereto a carbon-sheet, two additional sections secured to the first-named sections and provided with means for retaining pads of blanks, pads of blanks in triplicate, of different colors, attached to said sections, and sheets of carbon-paper detachably secured to both of said sections.

7. A sales-check book, comprising a support or section provided at one edge with a flange extending perpendicularly to the face thereof, a second section flexibly secured to said first section at another edge thereof and provided with means for retaining a pad of blanks with its bound edge in a position adjacent to said flange when said sections are folded together.

8. A sales-check book, comprising a section or support having a second section flexibly connected to one edge thereof and having two other sections each flexibly connected with the first section at another edge thereof one of said sections having means for removably holding a pad of blanks.

9. In a sales-check book or the like, the combination of a pair of covers hingingly secured together at adjacent edges, a pad of blanks removably secured to the inner side of one of the covers, a leaf hinged to the free edge of the other cover, a pad of blanks removably secured to said leaf, a leaf hinged to said covers along a line between their adjacent edges, and a pad of blanks removably secured to said last-named leaf.

10. In a sales-check book or the like, the combination of a pair of covers hingingly secured together at adjacent edges, one of said covers having means for removably holding a pad of blanks, a leaf hinged to the other cover, said leaf having means for removably holding a pad of blanks, and a leaf secured between said covers along a line between their adjacent edges and having means for removably holding a pad of blanks.

808,866. METALLIC BEDSTEAD. PETER P. OSBAUER, Buffalo, N. Y. Filed Aug. 15, 1905. Serial No. 274,966.

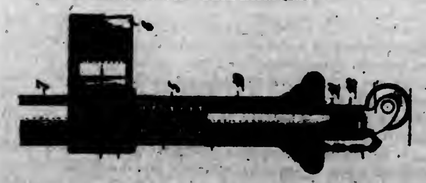

Claim.—1. A bedstead comprising hollow corner-posts and side rails rigidly connected and each corner-post provided with an internal abutment, slidable sleeves fitting into said posts and internally threaded at their outer ends, castors having threaded shanks fitting

into the threaded ends of said sleeves, and springs interposed between the abutments and the inner ends of said sleeves.

2. A bedstead comprising hollow corner-posts and side rails rigidly connected and each corner-post provided with an internal abutment, slidable sleeves fitting into said posts and internally threaded at their outer ends, casters having threaded shanks fitting into the threaded ends of said sleeves, springs interposed between the abutments and the inner ends of said sleeves, and means to prevent unintentional dislodgment of said sleeves and springs from the corner-posts when lifting the bedstead.

3. A bedstead comprising hollow corner-posts and side rails rigidly connected and each corner-post provided with an internal abutment, slidable sleeves fitting into said posts and internally threaded at their outer ends, casters having threaded shanks fitting into the threaded ends of said sleeves, springs interposed between the abutments and the inner ends of said sleeves, and a chain connecting each corner-post with its corresponding caster.

808,867. BADGE. DUDE W. PERRY, Keene, N. H. Filed May 26, 1905. Serial No. 262,176.

Claim.—An article of manufacture, consisting of a badge having a shank member provided with a threaded stud and projection; a cover-plate having an inwardly-projecting central portion internally threaded; a projecting rim on said central projecting portion; an annular inwardly-projecting rim on said cover-plate; an inscription-disk formed to fit within the annular rim of the cover-plate; and a spring member formed to spring over the rib of the projecting central portion of the cover-plate to retain the inscription-plate in place.

808,868. TELEPHONE SIGNALING APPARATUS. KARL H. POTAS, Los Angeles, Cal. Filed July 24, 1905. Serial No. 270,960.

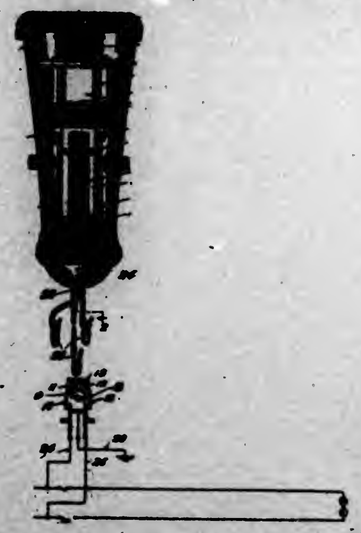

Claim.—1. In a telephonic receiving instrument of the character herein described, a base of insulating material in said instrument, two normally closed manually-operated make-and-break switches mounted on said base and forming a part of the instrument-circuit, one switch in each branch thereof, a ground-plate secured to said base at a point to be engaged by said switches when the same are moved to open the circuit and a connection from said plate to ground.

2. In a telephonic receiving instrument of the character herein described, a base of insulating material in said instrument, two normally closed manually-operated make-and-break spring-switches mounted on said base and forming a part of the instrument-circuit, one switch in each branch thereof, a ground-plate secured to said base as a gasket to be engaged by said switches when the same are moved to open the circuit and a connection from said plate to ground.

808,869. FARM-GATE. CHARLES R. PERRY, Des Moines, Iowa. Filed May 12, 1905. Serial No. 260,666.

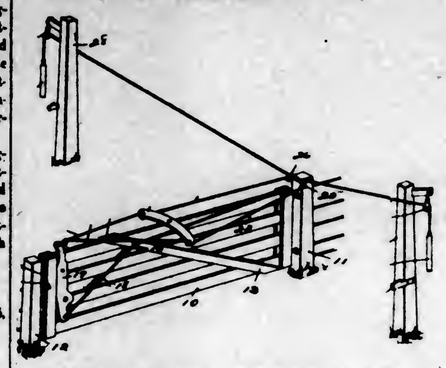

Claim.—In a farm-gate, a gate hinged to a fixed post, a latch carried by the gate, a lever pivoted to the gate and to the latch, a cable secured to the lower end of said lever and to the top of the gate near its hinged end, and held out of a straight line by a support intermediate of its ends, a second lever pivoted transversely on the top of the gate, ropes connecting its ends with the latch-operating lever, ropes fixed to its ends and extended through direction-pulleys to a point along the roadway a considerable distance from the gate, a post having a striker to hold the gate in a closed position and posts having strikers to hold the gate in open positions.

808,870. SELF-LOADING SCRAPER. HERSCHEL F. PURDUM, Sac City, Iowa. Filed May 6, 1905. Serial No. 259,645.

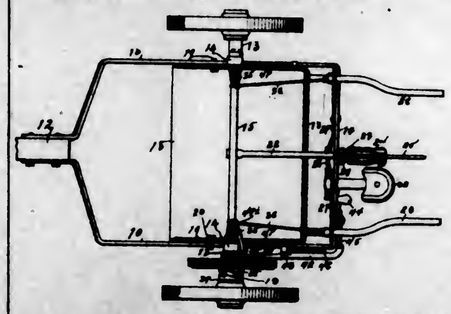

Claim.—1. In a wheel-scraper, a carriage-frame having bridles in its parallel sides and a scraper having trunnions extended through said bridles to traverse them and means to adjust the scraper relative to the carriage-frame, for the purposes stated.

2. In a wheel-scraper, an oblong carriage-frame, stub-axles fixed to the parallel sides of the frame, a scraper adjustably connected with the sides of the frame, uprights pivotally connected with the stub-axles and a rotatable shaft mounted in the top portions of the uprights and means to move the uprights and rotatable shaft forward to elevate and dump the scraper.

3. In a wheel-scraper, an oblong carriage-frame, stub-axles connected to the parallel sides of the frame, uprights pivotally connected with the stub-axles and a rotatable shaft mounted in the top portions of the uprights, tapering enlargements on the end of the shaft, a scraper having handles fixed to its rear end, ropes fixed to the handles and to the enlargements on the end of the shaft.

4. In a wheel-scraper, an oblong carriage-frame, stub-axles connected to the parallel sides of the frame, uprights pivotally connected with the stub-axles and a rotatable shaft mounted in the top portions of the uprights, tapering enlargements spirally grooved, ropes fixed to the small end of the grooved enlargements and to the double elbow-shaped handles fixed to the rear of the scraper.

5. In a wheel-scraper, an oblong carriage-frame, stub-axles connected to the parallel sides of the frame, uprights pivotally connected with the stub-axles and a rotatable shaft mounted in the top portions of the uprights, traction-wheels on the stub-axles, a clutch

member on the end of one of the hubs a mating movable clutch member on the same axle and means to operate the movable clutch member.

6. In a wheel-scraper, an oblong carriage-frame, stub-axles connected to the parallel sides of the frame, uprights pivotally connected with the stub-axles and a rotatable shaft mounted in the top portions of the uprights, traction-wheels on the stub-axles, a clutch member on the end of one of the hubs, a mating movable clutch member on the same axle, a lever fulcrumed to the carriage-frame to engage the movable clutch, a leaf-spring fixed to the side of the carriage-frame to normally retain the clutches in engagement and a treadle fixed to the rear end of the frame and connected with the lever for separating the clutch members to operate the movable clutch member.

7. In a wheel-scraper, an oblong carriage-frame, stub-axles connected to the parallel sides of the frame, uprights pivotally connected with the stub-axles and a rotatable shaft mounted in the top portions of the uprights, traction-wheels on the stub-axles, a clutch member on the end of one of the hubs a mating movable clutch member on the same axle, a lever fulcrumed to the carriage-frame to engage the movable clutch, a leaf-spring fixed to the side of the carriage-frame to normally retain the clutches in engagement and a treadle fixed to the rear end of the frame and connected with the lever for separating the clutch members to operate the movable clutch member, a spring-actuated rock-shaft in bearings fixed to one of the uprights, an arm at its lower end to lock the movable clutch and an arm at its upper end to contact with the rotatable shaft in the top of the uprights to retain the rock-shaft stationary and the spring on the shaft inoperative.

8. In a wheel-scraper, an oblong carriage-frame, stub-axles connected to the parallel sides of the frame, uprights pivotally connected with the stub-axles and a rotatable shaft mounted in the top portions of the uprights, traction-wheels on the stub-axles, a clutch member on the end of one of the hubs, a mating movable clutch member on the same axle and means to operate the movable clutch member, a cross-bar fixed to uprights pivoted to the stub-axles, a bar fixed to the center of the cross-bar and a lever-bearer connected with the end of it, a lever pivoted to the lever-bearer and fulcrumed to the top of the upright at the rear and center of the carriage-frame and a scraper adjustably connected with the parallel sides of the carriage-frame.

9. In a wheel-scraper, an oblong carriage-frame, stub-axles connected to the parallel sides of the frame, uprights pivotally connected with the stub-axles and a rotatable shaft mounted in the top portions of the uprights, traction-wheels on the stub-axles, a clutch member on the end of one of the hubs a mating movable clutch member on the same axle and means to operate the movable clutch member, a cross-bar fixed to uprights pivoted to the stub-axles, a bar fixed to the center of the cross-bar and a lever-bearer connected with the end of it, a lever pivoted to the lever-bearer and fulcrumed to the top of the upright at the rear and center of the carriage-frame a scraper adjustably connected with the sides of the carriage-frame and a seat for an operator at the side of said lever at the rear end of the frame.

10. In a wheel-scraper, an oblong carriage-frame, a scraper adjustably connected with the sides of the frame stub-axles connected to the parallel sides of the frame, uprights pivotally connected with the stub-axles and a rotatable shaft mounted in the top portions of the uprights, traction-wheels on the stub-axles, a clutch member on the same axle and means to operate the movable clutch member on the same axle, a cross-bar fixed to uprights pivoted to the stub-axles, a bar fixed to the center of the cross-bar and a lever-bearer connected with the end of it, a lever pivoted to the top of the upright at the rear and center of the carriage-frame and a seat for an operator at the side of said lever and means for holding and lifting the double elbowed handles and scraper.

11. In a wheel-scraper, an oblong carriage-frame, a scraper adjustably connected with the carriage-frame, handles fixed to the rear end of the scraper stub-axles connected to the parallel sides of the frame, uprights pivotally connected with the stub-axles and a rotatable shaft mounted in the top portions of the uprights, traction-wheels on the stub-axles, a clutch member on the same axle and means to operate the movable clutch member, a cross-bar fixed to uprights pivoted to the stub-axles, a bar fixed to the center of the cross-bar and a lever-bearer connected with the end of it, a lever pivoted to the lever-bearer and fulcrumed to the top of the upright at the rear and center of the carriage-frame, a seat for an operator at the side of said lever and detents pivoted to the rear end of carriage-frame for holding and lifting the double elbowed handles and scraper.

12. In a wheel-scraper, an oblong carriage-frame, a scraper adjustably connected with the carriage-frame stub-axles fixed to the parallel sides of the frame, uprights pivotally connected with the stub-axles and a rotatable shaft mounted in the top portions of the uprights, traction-wheels on the stub-axles, a clutch member on the same axle and means to operate the movable clutch member, a cross-bar fixed to uprights pivoted to the stub-axles, a bar fixed to the center of the cross-bar and a lever-bearer and connected with the end of it, a lever pivoted to the lever-bearer and fulcrumed to the top of the upright at the rear and center of the carriage-frame and a seat for an operator at the side of said lever, detents forked at their outer ends and terminating with inclined extensions at their inner ends and means to lock the detents pivoted to the rear end of carriage-frame for holding and lifting the handles fixed to the scraper.

13. In a wheel-scraper, an oblong carriage-frame having bridles in its parallel sides, a scraper having fixed trunnions in said bridles stub-axles fixed to the parallel sides of the frame, uprights pivotally connected with the stub-axles and a rotatable shaft mounted in the top portions of the uprights, traction-wheels on the stub-axles, a clutch member on the same axle and means to operate the movable clutch member, a cross-bar fixed to uprights pivoted to the stub-axles, a bar fixed to the center of the cross-bar and a lever-bearer and connected with the end of it, a lever pivoted to the lever-bearer and fulcrumed to the top of the upright at the rear and center of the carriage-frame, a seat for an operator at the side of said lever, detents forked at their outer ends and terminating with inclined extensions at their inner ends and a lever pivoted to the upright at the rear of the carriage-frame and provided with a ring at the end of its short arm to admit the extensions of the detents, a rack fixed to the upright and a spring-actuated pawl connected with the lever to lock the detents pivoted to the rear end of carriage-frame for holding and lifting the double elbowed handles and scrape.

14. In a wheel-scraper, an oblong carriage-frame having bridles in its parallel sides to admit trunnions, a scraper having fixed trunnions in said bridles stub-axles fixed to the parallel sides of the frame, uprights pivotally connected with the stub-axles and a rotatable shaft mounted in the top portions of the uprights, traction-wheels on the stub-axles, a clutch member on the same axle and means to operate the movable clutch member, a cross-bar fixed to the uprights pivoted to the stub-axles, a bar fixed to the center of the cross-bar and a lever-bearer and connected with the end of it, a lever pivoted to the lever-bearer and fulcrumed to the top of the upright at the rear and center of the carriage-frame, a seat for an operator at the side of said lever, detents forked at their outer ends and terminating with inclined extensions at their inner ends and a lever pivoted to the upright at the rear of the carriage-frame and provided with a ring at the end of its short arm to admit the extensions of the detents, a rack fixed to the upright and a spring-actuated pawl connected with the lever to lock the detents pivoted to the rear end of carriage-frame for holding and lifting the double elbowed handles and scrape.

15. In a wheel-scraper, an oblong carriage-frame having bridles in its parallel sides to admit trunnions, stub-axles fixed to the parallel sides of the frame, uprights pivotally connected with the stub-axles and a rotatable shaft mounted in the top portions of the uprights, tapering enlargements on the end of the shaft, a scraper having handles fixed to its rear end and trunnions at its sides to traverse the bridles in the sides of the frame, ropes fixed to the handles and to the enlargements on the end of the shaft and springs fixed to the ends of the cross-bar connected with the uprights of the stub-axle and to the sides of the carriage-frame.

808,871. TANK-INDICATOR. ELMER RAHN and IRA C. MAY, Sacramento, Cal., assignors of one-third to Howell S. Corbin, Sacramento, Cal. Filed June 19, 1905. Serial No. 266,827.

Claim.—1. An oil-tank indicator comprising a casting having a central portion fitting an opening in the tank and bolts by which the perimeter of the casting is secured to the tank, said central portion of the casting having a chamber with packing and a gland operable in the chamber, a shaft passing through the chamber of the casting and the gland said gland being counterbored from the outer end to a point proximate to the inner end whereby a limited surface of contact is provided between the gland and shaft, a yoke having a central opening for the shaft said yoke having its ends bent inward and fitted to the same bolts which secure the casting to the tank, nuts engaging the bolts, and a float and indicator means at opposite ends of the shaft.

2. The combination with a tank having an opening, of a casting having a central portion fitting said opening, a shaft passing through the casting and a gland and packing in the casting and through

which said shaft also passes, a float carried by one end of the shaft, indicator means at the opposite end of said shaft, a pipe passing through the casing to the packing thereof and adapted to deliver a thin oil under pressure to said packing, and means for resisting end thrust of the shaft said means including a shoulder on the shaft and a yoke against which the shoulder abuts said yoke having inwardly-bent ends, bolts passing through the ends of the yoke and also the edge portion of the casing whereby single bolts secure both parts, and nuts engaging the bolts.

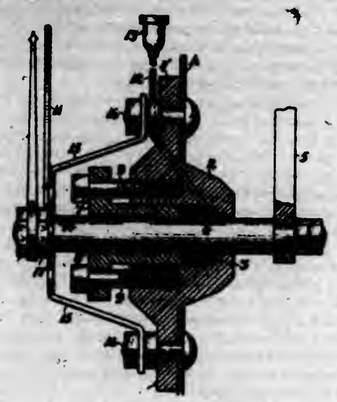

808,872. MAIL-BOX. EDWIN M. RAYMOND and WILLIAM S. STOUGHTON, Grand Rapids, Mich. Filed Mar. 14, 1905. Serial No. 249,989.

Claim.—1. A mail-box consisting of a case closed at the top and sides and open at the bottom, retaining-springs within the case to hold mail-matter inserted therein, and a pivotal support for the case located above the center of gravity of the case, upon which support the case is freely rotative.

2. A mail-box comprising a case having the form of a truncated pyramid and open at the bottom, a pivotal support for the case located above the center of gravity of the case upon which support the case is freely rotative, retaining-springs mounted on the top of the case, and retaining-springs in the lower part of the case.

3. A mail-box consisting of a truncated conical case open at the bottom, a pivot-support for the case located above the center of gravity of the case, a brace extending across the lower part of the case, diverging springs attached to the brace and extending upward within the case; and, opposing springs attached to the sides of the case and extending toward the first-named springs.

808,873. LINOTYPE-MACHINE. JOHN R. ROGERS, Brooklyn, N. Y., assignor to Rogers-Maser Linotype Company, a Corporation of New York. Filed Sept. 5, 1903. Serial No. 171,859.

Claim.—1. In a keyboard mechanism, the combination of a continuously-rotating toothed driving-roll, and a driven bar toothed to engage the roll and receive longitudinal motion therefrom and also toothed to engage the roll and effect the disengagement of the first-named tooth.

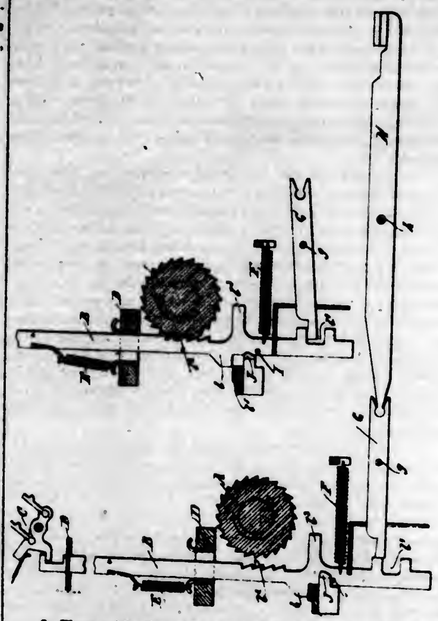

2. The combination of a continuously-rotating toothed driving-roll and a bar mounted to move longitudinally and laterally, said bar toothed to engage the roll and to cause the longitudinal movement, and also toothed to engage the roll and to cause the lateral movement.

3. The combination of a continuously-rotating toothed driving-roll, a bar mounted to move longitudinally and laterally and provided with teeth to engage the roll on different sides of its center, spring connections tending to draw the bar endwise and toward the roll, a finger-key mechanism acting to hold the bar normally out of engagement with the roll, and means for holding the bar out of engagement during its longitudinal retreat.

4. In a keyboard mechanism, the combination of the toothed roll, A, a bar, B, provided with actuating-teeth, b^3, and with a disengaging tooth, b^2, as described, means for throwing the bar into engagement, means for retreating the bar endwise when disengaged, means to hold the bar normally out of engagement, and means to hold it out of engagement while retreating endwise.

5. In combination, the toothed roll, A, the bar, B, having teeth, b^3, and tooth, b^2, spring connections tending to move the bar toward the roll, a spring connection tending to return the bar endwise when disengaged from the roll, means for holding the bar normally out of engagement with the roll, and means to hold it out of engagement while at rest.

6. In a keyboard mechanism, the combination of a toothed roll, a bar moved thereby, and a key to hold the bar normally out of engagement, the bar adapted to restore the key to its normal position.

7. In a keyboard mechanism, the combination of a reciprocating bar, power-driven means for moving the same endwise, a spring to return the bar, and movable means adapted to hold the bar normally out of engagement and to be returned by the bar to its original position.

808,874. MACHINE FOR MAKING HOLLOW GLASS ARTICLES. HARRY SIMMS, Wilmington, Del. Filed Aug. 14, 1903. Serial No. 169,672.

Claim.—1. In a machine for making hollow glass articles including a mold, a shell-former having its inner walls flaring at each end, its outer end having a shoulder overhanging and closing the open bottom of the mold for the purpose stated.

2. In a machine of the character specified, and in combination with a mold, a shell-former having its inner walls flaring at each end, its outer end having a shoulder overhanging and closing the open bottom of the mold, and a plunger adapted to operate within and to close the upper flaring end of the shell-former in forming the body of the blank.

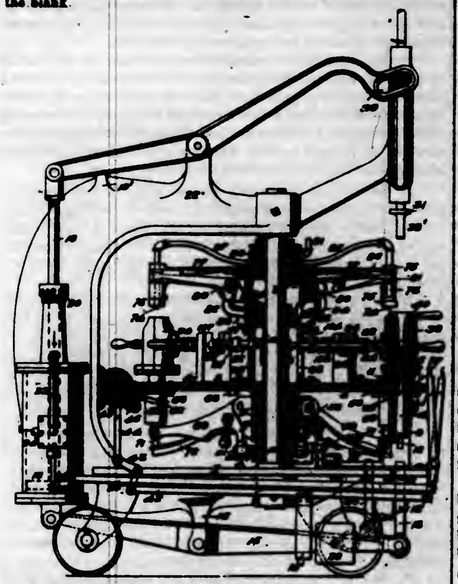

3. In a machine of the character specified, and in combination with a mold, a shell-former having its inner walls flaring at each end, its outer end having a shoulder overhanging and closing the open bottom of the mold, and a plunger adapted to operate within the flaring end of the shell-former and having a shoulder overhanging and closing the open flaring end of the shell-former.

4. In a machine of the character specified, and in combination with the mold, a shell-former or tube open at both ends, its inner end freely fitted upon the inner walls at the neck of the mold, its outer end flaring and having a shoulder closing the open bottom end of the mold.

5. In a machine of the character specified, and in combination with a mold open at both ends, a shell-former open at both ends and insertible within the open bottom of the mold, an upper plunger of less length than the shell-former adapted to operate in it in pressing the body of the blank, means automatically to insert and withdraw said plunger, an under plunger adapted to operate below the shell in forming the neck and blow-hole of the blank, and means automatically to insert said plunger into the mold.

6. In a machine of the character specified, and in combination with a mold open at both ends, a removable shell-former or tube open at both ends and adapted to fit upon the neck-walls of the mold, the outer end of the shell-former flaring and having a shoulder closing the open bottom of the mold, an upper plunger adapted to operate within the shell-former and having a shoulder abutting the shoulder of the shell-former to confine the latter and limit the insertion of the plunger, a seat stand or support adapted to close the neck end of the mold, a plunger adapted to operate within the neck end of the mold, means automatically to insert the upper plunger into and withdraw it from the shell-former, means automatically to raise and lower the seat-stand in its relation to the neck end of the mold and means automatically to insert the neck-forming plunger into the mold.

7. In a machine of the character specified, and in combination with a mold, a sleeve having a seat-stand adapted to close the neck-forming end of the mold, a lower plunger adapted to operate within the open neck of the mold, means automatically to raise and lower the seat-stand, means automatically to insert the plunger into the mold, means on the seat-forming stand and means provided on the plunger whereby the latter is withdrawn from the mold and means provided on the plunger and on the sleeve to limit the descent of the plunger from the mold.

8. In a machine of the character specified, and in combination with a mold open at both ends, a removable shell-former or tube open at both ends and adapted to fit upon the neck-walls of the mold-chamber, an upper plunger adapted to operate on the glass within the shell-former, a lever suspending and operating said plunger, a vertically-movable power-cylinder and a piston therein connected with said lever, and a power-supplying pipe connected to said cylinder, an under plunger adapted to operate within the open neck of the mold, a lifting-stem for said under plunger, a lever mounted beneath the base connected to said lifting-stem and to the lower end of power-cylinder, a hand-lever mounted on the base and a rod connecting said hand-lever with the valve connections of the power-cylinder

9. In a machine for making necked glass articles, an open-ended mold the matrix of which conforms to the shape of the body and neck of the completed articles a shell or tube removably insertible in the mold and adapted with the neck-forming portion of the mold-matrix to form the blank, a plunger removably insertible in the mold to form the blow-hole, a bottom-forming plunger insertible in the mold upon the withdrawal of the tube to form the bottom of the article, and blowing means for completing the article

10. In a machine for making necked glass articles, an invertible mold, blank-forming means comprised of a shell or tube insertible through one end of the mold and a blow-hole-forming plunger insertible through the opposite end of the mold, and blowing means operating upon the inversion of the mold to complete the article.

11. In a machine for making necked glass articles, an invertible open-ended mold, a shell-former in the mold and a plunger in the shell-former and of less length both at one end of the mold in one position of the latter, a lower blow-hole-forming plunger operating in the neck end of the mold below the shell-former to form the blank and blowing means operating to complete the article upon the removal of said shell and upper plunger and the inversion of the mold.

12. In a machine for making necked glass articles, an invertible open-ended mold, devices insertible through opposite ends of the mold in one position of the latter to form a blow-hole-containing blank, and a blowing device and a bottom-forming device insertible respectively through opposite ends of the mold after its inversion and the removal of the blank-forming devices.

13. In a machine for making necked glass articles, an invertible open-ended mold, a blank-forming tube and a blow-hole-forming plunger insertible respectively through opposite ends of the mold in one position of the latter, and means for finishing the article upon the inversion of the mold and the removal of the tube and plunger.

14. In a machine for making necked glass articles, an invertible open-ended mold, a blank-forming shell or tube and a blow-hole-forming plunger insertible respectively through opposite ends of the mold in one position of the latter, and a blowing device and a bottom-forming plunger insertible respectively through opposite ends of the mold after its inversion and the removal of the shell or tube and plunger.

15. In a machine for making necked glass articles, an open-ended mold, devices removably insertible in the mold for forming a blow-hole-containing blank, a blow-tube adapted to enter the blow-hole of the blank, and a bottom-forming plunger movable in the mold as the blowing progresses, said blow-tube and plunger being insertible upon the withdrawal of the blank-forming devices.

16. In a machine for making necked glass articles, an open-ended mold, an apertured support for the mold, a blow-hole-forming plunger movable through said support-aperture to enter one end of the mold, a shell or tube insertible through the opposite end of the mold, and an upper plunger insertible in the tube, said parts coacting to form a blow-hole-containing blank.

17. In a machine for making necked glass articles, an invertible open-ended mold, devices removably insertible in the mold in one position of the latter for forming a blow-hole-containing blank, means for inverting the blank-containing mold, an apertured stand for supporting the inverted mold, a bottom-forming plunger movable in the stand-aperture to enter the mold, and a blow-tube insertible through the opposite end of the mold.

18. In a machine for making necked glass articles, an open-ended mold, an apertured support for the mold, a blow-hole-forming plunger movable through said support-aperture to enter one end of the mold, a blank-forming shell or tube insertible through the opposite end of the mold, a second apertured stand, means actuated by hand for inverting and carrying the blank-containing mold after the removal of the tube and plunger to the second stand, a bottom-forming plunger movable in the second stand-aperture to enter the mold, and a blow-tube insertible through the opposite end of the mold.

19. In a machine for making necked glass articles, the combina-

tion of a mold and means for forming a blow-hole-containing blank, including a vertically-movable seat-stand and a vertically-movable plunger, a blow-tube, and means for moving the blow-tube nozzle to and from the blank, including a bell-crank lever and a cam for actuating the lever and a table rotatively carrying the mold and the blow-tube.

20. In a machine for making hollow glass articles, the combination of rotatable means including a mold, for forming a blow-hole-containing blank, a blow-tube, and means for moving the blow-tube to and from the mold comprised of a fixed cam centrally located in its relation to said rotating means, a bell-crank lever between the cam and blow-tube for raising the latter from the mold and rotating with said means and a spring for holding the blow-tube firmly within the neck-forming end of the mold.

21. In a machine for making glass articles, the combination of a mold, a pair of vertically-movable seat-stands side by side on one of which the mold is seated in an inverted position during the forming of the blank for the article, the other seat-stand supporting the mold during the operation by which the article is finished by blowing, and means by which the mold is changed from one seat-stand to the other.

22. In a machine for making glass articles, the combination of a mold, a seat-stand therefor, means coacting with both ends of the mold and the said seat-stand for pressing the blank therein, a second mold seat-stand, means by which the mold is changed by inversion from one support to the other, and blowing means for completing the article on the second seat-stand.

23. In a machine for making glass articles, the combination of a mold, a pair of vertically-movable seat-stands, means for pressing in the mold on one of said seat-stands a blow-hole-containing blank, means for imparting to the mold a swinging movement to invert it from one seat-stand to the other and means for blowing the article in the inverted mold.

24. In a machine of the character described, the combination of a mold, a hollow shaft fixed to the side of and carrying said mold, a fixed bearing-support for the inner end of the hollow shaft, a pinion fixed on the hollow shaft between its fixed end bearing and the mold, a fixed rack for the pinion supporting the hollow shaft, the latter having a swinging movement in its fixed end bearing, tops at each end of the rack limiting the swinging movement of the shaft, and a pair of seat-stands coöperating with the mold in the separate operations of press-forming and blowing the article.

25. In a machine of the character described the combination of a mold of two hinged sections, a hollow shaft fixed on the side of one of said mold-sections, a fixed bearing-support for said shaft, means for rotating said shaft, a lock for said mold-sections, and means operating longitudinally within said shaft to effect the release of the lock.

26. In a machine for making glass articles, the combination of a mold, a vertically-movable support for said mold, means for forming in the mold a blow-hole-containing blank, means for inverting the blank-containing mold, a vertically-movable support for the inverted mold, and blowing means including a movable nozzle for completing the article in the inverted mold.

27. In a machine for making glass articles including a mold, the combination of a pair of seat supports or stands for the mold, means for pressing in the mold on one of said seat-supports, a blow-hole-containing blank, blowing means for completing the article in the mold on the second seat-stand, and means for firmly supporting the molds on the separate seat-stands during the separate operations.

28. In a machine for making glass articles, the combination of an arm, means actuated by hand swinging said arm in a circular path, a mold formed of two hinged sections and carried by said arm, a pivoted catch for locking the closed mold, a spring-retracted rod connected with said catch, and a fixed cam for moving the rod and catch against the tension of the spring to release the mold.

29. In a machine for making glass articles, the combination of a rotatable support, a tubular arm or shaft extending radially therefrom, a two-part mold carried by said arm, a fixed cam, a rod slidable in the tubular arm and engaged by the cam, a pivoted catch for locking the mold parts, and a sleeve connected with the rod and having a cam-slot engaging with said catch.

30. In a machine for making glass articles, the combination of an open-ended mold, means for forming therein a blow-hole-containing blank, means for inverting the blank-containing mold, a vertically-movable support for the inverted mold, and a bottom-forming plunger movably mounted in said support and adapted to be removably inserted through the lower end of the inverted mold to form the bottom of the finished article.

31. In a machine for making glass articles, the combination of an open-ended mold, means for inverting the blank-containing mold during movement of the latter, a support for the inverted mold, means including a fixed cam and a bell-crank lever for raising and lowering said support, a plunger-former for forming the bottom of the finished article movably mounted in said support, and means including a fixed cam and lever connections for removably inserting the plunger into the lower end of the inverted mold.

32. In a machine for making glass articles, the combination of an open-ended mold, means coacting with said mold for forming therein a blow-hole-containing blank, means for inverting the blank-containing mold, a support for the inverted mold, a blow-tube nozzle vertically movable into the upper end of the inverted mold, and a bottom-forming plunger movable into the lower end of the inverted mold and receding therefrom in the blowing operation.

33. In a machine for making glass articles, the combination of a mold, a vertically-movable support for the mold, said support and mold adapted to swing in a circular path, a cam in the path of said support operating to raise the latter in position to support the mold, and means for shifting the cam to release the support and permit its retraction.

34. In a machine for making glass articles, the combination of an open-ended mold, a vertically-movable stand for the mold, said stand and mold adapted to move in a circular path, a pivoted cam in the path of the stand arranged to be shifted a predetermined distance by the stand and thereafter to elevate the latter into position to support the mold, a stop for limiting the movement of the cam, and means for retracting the cam to permit retraction of the stand.

35. In a machine for making glass articles, the combination of an open-ended mold, a vertically-movable stand for the mold, said stand and mold adapted to move in a circular path, a pivoted cam in the path of the stand arranged to be shifted a predetermined distance by the moving stand and thereafter to elevate the latter into position to support the mold, a stop for limiting the movement of the cam, and a vertically-movable latch arranged to engage the aforesaid cam and retract it to permit the descent of the stand.

36. In a machine for making glass articles, the combination of an open-ended mold, a blank-forming shell or tube insertible in the upper end of the mold, a vertically-movable stand for the mold, a blow-hole-forming plunger movable in an aperture of the stand, a lever 15 for elevating said plunger into the lower end of the mold, a pivoted cam for elevating the stand into position to support the mold, and a latch or trip carried by said lever for engaging the cam to retract it and permit the descent of the stand.

37. In a machine for making glass articles, the combination of an open-ended mold, a blank-forming tube or shell insertible in the upper end of the mold, a vertically-movable stand for the mold, a blow-hole-forming plunger movable in an aperture in the stand to enter the lower end of the mold, a pivoted cam adapted in one position to engage and elevate the stand into position to support the mold, a pivoted lever 15, a rod between the lever and plunger to effect the elevation of the latter, and a spring-controlled latch carried by the lever and adapted in the movement of the latter to engage the cam to retract it and release the stand.

38. In a machine for making glass articles, the combination of an open-ended mold, a blank-forming tube or shell insertible in the upper end of the mold, a vertically-movable stand for the mold, a blow-hole-forming plunger movable in an aperture in the mold to enter the lower end of the latter, means for elevating the stand into position to support the mold, a lever having a rod for engaging and elevating said plunger, and also carrying a trip or latch to engage said means and release the stand, and means for moving said lever.

39. In a machine for making glass articles, the combination of an open-ended mold, a blank-forming tube or shell insertible in the upper end of the mold, an upper plunger insertible through the tube, an upper lever connected with said plunger, a lower lever, a fluid-pressure cylinder on the lower lever, a piston in the cylinder the rod of which is connected with the upper lever, a vertically-movable stand for the mold, a pivoted cam adapted to elevate the stand into position to support the mold, a blow-hole-forming plunger movable in an aperture in the stand to enter the lower end of the mold, a rod carried by the lower lever arranged to engage the last-named plunger and force it into the mold, and a trip arm or latch carried by the lower lever arranged to engage the cam and move it to release said stand.

40. In a machine for making glass articles, a fixed shaft carrying a plurality of fixed cams, a table rotatable about said shaft, a two-part invertible mold, rotatable with the table, locking and releasing means for the mold operated by one of said cams, supports for the mold in its normal and inverted positions, means for moving one of said supports operated by another of said cams, a bottom-forming plunger, means for operating said plunger controlled by another of said cams, and blowing means including a nozzle operated to enter the mold by another of said cams.

41. In a machine of the character described, a circular table rotatable about a shaft, a plurality of mold-supporting seat-stands arranged in pairs, a mold for each pair of stands, means for imparting to the mold a movement to invert it from one seat-stand to the other, a blow device for each mold arranged in vertical alinement with one of the seat-stands of each pair, a valve-controlled air-supply common to each blow device, the seat-stands, the molds, the blow devices and the valve-controlled air-supply maintaining their coöperative relation during the rotation of the table.

42. In a machine for making glass articles and in combination, a circular table having peripheral cogs, rotatable about a shaft and carrying a plurality of mold-supporting stands, a worm mounted tangential to the table and engaging said cogs, a clutch member fixed to said worm, a clutch member operated from a source of power, hand-controlled means for effecting the intermittent rotation of the table, a plurality of molds, plungers adapted to operate within the opposite ends of the mold, and hand-controlled means for actuating the plungers.

43. In a machine for making glass articles and in combination, a rotatable table, a plurality of molds carried thereby a blow-nozzle for each mold, means for automatically inserting it therein, an air-controlling valve arranged to communicate with the blow-nozzles successively, means for effecting the intermittent rotation of the molds and the blow-nozzles at the same speed, and means for maintaining the air-pressure in the mold during such rotation.

44. In a machine for making glass articles, a circular table rotatable about a shaft and having a peripheral series of teeth, mold-supporting stands carried by said table, a series of studs or projections on said table, a constantly-driven shaft carrying a clutch member, a worm engaging the said teeth and connected with a companion clutch member, and means controlled by hand for effecting the engagement and release of said clutch members, and for interposing a stop in the path of said studs successively.

45. In a machine for making glass articles, and in combination with a two-part or divided mold, a hollow shaft on which it is mounted having slots 99, a rod within the hollow shaft having pins passing through said slots, a slotted collar 103 fixed on said shaft, a latch pivoted to one part of the mold, engaging said slotted collar, and adapted to engage a lug 106 on the other mold part, a central shaft, and a cam 103, fixed thereon and adapted to force the rod outward to effect the engagement of the latch with the mold-lug, and a spring on the hollow shaft to press it inward to release the latch from the lug.

46. In a machine for making glass articles and in combination, a plurality of molds, a blow-nozzle for each mold, means automatically for effecting the insertion of the nozzle into the mold, a flexible tube connecting each nozzle with the air-pressure supply, means for controlling the air-pressure in the blowing operation consisting of a rotating table carrying the molds and the blowing devices, a valve member carried by the table and having a plurality of ports one connecting each air-tube, a fixed valve member supplementing the rotating valve member and having a single port registering with the ports of the rotating member, and causing the air to remain under pressure in the mold during each intermittent movement of the table.

47. In a machine for making glass articles, and in combination with a mold open at both ends, a seat-stand for the open bottom of the mold, a bottom-forming plunger centrally within the seat-stand, a blow device in central alinement above the neck-forming end of the mold, means automatically to raise and lower the seat-stand in its relation to the mold, means automatically to raise the bottom-forming plunger within and to withdraw it from the mold, and means automatically to insert the blow device within the neck-forming end of the mold and to withdraw it therefrom in the operation of blowing the article.

48. In a machine of the character described, a bed-plate, a vertical shaft central thereon, a table rotatively mounted on the shaft, a plurality of mold-seats arranged in pairs side by side on the table around and in equal distance from the shaft, a mold for each pair of seat-stands mounted for inversion from one seat-stand to the other of the pair in the operations of pressing and blowing the article, means arranged beneath and above the bed-plate and operating in and upon one of each pair of the seat-stands for forming the neck and body of the article in one position of the mold, and means operating the devices for forming and blowing the article in the reversed position of the mold upon the adjacent seat-stand and means for intermittently rotating the table.

49. In a machine of the character described, a bed-plate, a vertical shaft fixed thereon, a table rotatively mounted on the shaft, a plurality of mold seat-stands arranged in pairs side by side around and equidistant from the shaft, a plurality of molds one for each pair of seat-stands, means for inverting each mold from one seat-stand to the other of the pair, a plurality of blow devices and means for operating the one for each mold arranged above the molds, a valve central with the shaft having communication with each blow device and with a compressed-air supply, means for intermittently rotating the table and means for maintaining the mold on the blowing seat-stand a longer time than on the pressing seat-stand.

50. In a machine of the character described, a bed-plate, a vertical shaft thereon, a table rotatively mounted on the shaft, a plurality of mold seat-stands arranged in pairs side by side on the table around and equidistant from the shaft, a plurality of molds one for each pair of seat-stands, means below and above the bed-plate and above the rotating table arranged in vertical alinement for operation with the mold in forming the blow-hole and body of the blank, means below and above the table in alinement for operation in blowing the article, means for inverting and transferring the mold out of alinement with one seat-stand into alinement with the other of the pair of seat-stands, and means for elevating the seat-stands to seat the mold in its transfer from one stand to the other and in alinement in each position with the pressing and the blowing devices.

51. In a machine of the character described, a bed-plate, a vertical shaft thereon, a table rotatively mounted on the shaft, a plurality of seat-stands arranged in pairs side by side on the table around and equidistant from the shaft, a plurality of molds one for each pair of seat-stands in their separate use for forming and blowing the article, upper and neck-forming plungers for the pressing seat-stands, a bottom-forming plunger and a blow-nozzle for each of the other seat-stands of the pair, these parts mounted to rotate together with the table and operated in the order described, a lever device for lifting each of the neck-forming plungers and levers for lifting the bottom-forming plungers of each of the other seat-stands of the pair in the blowing operation, means for operating the levers and means for rotating the table.

52. In a machine of the character described, a bed-plate, a vertical shaft thereon, a table rotatively mounted on the shaft, pairs of seat-stands 6, and 66 carried by the table around and equidistant from the shaft, a plurality of molds one for each pair of seat-stands, a cam 12 fixed on the bed-plate for lifting the seat-stand 6, a blow-hole-forming plunger 11 within the seat-stand, a lever 15, mounted on the bed-plate for lifting said plunger into the mold, a body-forming shell in the mold, an upper plunger for operating within the shell, a lever 21 for operating said plunger, a vertically-slidable power-cylinder pivotally connected to the lower lever, a piston-rod actuated by the power-cylinder and connected to the upper lever 21 a valve for controlling the air-supply to the cylinder, and a hand-actuated lever for controlling the valve to control the operation of the plungers.

53. In a machine of the character described, a bed-plate, a vertical shaft thereon, a table vertically mounted on the shaft, pairs of seat-stands 6 and 66 carried by the table around and equidistant from the shaft, a plurality of molds, one for each pair of seat-stands, a lever 69 mounted to rotate with the table for lifting the seat-stand 66, a bottom-forming plunger 71 within the seat-stand, a lever 72 for lifting said plunger, a cam 109 fixed on the shaft for operating the stand-lifting lever, and a cam 115 on the bed-plate for operating the plunger-lifting lever 72, an overhead blow-nozzle carried by the table one for each mold, a lever 79 for vertically operating the blow-nozzle, and a cam 84 on the fixed shaft for actuating the lever 79, a valve formed of a fixed and a rotating part, an air-supply tube connecting to the fixed valve part which latter is concentric with the shaft, and a flexible tube connecting the rotating valve part with the blow-nozzle for operation as stated.

54. In a machine of the character described, a bed-plate, a vertical shaft thereon, a table rotatively mounted on the shaft, a plurality of seat-stands carried by the table in pairs side by side and equidistant from the shaft, a plurality of molds one for each pair of stands, suitable means coacting with the stands and molds for pressing and for blowing the article, means for supporting and inverting each mold consisting of a sleeve 92, supported in suitable bearings on the table, a segmental rack 96 on the table, a half-gear fixed on the sleeve resting on and engaging the rack, and stops on said rack to limit the travel of the pinion to a semirevolution, whereby the mold is inverted from the press-forming stand to the blow-nozzle stand.

55. In a machine of the character described, a bed-plate, a vertical shaft thereon, a table rotatively mounted on the shaft, a plural-

ity of seat-stands carried by the table in pairs side by side and equidistant from the shaft, a plurality of hinged molds one for each pair of stands, a sleeve 32 fixed to and supporting the mold in bearings on the table, a segmental rack on the table, a half-gear fixed on the sleeve resting on and engaging the rack and limited in its movement to a semirevolution on the rack to invert the mold from one seat-stand to the other, a rod longitudinally movable within the sleeve, stops on the sleeve to limit each movement of the rod, a coil-spring on the sleeve constantly forcing the rod to the limit of its inward movement, a cam on the fixed shaft for moving the rod outward, and means actuated by said rod for locking and unlocking the hinged mold parts during the revolution of the table.

56. In a machine of the character described, and in combination a rotating table, a plurality of seat-stands carried by the table in pairs, side by side, a plurality of hinged molds one for each pair of seat-stands, means for inverting a mold from one seat-stand to the adjacent seat-stand, means for press-forming the blank, in the mold on one stand, means for blowing the bottle in the same mold on the adjacent stand, means for rotating the table intermittently by fifths of the circle, means automatically to open the mold for the removal of the blown bottle consisting of a latch for locking the hinged mold parts together, a sleeve on the end of which the mold is fixed, a rod within the sleeve, a collar 101 having an oblique slot 102 engaging one end of the latch and fixed to the rod by a pin passing through slots in the sleeve, a coiled spring on the sleeve connected to and constantly tending to force the oblique collar to hold the latch firmly locked, and a cam engaging the inner end of the rod and adapted to force its obliquely-slotted collar to unlock the latch to allow the mold to be opened.

57. In a machine of the character described, and in combination, a rotating table, a plurality of seat-stands carried thereby in pairs side by side, a plurality of invertible molds one for each pair of seat-stands, means for limiting the inversion of the mold to half a circle corresponding to the space between the seat-stands so that each mold is rotated from one seat-stand to the other of the pair, lower and upper plungers and means for actuating each in opposite directions to press the blow-hole and the body of the blank within the mold on one seat-stand, a bottom-forming plunger and a blow-nozzle, and means for actuating each in opposite directions to form the bottom and blow the bottle in the inverted mold on the other seat-stand of the pair.

58. In a machine of the character described, a rotating table, a plurality of seat-stands carried thereby grouped in pairs side by side, a vertical neck-forming plunger for each pair, an upper plunger in alinement with the center of one of the mold-stands, and a vertically-movable overhead blow-nozzle in alinement with the center of the other mold-stand, a night for each pair of seat-stands and means for inverting the mold from one seat-stand to the other, means for inserting the plungers and the blow-nozzle into the mold when seated and means for withdrawing the plungers and the blow-nozzle from the mold to allow of its inversion from one stand to the other.

59. In a machine of the character described, a mold, a pair of pressing-plungers therefor one operating in each end of the mold, a lever 15 for actuating the lower plunger, a lever 21 for actuating the upper plunger, a motor for actuating the levers consisting of a power-cylinder pivotally connected to and supported upon the end of the lower lever, a piston in the cylinder, the upper lever connected to the rod of the piston, a valve on the cylinder controlling the entrance of the motive fluid therein to cause the descent of the cylinder and the ascent of the piston-rod, a lever for controlling the valve for causing both plungers to be forced into the mold successively and to be withdrawn from the mold successively, a stop to limit the ascent of the cylinder and a stop to limit the descent of the piston.

60. In a machine of the character described, a mold, a pair of plungers therefor one operating in each end of the mold, a lever for actuating the lower plunger in forming the neck and the blow-hole of the article, a lever for actuating the upper plunger to form the body of the article, a compressed-air motor for actuating the levers consisting of a vertically-movable cylinder connected with the lower lever, a piston and its rod connected with the upper lever, a valve in said cylinder, a pipe connecting the valve with the fluid-supply and means for controlling the valve for holding the plungers under air-pressure in operative position to the mold.

61. In a machine of the character described, a mold, a plunger for forming the bottom of the article, a blow-nozzle, a guide-arm therefor, a lever pivotally mounted on the guide-arm and engaging the stem of the blow-nozzle, a cam adapted to lift the lever to hold the blow-nozzle in operative position, means for firmly holding the blow-nozzle in operative position, a lever engaging the bottom-forming plunger, a cam adapted to actuate the lever to cause it to descend in the mold while supporting the bottle as it is being blown, and means connecting the blow-nozzle with the compressed-air supply.

62. In a machine of the character described, a bed-plate, a vertical shaft thereon, a table rotatively mounted on the shaft, a plurality of seat-stands carried by the table in pairs, side by side and equidistant from the shaft, a plurality of molds one for each pair of stands, means for inverting a mold from one seat-stand to the other seat-stand of the pair, pressing-plungers vertically operative in each seat-stand, an upper pressing-plunger and an overhead blow-nozzle arranged vertically in alinement with the stand-plungers for pressing the blank in the mold on one stand and for blowing the finished article in the same mold on the adjacent stand, means for supplying the blow-nozzle with compressed air, means for rotating the table intermittently in fifths of the circle, and means controlling the air-supply to the blow-nozzles whereby to cause the air to remain under pressure in the blown bottle during one-fifth of the rotation of the table.

63. In a machine of the character described, a bed-plate, a vertical shaft thereon, a table vertically mounted on the shaft, a plurality of seat-stands carried by the table in pairs side by side and equidistant from the shaft, a plurality of molds one for each pair of stands, means for inverting a mold from one seat-stand to the adjacent seat-stand, means for press-forming the blank in the mold on one stand, means for blowing the bottle in the same mold on the adjacent stand, means for rotating the table intermittently by fifths of the circle, means for controlling the air-supply to each mold during one-fifth of the rotation of the table, and means automatically to open the mold for the removal of the blown bottle.

64. In a machine of the character described, a circular table rotatable about a fixed vertical shaft, an arm or tubular shaft supported on said table, a mold of hinged sections one of which is fixed to said tubular shaft, a latch pivoted on the shaft-connected mold-section, adapted to engage the other mold-section, a spring-retracted rod within the tubular shaft, a collar on the rod having an oblique slot engaging one end of the latch, and means whereby the rod is moved longitudinally and caused to maintain the engagement of the latch with the mold-section and a spring operatively connected to retract the rod to release the engagement of the latch with the mold.

65. In a machine for making glass articles including a rotatable table, a rotatable shaft radial thereon, a mold fixed on one end thereof, the other end of said shaft supported in a bearing, a segmental pinion on said shaft between the mold and said end bearing and a segmental rack for the pinion provided with stops for limiting its rotation in its travel on the rack to invert the mold, the bearing for the shaft and the rack-support for the pinion being fixed upon the table and the mold and its shaft movable in the arc of a circle on its inner end independent of the movement of the table and only to an extent required to invert the mold.

808,875. **TYPE-WRITING MACHINE.** CHARLES H. SHEPARD, New York, N. Y., assignor to Wyckoff, Seamans & Benedict, Hem. N. Y., a Corporation of New York. Filed Oct. 1, 1903. Serial No. 176,270.

Claim.—1. In a type-writing machine, the combination of a carriage, a wheel having indicating-marks thereon and which is automatically rotated during the travel of the carriage, a coöperating shield, and means for moving said shield during the travel of the carriage back and forth.

2. In a type-writing machine, the combination of a carriage, a wheel connected to be rotated by the travel of the carriage, indicating-marks arranged in different planes on said wheel, a shield that is adapted to expose said marks one at a time, and means for moving said shield during the travel of the carriage back and forth.

3. In a type-writing machine, the combination of a carriage, a wheel connected to be rotated by the travel of the carriage back and forth, spirally-arranged indicating-marks on said wheel, a shield that is adapted to expose said marks one at a time, and means for automatically moving said shield as the wheel is rotated in opposite directions by the back-and-forth travel of the carriage.

4. In a type-writing machine, the combination of a carriage, a wheel connected to be rotated in opposite directions by the travel of the carriage back and forth and which is fixed against axial movement, a series of indicating-marks arranged around said wheel and in different transverse planes thereon, a shield that is adapted to expose said marks one at a time, and means for moving said shield back and forth in the general direction of the axis of said wheel.

5. In a type-writing machine, the combination of a carriage, a wheel connected to be rotated by the travel of the carriage back and forth and which is fixed against axial movement, a series of indicating-marks spirally arranged around said wheel, a shield that is adapted to expose said marks one at a time, and means for automatically moving said shield back and forth in the general direction of the axis of said wheel as the wheel is rotated.

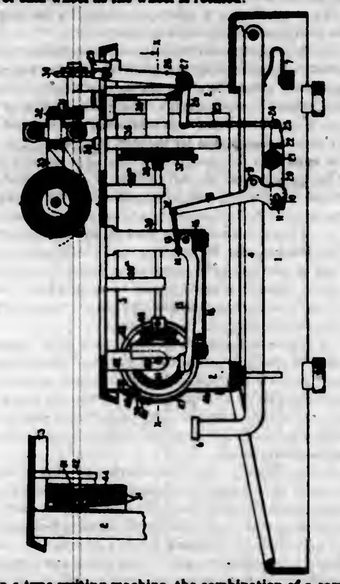

6. In a type-writing machine, the combination of a carriage, a wheel or drum connected to be rotated in opposite directions as the carriage travels back and forth, a series of spirally-arranged indices that extend more than once around said wheel or drum, an apertured shield that exposes but one index at a time on said wheel, and means for automatically effecting a movement of the shield back and forth in the general direction of the axis of the wheel or drum as the latter is rotated in opposite directions.

7. In a type-writing machine, the combination of a carriage, a wheel or drum connected to be rotated in opposite directions as the carriage travels back and forth and having a spiral groove therein, a series of spirally-arranged indices on said wheel or drum, a shield having a sight-opening therein, and means coöperating with said spiral groove and shield to automatically move the shield back and forth as the drum or wheel is rotated in opposite directions.

8. In a type-writing machine, the combination of a carriage, a wheel or drum geared to the carriage to be rotated in opposite directions thereby during the back-and-forth travel of the carriage and having a spiral groove therein, a series of spirally-arranged indices that extend more than once around said wheel or drum, a shield having a sight-opening therein that successively exposes the indices on the wheel or drum as it is rotated, and means coöperating with said spiral groove and shield to automatically move the shield back and forth as the drum or wheel is rotated in opposite directions.

9. In a type-writing machine, the combination of a carriage, means for affording a step-by-step letter-space movement of the carriage, a wheel, a series of spirally-arranged index-numbers extending around said wheel, one number for each letter-space movement of the carriage, means for causing the wheel to rotate in opposite directions during the back-and-forth travel of the carriage, a shield having a sight-opening therein, and means for automatically moving said shield back and forth as the wheel is rotated in opposite directions, to afford a successive reading of the spirally-arranged index-number at the sight-opening in the shield, and to at all times indicate the printing-point at the sight-opening whether the carriage be moving in the direction of its feed or in an opposite direction.

10. In a type-writing machine, the combination of a carriage, a wheel or drum that rotates in opposite directions as the carriage travels back and forth and which has a spiral groove therein, a series of spirally-arranged index-numerals that extend around said drum and conform substantially to the spiral arrangement of said index-numerals, a shield that coöperates with the wheel or drum to expose the index-numerals thereon one at a time, and means coöperating with the spiral groove in said wheel or drum and with said shield to move the shield back and forth in the general direction of the axis of the wheel or drum as the latter is rotated in opposite directions.

11. In a type-writing machine, the combination of a carriage, carriage-feed mechanism for affording a step-by-step feed movement of the carriage, a letter-space-indicating wheel which is carried by the frame of the machine and which is operatively connected to rotate in opposite directions as the carriage travels back and forth and which has a spirally-arranged groove therein, a series of spirally-arranged index-numerals on said wheel, a coöperating shield that has a sight-opening therein and is mounted to move back and forth in the general direction of the axis of said indicating-wheel as the wheel is rotated in opposite directions, and a pin that extends from said wheel and takes into said spiral groove.

12. In a type-writing machine, the combination of a carriage, a spring-drum for moving said carriage in the direction of its feed, escapement mechanism for affording a step-by-step feed movement of the carriage, a carriage index-wheel that is fixed against movement in an axial direction, intermediate gear connections between said wheel and spring-drum to turn the wheel in opposite directions as the carriage travels back and forth, a series of index-numerals located in different transverse planes on said wheel, a shield that is mounted to move in the general direction of the axis of said wheel, and means for automatically moving the shield back and forth when the said wheel is rotated in opposite directions.

13. In a type-writing machine, the combination of a carriage, a spring-drum for moving said carriage in the direction of its feed, escapement mechanism for affording a step-by-step feed movement of the carriage, a carriage index-wheel that is fixed against movement in an axial direction and has a spiral groove therein, intermediate gear connections between said wheel and spring-drum for effecting a rotation of the wheel as the carriage travels back and forth, a series of spirally-arranged index-numerals on said wheel, the spiral arrangement of the numerals corresponding substantially to the spiral groove, a shield that has a sight-opening therein and is mounted to move in the general direction of the axis of said wheel, and a projection extending from said shield into said spiral groove for automatically moving the shield back and forth when the said wheel is rotated in opposite directions.

14. In a type-writing machine, the combination of a carriage, means for affording a step-by-step letter-space feed movement of said carriage, a carriage index-wheel operatively connected to rotate in opposite directions as the carriage travels back and forth, a series of index-numerals extending more than once around said wheel, one number for each letter-space movement of the carriage, a movable shield, and means for automatically effecting a back-and-forth movement of the shield as the wheel rotates in opposite directions.

15. In a type-writing machine, the combination of a carriage, feed mechanism for affording a step-by-step feed movement of the carriage, a carriage index-wheel that rotates in opposite directions as the carriage travels back and forth, a series of index-numerals on said wheel and arranged at different points transversely thereof and the height of each index-numeral exceeding the distance covered by the carriage at its corresponding step-by-step feed movement, operative connections between the said wheel and carriage, a movable shield coöperating with said wheel, and means for automatically effecting a back-and-forth movement of the shield when the shield is rotated in opposite directions.

16. In a type-writing machine, the combination of a carriage, means for affording step-by-step feed movements of the carriage, a carriage index-wheel operatively connected to said carriage to travel at a greater rate of speed than the carriage as the latter travels back and forth, a series of index-numerals on said wheel, a shield having a sight-opening therein, and means for automatically moving the shield back and forth as the index-wheel is rotated in opposite directions.

17. In a type-writing machine, the combination of a carriage index-wheel that is operatively connected to rotate in opposite directions as the carriage travels back and forth, a shield having a sight-opening therein, and means for causing a coincident back-and-forth movement of the shield when the wheel is rotated, so as to bring the index-numerals successively into register with the sight-opening.

18. In a type-writing machine, the combination of a carriage, a carriage index-wheel controlled by the back-and-forth movement of the carriage, a casing that covers said wheel from observation, a shield that has a sight-opening therein and which is mounted to slide on the said casing, and means for automatically moving the shield back and forth when the wheel is rotated in opposite directions.

808,876. APPLIANCE FOR LIFTING AND TURNING DRILLS FOR ROCK-BORING AND OTHER PURPOSES. Charles Shannon, Paignton, England, assignor to Charles Shannon's "Drillite" Limited, London, England. Filed Jan. 19, 1904. Serial No. 189,782.

Claim.—1. A drill lifting and turning device comprising a stationary cylinder, a piston movable longitudinally and rotatively therein, spring-pressed gripping devices carried by the said piston, a cranked lever pivotally connected to the said cylinder and adapted to bear against the outer face of the piston, means connected with said cranked lever to force the piston inward and a foot-lever adapted to actuate said means; the lifting and turning of the drill being thus effected by the weight of the operator and as the result of his recovering the energy necessary for imparting the succeeding blow to the drill.

2. A drill lifting and turning device comprising a stationary cylinder, a piston movable therein, spring-pressed cam-levers carried by said piston, and friction-wedges also carried by said piston and actuated by the said cam-levers.

3. A drill lifting and turning device comprising a stationary cylinder, a piston movable therein, spring-pressed cam-levers carried by said piston, and friction-wedges also carried by said piston and actuated by the said cam-levers, said piston being provided with open slots having inclined surfaces for said wedges to slide in.

4. A drill lifting and turning device comprising a stationary cylinder, a piston movable longitudinally and rotatively therein, spring-pressed cam-levers carried by said piston, friction-wedges also carried by said piston in open slots therein having inclined surfaces, and a cranked lever pivotally connected to the said cylinder and adapted to bear against the outer face of the piston and operable by the foot.

5. A drill lifting and turning device comprising a stationary cylinder, a piston movable longitudinally and rotatively therein, spring-pressed cam-levers carried by said piston, friction-wedges also carried by said piston in open slots therein having inclined surfaces, a foot-operated cranked lever pivotally connected to the said cylinder and adapted to bear against the outer face of the piston, and means for rotating said piston when moved longitudinally in the said cylinder by the said foot-operated cranked lever.

6. A drill lifting and turning device comprising a stationary cylinder, a piston movable longitudinally and rotatively therein, spring-pressed gripping devices carried by the said piston, a cranked arm pivotally connected to the said cylinder and adapted to bear against the outer face of the piston, a foot-lever, a pivoted pawl on said foot-lever, and means actuated by said pawl and connected with and operating the said cranked lever.

7. A drill lifting and turning device comprising a stationary cylinder, a piston movable longitudinally and rotatively therein, spring-pressed gripping devices carried by the said piston, a cranked arm pivotally connected to the said cylinder and adapted to bear against the outer face of the piston, a foot-lever, a pivoted pawl on said foot-lever, and a cranked arm in operative relation to the said pivoted pawl and connected with the said cranked lever.

8. In a drill lifting and turning device, a stationary cylinder, a piston movable longitudinally and rotatively therein, a spring operating against the inner side of the piston, cam-levers carried by the piston and pressed by said spring, wedges also carried by the said piston and in operative relation to said cams, and inclined surfaces formed in slots in said piston for the said wedges to travel upon.

9. In apparatus for use in rock-boring or other purposes, a cylinder having straight and curved slots, a piston movable longitudinally and rotatively in said cylinder and carrying spring-pressed cam-levers and sliding wedges, circumferential grooves and teeth on the piston, an antifriction-rider for working in the said straight slot and an antifriction-rider for working in the said curved slot, projecting lugs on said respective riders for engaging in said grooves, a central spring-controlled tooth portion on each rider for engaging said teeth, and means adapted to move the piston against the pressure of the spring by the weight of the operator.

10. In apparatus for use in rock-boring or other purposes, the combination of the cylinder having straight and curved slots therein, a piston movable longitudinally and rotatively in said cylinder, circumferential grooves and teeth on said piston for engaging with the riders, antifriction-rollers on said riders, a tooth portion slidable transversely in each of said riders, and a spring threaded through the said slidable tooth portion.

11. In apparatus for use in rock-boring or other purposes, the combination of the cylinder having straight and curved slots therein, a piston movable longitudinally and rotatively in said cylinder, circumferential grooves and teeth in said piston, riders, antifriction-rollers on said riders for engaging lugs in said grooves, a tooth portion slidable transversely in each of said riders and engaging said teeth, a spring threaded through the said slidable tooth portion, a craned lever pivotally connected to the cylinder and bearing against the outer face of said piston, a pivoted arm, a connection between said lever and pivoted arm, and a foot-lever in operative relation to said pivoted arm.

12. In apparatus for use in rock-boring or other purposes, the combination with a lifting and turning device, of a foot-lever, the frame therefor, a strut or bar connection for said frame, a pawl on said foot-lever, a device operative by said pawl, and a cranked lever connected with said device for operating the lifting and turning device.

808,877. ROAD-LEVELING MACHINE. Clinton D. Smith, Russell, Iowa. Filed July 13, 1905. Serial No. 269,467.

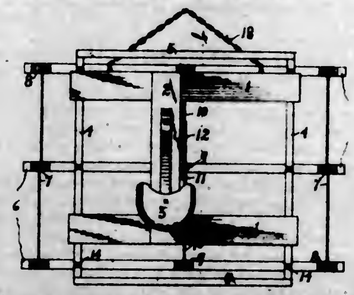

Claim.—1. A road-leveling machine, consisting of a suitable frame, a series of drag-bars mounted beneath the same and secured thereto by means of a series of eyebolts, a series of longitudinal arms or bars pivotally mounted and secured to said drag-bars, and means for tilting said drag-bars to any desired inclination.

2. A road-leveling machine, consisting of a suitable frame, a series of drag-bars secured thereto, a series of longitudinal arms or bars pivotally secured to said drag-bars, and means for operating the same.

3. In a road-leveling machine, a series of drag-bars, a series of brackets mounted thereon, a series of longitudinal arms or bars pivotally mounted within said brackets, a second set of longitudinal arms or bars pivotally mounted in said brackets, and means for operating and adjusting said drag-bars.

4. In a road-leveling machine, the combination with a suitable frame, and a series of drag-bars adjustably secured thereto; of a series of brackets mounted on said drag-bars, a series of longitudinal arms or bars pivotally secured thereto, and means for operating and adjusting said drag-bars.

5. In a road-leveling machine, the combination with a series of drag-bars, a series of brackets mounted thereon, and a series of longitudinal arms or bars pivotally mounted within said brackets; of a second set of longitudinal arms or bars mounted within said brackets, means for connecting said first and second set of longitudinal arms or bars, and means for operating and adjusting the same.

808,878. TRACTION-ENGINE. Levi O. Smith and Francis B. Smith, South Sterling, Pa. Filed May 11, 1905. Serial No. 260,994.

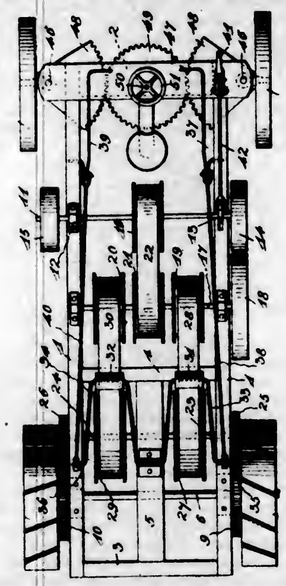

Claim.—1. A traction-engine having a driving-shaft, means to shift the same, a counter-shaft, pulleys and a belt connecting said driving-shaft and counter-shaft, gears to connect them when the driving-shaft is shifted to slacken the belt, so that the counter-shaft may be driven in either direction from the driving-shaft without reversing the latter, traction-wheels, and means to convey power to them from the said counter-shaft.

2. A traction-engine having a driving-shaft, means to shift the same, a counter-shaft, pulleys and a belt connecting said driving-shaft and counter-shaft, gears to connect them when the driving-shaft is shifted to slacken the belt, so that the counter-shaft may be driven in either direction from the driving-shaft without reversing the latter, traction-wheels, independently-revoluble shafts, gears respectively connecting them to the respective traction-wheels, pulleys on said independently-revoluble shafts and on said counter-shaft, slack belts connecting said pulleys, and means to tighten either or both of said slack belts at will, so that either or both of the traction-wheels may be driven simultaneously from the counter-shaft.

808,879. STUMP-PULLER. William Smith, La Crescent, Minn. Filed June 8, 1905. Serial No. 264,261.

Claim.—1. In a stump-puller, the combination with a V-shaped platform, of a base secured to said platform, an upwardly-projecting stub-axle secured to said base, a winding-drum revolubly mounted on said axle, a sweep-support having a horizontally-disposed opening to form a sweep-seat, a rectangular projection formed on the lower end of said support to engage a similarly-shaped recess in said winding-drum, a sweep secured in said opening, a centrally-disposed shaft extending through said sweep-support, and winding-drum and into said stub-axle, a lever connected to the upper end of said shaft, and means whereby said lever is connected with said sweep-support to raise and lower the same out of and into engagement with said winding-drum, substantially as described.

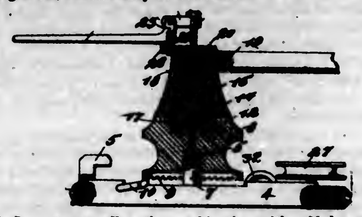

2. In a stump-puller, the combination with a V-shaped platform, of a base secured to said platform, an upwardly-projecting stub-axle secured to said base, a winding-drum revolubly mounted on said axle, a sweep-rest removably mounted in said winding-drum to turn the same, an anchoring-hook on said base, a pull-rope adapted to be detachably secured to said anchoring-hook, a sweep adapted to be firmly secured in said rest, and means to support the outer end of said sweep, substantially as described.

3. In a stump-puller, the combination with a platform consisting of two timbers bolted together at one end and diverging toward their other ends to form a V-shaped construction, a base-bar arranged across and secured to said platform-timbers, an anchor-hook formed on one end of said base-bar, an upwardly-projecting stub-axle secured to the center of said base-bar, a winding-drum revolubly mounted on said axle, a sweep-support arranged on said drum, and a sweep secured to said support, substantially as described.

4. In a stump-puller, the combination with a platform consisting of two timbers bolted together at one end and diverging toward their other ends to form a V-shaped construction, a base-bar arranged across and secured to said platform-timbers, an anchor-hook formed on one end of said base-bar, an upwardly-projecting stub-axle secured to the center of said base-bar, a winding-drum revolubly mounted on said axle, a sweep-support arranged on said drum, a sweep secured to said support, a pull-rope detachably connected to said winding-drum, a shorter sheave mounted on said base-bar, a snatch-block arranged on said pull-rope and hitch-ropes connected to said snatch-block, substantially as described.

808,880. FOUNTAIN-PEN. John A. L. Snyder, Scenic, Cal. Filed Jan. 17, 1905. Serial No. 241,483.

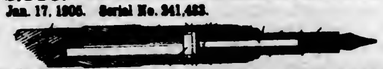

Claim.—1. A fountain-pen embodying a revoluble penholder, a stationary ink-feeder housed thereby and having a reduced side constituting an ink-channel in conjunction with the inner wall of the penholder.

2. A fountain-pen embodying a revoluble penholder provided with a cut-off, a stationary ink-feeder housed thereby and coacting with the cut-off, and a cap provided intermediate of its ends with means to engage the penholder to effect its turning when being applied or removed.

3. In a fountain-pen, the combination of a penholder, an ink-feeder arranged therein, a pen-feeder provided at its inner end with a tent, and a cut-off interposed between the pen-feeder and the ink-feeder and held from rotation by the tent.

4. In a fountain-pen, an ink-feeder, a penholder coacting therewith to control the flow of ink to the pen, and a cap or closure provided intermediate of its ends with means to actuate the holder.

5. A fountain-pen having a stationary ink-feeder, a revoluble penholder, a pen-feeder rigid with the holder, a cut-off interposed between the pen-feeder and the ink-feeder and held against rotation by the former.

6. A fountain-pen comprising a barrel, an ink-feeder rigid therewith, a penholder revolubly mounted upon the ink-feeder, a collar combined with the barrel and holder to maintain the latter in operative position, a pen-feeder carried by the penholder, and a cut-off disposed between the ink-feeder and pen-feeder.

7. A fountain-pen comprising a barrel, an ink-feeder rigid therewith, a penholder revolubly mounted upon the ink-feeder and carrying a packing, a collar combined with the barrel and engaging the packing to present an ink-tight joint, a pen-feeder carried by the penholder, and a cut-off combined with the pen-feeder and coacting with the ink-feeder.

9. A fountain-pen comprising a barrel open at both ends and provided intermediate of its ends with a shoulder or stop having recesses, a removable plug combined with one end of the barrel, an ink-feeder combined with the other end of the barrel and provided with a head to engage the said recesses, and with an abutment, a pen-holder revolubly mounted upon the ink-feeder and having a segmental stop to engage the abutment, a collar combined with the barrel for holding the penholder in position thereon, a pen-feeder carried by the penholder, and a cut-off interposed between the ink-feeder and the pen-feeder.

10. The combination with a barrel or ink-reservoir provided with interior recesses, of an ink-feeder reduced on one side to form a longitudinal ink-passage, and with one terminal constructed to engage the recesses, a penholder to inclose the feeder, and means to permit a partial revolution of the holder to open and close the ink-passage.

11. The combination with an ink-reservoir provided with interior recesses, of an ink-feeder constructed with a part to fit within the recesses, and with a projecting abutment, and a penholder provided at one end with a segmental stop to cooperate with the abutment to limit the rotary movement of the penholder to a partial revolution in either direction.

12. The combination with an ink-reservoir provided with interior recesses, of an ink-feeder constructed with a part to fit within the recesses and with a projecting abutment, a penholder provided with a segmental stop at its inner end, and a threaded collar to secure the penholder to the adjacent end of the reservoir.

13. The combination with a barrel provided with interior recesses, of an ink-feeder longitudinally reduced at one side to form an ink-passage and constructed with a part to fit within the recesses, and with projecting abutment, a penholder having a segmental stop at one end, means to connect the penholder and barrel and a pen-feeder to fit within the holder and provided with a longitudinal ink-passage.

13. The combination with a barrel, of a stationary ink-feeder arranged therein and forming an ink-passage in conjunction therewith, a penholder detachably connected with the barrel and within which the feeder extends, means to permit a partial revolution only of the holder about the feeder, and a pen-feeder removably secured within the outer end of the holder and formed with a longitudinal groove or passage to register with the ink-passage in said holder.

14. A fountain-pen comprising a barrel provided intermediate of its ends with recesses, an ink-feeder provided with a head to engage the recesses and with means to limit its insertion within the holder, a penholder revolubly mounted upon the feeder, and means to maintain the holder against longitudinal movement relatively to the feeder.

15. A fountain-pen embodying a revolvable penholder, a stationary ink-feeder housed thereby and having a reduced side constituting an ink-channel in conjunction with the inner wall of the penholder, and a cap having means to engage frictionally with the penholder to effect turning thereof.

16. A fountain-pen having a stationary ink-feeder, a revolvable penholder, a pen-feeder rigid with the holder, a cut-off interposed between the pen and feeder and held against rotation by the former, and a cap having means coacting with the penholder to effect its rotation to control the feed of ink.

808,881. LOGGING-CART. MATHEW H. STEARS, Keams, La. Filed Apr. 1, 1905. Serial No. 253,303.

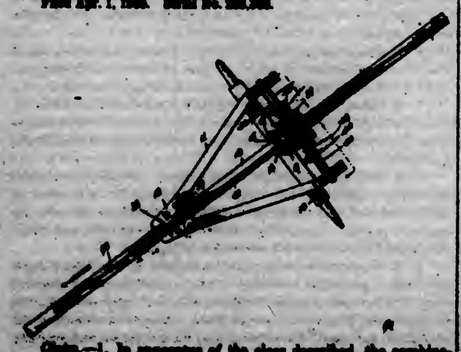

Claim.—1. In apparatus of the class described, the combination with the axle and bounds, of a shaft supported by the bounds, power and winding drums carried by the shaft, a tongue movable relatively to the bounds during the hoisting of the load, cables connecting both ends of the tongue to the power-drum, and flexible hoisting members carried by the winding-drum.

2. In apparatus of the class described, the combination with an axle having a guiding-slot, an antifriction-roller journaled in brackets above the slot, bounds secured to the axle and arranged on convergent lines, upper and lower plates connecting the ends of the bounds and forming in connection therewith a guide, a longitudinally-movable tongue extending through the guide and the slot, a catch pivoted to the tongue, a keeper carried by one of the plates and with which said catch engages, a flexible catch-operating member, an elevated yoke for supporting said flexible member, bearing-boxes carried by the bounds, a shaft mounted in the boxes, power and winding drums carried by the shaft, cables extending from the front and rear ends of the tongue and passing around said power-drum, flexible hoisting members mounted on the winding-drums, and a spring-buffer carried by the rear portion of the tongue and adapted to engage against the axle.

808,882. LIGHTNING-ARRESTER. FREDERICK A. STAFFORD, Charlton, Iowa. Filed Apr. 3, 1905. Serial No. 253,605.

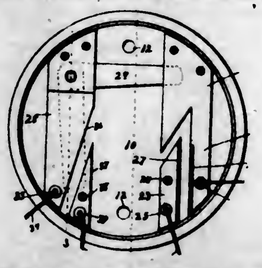

Claim.—1. In a lightning-arrester for telephones, the combination of a base, a contact-plate on the base to be connected with a line-wire and designed to engage a switch-arm, a grounded plate adjacent to said contact-plate, a second contact-plate spaced apart from the first to be connected with a telephone-wire, a switch-arm connected to the second contact-plate and designed to be moved to and from position connecting with the first contact-plate, and a second grounded plate adjacent to the second contact-plate.

2. In a lightning-arrester for telephones, the combination of a contact-plate to be connected with a line-wire, a second contact-plate to be connected with a telephone-wire, a switch-arm to be connected with the second contact-plate and designed to be placed into or out of contact with the first contact-plate, a grounded plate adjacent to the second contact-plate, said grounded plate also designed to be connected with a telephone-wire, said second contact-plate and said grounded plate designed to be engaged by the switch-arm when it is out of engagement with the first contact-plate.

3. A lightning-arrester comprising a circular base with a flange, a detachable cover therefor provided with a packing-ring and fitted to the flange, a contact-plate secured to the base and comprising an inner and outer layer to receive a switch-arm between them and also formed with an upturned flange, a binding-post on said plate adjacent to the upturned flange to receive a line-wire, a grounded plate having an upturned flange adjacent to the upturned flange of the contact-plate, a second contact-plate, a binding-post thereon to be connected to a telephone-wire, a switch-arm connected with the second contact-plate, a second grounded plate adjacent to the second contact-plate and designed to be connected with a ground-wire and also with a telephone-wire, said switch-arm in one position engaging both the second contact-plate and the second grounded plate and a rod connected with the switch-arm for operating it

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808,883. PAPER-FEEDING MACHINE. CHARLES D. STILWELL, Wayne, Pa. Filed Apr. 18, 1903. Renewed Apr. 8, 1905. Serial No. 254,553.

Claim.—1. In a paper-feeding machine, means for supporting a roll of paper from which paper is being drawn for use and means for guiding the web drawn from said roll through a determined path in the machine in combination with means for supporting a supplemental roll of paper, means for imparting to said supplemental roll a rotary motion which will cause its periphery to move with approximately the speed of the web in use, means for attaching the end of the web on the supplementary roll to the web in use without arresting the motion of either web, and means for shifting the supplemental roll to the supports for first roll.

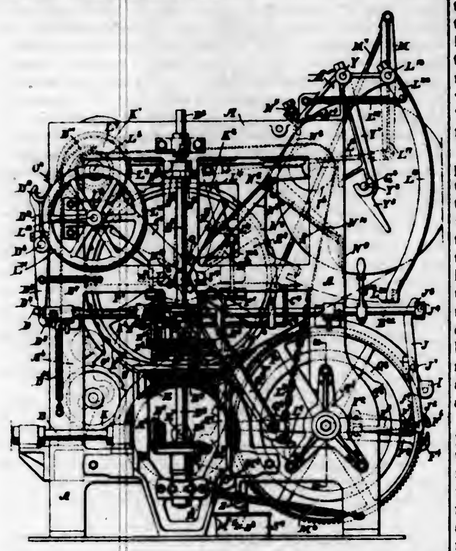

2. In a paper-feeding machine, means for supporting a roll of paper from which paper is being drawn for use and means for guiding the web drawn from said roll through a determined path in the machine in combination with means for supporting a supplemental roll of paper, means for imparting to said supplemental roll a rotary motion which will cause its periphery to move with approximately the speed of the web in use, means for attaching the end of the web on the supplementary roll to the web in use without arresting the motion of either web, and means for shifting the supplemental roll to the supports for first roll.

3. In a paper-feeding machine, means for supporting a roll of paper from which paper is being drawn for use and means for guiding the web drawn from said roll through a determined path in the machine in combination with means for supporting a supplemental roll of paper, means for imparting to said supplemental roll a rotary motion which will cause its periphery to move with approximately the speed of the web in use, means for attaching the end of the web on the supplementary roll to the web in use without arresting the motion of either web and means actuated by the contracting diameter of the roll in use for setting in operation said means for attaching the web of the supplementary roll.

4. In a paper-feeding machine, means for supporting a roll of paper from which paper is being drawn for use and means for guiding the web drawn from said roll through a determined path in the machine in combination with means for supporting a supplemental roll of paper, means for imparting to said supplemental roll a rotary motion which will cause its periphery to move with approximately the speed of the web in use, means for severing the web in use from the roll, means for applying glue to the end of the web of the supplementary roll and means for carrying the pasted end into contact with the severed end of the first web to connect the webs together.

5. In a paper-feeding machine, means for supporting a roll of paper from which paper is being drawn for use and means for guiding the web drawn from said roll through a determined path in the machine in combination with means for supporting a supplemental roll of paper, means for imparting to said supplemental roll a rotary motion which will cause its periphery to move with approximately the speed of the web in use, means for severing the web in use from the roll, means for applying glue to the end of the web of the supplementary roll and means for carrying the pasted end into contact with the severed end of the first web to connect the webs together and means actuated by the receding diameter of the roll in use for setting in operation said cutting, pasting and web-connecting devices.

6. In a paper-feeding machine, having means for supporting a paper-roll in use and for guiding the web of paper from said roll through the machine, the combination of a support for a supplemental paper-roll with revoluble arms adapted to carry a "stick" or device on which the end of the paper on the supplemental roll is attached, a carrier movable in close relationship with the guides for the web in use and with the revolving arms aforesaid, said carrier being adapted to receive the "stick" from the arms and bring it and the paper end attached to it in contact with the web from the first roll, means for shifting the "stick" from the arms to the carrier when desired, means for applying glue to the paper end on the "stick" before it is brought in contact with the first web and means for arresting and starting the motion of the carrier.

7. In a paper-feeding machine having means for supporting a paper-roll in use and for guiding the web of paper from said roll through the machine, the combination of a support for a supplemental paper-roll with revoluble arms adapted to carry a "stick" or device on which the end of the paper on the supplemental roll is attached, a carrier movable in close relationship with the guides for the web in use and with the revolving arms aforesaid, said carrier being adapted to receive the "stick" from the arms and bring it and the paper end attached to it in contact with the web from the first roll, means for shifting the stick from the arms to the carrier when desired, means for applying glue to the paper end on the "stick" before it is brought in contact with the first web, a constantly-moving motor device, mechanism for actuating the carrier devices aforesaid and clutch mechanism for connecting and disconnecting said mechanism with the motor device.

8. In a paper-feeding machine having means for supporting a paper-roll and for guiding the web of paper from said roll through the machine, the combination of a support for a supplemental paper-roll with revoluble arms adapted to carry a "stick" or device to which the end of the paper on the supplemental roll is attached, a carrier movable in close relationship with the guides for the web in use and with the revolving arms aforesaid said carrier being adapted to receive the "stick" from the arms and bring it and the paper end attached to it in contact with the web from the first roll, means for shifting the "stick" from the arms to the carrier when desired, means for applying glue to the paper end on the stick before it is brought in contact with the first web, a constantly-moving motor device, mechanism for actuating the carrier devices aforesaid, a friction-clutch and a positive clutch both acting to engage the carrier mechanism and couple it to the motor device and means for engaging first the friction-clutch and afterward the positive clutch.

9. In a paper-feeding machine having means for supporting a paper-roll and for guiding the web of paper from said roll through the machine, the combination of a support for a supplemental paper-roll with revoluble arms adapted to carry a "stick" or device to which the end of the paper on the supplemental roll is attached, a carrier movable in close relationship with the guides for the web in use and with the revolving arms aforesaid said carrier being adapted to receive the "stick" from the arms and bring it and the paper end attached to it in contact with the web from the first roll, means for shifting the "stick" from the arms to the carrier when desired, means for applying glue to the paper end on the stick before it is brought in contact with the first web, a constantly-moving motor device, mechanism for actuating the carrier devices aforesaid, a friction-clutch and a positive clutch both acting to engage the carrier mechanism and couple it to the motor device, means for engaging first the friction-clutch and afterward the positive clutch and means actuated by the movement of the "stick" to release both clutches after the paper on the "stick" is attached to the web in use.

10. In a paper-feeding machine, the combination with the rotatable carrier-arms F^3 and the carrier-chains K^3 of mechanism for actuating said carriers, a positively-moving motor device, clutch mechanism for coupling said motor to the carrier-driving mechanism, a rock-shaft B^{32} for moving the clutch mechanism, means tending to shift the shaft B^{32} to a position to release the clutches, a catch acting to hold the shaft in clutch-engaging position, a paper-holding "stick" adapted to be engaged and moved successively by the carrier-arms and the carrier-chains and means for releasing the catch holding the clutch-shaft B^{32} in operative position arranged to be actuated by the "stick" when moving with the chains K^3.

11. In a paper-feeding machine, the combination with the rotatable carrier-arms F^3 and the carrier-chains K^3 of mechanism for actuating said carriers, a positively-moving motor device, a friction-clutch B^{31} B^{32} for coupling said motor and the carrier-driving mechanism, a clutch-locking tooth C^9 movably secured to one clutch member and adapted in one position to positively lock the clutch members together, a rock-shaft B^{33} coupled to the movable friction-clutch member so as to move it to and from operative position and coupled to the

locking-teeth so as to move it from but not to operative position, means tending to move the rock-shaft to release the clutch devices, a catch adapted to hold it in operative position, a tooth-actuating lever C^6 C^6 pivoted on the movable friction-clutch member, a manually-operative block C^9 arranged to engage and operate said lever to engage the clutch-teeth and a paper-holding "stick" adapted to be engaged and moved successively by the carrier arms and chains and to act on the rock-shaft catch to release it when moved by the carrier-chains.

12. In a paper-feeding machine, the combination of the revoluble carrier-arms F^6 having fixed and movable jaws H^6 F^6 for holding the "stick" with the carrier-chains K^5 having "stick-holding" sockets K^6 adapted to register with the movable jaws F^6, sprocket-wheels F^5 over which chains K^5 pass, pivoted jaws c^3 secured to said wheels and the hook-lever M^6 having a hook M^9 adapted to engage and open jaw F^6 and a cam M^7 adapted to engage and move the jaw c^3 so as to move the stick from the arms F^6 to the sockets in chains K^5.

13. In a paper-feeding machine having a support for a paper-roll in use and a guide-drum L' over which the web from said roll passes, a support for a supplemental roll of paper, in combination with carrier-arms F^6 revoluble around said support and having fixed and movable "stick-holding" jaws H^6 F^6, a carrier-chain K^5 having sockets K^6 adapted to register with the movable jaws of the arms F^6 as the arms and chain revolve, sprocket-wheels supporting and guiding the chain carriers so that they move practically parallel with the guide-drum for a part of their length, means for releasing the "stick" from the arms F^6 and engaging it with the sockets of the chain carrier and means for pressing the "stick" against the guide-drum as it is carried over it.

14. In a paper-feeding machine having a support for a paper-roll in use and a guide-drum L' over which the web from said roll passes, a support for a supplemental roll of paper, in combination with a "stick" adapted to hold the end of the supplemental roll of paper, said "stick" having the trunnion-shafts H^3 and crank-arms H^4 H^5 extending from said shafts, carrier-arms F^6 revoluble around said support and having fixed and movable "stick-holding" jaws H^6 F^6 adapted to engage the crank-arm H^5 and the ends of shafts H^3 of the "stick," a carrier-chain K^5 having sockets K^6 adapted to register with the movable jaws of the arms F^6 as the arms and chain revolve and engage the stud-shafts H^3, sprocket-wheels supporting and guiding the chain carriers so that they move practically parallel with the guide-drum for a part of their length, means for releasing the "stick" from the arms F^6 and engaging it with the sockets of the chain carrier and cams U acting to engage the crank-arms of the stick and press it against the guide-cylinder.

15. In a paper-feeding machine the combination of the guide-drum L', the carrier-chains K^5 and the rolls O' held against the drum by elastic pressure and adapted to press the stick against said drum.

16. In a paper-feeding machine the combination with the guide-drum L' and carriers K^5 K^6 of the "stick," guides O^4 and O^4 arranged to withdraw the "stick" from the drum and release the paper as specified.

17. In a paper-feeding machine the combination with a constantly-acting motor and a clutch device whereby its motion is communicated to the moving parts of the machine, a latch holding the clutch in operative position, carriers K^5 constituting one of the parts actuated through the clutch, a "stick" adapted to hold the end of a web of paper and to be moved by the carriers, a guide O^4 arranged to gradually withdraw the "stick" from the carriers and a lever D^{11} arranged to be acted on by the "stick" moving through guide O^4 and to act to release the clutch-latch.

18. In a paper-feeding machine having a positively-driven shaft and moving parts driven by said shaft through a clutch, the combination with mechanism for pasting the end of a reserve roll of paper to a web in use, of mechanism for operating said pasting and applying devices comprising a cam, as N^{32}, directly connected to the positively-driven shaft and a cam q^2 connected with the driven mechanism whereby said devices are prevented from operating except in a definite relation to the motion of the driving-shaft, as well as to the movements of the driven mechanism.

19. In a paper-feeding machine having bearings for rolls of paper in use and in reserve and means for rotating the reserve roll with a speed corresponding to that of the web drawn from the roll in use, a paper-covering device adapted to act on the web in use in combination with mechanism for attaching the web of the reserve roll to the covered end of the web in use and moving toward the bearings thereof as the roll contracts and mechanism actuated by said moving part as it approaches the line of the roll-bearings for setting in operation the covering and paper-attaching devices.

20. In a paper-feeding machine having bearings for rolls of paper in use and in reserve and means for rotating the reserve roll with a speed corresponding to that of the web drawn from the roll in use, a cutter L^{30} supported on pivoted arms L^{19}, means tending to draw the cutter in across the web of paper, a stop-lever holding said cutter in non-operative position, means for attaching the end of the reserve roll of paper to the web in use and mechanism for releasing the cutter from the stop-lever and for setting in operation the mechanism operating to attach the paper of the reserve roll to the web in use said mechanism consisting in part of devices supported on the roll in use and moving toward operative position as the said roll contracts and in part of a device operated by the means acting to rotate the reserve roll whereby the cutting and attaching devices operate in a fixed rotation to the position of the rotating devices.

21. In a paper-feeding machine having bearings for rolls of paper in use and in reserve and means for rotating the reserve roll with a speed corresponding to that of the web drawn from the roll in use, a cutter L^{30} supported on pivoted arms L^{19}, means for attaching the end of the reserve roll to the web in use, a cutter L^{30} secured on pivoted arms, means tending to draw said cutter toward the web in use, a stop-lever acting to hold the cutter out of operation, means connecting the cutter and the paper-attaching mechanism whereby they act simultaneously, a device for acting on the stop-lever and releasing the cutters supported on the roll in use and moving toward operative position as the roll contracts and a coacting device operated by the revolving mechanism of the reserve roll whereby the cutter is released in a fixed relation to the position of said revolving mechanism.

22. In a paper-feeding machine having bearings for rolls of paper in use and in reserve and means for rotating the reserve roll with a speed corresponding to that of the web drawn from the roll in use, gluing mechanism for applying glue to the end of the web of the reserve roll, mechanism for applying the glued end of the reserve web to the web in use, cutter L^{30} secured on pivoted arms, means tending to draw said cutter toward the web in use, a stop-lever acting to hold the cutter out of operation, means connecting the cutter and the paper gluing and attaching mechanism whereby they act simultaneously, a device for acting on the stop-lever and releasing the cutter supported on the roll in use and moving toward operative position as the roll contracts and a coacting device actuated by the revolving mechanism of the reserve roll whereby the cutter is released the glue applied and the webs attached in a fixed relation to the position of said revolving mechanism.

23. In a paper-feeding machine having bearings for a roll of paper in use and a roll in reserve the combination with means for revolving the roll in reserve, means for cutting off the web from the roll in use and for securing the end of the reserve roll to the end of the web in use, of a rock-shaft *l*, a lever secured thereto and having its free end supported on the roll in use so as to move down as said roll contracts and mechanism supported by and moving with the rock-shafts for setting in operation the cutter and the attaching devices when the roll in use is reduced to a determined diameter.

24. In a paper-feeding machine having bearings for a roll of paper in use and a roll in reserve, the combination with means for revolving the roll in reserve, means for cutting off the web from the roll in use and for securing the end of the reserve roll to the end of the web in use, of a rock-shaft *l*, a lever secured thereto and having its free end supported on the roll in use so as to move down as said roll contracts, mechanism supported by and moving with the rock-shaft for setting in operation the cutter and the attaching devices when the roll in use is reduced to a determined diameter, a cam moving in fixed relationship with the roll-revolving mechanism and means controlled by said cam for assisting the final operative movements of the devices acting on the cutter and applying devices until they can operate in a determined relationship to the revolving devices.

25. In a paper-feeding machine having bearings for rolls of paper in use and in reserve and means for transferring the reserve roll to the bearings for the roll in use, the combination of guide-plates for the web in use situated between the bearings for the two rolls and means for shifting said guide-plates out of the path traveled by the reserve roll on its way to the bearings for the roll in use actuated by the transferring mechanism.

26. In a paper-feeding machine having bearings for rolls of paper in use and in reserve and means for transferring the reserve roll to the bearings for the roll in use, the combination of a cutter L^{30} for cutting off the web from the roll in use, a stop-lever for holding the cutter out of operation and means operated by the transferring device for shifting the cutter out of the path of the moving roll and engaging it with said stop-lever.

808,884. AUTOMATIC SIGN-CHANGING LETTER. EDWARD C. THOMAS and CHARLES F. JENKINS, Washington, D. C. Filed Oct. 19, 1905. Serial No. 283,494.

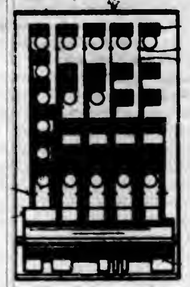

Claim.—1. In a changing-sign letter of the character described, the combination of a plate having openings therein relatively so located that unitary designs may be formed thereby, shutters, one for each opening, and means for moving said shutters in right lines to cover and uncover the openings.

2. In a changing-sign letter of the character described, the combination of a plate having openings therein relatively so located that unitary designs may be formed thereby, shutters, one for each opening, and means for moving said shutters in right lines to cover and uncover the openings, and a plurality of keys having projections arranged in a predetermined manner for successively moving said shutters to cover and uncover the openings to produce predetermined designs.

808,885. PIVOT-BOLT FOR LOOM-SHUTTLE SPINDLES. CHARLES F. THOMPSON, Oswego Falls, N. Y. Filed Sept. 26, 1904. Serial No. 225,999.

Claim.—A loom-shuttle having a recess in one end, a plate gained in one wall of the said recess and provided with a screw-threaded opening, the said wall of the said recess and provided with a screw-threaded opening coincident with the threaded opening in the plate and further provided with a countersink at the outer end of the said unthreaded opening, the opposite wall of the shuttle having an unthreaded opening of reduced diameter, in combination with a spindle having its pivotal end in said recess and provided with an unthreaded opening registering with the unthreaded opening of reduced diameter in one wall of the shuttle, and a bolt having an unthreaded stem portion in the unthreaded opening of the spindle and one wall of the shuttle, a screw-threaded portion of enlarged diameter in the screw-threaded opening of the plate and in the unthreaded opening of the shuttle-wall contiguous to said plate, said bolt being further provided with an enlarged head in the said countersink of the shuttle, and serving to firmly clamp the plate in place, the latter serving to lock the bolt, for the purpose set forth substantially as described.

808,886. DRILL SHARPENER, SHAPER, AND GAGER. JAMES T. THOMPSON, Tuolumne, Cal. Filed May 26, 1905. Serial No. 262,355.

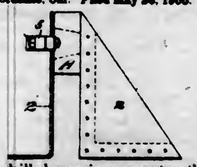

Claim.—1. In a drill-sharpening apparatus, the combination of a swage-block having a tapered die-recess, a removable sectional die fitting said recess, said die inclosing a tapered chamber corresponding to the drill-head to be produced, a tapered dolly fitting and closing an end of said chamber, and means for holding the dolly in position.

2. In a drill-sharpening apparatus, a suitably-supported swage-block having a horizontal tapered die-recess, a correspondingly-tapered sectional die fitting said recess, said die inclosing a space contracted at one end corresponding with the shape and size of a drill-shank and spreading out at the other end corresponding with the head of the finished drill, a tapered dolly fitting said die, and a locking-bar to hold said dolly in the die.

808,887. SCREW-MAKING AND METAL-TURNING LATHE. HENRY P. TRUEMAN and EDWARD D. CLEGHORN, Worcester, England. Filed Dec. 20, 1902. Serial No. 136,880.

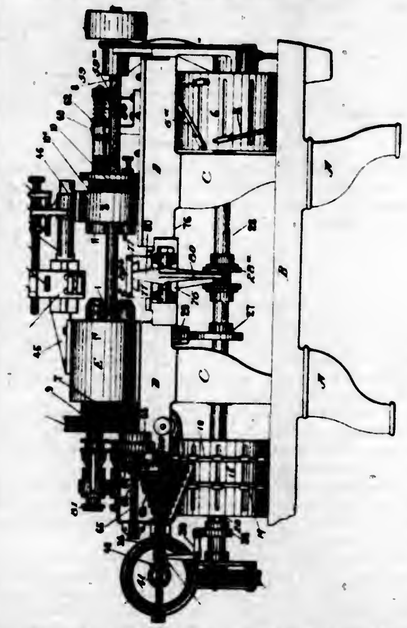

Claim.—1. In screw-making and metal-turning lathes, the means for enabling various thicknesses of work to be operated upon, consisting in the combination of a work-spindle, a feed-tube carried within said work-spindle, and having an interior screw-thread at one end, a feed-shell having an exterior screw-thread at its inner end, and a reducing-socket having one end screw-threaded internally and adapted to receive the externally-screw-threaded end of the feed-shell and having its other end screw-threaded externally and adapted to screw into the feed-tube, substantially as specified.

2. In screw-making and metal-turning lathes, in which a supplemental tool-carrier is employed; means for imparting a sliding movement to said tool-carrier, said means comprising a shaft having a worm-wheel and crank for actuating said tool-carrier, a worm-shaft to actuate said worm-wheel; a bearing-bracket upon the main tool-slide for supporting said shaft; an arm for supporting said tool-carrier, and an extension on said arm, the bearing-bracket for the worm-shaft having an opening or guide through which said extension slides; in combination with stops and springs for automatically operating said tool-carrier, said stops being rigidly carried upon said worm-shaft, one on each side of said bearing-bracket, and said springs being interposed between said stops and said bearing-bracket, substantially as specified.

3. In screw-making and metal-turning lathes, the cutting-off slideways held upon the main frame and capable of angular adjustment; the actuating-lever of said cutting-off slideways; the telescoping ball-joints of said actuating-lever; and the grooved guides along which the ball-joints of said actuating-lever operate, said grooved guides being attached to the tool-slides, substantially as specified.

4. In stock-feeding mechanism for screw-making and metal-turning lathes the combination with the feed-slides and the feed-spools operated by said feed-slides; of means for retaining said feed-spools in their retracted positions, said means consisting of balls arranged to lie in a groove in the feed-spool; recesses in the end of the feed-tube, in which are located said balls; and springs located in said recesses and arranged to exert a pressure on said balls, substantially as specified.

9. In screw-making and metal-turning lathes of the multispindle type, means for enabling the tool-slides to be adjusted to compensate for wear, said means comprising the combination with side strips, capable of adjustment to compensate for the wear on the sides of the tool-slide; of screw and clamp bolts for adjustment; and blocks fitted in spaces; and the spaces formed in the under side of the tool-slide, said blocks being capable of vertical adjustment to compensate for wear on the bottom of the tool-slide; and the set-screws for adjusting vertically, substantially as specified.

6. In screw-making and metal-turning lathes, means for operating the feed-spools, said means comprising a clamp-slide; a feed-slide arranged to slide upon said clamp-slide; a cam-pin upon said clamp-slide and a cam-pin upon said feed-slide, said pins being arranged to be operated by cam-stripe upon a cam-drum; and the said cam-drum and the said cam-stripe upon said cam-drum, substantially as specified.

808,888. **LENS-MOUNTING FOR EYEGLASSES.** JOHN R. VAN TASSEL, Geneva, N. Y., assignor to The Standard Optical Company, Geneva, N. Y., a Corporation of New York. Filed July 10, 1905. Serial No. 269,063.

Claim.—1. A one-piece lens-mounting consisting of a strip of metal folded upon itself forming an open loop or box and ears, the opposite arms being brought together at one edge of the lens between the ears and box for forming a comparatively thin neck, said box being offset beyond the plane of the lens, and also disposed in a horizontal plane above the ears.

2. A one-piece lens-mounting for eyeglasses consisting of a strip of metal folded upon itself, its intermediate portion forming a box which is disposed at one side of both the horizontal and vertical planes of the ends of the strip.

3. A lens-mounting for eyeglasses comprising lens-clamping ears, a box and a comparatively thin neck connecting the ears to the box, said neck being disposed at an angle with the ears, and the box being offset to one side of the neck.

4. A one-piece lens-mounting for eyeglasses consisting of a strip of metal folded upon itself, its intermediate portion forming an open loop or box and its ends being disposed in parallel planes spaced apart to receive the lens, one of the opposite arms being offset toward the other to bring portions of the two arms together forming a comparatively thin neck between the box and lens, said neck being inclined at an angle with the mechanical axis of the lens, and the box being offset and disposed in a plane at one side of the lens.

5. A one-piece mounting for an eyeglass, said mounting consisting of a strip of metal folded upon itself, the intermediate portion being deflected vertically at an angle with the ends and forming an open box which is disposed in a vertical plane at one side of the ends of the mounting.

6. In combination with a lens, a strip of metal folded upon itself and having its ends secured to the opposite faces of the lens, one of the opposite arms being offset laterally across the edge of the lens and provided with a projection engaging the edge of the lens, the intermediate portion of said strip forming an open loop located at one side of the vertical plane of the lens for the purpose described.

7. A lens-mounting for eyeglasses comprising an ear secured to the lens and offset laterally across the edge of the lens, said offset having oppositely-projecting lens-guards bearing upon the edge of the lens, a box united to the ear in combination with a bow and nose-guard secured within said box.

8. A lens-mount for eyeglasses comprising an ear secured to the lens in line with its mechanical axis, a box rigidly connected to the ear and located in a plane at one side of the mechanical axis and also disposed in a plane at one side of the vertical plane of the lens.

9. A one-piece lens-mounting for eyeglasses consisting of a strip of metal folded upon itself, its central portion forming a loop or box and the ends spaced apart to receive the lens, the portions between the ends and box being brought into juxtaposition to form a comparatively thin neck, said neck being deflected vertically at an angle with the ends and the box being offset horizontally beyond the plane of said ends for the purpose described.

10. A lens-mounting consisting of a strip of metal having its intermediate portion bent into the form of a loop or box and its ends separated forming ears to receive the lens, the portions of the strip between the box and ears being brought together to form a comparatively thin neck, and means to secure the ears to the lens.

11. A lens-mounting having a box open at both ends, a bow and a nose-guard each having one end inserted into the box and a U-shaped washer also inserted in the box and receiving one of said ends, one side of the washer being interposed between one side of the box and the adjacent end of one of the other parts inserted in said box and a clamping-screw having a head engaged with one side of the washer and having its threaded end engaged with the threaded aperture in the opposite side of the box.

12. In a lens-mounting, the combination with a lens, a one-piece strip of metal having its ends secured to opposite faces of the lens and its intermediate portion forming a box, and a bow and nose-guard each having one end secured in the box.

13. In combination with a lens, a one-piece strip of metal having its ends secured to opposite faces of the lens and its intermediate portion forming a rectangular box, and a nose-guard having one end inserted in the box, and means to secure said end in the box.

14. In combination with a lens, a one-piece strip of metal having its ends secured to opposite faces of the lens and its intermediate portion forming a rectangular box, one of the ends of said strip having oppositely-projecting spurs forming lens-guards engaging the edge of the lens.

808,889. **CUTTING-GAGE FOR SAW-TABLES.** CLAYTON VON CULIN, Wayland, N. Y. Filed Nov. 12, 1904. Serial No. 233,441.

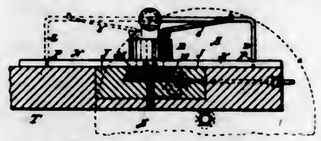

Claim.—The combination with a saw-table and a rail therein having slideways, of a saw-table gage having a base or slide adapted to engage and slide in said ways the said base and rail having each a series of perforations adapted for interchangeable registration and means for engagement therewith to secure adjustment of the gage and means for adjusting said slide so that the perforations in the slide-rail may not always register, the said base or slide having a close fit as to its lateral edges with said way but providing a longitudinal space beneath its bottom surface and the bottom of said slideway and perforations in the rail carried through the table, so that dust sifting through the perforations in the slide if carried by the slide in its adjustment which might otherwise clog in the slide will not prevent free sliding motion of the slide and may in such manner be permitted to escape through non-registering perforations in the bottom of the slideway.

808,890. **SINGLE-TRIGGER MECHANISM FOR FIREARMS.** GEORGE B. WITHERELL, Hartford, Conn., assignor to Remington Arms Company, Ilion, N. Y., a Corporation of New York. Filed May 23, 1902. Serial No. 108,062.

Claim.—1. In a multi barrel firearm having a plural number of hammers and a plural number of sears and their appurtenant parts, a coupler mounted on each of the sears and adapted to engage and operate the opposite sear, a trigger, and a connection between the trigger and sears adapted to initially engage either sear and subsequently operate the other sear without changing its position.

2. In a multi barrel firearm having a plural number of hammers and a plural number of sears and their appurtenant parts, a coupler mounted on each of the sears and adapted to engage and operate the opposite sear, said couplers controlled by the hammers, a trigger and a connection between the trigger and sears adapted to initially engage either sear and subsequently operate the other sear without changing its position.

3. In combination, in a firearm having a plurality of barrels, hammers, sears, and appurtenant parts, a trigger for actuating said sears, provided at its upper and under sides with recesses, a thumb-lever projecting into the lower recess and a sear-actuating lever projecting into the upper recess, said levers rigidly connected by a pin passing through the trigger adjacent to the recesses and a spring-detent appurtenant to the upper recess adapted to hold the parts in positive position of adjustment.

4. In a multi barrel firearm having a plural number of hammers and a plural number of sears and their appurtenant parts, a trigger, means intermediate the sears and trigger for automatically operating one of said sears after the operation of the other of said sears, a connection mounted on the trigger adapted to initially operate either of said sears and means for temporarily preventing the action of the automatic sear-operating means.

5. In a multi barrel firearm having a plural number of hammers and a plural number of sears and their appurtenant parts, automatic connections intermediate the sears whereby one of said sears may be operated after the other of said sears, a trigger for operating both of said sears, a connection mounted on the trigger and adapted to initially operate either of said sears, and elastically-controlled means for preventing the operation of the automatic sear-actuating means.

6. In a multi barrel firearm having a plural number of hammers and a plural number of sears and their appurtenant parts, a trigger for actuating said sears, a connection mounted on the trigger and co-operating with the trigger to initially operate either of said sears, an automatic connector adapted to couple said sears after either has been moved, and elastically-controlled means for temporarily preventing operative movement of the trigger and its connection.

7. In a multi barrel firearm having a plural number of hammers and a plural number of sears and their appurtenant parts, a coupler mounted on one of said sears and adapted to engage the opposite sear, a trigger, a connection cooperating with the trigger and adapted to initially operate either of the sears and subsequently operate the other sear without changing its position, and elastically-controlled means for temporarily preventing a sear-actuating movement of the trigger and connection.

8. In a multi barrel firearm having a plural number of hammers and a plural number of sears and their appurtenant parts, a coupler located on one of the sears and adapted automatically to engage the opposite sear, a trigger, a connection mounted on the trigger and adapted to initially operate either sear, means for moving said connection and elastically-retracted means for temporarily preventing the automatic action of said coupler.

9. In a multi barrel firearm having a plural number of hammers and a plural number of sears and their appurtenant parts, a coupler mounted on one of the sears and adapted automatically to engage the opposite sear, a trigger, a connection mounted on the trigger and adapted to initially connect the trigger with either sear, means located outside of the piece for moving said connection, and elastically-retracted means for temporarily preventing the automatic action of the coupler.

10. In a multi barrel firearm having a plural number of hammers and a plural number of sears and their appurtenant parts, a coupler mounted on one of the sears and adapted automatically to engage the opposite sear, a trigger, a connection mounted on the trigger and adapted to initially operate either sear, means located on the trigger for moving said connection, and elastically-retracted means for temporarily preventing the automatic action of the coupler.

11. In a firearm having a plural number of barrels, hammers and sears with their appurtenant parts, a trigger, a shifting trip borne on the trigger and pivoted at one end and with its other end lying below the sears, the pivot secured to said trip and extending into the trigger, a lever having one end secured to the pivot and its opposite end extending in the same direction as the sear end of the trip whereby the trip and lever have identical movements and means for resiliently holding said trip and lever in their various positions of adjustment.

808,891. **HORSESHOE-CALK.** BRUCE F. ATHERTON, Macedon, N. Y. Filed July 19, 1904. Serial No. 217,247.

Claim.—As a new article of manufacture, a horseshoe-calk comprising a body tapered to a longitudinal edge and having a laterally-extended flange at the opposite edge to provide an extended welding-face, the lower or tread side of the lateral flange being beveled, and having an oblique cut extended through opposite faces and having the partly-severed portion pressed outward at a right angle to the welding-face of the calk to form a pointed spur and leaving a diagonal surface or wall in the flange perpendicular or at a right angle to said welding-surface.

808,892. **SPINDLE-BRAKE DEVICE FOR WIRE-FENCE MACHINES.** AXEL F. BACKLIN and IRONY BELLIES, Worcester, Mass., assignors to The American Steel & Wire Company of New Jersey, Worcester, Mass., a Corporation of New Jersey. Filed Aug. 31, 1905. Serial No. 276,094.

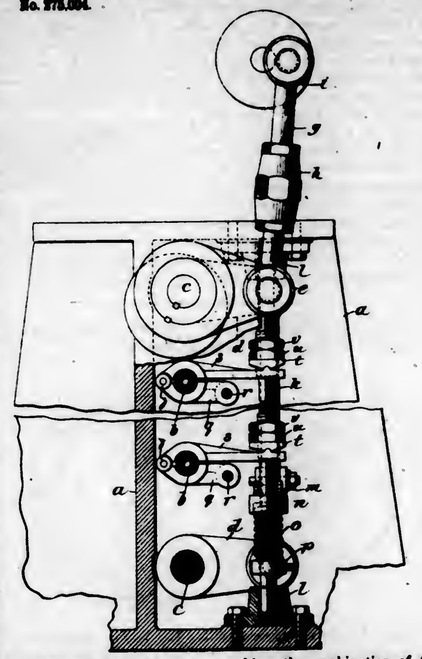

Claim.—1. In a wire-fence machine, the combination of the coiler-spindles, a brake device for each spindle, and means connected with the stay-cutter-actuating mechanism for applying the brakes.

2. In a wire-fence machine, the combination of the coiler-spindles, a pivoted brake device for each spindle, and means connected with the stay-cutter-actuating mechanism for applying the brakes.

3. In a wire-fence machine, the combination of the coiler-spindles, brake devices for the several spindles, and means operated from the main drive-shaft of the machine for alternately engaging and disengaging the spindles and brake devices.

4. In a wire-fence machine, the combination of the coiler-spindles, brake devices for the several spindles pivoted to the machine-frame adjacent to the spindles, and means operated from the main drive-shaft of the machine for causing said brake devices to move into and out of engagement with the corresponding spindles.

5. In a wire-fence machine, the combination of the coiler-spindles, a brake device for each spindle, a reciprocating bar engaging the several brake devices, and connections between said bar and the stay-cutter-actuating mechanism, whereby the bar is moved to apply the brakes when the stay-wires are cut and to release the brakes during the coiling operation.

6. In a wire-fence machine, the combination of the coiler-spindles, a brake device for each spindle pivoted to the machine-frame, a reciprocating bar engaging the several brake devices, and connections between said bar and the stay-cutter-actuating mechanism whereby the bar is moved to apply the brakes when the stay-wires are cut and to release the brakes during the coiling operation.

7. In a wire-fence machine, the combination of the coiler-spindles, a brake device for the several spindles, each comprising a pair of pivotally-connected shoes embracing the corresponding spindle and pivoted at one end to the machine-frame, a reciprocating rod engaging the free end of each brake device, and means operated from the main drive-shaft of the machine for operating said rod to apply and release the brakes.

8. In a wire-fence machine, the combination of the coiler-spindles, a brake device for the several spindles, each comprising a pair of pivotally-connected shoes embracing the corresponding spindle and pivoted at one end to the machine-frame, a reciprocating rod en-

gaging the free end of each brake device, and connections between said bar and the stay-cutter-actuating mechanism for moving said bar to apply the brakes when the cutters are operated.

9. In a wire-fence machine, the combination of the coiler-spindles, a brake device for the several spindles, each comprising a pair of pivotally-connected shoes embracing the corresponding spindle and pivoted at one end to the machine-frame, a reciprocating rod engaging the free end of each brake device, rock-shafts for operating the stay-cutter bar, a connecting-rod between said shafts, and a yoke fixed to said connecting-rod and engaging the reciprocating rod to move the latter to apply the brakes.

10. In a wire-fence machine, the combination of the coiler-spindles, a brake device for the several spindles, each comprising a pair of pivotally-connected shoes embracing the corresponding spindle and pivoted at one end to the machine-frame, a reciprocating rod engaging the free end of each brake device, rock-shafts for operating the stay-cutter bar, a connecting-rod between said shafts, a yoke fixed to said connecting-rod, and a spring-pressed collar on the reciprocating rod engaging said yoke, whereby the brakes will be yieldingly applied to the spindles when the stay-cutters are operated.

808,893. **ADDING-MACHINE.** EDWIN R. BEACH, Jersey City, N. J. Filed Mar. 23, 1905. Serial No. 252,470.

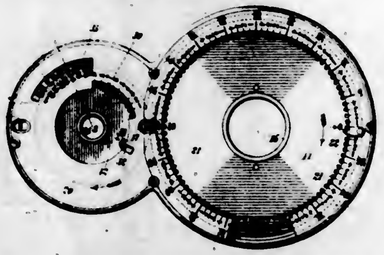

Claim.—1. In an adding-machine, the rotatively-mounted units and tens dial bearing the line of numerals along its outer edge and having the series of apertures adjacent thereto, to receive a stylus for rotating said dial, the fixed ring-dial over the outer portion of said rotary disk-dial and bearing numbered graduation-marks extending around it along the line of said apertures, which are exposed close along the inner edge of said ring-dial so that the stylus may be guided by said edge, a stop projecting inwardly over the said rotary dial to arrest the stylus at a given point, the rotatively-mounted hundreds-disk dial in horizontal line with said units and tens dial and whose peripheral edge substantially meets the same at a given reading-point, said hundreds-dial bearing the circular line of numerals and having the circular line of apertures to receive a stylus, a plate over said hundreds-dial and having an opening to expose some of said apertures therein and said plate being numbered along the line of said exposed apertures, and means for transmitting motion from the units and tens dial at each rotation of the same, to said hundreds-dial, combined with a thousands-dial in the form of a ring encompassing but slightly lower than said hundreds-dial and extending at one edge below said units and tens dial and said thousands-dial bearing the circular line of numerals and having the circular line of apertures to receive a stylus for actuating the same, a plate over said thousands-dial having an opening to expose some of the apertures therein and said plate bearing guiding-numerals along the edge of said opening, and means for actuating said thousands-dial at each rotation of said hundreds-dial, all of said dials being horizontally disposed within a casing and said machine having reading-openings for said dials; substantially as set forth.

2. In an adding-machine the rotatively-mounted units and tens dial bearing the line of numerals along its outer edge and having the series of apertures adjacent thereto to receive a stylus for rotating said dial, the fixed ring-dial over the outer portion of said rotary disk-dial and bearing numbered graduation-marks extending around it along the line of said apertures, which are exposed close along the inner edge of said ring-dial so that the stylus may be guided by said edge, a stop projecting inwardly over the said rotary dial to arrest the stylus at a given point, the rotatively-mounted hundreds-disk dial in horizontal line with said units and tens dial and whose peripheral edge substantially meets the same at a given reading-point, said hundreds-dial bearing the circular line of numerals and having the circular line of apertures to receive a stylus, a plate over said hundreds-dial and having an opening to expose some of said apertures therein and said plate being numbered along the line of said exposed apertures, and means for transmitting motion from the units and tens dial at each rotation of the same, to said hundreds-dial, combined with a thousands-dial in the form of a ring encompassing but slightly lower than said hundreds-dial and extending at one edge below said units and tens dial, and said thousands-dial bearing the circular line of numerals and having the circular line of apertures to receive a stylus for actuating the same, a plate over said thousands-dial having a segmental opening to expose some of the apertures therein and said plate bearing guiding-numerals along the edge of said opening, a star-wheel engaging recesses in the lower side of said thousands-dial and connected with a second star-wheel, and an arm carried by said hundreds-dial for engaging said second wheel at each rotation of said hundreds-dial and actuating said thousands-dial, all of said dials being horizontally disposed within a casing and said machine having reading-openings for said dials; substantially as set forth.

808,894. **ADJUSTABLE SUSPENDER FOR ELECTRICAL DEVICES.** AUSTIN BERRY, Ottawa, Canada. Filed July 11, 1905. Serial No. 269,257.

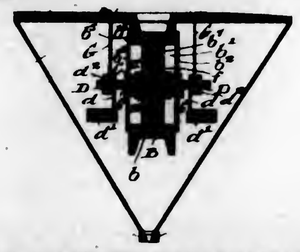

Claim.—1. In an adjustable suspending device for electrical devices the combination with a hollow grooved reel constructed of non-conducting material and having a plurality of ratchet-shaped teeth formed in the periphery of the flange of the groove, of conducting-plates secured thereto, a central non-conducting core, pintles extending in each end thereof, means for non-rotatably supporting said pintles, conducting-cords wound on said reel and connected individually to said side plates, means for affording electrical connection between said side plates and a suitable source of power and a gravity-operated dog adapted to cooperate with said ratchet-teeth as and for the purpose specified.

2. In an adjustable suspending device for electrical devices the combination with the base and canopy having a central opening at the bottom thereof, a hollow reel constructed of non-conducting material, conducting side plates secured thereto a central non-conducting core, pintles secured thereto, brackets non-rotatably supporting said pintles and cross-beams resting on said canopy and supporting said brackets, suspending conducting-cords wound on said reel and connected individually to said side plates and means for affording electrical connection between said side plates and a suitable source of power as and for the purpose specified.

808,895. **ROPE.** CHARLES H. BILLMAN, Boston, Mass. Filed Mar. 27, 1905. Serial No. 252,205.

Claim.—1. A rope comprising a wire cable served with a fibrous material wound thereon substantially at right angles to the axis of said cable, and a plurality of strands of fibrous material laid or twisted together over the same.

2. A rope comprising a core consisting of a cable composed of a plurality of strands twisted together, a fibrous material served thereon throughout its length by winding the same substantially at right angles to the axis of said core, and a plurality of strands of fibrous material laid or twisted together thereover.

3. A rope comprising a core consisting of a cable composed of a plurality of strands of fine wires twisted together, a fibrous material wound thereon throughout its length and substantially at right angles to the axis of said core, and a plurality of strands of fibrous material laid or twisted together thereover.

4. A rope comprising a core consisting of a cable composed of a plurality of strands of fine wire twisted together, a plurality of strands of fibrous material laid or twisted together thereover, and means for preventing contact between the wire strands and the outer fibrous strands.

5. A rope comprising a core consisting of a cable composed of a plurality of strands of fine wires twisted together, a plurality of strands of fibrous material laid or twisted together thereover, and a flexible non-metallic covering interposed between the wire strands and the outer fibrous strands.

6. A rope comprising a core consisting of a plurality of strands of fine wires twisted together, a service thereon of hempen yarns wound around said wire strands substantially at right angles to said core, and a plurality of strands of yarn laid or twisted together thereon each strand being practically equal to the area of said inner cable.

808,896. **TIME-CONTROLLED DAMPER.** SILAS B. BROWN, Cincinnati, Ohio. Filed Jan. 30, 1905. Serial No. 243,263.

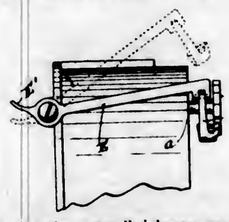

Claim.—1. In a time-controlled damper mechanism, a clock, a lever lighter at one end than the other, a trigger on the lighter end of the lever adapted to support a weight, a clock-controlled ratchet-wheel on the rear of the casing under the heavier end of the lever adapted to be held normally against rotation and to be periodically released, and a pawl pivotally suspended from the heavier end of said lever adapted to automatically drop into engagement with the teeth of said ratchet-wheel after the releasing operation, substantially as described.

2. In a time-controlled damper mechanism, a clock, a shaft extended through the casing, clock-actuated mechanism within the casing adapted to lock said shaft normally against rotation and to periodically release the same, a lever, a damper-controller adapted to be suspended on the lighter end of the lever, and devices on the heavier end of the lever and upon said shaft adapted to be automatically engaged after each releasing operation, substantially as specified.

808,897. **APPARATUS FOR TREATING AIR.** WILLIS H. CARRIER, Buffalo, N. Y., assignor to Buffalo Forge Company, Buffalo, N. Y. Filed Sept. 16, 1904. Serial No. 224,756.

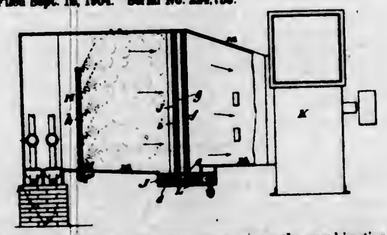

Claim.—1. In an air-purifying apparatus, the combination of an air-conduit and a separator therein comprising upright plates, each having a succession of oblique faces forming a continuous sinuous surface lengthwise of the conduit and having the front portion of such surface unobstructed to permit the distribution of the liquid along the plate from one face to another, and having its succeeding portion provided with projections which obstruct the flow of the liquid lengthwise of the conduit and promote the separation of the liquid from the air, the plates being spaced from each other to form continuous sinuous air-passages between them, substantially as set forth.

2. In an air-purifying apparatus, the combination of means for moistening the air, an air-conduit, and a separator therein comprising spaced upright plates having upright bends providing each plate with a succession of oblique faces and forming continuous sinuous air-passages between the plates, the surface of the front portions of said plates being smooth and unobstructed, and the succeeding portions of said plates having surface projections which obstruct the flow of the liquid lengthwise of the conduit, substantially as set forth.

3. In an air-purifying apparatus, the combination of means for moistening the air, an air-conduit, and a separator in said conduit comprising spaced upright plates having upright bends whereby the plates form continuous sinuous air-passages between them, a portion of the bends of each plate being provided with projecting flanges forming upright gutters, substantially as set forth.

4. In an air-purifying apparatus, the combination of means for moistening the air, an air-conduit, and a separator in said conduit composed of spaced upright plates having continuous zigzag surfaces and having projections forming gutters at salient portions of said surfaces, substantially as set forth.

5. A separator-plate for air-purifiers having separate sections arranged at an angle to each other, with the front portion of the rear section projecting beyond the rear portion of the adjacent front section, thereby forming a gutter at the junction of the sections, substantially as set forth.

808,898. **ICE-MACHINE.** ROBERT S. CATES, Kingman, Kans. Filed Nov. 10, 1904. Serial No. 232,074.

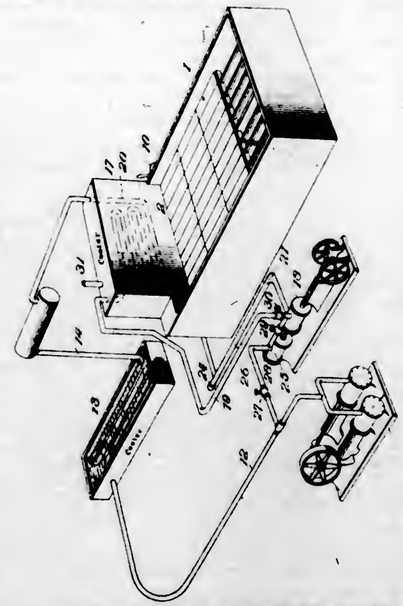

Claim.—1. In an ice-machine, the combination of a refrigerating-vat, a cooling-chamber at one end thereof in communication therewith, vertical partitions subdividing the lower portion of the cooling-chamber to form a tortuous path therein, a horizontal partition closing the upper ends of the vertical spaces forming the said tortuous path and having a vertical outlet, a coil arranged in the upper portion of the cooling-chamber, means for circulating compressed air through said coil, a perforated pipe connected with the said coil and arranged within said tortuous path for injecting cold air into the cooling-chamber for reducing the refrigerating solution to the proper temperature for freezing and to insure circulation of said solution through the vat and cooling-chamber, and an inclined deflector arranged above the perforated pipe for confining the air and insuring its commingling with the solution.

2. In an ice-machine, the combination of a refrigerating-vat, an air-compressor, a cooler, an engine operated by expansion of the cooled compressed air, means for injecting the expanded air into the

solution of the refrigerating-vat, an auxiliary air-compressor operated by means of the said engine, a valved pipe 26 connecting the auxiliary compressor with the air-pipe leading from the primary air-compressor, valved pipe 26 between the auxiliary air-compressor and its operating-engine, whereby compressed warm air may be admitted to the air-expansion engine to remove obstructing ice therefrom, substantially as specified.

808,899. METHOD OF MANUFACTURING SPECTACLE-FRAMES. WALTER A. CRAPO, Southbridge, Mass., assignor to American Optical Company, Southbridge, Mass., a Corporation of Massachusetts. Filed May 8, 1905. Serial No. 259,906.

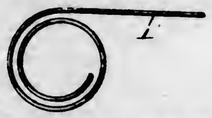

Claim.—1. An improved method of making wire frames for spectacles, &c., which consists in grooving the wire for the edge of the lens, with a varying depth of groove of predetermined length, soldering the nose-bridge and the temple attaching-lugs to the wire at its lens grooved portion, shaping the wire into a lens-frame, and deepening the groove in the wire where it is soldered to the nose-bridge.

2. An improved method of making wire frames for spectacles, &c., which consists in grooving the wire for the edge of the lens, with a varying depth of groove of predetermined length, soldering the nose-bridge and the temple attaching-lugs to the wire at its lens grooved portion, shaping the wire into a lens-frame, and deepening the groove in the wire where it is soldered to the nose-bridge, and where it is soldered to the temple attaching-lugs.

808,900. TOOL FOR MAKING ARTIFICIAL-STONE WALKS. PATRICK F. CONNELLY, Sioux Falls, S. D. Filed Mar. 10, 1905. Serial No. 249,498.

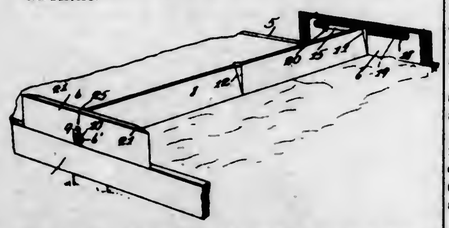

Claim.—1. In a device of the class described, a pair of runners, and a straight-edge pivotally supported between said runners and having its pivotal axis adjustable vertically with respect thereto.

2. In a device of the class described, a pair of runners, a straight-edge pivotally supported between said runners and having its pivotal axis adjustable vertically with respect thereto, and means for locking the straight-edge in adjusted position.

3. In a device of the class described, a pair of runners, and a combined straight-edge and marker pivotally supported between said runners.

4. In a device of the class described, a pair of runners, a straight edge pivotally supported between said runners, and marking-ribs carried by the straight-edge.

5. In a device of the class described, a pair of runners, and a straight-edge pivotally supported between said runners and having its side walls converging and provided with marking-ribs.

6. In a device of the class described, a pair of runners, and a straight-edge pivotally supported between said runners and provided with terminal and intermediate marking-ribs.

7. In a device of the class described, a pair of runners, and a straight-edge having converging side walls provided with terminal and intermediate marking-ribs gradually decreasing in height toward the base of said straight-edge.

8. In a device of the class described, a pair of runners each provided with a longitudinal slot, a straight-edge pivotally supported between said runners, and links pivoted to the opposite ends of the straight-edge and slidably mounted in said slots.

9. In a device of the class described, a pair of runners provided with alined recesses, a reversible straight-edge provided with terminal trunnions adapted to engage said recesses for pivotally supporting the straight-edge between said runners, and means for locking the straight-edge in reversed position.

10. In a device of the class described, a pair of runners each provided with a longitudinal slot, a reversible straight-edge pivotally supported between said runners, links pivoted to the opposite ends of the straight-edge, and clamping-bolts engaging the links and longitudinal slots for locking said straight-edge in reversed position.

11. In a device of the class described, a pair of runners, a combined straight-edge and marker pivotally supported between said runners and adjustable vertically with respect to the latter, and means for locking the straight-edge in adjusted position.

12. In a device of the class described, a pair of runners provided with a plurality of recesses or pockets, a straight-edge pivotally supported between said runners and adjustable vertically with respect to the latter, and a spring locking-clip carried by the straight-edge and adapted to engage the recesses in the runners for locking the former in adjusted position.

808,901. APPARATUS FOR RENDERING DRAWINGS AND DOCUMENTS TRANSPARENT AND WATERPROOF. CHARLES L. CRABB, New York, N. Y. Filed Apr. 6, 1905. Serial No. 254,171.

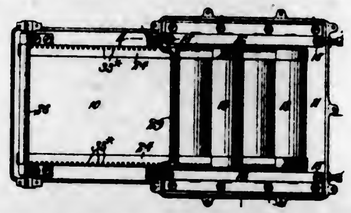

Claim.—1. In an apparatus for treating drawings and documents, the combination of a bath, a heating-chamber and calendering-rollers therein, and a sheet-carrier for passing sheets through said bath and thence through said chamber and between said rollers.

2. In an apparatus for treating drawings and documents, the combination of a bath, a heating-chamber and calendering-rollers therein, and endless bands which serve the two purposes of carrying sheets through said bath and chamber in contact with said rollers and driving said rollers.

3. In a calendering-chamber, the combination with calendering-rollers and journal-boxes therefor, of slides containing the several journal-boxes, springs within said slides between said boxes and screws screwing through said slides for the adjustment of said boxes and the rollers therein.

4. In an apparatus for treating sheets of paper or other material, the combination of a bath, a heating-chamber and calendering-rollers therein, a sheet-carrier composed of endless bands in lapping pairs running through said bath and chamber and on said rollers, and a separating-spreader applied between the bands of each pair.

5. In an apparatus for treating sheets of paper or other material, the combination of a bath, a heating-chamber and calendering-rollers therein, a sheet-carrier composed of endless bands in lapping pairs running through said bath and chamber and on said rollers, a spreader applied between the bands of said carrier, a spring-actuated tension-roller applied to said carrier, a slide carrying said tension-roller, and gearing between said slide and the spreader for simultaneously adjusting said roller and the spreader.

808,902. GAS-ENGINE. NEWTON CRANE, Boston, Mass., assignor to Newton Crane Gas Engine Company, Boston, Mass., a Corporation of Maine. Filed May 23, 1903. Serial No. 158,490.

Claim.—1. An engine comprising communicating cylinders forming the sides of a polygon, and double-acting pistons in said cylinders.

2. An engine comprising communicating cylinders forming the sides of a polygon, double-acting pistons in said cylinders, and connections whereby each pair of adjacent pistons move in opposite directions.

3. An engine comprising communicating cylinders forming the sides of a polygon, double-acting pistons in said cylinders, and a driven shaft operatively connected to all of said pistons.

4. An engine comprising communicating cylinders forming the sides of a polygon, each end of each cylinder forming with the end of the adjacent cylinder a combustion-chamber, double-acting pistons in said cylinders, a driven shaft, crank-shafts connected to said pistons, and operative connections between said crank-shafts and said driven shaft.

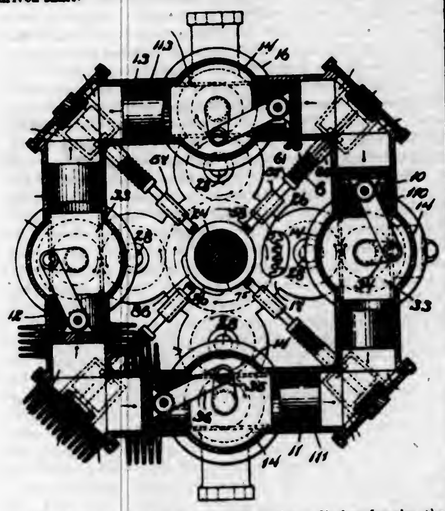

5. An engine comprising communicating cylinders forming the sides of a polygon, double-acting pistons in said cylinders, means whereby the pistons of each adjacent pair of cylinders operate in opposite directions, and means whereby combustible fluid is consumed in the meeting ends of said cylinders in a predetermined order.

6. An engine comprising communicating cylinders forming the sides of a polygon, double-acting pistons in said cylinders, a shaft located in the center of the polygon, and means connecting said pistons with said shaft.

7. An engine comprising communicating cylinders arranged in the form of a hollow polygon, each cylinder having an enlarged chamber between its ends, crank-shafts extending into said chambers, pistons in said cylinders connected to said crank-shafts, and a driven member connected to all of said crank-shafts.

8. A motor comprising a series of communicating cylinders forming the sides of a polygon, double-acting pistons in said cylinders, and means for successively effecting explosions in the chambers formed by all the meeting ends of said cylinders.

9. A motor comprising a series of communicating cylinders forming the sides of a polygon, double-acting pistons in said cylinders, means for successively effecting explosions in the chambers formed by the meeting ends of said cylinders, and a common driven member operatively connected to each of said pistons, independently of the others.

10. A motor comprising a series of cylinders forming the sides of a polygon with those cylinders which form the corners of the polygon communicating, double-acting pistons in said cylinders, a common conduit for supplying explosives mixture to the chambers formed by the meeting ends of said cylinders, and a common exhaust-conduit leading from said chambers.

11. A motor comprising four cylinders arranged in the form of a square, double-acting pistons in said cylinders, connections by which the pistons of each pair of adjacent cylinders move in opposite directions, and valve mechanism by which the explosions take place in the four corners of the square in succession.

12. A motor comprising an even number of cylinders arranged to form the sides of a polygon, pistons in said cylinders arranged whereby the pistons in each adjacent pair of cylinders move in opposite directions, a driven shaft, speed-reducing connections between said pistons and said shaft, and means whereby the explosions effect the simultaneous movement of the pistons in each pair of cylinders, successively, so that during each rotation of the shaft, it receives a series of impulses equal in number to the cylinders.

13. A motor comprising communicating cylinders arranged to form the sides of a square, there being an explosion-chamber at each angle of the square, a driven shaft in the center of the square, pistons in said cylinders geared to the shaft, and valve mechanisms including cams on said shaft and valve-rods radiating from the shaft toward the angles of the square.

14. A motor comprising cylinders arranged to form the sides of a square, each cylinder having a chamber intermediate of its ends, a crank-shaft extending into each chamber, plates closing the sides of said chambers, and a frame connecting said cylinders.

15. A motor comprising cylinders arranged to form the sides of a square, double-acting pistons in said cylinders, heads or plates closing the meeting ends of said cylinders, means connecting said cylinders, and heat-dissipating means on said cylinders and heads.

16. A motor comprising two communicating cylinders arranged at an angle to form a chamber between their meeting ends, and a valve-chamber on each side of said first-mentioned chamber and communicating therewith.

17. A two-part motor comprising a plurality of sets of cylinders, each set having the cylinders arranged to form the sides of a polygon, double-acting pistons in said cylinders, and a driven shaft operatively connected to all of said pistons.

18. A two-part motor comprising a plurality of sets of cylinders, each set having the cylinders arranged to form the sides of a polygon, pistons in said cylinders, a series of crank-shafts, each crank-shaft being connected to a piston in each set of cylinders and being located midway between the ends of a cylinder, and a driven shaft connected to all of said crank-shafts.

19. A two-part motor comprising a plurality of sets of cylinders, each set having the cylinders arranged to form the sides of a polygon, double-acting pistons in said cylinders, a series of crank-shafts, each crank-shaft being connected to a piston in each set of cylinders, a driven shaft connected to all of said crank-shafts, and means whereby the explosions occur alternately in said sets of cylinders and successively in the cylinders of each set.

20. A motor comprising a driven shaft, a series of cylinders arranged tangentially to a circle circumscribed about said shaft, each cylinder having an explosion-chamber at each end and a series of double-acting pistons in said cylinders operatively connected to said shaft.

21. A motor comprising a driven shaft, a series of cylinders arranged tangentially to a circle circumscribed about said shaft, a series of pistons in said cylinders operatively connected to said shaft, said adjacent pistons moving in opposite directions, valves for supplying fluid and exhausting the products of combustion from the meeting ends of said cylinders successively, and cams on said shaft for actuating said valves, said cams being arranged in sets and being movable whereby the explosions follow each other in one direction or the other around the shaft to cause the rotation of the shaft in one direction or the other.

22. A motor comprising a driven shaft, a series of cylinders arranged tangentially to a circle circumscribed about said shaft, a series of pistons in said cylinders operatively connected to said shaft, said adjacent pistons moving in opposite directions, valves for supplying fluid and exhausting the products of combustion from the meeting ends of said cylinders successively, cams on said shaft for actuating said valves, said cams being arranged in sets and being movable whereby the explosions follow each other in one direction or the other around the shaft to cause the rotation of the shaft in one direction or the other, and manually-operated means for moving said cams on said shaft.

23. A two-part motor comprising two complemental frames, each having a series of cylinders secured thereto to form the sides of a polygon, pistons in said cylinders, a driven shaft journaled in said frames, crank-shafts journaled in said frames, and each having cranks on both its ends connected to pistons, a gear on the driven shaft, gears on the crank-shafts, and gears supported on the frames and connecting the gear on the driven shaft with the gears on the crank-shaft.

24. An engine comprising a plurality of cylinders, each cylinder communicating at its ends with two adjacent cylinders to form combustion-chambers, double-acting pistons in said cylinders, and a shaft connected to all of said pistons.

25. An engine comprising a plurality of cylinders, each cylinder communicating at its ends with two adjacent cylinders to form combustion-chambers, double-acting pistons in said cylinders, a series of crank-shafts each located in a line midway between the ends of a cylinder, and a shaft connected to all of said crank-shafts.

26. In internal-combustion engines having a plurality of combustion-chambers and cylinders, the arrangement of cylinders and combustion-chambers in which each cylinder is double-ended, the two ends forming parts of two separate chambers in which different

phases of the Otto cycle are simultaneously taking place, the double cylinders and the combustion-chambers being arranged in a continuous series, so that adjacent ends of adjacent double cylinders are in communication with a common combustion-chamber, substantially as described.

27. In internal-combustion engines having a plurality of combustion-chambers and double cylinders arranged in a continuous series as herein described, the arrangement of the cylinder-pistons in which they are rigidly connected in pairs and each pair coupled to a separate crank, so that the two adjacent ends of adjacent pairs of pistons are performing one phase of the Otto cycle and simultaneously at their opposite ends performing the preceding or the consecutive phase of the same cycle, substantially as described.

808,903. AUTOPNEUMATIC MUSICAL INSTRUMENT. WALTER CHIPPER, New York, N. Y., assignor to Wheox & White Company, Meriden, Conn., a Corporation of Connecticut. Filed June 5, 1905. Serial No. 263,710.

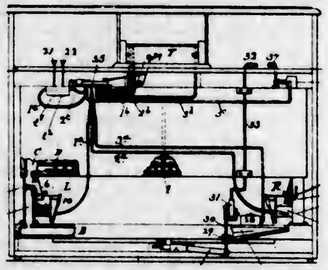

Claim.—1. In an autopneumatic music-playing instrument, the combination with the windway-passage for the air that effects movement of the action-playing pneumatics, said action-playing pneumatics, and a wind-inducing mechanism therefor; of an automatic air-pressure regulator or choker-pneumatic in connection with and forming a by pass to said windway, and having ports opening from and into the windway-trunk, the regulator-valve controlling one of said ports, a normally closed cut-off valve in said windway, intermedial to the regulator-ports, the valve-operating pneumatic and its primary controlling-pneumatics communicating with said windway between the regulator and wind-inducing means and having connection for operating said cut-off valve, and means operating as described for governing said primary and valve-operating pneumatics.

2. In combination, with the tracker, music-sheet, action-playing pneumatics, the wind-chest therefor, exhaust-chamber, and wind-inducing mechanism; the automatic regulator-pneumatic in connection with the windway-trunk between said wind-chest and the exhaust-chamber, said regulator having two ports into said trunk, and a regulator-valve for regulating the air-tension on said action-playing pneumatics, a port and stop-valve in the windway between said regulator-ports, for permitting passage of air to neutralize or modify the regulated air-tension, a pneumatic connected for operating said stop-valve, a tracker-duct pipe controlling said valve-operating pneumatic, the switch-valve in said pipe, the auxiliary air-inlet pipe unitable therewith at said switch-valve, and a finger-depressible entry-valve for said air-inlet.

3. The combination substantially as described, of the tracker, the treble and bass expression-regulators with controlling-pneumatics, the switch-valve seat with triple-arranged ports, tracker-duct pipes from the tracker to said valve-seat, conduit-pipes from the valve-seat to the respective expression-controlling pneumatics, ducts from said valve-seat to external air-inlets, the resiliently-acting inlet-valves closing said inlets, the finger-buttons for individually manually manipulating said inlet-valves, and a sliding switch-valve covering said valve-seat and adapted for uniting the respective pneumatic conduit-pipes with either the tracker-duct pipes or the inlet-valve ducts, in the manner as set forth.

4. In an autopneumatic music-playing instrument, the combination, of the pedal-depressing member 24, the pedal-actuating lever 23 fulcrumed on the frame and its rear end connected for moving said member, the pivotally-supported angle-lever 31, the cranked upright rocker-shaft 33 having a handle for manually moving said angle-lever, the lifter-rod 30 connecting the fore end of the pedal-actuating lever with one arm of said angle-lever, a pneumatic mechanism comprising primary and power pneumatics arranged in connection with the exhaust-chamber, the movable member of its power-pneumatic provided with means for unattached engagement with the lifter-rod, adjustable lugs or nuts arranged on said lifter-rod respectively above said angle-lever and said pneumatic member, the tracker-duct pipe for flushing the primary pneumatic of said mechanism, and means for governing the admittance of air thereinto, all substantially as and for the purposes set forth.

5. In an autopneumatic music-playing instrument, in combination substantially as described, with the series of action-playing pneumatics, the tracker and tracker-ducts leading thereto, the wind-chest for said pneumatics, and the vacuum-chamber communicating with air-exhausting bellows; a break or partition dividing said wind-chest, windway-trunks that directly connect the respective wind-chest divisions with said vacuum-chamber, a normally closed stop-valve in each of the windways, the automatic regulator-pneumatics arranged upon the windway-trunks between said wind-chest and vacuum-chamber, and having ports thereinto above and below said stop-valve, the regulator-valve coacting with one of said parts, expanding tension-springs for the regulator-pneumatics, a pneumatic-box united with the windway below the regulator and carrying primary and power pneumatics, said power-pneumatics connected for operating the stop-valves, flush-pipes for the respective primary pneumatics and means of the character shown for governing the inflow of air thereto, for the purposes set forth.

6. In an autopneumatic music-playing instrument, the combination substantially as described with the tracker-duct pipe, the pedal-actuating lever, primary and power pneumatics connected for moving said pedal-actuating lever, the flushing-pipe 3^{c} for controlling said pneumatics, and an air-inlet pipe or duct 3^{a} communicatable therewith; of the spring-closed piston-disk forming an entry-valve for said air-inlet, and the laterally-swinging cranked handle-lever 37 arranged through the run-board and having an offset that acts against the piston-stem for opening said entry-valve in the manner set forth.

7. In an instrument of the class specified, in combination as described, with the action wind-chest and casing, windways for treble and bass sections, with accentuation means at R and L, comprising a plurality of pneumatic pressure-regulators for choking the windways, and pneumatics controlling said pressure-regulators, and the pedal-controlling pneumatic, the flush-pipes 1^{c}, 2^{c} and 3^{c} severally pertaining to said pneumatics, and the tracker having two supplemental accent-ducts at one end and a forwardly-enlarged supplemental pedal-duct at its other end, the tracker-duct pipes 1^{b}, 2^{b} and 3^{b}, the air-inlet pipes 1^{a}, 2^{a} and 3^{a}, the switch-valve seat arranged upon the action-casing and having an end of each of said pipes exposed therein in triple order, the switch-valve sliding upon said seat, valve-pistons stopping said air-inlet pipes, springs 8 that normally close said valve-pistons, and pressure-buttons on the piston-stems for depressing the pistons to open the air-inlets, all arranged and operating as set forth.

808,904. COMBINATION RAIL AND TIE FASTENER. FRANCIS M. CROSSLEY, Dayton, Ohio. Filed Sept. 21, 1905. Serial No. 279,383.

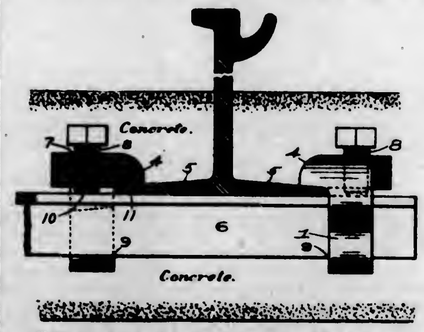

Claim.—1. In a rail-fastener for uniting rails to cross-ties, a clamp having a suitable opening for the tie, a lip projecting from said clamp and embracing the upper surface of the rail-flange, and a screw penetrating the top of said clamp and engaging the upper side of the rail, and effecting three points of contact when the device is rigidly secured in position.

2. A clamp for fastening rails to metallic ties consisting of a member having an opening therein to receive the tie, the lower surface of said opening being of tapering form, a lip projecting from one side of said member and engaging the rail-flange, and a screw penetrating the upper end of said clamp and engaging the tie.

3. In a fastener for rails, a clamp having a suitable opening to receive the tie, a screw passing through the upper portion of said clamp in alinement with the center of the tie-opening, a lip extending on one side of said screw and adapted to project over the rail-flange, the lower surface of the tie-opening in said clamp being of tapering form to provide a bearing-point between the lower side of the tie and the bottom of the clamp which engages said tie at a point between the contact-point of the screw and the tie, and the contact-point of the clamp and the rail-flange.

4. A clamp for securing rails to metallic cross-ties, the same having a T-shaped opening to receive the rail, the lower surface of said opening being of tapering form to engage the bottom of the rail at one side of the clamp, a lip projecting laterally from the upper side of the clamp to engage the rail-flange above the point of contact between the bottom of the tie and the bottom of the clamp, and a screw passing through said clamp and engaging the upper surface of the tie at a point opposite the engagement between the clamp and the rail-flange.

808,905. WALK-OVER CAR-SEAT. SAMUEL M. CURWEN, Philadelphia, Pa., assignor to John A. Brill, Philadelphia, Pa. Filed May 16, 1904. Serial No. 208,121.

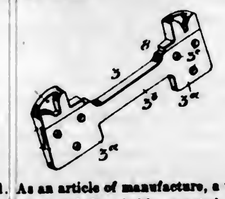

Claim.—1. As an article of manufacture, a wall-plate for seats and the like, provided with detachably-mounted socket-pieces.

2. As an article of manufacture, a wall-plate for seats and the like, provided with detachably-mounted socket-pieces which are mortised into said plate, so that the sockets will be in a position to receive extensions from the back when the plate is in use.

3. As an article of manufacture, a wall-plate for seats and the like having mortises of varying depth and socket-pieces fitting said mortises and adapted to receive portions of the back of the seat.

4. As an article of manufacture, a wall-plate for seats and the like provided with mortises, and socket-pieces with recesses formed at one side of their upper portions fitting said mortises.

5. As an article of manufacture, a wall-plate for seats and the like provided with mortises having two horizontal and an upright face, and socket-pieces having corresponding faces for engagement with the said mortises and a recess formed in one side of the upper face of the socket-pieces.

808,906. GRAIN-DOOR FOR CARS. MORTON G. DONEHEW, Russell township, Putnam county, Ind. Filed July 29, 1905. Serial No. 271,748.

Claim.—1. A grain-door including a door-body having at an end thereof an abutment attached movably thereto and provided with a joint-plate movable with the abutment and projectable beyond the adjacent end of the door-body forming an extensible part thereof.

2. A grain-door including a door-body having at an end thereof a joint-plate and an abutment movable together and provided with controlling means carried by the grain-door, a locking-pin carried by the abutment and movable therewith, and a dowel attached to the opposite end of the grain-door.

3. A grain-door including a door-body having at one side of an end thereof a movable joint-plate, an abutment at the opposite side of the door-body provided with a locking-pin projectable beyond the end of the door-body, connecting devices extending through the door-body and connecting the abutment with the joint-plate for the movement thereof, and operating means for moving the abutment.

4. A grain-door including a door-body having at one side of an end thereof a movable joint-plate, an abutment at the opposite side of the door-body connected to the joint-plate and movable therewith, a locking-pin carried by the abutment and projectable beyond the end of the door-body, a screw-head attached fixedly to the door-body, an operating-screw screwed into the screw-head and connected operatively to the abutment for the operation thereof, and a dowel carried by the opposite end of the door-body.

5. An expansible grain-door for cars including a door-body having at an end thereof a joint-plate and an abutment movable together and provided with controlling means carried by the grain-door, the joint-plate and the abutment being capable of engagement with a door-post of a car, and the opposite end of the door-body being adapted to engage an opposite door-post of the car.

6. An expansible grain-door for cars including a door-body having at an end thereof a joint-plate and an abutment movable together with respect to the door-body and provided with controlling means, the abutment having a locking-pin mounted thereon projectable beyond the end of the door-body simultaneously with the movement of the joint-plate, and the opposite end of the door-body having a projecting dowel.

7. A car including a body having a doorway between opposing door-posts, a car-door, a grain-door having an end for coöperation with a door-post and provided with a joint-plate and an abutment movable together at the opposite end of the grain-door, means for attaching the joint-plate and the abutment together and movably with respect to the grain-door body, and an operating device mounted on the grain-door and controlling the abutment.

8. In a car-body, the combination of a pair of opposing door-posts having each a socket therein, a grain-door having a dowel at an end thereof for entering one of the sockets and provided with a locking-pin for entering the other one of the sockets, an operating-screw for operating the locking-pin, and a joint-plate and an abutment connected together as movable parts of the grain-door and controlled by the locking-pin to and from one of the door-posts.

808,907. STANDARD. GEORGE W. DU BOIS, Kansas City, Mo. Filed Mar. 30, 1905. Serial No. 253,971.

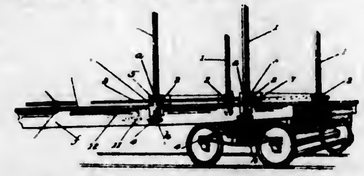

Claim.—1. The combination of the hinged standard provided with a hook, and the rod adjacent thereto and running parallel with the side of the car, and substantially as described.

2. The combination of the hinged standard provided with a hook, a casting provided with a slot, and a rod provided with a cut for engaging the hook, substantially as described.

3. The combination with a car-body, of standards pivoted on the sides of the same, hooks hinged to the standards and adapted to extend inward therefrom, a shaft arranged parallel to the adjacent side of the car-body and having portions with which the said hooks are attached for locking and releasing, and means for rotating and locking the said shaft, substantially as set forth.

808,908. GONG ATTACHMENT. JOHN T. DUFF, Pittsburg, Pa. Filed Sept. 28, 1904. Serial No. 228,345.

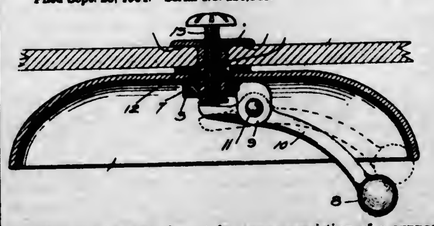

Claim.—1. An attachment for gongs consisting of a support adapted to pass through an opening in the supporting structure and provided on one end with a head or flange adapted to bear against said structure, said head being provided with prongs on its lower

face, a gong provided with an unthreaded opening passing over said support, a spacing washer or sleeve between said gong and the supporting structure, a collar secured to the end of said support and serving to clamp the gong and spacing member against the supporting structure, and a hammer and lever hinged to said collar.

2. An attachment for gongs consisting of a support adapted to pass through an opening in the supporting structure and provided on one end with a head or flange adapted to bear against said supporting structure and having its other end threaded, a gong provided with an unthreaded opening passing over said support, a spacing member between said gong and the supporting structure, a nut fitting on the threaded end of the support and serving to clamp the gong and spacing member against the supporting structure, and a hammer-lever hinged to said nut.

3. An attachment for gongs consisting of a hollow support adapted to pass through an opening in the supporting structure and provided on one end with a head or flange adapted to bear against said structure, a gong provided with an unthreaded opening passing over said support, a spacing member between said gong and supporting structure, a collar secured to the end of said support and serving to clamp the gong and spacing member against the supporting structure, a hammer-lever hinged to said collar, and operating means for said hammer passing through the opening in said support.

4. An attachment for foot-gongs comprising a hollow support adapted to pass through an opening in the supporting structure and provided on one end with a head or flange adapted to bear against said structure and having its opposite end threaded, a gong provided with an unthreaded opening passing over said support, a nut fitting on the threaded end of said support and serving to clamp the gong against the supporting structure, a hammer-lever hinged to said nut, and a pin having a sliding fit in the hollow support and arranged to contact with the hammer-lever.

5. An attachment for foot-gongs comprising a hollow bushing adapted to pass through the supporting structure and having a head or flange at its upper end bearing against said structure and having its lower end threaded, a gong provided with an unthreaded opening passing over said support, a spacing member between said gong and supporting structure, a nut fitting on the threaded end of said support and serving to clamp the gong and spacing member against the supporting structure, said nut being provided with ears, a hammer-lever hinged to said ears and having its end extending opposite the opening in the hollow support, and a pin having a sliding fit in said hollow support and arranged to contact with the end of said hammer-lever.

808,909. **INDEX-CARD.** JOSEPH S. DUNCAN and OLOF N. TEVANDER, Chicago, Ill., assignors to Addressograph Company, a Corporation of Illinois. Filed Feb. 13, 1905. Serial No. 245,402.

Claim.—1. The combination of a card provided with a projection extending beyond one edge thereof, and a detachable index-tab for the card adapted to form an interlocking engagement with said projection.

2. The combination of a card having an opening therein, a projection extending beyond an edge of the card, and a tab having a support and a foot, said foot being adapted to enter the opening in the card and said support being adapted to lie in front of the projection.

3. The combination of a card having an opening therein, a projection extending beyond an edge of the card, and a tab having a foot adapted to enter the opening in the card through the back thereof and an offset support adapted to lie in front of the projection.

4. The combination of a card having an opening therein, a projection extending beyond an edge of the card, and a tab having an offset support and an offset foot, said foot being adapted to enter the opening in the card and said support being adapted to lie in front of the projection.

5. The combination of a card having an opening therein, a projection extending beyond an edge of the card, and a tab having a foot adapted to enter said opening, a support adapted to lie in front of said projection, and a lip arranged to engage a wall of said opening to lock the tab in place on the card.

6. The combination of a card having a projection thereon cut and stamped out of the card, said projection extending above the upper edge of the card, and a tab cut out to receive the projection and provided with a foot adapted to enter the opening in the card through the back thereof and a support adapted to lie in front of the projection and upon the upper edge of the card.

7. The combination of a card having an opening therein, a projection cut and stamped out of the card and extending above its upper edge, a tab cut out to receive the projection, an offset foot on the tab adapted to enter the opening in the card through the back thereof, and an offset support on the tab adapted to lie in front of the projection and above the upper edge of the card.

808,910. **FAUCET.** FRANK A. DUNHAM, Brockton, Mass. Filed Apr. 11, 1905. Serial No. 255,083.

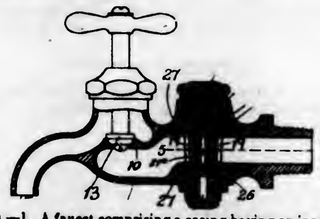

Claim.—1. A faucet comprising a casing having an inner valve-seat adjacent to the inlet end, and an outer valve-seat adjacent to the outlet end, a valve controlling the outer valve-seat, and a rotary filter-holder formed as a valve seated on the inner valve-seat, and provided with a filter, and with ports which permit the passage of liquid through the filter, the holder being adapted to be adjusted to shut off the liquid from the valve.

2. A faucet comprising a casing having a valve, a socket intersecting the passage between the valve and the inlet end of the casing, a chambered filter-holder adapted to turn in said socket and provided with ports which permit the passage of liquid through the filter, one of the portions of the holder between the ports being closed to shut off the liquid from the valve, while the other portion of the holder between the ports is provided with an opening to permit the entrance of water into the filter for the purpose of cleaning the same, the holder having an outlet at one end and means for closing said outlet.

3. A faucet comprising a casing having a valve, an adjustable holder interposed between the valve and the inlet end of the casing and provided with a filter, and with ports which permit the passage of liquid through the filter, the holder being adapted to be adjusted to shut off the liquid from the valve, and washers surrounding the holder and interposed between the same and the adjacent portions of the casing above and below said ports.

4. An appliance of the character stated, comprising a casing having an inlet, an outlet, and an intermediate socket, a chambered filter-holder adapted to turn in the socket and provided with ports which permit the passage of liquid from the inlet to the outlet through the filter, one of the portions of the holder between the ports being closed to shut off liquid from the casing-outlet, while the other portion of the holder between the ports is provided with an opening to permit the entrance of liquid into the holder and filter, the holder having a waste-outlet extending through the casing, and means for closing the same.

5. An appliance of the character stated, comprising a casing having an inlet, an outlet, and an intermediate socket, a chambered filter-holder adapted to turn in the socket and provided with ports which permit the passage of liquid from the inlet to the outlet through the filter, one of the portions of the holder between the ports being closed to shut off liquid from the casing-outlet, while the other portion of the holder between the ports is provided with an opening to permit the entrance of liquid into the holder and filter, the holder having an opening for the reception of a filter, and a waste opening or outlet, and means for closing said openings.

808,911. **METHOD OF ANNEALING METAL.** WILLIAM R. HAMMER, Reading, Pa., assignor to Joseph T. Williams, Easton, Pa. Filed May 15, 1902. Serial No. 107,480.

Claim.—1. The method of annealing metal which consists in introducing the metal into a molten bath containing a carbonate of an alkaline base, and a chlorid of an alkaline base, and free from a hardening agent, then removing the metal from the bath and slowly cooling it, as set forth.

2. The method of annealing metal, which consists in introducing metal into a molten bath containing a carbonate of an alkaline base and chlorids of two different alkaline bases, then removing the metal from the bath and slowly cooling it, as set forth.

3. The method of annealing metal, which consists in introducing the metal into a molten bath containing a carbonate of an alkaline base and chlorids of two different alkaline bases and free from a hardening agent, then removing the metal from the bath and slowly cooling it, as set forth.

4. The method of annealing metal, which consists in introducing the metal into a molten bath consisting of sodium chlorid, about three parts, and a carbonate of an alkaline base, about one part, then removing the metal from the bath and slowly cooling it, as set forth.

808,912. **DEVICE FOR REBEATING VALVES AND FAUCETS.** AUGUST EBBALEIN, Bridgeport, Conn. Filed Oct. 5, 1904. Serial No. 227,338.

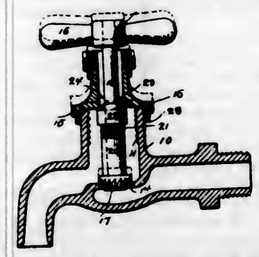

Claim.—1. A device of the character described comprising a convex cutter a shank therefor and a bearing-piece which slides over the shank, and is tapered at its upper end for engagement with the opening in a valve or faucet cap whereby the cutter is made self-centering on the seat of a valve or faucet.

2. A device of the character described comprising a convex cutter, a shank therefor, a sleeve adapted to slide over the shank and rest upon the cutter, a bearing-piece adapted to slide over the shank and having a taper at its upper end to engage the opening in a valve or faucet cap and washers intermediate the sleeve and bearing-piece whereby the parts may be so adjusted that the cutter will engage centrally the opening in the valve-seat when the cap is in engagement with a valve or faucet body, and turning down of the cap upon the body will force the cutter downward upon the valve-seat as the operation proceeds.

3. A device of the character described comprising a convex rotary cutter, a shank by which it is carried, a bearing-piece adapted to engage the shank and having a taper to engage the cap centrally and means for retaining the bearing-piece in engagement with the cap when the cutter is in engagement with the valve-seat, so that by rotation of the cutter and turning down of the cap upon the body a new concave valve-seat will be formed.

4. A device of the character described comprising a convex cutter, a shank therefor, a sleeve adapted to slide over the shank and rest upon the cutter and a bearing-piece adapted to slide over the shank and having a taper at its upper end to engage the cap centrally and center the cutter upon the valve-seat.

5. A device of the character described comprising a cutter, a shank therefor and a bearing-piece which slides over the shank, and is tapered at its upper end for engagement with the opening in a valve or faucet cap whereby the cutter is made self-centering on the seat of a valve or faucet.

6. A device of the character described comprising a self-centering cutter, a shank therefor, a sleeve adapted to slide over the shank and rest upon the cutter, a bearing-piece adapted to slide over the shank and having a taper at its upper end to engage the opening in the valve or faucet cap, and washers intermediate the sleeve and bearing-piece whereby the parts may be so adjusted that the cutter will engage centrally the opening in the valve-seat when the cap is in engagement with a valve or faucet body, and turning down of the cap upon the body will force the cutter downward upon the valve-seat as the operation proceeds.

7. A device of the character described comprising a self-centering rotary cutter, a shank by which it is carried, a bearing-piece adapted to engage the shank and having a taper to engage the cap centrally and means for retaining the bearing-piece in engagement with the cap when the cutter is in engagement with the valve-seat, so that by rotation of the cutter and turning down of the cap upon the body a new valve-seat will be formed.

8. A device of the character described comprising a self-centering cutter, a shank therefor, a sleeve adapted to slide over the shank and rest upon the cutter and a bearing-piece adapted to slide over the shank and having a taper at its upper end to engage the cap centrally and center the cutter upon the valve-seat.

808,913. **DEVICE FOR REMOVING OR REPLACING HAY-RACKS OR THE LIKE FROM OR TO THEIR RUNNING-GEAR.** GEORGE P. FINCH, Garneill, Mont., assignor of one-third to Alexander M. Hill and one-third to Walter H. Peck, Garneill, Mont. Filed Sept. 19, 1905. Serial No. 279,103.

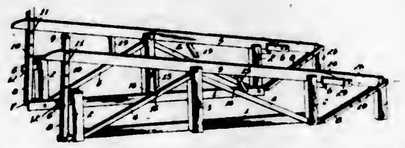

Claim.—1. In a device of the class described, the combination with tilting tracks or ways, of supplemental skids or tracks for facilitating the unloading of racks or boxes from sleds or low wagons onto the main tracks or ways and the loading thereof from the tracks or ways onto the running-gear.

2. In a device of the class described, the combination with tilting tracks or ways and supporting members therefor adapted to be extended horizontally or engaged with the tilting tracks or ways, of supplemental skids or tracks adapted for engagement with the main tracks or ways and with the supporting members when the said supporting members are extended horizontally for facilitating the unloading of racks or boxes from sleds or low wagons onto the main tracks or ways and the loading thereof from the tracks or ways onto the running-gear.

3. In a device of the class described, the combination with tilting tracks or ways and supporting members therefor adapted to be extended horizontally or engaged with the tilting tracks or ways, of supplemental skids or tracks adapted for detachable engagement with the main tracks or ways and also engageable with the supporting members when the latter are extended substantially horizontally, said supplemental skids being adapted to facilitate the unloading of racks or boxes from sleds or low wagons onto the main tracks or ways and the loading thereof from the tracks or ways onto the running-gear.

4. In a device of the class described, the combination with tilting tracks or ways, of supplemental skids or tracks, said supplemental skids being supported at their lower ends and detachably connected at their upper ends to the main tracks or ways and being adapted for facilitating the unloading of racks or boxes from sleds or low wagons onto the main tracks or ways and the loading thereof from the tracks or ways onto the running-gear.

5. In a device of the class described, the combination with tilting tracks or ways, of a wagon running-gear, a box or rack detachably supported thereby, and a member hinged to the wagon box or rack and positioned in front of the bolster of the running-gear for the purpose set forth.

6. In a device of the class described, the combination with tilting tracks or ways, of a wagon running-gear, a cross-piece secured to the bottom of the box or rack, and a member hinged to the cross-piece and adapted to engage the bolster of the running-gear.

808,914. **BUTTONHOLE ATTACHMENT FOR SEWING-MACHINES.** FRANK J. FREMA, Detroit, Mich. Filed Dec. 27, 1904. Serial No. 238,378.

Claim.—1. In a buttonholing-machine, the combination with a reciprocatory needle-bar, of a thread-guide shiftable through a segmental path, to be alternately upon opposite sides of said needle-bar and mechanism for shifting said guide, comprising a vertically-arranged lever mounted on a stationary pivot, said lever having its lower end universally movable in a horizontal plane, a connection between the lower end of said lever and the thread-guide, means for

reciprocating said lever and means for guiding the lower end thereof in an angular course.

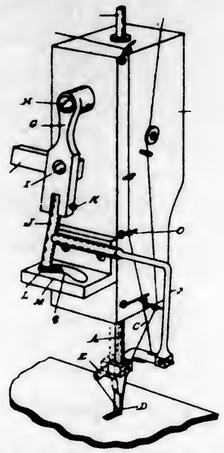

2. In a buttonholing-machine, the combination with a reciprocatory needle-bar, of a thread-guide shiftable through a segmental path, to be alternately upon opposite sides of said needle-bar and mechanism for shifting said guide comprising a vertically-arranged lever, formed in two sections, the lower section being pivoted to the upper section to swing in a plane transverse to the plane of movement of the lever as a whole, means for reciprocating said lever connected to the upper section thereof, a connection between the lower section of said lever and the thread-guide, and means for guiding the lower end of said lever through an angular course.

3. In a buttonholing-machine, the combination with a reciprocatory needle-bar, of a thread-guide shiftable through a segmental path, to be alternately upon opposite sides of said needle-bar and mechanism for shifting said guide, comprising the reciprocatory rod F, the lever G to which said rod is attached, the lower section J of said lever, pivoted to the upper section to swing in a transverse plane, the arm N connecting the section J with said thread-guide, the slotted guide-plate M and the antifriction-roll L on the section J for engaging the slot in said guide-plate.

808,915. **CARBURETER AND IGNITER FOR HYDROCARBON-ENGINES.** ARTHUR B. GOODSPEED, East Orange, N. J., assignor to Industrial Development Company, New York, N. Y., a Corporation of New York. Filed Mar. 10, 1904. Renewed June 9, 1905. Serial No. 264,531.

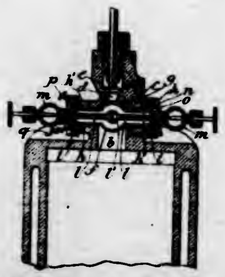

Claim.—1. An igniter for internal-combustion engines, &c., comprising a shell for external contact with the charge to be ignited and communicating internally with the external air and a carbureter and burner placed within said shell and comprising alined tubular members connected respectively with a hydrocarbon-supply and an air-supply and terminating centrally within said shell and means for spreading radially the burning gases, substantially as described.

2. An igniter for internal-combustion engines, &c., comprising a shell having a globular enlargement for external contact with the charge to be ignited and communicating internally with the external air, and a carbureter and burner placed within said shell and comprising alined tubular members connected respectively with a hydrocarbon-supply and an air-supply and terminating centrally within said globular enlargement and means for spreading radially the burning gases, substantially as described.

3. An igniter for internal-combustion engines, &c., comprising a shell for external contact with the charge to be ignited and communicating internally with the external air and a carbureter and burner placed within said shell and comprising tubular members connected respectively with a hydrocarbon-supply and an air-supply and terminating centrally and end to end within said shell whereby the burning gases are spread radially within the shell, substantially as described.

4. An igniter for internal-combustion engines, &c., comprising a shell having a globular enlargement for external contact with the charge to be ignited and communicating internally with the external air and a carbureter and burner placed within said shell and comprising alined tubular members connected respectively with a hydrocarbon-supply and an air-supply and terminating centrally and end to end within said globular enlargement whereby the burning gases are spread radially within said globular enlargement, substantially as described.

5. An igniter for internal-combustion engines, &c., comprising a shell for external contact with the charge to be ignited and communicating internally with the external air and a carbureter and burner placed within said shell and comprising alined tubular members connected respectively from opposite directions with a hydrocarbon-supply and an air-supply and enlarged and perforated at their opposing ends to form a burner-chamber centrally within said shell, substantially as described.

6. The combination with a cylinder of an internal-combustion engine having a chamber and an inlet for the charge, of an igniter comprising a shell having a globular enlargement located within said chamber to spread and ignite the charge admitted through said inlet and communicating internally with the external air and a carbureter and burner placed centrally within said shell and provided with means for spreading radially the burning gases, substantially as described.

7. The combination with a cylinder of an internal-combustion engine of an igniter comprising a shell subjected externally to the pressure within the cylinder and open for communication with the external air, and a hydrocarbon-burner within said shell, and means to regulate the escape of gases and the admission of air from and to the interior of said shell, substantially as described.

8. The combination with a cylinder of an internal-combustion engine having a chamber and an inlet for the charge, of an igniter comprising a shell having a globular enlargement located within said chamber to spread and ignite the charge admitted through said inlet, and communicating internally with the external air and a carbureter and burner placed centrally within said shell, substantially as described.

808,916. **DRAPER.** WALTER T. GORDON, Juniper, Oreg. Filed Apr. 12, 1905. Serial No. 255,344.

Claim.—In a draper or the like, the combination of a belt, a slat, and a slat-holder or clip comprising a base interposed between the slat and the belt and fixed with respect to the latter, and arms having inwardly-directed teeth on their edges throughout the length of the said edges; the said teeth being embedded in opposite sides of the slat.

808,917. **SMOKE-CONSUMER.** JAMES R. GORMLEY, Chicago, and JOHN GORMLEY and PATRICK CORLEY, Rockford, Ill. Filed Aug. 16, 1904. Serial No. 220,963.

Claim.—A smoke-consumer comprising a closed tank, a water-supply to the tank, an overflow to the tank provided with a relief-valve, a blower, a pipe connection between the blower and tank, and provided with a check-valve, and a pipe connection between the blower and boiler or other coal-consuming apparatus.

808,917.

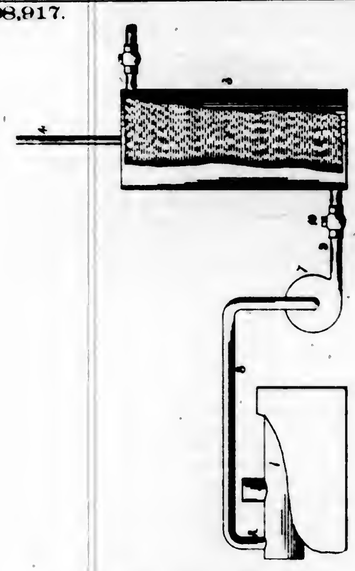

808,918. **TOP.** JOHN W. GRATTAN, Watertown, N. Y. Filed Apr. 1, 1905. Serial No. 253,272.

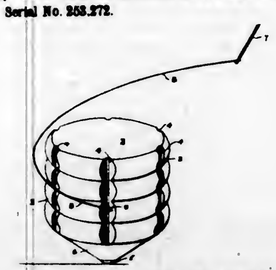

Claim.—1. A top of the class described, comprising a wooden body portion, a series of horizontal grooves or corrugations formed in the surface of said body, vertical grooves formed across the horizontal grooves and adapted to engage a knot on the end of a whip-lash, substantially as described.

2. A top of the class described, comprising a wooden body having one flat end and one cone-shaped end, a plurality of annular corrugations or grooves formed in the surface of said body, a plurality of grooves formed lengthwise of said body adapted to engage a knot or like part formed on the end of a whip-lash, substantially as described.

3. A top of the class described, comprising a cylindrical body having one flat, and one cone-shaped end, annular rings or corrugations formed around said body, and grooves formed lengthwise of said body adapted to provide a purchase or hold for a knot formed on the end of a whip-lash.

808,919. **RED AZO DYE AND PROCESS OF MAKING SAME.** JOHN HAGENBACH, Basle, Switzerland, assignor to Aniline Colour and Extract Works, formerly John R. Geigy, Basle, Switzerland. Filed June 20, 1905. Serial No. 267,676. (Specimens.)

Claim.—1. The process for producing red azo dyestuffs by combining the diazo derivatives of ortho amidonaphthol sulfonic acids with 1-phenyl-5-pyrazolones capable to combine in position four, substantially as set forth.

2. The process for producing a red azo dyestuff by combining the diazo derivative of 1-amido-2-naphthol-4-sulfonic acid with 1-phenyl-3-methyl-5-pyrazolone substantially as set forth.

3. The herein-described new azo dyestuffs produced by combining the diazo derivatives of ortho amidonaphthol sulfonic acids with 1-phenyl-5-pyrazolones capable to combine in position four, forming dark-brown powders with slight metallic luster, soluble in water with an orange-yellow to reddish-brown color, turning into yellowish red to bluish red by addition of acetic acid, soluble in concentrated sulfuric acid with a bright orange to red color and yielding on wool from acid-bath yellowish-brown to violet-brown shades, changing into yellowish red to bluish red when treated after dyeing with chromium compounds substantially as set forth.

4. The herein-described new azo dyestuffs produced by combining the diazo derivative from 1-amido-2-naphthol-4-sulfonic acid with 1-phenyl-3-methyl-5-pyrazolone, forming a dark-brown shiny powder, soluble in water with an orange-yellow color, turning into a brilliant red by addition of acetic acid, soluble in concentrated sulfuric acid with magenta color and yielding on wool from acid-bath reddish-brown-yellow shades changing into crimson-red when treated after dyeing with chromium compounds substantially as set forth.

808,920. **TOOL FOR SPREADING THE TUBES OF WATER-TUBE BOILERS.** PATRICK HEELY and JOHN KERR, New York, N. Y. Filed July 7, 1905. Serial No. 268,723.

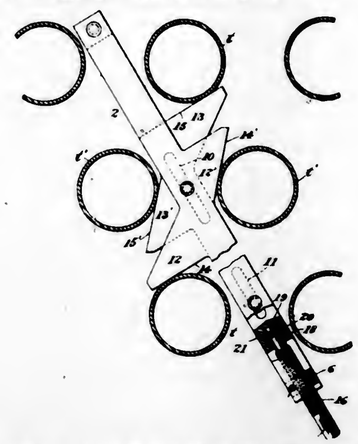

Claim.—1. A tool for spreading the tubes of water-tube boilers, embodying a carrier, a pair of tube-spreading members for spreading a plurality of tubes relatively to one another, and means for moving said tube-spreading members toward and from each other.

2. A tool for spreading the tubes of water-tube boilers, embodying a carrier, a pair of tube-spreading members for spreading a plurality of tubes relatively to one another, said tube-spreading members having parallel working faces, and means for moving said tube-spreading members toward and from each other and maintaining said working faces in parallelism.

3. A tool for spreading the tubes of water-tube boilers, embodying a carrier, a pair of tube-spreading members for spreading a plurality of tubes relatively to one another, and means for moving said tube-spreading members toward and from each other and for holding them in any position to which they may be shifted.

4. A tool for spreading the tubes of water-tube boilers, embodying a two-part carrier the two parts of which are adjustable relatively to each other, and a pair of tube-spreading members for spreading a plurality of tubes relatively to one another, said tube-spreading members being secured respectively to the two parts of the carrier.

5. A tool for spreading the tubes of water-tube boilers, embodying a two-part carrier the two parts of which are connected by screw-threads and are adjustable thereby relatively to each other, and a pair of tube-spreading members for spreading a plurality of tubes relatively to one another, said tube-spreading members being secured respectively to the two parts of the carrier and movable toward and from each other.

6. A tool for spreading the tubes of water-tube boilers, embodying a two-part carrier the two parts of which are connected by screw-threads and are adjustable thereby relatively to each other, and a pair of tube-spreading members for spreading a plurality of tubes relatively to one another, said tube-spreading members being secured

respectively to the two parts of the carrier and movable toward and from each other and having parallel working faces.

7. A tool for spreading the tubes of water-tube boilers, embodying a two-part carrier forming a rod one part of which constitutes a guide and the other part a slide movable along said guide, means for adjusting said slide on said guide and for holding it in its adjusted position, and a pair of tube-spreading members secured respectively to the two parts of the carrier.

8. A tool for spreading the tubes of water-tube boilers, embodying a two-part carrier forming a rod one part of which constitutes a guide and the other part a slide movable along said guide, means for adjusting said slide on said guide and for holding it in its adjusted position, and a pair of tube-spreading members secured respectively to the two parts of the carrier and having working faces extending in parallelism and at an acute angle to the axis of the carrier.

9. A tool for spreading the tubes of water-tube boilers, embodying a carrier having more than two tube-spreading members, and means for moving said tube-spreading members away from and toward each other to spread and release more than two tubes.

10. A tool for spreading the tubes of water-tube boilers, embodying a carrier, two pairs of tube-spreading members, and means for moving the members of one pair away from and toward each other in one direction and for moving the members of the other pair away from and toward each other in a direction transverse thereto to spread and release two pairs of tubes.

11. A tool for spreading the tubes of water-tube boilers, embodying a carrier, two pairs of tube-spreading members the working faces of each pair being parallel, and means for moving the members of one pair away from and toward each other in one direction and for moving the members of the other pair away from and toward each other in a direction transverse thereto to spread and release two pairs of tubes.

12. A tool for spreading the tubes of water-tube boilers, embodying a rod-like carrier, two pairs of tube-spreading members the working faces of each pair being parallel and the working faces of one pair being disposed at an acute angle to the axis of the carrier, and means for moving the members of one pair away from and toward each other in the direction of the length of the carrier and for moving the members of the other pair away from and toward each other in a direction transverse thereto to spread and release two pairs of tubes.

13. A tool for spreading the tubes of water-tube boilers, embodying a two-part carrier the two parts of which are adjustable relatively to each other, and two pairs of tube-spreading members one member of each pair being secured to one part of the carrier and the other member of each pair being secured to the other part of the carrier and the working faces of members of different pairs being disposed at different angles.

14. A tool for spreading the tubes of water-tube boilers, embodying a two-part carrier the two parts of which are adjustable relatively to each other, and two pairs of tube-spreading members one member of each pair being secured to one part of the carrier and the other member of each pair being secured to the other part of the carrier and the working faces of members of different pairs being disposed substantially at a right angle to the carrier and the members of the other pair having parallel working faces disposed substantially at an acute angle to the carrier.

15. A tool for spreading the tubes of water-tube boilers, embodying a two-part carrier the two parts of which are connected by screw-threads and are adjustable thereby relatively to each other, two pairs of tube-spreading members one member of each pair being secured to one part of the carrier and the other member of each pair being secured to the other part of the carrier and the working faces of members of different pairs being disposed at different angles.

16. A tool for spreading the tubes of water-tube boilers, embodying a two-part carrier one part of which has a fixed nut and the other part of which is slidable along the first, an adjusting-screw working in said nut of the first part of the carrier and swiveled to the other part of said carrier, and a pair of tube-spreading members secured respectively to the two parts of the carrier and movable toward and from each other.

17. A tool for spreading the tubes of water-tube boilers, embodying a two-part carrier one part of which has a fixed nut and the other part of which is slidable along the first, an adjusting-screw working in said nut of the first part of the carrier and swiveled to the other part of said carrier, and two pairs of tube-spreading members one member of each pair being secured to one part of the carrier and the other member of each pair being secured to the other part of the carrier and the working faces of members of different pairs being disposed at different angles.

808,921. RAILWAY-RAIL STAY. THOMAS D. HENDERSON, Chicago, Ill. Filed May 8, 1905. Serial No. 259,265.

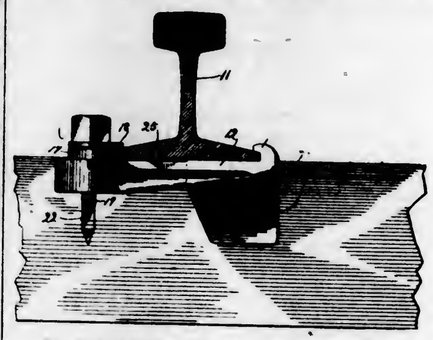

Claim.—1. A railway-stay comprising in combination, a body having a rail-flange-engaging hook at one end and a flange-gripping device at the opposite end; a shank projecting laterally from the hooked end of the bar; and a flange depending from the outer end of the shank, the face of the flange being inclined toward the remote end of the body of the stay.

2. In a railway-rail stay, in combination, a body having a rail-flange-engaging hook at one end and a transverse aperture at the opposite end; and a plug rotatably seated in the aperture and having a cam-rib for engaging the edge of the rail-flange.

3. In a railway-rail stay, in combination, a body having a rail-flange-engaging hook at one end and a transverse aperture at the opposite end; and a plug rotatably seated in the aperture and having a cam-rib for engaging the edge of the rail-flange, a key-seat being formed in the aperture-wall and the body of the plug.

4. In a railway-rail stay, in combination, a body having a flange-engaging hook at one end and a transverse aperture at the other end; a plug rotatably seated in the aperture and having a lateral foot engaging the under face of the body, and a top flange having its lower face beveled for engaging the top of the flange.

808,922. PIPE-COUPLING. AUSTIN T. HERRICK, Bradford, Pa. Filed Sept. 15, 1904. Serial No. 224,521.

Claim.—1. In a pipe-coupling, the combination of the sleeve and the collar, each having a bore to fit the outer circumference of a pipe, one of said parts being provided with a packing-receiving bore, and a packing fitting in said bore and provided with a V-shaped annular groove; the other part being provided with an annular projection, the outer end of which is larger than the base of the groove in the packing to cause an extreme compression on the inner and outer faces of the packing adjacent the base of the groove.

2. The combination with the sleeve and the collar, each having a bore fitting the outer circumference of the pipe, one of said parts having an enlarged packing-receiving bore, of a packing for said bore, having a V-shaped groove; the other of said parts having an annular projection with parallel inner and outer walls and its edge wider than the base of the V-shaped groove.

3. In a pipe-coupling, a packing-ring provided with a V-shaped groove extending from the top to a point near the bottom and having an enlargement at the bottom.

4. In a pipe-coupling, the combination with the sleeve having an enlarged bore; of a packing-ring adapted for insertion in said enlarged bore and provided with an annular V-shaped groove having an enlargement at its bottom; and a collar provided with an annular flange having an annular enlargement, and adapted to enter the annular groove of the packing-ring.

808,923. PIPE-COUPLING. AUSTIN T. HERRICK, Bradford, Pa. Filed Sept. 15, 1904. Serial No. 224,522.

Claim.—1. The combination with a sleeve having an interior annular projection having seats at its ends, of pipes fitted within the ends of the sleeves having greater diameters than the bore of the annular projection, packings adapted to receive the ends of the pipes and surround the same and having annular projections fitting between the seat and the end of the pipe, and means separable from the pipe for gripping the pipes and forcing them against the annular projection of the packing.

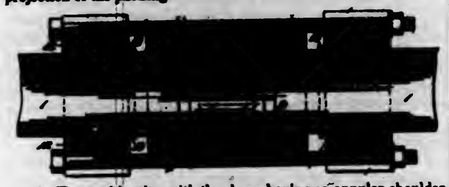

2. The combination with the sleeve having an annular shoulder therein, of a packing adapted to receive the end of a pipe of greater diameter than the bore of the annular shoulder, and having an annular projection adapted to extend between the shoulder and the end of the pipe, and means separable from the pipe adapted to grip a pipe and force it against the projecting portion of the packing.

3. In a pipe-coupling, a sleeve having a central bore enlarged at each end, a square seat and a wedge-shaped groove formed at the juncture of the central and enlarged bores.

4. In a pipe-coupling, the combination with a sleeve having a square seat and a wedge-shaped groove formed in its interior, of a packing-ring comprising an annular rectangular projection and beveled portions extending each side of the projection, said ring adapted to fit within said sleeve.

5. In a pipe-coupling, a packing-ring comprising a rectangular portion and wedge-shaped portions of different lengths extending from each side of the rectangular portion the outer faces of the wedge-shaped portions being in alinement.

6. In a pipe-coupling, the combination with a sleeve having a central and enlarged end portions, square seats and wedge-shaped grooves formed at the juncture of said bores, packing-rings each having a central rectangular portion and wedge-shaped portions of different length extending from each side of the rectangular portion, the shorter of the beveled portions being adapted to be seated in the wedge-shaped groove formed within the sleeve, of collars having a tapering bore and slips adapted to fit within said tapering bore and provided with wickers upon their inner faces.

7. The combination with the sleeve, of an annular shoulder or seat therein, provided with an annular groove, and a packing adapted to receive the end of a pipe and surround the same, having a portion adapted to enter the annular groove, and an annular portion adapted to extend between the end of the pipe and the seat or shoulder.

8. The combination with the sleeve having an annular shoulder therein; of a packing abutting against the shoulder and having a tapering pipe-receiving bore to receive the end of a pipe, and an annular projection at the smaller end of the bore; and means for forcing the pipe in the packing.

9. In a pipe-coupling, the combination with a member having a cylindrical bore; of a packing having a cylindrical portion to fit the bore of said member, a tapering bore, and a shoulder at the smaller end of the bore; a second member adapted to fit within the tapering bore of the packing and abut against the shoulder; and means for forcing the second member within the tapering bore of the packing to cause the packing to be pressed against the cylindrical bore of the first member.

808,924. FILTERING SYSTEM. HENRY L. HOLLIS, Chicago, Ill. Filed July 2, 1904. Serial No. 214,600.

Claim.—1. In a system of exhaust filtration, the combination with a receptacle containing the material to be filtered, of a filter-chamber in said receptacle, a pervious cloth adjacent to the outer surface of the filter-wall, and means for detachably securing said pervious cloth in place.

2. In a system of filtration, the combination with a filter-chamber, a detachable pervious screen adjacent to the surface of a filter-wall of said chamber, means for supplying material to be filtered to one side of the wall of said chamber, and means for reducing the pressure upon the other side of said wall.

3. In a system of filtration, the combination with a filter-chamber, a detachable pervious screen adjacent to the surface of a filter-wall of said chamber, means for supplying material to be filtered to one side of the wall of said chamber, and means for withdrawing fluid from said filter-chamber.

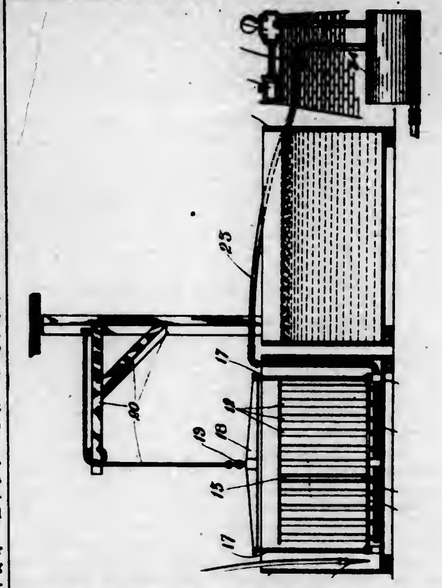

4. In a system of exhaust filtration, the combination with a suitable receptacle containing the material to be filtered, of a filter-chamber in said receptacle, a detachable pervious screen adjacent to the outer surface of a filter-wall of said chamber, means for withdrawing the fluid from the interior of said filter-chamber, and means for removing said filter-chamber from the receptacle.

5. In a system of exhaust filtration, the combination with a suitable receptacle containing the material to be filtered, of a filter-chamber in said receptacle, a detachable pervious screen adjacent to the outer surface of a filter-wall of said chamber, means for withdrawing the fluid from the interior of said filter-chamber, means for removing said filter-chamber from the receptacle, and means for agitating the material within said receptacle.

6. In a system of filtration, the combination with a receptacle containing the material to be filtered, a filter proper in said receptacle, a detachable screen adjacent to a filter-wall of said filter, a pump for producing a suction to cause the passage of fluid successively through said screen and said filter-wall, means for collecting the filtered fluid, a second receptacle containing water for washing purposes, and means for moving said filter proper from one receptacle to the other.

7. In a system of filtration, the combination with a suitable filter proper, of a detachable screen adjacent to a filter-wall of said filter, and means for causing a difference in pressure on the two sides of said filter-wall.

8. In a system of filtration, the combination with a suitable filter proper, of a detachable screen adjacent to a filter-wall of said filter, and means for causing a decrease in the pressure on the opposite side of the filter-wall from that upon which the detachable screen is placed.

9. In a filtering system, the combination with a filter-wall, of a detachable screen covering the outer surface of the filter-wall, and means for reducing the pressure on the inner side of the filter-wall.

10. In a system of exhaust filtration, the combination with a receptacle containing the material to be filtered, of a second receptacle containing water for washing purposes, a filter proper comprising a plurality of filter-chambers each having suitable canvas filter-walls, a detachable gauze-like cloth adjacent to the outer surface of each of said filter-walls, means for holding said cloths in place during the filtering operation, means for withdrawing air and fluid from the interior of said filter-walls, and means for transferring said filter proper from one receptacle to the other and for removing it from both, whereupon said gauze-like cloths may be changed, substantially as described.

11. In a system of exhaust filtration, the combination with a receptacle containing the material to be filtered, of a filter proper comprising a plurality of filter-chambers each having suitable canvas filter-walls, a detachable gauze-like screen adjacent to the outer surface of each of said filter-walls, means for holding said cloths in place during the filtering operation and prior to immersion in the material to be filtered, and means for creating suction within the filter-chambers.

12. In a system of exhaust filtration, the combination with a receptacle containing the material to be filtered, of a second receptacle containing water for washing purposes, a filter proper comprising a plurality of filter-chambers each having suitable filter-walls, a detachable gauze-like cloth adjacent to the outer surface of each of said filter-walls, means for holding said cloths in place during the filtering operation, means for withdrawing air and fluid from the interior of said filter-walls, and means for transferring said filter proper from one receptacle to the other and for removing it from both, whereupon said gauze-like cloths may be changed, substantially as described.

13. In a system of exhaust filtration, the combination with a receptacle containing the material to be filtered, of a filter proper comprising a plurality of filter-chambers each having suitable filter-walls, a detachable gauze-like screen adjacent to the outer surface of each of said filter-walls, means for holding said cloths in place during the filtering operation and prior to immersion in the material to be filtered, and means for creating suction within the filter-chambers.

14. In a system of exhaust filtration, the combination with a receptacle containing the material to be filtered, of a second receptacle containing water for washing purposes, a filter proper comprising a plurality of filter-chambers each having suitable filter-walls, a detachable gauze-like screen adjacent to the outer surface of each filter-wall, a reservoir, a flexible tube connecting said reservoir with the chambers of said filter proper, a pump for exhausting the air from said reservoir, and means for transferring said filter proper from one receptacle to the other and for removing it from both, whereupon said gauze-like screens may be renewed.

15. In a filtering system, the combination with a tank containing the material to be filtered, of a filtering medium, means for alternately introducing said medium into and removing the same from said tank, means for drawing the contained material through said filtering medium while in the tank, and a screen outside of the filtering medium for removing the solid material from said filtering medium, while said medium is outside the tank.

16. In a filtering system, the combination with a tank for containing the material to be filtered and a water-tank, of a filter, means for introducing and removing the same into and from each of said tanks alternately, and means for drawing the contents of said tanks through the filtering medium into detachable cloth provided with fine meshes external to said filtering medium for removing the solid material from said filtering medium.

17. In a filter, the combination with a filtering medium, of a pipe extending into said medium, a pump connected therewith for intermittently producing a drawing action, and a fine-meshed detachable screen for removing the solid material from said filtering medium, substantially as described.

18. In a filtering system, the combination with a tank for containing the material to be filtered and a tank for containing a cleansing liquid; of a filter, means for introducing and removing the same into and from the first-mentioned tank and for introducing and removing same into and from the second-mentioned tank, means for drawing the material contained in the first-mentioned tank through the filtering medium while the filter is within the tank and for drawing the liquid from the second-mentioned tank through the filter while therein, and a detachable screen for removing the solid material from the filter.

19. In a filtering system, the combination with a suitable filtering medium, of a tube communicating with the interior thereof, a pump for producing an intermittent drawing action within said tube, and a detachable cloth adjacent to the filtering medium to entangle and engage the solid material and for removing the same from the surface of the filtering medium.

20. In a filtering system, the combination with a tank for containing the material to be filtered and a cleansing-fluid tank, of a filter, means for introducing and removing the same into and from said tanks alternately, means for drawing the contents of said tanks through said filter, and a fine-meshed screen for removing foreign substances from the surface of said filter after its removal from the tank containing the cleansing fluid.

21. In a filter, the combination with a suitable receptacle for the material to be filtered, of a filter proper, means for introducing the same into and removing the same from said receptacle, means for producing a drawing action through said filter while in the receptacle, and a detachable fine-meshed screen outside of the filter through which the fluid must pass before reaching the filtering medium, means for removing said screen with the solid material engaged thereby, and a second screen for substitution in place of that removed.

22. In a filtering system, the combination with a suitable tank for containing the material to be filtered, of a filter comprising a plurality of plates, filtering means carried thereby, a tube communicating with the interior of said filtering means, means for introducing and removing said filter proper into and from said tank, means for drawing the material contained in said tank through said filtering medium and through said tube, and a bodily-removable cleansing-screen outside of said filtering means through which the fluid must be drawn in passing from the tank through said filtering means.

23. In a system of filtration, the combination with a receptacle containing the material to be filtered, of a filter-chamber in said receptacle having pervious stationary side walls, means for creating suction in said filter-chamber, additional pervious side walls for said filter-chamber, and hooks from which said additional walls may be suspended and from which said walls may be readily detached to remove therefrom the accumulated material after filtration.

24. In a system of exhaust filtration, the combination with a receptacle containing the solution to be filtered, of a filter-chamber in said receptacle, said filter-chamber consisting of a frame to the sides of which are permanently secured walls of pervious material, hooks extending from the sides of said frame, and additional side walls of pervious material stretched between said hooks and readily detachable therefrom, whereby the material accummulated on said additional walls after filtration may be removed from the filter-chamber.

808,925. **INDEPENDENT STEAM-HEAT RADIATOR.** WILLIAM HOLSTEIN, Chicago, Ill. Filed Feb. 23, 1905. Serial No. 247,033.

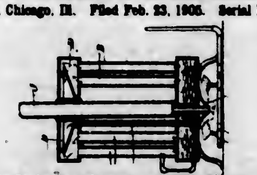

Claim.—1. In independent steam-heat radiators the combination of two receptacles integrally connected by tubes and a funnel-shaped disk in the upper receptacle, a tube connected with said disk said tube extending down and entering said lower receptacle to a point near the bottom thereof, said lower receptacle supplied with water, a heating device placed under said lower receptacle, said lower receptacle supplied with a water-gage, an air-valve connected with one of the connecting-tubes, substantially as described.

2. An independent steam-radiator comprising an upper receptacle and a lower receptacle joined by tubes, the upper receptacle containing a funnel-shaped disk, a condensation-tube connecting the said disk with the lower receptacle, the lower receptacle adapted to contain water, a heater below the lower receptacle, and a flue for the heater, substantially as described.

808,926. **WOOD-CONVEYER.** GEORGE G. HUSH, Fort Worth, Tex. Filed Oct. 11, 1905. Serial No. 282,936.

Claim.—1. A wood-conveyor comprising a traveling conveyer-box, a trolley-cable having one end elevated above the other, hangers attached to said box and provided with pulley-wheels engaging said cable, a driving-cable attached to said hangers, gearing for driving said driving-cable, said hangers having pulley-wheels engaging said cable, said box having an inclined hinged bottom piece, weighted latches for holding said bottom piece in place, a tripping device in the path of said latches, and weighted levers for bringing said hinged bottom piece back to its normal position.

2. A wood-conveyor comprising a traveling carrier, an inclined track for said carrier, means for moving said carrier, said carrier having a bottom consisting of two inclined portions meeting at a line transverse to the movement of the carrier and one of said bottom portions being hinged, weighted latches attached to the other bottom portion for holding said hinged portion in its normal position, a tripping device in the path of said latches, and weighted levers fulcrumed on the side of said carrier and having pivotal connections with said hinged bottom portion.

3. A wood-conveyor comprising a traveling carrier, an inclined track for said carrier, hangers in two sections pivotally connected together and attached to said carrier and provided with pulleys engaging said track, a driving-cable attached to said hangers at the pivotal connections of said hangers, pulleys for said driving-cable, said hangers having pulleys engaging the lower traveling part of said cable, means for driving said cable-driving pulleys, and means for unloading said carrier.

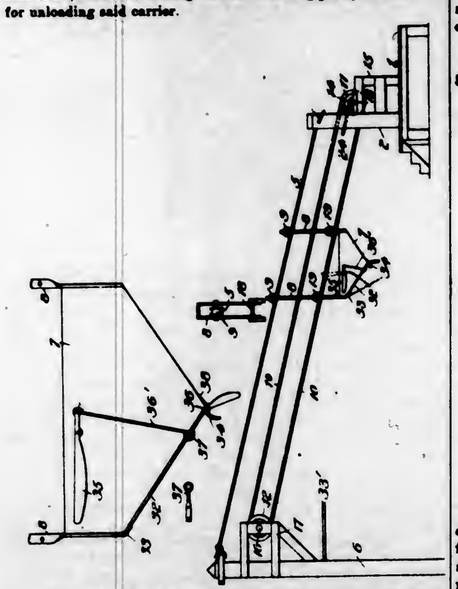

4. A wood-conveyor comprising a traveling carrier, an inclined track for said carrier consisting of a cable attached to a fixed object at one end, a spool at the other end thereof for regulating the tension thereof, means for rotating said spool, a ratchet-wheel and dog for holding said spool against rotation after suitable tension has been obtained, hangers in two sections pivotally connected together, the lower sections being attached to said carrier and the upper sections being provided with trolley-wheels engaging said track, a driving-cable attached to the pivotal connections of said hangers, pulleys for mounting and driving said cable, shafts for said pulleys, one of said shafts being a driving-shaft, the pulley mounted on said driving-shaft having a clutch formed on the hub thereof, a sprocket-wheel having a cooperating clutch formed on the hub thereof and adapted to engage the clutch of said driving-pulley, means for throwing said sprocket-wheel in and out of mesh with said driving-pulley, means for unloading said carrier, and means for regulating the speed of said carrier when returning to its normal position.

808,927. **ADJUSTING-SCREW FOR REVOLVING CHAIRS.** HOWARD G. HUSH, New York, N. Y. Filed Apr. 4, 1905. Serial No. 253,861.

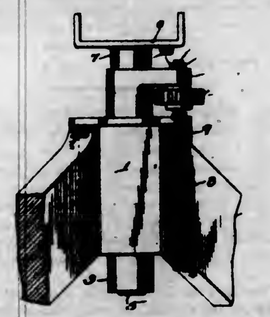

Claim.—An article of the class described comprising a leg-supporting head provided with a longitudinal smooth bore and a threaded offset, an internally and externally smooth sleeve engaging the orifice and having an arm constituting a bearing, an adjusting-screw in engagement with the threaded offset and having one end mounted for rotation in the arm, a stop secured to the upper end of the adjusting-screw and bearing upon the arm to hold the screw against disconnection therefrom, and an externally-smooth seat-supporting spindle mounted within the sleeve.

808,928. **MECHANICAL MOVEMENT.** ARTHUR W. HUTCHINS, Providence, R. I. Filed Dec. 29, 1904. Serial No. 238,708.

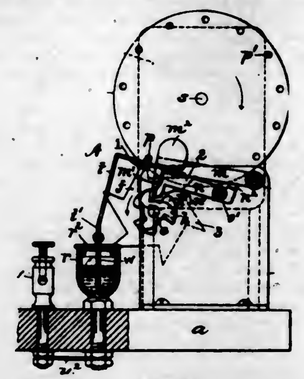

Claim.—1. In a device or mechanism of the class described, the combination with a revoluble star-wheel and lifting-cams and means for simultaneously actuating said wheel and cams intermittingly, of a pair of self-dropping coacting pawls having their normal movements controlled by said cams, and having one of the pawls arranged to be tilted upwardly by the action of the fellow pawl when the latter is depressed, as in dropping from its cam.

2. In a device or mechanism of the class described, the combination with a revoluble star-wheel, a pair of lifting-cams concurrently movable with said star-wheel and a continuously-movable disk or member provided with means for operating the wheel and cams in an intermittent manner, of a pair of self-dropping pawls normally actuated by and in substantially continuous engagement with said cams and with each other, one of the pawls when released from its cam acting to quickly elevate the other pawl, and a member or element secured to the last-named pawl whereby intermittent reciprocating movements are imparted to said member.

3. In a device or mechanism of the class described, the combination of a revoluble lifting-cam, a self-dropping or primary pawl in substantially continuous engagement therewith, a revoluble second cam, a secondary pawl adapted to engage the last-named cam and also in engagement with the primary pawl, a member connected with the secondary pawl by means of which member the movements of the latter pawl are utilized, and means for simultaneously imparting an intermittent rotary movement to the cams.

4. In a device or mechanism of the class described, a primary self-dropping swinging pawl m, a revoluble cam for elevating said pawl, a secondary self-dropping movement-transmitting pawl n arranged with respect to and in engagement with pawl m whereby the action of the latter in falling automatically elevates the other pawl, a revoluble check-cam for holding the last-named pawl in position while the primary pawl itself is moving upwardly, and means for simultaneously imparting an intermittent rotary movement to both the said pawl-lifting cams.

5. In a device or mechanism of the class described, the combination with a revoluble star-wheel and lifting-cams mounted and arranged to work in unison, of a continuously-revoluble disk provided with pins located in the path of the teeth of said star-wheel for engaging the latter and rotating it and said cams together in an intermittent manner, a pair of coacting self-dropping swinging pawls in engagement with and having their movements controlled by said cams, and having one of the pawls provided with a member or element through which the movements of the pawl are utilized, substantially as described.

808,929. AUTOMATIC GAS RANGE-SIGNAL. FREDUS A. KNUDSEN, Cedar, Ohio. Filed May 31, 1904. Renewed June 6, 1905. Serial No. 264,815.

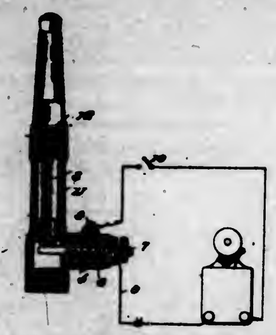

Claim.—1. In a pressure-alarm, the combination of a hollow body having a passage for the fluid or liquid, an electric alarm-circuit, a pin forming one terminal of said circuit and extending into the hollow body, a valve mounted to reciprocate within the hollow body and to close the aforesaid passage thereof and constituting in effect the other terminal of the alarm-circuit to close the same under abnormal conditions by coming in contact with the said pin, the latter also serving to support the valve and limit its downward movement and a spring for normally holding said valve in contact with the pin, substantially as set forth.

2. In a pressure-alarm, the combination of a hollow body having a passage for the fluid or liquid, an electric alarm-circuit, a pin forming one terminal of said circuit and extending into the hollow body, a valve mounted to reciprocate within the hollow body and to close the aforesaid passage thereof and constituting in effect the other terminal of the alarm-circuit to close the same under abnormal conditions by coming in contact with the said pin, a spring for normally holding said valve in contact with the pin, and a disk nut having screw-thread connections with the hollow body for regulating the tension of said spring and having an opening for reception of a tool and to provide an escape, substantially as set forth.

808,930. BURNER DEVICE FOR TUBULAR LANTERNS. DAVID C. KLINE, Rochester, N. Y., assignor to The Pritchard-Stong Company, Rochester, N. Y., a Corporation of New York. Filed July 21, 1905. Serial No. 270,033.

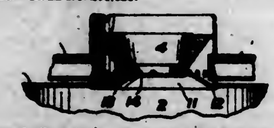

Claim.—1. In a burner device for tubular lanterns, a gallery-tube, an oil-pot having a central orifice within said gallery-tube, a burner-support having an orifice corresponding to said central orifice, a perforated diaphragm-plate having its outer edge fitting the gallery-tube and its inner edge registering with the oil-pot orifice, and means for holding said parts together.

2. In a burner device for tubular lanterns, a gallery-tube, an oil-pot having a central orifice within said gallery-tube, a burner-support having an orifice corresponding to said central orifice, a perforated diaphragm-plate having its outer edge fitting the gallery-tube and its inner edge registering with the oil-pot orifice, and a metal annulus in said orifices and compressed upon the adjacent edges of the oil-pot and of the burner-support.

808,931. ATTACHMENT FOR LINOTYPE-MACHINES. JOHN H. W. ELSOM, Philadelphia, Pa. Filed Oct. 1, 1903. Serial No. 175,722.

Claim.—1. In a linotype-machine, in combination, mechanism to assemble a line of matrices—a magnifying indicating-needle, and intermediate means, especially adapted to operate said indicating-needle.

2. In a linotype-machine, in combination, mechanism to assemble a line of matrices—a magnifying indicating-needle, one or more independent movable projections especially adapted with intermediate mechanism to operate upon said indicating-needle, and carried by said assembling mechanism.

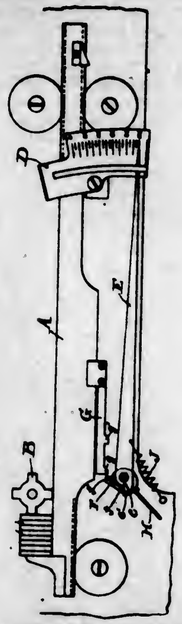

3. In a linotype-machine, in combination, mechanism to assemble a line of matrices—a magnifying indicating-needle, a scale on which a small portion of an inch is divided into a number of enlarged equal parts, these parts being numbered, and these numbers corresponding to one or more space-matrices especially provided.

4. In a linotype-machine, in combination, mechanism to assemble a line of matrices, a magnifying indicator, a corresponding scale, a series of space-matrices, especially sized and numbered to correspond with said scale, and to be used in connection therewith.

5. In a linotype-machine, in combination with the assembler-slide, one or more independent movable frames having a projection thereon, especially adapted to act in combination with intermediate mechanism upon a magnifying indicator, a pivoted pawl especially adapted to act, when struck by said projection, upon said indicator, and operatively connected therewith, and means to move said pawl into and out of line of movement of said projection.

6. In a linotype-machine, in combination, a magnifying indicator, a corresponding scale, one or more independent movable frames having a projection carried by said assembler-slide, especially adapted to act upon a pivoted pawl especially provided to act upon said indicating-needle, and a rod adapted to move said pawl into and out of alinement with said movable projection.

7. In a linotype-machine, in combination, an enlarged scale, a magnifying indicator coacting with said scale, a pin on which said indicator is pivoted, a pawl on said pin, operative connection between said pawl and indicator, a rod mounted on said pin, a spring around said pin, connected to said rod and pawl, said rod being especially adapted to move said pawl out of and into alinement with said movable projection.

808,932. MAIL-TRANSFERRING DEVICE. CHARLES KEEPS, Chicago, Ill. Filed Mar. 23, 1905. Serial No. 251,559.

Claim.—1. In a mail catching and delivering device, arms engaged upon the sides of the car adjacent a door, transverse arms or bars at the outer ends thereof adapted to extend parallel with the car when swung outwardly, a forwardly-directed spring-yoke on one of said bars, rearwardly-directed means on each of the same adapted to support a mail-bag or the like in position to be engaged by a corresponding device adjacent the track and adapted to deliver a bag to said jaws.

2. In a device of the class described, complemental means supported on the car and adjacent the track, comprising respectively, upper and lower longitudinal bars for supporting a mail-bag or the like in vertical position and oppositely-directed yokes having resilient sides and each adapted to engage and receive the bag supported upon the other.

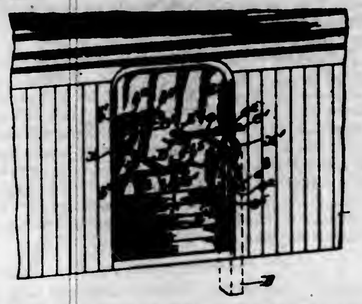

3. A device of the class described, a hinged arm adapted to be swung parallel with the car, a forwardly-directed spring-yoke pivoted horizontally on one end thereof, a rearwardly-directed support on the other end and a complemental device adapted to be supported adjacent the track, each of said devices acting to receive from and to deliver to the other a package, thereby affording an exchange.

4. A catching-yoke for the purpose specified comprising a bar adapted to be supported in engaging position, a transverse head at the end of said bar, an open annular spring projecting beyond the head and outwardly-curved jaws at the end of the said spring adapted to receive a mail-bag or the like between the same and a guard limiting the outward movement of the yoke arm or jaws.

5. In a device of the class described, a catching head comprising a bar, a transverse curved head thereon, oppositely-disposed leaf-springs pivoted on said bar and projecting slightly beyond the head and outwardly-curved jaws on the end of each spring acting to receive between the same, the articles to be engaged.

6. In a device of the class described, complemental members adapted to be engaged upon a car and upon a post adjacent a track and each adapted to support a mail-bag or the like in position to be engaged by the other, resilient engaging jaws carried on each in position to engage the mail-bag each upon the other centrally, whereby said devices are adapted to effect exchange of packages each with the other during the passage of a train and means limiting the spreading movement of said jaws.

7. In a device of the class described, the combination with upper and lower arms supported longitudinally of the car of a cross-head on one of said arms, a guide therein, a resilient yoke pivoted on said arm adjacent said head and projecting forwardly beneath said guide.

8. In a device of the class described the combination with a pair of longitudinal arms supported on a car and provided with rearwardly-directed reduced ends, a spring-clamp adapted to coact with said reduced ends to support a mail-bag in vertical position, a cross-head pivotally engaged at the opposite end of one of said arms and a resilient yoke on said arm and head adapted to receive a mail-bag from a similar device adjacent the track.

808,933. RUBBER HORSESHOE. ABRAM LANG, Bronx, N. Y. Filed Aug. 16, 1905. Serial No. 274,303.

Claim.—1. A horseshoe, comprising a rubber tread-plate provided with recesses, an anchor-rod embedded in said plate and extending across said recesses, a strap adapted to engage the horse's hoof, and connecting members attached at their upper ends to said strap and at their lower ends to the portions of the anchor-rod arranged in said recesses, substantially as set forth.

2. A horseshoe, comprising a rubber tread-plate provided in its edge with recesses, an anchor-rod embedded in the plate and extending across said recesses, an attaching-strap adapted to embrace the horse's hoof, and clips having their lower ends arranged in said recesses and pivoted to said anchor-rod and provided at their upper ends with loops through which said strap passes, substantially as set forth.

3. A horseshoe, comprising a rubber tread-plate, separate anchor-rods embedded in said plate and arranged along opposite sides thereof, said rods being provided at their front ends with transverse branches embedded in the toe portion of the plate, an attaching device adapted to engage the horse's hoof, and means for connecting said attaching device with said anchor-rods, substantially as set forth.

4. A horseshoe, comprising a rubber plate provided with recesses, an anchor-rod embedded therein and composed of a piece of wire doubled upon itself and extending across said recesses, an attaching device adapted to embrace the horse's hoof, and clips connected at one end to said attaching device and at their opposite ends to the portions of said anchor-rod arranged in said recesses, substantially as set forth.

5. A horseshoe, comprising a rubber plate provided with recesses, separate anchor-rods embedded lengthwise in said plate near opposite edges thereof and each composed of a piece of wire doubled upon itself and extending across said recesses, the free ends of said doubled wires being arranged transversely in the toe portion of the plate, an attaching-strap, and clips connecting said strap with the portions of the anchor-rods arranged in said recesses, substantially as set forth.

6. A horseshoe, comprising a rubber plate provided with recesses, an anchor-rod embedded therein and composed of a piece of wire doubled upon itself and extending across said recesses, a tie-rod extending lengthwise of the anchor-rod and engaging the end portions thereof, an attaching device adapted to embrace the horse's hoof, and clips connected at one end to said attaching device and at their opposite ends to the portions of said anchor-rod arranged in said recesses, substantially as set forth.

7. A horseshoe, comprising a rubber plate provided with recesses, separate anchor-rods embedded lengthwise in said plate near opposite edges thereof and each composed of a piece of wire doubled upon itself and extending across said recesses, a tie-rod arranged lengthwise between the members or branches of each anchor-rod and connecting the end portions thereof, an attaching-strap, and clips connecting said strap with the portions of the anchor-rods arranged in said recesses, substantially as set forth.

8. A horseshoe, comprising a rubber plate provided with recesses, separate anchor-rods embedded lengthwise in said plate near opposite edges thereof and each composed of a piece of wire doubled upon itself and extending across said recesses, a tie-rod arranged lengthwise between the members or branches of each anchor-rod and connecting the end portions thereof, a band surrounding the intermediate portions of the branches and the tie-rod of each anchor-rod, an attaching-strap, and clips connecting said strap with the portions of the anchor-rods arranged in said recesses, substantially as set forth.

808,934. BOTTLE-STOPPER. HENRY B. LABARRE, Chicago, Ill., assignor of one-half to Isaac A. Levinson, Chicago, Ill. Filed Sept. 5, 1905. Serial No. 277,600.

Claim.—1. In a bottle-stopper the combination of a cork piece, a disk thereon, and an additional piece formed up to obtain a top and a cylindrical wall, such cylindrical wall arranged to be forced inward into close contact with the neck of a bottle, and such top cut to obtain a thumb-piece, arranged to be bent into position to be seized and thereby a strip torn from the top and cylindrical wall-piece to release it from the bottle-neck, and such thumb-piece provided with a raised rib, tending to maintain the thumb-piece in the same plane as the remainder of the top; substantially as described.

2. The combination of a bottle-stopper and the neck of a bottle, the neck of the bottle provided with an annular rib and the bottle-stopper consisting of a cork piece, a disk thereon, and an additional

piece formed up to obtain a top and a cylindrical wall, such cylindrical wall arranged to be forced inward into close contact with the neck of the bottle and under the annular rib thereon and such top cut to obtain a thumb-piece, arranged to be bent into position to be seized and thereby a strip torn from the top and cylindrical wall of the additional piece to release it from the bottle-neck, and such thumb-piece provided with a raised rib tending to maintain the thumb-piece in the same plane as the remainder of the top; substantially as described.

808,935. HANDLE FOR DENTAL FLASKS. THEODORE G. LEWIS, Buffalo, N. Y., assignor to Buffalo Dental Manufacturing Company, Buffalo, N. Y., a Corporation of New York. Filed Aug. 26, 1905. Serial No. 275,570.

Claim.—1. A handle for a dental flask, comprising a body provided with means constructed to embrace the projecting upper end of a clamping-bolt of the flask and below said means with a member adapted to engage the side of the flask, substantially as set forth.

2. A handle for a dental flask provided with an eye or loop adapted to fit over one of the clamping-bolts of the flask and below the eye with arms or horns adapted to engage the side of the flask, substantially as set forth.

3. A handle for a dental flask, comprising a substantially horizontal body having a downwardly-curved front end, an eye or loop projecting forwardly from the curved portion of the handle and adapted to fit over one of the clamping-bolts of the flask, and a pair of horns projecting forwardly from said curved portion below the eye or loop and adapted to engage the side of the flask, substantially as set forth.

4. A handle for a dental flask, comprising a substantially horizontal body having a downwardly-curved front end, an eye or loop projecting forwardly from the curved portion of the handle and adapted to fit over one of the clamping-bolts of the flask, and a pair of diverging horns extending forwardly from said curved portion below the eye or loop and adapted to engage the side of the flask, substantially as set forth.

5. A handle for a dental flask, comprising a body having a downwardly-curved front portion provided at its end with a headed stud, a hub applied to said stud and carrying a pair of forwardly-extending horns, and an eye or loop projecting forwardly from the handle above said horns, substantially as set forth.

6. A handle for a dental flask, comprising a body having a downwardly-curved front portion provided at its end with a headed stud, a hub applied to said stud and provided with a pair of forwardly-extending horns and upwardly-projecting lips bearing against opposite sides of the handle, and an eye or loop projecting forwardly from the handle above said horns, substantially as set forth.

808,936. PHOTOGRAPHIC PLATE AND FILM LIFTER. JULES J. LEVY, Hoboken, N. J. Filed Sept. 20, 1904. Serial No. 224,430.

Claim.—1. The combination, with a pair of holding-jaws provided with a longitudinally-disposed groove in the inner edge of each, of a handle composed of two arms or rods bent with the inner end of each bent at an angle to the plane of the said handle and having one of such holding-jaws pivoted directly on each of them inner bent ends, whereby to be capable of a rotary movement around the same, substantially as described.

2. The combination, with a handle constructed of resilient material and having a loop in its outer end and with two arms or members disposed across each other, and the inner end portion of each bent at an angle to the plane of the said handle, of a holding-jaw pivoted directly upon the inner bent end of each of these arms or members, whereby to be capable of rotation around the same, and provided with a longitudinally-disposed groove in its inner edge, substantially as described.

3. The combination, with a handle constructed of resilient material and having a loop in its outer end with two arms or members crossing each other and bent at their inner ends at an angle to their respective body portions, and a holding-jaw pivoted directly upon the inner bent end of each of these arms or members whereby to be rotatable around the same, and provided with a longitudinally-disposed groove in its inner edge, of a supporting-plate adapted to be gripped and supported between such jaws and provided with means at its end or ends through which the finger of the operator may pass to raise the end of a film or paper supported upon such plate, substantially as described.

808,937. CAR-SIGNAL. ANDREW S. MACREADIE, South Portland, Me. Filed Mar. 27, 1905. Serial No. 252,116.

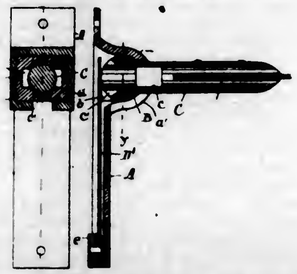

Claim.—1. In a car-signaling device the combination of a hollow casing, means for securing said casing to the car, a block held within said casing and adapted to turn therein, a rod pivoted in said block and a signal-target on the end of said rod.

2. In a car-signaling device, the combination of a hollow casing, a block secured within said casing and adapted to turn therein, a rod pivoted to said block, a spring adapted to press against the back of said block to prevent its rattling and a signal-target on the end of said rod.

3. In a car-signaling device, the combination of a hollow casing, having an opening in the rear and a block within said casing and adapted to turn therein, a rod pivoted in said block, a signal-target on the lower end of said rod, said casing having a horizontal opening in front large enough to allow said rod to turn and a smaller vertical slot extending downward from said opening, a portion of said rod being cut away to fit said slot and a flat spring acting against the back of said block to prevent its rattling.

4. In a car-signaling device, the combination of a hollow casing, having an opening in the rear and a block within said casing and adapted to turn therein, a rod pivoted in said block and adapted to be withdrawn therefrom, a signal-target on the lower end of said rod, said casing having a horizontal opening in front large enough to allow said rod to turn and a smaller vertical slot extending downward from said opening, a portion of said rod being cut away to fit said slot and a flat spring acting against the back of said block to prevent its rattling.

808,938. MAGAZINE FOR SMALL-ARMS. PAUL MAUSER, Oberndorf-on-the-Neckar, Germany. Filed July 28, 1903. Serial No. 167,543.

Claim.—1. In a magazine for firearms, a chamber for cartridges, and a spring for feeding the cartridges therein, extended in part around the exterior of said cartridge-chamber.

2. A magazine for firearms having a cartridge-chamber providing a substantially straight path for the cartridges, and a spring for feeding said cartridges extending in part around the lower portion of said chamber.

3. A magazine for firearms having a cartridge-chamber, and a spring for feeding the cartridges therein, said spring extending in part along an end of said chamber and exterior to the same, beyond the path of movement of the cartridges, and being curved at the lower part of said chamber.

4. A magazine for firearms having a chamber adapted to contain cartridges, and a spring for feeding said cartridges, arranged at the exterior of said chamber and extended around the lower part of said chamber and on both sides thereof.

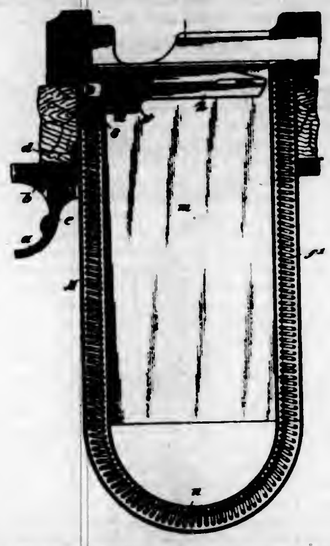

5. A magazine for firearms, having a cartridge-chamber providing a substantially straight path for the cartridges, a guide extending at front and at rear of said path and around the bottom thereof, and a spring in said guide adapted to feed said cartridges toward the top of said chamber.

6. In a magazine for firearms, a casing, a feeder in said casing, a guide extending around the lower end of said casing, and on both sides thereof, and a spiral spring in said guide for moving said feeder.

7. A magazine for firearms, comprising a substantially flat casing having a cartridge-chamber extending from bottom to top thereof, a guide extending along the front and rear ends of said casing, and around the bottom thereof, a feeder for said cartridges adapted to move in said chamber, a spring having one end bearing against one end of said guide, and its other end bearing against said feeder to move the latter.

8. In a magazine for firearms, a casing, a feeder in said casing, a guide extending around the lower end of said casing in a semicircular direction, and on both sides of said casing, said guide on one side having a slot opening into the interior of said casing, a slide adapted to move in said guide, and connected to said feeder through said slot, and a spiral spring one end of which engages said slide, and the other end of which bears against a fixed part on the other side of said guide.

9. In a magazine for firearms, a casing, a slide, a spring for moving said slide, a feeder pivoted at its end to said slide, and means for preventing said feeder from swinging downwardly around its pivot.

10. In a magazine for firearms, a casing, a slide, a spring for moving said slide, a feeder pivoted to said slide, and means for yieldingly holding said feeder in an oblique position in said casing.

11. In a magazine for firearms, a casing, a slide, a spring for moving said slide, a feeder pivoted to said slide, and means for yieldingly holding said feeder in an oblique position in said casing comprising a spring acting against said slide.

12. In a magazine for firearms, a casing having a guide, a slide having rollers moving along said guide, a spring for moving said slide, and a feeder pivoted to said slide.

13. A magazine adapted to be attached to and detached from a firearm, said magazine having an opening in its upper part, through which the cartridges are fed to the breech of said firearm, a sliding lip adapted to extend over said opening to retain the cartridges in said magazine when the latter is detached from the firearm, means adapted to engage a portion of the firearm to move said lip out of such position when the magazine is attached to the firearm, and a separate spring for automatically returning said lip to its operative position when the magazine is detached from the firearm.

14. A magazine adapted to be attached to and detached from a firearm, said magazine having an opening in its upper part, through which the cartridges are fed to the breech of said firearm, a sliding lip adapted to extend over said opening to retain the cartridges in said magazine when the latter is detached from the firearm, said lip having means for engaging a portion of the firearm whereby the lip is moved out of position when the magazine is attached to the firearm, and a separate spring adapted to move said lip upwardly into its operative position when the magazine is detached.

15. A magazine adapted to be attached to and detached from a firearm, said magazine having an opening in its upper part, through which the cartridges are fed to the breech of said firearm, two sliding lips normally extending over said opening from opposite sides of the magazine, and separate springs for moving said lips upwardly to their operative positions when the magazine is detached.

16. A magazine adapted to be attached to and detached from a firearm, said magazine having an opening in its upper part, through which the cartridges are fed to the breech of said firearm, loosely-mounted sliding lips, and separate springs for yieldingly holding said lips over said opening, in combination with a firearm having projections adapted to engage said lips to move the same out of the path of the cartridges when the magazine is attached thereto.

17. A magazine adapted to be attached to and detached from a firearm, said magazine having an opening in its upper part, through which the cartridges are fed to the breech of said firearm, two lips *l* adapted to slide longitudinally of the magazine, and springs *k* yieldingly holding said lips over said opening.

808,939. CAR STARTING AND STOPPING DEVICE. ROBERT MAW, Montreal, Canada. Filed Sept. 9, 1905. Serial No. 277,701.

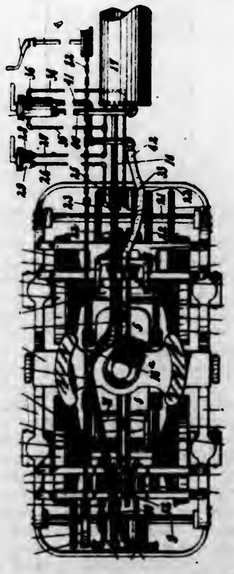

Claim.—1. In a car starting and stopping device, the combination of a plurality of air-compressors, chain-gearing connecting the compressors to the axles of the truck, a reservoir adapted to contain compressed air, a pipe connecting the compressors and the reservoir, an air-meter geared to the truck-axles, a pipe connecting the reservoir with the air-meter, a controlling-valve in said pipe clutches mounted on the truck-axles for throwing the compressor and the air-meter in and out of gear, means for actuating the clutches, and means for controlling said actuating means, substantially as described.

2. In a car starting and stopping device, the combination of a plurality of water-jacketed air-compressors, a reducing-gear connecting the compressors to the truck-axles, a reservoir adapted to contain compressed air, a flexible pipe connecting the compressors

and the reservoir, an air-motor, a reducing-gear connecting the air-motor to the truck-axles, a pipe connecting the air-motor and the reservoir, a controlling-valve in said pipe, clutches mounted on the axles adapted to throw the compressors and air-motor in and out of gear, an air-actuated system of tension-rods and levers for operating said clutches, and means for controlling said air-actuated system, substantially as described.

3. In a car starting and stopping device, the combination of a plurality of air-compressors geared to the truck-axles, a plurality of clutches, mounted on the axles, adapted to throw the air-compressors in and out of gear, a reservoir connected to the air-compressors, a reversible air-motor connected to the reservoir, clutches, mounted on the axles, adapted to throw the air-motor in and out of gear, a system of tension-rods and levers adapted to operate the clutches, air-actuated means for operating said tension-rods and levers, valves for controlling said air-actuated means, and an emergency-brake connected to the gearing of the air-compressor, substantially as described.

4. In a car starting and stopping device, the combination of a pair of compressor-pumps, sprocket-wheels mounted on one end of the truck-axles and connected to the compressor-pumps by chain-gearing, clutches attached to said sprocket-wheels adapted to throw the compressor-pumps in and out of gear, a reservoir connected to the compressor-pumps, a reversible air-motor, sprocket-wheels mounted on the opposite end of the truck-axles and connected to the air-motor by chain-gearing, a second series of clutches adapted to throw the air-motor in and out of gear, a pipe connecting the reservoir and the air-motor, a controlling-valve mounted in said pipe, tension-rods and levers adapted to operate said clutches, air-actuated pistons for operating said tension-rods and levers, valves for controlling said air-actuated pistons, and an emergency band-brake connected to the gearing of the air-compressor, substantially as described.

808,940. COMBINATION ADJUSTABLE TRESTLE. JOHN W. KEMER, Bureau county, Ill. Filed July 10, 1905. Serial No. 269,000.

Claim.—1. A trestle comprising legs consisting of a plurality of sections and couplings for uniting said sections whereby the trestle is adjustable in height by using a greater or less number of said sections, a cross-bar consisting of a plurality of sections and couplings uniting said sections whereby the trestle is adjustable longitudinally by using a greater or less number of said sections and a coupling consisting of two members for uniting said legs and cross-bar, each of said members having a longitudinal bore therein in which said legs are adjustable, said cross-bar constituting an axis for said members, said members being adjustable to different radii upon said axis, substantially as described.

2. A trestle comprising legs consisting of a plurality of sections and couplings for uniting said sections, a cross-bar consisting of a plurality of sections and couplings uniting said sections whereby the trestle is adjustable longitudinally by using a greater or less number of said sections, and a coupling consisting of two members for uniting said legs and cross-bar, each of said members having a longitudinal bore therein in which said legs are adjustable, said bores being disposed out of plane with each other, said members having a transverse bore therein, in which said cross-bar is adjustable, said cross-bar constituting an axis for said members, said members being adjustable to different radii upon said axis and means carried by said members for securing said legs and said cross-bar in adjusted position, substantially as described.

3. A trestle comprising legs consisting of a plurality of sections and couplings for uniting said sections, a cross-bar consisting of a plurality of sections and couplings uniting said sections, said cross-bar being adjustable longitudinally by using a greater or less number of said sections and a coupling consisting of two members for uniting said legs and cross-bar, each of said members having a longitudinal bore therein, in which said legs are adjustable, said bores being disposed out of plane with each other, said members having interlocking lugs through which said cross-bar is adapted to pass, said cross-bar constituting an axis for said members upon which said members are adjusted to different radii, substantially as described.

4. A trestle comprising outwardly-inclined, extensible legs and extensible cross-bar, a coupling consisting of two members for uniting said legs and cross-bar, each of said members having a longitudinal bore therein in which said legs are adjustable, said bores being disposed out of plane with each other, said members having interlocking lugs, through which said cross-bar is adapted to pass, said cross-bar constituting an axis for said members upon which said members are adjustable to different radii, substantially as described.

808,941. RACKING APPARATUS. HENRY G. MILLER and GEORGE R. LAWRENCE, Cleveland, Ohio. Filed Feb. 27, 1905. Serial No. 247,446.

Claim.—1. In a racking apparatus, the combination of a sealing tube and head, a filling-tube sliding within said tube, means for raising and lowering each of said tubes, and controlling-means for actuating said raising and lowering means and connected to be positively operated to first actuate the sealing-tube-lowering means and then the filling-tube-lowering means and a chamber communicating with the sealing-head to receive the overflow from the filled package, and a float device in said chamber and connected to actuate both raising means when lifted by the overflow.

2. In a racking apparatus, the combination with a liquid-supply receptacle having a counter-pressure supply above the liquid, of a filling-tube entering the package, a counter-pressure-supply tube communicating to the package above the liquid-level, and means for cutting off the liquid-supply before the counter-pressure supply and for withdrawing the filling-tube before the supply-tube, whereby the liquid is held under counter-pressure until immediately preceding the closing of the package.

3. In a racking apparatus, the combination of a sealing tube and head, a filling-tube sliding within said tube and provided with means for opening it by contact with the bottom of the package and for closing it by withdrawal from the same, fluid-pressure cylinders and pistons connected to said tubes to raise and lower the same, valves for admitting and exhausting the fluid-pressure at the opposite ends of said cylinders and having means for automatically actuating them into the raising positions and said valves connected to be moved together into their lowering positions, a handle for moving one of said valves into the lowering position, a catch for retaining said handle in such position, and a float actuated by the rising of the liquid in the package and connected to said catch to release the same when maximum level is attained in the package.

4. In a racking apparatus, the combination with a filling-tube and a sealing tube and head having suitable fluid-counter-pressure supply and means for independently raising and lowering each of said tubes, the structure composed of said elements being suspended to swing in a vertical plane, of fluid-pressure actuating means connected to said structure to swing the same and having its controlling means connected to be actuated by the raising means at the end of their operative movements.

5. In a racking apparatus, the combination with a filling-tube and a sealing tube and head having suitable fluid-counter-pressure supply and means for independently raising and lowering each of said tubes, the structure composed of said elements being suspended to swing in a vertical plane, of means connected to said structure to swing the same, controlling means for actuating said raising and lowering means and connected to be positively operated to first actuate the sealing-tube-lowering means and then the filling-tube-lowering means and to be automatically operated by the filling of the package to actuate both raising means, and controlling means for the tilting device and connected to be operated from the filling-tube-raising means at the extreme raised position of said tube to actuate the swinging means to tilt the structure out of operative position and to be operated by the positive lowering-controlling means to swing the structure into operative position.

6. In a racking apparatus, the combination of a sealing tube and head, a filling-tube sliding within said tube, fluid-pressure cylinders and pistons connected to said tubes to raise and lower the same, valves for admitting and exhausting the fluid-pressure at the opposite ends of said cylinders and having means for automatically actuating them into the raising positions and said valves connected to be moved together into their lowering positions, a handle for moving one of said valves into the lowering position, a catch for retaining said handle in such position, a float actuated by the rising of the liquid in the package and connected to said catch to release the same when maximum level is attained in the package, a fluid-pressure cylinder connected to tilt the foregoing structure into and out of operative position, and a valve for admitting and exhausting fluid-pressure into said cylinder and having operative means projecting into the filling-tube-actuating cylinder to be operated by the piston in the same

7. In a racking apparatus, the combination with a sealing tube and head, a filling-tube, and fluid-pressure means for raising and lowering the same, of valve mechanism controlling the fluid-pressure for such means, a hand-lever actuating such controlling mechanism, a detent for retaining said lever in its position for lowering the tubes, a float-chamber and float connected to the sealing-head, and means connected to be actuated by the rising of said float and connected to the detent to release the same by such rising of the float.

8. In a racking apparatus, the combination of a sealing tube and head, a filling-tube sliding within said tube and head, a cylinder and piston connected to the sealing-tube to raise and lower the same, a cylinder and piston above said other cylinder and connected to the filling-tube to raise and lower the same, pivotal support for said filling tube cylinder, a horizontal cylinder and piston connected to said latter cylinder to swing it in a vertical plane, a valve for controlling inlet and exhaust of motive fluid into and out of said horizontal cylinder a stem projecting into the filling-tube cylinder to be engaged and moved by the rising piston in the same and having means for forcing it against such piston and connected to the valve to operate the same, an extensible and contractible connection between the sealing-tube cylinder and the filling-tube cylinder and having stops for limiting the longitudinal movement of the former in its relation to the latter, a valve controlling the inlet and exhaust from both ends of the sealing-tube cylinder, a hand-lever for said valve and connected to the same to place it in position to admit motive fluid to the upper end of the cylinder when moved into a horizontal position, means for retaining said lever in such position, a valve-controlling inlet and exhaust of motive fluid into and out of both ends of the filling-tube cylinder, an arm connected to operate said valve and to place the valve in position to admit motive fluid to the lower end of the cylinder when in its uppermost position and to admit motive fluid into the upper end of the cylinder when in its middle position and to connect both ends to the cylinder when in its lowermost position, and a flexible connection between the hand-lever and said arm.

9. In a racking apparatus, the combination of a sealing tube and head, a piston upon said tube, a cylinder surrounding said tube and having the piston sliding within it, a filling-tube sliding within the sealing-tube and having a piston, a cylinder surrounding the filling-tube and having its piston sliding within it and provided with lateral trunnions, supports for said trunnions, a horizontal cylinder and piston connected to the upper end of the filling-tube cylinder to tilt the same in a vertical plane, a valve controlling admission and exhaust of motive fluid to and from said horizontal cylinder, a bar sliding in the upper end of the filling-tube cylinder to be slid by the piston at the upper extreme of its stroke and having a spring forcing it against said piston and connected to the valve of the horizontal cylinder, the valve 39 for the sealing-tube cylinder and having the hand-lever 45, detent mechanism for said hand-lever, the float 63 and chamber 33 connected to the sealing-head, the reloading means actuated by the rising of said float and connected to the detent, the rods 19 having the stops 20 and 21 and sliding in the cars 18, the valve-casing 66 having the distributing ports and passages 64 and 65 and inlet and outlet 68, the valve 70 having the passage 71 and recess 72 and passages 73 and 74, the stop 76, the valve-arm 75, and the chain 78 attached to said valve-arm and to the hand-lever.

808,942. MARINE-TORPEDO GUARD. JOHN NEUMANN, Milwaukee, Wis., assignor of one-half to George L. Boldenz, Milwaukee, Wis. Filed July 6, 1905. Serial No. 268,410.

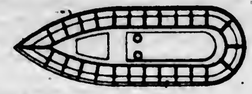

Claim.—1. In a device for capturing marine torpedoes as they approach a vessel, the combination with the vessel sides of a series of torpedo-receiving chambers having converging walls adapted to contact with the converging walls of an approaching torpedo and stop the same and means for supporting said chambers beneath the surface of the water at a distance from the vessel.

2. In a device for capturing marine torpedoes as they approach a vessel, the combination with the vessel sides of a series of torpedo-receiving chambers having converging walls adapted to contact with the converging walls of an approaching torpedo and stop the same; means for supporting said chambers beneath the surface of the water at a distance from the vessel and means for adjusting the walls of the receiving-chambers at any desired angle to the surface of the water.

3. In a device for capturing marine torpedoes as they approach a vessel, the combination with the vessel sides of a series of torpedo-receiving chambers having converging walls adapted to contact with the converging walls of an approaching torpedo and stop the same; means for supporting said chambers beneath the surface of the water at a distance from the vessel; means for adjusting the walls of the receiving-chambers at any desired angle to the surface of the water and means for automatically tilting the receiving-chamber and throwing the rear end of the torpedo above the surface of the water.

4. In a device for capturing marine torpedoes as they approach a vessel, the combination with the vessel sides of a series of torpedo-receiving chambers having converging walls adapted to contact with the converging walls of an approaching torpedo and stop the same; means for supporting said chambers beneath the surface of the water at a distance from the vessel; means for adjusting the walls of the receiving-chambers at any desired angle to the surface of the water; means for automatically tilting the receiving-chamber and throwing the rear end of the torpedo above the surface of the water and means actuated by the approaching torpedo for closing an electric circuit between a battery and a signal, whereby notice will be given in a vessel when a torpedo is captured.

5. In a device for capturing marine torpedoes as they approach a vessel, the combination with the vessel sides of a series of torpedo-receiving chambers having converging walls adapted to contact with the converging walls of an approaching torpedo and stop the same; means for supporting said chambers beneath the surface of the water at a distance from the vessel and means for automatically tilting the receiving-chamber as a torpedo enters, consisting in an air-receiving sack; an air-duct communicating from an air-reservoir; an air-controlling valve; a link communicating between one of the movable walls of the receiving-chamber and said valve, whereby, as a torpedo enters said chamber, said valve will be opened, said sack inflated, said receiver tilted and the rear end of the torpedo thrown above the surface of the water. substantially as set forth.

808,948. APPARATUS FOR FORMING SERPENTINE HOLLOW BODIES. KENNEDY PARK, Mansfield, Ohio. Filed Mar. 30, 1905. Serial No. 253,303.

Claim.—1. An apparatus of the character stated, comprising rotary or oscillatory dies adapted to externally form a serpentine hollow body, an oscillatory, expansible and contractible support for the interior of said body, and means for intermittently and positively expanding said support.

2. An apparatus of the character stated, comprising rotary or oscillatory dies adapted to externally form a serpentine hollow body, an expansible oscillatory mandrel adapted to occupy the interior of

and the reservoir, an air-motor, a reducing-gear connecting the air-motor to the truck-axles, a pipe connecting the air-motor and the reservoir, a controlling-valve in said pipe, clutches mounted on the axles adapted to throw the compressors and air-motor in and out of gear, an air-actuated system of tension-rods and levers for operating said clutches, and means for controlling said air-actuated system, substantially as described.

3. In a car starting and stopping device, the combination of a plurality of air-compressors geared to the truck-axles, a plurality of clutches, mounted on the axles, adapted to throw the air-compressors in and out of gear, a reservoir connected to the air-compressors, a reversible air-motor connected to the reservoir, clutches, mounted on the axles, adapted to throw the air-motor in and out of gear, a system of tension-rods and levers adapted to operate the clutches, air-actuated means for operating said tension-rods and levers, valves for controlling said air-actuated means, and an emergency-brake connected to the gearing of the air-compressor, substantially as described.

4. In a car starting and stopping device, the combination of a pair of compressor-pumps, sprocket-wheels mounted on one end of the truck-axles and connected to the compressor-pumps by chain-gearing, clutches attached to said sprocket-wheels adapted to throw the compressor-pumps in and out of gear, a reservoir connected to the compressor-pumps, a reversible air-motor, sprocket-wheels mounted on the opposite end of the truck-axles and connected to the air-motor by chain-gearing, a second series of clutches adapted to throw the air-motor in and out of gear, a pipe connecting the reservoir and the air-motor, a controlling-valve mounted in said pipe, tension-rods and levers adapted to operate said clutches, air-actuated pistons for operating said tension-rods and levers, valves for controlling said air-actuated pistons, and an emergency band-brake connected to the gearing of the air-compressor, substantially as described.

808,940. COMBINATION ADJUSTABLE TRESTLE. JOHN W. MIMMS, Bureau county, Ill. Filed July 10, 1905. Serial No. 269,000.

Claim.—1. A trestle comprising legs consisting of a plurality of sections and couplings for uniting said sections whereby the trestle is adjustable in height by using a greater or less number of said sections, a cross-bar consisting of a plurality of sections and couplings uniting said sections whereby the trestle is adjustable longitudinally by using a greater or less number of said sections and a coupling consisting of two members for uniting said legs and cross-bar, each of said members having a longitudinal bore therein in which said legs are adjustable and having a transverse bore therein in which said cross-bar is adjustable, said cross-bar constituting an axis for said members, said members being adjustable to different radii upon said axis, substantially as described.

2. A trestle comprising legs consisting of a plurality of sections and couplings for uniting said sections, a cross-bar consisting of a plurality of sections and couplings uniting said sections whereby the trestle is adjustable longitudinally by using a greater or less number of said sections, and a coupling consisting of two members for uniting said legs and cross-bar, each of said members having a longitudinal bore therein in which said legs are adjustable, said bores being disposed out of plane with each other, said members having a transverse bore therein, in which said cross-bar is adjustable, said cross-bar constituting an axis for said members, said members being adjustable to different radii upon said axis and means carried by said members for securing said legs and said cross-bar in adjusted position, substantially as described.

3. A trestle comprising legs consisting of a plurality of sections and couplings for uniting said sections, a cross-bar consisting of a plurality of sections and couplings uniting said sections, said cross-bar being adjustable longitudinally by using a greater or less number of said sections and a coupling consisting of two members for uniting said legs and cross-bar, each of said members having a longitudinal bore therein, in which said legs are adjustable, said bores being disposed out of plane with each other, said members having interlocking lugs through which said cross-bar is adapted to pass, said cross-bar constituting an axis for said members upon which said members are adjusted to different radii, substantially as described.

4. A trestle comprising outwardly-inclined, extensible legs and extensible cross-bar, a coupling consisting of two members for uniting said legs and cross-bar, each of said members having a longitudinal bore therein in which said legs are adjustable, said bores being disposed out of plane with each other, said members having interlocking lugs, through which said cross-bar is adapted to pass, said cross-bar constituting an axis for said members upon which said members are adjustable to different radii, substantially as described.

808,941. RACKING APPARATUS. HERBERT G. MILLER and GEORGE R. LAWRENCE, Cleveland, Ohio. Filed Feb. 27, 1905. Serial No. 247,446.

Claim.—1. In a racking apparatus, the combination of a sealing tube and head, a filling-tube sliding within said tube, means for raising and lowering each of said tubes, and controlling means for actuating said raising and lowering means and connected to be positively operated to first actuate the sealing-tube-lowering means and then the filling-tube-lowering means and a chamber communicating with the sealing-head to receive the overflow from the filled package, and a float device in said chamber and connected to actuate both raising means when lifted by the overflow.

2. In a racking apparatus, the combination with a liquid-supply receptacle having a counter-pressure supply above the liquid, of a filling-tube entering the package, a counter-pressure-supply tube communicating to the package above the liquid-level, and means for cutting off the liquid-supply before the counter-pressure supply and for withdrawing the filling-tube before the supply-tube, whereby the liquid is held under counter-pressure until immediately preceding the closing of the package.

3. In a racking apparatus, the combination of a sealing tube and head, a filling-tube sliding within said tube and provided with means for opening it by contact with the bottom of the package and for closing it by withdrawal from the same, fluid-pressure cylinders and pistons connected to said tubes to raise and lower the same, valves for admitting and exhausting the fluid-pressure at the opposite ends of said cylinders and having means for automatically actuating them into the raising positions and said valves connected to be moved together into their lowering positions, a handle for moving one of said valves into the lowering position, a catch for retaining said handle in such position, and a float actuated by the rising of the liquid in the package and connected to said catch to release the same when maximum level is attained in the package.

4. In a racking apparatus, the combination with a filling-tube and a sealing tube and head having suitable fluid-counter-pressure supply and means for independently raising and lowering each of said tubes, the structure composed of said elements being suspended to swing in a vertical plane, of fluid-pressure actuating means connected to said structure to swing the same and having its controlling means connected to be actuated by the raising means at the end of their operative movements.

5. In a racking apparatus, the combination with a filling-tube and a sealing tube and head having suitable fluid-counter-pressure supply and means for independently raising and lowering each of said tubes, the structure composed of said elements being suspended to swing in a vertical plane, of means connected to said structure to swing the same, controlling means for actuating said raising and lowering means and connected to be positively operated to first actuate the sealing-tube-lowering means and then the filling-tube-lowering means and to be automatically operated by the filling of the package to actuate both raising means, and controlling means for the tilting device and connected to be operated from the filling-tube-raising means at the extreme raised position of said tube to actuate the swinging means to tilt the structure out of operative position and to be operated by the positive lowering-controlling means to swing the structure into operative position.

6. In a racking apparatus, the combination of a sealing tube and head, a filling-tube sliding within said tube, fluid-pressure cylinders and pistons connected to said tubes to raise and lower the same, valves for admitting and exhausting the fluid-pressure at the opposite ends of said cylinders and having means for automatically actuating them into the raising positions and said valves connected to be moved together into their lowering positions, a handle for moving one of said valves into the lowering position, a catch for retaining said handle in such position, a float actuated by the rising of the liquid in the package and connected to said catch to release the same when maximum level is attained in the package, a fluid-pressure cylinder connected to tilt the foregoing structure into and out of operative position, and a valve for admitting and exhausting fluid-pressure into said cylinder and having operative means projecting into the filling-tube-actuating cylinder to be operated by the piston in the same

7. In a racking apparatus, the combination with a sealing tube and head, a filling-tube, and fluid-pressure means for raising and lowering the same, of valve mechanism controlling the fluid-pressure for such means, a hand-lever actuating such controlling mechanism, a detent for retaining said lever in its position for lowering the tubes, a float-chamber and float connected to the sealing-head, and means connected to be actuated by the rising of said float and connected to the detent to release the same by such rising of the float.

8. In a racking apparatus, the combination of a sealing tube and head, a filling-tube sliding within said tube and head, a cylinder and piston connected to the sealing-tube to raise and lower the same, a cylinder and piston above said other cylinder and connected to the filling-tube to raise and lower the same, pivotal support for said filling tube cylinder, a horizontal cylinder and piston connected to said latter cylinder to swing it in a vertical plane, a valve for controlling inlet and exhaust of motive fluid into and out of said horizontal cylinder a stem projecting into the filling-tube cylinder to be engaged and moved by the rising piston in the same and having means for forcing it against such piston and connected to the valve to operate the same, an extensible and contractible connection between the sealing-tube cylinder and the filling-tube cylinder and having stops for limiting the longitudinal movement of the former in its relation to the latter, a valve controlling the inlet and exhaust from both ends of the sealing-tube cylinder, a hand-lever for said valve and connected to the same to place it in position to admit motive fluid to the upper end of the cylinder when moved into a horizontal position, means for retaining said lever in such position, a valve-controlling inlet and exhaust of motive fluid into and out of both ends of the filling-tube cylinder, an arm connected to operate said valve and to place the valve in position to admit motive fluid to the lower end of the cylinder when in its uppermost position and to admit motive fluid into the upper end of the cylinder when in its middle position and to connect both ends to the exhaust when in its lowermost position, and a flexible connection between the hand-lever and said arm.

9. In a racking apparatus, the combination of a sealing tube and head, a piston upon said tube, a cylinder surrounding said tube and having the piston sliding within it, a filling-tube sliding within the sealing-tube and having a piston, a cylinder surrounding the filling-tube and having its piston sliding within it and provided with lateral trunnions, supports for said trunnions, a horizontal cylinder and piston connected to the upper end of the filling-tube cylinder to tilt the same in a vertical plane, a valve controlling admission and exhaust of motive fluid to and from said horizontal cylinder, a bar sliding in the upper end of the filling-tube cylinder to be slid by the piston at the upper extreme of its stroke and having a spring forcing it against said piston and connected to the valve of the horizontal cylinder, the valve 30 for the sealing-tube cylinder and having the hand-lever 45, detent mechanism for said hand-lever, the float 63 and chamber 33 connected to the sealing-head, the releasing means actuated by the rising of said float and connected to the detent, the rods 19 having the stops 20 and 21 and sliding in the cars 18, the valve-casing 66 having the distributing ports and passages 64 and 65 and inlet and outlet 68, the valve 70 having the passage 71 and recess 72 and passages 73 and 74, the stop 76, the valve-arm 75, and the chain 78 attached to said valve-arm and to the hand-lever.

808,942. MARINE-TORPEDO GUARD. JOHN NEUMAIER, Milwaukee, Wis., assignor of one-half to George L. Baldauf, Milwaukee, Wis. Filed July 6, 1905. Serial No. 268,416.

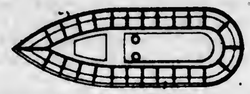

Claim.—1. In a device for capturing marine torpedoes as they approach a vessel, the combination with the vessel sides of a series of torpedo-receiving chambers having converging walls adapted to contact with the converging walls of an approaching torpedo and stop the same and means for supporting said chambers beneath the surface of the water at a distance from the vessel.

2. In a device for capturing marine torpedoes as they approach a vessel, the combination with the vessel sides of a series of torpedo-receiving chambers having converging walls adapted to contact with the converging walls of an approaching torpedo and stop the same; means for supporting said chambers beneath the surface of the water at a distance from the vessel and means for adjusting the walls of the receiving-chambers at any desired angle to the surface of the water.

3. In a device for capturing marine torpedoes as they approach a vessel, the combination with the vessel sides of a series of torpedo-receiving chambers having converging walls adapted to contact with the converging walls of an approaching torpedo and stop the same; means for supporting said chambers beneath the surface of the water at a distance from the vessel; means for adjusting the walls of the receiving-chambers at any desired angle to the surface of the water and means for automatically tilting the receiving-chamber and throwing the rear end of the torpedo above the surface of the water.

4. In a device for capturing marine torpedoes as they approach a vessel, the combination with the vessel sides of a series of torpedo-receiving chambers having converging walls adapted to contact with the converging walls of an approaching torpedo and stop the same; means for supporting said chambers beneath the surface of the water at a distance from the vessel; means for adjusting the walls of the receiving-chambers at any desired angle to the surface of the water; means for automatically tilting the receiving-chamber and throwing the rear end of the torpedo above the surface of the water and means actuated by the approaching torpedo for closing an electric circuit between a battery and a signal, whereby notice will be given in a vessel when a torpedo is captured.

5. In a device for capturing marine torpedoes as they approach a vessel, the combination with the vessel sides of a series of torpedo-receiving chambers having converging walls adapted to contact with the converging walls of an approaching torpedo and stop the same; means for supporting said chambers beneath the surface of the water at a distance from the vessel and means for automatically tilting the receiving-chamber as a torpedo enters, consisting in an air-receiving sack; an air-duct communicating from an air-reservoir; an air-controlling valve; a link communicating between one of the movable walls of the receiving-chamber and said valve, whereby, as a torpedo enters said chamber, said valve will be opened, said sack inflated, said receiver tilted and the rear end of the torpedo thrown above the surface of the water. substantially as set forth.

808,943. APPARATUS FOR FORMING SERPENTINE HOLLOW BODIES. KENNEDY PARK, Mansfield, Ohio. Filed Mar. 20, 1905. Serial No. 251,203.

Claim.—1. An apparatus of the character stated, comprising rotary or oscillatory dies adapted to externally form a serpentine hollow body, an oscillatory, expansible and contractible support for the interior of said body, and means for intermittently and positively expanding said support.

2. An apparatus of the character stated, comprising rotary or oscillatory dies adapted to externally form a serpentine hollow body, an expansible oscillatory mandrel adapted to occupy the interior of

a hollow body between said dies, means for moving the dies in unison, and means for intermittently and positively expanding the mandrel.

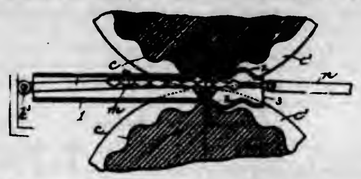

3. In apparatus of the character stated, comprising rotary or oscillatory dies adapted to externally form a serpentine hollow body, a mandrel composed of separable sections each hinged to a fixed support, an expanding and contracting device interposed between said sections, and means for moving said device and the dies simultaneously.

4. An apparatus of the character stated, comprising rotary or oscillatory dies adapted to externally form a serpentine hollow body, a mandrel composed of separable sections each hinged to a fixed support, a filling-piece interposed between said sections, said filling-piece having alternating projections and recesses, and means for simultaneously moving the dies and filling-piece.

808,944. **ALTERNATING-CURRENT-MOTOR REVERSER.** EDWIN H. FOSTER and BURLEIGH CURRIER, Philadelphia, Pa. Filed Mar. 20, 1905. Serial No. 250,615.

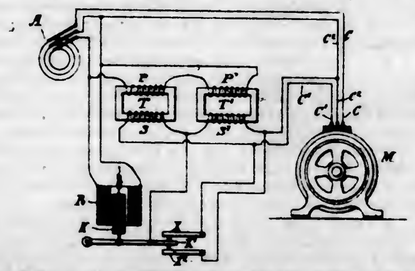

Claim.—1. The combination of a source of alternating-current energy, a motor connected with and adapted to operate from said source of energy having a plurality of energizing-circuits, part of which energizing-circuits is supplied with two opposing alternating electromotive forces in series and means for automatically varying one or both the opposing electromotive forces so that their sum is greater or less than zero, as desired, substantially as described.

2. The combination of a source of alternating-current energy, a motor connected with and adapted to operate from said source of energy having a plurality of energizing-circuits, part of which energizing-circuits is supplied with two equal opposing electromotive forces in series and means for automatically varying one or both the opposing electromotive forces so that their sum is either greater or less than zero, substantially as described.

3. The combination of a source of alternating-current energy, a motor connected with and adapted to operate from said source of energy, having a plurality of energizing-circuits, part of which energizing-circuits is supplied with an alternating electromotive force that is a variable resultant of two alternating opposing equal electromotive forces in series, one or both of which are automatically varied to produce the said resultant alternating electromotive force and means for varying the opposing electromotive forces, substantially as described.

4. The combination of a source of alternating-current energy, a motor connected with and adapted to operate from said source of energy, having a plurality of independent energizing-circuits, part of which energizing-circuits is supplied with an alternating electromotive force that is a variable resultant of two alternating opposing equal electromotive forces in series, one or both of which are automatically varied to produce the desired resultant electromotive force and means for varying said opposing electromotive forces, substantially as described.

5. The combination of a source of alternating-current energy, a motor connected with and adapted to operate from said source of energy, having a plurality of independent energizing-circuits, each of which is supplied with an alternating electromotive force that is a variable resultant of two alternating opposing electromotive forces in series, one of which is short-circuited to produce the desired resultant electromotive force and means for short-circuiting either of said opposing electromotive forces, substantially as described.

6. The combination of a source of alternating-current energy, a motor connected with and adapted to operate from said source of energy, having a plurality of independent energizing-circuits, each of which is supplied with an alternating electromotive force that is a variable resultant of two alternating opposing electromotive forces in series, one of which is short-circuited to produce the desired resultant electromotive force and means for short-circuiting either of said opposing electromotive forces, substantially as described.

7. The combination of a multiphase source of alternating-current energy, a multiphase motor, having a plurality of independent energizing-circuits energized by said source, pairs of transformers having their secondaries opposed and in series with each independent energizing-circuit, primaries of each pair of said transformers in series and connected to said source of alternating-current energy and means for short-circuiting the secondary of either transformer of each pair, substantially as described.

8. The combination of a multiphase source of alternating-current energy, a multiphase motor, having a plurality of independent energizing-circuits energized from said source, two transformers having their secondaries opposed in series and connected to one of said energizing-circuits, their primaries also in series and connected to said source of energy and means for short-circuiting the secondary of either transformer.

9. The combination of a multiphase source of alternating-current energy, a multiphase motor having a plurality of energizing-circuits energized by said source, part of said energizing-circuits supplied with alternating electromotive forces each of which is a variable resultant of two opposing alternating electromotive forces in series, one or both of which are automatically varied to produce said resultant, and means for automatically varying either or both of said opposing electromotive forces, substantially as described.

808,945. **MATCH-MAKING MACHINE.** EDWIN J. PRINDLE, Washington, D. C., assignor to The Diamond Match Company, New York, N. Y., a Corporation of Illinois. Filed Apr. 15, 1901. Serial No. 56,045.

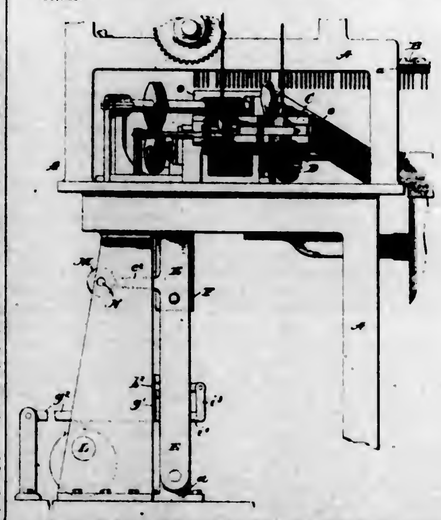

Claim.—1. In a match-machine, the combination with a carrier, of a splint-cutter, an air-trunk, and a splint-holder that engages the splint on the side next the inlet to the air-trunk and prevents the splint being carried toward the inlet said cutter being situated between the holder and the carrier.

2. In a match-machine, the combination with a carrier, of a splint-cutter, and a splint-holder supplemental to and separate from the cutter that surrounds the splint and holds it from lateral movement in any direction, the splint-cutter being situated between the carrier and the holder.

3. In a match-machine, the combination with a carrier, of a splint-cutter, means for reciprocating the same toward and from the carrier, a holder for the splints, means for reciprocating said holder toward and from the carrier, means for inserting the splints into the carrier while the carrier is in motion, and means for moving the said holder with the carrier during the insertion of the splints.

4. In a match-machine, the combination with a carrier, of a splint-cutter, and a holder for the splint, means for inserting the splint into the carrier while the splint is held both by said cutter and such holder, and means for moving said cutter and such holder with the carrier during the insertion of the splint, substantially as and for the purpose described.

5. In a match-machine, the combination with a continuously-moving carrier, of a splint-cutter, and a holder for the splint, means for inserting the splint into the carrier while the splint is held both by said cutter and such holder, and means for moving said cutter and such holder with the carrier during the insertion of the splint, substantially as and for the purpose described.

6. In a match-machine, the combination with a carrier constructed to hold and transport splints, of a splint-cutter, and a holder for the splint supplemental to and separate from the cutter, said cutter being located between the holder and the carrier means for inserting the splint into the carrier while the splint is held both by said cutter and such holder, and means for preventing the withdrawal of the splint from the carrier during the disengagement of the cutter and the holder from the splint, substantially as and for the purpose described.

7. In a match-machine, the combination with a carrier constructed to hold and transport splints, of a splint-cutter, and a holder supplemental to and separate from the cutter that surrounds the splint, said cutter being located between the holder and the carrier, means for inserting the splint into the carrier while the splint is held both by said cutter and such holder, and means for preventing the withdrawal of the splint from the carrier during the disengagement of the cutter and the holder from the splint, substantially as and for the purpose described.

8. In a match-machine, the combination with a carrier constructed to hold and transport splints, of a splint-cutter that surrounds the splint, a holder that surrounds the splint, supplemental to and separate from the cutter, said cutter being located between the holder and the carrier, means for inserting the splint into the carrier while the splint is held both by said cutter and by such holder, and means for preventing the withdrawal of the splint from the carrier during the disengagement of the cutter and the holder from the splint, substantially as and for the purpose described.

9. In a match-machine, the combination with a carrier constructed to hold and transport splints, of a splint-cutter that surrounds the splint, a holder that surrounds the splint supplemental to and separate from the cutter, said cutter being located between the holder and the carrier, means for inserting the splint into the carrier while the splint is held both by said cutter and by such holder, and for withdrawing said cutter and holder from the splint longitudinally thereof, and means for preventing the withdrawal of the splint from the carrier during the disengagement of the cutter and the holder from the splint, substantially as and for the purpose described.

10. In a match-machine, the combination with a carrier constructed to hold and transport splints, of a splint-cutter, and a holder supplemental to and separate from the cutter that surrounds the splint and is laterally immovable with relation to the cutter, said cutter being located between the holder and the carrier, means for inserting the splint into the carrier while the splint is held both by said cutter and by such holder, and means for preventing the withdrawal of the splint from the carrier during the disengagement of the cutter and the holder from the splint, substantially as and for the purpose described.

11. In a match-machine, the combination with a carrier, of a splint-cutter and a holder for the splint, means for inserting the splint into the carrier while the splint is held both by said cutter and such holder, means for moving said cutter and such holder with the carrier during the insertion of the splint, and means for preventing the withdrawal of the splint from the carrier during the disengagement of the cutter and the holder from the splint, substantially as and for the purpose described.

12. In a match-machine, the combination with a continuously-moving carrier, of a splint-cutter, and a holder for the splint, means for inserting the splint into the carrier while the splint is held both by said cutter and such holder, means for giving said cutter and such holder a movement with the carrier during the insertion of the splint, and means for preventing the withdrawal of the splint from the carrier during the disengagement of the cutter and the holder from the splint, substantially as and for the purpose described.

13. In a match-machine, the combination with a carrier constructed to hold and transport splints, of a tubular splint-cutter, and a tubular holder for the splint supplemental to and separate from the cutter, said cutter being located between the holder and the carrier, means for inserting the splint into the carrier while the splint is held both by said cutter and such holder, and means for preventing the withdrawal of the splint from the carrier during the disengagement of the cutter and the holder from the splint, substantially as and for the purpose described.

14. In a match-machine, the combination with a carrier, of a tubular splint-cutter, and a tubular holder for the splint supplemental to and separate from the cutter, means for inserting the splint into the carrier while the splint is held both by said cutter and such holder, and a pin which is adapted to bear upon the end of the splint while the cutter and the holder are disengaged from the splint, substantially as and for the purpose described.

15. In a match-machine, the combination with a carrier, of a tubular splint-cutter, and a tubular holder for the splint supplemental to and separate from the cutter, means for inserting the splint into the carrier while the splint is held both by said cutter and such holder, a pin which is adapted to bear upon the end of the splint, and means for moving said cutter and such holder along the splint and over such pin, substantially as and for the purpose described.

16. In a match-machine, the combination with a carrier, of a tubular splint-cutter, and a tubular holder for the splint, means for inserting the splint into the carrier while the splint is held both by said cutter and such holder, and means for giving said cutter and such holder a movement with the carrier during the insertion of the splint, substantially as and for the purpose described.

17. In a match-machine, the combination with a carrier, of a tubular splint-cutter, and a tubular holder for the splint, means for inserting the splint into the carrier while the splint is held both by said cutter and such holder, a pin which is adapted to bear upon the end of the splint, means for moving said cutter and such holder along the splint and over such pin, and means for giving said cutter, holder, and pin a movement with the carrier during the insertion of the splint, substantially as and for the purpose described.

18. In a match-machine, the combination with a carrier, of means movable in the direction of motion of the carrier for inserting a splint into such carrier, and an air-conduit adjacent thereto, said conduit having a portion in the path of the inserting means that is movable in the direction of travel of the carrier.

19. In a match-machine, the combination with a carrier, of a guide for the material from which the splint is formed, an air-conduit between said carrier and such guide, and means movable in the direction of motion of the carrier for inserting the splint into the carrier, said conduit having a portion yielding in the direction of movement of the carrier to permit movement of such means, substantially as and for the purpose described.

20. In a match-machine, the combination with a carrier, of a guide for the material from which the splint is formed, an air-conduit between said carrier and such guide, and means movable in the direction of motion of the carrier for forming the splint and inserting it into the carrier, said conduit having a portion yielding in the direction of movement of the carrier to permit movement of such means, substantially as and for the purpose described.

21. In a match-machine, the combination with a continuously-moving carrier of a guide for the material from which the splint is formed, an air-conduit between such carrier and said guide, means for inserting the splint into the carrier, and means for moving such inserting means with the carrier during the insertion of the splint into the carrier, said conduit having a portion yielding in the direction of movement of the carrier to permit movement of such splint-inserting means, substantially as and for the purpose described.

22. In a match-machine, the combination with a carrier, of means for inserting splints into the carrier, means for moving such inserting means with the carrier during the insertion of the splints therein, and an air-conduit having a portion in the path of the inserting means that is movable in the direction of travel of the carrier.

808,946. **RATCHET MECHANISM.** MICHAEL REISCH, Buffalo, N. Y., assignor to Rudy Reisch, Buffalo, N. Y. Filed May 24, 1905. Serial No. 262,106.

Claim.—1. The combination of a supporting-frame, an arbor

A A new article of manufacture, an overshoe having a neat-

held in the same against rotation and provided with a fixed holding-tooth having an inclined face and an abrupt back, an oscillatory actuating-casing mounted on said arbor, a ratchet mechanism actuated by said casing, and a return-spring having its outer end attached to said casing and its inner end provided with a holding-lip which engages the abrupt back of said tooth under the working strain and is free to move away from said tooth when the spring is strained in the opposite direction, substantially as set forth.

2. The combination of a supporting-frame, a removable arbor held therein against rotation, a sleeve having a holding-tooth and having a bore for the insertion of the arbor, said arbor and sleeve being provided with means for preventing the sleeve from turning on the arbor, an oscillatory actuating-casing mounted on said arbor, a ratchet mechanism actuated by said casing, and a return-spring having its outer end attached to said casing and its inner end provided with a holding-lip which engages said holding-tooth under the working strain and is free to move away from said tooth when the spring is strained in the opposite direction, substantially as set forth.

3. The combination of a supporting-frame having arbor-seats, one of which is flat-sided, an arbor adapted to be inserted into said seats and having a flat-sided end portion engaging in said flat-sided seat, a sleeve provided with a holding-tooth and having a flat-sided bore fitting the flat-sided portion of said arbor, an oscillatory actuating-casing mounted on said arbor, a ratchet mechanism actuated by said casing, and a return-spring having one end attached to said casing and the other end provided with a holding-lip which engages the tooth of said sleeve, substantially as set forth.

808,947. COMBINED WATER-HEATER AND PRESSURE-RESERVOIR. FRANK L. RAND, Chicago, Ill., assignor to James B. Clow & Son's, Chicago, Ill., a Corporation of Illinois. Filed Oct. 26, 1903. Serial No. 178,898.

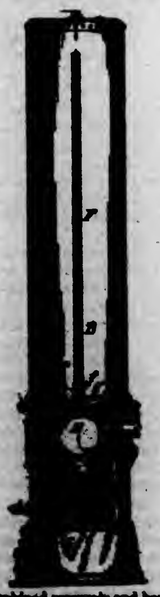

Claim.—1. A combined reservoir and heater comprising a casing, a reservoir which rises from and is supported on the casing, a combustion-chamber within the casing, which forms with the latter a water-leg, communicating at its top with the reservoir, a water-chamber within the combustion-chamber, a delivery-pipe which rises from the water-chamber through the reservoir and discharges into the top of the latter, said delivery-pipe communicating at its lower end with said water-chamber through an opening in the top wall of the combustion-chamber, and an inlet-pipe which passes through a smooth hole in the side wall of the combustion-chamber, enters an aperture in the side wall of the water-chamber, and communicates at its outer end with the water-leg, said delivery and inlet pipes being provided with removable packing means for making tight joints between the same and the top and side walls of the combustion-chamber.

2. A combined reservoir and heater comprising a casing, a reservoir which rises from and is supported on the casing, a combustion-chamber within the casing which forms with the latter a water-leg communicating at its top with the reservoir, a water-chamber located within the combustion-chamber, a delivery-pipe which leads from the water-chamber upwardly through the reservoir and discharges at its upper end into the latter, said delivery-pipe extending at its lower end downwardly through the top wall of the combustion-chamber and having screw-threaded connection with the top of the water-chamber, and an inlet-pipe which extends horizontally through the side wall of the combustion-chamber, communicates at its outer end with the water-leg, and has screw-threaded connection with the water-chamber; said water-chamber being provided at its top and side walls with annular, outwardly-facing shoulders which surround the delivery and inlet pipes and are adapted to bear against the inner faces of the top and side walls of the combustion-chamber, and the said delivery and inlet pipes being provided outside of said top and side walls with nuts and with gaskets interposed between the said nuts and the outer faces of said top and side walls.

3. A combined reservoir and heater comprising a casing, a reservoir which rises from and is supported on the casing, a combustion-chamber within the casing which forms with the latter a water-leg communicating at its top with the reservoir, a water-chamber located in the combustion-chamber, said water-chamber having a downwardly-convexed bottom and an integral, outwardly-directed branch forming an inlet-passage at the level of the lowermost part of the said chamber, an inlet-pipe which extends horizontally through the side wall of the combustion-chamber, is in communication at its outer end with the water-leg and is connected with said outwardly-directed branch inside of the combustion-chamber, the casing-wall being provided in line with the said inlet-pipe with an opening provided with a removable closure, and a discharge-pipe which communicates at its lower end with the top of the water-chamber, extends through the upper wall of the combustion-chamber, and discharges at its upper end at the top of the reservoir.

808,948. OVERSHOE. ALBERT B. ROGERS, Norwalk, Ohio, assignor to Hezekiah P. Bowler, Cleveland, Ohio. Filed Apr. 18, 1904. Serial No. 203,549.

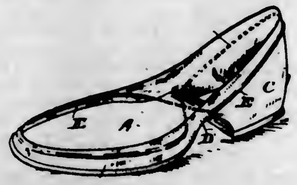

Claim.—1. As a new article of manufacture, an overshoe provided with longitudinally-elastic side shanks and with loops restraining the heel and the front portions of the upper.

2. An overshoe having a non-elastic band passing around both its front and rear part and deflected at the shank to prevent the band restraining the elasticity of the side shanks.

3. An overshoe having a non-elastic band vulcanized in the overshoe and passing around the front portion and then deflecting into the sole of the shank portion, and a non-elastic band passing around the heel portion and deflecting inwardly into the shank.

4. In an overshoe having a relatively high heel portion and a relatively low front portion, a non-elastic band vulcanized in the upright walls of the overshoe except at the shank portion, and at this portion passing into the sole of the overshoe and there vulcanized in place.

5. An overshoe having a relatively high heel portion and a relatively low front portion, a non-elastic loop vulcanized in the overshoe and passing around the front portion and then into the sole of the shank portion, and a non-elastic loop passing around the heel portion high up on the heel portion to take above the rearmost bulge of the inserted shoe.

6. As a new article of manufacture, an overshoe having a non-elastic band vulcanized in the side walls of the front and heel portion of the overshoe, and crossing itself within the sole of the shank portion.

7. As a new article of manufacture, an overshoe having a non-elastic band vulcanized in the side walls of the front and heel portion of the overshoe and crossing itself within the sole of the shank portion, said band on the heel portion leading diagonally upward from the sole to near the top of the heel, the band being vulcanized in place throughout.

8. As a new article of manufacture, an overshoe having two non-elastic loops, one vulcanized into the side walls of the front of the overshoe, and the other vulcanized into the side walls of the heel of the overshoe, and both vulcanized into the sole of the overshoe at the shank.

808,949. MOLD FOR THE MANUFACTURING OF HAIR-PINS. THEOPHILUS REED, Newark, N. J. Filed May 15, 1905. Serial No. 260,495.

Claim.—1. The combination with a mold composed of an upper and lower die for simultaneously pointing the opposite ends of a number of hair-pin blanks in horizontal position, of an empty templet or guide-bar adapted to be temporarily placed upon the lower die of said mold to assist in placing the blanks into proper position for pointing and to be then exchanged for the upper die.

2. The combination with a mold composed of an upper and lower die for simultaneously pointing the opposite ends of a number of hair-pin blanks in horizontal position, of an empty templet or guide-bar adapted to be temporarily placed upon the lower die of said mold and provided with recesses or notches adapted to guide said blanks into their proper positions upon the lower die, said templet to be then exchanged for the upper die.

808,950. TURBINE-ENGINE. HENRY SCHELLE, Milwaukee, Wis. Filed July 12, 1905. Serial No. 269,217.

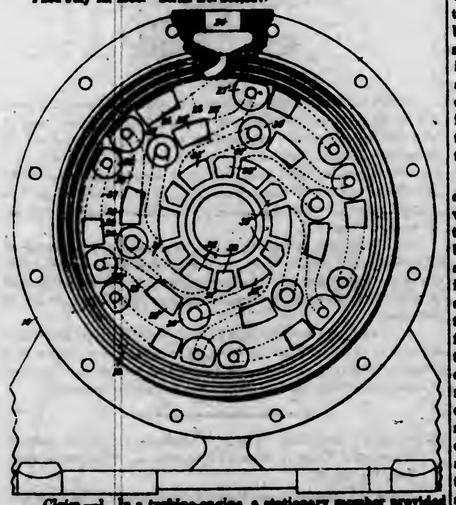

Claim.—1. In a turbine-engine, a stationary member provided with active faces on opposite sides, a movable member formed in sections each having an active face coöperating with one of the active faces of the stationary member, a sleeve on one section of the movable member projecting into an opening in the stationary member, and a boss on the other section of the movable member also projecting into said opening and threaded in the sleeve to join the two sections of the movable member and cause the end thrust of each section to counteract the end thrust of the other section and thus balance the end pressures of the movable member.

2. In a turbine-engine, a stationary member and a movable member having active faces coöperating with each other, a pressure-nozzle discharging through one active face, a series of blades supported on the other active face to receive pressure fluid from the nozzle, said blades comprising strips of metal angular in cross-section with one side longer than the other side to form a base engaging one end in a groove in their support, and a securing-strip fastened to said support and having a shoulder to engage the opposite end of the base of the blades.

3. A turbine member having an active face, a plurality of concentric series of blades in said active face comprising strips of sheet metal angular in cross-section with the portion in one plane longer than the portion in the other plane to form a base with end projections, said blades being embedded in a recess in the active face of the turbine member with one end projection of the outer and inner series of blades extending into grooves of the turbine member, and securing rings or strips countersunk in the recess of the turbine member and having shoulders to engage the other end projections of the outer and inner series of blades and also the end projections of the intermediate series of blades, the outer edges of the blades and the securing rings or strips being in the same plane with the active face of the turbine member.

4. In a turbine-engine, a stationary member and a movable member having coöperating active faces, concentric series of buckets on one active face, and pressure-nozzles on the other active face; said pressure-nozzles comprising a nozzle discharging into one series of buckets, another nozzle receiving the pressure fluid from said series of buckets and transferring it to another series of buckets, and a third nozzle connecting the first-mentioned series of buckets with the buckets of the same series farther in advance.

5. In a turbine-engine, a stationary member and a movable member having coöperating active faces, concentric series of buckets on one active face, and pressure-nozzles on the other active face; said pressure-nozzles comprising a nozzle discharging into one series of buckets, a set of nozzles receiving the pressure fluid from said series of buckets and transferring it to another series of buckets, and another set of nozzles connecting the first-mentioned series of buckets with the buckets of the same series farther in advance in the direction of rotation of the movable member.

6. In a turbine-engine, a stationary member having active faces on opposite sides, a movable member having active faces to coöperate with the active faces of the stationary member, a number of concentric series of buckets formed in each active face of the movable member, there being an inlet-chamber and an exhaust-chamber for pressure fluid in the stationary member, a pair of diverging nozzles leading from the inlet-chamber to each of the active faces of the stationary member and discharging into the outer series of buckets, and sets of transfer-nozzles in the active faces of the stationary member leading from each series of buckets to the inner series of buckets next thereto, the innermost series of buckets being adapted to discharge the pressure fluid through ports of the said exhaust-chamber.

7. In a turbine-engine, a stationary member having active faces on opposite sides, a movable member having active faces to coöperate with the active faces of the stationary member, a number of concentric series of buckets formed in each active face of the movable member, there being an inlet-chamber and an exhaust-chamber in the stationary member for pressure fluid, a pair of diverging nozzles leading from the inlet-chamber to each of the active faces of the stationary member and discharging into the outer series of buckets, sets of transfer-nozzles in the active faces of the stationary member leading from each series of buckets to the inner series of buckets next thereto, the innermost series of buckets being adapted to discharge the pressure fluid through ports of the said exhaust-chamber, other sets of nozzles in the active faces of the stationary member adapted to receive the remainder of the pressure fluid from the first-mentioned series of buckets after they pass by the transfer-nozzles and carry it to other buckets in the same series close to the next succeeding transfer-nozzle, pressure-tight connections between the movable member and the stationary member beyond the outer series of blades, and pressure-tight casings connected to the stationary member and inclosing the movable member.

808,951. CENTERING FOR ARCHES. LAWRENCE SCHILLER, Chicago, Ill. Filed Mar. 6, 1903. Serial No. 146,899.

Claim.—1. In a centering-support, the combination with hangers adapted to be hung over the floor-beams, of channels underlying the latter parallel therewith and suspended by said hangers, horizontal supports secured to the side walls of said channels, and centering-plates stopped at their ends on said horizontal supports, substantially as described.

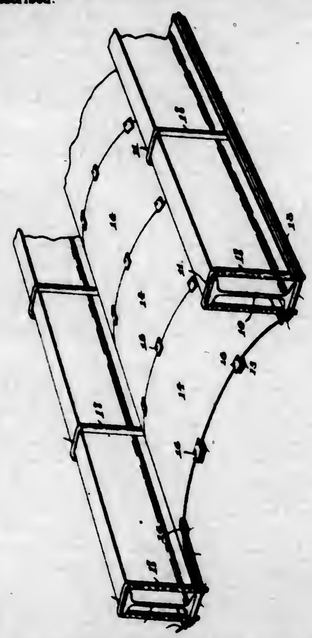

2. In a centering-support, the combination with inverted-U-shaped hangers adapted to be hung over the floor-beams, of channels underlying the latter parallel therewith and suspended on the lower ends of said hangers, angle-irons secured to the side walls of said channels, and centering-plates stopped at their ends on said angle-irons, substantially as described.

3. In a centering-support, the combination with supporting members suspended from the floor-beams, of a series of centering-plates rested at their ends on adjacent supporting means, said centering-plates being provided on one edge thereof with guides adapted to receive the adjacent edge of the adjacent centering-plate, whereby to facilitate the alinement of the series of centering-plates, substantially as described.

4. In a centering-support, the combination with inverted-U-shaped hangers adapted to be hung over the floor-beams, of channels underlying the latter parallel therewith and suspended on the lower ends of said hangers, angle-irons secured to the side walls of said channels, and metal arch-plates stopped at their ends on said angle-irons, substantially as described.

808,952. **ANTICREEPER FOR RAILWAYS.** JOHN O. SULLIVAN, Winnipeg, Canada. Filed July 3, 1905. Serial No. 268,893.

Claim.—1. The combination of the rails, the ties or supports thereof, a stop member secured to the rails, and a longitudinal anticreeper-bar secured to a plurality of said supports and abutting endwise against said stop member, whereby the longitudinal strains received by the rails are transmitted to and distributed over a number of the ties or supports by the anticreeper-bar, substantially as set forth.

2. The combination of a pair of adjoining rails, the ties or supports thereof, plates connecting the adjoining ends of the rails, and a longitudinal anticreeper-bar fastened to a plurality of the rail-supports and abutting at its end against said connecting-plate, substantially as set forth.

3. The combination of a series of rails, the ties or supports thereof, plates connecting the adjoining ends of the rails, and a longitudinal anticreeper-bar secured to a plurality of the ties, said bar extending from the connecting-plate of one rail-joint to the connecting-plate of the next joint and abutting at its ends against said plates, substantially as set forth.

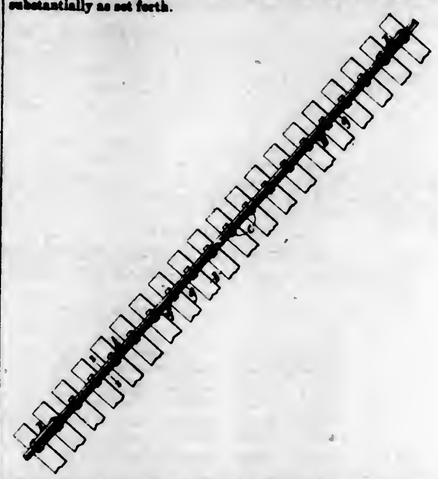

4. The combination of a pair of adjoining rails, the ties or supports thereof, plates connecting the adjoining ends of the rails, a longitudinal anticreeper-bar fastened to a plurality of the rail-supports and abutting at its end against said connecting-plate, and means for fastening the anticreeper-bar to the portions of the rails between the ties, substantially as set forth.

5. The combination of a pair of adjoining rails, the ties or supports thereof, plates connecting the adjoining ends of the rails, and longitudinal anticreeper-bars arranged on opposite sides of the rails and secured to a plurality of the ties and abutting at their ends against said connecting-plates, substantially as set forth.

808,953. **FEED-GAGE.** LA ROY B. TAFT, Redcloud, Nebr. Filed May 25, 1905. Serial No. 262,296.

Claim.—1. A feed-gage consisting of upper and lower members, a lever mounted in a pair of upturned projections formed integral with said upper member, substantially as shown, a spring mounted on the rear portion of said upper member and engaging said lever, a lug also formed integral with said upper member and adapted to limit the action of said spring-pressure, said lever being adapted to engage the gripper-bar of a printing-press, substantially as and for the purpose described.

2. A feed-gage having upper and lower members, said members being adapted to receive a tympan-sheet between them, a sheet-metal clamp bent upon itself, having upper and lower members and adapted to receive said first-named members between them, substantially as described.

3. A feed-gage having a clamp provided with a shank, said shank being pivoted to the inner face of said feed-gage and capable of a horizontal swinging movement, whereby it is brought into and out of engagement with the feed-gage, substantially as described.

808,954. **WRENCH.** HARLIN T. THOMPSON, Floville, Ga., assignor of one-half to William D. Gibson, Fayetteville, Ga. Filed Sept. 20, 1904. Serial No. 225,261.

Claim.—A wrench consisting of a stock having spaced teeth in the rear face and with a handle at one end and a laterally-extending jaw at the other end, a movable jaw having spaced sides extending rearwardly of the same and slidably disposed upon opposite sides of the stock and projecting rearwardly of the same, a brace member depending from said movable jaw, a band extending from said brace member and inclosing said stock, a block slidably disposed between

the spaced sides of said movable jaw and with guide-ribs bearing above and below said sides, said block having spaced teeth for engaging the teeth of said stock, a cam pivoted between the projecting portions of the spaced sides of said movable jaw, and a spring connected to said block and operating to maintain the same yieldably out of engagement with said stock when released by the withdrawal of the cam.

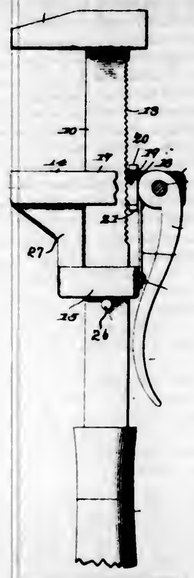

808,955. **MACHINE FOR APPLYING LABELS AND THE LIKE TO BOTTLES AND OTHER ARTICLES.** BENJAMIN W. TUCKER, Newark, N. J. Filed Apr. 20, 1905. Serial No. 256,546.

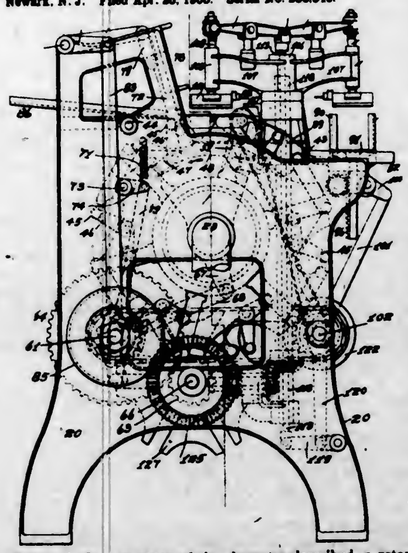

Claim.—1. In a machine of the character described, a rotary frame carrying a series of independent rolling-beds spaced apart, and means for imparting intermittent motion to the same, combined with a stationary rolling belt or apron with which each of said beds in series coöperates and which is normally sufficiently slack to permit a loop to be formed therein to receive the article to be treated, the series of movable rollers carried by said frame for coöperation with said beds and belt or apron, means supporting said rollers, and means for holding said rollers in their closed position to maintain said loop during the rolling action; substantially as set forth

2. In a machine of the character described, a rotary frame carrying a series of rolling-beds, and means for imparting intermittent motion to the same, combined with a rolling belt or apron with which each of said beds in series coöperates and which is normally sufficiently slack to permit a loop to be formed therein to receive the article to be treated, means for forming said loop, means for applying a label or the like upon said belt or apron in advance of said loop, and means for maintaining said loop during the rolling action; substantially as set forth.

3. In a machine of the character described, a rotary frame carrying a series of rolling-beds, and means for imparting intermittent motion to the same, combined with a rolling belt or apron with which each of said beds in series coöperates and which is normally sufficiently slack to permit a loop to be formed therein to receive the article to be treated, means for forming said loop, means for holding a stack of labels or the like, a carrier adapted to convey said labels from said stack to said rolling belt or apron, means in the path of said carrier for applying a layer of paste thereto on its movement to said stack, means for detaching the label from the carrier when the same is to be taken by said belt or apron, and means for maintaining said loop during the rolling action; substantially as set forth.

4. In a machine of the character described, a rotary frame carrying a series of rolling-beds, and means for imparting intermittent motion to the same, combined with a rolling belt or apron with which each of said beds in series coöperates and which is normally sufficiently slack to permit a loop to be formed therein to receive the article to be treated, means for forming said loop, means for holding a stack of labels or the like, a carrier adapted to convey said labels from said stack to said rolling belt or apron, means in the path of said carrier for applying a layer of paste thereto on its movement to said stack, and pneumatic means for detaching the label from the carrier when the same is to be taken by said belt or apron, and means for maintaining said loop during the rolling action; substantially as set forth.

5. In a machine of the character described, a rotary frame carrying a series of rolling-beds, and means for imparting intermittent motion to the same, combined with a rolling belt or apron with which each of said beds in series coöperates and which is normally sufficiently slack to permit a loop to be formed therein to receive the article to be treated, means for forming said loop, means for holding a stack of labels or the like, a carrier adapted to convey said labels from said stack to said rolling belt or apron, means in the path of said carrier for applying a layer of paste thereto on its movement to said stack, and pneumatic means for detaching the label from the carrier when the same is to be taken by said belt or apron, and means for maintaining said loop during the rolling action, said carrier being formed of sections to be opened from one another when the label is to be removed therefrom so as to aid in the detachment of the label; substantially as set forth.

6. In a machine of the character described, a rotary frame carrying a series of rolling-beds, and means for imparting intermittent motion to the same, combined with a rolling belt or apron with which each of said beds in series coöperates and which is normally sufficiently slack to permit a loop to be formed therein to receive the article to be treated, the crank-arms carried by said frame for each bed and carrying a roller for closing the loop in the belt or apron, means for firmly holding said roller in its closed position to maintain the loop during the rolling action, and means for moving said roller to its open position at the conclusion of the rolling action; substantially as set forth.

7. In a machine of the character described, a rotary frame carrying a series of rolling-beds, and means for imparting intermittent motion to the same, combined with a rolling belt or apron with which each of said beds in series coöperates and which is normally sufficiently slack to permit a loop to be formed therein to receive the article to be treated, the crank-arms carried by said frame for each bed and carrying a roller for closing the loop in the belt or apron, a cam for locking said roller in its closed position to maintain the loop during the rolling action, and a cam for moving said roller to its open position at the conclusion of the rolling action; substantially as set forth.

8. In a machine of the character described, a rotary frame carrying a series of rolling-beds, and means for imparting intermittent motion to the same, combined with a rolling belt or apron with which each of said beds in series coöperates and which is normally sufficiently slack to permit a loop to be formed therein to receive the arti-

cle to be treated, the crank-arms carried by said frame for each bed and carrying a roller for closing the loop in the belt or apron, means for firmly holding said roller in its closed position to maintain the loop during the rolling action, means for moving said roller to its open position at the conclusion of the rolling action, and means for then forming the succeeding loop at the receiving end of said belt or apron and thus effecting the straightening out of the other end of said belt or apron and the discharge of the article therefrom; substantially as set forth.

9. In a machine of the character described, a rotary frame carrying a series of rolling-beds, and means for imparting intermittent motion to the same, combined with a rolling belt or apron with which each of said beds in series coöperates and which is normally sufficiently slack to permit a loop to be formed therein to receive the article to be treated, the crank-arms carried by said frame for each bed and carrying a roller for closing the loop in the belt or apron, a cam for locking said roller in its closed position to maintain the loop during the rolling action, a cam for moving said roller to its open position at the conclusion of the rolling action, and means for then forming the succeeding loop at the receiving end of said belt or apron and thus effecting the straightening out of the other end of said belt or apron and the discharge of the article therefrom; substantially as set forth.

10. In a machine of the character described, a rotary frame carrying a series of rolling-beds, and means for imparting intermittent motion to the same, combined with a rolling belt or apron with which each of said beds in series coöperates and which is normally sufficiently slack to permit a loop to be formed therein to receive the article to be treated, the crank-arms carried by said frame for each bed and carrying a roller for closing the loop in the belt or apron, springs connected with said crank-arms for drawing said rollers toward their respective rolling-beds, the toe and its actuating means for moving the roller of the bed below the belt or apron outwardly to permit the formation of said loop, a cam for locking said roller in its closed position to maintain the loop during the rolling action, a cam for moving said roller to its open position at the conclusion of the rolling action, and means for forming the loop in the belt or apron as the beds become successively positioned; substantially as set forth.

11. In a machine of the character described, a rotary frame carrying a series of rolling-beds, and means for imparting intermittent motion to the same, combined with a rolling belt or apron with which each of said beds in series coöperates and which is normally sufficiently slack to permit a loop to be formed therein to receive the article to be treated, means for maintaining said loop during the rolling action, and means for applying pneumatic pressure against the label or the like placed upon said belt or apron for holding the same during the rolling action; substantially as set forth.

12. In a machine of the character described, a rotary frame carrying a series of rolling-beds, and means for imparting intermittent motion to the same, combined with a rolling belt or apron with which each of said beds in series coöperates and which is normally sufficiently slack to permit a loop to be formed therein to receive the article to be treated, means for maintaining said loop during the rolling action, and means for applying air suction through the rolling beds and belt or apron for holding the label during the rolling action; substantially as set forth.

13. In a machine of the character described, a rotary frame carrying a series of rolling-beds, and means for imparting intermittent motion to the same, combined with a rolling belt or apron with which each of said beds in series coöperates and which is normally sufficiently slack to permit a loop to be formed therein to receive the article to be treated, means for maintaining said loop during the rolling action, and means for applying air suction through the rolling beds and belt or apron for holding the label during the rolling action, said belt or apron being perforated and said bed slotted; substantially as set forth.

14. In a machine of the character described, a rotary frame carrying a series of rolling-beds, and means for imparting intermittent motion to the same, combined with a rolling belt or apron with which each of said beds in series coöperates and which is normally sufficiently slack to permit a loop to be formed therein to receive the article to be treated, means for maintaining said loop during the rolling action, and means for applying air suction through the rolling beds and belt or apron for holding the label during the rolling action, said belt or apron and said beds having openings in them to permit the air suction action and the front edges of said tables having bellow rulers which also have air-openings; substantially as set forth.

15. In a machine of the character described, a rotary frame carrying a series of rolling-beds, and means for imparting intermittent motion to the same, combined with a rolling belt or apron with which each of said beds in series coöperates and which is normally sufficiently slack to permit a loop to be formed therein to receive the article to be treated, means for maintaining said loop during the rolling action, means for applying air suction through the belt or apron and the rolling-beds as the latter becomes successively positioned below said belt or apron for holding the label on the latter during the rolling action, and means for excluding the air suction from the beds until they become thus positioned; substantially as set forth.

16. In a machine of the character described, a rotary frame carrying a series of rolling-beds, and means for imparting intermittent motion to the same, combined with a rolling belt or apron with which each of said beds in series coöperates and which is normally sufficiently slack to permit a loop to be formed therein to receive the article to be treated, means for forming the loop in said belt or apron, means for depositing the label on said belt or apron in advance of said loop, means for maintaining said loop during the rolling action, and means for applying air suction through the belt or apron and the rolling-beds as successively positioned below the same for holding the label during the rolling action; substantially as set forth.

17. In a machine of the character described, a rotary frame carrying a series of rolling-beds, and means for imparting intermittent motion to the same, combined with a rolling belt or apron with which each of said beds in series coöperates and which is normally sufficiently slack to permit a loop to be formed therein to receive the article to be treated, means for forming the loop in said belt or apron, means for applying air suction through the belt or apron and the rolling-beds as successively positioned below the same for holding the label during the rolling action, the crank-arms carried by said frame for each bed and carrying a roller for closing the loop in the belt or apron, means for firmly holding said roller in its closed position to maintain the loop during the rolling action, and means for moving said roller to its open position at the conclusion of the rolling action; substantially as set forth.

18. In a machine of the character described, a rotary frame carrying a series of rolling-beds, and means for imparting intermittent motion to the same, combined with a rolling belt or apron with which each of said beds in series coöperates and which is normally sufficiently slack to permit a loop to be formed therein to receive the article to be treated, means for forming the loop in said belt or apron, means for applying air suction through the belt or apron and the rolling-beds as successively positioned below the same for holding the label during the rolling action, the crank-arms carried by said frame for each bed and carrying a roller for closing the loop in the belt or apron, a cam for locking said roller in its closed position to maintain the loop during the rolling action, and a cam for moving said roller to its open position at the conclusion of the rolling action; substantially as set forth.

19. In a machine of the character described, a rotary frame carrying a series of rolling-beds, and means for imparting intermittent motion to the same, combined with a rolling belt or apron with which each of said beds in series coöperates and which is normally sufficiently slack to permit a loop to be formed therein to receive the article to be treated, means for applying air suction through the belt or apron and the rolling-beds as successively positioned below the same for holding the label during the rolling action, the crank-arms carried by said frame for each bed and carrying a roller for closing the loop in the belt or apron, means for firmly holding said roller in its closed position to maintain the loop during the rolling action, means for moving said roller to its open position at the conclusion of the rolling action, and means for then forming the succeeding loop at the receiving end of said belt or apron and thus effecting the straightening out of the other end of said belt or apron and the discharge of the article therefrom; substantially as set forth.

20. In a machine of the character described, a rotary frame carrying a series of rolling-beds, and means for imparting intermittent motion to the same, combined with a rolling belt or apron with which each of said beds in series coöperates and which is normally sufficiently slack to permit a loop to be formed therein to receive the article to be treated, means for applying air suction through the belt or apron and the rolling-beds as successively positioned below the same for holding the label during the rolling action, the crank-arms carried by said frame for each bed and carrying a roller for closing the loop in the belt or apron, a cam for locking said roller in its closed position to maintain the loop during the rolling action, means for moving said roller to its open position at the conclusion of the rolling action, and means for then forming the succeeding loop at the receiving end of said belt or apron and thus effecting the straightening out of the other end of said belt or apron and the discharge of the article therefrom; substantially as set forth.

21. In a machine of the character described, a rotary frame carrying a series of rolling-beds, and means for imparting intermittent motion to the same, combined with a rolling belt or apron with which each of said beds in series coöperates and which is normally sufficiently slack to permit a loop to be formed therein to receive the article to be treated, means for supplying air suction through the belt or apron and the rolling-beds as successively positioned below the same for holding the label during the rolling action, the crank-arms carried by said frame for each bed and carrying a roller for closing the loop in the belt or apron, springs connected with said crank-arms for drawing said rollers toward their respective rolling-beds, the toe and its actuating means for moving the roller of the bed below the belt or apron outwardly to permit the formation of said loop, a cam for locking said roller in its closed position to maintain the loop during the rolling action, a cam for moving said roller to its open position at the conclusion of the rolling action, and means for forming the loop in the belt or apron as the beds become successively positioned; substantially as set forth.

22. In a machine of the character described, a rotary frame carrying a series of rolling-beds having openings therein and said frame being hollow and having a hub and containing partitions whereby air-chambers are provided for said beds, said hub being apertured for each of said chambers, a chambered sleeve supporting said frame and upon which it rotates and having an aperture to successively communicate with said chambers as said rolling-beds are successively positioned, means for exhausting the air through said chambered sleeve and said air-chambers as the latter are successively brought into communication with the chamber of said sleeve, and means for imparting intermittent rotary motion to said frame, combined with a perforated rolling belt or apron with which each of said beds successively coöperates and which is normally sufficiently slack to permit a loop to be formed therein to receive the article to be treated, and means for maintaining said loop during the rolling action; substantially as set forth.

23. In a machine of the character described, a rotary frame carrying a series of rolling-beds having openings therein and said frame being hollow and having a hub and containing partitions whereby air-chambers are provided for said beds, said hub being apertured for each of said chambers, a chambered sleeve supporting said frame and upon which it rotates and having an aperture to successively communicate with said chambers as said rolling-beds are successively positioned, means for exhausting the air through said chambered sleeve and said air-chambers as the latter are successively brought into communication with the chamber of said sleeve, and means for imparting intermittent rotary motion to said frame, combined with a perforated rolling belt or apron with which each of said beds successively coöperates and which is normally sufficiently slack to permit a loop to be formed therein to receive the article to be treated, means for forming said loop, means for applying a label or the like upon said belt or apron in advance of said loop, and means for maintaining said loop during the rolling action; substantially as set forth.

24. In a machine of the character described, a rotary frame carrying a series of rolling-beds having openings therein and said frame being hollow and having a hub and containing partitions whereby air-chambers are provided for said beds, said hub being apertured for each of said chambers, a chambered sleeve supporting said frame and upon which it rotates and having an aperture to successively communicate with said chambers as said rolling-beds are successively positioned, means for exhausting the air through said chambered sleeve and said air-chambers as the latter are successively brought into communication with the chamber of said sleeve, and means for imparting intermittent rotary motion to said frame, combined with a perforated rolling belt or apron with which each of said beds successively coöperates and which is normally sufficiently slack to permit a loop to be formed therein to receive the article to be treated, means for forming said loop, means for holding a stack of labels or the like, a carrier adapted to convey said labels from said stack to said rolling belt or apron, means in the path of said carrier for applying a layer of paste thereto on its movement to said stack, and means for maintaining said loop during the rolling action; substantially as set forth.

25. In a machine of the character described, a rotary frame carrying a series of rolling-beds having openings therein and said frame being hollow and having a hub and containing partitions whereby air-chambers are provided for said beds, said hub being apertured for each of said chambers, a chambered sleeve supporting said frame and upon which it rotates and having an aperture to successively communicate with said chambers as said rolling-beds are successively positioned, means for exhausting the air through said chambered sleeve and said air-chambers as the latter are successively brought into communication with the chamber of said sleeve, and means for imparting intermittent rotary motion to said frame, combined with a perforated rolling belt or apron with which each of said beds successively coöperates and which is normally sufficiently slack to permit a loop to be formed therein to receive the article to be treated, means for forming said loop, means for holding a stack of labels or the like, a carrier adapted to convey said labels from said stack to said rolling belt or apron, means in the path of said carrier for applying a layer of paste thereto on its movement to said stack, and means for maintaining said loop during the rolling action, said carrier being formed of sections to be opened from one another when the label is to be removed therefrom; substantially as set forth.

26. In a machine of the character described, a rotary frame carrying a series of rolling-beds having openings therein and said frame being hollow and having a hub and containing partitions whereby air-chambers are provided for said beds, said hub being apertured for each of said chambers, a chambered sleeve supporting said frame and upon which it rotates and having an aperture to successively communicate with said chambers as said rolling-beds are successively positioned, means for exhausting the air through said chambered sleeve and said air-chambers as the latter are successively brought into communication with the chamber of said sleeve, and means for imparting intermittent rotary motion to said frame, combined with a perforated rolling belt or apron with which each of said beds successively coöperates and which is normally sufficiently slack to permit a loop to be formed therein to receive the article to be treated, the crank-arms carried by said frame for each bed and carrying a roller for closing the loop in the belt or apron, means for firmly holding said roller in its closed position to maintain the loop during rolling action, and means for moving said roller to its open position at the conclusion of the rolling action; substantially as set forth.

27. In a machine of the character described, a rotary frame carrying a series of rolling-beds having openings therein and said frame being hollow and having a hub and containing partitions whereby air-chambers are provided for said beds, said hub being apertured for each of said chambers, a chambered sleeve supporting said frame and upon which it rotates and having an aperture to successively communicate with said chambers as said rolling-beds are successively positioned, means for exhausting the air through said chambered sleeve and said air-chambers as the latter are successively brought into communication with the chamber of said sleeve, and means for imparting intermittent rotary motion to said frame, combined with a perforated rolling belt or apron with which each of said beds successively coöperates and which is normally sufficiently slack to permit a loop to be formed therein to receive the article to be treated, the crank-arms carried by said frame for each bed and carrying a roller for closing the loop in the belt or apron, a cam for locking said roller in its closed position to maintain the loop during the rolling action, and a cam for moving said roller to its open position at the conclusion of the rolling action; substantially as set forth.

28. In a machine of the character described, a rotary frame carrying a series of rolling-beds having openings therein and said frame being hollow and having a hub and containing partitions whereby air-chambers are provided for said beds, said hub being apertured for each of said chambers, a chambered sleeve supporting said frame and upon which it rotates and having an aperture to successively communicate with said chambers as said rolling-beds are successively positioned, means for exhausting the air through said chambered sleeve and said air-chambers as the latter are successively brought into communication with the chamber of said sleeve, and means for imparting intermittent rotary motion to said frame, combined with a perforated belt or apron with which each of said beds successively coöperates and which is normally sufficiently slack to permit a loop to be formed therein to receive the article to be treated, the crank-arms carried by said frame for each bed and carrying a roller for closing the loop in the belt or apron, means for firmly holding said roller in its closed position to maintain the loop during the rolling action, means for moving said roller to its open position at the conclusion of the rolling action, and means for then forming the succeeding loop at the receiving end of said belt or apron and thus effecting the straightening out of the other end of said belt or apron and the discharge of the article therefrom; substantially as set forth.

29. In a machine of the character described, a rotary frame carrying a series of rolling-beds having openings therein and said frame being hollow and having a hub and containing partitions whereby air-chambers are provided for said beds, said hub being apertured for each of said chambers, a chambered sleeve supporting said frame

and upon which it rotates and having an aperture to successively communicate with said chambers as said rolling-beds are successively positioned, means for exhausting the air through said chambered sleeve and said air-chambers as the latter are successively brought into communication with the chamber of said sleeve, and means for imparting intermittent rotary motion to said frame, combined with a perforated rolling belt or apron with which each of said beds successively coöperates and which is normally sufficiently slack to permit a loop to be formed therein to receive the article to be treated, the crank-arms carried by said frame for each bed and carrying a roller for closing the loop in the belt or apron, a cam for locking said roller in its closed position to maintain the loop during the rolling action, a cam for moving said roller to its open position at the conclusion of the rolling action, and means for then forming the succeeding loop at the receiving end of said belt or apron and thus effecting the straightening out of the other end of said belt or apron and the discharge of the article therefrom; substantially as set forth.

30. In a machine of the character described, a rotary frame carrying a series of rolling-beds having openings therein and said frame being hollow and having a hub and containing partitions whereby air-chambers are provided for said beds, said hub being apertured for each of said chambers, a chambered sleeve supporting said frame and upon which it rotates and having an aperture to successively communicate with said chambers as said rolling-beds are successively positioned, means for exhausting the air through said chambered sleeve and said air-chambers as the latter are successively brought into communication with the chamber of said sleeve, and means for imparting intermittent rotary motion to said frame, combined with a perforated rolling belt or apron with which each of said beds successively coöperates and which is normally sufficiently slack to permit a loop to be formed therein to receive the article to be treated, the crank-arms carried by said frame for each bed and carrying a roller for closing the loop in the belt or apron, springs connected with said crank-arms for drawing said rollers toward their respective rolling-beds, the toe and its actuating means for moving the roller of the bed below the belt or apron outwardly to permit the formation of said loop, a cam for locking said roller in its closed position to maintain the loop during the rolling action, a cam for moving said roller to its open position at the conclusion of the rolling action, and means for forming the loop in the belt or apron as the beds become successively positioned; substantially as set forth.

31. In a machine of the character described, a rolling-bed, a rolling belt or apron, and means for maintaining the loop in said belt or apron during the rolling action, combined with carrier mechanism for depositing the labels, one after another, on said belt or apron, said mechanism comprising a turn-table frame having a laterally-extending arm, a plunger-rod mounted in said arm and having the carrier on its lower end, a pivoted lever connected at one end with said plunger for imparting vertical movement to the same, a rod connected with the other end of said lever with means for imparting vertical movement to the same, and means for turning said frame whereby to move the said carrier from the stack of labels to said belt or apron and then back to said stack; substantially as set forth.

32. In a machine of the character described, a rolling-bed, a rolling belt or apron, and means for maintaining the loop in said belt or apron during the rolling action, combined with carrier mechanism for depositing the labels, one after another, on said belt or apron, said mechanism comprising a turn-table frame having laterally-extending arms, plunger-rods mounted in said arms and having carriers on their lower ends, pivoted levers connected at their outer ends with said plungers for imparting simultaneous vertical movement to the same, an actuating-rod connected with the inner ends of said levers for operating the same, and means for turning said frame whereby to move one of said carriers from the stack of labels to said rolling belt or apron and the other carrier to said stack of labels; substantially as set forth.

33. In a machine of the character described, a rolling-bed, a rolling belt or apron, and means for maintaining the loop in the belt or apron during the rolling action, combined with a carrier composed of separable sections for conveying the labels, one after another, to and depositing the same upon said belt or apron, means for moving said carrier horizontally and also vertically, pasting means in the path of said carrier for applying a layer of paste thereto before it engages the label, and means for separating said sections at the time of the deposit of the label on the belt or apron for aiding in the detachment of the label; substantially as set forth.

34. In a machine of the character described, a rolling-bed, a rolling belt or apron, and means for maintaining the loop in the belt or apron during the rolling action, combined with a carrier composed of separable sections for conveying the labels, one after another, to and depositing the same upon said belt or apron, means for moving said carrier horizontally and also vertically, pasting means in the path of said carrier for applying a layer of paste thereto before it engages the label, means for separating said sections at the time of the deposit of the label on the belt or apron, and means for creating pneumatic pressure against said label for detaching the same from said carrier and holding the same against said belt or apron; substantially as set forth.

35. In a machine of the character described, a rolling-bed, a rolling belt or apron, and means for maintaining the loop in the belt or apron during the rolling action, combined with a carrier composed of separable sections for conveying the labels, one after another, to and depositing the same upon said belt or apron, means for moving said carrier horizontally and also vertically, pasting means in the path of said carrier for applying a layer of paste thereto before it engages the label, means for separating said sections at the time of the deposit of the label on the belt or apron, and means for creating air suction through said bed and belt or apron for drawing said label from said carrier and holding it upon said belt or apron, said belt or apron and said bed having openings therein to permit the suction action against said label; substantially as set forth.

36. In a machine of the character described, a rolling-bed, a rolling belt or apron, and means for maintaining the loop in said belt or apron during the rolling action, combined with a label-carrier having hinged sections geared together for conveying the labels, one after another, to and depositing the same upon said belt or apron, means for moving said carrier horizontally and also vertically, pasting means in the path of said carrier for applying a layer of paste thereto before it engages the label, an actuating-arm on one of said hinged sections, a fixed arm in the path of said actuating-arm when the carrier is lowered upon the belt or apron to engage the same and turn said hinged sections outwardly, and means for creating pneumatic pressure against said label for detaching the same from said carrier and holding the same against said belt or apron; substantially as set forth.

37. In a machine of the character described, a rolling-bed, a rolling belt or apron, and means for maintaining the loop in said belt or apron during the rolling action, combined with a label-carrier for conveying the labels to and depositing the same upon said belt or apron, means in the path of said carrier for applying a layer of paste thereto before it engages a label, and means for creating pneumatic pressure for detaching said label from the carrier and holding it upon said belt or apron; substantially as set forth.

38. In a machine of the character described, a rolling-bed, a rolling belt or apron, and means for maintaining the loop in said belt or apron during the rolling action, combined with a label-carrier for conveying the labels to and depositing the same upon said belt or apron, means in the path of said carrier for applying a layer of paste thereto before it engages a label, and means for creating air suction through said belt or apron and bed for drawing the label from said carrier and holding it upon said belt or apron, said belt or apron and said bed having openings therein to permit the suction action against said label; substantially as set forth.

39. In a machine of the character described, a rolling-bed having openings therein, a hollow roller at the receiving end of said bed and having openings in its walls, a perforated rolling belt or apron upon said bed, and means for creating air suction through said bed, roller and apron, combined with means for forming a loop in said belt or apron adjacent to said hollow roller, means for closing said loop around the article to be treated, and means for maintaining said loop during the rolling action; substantially as set forth.

40. In a machine of the character described, a rolling-bed having openings therein, a hollow roller at the receiving end of said bed and having openings in its walls, a perforated rolling belt or apron upon said bed, and means for creating air suction through said bed, roller and apron, combined with means for forming a loop in said belt or apron adjacent to said hollow roller, means for closing said loop around the article to be treated, means for maintaining said loop during the rolling action, and means for opening said loop at the conclusion of such action; substantially as set forth.

808,956. MACHINE FOR APPLYING WRAPPERS TO MAGAZINES, BOOKS, AND THE LIKE. BENJAMIN W. TUCKER, Newark, N. J. Filed Aug. 23, 1905. Serial No. 275,268.

Claim.—1. In a machine of the character described, means for feeding the books, and means for feeding the wrappers thereto, combined with a set of folders in the path of the book and wrapper, means for moving the book and wrapper along said path and against said folders, and means for applying paste to one edge of the wrapper during such passage, said folders comprising means for opening the book, means for folding the short flap of the wrapper into the open book, means for folding the long flap of the wrapper across the book, and means for folding the projecting end of said long flap around under and up against the book; substantially as set forth.

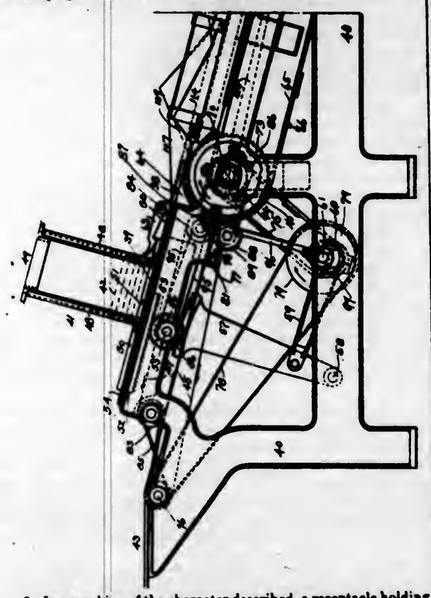

2. In a machine of the character described, a receptacle holding a stack of the books, a sliding bottom therefor for pushing the books one after another from the bottom of the stack, means for feeding the wrappers to the books pushed from the stack, and means for insuring the registry of the wrappers with relation to the books, combined with a set of folders in the path of the book and wrapper, means for moving the book and wrapper along said path and against said folders, and means for applying paste to one edge of the wrapper during such passage, said folders comprising means for opening the book, means for folding the short flap of the wrapper into the open book, means for folding the long flap of the wrapper across the book, and means for folding the projecting end of said long flap around under and up against the book; substantially as set forth.

3. In a machine of the character described, a receptacle for holding a stack of the books, a sliding bottom therefor having a shoulder on its upper surface to engage and push a book from the bottom of the stack, means for stripping such book from said bottom on the return of the latter, a table for supporting such book after leaving said bottom and along which the book may be pushed by the end of said bottom on its next succeeding outward movement, and means for feeding the wrappers to the books pushed to position by the end of said bottom, combined with a set of folders in the path of the book and wrapper, means for moving the book and wrapper along said path and against said folders, and means for applying paste to one edge of the wrapper during such passage, said folders comprising means for opening the book, means for folding the short flap of the wrapper into the open book, means for folding the long flap of the wrapper across the book, and means for folding the projecting end of said long flap around under and up against the book; substantially as set forth.

4. In a machine of the character described, a receptacle for holding a stack of the books, a sliding bottom therefor having a shoulder on its upper surface to engage and push a book from the bottom of the stack, a pair of pivoted dogs for engaging the book at said shoulder and stripping the same from said bottom on the return of the latter, a table for supporting such book after leaving said bottom and along which the book may be pushed by the end of said bottom on its next succeeding outward movement, and means for feeding the wrappers to the books pushed to position by the end of said bottom, combined with a set of folders in the path of the book and wrapper, means for moving the book and wrapper along said path and against said folders, and means for applying paste to one edge of the wrapper during such passage, said folders comprising means for opening the book, means for folding the short flap of the wrapper into the open book, means for folding the long flap of the wrapper across the book, and means for folding the projecting end of said long flap around under and up against the book; substantially as set forth.

5. In a machine of the character described, means for feeding the books, means for feeding the wrappers to a registry position, a suction-drum for conveying the wrappers as registered to said books, and means for delivering the wrappers as registered to said drum, combined with a set of folders in the path of the book and wrapper, means for moving the book and wrapper along said path and against said folders, and means for applying paste to one edge of the wrapper during such passage, said folders comprising means for opening the book, means for folding the short flap of the wrapper into the open book, means for folding the long flap of the wrapper across the book, and means for folding the projecting end of said long flap around under and up against the book; substantially as set forth.

6. In a machine of the character described, means for feeding the books, the upper and lower series of belts for feeding the wrappers, the registry-dogs upon which the wrappers are fed, a pair of rollers for closing against the wrappers on said dogs, means for moving said dogs to release the wrappers when said rollers act, an inclined table upon which said rollers move the wrappers as registered, and a suction-drum which takes the wrappers from said table and conveys them to said books, combined with a set of folders in the path of the book and wrapper, means for moving the book and wrapper along said path and against said folders, and means for applying paste to one edge of the wrapper during such passage, said folders comprising means for opening the book, means for folding the short flap of the wrapper into the open book, means for folding the long flap of the wrapper across the book, and means for folding the projecting end of said long flap around under and up against the book; substantially as set forth.

7. In a machine of the character described, means for feeding the books, and a suction-drum for conveying the wrappers in accurate registry to said books, combined with a set of folders in the path of the book and wrapper, means for moving the book and wrapper along said path and against said folders, and means for applying paste to one edge of the wrapper during such passage, said folders comprising means for opening the book, means for folding the short flap of the wrapper into the open book, means for folding the long flap of the wrapper across the book, and means for folding the projecting end of said long flap around under and up against the book; substantially as set forth.

8. In a machine of the character described, a suction-drum for conveying the wrappers to the books as the latter are positioned, said drum having means for cutting off the air suction from the wrapper as the latter reaches a certain point, combined with a set of folders in the path of the book and wrapper, means for moving the book and wrapper along said path and against said folders, and means for applying paste to one edge of the wrapper during such passage, said folders comprising means for opening the book, means for folding the short flap of the wrapper into the open book, means for folding the long flap of the wrapper across the book, and means for folding the projecting end of said long flap around under and up against the book; substantially as set forth.

9. In a machine of the character described, a suction-drum for conveying the wrappers to the books as the latter are positioned, said drum containing the partitions which confine the air suction to a limited section of said drum represented by the travel of the wrappers, combined with a set of folders in the path of the book and wrapper, means for moving the book and wrapper along said path and against said folders, and means for applying paste to one edge of the wrapper during such passage, said folders comprising means for opening the book, means for folding the short flap of the wrapper into the open book, means for folding the long flap of the wrapper across the book, and means for folding the projecting end of said long flap around under and up against the book; substantially as set forth.

10. In a machine of the character described, a suction-drum for conveying the wrappers to the books as the latter are positioned, and sprocket-chains mounted to travel on said drum and having toes to engage the rear edge of the book and wrapper and effect the passage of the same together through the machine, combined with a set of folders in the path of the book and wrapper, and means for applying paste to one edge of the wrapper during such passage, said folders

comprising means for opening the book, means for folding the short flap of the wrapper into the open book, means for folding the long flap of the wrapper across the book, and means for folding the projecting end of said long flap around under and up against the book; substantially as set forth.

11. In a machine of the character described, a suction-drum for conveying the wrappers to the books as the latter are positioned, sprocket-chains mounted to travel on said drum and having toes to engage the rear edge of the book and wrapper and effect the passage of the same together through the machine, and belts also mounted to travel on said drum and adapted to support the wrapper and book while the same are traveling through the machine, combined with a set of folders in the path of the book and wrapper, and means for applying paste to one edge of the wrapper during such passage, said folders comprising means for opening the book, means for folding the short flap of the wrapper into the open book, means for folding the long flap of the wrapper across the book, and means for folding the projecting end of said long flap around under and up against the book; substantially as set forth.

12. In a machine of the character described, means for receiving a wrapper with a book thereon and adapted to effect the passage of the same together through the machine, combined with a set of folders in the path of the book and wrapper, and means for applying paste to one edge of the wrapper during such passage, said folders comprising means for opening the book, means for folding the short flap of the wrapper into the open book, means for folding the long flap of the wrapper across the book, and means for folding the projecting end of said long flap around under and up against the book; substantially as set forth.

13. In a machine of the character described, means for receiving a wrapper with a book thereon and adapted to effect the passage of the same together through the machine, combined with a set of folders in the path of the book and wrapper and comprising means for opening the book, means for folding the short flap of the wrapper into the open book, means for folding the long flap of the wrapper across the book, and means for folding the projecting end of said long flap around under and up against the book; substantially as set forth.

14. In a machine of the character described, means for receiving a wrapper with a book thereon and adapted to effect the passage of the same together through the machine, combined with a set of folders in the path of the book and wrapper and comprising an advance inclined blade 107 for opening the book and a succeeding section 113 for holding the book open during a certain period, an inclined blade 108 for turning the short flap of the wrapper upwardly and a blade 114 for folding said flap inwardly and down into the open book, an inclined blade 109 for turning the long flap of the wrapper upwardly and a blade 115 for turning the same inwardly and downwardly across the book, a blade 119 for turning the projecting end of said long flap downwardly, and a blade 122 for then turning said end upwardly and inwardly below the book; substantially as set forth.

15. In a machine of the character described, a receptacle for holding a stack of the books or other articles, a sliding bottom therefor having a shoulder on its upper surface to engage and push an article from the bottom of the stack, means for stripping such article from said bottom on the return of the latter, a table for supporting such article after leaving said bottom and along which the article may be pushed by the end of said bottom on its next succeeding outward movement, and means for feeding the wrappers to the articles pushed to position by the end of said bottom, combined with a set of folders in the path of the article and wrapper, and means for moving the article and wrapper along said path and against said folders, said folders comprising means for folding the wrapper upon the article; substantially as set forth.

16. In a machine of the character described, means for feeding the articles to be wrapped, means for feeding the wrappers to a registry position, a suction-drum for conveying the wrappers as registered to said articles, and means for delivering the wrappers as registered to said drum, combined with a set of folders in the path of the article and wrapper, and means for moving the article and wrapper along said path and against said folders, said folders comprising means for folding the wrapper upon the article; substantially as set forth.

17. In a machine of the character described, means for feeding the articles to be wrapped, the upper and lower series of belts for feeding the wrappers, the registry-dogs upon which the wrappers are fed, a pair of rollers for closing against the wrappers on said dogs, means for moving said dogs to release the wrappers when said rollers act, an inclined table upon which said rollers move the wrappers as registered, and a suction-drum which takes the wrappers from said table and conveys them to said articles, combined with a set of folders in the path of the article and wrapper, and means for moving the article and wrapper along said path and against said folders, said folders comprising means for folding the wrapper upon the article; substantially as set forth.

18. In a machine of the character described, means for feeding the articles to be wrapped, and a suction-drum for conveying the wrappers in accurate registry to said articles, combined with a set of folders in the path of the article and wrapper, and means for moving the article and wrapper along said path and against said folders, said folders comprising means for folding the wrapper upon the article; substantially as set forth.

19. In a machine of the character described, a suction-drum for conveying the wrappers to the articles to be wrapped as the latter are positioned, said drum having means for cutting off the air suction from the wrapper as the latter reaches a certain point, combined with a set of folders in the path of the article and wrapper, and means for moving the article and wrapper along said path and against said folders, said folders comprising means for folding the wrapper upon the article; substantially as set forth.

20. In a machine of the character described, a suction-drum for conveying the wrappers to the articles to be wrapped as the latter are positioned, said drum containing the partitions which confine the air suction to a limited section of said drum represented by the travel of the wrappers, combined with a set of folders in the path of the article and wrapper, and means for moving the article and wrapper along said path and against said folders, said folders comprising means for folding the wrapper upon the article; substantially as set forth.

21. In a machine of the character described, a suction-drum for conveying the wrappers to the articles to be wrapped as the latter are positioned, and sprocket-chains mounted to travel on said drum and having toes to engage the rear edge of the article and wrapper and effect the passage of the same together through the machine, combined with a set of folders in the path of the article and machine, and means for applying paste to one edge of the wrapper during such passage, said folders comprising means for folding the wrapper upon the article; substantially as set forth.

22. In a machine of the character described, a suction-drum for conveying the wrappers to the articles to be wrapped as the latter are positioned, sprocket-chains mounted to travel on said drum and having toes to engage the rear edge of the article and wrapper and effect the passage of the same together through the machine, and belts also mounted to travel on said drum and adapted to support the wrapper and article while the same are traveling through the machine, combined with a set of folders in the path of the article and wrapper, and means for applying paste to one edge of the wrapper during such passage, said folders comprising means for folding the wrapper upon the article; substantially as set forth.

808,957. CIRCUIT-CONTROLLER. RICHARD VARLEY, Englewood, N. J., assignor, by mesne assignments, to The Autocoil Co., a Corporation of New Jersey. Filed Oct. 31, 1904. Serial No. 230,698.

Claim.—1. The combination of a permanent magnet, a rotary shaft carrying a block of iron tending to close the magnetic circuit of said magnet and a circuit-controlling lever interposed between a pole of said magnet and said block of iron.

2. The combination of an explosive-engine, a circuit controlling the ignition of the charge therein, a circuit-closer in said circuit and actuated by the engine a circuit-breaker also in said circuit and adapted to be actuated after the circuit-closer is actuated and means whereby the period during which the circuit remains closed is substantially independent of the speed of the engine.

3. The combination of a shaft, a magnet whose poles embrace said shaft, a body of iron carried by said shaft and rotating in the space between said poles, a circuit-controlling element carrying an armature subjected to the magnetic influence of said body of iron intermittently by the rotations of the shaft and a circuit controlled by said element.

4. A circuit-controller comprising a magnet and a movable element subject to the attraction of said magnet, means for moving the magnet periodically into attractive range of said element, a pair of contacts adapted to be brought together when said element is moved by the magnet, a second movable element adapted to be moved by the first after the first has brought said contacts together, and a second pair of contacts adapted to be separated when said second movable element is moved, said two pairs of contacts being in series with each other, substantially as described.

808,957.

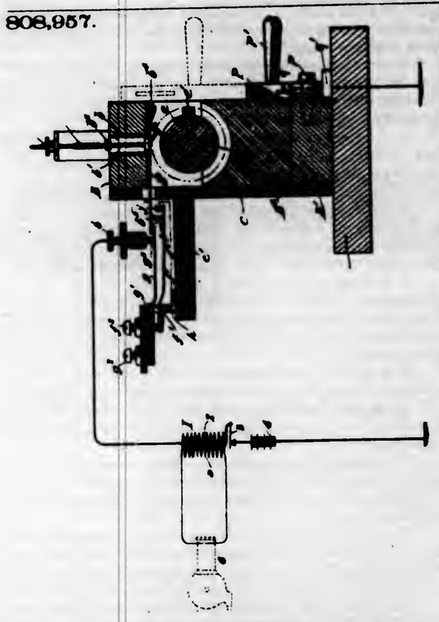

808,958. SPARK-IGNITION SYSTEM FOR EXPLOSIVE-ENGINES. RICHARD VARLEY, Englewood, N. J., assignor to The Autocoil Company, a Corporation of New Jersey. Filed Mar. 28, 1905. Serial No. 252,488.

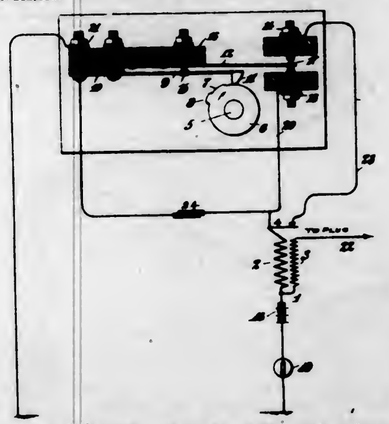

Claim.—1. In an ignition system for explosion-engines, the combination of an induction-coil, an igniting device, and means whereby according to the speed of the engine a single spark or a series of sparks will be created at the igniting device.

2. In an ignition system for explosion-engines, an induction-coil, a vibratory circuit-controller and a single make-and-break circuit-controller therefor, and means dependent upon the speed of the engine for determining which of said circuit-controllers shall produce the ignition of the charge.

3. In an ignition system for explosion-engines, the combination of a primary circuit including a vibrator and a branch of the primary circuit shunting the vibrator, a circuit-controlling device adapted to close said circuit and branch successively and an engine-shaft actuating said circuit-controller.

4. In an ignition system for explosion-engines, the combination of a primary circuit including a vibrator and a branch of the primary circuit shunting the vibrator, a circuit-controller adapted to close said circuit and branch successively and a compound cam adapted to actuate said circuit-controller.

5. In an ignition system for explosion-engines, the combination of an induction-coil, a vibrator, and two circuit-controllers with means for actuating them in succession, one circuit-controller adapted to control the primary circuit of the induction-coil independent of the vibrator, and the other adapted to control a circuit including the primary and the vibrator, for the purpose set forth.

6. In an ignition system for explosion-engines the combination of an induction-coil, a vibrator, and two circuit-controllers with means for actuating them in succession, one circuit-controller adapted to control the primary circuit of the induction-coil independent of the vibrator, and the other adapted to control a circuit including the primary and the vibrator, and means for holding one circuit closed longer than the other.

7. In an ignition system for explosion-engines, the combination of an induction-coil, two circuits each including the primary winding of said coil, a circuit-controlling device adapted to control both of said circuits and an engine-shaft adapted to actuate the controlling device so as to break one circuit and complete the other in succession.

8. In an ignition system for explosion-engines, the combination of an induction-coil, two circuit branches each including the primary winding of said coil, a circuit-controller adapted to control both of said branches, and means whereby one of said branches will be broken and the other completed in succession at each period of ignition of a charge.

808,959. GAME APPARATUS. EVA B. VINSON and BENJAMIN F. ROBINSON, Newark, N. J. Filed Mar. 16, 1905. Serial No. 250,330.

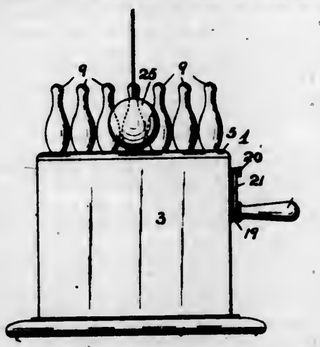

Claim.—1. In a game apparatus, a hollow base provided with sides and a top, one of said sides being provided with a slot, a set of pins adapted to be set up upon said top, a swinging plate journaled within the said base, a means of connection between the said plate and each pin, and an actuating means connected with said plate and extending from the slot in the side of the base for actuating said swinging plate, and by means of said plate and the means of connection between the same and the pins setting up the fallen pins when said plate-actuating means is operated, substantially as and for the purposes set forth.

2. In a game apparatus, a hollow base provided with sides and a top, one of said sides being provided with a slot, a set of pins adapted to be set up upon said top, a swinging plate journaled within the said base, a means of connection between the said plate and each pin, a shank extending from the said swinging plate said shank being movable in said slot, and an actuating-rod on said shank for actuating the said swinging plate, and by means of said plate and the means of connection between the same and the pins setting up the fallen pins when said actuating-rod is operated, substantially as and for the purposes set forth.

3. In a game apparatus, a hollow base provided with sides and a top, one of said sides being provided with a slot, and the said top being provided with a series of holes or perforations, a set of pins adapted to be set up upon said top, a swinging plate journaled near its rear edge within the said base, a series of rollers also journaled within said base, flexible cords or strings arranged over said rollers and extending through the holes or perforations in said top, said cords or strings being secured to the front edge of said swinging

plate and said pins, and an actuating means connected with said plate for actuating said plate, and by means of the said cords or strings setting up the fallen pins, substantially as and for the purposes set forth.

4. In a game apparatus, a hollow base provided with sides and a top, one of said sides being provided with a slot, and the said top being provided with a series of holes or perforations, a set of pins adapted to be set up upon said top, a swinging plate journaled near its rear edge within the said base, a series of rollers also journaled within said base, flexible cords or strings arranged over said rollers and extending through the holes or perforations in said top, said cords or strings being secured to the front edge of said swinging plate and said pins, a shank extending from the said swinging plate said shank being movable in said slot, an actuating-rod on said shank for actuating said swinging plate, and by means of the said cords or strings setting up the fallen pins, and an elastic band between said plate-actuating rod and the side of the base, for returning said swinging plate to its normal initial position, substantially as and for the purposes set forth.

808,960. VISE-SLIDE. ELI M. WALKER, Meriden, Conn., assignor to the Charles Parker Company, Meriden, Conn., a Corporation of Connecticut. Filed Dec. 13, 1904. Serial No. 236,594.

Claim.—A vise-slide having a longitudinal opening therethrough and a strengthening-bar embedded in the slide above and having an exposed lower edge which forms a portion of the wall of the longitudinal opening, the said bar extending under the jaw portion of the slide whereby the slide is reinforced throughout the portion subjected to strain.

808,961. CHECKREIN. WILLIAM WILLIAMSON, Saginaw, Mich. Filed May 9, 1904. Serial No. 207,106.

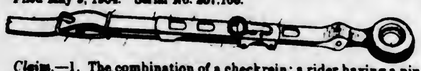

Claim.—1. The combination of a checkrein; a rider having a pin at its rear end engaging a loop formed in the checkrein by folding the end of the checkrein back upon itself; a catch carried by said rider; a tongue carrying a ring at its rear end and having openings in its upper surface, said tongue being slidably mounted between said rider and the looped end of the checkrein, substantially as described.

2. In combination with a checkrein having a rider at its lower end; a catch pivotally mounted on said rider, said catch being formed with one end upwardly beveled; a tongue slidably mounted beneath said catch, and having openings to engage therewith, substantially as described.

3. The combination of a checkrein; a rider having a pin at its rear end engaging a loop formed in the checkrein by folding the end of the checkrein back upon itself; a catch carried by said rider; a tongue carrying a ring at its rear end and having openings in its upper surface, said tongue being slidably mounted between said rider and the looped end of the checkrein; together with a buckle having a sliding loop formed integral therewith, substantially as described.

808,962. DISPLAY RACK OR STAND. HENRY M. WILLIS, East Williston, N. Y. Filed Mar. 10, 1904. Renewed June 5, 1905. Serial No. 263,869.

Claim.—1. A display-rack consisting of four body portions, means for loosely hinging said portions together to produce a rectangular rack and render them capable of being collapsed upon each other into flat form, and means carried by the rack for sustaining the same in display condition.

2. A collapsible display-rack consisting of a rectangular portion and an extended back, the top of the rectangular portion being provided with means for holding the articles to be displayed, and means for supporting the rack in display condition.

3. A collapsible display-rack consisting of a back portion, a top and a bottom portion each hinged to the back portion, and a front portion hinged to the top and bottom portions, and means for sustaining the several hinged portions in fixed relation to each other.

4. A collapsible display-rack consisting of a plurality of hinged portions forming a substantially rectangular body portion with an extended back, and a support hinged so as to swing within the body portion and support the rack in display condition.

5. A display-rack comprising a plurality of body portions, means for loosely hinging said portions together to render them capable of being collapsed upon each other into flat form, and means carried by one of said hinged portions for sustaining the rack in display condition.

6. A display-rack comprising a plurality of body portions, means for loosely hinging said portions together to render them capable of being collapsed upon each other into flat form, and a support hinged to one of said portions for sustaining the rack in display condition.

7. A collapsible display-rack comprising a plurality of body portions loosely hinged together and one of said portions being extended to form a back, and means for sustaining the rack in display condition.

8. A collapsible display-rack comprising a plurality of body portions hinged together and one of said portions being extended to form a back, and one of the said portions being provided with a hinged support for sustaining the rack in display condition.

9. A display-rack consisting of a plurality of individual body portions loosely hinged together to render them capable of being collapsed upon each other into flat form, and means for sustaining the parts in display condition.

10. A display-rack comprising a plurality of individual body portions, means for loosely hinging said parts together to render them capable of being collapsed upon each other into flat form in either of two directions, and means for sustaining the rack in display condition.

808,963. AWNING. AUGUST F. WINBERG, New York, N. Y. Filed Apr. 19, 1905. Serial No. 256,467.

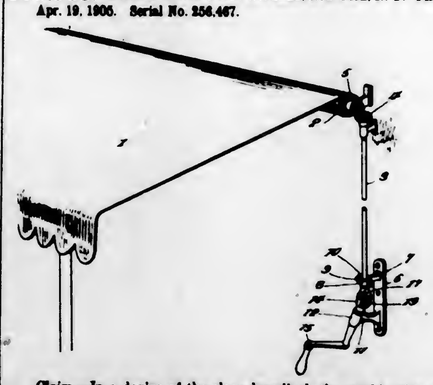

Claim.—In a device of the class described, the combination of the awning 1, the roller 2, the main shaft 3, the intermeshing pinions 4 and 5, the bracket 6, the lugs 7 projected from the bracket and forming a bearing for the shaft 3, the arm 11 projected from the bracket and having the inclined tubular head 12, the crank-shaft 13 mounted in the head 12, the universal connection 14 between the shafts 3 and 13, the crank-handle 15, and the set-screw 16 carried by the head 12 and adapted to engage the crank-shaft for the purpose specified.

808,964. FIRING MECHANISM FOR FIREARMS. GUSTAV B. WITTERSHEIM, Hartford, Conn., assignor to Remington Arms Company, Inc., N. Y., a Corporation of New York. Filed Apr. 20, 1904. Serial No. 204,213.

Claim.—1. In a multibarrel firearm having a plural number of hammers, sears, and their appurtenant parts, a trigger, hammer-controlled coupling means intermediate the sears and trigger for automatically coupling one of said sears to the other after the operation of the first of said sears, and a fluid-controlled means operatively arranged with reference to said trigger but normally disconnected therefrom and adapted to temporarily prevent the action of the automatic sear-coupling means.

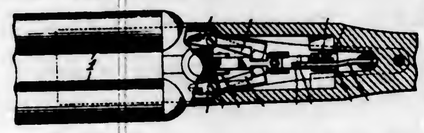

2. In a multibarrel firearm having a plural number of hammers, sears, and their appurtenant parts, a trigger, means intermediate the sears and trigger including pivoted hammer-controlled couplers for automatically coupling said sears after the operation of either one of said sears, and a fluid-resist operatively arranged with relation to said trigger to temporarily prevent the action of the automatic sear-coupling means, said fluid-resist being normally disconnected from said trigger.

3. In a multibarrel firearm having a plural number of hammers, sears, and their appurtenant parts, a trigger, a coupler pivoted on each of the sears and controlled by the position of the hammer, and a fluid-resist normally disconnected from though operatively arranged with reference to the trigger and adapted for temporarily preventing the coupling action of the pivoted couplers.

4. In a multibarrel firearm having a plural number of hammers and sears and appurtenant parts, a trigger, a pivoted coupler mounted upon each of the sears and controlled by the position of its hammer, a lever appurtenant to and normally disconnected from the trigger, and a fluid-resist operatively arranged with reference to the lever and adapted to temporarily prevent the coupling action of the couplers, during the connection of the trigger and lever.

5. In a multibarrel firearm having a plural number of hammers, sears and their appurtenant parts, a trigger, a pivoted coupler mounted upon each sear and controlled in its coupling action by its respective hammer, means intermediate the sears and trigger and cooperating with the couplers for operating either of said sears after the operation of the other of said sears, a pivoted lever, interengaging parts between one end of the lever and the trigger, a cylinder operatively mounted with reference to the lever, a piston fitting said cylinder, and interengaging connections between said piston and one end of the lever.

6. In a multibarrel firearm having a plural number of hammers, sears, and their appurtenant parts, a trigger, means intermediate the sears and trigger for automatically connecting one of said sears for operation after the operation of the other of said sears, a recess formed in the trigger, a pin projecting from said recess, a bifurcated lever engaging said pin, a support for the lever, a piston operatively connected with the opposite end of said lever, a cylinder surrounding the piston, and a valve for varying the action of the piston with reference to the cylinder.

7. In a multibarrel firearm having a plural number of hammers, sears and appurtenant parts, a trigger, means intermediate the sears and trigger for automatically connecting one of said sears after the operation of the other of said sears, a fluid-resist operatively arranged with reference to but normally disconnected from the trigger and comprising a piston and cylinder, and a valve extending through the upper tang to the cylinder for varying the action of the fluid-resist with reference to the trigger during connection of the parts.

8. In a multibarrel firearm having a plural number of hammers, sears and appurtenant parts, a trigger, means intermediate the sears and trigger for automatically connecting one of said sears after the operation of the other of said sears, a lever loosely connected with the trigger at one end and engaged at its opposite end by a movable piston, a cylinder surrounding said piston, and a valve projecting through the upper tang appurtenant thereto for varying the action of said piston.

9. In a multibarrel firearm having a plural number of hammers, sears and appurtenant parts, a pivoted coupler mounted upon each sear, a trigger, means intermediate the sears and trigger including the pivoted couplers for operating one of said sears after the operation of the other of said sears, means for resisting the normal action of the trigger comprising a cylinder and piston, and a valve for regulating the action of the latter in the former, and a spring arranged within the piston.

10. In a multibarrel firearm having a plural number of hammers, sears and their appurtenant parts, a trigger, means intermediate the sears and trigger for automatically coupling one of said sears for releasing action with respect to its hammer after the operation of the other of said sears, a pin arranged upon the trigger, a lever having a bifurcated end normally disengaged from said pin, and means for retarding the action of said lever upon its connection with the trigger.

11. In a multibarrel firearm having a plural number of hammers, sears and their appurtenant parts, a trigger, means intermediate the sears and trigger for automatically connecting for operation one of said sears after the operation of the other of said sears, a retarding-lever operatively arranged with reference to the trigger and having a bifurcated end, a cam-surface arranged upon one side of the bifurcation, a pin in the trigger normally disconnected from the lever and coöperating with said cam-surface, and fluid means for retarding the lever.

12. In a multibarrel firearm having a plural number of hammers, sears and appurtenant parts, a trigger, a pivoted hammer-controlled coupler mounted upon each of the sears, a shiftable block borne by the trigger and underlying said sears, a pivoted lever mounted independently of the trigger and arranged to be tilted thereby, an air-piston connected with one end of said lever and a spring operatively arranged with respect to said piston substantially as set forth.

13. In a multibarrel firearm having a plural number of hammers, sears and appurtenant parts, a trigger, a pivoted hammer-controlled coupler mounted upon each of the sears, a shiftable block borne by the trigger and underlying said sears, a pivoted lever mounted independently of the trigger and arranged to be tilted thereby, a tubular air-piston connecting with one end of said lever and a spring arranged within said piston substantially as set forth.

14. In a multibarrel firearm having a plural number of hammers, sears and appurtenant parts, means intermediate the trigger and sears whereby either of the hammers may be released by the single trigger, a recess formed in the gun-stock, a cylinder located in said recess and supported by the gun-stock, a piston fitting said cylinder, a lever pivoted independently of the trigger and normally disconnected therefrom, said lever having one end in operative engagement with the piston, whereby said piston will be moved by and will control said lever upon interengagement of the trigger and lever.

15. In a multibarrel firearm having a plural number of hammers, sears and appurtenant parts, a trigger, means intermediate the trigger and sears, whereby either hammer may be released by the single trigger, a cylinder inserted through the gun-stock, a piston arranged to move in said cylinder and having an anti-friction bearing connection with a lever, the pivoted lever engaging said piston through the antifriction-bearing, and with its opposite end normally disconnected from the trigger and arranged to connect the trigger and piston for retarding the movements of the trigger when said trigger is actuated to release either of the hammers.

808,965. CLUTCH. ROY L. WOODARD, Richburg, N. Y. Filed Jan. 31, 1905. Serial No. 243,623.

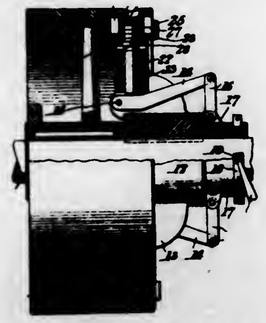

Claim.—1. The combination in a clutch, of a shaft, a loose pulley mounted thereon and having a perforated rib, a collar rigidly secured to the shaft, a plurality of arms projecting from the collar and provided with laterally-extended brackets, radially-movable pins guided by the arms and provided at their outer ends with tool-engaging surfaces accessible through the perforations of the pulley-rim, said pins being provided with peripheral threads, clutching-shoes having threaded openings for the reception of the threaded portions

of the pins and provided with lugs engaging said brackets to prevent independent turning movement of the shoes, said pins being independently adjustable with relation to the shoes to which they are attached, clamping-nuts mounted on the pins for holding the shoes in adjusted position, friction-blocks carried by the shoes, and means for operating the pins.

2. The combination in a clutch, of a shaft, a pulley loose on the shaft, a collar rigid with the shaft, an arm projecting from said collar and provided with a guiding-slot, an operating-lever disposed within the slot and pivoted to the arm, a radially-movable pin supported by the arm and engaging the lever, said pin having a recessed outer end, a clutching-shoe having edge flanges and provided with a central boss having a threaded opening for the reception of the threaded outer end of the pin, there being an opening in the pulley-rim for the insertion of a tool into the recess of said rim, a jam-nut carried by the threaded portion of the pin, brackets extending laterally from the arm and provided with guiding-openings, lugs or flanges depending from the shoe and held between said brackets, pins extending through the guiding-opening of the brackets and having a threaded connection with the shoes, compression-springs mounted on said pins, and nuts carried by the inner threaded ends of said pins for adjusting the stress of the springs.

808,966. **WEFT-REPLENISHING LOOM.** HORACE W. WYMAN, Worcester, Mass.; Mary H. Wyman administratrix of said Horace W. Wyman, deceased. Filed May 11, 1905. Serial No. 259,570.

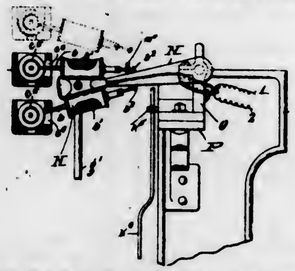

Claim.—1. In a loom, the combination with shifting or drop shuttle-boxes, of a plurality of filling-detector feelers, adapted to enter the shuttles, and having a longitudinal movement and also a movement in the arc of a circle.

2. In a loom, a plurality of filling-detector feelers, to detect substantial exhaustion of filling in the shuttles, said feelers moving in the arc of a circle in a vertical plane.

3. In a loom, the combination with a frame or support having a pivotal movement in a vertical plane, of a plurality of electromagnets carried on said frame or support.

4. In a loom, shifting or drop shuttle-boxes, a frame pivotally supported and carrying a plurality of filling-detector feelers, connections intermediate said frame and the shuttle-boxes, to communicate a pivotal movement to said frame at each movement of the shuttle-boxes, and cause the feelers to move in the arc of a circle so that only the feeler in line with the active shuttle will be in position to detect substantial exhaustion of filling.

5. In a loom, shifting shuttle-boxes, a frame pivotally supported and carrying a plurality of filling-detector feelers, connections intermediate said frame and the shuttle-boxes, to communicate a pivotal movement to said frame at each movement of the shuttle-boxes, and cause the feelers to move in the arc of a circle, a detector-rod, and connections intermediate said rod and the bunter of the filling-change mechanism, to cause said mechanism to operate when said detector-rod moves past the end of a feeler and said bunter.

6. In a loom, the combination with shifting shuttle-boxes, of a plurality of filling-detector feelers, one for each shuttle-box, and means for supporting said feelers, and for moving them with an angular or pivotal motion uniformly with the movement of the shuttle-boxes.

7. In a loom, the combination with shifting shuttle-boxes, and means to move them, of a plurality of electromagnets having movable cores or feelers, a pivotal or angular movable frame carrying said magnets, and means to move said frame to cause said feelers to have an angular or pivotal movement in a vertical plane.

8. In a loom, a plurality of movable filling-detector feelers, and means for supporting the same to cause the detecting ends of said feelers to move with an angular movement.

9. In a loom, a lay, a series of shuttle-boxes movable vertically on said lay and carrying bobbins, a plurality of filling-detector feelers moved in the arc of a circle on a pivoted frame, and said frame having a pivotal motion whereby a feeler will contact only with the bobbin in the active shuttle to detect substantial exhaustion of filling, when the lay is moved to its forward position.

808,967. **MEASURING-SPOON.** WILLIAM H. ARROWSMITH, Oakland, Cal. Filed May 10, 1905. Serial No. 259,771.

Claim.—1. A measuring device, consisting of a tubular case having an extension approximately equal to half the circumference of the tube and a front closed end to said extension, a plug slidable in the tube or extension to limit the containing portion thereof, and a latch by which the plug is locked in position.

2. In a measuring device, a tube having an extension cut down to approximately half the diameter of the tube, said extension having a hemispherical closed end, a plug slidable in the tube and having an extension cut down to correspond with the shape of the tube extension, a slot in the tube having transverse notches, and a spring-latch carried by the plug and adapted to engage with the notches of the tube.

808,968. **SECRET NAIL.** WILLIAM J. BODA, Dayton, Ohio, assignor of one-half to Lee M. Boda, Columbus, Ohio. Filed Mar. 20, 1905. Serial No. 251,716.

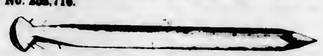

Claim.—1. A secret nail having a substantially elliptical shank, and having a head that is not substantially thicker than the shank.

2. A secret nail, consisting of a substantially elliptical shank, and a substantially elliptical head, said shank tapering toward the base of said head to expose the under surface of the latter.

3. A secret nail, consisting of a substantially elliptical shank, a substantially elliptical head, said shank tapering toward the base of said head, and said head having lower edges extending outward from said shank.

4. A secret nail, consisting of a substantially elliptical shank, a substantially elliptical head, said shank tapering toward the base of said head, and said head having lower edges extending outward from said shank, and having a convex upper surface, whereby said tapered shank is prevented from being injured by misdirected blows.

808,969. **FENCE-POST.** MICHAEL L. BOYCE, Carroll, Iowa. Filed Sept. 11, 1905. Serial No. 277,941.

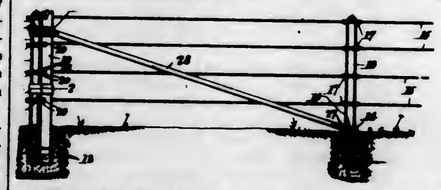

Claim.—1. A fence-post comprising a plurality of units each embodying parallel upright bars rigidly connected at the top, winding-rollers journaled in the bars and serving to space the same, means connecting the units with their planes disposed at an angle each to the other, and a base common to and in which the units are rigidly secured.

2. A fence-post embodying parallel upright bars, a pin extending transversely through the bars and having one end thereof bent at an angle to the adjacent bar, a sleeve embracing the pin between and spacing the bars apart, a collar engaging the bent end of the pin, and a tubular brace seated upon the collar and extending obliquely to an adjacent post.

3. A fence-post embodying parallel upright bars, means rigidly connecting the bars, a winding-roller between and journaled in the bars and provided with an angular winding-shank, a socket formed partly in the bar and partly in the roller-trunnion, and a pin engaging the socket.

808,970. **ROPE-CLAMP.** JOSEPH J. CLARK, Athens, Ohio. Filed Sept. 18, 1905. Serial No. 279,014.

Claim.—1. A rope clamp or fastener comprising a slender body enlarged at one end and having the rope or cord coöperating therewith attached to the opposite end and folded and secured to the body by means of a half-hitch, and a link slidable upon the folded end portion of the rope or cord.

2. A rope clamp or fastener comprising a slender body having an eye at one end and a rounded weighted head at the opposite end, the rope or cord being adapted to be attached to said eye and to be secured to the body or stem by means of a half-hitch.

3. In combination, a rope or cord, a clamp comprising a stem or slender body having a weighted head of rounded form at one end and an eye at the opposite end, said rope or cord being attached to the eye and secured to the body by means of a half-hitch, and a link slidable upon the folded end portion of the rope or cord.

808,971. **BEVEL-GAGE FOR HANDSAWS.** HUGH CONDRON, Vancouver, Canada. Filed Sept. 26, 1905. Serial No. 280,134.

Claim.—1. As a bevel-gage, the combination with a handsaw, of a bevel-bar pivotally mounted on each side of the blade of the saw adjacent to the handle so as to be susceptible of movement in planes parallel to the face of the blade, an open-jawed link member the jaw ends of which are connected one to each free end of the bevel-bar, a seat member secured to the upper side of the handle, such seat member having upward projections to engage the width of the link, a screw secured in the seat member and projecting upward through the jaw of the link, and a milled head-nut having a tapered portion to enter between the jaws of the link and tighten them against the width-engaging projections of the seat member.

2. As a bevel-gage, the combination with a handsaw, of a bevel-bar pivotally mounted on each side of the blade adjacent the handle, a forked link-bar pivotally secured to the bevel-bar at its free end and straddling the saw-blade, and means for clamping the link-bar in position, substantially as shown and described.

3. As a bevel-gage, the combination with a handsaw, of a bevel-bar pivotally mounted on each side of the blade adjacent the handle, a forked link-bar pivotally secured to each bevel-bar at its free end and straddling the saw-blade, means for clamping the link-bar in position, said last-named means comprising a seat member secured to the handle, said seat member having a screw portion projecting upwardly through the link member and a nut for securing the link member against the seat member, substantially as shown and described.

4. As a bevel-gage, the combination with a handsaw, of a bevel-bar, pivotally mounted on each side of the blade adjacent the handle, a forked link-bar pivotally secured to each bevel-bar at its free end and straddling the saw-blade, means for clamping the link-bar in position, said last-named means comprising a seat member secured to the handle, said seat member having a screw portion projecting upwardly through the link member and a nut for securing the link member against the seat member, and coöperating scale-marks on the link member and seat member to indicate the angular adjustment of the bevel-bar substantially as shown and described.

808,972. **SHREDDER-FEEDER.** GEORGE W. CRANE, Vesterburg, Ind. Filed June 23, 1904. Serial No. 213,670.

Claim.—1. In a feeder for shredders, the combination, with an endless carrier, of a pressure-roller journaled above said carrier and coöperating therewith, and a ratchet driving connection for said pressure-roller yieldable in the direction of feed, for the purpose set forth.

2. In a feeder for shredders, the combination, with an endless carrier provided with material-engaging means yieldable in the direction of movement of the carrier, a pressure-roller journaled above said carrier and coöperating therewith, and a ratchet driving connection for said roller yieldable in the direction of the movement of the carrier.

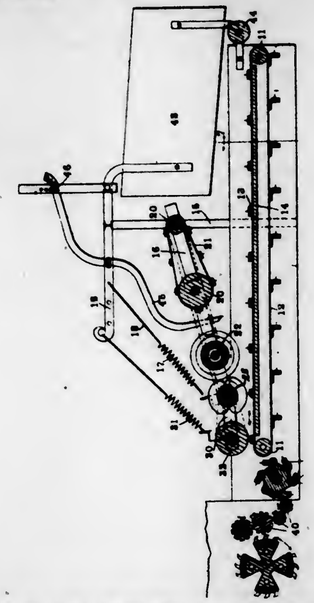

3. In a feeder for shredders, the combination, with an endless carrier, of a frame pivoted at one end above said carrier and extending downward and forward, an adjustable yielding support for the forward end of said frame, a pair of rollers journaled in said frame at its rear end, a raddle arranged over said rollers, a band-cutter roller journaled in said frame in front of said raddle, a spreader-roller journaled in said frame in front of the band-cutter roller, a supplemental frame pivoted to the forward free end of the first-mentioned frame, a yielding adjustable support for the free end of said supplemental frame, and a pressure-roller journaled in the forward end of said supplemental frame.

4. In a feeder for shredders, the combination, with an endless carrier, of a feeding-carrier arranged above said endless carrier and movable toward and from said endless carrier, band-cutting mechanism arranged above the carrier in advance of said feeding-carrier, and a retarding-rake independent of and arranged between said feeding-carrier and said band-cutting mechanism and projecting toward the endless carrier.

808,973. **DUMPING-WAGON.** GEORGE W. CRANE, Vesterburg, Ind. Filed June 5, 1905. Serial No. 263,260.

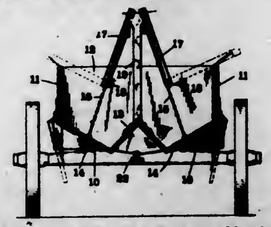

Claim.—1. In a dumping-wagon, the combination, with the bed-frame, of a swinging bottom therefor, a swinging arm, a connection between said swinging arm and the free end of the swinging bottom member, and means for limiting the swing of said swinging arm in one direction at a position slightly beyond the dead-center relative to the swinging bottom and the connection between said bottom and said lever.

2. In a dumping-wagon, the combination, with the main bed, of a swinging bottom member therefor normally tending to open by reason of its weight, a substantially vertically swinging arm pivoted on said bed, a connection between said arm and the free end of said swinging bottom member, and means for limiting the movement of said arm in one direction to a point where the connection between said arm and the swinging bottom member is slightly past the dead-center.

3. In a dumping-wagon, the combination, with the main bed, of a swinging bottom member for a portion thereof mounted upon a substantially longitudinal axis, a second swinging bottom member for another portion of said head and mounted upon a transverse axis, an operating-lever mounted to swing in a substantially vertical plane, connections between said lever and each of said swinging bottoms, and means for limiting the swing of said lever at a point slightly beyond its dead-center.

808,974. PROTECTOR FOR PNEUMATIC TIRES. HENRI DAVID, Paris, France. Filed Jan. 20, 1904. Serial No. 189,856.

Claim.—An antislipping removable protector for pneumatic tires, comprising a series of independent narrow metallic strips secured upon and extending transversely of the tire, each of said strips being bent at two points to form a central tread portion and diagonally-arranged substantially straight sides having eyes at their extremities and fastening means passed through said eyes to hold the strips upon the tire.

808,975. FRICTION-CLUTCH. HERMANN G. DITTRENNER, Minneapolis, Minn., assignor to Diamond Iron Works, a Corporation of Minnesota. Filed Aug. 29, 1904. Serial No. 223,800.

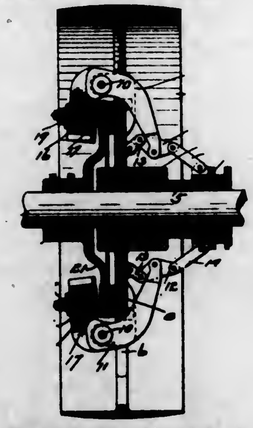

Claim.—1. The combination, with a shaft, of a loose pulley thereon, a member fixed on said shaft and having a surface to be gripped, arms pivoted on said pulley and provided with gripping-blocks to engage said member, a sliding sleeve, plates pivotally connected intermediate to their ends on said arms, and links pivotally connecting the ends of said plates with said pulley and said sleeve, the links between said plates and sleeve being substantially at right angles to the latter when the clutch is locked.

2. In a friction-clutch, the combination, with a pulley, of the pivoted arms 11 thereon, a clutch member plates 12 having a pivotal connection with said arms, links 13 connecting one end of said plates with said pulley, a sliding sleeve, and links 14 connecting said sleeve with the other ends of said plates, the pivots of the links 13 and the pivotal point of the links 14 on the plates 12 being substantially in line when the parts are in their locked position, substantially as described.

3. The combination, with a shaft, of a loose pulley thereon, a friction-disk fixed on said shaft and having a gripping-surface, arms pivoted on said pulley and provided with gripping-blocks, a sliding sleeve, links connecting said arms with said sleeve and with a fixed pivot on said pulley, the links connecting said arms with said sleeve exerting an outward drawing action on said arms, and the links connecting said arms with said fixed pivot exerting an outward thrust on said arms during their final movement to seat said blocks, substantially as described.

4. The combination, with a shaft, of a loose pulley thereon, a friction-disk fixed on said shaft and having a gripping-surface, arms pivoted on said pulley and provided with gripping-blocks, a sliding sleeve, plates pivoted at points intermediate to their ends on said arms, links connecting the ends of said plate with said sliding sleeve and with fixed pivots on said pulley, the links connecting said plates with said sleeve exerting an outward drawing action on said arms, and the links connecting said plates and said fixed pivots exerting an outward pushing or thrusting action on said arms during their final movement.

5. The combination, with a shaft and a loose pulley thereon, a friction-disk fixed on said shaft, arms pivoted on said pulley and having gripping-blocks to engage said disk, a sliding sleeve, links connecting said arms with said sleeve and with fixed pivots on said pulley, and the links connecting said arms and said fixed pivots serving as stops for said arms when in their inoperative position, substantially as described.

6. In a friction-clutch, the combination, with a revolving member, of a clutch member, arms pivoted on said revolving member and having gripping-blocks to engage said clutch member, a sliding sleeve, toggle mechanisms connecting said arms with said sleeve and with a fixed pivot, the toggle between said arms and said sleeve exerting an initial drawing action on said arms and the toggle between said arms and said fixed pivot supplementing the action of said sleeve-toggle by exerting a final outward thrust on said arms, and the connection of said arms with said toggle mechanisms being between their connections with said sleeve and said fixed pivot, substantially as described.

808,976. WOVEN FABRIC. THOMAS B. DORNAN, Philadelphia, Pa. Filed Jan. 12, 1905. Serial No. 240,734.

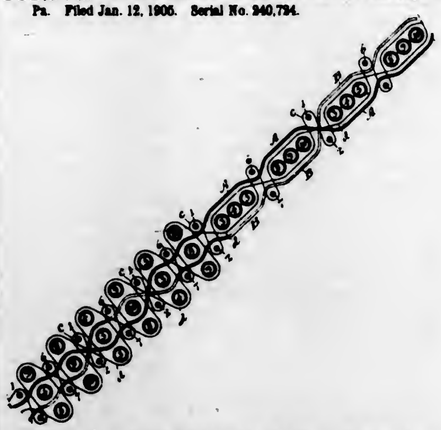

Claim.—1. A woven fabric having figuring weft-threads arranged in one plane in portions of the fabric and arranged in three planes in other portions of the fabric.

2. A woven fabric having figuring weft-threads arranged in one plane in portions of the fabric and arranged in three planes in other portions of the fabric and having warp-threads tying the weft-threads together from surface plane to surface plane at each side of each surface weft-threads at all portions where the figuring weft-threads are arranged in three planes.

3. A woven fabric having figuring warp-threads and figuring weft-threads, the figuring weft-threads being arranged in one plane in portions of the fabric and in three planes in other portions of the fabric, and the binder weft-threads being arranged in two planes.

4. A woven fabric having binder warp-threads and figuring warp-threads and figuring weft-threads, the figuring weft-threads being arranged in one plane in portions of the fabric and arranged in three planes in other portions of the fabric.

5. A woven fabric having binder warp-threads and figuring warp-threads and figuring weft-threads, the figuring weft-threads being arranged in one plane in portions of the fabric and in three planes in other portions of the fabric, and the binder warp-threads tying the weft-threads together from surface plane to surface plane at each side of each weft-thread at all portions where the figuring weft-threads are arranged in three planes.

6. A woven fabric having figuring weft-threads arranged in one plane in portions of the fabric and arranged in three planes in other portions of the fabric, and also having weft-threads arranged in two planes in other portions of the fabric.

7. A woven fabric having figuring weft-threads arranged in one plane in portions of the fabric and arranged in three planes in other portions of the fabric and also having weft-threads arranged in two planes in other portions of the fabric and having warp-threads tying the weft-threads together from surface plane to surface plane at each side of each surface weft-thread at portions where the weft-threads are arranged in two planes and three planes.

8. A woven fabric having figuring warp-threads and binder warp-threads and having figuring weft-threads arranged in one plane in portions of the fabric and arranged in three planes in other portions of the fabric and also having weft-threads arranged in two planes in other portions of the fabric.

9. A woven fabric having figuring warp-threads and binder warp-threads and having figuring weft-threads arranged in one plane in portions of the fabric and arranged in three planes in other portions of the fabric and also having weft-threads arranged in two planes in other portions of the fabric, the binder warp-threads tying the weft-threads together from surface plane to surface plane at each side of each surface weft-thread at all portions where the weft-threads are arranged in two planes and three planes.

10. A woven fabric having figuring weft-threads and binder weft-threads, the figuring weft-threads being arranged in one plane in portions of the fabric and in three planes in other portions of the fabric, and the binder weft-threads being arranged in two planes.

11. A woven fabric having figuring weft-threads and binder weft-threads, the figuring weft-threads being arranged in one plane in portions of the fabric and in three planes in other portions of the fabric, and the binder weft-threads being arranged in two planes, and having warp-threads tying the weft-threads together from surface plane to surface plane at each side of each surface weft-thread at all portions where the weft-threads are arranged in two planes and three planes.

12. A woven fabric having figuring warp-threads and figuring weft-threads and binder weft-threads, the figuring weft-threads being arranged in one plane in portions of the fabric and in three planes in other portions of the fabric, and the binder weft-threads being arranged in two planes.

13. A woven fabric having figuring warp-threads and binder warp-threads and figuring weft-threads and binder weft-threads, the figuring weft-threads being arranged in one plane in portions of the fabric and in three planes in other portions of the fabric, and the binder weft-threads being arranged in two planes, and the binder warp-threads tying the weft-threads together from surface plane to surface plane at each side of each surface weft-thread at all portions where the weft-threads are arranged in two planes and three planes.

14. A woven fabric having figuring warp-threads and binder warp-threads and figuring weft-threads and binder weft-threads, the figuring weft-threads being arranged in one plane in portions of the fabric and arranged in three planes in other portions of the fabric and the figuring warp-threads acting as stuffers between the surface figuring weft-threads and intermediate figuring weft-threads, and the figuring weft-threads acting as stuffers between the surface figuring warp-threads.

15. A woven fabric having figuring warp-threads and binder warp-threads and figuring weft-threads and binder weft-threads, the figuring weft-threads being arranged in one plane in portions of the fabric and in three planes in other portions of the fabric, and the binder weft-threads being arranged in two planes and the figuring warp-threads acting as stuffers between the surface figuring weft-threads and intermediate figuring weft-threads, and the figuring weft-threads acting as stuffers between the surface figuring warp-threads.

16. A woven fabric having figuring warp-threads and binder warp-threads and figuring weft-threads and binder weft-threads, the figuring weft-threads being arranged in one plane in portions of the fabric and arranged in three planes in other portions of the fabric, the binder warp-threads tying the weft-threads together from surface plane to surface plane at each side of each surface weft-thread at all portions where the weft-threads are arranged in two planes and three planes, and the figuring warp-threads acting as stuffers between the surface figuring weft-threads and intermediate figuring weft-threads, and the figuring weft-threads acting as stuffers between the surface figuring warp-threads.

17. A woven fabric having figuring warp-threads and binder warp-threads and figuring weft-threads and binder weft-threads, the figuring weft-threads being arranged in one plane in portions of the fabric and in three planes in other portions of the fabric, and the binder weft-threads being arranged in two planes, the binder warp threads tying the weft-threads together from surface plane to surface plane at each side of each surface weft-thread at all portions where the weft-threads are arranged in two planes and three planes and the figuring warp-threads acting as stuffers between the surface figuring weft-threads and intermediate figuring weft-threads, and the figuring weft-threads acting as stuffers between the surface figuring warp-threads.

18. A woven fabric having figuring weft-threads and binder weft-threads and figuring warp-threads and binder warp-threads, the binder warp-threads binding the figuring weft-threads with three figuring weft-threads in a loop of binder warp-threads.

19. A woven fabric having figuring weft-threads and binder weft-threads and figuring warp-threads and binder warp-threads, the binder warp-threads binding the figuring weft-threads with a plurality of figuring weft-threads in a loop of binder warp-threads, and each of such loops in the weft effects including a figuring weft-thread at each surface of the fabric and a figuring weft-thread between the two surface weft-threads.

20. A woven fabric having figuring weft-threads and binder weft-threads and figuring warp-threads and binder warp-threads, the binder warp-threads binding the figuring weft-threads with three figuring weft-threads in a loop of binder warp-threads and each of such loops in warp effects having the figuring weft-threads arranged in one plane.

21. A woven fabric having figuring weft-threads and binder weft-threads and figuring warp-threads and binder warp-threads, the binder warp-threads binding the figuring weft-threads with a plurality of figuring weft-threads in each loop of binder warp-threads, each of such loops in the weft effects including a figuring weft-thread at each surface of the fabric and a figuring weft-thread between the two surface weft-threads and each of such loops in warp effects having the figuring weft-threads arranged in one plane.

22. A woven fabric having figuring weft-threads and binder weft-threads and figuring warp-threads and binder warp-threads, the binder warp-threads binding the figuring weft-threads with a plurality of figuring weft-threads in a loop of binder warp-threads, each of such loops in the weft effects including a figuring weft-thread at each surface of the fabric and a figuring weft-thread between the two surface weft-threads, the figuring warp-threads acting as stuffers between the surface figuring weft-threads and intermediate figuring weft-threads, and the adjacent figuring weft-threads acting as stuffers between the surface figuring warp-threads.

23. A woven fabric having three figuring weft-threads and binder weft-threads and two figuring warp-threads and binder warp-threads, the binder warp-threads binding the figuring weft-threads with three figuring weft-threads in a loop of binder warp-threads, each of such loops in warp effects having the figuring weft-threads arranged in one plane, the figuring warp-threads acting as stuffers between the surface figuring weft-threads and intermediate figuring weft-threads and the figuring weft-threads acting as stuffers between the surface figuring warp-threads.

24. A woven fabric having figuring weft-threads and binder weft-threads and figuring warp-threads and binder warp-threads, the binder warp-threads binding the figuring weft-threads with a plurality of figuring weft-threads in each loop of binder warp-threads, each of such loops in the weft effects including a figuring weft-thread at each surface of the fabric and a figuring weft-thread between the two surface weft-threads and each of such loops in warp effects having the figuring weft-threads arranged in one plane, the figuring warp-threads acting as stuffers between the surface figuring weft-threads and intermediate figuring weft-threads and the figuring weft-threads acting as stuffers between the surface figuring warp-threads.

25. A woven fabric having figuring weft-threads and binder weft-threads and figuring warp-threads and binder warp-threads,

the binder warp-threads binding the binder weft-threads with a single binder weft-thread in a loop of binder warp-threads and binding the figuring weft-threads with a plurality of figuring weft-threads in a loop of binder warp-threads, each of such loops which contains figuring weft-threads including, in the weft effects, a figuring weft-thread at each surface of the fabric and a figuring weft-thread between the two surface weft-threads.

26. A woven fabric having figuring weft-threads and binder weft-threads and figuring warp-threads and binder warp-threads, the binder warp-threads binding the binder weft-threads with a single binder weft-thread in a loop of binder warp-threads and binding the figuring weft-threads with three figuring weft-threads in a loop of binder warp-threads, each of such loops which contains figuring weft-threads having, in the warp effects, the figuring weft-threads arranged in one plane.

27. A woven fabric having figuring weft-threads and binder weft-threads and figuring warp-threads and binder warp-threads, the binder warp-threads binding the binder weft-threads with a single binder weft-thread in a loop of binder warp-threads and binding the figuring weft-threads with a plurality of figuring weft-threads in a loop of binder warp-threads, each of such loops which contains figuring weft-threads including, in weft effects, a figuring weft-thread at each surface of the fabric and a figuring weft-thread between the two surface weft- threads, and having, in warp effects, the figuring weft-threads arranged in one plane.

28. A woven fabric having figuring weft-threads and binder weft-threads and figuring warp-threads and binder warp-threads, the weft-threads being arranged in sets of ten weft-threads each, each set comprising, in succession, two binder weft-threads, three figuring weft-threads, two binder weft-threads and three figuring weft-threads, the binder warp-threads being arranged in two sets and binding the figuring weft-threads with three figuring weft-threads in a loop of binder warp-threads.

29. A woven fabric having figuring weft-threads and binder weft-threads and binder warp-threads, the weft-threads being arranged in sets of ten weft-threads each, six figuring weft-threads and four binder weft-threads in each set, the binder warp-threads binding the figuring weft-threads with three figuring weft-threads in a loop of binder warp-threads.

30. A woven fabric having figuring weft-threads and binder weft-threads and binder warp-threads, the weft-threads being arranged in sets of ten weft-threads each, six figuring weft-threads and four binder weft-threads in each set, the binder warp-threads binding the binder weft-threads with a single binder weft-thread in a loop of binder warp-threads and binding the figuring weft-threads with three figuring weft-threads in a loop of binder warp-threads.

31. A woven fabric having figuring weft-threads and binder weft-threads and figuring warp-threads and binder warp-threads, the weft-threads being arranged in sets of ten weft-threads each, each set comprising, in succession, two binder weft-threads, three figuring weft-threads, two binder weft-threads and three figuring weft-threads, the binder warp-threads being arranged in two sets and binding the binder weft-threads with a single binder weft-thread in a loop of binder warp-threads and binding the figuring weft-threads with three figuring weft-threads in a loop of binder warp-threads.

32. A woven fabric having figuring weft-threads and binder weft-threads and figuring warp-threads and binder warp-threads, the weft-threads being arranged in sets of ten weft-threads each, each set comprising, in succession, two binder weft-threads, three figuring weft-threads, two binder weft-threads and three figuring weft-threads, the figuring warp-threads being arranged in two sets and the binder warp-threads being arranged in two sets and binding the binder weft-threads with a single binder weft-thread in a loop of binder warp-threads and binding the figuring weft-threads with three figuring weft-threads in a loop of binder warp-threads, the figuring warp-threads acting as stuffers between the surface figuring weft-threads and the intermediate figuring weft-threads and the figuring weft-threads acting as stuffers between the surface figuring warp-threads, substantially as set forth.

808,977. **FRONT BOLSTER AND BODY-SUPPORT FOR CHILDREN'S WAGONS.** GEO. P. EHARE, Toledo, Ohio. Filed May 8, 1905. Serial No. 259,593.

Claim.—1. In a bolster and body-support for a child's wagon, the combination with a body-support comprising a centrally-perforated bearing-plate and diverging arms secured to the bearing-plate, of a bolster comprising a single metal strap bent to form the parallel tongue-straps 3 at opposite ends of the central portion 2, the tongue-bounds 4, the axle-bearings 5, the bridge-supports 6, the parallel bridges 7, and the oppositely-extending truss-arms 8 having the angled end portions 9, the end portions 9 and the tongue-straps 3 having perforations alined with the bearings 5, a bearing-plate 13 conjoining the bridges 7, and means to pivot the bearing of the bolster to the bearing of the support.

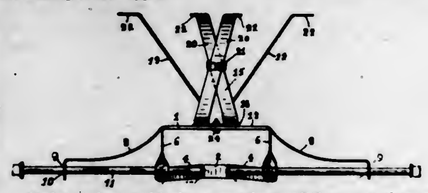

2. In a bolster and body-support for a child's wagon, the combination with a front-axle truss-bolster having a central bearing, of a body-support mounted on the bearing, comprising a bearing-disk and a pair of complementary truss-supports secured to the disk, said truss-supports each being formed of a single piece of metal strap bent to form an arm at each end of a central portion, said central portion being secured in parallel relation to the top of the disk bearing, and the arms at one end of the base thus formed being reversely quarter-twisted and relatively diverging laterally from the base, and the arms at the opposite end being bent at obtuse angles to the base, and relatively converging and crossing, all of the arms having their free end portions perforated and angled outward in a common plane, and a pin-bolt centrally pivoting the bearing of the bolster to the bearing of the support.

808,978. **MACHINE FOR DISENTANGLING FIBERS.** DANIEL C. FISHER, Boston, Mass. Filed Aug. 13, 1904. Serial No. 220,626.

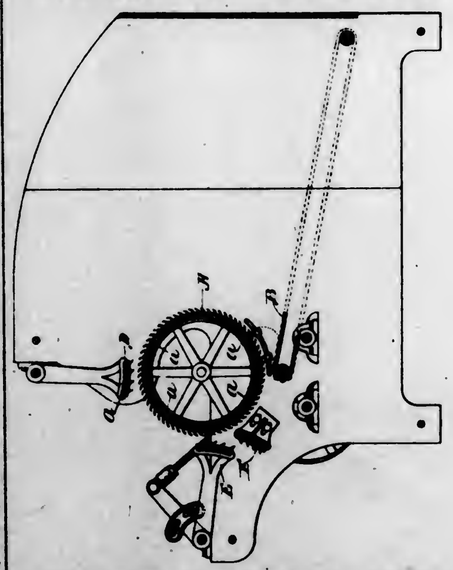

Claim.—1. A machine for disentangling fibers comprising a carrying-cylinder with teeth to carry the fleece past a vibrating segment; that vibrating segment with like teeth arranged in ranks but opposed to the teeth of the carrying-cylinder; and means to remove the fleece after it has been carried by the carrying-cylinder past the action of the vibrating segment, all combined to operate substantially as set forth.

2. A machine for disentangling fibers comprising a carrying-cylinder with teeth to carry the fleece past a primary vibrating segment; that primary vibrating segment with like teeth arranged in ranks but opposed to the teeth of the carrying-cylinder; and a secondary vibrating segment with like teeth but opposed to the teeth

of the primary segment, all combined to operate substantially as set forth.

3. In combination a toothed carrying-cylinder; a primary segment; a secondary segment; and means to adjust the stroke of each segment independently of the other, all substantially as described.

808,979. **SEEDBOX FOR GRAIN-DRILLS.** CHARLES L. FOWLE, Dowagiac, Mich., assignor to The Dowagiac Manufacturing Company, Dowagiac, Mich. Filed Dec. 1, 1902. Serial No. 133,426.

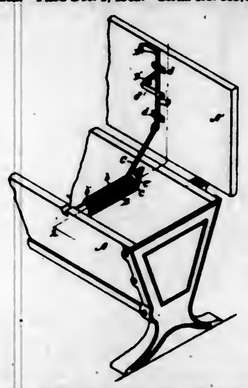

Claim.—1. In a device of the class described, the combination of a suitable box; a cover hinged thereto; a bracket B transversely supported in said box, having a longitudinal slot *b* with enlargements *b'* at its ends; a rock-shaft D carried by said cover; a spring *d'* on said rock-shaft adapted to retain the same in its initial position; a rod or link C pivotally secured to the end of said rock-shaft, having a laterally-projecting portion C' adapted to engage said slot *b* and slide therein when partially withdrawn; and a catch D'' on said rock-shaft adapted to engage said bracket B when the cover is closed, whereby said cover is adjustably retained in either its open or closed position, as specified.

2. In a device of the class described, the combination of a suitable box; a cover hinged thereto; a bracket B transversely supported in said box, having a longitudinal slot *b* with an enlargement; a rock-shaft D carried by said cover; a spring *d'* on said rock-shaft adapted to retain the same in its initial position; a rod or link C pivotally secured to the end of said rock-shaft, having a laterally-projecting portion C' adapted to engage said slot *b* and slide therein when partially withdrawn; and a catch D'' on said rock-shaft adapted to engage said bracket B when the cover is closed, whereby said cover is adjustably retained in either its open or closed position, as specified.

3. In a device of the class described, the combination of a suitable box; a cover hinged thereto; a bracket B transversely supported in said box, having a longitudinal slot *b* with enlargements *b'* at its ends; a rock-shaft D carried by said cover; a rod or link C pivotally secured to the end of said rock-shaft, having a laterally-projecting portion C' adapted to engage said slot *b* and slide therein when partially withdrawn; and a catch D'' on said rock-shaft adapted to engage said bracket B when the cover is closed, whereby said cover is adjustably retained in either its open or closed position, as specified.

4. In a device of the class described, the combination of a suitable box; a cover hinged thereto; a bracket B transversely supported in said box, having a longitudinal slot *b* with an enlargement; a rock-shaft D carried by said cover; a rod or link C pivotally secured to the end of said rock-shaft having a laterally-projecting portion C' adapted to engage said slot *b* and slide therein when partially withdrawn; and a catch D'' on said rock-shaft adapted to engage said bracket B when the cover is closed, whereby said cover is adjustably retained in either its open or closed position, as specified.

5. In a device of the class described, the combination of a suitable box; a cover hinged thereto; a bracket B transversely supported in said box having a longitudinal slot *b* with enlargements *b'* at its ends; a rock-shaft D carried by said cover; a spring *d'* on said rock-shaft adapted to retain the same in its initial position; a rod or link C pivotally secured to the end of said rock-shaft, having a laterally-projecting portion C' adapted to engage said slot *b* and slide therein when partially withdrawn, whereby said cover is adjustably retained in either its open or closed position, as specified.

6. In a device of the class described, the combination of a suitable box; a cover hinged thereto; a bracket B transversely supported in said box, having a longitudinal slot *b* with an enlargement; a rock-shaft D carried by said cover; a spring *d'* on said rock-shaft adapted to retain the same in its initial position; a rod or link C pivotally secured to the end of said rock-shaft, having a laterally-projecting portion C' adapted to engage said slot *b* and slide therein when partially withdrawn, whereby said cover is adjustably retained in position, as specified.

7. In a device of the class described, the combination of a suitable box; a cover hinged thereto; a bracket supported in said box having a longitudinal slot enlarged at its ends; a rock-shaft carried by said cover; a spring for holding the said rock-shaft under tension; a rod or link having a laterally-projecting portion adapted to engage said enlargements at the end of said slot, and to slide in said slot when partially withdrawn, for the purpose specified.

8. In a device of the class described, the combination of a suitable box; a cover hinged thereto; a bracket supported in said box having a longitudinal slot containing an enlargement; a rock-shaft carried by said cover; a spring for holding the said rock-shaft under tension; a rod or link having a laterally-projecting portion adapted to engage said enlargement and to slide in said slot when partially withdrawn, for the purpose specified.

9. In a device of the class described, the combination of a suitable box; a cover hinged thereto; a bracket supported in said box having a longitudinal slot enlarged at its ends; a rock-shaft carried by said cover; a rod or link having a laterally-projecting portion adapted to engage said enlargements at the ends of said slot and to slide in said slot when partially withdrawn, for the purpose specified.

10. In a device of the class described, the combination of a suitable box; a cover hinged thereto; a bracket supported in said box having a longitudinal slot containing an enlargement; a rock-shaft carried by said cover; a rod or link having a laterally-projecting portion adapted to engage said enlargement and to slide in said slot when partially withdrawn, for the purpose specified.

11. The combination of a box; a cover hinged thereon; a latch within said box arranged to automatically lock said cover in its open and in its closed positions; and a lever adapted to release the said latch, the said lever projecting outside of said box, for the purpose specified.

12. The combination of a box; a cover hinged thereon; a latch within said box, arranged to support and automatically lock said cover in its open position; and a lever for releasing said latch, the said lever projecting outside of the said box, for the purpose specified.

808,980. **BASE-BALL CATCHER'S MITT.** JOHN GAMBLE, Philadelphia, Pa., assignor to George A. Reach, Philadelphia, Pa. Filed Apr. 17, 1905. Serial No. 256,004.

Claim.—1. A base-ball mitt comprising a palm portion and back portion, each having a thumb extension, an integral flange extending rearwardly from the palm portion, lacing detachably connecting the flange with the back portion, a removable pad between the front and back portions, and a pocket formed in the front portion in close proximity to the thumb extension, substantially as described.

2. A base-ball mitt comprising a palm portion and a back portion, each having a thumb extension, an integral rearwardly-extending flange integral with said palm portion and narrowing in width between the thumb extension and body, lacing detachably connecting the rear edge of the flange with the back portion, and a pocket formed at the point where the said flange is of reduced width, substantially as described.

808,981. **TOOL-HOLDER.** CLARENCE L. GOODRICH, Hartford, Conn., assignor to Pratt & Whitney Company, Hartford, Conn., a Corporation of New Jersey. Filed Dec. 27, 1904. Serial No. 238,549.

Claim.—1. A holder for a screw-cutting tool comprising a pair of members, and means for connecting said members so that one will gradually yield in a spiral path while the tool is in operation.

2. A holder for a screw-cutting tool comprising a fixed member and a movable tool-carrying member, and guides on one member entering grooves in the other member, and constructed to permit arcuate movement of the movable member while the tool is cutting a thread.

3. The combination, with a fixed member, of guides having inclines, and rigid with said member; and a longitudinally-movable tool-carrying member having grooves for the reception of said guides, one wall of each groove having an incline bearing against its guide.

4. The combination, with a fixed member having inclined guides, of a tool-carrying member having grooves wider than said guides, one wall of each groove having a bearing-point on the inclined surface of its guide; and means for connecting the members for longitudinal sliding movement.

5. The combination, with a fixed head having a tubular shank, of a tool-carrying head having a shouldered stem inserted in said shank; a stop for limiting the inward movement of the tool-carrying head; a collar loose on the stem, and adapted to bear against a stop in the bore of the shank; a spring bearing against said collar; and a device on the shank for retaining the spring.

6. The combination, with a pair of devices, one of which is reciprocable with relation to the other, of inclined clutching guides carried by one device, and bearing-surfaces on the other device, and in engagement with said guides, whereby progressive arcuate movement of one device with relation to the other is permitted, to avoid binding of the parts when one device moves toward and from the other.

808,982. **BOILER-FLUE CLEANER.** ANDREAS GRÖNVALD, New Haven, Conn., assignor of one-half to Charles A. Bradley, Woodbridge, Conn. Filed May 15, 1905. Serial No. 260,453.

Claim.—1. In a boiler-flue cleaner, the combination with a header, vertically-arranged cleaning-pipes connected therewith and opening therefrom, a valve-tube within said header and provided with two or more series of openings each series adapted to open communication between the header and a portion of the cleaner-pipes, and close connection between the remaining portion of the cleaning-pipes and the header, substantially as described.

2. In a boiler-flue cleaner comprising a horizontally-arranged header, vertically-arranged perforated cleaning-pipes connected thereto and communicating therewith, a valve-tube within said header and formed with two or more series of openings each series adapted to open communication between said header and a portion of said cleaning-pipes, the several sets of openings arranged out of line with each other whereby when communication is opened between a portion of the pipes and the header the communication between the remaining pipes and the header will be closed, and a handle connected with said valve-tube and extending outward through said header, substantially as described.

808,983. **TELEPHONE-HOLDER.** LOUIS B. HALLOWELL, New York, N. Y., assignor of one-half to Thomas L. Ricart, Philadelphia, Pa. Filed Mar. 28, 1905. Serial No. 252,857.

Claim.—1. In a device of the class described, a tubular supporting-arm, a holder pivotally mounted to one end thereof, a base upon which said arm is pivoted, an adjusting-rod extending through said arm from said holder to said base, and a spring carried by the arm and connected to said rod to be placed under tension in the movement of said arm in one direction.

2. In a device of the class described, a tubular supporting-arm, a holder pivotally mounted at one end thereof, a base upon which said arm is pivoted, an adjusting-rod extending through said arm from said holder to said base, and a tension-spring surrounding said rod and bearing on said arm.

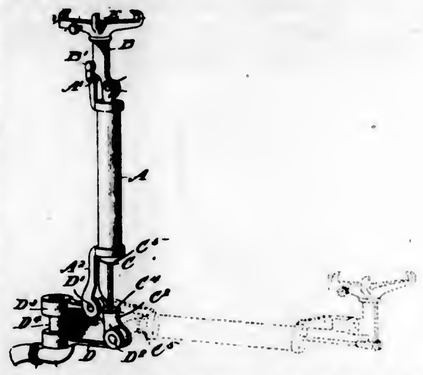

3. In a device of the class described, a tubular supporting-arm, a holder pivotally mounted to one end thereof, a base, an adjusting-rod extending through said arm from said holder to said base, a tension-spring surrounding said rod and bearing on said arm, and an attachment for pivotally supporting said tubular arm and base.

4. In a device of the class described, a tubular arm having pivoting-lugs at each end disposed at one side of the axial center of the arm, a holder pivoted to one of said lugs and having a rod connection in alinement with the end of said arm, a base to which the opposite lug is pivoted provided with a rod connection in alinement with the end of said arm, and a rod secured to the connections upon said holder and base and passing through said arm.

5. In a device of the class described, a tubular arm having pivoting-lugs at each end disposed at one side of the axial center of the arm, a holder pivoted in one of said lugs, a base to which the opposite lug is pivoted, a rod connecting said holder and base and passing through said arm, an apertured partition within said tubular arm, a spring surrounding said rod and bearing at one end against said partition, and an abutment carried upon said rod for the opposite end of said spring.

6. In a device of the class described, a base, a tubular arm pivoted thereto, a holder pivoted at the free end of said arm, a connection pivotally connected to said holder and base, and a spring bearing on said connection and arm and adapted to be placed under an increasing tension in the downward movement of the arm from a vertical to a horizontal plane.

7. In a device of the class described, a tubular supporting-arm, a holder pivotally mounted at one end thereof, a base upon which said arm is pivoted, an adjusting-rod extending through said arm from said holder to said base, a tension-spring bearing upon said rod and holder, a plate carried by the lower end of said rod, and a curved contact-face carried by the lower end of said arm.

8. In a device of the class described, a tubular supporting-arm, a holder pivotally mounted at one end thereof, a base upon which said arm is pivoted, a straight adjusting-rod extending through said arm, curved connectors secured to the opposite ends of said rod and pivoted to the holder and base, and a tension-spring bearing upon said rod and arm.

9. In a device of the class described, a tubular supporting-arm, a holder pivotally connected to the upper portion thereof, a depending coupling from said holder disposed in alinement with the axial center of the arm, a rod extending from said coupling through said arm, and a base provided with pivotal connections for said arm and rod disposed in parallel vertical planes and different horizontal planes.

10. In a device of the class described, a tubular supporting-arm, a holder pivotally connected to the upper portion thereof, a rod pivotally connected to said holder, a spring surrounding said rod and bearing upon said arm to be placed under tension in the travel of said arm, a base provided with pivotal connections for said arm and rod disposed in parallel vertical planes and different horizontal planes, an attachment for said base provided with a pintle, ears upon the base to receive said pintle, and a securing-plate for said attachment.

11. In a device of the class described, a tubular supporting-arm, a holder connected thereto, a rod pivotally connected to said holder, a base pivotally connected to said arm and rod, an attaching device for said base comprising a plate having a threaded socket secured thereto, a pintle provided with an angularly-disposed threaded shank to enter said socket, and a pivoting-lug carried by the base to seat upon said pintle.

808,984. **SIGNALING APPARATUS.** JAMES T. HANRAY, New York, N. Y. Filed June 30, 1903. Serial No. 164,713.

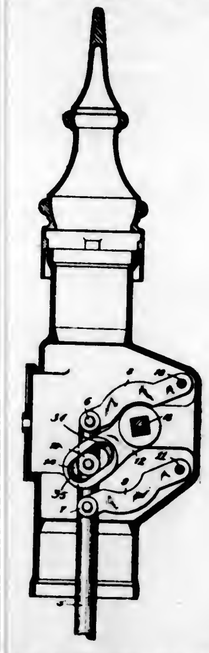

Claim.—1. In a signaling apparatus a crank-arm and means for varying the distances between its centers during the operation thereof whereby the leverage on said arm is substantially constant.

2. In a signaling apparatus a crank-arm and means for actuating the same, the parts being so arranged that the leverage on the crank-arm is substantially constant.

3. In a signaling apparatus a rod, a crank-arm and means actuated by said rod adapted to travel on said arm so as to vary the distances between the centers of said arm during the operation thereof whereby the leverage on said arm is substantially constant.

4. In a signaling apparatus, a rod, means for guiding said rod, a shaft, an arm mounted on said shaft and means actuated by said rod adapted to travel on said arm so as to vary the distances between the centers of said arm during the operation thereof whereby the leverage on said arm is substantially constant.

5. In a signaling apparatus a rod, a crank-arm and means for guiding said rod so as to exert a substantially constant leverage on said arm.

6. In a signaling apparatus a rod, links adapted to guide said rod, a shaft, a slotted arm mounted on said shaft and a roller carried by said rod and adapted to travel in said slot.

7. In a signaling apparatus a rod, links adapted to guide said rod and swinging on a predetermined radius, a shaft, a slotted arm mounted on said shaft and adapted to swing on a radius different from that of the guiding-links and a roller carried by said rod adapted to travel in the slot.

8. In a signaling apparatus a shaft, a slotted crank-arm mounted on said shaft, said slot being provided with knife-edges at its end.

9. In a signaling apparatus a rod, means for guiding said rod, a shaft, a slotted arm mounted on said shaft, knife-edges at the ends of said slot and a roller carried by said rod and adapted to travel in said slot.

808,985. **METAL PILING.** JAMES J. HAROLD, Jersey City, N. J., assignor, by mesne assignments, to Emma Harold, Jersey City, N. J. Filed Dec. 28, 1904. Serial No. 238,573.

Claim.—1. In piling, flanged beam members and interlocking bolts, said interlocking bolts adapted to receive flanges of said beam members and lock said beam members together.

2. In piling, channel-beams and interlocking bolts, said bolts adapted to receive the flanges of said channel-beams and lock said beams together.

3. In piling, the flanges of channel-beams turned away from each other, and the backs of said channel-beams locked together by interlocking bolts engaging some of said flanges.

4. In piling, flanged beam members and interlocking bolts, said interlocking bolts having looped hooks, and adapted to receive and lock the flanges of said beam members.

808,986. **SHOE-POLISHING STAND.** PETER H. HIXON, Chicago, Ill. Filed Jan. 6, 1905. Serial No. 239,934.

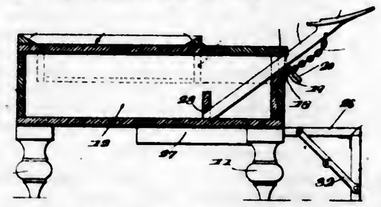

Claim.—In a shoe-polishing stand, a hollow base having spaced seats opening upwardly in its front wall and with a stationary top portion at the rear, a front portion hinged to said stationary top portion and bearing over said seats and closing the open ends of the same, a stop member within said base and bearing on the bottom thereof and provided with recesses in the lower edge in alinement with said seats, and bars extending through said seats and engaging said recesses at their inner ends and with foot-rests at their outer ends.

808,987. **PROCESS OF PRINTING FABRICS.** PAUL JEANNAIRE, and HENRY SCHMID, Mülhausen, Germany, assignors to Arnold Print Works, North Adams, Mass., a Corporation of Massachusetts. Filed Apr. 6, 1903. Serial No. 151,312. (Specimens.)

Claim.—1. The method of producing designs upon vegetable textile fabrics, which consists primarily, in successively printing thereon, in either order of sequence, two separate constituents whose combination is essential to the formation of a fixed color, in such manner as to superimpose the one upon the other wherever the design is to be produced, that is to say: printing with one of these constituents suitably thickened, a delimiting figure having its area and contour, respectively, corresponding to the field and outline of the ultimate design; and printing with the other remaining constituent suitably thickened, a pattern of decorative detail consisting of predetermined variegations and having, in the aggregate, such extent and shape as, when printed, to cover the spaces occupied by the field of the delimiting figure; next subjecting the fabric so printed to treatment adapted for effecting the combination of the said constituents in the formation of such fixed color, wherever they may have been coincidentally deposited; and finally clearing from the fabric those removable portions of the said constituents which have remained isolated from each other.

2. The method of producing designs upon vegetable textile fabrics, by successively printing thereon, in either order of sequence, but so as to superpose one imprint upon the other wherever the design is to be produced, on the one hand, with a suitably-thickened fixative for a coloring-matter, a delimiting figure having its area and contour, respectively, corresponding to the field and outline of the ultimate design, and, on the other hand, with a suitably-thickened coloring-matter appropriate for such fixative, a decorative pattern of predetermined variegations having, in the aggregate, such extent and shape as, when printed, to cover the spaces occupied by the field of the delimiting figure; then subjecting the fabric so printed to treatment adapted for intimately combining the said fixative and

coloring-matter wherever they may have been coincidently deposited; and finally, clearing from the fabric those portions of the coloring-matter which have remained isolated from the fixative.

808,988. SEPARABLE BUTTON OR STUD. WILLIAM H. KNOWS, Providence, R. I. Filed Mar. 29, 1905. Serial No. 252,745.

Claim.—1. A separable button comprising two button-heads one of which is hollow, and a curved hollow one-piece shank attached to one head and adapted to bear against the other head, said shank being formed with a notch near one end, a spring composed of two curved integral arms, one of said arms being attached to the inner wall of the outer plate of the hollow head, the other of said arms carrying a lug adapted to seat in the notch of the shank, said last-named arm extending into the hollow head, and a link arranged in the hollow head and engaging said last-named arm and extending through an opening in the perimeter of the hollow head.

2. A separable button comprising two heads, one of which is hollow, and a hollow shank carried by one head and bearing against the other head, said shank being formed with a notch near one end, a spring composed of two integral arms, the ends of both said arms being located in said hollow head and the end of one of said arms being attached within the hollow head while the other end is free, said free end carrying a lug adapted to seat in the notch in the shank, and a link arranged in the hollow head, and engaging said free end, and extending through an opening in the perimeter of the hollow head.

808,989. PORTABLE STAGING. THOMAS H. KINGSTON, Somerville, Mass. Filed Apr. 27, 1905. Serial No. 257,756.

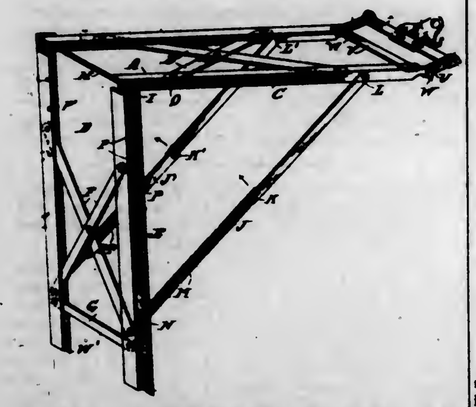

Claim.—1. A portable, folding frame for supporting a temporary roof-staging, comprising the combination of the following parts constructed, arranged, and operated as described, namely: a pair of horizontal platform-arms united by cross-bars and braces firmly riveted thereto: a pair of upright supports united in like manner by cross-bars and braces riveted thereto: a rod extended through and connecting the ends of said platform-arms and upright supports, thus hinging the two sections together: a pair of notched and jointed folding braces pivoted to the platform-arms, and at their opposite ends adjustably interlocked by means of their notches, with suitable studs projecting from the outside faces of the upright supports: and a fastening-plate riveted to a cross-bar having upturned ears connected by pivoted links to the front ends of the platform-arms, said plate being provided with spurs on its under side, and an opening through its body, and by the flexibility of its connections made capable of lying flat against roofs of varying pitch; all as and for the purposes specified.

2. The combination of section A, composed of arms C, C', formed of angle-steel, and united by cross-braces D, and bar V, riveted to the arms: section B, composed of supports E, E', of like construction as said arms, and united by cross-braces F, and bar G, riveted thereto, the arms of section A having single holes O, in their sides, and penetrating points W, on their front ends, and the supports of section B having suitably-arranged holes P, P', in their sides, and penetrating points W' on their lower ends, and projecting studs N, N' on their opposite outer faces: adjustable braces J, J', pivoted to arms at L, L', and jointed together at K, K', and having notches M, M', arranged to interlock with studs N, N'; rod H by which sections A and B are detachably pivoted together, and adjustably united so as to conform to various pitches of roof: and a fastening-plate R, formed with spurs on its under side, and a hole through its body, and being riveted to a movable bar T, which is pivoted at T' and T² to links U, U', pivoted to the front ends of arms C, C'; all constructed, combined and arranged to operate together substantially in the manner and for the purposes specified.

808,990. HOISTING APPARATUS. SAMUEL L. G. KNOX, Milwaukee, and WALTER FERRIS, South Milwaukee, Wis., assignors to The Bucyrus Company, South Milwaukee, Wis., a Corporation of Wisconsin. Filed Oct. 22, 1904. Renewed Nov. 20, 1905. Serial No. 288,089.

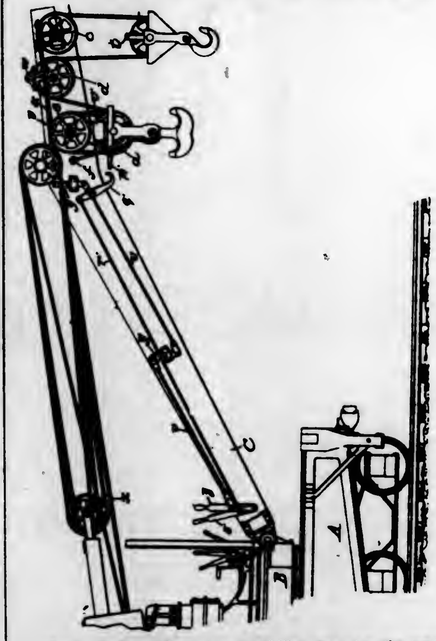

Claim.—1. In wrecking-cranes and like apparatus, the combination of two hoist-blocks supported from the jib, an intermediate idler-sheave, an operating-cable engaging the hoist-blocks and intermediate sheave, means for locking the cable against motion between the hoist-blocks, and means for locking one of said blocks to the jib, whereby either of said blocks may be operated by the same cable.

2. In wrecking-cranes and like apparatus, the combination of two hoist-blocks supported from the jib, an intermediate idler-sheave on the jib, an operating-cable anchored at one end to the jib and connected to a winding-drum at the other end, said cable engaging the hoist-blocks and the idler, a clamp for locking the cable to the idler, a clutch for locking one of said blocks to the jib, and means for operating said clamp and said clutch, whereby either of said blocks may be operated by the same cable.

3. In wrecking-cranes and like apparatus, the combination of two hoist-blocks supported from the jib, an intermediate idler-sheave on the jib, an operating-cable anchored at one end to the jib and connected to a winding-drum at the other end, said cable engaging the hoist-blocks and the idler, a clamp for locking the cable to the idler, a clutch for locking one of said blocks to the jib, a hand-lever, and reach-rod connections from the hand-lever to the clamp and clutch, whereby either of said blocks may be operated by the same cable.

4. In wrecking-cranes and like apparatus, the combination of two hoist-blocks supported from the jib, idler-sheaves on the jib adjacent to each of said blocks, an idler-sheave on the jib intermediate the first-mentioned idler-sheaves, an operating-cable anchored at one end to the jib and engaging a winding-drum at the other end, a clamp on the jib for locking the rope to the intermediate idler-sheaves, a pendular clutch on the jib for locking one of the blocks to the jib, a hand-lever, and reach-rod connections from the hand-lever to the clamp and the clutch, whereby either of said blocks may be operated by the same cable.

5. In wrecking-cranes and like apparatus, the combination of two hoist-blocks, an operating-cable therefor, and means for holding the idle hoist-block clear of the load lifted by the other hoist-block.

6. In wrecking-cranes and like apparatus, the combination of two hoist-blocks, an operating-cable therefor, and a hook on the jib adapted to engage the idle hoist-block and hold the same clear of the load lifted by the other hoist-block.

7. In wrecking-cranes and like apparatus, the combination of two hoist-blocks, an operating-cable therefor, a hook on the jib adapted to engage the idle hoist-block and hold the same clear of the load lifted by the other hoist-block, and a hand-lever and reach-rod on the jib for operating said hook.

808,991. DUMPING-VEHICLE. SAMUEL C. LANCASTER, Jackson, Tenn. Filed Jan. 13, 1905. Serial No. 241,673.

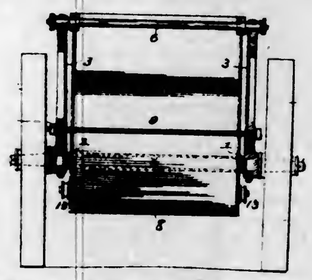

Claim.—1. A dumping-wagon comprising a frame and two body-sections hinged together at their upper ends and supported within said frame, and a single wheel at each side of said frame.

2. A dumping-wagon comprising a sectional hopper-shaped body having its members hinged together at the top, a draft-frame, means for mounting said body-sections in said draft-frame and a single wheel at each side of said draft-frame.

3. A dumping-wagon comprising a draft-frame, a wheel at each side thereof, upright bars located centrally on said frame, and two body-sections hinged together at their upper ends and supported coincident with said hinged connection by said upright bars.

4. A dumping-wagon comprising a draft-frame, axle-stubs projecting outwardly at each side of said frame, wheels on said axle-stubs, bars attached to the draft-frame adjacent to said axle-stubs and projecting upwardly, and a hopper-shaped body comprising two hinged members, disposed between said upright bars and supported from the upper ends thereof.

5. A dumping-wagon comprising a draft-frame, a single wheel at each side of the center thereof, a hopper-shaped body comprising two sections hinged together at their upper ends, means supporting said body at their hinged upper ends, upon said draft-frame, means for normally locking said body-sections together and means for drawing the sections together.

6. The combination of a crank-axle, wheels supporting the same, and a body comprising two sections, each hinged upon and supported by said crank-axle between said wheels.

7. The combination of a crank-axle, wheels supporting the same, and a hopper-shaped body suspended from the axle, and comprising two half-sections hinged together upon the axle.

8. The combination with a crank-axle, wheels supporting the same, and a body suspended from the axle, of means for adjusting the axle to change the angle of inclination of the wheels.

9. The combination of a crank-axle comprising separable sections, wheels supporting said axle, a body suspended from the axle, and a rod passed through upright sections of the crank-axle, and a nut screwed on said rod and adapted to adjust the axle-sections to change the angle of inclination of the wheels.

10. In a dumping-vehicle, the combination with a horizontal open frame, of a crank-axle having its stubs projected out beyond the frame, wheels on said stubs, and a hopper-bottom suspended from the axle in the frame, and comprising two half-sections hinged together on the axle, means for drawing the sections together or permit them to separate, and means for locking them together.

11. A dumping-wagon comprising a frame, wheels supporting said frame, a body supported by the frame, and means for adjusting the wheels to adapt them to the pitch of the road.

12. The combination with a body, a frame carrying the same, and wheels supporting said frame and body, of means for inclining said wheels in opposite directions to adapt their treads to the pitch of the road to be traveled.

13. A dumping-wagon, comprising a draft-frame, uprights thereon, a body supported in said frame, axles projecting laterally from the lower ends of said uprights, wheels on said axles, and means for inclining the uprights to incline the treads of the wheels to adapt them to the pitch of the road to be traveled

808,992. EXTENSIBLE HANDLE. DANIEL LAWSON, New York N. Y. Filed Apr. 6, 1905. Serial No. 254,948.

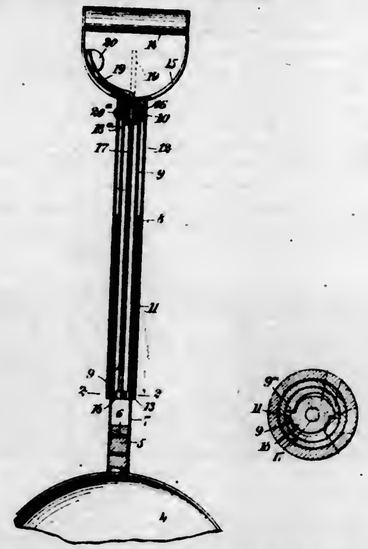

Claim.—1. The combination of a fork, a hand-grip mounted therein, an inner tube provided with an annular portion encircling a portion of said fork, an outer tube encircling said inner tube and spaced therefrom by said annular portion, a telescopic member disposed intermediate of said inner and outer tubes and free to slide relatively thereto, and means for locking said telescopic member rigidly in relation to said inner and outer tubes.

2. The combination of a fork, telescopic members connected therewith, one of said telescopic members being provided with cam-lobes, a rocking stem mounted within said fork and provided with cam-lobes mating said first-mentioned cam-lobes, and means controllable by hand for causing said stem to rock.

3. The combination of telescopic tubular members adapted to slide relatively to each other, one of said members being provided with cam-lobes, a rocking stem disposed within said tubular members and provided with cam-lobes mating the cam-lobes first mentioned, means controllable at will for turning said rocking stem so as to force all of the cam-lobes into locking engagement, and a member connected with one of said tubular members and provided with a hand-grip.

4. The combination of an inner tube provided with a bowl or the like, an outer tube encircling said inner tube and slidable relatively thereto, said outer tube being provided with a handle portion, a revoluble member mounted centrally within said inner tube and adapted to be turned at will by hand and cam mechanism operated by said revoluble member for securing said inner and outer tube rigidly together.

5. The combination of an inner tube provided with a bowl or the

like, an outer tube partially encircling said inner tube and slidable relatively thereto, and means for temporarily securing said outer tube and said inner tube rigidly together.

808,993. ADJUSTABLE TIME-LIMIT STAMP. WILLIS L. LEE, St. Louis, Mo. Filed Jan. 26, 1905. Serial No. 243,607.

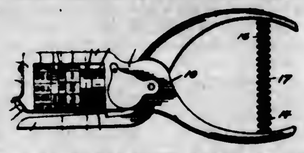

Claim.—1. In an adjustable time-limit stamp, a pair of jaws pivotally held together, handles integral with said jaws, a cylinder detachably positioned in the upper jaw, a series of printing-wheels adjustably mounted on said cylinder, a cushion positioned in the top surface of the lower jaw, and a printing-ribbon positioned between the printing-wheels and the cushion, substantially as specified.

2. In an adjustable time-limit stamp, a pair of handles pivoted together, jaws formed integral with said handles, a cylinder detachably secured to one of the jaws, a series of printing-wheels adjustably carried by said cylinder, there being a circular recess formed in said jaw; a printing-ribbon wound up within said recess, the free end of which ribbon passes beneath the printing-wheels and having its outer end secured to the outer end of the jaw, and a cushion positioned in the top face of the opposite jaw, substantially as specified.

808,994. COMBINED PUNCH AND TIME-STAMP. WILLIS L. LEE, St. Louis, Mo. Filed May 1, 1905. Serial No. 258,418.

Claim.—1. In a combined punch and time-stamp, a pair of jaws pivotally held together, handles for said jaws, a tape-housing integral with each handle, a series of printing-wheels carried by one of the jaws, an impression-pad carried by the opposite jaw, and an inking-tape extending from one housing around the printing-wheels and into the opposite housing, substantially as specified.

2. In a combined punch and time-stamp, a pair of jaws pivotally held together, handles formed integral with said jaws, tape-housing formed integral with said handles, tape-spindles in each of said housings, a series of printing-wheels carried by one of the jaws, an impression-pad carried by the opposite jaw, and a tape wound upon one of the spindles and passing around all of the printing-wheels, and being wound upon the opposite spindle, substantially as specified.

808,995. GEAR-CASING. FREDERICK H. LINCOLN, Philadelphia, Pa. Filed Sept. 9, 1905. Serial No. 277,761.

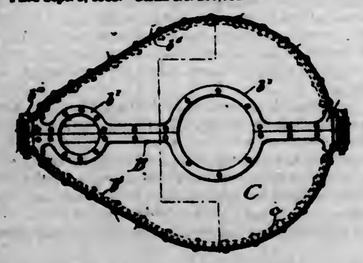

Claim.—A gear-casing comprising upper and lower integral side frames having semicircular registering portions, upper and lower exposed curved spring-metal bands connected at their ends to the ends of said side frames and forming the top and bottom of the casing, means for connecting the side frames so that the semicircular portions form circular apertures for the shafts, flexible side panels, each having its outer edge secured to and within the edge of the corresponding resilient band and its inner edge secured upon its side frame, and rivets securing the panels to the spring-metal bands.

808,996. BALING-PRESS. WINFIELD S. LIVINGOOD, Kansas City, Mo., assignor to Smith & Sons Mfg. Co., Kansas City, Mo. Filed Dec. 27, 1904. Serial No. 238,275.

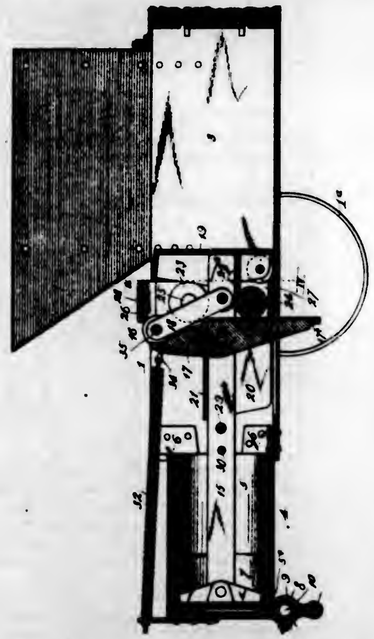

Claim.—1. In a baling-press, a baling-case, a head-block reciprocably arranged therein, a toggle connected to the head-block and adapted to move back and forth therewith, means for operating said toggle, and means interposed in the path of one end of the toggle to prevent said end from moving forwardly until the toggle has become extended or partly extended.

2. In a baling-press, a baling-case, a head-block reciprocably arranged therein, a toggle connected to the head-block and adapted to move back and forth therewith, means for operating said toggle, means interposed in the path of one end of the toggle to prevent said end from moving forwardly until the toggle has become extended or partly extended, and means for folding said toggle when it moves backwardly.

3. In a baling-press, a baling-case, a head-block reciprocably arranged therein, a cylinder secured to said baling-case, a piston-head reciprocably arranged in said cylinder, a toggle connected to the head-block and suitably connected to the piston-head and adapted to move back and forth therewith, and means interposed in the path of one end of the toggle to prevent said end from moving forward until the toggle has become extended or partly extended.

4. In a baling-press, a baling-case, a head-block reciprocably arranged therein, a toggle connected to the head-block and adapted to move back and forth therewith, means for operating said toggle, and means for preventing the toggle from folding when moving forwardly.

5. In a baling-press, a baling-case, a head-block reciprocably arranged therein, a cylinder secured to said baling-case, a piston-head reciprocably arranged in said cylinder, a toggle connected to the head-block and suitably connected to the piston-head and adapted to move back and forth therewith, a roller interposed in the path of one end of the toggle to prevent said end from moving forward until the toggle has become extended or partly extended, and means for preventing said toggle from folding when moving forwardly.

6. In a baling-press, a baling-case, a head-block reciprocably arranged therein, a cylinder secured to said baling-case, a piston-head reciprocably arranged in said cylinder, a piston-bar suitably secured to the head-block and said piston-head, a yoke secured in the baling-case, and a stop-pin extending transversely through the piston-bar adapted to contact with said yoke.

7. In a baling-press, a baling-case, a head-block arranged to travel therein, longitudinal flanges secured to said head-block, and guides in the baling-case beneath which said flanges travel.

8. In a baling-press, a baling-case, a head-block reciprocably arranged therein, a cylinder secured to said baling-case, a piston-head reciprocably arranged in said cylinder, piston-bars suitably secured to the head-block and said piston-head, a yoke secured in the baling-case, and guide-rollers journaled in the yoke between which the piston-bars operate.

9. In a baling-press, a baling-case, a head-block reciprocably arranged therein, a cylinder secured to said baling-case, a piston-head reciprocably arranged in said cylinder, piston-bars suitably secured to the head-block and said piston-head, a yoke secured in the baling-case, guide-rollers journaled in the yoke between which the piston-bars operate, and a stop-pin extending transversely through said piston-bars adapted to contact with said yoke.

10. In a baling-press, a baling-case, a head-block reciprocably arranged therein, a cylinder secured to said baling-case, a piston-head reciprocably arranged in the cylinder, piston-bars secured to said piston-head, a toggle pivotally secured to the head-block and said piston-bars, and a roller against which said toggle contacts.

11. In a baling-press, a baling-case, a head-block reciprocably arranged therein, a cylinder secured to said baling-case, a piston-head reciprocably arranged in the cylinder, piston-bars secured to said piston-head, a transverse pin 29 riveted to said piston-bars, a toggle pivotally secured to the head-block and said piston-bars the rear end of which contacts with pin 29 when said toggle is extended, a roller with which the toggle contacts and whereby said toggle is assisted in unfolding, and means for assisting the toggle to fold.

12. In a baling-press, a baling-case, a head-block arranged to travel therein, longitudinal flanges secured to said head-block, and rollers mounted in the baling-case beneath which said flanges travel.

13. In a baling-press, a baling-case, a head-block arranged to travel therein, longitudinal flanges secured to said head-block having inturned upper edges, and a pair of rollers journaled in the baling-case, beneath which said flanges travel.

14. In a baling-press, a baling-case, a yoke secured therein, and rollers journaled in said yoke.

15. In a baling-press, a baling-case, a yoke secured therein composed of a U-shaped portion and a transverse portion secured to the upper terminals of said U-shaped portion, and guide-rollers journaled in said yoke.

808,997. CONCENTRATOR FOR SOLUTIONS. JOHN U. LLOYD, Norwood, Ohio. Filed Feb. 20, 1905. Serial No. 246,424.

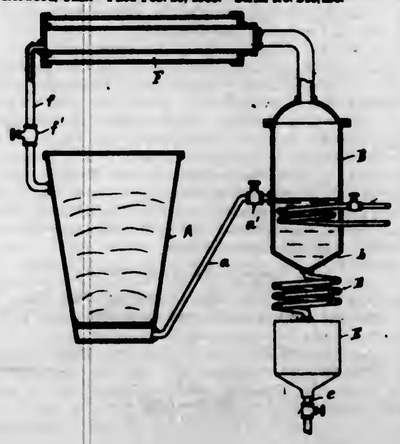

Claim.—1. The combination of a concentrating-tank, a heating-coil located within the tank near its bottom, an external coil communicating with the tank below the heating-coil, and a means for keeping the level of the liquid in the concentrating-tank around the heating-coil.

2. The combination of a concentrating-tank, a heating-coil located therein near its bottom, an external coil communicating at one end with the concentrating-tank below the heating-coil, and a reservoir at the other end of the external coil.

3. The combination of a concentrating-tank, a heating-coil within the concentrating-tank near its bottom, a reservoir located below the concentrating-tank, and an external coil connecting the top of the reservoir and the bottom of the concentrating-tank.

4. The combination of a concentrating-tank, a heating-coil within the concentrating-tank near the bottom thereof, an external coil communicating with the concentrating-tank below the level of the heating-coil, a means of holding the fluid in the concentrating-tank at the level of the heating-coil, a steeping-tank, a means of communication between the steeping-tank and the concentrating-tank, a condenser and means for connecting the condenser with the top of the concentrating-tank and with the steeping-tank.

808,998. METHOD OF MANUFACTURING SIDING. CHRISTIAN LOBTSCHER, Dubuque, Iowa. Filed Apr. 19, 1904. Serial No. 203,868.

Claim.—1. A method of manufacturing siding, consisting in producing a plank, seasoning it, ripping it to form strips, molding a groove in each corner of one edge and a groove in the center of the opposite edge of the strip, and finally cutting the strip into four siding-boards by sawing it in two centrally, the saw-cut extending parallel to the side surfaces of the strip, and sawing each of the halves on a diagonal line, said lines on the two halves converging toward each other.

2. A method of manufacturing siding, consisting in producing a plank, seasoning it, ripping it to form strips, molding a groove in each corner of one edge and a groove in the center of the opposite edge of the strip, and finally cutting the strip into four siding-boards by sawing it in two centrally on a line parallel to the side surfaces of the strip, and bisecting the central groove and sawing each of the halves on a diagonal line from the point near the ungrooved corner of each half to a point near the opposite corner thereof, said diagonal saw-cuts dividing each half into two exactly similar siding-boards.

3. A method of manufacturing siding, consisting in producing a plank by sawing, seasoning the blank, then ripping it to form strips of uniform width, resawing the strips in three directions to make four siding-board blanks, placing two of the blanks thus produced together with their freshly-sawed surfaces outward, and finally finishing said freshly-sawed surfaces.

808,999. HITCHING-POST. WILEY H. LOGUEN, Birmingham, Ala. Filed Sept. 27, 1905. Serial No. 280,370.

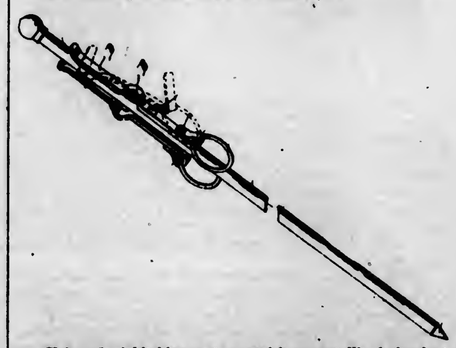

Claim.—1. A hitching-post, comprising a metallic shaft adapted to be driven into the ground, bars fastened at positions diametrically opposite upon said shaft, with the upper portions of said bars forming resilient clamps, and rings fastened to the lower ends of said bars, as set forth.

2. A hitching-post, comprising a metallic shaft, bars fastened to said shaft at positions diametrically opposite, the upper ends of said bars forming resilient clamps and the lower ends of the bars bent to form loops, and rings engaged by said loops, as shown and described.

808,000. METALLIC RAILWAY-TIE AND MEANS FOR SECURING RAILS THERETO. FRANK G. METCALF, Southbury, Conn. Filed Oct. 2, 1905. Serial No. 280,941.

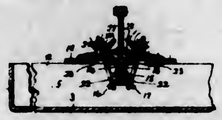

Claim.—1. The herein-described sheet-metal railway-tie comprising a bottom, ends, sides, and side flanges, said side flanges being inclined downward from the upper edge of said sides.

2. The herein-described sheet-metal railway-tie comprising a bottom, ends, sides, and side flanges, said side flanges being inclined downward from the upper edge of said sides, and rail-plates secured to said flanges the edges of the plates being inclined corresponding to the inclination of said flanges.

3. The herein-described sheet-metal railway-tie comprising a bottom, ends, sides, and side flanges, said side flanges being inclined downward from the upper edge of said sides, and rail-plates secured to said flanges, said plates formed in two parts the inner edges extending downward and terminating in outwardly-extending hooks.

4. The combination with a sheet-metal railway-tie having a bottom, ends, sides, and downwardly-extending side flanges, plates secured thereto, said plates formed in two parts and having the inner edges extending downwardly and terminating in outwardly-extending hooks, said plates also formed with clearance-slots, clips adapted to bear upon the face of said plate and formed with inwardly-extending jaws, and bolts passing through said clips and slots in said plates and formed at their inner ends with eyes to set over said hooks, substantially as described.

808,001. EYEGLASSES. REIL B. MEYROWITZ, New York, N. Y., assignor to The Meyrowitz Manufacturing Co., a Corporation of New Jersey. Filed Mar. 11, 1905. Serial No. 249,259.

Claim.—1. An eyeglass-post comprising a substantially rectangular block having a transverse slot therethrough adapted to support the retaining parts of the eyeglass, the base of the slotted part having a central threaded bore and the top wall of the slotted part having a bore adapted to receive the head of a screw inserted into said bore, the top and sides of the slotted part having a pair of kerfs substantially tangential to said bore in the top, one on each side thereof.

2. An eyeglass-post comprising a substantially rectangular block having a transverse slot therethrough adapted to support the retaining parts of the eyeglass, the base of the slotted part having a central threaded bore and the top wall of the slotted part having a bore adapted to receive the head of a screw inserted into said bore, the top and sides of the slotted part having a pair of kerfs substantially tangential to said bore in the top, one on each side thereof, and a kerf in the top and sides intermediate of said kerfs and parallel therewith, the members produced by the kerfs being bendable to and from the bore in the top.

3. An eyeglass-post comprising a substantially rectangular block having a transverse slot therethrough adapted to support the retaining parts of the eyeglass, the base of the slotted part having a central threaded bore and the top wall of the slotted part having a bore adapted to receive the head of a screw inserted into said bore, the top and sides of the slotted part having a pair of kerfs substantially tangential to said bore in the top, one on each side thereof, the members produced by the kerfs being bendable to and from the bore in the top.

4. An eyeglass-post comprising a substantially rectangular block having a transverse slot therethrough adapted to support the retaining parts of the eyeglass, the base of the slotted part having a central threaded bore and the top wall of the slotted part having a bore adapted to receive the head of a screw inserted into said bore, the top and sides of the slotted part having a pair of kerfs substantially tangential to said bore in the top, one on each side thereof, and a kerf in the top and sides intermediate of said kerfs and parallel therewith, the members produced by the kerfs being bendable to and from the bore in the top.

5. An eyeglass-post having a central threaded bore in the base, a pair of flanges on the base, one on each side of the bore and having alining passages therethrough for supporting the retaining parts of the eyeglass, a screw fitted in said bore and having its head engaged by the flanges, and upright pieces on the base on each side of the bore between the flanges and engaging the screw-head by their upper portions.

6. An eyeglass-post having a central threaded bore in the base, a pair of flanges on the base, one on each side of the bore and having alining passages therethrough for supporting the retaining parts of the eyeglass, a screw fitted in said bore and having its head engaged by the flanges, and upright pieces on the base on each side of its bore having transverse end portions extending into engagement with the said screw-head.

808,002. AIR-PUMP. DAVID MILLS, East Rand, Transvaal. Filed Mar. 3, 1905. Serial No. 248,238.

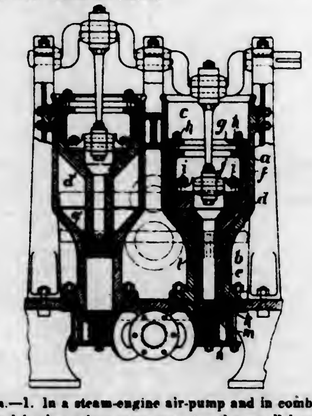

Claim.—1. In a steam-engine air-pump and in combination, a pump-barrel having a large upper part and a small lower part, a valveless piston working in the upper part, from the under side of which extends a plunger working in the lower part, an inlet-valve for the upper part, outlet-valves for the upper and lower parts respectively, and means for making communication between the lowest point of the upper part and the lower part at or near the termination of the suction-stroke and for breaking the communication at or near the commencement of the discharge-stroke.

2. In a steam-engine air-pump and in combination, an open-topped upper cylinder having a conical bottom surmounting a smaller cylinder, a piston working in, and corresponding in shape to the larger cylinder, from the under side of which piston extends a plunger working in the smaller cylinder, vertical ports formed in the upper part of the smaller cylinder adapted to be uncovered by the plunger at or near the end of the suction-stroke and to be again covered by it at or near the commencement of the discharge-stroke, an inlet and an outlet valve communicating by a common port with the under side of the larger piston and a valve for discharging from under the plunger; substantially as hereinbefore described and illustrated by the accompanying drawings.

808,003. CARRIER FOR BARRELS AND THE LIKE. JOHN MITCHELL, Dannemora, N. Y. Filed May 24, 1905. Serial No. 262,004.

Claim.—1. A carrier for barrels and the like comprising duplicate sets of pivotally-connected handles adapted to be carried to a downward inclination with reference to each other, segmental grappling members loosely suspended therefrom, and sets of rods crossing each other and movably connected at their ends to the ends of said segmental members and the under sides of the handles of each set, respectively.

2. A carrier for barrels and the like comprising duplicate sets of handles constructed at their adjacent ends with mortise-and-tenon joints and connected by a pivot, the inner ends of the handles of one set being beveled downwardly and outwardly, loosely-supported segmental grappling members occupying a position beneath the lower edges of the handles, and means loosely connecting the ends of each of said members with the under side of the handles of the set opposite thereto.

3. A carrier for barrels and the like comprising duplicate sets of handles constructed at their adjacent ends with mortise-and-tenon joints and connected by a pivot, the inner ends of the handles of one set being beveled downwardly and outwardly, loosely-supported segmental grappling members occupying a position beneath the lower edges of the handles, and crossed rods loosely connecting the ends of each of said members with the under side of the handles of the set opposite thereto.

4. A carrier for barrels and the like comprising duplicate sets of handles constructed at their adjacent ends with mortise-and-tenon joints and connected by a pivot, the inner ends of the handles of one set being beveled downwardly and outwardly, loosely-supported segmental grappling members occupying a position beneath the lower edges of the handles, and crossed rods loosely connecting the ends of each of said members with the under side of the handles of the set opposite thereto, portions of the rods of one set being bent to provide clearance for corresponding portions of the rods of the other set.

809,004. MECHANISM FOR PRINTING-PRESSES. JOHN J. MOSHER, Rochester, N. Y. Filed Dec. 19, 1904. Serial No. 237,362.

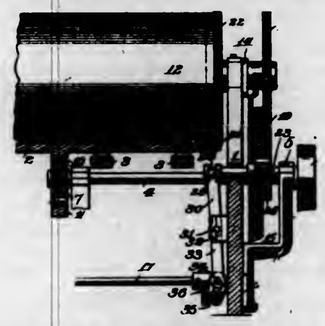

Claim.—1. In a printing-press, the combination with a reciprocatory bed, a revoluble cylinder coöperating therewith and rotated thereby when said bed is traveling in one direction, of a gear-wheel attached to the cylinder, a second gear-wheel adapted to coöperate therewith, devices driving it independently of the bed, means for moving the last-mentioned gear-wheel into and out of engagement with the first and mechanism for driving the bed.

2. In a printing-press, the combination with a reciprocatory bed, a revoluble cylinder, a rack on the bed and a gear-wheel on the cylinder coöperating when the bed is traveling in one direction, of means for disengaging said parts when the bed is traveling in the opposite direction, another gear-wheel attached to the cylinder, a driven gear-wheel adapted to coöperate therewith, means for rotating it and separate means for operating the driven gear-wheel into and out of operative engagement with the other simultaneously with the disengagement and engagement respectively of the coöperating rack and gear-wheel and means for operating the bed.

3. In a printing-press, the combination with a reciprocatory bed, a cylinder coöperating therewith and driven thereby when moving in one direction and a gear-wheel attached to the cylinder, of a laterally-movable gear-wheel having a segmental face at one side and adapted to coöperate with the gear-wheel on the cylinder when the latter is disengaged from the bed, means for shifting the laterally-movable gear and mechanism for driving it and the bed.

4. In a printing-press, the combination with a reciprocatory bed, a cylinder coöperating therewith and driven thereby when moving in one direction and a gear-wheel attached to the cylinder, of a driven gear-wheel coöperating with the gear-wheel on the cylinder and having a laterally-extending segmental face, means for shifting the driven gear and causing the disengagement of the bed and cylinder and means for operating the bed and driven gear.

5. In a printing-press, the combination with a reciprocatorybed, a cylinder coöperating therewith and driven thereby when moving in one direction and a gear-wheel attached to the cylinder, of a driven gear-wheel coöperating with the gear-wheel on the cylinder and having a laterally-exteading segmental face, means for causing an engagement and disengagement of the bed and cylinder and a shifting of the driven gear laterally into and out of alinement with the gear-wheel on the cylinder when the segmental face is in engagement therewith.

809,005. PANELED GOODS-RECEPTACLE. JOSEPH I. MCVOY, Chicago, Ill. Filed Sept. 11, 1905. Serial No. 277,975.

Claim.—1. In combination with a box of the character described, provided with a panel-covered flanged opening, a device for fastening the panel in place, comprising a guide member formed of a back having flanged sides and upper and lower loops, said member being secured at its flanges to the inner surface of the box-wall adjacent to the opening therein and a stop member reciprocably confined between said back and loops and provided with a handle, for the purpose set forth.

2. In combination with a box of the character described, provided with a panel-covered flanged opening, a device for fastening the panel in place, comprising a sheet-metal guide member consisting of a back having flanged sides and upper and lower loops forming with the back a guideway, said member being soldered at its flanges to the inner surface of the box-wall adjacent to the opening therein, and a stop member reciprocably confined between said back and loops and provided with a handle on one end and an obstruction on the opposite end, for the purpose set forth.

809,006. BILL FILE AND CABINET. OSMOND A. OSMONDSON, Richmond, Va. Filed Mar. 14, 1905. Serial No. 249,986.

Claim.—1. In filing devices, a main clamp-plate formed of sheet metal and provided with a continuous edge flange, the flanges at the opposite sides of the plate being approximately at a right angle to such plate, while the flange at the lower end of the plate is formed by curving or inclining the sheet metal from the rear face to approximately the edges of the side flanges to form a relatively sharp

introducing edge, and a secondary spring-pressed clamp supported by said main clamp-plate.

2. In filing devices, a main clamp-plate having a continuous edge flange, the lower portion of said plate being arranged on a curved or inclined line to form a relatively sharp introducing edge, and means projecting outward from the plate at points near the opposite lower corners thereof to space the clamp of which it forms a part from the next adjacent clamp.

3. In filing devices, a main clamp-plate, a secondary clamping member, and a spring connecting the two clamping members and having one end arranged to form an impaling-tooth.

4. In filing devices, a main clamp-plate having a continuous edge flange, the lower portion of the side flanges being extended outward and thence bent transversely to form spacing-lugs, and a secondary spring-pressed clamp supported by said plate.

5. In filing devices, a main clamp-plate having a continuous marginal flange, a secondary clamping member, and a spring connecting the two clamping members and having one end arranged to form an impaling-tooth.

6. In a filing device, a main clamp-plate having a continuous marginal flange, a secondary clamping member having an enlarged opening, and a spring passing through openings in the two clamping members and connecting the same, that portion of the spring to the rear of the main clamp-plate extending into the opening of the secondary clamping member.

7. In filing devices, a main clamp-plate, a secondary clamp-plate, both plates being provided with parallel slits, and the metal between the slits of the secondary clamp-plate being depressed to form a pocket, and a spring extending through the slits and seated in the depressed portion, one end of the spring being arranged to form an impaling-tooth.

8. In filing devices, a pair of clamping members having parallel slits, a spring extending through the slits and connecting said members, the rear end of the spring being seated under the secondary clamp and being provided with an opening, and a securing-tongue formed by stamping out and bending the metal of the secondary clamp, said tongue extending through the opening of the spring and holding the latter in place.

9. In filing devices, a main clamping member having a continuous marginal flange, tongues projecting from the flange and arranged parallel with the plane of the clamping member, auxiliary tongues formed by stamping out and bending the metal of said clamping member, all of said tongues forming a receiver for a name-card or the like.

10. In a filing device, main and secondary clamping members, and a projecting impaling-tooth extending through an opening in the main clamping member and disposed in a plane oblique to the plane of the clamps, the opening being of such size as to receive a number of impaling members and permit nesting when a number of clamps are assembled.

11. In a filing device, a main clamping member, a secondary clamping member, both clamping members having parallel slits, and the metal between the slits of the secondary clamping member being depressed, a spring-strip extending through the slits and seated in the depression, an intermediate portion of the strip extending between the two clamps, and projecting lugs or shoulders on said strip for preventing independent longitudinal movement of the same.

12. In filing devices, a main clamping member, an auxiliary clamping member, and a guard having side arms, there being tongues formed by stamping out and bending the metal of the main clamping member, said tongues engaging with and holding the arms in place.

13. In filing devices, the combination with a main and auxiliary clamping member, of a guard, having crimped side arms, and holding-tongues stamped from the metal of the main clamp and bent over said arms at points on opposite sides of such crimped portions.

14. In filing devices, the combination with main and auxiliary clamping members, of a guard, including a cross-bar and side arms, the cross-bar being bent over to form an engaging portion in a plane above the plane of the side arms.

15. In filing devices, the combination with main and auxiliary clamping members, of a guard formed of a strip of metal, the opposite ends of which are bent at a right angle to the central or body portion of the strip.

16. In filing devices, a main clamp-plate having a continuous edge flange, lugs adjacent to the edges of the plate, and a secondary spring-pressed plate supported by said plate, the lugs and spring-pressed plate forming spacing members for a number of assembled filing devices.

809,007. **MACHINE FOR CUTTING DIES FOR DIE-STOCKS.** HERMAN W. OSTER, Cleveland, Ohio, assignor to The Oster Manufacturing Company, Cleveland, Ohio, a Corporation of Ohio. Filed Apr. 17, 1905. Serial No. 256,094.

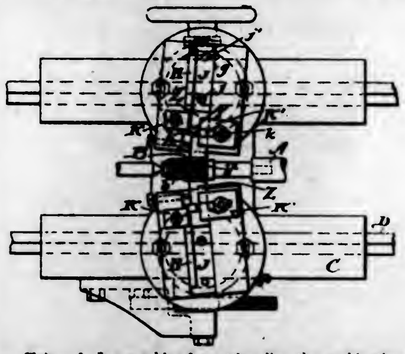

Claim.—1. In a machine for cutting dies, the combination of a rotatable cutter, a carriage movable in a path parallel to the axis of the cutter, a pair of plates upon said carriage on opposite sides of the cutter and simultaneously adjustable toward and from each other, a pair of die-holding blocks mounted respectively on vertical axes upon said plates and having die-holding recesses in their top faces adapted to hold dies on their flat sides extending radially from the cutter, means for holding said blocks immovable upon said plates, clamps for holding the dies in said recesses, and means for automatically causing the plates to separate at a predetermined point in the feed movement of the carriage.

2. The combination of a frame, a carriage mounted to slide thereon, holders transversely mounted on the carriage, a right and left hand screw mounted on the carriage and operating said holders, mechanism mounted on the carriage for turning said screw, and an arm secured to the frame and adapted to engage with and operate the screw-turning mechanism when the latter is brought in contact with said arm by the movement of said carriage.

3. The combination with the frame, a rotatable cutter, a carriage mounted on the frame and slidable parallel with the axis of the cutter, a pair of holders mounted on the carriage on opposite sides of the cutter, mechanism mounted on the carriage and operating to move the holders toward or from each other, a pinion for operating said mechanism, a geared member engaging said pinion, and a projection carried by said geared member and adapted to engage a projection carried by the frame.

4. The combination of the frame, a carriage slidable thereon, a pair of die-holders mounted on the carriage and transversely movable, a right and left hand screw transversely mounted in the carriage, a pinion on the shaft of said screw, a gear mounted on the carriage and engaging said pinion, a projection adjustably connected to said gear and a coöperating projection carried by the frame of the machine.

5. The combination of the frame, a carriage slidable thereon, die-holders transversely movable upon said carriage, a right and left hand screw journaled in the carriage, a pinion on said screw, a gear engaging said pinion, an arm journaled concentrically with said gear, an arcual undercut groove in said gear, a T-headed bolt seated in such groove and clamping the arm to the gear, a projection carried by said arm and a coöperative projection mounted on the frame.

809,008. **TIE LINER AND SPACER.** WILLIAM T. PAGE, Iron City, Ga. Filed May 31, 1905. Serial No. 263,061.

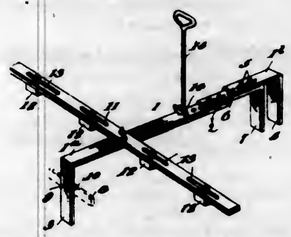

Claim.—1. In a tie liner and spacer for tracks, the combination of a gage-bar having a tie-engaging member, rail-engaging members carried by said gage-bar, and a transverse tie-spacing bar.

2. In a tie liner and spacer for tracks, the combination of a gage-bar having a tie-engaging member, rail-engaging members carried by said gage-bar, a transverse tie-spacing bar, and a plurality of tie-spacing members adjustably mounted upon said tie-spacing bar.

3. In a tie liner and spacer for tracks, the combination of a gage-bar composed of adjustably-connected sections, a tie-engaging member projecting from one section, spaced rail-engaging members carried by the other section, and a transverse tie-spacing bar mounted upon the gage-bar.

4. In a tie liner and spacer for tracks, the combination of a gage-bar composed of adjustably-connected sections, a tie-engaging member projecting from one section, adjustably-spaced rail-engaging members carried by the other section, a transverse spacing-bar mounted upon the gage-bar, and tie-spacing blocks adjustably mounted upon the tie-spacing bar.

5. In a tie liner and spacer for tracks, the combination of a gage-bar composed of adjustable sections, tie and rail engaging members carried by said gage-bar, a transverse tie-spacing bar, and a handle for the gage-bar.

6. In a tie liner and spacer for tracks, the combination of a gage-bar composed of adjustable sections, tie and rail engaging members carried by said gage-bar, a transverse tie-spacing bar, a handle for the gage-bar, and a pivoted rest carried by the tie-engaging member of the gage-bar.

7. In a device of the class described, the combination of a gage-bar composed of adjustably-connected sections, a tie-engaging member projecting downwardly from one end of one section, a rail-engaging member projecting from one end of the other section, a plate adjustably mounted upon the second section, and a second rail-engaging member carried by said plate and adjustable toward and from the first-mentioned rail-engaging member.

809,009. **COLLAR.** FREDERICK W. PARSONS, Cleveland, Ohio. Filed Mar. 6, 1905. Serial No. 248,418.

Claim.—A lay-down collar having a band and a lay-down portion overlapping the band at its outside, and the said band provided with a longitudinal slit in its rear portion forming a flexible strip below said slit and having a buttonhole at its middle, whereby engagement with the rear collar-button is effected without opening the collar.

809,009.

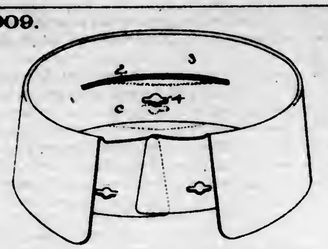

809,010. **LEATHER-WORKING MACHINE.** FRANKLIN J. PERKINS, Woburn, Mass., assignor, by mesne assignments, to Turner Tanning Machinery Company, Boston, Mass., a Corporation. Filed Feb. 9, 1904. Serial No. 193,777.

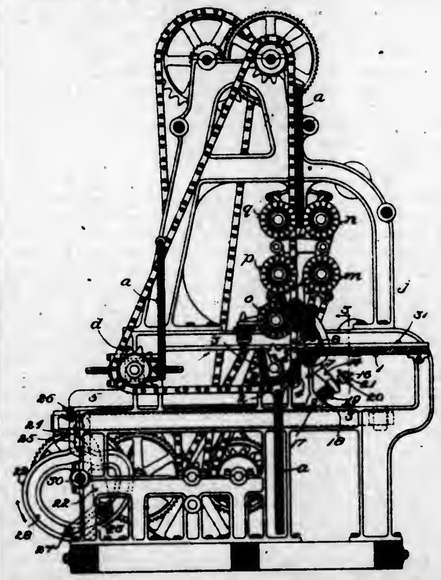

Claim.—1. In a machine of the character described, in combination, a table or support for the hide or skin, means to move it, operating-tools located on opposite sides of the path of movement of the said table or support, a carrier for the hide or skin coöperating with one of said tools to effect working of a portion of said hide or skin prior to the engagement of the hide or skin with said table or support, and a clamp to engage the hide or skin while on the carrier and prevent its movement under the influence of the tool coöperating with said carrier, substantially as described.

2. In a machine of the character described, in combination, a substantially flat table or support for a hide or skin, means to move it, operating-tools located on opposite sides of the path of movement of said table or support, a second support for the hide or skin movable substantially at right angles to the path of movement of the said table and coöperating with one of said operating-tools to effect working of a portion of the hide or skin while on said second support, and means coöperating with said second support to secure the hide or skin thereon against movement under the influence of the operating-tool which coöperates with said second support, substantially as described.

3. In a machine of the character described, in combination, a table or work-support, means to move said table in a substantially vertical path, operating-tools located on opposite sides of the path of movement of said table or work-support, a yielding support over which a hide or skin is adapted to be placed, movable toward and from the path of movement of said table, means for treating the hide

or skin while on said yielding support, and a clamp to hold the hide or skin

side by side, and made solid with each other, a projecting plate

on the support of steam into a number of small jets and reduces its ve-

or skin while on said yielding support, and a clamping-bar coöperating with the upper end of said yielding support, substantially as described.

4. In a machine of the character described, in combination, a table or work-support, means to move it, a carrier for a hide or skin movable toward the path in which said table is moved to place the hide or skin into position to be removed from said carrier by said table, means to move said carrier, means for treating the hide or skin while on said carrier, means for treating the hide or skin while on said table, and a clamp coöperating with said carrier to resist movement of the hide or skin while undergoing treatment on said carrier, said clamp being automatically actuated by said carrier to engage the hide or skin thereon, substantially as described.

5. In a leather-working machine, in combination a movable table or support, means to move the said table, operating-tools for working a hide or skin on said table, a carrier and an operating-tool for working a portion of a hide or skin on said carrier prior to the engagement of the hide or skin with the movable table, and a clearer to engage that portion of the hide or skin rearward of the carrier and position said portion for proper engagement of the hide or skin with the said movable table or support.

6. In a leather-working machine, in combination a movable table or support, means to move said table, operating-tools for working a hide or skin on said table, a horizontally-movable carrier and means for moving it, and an operating-tool for working a portion of a hide or skin on said carrier prior to the engagement of the hide or skin with the movable table, and a clearer to engage that portion of the hide or skin rearward of the carrier and position said portion for proper engagement of the hide or skin with the said movable table or support.

7. In a leather-working machine, in combination a movable table or support for a hide or skin, means to move it, operating-tools located on opposite sides of the path of movement of the said table, and means on opposite sides of the path of movement of said table to support the free ends of the hide or skin away from the sides of said table, said means comprising a pivoted portion of the work-support on one side of the table, and the carrier on the other side of the table, substantially as described.

8. In a leather-working machine, in combination a movable table and means for moving it, operating-tools coöperating with said table to work a hide or skin thereon, a horizontal work-support, a horizontally-moving carrier, a coöperating tool for working a portion of a hide or skin on said carrier and a moving clearer for clearing the edge of said hide or skin from said work-support as the carrier moves toward the operating-roll which coöperates therewith.

9. In a leather-working machine, in combination a movable table and means for moving it, operating-tools coöperating with said table to work a hide or skin thereon, a horizontal work-support having stripes thereon separated by intermediate spaces a horizontally-moving carrier, a coöperating tool for working a portion of a hide or skin on said carrier, and a moving clearer comprising a series of fingers projecting into the spaces between the stripes on said work-support for clearing the edge of said hide or skin from said work-support as the carrier moves toward the operating-roll which coöperates therewith.

10. In a leather-working machine, in combination, a movable table and means for moving it, tools coöperating with said table to work a hide or skin thereon, a horizontal work-support having a trough or depression at the rear side thereof, a horizontally-moving carrier, a coöperating tool for working a portion of a hide or skin on said carrier, and a moving clearer for clearing the edge of said hide or skin from said support as the carrier moves toward the operating-roll which coöperates therewith, and means for accelerating the motion of the clearer at the end of its movement to throw the edge of the hide or skin into the trough or depressed portion of the work-support, substantially as described.

11. In a leather-working machine, in combination a movable table, means for moving it, tools coöperating with said table to work a hide or skin thereon, a horizontal work-support, a moving carrier, a coöperating tool for working a portion of a hide or skin on said carrier, and a holder coöperating with said carrier to securely hold the hide or skin thereon while it is being operated upon by the coöperating tool, substantially as described.

12. In a leather-working machine, in combination a movable table, means for moving it, tools coöperating with said table to work a hide or skin thereon, a horizontal work-support, a moving carrier, a coöperating tool for working a portion of a hide or skin on said carrier, and a yielding holder coöperating with said carrier to securely hold the hide or skin thereon while it is being operated upon by the coöperating tool, substantially as described.

13. In a leather-working machine, in combination a movable table, means for moving it, tools coöperating with said table to work a hide or skin thereon, a horizontal work-support, a moving carrier, a coöperating tool for working a portion of a hide or skin on said carrier, a holder coöperating with said carrier to securely hold the hide or skin thereon while it is being operated upon by the coöperating tool, and a moving clearer for clearing the edge of said hide or skin from said work-support as the carrier moves toward the operating-tool which coöperates therewith.

14. In a leather-working machine, in combination a movable table and means for moving it, tools coöperating with said table to work a hide or skin thereon, a horizontal work-support having a depression or trough rearwardly thereof and hinged leaf or portion intermediate the said horizontal portion of the work-support and the said trough and forming an inclined side of the latter, a horizontally-moving carrier, a coöperating tool for working a portion of a hide or skin on said carrier, and means for moving the edge or rear portion of the hide or skin in advance of the carrier and depositing it in the trough of the work-support, substantially as described.

809,011. **BOTTLE-SEAL.** ANDREW B. PRIER, New York, N. Y. Filed June 6, 1905. Serial No. 264,945.

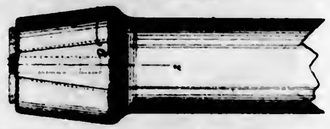

Claim.—1. A bottle-seal comprising a key-plate slidable on one side of the bottle-neck, and a sealing-strip passing over the bottle-closure and interlocking with said key.

2. In a bottle-seal, a bottle having a channel in its neck portion opening outward at the top, the opposite walls of the channel being undercut and converging upward, a key slidable in said channel and conforming thereto, the said key having a shoulder in its inner side, and a sealing-strip for passing over the bottle-stopper and into said channel and having a hook end for engaging said shoulder.

3. In a seal, a bottle having opposite vertically-disposed channels provided with undercut side walls, converging upward, key-plates slidable in said channels and conforming thereto, said key-plates having channels in their inner sides terminating in shoulders, and a sealing-strip for passing over the bottle-closure, the ends thereof being passed through said channels, and terminating in upwardly-extended portions for engaging with said shoulders.

809,012. **VALVE MECHANISM.** JAMES M. RAIKES and EDWARD W. RAIKES, Cleveland, Ohio. Filed Dec. 19, 1904. Serial No. 237,417.

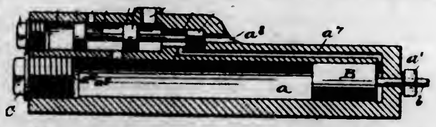

Claim.—1. In a valve mechanism, the combination of a cylinder, a piston adapted to reciprocate therein, a valve-chamber, a piston-valve occupying said chamber and having three heads, two of the heads being of different area and the third head having an area greater than such difference, and passage ways from the valve-chamber to the cylinder, leading as follows when the valve is at the outer end of its stroke, a passage-way to one end of the cylinder leading from a point between the heads of different area, a passage-way to the other end of the cylinder leading from a point between the other two heads, and a passage-way to an intermediate part of the cylinder from a point beyond the large-headed end of the valve.

2. The combination of a cylinder, a valve-casing, a pair of passage-ways leading from the valve-casing to the cylinder, a piston-valve occupying the valve-casing and having three heads, one of which is smaller than the other two, said valve being adapted to stand with one of said passage-ways between such small head and the next head, and the other passage-way between the other two heads, an admission passage-way between the heads when the valve is in each position, an exhaust passage-way controlled by the small head, and an additional passage-way from the cylinder to the valve-casing beyond the large end of the valve when so positioned.

3. The combination of a cylinder and a cylindrical valve-casing

side by side, and made solid with each other, a reciprocating piston within the cylinder, a piston-valve comprising three heads and a connecting-stem adapted to be inserted through the end of the valve-casing, means for closing such end, a passage-way from near one end of the valve-casing to near the end of the cylinder, a passage-way from an intermediate part of the valve-casing to near the other end of the cylinder, and a passage-way from near the other end of the valve-casing to an intermediate part of the cylinder, an admission passage-way to the valve-casing between two of the heads of the valve, and a pair of exhaust passage-ways leading from the chamber, one beyond the smallest head and the other intermediate of the two other heads.

4. The combination of a cylinder, a tubular valve-casing adjacent thereto, said valve-casing comprising a cylindrical chamber and a smaller cylindrical extension, a passage-way from the extension to the cylinder near one end, an exhaust passage-way from the extension, a passage-way from the main valve-casing to the cylinder near the other end, a passage-way from near the end of the main valve-casing to an intermediate point in the cylinder, a piston-valve having a stem and a pair of heads of the same diameter occupying said main valve-chamber, said stem extending into said extension, a smaller head on the stem within the extension, an admission-opening in the chamber between the smaller head and the next adjacent head, an exhaust-opening from the cylinder between the two larger heads of the valve.

809,013. **HOT-WATER-CIRCULATING APPARATUS.** ANDERS B. RECK, Copenhagen, Denmark. Filed Jan. 31, 1896. Serial No. 668,618.

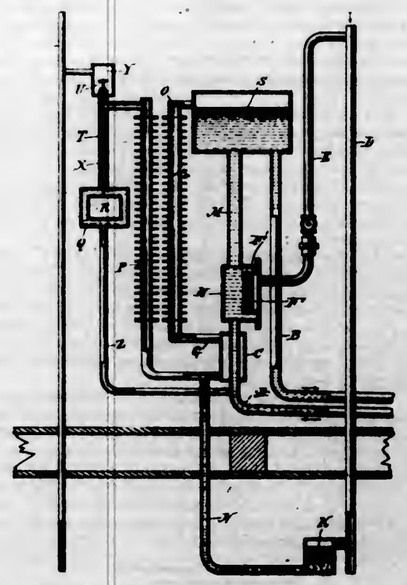

Claim.—1. In an apparatus for water circulation, comprising a flow-pipe, radiators, and a return-pipe from the radiators, the combination of a steam-supply pipe, a heating-tank provided with an inlet for steam, a pipe rising from the heating-pipe, a separator-tank connected with the rising-pipe and provided with an outlet for steam and water, a condenser connected with said outlet and located adjacent to said return-pipe, said condenser being adapted to conduct heat to the return-pipe, an outlet-pipe for air and excess steam leading from the steam-chamber of the condenser, a condensation-pipe in communication with said steam-chamber, and a water seal through which said condensation-pipe communicates with the steam-supply pipe to prevent the passage of steam from the supply-pipe to the condenser.

2. In an apparatus for water circulation, comprising a flow-pipe, radiators, and a return-pipe from the radiators, the combination of a steam-supply pipe, a heating-tank provided with an inlet for steam, a subdividing device located at the steam-inlet to break up the current of steam into a number of small jets and reduce its velocity, a pipe rising from the upper part of said heating-tank, a separator-tank connected to the upper end of said rising-pipe and provided with an outlet for steam and water, a condenser connected with said outlet located adjacent to said return-pipe and adapted to conduct heat thereto, an outlet-pipe for air and excess steam leading from the steam-chamber of the condenser, and a condensation-pipe in communication with said steam-chamber and with the steam-supply pipe, said condensation-pipe having a water seal to prevent the passage of steam from the supply-pipe to the condenser.

809,014. **DROPPER FOR DISINFECTING APPARATUS.** WILLIAM H. ROSS, Baltimore, Md. Filed May 18, 1905. Serial No. 261,003.

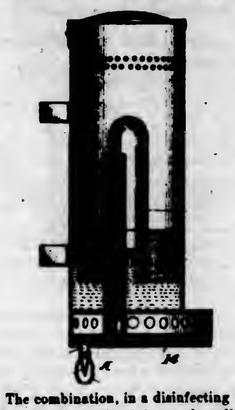

Claim.—1. The combination, in a disinfecting apparatus, with a fluid-tank and means for maintaining a slow discharge of fluid therefrom, of a dropping device comprising an open discharge-tube and a relatively slender solid point depending therefrom and from which the fluid drops.

2. The combination, in a disinfecting apparatus, with a fluid-tank and means for maintaining a slow discharge of fluid therefrom, of a dropping device connected with the discharge-opening of said apparatus and comprising a slender solid depending point from which the fluid drops.

3. The combination, in a disinfecting apparatus, with a fluid-tank and means for maintaining a slow discharge of fluid therefrom, of a dropping device connected with the discharge-opening of said apparatus and comprising a slender solid depending point from which the fluid drops, and a casing surrounding said point, for the purpose set forth.

809,015. **CHAIN.** SOLOMON SCHINDALL, New York, N. Y. Filed Mar. 31, 1905. Serial No. 253,690.

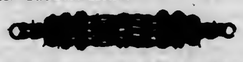

Claim.—1. A chain device, comprising a plurality of parallel chains placed side by side, the links of the separate chains forming transverse series of links, and the adjacent transverse series of links being connected by a single cross-link the side portions of which are passed through the links of the said two adjacent series of transverse links, substantially as shown and described.

2. A chain device, comprising a plurality of parallel chains placed side by side, the links of the separate chains forming transverse series of links, and the adjacent transverse series of links being connected by a single cross-link the side portions of which are passed through the links of the said two adjacent series of transverse links, and the links of the parallel chains being curb-links, substantially as shown and described.

3. A chain device, comprising a plurality of separate parallel curb-chains placed side by side and the links of which are twisted so that the sides thereof cross, the corresponding links of each chain being connected by a single transverse link, the side portions of which are passed therethrough, said chain device being also provided at the ends with transverse links which connect the corresponding links of the separate chains, and short chains connected with the transverse links, a number of the short chains being less

than the number of the first-named chains which make up the body of the device, substantially as shown and described.

4. A chain device, comprising a plurality of separate parallel curb-chains placed side by side and the links of which are twisted so that the sides thereof cross, the corresponding links of each chain being connected by a single transverse link, the side portions of which are passed therethrough, said chain device being also provided at the ends with transverse links which connect the corresponding links of the separate chains, and short chains connected with the transverse links, a number of the short chains being less than the number of the first-named chains which make up the body of the device, some of the links of the body of the device being longer than others and being connected by a single transverse link, substantially as shown and described.

809,016. **DUMPING-CAR.** PETER SCHNEIDER, Cowego, N. Y. Filed Aug. 28, 1905. Serial No. 276,018.

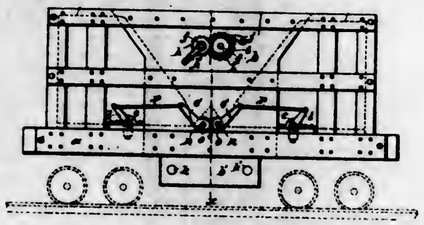

Claim.—1. A car-body composed of a stationary central section formed of two side plates, a stationary chute attached at its ends to the bottom portions of said side plates, and end sections pivotally supported to tilt automatically from the chute, in combination with transverse shafts pivotally supported in the aforesaid side plates, arms attached to said shafts, means connecting said arms to the inner ends of the end sections, means for turning the shafts to lift the end sections into normal position and locking devices for retaining the end sections in normal position.

2. A car-body composed of a stationary central section formed of side plates, a stationary chute attached at its ends to said side plates, and end sections mounted near the center of their length on transverse shafts to tilt automatically from the chute, in combination with shafts pivoted at their ends in the aforesaid side plates, arms attached to said shafts, means connecting said arms to the inner ends of the end sections, means for turning said shafts to lift the end sections into normal position, intermeshing gears pivotally supported at one side of the central body-section, arms extending from said gears toward the adjacent end sections, cranks attached to the supporting-shafts of said end sections, and rods connecting said cranks to the arms of the gears as and for the purpose set forth.

3. A car-body composed of a stationary central section formed of side plates extending below the body, a stationary chute extending across the center of the body and attached to the aforesaid side plates, and end sections mounted near the center of their length, on transverse shafts and tilting automatically from the chute, in combination with shafts pivoted at their ends in the aforesaid side plates, arms attached to said shafts, means connecting said arms to the inner ends of the end sections, intermeshing gears attached to said shaft, means for locking said gears and maintaining the end sections in their normal position, stops secured to the bottom extensions of the stationary side plates to limit the tilting of the end sections, intermeshing gears pivotally supported at one side of the central section, arms extending from said gears toward the adjacent end sections, cranks attached to the supporting-shafts of the said end sections, and rods connecting said cranks to the arms of the gears as set forth and shown.

809,017. **WARDROBE-HOOK.** BENJAMIN S. SCHAEFER, Columbus, Ohio. Filed Feb. 20, 1905. Serial No. 246,926.

Claim.—1. A wardrobe-hook comprising a vertical member and a rounded and broadened garment-supporting member of approximately uniform width throughout its length and inclined rearwardly toward the vertical member and having its rounded and broadened surface gradually merged rearwardly into the vertical member.

2. A wardrobe-hook comprising a vertical member and a rounded and broadened garment-supporting member of approximately uniform width throughout its length and inclined rearwardly toward the vertical member and having its rounded and broadened surface gradually merged rearwardly into the vertical member, the said garment-supporting member having its outer or forward end broadened and rounded and turned down.

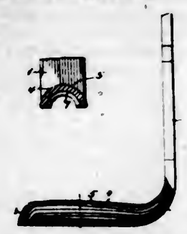

809,018. **ROLLER STAMPING DEVICE.** WILLIAM SCOTT, New York, N. Y., assignor to Kaumograph Co., New York, N. Y. Filed July 15, 1905. Serial No. 269,870.

Claim.—1. A roller stamping device comprising a hand-frame, a roller-stamp journaled thereon and provided in its peripheral face with a mark in intaglio, and an ink-fountain held on the said hand-frame adjacent to the said roller-stamp, the ink-fountain having a doctor in engagement with the peripheral face of the said roller-stamp.

2. A roller stamping device comprising a hand-frame, a roller-stamp journaled thereon and provided in its peripheral face with a mark in intaglio, an ink-fountain held on the said hand-frame adjacent to the said roller-stamp, the ink-fountain having a doctor in engagement with the peripheral face of the said roller-stamp, the said ink-fountain being pivoted on the frame, and means pressing the said fountain to hold the doctor with more or less force in contact with the roller.

3. A roller stamping device comprising a hand-frame, a roller-stamp journaled thereon and provided in its peripheral face with a mark in intaglio, an ink-fountain held on the said hand-frame adjacent to the said roller-stamp, the ink-fountain having a doctor in engagement with the peripheral face of the said roller-stamp, the said ink-fountain being pivoted on the frame, a spring-arm extending from the said ink-fountain, and an adjusting device on the frame and engaging the said spring-arm.

4. A roller stamping device comprising a hand-frame, a roller-stamp journaled thereon and provided in its peripheral face with a mark in intaglio, an ink-fountain held on the said hand-frame adjacent to the said roller-stamp, the ink-fountain having a doctor in engagement with the peripheral face of the said roller-stamp, and a spring-arm held in the frame and provided with a locking-pin engaging a recess in one end of the said roller-stamp to lock the latter against rotation until released and to automatically lock the roller-stamp on the completion of a revolution.

809,019. **DEVICE FOR CALCULATING HORSE-POWER.** BUCKEE M. SOUTHAM, Waipahu, Hawaii. Filed Jan. 31, 1905. Serial No. 243,497.

Claim.—1. A calculating device comprising a pair of scales, one being provided with a stationary gage-point, and a slide having a scale adapted to register with one of the first-mentioned scales and provided with a rider slidably mounted thereon and adapted to register with the other stationary scale and with the gage-point.

2. The combination with a support, of a slide-rule thereon having two stationary scales, and a slide provided with a scale and with a rider slidably mounted thereon and adapted to register with one of said stationary scales.

3. A calculating device, comprising a pair of scales, one representing mean effective pressures in horse-powers, and the other representing cylinder diameters, the second scale being provided with a stationary gage-point, a slide having a scale adapted to register with the first-mentioned scale and provided with a rider slidably mounted thereon and adapted to register with the second stationary scale and with the gage-point.

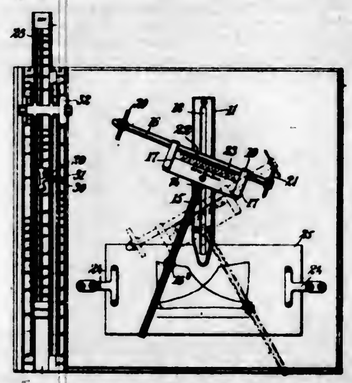

4. A device for calculating horse-powers, comprising a stationary scale having divisions representing mean effective pressures and horse-powers, a second stationary scale having divisions representing cylinder diameters and a gage-point among said divisions, and a slide adapted to move along both of said first-mentioned scales and provided with a scale representing revolutions per minute and length of stroke and having a rider slidably mounted thereon adapted to register with the second of said stationary scales and with said gage-point.

809,020. **SWIVEL.** FRANK W. SEIDL, Manitowoc, Wis. Filed Apr. 6, 1905. Serial No. 254,269.

Claim.—1. A swivel comprising a body portion with branches, a hook screw-threaded and mounted to turn in one of said branches, and a sleeve mounted to slide upon the other branch and to cover the end of the hook when closed, said other branch having a socket to receive said hook.

2. A swivel comprising a body portion with branches, a hook portion having a shank screw-threaded and mounted to turn in one of said branches, the other branch having at its free end a socket to receive said hook portion, a sleeve mounted to slide upon the other branch, and a spring within said branch adapted to be put under compression by the movement of said sleeve.

3. A swivel comprising a body portion with branches, one of which is internally threaded and the other having a hollow portion with slotted walls, a hook mounted in the threaded branch and adapted to a socket in the end of the other branch, a sleeve mounted to slide upon the hollow member, and a pin passed through said sleeve and through the slotted walls of the said member, and a spring within the said hollow portion in the path of movement of said spring.

809,021. **PROCESS OF PREVENTING THE FORMATION OF CLINKER IN GAS-PRODUCERS.** JAMES B. SHEAFFER, Dunbham, Pa., assignor of one-half to Orville C. Skinner, Dunbham, Pa. Filed July 27, 1904. Serial No. 218,267.

Claim.—1. The mode herein described of preventing the formation of clinker in gas-producers, said mode consisting in injecting jets or streams of water into the incandescent mass of fuel adjacent to the walls of the producer where clinker usually forms, substantially as described.

2. The mode herein described of preventing the formation of clinker on the walls of gas-producers, said mode consisting in projecting jets or streams of water against the walls of the producer at the point where clinker usually forms, substantially as described.

3. The mode herein described of preventing the formation of clinker in a gas-producer, said mode consisting in projecting jets or streams of water into the incandescent mass of fuel in the producer at points adjacent to the walls thereof, and agitating the mass of fuel, substantially as described.

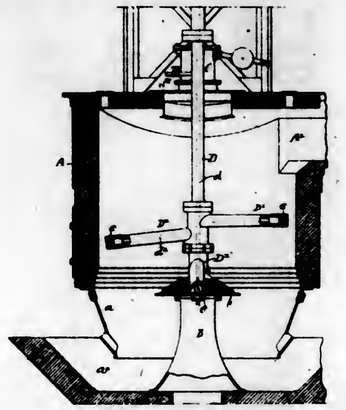

809,022. **AUTOMATIC LIFT-SEPARATOR.** SIDNEY W. SIBERNER, New York, N. Y. Filed Mar. 7, 1904. Serial No. 196,709.

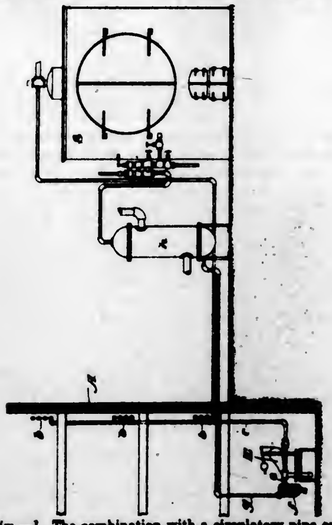

Claim.—1. The combination with a circulatory pipe or system of a steam-trap for lifting the returned water and a lift-separator interposed in the delivery from said steam-trap and comprising relatively large and small connected inlet and outlet chambers for the purpose described.

2. The combination with a pipe or system of a lifting apparatus connected with the same and constructed to lift the water therefrom, and a lift-separator interposed in the delivery of said apparatus to separate the steam from the water flowing through said delivery and assist in lifting the returned water.

3. The combination with a pipe or system of a lifting apparatus connected with the same and constructed to lift the water therefrom, and means interposed in a connection of said apparatus to separate the steam from the water flowing through said connection and to assist the lifting apparatus in the lifting operation.

4. The described lift-separator comprising relatively immovable chambers connected at or near their lower ends, the one serving as an inlet-chamber and having an inlet-opening at its upper end, the other serving as an outlet-chamber and having an outlet-opening at its lower end, said inlet-chamber being relatively larger in capacity than said outlet-chamber.

809,023. **GAS-PRODUCER.** ORVILLE C. SKINNER and JAMES B. SHEAFFER, Dunbham, Pa. Filed Aug. 1, 1904. Serial No. 219,135.

Claim.—1. A gas-producer having a fuel-chamber, a steam-jet pipe extending into the fuel-chamber, and a water-jet pipe extending into the fuel-chamber and having its discharge-end directed toward the steam-jet pipe.

2. A gas-producer having a fuel-chamber, a steam-jet pipe extending into the fuel-chamber, and a water-jet pipe extending into the fuel-chamber and having its discharge-end directed toward the steam-jet pipe, and means for agitating the fuel in the fuel-chamber.

3. A gas-producer having a fuel-chamber, a steam-jet pipe extending into the fuel-chamber, a water-jet pipe extending into the fuel-chamber and having its discharge-end directed toward the steam-jet pipe, and means for agitating the fuel in the fuel-chamber, said means comprising a rotary shaft.

4. A gas-producer having a fuel-chamber, a steam-jet pipe extending into the fuel-chamber, a water-jet pipe extending into the fuel-chamber and having its discharge-end directed toward the steam-jet pipe, and means for agitating the fuel in the fuel-chamber, said means comprising a rotary shaft having a plurality of arms.

5. A gas-producer having a fuel-chamber, a steam-jet pipe extending into the fuel-chamber, a water-jet pipe extending into the fuel-chamber and having its discharge-end directed toward the steam-jet pipe, and means for agitating the fuel in the fuel-chamber, said means comprising a rotary shaft having a plurality of arms, and a plurality of teeth on each arm.

809,024. **CLOTHES-LINE.** ALBERT SMITH, Lincoln, Neb. Filed Aug. 28, 1905. Serial No. 276,035.

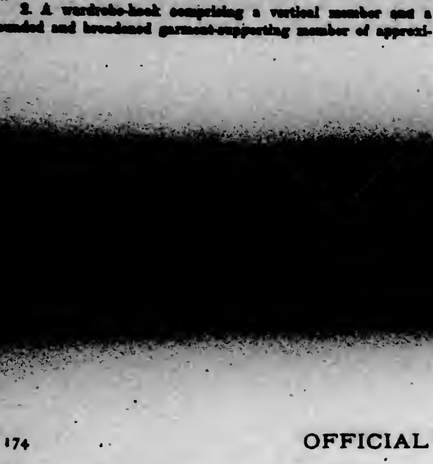

Claim.—1. A clothes-line comprising a carrier, a guide-pulley above and below the pivot-point of the carrier, and a line passing around the guide-pulleys and carrier, substantially as described.

2. A clothes-line comprising a carrier, a guide-pulley above and below the pivot-point of the carrier, and a line passing around the guide-pulleys and carrier, the line passing around the carrier on opposite sides of the pivot-point, substantially as described.

3. A clothes-line comprising a carrier, a guide-pulley above and below the pivot-point of the carrier, and a line passing around the guide-pulleys and carrier, the line passing around the carrier on opposite sides of the pivot-point and the guide-pulleys being arranged on opposite sides of the line, substantially as described.

809,025.

809,028. **GAS-PRODUCER.** CHARLES C. SKINNER and JAMES H. SHAFFER, Durham, Pa. Filed July 27, 1904. Serial No. 218,369.

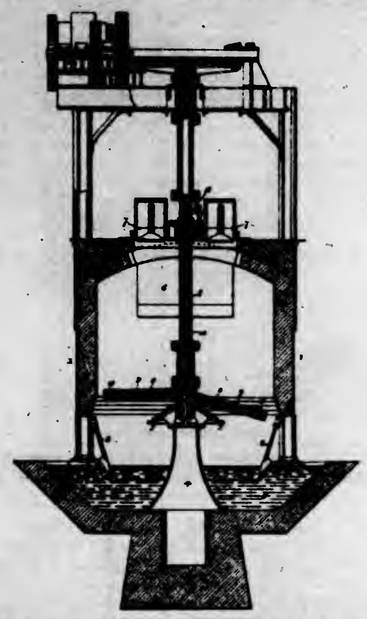

Claim.—1. The combination in a gas-producer, of a stirring-arm mounted within the producer, the arm having a nozzle through which water is projected into the mass of fuel at the point where clinker usually forms, substantially as described.

2. The combination of a gas-producer with a water-supply pipe mounted within the producer, said pipe having a nozzle adjacent to the inner wall of the producer for projecting a jet or stream of water toward the said inner wall of the producer into the mass of fuel where the clinker usually forms, substantially as described.

3. The combination of a gas-producer having a rotating shaft with hollow arms projecting into the mass of fuel in the producer, and means for discharging jets or streams of water from said arms into the fuel, substantially as specified.

4. The combination of a gas-producer having a rotating shaft with a hollow arm projecting into the mass of fuel in the producer, and means for discharging a jet or stream of water from the outer ends of said arm against the walls of the producer, substantially as described.

5. The combination of a gas-producer having a hollow rotating water-cooled shaft, with projecting water-cooled arms thereon, and water-discharging nozzles secured to the ends of said arms, substantially as specified.

809,024. **CLOTHES-LINE SUPPORT.** PATRICK J. SLOAN, Bayonne, N. J. Filed June 2, 1904. Serial No. 210,706.

Claim.—1. A clothes-line support comprising an arm mounted to swing horizontally and carrying at its free end a pulley for the passage of the clothes-line, carrier or guide pulleys on the support for the arm, one above and the other below the pivot of the said arm and over which passes the clothes-line to and from the said arm-pulley, and movable carriers for the said guide-pulleys, to allow the carrier or guide pulleys to assume different angles on swinging the arm in or out of the window.

2. A clothes-line support comprising an arm mounted to swing horizontally and carrying at its free end a pulley for the passage of the clothes-line, carrier or guide pulleys on the support for the arm, one above and the other below the pivot of the said arm and over which passes the clothes-line to and from the said arm-pulley, and carrier-plates disposed above and below the pivot of the said arm and mounted to swing up and down, on which plates the said guide-pulleys are mounted to turn.

3. A clothes-line support comprising an arm mounted to swing horizontally and carrying at its free end a pulley for the passage of the clothes-line, carrier or guide pulleys above and below the pivot of the said arm and over which passes the clothes-line to and from the said arm-pulley, movable carriers for the said guide-pulleys, to allow the carrier or guide pulleys to assume different angles on swinging the arm in or out of the window, and a connection between the said carriers and the said arm, for imparting movement to the said carriers on swinging the arm about.

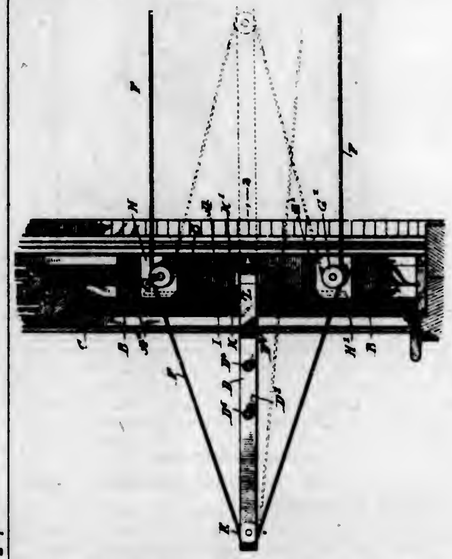

4. A clothes-line support comprising a bracket for attachment to a window, an arm mounted to swing horizontally on the said bracket, a pulley journaled in the free end of the said arm, plates hinged on the bracket above and below the pivot for the said arm, guide-pulleys journaled on the said plates and over which passes the clothes-line to and from the pulley on the said arm, and means on the said arm for imparting a swinging motion to the plates on swinging the arm.

5. A clothes-line support comprising a bracket for attachment to a window, an arm mounted to swing horizontally on the said bracket, a pulley journaled in the free end of the said arm, plates hinged on the bracket above and below the pivot for the said arm, guide-pulleys journaled on the said plates and over which passes the clothes-line to and from the pulley on the said arm, and means on the said arm for imparting a swinging motion to the plates on swinging the arm, the said means consisting of a rod secured to the arm, parallel to the pivot thereof, the upper end of the rod engaging the under side of the upper hinge-plate and the lower end of the rod being formed into a hook engaging a loop on the inner face of the lower hinge-plate.

6. A clothes-line support, comprising a bracket, an arm pivoted to the bracket, a pulley on the outer end of the arm, and hinged guide-pulleys on the bracket, one above and the other below the pivot of the arm and approximately in the same vertical plane therewith.

7. A clothes-line support, comprising a bracket, an arm pivoted to the bracket, a pulley on the outer end of the arm, guide-pulleys hinged to the said bracket on opposite sides of the pivot of the arm, and means for swinging the guide-pulleys from the said arm.

8. In a clothes-line support, a pivoted arm having a pulley at its free end, hinged carriers one above and the other below the pivot of the arm, a guide-pulley mounted in each carrier, a rod secured to the arm and operatively engaging the said carriers to swing them as the arm is swung, a loop held to slide on the rod, and keepers with which the loop is adapted to engage.

9. A clothes-line support, comprising a horizontally-swinging arm, a pulley on the outer end of the arm, independently-hinged guides, located a distance above and below the hinged end of the arm, and means for causing the guides to assume different angles on swinging the arm.

10. A clothes-line support, comprising a swinging arm, a pulley on the outer end of the arm, independently-hinged guides arranged on opposite sides of the hinged end of the arm at a distance therefrom, and means for swinging the guides in unison with the arm.

809,025. **INTERCHANGEABLE CULTIVATOR AND SEED-DRILL.** JACOB B. SHELBY, Chicago, Ill. Filed June 13, 1903. Serial No. 161,848.

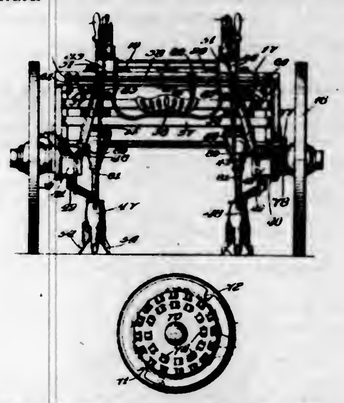

Claim.—1. In combination, a frame mounted on wheels and having attaching means adapted to receive interchangeably either cultivator mechanism comprising a shovel-carrying bar and a plurality of shovels, or seeder mechanism comprising a suitable dropper and furrow-making device.

2. In combination, an arching axle carried by wheels, attaching means formed on the axle for interchangeably attaching seeder mechanism or cultivator mechanism to the axle, such attaching means comprising loops formed on the cross member of the axle, and loops formed on the uprights of the axle for coöperating with the first-mentioned loops in attaching the seeder mechanism.

3. In combination, a frame comprising an arch-form axle and being mounted on wheels; ways attached to the vertical members of the arch; a frame adapted to move in the ways; a seed-can carried by the latter frame; mechanism for discharging seed from the can; and driving means carried by one of the wheels, with which the seed-discharging mechanism comes into operative engagement when the can-carrying frame is in its lower position.

4. In combination, an arching axle carried by wheels; a rocking crank-shaft journaled on the cross member of the arch; slideways formed on the uprights of the arch; and seeder mechanism carried by the crank-shaft and running in the slideways.

5. In combination, an arch-form axle carried by wheels; a bar pivotally attached to each upright of the axle; means for securing the bar parallel to the upright of the axle; and a seeder-carrying frame adapted to slide between the bar and the axle.

809,026. **ELECTRIC SCALE FOR ACCURATE LARD-WEIGHING.** CHARLES E. SUPPE, Groton, La., assignor to The Southern Cotton Oil Company, Jersey City, N. J., a Corporation of New Jersey. Filed June 25, 1903. Serial No. 163,008.

Claim.—1. In a device for weighing lard and automatically cutting off the flow thereto, the combination with a scale, of a feed-pipe, a valve in said pipe having a valve-rod, a pivoted lever connected to said rod, a spring attached to the end of the lever and acting to open the valve, an electromagnet arranged in connection with said lever and operating to close the valve, and an electric circuit having contacts, one of which is on the scale, so that the circuit may be closed to close the valve when the required delivery of lard or similar material has passed said valve, the movement of the scale thus controlling the magnet.

2. The combination with a scale, of a feed-pipe for delivering lard or similar substance to a receptacle on the scale, a valve in said pipe controlled by an electric circuit which is itself controlled by the movements of the scale, and a pressure-valve likewise in the feed-pipe, together with a pressure-controlling mechanism consisting essentially of a spring-plunger acted on by the pressure in the supply-pipe and opening and closing the aforesaid valve so as to make the quantity of the flow constant.

809,026.

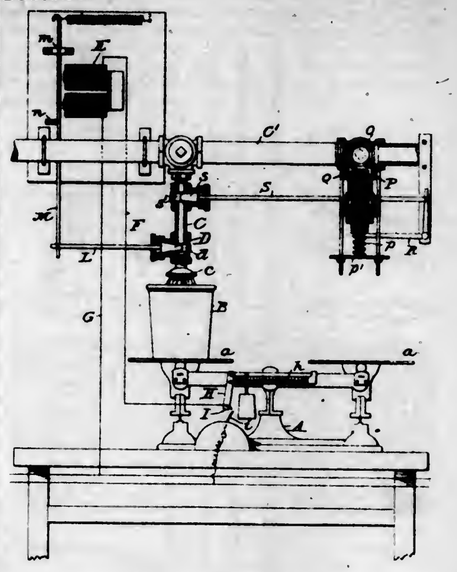

809,027. **HINGE.** JOSEPH SOSS, New York, N. Y. Filed Feb. 16, 1905. Serial No. 245,809.

Claim.—1. A hinge, comprising two plates having oblong, longitudinal and rectangular recesses in one edge thereof and segmentally-curved plates at the inner edges of said recesses, said segmentally-curved plates being projected in opposite directions, one of said segmentally-curved plates being provided at its ends with segmental keepers formed by inwardly-set angular flanges, and the other segmentally-curved plate being provided with outwardly-set segmental flanges adapted to enter said keepers and to slide therein, and means for preventing the separation of the segmentally-curved plates when connected, substantially as shown and described.

2. A hinge of the class described, comprising two plates each of which is provided in one edge thereof with a longitudinal rectangular recess at the inner side of which is a segmentally-curved plate, one of said segmentally-curved plates being provided at its ends with inwardly-set flanges forming segmental keepers which open upwardly and downwardly, and the other segmentally-curved plate being provided at its ends with outwardly-set flanges which extend upwardly and downwardly and which are adapted to enter and move in said keepers, said segmentally-curved plates being adapted to slide freely one within the other, substantially as shown and described.

3. A hinge of the class described, comprising two plates, each of which is provided in one edge with a longitudinal rectangular recess at the inner side of which is a segmentally-curved plate, one of said segmentally-curved plates being provided at its ends with inwardly-set segmental keepers and the other segmentally-curved plate being provided at its ends with flanges adapted to enter and move in said keepers, said segmentally-curved plates being also provided when connected, one with an inwardly-directed lug or projection near its free edge and the other with an outwardly-directed lug or projection near its free edge, substantially as shown and described.

809,028. **AUTOMATIC SAFETY RAILWAY-CROSSING.** THOS. SOWERS, Mariposa township, Ontario, Canada. Filed Apr. 20, 1905. Serial No. 256,048.

Claim.—1. In a device of the class described the combination of a railway-track; a swinging gate transverse of the track; a switch connecting with the track and located at one side of the gate; means

for opening and closing the switch; and connecting means between the gate and the switch whereby when the gate is closed the switch is open, and vice versa, substantially as described.

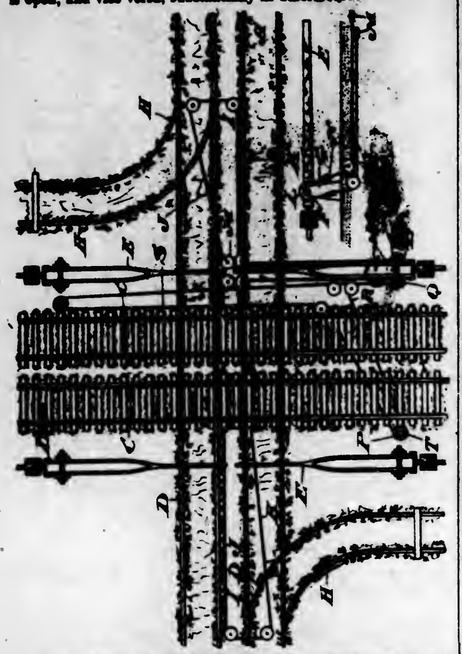

2. In a device of the class described the combination of a railway-track; a swinging gate transverse of the track; a switch connecting with the track and located at one side of the gate; means for opening and closing the switch; connecting means between the gate and the switch whereby when the gate is closed the switch is open, and vice versa; and a stop in the line of the switch, substantially as described.

3. In a device of the class described the combination of a railway-track; a swinging gate transverse of the track; a switch connecting with the track and curved out laterally; means for opening and closing the switch; and connecting means between the gate and the switch whereby when the gate is closed the switch is open, and vice versa, substantially as described.

4. In a device of the class described the combination of a right of way; a road crossing said right of way; railway-tracks on said road; a swing-gate transverse of the roadway at each side of the right of way; a switch at each side of the crossing, connecting with the main line, and curved out laterally; means for opening and closing the switches; and connecting means between each switch and a gate, whereby when the gate is closed the switch is open, and vice versa, substantially as described.

5. In a device of the class described the combination of a railway-track; a swinging gate transverse of the track; a switch connecting with the track and located at one side of the gate; means for opening and closing the switch; a drum on the same spindle as and rocking with the gate; two cables connected to opposite sides of the drum and opposite sides of the switch opening and closing means; and guide-pulleys for said cables, whereby when the gate is closed the switch is open, and vice versa, substantially as described.

6. In a device of the class described the combination of a railway-track; a swinging gate transverse of the track; a switch connecting with the track and located at one side of the gate; means for opening and closing the switch; a drum on the same spindle as and rocking with the gate; two cables connected to opposite sides of the drum and opposite sides of the switch opening and closing means; guide-pulleys for said cables, whereby when the gate is closed the switch is open, and vice versa; and a draft-spring in the cable adapted to open the switch, substantially as described.

7. In a device of the class described the combination of a right of way; a road crossing said right of way; railway-tracks on said road; a swing-gate transverse of the roadway at each side of the right of way; a switch at each side of the crossing, connecting with the main line and curved out laterally; means for opening and closing the switches; two drums on the same spindle as and rocking with one of the gates; two cables connected to opposite sides of one of the drums and opposite sides of the opening and closing means of one of the switches; similar cables similarly connected to the other drum and switch opening and closing means; and guide-pulleys for said cables, whereby when the gate is closed the switch is open, and vice versa, substantially as described.

8. In a device of the class described the combination of a right of way; a road crossing said right of way; railway-tracks on said road; a swing-gate transverse of the roadway at each side of the right of way; a switch at each side of the crossing, connecting with the main line, and curved out laterally; means for opening and closing the switches; connecting means between each switch and a gate, whereby when the gate is closed the switch is open, and vice versa; a signal-lamp adapted to show a danger-signal along the road and a safety-signal along the right of way, and vice versa; and means operated by a gate to move said signal-lamp, substantially as described.

9. In a device of the class described the combination of a right of way; a road crossing said right of way; railway-tracks on said road; a swing-gate transverse of the roadway at each side of the right of way; a switch at each side of the crossing, connecting with the main line, and curved out laterally; means for opening and closing the switches; connecting means between each switch and a gate, whereby when the gate is closed the switch is open, and vice versa; a signal-lamp adapted to show a danger-signal along the road and a safety-signal along the right of way, and vice versa; a pulley on the signal-lamp; a drum on the same spindle as and rocking with the aforesaid gate; two cables connecting the pulley and the drum; and guide-pulleys for the said cables, substantially as described.

809,029. **SIGNAL.** ROBERT STANFORD and PARKER R. COLPITT, Halifax, Canada. Filed Aug. 19, 1904. Serial No. 221,301.

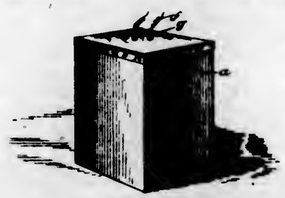

Claim.—1. A signal comprising a fusible case containing an illuminant charge, a destructible case therein containing a priming charge, a fuse leading from the priming to the illuminant charge, and means extending into the destructible case for igniting the priming charge to light the fuse.

2. A signal, comprising a case of lead, containing an illuminant charge, a destructible case therein containing a priming charge, a fuse for the priming charge leading through the bottom of said destructible case and thence to the illuminant charge, and means for igniting the priming charge.

3. A signal comprising a case containing an illuminant charge, another case therein containing a priming charge, a fuse leading from the priming charge to the illuminant charge, an igniter embedded in the priming charge, and an electric circuit of which the said igniter forms a part.

4. A signal comprising a case containing an illuminant charge, and another case therein containing a priming charge, a fuse leading from the priming charge to the illuminant charge, insulating-tubes passing through said first-named case to the interior of the second-named case, an electric igniter embedded in the priming charge, and electric conductors passing through said tubes and having electrical connection with the said igniter, the latter and said conductors forming parts of an electric circuit.

809,080. **TURNBUCKLE.** JOSEPH A. STEINMETZ, Philadelphia, Pa. Filed June 6, 1904. Serial No. 211,269.

Claim.—1. A turnbuckle comprising tubular portions, having closed inner ends and adapted to receive and protect the ends of the tie-rods, means at the outer ends of said portions for engaging with rods and an annular portion intermediate said tubular portions.

2. A turnbuckle comprising tubular portions, means at the outer ends of said tubular portions for engaging with the rods and an apertured member intermediate said tubular portions, the ends of the latter adjacent said member being closed.

809,031. **CHURN.** FREMEN SWALLOW, Claremore, Ind. Ter., assignor of one-fourth to Lee Settle, one-fourth to Morris Haas, and one-fourth to Joseph B. Poland, all of Claremore, Ind. Ter. Filed Feb. 17, 1905. Serial No. 246,041.

Claim.—1. In a churn, the combination with a dasher provided with upwardly-extending obliquely-arranged tubes, of a tubular dasher-shaft connected thereto, an air-tube extending into the tubular dasher-shaft and having a collecting-hood at its upper end with means for rotating the dasher-shaft and air-tube.

2. In a churn the combination with a rotary dasher, of a tubular dasher-shaft, connected thereto, an air-tube extending into the tubular dasher-shaft, a hood arranged upon the upper end of the air-tube, gears connected to the dasher-shaft and air-tube, a gear adapted to mesh with the said gears carried by the shaft and tube, together with means for supporting the said driving mechanism upon the churn-body, as set forth.

3. In a churn, the combination with the central casting, of the arms hinged thereto, each arm having its rear end upset, a pin connected to said upset end, a flanged sleeve slidable upon each arm, and a spring surrounding the pin and adapted to bear upon the upset end of the arm and the flange of the sleeve, together with a dasher-shaft passing through the central casting and means arranged upon the said central casting for rotating the dasher-shaft, as set forth.

4. In a churn, the combination with a dasher, of the tubular dasher-shaft, an air-tube, extending into the dasher-shaft, a hood arranged upon the upper end of the air-tube, the gears carried by the dasher-shaft and air-tube, a gear meshing with the said gears carried by the tube and shaft, the standard and bracket-arms for supporting said gears, the central casting carrying the standard, the arms hinged thereto and having upset ends, the pins connected to said upset ends, the flanged sleeves sliding upon the hinged arms, and the springs surrounding the pins and bearing upon the flanges of the sleeves as and for the purpose described.

5. In a churn, the combination with a dasher-shaft, of a casting supporting said shaft provided with hinged arms, each arm being provided with spring-actuated sleeves adapted to engage the edge of the churn and means carried by said casting for the purpose of operating the dasher-shaft, as set forth.

809,082. **EARTH-ANCHOR.** GEORGE F. SWORTHWOOD, Newark, N. J. Filed Aug. 1, 1905. Serial No. 272,510.

Claim.—1. The combination in an earth-anchor of a supporting-body, earth-penetrating blades hinged thereto, the blades having hinge-lugs with notches in their back edges to form catches against the supporting-body, the ends of the lugs extended to engage with the opposite blades when the blades are wide open, the blades comprising broad surfaces terminating in rounded and outwardly-curved points, an anchor-bolt passing through the supporting-body between the blades, there being a long thread on said bolt, a nut on the bolt below the supporting-body, there being lugs on the under side of said body to prevent the turning of the nut, and projections on the under side of said body for insertion in holes in an earth-plate, and an earth-plate as a thrust-bearing for the bolt.

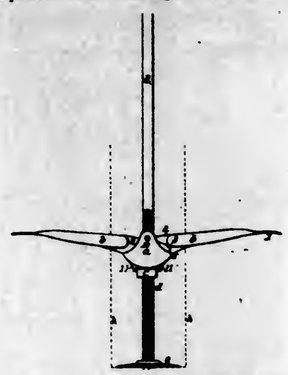

2. In an earth-anchor as shown, a supporting-body with hinge-lugs, a hole through the center of the body for the anchor-bolt, a long threaded anchor-bolt, a nut on the bolt below said body, there being lugs on the under side of said body to prevent turning of the nut, and there being projections on the under side of the body to engage with holes in an earth-plate, an earth-plate to engage with the projections on the supporting-body and containing a recess for the end of the anchor-bolt, blades with upturned edges for penetrating the soil with rounded and curved points, having hinge-lugs pivoted to the lugs of the supporting-body, the lugs provided with notches for engagement with the supporting-body, and extended ends for engagement with opposite blades when the blades are wide open.

3. An earth-anchor with soil-penetrating blades pivoted to a movable support as set forth, an anchor-bolt provided with a long thread extending through the anchor, a nut on the bolt held from turning by means on the anchor-blades, support, and an earth-plate to receive the thrust of the bolt.

4. An earth-anchor with soil-penetrating blades pivoted to a movable support, an anchor-bolt provided with a long thread extending through the anchor, a nut on the bolt below the anchor, there being lugs on the anchor to prevent the turning of the nut, there being projections on the anchor to temporarily hold an earth-plate by engagement with holes in said plate, and an earth-plate to receive the thrust of the bolt.

5. In combination with a anchor-bolt, an anchor movable by means of a long-threaded bolt through the anchor and a nut on the bolt under the anchor, the bolt thrusting against a fixed plate, separated from the anchor whereby the anchor is caused to rise by turning the bolt.

809,088. **FIRE-ESCAPE.** WILHELM F. TIEDE and FLORIAN OTT, Allegheny, Pa. Filed June 8, 1905. Serial No. 264,594.

Claim.—1. The combination with a building, of a collapsible metallic spiral stairway supported from the outside of the building near the top thereof, said collapsible stairway consisting of a plurality of spirally-arranged steps adapted to telescope one another, a platform suspended at the base of said steps and from the top of said stairway, means contained within said building to elevate said platform to telescope said steps, means to lock said steps in a telescoped position, means to shield said steps in said position, and means mounted within said building and actuated from the floor of the building to release said steps.

2. The combination with a building, of a shell supported upon the outside of said building near the top thereof, a spirally-arranged metallic stairway suspended from said shell, a platform supported by the base of said stairway, means mounted within said building to elevate said base and said stairway into said shell, and means carried within said building to release said stairway and said platform, substantially as described.

3. The combination with a building of a spirally-arranged telescopic stairway suspended from the top of said building and adapted

to be normally retained in a telescoped position, means to shield said stairway in said position, means actuated from each floor of said building to release said stairway, and means mounted within said building to telescope said stairway, substantially as described.

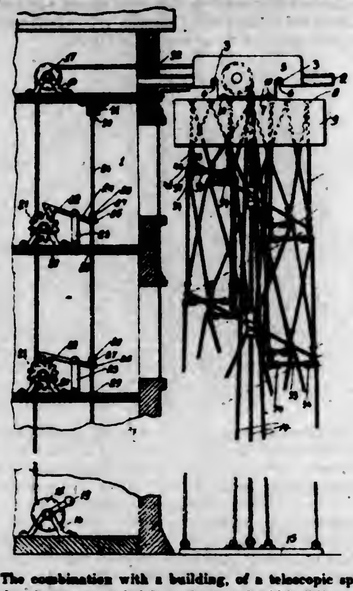

4. The combination with a building, of a telescopic spirally-arranged stairway suspended from the top of said building, means to normally hold said stairway in a telescoped position, and means to release said stairway, substantially as described.

5. In a fire-escape, a plurality of telescopic steps spirally arranged and adapted in their movement in one direction to operate by gravity, and means for positively moving the steps in the opposite direction.

6. A fire-escape of the character described consisting of a plurality of spirally-arranged telescopic steps adapted to be suspended from a building.

7. In a fire-escape, a suitably-supported shell, a spirally-arranged stairway suspended from said shell, and comprising a series of telescoping steps, means for normally holding said stairway in a telescoped position and means to release said stairway.

8. In a fire-escape, a plurality of telescopic spirally-arranged steps, adapted to be suspended in the form of a spiral stairway, and means for suspending said steps.

9. In a fire-escape, a suitably-suspended telescopic spiral stairway, and means to normally retain said stairway in the telescoped position.

10. In a fire-escape, a suitably-suspended telescopic spirally-arranged stairway, and means for shielding said stairway when in its telescoped position.

11. In a fire-escape, a telescopic spirally-arranged stairway, means for retaining said stairway normally in the telescopic position, and means for releasing said stairway.

12. In a fire-escape, a plurality of spirally-arranged telescopic steps.

809,084. GOLF-BALL. WILLIAM I. THOMAS, Chicago, Ill. Filed May 8, 1905. Serial No. 259,310.

Claim.—1. In a golf-ball, the combination with a core, consisting of windings arranged in layers, alternate layers being under relatively less tension than the intermediate layers, and a cover inclosing said core.

2. In a golf-ball, the combination with a center piece, of a core composed of windings arranged in layers surrounding said center piece, alternate layers being under greatly-increasing tension but under less tension than the intermediate layers, and a cover inclosing said core.

809,085. GOLF-BALL. WILLIAM I. THOMAS, Chicago, Ill. Filed May 8, 1905. Serial No. 260,320.

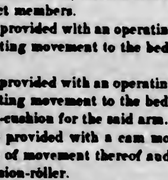

Claim.—1. In a golf-ball, the combination with a core composed of windings arranged in layers the inner and outer layers being wound under greater tension than the intermediate layer, and a cover inclosing said core.

2. In a golf-ball, the combination with a center piece, of a core composed of windings arranged in layers, the tension of the layer adjacent the center piece and that of the outer layer being greater than the tension of the windings of the intermediate layer, and a cover surrounding said core.

809,086. PLATE-PRESS. ROBERT TURNER, New Canaan, Conn., and BENJAMIN R. CORLEY, New York, N. Y. Filed Jan. 21, 1905. Serial No. 242,060.

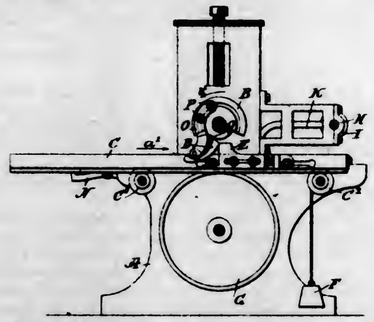

Claim.—1. A plate-press provided with an arm on the impression-roller, and a cam on the bed, the said arm and cam having yieldingly-mounted contact members.

2. A plate-press provided with an operating-arm on the impression-roller, for imparting movement to the bed, the said arm being yieldingly mounted.

3. A plate-press provided with an operating-arm on the impression-roller, for imparting movement to the bed, the said arm being pivoted, and a spring-cushion for the said arm.

4. A plate-press provided with a cam mounted on the bed to yield in the direction of movement thereof and adapted to be actuated from the impression-roller.

5. A plate-press provided with a cam mounted to slide on the bed, and a spring-cushion for the said cam whereby the cam can yield in the direction of movement of the bed.

6. In a plate-press, the combination with the impression-roller and the bed, of an arm pivoted on the impression-roller, a cushion for the said arm, a cam slidably mounted on the said bed and adapted to be engaged by the said arm, and a cushion for the said cam.

7. In a plate-press, the combination with the impression-roller and the bed, of an arm pivoted on the impression-roller, a cushion for the said arm, means for limiting the swinging motion of the said arm, a cam slidably mounted on the said bed and adapted to be engaged by the said arm, and a cushion for the said cam.

8. A plate-press provided with an impression-roller, a bed, and

connecting yielding means on the bed and roller for imparting a traveling motion to the said bed from the impression-roller.

9. A plate-press provided with an impression-roller, a bed, and yielding means for imparting the traveling motion to the said bed from the impression-roller and for forming a cushioning-step for the bed on its return movement.

10. In a plate-press, the combination with the impression-roller and the bed, an arm for operating the bed, said arm being pivotally connected with the impression-roller, means for limiting the swinging motion of the arm, and a cushion for said arm.

11. In a plate-press, the combination with the impression-roller and the bed, of a bracket carried by the impression-roller, an arm for operating the bed, said arm being pivoted to the bracket, a link connection between the arm and the bracket, and a cushion on the bracket between said bracket and arm.

12. In a plate-press, the combination with the impression-roller, and the bed, of a bracket adjustably secured to the impression-roller, an arm for operating the bed, said arm being pivoted at one end to the bracket, a slotted link connecting the arm with the bracket, and cushion on the bracket between said bracket and arm.

13. In a plate-press, the combination with the impression-roller and an arm carried thereby, of a bed, a bracket on the bed and provided with a projection, a cam mounted to slide on the bracket, and a cushion interposed between the cam and the projection of the bracket.

14. In a plate-press, the combination with the impression-roller, and an arm carried thereby, of a bed, a bracket adjustably secured to the bed and provided with a projection, a cam mounted to slide on the bracket, and cushion in the form of rubber blocks, one secured to the cam and the other to the projection of the bracket.

809,087. GAGE FOR CUTTER-HEADS. ELBER A. WALKER, Saratoga Springs, N. Y. Filed June 17, 1905. Serial No. 265,696.

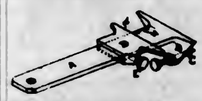

Claim.—1. An adjustable gage for cutter-heads; comprising a plate; a right-angled projecting block at the end thereof; a sliding plate adapted to reciprocate on that side of said first-mentioned plate opposite that from which said block projects; an adjusting-screw in said block; a set-screw in said sliding plate.

2. An adjustable gage for cutter-heads; comprising a plate; one end of which is adapted to be placed beneath the projecting portion of a cutter-blade; a right-angled projecting block at the end of said plate extending from the side of said plate opposite that upon which said cutter-blade is adapted to rest; an adjusting-screw in said block; a sliding plate upon the side of said first-mentioned plate that the cutter-blade is adapted to rest upon; a set-screw in said sliding plate,

3. An adjustable gage for cutter-heads; comprising a plate; a right-angled projecting magnetized block at the end thereof; an adjusting-screw in connection with said block; a sliding plate adapted to reciprocate on said first-mentioned plate along the side thereof opposite to that from which said block extends; a set-screw in said sliding plate, substantially as described.

809,088. TRAP-NEST FOR LAYING HENS. CHARLES B. WILLIAMS, Ontario, Cal. Filed Mar. 20, 1905. Serial No. 250,960.

Claim.—1. A trap-nest embodying a main frame or body open at the front, an apertured gate-frame laterally slidable across said front, a vertically-slidable wicket for closing the aperture in the gate when lowered, means for supporting the wicket elevated, and means for releasing the wicket so that it drops when a fowl enters the aperture in the gate.

2. A trap-nest embodying a slatted rectangular frame open at the front, an apertured gate-frame laterally slidable across said open front, a vertically-slidable wicket mounted upon the gate-frame, closing its aperture when lowered, a trip-plate carried by the gate-frame near the lower defining edge of the aperture therein, and means connecting the wicket and trip-plate and adapted to release the wicket, said means being actuated by the tread of a fowl on the trip-plate.

3. A trap-nest embodying a slatted rectangular frame open at the front, an apertured gate-frame laterally slidable across said open front, a slatted wicket vertically slidable on the gate-frame, means carried on said gate-frame for supporting the wicket elevated and the aperture uncovered, and means mounted upon the lower portion of the gate-frame and engaging the supporting means, the engaging means being actuated by the tread of a fowl passing through the aperture in the gate-frame.

4. A trap-nets embodying a slatted rectangular frame open at the front, a partition dividing the interior of the frame into a trap-chamber and a nest-chamber, said partition having a doorway therein near its rear end, a weighted trap-door hung in the doorway and normally opened by the weight thereon, a main door slidable across the open front ends of the two adjacent chambers, an apertured gate slidable across the front of the nest-chamber rearward of the main door, a wicket slidable vertically on the gate and, when lowered, closing the aperture therein, means for holding the wicket raised, a nest-box in the nest-chamber, means, actuated by the tread of a fowl entering the nest-chamber through the opening in the gate, for releasing the wicket that falls by gravity, and means for closing the weighted trap-door, actuated by the fowl entering the trap-chamber through the doorway guarded by said trap-door.

5. In a device of the character described, the combination with a slatted rectangular frame, open at the front and divided into compartments by a partition, of a main slatted door slidably held at the front and adapted for closure of the compartments, an apertured gate slidable at the front of the frame rearward of the main door, and adapted to partially close one compartment at its open front when the main door is open, a vertically-slidable wicket mounted upon the inner side of the gate, a trip-plate held to rock on the lower portion of the gate, a trigger-rod upwardly extended from the trip-plate and rocking therewith, and a projection on the wicket, engaged by the upper end of the trigger-rod, thus holding the wicket raised, a downward rocking movement of the trip-plate caused by the tread of a fowl releasing the wicket, that drops by gravity for closure of the aperture in the gate.

6. In a device of the character described, the combination with a slatted rectangular frame open at the front, a partition dividing the frame into compartments, said partition having a doorway near the rear end thereof, and means for temporarily closing the front, of a counterweighted door pivoted in the doorway, a hinged bottom board in one of said compartments, and a link-rod pivoted at its ends on the bottom board and on the counterweighted door, said door being rocked downward and held for the closure of the doorway by weight imposed upon the bottom board.

809,089. PNEUMATIC-ACTION OF MUSICAL INSTRUMENTS. HERMAN S. WARNER, Worcester, Mass., assignor to Aeolian Company, a Corporation of Connecticut. Filed Mar. 13, 1903. Serial No. 147,622.

Claim.—1. In a pneumatic-actuated musical instrument, the combination with one of the rolls for a perforated music-sheet capa-

ble of longitudinal movement, of a lever having one end pivoted to the frame of the instrument and its free end bearing against one end of said roll, a cam adapted to contact with said lever between its pivoted end and the end of said roll, and means for retaining the end of said roll in contact with said lever.

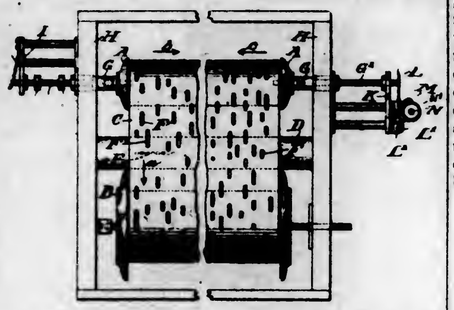

2. In a pneumatic-actuated musical instrument, the combination with one of the rolls for a perforated music-sheet capable of longitudinal movement, of a lever having one end pivoted to the frame of the instrument and its free end bearing against one end of said roll, a cam adapted to contact with said lever between its pivoted end and the end of said roll, and a spring bearing against the opposite end of said roll.

3. In a pneumatic-actuated musical instrument, the combination with one of the rolls for a perforated music-sheet capable of longitudinal movement, of the pivoted lever L bearing against said roll, and the cam M contacting with the lever L between its pivot and its contact with said roll.

4. In a pneumatic-actuated musical instrument, the combination with one of the rolls for a perforated music-sheet having extended bearings and capable of longitudinal movement, of a cam operatively connected with one of said bearings, a spring for reversing the movement of said roll, and means for limiting the longitudinal movement of said extended bearings.

5. In a pneumatic-actuated musical instrument, the combination with one of the rolls for a perforated music-sheet capable of longitudinal movement, of a lever having one end pivoted to the frame of the instrument and its free end bearing against one end of said roll, a cam adapted to contact with said lever between its pivoted end and the end of said roll, a spring bearing against the opposite end of said roll, and means for limiting the longitudinal movement of said roll.

6. In a pneumatic-actuated musical instrument, the combination with one of the rolls for a perforated music-sheet capable of longitudinal movement, a cam arranged to move said roll in one direction, means between said cam and said roll for multiplying the movement of said cam, and a spring for reversing the movement of said roll.

809,040. VEHICLE-WHEEL. MANUEL G. BARRO, New York, N. Y. Filed Mar. 6, 1905. Serial No. 248,479.

Claim.—1. In vehicle-wheels, an inner and an outer hub, one mounted loosely around the other, said outer hub being provided with gearing on the peripheral surface of the inner rib of the hub, a circular pneumatic tube fitted in the outer hub and having constant bearing upon the main hub by means of an endless band intervening between the two, a hollow bolt in connection with said pneumatic tube, and chains connecting the two hubs, which chains are in independent series, acting in opposite directions.

2. In vehicle-wheels, two spaced hubs, one surrounding the other and having movement to and from the other, an intermediate circular pneumatic tube jacketed in one hub and having bearing upon the other hub, means for supplying the said pneumatic tube with air, devices for preventing lateral movement of the surrounding hub, which devices are carried by the hub surrounded, series of chains attached to both hubs, the chains of both series being diagonally arranged but inclined in opposite directions, corresponding chains for the two series forming a triangle widest at the inner hub, dust-guards for the two hubs, means for securing the dust-guards in position, and a driving-gear carried by one of the hubs, as set forth.

3. In vehicle-wheels, an inner and an outer hub, one mounted loosely around the other, the outer hub being provided with a channel in its peripheral surface and with a chamber in its inner surface, said outer hub having eccentric movement to and from the inner hub, means carried by the inner hub for preventing lateral movement of the outer hub, a circular pneumatic tube located within the chamber of the outer hub and having bearing relative to the inner hub, dust-guards, with or without corrugations, for both sides of both hubs, means for securing the said guards in position, spokes fitted at intervals at their inner ends in the peripheral channel of the outer hub, a felly connected with the spokes, a metal tire for the felly, series of chains attached to both hubs, the chains of both series being diagonally arranged but inclined in opposite directions, each series of chains being independent in action, one series being employed in an advance movement of the wheel and the other in a reverse movement, spacing-blocks wedged between the spokes into the peripheral channel of the outer hub, and locking devices for the spacing-blocks, all arranged for the purpose specified.

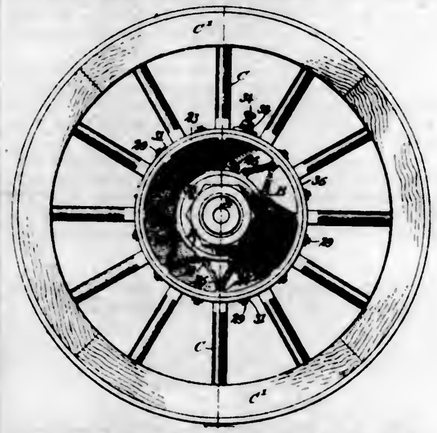

4. In vehicle-wheels, a primary and a secondary hub, a cushion between the two hubs, flexible elements connecting the hubs, the elements being in series and the elements of one series being inclined in an opposite direction to the elements of the other series, a flanged ring secured to the secondary hub, provided with an attached gearing and a dust-guard, and means for attaching the said dust guard to the flanged ring and to the primary hub.

5. In vehicle-wheels, a primary and a secondary hub, one mounted to revolve over the other, flexible elements connecting the said hubs, which elements are in two series, the elements of one series having an inclination the reverse of the inclination of the other series, a flanged ring secured to the inner peripheral portion of the secondary hub, a collar extending from said ring, teeth exteriorly produced on the collar, a dust-guard, a ring adapted to hold the dust-guard in connection with the said collar, and another ring arranged to hold the dust-guard in relation to the primary hub.

6. In vehicle-wheels, an inner or main hub having an integral disk-flange with a series of peripheral lugs projecting outward and also a removable disk-flange mounted on the hub, said disk having a series of peripheral lugs projecting outward in the same manner as those of the integral disk-flange of said hub, an outer or secondary hub provided with an inner annular chamber U-shaped in cross-section, and an exterior circular channel serving as a seat for the wheel-spokes, said secondary hub provided with a series of integral lugs projecting on each side, an intervening pneumatic cushion of U shape in cross-section, and flexible driving connections between the two hubs.

7. In vehicle-wheels, an inner or main hub and an outer or secondary hub, the latter with parallel sides in a straight line from the inner edge to the outer edge, and also with concave or round shoulders projecting outward from its side, said secondary hubs (denominated parallel sides and concave shoulders respectively) being provided with marginal ribs extending outwardly and said ribs provided with lugs extending inwardly, an intervening pneumatic cushion of U shape in cross-section, and flexible driving connections between the main and secondary hubs.

8. In vehicle-wheels, an inner or main hub and an outer or secondary hub, an intervening pneumatic cushion provided with an integral circular base at its inner portion, said base having a flat face, an endless band of marginal flanges adapted to be engaged by the said flat face of the said circular base, two series of chains located in opposite diagonal relation to each other and having direct communication with both hubs, each series acting in opposite directions so as to impart forward and backward movement respectively to the wheel.

9. In vehicle-wheels, an inner or main hub and an outer or secondary hub, a pneumatic cushion having at its inner portion an integral circular base, said cushion having direct bearing with relation to the secondary and the main hubs, the bearing with the latter being effected by an endless band intervening between the cushion and the main hub, chains arranged in two series, the chains of one series having an opposite diagonal direction to those of the other series, which chains extend directly to and from the main and secondary hubs respectively, each series acting in an opposite direction, one series being adapted for action to accomplish an advance movement of the wheel and the other series to accomplish a rearward movement.

10. In vehicle-wheels, an inner or main hub provided with a driving-gearing, an integral disk-flange with a series of lugs extending from said flange, a removable disk-flange having a series of lugs extending from said flange, a collar or endless metal band with marginal flanges carried by the main hub in connection with an elastic cushion of U shape in cross-section said collar being made to turn loosely on said hub, an outer or secondary hub loosely surrounding the main hub and having vertical movement to and from the same, a pneumatic cushion connected to the secondary hub, having direct action relative to the main hub, and flexible driving connections between the two hubs, which connections are in two series diagonally arranged but inclining in opposite directions, one series being adapted for action to accomplish an advance movement of the wheel and the other series to accomplish a rearward movement.

11. In vehicle-wheels, an inner and an outer hub, as described, one mounted loosely around the other, said outer hub being provided with gearing on the peripheral surface of the inner rib of the hub, a circular pneumatic tube of U shape in cross-section fitted in the interior chamber of the outer hub and having constant bearing upon the main hub by means of an endless band intervening between the pneumatic tube and the inner hub, a hollow bolt in connection with said pneumatic tube and the outer hub, and chains in direct connection with the two hubs, which chains are in independent series, acting in opposite directions.

12. In vehicle-wheels, two spaced hubs, as described, one surrounding the other and having movement to and from the other, an intervening circular pneumatic tube jacketed in the outer hub and having bearing upon the hub by means of an endless band in connection with the said pneumatic tube, and series of chains in direct connection with both hubs, the chains of both series being diagonally arranged but inclining in opposite directions, corresponding chains of the two series forming a triangle for the purpose described of allowing free eccentric play of the main hub to and from the other.

13. In vehicle-wheels, two spaced hubs, as described, one surrounding the other, the outer hub having a series of lugs on each side extending from said sides, an intervening circular pneumatic tube jacketed in the outer hub and having bearing upon the other hub, series of chains in direct connection with both hubs, the chains of both series being diagonally arranged but inclining in opposite directions, corresponding chains of the two series forming a triangle, a channel formed in the outer hub for the purpose described, spokes fitted in said channel, a felly receiving the spokes, and a hard tire for the felly.

14. In vehicle-wheels, two spaced hubs as described, one surrounding the other and having movement to and from the other, an intermediate circular pneumatic tube jacketed in the outer hub and having bearing upon the main hub, means for supplying the said pneumatic tube with air, devices for preventing lateral movement of the surrounding hub, which devices are carried by the hub surrounded as described, series of chains in direct connection with both hubs, the chains of both series being diagonally arranged but inclined in opposite directions, corresponding chains for the two series forming corresponding triangles, dust-guards for the two hubs as described, means for securing the dust-guards in position, and a driving-gear carried by one of the hubs as set forth.

15. In vehicle-wheels, an inner and an outer hub as described, one mounted loosely around the other, the outer hub being provided with a channel in its peripheral surface and with a chamber in its inner surface, said outer hub having eccentric movement to and from the inner hub, means carried by the inner hub for preventing lateral movement of the outer hub, a circular pneumatic tube of U shape in cross-section located within the chamber of the outer hub and having direct bearing relative to the inner hub, dust-guards, with or without corrugations for both sides of the body of the hubs, means for securing the said guards in position, spokes fitted at intervals in the peripheral channel of the outer hub, a felly connected with the spokes, a metal tire for the felly, series of chains in direct connection with both hubs, the chains of both series being diagonally arranged but inclined in opposite directions, each series of chains being independent in action, one series being employed in an advance movement of the wheel and the other in the reverse movement, spacing-blocks wedged between the spokes into the peripheral channel of the outer hub, and locking devices for the spacing-blocks, all arranged for the purpose specified.

16. In vehicle-wheels, a primary and a secondary hub as described, a pneumatic cushion between the two hubs, flexible elements in direct connection with the hubs, as described, the elements being in two series and the elements of one series being inclined in an opposite direction to the elements of the other series, a flanged ring or disk secured to the secondary hub, provided with an attached gearing and a dust-guard, and means for attaching the dust-guard to the flanged ring and to the primary hub.

17. In vehicle-wheels, a primary and an auxiliary hub, said hubs being provided at one or both sides with direct driving-chain connections arranged in two series, both series being in diagonal relation to both hubs, but one series of chains being in an opposite direction to the other with relation to said hubs, a driving flanged ring secured to the auxiliary hub, a dust-guard in connection with the said ring and the primary hub, and rings adapted to hold the dust-guard in position.

809,041. CENTRIFUGAL PULP-SCREEN. JAMES H. BAKER, GEORGE F. SHEVLIN, and FREDERICK H. BAKER, Saratoga Springs, N. Y., assignors to Baker and Shevlin Company, Saratoga Springs, N. Y., a Corporation of New York. Filed Aug. 30, 1905. Serial No. 276,345.

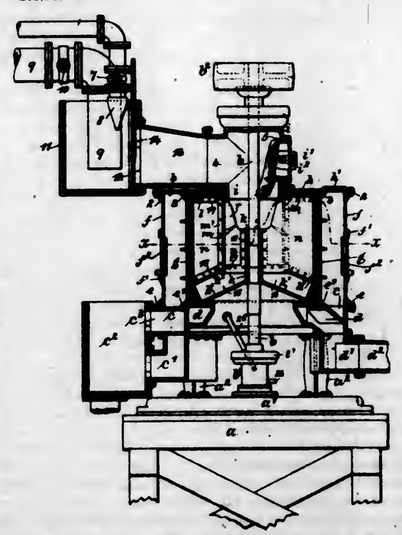

Claim.—1. In a centrifugal pulp-screen, the combination with the beater-wheels, of devices secured behind the blades of the beater-wheels and within the cylindrical portion and near the upper ends of the blades to prevent the stock gathering behind the blades.

2. In a centrifugal pulp-screen, the combination with the blades and cylindrical portions of the beater-wheels, of devices placed behind the blades and within the cylindrical part and near the upper part of the blades and extending across and filling the spaces behind the blades and means for attaching the same in place so as to prevent the lodgment of stock behind the blades.

3. In a centrifugal pulp-screen, the combination with the series of curved blades and the cylindrical portion bisecting the same and forming the beater-wheels, of fillets comprising plates of metal with bent ends extending across behind the blades and in the angle formed by said blades and cylinder with the end fitting in against the backs

of the blades and surface of the cylinder, so as to prevent the stock gathering behind the blades.

4. In a centrifugal pulp-screen, the combination with the blades and cylindrical portion forming the beater-wheels and in which cylindrical portion are exit-slots for the stock at the edges of and parallel with the said blades, of means for lessening the size of said slots as desired.

5. In a centrifugal pulp-screen, the combination with the blades and cylindrical portion forming the beater-wheels and in which cylindrical portion are exit-slots for the stock at the edges of and parallel with said blades, of blades slotted transversely and screws for attaching the same to the surface of the cylinder providing for an adjustable relation of the blades to the cylinder for varying the size of the slots.

6. In a centrifugal pulp-screen the combination with the circular segmental screen-plates and the annular concentric cast-metal troughs, of the segmental casing of panels surrounding the screen-plates and provided with an opening of appreciable area, a frame surrounding said opening and forming a slideway and a shutter-plate within said frame and against the surface of said casing to close off the opening in the panel of the casing for providing access thereto by raising the shutter-plate

7. In a centrifugal pulp-screen, the combination with the circular segmental screen-plates and the annular concentric cast-metal troughs, of the segmental casing of panels surrounding the screen-plates and provided with an opening of appreciable area, of a device having a slidable relation with said panels and adapted to cover the opening therein and a support therefor.

8. In a centrifugal pulp-screen, the combination with the segmental casing and concentric circular segmental screen-plates within the same, of the annular concentric cast-metal troughs, the one coming between the aforesaid parts at the base thereof and the other within the screen-plates, a discharge-trough connected with the inner of said concentric troughs and located below the same on one side of the machine, a discharge-trough opening into the outer of said cast-metal troughs and located beneath the same, and an exit-opening formed in the latter trough parallel to the exit-opening of the latter discharge-trough as an exit-opening for air from between the casing and the screen-plates.

9. In a centrifugal pulp-screen, the combination with the segmental casing of panels and the circular segmental screen-plates connected therewith and within the same and the annular concentric cast-metal troughs, the one between and the other within the said parts, of means located at the upper portion of the casing and screen-plates, between the panels of the segmental casing and also at one side of the outer cast-metal trough as exits for the confined air between said casing and screen-plates in the operation of the machine.

10. In a centrifugal pulp-screen, the combination with the segmental casing *f* and circular screen-plates *g*, of the annular concentric cast-metal troughs *c d*, to which the aforesaid parts are connected, a curved discharge-trough *c'* below and opening into the trough *c* at one side of the machine and having an exit-opening therefrom and of the length of the said trough *c'* and a parallel opening c^2 at the side of the trough *c* as an exit for the air from between the casing and the screen-plates.

11. In a centrifugal pulp-screen, the combination with the segmental casing *f* and circular screen-plates *g*, of the annular concentric cast-metal troughs *c d*, to which the aforesaid parts are connected, a curved discharge-trough *c'* below and opening into the trough *c* at one side of the machine and having an exit-opening therefrom and of the length of the said trough *c'* and a parallel opening c^2 at the side of the trough *c* as an exit for the air from between the casing and the screen-plates, and a tank c^3 fitted up against the discharge-trough *c'* and the air-exit opening c^2 of the trough *c* to receive the good stock in the operation of the machine.

12. In a centrifugal pulp-screen, the combination with a vertical revolvable shaft and a step-bearing for the lower end of the shaft and means for oiling and cooling the shaft at its bearing, of a cover to the oiling and cooling device provided with a downwardly-extending outer flange f' and a second downwardly-extending inner flange f^2.

13. In a centrifugal pulp-screen, the combination with a vertical revolvable shaft and a step-bearing for the lower end of the shaft and means for oiling and cooling the shaft at its bearing, of a device surrounding the shaft and extending over the oiling and cooling device and having parts associated therewith and acting at the same time to prevent foreign particles getting into the oiling and cooling device or oil spattered by the revolving shaft from getting out.

14. In a centrifugal pulp-screen, the combination with a vertical revolvable shaft and the beater-wheel, of an inlet-pipe for the stock to the beater-wheel, a vat and pipe connecting the same to said inlet-pipe, a pipe for introducing the stock into the vat, a pipe for water and a nozzle for admitting the water into the vat to mix with the stock and reduce its consistency, and a gate in the opening between said vat and pipe for regulating the extent of flow of the thinned stock to the machine.

15. In a centrifugal pulp-screen, the combination with a vertical revolvable shaft and the beater-wheel, of an inlet-pipe for the stock to the beater-wheel, a vat and pipe connecting the same to said inlet-pipe, a pipe for introducing the stock into the vat, a pipe for water and a nozzle for admitting the water into the vat to mix with the stock and reduce its consistency and a gate in the opening between said vat and pipe for regulating the extent of the flow of the thinned stock to the machine, the said nozzle being narrow in one direction and of at least the diameter of the pipe in the opposite direction and located above the lower end of the gate and the discharge-opening formed thereby and the lower end of the inlet-pipe for the stock below the normal position of the lower end of the gate and immersed, the gate controlling the depth of the discharge.

16. In a centrifugal pulp-screen, the combination with the segmental casing *f* and circular screen-plates *g* of the annular cast-metal trough *c* coming below and between the vertical planes thereof, a curved discharge-trough *c'* below the trough *c* and into which the trough *c* opens and an air-exit opening c^2 at the side of the trough *c* for the pent-up air from between the casing and screen-plates.

17. In a centrifugal pulp-screen, the combination with the segmental casing *f* and circular screen-plates *g* of the annular cast-metal trough *c* coming below and between the vertical planes thereof, and an air-exit opening c^2 at one side of the trough *c* and in the same horizontal plane for the pent-up air from between the casing and screen-plates.

809,042. **HAMMER-SUPPORTING FLANGE FOR PIANO-ACTIONS.** CHARLES P. BLINN, Boston, Mass., assignor to A. M. McPhail Piano Company, Boston, Mass., a Corporation of Massachusetts. Filed Sept. 25, 1905. Serial No. 279,282.

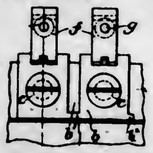

Claim.—1. A continuous flange for piano-actions, comprising a body portion having a series of lugs or hammer-supports, and a corresponding series of screw-holes, the body portion being weakened between the screw-holes.

3. A continuous flange for piano-actions, comprising a body portion and a series of lugs or hammer-supports, projecting from one edge of the body portion, the latter being provided with a series of screw-holes corresponding in number and position with the lugs, and with cuts or kerfs partially subdividing the body portion between the screw-holes.

3. A flange for piano-actions having pivot-supporting lugs for the hammers projecting from one edge of the flange, the portions of the flange between said lugs being transversely weakened to permit the crosswise breakage of the flange between the lugs, whereby any lug-supporting portion of the flange may be broken out and removed without removal of the entire flange.

4. A flange for piano-actions having pivot-supporting lugs for the hammers projecting from one edge of the flange, the portions of the flange between said lugs having cuts extending from one edge of the flange partly across the flange, the inner ends of said cuts being separated from the opposite edge of the flange by narrow necks, which, while preserving the continuity of the flange, may be easily broken to permit the removal of any lug-supporting portion of the flange without removal of the entire flange.

809,048. **REGULATING-HINGE FOR PIANO SWINGING FRAMES.** ISRAEL H. ROSENFIELDER and ROBERT K. TROMLER, New York, N. Y. Filed May 26, 1904. Serial No. 209,662.

Claim.—1. A hinge comprising a vertical section curved outwardly at its upper portion to permit of the adjustment of the said curved portion when the hinge is in position, a second vertical section, and means for pivotally connecting the sections of the hinge together at their upper portions.

2. A hinge, comprising a flat section and an independent section outwardly curved at its upper portion to permit of the adjustment of the curved portion when the hinge is in position, both sections being provided with a sleeve at their upper edges, the sleeves abutting at one end when in position, and the other end of the sleeve of one section having a recess therein, and a pintle passed through the said sleeves and provided with a lateral extension at one end entering the said recess, as set forth.

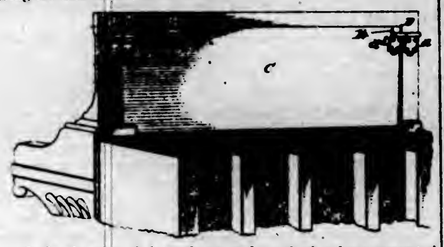

3. In pianos, a skeleton frame and a swinging frame mounted in the skeleton frame, hinges each made in two sections, one section of a hinge being attached to the skeleton frame and the other section to the swinging frame, both sections being provided with sleeves at their upper ends, one of the sleeves having a recess therein, the sections of the hinges secured to the skeleton frame being outwardly curved at their upper portions, means for firmly securing the lower portions of the hinges to their supports, adjusting-screws passed through the upper curved portions of the sections secured to the skeleton frame, and pintles passed through the said sleeves, having projections entering the said recesses so that by tightening or loosening the screws on the curved sections of the hinges any wind in the swinging frame can be rectified, as described.

4. A hinge for piano swinging frames comprising two independent sections, one of which is arranged for attachment to the skeleton frame and the other section for attachment to the swinging frame, both sections being provided with sleeves and a pintle passed through the said sleeves, the section of hinge for attachment to the skeleton frame being outwardly curved at the portion adjacent to the sleeve and adjustable toward or from the frame when in position thereon, and means for adjusting the said curved portion, as set forth.

5. In pianos and the like, a skeleton frame, and a swinging frame mounted in the skeleton frame, hinges each comprising a section attached to the skeleton frame and having an outwardly-curved portion and a sleeve at the end of the curved portion, another hinge-section attached to the swinging frame and having a sleeve at one end adapted to register with the sleeve of the first-named section, and a pintle passed through the sleeves, and adjusting-screws at the said curved portion, for the purpose set forth.

809,044. **AUTOMATIC NUT-LOCK.** JAMES T. CLARK, Winnipeg, Canada, assignor of one-half to George Donald McKay, Winnipeg, Canada. Filed May 31, 1905. Serial No. 262,263.

Claim.—1. A nut-lock comprising a washer having a plurality of integral, pointed, radial fingers upwardly curved at their central portions and adapted, when flattened down, to extend into the central opening of the washer, and a plurality of integral, pointed, outer fingers upwardly curved at their centers and having their points lying flush with the surface of the washer.

2. A nut-lock comprising a washer of spring metal having a plurality of integral, pointed, radial fingers upwardly curved at their centers and bent upwardly from left to right at their pointed ends to engage the under side and prevent backward turning of the nut, and a plurality of outer fingers upwardly curved at their central portions and having their ends lying flush with the surface of the washer.

3. In a washer having a central opening, a plurality of radial fingers having upwardly-curved central portions and inclined pointed ends extending into the central opening of the washer, downwardly-extending points in the periphery of the central opening adjacent to the radial fingers, and a plurality of outer fingers upwardly curved at their central portions and having their ends lying flush with the surface of the washer.

4. A nut-lock comprising a washer having a central opening, a plurality of radial fingers having upwardly-bent central portions and inclined pointed ends adapted to engage the thread of a bolt, downwardly-bent points on the periphery of the central opening adapted to engage the material underneath the washer, and outer pointed fingers bent upwardly at their central portions and having their points flush with the surface of the washer.

5. A nut-lock comprising a washer having a plurality of radial fingers with upwardly-bent central portions and inclined pointed ends, a plurality of downwardly-turned points adjacent to said fingers and a series of outer pointed fingers upwardly bent at their central portions and adapted to lock a nut against return movement.

6. A nut-lock comprising a trefoil-washer having radial fingers with upwardly-bent central portions and inclined pointed ends adapted to engage the thread of a bolt, downwardly-turned points on the periphery of the central opening of the washer adapted to prevent the washer from turning with the nut, and outer fingers bent upwardly at their central portions and adapted to lock the nut against return movement.

809,045. **SPRAYING APPARATUS.** ABBOT M. COBB, Malden, Mass. Filed Dec. 8, 1904. Serial No. 236,947.

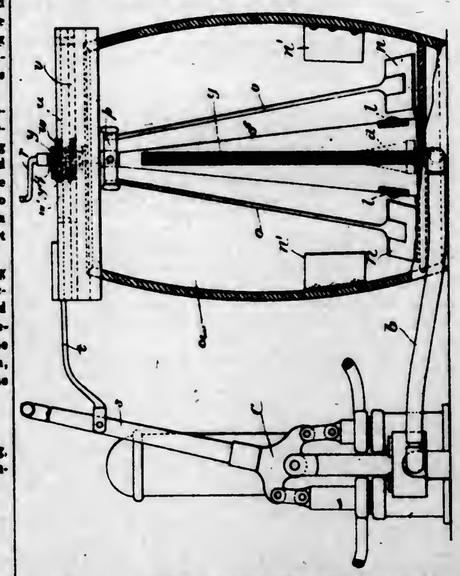

Claim.—1. A spraying apparatus comprising a receptacle having an outlet in its bottom, a conduit extending substantially the entire height of the receptacle attached to the bottom thereof with a liquid-tight connection and opening into said outlet, said conduit having provisions for admitting liquid to its interior simultaneously from the upper portion and a plurality of lower levels of the receptacle, and being separated on all sides from the walls of the receptacle by a space, and a stirring-blade located in such space and revolubly movable about the conduit.

2. A spraying apparatus comprising a receptacle having an outlet in its bottom, a conduit extending substantially the entire height of the receptacle attached to the bottom thereof with a liquid-tight connection and opening into said outlet, said conduit having provisions for admitting liquid to its interior simultaneously from the upper portion and a plurality of lower levels of the receptacle, and being separated on all sides from the walls of the receptacle by a space, a rotary cross-arm mounted above the conduit, a depending arm extending from said cross-arm downward into said space and movable around the conduit, and a stirring-blade secured to the depending arm adjacent the bottom of the receptacle and inclined with

respect to the vertical, whereby an upward movement is given to the liquid in the receptacle by movement of the blade.

3. A spraying apparatus comprising a receptacle having an outlet in its bottom, a conduit extending substantially the entire height of the receptacle attached to the bottom thereof with a liquid-tight connection and opening into said outlet, said conduit having provisions for admitting liquid to its interior simultaneously from the upper portion and a plurality of lower levels of the receptacle, and being separated on all sides from the walls of the receptacle by a space, a rotary cross-arm mounted above the conduit, a depending arm extending from said cross-arm downward into said space and movable around the conduit, a stirring-blade secured to the depending arm adjacent the bottom of the receptacle and inclined with respect to the vertical, whereby an upward movement is given to the liquid in the receptacle by movement of the blade, and stationary blades fixed to the walls of the receptacle arranged in vertical planes and projecting obliquely into said space.

4. A spraying apparatus comprising a receptacle having an outlet in its bottom, a conduit extending substantially the entire height of the receptacle attached to the bottom thereof with a liquid-tight connection and opening into said outlet, said conduit having provisions for admitting liquid to its interior simultaneously from the upper portion and a plurality of lower levels of the receptacle, and being separated on all sides from the walls of the receptacle by a space, a stirring-blade located in such space and revolubly movable about the conduit, a pump having a suction-pipe connected with said outlet, and connections between the pump and stirring-blade and operated by the former for revolving the latter about the conduit.

5. A spraying apparatus comprising a receptacle, an outlet-pipe communicating with the lower portion of the receptacle, a tubular member tightly secured to the bottom of the receptacle surrounding the opening of the outlet-pipe extending upwardly therefrom and forming in its interior a chamber separated from the main body of the receptacle, the tubular member being provided with orifices at different distances from the bottom of the receptacle, a strainer within the space inclosed by said tubular member connected to the outlet-pipe and surrounding the opening thereof, and means for imparting an upward movement to the liquid contained in the receptacle surrounding the tubular member.

6. In a spraying apparatus, a receptacle, a partition forming an inclosed space within the receptacle extending from the lower toward the upper portion of the receptacle and separated on all sides from the walls thereof, the said partition being tightly mounted to prevent the inflow of liquid to its interior beneath its lower edge and having openings in its sides arranged at different heights from its bottom, provisions for preventing the flow of liquid through certain of the lower openings until the level of the liquid has fallen below a predetermined point, an outlet-conduit opening into the lower portion of the space inclosed by the partition, and a member arranged in the space between the partition and the walls of the receptacle for agitating the liquid contained in said space.

7. In a spraying apparatus, a receptacle, a partition forming an inclosed space within the receptacle extending from the lower toward the upper portion of the receptacle and separated on all sides from the walls thereof, the said partition being tightly mounted to prevent the inflow of liquid to its interior beneath its lower edge and having openings in its sides arranged at different heights from its bottom, means adapted to close certain of the lowermost openings when the receptacle is full of liquid, and arranged to uncover the same after the level of liquid has fallen to a predetermined point, an outlet-conduit opening into the lower portion of the space inclosed by the partition, and a member arranged in the space between the partition and the walls of the receptacle for agitating the liquid contained in said space.

8. In a spraying apparatus, a receptacle, a partition forming an inclosed space within the receptacle extending from the lower toward the upper portion of the receptacle and separated on all sides from the walls thereof, the said partition being tightly mounted to prevent the inflow of liquid to its interior beneath its lower edge and having openings in its sides arranged at different heights from its bottom, valves arranged in line with certain of the lower openings on the inside of the partition and yieldingly impelled to close said openings, an outlet-conduit opening into the lower portion of the space inclosed by the partition, and a member arranged in the space between the partition and the walls of the receptacle for agitating the liquid contained in said space.

9. In a spraying apparatus, a receptacle, a conduit mounted within the receptacle to extend from the upper to the lower portion thereof, having openings in its sides and mounted with a liquid-tight connection at its lower end, and gravity-operated means for closing certain of said orifices.

10. In a spraying apparatus, a receptacle, a conduit mounted within the receptacle to extend from the upper to the lower portion thereof, having openings in its sides and mounted with a liquid-tight connection at its lower end, a guide connected to the interior of the conduit adjacent one of said orifices and inclined relatively thereto, and a ball supported by said guide.

11. A spraying apparatus comprising a receptacle adapted to contain a solution, a pump, a pipe connected to the pump and leading into the lower part of the receptacle, headed studs mounted on the bottom of the receptacle, a tubular member within the receptacle surrounding the opening of the suction-pipe and extending toward the upper portion of the receptacle, forming an inner chamber separated on all sides from the side walls of the receptacle, the said member being formed with perforations arranged at varying distances from the bottom of the receptacle and connected to the bottom of the receptacle by integral hooks engaging said studs for excluding from the inner chamber all the solution except that which flows through the perforations, and stirring members consisting of blades inclined to the vertical beside the tubular member supported in the lower portion of the space between said member and the side walls of the receptacle and movable in a direction to impart an upward movement to the liquid contained in said space.

12. A spraying apparatus comprising a receptacle, a vertical conduit therein having a series of orifices at different distances from the bottom of the receptacle, said conduit being separated from the inner surface of the receptacle by a space surrounding the conduit, a pump having a suction-pipe communicating with the lower portion of the conduit, means located in the space surrounding the conduit for imparting an upward movement to the liquid contained therein and movable about the conduit, and fixed blades projecting inwardly from the outer wall of said space above the said means, arranged to arrest rotary movement of the liquid.

13. In a spraying apparatus, a receptacle, a tubular member open at its lower end located within the receptacle, extending from the bottom to a point near the top thereof, and separated on all sides from the sides of the receptacle, headed studs mounted on the bottom of the receptacle, and a lateral flange having hooks on the lower portion of the tubular member arranged to be engaged with said studs by rotation of said tubular member and to hold the lower end in liquid-excluding connection with the bottom of the receptacle, the tubular member having perforations in its sides.

14. A spraying apparatus comprising a receptacle, a vertical conduit centrally located therein and having lateral orifices therein, an outlet-pipe extending into the receptacle and the interior of said conduit, a rotary arm mounted in the receptacle above the conduit, and stirring members depending from said arm and movable therewith in the space surrounding the conduit, said stirring members including flat blades inclined forwardly and downwardly with respect to the direction of rotation thereof and adapted to impart an upward movement to the liquid in the receptacle.

15. A spraying apparatus comprising a receptacle, a vertical conduit centrally located therein and having lateral orifices therein, an outlet-pipe extending into the receptacle and the interior of said conduit, a laterally-extending bar mounted in the receptacle above the conduit, means for rotating the bar, arms depending from the ends of said bar into the space surrounding the conduit, and inclined stirring-blades connected to the arms and rotarily movable with said bar.

16. A spraying apparatus comprising a receptacle adapted to contain a solution, a pump having a vibratory handle, a suction-pipe connecting the pump with an outlet in the receptacle, a rotary stirrer located in the receptacle having inclined blades for giving an upward movement to the solution, a vertical spindle connected to said stirrer for rotating the same, two pinions loosely surrounding at different levels said spindle, a horizontal guideway mounted on the top of the receptacle, a frame held, and movable longitudinally, in said guideway consisting of a pair of rack-bars arranged at different levels, one being in mesh with each of said pinions, a ratchet fixed to the spindle adjacent each pinion, pawls carried by the pinions for intermittently engaging the ratchets, and a link connecting said rack-frame with the pump-handle; the racks, pinions and ratchet being so arranged that opposite reciprocations of the frame cause first one and then the other ratchet to be engaged by its respective pawl, whereby the spindle is rotated always in the same direction.

809,046. SPRINKLING-MACHINE. WALTER A. COLLINS, Penns Manor, Pa. Filed May 12, 1905. Serial No. 260,215.

Claim.—1. In a sprinkling-machine, a frame adapted to be held in a substantially horizontal position, a disk-shape concaved sprayer carried by said frame and adapted to be held by the same in an oblique position, and said sprayer adapted when rotated to throw a fluid conducted to the same radially backward toward said frame and in an oblique direction with respect thereto.

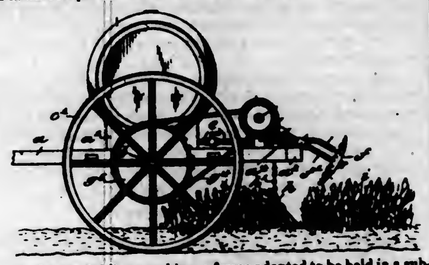

2. In a sprinkling-machine, a frame adapted to be held in a substantially horizontal position, concaved sprayers arranged at the rear end of said frame and adapted to be held by the same in an oblique position with respect thereto, means suspended from said frame and held by the same a certain distance in front and parallel to said sprayers and the rear end of said frame, said means adapted to engage and to raise and to bend over vines when brought into engagement therewith to permit liquid conducted to said sprayers to be spread by the same backward toward said vine-actuating means and in an oblique direction thereto and over and about the leaves of said vines and to prevent deflection of said fluid by gravity.

3. In a sprinkling-machine, a frame adapted to be held in a substantially horizontal position, concaved sprayers arranged at the rear end of said frame and adapted to be held by the same in an oblique position with respect to said frame, means yielding in vertical and horizontal planes suspended from said frame and held by the same a certain distance in front and parallel to said sprayers and to the rear end of said frame, said means adapted to be brought into and out of engagement with vines, and said concaved sprayers adapted when the vines are raised and bent over by said means to spray a fluid radially toward and about the under and upper sides or surface of the leaves of said vines and to prevent deflection of certain portions of said fluid by gravity.

4. In a sprinkling-machine, a sprayer consisting of a concaved disk having a central smooth portion and a corrugated portion forming projections and depressions radially extending from the smooth portion surrounding the same and terminating about the perimeter of said disk, said smooth portion, when said disk is rotated, adapted to permit of the spreading of a fluid over the same and the projections of said corrugated portion in conjunction with said smooth portion adapted to throw or cast the fluid radially from said disk and to deflect the same backward and means for positively rotating said disk.

5. In a sprinkling-machine, a frame adapted to be held in a substantially horizontal position, concaved sprayers having central smooth and corrugated outer portions forming projections and depressions arranged at the rear end of said frame and adapted to be held in an oblique position in respect thereto, a bar yielding in vertical and horizontal planes arranged below said frame a certain distance in front and parallel to said sprayers and adapted to be brought into and out of engagement with vines, said sprayers adapted to radiate fluid in an oblique direction and to throw the same slightly forward by passing over the concaved surface thereof to reach the under side or surface of the leaves of said vines and to counteract deflection of a certain portion of the fluid-spray by gravity.

6. In a sprinkling-machine, a frame adapted to be held in a substantially horizontal position, a sprayer carried by said frame and adapted to be held by the same in a substantially oblique position with respect thereto, a bar consisting of rigid and yielding members, flexible means adapted to adjustably connect said bar with said frame so as to be held by the same a certain distance in front of said sprayer, said bar adapted to raise and bend over vines when brought into engagement therewith so as to expose the under side or surfaces of the leaves thereof, and said sprayer adapted when rotated to throw a fluid over the leaves of said vines.

809,047. CALCULATING-MACHINE. HENRY S. HOUGH, Cambridgeport, Mass., assignor to Hough Manufacturing Company, Boston, Mass., a Corporation of Massachusetts. Filed Apr. 26, 1905. Serial No. 257,516.

Claim.—1. In a calculating-machine, a horizontally-slidable epicycle cylindrical meter, means for operating the meter, and a lever for resetting the meter.

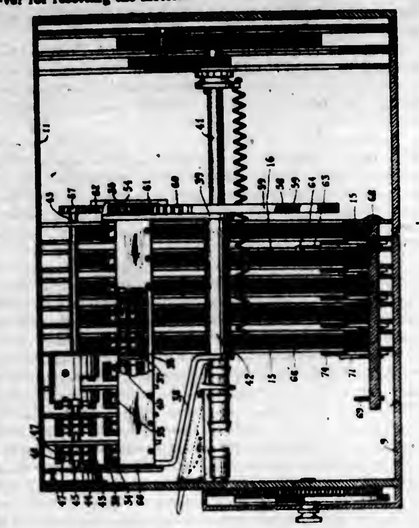

2. In a calculating-machine, a cylindrical epicycle meter movable horizontally and a lever for throwing the meter horizontally backward to its normal position.

3. In a calculating-machine, a meter, rotating means for the wheels of the meter, a driving-shaft without the meter for swinging the meter in a circle around the driving-shaft and against the rotating means, means for moving the meter horizontally and a lever for sending back the meter to initial position.

4. In a calculating-machine, a shaft, a cylindrical meter outside of and swinging upon the shaft, actuating means for rotating parts of the meter as the meter swings around the shaft, a frame inclosing the meter and shaft, and a lever having its handle extending without the frame for rotating all the parts of the meter to initial position.

5. In a calculating-machine, a meter, means for operating the meter, an indicator operable by the meter, and means for simultaneously resetting both the meter and indicator.

6. In a calculating-machine, a shaft, an arm journaled upon and extending outward from the shaft, a cylindrical meter outside of the shaft and journaled on the arm, actuating means for rotating the wheels of the meter when the same is swung in a circle around the shaft, means for moving the arm and meter along the shaft, a cylindrical indicator having its wheels rotated by the arm, and a lever for resetting the meter and indicator in their normal positions.

7. In a calculating-machine, an indicator having a series of teeth upon its periphery and partly projecting horizontal beyond one of its sides, a shaft below the indicator, an arm journaled on the shaft having a tooth projecting from its side and in contact with a tooth of the indicator-wheel on each revolution of the shaft.

8. In a calculating-machine, a shaft, an arm extending from and journaled upon the shaft and having a tooth extending outward at right angles to the arm, a meter journaled on the arm, an indicator above the meter having a series of teeth projecting beyond the wheel of the indicator and so arranged that on each revolution of the arm and meter around the shaft that the tooth on the arm will come in contact with one of the projecting teeth of the indicator and partly move the indicator.

9. In a calculating-machine, an indicator having a series of teeth extending outward beyond its side, a shaft, an arm extending outward from the shaft and provided with two teeth arranged to come in contact with two of the indicator-teeth on each revolution of the shaft, one tooth adapted to move the indicator a certain distance and the other tooth adapted to act as a stop for the indicator.

10. A calculating-meter, a series of segments having inwardly-projecting teeth arranged to be projected as desired, means for revolving the wheels of the meter against the inwardly-projected teeth, and inflexible means for stopping the revolving of the wheels.

11. In a calculating-machine, a shaft, a cylindrical meter outside of and swinging upon the shaft, actuating means for rotating parts of the meter as the meter swings around the shaft, and independent unyieldingly-stopping means for each of the rotating parts of the meter.

12. A revolving meter having a series of independently-revolving indicator-wheels in combination with a series of disks for separately turning the indicator-wheels and a series of stationary rigid fingers for separately stopping the indicator-wheels as the meter is revolved around the inner edge of the disks.

13. In a calculating-machine an epicycle meter, a series of toothed segments having outwardly-extending pins, a series of finger-levers for operating the segments having slots within which extend the pins and the segments adapted to be thrown by the finger-levers into operable contact with the meter as the meter is revolved around the inner circumference of the segments whereby the meter will be actuated.

14. In a calculating-machine, a series of toothed disks, levers for operating the disks, a cylindrical meter adapted to be driven around the inner side of the disks and in contact with the teeth of the operated disks, and means independent of the levers for holding the operated disks in operable contact with the revolving meter.

15. In a calculating-machine, several series of toothed disks, levers for operating the disks, a cylindrical meter adapted to be driven around the inner side of the disks and in contact with the teeth of the operated disks, locking means for each series independent of the levers for holding all the operated disks in meshing contact with the revolving meter and a lever for simultaneously throwing the locking means out of contact with all of the operated disks allowing them to return to initial positions.

16. In a calculating-machine, a series of segments, each segment provided with an ear, a pin attached to each ear, a lever for each segment having a slot within which extends one of the pins, and a cylindrical meter revolving within and operated by the segments.

17. In combination with the frame of a calculating-machine of a series of disks within the frame provided with ears, pins projecting from the ears, finger-keys extending without the frame and arranged to actuate the pins for inwardly projecting a portion of the disks, a driving-shaft, a meter without the shaft, means connecting the meter and shaft, means for operating the driving-shaft and rotating the meter, and means for resetting the disks and finger-keys.

18. In a calculating-machine, a series of finger-keys of different denominational value provided with slots in their shanks, a series of toothed segments provided with ears, each segment having a different number of teeth than the other segments in its series, a pin projecting from each ear and extending into the slot of itscorresponding finger-key, each pin traveling in a different direction from the other pins, each shank so varied in shape from the other shanks in its series that the travel of each pin is the least possible under the conditions so that each pin is equidistant from the fulcrum-point of its corresponding shank in each of the extreme positions which its segment will allow the pin to take, and a meter adapted to be actuated by the segments, substantially as shown.

19. In a calculating-machine having several series of toothed disks, of side walls inclosing each series, a meter having an indicator-wheel for each series of disks, a driving-shaft for revolving the meter and its shaft around the inner edges of the disks, a lever connected with each disk whereby the teeth of that disk may be projected inwardly in meshing contact with one of the wheels as the meter is revolved, a finger-plate for each indicator-wheel attached to one of the side walls extending inward toward the driving-shaft and having its finger adapted to stop the revolving of its corresponding indicator-wheel.

20. In a calculating-machine a recording-meter having a series of indicator-wheels, each wheel provided with two sets of numbers, segments surrounding the meter means for swinging the meter in contact with a portion of the segments, a second meter at one end of the segments and operated by the recording-meter on each revolution of the recording-meter, the recording-meter adapted to give the final sum in addition, the product in multiplication, and the minuend and sum in subtraction, and the second meter adapted to show the multiplier in multiplication and the result in division, substantially as described.

21. In a calculating-machine, several series of segments provided with inward-extending teeth and notches in their outer periphery, a spring-latch for each series adapted to engage a notch in each of the segments of that series, a revolving recording-meter having teeth in meshing contact with the teeth of the operated segments, a lever for disengaging the latches, and means connecting the lever and latches, substantially as shown.

22. In a calculating-machine, a series of segments, means for operating the segments, a driving-shaft within the segments, a hub carried by and horizontally slidable upon the shaft, arms extending outward from the hub and carrying a shaft, a cylindrical meter upon the shaft and revolved by the driving-shaft against the operated segments, a pinion upon the meter-shaft, a disk upon the driving-shaft, a hub encircling the disk having a series of teeth to be thrown as desired into meshing contact with the pinion whereby the meter may be set in initial position.

23. In a calculating-machine, a series of segments, a driving-shaft, a shaft, a cylindrical revolving meter upon the shaft arranged to be projected by the driving-shaft against a portion of the segments, a pinion upon the meter-shaft, an indicator above the meter, a pinion upon the indicator-shaft, a lever turning about the driving-shaft having two sets of teeth for operating the pinions and resetting the meter and indicator to their normal positions.

809,048. **VEHICLE.** JOHN J. FURCHTBAR, Joetta, Ill. Filed Aug. 26, 1905. Serial No. 275,881.

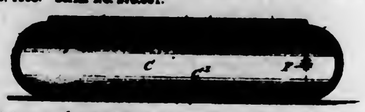

Claim.—1. A vehicle provided with a yieldingly-sustained immovable endless band, and a traveling endless band superimposed on the said immovable endless band and adapted to travel thereon.

2. A vehicle provided with an immovable endless band, a traveling endless band superimposed on the said fixed endless band and adapted to travel on the same, and an air-cushion for sustaining the said immovable band.

3. A vehicle comprising a supporting-frame, an air-cushion for sustaining the said frame, an endless band fixed to the frame, and a traveling band superimposed on the said fixed band and adapted to travel on the same.

4. A vehicle provided with an immovable endless band, a traveling endless band superimposed on the said fixed endless band and adapted to travel on the same, an air-cushion for sustaining the said immovable band, and means for delivering a strata of air between the said bands from the said air-cushion.

5. A vehicle provided with a pneumatically-sustained immovable endless band, and a traveling endless band superimposed on the said immovable endless band and adapted to travel thereon.

6. A vehicle comprising a supporting-frame, an air-cushion for sustaining the said frame, an endless band fixed to the frame, and a traveling band superimposed on the said fixed band and adapted to travel on the same, the said air-cushion and fixed band having registering openings for permitting air to pass from the said air-cushion between the said bands.

7. A vehicle comprising a supporting-frame, an air-cushion for sustaining the said frame, an endless band fixed to the frame, a traveling band superimposed on the said fixed band and adapted to travel on the same, and a lubricating-pad between the said bands at the top thereof.

809,049. **MATTRESS-HOLDER FOR FOLDING BEDS.** VERNOR J. GILLETT, Detroit, Mich. Filed Nov. 7, 1904. Serial No. 231,690.

Claim.—1. In a bedclothes-clamp, the combination of a resilient member adapted to engage the top, edge, and bottom of a mattress, with a bar parallel to said edge and connected with said resilient member, said bar being adapted to be secured to the supporting-frame, substantially as described.

2. A bedclothes-clamp, comprising a unitary resilient member adapted to engage the top, edge, and bottom of a mattress, and a member united thereto at one end, said member lying parallel with the edge of the mattress and being adapted to be secured to the supporting-frame, substantially as described.

3. In a bedclothes-clamp, the combination of end members each adapted to engage the top, edge, and bottom of a mattress with an intermediate member having spring connection with each of said end members, and capable of being attached to a mattress-supporting frame, substantially as described.

4. In a bedclothes-clamp, the combination of a member designed to be attached to a mattress-supporting frame with end members secured to each end thereof by spring means, each adapted to engage the top, edge and bottom of a mattress, substantially as described.

5. A bedclothes-clamp consisting of a unitary resilient member with a plurality of arms each adapted to engage the top, edge, and bottom of a mattress, said clamp being designed to be attached to the mattress-supporting frame, substantially as described.

6. In a bedclothes-clamp, a wire bent at its center to form a half-loop, each end of said half-loop terminating in a spiral spring, from which the wire is extended to form a rectangle, one of whose sides is open, two of the three sides being approximately parallel to the corresponding arm of the central loop and its open side facing in the same direction as the open side of the loop, and terminating in a circular loop whose plane is at an angle to that of the rectangle at one of whose corners it is situated, substantially as described.

7. In a bedclothes-clamp, a wire bent at its center into a U shape, each arm of which is at its upper terminal bent to form a spiral spring, hence continuing to form a rectangle two of whose sides are approximately parallel to its corresponding arm of the U, and whose fourth side is open and faces in the same direction as the open part of the U, terminating in a small loop whose plane is at an angle to that of the rectangle, at one of whose corners it is situated, substantially as described.

8. In a bedclothes-clamp, a wire bent at its center to form a half-loop, extending symmetrically on each side therefrom, being bent at each end of said half-loop into a spiral spring, continuing thence to form three sides of a rectangle, the open side facing in the same direction as the open end of said central loop, two of the sides thus formed by the wire being approximately parallel to the corresponding arm of the central loop, each end of said wire terminating in a small loop whose plane is at an angle to that determined by the three sides of the rectangle to one of whose corners it is attached, substantially as described.

809,050. **BOX-OPENER.** CARL GOLDMANN, New York, N. Y., assignor of one-half to Ernest Kohr, New York, N. Y. Filed June 6, 1905. Serial No. 264,082.

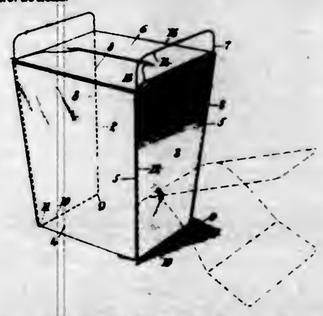

Claim.—1. A rectangular box provided in each pair of opposite corners thereof with a wire extending along the corners of each pair, thence through and across the under side of the bottom of the box, the extremities of each of said wires being united above the top of the box to form a bail for the box.

2. A rectangular box provided in each pair of opposite corners thereof with a wire extending along the corners of each pair, thence through and across the under side of the bottom of the box, the extremities of each of said wires being united above the top of the box to form a bail for the box, and each corner of the box being provided interiorly with a shield for the corresponding inner portion of the wire, to prevent contamination of the contents of the box.

809,051. **INVALID-BED.** LYDIA A. GOODSON, Elgin, and WILLIAM A. MASON, Algonquin, Ill. Filed May 22, 1905. Serial No. 261,547.

Claim.—1. In an invalid-bed, in combination with the mattress and the support for the same having registering apertures; a pin adapted to be entered through the aperture in the support and occupy the aperture in the mattress; a plate on which each support is mounted; parallel crank rock-shafts mounted on the bed-frame having their crank-wrists connected by the plate and having parallel lever-arms and a link connecting them, the ratchet-bar, 11, connected to one of the lever-arms and a stud for engagement with the ratchet-bar.

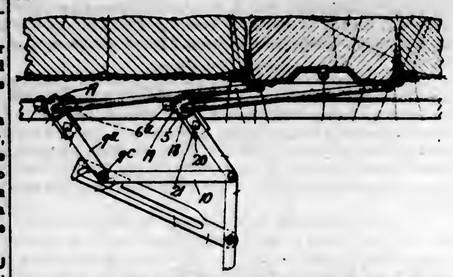

2. In an invalid-bed, in combination with the bed-frame, a mattress and mattress-support thereon; parallel cranked rock-shafts mounted on the bed-frame; a link plate connecting their crank-wrists, said rock-shaft having parallel lever-arms and a link connecting them, one of the arms being extended past the pivot of the link; a ratchet-bar pivotally connected with said extended lever-arm, and a stud for engagement with the ratchet-bar carried by the other lever-arm.

3. In an invalid-bed, in combination with the bed-frame, two parallel crank-shafts mounted thereon having their cranks extending downwardly; a link plate connecting their crank-wrists, said rock-shafts having each a lever-arm at both ends; links connecting the two arms at each end, one of the lever-arms at one end being extended beyond the link-pivot; a ratchet-bar connected to said extended arm, and a stud for engagement of the ratchet-bar carried by the corresponding arm of the other rock-shaft.

4. In an invalid-bed, in combination with the bed-frame, two parallel crank-shafts journaled in the side bars of the frame and cranked between the bars; a link plate connecting their crank-wrists, said rock-shafts having each a rigid lever-arm other than the crank-arms and extending at a considerable angle to said crank-arms; a link connecting said lever-arms, one of the lever-arms being extended beyond the pivot of the link; a bar having pivotal connection to one of the arms and sliding connection with the other arm at different distances from the crank-shafts, and means for releasably securing said bar at said sliding connection.

5. In an invalid-bed, in combination with a bed-frame, parallel shafts mounted in the side bars thereof and cranked downwardly between the side bars; a link plate connecting their crank-wrist; said rock-shafts having parallel lever-arms extending at an angle to their crank-arms respectively; a link connecting said lever-arms at equal distances from their respective crank-shafts, and a second link having a pivotal connection with one of the arms and a sliding connection with the other at different distances from the crank-shaft, and means for releasably engaging said second link at its said sliding connection.

6. In an invalid-bed, in combination with the bed-frame, parallel rock-shafts journaled on the side bars and cranked downwardly between said bars; a link plate connecting the crank-wrists, said shafts having parallel lever-arms extending at an angle to the crank-arms respectively; a link connecting said parallel arms at equal distances from their respective rock-shafts; a second link connecting one of the lever-arms with the first link, one of said connections being a sliding connection, and means for releasably engaging it at said sliding connection.

7. In an invalid-bed, in combination with the bed-frame, two parallel rock-shafts mounted on the side bars thereof; a link plate connecting the crank-wrists, each rock-shaft having a lever-arm extending at an angle to the crank-arm; a link connecting the two lever-arms at equal distances from the crank-shafts, one of the lever-arms being extended below the link connection, and a second link pivoted to said extended lever-arm and notched for engagement with the pivot of the link to the other arm.

8. In an invalid-bed, in combination with the bed-frame, two parallel rock-shafts mounted on the side bars thereof; a link plate connecting the crank-wrists, each rock-shaft having a lever-arm extending at an angle to the crank-arm; a link connecting the two lever-arms at equal distances from the crank-shafts, one of the lever-arms being extended below the link connection, and a second link pivoted to said extended lever-arm below the pivot of the first link and slotted and notched for engagement with the pivot of said first link to the other lever-arm.

9. In an invalid-bed in combination with a mattress-plug or bed-pan and apparatus for raising and lowering the same, comprising a plate for supporting the plug or bed-pan having an upwardly-struck boss forming a cavity in the lower side of the plate, the bottom of the plug or bed-pan having a recess to receive such protruding element.

10. In an invalid-bed, a bed-pan and an apparatus for raising and lowering the same comprising a plate for supporting the bed-pan which has an upwardly-struck and downwardly-open boss, in combination with a bed-pan having a corresponding recess struck upwardly from the bottom adapted to receive the boss, and means protruding into the cavity of the downwardly-open boss for securing the plate and pan together at the said corresponding boss and recess.

11. An invalid-bed having an apparatus for raising and lowering a mattress-plug or bed-pan, said apparatus comprising a plate for supporting the plug or bed-pan, in combination with such plug or pan adapted to be lodged on the plate, the plate having a boss struck from it protruding upwardly, the bottom of the pan or plug having a corresponding recess struck upwardly from the bottom adapted to receive the boss of the plate.

12. An invalid-bed having an apparatus for raising and lowering a mattress-plug or bed-pan, said apparatus comprising a plate for supporting the plug or bed-pan, in combination with such plug or bed-pan adapted to be lodged on the plate, the plate having a boss struck from it, protruding upwardly, and downwardly hollow, the bottom of the plug or bed-pan having a corresponding recess struck upwardly to receive the boss, the boss having an oblong slot, and a turn-button projecting from the bottom of the recess through such slot adapted to be turned across the same.

13. In an invalid-bed, in combination with a woven-wire-mattress support, a mattress mounted thereupon, the support and the mattress having registering apertures for a plug or bed-pan; corner posts or guides at the corners of the apertures in the mattress-support in position to enter the corners of the aperture in the mattress, said posts being bound rigidly to the woven-wire-mattress support.

14. In an invalid-bed, in combination with a woven-wire-mattress support, a mattress thereon, said support and mattress having registering apertures for a plug or bed-pan; corner posts or guides at the corners of the aperture in the mattress-support for engaging the corners of the aperture in the mattress, said corner-posts being made of a rod or wire folded upon itself and having the two branches bent at right angles to the folded portion and at an angle to each other; and a corner-plate lodged on one surface of the woven-wire mattress and secured thereto and to the terminal feet of the bent-wire post.

809,052. BUTTONHOLE-STITCHING MACHINE. WILLIAM B. GOODYEAR, Boston, Mass. Filed Nov. 4, 1904. Serial No. 231,347.

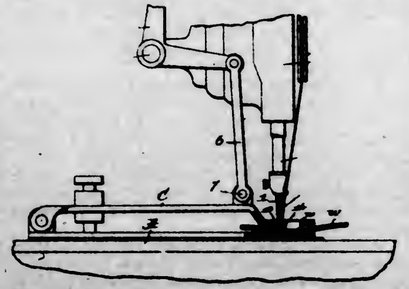

Claim.—1. In a sewing-machine having an eye-pointed needle, complemental stitch-forming means, a take-up and a work-holder, a purl-controller, and means for actuating the same to engage the needle-thread between the point of the needle and the work, and move the same to either side of the needle to thereby deflect the bights of under thread to the edge of the buttonhole thereby leaving the purl at the edge.

2. In a sewing-machine having an eye-pointed needle, complemental stitch-forming means, a take-up, a work-holder, a purl-controller having two prongs with a space between through which the needle passes in making each stitch, said prongs acting on the needle-thread to draw the bights of the under thread to the edge of the buttonhole thereby leaving the purl at the edge.

3. In a sewing-machine having an eye-pointed needle, complemental stitch-forming means, a take-up, a work-holder, a pivotally-mounted purl-controller or deflector in addition to the take-up, the acting portion of such controller or deflector occupying a position near the surface of the work, and means to move the same at an angle to the length of the buttonhole to engage the needle-thread between the needle and work and deflect the bight of the under thread to the edge of the buttonhole leaving the purl at the edge.

4. In a sewing-machine having an eye-pointed needle, complemental stitch-forming means, a take-up, a work-holder, a purl-controller, means to move the same at right angles to the length of the buttonhole, and means to raise said controller away from the work to remove or replace the work.

5. In a sewing-machine having an eye-pointed needle, complemental stitch-forming means, a take-up, a work-holder, a purl-controller, means to move the same at right angles to the length of the buttonhole, and means to adjust the throw of said controller to the width of the overedge stitches.

6. In a sewing-machine having an eye-pointed needle, complemental stitch-forming means, a take-up, a work-holder, a purl-controller in addition to the take-up and having a prong or projection, means for moving said controller to act upon the needle-thread between the point of the needle and the work as described, and means to vary automatically the position of the controller with relation to one or the other side of the buttonhole-slit being overstitched to deflect the bight of the under thread to the edge of the buttonhole.

7. In a sewing-machine, having an eye-pointed needle, complemental stitch-forming means, a take-up, a work-holder, a purl-controller having needle-thread-engaging means, by the side of which the needle passes in making each stitch, and means to move said purl-controller to one or the other side of the needle that it may act on the needle-thread to draw the bight of the under thread to either edge of the buttonhole, thereby leaving the purl at the edge.

809,053. MANUFACTURE OF SAND-LIME BRICKS. ALEXANDER GORDON, Weiser, Idaho. Filed May 4, 1905. Serial No. 259,806.

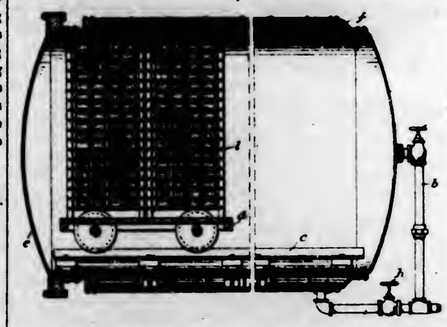

Claim.—1. A process of making sand-lime bricks, which comprises molding by the wet process, subjecting the bricks thus produced to a dry heat in a closed receptacle, and then subjecting them to a moist heat.

2. The process of making sand-lime brick, which comprises molding by the wet process, subjecting the bricks to a dry heat produced by steam, and then subjecting them to the direct action of steam.

3. A process of manufacturing sand-lime bricks, which consists in molding them in a moist state, transferring them from a molding-machine to pallets, introducing the bricks on the pallets into a heated dry atmosphere excluding external air from the bricks, and finally subjecting the bricks to a moist heat.

4. A process of making sand-lime bricks which comprises molding by the wet process, subjecting the bricks thus produced to a dry heat produced by steam, the bricks being in a closed receptacle, to preliminarily harden them and then completing the hardening operation by subjecting the bricks to the direct action of a heating medium composed of steam.

5. A process of making sand-lime bricks which comprises molding in a moist state, subjecting the bricks to a dry heat at ordinary pressures in a closed receptacle thereby evaporating water held in the bricks after molding, preliminarily hardening the bricks in their own steam thus generated and continuing the hardening operation by subjecting the bricks to a moist heat.

6. An apparatus for hardening sand-lime bricks, comprising a receptacle having a steam-jacket and provided with a track upon the inside thereof, a pipe for introducing steam into the jacket, a pipe for introducing steam in the interior of the receptacle, valves for both of said pipes, and means for connecting said pipes with the main supply-pipe, whereby the steam may be introduced into the jacket or receptacle at will.

7. An apparatus for hardening sand-lime bricks, comprising a receptacle having a steam-jacket and provided with a track upon the inside thereof, a pipe for introducing steam into the jacket, a pipe for introducing steam in the interior of the receptacle, valves for both of said pipes, and means for connecting said pipes with the main supply-pipe, in combination with a truck for running on said track, said truck being provided with pallets for supporting sand-lime bricks in a soft state.

809,054. ROTARY ENGINE. ANDREW HAGEN, San Francisco, Cal. Filed Sept. 21, 1905. Serial No. 279,594.

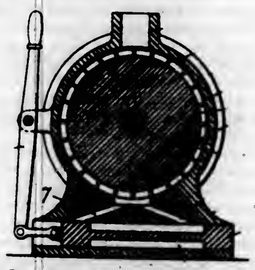

Claim.—1. In a rotary engine, the combination of a cylindrical casing, a cylinder rotating therein, the casing being provided at its lowest point with a steam-inlet substantially tangential to the cylinder, and guides for the shaft of the cylinder permitting the cylinder to rest in the bottom of the casing, said guides permitting the shaft to rise when steam is admitted to counterbalance the weight of the cylinder, substantially as described.

2. In a rotary engine, the combination of a substantially cylindrical casing, a cylinder rotating therein having longitudinal vanes and terminal cylindrical portions, packing-rings around said cylindrical portions, the casing being provided at the bottom with oppositely-directed inlet-ports substantially tangential to the cylinder, means for controlling said ports whereby they may be used alternately for reversing the direction of the cylinder, boxes for the shaft of the cylinder, and vertical slideways for said boxes, whereby the upward pressure of the live steam counterbalances more or less the weight of the cylinder, substantially as described.

3. In a rotary engine, the combination of a substantially cylindrical casing, a cylinder rotating therein having longitudinal vanes and terminal cylindrical portions, packing-rings around said cylindrical portions, the casing being provided at the bottom with oppositely-directed inlet-ports substantially tangential to the cylinder, means for controlling said ports whereby they may be used alternately for reversing the direction of the cylinder, boxes for the shaft of the cylinder, and vertical slideways for said boxes, whereby the upward pressure of the live steam counterbalances more or less the weight of the cylinder, and means for laterally adjusting said slideways, substantially as described.

4. In a rotary engine, the combination of a substantially cylindrical casing, a cylinder rotating therein having longitudinal vanes and terminal cylindrical portions, packing-rings around said cylindrical portions, the casing being provided at the bottom with oppositely-directed inlet-ports substantially tangential to the cylinder, means for controlling said ports whereby they may be used alternately for reversing the direction of the cylinder, boxes for the shaft of the cylinder, vertical slideways for said boxes, whereby the upward pressure of the live steam counterbalances more or less the weight of the cylinder, and screws limiting the upward movement of the boxes, substantially as described.

5. In a rotary engine, the combination of a substantially cylindrical casing, a cylinder rotating therein having longitudinal vanes and terminal cylindrical portions, packing-rings around said cylindrical portions, the casing being provided at the bottom with oppositely-directed inlet-ports substantially tangential to the cylinder, and each extending circumferentially about twice the distance between the vanes, means for controlling said ports whereby they may be used alternately for reversing the direction of the cylinder, boxes for the shaft of the cylinder, and vertical slideways for said boxes, whereby the upward pressure of the live steam counterbalances more or less the weight of the cylinder, substantially as described.

809,055. EXTINGUISHER. ANTON HASLINGER, Allegheny, Pa. Filed July 29, 1905. Serial No. 271,226.

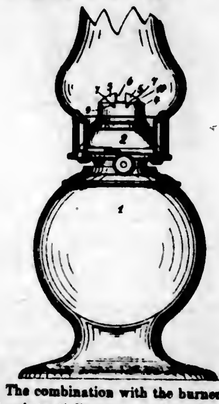

Claim.—1. The combination with the burner of a lamp and its wick-casing of substantially segment-shaped members pivotally mounted on said burner, depending plates carried by each member, adjacent the wick-casing and normally parallel to the side thereof, said members being adapted to alternately fold inwardly upon said wick-casing, the depending plate of that member which is folded inwardly bearing, at that position, upon the top of the wick-casing.

2. The combination with the burner of a lamp and its wick-casing, of substantially segment-shaped members pivotally mounted in said burner, depending perforated plates carried by each member adjacent to said wick-casing, said members being adapted to alternatively fold inwardly upon said wick-casing, the perforated plate of that member which is folded inwardly bearing at that position upon the top of the wick-casing.

809,056. ERASER-HOLDER. FREDERICK W. HAYES, Detroit, Mich. Filed June 19, 1905. Serial No. 265,865.

Claim.—1. In combination with a tubular rubber-holder adapted to be secured to the end of a pencil, the terminal of said holder being conically threaded, a plurality of extension-nipples threaded both externally and internally, the first adapted to engage over said terminal and the other over the first, and an erasing-rubber projecting through said terminal and nipples, substantially as described.

2. In combination with a rubber-holder provided with an opening therethrough and with an externally-threaded conical terminal at one end thereof, an extension-nipple screw-threaded on both its outer and inner faces and adapted to engage said terminal, and a second nipple similarly threaded, and adapted to engage said extension-nipple, whereby the nipples may be placed in continuous order, substantially as described.

809,057. ATTACHMENT FOR LADDERS. JAMES K. HEWES, Rhinecliff, N. Y. Filed June 15, 1905. Serial No. 265,276.

Claim.—The herein-described attachment for ladders, consisting of a plain, hollow, rectangular sleeve, having formed therein two diagonally-disposed apertures 7, in combination with a ladder having formed in one of its side bars at the lower end thereof a series of apertures, said apertures being arranged in zigzag relation, and a

pin or bolt 8 adapted to be projected through said apertures in the sleeve and side bar of the ladder, for the purpose described.

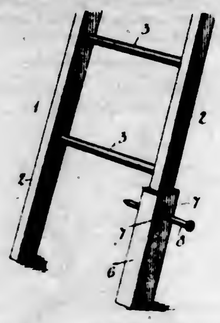

809,058. MAIL-POUCH FASTENER. LOUIS H. HINAMAN, Port Jervis, N. Y., assignor of three-fourths to Titus Hinaman, Kellam, Pa. Filed June 24, 1905. Serial No. 266,844.

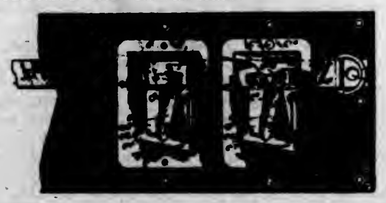

Claim.—1. A mail-pouch comprising an open sack having one of the sides of its open end provided with a transverse series of staples, and the opposite side provided with a transverse series of slots for receiving the staples, a flap secured to the first side and provided with transverse slots to receive the staples and with a longitudinal opening therethrough adjacent to the staples, a series of locks for the staples, comprising each a plate secured to the flap and provided with an opening registering with the slot in the flap and with an opening registering with the longitudinal opening in the flap, a locking-bolt slidably mounted on the plate and adapted to engage a staple, a lug on the bolt, a latch pivoted to the plate and provided with a lug engaging with the lug on the bolt, a spring for normally maintaining the latch in engagement with the bolt, a lever pivoted to the plate for actuating the locking-bolt, a cam on the lever for actuating the latch to release the bolt, an arm on the lever extending over the opening in the plate, a second plate inclosing the lock, a lever pivoted to the second plate and provided with a lug for engaging the sliding bolt, means whereby the lever may be actuated to release the lug from the locking-bolt, means for simultaneously actuating the series of locks comprising a flexible strap in the longitudinal opening in the flap, lugs on the strap for engaging the arms of the levers, and a lock traversing the ends of the strap and the pouch for preventing movement of the strap.

2. The combination with a mail-pouch provided with a transverse series of staples, and a flap having openings to receive the staples, locks for the staples comprising each a casing having an opening to receive the staples, a locking-bolt in the casing for engaging the staple, a latch for locking the bolt in position, a lever for actuating the bolt, a cam on the lever for releasing the latch, a lever pivoted within the casing, a lug on the lever for engaging the bolt to retain it in its locked position, means for releasing the lug, a strap within the flap and provided with lugs for engaging the ends of the actuating-levers whereby the bolts may be actuated simultaneously, and means for preventing movement of the strap.

3. The combination with a mail-pouch provided with a transverse series of staples, and a flap having openings to receive the staples, of locks for the staples comprising each a casing having an opening to receive the staple, a locking-bolt within the casing for engaging the staple, a latch for locking the bolt in position, a lever for actuating the locking-bolt, a cam on the lever for releasing the latch, and a strap within the flap and provided with lugs for engaging the actuating-levers whereby the locking-bolts may be actuated simultaneously.

4. The combination with a mail-pouch provided with a transverse series of staples and a flap having openings to receive the staples, of locks for the staples comprising each a casing having an opening to receive the staples, a locking-bolt within the casing for engaging the staples, a latch for locking the bolt in position, a lever for actuating the bolt, means on the lever for releasing the latch, means within the flap for engaging the actuating-levers to simultaneously actuate the locking-bolts, means within the casing of one of the locks for retaining the locking-bolt in its locked position, and means for releasing said retaining means.

5. The combination of a mail-pouch provided with a transverse series of staples and a flap having openings to receive the staples, of a series of locks for the staples each comprising a casing having an opening to receive the staple, means within the casing for engaging the staple to lock the same, means within the casing for retaining said engaging means in position, means within the casing for actuating the locking means and for simultaneously releasing the retaining means, and a single means engaging the actuating means of each of the series for simultaneously actuating the locking means.

6. The combination with a mail-pouch provided with a series of staples and a flap having openings to receive the staples, of a series of locks for the staples, comprising each a casing having an opening to receive the staple, means within the casing for engaging the adjacent staple, means for retaining the engaging means in position, means for actuating said engaging means and for simultaneously releasing the retaining means, and a single means engaging each of the actuating means of the series of locks for simultaneously actuating the staple-engaging means.

7. The combination with a mail-pouch provided with a transverse series of staples, and a flap having openings to receive the staples, of a series of locks for the staples, comprising a casing having an opening to receive the staple, means within the casing for engaging the staples to lock the same, means for retaining the locking means in position and single means for simultaneously actuating each of the staple-engaging means, and for releasing the retaining means.

809,059. TOY PISTOL. LOUIS H. HINAMAN, Port Jervis, N. Y., assignor of one-fourth to Titus Hinaman, Kellam, Pa. Filed June 24, 1905. Serial No. 266,845.

Claim.—1. A toy pistol comprising a barrel and a grip formed of two symmetrical concave halves, a screw-threaded bolt traversing the halves adjacent the junction of the barrel and grip, a nut engaging the bolt to secure the halves together, a hammer pivoted in the bolt, a plunger slidably mounted within the barrel and provided with a transverse slot at its outer end, connecting-rods between the plunger and the hammer, a rearwardly-projecting arm on the plunger and provided with a recess for engaging the bolt, a spring for retaining the arm in engagement with the bolt, a trigger pivoted to the bolt, a lug on the trigger for releasing the arm, and a spring for actuating the plunger comprising a rubber band traversing the slot therein, the free ends of the band extending without the open ends of the barrel, and a ring on the barrel for securing the ends of the band thereto, substantially as described

2. A toy pistol comprising a casing composed of two symmetrical concave halves, formed to represent a barrel and grip, means for securing the halves together, a hammer pivoted within the grip, a plunger slidably mounted within the barrel, means connecting the hammer and the plunger, a rearwardly-extending arm on the plunger, means engaging the arm to retain it in its rearward position, a trigger for releasing said arm, and a spring for actuating the plunger comprising a rubber band secured at its central point to the plunger, the free ends extending through the open ends of the barrel and a ring for securing the ends of the band to the barrel, substantially as described.

3. A toy pistol comprising a casing composed of two symmetrical halves secured together and shaped to represent a pistol barrel and grip, a sliding plunger within the barrel, a hammer pivoted within the grip, connections between the hammer and the plunger whereby when the hammer is set the plunger will be drawn to the rear of the barrel, means for retaining the hammer in the set position, a trigger for releasing said retaining means, and a spring for actuating the plunger comprising a rubber band secured thereto, and extending outwardly through the open end of the barrel, and a ring on the barrel engaging the ends of the rubber band to retain it in position, substantially as described.

4. A toy pistol comprising a casing, a plunger slidably mounted therein, a hammer, means whereby when the hammer is set the plunger is drawn to the rear, means for retaining the hammer in its set position, a trigger for releasing said retaining means, elastic means for actuating the plunger connected therewith and extending without the open end of the barrel, and a ring on the barrel engaging said elastic means.

5. A toy pistol comprising a casing, a plunger slidably mounted therein, a hammer, means whereby when the hammer is set the plunger is drawn to the rear, means for retaining the hammer in its set position, a trigger for releasing said retaining means, elastic means for actuating the plunger connected therewith and extending outwardly through the open end of the barrel, and means on the barrel for engaging said elastic means.

809,060. RINGER FOR TELEPHONES AND THE LIKE. HENRY R. HOUSE, Lamar, Colo. Filed Nov. 10, 1904. Serial No. 232,117.

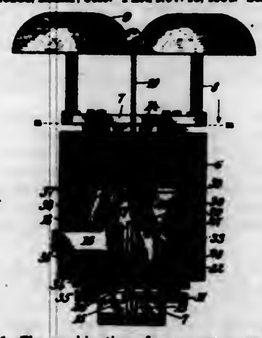

Claim.—1. The combination of a magnet, a supporting-plate, mechanism connected with said supporting-plate and adjusted relatively thereto, said mechanism being provided with brackets, springs connected with said brackets and depending therefrom, and an armature mounted upon said springs and free to rock by the resilience thereof.

2. The combination of a magnet, a supporting-plate, mechanism connected with said supporting-plate and adjustable relatively thereto, said mechanism being provided with brackets, springs connected with said brackets and depending therefrom, an armature mounted upon said springs and free to rock by the resilience thereof, and means for adjusting the position of said brackets relatively to said supporting-plate.

3. The combination of a magnet, a supporting-plate disposed adjacent thereto and provided with a slot, a yoke provided with a portion disposed adjacent to said supporting-plate and provided with a fastening member extending through said slot for the purpose of enabling said portion to be adjusted to different angles relatively to said supporting-plates, springs connected with said yoke and depending therefrom, an armature mounted upon said springs and free to vibrate by the resilience thereof, a clapper mounted upon said armature and adapted to be actuated thereby, and a bell to be struck by said armature.

4. The combination of a magnet, a supporting-plate disposed adjacent thereto, a yoke provided with a head disposed adjacent to said supporting-plate, means for adjusting said head relatively to said supporting-plate, brackets mounted upon said head and upon said yoke respectively, springs adjustably mounted within said brackets and depending therefrom, an armature mounted upon said springs, a clapper supported by said armature, and bells to be struck by said clapper.

5. The combination of a magnet, a supporting-plate disposed adjacent thereto, an arm mounted upon said supporting-plate and provided with a slot, a yoke supported by said supporting-plate and provided with a head, a member mounted upon said head and projecting through said slot in said arm, means for moving said arm into different radial positions for the purpose of adjusting said head relatively to said supporting-plate, springs connected with said head and with said yoke, an armature mounted upon said springs, a clapper connected with said armature and actuated by movements thereof, and bells to be struck by said clapper.

809,061. CHAIR. HENRY H. HOOVER, Fort Smith, Ark. Filed Feb. 4, 1905. Serial No. 244,189.

Claim.—1. A corner-iron stamped from sheet metal and fashioned into angular shape, the iron being provided with an upper receiving-surface, having one side edge made extended, and a fastening-tongue on the other side edge of the receiving-surface, with the same located at the bend in the iron, substantially as described.

2. A corner-iron having an upper receiving-surface and bent into shape at a reduced portion with its ends disposed at an angle, one to the other, and projecting tongues at the reduced portion, the iron being provided with perforations, substantially as described.

3. An angular iron formed with round receiving-troughs on its upper side, one side edge of the iron being made the higher, a reduced portion in the iron, tongues at the reduced portion, and means adapting the angular iron for attachment, substantially as described.

809,062. DOOR CHECK OR FASTENER. CHARLES H. P. INGALLS, Lynn, Mass. Filed Apr. 3, 1905. Serial No. 253,806.

Claim.—The herein-described door-check comprising a casing, a plunger-bar mounted to slide in said casing and provided with a series of ratchet-teeth on one side thereof, a pawl pivoted within the casing and designed to engage the teeth on the plunger to hold said plunger in projected position, a pivotally-mounted foot-lever connected to said pawl by a link, a spring secured to the casing and bearing at its free end against said foot-lever to hold the pawl in engagement with the teeth on the plunger, a spring surrounding the plunger within the casing, an adjustable ring on the plunger for regulating the tension of the spring, an elastic shoe upon the lower end of the plunger and a foot-piece on the upper end of said plunger, all substantially as described.

809,063. DRAIN-VALVE FOR HYDRANT-PIPES. FREDERICK A. JACOBS, Jamaica, N. Y. Filed Apr. 13, 1905. Serial No. 255,261.

Claim.—A valve device designed for use in a supply-pipe of a hydrant adjacent the hydrant connection, said valve device comprising a casing provided with a horizontal partition dividing said casing into top and bottom chambers, a threaded valve-stem passing downwardly into the valve-chamber within said casing and provided with a valve adapted to close a port or passage in said partition, said port or passage being normally closed; a valve-rod vertically movable through the end of the casing adjacent to the hydrant connec-

tion and provided with a valve adapted to close a port or passage in the bottom of said casing which is normally open; an arm connected with the first-named valve and with said valve-rod, a spring mounted on said rod above said valve, a collar secured to said rod above said spring, and means for limiting the upward movement of said rod, substantially as shown and described.

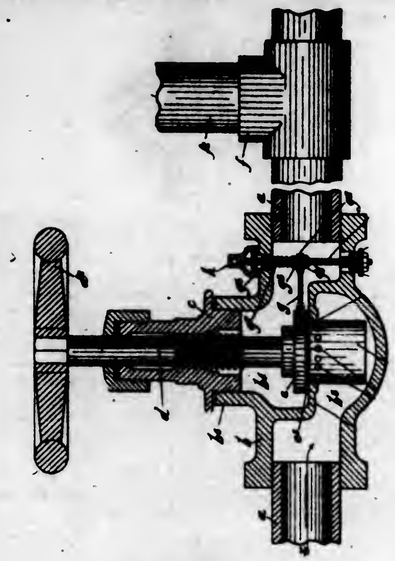

809,064. MARINE VESSEL. JOHN B. JOHNSON, Ishpeming, Mich. Filed June 30, 1905. Serial No. 267,746.

Claim.—1. A marine vessel having a hull, a propeller-shaft mounted at each side thereof and inclining with respect to the water-line of the hull, the lower ends of the shafts projecting below the hull, propellers carried by said ends of the shafts, means for mounting and driving the shafts, thrust-bearings engaged with the upper ends of the shafts, and a supporting-beam extending transversely across the hull and having its ends projected beyond the sides thereof, said ends of the supporting-beam carrying said thrust-bearings.

2. A marine vessel having a hull, a shaft mounted thereon, an engine-shaft extending fore and aft in the vessel, transverse shafts extending through the sides of the hull and geared with the engine-shaft, outside propeller-shafts mounted at each side of the hull and respectively geared with the ends of the transverse shafts, said propeller-shafts inclining downwardly and rearwardly, and propellers attached to the lower ends of the shafts.

809,065. HOOK. LORA JOHNS, Newton, Kans., assignor to The De Long Hook and Eye Company, Philadelphia, Pa., a Corporation of West Virginia. Filed Jan. 14, 1905. Serial No. 241,049.

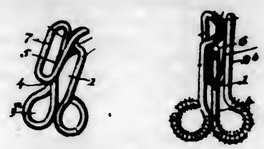

Claim.—1. A hook having a shank with eyes at one extremity thereof for attaching the same, a bill projecting from the extremity of said hook remote from said eyes, consisting of two bars spaced apart to form an opening therebetween, said shank having a lateral offset in the plane of said eyes, the offset to receive threads and said opening being above said offset whereby the sewing-needle may pass upwardly.

2. A hook having a shank comprising two members with eyes at one extremity thereof for attaching the same, a bill projecting from the extremity of said hook remote from said eyes, consisting of two bars spaced apart to form an opening therebetween, said members having lateral abutting offsets substantially in the plane of said eyes adapted to receive threads, said opening being disposed above said offsets whereby the sewing-needle may pass upwardly.

809,066. HOIST OR ELEVATOR. CLAUS A. JUEL, Chicago, Ill. Filed Apr. 6, 1905. Serial No. 254,105.

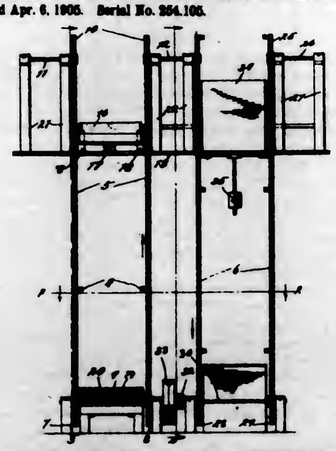

Claim.—1. In an elevator or hoist the combination of two sets of vertically-arranged endless belts, one or more receptacles for the material to be hoisted, means on said belts and receptacles whereby the receptacles are supported upon the belts, means for supporting the receptacles between the belts preparatory to the hoisting thereof by the belts, and means for driving the belts in opposite directions.

2. In an elevator or hoist the combination of two sets of vertically-driven belts, a receptacle for the material to be hoisted, means on the belts and receptacle whereby the belts engage and lift the receptacle, means at the lower end of one set of said belts for supporting a receptacle to be elevated between the belts, means at the upper end of the same set of belts for catching the elevated receptacle, arranged between the belts, means at the upper end of the other set of belts for holding the receptacle to be lowered, between the latter set of belts, and means at the lower end of the second set of belts for catching the lowered receptacle.

3. In an elevator or hoist the combination of two pairs of vertically-driven belts, one or more receptacles for the material to be elevated, means on said receptacles and belts whereby the receptacles are engaged and raised by the belts, means between the belts of one pair at the lower end for supporting a receptacle to be elevated, means between the belts of the same pair at the upper end, but on the opposite side for catching the elevated receptacle while coming downwardly means between the belts of the second pair at the upper end for holding a receptacle to be lowered, means between the belts of the second pair at the lower ends but on the opposite side for catching the lowered receptacle and means for driving said belts.

4. In an elevator or hoist the combination of two pairs of upright belts, a receptacle for the material to be elevated, means on said belts and receptacles whereby the receptacle is engaged and elevated by the belts, means between the belts of one pair at the lower end for supporting a receptacle to be elevated, a hinged incline projecting between the same pair of belts at the upper end in the line of movement of the receptacle while on that pair of belts, for catching the elevated receptacle, a normally elevated, hinged support between the belts of the second pair at the upper end for supporting a receptacle to be lowered, and means between the belts of the second pair at the lower end for catching the lowered receptacle.

809,067. SIEMENS REGENERATIVE FURNACE. ADALBERT KUHNWEINHART, Eurkmantel, near Teplitz, Austria-Hungary. Filed Mar. 16, 1905. Serial No. 250,408.

Claim.—1. In a Siemens regenerative furnace, the flue for products of combustion, a passage between the gas-regenerative chambers and the flue, a cut-off in said passage, and means for causing the gases to flow, previous to reversing the apparatus, from the flue through the said passage into the gas-regenerative chamber, whereby the flue-gases cause a displacement into the furnace of the combustible gases contained in the gas-regenerative chamber, substantially as described.

2. In a Siemens regenerative furnace, the flue for products of combustion, a passage between the gas-regenerative chambers and the flue, a cut-off in said passage and means for sucking the flue-gases, previous to reversing the apparatus, from the flue through the said passage into the gas-regenerative chamber, whereby the sucking action causes a displacement into the furnace of the combustible gases contained in the regenerative chamber, substantially as described.

3. In a Siemens regenerative furnace, the flue for products of combustion, a passage between the gas-regenerative chamber and the flue, a cut-off in said passage, and means for mechanically impelling the flue-gas from the flue through the said passage into the gas-regenerative chamber previous to reversing the apparatus, substantially as described.

4. In a Siemens regenerative furnace, the flue for products of combustion, a passage between the gas-regenerative chamber and the flue, and a suction and pressure device in said passage for causing the gases to flow, previous to reversing the apparatus, from the flue through the said passage into the gas-regenerative chamber, substantially as described.

809,068. COMPOSITION OF MATTER. DAVID LOEWENSTEIN, Chicago, Ill. Filed July 15, 1904. Serial No. 216,757.

Claim.—1. The herein-described composition of matter consisting of French glue, shellac, a solvent, starch and water, substantially as and for the purpose specified.

2. A composition of matter consisting of French glue, shellac, an alcoholic solvent, starch, water, and alum, substantially as specified.

3. As a new composition of matter the mixture containing French glue, shellac, a solvent, starch, water, alum, and ammonia, substantially as specified.

4. The herein-described composition of matter, consisting of French glue, shellac, a solvent, starch, water, alum, ammonia, and glycerin, substantially as specified.

5. As a new composition of matter the mixture containing French glue, shellac, alcohol, starch, water, alum, ammonia, and glycerin, substantially as specified.

6. The herein-described composition of matter consisting of French glue, shellac, alcohol, starch, water, alum, ammonia, glycerin, and coloring-matter, substantially as specified.

7. The herein-described composition of matter consisting of French glue, shellac, an alcoholic solvent, starch, and water commingled in the presence of heat, substantially as specified.

8. The herein-described composition of matter consisting of French glue, shellac, an alcoholic solvent, starch, and water commingled in the presence of steam, substantially as specified.

9. As a new composition of matter the mixture containing French glue, shellac, alcohol, starch, and water agitated and commingled in the presence of live steam, substantially as specified.

10. The herein-described composition of matter consisting of French glue, shellac, an alcoholic solvent, starch, water, and glycerin commingled in the presence and by the action of steam, substantially as specified.

11. The herein-described composition of matter consisting of French glue, shellac, alcohol, starch, water, glycerin, and ammonia agitated and commingled in the presence of heat, substantially as specified.

12. The herein-described composition of matter consisting of French glue, shellac, alcohol, starch, water, glycerin, ammonia, and alum commingled in the presence of heat, substantially as specified.

13. The herein-described composition of matter consisting of French glue, shellac, alcohol, starch, water, glycerin, ammonia, alum, and coloring-matter commingled in the presence of heat, substantially as specified.

14. As a new composition of matter the mixture consisting of French glue, shellac, an alcoholic solvent, starch, water, and coloring-matter substantially as and for the purpose specified.

15. A composition of matter consisting of French glue, shellac, an alcoholic solvent, starch, water, and glycerin, substantially as specified.

16. A composition of matter consisting of French glue, shellac, an alcoholic solvent, starch, water, and ammonia, substantially as specified.

17. A composition of matter consisting of French glue, shellac, an alcoholic solvent, starch, water, alum, and coloring-matter, substantially as specified.

18. A composition of matter consisting of French glue, shellac, an alcoholic solvent, starch, water, glycerin, and coloring-matter, substantially as specified.

19. A composition of matter consisting of French glue, shellac, an alcoholic solvent, starch, water, ammonia, and coloring-matter, substantially as specified.

20. A composition of matter consisting of French glue, shellac, alcohol, starch, water, and coloring-matter agitated and commingled in the presence of steam, substantially as specified.

809,069. DOWELING-MACHINE. JAMES L. LOVETT, New London, Pa. Filed May 10, 1905. Serial No. 259,657.

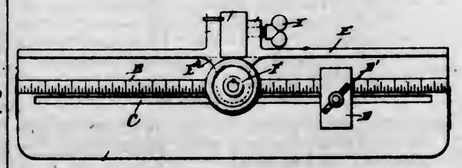

Claim.—1. In a machine of the character described, a table upon which the material to be bored is adapted to lie, a vertical back formed with the table against which one edge of the material is adapted to be placed, a movable gage-block adapted to abut against the end of the material, means for clamping the material downward upon the table, a vertical sliding drill-block arranged in the back of the device, said drill-block provided with different size openings formed therethrough, said openings to form a guide for the drill, and means for securing said block in any position placed, as and for the purpose specified.

2. In a device of the character described, a plate upon which the material is adapted to rest, a plate forming a back extending at right

angles from the rearward edge of the first-named plate against which one edge of the material is adapted to lie, the bed-plate being provided with a longitudinal guideway, a gage-block adapted to slide in said longitudinal guideway and abut against the end of the material, means for securing said gage-block in any position placed, means for clamping the material downward upon the bed-plate, two vertical lugs extending rearward from the back, a drill-block adapted to slide vertically between said lugs, said drill-block provided with lateral openings of different size formed therethrough from the front to the rear, said openings adapted to form guides for the drill, and means for securing said drill-block in any position placed, as and for the purpose specified.

3. In a device of the character described, a bed-plate having graduations marked thereon, said bed-plate provided with a longitudinal slot, a gage-block adapted to slide in said slot, means for securing said gage-block in place, a back rising at right angles to the bed-plate against which one edge of the material is adapted to rest, an ear extending forward from the upper end of the back, a clamp-screw threaded through said ear and adapted to be forced downward upon the material, a drill-guide block adapted to slide vertically in the back, the forward edge of the drill-block being flush with the front face of the back, said drill-block being provided with different size holes bored therethrough from the front to the back, said holes being arranged one above the other, graduations arranged alongside of the drill-block to enable the block to be moved so that any one hole can be brought to a certain point, and means for securing the block in any position set, as and for the purpose specified.

809,070. SEWERAGE SYSTEM FOR TRAINS. JOHN H. METTENHEIMER and WILLIAM L. HERRLIN, Austin, Tex. Filed Feb. 16, 1904. Serial No. 194,226.

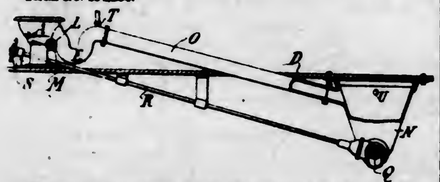

Claim.—1. A sewerage system for trains and the like, including in combination a water-closet bowl A with a direct vertical outlet C, a tank N into which the sewage is to be discharged and retained and from which it may be discharged at will, a trap E outside of said bowl and between said bowl and said tank, and a valve F which in one position closes the pipe C and forms the bottom of the bowl so that the sewage passes through the trap into said tank, and which in another position closes the trap E and forms the side of the bowl so that the sewage is discharged directly through said vertical outlet without passing through said trap.

2. A sewerage system for trains and the like, including in combination a water-closet bowl, a tank N into which the sewage may be discharged and which is adapted to retain the sewage and to permit the discharge of the same at will, an unobstructed straight outlet-pipe C from the bottom of said closet-bowl, a pipe O and trap E connecting said tank with the side of said bowl, a valve F which in one position forms the bottom of the bowl and closes the straight outlet-pipe and which in another position forms the side of the bowl and cuts off the trap E, a discharge-valve Q from said tank having a hand-operated controlling device in the vicinity of the bowl, and a steam-pipe U entering said tank.

809,071. MEANS FOR SUPPORTING THE EXPANSION ENDS OF BRIDGES, &c. PELHAM B. MOSLEY, Montreal, Canada. Filed May 5, 1905. Serial No. 258,862.

Claim.—1. The combination with a pair of bearing members, having a nest of rollers between them, of means effecting a sliding connection between each bearing members and rollers for the purpose of correcting any tendency of the rollers to deviate from any position with their axes at right angles to their plane of travel.

2. The combination with a pair of bearing members, having a nest of rollers between them, of means effecting a sliding connection between each bearing members and rollers for the purpose of correcting any tendency of the rollers to deviate from any position with their axes at right angles to their plane of travel, and such means limiting the extent of movement of such parts relatively to one another.

3. The combination with a pair of bearing members having a rolling member between them, of means carried by one of such members and effecting a sliding engagement with a member next to it for the purpose of maintaining the members constantly in the same relation.

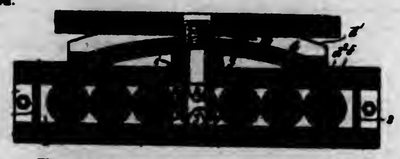

4. The combination with a pair of bearing members having a rolling member between them, of means carried by one of such bearing members and effecting a sliding engagement with the rolling member for the purpose of maintaining the members constantly in the same relation.

5. The combination with a pair of bearing members having a rolling member between them, one of such members having a hole therein presenting a face with which one of the faces of a projection carried by another of the members makes sliding contact for the purpose of maintaining the members constantly in the same relation.

6. The combination with a pair of bearing members having a rolling member between them, one of such members having a hole therein presenting a face with which one of the faces of a projection carried by another of the members makes sliding contact for the purpose of maintaining the members constantly in the same relation one of such faces being of cycloidal formation.

7. The combination with a pair of bearing members having a rolling member between them, one of such members having a hole therein presenting a face with which one of the faces of a projection carried by another of the members makes sliding contact for the purpose of maintaining the members constantly in the same relation, the contacting face of the projection being of cycloidal formation.

8. The combination with a pair of bearing members having a nest of rollers between them, and means for spacing such rollers, of a device carried by one of the bearing members and presenting a face adapted to make sliding contact with the face presented by one of the walls of a hole in the perimeter of one of the rollers for the purpose of maintaining the bearing members and rollers constantly in the same relation.

9. The combination with a pair of bearing members having a nest of rollers between them, and means for spacing such rollers, of a device carried by one of the bearing members and presenting a face adapted to make sliding contact with the face presented by one of the walls of a hole in the perimeter of one of the rollers for the purpose of maintaining the bearing members and rollers constantly in the same relation, one of such faces being of cycloidal formation.

10. The combination with a pair of bearing members having a nest of rollers between them and means for spacing such rollers, of a device carried by one of the bearing members and presenting a face adapted to make sliding contact with the face presented by one of the walls of a hole in the perimeter of one of the rollers for the purpose of maintaining the bearing members and rollers constantly in the same relation, the contacting face of the device being of cycloidal formation.

11. The combination with a pair of bearing members, having a nest of rollers between them one of such rollers having a pair of holes in the perimeter thereof one near each end, and means for spacing such rollers, of a pair of conoidal dowels carried by one of the bearing members and projecting into the holes in the roller.

12. The combination with a pair of bearing members, having a nest of rollers between them one of such rollers having a pair of holes in the perimeter thereof one near each end, and means for spacing such rollers, of a pair of dowels carried by one of the bearing members and projecting into the holes in the roller, such dowels being of conoidal formation and cycloidal in axial direction.

13. The combination with a pair of bearing members, having a nest of rollers between them one of such rollers having a pair of holes extending diametrically therethrough one near each end, and means for spacing such rollers, of a pair of conoidal dowels carried by one of the bearing members and projecting into the adjacent ends of the holes in the roller, and a second pair of dowels carried by the other bearing member and projecting into the opposite ends of the holes.

14. The combination with a pair of bearing members, having a nest of rollers between them one of such rollers having a pair of holes extending diametrically therethrough one near each end, and means for spacing such rollers, of a pair of dowels carried by one of the bearing members and projecting into the adjacent ends of the holes in the roller, and a second pair of dowels carried by the other bearing members and projecting into the opposite ends of the holes, such dowels being of conoidal formation and cycloidal in axial direction.

15. The combination with a pair of bearing members having a roller-bearing between them, of a dust-guard fitting closely between the bearing members and encircling the roller-bearing, one of the bearing members being movable relatively to the dust-guard, and the said dust-guard being free to move independently of both bearing members.

16. The combination with a pair of bearing members having a roller-bearing between them, of a rectangular dust-guard fitting closely between the bearing members and encircling the roller-bearing, one of the bearing members being movable relatively to the dust-guard and the said dust-guard being free to move independently of both bearing members.

17. The combination with a pair of bearing members having a roller-bearing between them, of a rectangular dust-guard free of and fitting closely between the bearing members and encircling the roller-bearing, such dust-guard consisting of a pair of parallel bars of channel cross-section, and a pair of bars having their ends secured rigidly to the ends of the channel-bars, such bars being slightly less in height than the distance between the bearing members.

18. The combination with a pair of bearing members having between them a nest of rollers with their ends diminished, of a rectangular dust-guard free of and fitting closely between the bearing members and encircling the rollers, such dust-guard consisting of a pair of parallel bars of channel cross-section formed with openings through which the diminished ends of the rollers project, and a pair of flat bars having their ends bent at right angles and secured rigidly to the ends of the channel-bars, such bars being slightly less in height than the distance between the bearing members.

19. The combination with a pair of bearing members having between them a nest of rollers with their ends diminished, of a dust-guard fitting closely between the bearing members and consisting of a pair of parallel bars of channel cross-section formed with holes through which the diminished ends of the rollers project, such holes being of sufficient dimensions to allow of limited play of the guard between the bearing members, and means securing the bars against axial movement relatively to the rollers, the channel-bars being slightly less in height than the distance between the bearing members and the said dust-guard being free to move independently of both bearing members.

20. The combination with a pair of bearing members having, between them, a nest of rollers with their ends diminished, of a rectangular dust-guard free of and fitting closely between the bearing members and encircling the rollers such dust-guard consisting of a pair of parallel bars of channel cross-section formed with holes through which the diminished ends of the rollers project such holes being of sufficient dimensions to allow of limited play of the guard between the bearing members and a pair of bars having their ends secured rigidly to the ends of the channel-bars, such bars being slightly less in height than the distance between the bearing members.

21. The combination with a pair of bearing members having, between them, a nest of rollers with their ends diminished, of spacer-bars at the opposite ends of the rollers and having holes fitting closely upon the diminished ends of the rollers, a rectangular dust-guard free of and fitting closely between the bearing members and encircling the rollers and the spacer-bars, such dust-guard consisting of a pair of parallel bars of channel cross-section formed with longitudinal slots, through which the diminished ends of the rollers project, and a pair of bars having their ends secured rigidly to the ends of the slotted bars, such bars being slightly less in height than the distance between the bearing members.

809,072. STEERING DEVICE FOR BOATS. ALONZO B. MCCOY, Burlington, N. J. Filed Mar. 14, 1905. Serial No. 249,696.

Claim.—1. In a device of the character described, a sprocket rotatably mounted, a chain in engagement therewith and in suitable connection with the rudder and means situated adjacent said sprocket serving both to properly guide the chain thereto and to act as guards for preventing the chain from leaving said sprocket, whereby fouling is prevented.

2. In a device of the character described, a sprocket rotatably mounted, a chain in engagement therewith and in suitable connection with the rudder and pulleys situated adjacent said sprocket serving to properly guide the chain thereto and to act as guards to prevent the chain from leaving said sprocket.

3. In a device of the character described, a sprocket rotatably mounted on a frame, a chain in engagement therewith and in suitable connection with a rudder, and pulleys mounted on the frame and so located with respect to said sprocket that the teeth thereof pass into the grooves of said pulley whereby said pulleys serve both to properly guide the chain to said sprocket, and prevent the same from leaving said sprocket.

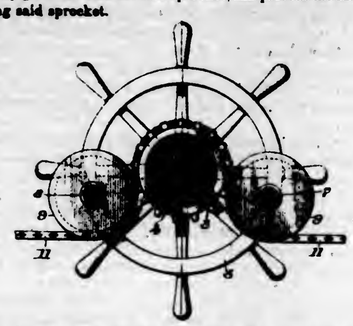

4. In a device of the character described, a sprocket rotatably mounted, a chain in engagement therewith and in suitable connection with a rudder, pulleys mounted adjacent said sprocket and having grooves in their periphery into which the teeth of said sprocket are adapted to pass, whereby the said pulleys serve both to guide the chain and to prevent the same from leaving said sprocket and means for operating the said sprocket.

809,073. HEAD-BOX FOR PAPER-MACHINES. WILLIAM MCNAUGHT, Holyoke, Mass. Filed May 19, 1905. Serial No. 261,206.

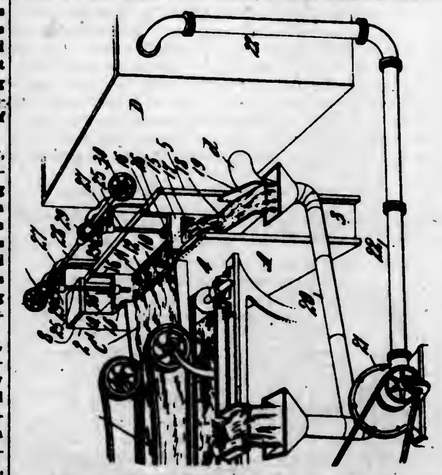

Claim.—1. In a paper-machine, the combination with a head-box having a pulp-inlet, and a pulp-outlet, and a lower-positioned relief-outlet, of a surface-regulating trough, having end closure heads, and guided for vertical movement within the head-box, and having a discharge-aperture, in one of its end closure-heads, communicating with the head-box relief-outlet, and means for regulating the height of said trough.

2. In a paper-machine, the combination with a head-box having a pulp-inlet, and a pulp-outlet, and a lower-positioned relief-outlet, of a surface-regulating trough, having end closure-heads and guided for vertical movement within the head-box, and having a discharge-aperture in one of its end closure-heads, communicating with the head-box relief-outlet, means for regulating the position of said trough, and a pump connecting with said relief-outlet and delivering the pulp received therefrom to the rear of the head-box inlet.

3. In a paper-machine, the combination with a head-box having a pulp-inlet, and a pulp-outlet, and a lower-positioned relief-outlet, of a surface-regulating trough, narrower than the width of the head-

box, having an opening or openings between it and the adjacent side wall or walls of the head-box, said trough having end-closure-heads, guided for vertical movements within the head-box and having a discharge-aperture in one end closure-head, communicating with the head-box relief-outlet, and means for regulating the height of said trough.

4. In a paper-machine, the combination with a head-box having a rear-side pulp-inlet, a front-side pulp-outlet, and a lower-positioned endwise-located relief-outlet, of a surface-regulating trough guided for vertical movement within the head-box and having an opening at one end communicating with the head-box relief-outlet, and means for regulating the vertical position of said trough relatively to the head-box outlet.

5. In a paper-machine, the combination with a head-box having a rear-side pulp-inlet, a front-side pulp-outlet, and a lower-positioned, endwise-located, relief-outlet, of a surface-regulating trough guided for vertical movement within the head-box, and having an opening at one end communicating with the head-box relief-outlet, a pair of vertical screw-shafts engaging end portions of the trough, and having bevel gear-wheels on upper portions thereof, a horizontally-mounted shaft having bevel gear-wheels in mesh with the screw-shaft gears, and means for rotating said horizontal shaft.

6. In a paper-machine, the combination with a head-box having oppositely-paired vertical grooves 16, 16, in the walls thereof, having a pulp-inlet, an apron-provided pulp-outlet, and a lower-positioned relief-outlet, of a surface-regulating trough having end closure-heads which engage and are guided in the said grooves, a discharge-aperture in one end closure-head communicating with the head-box relief-outlet, means connected with said relief-outlet for conveying the pulp passed through said relief-outlet back of the head-box, and means for adjusting the height of the said trough.

7. In a paper-machine, the combination with a screen-box and the head-box forward thereof, and having a rear-side pulp-inlet in connection with the screen-box, a forward-side horizontal overflow-outlet, and an endwise-located relief-outlet opening at a level below the said overflow-outlet, of a V-shaped upwardly-open trough narrower than, and centrally and horizontally positioned within the upper portion of the head-box, with openings between its edges and the front and rear walls of the head-box, and having end heads in guiding engagements with the head-box walls and one of said heads having an opening in communication with the head-box relief-outlet opening, means for imparting vertical adjusting movements to said trough, a pump, a conduit, leading from the said relief-outlet thereto, and a conduit leading therefrom to the screen-box.

809,074. GARMENT-SUPPORTER. HARRY F. NILES, Chicago, Ill. Filed Dec. 21, 1904. Serial No. 237,810.

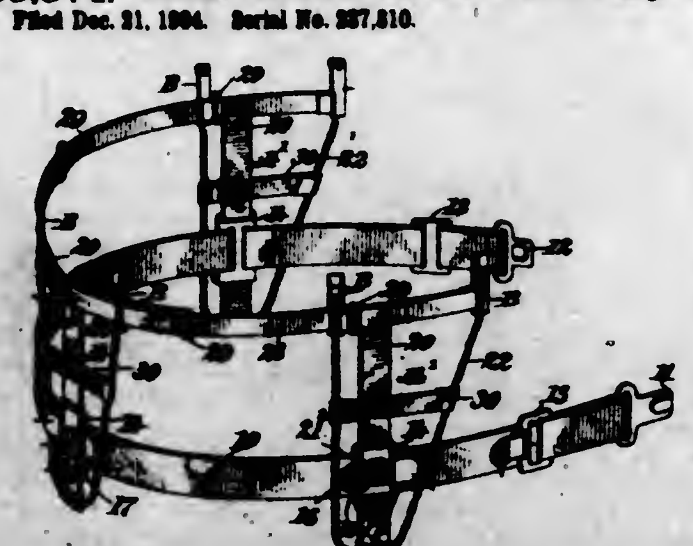

Claim.—1. A garment-supporter comprising a belt, yieldable carriers mounted thereon, garment-clasps mounted upon the carriers, and a band connecting the clasps.

2. A garment-supporter comprising a belt, yieldable carriers mounted upon the belt and being movable longitudinally and transversely thereof, garment-clasps mounted upon the carriers, a band connecting the clasps, and means for varying the length of the band.

3. A garment-supporter comprising a belt, yieldable carriers mounted thereon, garment-clasps mounted upon the carriers and each comprising a hook which may extend over the garment, a spring-tongue for engagement with the garment movable within the hook, and a band connecting the clasps below the hooks and tongues.

4. A garment-supporter comprising a belt, a supporting member mounted upon the belt, a spiral spring carried by the supporting member and being free to yield laterally, and a garment-clasp mounted upon the spring.

5. A garment-supporter comprising a belt, a slide movable upon the belt, a spiral spring carried by the slide and being free to yield laterally, and a garment-clasp mounted upon the spring.

6. A garment-supporter comprising a belt, a supporting member mounted upon the belt, a flexible member extending therefrom, a spring connected to the flexible member and extending above the belt, and a garment-clasp mounted upon the spring.

7. A garment-supporter comprising a belt, a supporting member mounted upon the belt, a flexible member extending therefrom, a spring connected to the flexible member and extending above the belt, and a garment-clasp pivoted upon the spring.

8. A garment-supporter comprising a belt, a supporting member mounted upon the belt, a flexible member extending from and being movable through the supporting member, a spring connected to the flexible member and extending above the belt, and a garment-clasp mounted upon the spring.

9. A garment-supporter comprising a belt, a supporting member mounted upon the belt, a flexible member extending therefrom, a generally U-shaped spring connected at its lower portion to the flexible member, and garment-clasps mounted upon each of its upper ends.

10. A garment-supporter comprising a belt, a supporting member mounted upon the belt, a flexible member extending therefrom, a generally U-shaped spiral spring connected at its lower portion to the flexible member, and garment-clasps mounted upon each of its upper ends.

11. A garment-supporter comprising a belt, a supporting member mounted upon the belt, a flexible member extending therefrom, a generally U-shaped spring connected at its lower portion to the flexible member, garment-clasps mounted upon each of its upper ends, and a band connecting the clasps.

12. A garment-supporter comprising a belt, a supporting member mounted upon the belt, a flexible member extending therefrom, a generally U-shaped spring connected at its lower portion to the flexible member, a band joining the opposite sides of the spring, and garment-clasps mounted upon each of the upper ends of the spring.

809,075. CALCULATOR. ALEXANDER RECHNITZER, Vienna, Austria-Hungary, assignor to The Keuffel & Esser Company, Hoboken, N. J., a Corporation of New Jersey. Filed June 29, 1901. Serial No. 66,596.

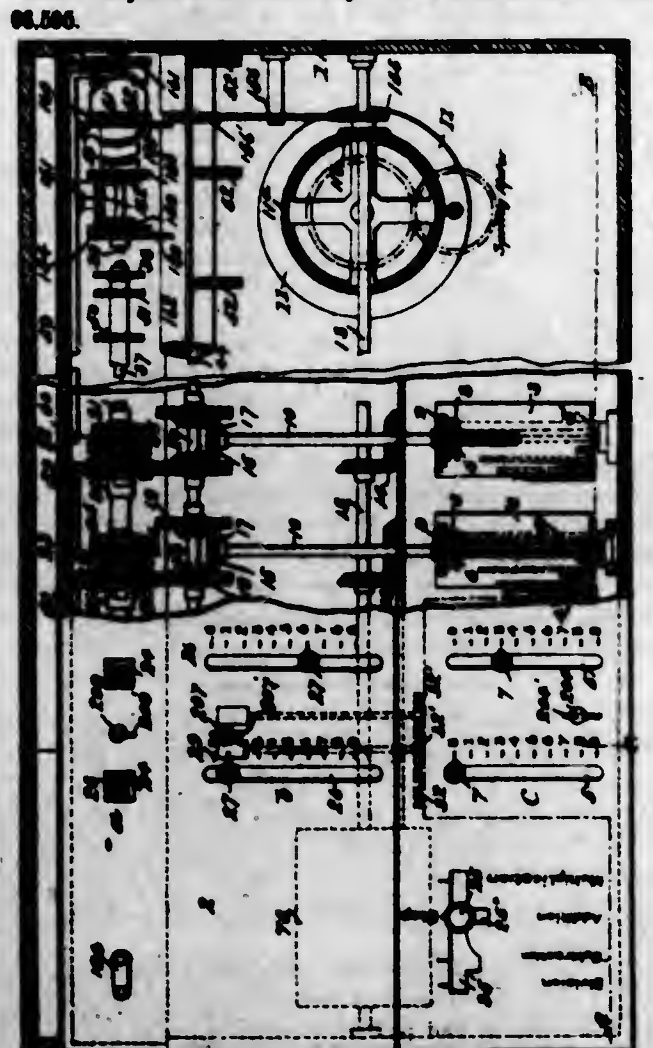

Claim.—1. The combination with registering devices, of operating devices, adapted when operated, automatically to move two or more of said registering devices each to an extent independently predetermined; transferring devices adapted when put into operation automatically and simultaneously to transfer the tens from all said registering devices which have reached a given position; a motor; means for connecting said motor with said operating devices and keeping the same in connection therewith until the desired operation is completed, means for automatically disconnecting said motor from said operating devices; means for automatically putting said transferring devices into operation after said disconnection of said motor from said operating devices, means for putting said motor into operation and means for automatically stopping the machine after the completion of its operation.

2. The combination with registering devices, of operating devices adapted when operated, automatically to move two or more of said registering devices, each to an extent independently predetermined; transferring devices adapted when put into operation automatically and simultaneously to transfer the tens from all said registering devices which have reached given position; a motor; means for connecting said motor with said operating devices and keeping the same in connection therewith until the said desired operation is completed; means for thereafter automatically disconnecting said motor from said operating devices, means for automatically putting said transferring devices into connection with said motor after the disconnection of said motor from said operating devices; means for putting said motor into operation, and means for automatically stopping the machine after the completion of its operation.

3. In a calculating-machine, the combination with a movable carriage containing registering devices, of means for operating the registering devices and means for preventing any movement of said carriage out of its normal position during the movement of said registering devices by said operating means.

4. In a calculating-machine, the combination of means for setting up a multiplicand of two or more digits, means for setting up a multiplier of two or more digits, numeral-wheels, means to add said multiplicand to said numeral-wheels successively a number of times corresponding to each digit of the multiplier and including a movable carriage having said numeral-wheels mounted thereon, and means for preventing movement of said carriage during any of such additions.

5. In a calculating-machine, the combination of means for setting up a divisor of two or more digits, numeral-wheels on which the dividend is set up, means to subtract said divisor from the dividend set up on said numeral-wheels successively a number of times represented by each digit of the quotient and including a movable carriage having said numeral-wheels mounted thereon, and means for preventing movement of said carriage during any of such subtractions.

6. In a calculating-machine, the combination with registering devices mounted on a movable carriage, of operating devices adapted to operate the registering devices to register either additions or subtractions dependent upon the position of said carriage with relation to the said operating means, and means for preventing movement of said carriage during such an addition or subtraction.

7. In a calculating-machine, the combination with a casing, a motor and registering devices driven by said motor, of a carriage movable independently of said motor with relation to the casing, and means for preventing any movement of said carriage during the movement of said registering devices.

8. In a calculating-machine, the combination of means for setting up a multiplicand of two or more digits, numeral-wheels, a motor, means driven by said motor to add said multiplicand to said numeral-wheels, a carriage movable independently of the motor and having the numeral-wheels mounted thereon for moving them to denominations of different order, and means for preventing any movement of the carriage during the performance of an addition.

9. In a calculating-machine, the combination of means for setting up a divisor of two or more digits, numeral-wheels on which the dividend is set up, a motor, means driven by said motor to subtract said divisor from said numeral-wheels, a carriage movable independently of the motor and having numeral-wheels mounted thereon for moving them to denominations of different order, and means for preventing any movement of the carriage during the performance of a subtraction.

10. In a calculating-machine, the combination with a casing containing operating mechanism, of a carriage movable with relation thereto, means for retaining said carriage in its position during an operation and for releasing the carriage at the end of an operation, and means coöperating with the releasing means to stop the operating mechanism during the movement of the carriage.

11. In a calculating-machine, the combination with a casing containing operating mechanism, of a carriage movable with relation thereto, means for retaining said carriage in its position during an operation and for releasing the carriage at the end of an operation, means for stopping said operating means after the end of a calculation, and means for placing the stopping means into operative position during the calculation.

12. In a calculating-machine capable of adding and subtracting, the combination of means for setting up a number of two or more digits, numeral-wheels, means to add the number set up to the numeral-wheels, a shiftable carriage having the numeral-wheels mounted thereon and means for turning said numeral-wheels in reverse direction, *i. e.*, to subtract after a shifting movement of the carriage has taken place.

13. In a calculating-machine capable of adding and subtracting, the combination of numeral-wheels, positively-operating carrying mechanism, and operating devices for adding numbers to said numeral-wheels, a shiftable carriage having said numeral-wheels mounted thereon and means for turning said numeral-wheels in reverse direction, *i. e.*, to subtract after a shifting movement of the carriage has taken place.

14. In a calculating-machine capable of multiplying and dividing, the combination of a shiftable carriage, means adapted automatically to shift the carriage, numeral-wheels mounted on the carriage, and operating devices to operate the numeral-wheels including means for reversing the rotation of the numeral-wheels after a shifting movement of carriage has taken place.

15. In a dividing-machine, the combination of means for setting up a divisor of two or more digits, a shiftable carriage, numeral-wheels on which the dividend is set up mounted on the carriage, and operating devices to operate the numeral-wheels including means for reversing the rotation of the numeral-wheels after a shifting movement of the carriage has taken place.

16. The combination, in a machine capable of adding and subtracting, of a movable carriage, a registering-wheel carried thereby, reversely-moving operating-wheels, and means for moving the carriage and thereby engaging either of the operating-wheels with the registering-wheel.

17. In a multiplying-machine, the combination of devices for setting up a multiplicand, means for indicating the position of the decimal-point in said multiplicand, devices for setting up the multiplier, means for indicating the position of the decimal-point in said multiplier and means adapted when set into operation automatically to carry out the operation of multiplication, register the result thereof and adjust said decimal-point to accord with said result.

18. In a multiplying-machine, the combination of devices for setting up a multiplicand, devices for setting up a multiplier of two or more digits, and means adapted, when put into operation, to automatically and successively add said mutiplicand a number of times corresponding with the multiplier, and to register the result thereof.

19. In a multiplying-machine, the combination with devices for setting up a multiplicand and devices for setting up a multiplier, of a movable carriage containing registering devices, means adapted when put into operation automatically to add the multiplicand a number of times to correspond with each figure of the multiplier and means for automatically moving said carriage and step by step bringing it successively into engagement with said means for causing successive additions.

20. In a dividing-machine, the combination with devices for setting up a dividend, devices for setting up a divisor and means adapted when once put into operation to automatically carry out the operation of division and register the result thereof whether the quotient comprises one or more digits.

21. In a dividing-machine, the combination with devices for setting up a dividend, devices for setting up a divisor of two or more digits, and means adapted, when once put into operation, to automatically carry out the operation of division, and register the result thereof whether the quotient comprises one or more digits.

22. In a dividing-machine, the combination of devices for setting up a dividend, means for indicating the position of a decimal-point in said dividend, devices for setting up a divisor, means for indicating the position of a decimal-point in said divisor, and means adapted when set into operation to automatically carry out the operation of division, register the result thereof and adjust said decimal-point to accord with said result.

23. In a dividing-machine, the combination of devices for setting up a dividend, devices for setting up a divisor and means adapted when once put into operation to automatically and successively subtract said divisor a number of times automatically regulated and dependent upon the dividend, and to register the result thereof.

24. In a dividing-machine, devices for setting up a dividend, de- ... left numeral-wheel during a rotation caused by the teeth on the com-

means to add the multiplicand set up to the registering-wheels a ... thereon and means adapted automatically to move and to arrest the

24. In a dividing-machine, devices for setting up a dividend, devices for setting up a divisor and arranging the same under said dividend and in parallel columns therewith starting from the left, means adapted when put into operation automatically to move the devices representing the dividend step by step and to the extent of one column thereof, means adapted automatically when put into operation to subtract the divisor from the figures of said dividend arranged in columns above said divisor until said dividend reaches zero, means for automatically registering the number of subtractions necessary to produce the above result, means adapted automatically at the end of each said result to readd to the dividend the remainder subtracted during the last said operation of subtraction and to move back the said registering devices one figure, and means for automatically stopping the machine at the end of the calculation.

25. The combination with a calculating-machine, of registering devices, means adapted to perform the calculation of addition and register the result thereof on said registering devices, and means comprising a single control-lever adapted automatically to put said machine into operation and reverse the same or cause it to perform the calculation of subtraction.

26. In a machine capable of performing the operations of addition and subtraction, the combination of means for setting up two numbers, a control-lever, and means whereby a single movement of the control-lever will adjust and release the machinery for the automatic performance of addition, or subtraction, respectively.

27. In a calculating-machine, the combination of a casing containing operating devices, a carriage containing registering devices and movable with regard to said casing, and means comprising a single control-lever adapted to change the position of said carriage with relation to said casing, and thereby causing said operating means to move said registering devices to register the result of the calculation of either addition or subtraction, depending upon the relative position of said carriage with reference to said casing.

28. The combination with registering devices, of operating means for simultaneously moving two or more of the same and transferring means for afterward simultaneously and positively transferring from a lower to a higher denomination.

29. The combination with registering devices, of operating means for simultaneously moving two or more of the same, and transferring means for afterward simultaneously transferring from a lower to a higher denomination from all of said registering devices, which either have reached a given position, when having been turned by the operating means, or are reaching this given position during the turning by the transferring means.

30. The combination with registering devices adapted by reverse movements of the same device to register additions and subtractions, of operating means for simultaneously moving two or more of the same and transferring means for simultaneously transferring from a lower to higher denomination.

31. The combination with registering devices adapted by reverse movements of the same device to register additions and subtractions, of operating means for simultaneously moving two or more of the same, and transferring means for simultaneously and positively transferring from a lower to a higher denomination.

32. The combination with registering devices adapted to register additions and subtractions, of operating means for simultaneously moving two or more of the same, and transferring means for simultaneously and positively transferring from a lower to a higher denomination from all of said registering devices, which either have reached a given position, when having been turned by the operating means, or are reaching this given position, during the turning by the transferring means.

33. In a calculating-machine, the combination with registering devices, of operating means for moving the same, carrying means actuated when one of the registering devices has reached a given position, and adapted to produce a further movement of the next registering device after the operating means have ceased to move, and means for producing a change of the registering mechanism during the transferring from a lower to a higher denomination, whereby a simultaneous movement of two or more registering devices will take place when one of them has reached a given position.

34. A transferring mechanism for calculating-machines, comprising a plurality of numeral-wheels each provided with a single tooth, a plurality of other wheels having single teeth mounted on a common shaft and rotating with the same, means actuated by the single teeth of the numeral-wheels, to cause connections between the numeral-wheels and the teeth rotating with the common shaft, so that these teeth can rotate the wheels, and means adapted to enable the single teeth of each numeral-wheel directly to rotate the next left numeral-wheel, during a rotation caused by the teeth on the common shaft.

35. In a calculating-machine, a plurality of numeral-wheels loosely mounted on a common shaft, a gear for each numeral-wheel, and a sliding bar movable parallel to the shaft and carrying a series of stops adapted to engage in the teeth of the gears and to stop the same either at the same time or successively dependent upon the arrangement of the stops.

36. The combination in a calculating-machine, of a plurality of numeral-wheels provided with cogs and geared together, one after the other for simultaneous movement, with means for correcting the play of the gears by adjusting them one after the other.

37. The combination, in a calculating-machine, of a plurality of numeral-wheels provided with cogs and geared together, one after the other for simultaneous movement, with means for positively correcting the play of the gears by adjusting them, one after the other, in a forward direction.

38. In an adding and subtracting machine, the combination with registering devices, of operating means for the same comprising two gears continuously operated in opposite directions and adapted for alternately engaging the same registering device for addition or subtraction respectively.

39. In a calculating-machine, means for operating the registering devices comprising a plurality of pairs of gears, the shafts of all the gears being in one line, and each pair connected with one of the operating means, and turned by them in opposite directions.

40. The combination, in a machine for simultaneously adding numbers of two or more digits, with operating means of registering devices, one means bodily movable with respect to the others, and adapted to register additions and subtractions, means for transferring the tens in additions and subtractions and means for putting said transferring devices into operation either for additions or subtractions dependent upon the position of the operation means with relation to the registering devices.

41. In a calculating-machine capable of performing additions and subtractions, the combination with a casing, of a carriage movable with regard thereto, a row of stops adjusting the carriage when additions are performed, and another row of stops adjusting the carriage when subtractions are performed.

42. In a calculating-machine, the combination of a casing, with a carriage, means adapted when put into operation to perform either additions or subtractions dependent upon the position of the carriage with regard to the casing, a yoke swinging upon its axis and means adapted to determine the position of the carriage by the different positions of the yoke.

43. In a machine capable of performing the operations of multiplying and dividing, the combination with a casing and a carriage movable with relation thereto, of stops for adjusting the carriage, and means adapted to render a part of the stops ineffective.

44. In a calculating-machine, the combination with a casing, of a carriage movable with relation thereto, two rows of stops for adjusting the carriage, one row being for addition and the other for subtraction, and means for rendering part of the stops ineffective.

45. In a calculating-machine, the combination of a motor, calculating mechanism driven by the motor, means for stopping the motor, and means for releasing the motor for a single operation, or a plurality thereof, as may be desired.

46. In a multiplying-machine, the combination of means for setting up a multiplicand of two or more digits, registering-wheels, means to add the multiplicand set up to the registering-wheels a number of times corresponding to each digit of the multiplier and including a carriage having the registering-wheels mounted thereon, means for moving the carriage in one direction and means for preventing such motion.

47. In a multiplying-machine, the combination of means for setting up a multiplicand of two or more digits, registering-wheels, means to add the multiplicand set up to the registering-wheels and including a carriage having the registering-wheels mounted thereon, means for preventing movement of the carriage until it has to be moved and means for then releasing the carriage automatically.

48. In a multiplying-machine, the combination of means for setting up a multiplicand of two or more digits, registering-wheels, means to add the multiplicand set up to the registering-wheels a number of times corresponding to each digit of the multiplier and including a carriage having the registering-wheels mounted thereon, and means adapted automatically to move the carriage during the performance of multiplication.

49. In a multiplying-machine, the combination of means for setting up a multiplicand of two or more digits, registering-wheels, means to add the multiplicand set up to the registering-wheels a number of times corresponding to each digit of the multiplier and including a carriage having the registering-wheels mounted thereon, and means adapted automatically to move and to arrest the carriage during the performance of multiplication.

50. In a multiplying-machine, the combination of means for setting up a multiplier, means for setting up a multiplicand, numeral-wheels, means to perform the multiplication with one digit of the multiplier and to register it on the numeral-wheels, a carriage having the numeral-wheels mounted thereon, means for moving the carriage and means controlled by the setting-up devices of the multiplier for retaining the carriage in its position until the completion of each digit operation and for releasing the carriage at the end of such operation.

51. In a multiplying-machine, the combination of means for setting up a multiplier, means for setting up a multiplicand, numeral-wheels, means to perform the multiplication with one digit of the multiplier and to register it on the numeral-wheels, a carriage having the numeral-wheels mounted thereon, means for moving the carriage and means controlled by the setting-up devices of the multiplier for stopping the carriage at the proper digit for operation.

52. In a multiplying-machine, the combination with a casing, of a carriage movable with relation thereto, devices on the carriage for setting up a multiplier of two or more digits by moving these devices out of their initial positions, operating means in the casing to return the said setting-up devices to their initial positions during a calculation, and means in the casing for stopping the operating devices when the setting-up devices have reached their initial positions.

53. In a multiplying-machine, the combination with a casing, of a carriage movable with relation thereto, devices on the carriage for setting up a multiplier by moving these devices out of their initial positions, operating means in the casing to return said setting-up devices to their initial position during an operation, and means for releasing the carriage when one of the setting-up devices reaches its initial position.

54. In a multiplying-machine, the combination of means for setting up a multiplicand, means for setting up a multiplier, and means adapted after having been released, to automatically perform the operation of multiplication, and to register the result thereof.

55. In a multiplying-machine, the combination of means for setting up a multiplicand, means for setting up a multiplier of two or more digits, and means adapted when put into operation automatically to perform the operation of multiplication and to register the result thereof.

56. In a multiplying-machine performing multiplication by repeated additions, the combination of means for setting up a multiplicand, means for setting up a multiplier of two or more digits, and means automatically to regulate the number of additions in accordance with the multiplier set up.

57. In a calculating-machine, the combination with a casing, and a carriage movable with relation thereto, of means mounted on the carriage for registering the number of additions or subtractions by their forward or backward movement, respectively, dependent upon the position of the carriage with relation to the casing.

58. In a dividing-machine, the combination of means for setting up a divisor of two or more digits, numeral-wheels on which the dividend is set up, means to subtract the divisor set up from the numeral-wheels a number of times dependent upon each digit of the quotient, including a carriage having the numeral-wheels mounted thereon, means for moving the carriage in one direction and means for preventing such motion.

59. In a dividing-machine, the combination of means for setting up a divisor of two or more digits, numeral-wheels on which the dividend is set up, means to subtract the divisor set up from the numeral-wheels, including a carriage having the numeral-wheels mounted thereon, means for preventing movement of the carriage until it has to be moved and for releasing the carriage automatically at such moment.

60. In a dividing-machine, the combination of means for setting up a divisor of two or more digits, numeral-wheels on which the dividend is set up, means to subtract the divisor set up from the numeral-wheels a number of times dependent upon each digit of the quotient, including a carriage having the numeral-wheels mounted thereon and means adapted automatically to move the carriage during the performance of division.

61. In a dividing-machine, the combination of means for setting up a divisor of two or more digits, numeral-wheels on which the dividend is set up, means to subtract the divisor set up from the numeral-wheels a number of times dependent upon each digit of the quotient, including a carriage having the numeral-wheels mounted thereon and means adapted automatically to move and to arrest the carriage during the performance of division.

62. In a calculating-machine, the combination with registering mechanism, capable of performing addition and subtraction, comprising numeral-disks, of transferring mechanism, and means connected with the numeral-disk of higher order for changing the operation from subtraction to addition.

63. In a calculating-machine, the combination with registering mechanism, capable of performing addition and subtraction, of transferring mechanism and mechanism substituted for the carrying mechanism of higher order for changing the operation from subtraction to addition.

64. In a dividing-machine, the combination with registering devices capable of performing addition and subtraction, of means for changing the action of the machine from adding to subtracting or from subtracting to adding if one of the registering devices passes a given position.

65. In a dividing-machine, the combination of a casing, with a carriage movable with respect thereto, registering devices, and means adapted to cause a movement of the carriage if one of the registering devices passes a given position.

66. In a dividing-machine, the combination of a casing, with a carriage movable with respect thereto, means preventing a movement of the carriage, registering devices, and means adapted automatically to release the carriage if one of the registering devices passes a given position.

67. In a calculating-machine, means for performing division including a casing with a carriage movable with respect thereto, and means adapted automatically to cause a movement of the carriage, if the machine indicates too great a quotient.

68. In a calculating-machine, means for performing division including means to try a quotient and means adapted to automatically correct the error if the machine tries too great a quotient.

69. In a calculating-machine, means for performing division including means to try a quotient, means adapted to correct the error if the machine tries too great a quotient, and means adapted automatically to adjust the machine for the continuation of the calculation on the next lower digit, after the error has been corrected.

70. In a calculating-machine, the combination with registering-wheels, of operating devices for moving the same, a movable carriage having the registering-wheels mounted thereon, and means for preventing movement of the operating devices during the movement of the carriage.

71. In a calculating-machine, the combination of means for setting up a multiplicand, means for setting up a multiplier of two or more digits, registering-wheels, operating devices for moving the same, a movable carriage having the registering devices mounted thereon, and means for preventing any movement of the operating devices during the movement of the carriage.

72. In a calculating-machine, the combination with registering-wheels, of operating devices for moving the same, a movable carriage having the registering devices mounted thereon, means for retaining the carriage in its position during the movement of the operating means, and for releasing the carriage at the end of such movement, and means for preventing any movement of the operating devices during the movement of the carriage.

73. In a calculating-machine, the combination with means for performing multiplication by repeated additions including registering devices, of a motor for actuating such means, means for stopping the motor after an addition, and means for releasing said stopping devices during an addition.

74. In a calculating-machine, the combination with means for performing division by repeated subtractions including registering devices, of a motor for actuating such means, means for stopping the motor after a subtraction and means for releasing said stopping devices during a subtraction.

75. In a calculating-machine, the combination with devices for the setting up of the decimal-point, one of them provided for each digit of the multiplicand or divisor, and each of them capable of an independent movement, of means for imparting to these devices another common movement.

76. The combination, in a calculating-machine, of means for setting up the decimal-point in the dividend, means for setting up the decimal-point in the divisor, and means adapted when put into operation automatically to indicate the place of the decimal-point in the quotient.

77. The combination, in a calculating-machine, of devices adapted when put into operation to perform the calculation of either addition or subtraction or multiplication or division, and to register

the result of each of said calculations, and means, comprising a single control-lever, adapted at will to put said machine into operation for the automatic performance of any one of said calculations.

78. The combination, in a calculating-machine, with means for setting up two figures, of devices adapted when put into operation automatically to perform the calculation of either addition or subtraction or multiplication or division with the figures set up, and to register the result of each of said calculations, automatically indicating the decimal-point in the product or quotient.

79. In a calculating-machine, the combination with means for registering a multiplier or quotient of two or more digits, of a motor, operating devices driven by the motor, stopping devices to stop the operating devices at the end of the operation, means for placing said stopping devices in operative position during the operation, and means for engaging said stopping devices at the end of the operation, if in operative position.

80. In a multiplying-machine, the combination of means for setting up a multiplicand, means for setting up a multiplier, means for performing the multiplication, a control-lever, means to stop the machine and means to adjust and release the machine for multiplication by a single movement of the control-lever.

81. In a dividing-machine, the combination of means for setting up a divisor, means for setting up a dividend, means for performing the division, a control-lever, means to stop the machine and means to adjust and release the machine for division by a single movement of the control-lever.

82. The combination, in a calculating-machine, of means for setting up a multiplicand and a multiplier means for setting up a decimal-point in one of the same, means for performing the multiplication and indicating the product, and means adapted when put into operation to automatically indicate the place of the decimal-point in the product.

83. The combination, in a calculating-machine, of means for setting up a multiplicand and a multiplier, means for setting up a decimal-point in both multiplicand and multiplier, means for performing the multiplication and indicating the product, and means adapted when put into operation to automatically indicate the place of the decimal-point in the product.

84. In a dividing-machine the combination with devices for setting up a divisor, devices for setting up a dividend which contains said divisor more than ten times, and means adapted when once put into operation to automatically carry out the operation of division and indicate the correct quotient.

85. In a dividing-machine the combination with devices for setting up a divisor, devices for setting up a dividend which contains said divisor more than ten times and means adapted when once put into operation to automatically carry out the operation of division and indicate the correct quotient comprising means for performing division corresponding to one figure of the quotient and automatically afterward performing division corresponding to the other figure of the quotient.

809,076. SAFETY DEVICE FOR ELEVATORS. ISAAC B. RITTER, Philadelphia, Pa. Filed July 15, 1905. Serial No. 269,788.

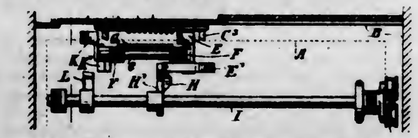

Claim.—1. The combination of an elevator-car, a door, a projection upon said door, a bell-crank lever pivoted to the hatchway and adapted to engage said projection, a lever pivoted to said hatchway adapted to be engaged by said projection when the door is closed, a cam-shoe upon said car adapted to engage said bell-crank lever and unlock the door, a cam-plate upon said car to be engaged by said lever when the door is open and means controlled by said cam-plate to lock the car, substantially as described.

2. The combination of an elevator-car, a door, a projection upon said door, a bell-crank lever to engage said projection, a lever adapted to be held out of action by said projection when said door is closed, a bearing on said car, a cam-shoe slidably mounted in said bearing, means for throwing said cam-shoe into engagement with said bell-crank lever, a cam-plate slidably mounted in said bearing adapted to be acted upon by said lever when said door is open and lock the car, substantially as described.

3. The combination of an elevator-car, a door, a projection upon said door, a bell-crank lever to engage said projection, a lever adapted to be held out of action by said projection, a bearing upon said car, a cam-shoe slidably mounted in said bearing, a rock-shaft, a cam upon the same adapted to throw said cam-shoe into engagement with said bell-crank lever and release said door, a cam-plate slidably mounted in said bearing adapted to be acted upon by said lever when the door is open, an arm on said rock-shaft to be engaged by said cam-plate and means for operating said rock-shaft in conjunction with the mechanism for starting and stopping the car, substantially as described.

4. The combination of an elevator-car, a rock-shaft to control said car, a cam on said rock-shaft, a roller, a cam-shoe carrying said roller, a bearing, an arm on said rock-shaft, a block to engage said arm, a cam-plate carrying said block, a spring between said cam-plate and said cam-shoe, and levers upon the hatchway to coact with said cam-plate and said cam-shoe, substantially as described.

5. The combination of an elevator-car, a rock-shaft to control said car, a cam on said rock-shaft, a roller, a cam-shoe, rods carrying said cam-shoe, bearings in which said rods are mounted, a spring, a bell-crank lever on the hatchway, a projection on the same to be engaged by said cam-shoe, and a door having a projection thereon, adapted to be engaged by said bell-crank lever, substantially as described.

6. The combination of an elevator-car, a rock-shaft, an arm on the same, a block having a recess formed therein, a cam-plate carrying said block, rods carrying said cam-plate, bearings in which said rods are mounted, a lever pivoted to the wall of the hatchway, a door, a projection upon the door to hold said lever out of action, and a projection upon the said lever to engage said cam-plate when the door is opened, substantially as described.

7. The combination of an elevator-car, a door, a projection on said door, said projection having a plurality of notches formed therein, a bell-crank lever, a projection on the same, a lever engaged by the said projection upon the door, a spring, a projection on said lever, and means upon the car to control said bell-crank lever and release the door and to lock the car when acted upon by the said lever controlled by the projection on the door, substantially as described.

809,077. GAS-CONTROLLER FOR FLASH-LIGHTS AND THE LIKE. ROBERT C. ROSEL, Chicago, Ill. Filed Mar. 6, 1906. Serial No. 305,622.

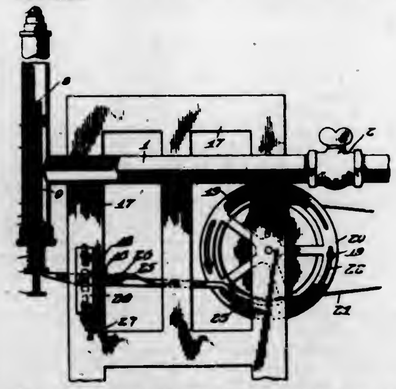

Claim.—1. A device of the kind described, comprising a tube, a valve controlling the opening in said tube, and projecting therefrom, and means for connecting said tube in the supply-pipe to a gas-light, in combination with a rotatable wheel and means operated by said wheel for engaging the projecting portion of said valve to operate the same to control the supply of gas to said light, and means for rotating said wheel.

2. A device of the kind described, comprising a tube, a valve controlling the opening in said tube and projecting therefrom, and means for connecting said tube in the supply-pipe to a gas-light, in combination with a lever arranged to engage the projecting portion of said valve to operate the same, a rotatable wheel provided with means for periodically engaging said lever, and means for rotating said wheel.

3. A device of the kind described, comprising a tube, a valve controlling the opening in said tube, and means for connecting said tube in the supply-pipe to a gas-light, in combination with a lever

adapted to operate said valve, a curved extension formed upon one end of said lever, and a rotatable wheel provided with means for periodically engaging said lever near said extension to operate said valve, and means for rotating said wheel.

4. A device of the kind described, comprising a tube, a valve controlling the opening in said tube, and means for connecting said tube in the supply-pipe to a gas-light, in combination with a lever arranged to operate said valve, a rotatable wheel provided with means for periodically engaging said lever to operate said valve, means for rotating said wheel, and means for adjusting the pivotal support of said lever to control the operation of said valve.

5. A device of the kind described, comprising a tube, a valve controlling the opening in said tube, and means for connecting said tube in the supply-pipe to a gas-light, in combination with a two-part lever arranged to operate said valve, the parts of said lever being pivotally connected, a stop to limit the relative movement of the lever parts and a spring tending to normally hold said movable part against said stop, a rotatable wheel provided with means for periodically engaging said lever to operate said valve, and means for rotating said wheel.

6. A device of the kind described, comprising a tube, a valve controlling the opening in said tube, and means for connecting said tube in the supply-pipe to a gas-light, in combination with a lever adapted to operate said valve, a curved extension formed upon one end of said lever, a rotatable wheel provided with means for periodically engaging said lever near said extension to operate said valve, means for rotating said wheel, and means for adjusting the pivotal support of said lever to control the operation of said valve.

7. A device of the kind described, comprising a tube, a valve controlling the opening in said tube, and means for connecting said tube in the supply-pipe to a gas-light, in combination with a two-part lever arranged to operate said valve, the parts of said lever being pivotally connected, a stop to limit the relative movement of said lever parts in one direction, a spring tending to normally hold said movable part against said stop, and a curved extension formed at one end of said lever, a rotatable wheel provided with means for periodically engaging said lever near said extension to operate said valve, and means for rotating said wheel.

8. A device of the kind described, comprising a tube, a valve controlling the opening in said tube, and means for connecting said tube in the supply-pipe to a gas-light, in combination with a two-part lever arranged to operate said valve, the parts of said lever being pivotally connected, a stop to limit the relative movement of said lever parts in one direction, a spring tending to normally hold said movable part against said stop, and a curved extension formed upon one end of said lever a rotatable wheel provided with means for periodically engaging said lever near said extension to operate said valve, means for rotating said wheel, and means for adjusting the pivotal support of said lever to control the operation of said valve.

9. A device of the kind described, comprising a tube, a valve, resiliently maintained at one limit of its movement, controlling the opening in said tube and means for connecting said tube in the supply-pipe to a gas-light, in combination with a lever arranged to move said valve to the opposite limit of its movement, a rotatable wheel provided with means for periodically engaging said lever to operate said valve, and means for rotating said wheel.

10. A device of the kind described, comprising a tube, a valve resiliently maintained at one limit of its movement, controlling the opening in said tube, and means for connecting said tube in a supply-pipe to a gas-light, in combination with a lever arranged to move said valve to the opposite limit of its movement, a curved extension formed upon one end of said lever, and a rotatable wheel provided with means for periodically engaging said lever near said extension to operate said valve, and means for rotating said wheel.

11. A device of the kind described, comprising a tube, a valve controlling the opening in said tube, a spring arranged to normally hold said valve open, and means for connecting said tube in the supply-pipe to a gas-light, in combination with a lever arranged to close said valve, a rotatable wheel provided with means for periodically engaging said valve to operate said valve, and means for rotating said wheel.

12. A device of the kind described, comprising a tube, a valve controlling the opening in said tube and projecting laterally therefrom, and means for connecting said tube in the supply-pipe of a gas-light, in combination with a lever arranged to engage said projecting part to operate said valve, a rotatable wheel provided with laterally-projecting pins in its rim for periodically engaging said lever, to operate said valve, and means for rotating said wheel.

13. A device of the kind described, comprising a tube, a valve controlling the opening in said tube, and means for connecting said tube in the supply-pipe to a gas-light, in combination with a lever arranged to operate said valve, a rotatable wheel having concentric slots formed in its rim, laterally-projecting pins adjustably positioned in said slot for periodically engaging said lever to operate said valve, and means for rotating said wheel.

14. A device of the kind described, comprising a tube, a valve controlling the opening in said tube, and means for connecting said tube in the supply-pipe to a gas-light, in combination with a lever adapted to operate said valve, a curved extension formed upon one end of said lever, a rotatable wheel having concentric slots formed in its rim, laterally-projecting pins adjustably positioned in said slots for periodically engaging said lever near said extension to operate said valve, and means for rotating said wheel.

15. A device of the kind described, comprising a tube, a valve controlling the opening in said tube, and means for connecting said tube in the supply-pipe to a gas-light, in combination with a lever arranged to operate said valve, a rotatable wheel having concentric slots formed in its rim, laterally-projecting pins adjustably positioned in said slots for periodically engaging said lever to operate said valve, and means for rotating said wheel, and means for adjusting the pivotal support of said lever to control the operation of said valve.

16. A device of the kind described, comprising a tube, a valve controlling the opening in said tube, and means for connecting said tube in the supply-pipe to a gas-light, in combination with a two-part lever arranged to operate said valve, the parts of said lever being pivotally connected, a stop to limit the relative movement of the lever parts, and a spring tending to normally hold said movable parts against said stop, a rotatable wheel having concentric slots in its rim, and laterally-projecting pins adjustably positioned within said slots for periodically engaging said lever to operate said valve, and means for rotating said wheel.

17. A device of the kind described, comprising a tube, a valve projecting longitudinally from said tube and controlling the opening therein, a by-pass arranged to permit the passage of gas by said valve, means to control the passage through said by-pass, and means for connecting said tube in the supply-pipe of a gas-light, in combination with a rotatable wheel and means operated by said wheel for engaging said projecting part to operate said valve to control the supply of said gas to said light.

18. A device of the kind described, comprising a tube, a valve controlling the opening in said tube, a by-pass arranged to permit the passage of gas by said valve, means to control the passage through said by-pass, and means for connecting said tube in the supply-pipe to a gas-light, in combination with a lever arranged to operate said valve, a rotatable wheel provided with means for periodically engaging said lever to operate said valve, means for rotating said wheel and means for adjusting the pivotal support of said lever to control the operation of said valve.

19. A device of the kind described, comprising a tube, a valve controlling the opening in said tube, a by-pass arranged to permit the passage of gas by said valve, means to control the passage through said by-pass, and means for connecting said tube in the supply-pipe to a gas-light, in combination with a two-part lever arranged to operate said valve, the parts of said lever being pivotally connected, a stop to limit the relative movement of the lever parts and a spring tending to normally hold said movable part in contact with said stop, a rotatable wheel provided with means for periodically engaging said lever to operate said valve, and means for rotating said wheel.

20. A device of the kind described, comprising a tube, a valve controlling the opening in said tube, a by-pass arranged to permit the passage of gas by said valve means to control the passage of gas through said by-pass, and means for connecting said tube in the supply-pipe to a gas-light, in combination with a lever adapted to operate said valve, a curved extension formed upon one end of said lever, a rotatable wheel provided with means for periodically engaging said lever near said extension to operate said valve, means for rotating said wheel, and means for adjusting the pivotal support of said lever to control the operation of said valve.

21. A device of the kind described, comprising a tube, a valve controlling the opening in said tube, a by-pass arranged to permit the passage of gas by said valve, means to control the passage through said valve, and means for connecting said tube in the supply-pipe to a gas-light, in combination with a lever adapted to operate said valve, a curved extension formed upon one end of said lever, a rotatable wheel provided with means for periodically engaging said lever near said extension to operate said valve, means for rotating said wheel,

and means for adjusting the pivotal support of said lever to control the operation of said valve.

22. A device of the kind described, comprising a tube, a valve for controlling the opening in said tube, a by-pass arranged to permit the passage of gas by said valve, means to control the passage through said by-pass, and means for connecting said tube in the supply-pipe to a gas-light, in combination with a lever arranged to operate said valve, a rotatable wheel having concentric slots formed in its rim, and laterally-projecting pins adjustably positioned in said slots, for periodically engaging said lever to operate said valve, and means for rotating said wheel.

23. A device of the kind described, comprising a tube, a valve controlling the opening in said tube, a spring arranged to normally hold said valve open, a by-pass arranged to permit the passage of gas by said valve, means to control the passage through said by-pass, and means for connecting said tube in the supply-pipe to a gas-light, in combination with a lever arranged to close said valve, a rotatable wheel provided with concentric slots in its rim, and laterally-projecting pins adjustably positioned within said slots for periodically engaging said lever to operate said valve, means for rotating said wheel and means for adjusting the pivotal support of said lever to control the operation of said valve.

24. A device of the kind described, comprising a tube, a valve controlling the opening in said tube, a spring to normally hold said valve open, a by-pass arranged to permit the passage of gas by said valve, means to control the passage through said by-pass, and means for connecting said tube in the supply-pipe to a gas-light, in combination with a two-part lever arranged to close said valve, the parts of said lever being pivotally connected, a stop to limit the relative movement of said parts in one direction, a spring tending to normally hold said movable part against said stop, and a curved extension formed at one end of said lever, a rotatable wheel provided with concentric slots in its rim, and laterally-projecting pins adjustably positioned in said slots for periodically engaging said lever near said extension to operate said valve, means for rotating said wheel, and means for adjusting the pivotal support of said lever to control the operation of said valve.

809,078. **ADJUSTABLE LEG FOR BILLIARD-TABLES.** CHARLES D. SEYMOUR, Rensselaer, N. Y. Filed Nov. 13, 1904. Serial No. 232,310.

Claim.—1. The combination with a billiard-table leg having a longitudinal bore in three diameters forming three chambers, and a transverse bore intersecting the intermediate chamber, of a block fitting in the intermediate chamber of the leg and provided at its upper end with a chamber having registering openings in its side walls, said block being also provided with a vertical opening leading out through the ends thereof, the lower end of the opening being threaded, a vertical shaft extending through the vertical opening of the block into the uppermost chamber of the leg, the lower end of the shaft being threaded and terminating in a head, a worm-wheel splined to the shaft in the chamber of the block, a casing mounted to turn on the head of the shaft in the lowermost chamber of the leg, a block fitting in the said lowermost chamber of the leg and secured to the bottom of the casing, and a horizontal shaft mounted in the horizontal bore of the leg and extending through the chamber of the said block, said shaft having a polygonal outer end and provided within the chamber of the block with a worm meshing with the worm-wheel on the vertical shaft, substantially as herein shown and described.

2. The combination with a table-leg having three vertical communicating chambers of different diameters, and a transverse chamber intersecting the intermediate vertical chamber, of a block fitting in the said intermediate vertical chamber of the leg and provided with a chamber having registering openings in its side walls, the said block being also provided with a vertical opening extending through the ends thereof, the lower end of said opening being threaded, a vertical shaft having its lower end threaded and working in the vertical opening of the block with its upper end extending into the uppermost chamber of the leg, a worm-wheel splined to the shaft in the chamber of the block, a block mounted to turn on the lower end of the shaft in the lowermost chamber of the leg, and a horizontal worm-shaft mounted in the transverse chamber of the leg, said worm-shaft extending through the chamber of the said block and having an outer polygonal end, substantially as described.

3. The combination with a table-leg provided with a longitudinal bore, the lower end of which is enlarged, and with a transverse bore intersecting the longitudinal bore, of a block having a chamber with apertured side walls, and a longitudinal opening leading through the ends of the block, the lower end of the opening being threaded, a vertical shaft extending through the longitudinal opening of the block and having its lower end threaded, a worm-wheel mounted on the shaft within the chamber of the block to slide on the shaft but to turn therewith, a block in the lower enlarged end of the bore of the leg and mounted to turn on the lower end of the said shaft, and a worm-shaft mounted in the transverse bore of the leg, said shaft extending through the chamber of said block and having a polygonal outer end.

809,079. **THILL-COUPLING.** CARLOS VIVES-NAVARRO, Ponce, Porto Rico. Filed Jan. 19, 1905. Serial No. 241,771.

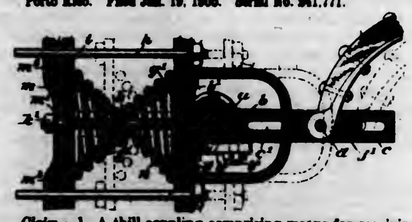

Claim.—1. A thill-coupling comprising means for receiving a thill or the like, means for guiding the thill to move rectilinearly, and yielding means for resisting motion of the thill in both directions.

2. A thill-coupling, comprising a guide, a yoke adapted to be guided thereby and to receive a thill or the like, yielding means for resisting a forward pull on the thill, and yielding means for resisting a backward thrust on the thill.

3. A thill-coupling, comprising a frame adapted to be attached to the axle or frame of a vehicle, guides connected with said frame, a yoke adapted to be connected with the thills or tongue of the vehicle and provided with means by which its motion is controlled by said guides, and means for resisting motion of the yoke in both directions.

4. The combination of a frame adapted to be secured to a portion of a vehicle and having guides thereon, a yoke movably mounted with respect to said frame, a pin connected with said yoke and provided with means for engaging said guides, said yoke being provided with feet, a rod passing freely through each of said feet, means connected with the rods for preventing their motion past the feet in one direction, and yielding means for resisting motion of the rods in either direction with respect to the frame.

5. The combination of a movable yoke having feet provided with perforations, a plurality of rods one mounted to move in each of said perforations, a nut upon each of said rods adapted to engage said feet, a disk provided with perforations for receiving said rods and mounted adjacent to said feet, a second disk similarly formed and spaced from the first disk, and a spring located between said disks.

6. The combination of a movable yoke having feet provided with perforations, a plurality of rods one mounted to move in each of said perforations, a nut upon each of said rods adapted to engage said feet, a disk provided with perforations for receiving said rods and mounted adjacent to said feet, a second disk similarly formed and spaced from the first disk, a spring located between said disks, a stationary frame on the outside of one of said disks, a plate on the outside of the other disk and connected with said frame, and means for preventing the rods from moving beyond said plate in one direction.

7. The combination of a movable yoke having feet provided with perforations, a plurality of rods one mounted to move in each of said perforations, a nut upon each of said rods adapted to engage said feet, a disk provided with perforations for receiving said rods and mounted adjacent to said feet, a second disk similarly formed and spaced from the first disk, a spring located between said disks, a stationary frame on the outside of one of said disks, a plate on the outside of the other disk and connected with said frame, means for preventing the rods from moving beyond said plate in one direction, means on the frame for guiding said disks in a straight line, and a projection on the frame for guiding the yoke in a line parallel to that in which the disks are guided.

8. The combination of a frame adapted to be secured to a portion of a vehicle and having guides thereon, a yoke movably mounted with respect to said frame, a pin connected with said yoke and provided with means for engaging said guides, and yielding means for resisting motion of the yoke in both directions with respect to the frame.

9. The combination of a frame adapted to be secured to a portion of a vehicle, a yoke movably mounted with respect to said frame, a rod passing freely through said yoke, means connected with the rod for preventing its motion past the yoke in one direction, and yielding means for resisting motion of the yoke in both directions with respect to the frame.

10. The combination of a movable yoke provided with perforations, a plurality of rods one mounted to move in each of said perforations, a nut upon each of said rods adapted to engage said yoke, a disk provided with perforations for receiving said rods and mounted adjacent to said yoke, a second disk spaced from the first disk, a spring located between said disks, a frame on one of said disks, a plate on the other disk and connected with the frame, and means for preventing the rods from moving beyond said plate in one direction.

809,080. **GUN ATTACHMENT.** ALFRED T. WIGHT, Rexton, Tex. Filed Mar. 20, 1905. Serial No. 250,966.

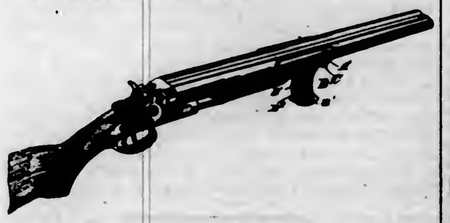

Claim.—1. The improved handle for guns herein described, comprising the spring-clasp having the opposite body-sections carved in cross-section to conform to a gun-barrel, and tapering longitudinally from end to end, the shank-plates depending from the inner edges of the opposite clasp-sections, the handle-section between the said shank-plates, the handle-sections fitting against the outer sides of the shank-plates, means for securing the handle-sections and the shank-plates together, and a clamping-screw connecting the opposite clasp-sections and adapted to bind the same securely upon the barrel, substantially as set forth.

2. The improved handle-attachment for guns, comprising a tapered spring-clasp formed of two elongated body-sections curved transversely and formed of spring metal and arranged opposite and inclined toward each other longitudinally, or from rear end to front end, and provided with pendent plates and means for securing them together to form a handle portion, as shown and described.

809,081. **INTERNAL-COMBUSTION ENGINE.** STUART S. WILLIAMS, Chicago, Ill. Filed Sept. 2, 1903. Serial No. 171,703.

Claim.—1. In an internal-combustion engine, the combination of a cylinder having a piston, a plurality of ignition-chambers each communicating with both ends of the cylinder, and valves controlling the communications of the chambers with the cylinder.

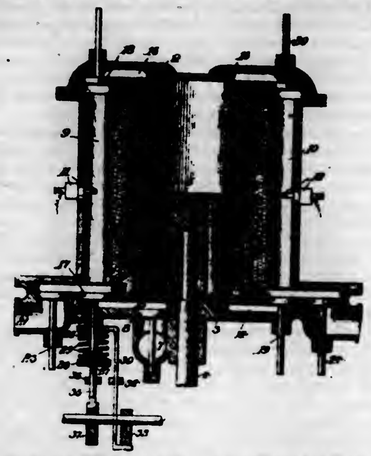

2. In an internal-combustion engine, the combination of a cylinder having a piston, a plurality of ignition-chambers, ports leading from both ends of the cylinder to each chamber, valves normally closing the ports, and means to unseat the valves to open the ports.

3. In an internal-combustion engine, the combination of a cylinder having a piston, a plurality of ignition-chambers, ports leading from both ends of the cylinder to each chamber, an exhaust-passage for each chamber, a valve for each passage, valves for the ports, and means to unseat the valves.

809,082. **INTERNAL-COMBUSTION ENGINE.** THOS. WRIGHT, Jersey City, N. J. Filed Feb. 17, 1904. Serial No. 193,961.

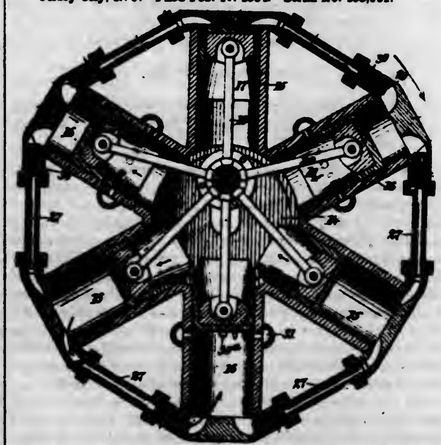

Claim.—1. In an internal-combustion engine, the combination of a plurality of working cylinders, a plurality of pump-cylinders arranged alternately with respect to the working cylinders, a crank-shaft common to all of the cylinders, means for supporting all of the cylinders to turn around the center of said shaft, pistons operating in the cylinders, connections between the pistons and the crank, means controlling fluid movement between the various cylinders, said means comprising connections between the pump-cylinders and the two working cylinders adjacent thereto, and valves controlling said connections and seating against pressure in the working cylinders.

2. In an internal-combustion engine, the combination of a plu-

rality of working cylinders, a plurality of pump-cylinders arranged alternately with respect to the working cylinders, a crank-shaft common to all of the cylinders, means for supporting the cylinders to turn around the center of the shaft, pistons operating in the cylinders, connections between the pistons and the crank, means for controlling fluid movement to and from the cylinders, said means including exhaust-ports in the working cylinders at the limit of the working stroke of their pistons, connections extending from the heads of the pump-cylinders to the heads of the working cylinders at each side of the pump-cylinders, and valves controlling said connections and seating against pressure within the working cylinders.

3. In an internal-combustion engine, the combination of a working cylinder, a pump-cylinder arranged at each side thereof, a crank-shaft common to the cylinders, means for supporting the cylinders to turn around the center of the crank-shaft, pistons operating in the cylinders, connections between the pistons and crank-shaft, means controlling fluid movement in the cylinders, said means including connections between the outer ends of the pump-cylinders and the outer end of the working cylinder, valves in said connections seating against pressure in the working cylinders, and an exhaust-port in the working cylinder at the end of the expansion-stroke of the piston

4. In an internal-combustion engine, the combination of a plurality of working cylinders and an equal number of pump-cylinders respectively arranged between the working cylinders, a crank-shaft central to all of the cylinders, means for supporting the cylinders to turn around the center of the crank-shaft, pistons operating in the cylinders, connections between the pistons and crank-shaft, means for controlling fluid movement to and from the cylinders, said means including exhaust-ports in the working cylinders at the limit of the expansion-strokes of the pistons thereof, connections between each pump-cylinder and the two working cylinders adjacent thereto, and valves controlling said connections.

5. In an internal-combustion engine, the combination of a plurality of working cylinders and an equal number of pump-cylinders respectively arranged between the working cylinders, a crank-shaft central to all of the cylinders, means for supporting the cylinders to turn around the center of the crank-shaft, pistons operating in the cylinders, connections between the pistons and crank-shaft, means for controlling fluid movement to and from the cylinders, said means including exhaust-ports in the working cylinders at the limit of the expansion-strokes of the pistons thereof, connections between each pump-cylinder and the two working cylinders adjacent thereto, and valves controlling said connections, said valves being located respectively adjacent to the working cylinders and seating against the pressure therein.

809,088. AUTOMATIC ELECTRICAL CONTROLLER FOR AIR-COMPRESSORS. FRED D. ADKINSON, Kendallville, Ind. Filed May 17, 1905. Serial No. 260,966.

Claim.—1. The improved automatic controller for the purpose specified, comprising a valve-chest and valve, an air-cylinder and a slidable piston contained therein and connected with said valve, a spring for opposing the movement of the piston in one direction, a second air-cylinder having a spring-pressed piston, an air-conductor connecting such second cylinder with the valve-chest, a slidable bar connected with the last-named piston, a casing applied to and slidable on said bar, a spring contained within the said casing and applying pressure between it and the bar, an electrical switch one member of which is connected with the casing, and spring locking and release mechanism connected with the casing for holding it normally immovable and the switch normally closed until a certain predetermined air-pressure is accumulated, substantially as described.

2. The improved controlling apparatus for the purpose specified, comprising two air-cylinders and pistons therein having springs for opposing movement in one direction, an air-chamber having a slidable valve which is connected with one of said pistons, a pipe connecting the air-chamber with a second cylinder, and an automatic locking and releasing mechanism connected with the piston of the second cylinder and comprising a slidable bar, a device that is slidable on said bar and provided with abutments or shoulders, a spring arranged between said device and a projection on said bar, and a spring-pressed latch adapted to engage with and automatically release said device, substantially as shown and described.

3. In a controller for the purpose specified, the combination with an air-cylinder, a piston slidable therein, a slidable bar extending therefrom and a guide in which said bar works, a casing applied to both bar and slidable thereon, a spring interposed between one portion of such casing and a stop on the bar, the casing having a top portion provided with depressions at opposite ends, a locking and releasing mechanism comprising a spring-actuated plunger having at its free end a roller adapted to enter said depressions and thus lock the casing until the pressure of the plunger-spring is overcome, and a switch included in a motor-circuit and adapted to be broken when the air-pressure reaches a certain predetermined degree and the locking mechanism releases the cylinder which it engages, substantially as described.

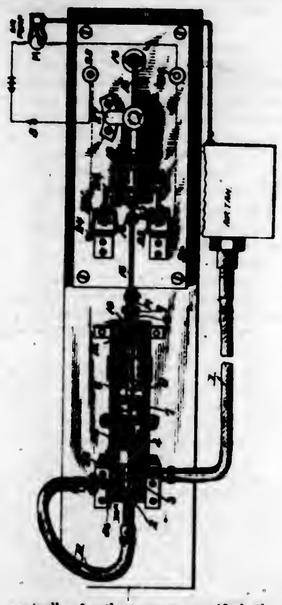

4. In a controller for the purpose specified, the combination with an air-cylinder and means for connecting it with an air-storage tank, of a piston which is slidable in said cylinder, a spring applied thereto for opposing movement in one direction, a bar connected with the piston and slidable therewith, a casing applied to the bar and slidable thereon, a spring inclosed by the casing and arranged between one end thereof and a stop on the bar, a casing having on its upper side engaging shoulders, a locking and releasing mechanism comprising a vertical tube having a slot in its lower side, a plunger slidable in the tube and having a lateral pin working in said slot, a roller journaled in the lower end of the plunger and adapted to engage projections arranged on the casing and spaced apart, a spring pressing on said plunger, a screw for adjusting the tension of the spring, and a switch included in an electrical circuit and adapted to be instantaneously parted when the tension of the spring of the locking mechanism is overcome, substantially as described.

809,084. CAR-SEAT. FREDERICK BENNETT and SHERIDAN A. WALKER, New York, N. Y. Filed Oct. 20, 1903. Renewed May 3, 1905. Serial No. 258,726.

Claim.—1. The combination of a support, a seat movably mounted thereon, two intermediately-pivoted links mounted on the support and having their upper ends in connection with the seat, a back,

and means connecting the back with the lower ends of the links, to sustain the back.

2. The combination of a support, a seat movably mounted thereon, two intermediately-pivoted links mounted on the support and having their upper ends in connection with the seat, a back, and arms attached to the sides of the back and extending downward to and connected with the lower ends of the links to sustain the back on the links.

3. The combination of a support, a seat movably mounted thereon, two intermediately-pivoted links mounted on the support and having their upper ends in connection with the seat, a back, arms attached to the sides of the back and extending downward to and connected with the lower ends of the links, to sustain the back on the links the lower ends of the arms having enlargements, and a rocking foot-rest having parts between which said enlargements engage, whereby to operate the foot-rest in unison with the seat and back.

4. The combination of a support, a link hung thereon, a seat having connection with the link, to be operated thereby, a back, an arm attached to the back and extending downward to and having connection with the link, and a foot-rest including an elbow-like part, between the limbs of which the lower end of the arm projects whereby to operate the foot-rest in unison with the back and seat.

5. The combination of a support, an intermediately-pivoted link mounted thereon and extending in a vertical direction, a movable seat mounted on the support and engaged by the upper part of the link, and a movable back having a part extending downward in connection with the lower end of the link, the back being wholly sustained through the medium of the link, said arrangement causing the seat and back to change position simultaneously.

6. The combination of a support, a seat movably mounted thereon, an intermediately-pivoted link mounted on the support and extending in a vertical direction, the link having its upper portion engaged with the seat, a back, an arm attached to the back and extending downward therefrom and having connection with the lower portion of the link, the back being wholly sustained through the medium of the link, and a foot-rest mounted below said arm and engaged thereby, whereby to operate the seat, back and foot-rest simultaneously.

7. The combination with a support, of two links pivotally mounted thereon and hanging freely downward from the same, a back, and a member projecting downward from the back and having pivotal connection with the lower ends of the links to sustain the back through the medium of said links.

8. The combination with a support, of two links pivotally mounted thereon and hanging freely downward from the same, a back, a member projecting downward from the back and having pivotal connection with the lower ends of the links to sustain the back through the medium of said links, and a seat movably sustained on the support and adapted to be operated by said links whereby to shift the seat simultaneously with the back.

9. The combination with a support, of two links independently pivoted thereon and hanging downward therefrom, a back and a member projecting downward from the back and having the lower portions of the links independently pivoted thereto, the upper or supporting pivots being farther apart than the lower or second-named pivots.

10. The combination with a support, of two links independently pivoted thereon and hanging downward therefrom, a back and a member projecting downward from the back and having the lower portions of the links independently pivoted thereto, the upper or supporting pivots being farther apart than the lower or second-named pivots, and a seat movably mounted on the support and arranged to be operated by said links.

809,085. ELECTROLYTIC APPARATUS. HENRY S. BLACKMORE, Mount Vernon, N. Y. Filed July 22, 1903. Serial No. 166,203.

Claim.—1. An apparatus for electrolyzing light-metal compounds, comprising an electrolytic vessel having a means for producing a heavy and light metal alloy by the electrolysis of the light-metal compounds, in combination with means for displacing the heavy and light metal alloy by gravity, means for associating the heavy and light metal alloy with a metal hydroxid, means for removing the light-metal oxid thus produced, means for converting the light-metal oxid into light-metal hydroxid, and means for returning a portion of the light-metal hydroxid to the chamber containing the heavy and light metal alloy.

2. An apparatus for electrolyzing light-metal compounds, comprising an electrolytic vessel having a means for producing a lead and light-metal alloy by the electrolysis of the light-metal compounds, in combination with means for displacing the lead and light-metal alloy by gravity, means for associating the lead and light-metal alloy with a metal hydroxid, means for removing the light-metal oxid thus produced, means for converting the light-metal oxid into light-metal hydroxid, and means for returning a portion of the light-metal hydroxid to the chamber containing the lead and light-metal alloy.

3. An apparatus for electrolyzing light-metal compounds, comprising an electrolytic vessel having a means for producing a lead and light-metal alloy by the electrolysis of the light-metal compounds, in combination with means for displacing the lead and light-metal alloy by gravity, means for associating the lead and light-metal alloy with a metal hydroxid, and means for removing the light-metal oxid thus produced, means for exposing light-metal oxid to the action of steam, and means for returning a portion of the light-metal hydroxid thus produced to the chamber containing the lead and light-metal alloy.

4. An apparatus for electrolyzing alkali-metal compounds, comprising an electrolytic vessel having means for producing a heavy-metal and alkali-metal alloy by the electrolysis of the alkali-metal compound, in combination with means for displacing the heavy-metal and alkali-metal alloy by gravity, means for associating the heavy-metal and alkali-metal alloy with a metal hydroxid, means for removing the alkali-metal oxid thus produced, means for converting the alkali-metal oxid into alkali-metal hydroxid, and means for returning a portion of the alkali-metal hydroxid to the chamber containing the heavy-metal and alkali-metal alloy.

5. An apparatus for electrolyzing alkali-metal compounds, comprising an electrolytic vessel having means for producing lead and alkali-metal alloy by the electrolysis of the alkali-metal compound, in combination with means for displacing the lead and alkali-metal alloy by gravity, means for associating the lead and alkali-metal alloy with a metal hydroxid, means for removing the alkali-metal oxid thus produced, means for converting the alkali-metal oxid into alkali-metal hydroxid, and means for returning a portion of the alkali-metal hydroxid to the chamber containing the lead and alkali-metal alloy.

6. An apparatus for electrolyzing alkali-metal compounds, comprising an electrolytic vessel having means for producing lead and alkali-metal alloy by the electrolysis of the alkali-metal compound, in combination with means for displacing the lead and alkali-metal alloy by gravity, means for associating the lead and alkali-metal alloy with a metal hydroxid, means for removing the alkali-metal oxid thus produced, means for exposing the alkali-metal oxid to the action of steam, and means for returning a portion of the alkali-metal hydroxid thus produced to the chamber containing the lead and alkali-metal alloy.

7. An apparatus for electrolyzing sodium compounds, comprising an electrolytic vessel having means for producing a heavy-metal and sodium alloy by the electrolysis of the sodium compound, in combination with means for displacing the heavy-metal and sodium alloy by gravity, means for associating the heavy-metal and sodium alloy with a metal hydroxid, means for removing the sodium oxid thus produced, means for converting the sodium oxid into sodium hydroxid, and means for returning a portion of the sodium hydroxid to the chamber containing the heavy-metal and sodium alloy.

8. An apparatus for electrolyzing sodium compounds, comprising an electrolytic vessel having means for producing lead and sodium alloy by electrolysis of the sodium compound, in combination with means for displacing the lead and sodium alloy by gravity, means for associating the lead and sodium alloy with a metal hydroxid, means for removing the sodium oxid thus produced, means for converting the sodium oxid into sodium hydroxid, and means for returning a portion of the sodium hydroxid to the chamber containing the lead and sodium alloy.

9. An apparatus for electrolyzing sodium compounds, comprising an electrolytic vessel having means for producing lead and sodium alloy by the electrolysis of the sodium compound, in combination with means for displacing the lead and sodium alloy by gravity, means for associating the lead and sodium alloy with a metal hydroxid, means for removing the sodium oxid thus produced, means for exposing the sodium oxid to the action of steam, and means for returning a portion of the sodium hydroxid thus produced to the chamber containing the lead and sodium alloy.

10. An apparatus for electrolyzing sodium chlorid, comprising an electrolytic vessel having means for producing a heavy-metal and sodium alloy by the electrolysis of sodium chlorid, in combination with means for displacing the heavy-metal and sodium alloy by gravity, means for associating the heavy-metal and sodium alloy with a metal hydroxid, means for removing the sodium oxid thus produced, means for converting the sodium oxid into sodium hydroxid, and means for returning a portion of the sodium hydroxid to the chamber containing the heavy-metal and sodium alloy.

11. An apparatus for electrolyzing sodium chlorid, comprising an electrolytic vessel having means for producing lead-sodium alloy by the electrolysis of sodium chlorid, in combination with means for displacing the lead-sodium alloy by gravity, means for associating the lead-sodium alloy with a metal hydroxid, means for removing the sodium oxid thus produced, means for converting the sodium oxid into sodium hydroxid, and means for returning a portion of the sodium hydroxid to the chamber containing the lead and sodium alloy.

12. An apparatus for electrolyzing sodium chlorid, comprising an electrolytic vessel having means for producing lead-sodium alloy by the electrolysis of sodium chlorid, in combination with means for displacing the lead-sodium alloy by gravity, means for associating the lead-sodium alloy with a metal hydroxid, means for removing the sodium oxid thus produced, means for exposing the sodium oxid to the action of steam, and means for returning a portion of the sodium hydroxid thus produced to the chamber containing the lead and sodium alloy.

809,086. PROCESS OF EXTRACTING SULFUR FROM THE SULFUR-CONTAINING CONSTITUENTS OF PETROLEUM.

HENRY S. BLACKMORE, Mount Vernon, N. Y., assignor, by direct and mesne assignments, to Black-Ford Utility Oil Company, a Corporation of the District of Columbia. Filed Dec. 12, 1904. Serial No. 236,420.

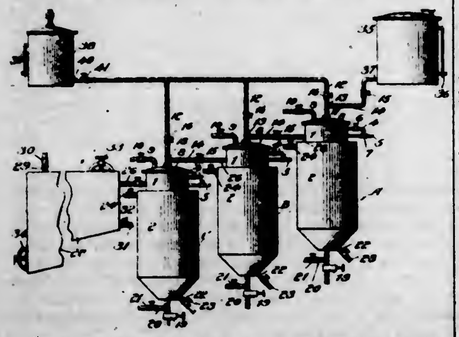

Claim.—1. The process of removing sulfur from petroleum containing the same, which consists in exposing sulfur-containing petroleum to the action of a metal-hydrogen carbid.

2. The process of removing sulfur from petroleum containing the same, which consists in exposing the sulfur-containing petroleum to the action of zinc-hydrogen carbid.

3. The process of removing sulfur from the constituents of petroleum, which consists in exposing the sulfur-containing constituent to the action of a metal-hydrogen carbid.

4. The process of removing sulfur from the constituents of petroleum, which consists in exposing the sulfur-containing constituent to the action of zinc-hydrogen carbid.

5. The process of removing sulfur from oil containing the same, which consists in exposing the sulfur-containing oil to the action of a metal-hydrogen carbid.

6. The process of removing sulfur from oil containing the same, which consists in exposing the sulfur-containing oil to the action of zinc-hydrogen carbid.

7. The process of producing hydrogen carbid, which consists in exposing a metal-hydrogen carbid to the action of sulfurous petroleum maintained at a reacting temperature.

8. The process of producing hydrogen carbid, which consists in exposing zinc-hydrogen carbid to the action of sulfurous petroleum maintained at a reacting temperature.

9. The process of producing hydrogen carbid, which consists in mixing sulfurous petroleum with a metal-hydrogen carbid while abstracting the heat evolved, by refrigeration.

10. The process of removing sulfur from sulfurous petroleum, which consists in exposing it to the action of a metal-hydrogen carbid maintained at a reacting temperature.

11. The process of purifying petroleum, which consists in exposing petroleum to the action of a metal-hydrogen carbid.

12. The process of purifying petroleum, which consists in exposing a refrigerated petroleum to the action of a metal-hydrogen carbid.

809,087. PROCESS OF ELIMINATING SULFUR FROM THE SULFUR-CONTAINING CONSTITUENTS OF PETROLEUM.

HENRY S. BLACKMORE, Mount Vernon, N. Y., assignor, by direct and mesne assignments, to Black-Ford Utility Oil Company, a Corporation of the District of Columbia. Filed Dec. 12, 1904. Serial No. 236,421.

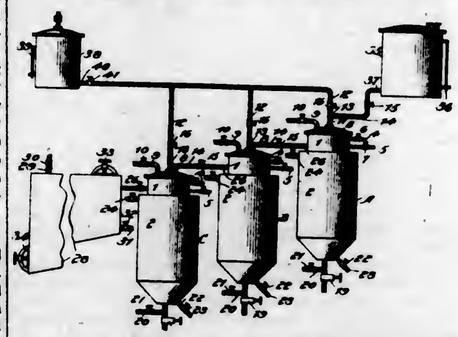

Claim.—1. The process of removing sulfur from petroleum containing the same, which consists in exposing sulfur containing petroleum to the action of a metal carbonyl.

2. The process of removing sulfur from petroleum containing the same, which consists in exposing the sulfur-containing petroleum to the action of nickel carbonyl.

3. The process of removing sulfur from the constitutents of petroleum, which consists in exposing the sulfur-containing constituent to the action of a metal carbonyl.

4. The process of removing sulfur from the constituents of petroleum, which consists in exposing the sulfur-containing constituent to the action of a nickel carbonyl.

5. The process of removing sulfur from oil containing the same, which consists in exposing the sulfur containing oil to the action of a metal carbonyl.

6. The process of removing sulfur from oil containing the same, which consists in exposing the sulfur-containing oil to the action of nickel carbonyl.

7. The process of purifying petroleum, which consists in exposing petroleum to the action of a metal carbonyl.

8. The continuous process of removing sulfur from sulfur-containing constituents of petroleum, which consists in exposing the sulfur-containing constituent to the action of a metal carbonyl, oxidizing the metal sulfid produced, deoxidizing the resultant metal oxid, exposing the same to the action of carbonic oxid liberated during the precipitation of the metal content of a previous increment of metal carbonyl whereby a new increment of metal carbonyl is produced, and exposing the metal carbonyl thus produced to the action of more sulfur-containing petroleum, substantially as described.

9. The continuous process of removing sulfur from sulfur-containing constituents of petroleum, which consists in exposing the sulfur-containing constituent to the action of a nickel carbonyl, oxidizing the metal sulfid produced, deoxidizing the resultant metal oxid, exposing the same to the action of carbonic oxid liberated during the precipitation of the metal content of a previous increment of nickel carbonyl whereby a new increment of nickel carbonyl is produced, and exposing the nickel carbonyl thus produced to the action of more sulfur-containing petroleum, substantially as described.

809,088. PROCESS OF PRODUCING CAUSTIC ALKALI.

HENRY S. BLACKMORE, Mount Vernon, N. Y. Filed May 10, 1905. Serial No. 259,818.

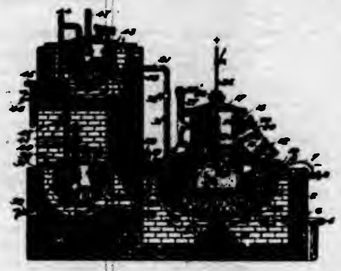

Claim.—1. The process of producing caustic alkali, which consists in providing a liquid-metal cathode having in communication therewith a liquefied alkali-metal compound of a weight sufficient to depress the surface thereof below its normal level, electrolyzing the alkali-metal compound whereby the alkali metal is deposited upon or unites with the depressed surface of the liquid-metal cathode, displacing the liquid metal containing the alkali metal from contact with the liquefied alkali-metal compound by gravity, and removing the alkali metal therein therefrom by the action of a fluid-metal hydroxid.

2. The process of producing caustic alkali, which consists in providing a liquid-metal cathode having in communication therewith a liquefied sodium compound of a weight sufficient to depress the surface thereof below its normal level, electrolyzing the sodium compound whereby the sodium is deposited upon or unites with the depressed surface of the liquid metal, displacing the liquid metal containing the sodium from contact with the liquefied sodium compound by gravity and removing the sodium therein therefrom by the action of fluid sodium hydroxid.

3. The process of producing caustic alkali, which consists in providing a liquid-metal cathode having in communication therewith liquefied sodium chlorid of a weight sufficient to depress the surface thereof below its normal level, electrolyzing the sodium chlorid whereby sodium is deposited upon or unites with the depressed surface of the liquid-metal cathode, displacing the liquid metal containing the sodium from contact with the liquefied sodium chlorid by gravity and removing the alkali metal therein therefrom by the action of fluid sodium hydroxid.

4. The process of producing caustic alkali, which consists in providing a liquid-lead cathode having in communication therewith a liquefied alkali-metal compound of sufficient weight to depress the surface thereof below its normal level, electrolyzing the alkali-metal compound whereby the alkali metal is deposited upon or unites with the depressed surface of the liquid-lead cathode, displacing the liquid lead containing the alkali metal from contact with the liquefied alkali-metal compound by gravity and removing the alkali metal therein therefrom by the action of fluid-metal hydroxid.

5. The process of producing caustic alkali, which consists in providing a liquid-lead cathode having in communication therewith liquefied sodium compound of sufficient weight to depress the surface thereof below its normal level, electrolyzing the sodium compound whereby the sodium is deposited upon or unites with the depressed surface of the liquid-lead cathode, displacing the liquid lead containing the sodium from contact with the liquefied sodium compound by gravity and removing the sodium therein therefrom by the action of fluid-metal hydroxid.

6. The process of producing caustic alkali, which consists in providing a liquid-lead cathode having in communication therewith liquefied sodium chlorid of sufficient weight to depress the surface thereof below its normal level, electrolyzing the sodium chlorid whereby the sodium is deposited upon or unites with the depressed surface of the liquid-lead cathode, displacing the liquid lead containing the sodium from contact with the liquefied sodium chlorid by gravity and removing the sodium therein therefrom by the action of fluid-metal hydroxid.

7. The process of producing caustic alkali, which consists in providing a liquid-metal cathode having in communication therewith a liquefied alkali-metal compound together with an inert granulated diaphragm, the whole of a weight sufficient to depress the surface thereof below its normal level, electrolyzing the alkali-metal compound whereby the alkali metal is deposited upon or unites with the depressed surface of the liquid-metal cathode, displacing the liquid metal containing the alkali metal from contact with the liquefied alkali-metal compound by gravity, and removing the alkali metal therein therefrom by the action of a fluid-metal hydroxid.

8. The process of producing caustic alkali, which consists in providing a liquid-metal cathode having in communication therewith a liquefied sodium compound together with an inert granulated diaphragm, the whole of a weight sufficient to depress the surface thereof below its normal level, electrolyzing the sodium compound whereby the sodium is deposited upon or unites with the depressed surface of the liquid-metal cathode, displacing the liquid metal containing the sodium from contact with the liquefied sodium compound by gravity, and removing the sodium therein therefrom by the action of fluid-metal hydroxid.

9. The process of producing caustic alkali, which consists in providing a liquid-metal cathode having in communication therewith liquefied sodium chlorid together with an inert granulated diaphragm, the whole of a weight sufficient to depress the surface thereof below its normal level, electrolyzing the sodium chlorid whereby the sodium is deposited upon or unites with the depressed surface of the liquid-metal cathode, displacing the liquid metal containing the sodium from contact with the liquefied sodium chlorid by gravity, and removing the sodium therein therefrom by the action of fluid-metal hydroxid.

10. The process of producing caustic alkali, which consists in providing a liquid-metal cathode having in communication therewith a liquefied alkali-metal compound together with diaphragm of granulated magnetite, the whole of a weight sufficient to depress the surface thereof below its normal level, electrolyzing the alkali-metal compound whereby the alkali metal is deposited upon or unites with the depressed surface of the liquid-metal cathode, displacing the liquid metal containing the alkali metal from contact with the liquefied alkali-metal compound by gravity, and removing the alkali metal therein therefrom by the action of a fluid-metal hydroxid.

11. The process of producing caustic alkali, which consists in providing a liquid-metal cathode having in communication therewith a liquefied sodium compound together with a diaphragm of granulated magnetite, the whole of a weight sufficient to depress the surface thereof below its normal level, electrolyzing the sodium compound whereby the sodium is deposited upon or unites with the depressed surface of the liquid-metal cathode, displacing the liquid metal containing the sodium from contact with the liquefied sodium compound by gravity, and removing the sodium therein therefrom by the action of fluid-metal hydroxid.

12. The process of producing caustic alkali, which consists in providing a liquid-metal cathode having in communication therewith liquefied sodium chlorid together with a diaphragm of granulated magnetite, the whole of a weight sufficient to depress the surface thereof below its normal level, electrolyzing the sodium chlorid whereby the sodium is deposited upon or unites with the depressed surface of the liquid-metal cathode, displacing the liquid metal containing the sodium from contact with the sodium chlorid by gravity, and removing the sodium therein therefrom by the action of fluid-metal hydroxid.

13. The process of electrolyzing metal compounds, which consists in providing a liquid-metal cathode having in communication therewith a diaphragm of granulated inert material together with a liquefied metal compound, electrolyzing the metal compound whereby the metal is deposited upon or unites with the liquid-metal cathode, and discharging the electronegative products liberated within the metal compound therefrom by the combined action of the granulated substance of the diaphragm, and gravity.

14. The process of electrolyzing light-metal compounds, which consists in providing a liquid-metal cathode having in communication therewith a diaphragm of granulated inert material together with a liquefied light-metal compound, electrolyzing the light-metal compound whereby the light metal is deposited upon or unites with the liquid-metal cathode, and discharging the electronegative products liberated within the light-metal compound therefrom by the combined action of the granulated substance of the diaphragm, and gravity.

15. The process of electrolyzing sodium compounds, which consists in providing a liquid-metal cathode having in communication therewith a diaphragm of granulated inert material together with a liquefied sodium compound, electrolyzing the sodium compound whereby the sodium is deposited upon or unites with the liquid-metal cathode, and discharging the electronegative products liberated within the sodium compound therefrom by the combined action of the granulated substance of the diaphragm, and gravity.

809,089. PROCESS OF MAKING CAUSTIC ALKALI. HENRY S. BLACKMORE, Mount Vernon, N. Y. Filed May 10, 1905. Serial No. 259,819.

Claim.—1. The process of making caustic alkali from salts of alkali metals, which consists in introducing into a cell containing an aqueous solution of the alkali-metal salt to be decomposed, a liquid metal, liberating the alkali metal in juxtaposition to the liquid metal by electrolysis, causing the liquid metal containing the alkali metal to pass into a separate or oxidizing cell through a liquid compound breaking its metallic connection between the liquid metal in the electrolytic cell and the liquid metal in the oxidizing-cell, by gravity, oxidizing the alkali metal contained in the liquid metal in the oxidizing-cell with the formation of caustic alkali, by electrolysis, and causing the liquid metal depleted of alkali to pass from the oxidizing-cell by gravity.

2. The process of making caustic alkali from salts of alkali metals, which consists in passing a liquid metal through an electrolytic cell containing an aqueous solution of the alkali-metal salt to be decomposed during electrolysis, decreasing the density and increasing the bulk of the liquid metal in the said electrolytic cell by causing it to unite with the alkali metal liberated by electrolysis therein, and causing it to overflow into a separate or oxidizing cell through a liquid compound capable of breaking metallic contact of the liquid metal in the separate cells from each other, by gravity, increasing the density of the liquid metal in the oxidizing-cell by separating the alkali metal therefrom by electrolytic oxidation, and discharging the liquid metal, thus separated from alkali metal, therefrom, by gravity.

3. The process of making caustic soda from sodium compounds, which consists in introducing into a cell containing an aqueous solution of the sodium compound to be decomposed, a liquid metal, liberating the sodium in juxtaposition to the liquid metal by electrolysis, causing the liquid metal containing the sodium to pass into a separate or oxidizing cell through a liquid compound breaking its metallic connection between the liquid metal in the electrolytic cell, and the liquid metal in the oxidizing-cell, by gravity, oxidizing the sodium contained in the liquid metal in the oxidizing-cell with the formation of caustic soda by electrolysis and causing the liquid metal depleted of sodium to pass from the oxidizing-cell, by gravity.

4. The process of making caustic soda from sodium chlorid, which consists in introducing into a cell containing an aqueous solution of the sodium chlorid to be decomposed, a liquid metal, liberating the sodium in juxtaposition to the liquid metal by electrolysis, causing the liquid metal containing the sodium to pass into a separate or oxidizing cell through a liquid compound breaking its metallic connection between the liquid metal in the electrolytic cell, and the liquid metal in the oxidizing-cell, by gravity, oxidizing the sodium contained in the liquid metal in the oxidizing-cell with the formation of caustic soda by electrolysis and causing the liquid metal depleted of sodium to pass from the oxidizing-cell, by gravity.

5. The process of making caustic alkali from salts of alkali metal, which consists in introducing mercury into a cell containing an aqueous solution of the alkali-metal salt to be decomposed, liberating the alkali metal in juxtaposition to the mercury, causing the mercury containing the alkali metal to pass into a separate or oxidising cell through a liquid compound breaking its metallic connection between the mercury in the electrolytic cell and the mercury in the oxidising-cell, by gravity, oxidising the alkali metal contained in the mercury in the oxidising-cell with the formation of caustic alkali, by electrolysis, and causing the mercury depleted of alkali to pass from the oxidising-cell by gravity.

6. The process of making caustic soda from sodium compounds, which consists in introducing mercury into a cell containing an aqueous solution of the sodium compound to be decomposed, liberating the sodium in juxtaposition to the mercury by electrolysis, causing the mercury containing the sodium to pass into a separate or oxidising cell through a liquid compound breaking its metallic connection between the mercury in the electrolytic cell, and the mercury in the oxidising-cell, by gravity, oxidizing the sodium contained in the mercury in the oxidizing-cell with the formation of caustic soda by electrolysis and causing the mercury depleted of sodium to pass from the oxidizing-cell, by gravity.

7. The process of making caustic soda from sodium chlorid, which consists in introducing mercury into a cell containing an aqueous solution of the sodium chlorid to be decomposed, liberating the sodium in juxtaposition to the mercury by electrolysis, causing the mercury containing the sodium to pass into a separate or oxidizing cell through a liquid compound breaking its metallic connection between the mercury in the electrolytic cell, and the mercury in the oxidizing-cell, by gravity, oxidizing the sodium contained in the mercury in the oxidizing-cell with the formation of caustic soda by electrolysis and causing the mercury depleted of sodium to pass from the oxidizing-cell, by gravity.

8. The process of making caustic alkali from salts of alkali metals, which consists in passing mercury through an electrolytic cell containing an aqueous solution of the alkali-metal salt to be decomposed during electrolysis, decreasing the density and increasing the bulk of the mercury in the said electrolytic cell by causing it to unite with the alkali metal liberated by electrolysis therein, and causing it to overflow into a separate or oxidizing cell through a liquid compound capable of breaking metallic contact of the mercury in the separate cells from each other, by gravity, increasing the density of the mercury in the oxidizing-cell by separating the alkali metal therefrom by electrolytic oxidation, and discharging the mercury, thus separated from alkali metal, by gravity.

9. The process of making caustic alkali from salts of alkali metals, which consists in passing mercury through an electrolytic cell containing an aqueous solution of an alkali-metal salt to be decomposed during electrolysis, decreasing the density and increasing the bulk of the mercury in the said electrolytic cell by causing it to unite with the alkali metal liberated by electrolysis therein, causing it to overflow into a separate or oxidizing cell through an electrically non-conductive liquid capable of breaking metallic contact of the mercury in the separate cells from each other, by gravity, increasing the density of the mercury in the oxidizing-cell by separating the alkali metal therefrom by electrolytic oxidation, and discharging the mercury, thus separated from the alkali metal, therefrom, by gravity.

10. The process of making caustic alkali from salts of alkali metals, which consists in passing mercury through an electrolytic cell containing an aqueous solution of an alkali-metal salt to be decomposed during electrolysis, decreasing the density and increasing the bulk of the mercury in the said electrolytic cell by causing it to unite with the alkali metal liberated by electrolysis therein, causing it to overflow into a separate or oxidizing cell through carbon tetrachlorid thereby breaking metallic contact of the mercury in the separate cells from each other, increasing the density of the mercury in the oxidizing-cell by separating the alkali metal therefrom by electrolytic oxidation, and discharging the mercury, thus separated from the alkali metal, by gravity.

809,090. INTERIOR CONCRETE STRUCTURAL WORK. FRANK C. CAHN, Cleveland, Ohio. Filed Mar. 24, 1905. Serial No. 251,396.

Claim.—The I-beams and the cross-stays connecting the same at intervals, concrete slabs suspended from said stays between said beams and temporary auxiliary supports for said slabs comprising beams beneath and supports above, and means engaging said beams with said supports.

809,091. COMPUTING MEASURING VESSEL. WILLIAM S. CAIN, Chicago, Ill. Filed May 11, 1905. Serial No. 259,883.

Claim.—1. The combination with a measuring vessel, of a false bottom which may be raised or lowered therein, a rod connected and movable with the bottom and extending up above the upper edge of the vessel and down beside the wall thereof, on the outside thereof, and a price-scale bar carried by said rod.

2. The combination with a measuring vessel, of a false bottom which may be raised or lowered therein, a rotatable scale-bar, having a plurality of scales, extending beside the wall of the vessel, on the outside thereof, and movable with said bottom, and a rod connecting the scale-bar and bottom.

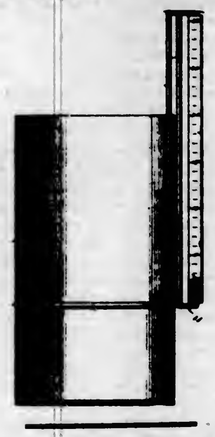

809,092. TOY. FRANCIS W. CARPENTER, Greenwich, Conn., assignor to Frederick F. Carpenter, New York, N. Y. Filed May 11, 1904. Serial No. 207,377.

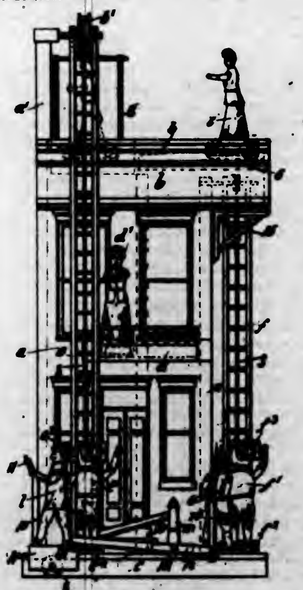

Claim.—1. The combination in a toy, of a toy building and sidewalk, a toy elevator adapted to descend through a shaft in the building, a tilting platform in line with the elevator and pivotally connected to the roof of the toy building, a toy rolling figure adapted to normally rest upon the platform and with its movement to descend and roll upon the platform of the elevator, an inclined toy ladder at one end resting upon the sidewalk and at its other end supported upon the toy building, the toy figure of a fireman, and means connecting the same with the ladder and a cord for drawing said toy figure up the ladder so that it may strike the tilting platform and overbalance the same.

3. The combination in a toy of a toy building and sidewalk, a toy elevator adapted to descend through a shaft in the building, a tilting platform in line with the elevator and pivotally connected to the roof of the toy building, a toy rolling figure adapted to normally rest upon the platform and with its movement to descend and roll upon the platform of the elevator, an inclined toy ladder at the lower end connected to the sidewalk and at the upper end to a support of the toy building, a pulley mounted upon said support, a toy figure and means connecting the toy figure to the inclined toy ladder, a cord from the toy figure over said pulley and connected to the top of the elevator, a projected balcony from the toy building, and a toy figure resting upon said platform and having outstretched arms and clasped hands forming a loop, the toy figure connected to the ladder having an outstretched arm adapted to pass within the loop of the toy figure upon the balcony.

4. The combination in a toy, of a toy building and sidewalk, a toy elevator adapted to descend through a shaft in the building, a tilting platform in line with the elevator and pivotally connected to the roof of the toy building, a toy rolling figure adapted to normally rest upon the platform and with its movement to descend and roll upon the platform of the elevator, an inclined toy ladder at the lower end connected to the sidewalk and at the upper end to a support of the toy building, a pulley mounted upon said support, a toy figure and means connecting the toy figure to the inclined toy ladder, a cord from the toy figure over said pulley and connected to the top of the elevator, a projected balcony from the toy building, a toy figure resting upon said platform and having outstretched arms and clasped hands forming a loop, the toy figure connected to the ladder having an outstretched arm adapted to pass within the loop of the toy figure upon the balcony, a projection from the lower support to the ladder of the toy figure of the fireman, means normally extending over said projection for holding down said figure and supporting the elevator in its raised position, and a device manually operated for releasing this holding device so as to permit the elevator to descend

5. The combination in a toy, of a toy building and sidewalk, a toy elevator adapted to descend through a shaft in the building, a tilting platform in line with the elevator and pivotally connected to the roof of the toy building, a toy rolling figure adapted to normally rest upon the platform and with its movement to descend and roll upon the platform of the elevator, an inclined toy ladder at the lower end resting upon the sidewalk and at the upper end secured to a support of the toy building, a pulley mounted upon said support, a toy figure and means connecting the same to the inclined toy ladder, a cord from the toy figure over said pulley and connected to the elevator, a projected balcony from the toy building and a toy figure resting upon said balcony and having outstretched arms and clasped hands forming a loop, the toy figure connected to the ladder having an outstretched arm adapted to pass between the arms of the toy figure upon the balcony, a projection upon the lowermost means connecting the toy figure to the ladder, a platform *b* pivoted to the sidewalk and normally extending over said projection, the toy figure of a fireman mounted upon said platform, a pivoted arm manually operated and adapted to engage said platform to hold the same in an initial position, and a spring for moving the platform.

6. The combination in a toy, of a toy building and sidewalk, a toy elevator adapted to descend through a shaft in the building, a tilting platform in line with the elevator and pivotally connected to the roof of the toy building, a toy rolling figure adapted to normally rest upon the platform and with its movement to descend and roll upon the platform of the elevator, an inclined toy ladder at the lower end resting upon the sidewalk and at the upper end secured to a support of the toy building, a pulley mounted upon said support, a toy figure and loops connecting the same to the inclined toy ladder, a cord from the toy figure over said pulley and connected to the elevator, a projected balcony from the toy building and a toy figure resting upon said balcony and having outstretched arms and clasped hands forming a loop, the toy figure connected to the ladder having an outstretched arm adapted to pass between the arms of the toy figure upon the balcony, a projection upon the lower loop of the toy figure, a platform *b* pivoted to the sidewalk and normally extending over said projection, the toy figure of a fireman mounted upon said

platform, a pivoted arm manually operated and adapted to engage said platform to hold the same in an initial position, a spring for moving the platform, a toy hydrant attached to the sidewalk, a hose therefrom to the toy figure of the fireman upon the platform *k*, a toy nozzle held by the outstretched hands of said toy figure, and another toy figure *o* of a fireman with outstretched arms and approaching hands, and an upright arm *n'* from one end of the pivoted arm passing through the hands of the toy figure *o* and guided thereby, whereby the arms *n'* and *n* may be manually operated for the release of the pivoted plate *k* and the parts carried thereby.

7. The combination in a toy, of a toy building and a sidewalk extending out from the base of the building, a plate *k* pivotally connected to the sidewalk and adapted to swing around one corner of the sidewalk, the toy representation of a hydrant, a toy hose therefrom, a toy figure of a fireman connected upon the outer end of the pivoted plate *k* and to the outstretched hands of which the toy hose passes, a toy nozzle terminating the hose in the hands of the toy figure, a rocking arm *n* pivoted to the base of the toy hydrant, a toy figure *o* of a fireman mounted upon said sidewalk, an upright arm *n'* passing between the outstretched hands of said toy figure and guided thereby, a pin 13 depending from the opposite end of the rocking arm and entering an aperture in the end of the pivoted plate *k*, a spring 9 at one end connected to one end of the plate *k* and at its other end to a post of the sidewalk and adapted upon the swinging of the arm *k* and the release of its pin 13 to move the said pivoted plate and change the position of the toy figure of the fireman.

8. The combination in a toy, of a toy building and a sidewalk extending out from the base of the building, a plate *k* pivotally connected to the sidewalk, means manually operated for holding the plate in a predetermined position, a toy figure of a fireman connected upon the outer end of the pivoted plate and a spring at one end connected to a post of the sidewalk and adapted upon the release of said plate *k* to swing the same with the figure of the fireman into a new position.

9. The combination in a toy, of a toy building and a sidewalk extending out from the base of the building, a plate *k* pivotally connected to the sidewalk, a support-roller at the outer end of the plate, means manually operated for holding the plate in a predetermined position, a toy figure of a fireman connected upon the outer end of the pivoted plate and a spring at one end connected to one end of the plate *k* and at its other end connected to a post of the sidewalk and adapted upon the release of said plate *k* to swing the same with the figure of the fireman into a new position.

10. The combination in a toy, of a toy plate and a sidewalk extending out from the base of the plate, a plate *k* pivotedly connected to the sidewalk, means manually operated for holding the plate in a predetermined position, a toy figure of a fireman connected upon the outer end of the pivoted plate, and a spring at one end connected to one end of the plate *k*, and at its other end connected to a post of the sidewalk and adapted upon the release of said plate *k* to swing the same with the figure of the fireman into a new position.

11. The combination in a toy, of a toy building and base, a toy elevator and guides in which the same is adapted to descend, a ladder from the base to near the top of the elevator, a toy figure exceeding the weight of the elevator, and guides therefor to the ladder, a pulley, a cord connecting the elevator and toy figure over the pulley, a rolling base having a toy figure and means for projecting the same onto the elevator where its added weight causes the elevator to descend the first-named guides drawing up the figure on the ladder and means causing the rolling base in its lowered position to run off the elevator permitting the figure to return the elevator to a normal position.

12. The combination in a toy, of a toy building and base, a toy elevator adapted to descend in guides, a ladder from the base to near the top of the elevator, a toy figure having an outstretched arm and exceeding the weight of the elevator and guides for the figure to the ladder, a pulley, a cord passing thereover and connecting the elevator and toy figure, a balcony on the face of the building, a toy figure placed thereon with outstretched arms and clasped hands, a rolling base having a toy figure and means for projecting the same onto the elevator, substantially as specified.

13 The combination in a toy, of a toy building and a sidewalk extending out from the base of the building, a plate *k* pivotally connected to the sidewalk, a toy figure of a fireman connected upon the outer end of the pivoted plate, a toy representation of a hydrant on said sidewalk, a toy hose therefrom and a toy nozzle terminating the hose in the hands of the toy figure of the fireman on the plate, means adapted for holding the plate in a predetermined position and which may be operated for releasing the same and a spring at one end connected to the sidewalk and at the other end to an end of said plate and adapted upon the release of said plate to swing the same with the figure of the fireman to a new position.

14. The combination in a toy, of an upright toy structure and base, a toy elevator adapted to descend in guides, a ladder from the base to near the top of the elevator, a toy figure exceeding the weight of the elevator and guides therefor to the ladder, a pulley, a cord connecting the elevator and toy figure over the pulley, a rolling base and a toy device supported thereby, means for projecting the same onto the elevator where its added weight causes the elevator to descend the first-named guides drawing up the figure on the ladder, and means causing the rolling base to then run off the elevator, permitting the figure to return the elevator to a normal position.

15. The combination in a toy, of a toy building, a toy elevator and means adapting the same to descend from the upper to the lower part thereof, a cord from the top of the elevator and a weighted figure on the other end of the cord overbalancing the weight of the elevator and normally holding the elevator in position at the upper part of the building, a toy rolling device, a tilting support for normally holding the same, and means for actuating the said support to cause the toy rolling device to move therefrom onto the platform and by the increased weight to cause the platform to descend and to raise the weighted figure on the other end of the cord, and a weighted figure in an elevated position so located as to be engaged by the weighted figure as raised by the elevator and to be lifted off its support, and to be temporarily carried by said weighted figure, and means for discharging the rolling toy device from the elevator near the lower part of the building thereby providing for the ascent of the elevator by the combined weights at the other end of the cord.

16. The combination in a toy, of a toy building, a toy elevator and means adapting the same to descend from the upper to the lower part thereof, a cord from the top of the elevator and a weighted figure on the other end of the cord overbalancing the weight of the elevator and normally holding the elevator in position at the upper part of the building, a toy rolling device, a tilting support for normally holding the same, and means for actuating the said support to cause the toy rolling device to move therefrom onto the platform and by the increased weight to cause the platform to descend and to raise the weighted figure on the other end of the cord, a weighted figure in an elevated position so located as to be engaged by the weighted figure as raised by the elevator and to be lifted off its support and to be temporarily carried by said weighted figure, and means for discharging the rolling toy device from the elevator near the lower part of the building thereby providing for the ascent of the elevator by the combined weights at the other end of the cord, and means adapted to be manually actuated and to engage the weighted figure at the end of the elevator-cord and hold the same so that the release of the elevator is at the pleasure of the party operating the toy.

17. The combination in a toy, of a toy building, a toy elevator, and means adapting the same to descend from the upper to the lower part of the building, a platform and a pivot therefor to the upper part of the building providing for the tilting of the platform, a rolling weighted figure adapted to normally rest upon the platform, and means manually actuated for tilting the platform and causing the rolling weighted figure to move off the same onto the elevator-platform.

18. The combination in a toy, of a toy building, a toy elevator and guides therefor adapting the elevator to rise and fall from the upper to the lower part of the building, a tilting platform pivotally connected to the roof of the toy building, a toy device of greater weight than the weight of the elevator and adapted to overbalance the same, a cord connecting the elevator and said toy device, and a pulley over which the same passes, a movable toy device adapted to descend upon the platform of the elevator and overbalance the same, causing its descent from the upper to the lower part of the building, and a manually-operated device engaging the toy device connected to the elevator-rope for temporarily holding the same and the elevator in position, the release of which permits the descent of the elevator with the rolling toy figure.

809,093. NAVIGABLE BALLOON. ALFRED CHERONNA, Zurich, Switzerland. Filed Apr. 26, 1905. Serial No. 256,676.

Claim.—1. In an air-ship, a propeller-frame, a propeller rotatably carried by said frame, a support for the latter, a hinged connection between the support and frame, a driving-shaft and separable driving elements connecting the shaft and propeller.

2. In an air-ship, the combination with a driving-shaft and a friction driving element thereon, of a propeller-frame, a propeller rotatably mounted therein and having a complementary friction-driven element, a support for the propeller-frame and a hinge connection between the support and said frame.

3. In an air-ship, the combination with the driving-shaft of a propeller-frame, a propeller rotatably mounted therein, a support for the propeller-frame to which the latter is hinged and adjustable about an axis at right angles to the axis of rotation of the propeller and separable driving elements connecting said propeller to the driving-shaft.

4. In an air-ship, the combination with a motor having two driving-shafts, each composed of two sections adapted to be coupled and uncoupled; of a propeller for each driving-shaft, a propeller-frame for each propeller in which frames said propellers are rotatably mounted, supports for said frames, a hinged connection between the frames and their respective supports and separable driving elements connecting the propellers to their driving-shafts.

5. In an air-ship, the combination with a motor having two driving-shafts, each composed of two sections adapted to be coupled and uncoupled; of a propeller for each driving-shaft, a propeller-frame for each propeller in which frames said propellers are rotatably mounted, supports for said frames about which the latter are adjustable about an axis at right angles to the axis of rotation of the propellers, a hinged connection between the frames and their respective supports and separable driving elements connecting the propellers to their driving-shafts.

6. In an air-ship, the combination with a motor having two motor-shafts, each composed of two sections adapted to be coupled and uncoupled; of a propeller for each driving-shaft, a propeller-frame for each propeller, in which frames said propellers are rotatably mounted, supports for said propeller-frames, separable connections between said supports and frames and means to adjust the frames independently of each other about an axis at right angles to the axis of rotation of the propellers.

7. In an air-ship, the combination with a motor having two motor-shafts, each composed of two sections adapted to be coupled and uncoupled; of a propeller for each driving-shaft, a propeller-frame for each propeller, in which frames said propellers are rotatably mounted, supports for said propeller-frames, a hinge connection and a separable connection between the propeller-frames and their respective supports, and means to adjust the frames independently of each other about an axis at right angles to the axis of rotation of the propellers.

8. In an air-ship, a propeller-frame, a propeller rotatably carried by said frame, a fixed support, a frame-support comprising a normally stationary element, a hinge connection between the latter and the fixed support and a frame-carrying element revolvable about said stationary element and about an axis at right angles to the axis of rotation of the propeller; in combination with a driving-shaft and separable driving elements connecting said shaft to the propeller.

9. In an air-ship, a motor, a horizontal driving-shaft and friction-disks driven thereby; in combination with propeller-wheels having a peripheral flange in contact with their respective friction-disks, the vertical shafts for said wheels, arms in which said shafts have their bearings, a friction-wheel on one of said arms in contact with the aforesaid peripheral flange and a relatively stationary support for said arms, for the purpose set forth.

10. In an air-ship, the combination with a motor having two shafts, each composed of two sections adapted to be coupled and uncoupled, of a plurality of supporting-rods, rings hinged to said rods, a propeller for each driving-shaft and a propeller-frame for each propeller rotatably mounted on said rings.

11. In an air-ship, the combination with a motor having two shafts, each composed of two sections adapted to be coupled and uncoupled, of a plurality of fixed supporting-rods, circular bearing members hinged to said rods, supporting members rotatably mounted on the bearing members, propeller-frames mounted on the supporting members, and a propeller rotatably mounted in each frame.

12. In an air-ship, the combination with a motor having two shafts, each composed of two sections adapted to be coupled and uncoupled, of a plurality of fixed supporting-rods, bearings for one section of each shaft supported by said rods, circular bearing members hinged to said rods, supporting members rotatably mounted on said circular bearing members, propeller-frames mounted on the rotatable supporting members and a propeller rotatably mounted in each frame.

809,094. MAGAZINE-RIFLE. WILLIAM B. CLAY, Williamstown, Ky. Filed July 1, 1905. Serial No. 267,941.

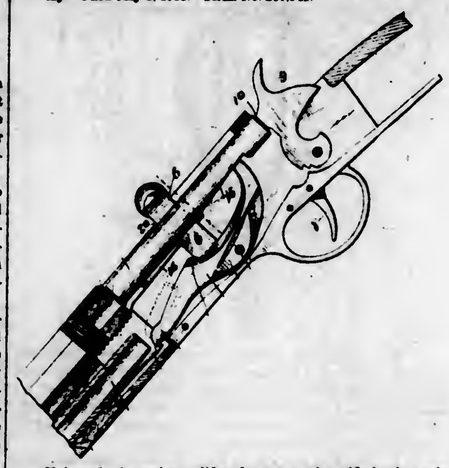

Claim.—1. A carrier or lifter for a repeating rifle having substantially one half of its efficient upper surface of crescent shape and the other half of said face substantially straight in combination with the lower end of the locking-bolt, which engages said efficient upper crescent-shaped surface of the carrier or lifter and rocks the same.

2. A carrier or lifter for a repeating rifle having the upper half of its efficient surface cam-shaped, and the other half or part provided with a trough to receive a cartridge in combination with the lower end of the locking-bolt which engages said efficient cam-shaped surface and operates the said lifter or carrier.

3. In a repeating rifle of the character described, a pivoted carrier or lifter, in combination with a breech-bolt, provided with a locking-pin having its lower end adapted to engage and rock said carrier to cause it to receive a cartridge and carry it into position to be loaded into the barrel of the gun.

4. In a repeating rifle of the character described, a pivoted carrier or lifter, in combination with a breech-bolt, provided with a locking-pin having its lower end adapted to engage and rock said carrier to cause it to receive a cartridge and carry it into position to be loaded into the barrel of the gun and a breech-bolt arranged to be moved to load the cartridge into the barrel.

809,095. OVERLAY. CLARK W. COBBS, Washington, D. C. Filed Oct. 7, 1904. Serial No. 227,602.

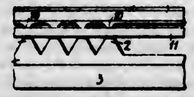

Claim.—1. The herein-described method of making overlays, which consists in forming depressions in the overlay-surface by the printing-surface under pressure, inking the printing-surface with suitable material, transferring the material from the printing-surface to the bases of the depressions by bringing the overlay and printing surfaces into contact, removing the portion of the overlay-surface not covered by the material to produce elevations on said overlay-surface in lieu of the former depressions, and finally removing said material.

2. An overlay having elevations and depressions, said elevations coinciding in places and positions with the places and positions of the elevations of its respective printing-surface.

809,096. WIRE-STRETCHER. ISHAM A. OWENS, Channing, Tex. Filed May 19, 1905. Serial No. 261,185.

Claim.—1. In a machine for the purposes described, the combination of a frame, a reel journaled therein, rollers at one end of said frame adapted to have the wire pass thereover, means on said reel adapted to have the ends of the wire secured thereto, and a removable roller located intermediate of said first-mentioned rollers, substantially as described.

2. In a machine for twisting wire for the purposes described, the combination with a frame, of a reel carried therein and provided with means adapted to have the wire secured thereto, said frame being constructed to allow the wire to lead to said reel at substantially right angles to said reel and an element in said frame for causing the twist in said wire to occur outside of said frame.

3. In a machine for twisting wire for the purposes described, the combination with a frame, of means carried therein for stretching a wire, said frame being constructed to lead said wire to said wire-stretching means at substantially a right angle to the line of said wire, and an element in said frame for causing the twist in said wire to occur outside of said frame, substantially as described.

809,097. PEANUT-THRESHER. JOHN T. DELK, Ivor, Va. Filed Dec. 26, 1904. Serial No. 238,679.

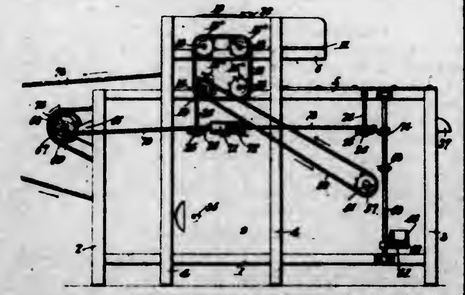

Claim.—1. A casing, shafts journaled in the sides of said casing at the four corners of a square around a vacant space, toothed cylinders upon said shafts, a hood extending over the top and one end of the casing, a feed-board at the opposite end of said casing, and means for rotating the several cylinder-carrying shafts in the same direction.

2. A casing, a plurality of shafts journaled in the sides of said casing at the four corners of a square around a vacant space, toothed cylinders upon said shafts, a hood extending over the top and one end, a feed-board at the opposite end of the casing in horizontal alinement with one of the upper cylinder-carrying shafts, and a plurality of comb-teeth extending forwardly and rearwardly from the front edge of the hood.

3. A casing, a plurality of shafts journaled in the sides of said casing at the four corners of a square around a vacant space, a feed-board disposed in horizontal alinement with one of the upper cylinder-carrying shafts, a hood extending and terminating above said shaft, a comb extending downwardly and rearwardly from the front edge of said hood, a cross-piece disposed in rear of the lower rear cylinder-carrying shaft, a comb extending forwardly and downwardly from said cross-piece, and a reciprocatory sieve disposed below the cylinder-carrying shafts.

4. A casing, a plurality of shafts journaled in the sides of said casing at the four corners of a square around a vacant space, cylinders upon said shafts having intercurrently-disposed teeth cooperating with each other, a reciprocatory sieve disposed below the cylinders to receive the discharge therefrom, a feed-board to supply material to one of the upper cylinders, a comb disposed above and cooperating with said upper cylinder to prevent material from passing back over said cylinder, and a comb disposed to cooperate with one of the lower cylinders to prevent material discharged from returning into the space between said cylinders.

5. A casing, shafts journaled in the sides of said casing, said shafts being disposed at the four corners of a square, means for rotating said shafts in the same direction, toothed cylinders upon the said shafts, a feed-board disposed in alinement with one of the upper shafts, a reciprocatory sieve disposed below the lower shafts, a comb disposed above and cooperating with the toothed cylinder upon the shaft adjacent to the feed-board, and a comb having downwardly-extending teeth supported to cooperate with the cylinder diagonally opposite to the cylinder adjacent to the feed-board.

6. In a machine of the class described, beating and disintegrating mechanism comprising a plurality of cylinders having intercurrently-disposed teeth cooperating with each other, means for rotating said cylinders in the same direction, a reciprocatory sieve below said cylinders, and an inclined chute extending beneath and connected with said sieve.

7. In a machine of the class described, an imperforate semicylindrical receptacle having an overflow, a shaft mounted for rotation concentrically therewith, and stemming-blades upon said shaft, said stemming-blades terminating in hook-shaped points.

8. A stemming-trough, means for directing a current of air immediately over the trough, and stemming-arms movable therein; said trough having an overflow-plate hingedly connected therewith; and means to vibrate the plate.

9. A stemming-trough, means for directing a current of air immediately over the trough, and stemming-arms movable therein, said trough having hingedly connected therewith a vibratory overflow-plate provided with outwardly-extending fingers; and means for directing an air-current beneath the trough and between the fingers.

10. A stemming-trough and stemming-arms movable therein, said trough having hingedly connected therewith a vibratory overflow-plate provided with outwardly-extending fingers, and an air-deflecting member supporting the free edge of said plate to direct a current of air between the fingers.

11. In a machine of the class described, a semicylindrical receptacle, a shaft mounted for rotation concentrically therewith and stemming-blades upon said shaft, said stemming-blades having incisions in their downgoing edges forming sharp-pointed teeth, and terminating in hook-shaped points at their free extremities.

12. In a machine of the class described, a trough or casing, a shaft mounted for rotation, concentrically therewith, stemming-blades upon said shaft, having hooks at their outer extremities and provided with sharp-pointed teeth upon their downgoing sides, a discharge-chute disposed below the trough or casing, a deflector disposed to receive the overflow from the latter and deposit the same upon the discharge-chute, and means for directing an air-blast against said deflector.

13. An imperforate receptacle having an overflow, a shaft mounted for rotation in said receptacle, and stemming-blades upon said shaft, said blades having hooked extremities and sharp points to engage the stems and to remove the latter by dragging them through the contents of the receptacle, causing said contents to overflow at the upgoing sides of the stemming-blades.

14. A receptacle, a shaft mounted for rotation in said receptacle, stemming-blades upon said shaft, means for supplying material to the receptacle at one side of the shaft, an inclined plane extending from the edge of the receptacle at the opposite side of the shaft, a discharge-chute, a deflector disposed to conduct material overflowing from the receptacle over the inclined plane to the discharge-chute, and means for directing an air-blast against said inclined plane.

15. In a machine of the class described, a trough or casing, a shaft mounted for rotation, concentrically therewith, stemming-blades upon said shaft, having hooks at their outer extremities and provided with sharp-pointed teeth upon their downgoing sides, a discharge-chute disposed below the trough or casing, a vibratory plate connected hingedly with the rear upper edge of the trough, a deflector disposed to receive the overflow from the latter and deposit the same upon the discharge-chute, and means for directing an air-blast against said deflector.

16. In a machine of the class described, a trough or casing, a shaft mounted for rotation, concentrically therewith, stemming-blades upon said shaft, having hooks at their outer extremities and provided with sharp-pointed teeth upon their downgoing sides; a discharge-chute disposed below the trough or casing, a vibratory plate having spaced fingers at its lower edges, said plate being hingedly connected with the rear, upper edge of the trough, a deflector disposed to receive the overflow from the latter and deposit the same upon the discharge-chute, and means for directing an air-blast against said deflector.

809,098. SPRING-ROLLER FOR WINDOW-SHADES. HAROLD R. DEBEY, Jerseyville, Ill., assignor to Sylvanus L. Hill, Jerseyville, Ill. Filed May 2, 1905. Serial No. 258,288.

Claim.—1. The combination of a roller having a spring-controlled pintle, a roller-bracket having a bearing-opening in which the pintle is capable of turning, and a combined winding and locking crank pivotally carried by the pintle and capable of being turned into engagement with the roller-bracket to prevent rotation of the pintle.

2. The combination of a roller having a spring-controlled pintle, a roller-bracket having an opening in which the pintle is capable of turning, and a combined winding and locking crank straddling the outer end of the pintle and pivotally connected thereto and also capable of being turned into locked engagement with the bracket to prevent rotation of the pintle.

3. The combination of a roller having a spring-controlled pintle, a roller-bracket having an opening in which the pintle is capable of turning and also provided with a seat, and a combined winding and locking crank pivotally carried by the pintle to swing from one side to the other and having a projection capable of entering the seat in the bracket to lock the pintle against rotation.

4. The combination of a roller having a spring-controlled pintle, a roller-bracket having a bearing-opening in which the pintle is capable of rotating and also provided with a seat, and a combined winding and locking crank straddling the outer end of the pintle and capable of being turned from one side to the other thereof, the crank being provided with a projection capable of engaging the seat of the bracket to lock the pintle against rotation.

5. The combination of a roller having a spring-controlled pintle, a bracket having an opening in which the pintle is capable of rotating, a combined winding and locking crank pivotally carried by the pintle and capable of being turned into locked engagement with the bracket, and a helical spring embracing the pintle between the bracket and the roller and bearing against these members to maintain the roller at the limit of its endwise movement away from the bracket to hold the crank in engagement with the bracket.

6. The combination of a roller having a spring-controlled pintle, a bracket having an opening in which the pintle is capable of rotating, a combined winding and locking crank pivotally carried by the pintle and capable of being turned into locked engagement with the bracket, and a spring to maintain the roller at the limit of its endwise movement from the bracket to detachably maintain the crank in locked engagement with the bracket.

809,099. FILTERING, PURIFYING, AND DECANTING APPARATUS. HENRI DOMINJAN, Paris, France. Filed Apr. 5, 1905. Serial No. 254,006.

Claim.—In a filter with supply-pipe at the top having a number of superposed filtering-compartments, separated by closed bottoms, the combination of revolving stirring-bars above the filtering strata with fingers depending from said bars into the filtering material, of perforated sheets carrying the filtering strata, and secured above the separating-bottoms of the compartments, of overflow-pipes passing centrally through the perforated sheets and the separating-bottoms to connect a compartment with the adjacent compartment below, of valved outlet-pipes branching off from each compartment near the bottom and of valved outlet-pipes communicating with the compartments at a point above the top surface of the filtering layer, substantially as described and for the purpose set forth.

809,099.

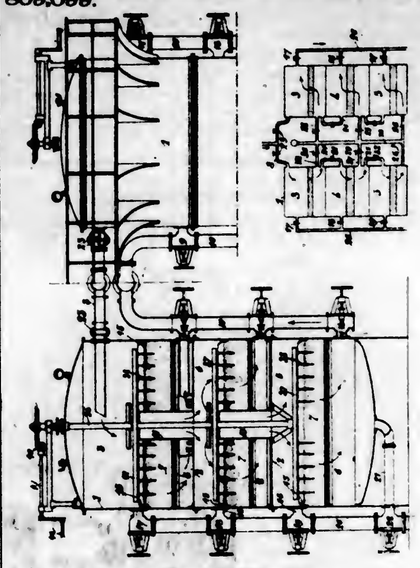

809,100. HOLLOW ROLL PASTRY. FRIEDRICH DIENER, London, England. Filed Nov. 11, 1905. Serial No. 286,903.

Claim.—Hollow roll pastry consisting of an inner flanged cylindrical roll and an outer cylindrical roll connected together by the flanges concentrically with nearly semicylindrical spaces between the two rolls and filling material occupying the said spaces the inner roll consisting of two superimposed semicylindrical troughs flanged at their longitudinal edges and connected together by the flanges and the outer roll consisting of two nearly semicylindrical troughs connected at their longitudinal edges to the faces of the flanges of the inner roll.

809,101. PROCESS OF MAKING STABLE NON-ALCOHOLIC IRON COMPOUNDS. KARL DIETERICH, Helfenberg, Germany. Filed Oct. 15, 1904. Serial No. 228,694.

Claim.—1. The herein-described process of producing stable non-alcoholic organic iron compounds and organic iron-manganese compounds of the character described, which consists in dissolving in distilled water an unstable organic iron compound and acidifying the same with hydrochloric acid, then cooling this acidulated solution to 0° centigrade, then forcing into it carbonic acid under a pressure of about six atmospheres and keeping it under such pressure for a time approximating two to three months.

2. The herein-described process of producing stable non-alcoholic iron compounds and organic iron-manganese compounds of the kind described, which consists in dissolving in water an unstable organic iron compound, then cooling this solution to 0° centigrade, then forcing into it carbonic acid under a heavy pressure, and keeping it under such pressure for a considerable space of time.

809,102. PIPE TONGS OR WRENCH. EDWARD DUGGINS, Oliver Springs, Tenn., assignor of one-half to John R. Richards, Oliver Springs, Tenn. Filed Sept. 12, 1905. Serial No. 278,169.

Claim.—In a wrench, the combination of a straight fixed jaw provided with two toothed recesses, and a concaved toothed face extending from the outermost recess to the back of the straight jaw; a pivoted adjustable jaw of arcuate shape having part of its inner face adapted to cooperate with the outer face of the fixed jaw; said toothed recesses of fixed jaw adapted to cooperate with the inner

face of the adjustable jaw when said adjustable jaw is adjusted with relation to the recesses, and means for adjusting the pivoted jaw with relation to the fixed jaw.

809,103. SKATE. WILLIAM H. DUNER, Toronto, Canada. Filed Dec. 3, 1904. Serial No. 235,967.

Claim.—1. A skate comprising a hollow support, quadrilateral in cross-section, and having its lower ends converged to form vertical portions, the said quadrilateral support being placed so that one of its corners forms the apex which is directly above the space between said vertical portions, the other corners of said support forming side ribs; the runner held between said vertical portions and extending a sufficient distance therebelow, and a horizontal brace secured within said support and in the inner corners formed by said side ribs.

2. A skate comprising a hollow support, quadrilateral in cross-section, and having its lower ends converged to form vertical portions, the said quadrilateral support being placed so that one of its corners forms the apex which is directly above the space between said vertical portions, the other corners of said support forming side ribs; the runner held between said vertical portions and extending a sufficient distance therebelow, and a horizontal brace secured within said support and in the inner corners formed by said side ribs, the side edges of said brace being turned so as to increase the soldering area between said inner corners and said brace.

3. A skate comprising a hollow support, quadrilateral in cross-section, and having its lower ends converged to form vertical portions, the said quadrilateral support being placed so that one of its corners forms the apex which is directly above the space between said vertical portions, the other corners of said support forming side ribs; the runner held between said vertical portions and extending a sufficient distance therebelow; a horizontal brace secured within said support and in the inner corners formed by said side ribs, the heel and sole cups provided with quadrilateral-shaped slots embracing said support and secured thereto, and the heel and sole plates secured to their respective cups.

4. The combination of the sole-plate provided with a first and second flange-bed and an opening provided with a downwardly-extending flange; a hollow cup fitting in said opening and provided at its top with an outwardly-flared flange which rests in said second flange-bed, the downwardly-extending flange of said sole-plate being secured to the outside of said hollow-cup, and the sole-plate-strengthening plate resting in said first flange-bed thus providing said sole-plate with a flat surface; the said sole-plate-strengthening plate being provided with a central hole which has a downwardly-turned flange which overlaps the outwardly-flared flange of said hollow cup and extends a suitable distance down thereinto, the said parts being suitably secured together.

809,104. WINDOW-CRANE. THOMAS H. PERSON, Davenport Iowa. Filed Nov. 28, 1904. Serial No. 234,506.

Claim.—1. In a window-crane, the combination with a single supporting-mast having a sill-engaging foot at its lower end, of means connected to the mast above its lower end for attaching the same to a window-frame and holding it against movement with respect thereto, and means for suspending elevating mechanism from the mast.

2. In a window-crane, the combination with a single supporting-mast formed of angle-iron, the flanges of which form at their lower ends a corner-receiving seat, one of said flanges being longer than the other and outturned to form a foot, of means for attaching the mast against movement to a window-frame, and means for suspending elevating mechanism from the upper end of the mast.

3. In a window-crane, the combination with a support having its lower end arranged to rest upon a sill, of an arm connected to and adjustable longitudinally of the support between the ends thereof, and means for securing the arm to a window or analogous frame.

4. In a window-crane, the combination with a supporting-mast having a sill-engaging lower end and having a longitudinal series of openings, of an arm, a fastening device for the arm arranged to be passed through any of said openings, and means for detachably securing the arm to a window or analogous frame.

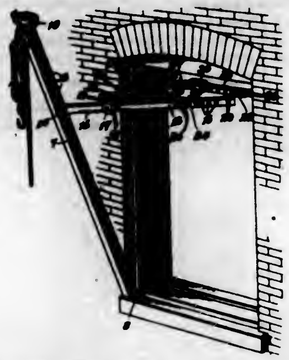

5. In a window-crane, the combination with a support, of an arm connected to the support, and means for securing the arm to a frame, said means including a carrier slidable upon the arm, and a jaw pivoted to the carrier and movable therewith.

6. In a window-crane, the combination with a support, of an arm connected to the support and having a rack, and means for securing the arm to a frame, said means including a carrier slidable upon the arm and having a device engaging the rack to hold the carrier against movement, and a jaw carried by the carrier.

7. In a window-crane, the combination with a supporting-mast, of an arm connected thereto and having a rack, a carrier comprising side plates that embrace the arm, and connections between the plates, one of said connections adjustably engaging the rack, and a jaw pivoted to the carrier and arranged to bear against a window or other analogous frame.

8. In a window-crane, the combination with a support, of an arm connected thereto and having a longitudinal series of openings therethrough, a jaw having a portion that lies alongside the arm, and fastening means for the jaw arranged to be passed through said portion and the openings in the arms.

9. In a window-crane, the combination with a support, of an arm connected thereto, and coacting frame-embracing jaws both adjustable longitudinally on the arm and movable toward and from each other.

10. In a window-crane, the combination with a mast, of an arm pivoted to the mast and having a rack and a longitudinally-disposed series of openings, a carrier slidably mounted on the arm and having an element that engages the rack, a jaw mounted on the carrier, another jaw, and means for adjustably securing the latter jaw to the arm, said means being arranged to be passed through the different openings in the arm.

11. In a window-crane, the combination with a support, of means for attaching the same to and holding it upon the side of a window-frame, and retaining means detachably connected to said attaching means and arranged to engage the opposite side of the frame.

12. In a window-crane, the combination with a support, of means for attaching the same to the side of a window-frame, said means including a frame-engaging jaw, and a retaining-bar having one end adapted to interlock with the jaw and its other end adapted to bear against the opposite side of the frame to that engaged by the jaw.

13. In a window-crane, the combination with a support, of means for attaching the same to the side of a window-frame, said means including a frame-engaging jaw, and a retaining-bar having one end to interlock with the jaw and having a frame-engaging foot at its other end that is adapted to bear against the opposite side of the frame to that engaged by the jaw.

14. In a window-crane, the combination with a support, of means for attaching the same to the side of a window-frame, said means including a frame-engaging jaw having an eye, and a sectional extensible retaining-bar having a pin at one end that engages the eye and a foot at its other end that is arranged to bear against the opposite side of the frame to that engaged by the jaw.

15. In a window-crane, the combination with a supporting-mast formed of angle-iron and having a tackle-engaging ring at its upper end and a sill-engaging foot at its lower end, of an arm pivotally and adjustably connected to the mast, frame-embracing jaws engaging the arm and relatively adjustable, the inner of said jaws having an eye, a retaining-bar comprising pivotally-connected sections, one of said sections having a pin that engages in the eye, the other having a foot that bears against the side of the frame opposite to that engaged by the jaws, and means for holding the sections against pivotal movement.

16. In a window-crane, the combination with a support, of an arm connected thereto, coacting frame-embracing jaws both adjustable longitudinally on the frame and movable toward and from each other, and means for securing both jaws in different positions upon the arm.

809,105. ATTACHMENT FOR HORSESHOES. JOHN P. GROUSE, Sandusky, Ohio. Filed May 16, 1905. Serial No. 260,657.

Claim.—1. An attachment for a horseshoe, consisting of a bow adapted to be applied to the inner edge of said shoe and carrying calks, saddles adapted to grip said bow at opposite sides of said shoe, affording means for securing said bow to said shoe, and a connection between said saddles for forcing the same apart.

2. An attachment for a horseshoe, comprising a bow conforming substantially to the inner edge of the shoe, said bow having extensions projecting below said shoe at the rear portion thereof, said extensions being bent outwardly and rearwardly to form calks with curved forward portions and rearwardly-projecting spurs, the upper edge of said calks resting against the under face of said shoe, and means for securing said bow to said shoe.

809,106. WALL-MOLD. JOHN H. GEER, Waynesboro, Pa. Filed Sept. 22, 1905. Serial No. 279,702.

Claim.—1. In a wall-mold, the combination, with uprights, and means for securing them to a wall, of horizontal supporting-bars secured between the said uprights, and a molding-box which rests on the said bars.

2. In a wall-mold, the combination, with uprights, and means for securing them to a wall, of horizontal supporting-bars provided with brackets at their ends which are slidable vertically on the said uprights, means for securing the said brackets in position, and a molding-box which rests on the said bars.

3. In a wall-mold, the combination, with uprights arranged in pairs and provided with clamping devices for securing them to a wall, of horizontal supporting-bars secured between the said uprights, and a molding-box which rests on the said bars.

4. In a wall-mold, the combination, with a molding-box provided with detachable ends, of clamping-bars the lower portions of which engage with the sides of the said box, an inclined distance-bar pivoted between the upper end portions of the said clamping-bars, and a clamping-screw engaging with the middle portions of the said bars.

5. In a wall-mold, the combination, with a molding-box, of a core, a vertical shaft journaled in the core and provided with a cross-piece inside the core, and retractable supporting-bars pivoted to the said cross-piece at one end and having their free end portions slidable in guide-holes in the core.

6. In a wall-mold, the combination, with a molding-box, of a core of greater depth than the said molding-box, a vertical shaft journaled in the core and provided with a cross-piece on its lower end portion inside the core, and retractable supporting-bars for the core pivoted at one end to the said cross-piece and having their other end portions slidable in guide-holes in the core.

809,107. FIRING MECHANISM FOR BREECH-LOADING GUNS. GREGORY GERDON, Watervliet, N. Y., assignor to Ordnance Improvement Company, a Corporation of New York. Filed Jan. 26, 1903. Serial No. 140,082.

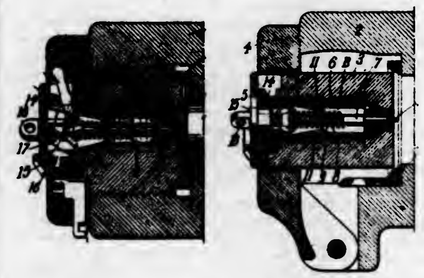

Claim.—1. In combination, the gun, the block rotatable therein, the non-rotating core in the block eccentric with the axis of the gun, and the firing-pin disposed eccentrically in said core.

2. The combination of the rotatable block, the firing element, and the core eccentric with the gun's axis, said block and core having relative movement.

3. The breech mechanism comprising in combination with the gun, an interrupted-thread block, a non-rotating core eccentric with the gun's axis upon which the block rotates, and a firing-pin eccentrically disposed in said core.

4. In a breech-loading gun, in combination, a rotatable breech-block, a firing element, a support for said element upon which said block rotates, and means actuated by the rotation of the block for preventing the pin if actuated from making contact with the cartridge-primer except when the block is closed.

5. In a breech-loading gun, in combination, a rotatable breech-block, a non-rotating core disposed in said block eccentrically to the gun's axis, a firing-pin and a guide for the pin-point automatically shiftable into and out of alinement with the axis of the gun.

6. In a breech-loading gun, the combination with its breech-block, of a firing-pin having longitudinal support therein, and means for moving it longitudinally and laterally in said block.

7. In a breech-loading gun, the combination with its breech-block, of a firing element, a non-rotating support for said element disposed longitudinally in said block, a guide for the point of said element and means for automatically moving said guide laterally with relation to the gun's axis.

8. In a breech-loading gun, the combination with its breech-block, of a primer detonating element and means longitudinally disposed in said block for automatically shifting said element laterally therein.

9. In a breech-loading gun, the combination with its breech-block, of a firing-pin, a non-rotating firing-pin guide longitudinally disposed in said block, means for reciprocating the pin, and means for shifting its point laterally as the block is rotated.

10. In a breech-loading gun, the combination with its breech-block, of a firing-pin having a guide-support longitudinally disposed in said block, the firing-pin point being in alinement with the axis of the gun when the block is in closed position, means for moving said support to shift the firing-pin laterally in the block when the latter is turned from closed position, and means for reciprocating said pin.

11. In a breech-loading gun having a concentric, rotatable breech-block, a firing-pin working in said block, and a guide for said pin longitudinally disposed in said block adapted to hold its point out of alinement with the axis of the gun except when the block is in closed position.

12. In a breech-loading gun, in combination with a concentrically-arranged, rotatable breech-block, a firing-pin, and means disposed longitudinally of said block and actuated by its rotation, for shifting the firing-pin point from concentric position in said block.

13. In a breech-loading gun, the combination with the rotatable breech-block and its firing-pin, of the non-rotating firing-pin support arranged eccentrically in said block, and adapted to center said pin in said block when the latter is in firing position, and to shift said pin to eccentric position therein when the block is turned from firing position.

14. In a breech-loading gun, the combination with its breech-block, of a firing-pin having a support longitudinally disposed in said block, the firing-pin being concentric with the bore of the gun when the block is in firing position, and means for moving said support to shift the firing-pin transversely of the axis of said block when the latter is turned from firing position.

15. In a breech-loading gun having a concentric, rotatable breech-block, a firing-pin carried by said block, and means supporting said firing-pin, longitudinally disposed in said block, and adapted to hold said pin eccentric with the bore of the gun except when the block is fi closed or firing position.

16. In a breech-loading gun having a concentrically-arranged, rotatable breech-block, the combination of a firing-pin working in said block and means actuated by the rotation of the block and longitudinally disposed in the same for automatically moving said firing-pin from concentric to eccentric position in said block.

17. In a breech-loading gun having a breech-block with interrupted thread, a firing-pin and firing-pin sleeve or support carried by said block, the sleeve being arranged eccentric in said block and the pin equally and oppositely eccentric in the sleeve.

18. In a breech-loading gun, having a concentric, rotatable breech-block, a firing-pin and means fitted longitudinally in said block capable of automatically moving the pin with respect to said block from eccentric to concentric position.

19. In a breech-loading gun, in combination with its rotatable breech-block, a firing-pin, a pin-support arranged longitudinally in the block, and means capable of automatically moving the pin with respect to the breech-block from eccentric to concentric position.

20. In a gun of the class described, in combination, an interrupted-thread breech-block, a firing mechanism, a longitudinal support for said mechanism arranged in said block, one being movable relatively to the other, and means constituting a functional barrier to said mechanism.

21. In a gun of the class described, in combination, an interrupted-thread breech-block, a firing-pin, a pin-support mounted longitudinally in the block, one being movable relatively to the other, and means constituting a functional barrier shiftable into the normal path of the pin-point.

809,108. APPARATUS FOR DETACHING THE HEADS FROM THE BODIES OF SHEET-METAL CANS. STANLEY K. GREEN, Baltimore, Md. Filed Aug. 4, 1903. Serial No. 168,236.

Claim.—1. In an apparatus for detaching the heads from the bodies of soldered sheet-metal cans, the combination of heaters, mechanism to convey the cans between the said heaters whereby the solder in the head-joints is liquefied, and devices to separate the heads from the bodies while the said solder is in a melted condition, substantially as specified.

2. In an apparatus for detaching the heads from the bodies of soldered sheet-metal cans, the combination of heaters, a conveyer to carry the cans to and from the said heaters, detaching devices to separate the heads from the bodies while the solder in the joint is heated to a liquefied condition, and a centering appliance whereby the cans are accurately presented to the head-detaching devices, substantially as specified.

3. In an apparatus for detaching the heads from the bodies of soldered sheet-metal cans, the combination of a movable endless conveyer-chain, segmental can holders or carriers attached to the said endless chain, heating appliances between which the endless chain conveys the cans, and flaring head-detaching blades which in the movement of the cans pass between the flanged heads thereof and separate them from the bodies, substantially as specified.

4. In an apparatus for detaching the heads from the bodies of soldered sheet-metal cans, the combination of a movable endless conveyer-chain carrying can-holders, a heater at each side of the said endless chain, and head-detaching appliances which comprise devices to compress the can-bodies between the heads thereof or distort them from a cylindrical form while the solder is in a liquefied condition, substantially as specified.

809,108.

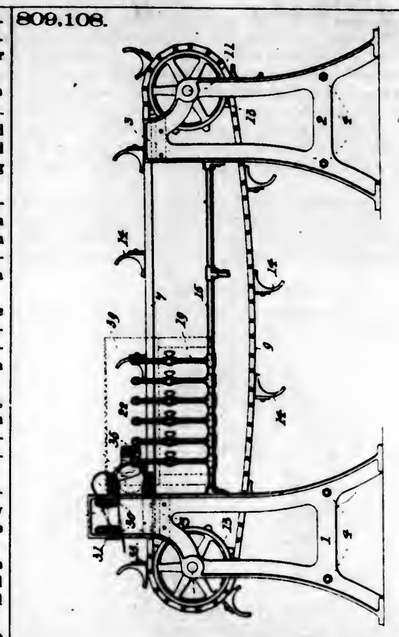

809,109. COTTON-CHOPPER. JAMES W. HAYNIE, Fairburn, Ga. Filed Mar. 7, 1905. Serial No. 248,900.

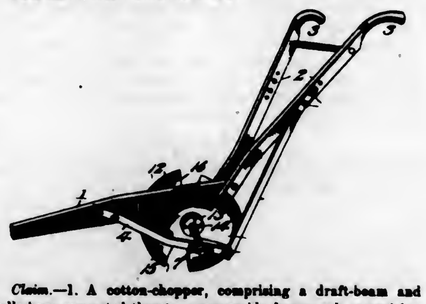

Claim.—1. A cotton-chopper, comprising a draft-beam and handle-bars connected thereto, a removable framework comprising brace-bars connected to the beam, supporting-bars connected to the handle-bars and to the ends of the brace-bars, and hanger-straps depending from the beam, shafts supported in the hanger-straps and brace-bars, said shafts inclining downwardly and forwardly from the beam, and a cutting-disk fixed on each of said shafts.

2. A cotton-chopper comprising a draft-beam and handle-bars connected thereto, brace-bars connected to the beam and extending downwardly and rearwardly therefrom, supporting-bars adjustably connected to the handle-bars and to the brace-bars, shafts supported at their outer ends in said brace-bars, a cutting-disk fixed on each of said shafts, and means depending from the beam to support the inner ends of said shafts.

809,110. SAFETY ATTACHMENT FOR GAGES. ISAAC W. HOUGHTON, HENRY C. DUBOIS, and ARDEN VAN VOORHEES, Marshall, Mich. Filed Aug. 28, 1905. Serial No. 276,251.

Claim.—1. In combination, a gage-tube, a valve governing the supply of gaged medium to said tube, a ratchet-plate connected with said valve, means normally tending to close the valve, a ratchet-lever arranged to engage the ratchet-plate to hold the same in such position that the valve is open, and a pressure-lever bearing against the gage-tube and coacting with the ratchet-lever, whereby when the gage-tube is broken, the pressure-lever will permit movement of the ratchet-lever to permit closing of the valve.

2. In combination, a gage-tube, a valve governing the supply of the gaged medium to said tube, a ratchet-plate revolubly with said valve, a spring coacting with said plate and normally tending to close the valve, a ratchet-lever arranged to engage the ratchet-plate to hold the same in such a position that the valve is open, and a pressure-lever pivoted between its ends and having one end in engagement with the gage-tube and the opposite end in engagement with the ratchet-lever, said pressure-lever being operable on breakage of the gage-tube to permit movement of the ratchet-lever to release the ratchet-plate and permit closing of the valve aforesaid.

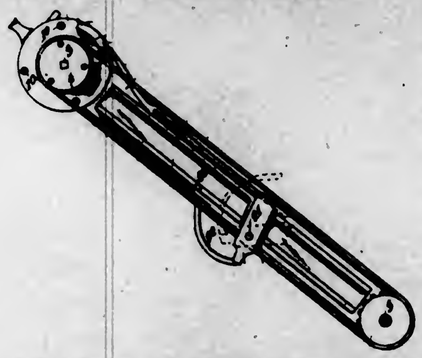

3. In combination, a gage-tube, valves governing admission of the medium to be gaged to said tube, a ratchet-plate connected with the stem of one of the valves and revolubly therewith, a spring connected with said ratchet-plate and normally tending to hold the valve adjacent thereto closed, a pivotally and slidably mounted ratchet-lever having one end thereof in engagement with the ratchet-plate, a pressure-lever pivoted between its ends and having one end engaged with the opposite end of the ratchet-lever, and an endless connection between the valves aforesaid, whereby when the gage-tube is broken the pressure-lever will release the ratchet-lever and permit simultaneous closing of the valves under the action of the spring aforesaid.

4. In combination, a gage-tube, a valve therefor, a spring for actuating said valve, a ratchet-plate coacting with the spring, a ratchet-lever engaging the ratchet-plate to hold the spring under tension, and a pressure-lever coacting with the gage-tube and the ratchet-lever and operable on breakage of the gage-tube to permit closing of the valve under actuation of the spring.

5. In combination, a gage-tube, a valve therefor, a spring for actuating said valve, a ratchet-plate coacting with the spring, a longitudinally-slidable ratchet-lever engaging the ratchet-plate to hold the spring under tension, and a pressure-lever coacting with the gage-tube and the ratchet-lever and operable on breakage of the gage-tube to permit closing of the valve under actuation of the spring.

809,111. MINER'S-LAMP SAFETY-SHIELD. RICHARD I. JENKINS, Lowistown, Mont., assignor of one-fourth to B. F. Marsh, Lowistown, Mont. Filed May 20, 1905. Serial No. 261,294.

Claim.—1. In a device of the character described, a shield having a plurality of openings therethrough near its upper end and an opening therethrough near its lower end, a sleeve surrounding said opening, a trough carried by the lower end of the shield, a horizontal flexible projection carried by the shield at its lower end to hold the same against upward movement, and a semicircular support secured to the back of the shield to hold the same against sidewise or tilting movement.

2. In a device of the character described, the combination, with a miner's lamp, of a vertical shield having an opening therethrough near its lower end, a sleeve carried by the shield and surrounding the opening, a semicircular support carried by the back of the shield to engage the body of the lamp and hold the shield against tilting or sidewise movement, and a horizontal flexible projection carried by the lower end of the shield and adapted to engage the bottom of the lamp to hold the shield in normal position.

809,112. LAMP-BURNER. DOLPHIS JOYAL, Lowell, Mass. Filed June 28, 1905. Serial No. 267,439.

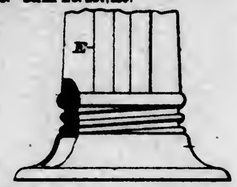

Claim.—1. In a lamp-burner, a perforated horizontal platform, comprising a central cone having a screw-threaded upper rim, a metal collar adapted to screw on said cone, an extended transparent tube formed with a transverse slot at its top, and an extended wick-tube as described.

2. In a lamp-burner, a perforated horizontal platform, comprising a central cone having a screw-threaded upper rim, a metal collar adapted to screw on said cone, an extended transparent tube beaded at its bottom rim to form a gripping edge for said collar and hemispherical at its top with a transverse slot with rounded edges, and an elongated wick-tube as described.

3. In a lamp-burner, a perforated horizontal platform, comprising a central cone having a screw-threaded upper rim, a metal collar adapted to screw on said cone, an extended transparent tube beaded at its bottom rim to form a gripping edge for said collar and hemispherical at its top with a transverse slot with rounded edges, and an elongated wick-tube, the outer surface of which is adapted to reflect light, as described.

809,113. CHAIN. JAMES M. JOYCE, Edgerton, Wis. Filed June 12, 1905. Serial No. 264,910.

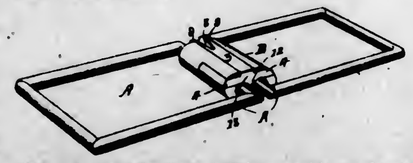

Claim.—1. A coupling for chain-links, comprising an elongated body portion slotted throughout its length on one face, and having recesses to receive the chain-links, and a block fitting in the slotted face of said body with its outer face flush with the outer face of the body, and means carried by said block when engaging the body for securing the block in engagement with the body.

2. A coupling for chain-links, comprising a body slotted throughout its length on one face, and having recesses to receive the chain-links, said body also having cut-away portions at one end, and a block fitting in the slotted face of the body and having side portions fitting in the recesses in the end of the body and means for securing said block in locked engagement in the body.

3. A coupling for chain-links, comprising a body slotted throughout its length on one face, and having interior recesses, and having recesses in one end, a block fitting in the slotted face of said body and having side portions fitting in the end recesses of the body, the underneath face of said block having longitudinal recesses registering with the chain-receiving recesses of the body, and means for securing the block in locked engagement with the body.

4. In combination with a pair of adjacent chain-links, a connection therefor, embodying a body portion and a locking element, said body portion being formed with a recess corresponding in shape to said locking element, said locking element being seated in said recess, and having its outer surface lying flush with the periphery of the body portion, the ends of said locking element being split and adapted to be spread apart into locking engagement with said body portion.

5. In combination with a pair of adjacent chain-links, a coupling therefor, embodying a body portion formed with a central bore, and a T-shaped opening, and a T-shaped locking element carried by said body portion and interfitting in said T-shaped opening, said locking element having its end formed with furcations adapted to be spread apart into locking engagement with the body portion.

6. In combination with a pair of adjacent chain-links, a connection therefor, embodying a body portion formed with a central bore and a T-shaped opening, and a T-shaped locking element interfitting in said opening and provided with a bifurcated end terminating in enlarged shoulders, adapted to be spread apart into locking engagement with said body portion.

7. In combination with a pair of adjacent chain-links, and connection therefor, embodying a body portion formed with a central bore, and a T-shaped opening, and a T-shaped locking element carried by said body portion and interfitting in said opening, said locking element being formed adjacent its end with a split portion adapted to be spread apart into locking engagement with said body portion.

809,114. **RAZOR-STROP.** OTTO KAMPFE and FREDERICK KAMPFE, New York, N. Y. Filed Feb. 11, 1904. Serial No. 193,143.

Claim.—1. A razor-strop provided with a bail or handle comprising a core-wire, and a covering of resilient coiled wire, the convolutions of which are closely wound and of an inner diameter greater than the diameter of said core-wire.

2. A bail or handle for razor-strops and the like, comprising a U-shaped core-wire, and a covering of closely-coiled resilient wire, the ends of said core being inwardly bent adjacent the ends of said coil, so as to crowd the convolutions of the same and to engage a strop or the like.

3. A razor-strop provided with a bail or handle comprising a core-wire, and a covering for said wire consisting of a resilient coil of wire the convolutions of which are greater in inner diameter than the diameter of said core-wire, the ends of said core being bent so as to crowd said convolutions and engage the strop proper.

809,115. **MILK-STRAINER.** AXEL A. C. KLINT, Holton, Kans. Filed Apr. 6, 1905. Serial No. 254,128.

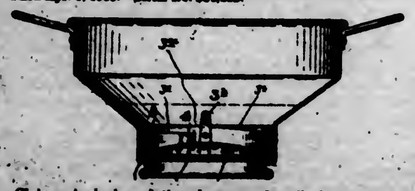

Claim.—A device of the character described, comprising a hemispheric strainer-guard with its rim or wall practically constituting two semicircular members one in continuation of the other, said members having their upper edges forming opposite inclines with their perpendicular edges or elevations opposed to their bases, respectively, said members also being bodily deflected or bent inward into lateral recesses, and a fixed handle-bar or bail whose points of connection with said members are arranged upon opposite sides of the bases of said members, respectively, in combination with a receptacle having an annular portion effective to receive said strainer, and having inward-extended headed studs adapted to ride upon the edges of said members and to enter said recesses.

809,116. **METHOD OF PRODUCING CIRCULATION IN ELECTROLYTIC PROCESSES.** HUGO KELLER, Vienna, Austria-Hungary, and PAUL ASKENASY, Nuremberg, Germany. Filed Oct. 20, 1903. Serial No. 179,166.

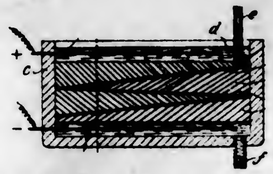

Claim.—1. In the art of electrolysis by the diaphragm process, the method which consists in causing a flow of an electrolyte toward and into the cathode-chamber in a direction substantially at right angles to the line of diffusion.

2. In the art of electrolysis by the diaphragm process, the method which consists in causing a flow of an electrolyte from the anode-chamber into the cathode-chamber in a direction substantially at right angles to the line of diffusion.

809,117. **ELEVATOR.** GEORGE R. LAYMAN, Lincoln, Ill. Filed July 5, 1905. Serial No. 268,792.

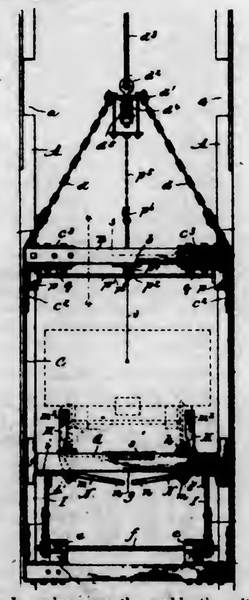

Claim.—1. In a mine-cage, the combination with the uprights or guide-rails of the elevator-shaft having passage-ways therein, of the cage, a platform pivoted therein, vertically-disposed triangular plates supporting the platform, a rock-shaft to which the triangular plates are fixed and forming a pivot for said plates by which the platform may be tilted, shoes at the sides of the platform adapted to slide on the uprights and pass through the passage-ways thereof when the platform is tilted, dogs pivoted in the platform and adapted to engage the wheels of a car run thereon, a spring connecting the dogs to hold them upright or normally in engagement with such wheels, and operating-levers connected to the dogs for releasing them, substantially as shown and described.

2. In a mine-cage, the combination with the cage, of a platform

pivoted therein, dogs pivoted in the platform and adapted to engage the wheels of a car run thereon, said dogs comprising a bar bifurcated at its upper or free end to provide oppositely-curved engaging members, shafts to which said dogs are fixed and extending longitudinally under the platform, levers attached to the shafts near the ends thereof and projecting toward the center of the platform at opposite ends of the latter, arms projecting outwardly at the free ends of the levers, and a spring adapted to hold the dogs normally upright with the levers at a downward inclination, substantially as shown and for the purpose set forth.

809,118. **METHOD OF WEAVING.** LEON LEMBEUX, Paterson, N. J. Filed May 31, 1905. Serial No. 263,043.

Claim.—1. The method of weaving twin fabrics which consists in forming sheds in the warp, projecting the ground-filling through the sheds, and simultaneously projecting a single inside selvage-filling back and forth through first one portion and then the other portion of an interior section of the shed, substantially as described.

2. The method of weaving twin fabrics which consists in forming sheds in the warp, projecting the ground-filling through the sheds, and simultaneously projecting a single inside selvage-filling back and forth through first one portion and then the other portion of an interior section of the shed, the shed being changed after the projecting through of the selvage-filling in each direction, substantially as described.

3. The method of weaving twin fabrics which consists in forming sheds in the warp and at certain intervals raising, alternately, first the raised threads of the inside selvage-warps for one part of the fabric and then the raised threads of the inside selvage-warp for the other part of the fabric, higher than the remaining raised threads of the warp, projecting the ground-filling through the sheds, and simultaneously projecting a single inside selvage-filling back and forth between the more highly raised selvage warp-threads and the remaining threads of one shed alternately with the threads of the other shed, substantially as described.

809,119. **FINGER-CURETTE.** MAXIMILIAN J. C. LEUCHS, New York, N. Y. Filed May 10, 1905. Serial No. 259,895.

Claim.—A finger-curette comprising a sleeve open at both ends, and a scraper overhanging one end of said sleeve and extending forwardly therefrom in line with the wall of the same, said scraper embodying a downwardly-disposed scraping edge.

809,120. **ELECTRIC RAILWAY.** CHARLES LEVINSON, New York, N. Y. Filed July 12, 1905. Serial No. 269,578.

Claim.—1. A safety device for preventing the starting of a car comprising a contact or switch located in the driving-motor circuit independent of the motorman's controller and associated with a gate of the car, said contact or switch being so arranged as to be opened and to cut off the current from the driving-motor independent of the motorman's controller when said gate is open, substantially as described.

2. A safety device for preventing the starting of a train of cars which consists in locating a plurality of contacts or switches in the driving-motor circuit in every car of the train, said contacts or switches being independent of the motorman's controller and associated with the gates on the cars, said contacts or switches being so arranged as to be opened and to cut off the current from the driving-motor independent of the motorman's controller when any of said gates are opened, substantially as described.

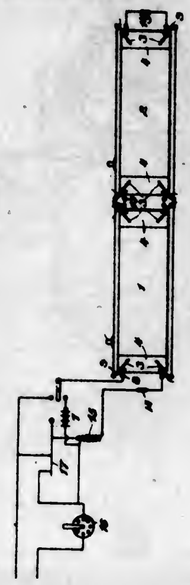

809,121. **ILLUMINANT.** JULIUS LEWY, Frankfort-on-the-Main, Germany. Filed June 20, 1903. Serial No. 162,543.

Claim.—A wax-like non-transparent composition of matter, containing paraffin, stearin and alcohol so mixed therewith as to impart opacity to the mixture.

809,122. **SPIKE-PULLER.** LORENZO A. MILLIGAN, Barstow, Cal. Filed June 16, 1905. Serial No. 265,626.

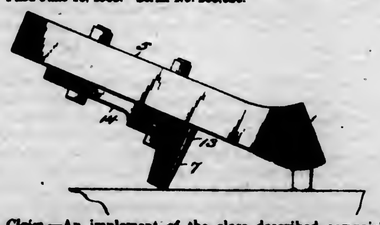

Claim.—An implement of the class described comprising a stock having a head at one end, said head having an upwardly and rearwardly slanted forward face and having a recess opening through its upper face, said head also having communicating slots in its forward and lower faces communicating with the recess, the walls of the slot in the forward face being sharpened at their upper portions, depending lips carried by the head at the sides of the slot in its bottom, said lips lying in a plane slightly below the bottom of the said head, a slotted rail-engaging foot on the stock, and headed bolts carried by said stock and engaging the slots formed in said rail-engaging foot.

809,123. **APPARATUS FOR GENERATING STEAM FROM HOT SLAG.** GEORGE MITCHELL, Los Angeles, Cal. Filed Dec. 13, 1904. Serial No. 236,768.

Claim.—1. The combination with a steam-generator having a feed-opening in its top and a casing over said generator and communicating therewith through said feed-opening, of a hollow slag-carrier having a series of radial slag-receptacles, a spout at the top of the casing, packing-rings between the slag-carrier and casing and

means for admitting steam into the hollow slag-carrier and subjecting the packing to the pressure thereof.

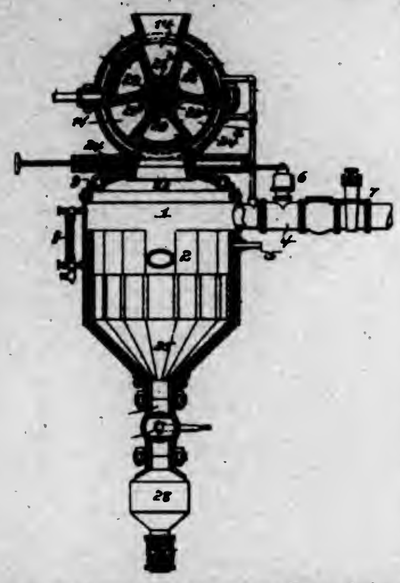

2. The combination with a steam-generator having a feed-opening in its top, of a slag-carrier over said feed-opening and having a horizontal axis of rotation, said carrier having a series of radiating slag-receptacles, each having a steam-duct in its bottom and means for forcing steam outwardly through said duct to eject the slag.

3. The combination with a steam-generator having an opening in its top, of a hollow rotary slag-carrier having a series of slag-receptacles and a chamber within the carrier, a casing inclosing the carrier, packing-rings on the carrier arranged to receive steam-pressure from said chamber, ducts communicating with said chamber in the carrier, a tubular hub for the carrier, central ducts connecting said tubular hubs with the bottoms of the slag-receptacles and with the chamber in the slag-carrier, a hollow journal on which the carrier rotates, said hollow journal having a port to register successively with the central ducts, and means for admitting steam to the hollow journal.

4. The combination with a steam-generator having an inlet-opening in its top, and a cylindrical casing over the same provided with an inlet-opening in its top of a rotary slag-carrier mounted in said casing and provided with a series of radial slag-receptacles, said carrier provided with a tubular hub having ports communicating with the slag-receptacles, and a stationary steam-pipe in said tubular hub and having a port in its bottom to register successively with the ports which communicate with the slag-receptacles.

5. The combination with a steam-generator having an inlet-opening in its top, and a casing over said opening, of a hollow rotary carrier mounted in said casing and provided with a series of radial slag-receptacles, said hollow carrier having peripheral grooves communicating with the interior of the carrier, packing-rings in said grooves, a tubular hub for said carrier, a stationary steam-pipe disposed within said tubular hub, said hub having a series of ports communicating with the interior of the carrier, and said tubular hub also having ports communicating with the bottoms of the radial slag-receptacles, said steam-pipe having an outlet-port in its bottom to communicate successively with the ducts in the tubular hub.

809,124. TRUNK. MARY E. HUMAN, Fort Smith, Ark. Filed Dec. 14, 1904. Serial No. 236,626.

Claim.—1. A circular trunk, comprising longitudinal sections hinged together, and unbroken circular boxes at the ends of said sections and forming the heads of the trunk, substantially as shown and described.

2. A circular trunk, comprising longitudinal sections hinged together, and unbroken circular boxes at the ends of said sections and forming the heads of the trunk, said unbroken circular boxes being greater in diameter than the intermediate portion of the trunk, substantially as shown and for the purpose set forth.

3. A circular trunk, comprising two longitudinal sections hinged together, one containing a series of boxes and the other having a hinged door, unbroken circular boxes forming the ends of the trunk when closed, and means for securing the parts in such closed position, substantially as shown and for the purposes set forth.

4. A circular trunk, comprising the semicircular longitudinal section 1 with a circular box forming the lower end thereof and a removable circular box at the upper end thereof, and a semicircular longitudinal section 1° hinged to the section 1 and having a door forming the inner side thereof, substantially as shown and described.

5. A circular trunk, comprising a semicircular longitudinal section 1 with a circular box forming the lower end thereof and a removable circular box at the upper end thereof, a mirror at the bottom of the removable circular box, and straps connecting said box to the section; together with a semicircular longitudinal section 1° hinged to the section 1 and having a door hinged at the inner side thereof, and a mirror in said door, substantially as shown and for the purpose set forth.

6. A circular trunk, comprising a semicircular longitudinal section 1 having a circular box forming the lower end or base thereof when the trunk is placed in a vertical position, a circular box removably mounted in the upper end of the section 1 and provided with a mirror, and semicircular boxes in said section between the aforesaid circular boxes; together with the section 1° hinged to the section 1 and provided with a door-frame and bottom, transverse rods at the upper portion of the section 1°, a door hinged in said frame, and means for securing the parts of the trunk together when the trunk is closed.

809,125. CREAM COOLER AND AERATOR. MARTIN MORTENSEN, Sioux City, Iowa. Filed Mar. 14, 1904. Serial No. 196,187.

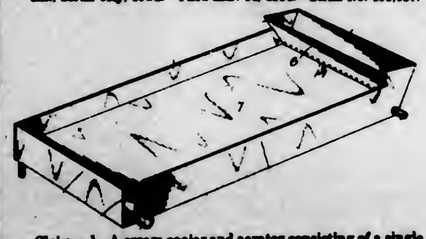

Claim.—1. A cream cooler and aerator consisting of a single receptacle having one of its end walls extending upwardly and outwardly at an inclination and one end of each of its side walls arranged adjacent to said inclined end wall enlarged and having the upper portion projecting rearwardly, a partition in said receptacle for dividing it into an upper and a lower compartment, said partition having one end formed in a semicylindrical manner to constitute a collecting-trough at the lower end of said receptacle, a filtering-plate having the lower portion thereof perforated, said plate arranged above said partition, secured to the inner face of the enlarged ends of said side walls, bearing against the inclined end wall and in connection with said inclined end wall and the enlarged ends of said side walls forming a filtering-trough, a spout communicating with said collecting-trough, a cooling-medium-supply pipe communicating with said lower compartment, and a cooling-medium-exhaust pipe communicating with said lower compartment.

2. A cream cooler and aerator comprising a single receptacle having one of its end walls extending upwardly and outwardly at an inclination and one end of each of its side walls arranged adjacent to said inclined end wall enlarged and projecting rearwardly, one of said side walls at its other end suitably cut away, a partition arranged in said receptacle and adapted to divide it into an upper and a lower compartment, said partition having one end thereof formed in a semicylindrical manner to constitute a filtering-trough registering with the cut-away portion of said side walls, deflecting-plates arranged in staggered relation with respect to each other and secured in the lower of said compartments, a filtering-plate having the lower portion thereof perforated, said plate arranged above said partition, secured to the inner face of the enlarged ends of said side walls, bearing against the inclined end wall and in connection with the inclined end wall and the enlarged end of said side walls forms a V-shaped filtering-trough, a spout communicating with said collecting-trough, a cooling-medium-supply pipe communicating with said lower compartment, and a cooling-medium-discharge pipe communicating with said lower compartment.

3. A cream cooler and aerator consisting of a single receptacle having one of its end walls extending upwardly and outwardly at an inclination, and one end of each of its side walls arranged adjacent to said inclined end wall enlarged, said enlarged portion of each of the end walls projecting rearwardly and having an inclined edge, the forward edge of each of said enlarged portions extending at an inclination, said inclined end wall secured to the forward inclined edge of said enlarged portions, a partition in said receptacle for dividing it into an upper and a lower compartment, said partition bent at its lower end to constitute a collecting-trough at the lower end of said receptacle, an inclined filtering-plate having the lower portion thereof perforated, said plate secured to the enlarged portions of the side walls, arranged above said partition, and in connection with said inclined end wall and said enlarged portions of the side walls forming a filtering-trough, a spout communicating with said collecting-trough, and means for supplying and exhausting a cooling medium to and from the lower of said compartments.

809,126. ELECTRIC-LIGHT-FIXTURE INSULATOR. LOUIS MCCARTHY, Boston, Mass. Filed Feb. 2, 1905. Serial No. 243,236.

Claim.—1. The improved insulator for electric-light-fixture canopies comprising two ribs separated by an intervening depression, the outer edge of one rib being adapted to engage the inside edge of a canopy of one size, and the inner edge of the other rib being adapted to engage the outside edge of a canopy of another size, whereby the insulator may be used with more than one size of canopy.

2. The improved insulator for electric-light-fixture canopies comprising two ribs of which the inner is the higher separated by an intervening depression, the outer edge of one rib being adapted to engage the inside edge of a canopy of one size and the inner edge of the other rib being adapted to engage the outside edge of a canopy of another size, whereby the insulator may be used with more than one size of canopy.

809,127. STATION-METER INDEX. DONALD MCDONALD and LYNN M. SCOFIELD, Albany, N. Y., assignors to American Meter Company, New York, N. Y., a Corporation of New York. Filed Apr. 20, 1904. Renewed Dec. 8, 1905. Serial No. 290,961.

Claim.—1. In a station-meter index, in combination with a revolving cylinder adapted to carry a chart, a threaded shaft, a recording instrument operated by said shaft, a gear loosely mounted on said shaft, a jam-nut having screw-threaded engagement therewith and cooperating with said gear for the purpose described, and means for operating said gear.

2. In a station-meter index, a recorder comprising a shaft and means for rotating the same, a cylinder loosely mounted on said shaft and adapted to carry a chart, a binding-screw carried by said cylinder and projecting radially outward beyond the same and adapted to engage said shaft, a recording instrument cooperating with said recorder-cylinder, and means for operating said recording instrument.

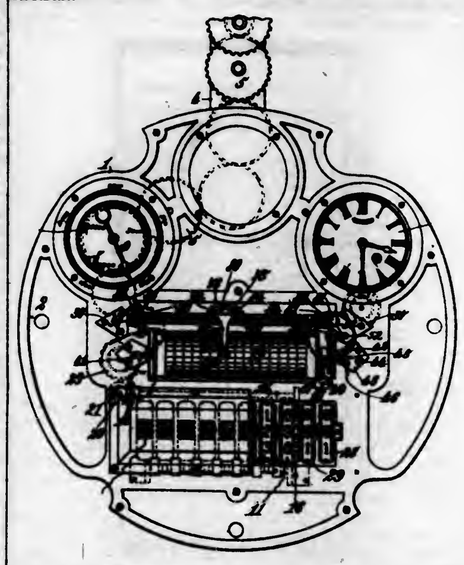

3. In a station-meter index a recorder comprising a cylinder having a swinging segment for clamping a chart to the cylinder, and means carried by said segment and adapted to yieldingly engage the ends of the cylinder for holding said segment in its clamping position.

4. In a station-meter index, a recorder comprising a cylinder having a swinging segment for clamping a chart to the cylinder and provided in its ends with recesses, and spring-pressed pins carried by said segment and adapted to engage in said recesses for holding said segment in its clamping position.

5. In a station-meter index, a recorder comprising a cylinder having a portion thereof cut away, a segment pivotally mounted in the ends of the cylinder and adapted to close against one edge of the cut-away portion of the cylinder, and a bar extending parallel with such edge but at a distance therefrom, substantially as described.

6. In a station-meter index, a recorder comprising a cylinder having a portion thereof cut away, a segment pivotally mounted in the ends of the cylinder and adapted to close against one edge of the cut-away portion of the cylinder, and a bar extending parallel with such edge but at a distance therefrom and projecting beyond the same, substantially as described.

7. In a station-meter index, a recorder comprising a cylinder having a segment thereof removed and pivotally mounted in the ends of the cylinder, radial plates projecting inward from said segment near the ends thereof, means carried by said plates and engaging the ends of the cylinder for holding the segment in a closed position, and a lifting device projecting through a curved slot in one end of said cylinder and secured to one of said plates for lifting said segment.

8. In a station-meter index, in combination with a recorder-drum, and means for rotating the same, a threaded shaft and means for rotating the same, a slidably-mounted carriage in mesh with said shaft, a recording instrument pivotally mounted on the outer end of said carriage and adapted to cooperate with said recorder-drum, and a spring-catch on said carriage adapted to engage the rear end of said instrument for holding it out of contact with said recorder-drum.

9. In a station-meter index, in combination with a recorder-drum and means for rotating the same, a threaded shaft and means for rotating the same, a slidably-mounted carriage in mesh with said shaft, a recording instrument pivotally mounted intermediate its ends on said carriage and adapted to cooperate with said recorder-drum, and a spring on said carriage adapted to engage the outer end of said instrument for holding it out of contact with said recorder-drum and to bear against the rear side of said instrument to hold it in yielding contact with said recorder-drum.

809,128. LEAF-HOLDER FOR USE IN TRANSFERRING ENTRIES. JOHN M. D. MCCORMICK, Alley, Ala. Filed Sept. 15, 1903. Serial No. 173,003.

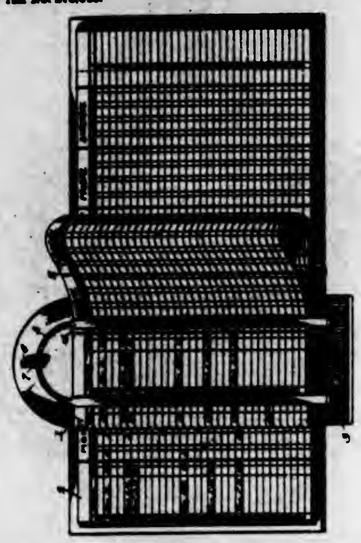

Claim.—1. The combination with a book, of means for holding leaves in transferring entries from one leaf to another, consisting of a base lying between folds in adjacent leaves, one leaf lying under the base and having a reverse fold from one side of the base so as to lie on top thereof, and the end portion of another leaf laid upon the base from the other side thereof, and a clamp for holding the leaves in such position upon the base, substantially as described.

2. The means for holding leaves in transferring entries from one leaf to another of a book, consisting of a base, a clamp hinged to the base and comprising two parallel members spaced apart and connected together at one end by a nosk opposite the hinged end, and means for holding the clamp in its position on the base, said means being, located at the opposite end of the base from where the clamp is hinged so as to engage the connecting-nosk of the clamp, substantially as described.

3. The means for holding leaves in transferring entries from one leaf to another of a book, consisting of a base formed of adjustable members to vary its length, a clamp hinged to the base and formed of adjustable members to vary its length, and means for holding the clamp in its position on the base, substantially as described.

809,129. COOKING UTENSIL. JOHN R. NYE, Waterville, Me. Filed Mar. 23, 1905. Serial No. 251,481.

Claim.—1. In a cooking utensil, the combination with a receptacle having a projecting skirt at the bottom thereof and a lid at the top, of a cover or dome adapted to fit over said receptacle and have its lower edge engage the skirt to provide a dead-air space thereabove and around the receptacle.

2. In a cooking utensil, the combination with a receptacle to receive the article to be cooked having a skirt projecting outwardly from the bottom thereof, a plurality of handles connected to the skirt and extending outwardly and upwardly, and a lid for the receptacle, of a dome or cover having its lower edge engaging the skirt and adapted to incase the entire receptacle and form a dead-air space thereabout.

3. In a cooking utensil, the combination with a receptacle to receive the article to be cooked having a skirt projecting outwardly from the bottom thereof, a plurality of handles connected to the skirt and extending outwardly and upwardly, and a lid for the receptacle, of a dome or cover having its lower edge engaging the skirt to surround the receptacle and form a dead-air space thereabout.

4. In a cooking utensil, the combination with a receptacle to receive the articles to be cooked, consisting of a body portion, a peripheral skirt or rim secured to the exterior of the bottom thereof and projecting outwardly, a plurality of handles having their short terminals connected to the skirt so that their handles project upward substantially parallel with the body of the receptacle, and a removable lid for the receptacle of a dome or cover adapted to have its lower edge engage the skirt and fit over the receptacle to form a dead-air space thereabout, consisting of a top having downwardly-projecting walls, and a handle carried by the top.

5. In a cooking utensil, the combination with a receptacle to receive the articles to be cooked, consisting of a body portion, a peripheral skirt or rim secured to the exterior of the bottom thereof and projecting upwardly, a plurality of handles having their short terminals connected to the skirt so that their handles project upward substantially parallel with the body of the receptacle and a removable lid or cover for the receptacle, of a dome adapted to have its lower edge engage the skirt and surround the receptacle to form a dead-air space therearound.

809,130. EQUALIZING WINDER FOR SPRING-MOTORS. CHRISTIAN PFEIFFER, New Britain, Conn., assignor to The New Britain Hardware Manufacturing Company, New Britain, Conn., a Corporation of Connecticut. Filed Nov. 18, 1903. Serial No. 181,701.

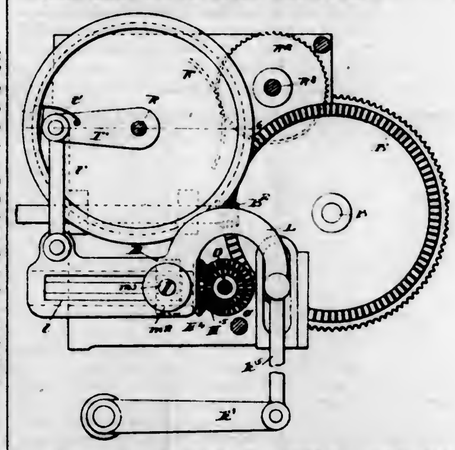

Claim.—1. The combination with a motor, of a winding mechanism, including a lever mechanism having an adjustable fulcrum, and means for shifting the fulcrum from the motor as it is being wound and unwound; substantially as described.

2. The combination with a motor having a transmitting-gear and a winding-gear, of a winding mechanism comprising a shaft geared to the winding-gear, a lever mechanism for rotating said shaft, a shifting fulcrum for the lever mechanism to vary the lever throw and extent of the winding, and operating connections between the said fulcrum and the transmitting and winding gears of the motor; substantially as described.

3. The combination with a motor having a transmitting-gear, and a winding-gear, of a lever mechanism operatively connected with the said winding-gear to wind the motor, a shifting fulcrum to vary the throw of the lever mechanism, gearing connecting the shifting fulcrum with the winding-gear of the motor and gearing connecting said shifting fulcrum with the transmitting-gear of the motor; substantially as described.

4. The combination with a motor having a transmitting-gear and a winding-gear, of a lever mechanism geared to the said winding-gear and including a shifting fulcrum-block, a tubular slotted shaft on which said shifting fulcrum reciprocates, a screw-shaft within the tubular shaft, a nut connecting the shifting fulcrum through said slot with the screw, gears on the ends of said tubular and screw shafts, and a second tubular and inner shaft geared respectively at one end with the first-named tubular and screw shafts, and at their other ends geared respectively to the said winding and transmitting gears of the motor; substantially as described.

5. The combination with a motor having a transmitting-gear and a winding-gear, of a shaft geared to the said winding-gear, for winding the motor, a lever mechanism for rotating said shaft, means for operating the lever mechanism, a shifting fulcrum for the lever mechanism to vary the throw thereof, and gearing connecting the said shifting fulcrum with the transmitting-gear and winding-gear of the motor, to shift the fulcrum back and forth as the motor is wound and unwound; substantially as described.

6. The combination with a motor having a transmitting-gear and a winding-gear, a shaft geared to the winding-gear and provided with a pulley or wheel, clutch-arms for rotating the wheel or pulley, slotted levers for rocking the clutch-arms, a fulcrum-saddle having an internal annular groove and provided with fulcrum trunnions or studs entering the lever-slots, mechanism for operating the levers, a longitudinally-slotted tubular shaft on which the said saddle slides, an inner screw-shaft, a nut extending through the shaft-slot into engagement with the screw-shaft, and having a lug projecting into the annular groove in the saddle and gearing connecting said tubular and screw shafts with the winding and transmitting gears of the motor; substantially as described.

7. The combination with a motor having a transmitting-gear, and a winding-gear, of a shaft geared to the said winding-gear and provided with a pulley or wheel, rocker-arms loose on the shaft, clutch devices at the rear ends of the arms to intermittently grip and release the wheel, longitudinally-slotted levers linked at their rear ends to the rear ends of said rocker-arms, a traveling fulcrum-forming saddle having trunnions entering the lever-slots, gearing for reciprocating the said saddle from the winding-gear and transmitting-gear of the motor, and rock-shafts connected to the slotted levers; substantially as described.

8. The combination with a motor having a winding-gear and a transmitting-gear, a transmitting-shaft meshing with the latter gear and provided with a loose transmitting-wheel and a clutch, a second oppositely-rotating transmitting-shaft loosely geared to the said transmitting-shaft and provided with a clutch and a transmitting-wheel, of a shaft geared to said winding-gear, an intermittent grip mechanism for rotating said shaft to wind the motor, and mechanism for controlling the throw of the intermittent grip mechanism from both the winding-gear and the transmitting-gear of the motor; substantially as described.

9. The combination with a motor having a transmitting-gear and a winding-gear, said winding-gear having an annular rim, a friction-clutch engaging the said rim, to prevent reverse rotation of the winding-gear, of a winding mechanism geared to said winding-gear, and a controlling mechanism for the extent of movement of the winding mechanism, and operatively connected to the said transmitting and winding gears of the motor; substantially as described.

10. The combination with a motor having a transmitting and a winding gear, the latter having an annular rim, a bracket mounted alongside said winding-gear and a wedge-like friction-block loose on the bracket and adapted to wedge against said rim and prevent reverse rotation of the winding-gear, of a winding mechanism geared to the said winding-gear, and a controller for controlling the extent of movement of the winding mechanism, and operative connections between the controller and the said transmitting and winding gears; substantially as described.

809,131. COTTON-GIN. FRANK PHELPS, Wellston, Okla. Filed Feb. 23, 1905. Serial No. 246,574.

Claim.—1. In a gin, the combination of the ginning member, brush, and brush-chamber, the ginning member and brush being so relatively disposed that matter centrifugally discharged from the ginning member will fall upon the top of the brush-chamber, and an upright divider-board upon the top of the brush-chamber, closely adjacent to the ginning member.

2. In a gin, the combination of the saws, means for removing the lint from the lower sides thereof, and a settling-chamber for motes, dirt and waste open to the exposed rear portions of the saws, and a divider-board in the bottom of said chamber having a concave front face immediately adjacent to the rear of the saws and an inclined back face slanting rearwardly downward from the peripheries of the saws toward the bottom of said settling-chamber.

3. In a gin, the combination of the saws, means for removing the lint from the lower side thereof, a receptacle for centrifugally-ejected motes, dust and waste particles located back of the saws below the axis of rotation thereof, and a divider-board between said receptacle and the saws closely adjacent to the latter.

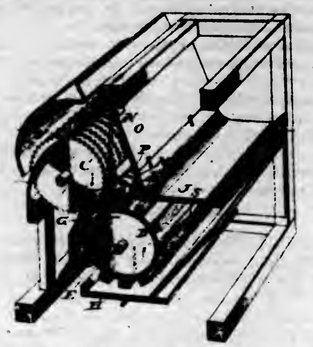

4. In a gin, the combination of the saws, means for removing the lint from the lower side thereof, a receptacle for centrifugally-ejected motes, dust and waste particles located back of the saws below the axis of rotation thereof, a divider-board between said receptacle and the saws adjacent to the latter, and a swinging gate having its lower end adapted to reach either the top of said divider-board or the opposite side of said receptacle to permit the discharge of such particles into said receptacle or not, as preferred.

5. In a gin, the combination of the saws, the lint-removing brush below the saws, a divider-board between the approaching peripheries of the saws and brush curved to the shape of the saws, and a deflector-board between the opposite or receding peripheries of the saws and brush.

6. In a gin, the combination of the breast-plate, saws, and lint-removing brush below the saws, the brush-chamber whose ceiling is back of the lower part of the saws, a dust or waste chamber above said ceiling, said chamber having a longitudinal recess or trough in its bottom, and a divider-board between said recess and the saws having a concave front face adjacent to the saws and a rearwardly downwardly slanting rear face.

7. In a gin, the combination of a ginning member or saws, the brush, and brush-chamber, the ginning member and brush being so relatively disposed that matter centrifugally discharged from the ginning member will fall upon the top of the brush-chamber, and an upper divider-board upon the top of the brush-chamber adjacent to the rear portion of the saws and curved in conformity therewith.

8. In a gin, the combination of the saws, means for removing the lint from the lower sides thereof, and a settling-chamber for waste, &c., opening to the exposed rear portions of the saws, a divider-board at the bottom of said chamber having a concave front face adjacent to the rear of the saws, a longitudinal trough or pocket back of said divider-board, and a conveyer therein.

9. In a gin, the combination of the saws, a brush-chamber lower than the saws having a removable ceiling supported upon the inside of the gin-frame, an inner discharge-chute having a hinged ceiling, a mote-receptacle above the brush-chamber, a swinging gate behind the saws adapted to permit or cut off the discharge of motes therewinto, the sides of the brush-chamber having circular openings axially alined with the brush, and removable coverings for the same, whereby access can be had to the ends of the brush and the rear of the saws and brush.

809,132. TICKET-HOLDER. NICHOLAS A. PLANCICH, San Francisco, Cal. Filed Aug. 3, 1905. Serial No. 272,463.

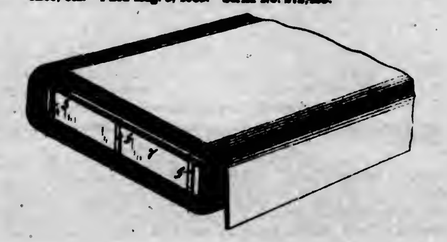

Claim.—1. An article of the class described, comprising a pin and a laterally-expanded head comprising a bottom cross-bar, side uprights, and top cross-bar, the cross-bars and uprights forming a slot extending transversely through the head parallel with the bottom cross-bar, substantially as described.

2. An article of the class described comprising a pin, and a laterally-expanded head comprising a bottom cross-bar, a top cross-bar over the bottom bar, the said bars being so secured so as to form a slot between, said top bar being depressed so as to act as a spring.

3. An article of the class described comprising a pin, provided with a flat surface to prevent the same from turning when inserted in place, and a laterally-expanded head comprising bottom and top cross-bars, side uprights, the cross-bar and uprights forming a slot extending parallel with the bottom cross-bar.

809,133. REPEATING-ALARM CLOCK. WILSON H. PORTER, New Haven, Conn., assignor to The New Haven Clock Company, New Haven, Conn., a Corporation of Connecticut. Filed Apr. 17, 1903. Serial No. 153,361.

Claim.—1. In a repeating-alarm clock, the combination with the time-train; of an alarm-train; an alarm-checking lever; a repeating-alarm lever normally yieldingly engaging said alarm-checking lever; a device operated by the time-train to intermittently release said repeating-alarm lever from engagement with said alarm-checking lever; and mechanism operated by the time-train to disengage said repeating-alarm lever from said releasing device, substantially as described.

2. In a repeating-alarm clock, the combination with the time-train; of an alarm-train; an alarm-checking lever; a repeating-alarm lever normally yieldingly engaging said alarm-checking lever; a device operated by the time-train to intermittently release said repeating-alarm lever from engagement with said alarm-checking lever; and mechanism for simultaneously disengaging the repeating-alarm lever from said releasing device, and engaging said alarm-checking lever to check the alarm-train, substantially as described.

3. In a repeating-alarm clock, the combination with the time-train; of an alarm-train; an alarm-checking lever; a repeating-alarm lever normally yieldingly engaging said alarm-checking lever; a device operated by the time-train to intermittently release said repeating-alarm lever from engagement with said alarm-checking lever; and mechanism operated by the time-train for disengaging the repeating-alarm lever from said releasing device except when the alarm-train is released, substantially as described.

4. In a repeating-alarm clock, the combination with the time-train; of an alarm-train; an alarm-checking lever; an alarm-lever adapted to engage said alarm-checking lever and operated by the time-train to periodically release the alarm-checking lever; a repeating-alarm lever normally yieldingly engaging said alarm-checking lever; a device operated by the time-train to intermittently release said repeating-alarm lever from engagement with said alarm-checking lever, said repeating-alarm lever being disengaged from said releasing device by said alarm-lever when the latter is in engagement with said alarm-checking lever, substantially as described.

5. In a repeating-alarm clock, the combination with the time-train; of an alarm-train; an alarm-checking lever; a repeating-alarm lever normally yieldingly engaging said alarm-checking lever; a device operated by the time-train to intermittently release said repeating-alarm lever from engagement with said checking-lever; and an alarm-lever adapted to simultaneously engage said alarm-checking lever to check the same and said repeating-alarm lever to disengage the latter from said releasing device, said alarm-lever being operated by the time-train periodically to simultaneously release said alarm-checking lever and said repeating-alarm lever, substantially as described.

6. In a repeating-alarm clock, the combination with the time-train; of an alarm-train; an alarm-checking lever; a repeating-alarm lever normally yieldingly engaging said alarm-checking lever; a device operated by the time-train to intermittently release said repeating-alarm lever from engagement with said alarm-checking lever; and mechanism operated by the time-train for simultaneously disengaging said repeating-alarm lever from said releasing device and engaging said alarm-lever, substantially as described.

7. In a repeating-alarm clock, the combination with the time-train; of an alarm-train; an alarm-checking lever; a repeating-alarm lever normally yieldingly engaging said alarm-checking lever; a device operated by the time-train to intermittently release said repeating-alarm lever from engagement with said alarm-checking lever; a lever operated by the time-train adapted to disengage said repeating-alarm lever from said releasing device, and to periodically release said repeating-alarm lever, substantially as described.

8. In a clock-movement, the combination with a time-train; of a lever rocked by said time-train; mechanism adapted to disengage said lever from said time-train and operated by said train to periodically release said lever, substantially as described.

9. In a repeating-alarm clock, the combination with a time-train; of an alarm-train; an alarm-checking lever; a repeating-alarm lever normally yieldingly engaging said alarm-checking lever; a ratchet-wheel operated by the time-train to intermittently release said repeating-alarm lever from engagement with said alarm-checking lever; and a lever operated by the time-train to disengage said repeating-alarm lever from said ratchet, substantially as described.

809,134. WIRE HINGE. CURTIS D. REECE and FREDERICK T. AUSTIN, Corydon, Iowa. Filed Apr. 1, 1905. Serial No. 253,280.

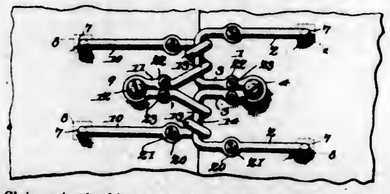

Claim.—A wire hinge comprising a pair of yoke-shaped members, the bow of each member being provided with an eye for the reception of a fastening, the ends of one of the yokes being bent laterally outward to form pintle elements lying in the plane of the member and the extremities of the pintle elements being bent at substantially right angles thereto and formed into attaching elements, the side of the other hinge member being loosely coiled around the pintle elements with their extremities formed into attaching elements disposed in substantial parallelism with the attaching elements of the first-mentioned hinge member.

809,135. PENCIL-HOLDER. ISAAC C. REESOR, El Paso, Tex. Filed July 6, 1905. Serial No. 268,267.

Claim.—1. A device of the class described, comprising pencil-clamping means provided with opposite clamping-jaws and having a resilient projecting portion, and a clamping jaw or lever supported by the said resilient projecting portion, said resilient projecting portion serving to hold the lever in engagement with a pocket or other portion of a garment.

2. A device of the class described, comprising pencil-engaging means provided with a loose coil having a projecting resilient portion, said pencil-engaging means being also provided with a pair of oppositely-disposed substantially U-shaped jaws curved to conform to the configuration of a pencil and arranged to embrace the same, the terminals of the jaws being separated, and a clamping-lever connected at an intermediate point with and supported by the projecting resilient portion, which forms a spring for holding the lever in engagement with the garment.

3. A device of the class described, comprising a pencil-receiving coil having means for positively engaging a pencil or the like and provided with a projecting resilient portion, and a lever formed integral with the pencil-receiving coil and connected with and supported by the resilient projecting portion, said lever consisting of opposite loops or arms, the outer end of one of the loops being bent at an angle and extended laterally, and the terminal of the material being coiled around the lever at its point of connection with the resilient projecting portion, which forms a spring for holding the lever in engagement with the garment.

4. A device of the class described, comprising clamping means for engaging a garment, a pencil-receiving coil forming a spring for the clamping means, and means independent of the coil and the said clamping means for engaging the opposite sides of a pencil.

5. A device of the class described, comprising clamping means for engaging a garment, a pencil-receiving coil forming a spring for the clamping means, and a pair of clamping-jaws connected with the coil and arranged to engage a pencil at opposite sides thereof.

809,136. VENEER-CUTTING MACHINE. JAMES J. RUSSELL, Milwaukee, Wis. Filed Mar. 26, 1904. Serial No. 200,695.

Claim.—1. In combination with the knife and presser-bar of a veneer-cutting machine, said presser-bar having a series of transversely-arranged slots in its under side, of a set of roughing-tools in said slots, each tool having longitudinal grooves on its under side and beveled at right angles to said grooves on its inner end, whereby a series of roughing or scoring points are formed on the inner end of said tool, said tools being arranged to score or roughen the veneer sheet as it is cut from the log, substantially as described.

2. In a stave-veneer-cutting machine the combination of the presser-bar having a series of transverse slots in its under side, a set of adjustable roughing-tools slidably fitted in said slots, and bolts tapped through the outer edge of the presser-bar for adjusting said roughing-tools toward the inner edge of the bar; with a cutting-knife arranged below the cutter-bar, with its cutting edge approximately opposite the working edges of the cutting-tools, substantially as described.

809,137. FLUSH HINGE. THOMAS F. SALING, Cora, Idaho. Filed June 15, 1905. Serial No. 265,360.

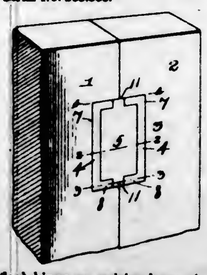

Claim.—1. A flush hinge comprising leaves 4, 4 formed with inturned flanges 8 having cut-away corners 9, a link 5 adapted to fit between said leaves and having stops 11 at its ends, to engage the cut-away corners of said flanges, and pivots connecting said link to the flanges of said leaves, substantially as described.

2. A flush hinge comprising leaves 4, 4 formed at their ends with inwardly-projecting flanges having beveled corners, and upon their inner sides with longitudinally-extending recesses, a link 5 disposed between the flanges of said leaves and having beveled edges to coact with the recesses in said leaves, and wedge-shaped stops at its ends to coact with the beveled corners of said flanges, and pivot-pins passed through said flanges and into said link, substantially as described.

809,138. MILK-PRESERVE AND PROCESS OF MAKING SAME. LEOPOLD LARASSE, Berlin, Germany, assignor to C. F. Boehringer & Soehne, Maschinen-Waldhof, Baden, Germany, a Firm. Filed Mar. 13, 1905. Serial No. 249,816.

Claim.—1. The process of preparing a milk-preserve, which consists in evaporating, at a temperature not exceeding 60° centigrade, a milk containing a substantial amount of living lactic-acid germs.

2. The process of preparing a milk-preserve, which consists in preparing a milk containing a substantial amount of living lactic-acid germs, and then evaporating said milk at a temperature not exceeding 60° centigrade.

3. The process of preparing a milk-preserve, which consists in evaporating, in a vacuum, at a temperature not exceeding 60° centigrade, a milk containing a substantial amount of living lactic-acid germs.

4. The process of preparing a milk-preserve, which consists in evaporating a milk containing a substantial amount of living lactic-acid germs, in a vacuum, at a temperature not exceeding 60° centigrade, while keeping the mass in motion.

5. The process of preparing a milk-preserve, which consists in evaporating to dryness, at a temperature not exceeding 60° centigrade, a milk containing a substantial amount of living lactic-acid germs.

6. The process of preparing a milk-preserve, which consists in evaporating to dryness, at a temperature not exceeding 60° centigrade, a milk containing a substantial amount of living lactic acid germs, and then grinding the resultant product.

7. The process of preparing a milk-preserve, which consists in preparing a milk containing a substantial amount of living lactic-acid germs, and then evaporating said milk to dryness at a temperature of about 53° centigrade.

8. The process of preparing a milk-preserve, which consists in preparing a milk containing a substantial amount of living lactic-acid germs, then evaporating said milk to dryness at about 53° centigrade, and grinding the resultant product to a fine powder.

9. As a new article of manufacture, a milk-preserve in the form of a powder, containing living lactic-acid germs and the non-aqueous constituents of the milk from which it is obtained and having an agreeable and slightly-acid flavor.

10. As a new article of manufacture, a milk-preserve, in the form of a powder containing living lactic-acid germs and the non-aqueous constituents of buttermilk and having an agreeable and slightly-acid flavor.

809,139. MEASURING-TAPE. EDMUND L. SAXTON, Lansing, Mich. Filed June 20, 1905. Serial No. 267,675.

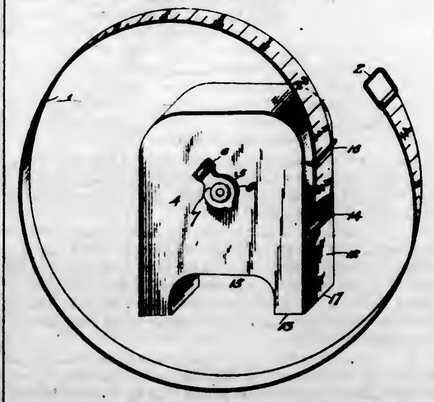

Claim.—A device of the character described, comprising a casing having two of its sides disposed in planes at right angles to each other, one of said sides being formed with an opening and the other with a finger-recess, a winding-drum in said casing, a measuring-tape wound upon said drum and passing through said opening, a combined tape-guide and indicator upon said casing, and graduations upon said tape so disposed that the measurement read at said indicator will include the distance from the outer end of said tape to the square end of said casing, substantially as described.

809,140. CURTAIN-FASTENER. JAMES SOMMERS, Newport, Ky. Filed Jan. 23, 1905. Serial No. 242,265.

Claim.—1. In a curtain-fastening, the combination of cap A having larger and smaller connecting-openings B and C; wall b at the edge of opening B; spring E lying around wall b and having depressible points projecting into opening C; tang b^5 on wall b for re-

curing spring E in position, and lugs b' on wall b for guiding spring E, substantially as specified.

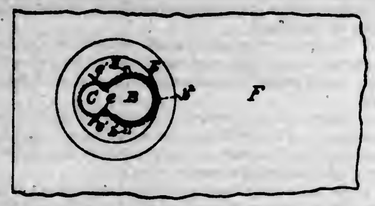

2. In a curtain-fastening, the combination of cap A having larger and smaller connecting-openings B and C; walls b and c on the edges of openings B and C; spring E lying around wall b and having depressible points projecting into opening C; tang b^3 on wall b for securing spring E in position, and lugs b' on wall b for guiding spring E, substantially as specified.

809,141. HOT-WATER BOTTLE. EDWARD J. SCHUTZ, Akron, Ohio. Filed Mar. 27, 1905. Serial No. 252,491.

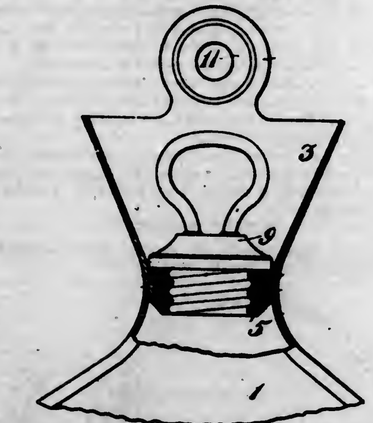

Claim.—1. A water-bottle having its body portion extended to form a filling-funnel and further having its neck provided with an integral inwardly-extending annular rib, and a stopper-receiving means clamped to said rib.

2. A water-bottle having its body portion extended to form a filling-funnel and further having its neck provided with an integral inwardly-extending annular rib, a socket-forming means arranged within said neck and having a portion thereof engaging one face of said rib, and means engaging said socket-forming means for clamping the socket to the rib, said socket-forming means adapted to receive the bottle-stopper.

3. A water-bottle having its body portion extended to form a filling-funnel and further provided with an integral inwardly-extending annular rib in the neck portion thereof, a socket-forming means arranged within said neck and having a portion thereof engaging one face of said rib, and means engaging said socket-forming means for clamping the socket-forming means to the rib, said socket-forming means adapted to receive the bottle-stopper.

4. A water-bottle having its body portion extended to form a filling-funnel and further provided with an integral inwardly-extending annular rib in the neck portion thereof, a socket-forming means having a post thereof engaging one face of said rib, a ring mounted upon the opposite face of said rib, and means engaging the socket-forming means for clamping the same to the rib, said socket-forming means adapted to receive the bottle-stopper.

809,142. HOT-WATER BOTTLE. EDWARD J. SCHUTZ, Akron, Ohio. Filed Mar. 27, 1905. Serial No. 252,492.

Claim.—A hot-water bottle having the walls thereof provided with a transversely-extending opening of sufficient size to permit the withdrawal therethrough of a core or mandrel on which the bottle is formed without injury to the bottle and further having that portion of the walls around the opening secured together, and a gromet extending through the opening, secured to the walls and constituting a lining for said opening.

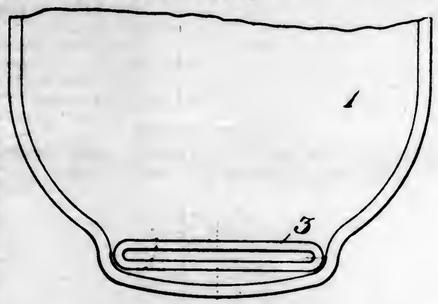

809,143. METHOD FOR MAKING HOT-WATER BOTTLES. EDWARD J. SCHUTZ, Akron, Ohio. Filed Sept. 18, 1905. Serial No. 278,958.

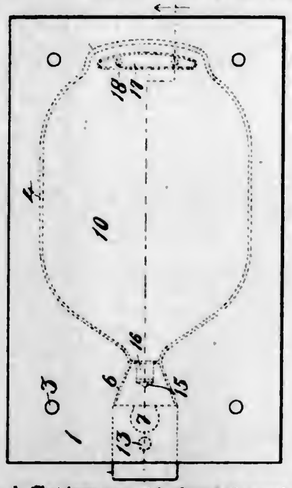

Claim.—1. That improvement in the art of manufacturing water-bottles and the like from rubber, which consists in vulcanizing the body and filling-funnel of a water-bottle as a unitary article around a suitable core or mandrel in a mold, and simultaneously forming in the body portion of said bottle an opening at a point distinct from the neck portion thereof, and then removing the core or mandrel through said opening.

2. That improvement in the art of manufacturing water-bottles and the like from rubber, which consists in vulcanizing the body and filling-funnel thereof as a unitary article around a suitable core or mandrel in a mold, and simultaneously forming in the body portion of said bottle an opening distinct from the neck portion thereof, then removing said core or mandrel through said opening and subsequently lining the opening through which said core or mandrel was withdrawn, whereby leakage from said bottle is prevented.

3. That improvement in the art of manufacturing water-bottles from rubber which consists in vulcanizing the body and filling-funnel of a water-bottle as a unitary article around a separable core or mandrel in a suitable mold, then withdrawing the core or mandrel by which the interior of the bottle is shaped through a suitable opening in the body of the bottle at a point distant from the neck portion thereof, and subsequently lining the opening through which the mandrel is removed by means of a gromet.

809,144. HORSESHOE. JOHN SMALLPEICE, Manchester, England. Filed Mar. 7, 1903. Serial No. 146,062.

Claim.—1. A detachable hoof-pad, comprising a metal frame, a bag secured thereto, an inflatable rubber pad within the bag, and means for detachably securing it to a permanent metal shoe.

2. In combination with a permanent metal horseshoe, having pins projecting from the rear ends and stud-holes in the shoe, a hoof-pad comprising a metal frame with turned-up ends, holes in said up-turned ends adapted to fit over the pins of the shoe, studs projecting through the hoof-pad frame and fitting the stud-holes in the shoe, and an inflatable bag stitched to said frame.

809,145. DOOR. NILS P. SJOGREN, Jamestown, N. Y. Filed June 2, 1905. Serial No. 263,443.

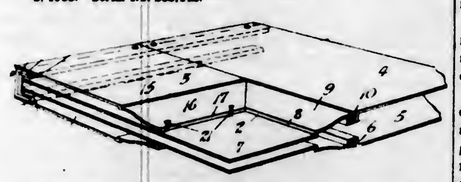

Claim.—1. A door comprising stile-sections, end sections interlocking with the stile-sections and extending transversely of the door, and panel-sections interlocking with the stile-sections between the end sections, said panel-sections being secured beyond said interlocking plane by the interlocking of the stile and end sections.

2. A door comprising stile-sections, end sections interlocking with the stile-sections and panel-sections interlocking with the stile-sections between the end sections, said panel-sections being secured to the stile-sections beyond their interlocking-plane.

3. A door comprising stile-sections, end sections interlocking with the stile-sections, and panel-sections interlocking with the stile-sections between the end sections, the side edges of the panel-sections being secured between the interlocking connections of the stile-sections and end sections.

4. A door comprising stile-sections provided with locking-flanges on their inner edges, end sections formed with locking-flanges to engage the locking-flanges of the stile-sections, and panel-sections formed on their side edges for a portion of their length with interlocking flanges to engage the interlocking flanges of the stile-sections between the end sections.

5. A door comprising stile-sections provided with locking-flanges on their inner edges, end sections formed with locking-flanges to engage the locking-flanges of the stile-sections, and panel-sections formed on their side edges for a portion of their length with interlocking flanges to engage the interlocking flanges of the stile-sections between the end sections, the remaining length of the side edges of the panel-sections being plain to engage between the interlocking flanges of the end sections and stile-sections.

6. A door comprising stile-sections, panel-sections secured thereto and end sections secured to the stile-sections, a keeper to support the edges of the end sections between the stile-sections, and a binder within the keeper to receive the ends of the panel-sections.

7. A door comprising stile-sections, panel-sections secured thereto and end sections secured to the stile-sections, a keeper to support the edges of the end sections between the stile-sections, a binder within the keeper to receive the ends of the panel-sections, and means passed through the end sections and between the binder and keeper to secure said parts together.

8. A door comprising stile-sections, panel-sections secured thereto and end sections secured to the stile-sections, a keeper to support the edges of the end sections between the stile-sections, a binder within the keeper to receive the ends of the panel-sections, and rivets passed through the end sections and between the binder and keeper, the approximate wall of the former being channeled to receive said rivets.

809,146. BRICK-TONGS. RASMUS SKOV and JOHN PEDERSEN, Aneta, N. D. Filed May 27, 1905. Serial No. 262,061.

Claim.—1. A device of the class described comprising a stationary and a relatively movable clamping member, and a detachable gripping-jaw mounted for longitudinal adjustment on said stationary member.

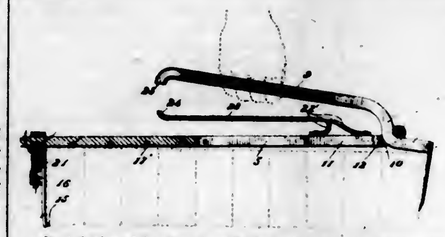

2. A device of the class described comprising a stationary and a relatively movable clamping member, a detachable gripping-jaw mounted for longitudinal adjustment on said stationary member, and means for locking the gripping-jaw in adjusted position.

3. A device of the class described comprising a stationary and a relatively movable clamping member, and a handle carried by the stationary member for coöperation with the movable member in receiving and releasing the load.

4. A device of the class described comprising a stationary clamping member provided with a series of locking-recesses, a movable clamping member pivotally associated therewith, an adjustable gripping-jaw mounted for longitudinal movement in the stationary member, and a locking-bolt carried by the gripping-jaw for engagement with said recesses.

5. A device of the class described comprising a stationary clamping member provided with a plurality of locking-recesses, a relatively movable clamping member pivotally supported on said stationary member and provided with a fixed terminal gripping-jaw, an adjustable gripping-jaw mounted for longitudinal movement on the stationary member, a perforated lug secured to said adjustable gripping-jaw and having a cam-slot formed in the walls thereof, a spring-pressed bolt slidably mounted in the perforated lug and adapted to engage the locking-recesses in said stationary member, and means for operating said bolt.

6. A device of the class described comprising a stationary clamping member having one end thereof bent upwardly and provided with a terminal slot, a relatively movable clamping member pivotally supported in said slot, and an adjustable gripping-jaw mounted for longitudinal movement on the stationary member.

7. A device of the class described comprising a stationary clamping member provided with a terminal upwardly-bent head having a slot or recess formed therein, the walls of which are curved or rounded, and a relatively movable clamping member provided with an intermediate curved shoulder for engagement with the walls of said slot.

8. A device of the class described comprising a stationary clamping member, a relatively movable clamping member pivotally mounted thereon and having one end thereof extended to form a longitudinally-disposed operating-handle, and an auxiliary handle secured to and spaced from the stationary member and adapted to engage the main handle for limiting the downward movement of the latter.

9. A device of the class described comprising a stationary clamping member, a relatively movable clamping member pivotally mounted thereon and provided with a longitudinally-disposed handle the end of which is bent downwardly, and an auxiliary handle secured to and spaced from the stationary member and provided with an upturned terminal for engagement with the free end of the main handle for limiting the downward movement of the latter.

809,147. TURBINE. CHARLES H. SMITH, York, Pa., assignor to S. Morgan Smith Company, York, Pa., a Corporation of Pennsylvania. Filed Sept. 27, 1904. Serial No. 226,176.

Claim.—1. In a turbine, the combination with the gate-operating mechanism and a set of gates, of an adjustable connecting member between each of the gates and said mechanism, said member provided with concentric and eccentric portions, said concentric portion attached to said mechanism and said eccentric portion connected with a gate.

2. In a turbine, the combination with the gate-operating mechanism and a set of gates, of removable shouldered adjustable con-

meeting members abutting against and attached to said mechanism and connected with the gates.

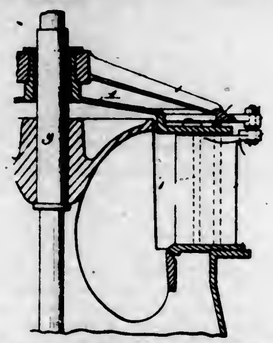

3. In a turbine, the combination with an apertured operating mechanism for the gates, and a set of gates each provided with a lug having an oval-shaped opening, of an adjustable connecting member between each of the gates and said mechanism, each of said members provided with a concentric and eccentric portion, said concentric portion adapted to extend in an aperture formed in said mechanism and said eccentric portion adapted to extend in the oval-shaped opening of the gate.

4. In a turbine, the combination with the gate-operating mechanism and a set of gates, of an adjustable connecting member between each of the gates and said mechanism, said member provided with a concentric and an eccentric portion, one of said portions attached to said mechanism and the other of said portions connected with the gate.

809,148. **TRAP.** CHARLES SPINLER, Blooming Prairie, Minn. Filed June 10, 1905. Serial No. 264,637.

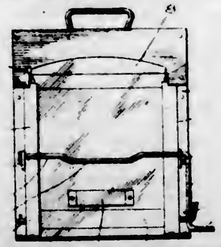

Claim.—1. In a trap the combination with a body portion having an opening therein, of a closure for the opening arranged for vertical movement into and out of operative position, a revoluble crank-shaft disposed across the opening for movement to bring its crank into and out of the path of movement of the door, said crank being adapted to receive the door thereupon to support the latter, means for holding the crank-shaft with its crank in position to support the door, and means operable by an animal within the body portion for moving the shaft-holding means out of operative position.

2. A trap comprising a body portion having an opening therein and having guides at the sides of the opening, a door slidably mounted in the guides for movement into and out of position to close the opening, a revoluble crank-shaft disposed for movement to bring its crank into and out of position to receive the door thereupon to hold the door in inoperative position, said door being arranged to move into operative position when the crank is moved out of position to support the door, means for holding the shaft with its crank in operative position, a trip-plate within the body portion, a trigger connected with the trip-plate and an arm carried by the crank-shaft, said trigger being adapted to receive the arm thereupon at times to hold the crank-shaft with its crank in operative position, said trip-plate being operable by an animal within the body portion to bring the trigger out of operative position.

3. A trap comprising a body portion having an opening therein, vertical guides located at the sides of the opening, a bottom for the body portion comprising a metallic plate having its forward edge portion bent inwardly upon itself and then upwardly, the upwardly-bent portion lying inwardly of the guides and a door slidably mounted in the guides, said door being arranged to lie with its lower edge forwardly of the upwardly-turned portion of the bottom and in close relation thereto when the door is in closed position.

4. In a trap the combination with a body portion having an opening therein, of a door movable into and out of position to close the opening, a crank-shaft arranged for movement into and out of the path of movement of the door said crank when in the path of movement of the door being arranged to hold the latter in inoperative position, an arm carried by the crank-shaft, a second shaft journaled in the body portion, a trigger carried by the second shaft and adapted to receive the arm of the crank-shaft thereupon to hold the crank-shaft with its crank in the path of movement of the door, a trip-plate mounted upon the second-named shaft within the body portion and lying with its forward edge portion depressed when the trigger is in position to receive the arm thereupon, said trip-plate being adapted to receive weight upon its rearward portion to remove the trigger out of operative position and a bait-holder within the body portion adjacent to the rearward portion of the trip-plate.

809,149. **ROTARY ENGINE.** DANIEL B. STALKER, Hot Springs, Ark., assignor of one-half to Arthur S. Koyer, Los Angeles, Cal. Filed Jan. 16, 1905. Serial No. 241,200.

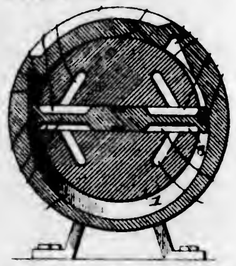

Claim.—1. In a rotary engine, a fixed hub having live-steam and exhaust ports therein, said hub having a cross-slot, a slidable valve mounted in said slot, a revoluble cylinder having a passage extending part way around the hub within said cylinder, said passage ending in a shoulder means to reciprocate said slidable valve, and means to place said live-steam port in communication with said passage.

2. In a rotary engine, a fixed hub having live-steam and exhaust ports therein, said hub having a cross-slot, a slidable valve mounted in said slot, a revoluble cylinder, having an eccentric passage ending with a pocket, mounted around said hub, and means to place said live-steam ports alternately into communication with said eccentric passage.

3. In a rotary engine, a fixed hub having live-steam and exhaust ports therein, said hub having a cross-slot, a slidable valve mounted in said slot, a revoluble cylinder, having an eccentric passage ending in a pocket mounted around said hub, an exhaust-passage communicating with said exhaust-ports, means to place said live-steam ports alternately into communication with said means to place said exhaust-ports, alternately into communication with said passage.

4. In a rotary engine, a fixed hub having live-steam and exhaust ports therein, said hub having a cross-slot, a slidable valve mounted in said slot, a revoluble cylinder, having an eccentric passage ending in a pocket, mounted around said hub, an exhaust-passage communicating with said exhaust-ports, said valve having means to place said live-steam ports alternately into communication with said eccentric passage, and means to place said exhaust-ports alternately into communication with said passage.

5. In a rotary engine, a fixed hub having live-steam and exhaust ports therein, said hub having a cross-slot, a slidable valve mounted in said slot, a revoluble cylinder, having an eccentric passage ending in a pocket at each end, each pocket opening toward the passage, said valve having means to place said live-steam ports alternately into communication with said eccentric passage, and means to convert said live-steam ports into exhaust-ports and vice versa, whereby the engine may be reversed.

6. In a rotary engine, a fixed hub having live-steam and exhaust ports therein, said hub having a cross-slot and passages from said live-steam and exhaust ports to said slot, a slidable valve mounted in said slot, said valve having recesses or cavities on both faces opposite said passages, a cylinder having an interior cut-out portion forming a passage between said hub and cylinder, said cylinder having an interior shoulder, and means to reciprocate said valve whereby the live-steam ports are alternately placed into communication with the passage between said cylinder and hub.

7. In a rotary engine, a fixed hub having live-steam and exhaust ports therein, said hub having a cross-slot and passages from said live-steam and exhaust ports to said slot, a slidable valve mounted in said slot, said slot having recesses or cavities on both faces opposite said passages, a cylinder having an interior eccentric cut-out portion forming a passage between said hub and cylinder, said last-named passage ending in a pocket, said sliding valve adapted to be reciprocated by the eccentric form of said passage and said live-steam ports are alternately placed into communication with said eccentric passage.

8. In a rotary engine, a fixed hub having four ports, a cross-slot, passages connecting each of said ports with said slot and an exhaust-passage connecting with another central port, a steam-chest arranged at the opening of said ports, a reversing-valve having a passage therein adapted to cover either pair of diametrically opposite ports and place them in communication with the exhaust-passage, a slidable valve mounted in said cross-slot, a revoluble cylinder having an eccentric cut-out portion ending in a pocket between said hub and cylinder, and means to place said live-steam ports alternately into engagement with said last-mentioned passage.

9. In a rotary engine, a fixed hub having a cross-slot, a slidable valve mounted in said slot, said valve having recesses or cavities in each of its faces separated by packing-strips, a rotary cylinder mounted around said hub and having an eccentric inner surface adapted to reciprocate said valve, said hub having live-steam and exhaust ports adapted to be alternately placed into communication with the interior of the cylinder by way of the recess in said valve, and said cylinder having pockets for the steam whereby said cylinder is rotated.

809,150. **HARROW.** GUSTAVUS A. TRUCKENBROD, Lamoille, Ill. Filed Apr. 4, 1905. Serial No. 253,814.

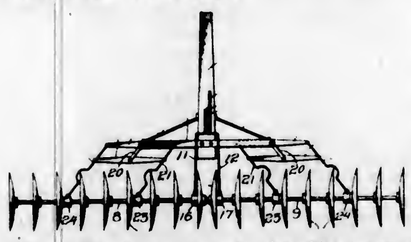

Claim.—1. In a harrow, the combination with a tongue, of cross-beams carried by said tongue, shafts, disks carried by the shafts, frames pivoted between the ends of said cross-beams and including each a pair of parallel members, a link connected with said members, draft-rods pivotally connected at the end of the said parallel members and to the said shaft, and means for adjusting the shafts to aline or lie at various angles, the draft-rods being in position to lie at right angles to their respective shafts when the latter are at a predetermined angle to each other.

2. A harrow comprising a tongue, shafts, cross-beams carried by said tongue, one of said beams being disposed above and the other of said beams being disposed below said tongue, draft-frames pivoted between the ends of said beams, said frames including spaced parallel members, a link pivotally connected at its ends to the said members at the point of pivotal connection of the said frame with the said beams, draft-rods having one of their ends pivotally connected to said parallel members and having their other ends pivotally connected to said shaft, and means for adjusting the said shafts to aline or lie at various angles, the draft-rods being so positioned as to lie parallel to each other at all times and at right angles to their respective shafts when the latter are at a predetermined angle to each other.

809,151. **AUTOMATIC WAGON-BRAKE.** EVERETT F. VEATCH, Pulse, Kans. Filed June 3, 1905. Serial No. 263,573.

Claim.—1. In a wagon-brake, the combination of the front and rear axles, a tongue connected with the front axle, a housing on the tongue provided with an opening through its upper face, a doubletree slidably mounted in the housing, a block pivoted in the opening in the housing for retaining the doubletree in its forward position, a brake-beam supported adjacent to the rear axle, brake-shoes at either end of the beam, pairs of oppositely-disposed toggle-levers connecting the ends of the brake-beam with the rear axle, rods connecting the joints of the corresponding levers, toggle-levers connecting the joints of the respective pairs of levers, a rod connecting the joints of the last-named toggle-levers, a pulley on the rod, a cable secured to the pulley on the last-named rod and passing around the first-named rods and under the pulley to the doubletree, a spring secured to the brake-beam, a screw-threaded rod traversing the rear axle and connected with the spring, and a crank for manipulating the rod.

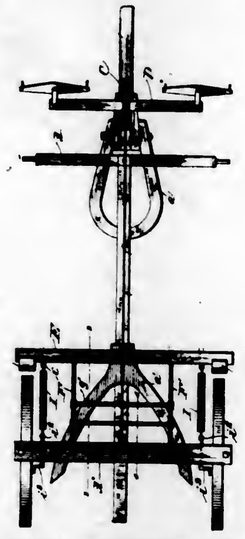

2. In a wagon-brake, the combination of the front and rear axles, a tongue connected with the front axle, a doubletree slidably mounted on the tongue, means for retaining the doubletree in its forward position, a brake-beam supported adjacent to the rear axle, brake-shoes at either end of the beam, pairs of oppositely-disposed toggle-levers connecting the ends of the brake-beams with the rear axle, rods connecting the joints of the corresponding levers, toggle-levers connecting the joints of the respective pairs of levers, a rod connecting the joints of the last-named toggle-levers, a cable encircling the rods and connected to the doubletree, a spring connecting the brake-beam with the rear axle, and means for adjusting the spring.

3. In a wagon-brake, the combination with the front and rear axle, a tongue connected with the front axle, a doubletree slidably mounted on the tongue, means for maintaining the doubletree in its forward position, a brake-beam supported adjacent to the rear axle, toggle-levers connecting the ends of the brake-beam with the rear axle, means for maintaining the toggle-levers normally broken, and means connecting the doubletree and the toggle-levers for extending the same.

4. In a wagon-brake, the combination of the front and rear axle, the tongue connected with the front axle, a doubletree slidably mounted on the tongue, a brake supported adjacent to the rear axle, toggle-levers connecting the brake with the rear axle, means for maintaining the toggle-levers normally broken, and means connecting the doubletree and the toggle-levers for extending the same.

5. In a wagon-brake, the combination with the front and rear axles, the tongue connected with the front axle, a doubletree slidably mounted on the tongue, braking mechanism supported adjacent to the rear axle, toggle-levers connecting the braking mechanism with the rear axle, means for maintaining the toggle-levers normally broken, and means connected with the doubletree for extending the same.

6. In a wagon-brake the combination with the front and rear axles of a doubletree associated with the front axle, braking mechanism, toggle-levers connecting the braking mechanism with the rear axle, means for maintaining the toggle-levers normally broken,

and means whereby traction on the doubletree may extend the toggle-levers to relax the brake.

7. In a wagon-brake, the combination with the front and rear axles, a normally operative brake, toggle-levers connecting the brake with the rear axle, and means whereby traction on the doubletree may extend the toggle-levers to relax the brake.

809,152. PIPE-WRENCH. GEORGE W. WATTS, San Francisco, Cal., assignor to Benjamin F. Watts, trustee, San Francisco, Cal. Filed Aug. 28, 1899. Renewed June 8, 1905. Serial No. 264,236.

Claim.—1. A wrench comprising a two-part handle and two jaws, each jaw forming a part and continuation of one member of the handle, one jaw having a toothed surface in line with its handle member, and the other jaw having a plain surface permanently at an angle to its handle member, and to the toothed jaw, means for adjusting the jaws, and a hinge-joint connecting the handle members.

2. A wrench comprising a two-part handle and two jaws, each jaw forming a part and continuation of one member of the handle, one jaw being in line with its handle member, and having a recess and a superficially-toothed plate in said recess, and the other jaw having a plain surface permanently at an angle to its handle member and to the toothed jaw, means for adjusting the jaws, and a hinge-joint connecting the handle members.

809,153. JOINT FOR BRACELETS. NILS C. WALLENSTEIN, Central Falls, R. I., assignor to J. M. Fisher & Company, a Firm. Filed Sept. 5, 1905. Serial No. 276,960.

Claim.—1. A bracelet constructed of tubing and having a joint formed of two separate hinge members, and said members having engaging means for positively drawing the hinged portion of the bracelet tightly together as said bracelet is closing.

2. A bracelet constructed of tubing and having a joint formed of two separate members fixed into the ends of said tubing, and said members having means whereby one of said members engages the other to positively draw the hinged portion of the bracelet tightly together as said bracelet is closing.

3. A bracelet, constructed of tubing, and having a joint formed separate and inserted into said tubing said joint being composed of two interlocking members and a link connecting said members together.

4. In a bracelet, a joint composed of two interlocking members, a pivoted link loosely connecting said members together, and means for drawing the joint tightly together when the bracelet is closed.

5. In a joint for a bracelet, a tongue member, a grooved member, the tongue in said first-named member adapted to engage and reciprocate in the groove in said second-named member, and a link connecting said members together.

6. A bracelet constructed of tubing and having a joint comprising two interlocking members, a swinging link connecting said members together, and means in said members whereby the ends of said tubing will be brought tightly together when the bracelet is closed.

7. In a joint for a bracelet, a tongue member, a grooved member, the tongue in said first-named member adapted to engage and reciprocate in the groove in said second-named member, a link connecting said members together, means in said members whereby they will be drawn together when closed, and means in said members for limiting the extent of opening of the hinge.

8. A bracelet constructed of tubing and having a joint comprising a member fixed into one end of the tubing, a second member fixed into another end of the said tubing, means including a swinging link for connecting these two members together, and means in said members whereby the ends of said tubing will be drawn together when the bracelet is closed.

9. A bracelet constructed of tubing and having a joint comprising a grooved member fixed into one end of the tubing, a tongue member fitted into another end of said tubing, said tongue being adapted to engage and reciprocate in the groove in said grooved member, a swinging link adapted to connect these two members together, and means in said members whereby the ends of said tubing will be brought tight together when the bracelet is closed.

10. A bracelet constructed of tubing and having a joint comprising a member fixed into one end of the tubing, a second member fixed in another end of the tubing, means including a swinging link for connecting these two members together, a hooked end piece in one of said members, a protuberance on the other member having a wall slanting from its apex away from the end of the tube, whereby said hooked member is adapted to hook over and engage said slanting wall to draw the two members together while the bracelet is being closed.

11. A bracelet constructed of tubing and having a joint comprising a grooved member fixed into one end of the tube, a tongue member fitted into an adjacent end of said tube, said tongue being adapted to engage and reciprocate in the grooved portion of said grooved member, a swinging link adapted to connect these two members together, the grooved member having a hooked end, a protuberance on the other member having a wall slanting from its apex away from the end of the tube whereby said hooked end is adapted to engage said slanting wall to draw the two members tightly together when the bracelet is being closed.

809,154. HEATING APPARATUS. WILLIAM S. WASHBURN, Brockton, Mass. Filed Aug. 23, 1905. Serial No. 275,397.

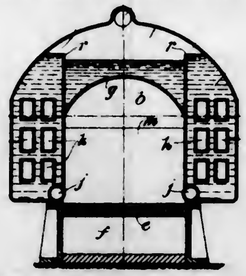

Claim.—1. In a heating system for buildings, a heating apparatus having a main heating portion located in close proximity to the main source of heat and adapted to be connected with the supply end of a system of heating-pipes, and a preliminary heating portion located beside said main heating portion, having provisions at its lower part for connection with the return end of the system and opening at its upper part into the main heating portion, whereby the water supplied by the return-pipe is caused to rise in the preliminary heating portion and then to flow into the main heating portion, where it receives the final increment of heat.

2. In a heating system for buildings, a heating apparatus having a main heating portion and a preliminary heating portion opening into, and located below the top of, the main heating portions, said portions having provisions for connection respectively with the supply and return ends of the heating system, and the main heating portion being close to the hottest part of the fire and so arranged that the hottest water is acted upon only by the hottest gases and is protected from contact with the cooler gases, while the preliminary heating portion is arranged to be acted on by gases which have delivered a part of their heat to the main heating portion.

3. In a heating system for buildings, a heating apparatus having a main heating portion located in close proximity to the main source of heat and adapted to be connected with the supply end of a system of heating-pipes, a preliminary heating portion located beside said main heating portion, having provisions at its lower part for connection with the return end of the system and opening at its upper part into the main heating portion, and a gas-outlet leading from the fire-space through the preliminary heating portion, whereby the water supplied by the return-pipe is first heated partially by the products of combustion and caused to rise in the preliminary heating portion and then to flow into the main heating portion, where it receives the final increment of heat.

4. In a heating system for buildings, a heating apparatus having a main heating portion located in close proximity to the main source of heat and adapted to be connected with the supply end of a system of heating-pipes, a preliminary heating portion located beside said main heating portion, having provisions at its lower part for connection with the return end of the system and opening at its upper part into the main heating portion, and a system of passages leading from the fire-space through the preliminary heating portion to an outlet, for conducting through such portion the products of combustion after they have given up a portion of their heat to the water in the main heating portion, whereby the water supplied by the return-pipe is first heated partially by the products of combustion and caused to rise in the preliminary heating portion and then to flow into the main heating portion, where it receives the final increment of heat.

5. A heating apparatus for buildings, having a main heating portion in close proximity to the main source of heat and adapted to be connected with the supply end of a system of heating-pipes, a preliminary heating portion located beside the main heating portion and below the top thereof, having provisions at its lower part for connection with the return end of the system and opening at its upper part into the main heating portion, and flues leading from the fire-chamber through the preliminary heating portion, and surrounded by the water therein, to an outlet for carrying off the products of combustion, whereby the water supplied by the return-pipe is heated partially and caused to flow upwardly through the preliminary heating portion into the main heating portion where it receives the final increment of heat, and whereby a relatively low level of water in the heater is permitted.

6. A steam-heating apparatus for buildings, having a steam-generating chamber in close proximity to the main source of heat, a water-receiving portion located mainly below the water-level in the steam-chamber, having provisions at its lower part for connection with the return end of a system of heating-pipes and opening at its upper part into the steam-chamber, and passages leading from the fire-box through the preliminary heating portion to an outlet for conducting therethrough the products of combustion after they have delivered a part of their heat to the water in the steam-chamber, where by the return-water is heated and a low water-level in the heater permitted.

7. In a heating system a heating apparatus having a main heating portion located in close proximity to the main source of heat and adapted to be connected with the supply end of a system of heating-pipes, a preliminary heating portion beside and below the main heating portion having provisions at its lower part for connection with the return end of the heating system and having an opening at its upper part communicating with the main heating portion, and a wall or partition in the main heating portion connected to the walls thereof and extending laterally across said opening and downward below the water-level, there being provided a vent-space between the upper edge of said wall or partition and the top of the main heating portion.

809,155. AUTOMATIC BRAKE FOR SLEDS. BENJY M. WHEARE, Balsam Lake, Wis. Filed Apr. 22, 1905. Serial No. 256,527.

Claim.—1. The combination with a sled, of a toothed head movable into and out of contact with the road-bed, a variable-action friction member operative to frictionally resist the rotation of said toothed wheel, and a connection for moving said head into contact with the road-bed and for setting the frictional brake under a frictional tension depending on the force transmitted through said operating connection, substantially as described.

2. The combination with a sled having a pole, of a push-rod having a limited movement on said pole, a draft-equalizer applied to the rear portion of said push-rod, a neck-yoke operative on the forward end of said push-rod, a pivoted frame applied to said sled, a toothed wheel carried by the free end of said frame and engageable with the road-bed, a friction-brake operative to resist rotation of said toothed head, and a connection from the said push-rod to said friction-brake, for setting said brake under a rearward movement of the said push-rod, substantially as described.

3. The combination with a sled having a pole, of a frame pivoted to said sled with its free end projecting forward and transverse shaft journaled in the free portion of said pivoted frame, a pair of toothed heads carried by said shaft and engageable with the road-bed, a friction-drum on said shaft, a brake-strap attached at one end of said frame and working on the periphery of said friction-drum, a push-rod extending along said pole, and having a longitudinal movement with respect thereto, a draft-equalizer applied to the rear portion of said push-rod, neck-yoke operating on the forward end of said push-rod, a rod attached to the rear end of said push-rod, and with the free end of said pivoted frame for raising the latter and said toothed heads under a forward movement of said push-rod, and a rod attached to the rear end of said push-rod and to the free end of said brake-strap for setting the brake under a rearward movement of said push-rod, substantially as described.

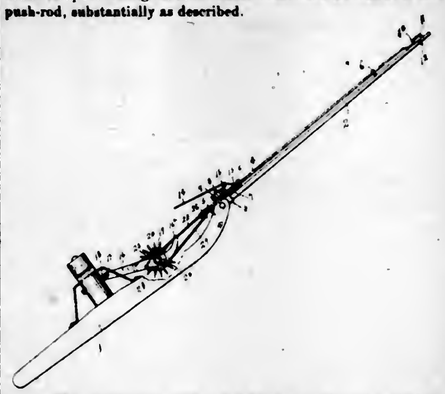

4. The combination with a sled having a pole and a chafing-plate applied to the rear portion of said pole, and a frame 16 pivotally attached at its rear end to said sled, a shaft 19 loosely journaled in the forward portion of said frame 16, and provided with toothed heads 20, and with the intermediate friction-drum 21, brake-strap 22 attached at one end to said frame 16 and frictionally engaging the periphery of said drum 21 and push-rod 4 having a sliding movement on said pole, a draft-equalizer applied to the rear portion of said push-rod and neck-yoke, operative on the forward portion of said push-rod, a spring-latch cooperating with said chafing-plate 7 to hold said push-rod in a forward position, said push-rod having a head at its rear end for limiting its forward movement, a rod 29 attached to the rear end of said push-rod 4, and into the free end of said frame 16 for raising said toothed heads out of contact with the road-bed under a forward movement of said push-rod, and the rod 25 attached to the rear end of said push-rod 4, and connected to the free end of said brake-strap 22 and serving to set the brake under a rearward movement of said push-rod 4, substantially as described.

809,156. EYEGLASS-MOUNTING. GEORGE W. WELLS, Southbridge, Mass. Filed May 26, 1905. Serial No. 263,336.

Claim.—1. In an eyeglass-mounting, a post of flat or non-circular shape in cross-section, and having two attaching lugs or projections on each end thereof.

2. In an eyeglass-mounting, a post having two attaching lugs or projections on each end thereof.

3. In an eyeglass-mounting, the combination with a lens strap or rim, having an opening therein, and the nose-bridge and nose-guard, each having an opening in its attaching end, of a post having an attaching lug or projection on each end, to enter said opening in the strap or rim and said openings in the attaching end of the nose-bridge and nose-guard, and be secured therein.

4. In an eyeglass-mounting, the combination with the lens-strap having an opening therein, and the nose-bridge and nose-guard, each having an opening in its attaching end, of a post of flat or non-circular shape in cross-section, and having an attaching lug or projection on each end, to enter said opening in the strap and said openings in the attaching end of the nose-bridge and nose-guard, and be riveted therein.

3. In an eyeglass-mounting, the combination with a lens strap or wire, and the nose-bridge and nose-guard, each having an opening in its attaching end, of a post secured to the lens strap or wire, and having an attaching lug or projection thereon, to enter the openings in the attaching end of the nose-bridge and nose-guard, and be secured therein.

809,157. PHOTOMECHANICAL MULTICOLOR-PRINTING. MAURICE H. WEIL, Philadelphia, Pa. Filed Dec. 17, 1903. Serial No. 186,804.

Claim.—1. An improved process of photomechanical multicolor-printing, which consists in first preparing the required set of primary color-positives of the object or picture sought to be reproduced, and then preparing therefrom the negatives which are transferred to stone or copper, by interposing in the production of each negative in the set for a multicolor impression a single screen prepared with an irregular, grain or stipple pattern and which is thereby adapted to be so used without shifting its position during each of the several exposures; substantially as described.

2. An improved process of photomechanical multicolor-printing, which consists in preparing primary color-negatives for transfer to copper or stone, by simultaneously interposing in the production thereof the requisite color-filter for each negative in the set and a single screen etched or otherwise prepared with an irregular, grain or stipple pattern and which may be maintained in one position and without shifting during the exposure; substantially as described.

3. An improved process of producing photomechanical multicolor-prints, without line effects, which consists in preparing the copper or stone printing-surfaces from a set of negative films in the production of each of which the requisite color-filter and a screen of irregular, grain or stipple pattern has been interposed; and then producing the finished picture by superposing impressions from said plates or stones, one over the other, in proper register; substantially as described.

809,158. WEFT-REPLENISHING LOOM. CHRISTOPHER WHALLEY, Clitheroe, England. Filed July 21, 1905. Serial No. 269,494.

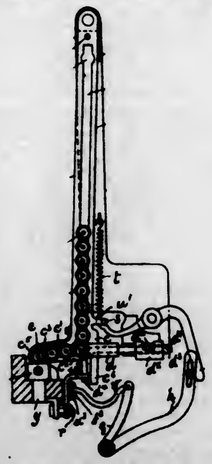

Claim.—1. Apparatus for automatically replenishing the weft in loom-shuttles, comprising a bracket, a magazine for containing cops, consisting of an L-shaped frame suspended from said bracket, said magazine adapted to swing from its point of suspension toward the slay, and means adapted to force a cop into the shuttle from the mouth of said magazine as it swings from said slay.

2. A magazine for automatic weft-replenishing looms, comprising a swinging L-shaped slotted bar supporting a number of cops and feed means for forcing the cop at the bottom of the slotted bar from the magazine as it swings, into a shuttle, upon the failure of a cop therein.

3. A magazine for automatic weft-replenishing looms, comprising a slotted L-shaped pivoted frame, a projection *d* in the path of said slot in the lower leg of the L-shaped frame, and means for oscillating said frame upon the failure of the weft, in combination with the slay and shuttle and means to bring the shuttle beneath the open end of the slotted frame and to engage said frame to move it against said projection, whereby a spindle with a cop thereon will be forced from the frame into the shuttle.

809,159. DISPENSING BOTTLE OR JAR. RICHARD M. WILLIS, New York, and ALONZO A. DU MOND, Rochester, N. Y.; said Du Mond assignor to said Willis. Filed Sept. 20, 1905. Serial No. 279,235.

Claim.—1. A hermetically-sealed bottle or jar, provided at each end with a narrow discharge-aperture ordinarily closed by a breakable closure, substantially as described.

2. A hermetically-sealed bottle or jar made of a single piece of glass and provided with breakable ends and weakened portions near said ends, discharge-apertures being left when said ends are broken off, substantially as described.

3. A bottle or jar with its top hermetically sealed and provided with a weakened portion and with a sealed portion, and with the bottom provided with a projecting portion which can be easily broken off, substantially as described.

809,160. MECHANICAL MOVEMENT. RICHARD T. WINGO, Providence, R. I., assignor to Brown and Sharpe Manufacturing Company, Providence, R. I., a Corporation of Rhode Island. Filed May 31, 1905. Serial No. 263,007.

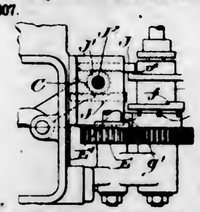

Claim.—1. The combination with a clutch, of rotary and non-rotary members coöperating to disengage said clutch and hold it out of operation, means for withdrawing a non-rotary member from engagement with a rotary member and simultaneously moving a non-rotary member into the path of a rotary member, substantially as described.

2. The combination with a clutch, of one or more cams, carried by the clutch, one or more abutments for coöperating therewith to hold the clutch out of operation, means for disengaging an abutment from a cam to release the clutch and simultaneously moving an abutment into position to throw the clutch out of operation, substantially as described.

3. The combination with a clutch, of one or more cams carried by the clutch, two abutments coöperating therewith to hold the clutch out of operation, connections between the abutments for moving one into the path of a cam as the other is disengaged from a cam, substantially as described.

4. The combination with a clutch, of a plurality of cams carried by the clutch, two abutments for coöperating therewith to hold the clutch out of operation, connections between the abutments for moving one into the path of the cam as the other is disengaged from a cam, substantially as described.

809,161. WASHBOWL-VALVE. DAVID W. YORK, Gardiner, Me. Filed Apr. 28, 1905. Serial No. 257,851.

Claim.—1. A bowl provided with a discharge-opening and a by-pass, a valve-casing having its upper end positioned within said discharge-opening and provided with a waste-pipe formed integral therewith and having communication at an upper and lower point with the valve-casing, said valve-casing being provided with an opening arranged in alinement with said by-pass, a valve mounted within said casing, and means for operating the same.

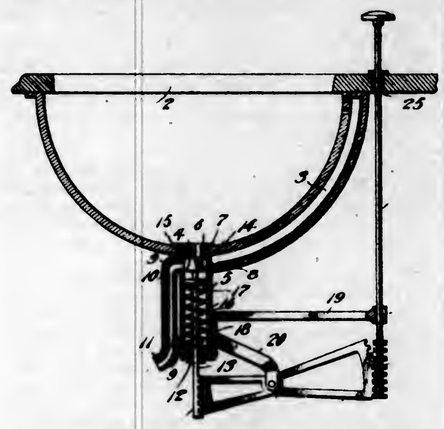

2. A water-bowl provided with a discharge-opening and a by-pass, a valve-casing having its upper end positioned within said discharge-opening and provided with a waste-pipe having communication at an upper and lower point with said valve-casing, said casing being provided with an opening arranged in alinement with said by-pass, a bearing-nut threaded in the lower end of said valve-casing, a valve-rod having its lower end provided with a rack and having its upper end journaled within said bearing-nut and positioned within the casing, a valve carried by the upper end of said rod, a spring adapted to normally retain the valve seated, a bracket carried by said casing and provided with a horizontally and a downwardly projecting bracket-arm, a rocking element consisting of two diametrically-opposed segmental gear elements, one of said gear elements being in mesh with the rack portion of the valve-rod, and an operating-bar journaled in a bearing in a horizontal bracket-arm and provided with a rack in mesh with the other segmental gear element.

809,162. CIGAR. CHARLES F. SENKER, New York, N. Y. Filed Dec. 9, 1904. Serial No. 236,063.

Claim.—1. A cigar having its butt-end compressed around and adjacent to the wrapper and binder and formed with a loose projecting figure integral with the filler, said figure being inclosed by the compressed portion, whereby the cigar is sealed against escape of moisture and an igniting-surface provided, substantially as described.

2. A cigar having its butt-end compressed at the edges thereof, and a projecting portion surrounded by the compressed portion and provided with perforations that extend back into the body of the cigar.

809,163. DEMOUNTABLE BUILDING. JOHANN ARAM, Prakfalu, Austria-Hungary. Filed Dec. 27, 1904. Serial No. 238,478.

Claim.—1. A knockdown building comprising in its construction a floor-frame and a ceiling-frame, building units arranged in pairs, one behind the other between said floor and ceiling frames and connected by transverse cross-bars at desired distances apart, each of said units consisting of a wooden frame having a foraminous metal sheet secured thereto and provided with a casting of artificial stone, and means for connecting said units together in the edgewise relation.

2. A knockdown building comprising in its construction a series of beams each one of which has secured to one end an angle-iron provided at one end with projections, and rafters resting at one end on said beams, said rafters being arranged in pairs secured together transversely by screws and provided with angle-irons engaging the projections on the angle-irons on one or the other of said beams.

809,163.

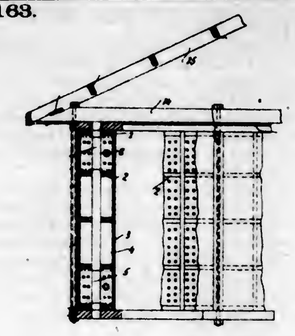

809,164. HOT-WATER HEATING APPARATUS. WARWICK H. BEANES and HUGH WALTON, Peterborough, England. Filed Mar. 28, 1905. Serial No. 252,456.

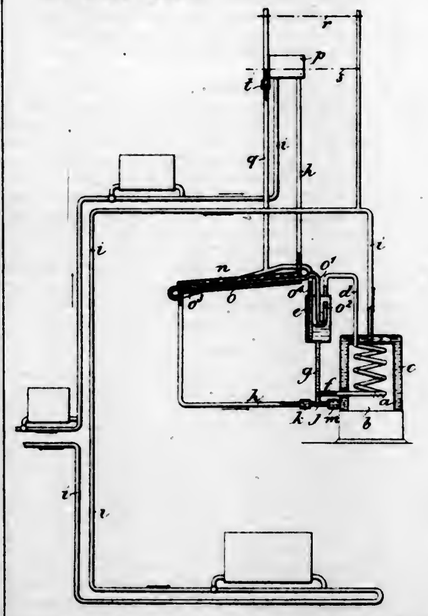

Claim.—1. Hot-water heating apparatus comprising a hot-water-circulating conduit including a water-heater, a separate steam-generator, a water-displacement vessel arranged outside of and connected to said steam-generator and to said conduit, a condenser adapted to be placed in connection with said vessel each time a predetermined quantity of water is forced therefrom into said conduit, and valves arranged to cause the water to flow in the proper direction through said conduit.

2. Hot-water heating apparatus comprising a water-circulating conduit including a water-heater, a separate steam-generator connected to said conduit, a water-displacement vessel connected at its upper end to said steam-generator and at its lower end to said conduit, a condenser adapted to be connected to said displacement vessel each time a predetermined quantity of water is forced therefrom into said conduit, and valves arranged to cause the water to circulate through said conduit but not through said steam-generator.

3. Hot-water heating apparatus comprising a water-circulating conduit including a water-heater and provided with water-controlling valves, a combined water-displacement vessel and steam-generator arranged external to said conduit but connected thereto at one point, and a condenser adapted to be placed in communication

with said vessel each time a predetermined quantity of water is forced therefrom into said conduit.

4. Hot-water heating apparatus comprising a water-circulating conduit including a water-heater and controlling-valves, a displacement vessel connected to said conduit between two of said valves, a separate steam-generator having its upper and lower ends in communication with the upper and lower ends respectively of said vessel, and a condenser adapted to be placed in communication with said vessel each time a predetermined quantity of water is forced therefrom into said conduit.

5. Hot-water heating apparatus comprising a water-circulating conduit including a water-heater and two non-return valves opening in the same direction, a water-displacement vessel connected to said conduit between said valves, a separate steam-generator of small capacity having its upper and lower ends in communication respectively with the upper and lower ends of said vessel, and a condenser adapted to be placed in connection with said vessel each time a predetermined quantity of water is forced therefrom into said conduit.

6. In hot-water heating apparatus the combination with a water-circulating conduit including a water-heater and non-return valves opening in the same direction, of a water-displacement vessel having a discharge-pipe connected to said conduit between said valves, a steam-generator of relatively small capacity connected at its upper end to said vessel and at its lower end to said discharge-pipe, and a condenser adapted to be placed in connection with said vessel each time a predetermined quantity of water is forced therefrom into said conduit.

7. Hot-water heating apparatus comprising a water-circulating conduit including a water-heater and two non-return valves opening in the same direction, a water-displacement vessel connected to said conduit between said valves, a separate steam-generator of small capacity having its upper and lower ends in communication respectively with the upper and lower ends of said vessel, a downtake-pipe arranged external to said vessel and connecting the top and bottom of said steam-generator, and a condenser adapted to be placed in connection with said vessel each time a predetermined quantity of water is forced therefrom into said conduit.

8. Hot-water heating apparatus comprising a water-circulating conduit including a water-heater and two non-return valves opening in the same direction, a water-displacement vessel connected to said conduit between said valves, a separate steam-generator of small capacity having its upper and lower ends in communication respectively with the upper and lower ends of said vessel, a downtake-pipe arranged external to said vessel and connected to the lower end of said steam-generator, a U-shaped tube connecting the upper end of said pipe to the top of said steam-generator, and a condenser adapted to be placed in connection with said vessel each time a predetermined quantity of water is forced therefrom into said conduit.

9. Hot-water heating apparatus comprising a water-circulating conduit including a water-heater and two non-return valves opening in the same direction, a water-displacement vessel connected to said conduit between said valves, a separate steam-generator of small capacity having its upper end in communication with the top of said vessel, a downtake-pipe arranged external to said vessel and connecting the top and bottom of said steam-generator, a tube connecting the bottom of said steam-generator to the bottom of said vessel, and a condenser adapted to be placed in connection with said vessel each time a predetermined quantity of water is forced therefrom into said conduit.

10. Hot-water heating apparatus comprising a water-circulating conduit including a water-heater and two non-return valves opening in the same direction, a water-displacement vessel having a water-discharge pipe extending from its lower end and connected to said conduit between said valves, said discharge-pipe being bent so as to extend upward to a point above said vessel and then downward to said conduit, a steam-generator of small capacity having its upper end in communication with the top of said vessel, a downtake-pipe arranged external to said vessel and connecting the top and bottom of said steam-generator, a pipe extending downward through said downtake-pipe and connected at its upper end to the upper portion of said bent discharge-pipe, and a condenser adapted to be placed in connection with said vessel each time a predetermined quantity of water is forced therefrom into said conduit.

11. In hot-water-circulating apparatus, the combination with a water-circulating conduit including a water-heater and two non-return valves opening in the direction in which the water is to flow, of a water-displacement vessel, a water-discharge pipe connecting the bottom of said vessel to said conduit at a part thereof between said valves, a steam-generator of small capacity located in the combustion-chamber of said heater and having its upper end connected to the top of said vessel and its lower end in communication with said conduit between said valves, and a condenser adapted to be placed in communication with said vessel each time a predetermined quantity of water is forced therefrom into said conduit.

12. In hot-water-circulating apparatus, the combination with a water-circulating conduit including a water-heater and two non-return valves opening in the direction in which the water is to flow, of a water-displacement vessel, a water-discharge pipe connecting the bottom of said vessel to said conduit at a part thereof between said valves, a steam-generator of small capacity located in the combustion-chamber of said heater and having its upper end connected to the top of said vessel and its lower end in communication with said conduit between said valves, a downtake-tube arranged external to said vessel and connecting the top and bottom of said steam-generator, and a condenser adapted to be placed in communication with said vessel each time a predetermined quantity of water is forced therefrom by steam into said conduit.

13. In hot-water-circulating apparatus, the combination with a water-circulating conduit including a water-heater and two non-return valves opening in the direction in which the water is to flow, of a water-displacement vessel, a water-discharge pipe connecting the bottom of said vessel to said conduit at a part thereof between said valves, said pipe being bent so as to extend upward to a point above said vessel and then downward, a steam-generator of small capacity located in the combustion-chamber of said heater and having its upper end connected to the top of said vessel, a downtake-pipe arranged external to said vessel and connecting the lower end of said steam-generator to the upper end thereof, a pipe extending downward through said downtake-pipe and connected at its upper end to the upper portion of said bent discharge-pipe, and a condenser adapted to be placed in communication with said vessel each time a predetermined quantity of water is forced therefrom by steam into said conduit.

14. Hot-water heating apparatus comprising a water-circulating conduit including a water-heater and two non-return valves arranged in the return portion of said conduit and opening toward said heater, a water-displacement vessel arranged to discharge into said conduit between said valves, a separate steam-generator of relatively small capacity connected to the top of said vessel, and a condenser adapted to be connected to said vessel each time a predetermined quantity of water is forced therefrom into said conduit.

15. Hot-water heating apparatus comprising a water-circulating conduit including a water-heater and two non-return valves arranged in the return portion of said conduit and opening toward said heater, a water-displacement vessel arranged to discharge into said conduit between said valves, a separate steam-generator of relatively small capacity connected to the top of said vessel and having its lower end in communication with said conduit between said valves, and a condenser adapted to be connected to said vessel each time a predetermined quantity of water is forced therefrom by steam into said conduit.

16. Hot-water heating apparatus comprising a water-circulating conduit including a water-heater arranged between its delivery and return portions, and an expansion-tank arranged at the highest point, non-return valves arranged in the return portion of the conduit and opening toward said water-heater, a displacement vessel, a discharge-pipe connecting the lower end of said vessel to said conduit between said valves, said pipe being bent upward to a point above said vessel and then downward, a steam-generator of small capacity located in the combustion-chamber of said heater and connected to the top of said vessel, a downtake-pipe between the top and bottom of said steam-generator, a pipe connecting the bottom of said steam-generator and downtake-pipe to the upper bent portion of said discharge-pipe, and a condenser adapted to be placed in connection with said vessel each time a predetermined quantity of water is forced therefrom into said conduit.

17. Hot-water heating apparatus comprising a water-circulating conduit including a water-heater, a separate steam-generator, a water-displacement vessel having its upper end in connection with said steam-generator and its lower end in communication with said conduit, a condenser adapted to be placed in communication with said vessel when a predetermined quantity of water has been forced therefrom into said conduit, said condenser comprising a water-chamber forming part of said conduit, and valves arranged to cause the water to flow in the proper direction through said conduit.

18. Hot-water heating apparatus, comprising a water-circulating conduit including a water-heater, a separate steam-generator, a water-displacement vessel having its upper end in communication with the upper end of said steam-generator and its lower end in communication with the lower end of the steam-generator and with said conduit, a condenser comprising a tube having one end arranged to be placed in communication with the upper part of said vessel when a predetermined quantity of water has been forced therefrom, connecting means whereby the other end of the condenser-tube can be placed in communication with the bottom of said vessel, said connecting means being adapted to prevent circulation of water through said vessel and tube, and valves arranged to cause water to flow in the proper direction through said conduit.

19. Hot-water heating apparatus comprising a water-circulating conduit including a water-heater, a separate steam-generator of small capacity, a water-displacement vessel having its upper end in communication with said steam-generator and its lower end in communication with the lower end of said steam-generator and with said conduit, a condenser arranged to be placed in communication with said vessel when a predetermined quantity of water has been forced therefrom into said conduit, a vent-pipe with controlling-valve to allow of escape of air, or steam, or both, from said condenser, and valves arranged to cause water to flow in the proper direction through said conduit.

20. In hot-water heating apparatus the combination with a water-circulating conduit including a water-heater, of a water-displacement vessel connected at its lower end to said conduit, a steam-generator and a condenser arranged in shunt-circuits to said vessel, and non-return valves arranged in said conduit at opposite sides of the point of connection thereto of said vessel; the inlet to said condenser being arranged to admit steam thereto from said vessel when the level of water in the latter falls to a predetermined point.

21. In hot-water heating apparatus the combination with a water-circulating conduit including a water-heater, of a water-displacement vessel connected at its lower end to said conduit, steam generating and condensing tubes arranged in shunt-circuits to said vessel, the steam-generating tube being of small internal capacity and arranged in the combustion-chamber of said heater, and the steam-inlet to the condensing-tube being arranged to be uncovered when the level of water in said vessel has been depressed to a predetermined point.

22. Hot-water heating apparatus comprising a water-circulating conduit including a water-heater and having an expansion-tank at its highest part, a water-displacement vessel having its lower end connected to the delivery portion of said conduit, a separate steam-generator connected to the top and bottom of said vessel, a condenser comprising a chamber arranged to form part of the circulating-conduit, and a condenser-tube the inlet end of which is bent to a U shape and located in the upper part of said vessel, connecting means between the other end of said condenser-tube and the bottom of said vessel and adapted to prevent circulation of water through said vessel and tube, and valves for constraining water to flow in the proper direction in the said circulating-conduit.

23. In hot-water heating apparatus, the combination with a hot-water-circulating conduit including a water-heater and having an expansion-tank at its highest part, of a steam-generating tube of relatively small internal capacity arranged within the combustion-chamber of said water-heater, a water-displacement vessel having its upper end in communication with said steam-generating tube and its lower end in communication with said conduit and with the lower end of said steam-generating tube, a steam-condenser comprising a condenser-chamber arranged to form part of said conduit, and a condenser-tube having one end bent to a U shape and located in the upper part of said vessel, connecting means between the other end of said condenser-tube and the bottom of said vessel, said connecting means being adapted to prevent water circulating through said vessel and condenser-tube, a vent-pipe that is in communication with said condenser-tube and extends to a higher level than the water in said expansion-tank, a non-return valve controlling said vent-pipe, and non-return valves arranged to constrain the water to flow in the proper direction through said conduit.

24. In hot-water heating apparatus, the combination with a hot-water-circulating conduit including a water-heater, two non-return valves opening toward said heater, and an expansion-tank at its highest part, of a separate steam-generator arranged to receive a supply of water from the conduit, a water-displacement vessel having its upper end in communication with said steam-generator and its lower end in communication with the lower end of said steam-generator and with the return portion of said conduit between said non-return valves, a condenser comprising a chamber arranged to form part of the water-circulating conduit, a condenser-tube extending through said chamber and having one end bent to a U shape and located in the upper part of said vessel, an upwardly-extending pipe connected to the other end of said condenser-tube, a pipe connecting the upper end of the last-mentioned tube to the bottom of said displacement vessel, and a vent-pipe connected to the said upwardly-extending tube.

809,165. BRAKE MECHANISM. HENRY S. BENNET, Bliss, Ill. Filed June 26, 1905. Serial No. 267,206.

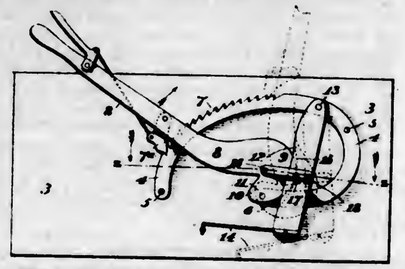

Claim.—1. A lever having a laterally-projecting arm near its end, and on which it is fulcrumed, and a rounded end continuing to the arm, in combination with a pivoted link, and straps connecting said arm and link, whereby said rounded arm end is held in contact with said link.

2. A lever having a laterally-projecting arm near its end and on which it is fulcrumed and a rounded end continuing to the arm, in combination with a pivoted link and means whereby said link is held in contact with said lever, said link having in its side adjacent to the lever a groove in which said rounded lever end is operable.

3. Mechanism of the character described, comprising a ratchet-bar having one end curved under itself, a lever terminating in a laterally-projecting arm and a rounded end continuing to the arm and fulcrumed at the end of the arm to the lower part of said ratchet-bar, a link pivoted to the upper part of said ratchet-bar and having on its side adjacent to the lever a groove in which said rounded lever end is operable, straps connecting said lever and link, means at the lower end of said link whereby the mechanism to be operated is moved, and a pawl on said lever and cooperating with said ratchet-bar.

809,166. WAGON-SPINDLE. ALBERT J. BELIEL, Mulhall, Okla. Filed June 16, 1905. Serial No. 265,560.

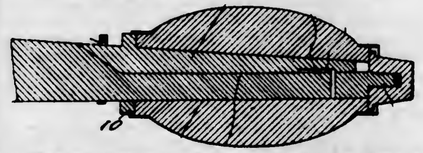

Claim.—1. A wagon-spindle comprising upper and lower portions arranged for longitudinal movement with respect to each other, a collar carried by one portion and slidably engaged with the other portion, means for holding the two portions at different points of their movement with respect to each other, and means for holding the portions against lateral movement with respect to each other.

2. A spindle comprising a portion having a flat face and a tapered curved face, said flat face extending at an angle to the central longitudinal axis of the spindle, a member having a flat and a curved face disposed with its flat face against that of the first-named portion for longitudinal movement thereupon, a surrounding collar carried by the member and extending beyond the flat face thereof, said collar having an opening therein in which the first-named portion of the spindle is slidably engaged, said member having a longitudinal groove in its flat face, a pin carried by the first-named portion and slidably engaged in the groove and means for holding the member at different points of its movement.

809,167. FOLDING BEDSTEAD. HENRY H. BLAYLOCK, Hountonville, N. C. Filed Aug. 4, 1905. Serial No. 272,067.

Claim.—1. A bedstead comprising head and foot boards, wings hingedly connected to the opposite side edges of the said boards, a bottom connecting the head and foot boards and hinged leaves arranged one upon each side of said footboard, means for locking the

said leaves beneath the bottom, and means for fastening the respective leaves against the corresponding sides of said bottom.

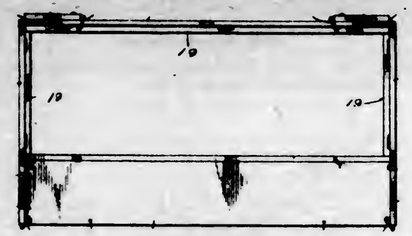

2. A bedstead comprising a head and foot board, a bottom connecting the head and foot boards, hinged wings connected with the head and foot boards and hinged leaves connected with the bottom for coöperation with said wings whereby the bedstead may be converted into a single or double bedstead.

809,168. **SMOKE-CONSUMER.** GEORGE M. BOOTH, Baltimore, Md. Filed July 7, 1905. Serial No. 268,696.

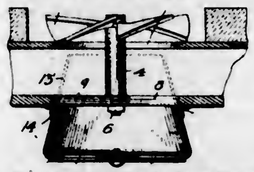

Claim.—1. In combination with the door of a furnace having a hole for the passage of the air, a turbine-shaped deflector immovably secured to the door on the inside thereof and opposite the hole and arranged to set up a whirling movement of the air and products of combustion substantially as described.

2. In combination with the door of a furnace having a hole for the passage of the air, a turbine-shaped deflector immovably secured to the door on the inside thereof and opposite the hole and arranged to set up a whirling movement of the air and products of combustion, and means for regulating the air-supply thereto, substantially as described.

3. In combination with the door of a furnace having a hole for the passage of the air, a turbine-shaped deflector immovably secured to the door on the inside thereof and opposite the hole and arranged to set up a whirling movement of the air and products of combustion, and a shallow casing provided with air-passages and a valve regulating the air-supply to said passages, substantially as described

4. In combination with the door of a furnace having a hole for the passage of the air, a deflector immovably secured to the door opposite the hole and having a series of turbine-blades, one of said blades being of greater length than the other blades, substantially as described.

809,169. **EXPANSIBLE PULLEY.** JOHN P. BRENNAN, Lawrence, Mass. Filed June 2, 1905. Serial No. 263,401.

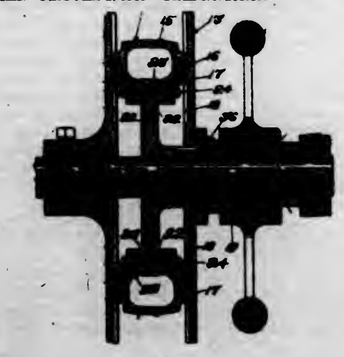

Claim.—1. The improved expansible pulley comprising a shaft, a pair of side plates provided with radially-arranged slots, one of said side plates being fast and the other loose on the said shaft, sectors radially movable in the said slots, a cam-disk intermediate the said side plates and provided with a sleeve about the said shaft and extending through said loose side plate, and moving means on the said sleeve by the rotation of which the cam-disk is rotated independently of the side plates.

2. The improved expansible pulley comprising a shaft, a pair of side plates provided with radially-arranged slots therein, one of said side plates being fast to the said shaft, sectors radially movable in the said slots, a single cam-disk intermediate the said side plates and acting upon the said sectors, said cam-disk being provided with a sleeve about the said shaft, and a hand-wheel on the said sleeve by the rotation of which the cam-disk is rotated independently of the said side plates.

3. The improved expansible pulley comprising a shaft, a pair of side plates provided with radially-arranged slots, one of said side plates being fast to the said shaft, sectors radially movable in the said slots, a cam-disk acting upon said sectors and provided with a sleeve about the said shaft, a hand-wheel slidably movable on said sleeve by the rotation of which the said cam-disk is rotated independently of the said side plates, and locking means operated by the longitudinal movement of said hand-wheel.

4. In an expansible pulley, the combination with side plates, movable sectors, an adjusting-disk, and locking means, of a hand-wheel slidably mounted on a sleeve of the said adjusting-disk, whereby rotation of the said hand-wheel adjusts the sectors and longitudinal movement operates the locking means.

5. In an expansible pulley, the combination with a pair of side plates provided with radial slots, and sectors radially movable in the said slots, of locking means comprising a bolt, a head for one end of the said bolt, a cam mounted upon the other end of said bolt and engaging one of the said side plates, and moving means for the said cam.

6. In an expansible pulley, the combination with a shaft, a pair of side plates thereon provided with radial slots, and sectors radially movable in the said slots, of locking means comprising a bolt, a head for one end of said bolt, a cam mounted upon the other end of said bolt and engaging one of the said side plates, an arm fast to the said cam, and a hand-wheel slidably mounted with relation to the said shaft and provided with a grooved hub within which the end of the said arm is received, whereby the longitudinal movements of the said hand-wheel with relation to the said shaft cause movement of the said cam to operate the locking means.

7. The improved expansible pulley and locking means therefor, comprising a pair of side plates provided with radial slots, sectors radially movable in the said slots, an adjusting-disk intermediate the said pair of side plates provided with cam-slots therein, said adjusting-disk being also provided with a sleeve about the driving-shaft on which the pulley is mounted, connecting means between the said cam-slots and the said sectors, a hand-wheel slidably mounted upon the sleeve of the said adjusting-disk and adapted to rotate the said adjusting-disk independently of the said side plates, and locking means for the parts of the said expansible pulley operated by the longitudinal movement of the hand-wheel.

809,170. **COLLAPSIBLE TABLE.** WALTER L. BROADWELL, South Norfolk, Va. Filed June 1, 1904. Serial No. 210,794.

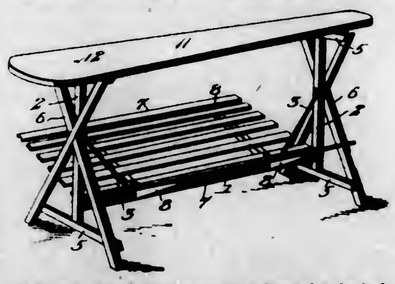

Claim.—1. A table-top, a supporting-frame therefor including a horizontal strip, and a removable shield comprising a pair of sections pivotally connected, said sections having portions adapted to conjointly engage and clamp the strip between them.

2. A table-top, a supporting-frame therefor including a horizontal strip, and a removable shield comprising a pair of sections pivotally connected, said sections having transverse cleats spaced at their inner adjacent ends and adapted to conjointly receive and clamp the strip between them.

809,171. **STEERING DEVICE.** ALEXANDER T. BROWN, Syracuse, N. Y., assignor to Brown-Lipe Gear Company, Syracuse, N. Y., a Copartnership. Filed May 11, 1904. Serial No. 207,463.

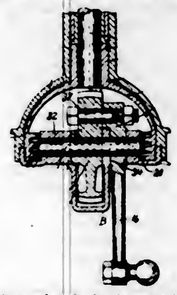

Claim.—1. A steering device for vehicles comprising a driving member having internal substantially helical teeth, and a driven member arranged eccentrically relatively to the driving member and provided with teeth engaging the internal teeth at one side of the driving member and separated from said internal teeth at the diametrically opposite side of the driving member, substantially as and for the purpose specified.

2. A steering device for vehicles comprising a driving member movable about an axis and having internal substantially helical teeth, a driven member arranged in alinement with said axis and movable about an axis disposed at an angle to the axis of the driving member and provided with teeth engaging the former teeth, and fixed means for supporting the driven member, substantially as and for the purpose set forth.

3. A steering device for vehicles comprising a driving member formed with a hollow portion having internal teeth, a driven member provided with teeth engaging the internal teeth within the hollow portion of the driving member, and fixed means projecting within said hollow portion for supporting the driven member, substantially as and for the purpose described.

4. A steering device for vehicles comprising a driving member having internal substantially helical teeth, and peripheral engaging faces of unequal diameter, a driven member provided with teeth engaging the former teeth, and a casing having internal faces of unequal diameter for engaging the former faces, substantially as and for the purpose set forth.

5. In a steering device for vehicles, the combination of a driving member having internal substantially helical teeth, and peripheral engaging faces of unequal diameter, and a casing having internal faces of unequal diameter for engaging the peripheral faces opposing surfaces of the driving member and the casing between said engaging faces being separated from each other; with a driven member provided with teeth engaging the former teeth, substantially as and for the purpose described.

6. In a steering device for vehicles, the combination of a driving member having internal substantially helical teeth, and peripheral engaging faces of unequal diameter, and a casing having internal faces of unequal diameter for engaging said peripheral faces, the driving member and the casing having annular shoulders for preventing endwise movement of one of said parts in one direction relatively to the other; with a driven member provided with teeth engaging the former teeth, substantially as and for the purpose set forth.

7. In a steering device for vehicles, the combination of a driving member having internal teeth, a casing comprising separable sections, each having a face engaged with said member, and a driven member provided with teeth engaging the former teeth, substantially as and for the purpose described.

8. In a steering device for vehicles, the combination of a driving member having internal teeth, a casing comprising separable sections, one being adjustable relatively to the other, and a driven member provided with teeth engaging the former teeth, substantially as and for the purpose specified.

9. In a steering device for vehicles, the combination of a driving member movable about an axis and having internal substantially helical teeth, and a casing comprising a main part, and an end section engaging the driving member; with a driven member movable about an axis arranged at an angle to the axis of the driving member and provided with teeth engaging the former teeth, substantially as and for the purpose set forth.

10. In a steering device for vehicles, the combination of a driving member movable about an axis and formed with a hollow portion having internal substantially helical teeth and an opening extending through the wall of said portion, and a casing comprising a main part, and an end section engaging the driving member and closing the end of the hollow portion thereof; with a driven member arranged in alinement with said axis and movable about an axis disposed at an angle to the axis of the driving member and provided with teeth engaging the former teeth, substantially as and for the purpose described.

11. In a steering device for vehicles, the combination of a driving member formed with a hollow portion having internal substantially helical teeth and an opening extending through the wall of said portion, and a casing comprising a main part, and an end section for closing the end of the hollow portion of said driving member, the driving member and the casing having means for preventing endwise movement of one of said parts relatively to the other; with a driven member provided with teeth engaging the former teeth, substantially as and for the purpose set forth.

12. In a steering device for vehicles, the combination of a driving member formed with a hollow portion having internal teeth, a support for the driving member having a part thereof extended within said hollow portion, and a driven member journaled in said part of the support and provided with teeth engaging the former teeth, substantially as and for the purpose specified.

13. In a steering device for vehicles, the combination of a driving member movable about an axis and formed with a hollow portion having internal teeth, and an opening extending through the wall of said portion, means for closing the opening in the hollow portion of the driving member, and a driven member movable about an axis disposed at an angle to the axis of the driving member, said driven member being journaled in said means and provided with teeth engaging the former teeth, substantially as and for the purpose specified.

14. In a steering device for vehicles, the combination of a driving member formed with a hollow portion having internal teeth, and an opening extending through the wall of said portion, a driven member movable in the opening and provided with teeth engaging the internal teeth, said driven member projecting beyond the opening, and means for closing the opening in the hollow portion of the driving member, said means being provided with an extension for inclosing the part of the driven member projecting beyond the opening of the driving member, substantially as and for the purpose specified.

15. In a steering device for vehicles, the combination of a driving member formed with a hollow portion having internal teeth, and an opening extending through the wall of said portion, a driven member provided with teeth engaging the internal teeth, and means for closing the opening in the driving member, said means having its inner portion provided with a bearing for the driven member, substantially as and for the purpose set forth

16. In a steering device for vehicles, the combination of a driving member formed with a hollow portion having internal teeth, and an opening extending through the wall of said portion, a driven member movable in the opening and provided with teeth engaging the internal teeth, said driven member projecting beyond the opening, and a casing for the driving member having a part for closing the opening in the driving member, said part having its inner portion provided with a bearing for the driven member and its outer portion formed with an extension for inclosing the portion of the driven member projecting beyond the opening of the driving member, substantially as and for the purpose described.

17. In a steering device for vehicles, the combination of a driving member formed with a hollow portion having internal teeth, and an opening in its lower part, and a casing for the driving member comprising a main part, and an end section for closing the opening in the hollow portion of the driving member, the casing and the driving member having means for journaling the driving member in the casing and preventing endwise movement thereof relatively to the casing, and said end section of the casing having its inner portion provided with a bearing and its outer portion formed with a hollow extension; with a driven member provided with teeth engaging the internal teeth, said driven member being journaled in the

bearing of the end section of the casing and projecting into said hollow extension, substantially as and for the purpose specified.

18. A steering device for vehicles, comprising a driving member having internal teeth, a driven member provided with teeth engaging the former teeth, a casing, and a power-transmitting member movable about the axis of the driven member with said driven member and projecting beyond the casing, substantially as and for the purpose set forth.

19. A steering device for vehicles, comprising a driving member having internal substantially helical teeth, a driven member provided with teeth engaging the former teeth, and a power-transmitting member movable about the axis of the driven member with said driven member, substantially as and for the purpose set forth.

20. A steering device for vehicles, comprising a driving member having internal substantially helical teeth, a driven member provided with teeth engaging the former teeth, a bearing for the driven member, and a power-transmitting member movable about the axis of the driven member and having an extension projecting beyond the bearing and fixed to the driven member, substantially as and for the purpose described.

21. In a steering device for vehicles, the combination of a driving member formed with a hollow portion having internal teeth, and an opening extending through the wall of said portion, means for closing the opening in the hollow portion of the driving member, said means having an opening therethrough, a driven member provided with teeth engaging the former teeth, and a power-transmitting member movable with the driven member in the opening in said means, substantially as and for the purpose specified.

22. In a steering device for vehicles, the combination of a driving member formed with a hollow portion having internal teeth, and an opening extending through the wall of said portion, means for closing the opening in the hollow portion of the driving member, said means having its inner portion provided with a bearing, a shaft supported by the bearing, a driven member supported by the shaft and movable in the opening and provided with teeth engaging the internal teeth, and a power-transmitting member mounted on the shaft and fixed to the driven member, substantially as and for the purpose set forth.

23. In a steering device for vehicles, the combination of a driving member formed with a hollow portion having internal teeth and an opening extending through the wall of said portion, a casing for the driving member having a part for closing the opening in the hollow portion of the driving member, said part having its inner portion provided with a bearing and its outer portion formed with a hollow extension, and said casing being formed with an opening at one side of the extension, a shaft supported by the bearing, a driven member supported by the shaft and movable in the hollow extension and provided with teeth engaging the internal teeth, and a power-transmitting member passed through the opening at one side of the hollow extension and mounted on the shaft and fixed to the driven member, substantially as and for the purpose described.

24. In combination, pivoted wheel-supports having arms extending rearwardly from their axes, one of the supports being provided with an arm projecting in front of the axes of said supports, a driving member having internal teeth, a driven member provided with teeth engaging the former teeth and a power-transmitting member connected to the forwardly-projecting arm and movable about the axis of the driven member with said driven member, substantially as and for the purpose specified.

809,172. **BOUQUET-HOLDER.** JOHN BURNOK, Fort Shaw, Mont. Filed Apr. 19, 1905. Serial No. 256,267.

Claim.—1. A device of the class described comprising a hollow body portion including two sections hinged together at their lower ends for movement of their upper ends toward and away from each other, means for holding the sections yieldably with their upper ends separated, means for holding the sections with their adjacent edge portion in mutual engagement, absorbent linings for the sections, and flanges carried by the upper ends of the section and extending outwardly therefrom, said sections and their respective flanges being each formed from a single piece of metal, the body portion being open at its upper end.

2. A device of the class described comprising two transversely-semicircular sections rounded at their lower ends and open at their upper ends, a hinge secured to the rounded portions of the sections for movement of the sections into and out of engagement with each other, said sections being cut away to receive the hinge, means for holding the sections with their edge portions in mutual engagement, absorbent linings for the sections, an outwardly-extending flange carried by the upper end of each section, each of said sections and its flange being formed of a single piece of metal, and means for holding the sections yieldably with their edge portions in spaced relation.

3. A bouquet-holder comprising a body portion including two sections hinged together at their lower ends for movement into and out of operative position, said body portion being adapted for engagement in the neck of a vase, outwardly-extending flanges carried by the outer ends of the sections and arranged to rest upon the neck of a vase in which the body portion is engaged, means for holding the sections yieldably in inoperative position, a latch arranged to hold the sections in operative position, absorbent linings for the sections, and pins carried by the sections and extending thereinto for the engagement of plants disposed within the holder to retain said plants in position.

809,173. **SPRING END.** GEORGE H. CHANNELL, New Kensington, Pa., assignor to Union Spring and Manufacturing Co., New Kensington, Pa., a Corporation of Pennsylvania. Filed Mar. 13, 1905. Serial No. 249,857.

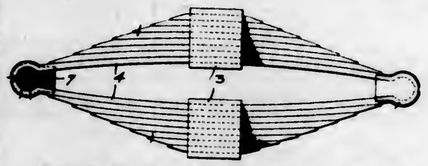

Claim.—1. A spring-end support comprising a block having a rounded body adapted to have the spring ends lapped over the same, and an inwardly-projecting bearing portion of less thickness than the body.

2. A spring-end support comprising a block having a rounded body adapted to have the spring ends lapped over the same, and an inwardly-projecting bearing portion of less thickness than the body and of increasing thickness inwardly.

3. A spring-end support comprising a block having a rounded body adapted to have the spring ends lapped over the same, an inwardly-projecting bearing portion of less thickness than the body, and an outwardly-projecting lug or rib adapted to lie between the ends of the springs.

4. A spring-end support comprising a block having a rounded body adapted to have the spring ends lapped over the same, an inwardly-projecting bearing portion of less thickness than the body, and end projections or flanges adapted to bear against the edges of the springs.

5. A spring-end support comprising a block having a body adapted to be embraced by the spring ends, and an inwardly-projecting bearing portion of less thickness than the body and of increasing thickness inwardly.

6. The combination of a leaf-spring comprising leaves substantially straight at their ends and having the longest leaf of each member provided at its ends with a concave portion extending transversely thereof, together with an end-support comprising a block having a rounded body seated in said concave portion and an inwardly-projecting bearing portion of less thickness than the body.

7. The combination of a leaf-spring comprising leaves substantially straight at their ends and having the longest leaf of each of its members provided at its ends with a concave portion extending transversely thereof, together with an end-support comprising a block having a rounded body seated in said concave portion and an inwardly-projecting bearing portion of less thickness than the body and of increasing thickness inwardly.

8. The combination of a leaf-spring comprising leaves substantially straight at their ends and having the longest leaf of each of its members provided at its ends with a depression extending transversely thereof, together with an end-support comprising a body seated in said depressions and provided with an inwardly-projecting bearing portion of less thickness than the body and of increasing thickness inwardly.

9. The combination with a leaf-spring comprising leaves substantially straight at their ends and having the longest leaf of each of these members provided at its ends with a depression extending transversely thereof, together with an end-support comprising a body seated in said depressions and provided with an inwardly-projecting bearing portion of less thickness than said body and of increasing thickness inwardly.

10. The combination of a leaf-spring comprising leaves substantially straight at their ends and having the longest leaf of each of its members provided at its ends with a depression extending transversely thereof, together with an end-support comprising a body seated in said depressions and having an inwardly-extending bearing portion and provided with flanges or projections adapted to bear against the edges of said spring-leaves.

809,174. **VIOLIN-BRIDGE.** THOMAS L. DAVIS, Speedwell, Tenn. Filed May 10, 1905. Serial No. 260,845.

Claim.—1. A bridge for musical instruments comprising a hollow body portion adapted for the reception of strings thereupon and a resonant body located within the body portion.

2. A bridge for musical instruments comprising a hollow body portion adapted for the reception of strings thereupon having openings in one of its walls and a resonant body located within the body portion.

3. A bridge for musical instruments comprising a hollow body portion adapted to receive strings thereupon, a transversely-extending pin secured at one end to one of the walls of the body portion and lying within the latter, and a resonant body disposed upon the pin, said wall of the body portion having a plurality of openings therein arranged in a series surrounding the pin.

4. A bridge for musical instruments comprising a hollow body portion adapted to receive strings thereupon, a pin located therewithin and secured to the body portion and a resonant body mounted upon the pin.

5. A bridge for musical instruments comprising a hollow body portion adapted to receive strings thereupon, a pin disposed within the body portion and secured at its ends to the walls thereof and a resonant body mounted upon the pin.

6. A bridge for musical instruments comprising a hollow body portion adapted to receive strings thereupon including two sections, a pin disposed within the body portion and secured at its ends to the sections.

7. A bridge for musical instruments comprising a hollow body portion having a string-receiving portion, and a resonant body located within the body portion.

8. As an article of manufacture a bridge for musical instruments comprising two hollowed sections open at one side, said sections being disposed with their open faces against each other and being secured together, a transversely-extending pin secured at its ends to the sections and a longitudinally-extending metallic plate located within the body portion and having an opening in which the pin is engaged, said plate being transversely curved.

9. A bridge for musical instruments comprising a hollow body portion having a string-receiving portion, a pin located within the body portion and secured at its ends to opposite points upon the walls thereof to receive vibrations therefrom, and a resonant body mounted upon the pin.

10. A bridge for musical instruments comprising a vibratory body portion and a resonant body connected with the body portion to receive vibrations therefrom.

11. A bridge for musical instruments comprising a body portion and a resonant body connected therewith, said body comprising a transversely-curved metallic plate.

12. A bridge for musical instruments comprising a hollow body portion, a resonant body located within the body portion and a support for the body.

13. A device of the class described comprising a hollow body portion having a string-receiving ridge at its top, supporting-feet carried by the body portion, a pin located within the body portion and a resonant plate mounted upon the pin.

14. A bridge for musical instruments comprising a body portion including two longitudinally-extending sections having outer faces meeting at an angle at their upper edges to form a string-receiving ridge, a transversely-extending pin secured at each end to one of the sections and lying within the body portion and a resonant body mounted upon the pin.

15. A bridge for musical instruments comprising a body portion including two hollow sections disposed with their hollow portions toward each other and having the edges of the hollow portions flat and in mutual contact, the outer faces of the sections being curved and meeting at one edge at an angle to form a string-receiving ridge at the top of the body, said ridge being curved outwardly from end to end of the body portion, a support within the body portion adapted to receive strings thereupon, and a metallic sounding-plate carried by the support, each section having a plurality of perforations therethrough communicating with the hollow thereof.

809,175. **MAP-CASE.** JOHN DAWSON and CHARLES O. ROSEN, Chicago, Ill. Filed Feb. 17, 1905. Serial No. 246,123.

Claim.—1. An individual map-case having a flat top, a flat front wall which slopes downwardly and outwardly and a flat bottom terminating some distance from the front wall, thereby leaving an opening immediately adjacent to the front wall, substantially as described.

2. The combination of a plurality of individual map-cases each containing a map, means for removably supporting said cases one above another, each of said cases having an opening for the passage of its contained map, and strips secured to the bottoms of the maps, and, when the maps are wound up, contacting with adjacent cases to conceal the spaces between them, substantially as described.

3. The combination of a plurality of individual map-cases each containing a map, means for supporting said cases one above another, said cases having adjacent to their front walls openings for the passage of the map, and the bottom of each case projecting forward beyond the top of the case immediately below it, and strips secured to the bottoms of the maps and adapted to close said openings, substantially as described.

4. The combination of a plurality of individual map-cases each containing a map, means for supporting them one above another, the bottom of each case projecting forward beyond the top of the case immediately below it and each case having a bottom opening for the passage of the map, and strips secured to the maps and adapted to contact with adjacent cases, substantially as described.

5. The combination of a plurality of individual map-cases and a cabinet for supporting them, each individual case and the end walls of the cabinet having means whereby the individual cases are independently supported, and each map having a strip adapted to contact with adjacent individual cases for closing the spaces between them, substantially as described.

6. The combination of a plurality of individual map-cases and a cabinet for supporting them, one above another, each individual case having at its ends projections and a cabinet having corresponding grooves for receiving said projections whereby the individual cases are independently supported, and strips attached to the bottoms of the individual maps and adapted to close the spaces between the individual cases, substantially as described.

7. The combination of a plurality of individual map-cases, each having at the bottom an opening for the passage of the map and each containing a map having at the bottom a strip, a cabinet, the cases and the cabinet being provided with interengaging elements whereby the cases are independently and removably supported by the cabinet, and means for holding the cases in place in the cabinet, said means including headed studs projecting from the cabinet and a strip having keyhole-slots for receiving the studs, substantially as described.

809,176. **LANDING-CHAIR FOR MINING-CAGES.** GILBERT H. DENTON, Denver, Colo. Filed Feb. 24, 1905. Serial No. 247,114.

Claim.—1. A cage, and chairs pivotally appended to said cage, above the platform thereof and having horizontal portions below their pivots with seats disposed beneath said platform of the cage.

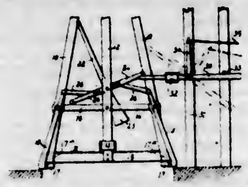

2. A cage, and chairs pivotally appended to said cage with horizontal portions below their pivots, the point of pivot being above the platform thereof and a manually-operable lever pivotally connected with said chairs above their pivots.

3. A cage, and chairs having right-angled arms provided with seats below their pivots and with elongated eyes at their pivotal support, appended to said cage above the platform thereof by means of axial pins extending through said elongated eyes.

4. A cage, chairs pivotally attached to said cage above the platform thereof, and manually-operable means above the pivots of the chairs for placing said chairs in an operative position.

5. A cage, and chairs pivoted to the cage above the platform appending the chairs below the said platform, and manually-operable means above the pivots of the chairs for actuating the same adapted to place the chairs in an operative position.

6. A cage, chairs having central raised parts forming seats and having right-angled arms provided with elongated eyes by means of which the chairs are pivotally appended to the said cage at a point above the platform thereof, and means for placing said chairs in the operative position.

7. A cage, chairs pivotally connected thereto, and having horizontal portions with seats, means for actuating said chairs comprising a lever fulcrumed to said cage, arms extending from said lever, and connecting-bars pivoted to said arms and to said chairs.

8. A cage, chairs for said cage pivoted thereto, above the platform thereof, means above the pivots of said chairs for placing said chairs in an operative position comprising the lever fulcrumed to the said cage and toggle-arms pivoted to said lever and to the said chairs, and a lever secured to a substantial support adjacent to the passageway for the cage.

9. A cage, chairs pivotally appended to said cage from a point above the platform thereof, said chairs having raised central parts adapted to form seats for the cage and portions to rest upon substantial parts of the landings; also having right-angled arms provided with elongated apertures forming means for pivoting said chairs to the cage, and means for placing said chairs in an operative position comprising a lever fulcrumed to a central upright post of the cage, arms extending at substantially right angles from said lever, a downwardly-appended weight forming part of said lever, connecting-rods pivoted to said arms and to the upper ends of the right-angled arms of the chairs, substantially as specified.

10. A cage, and chairs pivotally appended to the cage above and independent of the platform thereof and having portions forming seats therefor.

11. A cage, and chairs pivotally appended to said cage above and independent of the platform thereof and having seats below the platform.

12. A cage, and chairs having the central parts of the main portions raised forming seats and having right-angled arms provided with elongated eyes; the said chairs adapted to be appended to the cage above the platform thereof by means of axial pins extending through the elongated eyes in the said right-angled arms in a manner adapted to bring the seats below the platform of the cage, and means for placing the chairs in an operative position.

13. A cage, and chairs pivotally appended to said cage above the platform and having manually-operable means extended above their pivots and connected with said chairs by means pivotally attached directly thereto for coöperation with actuating means therefor.

14. A cage, and chairs pivotally appended to said cage, the point of pivot being above the platform thereof integral portions of said chairs having seats below the platform.

15. A cage, and chairs having horizontal portions below the platform of the cage and right-angled arms extending upwardly therefrom, and said horizontal portions formed with seats appended below the platform of the cage, the said right-angled arms being pivotally attached to the posts of the cage above the platform thereof.

16. The combination of a cage, and bars having right-angled portions extended upwardly therefrom and having loose play on pivots on the cage above and independent of the platform of the cage, the horizontal portions of said bars being extended beneath the said platform.

17. The combination of a cage and bars having right-angled arms extended upwardly therefrom and horizontal portions extended beneath the platform of the cage and their upwardly-extended portions having loose play on pivots on the cage above the said platform, the central parts of said bars being raised.

18. The combination with a cage, of supporting devices disposed below the platform of the cage and having upwardly-extending arms, the latter being pivoted above the platform of the cage and having means pivotally connecting said arms beyond the pivot for coöperation with actuating means.

19. The combination with a cage, of supporting devices disposed below the platform of the cage and having upwardly-extending arms, the latter being pivoted above the platform of the cage and having means beyond the pivot for coöperation with manually-operable actuating means and means engaging means movable with said actuating means for automatically actuating said arms.

809,177. **DOWEL.** PAUL L. E. DROLSHAGEN, New York, N. Y. Filed Nov. 25, 1904. Serial No. 234,173.

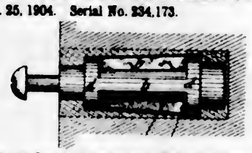

Claim.—1. A dowel of substantially circular cross-section provided with transversely-extending ribs, and with ribs extending between the same.

2. A dowel comprising a conically-tapering body having a socket in the smaller end thereof.

3. A dowel comprising a conically-tapering body provided in proximity to each end with a transverse circumferential rib, and having longitudinally-disposed ribs connecting said transverse ribs.

809,178. **FLOUR-SIFTER.** EDWIN T. FARMER, Carthage, Mo., assignor of one-half to John Ruhl, Carthage, Mo. Filed Apr. 11, 1905. Serial No. 254,913.

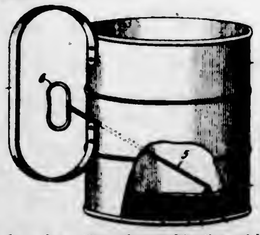

Claim.—In a flour-sifter, the combination with a cylindrical-shaped containing vessel provided with a screen-bottom, an agitator pivotally mounted thereon, a spring-arm subtended across the agitator and arranged to lie close to the same, one end of the arm being connected to the side of the vessel and its opposite end to the circumferential edge of the agitator, and a rod connected to the spring-arm near its point of connection with the agitator and extending upward therefrom and through the side of the vessel in close proximity to the handle thereof, whereby the agitator may be operated, substantially as set forth.

809,179. **RIDING-SADDLE.** PATRICK H. FONTAINE, Bethel Hill, N. C. Filed Nov. 18, 1904. Serial No. 233,277.

Claim.—1. The combination with a saddle having a loop, and a girth, of an attachment connected to the girth and having a loop slidably mounted within the loop of the saddle, and a stirrup-strap connected to one end of and supported by the loop of the attachment.

2. The combination with a saddle having a loop extending therefrom, and a girth, of an attachment connected to the girth and having a loop engaging and slidably mounted within the loop of the saddle, a stirrup-strap connected to and supported by the end of the loop of the attachment, and means for holding said strap in position at the end of the loop.

3. The combination with a saddle having a loop extending therefrom and a girth supported upon the saddle, of a stirrup-strap, a strap connected to the girth and having a loop engaging and slidably mounted upon the loop of the saddle, a keeper within the loop of the strap and a link interposed between said keeper and the end of its loop, said link engaging the stirrup-strap.

4. An attachment of the character described, comprising a girth-strap having a loop at one end, a keeper positioned within the limit of the edges of said strap and within the looped portion, and a link mounted within one end of the looped portion of said strap.

5. An attachment for saddles, comprising a strap provided with a looped portion at one end thereof, a keeper secured within the looped portion, and stirrup-supporting means assembled with the looped portion of said strap and normally engaging the keeper within the same.

6. The combination with a saddle provided with a depending member, and a girth, of an adjustable member provided with a loop portion positioned upon said depending member and connected to said girth, and looped means positioned within the looped portion of said adjustable member and being capable of movement for causing adjustment of said adjustable member.

7. The combination with a saddle, and a girth, of an adjustable member supported by said saddle and connected to said girth, said member provided with means for limiting the girth against downward movement, and a stirrup supported by the upper end of said member.

8. The combination with a saddle provided with a depending member, and a girth, of a slidable strap supported upon said depending member and connected at its lower end to said girth, and a stirrup-strap secured to the upper end of said slidable strap and capable of moving said strap upon the depending portion of the saddle for adjusting said girth.

9. The combination with a saddle, and a girth, of an adjustable member carried by said saddle and connected to said girth, said member provided with a loop formed upon its upper end, a stirrup-strap provided with looped means carried by said member, the looped means of said stirrup-strap engaging the looped means of said member.

10. The combination with a saddle, and a girth, of an adjustable member positioned upon said saddle and connected to said girth, a keeper, said member inclosing said keeper, and stirrup-supporting means positioned upon said member and capable of engaging said keeper, said stirrup-supporting means being capable of causing adjustment of said member and girth.

809,180. **ROTARY ENGINE.** HENNING A. FREDLUND, Dubuc, Canada. Filed June 5, 1905. Serial No. 263,866.

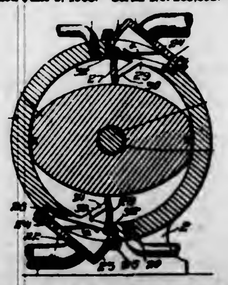

Claim.—1. A rotary engine including a casing having oppositely-disposed housings secured upon the outer periphery thereof, exhaust-openings leading through the casing and the housings, gates pivotally mounted for movement into corresponding housings and the casing, a piston arranged within the casing upon which the said gates normally rest, the said gates being arranged in the line of the exhaust-openings, and inlet-ports for the admission of steam for the rotation of the piston and to move the gates into and out of their respective housings.

2. A rotary engine comprising a casing, a piston mounted within the casing, the piston having end flanges and an intermediate flange arranged nearer one end flange than the other, the portions of the piston between said flanges being oval-shaped, exhaust-ports in the casing, a gate pivotally mounted within the line of each exhaust-opening, housings arranged for the reception of each gate when moved into one position, and intermediate ports for the reception of steam to rotate the piston and for moving the gates into and out of their respective housings.

809,181. **CENTERING DEVICE FOR DRAW-BARS.** MYERS A. GARRETT, Chicago, Ill. Filed June 7, 1905. Serial No. 264,129.

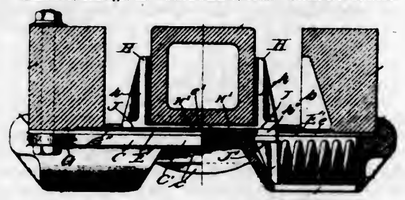

Claim.—1. In a device of the class described, the combination of a laterally-movable follower adapted to engage the draw-bar, laterally-disposed curved guides engaging the follower, a spring adapted to exert lateral pressure upon the follower, and means for supporting the follower and spring, substantially as described.

2. In a device of the class described the combination of a follower adapted to engage the draw-bar, a support having ribs upon which the follower rests and having laterally-disposed guides engaging the follower, a spring for exerting lateral pressure upon the follower, and means for supporting the spring, substantially as described.

3. In a device of the class described, the combination of a follower adapted to engage the draw-bar, a support for the follower having a raised rib, adapted to directly engage and support the draw-bar, a spring for exerting lateral pressure upon the follower, and a support for the spring, substantially as described.

4. In a device of the class described the combination of a follower adapted to engage the draw-bar, a support having ribs upon which the follower rests and having a higher rib adapted to engage and support the draw-bar, a spring for exerting lateral pressure upon the follower, and means for supporting the spring, substantially as described.

5. In a device of the class described, the combination of a laterally-movable follower, a support therefor, a spring and means for supporting the spring, said follower having a head adapted to engage the draw-bar, and a foot adapted to engage the spring, and said support having a slot through which the follower extends substantially as described.

6. In a device of the class described, the combination of a laterally-movable follower, a support therefor, a spring, and means for supporting the spring, said follower having a head adapted to engage the draw-bar and a foot adapted to engage the spriag, and said support having a curved slot through which the follower extends, substantially as described.

7. In a device of the class described, the combination of a support, a follower extending above and below the support, a spring adapted to engage the follower below the support, and means for supporting the spring, the support having a laterally-disposed curved guide for the follower, substantially as described.

8. In a device of the class described, the combination of a support in the nature of a carry-iron, a pair of independent followers supported by and extending above and below the support, a spring adapted to engage the follower below the support and a casing containing the spring, substantially as described.

9. In a device of the class described, the combination of a laterally-movable follower, a spring for exerting lateral pressure upon the follower, a chamber containing the spring and open at top and a slotted plate forming a partial cover for the casing and a support for the follower, substantially as described.

10. In a device of the class described the combination of a pair of independently-movable followers adapted to engage the draw-bar, means for supporting said followers and confining them to lateral curvilinear movement, independent springs for exerting lateral pressure upon the followers, and means for supporting the springs, substantially as described.

11. In a device of the class described the combination of a pair of independently-movable followers, independent springs for exerting lateral pressure upon the followers, and means for supporting the followers and springs, said supporting means including a plate having vertical shoulders adapted to engage the draft-arms, substantially as described.

12. In a device of the class described the combination of a pair of independently-movable followers, springs for exerting lateral pressure upon the followers and means for supporting the followers and springs, said supporting means including a plate having beneath it chambers for containing the springs, substantially as described.

13. In a device of the class described, the combination of a pair of independent laterally-movable followers having vertical faces adapted to engage the opposite sides of the draw-bar, each of said followers having a horizontal toe adapted to extend beneath and support the draw-bar, and a spring adapted to exert lateral pressure upon the follower, substantially as described.

14. In a device of the class described, the combination of a laterally-movable follower adapted to engage the draw-bar, said follower having a toe adapted to extend beneath and support the draw-bar, a support upon which the follower is slidably mounted and upon which the toe bears, whereby it is supported and in turn supports the draw-bar, means for confining the follower to lateral movement, and means for yieldingly resisting the movement of the follower, substantially as described.

15. In a device of the class described, the combination of a pair of independently-movable followers adapted to engage the draw-bar, said followers having toes adapted to extend beneath and support the draw-bar, a support upon which the followers are slidably mounted and upon which the toes bear, means for confining the followers to lateral movement, and means for yieldingly resisting their outward movement, substantially as described.

809,182. DUSTING-MACHINE FOR CANDY. PAUL HAASE, Pinneck, Germany. Filed Jan. 24, 1905. Serial No. 242,573.

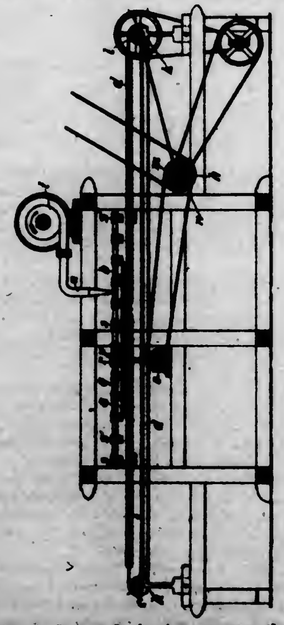

Claim.—1. In a candy-cleaning apparatus, the combination of an endless traveling apron, means for shaking the apron in its course of travel, a candy-receptacle carried by the apron, brushes for cleaning the candy as the receptacle travels and reciprocates with the apron, means for operating the brushes, and means for discharging the dust and removed impurities from the receptacle.

2. In a candy-cleaning apparatus, the combination of a continuously-traveling shaking-apron, a receptacle carried thereby and lined with brushes, movable brushes coöperating with the brushes in the receptacle to remove the dust and impurities from the candy therein, means for discharging the removed dust and impurities from the receptacle.

3. In a candy-cleaning apparatus, the combination of a continuously-traveling shaking-apron, a receptacle carried thereby, brushes for cleaning the candy in the receptacle in its course of travel with the apron, means for operating the apron and brushes, and means for delivering a blast of air against the candy in the receptacle to discharge the removed dust and impurities therefrom.

4. In a candy-cleaning apparatus, the combination of a continuously-traveling shaking-apron, a candy-receptacle carried thereby, brushes pivoted to swing downward into the receptacle and remove the dust and impurities from the candy contained therein, eccentrics for operating said brushes, means for actuating the apron and eccentrics, and means for discharging the removed dust and impurities from the receptacle.

5. In a candy-cleaning apparatus, the combination of resilient supports provided with bearings, shafts journaled in said bearings, an endless apron traveling around said shafts, means for vibrating the supports in unison during the course of travel of the apron, a candy-receptacle carried by the apron, brushes for cleaning the candy therein, means for operating the brushes, and means for discharging the dust and impurities from the receptacle.

6. In a candy-cleaning apparatus, an endless traveling shaking-apron, a receptacle carried thereby provided with fixed cleaning-brushes, movable brushes coöperating therewith, means for operating the apron and movable brushes, and means for discharging the dust and impurities from the receptacle.

809,183. CURRENT-TAP. WILLIAM D. HARRIS, Philadelphia, Pa. Filed Mar. 24, 1905. Serial No. 251,836.

Claim.—1. In a current-tap, the combination with a body of insulating material of a set of plug-contacts and a second set of socket-contacts, and terminals for the attachment of conducting-wires in electrical connection with certain of said contacts, there being a single metallic shell having a portion serving as one of the plug-contacts and another portion serving as one of the socket-contacts, substantially as described.

2. In a current-tap, the combination with a body of insulating material of a set of plug-contacts and a second set of socket-contacts, and terminals for the attachment of conducting-wires in electrical connection with certain of said contacts, there being a single metallic shell having a portion serving as one of the plug-contacts and another portion serving as one of the socket-contacts, with an insulating-casing extending around the terminals and a portion of the shell, substantially as described.

3. In a current-tap, the combination of a supporting-body of non-conducting material, a shell upon and projecting beyond the same, said projecting portion of the shell being constructed to receive a lamp and another portion of the shell being constructed to enter a socket, electrically-connected contacts on opposite ends of said body, and two terminals for the attachment of current-conductors, one of said terminals being electrically connected to the conductors on the ends of the body and the other being electrically connected to the metallic shell, substantially as described.

4. The combination in a current-tap of a body of non-conducting material, a metallic shell carried thereby having two portions, of which one is formed to enter a socket and the other is formed to receive a lamp, two contacts in electrical connection with each other and respectively carried on opposite ends of the porcelain body, one of said contacts having a portion extending adjacent to an opening in the shell and being provided with a binding screw or screws, with a second binding screw or screws in electrical connection with said shell, substantially as described.

5. The combination in a current-tap of a body of non-conducting material, a metallic shell carried thereby having two portions, of which one is formed to enter a socket and the other is formed to receive a lamp, two contacts in electrical connection with each other and respectively carried on opposite ends of the porcelain body, one of said contacts having a portion extending adjacent to an opening in the shell and being provided with a terminal screw or screws, a second terminal screw or screws in electrical connection with the shell, and a casing surrounding a portion of said shell and provided with openings placed to permit of access to said terminal screws, substantially as described.

6. The combination of a porcelain body, contact-pieces on opposite ends of the same, means for electrically connecting said pieces, a metallic shell carried on the body electrically insulated from said contacts and having one portion constructed to enter a socket and another portion constructed to receive a lamp, means for preventing motion of the said shell and said body relatively to each other, with terminals for the connection of conductors respectively connected to the shell and to the contact-pieces, substantially as described.

7. The combination of a supporting-body, a metallic shell thereon having a portion for the reception of a lamp and another portion shaped to enter a lamp-socket, a piece carried in a recess of said body, a screw passing through the shell and entering said piece, electrically-connected contacts on opposite ends of the body, and conductor-terminals respectively connected to said contacts and to the shell, substantially as described.

8. The combination of a body of non-conducting material, contacts on opposite ends of the same, a screw passing through the body and electrically and mechanically connected to said contacts, one of the contacts having an extension, a shell carried by the body and having a portion projecting beyond one end of the same for the reception of a lamp and another portion constructed to enter a lamp-socket, with terminals respectively connected to said extension of one of the contacts and to the metallic shell, substantially as described.

9. The combination of a body of non-conducting material, conducting-pieces on opposite ends of the same, a screw passing through the body and electrically and mechanically connecting said pieces, one of the pieces having an extension, a shell carried by the body having a portion projecting beyond one end of the same for the reception of a lamp, and another portion constructed to enter a lamp-socket, terminals respectively connected to said extension of one of the contact-pieces and to the metallic shell, and a casing of non-conducting material surrounding the open end of the metallic shell, substantially as described.

809,184. MULTIPLE-BOLT MECHANISM. SYLVESTER S. HAWLEY, Centralia, Ill. Filed Apr. 5, 1905. Serial No. 253,942.

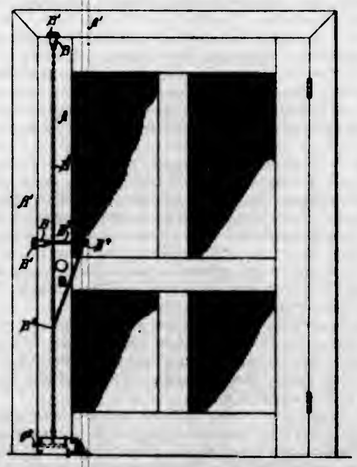

Claim.—1. In a device of the class described, a pivoted angular operating-bolt provided with a lever at one side thereof, a locking-bolt removed from said operating-bolt, a rod extending from said lever, a connection extending from the locking-bolt to the rod upon the lever of the pivoted bolt, a fixed plate, and a pivoted latch-plate carried by the lever end of the operating-bolt to engage said fixed plate.

2. In a device of the class described, an angular operating-bolt pivoted intermediate of its ends, a casing within which said bolt is disposed, a post disposed upon said bolt at one side of its pivot, a spring surrounding said post and bearing upon said casing and bolt, and a pivoted latch member mounted upon the free end of the lever portion of the bolt to engage a fixed plate.

3. In a device of the class described, an angular operating-bolt pivoted intermediate of its ends, a casing within which said bolt is disposed, a post disposed upon said bolt at one side of its pivot, a spring surrounding said post and bearing upon said casing and bolt, a pivoted latch member mounted upon the free end of the lever portion of the bolt to engage a fixed plate, a connecting-rod extending from the lever end of said bolt through said casing, a bolt disposed at a distance therefrom, and a flexible connection between said rod and locking-bolt.

809,185. EXPLOSIVE-ENGINE. JOHN F. JOHNSON, Chester, Pa. Filed Oct. 19, 1904. Serial No. 229,133.

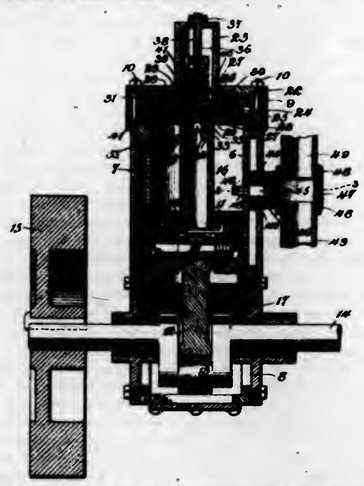

Claim.—1. In an engine, the combination with a cylinder, of a reciprocatory piston mounted therein, a tubular extension carried by the piston and reciprocating therewith, said extension having a port, means for introducing motive-fluid-supply charges into the extension, a cut-off located within the extension and arranged to close the port thereof, and means for holding the cut-off against reciprocation.

2. In an engine, the combination with a cylinder and compression-chamber, of a piston operating between the same, a tubular extension carried by the piston, said extension projecting into the cylinder, having communication with the chamber and having a port, and a cut-off located in the extension and held against reciprocation therewith, said cut-off being arranged to close the port thereof.

3. In an engine, the combination with a cylinder having a rear wall, of a reciprocatory piston mounted in the cylinder, a tubular motive-fluid inlet extension carried by the piston and having a port contiguous to its rear end, said port being spaced from the rear wall of the cylinder when the piston is at the forward limit of its stroke, and a stationary cut-off plunger located in the extension, said plunger coacting with the port to close the same upon the rearward movement of the piston.

4. In an engine, the combination with a cylinder, of a piston operating therein and having a tubular extension, said extension being provided with ports located at different distances from the piston, and means for simultaneously opening and closing the ports on the reciprocation of the piston.

5. In an engine, the combination with a cylinder, of a piston operating therein and having a tubular extension, said extension being provided in different sides with ports located at different distances from the piston, and means located within the extension for simultaneously opening and closing the ports upon the reciprocation of the piston.

10. In a device of the class described the combination of a pair of independently-movable followers adapted to engage the draw-bar, means for supporting said followers and confining them to lateral curvilinear movement, independent springs for exerting lateral pressure upon the followers, and means for supporting the springs, substantially as described.

11. In a device of the class described the combination of a pair of independently-movable followers, independent springs for exerting lateral pressure upon the followers, and means for supporting the followers and springs, said supporting means including a plate having vertical shoulders adapted to engage the draft-arms, substantially as described.

12. In a device of the class described the combination of a pair of independently-movable followers, springs for exerting lateral pressure upon the followers and means for supporting the followers and springs, said supporting means including a plate having beneath it chambers for containing the springs, substantially as described.

13. In a device of the class described, the combination of a pair of independent laterally-movable followers having vertical faces adapted to engage the opposite sides of the draw-bar, each of said followers having a horizontal toe adapted to extend beneath and support the draw-bar, and a spring adapted to exert lateral pressure upon the follower, substantially as described.

14. In a device of the class described, the combination of a laterally-movable follower adapted to engage the draw-bar, said follower having a toe adapted to extend beneath and support the draw-bar, a support upon which the follower is slidably mounted and upon which the toe bears, whereby it is supported and in turn supports the draw-bar, means for confining the follower to lateral movement, and means for yieldingly resisting the movement of the follower, substantially as described.

15. In a device of the class described, the combination of a pair of independently-movable followers adapted to engage the draw-bar, said followers having toes adapted to extend beneath and support the draw-bar, a support upon which the followers are slidably mounted and upon which the toes bear, means for confining the followers to lateral movement, and means for yieldingly resisting their outward movement, substantially as described.

809,182. **DUSTING-MACHINE FOR CANDY.** PAUL HAASE, Pfunsek, Germany. Filed Jan. 24, 1905. Serial No. 242,573.

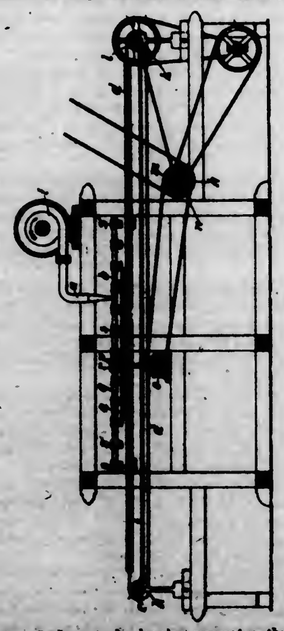

Claim.—1. In a candy-cleaning apparatus, the combination of an endless traveling apron, means for shaking the apron in its course of travel, a candy-receptacle carried by the apron, brushes for cleaning the candy as the receptacle travels and reciprocates with the apron, means for operating the brushes, and means for discharging the dust and removed impurities from the receptacle.

2. In a candy-cleaning apparatus, the combination of a continuously-traveling shaking-apron, a receptacle carried thereby and lined with brushes, movable brushes coöperating with the brushes in the receptacle to remove the dust and impurities from the candy therein, means for discharging the removed dust and impurities from the receptacle.

3. In a candy-cleaning apparatus, the combination of a continuously-traveling shaking-apron, a receptacle carried thereby, brushes for cleaning the candy in the receptacle in its course of travel with the apron, means for operating the apron and brushes, and means for delivering a blast of air against the candy in the receptacle to discharge the removed dust and impurities therefrom.

4. In a candy-cleaning apparatus, the combination of a continuously-traveling shaking-apron, a candy-receptacle carried thereby, brushes pivoted to swing downward into the receptacle and remove the dust and impurities from the candy contained therein, eccentrics for operating said brushes, means for actuating the apron and eccentrics, and means for discharging the removed dust and impurities from the receptacle.

5. In a candy-cleaning apparatus, the combination of resilient supports provided with bearings, shafts journaled in said bearings, an endless apron traveling around said shafts, means for vibrating the supports in unison during the course of travel of the apron, a candy-receptacle carried by the apron, brushes for cleaning the candy therein, means for operating the brushes, and means for discharging the dust and impurities from the receptacle.

6. In a candy-cleaning apparatus, an endless traveling shaking-apron, a receptacle carried thereby provided with fixed cleaning-brushes, movable brushes coöperating therewith, means for operating the apron and movable brushes, and means for discharging the dust and impurities from the receptacle.

809,183. **CURRENT-TAP.** WILLIAM D. HARRIS, Philadelphia, Pa. Filed Mar. 24, 1905. Serial No. 251,836.

Claim.—1. In a current-tap, the combination with a body of insulating material of a set of plug-contacts and a second set of socket-contacts, and terminals for the attachment of conducting-wires in electrical connection with certain of said contacts, there being a single metallic shell having a portion serving as one of the plug-contacts and another portion serving as one of the socket-contacts, substantially as described.

2. In a current-tap, the combination with a body of insulating material of a set of plug-contacts and a second set of socket-contacts, and terminals for the attachment of conducting-wires in electrical connection with certain of said contacts, there being a single metallic shell having a portion serving as one of the plug-contacts and another portion serving as one of the socket-contacts, with an insulating-casing extending around the terminals and a portion of the shell, substantially as described.

3. In a current-tap, the combination of a supporting-body of non-conducting material, a shell upon and projecting beyond the same, said projecting portion of the shell being constructed to receive a lamp and another portion of the shell being constructed to enter a socket, electrically-connected contacts on opposite ends of said body, and two terminals for the attachment of current-conductors, one of said terminals being electrically connected to the conductors on the ends of the body and the other being electrically connected to the metallic shell, substantially as described.

4. The combination in a current-tap of a body of non-conducting material, a metallic shell carried thereby having two portions, of which one is formed to enter a socket and the other is formed to receive a lamp, two contacts in electrical connection with each other and respectively carried on opposite ends of the porcelain body, one of said contacts having a portion extending adjacent to an opening in the shell and being provided with a binding screw or screws, with a second binding screw or screws in electrical connection with said shell, substantially as described.

5. The combination in a current-tap of a body of non-conducting material, a metallic shell carried thereby having two portions, of which one is formed to enter a socket and the other is formed to receive a lamp, two contacts in electrical connection with each other and respectively carried on opposite ends of the porcelain body, one of said contacts having a portion extending adjacent to an opening in the shell and being provided with a terminal screw or screws, a second terminal screw or screws in electrical connection with the shell, and a casing surrounding a portion of said shell and provided with openings placed to permit of access to said terminal screws, substantially as described.

6. The combination of a porcelain body, contact-pieces on opposite ends of the same, means for electrically connecting said pieces, a metallic shell carried on the body electrically insulated from said contacts and having one portion constructed to enter a socket and another portion constructed to receive a lamp, means for preventing motion of the said shell and said body relatively to each other, with terminals for the connection of conductors respectively connected to the shell and to the contact-pieces, substantially as described.

7. The combination of a supporting-body, a metallic shell thereon having a portion for the reception of a lamp and another portion shaped to enter a lamp-socket, a piece carried in a recess of said body, a screw passing through the shell and entering said piece, electrically-connected contacts on opposite ends of the body, and conductor-terminals respectively connected to said contacts and to the shell, substantially as described.

8. The combination of a body of non-conducting material, contacts on opposite ends of the same, a screw passing through the body and electrically and mechanically connected to said contacts, one of the contacts having an extension, a shell carried by the body and having a portion projecting beyond one end of the same for the reception of a lamp and another portion constructed to enter a lamp-socket, with terminals respectively connected to said extension of one of the contacts and to the metallic shell, substantially as described.

9. The combination of a body of non-conducting material, conducting-pieces on opposite ends of the same, a screw passing through the body and electrically and mechanically connecting said pieces, one of the pieces having an extension, a shell carried by the body having a portion projecting beyond one end of the same for the reception of a lamp, and another portion constructed to enter a lamp-socket, terminals respectively connected to said extension of one of the contact-pieces and to the metallic shell, and a casing of non-conducting material surrounding the open end of the metallic shell, substantially as described.

809,184. **MULTIPLE-BOLT MECHANISM.** SYLVESTER S. HAWLEY, Centralia, Ill. Filed Apr. 5, 1905. Serial No. 253,943.

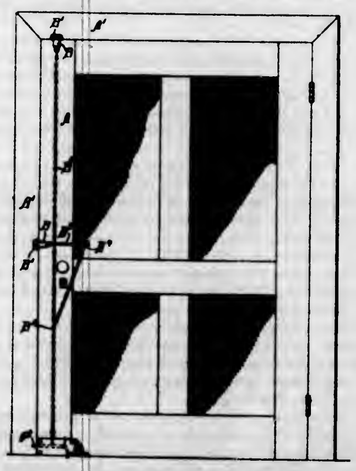

Claim.—1. In a device of the class described, a pivoted angular operating-bolt provided with a lever at one side thereof, a locking-bolt removed from said operating-bolt, a rod extending from said lever, a connection extending from the locking-bolt to the rod upon the lever of the pivoted bolt, a fixed plate, and a pivoted latch-plate carried by the lever end of the operating-bolt to engage said fixed plate.

2. In a device of the class described, an angular operating-bolt pivoted intermediate of its ends, a casing within which said bolt is disposed, a post disposed upon said bolt at one side of its pivot, a spring surrounding said post and bearing upon said casing and bolt, and a pivoted latch member mounted upon the free end of the lever portion of the bolt to engage a fixed plate.

3. In a device of the class described, an angular operating-bolt pivoted intermediate of its ends, a casing within which said bolt is disposed, a post disposed upon said bolt at one side of its pivot, a spring surrounding said post and bearing upon said casing and bolt, a pivoted latch member mounted upon the free end of the lever portion of the bolt to engage a fixed plate, a connecting-rod extending from the lever end of said bolt through said casing, a bolt disposed at a distance therefrom, and a flexible connection between said rod and locking-bolt.

809,185. **EXPLOSIVE-ENGINE.** JOHN F. JOHNSON, Chester, Pa. Filed Oct. 19, 1904. Serial No. 229,133.

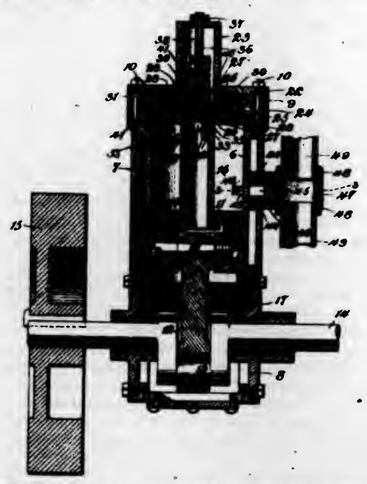

Claim.—1. In an engine, the combination with a cylinder, of a reciprocatory piston mounted therein, a tubular extension carried by the piston and reciprocating therewith, said extension having a port, means for introducing motive-fluid-supply charges into the extension, a cut-off located within the extension and arranged to close the port thereof, and means for holding the cut-off against reciprocation.

2. In an engine, the combination with a cylinder and compression-chamber, of a piston operating between the same, a tubular extension carried by the piston, said extension projecting into the cylinder, having communication with the chamber and having a port, and a cut-off located in the extension and held against reciprocation therewith, said cut-off being arranged to close the port thereof.

3. In an engine, the combination with a cylinder having a rear wall, of a reciprocatory piston mounted in the cylinder, a tubular motive-fluid inlet extension carried by the piston and having a port contiguous to its rear end, said port being spaced from the rear wall of the cylinder when the piston is at the forward limit of its stroke, and a stationary cut-off plunger located in the extension, said plunger coacting with the port to close the same upon the rearward movement of the piston.

4. In an engine, the combination with a cylinder, of a piston operating therein and having a tubular extension, said extension being provided with ports located at different distances from the piston, and means for simultaneously opening and closing the ports on the reciprocation of the piston.

5. In an engine, the combination with a cylinder, of a piston operating therein and having a tubular extension, said extension being provided in different sides with ports located at different distances from the piston, and means located within the extension for simultaneously opening and closing the ports upon the reciprocation of the piston.

6. In an engine, the combination with a cylinder, of a piston operating therein and having a tubular extension, said extension being provided in different sides with ports located at different distances from the piston, and a stationary plunger located within the extension and having spaced projections that are arranged to cover certain of the ports, other of said ports being movable to points between the projections.

7. In an engine, the combination with a cylinder having a rear wall provided with a socket, of a piston operating in the cylinder and having a tubular extension movable into and out of the socket, said extension having a port movable into and out of the cylinder, a stationary plunger located within the extension, and packing interposed between the plunger and extension and between the rear wall and the extension.

8. In an engine, the combination with a cylinder having a rear wall provided with a socket, of a piston operating in the cylinder and having a tubular extension movable into and out of the socket, said extension having a port movable into and out of the cylinder, a stationary plunger located within the extension, and a packing-ring located in the rear wall of the cylinder and surrounding the extension, said plunger being also provided with packing-receiving recesses.

9. In an engine, the combination with a cylinder, of a piston operating therein and having a tubular extension provided with ports, a stationary cut-off plunger located within the extension and having an annular packing-recess, and a supporting-rod for the plunger having a passage-way communicating with the annular recess.

10. In an engine, the combination with a cylinder having a compression-chamber at one end, of a piston operating in the cylinder, a tubular extension carried by the piston and having communication with the compression-chamber, said extension being provided with lateral ports located at different distances from the piston, a cut-off plunger located within the extension and having an annular packing-groove, a supporting-rod for holding the plunger against movement with the extension, said rod having a passage-way communicating with the annular groove, and extensions carried by the inner end of the plunger for effecting the closure of certain of the ports.

11. In an engine, the combination with cylinders arranged in tandem, of pistons operating in the cylinders, a connection between the pistons, and means for introducing motive-fluid-supply charges to one of the cylinders through said connection.

12. In an engine, the combination with cylinders arranged in tandem, of pistons operating in the cylinders, a connection between the pistons, and means for successively introducing motive-fluid-supply charges to the cylinders through the said connection.

13. In an engine, the combination with separate sets of cylinders and compression-chambers, of a piston operating in each cylinder and acting upon the motive fluid in each chamber, a tubular connection between the pistons constituting means of communication between each chamber and the coacting cylinder, and means for cutting off said communication.

14. In an engine, the combination with cylinders arranged in tandem, of a compression-chamber formed at the end of the cylinders, pistons operating in each cylinder, a tubular connection between the pistons constituting means of communication between each chamber and its coacting cylinder, and means for cutting off such communication.

15. In an engine, the combination with cylinders disposed in tandem, of pistons operating in the cylinders and subdividing each into an explosion and a compression chamber, a tubular connection between the pistons having communication with both explosion and both compression chambers, and means for cutting off such communication.

16. In an engine, the combination with cylinders located in tandem, of pistons operating in the cylinders and subdividing each into an explosion and a compression chamber, a tubular connection between the pistons having communication with both compression-chambers and ports that open into both explosion-chambers, and means for cutting off the ports.

17. In an engine, the combination with cylinders arranged in tandem, of pistons operating in the cylinders and subdividing each into an inner explosion and an outer compression chamber, and a tubular extension connecting the pistons and having open ends communicating with both of said outer compression-chambers, said extension projecting through both explosion-chambers and having ports that communicate therewith.

18. In an engine, the combination with cylinders arranged in tandem, of pistons operating in the cylinders and subdividing each into an inner explosion and an outer compression chamber, a tubular rod connecting the pistons and having open ends communicating with both of said compression-chambers, said rod projecting through both of said inner explosion-chambers and having lateral ports communicating therewith, and means for closing the ports.

19. In an engine, the combination with explosion-chambers, of pistons operating therein, and a reciprocatory charge-conducting device having common ports for introducing charges to the different explosion-chambers.

20. In an engine, the combination with explosion-chambers, of pistons operating therein, and a reciprocatory charge-conducting device having a common port movable into communication with different chambers.

21. In an engine, the combination with explosion-chambers, of reciprocatory pistons operating therein, a charge-conducting device carried by the pistons and reciprocating in the different chambers and having a port that is movable into communication with said chambers.

22. In an engine, the combination with explosion-chambers, of pistons operating therein, a charge-conducting device movably extending into the chambers and having a port that is relatively movable into communication with said chambers, and means located within the device and stationary with respect thereto for cutting off communication between the ports and one of the chambers when said port is in communication with the other chamber.

23. In an engine, the combination with explosion-chambers, of a partition-wall separating the same, pistons operating in the chambers, and a tubular connection between the pistons passing through the wall and having a port movable through said wall into the different explosion-chambers.

24. In an engine, the combination with explosion-chambers, of a partition-wall separating the same, pistons operating in the chambers, and a tubular connection between the pistons passing through the wall and having a port movable through said wall into the different explosion-chambers, said wall constituting means for cutting off communication between the port and one of the chambers when said port is located in the other chamber.

25. In an engine, the combination with explosion-chambers, of pistons operating therein, a tubular charge-conducting device movably extending into the chambers and having a port that is successively movable into communication with said chambers, and a plunger located within the charge-conducting device.

26. In an engine, the combination with cylinders disposed in tandem, of pistons operating in the cylinders, and a tubular connection between the cylinders, said tubular connection having a port movable into the different cylinders upon the reciprocation of the piston.

27. In an engine, the combination with cylinders arranged in tandem, of pistons operating in the cylinders and dividing the same into explosion and compression chambers, a tubular connection between the pistons having communication with the compression-chambers, and a port that is movable into communication with the explosion-chambers.

28. In an engine, the combination with cylinders arranged in tandem, of pistons operating in the cylinders and dividing the same into explosion and compression chambers, a tubular connection between the pistons having communication with the compression-chambers, a port that is movable into communication with the explosion-chambers, and a stationary plunger located within the connection.

29. In an engine, the combination with cylinders arranged in tandem, of a division-wall separating the cylinders, pistons operating in the cylinders and subdividing the same into inner explosion-chambers and outer compression-chambers, a tubular connection between the pistons having open ends communicating with the compression-chambers, said connection having a port movable through the division-wall into the different explosion-chambers, and means located in the connection at the division-wall for cutting off communication between the ends of the connection.

30. In an engine, the combination with a cylinder, of a reciprocatory piston located therein, another cylinder, means for securing the other cylinder in tandem relation upon the first-mentioned cylinder, a reciprocatory piston located in said second cylinder, and means for connecting the pistons.

31. In an engine, the combination with a cylinder having a head provided with an opening, of a reciprocatory piston located in the cylinder, another cylinder having a head provided with an opening, means for securing the other cylinder in tandem relation upon the first-mentioned cylinder with the heads abutted and the openings alined, a reciprocatory piston located in the second cylinder, and means passing through the openings for connecting said pistons.

32. In an engine, the combination with a cylinder, of a removable head for the same having an opening, a reciprocatory piston located in the cylinder, another cylinder, a removable head for said second cylinder having an opening, a reciprocatory piston operating in the second cylinder, common bolts for securing the heads to the cylinders and the cylinders to each other with the openings in the heads alined, and a rod connection between the pistons, said connection passing through the openings.

33. In an engine, the combination with a cylinder having a curved wall and spaced exhaust-openings therein, of outstanding angularly-disposed walls connected to said curved wall on opposite sides of the exhaust-openings and having flat outer faces disposed in substantially the same plane, and an exhaust-pipe coupling secured against said outer flat faces.

809,186. **TELEPHONE SYSTEM.** HENRY A. JUDSON, Washington, D. C. Filed Sept. 9, 1905. Serial No. 277,700.

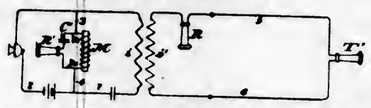

Claim.—1. In a telephone system, a talking-circuit comprising a direct path of negligible resistance for continuous current, a magnetic discharge-coil a transmitter and a source of current therein, and a shunt-path around the said coil only, said shunt opaque to continuous current but passing high-frequency currents directly, substantially as described.

2. In a telephone system, a transmitter and a source of current-supply, a condenser, and the primary winding of an induction-coil, all in series with each other, together with a bridge across the circuit in shunt of the condenser and primary, said bridge containing an electromagnet having windings of low ohmic resistance but high self-induction, substantially as described.

3. In a telephone system, a circuit containing a transmitter, a source of current-supply and the primary of an induction-coil, with a bridge across said circuit containing an electromagnet, substantially as described.

4. In a telephone system, a talking-circuit containing a transmitter, a battery and an electromagnet, with a shunt around said electromagnet only, said shunt containing a condenser and connected to line, substantially as described.

5. In a telephone system, a transmitter, a battery, and an electromagnet of relatively low ohmic resistance in series with the battery and transmitter, and a shunt around said magnet only, said shunt so arranged as to be practically opaque to continuous currents but transparent to periodic currents, substantially as described.

6. In a telephone system, a transmitter, a battery, and an electromagnet of relatively low ohmic resistance in series with the battery and transmitter, a receiving device and a shunt around said magnet opaque to direct current and including the line-circuit and the receiving device, substantially as described.

7. In a telephone system, a circuit containing a transmitter, a source of current-supply and the primary of an induction-coil, a secondary connected to line, and a bridge across said circuit containing a receiver and a condenser only, substantially as described.

809,187. **MAIL-DELIVERER.** HERBERT L. KIMMONS, Decker, Ind. Filed May 1, 1905. Serial No. 258,943.

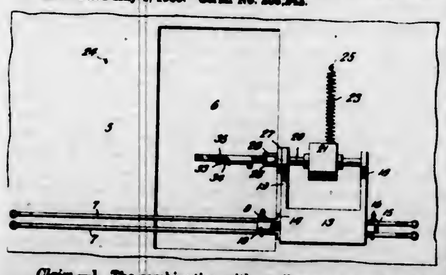

Claim.—1. The combination with a railway-car of a horizontal guide secured to the car, a frame engaged with the guide and movable longitudinally thereof, a catcher connected with the frame and movable into and out of operative position, means for holding the catcher in inoperative position, means for holding the catcher in operative position, said means being shiftable with respect to the guide to lie at times with its catcher extending in one direction and at times with its catcher extending in opposite direction.

2. The combination with a railway-car having an opening in the wall thereof, of horizontal guides secured to the car, and a catcher connected with the guides and arranged for movement longitudinally thereof to lie at opposite sides of the opening, said catcher being arranged for movement to lie at times exteriorly of the car and in position to receive a mail-bag and at times interiorly of the car, means for holding the catcher yieldably in this last-named position, means for holding the catcher in position to receive a mail-bag, means for moving the second-named holding means into inoperative position, said third-named means being arranged for operation by the impact of a mail-bag engaged by the catcher said catcher being shiftable pivotally with respect to the guides to extend at times in one direction and at times in the opposite direction and means for holding the catcher against its pivotal movement with respect to the guides.

3. A catcher comprising spaced guide-rails, a plate pivotally and slidably engaged between the guide-rails, a frame secured to the plate and lying at one side of the guide-rails said frame being movable pivotally with the plate to extend in opposite directions, means for holding the frame and plate against pivotal movement and a catching device carried by the frame.

4. In a device of the class described the combination with a frame of a shaft revolubly mounted in a frame, a catcher carried by the shaft and movable into and out of operative position said catcher when in operative position being movable with the shaft into position to receive a mail-bag and into position to discharge the latter said catcher when in inoperative position being arranged to hold the shaft against rotation.

5. A device of the class described comprising a frame a shaft revolubly mounted in the frame a catcher carried by the shaft and movable with respect thereto into and out of operative position, said catcher when in operative position being movable with the shaft into position to receive a body and into position to discharge the latter, said catcher being arranged for coöperation with the frame when the catcher is in inoperative position to hold the shaft against rotation.

6. A device of the class described comprising a catching device movable into and out of position to receive a body, said device comprising a movable arm means carried by the arm for holding the catcher in position to receive a body said arm being movable by a body received by the catcher to bring the holding means into inoperative position and means for moving the catcher out of position to receive a body when the holding means is moved into inoperative position.

7. A device of the class described comprising a frame an arm carried by the frame and having a jaw at one end, a jaw pivoted to the arm for coöperation with the first-named jaw, means for holding the pivoted jaw yieldably at the limit of its movement toward the other jaw and means for holding the pivoted jaw against the action of the yieldable holding means, said second-named holding means including a portion lying in position for engagement by a body between the jaws for movement of said holding means into inoperative position.

8. A catching device comprising pivotally-connected jaws movable toward and away from each other, means for holding the jaws yieldably at the limits of their movements toward each other, a projection carried by one of the jaws and a latch pivoted to the other jaw for movement into and out of engagement with the projection, said latch being arranged when in engagement with the projection to hold the jaws against the action of the yieldable holding means said latch when in operative position lying in position for engagement by a body between the jaws for movement of the latch by said body into inoperative position.

809,188. **TAG-STAMPING DEVICE.** CHARLES C. KING, Louisville, Ky. Filed Feb. 4, 1905. Serial No. 244,133.

Claim.—1. A device of the kind described comprising a frame, the lower ends of which are connected by parallel bars, a pair of axles adjustably mounted in vertical slots at the opposite end of the frame, each axle carrying a series of rollers, and the endless type-bands movable around the rollers and bottom bars.

2. A device of the kind described comprising a frame having the parallel bottom bars, parallel axles mounted in slots near the opposite end of the frame, each axle having a series of rollers arranged to turn thereon, the endless type-bands adapted to travel around the

rollers and bars and screws carried by the cover-plate and passing through the axle for adjusting the axles for the purpose described.

3. A device of the kind described comprising a frame having the parallel bottom bars connected thereto, parallel axles mounted in the frame, the rollers arranged upon the axles and the type-bands adapted to travel around the rollers and bottom bars, a cover-plate connected to the top of the frame and the adjusting-screws carried by the cover-plate and passing through the ends of the axles whereby said axles are adjustable with reference to the bottom bars, all of said parts being arranged and adapted to operate substantially as described.

4. A device of the kind described comprising a frame, the lower ends of which are connected by parallel bars, a pair of axles having squared ends mounted in vertical slots at the opposite end of the frame, and the adjusting-screws carried by the cover-plate and passing through the ends of the axles, for the purpose described.

5. A device of the kind described comprising a frame, the lower ends of which are connected by parallel bars, a pair of axles having squared ends mounted in vertical slots at the opposite end of the frame, each axle carrying a series of rollers, the endless type-bands adapted to travel around the rollers and bars, and adjusting-screws mounted in slotted lugs of the cover-plate and passing through the end of the axle for the purpose described.

809,189. **TRACTION-ENGINE.** MOSES W. KOUNS, Washington Court-House, Ohio, assignor to The Ohio Manufacturing Company, Upper Sandusky, Ohio, a Corporation of Ohio. Filed Aug. 14, 1905. Serial No. 274,101.

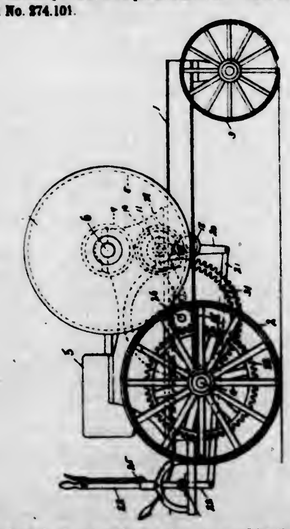

Claim.—1. In a traction-engine, the combination, with a frame and driving ground-wheels supporting the same, of an engine of the character described mounted on said frame, a shaft driven by said engine and having a friction-wheel with concentric internal and external annular friction-surfaces, a counter-shaft provided with a friction-wheel located between said friction-surfaces and connected with the driving ground-wheels by suitable gearing, and means for relatively moving said shafts to bring the counter-shaft friction-wheel into contact with either the internal or external friction-surface of the other friction-wheel, substantially as described.

2. In a traction-engine, the combination, with a frame and driving ground-wheels supporting the same, of an engine of the character described mounted on said frame, a shaft driven by said engine and having a friction-wheel with concentric internal and external annular friction-surfaces, a counter-shaft provided with a friction-wheel located between said surfaces and connected with the driving ground-wheels by suitable gearing, and means for moving said counter-shaft toward and from the other shaft to bring the counter-shaft friction-wheel into contact with either the internal or external friction-surface of the other friction-wheel, substantially as described.

3. In a traction-engine, the combination, with a frame and driving ground-wheels supporting the same, of an engine of the character described mounted on said frame, a shaft driven by said engine and having a friction-wheel with concentric internal and external annular friction-surfaces, a counter-shaft provided with a friction-wheel located between said friction-surfaces and connected with the driving ground-wheels by suitable gearing, pivoted arms supporting said counter-shaft, and means for actuating said arms to move the counter-shaft toward and from the other shaft and bring the counter-shafttfriction-wheel into contact with either the internal or external friction-surface of the other friction-wheel, substantially as described.

4. In a traction-engine, the combination, with a frame and driving ground-wheels supporting the same, of an engine of the character described mounted on said frame, a shaft driven by said engine and having a friction-wheel with concentric internal and external annular friction-surfaces, a counter-shaft provided with a friction-wheel located between said friction-surfaces and connected with the driving ground-wheels by suitable gearing, pivoted arms supporting said counter-shaft, and means for actuating said arms to move the counter-shaft toward and from the other shaft and bring the counter-shaft friction-wheel into contact with either the internal or external friction-surface of the other friction-wheel, said means comprising an eccentric engaging one of the arms, a hand-lever, and operative connections between said hand-lever and eccentric, substantially as described.

5. In a traction-engine, the combination, with a frame and driving ground-wheels supporting the same, of an engine of the character described mounted on said frame, a shaft driven by said engine and having a friction-wheel with concentric internal and external annular friction-surfaces, an intermediate shaft operatively connected with the ground-wheels and provided with a gear, a counter-shaft having a pinion to mesh with said gear and a friction-wheel located between the friction-surfaces of the other friction-wheel, arms supporting said counter-shaft at their free ends and pivotally supported at their other ends to move in an arc substantially concentric with the intermediate shaft, and means for actuating said arms to bring the counter-shaft friction-wheel into contact with either the internal or external friction-surface of the other friction-wheel, substantially as described.

6. In a traction-engine, the combination, with a frame and driving ground-wheels supporting the same, of an engine of the character described mounted on said frame and having a crank-shaft provided with a fly-wheel having concentric internal and external annular friction-surfaces, a counter-shaft provided with a friction-wheel located between said friction-surfaces and connected with the driving ground-wheels by suitable gearing, and means for relatively moving said shafts to bring the counter-shaft friction-wheel into contact with either the internal or external friction-surface of said fly-wheel, substantially as described.

7. In a traction-engine, the combination, with a frame and driving ground-wheels supporting the same, of an engine of the character described mounted on said frame, a shaft driven by said engine and having two friction-wheels, each provided with concentric internal and external annular friction-surfaces on its inner face, a counter-shaft extending between said friction-wheels and having at each end a friction-wheel located between the friction-surfaces of the corresponding friction-wheel on the driven shaft, said counter-shaft being connected with the driving ground-wheels by suitable gearing, and means for relatively moving said shafts to bring the counter-shaft friction-wheels into contact with either the internal or external friction-surfaces of the other friction-wheels, substantially as described.

8. In a traction-engine, the combination, with a frame and driving ground-wheels supporting the same, of an engine of the character described mounted on said frame, a shaft driven by the engine and having two friction-wheels with concentric internal and external annular friction-surfaces on their adjacent faces, an intermediate shaft having a driving connection with the ground-wheels and

provided with a gear, a counter-shaft extending between the friction-wheels of the driven shaft and provided at its ends with friction-wheels located between the friction-surfaces thereof, said counter-shaft having a pinion to mesh with the gear of the intermediate shaft, arms supporting said counter-shaft at their free ends and pivotally supported at their other ends to move in an arc substantially concentric with the intermediate shaft, a rock-shaft provided with eccentrics engaging said arms to actuate the same, a hand-lever, and operative connections between said hand-lever and rock-shaft, substantially as described.

9. In a traction-engine of the character described, a driving friction-wheel having concentric internal and external annular friction-surfaces, a counter-shaft having a friction-wheel located between said friction-surfaces, pivoted arms supporting said counter-shaft, one of said arms having adjacent projections, a rock-shaft having an eccentric thereon provided with an annular flange engaging between the adjacent projections of the arm, and means for operating said rock-shaft, substantially as described.

10. In a traction-engine of the character described, a driven shaft having two friction-wheels thereon provided with concentric internal and external annular friction-surfaces, a counter-shaft provided with friction-wheels located between said surfaces, arms supporting said counter-shaft at their free ends and pivoted at their other ends, said arms having adjacent projections, a rock-shaft having eccentrics thereon provided with annular flanges engaging between the projections of the arms, and means for operating said rock-shaft, substantially as described.

809,190. **WELL-PULLING MACHINE.** OLIVER D. KRAFT and LOUIS W. FETZER, Findlay, Ohio. Filed June 9, 1905. Serial No. 264,880.

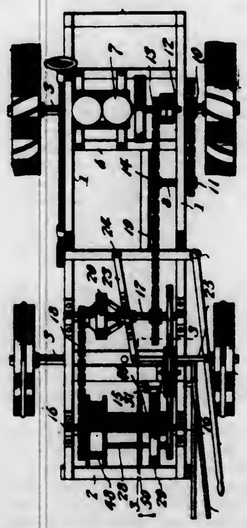

Claim.—1. In a machine of the class set forth, the combination with a drive-shaft provided with a gear, a drum provided with a gear, a power-transmitting member carried by the drum and the shaft, a clutch member carried by the shaft by means of which said power-transmitter can be thrown into and out of operation, and vertically-adjustable gears adapted to be brought into engagement with the said first-named gears, whereby the direction of rotation of the drum may be changed, said gears being freely removable.

2. In a machine of the class set forth, the combination with a drive-shaft provided with a gear, a drum provided with a gear, a power-transmitting member carried by the drum and the shaft, a clutch member carried by said shaft by means of which the power-transmitter can be thrown into and out of operation, and a frame provided with gears adapted to be brought into engagement with said first-named gears, whereby the direction of rotation of the drum may be changed.

3. In a machine of the class set forth, the combination of a drive-shaft provided with a gear, a drum provided with a gear, a power-transmitting member carried by the drum and the shaft, a clutch member carried by said shaft by means of which the power-transmitter can be thrown into and out of operation, a frame provided with gears adapted to be brought into engagement with said first-named gears, whereby the direction of rotation of the drum may be changed, and means for retaining the last-named gears normally out of engagement with the first-named gears.

4. In a machine of the class set forth, the combination with a drive-shaft provided with a gear, a drum provided with a gear, a power-transmitting member carried by the drum and the shaft, a clutch member carried by said shaft by means of which the power-transmitter can be thrown into and out of operation, vertically-adjustable gears adapted to be brought into engagement with said first-named gears whereby the direction of rotation of the drum may be changed, and means for retaining said last-named gears normally out of engagement with said first-named gears.

5. In a machine of the class set forth, the combination with a drive-shaft provided with a gear, a drum provided with a gear, a power-transmitting member carried by the drum and said shaft, a clutch member carried by said shaft to throw said power-transmitter into and out of operation, and vertically-adjustable gears adapted to be brought into engagement with said first-named gears, whereby the direction of rotation of the drum may be changed.

6. In a machine of the class set forth, the combination with a drive-shaft provided with a gear, a drum provided with a gear, a power-transmitting means interposed between the drum and said shaft, a clutch carried by said shaft and adapted to control said power-transmitting means, means for operating said clutch, a vertically-adjustable gear adapted to be brought into engagement with said first-named gears to change the direction of rotation of the drum, means for operating said last-named gear, a brake-band for said drum, and means for operating said brake-band.

7. In a machine of the class set forth, the combination with a drive-shaft provided with a gear, a drum provided with a gear, a power-transmitting member carried by the drum and the shaft, a clutch member carried by the shaft by means of which the power-transmitter can be thrown into and out of operation, and a vertically-adjustable gear adapted to be brought into engagement with said first-named gear when said power-transmitting member is thrown out of operation.

809,191. **COMBINATION-TOOL.** EDWARD J. LA DUKE and ISAAC G. O'HARRA, Seattle, Wash. Filed June 20, 1905. Serial No. 267,794.

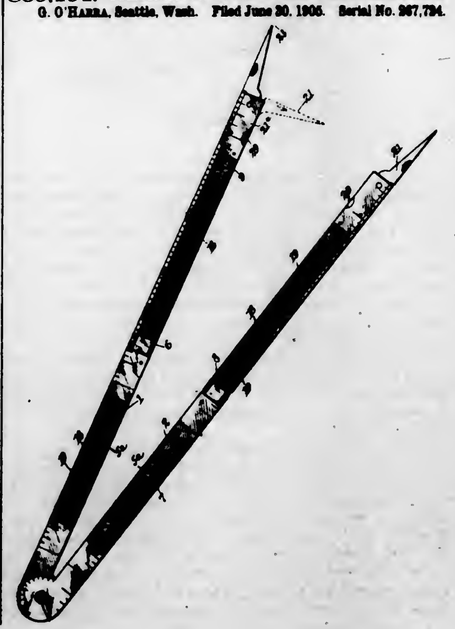

Claim.—A tool of the class described, comprising two pivoted legs having limbs with connecting-joints, one of said limbs at each joint having a head presenting three flat faces, a spring attached to the opposite limb and engaging said faces, respectively, to hold said limbs in rigid relation, the outer of said limbs having sockets, and pivoted blades carried by said outer limbs and normally lying in said sockets.

809,192. **REPAIRING DEVICE FOR VEHICLES.** CHARLES W. LAVERS, Halifax, Canada. Filed July 20, 1905. Serial No. 270,626.

Claim.—1. In a repairing device for vehicles, a splice-bar provided with a wheel-spindle at one end, a hook at the opposite end, and a central longitudinal recess, in combination with clips for securing said splice-bar to a broken portion of the vehicle, substantially as described.

2. A repairing device for vehicles comprising a splice-bar having a central longitudinal recess, an axle-spindle at one end and a hook at the other, and clamps for holding the same in place upon a broken portion of a wheeled vehicle, substantially as described.

3. A repairing device for vehicles comprising a splice-bar having a spindle at one end and clips for securing the splice-bar in place, said spindle having a threaded socket in its end to accommodate a threaded bolt, said spindle also having a threaded end of opposite pitch to the socket, substantially as described.

4. A repairing device for vehicles comprising a splice-bar having a wheel-spindle at one end, a hook at its opposite end, clips for securing the device in place, said spindle having a threaded outer end and a socket provided with threads of opposite pitch to the threads on the end of the spindle, and means for binding the clips against the splice-bar, substantially as described.

809,193. **ANTICREEPING DEVICE.** JOHN R. LIGGETT, Cumberland, Md. Filed June 3, 1905. Serial No. 263,581.

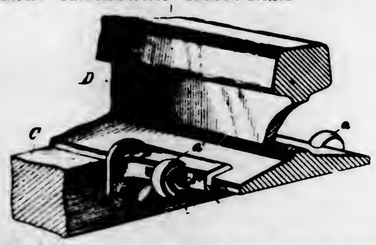

Claim.—1. An anticreeping device substantially as herein described comprising an abutment-section having a cuff provided with a plate to underlie the edge of a rail-base and with a top plate to overlie said base, the outer side of said cuff being inclined or tapered toward one end and provided at the larger end of said cuff with a depending plate to abut a cross-tie, and a cross-piece provided at its ends with upturned hooks to engage the edge of a rail-base and the outer side of the cuff of the abutment-section, said hooks being comparatively narrow whereby they may cant or rock in the initial creeping movement of the rail, substantially as set forth.

2. An anticreeping device for railroad-rails comprising a cuff having plates overlying and underlying and adapted to receive between them the edge of a rail-base, and a cross-piece having means for engaging said cuff and the opposite side of a rail-base, substantially as set forth.

3. The combination in a device for preventing rails from creeping, of a cuff-section adapted to embrace the edge of a rail-base and tapered or inclined on its outer side, of a cross-bar having at one end a hook engaging the outer side of said cuff and adapted to rock in engagement therewith, means being provided at the opposite ends of the cross-bar for engagement with the rail-base and adapted to rock in its said engagement, substantially as set forth.

4. An anticreeping device comprising a cuff adapted to embrace a rail-base and having its outer side inclined or tapered and means engaging with said inclined or tapered side for binding the cuff to a rail-base, substantially as set forth.

5. An anticreeping device consisting of an abutment-section having a cuff provided with upper and lower plates to fit above and below the edge of a rail-base and a depending plate at one end of said cuff to engage with a cross-tie and a cross-bar hooked at its ends to engage with said cuff and the opposite edge of a rail-base to which said cuff is fitted, substantially as set forth.

6. An anticreeping device comprising an abutment-section adapted to fit one edge of a rail-base and a cross-bar provided at its opposite ends with upturned hooks rounded in the direction of length of the rail and adapted to engage with the outer side of the abutment-section and with the opposite edge of a rail-base and to rock or cant in the direction of length of said rail in the initial movement of a rail, substantially as set forth.

7. An anticreeping device comprising an abutment-section to engage one edge of a rail-base and a cross-bar having at its ends upturned hooks to engage said abutment-section and the opposite edge of a rail-base and made in sections adjustably connected whereby the said cross-bar may be adjusted as to length substantially as set forth.

809,194. **PROTECTOR FOR SPECTACLES.** CHARLES B. LEWIS, Peru, Ill. Filed Mar. 13, 1905. Serial No. 249,880.

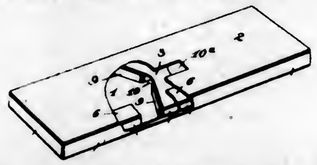

Claim.—1. A spectacle or the like case having upwardly-projecting walls, spaced apart, to receive the nose-piece of a pair of spectacles or the like between them, and a bridge-piece to fit over, engage the said walls, bridge the space and cover the nose-piece of the spectacles between them, substantially as described.

2. A spectacle or the like case, having a base provided with upwardly-projecting walls, spaced apart, to receive the nose-piece of a pair of spectacles or the like between them, a bridge-piece to fit over, engage the said walls, bridge the space and cover the nose-piece of the spectacles between them, and a cover to close over the said base and the said bridge-piece, substantially as described.

3. A spectacle or the like case, having a base provided with two pairs of upturned, outwardly-diverging walls spaced apart to receive the spectacle nose-piece between them, and a bridge-piece, having similarly-disposed pairs of diverging walls, to close over and engage the first-mentioned walls and cover the spectacle nose-piece between them, substantially as described.

4. A spectacle or the like case formed of a single piece of material to provide a base, a cover, and side walls, said base being provided with upturned spaced walls to receive the nose-piece of a pair of spectacles or the like between them, and one of said side walls being formed with a bridge-piece to close over and engage the spaced walls, and to cover the spectacle nose-piece between them, the said cover being adapted to close over the said bridge-piece, substantially as described.

5. A spectacle or the like case comprising a base, a cover and side walls, said base being provided with upturned spaced walls to receive the nose-piece of a pair of spectacles or the like between them, and one of said side walls being formed with a bridge-piece to close over and engage the spaced walls, and to cover the spectacle nose-piece between them, the said cover being adapted to close over the said bridge-piece, substantially as described.

809,195. **BOBBIN-TRAY.** JOHN LLOYD, Bridgeport, Conn. Filed Apr. 10, 1905. Serial No. 254,741.

Claim.—1. In a bobbin-tray the combination with a frame, of a series of longitudinal wire supports, each bearing a series of pins arranged at proper distances apart, and transverse stay-wires to engage the longitudinal wires intermediate of the pins.

2. In a bobbin-tray of the class described, the combination with a suitable frame, of a series of supporting-wires attached thereto, each containing pins formed at a right angle to and of the wires of the support, and transverse stay-wires to engage said supporting-wires intermediate of said pins and arranged at a right angle thereto.

3. In a bobbin-tray of the class described, the combination with a frame, of a series of longitudinal wire supports attached thereto, a series of twisted pins formed of and integral with the wire of the supports, and transverse stay-wires connecting the longitudinal supports.

4. In a bobbin-tray of the class described, the combination with a frame, of a series of wire supports arranged parallel and attached to said frame, a series of twisted pins disposed therefrom formed of and integral with the wires of the support, and wires arranged at a right angle to said supports for retaining said supporting-wires at a proper distance apart.

5. In a bobbin-tray of the class described, the combination with a suitable frame, of parallel supporting-wires, each having a series of folded and twisted loops therein to form pins, wires for retaining said loops in a closed position, and wires for retaining the supporting-wires at a proper distance apart.

6. In a bobbin-tray of the class described, the combination with a substantially rectangular frame, of a series of longitudinal wire supports attached thereto and containing integral pins, and transverse wires connecting the frame and supports intermediate of the said pins.

7. In a bobbin-tray of the class described, the combination with a suitable frame, of a series of parallel wire supports connected to the ends of the frame, a series of pins formed of and integral with each of said wire supports, a series of wire braces attached to the sides of the frame and connecting the said supports.

809,196. **STOP-WATCH.** ALBERT C. LOKER, Kansas City, Mo. Filed Apr. 21, 1905. Serial No. 256,706.

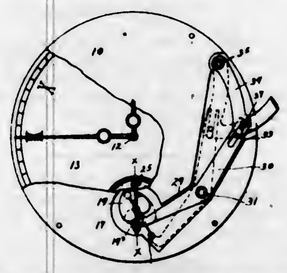

Claim.—1. In a watch or timepiece the combination with a hand-setting lever having a slot at its upper end, a suspended arm pivotally connected with the slotted end of said lever and an operating branch portion extending outwardly therefrom.

2. The combination with the bottom plate of a watch or timepiece supporting the watch-movement of a time-indicator shaft, an independent bearing for the hands of the watch, having a socket adapted to receive the end of said indicator-shaft, a cam upon said bearing, a pivoted lever upon the bottom plate, an extension of one end of said lever adapted to engage with the cam, said lever having a slot at the other end, a suspended arm pivotally connected with the slotted end of said lever, and an operating branch portion of said arm extending outwardly therefrom.

3. The combination with the bottom plate of a watch or timepiece supporting the watch-movement having a recess, a shaft opening therein, an indicator-shaft extending through said opening, an independent bearing for the hands, having a socket adapted to fit the end of said shaft, a cam having a notch upon said bearing within said recess, said bottom plate having a recess communicating with the recess near the shaft, opening and extending to the edge of the bottom plate, a lever pivoted in said latter recess, a projection at one end engaging with the notch in said cam; said lever having a slot in the upper end, a suspended arm having a bent portion and a pin extending in the slot in the said lever.

809,197. **SELF-FASTENING COTTON-MARKER.** GEORGE W. LOWE, Hindsay, Ind. Ter. Filed July 11, 1905. Serial No. 269,269.

Claim.—1. A marker for cotton-bales and the like, consisting of a sheet-metal plate having perforations near each corner, and perforations intermediate said end perforations, smooth wires or rods threaded through said intermediate perforations, and bent downwardly passing through the end perforations, the ends of said rods having V-shaped slits, whereby when pressure is exerted on the bale during compression, the split ends of the rods or wires will be forced into the bale and spread apart, to retain the plate on the bale.

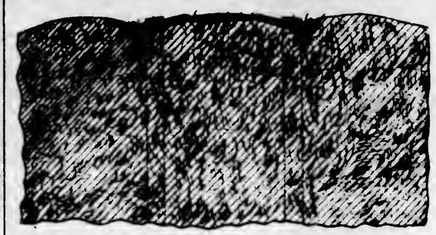

2. A marker for cotton-bales and the like, comprising a curved sheet-metal plate having an arched central portion and provided with perforations at the sides of said arched portion, said plate being further provided with perforations near each corner and in longitudinal alinement with the perforations at the sides of the arched portion, and rods or wires threaded through the perforations of the arched portion and having their ends bent downwardly through the end perforations, the extreme ends of said rods or wires having V-shaped slits, whereby the ends of said rods will be caused to spread apart by pressure during compression of the bale and secure the marker to the bale.

3. A marker for cotton-bales and the like, comprising a sheet-metal plate having parallel rows of perforations, and smooth rods or wires threaded through said perforations, the ends of the rods being bent downwardly and provided with V-shaped slits, whereby the slitted ends of the rods or wires will be caused to spread apart by pressure during compression of the bale, and thereby secure the plate to the bale.

809,198. **COIN-CONTROLLED SCALE.** JOHN LORENTZEN, Duluth, Minn. Filed Oct. 13, 1904. Serial No. 228,236.

Claim.—1. The combination in a weighing-scale, of a platform, a shaft to which revoluble movement is imparted on the depression of the platform, a pointer, a clutching-sleeve for connecting the hand or pointer to the shaft, and a coin-controlled cam-slide for moving said sleeve.

2. The combination in a weighing-machine, of a platform, a shaft to which revoluble movement is imparted on the depression of the platform, an indicating means normally disconnected from the shaft, a clutch-sleeve for connecting the indicating means to the shaft, and a coin-actuated cam-slide for operating said clutch-sleeve.

3. The combination in a weighing-scale, of a platform, a shaft receiving revoluble movement on the depression of the platform, an indicating means normally disconnected from the shaft, a slidable clutching-sleeve for clutching the indicating means to the shaft, a cam-slide engaging said sleeve, said cam-slide having a coin-seat, and a movable coin-engaging bar through which the slide may be actuated, after the insertion of a coin, to move said sleeve to clutching position.

4. In a weighing-scale, a platform, a shaft to which revoluble

movement is imparted on the depression of the platform, a clutch-sleeve mounted on the shaft, an indicating means normally disconnected from the clutch-sleeve, a coin-actuated slide having an inclined face forming a coin-rest, said slide being provided with a cam for engaging and moving the slide to clutching position, and a push-bar serving when depressed to engage and force a coin against the rest, and thus transmit longitudinal movement to the slide.

5. The combination in a weighing-scale, of a platform, a shaft to which revoluble movement is imparted by depression of the platform, a clutch-sleeve mounted on the shaft, an indicating means normally disconnected from the clutch-sleeve, a slidable cam for engaging and moving the clutch-sleeve to operative position, said slidable cam having a groove provided with an inclined wall forming a coin-rest, and a push-bar adapted to engage a coin and force the same against the rest, said push-bar having a pendent finger to prevent premature escape of the coin.

6. The combination with a weighing-scale, of a platform, a shaft, means including a pair of friction-disks for transmitting movement from the platform to the shaft, one of said disks having a projecting shoulder, a clutch, an indicator, a coin-actuated cam-slide for moving said clutch to operative position, and a pivotally-mounted lever connected to the slide and disposed in the path of movement of said shoulder thereby to restore the parts to initial position.

7. In coin-controlled mechanisms, a coin-actuated slide, a movable member receiving revoluble movement first in one direction and then in the opposite direction, said member being provided with a projecting shoulder, and a lever connected to the slide and having one end disposed in the path of movement of the shoulder thereby to restore the slide to initial position.

809,199. MOLD. WILLIAM H. LUCAS, Newark, Ohio. Filed Aug. 31, 1905. Serial No. 276,883.

Claim.—1. A mold of the character described comprising a plurality of side sections forming the body of the mold, a top-supporting ring, V-shaped adjustable braces adapted to hold said ring in place, means whereby the lower ends of said braces are engaged with the upper ends of the side sections, means whereby the upper ends of the braces are adjustably connected to said ring, top plates or sections arranged on said side sections and supporting-ring, inner and outer neck-forming casings, and means arranged on said casings to form an opening or passage through the neck, substantially as described.

2. A mold of the character described comprising a plurality of side sections forming the body of the mold, a top-supporting ring, adjustable, V-shaped braces adapted to hold said ring in place, top sections or plates supported on said ring and the upper ends of the side sections, inner and outer neck-forming casings arranged above said top plates, said casings having formed therein openings, passage-forming plates or walls arranged between said casings, said walls being formed by bending inwardly the material cut out to form the opening in the outer casing, and hooks adapted to connect and brace the edges of the openings in said plates, substantially as described.

809,200. APPARATUS FOR VAPORIZING LIQUID COMBUSTIBLES. JOSEPH LÖSER, Aix-la-Chapelle, Germany. Filed Nov. 17, 1903. Serial No. 181,553.

Claim.—1. An apparatus for converting liquid combustibles into gases consisting of a combination of a generator, means for supplying liquid thereto, said generator being fitted with a succession of downward-shelving surfaces over which the liquid is spread and from which it drains to the next lower surface, means for heating said surfaces, a perfector charged with loose permeable material in communication with said generator, means for heating the perfector and through which perfector the product of the partial distillation in the generator is required to pass and be therein filtered and entirely gasified.

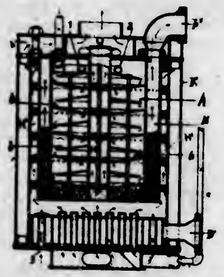

2. An apparatus for converting liquid combustibles into gases consisting of a combination of a generator, means for supplying liquid thereto, said generator being fitted with a succession of downward-shelving surfaces of undulating form and penetrable character over and through which the liquid is spread and from which it drains to the next lower surface, means for heating said surfaces, and a perfector charged with loose permeable material in communication with said generator, means for heating the perfector and through which perfector the product of the partial distillation in the generator is required to pass and be therein filtered and entirely gasified.

3. An apparatus for converting liquid combustibles into gases consisting of a combination of a generator, means for supplying liquid thereto, said generator being fitted with a succession of downward-shelving surfaces over which the liquid is spread and from which it drains to the next lower surface, means for heating said surfaces, a perfector charged with loose permeable material in communication with said generator, means for heating the perfector and through which perfector the product of the partial distillation in the generator is required to pass and be therein filtered and entirely gasified, and a cooling-receiver into which the products of distillation are led such receiver being charged with the liquid destined to be converted into gas.

809,201. RECEIVING-BASIN. ALEXANDER LUTE, New York, N. Y., assignor to The United States Sanitary and Utility Sewage Disposal Company, New York, N. Y., a Corporation of New Jersey. Filed Aug. 26, 1905. Serial No. 275,827.

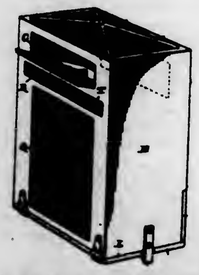

Claim.—1. The combination with a receiving-basin having an inlet and an outlet, of a basket adapted to be removably placed in the same and comprising a sheet-metal receptacle having an inlet on one side with an apron extending therefrom to the back, and a screened discharge-opening beneath said apron and in the front side.

2. The combination with a suitable receiving-basin having an inlet and an outlet, of a basket within the basin adapted to receive the flow from the inlet, a screened opening in the front of the basket to permit the escape of water and additional openings above said screened opening to accommodate the overflow from said basket.

3. The combination with a receiving-basin, of a removable basket contained therein and comprising an inlet having an apron to conduct the water across the basket, screened openings beneath the apron, a coarse horizontally-disposed screen within the basket beneath the apron, and an additional overflow-opening between said horizontally-disposed screen and the apron whereby the water is caused to rise through said horizontal screen and escape through said overflow-opening.

4. The combination with a receiving-basin, of a basket removably placed therein and having an inlet with an apron extended from the same across the basket and adapted to discharge the water in the rear of the basket, a vertically-disposed screened opening beneath the apron in the front of the basket, and an additional screened opening in the rear of the basket above the apron to accommodate an overflow of water.

5. The combination with a receiving-basin provided with vertically-disposed ways, of a basket adapted to be removably supported intermediate of said ways and containing an opening to receive the inflow of water, an apron extended from said inlet to deflect said inflow of water against the rear of the basket, a screened opening in the face of the basket beneath the apron, additional overflow-openings in the face of the basket and beneath the apron, a horizontally-disposed screen for said opening, and an additional screened opening in the rear of the receptacle above the apron.

809,202. MECHANICAL STOKER. ALBERT K. MANSFIELD, Salem, Ohio, and SAMUEL M. FELTON, Chicago, Ill. Filed Jan. 28, 1904. Serial No. 190,941.

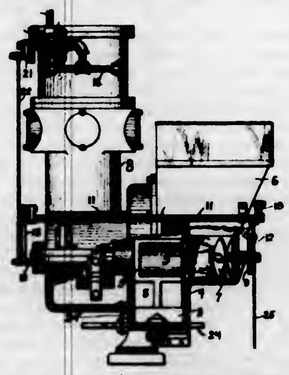

Claim.—1. In a stoker, the combination, substantially as set forth, of a circular feed-chamber having a tangential nozzle and having a central feed-opening through one of its sides, a supply-hopper communicating with said feed-opening, a rotary feed-wing mounted in said feed-chamber and having a recess in axial prolongation of said feed-opening, and mechanism for rotating the feed-wing.

2. In a stoker, the combination, substantially as set forth, of a circular feed-chamber having a tangential nozzle and having a central feed-opening through one of its sides, a supply-hopper communicating with said feed-opening, a rotary feed-wing mounted in said feed-chamber and having a recess in axial prolongation of said feed-opening, mechanism for rotating the feed-wing, and an angularly-adjustable deflecting-rib mounted in said nozzle.

3. In a mechanical stoker, the combination, substantially as set forth, of a circular feed-chamber having a tangential discharge-nozzle, a feed-wing having an axial recess mounted for rotation in the feed-chamber, a feed-hopper having communication with the central portion of the feed-chamber and arranged to feed endwise into the axial recess of the feed-wing, a conveyer at the juncture of the hopper and feed-chamber, and mechanism for giving motion to said wing and to said conveyer.

4. In a mechanical stoker, the combination, substantially as set forth, of a feed-chamber having a discharge-nozzle, a feed-hopper arranged to deliver coal thereto, a rotary discharge device mounted upon a horizontal axis within the feed-chamber to expel the coal therefrom into the furnace, a fluid-pressure motor for rotating the discharge device continuously, a throttle-valve provided with a variable opening controlling the supply of fluid to said motor, and mechanism operated by the motor to actuate said throttle-valve, whereby the speed of rotation of said discharge device is automatically subjected to successive changes.

5. The combination of a feed-chamber having a horizontal discharge-nozzle at its base, a rotary wing provided with an axial recess and mounted for rotation in said feed-chamber, a feed-hopper having communication with the central portion of the feed-chamber and arranged to feed endwise into the axial recess of said wing, a motor, transmitting mechanism between the motor and said wing, and additional transmitting connections from the motor adapted to be connected with the shaking-grate.

6. In a mechanical stoker, the combination, substantially as set forth, of a feed-wing provided with a hub and blade mounted for rotation upon a horizontal axis and having at its hub an axial recess with an opening opposite the blade, and means for delivering coal into said recess and for guiding the coal when dumped from the recess and acted upon by the wing.

7. In a mechanical stoker, the combination, substantially as set forth, of a feed-wing provided with a hub and blade mounted for rotation upon a horizontal axis and having at its hub an axial recess with an end wall and with an opening opposite the blade, and means for delivering coal into said recess and for guiding the coal when dumped from the recess and acted upon by the wing.

8. In a mechanical stoker, the combination substantially as set forth, of a feed-wing provided with a hub and blade mounted for rotation upon a horizontal axis and having at its hub an axial recess with an opening at one end and with an opening opposite the blade, and means for delivering coal endwise into said recess and for guiding the coal when dumped from the recess and acted upon by the wing.

9. In a mechanical stoker, the combination, substantially as set forth, of a feed-wing provided with a hub and blade mounted for rotation upon a horizontal axis and having at its hub an axial recess open at one end and side, and a chamber inclosing said wing and having an inlet to deliver coal to said recess and an outlet for coal dumped from said recess and acted upon by the wing.

10. In a mechanical stoker, the combination, substantially as set forth, of a feed-chamber having a horizontal discharge-nozzle at its base and having a feed-opening leading into its side, a conveyer disposed within said feed-opening, a rotary shaft, and a wing carried by said shaft within said feed-chamber and having an axial recess communicating with said feed-opening and adapted to receive the fuel advanced therethrough by the conveyer, the inner wall of said axial recess coinciding substantially with the margin of said feed-opening.

11. In a mechanical stoker, the combination, substantially as set forth, of a feed-chamber having an outlet and a feed-opening, a rotary shaft, and a feed-wing carried by said shaft and disposed within said chamber and having its inner portion disposed at such radial distance from the axial line of the shaft as to provide the wing with an axial recess within the field swept through by said wing, said axial line being arranged to receive fuel entering through said feed-opening.

12. In a mechanical stoker, the combination, substantially as set forth, of a feed-chamber having a feed-opening leading into one of its sides, a rotary conveyer mounted at said feed-opening and adapted to feed fuel therethrough, a shaft mounted in the side of the feed-chamber opposite the conveyer and in axial line therewith, and a feed-wing having an axial recess carried by the shaft within the chamber.

13. In a mechanical stoker, the combination, substantially as set forth, of a feed-chamber having a horizontal discharge-nozzle and having a feed-opening leading into one of its sides, a shaft mounted in the chamber in axial alinement with said feed-opening, and a rotary wing disposed within the feed-chamber and carried by said shaft and having its inner portion at a distance from the common axial line of the shaft and feed-opening, whereby said wing is provided with an axial recess surrounded by the field swept through by said feed-wing, said axial recess being arranged to receive fuel entering through said feed-opening.

809,203. ANIMAL-TRAP. GEORGE J. MILLER, Radicott, Wash. Filed Mar. 23, 1905. Serial No. 251,709.

Claim.—1. In an animal-trap of the class indicated, the combination, with a horizontal base-frame, and bars which extend centrally across the same, of spring-jaws formed of a single piece of

spring-wire, the same being bent at its middle to form one of the jaws and coiled around the adjacent bar and crossed to and coiled about the other bar, the ends of the wire being extended and connected to form the other jaw, substantially as described

2. In a trap of the class indicated, the combination, with the horizontal base-frame, and bars traversing the same at its center, of spring-jaws having coils embracing the bars, a trigger for connecting the jaws when set, and a catch applied to the bars between the coils, for engaging the trigger, substantially as described.

3. The combination, with a horizontal base-frame and bars extending across the same, of a catch applied to said bars, spring-jaws, and a trigger for securing them when set, the same being adapted for engagement with the catch in the manner described.

4. The combination, with a horizontal base-frame, spring-jaws, and a catch arranged in the middle of the frame, of a trigger adapted to connect the jaws when set and to engage the catch, whereby the trigger is held until tripped, substantially as described.

5. The combination, with a horizontal base-frame, a U-shaped bolt passing through the same transversely, the spring-jaws formed of a wire coiled about the members of the bolt, and a trigger, of a T-shape catch, the members of the bolt passing through the body or head of the catch and the latter projecting upward, in the manner described.

809,204. SLAG STEAM-GENERATOR. GEORGE MITCHELL, Los Angeles, Cal. Filed July 27, 1905. Serial No. 271,514.

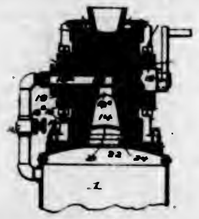

Claim.—1. The combination with a steam-generator having an opening in its top, of a rotary slag-carrier mounted horizontally over said opening and having a series of radial slag-receptacles, and adjustable means for forcing said rotary carrier down upon its seat over the opening in the top of the generator.

2. The combination with a steam-generator having a feed-opening in its top and a casing over the generator having a valve-seat communicating with said feed-opening, of a rotary slag-carrier disposed in said casing and having a series of radial slag-receptacles, and vertically-adjustable bearings for the journals of said rotary slag-carrier for pressing the latter down upon said valve-seat.

3. The combination with a steam-generator having an opening in its top, of a rotary slag-carrier disposed horizontally over said opening and having a series of radial slag-receptacles, standards at respective sides of said carrier, journal-boxes in said standards in which the journals of the carrier are mounted, and means in the standards for adjusting said boxes vertically.

809,205. VEHICLE-WHEEL. GEORGE D. MUMBRUE, New York, N. Y. Filed Mar. 20, 1905. Serial No. 251,108.

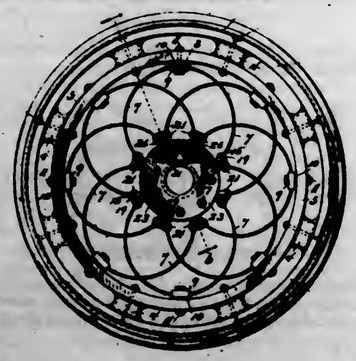

Claim.—1. In a vehicle-wheel, an inner rim, a hub, spring-spokes having their outer ends bent, a two-part clamp to adjustably hold the hub end of each spoke and having bearing in the hub, and a channel-shaped securing member having transverse beads over which the outer bent ends of said spokes take and around which said bent ends are capable of rotation, substantially as and for the purpose set forth.

2. In a vehicle-wheel, a hub having flanges and bearing-recesses formed in the flanges, in combination with spokes, a clamp to hold the hub end of the spokes, said clamp held and having bearing in said recesses, substantially as described.

3. In a vehicle-wheel, a spool-shaped hub having flanges at its ends, circular recesses formed in said flanges, in combination with spring-spokes, a two-part clamp to hold the hub end of each spoke and having a cylindrical portion to enter said recesses and a cover-plate to hold said clamps in the recesses, substantially as described.

4. In a vehicle-wheel, a spool-hub having flanges at its ends, circular recesses in each flange extending partly through them, in combination with spring-spokes, a two-part clamp having a cylindrical portion, to hold the hub end of each spoke, said cylindrical portion having bearing in a recess in the hub-flange, plates having recesses to register with those in the flanges and secured to said flanges.

5. In a vehicle-wheel, a two-part spool-shaped hub having flanges at its ends, circular recesses in each flange extending partly through them, two-part cover-plates having circular recesses extending partly through them and registering with those in the flanges; in combination with a two-part clamp for the hub end of each spoke having a tubular portion to have bearing in the registering recesses and means to secure each plate to its respective flange.

6. In a vehicle-wheel, the combination with the spokes and a hub having recesses formed therein, of clamp members for the hub ends of the spokes having bearing ends retained in and having bearing in said recesses, a metallic piece between the bearing end of said clamp and the walls of the recess to take up wear and prevent rattling.

7. In a vehicle-wheel, the combination with spokes and a hub having cylindrical recesses around its periphery, of clamp members for the hub ends of the spokes having a cylindrical bearing end, retained in and having bearing in said recesses, cylindrical wear-pieces around said cylindrical end and circular washers in said recesses at the ends of said cylindrical bearing ends, said washers and wear-pieces of a metal differing from that of said members and hub.

809,206. MINING-MACHINE. DANIEL R. MURPHY, Scranton Hill, Pa., assignor to Joseph A. Jeffrey, Columbus, Ohio. Filed Feb. 23, 1904. Serial No. 194,586.

Claim.—1. In a mining-machine of the class described, the combination with the motor platform or carrier having a guideway formed therein and a cutter-frame adjustable relatively to the motor-carrier and having its rear end fitted into said guideway of a connecting and bracing bar extending forward from the motor-carrier, and means for adjustably securing the said bar to the cutter-frame, substantially as set forth.

2. In a mining-machine, of the class described, the combination of a motor platform or carrier, a cutter-frame having a central thrust-rail adjustable relatively to the motor-carrier and having its rear end loosely braced, and a connecting and bracing bar projecting forward from the motor-carrier and adjustably clamped to the said center rail of the cutter-carriage, substantially as set forth.

3. In a mining-machine of the class described, the combination of a cutting apparatus having a center thrust-rail, an engine or motor platform or carrier having abutments for the rear end of the center rail to hold it laterally in relation to the motor-carrier, and a connecting and bracing bar extending forward from the engine-carrier, and means for securing said bar to the center rail at either of several positions, substantially as described.

4. In a mining-machine of the class described, the combination of a cutter-carrier having a central thrust-rail, an engine or motor platform or carrier having a guideway for the rear end of the center rail, a screw-rod and nut interposed between the motor-carrier and the cutting apparatus for adjusting them relatively to each other, and a bracing and connecting bar supplemental to the aforesaid parts and interposed between the motor-carrier and the cutter-carrier, and means for securing said bar in either of several positions relatively to the cutter-carrier, substantially as set forth.

5. In a mining-machine of the class described, the combination of a cutter-carrier having a longitudinally-adjustable thrust-bar, an engine or motor platform or carrier having laterally-acting abutments for the rear end of the bar, a clamping device situated near the rear end of the said thrust-bar for connecting the motor-carrier and the cutter-carrier, and a supplemental clamping device for connecting together the said parts and situated at points in front of the motor-carrier, substantially as set forth.

6. In a mining-machine of the class described, the combination of a cutter-carrier having a longitudinally-arranged thrust-bar, an engine-platform or motor-carrier, a clamping-bolt at the rear end of the said cutter-carrier and supported by one of the said carriers, the other of said carriers having a slot for the movement of the bolt, and a supplemental clamping-bolt supported by one of said carriers at points in front of the motor-carrier, and a slotted bar for the said bolt supported by the other carrier, substantially as set forth.

7. In a mining-machine, the combination of the cutter-carrying frame, the motor-platform having a guideway into which the rear end of said cutter-carrying frame is fitted, the adjusting means interposed between the said frame and the said platform, the bracing-bar extending forward from said platform, and means for adjustably connecting said bracing-bar to the said cutter-carrying frame.

8. In a mining-machine, the combination of the motor-platform, the cutter-carrying frame adjustably connected to said platform, the bracing-bar extending forward from and detachably connected to said motor-platform, and the adjustable clamp between the said bracing-bar and the cutter-carrying frame.

9. In a mining-machine, the combination of the cutter-carrier, the engine-platform or motor-carrier the adjustable connecting means between the said carriers, the bracing-plate extending forward from said motor-carrier and having a longitudinal slot therethrough, and a clamping-bolt extending through said slot and adapted to clamp the cutter-carrier to the said bracing-plate in various positions of adjustment.

809,207. HEATING APPARATUS. OSCAR S. MCCURDY, Wilkinsburg, Pa. Filed Aug. 20, 1904. Serial No. 221,625.

Claim.—1. In air-heating apparatus, the combination of a heater, a surrounding air-shell, a register-valve controlling the outflow therefrom, a burner-valve, a combustion air-damper gearing connecting the burner-valve and air-damper, and means connected with the register-valve controlling the fuel and combustion air-supply, substantially as set forth.

2. In air-heating apparatus, the combination of a heater, a surrounding air-shell, a register-valve controlling the outflow therefrom, a burner-valve, a combustion air-damper, a fuel-valve stem provided with gearing in operative engagement with the air-damper, and connections between the valve-stem and the register-valve, substantially as set forth.

3. In air-heating apparatus, the combination of a heater, a surrounding air-shell, a pivoted register-valve controlling the outflow of the heated air, a burner-valve, a rotatable combustion air-damper provided with gear-teeth, a valve-stem provided with teeth engaging the damper-teeth and having a turning-arm, and connections between the register-valve and said arm, substantially as set forth.

4. In air-heating apparatus, the combination of a heater, a surrounding air-shell, a pivoted register-valve controlling the outflow of the heated air, a burner-valve having a variable-supply burner-outlet and a constant-supply pilot-outlet, a rotatable combustion air-damper provided with gear-teeth, a valve-stem provided with teeth engaging the damper-teeth and having a turning-arm, and connections between the register-valve and said arm, substantially as set forth.

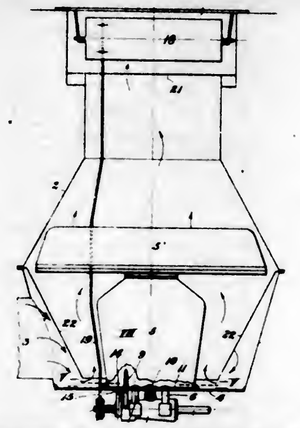

5. In air-heating apparatus, the combination of a heater, a surrounding air-shell, a pivoted register-valve controlling the outflow of the heated air, a burner-valve, a rotatable combustion air-damper provided with gear-teeth, a valve-stem provided with teeth engaging the damper-teeth and having a turning-arm, and connections between the register-valve and said arm, substantially as set forth.

6. In air-heating apparatus, the combination with the air-heater, of a burner for heating the same, a valve for controlling the supply of fuel to the burner, a hot-air outlet from said heater, a valve in said outlet for controlling the flow of hot air therefrom into the place to be heated, an air-damper, a burner-valve stem having gear-teeth in rotatable engagement with said damper, and connections between the said hot-air valve and said burner-valve whereby the flow of fuel and air to the burner may be controlled by the movement of the hot-air valve, substantially as set forth.

7. In air-heating apparatus, the combination with a burner and heater chamber, of a base-plate provided with air-supply openings, a damper mounted thereon provided with registering air-openings, a burner-valve provided with fuel-supply pipes opening into the heater-chamber, and a valve-stem for said valve having gear-teeth in operative engagement with the damper, substantially as set forth.

809,208. WINDMILL. MELCHOR S. NEWCOMER, Polo, Ill. Filed May 8, 1905. Serial No. 259,462.

Claim.—1. In a mechanism of the class described, the combination with a support, of a lever secured to said support, a slotted, weighted pawl carried by said lever, vane-connected means coacting with said pawl, longitudinally-movable guiding means engaging the slotted portion of said pawl, locking means for said vane-connected means, and means for retaining said guiding means in an adjusted position.

2. In a mechanism of the class described, the combination with a support and a pump-rod, of a lever provided with a bifurcated end mounted upon said support, means for adjustably connecting said lever to said pump-rod, a weighted, slotted pawl mounted upon the bifurcated end of said lever, a ratchet-bar positioned within said slotted pawl, a locking-pawl carried by said support and coacting with said ratchet-bar, movable guiding means coacting with and adapted to retain said slotted pawl in an adjusted position, and means for causing movement of said guiding means.

3. In a mechanism of the class described, the combination with a support and a pump-rod, of an apertured lever secured to said support, said lever provided with integral extensions, means adjustably connecting said lever to said pump-rod, a weighted primary pawl positioned upon the extension of the lever, an auxiliary pawl secured to said support, a ratchet-bar coacting with said primary and auxiliary pawls, an adjustable member secured to said ratchet-bar, longitudinal movable guiding means coacting with said primary pawl,

primary and auxiliary cranks carried by said support, means connecting said auxiliary crank to said guiding means and auxiliary pawl, a dog carried by said support and adapted to lock said guiding means and auxiliary crank in an adjusted position, said primary crank provided with a cam member, a weight carried by said primary crank, said cam member adapted to move said dog from a locked position, and means for actuating said primary crank.

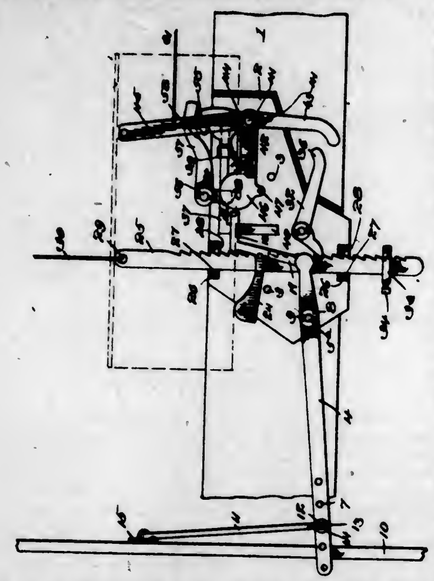

4. In a mechanism of the class described, the combination with a support, of a lever provided with a bifurcated end mounted upon said support, a weighted pawl mounted upon the bifurcated end of said lever, a ratchet-bar secured contiguous to said pawl and coacting therewith, locking means carried by said support and coacting with said ratchet-bar, movable guiding means carried by said support and coacting with said pawl, and cranks carried by said support and coacting with said guiding and locking means

5. In a mechanism of the class described, the combination with a support and a pump-rod, a lever carried by said support, of means for adjustably connecting said lever to said pump-rod, a weighted, slotted pawl carried by said lever, a ratchet-bar positioned within said slotted pawl, locking means carried by said support and coacting with said ratchet-bar, movable guiding means coacting with and adapted to retain said slotted pawl in an adjusted position, and means for causing movement of said guiding means.

6. In a mechanism of the class described, the combination with a support, vane-connected means carried by said support, of a primary and an auxiliary pawl carried by said support and coacting with said vane-connected means, guiding means carried by said support and coacting with said primary pawl, a primary and an auxiliary crank carried by said support, said auxiliary crank connected to said guiding means, and means carried by said primary crank and adapted to engage said auxiliary crank for moving said auxiliary crank and thereby causing movement of said guiding means, primary pawl, and auxiliary pawl.

7. In a mechanism of the class described, the combination with a support, vane-connected means carried by said support, a primary member and an auxiliary member for controlling movement of said vane-connected means, of guiding means for said primary member, a weighted, primary crank and an auxiliary crank carried by said support, means connecting said auxiliary crank to said guiding means, said primary crank provided with means for engaging and causing movement of said auxiliary crank and auxiliary member, when said primary crank is moved rearwardly, and means for locking said auxiliary crank, guiding means, and auxiliary member in an adjusted position.

8. In a mechanism of the class described, the combination with a support, of vane-connected means carried by said support, a primary and an auxiliary member carried by said support and coacting with said vane-connected means for controlling movement thereof, guiding means for said primary member, a primary and an auxiliary crank carried by said support, means connecting said auxiliary crank and guiding means, means carried by said primary crank for actuating said auxiliary crank when said primary crank is moved rearwardly, said auxiliary crank adapted to move said auxiliary member to an inoperative position when rearward movement is imparted to said primary crank, and means for securing said auxiliary crank, guiding means, and primary and auxiliary members in an adjusted position.

9. In a mechanism of the class described, the combination with a support, vane-connected means carried by said support, actuating means carried by said support and coacting with said vane-connected means, locking means for said vane-connected means, of guiding means carried by said support and coacting with said actuating means, a crank carried by said support and movably connected to said guiding means, said crank adapted to adjust said locking means and retain it in an adjusted position, locking means for retaining said crank in an adjusted position, and means for actuating said crank.

10. In a mechanism of the class described, the combination with a support, vane-connected means carried by said support, actuating means for said vane-connected means, locking means for said vane-connected means, of a crank carried by said support, means movably connecting said actuating means to said crank, said crank adapted to move said locking means and to retain it in an adjusted position, and a weighted, primary crank carried by said support and capable of being moved for actuating said crank connected to said actuating means.

11. In a mechanism of the class described, the combination with a support, vane-connected means carried by said support, actuating means for said vane-connected means, locking means for said vane-connected means guiding means for said actuating means, of a crank carried by said support and pivotally connected to said guiding means, said crank adapted to move said actuating means to an inoperative position, a locking member for said crank, and means for actuating said crank.

809,209. LATCHING MECHANISM FOR EXCAVATOR-DIPPERS. MALACHI O'CONNOR, Oswego, N. Y. Filed Feb. 6, 1905. Serial No. 244,444.

Claim.—1. The combination of a latch, a yieldably-mounted carrier for said latch, a detent for maintaining the latch in its operative position, and means independent of the detent for limiting the motion of the latch.

2. The combination of a latch, a carrier for the latch, a spring for acting against the carrier to normally hold it in an advanced position, a detent for maintaining the latch in its operative position, and means independent of the detent, for limiting the motion of the latch.

3. The combination of a latch, a yieldably-mounted carrier for the latch, and a detent for the latch, supported by the carrier.

4. The combination of a latch, a yieldably-mounted carrier having a bifurcated portion, said latch being movably supported by the bifurcated portion, and a detent for the latch, also supported by said bifurcated portion.

5. The combination of a latch, a yieldably-mounted carrier for the latch, the latch being pivotally supported by the carrier, and a detent for the latch, also pivotally supported by the carrier.

6. The combination of a latch, a yieldably-mounted carrier for the latch, loops for guiding the carrier, a stop carried by one of the loops and serving to limit the motion of the latch with respect to its carrier, and a detent for the latch, supported by the carrier.

7. The combination of a latch having a hooked working end, a yieldably-mounted carrier for the latch, means for limiting the motion of the latch on its carrier, when the latch is in its operative position, and a movable detent for the carrier.

8. The combination of a perforated back plate, bolts countersunk in the perforations and extending through the back plate, a cover perforated to receive the bolts, the shanks of the latter being perforated, pins passing through the perforations of said shanks to hold the cover removably in place, a latch, a yieldably-mounted carrier for the latch, in said cover, and a detent housed by the cover, for said latch.

9. The combination of a latch, a yieldably-mounted carrier for the latch, a detent for the latch, and means for protecting the said parts from dust.

10. The combination of a latch, a yieldably-mounted carrier for the latch, having a bifurcated portion, a fixed device to limit the motion of the latch, a bail-form detent having an antifriction-roll constituting the effective portion of the detent and serving to engage the latch, said detent being supported by the carrier, and means for operating the detent.

809,210. GARMENT-SUPPORTER. BENJAMIN F. ORBWILER, Chicago, Ill. Filed Apr. 7, 1905. Serial No. 254,899.

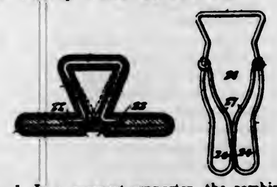

Claim.—1. In a garment-supporter, the combination with a loop member, of a stud member coöperating therewith and including a stud having independent or separate side elements that are spaced apart and are movable toward each other under the compressing action of the surrounding loop member.

2. In a garment-supporter, the combination with a loop member, of a stud member coacting therewith and including a stud having spaced substantially straight side elements that converge toward their inner ends, said inner ends being disconnected or separated from each other and capable of movement toward each other under the compressing action of the surrounding loop member.

3. In a garment-supporter, the combination with a loop member, of a stud member coacting therewith and comprising a base, and a substantially triangular-shaped stud located on the base and arranged to be surrounded by the loop member, said stud having spaced side elements, the inner ends of which are connected to the base and are movable toward each other under the compressing action of the loop member.

4. In a garment-supporter, the combination with a loop member, of a stud member coacting therewith and comprising a base, and a stud having spaced side elements, said elements having their outer ends connected and their inner ends slidably mounted in the base and movable toward each other under the compressing action of the loop member.

5. In a garment-supporter, the combination with a loop member, of a stud member coacting therewith and comprising a base having a guideway, and a stud having spaced side elements, spaced portions of which are mounted in the guideway and movable therein toward each other under the compressing action of the loop member.

6. In a garment-supporter, the combination with a loop member, of a stud member coacting therewith and comprising a base having an opening, and a stud formed of a single looped piece having converging side elements that pass through the opening in the base and are provided with offset terminals.

7. In a garment-supporter, the combination with a loop member, of a stud member coacting therewith and including a stud having side elements that are spaced apart and are movable toward each other under the compressing action of the surrounding loop member, and a cushion carried by said stud.

8. In a garment-supporter, the combination with a loop member, of a stud member coacting therewith and comprising a base, a substantially triangular-shaped stud located thereon and arranged to be surrounded by the loop member, said stud having spaced side elements, the inner ends of which are connected to the base and are movable toward each other under the compressing action of the loop member, and a cushion surrounding the said members.

9. In a garment-supporter, the combination with a loop member, of a stud member coöperating therewith and comprising a base, a stud projecting from the base and including side elements connected by a top element, and a tubular cushion surrounding each of the side members and the top member.

10. In a garment-supporter, the combination with a loop member, of a stud member coöperating therewith and comprising a base, a stud projecting from the base and formed of a loop-strip having substantially straight side elements connected by a top element, and a tubular cushion surrounding each side and top element.

11. In a garment-supporter, the combination with a loop member, of a stud member coöperating therewith and comprising a base having an opening, a substantially triangular-shaped stud formed of a single piece having convergent side elements connected at their outer ends, the inner convergent ends of said elements passing through the opening and having outturned terminals, and a tubular cushion covering each of the side elements and extending about the top element, said side elements being movable toward each other under the compressing action of the loop member.

12. In a garment-supporter, the combination with a stud member, of a loop member coöperating therewith and comprising yielding loop-sections normally located out of alinement in different substantially parallel planes and movable laterally in their respective planes toward and from an alined position when engaged upon said stud member.

13. In a garment-supporter, the combination with a stud member, of a loop member coöperating therewith and comprising yielding stud-embracing sections, the inner sides of which are disposed in convergent relation between the outer sides and are movable toward a parallel relation when the stud member is engaged between them.

14. In a garment-supporter, the combination with a stud member, of a loop member coöperating therewith and comprising loop-sections located flat upon each other and disposed in angular relation, the inner sides of said sections being disposed across each other and being movable toward a parallel relation when the stud member is engaged between them

15. In a garment-supporter, the combination with a stud member, of a loop member coöperating therewith and comprising yielding loop-sections disposed in angular relation, each of said sections consisting of spaced side elements, one of the side elements of each section having a slidable engagement with one of the side elements of the other section.

16. In a garment-supporter, the combination with a stud member, of a loop member coöperating therewith and comprising loop-sections disposed in angular relation, each of the sections consisting of an inner and an outer side element, the inner side element of one of said sections having a slidable engagement with the outer side element of the other.

17. In a garment-supporter, the combination with a stud member, of a loop member coöperating therewith and comprising yielding loop-sections, each of said sections consisting of spaced inner and outer side elements, the inner side elements extending across each other and having terminal eyes slidably engaged with the outer side elements.

18. In a garment-supporter, the combination with a stud member, of a loop member coöperating therewith and formed of a single wire into a pair of tapering loop-sections disposed in angular relation and comprising spaced side elements, the inner of which are crossed, the inner side element of each section having a terminal eye

that is slidably engaged with the outer side element of the other section.

19. In a garment-supporter, the combination with a stud member comprising a base, a stud having side elements that are carried by the base and are movable toward and from each other, and a cushion covering said side elements, of a loop member comprising angularly-disposed loop-sections having inner and outer side elements arranged across each other and adapted to receive between them the stud of said stud member.

20. In a garment-supporter, the combination with a stud member, of a loop member coöperating therewith and comprising loop-sections located in different planes in angular relation to each other, said loop-sections swinging in their respective planes, on axes that intersect said planes, toward an alined position, when the stud is engaged in the sections.

809,211. **STARTING MEANS FOR GAS OR SIMILAR ENGINES.** FRANCIS L. ORR, Thurman, Iowa, assignor of one-half to Mark Morrow, Percival, Iowa. Filed Feb. 21, 1905. Serial No. 246,753.

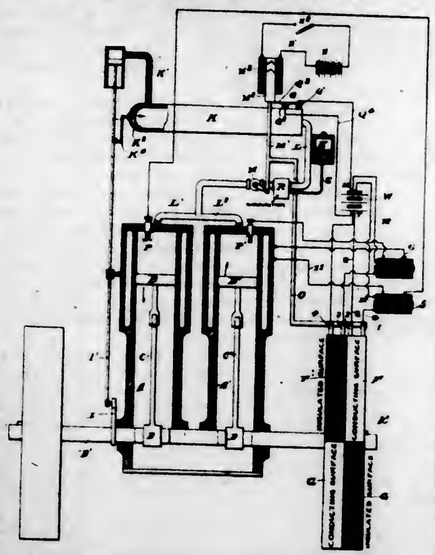

Claim.—1. An explosive-engine starter, employing an air-storage tank, a carbureter, an air passage-way leading from the storage-tank, through the carbureter and into the combustion-chamber of the engine, means for re-storing the air-tank, means operating to arrest action of the storing means by pressure in the storage-tank, a spark-plug with battery and suitable electric circuit, for ignition of the explosive mixture in the engine combustion-chamber, a commutator device driven by the engine, a valve in the air passage-way leading from the storage-tank, a solenoid or similar device having electric supply and a cut-out, adapted for operating the said valve, brushes adapted for adjustment into circuit-closing contact with the commutator by operation of the solenoid, a normally open circuit-closer adapted for closure through operation of the solenoid, the spark-coil and battery being in electrical circuit with the commutator-brushes, the engine spark-plug, and the poles of the normally open circuit-closer, substantially as described.

2. The combination with an explosive-engine, having means for feeding explosive mixture thereinto, employing an air-storage tank, a carbureter connected thereto, and means adapted for automatically re-storing air in the tank, of a commutator device, brushes for contact with the commutator device, means employing a solenoid or similar device for adjustment of the commutator-brushes and the conjoint feed of explosive mixture into the engine, a battery and circuit having therein a suitable closer, for operation of the solenoid, a normally open circuit-closer adapted for momentary closure by operation of the solenoid, and a battery and spark-coil in electric circuit with the commutator-brushes, the engine spark-plug and the poles of the normally open circuit-closer, substantially as described.

3. The combination with an engine having a plurality of working cylinders, and a common power-shaft, of a circular commutator on the power-shaft, the outer periphery of the commutator being divided into sets of oppositely-located conductive and insulated surfaces, brushes adapted for adjustment into and out of contact with the commutator, means adapted to feed explosive mixture into the engine-cylinders and whereby adjustment of the commutator-brushes is effected, a normally open circuit-closer adapted for momentary closure, and electrical means for operating the same, which is also adapted for conjoint operation of the explosive-mixture-supply means, and a battery and spark-coils, in electrical circuit with the commutator-brushes, the spark-plugs in the engine-cylinders, and the poles of the normally open circuit-closer, substantially as described.

4. The combination with an explosive-engine, employing a spark-plug, a battery in electrical circuit with the spark-plug, and switches for closing and opening the battery-circuit, of a circuit employing a spark-coil, a commutator whereby the circuit is closed and opened, a normally open circuit-closer in the battery-circuit, a solenoid or similar device adapted for momentary closing of the normally open circuit-closer and also conjoint feed of explosive mixture to the engine, a battery in electric circuit with the solenoid, and a switch in the solenoid circuit, substantially as described.

809,212. **NON-REFILLABLE BOTTLE.** FREDERICK M. OSGOOD, Manchester, N. H. Filed Jan. 30, 1905. Serial No. 243,195.

Claim.—1. In a non-refillable bottle, a shell adapted to be inserted within the bottle-neck, said shell having exterior locking-flanges, a sleeve of packing material inserted between the shell and the bottle-neck, a transverse partition extending across the shell and provided with a port, a conical-shaped perforated partition beneath said transverse partition, a double cone-shaped buoyant valve beneath the inclined partition and controlling an inlet-port into the shell, a ball interposed between said valve and partition, a tubular member rising from the transverse partition and provided with lateral ports, and a valve controlling the outlet end of said tubular member.

2. A non-refillable bottle presenting a neck provided with two shoulders, a sleeve fitted within the bottle-neck and retained between said shoulders, said sleeve having a transverse partition provided with one or more ports, a vertical tubular member rising from the transverse partition and provided with lateral ports, a non-detachable valve controlling the outlet end of the tubular member, a cone-shaped perforated partition beneath the transverse partition, a buoyant valve beneath the cone-shaped partition, said valve controlling the inlet-port to the sleeve and a ball-weight interposed between the valve and cone-shaped partition.

809,213. **MEANS FOR SEALING BOTTLES.** FREDERICK M. OSGOOD, Manchester, N. H. Filed Mar. 20, 1905. Serial No. 250,906.

Claim.—1. A bottle the neck of which is provided with a groove, a cap to be placed over the bottle-neck, said cap having an interior inwardly-facing shoulder near its open end and a locking device presenting a resilient arm having a projection to enter said groove, the end of the arm being adapted to engage the shoulder in the cap and thereby lock the cap on the bottle-neck.

2. A bottle, the neck of which is provided with a groove, a cap to be placed over the bottle-neck, said cap having an interior, inwardly-facing shoulder near its open end, and a locking device comprising resilient arms having projections to enter said groove, the ends of the arms being adapted to engage the shoulder in the cap and thereby lock the cap on the bottle.

3. A bottle, the neck of which is provided with a groove, a breakable cap to be placed over the bottle-neck, said cap having an interior, inwardly-facing shoulder near its open end, and a locking device comprising resilient arms having projections to enter said groove, the ends of the arms being adapted to engage the shoulder in the cap and thereby lock the cap on the bottle.

4. A bottle, the neck of which is provided with a groove, a wooden cap to be placed over the bottle-neck, said cap having an interior, inwardly-facing shoulder near its open end, and a locking device comprising resilient arms having projections to enter said groove, the ends of the arms being adapted to engage the shoulder in the cap and thereby lock the cap on the bottle near its open end, said cap having a saw-cut in its opposite end.

809,214. **RAIL-SUPPORT.** FRANK C. PAINTER, Osman, Ill. Filed Sept. 2, 1905. Serial No. 276,817.

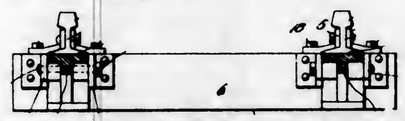

Claim.—1. The combination of the meeting ends of two railway-rails, ties for supporting the same, said ties being provided with supporting-plates and securing-brackets, and a bridge-piece adapted to be supported by said plates and secured in position by means of said brackets.

2. The combination of the meeting ends of two railway-rails, ties for supporting the same, said ties being provided with supporting-plates and angular securing-brackets, and a bridge-piece adapted to be supported by said plates and secured in position by said brackets.

3. The combination of the meeting ends of two railway-rails, ties for supporting the same, said ties being provided with supporting-plates and securing-brackets, a bridge-piece provided with downturned flanges adapted to rest upon said plate, and means for engaging the bridge-piece and said brackets.

4. The combination of the meeting ends of two railway-rails, ties for supporting the same, said ties being provided with supporting-plates and securing-brackets, a bridge-piece provided with downturned flanges adapted to rest upon said plates and with arcuate strengthening-ribs, and means passing through the bridge-piece and said brackets to secure the bridge-piece in position.

5. The combination of the meeting ends of two railway-rails, ties for supporting the same, said ties being provided with plates and securing-brackets, a bridge-piece having downturned flanges to rest upon said brackets, and projections, means passing through said projections and brackets to secure the bridge-piece in position, and an arcuate-shaped strengthening-rib secured to the bridge-piece and said downturned flanges.

6. The combination of the meeting ends of two railway-rails, metallic ties for supporting the same, said ties having formed integral supporting-plates and attached thereto supporting-brackets, cores of concrete for the ties, and a bride-piece supported by said plates and secured in applied position by said brackets.

809,215. **LOCOMOTIVE ASH-PIT AND BLOWER.** HENRY H. PARSON, New York, N. Y. Filed Jan. 14, 1904. Serial No. 189,009.

Claim.—1. In a locomotive, an ash-pit, a grate, levers for operating the grate, the ash-pit being provided with an opening through which the levers pass, a device for closing said opening comprising a fixed member to form a normal support for the levers and a hinged member resting on the levers and movable in unison therewith, whereby to prevent the escape of air in the operation of the levers.

2. In a locomotive, an ash-pit, a grate, levers for operating the grate, the ash-pit being provided with an opening through which the levers pass, a device for closing said opening comprising a fixed member provided with an extension, said extension forming a normal support for the levers and a hinged member provided with a corresponding extension and resting on the levers and moving in unison therewith, whereby the escape of air in the operation of the levers is prevented.

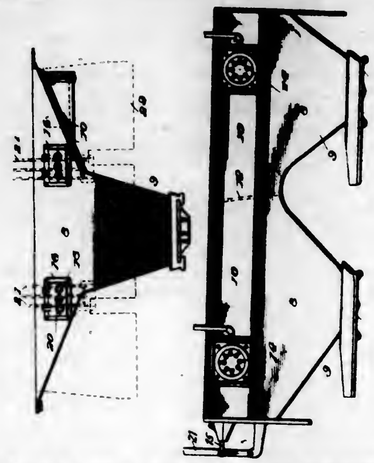

3. In a locomotive, an ash-pit, a grate, levers for operating the grate, the ash-pit being provided with an opening through which the levers pass, a device for closing said opening comprising a fixed member provided with an extension, said extension forming a normal support for the levers and a hinged member provided with a corresponding extension and resting on the levers and moving in unison therewith, said members being provided with registering notches through which the levers pass.

4. In a locomotive, a grate, an ash-pit arranged beneath the grate and closed air-tight except toward the grate, a blower in the ash-pit and a wind-shield for the blower supported by the ash-pit independent of the blower.

5. In a locomotive, a grate, an ash-pit arranged beneath the grate and closed air-tight except toward the grate, a blower in the ash-pit and a pair of wind-shields, one arranged in front of and the other in the rear of the blower, said wind-shields being carried by the ash-pit independent of the blower whereby a dead-air space is formed around the blower.

6. In a locomotive, a grate, a plurality of ash-pits arranged beneath the grate, each of said ash-pits being entirely independent and closed air-tight except toward the grate, a blower in each ash-pit and a wind-shield carried by the forward ash-pit, said wind-shield being entirely independent of the blower and adapted to shield the blower of each ash-pit.

7. In a locomotive, a grate, a plurality of ash-pits arranged beneath the grate, each of said ash-pits being entirely independent and closed air-tight except toward the grate, a blower in each ash-pit and a pair of wind-shields one arranged in front of the blowers and the other arranged behind the blowers, said shields being carried by the ash-pits entirely independent of the blowers and forming a dead-air space in which the blowers are located.

8. In a locomotive, a grate, an ash-pit arranged beneath the grate, closed air-tight except toward the grate, a blower in the ash-pit, a plate carried by the ash-pit and extending out at right angles to the side of the ash-pit to form a wind-shield for the blower.

9. In a locomotive, a grate, an ash-pit arranged beneath the grate, said ash-pit closed air-tight except toward the grate, a blower in the ash-pit and a pair of plates extending out at right angles to the sides of the ash-pit, one in front of the blower and the other in the rear thereof, said plates being independent of the blower and forming a dead-air space around the blower.

10. In a locomotive, a grate, an ash-pit, a blower in the ash-pit and a wind-shield separated from the blower and adapted to form a dead-air space around the blower.

809,216. **HARVESTER-REEL.** JOSHUA PEARCE, Pickering, La. Filed Apr. 11, 1905. Serial No. 254,968.

Claim.—1. A reel-blade comprising arms, spaced strips connecting the arms, and a body of light material between the strips and clamped at its edges by the strips.

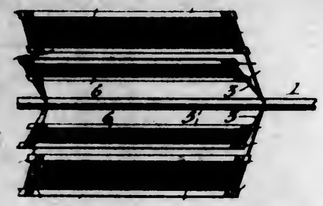

2. A reel-blade comprising arms, spaced strips provided with clips engaging the arms, each strip consisting of a folded piece of sheet metal, and a body of woven material filling the space between the strips and clamped at its edges between the folds thereof.

809,217. RAIL-JOINT. CLARENCE D. PETERS, Etherley, Ill. Filed July 14, 1905. Serial No. 269,681.

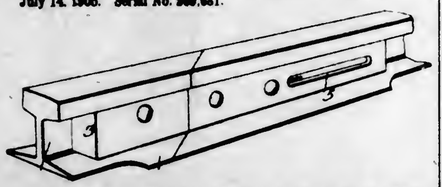

Claim.—1. In combination with the meeting ends of railway-rails, of wedge-blocks designed to be moved longitudinally of the rails without wedging action, means to move one of said blocks with relation to the other to produce a wedging action, and means to hold said blocks in wedging position.

2. In combination with the meeting ends of railroad-rails, of wedging-blocks designed to coöperate therewith and movable longitudinally of the rails, said blocks being formed with means arranged to register to permit their longitudinal movement, means arranged to register when said blocks are in wedging position, and means to coöperate with said last-mentioned means to lock the blocks in wedging position.

3. The combination with railroad-rails formed with registering housings at their meeting ends, wedge-blocks longitudinally movable in said housings, two sets of depressions formed in each wedge-block, the depressions of one set being in register in the respective blocks only when the blocks are in wedging position, and means to engage said registering depressions.

4. The combination with railroad-rails formed with housings adapted to longitudinally aline when the rails are in position, wedge-blocks seated in one housing and adapted to coöperate with the other, each of said wedge-blocks being formed with an operating depression adapted to aline with each other for the initial movement of the blocks, each of the blocks being formed with locking depressions normally out of register, said locking depressions registering only after the wedging action of the blocks, and means engaging the walls of the housing and said registering locking depressions.

5. The combination with railroad-rails formed with longitudinally-arranged housings at their meeting ends, of wedge-blocks normally within one housing and adapted to coöperate with the other, each of said wedge-blocks being formed with operating depressions and with locking depressions, said locking depressions being out of register in the respective blocks when the operating depressions thereof register, the walls of the housing being formed with longitudinally-arranged slots adapted to register with the operating depressions in the wedge-blocks.

809,218. APPARATUS FOR THE SEPARATION OF GASES FROM THEIR MIXTURES. RAOUL P. PICTET, Berlin, Germany. Filed May 24, 1901. Serial No. 61,720.

Claim.—1. In an apparatus for the separation of a gaseous mixture into its constituents by the liquefaction and subsequent evaporation or fractional distillation of such gaseous mixture in the manner hereinbefore described, the combination with a liquefier comprising a series of closed evaporator trays, troughs or sections, connected to permit passage of liquid through the series, and provided with conduits, in contact with liquid in such trays, for the passage of gas to be liquefied, and with separate gas-outlets, of a plurality of heat-exchangers, each having adjacent conduits for the passage of gas to be liquefied and for the gas escaping from the evaporator-trays, such conduits of the several exchangers being connected respectively to the corresponding conduits and outlets of different trays of the series; a source of supply of compressed gas to be liquefied, to which the corresponding conduits of the exchangers are connected in multiple, and means for collecting the liquefied mixture from the conduits of the several trays.

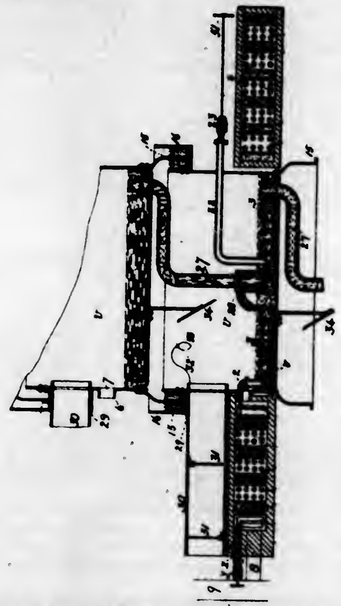

2. In an apparatus for the separation of a gaseous mixture into its constituents by the liquefaction and subsequent evaporation or fractional distillation of such gaseous mixture in the manner hereinbefore described, the combination with a liquefier comprising a series of closed evaporator trays, troughs or sections connected to permit passage of liquid through the series, but sealed against the passage of gas from one to the other, and provided with conduits, in contact with liquid in such trays, for the passage of the gas to be liquefied, and with separate gas-outlets, of a plurality of heat-exchangers, each having adjacent conduits for the passage of gas to be liquefied and for the gas escaping from the evaporator-trays, such conduits of the several exchangers being connected respectively to the corresponding conduits and outlets of different trays of the series; a source of supply of compressed gas to be liquefied, to which the corresponding conduits of the exchangers are connected in multiple, and means for collecting the liquefied mixture from the conduits of the several trays.

3. In an apparatus for the separation of a gaseous mixture into its constituents by the liquefaction and subsequent evaporation or fractional distillation of such gaseous mixture in the manner hereinbefore described, the combination, with a liquefier comprising a series of closed evaporator trays, troughs or sections, connected to permit passage of liquid through the series, and provided with conduits, in contact with liquid in such trays, for the passage of the gas to be liquefied, and with separate gas-outlets, of a plurality of heat-exchangers each having adjacent conduits for the passage of gas to be liquefied and for the gas escaping from the evaporator-trays, such conduits of the several exchangers being connected respectively to the corresponding conduits and outlets of different trays of the series; a source of supply of compressed gas to be liquefied to which the corresponding conduits of the exchangers are connected in multiple, means for collecting the liquefied mixture from the conduits of the several trays, and means for collecting the gases escaping from the several exchangers.

4. In an apparatus for the separation of a gaseous mixture into its constituents by the liquefaction and subsequent evaporation or

fractional distillation of such gaseous mixture in the manner hereinbefore described, the combination with a liquefier comprising a series of closed evaporator trays, troughs or sections, connected to permit passage of liquid through the series and provided with conduits, in contact with liquid in such trays, for the passage of gas to be liquefied, and with separate gas-outlets, of a plurality of heat-exchangers surrounding the said liquefier and each having adjacent conduits for the passage of gas to be liquefied and for the gas escaping from the said evaporator-trays, the said conduits of the several exchangers being connected to the corresponding conduits and outlets of different evaporator-trays of the series; a source of supply of compressed gas to be liquefied, to which the corresponding conduits of the exchangers are connected in multiple, means for collecting the gas escaping from the several exchangers, and means for collecting the liquefied mixture from the conduits of the several trays.

5. In an apparatus for the separation of a gaseous mixture into its constituents by the liquefaction and subsequent evaporation or fractional distillation of such gaseous mixture in the manner hereinbefore described, the combination with a liquefier comprising a series of closed evaporator trays, troughs or sections connected to permit passage of liquid through the series, and provided with conduits, in contact with liquid in such trays, for the passage of the gas to be liquefied, and the separate gas-outlets, of a plurality of heat-exchangers each having adjacent conduits for the passage of gas to be liquefied and for the gas escaping from the evaporator-trays, such conduits of the several exchangers being connected respectively to the corresponding conduits and outlets of different trays of the series; a source of supply of compressed gas to be liquefied, to which the corresponding conduits of the exchangers are connected in multiple, and a collector into which the gas from the several exchangers is discharged, provided with means for separating gases discharged from the different exchangers of the series.

6. In an apparatus for the separation of a gaseous mixture into its constituents by the liquefaction and subsequent evaporation or fractional distillation of such gaseous mixture in the manner hereinbefore described, the combination with a liquefier comprising a series of closed evaporator trays, troughs, or sections connected to permit passage of liquid through the series, and provided with conduits, in contact with liquid in such trays, for the passage of the gas to be liquefied, and with separate gas-outlets, of a plurality of heat-exchangers each having adjacent conduits for the passage of gas to be liquefied and for the gas escaping from the evaporator-trays, such conduits of the several exchangers being connected respectively to the corresponding conduits and outlets of different trays of the series; a source of supply of compressed gas to be liquefied, to which the corresponding conduits of the exchangers are connected in multiple, a collector into which the gas from the several exchangers is discharged, and valves in said collector adapted to permit separation of gas flowing from different exchangers of the series.

7. In an apparatus for the separation of a gaseous mixture into its constituents by the liquefaction and subsequent evaporation or fractional distillation of such gaseous mixture in the manner hereinbefore described, the combination with a liquefier comprising a series of closed evaporator trays, troughs or sections, connected to permit passage of liquid through the series, and provided with conduits, in contact with liquid in such trays, for the passage of the gas to be liquefied, and with separate gas-outlets, of a plurality of heat-exchangers each having adjacent conduits for the passage of gas to be liquefied and for the gas escaping from the evaporator-trays, such conduits of the several exchangers being connected respectively to the corresponding conduits and outlets of different trays of the series; a source of supply of compressed gas to be liquefied, to which the corresponding conduits of the exchangers are connected in multiple, and means for collecting the liquefied mixture from the conduits of the several trays, and for conducting said mixture to the uppermost of said trays.

8. In an apparatus for the separation of a gaseous mixture into its constituents by the liquefaction and subsequent evaporation or fractional distillation of such gaseous mixture in the manner hereinbefore described, the combination with a liquefier comprising a series of closed evaporator trays, troughs or sections connected to permit passage of liquid through the series, but sealed against the passage of gas from one to the other, and provided with conduits, in contact with liquid in such trays, for the passage of the gas to be liquefied, and with separate gas-outlets, of a plurality of heat-exchangers, each having adjacent conduits for the passage of gas to be liquefied and for the gas escaping from the evaporator-trays, such conduits of the several exchangers being connected respectively to the corresponding conduits and outlets of different trays of the series; a source of supply of compressed gas to be liquefied, to which the corresponding conduits of the exchangers are connected in multiple, and means for collecting the liquefied mixture from the conduits of the several trays, and for conducting said mixture to the uppermost of said trays.

9. In an apparatus for the separation of a gaseous mixture into its constituents by the liquefaction and subsequent evaporation or fractional distillation of such gaseous mixture in the manner hereinbefore described, the combination, with a liquefier comprising a series of closed evaporator trays, troughs or sections, connected to permit passage of liquid through the series, and provided with conduits, in contact with liquid in such trays, for the passage of the gas to be liquefied, and with separate gas-outlets, of a plurality of heat-exchangers each having adjacent conduits for the passage of gas to be liquefied and for the gas escaping from the evaporator-trays, such conduits of the several exchangers being connected respectively to the corresponding conduits and outlets of different trays of the series; a source of supply of compressed gas to be liquefied, to which the corresponding conduits of the exchangers are connected in multiple, means for collecting the liquefied mixture from the conduits of the several trays, and for conducting said mixture to the uppermost of said trays, and means for collecting the gases escaping from the several exchangers.

10. In an apparatus for the separation of a gaseous mixture into its constituents by the liquefaction and subsequent evaporation or fractional distillation of such gaseous mixture in the manner hereinbefore described, the combination with a liquefier comprising a series of closed evaporator trays, troughs or sections, connected to permit passage of liquid through the series and provided with conduits, in contact with liquid in such trays, for the passage of gas to be liquefied, and with separate gas-outlets, of a plurality of heat-exchangers surrounding the said liquefier and each having adjacent conduits for the passage of gas to be liquefied and for the gas escaping from the said evaporator-trays, the said conduits of the several exchangers being connected respectively to the corresponding conduits and outlets of different evaporator-trays of the series; a source of supply of compressed gas to be liquefied, to which the corresponding conduits of the exchangers are connected in multiple, means for collecting the gas escaping from the several exchangers, and means for collecting the liquefied mixture from the conduits of the several trays, and for conducting said mixture to the uppermost of said trays.

11. In an apparatus for the separation of a gaseous mixture into its constituents by the liquefaction and subsequent evaporation or fractional distillation of such gaseous mixture in the manner hereinbefore described, the combination with a liquefier comprising a series of closed evaporator trays, troughs or sections connected to permit passage of liquid through the series, but sealed against the passage of gas from one to the other, and provided with conduits, in contact with liquid in such trays, for the passage of the gas to be liquefied, and with separate gas-outlets, of a plurality of heat-exchangers each having adjacent conduits for the passage of gas to be liquefied and for the gas escaping from the evaporator-trays, such conduits of the several exchangers being connected respectively to the corresponding conduits and outlets of different trays of the series; a source of supply of compressed gas to be liquefied, to which the corresponding conduits of the exchangers are connected in multiple, a collector into which the gas from the several exchangers is discharged, provided with means for separating gases discharged from the different exchangers of the series, and means for collecting the liquefied mixture from the conduits of the several trays and for conveying said mixture to the uppermost of said trays.

12. In an apparatus for the separation of a gaseous mixture into its constituents by the liquefaction and subsequent evaporation or fractional distillation of such gaseous mixture in the manner hereinbefore described, the combination with a liquefier comprising a series of closed evaporator trays, troughs or sections connected to permit passage of liquid through the series, and provided with conduits, in contact with liquid in such trays, for the passage of the gas to be liquefied, and with separate gas-outlets, of a plurality of heat-exchangers each having adjacent conduits for the passage of gas to be liquefied and for the gas escaping from the evaporator-trays, such conduits of the several exchangers being connected respectively to the corresponding conduits and outlets of different trays of the series; a source of supply of compressed gas to be liquefied, to which the corresponding conduits of the exchangers are connected in multiple, a collector into which the gas from the several exchangers is discharged, valves in said collector adapted to permit separation of gas flowing from different exchangers of the series, and means for collecting the liquefied mixture from the conduits of the several trays and for conveying said mixture to the uppermost of said trays.

13. In an apparatus for the separation of a gaseous mixture into its constituents by the liquefaction and subsequent evaporation or fractional distillation of such gaseous mixture in the manner hereinbefore described, the combination with a liquefier comprising a series of closed evaporator trays, troughs or sections, connected to permit passage of liquid through the series, and provided with conduits, in contact with liquid in such trays, for the passage of the gas to be liquefied, and with separate gas-outlets, of a plurality of heat-exchangers each having adjacent conduits for the passage of gas to be liquefied and for the gas escaping from the evaporator-trays, such conduits of the several exchangers being connected respectively to the corresponding conduits and outlets of different trays of the series; a source of supply of compressed gas to be liquefied, to which the corresponding conduits of the exchangers are connected in multiple, and means for collecting the liquefied mixture from the conduits of the several trays, for filtering said mixture and for delivering the filtered liquid to the uppermost of said trays.

14. In an apparatus for the separation of a gaseous mixture into its constituents by the liquefaction and subsequent evaporation or fractional distillation of such gaseous mixture in the manner hereinbefore described, the combination with a liquefier comprising a series of closed evaporator trays, troughs or sections connected to permit passage of liquid through the series, but sealed against the passage of gas from one to the other, and provided with conduits, in contact with liquid in such trays, for the passage of the gas to be liquefied, and with separate gas-outlets, of a plurality of heat-exchangers, each having adjacent conduits for the passage of gas to be liquefied and for the gas escaping from the evaporator-trays, such conduits of the several exchangers being connected respectively to the corresponding conduits and outlets of different trays of the series; a source of supply of compressed gas to be liquefied, to which the corresponding conduits of the exchangers are connected in multiple, and means for collecting the liquefied mixture from the conduits of the several trays, for filtering said mixture and for delivering the filtered liquid to the uppermost of said trays.

15. In an apparatus for the separation of a gaseous mixture into its constituents by the liquefaction and subsequent evaporation or fractional distillation of such gaseous mixture in the manner hereinbefore described, the combination, with a liquefier comprising a series of closed evaporator trays, troughs or sections, connected to permit passage of liquid through the series, and provided with conduits, in contact with liquid in such trays, for the passage of the gas to be liquefied, and with separate gas-outlets, of a plurality of heat-exchangers, each having adjacent conduits for the passage of gas to be liquefied and for the gas escaping from the evaporator-trays, such conduits of the several exchangers being connected respectively to the corresponding conduits and outlets of different trays of the series; a source of supply of compressed gas to be liquefied, to which the corresponding conduits of the exchangers are connected in multiple, means for collecting the liquefied mixture from the conduits of the several trays, for filtering the same, and for delivering the filtered liquid to the uppermost of said trays, and means for collecting the gases escaping from the several exchangers

16. In an apparatus for the separation of a gaseous mixture into its constituents by the liquefaction and subsequent evaporation or fractional distillation of such gaseous mixture in the manner hereinbefore described, the combination with a liquefier comprising a series of closed evaporator trays, troughs or sections, connected to permit passage of liquid through the series and provided with conduits, in contact with liquid in such trays, for the passage of gas to be liquefied, and with separate gas-outlets, of a plurality of heat-exchangers surrounding the said liquefier and each having adjacent conduits for the passage of gas to be liquefied and for the gas escaping from the said evaporator-trays, the said conduits of the several exchangers being connected to the corresponding conduits and outlets of different evaporator-trays of the series; a source of supply of compressed gas to be liquefied, to which the corresponding conduits of the exchangers are connected in multiple, means for collecting the gas escaping from the several exchangers, and means for collecting the liquefied mixture from the conduits of the several trays for filtering the same and for delivering the filtered liquid to the uppermost of said trays.

17. In an apparatus for the separation of a gaseous mixture into its constituents by the liquefaction and subsequent evaporation or fractional distillation of such gaseous mixture in the manner hereinbefore described, the combination with a liquefier comprising a series of closed evaporator trays, troughs or sections connected to permit passage of liquid through the series, and provided with conduits, in contact with liquid in such trays, for the passage of the gas to be liquefied, and with separate gas-outlets, of a plurality of heat-exchangers each having adjacent conduits for the passage of gas to be liquefied and for the gas escaping from the evaporator-trays, such conduits of the several exchangers being connected respectively to the corresponding conduits and outlets of different trays of the series; a source of supply of compressed gas to be liquefied, to which the corresponding conduits of the exchanger are connected in multiple, a collector into which the gas from the several exchangers is discharged, provided with means for separating gases discharged from the different exchangers of the series, and means for collecting the said liquid from the conduits of said trays, for filtering the same and for delivering the filtered liquid to the uppermost of said trays.

18. In an apparatus for the separation of a gaseous mixture into its constituents by the liquefaction and subsequent evaporation or fractional distillation of such gaseous mixture in the manner hereinbefore described, the combination with a liquefier comprising a series of closed evaporator trays, troughs or sections connected to permit passage of liquid through the series, and provided with conduits, in contact with liquid in such trays, for the passage of the gas to be liquefied, and with separate gas-outlets, of a plurality of heat-exchangers each having adjacent conduits for the passage of gas to be liquefied and for the gas escaping from the evaporator-trays, such conduits of the several exchangers being connected respectively to the corresponding conduits and outlets of different trays of the series; a source of supply of compressed gas to be liquefied, to which the corresponding conduits of the exchangers are connected in multiple, a collector in which the gas from the several exchangers is discharged valves in said collector adapted to permit separation of gas flowing from different exchangers of the series, and means for collecting the said liquid from the conduits of said trays, for filtering the same and for delivering the filtered liquid to the uppermost of said trays.

19. In an apparatus for the separation of a gaseous mixture into its constituents by the liquefaction and subsequent evaporation or fractional distillation of such gaseous mixture in the manner hereinbefore described the combination with each trough or tray of the liquefier of a window to permit inspection of the interior of such trough or tray and of the flow of liquefied gaseous mixture from one trough or tray of the liquefier to the next and the intensity of the evaporation of the liquefied gaseous mixture and an outlet for cold dry gas adjacent to such window all for the purpose hereinbefore described.

20. In an apparatus for the separation of a gaseous mixture into its constituents by the liquefaction and subsequent evaporation or fractional distillation of such gaseous mixture in the manner hereinbefore described the combination with each trough or tray of the liquefier of a window and an outlet for cold dry gas adjacent to such window, a mirror and an electric lamp to act with such window to permit inspection of the interior of such trough or tray and of the flow of liquefied gaseous mixture from one trough or tray of the liquefier to the next and the intensity of the evaporation of the liquefied gaseous mixture all for the purpose hereinbefore described.

21. In an apparatus for the separation of a gaseous mixture into its constituents by liquefaction and subsequent evaporation or fractional distillation of such gaseous mixture, in the manner hereinbefore described, the combination with a liquefier comprising a plurality of evaporating-chambers arranged one above the other and connected in series and arranged to permit the flow of the liquefied gaseous mixture from one to the other but to prevent the flow of gas from one to the other, said series comprising intermediate chambers from which gaseous mixtures of different proportions may be obtained, and end chambers from which gases of relative purity may be obtained, of an exchanger comprising a plurality of sections arranged one above the other, surrounding the liquefier and each corresponding to one of the chambers of said liquefier, each exchanger-section having pipes, connected to its corresponding liquefier-chamber, through which the gaseous mixture to be cooled and eventually liquefied is made to pass, and having also channels to contain such pipes, each channel connected to the corresponding chamber of the liquefier.

22. In an apparatus for the separation of a gaseous mixture into its constituents by liquefaction and subsequent evaporation or fractional distillation of such gaseous mixture, in the manner hereinbefore described, the combination with a liquefier comprising a plurality of evaporating-chambers arranged one above the other and connected in series and arranged to permit the flow of the liquefied gaseous mixture from one to the other but to prevent the flow of gas from one to the other, said series comprising intermediate chambers from which gaseous mixtures of different proportions may be obtained, and end chambers from which gases of relative purity may be obtained, of an exchanger comprising a plurality of sections arranged one above the other, surrounding the liquefier, and each corresponding to one of the chambers of said liquefier, each exchanger-section having channels connected to the corresponding chamber of the liquefier and leading spirally outward therefrom for the escape of gas from said chamber, and having also pipes in such channels, connected to the corresponding liquefier-chamber, through which the gaseous mixture to be cooled and eventually liquefied is made to pass.

23. In an apparatus for the separation of a gaseous mixture into its constituents by the liquefaction and subsequent evaporation or fractional distillation of such gaseous mixture in the manner hereinbefore described, the combination of a plurality of sections of the apparatus adapted to resist pressure and arranged to be exposed to low temperatures in the operation of the apparatus and provided on adjacent sides with troughs adapted to contain water and with projections adapted to enter said troughs, whereby when water in such troughs is frozen the parts are secured together and means for producing within the apparatus a temperature below the freezing-point of the liquid in said troughs.

24. The combination with the troughs or trays of an exchanger for use in an apparatus for the separation of a gaseous mixture into its constituents by the liquefaction and subsequent evaporation or fractional distillation of such gaseous mixture in the manner hereinbefore described of feet upon some of such troughs or trays to enter into channels in the others of the said troughs or trays and channels upon the others of the said troughs or trays to receive the said feet and to receive water for the purpose hereinbefore described and means for producing within the apparatus a temperature lower than the freezing-point of the liquid within said channels.

25. In an apparatus for the separation of a gaseous mixture into its constituents by the liquefaction and subsequent evaporation or fractional distillation of such gaseous mixture in the manner hereinbefore described a liquefier consisting in the combination of a number of structurally-separate trays means to permit the flow of liquid from tray to tray and preserve a quantity of liquid in each tray, ice-joints between the trays, and coils immersed in the liquid in said trays and serving for the liquefaction of gaseous mixture in their interiors and for the evaporation of the liquid in the said trays for the purpose hereinbefore described.

26. An apparatus for the separation of a gaseous mixture into its constituents by the liquefaction and subsequent evaporation or fractional distillation of such gaseous mixture in the manner hereinbefore described consisting essentially in the combination of an exchanger and liquefier containing respectively corresponding numbers of sections and trays or troughs varying as to number according to the degree of purity desired in the gases to be separated and collected, the sections containing pipes for the passage of the gaseous mixture to be liquefied and channels containing the said pipes and each in communication with one of the trays or troughs and the trays or troughs each in communication with the channel in the corresponding section and a coil in each tray or trough in communication with the pipe in the corresponding channel, a liquid-collector in communication with the said coils, means to regulate the flow of liquefied gaseous mixture from each of the said coils to the said liquid-collector, a filter in communication with the said liquid-collector and with the uppermost of the said trays or troughs, a float in the lowest of the said trays or troughs, a gas-collector in communication with the said channels and provided with an outlet for gases not desired to be collected, means to regulate the escape of gases thereby, means to regulate the number of the said channels which are allowed to communicate at any time with the outlet for gases which it is not desired to collect and the number of the said channels from which gases are to be conducted to the places to which the said gas-collector may be connected all for the purposes hereinbefore described.

27. An apparatus for the separation of a gaseous mixture into its constituents by the liquefaction and subsequent evaporation or fractional distillation of such gaseous mixture in the manner hereinbefore described consisting essentially in the combination of an exchanger and liquefier containing respectively corresponding numbers of sections and trays or troughs varying as to number according to the degree of purity desired in the gases to be separated and collected, the sections containing pipes for the passage of the gaseous mixture to be liquefied and channels containing the said pipes and each in communication with one of the trays or troughs and the trays or troughs each in communication with the channel in the corresponding section and a coil in each tray or trough in communication with the pipe in the corresponding channel, a liquid-collector in communication with the said coils, means to regulate the flow of liquefied gaseous mixture from each of the said coils to the said liquid-collector, a filter in communication with the said liquid-collector and with the uppermost of the said trays or troughs, a float in the lowest of the said trays or troughs, a gas-collector in communication with the said channels and provided with an outlet for gases not desired to be collected, means to regulate the escape of gases thereby, means to regulate the number of the said channels which are allowed to communicate at any time with the outlet for gases which it is not desired to collect and the number of the said channels from which gases are to be conducted to the places to which the said gas-collector may be connected all for the purposes hereinbefore described.

28. An apparatus for the separation of a gaseous mixture into its constituents by the liquefaction and subsequent evaporation or fractional distillation of such gaseous mixture in the manner hereinbefore described consisting essentially in the combination of an exchanger and liquefier containing respectively corresponding numbers of sections and trays or troughs varying as to number according to the degree of purity desired in the gases to be separated and collected, the sections containing pipes for the passage of the gaseous mixtures to be liquefied and channels containing the said pipes and each in communication with one of the trays or troughs and the trays or troughs each in communication with the channel in the corresponding section and a coil in each tray or trough in communication with the pipe in the corresponding channel a liquid-collector in communication with the said coils, valves to regulate the flow of the liquefied gaseous mixture from each of the said coils to the said liquid-collector a filter in communication with the said liquid-collector and with the uppermost of the said trays or troughs a float in the lowest of the said trays or troughs, electric contacts to act in conjunction with the said float, a gas-collector in communication with the said channels and furnished with a triangular opening for the escape of gases not desired to be collected, a piston weighted to regulate the escape of gases thereby, valves to regulate the number of the said channels which are allowed to communicate at any time with the outlet for gases which it is not desired to collect and the number of the said channels from which the gases are to be conducted to the places to which the said gas-collector may be connected, all for the purpose hereinbefore described.

29. An apparatus for the separation of a gaseous mixture into its constituents by the liquefaction and subsequent evaporation or fractional distillation of such gaseous mixture in the manner hereinbefore described consisting essentially in the combination of an exchanger and liquefier containing respectively corresponding numbers of sections and trays or troughs varying as to number according to the degree of purity desired in the gases to be separated and collected, the sections containing pipes for the passage of the gaseous mixture to be liquefied and channels containing the said pipes and each in communication with one of the trays or troughs, and the trays or troughs each in communication with the channel in the corresponding section and a coil in each tray or trough in communication with the pipe in the corresponding channel, a liquid-collector in communication with the said coils, valves to regulate the flow of liquefied gaseous mixture from each of the said coils to the said liquid-collector, a filter in communication with the said liquid-collector and with the uppermost of the said trays or troughs, a valve to shut off the said filter from the uppermost tray or trough, a float in the lowest of the said trays or troughs, electric contacts to act in conjunction with the said float, a gas-collector in communication with the said channels and provided with an outlet for gases not desired to be collected, means to regulate the escape of gases thereby, means to regulate the number of the said channels which are allowed to communicate at any time with the outlet for gases which it is not desired to collect and the number of the said channels from which gases are to be conducted to the places to which the said gas-collector may be connected all for the purposes hereinbefore described.

30. An apparatus for the separation of a gaseous mixture into its constituents by the liquefaction and subsequent evaporation or fractional distillation of such gaseous mixture in the manner hereinbefore described consisting essentially in the combination of an exchanger and liquefier containing respectively numbers of sections and trays or troughs varying as to number according to the degree of purity desired in the gases to be separated and collected, the sections containing pipes for the passage of the gaseous mixture to be liquefied and channels containing the said pipes and each in communication with one of the trays or troughs and the trays or troughs each in communication with the channel in the corresponding section and a coil in each tray or trough in communication with the pipe in the corresponding channel, a liquid-collector in communication with the said coils, valves to regulate the flow of liquefied gaseous mixture

from each of the said coils to the said liquid-collector, a filter in communication with the uppermost of the said trays or troughs, a float in the lowest of the said trays or troughs electrical contacts to act in conjunction with the said float means to permit inspection of the interiors of the said troughs or trays a gas-collector in communication with the said channels and provided with an outlet for gases not desired to be collected a piston to regulate the escape of gases thereby, means to regulate the number of the said channels which are allowed to communicate at any time with the outlet for gases which it is not desired to collect and the number of the said channels from which gases are to be conducted to the places to which the said gas-collector may be connected for the purposes hereinbefore described.

31. An apparatus for the separation of a gaseous mixture into its constituents by the liquefaction and subsequent evaporation or fractional distillation of such gaseous mixture in the manner hereinbefore described consisting essentially in the combination of an exchanger and liquefier containing respectively numbers of sections and trays or troughs varying as to number according to the degree of purity desired in the gases to be separated and collected, the sections containing pipes for the passage of the gaseous mixture to be liquefied and channels containing the said pipes and each in communication with one of the trays or troughs and the trays or troughs each in communication with the channel in the corresponding section and a coil in each tray or trough in communication with the pipe in the corresponding channel, a liquid-collector in communication with the said coils, valves to regulate the flow of liquefied gaseous mixture from each of the said coils to the said liquid-collector, a filter in communication with the uppermost of the said trays or troughs, means to regulate the flow of liquefied gaseous mixture to the said filter, means to shut off the said filter from the uppermost tray or trough, a float in the lowest of the said trays or troughs, electrical contacts to act in conjunction with the said float, means to permit inspection of the interiors of the said troughs or trays, a gas-collector in communication with the said channels, and provided with an outlet for gases not desired to be collected a piston to regulate the escape of gases thereby, means to regulate the number of the said channels which are allowed to communicate at any time with the outlet for gases which it is not desired to collect and the number of the said channels from which gases are to be conducted to the places to which the said gas-collector may be connected for the purposes hereinbefore described.

32. An apparatus for the separation of a gaseous mixture into its constituents by the liquefaction and subsequent evaporation or fractional distillation of such gaseous mixture in the manner hereinbefore described consisting essentially in the combination of an exchanger and liquefier containing respectively numbers of sections and trays or troughs varying as to number according to the degree of purity desired in the gases to be separated and collected, the sections containing pipes for the passage of the gaseous mixture to be liquefied and channels containing the said pipes and each in communication with one of the trays or troughs and the trays or troughs each in communication with the channel in the corresponding section and a coil in each trough or tray in communication with the pipe in the corresponding channel a liquid-collector in communication with the said coils, valves to regulate the flow of liquefied gaseous mixture from each of the said coils to the said liquid-collector, filters in communication with the uppermost of the said troughs or trays means to regulate the flow of liquefied gaseous mixture to the said filters, means to shut off the said filters from the uppermost tray or trough a float in the lowest of the said trays or troughs, electrical contacts to act in conjunction with the said float means to permit inspection of the interiors of the said troughs or trays, a gas-collector in communication with the said channels and provided with an outlet for gases not desired to be collected, a piston to regulate the escape of gases thereby means to regulate the number of the said channels which are allowed to communicate at any time with the outlet for gases which it is not desired to collect and the number of the said channels from which gases are to be conducted to the places to which the said gas-collector may be connected for the purposes hereinbefore described.

34. An apparatus for the separation of a gaseous mixture into its constituents by the liquefaction and subsequent evaporation or fractional distillation of such gaseous mixture in the manner hereinbefore described consisting essentially in the combination of an exchanger and liquefier containing respectively corresponding numbers of sections and trays or troughs varying as to number according to the degree of purity desired in the gases to be separated and collected, the sections containing pipes for the passage of the gaseous mixture to be liquefied and channels containing the said pipes and each in communication with one of the trays or troughs and the trays or troughs each in communication with the channel in the corresponding section and a coil in each tray or trough in communication with the pipe in the corresponding channel, a liquid-collector in communication with the said coils, valves to regulate the flow of liquefied gaseous mixture from each of the said coils to the said liquid-collector, filters in communication with the said liquid-collector and with the uppermost of the said trays or troughs valves to shut off the said filters from the uppermost tray or trough, a float in the lowest of the said trays or troughs, electric contacts to act in conjunction with the said float, a gas-collector in communication with the said channels and furnished with an opening for the escape of gases not desired to be collected, means to regulate the escape of gases thereby, valves to regulate the number of the said channels which are allowed to communicate at any time with the outlet for gases which it is not desired to collect and the number of the said channels from which gases are to be conducted to the places to which the said gas-collector may be connected all for the purposes hereinbefore described.

35. An apparatus for the separation of a gaseous mixture into its constituents by the liquefaction and subsequent evaporation or fractional distillation of such gaseous mixture in the manner hereinbefore described consisting essentially in the combination of an exchanger and liquefier containing respectively numbers of sections and trays or troughs varying as to number according to the degree of purity desired in the gases to be separated and collected, the sections containing pipes for the passage of the gaseous mixture to be liquefied and channels containing the said pipes and each in communication with one of the trays or troughs and the trays or troughs each in communication with the channel in the corresponding section and a coil in each tray or trough in communication with the pipe in the corresponding channel, a liquid-collector in communication with the said coils, valves to regulate the flow of the liquefied gaseous mixture from each of the said coils to the said liquid-collector filters in communication with the said liquid-collector and with the uppermost of the said trays or troughs, valves to shut off the said filters from the uppermost tray or trough, a float in the lowest of the said trays or troughs, electric contacts to act in conjunction with the said float a gas-collector in communication with the said channels and furnished with an opening for the escape of gases not desired to be collected automatic means to regulate the escape of gases thereby, valves to regulate the number of the said channels which are allowed to communicate at any time with the outlet for gases which it is not desired to collect and the number of the said channels from which gases are to be conducted to the places to which the said gas-collector may be connected, all for the purposes hereinbefore described.

809,219. APPARATUS FOR DEHYDRATING COMPRESSED GASES. RAOUL P. PICTET, Steglitz, Germany. Filed July 25, 1903. Serial No. 166,949.

Claim.—1. A dehydrater for drying compressed gas, air for example, consisting in a chamber to contain liquid and furnished with an inlet for the gas to be dried and an outlet for the dried gas, a tubular coil for the passage of cooling liquid mounted in the said chamber and immersed in the liquid therein and a casing also supported in the said chamber and immersed in the liquid therein and provided with partitions having openings for the gas to pass through in ascending within the casing.

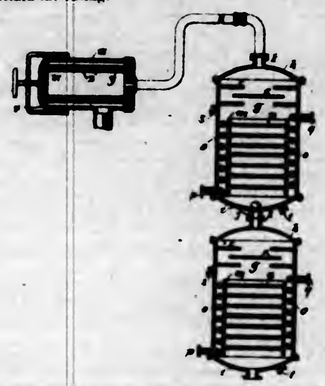

2. Dehydraters in series for drying compressed gas, air for example, with the outlet of one connected to the inlet of another and each consisting of a chamber to contain liquid and furnished with an inlet for the gas to be dried and an outlet for the dried gas, a tubular coil for the passage of cooling liquid mounted in the said chamber and immersed in the liquid therein and a casing also supported in the said chamber and immersed in the liquid therein and provided with partitions having openings for the gas to pass through in ascending within the casing.

3. Dehydraters in series for drying compressed gas, air for example, with the outlet of one connected to the inlet of another and containing liquids cooled to different temperatures and each consisting of a chamber to contain liquid and furnished with an inlet for the gas to be dried and an outlet for the dried gas, a tubular coil for the passage of cooling liquid mounted in the said chamber and immersed in the liquid therein and a casing also supported in the said chamber and provided with partitions having openings for the gas to pass through in ascending within the casing.

4. Dehydraters in series for drying compressed gas air for example, each containing cooled liquid cooled to a temperature different from that in another with the outlet of one, containing liquid cooled to one temperature connected to the inlet of another containing a liquid cooled to another temperature and each consisting of a chamber to contain liquid and furnished with an inlet for the gas to be dried and an outlet for the dried gas, a tubular coil for the passage of cooling liquid mounted in the said chamber and immersed in the liquid therein and a casing also supported in the said chamber and immersed in the liquid therein and provided with partitions having openings for the gas to pass through in ascending within the casing.

5. Dehydraters in series for drying compressed gas air for example, each containing cooled liquid and one containing liquid cooled to a lower temperature than the liquid in another with the outlet of the one containing liquid cooled to one temperature connected to the inlet of another containing liquid cooled to a lower temperature and each consisting of a chamber to contain liquid and furnished with an inlet for the gas to be dried and an outlet for the dried gas, a tubular coil for the passage of cooling liquid mounted in the said chamber and immersed in the liquid therein and a casing also supported in the said chamber and immersed in the liquid therein and provided with partitions having openings for the gas to pass through in ascending within the casing.

6. Two dehydraters in series for drying compressed gas, air for example, with the outlet of the one connected to the inlet of the other and each consisting of a chamber to contain liquid and furnished with an inlet for the gas to be dried and an outlet for the dried gas, a tubular coil for the passage of cooling liquid mounted in the said chamber and immersed in the liquid therein and a casing also supported in the said chamber and immersed in the liquid therein and provided with partitions having openings for the gas to pass through in ascending within the casing.

7. Two dehydraters in series for drying compressed gas, air for example, with the outlet of the one connected to the inlet of the other and containing liquids cooled to different temperatures and each consisting of a chamber to contain liquid and furnished with an inlet for the gas to be dried and an outlet for the dried gas, a tubular coil for the passage of cooling liquid mounted in the said chamber and immersed in the liquid therein and a casing also supported in the said chamber and provided with partitions having openings for the gas to pass through in ascending the casing.

8. Two dehydraters in series for drying compressed gas, air for example, each containing cooled liquid cooled to a temperature different from that in the other, with the outlet of one containing liquid cooled to one temperature connected to the inlet of the other containing a liquid cooled to another temperature and each consisting of a chamber to contain liquid and furnished with an inlet for the gas to be dried and an outlet for the dried gas, a tubular coil for the passage of cooling liquid mounted in the said chamber and immersed in the liquid therein and a casing also supported in the said chamber and immersed in the liquid therein and provided with partitions having openings for the gas to pass through in ascending within the casing.

9. Two dehydraters in series for drying compressed gas, air, for example each containing cooled liquid and one containing liquid cooled to a lower temperature than the liquid in the other, with the outlet of the one containing liquid cooled to one temperature connected to the inlet of the other containing liquid cooled to a lower temperature and each consisting of a chamber to contain liquid and furnished with an inlet for the gas to be dried and an outlet for the dried gas, a tubular coil for the passage of cooling liquid mounted in the said chamber and immersed in the liquid therein, and a casing also supported in the said chamber and immersed in the liquid therein and provided with partitions having openings for the gas to pass through in ascending within the said casing.

10. Two dehydraters in series for drying compressed gas, air for example, each containing cooled liquid and one containing liquid cooled to a temperature of about 0° centigrade and the other containing liquid cooled to a lower temperature and with the outlet of the one containing liquid cooled to a temperature af about 0° centigrade connected to the inlet of the other containing liquid cooled to a lower temperature and each consisting of a chamber to contain liquid and furnished with an inlet for the gas to be dried and an outlet for the dried gas, a tubular coil for the passage of cooling liquid mounted in the said chamber and immersed in the liquid therein and a casing also supported in the said chamber and immersed in the liquid therein and provided with partitions having openings for the gas to pass through in ascending within the casing.

11. Two dehydraters in series for drying compressed gas, air for example, each containing cooled liquid and one containing liquid cooled to a temperature of about 0° centigrade and the other containing liquid cooled to a temperature of about from —20° centigrade to —40° centigrade and with the outlet of the one containing liquid cooled to a temperature of about 0° centigrade connected to the inlet of the other containing liquid cooled to the temperature of about from —20° centigrade to —40° centigrade and each consisting of a chamber to contain liquid and furnished with an inlet for the gas to be dried and an outlet for the dried gas, a tubular coil for the passage of cooling liquid mounted in the said chamber and immersed in the liquid therein and a casing also supported in the said chamber and immersed in the liquid therein and provided with partitions having openings for the gas to pass through in ascending within the casing.

809,220. COLLECTOR-RING. HARRY G. REIST, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Apr. 23, 1904. Serial No. 204,316.

Claim.—1. A collector-ring cut away to form a flexible part, and a supporting-stud carried by said part.

2. A collector-ring having circumferentially-extending slots

from each of the said coils to the said liquid-collector, a filter in communication with the uppermost of the said trays or troughs, a float in the lowest of the said trays or troughs electrical contacts to act in conjunction with the said float means to permit inspection of the interiors of the said troughs or trays a gas-collector in communication with the said channels and provided with an outlet for gases not desired to be collected a piston to regulate the escape of gases thereby, means to regulate the number of the said channels which are allowed to communicate at any time with the outlet for gases which it is not desired to collect and the number of the said channels from which gases are to be conducted to the places to which the said gas-collector may be connected for the purposes hereinbefore described.

31. An apparatus for the separation of a gaseous mixture into its constituents by the liquefaction and subsequent evaporation or fractional distillation of such gaseous mixture in the manner hereinbefore described consisting essentially in the combination of an exchanger and liquefier containing respectively numbers of sections and trays or troughs varying as to number according to the degree of purity desired in the gases to be separated and collected, the sections containing pipes for the passage of the gaseous mixture to be liquefied and channels containing the said pipes and each in communication with one of the trays or troughs and the trays or troughs each in communication with the channel in the corresponding section and a coil in each tray or trough in communication with the pipe in the corresponding channel, a liquid-collector in communication with the said coils, valves to regulate the flow of liquefied gaseous mixture from each of the said coils to the said liquid-collector, a filter in communication with the uppermost of the said trays or troughs, means to regulate the flow of liquefied gaseous mixture to the said filter, means to shut off the said filter from the uppermost tray or trough, a float in the lowest of the said trays or troughs, electrical contacts to act in conjunction with the said float, means to permit inspection of the interiors of the said troughs or trays, a gas-collector in communication with the said channels and provided with an outlet for gases not desired to be collected means to regulate the escape of gases thereby, means to regulate the number of the said channels which are allowed to communicate at any time with the outlet for gases which it is not desired to collect and the number of the said channels from which gases are to be conducted to the places to which the said gas-collector may be connected for the purposes hereinbefore described.

32. An apparatus for the separation of a gaseous mixture into its constituents by the liquefaction and subsequent evaporation or fractional distillation of such gaseous mixture in the manner hereinbefore described consisting essentially in the combination of an exchanger and liquefier containing respectively numbers of sections and trays or troughs varying as to number according to the degree of purity desired in the gases to be separated and collected, the sections containing pipes for the passage of the gaseous mixture to be liquefied and channels containing the said pipes and each in communication with one of the trays or troughs and the trays or troughs each in communication with the channel in the corresponding section and a coil in each trough or tray in communication with the pipe in the corresponding channel a liquid-collector in communication with the said coils, valves to regulate the flow of liquefied gaseous mixture from each of the said coils to the said liquid-collector, filters in communication with the uppermost of the said troughs or trays means to regulate the flow of liquefied gaseous mixture to the said filters, means to shut off the said filters from the uppermost trough or tray a float in the lowest of the said trays or troughs, electrical contacts to act in conjunction with the said float, means to permit inspection of the interiors of the said troughs or trays, a gas-collector in communication with the said channels and provided with an outlet for gases not desired to be collected means to regulate the escape of gases thereby, means to regulate the number of the said channels which are allowed to communicate at any time with the outlet for gases which it is not desired to collect and the number of the said channels from which gases are to be conducted to the places to which the said gas-collector may be connected for the purposes hereinbefore described.

33. An apparatus for the separation of a gaseous mixture into its constituents by the liquefaction and subsequent evaporation or fractional distillation of such gaseous mixture in the manner hereinbefore described consisting essentially in the combination of an exchanger and liquefier containing respectively numbers of sections and trays or troughs varying as to number according to the degree of purity desired in the gases to be separated and collected, the sections containing pipes for the passage of the gaseous mixture to be liquefied and channels containing the said pipes and each in communication with one of the trays or troughs and the trays or troughs

formed in it to give flexible portions, and supporting-studs engaging said portions.

3. In combination, a cylindrical support, a collector-ring, flexible portions carried thereby, and means extending between said flexible portions and said support and normally holding said portions under tension.

4. In combination, a support, a collector-ring, flexible members secured thereto, and means extending between said support and said flexible members holding said flexible members under tension when the collector-ring is cold.

5. In combination, a support, a collector-ring formed with flexible parts, and means for securing the collector-ring to the support in such a manner that the flexible parts are put in an initial tension which decreases when the collector-ring expands.

6. In combination, a support, a collector-ring formed with flexible parts, and a device extending between said support and said flexible parts by which the latter are put under initial tension.

7. In combination, an annular collector-ring formed with slots in it to give flexible strips or portions, each of which is connected at its ends to the collector-ring proper and is formed with a socket located between its ends, pins or studs secured in said sockets and extending radially inward from the collector-ring, and a cylindrical support for the collector-ring having an engaging surface or surfaces against which the inner ends of the studs or pins bear, the parts being so proportioned and arranged that when the collector-ring is at normal atmospheric temperature the flexible portions are deflected outward.

8. An annular collector-ring having circumferentially-extending slots formed therein to give flexible portions, and supporting means engaging said flexible portions.

9. A collector-ring formed with one or more flexible strips or portions each secured at its ends to the collector-ring proper, and a supporting device engaging each of said strips between its ends.

10. A collector-ring formed with one or more flexible strips or portions each secured at its ends to the collector-ring proper and having a socket formed in it, and a supporting pin or stud located in said socket.

11. In combination, a cylindrical support, a collector-ring formed with flexible strips, each of said strips being secured at its ends to the collector-ring proper, and a device for securing the collector-ring to the support extending between said support and each flexible strip.

12. In combination, a cylindrical support, a collector-ring formed with flexible strips, each of said strips being secured at its ends to the collector-ring proper, and means for securing the collector-ring to said support extending between said support and the flexible strips, said means being arranged to deflect the strips outward in the normal condition of the apparatus.

809,221. **WINDOW-SHADE HOLDER.** JOHN RENNER, Burlington, Iowa. Filed Feb. 24, 1905. Serial No. 247,154.

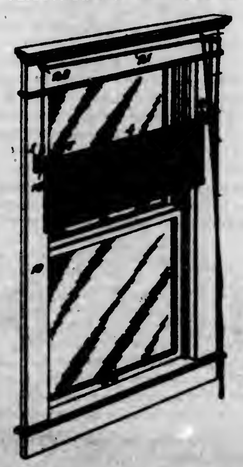

Claim.—1. In a device of the class described, the combination of a bracket having a bearing portion and provided therein with a journal-receiving opening, said bracket being also provided with an entrance-slot, and a locking-plate mounted on the bearing portion of the bracket and provided with a journal-receiving opening and having an entrance-slot, said locking-plate being movable to carry its entrance-slot into and out of register with that of the bracket.

2. In a device of the class described, the combination with a curtain-roller, of a bracket having a concavo-convex bearing portion and provided therein with a journal-receiving opening, said bracket being also provided with an entrance-slot, and a concavo-convex locking-plate fitted on the bearing portion of the bracket and provided with an opening and having an entrance-slot, said locking-plate being capable of a rotary movement to carry its entrance-slot into and out of register with that of the bearing-bracket.

3. In a device of the class described, the combination with a curtain-roller, of a bracket having a concavo-convex bearing portion presenting an inner convex face to the curtain-roller and having an outer concave face, said bracket having an opening and an entrance-slot thereto, a concavo-convex locking-plate arranged on the outer face of the bearing portion of the bracket and provided with an opening, and an entrance-slot thereto, and lugs securing the locking-plate to the bracket, said lugs extending from one of the parts and engaging the other.

4. In a device of the class described, the combination with a curtain-roller, of a substantially L-shaped bracket provided at its inner face with a tongue extending across the angle of the bracket and forming a guide-opening.

5. In a device of the class described, the combination with brackets adapted to support a window-shade, and a curtain-cord provided with two branches, of guides located at opposite sides of the window, one of the guides being provided with spaced inner, outer, and intermediate guide-eyes located different distances from the window and arranged to equalize the friction, the inner eye receiving one of the branches, and the other branch being passed through the intermediate and outer eyes.

6. In a device of the class described, the combination with brackets adapted to support a window-shade, and a curtain-cord provided with branches, of guides located at opposite sides of the window, one of the guides being constructed of a single piece of metal disposed substantially horizontally and provided at its inner end with a shank for connecting it to a window-frame and coiled at intervals to form spaced inner, outer, and intermediate guide-eyes, the inner eye receiving one of the branches of the curtain-cord and the other branch being passed through the intermediate and outer eyes.

7. In a device of the class described, the combination with brackets adapted to support a window-shade, and a curtain-cord, of guides for the curtain-cords, one of the guides being constructed of a single piece of metal coiled at intervals to form spaced inner, outer, and intermediate guide-eyes for the curtain-cord, the inner and outer eyes being vertical and arranged in longitudinal and transverse planes, and the intermediate eye being disposed horizontally.

809,222. **WATER-CLOSET.** CHARLES H. ROLLINS, Watertown, Mass. Filed May 27, 1903. Serial No. 159,606.
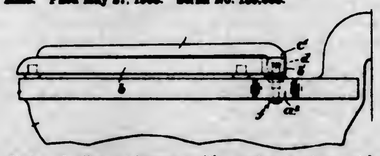
Claim.—1. For employment with a water-closet, a seat having two integral rearwardly-projecting arms, a cover having an integral arm which projects into and fills the space between the said arms on the seat, and a rod or pintle passing through apertures in all of said arms and adapted to be connected to a closet, said rod or pintle being covered and concealed substantially from end to end by the cover and seat.

2. For employment with a water-closet, a seat having one or more rearwardly-projecting arms, a cover adapted to rest upon the top of said seat and having an integral arm which projects rearwardly and downwardly into the plane of the last-mentioned arm or arms, and a rod passing through said arms and adapted to be connected to the closet, said arms being contiguous so as to substantially cover and conceal the rod from end to end thereof.

3. For employment with a water-closet, the combination of a seat and a cover, said seat and cover having non-metallic arms, the ends of which are in the same plane and substantially contiguous, said arms having alined apertures, a straight rod or pintle passed through said apertures and covered substantially from end to end by said arms.

4. For employment with a water-closet, a seat having two integral rearwardly-projecting arms, a cover having an integral arm which projects downward between the arms of said seat and fills the space between the said arms, all of said arms having alined apertures, a straight rod or pintle passing through said apertures and covered substantially from end to end by said arms, and studs by which said pintle or rod may be connected to said closet.

5. In combination with a water-closet, upright studs at the sides thereof, non-metallic casings inclosing said studs, a rod supported by said studs, and a non-metallic seat and a non-metallic cover having apertures for receiving and concealing said rod, at all points between said studs.

6. In combination with a water-closet, non-metallic knobs secured to said closet at the rear sides of the top thereof, studs loose within said knobs, a metallic rod having its ends terminating in said knobs and studs, and a non-metallic seat and a non-metallic cover hinged to and concealing said rod, whereby no metallic surfaces are exposed.

7. In combination with a water-closet, upright metallic studs secured to said closet, non-metallic knobs or casings entirely concealing said studs, a metallic rod supported by said studs, a non-metallic seat having separated arms apertured to receive said rod and held against lateral movement by said knobs or casings, and a non-metallic cover having a downwardly-projecting arm which extends between the arms of the seat and which is apertured to receive said rod.

809,223. **COMBINED SMOKE-FLUE AND VENTILATING DEVICE.** CHARLES C. ROTH, Denver, Colo., assignor to The Denver Tent and Awning Company, Denver, Colo. Filed Dec. 27, 1904. Serial No. 238,548.

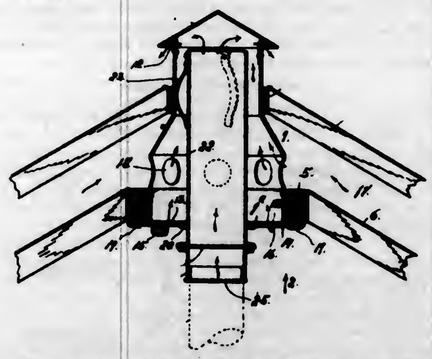

Claim.—1. In a structure having a roof and fly, a combined smoke-flue and ventilating device, consisting of a smoke-flue and a surrounding ventilating-flue, both flues being open-ended and forming independent passages between the atmosphere and the interior of the structure, and each flue being provided with suitable means for controlling said passage, the ventilating-flue also communicating with the space between the roof and fly.

2. The combination with a structure provided with a roof and fly, of a ventilating-flue mounted therein and passing through the roof and fly, the said flue communicating with the atmosphere at the top, the interior of the structure at the bottom, and with the space between the roof and fly intermediate its extremities, and an open-ended, damper-controlled smoke-flue centrally located in the ventilating-flue, a suitable space being left between the two flues, substantially as described.

3. The combination of a structure having a roof and fly respectively, provided with central openings, frames surrounding said openings, a ventilating-flue passing through the said openings and fastened to the frames, the flue having communication with the atmosphere at the top and with the interior of the structure at the bottom, and with the space between the roof and fly intermediate its extremities, a cut-off slide for controlling the bottom opening, and an open-ended flue centrally located in the ventilating-flue for the purpose set forth.

4. The combination with a structure having a roof and fly of a flue open at the top and bottom, a slide for controlling the bottom opening, the said flue communicating with the atmosphere at the top the inside of the structure at the bottom and the space between the roof and fly intermediate its extremities another flue centrally located in the ventilating-flue, guides interposed between the two flues at the top for centering the central flue which is fitted tightly into the bottom of the ventilating-flue, the central flue being open-ended and having a mesh-covered thimble inserted in its lower extremity.

809,224. **RAZOR-GUARD.** EDWARD A. SCHREIBER and JOSEPH O. KLEE, Rochester, N. Y. Filed May 18, 1905. Serial No. 261,000.

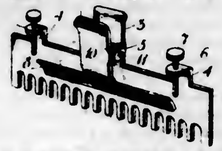

Claim.—1. A razor-guard comprising a plate having teeth on one side, adjusting-screws carried by the plate to bear against the rear side of a razor-blade and a spring-pressed clamp-clip pivotally connected to the said plate to clamp a razor-blade between it and the said plate, substantially as described.

2. A razor-guard comprising a plate to bear against one side of a razor-blade, provided at one side with teeth and at the opposite side with outwardly-extending arms, adjusting-screws carried by two of said arms near the ends of said plate to bear against the back of the razor-blade, a clamp-clip having an arm pivotally connected to the other arm of the said plate and a spring between the said arms and normally closing the clamp-clip against the plate, substantially as described.

809,225. **PROCESS OF MANUFACTURING ARTIFICIAL PAVING-STONES.** WILHELM SCHUMACHER, Oberdollendorf, Germany. Filed Dec. 11, 1903. Serial No. 184,842.

Claim.—1. The herein-described method of producing artificial paving-stones, which consists in first heating bauxite at a high temperature until it is perfectly sintered, then reducing it to small pieces of a suitable fineness, next mixing it with a ground binding material (clay, cement, asphalt and the like), afterward moistening the mixture with water and molding it to stones and finally burning the stones.

2. The herein-described method of producing artificial paving-stones, which consists in first heating bauxite with the addition of a flux at a high temperature until it is perfectly sintered, then reducing it to small pieces of a suitable fineness, next mixing it with a ground binding material (clay, cement, asphalt and the like), afterward moistening the mixture with water and molding it to stones and finally burning the stones.

809,226. **WIRE-CARRIER.** FRANK L. SESSIONS, Columbus, Ohio, assignor to Joseph A. Jeffrey, Columbus, Ohio. Filed July 17, 1903. Serial No. 165,976.

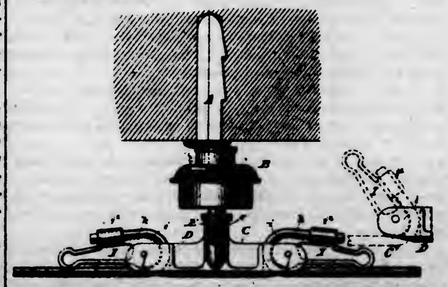

Claim.—1. A wire-carrier having a body part provided with a wire-passage and an opposing gripping element pivotally connected to the body part and adjusted by means of a handle or projecting arm having a projection with a passage-way through it for receiving the end of the wire.

2. A wire-carrier having a body part provided with a wire-passage and an opposing gripping element pivotally connected to the

body part and adjusted by means of a handle or projecting arm having a projection normally above the main line of the wire with a passage-way through it for receiving the end of the wire.

3. A wire-carrier having a body part formed with a vertically-arranged passage-way through which can be passed a bent portion of the wire, and a gripper movably connected to the body part and having a wire-gripping part and means for adjusting the wire-gripping part adapted to be engaged at its free end by the line-wire substantially as set forth whereby the trolley-pressure against the line-wire tends to increase the locking or clamping pressure between the gripping elements.

4. A wire-carrier having a body part with an aperture having a wall or abutment on a line inclined to the main line of the wire, and a pivoted gripper pivotally connected to the body part having a wire-gripping part and means for adjusting the wire-gripping part adapted to engage the line-wire at a point some distance from its clamped portion.

5. A wire-carrier having a body part provided with a wire-passage and an opposing gripping element pivotally connected with the body part and adjusted by means of a handle or lever-arm provided with means for receiving and holding the end of the wire to be clamped, substantially as set forth.

6. A wire-carrier having a body part provided with a wire-passage and an opposing gripping element pivotally connected with the body part and adjusted by means of a handle or lever-arm, said handle being provided with a device for receiving the end of the wire and carrying it around said pivotal connection as the handle is adjusted to cause the gripping of the wire, substantially as set forth.

809,227. CONVEYER-BELT SUPPORT. ARCHIBALD W. F. STECKEL, Columbus, Ohio, assignor to Joseph A. Jeffrey, Columbus, Ohio. Filed June 20, 1904. Serial No. 213,402.

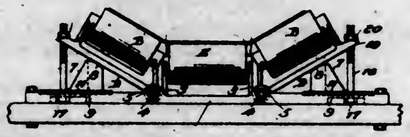

Claim.—1. In a conveyer, a belt-support consisting of the combination of two inclined pulleys, a movable carrier for each of said pulleys operable up and down in planes transverse to the belt, an intermediate support for the belt independent of said pulleys, and means for operating said carriers to adjust said inclined pulleys relative to said intermediate support.

2. In a conveyer, a belt-support consisting of the combination of two inclined pulleys, a carrier for each of said pulleys mounted on a hinge or fulcrum, the axis of which is longitudinal of the belt, an intermediate support for the belt independent of said pulleys, and means for adjusting the said carriers around their longitudinal axes to change the positions of said pulleys relative to said intermediate support.

3. In a conveyer, a belt-support consisting of the combination of two inclined pulleys, a carrier for each of said pulleys mounted on a longitudinal hinge or fulcrum and having inner and outer bearings for the inner and outer ends of the pulley shafts or journals, an intermediate support for the belt, and means for adjusting the said carriers around their longitudinal hinges.

4. In a conveyer, a belt-support consisting of the combination of two inclined pulleys, a carrier for each of said pulleys, adjustable up and down, and transversely-movable slides engaging said carriers for adjusting the latter.

5. In a conveyer, a belt-support consisting of the combination of two inclined pulleys, a carrier for each of said pulleys mounted on a longitudinal axis or fulcrum, means for forcing and holding said carriers downward, and means for forcing and holding said carriers upward.

6. In a conveyer, the combination of two inclined pulleys, a base, a carrier for each of said pulleys, movably supported on a hinge or fulcrum on said base, and inwardly and outwardly movable slides interposed between said carriers and the base.

7. In a conveyer, a belt-support consisting of the combination of two inclined pulleys, a base, a carrier for each of said pulleys, movably supported on a hinge or fulcrum on said base, inwardly and outwardly movable slides interposed between said carriers and the base, and connections between the base and said carriers for holding the latter downward.

8. In a mechanism of the class described, the combination with a suitable frame and a conveyer-belt arranged thereon, of a plurality of pulleys designed to support the central portion of said belt, pulleys arranged at the ends of said central pulleys designed to support the edges of said belt, means for adjusting said end pulleys to diagonal planes, and means for locking the same in such positions, substantially as set forth.

809,228. WINDOW-VENTILATOR. AUGUSTUS A. STEPHENS, Bellaire, Ohio. Filed Oct. 28, 1904. Serial No. 230,240.

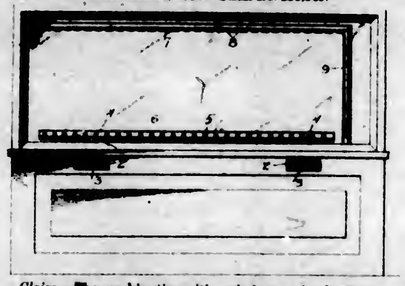

Claim.—The combination with a window-casing having screened openings beneath its bottom which openings lead from the outside; of a perforated tubing arranged within the casing at the bottom thereof, said tubing having a depending pipe extension at each end adapted to extend through the bottom of the casing and having flaring mouths fitting over the corresponding openings beneath the bottom of the casing; a second perforated tubing arranged at the top of and within the casing and independent of the other tubing, the perforations of the latter tubing being arranged in the bottom thereof, a pipe leading from one end of the upper tubing through the flooring of the casing, a fan in communication with the lower end of the last-named pipe, and means for operating the fan to draw warm air out of the casing through the tubing, the pipe and the fan.

809,229. PRINTING-PLATE HOLDER. EDWIN R. STORM, New York, N. Y. Filed Jan. 21, 1904. Serial No. 190,089.

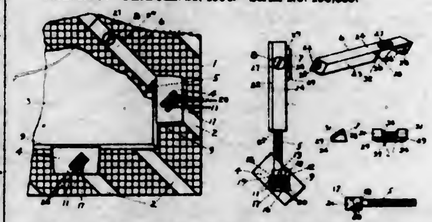

Claim.—1. In a holder for printing-plates the combination of a block having grooves adapted to receive and hold one or more plate-clamps and adjustable plate-clamps held in the grooves, each of said plate-clamps consisting of a base-piece adapted to be held in the grooves, a face-piece having a member extending into the groove and adapted to act with the head of a screw to hold the face-piece to position on the grooved block, and an adjusting-screw adapted to move the face-piece and the printing-plate over limited distances and hold the face-piece and printing-plate securely to the block at any point of such limited distances.

2. In a holder for printing-plates the combination of a block having grooves adapted to receive and hold one or more plate-clamps, a base-piece adapted to be secured within one of the grooves, an adjusting-screw held by the base-piece a member formed to extend into the grooves and engage with the adjusting-screw, and a movable face-piece formed integrally with the said member controlled by and moving with the adjusting-screw.

3. In a holder for printing-plates the combination of a block having grooves adapted to receive one or more plate-clamps, a base-piece adapted to be inserted at any point of the groove, a sliding member working within said base-piece, a set-screw adapted to act with the sliding member and hold the base-piece securely to any point of the groove, an adjusting-screw working within the base-piece and a face-piece with a holding edge thereon, controlled by the adjusting-screw.

4. In a holder for printing-plates, the combination of a grooved block, an adjusting-screw working within a threaded hole, a shoulder formed on the adjusting-screw, a face-piece working on the top surface of the grooved block, a member on the face-piece extending into the groove formed in the block, a surface adapted to receive the shoulder formed on the adjusting-screw, one or more slots in the face-piece adapted to admit the passage of an operating-bar and holes in the head of the adjusting-screw adapted to receive the end of an operating-bar.

5. In a holder for printing-plates the combination of a grooved block, a face-piece working on the top surface of the grooved block, a holding edge on the face-piece, a member on the face-piece extending into the groove formed in the block, a surface formed on the member extending into the groove, a shoulder formed on an adjusting-screw said shoulder being adapted to work against the surface formed on the member extending into the groove and an adjusting-screw having a shoulder thereon adapted to work against the face-piece and carry it along the lineal distance traversed by the head of the screw.

6. In a holder for printing-plates the combination of a grooved block, a face-piece working on the surface of the grooved block, a member on the face-piece extending into and fitted to the groove, a recessed portion in the said member adapted to receive the head of an adjusting-screw, a surface in the recessed portion adapted to receive the shoulder formed at the head of the adjusting-screw, an adjusting-screw formed with a shoulder at the head adapted to fit against the surface formed in the recessed portion, a member having a threaded hole adapted to receive and hold the adjusting-screw and holes in the head of the adjusting-screw adapted to receive the end of an operating-bar.

7. In a holder for printing-plates the combination of a grooved block, a face-piece working on the surface of the grooved block, an adjusting-screw held rotatably within the groove and working in a threaded hole, a base-piece having a threaded hole adapted to receive the adjusting-screw, a head on the adjusting-screw and a member on the face-piece extending into the groove and adapted to act in conjunction with the head of the adjusting-screw to hold the face-piece to the groove.

8. In a holder for printing-plates the combination of a grooved block, a face-piece working on the surface of the grooved block, a base-piece having a threaded hole therein secured within the groove, an adjusting-screw held rotatably within the groove and working in the said threaded hole in the base-piece, a head on the adjusting-screw, a member on the face-piece extending into the groove, a face on the said member fitted to the side of the groove, a recessed portion adapted to receive the head of the adjusting-screw and hold the head of the said adjusting-screw against the side of the groove causing it to act in conjunction with the said member to hold the face-piece to the surface of the block.

9. In a holder for printing-plates the combination of a grooved block, a face-piece working on the surface of the grooved block, a base-piece with a threaded hole therein secured within the groove, adapted to receive an adjusting-screw, an adjusting-screw working in the threaded hole, a head on the adjusting-screw adapted to pass into and work against one side of the groove, a member on the face-piece extending into the groove and adapted to pass freely to one side of the stem of the adjusting-screw in entering or leaving the groove, and a wedge-shaped portion on the member extending into the groove adapted to pass between the head of the adjusting-screw and a side of the groove and act in conjunction with the head of the adjusting-screw to hold the face-piece to the grooved block.

10. In a holder for printing-plates the combination of a grooved block, a face-piece working on the surface of the grooved block a base-piece with one side conforming to a side of the groove and its opposite side formed to admit the insertion of the base-piece in the groove, a sliding member working in the base-piece, a set-screw working in the base-piece and the sliding member, and an adjusting-screw connecting the face-piece to the base-piece.

11. In a holder for printing-plates the combination of a grooved block, a face-piece working on the surface of the grooved block, a base-piece with one side conforming to a side of the groove and its opposite side formed to admit the insertion of the base-piece at any point of the groove, a recessed portion in the base-piece adapted to receive a sliding member, ways formed in the recessed portion, a sliding member within the recessed portion, lugs on the sliding member fitted to the said ways and a set-screw adapted to act in conjunction with the sliding member to hold the base-piece rigidly within the groove.

12. In a holder for printing-plates the combination of a grooved block, a face-piece working on the surface of the grooved block, a base-piece with a threaded hole therein adapted to enter and partly fill the groove, a recessed portion in the base-piece connecting with the threaded hole, an inclined face on the recessed portion, a sliding member working within the recessed portion provided with a threaded surface corresponding to the said threaded hole, an inclined face on the sliding member adapted to work against the inclined face on the recessed portion, and a set-screw working within the threaded hole in the base-piece and connecting the sliding member to the base-piece.

13. In a holder for printing-plates the combination of a grooved block, a face-piece working on the surface of the grooved block, a base-piece provided with a threaded hole and adapted to enter and partly fill the groove, a set-screw in the threaded hole, a recessed portion in the base-piece, a sliding member within the recessed portion provided with a threaded surface adapted to receive the set-screw, an inclined face on the sliding member and an inclined face on the recessed portion adapted to bear against the inclined face on the sliding member and force it to slide until the threaded surface can be engaged by the set-screw as and for the purposes described.

14. In a holder for printing-plates the combination of a grooved block, a face-piece working on the surface of the grooved block, a base-piece with one side conforming to a side of the groove and its opposite side formed to admit the insertion of the base-piece at any point of the groove, a recessed portion in the base-piece, a sliding member within the recessed portion having one side conforming to a side of the groove, an inclined face on the sliding member, an inclined face on the base-piece adapted to fit against the inclined face on the sliding member to force the sliding member to one side of the groove and the base-piece to the other side of the groove and a set-screw connecting the sliding member and the base-piece and adapted to force and hold the base-piece and sliding member against the sides of the groove.

15. In a holder for printing-plates the combination of a grooved block, a face-piece working on the surface of the grooved block, a base-piece adapted to enter and partly fill the groove, a side on the base-piece conforming to one side of the groove, a sliding member with a side conforming to the opposite side of the groove, a screw connecting the base-piece and the sliding member adapted to bring the sliding member in coöperation with the base-piece and hold the base-piece fixedly in the groove, said base-piece having a threaded hole adapted to receive an adjusting-screw, and an adjusting-screw connecting the face-piece and the base-piece.

16. In a holder for printing-plates the combination of a grooved block, a base-piece adapted to enter and partly fill the groove, having one side conforming to a side of the groove and its opposite side formed to admit the insertion of the base-piece at any point of the groove, and provided with a recessed portion having ways therein, said base-piece being provided with a threaded hole adapted to receive an adjusting-screw and with a threaded hole partly cut away leading to the recessed portion and adapted to receive a set-screw, an inclined plane formed in the recessed portion, a sliding member within the recessed portion formed with an inclined face adapted to bear against the said inclined plane and provided with a threaded surface adapted to engage with a set-screw, lugs on the sliding member fitted to the said ways, a set-screw working partly in the base-piece and partly in the sliding member, an adjusting-screw provided with a head having a slot formed in the end and furnished with holes adapted to receive the end of an operating-bar, a face-piece working on the surface of the grooved block provided with one or more slots adapted to admit the passage of an operating-bar, a member on the face-piece extending into and fitted to one side of the groove, said member being provided with a recessed portion adapted to receive the head of the adjusting-screw and having a surface formed in the recessed portion adapted to receive the shoulder formed at the head of the adjusting-screw, a shoulder formed on the adjusting-screw between the head and the shank, and a holding edge formed on the face-piece adapted to bear against and hold the plate securely to the block.

17. In a holder for printing-plates the combination of a grooved block, a face-piece working on the surface of the grooved block, an adjusting-screw held rotatably within the groove, a member on the face-piece extending in the groove, a head on the screw adapted to bear against the said member to move the face-piece, a holding edge on the face-piece and one or more slots in the face-piece adapted to admit the passage of an operating-bar.

18. In a holder for printing-plates the combination of a grooved block, a face-piece working on the surface of the grooved block, an adjusting-screw held rotatably within the groove and working in

a threaded hole, a member in the groove having a threaded hole, a member on the face-piece extending in the groove, a head on the adjusting-screw adapted to engage with the member on the face-piece to control the movement of the said face-piece, a holding edge on the face-piece and one or more slots in the face-piece adapted to admit the passage of an operating-bar.

809,280. PAPER-BAG MACHINE. FREDERICK E. STRAFFORD, Rumford Falls, Me., assignor to Continental Paper Bag Company, a Corporation of Maine. Filed Apr. 26, 1904. Serial No. 204,903.

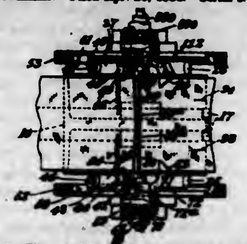

Claim.—1. The combination of a revoluble folding-bed, a pair of side clips thereon, a pair of nipper-trunnions, oppositely disposed with respect to the folding-bed, and having their axes substantially coincident with a straight line transverse the folding-bed and mounted for oscillation about the axis of said folding-bed, a pair of side nippers pivotally mounted in each nipper-trunnion for oscillation transverse the folding-bed, one member of each pair of side nippers mounted for oscillation toward and away from the other member of its respective pair, means to oscillate the nipper-trunnions about their own axis and about the axis of the folding-bed, means to oscillate the side nippers transverse the folding-bed, and means to oscillate one member of each pair of side nippers toward and away from the other member of its respective pair; all combined and operating together substantially as described.

2. The combination of a folding-bed, a pair of side clips 23, 24 thereon; a pair of defining-blades 38, 39 for defining the main transverse crease and vibrating upon axes substantially normal to the line of their defining edges, said axes forming acute angles respectively with the folding-bed, means for opening out the forward end of the bag-blank and folding the same down over the defining-blades, means for timing the side clips, the defining-blades and the folding means each with the others, and means for delivering the bag-blank to the folding-bed; all combined and operating together substantially as described.

3. The combination of a folding-bed, a pair of side clips 23, 24 thereon; two pairs of side nippers 62, 72 and 102, 112 vibrating inwardly and outwardly, with respect to the path of the bag-blank; nipper-trunnions 58, 580; said pairs of side nippers mounted for oscillation on said nipper-trunnions respectively; cams 71, 710 for closing the side nippers respectively; gears 79, 790, and segment-gears 80, 800 for oscillating the nipper-trunnions respectively; and plungers 70, 700 for vibrating the side nippers respectively; all combined and operating together substantially as described.

4. The combination of a revoluble folding-bed, a pair of side clips 23, 24 thereon; two pairs of side nippers 62, 72 and 102, 112 vibrating inwardly and outwardly, with respect to the path of the bag-blank; nipper-trunnions 58, 580; said pairs of side nippers mounted for oscillation on said nipper-trunnions respectively; cams 71, 710 for closing the side nippers respectively; gears 79, 790, and segment-gears 80, 800 for oscillating the nipper-trunnions respectively; plungers 70, 700 for vibrating the side nippers respectively; arms 34, 35 oscillating about the axis of the revoluble folding-bed, said arms having mounted thereon respectively nipper-trunnions 58, 580, cams 71, 710, and segment-gears 80, 800; all combined and operating together substantially as described.

5. The combination of a folding-bed 20, a pair of side clips 23, 24 thereon; two pairs of side nippers 62, 72 and 102, 112 vibrating inwardly and outwardly, with respect to the path of the bag-blank; nipper-trunnions 58, 580; said pairs of side nippers mounted for oscillation on said nipper-trunnions respectively; cams 71, 710 for closing the side nippers respectively; gears 79, 790 and segment-gears 80, 800 for oscillating the nipper-trunnions respectively; plungers 70, 700 for vibrating the side nippers respectively; oscillating arms 34, 35 having mounted thereon respectively nipper-trunnions 58, 580, cams 71, 710, and segment-gears 80, 800; all combined and operating together substantially as described.

6. The combination of a folding-bed, side clips 23, 24 thereon, a pair of defining-blades for defining the main transverse crease, and vibrating upon axes substantially normal to the line of their defining edges, said axes forming acute angles respectively with the folding-bed; and means for folding the upper plies of the bag-blank over the defining-blades, all combined and operating together substantially as described.

7. The combination of a folding-bed, means for holding a bag-blank thereon; a defining-blade, mounted for vibration upon an axis substantially normal to the line of its defining edge, said axis forming an acute angle lengthwise with the folding-bed and means for folding the bag-blank down over the defining-blade, all combined and operating together substantially as described.

8. The combination of a folding-bed, means for holding a bag-blank thereon; a pair of defining-blades 38, 39 each vibrating upon an axis substantially normal to the line of its defining edge, said axes forming acute angles respectively with the folding-bed, means coacting with the folding-bed, for opening out the forward end of the bag-blank and folding the same down over the defining-blades all combined and operating together substantially as described.

9. The combination of a revoluble folding-bed, a pair of oppositely-disposed trunnions 58, 580 each mounted for oscillation about its own axes and about the axis of the folding-bed, side clips 23, 24 on the folding-bed, a pair of side nippers carried by each trunnion, said side nippers being mounted in their respective trunnions for vibration inwardly and outwardly with respect to the folding-bed, one of each pair of said side nippers being mounted for vibration toward and away from the other nipper of its respective pair, all combined and operating together substantially as described.

809,281. BONDING OR TYING DEVICE. WILLIAM B. THIMS, Trenton, N. J. Filed Aug. 29, 1904. Serial No. 222,619.

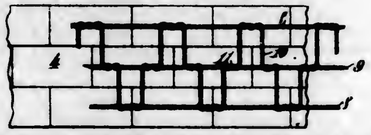

Claim.—1. In a bonding or tying device of the class set forth, the combination of two or more longitudinal strands arranged in parallel relation, and a single-strand cross-stay means alternately secured to the longitudinal strands at spaced intervals by a plurality of twists, the single-strand cross-stay having members bent in planes at right angles to and within the confines of the longitudinal strands, and the interlocking twists being formed both in the U-shaped bends of the cross-stay and in the longitudinal strands, the said single cross-stay having its parts in planes at right angles to the longitudinal strands and extending fully throughout the length of the bonding or tying device as a continuous structure.

2. The combination with a wall, having courses of brick or stone therein, of a bonding or tying device therefor consisting of two or more longitudinal strands arranged in parallel relation, and a single-strand cross-stay having U-shaped members continuous with each other and alternately secured to the longitudinal strands by a plurality of twists, the said single-strand cross-stay having its parts in planes at right angles to the longitudinal strands and spaced regularly throughout the whole length of the tying device, the longitudinal strands and the cross-stay members being spaced such distances that the longitudinal strands disposed within the opposite side margins of the wall engage the intermediate portions of the courses and the single-strand cross-stay at regular intervals pass over the courses between the joints of the constituents thereof.

3. The combination with a wall, having courses of brick or stone included therein, of a bonding or tying means therefor consisting of longitudinal and transversely extending strands having U-shaped members continuous with each other and the bends disposed in reverse positions and engaging all the brick or stone, the transversely-extending strands being in planes at right angles to the longitudinal strands and spanning the longitudinal joints between the courses and also intersecting the transverse joints, and the longitudinal strands extending intermediately over the brick or stone elements and crossing the transverse joints thereof in planes at right angles.

4. The combination with a wall, having course of brick or stone, of a bond or tie having outer marginal longitudinally-extending strands, and an intermediate longitudinal strand parallel with the outer ones, and transversely-disposed strands having reversely-positioned U-shaped bends continuous with each other and alternately connected to the outer longitudinal strands and the intermediate longitudinal strands by twists and arranged in regular spaced parallel relation throughout the whole length of the bond or tie.

5. A bonding or tying device for the purpose set forth, having outer marginal longitudinally-extending strands, and an intermediate longitudinal strand parallel with the other ones, and a single-strand cross-stay having U-shaped members continuous with each other and alternately secured to the outer longitudinal strands and the inner or intermediate strands by a plurality of twists extending lengthwise of and formed both in the longitudinal strands and the bends of the said members and regularly spacing the cross-stay, the latter having its cross parts at planes at right angles to the longitudinal strands.

809,282. SEMI-AUTOMATIC TELEPHONE-EXCHANGE SYSTEM. ARTHUR T. M. TROTMAN, London, England. Filed Oct. 6, 1905. Serial No. 281,713.

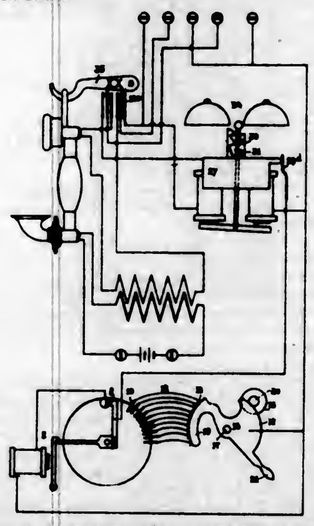

Claim.—1. A telephone-exchange comprising a subscriber's latent-signal set including a signal-transmitter arranged to send its signal in groups, with a prolonged current change between the groups, a calling-board with subscriber's jacks and calling-plugs, a called board with subscriber's jacks and called plugs, a numerical indicator at the called board in the plug-circuit comprising a set of actuating-magnets, a commutator-relay to successively throw them into circuit, and a retarding-relay operated by the prolonged current changes to actuate the commutator-relay, these parts being set into operation by the plugging of the calling-plug into the calling-subscriber's jack, to indicate to the called operator the signal set substantially as described.

2. A telephone-exchange comprising a subscriber's latent-signal set, a calling-board with subscribers' jacks, a bench carrying calling-plugs and calling-plug switches, a called board with subscribers' jacks, a bench carrying called plugs, a supervisory lamp for the called plug in circuit with the calling-plug switches, and a numerical indicator at the called board in the plug-circuit, whereby the removal of the calling-plug from its plug-switch and the plugging of the calling-plug into the calling-subscriber's jack, lights the supervisory lamp at the called plug and actuates the numerical indicators to register the latent signal, substantially as described.

3. A telephone-exchange comprising a subscriber's latent-signal set including a signal-transmitter, arranged to send signals in groups with a prolonged current change between the groups, a calling-board with subscriber's jacks and calling-plugs, a called board with subscribers' jacks and called plugs, a numerical indicator, at the called board, in the plug-circuit, comprising a set of actuating-magnets and a circuit-changing restoring device, a commutator-relay to successively throw the magnets into circuit, and a retarding-relay operated by the prolonged current changes to actuate the commutator-relay, the parts being set into operation by the plugging of the calling-plug into the calling-subscriber's jack to indicate to the called operator the signal set, and the commutator-relay being returned to normal by the circuit-changer of the restoring device, substantially as described.

4. A telephone-exchange comprising a subscriber's latent-signal transmitter arranged to store a plurality of identical signals, two exchanges each comprising a calling-board with subscribers' jacks, trunking-jacks and calling-plugs, and a called board with subscribers' jacks, trunking-jacks, called plugs and a numerical indicator, in the plug-circuit, energized by the plugging of the calling-plug into the calling-subscriber's jack, whereby the first calling operator may register the stored signal on the first called board, the first called operator may trunk to the second exchange, and the second calling operator may again register the stored signal at the second called-operator's board, substantially as described.

5. A telephone-exchange comprising a subscriber's latent-signal set arranged to send its signals in separate groups, a calling-board with subscribers' jacks, a bench carrying calling-plugs, a called board with subscribers' jacks, a bench carrying called plugs, an electromagnetic distributer, and a numerical indicator comprising a set of indicators at the called board in the plug-circuit, energized by the plugging of a calling-plug into the calling subscriber's jack to simultaneously indicate to the called operator the several elements of the signal set on the subscribers' latent-signal transmitter, substantially as described.

6. A telephone-exchange comprising a subscriber's latent-signal set arranged to send its signal in separate groups, a calling-board withsubscribers' jacks and calling-plugs, a called board with subscribers' jacks, called-plug switches and called plugs therein, an electromagnetic distributer for distributing the several groups constituting a signal, and a numerical indicator, comprising a set of indicators, at the called board, in the plug-circuit passing through the called-plug switches, energized by plugging the calling-subscriber's plug into his jack, whereby the raising of the called plug from its called-plug switch cuts the numerical indicator out of circuit, substantially as described.

809,283. SUGAR-BEET SEEDER. FREDERICK TIEMANN, Ordway, Colo. Filed May 1, 1905. Serial No. 258,319.

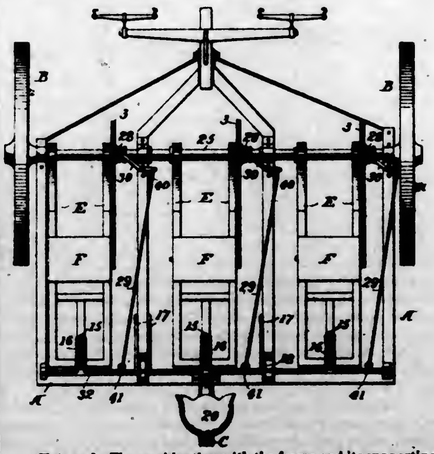

Claim.—1. The combination with the frame and its supporting-wheels and shaft of a planter, of a plurality of supplemental frames each connected to said shaft to swing independently, each supporting plows and seed-distributing mechanism, means for operating said mechanisms from said shaft, and independent clutch devices between the shaft and each of said means, substantially as set forth.

2. The combination with the seedbox of a planter, having a port at the end, of a seed-wheel having pockets, means for rotating it to carry said pockets past said port, a closing-plate at the opposite side of the wheel having a port, and a conduit leading downward from the latter port, substantially as set forth.

3. The combination with the seedbox of a planter having an end piece and port therein, of a shaft extending through said end, a seed-wheel with pockets secured to said shaft and rotating in contact with

the outer face of said end piece, a plate in contact with the outer face of the wheel having a channel, the upper end of which is in position to coincide with the pockets, a plow, and a conduit extending from above the plow to the lower end of said channel, substantially as set forth.

4. In a seed-distributer, a box having a port at one end, a seed-wheel with pockets arranged to be brought opposite said port, a plate having a channel with which said pockets may be brought into communication, and a spring arranged adjacent said wheel to spring into each pocket as the latter passes the spring, substantially as set forth.

5. A box for a planter having an end piece with a port therein, a wheel with pockets rotating in contact with the outer face of said end piece, and a plate recessed at the inner face to receive said wheel and with a channel, the upper end of which is in position to coincide with the said pockets as the wheel revolves, substantially as set forth.

6. The combination with the frame of a planter, of a supplemental frame, a seedbox carried thereby, seed-distributing mechanism at each end of said box, and plows carried by said box, each plow on a bar adjustable vertically in said supplemental frame, substantially as set forth.

7. The combination with the main frame and driving-shaft, of the swinging seed-distributing frame, a rock-shaft, connections whereby to elevate the rear end of the seed-distributing frame, driving mechanism including a clutch device, and connections whereby the clutch device is shifted when the rock-shaft is operated to lift the seed-distributing frame, substantially as set forth.

8. The combination with the main frame, driving-shaft, swinging frame E, rock-shaft 32 connected to the frame E, and means for rocking said shaft, of sprocket-wheels loose upon the driving-shaft, sprocket-chains carried by said wheels and extending to pinions on the frames E, clutch devices for connecting the sprocket-wheels to and releasing them from the shaft, and connections whereby the clutch devices are shifted as the rock-shaft is turned, substantially as set forth.

809,284. **STOP-MOTION FOR KNITTING-MACHINES.** ERNEST TOMPKINS, Troy, N. Y., assignor to Tompkins Brothers Company, Troy, N. Y. Filed June 6, 1904. Serial No. 211,262.

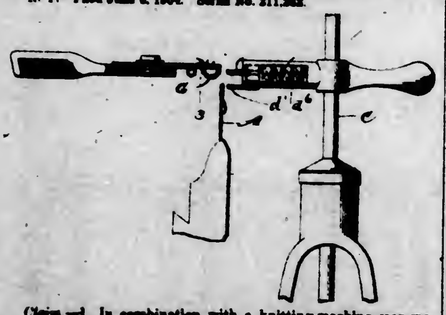

Claim.—1. In combination with a knitting-machine stop-motion having a stop-finger located outside the cloth and needles and having a cloth-presser located within the cloth; with a spring-controlled trip located within the cloth and needles adapted to engage the stop-finger and actuate the stop-motion when the cloth leaves the needles, said trip being controlled by the said presser, substantially as described.

2. In combination, a knitting-machine, and a stop-motion having a stop-finger located exterior to the needles and cloth, and a presser located within the needles and cloth; with a movable trip located adjacent to the presser and adapted to actuate the stop-finger when the cloth leaves the machine, substantially as described.

3. The combination of a knitting-machine, and a stop-motion having a spring-pressed stop-finger located exterior to the needles and cloth, and a spring-actuated presser located within the needles and cloth; with a laterally-movable trip located adjacent to the presser-arm, and connected therewith so as to be controlled thereby, said trip actuating the stop-finger when the cloth leaves the machine, substantially as described.

809,285. **INDUCTION-COIL VIBRATOR.** RICHARD VARLEY, Bridgeport, N. J., assignor to The Autocall Company, a Corporation of New Jersey. Filed Feb. 23, 1905. Serial No. 247,218.

Claim.—1. An induction-coil comprising a vibratile element fixed at one end and carrying an armature at the other, in combination with a tension-screw adapted to positively increase the tension of said element when working outward.

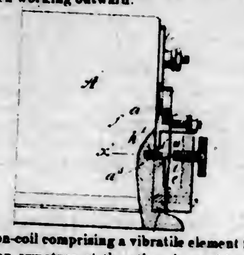

2. An induction-coil comprising a vibratile element fixed at one end and carrying an armature at the other, in combination with a tension-screw connected to said element to tension the same when moving outward.

3. An induction-coil comprising a vibratile element fixed at one end and carrying an armature at the other, in combination with a tension-screw having a left-hand thread and connected to positively engage the rear side of said element.

4. In a vibrator for induction-coils, the combination of a vibratile element, an adjusting-screw therefor and means for preventing excessively straining said element when the screw is worked in a direction to increase the tension thereof.

5. In a vibrator for induction-coils, the combination of a vibratile element, an adjusting-screw therefor and a stop limiting the outward movement of the screw.

6. In an induction-coil, a vibratory spring adapted to be drawn in one direction by the magnetic attraction of the coil, means for increasing the tension of the spring and means for preventing excessive increase of such tension.

7. In an induction-coil, a vibratory spring adapted to be drawn in one direction by the magnetic attraction of the coil, a screw for altering the tension of the spring and means for limiting the longitudinal movement of the screw.

8. In an induction-coil, a vibratory spring adapted to be drawn in one direction by the magnetic attraction of the coil, a screw adapted to give the spring an opposing tension and a stop on said screw limiting its ability to strain the spring.

9. A vibratile element for induction-coils comprising a flat spring having a notch in its fixed end and a screw passing through said notch and clamping the spring fast.

10. A vibratile element for induction-coils comprising a flat spring having a notch in its fixed end, a frame in two parts between which the fixed end of the spring is inserted and a screw passing through the two parts of the frame and the notch in the spring, for the purpose set forth.

11. The combination of the core of an induction-coil, a flat spring carrying an armature arranged in front of said core, said spring having at its fixed end two notches, and two clamping-screws passing through said notches and thereby positioning and clamping the spring.

12. In an induction-coil, a spring-plate, a screw passing transversely through the plate and independently mounted thereof and means whereby the plate is removable without removing the screw.

13. In an induction-coil, a spring-plate, a screw passing transversely through the plate and independently mounted thereof and adapted to regulate the tension of the spring and means whereby the plate is removable without removing the screw.

14. In an induction-coil, a spring-plate and an adjusting-screw mounted in front thereof and having an extension positively engaging its rear side.

15. In an induction-coil, a spring-plate having an opening and an adjusting-screw passing through said opening and carrying a cross-head engaging the rear side of the plate.

16. In an induction-coil, a vibratory spring-plate having a notch and an adjusting-screw for said plate straddled by said notch.

17. In an induction-coil, a frame provided with two clamping-screws and an adjusting-screw, in combination with a spring-plate having three notches adapted to straddle the three screws respectively.

809,286. **ELECTROMAGNETIC SWITCH-SETTING APPARATUS AND ELECTRIC RAIL-HEATER.** BRUNO O. WAGNER, Swissvale, Pa. Filed Mar. 9, 1905. Serial No. 249,515.

Claim.—1. A switch-setting mechanism of the character stated, comprising a casing, a reciprocating electric motor mounted therein, a rod reciprocatably mounted in said casing and projecting outside thereof and adapted to be connected to the switch-point-connecting rod, a lever connection within the casing between the reciprocating motor and the reciprocating rod for imparting the motion of the motor to the rod, and circuit-closers mounted within the casing at each end of the motor and adapted to be operated by the reciprocating motor, substantially as shown and described.

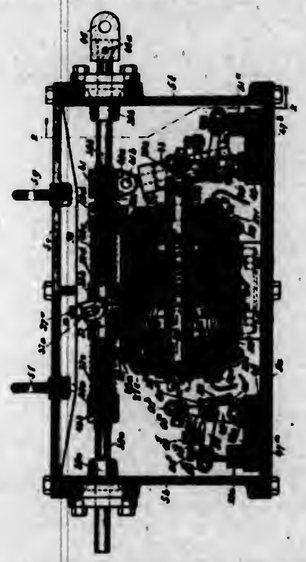

2. In a switch-setting apparatus of the character stated, a casing, bearings detachably secured in the end walls therein, a rod reciprocatably mounted in said bearings and projecting outside of the casing, a coupling member on the end of said rod adapted to be connected with the switch-point-joining rod, a sleeve loosely held on the first-mentioned rod, buffer-springs at each side of said sleeve on said first-mentioned rod, a reciprocating electric motor mounted within the casing, a lever pivotally secured within the casing and connected with said sleeve on said first-mentioned rod and with the reciprocating armature of the motor whereby the motion of the motor is imparted to said first-mentioned rod, said motor including stationary field-magnets and a reciprocating armature-magnet, a shaft for said armature-magnet reciprocatably mounted in apertures in the field-magnets, and circuit-closers within the casing adapted to be engaged by said armature-shaft to operate the same as the shaft reaches the limit of its movement in each direction, substantially as shown and described.

3. A switch-setting mechanism of the character stated, comprising in combination with an electric motor consisting of a pair of stationary magnet-coils, cup-shaped iron pole-pieces for receiving said magnet-coils, a pulley-shaped armature having cavities in its ends, armature-coils held in said armature-cavities, said cup-shaped pole-pieces being centrally apertured, a shaft endwise movably held in said apertures of the pole-pieces, said armature being fixedly secured to said shaft to reciprocate between the pole-pieces, a rod mounted for endwise movement and a lever joining said rod with said armature for imparting the motion of the armature to the switch-rail-connecting rod, and circuit-closers mounted within the casing at each end of the motor and adapted to be operated by the reciprocating motor, substantially as shown and described.

4. A switch-setting mechanism of the character stated, in combination with an electric motor consisting of a pair of stationary magnet-coils, cup-shaped iron pole-pieces for receiving said magnet-coils, a pulley-shaped armature having cavities in its ends, armature-coils held in said armature-cavities, said cup-shaped pole-pieces being centrally apertured, a shaft endwise movably held in said apertures of the pole-pieces, said armature being fixedly secured to said shaft to reciprocate between the pole-pieces, and means for imparting the motion of the armature to switch-rail points substantially as shown and described.

5. A switch-setting mechanism of the character stated, comprising in combination with an electric motor consisting of a pair of stationary magnet-coils, cup-shaped iron pole-pieces for receiving said magnet-coils, a pulley-shaped armature having cavities in its ends, armature-coils held in said armature-cavities, said cup-shaped pole-pieces being centrally apertured, a shaft endwise movably held in said apertures of the pole-pieces, said armature being fixedly secured to said shaft to reciprocate between the pole-pieces, a rod mounted for endwise movement and a lever joining said rod with said armature to impart the armature motion to the rod, said rod having means for connecting with the switch-rail-connecting rod, circuit-closers mounted adjacent said pole-pieces and adapted to be engaged by the armature-shaft as it reaches the limit of its movement in each direction and toggle-spring devices for holding the parts in the position they assume when the armature is moved to the limit of its stroke in each direction, substantially as shown and described.

6. A switch-setting mechanism of the character stated, comprising the combination with an electric motor consisting of a pair of stationary magnet-coils, cup-shaped iron pole-pieces for receiving said magnet-coils, a pulley-shaped armature having cavities in its ends, armature-coils held in said armature-cavities, said cup-shaped pole-pieces being centrally apertured, a shaft endwise movably held in said apertures of the pole-pieces, said armature being fixedly secured to said shaft to reciprocate between the pole-pieces, a rod mounted for endwise movement and a lever joining said rod with said armature to impart the armature motion to the rod, said rod having means for connecting it with the switch-rail-connecting rod, of circuit-closers mounted adjacent said pole-pieces and adapted to be engaged by the armature-shaft as it reaches the limit of its movement in each direction, toggle devices for holding the parts in the position they assume when the armature has moved to the limit of its stroke in each direction, and a hermetically-closed housing for the whole, substantially as shown and described.

7. In a switch-setting apparatus, an electric motor comprising a pair of stationary field-magnets each consisting of a cup-shaped iron pole-piece and energizing-coils held within the cup portion of said pole-pieces, a cylindrical tubular casing secured to said pole-pieces and closed at the ends by said pole-pieces, said casing consisting of non-magnetic material, means for securing the energizing-coils of the field-magnets in position thereon, a pulley-shaped armature having cup portions at each end and mounted for reciprocation between the said pole-pieces within the casing, a shaft passing through apertures in the pole-pieces upon which said armature is fixedly secured, energizing-coils secured within the cup-shaped portion of the armature, means for holding said last-named coils in position, a reciprocating rod mounted adjacent to said motor, elastic connections between said rod and said motor-armature, whereby the motion of the armature is imparted to the rod, means for holding the rod and armature to their moved positions, and a hermetically-closed housing for the whole, substantially as shown and described.

8. In a switch-setting apparatus, an electric motor comprising a pair of stationary field-magnets each consisting of a cup-shaped iron pole-piece and energizing-coils held within the cup portion of said pole-pieces, a cylindrical tubular casing secured to said pole-pieces and closed at the ends by said pole-pieces, said casing consisting of non-magnetic material, means for securing the energizing-coils of the field-magnets in position thereon, a pulley-shaped armature having cup portions at each end and mounted for reciprocation between the said pole-pieces within the casing, a shaft passing through apertures in the pole-pieces upon which said armature is fixedly secured, energizing-coils held within the cup-shaped portion of the armature, means for holding said last-named coils in position, a reciprocating rod mounted adjacent to said motor, elastic connections between said rod and said motor-armature, whereby the motion of the armature is imparted to the rod, means for holding the rod and armature to their moved positions, a hermetically-closed housing for the whole, and circuit-closers mounted within said housing adjacent the ends of said motor and adapted to be engaged by the motor-shaft as it reaches the end of its stroke substantially as shown and described.

9. An apparatus of the character stated, comprising in combination with a pair of stationary field-magnets consisting of cup-shaped iron pole-pieces and energizing-coils held within the said pole-pieces, a housing of non-magnetic metal secured to and closed at the ends by said field-magnets, means for holding the coils of the field-magnets in position, said housing consisting of two semi-cylindrical parts embracing the pole-pieces to leave two longitudinal openings of equal widths extending the entire length of the housing and diametrically opposite to each other, said pole-pieces including centrally-apertured hubs to form bearings, a shaft longitudinally

slidable in said hub-bearings, insulating-pins in the ends of said shaft, a pulley-shaped iron armature fixedly secured to the middle portion of said shaft, said armature having coil-receiving portions at each end, energizing-coils mounted in said armature, means for holding said coils in position on the armature, said armature including a cylindrical rim having a pair of diametrically-disposed parallel grooves, a block of insulating material secured to the armature in one of said grooves and adapted to permit passage of the terminal wires of the armature-coils and to project through one of the openings between the housing portions, a metallic block secured to the armature in the other armature-groove, said block having a projecting stud and adapted to project through the other opening between the housing-sections, one of said sections being formed with a lug, a lever pivotally secured to said lug and having a bifurcated end to engage the stud of the metallic armature-block and a longitudinally-movable rod adapted to be engaged by the free end of said last-named lever for imparting motion to the switch-shifting rod, substantially as shown and described.

10. An apparatus of the character stated, comprising in combination with a pair of stationary field-magnets consisting of cup-shaped iron pole-pieces and energizing-coils held within the said pole-pieces, a housing of non-magnetic metal secured to and closed at the end by said field-magnets, means for holding the coils of the field-magnets in position said housing consisting of two semicylindrical parts embracing the pole-pieces to leave two longitudinal openings of equal widths extending the entire length of the housing and diametrically opposite to each other, said pole-pieces including centrally-apertured hubs to form bearings, a shaft longitudinally slidable in said hub-bearings, insulating-pins in the ends of said shaft, a pulley-shaped iron armature fixedly secured to the middle portion of said shaft, said armature having coil-receiving portions at each end, energizing-coils mounted in said armature, means for holding said coils in position on the armature, said armature including a cylindrical rim having a pair of diametrically-disposed parallel grooves, a block of insulating material secured to the armature in one of said grooves and adapted to permit passage of the terminal wires of the armature-coils and to project through one of the openings between the housing portions, a metallic block secured to the armature in the other armature-groove, said block having a projecting stud and adapted to project through the other opening between the housing-sections, one of said housing-sections being formed with a lug, a lever pivotally secured to said lug and having a bifurcated end to engage the stud of the metallic armature-block and a longitudinally-movable rod adapted to be engaged by the free end of said last-named lever for imparting motion to the switch, and a pair of circuit-closers each adapted to be engaged by the armature-shaft as it reaches the limit of its stroke substantially as shown and described.

11. An apparatus of the character stated, comprising in combination with a pair of stationary field-magnets consisting of cup-shaped iron pole-pieces and energizing-coils held within the said pole-pieces, a housing of non-magnetic metal secured to and closed at the ends by said field-magnets, means for holding the coils of the field-magnets in position, said housing consisting of two semicylindrical parts embracing the pole-pieces to leave two longitudinal openings of equal widths extending the entire length of the housing and diametrically opposite to each other, said pole-pieces including centrally-apertured hubs to form bearings, a shaft longitudinally slidable in said hub-bearings, insulating-pins in the ends of said shaft, a pulley-shaped iron armature fixedly secured to the middle portion of said shaft, said armature having coil-receiving portions at each end, energizing-coils mounted in said armature, means for holding said coils in position on the armature, said armature including a cylindrical rim having a pair of diametrically-disposed parallel grooves, a block of insulating material secured to the armature in one of said grooves and adapted to permit passage of the terminal wires of the armature-coils and to project through one of the openings between the housing portions, a metallic block secured to the armature in the other armature-groove, said block having a projecting stud adapted to project through the other opening between the housing-sections, one of said housing-sections being formed with a lug, a lever pivotally secured to said lug and having a bifurcated end to engage the stud of the metallic armature-block and a longitudinally-movable rod adapted to be engaged by the free end of said last-named lever for imparting motion to the switch-shifting rod, and a pair of circuit-closers each adapted to be engaged by the armature-shaft as it reaches the limit of its stroke, and toggle-spring devices for securing the parts in their extreme positions, substantially as shown and described.

12. An apparatus of the character stated, comprising in combination with a pair of stationary field-magnets consisting of cup-shaped iron pole-pieces and energizing-coils held within the said pole-pieces, a housing of non-magnetic metal secured to and closed at the ends by said field-magnets, means for holding the coils of the field-magnets in position, said housing consisting of two semicylindrical parts embracing the pole-pieces to leave two longitudinal openings of equal widths extending the entire length of the housing and diametrically opposite to each other, said pole-pieces including centrally-apertured hubs to form bearings, a shaft longitudinally slidable in said hub-bearings, insulating-pins in the ends of said shaft, a pulley-shaped iron armature fixedly secured to the middle portion of said shaft, said armature having coil-receiving portions at each end, energizing-coils mounted in said armature, means for holding said coils in position on the armature, said armature including a cylindrical rim having a pair of diametrically-disposed parallel grooves, a block of insulating material secured to the armature in one of said grooves and adapted to permit passage of the terminal wires of the armature-coils and to project through one of the openings between the housing portions, a metallic block secured to the armature in the other armature-groove, said block having a projecting stud adapted to project through the other opening between the housing-sections, one of said sections being made with a lug, a lever pivotally secured to said lug and having a bifurcated end to engage the stud of the metallic armature-block, a longitudinally-movable rod adapted to be engaged by the free end of said last-named lever for imparting motion to the switch-shifting rod, a pair of circuit-closers each adapted to be engaged by the armature-shaft as it reaches the limit of its stroke, toggle-spring devices for securing the parts in their extreme positions, and a hermetically-sealed housing for the whole.

13. An apparatus of the character stated comprising an electric motor consisting of a pair of stationary field-magnets, each comprising a cup-shaped iron pole-piece, energizing-coils held within said cup-shaped pole-pieces, a pulley-shaped armature having cup-shaped ends, energizing-coils held within said cup-shaped ends of the armature, an armature-shaft fixedly secured to the armature and reciprocatably mounted in bearing-apertures in the cup-shaped pole-pieces, said armature being adapted for reciprocatable motion between said cup-shaped pole-pieces, a switch-shifting rod, bearings for said rod, said switch-shifting rod being mounted parallel with the armature-shaft and adapted to be connected with the rail-switch-connecting bar, a metallic sleeve slidable upon said shifting rod, adjusting-nuts at each side of said metallic sleeve on said rod, coil-springs mounted on the rod between the sleeve and the adjusting-nuts, a pivotally-mounted lever having one end in connection with the armature and the other end in connection with the sleeve, and a toggle-spring attachment secured to said switch-shifting rod at one end, and fixedly held at its other end to lock the parts to their shifted positions, substantially as shown and described.

14. An apparatus of the character stated, comprising an electric motor consisting of a pair of stationary field-magnets, each comprising a cup-shaped iron pole-piece, energizing-coils held within said cup-shaped pole-pieces, a pulley-shaped armature having cup-shaped ends, energizing-coils held within said cup-shaped ends of the armature, an armature-shaft fixedly secured to the armature and reciprocably mounted in bearing-apertures in the cup-shaped pieces, said armature being adapted for reciprocatable motion between said cup-shaped pole-pieces, a switch-shifting rod, bearings for said rod, said switch-shifting rod being mounted parallel with the armature-shaft and adapted to be connected with the rail-switch-connecting bar, a metallic sleeve slidable upon said shifting rod, adjustable nuts at each side of said metallic sleeve on said rod, coil-springs mounted on the rod between the sleeve and the adjusting-nuts, a pivotally-mounted lever having one end in connection with the armature and the other end in connection with the sleeve, a toggle-spring attachment comprising a swing-bracket mounted for oscillatory movement, an eyebolt longitudinally mounted in said bracket, a collar fixedly secured to said eyebolt between the bearing portions of the bracket, a coil-spring on said eyebolt between said collar and one of said bracket-bearing portions, a clevis secured to the switch-shifting rod, said eyebolt being pivotally connected with said clevis, said toggle attachment being arranged to hold the parts in their shifted positions, substantially as shown and described.

15. An apparatus of the character stated, comprising an electric motor consisting of a pair of stationary field-magnets, each comprising a cup-shaped iron pole-piece, energizing-coils held within said cup-shaped pole-pieces, a pulley-shaped armature having cup-shaped ends, energizing-coils held within said cup-shaped ends of the armature, an armature-shaft fixedly secured to the armature and reciprocably mounted in bearing-apertures in the cup-shaped pieces, said armature being adapted for reciprocatable motion between said cup-shaped pole-pieces, a switch-shifting rod, bearings for said rod, said switch-shifting rod being mounted parallel with the armature-shaft and adapted to be connected with the rail-switch-connecting bar, a metallic sleeve slidable upon said shifting rod, adjustable nuts at each side of said metallic sleeve on said rod, coil-springs mounted on the rod between the sleeve and the adjusting-nuts, a pivotally-mounted lever having one end in connection with the armature and the other end in connection with the sleeve, a toggle-spring attachment comprising a swing-bracket mounted for oscillatory movement, an eyebolt longitudinally mounted in said bracket, a collar fixedly secured to said eyebolt between the bearing portions of the bracket, a coil-spring on said eyebolt between said collar and one of said bracket-bearing portions, a clevis secured to the switch-shifting rod, said eyebolt being pivotally connected with said clevis, said toggle-spring attachment being arranged to hold the parts in their shifted positions, a metallic cup being secured to said insulated base and out of contact with said pillar to coöperate with said last-named set-screw, said metallic cup adapted to contain mercury and to be engaged by said last-named set-screw when the circuit-closer has been operated upon by the armature-shaft, and a hermetically-sealed housing for the whole.

16. An apparatus of the character stated, comprising an electric motor consisting of field and armature magnets, said field-magnets each including a cup-shaped iron pole-piece, said armature consisting of a pulley-shaped body having oppositely-arranged cavities, energizing-coils held in said armature-cavities, energizing-coils held in the cup-shaped pole-pieces, a shaft to which said armature is fixedly secured and which projects through bearing-apertures in the pole-pieces to allow the armature to describe a longitudinal motion between the pole-pieces, a switch-shifting rod, lever connections between the switch-shifting rod and the armature to impart the motion of the armature to the switch-shifting rod, toggle-spring devices for locking the entire mechanism to its final positions, circuit-closers mounted adjacent the motor for operation by said motor-armature, an iron housing for hermetically and water-proofingly inclosing the entire electromechanical apparatus, said housing serving also as a junction-box for all cable-joints, and comprising a metallic frame having a pair of oppositely-disposed outwardly-projected apertured bosses, metallic bearing-bushings secured to the said housing and projecting within said bosses, said bearings adapted to receive the switch-shifting rod, said housing having an inside flat portion, a terminal block having binding-screws, mounted on said flat portion within the housing, said toggle devices being secured at one end to said housing, means carried by the housing for hermetically passing the leading-in cables through the housing-wall, a metallic bottom plate secured to the bottom of said housing-frame and a removable cover-plate secured to the top of said housing-frame, said cover-plate having a plurality of finger-engaging eyebolts for the purposes specified.

17. In a switch-setting mechanism of the character stated, an electric motor comprising stationary field-magnets each consisting of a cup-shaped iron pole-piece, energizing-coils held within the cup-shaped pole-pieces, a pulley-shaped armature having cup-shaped coil-receiving portions at each end, energizing-coils held in said cup-shaped portions of the armature, an armature-shaft endwise movable in bearing-apertures in the cup-shaped field-magnet pole-pieces and fixedly secured to the armature, said armature being adapted for reciprocatable motion between the pole-pieces of the field-magnets, a switch-shifting rod, connections between said switch-shifting rod and said motor-armature for imparting the motion of the motor-armature to the switch-shifting rod, circuit-closers mounted adjacent each end of the motor and adapted to be operated by the armature-shaft as it reaches the limit of its stroke in either direction, each circuit-closer consisting of a base of insulating material, a metallic pillar having a horizontal arm or jib at its top and being mounted on said insulating-base, wire-receiving terminal screws at the foot of said pillar, a pin secured to the foot portion of said pillar, an adjustable set-screw in the outer end of said jib, an angular lever fulcrumed upon said pillar and provided with a pin on its operating-arm, a coil-spring connecting said first-named pin to said second-named pin said armature-shaft having insulating members in its ends, an adjustable set-screw in the end piece of the operating-arm of said angle-levers of the circuit-closers for operating with said insulating armature-shaft members, means for securing said set-screw to its adjusted position, a metallic set-screw at the other end of the angle-lever, means for mechanically securing said last-named set-screw to its adjusted positions, a metallic cup being secured to said insulated base and out of contact with said pillar to coöperate with said last-named set-screw, said metallic cup adapted to contain mercury and to be mechanically engaged by said last-named set-screw when the circuit-closer has been operated upon by the armature-shaft, substantially as shown and described.

18. An apparatus of the character stated, comprising an electric motor consisting of field and armature magnets, said field-magnets each including a cup-shaped iron pole-piece, said armature consisting of a pulley-shaped body having oppositely-arranged cavities, energizing-coils held in said armature-cavities, energizing-coils held in the cup-shaped pole-pieces, a shaft to which said armature is fixedly secured and which projects through bearing-apertures in the pole-pieces to allow the armature to describe a longitudinal motion between the pole-pieces, a switch-shifting rod, lever connections between the switch-shifting rod and the armature to impart the motion of the armature to the switch-shifting rod, toggle-spring devices for locking the entire mechanism to its final positions, circuit-closers mounted adjacent the motor for operation by said motor-armature, an iron housing for hermetically and water-proofingly inclosing the entire electromechanical apparatus, said housing serving also as a junction-box for all cable-joints, and comprising a metallic frame having a pair of oppositely-disposed outwardly-projected apertured bosses, metallic bearing-bushings secured to the said housing and projecting within said bosses, said bearings adapted to receive the switch-shifting rod, said housing having an inside flat portion, a terminal block having binding-screws, mounted on said flat portion within the housing, said toggle devices being secured at one end to said housing, means carried by the housing for hermetically passing the leading-in cables through the housing-wall, a metallic bottom plate secured to the bottom of said housing-frame and a removable cover-plate secured to the top of said housing-frame, said cover-plate having a plurality of finger-engaging eyebolts for the purposes specified.

19. In a switch-setting apparatus, an electric motor comprising a pair of stationary field-magnets each consisting of a cup-shaped iron pole-piece and energizing-coils held within the cup portion of said pole-pieces, a cylindrical tubular casing secured to said pole-pieces and closed at the ends by said pole-pieces, said casing consisting of non-magnetic material, means for securing the energizing-coils of the field-magnets in position thereon, a pulley-shaped armature having cup portions at each end and mounted for reciprocation between the said pole-pieces within the casing, a shaft passing through apertures in the pole-pieces upon which said armature is fixedly secured, energizing-coils secured within the cup-shaped portion of the armature, means for holding said last-named coils in position.

20. In a system of the character stated, a source of electric energy, an electromagnetic switch-setting mechanism including field and armature coils in circuit with the source of electric energy, a reversing-switch for reversing the current in the armature, a balanced electromagnetic indicator in the armature-circuit, and means controlled by the switch-setting mechanism for varying the electric current as it passes through the indicator to upset its balance to indicate the position of the switch.

21. In a system of the character stated, a source of electric energy, an electromagnetic switch-setting mechanism including field and armature electromagnets, in circuit with the source of electric energy, a current-reversing switch in the armature-circuit, a balanced electromagnetic indicator in the armature-circuit, and means controlled by the switch-setting mechanism for varying the electric current in a portion of the armature-circuit as it passes through the indicator to upset the indicator-balance to cause the indicator to indicate the position of the switch.

22. In a system of the character stated, a source of electric energy, an electromagnetic switch-setting mechanism including field and armature electromagnets, a pair of line-wires connecting the field-magnet coils with the source of electric energy, a second pair of line-wires connecting the armature-coils with the source of electric energy, current-reversing switch in the armature-circuit, a balanced indicator including a pair of coils, one of which is connected in series with one armature line-wire and the other connected in series with the other armature line-wire, and means controlled by the switch-setting mechanism, for varying the current in one of said armature line-wires to upset the balance of the indicator to cause it to indicate the position of the switch-setting mechanism.

23. In a system of the character stated, a source of electric energy, an electromagnetic switch-setting mechanism including field and armature electromagnets, a pair of line-wires connecting the

field-magnet coils with the source of energy, a second pair of line-wires connecting the armature-coils with the source of energy, a current-reversing switch in the armature-circuit, a balanced indicator including a pair of operating-coils, one of which is connected in series with one armature line-wire and the other connected in series with the other line-wire, and means controlled by the switch-setting mechanism for shunting a supplemental current through one of said armature line-wires to upset the balance of the indicator.

24. In a system of the character stated, a source of electric energy, an electromagnetic switch-setting mechanism including field and armature electromagnets, a pair of line-wires connecting the field-magnet coils with the source of electric energy, a second pair of line-wires connecting the armature-coils with the source of electric energy, a current-reversing switch in the armature-circuit, a balanced indicator including a pair of coils, one of which is connected in series with one armature line-wire and the other connected in series with the other armature line-wire, and means controlled by the switch-setting mechanism, for varying the current in one of said armature line-wires to upset the balance of the indicator to cause it to indicate the position of the switch-setting mechanism, without changing the flow of current through the armature.

25. In a system of the character stated, a source of electric energy, an electromagnetic switch-setting mechanism including field and armature electromagnets, a pair of line-wires connecting the field-magnet coils with the source of energy, a second pair of line-wires connecting the armature-coils with the source of energy, a current-reversing switch in the armature-circuit, a balanced indicator including a pair of operating-coils one of which is connected in series with one armature line-wire and the other connected in series with the other line-wire, and means controlled by the switch-setting mechanism for shunting a supplemental current through one of said armature line-wires to upset the balance of the indicator, without changing the flow of current through the armature.

26. In a system of the character stated, a source of electric energy, an electromagnetic switch-setting mechanism including field and armature electromagnets, a pair of line-wires connecting the field-magnet coils with the source of electric energy, a second pair of line-wires connecting the armature-coils with the source of electric energy, a current-reversing switch in the armature-circuit, a balanced indicator including a pair of coils, one of which is connected in series with one armature line-wire and the other connected in series with the other armature line-wire, and means controlled by the switch-setting mechanism, for varying the current in one of said armature line-wires to upset the balance of the indicator to cause it to indicate the position of the switch-setting mechanism, said last-named means comprising a circuit-closer connected to one armature line-wire and to the field-coil circuit midway between the field-coils.

27. In a system of the character stated, a source of electric energy, an electromagnetic switch-setting mechanism including field and armature electromagnets, a pair of line-wires connecting the field-magnet coils with the source of electric energy, a second pair of line-wires connecting the armature-coils with the source of electric energy, a current-reversing switch in the armature-circuit, a balanced indicator including a pair of coils, one of which is connected in series with one armature line-wire and the other connected in series with the other armature line-wire, and means controlled by the switch-setting mechanism, for varying the current in one of said armature line-wires to upset the balance of the indicator to cause it to indicate the position of the switch-setting mechanism, said last-named means comprising a circuit-closer connected to one armature line-wire and to the field-coil circuit midway between the field-coils, and a second circuit-closer likewise connected to the field-coil circuit and to the other armature line-wire.

28. In a system of the character stated, a source of electric energy, an electromagnetic switch-setting mechanism including field and armature electromagnets, a pair of line-wires connecting the field-magnet coils with the source of electric energy, a second pair of line-wires connecting the armature-coils with the source of electric energy, a current-reversing switch in the armature-circuit, a balanced indicator including a pair of coils, one of which is connected in series with one armature line-wire and the other connected in series with the other line-wire, and means controlled by the switch-setting mechanism for varying the current in one of said armature line-wires to upset the balance of the indicator to cause it to indicate the position of the switch-setting mechanism, said last-named means comprising a circuit-closer connected to one armature line-wire and to the field-coil circuit midway between the field-coils, and a second circuit-closer likewise connected to the field-coil circuit and to the other armature line-wire, said circuit-closers each including portions to be engaged by the armature to operate the closers.

29. In a system of the character stated, a source of electric energy, an electromagnetic switch-setting mechanism including field and armature electromagnets, a pair of line-wires connecting the field-magnet coils with the source of energy, a second pair of line-wires connecting the armature-coils with the source of energy, a current-reversing switch in the armature-circuit, a balanced indicator including a pair of operating-coils, one of which is connected in series with one armature line-wire and the other connected in series with the other armature line-wire, and means controlled by the switch-setting mechanism for shunting a supplemental current through one of said armature line-wires to upset the balance of the indicator, said means comprising a circuit-closer connected to one armature line-wire and to the field-coil circuit midway between the field-coils.

30. In a system of the character stated, a source of electric energy, an electromagnetic switch-setting mechanism including field and armature electromagnets, a pair of line-wires connecting the field-magnet coils with the source of energy, a second pair of line-wires connecting the armature-coils with the source of energy, a current-reversing switch in the armature-circuit, a balanced indicator including a pair of operating-coils, one of which is connected in series with one armature line-wire and the other connected in series with the other armature line-wire, and means controlled by the switch-setting mechanism for shunting a supplemental current through one of said armature line-wires to upset the balance of the indicator, said means comprising a circuit-closer connected to one armature line-wire and to the field-coil circuit midway between the field-coils, and a second circuit-closer likewise connected to the field-coil circuit and to the other armature line-wire, said circuit-closers each including portions to be engaged by the armature to operate the closers.

31. In a system of the character stated, a source of electric energy, an electromagnetic switch-setting mechanism including field and armature electromagnets, a pair of line-wires connecting the field-magnet coils with the source of energy, a second pair of line-wires connecting the armature-coils with the source of energy, a current-reversing switch in the armature-circuit, a balanced indicator including a pair of operating-coils one of which is connected in series with one armature line-wire and the other connected in series with the other line-wire, and means controlled by the switch-setting mechanism for shunting a supplemental current through one of said armature line-wires to upset the balance of the indicator, without changing the flow of current through the armature, said last-named means comprising circuit-closers connected to the field-coil circuit between the field-coils and to the armature line-wires, and including portions for engaging with the armature and to be operated thereby.

32. In a system of the character stated, a source of electric energy, an electromagnetic switch-setting mechanism including field and armature coils in circuit with the source of electric energy, a reversing-switch for reversing the current in the armature, a balanced electromagnetic indicator in the armature-circuit, and means controlled by the switch-setting mechanism for varying the electric current as it passes through the indicator to upset the balance to indicate the position of the switch, and electric heaters adapted to be disposed adjacent the switch-rails and connected in series with the switch-setting mechanism.

33. In a system of the character stated, a source of electric energy, an electromagnetic switch-setting mechanism including field and armature electromagnets, in circuit with the source of electric energy, a current-reversing switch in the armature-circuit, a balanced electromagnetic indicator in the armature-circuit, means controlled by the switch-setting mechanism for varying the electric current in a portion of the armature-circuit as it passes through the indicator to upset the indicator-balance to cause the indicator to indicate the position of the switch, and electric heaters adapted to be disposed adjacent the switch-rails and connected in series with the switch-setting mechanism.

34. In a system of the character stated, a source of electric energy, an electromagnetic switch-setting mechanism including field and armature electromagnets, a pair of line-wires connecting the field-magnet coils with the source of energy, a second pair of line-wires connecting the armature-coils with the source of energy, a current-reversing switch in one armature-circuit, a balanced indicator including a pair of operating-coils, one of which is connected in series with one armature line-wire and the other connected in series with the other line-wire, means controlled by the switch-setting mechanism for shunting a supplemental current through one of said armature line-wires to upset the balance of the indicator, and electric heaters adapted to be disposed adjacent the switch-rails and connected in series with the switch-setting mechanism.

35. In a system of the character stated, a source of electric energy, an electromagnetic switch-setting mechanism including field and armature electromagnets, a pair of line-wires connecting the field-magnet coils with the source of electric energy, a second pair of line-wires connecting the armature-coils with the source of electric energy, a current-reversing switch in the armature-circuit, a balanced indicator including a pair of coils, one of which is connected in series with one armature line-wire and the other connected in series with the other armature line-wire, and means controlled by the switch-setting mechanism for varying the current in one of said armature line-wires to upset the balance of the indicator to cause it to indicate the position of the switch-setting mechanism without changing the flow of current though the armature, and electric heaters adapted to be disposed adjacent the switch-rails and connected in series with the switch-setting mechanism.

809,237. SEMAPHORE MECHANISM. BRUNO O. WAGNER, Swissvale, Pa. Filed Mar. 9, 1905. Serial No. 249,316.

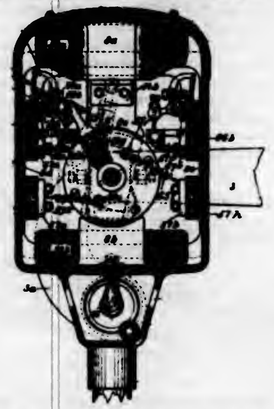

Claim.—1. In a mechanism of the character stated, a housing of magnetic material, pole-pieces integrally formed within said housing, energizing-coils carried by said pole-pieces, an armature mounted for limited rotatable movement between the pole-pieces, circuit-closers within the housing, means carried by the armature for operating the circuit-closers at times, a semaphore-blade on the outside of the housing coöperatively connected to turn with the armature, said blade having a tailpiece provided with a colored glass, a supplemental housing formed with and below the first-mentioned housing, said supplemental housing adapted to receive an incandescent lamp and a resistance-coil, said supplemental housing having apertures diagonally opposite each other, one of which is adapted to register with the tailpiece-glass when the semaphore is in one position, and terminal blocks for making wire connections mounted within the housing.

2. In a mechanism of the character stated, a housing of magnetic material, pole-pieces integrally formed within said housing energizing-coils carried by said pole-pieces, an armature mounted for limited rotatable movement between the pole-pieces, circuit-closers within the housing, means carried by the armature for operating the circuit-closers at times, a semaphore-blade on the outside of the housing coöperatively connected to turn with the armature, said blade having a tailpiece provided with a colored glass, a supplemental housing formed with and below the first-mentioned housing, said supplemental housing adapted to receive an incandescent lamp and a resistance-coil, said supplemental housing having apertures diagonally opposite each other, one of which is adapted to register with the tailpiece-glass when the semaphore is in one position, terminal blocks for making wire connections mounted within the housing, and a supplemental roof for the housing.

3. In a semaphore mechanism, a housing formed of magnetic material, pole-pieces integrally formed within said housing, one of said pole-pieces being longer than the other, energizing-coils carried by said pole-pieces, an armature mounted for limited rotary movement between said pole-pieces, said housing having openings at its ends, closure-caps for said openings, said closure-caps being provided with bearings, said armature having shaft portions extending through said closure-cap bearings, a semaphore-blade secured to one of said shaft portions, circuit-closers within the housing, means carried by the armature for operating the circuit-closers, and toggle-spring devices for holding the armature to its moved positions.

4. In a semaphore mechanism, a housing formed of magnetic material, pole-pieces integrally formed within said housing, one of said pole-pieces being longer than the other, energizing-coils carried by said pole-pieces, an armature mounted for limited rotary movement between said pole-pieces, said housing having openings at its ends, closure-caps for said openings, said closure-caps being provided with bearings, said armature having shaft portions extending through said closure-cap bearings, a semaphore-blade secured to one of said shaft portions, circuit-closers within the housing, means carried by the armature for operating the circuit-closers, toggle-spring devices for holding the armature to its moved positions, said housing having a supplemental chamber at its under side and being provided with a collar portion by means of which it may be secured to a pole, an incandescent lamp and a resistance-coil in said supplemental chamber, said supplemental chamber having ventilating-apertures, said supplemental chamber having a pair of alining apertures in opposite walls, transparent covers for said alining apertures, said semaphore having a tailpiece carrying a colored glass for registering with one of said alining apertures, a resilient buffer-spring device for said armature substantially as shown and described.

5. In an apparatus of the character stated, a housing of magnetic metal, a pair of pole-pieces integrally formed therewith within the housing, one of said pole-pieces being of greater length than the other, an energizing-coil mounted on said longer pole-piece, means for holding said coil in place on said longer pole-piece, an energizing-coil for the other pole-piece, said housing having openings in its end walls, closure-plates having bearings and integrally-formed drip-pans, an armature, a disk secured to each end of the armature, short shafts secured to each disk and passing through the bearings in the closure-plates, an arm carried by one of said shafts, a bracket pivotally connected to said arm, an eyebolt carried by said bracket, said eyebolt being pivotally secured to the longer pole-piece, a collar and a coil-spring on said eyebolt for forcing the eyebolt in one direction, one of said armature-shafts projecting through its closure-plate, and a semaphore-blade mounted on said last-named shaft-section.

6. In an apparatus of the character stated, a housing of magnetic metal, a pair of pole-pieces integrally formed therewith within the housing, one of said pole-pieces being of greater length than the other, an energizing-coil mounted on said longer pole-piece, means for holding said coil in place on said longer pole-piece, an energizing-coil for the other pole-piece, said housing having openings in its end walls, closure-plates for said openings, said closure-plates having bearings and integrally-formed drip-pans, an armature, a disk secured to each end of the armature, short shafts, secured to each disk and passing through the bearings in the closure-plates, an arm carried by one of said shafts, a bracket pivotally connected to said arm, an eyebolt carried by said bracket, said eyebolt being pivotally secured to the longer pole-piece, a collar and a coil-spring on said eyebolt for forcing the eyebolt in one direction, one of said armature-shafts projecting through its closure-plate, a semaphore-blade mounted on said last-named shaft-sections, means mounted within the casing and adapted to be engaged by said shaft-arm as the armature has reached the limit of its movement in each direction to serve as a buffer-spring therefor, circuit-closers mounted within the casing, an arm secured to one of said armature-disks for operating the circuit-closers.

7. In an apparatus of the character stated, a housing of magnetic metal, a pair of pole-pieces integrally formed therewith within the housing, one of said pole-pieces being of greater length than the other, an energizing-coil mounted on said longer pole-piece, means for holding said coil in place on said longer pole-piece, an energizing-coil for the other pole-piece, said housing having openings in its end walls, closure-plates for said openings, said closure-plates having bearings and integrally-formed drip-pans, an armature, a disk secured to each end of the armature, short shafts secured to each disk and passing through the bearings in each closure-plate, an arm carried by one of said shafts, a bracket pivotally connected to said arm, an eyebolt carried by said bracket, said eyebolt being pivotally secured to the longer pole-piece, a collar and a coil-spring on said eyebolt for forcing the eyebolt in one direction, one of said armature-shafts projecting through its closure-plate, a semaphore-blade mounted on said last-named shaft-section, means mounted within the casing and adapted to be engaged by said shaft-arm as the armature has reached the limit of its movement in each direction to serve as a buf-

for therefor, circuit-closers mounted within the casing, an arm secured to one of said armature-disks for operating the circuit-closers, each of said circuit-closers comprising a fixedly-held mercury-cup and a pivotally-mounted arm, an adjustable contact-point carried by each arm, a coil-spring for normally holding the arm with its contact-point out of the mercury-cup and an insulating-base upon which said arm and said mercury-cup are secured.

8. In an apparatus of the character stated, a housing of magnetic metal, a pair of pole-pieces integrally formed therewith within the housing, one of said pole-pieces being of greater length than the other, an energizing-coil mounted on said longer pole-piece, means for holding said coil in place on said longer pole-piece, an energizing-coil for the other pole-piece, said housing having openings in its end walls, closure-plates for said openings, said closure-plates having bearings and integrally-formed drip-pans, an armature, a disk secured to each end of the armature, short shafts secured to each disk and passing through the bearings in the closure-plates, an arm carried by one of said shafts, a bracket pivotally connected to said arm, an eyebolt carried by said bracket, said eyebolt being pivotally secured to the longer pole-piece, a collar and a coil-spring on said eyebolt for forcing the eyebolt in one direction, one of said armature-shafts projecting through its closure-plate, a semaphore-arm mounted on said last-named shaft-section, means mounted within the casing and adapted to be engaged by said shaft-arm as the armature has reached the limit of its movement in each direction to serve as a buffer therefor, circuit-closers mounted within the casing, an arm secured to one of said armature-disks for operating the circuit-closers, each of said circuit-closers comprising a fixedly-held mercury-cup and a pivotally-mounted arm, an adjustable contact-point carried by each arm, a coil-spring for normally holding the arm with its contact-point out of the mercury-cup and an insulating-base upon which said arm and said mercury-cup are secured, a supplemental roof for said housing and means for securing said housing to a pole.

9. In an apparatus of the character stated, a housing of magnetic metal, a pair of pole-pieces integrally formed therewith within the housing, one of said pole-pieces being of greater length than the other, an energizing-coil mounted on said longer pole-piece, means for holding said coil in place on said longer pole-piece, an energizing-coil for the other pole-piece, said housing having openings in its end walls, closure-plates having bearings and integrally-formed drip-pans, an armature, a disk secured to each end of the armature, short shafts secured to each disk and passing through the bearings in the closure-plates, an arm carried by one of said shafts, a bracket pivotally connected to said arm, an eyebolt carried by said bracket, said eyebolt being pivotally connected to the longer pole-piece, a collar and a coil-spring on said longer pole for forcing the eyebolt in one direction, one of said armature-shafts projecting through its closure-plate, a semaphore-blade mounted on said last-named shaft-section, means mounted within the casing and adapted to be engaged by said shaft-arm as the armature has reached the limit of its movement in each direction to serve as a buffer therefor, circuit-closers mounted within the casing, an arm secured to one of said armature-disks for operating the circuit-closers, each of said circuit-closers comprising a fixedly-held mercury-cup and a pivotally-mounted arm, an adjustable contact-point carried by each arm, a coil-spring for normally holding the arm with its contact-point out of the mercury-cup and an insulating-base upon which said arm and said mercury-cup are secured, a supplemental roof for said housing and means for securing said housing to a pole, said housing including an extension forming a supplemental chamber, an electric light mounted in said supplemental chamber, said supplemental chamber having apertures in its end walls, tubular members held in said apertures, transparent closure members for the outer ends of said tubular members, said semaphore-blade having a tailpiece, a colored transparent disk carried by said tailpiece for registering with said transparent closer members of one of said tubular members.

10. In an apparatus of the character stated, a housing of magnetic metal, a pair of pole-pieces integrally formed therewith within the housing, one of said pole-pieces being of greater length than the other, an energizing-coil mounted on said longer pole-piece, means for holding said coil in place on said longer pole-piece, an energizing-coil for the other pole-piece, said housing having openings in its end walls, closure-plates for said openings, said closure-plates having bearings and integrally-formed drip-pans, an armature, a disk secured to each end of the armature, short shafts secured to each disk and passing through the bearings in the closure-plates, an arm carried by one of said shafts, a bracket pivotally connected to said arm, an eyebolt carried by said bracket, said eyebolt being pivotally secured to the longer pole-piece, a collar and a coil-spring on said eyebolt, for forcing the eyebolt in one direction, one of said armature-shafts projecting through its closure-plate, a semaphore-blade mounted on said last-named shaft-section, means mounted within the casing, and adapted to be engaged by said shaft-arm as the armature has reached its limit of movement in each direction to serve as a buffer therefor, circuit-closers mounted within the casing, and an arm secured to one of said armature-disks for operating the circuit-closers, each of said housing closer-plates having an aperture, a closure member for said apertures, means for detachably securing said last-named closure-plate members over the closure-plate apertures hermetically substantially as shown and described.

11. In a mechanism of the character stated, a housing, pole-pieces within the housing, energizing-coils carried by said pole-pieces, an armature mounted for rotary movement between the pole-pieces, circuit-closers within the housing, means within the housing for operating said circuit-closers, a semaphore-blade without the housing coöperatively connected to turn with the armature, substantially as shown and described.

12. In a mechanism of the character stated, a housing, pole-pieces within the housing, energizing-coils carried by said pole-pieces, an armature mounted for rotary movement between the pole-pieces, circuit-closers mounted within the housing, means within the housing for operating said circuit-closers, a semaphore-blade without the housing coöperatively connected to turn with the armature, said blade having a tailpiece provided with an indicating-glass, a supplemental housing below the first supplemental housing, a signal-lamp within said supplemental housing, said supplemental housing having apertures adapted to register with the tailpiece-glass when the semaphore is in one position.

809,238. **RAIL-JOINT.** ROBERT L. ALEXANDER, Moral, Okla., assignor of one-half to Albert Coleman, McComb, Okla. Filed Apr. 10, 1905. Serial No. 254,833.

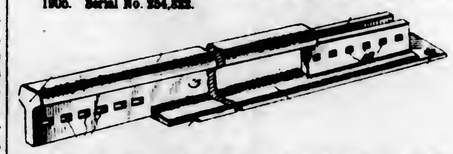

Claim.—A railway-rail having formed on one end a longitudinally-projecting head and slotted web, and on its opposite end a longitudinally-projecting web and flange, said web and flange having formed therein a longitudinally-extending mortise to receive the longitudinally-projecting web of the next adjacent rail-section, the sides of said mortise web having formed therein oppositely-disposed rectangular apertures to alinse with the rectangular slots in the web of the adjoining section, pins having square shanks adapted to be projected through the alined apertures and slots in said web, said pins having bifurcated outer ends adapted to be bent into engagement with the adjacent sides of said webs, thereby securing said pins in place, substantially as described.

809,239. **CLOTH-TENSION DEVICE FOR TAKE-UP MECHANISM FOR LOOMS.** CLINTON S. ANDREW, North Grosvenor Dale, Conn. Filed Feb. 24, 1904. Serial No. 196,005.

Claim.—1. In a cloth-tension device for looms, the combination of the high take-up roll, and the roll upon which the cloth is wound, with a tension-bar which serves to deflect the cloth from its progressive plane extending outward from the fell, and is located between the vertical plane of the axis of the take-up roll and the plane of the front face of the lay-beam inside of the breast-beam.

2. In a cloth-tension device for looms, the combination of the high take-up roll and the roll upon which the cloth is wound with the parallel tension-bars which serve to deflect the cloth downward from its progressive plane extending outward from the fell, and thence to the take-up roll, and located between the vertical plane of the axis of the take-up roll, and the plane of the front face of the lay-beam inside of the breast-beam.

3. In a cloth-tension device for looms, the combination of a take-up roll, and a roll upon which the cloth is wound with a flexible resilient guide-bar, adapted for lateral deflection upon the opening of the shed, and over the surface of which the cloth primarily passes in its progressive movement from the fell to the take-up roll.

4. In a cloth-tension device for looms, the combination of a take-up roll, and a roll upon which the cloth is wound, with a flexible resilient guide-bar, for primarily deflecting the cloth from the plane of the fell.

5. In a cloth-tension device for looms, the combination of the high take-up roll, and the roll upon which the cloth is wound, with a flexible resilient guide-bar, which deflects the cloth from the plane of the fell, downward between the take-up roll and the lay.

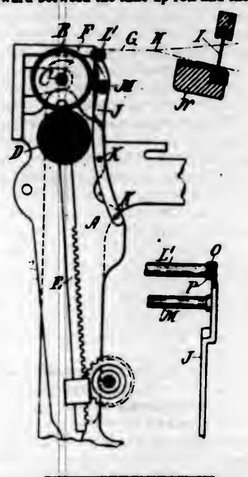

809,240. **SEWING-MACHINE CABINET.** GUSTAV BAUMANN, Chicago, Ill., assignor, by direct and mesne assignments, to Illinois Sewing Machine Company, Chicago, Ill.; White Sewing Machine Company, Cleveland, Ohio, and Davis Sewing Machine Company, Dayton, Ohio. Original application filed Aug. 8, 1903, Serial No. 168,893. Divided and this application filed June 10, 1905. Serial No. 264,667.

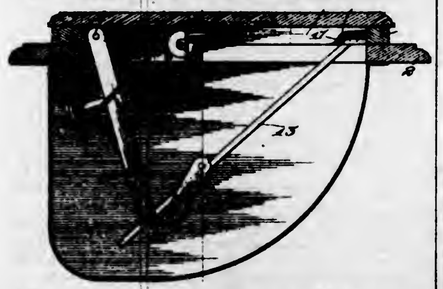

Claim.—1. In a device of the class described the combination with the table-top having an opening through it, a platform hinged at one side of said opening, a hinged leaf adapted to cover said opening, and means for transmitting movement from said hinged leaf to said platform, of a leaf operatively connected to the free side of the platform, a rest for the free side of said leaf, and a stationary guide fixed to the cabinet and engaging the leaf for automatically directing its free side onto the rest, substantially as described.

2. In a sewing-machine cabinet the combination with the table-top having an opening therethrough, of a platform hinged to the top at one side of said opening to swing from a position below said opening to a position partially closing said opening, a leaf adapted to coact with said platform and complete the closure of said opening, means whereby said platform when swung actuates said leaf, and an inclined guide fixed below the top of the table in position to engage said leaf and guide the same from a position below the opening to a horizontal position within the opening, substantially as described.

3. In a lift and drop head sewing-machine cabinet the combination with a table having an opening through it, of a machine-head platform hinged to said table within said opening at one side thereof and adapted to close said opening or to move below it, said platform consisting of two hinged portions which fold in the drop movement of the platform and thereby reduce its width when lowered, and a stationary guide, below the table-top, inclined from bottom to top toward the side of said opening opposite that at which the machine-head platform is hinged and terminating at its upper end, adjacent to the table-top, in a curvature in the same direction, whereby the free side of the hinged leaf is directed into the opening in the table-top and when nearing its uppermost position is directed into a horizontal position within said opening, substantially as described.

809,241. **FLAT-BED WEB-PRINTING PRESS.** HENRY F. BECHMAN, Battlecreek, Mich., assignor to The Duplex Printing Press Company, Battlecreek, Mich. Filed Feb. 11, 1905. Serial No. 245,238.

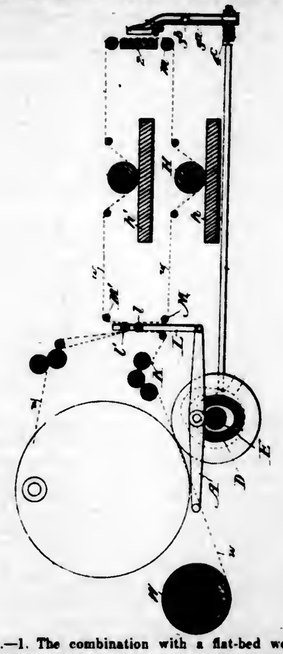

Claim.—1. The combination with a flat-bed web-perfecting press having two separated printing-couples, of a supplemental printing mechanism arranged to operate upon the web at a point intermediate the first and second printing mechanism.

2. The combination with a press having a plurality of separated printing mechanisms each comprising a bed and coacting cylinder adapted to successively print a web, of a supplemental printing device adapted to operate upon the web intermediate the said printing mechanisms.

3. The combination with a web-perfecting press having a plurality of separated printing mechanisms each comprising a coacting bed and cylinder, of a supplemental printing mechanism comprising a platen and a reciprocating bed, and arranged to operate upon the part of the web intermediate the first-mentioned printing mechanisms.

4. The combination of a web-perfecting press having a pair of stationary beds and reciprocating cylinders adapted to perfect the web; with a platen-press arranged intermediate the first and second beds and cylinders, and adapted to operate upon the portion of the web intermediate said beds and cylinders.

5. The combination with a flat-bed web-perfecting press, comprising a pair of separated stationary beds and coacting cylinders adapted to successively operate upon the web, of a supplemental printing mechanism, comprising a platen and a reciprocating type-carrier, arranged to operate upon the portion of the web intermediate the first and second impression-cylinders.

6. In combination with a duplex flat-bed web-perfecting press having a pair of parallel beds, a pair of reciprocating cylinders respectively coacting with said beds and means for feeding the web of paper successively between the beds and cylinders to be perfected thereby, of a reciprocating printing mechanism at one end of the beds adapted to operate upon the portion of the web between the first and second cylinders.

7. The combination with a duplex press having a pair of stationary beds and coacting cylinders, means for continuously feeding the web to and from said press, means for directing the web successively between the beds and cylinders to be perfected thereby and means for intermittently moving the intermediate part of the web through the printing mechanism; of a third printing mechanism located at a point intermediate the first and second type-beds and adapted to operate upon the intermediate part of the web while it is momentarily stationary.

8. The combination of a stationary bed, a reciprocating cylinder, means for feeding the web continuously to and from the press, and a pair of devices for looping the web between the feed and delivery and whereby it may be intermittently shifted over the bed; with a supplemental printing mechanism arranged to operate upon the web at a point intermediate the looping devices.

9. The combination of a stationary bed, a reciprocating cylinder, means for feeding the web continuously to and from the press, and two separated devices for looping the web between the feed and delivery, and whereby it may be intermittently shifted over the bed; with a stationary bed and a reciprocating type-carrier arranged to operate upon the web at a point intermediate the looping devices, and a cam operated by the looping cam-shaft for actuating said type-carrier.

10. The combination with a press comprising upper and lower stationary type-beds, a pair of reciprocating cylinders respectively coacting with said type-beds, web-guiding mechanism for directing a web successively between the beds and cylinders, means for feeding the web to and from the press, and mechanism for looping the web to shift a portion thereof intermittently between the beds and cylinders, of a stationary platen and a reciprocating type-carrier located in the path of the web intermediate the first and second cylinders, and a reciprocating bar connected with the reciprocating type-carrier and arranged to operate the latter while a portion of the web in the press is momentarily stationary.

11. The combination with a press comprising upper and lower stationary type-beds, a pair of reciprocating cylinders respectively coacting with said type-beds, web-guiding mechanism for directing a web successively between the beds and cylinders, means for feeding the web to and from the press, devices for looping the web to shift a portion thereof intermittently between the beds and cylinders, and a shaft and cams for operating the looping devices; of a stationary platen and a reciprocating type-carrier, located in the path of the web intermediate the first and second cylinders, a reciprocating bar connected with the reciprocating type-carrier, and cams on the said shaft adapted to operate the bar, substantially as described.

809,242. **PILE-DRIVER.** ABRAHAM BISHOP, Pittsburg, Pa. Filed May 27, 1904. Renewed Dec. 4, 1905. Serial No. 288,202.

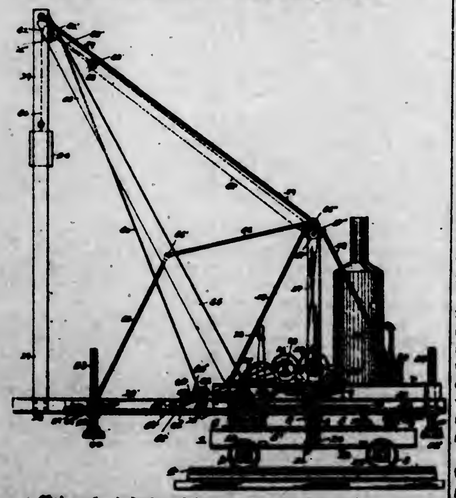

Claim.—1. A device of the type described, comprising a truck, a rotatable platform mounted thereon, and carrying drums driving-gearing on said platform, for operating said drums an engine on said platform and connected to said gearing for driving the same, a shaft extending under and parallel with said drums and having a gear-wheel thereon for engaging with the driving-gearing, an upright shaft having a beveled pinion thereon engaging with the beveled pinion on the first-named shaft, and connections from said upright shaft to the axles of the truck for moving said truck.

2. A device of the type described, comprising a truck, a rotatable platform mounted thereon, and carrying drums driving-gearing on said platform, for operating said drums an engine on said platform and connected to said gearing for driving the same, a shaft extending under and parallel with said drums and having a gear-wheel thereon for engaging with the driving-gearing, an upright shaft having a beveled pinion thereon engaging with the beveled pinion on the first-named shaft, and connections from said upright shaft to the axles of the truck for moving said truck.

3. A device of the type described, comprising a truck, a rotatable platform mounted thereon, and carrying drums driving-gearing on said platform, for operating said drums an engine on said platform and connected to said gearing for driving the same, a shaft extending under and parallel with said drums and having a gear-wheel thereon for engaging with the driving-gearing, a beveled pinion on said shaft, an upright shaft between said truck and platform having beveled pinions at each end thereof and the upper one of said pinions engaging with the beveled pinion on the first-named shaft, and connections from the lower one of said beveled pinions to the axles of the truck for moving said truck.

4. A device of the type described, comprising a truck, a rotatable platform mounted thereon, and carrying drums driving-gearing on said platform, for operating said drums an engine on said platform and connected to said gearing for driving the same, a shaft extending under and parallel with said drums and having a gear-wheel thereon for engaging with the driving-gearing, a beveled pinion on said shaft, an upright shaft between said truck and platform having bevel-pinions at each end thereof and the upper one of said pinions engaging with the beveled pinion on the first-named shaft, a shaft below said upright shaft having a beveled pinion thereon engaging with the beveled pinion on the lower end of the upright shaft, and gearing connecting said last-named shaft with the axles of the truck for moving said truck.

5. A device of the type described, comprising a truck, a rotatable platform mounted thereon, and carrying drums driving-gearing on said platform, for operating said drums an engine on said platform and connected to said gearing for driving the same, a shaft extending under and parallel with said drums and having a gear-wheel thereon for engaging with the driving-gearing, a beveled pinion on said shaft, an upright shaft between said truck and platform having beveled pinions at each end thereof and the upper one of said pinions engaging with the beveled pinion on the first-named shaft, a shaft below said upright shaft having a beveled pinion thereon engaging with the lower one of the beveled pinions on the upright shaft, and worm-gears on said last-named shaft engaging with worm-wheels on the axles of the truck for moving said truck.

6. A device of the type described, comprising a truck, a platform mounted on said truck, and carrying drums driving-gearing on said platform, for operating said drums an engine on said platform and connected to said gearing for driving the same, a shaft extending under and parallel with said drums and having a gear-wheel thereon engaging with said driving-gearing, and connections from said shaft for rotating the platform on the truck.

7. A device of the type described, comprising a truck, a platform mounted on said truck, and carrying drums driving-gearing on said platform, for operating said drums an engine on said platform, and connected to said gearing for driving the same, a shaft extending under and parallel with said drums and having a gear-wheel thereon engaging with said driving-gearing, a worm-rack on said truck, and a worm-gear on said shaft and engaging with said worm-rack for rotating said platform on the truck.

8. A device of the type described, comprising a truck, a platform mounted on said truck, and carrying drums driving-gearing on said platform, an engine on said platform for operating said drums and connected to said gearing for driving the same, a shaft extending under and parallel with said drums and having a gear-wheel thereon engaging with said driving-gearing, a worm-rack on said truck, a worm-gear on said shaft and adapted to engage said worm-rack, and a clutch on said shaft for engaging with said worm-gear to rotate said platform on said truck.

9. A device of the type described, comprising a truck, a rotatable platform mounted on said truck, and carrying drums driving-gearing on said platform, an engine on said platform and connected to said gearing for driving the same, a shaft extending under and parallel with said drums and having a gear-wheel thereon engaging with said driving-gearing, and means on said platform and operated from said shaft for raising said platform to permit the truck to be rotated on said platform.

10. A device of the type described, comprising a truck, a rotatable platform mounted on said truck, and carrying drums driving-gearing on said platform, an engine on said platform and connected to said gearing for driving the same, a shaft extending under and parallel with said drums and having a gear-wheel thereon engaging with said driving-gearing, jacks mounted on said platform, and means connecting said shaft and jacks for raising said platform to permit the trucks to be rotated on said platform.

11. A device of the type described, comprising a truck, a rotatable platform mounted on said truck, and carrying drums driving-gearing on said platform, an engine on said platform and connected to said gearing for driving the same, a shaft having a gear-wheel thereon engaging with the driving-gearing, jacks mounted on said platform and provided with screw-bars thereon, and means connecting said shaft and screw-bars for operating said jacks to raise said platform and permit the trucks to be rotated on said platform.

12. A device of the type described, comprising a truck, a rotatable platform mounted on said truck, driving-gearing on said platform, an engine on said platform and connected to said gearing for driving the same, a shaft having a gear-wheel thereon engaging with the driving-gearing, jacks mounted on said platform and provided with screw-bars thereon, worm-wheels on said screw-bars, worm-gears mounted on shafts and engaging with said worm-wheels, and means connecting said first-named shaft with the worm-gear shafts for operating said jacks to raise said platform and permit the truck to be rotated on said platform.

13. A device of the type described, comprising a truck, a rotatable platform mounted on said truck, driving-gearing on said platform, an engine on said platform and connected to said gearing for driving the same, a shaft having a gear-wheel thereon engaging with the driving-gearing, jacks mounted on said platform and provided with screw-bars thereon, worm-wheels on said screw-bars, worm-gears mounted on shafts and engaging with said worm-wheels, a beveled pinion on said first-named shaft engaging with a beveled pinion on one of the worm-wheel shafts, and shaft and gearing connections from said worm-wheel shaft to the other worm-wheel shafts for operating said jacks to raise said platform and permit the trucks to be rotated on said platform.

14. A device of the type described, comprising a truck, a platform mounted on said truck, driving-gearing on said platform, an engine on said platform and connected to said gearing for driving the same, uprights carried from said platform, a ram on said uprights, a detachable portion on said platform connected to said uprights, and a boom pivoted to the permanent portion of said platform and removably connected to said uprights.

809,243. **MOP-HOLDER.** HARRY BITNER, Berwyn, Ill., assignor to Arcade Manufacturing Company, Freeport, Ill., a Corporation of Illinois. Filed Mar. 31, 1904. Serial No. 201,192.

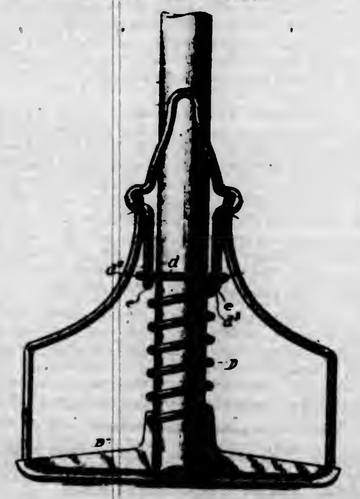

Claim.—1. The combination with a stick, a cross-head on the end of the stick, and a bail guided on the cross-head and extending therefrom along the stick, of a spring on the stick above the cross-head, one of the upper coils of said spring being provided with oppositely-extending U-shaped bends, and a lever pivoted upon said U-shaped bends and connected with the upper ends of the bail.

2. The combination with a stick, a cross-head on the lower end thereof, and a bail guided on the cross-head and extending therefrom along the stick, of a lever pivotally supported at its lower end adjacent to the stick, said lever being formed of wire having oppositely-extending U-shaped bends and suitable connections with the bail pivoted upon said U-shaped bends.

3. The combination with a stick, a cross-head on the lower end thereof, and a bail guided on the cross-head and extending therefrom along the stick, of a lever pivotally supported at its lower end adjacent to the stick, said lever being formed of wire having oppositely-extending U-shaped bends and eyes upon the upper ends of the bail, pivoted upon said U-shaped bends.

4. The combination with a stick, a cross-head on the end of the stick and a bail guided on the cross-head and extending therefrom along the stick, of a spring on the stick above the cross-head, a lever bent into approximately U shape, having a bearing at its lower end upon the upper portion of the spring, and having laterally-extending U-shaped bends by means of which it is pivoted to the upper ends of the bail.

5. The combination with a stick, a cross-head on the end of the stick, and a bail guided on the cross-head and extending therefrom along the stick, of a spring on the stick above the cross-head, one of the upper coils of said spring having laterally-extending U-shaped bends and the wire adjacent to the upper bend brought down toward the next coil of the spring to afford a bearing thereon, and a lever pivoted upon said U-shaped bends and connected to the upper end of the bail.

6. The combination with a stick, a cross-head on the end of the stick, and a bail guided on the cross-head and extending therefrom along the stick, of a spring on the stick above the cross-head, one of the upper coils of said spring being formed with oppositely-extending U-shaped bends, and an approximately U-shaped wire lever pivoted by means of the ends of the wire upon the U-shaped bends, and having, between its ends, laterally-extending U-shaped bends upon which the upper ends of the bail are pivoted.

809,244. **CLOTHES-TONGS.** FRANK L. BLOSQUIST, Sanders, Idaho. Filed Apr. 18, 1904. Serial No. 203,734.

Claim.—A device of the character described comprising two similar jaw members, each provided at its upper end with a comparatively short half-round shank portion, these shank portions being rigidly secured together in flat engagement with each other to form a single round shank or handle for the tongs, the main portions of the two jaw members being of substantially similar cross-sectional shape with said shank members and diverging slightly from each other as they extend downwardly from said handle, said jaws and shank portions having shoulders at their point of union with each other, said jaws being cut away on their inner flat sides at their upper ends to render them springy at that point.

809,245. **BALL-RETURN MECHANISM FOR BOWLING-ALLEYS.** FREDERICK W. BRINKMEYER, Decatur Ill. Original application filed Nov. 17, 1904, Serial No. 233,188. Divided and this application filed Mar. 25, 1905. Serial No. 251,045.

Claim.—1. A bowling-alley having a ball-runway provided at its rear end with a chute and at its forward end with a gallery or receiving portion, the rear end of the alley being provided with a downwardly and laterally inclined chute, an endless conveyer inclined upwardly and forwardly from the chute to the ball-runway and provided with pockets or cups to gather the balls from said chute and transfer them to the runway-chute, and means for operating said conveyer from a point adjacent to the gallery or receiving portion.

2. A bowling-alley having a ball-runway provided at its inner end with an inclined chute and at its forward end with a gallery or receiving portion, the rear end of the alley being provided at one side thereof with a ball-receiving pocket and a downwardly and lat-

erally inclined chute leading to said pocket, an inclined support leading from the pocket to a point adjacent the chute portion of the runway, a correspondingly-inclined endless conveyer mounted on said support and provided with pockets or cups to gather the balls from said receiving-pocket and conduct the same to the chute of the runway, and means for operating said conveyer from a point adjacent to the gallery or receiving portion of the ball-runway.

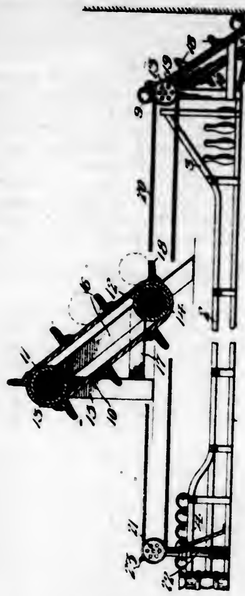

809,246. PANTOGRAPH. NATHANIEL H. BROWN, Philadelphia, Pa., assignor to Williams, Brown & Earle, Philadelphia, Pa. Filed July 8, 1905. Serial No. 268,796.

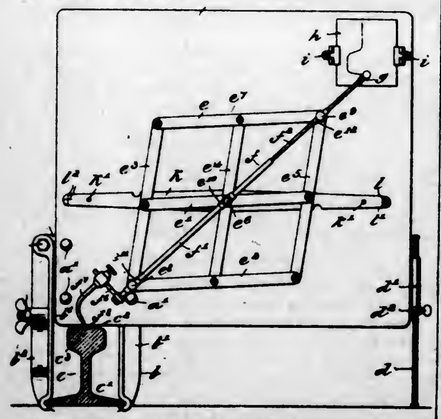

Claim.—1. In a pantograph, a movable frame, a holder, consisting of members slidable in each other and having a tracing-point and drawing means arranged at their respective free ends, said tracing-point being curved and pivotally secured to said holder and its free end arranged in the longitudinal central axis thereof to remain in alinement therewith during turning of said tracing-point around its holder and said tracing-point adapted to permit of the reproduction of its movements by said drawing means by expanding and contracting said holder by said frame.

2. In a pantograph, a movable frame, a holder, consisting of members slidable in each other and having a tracing-point and drawing means carried by said holder, said tracing-point curved and pivotally secured to said holder and its free end arranged in the longitudinal central axis to permit said tracing-point by turning on said holder to be moved over curved objects and to remain with its end in the longitudinal central axis of said holder and said tracing-point adapted to permit of the reproduction of its movements by said drawing means by the expanding and contracting of said holder by said frame.

3. In a pantograph, a movable frame, a holder, consisting of two members slidable in each other and having a tracing-point and a pencil carried by said holder at opposite ends, said tracing-point curved and pivotally secured to said holder and its free end arranged in the longitudinal central axis thereof to permit said tracing-point by turning on said holder to be moved over curved objects, and said pencil being adapted to be actuated by the movements of said tracing-point and by the sliding of said holder members within each other to reproduce a profile of the object.

4. In a pantograph, a frame consisting of a series of limbs movably joined to each other at their respective ends and a point intermediate thereof, a telescoping holder carried and actuated by said frame *e*, an arm pivotally secured to one end of said holder, a curved tracing-point slidably arranged on said arm and having an end arranged in the central longitudinal axis of said holder, and a pencil-holder arranged at the other end of said holder and having a pencil movably arranged therein.

5. In a pantograph, a board, a movable frame pivotally secured to said board, a holder having a tracing-point and a pencil carried by said frame, a clamp arranged at one side of said board and adapted to engage an object to be traced by said tracing-point and to be reproduced in profile by said pencil, and adjustable means arranged at the opposite side of said board, said means and clamp adapted to hold said board and frame in proper position with respect to said object.

6. In a pantograph, a board, a movable frame pivotally secured to said board, a holder having a tracing-point and a pencil carried by said frame, a clamp consisting of two members pivotally connected with each other and having gripping-jaws adapted to engage the object to be traced by said tracing-point and to be reproduced in profile by said pencil and to hold said board and frame in proper position thereto, and means adapted to hold the members of said clamp in engagement with the object.

7. In a pantograph, a board, a movable frame pivotally secured to said board, a holder carried by said frame and having at opposite ends a tracing-point and a pencil projecting from said holder beyond said frame, and a standardizing bar or aliner carried by said board having a post and markings arranged at opposite ends thereon, said markings and post adapted, when said pencil and tracing-points are respectively brought into alinement with the same to facilitate an adjustment of the tracing-point and pencil on said holder.

8. In a pantograph, a board, a frame consisting of a series of limbs movably joined to each other at their respective ends and at points intermediate thereto movably connected with said board, a holder, consisting of a tube and a rod movably secured to said frame, a tracing-point and pencil movably and adjustably secured to said tube and rod, and a clamp adapted to connect said board with the object to be drawn.

9. In a pantograph, a board, a frame consisting of a series of limbs movably joined to each other at their respective ends and at points intermediate thereto movably connected with said board, a holder, consisting of a tube and a rod movably secured to said frame, a tracing-point and pencil respectively movably and adjustably secured to said tube and rod, a clamp adapted to connect said board with the object to be drawn, and a standardizing bar or aliner carried by said board and arranged below said frame and having a post and markings arranged at opposite ends thereon and adapted to serve as a guide to bring said tracing-point and pencil back to their respective relative positions when away from the same.

10. In a pantograph, a board, a movable frame pivotally secured to said board, a holder for a tracing-point and pencil carried by said frame, a clamp secured to said board and adapted to connect the same to an object to be drawn by said tracing-point and to be reproduced by said pencil, and a rod movably secured to said board and adapted in conjunction with said clamp to support said board.

809,247. FIRE-BOX. FRANK BURGER and HENRY M. WILLIAMS, Fort Wayne, Ind.; said Burger assignor of one-half of his right to said Williams. Filed Mar. 14, 1902. Serial No. 98,321.

Claim.—1. A boiler consisting of two pairs of superposed shells, one pair inclosing the other with a space between them to form the water and steam space of the boiler, and the inner pair forming the fire-box, combined with a casing inclosing said shells with a space between them with which the fire-box is in communication, and a partition dividing said space into upper and lower chambers, substantially as set forth.

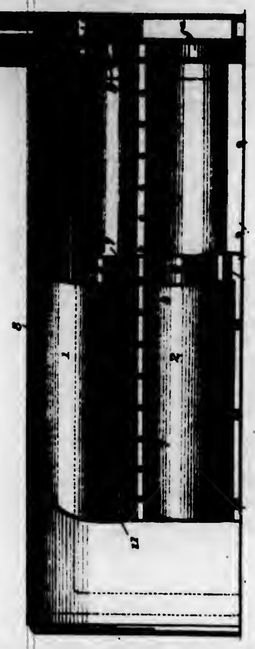

2. A boiler consisting of two pairs of superposed shells, one pair inclosing the other with a space between them to form the water and steam space of the boiler, and the inner pair forming the fire-box extending from end to end of the boiler, horizontal water-tubes extending across the fire-box and communicating with the interior of the boiler at each side thereof, and vertical tubes leading from the horizontal tubes through the crown-sheet of the fire-box, substantially as set forth.

3. In a boiler, the combination with two pairs of superposed shells, one pair inclosing the other with a space between them, channel-irons secured to the shells of the respective pairs at their junctions, horizontal tubes secured in the channel-irons of the inner shells and forming stays therefor, and rods extending through said tubes and secured at their ends in the channel-bars of the outer shells, substantially as set forth.

4. In a boiler, the combination with superposed shells and channel-irons secured thereto at their junctions, of screw-plugs secured in said channel-irons at opposing points, and a rod passing loosely through one plug and having a threaded connection with the other, and nuts on the ends of the rod engaging the plugs substantially as set forth.

5. In a boiler, the combination with superposed shells and channel-irons secured thereto at their junctions, of screw-plugs secured in said channel-irons at opposing points, and a rod passing loosely through one plug and having a threaded connection with the other, nuts on the ends of the rod engaging the plugs, a casing inclosing said shells and having openings to afford access to said nuts and rods, and covers for said openings, substantially as set forth.

809,248. MACHINE FOR GAGING PIVOTS. DUANE H. CHURCH, Newton, Mass.; Harriet L. Church executrix of said Duane H. Church, deceased. Filed May 5, 1898. Serial No. 679,776.

Claim.—1. A machine of the character described comprising a holder having relatively movable members for holding a pivot against displacement, a plurality of gages each having an aperture differing in its known diameter from that of the others, and mechanism for automatically bringing said pivot and said gages into operative relation while said pivot is held or carried by the holder.

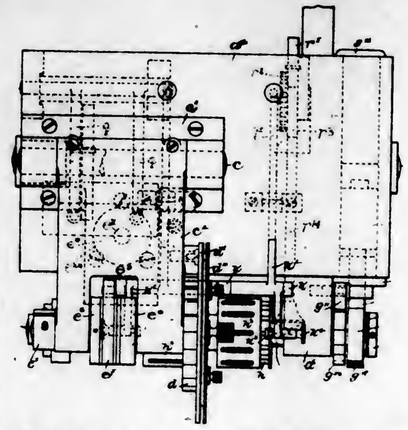

2. A machine of the character described, comprising a holder having clamps, for a pivot, a plurality of gages each having a jewel with an aperture of a known diameter, and automatic mechanism for bringing said pivot and said jewels into operative relation while said pivot is carried by said holder.

3. A machine of the character described comprising a holder having provisions for clamping a pivot therein, a plurality of gages each having a jewel with an aperture of a known diameter, and automatic mechanism for moving said gages in succession into operative relation to said pivot.

4. A machine of the character specified comprising a holder having relatively movable members having provisions for clamping the article being measured, measuring devices, and mechanism for causing said devices to measure the diameter of a part or feature of said article.

5. A machine of the character specified comprising a holder with provisions for clamping or securing the articles being measured, measuring devices, and mechanism for causing said devices to measure and record the diameter of a part or feature of said article.

6. A machine of the character described having a holder for the article to be measured and a plurality of measuring-gages for automatically measuring each of two different parts of said article.

7. A machine of the character described having a holder for the article to be measured and a plurality of measuring-gages for automatically measuring and independently recording the measurements of each of two different parts or features of said article.

8. A machine of the character described comprising a plurality of gages, a holder having relatively movable members independent of the gages for the articles to be measured, means for moving said holder to present said articles to each of said gages, and means for bringing each article and said gages successively into engagement until said article is measured.

9. A machine comprising a plurality of gages, a holder having relatively movable members independent of the gages for a plurality of articles to be measured, means for automatically moving said holder, and mechanism for automatically causing the pivot and gage to engage without dislocating said article from its holder.

10. A machine comprising a holder having relatively movable members for receiving and holding a pivot or thing to be measured, a plurality of graded gages, mechanism for advancing said gages automatically into operative relation to a pivot in the holder, and mechanism for causing said gages to measure said pivot without removing it from said holder.

11. A machine comprising a rotary holder having relatively movable members for receiving a pivot or thing to be measured, a carrier having a plurality of graded gages, mechanism for imparting a step-by-step movement to said holder to present the pivots or things to be measured successively to the gages, and mechanism for causing said gages to measure said pivot without removing it from said holder.

12. A machine for measuring the pivot on the end of a balance-staff; comprising a holder having provisions for receiving and rigidly holding said staff, a plurality of independent measuring devices for measuring the cross-diameter of the said pivot, and automatic mechanism for causing said holder to present said pivot to said measuring mechanism.

13. A machine having a holder having relatively movable members for receiving and rigidly holding a thing to be measured, a plurality of gages for measuring said thing, and means for causing said thing and said gages to be brought into operative relation.

14. A machine comprising a series of gages, a holder having relatively movable members for receiving and rigidly holding an article to be measured, mechanism for causing the article to be brought into operative relation to the gages until a gage corresponding to the article is reached.

15. A machine of the character described comprising a holder having relatively movable members for clamping an article to be measured, and a series of gages each movable into operative relation to said article.

16. A machine of the character described comprising a pivot-holder having provisions for clamping an article to be measured, a gage-carrier having a series of gages, and mechanism for moving said carrier to bring said gages successively into operative relation to an article.

17. A machine of the character described comprising a holder having relatively movable members for an article to be measured, a rotary carrier having a series of gages, and mechanism for imparting a step-by-step movement to the carrier to bring the gages successively into operative relation to said article.

18. A machine of the character described comprising a holder for the article to be measured, a carrier having a series of movable gages, mechanism for moving the carrier to bring the gages successively into alinement with said article, and mechanism for bringing the gages into contact with said article.

19. A machine of the character described comprising a holder, for the article to be measured, a series of independently-movable gages, mechanism for bringing said gages successively into engagement with said article, and automatic devices for holding the remaining gages out of contact with said article after a gage corresponding to said article has been engaged therewith.

20. A machine of the character described comprising a holder for the article to be measured, a series of movable gages, mechanism for bringing said gages successively into engagement with the said article, a feeler, in operative relation to said gages, and mechanism controlled by said feeler for governing the movement of the gages.

21. A machine of the character described comprising a holder for the article to be measured, a carrier, a series of graded gages mounted on said carrier and movable into engagement with said article, a pneumatic device for controlling the movement of the gages, and a feeler in operative relation to said gages for controlling the pneumatic device.

22. A machine of the character described comprising a holder for the article to be measured, a carrier having a series of movable gages, a pneumatic device for moving the gages, a regularly automatically moving valve controlling the passage of air to said pneumatic device, a feeler in operative relation to the gages, and supplemental devices controlled by the feeler for cutting the first said supply to the pneumatic device when a gage corresponding to the pivot is presented thereto.

23. A machine of the character described comprising a pivot-holder having relatively movable members, a series of automatically-acting measuring devices, each having an aperture of a known diameter, and means for bringing said pivots and said apertures successively into alinement.

24. A machine of the character described comprising a pivot-holder, a series of measuring devices, each consisting of a jewel having an aperture of a predetermined diameter, and automatic devices for moving and presenting them successively to the pivot.

25. A machine of the character described comprising a holder having means for clamping a pivot, a series of measuring devices, each having an aperture of a known diameter different from that of any of the others, and mechanism including a movable carrier for engaging said devices with the pivot, in order beginning with that having the aperture of the largest diameter.

26. A machine of the character described, comprising a recording device, a series of graded gages, mechanism for automatically presenting said gages one by one to the pivot to be measured, and mechanism for operating the recording device when a gage corresponding to the pivot is presented thereto.

27. A machine of the character described, comprising a work-holder, a series of graded gages, mechanism for presenting said gages one by one to the work carried by said holder, devices for holding a record-sheet, and devices for making a record of the diameter of each piece of work upon the sheet.

28. A machine of the character described, comprising a work-holder having relatively movable members, a series of graded gages, mechanism for presenting said gages one by one to the work carried by said holder, and a device having symbols designating the internal diameters of the gages and moving simultaneously with the gages.

29. A machine of the character described, comprising a work-holder, a series of graded gages, mechanism for presenting said gages, one by one, to the pivot, a device having symbols designating the internal diameters of the gages, and moving simultaneously with the gages, and mechanism for bringing a record-sheet against a symbol when a gage corresponding to the pivot is presented thereto.

30. A machine of the character described having provisions for automatically measuring and recording the diameter of a predetermined number of pivots in succession, and provisions for stopping the machine automatically when the diameters of said pivots have been recorded.

31. A machine of the character described comprising two independent sets of measuring devices and a carrier located between said sets of measuring devices for presenting the two pivots of a balance-wheel or other part of a watch simultaneously to the said devices.

32. A machine of the character described comprising a holder for the pivots to be measured, means for supporting a record-sheet, two independent sets of oppositely-arranged graded gages, and mechanism controlled by said gages for recording on said record-sheet the measurements of the pivots.

33. A machine of the character described comprising measuring devices, and a carrier for presenting the pivots to the said devices, said carrier consisting of two separable clamps having alined apertures to receive the pivots whereby said pivots are held rigidly while being measured.

34. A machine of the character described, comprising a pivot-carrier, two independent sets of measuring devices, means for supporting a record-sheet, a device having two sets of symbols, and placed in operative relation to the record-sheet, a feeler for each set of gages, and two independent hammers each controlled by one of the feelers, and each arranged to strike the record-sheet against one of the symbols.

35. A machine comprising recording mechanism, devices for measuring the diameter of the thing to be measured, means for automatically presenting the thing to be measured to the measuring device, and mechanism for operating the recording mechanism when the said thing is measured.

36. A machine comprising mechanism, for measuring the diameter of the thing to be measured and for recording the measurements, means for automatically presenting the thing to be measured to the measuring device, and mechanism controlled by the measuring devices for automatically operating the recording mechanism.

37. A machine of the character specified comprising a holder for the articles to be measured, a plurality of gages, a carrier for said gages, means for moving said gages to present them one by one to one of said articles, and means for moving said holder to present said articles in succession to said gages.

38. A machine of the character described comprising a holder for the article to be measured, measuring devices for ascertaining the diameter of said article, and pneumatic mechanism for automatically causing said devices to measure said article.

39. A machine of the character described comprising a holder having relatively movable members for the article to be measured, a plurality of gages, said article and said gages being adapted to pass one into the other, and means for causing said gages to successively move into operative relation to said article while it is in the holder without dislocating said article.

809,249. **NON-REFILLABLE BOTTLE.** FRANK J. DAVIS, Indianapolis, Ind., assignor, by direct and mesne assignments, to himself, John C. Walker, and Fred R. Tutsey, Indianapolis, Ind. Filed Mar. 26, 1904. Renewed June 12, 1905. Serial No. 264,962.

Claim.—1. In means insertible within a bottle to prevent its being refilled, a suitable valve-seat a hollow valve extending through and inwardly beyond said seat and open at its inner end, and means for closing said valve that is overcome by the gravity of the valve when filled with liquid.

2. In means insertible within a bottle to prevent its being refilled, a valve-seat, a hollow valve the outer end of which is conical to fit the valve-seat and the inner end of which is cylindrical and extends beyond the valve-seat and is open at its inner end, and means for closing said valve that is overcome by the gravity of the valve when filled with liquid.

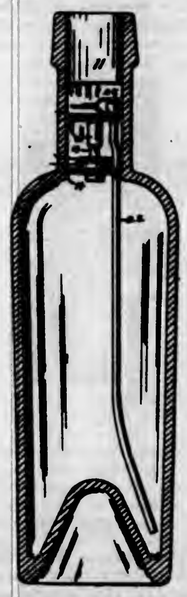

3. A device for rendering a bottle non-refillable consisting of two disks, the lower one having a valve-seat and the upper one having an outlet-opening, a hollow valve fitting in said valve-seat with a central outward stem, a tubular guide extending centrally from the outer disk toward the valve-seat to receive the stem of the valve, a spring in said tubular guide acting against the valve-stem, an air-tube extending through both disks, a valve at the outer end of said air-tube for closing the same, and a protecting-cover mounted on the outer disk and extending substantially over the outlet through the outer disk and inlet into the air-tube, substantially as set forth.

809,250. **CEMENT-BRICK MACHINE.** FRED B. DUBART, Superior, Nebr., assignor of two-thirds to C. B. Adams and A. C. Pelt, Superior, Nebr. Filed Aug. 12, 1905. Serial No. 274,726.

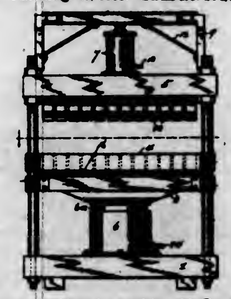

Claim.—In a machine for making blocks from material in plastic form, a bed-plate slidably mounted on a suitable frame, mold-boxes slidably mounted on said frame above said bed-plate, means for raising said bed-plate and mold-boxes, a header adjustably mounted on said frame, dies secured to the under side of said header, and means for raising said mold-boxes independently of said bed-plate.

809,251. **CEMENT-TILE MACHINE.** FRED B. DUBART, Superior, Nebr., assignor of two-thirds to C. B. Adams and A. C. Pelt, Superior, Nebr. Filed Aug. 12, 1905. Serial No. 274,726.

Claim.—In a machine of the class described, a base having vertical shafts secured thereto, a header-plate adjustably mounted on the upper part of said shafts, and means for locking said header in its adjusted position; a bed-plate slidably mounted on said shafts, a mold-box secured, to said bed-plate with a space between said box and said bed-plate, pallets slidably arranged in the space between the mold-box and the bed-plate, and a mold-box having hinged ends, and means for operating said bed-plate, all substantially as described.

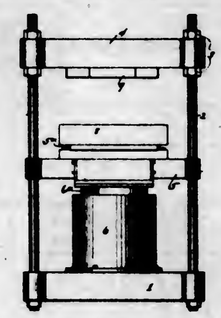

809,252. **CEMENT-BLOCK MACHINE.** FRED B. DUBART, Superior, Nebr., assignor of two-thirds to C. B. Adams and A. C. Pelt, Superior, Nebr. Filed Aug. 14, 1905. Serial No. 274,727.

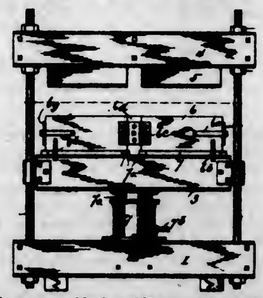

Claim.—In a cement-block-molding machine, a slidably-mounted bed-plate having supported thereon a mold-box formed with a central portion and provided with sides hinged on said central portion, also provided with ends hinged to one of said sides of the boxes and means for locking said end pieces on the opposite sides of the box, means for centering the mold-box on the bed-plate, and means for operating said bed-plate.

809,253. **DEVICE FOR CIRCULATING STEAM, &c.** FRANK C. GOFF, Denver, Colo. Filed Nov. 6, 1903. Serial No. 180,268.

Claim.—1. The combination with a heating system, of means connected with the air-outlet of the system for automatically controlling the supply of the heating agent, by the force of the air driven out of the system by said agent.

2. The combination with a steam-heating system, of means connected with the air-outlet of the system for automatically controlling the supply of the heating agent, by the suction produced in the system incident to steam condensation.

3. The combination with a steam-heating system, of means connected with the air-outlet of the system for automatically controlling the supply of the heating agent, by the action of the air driven out of the system by the heating agent, and the suction incident to steam condensation in the system.

4. The combination with a heating system, of a cylinder in communication with the air-valves to allow the air driven out of the system, to enter the cylinder, a piston in the cylinder, and means connected with the piston and actuated thereby for controlling the supply of the heating agent.

5. The combination with a heating system, of a cylinder in communication with the air-valves of the system to allow the air driven out of the system to enter the cylinder, a piston in the cylinder, and

a valve located in the system and connected with the cylinder-piston, whereby the valve is actuated to regulate the supply of the heating agent.

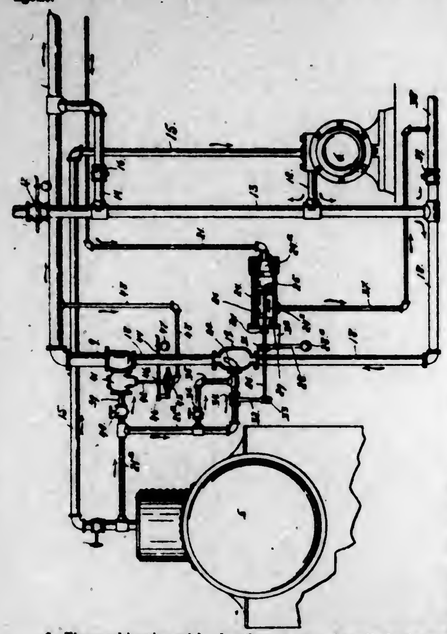

6. The combination with a heating system, of a cylinder in communication with the air-valves of the system, a piston in the cylinder, a lever connected with the piston-stem, a valve for controlling the heating agent, and connected with the piston-stem, the lever normally holding the valve closed, the piston-stem, however, being actuated by the movement of the piston as the latter is operated in response to the air-pressure or suction, substantially as described.

7. The combination with a heating system, of a cylinder in communication with the air-valves of the system, a piston in the cylinder, a valve located in the system for controlling the heating agent, and connected with the piston-stem, whereby the valve is automatically actuated by said stem, and a valve located in a by-pass of the system.

8. The combination with a heating system, of means in communication with the air-valves of the system for automatically controlling the supply of the heating agent to the system, by the normal action of the air driven out of the system by the heating agent, and the suction incident to condensation, and means interposed in the system for automatically controlling the supply of the heating agent to the system.

9. The combination with a heating system, of means in communication with the air-valves of the system for automatically controlling the supply of the heating agent to the system by the normal action of the air driven out of the system by the heating agent and the suction incident to condensation, and means interposed in the system for automatically controlling the supply of the heating agent to the system by the force of said agent in the system, said last-named means consisting of a valve and a weighted diaphragm, the latter being connected with the valve on one side and in communication with the heating agent on the opposite side.

10. The combination with a radiator, of means communicating with the air-outlet of the radiator for automatically controlling the supply of the heating agent thereto, by the force of the air driven out of the radiator by said agent.

11. The combination with a steam-radiator, of means communicating with the air-outlet of the radiator for automatically controlling the supply of the heating agent thereto by the suction produced in the radiator incident to steam condensation.

809,254. GRINDER. GEORGE W. GOLDEN, Detroit, Mich. Filed Jan. 3, 1903. Serial No. 137,412.

Claim.—1. In a grinder, the combination with a frame, an arbor journaled therein, a grinder-wheel mounted on said arbor, and a drive connection for revolving said arbor, of an adjustable guide arranged at the side of said wheel, and auxiliary means for limiting the adjustment of said guide to hold the same at a predetermined angularity.

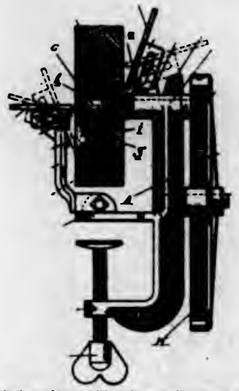

2. In a grinder, the combination with a frame, arbor journaled therein, grinder-wheel mounted upon said arbor, of a guide adjustably secured to said frame at one side of said grinder, and stops for limiting the angular adjustment of said guide, to hold the same in predetermined positions of adjustment for two different kinds of work.

3. In a grinder, the combination with an arbor, of a grinder-wheel mounted thereon and having a central recess, clamping means for securing said wheel on said arbor, arranged in said recess, completely below the surrounding surface of the grinder-wheel and a guide for the work on the recessed side of said wheel.

4. In a grinder, a frame comprising a vertical bar and clamped at the lower end of said bar, a journal-bearing at the upper end of said bar, an arbor in said bearing, a grinder-wheel on said arbor, the clamping means being countersunk below the surface of the grinder-wheel, a pinion mounted on the opposite end of said arbor, a drive-gear intermeshing with said pinion, and a rearwardly-projecting lug on said frame, upon which said drive-gear is journaled, whereby the periphery of said drive-wheel is arranged to clear the front face of the grinder-wheel.

809,255. CAR-COUPLING. WILLIAM W. GORDON, Washington, D. C. Filed Oct. 11, 1905. Serial No. 282,208.

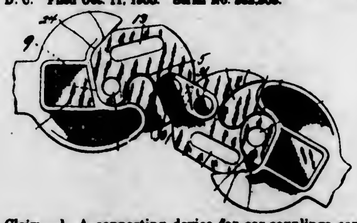

Claim.—1. A connecting device for car-couplings comprising two coupling sections or heads, each of which is provided with a coupling-hook adapted to engage with the respective coupling-knuckles of adjacent cars, and one of said coupling-sections being provided with a shouldered portion at its rear end adapted to project within the slot of a draw-head to hold said coupling-section in position and prevent the same from dropping away from the draw-head, and a pivotal connection between the coupling-sections.

2. A connecting device for car-couplings comprising two coupling sections or heads, each of which is provided with a coupling-hook adapted to engage with the respective coupling-knuckles of adjacent cars, and a pivot-bolt passing through alined apertures in the coupling-sections.

3. A connecting device for car-couplings comprising two coupling sections or heads, each of which is provided with a coupling-hook adapted to engage with the respective coupling-knuckles of adjacent cars, one of said coupling-sections having a shouldered portion at its rear end adapted to project within the slot of a draw-head to hold said coupling-section in position and prevent the same from dropping away from said draw-head, and a pivot-bolt passing through alined apertures in the coupling-sections.

4. A connecting device for car-couplings comprising two coupling sections or heads, each of which is provided with a hook adapted to engage with the respective knuckles of adjacent cars, one section being horizontally slotted to partially receive the other section in the swinging movements of the latter, and a pivot-bolt passing through alined apertures in the said sections.

809,256. MACHINE FOR MAKING GASKETS. JAMES W. GUILLOTT, Chicago, Ill. Filed Feb. 6, 1905. Serial No. 244,426.

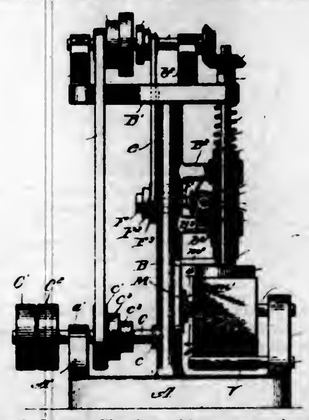

Claim.—1. In a machine for making corrugated gaskets, the combination with a plate having concentric corrugations, of a die having corrugations corresponding to those of said plate, means for relatively rotating said die and said plate, and automatic means for intermittently reciprocating said die toward and away from said plate.

2. In a machine for making corrugated gaskets, the combination with a plate having concentric corrugations, of a die having corrugations to correspond to those of said plate, a carrier for supporting said die, means for rotating said carrier relative to said plate, and automatic means for intermittently moving said carrier and plate toward and away from each other.

3. In a machine for making corrugated gaskets, the combination with a plate having concentric corrugations, of a die having corrugations corresponding to those of said plate, a carrier for supporting said die, a cutter mounted upon said carrier, means for rotating said carrier relatively to said plate, and means for intermittently reciprocating said carrier toward and away from said plate.

4. In a machine for making corrugated gaskets, the combination with a plate having concentric corrugations, of a roller having corrugations corresponding to those of said plate, a carrier upon which said roller is journaled, means for rotating said carrier relatively to said plate, and automatic means for intermittently reciprocating said carrier toward and away from said plate.

5. In a machine for making corrugated gaskets, the combination with a plate having concentric corrugations, of a roller having corrugations corresponding to those of said plate, a carrier upon which said roller is journaled, a cutting-disk journaled upon said carrier, means for rotating said carrier relatively to said plate, and means for intermittently reciprocating said carrier toward and away from said plate.

6. In a machine of the character described, the combination with a plate having concentric corrugations, a carrier located adjacent said plate, radial rods upon said carrier, rollers journaled upon said rods having corrugations corresponding with those of said plate, cutting-disks journaled upon said rods, means for rotating said carrier relatively to said plate, and means for intermittently moving said carrier and plate toward and away from each other.

7. In a machine of the character described, the combination with a plate having concentric corrugations, a carrier located adjacent said plate, radial rods upon said carrier, rollers journaled upon said rods having corrugations corresponding with those of said plate, cutting-disks journaled upon said rods, a corrugated disk fixed concentrically to said carrier and located between the inner ends of said rollers, means for rotating said carrier relatively to said plate, and means for intermittently moving said carrier and plate toward and away from each other.

8. In a machine of the character described, the combination with a plate having concentric corrugations, a die having corrugations corresponding to those of said plate, a carrier for said die, a shaft to which said carrier is fixed, means for rotating said shaft, a sleeve loosely surrounding but longitudinally immovable relatively to said shaft, and means engaging said sleeve for intermittently reciprocating said carrier.

9. In a machine of the character described, the combination with a plurality of plates each having concentric corrugations, of a die having corrugations corresponding to those of said plates, means for rotating said die relatively to said plate, means for successively locating each of said plates beneath said die, and means for intermittently reciprocating said die toward and away from the adjacent plate.

10. In a machine of the character described, the combination with a plurality of plates each having concentric corrugations, a rotary table upon which said plates are supported, a die having corrugations corresponding to those of said plates, means for rotating said table to successively locate said plates beneath said die, and means for intermittently reciprocating said die toward and away from the adjacent plate.

11. In a machine of the character described, the combination with a rotary table, of a plurality of plates each having concentric corrugations, a die having corrugations corresponding with those of said plates, a carrier supporting said die, means for rotating said carrier, and means for intermittently reciprocating said carrier away from said table and coincidently rotating said table to locate a following plate beneath said carrier.

12. In a machine of the character described, the combination with a square table journaled to rotate in a vertical plane, a plate having concentric corrugations secured to each face of said table, a die having corrugations corresponding to those of said plates, means for rotating said die relatively to the coöperating plate, means for intermittently reciprocating said die away from said table and coincidently rotating said table to locate a following plate beneath said die.

13. In a machine for making corrugated gaskets, the combination with a plate having concentric corrugations, of a die having corrugations corresponding to those of said plate, means for rotating said die relatively to said plate, means for intermittently reciprocating said die toward and away from said plate, and means for automatically interposing sheet-copper between said die and plate.

14. In a machine of the character described, the combination with a square table journaled to rotate in a vertical plane, a plate having concentric corrugations secured to each face of said table, a die having corrugations corresponding to those of said plates, means for intermittently reciprocating said die away from said table and coincidently rotating said table to locate another plate beneath said die, and means for automatically securing a sheet of copper to said table.

15. In a machine of the character described, the combination with a square table journaled to rotate in a vertical plane, a plate having concentric corrugations secured to each face of said table, a die having corrugations corresponding to those of said plates, radially-reciprocating pins carried by said tables, means for projecting said pins through said plates to engage copper sheet and secure the same to said table, and means for disengaging said pins from the copper plate.

16. In a machine for making corrugated gaskets, the combination with a plate having corrugations, of a die having corrugations corresponding to those of said plate, a carrier for supporting said die, a plurality of cutters mounted upon said carrier at different distances from its axis, and means for relatively rotating said carrier and plate.

17. In a machine for making corrugated gaskets, the combination with a plate having concentric corrugations, of a die having corrugations corresponding to those of said plate, a carrier for supporting said die, a cutter mounted upon said carrier, means for radially adjusting the position of said cutter upon said carrier, and means for relatively rotating said carrier and said plate.

18. In a machine for making corrugated gaskets, the combination with a plate having concentric corrugations, of a plurality of rollers having corrugations corresponding to those of said plate, a carrier upon which said rollers are journaled, a plurality of cutting-

disks journaled upon said carrier and located different distances from its axis, means for relatively rotating said carrier and said plate, and means for relatively moving said carrier and plate toward and away from each other.

19. In a machine of the character described, the combination with a plate having concentric corrugations, a carrier located adjacent said plate, radial rods upon said carrier, rollers journaled upon said rods having corrugations corresponding with those of said plate, means for relatively rotating said carrier and said plate, and means for relatively moving said carrier and plate toward and away from each other.

20. In a machine of the character described, the combination with a plate having concentric corrugations, a carrier located adjacent said plate, radial rods upon said carrier, rollers journaled upon said rods having corrugations corresponding with those of said plate, cutting-disks journaled upon said rods at different distances from the axis of said carrier, means for adjusting said cutting-disks radially with respect to said carrier, means for relatively rotating said carrier and plate, and means for relatively moving said carrier and plate toward and away from each other.

809,257. **TOOL-HOLDER.** ERNST M. W. HANSON, Hartford, Conn., assignor to Pratt & Whitney Company, Hartford, Conn., a Corporation of New Jersey. Filed Aug. 9, 1905. Serial No. 273,479.

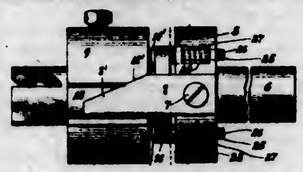

Claim.—1. The combination, with a fixed member, of a member movable thereon and carrying a screw-cutting tool; a yielding device carried by one of the members; and an adjustable collar on the other member adapted to engage said yielding device when the tool engages the work.

2. The combination, with a fixed member, of a tool-carrying member having a stem movable with respect to said fixed member; a collar on said stem and yielding devices between the collar and the fixed member, said yielding devices serving to permit the tool to engage the work under yielding pressure.

3. The combination, with a fixed member having a head provided with a series of chambers, of a movable member mounted on the fixed member; spring-actuated plungers carried in the chambers of the fixed member; and a device carried by the movable member and adapted to engage said plungers when the tool comes into contact with the work.

4. The combination, with a fixed member having a tubular shank, of spring-actuated plungers carried by said fixed member; a movable member having a stem inserted in the tubular shank of the fixed member; and a stop disk or projection secured to said stem, and bearing against the heads of said plungers.

5. The combination, with a fixed member having a tubular shank, and provided with a head having a series of chambers, of spring-actuated plungers operable in said chambers; a movable member having a stem fitted in the tubular shank of the fixed member; and a stop disk or projection adjustably secured to said stem, and receiving the impact of the spring-actuated plungers.

809,258. **BOTTLE-CLOSURE.** JACOB HEMMERDEN, Houston, Tex., assignor of one-half to John De Philippi, Houston, Tex. Filed Apr. 6, 1905. Serial No. 254,617.

Claim.—1. The combination with a bottle-body open at the top, and a plug in said opening, of a cap-piece having a cavity in its lower side affording clearance from the plug when seated on said bottle-body, the cap-piece having lateral perforations extending outward from the cavity therein, and a locking-strand in the body of the bottle extended at its ends up into the cavity of the cap-piece and thence outward through the lateral perforations therein, said ends being secured in the perforations.

2. The combination with a cylindrical bottle-body having a short neck thereon, said neck having an annular recess encircling its lower end, and a plug closing the neck, of a dome-shaped cap-piece having lateral perforations in its side wall and provided with an annular depending flange that seats in the annular recess, and a locking-strand in the wall of the bottle-body, the ends of said strand being inserted into the lateral perforations and therein secured.

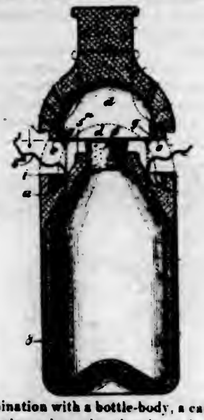

3. The combination with a bottle-body, a cap-piece securable on said body over a plugged opening therein, and means for removably securing the cap-piece on the body, of a label or the like secured over the joint between the cap-piece and the bottle-body, so that the fracture of the label will expose the removal of the cap-piece.

809,259. **POTATO-DIGGER.** JOHN HEIT, Solon, Ohio. Original application filed Feb. 11, 1905, Serial No. 245,926. Divided and this application filed May 4, 1905. Serial No. 258,809.

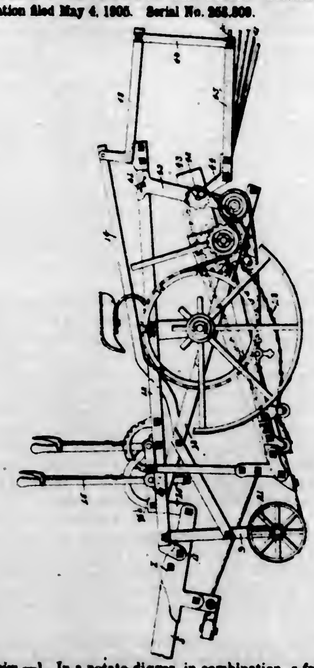

Claim.—1. In a potato-digger, in combination, a frame having upper and lower bars, arms hinged to the rear ends of the lower bars and adjustably connected to the rear ends of the upper bars, a shaft carried by said arms and having cranks at the ends, and a shaker suspended from the upper bars and connected to the cranks.

2. In a potato-digger, in combination, a frame having upper bars, arms depending from said bars, a crank-shaft carried by said arms, a shaker hung at the front end from said cranks, and levers fulcrumed on the rear ends of the bars and connected by links to the rear end of the shaker.

809,260. **POTATO-DIGGER.** JOHN HEIT, Solon, Ohio. Original application filed Feb. 11, 1905, Serial No. 245,926. Divided and this application filed May 9, 1905. Serial No. 259,861.

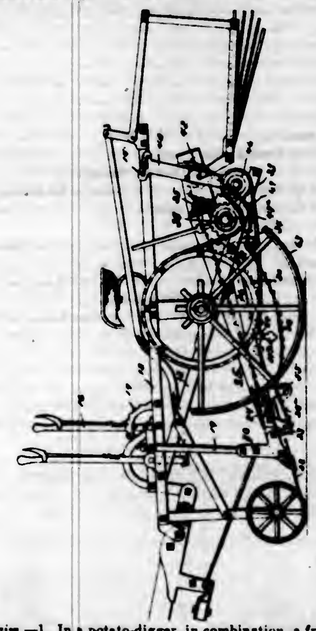

Claim.—1. In a potato-digger, in combination, a frame having upper bars 12, bars 13 secured thereto and inclined down and back, the side bars 26 pivoted to said bars 13, an endless carrier supported by said side bars, and arms 40 extending between the rear ends of the bars 12 and 13 and supporting the rear end of the carrier, and having wheels around which the carrier extends, and adjustable to vary the tension of the carrier.

2. In a potato-digger, the combination with a main drive-chain and an endless carrier, of an adjustable arm, separate shafts mounted upon the arm, sprockets carried by the shafts and around which the drive-chain and the carrier respectively extend, another shaft having thereon a sprocket engaged with the chain and another engaged with the carrier, and a clutch between the last-mentioned shaft and one of the sprockets thereon.

809,261. **VALVE FOR GAS-PRODUCERS.** FRANKLIN G. HOBART, Beloit, Wis., assignor to Fairbanks Morse & Company, Chicago, Ill., a Corporation of Illinois. Filed May 3, 1905. Serial No. 258,498.

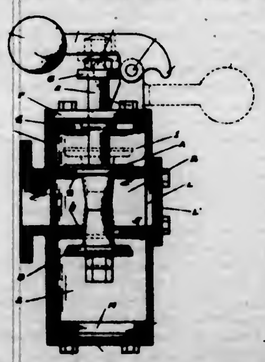

Claim.—1. In a valve for a gas-producer, the combination with a chambered casing having an inlet and opposed outlet-openings, of valves seating from the outside adapted to close said outlets, a stem on which said valves are mounted, one end thereof being extended loosely through said casing, and a weight pivoted on the outside of said casing and adapted to normally rest on the end of said valve-stem, for the purpose described.

2. In a valve for a gas-producer, the combination with a casing having a chamber open to the atmosphere, a chamber forming a pocket for collecting dust and open to the scrubber or other part of the apparatus, and an intermediate inlet-chamber open to the generator, the dividing-walls having opposed openings, of valves adapted to seat on the outer sides of said openings, a stem on which said valves are mounted having one end extended and passing loosely through the casing, and a weight pivoted on the outside of said casing and adapted to rest on the end of said stem to normally close the valve between the inlet-chamber and the chamber open to the atmosphere.

3. A valve consisting of a valve-casing, a vertically-removable stem extending outside of said casing, the movable elements of the valve mounted thereon, a lever pivoted on said casing and arranged to hold the valve closed in one extreme position and open at its opposite extreme position by gravity, substantially as described.

4. The mechanism for operating a vertical spindle-valve consisting of a weighted lever pivoted to the valve-casing and lying approximately horizontal in both extreme positions and engaging said valve spindle and stem, said lever resting on top of said valve-stem in one extreme position with said resting-point falling between the pivot and the center of gravity of said lever, and in its opposite position with the weight-arm resting under a collar or head in said valve-stem with the pivot falling between said resting-point and said center of gravity, whereby the weight of the lever acts to hold the valve down in the first-mentioned position and up in the last-mentioned position, substantially as described.

809,262. **CONTACT DEVICE FOR INDUCTION APPARATUS.** RALPH O. HOOD, Danvers, Mass., assignor of one-half to Warren D. King, Peabody, Mass. Filed Apr. 11, 1905. Serial No. 254,981.

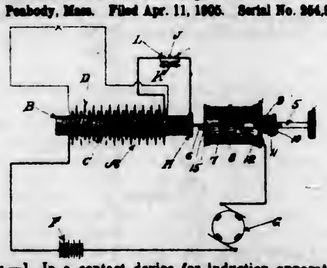

Claim.—1. In a contact device for induction apparatus, the combination of a casing, a flexible closure therefor forming therewith a substantially air-tight chamber and contact-points, one of which passes through the said flexible closure.

2. In a contact device for induction apparatus, the combination of a casing, a closure therefor forming therewith a substantially air-tight chamber, and contact-points one of which passes through the said closure.

3. In a contact device for sparking apparatus, the combination of a casing, a flexible closure therefor forming therewith a substantially air-tight chamber, a fixed contact-point, and a movable contact-point passing through the said flexible closure.

4. In a contact device for sparking apparatus, the combination of a casing, a flexible closure therefor forming therewith a substantially air-tight chamber, a movable contact-point passing through the said flexible closure and operatively connected therewith whereby a substantially air-tight joint between the said movable contact-point and the said closure is effected without impeding the movement of the said movable contact-point.

5. In a contact device for sparking apparatus, the combination of a casing, a flexible closure therefor forming therewith a substantially air-tight chamber, a fixed contact-point, a movable contact-point passing through the said flexible closure and adjusting means for the said fixed contact-point.

6. In a contact device for sparking apparatus, the combination of a tube closed at one end, a flexible closure for the other end thereof forming therewith a substantially air-tight chamber, a fixed contact-point and a movable contact-point passing through the said flexible closure.

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7. In a contact device for sparking apparatus, the combination of a transparent tube closed at one end, a flexible closure for the other end thereof forming therewith a substantially air-tight chamber, a fixed contact-point and a movable contact-point passing through the said flexible closure.

8. In a device of the character specified, the combination with an induction-coil and a core therefor, of a contact device comprising a casing, a flexible closure therefor, a fixed contact-point having an armature for the said core and a movable contact-point mounted upon the said armature and passing through the said flexible closure and forming therewith a substantially air-tight joint.

809,263. SOUND-RECORD TABLET. WILLIAM H. HOYT and WILLIAM J. GAVEN, Bridgeport, Conn., assignors to The Duet Company, Hackensack, N. J., a Corporation of New Jersey. Original application filed June 11, 1904, Serial No. 212,216. Divided and this application filed June 15, 1905. Serial No. 265,266.

Claim.—1. A sound-record tablet whose body is composed mainly of earthy material and having a thin surface layer composed of like earthy materials with the addition of shellac.

2. A sound-record consisting of a tablet of suitable earthy materials containing little or no shellac but provided with a skin containing shellac and containing also resisting material similar to that of the body of the tablet, and having the sound-record in or upon said skin.

3. A sound-record consisting of a tablet having a uniform coefficient of expansion whose body is composed mainly of earthy materials containing little or no shellac and having a surface layer containing like earthy materials and shellac, said layers being united together and constituting a tablet, the sound-record groove being impressed upon said surface layer.

809,264. TRUSS-BRIDGE. WILLIAM J. HUMPHREYS, Elmwood, Ill. Filed Dec. 4, 1903. Serial No. 183,702.

Claim.—1. A bridge structure comprising longitudinal girders, transverse truss-beams supporting the same, standards rising from the girders, truss-beams overlying the girders, and brace-beams extending from the truss-beams in combination with couplings uniting said standards, truss-beams and brace-beams, each of said couplings comprising duplicate members arranged to abut and formed with an extended portion to receive and snugly engage one side face of each of the truss-beams, standards and brace-beams, and means for connecting the members of the coupling to each other and with said standards, truss-beams and brace-beams.

2. A bridge structure comprising longitudinal girders, transverse truss-beams supporting the same, standards rising from the girders, truss-beams overlying the girders, and brace-beams extending from the truss-beams in combination with couplings uniting said standards, truss-beams and brace-beams, each of said couplings comprising duplicate members arranged to abut and formed with an extended portion to receive and snugly engage one side face of each of the truss-beams, standards and brace-beams, each member of said coupling being formed with a semicircular recess providing when the members are assembled an opening through the coupling, a suspension-rod secured in said opening, and means for connecting the members of the coupling with each other and with said standards, truss-beams and brace-beams.

3. A bridge structure comprising a supporting-girder, transverse truss-beams underlying the same, a truss-beam above the girder, a standard intermediate the girder and truss-beam, and a brace-beam extending from said truss-beam, in combination with a coupling to unite said standard, truss-beam, and brace-beam, said coupling comprising a body portion formed with a diagonal opening, said body portion having a plurality of extensions, each of said extensions being recessed to receive and conform to the ends of the truss-beam, standard and brace-beam, a suspension-rod longitudinally adjustable in the opening in the coupling and means for securing the coupling to said truss-beam, standard and brace-beam.

809,265. FUR-SEWING-MACHINE ATTACHMENT. CHARLES B. JOHNSON, St. Paul, Minn., assignor of one-half to John W. Stiefel, St. Paul, Minn. Filed Mar. 11, 1905. Serial No. 249,596.

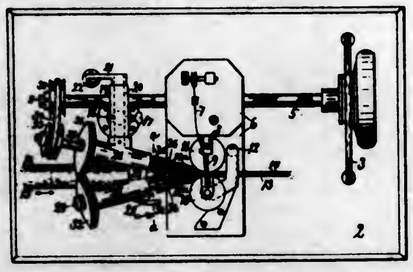

Claim.—1. A sewing-machine attachment comprising a pair of longitudinally grooved or corrugated rollers operatively connected with the machine and being arranged longitudinally at opposite sides of the line of feed toward the needle, and means for rotating the rollers in opposite directions.

2. A sewing-machine attachment comprising a pair of longitudinally grooved or corrugated rollers operatively connected with the machine and being arranged longitudinally at opposite sides of the line of feed toward the needle, and means for rotating the rollers in opposite directions, and an adjustable support for said rollers.

3. A sewing-machine attachment comprising a pair of longitudinally-corrugated conical rollers; an adjustable support for the rollers, means for effecting the rotation of said rollers in opposite directions, and a rod-and-lever mechanism for tilting the rollers upward, substantially as and for the purpose set forth.

4. A sewing-machine attachment comprising a standard or support securable to the machine, a tilting head carried by the support, a pair of shafts journaled in said head and geared together to rotate in opposite directions, a pair of longitudinally-corrugated rollers extending from the ends of said shafts approximately along the line of feed toward the needle, a rocker-arm on the tilting head, a rod extending from the rocker-arm and having below the table a lever adapted to be operated by the lower limbs of the operator so as to tilt the rollers upward away from the work when so desired.

5. The combination with the feeders of a fur-sewing machine; of separators comprising longitudinally-corrugated conical rollers adapted to project between the feeders; means for supporting said rollers; and means for rotating the same in opposite directions, for the purpose set forth.

6. The combination with a fur-sewing machine, of an attachment comprising a standard securable upon the machine, a tilting frame mounted on the standard, a pair of converging shafts journaled in the frame, corrugated conical rollers fixed upon the converging ends of the shafts, two meshing gears secured one on each of said shafts, one of said shafts being operatively connected with a shaft of the sewing-machine, and means for tilting said frame and for holding it in normal position.

7. The combination with a fur-sewing machine, of an attachment comprising a standard securable upon the machine, a tilting frame mounted on the standard, a pair of converging shafts journaled in the frame, corrugated conical rollers fixed upon the converging ends of the shafts, two meshing gears secured one on each of said shafts, one of said shafts being operatively connected with a shaft of the sewing-machine, and means for tilting said frame and for holding it in normal position, and means for vertically adjusting said tilting frame, and tilting means, substantially as and for the purpose set forth.

809,266. TRACTION-WHEEL. MINARD LAFEVER, Battlecreek, Mich., and WALTER GREGORY, Minneapolis, Minn. Filed Feb. 6, 1904. Serial No. 192,365.

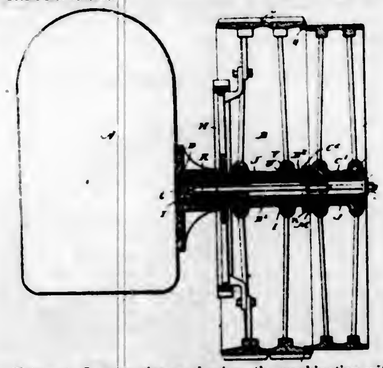

Claim.—1. In a traction mechanism, the combination with the engine of the two-part axle, the outer part being detachably connected to the inner part, the main drive-wheel mounted on the inner part of the axle, the power-transmitting devices interposed between the engine and the said drive-wheel, the supplemental wheel of smaller diameter than the said main wheel and mounted loosely in relation thereto on the outer part of the axle, and an abutment or series of abutments on the main drive-wheel for receiving the lateral thrust of the peripheral part of the supplemental wheel and causing said wheels to mutually brace each other.

2. In a traction mechanism, the combination with the engine, of the main drive-wheel, the power-transmitting devices interposed between the engine and the drive-wheel, the supplemental supporting-wheel of less diameter than the main wheel and mounted upon the axis thereof and rotatable about the said axis independently of the said main wheel, and an abutment or a series of abutments on the main drive-wheel for receiving the lateral thrust of the peripheral parts of the supplemental wheel, substantially as set forth.

3. In a traction mechanism, the combination with the engine, of the two-part axle, the inner part being secured to the engine and the outer part being detachably connected to the inner part, the main drive-wheel mounted on the inner part of the axle, and the supplemental wheel of smaller diameter than the main wheel and mounted loosely in relation thereto on the outer part of the axle, substantially as set forth.

4. In a traction mechanism, the combination with the engine, of the main drive-wheel, the axle therefor rigidly secured to the engine, the supplemental axle detachably secured to the main axle, and the supplemental wheel loosely mounted upon the supplemental axle, substantially as set forth.

5. In a traction mechanism, the combination with the engine, of the main axle rigidly secured to the engine and having a tubular outer end, the main drive-wheel mounted upon the main axle, the supplemental axle inserted in and detachably connected to the main axle, the supplemental wheel mounted upon the supplemental axle, and a two-part fastening device passing through the main axle and the supplemental axle, one part of said fastening device being adapted for use when the main wheel only is in position, and both parts adapted for use when both wheels are in operative position, substantially as set forth.

6. In a traction mechanism, the combination with the engine, of the bracket secured to the engine, the main tubular axle cast with the bracket, the main drive-wheel mounted on the main axle, the supplemental tubular axle inserted into the main axle, the supplemental wheel mounted loosely on the supplemental axle, and extensible devices for securing in place either the main driving-wheel when used alone or both of said wheels, substantially as set forth.

7. In a traction mechanism, the combination with the engine, of the main drive-wheel, the supplemental, loosely-mounted, supporting-wheel, the main axle rigidly connected to the engine, the supplemental axle detachably connected to the main axle, means for preventing rotation of the supplemental axle, and means for preventing lateral displacement thereof, substantially as set forth.

8. In a traction mechanism, the combination of the engine, the tubular axle rigidly connected to the engine, the main drive-wheel supported upon said axle, the supplemental tubular axle fitted within the main tubular axle, the supplemental supporting-wheel mounted upon a supplemental axle, means for locking the supplemental axle against rotation, and means for simultaneously holding the supplemental axle and the wheels against lateral displacement, substantially as set forth.

9. A wheel for a traction-engine having two rotary ground-engaging, vehicle-supporting elements mounted on a common fixed axis and independently rotatable about said axis, one element being of less diameter than the other, and the latter having an abutment or a series of abutments for receiving the lateral thrust of the peripheral parts of the former and mutually bracing the said wheels.

10. In a traction mechanism, the combination with the engine, of the main drive-wheel, the axle therefor, the supplemental axle detachably secured to the main axle, and the supplemental wheel mounted on the supplemental axle.

11. In a traction mechanism, the combination with the engine, of the main drive-wheel, the axle therefor, the supplemental axle detachably secured to the main axle, and the supplemental wheel mounted on the supplemental axle and adapted to rotate independently of the main driving-wheel.

12. In a traction mechanism, the combination with the engine, of the main axle rigidly secured to the engine and having a tubular outer end, the main drive-wheel mounted upon the main axle, the supplemental axle inserted in and detachably connected to the main axle, the supplemental wheel mounted upon the supplemental axle, and means adapted both to hold the supplemental axle in proper relation to the main axle and to hold the supplemental wheel in proper position on the supplemental axle.

13. In a traction mechanism, the combination with the engine, of the main axle, the main drive-wheel mounted upon the main axle, the supplemental axle detachably secured to the main axle, the supplemental wheel mounted upon the supplemental axle, and a two-part fastening device associated with said axles, one part of said device being adapted for use when the main wheel only is in position, and both parts being adapted for use when both wheels are in operative position.

14. In a traction mechanism, the combination with the engine, of the main drive-wheel, the supplemental supporting-wheel, the main axle, the supplemental axle detachably connected to the main axle and means for preventing rotation of the supplemental axle.

15. In a traction mechanism, the combination with the engine, of the main axle, the main drive-wheel mounted on said axle, the supplemental axle detachably connected to the main axle, the supplemental supporting-wheel mounted on said supplemental axle, and means for preventing lateral displacement of the supplemental axle relative to the main axle.

16. In a traction mechanism, the combination with the engine, of the main axle, the main drive-wheel mounted on said axle, the supplemental axle detachably connected to the main axle, the supplemental supporting-wheel mounted on said supplemental axle, and means for preventing lateral displacement both of said supplemental axle and said supplemental wheel.

809,267. STATION-INDICATOR. RICHARD F. LE BROCQ, Bloomfield, N. J., assignor of one-half to James P. Hinsman, New York, N. Y. Filed Mar. 30, 1905. Serial No. 253,890.

Claim.—1. In indicators, a casing, winding-drums in said casing carrying an indicating-strip, a stop-roll operated by said strip, a stop-disk provided with a recess mounted on said stop-roll, a spring-pressed stop-lever mounted in said casing and carrying a detent co-operating with said recess, a step-switch actuated by said stop-lever, a holding-lever adapted to engage said stop-lever and carrying a

spring-actuated latch, a worm coöperating with said latch and operating in unison with said winding-drums, a setting-lever adapted to coöperate with said holding-lever, a setting-switch actuated by said setting-lever, an electromagnet to actuate said setting-lever, an electric motor operating said winding-drums and contacts in series with said motor controlled by said stop-switch and said setting-switch and a track-switch connected in series with the electromagnet actuating said setting-lever.

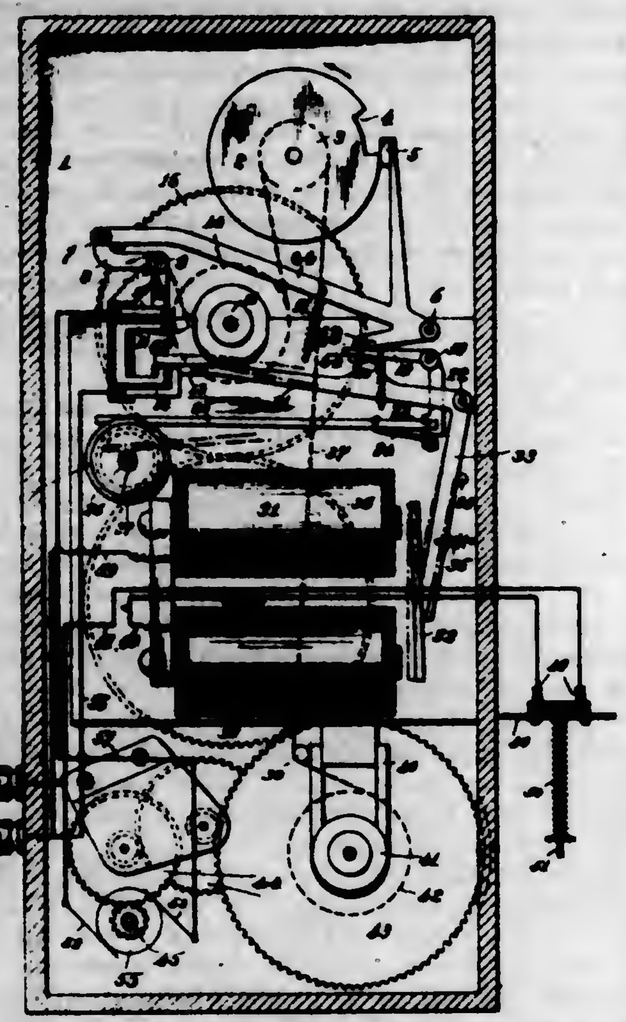

2. In indicators, an indicating-strip, winding-drums connected to said strip, a stop-disk operated in unison with said strip, a stop-lever carrying a detent coöperating with said stop-disk and a stop-switch actuated by said stop-lever, a holding-lever to engage and operate said stop-lever, a latch on said holding-lever, a releasing device operating in unison with said indicating-strip and coöperating with said holding-latch, a setting-lever to engage said holding-lever, a setting-switch actuated by said setting-lever, an electromagnet coöperating with and actuating said setting-lever to be connected in series with a contact device, a motor to operate said indicating-strip, and electrical contacts governed by said stop-switch and said setting-switch controlling the operation of said motor.

3. In indicators, an indicating-strip, a stop-disk operated in unison with said strip and provided with a recess a motor to operate said strip, a stop-lever carrying a detent to coöperate with said recess, a stop-switch actuated by said stop-lever, a holding-lever to engage said stop-lever, releasing means coöperating with said holding-lever and operating in unison with said strip, a setting-lever to actuate said holding-lever and said stop-lever, a setting-switch actuated by said setting-lever, means to actuate said setting-lever and contacts governed by said setting-switch and stop-switch to control said motor.

4. In indicators, indicating means, a stop-disk operated in unison with said indicating means, a stop-lever coöperating with said stop-disk, a stop-switch actuated by said stop-lever, a setting-lever to operate with said stop-lever, a setting-switch actuated by said setting-lever, means to actuate said setting-lever, means to hold said stop-lever in position after its actuation by said setting-lever until said indicating means has moved, a motor to actuate said indicating means and contacts controlling said motor and coöperating with said setting-switch and said stop-switch.

5. In indicators, indicating means, a stop operated in unison with said indicating means, a stop-lever carrying a detent coöperating with said stop, a stop-switch actuated by said stop-lever, a setting-lever to actuate said stop-lever, a setting-switch actuated by said setting-lever, means to hold said stop-lever in position after its actuation by said setting-lever until said indicating means has moved, an electric motor and electrical contacts connected in series with said motor and coöperating with said stop-switch and said setting-switch.

6. In indicators, indicating means, a stop operated in unison with said indicating means, stopping means carrying a detent to coöperate with said stop, a stop-switch actuated by said stopping means, setting means to actuate said stopping means, a setting-switch actuated by said setting means, devices to hold said stopping means in position after actuation by said setting means until said indicating means has moved, a motor to operate said indicating means and electrical contacts in series coöperating with said stop-switch and said setting-switch to control said motor.

7. In indicators, indicating means, a stop actuated in unison with said indicating means, a stop-lever carrying a detent coöperating with said stop, an electric switch actuated by said stop-lever, setting means to actuate said stop-lever, a setting-switch actuated by said setting means, a motor to operate said indicating means, and electrical contacts in series and coöperating with said stop-switch and said setting-switch to control said motor.

809,268. SPARKING IGNITION SYSTEM. Leon J. Le Pontois, New Rochelle, N. Y., assignor to Poly-Phase Ignition System Company, a Corporation of New York. Filed Nov. 17, 1904. Serial No. 233,165.

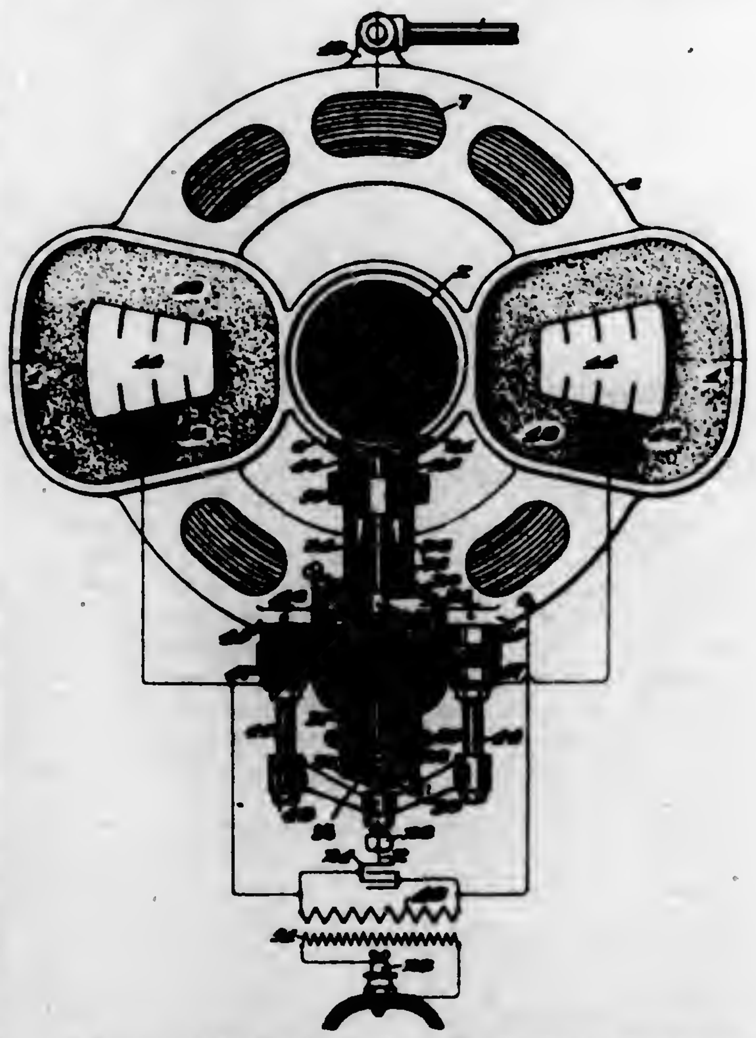

Claim.—1. A sparking ignition system comprising an alternating-current generator of the inductor type, said generator consisting of a stator having a field-magnet in the form of a permanently-magnetized ring wound from a continuous steel ribbon, symmetrically-located polar projections secured to said ring, coils wound on said polar projections, an inductor mounted on a revoluble shaft whose axis is coincident with the axis of said stator and constituting a rotor, a circuit-breaker rigidly secured to said stator, a cam mounted on the rotor-shaft and adapted to actuate said breaker at the period of maximum current generation, a transformer, sparking electrodes included in the secondary circuit of the transformer, and means for shifting said stator and breaker relative to said rotor and cam respectively so as to modify at will the time of sparking.

2. A sparking ignition system comprising an alternating-current generator of the inductor type, said generator consisting of a stator having a field-magnet in the form of a permanently-magnetized ring wound from a continuous steel ribbon, symmetrically-located polar projections secured to said ring, coils wound on said polar projections, an inductor mounted on a revoluble shaft whose axis is coincident with the axis of said stator and constituting a rotor, a circuit-breaker rigidly secured to said stator, said breaker comprising a chambered casing filled with a non-volatile electrically-conductive liquid, terminals supported in said liquid, one of said terminals being fixed in position and insulated from the casing, a movably-supported plunger to which the other terminal is secured, a cam mounted on the rotor-shaft and adapted to actuate said breaker at the period of maximum current generation, a transformer, sparking electrodes included in the secondary circuit of the transformer, and means for shifting said stator and breaker relative to said rotor and cam respectively so as to modify at will the time of sparking.

3. In an apparatus of the character described the combination with an alternating-current generator comprising a rotor and a stator, a supporting-frame for said stator, a circuit-breaker seated in an opening in said frame, a yoke carried by the frame and a clamp supported by said yoke and adapted to bear against the head of the breaker to force it to its seat.

4. In an apparatus of the character described the combination with an alternating-current generator comprising a rotor and a stator, a supporting-frame for said stator, a circuit-breaker seated in an opening in said frame, a yoke pivotally carried by said frame and a clamp supported by said yoke and adapted to bear against said breaker to force it to its seat.

809,269. COILING-MACHINE. Marcellus C. Lovejoy, Portland, Me., assignor to Edward M. Lang, Jr., Portland, Me. Original application filed Feb. 27, 1904. Serial No. 195,543. Divided and this application filed July 13, 1905. Serial No. 269,442.

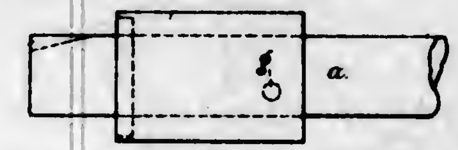

Claim.—1. The combination of a shaft, a former provided with a circular opening and a circular recess in the end around said opening, means whereby said former is prevented from revolving while free to slide upon the shaft and a passage extending from end to end of said former of equal width with said circular recess, substantially as set forth.

2. The combination of a shaft, a former provided with a circular opening and also a circular recess in the end around the opening, an opening in the face of said recess connecting with a slot or passage extending to the rear end of said former and conforming in shape to the material to be treated and means whereby said former is prevented from revolving while free to slide upon said shaft, substantially as described.

3. The combination of a shaft, a former provided with a circular opening for the reception of the shaft and with a circular recess in the end thereof around said opening, an opening in the face of said recess extending diagonally rearward through said former and within the walls thereof of equal width and of a shape conforming to the material to be treated, substantially as described.

809,270. TOY. Isaac N. Phipps, Mount Sterling, Ky. Filed Nov. 14, 1904. Serial No. 232,866.

Claim.—1. A toy comprising a member provided with an opening, a spring within said opening whose one end is secured to said member, the free end of said spring extending beneath said member, a second member provided with studs or protrusions adapted to engage the free end of said spring, a portion of said second member adapted to take into the opening in said first member and through the spring therein, mechanism secured to said first member, said second member provided with a second stud or protrusion adapted to engage with said mechanism on the first member, means secured to said first member and engaging with said mechanism whereby said mechanism is disengaged from the second stud or protrusion and the second member released and subjected to the action of the spring, substantially in the manner shown and for the purpose described.

2. A toy comprising a member having an opening therein, a coil-spring secured within said opening, the free end of said spring extending beneath said member, a second member, two sets of studs or protrusions on the upper face of said second member, the second member provided with a spindle portion adapted to take through the opening in the first member, the free end of the said spring adapted to engage with one set of said studs or protrusions, a spring-controlled lever secured to said first member and adapted to engage with the other set of said studs or protrusions, and a trigger adapted to engage with said spring-controlled lever whereby the latter may be disengaged from the stud or protrusion on said second member, and the latter subjected to the action of the spring, substantially as shown and for the purpose described.

3. A toy comprising a member having an opening therein, a coil-spring within said opening, one end of which is secured to said member and its free end extending slightly outside of said opening, a second member provided with a stud or studs on its upper surface, said second member adapted to take into the opening in said first member and adapted to be engaged by the free end of said spring, spring-controlled mechanism on said first member and adapted to engage with said second member to retain it in the desired position, and means secured to said first member for releasing said spring-controlled mechanism from the second member, whereupon the latter is subjected to the action of the spring, substantially as shown and for the purpose described.

4. A toy comprising a member having an opening therethrough, a coil-spring within said opening, one end of which is secured to said member, while the other end terminates in a hook, a second member provided with studs or protrusions on its upper surface, said second member provided with a spindle adapted to take through the opening in said first member and inside of the coil-spring, said studs or protrusions being in line with the hook end of the said spring and adapted to engage therewith, mechanism pivotally secured to said first member and adapted to engage with said second member and retain it at the desired point, and means pivotally secured to said first member, and adapted to engage said mechanism to release the second member and subject it to the action of the spring, substantially in the manner and for the purpose described.

5. A toy comprising a member having an opening therethrough, a coil-spring within said opening, whose one end is secured to said member and the other terminating in a hook, a second member provided with studs or protrusions on its upper surface in line with the hook end of said spring, said second member also provided with a stud or studs at a different distance from the center from the first-mentioned stud or studs, a spring-controlled mechanism pivotally secured to said first member and adapted to engage with the last-mentioned stud or studs, and means secured to said first member and adapted to engage with said mechanism to release it from engagement with the stud or studs whereupon the second member is subjected to the action of the spring, substantially as shown and in the manner described.

809,271. VISE. Francis M. Stambaugh, St. Louis, Mo., assignor to The American Brake Company, St. Louis, Mo., a Corporation of Missouri. Original application filed Mar. 7, 1905, Serial No. 248,849. Divided and this application filed May 15, 1905. Serial No. 260,477.

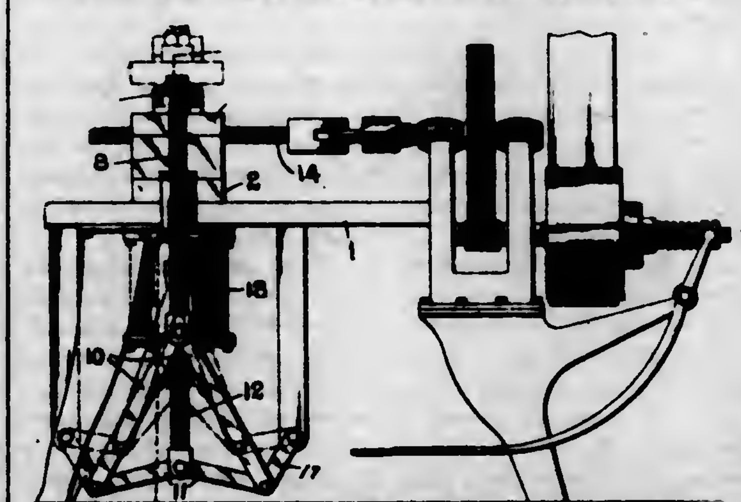

Claim.—In a metal-working machine, a base carrying a rigid jaw provided with a facing of soft metal, a coöperating jaw faced with soft metal and carried by a movable cross-head, a plurality of pitmen connected to said cross-head and moving in guideways formed in the base, toggle-levers connected to the lower end of each pitman, a cylinder carried by said base, a fluid-actuated piston mounted in said cylinder for moving the cross-head to clamp the jaws together and provided with a piston-rod, compound toggle-levers joined to the toggle-levers on the pitmen and connected at their respective ends to the piston-rod and to stationary parts of the base, and means for moving the piston to disengage the clamping-jaws; substantially as described.

809,272. QUICK-ADJUSTING MICROMETER. LARET S. STARRETT and JOHN A. ASHLL, Athol, Mass., assignors to The L. S. Starrett Company, Athol, Mass., a Corporation of Massachusetts. Filed May 26, 1905. Serial No. 262,388.

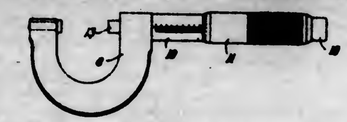

Claim.—1. A micrometer-gage comprising a frame or body, a self-opening split nut, a micrometer-screw extending through said nut, and means for automatically compressing said nut to engage it with the screw, and for manually releasing the nut-prongs from such compression and engagement, by direct endwise pressure applied axially, for the purpose set forth.

2. A micrometer-gage, comprising a frame or body, a self-opening split nut, a micrometer-screw extending through said nut, and means for automatically compressing said nut to engage it with the screw, and for manually releasing the nut-prongs from such compression and engagement, to permit free reciprocation, the surfaces of the frame, fixed barrel and rotary sleeve being symmetrical and free from any apparent adjusting devices, substantially as set forth.

3. A micrometer comprising a frame or body and a spindle and rotatable sleeve secured to each other and to parts having a threaded engagement with a fixed part of the instrument, in combination with means for interrupting such threaded engagement and for imparting a free sliding movement to said spindle and sleeve with relation to the frame and parts fixed thereon, and with an inclosed terminal catch limiting such sliding movement and preventing accidental dismemberment, for the purpose set forth.

4. A micrometer comprising a frame or body and parts fixed thereon including a long hollow screw, in combination with a spindle within said screw, a rotatable sleeve concentric therewith and an intermediate threaded part adapted to engage the threads of said screw for adjustment by rotation, and with means for interrupting such threaded engagement and imparting a sliding movement to said spindle and sleeve, and a concealed stop device adapted to engage a recess within said sleeve to properly limit such sliding movement, for the purpose set forth.

5. A quick-adjusting micrometer, comprising four rigid parts connected together, and consisting of the frame or body at one end of the instrument, an integral tubular extension thereof, a longitudinally-graduated cylindrical barrel and an inclosed hollow screw, in combination with four movable parts united together at the other end of the instrument and comprising the axial spindle, the inclosing rotatable sleeve, the intermediate split nut surrounding said screw and an actuating-collar for said nut, these four parts adapted for adjustment by rotation under threaded engagement and for quick, sliding adjustment when threads are disengaged, substantially as set forth.

6. A quick-adjusting micrometer comprising the frame or body, the graduated cylindrical barrel fixed thereon, and the elongated hollow screw projecting rigidly from the frame, in combination with the axial spindle within said screw, the rotatable sleeve, the intermediate split nut surrounding said screw and the adjustable nut-actuating collar with terminal head and spring, serving to disengage and reengage said nut and screw, substantially as set forth.

7. The improved micrometer described, embodying the frame 8, the hollow screw 12 projecting rigidly therefrom, and the rigid, longitudinally-graduated, cylindrical barrel 10 concentric therewith, in combination with the axial spindle 13, the shouldered terminal cap 16 fixed thereon, the outer rotatable sleeve secured to the periphery of said cap and the split nut 14 held by its tubular end upon a reduced shoulder of said cap, and with the nut-collar 17 having extensions 18 projecting through recesses in said cap and connected to the head 19, for the purpose set forth.

809,273. LIQUID-MEASURING DEVICE. FRANK S. TURNER, SUMNER FRANK, and WARD B. MARTIN, Genoa, Ohio, assignors, by mesne assignments, to W. B. Martin. Filed July 13, 1903. Serial No. 165,902.

Claim.—1. In a liquid-measuring device, the combination, with a liquid-supply reservoir, of a pipe communicating at one end with the liquid-receiving interior space of the reservoir, and contained within the reservoir, which pipe is provided with a valved discharge branch between the ends of the pipe and declines toward its said branch from both ends; a row of measuring vessels contained within the reservoir along the pipe and communicating with the passage-way formed by and interiorly of the said pipe, and the valves arranged to control continuity in the said passage-way, substantially as and for the purpose set forth.

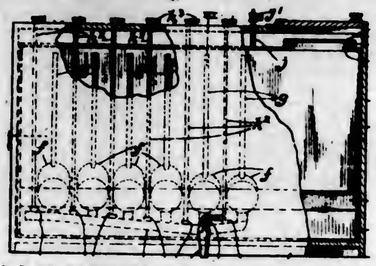

2. In a liquid-measuring device, the combination, with a liquid-supply reservoir, of a pipe arranged within the liquid-receiving interior space at the bottom and forward side of the reservoir and communicating at one end with the said space, which pipe is provided with a valved discharge branch between the ends of the pipe, and declines toward its said branch from both ends; a row of measuring vessels contained within the reservoir along the aforesaid pipe and having bottoms declining toward the pipe, which vessels communicate at the lower end of the said bottoms with the passage-way formed by and interiorly of the said pipe, and the valves arranged to control continuity in the said passage-way, substantially as and for the purpose set forth.

3. In a liquid-measuring device, the combination, with a liquid-supply reservoir of a row of vented measuring vessels within the lower portion of the reservoir, which row is arranged widthwise of the reservoir; a pipe arranged at the bottom and longitudinally of the row of measuring vessels and provided with a valved discharge branch extending outside of the reservoir, which pipe is contained within the liquid-receiving interior space of the reservoir and communicates with the interior chambers of the aforesaid vessels, and normally open valves arranged to control continuity in the passage-way formed by and within the said pipe, substantially as and for the purpose set forth.

4. In a liquid-measuring device, the combination, with a liquid-supply reservoir, of a row of vented measuring vessels contained within the lower portion of the liquid-receiving interior space of the reservoir, which vessels have their bottoms declining toward the front of the reservoir and have outlets at the lower ends of the said bottom; a pipe arranged within the liquid-receiving interior space of the reservoir and extending longitudinally of the aforesaid row of vessels, which pipe is provided with a valved discharge branch extending outside of the said space and communicates with the aforesaid outlets, normally open valves arranged to control continuity in the passage-way formed by and within the said pipe and arranged as required to render any one or more of the aforesaid vessels drainable through the said pipe and the connected branch without moving or interfering with the contents of the remaining vessel or vessels, and means for manipulating the said valves from the exterior of the reservoir.

5. In a liquid-measuring device, the combination, with a liquid-supply reservoir having a declining bottom and a trough arranged at the lower end of the said bottom and in open relation with the chamber of the reservoir, of a plurality of vented measuring vessels arranged over the said bottom and contained within the chamber of the reservoir, a pipe arranged within and longitudinally of the said trough and provided with a valved discharge branch extending outside of the said trough, which pipe is in open relation with the chambers of the said vessels, the said normally open valves arranged to control continuity in the passage-ways formed by and within the said pipe, substantially as and for the purpose set forth.

6. In a liquid-measuring device, the combination, with a liquid-supply reservoir having a declining bottom and a trough arranged at the lower end of the said bottom and in open relation with the chamber of the reservoir, of a row of vented measuring vessels arranged over the said bottom and contained within the chamber of the reservoir; a pipe arranged within and longitudinally of the said trough and provided with a valved discharge branch which extends outside of the said trough and having upwardly-projecting tubular members which connect at their lower ends with the passage-way formed within and extending longitudinally of the said pipe and communicate, at the upper end, with the chamber of the different measuring vessels, respectively, which pipe has one of the said upwardly-projecting members forming one end of the said pipe and is open at its opposite end; normally open valves arranged to control continuity in the aforesaid passage-way between the measuring vessels, and another normally open valve arranged to control continuity in the said passage-way between the open extremity of the pipe and the adjacent side of the adjacent measuring vessel.

809,274. SPOOL-CABINET. JOHN A. EPLEY, Iuka, Kans. Filed Apr. 24, 1906. Serial No. 257,944.

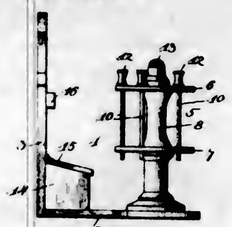

Claim.—The herein-described spool-cabinet consisting of a base 2, an upright back 3 secured to said base and provided near its upper end with an opening 18, whereby said cabinet may be suspended from a wall or other support, a box 14 secured at the juncture of said base and back and provided with a cover 15 hinged to the back 3, a rack 16 projecting from and secured to the back and provided with openings 17 for supporting scissors and other implements, in upright position against the back 3, a spool-rack comprising a pair of horizontally-disposed disks 6, 7 connected together by a centrally-disposed sleeve 8, a standard 4, consisting of a rod passing through said disks and sleeve and supported upon the base 2, an annular series of removable spool-receiving spindles 10 provided with heads 12, said spindles passing through the disks 6, 7 to retain spools thereon, and a removable needle-cushion 13 arranged on the upper end of the standard 4, essentially as described.

809,275. SPIRIT-LEVEL. CALVIN S. BROWN, Toledo, Ohio, and JOSEPH N. CLOUSE, St. Louis, Mo. Filed Jan. 14, 1904. Renewed Dec. 1, 1905. Serial No. 290,331.

Claim.—1. In a spirit-level movement fitted to and secured in the mortise in the wooden beam, the combination of the bed-frame F to which is pivoted the various working parts consisting of the gear-segment G with its tube H and spirit-vial I and double index-finger N also the shaft J with its worm-gear K, thumb-nut L spring f^3 and compression lock-plate M with its nut m', spring m^3, and hook m^4, all working together to operate the spirit-vial I and the double index-finger N, substantially as shown and described.

2. In a spirit-level movement for the purpose of obtaining inclines from the level in degrees or in fractions of inches and deflections from a vertical line in the plumb in degrees or in fractions of inches, the scale segment-plate f^4 provided with a double scale in combination with the double index-finger N, the gear-segment G, the spirit-vial I, and its tube H, and the operating-shaft J with its worm-gear K, spring f^3 and thumb-nut L, substantially as shown and described.

3. In a spirit-level movement the works provided with a bed-plate secured to the beam in its mortise the said works consisting of the gear-segment G, provided with the spirit-vial I and tube H, the worm-gear K with its shaft J provided with spring f^3 nut f' and squared portion f^2 and the thumb-nut L with its flange f' sliding on the said squared portion f^2, also the compression lock-plate M, with its stop-nut m', coiled spring m^3 and yoke-hook m^4, said thumb-nut L and stop-nut m' extending to the surface of the beam forms a means of operating the gear-segment G, with its parts attached, substantially as shown and described.

4. In a spirit-level, the general combination of the wooden beam with its mortises, the perforated metal plates with glass plates back of them covering the said mortises, the movements secured in the said mortises consisting of the bed-frame having a double scale segment-plate, the gear-segment plate pivoted to the said bed-frame and mounted with the tube and spirit-vial, the adjustable double index-finger secured to the said gear-segment, the worm-gear, coiled spring, and thumb-nut for operating said segment-gear, the compression lock-plate with its stop-nut coiled spring and yoke-hook holding said thumb-nut in compressed position, substantially as shown and specified.

REISSUES.

12,428. SHUTTLE-BRAKE. JEAN LAFORET, Etoile, France, assignor to Albert B. Strange, New York, N. Y. Filed Dec. 21, 1904. Serial No. 237,867. Original No. 763,643, dated June 14, 1904.

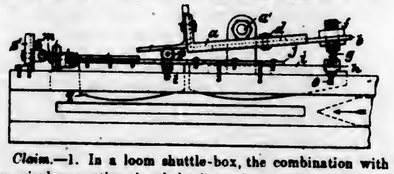

Claim.—1. In a loom shuttle-box, the combination with two successively-operative shuttle-brakes, of an oscillatory beam bearing at its ends respectively against the one and other of said brakes for the purpose set forth.

2. In a loom shuttle-box, the combination with two successively-operative pivoted shuttle-brakes, of an oscillatory beam having adjustable bearing at its ends respectively against the one and other of said brakes for the purpose set forth.

3. In a loom shuttle-box, the combination with two successively-operative shuttle-brakes, of an oscillatory beam bearing at one end positively against the rearmost brake and at the other end resiliently against the foremost brake for the purpose set forth.

4. In a loom shuttle-box, the combination with two successively-operative shuttle-brakes, of an oscillatory beam adjustable in length and having horizontally-adjustable ends bearing respectively against the one and other of said brakes for the purpose set forth.

5. In a loom, the combination, with the batten or lay structure and with the shuttle, of two successively-operative shuttle-brakes, and an oscillatory beam adapted to bear at its ends respectively against the one and the other of said brakes, said shuttle-brakes being spaced a distance corresponding to the length of the shuttle whereby to bear against both end portions thereof when the shuttle is completely boxed, substantially as described.

6. In a loom, the combination, with the batten or lay structure and with the shuttle, of two successively-operative shuttle-brakes, and an oscillatory beam adapted to bear at its ends respectively against the one and the other of said brakes and against one of them resiliently, said shuttle-brakes being spaced a distance corresponding to the length of the shuttle whereby to bear against both end portions thereof when the shuttle is completely boxed, substantially as described.

12,429. WELT-MAKING MACHINE. GEORGE H. ROLLINS, East Bridgewater, Mass. Filed July 12, 1905. Serial No. 269,417. Original No. 743,794, dated Jan. 5, 1904.

Claim.—1. A machine of the kind described, comprising means for feeding a welt-strip, means for holding said welt-strip, means cooperating therewith for making a transverse cut in one face of said strip, and means for limiting the length of the transverse cut in the strip to fall short of the outer edge of the strip.

2. A machine of the kind described, comprising means for feeding a welt-strip, and automatic cutting mechanism for making a series of transverse cuts in one side of said welt, less in depth than the thickness of the welt and stopping short of the outer edge of the strip.

3. A machine of the kind described, comprising means for feeding a welt-strip, a holder for the strip, and cutting mechanism for removing the leather therefrom to form a series of grooves within and extending transversely of one face of said strip, and means for rocking said holder for controlling the length of the groove with relation to the width of the strip.

4. In a machine of the kind described, a holder for a welt-strip

4. In a machine of the kind described, a holder for a welt-strip, a cutter coöperating therewith for cutting said strip, said holder having a passage conforming in shape and size to the welt-strip and substantially embracing the strip, said passage being adjustable for different thicknesses of strips.

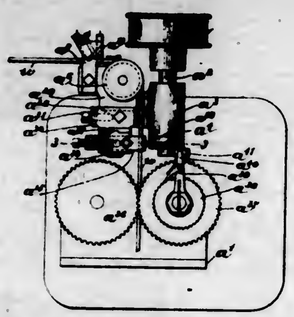

5. In a machine of the kind described, a holder for a welt-strip, a cutter coöperating therewith for removing transverse grooves of material from one face of said strip less in length than the width of the strip, and means for varying the depth of the grooves formed.

6. In a machine of the kind described, a holder for a welt-strip, a cutter having a blade acting intermittently on and transversely cutting said strip on one side at intervals of its length, and means for varying the angular position of said holder with relation to said cutter to change the length of the cuts.

7. In a machine of the kind described, a holder for a welt-strip, a cutter coöperating therewith for cutting said strip, said holder substantially embracing the strip, and means for varying the angular position of said holder with relation to said cutter.

8. In a machine of the kind described, a holder for a welt-strip, a cutter coöperating therewith for cutting said strip, said holder containing means for bending said welt-strip transversely to its length.

9. In a machine of the kind described, a holder for a welt-strip, a cutter coöperating therewith for cutting said strip, said holder being adjustable for different thicknesses of strips, and also adjustable toward and from said cutter.

10. A machine of the kind described, comprising a cutter, for cutting a welt-strip and means for bending said strip opposite said cutter in a direction transverse to its length.

11. In a machine of the kind described, a holder for a welt-strip comprising opposite parts for substantially embracing said strip, one of said parts having a deflecting device for engaging the welt on one side and bending the adjacent edge thereof but of line with the rest of the welt.

12. In a machine of the kind described, a holder for a welt-strip comprising two parts and means for adjusting the same toward and from each other for different thicknesses of strips, one part having a slotted portion for engaging the outer side of the welt, and a cutter for operating in said slot on said welt.

13. In a machine of the kind described, means for holding a welt-strip comprising a carrier, means for adjusting the same out and in, and a holder vertically adjustable on said carrier, said holder having an opening for the passage of the welt-strip.

14. A machine of the kind described, comprising a holder for a welt-strip, a cutter coöperating therewith for cutting transverse notches therein, and feeding mechanism for feeding the welt-strip, including a feed device having projections spaced apart to correspond with the notches cut in the strip, said projections entering said notches and feeding the strip thereby.

15. A machine of the kind described, comprising feeding mechanism, a cutter for making a series of transverse cuts in a welt-strip, cutting mechanism for longitudinally cutting said strip, and directing means for presenting said strip in different directions to said respective cutting devices.

16. In a machine of the kind described, a holder for a welt-strip, a cutter coöperating therewith for making transverse cuts in one face of said strip, and means for varying the length of the cuts.

17. In a machine of the kind described, a holder for a welt-strip, a cutter coöperating therewith for making transverse cuts in one face of said strip, and means for varying the location of said cuts toward and from the edge of said strip.

18. A machine of the kind described, comprising means for cutting a longitudinal groove in a welt-strip, and means for cutting a series of transverse cuts intersecting said longitudinal groove.

19. A machine of the kind described, comprising means for feeding a welt-strip, and means for longitudinally grooving said welt-strip, combined with automatic cutting means for simultaneously cutting transversely into the welt partially through from one side thereof.

20. A machine of the kind described, comprising means for feeding a welt-strip, and three coöperating cutters for simultaneously cutting respectively a longitudinal groove, a beveled edge, and a series of transverse cuts stopping short of the outer edge of the welt.

12,430. **TRUCK.** HERMAN WEBER, Colorado Springs, Colo. Filed May 26, 1905. Serial No. 262,508. Original No. 772,014, dated Oct. 11, 1904.

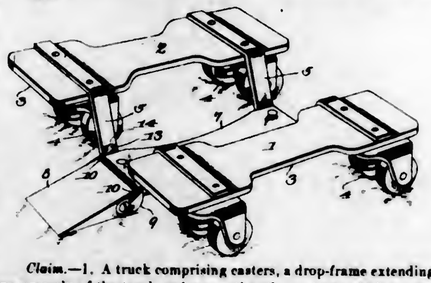

Claim.—1. A truck comprising casters, a drop-frame extending transversely of the truck and connecting the casters, said frame being permanently secured to and serving to maintain the casters in fixed relative positions, and a fixed load-receiving platform supported by said drop-frame.

2. A truck comprising casters, a load-receiving platform between them, a loading member extending from one end of the platform proper to a point beyond the casters, and a drop frame connecting the casters and serving as a support for such platform.

3. A truck comprising casters, and a load-receiving platform arranged between and supported by the casters, there being a loading member extending from the receiving end of the platform to a point beyond the line of the casters, the platform having a dished load-receiving surface disposed approximately in the horizontal plane of the revoluble elements of the casters.

4. A truck comprising wheeled bolsters, drop frame-bars connecting the bolsters, and a load-supporting platform carried by the bars between the bolsters.

5. A truck comprising a pair of wheeled bolsters, drop frame-bars connecting the bolsters, a load-supporting platform carried by the bars, and a skid coacting with the platform.

6. A truck comprising a pair of wheeled bolsters, drop frame-bars connecting the bolsters, a dished load-supporting platform carried by the frame-bars, and a skid pivotally connected with one of the frame-bars.

7. A truck comprising a pair of wheeled bolsters, drop frame-bars connecting the bolsters, a dished load-supporting platform carried by the frame-bars, and a wedge-shaped skid pivotally connected with one of the frame-bars.

8. A truck comprising a pair of bolsters, caster-wheels combined therewith, drop frame-bars connecting the bolsters, a dished load-supporting platform carried by the frame-bars, and a wedge-shaped skid connected with one of the frame-bars and provided on its under side with spurs.

12,431. **INDUCTION-MOTOR.** ARE L. CUSHMAN, Concord, N. H., assignor, by direct and mesne assignments, to The Cushman Electric Company, Concord, N. H., a Corporation of Maine. Filed Nov. 19, 1904. Serial No. 233,541. Original No. 726,234, dated Apr. 14, 1903.

Claim.—1. In an induction-motor, a secondary member provided with a secondary winding having a plurality of elements arranged in multiple arc, all adapted to carry currents in one direction only, any desired number of which may be used at the same time, and each of which when in use acts as an effective element of the winding contributing to the polarization of the secondary member, and means carried by the secondary member for bringing said elements one at a time into action and for removing them from action, said means admitting the current fully to each element as such element is brought into action.

2. In an induction-motor, the combination of a secondary winding made up of elements of low specific resistance, and means for forming a closed induced circuit from a part only of said elements so as to reduce the current induced in said secondary at starting, and means for bringing into action additional elements as the motor speeds up.

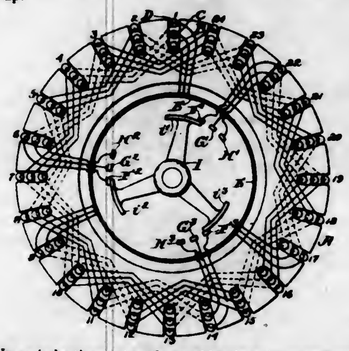

3. In an induction-motor, the combination of a secondary winding made up of elements of low specific resistance, means for forming a closed circuit from part of said elements, and means for forming additional closed circuits from other elements as the motor speeds up.

4. In an induction-motor, the combination of a secondary winding made up of elements of low specific resistance, means for forming a closed circuit from a part of said elements and means for forming additional closed circuits in multiple arc therewith from other elements as the motor speeds up.

5. In an induction-motor, the combination of a plurality of elements part of which form star-connected closed circuits and means for connecting others of said elements to form additional star-connected closed circuits and disconnecting them as desired.

6. In an induction-motor, the combination of a plurality of elements part of which are connected in closed circuit star fashion and means for connecting others of said elements in closed circuits star fashion and in multiple arc with said first star-connected elements.

7. In an induction-motor, the combination of a winding made up of a plurality of elements of low specific resistance, a switch for gradually bringing said elements into and removing them from action, and means for operating said switch.

12,432. **SKYLIGHT.** JOHANNES DREKHARDT, Berlin, Germany, assignor to William F. Pfaus, New York, N. Y. Filed Oct. 14, 1905. Serial No. 282,969. Original No. 745,310, dated Nov. 24, 1903.

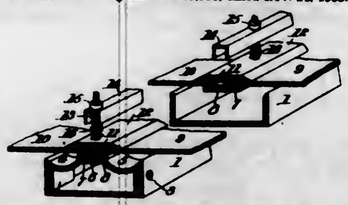

Claim.—1. A roof structure comprising supporting-bars, means carried thereby for supporting the adjacent edges of glass panes, uprights extending from said bars between the panes, and bars supported by said uprights above the panes and parallel with the supporting-bars.

2. A roof structure comprising supporting-bars, brackets supported by these bars at a suitable distance from each other, vertical bolts projecting from these brackets, flat iron bars connecting the brackets of one bar with each other, elastic strips on said iron bars serving as supports for the edges of the panes of glass, elastic strips covering the adjacent edges of the panes of glass, protecting-caps covering said elastic strips, springs for pressing said caps and consequently the edges of the panes of glass firmly on their seats, and bars resting on set-offs on the upper ends of the bolts running parallel to the supporting-bars substantially as described and shown and for the purpose set forth.

3. Improved bars used for the support of panes of glass constituting the roofs of greenhouses and other glass-covered buildings, comprising in combination supporting-bars, brackets supported by these bars at a suitable distance from each other, vertical bolts projecting from these brackets, flat iron bars connecting the brackets of one bar with each other, elastic strips on said iron bars serving as supports for the edges of the panes of glass, elastic strips covering the adjacent edges of the panes of glass, protecting-caps covering said elastic strips, spiral springs coiled around the vertical bolts pressing said caps and consequently the edges of the panes of glass firmly on their seats, and bars resting on set-offs on the upper ends of the bolts running parallel to the supporting-bars substantially as described and shown and for the purpose set forth.

4. Improved bars used for the support of panes of glass constituting the roofs of greenhouses and other glass-covered buildings, comprising in combination U-shaped iron bars, ⊓-shaped brackets inserted into these bars at a suitable distance from each other, two grooves in the upper surface of said brackets forming bridges between them, vertical bolts screwed into these bridges, flat iron bars connecting the bridges of one bar with each other, felt strips on said iron bars serving as supports for the edges of the panes of glass, felt strips covering the adjacent edges of the panes of glass, protecting-caps covering said felt strips, spiral springs coiled around the vertical bolts pressing said caps and consequently the edges of the panes of glass firmly on their seats, and ⊓-shaped iron bars resting on set-offs on the upper ends of the bolts running parallel to the supporting-bars, substantially as described and shown and for the purpose set forth.

5. A roof structure comprising channel-shaped supporting-bars, brackets having their ends turned down and fitted within the sides of the channel-shaped bars, said brackets being secured to the said bars, means for supporting the adjacent edges of glass panes, uprights extending between the panes, and bars supported by said uprights above the panes and parallel with the supporting-bars.

12,433. **HEEL-BUILDING MACHINE.** WILLIAM WOLFE, Batavia, Ohio, assignor to The American Heel Machine Company, Cincinnati, Ohio, a Corporation of Ohio. Filed May 29, 1905. Serial No. 262,948. Original No. 760,768, dated May 24, 1904.

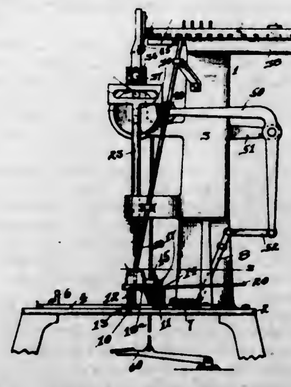

Claim.—1. In a heel-building machine, a plurality of sectional and independently-adjustable plates for engagement with the edges of heel-lifts, and a carrier for receiving and moving the heel-lifts into engagement with said adjusting-plates, substantially as described.

2. In a heel-building machine, a plurality of independently-adjustable plates adapted to adjust a pile of heel-lifts, a carrier for supporting the lifts, and a gage carried by the carrier and serving in connection with the latter to force the lifts into engagement with the plates, substantially as described.

3. In a heel-building machine, a plurality of independently-adjustable plates adapted to adjust a pile of heel-lifts, a carrier for the compilation of heel-lifts, a gage on the carrier serving in connection with the plates to engage the heel-lifts and form the heel-blank, means for reciprocating the carrier, and means for cushioning said movement, substantially as described.

4. In a heel-building machine, a bed-plate having guides, a car-

rier engaging said guides, a pair of sectional and independently-adjustable heel-lift-adjusting devices carried by the bed-plate and extending over the carrier, a third heel-lift-adjusting device carried by the bed-plate and held in position for engagement by the rear edge of the heel-blank, and means for moving the carrier to move the taps or lifts into engagement with the said adjusting devices, substantially as described.

5. In a machine of the class described, a bed adjusting devices on the bed, a perforated nailing-block for engaging over the top of the blanks, means for feeding nails to the perforations, a nail-driver, an actuating-shaft, connections between the shaft and driver, a blank-supporting carrier, and connections between said driving-shaft and carrier for moving the latter into position for the nail-driving operation, substantially as described.

6. In a heel-building machine, a bed, heel-lift-adjusting devices on said bed, a heel-blank carrier, a perforated nail-block carrier, a nail-driver, a driving-shaft, connections between the said shaft and the nail-driver, connections between the said shaft and the carrier adapted to actuate said members in time movements, and means for intermittingly operating the said shaft, substantially as described.

7. In a heel-building machine, a bed having a slideway, a heel-lift carrier adapted to be reciprocated in said slideway, devices for adjusting the edges of the heel-lifts located on the bed at the inner end of the slideway, a device on the carrier for adjusting the edges of the heel-lifts, and a nailing mechanism supported upon the bed over the inner end of said slideway.

8. In a heel-building machine, a bed having a slideway, a heel-lift carrier adapted to be reciprocated in said slideway, adjusting devices on the bed at the inner end of the slideway, adapted to engage the curved edges of the lifts when presented by the carrier, a device on the carrier for adjusting the straight edges of the lifts, and a nailing mechanism supported on the bed over the inner end of said slideway and between the stationary adjusting devices.

9. In a heel-building machine, a bed having a slideway, a heel-lift carrier adapted to be reciprocated in said slideway, devices for adjusting the edges of the heel-lifts located on the bed at the inner end of the slideway, a coöperating device on the carrier for adjusting the edges of the heel-lifts, a nailing mechanism supported upon the bed over the inner end of said slideway, and power-driven means for automatically actuating the driving mechanism and the sliding carrier, substantially as described.

10. In a machine of the class described, a bed, a nail-block over the bed, a carrier on the bed movable to and from position under the nail-block, devices located on the carrier and on the bed for engaging and adjusting the heel-lifts on the carrier, and power-driven means for driving a nail from the nail-block through the heel-lifts, and for moving the carrier into position for the nail-driving operation, substantially as described.

11. In a machine of the class described, a bed, a nail-block over the bed, a carrier on the bed moveble to and from position under the nail-block, a gage on the carrier for engaging the front edges of the heel-lifts, adjusting devices on the bed around the carrier for engaging the rear and side edges of the heel-lifts, and power-driven means for driving a nail from the nail-block through the lifts and for moving the carrier into position for the nail-driving operation, substantially as described.

12. In a heel-building machine, a bed, a carrier for supporting the heel-lifts, a nail block and driver for engaging the top of the lifts, adjusting and gage devices for engaging the edges of the lifts, driving mechanism and connections adapted to move the carrier to bring the compiled lifts into engagement with the adjusting devices under the nailing-block and to operate the driver, substantially as described.

13. In a heel-building machine, a bed, a carrier for supporting the heel-lifts, a nail block and driver for engaging the top of the lifts, adjusting and gage devices for engaging the edges of the lifts, a driving-shaft, connections between said driving-shaft, the nail driver and carrier adapted to move the carrier on the bed to engage the lifts with the adjusting devices under the nail-block, to drive a nail, and means for intermittingly operating said shaft, substantially as described.

DESIGNS.

37,766. FINGER-RING. JOSEPH LEWIS HERZOG, New York, N. Y. Filed Dec. 4, 1905. Serial No. 290,515. Term of patent 7 years.

37,766.

Claim.—The ornamental design for a ring as shown.

37,767. BRACELET. CHARLES SEAVER HURD, Newark, N. J. Filed Oct. 30, 1905. Serial No. 285,192. Term of patent 3½ years.

Claim.—The ornamental design for a bracelet, as shown.

37,768. SOUVENIR CRADLE. CHRISTOPHER C. BOYKIN, Norfolk, Va. Filed Oct. 17, 1905. Serial No. 283,186. Term of patent 3½ years.

Claim.—The ornamental design for a souvenir cradle, as shown.

37,769. SPOON OR FORK. CHARLES A. BENNETT, Taunton, Mass., assignor to Reed & Barton Corporation, a Corporation of Massachusetts. Filed Nov. 27, 1905. Serial No. 289,350. Term of patent 14 years.

Claim.—The ornamental design for a spoon or fork as shown.

37,770. ASH-TRAY. ARTHUR Q. WALSH, New York, N. Y. Filed Dec. 5, 1905. Serial No. 290,491. Term of patent 7 years.

Claim.—The ornamental design for an ash-tray, as shown.

37,771. PADLOCK. ARCHER W. DOUGLAS, St. Louis, Mo., assignor to Simmons Hardware Company, St. Louis, Mo., a Corporation. Filed Nov. 25, 1905. Serial No. 289,128. Term of patent 14 years.

37,771.

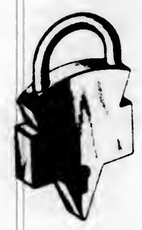

Claim.—The ornamental design for a padlock, as shown.

37,772. LAMP. IRVING H. ATWOOD, Amesbury, Mass. Filed Nov. 28, 1905. Serial No. 289,541. Term of patent 7 years.

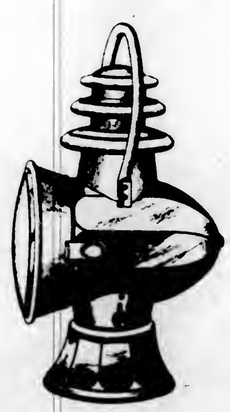

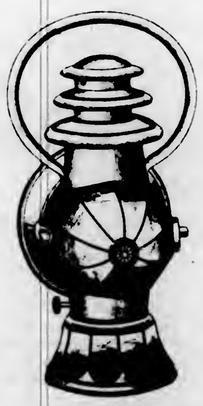

Claim.—The ornamental design for a lamp as shown.

37,773. VEHICLE-LAMP. ERNEST C. EVERETT, New York, N. Y., assignor to R. E. Dietz Company, New York, N. Y. Filed Nov. 20, 1905. Serial No. 288,333. Term of patent 7 years.

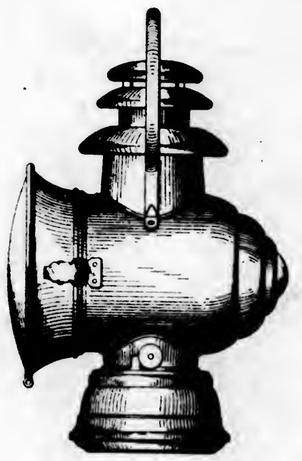

Claim.—The ornamental design for a vehicle-lamp as shown.

37,774. AUTOMOBILE-BODY. EDWIN R. THOMAS and JAMES R. KOHN, Buffalo, N. Y., assignors to E. R. Thomas Motor Company, Buffalo, N. Y. Filed Nov. 18, 1905. Serial No. 288,061. Term of patent 7 years.

Claim.—The ornamental design for an automobile-body, as shown.

TRADE-MARKS

37,775. WRAPPING-PAPER. FRANK O. WALTHER, New York, N. Y., assignor to Walther & Company, New York, N. Y., a Firm. Filed Oct. 19, 1905. Serial No. 283,551. Term of patent 14 years.

Claim.—The ornamental design for wrapping-paper, as shown.

37,776. BELT. DAVID HIRSCHMAN, New York, N. Y. Filed Nov. 27, 1905. Serial No. 289,273. Term of patent 3½ years.

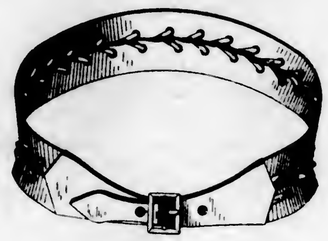

Claim.—The ornamental design for a belt, as shown.

TRADE-MARKS

PUBLISHED JANUARY 2, 1906.

The following trade-marks have been adjudged entitled to registration under the act of February 20, 1905, and are published in compliance with section 6 of said act. Said section provides:

"Any person who believes he would be damaged by the registration of a mark may oppose the same by filing notice of opposition, stating the grounds therefor, in the Patent Office within thirty days after the publication of the mark sought to be registered, which said notice of opposition shall be verified by the person filing the same before one of the officers mentioned in section two of this act. If no notice of opposition is filed within said time the Commissioner shall issue a certificate of registration therefor, as hereinafter provided for."

Marks which are stated to have been "Used ten years" are registrable under the last proviso of section 5 of said act, which is as follows:

"And provided further, That nothing herein shall prevent the registration of any mark used by the applicant or his predecessors, or by those from whom title to the mark is derived, in commerce with foreign nations or among the several States, or with Indian tribes, which was in actual and exclusive use as a trade-mark of the applicant or his predecessors from whom he derived title for ten years next preceding the passage of this act."

Section 14 of said act provides for the following fee:

"On filing notice of opposition to the registration of a trade-mark, ten dollars."

Ser. No. 830. FLOUR MADE FROM WHEAT. SILVERSON MILLING Co., New Ulm, Minn. Filed Apr. 8, 1905.

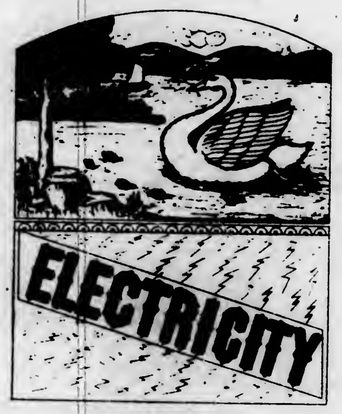

The representation of a landscape with a lake in the foreground upon which is the representation of a swan and the word "ELECTRICITY," all of which appear upon a panel which has on its lower portion the representation of electric flashes.

Ser. No. 1,218. INCANDESCENT GAS-MANTLES. FLASH SELF LIGHTING MANTLE Co., New York, N. Y., assignor to The Flash Self Lighting Mantle Company, a Corporation of Maine. Filed Apr. 12, 1905.

Ser. No. 1,218.

The word "FLASH," terminating in a zigzag, in which appear the words "SELF LIGHTING MANTLE."

Ser. No. 1,957. SMOKED HERRING. SLADE GORTON & Co., Gloucester, Mass. Filed Apr. 17, 1905.

The word "MARINER" on a banner placed across a marine scene. The marine scene shows a portion of the rear of a vessel and the upper portion of a man in oil clothing with a hand on the wheel. The waves appear in the background.

Ser. No. 2,060. DISTILLED AND CARBONATED WATERS. FRANK M. FIELEY, Washington, D. C. Filed Apr. 17, 1905.

Ser. No. 2,060.

SER. No. 2,080.

The letter "F" in a parallelogram or outline figure of a diamond.

SER. No. 2,648. SILK FABRICS. STEWART SILK COMPANY, Boston, Pa., and New York, N. Y. Filed Apr. 21, 1905.

PUREDI

The word "PUREDI."

SER. No. 2,784. HOOF-DRESSING. WILBUR F. YOUNG, Springfield, Mass. Filed Apr. 24, 1905.

TAROLEUM

The word "TAROLEUM."

SER. No. 2,925. SUPPOSITORIES. THE ELI LILLY & COMPANY, Indianapolis, Ind. Filed Apr. 24, 1905.

GLYCONES.

The word "GLYCONES."

SER. No. 2,946. WATCHES AND WATCH PARTS. THE HAMPDEN WATCH CO., Canton, Ohio. Filed Apr. 25, 1905.

The Dueber Watch Co

The words "THE DUEBER WATCH CO."

SER. No. 3,179. VENTILATORS, CHIMNEY-COWLS, AND VENTILATING-CAPS FOR AIR-SHAFTS AND LIKE DEVICES AND VENTILATED RIDGING. GLOBE VENTILATOR COMPANY, Troy, N. Y. Filed Apr. 26, 1905.

GLOBE

The word "GLOBE."

SER. No. 3,061. GOLD, BRONZE, SILVER, AND ALUMINUM PAINTS, AND GOLD, BRONZE, SILVER, AND ALUMINUM ENAMELS. GERSTENDORFER BROS., New York, N. Y. Filed Apr. 26, 1905. Used ten years.

The representation of a woman in Japanese costume holding in her right hand a fan and carrying a parasol over her left shoulder. To the side of the female figure is the word "JAPANESE."

SER. No. 3,454. WHEAT-FLOUR. J. B. CAMORS & CO., New Orleans, La. Filed Apr. 26, 1905.

PICKWICK

The word "PICKWICK."

SER. No. 3,489. HECTOGRAPHIC PRINTING APPARATUS. FELIX FALK DAUS, New York, N. Y. Filed Apr. 28, 1905.

"Tip Top"

The words "TIP TOP," inclosed in quotation-marks.

SER. No. 3,531. FINGER-RINGS. WM. LOEB & CO., Providence, R. I. Filed Apr. 28, 1905.

W.L.&CO.

The letters and character "W. L. & Co."

SER. No. 3,855. CALICOES. AMERICAN PRINTING COMPANY, Fall River, Mass. Filed May 1, 1905. Used ten years.

CALCUTTA
FANCIES

The word-symbol "CALCUTTA FANCIES."

SER. No. 3,646. COTTON PLAIDS, CHECKS, AND STRIPES, ALSO COTTON CHEVIOTS. SAMUEL A. CROZER & SON, Upland, Pa. Filed Apr. 29, 1905. Used ten years.

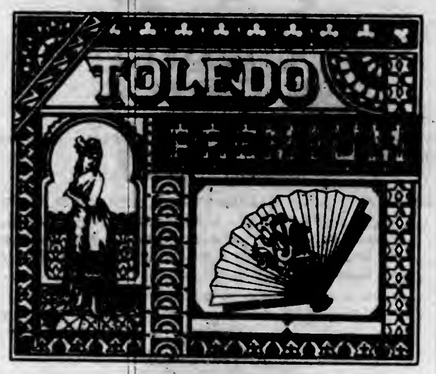

The words "TOLEDO PREMIUM," produced in two panels, one above the other, which panels are contained within a decorative border outlined by a line of clover-leaf figures, a line of star figures, and lines of connected arch figures with intervening spade-like figures, one corner of the said panels being distinguished by a diagonal-bar panel having zigzag figures therein and a semicircular panel decorated with a Grecian border, which latter decoration appears at one end of the panel containing the word "TOLEDO," and at the other end of the same panel a semicircular decorative figure is produced, including pointed figures, semicircular, plain, and plume figures. Beneath the word "PREMIUM" and the panel another panel appears, on which an open fan is represented bearing the monogram composed of the letters, character, and abbreviation "W L J & Co, and at one side of the fan panel another panel appears, upon which a representation of a standing female figure is produced dressed in a fancy costume, the figure panel and the fan panel being separated by a vertical panel having a lattice effect and semicircular figures appearing at the apparent openings therein.

SER. No. 3,849. CALICOES. AMERICAN PRINTING COMPANY, Fall River, Mass. Filed May 1, 1905. Used ten years.

A band of silver containing the word "AMERICAN."

SER. No. 3,853. CALICOES. AMERICAN PRINTING COMPANY, Fall River, Mass. Filed May 1, 1905.

A band of gold having a central longitudinal strip of red extending throughout its length.

SER. No. 3,957. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y. Filed May 2, 1905.

A panel having at each corner a shell-like figure and at the ends and sides a conventional leaf design surrounding an inner panel, at the center of which, within a two-lined circle, is a rosette. Surrounding said two-lined circle within an outer circle is a curved design set off by a background of parallel horizontal lines. The ends of the inner panel each contain a large fleur-de-lis pointing inward and ten smaller fleurs-de-lis pointing in the same direction.

SER. No. 4,297. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y. Filed May 5, 1905.

A device displaying at each end a conventional bearded face with a fillet. From a central rosette-like figure a conventional leaf-like double scroll extends toward each side, the rest of the design being covered by branching curved scrolls.

SER. No. 4,281. COFFEE. LEVERING COFFEE CO., Baltimore, Md. Filed May 4, 1905.

HUNTER

The word "HUNTER" and the representation of a man in hunting costume mounted on horseback and inclosed in an oval-shaped frame.

SER. No. 5,011. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y. Filed May 11, 1905. Used ten years.

A design displaying at the center a dark ace of spades with a light line along its outer border and displaying over its surface a curved scroll, a few light dots, and three rosette-like figures. Around the ace of spades is a light heart-shaped band having dark spots at its apex and also at its lower end on each side of the prong of the ace figure. At the bottom is a ribbon-like scroll extending outward from the center and connecting by a bow, sprays of leaves, and buds, which extend upward on each side of the central figure. Near the top of the heart-shaped design is a horizontal band shown at each side but hidden at the middle by the heart-shaped figure.

SER. No. 5,105. LAWN-MOWERS. ADELBERT B. CAMP, Springfield, Mass. Filed May 11, 1905. Used ten years.

Universal

The word "UNIVERSAL."

SER. No. 5,122. LINIMENT FOR EXTERNAL AND INTERNAL USE FOR THE CURING AND ALLEVIATION OF VARIOUS HUMAN AILMENTS. FRED. G. BOYNTON, Boston, Mass. Filed May 11, 1905. Used ten years.

JOHNSON'S
AMERICAN
ANODYNE LINIMENT.

The phrase "JOHNSON'S AMERICAN ANODYNE LINIMENT."

SER. No. 5,128. PURGATIVE MEDICINE. FRED. G. BOYNTON, Boston, Mass. Filed May 11, 1905. Used ten years.

SER. No. 5,128.

P P P
PARSONS'
PURGATIVE PILLS

The phrase "PARSONS' PURGATIVE PILLS," associated with the letters "P. P. P."

SER. No. 5,135. CANNED OYSTERS, FISH, CLAMS, CRABS, SHRIMP, AND LOBSTERS. A. BOOTH AND COMPANY, Chicago, Ill.; Baltimore, Md.; St. Paul, Duluth, and Minneapolis, Minn.; St. Louis, Mo.; Louisville, Ky.; Omaha, Nebr.; Indianapolis, Ind., and Port Arthur, Canada. Filed May 11, 1905.

An oval panel with rays radiating therefrom and forming a diamond-shaped figure, the oval panel being printed in red and bearing the word "BOOTH."

SER. No. 5,190. WHISKY. CHARLES F. RIORDAN, Boston, Mass. Filed May 11, 1905.

The letters "C F R," and beneath them a scroll design crossing the lower extended part of the "F."

SER. No. 5,228. LAGER-BEER. THE J. CHR. G. HUPFEL BREWING CO., New York, N. Y. Filed May 11, 1905.

The capital letter "H," which is inclosed in a rectangular panel formed by four connected and intersecting loops.

SER. No. 5,380. CLOTH FOR BOOKBINDING PURPOSES. CHASE CHIVERS, New York, N. Y. Filed May 12, 1905.

DURABLINE

The word "DURABLINE."

SER. No. 5,692. LAGER-BEER. S. S. PIERCE CO., Boston, Mass. Filed May 15, 1905.

The picture of a war vessel at sea located in an oval panel. Underneath the panel is the representation of an eagle holding a shield, on which is a lion rampant. Beneath the vessel is a scroll, and beneath the scroll on a rectangular panel is the word "OLYMPIA." The whole is surrounded by an ornamental border, in the upper corners of which are the letters "S S P," arranged as monograms on small shields.

SER. No. 5,732. LIQUID PAINT FOR METALLIC ROOFS. LEWIS C. BROWN, New York, N. Y. Filed May 15, 1905.

The representation of the head and shoulders of the sphinx, with the words "SPHINX TIN-ROOF PAINT" printed across the breast portion thereof. A ladder is inclined against the side of the head of the sphinx, and upon the sphinx, the ladder, and the ground are several brownies, all at work as though applying paint to the sphinx.

SER. No. 5,983. COTTON DUCK. MOUNT VERNON-WOODBERRY COTTON DUCK COMPANY, Baltimore, Md. Filed May 18, 1905. Used ten years.

WOODBERRY

U.S.ARMY DUCK

The words and abbreviations "WOODBERRY U. S. ARMY DUCK."

SER. No. 6,146. HOSIERY. BENJAMIN J. FISHER, Athens, Tenn. Filed May 20, 1905.

TOM SAWYER

The words "TOM SAWYER."

SER. No. 6,042. METAL-POLISH. AMERICAN METAL POLISH CO., Somerville, Mass. Filed May 16, 1905. Used ten years.

SILVA PUTZ

The words "SILVA PUTZ."

SER. No. 6,271. WHISKY. ARMIN BERKOWITZ, Hamilton, Ohio. Filed May 22, 1905.

CREMO

The word "CREMO" and a monogram composed of the letters "A B" and a picture of a bee, and a plantation scene showing a house, barns and field, a river, and a road on which is an ox-cart and two men on horses.

SER. No. 6,286. WHISKY. THE STAR DISTILLERY COMPANY, Cincinnati, Ohio. Filed May 22, 1905.

GOLDEN BLOSSOM

The words "GOLDEN BLOSSOM."

SER. No. 6,319. SYNTHETIC COAL-TAR PRODUCT MADE UP IN THE FORM OF TABLETS TO BE USED AS A CURE FOR HEADACHES, NEURALGIA, AND SIMILAR DISORDERS OF THE HUMAN SYSTEM. MILLER DRUG COMPANY, St. Louis, Mo. Filed May 23, 1905.

SER. No. 6,319.

Bromophine

The word "BROMOPHINE."

SER. No. 6,324. RUBBER WATER-BAGS AND RUBBER WATER-BOTTLES. THE SEAMLESS RUBBER CO., New Haven, Conn. Filed May 22, 1905.

A conventional fleur-de-lis with the letters "S R C," one letter appearing on each leaf.

SER. No. 6,430. WATERPROOF TEXTILE FABRICS. ARTHUR BERGL, New York, N. Y. Filed May 24, 1905.

The words "WATER QUEEN," appearing upon a solid black background and associated with the picture of a mermaid wearing a crown upon her head and holding extended in her right hand a mirror, and the words "SHOWER PROOF" underneath the picture.

SER. No. 6,745. RUBBER SUBSTITUTES. THE DERMATINE COMPANY LIMITED, Camberwell, London, England. Filed May 26, 1905. Used ten years.

The word "DERMATINE" on a scroll and the representation of a hippopotamus.

SER. No. 6,980. LEATHER-BOOTS, SHOES, AND SLIPPERS. CLARK-HUTCHINSON COMPANY, Boston, Mass. Filed May 29, 1905.

DEVELOPER

The word "DEVELOPER."

SER. No. 6,981. LEATHER BOOTS, SHOES, AND SLIPPERS. CLARK-HUTCHINSON COMPANY, Boston, Mass. Filed May 29, 1905.

ROYCROFT

The word "ROYCROFT."

SER. No. 6,983. LEATHER BOOTS, SHOES, AND SLIPPERS. CLARK-HUTCHINSON COMPANY, Boston, Mass. Filed May 29, 1905.

PROGRESS

The word "PROGRESS."

SER. No. 7,101. SHOE POLISHES AND BLACKINGS. FRANK H. FREEMONT, Boston, Mass. Filed May 31, 1905.

WAXOL

The word "WAXOL."

SER. No. 7,304. WHISKY. KATE A. BUCKLEY, Washington, D. C. Filed June 3, 1905.

"HOUSE OF DANIEL"

The word-symbol or phrase "HOUSE OF DANIEL," inclosed in quotation-marks.

SER. No. 7,662. WHISKY. DOWLING BROS. INC., Burgin, Ky. Filed June 8, 1905.

OLD D.L. MOORE DISTY

The words "OLD D. L. MOORE DISTY."

SER. No. 7,705. WHISKY. THE BERGIN & BRADY CO., Columbus, Ohio. Filed June 8, 1905.

DEEPWATER

The word "DEEPWATER."

SER. No. 7,806. PATENT-LEATHER. A. C. LAWRENCE LEATHER CO., Boston, Mass. Filed June 10, 1905.

BLACK DIAMOND

The words "BLACK DIAMOND," inclosed in a diamond-shaped figure.

SER. No. 7,858. JELLY PREPARATION. MICHIGAN CARBON WORKS, Detroit, Mich. Filed June 10, 1905.

Gelvet

The word "GELVET."

SER. No. 7,960. GOVERNORS FOR PUMPING-ENGINES. CHARLES P. MCMULLEN, New York, N. Y. Filed June 12, 1905.

IDEAL

The word "IDEAL."

SER. No. 8,010. HORSE-BLANKETS. WM. B. RILEY & CO., Philadelphia, Pa. Filed June 13, 1905. Used ten years.

STONE

The fanciful title "STONE."

SER. No. 8,058. TRADE-JOURNAL. M. T. RICHARDSON COMPANY, New York, N. Y. Filed June 13, 1905.

THE BLACKSMITH AND WHEELWRIGHT

The words "THE BLACKSMITH AND WHEELWRIGHT."

SER. No. 8,078. DYESTUFF. CASSELLA COLOR COMPANY, New York, N. Y. Filed June 14, 1905.

Immedial Black

The words "IMMEDIAL BLACK."

SER. No. 8,389. JAMS AND JELLIES. WILKINSON, GARDEN & CO., Newark, N. J. Filed June 17, 1905.

SER. No. 8,389.

IDEAL

The word "IDEAL."

SER. No. 8,538. GAME-BOARDS. CARROM-ARCHARENA CO., Ludington, Mich. Filed June 19, 1905.

CARROMS

The word "CARROMS."

SER. No. 8,606. HORSE-NAILS. UNION HORSE NAIL COMPANY, New Haven, Conn., and Chicago, Ill. Filed June 20, 1905.

The representation of two hands clasping each other.

SER. No. 8,611. HORSE-NAILS. UNION HORSE NAIL COMPANY, New Haven, Conn., and Chicago, Ill. Filed June 20, 1905.

NW

The initials "N W."

SER. No. 8,629. WHISKY. P. J. BOWLIN LIQUOR CO., St. Paul, Minn. Filed June 21, 1905. Used ten years.

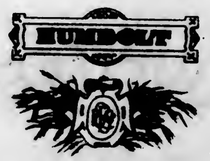

The word "HUMBOLT," displayed on an ornamental panel design, beneath which is a monogram composed of the letters and abbreviation P J B L Co within an oval outline on a shield design, at each side of which are heads and leaves of grain.

SER. No. 8,655. HIGH-SPEED TOOL-STEEL. FULLER BROTHERS & CO., New York, N. Y. Filed June 21, 1905.

CRESTA

The word "CRESTA."

SER. No. 8,691. BASE-BALLS. A. J. REACH Co., Philadelphia, Pa. Filed June 21, 1905. Used ten years

OFFICIAL
SOUTHERN LEAGUE

The words "OFFICIAL SOUTHERN LEAGUE."

SER. No. 8,694. BOXING-GLOVES. A. J. REACH Co., Philadelphia, Pa. Filed June 21, 1905. Used ten years.

The Corbett.

The words "THE CORBETT."

SER. No. 9,154. BOOTS, SHOES, AND SLIPPERS OF LEATHER OR TEXTILE MATERIAL, OR BOTH, AND SOLES THEREFOR. MOSES & ROSENS, New York, N. Y. Filed June 27, 1905.

Smart Set

The words "SMART SET."

SER. No. 9,156. BOOTS, SHOES, AND SLIPPERS OF LEATHER OR TEXTILE MATERIALS, OR BOTH, AND SOLES THEREFOR. MOSES & ROSENS, New York, N. Y. Filed June 27, 1905.

Red Dragon

The words "RED DRAGON."

SER. No. 9,319. WIRE ROPE. DURABLE WIRE ROPE Co., Boston, Mass. Filed June 30, 1905.

JUPITER

The word "JUPITER."

SER. No. 9,326. SILVER-PLATED HOLLOW WARE. INTERNATIONAL SILVER COMPANY, Meriden, Conn. Filed June 30, 1905. Used ten years.

The words "MERIDEN B. COMPANY," inclosed in a circle and surrounding a configuration of a shield and a diagrammatic representation of a pair of scales.

SER. No. 9,449. CREAM-SEPARATORS. THE DE LAVAL SEPARATOR COMPANY, New York and Poughkeepsie, N. Y. Filed June 30, 1905.

BABY

The word "BABY."

SER. No. 9,684. WHISKY. BACH AND GRIEWE, Cincinnati, Ohio. Filed July 3, 1905.

The word "INDEX," partially surrounded by fanciful scroll-lines, and a hand with the index-finger pointing to the word.

SER. No. 9,686. WHISKY. MANY, BLANC & Co., Chicago, Ill. Filed July 3, 1905. Used ten years.

The word "ETHYL," ornamented with fanciful scroll-lines beneath the word.

SER. No. 9,700. WHISKY. THE ULLMAN HERSTEIN Co., Cleveland, Ohio. Filed July 3, 1905. Used ten years.

D. T. GILMORE & SON

The name "D. T. GILMORE & SON."

SER. No. 9,718. WHISKY. THE D. KELLY Co., Columbus, Ohio. Filed July 3, 1905. Used ten years.

HILLS DALE

The word "HILLSDALE."

SER. No. 9,787. AUTOMOBILES. ST. LOUIS MOTOR CARRIAGE Co., St. Louis, Mo. Filed July 5, 1905.

The phrase "RIGS THAT RUN," in connection with a winged wheel, the phrase and wheel being associated with the words "ST. LOUIS MOTOR CARRIAGE CO." and "ST. LOUIS, MO."

SER. No. 9,850. REMEDY FOR THE CURE OF THROAT AFFECTIONS, SUCH AS WHOOPING COUGH, CROUP, AND HOARSENESS. THE GLENBURN MEDICINE Co., Findlay, Ohio. Filed July 6, 1905. Used ten years.

The words "DR. DRAKE'S GERMAN CROUP REMEDY," the word "CROUP" being formed by a large letter "C" and the remaining letters, "ROUP," on a panel.

SER. No. 9,921. MACHINE-OILS. H. R. DURKEE & Co., New York, N. Y. Filed July 8, 1905.

CHALLENGE

The word "CHALLENGE."

SER. No. 9,961. VARNISHES. THE AMERICAN VARNISH COMPANY, Chicago, Ill. Filed July 10, 1905. Used ten years.

GRANITE FINISH

The words "GRANITE FINISH."

SER. No. 9,968. VARNISHES. THE AMERICAN VARNISH COMPANY, Chicago, Ill. Filed July 10, 1905. Used ten years.

Floorene

The word "FLOORENE."

SER. No. 10,017. WHISKY. THE STANDARD DISTILLING Co., Cincinnati, Ohio. Filed July 11, 1905.

SER. No. 10,017.

GLADIATOR

The word "GLADIATOR," associated with a figure of a man dressed as a gladiator, holding in one hand a sword and in the other a shield and with his foot resting on the prostrate figure of a man, and inclosed in a rectangular panel.

SER. No. 10,025. WHISKY. THE STANDARD DISTILLING Co., Cincinnati, Ohio. Filed July 11, 1905.

SWEET CAPORAL
8 D Co

The words "SWEET CAPORAL" and a design of a monogram of the letters "8 D Co" within a circular outline bordered by ornamental scroll-lines.

SER. No. 10,029. WHISKY. THE J. W. EVERDEN Co., Buffalo, N. Y. Filed July 11, 1905.

ATEX

The word "ATEX," below which is a fanciful picture of the head of an old man with smooth shaven face and heavy gray hair.

SER. No. 10,135. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y. Filed July 12, 1905.

A rectangular design of scrolls. In each corner is a profile of a griffin-head with tongue protruding. In the center a conventional rosette appears within a circle.

SER. No. 10,139. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y. Filed July 12, 1905.

SER. No. 10,139.

A design in which a rectangular panel is shown having rounded projections at the sides and ends. The surface of the panel is covered by a conventional scroll, and in the center within two circles is an ornamental rosette.

SER. No. 10,141. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y. Filed July 12, 1905.

A rectangular design having a central dark panel with a border of circular figures. At the center of the panel is a wheel with light dots arranged about, and at each end is a scroll. Surrounding the panel is a delicate scroll suggesting a vine and leaves.

SER. No. 10,145. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y. Filed July 12, 1905.

An elaborate design having a central six-sided scroll inclosing a conventional figure which starts at the center and spreads toward each end. In each corner an elaborate scroll appears, which intertwines with the central scroll. Scattered over the design are many berry-like figures.

SER. No. 10,368. LACE-LEATHER. NEW YORK LEATHER BELTING CO., New York, N. Y. Filed July 13, 1905.

VICTOR

The word "VICTOR."

SER. No. 10,382. PILLS FOR DISEASES ARISING FROM A DISORDERED STOMACH OR TORPID LIVER. LAMBERT, CORLISS & CO., New York, N. Y. Filed July 13, 1905.

Pillikin

The word "PILLIKIN."

SER. No. 10,401. UNDERSHIRTS AND UNDERDRAWERS. ERLANGER BROS., New York, N. Y. Filed July 15, 1905.

B.V.D.

The letters "B. V. D."

SER. No. 10,473. PROPRIETARY MEDICINE, WHICH IS AN EXTERNAL AND INTERNAL ANTISEPTIC AND DISINFECTANT, ANTIPYRETIC, DIURETIC, ANODYNE, AND HYPNOTIC. SALO-SEDATUS CHEMICAL COMPANY, St. Louis, Mo. Filed July 17, 1905. Used ten years.

SALO-SEDATUS

The hyphenated word "SALO-SEDATUS."

SER. No. 10,482. ASEPTIC PREPARATION OF ERGOT OF RYE USED AS A HEMOSTATIC AND IN GYNECOLOGIC WORK. H. K. MULFORD COMPANY, Philadelphia, Pa. Filed July 17, 1905.

CORNUTOL

The word "CORNUTOL."

SER. No. 10,518. SEWING-MACHINES AND SEWING-MACHINE PARTS. HOUSEHOLD SEWING MACHINE CO., Providence, R. I. Filed July 18, 1905.

Marguerite

The word "MARGUERITE."

SER. No. 10,628. EMBROIDERY. ATLANTIC NOVELTY CO., New York, N. Y. Filed July 20, 1905.

The representation of a butterfly with outspread wings, together with the word "JETEVEUX."

SER. No. 10,641. GLAZED AND DULL OR "MAT" KID. KEYSTONE LEATHER CO., Philadelphia, Pa. Filed July 21, 1905.

The representation of a keystone with the head of a kid in the center and the word "KEYSTONE" above it and the word "KID" below.

SER. No. 10,790. CORSETS. WEINGARTEN BROS., New York, N. Y. Filed July 26, 1905.

LA DAUPHINE

The words "LA DAUPHINE."

SER. No. 10,919. BRUSHES FOR PAINTERS AND DECORATORS. HARLOW & GOODMAN, New York, N. Y. Filed July 27, 1905.

MURESCO

The word "MURESCO."

SER. No. 11,015. INSECT-POWDER. CARON CHEMICAL COMPANY, Philadelphia, Pa. Filed July 29, 1905.

The representation of the bust of a woman with her right hand uplifted, from which she is shaking or distributing powder from a box, all appearing on an elliptical panel, to the right and to the left of which, respectively, are shown four insects, comprising a beetle, bugs, roaches, ants, and fly, with their heads turned away from the panel, and the words "KLEAN-M-OUT above the panel."

SER. No. 11,102. CONDENSED MILK. BORDEN'S CONDENSED MILK CO., New York, N. Y. Filed Aug. 1, 1905. Used ten years.

FULL WEIGHT
BRAND

The words "FULL WEIGHT," associated with the word "BRAND."

SER. No. 11,242. STOGIES. R. & W. JENKINSON CO., Pittsburg, Pa. Filed Aug. 4, 1905. Used ten years.

Red Label

The words "RED LABEL."

SER. No. 11,272. CANDY. GEORGE B. HAZARD, Providence, R. I. Filed Aug. 4, 1905. Used ten years.

Anderson's

The word "ANDERSON'S."

SER. No. 11,243. CIGARS. R. & W. JENKINSON CO., Pittsburg, Pa. Filed Aug. 4, 1905.

The words "DUQUESNE CLUB" and the representation of a club-house of said club, the words "DUQUESNE CLUB" appearing upon panels or scrolls upon either side of the representation of the building, the panels being produced upon shield-like devices with torches across them, the shields being in the foreground of garlands of flowers, there being also suspended from the panel or scroll bearing the word "DUQUESNE" the representation of a fanciful coat of arms upon a shield, and from the scroll bearing the word "CLUB" is suspended a shield bearing a monogram of the letters and character "R & W J Co."

SER. No. 11,309. CANNED SALMON. JOSEPH G. MIELER, Brookfield, Wash. Filed Aug. 7, 1905. Used ten years.

ST. GEORGES BRAND

The name "ST. GEORGE'S BRAND," associated with a representation of St. George and the dragon within an oval border, the major axis of which is horizontal, and representations of the obverse and reverse of a medal of the "INTERNATIONAL FISHERIES EXHIBITION 1883," these words and figures appearing on the reverse, in connection with representations of a net, fishes, and an eel, and the obverse bearing the profile of Queen Victoria and the words "VICTORIA REGINA." The medal representations form circular figures at the respective ends of the major axis of the oval and partly overlap the oval border, and above them conventional representations of plumes project from the oval border.

SER. No. 11,810. CANNED SALMON. JOSEPH G. MIELER, Brookfield, Wash. Filed Aug. 7, 1905. Used ten years.

Mascot

The word "MASCOT."

SER. No. 11,812. CANNED SALMON. JOSEPH G. MIELER, Brookfield, Wash. Filed Aug. 7, 1905.

Forget-me-not

The name or brand "FORGET ME NOT."

SER. No. 11,878. SCOTCH WHISKY. FREDERICK R. WEST'S SUPREME, New York, N. Y. Filed Aug. 7, 1905.

The words and character "BLACK & BLUE," printed along the diagonal line of division between a black portion and a blue portion of a rectangular label.

SER. No. 11,451. NON-FERROUS ALLOYS. LUMEN BEARING COMPANY, Buffalo, N. Y. Filed Aug. 9, 1905.

The representation of a star bearing the word "LUMEN" and associated with the representation of a buffalo standing below the star, a pair of crucibles in the background behind the buffalo on opposite sides of the star, and a circular band surrounding these various features and bearing the words and abbreviations "LUMEN BEARING COMPANY, BUFFALO, N. Y."

SER. No. 11,529. BEER. JACOB RUPPERT, New York, N. Y. Filed Aug. 11, 1905.

The representation of an American-Beauty rose.

SER. No. 11,580. BEER. JACOB RUPPERT, New York, N. Y. Filed Aug. 11, 1905.

SER. No. 11,580.

The representation of a Marechal-Niel rose.

SER. No. 11,581. BEER. JACOB RUPPERT, New York, N. Y. Filed Aug. 11, 1905.

ROSE-BUD

The hyphenated word "ROSE-BUD."

SER. No. 11,945. SHOW-CASES. JOHN PHILLIPS & Co., LTD., Detroit, Mich. Filed Aug. 23, 1905.

Silent Salesman

The words "SILENT SALESMAN."

SER. No. 11,985. RUBBER ERASERS. EAGLE PENCIL COMPANY, New York, N. Y. Filed Aug. 21, 1905.

The representation of an eagle with outstretched wings holding pencils in its beak and talons.

SER. No. 12,019. SCISSORS AND SHEARS. CHALLENGE CUTLERY CORPORATION, Bridgeport, Conn. Filed Aug. 26, 1905.

CHALLENGE

The word "CHALLENGE."

SER. No. 12,020. POCKET-KNIVES. CHALLENGE CUTLERY CORPORATION, Bridgeport, Conn. Filed Aug. 26, 1905.

CHALLENGE

The word "CHALLENGE."

SER. No. 12,057. JEWELERS' PENDANT-BOWS. SWARTCHILD & Co., Chicago, Ill. Filed Aug. 30, 1905.

"GOLD SHELL"

The words "GOLD SHELL" within quotation-marks, the type of the letters of said words being block capital.

SER. No. 12,123. SWITCHBOARD-CORDS. JOHN B. CRAWFORD, Chicago, Ill. Filed Aug. 31, 1905.

PREMIER
"B B"

The arbitrary word, letters, and quotation-marks "PREMIER "B B.""

SER. No. 12,238. BRUSHES. ISLE AND GRUPP, Buffalo, N. Y. Filed Sept. 5, 1905.

SOLID BACK

The representation of a buffalo, associated with the words "SOLID BACK."

SER. No. 12,395. CARRIAGES, WAGONS, AND CARTS. STUDEBAKER BROTHERS MANUFACTURING COMPANY, South Bend, Ind. Filed Sept. 8, 1905.

Studebaker

The word "STUDEBAKER," arranged in a particular and distinctive form of script, with a paraph extending from the final "r" back under the word.

SER. No. 12,546. LEATHER SHOES. BRAUER & LEVENTHAL, New York, N. Y. Filed Sept. 14, 1905.

B&L

The letters "B" and "L" with the character "&" interposed therebetween.

SER. No. 18,725. LEATHER AND CANVAS SHOES AND SLIPPERS. BIGLAS & DEVELL, Memphis, Tenn. Filed Oct. 15, 1905.

TENNA

The word "TENNA."

SER. No. 18,726. LEATHER AND CANVAS SHOES AND SLIPPERS. BIGLAS & DEVELL, Memphis, Tenn. Filed Oct. 12, 1905.

MEMPHA

The word "MEMPHA."

SER. No. 18,648. EXPLOSIVES. MASURITE EXPLOSIVE COMPANY, Masury, Ohio. Filed Oct. 16, 1905.

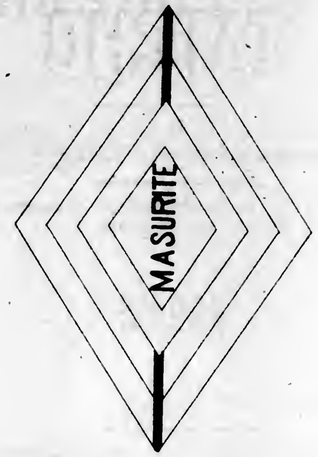

A series of concentric diamond-shaped figures bearing the word "MASURITE."

SER. No. 18,788. PERIODICAL DEVOTED TO THE INTERESTS OF CONTRACTORS. WILLIAM A. MARSH, Columbus, Ohio. Filed Oct. 18, 1905.

THE DIRT MOVER

The words "THE DIRT MOVER."

SER. No. 18,885. CORSETS. THE WARNER BROS. CO., Bridgeport, Conn. Filed Oct. 24, 1905. Used ten years.

Warner's

The word "WARNER'S."

SER. No. 18,886. CORSETS. THE WARNER BROS. CO., Bridgeport, Conn. Filed Oct. 24, 1905. Used ten years.

RUST-PROOF

The hyphenated word "RUST-PROOF."

SER. No. 13,913. OIL SHADE-CLOTH. HYMAN BRANFORD CO., San Francisco, Cal. Filed Oct. 24, 1905.

TATCHO

The word or combination of letters "TATCHO."

SER. No. 13,975. QUEBRACHO EXTRACT. A. KLIPSTEIN & COMPANY, New York, N. Y. Filed Oct. 27, 1905.

ARGAM

The word "ARGAM."

SER. No. 13,988. PICKERS AND BURRING-MACHINES AND ATTACHMENTS AND PARTS THEREOF, SUCH AS EMPLOYED FOR WORKING WOOL AND OTHER TEXTILE FIBERS. CURTIS & MARBLE MACHINE CO., Worcester, Mass. Filed Oct. 27, 1905. Used ten years.

PARKHURST

The word "PARKHURST."

SER. No. 13,989. PICKERS AND BURRING-MACHINES AND ATTACHMENTS AND PARTS THEREOF, SUCH AS EMPLOYED FOR WORKING WOOL AND OTHER TEXTILE FIBERS. CURTIS & MARBLE MACHINE CO., Worcester, Mass. Filed Oct. 27, 1905. Used ten years.

ATLAS

The word "ATLAS."

SER. No. 14,025. HOSE PIPES, NOZZLES, GATES, AND COUPLINGS. EUREKA FIRE HOSE COMPANY, Jersey City, N. J. Filed Oct. 28, 1905.

EUREKA

The word "EUREKA."

SER. No. 14,080. PLASTIC SUBSTANCES FOR EXTERNAL USE. ANTICONGESTINE COMPANY, Akron, Ohio. Filed Oct. 28, 1905.

ANTICONGESTINE

The word "ANTICONGESTINE."

SER. No. 14,078. REMEDIES FOR ASTHMA. JOHN K. BRATER, New York, N. Y. Filed Oct. 30, 1905.

A black border surrounding a blue field, upon which field the medallion likeness of the proprietor is produced. Above the medallion the word "BRATER'S" appears, at one side of it the word "ASTHMA" and at the opposite side the word "CURE," the two words "ASTHMA" and "CURE" being partially surrounded by scrolls.

SER. No. 14,086. CORSETS. MARSHALL FIELD & COMPANY, Chicago, Ill. Filed Oct. 30, 1905.

Noblesse

The word "NOBLESSE."

SER. No. 14,347. BEER. PABST BREWING COMPANY, Milwaukee, Wis. Filed Nov. 4, 1905.

The arbitrary words "BLUE RIBBON," above the words a design comprising the representation of a conventionalized hop-leaf, the initial "B" on the leaf, a circular red band surrounding the leaf, the name "PABST" on the upper part of the band, the name "MILWAUKEE" on the lower part of the band, a number of barley-heads springing outwardly and upwardly from below the band, a rhomboidal border comprising an inner narrow gilt line, and a blue band surrounding the entire design.

SER. No. 14,528. SOUND-BOXES FOR TALKING-MACHINES. VICTOR TALKING MACHINE COMPANY, Camden, N. J. Filed Nov. 13, 1905.

CONCERT

The word "CONCERT."

SER. No. 14,524. RECORDS FOR TALKING-MACHINES. VICTOR TALKING MACHINE COMPANY, Camden, N. J. Filed Nov. 13, 1905.

The representation of a winged cupid seated leaning on one hand and drawing substantially concentric lines around himself with a quill held in the other hand.

SER. No. 14,604. MALT EXTRACT. THE BARAGON MALT EXTRACT CO., New York, N. Y. Filed Nov. 14, 1905.

The letters "A & P" and the representation of a shock of barley.

SER. No. 14,797. COFFEE. STEWART BROTHERS COMPANY, Omaha, Nebr. Filed Nov. 18, 1905.

The representation of a Wedgwood vase inclosed in a circle, in connection with which appears the word "WEDGWOOD." There is a wreath partially surrounding the circle and an ornamental scroll design extending from opposite sides of the wreath.

SER. No. 15,021. WHISKY. F. B. MILLER & Co., New Albany, Ind. Filed Nov. 27, 1905.

The words "OLD MILL RUN WHISKEY," associated with a spray of grain and a seal superposed over the spray, the seal having scrollwork on each side of it and bearing the monogram "F B M & Co."

SER. No. 14,958. VARNISHES. JOHN W. MASURY & SON, Brooklyn, N. Y. Filed Nov. 24, 1905. Used ten years.

MASURY'S

The word "MASURY'S."

SER. No. 15,027. COMBINATION OF RYE WHISKY, ROCK CANDY, AND HOREHOUND. KIRK-GEARY & Co., Sacramento, Cal. Filed Nov. 27, 1905.

A rectangular panel, within which is arranged a shield ornamented by scrollwork, the word "DU VAL'S" being arranged on said shield near the top and a curved panel being disposed near the bottom of the shield, there being radiating lines from the shield toward the edges of the rectangular panel.

SER. No. 15,035. PREPARATIONS FOR CLEANING MARBLE, TILE, STONE, MOSAIC, AND COMPOSITION SURFACES. INDIA ALKALI WORKS, Boston, Mass. Filed Nov. 28, 1905.

Marblica

The word "MARBLICA."

SER. No. 15,038. REAMERS. THE STANDARD TOOL COMPANY, Cleveland, Ohio. Filed Nov. 28, 1905.

The representation of the outline of a shield, with the words "STANDARD TOOL CO." included within the outline of the shield.

Ser. No. 15,040. TAPS. THE STANDARD TOOL COMPANY, Cleveland, Ohio. Filed Nov. 28, 1905.

The representation of the outline of a shield, with the words "STANDARD TOOL CO." included within the outline of the shield.

Ser. No. 15,150. ENAMEL PAINTS. PEERLESS ENAMEL PAINT WORKS, New York, N. Y. Filed Dec. 9, 1905.

A diamond-shaped background against which are displayed the words "PEERLESS ENAMEL," so arranged that the letters of the word "PEERLESS" increase in size toward the end, while the letters of the word "ENAMEL" decrease in size toward the end, the whole being inclosed in a diamond-shaped geometrical figure, opposite each side of which are the letters "P. E. P. W."

PRINTED AND BOUND BY
SACKETT & WILHELMS
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NEW YORK

TRADE-MARKS

REGISTERED JANUARY 2, 1906.

48,446. TAPS AND BUSHES. AMERICAN TAP BUSH CO., Detroit, Mich.
A monogram composed of the letters and abbreviation "A T B Co."
Filed May 8, 1905. Serial No. 4,775. PUBLISHED NOVEMBER 7, 1905.

48,447. PACKED SHRIMP. BARATARIA CANNING CO., Biloxi, Miss.
The representation of a shrimp on a bed of leaves.
Filed April 24, 1905. Serial No. 2,861. PUBLISHED NOVEMBER 7, 1905.

48,448. HAIR-CLIPPERS. BROWN & SHARPE MANUFACTURING COMPANY, Providence, R. I.
The word "BRESSANT."
Filed May 18, 1905. Serial No. 5,942. PUBLISHED NOVEMBER 7, 1905.

48,449. FLAVORING EXTRACTS. CRESCENT MANUFACTURING CO., Seattle, Wash.
The word "CRESCENT" and the representation of a crescent.
Filed April 29, 1905. Serial No. 3,649. PUBLISHED NOVEMBER 7, 1905.

48,450. HAMS. PHILIP GEORGE CROMWELL, Baltimore, Md.
The words "THE LORD BALTIMORE BRAND" and a picture of the city hall of Baltimore city.
Filed June 26, 1905. Serial No. 9,051. PUBLISHED NOVEMBER 7, 1905.

48,451. HAM AND BACON. PHILIP GEORGE CROMWELL, Baltimore, Md.
The letter "G" having therein the representation of the face of a hog. Associated with the mark are the name, abbreviations, words, and character "P. T. GEORGE & Co., BALTIMORE, U. S. A."
Filed June 26, 1905. Serial No. 9,053. PUBLISHED NOVEMBER 7, 1905.

48,452. HAMS. PHILIP GEORGE CROMWELL, Baltimore, Md.
The representation of an ear of corn and the words, letters, abbreviation, and character "WESTPHALIA HAM CURED BY P. T. GEORGE & Co. BALTIMORE."
Filed June 26, 1905. Serial No. 9,054. PUBLISHED NOVEMBER 7, 1905.

48,453. SAWS. E. C. ATKINS & COMPANY, Indianapolis, Ind.; New York, N. Y.; Memphis, Tenn.; Atlanta, Ga.; Minneapolis, Minn.; Portland, Oreg.; Seattle, Wash.; San Francisco, Cal.; Chicago, Ill., and Toronto, Canada.
The words "SILVER STEEL."
Filed June 26, 1905. Serial No. 9,042. PUBLISHED NOVEMBER 7, 1905.

48,454. WEIGHING-MACHINES AND PARTS THEREOF. E. AND T. FAIRBANKS AND COMPANY, St. Johnsbury, Vt.
The representation of a globe or sphere, on which meridians and parallels are delineated, used in connection with the words "FAIRBANKS STANDARD," arranged upon a scroll extending across the face of the globe, there being also shown on the globe representations of a portion of the Western Hemisphere. The words "ATLANTIC OCEAN" and "SOUTH PACIFIC OCEAN," as designating those portions of the respective bodies of water, are also shown upon the figure.
Filed May 18, 1905. Serial No. 5,973. PUBLISHED NOVEMBER 7, 1905.

48,455. NURSING-BOTTLES. WILLIAM MORE DECKER, Buffalo, N. Y.
The word "HYGEIA" and the representation of a serpent curved into ring form and inclosing the word.
Filed June 2, 1905. Serial No. 7,381. PUBLISHED NOVEMBER 7, 1905.

48,456. BISCUITS, CRACKERS, &c. FRENCH & COMPANY, Factoryville, Pa.
The representation of a triangle.
Filed June 14, 1905. Serial No. 8,133. PUBLISHED NOVEMBER 7, 1905.

48,457. CURED MEATS. GEORGE A. HORMEL & Co., Austin, Minn.
The representation of a seal bearing the picture of the head of a hog, the representation of a dairy maid carrying a pail upon her arm, and the representation of a ribbon with the word "DAIRY" inscribed thereon.
Filed May 26, 1905. Serial No. 6,738. PUBLISHED NOVEMBER 7, 1905.

48,458. SHEARS AND SCISSORS. GRAEF & SCHMIDT, New York, N. Y.
The representation of a spider's web with a spider thereupon and leaves and berries surrounding said web, the word "SPIDER" being arranged at one side and the word "BRAND" at the other side of the spider.
Filed May 10, 1905. Serial No. 4,879. PUBLISHED NOVEMBER 7, 1905.

48,459. OLIVES. CHARLES GULDEN, New York, N. Y.
The words "DON CARLOS."
Filed April 13, 1905. Serial No. 1,325. PUBLISHED NOVEMBER 7, 1905.

48,460. MUSTARD. CHARLES GULDEN, New York, N. Y.
The words "GULDEN'S MUSTARD."
Filed April 13, 1905. Serial No. 1,326. PUBLISHED NOVEMBER 7, 1905.

48,461. CONDENSED SOUPS. JOSEPH CAMPBELL COMPANY, Camden, N. J.
The word "CAMPBELL'S."
Filed May 16, 1905. Serial No. 5,839. PUBLISHED NOVEMBER 7, 1905.

48,462. WHEAT-FLOUR. THE NORTHWESTERN CONSOLIDATED MILLING COMPANY, Minneapolis, Minn.
The words "CHRISTIAN'S EXTRA."
Filed May 11, 1905. Serial No. 5,050. PUBLISHED NOVEMBER 7, 1905.

48,463. WHEAT-FLOUR. THE NORTHWESTERN CONSOLIDATED MILLING COMPANY, Minneapolis, Minn.
The word "COLUMBIA."
Filed May 11, 1905. Serial No. 5,053. PUBLISHED NOVEMBER 7, 1905.

48,464. WHEAT-FLOUR. THE NORTHWESTERN CONSOLIDATED MILLING COMPANY, Minneapolis, Minn.
The representation of a small boy wearing boots and a broad-brim hat seated upon a stool in the foreground of a barrel and flour-sack and busily engaged in cutting a slice from a loaf of bread which he holds in his lap.
Filed May 11, 1905. Serial No. 5,055. PUBLISHED NOVEMBER 7, 1905.

48,465. CANNED FRUITS AND VEGETABLES. THE SCUDDERS-GALE GROCER COMPANY, St. Louis, Mo.
The word "BUFFALO" and the pictorial representation of a buffalo's head partly surrounded by ornamental scrollwork.
Filed April 1, 1905. Serial No. 218. PUBLISHED NOVEMBER 7, 1905.

48,466. WATER-SUPPLY TANKS AND VALVES THEREFOR. THE STAPLES VALVE CO., Newburgh, N. Y.
The words "ROYAL FLUSH."
Filed May 25, 1905. Serial No. 6,635. PUBLISHED NOVEMBER 7, 1905.

48,467. MUSTARD AND SPICES. TONE BROS., Des Moines, Iowa.
The words and abbreviation "TONE BROS SPICES" and the representation of a cannon and a pile of cannon-balls.
Filed April 27, 1905. Serial No. 3,320. PUBLISHED NOVEMBER 7, 1905.

48,468. SARDINES AND LIKE FISH. WELLS, STONE & CO., Chicago, Ill.
The word "SENATOR."
Filed June 19, 1905. Serial No. 8,552. PUBLISHED NOVEMBER 7, 1905.

48,469. WHEAT-FLOUR. GEO. A. ZABRISKIE, New York, N. Y.
The word "EMINENCIA."
Filed April 27, 1905. Serial No. 3,293. PUBLISHED NOVEMBER 7, 1905.

48,470. PORTLAND, NATURAL-ROCK, AND IMPROVED CEMENT. AMERICAN CEMENT COMPANY, Philadelphia, Pa.
A conventional representation of the sun.
Filed June 20, 1905. Serial No. 8,572. PUBLISHED NOVEMBER 7, 1905.

48,471. LAUNDRY AND TOILET SOAP. FRANK GAINS BURKE, New York, N. Y.
The word "COALINE."
Filed May 13, 1905. Serial No. 5,593. PUBLISHED NOVEMBER 7, 1905.

48,472. HARNESS-LEATHER. CAFFON & BERTSCH LEATHER CO., Holland, Mich.
The words "MASTER OF THE BARKS," appearing on a curved panel, and the representation of a dog's head embellished with oak and hemlock branches, all inclosed in a circular figure.
Filed June 30, 1905. Serial No. 9,530. PUBLISHED NOVEMBER 7, 1905.

48,473. COTTON, WOOL, SILK, AND LINEN UNDERWEAR. CHALMERS KNITTING COMPANY, Amsterdam, N. Y.
The word "POROSKNIT."
Filed May 18, 1905. Serial No. 6,035. PUBLISHED NOVEMBER 7, 1905.

48,474. PENS. C. HOWARD HUNT PEN CO., Camden, N. J.
A representation of the point of a writing-pen inclosed in a circle.
Filed April 6, 1905. Serial No. 612. PUBLISHED NOVEMBER 7, 1905.

48,475. CEMENT. ECLIPSE CEMENT & BLACKING CO., Philadelphia, Pa.
The word "TIGER."
Filed October 5, 1905. Serial No. 13,315. PUBLISHED NOVEMBER 7, 1905.

48,476. FERTILIZERS. FEDERAL CHEMICAL CO., Louisville, Ky.
The word "DAYBREAK," associated with the picture of a rooster.
Filed July 8, 1905. Serial No. 9,980. PUBLISHED NOVEMBER 7, 1905.

48,477. LEATHER BOOTS AND SHOES. GEO. D. WITT SHOE CO., Lynchburg, Va.
The word "AMERICUS."
Filed June 21, 1905. Serial No. 8,683. PUBLISHED NOVEMBER 7, 1905.

48,478. SHOE-DRESSING. GEO. E. KEITH COMPANY, Brockton, Mass.
The compound word "WALK-OVER."
Filed June 21, 1905. Serial No. 8,700. PUBLISHED NOVEMBER 7, 1905.

48,479. SOAP. FERDINAND T. HOPKINS, New York, N. Y.
The facsimile signature "T. FELIX GOURAUD," displayed in white upon a dark panel.
Filed June 1, 1905. Serial No. 7,167. PUBLISHED NOVEMBER 7 1905.

48,480. REMOVABLE OVENS FOR COOKING-STOVES ERNST H. HUENEFELD, Cincinnati, Ohio.
The word "ROYAL."
Filed May 16, 1905. Serial No. 5,779. PUBLISHED NOVEMBER 7, 1905.

48,481. COATS, PANTS, OVERALLS, AND BLOUSES. LARNED CARTER AND CO., Detroit, Mich.
The words "HEAD LIGHT."
Filed May 18, 1905. Serial No. 5,962. PUBLISHED NOVEMBER 7, 1905.

48,482. DOUBLE-BREASTED BUTTONLESS INFANTS' VESTS. MAX LOWENTHAL & BROTHER, Rochester, N. Y.
The word "SIMPLEX" written in script.
Filed May 13, 1905. Serial No. 5,552. PUBLISHED NOVEMBER 7, 1905.

48,483. GUITARS AND MANDOLINS. LYON & HEALY, Chicago, Ill.
The word "LAKESIDE."
Filed August 7, 1905. Serial No. 11,361. PUBLISHED OCTOBER 24, 1905.

48,484. COTTON PIECE GOODS. MASSACHUSETTS COTTON MILLS, Lowell, Mass.
The representation of a tropical scene and a parrot standing upon a bough of a tree and holding fruit in its claw.
Filed May 11, 1905. Serial No. 5,244. PUBLISHED NOVEMBER 7, 1905.

48,485. CIGARETTES. HENRY P. STRAUSE, New York, N. Y.
The word "STRAUSE" written in script and provided with a paraph.
Filed May 29, 1905. Serial No. 6,889. PUBLISHED NOVEMBER 7, 1905.

48,486. WITHDRAWN.

48,487. PAPER-BOARD, AND ENVELOPS OR RECEPTACLES MADE THEREFROM. THE THOMPSON & NORRIS CO., Brooklyn and New York, N. Y.
The word "CELLULAR."
Filed April 22, 1905. Serial No. 2,739. PUBLISHED NOVEMBER 7, 1905.

48,488. CROCHET QUILTS. UNION MANUFACTURING COMPANY, Peterboro, N. H.
The words "CLARENDON CROCHET QUILT."
Filed May 12, 1905. Serial No. 5,289. PUBLISHED NOVEMBER 7, 1905.

48,489. WASHING-MACHINES. WHIPPLE BROTHERS CO., Westerly, R. I.
The word "WONDER."
Filed May 12, 1905. Serial No. 5,281. PUBLISHED NOVEMBER 7, 1905.

48,490. LEATHER BOOTS AND SHOES. WINGO, ELLETT & CRUMP SHOE CO., Richmond, Va.
The words "HUNT CLUB."
Filed May 23, 1905. Serial No. 6,413. PUBLISHED NOVEMBER 7, 1905.

48,491. SILVER-PLATED FLAT WARE, HOLLOW WARE, AND TABLEWARE. WM. A. ROGERS, LIMITED, New York, N. Y.
The representation of a horseshoe about the letter "R."
Filed May 26, 1905. Serial No. 6,564. PUBLISHED NOVEMBER 7, 1905.

48,492. SILVER-PLATED FLAT WARE, HOLLOW WARE, AND TABLEWARE. WM. A. ROGERS, LIMITED, New York, N. Y.
The words and abbreviation "NIAGARA SILVER CO."
Filed July 26, 1905. Serial No. 10,948. PUBLISHED NOVEMBER 7, 1905.

48,493. SILVER-PLATED FLAT WARE, HOLLOW WARE, AND TABLEWARE. WM. A. ROGERS, LIMITED, New York, N. Y
The letters and abbreviations "R. S. MFG. Co."
Filed July 26, 1905. Serial No. 10,949. PUBLISHED NOVEMBER 7, 1905.

48,494. ABSORBENT PADS OR PLASTERS. GEORGE C YOUNG, Jackson, Mich., assignor to Young Remedy Company, Jackson, Mich., a Corporation of Michigan.
A representation of the bust of a man with one arm upraised and a pad applied to the stomach and the abbreviation and words "DR. YOUNG'S STOMACH DRAFT" thereon.
Filed May 13, 1905. Serial No. 5,398. PUBLISHED NOVEMBER 7, 1905.

48,495. LEATHER SHOES. BATTREALL-WHITTINGHILL SHOE CO., St. Joseph, Mo.
The word and numerals "DISTRICT 76," the numerals being traversed by a scroll bearing the word "DISTRICT."
Filed May 16, 1905. Serial No. 5,844. PUBLISHED NOVEMBER 7, 1905.

48,496. LAGER-BEER. C. SCHMIDT AND SONS BREWING COMPANY, Philadelphia, Pa.
The word "PURITAN."
Filed May 11, 1905. Serial No. 5,124. PUBLISHED NOVEMBER 7, 1905.

48,497. BEER. GOTTFRIED BREWING COMPANY, Chicago, Ill.
The words "GOLDEN DROP."
Filed June 17, 1905. Serial No. 8,441. PUBLISHED NOVEMBER 7, 1905.

48,498. LEATHER BOOTS AND SHOES AND LEATHER FOR THE SAME. FRANK G. JONES, Boston, Mass.
The words "FISH SKIN," the words being separated, and arranged between them is the representation of an anchor and a fish.
Filed May 31, 1905. Serial No. 7,087. PUBLISHED NOVEMBER 7, 1905.

48,499. LEATHER BOOTS AND SHOES. HINKLE SHOE CO., Evansville, Ind.
The representation of a rock, upon which appear the words "SOLID ROCK," the rock being surrounded by sprays of leaves, grass, &c.
Filed June 2, 1905. Serial No. 7,260. PUBLISHED NOVEMBER 7, 1905.

48,500. LEATHER BOOTS AND SHOES. JOHN W. RUSS COMPANY, Haverhill, Mass.
The word "SUMMIT."
Filed June 7, 1905. Serial No. 7,571. PUBLISHED NOVEMBER 7, 1905.

48,501. MALT EXTRACTS AND PEPTONIZED MALT FOODS. ALBERT LIEBER, Indianapolis, Ind.
The representation of a calla lily arranged upon a black disk background above the representation of a hop bud and leaf and barley-heads and inscribed with the letter "L."
Filed April 6, 1905. Serial No. 576. PUBLISHED NOVEMBER 7, 1905.

48,502. LAMP GLASSES AND GLOBES. MACBETH-EVANS GLASS COMPANY, Pittsburg, Pa.
The words "RED STAR," associated with the representation of a star, from which are diffused rays.
Filed May 18, 1905. Serial No. 6,014. PUBLISHED NOVEMBER 7, 1905.

48,503. COTTON PIECE GOODS. MASSACHUSETTS COTTON MILLS, Lowell, Mass.
The word "SAGAMORE."
Filed May 11, 1905. Serial No. 5,230. PUBLISHED NOVEMBER 7, 1905.

48,504. MALT TONIC. MCAVOY BREWING CO., Chicago, Ill.
The hyphenated word "MALT-MARROW," the representation of a hop-bud in full bloom, a head of barley beneath the hyphenated word "MALT-MARROW," and above the hyphenated word "MALT-MARROW" the representation of hop-buds and heads of barley having their stems united.
Filed May 2, 1905. Serial No. 3,991. PUBLISHED NOVEMBER 7, 1905.

48,505. MEN'S AND CHILDREN'S OVERCOATS, COATS, VESTS, AND TROUSERS. MYERS & ANDREWS, Boston, Mass.
The picture of a female figure in mourning.
Filed July 31, 1905. Serial No. 11,057. PUBLISHED NOVEMBER 7, 1905.

48,506. SOFT AND STIFF FUR-FELT HATS. NO NAME HAT M'F'G. CO., Orange, N. J.
The representation of a shield surmounted by a scroll, having on the shield the representation of a hare and beaver and in the scroll the word "SUPERB."
Filed April 26, 1905. Serial No. 3,057. PUBLISHED NOVEMBER 7, 1905.

48,507. MEN'S SUSPENDERS. LEWIS OPPENHEIMER'S SONS, Philadelphia, Pa.
The word "EAGLE."
Filed July 24, 1905. Serial No. 10,740. PUBLISHED NOVEMBER 7, 1905.

48,508. MEN'S GARTERS. LEWIS OPPENHEIMER'S SONS, Philadelphia, Pa.
The word "EAGLE."
Filed July 24, 1905. Serial No. 10,741. PUBLISHED NOVEMBER 7, 1905.

48,509. OVERALLS, BLOUSES, COATS, VESTS, AND TROUSERS. OSHKOSH CLOTHING MANUFACTURING COMPANY, Oshkosh, Wis.
The letters and character "J & C."
Filed July 10, 1905. Serial No. 9,978. PUBLISHED NOVEMBER 7, 1905.

48,510. LEATHER FOR THE UPPERS OF SHOES. ROBERT H. FOERDERER, INC., Philadelphia, Pa.
The words "VICI KID," associated with the representation of a horseshoe.
Filed May 31, 1905. Serial No. 7,112. PUBLISHED NOVEMBER 7, 1905.

48,511. CHOCOLATES AND BONBONS. R. L. PERRY CO., Boston, Mass.
The words "LA REINE."
Filed June 9, 1905. Serial No. 7,752. PUBLISHED NOVEMBER 7, 1905.

48,512. BEER. THE INDIANAPOLIS BREWING COMPANY, Indianapolis, Ind.
The word "HOOSIER."
Filed April 6, 1905. Serial No. 557. PUBLISHED NOVEMBER 7, 1905.

48,513. BEER. THE INDIANAPOLIS BREWING COMPANY, Indianapolis, Ind.
The representation of a fantastically-shaped figure, the outline of the lower portion describing approximately two-thirds of a circle and that of the upper portion being wing-like. Between the tips of the wing-like representation is a sunburst, in advance of which is a partially-draped female sitting upon a wheel, with one hand elevated and carrying a foaming glass of liquor and the other hand extended and holding a chaplet of laurel-leaves. The wheel rests upon a sphere occupying the lower portion of the fantastically-shaped figure, the sphere showing a shadow-map of North America. At opposite sides of the female are representations of malt and hops, and at opposite sides of the wheel are the words "PROGRESS BRAND," and across the sphere is the word "DUESSELDORFER." Upon the sphere are the words and abbreviations "INDIANAPOLIS BREWING CO'S" and "INDIANAPOLIS, IND., U. S. A."
Filed April 6, 1905. Serial No. 559. PUBLISHED NOVEMBER 7, 1905.

48,514. MALT EXTRACT. THEO. HAMM BREWING CO., St. Paul, Minn.
The hyphenated word "HAM-MALT."
Filed June 13, 1905. Serial No. 8,082. PUBLISHED NOVEMBER 7, 1905.

48,515. ADHESIVE TAPE OR CLOTH. THE OKONITE COMPANY, LIMITED, New York, N. Y.
The word "MANSON."
Filed August 16, 1905. Serial No. 11,688. PUBLISHED NOVEMBER 7, 1905.

48,516. MOLASSES TAFFY, CANDY KISSES, AND OTHER CANDIES. THE ROBERT F. MACKENZIE CO., Cleveland, Ohio.
The word "SUNBEAM'S" inclosed in quotation-marks.
Filed June 15, 1905. Serial No. 8,208. PUBLISHED NOVEMBER 7, 1905.

48,517. BEER. THE SAN DIEGO BREWING CO., San Diego, Cal.
The word "CORONA" written in script and with the stem of the letter "C" encircled by a crown.
Filed May 2, 1905. Serial No. 4,140. PUBLISHED NOVEMBER 7, 1905.

48,518. SYRUPS, FLAVORINGS, TONICS, AND EXTRACTS FOR NON-INTOXICATING AERATED BEVERAGES. BRAND BROTHERS COMPANY, Chicago, Ill.
The word "VRIL."
Filed April 26, 1905. Serial No. 3,051. PUBLISHED JUNE 13, 1905.

48,519. MEDICINE FOR THE CURE OF ENURESIS AND KINDRED TROUBLES. FREDRICK BOETTGER, Peoria, Ill.
The compound word "URI-STOP."
Filed July 21, 1905. Serial No. 10,643. PUBLISHED NOVEMBER 7, 1905.

48,520. PERFUME FOR REPELLING MOSQUITOS. CEYLON PERFUME COMPANY, Englewood, N. J.
The words "ROUGH ON SKEETERS."
Filed May 26, 1905. Serial No. 6,754. PUBLISHED NOVEMBER 7, 1905.

48,521. BASE-BALLS. CHARLES DISCH, Brooklyn, N. Y.
The word "SIXTY."
Filed June 19, 1905. Serial No. 8,537. PUBLISHED NOVEMBER 7, 1905.

48,522. COUGH-SYRUP. FOSTER MILBURN CO., Buffalo, N. Y.
The representation of a group of pine-trees inclosed in a frame or border having transverse bands extending across the same, one above and the other below the group of pine-trees. Within the frame, above the upper band, are the abbreviation and word "DR. WOOD'S," while in the upper band appear the words "NORWAY PINE" and in the lower band the word "SYRUP."
Filed May 18, 1905. Serial No. 5,947. PUBLISHED NOVEMBER 7, 1905.

48,523. WINE. PHILIP FREILER, Elgin, Ill.
The word "PEERLESS."
Filed April 20, 1905. Serial No. 2,342. PUBLISHED JUNE 20, 1905.

48,524. HEADACHE REMEDY AND TONIC. GEORGE C. HOLDEN, Wayne, Pa.
The hyphenated word "BROMO-LITHIA."
Filed June 6, 1905. Serial No. 7,553. PUBLISHED NOVEMBER 7, 1905.

48,525. WHITE LEAD. NATIONAL LEAD COMPANY, Jersey City, N. J., and New York, N. Y.
The representation of an anchor and chain and the words and abbreviation "ANCHOR WHITE LEAD WORKS, CINCINNATI, O."
Filed April 20, 1905. Serial No. 3,637. PUBLISHED NOVEMBER 7, 1905.

48,526. CANDY. REYMER & BROTHERS, INCORPORATED, Pittsburg, Pa.
The word "DUQUESNE."
Filed June 1, 1905. Serial No. 7,172. PUBLISHED NOVEMBER 7, 1905.

48,527. KNIVES, FORKS, AND SPOONS WHICH ARE MADE OF STEEL AND TINNED. R. WALLACE & SONS MFG. CO., Wallingford, Conn.
The representation of four spoons arranged to form the letter "W" and the representation of a fork placed horizontally a short distance beneath it.
Filed June 8, 1905. Serial No. 7,644. PUBLISHED NOVEMBER 7, 1905.

48,528. BOTTLED CIDER. S. S. PIERCE CO., Boston, Mass.
The representation of an eagle holding in his beak a shield on which is the representation of a lion rampant with a crown on his head, and the letters, abbreviation, and words "S. S. P. CO. PURITAS ET CURA."
Filed May 15, 1905. Serial No. 5,891. PUBLISHED NOVEMBER 7, 1905.

48,529. ROTARY TYPE-PRINTING MACHINES. THE AMERICAN MULTIGRAPH COMPANY, Cleveland, Ohio.
The representation of a five-pointed star within a double circle, two small stars between the two circles at diametrically opposite points, and a perspective of a cylindrical hand printing-machine superposed across the face of the star.
Filed May 8, 1905. Serial No. 4,626. PUBLISHED NOVEMBER 7, 1905.

48,530. ACID, HEAT, WATER, AND WEATHER PROOF, AND WOOD AND METAL PRESERVATIVE PAINT. THE HYDRO-CARBON MANUFACTURING COMPANY, Denver, Colo.
The word "ELATEROID" printed upon a figure with parallel top and base lines, the base-line being heavily shaded, reëntrant angles, the upper lines of the angles being heavily shaded, and arcs of a circle of long radius converging at equidistant points from the apex of the reëntrant angles.
Filed April 10, 1905. Serial No. 2,943. PUBLISHED NOVEMBER 7, 1905.

48,531. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.
The representation of a rectangular panel upon which, inclosed by a light line, appear a large number of conventional flowers, each having four petals, all arranged in parallel lines, small dots and four-pointed stars appearing between the flowers.
Filed June 27, 1905. Serial No. 9,241. PUBLISHED NOVEMBER 7, 1905.

48,532. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.
A design many times repeated in which irregular lines and dots are arranged to represent a coral surface.
Filed July 1, 1905. Serial No. 9,572. PUBLISHED NOVEMBER 7, 1905.

48,533. REMEDIES FOR CERTAIN NAMED DISEASES. THE RADIO-SULPHO CO., Denver, Colo.
The hyphenated word "RADIO-SULPHO."
Filed April 15, 1905. Serial No. 1,733. PUBLISHED AUGUST 15, 1905.

48,534. COMPOUNDS FOR THE TREATMENT OF THE HAIR AND SCALP. NELLIE VON FELDMAN, Washington, D. C.
The words "CROWNING GLORY."
Filed June 7, 1905. Serial No. 7,601. PUBLISHED NOVEMBER 7, 1905.

48,535. GLOVES. WERTHEIMER & CO., New York, N. Y.
The word "MAJESTIC."
Filed April 19, 1905. Serial No. 2,242. PUBLISHED NOVEMBER 7, 1905.

48,536. SPARKLING WINES. WHITE TOP CHAMPAGNE COMPANY, Hammondsport, N. Y.
The words "WHITE TOP."
Filed May 16, 1905. Serial No. 5,845. PUBLISHED NOVEMBER 7, 1905.

48,537. SILVER-PLATED FLAT WARE, HOLLOW WARE, AND TABLEWARE. WM. A. ROGERS, LIMITED, New York. N. Y.
The representation of a horseshoe about the letter "R," the names "WM. A. ROGERS" and "NEW YORK" being respectively thereabove and therebelow, the whole being inclosed in a circle surmounted by the words "QUADRUPLE PLATE."
Filed May 26, 1905. Serial No. 6,567. PUBLISHED NOVEMBER 7, 1905.

48,538. PILLS AND TABLETS FOR DISEASES OF THE BLOOD, LIVER, STOMACH, BOWELS, KIDNEYS, AND NERVES. CHAUNCEY F. YORK, Warriorsmark, Pa.
The hyphenated word "MA-LE-NA."
Filed April 5, 1905. Serial No. 409. PUBLISHED MAY 16, 1905.

48,539. MEDICATED LOZENGES. JOHN I. BROWN & SON, Boston, Mass.
The facsimile signature "JOHN I. BROWN & SON."
Filed July 3, 1905. Serial No. 9,638. PUBLISHED NOVEMBER 7, 1905.

48,540. WHISKY. H. & H. W. CATHERWOOD, Philadelphia, Pa.
A picture of three feathers bound together at the bottom by a crown and scroll.
Filed May 29, 1905. Serial No. 7,050. PUBLISHED NOVEMBER 7, 1905.

48,541. WHISKY. COLUMBIA DISTILLING CO., St. Louis, Mo.
The word "NORWOOD."
Filed August 10, 1905. Serial No. 11,488. PUBLISHED NOVEMBER 7, 1905.

48,542. PREPARATION FOR THE CURE OF CANCERS AND KINDRED DISEASES. DENNIS R. DUFUIS, St. Louis, Mo.
The word "RADOL."
Filed June 9, 1905. Serial No. 7,733. PUBLISHED NOVEMBER 7, 1905.

48,543. WHISKY. FRANKEL, REGENTHAL AND DAMLER, St. Paul, Minn.
The word "FLAMBEAU," below which are the letters "F R D" inside a double circle, which is divided into three equal portions, each of which contains a letter.
Filed June 26, 1905. Serial No. 9,112. PUBLISHED OCTOBER 31, 1905.

48,544. WHISKY. FRANKEL, REGENTHAL AND DAMLER, St. Paul, Minn.
The words "BALTIMORE SELECT."
Filed June 26, 1905. Serial No. 9,113. PUBLISHED OCTOBER 31, 1905.

48,545. WHISKY. FRANKEL, REGENTHAL AND DAMLER, St. Paul, Minn.
The words "HAY CREEK."
Filed June 26, 1905. Serial No. 9,114. PUBLISHED OCTOBER 31, 1905.

48,546. WHISKY. FRANKEL, REGENTHAL AND DAMLER, St. Paul, Minn.
The words "SUMMIT HILL."
Filed June 26, 1905. Serial No. 9,116. PUBLISHED OCTOBER 31, 1905.

48,547. WINES. SIGMUND HOCHSTADTER, New York, N. Y.
The representation of an ornamental shield having an elliptical center panel bearing a monogram composed of the letters and abbreviation "T H Co." The shield is supported at its sides by angels or cherubim bearing branches of grapes with foliage. Partly below and to the rear of said shield is disposed a scroll or band, below said scroll or band a horizontal panel having an ornamental outline, and below said panel a bunch of grapes with foliage, the entire device being inclosed by a rectangular border or frame having ornamented corner-pieces.
Filed May 20, 1905. Serial No. 6,193. PUBLISHED NOVEMBER 7, 1905.

48,548. RYE AND BOURBON WHISKIES. PAUL JONES & CO., Louisville, Ky.
The words "FOUR ROSES."
Filed July 17, 1905. Serial No. 10,466. PUBLISHED NOVEMBER 7, 1905.

48,549. SALVE AND OINTMENT. EDGAR J. KOERNLEIN, Cincinnati, Ohio.
A representation of the head of a goat carrying a scroll in its mouth, on which are the words "NON-POISONOUS," and inclosed by a circular band, on which are the words, number, character, and abbreviations "BUCKS-HORN-RELIABLE-SALVE & OINTMENT-CO. 48-PERIN-BLDG-CINCINNATI, O."
Filed June 7, 1905. Serial No. 7,597. PUBLISHED NOVEMBER 7, 1905.

48,550. WHISKY. J. & E. MAHONEY, Portsmouth, Va.
The words "BELLE OF VIRGINIA," beneath which is the bust-picture of a woman holding a spray of rye in her left hand and surrounded by three concentric circles.
Filed June 30, 1905. Serial No. 9,432. PUBLISHED NOVEMBER 7, 1905.

48,551. SEWING-MACHINES. ALBERT G. MASON, Cleveland, Ohio.
The word "CROWN" and the representation of a crown, used singly or together.
Filed April 3, 1905. Serial No. 278. PUBLISHED NOVEMBER 7, 1905.

48,552. ELECTRIC HEEL-PLATES. EDW. H. MEALY, Baltimore, Md.
The word "MELICHERL."
Filed April 25, 1905. Serial No. 3,017. PUBLISHED NOVEMBER 7, 1905.

48,553. WHISKY. RUBEL-LILIENFELD CO., Chicago, Ill.
The words "RANDOLPH CLUB."
Filed July 15, 1905. Serial No. 10,356. PUBLISHED NOVEMBER 7 1905.

48,554. WHISKY. RUBEL-LILIENFELD CO., Chicago, Ill.
The word "HATCHWOOD," under which is a monogram composed of the letters and character "R & M" surrounded by a circle, on each side of which appears a fancy scroll, together with a sheaf of rye.
Filed July 15, 1905. Serial No. 10,357. PUBLISHED NOVEMBER 7, 1905.

48,555. WHISKY. ISAAC SOLOMON, Cincinnati, Ohio.
The words "GOLD BOND" below a crest inclosed in a double circle, on which is a shield bearing a monogram composed of the letters, character, and abbreviation "I S & Co." On either side of the shield is shown a head of grain.
Filed August 10, 1905. Serial No. 11,486. PUBLISHED NOVEMBER 7, 1905.

48,556. WHISKY. STRAUS BROTHERS COMPANY, Chicago, Ill.
The word "SOLO," associated with the design of a staff of music, and the words "BEST ON THE BARS" within quotation-marks.
Filed August 10, 1905. Serial No. 11,514. PUBLISHED NOVEMBER 7, 1905.

48,557. WHISKY. STRAUS BROTHERS COMPANY, Chicago, Ill.
The name "MANSFIELD."
Filed August 10, 1905. Serial No. 11,515. PUBLISHED NOVEMBER 7, 1905.

48,558. REMEDIES FOR DISEASES OF THE THROAT, LUNGS, AND BRONCHIAL ORGANS. HANNAH STRINGER, New York, N. Y.
The words "STRINGER'S PULMONIC SYRUP."
Filed April 14, 1905. Serial No. 1,521. PUBLISHED NOVEMBER 7, 1905.

48,559. WHISKY. THE ANGELO MYERS DISTILLERY, INC., Philadelphia, Pa.
The word "KINSEY."
Filed July 15, 1905. Serial No. 10,381. PUBLISHED NOVEMBER 7, 1905.

48,560. WHISKY. THE D. L. MOORE DISTILLERY CO., Lawrenceburg, Ky.
The name "VANARSDELL."
Filed July 15, 1905. Serial No. 10,349. PUBLISHED NOVEMBER 7, 1905.

48,561. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.
The representation of a rectangular panel displaying at each corner the upper half of a horned devil holding a trident. Below the waist of each devil a conventional leaf-like scroll extends, curving to cover substantially the entire surface of the panel. At the center is a conventional figure with four ray-like points extending toward the sides and ends.
Filed May 5, 1905. Serial No. 4,328. PUBLISHED NOVEMBER 7, 1905.

48,562. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.
The representation of a panel surrounded by a conventional border of square dots, upon which, at each end, are two figures, the right-hand figure being a cupid struggling with a knotted ribbon, while the left-hand figure is a girl represented as swinging in a heart-shaped hoop. A butterfly is shown within the hoop near the girl's head.
Filed July 1, 1905. Serial No. 9,576. PUBLISHED NOVEMBER 7, 1905.

48,563. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.
The representation of a panel inclosed by a narrow line, upon which are displayed, at each end, a number of sprays of lilies of the valley and their foliage. About the center are arranged four larger flowers with shorter and wider leaves than those of the lilies.
Filed July 1, 1905. Serial No. 9,577. PUBLISHED NOVEMBER 7, 1905.

48,564. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.
The representation of a panel with an elaborate border of rosettes, globules, and curves surrounding an inner panel, displaying within a mosaic-like border a surface of irregular blocks like mosaic work, upon which is shown at each end a conventional stalk with leaves and a flower also simulating mosaic work. At each end extending from the stalk design toward the opposite corner are four rings arranged in a curved line, each displaying a figure like a Maltese cross.
Filed July 1, 1905. Serial No. 9,579. PUBLISHED NOVEMBER 7, 1905.

48,565. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio.
The abbreviation, numerals, and word "No. 87 BEZIQUE."
Filed May 4, 1905. Serial No. 4,245. PUBLISHED NOVEMBER 7, 1905.

48,566. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio.
The word "SPROCKET."
Filed May 11, 1905. Serial No. 5,112. PUBLISHED NOVEMBER 7 1905.

48,567. WHISKY. THE WAKEMAN DISTILLING CO., Chattanooga, Tenn.

The words "OLD WAKEMAN" in a ribbon design, above which is a monogram composed of the letters and abbreviation "W D Co" in a circle.

Filed August 10, 1905. Serial No. 11,483. PUBLISHED NOVEMBER 7, 1905.

48,568. BEER. THEO. HAMM BREWING CO., St. Paul, Minn.

Two concentric circles inclosing a blue field upon which, oppositely disposed, are a series of stars, there being within the inner circle the representation of an eagle with spread wings and holding in its beak a diamond having a central seal thereon bearing the letter "H."

Filed June 13, 1905. Serial No. 8,030. PUBLISHED NOVEMBER 7, 1905.

48,569. BITTER WINES. JOSEPH TRINER, Chicago, Ill.

The representation of a bunch of grapes and leaves and a monogram composed of the letters "T K," associated with the words "AMERICAN ELIXIR OF BITTER WINE HORÉ VINO."

Filed April 17, 1905. Serial No. 2,049. PUBLISHED NOVEMBER 7, 1905.

48,570. WHISKY. GEORGE V. WENDEL, New York, N. Y.

The word "CADET" and the picture of a cadet inclosed in an oval.

Filed July 15, 1905. Serial No. 10,384. PUBLISHED NOVEMBER 7, 1905.

48,571. WHISKY. BERNHEIM DISTILLING CO., INC., Louisville, Ky.

The name "I. W. HARPER."

Filed July 3, 1905. Serial No. 9,705. PUBLISHED NOVEMBER 7, 1905.

48,572. NON-ALCOHOLIC BEVERAGES. JOHN W. BIRKHEAD, Dallas, Tex.

The words "PEPSIN PUNCH."

Filed June 8, 1905. Serial No. 7,639. PUBLISHED NOVEMBER 7, 1905.

48,573. SLOE GIN. CHARLES JACQUIN ET CIE., INC., New York, N. Y.

The representation of a circular panel imposed upon an ornamental horizontal band. In said panel is shown a spray of foliage with berries. Below said panel and band appears the title inscription "GRAHAM'S SLOE GIN," below said inscription the signature "JOHN J. GRAHAM," and below said signature the name and description "CHARLES JACQUIN ET CIE INC. N. Y. SOLE PROPRIETORS," the entire device being inclosed by a plain border.

Filed June 2, 1905. Serial No. 7,246. PUBLISHED NOVEMBER 7, 1905.

48,574. COCKTAILS. CHARLES JACQUIN ET CIE., INC., New York, N. Y.

The representation of an ermine having thereon a fore arm and hand holding a glass and the whole surmounted with a crown. Associated with said representation are the words "HAVA COCKTAIL" and the signature "CHARLES JACQUIN ET CIE INCORP.," together with the words "NEW YORK," and the entire device is inclosed by a plain rectangular border.

Filed July 12, 1905. Serial No. 10,157. PUBLISHED NOVEMBER 7, 1905.

48,575. WHISKY. CHICAGO DISTILLING CO., Chicago, Ill.

The words "RIVER MILLS."

Filed July 11, 1905. Serial No. 10,042. PUBLISHED NOVEMBER 7, 1905.

48,576. GIN. CHICAGO DISTILLING CO., Chicago, Ill.

The word "COLUMBIAN," printed across the upper part of a fanciful shield design.

Filed July 11, 1905. Serial No. 10,048. PUBLISHED NOVEMBER 7, 1905.

48,577. WHISKY. G. F. COSHLAND & Co., New York, N. Y.

The words "EMPIRE CLUB" and a monogram composed of the letters, character, and abbreviation "G F C & Co" inclosed in a wreath of oak and laurel leaves, and a torch on each side and at the top of the wreath.

Filed May 24, 1905. Serial No. 6,514. PUBLISHED NOVEMBER 7, 1905.

48,578. WHISKY. GOODKIND BROS., Helena, Mont.

The words "MONTANA CLUB."

Filed July 15, 1905. Serial No. 10,347. PUBLISHED NOVEMBER 7, 1905.

48,579. GIN. C. H. GRAVES & SONS, Boston, Mass.

The words "LAUREL WREATH GIN" on a circular ground surrounded by a circular border, the said ground containing two sprays of laurel arranged somewhat in the form of a wreath. The words "LAUREL WREATH" appear on a curved band having concentric border-lines and extending across the circular ground and overlapping the sprays of laurel, and the word "GIN" appears on a horizontal band located beneath the words "LAUREL WREATH" and having curved ends and a border-line.

Filed May 29, 1905. Serial No. 6,878. PUBLISHED NOVEMBER 7, 1905.

48,580. WHISKY. HAGEN & TRAVERS, Buffalo, N. Y.

The words "MAY BROOK" and a monogram composed of the letters and character "H & T" inclosed in a fanciful scroll design bordered by heads of grain.

Filed July 11, 1905. Serial No. 10,074. PUBLISHED NOVEMBER 7 1905

48,581. WHISKY. HANNAH & HOGG, Chicago, Ill.

The word "RAMSHEAD," underneath which is the representation of a ram's head ornamented by ribbons, with a spray of thistle at either side. On top of the ram's head is an ornamental design including a hat.

Filed July 15, 1905. Serial No. 10,341. PUBLISHED NOVEMBER 7, 1905.

48,582. COGNAC. SIGMUND HOCHSTADTER, New York, N. Y.

The words "MALVEAUX FRÈRES" associated with the representation of a shield, upon which appears a flying dove bearing a branch or spray of foliage in its bill, and at each side of said shield appears an ornament composed of scrollwork.

Filed May 20, 1905. Serial No. 6,199. PUBLISHED NOVEMBER 7, 1905.

48,583. WHISKY. HARRY KAHN, Cincinnati, Ohio.

The words "OLD HARRY."

Filed June 1, 1905. Serial No. 7,199. PUBLISHED NOVEMBER 7, 1905.

48,584. WHISKY. KLEIN BROS., Cincinnati, Ohio.

The name "THOS. J. MCBRIDE."

Filed July 3, 1905. Serial No. 9,707. PUBLISHED NOVEMBER 7, 1905.

48,585. WHISKY. SOL. E. LEVI, Portland, Oreg.

The word "STUBBLE" inclosed in a double ellipse.

Filed July 3, 1905. Serial No. 9,723. PUBLISHED NOVEMBER 7, 1905.

48,586. LAMP GLASSES AND GLOBES. MACBETH-EVANS GLASS COMPANY, Pittsburg, Pa.

The word "HELIOS" associated with the figure of an arm and hand grasping a bar and surrounded by a square border.

Filed May 18, 1905. Serial No. 6,006. PUBLISHED SEPTEMBER 26, 1905.

48,587. WHISKY. MANY, BLANC & Co., Chicago, Ill.

The words "WHITE TOP," above which is the representation of a snow-covered mountain-peak. At the left side of the mountain is a monogram composed of the letters, character, and abbreviation "M B & Co" inclosed in a circle.

Filed July 3, 1905. Serial No. 9,687. PUBLISHED NOVEMBER 7, 1905.

48,588. WHISKY. ANGELO MYERS, Philadelphia, Pa.

The letters "W. W. W."

Filed July 15, 1905. Serial No. 10,353. PUBLISHED NOVEMBER 7, 1905.

48,589. WHISKY. ANGELO MYERS, Philadelphia, Pa.

The word "PENNGLEANN."

Filed July 15, 1905. Serial No. 10,355. PUBLISHED NOVEMBER 7, 1905.

48,590. WHISKY. NELSON DISTILLING CO., St. Louis, Mo.

The words "GEM OF ST. LOUIS," associated with the words and abbreviations "HAND MADE SOUR MASH BOURBON PROPR'S. NELSON DISTILLING CO.," ornamented by ornamental dashes.

Filed May 24, 1905. Serial No. 6,500. PUBLISHED NOVEMBER 7, 1905.

48,591. WHISKY. OLD TIMES DISTILLERY COMPANY, Louisville, Ky.

The representation of a log-cabin distillery within a circle presenting a representation of the world, upon which appear the words "OLD TIMES WHISKEY."

Filed April 16, 1905. Serial No. 1,743. PUBLISHED JUNE 13, 1905.

48,592. WHISKY. OREGON IMPORTING CO., Portland, Oreg.

The letters "O I C" inclosed in a double ellipse.

Filed July 3, 1905. Serial No. 9,724. PUBLISHED NOVEMBER 7, 1905.

48,593. WHISKY. CHARLES H. ROSS & Co., Baltimore, Md.

The letter, words, and figure "J. JACKSON OLD RYE WHISKEY 5 YEARS OLD."

Filed July 7, 1905. Serial No. 9,360. PUBLISHED NOVEMBER 7, 1905.

48,594. WHISKY. FREDERICK SCHUELER, Columbus, Ohio.

The word "DANDELION."

Filed July 11, 1905. Serial No. 10,068. PUBLISHED NOVEMBER 7, 1905.

48,595. WHISKY. JOHN SPENGLER, Kansas City, Mo.

The words "PRIDE OF DELAWARE."

Filed July 11, 1905. Serial No. 10,038. PUBLISHED NOVEMBER 7, 1905.

48,596. WHISKY. STRAUSS, FRITZ & Co., Cincinnati, Ohio.

The words "OLD BON TON."

Filed July 15, 1905. Serial No. 10,343. PUBLISHED NOVEMBER 7, 1905.

48,597. WHISKY. THE ALBERT M. GUGENHEIM COMPANY, Cincinnati, Ohio.

The words "PLEASANT DREAMS" on a picture representing a man sitting in a large easy wicker chair dozing. He is sitting before a table upon which rest a half-filled small tumbler of whisky, a bottle of whisky, and an open box of cigars, the man holding in his hand a half-smoked cigar. Issuing from his mouth is a winding stream of smoke, and scattered in the midst of this smoke are symbolic pictures of his dreams—namely, four playing-cards, a bag marked "$10,000," three greenbacks marked with figures and some indistinct representations of the marks on greenbacks, an insect flying whose wings have the dollar-mark on them, a man and woman in full dress embracing and kissing, another bag marked "$5,000," a piece of paper marked "SHARES," and two race-horses with jockeys on them engaged in racing.

Filed June 2, 1905. Serial No. 7,291. PUBLISHED NOVEMBER 7, 1905.

48,598. RUBBER OVERSHOES. THE ADAMS AND FORD COMPANY, Cleveland, Ohio.

The word "EVERSTICK," in which there is an extended flourish under the body of the word from the initial to the final letter.

Filed April 3, 1905. Serial No. 334. PUBLISHED NOVEMBER 7, 1905.

48,599. CANDY. THE CHANDLER AND RUDD COMPANY, Cleveland, Ohio.

The words "THE BUZZ PACKAGE."

Filed May 8, 1905. Serial No. 4,637. PUBLISHED NOVEMBER 7, 1905.

48,600. WHISKY. THE D. KELLY CO., Columbus, Ohio.

The words "HOLYOKE CLUB."

Filed July 3, 1905. Serial No. 9,712. PUBLISHED NOVEMBER 7, 1905.

48,601. WHISKY. THE D. KELLY COMPANY, Columbus, Ohio.

The words "OLD CORTLAND" above an equilateral triangular design in black, on which is the monogram, in white, "D K," flanked by the word and abbreviation "THE" and "Co." at the base of the design.

Filed July 3, 1905. Serial No. 9,716. PUBLISHED NOVEMBER 7, 1905.

48,602. WHISKY. THE J. W. EVENDEN CO., Buffalo, N. Y.

The letters "V-V-V" and a picture representing a woman holding both hands aloft and bearing in the right one a torch from which float two long strands of ribbon, one on either side of the letters "V-V-V."

Filed July 11, 1905. Serial No. 10,080. PUBLISHED NOVEMBER 7, 1905.

48,603. WHISKY. THE STANDARD DISTILLING CO., Cincinnati, Ohio.

The words "LICK RUN" and a monogram composed of the letters and abbreviation "S D Co" inclosed in a circle.

Filed July 11, 1905. Serial No. 10,021. PUBLISHED NOVEMBER 7, 1905.

48,604. WHISKY. THE ULLMAN EINSTEIN CO., Cleveland, Ohio.

The name "J. GIBBONS" above a monogram inclosed in a double circle and consisting of the letters, character, and abbreviation "U E & Co." Below this design is a wreath of grain.

Filed July 3, 1905. Serial No. 9,690. PUBLISHED NOVEMBER 7, 1905

48,605. WHISKY. THE ULLMAN EINSTEIN CO., Cleveland, Ohio.

The words "EUCLID CLUB."

Filed July 3, 1905. Serial No. 9,693. PUBLISHED NOVEMBER 7, 1905.

48,606. WHISKY. THE ULLMAN EINSTEIN CO., Cleveland Ohio.

The words "UNION SPRING."

Filed July 3 1905. Serial No. 9,699. PUBLISHED NOVEMBER 7 1905.

48,607. BITTERS. THE ULLMAN EINSTEIN CO., Cleveland, Ohio.

The word "GERMANIA" above a representation of the Germania statue.

Filed July 3, 1905. Serial No. 9,702. PUBLISHED NOVEMBER 7, 1905.

48,608. WHISKY. THE WAKEMAN DISTILLING CO., Chattanooga, Tenn.

The words "QUEEN OF TENNESSEE."

Filed July 11, 1905. Serial No. 10,071. PUBLISHED NOVEMBER 7, 1905.

48,609. WHISKY. THE WILLIAM WERDER & SON COMPANY, Ashland, Wis.

The word "BURGOMASTER," under which is the representation of a man with a wooden leg holding a glass of liquor in his left hand and a cane in his right hand.

Filed June 30, 1905. Serial No. 9,490. PUBLISHED NOVEMBER 7, 1905.

48,610. WHISKY. WEIDEMAN-FRIES CO., Cleveland, Ohio.

The words "CROWN PRINCE" and the representation of a prince standing by a horse and inclosed in a circular figure, at each side of which is the design of a crown.

Filed July 11, 1905. Serial No. 10,050. PUBLISHED NOVEMBER 7, 1905.

48,611. WHISKY. H. WEIL & SONS, Paducah, Ky.

The words "THREE RIVERS" and the representation of a circular figure bearing the words "THREE RIVERS" and crossed by an arrow.

Filed July 15, 1905. Serial No. 10,350. PUBLISHED NOVEMBER 7, 1905.

48,612. GIN. ANDREW MCQUATE YOUNG, Womelsdorf, Pa.

The words "WHITE TOP."

Filed July 11, 1905. Serial No. 10,066. PUBLISHED NOVEMBER 7, 1905.

48,613. VERMIFUGES OR WORM-SYRUPS. SAMUEL W. SMITH, Ansonia, Conn.

The hyphenated word "SAN-TIN-EA."

Filed May 4, 1905. Serial No. 4,262. PUBLISHED AUGUST 22, 1905.

LABELS

REGISTERED JANUARY 2, 1906.

12,588.—*Title:* "ABDULLA & CO. LTD." (For Cigarettes and Cigarette-Tobacco.) ABDULLA & CO., LIMITED, New York, N. Y. Filed November 20, 1905.

12,589.—*Title:* "FIG YEAST." (For Yeast.) F. WEDEHASE, Sebastopol, Cal. Filed December 6, 1905.

12,590.—*Title:* "MOUNT HARRISON BRAND." (For Oranges.) FRANK L. SEWALL, East Highlands, Cal. Filed December 6 1905.

12,591.—*Title:* "MYSTIC CREAM." (For a Toilet Preparation.) OGDEN AND SHIMAR, Middletown, N. Y. Filed December 8, 1905.

12,592.—*Title:* "PRIDE OF KENTUCKY." (For Bleached Cotton.) J. M. ROBINSON, NORTON & Co., Louisville, Ky. Filed December 8, 1905.

12,593.—*Title:* "SNOW-WHITE TOWEL DUPLEX WEAVE." (For Towels.) ROBERT WISE, New York, N. Y. Filed July 14, 1905

PRINTS

REGISTERED JANUARY 2, 1906

1,529.—*Title:* "UNDER THE EVENING LIGHT." (For Ale.) THE MEEK COMPANY, Coshocton, Ohio. Filed November 8, 1905.

1,530.—*Title:* "A WISCONSIN DEER HUNT. THE RETURN—TWO BUCKS." (For Beer.) THE MEEK COMPANY, Coshocton, Ohio. Filed December 4, 1905.

1,531.—*Title:* "THE COWBOY'S DELIGHT." (For Whisky.) THE MEEK COMPANY, Coshocton, Ohio. Filed November 1, 1905.

1,532.—*Title:* "ARGO SALMON—SALMON FRITTERS." (For Salmon.) ALASKA PACKERS ASSOCIATION, San Francisco, Cal. Filed December 8, 1905.

1,533.—*Title:* "ARGO SALMON—DELICIOUS BAKED." (For Salmon.) ALASKA PACKERS ASSOCIATION, San Francisco, Cal. Filed December 8, 1905.

1,534.—*Title:* "ARGO SALMON—STUFFED EGGS." (For Salmon.) ALASKA PACKERS ASSOCIATION, San Francisco, Cal. Filed December 8, 1905.

1,535.—*Title:* "ARGO SALMON—SALMON CHOWDER." (For Salmon.) ALASKA PACKERS ASSOCIATION, San Francisco, Cal. Filed December 8, 1905.

1,536.—*Title:* "HARRY TETHER." (For Shoes.) THE BROWN SHOE CO., St. Louis, Mo. Filed December 7, 1905.

1,537.—*Title:* "ATTENTION BOYS AND GIRLS." (For Shoes.) THE BROWN SHOE CO., St. Louis, Mo. Filed December 7, 1905.

1,538.—*Title:* "THE PRAISE OF BUSTER BROWN. BLUE RIBBON SHOES." (For Shoes.) THE BROWN SHOE CO., St. Louis, Mo. Filed December 7, 1905.

1,539.—*Title:* "A TOAST." (For Shoes.) THE BROWN SHOE CO. St. Louis, Mo. Filed December 7, 1905.

1,540.—*Title:* "LITTLE JAKKIE HORNER." (For Shoes.) THE BROWN SHOE CO., St. Louis, Mo. Filed December 7, 1905.

1,541.—*Title:* "BUSTER BROWN GUARDS ARE ON PARADE." (For Shoes.) THE BROWN SHOE CO., St. Louis, Mo. Filed December 7, 1905.

1,542.—*Title:* "SAMMIE SO HAUGHTY." (For Shoes.) THE BROWN SHOE CO., St. Louis, Mo. Filed December 7, 1905.

1,543.—*Title:* "LITTLE INDIANS SNOW AND CROW." (For Shoes.) THE BROWN SHOE CO., St. Louis, Mo. Filed December 7, 1905.

1,544.—*Title:* "BUSTER BROWN'S HEART." (For Shoes.) THE BROWN SHOE CO., St. Louis, Mo. Filed December 7, 1905.

1,545.—*Title:* "THE RETURN OF JAKKIE HORNER." (For Shoes.) THE BROWN SHOE CO., St. Louis, Mo. Filed December 7, 1905.

1,546.—*Title:* "JANE AND I." (For Shoes.) THE BROWN SHOE CO., St. Louis, Mo. Filed December 7, 1905.

1,547.—*Title:* "BUSTER BROWN BLUE RIBBON BOOK." (For Shoes.) THE BROWN SHOE CO., St. Louis, Mo. Filed December 7, 1905.

1,548.—*Title:* "100 YARD DASH." (For Shoes.) THE BROWN SHOE CO., St. Louis, Mo. Filed December 7, 1905.

1,549.—*Title:* "PUNJAP." (For a Game.) BLANCHARD & COMPANY, Cambridge, Mass. Filed November 21, 1905.

1,550.—*Title:* "SHOOT 'INFALLIBLE' POWDER FOR FIELD AND TRAP." (For Powder.) E. I. DU PONT COMPANY, Wilmington, Del. Filed August 31, 1905.

1,551.—*Title:* "YOUR OLD TRUNK OR BAGGAGE MADE AS GOOD AS NEW." (For Trunks and Baggage.) EMERGENCY BAGGAGE REPAIR COMPANY, New York, N. Y. Filed December 6, 1905.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

NETH AND TAMPLIN *v.* OHMER.

Decided October 24, 1905.

INTERFERENCE—JUDGMENT ON THE RECORD.

Where the preliminary statement of N. and T. failed to overcome the record date of O.'s application and motion by N. and T. to amend their preliminary statement had been denied and the denial affirmed on appeal, *Held* that O. is entitled to an award of priority of invention.

APPEAL from Examiners-in-Chief.

FARE-REGISTER.

Mr. Richard J. McCarty and *Mr. D. P. Wolhaupter* for Neth and Tamplin.

Mr. Harry A. Toulmin for Ohmer.

ALLEN, *Commissioner:*

This is an appeal by Neth and Tamplin from a decision of the Examiners-in-Chief affirming the decision of the Examiner of Interferences awarding priority of invention to Ohmer as to the following issue:

1. A fare-register comprising a series of independent counters for counting separate classes of fares, an actuating device for each counter, an operating-slide common to said actuating devices, and a series of setting-cams, one for each actuating device, each of said cams when set moving its proper actuating device into operative relation with said common operating-slide.

2. A fare-register comprising a series of independent counters for counting separate classes of fares, setting-cams, one for each counter, connected link-and-lever mechanism between each cam and its appropriate counter, and a common operating-slide, each of said mechanism being thrown into operative relation with said common operating-slide by its appropriate cam.

3. A fare-register comprising a series of independent counters for counting separate classes of fares, setting-cams mounted on a common shaft, one for each counter, connected link-and-lever mechanism between each cam and its appropriate counter, and a common operating-slide, each of said mechanisms being thrown into operative relation with said common operating-slide by its appropriate cam.

4. A fare-register comprising a series of independent counters for counting separate classes of fares, setting-cams mounted on a common setting-shaft, one for each counter, connected link-and-lever mechanism between each cam and its appropriate counter, and a common operating-slide, each of said mechanisms being thrown into operative relation with said common operating-slide by its appropriate cam.

The record shows that Ohmer filed his application February 9, 1903, and he is therefore entitled to that date for conception and reduction to practice.

In the preliminary statement filed by Neth and Tamplin the earliest date of conception of the invention by them is stated to be the "early part of November, 1903." As Neth and Tamplin's earliest date of conception is subsequent to the date of reduction to practice to which Ohmer is entitled, Neth and Tamplin cannot prevail in this proceeding. The record shows that a motion was brought by Neth and Tamplin to amend their preliminary statement after they had been made aware of the date of filing of Ohmer's application. On consideration of the showing made in their behalf the Examiner of Interferences denied this motion. On appeal his decision was affirmed on April 20, 1905, for reasons stated in that decision.

The decision of the Examiners-in-Chief awarding priority of invention to Ohmer is affirmed.

PARKES *v.* LEWIS.

Decided October 27, 1905

1. INTERFERENCE—APPEAL ON PRIORITY—MOTION TO TRANSMIT MOTION TO DISSOLVE NOT GRANTED.

Where the grounds for dissolution specified in Rule 122 were raised at the proper time and decided by the Primary Examiner and by the Examiners-in-Chief on appeal and the case is appealed to the Commissioner from a decision of the Examiners-in-Chief on the question of priority, a motion to transmit the interference to the Primary Examiner to consider the question of patentability will not be granted unless a clear and unmistakable error appears in the prior decisions.

2. SAME—AMENDMENT OF PRELIMINARY STATEMENT.

A motion to amend a preliminary statement to correct the inadvertent use of the word "model" instead of the words "full-sized machine" will not be granted where it is found that the device referred to as the "full-sized machine" does not disclose the issue.

3. SAME—REBUTTAL TESTIMONY RELATING TO PATENTABILITY STRICKEN OUT.

Rebuttal testimony which related solely to the patentability of the issue *Held* to have been properly stricken out.

APPEAL from Examiners-in-Chief.

SEWING-MACHINE.

Mr. William R. Baird for Parkes.

Messrs. Fowler & Bryson for Lewis.

ALLEN, *Commissioner:*

This is an appeal by Parkes from a decision of the Examiners-in-Chief affirming the decision of the Examiner of Interferences awarding priority of invention to Lewis as to the following issue:

1. In a sewing-machine, a rotary-hook mechanism arranged to remain in the same center of rotation, a laterally-reciprocating needle, and means for varying the depth of the thrust of said needle.

2. In a sewing-machine, a needle, means for vibrating said needle laterally, a rotary hook arranged to remain in the same center of rotation, and means for rotating said hook twice to each thrust of said needle.

At the hearing motions were made in behalf of Parkes to remand this interference to the Primary Examiner for the purpose of considering the question of patentability of the issues, also for leave to amend his preliminary statement. Appeal was also taken from that part of the decision of the Examiner of Interferences striking out certain testimony taken in rebuttal in behalf of Parkes, which testimony was held by the Examiner of Interferences to relate solely to the question of patentability and not, therefore, proper rebuttal testimony.

The questions of patentability of the issues and interference in fact, the right of the party Lewis to make the

claims, and irregularity in the declaration of interference were considered by the Primary Examiner on motion, and the motion to dissolve the interference was denied. The Examiner's decision was affirmed on appeal. These questions must be regarded as finally settled. The questions were raised at the proper time during the proceedings of this interference, considered, and determined. After appeal has been taken from the decision of the Examiners-in-Chief a motion to transmit an interference to the Primary Examiner will not be granted unless there should appear that a clear and unmistakable error has been committed in the prior decisions. No such error appears in this case, notwithstanding the testimony which has been submitted by Parkes on this question.

The question as to the amendment of Parkes's preliminary statement was also raised on motion and finally settled, for reasons which appear of record. As clearly appears from the record, the amendment to the preliminary statement if it had been permitted would not change the effect of the decisions which have been rendered on final hearing. It appears that Parkes originally stated in his preliminary statement that he made a model of the invention in 1897, and he sought to amend this statement by alleging that a full-sized machine was built by him at this time. He urged that he inadvertently called this machine a model; that the machines were not technically models, but were full-sized devices. The machine which has been introduced in evidence as "Parkes' Exhibit First Ornamental Stitch Machines" is admitted by Parkes not to disclose the issue. This machine was not produced at the hearing. The other machine marked "Parkes' Exhibit Second Ornamental Stitch Machine," which is testified to as being completed April, 1897, also does not disclose the issue, and therefore it is immaterial whether this machine is considered a full-sized working device or whether it is a model, as first stated by Parkes in his preliminary statement. In either event there is no disclosure of the invention contained therein. In this machine there is no "rotary-hook mechanism arranged to remain in the same center of rotation," which element is essential to each one of the appealed counts. In regard to the testimony which was taken in rebuttal in behalf of Parkes the Examiner was right in striking the same from the record; but, as has already been stated, this testimony does not warrant the remanding of the interference to the Primary Examiner for the purpose of determining again the question of patentability of invention.

The question of priority of invention, which is, in fact, the only proper question raised by this appeal, has been decided by the tribunals below in favor of Lewis, and that they are right in this finding is very clear from the record. Lewis filed his original application, of which the application involved in this interference is a division, on January 27, 1900. He is at least entitled to this date for conception and reduction to practice whatever may be the legal effect given to his 1899 machine. Lewis alleges that the testimony presented by him warrants the holding that this machine was an actual reduction to practice of the invention. For the purpose of this interference it is not necessary to decide whether Lewis is right in his contention or not, for it is immaterial whether Lewis be awarded actual reduction to practice in 1899 or whether he be regarded as reducing the invention to practice in January, 1900, when he filed his application for a patent. He is in either event the first to reduce to practice by at least a year, as Parks cannot be awarded a reduction to practice of the invention of the issue prior to December, 1900, as clearly appears from the testimony which has been so carefully analyzed by the Examiner of Interferences and set forth in his decision. It is also immaterial to this case whether Parkes is held to have been the first to conceive the invention or not, for it is very clear that he was lacking in diligence. As stated by the Examiners-in-Chief:

> The evidence indicates that he (Parkes) was provided with ample means, that according to his own admission the invention could easily have been embodied in a machine, and that he was making no effort to reduce the invention to practice at that the date of Lewis's parent application and made none for several months thereafter.
>
> It thus appears that whether or not Parkes was the first conceiver, he cannot prevail in this controversy.

The decision of the Examiners-in-Chief awarding priority of invention to Lewis is affirmed.

EX PARTE AMERICAN GLUE COMPANY.

Decided December 13, 1905.

TRADE-MARKS—COAT OF ARMS—"TEN YEARS'" CLAUSE.

The coat of arms of the United States is not registrable as a trade-mark even under the "ten years'" clause of the law.

ON APPEAL.

TRADE-MARK FOR FLINT, ETC.

Mr. Vere Goldwaithe for the applicant.

ALLEN, *Commissioner:*

This is an appeal from the action of the Examiner of Trade-Marks refusing to register a mark described as follows:

> The trade-mark consists of the words "New England" together with a representation of a spread-eagle holding in its talons arrows and an olive branch and having a shield upon its breast.

It is clear upon inspection, and the appellant admits in his brief, that the mark includes the coat of arms of the United States. Section 5 of the act of February 20 expressly prohibits the registration of marks including the coat of arms of a nation, and it is because of the inclusion of the coat of arms that the Examiner has refused registration in this case.

It is clear that the Examiner is right in his ruling. The contention is made on behalf of the appellant that the prohibition against the registration of a mark including the coat of arms in a registered trade-mark has no application to marks alleged to have been in actual and exclusive use for ten years, and attention is called to the fact that such allegation of use has been made in this case. The question here involved was fully discussed and was decided in the case of *Cahn, Belt & Company*, (118 O. G., 1936.) For the reasons there stated it is held that this Office is justified in refusing registration of a mark presented under the "ten years'" clause of the law where it includes the coat of arms of a State or nation.

It is noted that the appellant has filed a substitute description of his mark curing certain objections made by the Examiner and that therefore it is unnecessary to refer to those objections.

The decision of the Examiner refusing registration is affirmed.

MOORE *v.* CURTIS.

Decided December 13, 1905.

1. INTERFERENCE — MOTION TO AMEND — CONSIDERATION OF RIGHT TO MAKE PROPOSED CLAIMS.

Upon petition that the Examiner be directed to hear a party upon his opponent's motion to amend on the question of his opponent's right to make proposed claims, *Held* that petitioner may present his arguments upon motion for dissolution in case the proposed claims are admitted.

2. HEARINGS—DURATION—DISCRETION OF EXAMINER.

Where upon petition that the Examiner be directed to hear further a party on motion in interference it appears that no hardship or irreparable injury will be suffered through the Examiner's refusal to hear, *Held* that the Examiner would not be controlled in the exercise of his discretion as to the duration of the hearing.

ON PETITION.

TURBINES.

Mr. Thomas D. Stetson and *Mr. C. J. Hedrick* for Moore.

Messrs. Dyer & Dyer for Curtis.

ALLEN, *Commissioner:*

This is a petition by Moore requesting that the Primary Examiner be directed to hear the petitioner on the right of Curtis to make certain claims which have been proposed by Curtis for addition to the issue upon motion under Rule 109.

It appears that the motion was transmitted and that the Primary Examiner gave a hearing thereon, at which the petitioner appeared by counsel and was heard. It also appears that the Examiner after the petitioner had been heard for a certain time refused to hear the petition further, and it is in view of this refusal that this petition has been brought, the petitioner alleging that he was not notified in advance that he would be heard for a limited time only and that through the unexpected limitation of the hearing by the Examiner the petitioner was prevented from presenting his case upon the right of Curtis to claim the proposed counts. The practice permits Moore to present his arguments in opposition to Curtis's right to make the proposed claims upon motion for dissolution of the interference in the event that the claims should be found acceptable by the Primary Examiner and should, in fact, be included in the interference. (*Jenne* v. *Brown* v. *Booth*, 59 O. G., 157; *Pfingst* v. *Anderson*, 114 O. G., 264.) It does not appear that the petitioner can suffer any hardship or irreparable injury through the refusal of the Examiner to hear him further at this time. Under such circumstances the Examiner should not be controlled in the exercise of his discretion as to the duration of the hearing.

Petition denied.

GALLY *v.* BURTON.

Decided December 18, 1905.

1. INTERFERENCE—DISSOLUTION—FAILURE TO INCLUDE CLAIMS MADE BY BOTH PARTIES.

Failure to include in the issue certain claims made by both parties does not constitute an irregularity where such claims are not patentably different from those which were included.

2. SAME—SAME—CLERICAL ERRORS DO NOT WARRANT DISSOLUTION.

The omission or improper use of hyphens in the counts of an issue and the use of the word "power" instead of the word *primary* are mere clerical errors, which may be corrected by a letter of the Primary Examiner calling attention to them, and they furnish no reason for dissolving the interference on the ground of irregularity in the declaration.

APPEAL on motion.

SELF-PLAYING MUSICAL APPARATUS.

Mr. Robert A. Gally pro se.

Messrs. Burton & Burton for Burton.

ALLEN, *Commissioner:*

This is an appeal by Gally from a decision of the Primary Examiner refusing to dissolve the interference on the ground of irregularity in the declaration thereof.

Gally is a patentee, and six of his claims were suggested by the Examiner to the appellee, Burton. The appellee adopted all of the claims; but the Examiner considered that it was necessary only to include three of such claims in the issue, and so declared the interference. The appellant contends that the failure to make each of such claims an issue in the interference constituted such an irregularity in the declaration thereof as will preclude a proper determination of the question of priority, because the three claims which have not been included in the interference differ in substance from those which were included, and it is therefore possible "that the party who prevailed on priority might do so on proofs of an invention answering to the issue, but not to the other claims, yet would be awarded by the Office those claims as well, although such particular forms of invention might actually have been the prior invention of the losing party to the broad issue." But this result would not follow unless the claims were patentably different. It seems that appellant agrees with this proposition, but asserts that the claims are patentably different, pointing out certain limitations which are found in the unincluded claims which are not found in the counts of the issue. These differences do exist, as stated by appellant, and the Primary Examiner recognizes this fact, but has held that the limitations are not such as render the claims including them patentable over the issue. The Examiner therefore declared the interference in accordance with the practice laid down in *Votey* v. *Wuest, Jr.*, v. *Doman*, (111 O. G., 1627.) On this appeal appellant does not give any reasons why he regards the claims in question as being patentable over the issue, except that they are somewhat different in scope and that the Examiner has practically admitted that they are patentably different, because otherwise he would not have suggested *all* of them to appellee. But when it is stated that the claims are not patentably different from the counts of the issue it is meant that they cannot be allowed to two different parties. They might all be allowed to one of the parties; but the three claims of the issue could not be allowed to one party and the other three claims to the other party, no matter what the proofs might be.

Another reason given in support of the appeal is that certain hyphens have not been used where they should have been used. This is a matter which does not change the meaning of the claims in any way and is immaterial. It is also asserted that a hyphen has been improperly used, and the word "power" is used where the word *primary* should have been used; but these are mere clerical errors, which were sufficiently corrected by the Examiner in a letter written to the Examiner of Interferences calling attention to them, which letter is a part of the record of this interference.

It appears that there has been no such irregularity in the declaration of this interference as will preclude a proper determination of the question of priority, and the decision of the Primary Examiner is therefore affirmed.

EX PARTE A. G. SPALDING & BROS.

Decided December 21 1905.

1. TRADE-MARKS—DESCRIPTION OF PARTICULAR GOODS—STATUTORY REQUIREMENT.

Where a trade-mark application said that the mark had been

used upon "implements, apparatus, and goods used in athletic games and sports," registration was properly refused on the ground that the statutory requirement for a description of the particular goods had not been complied with.

2. SAME—SAME—INDEFINITENESS—PRIMA FACIE RIGHT.

A description which is so indefinite as to convey no intelligible idea of the particular goods upon which the mark has been used is not a compliance with the statute and does not make out a *prima facie* right to registration.

3. SAME—USE UPON PARTICULAR GOODS NECESSARY—FACTS, NOT CONCLUSIONS, MUST BE STATED.

An applicant's right to registration of a trade-mark is dependent upon his use of it upon some specific goods, and under the terms of the statute the facts upon which the right is based must be stated, leaving the scope of the right acquired for subsequent judicial determination.

4. SAME—SAME—GOODS NOT OF SUBSTANTIALLY THE SAME DESCRIPTIVE PROPERTIES.

Where the description of the goods upon which the mark has been used is in such broad and general terms as to include goods which are not of substantially the same descriptive properties, registration must be refused on the ground that the application is not limited to a single trade-mark right.

5. SAME—DIVISION—SINGLE TRADE-MARK RIGHT

A single trade-mark registration should include only a single trade-mark right, and a single right extends no further than to merchandise having substantially the same descriptive properties.

6. SAME—SAME—ACTS OF 1881 AND 1905 COMPARED.

The act of 1905 contains the same provisions and has the same meaning as the act of 1881 in so far as the limitation to goods of substantially the same descriptive properties is concerned.

ON APPEAL.

TRADE-MARK FOR ATHLETIC SUPPLIES.

Messrs. Redding, Kiddle & Greeley and *Mr. A. P. Greeley* for the applicants.

ALLEN, *Commissioner:*

This is an appeal from the action of the Examiner of Trade-Marks rejecting the above-entitled application for trade-mark registration on the ground that the application does not include a particular description of the goods to which the mark has been applied, as required by the statute, and upon the further ground that the application covers more than one trade-mark right.

It is said in the application:

> The class of merchandise to which the trade-mark is appropriated is athletic supplies, and the particular description of the goods comprised in said class upon which said trade-mark is used is implements, apparatus, and goods used in athletic games and sports.

This is the only description of goods contained in the application, and it is obviously so indefinite as to convey no intelligible idea of the particular goods upon which the mark has been used.

The right to registration is founded upon the common-law right which can be acquired only by use of the mark upon some particular articles of trade. The statute contemplates and requires that the applicant state not merely the class of goods, but the particular goods within the class upon which the mark has been used. Section 1 of the act of February 20, 1905, says he shall state—

> the class of merchandise and the particular description of goods comprised in such class to which the trade-mark is appropriated.

This requirement for a statement of the particular goods upon which the mark has been used was evidently placed in the law to prevent fraud and imposition upon the public. The applicant was not to be permitted to determine for himself the scope of his trade-mark right and secure the sanction of this Office for his claim without disclosing the facts upon which his claim is based. However broad his right, it is based upon the use of the mark upon some specific goods. It seems perfectly clear that the appellants may have used their mark upon *some* "implements, apparatus, and goods used in athletic games and sports" without acquiring a common-law right to exclude others from using the mark upon other "implements, apparatus, and goods used in athletic games and sports." In other words, it does not follow from use upon some of the goods that the appellants' right extends to all goods within the alleged class, and therefore their statement is too indefinite to establish even a *prima facie* right.

The applicants should have specified the particular goods upon which they have used the mark, leaving it to the courts to determine whether or not their right includes the whole field of athletic goods. In other words, they should furnish the specific material upon which the conclusion is based, and not merely the conclusion. If they are wrong in their conclusion, they mislead the public and furnish nothing by which their error may be detected. Registration in such a case is a fraud upon the public.

The Examiner was clearly right in refusing registration, because the applicants have not complied with the statutory requirement for a statement of the particular goods upon which the mark has been used.

While the appellants' statement fails to mention the specific goods, the broad and general terms used by them include a great variety of goods of entirely different characters. As above stated, it is impossible to determine from the appellants' statement whether they have acquired trade-mark rights upon all goods coming within the terms of their indefinite description; but it is very clear that if they have such rights they constitute more than one trade-mark right. All goods coming within the indefinite terms of description are not of substantially the same descriptive properties. It is clear that different parties might use the same mark upon different goods coming within the description without bringing about a conflict of rights. This is because there is no such similarity between any and all implements or apparatus used in any and all athletic sports or games as to make one believe that they have the same origin or ownership merely because the same mark appears upon them. This is because athletic sports and games are of great variety, and the implements and apparatus used in them are subject to the same variety and include articles having no resemblance to each other, either in appearance or use, and which are of such diverse character that they are usually, if not always, made by different manufacturers.

In the case of *Faxon* (103 O. G., 891) it was pointed out that under the act of 1881 a single trade-mark registration should include only a single trade-mark right and that a single right extended no further than to merchandise having substantially the same descriptive properties. The reasons for the ruling were fully stated there, and it is unnecessary to repeat them here.

When the act of February 20, 1905, was passed, revising the entire trade-mark law, no change was made in those provisions upon which the decision in the *Faxon Case* was based. The same words were used in this new law, and therefore it has the same meaning. (*Ex parte The Chas. H. Phillips Chemical Co.*, 119 O. G., 652.) It is to be presumed that Congress would have changed the wording of the new law if it had intended that it should have a different meaning from that which had been found in the old law.

The appellants are not entitled to registration, since they have not made out a *prima facie* case of ownership at common law by specifying the particular goods upon which they have actually used the mark, as required in the statute, and since the claim made by them includes many separate trade-mark rights which cannot be included in a single registration.

The decision of the Examiner of Trade-Marks is affirmed.

EX PARTE GRISERIN-WERKE PAUL CAMPHAUSEN
G. M. B. H.

Decided December 28, 1905.

1. TRADE-MARKS—"PENDING" CASES—REJECTION BY EXAMINER.

A trade-mark application is not to be regarded as adjudicated and as not "pending" within the meaning of sections 14 and 24 of the act of 1905 merely because it had been rejected by the Examiner.

2. SAME—SAME—SAME—FINAL ADJUDICATION.

The mere rejection by the Examiner of a trade-mark application under the act of 1881 did not finally dispose of it, since it was subject to amendment and reconsideration if request therefor were made within a reasonable time.

3. SAME—SAME—APPEAL—UNREASONABLE DELAY.

While a trade-mark application is not taken out of the class of pending cases merely because it has been rejected, it is taken out of that class where the right of appeal was exhausted and where there has been unreasonable delay in prosecuting the application.

4. SAME—SAME—ABANDONMENT.

Where after rejection the trade-mark applicant abandoned all intention of further prosecuting the case, it was not a live or pending case, but was abandoned.

5. SAME—SAME—DELAY IN PROSECUTION—EVIDENCE OF ABANDONMENT

Failure to take any action in prosecution of an application for a long period of time is evidence of an intention to abandon the application and in the absence of proof to the contrary is to be taken as establishing the fact.

6. SAME—SAME—LACHES—APPLICATION NOT NOTICE.

An application for the registration of a trade-mark is not notice to the public through this Office of the applicant's claim of ownership unless that application is prosecuted with reasonable diligence. The application is abandoned by laches.

7. SAME—SAME—DELAY OF ONE YEAR UNREASONABLE.

No hard and fast rule can be laid down as to what delay will be regarded as an abandonment of a trade-mark application; but ordinarily a delay for more than one year will be deemed unreasonable unless excuse is made therefor.

8. SAME—ANTICIPATION—"GRISERIN" AND "ELECTRENE."

The trade-mark "Griserin" does not so nearly resemble the mark "Electrene" as to deceive purchasers.

ON APPEAL.

TRADE-MARK FOR MEDICINAL PREPARATIONS.

Messrs. Knight Bros. for the applicant.

ALLEN, *Commissioner:*

This is an appeal from the action of the Examiner of Trade-Marks refusing registration on the ground that no valid application has been filed under the Trade-Mark Act of February 20, 1905, which is now in force.

It appears that application for registration was filed under the act of 1881 on December 23, 1904, and that the Examiner of Trade-Marks wrote a letter on January 5, 1905, refusing registration in view of a prior registration, No. 27,094, September 24, 1895, granted to one Reynolds. He also made certain formal objections. On April 17, 1905, the applicant filed an amendment curing the formal objections and seeking to bring the application under the act of February 20, 1905. The Examiner refused to admit this amendment, saying:

> Applicant is not entitled to amend this application to bring the same under the provision of the act of February 20, 1905, for the reason that the application is not a pending application under the act of 1881, having been refused registration in Office letter of January 5, 1905.

Upon request for reconsideration the Examiner repeated his ruling, but also called attention to formal defects in the amendment. Another amendment was then filed, being in form such as required by sections 14 and 24 of the act of 1905. The Examiner refused to admit the amendment or to consider the application as one pending upon which registration might be granted. This appeal was thereupon taken, and it presents for determination the question whether this application was pending at the time of the passage of the act of February 20, 1905.

The Examiner's action in this case was based upon my ruling in *ex parte Mark Cross Company*, (116 O. G., 1733,) where it was said:

> In the present case it surely is not unreasonable to suppose that Congress intended the word "pending" to have the ordinary meaning and to apply to cases which had not been adjudicated. It was to be presumed that there would be applications in this Office filed under the act of 1881 and not disposed of at the time the new law was to take effect. It was obviously proper and reasonable to preserve the rights of these applicants and provide for an adjudication of their cases. The word *pending* plainly refers to these cases, and it cannot be applied to adjudicated cases without giving it a forced and unnatural construction.

The Examiner points out that the present case had been acted upon and "adjudicated" by him and that therefore under the above ruling it was not pending when the law of 1905 took effect. He was justified in taking such position in view of the decision cited and would not have been justified in allowing the present case unless and until some higher tribunal modified the ruling or construed the term "adjudicated" to mean something more than a mere letter of rejection by the Examiner.

It does not follow, however, that it is finally determined that no applications which stand rejected when the act of February 20, 1905, took effect are to be regarded as pending at that date. My attention has been called to several cases in which there would be manifest hardship in holding that the applications were not pending, although they had been rejected. In some instances the rejection was made so late that it was impossible for the applicant to ask for reconsideration or to appeal before the new law went into effect. In others the applicants show that they were diligently engaged in investigating the alleged prior ownership of the mark by another, cited as the reason for rejecting the application, and at the time the act of 1905 took effect had not completed that investigation. They were unable to present to this Office the result of that investigation with a request for reconsideration until after the new law took effect.

In the matter of collecting for the Government fees for services rendered by this Office it is believed that the fee should not be remitted by the executive branch of the Government in any case where there is reasonable doubt as to the intention of Congress. The executive officer of the Government should collect the fees in case of doubt, leaving the parties to their remedy by action in the courts, whose functions are to determine finally just such questions.

In the present case, however, I have reached the conclusion that there is no reasonable doubt of the fact that the application was pending within the meaning of the act of

February 20, 1905, at the time of its passage. The mere rejection of the case by the Examiner did not finally dispose of it. It was subject to amendment and reconsideration if request therefor were made within a reasonable time. It was to be expected that the applicant would ask for reconsideration or appeal within a reasonable time if it did not wish to acquiesce in the adverse ruling. The applicant did, in fact, ask for reconsideration without unreasonable delay, and I am convinced that it was not the intent of Congress to deprive it of that right merely because in the meantime the new law was passed and went into effect.

While I am satisfied, after thorough consideration, that Congress did not intend to require a new application and new fee in order to entitle a trade-mark claimant to secure an adjudication which he was entitled to secure and was diligently seeking to secure on his application under the old law, I am equally well satisfied that the word "pending" in the act of 1905 does not include and was not intended to include all applications rejected under the act of 1881 merely because the applicant had not taken advantage of the right of appeal given him by the rules.

It is perfectly clear that many applications had been rejected by the Examiner and abandoned by the applicants long before the act of 1905 was passed. Where after rejection the applicant abandoned all intention of further prosecuting the case, it is clear that the case was not a live or "pending" case. Failure to take any action for a long period of time is evidence of such abandonment and in the absence of proof to the contrary is to be taken as establishing the fact.

A suit in the courts must be prosecuted with reasonable diligence in order to operate as notice or to have the effect of *lis pendens*. (*Am. and Eng. Encycl. of Law*, vol. 21, p. 622; *Redfield* v. *Ystalyfera Iron Co.*, 110 U. S., 174.) So here an application for registration of a trade-mark is not notice to the public through this Office of the applicant's claim of ownership unless that application is prosecuted with reasonable diligence. Long and unexcused delay shows an abandonment of the proceeding, and this Office is justified in regarding it as no longer notice of the party's claim to the alleged trade-mark. In regard to diligence of prosecution it is said in *American and English Encyclopædia of Law*, (vol. 21, p. 623:)

> No hard and fast rule, however, can be laid down for the government of all cases, but the question of reasonable diligence in prosecuting must of necessity depend upon the particular facts and circumstances of each case.

While no hard and fast rule can be laid down as to what delay will be regarded as an abandonment of a trade-mark application, it may be said that ordinarily a delay for more than a year will be deemed unreasonable unless excuse is made therefor. Congress has deemed one year a reasonable time for acting upon patent applications, and no reason is apparent why a longer period should be required in trade-mark cases. The analogy is as close as that which was the basis of the ruling by the Supreme Court that reissue applications should be made within two years after the date of the patent. (*Topliff* v. *Topliff*, 145 U. S., 156.)

It must be held that a trade-mark application was not "pending" at the time of the passage of the act merely because no final decision in the case had been rendered by the Commissioner in person on appeal, as in the case of *Mark Cross Co.*, (116 O. G., 2534.) Any unreasonable delay, particularly after adverse judgment by the Examiner, takes the case out of the class of live or pending applications, and, as above stated, a delay of more than one year will be regarded *prima facie* as unreasonable.

Since there was no unreasonable delay in the present case, it must be regarded as pending at the time of the passage of the act of February 20, 1905.

This appellant's trade-mark consists of the word "Griserin," and the mark registered by Reynolds and cited originally as the ground of rejection consists of the word "Electrene." There is no such resemblance between the marks as would deceive purchasers, and it is probable that the Examiner would have withdrawn his rejection upon reconsideration if he had felt at liberty to regard the application as one properly before the Office for consideration under the act of 1905.

The decision of the Examiner of Trade-Marks is reversed.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

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Labels	20—	No. 12,594 to No. 12,613, inclusive.
Prints	9—	No. 1,582 to No. 1,590, inclusive.
Reissues	2—	No. 12,634 to No 12,635, inclusive.
Total issue	880	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	3	1	Nevada		
Alaska, District of			New Hampshire		
Arizona Territory			New Jersey	22	7
Arkansas	5		New Mexico Ter'y	1	
California	15	3	New York	89	71
Colorado	4	1	North Carolina	1	
Connecticut	21	2	North Dakota	1	
Delaware			Ohio	40	20
District of Columbia	5		Oklahoma Ter'y	2	
Florida	1		Oregon	1	
Georgia	4	2	Pennsylvania	55	15
Hawaii Territory	3	4	Porto Rico		
Idaho			Rhode Island	5	1
Illinois	64	10	South Carolina	1	
Indian Territory			South Dakota	1	
Indiana	22		Tennessee	5	4
Iowa	22	1	Texas	9	1
Kansas	4		Utah	1	
Kentucky	5	4	Vermont	2	
Louisiana	2		Virginia	7	
Maine	6	2	Washington	4	1
Maryland	5	1	West Virginia	4	
Massachusetts	28	27	Wisconsin	16	
Michigan	15	1	Wyoming	1	
Minnesota	15	3	U. S. Army		
Mississippi			U. S. Navy		
Missouri	12	4			
Montana	1		Total to citizens of the United States	469	195
Nebraska	5				

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina			Netherlands		
Austria-Hungary	3		Newfoundland		
Belgium	1		New South Wales		
Brazil			New Zealand	1	
British West Indies			Norway	1	
Canada	2		Persia		
Cape Colony			Queensland		
Chile			Roumania		
China			Russia		
Costa Rica			San Salvador		
Cuba			Scotland	2	
Denmark			Sierra Leone	1	
Egypt			Spain		
England	24		Sweden	2	
France	3		Switzerland	2	
Germany	44	2	Transvaal, South Africa		
India			Victoria	1	
Ireland	1		Western Australia		
Italy	2		Total to citizens of foreign countries	91	3
Japan	1				
Mexico		1			
Natal					

Date of Patent.

RULE 207. The weekly issue closes on Thursday, and the patents of that issue bear date as of the third Tuesday thereafter. If the final fee in any application is not paid on or before Thursday, the patent will not go to issue until the following week.

Trade-Marks.

The publication of trade-marks under the act of February 20, 1905, in the OFFICIAL GAZETTE, commenced MAY 2, 1905, and will appear in each weekly number of the GAZETTE thereafter.

Extra copies of the trade-mark portion of the GAZETTE, which will be sold separately, may be obtained single or in quantities for five cents each. Coupons will be taken in payment therefor.

Payment of Patent Fees.

RULE 207. All payments of money required for Office fees must be made in specie, Treasury notes, national-bank notes, certificates of deposit, post-office money-orders, or certified checks. Money-orders and checks should be made payable to the "Commissioner of Patents." Payment may also be made to the Treasurer, or to any of the assistant treasurers of the United States, or to any of the depositaries of national banks, or receivers of public money, designated by the Secretary of the Treasury for that purpose, who shall give the depositor a receipt or certificate of deposit therefor. *This receipt or certificate of deposit shall, in case of payment of final fees, be deposited in the mail for transmission to the Patent Office, within six months from the allowance of the application.* Money sent by mail to the Patent Office will be at the risk of the sender. Letters containing money should be registered. In no case should money be sent with models.

RULE 208. The weekly issue closes on Thursday, and the patents of that issue bear date as of the third Tuesday thereafter. If the final fee in any application is not paid on or before Thursday, the patent will not go to issue until the following week.

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business January 2, 1906.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
	In arrears—Under one month.			
303	XVII. Linotyping, Printing, Matrix-Making, Nut and Bolt Locks.	Dec. 20	Oct. 2	328
175	III. Annealing and Tempering, Coating with Metal, Electrochemistry, Metal-Founding, Metallurgy, Shaping Fluid Metal.	Dec. 18	Nov. 27	246
308	XV. Bread, Pastry, and Confections, Making, Coating, Laminated Sheets and Fabrics, Fuel, Glass, Hydraulic Lime and Cement, Paper-Making, Paving, and Plastics.	Dec. 18	Oct. 20	376
378	XXXVIII. Artesian and Oil Wells, Bottles and Jars, Care of Live Stock, Fishing and Trapping, Stationery, Stone-Working.	Dec. 18	Oct. 19	381
307	XIV. Cutting and Punching Sheets and Bars, Farriery, Metal-Bending, Metal-Ornamenting, Metal Personal Wear, Making, Sheet-Metal Ware, Making, Tools, Wire-Working.	Dec. 18	Aug. 7	200
164	XXXIII. Canes, Canopies, Cutlery, Domestic Cooking Vessels, Electricity, Medical and Surgical, Electric Signaling, Fireproof Buildings, Harness, Masonry, Tents and Umbrellas.	Dec. 18	July 6	734
112	XXI. Textiles, Carding, Knitting, Spinning, Weaving, etc.	Dec. 18	June 12	563
321	I. Tillage, etc., Fences, and Railway Draft Appliances.	Dec. 16	Nov. 17	193
337	XVIII. Steam-Engineering, etc ...	Dec. 16	Sept. 29	311
128	II. Bee Culture, Dairy, Label-Affixers, Paper Files and Binders, Presses, Store-Service, Tobacco, etc.	Dec. 16	Sept. 18	179
332	X. Carriages and Wagons.....	Dec. 15	Sept. 6	726
379	XXIII. Acoustics, Coin-Handling, Horology, Recorders, Registers, Optics, Signals, Time Controlling Mechanism.	Dec. 15	Aug. 23	362
154	XI. Boot and Shoe Making, Boots, Shoes, and Leggings, Button, Eyelet, and Rivet Setting, Leather Manufacturing, Nailing and Stapling, Check-Controlled Apparatus, Whips and Whip Apparatus.	Dec. 15	July 17	417
322	XXXVI. Curtains, Shades, and Screens, Drafting, Driers, Measuring Instruments, and Wind-Wheels.	Dec. 14	Nov. 28	219
167	XXXVII. Electricity, Conductors, Lighting, Special Apparatus.	Dec. 14	Apr. 17	665
316	VI. Bleaching and Dyeing, Chemicals, Explosives, Fertilizers, Medicines, Preserving, Sugar and Salt.	Dec. 9	Oct. 19	203
133	XXII. Air-Guns, Ammunition and Explosive Devices, Boats and Buoys, Catapults and Targets, Firearms, Marine Propulsion, Ordnance, Ships.	Dec. 9	Sept. 11	266
146	XXXII. Carbonating Beverages, Dispensing Beverages, Dispensing-Cans, Metallic Shipping and Storing Vessels, Packaging Liquids, Paper Receptacles, Refrigeration, Wooden Receptacles.	Dec. 9	Aug. 21	608
324	XII. Elevators, Journal-Boxes, Lubricators, Machine Elements, Pulleys and Shafting.	Dec. 7	Oct. 7	460
144	XXIV. Apparel, Apparel Apparatus, Sewing-Machines, Surgery, Toilet.	Dec. 7	Sept. 25	510
167	V. Fine Arts, Bookbinding, Harvesters, Jewelry, and Music.	Dec. 5	Oct. 13	235
127	VIII. Beds, Chairs, Furniture, Kitchen and Table Articles, Stove Furniture.	Dec. 5	Aug. 24	309
282	XXX. Fluid-Pressure Regulators, Lamps and Gas-Fittings, Typewriting Machines.	Dec. 5	May 8	202

Applications Under Examination—Continued.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
232	IV. Bridges, Conveyers, Cranes and Derricks, Excavating, Hoisting, Hydraulic Engineering, Loading and Unloading, and Towers.	Dec. 4	Dec. 4	253
304	XXXIV. Railways, Railway-Brakes, Rolling-Stock.	Dec. 4	Nov. 15	393
375	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, Washing Apparatus.	Dec. 4	July 17	589
105	XXVI. Electricity, Generation, Electric Heaters, Electric Railways, Motive Power.	Dec. 4	June 19	649
	Between one and two months.			
172	XXXI. Alcohol, Charcoal and Coke, Distillation, Gas, Heating and Illuminating, Hides, Skins, and Leather, Liquid Coating Compositions, Oils, Fats, and Glue, Water Purification.	Dec. 1	Nov. 20	235
244	XXXV. Baggage, Buckles, Buttons, and Clasps, Card, Picture, and Sign Exhibiting, Deposit and Collection Receptacles, Package and Article Carriers, Packing and Storing Vessels, Photography.	Dec. 1	Nov. 2	475
109	XVI. Telegraphy and Telephony..	Dec. 1	Oct. 30	237
312	VII. Velocipedes, Clutches, Fire-Escapes, Games and Toys, Ladders, Mechanical Motors, and Paper Manufactures.	Dec. 1	Oct. 2	508
147	XXIX. Coopering, Roofs, Wheelwright-Machines, Wooden Buildings, Wood-Sawing, Wood-Turning, Woodworking-Tools.	Dec. 1	Sept. 9	379
122	XIX. Stoves and Furnaces and Steam-Boiler Furnaces.	Dec. 1	June 15	606
142	IX. Baths and Closets, Fire-Extinguishers, Hydraulic Motors, Pumps, Sewerage, and Water Distribution.	Dec. 1	June 6	967
282	XXVIII. Air and Gas Engines, Air and Gas Pumps, Pneumatics.	Nov. 16	May 26	780
179	XX. Artificial Limbs, Builders' Hardware, Dentistry, Locks and Latches, Safes, Undertaking.	Nov. 8	July 3	418
315	XXV. Butchering, Mills, Threshing, and Vegetable Cutters and Crushers.	Nov. 6	July 20	465
330	XIII. Arms, Projectiles, and Explosive Charges, Making, Metal-Working, Needle and Pin Making.	Nov. 2	Aug. 28	520
	Total number of applications awaiting action			17,256
150	TRADE-MARKS, DESIGNS, LABELS AND PRINTS.			
	Between one and two months.			
	Trade-Marks.....	Nov. 4	Oct. 11	4055
	Under one month.			
	Designs.....	Dec. 23	Dec. 14	9
	Labels and Prints.....	Dec. 29	Dec. 20	32

Full Names of Applicants.

* * * All applications which disclose the full name of the applicant in the preamble of the specification will be received and considered as a sufficient compliance with Rule 40 of the Rules of Practice. (Order 881.)

When the full first name of the applicant does not appear either in his signature or in the preamble to the specification, the Examiner will, in his first official letter, require an amendment supplying the omission, and he will not pass the application to issue until the omission has been supplied, unless an affidavit shall have been filed setting forth that the full first name of the applicant is the one originally given by him. (Order 688.)

PATENTS

GRANTED JANUARY 9, 1906.

809,276. **HARNESS LINING AND PAD AND THE LIKE.** EMMA M. AULTON, Bushbury, near Wolverhampton, England. Filed Dec. 7, 1903. Serial No. 184,166.

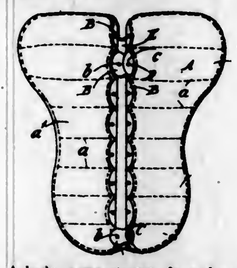

Claim.—1. A body, compartments formed on the body, said compartments having one end open, flaps for closing the open ends of the compartments said flaps having apertures, bladders insertible in the compartments and flexible tubes carried by the bladders, said tubes passing through the apertures of the flaps to confine the bladders within the compartments and to hold the flaps in closed position.

2. A body, compartments formed on the body, said compartments having one end open, flaps for closing the open ends of the compartments, said flaps having apertures, bladders insertible in the compartments, flexible tubes carried by the bladders, said tubes passing through the apertures of the flaps to thereby confine the bladders within the compartments and to hold the flaps in their closed positions, and means for holding the body in applied position.

809,277. **TURBINE.** JOHN H. BARKER, Newcastle-upon-Tyne, England, assignor to Charles Algernon Parsons, Newcastle-upon-Tyne, England. Filed Sept. 26, 1905. Serial No. 280,147.

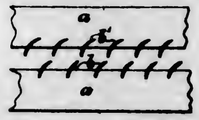

Claim.—1. A bladed turbine-drum comprising in combination a plurality of rings, blades carried by said rings so that the blades project from the lateral face of said rings, the rings being associated so that the blades projecting from adjacent faces of the rings come into alinement, substantially as described.

2. A bladed turbine-drum having a plurality of rings, blades carried by the rings and spaced at double the circumferential pitch required, the blades being arranged to project laterally from the rings for one-half the width of the blades and the rings being associated so that the blades projecting from contiguous faces of the rings fall into alinement, substantially as described.

3. The combination of a ring *a* having the alternate blades of a row formed thereon so as to project laterally for one-half the width of the blade, an adjacent ring similarly carrying the remainder of the blades which form the complete row, bolts *c* binding a plurality of such associated blade-carrying rings, substantially as described.

809,278. **PROCESS OF PRODUCING SOLUTIONS CONTAINING PURE SILVER SALT.** WALTHER DÉSAEGHER, Winterthur, Switzerland. Filed July 6, 1905. Serial No. 268,592.

Claim.—The herein-described process of producing a solution containing pure silver salt, consisting in dissolving in about thirty liters of water 0.8 kilogram of silver salts, which are then precipitated as chlorid with diluted hydrochloric acid of twelve per cent. and the deposit washed out, whereupon in a reducing solution of about thirty liters of water and 3.3 kilograms of hyposulfite of soda the precipitated chlorid of silver is dissolved while being constantly stirred and with this solution are mixed, while the same is being stirred, first 1.8 kilograms of caustic ammonia of eight per cent. and then eight kilograms of finely-triturated Spanish whiting, whereby double salts are formed of which the following can be traced:

$$Ag_2S_2O_3 \text{ and } Ag_2S_2O_3Na_2S_2O_3H_2O,$$

substantially as and for the purpose set forth.

809,279. **PROCESS FOR THE PRODUCTION OF STOVE-POLISH.** ANTON N. BRAUN, Arad, Austria-Hungary. Filed Aug. 12, 1905. Serial No. 273,977.

Claim.—1. Process for the production of a stove-polish consisting in dissolving gum-arabic in distilled water, boiling the mixture with spirit of turpentine while the gum-arabic is dissolving, and adding a pulverized alloy of aluminium and tin substantially as described.

2. Process for the production of a stove-polish consisting in dissolving gum-arabic in distilled water, boiling the mixture with spirit of turpentine while the gum-arabic is dissolving, adding to part of this product a pulverized alloy of aluminium and tin, diluting the latter product with the remainder of the gum-arabic and turpentine solution and stirring the whole substantially as described.

3. Process for the production of a stove-polish consisting in dissolving twelve parts gum-arabic in seventy-four parts distilled water, boiling the mixture with four parts spirit of turpentine while the gum-arabic is dissolving, mixing thirty parts of the product with ten parts pulverized alloy of aluminium and tin in equal proportions, diluting the latter mixture with the remainder of the gum-arabic and turpentine solution and stirring the whole substantially as described.

809,280. **BEARING FOR VERTICAL SHAFTS.** EDGAR W. BROCKALL, Rochester, N. Y. Filed June 24, 1905. Serial No. 266,535.

Claim.—1. The combination with a suitable support, of a shaft-supporting sleeve mounted in said support and open at one side for the driving means, a step-bearing in the lower end of the sleeve, a shaft mounted in the sleeve and stepped at its lower end in said step-bearing, and means for yieldingly connecting the lower end of the sleeve to the support.

2. The combination with a suitable support, of a sleeve provided with an apertured flange at its lower end and passed upwardly through an opening in said support, screws passed loosely through the flange-aperture upwardly into the lower side of the support, and springs between the flange and support.

3. The combination with a suitable support, of a shaft-supporting sleeve open at one side for the driving connections, a step-bearing in the lower end of the sleeve for said shaft, an apertured flange being provided on the sleeve below the support, screws passed loosely through said flange-apertures into the lower side of said support, and springs on the screws between the flange and support.

4. The combination with a support and a shaft-supporting sleeve passed upwardly through an opening in the support and there provided with an annular pivot-ledge, screws passed up loosely through the flange-apertures into the lower side of the support, springs between the flange and support, of a cup in the lower portion of the sleeve, three balls in the cup, a plug closing the lower end of the sleeve and holding the cup in place, and a shaft within the sleeve and having a pointed lower end stepped between the balls.

809,280.

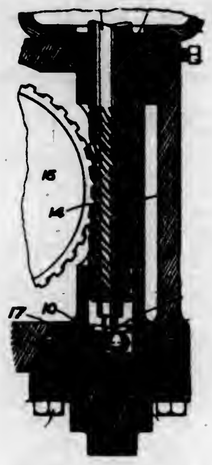

809,281. SAFETY DEVICE FOR OIL-CANS. BENEDETTO BUCCIERI, Sharpsburg, Pa., assignor of one-half to Vincenzo De Luca, Pittsburg, Pa. Filed June 23, 1905. Serial No. 266,640.

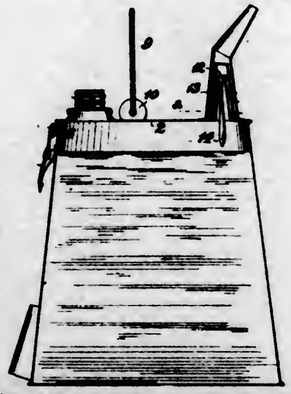

Claim.—1. The combination, with an oil-can, of a spout, an open-ended discharge-tube therein, a check or non-return valve controlling said discharge-tube, a closing-weight fixed to said valve, and a perforated casing interposed between the discharge-tube and the spout.

2. The combination, with an oil-can, of a spout, an automatically-acting valve controlling communication between the spout and the interior of the can, and a perforated casing interposed between the valve and the spout.

809,282. STEAM-GENERATOR. THOMAS R. BUTHAN, Lake Bluff, Ill. Filed Dec. 21, 1904. Serial No. 237,142.

Claim.—1. In a steam-generator, a horizontal boiler-shell comprising a portion of smaller diameter, and a portion of larger diameter extending above the top of the portion of smaller diameter to provide a water-space in its lower portion aligning with that of the portion of smaller diameter, and a steam-space in its upper segment, and passages for conducting gases through the water-space and subsequently through the steam-space in the larger portion of the shell.

2. In a steam-generator, a boiler-shell comprising a portion of smaller diameter and a portion of larger diameter, extending above the top of the portion of smaller diameter to provide a water-space in its lower portion aligning with that of the portion of smaller diameter, and a steam-space in its upper segment, tubes or flues taking through the joint length of said portions from end to end of the shell, superheating tubes or flues taking through the steam-space in the larger portion of the shell, and means for directing gases successively through the first said tubes or flues and the second said tubes or flues.

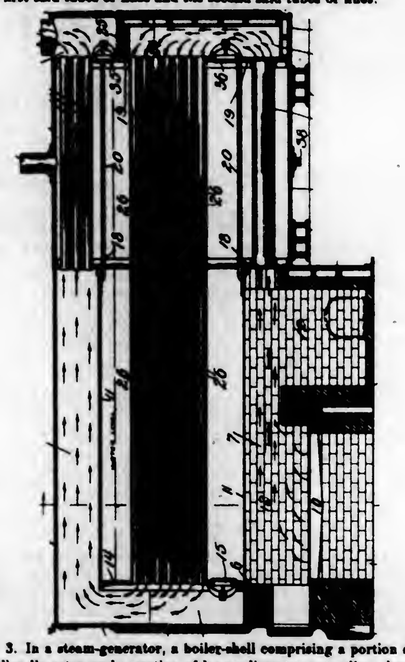

3. In a steam-generator, a boiler-shell comprising a portion of smaller diameter, and a portion of larger diameter, extending above and below the portion of smaller diameter, gas-passages through the lower segment of the portion of larger diameter, a main battery of tubes extending through the shell from end to end, passages through the upper segment of the portion of the shell of larger diameter, and means for directing the heating medium successively through the passages and tubes in the order named.

4. In a steam-generator a source of heat-supply, a boiler-shell having a portion of smaller diameter and a portion of larger diameter, the portion of smaller diameter being directly exposed to the heat, water-heating passages through the lower segment of the enlarged portion of the shell, water-heating tubes extending throughout the entire length of the shell, and superheating-tubes extending through the upper segment of the enlarged portion of the shell, and means for directing the heat successively through said passages and tubes in the order named.

5. In a steam-generator, a boiler-shell comprising a portion of smaller diameter and a portion of larger diameter, water-heating tubes or flues extending through the lower arc of the enlarged zone of the shell, superheating-tubes extending through the upper arc of the enlarged zone of the shell, a heat-generator arranged to primarily heat the portion of the shell of smaller diameter, and means for directing the heated gases through the water-heating tubes and superheating-tubes.

6. In a steam-boiler, a shell comprising a cylinder of smaller diameter and a cylinder of larger diameter arranged end to end in open communication, heads for the opposite ends of the cylinders, and braces for the head of the larger cylinder at one end secured to said head, and at their other ends secured to the smaller cylinder.

7. In a steam-generator, a shell comprising a portion of smaller diameter and a portion of larger diameter, passages through the lower segment of the portion of larger diameter, tubes through the upper segment of said portion, a source of supply of a heating medium, and means for directing the heating medium successively through the passages and tubes in the lower and upper segments of said larger portion of the shell.

8. In a steam-generator, a shell comprising a portion of smaller diameter and a portion of larger diameter, flues through the lower segment of the larger portion of the shell, tubes through the upper segment of the larger portion of the shell, a source of supply of a heating medium, and means for directing the heating medium sequentially through said flues and tubes.

9. In a steam-generator, a shell having a front portion of relatively small diameter and a rear portion of relatively large diameter, a passage in rear of said shell, and a partition-wall in said passage dividing it into two uptakes, an uptake at the front end, a passage over the smaller part of the shell communicating with the front uptake, a furnace arranged to directly heat the lower surface of the smaller portion of the shell, tubes or flues taking through the lower segment of the enlarged portion of the shell arranged to receive heat from the furnace and opening into the lower rear uptake, fire-tubes taking through the shell from end to end and opening into the lower rear uptake and the front uptake, tubes taking through the upper segment of the enlarged portion of the shell opening into the passage over the front of the shell, and into the upper rear uptake, and an outlet flue communicating with the upper rear uptake.

809,283. MACHINE FOR FORMING ROUND COTTON-BALES. CARTER M. CAGLE, Beckville, Tex. Filed Jan. 31, 1906. Serial No. 243,537.

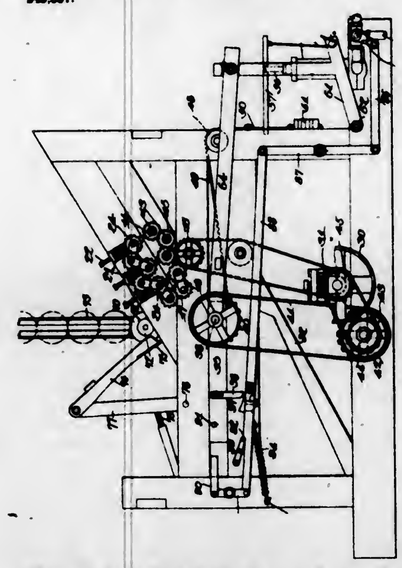

Claim.—1. In a bale-forming machine, a belt, a transfer-roller serving as a bale-forming means, and means for imparting movement to the belt, the bale being formed serving as a friction member for transmitting movement from the belt to the roller.

2. In a baling-press, a compression means, and means under the control of the bale being formed for automatically moving the compression means to inoperative position when said bale has reached a predetermined size.

3. In a baling-press, a compression-roller, and means for automatically moving the same to inoperative position when the bale has reached a predetermined size.

4. In a baling-press, a compression-roller, means for automatically moving the roller to inoperative position, and means for adjusting the time of operation in accordance with the diameter of the bale to be formed.

5. In a baling-press, a compression-roller, a movable frame supporting the roller, means for moving the roller out of contact with the bale, and mechanism operable by the movement of the frame for controlling the operation of the roller-moving means.

6. The combination in a baling-press, of a compression-roller, a frame carrying the same, frame-engaging means for adjusting the roller to inoperative position, and an adjustable mechanism operable by the frame for controlling the operation of said frame-engaging means.

7. The combination in a baling-press, of a compression-roller, a frame carrying the same, a fluid-pressure-actuated mechanism for moving the roller to inoperative position, and means controlled by said frame for governing the supply of fluid under pressure to said mechanism.

8. The combination in a baling-press, of a compression-roller, a movable frame carrying said roller, a fluid-pressure-operated means for engaging said frame, and adjusting the rollers to inoperative position, a normally closed valve for governing the flow of fluid under pressure to said mechanism, and means operable by the frame for opening said valve.

9. The combination in a baling-press, of a compression-roller, a slidable frame for said roller, a fluid-pressure-operated mechanism for moving the roller to inoperative position, a valve for controlling the flow of fluid under pressure to such mechanism, and valve-operating rods disposed in the path of movement of said frame.

10. The combination in a baling-press, of a compression-roller, a slidable frame carrying said compression-roller, a fluid-pressure-operated mechanism for moving the roller to inoperative position, a valve controlling the flow of fluid to said mechanism, a valve-operating rod having a locking-shoulder, a fixed stop for engaging the shoulder, a valve-opening spring engaging the rod, and adjustable means operable on movement of the frame for moving said shoulder from engagement with the stop.

11. The combination in a baling-press, of a compression-roller, a movable frame carrying said roller, a fluid-pressure-operated mechanism for moving said roller to inoperative position, a valve for controlling the flow of fluid under pressure to said mechanism, a valve-operating rod having a locking-shoulder, a fixed stop with which said shoulder engages, a spring engaging the rod and serving when the latter is released to move the valve to open position; an adjustable cam carried by the rod, and a lug or finger carried by the frame and adapted to engage said cam.

12. The combination in a baling-press, of a compression-roller, a movable frame carrying said roller, a fluid-pressure-operated means engaging said frame, a normally closed valve controlling the flow of fluid to and from said means, and valve-operating means carried by the frame.

13. The combination with a compression-roller, of a movable frame carrying said roller, a fluid-pressure-operated means engaging said frame, a valve for controlling the flow of fluid under pressure to and from said means, a valve-operating device, and means carried by the frame for engaging said device and first opening and then closing said valve.

14. The combination in a baling-press, of a compression device, and means for automatically moving the same into and out of operative position.

15. The combination in a baling-press, of a compression means, means for automatically moving the same to inoperative position at the completion of each bale-forming operation, and mechanism for restoring the compression means to operative position after the discharge of a finished bale.

16. The combination in a baling-machine, of a compression-roller, a slidable frame carrying said roller, a weight connected to the frame and tending to hold the roller in engagement with the bale, a fluid-pressure cylinder, a piston in said cylinder, links forming a connection between the piston and the frame, and means connecting the piston to the link to adjust the roller to inoperative position.

17. The combination in a baling-machine, of a compression-roller, a frame carrying the same, a winding-drum, cables or chains connecting the frame to the drum, a weighted cable or chain secured to said frame, a rocking frame connected to the roller-carrying frame, a fluid-pressure cylinder, a piston arranged therein and connected to the rocking frame, a valve for controlling the flow of fluid under pressure to and from the cylinder, a rod connected to the valve and provided with a shoulder, a stop with which said shoulder engages, a spring connected to the rod, a cam on said rod, a lug or finger arranged on the movable frame and serving to engage said cam, an arm connected to the valve-rod, and a projecting lug carried by the frame and adapted to engage said arm as the roller-carrying frame nears the limit of its rearward movement.

18. The combination in a baling-press, of compression members, and means for automatically feeding cores or spools between said compression members.

19. The combination in a baling-machine having a baling-chamber, of a pair of compression members, means for automatically feeding empty cores or spools to the compression-chamber, and means for automatically discharging completed bales from said chamber.

20. In a baling-machine, the combination with compression members, of a frame having grooves leading between said compression members, and means for feeding cores or spools along said grooves.

21. The combination in a baling-machine, of grooved frames, means for feeding cores or spools along said grooves, and a compres-

sion member serving at the completion of each baling operation to feed the filled core or spool to discharge position in said grooves.

22. The combination in a baling-machine, of a baling-chamber, compression members, a core or spool reservoir, and means for feeding single spools therefrom to the baling-chamber.

23. The combination in a baling-press, of compression members forming a baling-chamber, a core or spool reservoir, and means under the control of one of said compression members for automatically feeding single cores or spools from the reservoir to the baling-chamber.

24. The combination with a frame, of a compression-roller, a slidable carrier therefor, a core-feeding frame, and an arm secured to said frame and arranged in the path of movement of the carrier.

25. The combination in a baling-machine, of compression members forming a baling-chamber, a movable frame carrying one of said compression members, a core or spool reservoir, a rocking frame having one end in the path of movement of the movable frame, and yieldable fingers carried by the rocking frame and serving to engage successive cores as they are fed to the baling-chamber.

26. In a baling-machine, a continuously-operable means for compressing loose material into a bat or web, an intermittently-operable means for pressing the bat into the form of a cylindrical bale, means for automatically feeding fresh cores to the baling-chamber, and means for automatically discharging filled cores from said chamber.

809,284. **RAIL-JOINT.** ALVIN W. CROSMANN and LOGAN L. COMBS, Hickory, Pa. Filed Apr. 27, 1905. Serial No. 257,614.
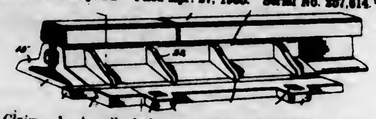
Claim.—1. A rail-chair comprising an apertured base-plate having rail-engaging means at one edge; a splice-bar supported on the chair, and engaging the opposite side of the rails; lugs extending from the splice-bar, and entering the apertures in the base-plate; and means for securing the splice-bar against lateral displacement.

2. A rail-chair comprising an apertured base-plate having rail-engaging means at one edge, and a key-seat at its opposite edge; a splice-bar supported on the chair; lugs extending from the splice-bar, and entering the apertures in the base-plate; and a key driven into the seat, and engaging the outer edge of the splice-bar, to prevent lateral displacement thereof.

3. A rail-chair comprising an apertured base-plate having rail-engaging means at one edge, and a key-seat at its opposite edge; a splice-bar supported on the chair, and having projections overhanging the key-seat; and a key driven into the seat under said projections, and engaging the outer edge of the splice-bar, to prevent lateral displacement thereof.

809,285. **SAFETY DEVICE FOR ELEVATORS.** JOHN R. CONLEY, Oakland, Kans. Filed Mar. 21, 1905. Serial No. 251,343.

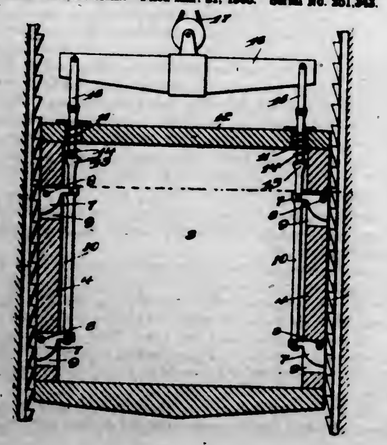

Claim.—In a safety device for elevators the combination of an elevator-shaft, vertical toothed rails arranged in said shaft at opposite sides thereof, a cage, the safety-catches 7 pivoted at opposite sides of the cage, a horizontal bar at the upper portion of the cage and having vertical openings therethrough, the draw-bars 10 arranged at opposite sides of the cage and pivotally connected with the inner ends of the safety-catches, the shoulders 13 pivoted upon said draw-bars, the cross-head 16, the links 15 connecting the upper extremities of the draw-bars 10 and the cross-head 16, the cable 17 connected with the cross-head 16, and the springs 14 coacting with the draw-bars 10 and bearing against the shoulders thereof and normally tending to force the safety-catches into engagement with the toothed rails aforesaid.

809,286. **TRUNK.** HERMAN DAVIS, New Orleans, La. Filed Oct. 3, 1905. Serial No. 281,131.

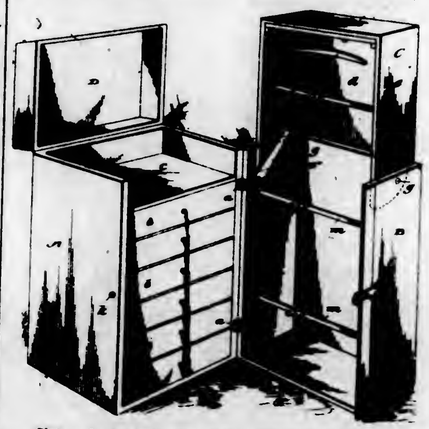

Claim.—1. A trunk comprising a body-section open at its upper end and having a shelf arranged adjacent to said end, a second body-section hinged to that first mentioned and open at its upper end, a vertically-swinging section hinged to the second-mentioned body-section and arranged when in an upright position to form an upward continuation thereof, and also arranged when in a horizontal position to rest on the shelf of the first-mentioned body-section, and an end-closure section hinged to the back wall of the first-mentioned body-section and arranged when closed to rest over the vertically-swinging section.

2. A trunk comprising a body-section open at its upper end and having a shelf arranged adjacent to said end, a vertical series of slidable drawers arranged in the body-section below the shelf thereof, a second body-section hinged to that first mentioned and open at its upper end, a vertically-swinging section hinged to the second-mentioned body-section and arranged when in an upright position to form an upward continuation thereof and also arranged when in a horizontal position to rest on the shelf of the first-mentioned body-section, suitable means for detachably fastening the said vertically-swinging section in its upright position, means carried by said section for hanging garments in the same and the second-mentioned body-section, means on said sections for retaining garments therein, and an end-closure section hinged to the back wall of the first-mentioned body-section and arranged when closed to rest over the vertically-swinging section.

3. A trunk comprising body-sections hinged together; one of said sections being open at its upper end, and a vertically-swinging section hinged to the last-mentioned body-section and arranged when in an upright position to form an upward continuation thereof, and also arranged to be swung down into a horizontal position and on the other body-section.

4. A trunk comprising body-sections hinged together; one of said sections being open at its upper end, a vertically-swinging section hinged to the last-mentioned body-section and arranged when in an upright position to form an upward continuation thereof, and an end-closure section hinged to the back wall of the other body-section and arranged when closed to rest over the said vertically-swinging section.

5. A trunk comprising body-sections hinged together; one of said sections being open at its upper end, and an adjustable section carried by the last-mentioned body-section and arranged when in an upright position to form an upward continuation thereof, and also arranged when in a horizontal position to rest on the other body-section.

6. A trunk comprising body-sections hinged together; one of said sections being open at its upper end, an adjustable section carried by the last-mentioned body-section and arranged to be placed in an upright position to form an upward continuation thereof and also arranged to be placed in a horizontal position and on the other body-section, and an end-closure section carried by such other body-section and arranged when closed to rest over the said adjustable section.

7. A trunk comprising body-sections hinged together; one of said sections being open at its upper end, an adjustable section carried by the last-mentioned body-section and arranged to be placed in an upright position to form an upward continuation thereof and also arranged to be placed in a horizontal position and on the other body-section, an end-closure section carried by such other body-section and arranged when closed to rest over the adjustable section, and means on the adjustable section coöperating with means on the body-section by which it is carried for detachably securing the adjustable section in its upright position.

809,287. **DUPLICATING APPARATUS.** ALBERT B. DICK, Lake Forest, Ill., assignor to A. B. Dick Company, Chicago, Ill., a Corporation of Illinois. Filed Feb. 4, 1905. Serial No. 244,136.

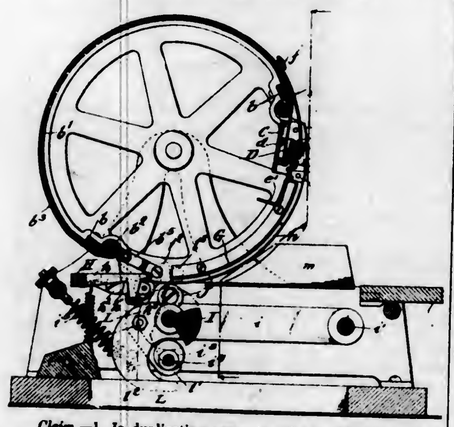

Claim.—1. In duplicating apparatus, the combination with a movable drum and an underlying pressure-roller, of means carried by said drum for flattening an impression-sheet in advance of the passage of the same between said drum and roller, substantially as set forth.

2. In duplicating apparatus, the combination with a movable drum and an underlying pressure-roller, of members mounted within the drum, at that point not covered by the stencil-sheet thereon, for coacting with an impression-sheet in advance of the passage of the same between said drum and roller, substantially as set forth.

3. In duplicating apparatus, the combination with a movable drum and an underlying pressure-roller, of means for passing an impression-sheet between said drum and roller and wings carried by said drum and extending adjacent to the path of such impression-sheet, substantially as set forth.

4. In duplicating apparatus, the combination with a movable drum comprising heads and a stencil-carrier, of wings extending inwardly from the inner faces of said drum-heads and adapted to coact with a sheet in advance of the passage thereof between said drum and roller, substantially as set forth.

5. In duplicating apparatus, the combination with a movable drum, of an underlying pressure-roller movable to operative and inoperative positions relatively to said drum, a lock positively coacting with said roller and means operated by said drum for actuating said lock to hold said roller in inoperative position, substantially as set forth.

6. In duplicating apparatus, the combination with a movable drum and an underlying pressure-roller movable to operative and inoperative relation to said drum, of means carried by the drum for moving said roller to inoperative position, and a lock operated by said drum for maintaining said roller in such position, substantially as set forth.

7. In duplicating apparatus, the combination with a drum and an underlying pressure-roller mounted on swinging arms and movable to operative and inoperative relation to said drum, of a lock for maintaining said pressure-roller in inoperative position said lock including a lever mounted upon one of said arms, and means carried by said drum for moving said lever to locking and unlocking positions, substantially as set forth.

8. In duplicating apparatus, the combination with a movable drum and an underlying pressure-roller mounted upon hinged arms, of a cam carried by said drum and operating to throw said pressure-roller to inoperative position, a locking device for said pressure-roller, and means carried by said drum for operating said locking device, substantially as set forth.

9. In duplicating apparatus, the combination with a movable drum, of an underlying pressure-roller movable to operative and inoperative relation to said drum, means carried by said drum for moving said roller to inoperative position, and a lock for said pressure-roller having a member projecting into the line of travel of a projection upon said drum, substantially as set forth.

10. In duplicating apparatus, the combination with a movable drum, of an underlying pressure-roller mounted in hinged arms spring-pressed toward said drum, mechanism intermediate of said roller and drum for depressing the former, locking-levers carried by said hinged arms and adapted to lock said pressure-roller in inoperative position, and means carried by said drum for operating said levers, substantially as set forth.

11. In duplicating apparatus, the combination with a drum and a stencil and an attaching device carried thereby, of a stencil-protecting plate detachably secured to said drum independently of said device, said plate coacting with said stencil, substantially as set forth.

12. In duplicating apparatus, the combination with a drum and a stencil-attaching device carried thereby, of a detachable stencil-protecting plate independent of said device, and means carried by said drum and coacting with said plate at either edge thereof to maintain said plate in position, substantially as set forth.

13. In duplicating apparatus, the combination with a drum and a stencil-attaching device carried thereby, of a detachable stencil-protecting plate independent of said device, and latches carried by said drum for securing said plate in position, substantially as set forth.

809,288. **DUPLICATING APPARATUS.** ALBERT B. DICK, Lake Forest, Ill., assignor to A. B. Dick Company, Chicago, Ill., a Corporation of Illinois. Filed Feb. 4, 1905. Serial No. 244,139.

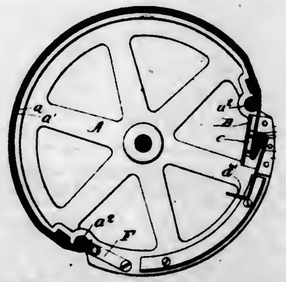

Claim.—1. In duplicating apparatus, the combination with a drum and a stencil-sheet, of coacting parts one supported on said drum and the other supported on said sheet and one of which is movable relatively to its support, said parts being arranged to secure said sheet in position on said drum by a forward and reverse movement of the sheet relatively to the drum, substantially as set forth.

2. In duplicating apparatus, the combination with a drum and a part secured to said drum and adapted to move therewith, said part having a substantially flat and uniform surface, of a stencil-sheet the forward end whereof is movable relatively to the body portion of the sheet and is brought into coaction with said part by a forward move-

ment past said part and then a rearward movement relatively thereto, substantially as set forth.

3. In duplicating apparatus, the combination with a movable drum, of a part secured thereto, and a stencil-sheet having at one end a portion extending back adjacent to the body portion thereof and movable relatively to such body portion, said sheet being brought into automatic securing relation to said drum by relative movement thereof carrying said end of the sheet past said part on the drum and succeeding movement in the opposite direction, substantially as set forth.

4. In duplicating apparatus, the combination with a drum, of a part secured thereto and moving therewith, and a stencil-sheet having a folded elastic end coacting with said part, substantially as set forth.

5. In duplicating apparatus, the combination with a drum, of two parts secured thereto and moving therewith, a stencil-sheet and means carried thereby for securing said sheet in position upon passing the forward end thereof between said parts, substantially as set forth.

6. In duplicating apparatus, the combination with a drum, of a part secured thereto and moving therewith, a stop, a stencil-sheet and means carried thereby for securing said sheet in position upon movement of the same toward and from said stop and in coöperative relation to said part, substantially as set forth.

7. In duplicating apparatus, the combination with a drum, of two parts secured thereto and moving therewith, a stencil-sheet and means carried thereby for securing said sheet in position upon said drum upon the movement of said sheet past one of said parts and its return movement, leaving a portion of said sheet between said part and the other part, substantially as set forth.

8. In duplicating apparatus, the combination with a drum, of three parts carried thereby and movable therewith, a stencil-sheet, and means for securing the same in position upon said drum by passing the end thereof forward between two of said parts and then rearward, leaving a portion of said sheet between one of said parts and the third part, substantially as set forth.

9. In duplicating apparatus, the combination with a drum, of a part moving therewith, and a stencil-sheet having a part elastically connected thereto but extending outwardly and backwardly from the end thereof and adapted to coact with said part upon said drum upon forward and rearward movement of said sheet relatively thereto, substantially as set forth.

10. In duplicating apparatus, the combination with a drum, of a part moving therewith, a stencil-sheet having a part elastically connected thereto but extending outwardly and backwardly from the end thereof and entirely free from the sheet except at said end, said part of the stencil-sheet coacting with said part moving with the drum to secure the sheet upon the drum, substantially as set forth.

11. In duplicating apparatus, the combination with a drum having a shelf-plate and a locking-plate, of a stencil-sheet having a folded forward end adapted to pass between said plates and to coact automatically with said locking-plate, by reason of its elasticity, substantially as set forth.

12. In duplicating apparatus, the combination with a shelf-plate, a locking-plate and a stop-plate, of a stencil-sheet having a folded forward end adapted to be passed between said shelf-plate and locking-plate and to automatically coact with said locking-plate, by reason of its elasticity, upon reverse movement of said sheet, the fold thereof passing between said locking-plate and said stop-plate, substantially as set forth.

809,289. NON-REFILLABLE BOTTLE. WILLIAM J. DOLAN and FRANK H. BOSSHARDT, Indianapolis, Ind. Filed May 20, 1905. Serial No. 261,004.

Claim.—1. The combination with a bottle having a groove within its neck, of a shell closed at one end and introduced into the bottle and having its other end resting in said groove, said latter end being expansible to prevent the withdrawal of the shell, said shell having perforations and additional slotted openings through its walls and a valve-seat at its open end, and a ball-valve within said shell forming a closure with said seat against entrance to the bottle.

2. A bottle having a neck with an opening which increases in diameter as it extends into the bottle and terminating with a shoulder forming an opening of less diameter than the mouth of the bottle, a metal shell closed at one end and having a flange at its opposite end at right angles to the body of the shell and resting upon the shoulder of the bottle, said flange being bent up approximately parallel with the body of the shell for introduction into the bottle and afterward flared to prevent withdrawal, said shell having openings through its walls and said shell having its lower end restricted in diameter, and a ball within the shell making its seat upon the restricted portions at the mouth of the shell.

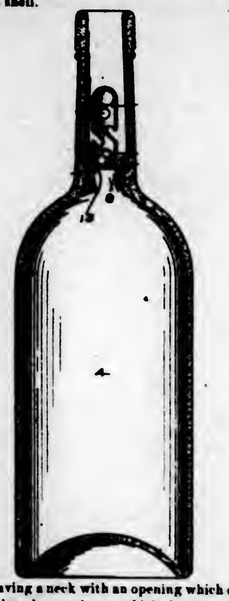

3. A bottle having a neck with an opening which expands downwardly to a shoulder, the opening at which shoulder is of less diameter than the mouth of the bottle, an annular flange between the shoulder and the mouth of the bottle, a metal shell introduced into the neck of the bottle, said shell being closed at one end and having an outwardly-extending flange at its other end, said flange resting upon said shoulder and forming the support for the shell, said flange having an upwardly-extended portion engaging the flange in the neck of the bottle, said shell having oblique slots in its opposite walls, and perforations between said slots and the upper end of the shell, a valve-seat in the lower end of the shell, and a ball placed loosely within the shell and operating with the valve-seat to prevent ingress to the bottle.

809,290. WATCH. ADOLF PEHLCKE, Charlottenburg, Germany. Filed June 3, 1904. Serial No. 211,616.

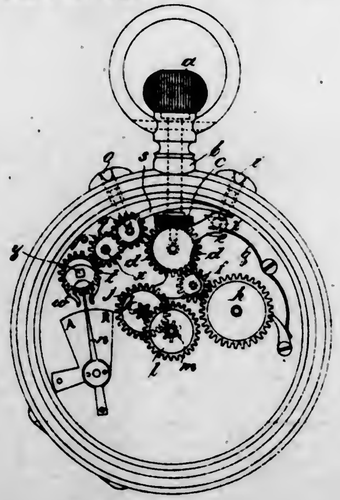

Claim.—In a watch, the combination comprising the watchcase, a winding-stem, a toothed wheel *e* arranged upon this winding-stem, the toothed wheel *d* engaging the said toothed wheel *c*, a turnable coupling-plate *e* arranged on the shaft of said toothed wheel *d*, a toothed wheel *f* arranged at said coupling-plate *e*, a turnable coupling-lever, a toothed wheel *g* arranged on said coupling-lever, two toothed wheels *p t* driven by said toothed wheel *g*, a horseshoe-shaped body secured to said toothed wheel *t* for operating the regulating-hand of the watch, a setting mechanism for setting the watch, a winding-wheel *h*, a push-button *i* for alternate coupling the wheel *f* with said setting mechanism respectively the winding-wheel, a second push-button for operating simultaneously by aid of said coupling-lever the regulating-hand and the setting mechanism of the watch, substantially as described.

809,291. ART OF MANUFACTURING IRON OR STEEL. EMIL FLEISCHER, Dresden-Strehlen, Germany, assignor to Jacob Eduard Goldschmid, Frankfort-on-the-Main, Germany. Filed July 26, 1904. Serial No. 218,264.

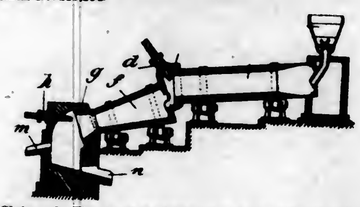

Claim.—1. The art of producing iron or steel direct, which consists in subjecting the ore to a continuous transversely-rolling and a continuous forwardly-progressive motion, and simultaneously acting upon it by consecutive gas-flames, the first of which is a reducing-flame.

2. The art of producing iron or steel direct, which consists in subjecting the ore, in the presence of fluxes, to a continuous transversely-rolling and a continuous forwardly-progressive motion, and simultaneously acting upon it by consecutive gas-flames, the first of which is a reducing-flame.

3. The art of producing iron or steel direct, which consists in subjecting the ore, in the presence of fluxes and pulverized carbon, to a continuous transversely-rolling and a continuous forwardly-progressive motion, and simultaneously acting upon it by consecutive gas-flames, the first of which is a reducing-flame.

4. The art of producing iron or steel direct, which consists in subjecting the charge to a continuous transversely-rolling and a continuous forwardly-progressing motion, and simultaneously acting upon the charge, at the initial stage of its forward travel, by a reducing-flame, and, at the terminal stage of its travel, by a melting-flame.

5. The art of producing iron or steel direct, which consists in subjecting the charge to a continuous transversely-rolling and a continuous forwardly-progressing motion, and simultaneously acting upon the charge, at the initial stage of its forward travel, by a strongly-reducing flame, and at the terminal stage of its travel, to a substantially neutral melting-flame.

809,292. GAS-ENGINE. WILLIAM T. FOX, Rochester, N. Y. Filed Aug. 17, 1904. Serial No. 221,061.

Claim.—1. In a gas-engine, the cylinders having each a piston and arranged in four pairs, a rigid rod connecting the pistons of each pair, two crank-shafts one for each double pair, a main or driving shaft operatively connected to the crank-shafts, and means for successively exploding gas in the cylinders to drive said main shaft at every quarter-rotation thereof.

2. In a gas-engine, the cylinders having each a piston and arranged in four pairs, a rigid rod connecting the pistons of each pair, two crank-shafts one for each double pair, a main or driving shaft operatively connected to the crank-shafts, and means for successively exploding gas in the cylinders to drive said main shaft at every quarter-rotation thereof, the several shafts being parallel and operatively connected by gears.

3. In a gas-engine, the cylinders having each a piston and arranged in four pairs, a rigid rod connecting the pistons of each pair, two crank-shafts one for each double pair, a main or driving shaft operatively connected to the crank-shafts, and means for successively exploding gas in the cylinders to drive said main shaft at every quarter-rotation thereof, the several shafts being parallel and operatively connected by gears, and the valve-actuating cam-shafts situated between and parallel to the said crank-shafts.

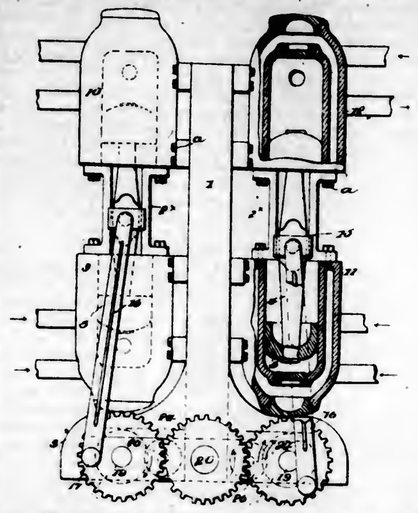

4. In a gas-engine, the cylinders having each a piston and arranged in four pairs, a rigid rod connecting the pistons of each pair, two crank-shafts one for each double pair, a main or driving shaft operatively connected to the crank-shafts, and means for successively exploding gas in the cylinders to drive said main shaft at every quarter-rotation thereof, the several shafts being parallel and operatively connected by gears situated at both ends of the shafts.

5. In a gas-engine, the cylinders having each a piston and arranged in four pairs, a rigid rod connecting the pistons of each pair, two crank-shafts one for each double pair, a main driving-shaft operatively connected to the crank-shafts, and means for successively exploding gas in the cylinders to drive said main shaft at every quarter-rotation thereof the several shafts being parallel and operatively connected by gears, and the valve-actuating cam-shafts situated between and parallel to the said crank-shafts.

6. In a gas-engine, the cylinders having each a piston and arranged in four pairs, a rigid rod connecting the pistons of each pair, two crank-shafts one for each double pair, a main driving-shaft operatively connected to the crank-shafts, and means for successively exploding gas in the cylinders to drive said main shaft at every quarter-rotation thereof, the several shafts being parallel and operatively connected by gears, and the valve-actuating cam-shafts situated between and parallel to the said crank-shafts, said cam-shafts having gears fixed thereon and driven by pinions on the crank-shafts, all of said shafts being situated in approximately the same plane.

7. In a gas-engine, the cylinders having each a piston and arranged in four pairs, a rigid rod connecting the pistons of each pair, two crank-shafts one for each double pair, a main driving-shaft operatively connected to the crank-shafts, and means for successively exploding gas in the cylinders to drive said main shaft at every quarter-rotation thereof, the several shafts being parallel and operatively connected by gears, and the valve-actuating cam-shafts situated between and parallel to the said crank-shafts, said cam-shafts having gears fixed thereon and driven by pinions on the crank-shafts, all of said shafts being situated in approximately the same plane and in the base below the cylinders.

8. In a gas-engine, the cylinders having each a piston and arranged in four pairs, a rigid rod connecting the pistons of each pair, two crank-shafts one for each double pair, a main or driving shaft operatively connected to the crank-shafts, and means for successively exploding gas in the cylinders to drive said main shaft at every quarter-rotation thereof, the several shafts being parallel and operatively connected by gears, and the valve-actuating cam-shafts sit-

uated between and parallel to the said crank-shafts, said cam-shafts having gears fixed thereon and driven by pinions on the crank-shafts, all of said shafts being situated in approximately the same plane and in the base below the cylinders, and a post rising from the base, the pairs of cylinders being fixed to opposite sides of said post.

9. In a gas-engine, the base, the central post, and the several cylinders separately fixed to the post on opposite sides thereof and detachable singly therefrom.

10. In a gas-engine, the base, the central post, the several cylinders separately fixed to the post on opposite sides thereof, and piston-rod guides detachably fixed to cylinders having pistons with a rigid rod common to the pistons of two cylinders.

11. In a gas-engine, the base having the central post, the cylinders arranged in pairs, the pistons, piston-actuating shafts, and the valve-actuating rods, all said shafts being situated in the base and said rods situated between the cylinders.

809,293. GAME APPARATUS. ALBERT FRIEDENTHAL, Oakland, Cal. Filed Oct. 26, 1904. Serial No. 229,063.

Claim.—In a game apparatus of the kind described, a decahedron having its faces marked to indicate different values of different species, each face being quadrangular in shape, and the peripherial edge of the decahedron zigzag as set forth.

809,294. CALCULATOR. SPEED S. FRY, Breckenridge, Colo. Filed Mar. 27, 1905. Serial No. 252,369.

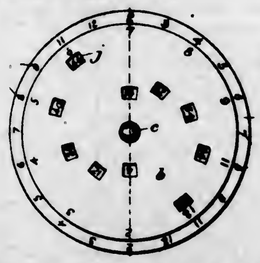

Claim.—In a device of the character described, a disk having a series of numbers in duplicate around its edge, of different identities, each number having arranged therebeneath on a radial line, series of numbers of the same identity, a second disk pivoted to the first-named disk, said disks having series of reversely and spirally arranged apertures, said disk having series of numbers around its edge of different identities but coinciding with the identities of the series of the first-named disk, said series of the second-named disk not being in duplicate, coinciding series of the disks and one of the series of the apertures all acting in conjunction one with the other.

809,295. GAS-PRODUCER. JUNIUS R. GREENE, Worcester, Mass., assignor to Morgan Construction Company, Worcester, Mass., a Corporation of Massachusetts. Filed July 10, 1903. Serial No. 164,994.

Claim.—1. In a gas-producer, the combination with the heating-chamber having an opening at its top for the admission of fuel, of a fuel-reservoir placed above said opening and having an opening in its bottom for the delivery of fuel to a distributer, a distributer between the opening in the heating-chamber and the opening in the reservoir, said distributer consisting of a rotating shell smaller at its lower than at its upper end, with an opening at its upper end larger than the delivery-opening of said reservoir and concentric with its axis of rotation, and with an opening at its lower end eccentric with its axis of rotation, and a disk inclosed in said distributer having its diameter larger than the diameter of the delivery-opening in said reservoir, with an annular space around said disk for the passage of fuel.

2. In a gas-producer, the combination with the heating-chamber having an opening at its top for the admission of fuel, of a fuel-reservoir placed above said opening, said reservoir having a hopper-shaped bottom with a concentric opening therein for the delivery of fuel to a distributer, a distributer between the opening in the heating-chamber and the delivery-opening of said reservoir, said distributer consisting of a rotating shell smaller at its lower than at its upper end, with an opening at its upper end larger than the delivery-opening of said reservoir and concentric with its axis of rotation, and with an opening at its lower end eccentric with its axis of rotation, and a disk inclosed in said distributer, having its diameter larger than the diameter of the delivery-opening in said reservoir, with an annular space around said disk for the passage of fuel.

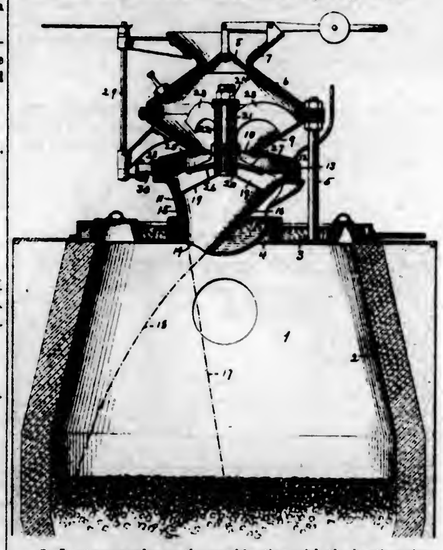

3. In a gas-producer, the combination with the heating-chamber having an opening at its top for the admission of fuel, of a rotating fuel-distributer placed above said heating-chamber and consisting of a shell, with a passage therethrough for fuel, said distributer having an opening at its upper end concentric with its axis of rotation for the admission of fuel, and an opening at its lower end eccentric to its axis of rotation for the delivery of fuel, with the sides of said distributer having a varying inclination to a vertical plane, whereby the fuel in passing through said distributer is projected into the heating-chamber at different angles, a disk inclosed in said distributer, with an annular space around it for the downward passage of fuel, and means for delivering fuel to said distributer upon the central portion of said disk, substantially as described.

4. In a gas-producer, the combination with a heating-chamber having a top plate provided with an opening for fuel, of a rotating fuel-distributer above said top plate, said distributer consisting of a shell having a passage therethrough for fuel, and having a delivery-opening at its lower end for the delivery of fuel to the heating-chamber, a concentric disk inclosed in said distributer near its upper end, with an annular space between said disk and the wall of the distributer, and means for supplying fuel to the central section of said disk.

5. In a gas-producer, the combination with a heating-chamber having an opening at its top for the admission of fuel, of a distributer above said opening, consisting of a rotating shell with its lower end the smaller and provided with an opening eccentric to its axis of rotation for the delivery of fuel to the heating-chamber, a disk carried by said distributer, with an annular space between said disk and the inner wall of said distributer, substantially as described.

6. In a gas-producer, the combination with a heating-chamber having an opening at its top for the admission of fuel, of a fuel-distributer above said opening and consisting of a rotating shell having a passage therethrough, with the lower end of said shell the smaller and provided with an opening eccentric to its axis of rotation, a disk carried by said shell, with its upper surface slightly inclined from its center downward, and having an annular space between said disk and the inner wall of said distributer, substantially as described.

7. In a gas-producer, the combination with a heating-chamber having an opening for the admission of fuel, and a fuel-reservoir

placed above said opening and having an opening in its bottom for the delivery of fuel to a distributer, of a fuel-distributer between said heating-chamber and said reservoir, said fuel-distributer having an annular admission-opening for the admission of fuel of greater diameter than the opening in the bottom of said reservoir, and concentric with its axis of rotation, with the inner wall of said distributer at a varying inclination to a vertical plane, and a delivery-opening eccentric with its axis of rotation.

8. In a gas-producer, the combination with a heating-chamber, having an opening in its top for the admission of fuel, and a fuel-reservoir placed above said opening and having an opening in its bottom for the delivery of fuel to a distributer, of a fuel-distributer between said heating-chamber and said reservoir, said fuel-distributer having an annular eccentric admission-opening for the admission of fuel of greater diameter than the opening in the bottom of said reservoir, means for conducting the fuel from said opening in the bottom of said reservoir to said annular admission-opening, and an eccentric delivery-opening at the bottom of said distributer.

9. In a gas-producer, the combination with the heating-chamber, of a fuel-distributer, consisting of a rotating shell placed above the heating-chamber with the lower end of said shell the smaller, a central hub in said shell, arms connecting said shell and said hub, a disk supported by said hub concentrically with said shell, with an annular space between said disk and said shell for the passage of fuel, a shaft held in said hub, a journal-bearing above said distributer for said shaft, and means for supplying fuel to said distributer, substantially as described.

10. In a gas-producer, the combination of a heating-chamber, having an opening at its top for the admission of fuel, a rotating hollow fuel-distributer above said opening with its upper end concentric and with its lower end eccentric with said fuel-opening, means for rotating said distributer, means for closing the central section of the fuel-passage at the upper end of said distributer whereby an annular fuel-passage is formed at the upper end of the distributer, and means for supplying fuel to said distributer, substantially as described.

11. In a gas-producer, the combination with a heating-chamber having an opening at the top for the admission of fuel, of a rotating fuel-distributer placed above said opening, said distributer having a concentric annular passage at its upper end and an eccentric delivery-opening at its lower end, means for rotating said distributer, a fuel-reservoir above said distributer having a hopper-shaped bottom with a delivery-opening therein smaller than the annular passage in said distributer, substantially as described.

12. In a gas-producer, the combination with a heating-chamber having an opening in its top for the admission of fuel, of a fuel-reservoir placed above said opening and having a hopper-shaped bottom provided with a concentric opening for the delivery of fuel, a central hub inclosed in said reservoir, arms connecting said hub with the wall of the reservoir, a shaft journaled in said hub, a hub attached to the lower end of said shaft, arms connecting said second hub with a rotating shell having its upper end concentric with said shaft and having its lower end inclosed in the fuel-opening of the heating-chamber and provided with an opening eccentric to its axis of rotation and a disk inclosed in said distributer with an annular space between said disk and the inner wall of said distributer, and with the diameter of said disk greater than the delivery-opening in said reservoir, substantially as described.

809,296. DRILL-CHUCK. CHARLES GORDON, Milwaukee, Wis. Filed June 9, 1902. Serial No. 110,710.

Claim.—1. In a drill-chuck, the combination of a shank, a body portion, movable centering-jaws, movable driving-dogs carried by the body portion independently of the centering-jaws, and means for automatically operating said dogs and jaws.

2. In a drill-chuck, the combination of a shank, a body portion having fixed projecting arms, oppositely-disposed cooperating centering-jaws located and movable between said arms, driving-dogs carried by said arms independently of the centering-jaw, means for operating the centering-jaws, and separate means for operating the driving-dogs.

3. In a drill-chuck, the combination of a body portion having a driving-shank on one end and fixed depending arms on the opposite end, a pair of interlocking, movable, centering-jaws, located between said arms, drill-driving dogs sliding in bearings carried by the depending arms, springs carried by the said arms, and acting to move the dogs inward, means carried by the arms to move the said dogs outward and independent means connected with the chuck-body that operates the centering-jaws.

4. In a drill-chuck, the combination of a body portion having a driving-shank on one end and fixed depending arms on the opposite end, a pair of interlocking, movable centering-jaws located between said arms, said jaws having their outer edges inclined and grooved, a slotted plate engaging with the said inclined grooved outer edges of the jaws and adapted to move longitudinally on the depending arms, means for moving the plate longitudinally and independent means for holding the drill against rotation, relative to the chuck.

5. In a drill-chuck, the combination of a body portion having a driving-shank on one end and fixed depending arms on the opposite end, a pair of interlocking, movable, centering-jaws located between said arms, said jaws having their outer edges inclined, a slotted plate engaging with the said inclined outer edges of the jaws, and adapted to move longitudinally on the depending arms and positively control the movement of said jaws, a plate above the body portion of the chuck, movable on the chuck-shank, and connected with the lower slotted plate and a spring interposed between the upper plate and the chuck-body.

6. In a drill-chuck the combination of a body portion having a driving-shank on one end, fixed depending arms on the opposite end, and a collar on the lower part of the body portion, a pair of interlocking, centering-jaws, located between said arms, said jaws having their outer edges inclined, a slotted plate engaging with the inclined outer edges of the jaws and adapted to move longitudinally on the said arms, a plate above the body portion of the chuck, movable on the driving-shank, connections between the two plates and a spring between the upper plate and the collar.

7. In a drill-chuck, the combination of a body portion having a driving-shank on one end, fixed depending arms on the opposite end, centering-jaws located between the arms, drill-holding dogs adapted to slide in transverse diametrically-disposed openings through the arms, inclined slots or shoulders on the dogs, springs operating to move the dogs inward, plungers moving through longitudinal openings, in the arms and body portion, said plungers having angular ends adapted to engage with the angular slots or shoulders on the dogs, and means for moving the plungers longitudinally to separate the dogs.

809,297. AXLE-TRUSS. CHARLES M. HASSER, South Bend, Ind. Filed May 31, 1905. Serial No. 263,164.

Claim.—1. In combination, an axle-truss having a slot adjacent to each of its ends, axle-skeins having two shoulders, said skeins having their under sides between said shoulders flattened, the inner one of said shoulders being cut away at the under side, lugs located upon the flattened portion of said skeins, one of said lugs being located at the portion where the inner shoulder is cut away, the other lug being located adjacent to said first-mentioned lug, guides at each side of said flattened portion, the said lugs being adapted, respectively, to enter the slot in the said axle-truss and to form end abutments therefor, and means for retaining the said axle-truss in rigid engagement with the said axle-skeins.

2. An axle-truss provided with a slot in each end thereof, axle-skeins having a flattened under side, guideways at each side of said flattened portion, lugs located within said flattened portion, said lugs being so located that they will be in a position to enter the said slot in the ends of the axle-truss and form an abutment for the end of said axle-truss, and a binding-clip located between said lugs and adapted to retain the truss and the skeins in rigid engagement.

809,298. HORSE-COLLAR. GEORGE W. HAHN, Mansfield, Ill. Filed May 17, 1904. Serial No. 208,489.

Claim.—1. A horse-collar, comprising thin metallic sides forming a complete front for the collar, complete side pads having inner

and outer flexible walls and provided at their side edges with seams, the inner walls of the pads being fitted against the inner faces of the metallic sides, and means independent of the seams of the side pads for securing the latter to the metallic sides, whereby the side pads are adapted to be removed therefrom without separating the walls of the said pads.

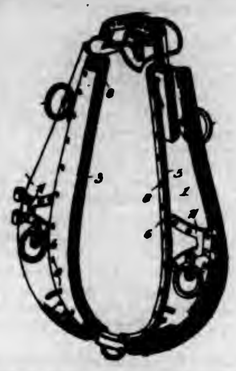

2. A horse-collar, comprising thin metallic sides curved in cross-section and having their front and rear longitudinal edges extended in opposite directions, and complete side pads arranged along the inner faces of the metallic sides and provided at their front and rear edges with flexible attachment portions or flanges formed by extending the walls of the pads beyond the seams thereof and fitted against the front and rear edges of the metal sides and secured to the same, substantially as described.

3. A horse-collar, comprising metallic sides curved in cross-section and having rearwardly-curved rear edges and forwardly-curved front edges, the latter being partially rolled to present inner convexed faces, and complete side pads arranged along the inner faces of the metallic sides and provided at their front and rear edges with flexible flanges or attachment portions fitted against and conforming to the configuration of the front and rear curved edges of the sides and secured to the same, said flexible flanges or attachment portions being formed by extensions of the outer or rear walls of the pads, substantially as described.

4. A horse-collar, comprising thin metallic sides forming a complete front for the collar, complete side pads provided with inner and outer walls and having seams connecting the walls at the side edges of the pads, and means for detachably securing the side pads to the metallic sides at the inner and outer edges of the former and at points beyond the seams thereof.

809,299. **MANUFACTURE OF BOTTLE-ENVELOPS.** CHRISTIAN B. B. HEBER and GUSTAV A. H. SCHULTZ, Bremen, Germany. Filed July 8, 1903. Serial No. 164,726.

Claim.—The method of making bottle-wrappers from fluted cardboard having a plain backing, which consists in wrapping a strip of such cardboard around the body of a bottle or around a smooth core of like form with the plain backing outside and the fluting lengthwise of the bottle-core, steaming that portion of the cardboard which is to form the neck of the wrapper, shaping said neck by pressure, gathering and tying the end of the neck and uniting the overlapping sides of the cardboard, whereby said board will be evenly creased all around at the neck by reason of the pressure on the fluted board which starts the creases between adjacent flutings attached to the backing and causes the creases to lie parallel to the axis of the wrapper.

809,300. **SWITCH-PLUG WITH ELECTRICAL FUSE.** ALEXANDER HEPNER and KURT DENNER, Berlin, Germany. Filed July 20, 1904. Serial No. 217,207.

Claim.—1. In a fuse-plug for electric circuits, the combination with an insulating plug-body, of two contact-bodies fixed to said plug-body, through which contact-bodies the current enters and leaves the plug, a plurality of fuses within said plug-body in fixed position to the same, and electrically connected with one of their ends to one of said contact-bodies, and a movable member for connecting *serviatim* the other ends of the fuses with the other contact-body, substantially as described and for the purpose set forth.

2. In a fuse-plug for electric circuits, the combination with an insulating plug-body, of two contact-bodies fixed to said plug-body, through which contact-bodies the current enters and leaves the plug, a plurality of fuses within said plug-body in fixed position to the same, and electrically connected with one of their ends to one of said contact-bodies, and a member movable around its axis for connecting *serviatim* the other ends of the fuses with the other contact-body, substantially as described and for the purpose set forth.

3. In a fuse-plug for electric circuits, the combination with an insulating plug-body, of two outside contact-bodies fixed to said plug-body, through which contact-bodies the current enters and leaves the plug, a plurality of fuses within said plug-body in fixed position to the same, and electrically connected with one of their ends to one of said contact-bodies, a plate of insulated material, pairs of contact-pieces situated in said plate, one of the contact-pieces of each pair being electrically connected to the other end of one of the fuses, the other contact-piece of each pair being electrically connected to the second contact-body, and means for electrically connecting in turn the contact-pieces of each pair to each other, substantially as described and for the purpose set forth.

4. In a fuse-plug for electric circuits, the combination with an insulating plug-body, of two outside contact-bodies fixed to said plug-body, through which contact-bodies the current enters and leaves the plug, a plurality of fuses within said plug-body in fixed position to the same, and electrically connected with one of their ends to one of said contact-bodies, a plate of insulated material, pairs of contact-pieces situated in said plate, one of the contact-pieces of each pair being electrically connected to the other end of one of the fuses, the other contact-piece of each pair being electrically connected to the second contact-body, a plate of insulating material with a metallic strip, and means for turning said insulated plate so as to electrically connect the two contact-pieces of in turn each pair to each other, substantially as described and for the purpose set forth.

809,301. **ELECTRIC MULTIPLE-FUSE PLUG.** ALEXANDER HEPNER and KURT DENNER, Berlin, Germany. Filed July 20, 1904. Serial No. 217,208.

Claim.—1. In an electric fuse-plug, the combination with a plug-body of two outside contact-bodies, through which the current enters and leaves the plug, a plurality of fuses within said plug-body, one end of each fuse being electrically connected to one of said contact-bodies, means arranged on the outside of the plug and so movable thereon as to electrically connect *serviatim* the other fuse ends with the other outside contact-body, essentially as described and for the purpose set forth.

2. In an electric fuse-plug, the combination with a plug-body of two outside contact-bodies, through which the current enters and leaves the plug, a plurality of fuses within said plug-body, one end of each fuse being electrically connected to one of said contact-bodies, means arranged on the outside of the plug and so movable thereon as to electrically connect successively a certain number of the inside fuses with the other outside contact-body, substantially as described and for the purpose set forth.

3. In an electric fuse-plug, the combination with a plug-body, of two outside contact-bodies, through which the current enters and leaves the plug, a plurality of fuses within said plug-body, one end of each fuse being electrically connected to one of said contact-bodies, partitions for insulating two successive fuses from each other, and a movable ring on the outside of the plug-body, with contact-springs for electrically connecting successively one of the inside fuses with the other outside contact-body, substantially as described and for the purpose set forth.

809,302. **TRANSFORMER CUT-OUT.** JOHN P. HUTHERINGTON, Logansport, Ind. Filed Jan. 27, 1905. Serial No. 242,570.

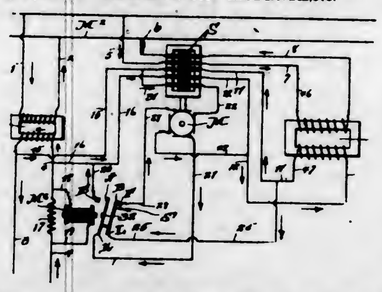

Claim.—1. In an apparatus of the character described, the combination, of a primary circuit, a secondary circuit, a transformer connected to receive current from said primary circuit and to deliver the transformed current to said secondary circuit, an auxiliary transformer, and means for automatically introducing said auxiliary transformer into the system in parallel with said first transformer, and cutting it out therefrom, said means consisting of devices controlled by variations in the load, substantially as described.

2. In an apparatus of the character described, the combination, of a primary circuit, a secondary circuit, a transformer connected to receive current from said primary circuit, and to deliver the transformed current to said secondary circuit, an auxiliary transformer, and means for automatically introducing said auxiliary transformer into the system in parallel with said first transformer, and cutting it out therefrom, said means consisting of devices connected with the secondary circuit and controlled by variations in the load, substantially as described.

3. In an apparatus of the character described, the combination, of a primary circuit, a secondary circuit, a transformer connected to receive current from said primary circuit and to deliver the transformed current to said secondary circuit, an auxiliary transformer and means for automatically introducing said auxiliary transformer into the system in parallel with said first transformer, said means consisting of a switch, connections from the primary circuit to the auxiliary transformer and from the auxiliary transformer to the secondary circuit controlled by said switch, an actuator for said switch, automatic means for energizing said actuator when the load becomes excessive and automatic means for deenergizing the actuator and stopping the switch after a predetermined amount of movement of the same to cut said auxiliary transformer into the circuit, substantially as described.

4. In an apparatus of the character described, the combination of a primary circuit, a secondary circuit, a transformer connected to receive current from said primary circuit and to deliver the transformed current to said secondary circuit, an auxiliary transformer, and means for automatically introducing said auxiliary transformer into the system in parallel with said first transformer, said means consisting of a switch, connections controlled by said switch, leading from the primary circuit to the auxiliary transformer and from the auxiliary transformer to the secondary circuit, a motor to actuate said switch, magnetic devices interposed in the secondary circuit and adapted to become operative upon an excess of load therein, a circuit adapted to operate the motor and controlled by said magnetic devices, the arrangement being such that said switch will be operated to cut said auxiliary transformer into the system upon an excess of load, substantially as described.

5. In an apparatus of the character described, the combination of a primary circuit, a secondary circuit, a transformer connected to receive current from said primary circuit and to deliver the transformed current to said secondary circuit, an auxiliary transformer and means for automatically introducing said auxiliary transformer into the system in parallel with said first transformer cutting it out therefrom, said means consisting of connections from the primary to said auxiliary transformer and from said auxiliary transformer to the secondary, a switch for controlling said connections, a motor for operating said switch, a magnet interposed in the secondary circuit, an armature carrying electrical connections and contact-points upon its opposite sides and adapted to be actuated by said magnet upon an excess of load in the secondary, a contact adjacent at side of said armature and adapted to be engaged by said contact-point upon the armature, a circuit including said motor, said connections and contact upon the armature and said adjacent contact-point, a second electrical connection and contact-point upon the opposite side of said armature from said first-mentioned connections, a second contact adjacent said second contact-point on the armature, a second circuit including the secondary of the auxiliary transformer, the motor, the second connection and contact-point of the armature and the contact adjacent thereto, said second armature contact-point being adapted to rest against said second contact when the armature is not actuated by the magnet, substantially as described.

6. In an apparatus of the character described, the combination of a primary circuit, a secondary circuit, a transformer connected to receive current from said primary circuit and to deliver the transformed current to said secondary circuit, a series of auxiliary transformers, means for automatically introducing said auxiliary transformers successively into the system in parallel with said first transformer and with each other said means consisting of a series of devices adapted to be successively actuated by a cumulative excess of load, substantially as described.

809,303. **MEANS FOR HOLDING SPOOLS AND SEWING-MACHINE BOBBINS.** FRANK A. HOLT, Holyoke, Mass. Filed Sept. 3 1904. Serial No. 223,315.

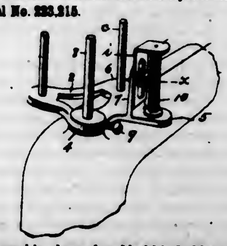

Claim.—A combined spool and bobbin holder comprising a base having a plurality of upstanding spool-receiving pins, and a perforated collar member adapted to receive and be mounted over the fixed spool-pin of a sewing-machine, whereby the latter constitutes one of the pins of the holder, said base being further provided with a bobbin-rack consisting of a lower fixed member and an upper vertically-adjustable member, said relatively fixed and adjustable members being provided with bearing elements receiving the axle-pin of a bobbin.

809,804. ROAD-CULVERT. WILLIAM IRMAN and FRANK B. MILLER, Isanti, Minn. Filed Dec. 15, 1904. Serial No. 237,601.

Claim.—1. A culvert comprising a base-section having inturned flanges at its side edges on its upper side, and side sections having outturned flanges at their lower sides to engage said inturned flanges of the base-section.

2. A culvert comprising a base-section and side sections, said base and side sections having coengaging devices to lock the said sections to the base-section and prevent the lower portions of the side sections from moving outwardly on the base-section, said side sections being further provided with means to secure their upper portions together and permit lateral movement of said upper portions.

809,805. ELECTRICAL PIANO-PLAYER. PARNELL B. KEBOE, Flemingsburg, Ky. Filed Apr. 27, 1905. Serial No. 257,621.

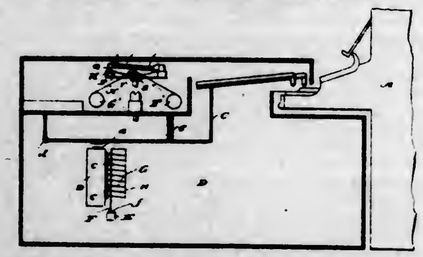

Claim.—1. In a player for pianos and other musical instruments, the combination of striking devices, electromagnets for depressing the striking devices; said electromagnets having terminals at intervals in the length of their helices and movable contact-pieces connected with said terminals, electromechanical means for moving the said contact-pieces, bars having portions designed to be engaged by said contact-pieces; said portions normally resting out of alinement with the contact-pieces, and electromechanical means for moving the bars to carry the said portions thereof into alinement with the contact-pieces.

2. In a player for pianos and other musical instruments, the combination of striking devices provided with armatures, electromagnets disposed below said armatures and having terminals at intervals in the length of their helices and movable contact-pieces, bars having portions designed to be engaged by said contact-pieces; said portions normally resting out of alinement with the contact-pieces, and electromechanical means for moving the bars to carry the said portions thereof into alinement with the contact-pieces.

3. In a player for pianos and other musical instruments, the combination of striking devices provided with armatures, electromagnets disposed below said armatures and having terminals at intervals in the length of their helices and vertically-movable contact-pieces connected with said terminals, vertically-movable bars having armatures, sleeves movable vertically on said bars and having loops receiving the contact-pieces, adjustable devices for supporting the sleeves on the vertical bars, electromagnets disposed below the armatures of the vertical bars, horizontally-movable bars having enlargements normally resting out of vertical alinement with the contact-pieces and also having armatures, and electromagnets for moving said bars horizontally.

4. In a player for pianos and other musical instruments, the combination of striking devices provided with armatures, electromagnets disposed below said armatures and having terminals at intervals in the length of their helices, a support, vertically-movable contact-pieces connected to said terminals and the support, vertically-movable bars having armatures, sleeves movable vertically on said bars and having loops receiving the contact-pieces, set-screws adjustable in bearings on the bars and supporting the sleeves, electromagnets disposed below the armatures of the vertical bars, horizontally-movable bars having enlargements normally resting out of vertical alinement with the contact-pieces and also having armatures, and electromagnets for moving said bars horizontally.

5. In a player for pianos and other musical instruments, the combination of a web, striking devices, electromagnets for depressing the striking devices; said electromagnets having terminals at intervals in the length of their helices and movable contact-pieces connected with said terminals, means controlled by the web for energizing said electromagnets, electromechanical means for moving the said contact-pieces, means controlled by the web for energizing said electromechanical means, bars having portions designed to be engaged by said contact-pieces; said portions normally resting out of alinement with the contact-pieces, electromechanical means for moving the bars to carry the said portions thereof into alinement with the contact-pieces, and means controlled by the web for energizing the latter electromechanical means.

6. In a player for pianos and other musical instruments, the combination of a tracker having a depression in its upper side, a web arranged to travel over said tracker and having perforations, electromagnets for depressing the striking devices; said electromagnets having terminals at intervals in the length of their helices and movable contact-pieces connected with said terminals, circuit-closers arranged above the tracker and having beveled projections adapted to fall through openings in the web and into the depression of the tracker; said circuit-closers being electrically connected with the said electromagnets and a source of electrical energy, electromechanical means for moving the said contact-pieces, circuit-closers arranged above the tracker and having beveled projections adapted to fall through openings in the web and into the depression of the tracker; said circuit-closers being electrically connected with the said electromechanical means and a source of electrical energy, bars having portions designed to be engaged by said contact-pieces; said portions normally resting out of alinement with the contact-pieces, electromechanical means for moving the bars to carry the said portions thereof into alinement with the contact-pieces, and circuit-closers arranged above the tracker and having beveled-projections adapted to fall through openings in the web and into the depression of the tracker; said circuit-closers being electrically connected with the latter electromechanical means and a source of electrical energy.

7. In a player for pianos and other musical instruments, the combination of striking devices, electromagnets for depressing the striking devices, and electromechanical means for carrying current from the helices of said electromagnets at different points in the length thereof.

8. In a player for pianos and other musical instruments, the combination of striking devices, a web, electromagnets controlled by the web and arranged to depress the striking devices, and electromechanical means controlled by the web and arranged to carry current from the helices of said electromagnets at different points in the length thereof.

9. In a player for pianos and other musical instruments, the combination of a vertically-movable tracker, a web movable over the tracker, means for normally supporting the tracker, electromechanical means controlled by the web for releasing the tracker and permitting the same to move downwardly at a predetermined time, striking devices, electromagnets controlled by the web and arranged to depress the striking devices, and electromechanical means controlled by the web and arranged to carry current from the helices of said electromagnets at different points in the length thereof.

10. In a player for pianos and other musical instruments, the combination of a vertically-movable tracker, a web movable over the tracker, means for normally supporting the tracker and electromechanical means, controlled by the web, for releasing the tracker and permitting the same to move downwardly at a predetermined time.

11. In a player for pianos and other musical instruments, the combination of a vertically-movable tracker having a notch, a web movable over said tracker, an armature-latch normally resting in the notch of the tracker, an electromagnet arranged adjacent to said armature-latch, and means controlled by the web for energizing the electromagnet at a predetermined time.

12. In a player for pianos and other musical instruments, the combination of a vertically-movable tracker having a notch, a web movable over the tracker, striking devices, electromagnets controlled by the web and arranged to depress the striking devices, electromechanical means controlled by the web and arranged to carry current from the helices of said electromagnets at different points in the length thereof, an armature-latch normally resting in the notch of the tracker, an electromagnet arranged adjacent to the armature-latch, and means controlled by the web for energizing the said magnet at a predetermined time.

13. In a player for pianos and other musical instruments, the combination of striking devices, a web, electromagnets controlled by the web and arranged to depress the striking devices, electromechanical means controlled by the web and arranged to carry current from the helices of said electromagnets at different points in the length thereof, a source of electrical energy, and means, intermediate the source of electrical energy and the electromagnets, and controlled by the web for making the volume of the current supplied to the electromagnets correspond with the number of electromagnets energized at one and the same time.

14. In a player for pianos and other musical instruments, the combination of a web, striking devices, electromagnets controlled by the web for depressing the said striking devices, a source of electrical energy, a receptacle containing conductive substance and connected with the source of electrical energy, a second receptacle containing conductive substance electrically connected with the electromagnets, a plurality of receptacles containing conductive substance and connected by resistances with the second-mentioned receptacle, armatures for connecting the first-mentioned receptacle and the plurality of receptacles, electromagnets controlling said armatures, and means controlled by the web for energizing said electromagnets.

15. In a player for pianos and other musical instruments, the combination of a web, a source of electrical energy, a receptacle containing conductive substance and electrically connected with the source of electrical energy, a second receptacle containing conductive substance, striking devices, electromagnets controlled by the web and connected with the second-mentioned receptacle for depressing the striking devices, a plurality of receptacles containing conductive substance connected by resistances with the second-mentioned receptacle, armatures for electrically connecting the first and second mentioned receptacles, magnets for moving said armatures, and means controlled by the web for energizing said magnets.

16. In a player for pianos and other musical instruments, the combination of a vertically-movable tracker, a web movable over the tracker, means for winding the web from one roller to another, the said rollers, a driving connection for the rollers, movable means controlled by the web for normally supporting the tracker and means controlled by the web for reversing the driving connection.

17. In a player for pianos and other musical instruments, the combination of a web, striking devices, electromagnets controlled by the web and arranged to actuate the striking devices, means controlled by the web and arranged to regulate the strength of the blows of the striking devices, and means controlled by the web for regulating the volume of current supplied to the electromagnets.

18. In a player for pianos and other musical instruments, the combination of a web, a vertically-movable tracker supporting the same, means for normally supporting the tracker, electromechanical means controlled by the web and arranged to release the tracker and permit the same to move downwardly at a predetermined time, striking devices, electromagnets controlled by the web and arranged to actuate the striking devices, means controlled by the web and arranged to regulate the strength of the blows of the striking devices, and means controlled by the web for regulating the volume of the current supplied to the electromagnets.

19. In a player for pianos and other musical instruments, the combination of a web, a vertically-movable tracker supporting the same, means for supporting the tracker, electromechanical means controlled by the web and arranged to release the tracker and to permit the same to move downwardly at a predetermined time, striking devices, electromagnets controlled by the web and arranged to actuate the striking devices, means controlled by the web and arranged to regulate the strength of the blows of the striking devices, means controlled by the web for regulating the volume of current supplied to the electromagnets, means controlled by the web for reversing the direction of movement of the web when the tracker moves downwardly, and means controlled by the web for breaking the circuits connected with the electromagnets for actuating the striking devices.

809,806. AIR-HEATING SYSTEM. FRANKLIN S. LARMON, Washington, D. C., assignor to Cosmos Construction Company, Washington, D. C., a Corporation of District of Columbia. Filed Mar. 27, 1903. Renewed June 7, 1905. Serial No. 264,167.

Claim.—1. In an air-heating system, the combination with a register, of a jacket which is open at top and bottom, and arranged beneath the register-box, the upper edge of which jacket is spaced down from the lower part of such register-box, thereby forming a passage *g*, through which the air can pass in either direction, substantially as shown and described.

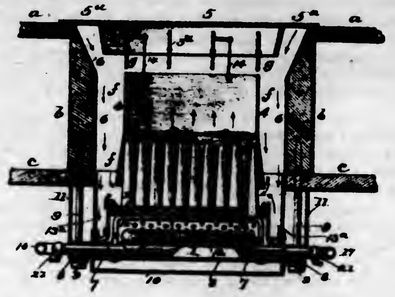

2. In an air-heating system, the combination with a register, and a jacket spaced down from the register-box, of an inclosing jacket 6 which is spaced from its interior jacket, thereby forming an air-passage between the two which communicates at the top of the inner jacket with the air-passage therein, substantially as shown and described.

3. In an air-heating system, the combination with a register, of an air-conducting jacket spaced below it, a heater arranged below said jacket and spaced therefrom, and an inclosing jacket spaced from the first-named one, substantially as shown and described.

4. In an air-heating system, the combination with a register, of an air-conducting jacket 4 arranged below it and adapted for vertical adjustment, whereby it serves to regulate the passage of air between the register and jacket, substantially as shown and described.

5. In an air-heating system, the combination with a register, and an air-conducting jacket arranged below it and adapted for vertical adjustment, of an inclosing jacket 6, spaced from the inner jacket, substantially as shown and described.

6. In an air-heating system, the combination with a register, of an air-conducting jacket arranged below it and adapted for vertical adjustment, and means for adjusting it, substantially as shown and described.

7. In an air-heating system, the combination with a register, of an air-conducting jacket arranged below it and adapted for vertical adjustment, and connecting devices which suspend the jacket from the pivoted leaves of the said register, substantially as shown and described.

8. In an air-heating system, the combination with a register, a vertically-adjustable jacket 4 arranged below, and means for adjusting it, of an inclosing fixed jacket 6, spaced from jacket 4, substantially as shown and described.

9. In an air-heating system, the combination with a heater-plate, of a jacket arranged over said plate and adapted for vertical adjustment, whereby it may serve to control access of air to the plate, substantially as shown and described.

10. The combination with a heater-plate, and a vertically-adjustable jacket arranged directly over it, of an inclosing jacket 6, spaced from the first one to form an air-passage, and connected at its lower end with said plate, substantially as shown and described.

11. The combination with a heater-plate, and a vertically-adjustable jacket arranged directly over it, of an inclosing jacket 6, spaced from the first one to form an air-passage, and having a trough-like extension 13ª descending below said plate and returning to connect therewith, substantially as shown and described.

12. The combination with a heater-plate, and the fixed jacket 6, of the downward trough-like extension of the jacket, 13ª, which is arranged loosely within the lower portion of said jacket, and is removable vertically therefrom, substantially as shown and described.

13. In an air-heating system, the combination with a heater-plate, and a vertically-adjustable jacket arrange dover it, of a register arranged over said jacket and spaced therefrom, substantially as shown and described.

14. In an air-heating system, the combination with a heater-plate, and a vertically-adjustable jacket 4 over it, of a register spaced above, and an inclosing jacket 6 spaced from, said jacket 4, substantially as shown and described.

15. In an air-heating system, the combination with a heater-plate, of a jacket which is open at top and bottom and arranged above

the plate, and adapted for vertical adjustment, and means for adjusting it, substantially as shown and described.

16. In an air-heating system, the combination with a heater-plate, and a register having pivoted leaves, of a vertically-adjustable jacket arranged between the plate and register, and open at each end, and means connecting the jacket with the register-leaves, whereby the adjustment of the latter in opening and closing correspondingly adjusts the jacket higher or lower and thus regulates the admission of air to the heater-plate, substantially as shown and described.

17. In an air-heating system, the combination with a heater-plate and a register having pivoted leaves, of a vertically-adjustable jacket 4, and connecting devices which suspend the jacket from the leaves of the register, whereby simultaneous adjustment of register and jacket is secured, substantially as shown and described.

18. In an air-heating system, the combination with a heater-plate, burners arranged beneath the same, and a jacket which is open at each end and adapted for vertical adjustment, of means for opening and closing the burners, and adjusting the jacket, for simultaneously regulating supply of gas and air, substantially as shown and described.

19. In an air-heating system, the combination with a heater-plate, burners arranged beneath the same, a vertically-adjustable jacket which is open at each end and arranged above said plate, of a register, and means connecting the operative parts of the register with said jacket and the burners, whereby the register and stop-cocks are opened and closed and the jacket adjusted simultaneously, substantially as shown and described.

20. In an air-heating system, the combination with a heater-plate, and a register having pivoted leaves and an operative lever, of a vertically-adjustable jacket 4 and connecting devices which suspend the jacket from the register-leaves, and burners provided with stop-cocks whose operative levers are connected by link-and-lever mechanism with the operative lever of the register, whereby simultaneous adjustment of register, jacket and burners is secured, substantially as shown and described.

21. In an air-heating system, the combination, with a heater-plate, a vertically-adjustable jacket 4 over said plate, burners beneath the plate provided with stop-cocks 21 having levers, and a register-bar 27 having a pivoted operating-lever 28, of bars 23 having hooks which connect them detachably with the stop-cock levers, and means comprising pivoted levers 24, 24', 25 and 26, which serve to connect the said register-bar with the hook-bars 23, substantially as described.

22. In an air-heating system, the combination with a heater-plate, a burner beneath the same, a movable bar detachably connected with the stop-cock of said burner, and means for operating said bar, of a second burner arranged contiguous to the first so that one may light from the other, and a device attached to such second burner and adapted to engage with and lock the operative bar of the first-named one, the turning out of the flame of the second burner thereby preventing the opening of the first burner until the second one is relighted, substantially as shown and described.

23. In an air-heating system, the combination with a heater-plate, and a fixed bar, a series of burners arranged beneath the plate, detachable bars connecting the stop-cocks of said burners, and means for operating said bars, of another burner arranged contiguous to each of said series, and a movable bolt or bolts connected with the stop-cock lever of the last-named burner, the fixed and one or more movable bars being provided with notches which coincide when a movable notched bar is adjusted for closing the cocks, and thus form a socket adapted to receive the said bolt, substantially as shown and described.

24. In an air-heating system, the combination with a heater-plate, a fixed bar, a register provided with a pivoted lever, and detachable bars connecting the stop-cock levers of a series of burners, of another burner arranged adjacent to one or more of said series, and having a locking-bolt adapted to engage notches in the fixed and movable bars, and link-and-lever mechanism operatively connecting the movable bars with the register-lever, substantially as shown and described.

25. In an air-heating system, the combination with a register having an open-work side extension of its plate, of a jacket 4 arranged below whose upper edge is separated from the register-box, whereby an opening *g* is formed between them for the passage of air through the said side extension when the register is closed, substantially as shown and described.

26. The combination with a register having an open-work side extension, and a heater arranged below, of a jacket whose upper edge is separated from the register-box, whereby an opening between them is provided for passage of heated air when the register is closed, substantially as shown and described.

27. The combination with a register having an open-work side extension, a heater arranged below, and a jacket whose upper edge is separated from the register-box, of an inclosing jacket 6, substantially as shown and described.

28. The combination with a register having an open-work side extension, a heater arranged below, and an inclosing jacket 6, of a jacket 4 arranged between the heater and the register, and whose upper and lower edges, respectively, are separated from the said register and the said heater, substantially as shown and described.

29. In an air-heating system, the combination with a horizontal heater-plate having a series of vertical cones, of a vertically-movable jacket inclosing the upper portion of the cones, but separated from the heater-plate proper, a register arranged above the jacket and provided with pivoted leaves which are operatively connected with the jacket, a fixed jacket arranged exterior to the register-box and separated from the movable jacket by a narrow space, and having a downward trough-like extension projecting below the heater-plate and opposite the burners, and a perforated casing arranged beneath the burners and serving to inclose the same, substantially as shown and described.

30 The combination with the heater-plate, burners and perforated casing, of jacket 4 adapted for vertical adjustment, substantially as shown and described.

31. In an air-heating system, the combination with the heater-plate provided with upwardly-projecting cones, of the jacket 4, made vertically adjustable, and its lower end adapted to inclose the cones more or less according to the adjustment, substantially as described.

809,307. RESAWING-MACHINE. LENORD A. LAWSON, McBee, S. C. Filed May 3, 1905. Serial No. 258,062.

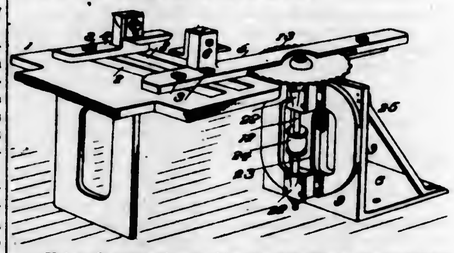

Claim.—In a resawing-machine, the combination of a supporting-base provided with a vertically-extending standard or plate provided at its lower end with a projection 21, and also provided with a plurality of elongated slots, a bar mounted at one side of said plate and provided at its lower end with an outwardly-projecting extension, an adjusting device or screw working through the projection 21 against the said extension whereby to move the said bar vertically, a mandrel-supporting frame supported at its lower end on the said extension and abutting against the outer face of the said bar and provided with upper and lower curved slots, fastenings or bolts accommodated in said slots and extending through said bar and through the slots in the plate, a pivoted bolt secured to said frame and passing through one of the slots in the plate, a bearing-plate 23 attached to the outer side of the mandrel-supporting frame and over the heads of the said bolts whereby the latter are retained in position as against longitudinal displacement, and a mandrel or shaft journaled in said bearing-plate and carrying a saw at one end, as for the purpose set forth.

809,308. MACHINE FOR TRIMMING THE CORNERS OF BOXES. JAMES T. LECHMERE, Hamilton, Canada. Filed July 24, 1905. Serial No. 270,269.

Claim.—1. In a machine for trimming the corners of boxes, a rigid frame, an upper frame adapted to vertically slide in the rigid frame, an upper transverse guide secured to the slidable frame and a similar guide secured to the rigid frame and below the upper guide, upper and lower bearings secured to said guides, and in vertical line, similar upper and lower bearings adapted to slide on the upper and lower guides, and in vertical line, means on the rigid frame and on the adjustable frame to vertically adjust the adjustable frame, means on the rigid frame and on the adjustable frame to horizontally adjust said adjustable bearings, and box-corner-trimming means.

2. In a machine for trimming the corners of boxes, a rigid frame, corner-posts in the frame, bearings secured to the upper parts of the posts, vertical grooves on the inner sides of the posts, an adjustable frame, guides secured to the frame-tongues on the guides adapted to slide in the grooves, transverse shafts journaled in bearings of the rigid frame, bevel-wheels secured on the outer ends of the shafts, sprocket-wheels on the shafts, a chain connecting the sprockets, vertical screws through said bearings and guides, bevel-wheels on the screws meshing in the bevel-wheels on the shafts, a crank-handle on one said shaft to adjust the adjustable frame, and box-corner-trimming means.

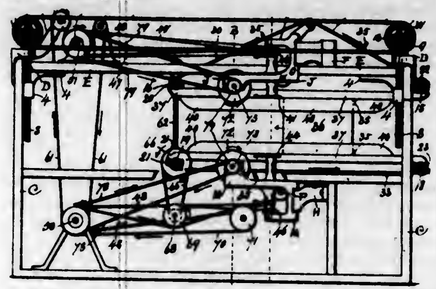

3. In a machine for trimming the corners of boxes, a rigid frame, an adjustable frame in said rigid frame, a transverse guide secured to the adjustable frame, bearing secured to the guide, a similar bearing adapted to slide on the guide, a vertical shaft adapted to revolve in the stationary bearing, a similar shaft adapted to revolve in the slidable bearing, a pulley on each shaft, a horizontal saw secured on the lower end of each shaft, means on the adjustable frame to revolve said pulleys, transverse shafts extending through said bearings, and adapted to revolve therein, a pulley on each shaft, vertical saws a part on each said shaft, and means for revolving the shafts.

4. In a machine for trimming the corners of boxes, a rigid frame, an upper frame adapted for vertical adjustment therein, transverse guides secured to each said frame, and in vertical line, stationary bearings secured to said guides and in vertical line, adjustable bearings on the guides and opposite to the stationary bearings, means connected to the rigid frame and to the adjustable bearings for adjusting the adjustable bearings, a vertical shaft in each said bearing, a pulley on each shaft, a horizontal saw on the end of each shaft and vertically opposite to each other, an upper and a lower horizontal shaft extending through the respective upper and lower bearings, a pulley on each of said horizontal shafts and a vertical saw secured on each of said horizontal shafts.

5. In a machine for trimming the corners of boxes, a rigid frame, a frame adapted for vertical adjustment in the rigid frame, upper and lower transverse guides secured to said frames, bearings rigid on said guides, similar bearings adapted to slide on the guides, opposite horizontal saws and opposite vertical saws adapted to revolve and supported by said bearings, upper and lower chain-supports, sprockets supported on the adjustable frame, lower and vertically-opposite sprockets supported by the rigid frame, feed-chains connecting the upper sprockets and feed-chains connecting the lower sprockets, dogs on the feed-chains, supports on the adjustable frame for the feed-chains and supports on the rigid frame for the feed-chains and boxes.

6. In a machine for trimming the corners of boxes, a rigid frame, an adjustable frame to vertically slide therein, stationary bearings supported by said frames, adjustable bearings supported by said frames, horizontal chain-supports secured on said bearings, transverse shafts supported by said frames and apart from each other and in vertical line, sprockets on said shafts, horizontal chains connecting the upper sprockets, and horizontal chains connecting the lower sprockets, and in said horizontal supports, dogs on the chains, side box-guides on the chain-supports, means for adjusting the frame, means for adjusting the bearings, means for revolving the sprockets, and box-corner-trimming means.

7. In a machine for trimming the corners of boxes, a rigid frame, an adjustable frame adapted to vertical adjustment therein, means to adjust the frame, a bearing secured to one side of the adjustable frame and a similar bearing on the adjustable frame and adapted to horizontal adjustment, a vertical shaft adapted to revolve in each bearing, a pulley on each shaft, a horizontal saw on the lower end of each shaft, means on the adjustable frame for revolving the shafts, a transverse shaft extending through the bearings, a pulley on each shaft, a vertical saw secured to one end part of the horizontal shaft, a similar saw on the opposite end part of the shaft and adapted to slide thereon, and means for adjusting the saw.

809,309. ELECTROPLATING APPARATUS. ARTHUR W. L'HOMMEDIEU, Chicago, Ill., assignor to Charles F. L'Hommedieu, Chicago, Ill. Filed Apr. 22, 1905. Serial No. 256,230.

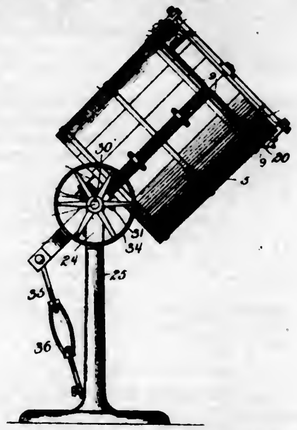

Claim.—1. In a device of the character described, the combination of a tub adapted to contain a plating solution, and arranged to be rotated upon an axis laterally inclined from a vertical plane, one or more anodes secured near the inner surface of the tub, one or more resident cathodes near the axis of the tub and a perforate receptacle of non-conducting material, adapted to contain the material to be plated interyening between the said electrodes.

2. In a device of the character described, the combination of a plating-tub adapted to contain a plating solution and arranged to be rotated upon an upwardly-extending axis, anodes arranged around the inside surface of said tub, a resident cathode arranged near the axis of said tub, a non-conducting support for the material to be plated, electric connections for said anode and resident cathode and a means for rotating the tub.

3. In a device of the character described, the combination of a plating-tub adapted to contain a plating solution and arranged to be rotated upon an upwardly-extending axis, anodes arranged around the inside surface of said tub, a resident cathode arranged near the axis of said tub, a non-conducting, perforate cylinder, for supporting the material to be plated, arranged intermediate the said anodes and resident cathode, electric connections for said anodes and resident cathode and a means for rotating the tub.

4. In a device of the character described, the combination of an imperforate cylinder closed at its base end, arranged to be rotated upon an upwardly-extending axis, a removable perforate cylinder of non-conducting material closed at its base end, arranged within said first cylinder, an anode arranged between said cylinders, a resident cathode within the interior cylinder, electric connections and a means for rotating said cylinders.

5. In a device of the character described, the combination with a plating-tub provided with an anode, a metallic pan constituting a part of the cathode arranged near the bottom of the tub to support the material to be plated, a perforate non-conducting screen between said anode and resident cathode, a means for adjusting the inclination of the tub, electric connections, and a means for rotating said tub.

809,310. COPY-HOLDER. ARTHUR D. LONG, Fairfield, Iowa, assignor of one-half to George Dietz, Fairfield, Iowa. Filed May 6, 1905. Serial No. 259,169.

Claim.—1. In combination, a base, a support mounted in said base, a sleeve mounted on the support, said sleeve having an end bifurcated, a segmental bracket mounted in the bifurcation of the sleeve, said bracket having its curved edge notched, a table secured

to the base of the bracket a ball within the sleeve adapted to fit within one of the notches of the segment and to contact with the wall of the sleeve, a plug within the sleeve, and a spring interposed between the plug and ball to force and hold said ball within a notch of the segment.

2. In combination with a mounted support, a table carried thereby, said table having grooves in its opposite sides, a cross-wire carried by the table, and a U-shaped clip having its ends secured to the opposite sides of the table, the free portions of the clip being contracted and fitted within the grooves of the table.

3. In combination, a supported table, a book-engaging means extending across the table and secured to the sides thereof, and a spring-clip secured to the sides of the table and extending across the table above the engaging means, the engaging means being arranged with relation to the clip to prevent the spreading thereof.

4. In combination, a supported table, a wire extending across the table, the ends of the wire being secured to the sides of the table, and a spring-clip secured to the sides of the table and extending across the table, said clip passing beneath the wire and having its movement limited by said wire.

809,311. **FIREPROOF WIRE.** ARÂNDA M. LOUGHE, Boston, Mass. Filed Nov. 5, 1903. Serial No. 179,989.

Claim.—1. As an article of manufacture, a permanently-flexible armored electric conductor of indeterminate length having an external size adapted to the usual wiring requirements of office-buildings, and having its component parts held integrally and permanently together by adhesion, said parts including a wire, a fireproof jacket for the wire, a waterproof covering for said jacket, and a tightly-woven-wire covering provided internally and externally with a waterproof and fireproof covering of insulation.

2. As an article of manufacture, a permanently-flexible armored electric conductor of indeterminate length having an external size adapted to the usual requirements of office-buildings, and having its component parts held integrally and permanently together by adhesion, said parts including a wire, an asbestos jacket for the wire rendered moisture-proof by an enveloping coating of cement, inclosed by a tightly-woven jacket of wire embedded on both sides in waterproof and fireproof insulation.

809,312. **PROCESS OF MAKING FIREPROOF CONDUCTORS.** ARÂNDA M. LOUGHE, Boston, Mass. Filed May 23, 1904. Serial No. 209,191.

Claim.—1. The herein-described process, consisting of coating a conductor-wire with a cover of approximately pure rubber, applying to said rubber coating a plurality of vulcanizable coatings containing insulating and fireproofing ingredients, with increasing proportions of the latter in successive coatings, applying a woven-wire jacket tightly thereto, applying a highly-heated, thin, vulcanizable, fireproof and electrolysis-proof insulating compound to said wire jacket, maintaining said jacket and the adjacent contained portions highly heated during said application, repeating said application of said thin compound a plurality of times until said compound has permeated the meshes of the jacket and become incorporated therewith entirely about the individual strands and on both sides of the jacket, said jacket being permitted to cool appreciably between successive applications of said compound, then applying a heavy coating of vulcanizable, fireproofing compound, and finally vulcanizing the whole together.

2. The herein-described process, consisting in providing a conductor-wire with vulcanizable insulation and then applying a metal jacket thereto, applying to said jacket a fireproof and electrolysis-proof insulating vulcanizable, plastic compound, heating said compound and metal jacket during said application sufficiently to incorporate the compound in the jacket, and then permitting the same to cool and repeating said treatment, heating and cooling, until the metal jacket is covered with a thick coating and finally vulcanizing the whole together.

3. The herein-described process, consisting in applying to a conductor-wire successive dippings of insulating and fireproofing compound, the first dippings consisting exclusively or principally of insulating material and the fireproof ingredients predominating in the outer dippings, said compound containing material for rendering the product permanently flexible, and also containing a vulcanizing agent, next applying a fibrous covering permeated throughout with fireproof material, applying thereto a coating of vulcanizable fireproof and insulating compound, weaving a wire jacket tightly thereon, treating said jacket under heat to a hot coating of electrolysis-proof vulcanizable compound, as described, and finally treating the whole to a vulcanizing process.

4. The herein-described process, consisting in providing a conductor-wire with a vulcanizable and permanently-flexible covering of insulation containing fireproofing ingredients, embedding therein, while still in a plastic state, a flexible covering of closely-woven wire, repeatedly dipping the aforesaid in a thin plastic vulcanizable compound of insulating, permanently-flexible, fireproof materials, maintaining both the wire covering and thin compound highly heated during said dippings, and applying to the exterior a thick, permanently-flexible coating of vulcanizable compound containing insulating, fireproofing and waterproofing ingredients, the latter two predominating, and finally vulcanizing the whole sufficiently to unite all of said parts together into a flexible, unitary article.

809,313. **PROTECTED CONDUCTOR.** ARÂNDA M. LOUGHE, Boston, Mass. Filed May 23, 1904. Serial No. 209,192.

Claim.—1. As an article of manufacture, a protected conductor, comprising an inner conductor-wire, an enveloping compound of insulating and fireproof ingredients having an increasing quantity of the latter on its outer side, a covering of fireproof fabric surrounding said compound and permeated on both sides with fireproof materials, a woven-wire jacket tightly embedded in the fireproof materials on the outer side of said fabric covering, and a coating of fireproof compound inclosing said wire jacket, the whole containing vulcanizing ingredients and being vulcanized together as a one-piece article.

2. As an article of manufacture, an inner conductor-wire, an enveloping vulcanizable compound containing a maximum quantity of insulating ingredients adjacent the wire, and an increasing quantity of fireproofing ingredients toward its outer side, a coarse-mesh woven-wire jacket filled and permeated on both sides with a vulcanizable compound containing fireproofing and insulating ingredients, and a superimposed fine-mesh woven-wire jacket, permeated on both sides with a vulcanizable compound containing fireproofing, insulating and waterproofing ingredients, the whole being vulcanized together as a one-piece article.

3. As an article of manufacture, an inner conductor-wire, an enveloping vulcanizable compound of insulating and fireproofing ingredients, a tightly-woven wire jacket, having a vulcanizable, fireproofing and insulating compound incorporated therewith on both sides and permeating the meshes thereof, and a thick external coating, having a large number of layers of vulcanizable, permanently-flexible compound, containing ingredients as described for rendering the same moisture-proof, electrolysis-proof and fireproof, and the whole being vulcanized together as a one-piece article.

4. As an article of manufacture, a cable, containing a plurality of individual conductor-wires, each embedded in a compound containing substantially pure insulating material adjacent the wire and an increasing proportion of vulcanizable and fireproofing ingredients externally thereof, all of said wires thus covered being together inclosed in a similar enveloping compound, and a plurality of woven-wire jackets separated from each other, and each embedded in and permeated by, a vulcanizable compound containing insulating and fireproofing ingredients, the inner jacket having coarse-mesh and fine wire and the outer jacket having coarse wire tightly woven, and an outside covering of thick, vulcanizable, fireproof, waterproof and insulating compound, the whole being vulcanized together, and permanently flexible.

5. As an article of manufacture, a cable, containing a plurality of individual conductor-wires permanently insulated from each other, and an enveloping compound of vulcanizable, insulating, fireproofing ingredients, a coarse-mesh fine-wire jacket, tightly inclosing said compound, a thin coating of similar compound incorporated therewith as stated, a thick coating of similar compound, containing an increased quantity of fireproofing ingredients, inclosing the same, a close-woven fine-wire jacket thereon, a further covering of similar compound similarly arranged, a close-woven coarse-wire jacket, and a thick coating of similar compound enveloping the whole, all being vulcanized together as a one-piece article.

6. As an article of manufacture, a protected conductor, comprising an inner conductor-wire, an enveloping compound of insulating and fireproofing ingredients, and a plurality of woven-wire jackets separated from each other by vulcanizable, fireproof insulating compound, and also permeated with said compound, the whole being vulcanized together and permanently flexible, the wire of the outer jacket having great tensile strength and hardness, and the wire of the inner jacket being lighter and more flexible.

809,314. **CARD-INDEX DRAWER.** WILLIAM LUBLEY, Chicago, Ill. Filed Dec. 4, 1903. Serial No. 133,230.

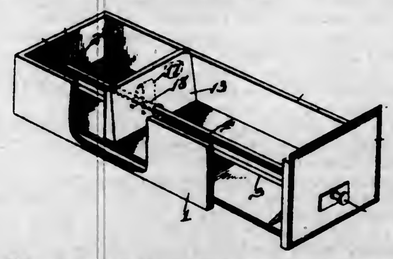

Claim.—1. In a card-index drawer the combination of the drawer, a card-holding rod journaled therein and having an eccentric portion adapted to stand out of line with the entrance to the slot of the card for holding the card in place, and a deflectable member normally engaging said eccentric portion for holding the rod against rotation, and adapted to be deflected out of engagement with said eccentric portion for permitting the rod to rotate, substantially as set forth.

2. In a card-index drawer the combination of the drawer, a flattened rod journaled therein and having a notched or narrowed portion and a deflectable plate engaging said rod adjacent to said notched or narrowed portion for holding the rod against rotation when in one position and permitting of its rotation when deflected opposite the notched or narrowed portion, substantially as set forth.

3. In a card-index drawer the combination of the drawer, a rotatable flattened rod journaled therein and having a narrowed or notched portion and a deflectable plate having a notch in which said rod engages, one side of the notch in said plate extending but partially across said rod, substantially as set forth.

4. In a card-index drawer the combination of the drawer, a rotatable flattened rod journaled therein and having a notched or narrowed portion and a deflectable holder for said rod embracing the edge thereof at a point adjacent to said notched or narrowed portion, substantially as set forth.

5. In a card-index drawer the combination of the drawer, a rotatable flattened rod journaled therein and having a notched or narrowed portion and a deflectable plate having a notch in which said rod engages, one side of said notch being of less length than the width of said rod and having the lip 12, substantially as set forth.

6. In a card-index drawer, the combination of a drawer, a card-holding rod secured in the bottom thereof, a follower-block located across said drawer and a spring-tongue secured rigidly at one end directly to said block and having its other end provided with an aperture in which said rod fits, said tongue being arranged normally at an angle to the face of the block and at an obtuse angle to the rod and flexible toward said face of the block.

7. In a card-index drawer the combination of the drawer, a flattened rod journaled in said drawer longitudinally thereof, a follower in said drawer and a V-shaped spring-plate secured to said follower and having registering apertures for the passage of said rod, substantially as set forth.

8. In a card-index drawer, the combination of a drawer, a card-holding rod secured therein, a follower located across the drawer and a spring-tongue secured at one end to the follower and projecting normally at an angle to the face of the follower and having an aperture through which the said rod passes and gripping and binding said rod, the spring being compressible toward said face of the follower for releasing the rod.

809,315. **BOOK-SUPPORT.** JAMES MACCALLUM, St. Louis, Mo. Filed Dec. 1, 1904. Serial No. 235,012.

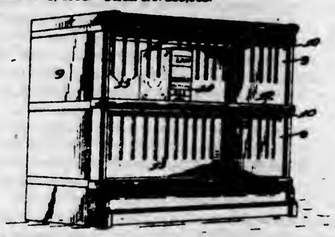

Claim.—The combination with a bookcase, of attaching-plates secured to the inner faces of the end walls of said case immediately beneath the front of the book-shelf, a rod having its ends mounted in the attaching-plates, a series of tubular sleeves rotatably arranged on the rod, the series of sleeves extending from one end of the rod to the other, and a supporting-finger rigidly fixed to and depending from each sleeve, substantially as specified.

809,316. **CONVEYER.** JOHN W. MACKIN, Chicago, Ill., assignor to Chester T. Drake, Chicago, Ill. Filed Jan. 24, 1903. Serial No. 140,343.

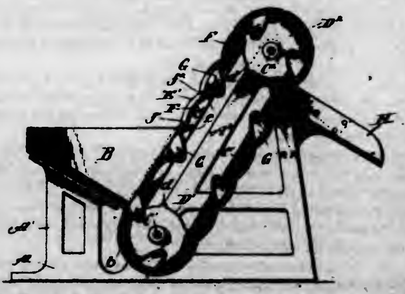

Claim.—1. The combination with a supporting-frame, of guide-wheels journaled at the top and bottom of said frame and located out of vertical alinement, an endless conveyer passing around said wheels and comprising buckets and intermediate plates having overlapping adjacent edges, the tops of the buckets being flush with the surface of intermediate plates, a supply-hopper the lower edge of which terminates adjacent to said conveyer and lies below the axis of the lower guide-wheels, and a chute supported by said frame and located beneath the upper guide-wheel.

2. The combination with an endless conveyer comprising a series of buckets, and plates pivotally connected at their ends to the

adjoining ends of the buckets, of guide-wheels within the opposite ends of said conveyer around which it travels, the tops of the adjacent buckets and plates being flush and having overlapping edges whereby a smooth surface between the buckets is formed when the conveyer follows a curved path of movement around the guide-wheels.

3. An endless conveyer comprising a series of buckets and plates pivotally connected at their ends to the adjoining ends of the buckets, said buckets and plates being interchangeable whereby the capacity of the conveyer may be varied.

4. In a conveyer, the combination with a chain, of buckets supported by said chain, and plates also carried by the chain and interposed between the buckets thereby forming a smooth surface to guide the material falling upon the conveyer into the buckets, said buckets and plates being interchangeable whereby the capacity of the conveyer may be varied.

5. In a conveyer, the combination with an endless chain, of buckets supported by said chain, plates also supported by said chain between the buckets, guide-wheels within the opposite ends of said conveyer around which it travels, the tops of the buckets being flush with the surface of the plates and said buckets and plates having overlapping adjacent edges whereby a smooth surface is formed to guide the material falling upon the conveyer into the buckets and a continuous smooth surface between the buckets is formed when the conveyer passes around said guide-wheels.

6. In a device of the character described, the combination with a hopper, of a conveyer comprising an endless chain, buckets supported by said chain, plates also supported by the chain between the buckets, a guide around which said chain passes located adjacent to the delivery end of said hopper, and an apron extending downwardly from the bottom of said hopper partially around said guide and occupying a position adjacent to the path of movement of the conveyer.

7. In an endless conveyer, the combination with a chain comprising pairs of vertical links, of buckets secured between pairs of links and located below the outer edges thereof, plates also secured between pairs of links and located below the outer edges thereof, the adjacent buckets and plates having overlapping edges.

8. In an endless conveyor, the combination with a chain comprising pairs of vertical links, of buckets secured between pairs of links and located below the outer edges of the links, plates also secured between pairs of links below the outer edges thereof, whereby the outer portions of the links constitute flanges to retain the material upon the conveyer.

9. In an endless conveyer, the combination with a chain comprising pairs of vertical links, rods extending through the ends of the adjoining pairs of links, buckets secured between pairs of links and located below the outer edges thereof, plates also secured between pairs of links and located below the outer edges thereof, and guide-wheels around which the chain passes having grooves for receiving said rods.

10. In a conveyer, an element comprising a pair of vertical links, ribs projecting laterally from the opposing surfaces of the links, and a plate located between the links and secured to the ribs thereon.

11. In a conveyer, an element comprising a pair of vertical links, ribs projecting laterally from the opposing surfaces of the links, and a bucket located between the links and having flanges secured to the ribs thereon.

12. In a conveyer, an element comprising a pair of vertical links, ribs projecting laterally from the opposing surfaces of the links, a bucket located between the links and secured to the ribs thereon, said bucket comprising a plate having a hole therethrough, and the bucket proper secured beneath said plate and registering at its top with the hole therethrough.

13. In an endless conveyer, the combination with a chain comprising vertical links the inner edges of which are concave, of buckets carried by said chain, guide-wheels around which the chain passes, and flanges projecting from said guide-wheels adapted to be engaged by and support the chain throughout the path of movement of the conveyer around the guide-wheels the peripheries of the guide-wheels conforming in curvature to the concavity of the inner edges of the links.

14. In an endless conveyer, the combination with a chain comprising pairs of vertical links, rods extending through the ends of the adjoining pairs of links, buckets secured between pairs of links, plates also secured between pairs of links, guide-wheels around which the chain passes having grooves for receiving said rods, and circular flanges on said guide-wheels, said flanges projecting into the path of movement of and supporting the links through engagement with the lower edges thereof.

15. The combination with an endless conveyer comprising a series of pivotally-connected longitudinally-curved buckets and plates, of guide-wheels around which the conveyer travels the peripheries of which conform to the curvature of the buckets and plates, the adjacent buckets and plates having overlapping edges whereby a smooth surface between the buckets is formed when the conveyer follows a curved path of movement around the guide-wheels.

809,317. CAR-FRAME. WILLIAM R. MCKEEN, JR., Omaha, Nebr. Filed May 29, 1905. Serial No. 262,860.

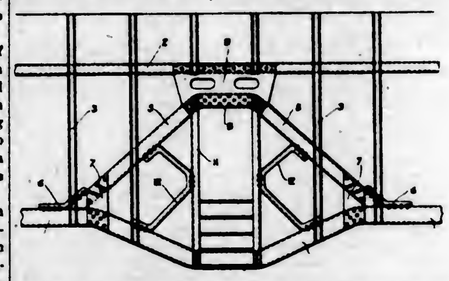

Claim.—1. In a car-frame, in combination, a longitudinal sill provided with a portion depressed below the main portion thereof and a raised portion bridging said depressed portion, and cross members connecting said raised and depressed portions.

2. In a car-frame, in combination, a sill comprising a portion depressed below the main portion and a portion bridging said depressed portion, and a side plate rigidly connected with said bridging portion of said sill.

3. In a car-frame, in combination, a sill comprising a portion depressed below the main portion thereof and a raised portion bridging said depressed portion, a side plate, studs connecting said sill and said side plate, and means rigidly connecting said raised portion of said sill with said side plate.

4. In a car-frame, in combination, a sill split longitudinally throughout a portion of its length into an upper and a lower portion, and a door-frame secured between said portions.

5. In a car-frame, in combination, a sill split longitudinally throughout a portion of its length into an upper and a lower portion, a pair of spaced upright members stretched between and connected with said upper and lower portions, and a brace secured to each of said members and having its upper and lower ends connected respectively with said upper and lower portions of said sill.

6. In a car-frame, in combination, an upper member, a lower member, a pair of cross members stretched between said upper and lower members, and braces having their central portions secured to said cross members and having their upper and lower extremities reversely inclined and secured respectively to said upper and lower members.

7. In a car-frame, in combination, a sill having a portion depressed below the main portion thereof and a raised portion bridging said depressed portion, a side plate rigidly connected with said raised portion, spaced cross members stretched between and connected with said raised and depressed portions, and a brace secured to each of said cross members, each of said braces having its upper and lower ends respectively secured to said raised and depressed portions of said sill.

8. In a car-frame, in combination, a sill having a portion depressed below the main portion thereof and a raised portion bridging said depressed portion, a side plate rigidly connected with said raised portion, spaced cross members stretched between and connected with said raised and depressed portions, a brace secured to each of said cross members, each of said braces having its upper and lower ends respectively secured to said raised and depressed portions, and stops extending within the car-frame from said depressed portion.

9. In a car-frame, in combination, a sill split longitudinally throughout a portion of its length into an upper and a lower portion, said lower portion being depressed below the main portion of said sill, a pair of spaced cross members stretched between and connected with said upper and lower portions and forming a door-frame, a side plate rigidly connected with said upper portion, and stops extending inwardly from said door-frame.

10. In a car-frame, in combination, a sill comprising a portion depressed below the main portion thereof and a raised portion bridging said depressed portion, a side plate, studs connecting said side plate and said sill, a pair of spaced cross members stretched between and connecting said raised and depressed portions of said sill and forming a door-frame, stops leading inwardly from said door-frame, a brace connected with each of said cross members, each of said braces having its upper and lower extremities connected respectively with said raised and dropped portions of said sill, and means rigidly connecting said raised portion with said side plate.

11. In a car-frame, in combination, a sill comprising a portion depressed below the main portion thereof and a raised portion bridging said depressed portion, said raised portion forming with said depressed portion substantially a rhomb, a side plate rigidly connected with said raised portion, and cross members stretched between the central parts of said raised and depressed portions.

12. In a car-frame, in combination, a sill comprising a portion depressed below the main portion thereof and a raised portion bridging said depressed portion, said raised portion forming with said depressed portion substantially a rhomb, a side plate rigidly connected with said raised portion, cross members stretched between the central parts of said raised and depressed portions, and inclined braces connecting each of said cross members with said raised and said depressed portions.

13. In a car-frame, the combination with an upper member, of a lower member divided intermediate its length and having one portion of such division extending upwardly toward said upper member, and the other portion of such division extending downwardly, and a frame arranged between the portions of the divided lower member.

14. In a car-frame, the combination of a sill divided intermediate its length, one portion of such division being dropped below the horizontal plane of the main portion of the sill, and the other portion of such division extending upwardly above the horizontal plane of the main portion of the sill, and a frame interposed between the portions of such division.

15. In a car-frame, the combination of a sill divided intermediate its length, and having the members of such division shaped to constitute substantially a rhomb, and a frame interposed in such division.

16. The combination of a sill divided intermediate its length, the members of such division being spread apart, a door-frame interposed between said members, and braces connecting said door-frame with the sides of said members.

17. In a car-frame, in combination, an upper side plate a sill having a portion thereof raised above the level of the main portion thereof, and means connecting said raised portion with said side plate.

18. In a car-frame, in combination, an upper side plate, a sill having a portion raised above the main portion thereof and rigidly connected with said upper side plate and means connecting the portions of said sill adjacent said raised portion, said last-mentioned means being positioned beneath said raised portion.

19. In a car-frame, a sill split longitudinally into an upper and a lower portion, said upper portion being raised above the main portion of said sill and rigidly connected with the upper portion of the frame.

20. In a car-frame, in combination, an integral sill split longitudinally throughout a portion of its length into an upper and a lower portion, and a door-frame secured between said portions.

21. In a car-frame, in combination, an upper side plate, a sill having the central portion thereof raised above the level of the main portion thereof, and means connecting said raised portion with said side plate.

22. In a car-frame, an integral sill split longitudinally into an upper and a lower portion, said upper portion being raised above the main portion of said sill and rigidly connected with the upper portion of the frame.

809,318. DRAFT APPLIANCE. ANGUS MCNEIL, North Sydney, Canada. Filed Feb. 9, 1905. Serial No. 244,977.

Claim.—1. In a device of the character described, a tube, shouldered plugs therein at each end, one of said plugs being permanently connected to said tube and having a longitudinally-projected opening therein, a draft-rod projected through said opening, a loop or eyelet on the end of said rod, a spring upon said rod extending longitudinally of said tube, a disk upon said rod beyond said spring, a securing nut and pin upon said rod and beyond said disk, a pivotally-supported engaging hook connected with one of said plugs, and a spring-supported loop surrounding one portion thereof.

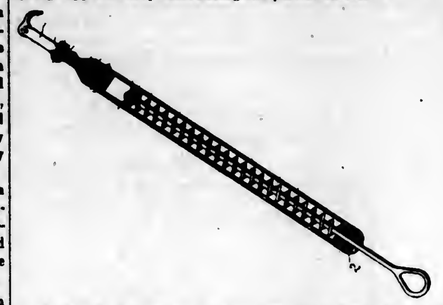

2. In a draft appliance, a tube, a plug secured therein at each end, said plugs being provided with shoulders abutting against the ends of said tube, in combination with a draft-bar projected through one of said plugs and extending longitudinally within said tube, a spring upon said draft-bar, a disk on said bar beyond said spring, means for securing said disk in position, an integral loop on said draft-bar, an engaging means extending longitudinally from and pivoted to the plug at the end of the device opposite said loop, and means for locking said engaging means in position.

3. In a device of the character described, a tube or cylinder provided with openings for admitting a lubricant therein, a plug brazed in one end of said tube, said plug being perforated longitudinally of said tube, a slidable draft-rod with a loop or eyelet thereon projecting through said plug and longitudinally within said tube, a disk at the inner end of said draft-rod, a spring on said rod between said disk and said plug, in combination with a plug at the opposite end of said tube, a rockable hook mounted on said plug, and a loop adapted to lock said hook in position.

4. In a device of the character described, a tube, plugs therein, one of which is perforated longitudinally of said tube, a longitudinally-slidable draft-rod, a spring thereon, means for holding said spring upon said rod, an integral loop on said rod, a pivotally-supported draft-hook connected with the opposite end of the device, and a rockable loop adapted to lock said hook.

5. In a device of the character described, a tube, a plug in one end with an opening therethrough, a slidable draft-bar extending through said opening into said tube, a spring thereon, a disk connected with the opposite end of said draft-rod, a removable plug in the end of said tube in proximity to said disk, a pivoted hook on said removable plug, and a yielding engaging member adapted to retain said hook in a locked position.

809,319. RESERVOIR-PEN. PAUL ORTWALL, Paderborn, Germany. Filed Oct. 21, 1904. Serial No. 229,743.

Claim.—In a writing-pen, a concavo-convex pen-body, a piece integrally connected with said body at one side and bent beneath the concave surface thereof, said piece having a projection at its free side, adapted for attachment to the pen-body and having a plurality of projections at its ends bent upwardly toward the pen-body, and a cake of solid ink, held between said piece and pen-body.

809,320. SAFETY DEVICE FOR ELEVATORS. FRED S. PAYNE, Boston, Mass. Filed Apr. 20, 1905. Serial No. 256,513.

Claim.—1. A safety device comprising a tongue-piece, a latch normally open, movably attached thereto, and a plate having an aperture, said tongue-piece and said plate being attached, one to the elevator-car, the other to some support outside the car and both said tongue-piece and said plate being so arranged as to interlock whenever the elevator-car ascends beyond a given point within the elevator-shaft.

2. A safety device comprising a tongue-piece having a shank with latches normally open, movably attached to said shank, said tongue-piece being rigidly attached to some support above the elevator-car and a plate having an aperture, said plate being rigidly at-

tached to the elevator-car; said tongue-piece and said plate being so arranged as to interlock whenever the elevator-car passes a given point.

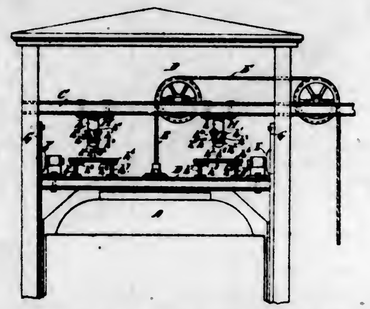

3. A safety device for elevators consisting of the combination of two interlocking members, one member being a tongue-piece with latches normally open, movably attached within a recess to said tongue-piece, the other member being a plate with an aperture adapted to allow the passage of said tongue-piece through said plate.

4. A safety device consisting in the combination of a tongue-piece with a latch normally open, movably attached thereto, a plate with an aperture adapted to allow said latch to pass through said plate, and means for causing said latch to resume its normal position after passing through said plate.

5. A safety device consisting in the combination of a tongue-piece with a latch normally open, movably attached thereto, a plate with an aperture adapted to allow said latch to pass through said plate, means for causing said latch to resume its normal position after passing through said plate, and stops on said plate to engage said latch.

6. The combination of a tongue-piece with a shank, having a recess, latches normally open, movably attached to said shank, a plate with an aperture adapted to permit the passage of said tongue-piece through said plate, means for causing said latches to close while passing through said plate, other means for causing said latches to open after passing through said plate, and stops on said plate to engage said latches.

809,321. SASH-SUPPORTING PLATFORM FOR GLAZIERS. FREDERICK J. PETERS, Milwaukee, Wis. Filed July 3, 1905. Serial No. 268,077.

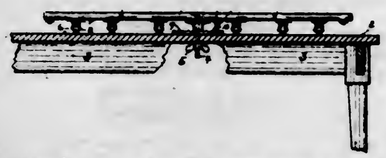

Claim.—In a glazier's table, the combination of a stationary table-top; a revoluble platform; means for connecting said revoluble platform at its center with said supporting-table top; a plurality of rollers connected with said revoluble platform and adapted to support the same from said table-top; an annular ratchet connected with the upper surface of said stationary table-top; a pawl pivotally connected with said platform, said pawl being adapted to move freely over said ratchet as the platform is moved in one direction and to engage said ratchet and lock said platform so as to resist the lateral pressure applied to said platform in the opposite direction, all substantially as and for the purpose specified.

809,322. APPARATUS FOR THE COMPLETE COMBUSTION OF SOLID FUEL. ADAM PETERS, Frankfort-on-the-Main, Germany. Filed Mar. 17, 1904. Serial No. 198,681.

Claim.—1. In a furnace in combination, a grate, a main flue in the rear of said grate, combustion-spaces beside said main flue, air-inlets for said combustion-spaces, and air-inlets behind said grate into said main flue, said combustion-spaces having apertures communicating with said main flue, substantially as described.

2. A furnace consisting in combination of a grate composed of two parts, a front part inclined toward the rear and a horizontal part, a bridge above said horizontal part, transversely disposed in said furnace, a central main flue beneath said bridge and behind said grate, apertures in said bridge, lateral combustion-spaces beside said main flue with which the apertures in the bridge communicate, air-inlets for said combustion-spaces, air-inlets for the main flue, and an extended combustion-space in the rear of said first-named lateral combustion-spaces substantially as described.

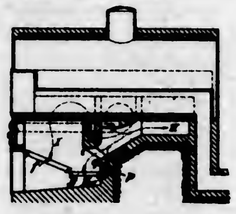

809,323. FODDER LOADER AND HAULER. MARION PLACKARD, Orestes, Ind. Filed Aug. 14, 1905. Serial No. 274,944.

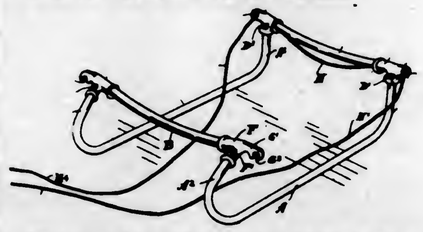

Claim.—1. A device of the kind described consisting of an oppositely-parallel-positioned pair of runners connected detachably each to the other and retained rigidly apart by transversely-extending bars formed curvilinearly downwardly, a rope loosely connected to the rear ends of said runners having its free ends adapted to be extended forwardly; means on the front ends of said runners for receiving the oppositely-extending portions of said rope and upon which the same may be fastened.

2. In a device of the kind described, the combination with a pair of runners, transversely-extending bars connecting the runners, of oppositely positioned and secured means at the rear ends of the runners for loosely retaining a rope, oppositely positioned and secured means at the front ends of the runners whereby the opposite ends of said rope being drawn diagonally transversely about the object to be bound, may be secured.

3. In a device of the kind described, the combination with a pair of runners, transversely-extending bars connecting and retaining apart said runners, of elbow-shaped joints for connecting the rear ends of said runners to said transversely-extending bars provided with apertures therein for the detachable connection of the same to the runners and with ears thereon formed integral therewith, and having eyes therein.

4. In a device of the kind described, the combination with a pair of runners, transversely-extending bars connecting and retaining apart said runners, of elbow-shaped joints for connecting the forward ends of said runners to said transversely-extending bars provided with apertures therein for the detachable connection of same to the runners, and having hooks thereon formed integral therewith.

809,324. REFRIGERATOR. EDWARD PRENDERGAST, St. Louis, Mo. Filed Jan. 26, 1905. Serial No. 243,016.

Claim.—The improved weighing mechanism for refrigerators, comprising the combination of a refrigerator ice-chamber, a cooling-chamber, the platform 4 forming the bottom of said ice-chamber, and also forming the top of the said cooling-chamber; a common weighing-scale having the usual platform and casing 7 mounted upon the said platform 4; the water-shed 8 located above said scale; the vertically-movable ice-rack 9 mounted in the said ice-chamber above said water-shed and adapted to rest thereon; a series of eccentrics 10; shafts 11, upon which said eccentrics are mounted beneath said ice-rack 9 in order to raise and lower said ice-rack with relation

to the said water-shed, said shafts projecting outwardly through the rear wall of the said ice-chamber; crank-arms 12 and 13 fixed upon the projecting rear ends of said shafts, the connecting-rod 14 connecting said crank-arms, and a handle connected to the said crank-arm 13, substantially described.

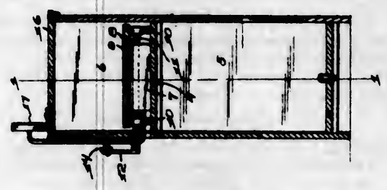

809,325. TOBACCO-PIPE, CIGAR-HOLDER, AND CIGARETTE-HOLDER. LESLIE PROBYN, Freetown, Sierra Leone. Filed Feb. 15, 1905. Serial No. 245,801.

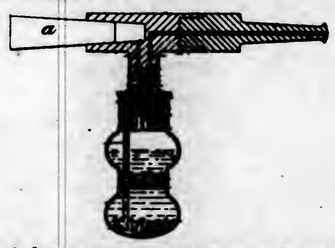

Claim.—1. In an apparatus for smoking tobacco, the combination of a holder, a mouthpiece and passages leading from same, a plug having two passages therein, the upper ends of which are adapted in one position to coincide with the passages leading from the holder and mouthpiece, the lower ends of which lead to a liquid-chamber and cause the smoke to pass through the liquid, a cross-passage in said plug intermediate of the other two passages and adapted in one position to directly connect the passages leading from the holder and mouthpiece, a liquid-chamber carried by said plug and adapted to be turned and to assume two positions at right angles to each other, substantially as set forth.

2. In an apparatus for smoking tobacco, the combination of a holder, a mouthpiece, passages leading from said mouthpiece, a plug having two passages therein the upper ends of which are adapted in one position to register with the passages leading from the holder and mouthpiece the lower ends of which lead to a liquid-chamber and cause the smoke to pass through the liquid, a cross-passage in said plug intermediate of the other two passages and adapted in one position to directly connect the passages leading from the holder and mouthpiece, a liquid-chamber carried by said plug and adapted to be turned to assume two positions at right angles to each other and stops to limit the motion of said plug, substantially as described.

809,326. CRATE. WILLIAM H. REDMOND, Mount Pleasant, Mich. Filed July 8, 1905. Serial No. 268,762.

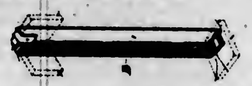

Claim.—1. A metallic corner-stay for a crate having its sides and ends formed of slats, said stay formed of a strip of sheet metal bent into the form of an angle-bar and provided with extensions at the upper end of the sides forming the angle of the bar which are adapted to be hooked over the top slats in the corners of the crate and with an extension adapted to fold on top of one of the aforesaid slats and interlock with the extension which hooks over said slat and thereby prevent the angle-bar from spreading out at the upper end.

2. A crate provided with metallic corner-stays formed of a metal strip bent into the form of an angle conforming to the corners of the crate and to which the ends of the slats forming the ends and sides of the crate are secured, said stay formed with extensions at the upper ends which are hooked over the top slats and are secured thereto and also with an extension engaging into the hook formed by one of the aforesaid extensions

3. A metallic corner-stay for a crate having its sides and ends formed of slats and secured to metallic stays at the corners of the crate, said stay formed of a strip of sheet metal bent to form an angle-bar conforming to the corners formed by the junction of the sides and ends of the crate and provided with extensions at the upper and lower ends, those at the upper end comprising the tongues *a b c* adapted to form an interlocked housing for the top slats in the manner described.

809,327. PIPE-CLAMP. EDWARD L. RIESER, Troy, Ohio, assignor to Gamaliel C. Myers, Dayton, Ohio. Filed Sept. 19, 1904. Renewed Nov. 27, 1905. Serial No. 289,946.

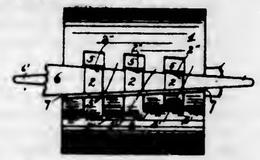

Claim.—1. A pipe-clamp having a series of loops in one portion thereof, the ends of said loops being integrally joined to said portion, and a corresponding series of slots into which said loops project, said slots having a series of adjacent parallel bars forming loops, a tapering wall lying on the outside of said slots, and a wedge-shaped key adapted to enter the loops on both portions of the clamp, and to draw said portions together as shown and described.

2. A clamp for stopping leak-holes in piping, consisting of a metallic band having a series of parallel loops stamped therein adjacent to one longitudinal edge thereof, and a series of parallel loops adjacent to the other longitudinal edge thereof with a series of intervening slots, a tapered wall extending throughout the length of the clamp, and an insertible key between the two series of loops and adapted to tighten said clamp by being confined on one side by said wall and on the other side by the inner terminals of the loops.

3. A clamp for stopping leak-holes in piping, having in one longitudinal edge thereof a series of stamped loops, the outer terminals of which extend on an angle to the body of the clamp, and the other longitudinal edge of said clamp having a series of parallel loops and slots inclosed at their outer terminals by a tapered wall extending throughout the length of the clamp, and a double tapered key adapted to pass between said loops and to draw the clamp together.

809,328. DRAFT-GEAR FOR VEHICLES. CHRISTIAN SHARER, Vandalia, Mich. Filed Mar. 7, 1905. Serial No. 248,894.

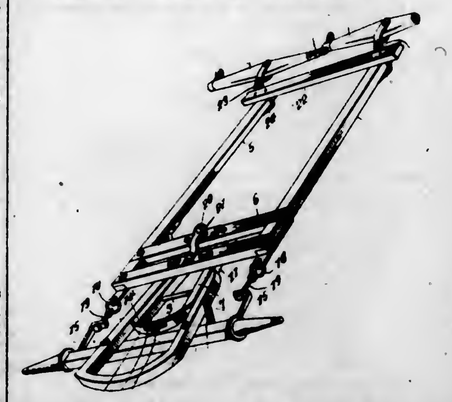

Claim.—1. The combination of a longitudinal draft-bar, a transverse draft-bar, spaced hounds connected at a point between their ends to the transverse draft-bar, and adjustable connections between opposite ends of said hounds.

2. The combination of an axle, draft-gear embodying a longitudinal draft-bar, a transverse draft-bar, spaced hounds projected from the transverse draft-bar for attachment to the axle, and con-

sections between the end portion of the transverse draft-bar and the axle.

3. The combination of an axle, draft-gear embodying a longitudinal draft-bar, a transverse draft-bar, spaced hounds projected from the transverse draft-bar for attachment to the axle, and adjustable connections between the end portions of the transverse draft-bar and the axle.

4. The combination of an axle, spaced longitudinal draft-bars, a transverse draft-bar connecting said longitudinal draft-bars, connecting means between the transverse draft-bar and the axle, an equalizing yoke device comprising a main yoke-bar attached to the longitudinal draft-bars, and short yoke-bars carried by the main yoke-bar.

5. The combination of spaced longitudinal draft-bars, a transverse draft-bar connecting the longitudinal draft-bars, an axle, spaced hounds projected from the transverse draft-bar and connected with the axle, and adjustable connections between the spaced hounds at opposite ends thereof.

6. The combination of spaced longitudinal draft-bars, a transverse draft-bar connecting the longitudinal draft-bars, an axle, spaced hounds projected from the transverse draft-bar and connected between the ends therewith, and adjustable connections between the opposite ends of the spaced hounds and comprising overlapping members.

7. The combination of an axle, spaced longitudinal draft-bars, spaced transverse draft-bars, spaced hounds extending from the transverse draft-bars and adjustably connected therewith, adjustable connections between opposite ends of the spaced hounds aforesaid, hounds projected from the axle and connected with the spaced hounds aforesaid, and take-up connections between the opposite ends of one of the transverse draft-bars and the axle.

809,329. **BELT-SHIFTER.** FRIEDRICH W. SEYBOTH and ERNST K. A. BAUMANN, Zwickau, Germany. Filed June 13, 1905. Serial No. 264,865.

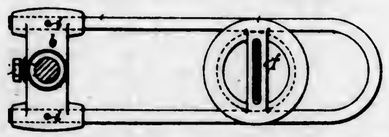

Claim.—A belt-shifter for step-pulleys, comprising a spindle, a belt-fork secured to said spindle, and a ring having a belt-guiding slot, said ring being exteriorly grooved to rotatably and slidably engage said fork.

809,330. **PAPER-HOLDER.** JOHN SIM, Liverpool, England. Filed Mar. 22, 1905. Serial No. 251,521.

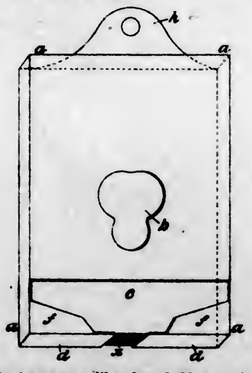

Claim.—1. A paper or like sheet holder consisting of a box, having an aperture at the lower part in front, and across same, for the withdrawal of the paper sheets; a gap or opening in the bottom of the box, extending into the front opening, for applying the thumb to the lower edges; front steps at each side of the lower opening, for holding the sheets at the front lower edges; and an opening above the withdrawal-opening for applying the finger to the front surface of the sheets; substantially as set forth.

2. A paper or like sheet holder consisting of a box having an opening in one side at the bottom thereof, steps *f*, *f* filling the lower corners of said opening, and an opening extending across the entire width of the bottom of the box in the center thereof, said opening communicating with the opening in the side, substantially as described.

3. A paper or like sheet holder consisting of a box having an opening in one side at the bottom thereof, and an opening in the central part of the bottom of the box, said opening extending from one side of the bottom to the other and communicating with the side opening, substantially as described.

809,331. **CLUTCH MECHANISM.** MICHELE G. DE SIMONE, London, England, assignor of three-eighths to Domenico Robert de Simone and one-fourth to The Wilkinson Sword Company Limited, both London, England. Filed Apr. 14, 1905. Serial No. 255,589.

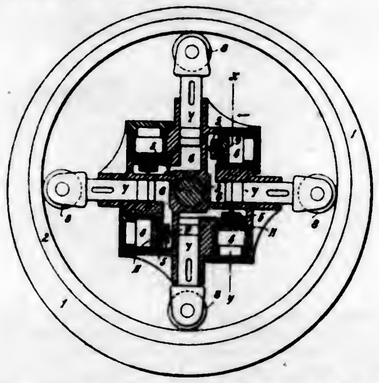

Claim.—1. In a liquid-clutch, the combination of a rotary clutch member having a circular recess eccentric to the axis of rotation, a second clutch member formed with radiating cylinders, plungers in said cylinders, the ends of which engage the inner face of said eccentric recess, a common liquid-chamber in communication with all the cylinders, a separate valve between each cylinder and the common liquid-chamber, and means for operating all the valves to allow the liquid to flow freely between the common liquid-chamber and the cylinders and the plungers to reciprocate in the latter under the action of the eccentric surface of the second clutch member, whereby the clutch will run idle, said means also serving to operate all the valves to close communication between the common liquid-chamber and the cylinders and lock the liquid therein and the plungers in rigid engagement with the eccentric surface of the second clutch member whereby both members are forced to rotate together.

2. In a liquid-clutch, the combination of an outer rotary clutch member having a circular recess eccentric to the axis of rotation, an inner rotary clutch member formed with radiating cylinders, plungers in said cylinders, the ends of which engage the inner face of said eccentric recess, a common liquid-chamber communicating through a separate and independent passage with each cylinder, a separate and independently self-adjusting valve controlling the respective passage between each cylinder and the common liquid-chamber, and means for operating all the valves in unison to allow the liquid to flow freely between the common liquid-chamber and the cylinders and the plungers to reciprocate in the latter under the action of the eccentric surface of the outer clutch member, whereby the clutch will run idle, said means also serving to operate all the valves in unison to close communication between the common liquid-chamber and the cylinders and lock the liquid therein and the plungers in rigid engagement with the eccentric surface of the outer clutch member whereby both members are forced to rotate together.

3. The improved clutch mechanism comprising a rotary clutch member having a circular recess eccentric to the axis of rotation, another rotary clutch member formed with radially-disposed cylinders, plungers in said cylinders, the ends of which engage the inner face of said eccentric recess, a common liquid-chamber in communication with all the cylinders, valves between said cylinders and the common liquid-chamber, means for operating said valves whereby the liquid may be allowed to run freely between the cylinders, and the plungers to reciprocate therein under the action of the eccentric

surface of the other member of the clutch, whereby the clutch will run free, said means also serving to operate said valve to close communication between the cylinders and lock the liquid therein and the plungers in rigid engagement with the eccentric surface of the other member of the clutch whereby both members rotate together.

809,332. **LIP-TURNER.** FRANK F. SMITH, Detroit, Mich., assignor to The Robert Mitchell Machinery Co., Detroit, Mich., a Corporation of Michigan. Filed May 10, 1902. Renewed Nov. 4, 1904. Serial No. 231,356.

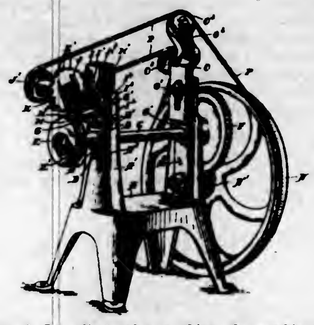

Claim.—1. In a lip-turning machine, the combination with means for supporting and feeding the work, of a wiper-wheel revolving in a plane at right angles to the path of the lip and having peripheral wiper-teeth traversing the path of the lip.

2. In a lip-turning machine, the combination with means for supporting and feeding the work, of a wiper-wheel revolving in a plane at right angles to the path of the lip and having peripheral wiper-teeth traversing the path of the lip above the surface of the work.

3. In a lip-turning machine, the combination with means for supporting and feeding the work, of a revolving wiper-wheel operating in a plane at right angles to the path of the lip for turning the lip and a presser for setting the lip after passing the wiper-wheel.

4. In a lip-turning machine, the combination with means for supporting and feeding the work, of a lip-raising tool, a wiper-wheel traversing the path of the lip for turning the lip and a presser-roll for setting the lip.

5. In a lip-turning machine, a revolving wiper-wheel in a plane at right angles to the path of the lip and having wiper-teeth formed with rounded-off contact-faces for striking the lip above its base and turning the same.

6. In a lip-turning machine, the combination with means for supporting and feeding the work, of a wiper-wheel revolving in a plane at right angles to the path of the lip and adapted to turn the lip by a wiping contact therewith and means for holding the work in position against such contact.

7. In a lip-turning machine, in combination with the frame thereof, a lip-raising tool mounted upon the frame, a wiper-wheel revolvable in a plane at right angles to the path of the lip and adjacent to said tool, a presser-roll adjustably secured to said frame and extending longitudinally across the path of the lip, a work-supporting wheel revolvable in a vertical plane, and means for yieldingly holding said wheel in contact with the work to clamp the same between the tool and the wheel.

8. In a lip-turning machine, in combination with the frame thereof, a horizontal shaft mounted in movable bearings on said frame, a work supporting and feeding wheel on said shaft, a lip-raising guide adjustably secured on said frame, means for yieldingly supporting the shaft to clamp the work between the wheel and said guide, a bracket adjustably secured to the frame, a shaft mounted on said bracket, a wiper-wheel on said shaft adjacent to the guide, and a presser-roll adjacent to the wiper-wheel.

9. In a lip-turning machine, in combination with the frame thereof having vertical ways, a bearing-block mounted on said ways, a shaft extending longitudinally of the frame and journaled and supported at one end on said block, a work supporting and feeding wheel on said shaft, a lip-raising guide on said frame extending over said wheel, a spring engaging said bearing-block to yieldingly clamp the work between the wheel and the guide, means for depressing said spring to lower the wheel, a bracket secured to the frame, a shaft mounted in a bearing on said bracket, a wiper-wheel revolving in a plane at right angles to the path of the lip and secured on the end of said shaft, and a bracket adjustably mounted on the frame adjacent to the wiper-wheel and provided with a presser-roll extending across the path of the lip at right angles thereto.

10. In a lip-turning machine, in combination with the frame thereof, a bearing-block movable in verical ways on said frame and a bearing-block secured in an opening in said frame and free to tilt therein, a horizontal shaft mounted in said bearings, a work supporting and feeding wheel on said shaft, a lip-raising guide on said frame, a spring engaging the lower side of the movable bearing-block to hold the feed-wheel in contact with the work to clamp the same between the wheel and said guide, an adjusting-plug engaging the lower end of said spring, means for adjusting and holding said plug, a rod secured to said movable block to move the same on its ways, nd a wiper-wheel adjacent to the lip-raising guide revolving at right angles to the path of the lip.

11. In a lip-turning machine, in combination with the frame thereof having a vertical standard at each end thereof, one standard being provided with an opening and the other with vertical ways, a bearing-block in said opening and a bearing-block movable on said ways, a horizontal shaft mounted on said blocks, a work supporting and feeding wheel on said shaft, stops adapted to be engaged by the block on said ways, a coil-spring engaging the lower side of said block at one end, an adjusting-plug projecting through an opening in said frame and engaging the lower end of said spring and provided with an axial opening, means for adjusting said plug in the opening, a rod secured to the lower side of the block on the ways and extending downward through the spring and the opening in the plug, a lip-raising guide adjustably secured to the frame, a wiper-wheel revolving at right angles to the path of the lip and adjacent to the guide, a bracket adjustably secured to the frame, and a pressure-roll journaled on said bracket adjacent to the wiper-wheel.

12. In a lip-turning machine, in combination with the frame thereof having vertical standards, a horizontal shaft mounted in movable bearings on said standards, a work feeding and supporting wheel secured on said shaft, a supporting-block adjustably secured to one of the standards, a lip-raising guide provided with a slot and adjustably secured to said block by a screw passing through said slot, a bracket adjustably secured to the block, a presser-roll journaled on said bracket and extending longitudinally across the path of the lip, a bracket adjustably secured to the standard, a shaft mounted in a bearing on said last-named bracket, and a wiper-wheel secured to one end of the last-named shaft and revolving in a plane at right angles to the path of the lip and between the lip-raising guide and the presser-roll.

809,333. **CAM-MOVEMENT EXPLOSIVE-ENGINE.** PHILIP K. STEES, New York, N. Y. Filed Jan. 22, 1903. Serial No. 140,067.

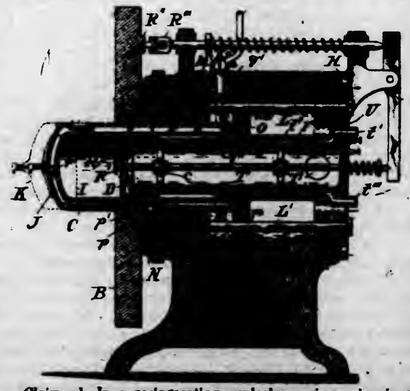

Claim.—1. In a reciprocating explosive-engine, wherein the motion of the reciprocating element actuated by an energized power medium, is adapted to be translated into a rotary motion at its fly-wheel, a kinematic connection between the fly-wheel and the reciprocating element located within the hub of the fly-wheel, for converting the motion of the reciprocating element into a relatively constant rotatory motion of the fly-wheel and conversely for transforming a constant rotatory motion of the fly-wheel into a periodic recip-

rocating motion of the reciprocating element, together with suitable valve mechanism for controlling the working fluid for said engine, actuated by said fly-wheel, substantially as described.

2. In a reciprocating explosive-engine, wherein the motion of the reciprocating element actuated by an energized power medium is adapted to be translated into a rotary motion at its fly-wheel, a kinematic connection between the fly-wheel and the reciprocating element located within the hub of the fly-wheel, for converting the motion of the reciprocating element into a relatively constant rotatory motion of the fly-wheel and conversely for transforming a constant rotatory motion of the fly-wheel into a periodic reciprocating motion of the reciprocating element, a circulating fluid between said reciprocating element and said fly-wheel, and a valve for controlling the working fluid for said engine, together with means coacting between said fly-wheel and said valve for actuating the latter upon the rotation of the said fly-wheel substantially as described.

3. In an explosive-engine having a reciprocating power element actuated by an energized power medium and a rotatory member therefor, a kinematic connection between the reciprocating power element and the rotatory member located at a point radiating from the axis of rotation of the rotatory member, for translating the motion of the reciprocating power element into a relatively constant rotatory motion of the rotatory member and conversely for transforming a constant rotatory motion of the rotatory member into a periodic reciprocating motion of the reciprocating power element, a circulating fluid between the said reciprocating power element and said rotatory member, and a reciprocating valve for controlling the working fluid for the said engine, together with means coacting between said rotatory member and said valve for actuating the latter upon the rotation of the said rotatory member; substantially as described.

4. In an explosive-engine having a reciprocating power element actuated by an explosive mixture and a rotatory member therefor adapted to revolve about said reciprocating power element, a kinematic connection between the reciprocating power element and the rotatory member located at a point radiating from the axis of rotation of the rotatory member, for translating the motion of the reciprocating power element into a relatively constant rotatory motion of the rotatory member and conversely for transforming a constant rotatory motion of the rotatory member into a periodic reciprocating motion of the reciprocating power element, a circulating fluid between said reciprocating power element and said rotatory member, a reciprocating valve for controlling the working fluid for said engine, together with means coacting between said rotatory member and said valve for actuating the latter upon the rotation of the said rotatory member and means for igniting said explosive mixture.

5. In an explosive-engine comprising a combustion-chamber having a reciprocating power element actuated by an explosive mixture confined in said combustion-chamber and a rotatory member adapted to revolve about said reciprocating power element, a kinematic connection between the reciprocating power element and the rotatory member located at a point radiating from the axis of rotation of the rotatory member and exterior to said cylinder, for translating the motion of the reciprocating power element into a relatively constant rotatory motion of the rotatory member and conversely for transforming a constant rotatory motion of the rotatory member into a periodic motion of the reciprocating power element, a circulating fluid between said reciprocating power element and said rotatory member, a reciprocating valve for controlling the working fluid for said engine, together with means coacting between said rotatory member and said valve for actuating the latter upon the rotation of the said rotatory member and means located within the cylinder for igniting said explosive mixture.

6. In an explosive-engine, comprising a combustion-chamber having a reciprocating power element actuated by an explosive mixture confined in said combustion-chamber and a rotatory member adapted to revolve about said reciprocating power element, a kinematic connection between the reciprocating power element and the rotatory member located in an arc radiating from the axis of rotation of the rotatory member and concentric with the exterior of said cylinder, for translating the motion of the reciprocating power element into a relatively constant rotatory motion of the rotatory member and conversely for transforming a constant rotatory motion of the rotatory member into a periodic reciprocating motion of the reciprocating power element, a circulating fluid between said reciprocating power element and said rotatory member, a reciprocating valve for controlling the working fluid for said engine, together with means coacting between said rotatory member and said valve for actuating the latter upon the rotation of the said rotatory member and means located within the cylinder for igniting the explosive mixture.

7. In an explosive-engine comprising a combustion-chamber having a reciprocating power element actuated by an explosive mixture confined within said chamber and a rotatory member adapted to revolve about said reciprocating power element, said reciprocating power element adapted to vibrate along an axial line coincident with the axis of rotation of the rotatory member, a kinematic connection between the reciprocating power element and the rotatory member, for translating the motion of the reciprocating power element into a relatively constant rotatory motion of the rotatory member and conversely for transforming a constant rotatory motion of the rotatory member into a periodic reciprocating motion of the reciprocating power element, a circulating fluid, and inlet and outlet pipe connections therefor, located between said reciprocating power element and said rotatory member, inlet and exhaust valves for controlling the working fluid for said engine, together with means coacting between said rotatory member and said exhaust-valve for actuating the latter upon the rotation of the said rotatory member and means for igniting said explosive mixture.

809,334. DISK-SHARPENER. CHARLES M. STRAIN, Crawfordsville, Iowa, assignor of one-third to Davidson Bros., Crawfordsville, Iowa. Filed Apr. 17, 1905. Serial No. 256,096.

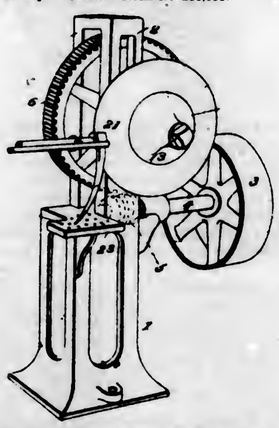

Claim.—1. In a disk-sharpener, the combination of a power-driven shaft provided with a clamp member having its outer face provided with a centrally-disposed recess and with a circular series of spaced projections, a coöperating clamp member loose upon said shaft and having recesses in its inner face to receive the projections of the first-mentioned clamp member and provided in its outer face with a depression to receive the hub of the disk to be sharpened, a means acting jointly with the said clamp members for holding them and the work securely.

2. A holder for disk-sharpeners provided with a supporting-standard curved in its length to admit of the disk to be sharpened occupying a position between parallel planes passed through respectively, the edge of the tool and the foot of the standard, whereby the normal tendency of the tool is to fall away from the disk.

3. A tool-holder for disk-sharpeners comprising members pivoted between their ends, one of said members having a pressure-roller and the other provided with a tool and with an integral standard curved and tapered throughout its length to a point, the parts being arranged to admit of the disk to be sharpened occupying a position between parallel planes passed through respectively the edge of the tool and the foot of the standard, whereby the normal tendency of the tool is to fall away from the disk.

809,335. CULTIVATOR. HERMAN S. SWANSON, Shenandoah, Iowa, assignor to Swanson Mfg. Co., of Iowa. Filed Dec. 15, 1904. Serial No. 236,944.

Claim.—1. In a cultivator, a rocker-shaft suitably mounted, cultivating appliances suitably secured thereto, a crank-arm also secured to the rocker-shaft, a segment secured to said crank-arm, a hand-lever fulcrumed upon the segment, means for locking said hand-lever and segment together, and means engaging the hand-lever against which the latter is arranged to push.

2. In a cultivator, a rocker-shaft suitably mounted, cultivating appliances suitably secured thereto, a right-angled crank-arm also secured to the rocker-shaft, a segment secured to said crank-arm, a hand-lever fulcrumed upon the segment, means for locking said hand-lever and segment together, and means engaging the hand-lever against which the latter is arranged to push.

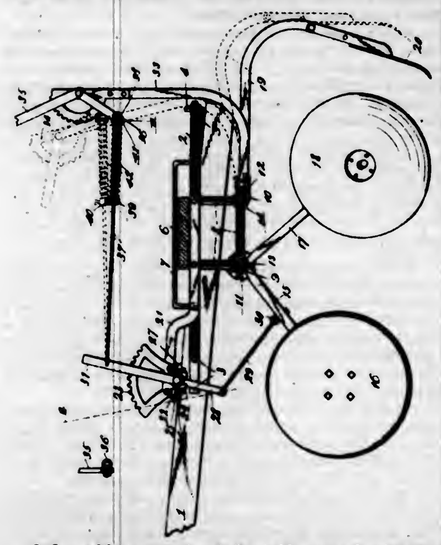

3. In a cultivator, a rocker-shaft suitably mounted, cultivating appliances suitably secured thereto, a crank-arm also secured to the rocker-shaft, a segment secured to said crank-arm, a hand-lever fulcrumed upon the segment, means for locking said hand-lever and segment together, and a connecting-rod suitably secured at its forward end and loosely secured at its rear end to said hand-lever.

4. In a cultivator, a rocker-shaft suitably mounted, cultivating appliances suitably secured thereto, a crank-arm also secured to the rocker-shaft, a segment secured to said crank-arm, a hand-lever fulcrumed upon the segment, means for locking said hand-lever and segment together, a connecting-rod suitably secured at its forward end and loosely secured at its rear end to said hand-lever, and a coil-spring embracing said connecting-rod and pressing against the hand-lever.

5. In a cultivator, a rocker-shaft suitably mounted, cultivating appliances suitably secured thereto, a crank-arm also secured to the rocker-shaft, a segment secured to said crank-arm, a hand-lever fulcrumed upon the segment, a connecting-rod suitably secured at its forward end and loosely engaging the hand-lever with its rear end, a collar adjustably secured to said connecting-rod, and an expansion-spring embracing the connecting-rod and interposed between said collar and the hand-lever.

6. In a cultivator, a rocker-shaft suitably mounted, cultivating appliances suitably secured thereto, a crank-arm also secured to the rocker-shaft, a segment secured to said crank-arm, a hand-lever fulcrumed upon the segment, an eyebolt swiveled on the lever, a connecting-rod suitably secured at its forward end and having its rear end extending through the eyebolt, and means for preventing the accidental withdrawal of the connecting-rod from said eyebolt.

7. In a cultivator, two rocker-shafts suitably mounted, cultivating appliances suitably secured thereto, a primary lever fulcrumed upon the cultivator, means connecting said lever to one of said rocker-shafts, a crank-arm secured to the other rocker-shaft, a segment secured to said crank-arm, a secondary hand-lever fulcrumed upon said segment, and a connecting-rod pivotally secured at one end to one of the levers and loosely secured at its opposite end to the other lever.

8. In a cultivator, two rocker-shafts suitably mounted, cultivating appliances suitably secured thereto, a primary lever fulcrumed upon the cultivator, means connecting said lever to one of said rocker-shafts, a segment located beside said primary lever, a longitudinal brace to which said segment is secured, a crank-arm secured to the other rocker-shaft, a segment secured to said crank-arm, a secondary hand-lever fulcrumed upon said segment, and a connecting-rod pivotally secured at one end to one of the levers, and loosely secured at its opposite end to the other lever.

9. In a cultivator, two rocker-shafts suitably mounted, cultivating appliances secured to one of said rocker-shafts, a primary lever fulcrumed upon the cultivator, means connecting said lever to one of said rocker-shafts, wheel-arms secured to one of said shafts, a crank-arm secured to the other rocker-shaft, a secondary hand-lever fulcrumed upon said crank-arm, means for locking said hand-lever to said crank-arm when desired, and a connecting-rod pivotally secured at one end to one of the levers, and loosely secured at its opposite end to the other lever.

10. In a cultivator, two rocker-shafts, one of which is mounted in advance of the other, cultivating appliances suitably secured to one of said shafts, wheel-arms secured to one of said shafts, a transverse shaft mounted upon the cultivator, crank-arms secured to the transverse shaft, a primary hand-lever also secured to the transverse shaft, means connecting the crank-arms to the wheel-arms, a crank-arm secured to the other rocker-shaft, a segment secured to said crank-arm, a secondary hand-lever fulcrumed upon said segment, and a connecting-rod pivotally secured at one end to one of the levers and slidably secured at its opposite end to the other lever.

11. In a cultivator, two rocker-shafts suitably mounted, cultivating appliances suitably secured to one of said shafts, wheel-arms secured to one of said shafts, a crank-arm secured to one of said shafts, a primary lever fulcrumed upon the cultivator, means connecting said lever to the other shaft, and suitable means connecting the crank-arm to said primary lever whereby both may be simultaneously operated or the crank-arm may be operated independently of the primary lever.

12. In a cultivator, two rocker-shafts suitably mounted, cultivating appliances secured thereto, a crank-arm secured to one of said shafts, a primary lever fulcrumed upon the cultivator, means connecting said lever to the other shaft, and resilient means connecting the crank-arm to said primary lever whereby both may be simultaneously operated or the crank-arm may be operated independently of the primary lever.

13. In a cultivator, two rocker-shafts suitably mounted, cultivating appliances secured thereto, a crank-arm secured to one of said shafts, a primary lever fulcrumed upon the cultivator, means connecting said lever to the other shaft, resilient means connecting the crank-arm to said primary lever whereby both may be simultaneously operated or the crank-arm may be operated independently of the primary lever, and means for regulating the tension of said resilient connections.

14. In a cultivator, two rocker-shafts suitably mounted, cultivating appliances secured thereto, a crank-arm secured to one of said shafts, a secondary hand-lever fulcrumed upon said crank-arm, means for locking said lever to the crank-arm when desired, a primary lever fulcrumed upon the cultivator, means connecting said lever to the other shaft, and suitable means connecting the secondary lever to the primary lever whereby both may be simultaneously operated or the secondary lever may be operated independently of the primary lever.

15. In a cultivator, two rocker-shafts suitably mounted, cultivating appliances secured thereto, a crank-arm secured to one of said shafts, a secondary hand-lever fulcrumed upon said crank-arm, means for locking said lever to the crank-arm when desired, a primary lever fulcrumed upon the cultivator, means connecting said lever to the other shaft, and resilient means connecting the secondary lever to the primary lever whereby both may be simultaneously operated or the secondary lever may be operated independently of the primary lever.

16. In a cultivator, two rocker-shafts suitably mounted, cultivating appliances secured thereto, a crank-arm secured to one of said shafts, a secondary hand-lever fulcrumed upon said crank-arm, means for locking said lever to the crank-arm when desired, a primary lever fulcrumed upon the cultivator, means connecting said lever to the other shaft, resilient means connecting the secondary lever to the primary lever whereby both may be simultaneously operated or the secondary lever may be operated independently of the primary lever, and means for regulating the tension of the resilient connections.

17. In a cultivator, an octagonal frame, bearings depending from said frame, rocker-shafts mounted in said bearings, cultivating appliances suitably secured to said shafts, a primary lever fulcrumed upon the cultivator, means connecting said lever to one of said shafts, a right-angled crank-arm secured to the other shaft and

extending upwardly and backwardly to the rear of the frame, a secondary lever fulcrumed upon said crank-arm, means for locking said secondary lever to the crank-arm when desired, and a connecting-rod pivotally secured at one end to one of the levers and loosely secured at its opposite end to the other lever.

18. In a cultivator, an octagonal frame, bearings depending from said frame, rocker-shafts mounted in said bearings, cultivating appliances secured to one of said shafts, a crank-arm suitably secured to one of said shafts, a secondary hand-lever fulcrumed upon said crank-arm, means for locking said secondary lever to the crank-arm, a primary lever fulcrumed upon the cultivator, means connecting said lever to the other shaft, and a connecting-rod pivotally secured at one end to one of the levers and loosely secured at its opposite end to the other lever.

19. In a cultivator, two rocker-shafts one of which is mounted in advance of the other, cultivating appliances suitably secured thereto, wheel-arms also secured to the forward shaft, a transverse shaft suitably mounted, crank-arms secured thereto, draft-rods connecting said crank-arms to the wheel-arms, a primary lever also secured to the transverse shaft, a crank-arm secured to the rear rocker-shaft, a segment secured to said crank-arm, a secondary lever fulcrumed upon said segment, and a connecting-rod pivotally secured at one end to the primary lever and loosely secured at its opposite end to the other lever.

20. In a cultivator, two rocker-shafts one of which is mounted in advance of the other, cultivating appliances suitably secured thereto, wheel-arms also secured to the forward rocker-shaft, a forwardly-extending longitudinal brace suitably secured at its rear end to the frame of the machine, a transverse brace secured at its opposite ends to the forward end of the longitudinal brace and the tongue of the machine, a segment secured to the longitudinal brace and provided with a bearing, a transverse shaft journaled at one end in said bearing and at its opposite end in a bearing upon the tongue, depending crank-arms secured to said transverse shaft, draft-rods connecting said depending crank-arms to the wheel-arms, a primary lever rigidly secured to the transverse shaft adjacent to the segment, a crank-arm secured to the rear rocker-shaft, a segment secured to said crank-arm, a secondary lever fulcrumed upon said segment, and a connecting-rod pivotally secured at one end to one of the levers and loosely secured at its rear end to the other lever.

809,886. SINGLE-ROW CULTIVATOR. HERMAN S. SWANSON, Shenandoah, Iowa. Filed Aug. 20, 1905. Serial No. 276,220.

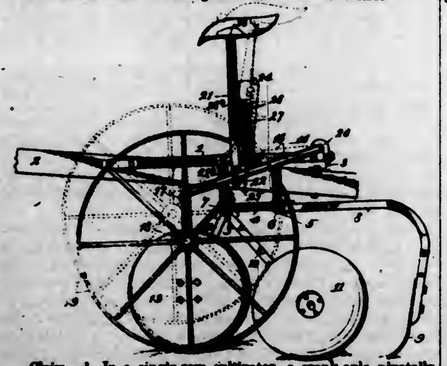

Claim.—1. In a single-row cultivator, a crank-axle pivotally mounted upon the cultivator, balancing-wheels mounted upon the free ends of said crank-axle, yielding means for normally limiting the upward movement of said balancing-wheels, and means for positively limiting said upward movement.

2. In a single-row cultivator, a crank-axle pivotally mounted upon the cultivator, balancing-wheels mounted upon the free ends of said crank-axle, a spring for normally limiting the upward movement of said balancing-wheels, and means for positively limiting said upward movement.

3. In a single-row cultivator, a crank-axle pivotally mounted upon the cultivator, balancing-wheels mounted upon the free ends of said crank-axle, yielding means for normally limiting the upward movement of said balancing-wheels, and a cable for positively limiting said upward movement.

4. In a single-row cultivator, a crank-axle pivotally mounted upon the cultivator, balancing-wheels mounted upon the free ends of said crank-axle, yielding means for normally limiting the upward movement of said balancing-wheels, and adjusting means for positively limiting said upward movement.

5. In a single-row cultivator, a crank-axle pivotally mounted upon the cultivator, balancing-wheels mounted upon the free ends of said crank-axle, adjustable yielding means for normally limiting the upward movement of said balancing-wheels, and means for positively limiting said upward movement.

6. In a single-row cultivator, a crank-axle pivotally mounted upon the cultivator, balancing-wheels mounted upon the free ends of said crank-axle, a member carried by said crank-axle, a cable attached at its ends to the cultivator and said member for positively limiting the upward movement of the balancing-wheels, and yielding means secured to said cable for normally limiting said upward movement.

7. In a single-row cultivator, a pair of guide-wheels upon which said cultivator is mounted, a crank-axle pivotally mounted upon the cultivator, balancing-wheels mounted upon the free ends of said crank-axle, said guide-wheels and balancing-wheels having independent vertical movement, yielding means for normally limiting said independent movement, and means for positively limiting said movement.

8. In a cultivator, the combination with a tongue, a frame mounted thereon, cultivating appliances suitably secured to said frame, and guide-wheels upon which said frame is mounted, of a crank-axle pivotally mounted upon the frame, balancing-wheels mounted upon the free ends of said crank-axle, said guide-wheels and balancing-wheels having independent vertical movement, yielding means for normally limiting said independent movement, and means for positively limiting said movement.

9. In a single-row cultivator, a crank-axle pivotally mounted upon the cultivator, balancing-wheels mounted upon said crank-axle, a seat-bracket mounted upon the crank-axle, a cable attached at its ends to the seat-bracket and the cultivator, and a spring secured at its ends to said cable, substantially as described.

10. In a single-row cultivator, a crank-axle pivotally mounted upon said cultivator, balancing-wheels mounted upon said crank axle, a seat-bracket adjustably mounted upon said crank-axle, a cable adjustably attached at one end to the seat-bracket and attached at its opposite end to the cultivator, said cable having a suitable amount of slack, and a spring adjustably secured to the ends of said slack portion, substantially as described.

809,887. POWER-TRANSMITTING MECHANISM FOR MOTOR-VEHICLES. ROBERT SYMONDS, Jr., Kenosha, Wis., assignor to Thomas B. Jeffery, Kenosha, Wis. Filed Apr. 7, 1905. Serial No. 254,373.

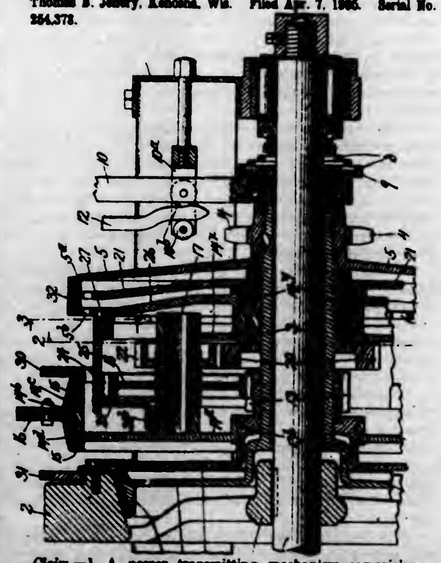

Claim.—1. A power-transmitting mechanism comprising a power-shaft and power-wheel thereon; a power-transmitting wheel loose on the power-shaft and disengageably engageable with the power-wheel; a gear rigid with the power-wheel and a speed-reducing gear-train therefrom to the power-transmitting wheel; a frame for carrying the intermediate gear-train which is mounted rotatably about the power-shaft, and means for holding such frame against rotation.

2. A power-transmitting mechanism comprising a power-shaft and a power-wheel thereon; a power-transmitting wheel loose on the power-shaft and disengageably engageable with the power-wheel; a gear rigid with the power-wheel, and a direction-reversing gear-train therefrom to the power-transmitting wheel; a frame for carrying the intermediate gears of the train which is mounted rotatably about the power-shaft, and means for holding such frame against rotation.

3. A power-transmitting mechanism comprising a power-shaft and a power-wheel thereon; a power-transmitting wheel loose on the power-shaft and disengageably engageable with the power-wheel; a gear rigid with the power-wheel; a gear-train operated by said gear comprising two oppositely-rotating elements both journaled about the power-shaft; means rigid with the power-transmitting wheel adapted for engagement with each of said oppositely-rotated elements, and means for moving said elements at will into and out of such engagement.

4. A power-transmitting mechanism comprising a power-shaft and a power-wheel thereon; a power-transmitting wheel loose on the power-shaft and disengageably engageable with the power-wheel; a gear rigid with the power-wheel; a gear-train operated by said gear comprising two differently-speeded elements; means rigid with the power-transmitting wheel adapted for engagement with each of said differently-speeded elements, and means for moving said elements at will into and out of such engagement.

5. A power-transmitting mechanism comprising a power-shaft and a power-wheel thereon; a power-transmitting wheel loose on the power-shaft disengageably engageable with the power-wheel; a gear rigid with the power-wheel and a speed-reducing and direction-reversing gear-train therefrom to the power-transmitting wheel; a gear-frame for carrying the intermediate gears of the train which is mounted rotatably about the power-shaft, and means for holding such frame against rotation.

6. A power-transmitting mechanism comprising a power-shaft and a power-wheel thereon; a power-transmitting wheel loose on the power-shaft and disengageably engageable with the power-wheel; a gear rigid with the power-wheel; a gear-train operated by said gear comprising two oppositely-rotated and differently-speeded elements both journaled about the power-shaft; means rigid with the power-transmitting wheel adapted for engagement with each of said oppositely-rotated and differently-speeded elements, and means for moving said elements at will into and out of such engagement.

7. A power-transmitting mechanism comprising a power-shaft and a power-wheel thereon; a power-transmitting wheel loose on the power-shaft disengageably engageable with the power-wheel; a gear rigid with the power-wheel; a gear-train operated by said gear comprising two oppositely-rotated elements both journaled about the power-shaft; means rigid with the power-transmitting wheel adapted for engagement with each of said oppositely-rotated elements; a frame by which said gear-train is carried, and means for moving the frame at will to carry said oppositely-rotated elements into and out of such engagement.

8. A power-transmitting mechanism comprising a power-shaft and a power-wheel thereon; a power-transmitting wheel loose on the power-shaft and disengageably engageable with the power-wheel; a gear rigid with the power-wheel; a gear-train operated by said gear comprising two oppositely-rotated elements both journaled about the power-shaft; means rigid with the power-transmitting wheel adapted for engagement with each of said oppositely-rotated elements; a frame on which said gear-train is carried mounted for rotation about the power-shaft; means for moving it at will to carry said oppositely-rotated elements into and out of engagement with the power-transmitting wheel and for holding said frame against rotation at both limits of such movement.

9. A power-transmitting mechanism comprising a power-shaft and a power-wheel thereon; a power-transmitting wheel having a sleeve by means of which it is journaled loose on the power-shaft, and disengageably engageable with the power-wheel; a gear rigid with the power-wheel; a gear-train comprising a spur-wheel and an internal gear both journaled about the sleeve, and gear connections extending from the gear which is rigid with the power-wheel, both to the spur-gear and to the internal gear for communicating to them respectively opposite rotation, the spur-gear and the internal gear having each rigid with it an element adapted for driving engagement, the power-transmitting wheel having means for such engagement; a frame in which the gear-train is carried movable longitudinally with respect to the power-shaft for carrying said elements into and out of engagement with the power-transmitting wheel.

10. A power-transmitting mechanism comprising a power-shaft and a power-wheel thereon; a power-transmitting wheel loose on the power-shaft and disengageably engageable with the power-wheel; a gear rigid with the power-wheel; a gear-train therefrom to the power-transmitting wheel comprising two oppositely-rotated elements each adapted for engagement with the power-transmitting wheel, the power-transmitting wheel having rigid with it a brake-flange, said brake-flange having the means for engagement with said oppositely-rotated elements of the gear-train; the frame on which the gear-train is carried being movable longitudinally with respect to the shaft to carry said elements into and out of such engagement

11. A power-transmitting mechanism comprising a power-shaft and a power-wheel thereon; a power-transmitting wheel loose on the power-shaft and disengageably engageable with the power-wheel; a gear rigid with the power-wheel, and a gear-train therefrom to the power-transmitting wheel comprising an element adapted to be moved into and out of engagement with the power-transmitting wheel; a frame on which the gear-train is carried mounted for rotation about the power-shaft, movable longitudinally with respect thereto for carrying said element into and out of such engagement with the power-transmitting wheel, said gear-carrying frame having a friction-flange; means mounted on the main frame for engagement with such friction-flange to hold the frame against rotation, such means being movable longitudinally with respect to the shaft for carrying the gear-frame longitudinally, and a stop on the main frame which arrests such movement of the gear-frame

12. A power-transmitting mechanism comprising a power-wheel and a gear rigid therewith; a gear-train operated by said gear comprising two oppositely-rotated elements both journaled about the axis of the power-wheel; a power-transmitting wheel adapted for engagement with each of said oppositely-rotated elements, and a frame in which said gear-train is carried mounted for rotation about the axis of the power-wheel and for movement at will longitudinally with respect thereto to carry said oppositely-rotated elements into and out of such engagement, said frame having two friction-faces; a friction-shoe mounted on the frame for encounter with said faces respectively by movement in opposite directions; said shoe being adapted to be moved to engage and move the gear-frame, and stops on the main frame for limiting the movement of the gear-frame in said opposite directions.

13. A power-transmitting mechanism comprising a power-shaft and a power-wheel thereon; a power-transmitting sleeve on the shaft having a clutch member and means for power-transmitting engagement with said wheel; a gear rigid with the wheel concentric with the shaft exterior to the sleeve; a gear-train comprising a spur-wheel and an internal gear, both journaled about the sleeve, and gear connections extending from the first-mentioned gear both to the spur-gear and to the internal gear for communicating to the latter respectively opposite rotation, the spur-gear and the internal gear each having a clutch member, the bearing-support for said gear being movable longitudinally with respect to the shaft for carrying the clutch members of said gears into and out of engagement with the clutch member on the sleeve.

14. A power-transmitting mechanism comprising a power-shaft and a power-wheel thereon; a power-transmitting sleeve journaled on the shaft having power-transmitting engagement with the wheel and movable longitudinally on the shaft to engage it with and disengage it from the wheel; a gear concentric with the shaft outside the sleeve having rigid connection with the wheel; a gear-train connecting said gear with the sleeve comprising a spur-gear journaled about the sleeve; an internal gear also journaled thereabout, and intermediate gears communicating power from the first-mentioned gear to said spur-gear and internal gear respectively; a clutch member on the sleeve and clutch members on said spur-gear and internal gear respectively for engagement with the clutch member on the sleeve; means for moving the sleeve into and out of engagement with the wheel and means for moving the gear clutch members into and out of engagement respectively with the sleeve clutch member.

15. A power-transmitting mechanism comprising a power-shaft; a wheel fast thereon for rotation; a power-transmitting sleeve on the shaft; means for engaging it with and disengaging it from the wheel; a gear concentric with the shaft exterior to the sleeve and rigidly connected with the wheel for rotation; a gear-carrying frame mounted for rotation about the shaft; a gear-train carried by said frame of which the first wheel is engaged with the first-mentioned gear, and which comprises a wheel having a clutch member; a cooperating

clutch member on the sleeve and means for holding the gear-frame against rotation.

16. A power-transmitting mechanism comprising a power-shaft and a power-wheel thereon; a power-transmitting sleeve on the shaft having disengageable power-transmitting engagement with the wheel; a gear concentric with the shaft exterior to the sleeve, rigid with the wheel; another gear journaled about the shaft having a clutch member; gear connections from the first-mentioned gear to the second; a frame on which said intermediate gear connections are carried mounted for rotation about the shaft, and means for holding said frame against rotation.

17. A power-transmitting mechanism comprising a power-shaft; a power-transmitting wheel loose on the power-shaft; a gear rigid with said shaft, and a speed-reducing gear-train intermediate said rigid gear and power-transmitting wheel; a frame for carrying said intermediate gear-train which is mounted rotatably about the power-shaft, and means for holding such frame against rotation.

18. A power-transmitting mechanism comprising a power-shaft; a power-transmitting wheel loose on the power-shaft; a gear rigid with the power-shaft and a motion-reversing train intermediate said rigid gear and the power-transmitting wheel; a frame for carrying the intermediate gear-train which is mounted rotatably about the power-shaft, and means for holding such frame against rotation.

19. A power-transmitting mechanism comprising a power-shaft; a power-transmitting wheel loose on the shaft; a gear rigid with the power-shaft; a gear-train operated by said rigid gear comprising two differently-speeded elements; means rigid with the power-transmitting wheel adapted for engagement with each of said differently-speeded elements, and means for moving said elements at will into and out of such engagement.

20. A power-transmitting mechanism comprising a power-shaft; a power-transmitting wheel loose on the shaft; a gear-train operated by said gear extending to and comprising two oppositely-rotating elements; means rigid with the power-transmitting wheel adapted for engagement with each of said oppositely-rotating elements, and means for moving said elements at will into and out of such engagement.

21. A power-transmitting mechanism comprising a power-shaft; a power-transmitting wheel loose on the shaft; a gear rigid with the power-shaft, and a speed-reducing and direction-reversing gear-train intermediate said rigid gear and the power-transmitting wheel; a gear-frame for carrying the intermediate gear-train which is mounted rotatably about the power-shaft, and means for holding such frame against rotation.

22. A power-transmitting mechanism comprising a power-shaft; a power-transmitting wheel loose on the shaft; a gear rigid with the shaft; a gear-train operated by said rigid gear comprising two oppositely-rotated and differently-speeded elements; means rigid with the power-transmitting wheel adapted for engagement with each of said oppositely-rotated and differently-speeded elements, and means for moving said elements at will into and out of such engagement.

23. A power-transmitting mechanism comprising a power-shaft; a power-transmitting wheel loose on the shaft; a gear rigid with the shaft; a gear-train operated by said rigid gear comprising two oppositely-rotated elements; means rigid with the power-transmitting wheel adapted for engagement with each of said oppositely-rotated elements; a frame by which each gear-train is carried, and means for moving the frame at will to carry said oppositely-rotated elements into and out of such engagement.

809,838. POWER-TRANSMITTING MECHANISM FOR MOTOR-VEHICLES. Rodney Starkweather, Jr., Kenosha, Wis., assignor to Thomas B. Jeffery, Kenosha, Wis. Filed Apr. 7, 1905. Serial No. 254,570.

Claim.—1. A power-transmitting mechanism comprising a power-shaft, a power-transmitting wheel loose on such shaft; a driving-gear rigid with the power-shaft; a driven gear rigid with the power-transmitting wheel; a gear-frame and a gear-train therein having an initial wheel meshing with said driving-gear and comprising two gears in different transverse planes connected in the train for opposite rotation and each adapted for meshing with the driven gear, said gear-frame being movable along the power-shaft and means for moving it back and forth.

2. A power-transmitting mechanism comprising a power-shaft, a power-transmitting wheel loose on the shaft; a driving-gear rigid with the power-shaft; a driven gear rigid with the power-transmitting wheel; a gear-frame mounted for rotation about the power-shaft; a gear-train on such frame having an initial wheel meshing with the driving-gear and comprising two gears in different transverse planes connected in the train for opposite rotation, each adapted for meshing with the driven gear; means for holding the gear-frame against rotation and means for moving it back and forth along the power-shaft.

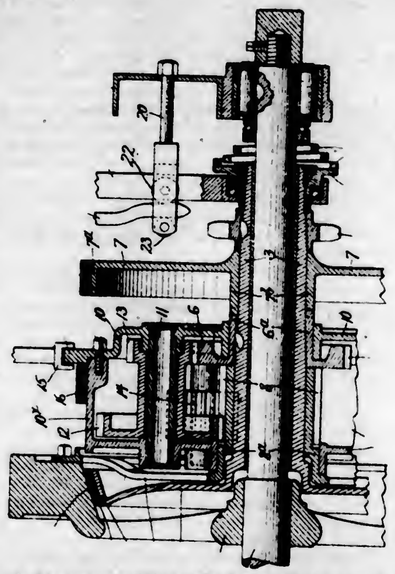

3. A power-transmitting mechanism comprising a power-shaft, a power-wheel rigid therewith; a power-transmitting wheel loose on the power-shaft; a driving-gear rigid with the power-wheel; a driven gear rigid with the power-transmitting wheel; a planetary-gear frame mounted for rotation about the power-shaft; a gear-train on such frame having an initial wheel meshing with the driving-gear and comprising two gears in different transverse planes connected in the train for opposite rotation, each adapted for meshing with the driven gear; means for disengageably engaging the driven gear with the power-wheel; means for holding the planetary-gear frame against rotation and means for moving said frame back and forth along the shaft.

4. A power-transmitting mechanism comprising a power-shaft, a power-transmitting wheel loose or the shaft; a driving-gear rigid with the power-shaft; a driven gear rigid with the power-transmitting wheel; a planetary-gear frame journaled for rotation about the power-shaft; a gear-train on such frame comprising two gears rigid with each other situated for meshing with the driving-gear and with the driven gear respectively, said train comprising a third gear meshing with the first of said two gears in a different plane transverse to the power-shaft from the second of said gears, said planetary-gear frame being movable back and forth along the power-shaft.

809,839. FLUID-SEALING DEVICE FOR GAS-PRODUCERS. Godfrey M. S. Taft, Montclair, N. J., assignor to Combustion Utilities Company, New York, N. Y., a Corporation of New York. Filed Aug. 17, 1905. Serial No. 274,080.

Claim.—1. A fluid-sealing device for gases comprising two chambers adapted to contain water; means for connecting the two chambers; means for raising and lowering the water-level in each chamber by displacement; and ports in said chambers affording inlet and outlet passages for the gas.

2. A fluid-sealing device consisting of two connecting-chambers having ports opening therefrom, and having displacement-plungers adapted to close one or more ports solely by the water-sealing thereof.

3. A fluid-sealing device, comprising the chambers F and F' having the gas-inlet B and the gas-outlets A and C; displacement-plungers D and D'; and connecting-passages G.

4. A fluid-sealing device comprising a chamber having a gas-inlet and two gas-outlets one or other of said outlets being at all times sealed by a water seal; a second chamber having connection with the first chamber through one of said outlets; means for simultaneously opening one of said outlets and closing the other of said outlets by water displacement.

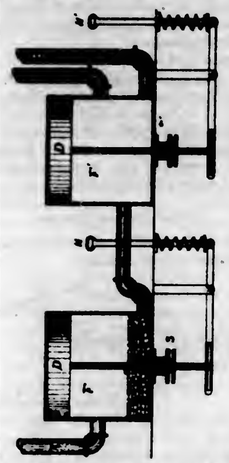

5. A fluid-sealing device comprising two chambers adapted to contain water; in the upper part of one chamber a gas-inlet in the lower part a gas-outlet and midway said inlet and outlet a second outlet connecting with the remaining chamber in its lower part; means for alternately water-sealing either of said outlets whereby one outlet is always open whenever the other outlet is closed.

809,840. WHEELBARROW. William Tasker, Biloxi, Miss. Filed Apr. 27, 1905. Serial No. 257,778.

Claim.—1. In a vehicle of the class described, a receptacle open at the rear end, spaced supporting members disposed through said receptacle and extending in advance of its closed end and rearwardly of its open end and with handles at the rear ends of the same, an axle extending transversely of said receptacle beneath the closed end thereof and provided with bearing-wheels, and U-shaped bolts for clamping around said axle and extending through said receptacle and the supporting members passing therethrough.

2. A wheelbarrow comprising a body having opposite side walls and a substantially vertical front wall, the rear end and top of the body being open, an axle secured across the under side of the bottom of the body, supporting-wheels mounted upon the axle, and a pair of bars applied to the upper face of the body and piercing the front wall thereof, said bars being extended in rear of the body and formed into handles and the other ends of the bars being projected in front of the body and forming props for engagement with the ground to support the barrow in a tilted position with its rear open end elevated.

809,841. VEHICLE-BRAKE. Bartholomew Viola, Brooklyn, N. Y. Filed Mar. 20, 1905. Serial No. 250,913.

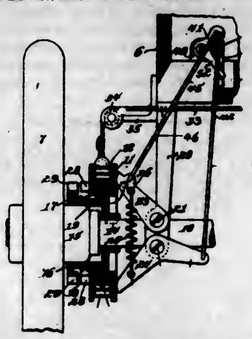

Claim.—1. The combination with a vehicle, of a member on a wheel thereof and having engageable devices thereon, a shaft, a member shiftable relatively to said shaft, and adapted to coöperate with said engageable devices, a band-brake attached to said member to prevent its rotation when the same coöperates with said engageable devices, and levers adapted to effect the relative movement of said member.

2. The combination with a vehicle, of a member on a wheel thereof, and having engageable devices thereon, a shaft, a member shiftable relatively to said shaft and adapted to coöperate with said engageable devices, a band-brake attached to said member to prevent its rotation when the same coöperates with said engageable devices, levers adapted to effect the relative movement of said member, and means to actuate said levers.

3. The combination with a vehicle, of a member having engageable devices thereon, a shaft, a member shiftable relatively to said shaft and adapted to coöperate with said engageable devices, a band-brake attached to said member to prevent its rotation when the same coöperates with said engageable devices, means to effect the relative movement of said member, and means to control said last-mentioned means.

4. The combination with a vehicle, of a member having engageable devices thereon, a shaft, a member shiftable relatively to said shaft and adapted to coöperate with said engageable devices, a band-brake attached to said member to prevent its rotation when the same coöperates with said engageable devices, and levers adapted to press against and effect the relative movement of said member.

5. The combination with a vehicle, of a member having engageable devices thereon, a shaft, a member shiftable relatively to said shaft and adapted to coöperate with said engageable devices, a band-brake attached to said member to prevent its rotation when the same coöperates with said engageable devices, spring-actuated levers adapted to effect the relative movement of said member, means to control said levers, and means to operate said means.

6. The combination with a vehicle, of a member having engageable devices thereon, a shaft, a member, shiftable rotatively to said shaft and adapted to coöperate with said engageable devices, a band-brake attached to said member to prevent its rotation when the same coöperates with said engageable devices, spring-actuated means adapted to effect the relative movement of said member, connections to control said means, also means to operate said connection.

7. In a vehicle the combination with a wheel, of a member secured thereto and provided with a clutch portion an axle, a member movable thereupon and parallel to the longitudinal axis thereof and adapted to engage and operate with the first-mentioned member, a band-brake for impeding the rotation of the second member when in engagement with the first member, means to effect such engagement, and a spring to normally maintain such members disengaged.

8. In a vehicle the combination with a wheel, of a member secured thereto and provided with a clutch portion, an axle, a member movable thereupon and parallel to the longitudinal axis thereof and adapted to engage and operate with the first-mentioned member, a band-brake for impeding the rotation of the second member when in engagement with the first member, means to effect such engagement,

means to normally maintain such members disengaged, means to operate said first-mentioned means, and a connection between the vehicle and the band-brake.

9. In a vehicle the combination with a wheel, of a member secured thereto and provided with a clutch portion, an axle, a member movable thereupon and parallel to the longitudinal axis thereof and adapted to engage and operate with the first-mentioned member, a band-brake for impeding the rotation of the second member when in engagement with the first member, means to effect such engagement, means to normally maintain such members disengaged, means to operate said first-mentioned means, and a spring connection between the vehicle and the band-brake.

809,342. LOCK AND LATCH MECHANISM. HENRY G. VOIGHT, New Britain, Conn., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn., a Corporation of Connecticut. Filed Mar. 27, 1905. Serial No. 252,126.

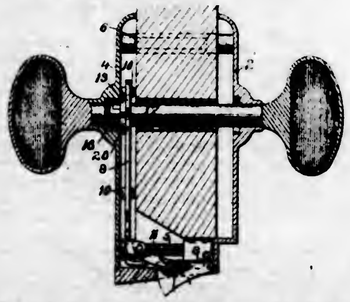

Claim.—1. In a mechanism of the character described, the combination of inner and outer side plates, an end plate, a latch-bolt carried by said end plate, an operating-slide with connections for the latch-bolt carried by the inner side plate, an inner knob having bearings in the inner side plate, an outer knob having a bearing in the outer side plate, and a shank extending from the outer knob and provided with means of connection with the operating-slide, said outer side plate being adjustable to and fro relative to said outer knob-shank.

2. In a mechanism of the character described, inner and outer side plates, an end plate, said side plates being adjustable to doors of different thicknesses, a latch-bolt, latch-operating mechanism carried by one of said side plates, a knob rotatably carried by the same side plate but having a fixed lateral position relative thereto, a second knob having a shank extending through the other side plate and rotatable therein, but capable of movement therethrough, and means of connection between said shank and said operating mechanism independent of the thickness of the door.

3. In a mechanism of the character described, the combination of two side plates adapted to the opposite sides of a door, an end plate carried by one of said side plates, a pivotally-mounted latch-bolt carried by said end plate, an operating-slide carried by the opposite side plate, an arm pivotally carried by said operating-slide and engaging said latch-bolt, and a shoulder carried by said operating-slide engaging said arm, an accessible actuating means at each side of said mechanism with connections for said operating-slide whereby said latch-bolt may be retracted independently of said slide by means of a striker-plate or retracted with said slide by said actuating means, and independently of the thickness of the door to which the mechanism is applied.

4. In a mechanism of the character described, inner and outer side plates, means for alining said plates, operating mechanism carried by the inner side plate, inner and outer knobs, a long shank projecting from the outer knob, means of connection between said knobs and said operating mechanism, clamping and supporting means for the inner end of said outer shank carried by the inner side plate, and means for releasing the same.

5. In a mechanism of the character described, an inner side plate, a knob rotatably carried thereby, a latch-bolt, operating means therefor carried by said side plate, an outer-side plate, a knob rotatably mounted but longitudinally movable in said outer side plate, and means for removably supporting the inner end of said outer knob-shank, said means being carried by said inner side plate.

6. In a mechanism of the character described, inner and outer side plates, a latch-bolt, an operating-slide therefor, a knob rotatably carried by one of said side plates, a second knob having a bearing in the other side plate and having a shank extending therethrough, clamping means carried by the first side plate for supporting the end of said shank, means for releasing said clamping means, and means of connection between said side plates whereby they may be applied to doors of different thicknesses.

7. In a mechanism of the character described, inner and outer side plates adjustable to and fro and adapted to doors of different thicknesses, an end plate carried by one of said side plates, a latch-bolt carried thereby, an operating-slide carried by one of said side plates, a knob carried by said side plate, a knob having a shank supported in but longitudinally movable through the outer side plate, means carried by the first side plate for supporting the opposite end of said shank, and means of connection between said shank and said operating-slide.

809,343. FISHING-TACKLE. BENJAMIN WALDBERG, Chicago, Ill. Filed May 6, 1905. Serial No. 259,240.

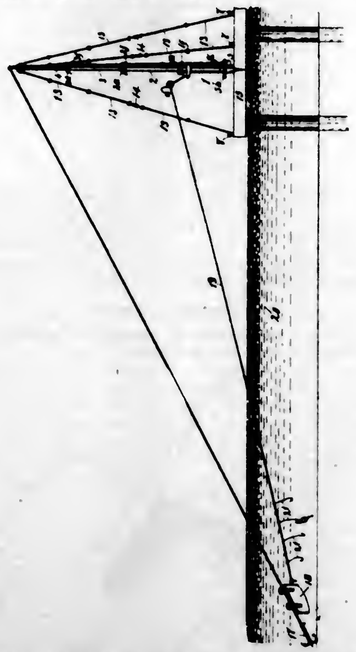

Claim.—1. In fishing-tackle, a telescopic rod, and adjustable means for holding the rod in an upright position on a dock or the like.

2. Fishing-tackle comprising a telescopic rod having several tubular sections slidably arranged one within another and provided with lock-joints, and having means for securing its lower end to a dock or the like; and adjustable means for connecting the upper end of the rod with a dock or the like.

3. Fishing-tackle comprising a rod having a screw adapted to project from its lower end, a housing for covering said screw, jointed guy-wires for holding the rod in an upright position, an anchor, a trolley-line for connecting the anchor with the top of the pole, a trolley adapted to travel on said trolley-line, a signal-bell mounted on the rod, and a fish-line carrying fish-hooks and connected with the said bell and anchor.

4. In a rod of the character described, a lock-joint comprising two concentric tubular sections slidably arranged one within the other; a collar surrounding the inner section and secured on the inner wall of the outer section adjacent to the upper end of the outer section and provided with a notch formed in its lower end, and a collar surrounding the lower end of the inner section and provided on its upper end with a hook adapted to engage the notch in the first-named collar for the purpose described.

809,344. COKE-OVEN COVER. ANDREW H. WALSTROM, Birmingham, Ala. Filed Dec. 12, 1904. Serial No. 236,573.

Claim.—1. An oven-cover having a substantial dome shape, whose radiating-surface comprises a plurality of distinct circular subsurfaces.

2. An oven-cover having a substantial dome shape, whose radiating-surface comprises a plurality of distinct circular subsurfaces, integrally formed with each other.

3. A coke-oven cover of substantial dome shape composed of a plurality of curved surfaces of different radii having their centers of curvature regularly arranged around the axial line of the oven-cover substantially as shown and described.

4. A dome-shaped oven-cover formed of a single member having a plurality of longitudinally and transversely curved circular surfaces, each surface being curved on independent radii.

5. A dome-shaped oven-cover of an integral structure comprising a plurality of subsurfaces each formed as a circular band, each of different radii of curvature and each curved transversely on different radii, the radius of the transverse curvature of each successive surface increasing from the base of the cover toward the top thereof substantially as shown and described.

6. A dome-shaped oven-cover of an integral structure comprising a plurality of circular subsurfaces successively joining with each other, the line of juncture of each surface with the other lying in parallel horizontal planes substantially as shown and described.

7. An oven-cover of an integral structure and of substantial dome shape, comprising a plurality of surface bands each of which bands being transversely curved, the radius of transverse curvature of each successive band being different from the other, the lines of juncture between successive bands forming circles and lying in parallel horizontal planes, substantially as shown and described.

8. An oven-cover having a substantial dome shape whose radiating-surface comprises a plurality of distinct subsurfaces integrally formed with each other, the lines of juncture between the subsurfaces lying in parallel circles around a common axis.

809,345. AUTOMATIC TRIP MECHANISM. ALFRED E. WATTS, Duluth, Minn. Filed Sept. 26, 1904. Serial No. 225,944.

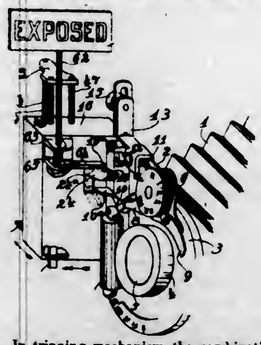

Claim.—1. In tripping mechanism, the combination of a casing, rock-shafts mounted in said casing, striking-fingers keyed to said rock-shafts and extending through a slot in said casing, means adapted to rock said shafts independently of each other, means adapted to temporarily prevent the rocking of said shafts, and means adapted to regulate the relative time between the rocking of one of said shafts and the rocking of the other of said shafts.

2. In tripping mechanism, the combination of a casing, a rock-shaft mounted in said casing, a striking-finger rigidly secured to said rock-shaft and extending outwardly of said casing through a slot formed therein, means for rocking said rock-shaft and means for temporarily preventing the rocking of said shaft, substantially as described.

3. In tripping mechanism, a casing, rock-shafts journaled therein, fingers rigidly secured to said rock-shafts and extending outwardly of said casing through a slot formed therein, means adapted to rock said rock-shafts, and means adapted to temporarily prevent the rocking of said shafts, substantially as described.

4. In tripping mechanism, a casing, rock-shafts journaled therein, fingers rigidly secured to said rock-shafts and extending outwardly of said casing through a slot formed therein, means adapted to rock said rock-shafts independently of each other, means adapted to temporarily prevent the rocking of one of said shafts, means adapted to temporarily prevent the rocking of the other of said shafts and also adapted to govern the first said preventing means, substantially as described.

5. In tripping mechanism, a casing, rock-shafts mounted therein, striking-fingers rigidly secured to said rock-shafts respectively, means adapted to independently rock said shafts, means adapted to temporarily prevent the rocking of one of said shafts and including a timing mechanism, means adapted to temporarily prevent the rocking of the other of said rock-shafts and also adapted to govern the means for preventing the rocking of the first said one of said rock-shafts, substantially as described.

6. In tripping mechanism, the combination of a casing, rock-shafts mounted therein, fingers rigidly secured to said rock-shafts and extending out of said casing through a slot formed therein, a signal adapted in set position to engage notches formed in said fingers and in operative position to disengage therefrom, means adapted to operate said rock-shafts independently, means including a timing device adapted to temporarily prevent the operation of one of said shafts and for holding it in set position, means including a fuse adapted to temporarily prevent the operation of the other of said rock-shafts and to hold it in set position and also adapted to govern the means for preventing the operating of the first said rock-shaft, substantially as described.

7. In tripping mechanism, the combination of a casing, spring-operated rock-shafts mounted therein, fingers secured to said rock-shafts and extending outwardly of said casing through a slot formed therein, levers keyed to said rock-shafts within said casing, pivoted levers having blocks mounted thereon adapted in operation to engage the first said levers, a pivoted lever adapted in operation to engage the foot of one of the second said levers, a cleat, a fuse adapted temporarily to secure the fifth said lever in operative position to said cleat, a spring-controlled sixth lever adapted in operation to engage the foot of the other of the second said levers, a spring adapted in operation to disengage said sixth lever from the corresponding second said lever, means adapted to temporarily suspend the operation of the last-said spring, means adapted to temporarily secure the continuance of operation of the said sixth lever against the operation of the last-said spring and including a timing device, said timing device being adapted to release said sixth lever at the expiration of a predetermined period, substantially as described.

8. In a tripping mechanism, the combination of a plural number of striking-fingers, means adapted to lower said fingers, means adapted to temporarily secure said fingers in a raised position, automatic time-regulating means adapted in set position to temporarily continue the operation of the means for securing one of said fingers in a raised position and after being released to permit the operation at the expiration of a predetermined following period of the means for lowering the last-said finger, a time-measuring device adapted to govern the operation of the means for securing the position of the other of said fingers and also adapted to govern the operation of the said time-regulating means, substantially as described.

9. In a tripping mechanism, the combination of a rock-shaft, a finger rigidly secured thereto, means adapted to rock said shaft, means adapted in operative position to prevent the operation of said shaft-rocking means, means including a fuse adapted to secure said preventive means in operative position, and means for retracting said preventive means, substantially as described.

10. In a tripping mechanism, the combination of a rock-shaft, a finger rigidly secured thereto, means adapted in operation to rock said shaft, means adapted in operation to prevent the operation of the shaft-rocking means, retracting means adapted to retract said preventive means, means including an automatic time-limiting device adapted to temporarily continue for a predetermined period the operation of said preventive means against the action of said retracting means and at the termination of said period to release said preventive means.

11. The combination with a suitable support, of fingers pivoted thereon, means adapted in set position to maintain said fingers in raised position and when released to release said fingers from such raised position, a timing device adapted to prevent the release of one of said fingers until the expiration of a predetermined period after

the release of the other of said fingers and upon the expiration of such period to permit the release of said one of said fingers, a timing device adapted to prevent the release of either of said fingers until the expiration of an approximately predetermined period and at the expiration of said period to permit the release of said other of said fingers.

12. The combination with a suitable support, of a striking member, means adapted to operate the same, means adapted to prevent the operation of said striking member, means adapted to retract said preventive means, and means adapted to continue the operation of said preventive means for a predetermined period against the active tendency of said retractive means and at the expiration of such period to automatically release said preventive means.

13. The combination of a support, a finger pivotally mounted thereon, a spring adapted to rock said finger, a series of levers adapted to prevent the operation of said finger and to hold it in set position, springs adapted to retract some of said levers, a cylinder, a piston therein, a piston-rod connected to said piston and extending out of said cylinder, a foot carried by said piston-rod outwardly of said cylinder and adapted to engage one of the levers of said series when said piston is raised and to hold said lever in operative position, a rack adapted to engage said foot to hold the same in raised position, a spring adapted to hold said rack in operative position, a striking member adapted to retract said rack to disengage it from said foot, a lever adapted to prevent the striking movement of said striking member, a spring adapted to retract the last-said lever, and means adapted to hold the last-said lever in operative position for an approximately predetermined period.

14. The combination with a suitable support, of a movable finger mounted thereon, means adapted to force said finger toward one end of its path of travel, means adapted in operation to hold said finger at the other end of its path of travel, means adapted to retract said holding means, and means including a timing device adapted for a predetermined period to delay the operation of said retracting means and at the expiration of such period to permit the operation of said retracting means.

809,346. AUTOMATIC TRIPPING DEVICE FOR PHOTOGRAPHIC SHUTTERS. ALFRED B. WATTS, Duluth, Minn. Filed Dec. 20, 1904. Serial No. 237,636.

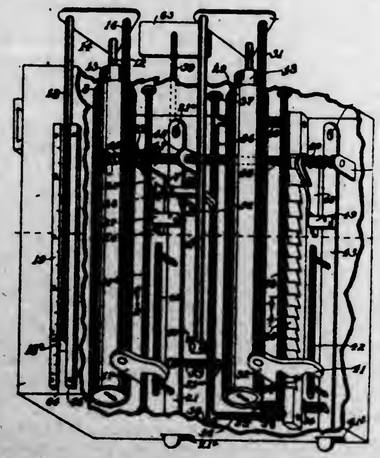

Claim.—1. The combination with a suitable casing, of a lever mounted therein and extending outwardly thereof, operating means adapted to operate said lever, a second lever adapted to arrest the first said lever in set position, retracting means adapted to retract said second lever, a cylinder, a piston in said cylinder, a piston-rod connected to said piston and extending out of one end of said cylinder, lever-governing means carried by said piston adapted to arrest the second said lever in set position during a portion of the period of movement of said piston in said cylinder, and piston-governing means adapted to control the movement of said piston.

2. The combination with a suitable casing, of a lever mounted therein and extending outwardly thereof, operating means adapted to operate said lever, a second lever adapted to arrest the first said lever in set position, retracting means adapted to retract the second said lever, a cylinder, a piston in said cylinder, a piston-rod connected with said piston and extending out of one end of said cylinder, lever-governing means carried by said piston and adapted to arrest the said second lever in set position during a portion of the movement of said piston in said cylinder, governing means adapted to engage the lever-arresting means carried by said piston and to prevent lever-disengaging movement of the lever-governing means carried by said piston-rod, retracting means adapted to retract the last said lever-arresting means, and means adapted to actuate said piston.

3. The combination with a suitable support, of a lever mounted thereon, actuating means adapted to actuate said lever, a second lever adapted to arrest the first said lever in set position, retracting means adapted to retract the second said lever, a spring-actuated fluid-controlled timing device adapted for an approximately predetermined period to lock said second lever in set position, a third lever mounted on said support, means adapted to actuate said third lever, a fourth lever adapted to arrest said third lever in operative set position, means adapted to retract said fourth lever, a second spring-actuated fluid-controlled timing device adapted to arrest said fourth lever in operative set position, a fifth lever adapted in operation to arrest the first said spring-actuated fluid-controlled timing device in set position and adapted to be retracted by said third lever when the latter-said lever is actuated, the first said timing device being adapted to continue its arresting action upon said second lever for an approximately predetermined period after the retraction of said fifth lever and then to automatically release said second lever, a sixth lever, adapted to be arrested in set operation by said third lever, and means for operating said sixth lever.

4. The combination with a suitable support, of levers mounted thereon, means adapted to retract said levers respectively spring-actuated fluid-controlled timing devices engaging one of said levers and adapted to temporarily prevent the retraction of said one of said levers; other spring-actuated fluid-controlled timing devices adapted to engage another of said levers and temporarily prevent the retraction of said other of said levers and adapted to be governed by the first said devices.

5. In a tripping mechanism, the combination with a suitable support, of a series of levers mounted thereon and adapted to be held in set position, means adapted to retract said levers from said set position, a timing mechanism comprising a fluid-filled cylinder containing a spring-actuated fluid-controlled piston having a port extending therethrough, a check-valve governing the flow of said fluid through said port in one direction, means adapted to actuate said piston, a piston-rod connected to said piston, lever-engaging means carried by said rod and adapted to engage the last lever of said series and to hold it in set position for an approximately predetermined period and adapted at the expiration of said period to release said last lever, the construction being such that each of the others of said levers will be held in set position by the respectively next succeeding lever of the series and will be released upon the release of the said respectively next succeeding lever.

6. The combination with a suitable support, of a series of levers mounted thereon and adapted to be held in set position, means adapted to retract said levers from set position, a timing mechanism comprising a fluid-filled cylinder, a spring-actuated fluid-controlled piston in said cylinder and having a port extending through said piston, a check-valve adapted to prevent the flow of said fluid through said port in one direction, a piston-rod connected to said piston, lever-engaging means carried by said rod and adapted to engage the last lever of said series and to hold it in set position for an approximately predetermined period, a second series of levers mounted on said support and adapted to be held in set position, means adapted to release said levers from set position, a second timing mechanism comprising a fluid-filled cylinder, a spring-actuated fluid-controlled piston in the latter-said cylinder and having a port extending through the latter-said piston, a check-valve adapted to prevent the flow of fluid through the latter-said port in one direction, a piston-rod connected to the latter-said piston, lever-engaging means carried by the latter-said rod and adapted to engage the last lever of said second series and adapted to hold it in set position for approximately a period predetermined upon, the construction being such that each of said levers except the last of each of said series will be held in set position by the respectively next succeeding lever of the respectively corresponding series, a lever mounted on said support and adapted in set position to engage the lever-engaging means carried by the piston-rod of said second timing mechanism, to prevent the retraction of the last-said lever-engaging means,

and adapted to extend into the path of one of the levers of the first said series and to be retracted from set position by the last-referred-to lever of the first said series during the retracting movement of said lever of the first said series.

7. The combination with a suitable support, of a lever mounted thereon, means for holding said lever in operative position and comprising a fluid-filled cylinder, a piston therein provided with a port extending through said piston, a cage secured in or to said piston, a ball-valve positioned in said cage and adapted in operation to prevent a flow of fluid through said port in one direction, a piston-rod connected to said piston, a spring adapted to move said piston in the direction from which the flow of fluid through said port is prevented, and lever-engaging means carried by said piston-rod and adapted to engage said lever to hold the same in set position and adapted to disengage from said lever when said piston reaches the end of its stroke under the impulse of said spring.

809,347. ANTITOXIN FOR FATIGUE AND PROCESS OF MAKING THE SAME. WOLFGANG WEICHARDT, Berlin, Germany. Filed Jan. 18, 1904. Serial No. 189,489. (Specimens.)

Claim.—1. The process for obtaining a substance adapted to neutralize and render inoperative the toxin arising in the human organism in cases of fatigue, which consists in producing in animals intense fatigue, obtaining from the same toxin accumulated in their organism in consequence of fatigue, by removing constituent parts containing the toxin, injecting the said toxin into other animals and subsequently abstracting suitable parts of their organism, substantially as described.

2. The process for obtaining a substance adapted to neutralize or render inoperative the toxin arising in the human body in cases of fatigue, which consists in producing in animals intense muscular fatigue, obtaining from the same toxin accumulated in their organism in consequence of fatigue, by removing organic plasm from the animal, injecting the said toxin into other animals and subsequently abstracting suitable liquid products of their organism, substantially as described.

3. The process for obtaining a substance adapted to neutralize and render inoperative the toxin arising in the human body in cases of fatigue, which consists in producing muscular fatigue in animals, bleeding the fatigued animals, taking muscular tissues from the same, maintaining it at about 37° centigrade for several hours, grinding it to pulp, pressing out superfluous liquid, filtering the plasm thus obtained, injecting it into suitable animals; and allowing it to act, then bleeding the animals thus treated and extracting the serum from the blood thus obtained, substantially as described.

4. As a new substance, a pharmaceutical preparation containing an antitoxin against the poisons arising in the human and animal organism in cases of fatigue, which preparation consists of the concentrated serum of animals treated with toxins of fatigue taken from the fatigued animals and which has the property of neutralizing or destroying these toxins, substantially as described.

809,348. POWER-HAMMER. MILTON T. WHITON, Nyack, N. Y., assignor of one-half to William F. Hutchinson, Nyack, N. Y. Filed June 3, 1904. Serial No. 210,969.

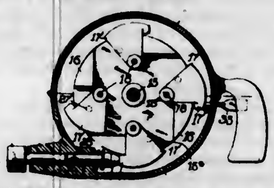

Claim.—1. A power-hammer, comprising a portable inclosing casing having a tool-holder arranged tangentially therein, a rotatable shaft journaled in the casing, a series of freely-swinging hammers hung around and carried by the shaft so as to swing within the casing opposite the tool-holder, and a clutch mechanism operated from outside the casing and acting to directly engage the individual hammers.

2. A power-hammer, comprising an inclosing casing having a tangentially-arranged tool-holder therein, a rotatable shaft in the casing, a disk carried by the shaft freely-swinging hammers pivoted on the disk and contained wholly within the casing, and a clutch mechanism manually controlled and operating to directly engage the hammers.

3. In a device of the kind described, the combination of the power-shaft, the disk carried thereby, the hammers pivoted on the disk, and the pins slidable through the disks to engage and stop the hammers.

4. In a device of the kind described, the combination with the power-shaft, the freely-swinging hammers supported radially around the shaft and carried thereby, the slide-disk on the shaft and the pins carried by the disk and adapted to engage the hammers as set forth.

5. The combination with the rotary disks and the hammers carried thereby, one of the disks being pierced opposite the hammers, of the spring-pins held in the perforations of the disk and arranged to engage the sides and edges of the hammers.

809,349. GRINDSTONE-FRAME. GUSTAVUS WIDEMAN, Aurora, Ill., assignor to The Richards Manufacturing Company, Aurora, Ill., a Corporation of Illinois. Filed Jan. 30, 1905. Serial No. 243,207.

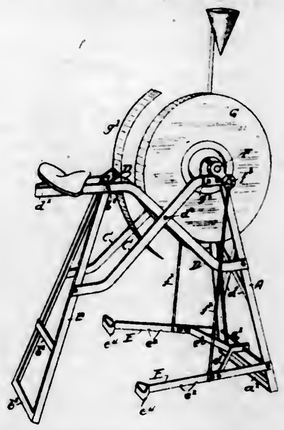

Claim.—1. In a grindstone-frame, two standards; each consisting of a single bar of iron bent to form a triangle the base of which is adapted to rest on the ground, said standards arranged with their upper portions inwardly inclined, and means connecting and bracing said standards consisting of bars having their ends bolted to the standards, said bars arranged in X form and pivoted together at their intersecting points.

2. In a grindstone-frame, two standards each consisting of a single bar of iron bent to form a triangle the base of which is adapted to rest on the ground, and means connecting and bracing said standards consisting of bars having their ends bolted to the standards, said bars arranged in X form and pivoted together at their intersecting points, and one of said bars bent to form a seat-support substantially as described.

3. In a grindstone-frame, two standards, each consisting of a single bar of iron bent to form a triangle the base of which is adapted to rest on the ground, and means connecting and bracing said standards consisting of the bent bar D, and bars C, arranged and connected in X form, treadles pivotally connected with one of said standards, pitman-rods detachably connected with said treadles and means connecting said pitman-rods with a grindstone.

4. In a grindstone-frame, two standards, each consisting of a single bar of iron bent to form a triangle the base of which is adapted to rest on the ground, means connecting said standards consisting of bars having their ends bolted to the standards, said bars arranged in X form and pivoted together at their intersecting points, one of said bars bent to form a seat-support and extending on both sides of the frame, and the other bars bent horizontally at their upper ends to form a support on each side of the grindstone.

5. In a grindstone-frame, two triangular-shaped standards, means connecting said standards, said means consisting of metal bars bent edgewise near their ends to form horizontal portions, said portions bolted to the standards, and said bars arranged in X form and pivoted together at their points of intersection, a grindstone mounted on said frame, and means for operating said grindstone.

809,350. COAL-MINING MACHINE. CONRAD WESSELMANN, Gelsenkirchen, Germany. Filed Dec. 15, 1903. Serial No. 135,200.

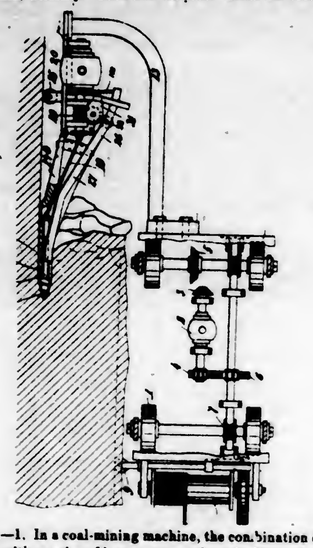

Claim.—1. In a coal-mining machine, the combination of a motor-engine, with a series of borers arranged vertically one below the other and acting to drive holes parallel to the joints of the layers of coal, plates acting in the manner of wedges, the front ends of which enter the bore-holes, and means to rock said plate on a pivot at their forward ends.

2. A coal-mining machine comprising in combination a series of several borers arranged vertically one below the other, a crushing-plate and a motor-engine operating the borers and connection of said motor-engine with a cam-disk at the rear end of the crushing-plate and serving to impart oscillating movement to said crushing-plate.

3. A coal-mining machine comprising in combination a series of several levers arranged vertically one below the other and a crushing-plate acting like a wedge, and means to impart a continuous rocking movement to the rear end of said plate, a frame or scaffold, borers supported thereby, a motor-engine mounted upon the plate, a car supporting the frame or scaffold and continuously feeding the entire mechanism by the action of the motor-engine.

4. In a coal-mining machine, the combination of a series of borers arranged vertically one below the other, with a crushing-plate acting like a wedge and entering the bore-holes at its front end, means to rock the rear end of said plate, the middle section of said plate being provided with movable knife-plates, and with means for moving said knife-plates.

5. A coal-mining machine comprising in combination a series of several borers arranged vertically one below the other, and a crushing-plate having a wedge-like action, movable knife-plate on said crushing-plate, means for operating the crushing-plate, and means for operating the knife-plates.

6. In a coal-mining machine, the combination of a car with a series of rotatable drills arranged above one another, and means for simultaneously breaking the coal at the side of the drills, substantially as specified.

7. In a coal-mining machine, the combination of a car with a series of rotatable drills arranged above one another, a pivoted push-plate, and means for oscillating said plate in a lateral direction, substantially as specified.

8. In a coal-mining machine, the combination of a car with a series of rotatable drills arranged above one another, a pivoted laterally-oscillating push-plate, cutters slidable upon said plate, and means for operating said cutters, substantially as specified.

809,351. FASTENING DEVICE. EMIL WOTHE, Swinkau, Germany. Filed May 24, 1905. Serial No. 262,082.

Claim.—1. A fastening device of the character described, consisting of a head portion, comprising a plate and a plurality of resilient pins arranged in a circle and secured to said plate, each of said pins having an inward knee-shaped bend, and a base portion, comprising a plate, a socket attached to the same, and a central shank arranged in said socket and having a head, the bends of the pins being adapted to engage behind said shank-head when the head portion is in engagement with the base portion.

2. A fastening device of the character described, consisting of a head portion, comprising a plate, a plurality of resilient pins arranged in a circle and riveted to said plate, each of said pins having an inward knee-shaped bend, and a plate secured to the former plate and covering over the riveted ends of said pins, and a base portion, comprising a plate, a socket attached to the same, and a central shank arranged in said socket and having a head, the bends of the pins being adapted to engage behind said shank-head when the head portion is in engagement with the base portion.

809,352. BEDSTEAD ATTACHMENT. WILLIAM A. WEIGEL, Cumming, Ga. Filed Aug. 21, 1905. Serial No. 275,076.

Claim.—1. An attachment for bedsteads comprising clamping members having resilient arms adapted to embrace a post of a bedstead, means for drawing said arms frictionally against the post, a rod mounted in bracket extensions of said members, a cabinet, a bar fastened thereto and bent to form lateral arms which are pivotally mounted upon said rod which is carried by said bracket extensions, as set forth.

2. An attachment for bedsteads comprising clamping members having resilient arms adapted to embrace a post of a bedstead, means for drawing said arms frictionally against the post, a rod mounted in bracket extensions of said members, a cabinet, a bar bent to form parallel bracket-arms which are apertured and adapted to receive said rod upon the bracket extensions of said members, the ends of said bar being bent at right angles to said apertured arms and fastened to said cabinet, as set forth.

3. An attachment for bedsteads comprising clamping members having resilient arms adapted to embrace a post of a bedstead, means for drawing said arms frictionally against the post, a rod mounted in bracket extensions of said members, a cabinet, a bar bent to form two parallel arms which are apertured to receive said rod upon the bracket extension of said members, the ends of said bars bent at right angles to said parallel arms and adapted to be fastened to the cabinet, portions of said bar intermediate the parallel arms thereof being inclined and terminating at their inner portions in a part of said bar which is in alinement with the angled ends thereof and fastened to said cabinet, as set forth.

4. An attachment for bedsteads comprising clamping members having resilient angled arms, the shank portions of which are apertured, a bolt passing through said apertures, a nut upon the threaded end of said bolt and adapted to bear against one of said arms, an extension of each of said members forming a bracket-support which is apertured, a rod passing through the apertures of said bracket extensions, a cabinet, and a bar fastened thereto and having portions which extend laterally and pivotally mounted upon said rod, as set forth.

809,353. LATHE ATTACHMENT. MAX C. SAGER, New Haven, Conn., assignor to Edward S. Swift, trustee, New Haven, Conn. Filed Mar. 24, 1905. Serial No. 251,725.

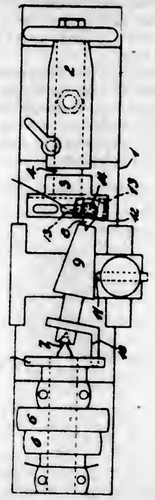

Claim.—1. An attachment for a lathe comprising a body portion arranged to be secured to the tail-stock spindle, and a laterally-adjustable center carried by the body of said attachment, and means for securing said center coincident with and at various points eccentric to the axis of the tail-stock spindle.

2. An attachment for a lathe comprising a body portion arranged to be secured to the tail-stock spindle, a laterally-adjustable center carried by the body of said attachment, and means for securing said center coincident with and at various points eccentric to the axis of the tail-stock spindle and at various angles relatively thereto.

3. An attachment for a lathe comprising a body portion arranged to be secured to the tail-stock spindle, a laterally-adjustable center carried by the body of said attachment, said center having a ball-like end, and means for securing said center at various points eccentric to the axis of the tail-stock.

4. An attachment for a lathe comprising a body portion arranged to be secured to the tail-stock spindle, a center, a transverse groove in said body portion intersecting said spindle said center being adjustable therein laterally relatively to the axis of said spindle, and means for clamping said center at any point in said groove.

5. An attachment for a lathe, comprising a body portion arranged to be secured to the tail-stock spindle, a transverse guideway in said body portion intersecting the axis of the tail-stock, a laterally-adjustable center mounted thereon, and means for clamping said center coincident with and eccentric to the axis of said tail-stock.

809,354. METHOD OF DENSIFYING AND ELIMINATING AIR AND GAS FROM MASSES OF PULVERULENT METALLIC SALTS AND OXIDS. BAYER O. BARTLETT and WILLIAM F. GORDON, Joplin, Mo. Filed Apr. 29, 1903. Serial No. 154,726.

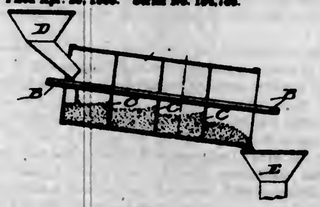

Claim.—The method of densifying and eliminating air and gas from dry masses of pulverulent metallic salts and oxids, which consists in treating a mass of such pulverulent material in a rotating receptacle to cause the mass as a whole to revolve in the receptacle and its component particles to constantly shift their relative positions as described.

809,355. CENTRIFUGAL CREAM-SEPARATOR. EDGAR W. BROCKALL, Rochester, N. Y. Filed May 23, 1905. Serial No. 261,699.

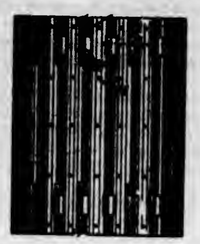

Claim.—1. In a centrifugal cream-separator, the combination with a rotary bowl, of a series of vertical, cream-collecting plates that intersect the radial lines of the bowl adjacent to its wall, leaving space for milk between said plates and said wall, said plates having passages through which the milk can pass to the wall of the bowl; and division-blades adjacent to said cream-collecting plates, adapted to receive the cream from both sides of said plates and to conduct it inwardly.

2. In a centrifugal cream-separator, the combination with a rotary bowl, of a series of division-blades having angular portions that intersect the radial lines of the bowl adjacent to its wall and leave space for milk between such portions and the wall of the bowl, said blades having passages for the milk to pass to the wall of the bowl from the spaces between said blades, each of said angular portions of said blades approaching another blade whereby cream is delivered from both of its sides to such other blade to be conducted inwardly thereby.

3. In a centrifugal cream-separator, the combination with a rotary bowl, of a series of vertical, cream-collecting plates that intersect the radial lines of the bowl and form a series of vertical compartments for milk between them and the wall, said plates having passages through which milk can pass to said vertical channels; and division-blades adjacent to said cream-collecting plates, adapted to receive the cream from both sides of said plates and to conduct it inwardly.

809,356. OSCILLATING ELECTRIC FAN. HERBERT S. BROWN, New York, N. Y. Filed July 27, 1904. Serial No. 218,271.

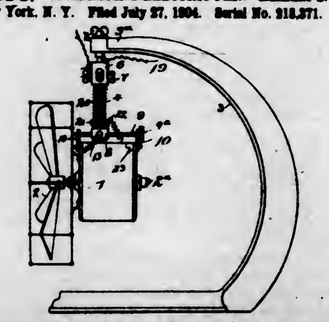

Claim.—1. The combination, with a fan having its axis placed at an angle to the vertical and arranged to deliver a stream of air in the general direction of said axis, of an electric motor therefor and a suspending device having means for producing torsional reaction to the movement of the fan about the suspending device as a pivot, whereby variations in the current supplied to the motor serve to maintain oscillation of the fan, substantially as described.

2. The combination, with an electric motor-driven fan having its axis placed at an angle to the vertical and arranged to deliver a stream of air in the general direction of said axis, of a suspending

device having means for producing torsional reaction to the movement of the fan about the suspending device as a pivot, and means for supplying current to the motor, whereby variations in the current serve to maintain oscillation of the fan, substantially as described.

3. The combination, with an electric motor-driven fan having its axis placed at an angle to the vertical and arranged to deliver a stream of air in the general direction of said axis, of a suspending device having means for producing torsional reaction to the movement of the fan about the suspending device as a pivot, the axis of the fan and of the suspending device being in one vertical plane, and means for supplying current to the motor, whereby variations in the current serve to maintain oscillation of the fan, substantially as described.

4. The combination of an electric fan, having a motor, with a hanger above the same, a flexible connection between the hanger and the fan, means for adjusting the operative length of said connection between the fan and hanger, and means to convey electrical current to the motor from a source of electrical energy, substantially as described.

5. The combination of an electric fan having a motor, with a hanger above the same, terminals connected with said hanger for connection with the line-wires, a flexible support for the fan depending from the hanger, conductors connecting said terminals with the motor, and means for adjusting the fan laterally with respect to said support, substantially as described.

6. The combination of an electric fan, a horizontally-disposed rod having a block for adjustment along the fan, a hanger above the fan, and a flexible connection between the hanger and the block, substantially as described.

7. The combination of an electric fan, a horizontally-disposed rod having a block for adjustment along the fan, a hanger above the fan, a flexible connection between the hanger and the block, and means for adjusting the operative length of the support between the hanger and the fan, substantially as described.

8. The combination of an electric fan with a block provided with a shaft, a flexible support connecting said shaft with the fan, and means for supporting said block, substantially as described.

9. The combination of an electric fan with a flexible support for the fan, means for sustaining said support, and a shaft connected with said support for regulating the operative length of the support, substantially as described.

10. The combination of an electric fan, with a block having a shaft, a flexible support connecting said shaft with the fan, and a conductor in circuit with the fan-motor and connected with said shaft, substantially as described.

11. The combination of an electric fan, a hanger, a block connected therewith, a shaft carried by the block, a flexible support connecting the shaft with the fan, a conductor connected with said shaft and in circuit with the fan-motor, a contact in circuit with said shaft for connection with a line-wire, and another conductor connected with the terminal of the motor for connection with the line-wire, substantially as described.

12. The combination of an electric fan, with a block, a flexible support connecting the block with the fan, a conductor coiled around said flexible support and in circuit with the fan-motor, and another conductor in circuit with the fan-motor, substantially as described.

13. The combination of an electric fan with a block, a flexible support connecting the block with the fan, a conductor coiled around said flexible support and in circuit with the fan-motor, another conductor in circuit with the fan-motor, and means for holding the support and coiled conductor under opposing twisting strains, substantially as described.

14. The combination of an electric fan, with a pair of blocks, one of which is connected with the fan, a hanger for the other block, a flexible support connecting said blocks, a coiled conductor surrounding said flexible support and connected with said blocks and in circuit with the fan-motor, and another conductor in circuit with the fan-motor, substantially as described.

15. A support for an oscillating fan comprising a pair of blocks, a flexible support connecting said blocks, and a coiled conductor connected with said blocks and inclosing said support, substantially as described.

16. A support for an oscillating fan comprising a pair of blocks, a flexible support connecting said blocks, a coiled conductor connected with said blocks and inclosing said support, and means for adjusting said coiled conductor and one of the blocks with respect to each other, substantially as described.

17. A support for an oscillating electric fan, comprising a pair of blocks, a shaft carried by one block, a flexible support connecting said shaft with the other block, and a coiled wire connected with said blocks and surrounding said support, substantially as described.

18. A support for an oscillating electric fan, comprising a pair of blocks, a shaft carried by one block, a flexible support connecting said shaft with the other block, a coiled spring connected with said blocks and surrounding said support, and a conductor connected with said shaft and with a contact carried by the opposite block, substantially as described.

19. A support for an electric fan comprising a pair of blocks, a shaft carried by one block, a flexible support connecting said shaft to the other block, a conductor connected with said shaft and leading to the other block, a coiled conductor surrounding said support, and contacts carried by said blocks for connection with the coiled conductor, substantially as described.

809,357. **SEAL-LOCK.** PHILIP S. CLAUSEN, Aurora, Ill. Filed Nov. 19, 1904. Serial No. 233,469.

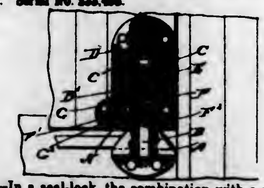

Claim.—In a seal-lock, the combination with a plate provided with guides and housing, said guides and housing being apertured, a dog pivoted in the housing, a bolt sliding between the guides and provided with a transverse aperture, a seal adapted to be passed through the apertured guides and bolt, said seal having an arrow-head at one end which is adapted to be engaged by the pivoted dog, the opposite end of the seal being provided with a flat head, the seal being reduced adjacent said flat head, for the purpose described.

809,358. **VETERINARY SURGEON'S TABLE.** LEONARD L. CONKEY, Grand Rapids, Mich. Filed Feb. 1, 1905. Serial No. 243,630.

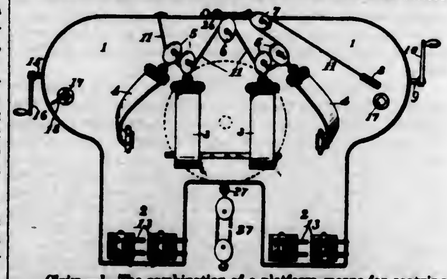

Claim.—1. The combination of a platform, means for securing an animal upon the same, a support for the platform, and a double-jointed hinge connecting the platform and support.

2. The combination of a platform, means for securing an animal upon the same, a support for the platform, means for rotating the support about a vertical axis, and a double-jointed hinge connecting the platform and support.

3. The combination of a platform, means for securing an animal upon the same, a support for the platform, a double-jointed hinge connecting the platform and support, and a hoisting-tackle adapted to be attached to either side of the platform to elevate the same.

4. The combination of a platform, means for supporting the platform in a vertical position, means for supporting the same in a horizontal position, straps to engage the body of an animal and attached to the platform at one end, pulleys on the free ends of the straps, a cord engaging the pulleys, means for adjusting the cord, bands adapted to be attached to the legs of an animal, cords attached to the bands, and means for adjusting the said cords.

5. The combination of a platform, means for supporting the same in either a vertical, or an inclined position, means for supporting the platform in a horizontal position, straps attached at one end to the platform, pulleys on the free ends of the straps, pulleys on the platform, a cord attached to the platform and successively engaging said pulleys, a shaft journaled on the platform on which shaft the cord is wound, a crank on the shaft, a pawl and ratchet to hold the shaft, and means for securing the legs of the animal to the platform.

6. The combination of a platform, means for adjustably supporting the platform, straps attached to the platform at one end, pulleys attached to the free ends of the straps, pulleys attached to the platform, a cord attached to the platform at one end and successively engaging the pulleys, a shaft on which the cord is wound, means for rotating and holding the shaft, bands to attach to the legs of the animal, cords attached to the bands, a shaft on which the cords are wound, and means for rotating and holding the shaft.

7. The combination of a platform, a support for the platform and rotative on a vertical axis, double-jointed hinges connecting the platform and the support, four straps attached at one end to the platform, a pulley on each free end of each strap, two pulleys attached to the edge of the platform, a pulley in an opening in the platform, a cord attached to the platform at one end and thence extending through two of the strap-pulleys, thence through a platform-pulley, thence through the other two strap-pulleys, thence through the other platform-pulley, thence over the pulley in the opening, a shaft journaled on the platform, around which shaft the other end of the cord is wound, a crank and ratchet on the shaft, and a pawl engaging the ratchet.

8. The combination of a platform, means for attaching an animal to said platform, a support for said platform rotative on a vertical axis, an upper hinge member attached to the platform, a lower hinge member attached to the support, and a middle hinge member extending wholly across the top of the support and pivoted at its respective ends to the other hinge members.

9. The combination of a platform, means for adjustably supporting the same, straps to engage the body of an animal and attached to the platform at one end, a cord connected to the free end of said straps, a shaft on which the cord is wound, means for rotating and holding the shaft, bands to surround the legs of an animal, cords attached to the bands, a shaft on which the cords are wound, and means for rotating and holding the said shaft.

10. The combination of a bed having a circular track, rolls traversing the track, a rotative circular track above the rolls, a support mounted on the rotative track, a spider and center bolt to hold the support in place, transverse beams on the support, double-jointed hinges attached to the beams, a platform attached to the hinges, and means for securing an animal upon the platform.

809,359. **DISPLAY-HANGER.** GRANT D. DIAL, Chicago, Ill. Filed Dec. 17, 1904. Serial No. 237,262.

Claim.—As a new article, a bar having means for suspension from a stationary structure and provided with a plurality of spaced apertures, and flexible suspension members of varying lengths and connected at their ends in said apertures and hanging therefrom in loops of graduated lengths.

809,360. **APPARATUS FOR PROMOTING THE GROWTH OF HAIR.** NAPOLEON W. DIBLE, Kansas City, Mo. Filed Oct. 4, 1904. Serial No. 227,104.

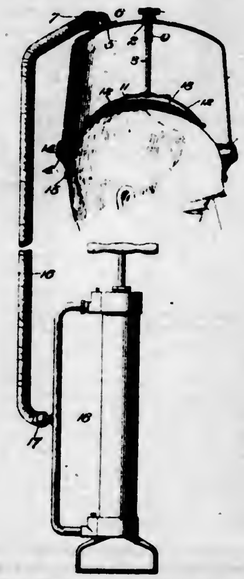

Claim.—1. An air-tight cap, an elastic band secured to the lower margin of the same, a support within the cap to rest upon the patient's head, means whereby the support is free to move toward or from the crown of the cap, and means whereby said support may be secured at the desired distance from the crown of the cap.

2. An air-tight cap, an elastic band secured to the lower margin of the same, a support within the cap to rest upon the patient's head, and a rod vertically adjustable through the crown of the cap and attached at its lower end to the support.

3. An air-tight cap having a threaded hole in its crown, an elastic band secured to the lower margin of said cap, a support within the cap to rest upon the patient's head, and a rod attached at its lower end to said support and capable of sliding through the threaded hole of the cap, and provided with a threaded portion for engagement at times with said threaded hole.

4. An air-tight cap having a threaded hole in its crown, an elastic band secured to the lower margin of said cap, a support within the cap to rest upon the patient's head, a rod attached at its lower end to said support and capable of sliding through the threaded hole of the cap and provided with a threaded portion for engagement at times with said threaded hole, and a handle secured to the upper end of the rod externally of the cap.

5. An air-tight cap, an elastic band secured to the lower margin of the same, and a support within the cap to rest upon the patient's head, the same comprising an inverted cup provided with openings, and a foraminous bottom bridging the lower side of said openings.

6. An air-tight cap, an elastic band secured to the lower margin of the same, a support within the cap to rest upon the patient's head, the same comprising an inverted cup provided with openings and a foraminous bottom bridging the lower side of said openings, and means for creating a vacuum in said cap.

809,361. **WATER ELEVATING AND STORAGE APPARATUS.** WILLIAM W. DOUGLASS, Kansas City, Mo. Filed June 9, 1904. Serial No. 211,893.

Claim.—1. In an apparatus of the character described, the combination of a water-elevating mechanism, a cable to effect the operation of said mechanism, a suitable framework, a stationary drum therein to which is rigidly secured said cable, and a drum movable toward and from the stationary drum and engaged by a loop in said cable.

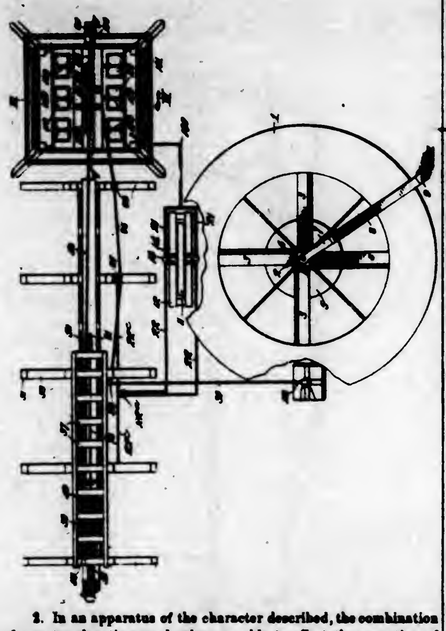

2. In an apparatus of the character described, the combination of a water-elevating mechanism, a cable to effect the operation of said mechanism, a suitable framework, a stationary drum therein to which is rigidly secured said cable, a drum movable toward and from the stationary drum and engaged by a loop in said cable, and means for effecting the travel of said movable drum from the stationary drum.

3. In an apparatus of the character described, the combination of a water-elevating mechanism, a cable to effect the operation of said mechanism, a suitable framework, a stationary drum therein to which is rigidly secured said cable, a drum movable toward and from the stationary drum and engaged by a loop in said cable, means for effecting the travel of said movable drum from the stationary drum, and means for moving the movable drum toward the stationary drum.

4. In an apparatus of the character described, the combination of a water-elevating mechanism, a cable to effect the operation of said mechanism, a suitable framework, a stationary drum therein to which is rigidly secured said cable, a drum movable toward and from the stationary drum and engaged by a loop in said cable, and an expansive frame connected to the movable drum and adapted when expanding to move said drum away from the stationary drum.

5. In an apparatus of the character described, the combination of a water-elevating mechanism, a cable to effect the operation of said mechanism, a suitable framework, a stationary drum to which is rigidly secured said cable, a drum movable toward and from the stationary drum and engaged by a loop in said cable, an expansive frame connected to the movable drum and adapted when expanding to move said drum away from the stationary drum, and means for yieldingly impelling the movable drum toward the stationary drum after the expansion of said frame has occurred.

6. In an apparatus of the character described, the combination of a water-elevating mechanism, a cable to effect the operation of said mechanism, a suitable framework, a stationary drum to which is rigidly secured said cable, a drum movable toward and from the stationary drum and engaged by a loop in said cable, an expansive frame having one end fixed and the other movable, and a suitably-guided cable connected to the movable end of the expansive frame and to said movable drum.

7. In an apparatus of the character described, the combination of a water-elevating mechanism, a cable to effect the operation of said mechanism, a suitable framework, a stationary drum to which is rigidly secured said cable, a drum movable toward and from the stationary drum and engaged by a loop in said cable, an expansive frame having one end fixed and the other movable, a suitably-guided cable connected to the movable end of the expansive frame and to said movable drum, one or more hydraulic jacks for effecting the expansion of said frame, and means for discharging the water from said jack or jacks to permit said frame to contract.

8. In an apparatus of the character described, the combination of a water-elevating mechanism, a framework, a stationary frame therein, a vertically-movable frame therein, a lazy-tongs frame secured at one end to the framework, and arranged between the superposed movable and stationary frames, a stationary drum in said framework, a drum to travel toward and from said stationary drum, a cable secured at one end to the stationary drum and looped around the same and the movable drum and extending from the stationary drum and connected at its opposite end to the water-elevating mechanism to operate the same, means for drawing the movable drum yieldingly toward the stationary drum, a suitably-guided cable connecting the movable drum and the free end of the lazy-tongs frame, one or more valve-controlled hydraulic rams supporting the movable frame, a force-pump having a check-valve-controlled pipe connection with said ram or rams, a vertically-slidable weight on the framework, a disk connected to open and close the valve of each ram, a link connecting the disk and slidable weight, a spring-actuated bolt to lock the disk against back rotation when the weight is raised, means operated by the water-elevating mechanism to raise said weight and open the ram-valve when the vertically-movable frame is elevated, and means also actuated by the operation of the water-elevating mechanism for unlocking the bolt from said disk to permit the weight to descend.

809,862. **PROCESS OF MAKING DIALKYL-BARBITURIC ACIDS.** MAX BISCHLEBEN, Elberfeld, Germany, assignor to Farbenfabriken of Elberfeld Co., New York, N. Y., a Corporation of New York. Filed Oct. 16, 1905. Serial No. 283,017.

Claim.—1. The process for the production of dialkyl-barbituric acids having the above-given general formula, which process consists in heating 2-thio-4-imino-5-dialkyl-6-oxypyrimidins with acids, substantially as hereinbefore described.

2. The process for the production of diethyl-barbituric acid, which process consists in heating 2-thio-4-imino-5-diethyl-6-oxypyrimidin with acids, substantially as hereinbefore described.

809,863. **ROTARY ENGINE.** ALBERT O. ENGLUND, Wayne, Kans. Filed May 20, 1905. Serial No. 261,416.

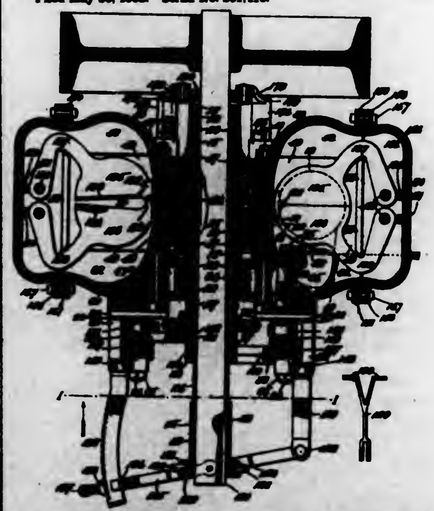

Claim.—1. A rotary engine, comprising a cylinder having a circular chamber, a shaft centrally of and surrounded by said chamber,

a piston rigid with the shaft and partitioning the chamber, a gate partitioning the chamber, valve-controlled inlet and exhaust ports communicating with the chamber at opposite sides of the gate, means for opening the inlet-port valve to admit steam to the chamber between the piston and said gate, means to close the exhaust-port valve as the piston passes the point of communication of the exhaust-port with the chamber, means for opening the gate to permit the piston to pass, and means to close the inlet-port valve at a predetermined time.

2. A rotary engine, comprising a cylinder having a circular chamber, a shaft centrally of and surrounded by said chamber, a piston rigid with the shaft and partitioning the chamber, a gate partitioning the chamber, valve-controlled inlet and exhaust ports communicating with the chamber at opposite sides of the gate, means for opening the inlet-port valve to admit steam to the chamber between the piston and said gate, means to close the exhaust-port valve as the piston passes the point of communication of the exhaust-port with the chamber, means for opening the gate to permit the piston to pass, means to close the inlet-port valve at a predetermined time, means to reopen the exhaust-port valve after the piston passes its point of communication with the said chamber, and means to reclose the gate after the piston passes it.

3. A rotary engine, comprising a cylinder having a circular chamber, a shaft centrally of and surrounded by said chamber, a piston rigid with the shaft and partitioning the chamber, diametrically opposite gates, valve-controlled inlet-ports communicating with the chamber at diametrically opposite points and at opposite sides of the plane of said gates, and valve-controlled exhaust-ports communicating with the chamber at diametrically opposite points, and at opposite sides of the plane of the gates.

4. A rotary engine, comprising a cylinder having a circular chamber, a shaft centrally of and surrounded by said chamber, a piston rigid with the shaft and partitioning the chamber, diametrically opposite gates, valve-controlled inlet-ports communicating with the chamber at diametrically opposite points and at opposite sides of the plane of said gates, valve-controlled exhaust-ports communicating with the chamber at diametrically opposite points, and at opposite sides of the plane of the gates, means for alternately opening the inlet-port valves, means for closing said valves, means for alternately opening the exhaust-port valves, means for closing said valves, means for alternately opening the gates, and means for closing said gates.

5. A rotary engine, comprising a cylinder having a circular chamber, a shaft centrally of and surrounded by said chamber, a piston rigid with the shaft and partitioning the chamber, diametrically opposite gates, valve-controlled inlet-ports communicating with the chamber at diametrically opposite points and at opposite sides of the plane of said gates, valve-controlled exhaust-ports communicating with the chamber at diametrically opposite points and at opposite sides of the plane of the gates, means for alternately closing the inlet-port valves, springs for opening said valves, means for alternately closing the exhaust-port valves, springs for opening said valves, means for alternately opening the gates, and means for closing said gates.

6. A rotary engine, comprising a cylinder having a circular chamber, a shaft centrally of and surrounded by said chamber, a piston rigid with the shaft and partitioning the chamber, diametrically opposite gates, valve-controlled inlet-ports communicating with the chamber at diametrically opposite points and at opposite sides of the plane of said gates, valve-controlled exhaust-ports communicating with the chamber at diametrically opposite points and at opposite sides of the plane of the gates, piston-actuated means for alternately closing the inlet-port valves, means for opening said valves, piston-actuated means for alternately closing the exhaust-port valves, means for opening said valves, piston-actuated means for opening the gates, and means for closing said gates.

7. A rotary engine, comprising a cylinder having a circular chamber, a shaft centrally of and surrounded by said chamber, a piston rigid with the shaft and partitioning the chamber, diametrically opposite gates, valve-controlled inlet-ports communicating with the chamber at diametrically opposite points and at opposite sides of the plane of said gates, valve-controlled exhaust-ports communicating with the chamber at diametrically opposite points and at opposite sides of the plane of the gates, piston-actuated means for alternately closing the inlet-port valves, springs for opening said valves, piston-actuated means for alternately closing the exhaust-port valves, springs for opening said valves, means for alternately opening the gates, and means for closing said gates.

8. A rotary engine, comprising a cylinder having a circular chamber, a shaft centrally of and surrounded by said chamber, a piston rigid with the shaft and partitioning the chamber, diametrically opposite gates, valve-controlled inlet-ports communicating with the chamber at diametrically opposite points and at opposite sides of the plane of the gates, valve-controlled exhaust-ports communicating with the chamber at diametrically opposite points and at opposite sides of the plane of the gates, independent means holding the valves yieldingly open, a cam rotatable with the shaft, means caused by said cam to alternately close the inlet-port valves, a second cam rotatable with the shaft, means caused by said cam to alternately close the exhaust-port valves, means for alternately opening the gates, and means for closing said gates.

9. A rotary engine, comprising a cylinder having a circular chamber, a shaft centrally of and surrounded by said chamber, a piston rigid with the shaft and partitioning the chamber, a valve-controlled exhaust-port communicating with the chamber, an adjustable cam journaled on the shaft, a sliding sleeve mounted on the sleeve a lever suitably supported and connected to slide the sliding sleeve, means whereby movement of the sliding sleeve shall rotate the adjustable cam, means for locking the cam at the desired point of adjustment, and means whereby said cam under the revolution of the shaft shall operate said valve.

10. In a rotary engine, a cylinder, comprising two members secured together and provided with mating circular grooves conjointly forming a circular passage, a shaft journaled in the cylinder centrally of the circular chamber, a disk secured rigidly on the shaft between the members of and within the cylinder, and provided with a peripheral recess, a bolt secured in said disk and having its head snugly engaging said recess to form a part of the disk, means to prevent said bolt from turning, a piston secured rigidly to said bolt and projecting outwardly from said head and partitioning the cylinder-chamber, and friction-rings carried by said piston and engaging the walls of said chamber.

11. In a rotary engine, a cylinder having a circular chamber and an intersecting shallow gate-passage, and a gate comprising a pair of members suitably pivoted and adapted to partition said chamber by swinging inwardly until they meet and to leave said chamber unobstructed by swinging outwardly; each member of the gate being provided at its inner or free end with an extension of half its thickness adapted to overlap each other, and one of the members having a groove in its inner edge and the other a tongue to engage said groove when the members are swung together to conjointly partition the cylinder-chamber.

12. A rotary engine, comprising a cylinder having a circular chamber, a shaft centrally of and surrounded by said chamber, a piston rigid with the shaft and partitioning the chamber, diametrically opposite gates, valve-controlled inlet-ports communicating with the chamber at diametrically opposite points and at opposite sides of the plane of the gates, valve-controlled exhaust-ports communicating with the chamber at diametrically opposite points and at opposite sides of the plane of the gates, independent means holding the valves yieldingly closed, a cam rotatable with the shaft, means caused by said cam to alternately open the inlet-port valves, a second cam rotatable with the shaft, means caused by said cam to alternately open the exhaust-port valves, a third cam rotatable with the shaft, means actuated by said cam to alternately open the gates, and means for closing said gates.

13. In a rotary engine, a circular chamber, a shaft centrally of and surrounded by said chamber, a piston rigid with the shaft and partitioning the chamber, diametrically opposite gates, inlet-ports communicating with the chamber at diametrically opposite points and at opposite sides of the plane of said gates, exhaust-ports communicating with said chamber at diametrically opposite points and at opposite sides of the plane of said gates, rotary valves for all of said ports, helical springs to hold said valves normally open, means for alternately closing the inlet-ports, means for alternately closing the exhaust-ports, means for alternately opening the gates, and means for alternately closing them.

14. In a rotary engine, a circular chamber, a shaft centrally of and surrounded by said chamber, a piston rigid with the shaft and partitioning the chamber, diametrically opposite gates, inlet-ports communicating with the chamber at diametrically opposite points and at opposite sides of the plane of said gates, exhaust-ports communicating with said chamber at diametrically opposite points and at opposite sides of the plane of said gates, conical rotary valves, yielding means to resist endwise movement of said valves, means to overcome such resistance and adjust and secure said valves in their new positions to compensate for wear and prevent leakage of steam around them, means for alternately closing the inlet-port valves, means for alternately closing the exhaust-port valves, means for alternately opening the gates, and means for alternately closing them

15. In a rotary engine, a cylinder having a circular chamber, a shaft centrally of and surrounded by said chamber, a piston rigid with the shaft and partitioning the chamber, a valve-controlled exhaust-port communicating with the chamber, an adjustable cam journaled on the shaft, a sliding sleeve mounted on the shaft and provided with a spiral slot, a rotatable sleeve on the shaft and secured to the adjustable cam and provided with a pin engaging the spiral slot of the sliding sleeve, a lever suitably supported and connected to slide the sliding sleeve, means for locking the adjustable cam at the desired point, and means whereby said cam under the revolution of the shaft shall operate said valve.

809,364. BRIDLE-BIT. CHARLES H. FALLS, Clarksville, Iowa. Filed July 20, 1905. Serial No. 271,757.

Claim.—1. A bit, having integral snaffles terminating in eyes, split plugs engaging the hollow ends of said bit, oscillating rein-loops connected to eyes in said plugs, each of said plugs having a saddle with a seat to be engaged by said rein-loops, as set forth.

2. A bit, having integral snaffles with eyes in the ends thereof, split plugs having eyes and integral saddles adapted to seat, respectively, in the hollow ends of said bit and recesses in the ends of the bit, and rein-loops engaging said eyes formed in said plugs, and adapted to seat in said saddles, as set forth.

3. A bit, having integral snaffles with eyes in the ends thereof, split plugs, having their outer faces tapering and adapted to frictionally engage the inclined walls in the ends of said bit, an integral saddle upon each plug, each saddle having a concaved part, forming a seat, the edge of said saddle adapted to engage in a recess formed at right angles in the bit to the length thereof, rein-loops engaging elongated eyes formed in said plugs, and a jaw-strap connecting said loops, as set forth.

4. A bit, having integral snaffles with eyes in the ends thereof, split plugs, having their outer faces tapering and adapted to frictionally engage the inclined walls in the ends of said bit, an integral saddle upon each plug, each saddle having a concaved part, forming a seat, the inner edge of each saddle having its opposite walls inclined and designed to engage the tapering walls of recesses in the ends of the bit, and rein-loops engaging eyes formed in said plugs, as set forth.

5. A bit, having integral snaffles and eyes at the ends thereof, split plugs engaging in the ends of said bit, and provided each with a saddle held in a recess formed at right angles to the length of the bit, rein-loops engaging eyes in said plugs and having cross-bars to which a jaw-strap is adapted to be fastened, as set forth.

809,365. DENTAL TOOL. ADAM W. PHILPHANN, Chicago, Ill. Filed Apr. 20, 1905. Serial No. 256,610.

Claim.—1. In a dental tool, in combination with the exterior element or barrel, a plunger reciprocating in the barrel and having jaws which are operated by such reciprocation, the plunger being exteriorly threaded at a portion of its length, and a nut engaging such threaded portion of the plunger and stopped on the barrel against movement longitudinally therein in one direction.

2. In a dental tool, in combination with the exterior element or barrel, a plunger reciprocating in the barrel, and having jaws protruding therefrom which are operated by such reciprocation; a spring reacting between the plunger and the barrel for yieldingly resisting the longitudinal movement of the plunger in one direction and retracting it in the opposite direction; an element which is stopped on the barrel against movement longitudinally thereon in the opposite direction from that in which the spring reacts against the plunger, said stopped element having threaded engagement with the plunger.

3. In a dental tool, in combination with the exterior element or barrel, a plunger reciprocating in the barrel having jaws which are operated by such reciprocation; a spring reacting between the plunger and the barrel for yieldingly resisting the forward longitudinal movement of the plunger and retracting it rearward, the plunger being protruded from the barrel at the upper or rear end, and exteriorly threaded at such protruded portion, and a nut adjustable thereon for stopping against the upper end of the barrel.

809,366. STEAM-GENERATOR. DAVID FITZSIMMONS, Oswego, N. Y. Filed May 27, 1905. Serial No. 262,568.

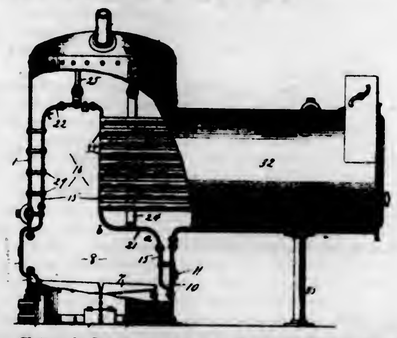

Claim.—1. In a steam-generator, the combination with a vertical cylindrical shell inclosing an ash-pit below, of an inner shell having a cylindrical lower portion forming a fire-box and a semicylindrical upper portion forming a combustion-chamber, said inner shell being arranged within the cylindrical shell and having its lower margin connected thereto to form a water-leg around the fire-box, a grate above the ash-pit, a horizontal cylindrical shell extending rearwardly from the vertical shell, tubes in the horizontal shell secured to the rear wall of the combustion-chamber, and two braces supporting the inner shell in the outer shell, one brace being connected to the front higher portion of the inner shell and one brace being connected to the rear lower portion of the inner shell.

2. In a steam-generator, an outer, vertical cylindrical shell, an annular flanged, supporting-casting fitted to the foot of said shell, an inner shell or crown-sheet arranged within the outer shell and riveted to said outer shell around its lower margin, said inner shell being formed with a cylindrical lower portion, a semicylindrical upper portion arranged above the front of the lower portion and a straight vertical wall forming the rear face of said upper portion, said lower portion forming the fire-box and having a rear half-dome over the fire-box, said upper portion forming a combustion-chamber and having a front half-dome over the combustion-chamber, the curves between the fire-box wall, and the rear half-dome, between said rear half-dome and said vertical wall, and between the combustion-chamber front wall and the front half-dome being curves in the arcs of large circles, and a horizontal, cylindrical shell containing tubes extending from the vertical shell.

3. In a steam-generator, an outer cylindrical shell, vertically arranged, an inner shell inclosed within the outer and having its lower margin secured thereto, the inner shell having a lower cylindrical portion forming a fire-box, and an upper semicylindrical portion above the front of the fire-box forming a combustion-chamber, the top of said upper portion, and the top of said lower portion behind the combustion-chamber being in the form of half-domes, the bends in said inner shell being arcs of large circles, a single brace between each of said half-domes and the outer shell, and a horizontally-arranged cylindrical shell rearwardly extending from the vertical shell and containing the fire-tubes, substantially as described and shown.

809,367. BLOCK-MOLDING MACHINE. HARVEY P. GATES, Remington, Ind. Filed June 22, 1905. Serial No. 266,402.

Claim.—1. In a block-molding machine, the combination with a table mounted on wheels and having a mold-box, of a pressure-frame having a plunger over the box, and having supporting-sills under the table and movable up and down with respect thereto, to support the frame on the table or on the ground.

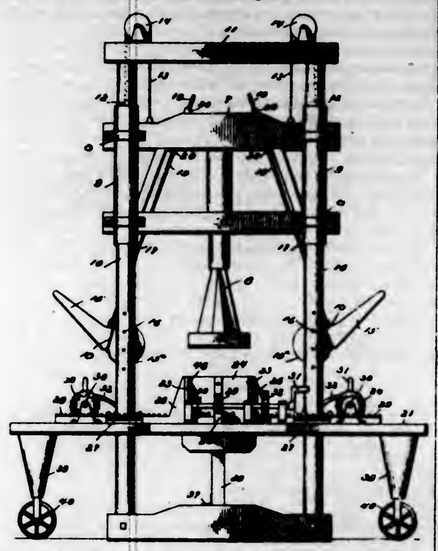

2. In a block-molding machine, the combination with a table and mold thereon, of tubular standards extending above the table, sleeves slidable up and down on the standards, and a plunger-frame secured to the sleeves and having counterbalance-weights connected thereto and located inside the standards.

3. The combination with a table and pallet, of a mold-box thereon having separable sides and ends, means to advance and retract the same, and means to connect the pallet with one of the ends to retract the former with the latter.

4. A mold-box comprising sides having longitudinal ribs thereon with a line of holes thereon, ends having loops, and pins insertible through said loops and holes to hold the sides and ends together.

5. An extensible mold-box plate comprising upper and lower plate-sections the former of which may be raised or lowered with respect to the latter, to vary the depth of the box.

809,368. EYEGLASS-GUARD. CHARLES GOODWIN, East Providence, R. I. Filed Dec. 22, 1904. Serial No. 237,980.

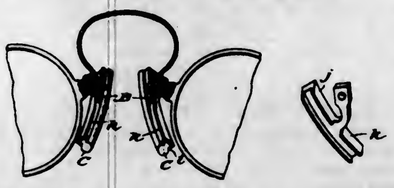

Claim.—1. In a nose-guard for eyeglasses, the combination of a strip or body portion in the form of an oblong rectangular parallelogram having on one long side thereof the bent-up flange *i* and on the opposite side the bent-up flanges *j k*, extending respectively from the ends of said strip or body portion toward the center of said last-mentioned side but leaving an interval at said center, and an offset arm extending angularly from said strip or body portion at said interval, all made of a single piece of metal, substantially as described.

2. In a nose-guard for eyeglasses, the combination of a strip or body portion, the perforated offset arm extending angularly therefrom, the flange *i* along the outer side of said strip or body and bent at an angle therewith, and the two flanges *j k* along the inner side of said strip or body extending from the respective ends of said strip or body to said arm and bent to be parallel with the flange *i*, all made of one piece of metal, substantially as shown.

3. The improved blank for nose-guards for eyeglasses herein described, consisting of a single piece of metal and comprising a strip or body portion in the form of an oblong rectangular parallelogram, an offset arm extending angularly therefrom at one side midway the ends thereof, both said body and arm being in one plane and of the same thickness, and flanges extended in the plane of said body on the opposite straight long sides thereof but of a thickness less than that of said body, substantially as specified.

809,369. AUTOMATIC DEVICE FOR PHOTOGRAPHIC PURPOSES. WILLIAM H. GREENE, Prophetstown, Ill. Filed Apr. 21, 1905. Serial No. 256,753.

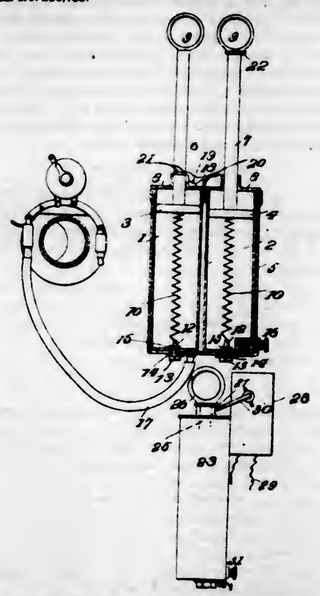

Claim.—1. In a device of the class described, the combination of a cylinder and a piston therefor, a second cylinder and piston, means for actuating said pistons, means for holding one of said pistons in a predetermined position, and means operable by the other piston for actuating the holding means coacting with the piston above mentioned.

2. In a device of the class described, the combination of a cylinder, a valved outlet for said cylinder, a second cylinder, spring-actuated pistons operating in the cylinders, piston-rods for said pistons, means for holding the piston-rod of the second-mentioned cylinder in an ascertained position against the tension of the spring cooperating therewith, and means operated by the piston-rod of the first-mentioned cylinder for actuating the means holding the piston-rod of the second-mentioned cylinder in the ascertained position aforesaid.

3. In a device of the class described, the combination of the cylinders 1 and 2, pistons operating in said cylinders, piston-rods extending from the pistons aforesaid, spring means for holding the pistons in a predetermined position, a catch cooperating with the piston-rod of the cylinder 1, means carried by the piston-rod of the cylinder 2 for actuating said catch, and a valve for the cylinder 2.

4. In a device of the class described, the combination of the cylinders 1 and 2, pistons operating in said cylinders, piston-rods extending from the pistons aforesaid, spring means for holding the pistons in a predetermined position, a catch cooperating with the piston-rod of the cylinder 1, means carried by the piston-rod of the cylinder 2 for actuating said catch, a valve for the cylinder 2, and handles operatively connected with the piston-rods of the cylinders 1 and 2.

5. In a device of the class described, the combination of the cylinders 1 and 2, pistons operating in said cylinders, piston-rods for said pistons springs connecting the cylinders and the piston-rods for holding the pistons in a predetermined position, a catch cooperating

with the piston-rod of the cylinder 1, and means carried by the piston-rod of the cylinder 2 for actuating said catch.

6. In a device of the class described, the combination of the cylinders 1 and 2, pistons operating in said cylinders, piston-rods for said pistons, springs connecting the cylinders and the piston-rods for holding the pistons in a predetermined position, a spring-actuated catch cooperating with the piston-rod of the cylinder 1, and means carried by the piston-rod of the cylinder 2 for actuating said catch.

7. In a device of the class described, the combination of the cylinders 1 and 2, pistons operating in said cylinders, piston-rods for said pistons, springs connecting the cylinders of the piston-rods for holding the pistons in a predetermined position, a catch cooperating with the piston-rod of the cylinder 1, and a projection carried by the piston-rod of the cylinder 2 for actuating the catch aforesaid.

8. In a device of the class described, the combination of the cylinders 1 and 2, an outlet-cylinder 1, a valved outlet for the cylinder 2, pistons operating in the cylinders 1 and 2, piston-rods for said pistons, springs arranged in the hollow portions of the piston-rods for holding the pistons at a predetermined position, a catch cooperating with the piston-rod of the cylinder 1, and means carried by the piston-rod of the cylinder 2 for actuating said catch.

809,370. SADDLE TREE OR FRAME. RUDOLF GUILLEAUME, Mülheim-on-the-Rhine, Germany, assignor to Maschinen und Dampfhammerfabrik "Guilleaume Werke" Gesellschaft mit Beschränkter Haftung, Neustadt-on-the-Hardt, Germany. Filed Sept. 16, 1904. Serial No. 224,699.

Claim.—1. In a saddle tree or frame, the combination of two sheet-steel side plates having sideway and downward extensions formed integral therewith at their forward ends, said plates being arranged at a short distance apart, being comparatively narrow adjoining said extensions, and having wider portions toward their rear, where they are rounded off, a sheet-steel pommel-plate having sidewardly and downwardly projecting portions at its front fitting the extensions of the side plates, and a sheet-steel cantle-plate in the form of a crescent riveted to the side plates around its inner curve and projecting upward and backward from said side plates, substantially as herein shown and described.

2. In a saddle tree or frame, the combination of two sheet-steel side plates having sideway and downward extensions formed integral therewith at their forward ends, said plates being arranged at a short distance apart, being comparatively narrow adjoining said extensions, and having wider portions toward their rear, where they are rounded off, a sheet-steel pommel-plate having sidewardly and downwardly projecting portions at its front fitting the extensions of the side plates, a series of strengthening-plates riveted to the pommel-plate and side plates, each strengthening-plate having a main portion and sidewardly and downwardly projecting portions at its front end, and a sheet-steel cantle-plate in the form of a crescent riveted to the side plates around its inner curve and projecting upward and backward from said side plates, substantially as herein shown and described.

3. In a saddle tree or frame, the combination of two sheet-steel side plates having sideway and downward extensions formed integral therewith at their forward ends, said plates being arranged at a short distance apart, being comparatively narrow adjoining said extensions, and having wider portions toward their rear, where they are rounded off, a sheet-steel pommel-plate having sidewardly and downwardly projecting portions at its front fitting the extensions of the side plates, a series of strengthening-plates riveted to the pommel-plate and side plates, each strengthening-plate having a main portion and sidewardly and downwardly projecting portions at its front end, and being smaller than the one upon which it rests, and a sheet-steel cantle-plate in the form of a crescent riveted to the side plates around its inner curve and projecting upward and backward from said plates, substantially as herein shown and described.

809,371. VOTING-MACHINE. ELMA A. HAGEMEYER, Lyndhurst, N. J., executrix of Charles F. Hemington, deceased, assignor to The Diebold Voting Machine Company, Lyndhurst, N. J., a Corporation of New Jersey. Filed Jan. 20, 1903. Serial No. 139,697.

Claim.—In a voting-machine, a cylindrical casing having an annular slot therein, actuators radially mounted in said casing and each having a portion projecting through said slot whereby it may be swung horizontally, a tube extending from the exterior of said casing to the interior and adapted to receive a ballot, a swinging gate normally closing the lower end of said tube, a support adapted to be moved vertically within said casing, a lever carried by said support, a link from one end of said lever to said gate, the other end of said lever arranged when moved vertically with said support, to contact with one of said actuators presented in its path, and thereby move said gate to open said tube.

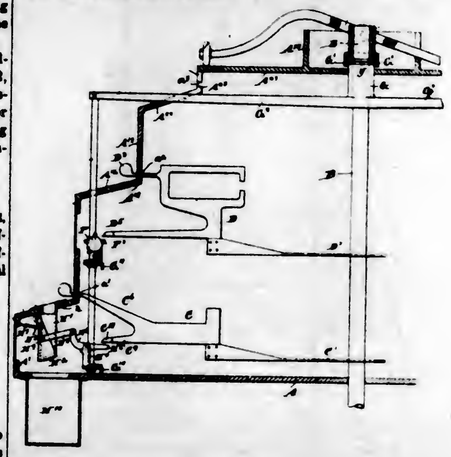

809,372. VARIABLE-SPEED GEAR. EMIL A. HOEFER, Freeport, Ill., assignor to Hoefer Manufacturing Company, Freeport, Ill. Filed July 20, 1905. Serial No. 271,268.

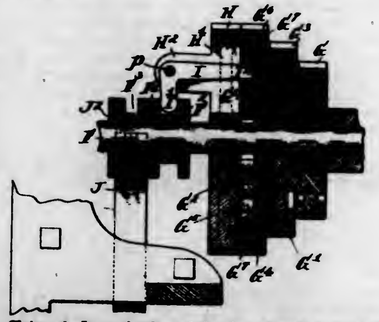

Claim.—1. In mechanism of the class described, in combination, a shaft, a plurality of loose gear-wheels, stepped and concentrically mounted thereon, and rotating means adapted to separately and interiorly engage and revolve said gear-wheels, substantially as described.

2. In mechanism of the class described, in combination, a shaft, a plurality of gear-wheels, stepped and mounted loose thereon, and a rotatable lever adapted to separately and interiorly engage and drive each of said gear-wheels, substantially as described.

3. In mechanism of the class described, in combination, a non-rotatable shaft, a plurality of separate gear-wheels, stepped and concentrically mounted thereon, and a rotatable part carrying an arm adapted to separately engage and drive each of said gear-wheels, substantially as described.

4. In mechanism of the class described, in combination, a shaft, a plurality of gear-wheels stepped, a peripherally-grooved collar, and a single gear-wheel, all rotatably mounted on said shaft—the last-mentioned gear-wheel being located between the larger of the stepped gear-wheels and the collar—and a bell-crank lever mounted in bearings on and extending transversely through the single gear-wheel and projecting one arm into engagement with the peripheral groove in the collar and having the other arm adapted to engage—by sliding the collar on the shaft—and separately drive each one of said plurality of gear-wheels, substantially as described.

5. In mechanism of the class described, in combination, a shaft F, a collar F′ having a peripheral groove F³ therein and mounted loose thereon, a gear-wheel G provided with an integral or rigid hub G′ terminating, at its free end, in actuating-lugs G² and mounted loose on the shaft F, a gear-wheel G³, of larger diameter than the gear-wheel G, provided with an integral or rigid hub G⁴ terminating, at its free end, in actuating-lugs G⁵ and mounted loose on the hub G′, of the gear-wheel G, a gear-wheel G⁶, of larger diameter than the gear-wheel G³, provided, at its free end, with actuating-lugs G⁷, and mounted loose on the hub G⁴ of the gear-wheel G³, a gear-wheel H having a transverse slot H′ in the web thereof, flanked by two parallel transversely-projecting bearing-lugs H² and mounted loose on the shaft F, a bell-crank lever I pivotally mounted, at its angle and by means of a pintle p, between the lugs H² and projecting one arm I′ into engagement with the groove F³ in the periphery of the collar F′, and the other arm I³ through the slot H′, the latter arm being adapted to engage and separately drive each one of said gear-wheels G G³ G⁶, and a pinion L mounted on the main driving-shaft of the machine and meshing with said gear-wheel H, substantially as described.

809,373. PORTABLE GRAIN-ELEVATOR. DAVID C. HOY and CHARLES F. LADWIG, Horn Springs, Iowa. Filed Mar. 14, 1904. Serial No. 198,116.

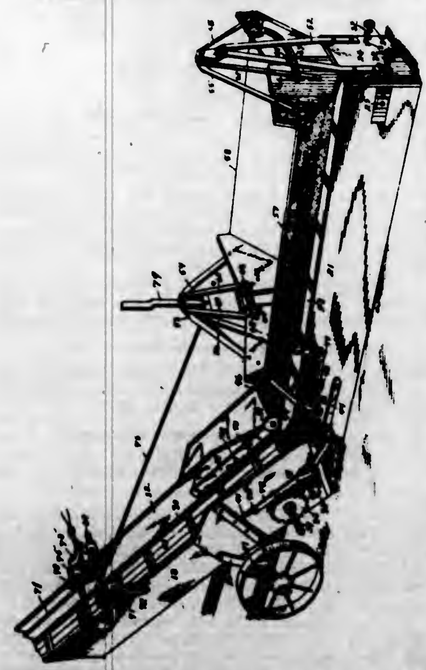

Claim.—1. In a device of the class described, the combination of a two-part pivotally-mounted hopper, means for maintaining the parts a slight distance away from each other, and means for maintaining the pivotally-mounted hopper in various positions on its pivotal movement.

2. In a device of the class described, two supports, a two-part hopper pivotally attached to said supports and the parts of the hopper capable of pivotal movement toward and away from each other.

3. In a device of the class described, two supports, a two-part hopper pivotally attached to said supports and the parts of the hopper capable of pivotal movement toward and away from each other, and means for maintaining the parts of the hopper in position relative to each other.

4. In a device of the class described, two supports, a two-part hopper pivotally attached to said supports and the parts of the hopper capable of pivotal movement toward and away from each other, and means connected with said support and with said hopper for maintaining the hopper in position relative to said support.

5. In a device of the class described, two supports, a two-part hopper pivotally attached to said supports and the parts of the hopper capable of pivotal movement toward and away from each other, means for maintaining the parts of the hopper in position relative to each other, and means connected with said support and with said hopper for maintaining the hopper in position relative to said support.

6. In a device of the class described, two supports, a two-part hopper pivotally attached to said supports and the parts of the hopper capable of pivotal movement toward and away from each other, and a conveyer mounted beneath said hopper.

7. In a device of the class described, two supports, a two-part hopper pivotally attached to said supports and the parts of the hopper capable of pivotal movement toward and away from each other, means for maintaining the parts of the hopper in position relative to each other, and a conveyer mounted beneath said hopper.

8. In a device of the class described, two supports, a two-part hopper pivotally attached to said supports and the parts of the hopper capable of pivotal movement toward and away from each other, means connected with said support and with said hopper for maintaining the hopper in position relative to said support, and a conveyer mounted beneath said hopper.

9. In a device of the class described, two supports, a two-part hopper pivotally attached to said supports and the parts of the hopper capable of pivotal movement toward and away from each other, means for maintaining the parts of the hopper in position relative to each other, means connected with said support and with said hopper for maintaining the hopper in position relative to said support, and a conveyer mounted beneath said hopper.

10. In a device of the class described, an elevating conveyer-casing, a lateral conveyer-casing hinged to the elevating conveyer-casing, a conveyer extending longitudinally of said casings and operatively mounted therein, a slidingly-mounted idler connected with the lower end of the elevating conveyer-casing designed to maintain the conveyer in position relative to the bottom of the casings, and a slidingly-mounted guide designed to force the substance to be carried by the conveyer toward the center of it.

11. In a device of the class described, an elevating conveyer-casing, a lateral conveyer-casing hinged to the elevating conveyer-casing, a conveyer extending longitudinally of said casings and operatively mounted therein, a slidingly-mounted idler connected with the lower end of the elevating conveyer-casing designed to maintain the conveyer in position relative to the bottom of the casings, and means for swinging the lateral conveyer-casing toward the elevating conveyer-casing.

12. In a device of the class described, an elevating conveyer-casing, a lateral conveyer-casing hinged to the elevating conveyer-casing, a conveyer extending longitudinally of said casings and operatively mounted therein, a slidingly-mounted idler connected with the lower end of the elevating conveyer-casing designed to maintain the conveyer in position relative to the bottom of the casings, means for swinging the lateral conveyer-casing toward the elevating conveyer-casing, and means for limiting the movement of the lateral conveyer-casing toward the elevating conveyer-casing.

13. In a device of the class described, an elevating conveyer-casing, a lateral conveyer-casing hinged to the elevating conveyer-casing, a conveyer extending longitudinally of said casings and operatively mounted therein, a slidingly-mounted idler connected with the lower end of the elevating conveyer-casing designed to maintain the conveyer in position relative to the bottom of the casings, and means attached to the lateral conveyer-casing and operatively connected with the idler for moving said idler upwardly as the lateral conveyer is swung on its hinge toward the elevating-conveyer.

14. In a device of the class described, an elevating conveyer-casing, a lateral conveyer-casing hinged to the elevating conveyer-casing, a conveyer extending longitudinally of said casings and operatively mounted therein, a wheel-bearing truck connected with the elevating conveyer-casing, means for holding the truck in position relative to the elevating conveyer-casing when the said casing is elevated.

15. In a device of the class described, an elevating conveyer-casing, a lateral conveyer-casing hinged to the elevating conveyer-casing, a conveyer extending longitudinally of said casings and operatively mounted therein, a wheel-bearing truck connected with the

elevating conveyer-casing, and means designed to be connected with a storehouse and to the elevating conveyer-casing and its extensions for raising and lowering the free end of the elevating conveyer-casing.

16. In a device of the class described, an elevating conveyer-casing, a lateral conveyer-casing hinged to the elevating conveyer-casing, a conveyer extending longitudinally of said casings and operatively mounted therein, a wheel-bearing truck connected with the elevating conveyer-casing, means for holding the truck in position relative to the elevating conveyer-casing when the said casing is elevated, and means designed to be connected with a storehouse and to the elevating conveyer-casing and its extensions for raising and lowering the free end of the elevating conveyer-casing.

17. In a device of the class described, an elevating conveyer-casing, a lateral conveyer-casing hinged to the elevating conveyer-casing, a conveyer extending longitudinally of said casings and operatively mounted therein, adjustable means connected with the end of the lateral conveyer-casing designed to maintain the conveyer in a taut position, a pivotally-mounted two-part hopper, the parts of said hopper being capable of pivotal movement relative to each other, and means for maintaining the parts of said hopper in position relative to each other.

18. In a device of the class described, an elevating conveyer-casing, a lateral conveyer-casing hinged to the elevating conveyer-casing, a conveyer extending longitudinally of said casings and operatively mounted therein, adjustable means connected with the end of the lateral conveyer-casing designed to maintain the conveyer in a taut position, a pivotally-mounted two-part hopper, the parts of said hopper being capable of pivotal movement relative to each other, means for maintaining the parts of said hopper in position relative to each other, and means for maintaining the hopper in various positions of its pivotal movement.

19. In a device of the class described, an elevating conveyer-casing, a lateral conveyer-casing hinged to the elevating conveyer-casing, a conveyer extending longitudinally of said casings and operatively mounted therein, adjustable means connected with the end of the lateral conveyer-casing designed to maintain the conveyer in a taut position, a pivotally-mounted two-part hopper, the parts of said hopper being capable of pivotal movement relative to each other, means for maintaining the parts of said hopper in position relative to each other, means for maintaining the hopper in various positions of its pivotal movement, and means for swinging the lateral conveyer-casing and the hopper toward the elevating conveyer-casing.

20. In a device of the class described, an elevating conveyer-casing, a lateral conveyer-casing hinged to the elevating conveyer-casing, a conveyer extending longitudinally of said casings and operatively mounted therein, adjustable means connected with the end of the lateral conveyer-casing designed to maintain the conveyer in a taut position, a pivotally-mounted two-part hopper, the parts of said hopper being capable of pivotal movement relative to each other, means for maintaining the parts of said hopper in position relative to each other, means for maintaining the hopper in various positions of its pivotal movement, means for swinging the lateral conveyer-casing and the hopper toward the elevating conveyer-casing, and means for limiting the movement of the hopper and the lateral conveyer-casing relative to the elevating conveyer-casing.

809,374. EARTH-ANCHOR. Ezra C. Holmes and Harry Holmes, Des Moines, Iowa. Filed Dec. 9, 1904. Serial No. 236,161.

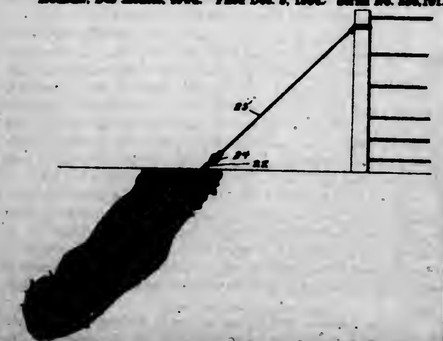

Claim.—1. In a device of the class described, a curved body portion, rounded at the ends, rods attached to the body portion at points outside of the center of the body portion.

2. In an earth-anchor, a body portion, rods having diverging ends secured to the body and outside its central portion, and means at the upper ends of said rods to which a cable or rope may be attached.

3. In a device of the class described, a curved body portion, loops on each side and at each end of the body portion, a strap passing around each end of the body portion and through the loops, each of said straps having a loop at each end of it, and rods secured to the loops in the ends of the straps having loops at their free ends.

4. In a device of the class described, a curved body portion, loops on each side and at each end of the body portion, a strap passing around each end of the body portion and through the loops, each of said straps having a loop at each end of it, rods secured to the loops in the ends of the straps having loops at their free ends, and means for securing the loops at the free ends of their rods in position relative to each other and for connecting the device to a post or other object.

5. In an anchor-post, a curved body portion, rods attached to the body portion at points outside the center of it.

6. In an anchor-post, a curved body portion, rods attached to the body portion at points outside the center of it, and means connected with said rods to which a cable or rope may be attached.

809,375. COPYING-PRESS. Ferdinand E. Jagenberg, Düsseldorf, Germany. Filed May 12, 1905. Serial No. 260,165.

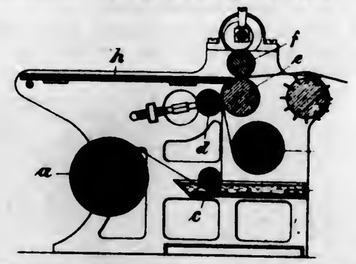

Claim.—1. A copying-press provided with means for feeding a length of copying-paper through the press, means for copying a writing on one side of the paper, and means for simultaneously gumming a reinforcing-strip along the longitudinal edge on the other side of the paper, substantially as specified.

2. A copying-press provided with a copying-cylinder, a pressure-roller above the same, a feed-table, a paper-carrying reel, and a strip-carrying reel beneath the cylinder, substantially as specified.

809,376. DESK-TABLE. Henry Johnson, Detroit, Mich., assignor to Cadillac Cabinet Company, Detroit, Mich., a Corporation of Michigan. Filed Sept. 28, 1904. Serial No. 226,694.

Claim.—1. The combination with a table comprising a top, side rails, and legs, of a drawer beneath said top having its sides adjacent to said side rails, and slides engaging complementary grooves in the sides of said drawer and the side rails of the said table, and roller-disks engaging kerfs in said slides and adapted to retain the same in engagement with said side rails when said drawer is withdrawn.

3. The combination with a table comprising a top, side rails, and legs, of a drawer arranged beneath said top adjacent to said side rails, slides engaging complementary grooves in said drawer and side rails, shoulders on said slides adapted to impinge against the forward legs to limit the outward movement of said slides, pins in said drawer engaging slots in said slides for limiting the outward movement of the former in relation to the latter, and roller-disks engaging kerfs in said slides and adapted to retain the same in engagement with said side rails when said drawer is withdrawn.

809,377. CONDUCTOR'S CASH-FARE-RECEIPT REGISTER. William W. Kay, St. Louis, Mo. Filed Nov. 12, 1903. Serial No. 181,089.

Claim.—1. In a conductor's cash-fare-receipt register, a suitable casing, means for advancing therein an original record strip or tape and a duplicate strip corresponding thereto, means for simultaneously imprinting the cash fare upon both the original and duplicate strip, and mechanism for recording the time of said imprint upon the duplicate strip only, substantially as set forth.

2. In a conductor's cash-fare-receipt register, a suitable casing, means for advancing therein an original record strip or tape and a duplicate strip corresponding thereto, means for imprinting the cash fare upon both the original and duplicate, and mechanism for imprinting the station or destination to which said fare corresponds upon said duplicate strip only, substantially as set forth.

3. In a conductor's cash-fair-receipt register, a suitable casing, means for advancing therein an original record strip or tape and a duplicate strip corresponding thereto, means for imprinting the cash fare upon both the original and duplicate, and mechanism for recording the time of said imprint and the station or destination to which said fare corresponds, upon said duplicate strip only, substantially as set forth.

4. In a conductor's cash-fare-receipt register, a suitable casing, means for advancing therein an original record strip or tape and a duplicate strip corresponding thereto, the latter being wholly confined within the casing, means for simultaneously imprinting the cash fare upon both the original and duplicate, and mechanism for recording the time of said imprint upon the duplicate strip only, the original being adapted to be withdrawn from the casing after the record has been impressed thereon, substantially as set forth.

5. A conductor's cash-fare-receipt register, comprising a suitable casing, a roll carrying two strips of paper within said casing, an ink-ribbon extending alongside of one of said strips of paper after it has been withdrawn from said roll, another ink-ribbon of limited width extending across and between said strips of paper, suitable feed-rolls between which said strips pass, a printing or stamping device for inditing upon one strip of paper only the amount of cash fare received from each passenger, means for inditing upon the other strip of paper the time of receipt of cash fare from passengers, and means for inditing the station identification-marks upon the last-mentioned strip of paper, substantially as described.

6. In a conductor's cash-fare-receipt register, a suitable casing, means for advancing therein an original and duplicate record strip or tape, the original being adapted to be progressively withdrawn from the casing, an inking-ribbon for the duplicate strip, an inking-ribbon for the original strip disposed at an angle to the first-mentioned ribbon, means for imprinting the cash fare upon both the original and duplicate strips, and mechanism for recording the time of such imprint upon the duplicate strip only, and likewise the station or destination to which said fare corresponds, substantially as set forth.

7. In a conductor's cash-fare-receipt register, a casing, means for advancing, in parallel, an original and a duplicate record-strip, cash-fare-printing wheels which are independently adjustable to set up different amounts in the printing-line, means for making a printing impression upon both of said strips from the same type in the printing-line of the cash-fare-printing wheels, time-printing wheels, for making a printing impression upon one of said strips coincidently with the recording of the amount of the cash fare received, and a time-train for driving said time-printing wheels; substantially as described.

8. In a machine of the character described, the combination with printing-wheels which are independently adjustable to set up characters representing varying amounts in the printing-line, time-printing wheels, a clock-motor for driving said time-printing wheels, means for advancing two strips past the printing-lines of both sets of printing-wheels, and an operating-handle for making a printing impression on both of said strips from said cash-fare-printing wheels and an impression upon only one of said strips from the time-printing wheels; substantially as described.

9. In a machine of the character described, the combination with printing-wheels which are independently adjustable to set up characters representing station-numbers, in the printing-line, time-printing wheels, a clock-motor for driving said time-printing wheels, means for advancing an original record-strip and a parallel duplicate strip past the printing-lines of both sets of printing-wheels, both of said strips being fed together past said printing-wheels, and an operating-handle for making a printing impression on said stripe from said printing-wheels; substantially as described.

10. In an apparatus of the character described, the combination with time-printing wheels, a clock-motor for driving the same, independently-adjutable cash-fare-printing wheels, independently-adjustable station-number-printing wheels, means for advancing an original record-strip and a duplicate strip past the printing-lines of all of said printing-wheels, both of said stripe being fed together past said printing-wheels, and means for making printing impressions on said strips from said printing-wheels; substantially as described.

11. In a conductor's register, the combination with means for supporting a record-strip, of printing mechanisms for recording cash fares on said strip, printing mechanisms for recording the time on said strip, a clock mechanism in connection with the type-wheels of said last-mentioned printing mechanism, means for making printing impressions on said record-strip, and a printing-wheel for printing the numbers of the stations between which the cash fare recorded on the strip is applicable, the operation of said station-printing wheel operating a line-spacing mechanism for feeding the record-strip; substantially as described.

12. In a conductor's cash-fare register, the combination with printing-wheels, means for operating said printing-wheels to set up the amount of fare received in the printing-line, printing-wheels located adjacent to said first-mentioned printing-wheels, clock mechanism for driving the last-mentioned printing-wheels, a platen, means for initially moving said platen to make a printing impression, and means which are effective after said initial movement, for moving the platen to and from contact with the printing-type; substantially as described.

13. In a conductor's register, the combination with two sets of printing-wheels, one of said sets being driven by a clock mechanism, and the other manually adjusted to indicate the amount of fare received, means for supporting a record-strip, a printing-platen, a cam for operating said platen, and means whereby the initial rotation of said cam will not effect a printing impression, said cam being caused to complete its rotative movement independently of the control of the operator so as to instantly make the printing impression and raise the platen from the printing-type after the printing impression is made; substantially as described.

14. In a conductor's register, the combination with printing-type, of a platen having a reciprocatory movement, a cam for vibrating said platen, a drive-wheel for said cam, and a pawl-and-ratchet connection cooperating with said drive-wheel whereby a portion of the revolution of the cam is independent of the control of the operator; substantially as described.

15. In a conductor's register, the combination with printing-type, of a reciprocatory platen for making the printing impression from said type, a cam for reciprocating said platen, a gear carrying said cam, the second gear in mesh with the first-mentioned gear, an operating-handle, and a pawl-and-ratchet mechanism interposed between the operating-handle and said second gear; substantially as described.

16. In a conductor's register, the combination with printing-type, of a platen for making a printing impression therefrom, a cam for operating said platen, a spring connected to said cam for holding the platen in an elevated position, and a ratchet-and-pawl mechan-

lem for partially rotating said cam and placing said spring under tension so that the spring will make a printing impression; substantially as described.

17. In a conductor's register, the combination with printing-type, of a reciprocatory platen, a cam for operating said platen, a crank-arm connected to said cam, a spring connected to said crank-arm, and a ratchet-and-pawl mechanism for driving said cam and crank-arm around until the crank-arm passes the position of dead-centers whereby the power stored in said spring will act to move the crank-arm and cam to complete the rotative movement thereof and effect an instantaneous printing impression; substantially as described.

18. In a conductor's register, the combination with printing-type, of a platen-actuating mechanism, a paper-feed roll, means for locking the paper-feed roll after a limited peripheral distance has been traversed, and means operated by the platen-actuating mechanism for releasing the paper-feed roll; substantially as described.

19. In a conductor's register, the combination with printing-type, a platen, platen-actuating mechanism comprising a gear with a projection thereon, a paper-feed roll, and a lock coöperating with said paper-feed roll, said lock having a tailpiece which is located in the path of said projection when the feed-roll is locked, whereby the operation of the platen-actuating mechanism will operate said lock to release the paper-feed roll; substantially as described.

20. In a conductor's register, the combination of a paper-feed roll having a friction-pulley at one end, locking projections adjacent said friction-pulley, a locking-plate in engagement with said friction-pulley and provided with a complementary locking projection designed to coöperate with the locking projections on the paper-feed roll, and means for moving said locking-plate out of locking position; substantially as described.

21. In a conductor's register, the combination of a paper-feed roll, means for supporting a record-strip, a friction-pulley on the end of said paper-feed roll, locking projections also carried by said paper-feed roll, a locking-plate in frictional engagement with said pulley, said plate having a complementary locking projection to arrest the movement of the feed-roll, printing mechanism for making the printing impression on the record-strip, and means whereby upon the actuation of said printing mechanism said locking-plate is operated to release the paper-feed roll; substantially as described.

22. In a conductor's register, the combination of means for supporting a record-strip, of a printing-wheel for printing the numbers of stations on said record-strip, a shaft upon which said printing-wheel is mounted, a universal coupling for supporting one end of said shaft, and an operating-handle on the other end of said shaft for moving the same to cause its carried printing-wheel to make a printing impression on the record-strip; substantially as described.

23. In a conductor's register, the combination with nested indicator-wheels, a shaft capable of longitudinal and rotary motion, said shaft having a projection designed to engage and successively operate the said indicator-wheels, printing-wheels mounted on said shaft, and a complementary projection on said shaft for engaging and operating the printing-wheels corresponding to the position occupied by the indicator-wheels; substantially as described.

24. In a conductor's register, the combination with nested cup-shaped indicator-wheels, of spring-pressed devices for holding them in adjusted positions, a shaft capable of longitudinal and rotary movement and provided with a projection for separately operating said disks, printing-wheels mounted on said shaft, and a complementary projection on the shaft for engaging and operating the printing-wheels to correspond with the positions of their respective disks; substantially as described

25. In a conductor's register, the combination with two sets of printing-type, one for impressing the cash fares on the record-strip and the other for impressing the time upon said record-strip, a platen for making a printing impression from said type, an independently-operable printing-wheel for printing the numbers of the stations between which the cash fare recorded is applicable, a receiving-spool for the record-strip, and means operated by the last-mentioned printing mechanism for driving said receiving-spool to wind up the record-strip; substantially as described.

26. In a conductor's register, the combination with cash-fare-printing wheels, time-printing wheels, a platen for making a printing impression on said wheels, means for supporting a permanent record-strip, means for printing the numbers of the stations on said permanent record-strip between which stations the cash fare paid is applicable, means operated by the last-mentioned printing mechanism for winding up the record-strip, means for supporting a second record-strip which is issued from the machine, a paper-feed roll therefor, and means for locking said paper-feed roll against movement after a predetermined length of said record-strip is paid out by the machine; substantially as described.

809,378. FARE-REGISTER. WILLIAM W. KAY, St. Louis, Mo. Filed Apr. 17, 1905. Serial No. 256,080.

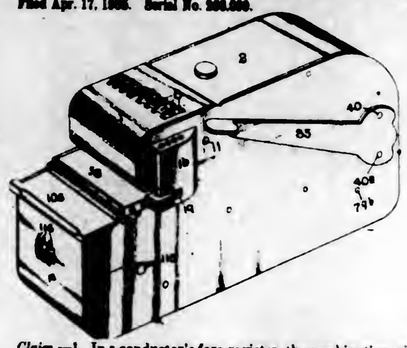

Claim.—1. In a conductor's fare-register, the combination with a totalizer, means for registering in said totalizer and recording on a strip of paper the number of tickets or cash-fare receipts canceled by the machine, canceling devices operable in connection with said registering and recording means, time-printing wheels, and means for impressing the time on the record-strip in connection with each ticket or cash-fare receipt registered, recorded and canceled; substantially as described.

2. In a conductor's fare-register, the combination with means for registering and recording the number of tickets or cash-fare receipts lifted, time-printing wheels, means for impressing the time on the record-strip in connection with the registration and recordation of each ticket or cash-fare receipt lifted, station-number-printing wheels, and means for making a printing impression upon said record-strip from said station-number-printing wheels; substantially as described.

3. In a conductor's fare-register, the combination with means for advancing a record-strip, of means for advancing a hat-check strip, station-number-printing wheels, register-printing wheels, time-printing wheels, and means for impressing the station-numbers and register-numbers on said stripe, said means impressing the time on the record-strip only; substantially as described.

4. In a conductor's fare-register, the combination with each-fare-printing wheels, of time-printing wheels, means for advancing a record-strip past said cash-fare-printing wheels and said time-printing wheels, means for impressing the time on the record-strip in connection with each cash-fare item recorded, and independent mechanism for impressing the cash-fare-printing wheels on said record-strip; substantially as described.

5. In a conductor's fare-register, the combination with means for supporting a record-strip, printing mechanism for recording cash fares on said strip, independent printing mechanism for recording the time on said strip, a time-train for driving the type-wheels of said last-mentioned printing mechanism, and independently-operable means for making printing impressions from said wheels on said record-strip; substantially as described.

6. In a conductor's fare-register, the combination with printing mechanism for recording and registering tickets and cash-fare receipts collected by the conductor, means for feeding a record-strip, a clock mechanism, printing-wheels driven by said clock mechanism, and means whereby said clock-driven printing-wheels are caused to make a printing impression; substantially as described.

7. In a conductor's fare-register, the combination with printing mechanism for recording and registering the serial numbers of tickets and cash-fare receipts collected by the conductor, means for feeding a record-strip, a clock mechanism, printing-wheels driven by said clock mechanism, banks of independently-rotatable station-number-printing wheels, and means whereby said clock-driven printing-wheels and said station-number-printing wheels are caused to make a printing impression; substantially as described.

8. In a conductor's fare-register, the combination with register-printing wheels, station-number-printing wheels, time-printing wheels, and cash-fare-printing wheels, of means for feeding a record-strip, and independently-operable means for making a printing impression from the cash-fare-printing wheels upon said record-strip; substantially as described.

9. In a conductor's fare-register, the combination with a register-printing mechanism, a cash-fare-receipt-printing mechanism, and a time-printing mechanism, of means for supporting a record-strip, and a hat-check strip, one of which is retained in the register, means for issuing the other of said stripe from the register, an operating-handle, and means for effecting a printing impression upon said stripe from said handle and moving both of said stripe together past the printing-wheels; substantially as described.

10. In a conductor's fare-register, the combination with ticket-canceling devices, of a printing register and recorder operating in conjunction therewith, means for effecting a printing impression from said register to make said record coincidently with the cancellation of a ticket, time-printing wheels, and means for feeding a record-strip past said time-printing wheels and said register-printing wheels; substantially as described.

11. In a conductor's fare-register, the combination with ticket-canceling devices, of register-printing wheels, station-number-printing wheels and time-printing wheels, means for feeding a record-strip past said printing-wheels, and means for making a printing impression from said printing-wheels upon said record-strip; substantially as described.

12. In a conductor's fare-register, the combination with ticket-canceling devices, of register-printing wheels, time-printing wheels, and cash-fare-printing wheels, means for feeding a record-strip past said printing-wheels, means for impressing the register and time printing wheels upon said record-strip, and independent means for impressing the cash-fare-printing wheels upon said record-strip; substantially as described.

13. In a conductor's fare-register, the combination with means for recording cash fares, of clock mechanism, means operable independently of the said cash-fare-recording mechanism for impressing the time on the record-strip in connection with each cash-fare item recorded, and printing-wheels for printing the numbers of the stations between which the cash-fare item recorded on said strip is applicable; substantially as described.

14. In a conductor's fare-register, the combination with means for advancing the record-strip, cash-fare-printing wheels for making a record of the cash fare received upon said strip and upon another strip, which other strip is issued from the machine, register-printing wheels, station-number-printing wheels, time-printing wheels, and means for making a printing impression from said last three mentioned printing-wheels upon said record-strip; substantially as described.

15. In a conductor's fare-register, the combination with a cash-fare-printing wheels for making a record of cash fares received upon two stripe of paper, one of which is issued from the machine and the other of which is retained in the machine to make a permanent record of the transaction, register-printing wheels, station-number-printing wheels, time-printing wheels, means for making a printing impression from said last-mentioned printing-wheels upon said permanent record-strip but not upon the cash-fare receipt issued from the machine, and a spool for supporting a roll of hat-checks, upon which hat-checks the station-numbers and register-number are printed by the said station-number-printing wheels, and the said register-printing wheels; substantially as described.

16. In a conductor's fare-register, the combination with ticket or cash-fare-receipt canceling devices, means for marking said tickets or cash-fare receipts with numbers to identify the order of their cancellation, time-printing wheels, a time-train for driving said printing wheels, and means for operating said canceling and marking devices coincidently with making a printing impression with said time-printing wheels; substantially as described.

17. In a conductor's fare-register, the combination with ticket or cash-fare-receipt canceling devices, means for marking said tickets or cash-fare receipts with numbers to identify the order of their cancellation, means for recording the time of such cancellation, and means for marking the station-number in connection with the time of cancellation; substantially as described.

18. In a conductor's fare-register, the combination with ticket-canceling devices, of register-printing wheels, means for effecting a printing impression from said wheels upon said ticket and also upon a hat-check, coincidently with the operation of said canceling devices, means for feeding the hat-check from a roll past the register-printing wheels, and means for automatically setting said register-printing wheels after each printing impression; substantially as described.

19. In a conductor's fare-register, the combination with ticket and cash-fare-receipt canceling devices, means for marking said tickets or cash-fare receipts which are canceled with identifying-numbers, means for similarly marking a check to be issued for the ticket or cash-fare receipt canceled, and means for recording the time of issuance of said check; substantially as described.

20. In a conductor's fare-register, the combination with cash-fare-receipt-printing mechanism for printing the amount of a cash-fare receipt on a receipt to be issued and canceled, said printing mechanism also printing said amount on a record retained in the machine, means for canceling said receipt, and means for recording the time of such cancellation; substantially as described.

21. In a conductor's fare-register, the combination with cash-fare-receipt-printing mechanism for printing the amount of a cash-fare receipt on a receipt to be issued and canceled, said printing mechanism also printing said amount on a record retained in the machine, means for canceling said receipt, means for recording the time of such cancellation, and means for recording the station-numbers between which the cash fare is applicable; substantially as described.

22. In a conductor's fare-register, the combination with cash-fare-receipt-printing mechanism for printing the amount of a cash-fare receipt on a receipt to be issued and canceled, said printing mechanism also printing said amount on a record retained in the machine, means for canceling said receipt, means for recording the time of such cancellation, and means for recording the station-numbers between which the cash fare is applicable, said means also printing said station-numbers on a check to be issued for said canceled receipt; substantially as described.

809,379. ADJUSTABLE SUPPORT FOR TELEPHONES. HERBERT L. KNIGHT and BURTON W. SWEET, Cleveland, Ohio, assignors to The Williams-Abbott Electric Company, Cleveland, Ohio, a Corporation of Ohio. Filed Apr. 15, 1905. Serial No. 256,774.

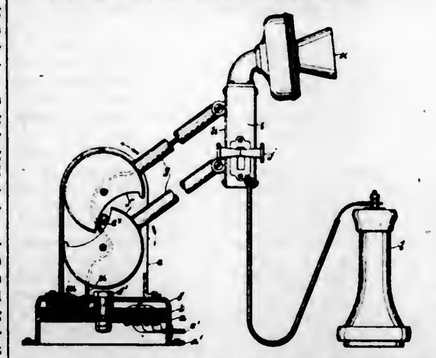

Claim.—1. In an adjustable support for a telephone, the combination with friction-blocks pivotally mounted in a vertical plane, means for opposing the movement thereof upon their pivotal mountings, supporting-arms extending from said friction-blocks, and a telephone-support carried by said supporting-arms in any desired position of vertical adjustment, substantially as set forth.

2. In an adjustable support for a telephone, the combination with friction-blocks pivotally mounted in a vertical plane, means for opposing the movement thereof upon their pivotal mountings, supporting-arms extending from said friction-blocks, a telephone-support carried by said supporting-arms in any desired position of vertical adjustment, a base portion, and a horizontally-adjustable mounting for the friction-blocks, whereby a supported telephone may be actuated into the desired positions of vertical and horizontal adjustment, substantially as set forth.

3. In an adjustable support for telephones, the combination with a stationary base portion, of a rotatable base portion pivotally mounted thereon, pivotally-mounted friction-blocks and means for opposing their rotation in vertical planes, supporting-arms carried by said friction-blocks, and a supporting plate or bracket mounted upon said arms for carrying the telephone, whereby said instrument is made adjustable in vertical and horizontal positions and is retained in place, substantially as set forth.

4. In an adjustable supporting device for telephones, the combination with rotatably-mounted friction-blocks, of side pieces bearing against the same and normally retaining said blocks against rotation, clamping means associated with said side pieces, parallel arms extending from said friction-blocks, and a bracket or supporting-plate for the telephone pivotally secured to the outer extremities

of said supporting-arms whereon the telephone is adapted to be

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between the retainers, and devices actuated by the ejector for posi-

sure-controlling device for admitting a fluid under pressure into the

of said supporting-arms wherein the telephone is adapted to be mounted, substantially as set forth.

5. The combination in an adjustable supporting device with a stationary base portion, of a pivotally-mounted carrying part thereon, two coacting friction-blocks pivotally supported upon the carrying part, friction-surfaces engaging the same, clamping means for forcibly engaging the latter with the friction-blocks, parallel supporting-arms extending from said friction-blocks, and a bracket or supporting-plate for a telephone instrument pivotally connected at the extremities of said supporting-arms, substantially as set forth.

809,380. **BARREL-OPENER.** JAMES S. KNIGHT and MYRON B. RUSS, Kansas City, Mo. Filed May 20, 1905. Serial No. 261,949.

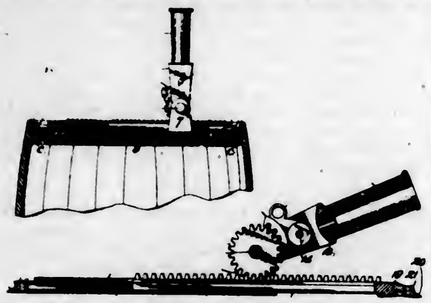

Claim.—1. A barrel-opener, comprising a pair of members fitting slidingly together and terminating at their outer ends in heads having wedges at their outer margins, a lever pivotally supported from one of said members, and means whereby pivotal movement of said lever in one direction shall slide said members and thereby increase the distance between their heads.

2. A barrel-opener, comprising a pair of members fitting slidingly together and terminating at their outer ends in heads having wedges at their outer margins and shoulders inward of and above said wedges, a lever pivotally supported from one of said members, and means whereby pivotal movement of said lever in one direction shall slide said members and thereby increase the distance between their heads.

3. A barrel-opener, comprising a pair of members fitting slidingly together and terminating at their outer ends in segmental heads having wedges at their outer margins, a lever pivotally supported from one of said members, a gravity-dog carried by said lever, and means actuated by said dog as the lever is swung forward to slide said members and increase the distance between their heads.

4. A barrel-opener, comprising a pair of members fitting slidingly together and terminating at their outer ends in heads having wedges at their outer margins, one of said members being provided with cog-teeth, a cog-wheel engaging said teeth and having rotary movement only, a lever pivoted to rotate around the axis of the wheel, and a gravity-dog carried by said lever and adapted as the latter is swung forward to engage and rotate said wheel.

809,381. **SOLDERING-FLUX.** OSCAR J. LANIGAN, Chicago, Ill. Filed Mar. 3, 1903. Serial No. 146,269.

Claim.—A soldering-flux comprising red oil, resin and ammoniated water, substantially as described.

809,382. **WINDOW-LOCKING MEANS.** THOMAS LEE, Horse City, Ohio. Filed Aug. 9, 1905. Serial No. 273,226.

Claim.—1. In combination with a window, an upper window-locking catch consisting of a bolt, a keeper for it, a weighted lever to hold this bolt normally in locking engagement with its keeper, a lower window-locking catch, a link connecting it with the weighted lever of the upper catch and means to manipulate this latter to unlock it and simultaneously also the lower catch.

2. In combination with a window, a locking-bolt at its upper edge, a keeper for it, a weighted lever to hold it normally in locking engagement with its keeper, a weighted hook at the lower edge of the window, a keeper for it, a link to connect this hook with the weighted lever of the upper catch and means to manipulate this latter.

809,382.

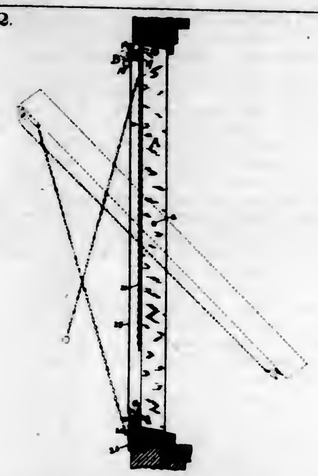

809,383. **METHOD OF CLEANSING MANUFACTURED GASES.** LEON P. LOWE, San Francisco, Cal. Filed June 17, 1903. Serial No. 161,795.

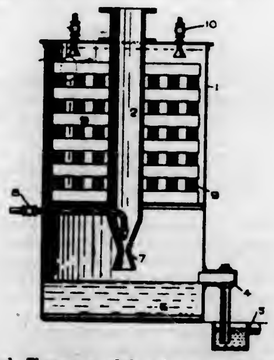

Claim.—1. The process of cleansing gas which consists in subjecting it to compression and frictional resistance and simultaneously saturating it with steam, thereby greatly increasing the several masses of the impurities, and projecting the mixture of gas and impurities downward toward the surface of a continuous body of water with sufficient velocity to throw said impurities into contact with the water, the lighter gas escaping said contact, and withdrawing the purified gas, substantially as described.

2. The process of cleansing gas which consists in subjecting it to compression and frictional resistance and simultaneously saturating it with steam, thereby greatly increasing the several masses of the impurities, and projecting the mixture of gas and impurities downward toward the surface of a continuous body of water with sufficient velocity to throw said impurities into contact with the water, the lighter gas escaping said contact, withdrawing the purified gas, and removing the steam, substantially as described.

809,384. **CIGAR-MACHINE.** WILLIAM S. LOCKETT, East Orange, N. J., assignor to International Cigar Machinery Company, New York, N. Y., a Corporation of New Jersey. Filed Apr. 14, 1904. Serial No. 203,196.

Claim.—1. In a cigar-machine, the combination with a carrier adapted to carry bunches or cigars, said carriers having sets of retainers, of ejectors one for each set, the ejector for each set being located between the retainers of that set, and means for positively swinging the sets of retainers to open and close them.

2. In a cigar-machine, the combination with a carrier having a set of retainers for carrying bunches or cigars, of an ejector located between the retainers, and devices actuated by the ejector for positively opening and closing the retainers.

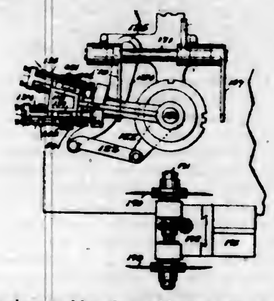

3. In a cigar-machine, the combination with a carrier adapted to carry bunches or cigars, said carriers having two sets of retainers, of two ejectors, one for each set, the ejector for each set being located between the retainers of that set, and devices operated by the ejectors for positively opening and closing the retainers.

4. In a cigar-machine, the combination with a carrier having two sets of pivoted retaining-fingers for carrying bunches or cigars, two ejectors one for each set of fingers, and means actuated by the ejectors for positively opening and closing the fingers.

5. In a cigar-machine, the combination with a carrier having retainers adapted to carry bunches or cigars, of an ejector located between the retainers, operating means for the ejector, means carried by the ejector and operating on the interior of the retainers to open the same, and means carried by the ejector and operating on the exterior of the retainers to close the same.

6. In a cigar-machine, the combination with a carrier having retainers for carrying bunches or cigars, of an ejector mounted between the retainers, operating means for the ejector, a cross-bar mounted on the ejector and operating on the interior of the retainers to open the same, and a cross-bar mounted on the ejector and operating on the exterior of the retainers to close the same.

7. In a cigar-machine, the combination with a carrier adapted to carry bunches or cigars, said carrier having two sets of retainers, of two ejectors, one for each set, the ejector for each set being mounted between the retainers of that set, and positively-operated means actuated by the ejectors for closing the retainers.

8. In a cigar-machine, the combination with a carrier adapted to carry bunches or cigars, said carrier having a set of retainers, an ejector mounted between the retainers, means for opening the retainers, and a cross-bar carried by the ejector and operating on the exterior of the ejector to close the same.

9. In a cigar-machine, the combination with a carrier adapted to carry bunches or cigars, said carrier having two sets of retainers, two ejectors, one for each set of retainers, the ejector for each set being mounted between the retainers of that set, cross-bars carried by the ejectors and operating on the interior of the retainers, cross-bars carried by the ejectors and operating on the exterior of the retainers, and cam-surfaces on the exterior of the retainers with which said cross-bars coöperate.

10. In a cigar-machine, the combination with a movable bunch-carrier, a cutter in the path of the carrier, and coöperating yielding cutting-plates mounted on the carrier, substantially as described.

11. In a cigar-machine, the combination with a movable bunch-carrier, of a rotating cutter in the path of movement of the carrier, and coöperating yielding cutting-plates mounted on the carrier, substantially as described.

12. In a cigar-machine, the combination with a movable bunch-carrier, of a cutter in the path of movement of the carrier, and recessed spring-plates mounted on each end of the carrier and coöperating with the cutter, substantially as described.

13. In a cigar-machine, the combination with a movable bunch-carrier, of a rotating cutter in the path of movement of the carrier, and recessed spring-plates mounted on each end of the carrier and coöperating with the cutter, substantially as described.

809,385. **APPARATUS FOR DISCHARGING LIQUIDS IN VACUO.** JARARD W. LETTON, Portsmouth, Va. Filed Oct. 28, 1904. Serial No. 230,263.

Claim.—1. A vacuum-trap comprising a casing having a pressure-controlling device for admitting a fluid under pressure into the casing a vacuum-controlling device for exhausting the casing of pressure, and mechanism controlling the said devices to alternately connect the casing with a pressure-supply and a vacuum apparatus.

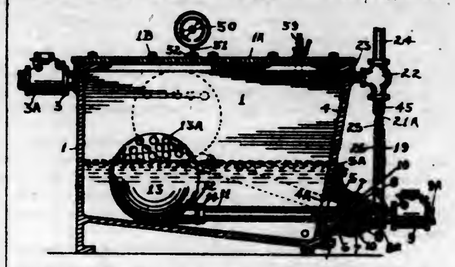

2. A vacuum-trap comprising a casing having an inlet and a discharge, a pressure-controlling device for admitting a fluid under pressure into the said casing, a vacuum-controlling device for exhausting the casing of pressure, and a float-controlled mechanism actuated by the rising and falling of the liquid in the said casing and controlling the said devices.

3. A vacuum-trap comprising a casing having an inlet and a discharge, a pressure-controlling device for admitting a fluid under pressure into the said casing, a vacuum-controlling device for exhausting the casing of pressure, and a float-controlled mechanism actuated by the rising and falling of the liquid in the said casing and controlling the safety devices, to alternately connect the said casing with pressure-supply and a vacuum apparatus.

4. In an apparatus of the class described comprising a liquid-receptacle, means for connecting the said receptacle to a vacuum, valve means forming an outlet for the receptacle to the atmosphere, means for alternately closing the said vacuum connection and the outlet, and exterior controlling means for governing the period of opening and closing to the vacuum source and the outlet to the atmosphere; as described.

5. In an apparatus for receiving and discharging liquids from separators and the like comprising a receptacle having a normally open connection to the vacuum and closed to the atmosphere, means for closing the vacuum connection when discharging to the atmosphere and in a reverse order, and float-actuated exterior means connected to the vacuum source and the atmosphere for controlling the said opening and closing of the receptacle to the vacuum and the exterior thereof; as described.

6. In an apparatus of the class described, of a closed receptacle having a normally open inlet connection to a vacuum and liquid source, a normally closed outlet connection to the atmosphere, automatic means for closing the vacuum and liquid connection when the said atmospheric connection is open, means for closing the said connections in a reverse order, means for closing one connection before opening the other, exterior-disposed vacuum and atmospheric-pressure communicating means actuated by the float for controlling the receptacle connections, and pressure means for forcing the receptacle contents to the atmosphere; as described.

7. In an apparatus of the class described comprising a closed vacuous receptacle, means for receiving liquids from oil separators and extractors under a vacuum from and discharging the same to the atmosphere, a vacuum-communicating connection to the vacuum source and the liquid, a discharge connection normally closed to the receptacle interior, float-controlled valve means connected to the vacuous-receptacle interior and the atmosphere and governing the said connections, means for opening the receptacle interior to the vacuum during the filling thereof, means for admitting atmospheric pressure to the said receptacle when discharging, and exterior means for causing a discharge of the receptacle independent of the float; as described.

8. In an apparatus of the class described comprising a closed liquid-receptacle having connection to a source of vacuum and the liquid, an outlet connection normally closed by atmospheric pressure, a liquid-level-actuated exteriorly-disposed valve means connected to the vacuum and the atmosphere, means controlled by the said valve for excluding the atmosphere when the receptacle is filling with the liquid, means for admitting the atmosphere when the receptacle is discharging, and automatic means controlled by the float for closing one receptacle connection before another is open; as described.

9. In an apparatus of the class described comprising a vacuous

receptacle having a normally open vacuum-communicating liquid-inlet, an outlet to the exterior of the receptacle normally closed by atmospheric pressure, equalizing means connected to the vacuum source and the receptacle interior, means controlled by the said equalizing means for maintaining a vacuum when the receptacle is filling with the liquid, means controlled by the equalizing means to close the vacuum connection and admit atmospheric air when the receptacle is discharging to the exterior of the said receptacle, liquid-level controlling means for automatically operating the equalizing means and means exterior to the receptacle for actuating the equalizing means independent of the liquid-level in the receptacle; as described.

10. In an apparatus for discharging liquids *in vacuo*, comprising a closed receptacle having an outlet connection and a normally open vacuum-communicating inlet-valve, a float-controlled snifting-valve normally open to the vacuum, means for simultaneously closing the said snifting-valve to the vacuum and opening thereof to the atmosphere; as described.

11 In an apparatus for discharging liquids under a vacuum comprising a vacuum-chamber having inlet and outlet valves normally closed by atmospheric pressure, an exteriorly-disposed snifting-valve having a normal communication with the said chamber and the vacuum source, float controlling means for simultaneously closing the said snifting-valve to the vacuum connection and opening the same to the atmosphere when discharging the chamber, and means for delaying the full opening of the snifting-valve; as described.

12. In an apparatus for discharging liquids *in vacuo* comprising a closed vacuous receptacle, a vacuum-connected inlet-valve normally discharging into the said vacuous receptacle, a discharge-valve normally closed by atmospheric pressure, a float-actuated controlling-valve normally in communication with the vacuum and the receptacle interior, means for simultaneously closing the said controlling-valve to the vacuum and the receptacle and admitting the atmosphere thereto during a discharge of the liquid, and means for forcing the discharge of the receptacle by pressure; as described.

13. In an apparatus for collecting and discharging liquids under a vacuum comprising a vacuous receiving-chamber having a liquid-inlet valve normally open to the said chamber and the vacuum source, means for closing the said inlet-valve when air is admitted to the chamber, a periodic-discharge valve normally closed to the interior of the chamber by the atmosphere, a float-actuated controlling-valve connected to the vacuum source and the interior of the chamber, means for causing the said controlling-valve to remain open to the vacuum and the chamber during the filling thereof, and means for closing the controlling-valve to the vacuum and admitting air to the chamber during its discharge; as described.

14. In an apparatus for discharging accumulated liquids under a vacuum the combination with a normally vacuous receptacle, a vacuum-connected normally open inlet-valve, a normally closed receptacle discharge-valve, a float-controlled normally open angle-valve for connection to the vacuum source and the receptacle interior, means for simultaneously closing the said angle-valve to the vacuum and the said receptacle interior and admitting the atmosphere thereto, means for closing the said inlet-valve to the vacuum and liquid by atmospheric pressure, and means for opening the said discharge-valve by the weight of the liquid for emptying the receptacle when the atmosphere is admitted; as described.

15. In an apparatus for discharging liquids under a vacuum, the combination with a vacuous-closed receptacle, a vacuum-connected normally open inlet-valve, a normally closed discharge-valve, an angle controlling snifting-valve connected to and normally open to the vacuum and the interior of the receptacle, means for simultaneously closing the said controlling-valve and admitting the atmosphere to the receptacle, float means for regulating the opening and closing of the controlling-valve, and means for closing the vacuum connections of the receptacle by automatic means when discharging; as described.

16. In an apparatus for automatically discharging liquids under a vacuum, comprising a closed chamber having a vacuum-connected liquid-inlet valve, a normally closed outlet-valve, an opening at one end of the receptacle, a flanged exteriorly-disposed plug-casing having an inward divergent cavity, a plug-seat centrally located in the said cavity, a float-actuated apertured plug normally oscillating in the seat during changes in the liquid-level in the receptacle, the said plug adapted to rest upon the seat partially on its circumference, a discharge-orifice at the smaller end of the divergent cavity for the said outlet-valve, and means for keeping the liquid in the receptacle in contact with the outlet-valve until the opening thereof; as described.

17 In an apparatus for discharging liquids in a vacuum, the combination with a closed vacuum-chamber having an inlet and outlet valve connection, an aperture in the said chamber, a plug-casing exteriorly fixed over the said aperture, the said casing having an inwardly-divergent cavity, a raised seat therein, a float-controlled perforated cylindrical plug adapted for rotary movement in the raised seat, means for discharging the chamber through the plug to the outlet-valve; as described.

18. In an apparatus for discharging liquids in a vacuum, the combination comprising a vacuous receptacle having an inlet connected to the source of liquid and the vacuum, a discharge-valve, a plug-casing disposed upon the exterior of the receptacle, a transversely-disposed partly-cylindrical seat inclosed therein, a cylindrical plug in the seat having a diametrical perforation therethrough, an interiorly-divergent cavity within the said plug-casing on both sides of the plug-seat to the interior of the receptacle and the outlet-valve, a float-connected stem secured in the said plug perforation, means for causing a semirotary movement of the plug by the said stem when actuated by the liquid-level in the receptacle, means for effecting a discharge of the liquid through the stem to the outlet-valve and the atmosphere, and means for opening the said outlet-valve by the hydrostatic head of the liquid when a plenum is established in the receptacle; as described.

19. In an apparatus for discharging liquids under a vacuum, the combination with a vacuous liquid-receiving chamber having an inlet and outlet connection, an angle air and vacuum controlling valve, a detachable cover on the said chamber, an exteriorly-disposed plug-casing connected to the said chamber and outlet-valve, a rotary perforated plug seated centrally within the casing, a hollow discharge-stem fitted at one end to the said plug perforation, a perforated float connected to the other end of the stem, means for discharging the chamber and float through the perforations thereof to the outlet, means for maintaining a channel-way for the liquid to the outlet-valve at any inclination of the said float-stem, means for breaking the vacuum in the chamber during a discharge thereof, and means for automatically restoring the vacuous condition in the chamber after the said discharge; as described.

20. In an apparatus for discharging liquids under a vacuum, the combination with a vacuous receptacle having inlet and outlet connection, an exteriorly-connected flanged partly-cylindrical casing upon the said receptacle, a rotary plug provided with an axial spindle on both sides thereof, centrally located in the said casing, the said plug having a diametrical aperture therethrough, a hollow stem secured in the said aperture, an angular perforated float connected to one end of the stem, an angle vacuum and air valve controlling the passage from the vacuum and the interior of the receptacle, a lever on one of the said plug-spindles, connecting means from the said lever for controlling the said angle-valve by the float; as described.

21. In an apparatus for receiving and discharging liquids under a vacuum, the combination with a normally closed vacuous receptacle having inlet and outlet connection, an outside connected flanged plug-casing having the said outlet-valve thereon, a rotary apertured spindle-provided plug centrally disposed within the said casing, a hollow stem fixed at one end to the plug, a hollow liquid-receiving discharge-float attached to the said stem at a tangent thereof, the said float having perforations placed at an angle and adapted to assume an approximate horizontal position when elevated, an angle-valve connected to the source of vacuum and the interior of the receptacle, an arm on one of the plug-spindles, means for operating the angle-valve by the said arm, and a wheel on the other plug-spindle for manually raising and lowering the float from the exterior of the receptacle; as described.

22. In an apparatus for discharging liquids in a vacuum, the combination with a collecting vacuous chamber having inlet and outlet valves, an outside connected flanged plug-casing, a rotary movable perforated plug having axial spindles on both ends thereof working air-tight in the casing, a series of compression-nut stuffing-boxes on the casing for the said spindles, an angular perforated hollow float, a hollow discharging-stem connected to the said float and plug, a lever on one of the said plug-spindles, an angle-valve controlling the opening to the source of vacuum and the interior of the chamber, an operating-stem for opening and closing the angle-valve connections, a connecting-rod having a perforated offset end at right angles to the rod, means for yieldably connecting the said angle-valve spindle to the said rod and through the offset portion, means for opening the said angle-valve to the vacuum by the said yieldable connection and the connecting-rod, a ratchet-toothed hand-wheel on one of the plug-spindles, a spring-pressed pawl engaging with the teeth of the said wheel, means for operating the float from the exterior of the chamber, means for holding the float and stem with the attached mechanism at any point by the said wheel and pawl, and means for disengaging the float and stem by the pawl and spring thereof through the buoyancy of the inclosed float; as described.

23. In an apparatus for discharging liquids *in vacuo*, the combination with a vacuous receptacle having inlet and outlet connection, an exteriorly-disposed plug-casing attached thereto, a rotary perforated plug having spindles thereon and seated in the said casing, a stem connected at one of its ends to the plug, a hollow float having angular perforations connected to the other end of the stem, an angle combined air-inlet and vacuum cut-off valve for the said receptacle, a partly-threaded working spindle for the angle-valve, an operating-lever on one of the plug-spindles, a connecting-rod having an apertured bracket pivoted to the said lever and resiliently connected to the angle-valve, a spring encompassing the said spindle of the angle-valve below the said bracket, means for opening the receptacle interior to the vacuum against the pressure of the atmosphere by the said spring and connecting-rod, a series of adjusting and locking nuts for regulating the spring compression, a buffer-spring encircling the said angle-valve spindle above the connecting-rod bracket, and means for cushioning the impact of the float upon the bottom of the receptacle by the said buffer-spring; as described.

24. In an apparatus for receiving and discharging liquids *in vacuo*, the combination with a vacuous receptacle having inlet and outlet connection for the liquid, an angle snifting-valve comprising a valve-casing provided with a connection to the vacuum and a connection to the interior of the receptacle, a bonnet having an inner hollow cylindrical portion and an outer rounded end perforated air-inlet portion, a partly-threaded stem for float-operating the valve mechanism, a beveled valve-seat, a bevel flanged puppet-valve screw-connected to the inner part of the valve-stem, a threaded sleeve forming a part of the said puppet-valve, an expansible piston movably closing the bore of the hollow cylindrical bonnet portion when the puppet-valve is unseated for communication with the vacuum, a fixed and movable collar on the said puppet-valve sleeve, screw-and-nut means for compressing the collars to expand the piston to fill the bore of the cylindrical or sleeved bonnet portion, connecting-rod-actuated spring means for simultaneously unseating the said puppet-valve against atmospheric pressure and closing the said cylindrical bonnet portion to exclude the atmosphere as described.

25. In an apparatus for discharging liquids *in vacuo*, the combination of a vacuous receptacle having inlet and outlet connection, an angle controlling-valve comprising a valve-casing having connection to the vacuum and the interior of the receptacle at right angles to each other, a partly-threaded valve-stem, a beveled valve-seat in the said valve-casing, a convex-flange winged puppet-valve opening to the said receptacle interior and the vacuum, a threaded sleeve portion on the said puppet-valve, a bearing-collar on the sleeve, an expansible perforated piston encircling the valve-stem, a nut-adjusted collar on the said valve-stem, means for compressing the said piston by the collar, a nut-secured interiorly-sleeved bonnet on the said valve-casing, means for causing a sliding closure of the said sleeve by the piston when the puppet-valve is unseated, a perforated outer portion of the said bonnet, means for drawing air through the said perforations to the interior of the receptacle when the puppet-valve is seated, and spring means for the quick opening of the said puppet-valve against the atmospheric pressure; as described.

26. In an apparatus for discharging liquids *in vacuo*, the combination of a vacuous receptacle having inlet and outlet connection, a controlling-valve comprising a valve-casing, a vacuum connection and a connection to the said receptacle interior, a float-operated stem, a tapering valve-seat, a convex-flanged puppet-valve secured to the said stem, a threaded sleeve on the said puppet-valve, a piston enlargement on the valve-stem, a plug removably fitted to the said valve-casing and provided with a pressure-chamber, a cylindrical bore in the said plug for the piston movement, a balancing cylindrical enlargement on the lower end of the valve-stem and fitting air and steam tight in the plug, a compressed-air and steam inlet in the said plug, means for causing a pressure to enter the receptacle when the puppet-valve is seated for discharging its contents, and means for causing the piston to close the said cylindrical bore when the puppet-valve is open, to exclude the pressure; as described.

27. In an apparatus for discharging liquids *in vacuo*, the combination with a vacuous receptacle having inlet and outlet connection, of an angle control and snifting valve comprising a valve-casing having a vacuum and a receptacle connection, a float-operated spindle, a plug in the said casing having a cylindrical bore and a pressure-chamber, a perforation in the plug for admitting pressure therein and to the receptacle, a beveled flanged puppet-valve normally open to the vacuum, a piston slidably fitting in the said bore, means for simultaneously closing the said puppet-valve and admitting pressure into the receptacle to discharge its contents, means for closing the said bore by the piston when the puppet-valve is open to the vacuum and the interior of the receptacle, means for releasing an excess of pressure in the receptacle, and spring means for resiliently connecting the said puppet-valve, piston and the spindle to the float mechanism; as described.

809,886. ROPE. EDWIN D. METCALF, Auburn, N. Y., assignor to Columbian Rope Company, Auburn, N. Y., a Corporation of New York. Filed Oct. 19, 1905. Serial No. 283,455.

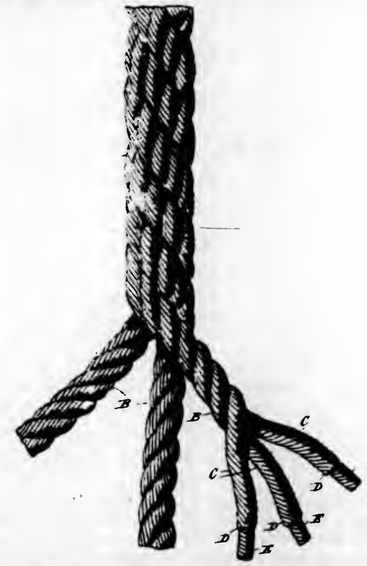

Claim.—1. A rope consisting of strands each twisted about the other and each strand formed of yarns arranged in a core and a sheath therefor, both twisted in the same direction and the core being twisted a greater number of turns than the sheath in a given length of the strand.

2. A cable-laid rope embodying strands, each composed of a core and a sheath formed of yarns, and both core and sheath twisted in the same direction, the core having a greater number of turns than the sheath in an equal length of rope.

3. A rope composed of twisted yarns, the yarns being arranged in cores, and a sheath surrounding each core, said cores and sheaths all being twisted in the same direction but with a greater number of turns in the cores than in the sheaths, to form strands, said strands being twisted about each other and in direction opposite the twists of the strands to form hawser-laid ropes and said ropes being twisted about each other in direction opposite the twists in the hawser-laid ropes to form a cable-laid rope.

4. The process of making rope-strands which consists in twisting a bundle of yarns to form a core then applying a sheath of yarns to the twisted core and twisting said core and sheath in the same direction, whereby the twists in the core and sheath will be in the same direction but with a greater number of turns in the core.

809,387. CABLEWAY. THOMAS S. MILLER, South Orange, N. J. Filed Dec. 16, 1902. Serial No. 135,943.

Claim.—1. In a ropeway in combination, a carriage-supporting rope, a load-carriage supported therefrom, a hoisting-rope having a loop pendent from the load-carriage and extending therefrom toward the head and tail, a traction-rope having a loop extending toward the tail-support, a movable block to which one end of the hoisting-rope is secured, and a winding mechanism controlling the other end of said hoisting-rope, said movable block forming a connection between the loop of the traction-rope and the main rope.

2. In a ropeway, in combination, two winding mechanisms having independent clutches and brakes, a traction-rope connected with

one, a load-carriage having both a traction and a supporting engagement with said traction-rope, two ropes connected with the other winding mechanism, one being the hoisting-rope and the other controlling the deflection of said traction-rope.

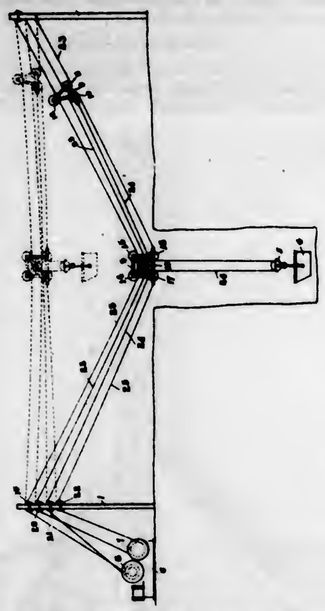

3. In a ropeway, in combination, a load-carriage, a rope participating both in its traction and support, a movable pulley in a loop of said rope, winding mechanism, a rope whereby the tension of said winding mechanism is applied to said movable pulley and a hoisting-rope extending from the same winding mechanism to the fall.

4. In a ropeway, in combination, a load-carriage, a rope participating both in its traction and support, a movable pulley in a loop of said rope, winding mechanism, a rope whereby the tension of said winding mechanism is applied to said movable pulley, and a hoisting-rope extending from the same winding mechanism over load-carriage sheaves and forming a loop at the fall.

5. In a ropeway, in combination, a load-carriage, a rope participating both in its traction and support, a movable pulley in a loop of said rope, winding mechanism, a rope whereby the tension of said said winding mechanism is applied to said movable pulley and a hoisting-rope extending from the same winding mechanism to the same movable pulley and forming a loop at the fall.

6. In a ropeway, in combination, a main rope, a traction-rope, means for controlling the deflection of the same, means whereby the deflection is automatically transmitted from one to the other, a load-carriage containing a running supporting engagement with said main rope and with one run of said traction-rope and a traction engagement with the other run of said traction-rope and a hoisting-rope having a running connection with said carriage and extending thence toward the head and tail.

7. In a ropeway, in combination, a load-carriage, ropes supporting the same, means whereby the deflection of the same is controlled, a winding mechanism and a hoisting-rope having one end connected with said winding mechanism and the other end with said supporting-ropes.

8. In a ropeway, in combination, a load-carriage, a traction-rope containing a loop at the tail end, a main rope extending between the head and tail supports, and a movable sheave-block extending between the loop and the main rope and coupling said loop with said main rope.

9. In a ropeway, in combination, a load-carriage, ropes whereby it is supported, a fall-rope and operatively-connected means whereby the deflection of said supporting-ropes and the length of the fall are correlatively controlled.

10. In a ropeway, in combination, a load-carriage, ropes whereby it is supported, a hoisting-rope, a prime mover and means whereby the deflection of all of said ropes is correlatively controlled by the power of said prime mover.

11. In a ropeway, in combination, a load-carriage, a hoisting-rope and means whereby the deflection of said hoisting-rope and the length of the fall are concurrently controlled.

12. In a ropeway, in combination, a load-carriage, ropes by which it is supported, a fall and means whereby said supporting and fall ropes are concurrently moved at a differential speed to control the deflection of the supporting-ropes and the length of the fall.

13. In a ropeway, in combination, a load-carriage, ropes by which it is supported, a fall and means whereby the elevation of the load is controlled by a concurrence of ropeway deflection and the length of fall-rope movements.

14. In a ropeway, in combination, a load-carriage, ropes by which it is supported, an actuator whereby the deflection of said ropes is controlled; the maximum power of said actuator being less than that which will produce a breaking strain on said ropes.

15. In a ropeway, in combination, a load-carriage, two drums, a rope operated by each of said drums participating in the support of said carriage and a fall-rope operated by one of said drums.

16. In a ropeway, in combination, a load-carriage, a fall-block, ropes by which said load-carriage is supported, a fall-rope and a rope-drum by which both the elevation of the load-carriage and the length of the fall are concurrently controlled.

17. In a ropeway, in combination, a load-carriage, a fall-block, ropes whereby the load-carriage is supported and traversed, a fall-rope and two rope-drums one of which controls the traverse and the other of which concurrently controls both the elevation of the load-carriage and the length of the fall.

18. In a ropeway, in combination, a load-carriage, ropes by which it is supported, a hoisting-rope, operatively-connected means whereby the deflection of said supporting-ropes and the length of fall are concurrently controlled and means whereby the speed of operating said supporting-ropes is reduced below that of operating said hoisting-rope.

19. In a ropeway, in combination, a load-carriage, a hoisting-rope having a loop suspended from the carriage and extending thence toward the head and tail, winding mechanism for one end of said hoisting-rope, a rope-support for the other and thereof between the head and tail of the ropeway, means whereby the position of said rope-support may be controlled and means whereby the deflection of said ropeway may be controlled.

20. In a ropeway, in combination, a load-carriage, two drums one of which contains parts of different diameters, a rope operated by each of said drums participating in the support of said carriage and a fall-rope operated by one of said drums at a different diameter.

21. In a ropeway, in combination, a load-carriage, a rope-drum containing parts of different diameters, a carriage-supporting rope operated at one diameter of said drum and a fall-rope operated by the other diameter thereof.

22. In a ropeway, in combination, a load-carriage, a rope-drum, a carriage-supporting rope operated by said drum and a fall-rope also operated by said drum.

809,388. CONVERTIBLE WAGON-BOX AND HAY-RACK. GEORGE B. MILLS, South Bend, Ind. Filed May 9, 1905. Serial No. 259,879.

Claim.—1. A bed-frame including sills and cross-bars, an end-gate permanently supported upon the front cross-bar, an end-gate hingedly connected with the rear cross-bar, side members hingedly connected with the sills, a shaft journaled longitudinally in the bed-frame, drums upon said shafts, and flexible supporting means connected with said drums and guided to the upper corners of the hinged side members over guide means including pulleys upon the lower corners of the end-gates and pulleys upon the inner sides of the end sills.

2. A bed-frame including sills and cross-pieces, hinge-leaves upon the outer sides of the sills, side members, hinge-leaves upon the inner sides of said side members, and hinge members each including a pair of parallel pintles and a cross-bar connecting the same and constituting a link.

3. A bed-frame including sills and cross-bars, side members supported in an upright position upon the upper edges of the sills and connected with the latter by hinges including links, and angular brace members upon the side members adapted to abut upon the outer sides of the sills when the side members are extended.

4. A bed-frame including sills and cross-bars, side members supported in an upright position upon the upper edges of the sills and connected with the latter by hinges including links, angular brace members upon the side members adapted to abut upon the outer sides of the sills when the side members are extended, flexible supporting means connected with the upper corners of the side members, and winding-drums for said flexible supporting means.

5. In a device of the class described, the combination with a bed-frame including sills, of side members including stakes, angular brace members at the lower ends of said stakes, and brace-rods connecting the outer ends of said angular braces with the upper ends of the stakes; and means for hingedly connecting said sills and side members.

6. In a device of the class described, the combination with a bed-frame including sills, of side members including stakes, angular box-like brace members at the lower ends of said stakes having recesses in their under sides near their outer ends, and brace-rods having heads seated in said recesses the upper ends of said brace-rods being connected with the upper ends of the stakes; and means for hingedly connecting said sills and side members.

7. In a device of the class described, a bed-frame, front and rear end-gates, side members connected hingedly with the sills of the bed-frame, a boom-ladder supported slidingly upon the front end-gate, and a post supported slidingly upon the rear end-gate and having a loop at its upper end; in combination with flexible supporting means for the hinged side members, winding-drums for said flexible supporting means, and means for retaining said winding-drums at various adjustments.

809,389. PUMP. PHILIP A. MYERS, Ashland, Ohio, assignor to F. E. Myers and Brother, Ashland, Ohio, a Copartnership. Filed June 13, 1905. Serial No. 264,782.

Claim.—1. A pump comprising a standard, a fulcrum-support detachably connected therewith and having a supporting-ring, a reservoir-head removably supported at its lower end on the standard and having at its upper end a reduced portion or neck to fit within said ring, and a stuffing-box carried by said neck and having a diameter less than the internal diameter of the ring, a pipe detachably connected to the lower end of the reservoir-head, and a pump-rod comprising two separable sections, the upper section being unitary and comprising a lower part circular in cross-section, fitting the stuffing-box, and adapted for connection with the lower section of the pump-rod, and an upper part in the form of a flattened bar of a maximum diameter greater than the lower part, fitting the guide, and adapted for connection with the windmill, and a pump-handle carried by said fulcrum-support, substantially as described.

2. A pump comprising a standard, a fulcrum-support detachably connected therewith and having a supporting-ring and pump-rod guide, a reservoir-head removably supported at its lower end on the standard and having at its upper end a reduced portion or neck to fit within said ring, and a stuffing-box carried by said neck and having a diameter less than the internal diameter of the ring, a pipe detachably connected to the lower end of the reservoir-head, and a pump-rod comprising two separable sections, the upper section being unitary and comprising a lower part circular in cross-section, fitting the stuffing-box, and adapted for connection with the lower section of the pump-rod, and an upper part in the form of a flattened bar of a maximum diameter greater than the lower part, fitting the guide, and adapted for connection with the windmill, and a pump-handle carried by said fulcrum-support, substantially as described.

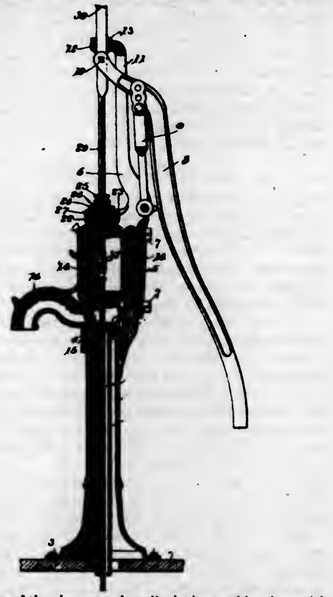

3. In a pump of the character described, the combination, with a standard having a supporting-seat at the upper end of its body, of a fulcrum-support detachably connected with said standard and provided with a supporting-ring, a reservoir-head supported vertically in the standard-seat at its lower end and having a reduced neck at its upper end which fits and is laterally supported by the ring, said neck carrying a stuffing-box, of a diameter such as to pass freely through said ring, substantially as described.

4. In a pump of the character described, the combination, with a standard and a reservoir-head removably supported thereon and provided with a stuffing-box, of a detachable fulcrum-support having a ring fitting over the upper end of the reservoir-head and its stuffing-box, said ring being of greater diameter than the upper end of the reservoir-head and stuffing-box, so as to be freely removable by an upward motion relatively thereto, and a pump-rod section having a round lower part adapted to pass through the stuffing-box, and a flattened upper part, the maximum diameter of which is greater than that of the lower part, substantially as described.

5. In a pump of the character described, the combination, with a reservoir-head internally threaded at its lower end, of a bushing externally threaded to fit the internal thread of the reservoir-head, and having a passage therethrough with threaded portions of different diameters, substantially as described.

809,390. PULLEY-MOUNTING. WILLIAM T. MCDERMOTT and WILLIAM P. BUTZEL, Baltimore, Md. Filed Jan. 11, 1905. Serial No. 240,883.

Claim.—1. In a pulley-mounting, the combination with a retaining-plate to be secured to a window-frame or analogous support, said plate having an opening, of a pulley-support having portions that engage both the inner and outer sides of the plate, a part of the support extending through the opening and said support being removable outwardly through said opening, a pulley journaled on the

support, and means on the outside of the plate for detachably securing the support against movement to the retaining-plate, said securing means thus being accessible when the plate is secured to a window-frame to permit the removal of the pulley-support and the pulley carried thereby.

2. In a pulley-mounting, the combination with a retaining-plate to be secured to a window-frame or analogous support and having an opening, of a pulley-boxing fitting in the opening and having a face-plate that engages both the inner and outer sides of the retaining-plate, said boxing being removable outwardly through the opening a pulley journaled in the boxing, means for detachably fastening the boxing to the outer side of the retaining-plate, said means being accessible when the plate is secured to a window-frame to permit the detachment of the boxing and pulley carried thereby and means for fastening the retaining-plate to a support.

3. In a pulley-mounting, the combination with a retaining-plate to be secured to a window-frame or analogous support, said plate having a seat in its outer face and an opening that communicates with said seat, of a pulley-support that passes through the opening, said support having a face-plate that fits in the seat, a tongue carried by the face-plate and engaging the rear face of the retaining-plate, means for securing the retaining-plate to a frame or other support, means for detachably securing the face-plate in the seat, and a pulley journaled in the support.

4. In a pulley-mounting, the combination with a retaining-plate having a seat in its inner side and an opening located at one end of the seat, of a pulley-support that passes through the opening, said support engaging over the front face of the plate and being provided with a tongue that passes through the opening and engages in the rear seat, means for securing the retaining-plate to a frame or other support, means passing through the face-plate and engaging the retaining-plate for detachably securing the pulley support in place, and a pulley journaled in the support.

5. In a pulley-mounting, the combination with a retaining-plate to be secured to a window-frame, said plate having a longitudinally-disposed opening, a seat in its front face that substantially surrounds the opening, and a seat in its rear face located at one end of the opening, of means for fastening the retaining-plate to the frame, a face-plate that fits in the front seat of the retaining-plate, a tongue carried by one end of the face-plate, passing through the opening, and engaging in the rear seat, a screw passing through the other end of the face-plate and engaging the retaining-plate for holding said face-plate in position, a boxing carried by the rear side of the face-plate and passing through the opening in the retaining-plate, and a pulley journaled in the boxing.

6. In a pulley-mounting, the combination with a window-frame wall having an opening, of a retaining-plate secured thereto and having an opening alined with the wall-opening, a pulley-boxing passing through the plate-opening and having a tongue engaging the rear portion of said plate, said boxing also having a portion located over the front face of the plate, holding means passing through said latter portion, and a pulley in the boxing.

7. In a pulley-mounting, the combination with a frame-wall having an opening, of a retaining-plate secured to the rear face of the frame-wall, said plate having an opening alined with the wall-opening and a seat in its outer side, a flange carried by the frame-wall and engaging in the seat, a pulley-boxing passing through the plate-opening and having a tongue engaging the rear portion of the plate, a face-plate carrying the boxing and fitting in the seat of the retaining-plate alongside the flange, a pulley located in the boxing, and means for detachably fastening the face-plate to the retaining-plate.

8. In a pulley-mounting, the combination with a metallic frame-wall having an opening and rearwardly-extending flanges surrounding the said opening, of a retaining-plate secured to the rear face of the wall and having a seat that receives the flanges, said retaining-plate being also provided with an opening, a face-plate fitting snugly in the seat within the flanges, means for detachably securing said plate in place, a pulley-support carried by the face-plate and extending through the opening in the retaining-plate, and a pulley journaled on the support.

809,891. TYPE-WRITING MACHINE. LOUIS C. HERY, New York, N. Y. Filed Mar. 14, 1904. Serial No. 198,068.

Claim.—1. In a type-writing machine, a carriage-feed mechanism comprising a carriage-controlling mechanism, a vibratory member, a detaining member and a rotary spacing member carried thereby, the axis of said spacing member being substantially at right angles to the contact-face thereof, means whereby pressure from the engagement of the carriage-controlling mechanism with said spacing member during the direct movement of said vibratory member holds said spacing member stationary and said spacing member is permitted to rotate instantly upon the initial reversal of movement of said vibratory member, such rotation of said spacing member permitting axial movement thereof, means whereby said spacing member is restored to its normal position after each spacing and connections between said vibratory member and the several key-levers whereby said detaining member and said spacing member are caused to successively engage said carriage-controlling mechanism.

2. In a type-writing machine, a carriage-feed mechanism comprising a carriage-controlling mechanism, a vibratory member, a detaining member and a rotary spacing member consisting of a flange and an axle or shaft therefor extending at substantially right angles to the contact-face thereof, carried by said vibratory member, opposed bearings carried respectively by said vibratory member and said shaft whereby pressure from the engagement of the carriage-controlling mechanism with said spacing member during the direct movement of said vibratory member, holds said spacing member stationary, and said spacing member is permitted to rotate instantly upon the initial reversal of movement of said vibratory member, such rotation of said spacing member permitting axial movement thereof, a spring whereby said spacing member is restored to its normal position after each spacing, and connections between said vibratory member and the several key-levers whereby said detaining member and said spacing member are caused to successively engage said carriage-controlling mechanism.

3. In a type-writing machine, a carriage-feed mechanism comprising a carriage-controlling mechanism, a vibratory member, a detaining member and a rotary spacing member consisting of a flange and an axle or shaft therefor extending at substantially right angles to the contact-face thereof, carried by said vibratory member, opposed bearings carried respectively by said vibratory member and said shaft whereby pressure from the engagement of the carriage-controlling mechanism with said spacing member, during the direct movement of said vibratory member, holds said spacing member stationary, and said spacing member is permitted to rotate instantly upon the initial reversal of movement of said vibratory member, said rotation of said spacing member permitting axial movement thereof, means whereby the axial movement of said spacing member is limited to a portion of a letter-space, a spring whereby said spacing member is restored to its normal position after each spacing, and connections between said vibratory member and the several key-levers whereby said detaining member and said spacing member are caused to successively engage said carriage-controlling mechanism.

4. In a type-writing machine, a carriage-feed mechanism comprising a carriage-controlling mechanism, a vibratory member, a detaining member and a rotary spacing member consisting of a flange and an axle or shaft therefor extending at substantially right angles to the contact-face thereof, carried by said vibratory member, opposed bearings carried by said vibratory member and said shaft respectively whereby pressure from the engagement of the carriage-controlling mechanism with said spacing member during the direct movement of said vibratory member holds said spacing member stationary and said spacing member is permitted to rotate instantly upon the initial reversal of movement of said vibratory member, such rotation of said spacing member permitting axial movement thereof, a spring adapted to rotate said shaft whereby said spacing member is restored to its normal position after each spacing and said opposed bearings are forced into intimate contact with each other, and connections between said vibratory member and the several key-levers whereby said detaining member and said spacing member are caused to successively engage said carriage-controlling mechanism.

5. In a type-writing machine, a carriage-feed mechanism comprising a carriage-controlling mechanism, a vibratory member, a detaining member and a rotary spacing member consisting of a flange and an axle or shaft therefor extending at substantially right angles to the contact-face thereof, carried by said vibratory member, opposed bearings carried respectively by said vibratory member and said shaft whereby pressure from the engagement of the carriage-controlling mechanism with said spacing member during the direct movement of said vibratory member, holds the spacing member stationary, and said spacing member is permitted to rotate instantly upon the initial reversal of movement of said vibratory member, such rotation permitting axial movement thereof, a spring whereby said spacing member is restored to its normal position after each spacing, said carriage-controlling mechanism comprising a rack member, the teeth of which present contact-faces to said spacing member on different planes whereby engagement of said parts will be at different radii during the printing and the spacing intervals, and connections between said vibratory member and the several key-levers, whereby said detaining member and said spacing member are caused to successively engage said carriage-controlling-mechanism rack member.

6. In a type-writing machine, a carriage-feed mechanism comprising a carriage-controlling mechanism, a vibratory member, a yoke carried thereby having oppositely-disposed bearings therein, a detaining member mounted on said vibratory member, a spacing member comprising a flange and an axle or shaft having a winding way therein mounted in said bearings and extending at substantially right angles to the contact-face of said flange, a guide carried by said yoke and engaging said way whereby pressure from the engagement of the carriage-controlling mechanism with said spacing member during the direct movement of said vibratory member holds said spacing member stationary, and said spacing member is permitted to rotate instantly upon the initial reversal of movement of said vibratory member, such rotation of said spacing member permitting axial movement thereof, a spring whereby said spacing member is restored to its normal position after each spacing, and connections between said vibratory member and the several key-levers whereby said detaining member and said spacing member are caused to successively engage said carriage-controlling mechanism.

7. In a type-writing machine, a carriage-feed mechanism comprising a carriage-controlling mechanism, a vibratory member, a yoke carried thereby having oppositely-disposed bearings therein, a detaining member mounted on said vibratory member, a spacing member comprising a flange and an axle or shaft therefor having a winding way therein, mounted in said bearings and extending at substantially right angles to the contact-face of said flange, a guide comprising a screw-threaded point-bearing carried by said yoke and engaging said way whereby pressure from the engagement of the carriage-controlling mechanism with said spacing member during the direct movement of said vibratory member holds said spacing member stationary, and said spacing member is permitted to rotate instantly upon the initial reversal of movement of said vibratory member, such rotation of said spacing member permitting axial movement thereof, a spring whereby said spacing member is restored to its normal position after each spacing, and connections between said vibratory member and the several key-levers, whereby said detaining member and said spacing member are caused to successively engage said carriage-controlling mechanism.

8. In a type-writing machine, a carriage-feed mechanism comprising a carriage-controlling mechanism, a vibratory member, a yoke carried thereby having oppositely-disposed bearings therein, a detaining member mounted on said vibratory member, a spacing member comprising a flange and an axle or shaft having a winding way therein mounted in said bearings and extending at substantially right angles to the contact-face of said flange, a guide carried by said yoke engaging said way whereby pressure from the engagement of said carriage-controlling mechanism with said spacing member during the direct movement of said vibratory member holds said spacing member stationary and said spacing member is permitted to rotate instantly upon the initial reversal of movement of said vibratory member, such rotation of said spacing member permitting axial movement thereof, means whereby axial movement of said spacing member is limited to a portion of a letter-space, a spring whereby said spacing member is restored to its normal position after each spacing, and connections between said vibratory member and the several key-levers whereby said detaining member and said spacing member are caused to successively engage said carriage-controlling mechanism.

9. In a type-writing machine, a carriage-feed mechanism comprising a carriage-controlling mechanism, a vibratory member, a detaining member and a rotary spacing member consisting of a flange and an axle or shaft therefor extending at substantially right angles to the contact-face thereof, carried by said vibratory member, opposed bearings carried respectively by said vibratory member and said shaft whereby pressure from the engagement of the carriage-controlling mechanism with said spacing member during the direct movement of said vibratory member holds said spacing member stationary, and said spacing member is permitted to rotate instantly upon the initial reversal of movement of said vibratory member, such rotation of said spacing member permitting axial movement thereof, a spring whereby said spacing member is restored to its normal position after each spacing and connections between said vibratory member and the several key-levers whereby said detaining member and said spacing member are caused to successively engage said carriage-controlling mechanism, said detaining member being provided with an extension alined with and following the top periphery of said spacing member.

809,892. CRANK-SHAFT SUPPORT FOR LOOMS. ANTHONY J. O'REILLY, Worcester, Mass., assignor to Crompton-Thayer Loom Company, Worcester, Mass. Filed June 13, 1904. Serial No. 212,300.

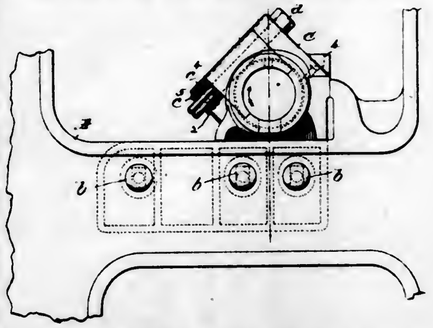

Claim.—1. The combination with a crank-shaft, of a box having two arms, one of said arms crossing a vertical plane passing through the longitudinal axis of said crank-shaft, said arms being provided with holes extending in alinement transversely of the crank-shaft, a cap disposed between the two arms, and a bolt passing through the cap and entering the alined holes in the said arms.

2. A crank-shaft bearing comprising a box having two arms, said arms being extended to one side of a vertical plane passing through the longitudinal axis of said bearing, a cap disposed between the two arms, and a single bolt passing transversely of the bearing through said arms and holding the cap in place between the extended arms.

3. A bearing comprising a box having two arms, the uppermost one of which is extended across a vertical line intersecting the longitudinal axis of said shaft, a cap entering the space between said arms, said cap being bored through from one to its opposite edge and a bolt extended through the hole in said cap and also through the hole in that one of said arms that crosses a vertical line intersecting the longitudinal axis of said shaft, the opposite end of said bolt being extended through the lowermost arm of said box, the bolt retaining the cap in working position.

809,893. LUBRICATOR. WILLIAM S. PATTERSON, Salt Lake City, Utah. Filed Mar. 3, 1905. Serial No. 248,280.

Claim.—1. A lubricator whose oil-cup, neck, base, adjuster-housing and lugs on the lower side of said base are integral, an adjustable lever journaled in said lugs, an intake for the oil and an adjustable cover therefor as described.

2. A lubricator comprising an oil-cup, provided with an oil-inlet in its top, an oil-channel extending downward from said cup and opening into a chamber, a ball-valve in said chamber to close said channel, and an adjustable lever to support and vertically move said ball for the purpose specified.

3. A lubricator comprising an oil-cup provided with an oil-inlet, an oil-channel extending downward from said cup and opening into a chamber, a ball-valve in said chamber to close said channel, a lever to support said ball-valve, there being a finger on said lever, a spring engaged by said finger, an adjusting-bolt attached to said spring, there being a housing exterior to the oil-cup (in which said bolt is longitudinally movable) provided with teeth on its upper surface, and a nut on said bolt having notches to engage said teeth as described.

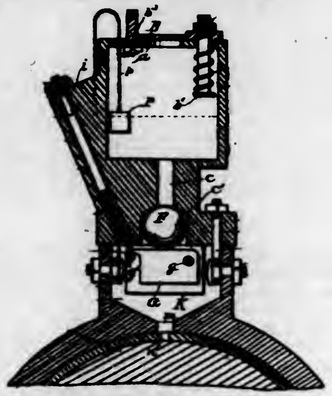

809,394. ELECTRICALLY-OPERATED PORTABLE DRILL. ADOLPH PFLUMMER, Cleveland, Ohio, assignor to The Van Dorn-Elliott Electric Co., Cleveland, Ohio, a Corporation of Ohio. Filed Sept. 19, 1904. Serial No. 224,963.

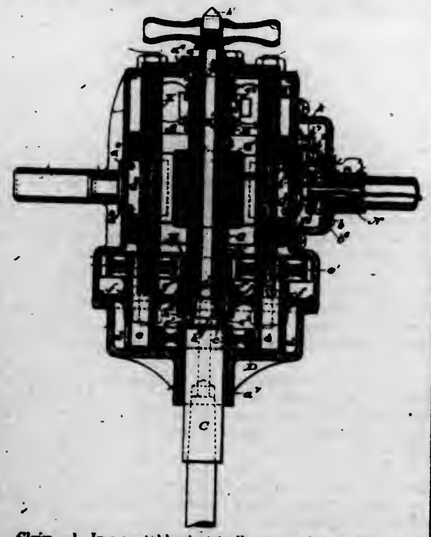

Claim.—1. In a portable electrically-operated drill, the combination of a multipolar motor provided with a casing and a hollow shaft; a drill-spindle mounted in said casing; intermediate gearing connecting said motor-shaft and spindle; and a feed-screw located within said hollow shaft and provided with an end portion projecting therefrom and having a bearing adapted to receive the inner end of said drill-spindle.

2. In a portable electrically-operated drill, the combination of a multipolar motor provided with a casing and mounted within the latter and having a hollow shaft; a feed-screw mounted within said shaft and coaxial therewith; a drill-spindle mounted in one end of the casing and having its axis in the same straight line with the motor's axis; a removable head secured to the other end of said casing; intermediate gearing connecting said motor and spindle; a diaphragm located transversely of said line of the motor-axis, one end of said diaphragm; and binding-bolts passing through said head between the separate field-sections and having their inner ends secured to said diaphragm.

3. In a portable electrically-operated drill, the combination of a multipolar motor provided with a casing and mounted within the latter and having a hollow shaft; a feed-screw mounted within and coaxial with said shaft; a drill-spindle mounted in one end of the casing and having its axis in the same straight line with the motor's axis; a removable head secured to the other end of said casing; intermediate gearing connecting said motor and spindle; a diaphragm located transversely of said line of the motor-axis, one end of said shaft being supported by said head and the other by said diaphragm; binding-bolts passing through said head and between the separate field-sections and having their inner ends secured to said diaphragm; and a controller for said motor having its resistance-coils mounted upon said binding-bolts.

4. In a portable electrically-operated drill, the combination of a multipolar motor provided with a casing and a shaft; a drill-spindle mounted in said casing; a removable head secured to said casing, provided with a bearing for one end of the motor-shaft, and including an annular ring adjustable around the axis of the motor-shaft; brush-holders mounted upon said ring; intermediate gearing connecting said motor and spindle; a diaphragm located transversely of the motor-shaft and providing a bearing for the other end of the latter; and binding-bolts passing through said head between the separate field-sections and having their inner ends secured to said diaphragm.

5. In a portable electrically-operated drill, the combination of a motor provided with a casing and a shaft; a drill-spindle mounted in said casing; gearing connecting said motor-shaft and drill-spindle; and a feed-screw located within said casing centrally relatively to said motor and arranged with one end in juxtaposition to the inner end of said drill-spindle.

809,395. LOCK FOR CROSSED WIRES. ELMER T. POCKLINGTON, Clayton, Mich. Filed Jan. 6, 1905. Serial No. 239,954.

Claim.—1. The combination with a pair of crossed wires, of a substantially U-shaped lock therefor having its bend straddling one of the wires with its sides substantially parallel therewith and crossing the other wire at the opposite side of the first wire, the end portion of one of the sides of the lock being bent transversely across the first-mentioned wire upon the same side thereof as the original bend of the lock and engaged with the other side of the lock, the end of said other side of the lock being bent transversely across the adjacent side of the first-mentioned wire and hooked around the same.

2. The combination with a pair of crossed wires, of a substantially U-shaped lock having its bend placed astraddle of one of the wires with its sides extending across the other wire at the opposite side of the first-mentioned wire, one side of the lock lying entirely upon one side of the first-mentioned wire with its extremity hooked about the same, and the other side of the lock bent transversely across the first-mentioned wire and engaged with the first-mentioned side of the lock.

3. The combination with a pair of crossed wires, of a substantially U-shaped lock having its bend straddling one of the wires with its sides crossing the other wire at the opposite side of the first-mentioned wire, the sides of the lock being bent inwardly across the adjacent wire upon opposite sides thereof, one side of the lock being hooked about the adjacent wire and the other side being hooked about the first-mentioned side of the lock at the opposite side of the wire.

809,396. AUTOMATIC POTATO CUTTER AND PLANTER. JOHN J. PUTNEY, Stuart, Iowa. Filed Feb. 20, 1905. Serial No. 247,044.

Claim.—1. In a potato cutter and planter, a carriage-frame composed of rigid parallel side pieces and cross-pieces mounted upon a rotatable axle, a runner-frame hinged to its front end, a pole fixed to the runner-frame, an arm fixed to the rear end of the pole, a toothed sector fixed to the rear end of the arm, a rotatable shaft mounted on the carriage-frame, a hand-lever fixed to the end of the shaft, a rack fixed to the side of the frame and a pawl carried by the hand-lever to engage the rack, arranged and combined to operate in the manner set forth, for the purposes stated.

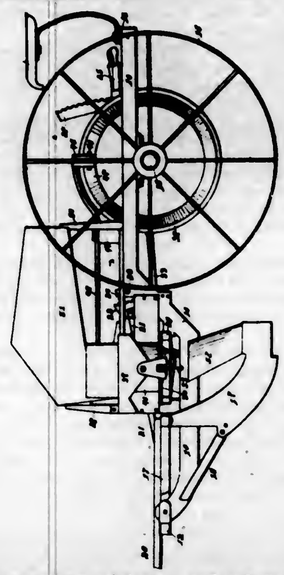

2. In a potato cutter and planter, a carriage-frame composed of rigid parallel side pieces and cross-pieces mounted upon a rotatable axle, a runner-frame hinged to its front end, a pole fixed to the runner-frame, an arm fixed to the rear end of the pole, a toothed sector fixed to the rear end of the arm, a rotatable shaft mounted on the carriage-frame, a gear-wheel on said shaft and means for actuating the shaft, standards fixed to the carriage-frame and a hopper having an inclined bottom fixed to the standards, arranged and combined to operate in the manner set forth for the purposes stated.

3. In a potato cutter and planter, a carriage-frame composed of rigid parallel side pieces and cross-pieces mounted upon a rotatable axle, a runner-frame hinged to its front end, a pole fixed to the runner-frame, an arm fixed to the rear end of the pole a toothed sector fixed to the rear end of the arm, a rotatable shaft mounted on the carriage-frame, a gear-wheel on said shaft and means for actuating the shaft, standards fixed to the sides of the carriage-frame, a hopper having an inclined bottom fixed to the standards and platforms fixed to the sides of the carriage-frame to extend outward from the standards, arranged and combined to operate in the manner set forth for the purposes stated.

4. In a potato cutter and planter, a horizontal reciprocating cutter-carrier having fixed cutters, a grooved cam-wheel on a rotatable axle, a lever pivoted to the carriage-frame and the short arm of the lever extended into the cam and the long arm slidably and pivotally connected with the cutter-carrier, arranged and combined to operate in the manner set forth for the purposes stated.

5. In a potato cutter and planter, a horizontal reciprocating cutter-carrier having fixed cutters, a grooved cam-wheel on a rotatable axle, a lever pivoted to the carriage-frame and the short arm of the lever extended into the cam and the long arm slidably and pivotally connected with the cutter-carrier, and plates fixed to the end portions of the cutter-carrier to retain potatoes in position to be engaged by the fixed cutters on the end portions of the said carrier, arranged and combined to operate in the manner set forth for the purposes stated.

6. In a potato cutter and planter, a horizontal reciprocating cutter-carrier having fixed cutters, a grooved cam-wheel on a rotatable axle, a lever pivoted to the carriage-frame and the short arm of the lever extended into the cam and the long arm slidably and pivotally connected with the cutter-carrier, plates fixed to the end portions of the cutter-carrier to retain potatoes in position to be engaged by the fixed cutters on the end portions of the said carrier and platforms having open-ended potato-conveyers fixed above the said potato-cutters, arranged and combined to operate in the manner set forth for the purposes stated.

7. In a potato cutter and planter, a horizontal reciprocating cutter-carrier having fixed cutters, a grooved cam-wheel on a rotatable axle, a lever pivoted to the carriage-frame and the short arm of the lever extended into the cam and the long arm slidably and pivotally connected with the cutter-carrier, plates fixed to the end portions of the cutter-carrier to retain potatoes in position to be engaged by the fixed cutters on the end portions of the said carrier, platforms having open-ended potato-conveyers fixed above the said fixed potato-cutters, arranged and combined to operate in the manner set forth for the purposes stated.

8. In a potato cutter and planter, a horizontal reciprocating cutter-carrier having fixed cutters, a grooved cam-wheel on a rotatable axle, a lever pivoted to the carriage-frame and the short arm of the lever extended into the cam and the long arm slidably and pivotally connected with the cutter-carrier, plates fixed to the end portions of the cutter-carrier to retain potatoes in position to be engaged by the fixed cutters on the end portions of the said carrier, platforms having open-ended potato-conveyers fixed above the said fixed potato-cutters, a reciprocating potato-carrier mounted on top of said platform and means for actuating said potato-carrier and a hopper above the said potato-carrier for feeding potatoes to said potato-carrier, arranged and combined to operate in the manner set forth for the purposes stated.

9. In a potato cutter and planter, a reciprocating potato-carrier, a cam-wheel fixed to the rotatable axle of a carriage, a lever pivotally connected with the carriage-frame and its front end connected with the reciprocating potato-carrier and its rear end provided with a cross-head and rollers journaled to the end of the cross-head to engage cam-surfaces at the sides of the cam-wheel, arranged and combined to operate in the manner set forth for the purposes stated.

809,397. SPOKE-EXTRACTOR. GEORGE RAITHEL, Middleville, N. Y. Filed Apr. 11, 1904. Serial No. 202,533.

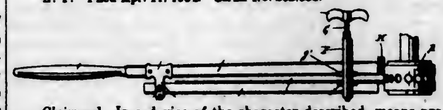

Claim.—1. In a device of the character described, means provided to clutch a spoke, said means provided with an outwardly-extended handle and a block adapted to provide a fulcrum for the handle in its operation to and fro across the normal line of the spoke, substantially as described.

2. In a spoke-extractor, clutching means comprising two bars adjustably pivotally connected toward their outer end and adjustably connected at their inner end, adjustable means provided between the end of the bars and the hub for applying side movement of the bars in extracting the spoke, in combination, substantially as shown.

3. In a device of the character described, a member provided with means to clutch a spoke and extended substantially parallel with the spoke and adapted to receive and transmit an increased leverage applied thereto crosswise of the spoke and a block adapted to provide a fulcrum for the said member, in swinging it to and fro across the normal line of the spoke.

4. In a device of the character described, a member having means adjustable to clamp a spoke and being adapted to receive and apply to the spoke increased leverage applied to the said member beyond the end and transverse the line of said spoke and a hand-block adapted to be placed between the hub and the said clamping member, for applying side movement of the member in extracting the spoke.

5. In a device of the character described, a member adapted to clutch various sizes of spokes lengthwise thereof and secure an extended leverage for the application of side pressure to the spoke and a fulcrum-block adapted to provide a fulcrum for the said member in swinging to and fro in extracting the spoke.

6. In a device of the character described, a member adapted to clutch various sizes of spokes lengthwise thereof and extending beyond the end of the spoke to transmit side pressure to the spoke and a hand-block adapted to be placed on alternate sides of the spoke between the clutching member and the hub to provide a fulcrum for the clutching member in swinging it to and fro to withdraw the spoke.

7. In a spoke-extractor, a clamp and a key, the former being adapted to extend beyond the spoke for use of high leverage in applying reciprocating lateral pressure to the spoke and the latter being adapted to be inserted between the clamp and the hub to employ said pressure in extracting the spoke, substantially as described.

809,398. SECTIONAL CAR-WHEEL. GEORGE W. RICHARDS, Mountaintop, Pa. Filed Apr. 14, 1905. Serial No. 255,562.

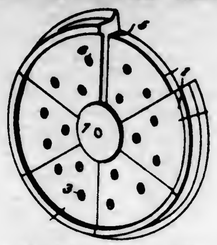

Claim.—1. A car-wheel comprising a body, a sectional tread composed of a plurality of segments, each segment embodying an extension overlapping the body at one side thereof, a plate removably secured centrally of the side of the body upon which the extensions of the segments aforesaid are arranged, engaging the inner ends of the extensions to coact therewith to prevent displacement of the same, and means at the outer portion of the body of the wheel for fastening the outer portions of the segments thereto.

2. A car-wheel comprising a body and a sectional tread, the tread-sections having extensions overlapping the body, and a plate attached to the body and interlocking with the extensions aforesaid.

3. A sectional car-wheel comprising a body and a sectional tread, the tread-sections having shoulders interlocking with the outer edge of said body, extensions projected from the tread-sections, and a plate removably attached to a side of the body centrally thereof and interlocking with the extensions of the tread-sections.

4. A car-wheel comprising a body, a sectional tread composed of a plurality of segments, each segment embodying an extension overlapping the body at one side thereof, a threaded extension projected from the central portion of the body, a plate secured to said extension, said plate being disposed at the side of the body upon which the extensions of the segments are arranged and engaging the inner ends of said extensions to coact to prevent displacement thereof, and means at the outer portion of the body of the wheel for fastening the outer portions of the segments thereto.

5. In a sectional car-wheel, the combination of a disk having a raised seat on one side thereof, a sectional tread having a shoulder adapted to fit against the edge of said disk and having a flange extending along one face of the disk and bearing against the sides of said raised seat and having recesses therein, a plate fitting over said raised seat and extending over said flanges and having a projection to engage in the before-mentioned recesses in the flanges to prevent radial movement of the sections, and means for securing the disk and tread-sections together.

6. In a sectional car-wheel the combination of a disk having beveled edges and a raised seat on one side thereof, a sectional tread having a shoulder rabbeted or undercut upon its under side to receive the beveled edge of the disk to prevent lateral movement and also having a flange extending along one face of the disk and bearing against the sides of said raised seat and having recesses therein, and a plate fitting over said raised seat and extending over said flanges and having projections to engage the before-mentioned recesses in the flanges to prevent radial movement of the sections.

809,399. STEREOTYPE-PLATE HOLDER. CHARLES F. ROCKWOOD, Brooklyn, N. Y., assignor to Rockwood Manufacturing Company, Brooklyn, N. Y., a Corporation of New Jersey. Filed Oct. 28, 1903. Serial No. 178,695.

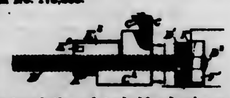

Claim.—1. A printing-plate holder having a series of clamp-slots and each slot corresponding in width at the surface of the plate-holder and at the base of the slot, and intermediately and oppositely undercut and shouldered with downward-converging walls from the undercut portions.

2. A printing-plate holder having a series of clamp-slots therein, and each slot having opposite parallel walls immediately below the surface of the plate-holder that are undercut and shouldered and inclined walls from the limits of the undercut portions that converge downward toward the bottom of the slot.

3. A clamp device for a printing-plate holder, consisting of the clamp, C, having the threaded portion, C^3, the tumbler, E, threaded and its upper surface having the grooves, E^2, E^2, the screw, D, connecting the clamp and tumbler together, and provided with the pinion-head, D', the washer, F, and the journal-box, F', and all combined, substantially as specified.

4. The combination with a clamp for a printing-plate holder, of the tumbler, E, having the grooves, E^2, E^2, in its upper surface and being connected with the clamp mechanism, substantially as specified.

5. The clamp device for a printing-plate holder having clamp-slots therein consisting of a pair of clamps, C, C, the screw, D, having right-hand and left-hand threaded sections which are fitted to the clamps that are correspondingly threaded, one for each section and the screw being provided with means for its rotation and journaling in said slots, and the tumbler device, E, fitted to the screw in connection with each of the clamps, and all combined, substantially as specified.

6. In combination with a curved printing-plate holder, a clamp device provided with a lateral adjusting-screw and tumbler mechanism, the head of the screw and the edge of the tumbler being curved to make them operative in the slots in the holder, substantially as specified.

7. A clamp device for a curved printing-plate holder having slots therein having a clamp with its under surface convex, a tumbler with its upper surface convex and its adjusting-screw having the under portion of its pinion and the outer portion of its washer convex, and all combined, substantially as specified.

8. A printing-plate holder having a series of clamp-slots therein each one pica wide and each slot having opposite parallel walls immediately below the surface of the plate-holder that are undercut and shouldered and inclined walls from the limits of the undercut portions that converge downward toward the bottom of the slot.

9. A printing-plate holder having a series of clamp-slots therein and each slot having opposite parallel walls for an appreciable distance below the surface of the plate-holder that are undercut and shouldered, and inclined walls from the limits of the undercut portions that converge downward toward the bottom of the slot.

10. A printing-plate holder having a series of clamp-slots therein and each slot having opposite parallel walls for an appreciable distance below the surface of the plate-holder that are undercut and shouldered and also opposite parallel walls at the bottom of the slot which agree in width with the aforesaid walls, and intermediate inclined walls from the limits of the undercut portions that converge downward to conjunction with the parallel walls at the bottom of the slot.

11. A printing-plate holder having a series of clamp-slots therein and each slot having opposite parallel walls for an appreciable distance below the surface of the plate-holder that are undercut and shouldered, the groove being of V form below the limits of the undercut shouldered portion.

12. A printing-plate holder having a series of clamp-slots and each slot corresponding in width at the surface of the plate-holder and at the base of the slot and intermediately and oppositely undercut and shouldered with downward-converging walls from the undercut portions, and a clamp device adapted to fit down into the groove and having a revoluble screw-stem and swinging tumbler threaded upon and longitudinally movable by said screw-stem, said tumbler having substantially parallel side walls and an upper edge adapted to pass beneath either undercut and shouldered portion with one side wall in close proximity with one converging wall of the plate-holder.

13. A printing-plate holder having parallel series of clamp-slots at right angles to and intersecting one another, and each slot corresponding in width at the surface of the plate-holder and at the base of the slot, and intermediately and oppositely undercut and shouldered with downward-converging walls from the undercut portions.

14. A printing-plate holder having parallel series of clamp-slots at right angles to and intersecting one another each one pica wide, with the intervening squares of the plate-holder each three picas wide, and each slot having opposite parallel walls for an appreciable distance below the surface of the plate-holder that are undercut and shouldered, and inclined walls from the limits of the undercut portions that converge downward toward the bottom of the slot.

809,400. VALVE MECHANISM FOR INTERNAL-COMBUSTION ENGINES. WILLIAM H. SCHOONMAKER, Montclair, N. J. Filed Feb. 11, 1904. Serial No. 193,693.

Claim.—1. The combination of a valve-stem mounted to reciprocate and to turn and having annular or part-annular rack-teeth thereon, and a pinion meshed with the rack-teeth, to impart reciprocal movement thereto.

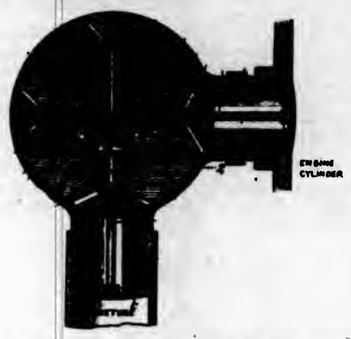

2. The combination of a casing comprising two communications, valves commanding said communications, crossing valve-stems located in the casing and having annular rack-teeth formed thereon, a rock-shaft extending into the casing, and a pinion or pinions attached to the shaft and meshed with the rack-teeth of the valve-stems.

3. The combination of two crossing valve-stems having annular rack-teeth thereon, and a toothed gear meshed with the said rack-teeth to operate the valve-stems.

4. The combination of a casing having inlet and outlet communications, valves respectively commanding the said communications, crossing stems connected with the valves, a rock-shaft extending into the casing, and means within the casing for simultaneously and positively operating the valves and stems from the rock-shaft.

5. The combination of a casing having inlet and outlet communications, outwardly-opening valves commanding the same, a rock-shaft extending into the casing, and means within the casing for simultaneously and positively operating the valves from said rock-shaft.

6. The combination of a casing having inlet and outlet nipples, outwardly-opening valves seated on the outer end of said nipples, valve-stems connected respectively to the valves and extending into the casing, and a means projecting into the casing and connected with the stems to simultaneously and positively operate the valves.

809,401. RAILROAD-TIE. FRANK SEYMOUR, Lead, S. D., assignor of one-fourth to John Lapp, Rochford, S. D., and one-fourth to Robert H. Driscoll, Lead, S. D. Filed Oct. 4, 1905. Serial No. 281,823.

Claim.—1. A metallic tie-frame including a base provided near the ends thereof with lugs, and head-plates supported thereby.

2. A metallic tie-frame including a base provided near its ends with head-plate-supporting lugs and having an intermediate upward reinforcement.

3. A metallic tie-frame including a base concaved in its under side and provided on its upper side with head-plate-carrying lugs, and an intermediate reinforcement.

4. A metallic tie-frame including a base provided on its upper side with head-plate-carrying lugs and an intermediate reinforcement, said base being provided with a plurality of apertures.

5. A base having lugs and head-plates supported by said lugs, said head-plates having recessed upper corners.

6. A base-plate having lugs, head-plates supported by said lugs, and bolts extending upwardly through the head-plates.

7. A base-plate having lugs, head-plates supported upon said lugs, and bolts extending upwardly through the head-plates and having non-circular heads seated in recesses in the head-plates.

8. A base-plate having lugs, head-plates supported by the lugs, bolts extending upwardly through the head-plates, and a plastic body molded upon the base-lugs and head-plates.

9. A metallic tie-frame including a base having head-plate-supporting lugs, end plates abutting upon the base, and wires connecting said end plates.

10. A metallic tie-frame including a base having head-plate-supporting lugs, end plates abutting upon the base and having slots and outturned flanges, and wires connecting the end plates.

11. A metallic tie-frame including a base-plate having head-plate-supporting lugs, end plates abutting upon the base, wires connecting the end plates, and cross-wires connecting the end-plate-connecting wires.

12. A metallic tie-frame including a base having head-plate-supporting lugs, end plates abutting upon the base, end-plate-connecting wires, and cross-wires connecting the latter, in combination with a plastic body molded upon the frame.

809,402. SCAFFOLD-NAIL. CHARLES E. SPRINGER, Chicago, Ill. Filed Dec. 10, 1904. Serial No. 236,575.

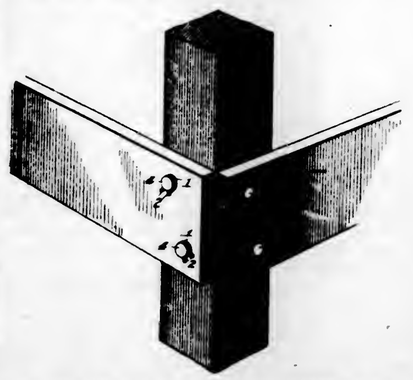

Claim.—1. The combination with a scaffold-nail, of a collar open at one side and arranged beneath the head of the nail to prevent surface contact between the timber and the head of the nail when driven and so that when said collar is removed laterally a space will be provided for the entrance of a tool to readily pull the nail.

2. The combination with a scaffold-nail, of a collar open at one side and arranged beneath the head of the nail to prevent surface contact between the timber and the head of the nail when driven and so that when said collar is removed laterally a space will be provided for the entrance of a tool to readily pull the nail, the said collar having lateral prongs along its side opening for the convenient dislodgment of the collar from underneath the nail-head.

809,403. LINE-HOLDER. CHRISTIAN STRAUBEL, Peoria, Ill. Filed Dec. 22, 1904. Serial No. 238,015.

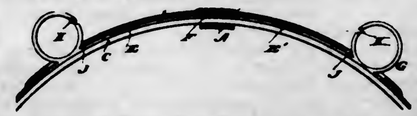

Claim.—1. As an article of manufacture a long flat metal member curved in the arc of a circle and having near one end a ring, there being a slit in said ring opening upward and inward into the ring, said slit being in the side of the ring nearest the longest extremity of the member carrying it.

2. In a line-support, a pair of curved rigid members placed end to end in line with one another, a ring carried by each said member, the openings thereof being at right angles to the length of the said

members, there being upwardly and inwardly extending slits in the rings for the passage of the driving-reins in combination with the hip-strap of a harness to which the members are secured, as set forth.

3. In a line-support, a pair of members in line with one another, a ring on each said member, each said ring having an upwardly and inwardly extending slit or opening for the passage of the line, in combination with the hip-strap of a harness, a covering member through which the rings extend, said covering member covering the ring-carrying members, and a member at the adjoining ends of the said ring-carrying members for securing those ends against movement as set forth.

4. The combination with the hip-strap C of a harness, of the flat and long members E and E' lying upon said strap, the housing D inclosing the adjacent ends of the members, the rings G G formed with the said members, there being openings in said rings, and the covering H for covering all but the rings from view.

809,404. **AXLE-BOX FOR RAILWAY-CARS.** HEINRICH STÜTZNE, Witten, Germany. Filed Mar. 17, 1903. Serial No. 148,166.

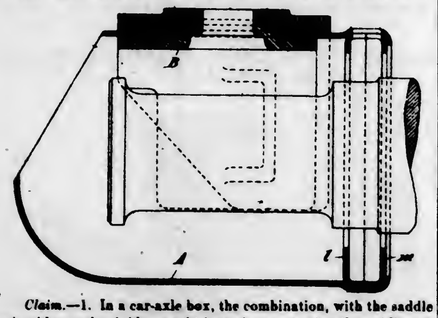

Claim.—1. In a car-axle box, the combination, with the saddle and guides, and a rigid wrought-iron piece secured to the saddle and guides, of a comparatively light wrought-iron casing secured to said piece and serving to inclose the axle.

2. In a car-axle box, the combination, with the saddle and guides, and a rigid piece secured to the saddle and guides, of a wrought-iron casing secured on the outer side of said piece and serving to inclose the axle.

3. In a car-axle box, the combination, with the saddle and guides, and a rigid piece secured to the saddle and guides, of a comparatively light casing secured between the guides and said piece and serving to inclose the axle.

4. In a car-axle box, the combination, with the saddle and guides, and a rigid piece secured to the saddle and guides by means of a flange, of a comparatively light casing secured between the guides and said piece and serving to inclose the axle.

5. In a car-axle box, the combination, with the saddle and guides, and a rigid wrought-iron piece secured to the saddle and guides and adapted to sustain the shocks transmitted thereby, of a comparatively light casing of wrought-iron arranged between the guides and said piece and serving to inclose the axle, the connection between the rigid piece and the saddle and guides being by a flange in such manner as to rigidly clamp the casing between the piece and guides.

6. In a car-axle box, the combination, with the saddle and guides, and a rigid piece secured to the saddle and guides, of a comparatively light casing secured to said piece and serving to inclose the axle, and a partition arranged within the casing in such manner as to form a packing-chamber.

7. In a car-axle box, the combination, with the saddle and guides, and a rigid piece secured to the saddle and guides, of a comparatively light casing secured to said piece and serving to inclose the axle, said casing having an enlargement at one end, and spaced plates arranged within said enlargement in such manner as to form a packing-chamber.

8. In a car-axle box, the combination, with the saddle and guides, and a rigid piece secured to the saddle and guides, of a comparatively light casing secured to said piece and serving to inclose the axle, said casing having its inner end enlarged and bent inwardly, and a plurality of bent plates disposed within said casing in such manner as to form a packing-chamber.

9. In a car-axle box, the combination, with the saddle and guides, and a rigid wrought-iron piece secured to the saddle and guides, of a comparatively light casing secured to said piece and serving to inclose the axle, said casing having upon its inner end an enlargement, and perforated plates having flanged edges opposed to each other and arranged within the enlargement in such manner as to form a packing-chamber.

10. In a car-axle box, in combination, with the saddle and guides, and a rigid wrought-iron piece secured to the saddle and guides by means of a flange, of a comparatively light wrought-iron casing arranged between the guides and said piece and serving to inclose the axle, and spaced perforated plates disposed within said casing near the inner end in such manner as to embrace the axle and serve as a packing-chamber.

809,405. **METHOD OF SKIMMING SLAG FROM MOLTEN METAL.** MAXIMILIAN M. SUPPES, Elyria, Ohio. Filed July 1, 1903. Serial No. 163,953.

Claim.—1. The herein-described method of skimming slag from liquid metal, which consists in displacing the slag by the immersion, or partial immersion, therein, of a displacing mass or body, having a specific gravity higher than that of the slag and lower than that of the underlying metal.

2. The herein-described method of skimming slag from liquid metal, which consists in displacing the slag by the immersion, or partial immersion, therein of a body of refractory material, having a specific gravity higher than that of the slag and lower than that of the underlying metal.

809,406. **VARIABLE-SPEED GEAR.** MORTON C. TALCOTT, Hartford, Conn. Filed Oct. 14, 1905. Serial No. 282,791.

Claim.—1. A gearing having a motor-shaft, gears of different diameters on the motor-shaft, a transmission-shaft, gears of different diameters on the transmission-shaft and meshing with the gears on the motor-shaft, the gears on one shaft being keyed and the gears on the other shaft being loose, clutches adapted to connect the loose gears with their shaft, a reciprocatory bar, dogs carried by the bar and adapted when moved in one direction to cause the closing of the clutches successively, and a wedge-bar arranged to cause a disengagement of the dogs and allow the clutches to successively release, substantially as specified.

2. A gearing having a motor-shaft, gears of different diameters keyed on the motor-shaft, a transmission-shaft, gears of different diameters loose on the transmission-shaft and meshing with the gears on the motor-shaft, clutches adapted to connect the loose gears with the transmission-shaft, a reciprocatory bar, dogs carried by the bar and adapted when moved in one direction to cause the closing of the clutches successively, and a wedge-bar arranged to cause a disengagement of the dogs and allow the clutches to successively release, substantially as specified.

3. A gearing having a motor-shaft, gears of different diameters keyed on the motor-shaft, a transmission-shaft, gears of different diameters loose on the transmission-shaft and meshing with the gears on the motor-shaft, clutches adapted to connect the loose gears with the transmission-shaft, a fixed shaft, sleeves movable on the fixed shaft and adapted to move the clutches, a reciprocatory bar, dogs carried by the bar and adapted when moved in one direction to successively engage and move the sleeves, and a wedge-bar arranged to cause a successive disengagement of the dogs from the sleeves, substantially as specified.

4. A gearing having a motor-shaft, gears of different diameters keyed on the motor-shaft, a transmission-shaft, gears of different diameters loose on the transmission-shaft and meshing with the gears on the motor-shaft, clutches adapted to connect the loose gears with the transmission-shaft, a fixed shaft, sleeves movable on the fixed shaft, arms projecting from the sleeves and arranged to move the clutches, a reciprocatory bar, dogs carried by the bar and adapted when moved in one direction to successively engage and move the sleeves, and a wedge-bar arranged to cause a successive disengagement of the dogs from the sleeves, substantially as specified.

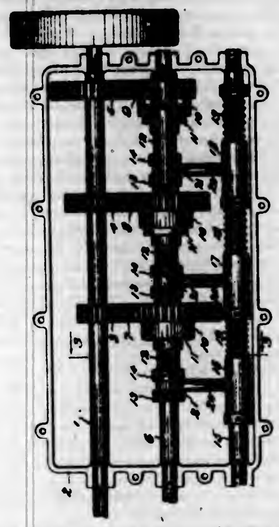

5. A gearing having a motor-shaft, gears of different diameters keyed on the motor-shaft, a transmission-shaft, gears of different diameters loose on the transmission-shaft and meshing with the gears on the motor-shaft, clutches adapted to connect the loose gears with the transmission-shaft, sleeves on the transmission-shaft, springs between the sleeves and the clutches, collars on the sleeves, antifriction-bearings between the collars and the sleeves, a fixed shaft, sleeves movable on the fixed shaft, arms extending outwardly from the sleeves on the fixed shaft, forks connected with the arms and engaging the collars on the sleeves on the transmission-shaft, a reciprocatory bar, dogs carried by the bar and adapted when moved in one direction to successively engage and move the sleeves, and a wedge-bar arranged to cause a successive disengagement of the dogs from the sleeves, substantially as specified.

809,407. **BOTTLE-FILLING MACHINE.** FREDERICK B. THATCHER, Providence, R. I. Filed Dec. 6, 1902. Serial No. 134,161.

Claim.—1. In a bottle-filling machine, in combination with a support and a housing, a filling-tube projecting into the housing, a stopper-engaging device borne on the tube and having means to engage and entirely disconnect the stopper from the bottle and lift and carry it in the lateral movement of the stopper-engaging device, and means for imparting independent longitudinal and lateral movement to said device to disconnect and swing the stopper clear of the mouth of the bottle.

2. In a bottle-filling machine, in combination with a support and a housing appurtenant thereto, a filling-tube projecting into the housing, a stopper-engaging device located on the tube and having means to engage and entirely disconnect the stopper from the bottle and lift and carry it in the lateral movement of the stopper-engaging device, and means for independently lifting and turning said tube to disconnect and remove the stopper from the bottle.

3. In a bottle-filling machine, in combination with a support and a housing appurtenant thereto, a filling-tube projecting into the housing and located eccentrically therein, a foot secured to the tube and adapted to engage a stopper, and means for entirely and independently lifting and turning said tube to remove the stopper from the mouth of a bottle.

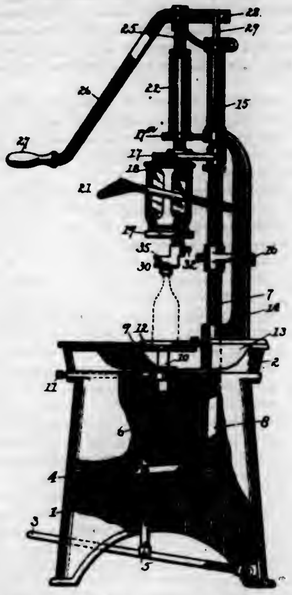

4. In a bottle-filling machine, in combination with a support and a housing therefor, a filling-tube projecting into the housing and located eccentrically therein, a foot secured to the tube and having stopper-engaging means to engage and entirely lift and carry the stopper in the lateral movement of the stopper-engaging device and having a fluid-outlet, and means for lifting and axially turning the tube to remove the stopper and locate the fluid-outlet over the mouth of a bottle.

5. In a bottle-filling machine, in combination with a support and a housing appurtenant thereto, a filling-tube projecting into the housing and having a recess located and arranged to entirely lift and carry a stopper, and means for axially turning the tube to remove the stopper from the mouth of a bottle.

6. In a bottle-filling machine, in combination with a support and a housing appurtenant thereto, a filling-tube projecting into the housing and having a recess located and arranged to entirely lift and carry a stopper, and means for lifting and axially turning the tube to remove the stopper from the mouth of a bottle.

7. In a bottle-filling machine, in combination with a support and a housing appurtenant thereto, a filling-tube projecting into the housing, a foot offset from the tube and containing a recess located and arranged to entirely lift and carry a stopper, and means for lifting and axially turning the tube to remove the stopper from the mouth of a bottle.

8. In a bottle-filling machine, in combination with a support and a housing appurtenant thereto, a filling-tube projecting into the housing, a foot offset from the tube and having a recess located and arranged to entirely lift and carry a stopper, and a fluid-outlet, and means for axially turning the tube to remove the stopper and locate the outlet over the mouth of a bottle.

9. In a bottle-filling machine, in combination with a support and a housing, means for reciprocating the housing, a filling-tube extending into the housing, a foot offset from the end of the tube and having a recess located and arranged to entirely lift and carry a stopper, and means for raising and axially turning the tube to remove the stopper from a bottle.

10. In a bottle-filling machine, in combination with a support and a housing, means for reciprocating the housing, a filling-tube, a fluid connection to the filling-tube, a foot offset from the end of the tube and having a recess located and arranged to entirely lift and carry a stopper, and a fluid-outlet, and means for axially turning the tube to remove the stopper and locate the fluid-outlet over the mouth of a bottle.

11. In a bottle-filling machine, in combination with a support and a housing, means for reciprocating the housing, a filling-tube projecting into and located eccentrically to the axis of the housing, a fluid connection with the filling-tube, a foot offset from said tube and having a recess located and arranged to entirely lift and carry a stopper, and a fluid-outlet, and means for axially turning the tube to remove the stopper and locate the fluid-outlet over the mouth of a bottle.

12. In a bottle-filling machine, in combination with a support and a housing, a filling-tube projecting into the housing and having means located and arranged to entirely lift and carry a stopper, and a handle-lever secured to the tube to turn it to remove the stopper from the mouth of a bottle.

13. In a bottle-filling machine, in combination with a support and a housing, a filling-tube projecting into the housing and having means located and arranged to entirely lift and carry a stopper, a handle-lever secured to the tube to turn it, and a guide for said lever.

14. In a bottle-filling machine, in combination with a support and a housing, a filling-chamber located above the housing, a filling-tube extending through said chamber into the housing, a fluid connection to said fluid-chamber, means on the end of a tube located and arranged to entirely lift and carry a stopper, and means for axially turning the tube to carry the stopper from the mouth of a bottle.

15. In a bottle-filling machine, in combination with a support and a housing appurtenant thereto, a filling-tube projecting into the housing, a stopper-holding device having a recess for the entrance of a stopper and an enlarged recess for holding the stopper in the final placing of the bottle before movement of the stopper-holding device to remove the stopper, and means for operating the stopper-engaging device to entirely lift and carry the stopper.

16. In a bottle-filling machine, in combination with a support and a housing therefor, a filling tube projecting into the housing, a foot on the end of the tube having a lipped recess extending lengthwise of the foot, and a holding-recess located in the upper surface of the lips for the final placing of a stopper before movement of the foot to remove the stopper.

17. In a bottle-filling machine, in combination with a support and a housing appurtenant thereto, a filling-tube projecting into the housing, a stopper-engaging device having a lipped recess and an enlarged recess at the back portion thereof for the final reception of a stopper before movement of the stopper-engaging device to remove the stopper, and means for operating the stopper-engaging device.

18. In a bottle-filling machine, in combination with a support and a housing appurtenant thereto, a filling-tube projecting into the housing, a foot on the end of a tube having a lipped recess extending lengthwise of the foot and a lateral recess for the final reception of a stopper before movement of the foot to remove the stopper opening out of the lengthwise recess, and means for operating the tube.

19. In a bottle-filling machine, in combination with a support and a housing therefor, a filling-tube, a foot secured to the end of the tube and having a recess for the reception of a stopper and an enlarged recess at the back portion thereof for finally receiving a stopper before movement of the foot to remove it, and means for operating the tube.

20. In a bottle-filling machine, in combination with a support and a housing appurtenant thereto, a filling-tube projecting into the housing, stopper-engaging means located on the tube to entirely lift and carry a stopper, and means for lifting and axially turning said tube.

21. In a bottle-filling machine, in combination with a support and a housing appurtenant thereto, a filling-tube projecting into the housing and eccentrically located therein, stopper-engaging means on the end of the tube to entirely lift and carry a stopper and means for lifting and axially turning said tube.

22. In a bottle-filling machine, in combination, a support, a housing appurtenant to the support, a filling-tube extending into and located eccentrically of the housing, an offset foot from said tube having means for receiving a stopper to entirely lift and carry it, and means for operating the tube.

23. In a bottle-filling machine, in combination with a support and a housing appurtenant thereto, a filling-tube projecting into the housing and having a recess located and arranged to entirely lift and carry a stopper, and means for axially turning the tube to remove the stopper in a lateral direction from the mouth of a bottle.

24. In a bottle-filling machine, in combination with a support and a housing appurtenant thereto, a filling-tube projecting into the housing and having a recess located and arranged to entirely lift and carry a stopper, and means for lifting and axially turning the tube to remove the stopper in a lateral direction from the mouth of a bottle.

25. In a bottle-filling machine, in combination with a support and a housing appurtenant thereto, a filling-tube projecting into the housing, a foot offset from the tube and containing a recess located and arranged to entirely lift and carry a stopper, and means for lifting and axially turning the tube to remove the stopper in a lateral direction from the mouth of a bottle.

26. In a bottle-filling machine, in combination with a support and a housing appurtenant thereto, a filling-tube projecting into the housing, a foot offset from the tube and having a recess located and arranged to entirely lift and carry a stopper and a fluid-outlet, and means for axially turning the tube to remove the stopper in a lateral direction and locate the outlet over the mouth of the bottle.

27. In a bottle-filling machine, in combination with a support and a housing, means for reciprocating the housing, a filling-tube extending into the housing, a foot offset from the end of the tube and having a recess located and arranged to entirely lift and carry a stopper, and means for raising and axially turning the tube to remove the stopper in a lateral direction from the mouth of the bottle.

28. In a bottle-filling machine, in combination with a support and a housing, means for reciprocating the housing, a filling-tube, a fluid connection to the filling-tube, a foot offset from the end of the tube and having a recess located and arranged to entirely lift and carry a stopper and a fluid-outlet, and means for axially turning the tube to remove the stopper in a lateral direction from and locate the fluid-outlet over the mouth of the bottle.

29. In a bottle-filling machine, in combination with a support and a housing, means for reciprocating the housing, a filling-tube projecting into and located eccentrically to the axis of the housing, a fluid connection with the filling-tube, a foot offset from said tube and having a recess located and arranged to entirely lift and carry a stopper and having a fluid-outlet, and means for axially turning the tube to remove the stopper in a lateral direction from and locate the fluid-outlet over the mouth of the bottle.

30. In a bottle-filling machine, in combination with a support and a housing appurtenant thereto, a filling-tube projecting into the housing, stopper-engaging means located on the tube to entirely lift and carry a stopper, and means for axially turning said tube and lifting it independently of its turning movement.

31. In a bottle-filling machine, in combination with a support and a housing appurtenant thereto, a filling-tube projecting into the housing and eccentrically located therein, stopper-engaging means on the end of the tube to entirely lift and carry a stopper, and means for axially turning said tube and for lifting it independent of its turning movement.

32. In a bottle-filling machine, in combination, a filling-tube having a foot on the end thereof containing a lipped recess extending lengthwise of the foot and a holding-recess located in the upper surface of the lips for the final reception of a stopper before movement of the foot to remove the stopper.

809,408. **DUST-COLLECTOR.** JOHN S. THURMAN, St. Louis, Mo. Filed May 6, 1905. Serial No. 259,248.

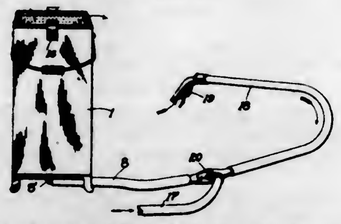

Claim.—1. A dust-collector comprising a suitable receptacle open at the top, a strainer-hood confined within and snugly embraced by the walls of the same, means for conveying a current of dust-laden air into the receptacle beneath the hood, a shield interposed in the path of the current for arresting the dust, and means providing for the escape of the filtered air through the top of the receptacle, substantially as set forth.

2. A dust-collector comprising a suitable receptacle open at the top, a removable strainer-hood supported within the same a suitable distance above the bottom thereof, means for conducting a current of dust-laden air into the bottom of the receptacle, a shield confined within the receptacle beneath and contiguous to the hood for intercepting the dust, and means providing for the escape of the filtered air through the top of the receptacle, substantially as set forth.

3. In a dust-collector, a strainer-hood comprising a box open at opposite ends, a strainer composed of a dust-intercepting web disposed in a series of folds between said open ends, the sides of the folded sections being secured to the adjacent walls of the box, a receptacle embracing the walls of the box, and a dust-intercepting layer interposed between the box and receptacle, substantially as set forth.

In a dust-collector, a strainer-hood comprising a box open at opposite ends, a strainer composed of a web of cloth disposed in a series of folds between said open ends, strips inserted on opposite sides between the folds, the edges of the latter being folded against the strips between the latter and the adjacent walls of the box, and the strips secured to the said walls, the ends of the web being secured to the walls opposite thereto and a receptacle snugly embracing the walls of the box, substantially as set forth.

5. In a dust-collector, a strainer-hood comprising a box open at opposite ends, a strainer composed of a web of cloth disposed in a series of folds between said open ends, the sides of the folded sections being secured to the adjacent walls of the box, and the ends of the web being secured to the walls opposite thereto, a covering of felt for the box and a receptacle snugly embracing the walls of the box, substantially as set forth.

809,409. **PNEUMATIC TIRE.** PARDON W. TILLINGHAST, Edgewood, R. I. Filed Mar. 5, 1903. Serial No. 146,396.

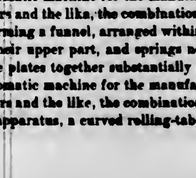

Claim.—1. A pneumatic tire, having an air-tube constructed of caoutchouc the surfaces of which are rendered non-viscous and un vulcanizing for the purpose of facilitating repairs.

2. A pneumatic tire including an unsulfurized atmospherically-treated air-tube said air treatment being for the purpose of rendering the surface of said tube non-viscous, an outer covering of vulcanized rubber and a ply or plies of fabric between the said covering and the tube.

3. A pneumatic tire including an air-tube, an outer tube of rubber and a ply or plies of fabric, said air-tube having its overlapping joints and parts made of unsulfurized caoutchouc and having its exposed surface atmospherically treated to facilitate repairs.

4. A pneumatic tire composed of the following elements, an unsulfurized, atmospherically-treated air-tube said treatment being for the purpose of rendering non-viscous the surfaces only of said tube for the purpose of facilitating repairs means connected to said tube whereby air may be supplied to the same, an outer covering of vulcanizable rubber a ply or plies of fabric which together with said covering is vulcanized into an integral mass inclosing said air-tube.

809,410. **MACHINE FOR THE MANUFACTURE OF CIGARS, CIGARETTES, CIGAR-FILLERS, AND THE LIKE.** MAX VAN GULPEN, Mülheim-on-the-Rhine, Germany. Filed Jan. 14, 1905. Serial No. 240,614.

Claim.—1. In an automatic machine for the manufacture of cigars, cigarettes, cigar-fillers, and the like, which during one revolution of the main shaft completes one cigar, cigarette, cigar-filler, or the like, the combination of filler-molds; means for transferring bunches from the molds to the rolling mechanism, rolling apparatus arranged underneath said molds consisting of a bunching-roller and a presser-roller, a rolling-table, a recess in said table, a rolling-apron covering said table and recess; a forming apparatus receiving the cigars from the rolling apparatus; a fan in said forming apparatus; and circular knives to trim the ends of the cigars or the like, substantially as set forth.

2. In an automatic machine for the manufacture of cigars, cigarettes, cigar-fillers and the like, the combination of a frame and two thin flat plates forming a funnel, arranged within said frame mounted on pivots at their upper part, and springs normally holding the lower parts of the plates together substantially as set forth.

3. In an automatic machine for the manufacture of cigars, cigarettes, cigar-fillers and the like, the combination of a mechanically-operated rolling apparatus, a curved rolling-table with a recess and a funnel into which the tobacco is pushed by a plunger, a bunching and a pressure roller carried to and fro over the rolling-table during the rolling action and mounted rigidly in a single common firm frame so that no difference in the pressure and rolling action is possible, and means for imparting a shaking motion to said bunching and pressure rollers as they are carried to and fro over the rolling-table substantially as set forth.

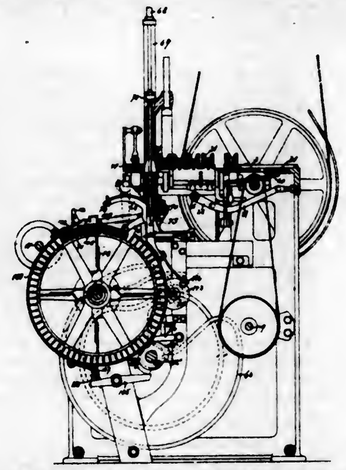

4. In an automatic machine for the manufacture of cigars, cigarettes, cigar-fillers, and the like, the combination of a rotatable drum, forming-molds on its circumference, a fan within said drum, and a cutting apparatus arranged to cut the ends of the cigars or the like while in said molds, substantially as set forth.

809,411. **BOOKBINDER'S GAGE.** ALWIN VON AUW, New York, N. Y. Filed Aug. 8, 1904. Serial No. 220,026.

Claim.—1. A bookbinder's gage presenting a sheet-supporting surface provided with elevations at two or more margins forming sheet-positioning devices, and having means for accurately positioning a plurality of strips of material in relation to a sheet resting upon said sheet-supporting surface.

2. A bookbinder's gage having a bed-plate provided with marginal elevations and presenting a sheet-supporting surface provided with strip-receiving channels.

3. In a bookbinder's gage, the combination with a bed-piece having a plurality of strip-receiving channels, of means for simultaneously removing the strips from all of said channels.

4. In a bookbinder's gage, the combination with a sheet-supporting member provided with means for positioning a plurality of strips, of devices for lifting the sheet and the strips off the sheet-supporting member.

5. In a bookbinder's gage, the combination with a bed-piece presenting a sheet-supporting surface provided with a plurality of strip-receiving channels, of a lifter comprising a plurality of arms normally resting in said channels.

6. In a bookbinder's gage, the combination with a bed-plate presenting a sheet-supporting surface provided with strip-receiving channels, of a lifting device comprising a plurality of arms somewhat narrower than said channels and normally resting in said channels.

7. In a bookbinder's gage, the combination with a bed-plate presenting a sheet-supporting surface provided with strip-receiving channels having narrower channels formed in the bottoms thereof, of a plurality of lifter-arms secured at one end and normally resting in said narrower channels.

8. In a bookbinder's gage, the combination with means for supporting a sheet of material and means for accurately positioning a

plurality of strips in relation thereto, of a device for lifting the sheet and the strips simultaneously from the gage, and means for limiting the movement of said lifting device.

809,412. ART OF FORMING HELICES FOR CHAIN-LINKS. ISAAC D. WEAVER, Lebanon, Pa., assignor of one-half to Samuel B. Light, Lebanon, Pa. Filed June 10, 1903. Renewed June 10, 1905. Serial No. 264,734.

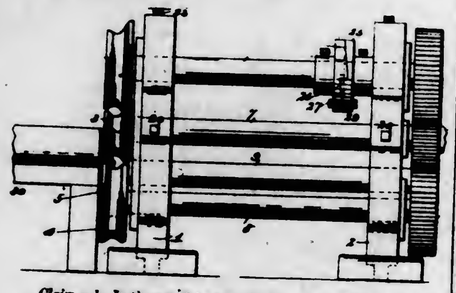

Claim.—1. In the art of forming helices, the method which consists in heating the metal, forcibly condensing or staving up the metal on the inside of the helix and maintaining the fiber of the metal on the outside thereof in substantially normal and uniform condition.

2. In the art of forming helices, the method which consists in heating the metal, forcibly condensing or staving up the metal on the inside of the helix by retarding the flow of the metal, and maintaining the fiber of the metal on the outside thereof in substantially normal and uniform condition.

809,413. MANUFACTURE OF HELICES FOR CHAIN-LINKS. ISAAC D. WEAVER, Lebanon, Pa., assignor of one-half to Samuel B. Light, Lebanon, Pa. Filed June 10, 1903. Renewed June 10, 1905. Serial No. 264,736.

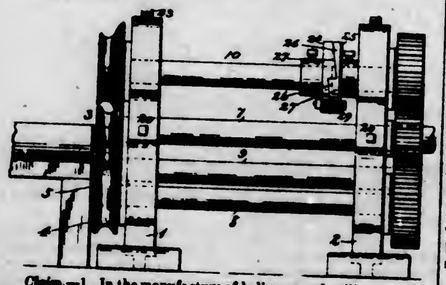

Claim.—1. In the manufacture of helices, a rod-coiling machine having rolls or disks provided with grooved perimeters, said rolls being of different diameters and adapted to receive a rod of metal and move the same, and means for rotating the rolls in opposite directions and constructed to rotate one of the rolls at a slower speed than the other roll, whereby the metal on the inside of the helix is condensed or staved up, and the fiber of the metal of the outside maintained in substantially normal and uniform condition.

2. In the manufacture of helices, a rod-coiling machine having rolls or disks provided with grooved perimeters, said rolls being of different diameters and the smallest one of which is arranged central to the other rolls, and the center of the upper roll a greater distance from the center of the smallest roll than the center of the lower roll, and means for rotating the rolls in opposite directions and constructed to rotate the perimeter of the upper roll at a slower speed than the lower roll, whereby the metal on the inside of the helix is condensed or staved up, and the fiber of the metal on the outside thereof maintained in substantially normal and uniform condition.

3. In the manufacture of helices, a rod-coiling machine having rolls or disks provided with grooved perimeters, said rolls being of different diameters and the smallest one of which is arranged central to the other rolls, and the upper roll provided with an extensible and contractible shaft for varying the spaces between the coils.

809,414. TOY CANNON. JAMES B. WEAVER, Allegheny, Pa. Filed Nov. 28, 1904. Serial No. 234,467.

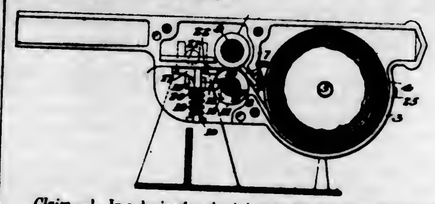

Claim.—1. In a device for obtaining explosions in rapid succession, a pair of feed-rolls arranged to feed forward a strip provided with separated portions of an explosive, means for continuously rotating said rolls, a reciprocating hammer, and mechanism for reciprocating said hammer as the separated portions of explosive are brought into registry therewith; substantially as described.

2. In a device for obtaining explosions in rapid succession, a pair of feed-rolls having gripping portions and cut-away portions to allow the passage of separated portions of an explosive on a flexible strip, means for continuously rotating said rolls, a reciprocating hammer, and a rotary crank device having connections arranged to move the hammer in at least one direction of its reciprocation; substantially as described.

3. In a device for obtaining explosions in rapid succession, a pair of feed-rolls, means for continuously rotating said rolls, a spring-actuated reciprocating hammer, an opposite anvil, and means for retracting the hammer to deliver a blow upon the successive portions of explosive; substantially as described.

4. In a device for obtaining explosions in rapid succession, a magazine-chamber arranged to contain a reel of flexible material carrying separated portions of an explosive, an exploding-chamber connected with the magazine-chamber by a channel through which the strip is fed, a feeding device in the exploding-chamber, means for continuously moving the feeding device, a reciprocating hammer therein arranged to deliver successive blows upon the successive separated portions of the explosive and means for reciprocating said hammer; substantially as described.

5. In a device for obtaining explosions in rapid succession, a magazine-chamber, an exploding-chamber connected to the magazine-chamber by a narrow channel through which the strip of material carrying the explosive is fed, a pair of feed-rolls in the exploding-chamber, means for continuously rotating the feed-rolls, a reciprocating hammer, and connections arranged to reciprocate said hammer; substantially as described.

6. In a device for obtaining explosions in rapid succession, a magazine-chamber arranged to receive a coil of flexible material carrying separated portions of an explosive, an exploding-chamber connected to the magazine-chamber by a channel through which the strip is fed, a pair of feed-rolls in the exploding-chamber having grooves or cut-away portions to allow passage of the explosive, one of said feed-rolls having cam portions, a reciprocating spring-pressed hammer arranged to be actuated by the cam, and a crank or similar device for turning the feed-rolls; substantially as described.

7. In a device for obtaining explosions in rapid succession, a magazine-chamber arranged to receive a coil of flexible material carrying separated buttons of an explosive, an exploding-chamber connected therewith by a narrow channel through which the strip is fed, feed-rolls, means for continuously rotating said rolls, a reciprocating hammer within the exploding-chamber, and means for closing the channel into the magazine-chamber when the explosion takes place; substantially as described.

8. In a device for obtaining explosions in rapid succession, a pair of feed-rolls, means for turning the same continuously, a reciprocating hammer, connections between the feed-rolls and hammer arranged to retract said hammer, and means for returning it to strike the explosive; substantially as described.

809,415. ROLLER-COMPRESS. SAMUEL J. WEBB, Hinden, La. Filed Jan. 16, 1903. Serial No. 1,089.

Claim.—1. In an apparatus for compressing bales of cotton, the combination of grooved rollers between which the bale is compressed, and means for forcing the bale between the rollers, substantially as described.

2. In an apparatus for compressing bales of cotton, the combination with rollers between which the bale is compressed, of means for rotating said rollers, substantially as described.

3. In an apparatus for compressing bales of cotton, the combination of rollers between which the bale is compressed, the rollers being constructed and arranged to permit the tying of the bale while under pressure, substantially as described.

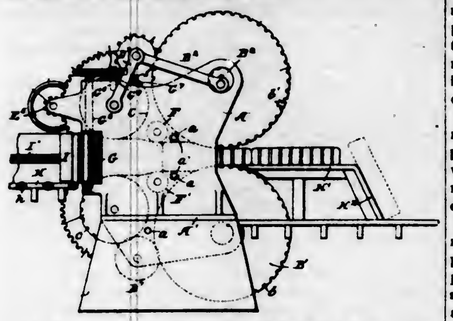

4. In an apparatus for compressing bales of cotton, the combination of rollers between which the bale is compressed, the rollers being provided with slots in their peripheries through which the bale-ties may be passed, substantially as described.

5. In an apparatus for compressing bales of cotton, the combination of rollers between which the bale is compressed, the rollers being provided with longitudinally-removable peripheral sections leaving slots between them for the reception of the bale-ties, substantially as described.

6. In an apparatus for compressing bales of cotton, the combination with rollers between which the bale is compressed with respect to thickness, of rollers between which the bale is compressed laterally with respect to breadth, and means for preventing the lateral extension of the bale while being compressed with respect to thickness, substantially as described.

7. In an apparatus for compressing bales of cotton, the combination with rollers between which the bale is compressed with respect to thickness, of means for positively operating the rollers and means for limiting the longitudinal extension of the bale while being compressed, substantially as described.

8. In an apparatus for compressing bales of cotton, the combination with rollers between which the bale is compressed with respect to thickness, of rollers for compressing the bale with respect to breadth, means for positively operating both sets of said rollers and means for limiting the longitudinal extension of the bale while being compressed, substantially as described.

9. In an apparatus for compressing bales of cotton, the combination with rollers between which the bale is compressed with respect to thickness, of rollers for compressing the bale with respect to width, means for positively operating both sets of said rollers and means for forcing the bale between the rollers and limiting the longitudinal extension of the bale, substantially as described.

10. In an apparatus for compressing bales of cotton, the combination with main compress-rollers between which the bale is compressed with respect to thickness, of preliminary compress-rollers, and rollers between which the bale is compressed with respect to width, and means for positively operating all of said rollers, substantially as described.

11. In an apparatus for compressing bales of cotton, the combination with main compress-rollers between which the bale is compressed with respect to thickness, of preliminary compress-rollers, rollers between which the bale is compressed with respect to breadth, means for positively operating all of said rollers and means for forcing the bale between the rollers, substantially as described.

12. In an apparatus for compressing bales of cotton, the combination with main compress-rollers between which the bale is compressed, of preliminary compress-rollers, means for positively operating all of said rollers and guides arranged between the two sets of rollers, substantially as described.

13. In an apparatus for compressing bales of cotton, the combination with main compress-rollers between which the bale is compressed, of preliminary compress-rollers, means for positively operating all of said rollers and connections between the two sets of rollers whereby they are driven at proper speeds with relation to each other, substantially as described.

14. In an apparatus for compressing bales of cotton, the combination with preliminary compress-rollers, of main compress-rollers, the latter being provided with grooves transverse to the peripheries of the rollers whereby the bale can be tied while the bale is under full compression between the rollers, substantially as described.

15. In an apparatus for compressing bales of cotton, the combination with main compress-rollers between which the bale is compressed, of preliminary compress-rollers operating at right angles to the main compress-rollers, means for positively operating all of said rollers and a feeding-platform provided with rollers arranged to deliver the bale to the preliminary compress-rollers, substantially as described.

16. In an apparatus for compressing bales of cotton, the combination with main compress-rollers between which the bale is compressed, means for positively operating said rollers, means for preventing the lateral extension of the bale while being pressed, and means whereby the ties may be applied for securing the bale in its compressed form, substantially as described.

17. In an apparatus for compressing bales of cotton, the combination with main compress-rollers between which the bale is compressed, means for positively driving said rollers, said rollers being provided with grooves transverse to their periphery, and a frame supporting said compress-rollers, the frame being shaped to permit access to the bale while being compressed, substantially as described.

18. In an apparatus for compressing bales of cotton, the combination with rollers between which the bale is compressed with respect to thickness, of rollers between which the bale is compressed laterally with respect to breadth, means for preventing the lateral extension of the bale while being compressed with respect to thickness, means for limiting the longitudinal extension of the bale while being compressed, and means whereby the ties may be applied for securing the bale while under final compression, substantially as described.

809,416. FAN ATTACHMENT FOR SEWING-MACHINES. LEOPOLD WEINSTEIN and JOSEPH PERLSTEIN, Chicago, Ill. Filed Feb. 25, 1905. Serial No. 247,236.

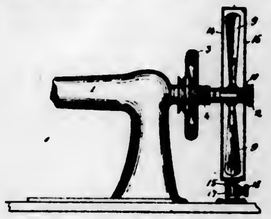

Claim.—1. In a fan attachment for sewing-machines, an axle provided with a collar and having screw-threaded ends, a fan rotatably mounted on the axle, means for regulating the frictional engagement between the fan and collar on the axle substantially as described.

2. In a fan attachment, an axle provided with a screw-thread at each end and having a collar secured thereto, a fan having a hub provided with an annular recess at one end rotatably mounted on said axle, a thumb-nut threaded on the outer end of the axle whereby the fan is prevented from accidental displacement with said axle as and for the purpose described.

3. The combination with the fly-wheel of a sewing-machine, of an axle provided with a collar and having one end threaded in an aperture in the fly-wheel, and a fan rotatably mounted on the axle and means for holding the fan on the axle substantially as set forth.

4. The combination with a sewing-machine of an axle carried by the fly-wheel of the sewing-machine and a fan rotatably mounted on said axle, a thumb-nut threaded on the axle and a spring inserted between the thumb-nut and hub of the fan as and for the purpose set forth.

5. In a device of the character described, an axle provided with a stationary collar threaded in the hub of a fly-wheel of a sewing-machine, a fan on the axle end provided with an annular recess in the outer end of its hub, a spiral spring seated in said annular recess, a thumb-nut threaded on the outer end of the axle whereby the tension of the spring is regulated, as and for the purpose set forth.

6. In a fan attachment for sewing-machines, an axle having a stationary collar and provided with screw-threaded ends secured to the fly-wheel of a sewing-machine, a fan having a hub provided with an annular recess at one end rotatably mounted on said axle, a spiral spring seated in the annular recess of the fan-hub, a thumb-nut

threaded against the spiral spring on the axle, substantially as described.

809,417. CONTINUOUS-RAIL JOINT AND CLAMP. WILLIAM J. WILLIAMS, Terre Haute, Ind. Filed Oct. 2, 1905. Serial No. 280,915.

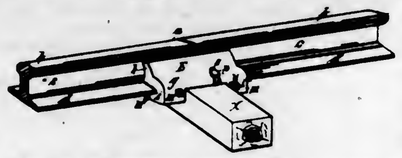

Claim.—In a continuous-rail joint and clamp, the combination of two rails, provided with corresponding beveled ends adapted to coincide and with notched bases, adapted to engage lugs provided therefor, with a two-section clamp, consisting of two opposing jaws adapted to engage the sides of the rails, a recess in said jaws adapted to receive the base-flanges of the rails and pendent feet provided with inwardly-projecting arms, adapted to oppose one another beneath said rails, and two bolts adapted to bind the sections of the clamp together upon the rails all substantially as shown and for the purpose set forth.

809,418. ART OF MANUFACTURING WINDOW-GLASS. LÉON APPERT, Paris, France. Filed Mar. 22, 1905. Serial No. 251,411.

Claim.—1. An improvement in the art of producing plates of glass, which consists, in first forming a hollow closed-top blank of glass in the shape of a conic frustum, next in transforming the blank thus produced into a bulbous or ovoid shaped body by subjecting it to the action of heat until it is rendered sufficiently plastic, and, while in that condition, imparting to it a rotary motion upon its axis, at the same time that a current of air is being forced into its interior, and next, in changing the position of the bulbous or ovoid shaped body thus produced end for end and transforming it into a plate or disk by reheating it, and, when sufficiently plastic, imparting to it a rotary motion upon its axis, substantially as described.

2. An improvement in the art of producing plates of glass, which consists, in first casting a hollow closed-top blank of glass in the form of a conic frustum, next in transforming this blank into a bulbous or ovoid shaped body, by subjecting it to the action of heat until it is rendered sufficiently plastic, and, while in that condition, imparting to it a rotary motion upon its axis, at the same time that a current of air is forced into its interior, and next, in changing the position of the bulbous or flattened-ovoid shaped body thus produced end for end and transforming it into a plate or disk by reheating it, and, when sufficiently plastic, imparting to it a rotary motion upon its axis, substantially as described.

3. An improvement in the art of producing plates of glass, which consists, in first casting a hollow closed-top blank of glass in the form of a conic frustum, next in transforming this blank into a bulbous or ovoid shaped body by subjecting it to the action of heat until it is rendered sufficiently plastic, and, while in that condition, imparting to it a rotary motion upon its axis at the same time that a current of air is forced into its interior, next in changing the position of the bulbous or ovoid shaped body thus produced end for end and transforming it into a plate or disk by reheating it, and, when sufficiently plastic, imparting to it a rotary motion upon its axis, and next in annealing the plate or disk thus formed, substantially as described.

4. An improvement in the art of producing plates of glass, which consists, in first casting a hollow closed-top blank of glass in the form of a conic frustum, next in transforming this blank into a bulbous or flattened-ovoid body by subjecting it to the action of heat until it is rendered sufficiently plastic, and, while in that condition, imparting to it a rotary motion upon its axis, as well as an up-and-down movement, at the same time that a current of air is forced into its interior, next in changing the position of the bulbous or flattened-ovoid shaped body thus produced end for end and transforming it into a plate or disk by reheating it, and, when sufficiently plastic, imparting to it a rotary motion upon its axis, and next in annealing the plate or disk thus formed, substantially as described.

5. An improvement in the art of producing plates of glass, which consists, in first casing a hollow closed-top blank of glass in the form of a conic frustum, next in clamping this blank with its open end downward upon a rotary platform, next in transforming this blank into a bulbous or flattened-ovoid shaped body by subjecting it to the action of heat in an oven until it is rendered sufficiently plastic, and, while in that condition, imparting to it a rotary motion upon its axis, as well as a vertical up-and-down movement at the same time that a current of air is being forced into its interior, next in cooling the same and securing it to a second rotary platform with its open end upward, next in transforming the bulbous or flattened-ovoid shaped body thus produced into a plate or disk by reheating it in an oven, and, when sufficiently plastic, imparting to it a rotary motion upon its axis, and next in annealing the plate or disk thus produced, substantially as described.

809,419. DISPENSING DEVICE. GILBERT L. BELCHER, San Francisco, Cal. Filed Jan. 25, 1905. Serial No. 242,640.

Claim.—1. A dispensing device comprising a longitudinally-slitted tubular holder having a discharge-orifice at one end, a friable wafer on the inside of the tube and covering the slit therein, a follower operating in a tube, and means separate from the follower and movably mounted on the outside of the tube and having a member operating through said slit to operate the follower.

2. A dispensing device comprising a longitudinally-slitted inflexible tube having a discharge-orifice at one end, a closure for the slit, a follower in the tube, and means separate from the follower and movably mounted on the outside of the tube and having a member operating through the slit, to open the closure and to actuate the follower.

3. A tubular holder having a discharge-orifice, a follower therein, a cutting device movable in the direction of the length of the holder and a sleeve on the outside of the holder and carrying the cutting device, said cutting device engaging the follower to advance it to eject the contents of the holder.

809,420. SMOOTHING AND POLISHING MACHINE. LEROY A. BERRY, Hartford, Mo. Filed Feb. 15, 1904. Serial No. 193,720.

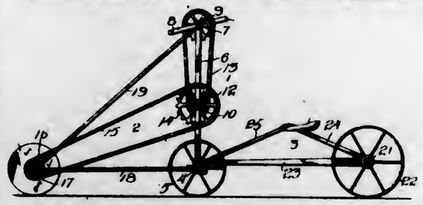

Claim.—A smoothing and polishing machine, comprising an ambulant carriage, a frame connected to and projecting from the front end thereof, an abrasive roll mounted in the frame, and driving means for said roll comprising hand-cranks and sprockets also mounted in said frame, said roll and driving means being adjustable in a vertical plane by the pivotal movement of said frame.

809,421. EXPANSIBLE SPROCKET. ARTHUR W. BOON, Brixton, England. Filed Jan. 27, 1904. Serial No. 190,842.

Claim.—1. In a variable sprocket-wheel the combination with a drum having a series of radially-arranged slots, of a series of adjustable blocks forming a variable circumference to said drum, of teeth pivoted in recesses in said blocks, and of springs operating to retain said teeth in their operative positions but allowing them to give way when they are inoperative, as set forth.

2. A variable sprocket-wheel comprising a drum A, a series of blocks B adjustably mounted in radial slots in said drum, teeth C pivoted transversely in recesses in said blocks, springs C' operating to retain said teeth in their active positions, and means for varying the positions of the blocks in the radial slots in the drum, as set forth.

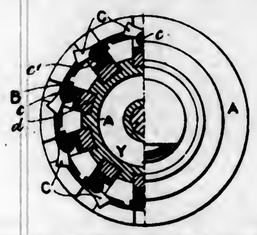

3. In a variable sprocket-wheel comprising a drum A, a series of blocks B arranged to slide in radial slots in said drum and means for varying the positions of said blocks in said drum, sprocket-teeth C pivoted to said blocks having one face shaped to engage the links of the sprocket-chain so as to receive from it or impart to it motion in one direction, the other face of the teeth being so shaped that it will not engage with the sprocket-chain but turn on its pivot and so become inoperative, as set forth.

4. The combination in a variable sprocket-wheel of a drum A having a series of radial slots, a series of blocks B mounted to slide in the slots in said drum, teeth C pivoted transversely to the blocks B, springs C' operating to keep the teeth C in their operative positions with reference to the circumference of the wheel, and means for varying the positions of the blocks in the radial slots in the drum, as set forth.

809,422. LANTERN-GLOBE RACK. CHARLES F. BOWMASTER, Litchfield, Ill. Filed June 20, 1905. Serial No. 267,602.

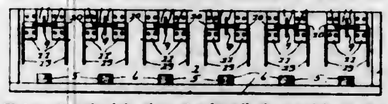

Claim.—A rack of the character described comprising a support consisting of a base and a back, a cushioned projection upon said base adapted to engage a lantern-globe or the like, bearings upon said back, a bracket constructed of bent wire and consisting of a globe-engaging loop, a finger-piece, pivot-arms mounted in said bearings and stops at the ends of said arms, and a spring upon said bracket for holding said stops normally in engagement with said back, substantially as described.

809,423. TELEPHONE. CHARLES G. BURKE, Brooklyn, N. Y., assignor of one-half to John Q. A. Whittemore, Boston, Mass. Filed Sept. 16, 1901. Serial No. 75,494.

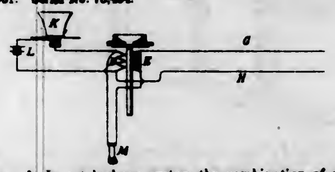

Claim.—1. In a telephone system the combination of a local transmitter comprising a battery and a transmitting-circuit, a main-line circuit, a receiver comprising a diaphragm, a core for operating the said diaphragm, an induction-coil surrounding the said core for magnetically affecting the said core and having two coils, one of said coils formed of coarse wire of few turns and connected in series with the said local circuit, the other of said coils formed of fine wire of many turns and connected in series with the said coil of coarse wire and the main line, as set forth.

2. In a telephone system the combination of a local transmitting-circuit comprising a battery and a transmitter, of main-line circuit, a receiving means comprising two magneto-telephones, one of said telephones having a diaphragm, a magnetic core for operating said diaphragm, an induction-coil surrounding the said core and for magnetically affecting the said core and having two coils, one of said coils being formed of coarse wire of few turns and in series with the said local transmitting-circuit and in shunt of the main-line circuit, the other of said coils formed of fine wire of many turns and connected in series with the main line and the other telephone, as set forth.

3. In a telephone system the combination of a transmitting-circuit comprising a battery and a transmitter, a main-line circuit, a telephone-receiver having a diaphragm, a core for operating the said diaphragm, an induction-coil located on the said core having two coils, one of said coils constituting a transmitting-coil connected in series with the said transmitting-circuit, the other of said coils constituting a receiving-coil and connected in series with the said main-line circuit and in series with two parts of the said transmitting-circuit one of the said parts comprising the said transmitting-coil.

809,424. LOCK. CHARLES J. CALEY and HENRY G. VOIGHT, New Britain, Conn., assignors to The Russell and Erwin Manufacturing Company, New Britain, Conn., a Corporation of Connecticut. Filed Oct. 19, 1904. Serial No. 229,004.

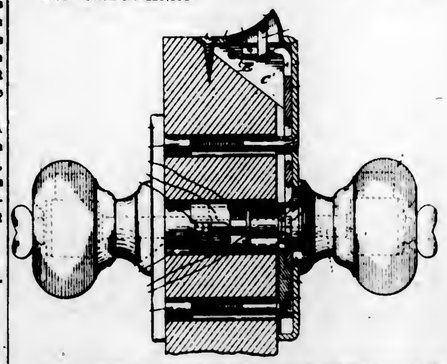

Claim.—1. In a lock, a latch-slide, a knob and connections for operating said slide, a dogging device carried by said slide and means carried by said knob for operating said dogging device to check the movement of said slide.

2. In a lock, a latch-slide, a knob and connections for operating said slide, a dogging device carried by said slide and movable independently thereof and a stop arranged to coact with said dogging device and means operable through said knob for moving said dogging device.

3. In a lock, a reciprocating latch-slide, a knob, a dogging-slide carried by said reciprocating latch-slide said dogging-slide moving in a plane at an angle to that of the latch-slide, a stop coacting with said dogging-slide and means accessible through said knob for operating said dogging-slide.

4. In a lock, a reciprocating latch-slide, means for operating the same to retract it, a dogging device carried by said slide, means for shifting the position of said dogging device into its unlocked or locked position and a spring operating to advance the latch-slide, said spring being arranged to frictionally hold the dogging-slide in either of its operative positions.

5. In a lock, a plate, a latch-slide carried at the inner side thereof, a second plate and means for securing the same to the first-mentioned plate and adjusting said plates to and fro, a knob carried by each of said plates, a lock carried by each of said knobs, means of connection between each of said knobs and said latch-slide, a dogging device, independent roll-backs for operating said dogging device and means of connection between said roll-backs and said locks.

6. In a lock, two plates adjustable to and fro, a latch-slide carried by one of said plates, a knob carried by the same plate in turn carrying a roll-back coöperating with said slide, a knob carried by the other plate, a knob-shank projecting therefrom, a tubular telescopic coupling between said shank and said roll-back.

7. In a lock, a latch-slide, a dogging device carried by the slide and means comprising two independent alined spindles controllable from opposite sides of the door to operate said dogging device to check the movement of said slide.

8. In a lock, two plates adjustable to and fro, a latch-slide carried by one of said plates, a knob carried by the same plate in turn

carrying a roll-back coöperating with said slide, a knob carried by the other plate, a knob-shank projecting therefrom, a tubular telescopic coupling between said shank and said roll-back, a dogging device arranged to coöperate with said latch-slide to engage or disengage the same and independent key-controlled means carried by each of said knobs for operating said dogging device.

9. In a lock, two plates adjustable to and fro, a latch-slide carried by one of said plates, a knob carried by the same plate in turn carrying a roll-back coöperating with said slide, a knob carried by the other plate, a knob-shank projecting therefrom, a tubular telescopic coupling between said shank and said roll-back, a dogging device carried by said latch-slide and independent key-controlled means for operating said dogging device, said means being accessible from each side of the lock.

10. In a lock, a frame-plate arranged to bear against the outer surface of the door said plate being recessed on its inner surface to receive operating parts, a latch-slide and a roll-back located in said recess, a face-plate arranged to bear against the edge of the door and carried by said side plate, a second plate independent of said first-mentioned plate and said face-plate and arranged to be engaged upon the opposite side of the door, knobs carried by each of said plates said knobs being adjustably connected with each other and in turn being connected with said slide.

11. In a lock, a pair of escutcheon-plates adjustable to and fro, separate knobs carried by each of said plates and movable therewith, a latch-slide carried by one of said plates and means of connection between said latch-slide and each of said knobs, a dogging device arranged to check the movement of said slide and means on opposite sides of the lock for operating said dogging device one of said means comprising a spindle located concentrically with one of said knob-shanks and controllable independently of said knobs.

12. In a lock, two plates adjustable to and fro, a latch-slide carried by one of said plates, a knob carried by the same plate, a roll-back connected to said knob and coöperating with said slide, a knob carried by the other plate, a knob-shank carried thereby and projecting therefrom, and adjustable means of operative connection between the knob-shank and said latch-slide, whereby said second plate may be adjusted to and fro with said knob and operative connection maintained between both of said knobs and said latch mechanism.

13. In a lock, two plates adjustable to and fro, a latch-slide carried by one of said plates, a knob carried by the same plate, a roll-back operated by said knob and coöperating with said slide, a knob carried by the other plate and in alinement with the first-mentioned knob, a knob-shank projecting from said second knob, and a telescopic connection between the same and the latch-operating mechanism.

14. In a lock, two plates adjustable to and fro, a latch-slide carried by one of said plates, a knob carried by the same plate, a roll-back connected to said knob and coöperating with said slide, a knob carried by the other plate, a knob-shank carried thereby and projecting therefrom, and a telescopic connection between the knob-shank and said latch-slide, whereby said second plate may be adjusted to and fro with said knob and operative connection maintained between both of said knobs and said latch mechanism, and a lock carried by one of said knobs, said lock including a rotatable member and means of connection between said rotatable member and the latch-slide.

809,425. **LOCK AND LATCH FITTINGS.** CHARLES J. CALEY, New Britain, Conn., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn., a Corporation of Connecticut. Filed Oct. 29, 1904. Serial No. 230,469.

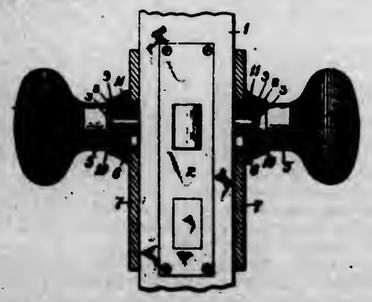

Claim.—1. In lock and latch fittings, the combination of a spindle, knobs, with an antifriction device for one of said knobs comprising a ball race and retainer, a series of balls carried thereby and a conical bearing carried by said spindle and affording a longitudinal as well as vertical abutment.

2. A spindle-bearing comprising the combination of a plate forming a housing and support, a ball race and retainer, a series of balls carried therein, a knob-spindle and a conical bearing carried thereby and coacting with said balls for resisting longitudinal as well as vertical movement of said spindle, substantially as described.

3. In a spindle-bearing, the combination of a housing, a series of balls, a knob-spindle and a bearing member carried thereby and adapted to rotate therewith and having a convexly-curved surface for permitting compensation for angular displacement.

4. In a device of the character described, the combination of a thimble or rose-plate, a ball race and retainer secured therein, a series of balls carried in said retainer, a spindle, a knob and a conical bearing member for coacting with said balls.

5. In a device of the character described, the combination of a rose-plate or thimble, a ball race and retainer secured therein, a series of balls in said retainer, a yielding support for said retainer, a knob and a conical bearing for coacting with said parts for the purpose specified.

6. In a device of the character described, the combination of a rose-plate or thimble, a ball race and retainer secured therein, a yielding support therefor, a series of balls in said retainer, a knob and a conical bearing having a curved surface for compensation, substantially as described.

7. In a device of the character described, the combination of a spindle having a threaded portion on one end, a housing, a series of antifriction-balls located therein, a bearing carried by said spindle, and a knob and coupling affording means of connection with said threaded portion of said spindle, substantially as described and for the purpose specified.

8. In lock and latch mechanism, the combination of a thimble or rose-plate, a ball race and retainer arranged therein, a series of balls carried by said retainer, a knob, a spindle connected thereto, a conical bearing arranged to coact with said balls and affording a longitudinal as well as vertical abutment for said knob.

9. As an article of manufacture, a lock and latch fitting, comprising, a thimble or rose-plate adapted to be secured to a door and having a vertical inner shoulder, a combined ball race and retainer secured in said thimble or rose-plate, a series of balls contained therein but exposed outwardly and toward the axis for coöperation with a conical bearing, and a spring arranged between said shoulder and said combined retainer and ball-race, affording a yielding abutment therefor.

809,426. **BINDER.** FREDERICK A. CLEVELAND, New York, N. Y. Filed May 17, 1905. Serial No. 260,784.

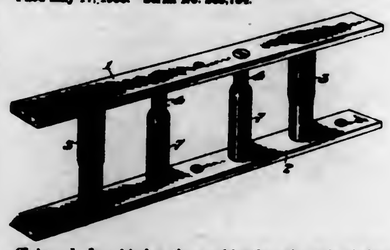

Claim.—1. In a binder, the combination of a pair of clamping members, a post attached to one of said clamping members, an unattached pawl or dog carried by said post and fulcrumed therein and adapted to engage the inner surface of a casing, a casing secured to the other of said clamping members adapted to telescope over said post, substantially as described.

2. In a binder, the combination of a pair of clamping members, a post having a slot at the lower end thereof attached to one of said clamping members, an unattached pawl or dog carried by said post and fulcrumed therein and adapted to engage the inner surface of a casing, a casing secured to the other of said clamping members adapted to telescope over said post, substantially as described.

3. In a binder, the combination of a pair of clamping members, a post having a slot at the lower end thereof attached to one of said clamping members, an unattached pawl or dog carried by said post and fulcrumed therein in such a manner that the bottom of said slot forms a stop to limit the movement of said pawl or dog, a casing secured to the other of said clamping members adapted to telescope over said post, substantially as described.

4. In a binder, the combination of a pair of clamping members, a post attached to one of said clamping members, an unattached pawl or dog carried by said post and fulcrumed therein and adapted to engage the inner surface of a casing, a casing having a serrated inner surface secured to the other of said clamping members and adapted to telescope over said post, substantially as described.

5. In a binder, the combination of a pair of clamping members, a post attached to one of said clamping members, an unattached pawl or dog carried by said post and fulcrumed therein and adapted to engage the inner surface of a casing, a casing having a threaded inner surface secured to the other of said clamping members and adapted to telescope over said post, means for rotating said post in said casing, substantially as described.

6. In a binder, the combination of a pair of clamping members, a post having a chamber at the lower end thereof attached to one of said clamping members, an unattached pawl or dog carried by said post and fulcrumed therein and adapted to engage the inner surface of a casing, a casing secured to the other of said clamping members adapted to telescope over said post, substantially as described.

7. In a binder, the combination of a pair of clamping members, a post having a slot at the lower end thereof, said slot being partially closed by means of a stop member secured therein, an unattached pawl or dog carried by said post in said slot and fulcrumed against said stop member and adapted to engage the inner surface of a casing, a casing secured to the other of said clamping members adapted to telescope over said post, substantially as described.

8. In a binder, the combination of a pair of clamping members, a post attached to one of said clamping members, an unattached pawl or dog carried by said post and having one end thereof adapted to be fulcrumed therein and the other end thereof adapted to engage the inner surface of a casing, a casing secured to the other of said clamping members adapted to telescope over said post, substantially as described.

9. In a binder, the combination of a pair of clamping members, a post attached to one of said clamping members, an unattached pawl or dog carried by said post and having one end thereof curved to fulcrum therein and the other end thereof adapted to engage the inner surface of a casing, a casing secured to the other of said clamping members adapted to telescope over said post, substantially as described.

10. In a binder, the combination of a pair of clamping members, a post attached to one of said clamping members, an unattached pawl or dog carried by said post and having one end thereof formed on a circular arc to fulcrum therein and the other end thereof adapted to engage the inner surface of a casing, a casing secured to the other of said clamping members adapted to telescope over said post, substantially as described.

11. In a binder, the combination of a pair of clamping members, a post having a slot at the lower end thereof, said slot being partially closed by means of a stop member secured therein, a stop member having a portion thereof adapted to form a fulcrum for a pawl or dog, an unattached pawl or dog carried by said post in said slot and having one end thereof adapted to be fulcrumed against said stop member and the other end thereof adapted to engage the inner surface of a casing, a casing secured to the other of said clamping members adapted to telescope over said post, substantially as described.

12. In a binder, the combination of a pair of clamping members, a post having a slot at the lower end thereof, said slot being partially closed by means of a stop member secured therein, a stop member having a portion thereof curved to form a fulcrum for a pawl or dog, an unattached pawl or dog carried by said post in said slot and having one end thereof curved to adapt it to be fulcrumed against said stop member and the other end thereof adapted to engage the inner surface of a casing, a casing secured to the other of said clamping members adapted to telescope over said post, substantially as described.

13. In a binder, the combination of a pair of clamping members, a post having a slot at the lower end thereof, said slot being partially closed by means of a stop member secured therein, a stop member having a portion thereof formed on a circular arc to provide a fulcrum for a pawl or dog, an unattached pawl or dog carried by said post in said slot and having one end thereof formed on a circular arc to adapt it to be fulcrumed against said stop member and the other end thereof adapted to engage the inner surface of a casing, a casing secured to the other of said clamping members adapted to telescope over said post, substantially as described.

14. In a binder, the combination of a pair of clamping members, a post having a slot at the lower end thereof, said slot being partially closed by means of a stop member secured therein, a stop member having a portion thereof formed on a circular arc to provide a fulcrum for a pawl or dog, an unattached pawl or dog carried by said post in said slot and having one end thereof formed on a circular arc to adapt it to be fulcrumed against said stop member and having at the other end thereof a projection adapted to engage coöperating projections on the inner surface of the casing, a casing having projections from the inner surface thereof adapted to engage said projection on said pawl or dog, said casing being secured to the other of said clamping members and adapted to telescope over said post, substantially as described.

809,427. **BOTTLE-CLOSURE.** JOSEPH C. COMBS, Alexandria, Ind. Filed Dec. 10, 1904. Serial No. 237,504.

Claim.—1. In combination with a bottle, the neck 2 having the annular recess 10 formed at the mouth thereof, the resilient ring 11 seated in the recess 10, the disk 9 above the ring 11, a closure consisting of a tubular body closed at one end and receiving the neck therein, said closed end engaging the disk 9 and having a projection pressed outwardly therefrom and spaced from the disk 9 so as to be readily severed from the closed end of the tubular body, and an annulus coöperating with the tubular body to prevent displacement thereof.

2. In combination with a bottle or like necked receptacle, a closure comprising a tubular body receiving the neck, a second tubular member secured to the neck and preventing displacement of the first-mentioned tubular body, and resilient annuli between the neck and the tubular members aforesaid.

3. In combination with a bottle or like necked receptacle, a closure comprising a tubular body receiving the neck, a second tubular member secured to the neck and preventing displacement of the first-mentioned tubular body, resilient annuli between the neck and the tubular members aforesaid, and means upon the neck interlocking with the tubular member aforesaid.

4. In combination with a bottle or like necked receptacle, a sectional closure comprising a tubular body receiving the neck and having a portion pressed therefrom to provide a projection adapted to be severed from said body, a second tubular member adapted to receive the first-mentioned tubular body and the neck, a resilient annulus between the neck and the tubular member, and projections extending from the tubular member and having interlocking connection with the neck.

5. In combination with a bottle or like necked receptacle, a ring surrounding said neck and secured thereto, said ring being provided with an outwardly-projecting flange, and a closure for the neck having a plurality of lugs or extending members provided with projections to engage over the flange of the ring aforesaid, whereby said closure is prevented from displacement.

809,428. **WAX-POT FOR SEWING-MACHINES.** GEORGE L. CONCORAN and GEORGE A. DOSTER, St. Louis, Mo., assignors to Champion Shoe Machinery Company, St. Louis, Mo., a Corporation of Missouri. Filed Aug. 4, 1905. Serial No. 272,720.

Claim.—In a machine of the class described, mechanism for measuring and feeding a strand of thread, a wax-pot carried by the frame of the machine and having a thread-opening in its side wall alining with said thread measuring and feed mechanism, mechanism for winding thread onto a bobbin, and a thread-opening in the bottom of the wax-pot for receiving a second strand of thread that passes through the wax-pot and is wound onto the bobbin; substantially as described.

809,428.

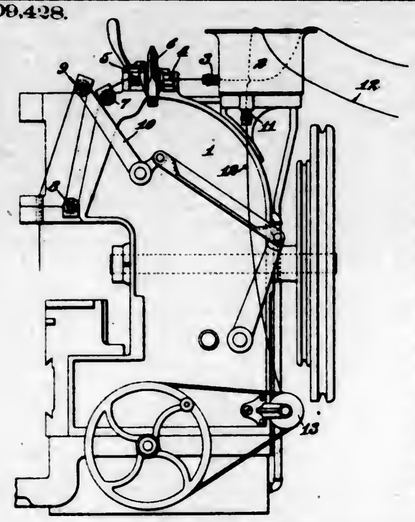

809,429. AUTOMATIC RECORDING ICE-SCALE. CHARLES B. CRANE, Seattle, Wash. Filed May 2, 1905. Serial No. 258,429.

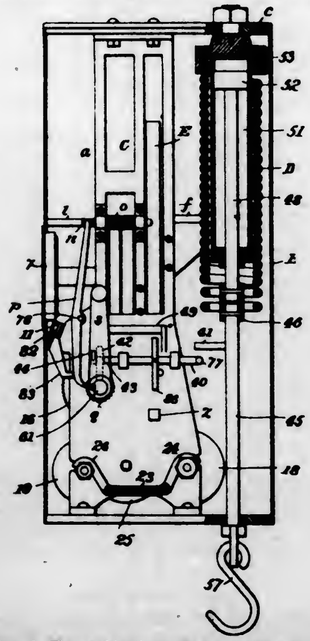

Claim.—1. The combination with the casing, printing-wheels, spring-supported rod and connections, and platen of a spring-scale, of a handle outside the casing, connections for operating the printing devices, two recording-strips, a cutter for cutting one of the strips, means for operating it from said handle, and means for delivering the cut portions outside the casing, substantially as set forth.

2. The combination in a spring-scale, of a casing, a helical spring suspended within the same, a rod connected with said spring and extending through the bottom of the casing, a ticket-printing mechanism including means whereby the type indicating the weight is shifted on the movement of the said rod and in proportion thereto, a handle outside the casing, connections whereby the printing mechanism may be actuated while the spring is distended, and a locking device whereby a second movement of the handle is prevented until the spring is again contracted, substantially as set forth.

3. The combination in a weighing-machine, of a suspended helical spring, a rod connected to the lower end of the spring and extending upward within the spring and provided with a piston, and a cylinder within said spring receiving said piston and constituting therewith a dash-pot, substantially as set forth.

4. The combination of the type-disk E, means for turning the same in proportion to the weight of an article to be weighed, said disk provided on its face with a series of tapering sockets, arranged in a circle, a slide having a pointed end adapted to said sockets, means for moving the slide toward the disk to bring each type into proper printing position, an operating-handle, and means for preventing the movement of the latter until the slide is in position in one of the sockets, substantially as set forth.

5. The combination with a type-disk, slide *l*, platen, and operating-handle *s*, of a ratchet *g* connected to said handle, a lever *p* engaging said ratchet at one end, and a pin on the slide engaging the other end of the lever, substantially as set forth.

6. The combination in a weighing-machine, of a suspended spring, a rod suspended therefrom, printing mechanism including a type-disk connected to be turned in proportion to the extent to which the spring is distended, an operating-handle, and means for preventing the operation of the handle until the spring is distended and for restraining the further movement of the handle until the spring again contracts, substantially as set forth.

7. The combination with the spring and rod 45, printing mechanism and operating-handle, of a rock-shaft provided with studs for limiting the movement of the handle and with a projecting arm, and a pin upon the rod 45 for engaging said arm, substantially as set forth.

8. The combination with the spring, rod 45 and its pin 41, of printing devices, an operating-handle, an arm 42 connected to be carried therewith, and a rock-shaft 40 provided with studs 43, 44 at an angle to each other and with an arm 77 in position to be struck by the pin 41, substantially as set forth.

9. The combination with the spring-balance of a weighing-machine, of a printing-disk connected to be moved in proportion to the distension of the spring, dating-disks, means for adjusting the same, a platen beneath the said disks, an operating-handle, means for operating the platen on the turning of said handle, and means for locking the handle until the parts are in position for printing, substantially as set forth.

10. The combination with the type-carrying devices, a movable bar provided with means for supporting a body to be weighed, and connections for operating the type-carriers from said bar, of a movable platen, a shaft, a handle for operating the same, a cam arranged to lift the platen on the turning of the shaft, and means for locking the handle until the type-carriers are in place, substantially as set forth.

11. The combination with the type-carrying devices, a movable bar provided with means for supporting a body to be weighed, and connections for operating the type-carriers from said bar, of a movable platen, a shaft, a handle for operating the same, a cam arranged to lift the platen on the turning of the shaft, a hammer, and means for operating the hammer to carry the platen percussively toward the type after the platen is raised, substantially as set forth.

12. The combination with the type-carrying devices and platen, a movable bar provided with means for supporting a body to be weighed, and connections for operating the type-carriers from said bar, of a cam, connections for raising the platen, a hammer for striking the platen, and means for withdrawing and releasing the said hammer after the platen is raised, substantially as set forth.

13. The combination with the type-carrying devices and platen, a movable bar provided with means for supporting a body to be weighed, and connections for operating the type-carriers from said bar, of a shaft, a cam thereon for raising the platen, a hammer and spring-support therefor, and a pin upon the said shaft arranged to engage and release said hammer, substantially as set forth.

14. The combination with the type-carrying devices and platen, a movable bar provided with means for supporting a body to be weighed, and connections for operating the type-carriers from said bar, of means for carrying a plurality of strips between the platen and type, a cutter for cutting one of the strips, an operating-handle, means whereby the said strips are carried beneath the type, and the cutter operated and the platen carried to and from the type upon the movement of the handle, a casing inclosing the parts, and means for delivering the cut portion of the strip outside the casing, substantially as set forth.

15. The combination with the type-carriers and platen, a movable bar provided with means for supporting a body to be weighed, and connections for operating the type-carriers from said bar, of means for feeding two strips across the platen, a cutter, means for actuating the same to cut sections from one of the strips, and a spool and means for turning it to roll up the other strip, substantially as set forth.

16. The combination with the type-carriers, and platen, a movable bar provided with means for supporting a body to be weighed, and connections for operating the type-carriers from said bar, of means for feeding two strips across the platen, a cutter, means for actuating the same to cut sections from one of the strips, and a spool and a motor for turning it to roll up the other strip, substantially as set forth.

17. The combination with the type-carriers and platen, a movable bar provided with means for supporting a body to be weighed, and connections for operating the type-carriers from said bar, of means for feeding two strips across the platen, a cutter, means for actuating the same to cut sections from one of the strips, a spool, and a spring-actuated drum to turn the same to roll up the other strip, substantially as set forth.

18. The combination with the type-carrying devices and platen, a movable bar provided with means for supporting a body to be weighed, and connections for operating the type-carriers from said bar, of means for carrying superposed strips across the face of the platen, and means for guiding a printing-ribbon transversely across the face of the platen over one of the strips and back over the other, substantially as set forth.

19. The combination with the type-carrying devices and platen, a movable bar provided with means for supporting a body to by weighed, and connections for operating the type-carriers from said bar, of means for feeding a strip across the face of the platen, a printing-ribbon, spools, and a guide-roll arranged to direct the said ribbon across the face of the platen at right angles to the direction of the paper strip, substantially as set forth.

20. The combination with the spring, shaft, type-disk and spring-blade *i*, of a bearing-pin *j* adjustable upon said disk, substantially as set forth.

21. The combination with the frame having slots for the reception of shafts, of oppositely-arranged spools, two hooked levers engaging said shafts, and a spring connecting the ends of both levers, substantially as set forth.

809,430. MAIL-BAG RECEIVING AND DELIVERING APPARATUS. THEODORE CROSS, Washington, Ind. Filed Oct. 11, 1905. Serial No. 282,312.

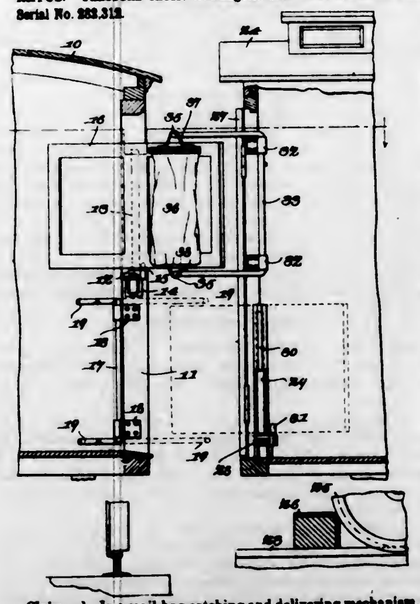

Claim.—1. In a mail-bag catching and delivering mechanism, a plate having means applied intermediate thereof for swinging in a car-doorway, a supporting structure movable toward and away from the path of the car, and a mail-bag-supporting means attached to said structure.

2. In a mail-bag catching and delivering mechanism, a plate having means applied intermediate thereof for swinging in a car-doorway, guide-tracks arranged at right angles to the line of movement of the car, a supporting structure movable upon said tracks, and mail-bag-supporting means carried by said structure.

3. The combination with a railway-car of a plate having means applied intermediate thereof for swinging in the doorway of said car, means for suspending a mail-bag from said car, guide-tracks arranged at right angles to the line of movement of the cars, a supporting structure movable upon said guide-tracks, a plate having means applied intermediate thereof for swinging in said structure, and means for suspending a mail-bag from said structure.

4. The combination with a railway-car of a plate having means applied intermediate thereof for swinging in the doorway of said car, means for suspending a mail-bag and movably connected to the car and swinging into and projecting from the same, means for suspending a mail-bag in the path of said plate when projected, and means for removing a mail-bag from said suspending means when projected.

5. The combination with a railway-car of a plate having means applied intermediate thereof for swinging in the doorway of said car, means for suspending a mail-bag and movably connected to the car and swinging into and projecting from the same, a supporting structure movable toward and away from the line of movement of the car, a plate having means applied intermediate thereof for swinging in said structure, means for suspending a mail-bag and movably connected to said structure and swinging into and projecting from the same.

6. The combination with a car of a bar disposed transversely of its doorway-opening, a plate mounted intermediate thereof for swinging upon said bar, and means for suspending a mail-bag in the path of said plate when projected.

7. The combination with a car of a bar disposed transversely of its doorway-opening and provided with a stop member, a plate pivoted intermediately thereof to said bar and limited in its movement by said stop member, and means for suspending a mail-bag in the path of said plate when projected.

8. The combination with a railway-car of a mail-bag-suspending member consisting of a U-shaped bar mounted to swing through the doorway-opening of the car and with oppositely-extending suspension-fingers at the terminals of its arms.

809,431. WIND-WHEEL. CHARLES R. CUTTING, Raton, N. Mex. Filed Apr. 25, 1905. Serial No. 257,335.

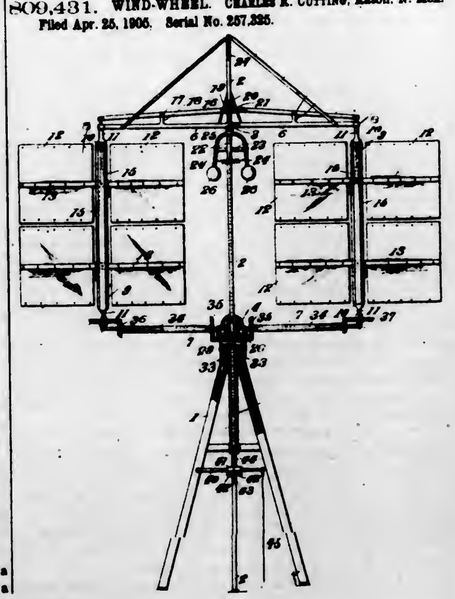

Claim.—1. In a wind-wheel, the combination of a wheel-shaft, sets of blades rotatable with said shaft, the blades of each set being movable about horizontal axes, means for feathering the blades, and means for causing the blades of each set to move in opposite directions in feathering about the horizontal axes thereof.

2. In a wind-wheel, the combination of a wheel-shaft, sets of blades rotatable with said shaft, each set of blades being movable about a vertical axis, means for causing each set of blades to make a half-revolution about its vertical axis in one revolution of the wheel, the blades of each set of blades being movable about horizontal axes also, a governor for feathering the blades about their horizontal axes, said governor embodying governor-levers, and independent connections between the governor-levers and the blades of each set aforesaid whereby said blades of each set are caused to move in opposite directions in feathering about the horizontal axes thereof.

3. In a wind-wheel, the combination of a wheel-shaft, a plurality of arms projected from said shaft, vertical frames supported by said arms, blades movable about horizontal axes and carried by the frames aforesaid, and a governor connected with said blades so as to cause the same to move in opposite directions in throwing the latter out of the wind.

809,432. **ADJUSTABLE HOLDER FOR DRAWING MODELS AND THE LIKE.** GUSTAV J. DIRRSCHERBL, Dresden-Plauschen, Germany. Filed Apr. 16, 1904. Serial No. 203,515.

Claim.—1. An adjustable holder for drawing models, comprising a horizontal disk provided with a scale, a vertical disk provided with a scale, pivotally mounted at the center of said horizontal disk, and a holding device pivotally secured to the said vertical disk with capability of turning in a vertical plane, substantially as described.

2. An adjustable holder for drawing models comprising a horizontal disk *d*, a vertical disk *f* pivotally mounted at the center of said horizontal disk *d*, a second horizontal disk *i* pivotally secured to the said vertical disk *f*, a second vertical disk *l* pivotally mounted at the center of said horizontal disk *i*, all the said disks *d f i l* being provided with scales, and a holding device pivotally secured to the said disk *l* with capability of turning in a vertical plane, all substantially as described.

809,433. **ROTARY ELECTRIC SWITCH.** JOHN DUDDELL, Fallsworth, Manchester, England. Filed Mar. 15, 1905. Serial No. 250,226.

Claim.—1. A rotary switch comprising a spring-drum, a support for the same, contacts on each of said parts and means for permitting said contacts to engage each other when the drum rotates in one direction and for preventing engagement when the drum rotates in the other direction, substantially as described.

2. A rotary switch comprising a spring-drum, a support therefor, a contact on each of said parts, and a shield of non-conducting material carried by said drum said shield covering the contact on the drum and being set at an incline to said drum so that when the drum is rotated in one direction said shield will engage with a contact on the support and force said contact into engagement with the drum-contact, while when the drum is rotated in the opposite direction said shield will prevent engagement of the contacts, substantially as described.

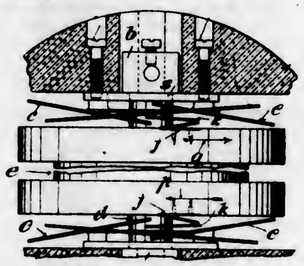

3. A rotary switch consisting of a body of non-conducting material, a spring-drum mounted to rotate therein, a current-consuming apparatus, wires connecting said apparatus with the drum, fixed contact-plates carried by the body, an electric circuit connected to said plates, contact-plates connected to the drum, and means for allowing the side plates to engage with each other on the rotation of the drum in one direction and for preventing the engagement of said plates on the rotation of the drum in the other direction, substantially as described.

809,434. **RAIL-JOINT CHAIR.** AURELIUS M. EWING, Seattle, Wash. Filed Sept. 11, 1905. Serial No. 277,942.

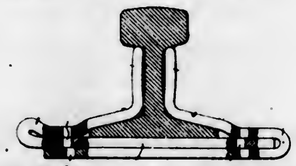

Claim.—1. A rail-joint comprising superimposed plates adapted to be interposed between the rail and a tie and each extending laterally upon both sides of the rail, the upper plate being folded upon itself for engagement with the base-flanges upon one side and the lower plate folded over and embracing one extended side of the upper plate and for engagement with the base-flange of the opposite side.

2. A rail-joint chair comprising superimposed plates adapted to be interposed between the rail and a tie and each extending laterally upon both sides of the rail, the upper plate being folded upon itself for engagement with the base-flanges upon one side and the lower folded over and embracing one extended side of the upper plate and for engagement with the base-flange of the opposite side, the said extended plates being each provided upon both sides with spike-receiving openings normally out of alinement but arranged to be forced to register and the plates to grip the rail by the driving of a fastening.

809,435. **RAILWAY-CAR TRUCK.** WALTER PERRIN, South Milwaukee, Wis., assignor to The Bucyrus Company, South Milwaukee, Wis., a Corporation of Wisconsin. Filed Apr. 14, 1905. Serial No. 255,557.

Claim.—1. A railway-car truck, comprising a bolster, upper and lower arch-bars, bolster-columns, a spring-plank secured to the lower arch-bars, means connecting the upper arch-bars to prevent independent lateral movement thereof, and diagonal braces attached at their ends to the upper ends of the bolster-columns and the spring-plank, respectively.

2. A railway-car truck, comprising a bolster, upper and lower arch-bars, bolster-columns, a spring-plank secured to the lower arch-bars, lugs on the bolster ends engaging the upper arch-bars to prevent independent lateral movement of said arch-bars, and diagonal braces attached at their ends to the upper ends of the bolster-columns and the spring-plank, respectively.

3. A railway-car truck, comprising a bolster, upper and lower

arch-bars, bolster-columns, a spring-plank secured to the lower arch-bars, lugs on the bolster ends engaging the upper arch-bars to prevent independent lateral movement of said arch-bars, and diagonal braces attached to the top of the bolster-columns by the through-bolts and to the spring-plank, respectively.

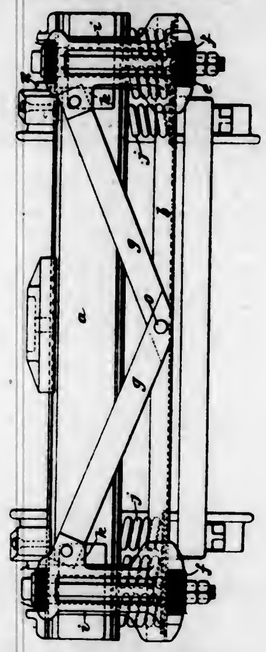

809,436. **DIPPER FOR DREDGES, EXCAVATORS, AND THE LIKE.** WALTER PERRIN, South Milwaukee, Wis., assignor to The Bucyrus Company, South Milwaukee, Wis., a Corporation of Wisconsin. Filed Apr. 14, 1905. Serial No. 255,558.

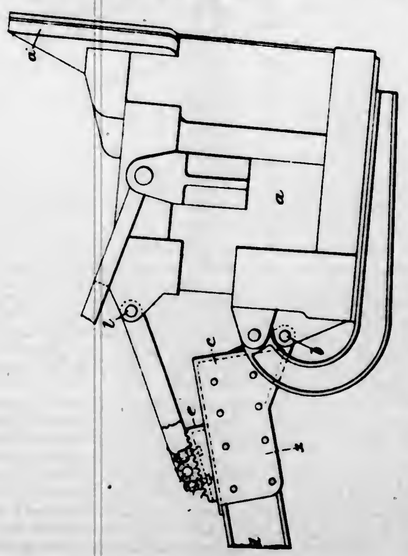

Claim.—1. The combination of a dredge-dipper, a handle to which said dipper is hinged, a brace pivotally connected to the dipper, a journal-bearing in which the other end of said brace is pivoted, and means for adjustably securing said bearing to the dipper-handle; whereby the cutting angle of the dipper may be varied.

2. The combination of a dredge-dipper, a handle to which said dipper is hinged, a brace pivotally connected to the dipper, a serrated lug on the handle, a journal-bearing in which the other end of the brace is pivoted and having serrations meshing with those on the lug, and means for adjustably securing said bearing to the lug.

3. The combination of a dredge-dipper, a handle to which said dipper is hinged, a brace pivotally connected to the dipper, a serrated lug on the handle, a journal-bearing in which the other end of the brace is pivoted and having serrations meshing with those on the lug, and bolts carried by said bearing and engaging a slot in said lug to adjustably secure said bearing to the lug.

809,437. **THREAD-GUIDE.** DAVID C. FINNEY, Huntsville, Ala. Filed July 29, 1903. Renewed Dec. 7, 1905. Serial No. 290,783.

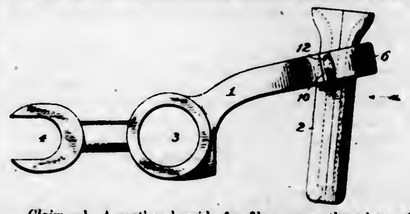

Claim.—1. A sectional guide for fiber, yarn, thread or other material having a flaring end, one section thereof being provided at its flaring end with means for engaging the interior of the flaring end of another section, whereby said sections are held in proper relation to each other.

2. A guide for fiber, yarn, thread or other material, comprising longitudinally-disposed separable sections and having a flaring end, one section thereof being provided at its flaring end with means for engaging the interior of the flaring end of another section, whereby said sections are held in proper relation to each other.

3. A sectional guide for yarn, fiber, thread or other material having a flaring end, one section thereof being provided at its flaring end with means for engaging recesses in the flaring end of another section, substantially as described.

4. A guide for yarn, fiber, thread or other material, comprising longitudinally-disposed separable sections and having a flaring end, one section being provided at its flaring end with means for engaging recesses in the flaring end of another section, substantially as described.

5. A sectional guide for yarn, fiber, thread or other material having a flaring end, one section thereof being provided at its flaring end with projecting leaves for engaging the flaring end of another section, substantially as described.

6. A guide for yarn, fiber, thread or other material, comprising longitudinally-disposed separable sections and having a flaring end, one section being provided at its flaring end with projecting leaves for engaging the flaring end of another section, substantially as described.

7. A sectional guide for yarn, fiber, thread or other material having a flaring end, one section thereof being provided at its flaring end with projecting leaves for engaging recesses in the flaring end of another section, substantially as described.

8. A guide for yarn, fiber, thread or other material, comprising longitudinally-disposed separable sections and having a flaring end, one section being provided at its flaring end with projecting leaves for engaging recesses in the flaring end of another section, substantially as described.

9. A hollow sectional guide for fiber, yarn, thread or other material, one section thereof having fingers near one end arranged to engage the interior of the corresponding end of another section, substantially as described.

10. A hollow guide for fiber, yarn, thread or other material, comprising longitudinally-disposed separable sections, one section thereof having fingers near one end arranged to engage the interior of the corresponding end of another section, substantially as described.

11. A hollow sectional guide for fiber, yarn, thread or other material, one section thereof having wedge-shaped fingers near one end

arranged to engage the interior of the corresponding end of another section, substantially as described.

12. A hollow guide for fiber, yarn, thread or other material, comprising longitudinally-disposed separable sections, one section thereof having wedge-shaped fingers near one end arranged to engage the interior of the corresponding end of another section, substantially as described.

13. A hollow sectional guide for fiber, yarn, thread or other material, one section thereof having near one end an inclined surface arranged to seat on an inclined surface near the corresponding end of another section, substantially as described.

14. A hollow guide for fiber, yarn, thread or other material, comprising longitudinally-disposed separable sections, one section thereof having near one end an inclined surface arranged to seat on an inclined surface near the corresponding end of another section, substantially as described.

15. A sectional guide for fiber, yarn, thread or other material, one section thereof being provided with an inclined surface and projecting fingers, and another section opposite said first-mentioned section thereof being provided with an inclined surface and recesses arranged to seat the surface and fingers of its opposite section, substantially as described.

16. A guide for fiber, yarn, thread or other material, comprising longitudinally-disposed separable sections, one section being provided with an inclined surface and projecting fingers, and another section opposite said first-mentioned section being provided with an inclined surface and recesses arranged to seat the surface and fingers of its opposite section, substantially as described.

17. A sectional guide for fiber, yarn, thread or other material, having a separable end closure therein provided with an aperture, substantially as described.

18. A guide for fiber, yarn, thread or other material, comprising longitudinally-disposed separable sections, and having a separable end closure therein provided with an aperture, substantially as described.

19. A sectional guide for fiber, yarn, thread or other material, having in one end a longitudinally-perforated closure comprising separable sections, substantially as described.

20. A guide for fiber, yarn, thread or other material, comprising longitudinally-disposed separable sections, and having in one end a longitudinally-perforated closure comprising separable sections.

21. A sectional guide for fiber, yarn, thread or other material, having in one end a longitudinally-perforated closure, said closure comprising sections separable along a line at an angle to said perforation, substantially as described.

22. A guide for fiber, yarn, thread or other material, comprising longitudinally-disposed separable sections, and having in one end a longitudinally-perforated closure, said closure comprising sections separable along a line at an angle to said perforation, substantially as described.

23. The combination of a sectional guide for fiber, yarn, thread or other material, and a holder therefor comprising an eye having a swinging arm for opening and closing said eye, and means for securing said arm in closed position and engaging the guide, substantially as described.

24. The combination of a sectional guide for fiber, yarn, thread or other material, and a holder therefor comprising an eye having a swinging arm for opening and closing said eye, and means on said arm for securing it in closed position and engaging the guide, substantially as described.

25. The combination of a sectional guide for fiber, yarn, thread or other material, and a holder therefor comprising an eye having a swinging arm for opening and closing said eye, and a set-screw for securing said arm in closed position and engaging the guide, substantially as described.

26. The combination of a sectional guide for fiber, yarn, thread or other material, and a holder therefor comprising an eye having a swinging arm for opening and closing said eye, and a set-screw on said arm for securing it in closed position and engaging the guide, substantially as described.

27. The combination of a sectional guide for fiber, yarn, thread or other material, and a holder therefor comprising an eye having a swinging arm hung by a hinge-joint to the main portion of said holder for opening and closing the eye, and means for securing said arm in closed position and engaging the guide, substantially as described.

28. The combination of a sectional guide for fiber, yarn, thread or other material, and a holder therefor comprising an eye having a swinging arm hung by a hinge-joint to the main portion of said holder for opening and closing the eye, and means on said arm for securing it in closed position and engaging the guide, substantially as described.

29. The combination of a sectional guide for fiber, yarn, thread or other material, and a holder therefor comprising an eye having a swinging arm hung by a hinge-joint to the main portion of said holder for opening and closing the eye, and a set-screw for securing said arm in closed position and engaging the guide, substantially as described.

30. The combination of a sectional guide for fiber, yarn, thread or other material, and a holder therefor comprising an eye having a swinging arm hung by a hinge-joint to the main portion of said holder for opening and closing the eye, and a set-screw on said arm for securing it in closed position and engaging the guide, substantially as described.

31. The combination of a sectional guide for fiber, yarn, thread or other material, and a holder therefor, said holder having means whereby it can be released from its actuating means, and comprising means for simultaneously releasing said guide from said holder and the material passing therethrough, substantially as described.

32. The combination of a sectional guide for fiber, yarn, thread or other material, and a holder therefor, said holder having means whereby it can be released from its actuating means, and comprising an eye having a swinging arm for opening and closing said eye, and means for securing said eye in closed position and engaging the guide, substantially as described.

33. The combination of a sectional guide for fiber, yarn, thread or other material, one section thereof being provided with an inclined surface and projecting fingers, and another section thereof opposite said first-mentioned section being provided with an inclined surface and recesses arranged to seat the surface and fingers of its opposite section; and a holder for said guide comprising an eye having a swinging arm hung by a hinge-joint to the main portion of said holder for opening and closing said eye, and a set-screw on said arm for securing it in closed position and engaging the guide, substantially as described.

809,438. **MECHANISM FOR AUTOMATICALLY DISTRIBUTING LIQUID FUEL.** HENRI GALOPIN, Melbourne, Victoria, Australia. Filed May 19, 1905. Serial No. 261,220.

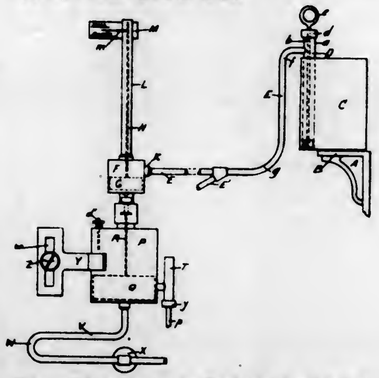

Claim.—1. In mechanism for distributing liquid fuel, in combination a chamber, containing a float, such float being adjustably weighted and having a vertical spindle contacting with a vertically-moving valve, operating against the orifice of a vertical inverted conical nozzle, and arranged to shut off the flow through such nozzle when said chamber has received a predetermined charge of such liquid, and a T-shaped pipe containing an overflow-pipe capable of vertical adjustment, substantially as and for the purposes herein described.

2. In mechanism for distributing liquid fuel, in combination, a chamber, containing a float, such float being adjustably weighted and having a vertical spindle contacting with a vertically-moving valve, operating against the orifice of a vertical inverted conical nozzle, and arranged to shut off the flow through such nozzle when said chamber has received a predetermined charge of such liquid, a T-shaped pipe containing an overflow-pipe capable of vertical adjustment, also a registering mechanism comprising a chamber containing a float with vertical spindle carrying a pointer at its upper extremity, and moving within a vertical tube carrying an index-plate, substantially as and for the purposes herein described.

3. In mechanism for distributing liquid fuel in combination a chamber, containing a float, such float being adjustably weighted and having a vertical spindle contacting with a vertically-moving valve, operating against the orifice of a vertical inverted conical nozzle, and arranged to shut off the flow through such nozzle when said chamber has received a predetermined charge of such liquid, a T-shaped pipe containing an overflow-pipe capable of vertical adjustment, also a supply-pipe with a siphon-bend at its inlet end having attached a pump comprising a pump-barrel, a plunger, a plunger-rod, a gland and a handle substantially as and for the purposes herein described.

4. In mechanism for distributing liquid fuel, in combination, a chamber containing a float, such float being adjustably weighted and having a vertical spindle contacting with a vertically-moving valve, operating against the orifice of a vertical inverted conical nozzle, and arranged to shut off the flow through such nozzle when said chamber has received a predetermined charge of such liquid, a T-shaped pipe containing an overflow-pipe capable of vertical adjustment, a registering mechanism comprising a chamber containing a float with vertical spindle carrying a pointer at its upper extremity, and moving within a vertical tube carrying an index-plate, and a supply-pipe with a siphon-bend at its inlet end having attached a pump comprising a pump-barrel, a plunger, a plunger-rod, a gland and a handle substantially as and for the purposes herein described.

809,439. **MEASURING-VALVE MECHANISM.** RUDOLPH W. GOSS, St. Louis, Mo., assignor to United States Fiber Stopper Company, St. Louis, Mo., a Corporation of South Dakota. Filed Jan. 23, 1905. Serial No. 242,189.

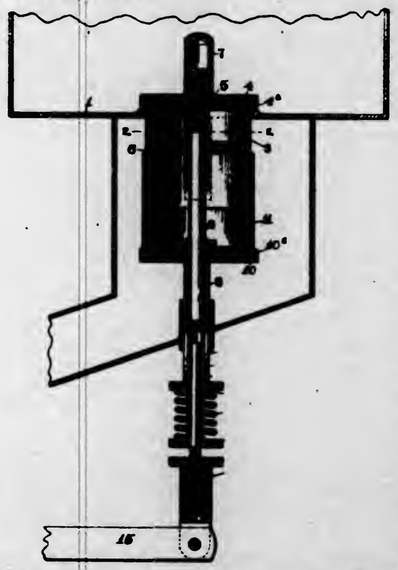

Claim.—1. In a measuring-valve mechanism, the combination with a measuring-chamber comprising telescopic sections, a tank to which one of the sections is rigidly secured, the other section being slidable on the rigid section, of valves without an interposed spring between them and being adapted to be moved longitudinally of said sections, one of said valves being adapted to be seated on the edge of the wall of the rigid section, and the other on the edge of the wall of the movable section, and a resiliently-controlled means for the valves and common to both of them for alternately opening and closing said valves; substantially as described.

2. In a measuring-valve mechanism, the combination with a tank, of a measuring-chamber having two parts, one of which is slidable on the other, and one of said parts being rigid with the tank, of valves without an interposed spring between them, said valves controlling the inlet and exit openings to and from said chamber, devices connected to said valves, and an expansible spring coöperating with said devices and whose energy is exerted to normally seat said valves; substantially as described.

3. In a measuring-valve mechanism, the combination with a casing including an extensible chamber comprising two parts, one of which is movable within the other, of operable valves in the ends of the casing for controlling the inlet and discharge openings to and from said chamber and adapted to be moved longitudinally thereof, means for adjusting said valves to accommodate them to the movement of the movable part of the chamber, said adjusting means also serving as operating means for said valves; substantially as described.

4. In a measuring-valve mechanism, the combination with a measuring-chamber, of valves for controlling the inlet and exit openings to and from said chamber, a rod on one of said valves having a flanged end, a sleeve on the other of said valves having a flanged end, said rod passing through said sleeve, and a spring interposed between the flanged ends of said rod and sleeve; substantially as described.

5. In a measuring-valve mechanism, the combination with a measuring-chamber, of a valve for closing the upper end of said chamber, a rod on said valve, a valve for closing the lower end of said chamber, a sleeve on said lower valve, through which sleeve said rod passes, the lower end of said rod being hollow, said rod and said sleeve being slotted, a rod 13 fitting in the hollow portion of the first-mentioned rod and having a cross-pin engaging slots in said first-mentioned rod and sleeve, and a spring coöperating with said first-mentioned rod and said sleeve; substantially as described.

6. In a measuring-valve mechanism, the combination with a measuring-chamber, of valves for controlling the inlet and outlet openings to and from said chamber, slotted members connected to said valves respectively, and a key passing through the slots of said members whereby when said key is moved in one direction it raises one of said valves from its seat, and when said key is moved in the opposite direction it moves the other of said valves from its seat; substantially as described.

7. In a measuring-valve mechanism, the combination with a measuring-chamber, of valves for controlling the inlet and outlet openings to and from said chamber, slotted members connected to said valves respectively, a key passing through the slots of said members whereby when said key is moved in one direction it raises one of said valves from its seat, and when said key is moved in the opposite direction it moves the other of said valves from its seat, and a spring for holding either of said valves to its seat while the other of said valves is unseated; substantially as described.

8. In a measuring-valve mechanism, the combination with the walls of a measuring-chamber, said walls being provided with valve-seats, one of said seats being fixed and the other movable, of means for adjusting the walls carrying the movable seat, whereby the cubical capacity of the chamber is changed, valves for coöperating with said seats, common means for operating said valves alternately, a compensating connection between one of said valves and said operating mechanism, and an adjusting mechanism between the other of said valves and said operating mechanism, whereby said last-mentioned valve may be adjusted to accommodate the changed position of its coöperating seat; substantially as described.

9. In a measuring-valve mechanism, the combination with telescoping walls forming a measuring-chamber, said walls having valve-seats at their ends, means for adjusting one wall with relation to the other whereby the cubical capacity of said chamber is changed, valves coöperating with said seats, common means for alternately opening and closing said valves, means for accommodating the valves in the changed position of the telescoping walls, said last-mentioned means operating independently of the valve-operating mechanism, whereby the same opening movement is imparted to both valves irrespective of the adjusted position of their coöperating seats; substantially as described.

10. In a measuring-valve mechanism, the combination with a fixed cylinder having a valve-seat at its upper end, a valve coöperating with said seat, means for holding said valve against rotation, a threaded rod engaging said seat, a telescoping cylinder coöperating with said first-mentioned cylinder, a valve which is seated against the lower end of said telescoping cylinder, means coöperating with both of said valves to move them from their seats alternately, a spring for moving said valves to seating position and holding them seated, means for adjusting the position of the telescoping cylinder, means for adjusting the position of the valve which coöperates with said telescoping cylinder to accommodate said valve to the different positions of said cylinder, said adjusting mechanism being independent of the valve-operating mechanism and includ-

ing the rod having threaded engagement with the valve seated on the upper end of the fixed cylinder, which threaded engagement constitutes a compensating mechanism for permitting said adjustment without disturbing the relation of said valve to its fixed seat; substantially as described.

809,440. FEED-BOX FOR CANE-MILLS. JOHN P. GOLDEN, Columbus, Ga. Filed Apr. 3, 1905. Serial No. 253,417.

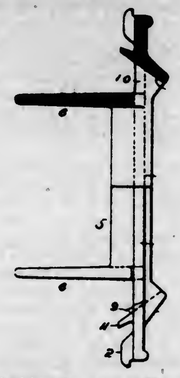

Claim.—1. A feed-box for a cane-mill having a feed-opening and a slot below the lower face of the feed-opening, flanges projecting inwardly from the inner face of the box said flanges having curved edges to conform to the curvature of the rolls of the mill, and an enlargement on the front face of the feed-box and having an inclined upper face alining with the lower wall of said slot.

2. A feed-box for cane-mills, having a slot near each end, outwardly-projecting drip-cups communicating with said slots, said feed-box having a feed-opening common to both slots and drip-cups, and flanges projecting inwardly at the upper and lower ends of said feed-opening.

809,441. CIGAR-HOLDER FOR BILLIARD AND POOL TABLES. ELBERT B. HAMES, Winthrop Harbor, Ill. Filed Dec. 27, 1904. Serial No. 238,594.

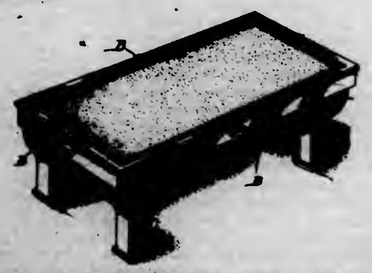

Claim.—1. A cigar-holder for billiard-tables and the like, consisting of a rest for holding the cigar, a rear vertical wall, and a forward extension at the upper end of said wall projecting horizontally beyond the front edge of said rest, said parts being apertured to receive holding-screws.

2. A cigar-holder for billiard-tables and the like, consisting of a rest for holding the cigar, a rear vertical wall, a forward extension at the upper end of said wall projecting horizontally beyond the front edge of said rest and then bent upwardly and then rearwardly to embrace the rail of the billiard-table, said parts being apertured to receive holding-screws.

809,442. CREAM-SEPARATOR. JOHN W. HINSLEY, Watertown, Minn. Filed July 15, 1905. Serial No. 269,618.

Claim.—1. A portable cream-separator, having, in combination, a body having its lower end shaped to form a base to support the body firmly in upright position and provided with a vent in the bottom, a stopper for closing the vent, and means connected with the stopper and extending to the top of the body for loosening the stopper to open the vent.

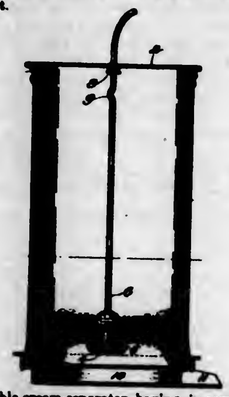

2. A portable cream-separator, having, in combination, a body having its lower end shaped to form a base to support the body firmly in upright position and provided with a vent centrally located in the bottom thereof, a cover arranged to be secured to the top of the body by a rotary movement and provided with a centrally-disposed opening, a stopper for the vent, and a rod secured to the stopper and passing loosely through the opening in the cover.

3. A portable cream-separator, having, in combination, a body with a vent in the bottom thereof, a cover provided with an opening, a stopper for the vent, and a rod secured to the stopper and passing through the opening in the cover, the rod being provided with an offset to engage the cover and prevent entire removal of the stopper from the vent when the cover is in place.

4. A portable cream-separator, having, in combination, a body with a vent in the bottom, means for opening and closing the vent, and a pan, for receiving the liquid discharged through the vent, provided with a shoulder for supporting the body above the bottom of the pan, and with a discharging-nose.

5. A portable cream-separator, having, in combination, a glass body having its lower end shaped to form a base to support the body firmly in upright position and provided with a vent in the bottom and a rubber stopper for closing the vent.

6. A portable cream-separator, having, in combination, a body having its lower end shaped to form a base to support the body firmly in upright position and provided with a vent in the bottom, a stopper for closing the vent, and means connected with the stopper for loosening the stopper to open the vent.

7. A portable cream-separator having, in combination, a body with a vent in the bottom thereof, a cover provided with an opening, a stopper for the vent and a rod secured to the stopper and passing through the opening in the cover, the rod being provided with means to engage the cover and prevent entire removal of the stopper from the vent when the cover is in place.

8. A portable cream-separator, having, in combination, a body with a vent in the bottom thereof, means for opening and closing the vent, and a pan for receiving the liquid discharged through the vent, constructed to receive the lower portion of the body and provided with means to support the body above the bottom of the pan.

809,443. DOUGH DIVIDING AND SCALING MACHINE. ROBERT HOMBRAGH, Jr., and WILLIAM LEITH, Joliet, Ill. Filed Aug. 24, 1904. Serial No. 223,022.

Claim.—1. In a dough dividing and scaling machine, the combination with a receptacle for dough having an outlet at one end for the passage of dough and having a spiral conveyer and conveyer-shaft, mounted on suitable bearings, of a power-pulley mounted on said shaft, of a frictional wheel in peripheral contact with the face of said power-pulley, a fixed shaft on which said frictional wheel is adjustably mounted, a dough cutter or divider, consisting of a horizontally and intermittently rotating table mounted on a vertical shaft, and having radially-arranged cutting knives or wires, in such a position as to sever from the mass of dough issuing from the said receptacle, predetermined weights and quantities of dough, means for communicating intermittent motion to said table from and through the medium of said frictional wheel, an index or pointer carried by said frictional wheel, a graduated scale-plate adjacent to said index, and means for adjusting said frictional wheel, radially with relation to the said power-pulley, whereby the speed of the frictional wheel may be varied, the desired weight of portions of dough indicated, and the corresponding portions of dough severed from the mass, all substantially as set forth.

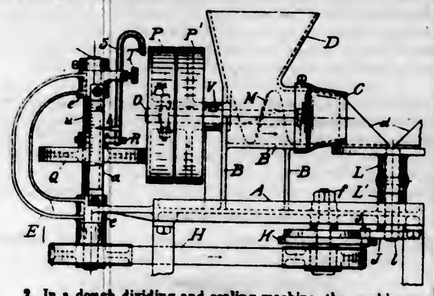

2. In a dough dividing and scaling machine, the combination with intermittently-operating cutters, mounted on a vertical axis and adapted to travel horizontally and to cut portions of dough from a constantly-feeding mass, of means for automatically regulating the amount of dough cut at each motion of the cutters, and means for indicating the weight of each portion of dough so cut, all substantially as set forth.

809,444. TURPENTINE-BOX-CUTTING MACHINE. ROSWELL L. IVEY and RONALD D. MCDONALD, De Land, Fla., assignors of one-third to Sidney V. Hough, De Land, Fla. Filed Apr. 4, 1905. Serial No. 253,847.

Claim.—1. In a machine substantially as described, the combination of the cross-head having the body portion provided with side rails or ribs, and the transversely-movable tool-carrier having bearings for the cutter-shaft, the cutter-shaft in said bearings having a shoulder limiting the outward movement of the shaft, whereby the shaft may be fed inwardly by a feed-screw, the feed-screw for feeding the tool-carrier transversely, the main frame having the opposite uprights composed of front and rear bars spaced apart to form guideways for the rails of the cross-head, said cross-head being provided with upright bearings for its adjusting-screws, the adjusting-screws journaled to the main frame and threaded in the bearings of the cross-head, the cross-shaft geared with the screws for adjusting the cross-head, the upper and lower tension-screws for pressing the main frame away from a tree, chains to pass around the tree and the screws connected with the main frame for tightening said chains to hold the main frame to the tree, the dogs adapted at one end to engage with the tree, and the screws connecting the other ends of the dogs with the main frame for securing the main frame to the tree, all substantially as and for the purposes set forth.

2. In a machine substantially as described, the combination with the main frame, the cutter for forming a box in a tree, and the means for supporting and adjusting the cutter, of means for binding the main frame in connection with the tree, and means for pressing the main frame away from the tree in opposition to the binding means, substantially as set forth.

3. In a machine substantially as described, the combination of the uprights spaced apart forming a way for the cross-head, and consisting of front and rear bars spaced apart forming guides for the rails or ribs on the cross-head, the top plate connecting the cross-bars and having bearings for the cross-shaft and for the screw-shafts, the cross-shaft and the screw-shafts being geared together, the upper cross-bar extending between the uprights and projecting beyond the same and having bearings for the upper chain-securing screws, the arch or cross bar extending between the upper ends of the uprights and having a bearing for the upper tension-screw for pressing the frame away from a tree, and adjusting the machine to any desired angle with the tree, a chain for connection with the chain-screws and adapted to pass around a tree, the cross-head having bearings for its feed-screws and comprising the main or body portion, and the cutter-carrier movable transversely therein, means for moving the cutter-carrier transversely of the body portion of the cross-head, the cutter and its shaft, means for bracing the lower end of the main frame away from a tree, the lateral lugs on the front bars of the uprights and having the rearwardly-inclined wings provided with bearings for dog-securing screws, the dog-securing screws and the dogs connected at one end with the screw and adapted at their other ends to engage with a tree-trunk, substantially as and for the purposes set forth.

4. The combination in a machine substantially as described, of the main frame, uprights having front and rear bars spaced apart, the front bars being provided with lateral lugs having projecting wings forming bearings for dog-securing screws, the said screws and the dogs secured thereto, the lower cross-bar connecting the uprights and extending laterally beyond the same, the plates J secured at their upper ends to the laterally-projecting lugs of the uprights and lapping at their lower ends along the extended ends of the lower cross-bar and secured thereto, and screws threaded in said plates and adapted to brace the lower end of the main frame away from a tree-trunk, a chain to pass around the tree-trunk and screws threaded in said plates for tightening such chain, substantially as and for the purposes set forth.

5. A machine for cutting boxes in turpentine-trees, comprising a main frame, means for securing and bracing the main frame in connection with a tree, a cutter-head adapted to cut the box in the tree, and means supported by the main frame for carrying and adjusting the said cutter, substantially as set forth.

6. The combination in a machine for cutting boxes in turpentine-trees, of a main frame having the opposite uprights connected together, lateral extensions beyond the uprights, screw devices carried by the said lateral extensions for securing and bracing the main frame in connection with a tree-trunk, a cross-head movable between the uprights and having a transversely-movable cutter-carrier, means for adjusting the cross-head longitudinally between the uprights, means for adjusting the cutter-carrier transversely, and the cutter and its shaft supported by said carrier, substantially as set forth.

7. A machine for cutting boxes in turpentine-trees, comprising a cutter and its shaft, a main frame, a cross-head operating in said main frame and having bearings for the cutter-shaft, and devices carried by the main frame for securing and bracing the same in connection with a tree-trunk, substantially as set forth.

8. A machine for use in cutting turpentine-boxes comprising a main frame, a cross-head movable in said frame and having a transversely-movable cutter-carrier, means for holding the main frame to and bracing it from a tree, the cutter-shaft journaled in the carrier portion of the cross-head and a cutter-head on the said shaft having at its inner and outer sides cutting-plates whose outer edges are projected in the direction of revolution of the cutter and are curved from the center of the cutter outwardly toward its periphery to form the curved inner and outer walls of a box in a tree-trunk, substantially as set forth.

9. In a machine substantially as described, a cutter-head having on its inner and outer sides cutter-blades curving from the center of the head outwardly, the cutting edges of the blades projecting in the direction of revolution of the head, substantially as and for the purposes set forth.

10. A cutter-head, comprising the body or stock, the edge or lead cutters secured to said stock and the side cutters on opposite sides of the stock having their cutting edges curved from end to end, substantially as described.

11. A cutter-head for cutting turpentine-boxes in tree-trunks comprising a body or stock and blades at the inner and outer sides thereof, the blades at the outer side of the stock being given a bulge or swell whereby to cut the mouth of the turpentine-box approximately level, substantially as described.

12. The combination in a cutter-head of the body-plate, the ribs projecting on the opposite sides thereof and the side cutters having the face-plates lapped against and secured to said ribs and their outer cutting edges curved, substantially as described.

13. In a cutter-head the combination with the body or stock plate having on its opposite sides the projecting ribs and provided with the openings alongside said ribs, of the side cutters secured to the ribs on opposite sides of the stock or body plate, one set of said cutters being provided with lugs projecting into the openings in said body-plate and means securing the cutters to the oppositely-projecting ribs, substantially as set forth.

14. The combination in a cutter-head with the body-plate and the ribs projecting therefrom, of the side cutters having their face-plates lapped alongside of and secured to said ribs, said side cutters being curved on their outer edges and overlapping at their outer ends the outer edge of the body-plate, substantially as set forth.

15. The combination in a cutter-head with a body or stock plate provided on its opposite sides with the projecting ribs and having in its outer edge notches alongside the said ribs of the side cutters having their face-plates lapping alongside of and secured to the said ribs and provided at their outer ends with projecting portions fitting in the edge notches of the stock-plate and lapping the outer edge of the said plate, substantially as set forth.

16. A cutter-head for use in cutting turpentine-boxes in tree-trunks having cutters at its inner and outer sides and presenting in cross-section a form tapering toward its periphery whereby said cutter when revolved in contact with and at an inclined angle to a tree-trunk, will cut a pocket constituting the so-called box in said trunk, substantially as set forth.

17. A cutter-head for cutting turpentine-boxes in tree-trunks comprising a body or stock, edge or lead cutters at the periphery of said cutter-head and inner and outer side cutters having their outer or cutting edges curving gradually toward each other at the periphery of the cutter-head, the lead-cutters being arranged between the adjacent pairs of side cutters, substantially as and for the purposes set forth.

18. A revolving tool for cutting turpentine-boxes in tree-trunks comprising the body or stock, the lead blades or cutters arranged midway between its inner and outer faces and the inner and outer curved blades at the opposite faces of the cutter with their cutting edges extending approximately in the line of direction of revolution of the cutter-head and with the outer blades given a swell or bilge whereby to form the mouth of the pocket or box on approximately a straight line at its lower edge, substantially as set forth.

809,445. SAMPLE-DISPLAY-CASE. ALFRED JELLIFFE, St. Louis, Mo. Filed May 5, 1905. Serial No. 259,866.

Claim.—1. In a device of the class described, the combination with a casing having a transparent panel, said casing having slots in the side walls thereof, rollers journaled in the sides of the casing, and resiliently-supported bearings for the rollers, which bearings have a tendency to force the rollers against the panel; substantially as described.

2. In a device of the class described, the combination with a casing, of a transparent panel carried by the casing, a partition carried by the casing and parallel with the panel, rollers at the respective ends of the partition, and resiliently-supported bearings for the rollers, which bearings have a tendency to maintain the peripheries of the rollers in contact with the panel; substantially as described.

3. In a device of the class described, the combination with a casing having a transparent panel, of oppositely-rotatable rollers carried by the casing, a web wound on said rollers and having different kinds of material stitched thereto, and resiliently-supported bearings for the rollers exerting pressure thereagainst to force the material against one surface of the panel irrespective of the diameter of the roll of material on either of the rollers; substantially as described.

809,446. CALCULATOR. FREDERICK G. JOHNSON, Hartford, Conn. Filed June 20, 1903. Serial No. 162,370.

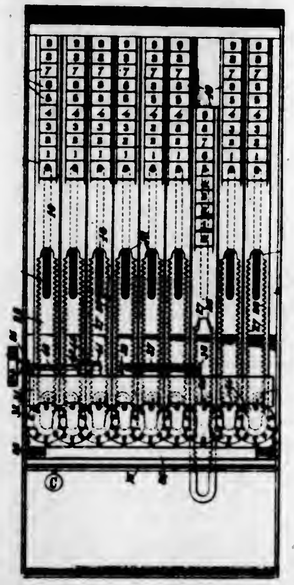

Claim.—1. In a calculator the combination with a case provided with a septum, reciprocatory actuating-bars and their alining members on one side of the septum, and actuating bar-springs upon the other side of the septum, of means for imparting measured movement to the respective bars, and means for registering the degree of movement so imparted.

2. In a calculator the combination with a case provided with a septum, reciprocatory actuating-bars and their alining members on one side of the septum, and actuating bar-springs upon the other side of the septum, of means for imparting measured movement to the respective bars, and means for registering collectively the degree of movement so imparted.

3. In a calculator the combination with a case, spring-retracted actuating-bars provided respectively with a pair of racks, registering mechanism including pinions adapted to mesh with said racks, and means for shifting the pinions from engagement with one set of racks to the other.

4. In a calculator the combination with a case, spring-retracted actuating-bars provided respectively with a pair of racks, registering mechanism including pinions adapted to mesh with said racks, and means for shifting the pinions from engagement with one set of racks to the other, said means for shifting the pinions consisting of a pair of relatively adjustable pinion-bearing boxes.

5. In a calculator the combination with a case, spring-retracted actuating-bars provided respectively with a pair of racks, registering mechanism including pinions adapted to mesh with said racks, means for shifting the pinions from engagement with one set of racks to the other, said means for shifting the pinions consisting of a pair of relatively adjustable pinion-bearing boxes, and means for fixing the adjustment of the said boxes.

6. In a calculator the combination with a case, a plurality of spring-retracted actuating-bars, and registering mechanism including a corresponding plurality of staffs and dial-plates, of mechanism operatively connecting the respective bars and staffs, including clutch mechanism, whereby the positive movements only of the bars are registered, and mechanism for disengaging the clutch mechanism.

7. In a calculator the combination with a case, spring-retracted actuating-bars, and registering mechanism comprising respectively staffs and dial-plates, of pinions operatively connecting the staffs and their respective bars, means for reversing the operative relations between said pinions to their bars, and means for simultaneously reversing the operative relations of said pinions to their dial-plates.

809,447. CORNER-FASTENING FOR BEDS. BENJAMIN H. JONES, St. Louis, Mo. Filed Apr. 14, 1905. Serial No. 255,545.

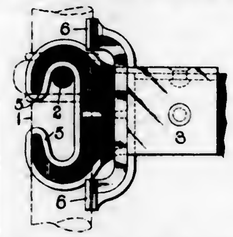

Claim.—In a corner-fastening for beds, the combination with a metal bed post and its connecting tie-rod, of a casting, a rail secured to said casting, a laterally-extending hook on said casting for engaging the tie-rod, and bearing-points on the casting located above and below the hook and in line with the post for engaging said post; substantially as described.

809,448. ADJUSTABLE BRACKET. SOLOMON KAHN, Cadillac, Mich. Filed Nov. 1, 1904. Serial No. 231,016.

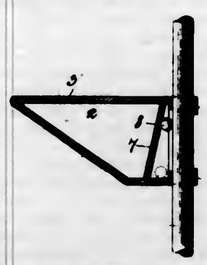

Claim.—The combination with a standard, of a bracket having a sleeve adapted to receive the standard, the inner wall of the sleeve being slotted, said bracket having an inclined wall, and a ball located in the bracket between the inclined and slotted walls, said ball being adapted to be thrown into contact with the inclined wall and to project slightly through the slotted wall into engagement with the standard, substantially as described and for the purpose set forth.

809,449. HARNESS-PAD. WILLIAM L. KELLERMAN, Oskaloosa, Iowa, assignor of one-half to Scott H. Hull, Oskaloosa, Iowa. Filed Mar. 10, 1906. Serial No. 305,410.

Claim.—A harness-pad comprising a body or back, fillings disposed below said body or back, at opposite sides of the transverse center of the same, a bottom layer in which the fillings and the body or back are arranged; said bottom layer being one piece of material and having longitudinal bights receiving the edges of the body or back throughout the length of said edges and end bights receiving the opposite ends of the body or back throughout the length of said ends, and means extending through and connecting the opposite portions of the longitudinal and end bights together and to the body or back at intervals throughout the length of the pad.

809,450. PROCESS OF MAKING SULFURIC ANHYDRID. RUDOLF KNIETSCH, Ludwigshafen-on-the-Rhine, Germany, assignor, by mesne assignments, to General Chemical Company, a Corporation of New York. Filed Sept. 24, 1901. Serial No. 76,333.

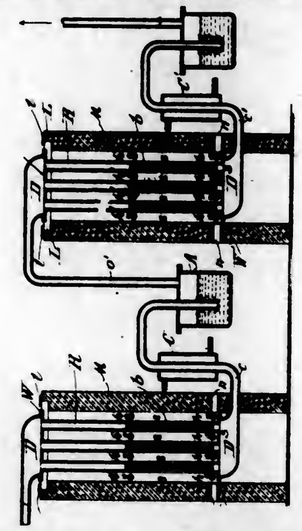

Claim.—1. The process of manufacturing sulfuric anhydrid which consists in passing sulfurous-acid gas and oxygen over contact substance containing platinum, interrupting the process when the conversion has been partially effected, removing sulfuric anhydrid formed and subjecting the unconverted gases thus freed from sulfuric anhydrid to further action of contact substance containing platinum.

2. The process of manufacturing sulfuric anhydrid which consists in passing sulfurous-acid gas and oxygen over contact substance containing platinum which is subjected to a regulated cooling so as to remove the excess of heat due to the reaction, interrupting the process when the conversion has been effected to an extent of about seventy to ninety per cent., removing sulfuric anhydrid formed and subjecting the unconverted gases thus freed from sulfuric anhydrid to further action of contact substance containing platinum.

3. The process of manufacturing sulfuric anhydrid which consists in passing sulfurous-acid gas and oxygen over contact substance containing platinum, interrupting the process when the conversion has been partially effected, removing sulfuric anhydrid formed and passing the unconverted gas thus freed from sulfuric anhydrid over contact substance containing platinum, interrupting the process when a portion of the remaining sulfur dioxid has been converted into sulfuric anhydrid, removing sulfuric anhydrid formed and subjecting the remaining unconverted gases to further action of contact substance containing platinum.

809,451. DOUBLE-ACTING EXPLOSIVE-ENGINE. JOSEPH W. KYLE and JOHN W. HICKS, Chicago, Ill., assignors of one-third to Garfield G. Bennett, Chicago, Ill. Filed Dec. 17, 1903. Serial No. 185,868.

Claim.—1. An explosive-engine comprising a cylinder, simultaneously reciprocating pistons in each end thereof, a generating and mixing device, a pipe leading therefrom and opening into each end of the cylinder beyond the outermost travel of the pistons, an inlet-port in open communication with the pipe and disposed between the pistons when at their outermost limit of movement, an exhaust-port also opening between the pistons when so positioned, a sparker po-

16. The combination with a plurality of cylinders, of a simulta-

sitioned to ignite the charge when the pistons are at their inward limit of movement, a transverse shaft intermediate the ends of the cylinder, a plurality of oppositely-disposed cranks thereon and means connecting the outer ends of said pistons with said cranks and adapted to rotate said shaft.

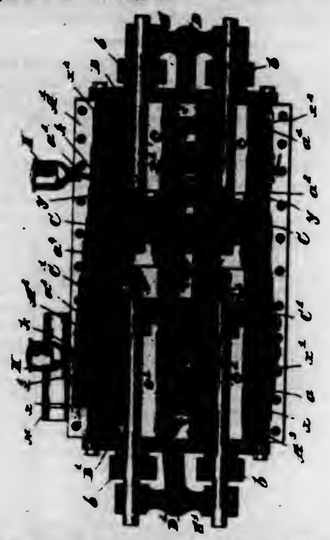

2. The combination with a cylinder, of simultaneously and oppositely reciprocating pistons in each end thereof, unvalved communicating ports opening into each end of the cylinder beyond the outermost travel of the pistons, a like port opening between the pistons when in said position, means for supplying an explosive mixture through said ports into the ends of the cylinder which serve as compression-chambers and from thence between the pistons which in their inward movement compress the charge, a sparker disposed centrally of the cylinders and acting to ignite the mixture when under maximum compression, a transverse shaft, oppositely-disposed cranks thereon and a plurality of connecting-rods connecting said pistons with said cranks.

3. An explosive-engine comprising a two-part casing rigidly bolted together and cored to provide inlet-passages, an exhaust-passage and a water-chamber, a cylindric bushing secured therein forming the engine-cylinder, oppositely and simultaneously reciprocating pistons in said cylinder having outwardly-extending piston-rods, a shaft disposed transversely of the pistons, a crank-arm on each end thereof, a cross-head on each of the piston-rods, and a connecting-rod secured on each end of each cross-head and operatively connected with the crank on each side of the engine.

4. An engine comprising a cylinder having a cast-metal jacket or casing surrounding the same and cored to provide an inlet-passage at each end of the same, an exhaust-passage intermediate of the ends, communicating water-passages surrounding the cylinder, oppositely and simultaneously reciprocating pistons in each end of the cylinder which act to compress the explosive mixture at the outward movement and compress the charge on the inward movement, and a centrally-disposed sparker acting to ignite the charge at maximum pressure, a transverse shaft having a double crank on each side of the cylinder and a cross-head at each end of the cylinders and reciprocated by the pistons and connecting-rods on each side of the cylinders engaged on each end of each cross-head and connecting the same with the cranks.

5. The combination with two parallel cylinders, of a transverse shaft extending centrally between the same, a double crank on said shaft on each side of the cylinder, a reciprocating piston in each end of each cylinder the piston-rods of which extend through the cylinder-heads and are rigidly connected at each end by a cross-head, a connecting-rod journaled on each side of each cross-head and connected with the cranks on said shaft on each side of the cylinder, ports arranged to admit the explosive mixture into the ends of the cylinders for initial compression and between the pistons for final compression and a sparker in each cylinder extending between the pistons.

6. In a double-acting engine the combination with parallel cylinders of oppositely and simultaneously reciprocating pistons in each end of each, a cross-head rigidly connected with the piston-rods at each end of the cylinders, a shaft extending centrally and transversely between the cylinders and provided on each side of the engine with a double crank, one of which is set obliquely with respect to the shaft and connecting-rods journaled on each side of each cross-head connected at their inner ends on said cranks.

7. In an engine the combination with pistons reciprocating oppositely in pairs, of a cross-head at each end of the engine, each rigidly connected with a plurality of the pistons, a connecting-rod on each side of each cross-head, a shaft having a plurality of double cranks thereon with which the connecting-rods engage and means for reciprocating the pistons.

8. In an engine the combination with pistons reciprocating oppositely in pairs, of a cross-head at each end of the engine, each rigidly connected with a plurality of the pistons, a connecting-rod on each side of each cross-head, a shaft having a plurality of double cranks thereon with which the connecting-rods engage and means for injecting and compressing an explosive mixture between the pistons and means for exploding same.

9. In a device of the class described the combination with oppositely-reciprocating pistons, the cross-heads, shafts and connecting-rods, of a generating and mixing device positioned near one end of the cylinder, a pump operated from one of the cross-heads and acting to force fluid hydrocarbon into the generating and mixing chamber and means for regulating the action of the pump.

10. In a device of the class described the combination with oppositely-reciprocating pistons, the cross-heads, shafts and connecting-rods, of a generating and mixing device positioned near one end of the cylinder, a pump operated from one of the cross-heads and acting to force fluid hydrocarbon into the generating and mixing chamber and means for regulating the action of the pump.

11. The combination with an engine-cylinder having oppositely-reciprocating pistons therein, of a generating-chamber, a pump positioned and connected to force hydrocarbon fluid into the generator at each stroke of the piston in regulable amounts, a tappet-arm carried on one of the cross-heads and adapted to actuate the pump, a valved pipe leading from the generating-chamber longitudinally of the cylinders and unvalved ports opening therefrom into the cylinders at each end thereof whereby the inward movement of the pistons acts to draw the explosive fluid into the ends of the cylinders.

12. The combination with an engine-cylinder having oppositely-reciprocating pistons therein, of a generating-chamber, a pump positioned and connected to force hydrocarbon fluid into the generator at each stroke of the piston in regulable amounts, a tappet-arm carried on one of the cross-heads and adapted to actuate the pump, a valved pipe leading from the generating-chamber longitudinally of the cylinders and unvalved ports opening therefrom into the cylinders at each end thereof whereby the inward movement of the pistons acts to draw the explosive fluid into the ends of the cylinders, and a port opening between the pistons and acting to admit the fluid therefrom between the pistons.

13. In an explosive-engine the combination with two cylinders located one above the other, of a simultaneously and oppositely reciprocating piston in each end of each cylinder, cross-heads connecting the outwardly-extending ends of the piston-rods thereof, laterally-directed arms on each cross-head, a shaft extending centrally and transversely between the cylinders, a double crank on each end thereof, a connecting-rod journaled on each of the projecting arms of each cross-head and each connected at their inner ends with the respective cranks on said shaft.

14. In an explosive-engine the combination with two cylinders located one above the other, of a simultaneously and oppositely reciprocating piston in each end of each cylinder, cross-heads connecting the outwardly-extending ends of the piston-rods thereof, laterally-directed arms on each cross-head, a shaft extending centrally and transversely between the cylinders, a double crank on each end thereof, a connecting-rod journaled on each of the projecting arms of each cross-head and each connected at their inner ends with the respective cranks on said shaft, means for admitting explosive mixture between the pistons in each cylinder and compressing the same by the inward movement of said pistons and a sparker disposed between the pistons and each cylinder and acting to release the fluid when at maximum compression.

15. The combination in an explosive-engine, of a plurality of parallel cylinders located one above the other, a shaft extending transversely between the cylinders, a double crank on each end thereof, said double cranks being arranged with their centers out of alinement with the center of the shaft.

16. The combination with a plurality of cylinders, of a simultaneously and oppositely reciprocating piston in each end of each cylinder, a cross-head connecting the ends of the piston-rods at each end of the cylinders, laterally-projecting arms on each cross-head extending beyond the sides of the cylinders, a shaft extending transversely between the cylinders a double crank on each end, connecting-rods journaled at their outer ends on the ends of said arms and at their inner ends on the respective cranks on said shaft, a generating and mixing device for hydrocarbon fluid operated from one of the cross-heads and unvalved passages and ports adapted to admit the explosive mixture into the ends of the cylinder during the inward movement of the pistons, to be compressed during the outward movement thereof and a passage connecting with the ends of the cylinders adapted to admit the same between the pistons under maximum pressure whereby inward movement of the pistons acts to complete the compression and means for igniting the charge when under maximum compression.

17. The combination with a plurality of cylinders, of a simultaneously and oppositely reciprocating piston in each end of each cylinder, a cross-head connecting the ends of the piston-rods at each end of the cylinders, laterally-projecting arms on each cross-head extending beyond the sides of the cylinders, a shaft extending transversely between the cylinders a double crank on each end, connecting-rods journaled at their outer ends on the ends of said arms and at their inner ends on the respective cranks on said shaft, a generating and mixing device for hydrocarbon fluid operated from one of the cross-heads and unvalved passages and ports adapted to admit the explosive mixture into the ends of the cylinder during the inward movement of the pistons, to be compressed during the outward movement thereof and a passage connecting with the ends of the cylinders adapted to admit the same between the pistons under maximum pressure whereby inward movement of the pistons acts to complete the compression, and electrically-operated sparkers disposed between the pistons of each cylinder and acting to ignite the charge.

18. In an explosive-engine the combination with a plurality of cylinders having in their ends oppositely-reciprocating pistons, a generating and mixing device connected with said cylinders and adapted to supply an explosive mixture into the ends of the cylinders during the inward stroke of the piston, a passage and ports permitting the escape of said mixture into the cylinders between the pistons when compressed by the outward stroke thereof, an electrically-operated sparker intermediate of said pistons comprising an insulated tappet-arm having at its inner end a conducting contact-piece adapted to make and break contact with one of the pistons, an electrical connection at the outer end of said sparker and a driving-shaft extending transversely between said cylinders.

19. The combination with a cylinder of oppositely-reciprocating pistons in the ends thereof, means for admitting an explosive mixture into the ends of the cylinder during the inward stroke of the piston, a relief-cylinder connected by ports with said ends of the cylinders and adapted to permit the compression of the explosive mixture therein during the outward stroke of the pistons, an exhaust-port located between the pistons when at the outermost limit of their travel and ports leading from the relief-cylinder to a point intermediate of the piston and adapted to deliver the explosive mixture between the cylinders for final compression and combustion.

20. In an explosive-engine a relief-cylinder communicating with the compression ends of the explosion-cylinder, a passage and port leading therefrom and opening into the combustion-chamber when the fluid is under maximum compression, and a spring-pressed piston in said relief-cylinder acting to maintain uniform tension on the said explosive fluid when said passage and ports are open.

21. The combination in an explosive-engine comprising a cylinder having oppositely-movable pistons in the end thereof, a generating and mixing device connected to supply an explosive mixture into the ends of the cylinder during the inward movement of the piston, a relief-cylinder connected with the ends of the cylinder and a compression-cylinder connected with the ends of the combustion-cylinder, a spring-pressed piston-head therein acting to maintain approximately uniform tension on the fluid, a passage and ports leading therefrom and connecting with the combustion-chamber between the pistons when the same are at the outward limit of their stroke, an exhaust-passage also located between the pistons when so positioned and means whereby the charge is ignited at the maximum compression during the inward stroke of the piston.

22. In an explosive-engine the combination with a plurality of cylinders of a crank-shaft extending transversely between the same, a plurality of cranks on said shaft arranged in obliquely-disposed pairs, a piston in each end of each cylinder, rods connecting said pistons with said cranks a hydrocarbon-generator operated by the movement of the pistons and means for admitting hydrocarbon from the generator to said cylinders.

23. In an explosive-engine the combination with a plurality of cylinders of a shell inclosing the same, a piston in each end of the cylinders, inlet-ports between the cylinder and shell at each end of the cylinder, an inlet and an exhaust port opening between the pistons when at their outer limit of movement, transverse crank-shaft intermediate the cylinders, cranks thereon and means connecting said cranks with the outer ends of the piston-rods.

809,452. **MACHINE FOR MOLDING HOLLOW WALLS.** ISRAEL L. LANDES, Chicago, Ill. Filed Apr. 1, 1905. Serial No. 253,358.

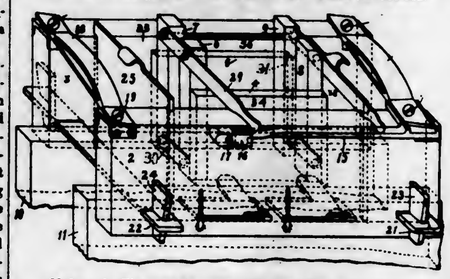

Claim.—1. The combination with a molding-machine comprising a pair of mold-boards and means for moving said mold-boards longitudinally and laterally relatively to each other, of a core having sides movable vertically relatively to each other, connecting-links for the lower parts of said sides and levers pivoted to the upper parts of said sides for yoking said upper parts together and for moving said sides relatively in a vertical plane.

2. A molding-machine comprising mold-boards movable laterally and longitudinally relatively to each other and a core having sides connected by pivoted cross-bars or links, a lever overlying the tops of said mold-boards and pivoted thereto, said lever arranged to move said mold-boards in a horizontal plane, a similar lever, or several thereof, pivoted to the sides of said core and adapted to move one of said sides vertically and laterally relatively to the other side, and a connecting cross-bar pivoted to said mold-boards to assist in supporting the latter in their relative positions and to move with said lever.

3. In a molding-machine, the combination of a pair of mold-boards, with means for moving said mold-boards longitudinally and laterally relatively to each other, a core having sides arranged to be moved relatively to each other, means for supporting said sides in their relative positions, and gates, or partition-walls, which are adjustable between said mold-boards to make an inclosed mold-space around said core.

4. In a molding-machine, in combination, a pair of mold-boards movable toward and from each other in parallel planes, means for moving said mold-boards, means for yoking said mold-boards together temporarily against relative movement during formation of a cast, means for partitioning off a portion of the mold-space between said mold-boards, a core having sides arranged to move toward and from each other in parallel planes, said core being free of said mold-boards and adjustable in any suitable position within said portion of said mold-space.

5. In a molding-machine, the combination with a pair of mold-boards movable longitudinally and laterally relatively to each other in a horizontal plane, of core sides movable relatively to each other in a vertical plane, means for moving said mold-boards, means for yoking said mold-boards together against relative movement, means for moving said core sides, means for supporting said mold-boards upon a hollow wall, and removable end gates or partition-walls which divide the space between said mold-boards into a mold-space adapted to receive said core sides.

809,453. **HIGH-TENSION-CURRENT DISTRIBUTER FOR INTERNAL-COMBUSTION ENGINES.** LEON J. LE POUTRE, New Rochelle, N. Y., assignor to Poly-Phase Ignition System Company, a Corporation of New York. Filed Dec. 13, 1904. Serial No. 236,604.

Claim.—A high-tension-current distributer comprising a cylindrical casing of an insulating material, a plurality of projections

extending from the base of said casing, metallic segments secured to

two sets of traction-wheels on the machine, the wheels of each set

extending from the base of said casing, metallic segments secured to said projections, each of said segments being connected to a terminal leading to a corresponding spark-plug, a shaft supported in a bearing carried by said casing, a current-distributing arm secured to the outer end of said shaft and adapted to pass in close proximity to said segments, means to rotate said shaft and arm so as to cause the latter to distribute to said segments successively sufficient current for the efficient ignition of an explosive mixture, and a circular wall also projecting from the base of the casing and interposed between said bearing and said segments for the purpose described.

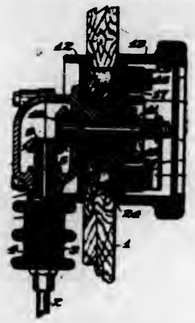

809,454. TRAVERSING MECHANISM. WILLIAM B. MAGER, South Milwaukee, Wis., assignor to The Bucyrus Company, South Milwaukee, Wis., a Corporation of Wisconsin. Filed Apr. 24, 1905. Serial No. 257,178.

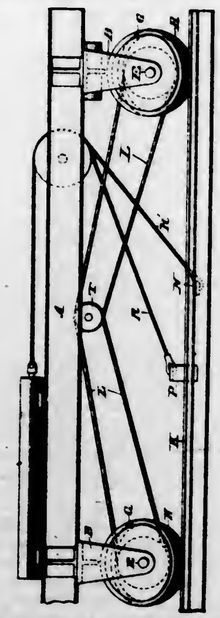

Claim.—1. Apparatus for traversing or transporting excavators or other heavy machinery, comprising two movable parallel track-sections, inner and outer sets of traction-wheels on the machine coöperating with the respective track-sections, the wheels of each set having flattened portions, the flat portions of the respective sets lying adjacent the normal portions of the other set, whereby the machine is alternately supported by the respective sets of wheels, and means for advancing the respective track-sections as they are disengaged from the coöperating set of wheels.

2. Apparatus for traversing or transporting excavators or other heavy machinery, comprising two movable parallel track-sections, two sets of traction-wheels on the machine, the wheels of each set having flattened, peripheral portions lying adjacent circular portions of the other set, means for driving the traction-wheels, and means for advancing the respective track-sections as they are alternately freed from the coöperating traction-wheels.

3. Apparatus for traversing or transporting excavators or other heavy machinery, comprising two movable parallel track-sections, two sets of traction-wheels on the machine, the wheels of each set having flattened, peripheral portions lying adjacent circular portions of the other set, means for driving the traction-wheels, and power mechanism on the machine connected to the respective track-sections for advancing the latter as they are alternately freed from the coöperating traction-wheels.

4. Apparatus for traversing or transporting excavators or other heavy machinery, comprising two movable parallel track-sections, two sets of traction-wheels on the machine, the wheels of each set having flattened, peripheral portions lying adjacent circular portions of the other set, means for driving the traction-wheels, and power mechanism on the machine having cables connected to the respective track-sections for advancing the latter as they are alternately freed from the coöperating traction-wheels.

809,455. AMMUNITION-HOISTING MECHANISM. JOHN F. MINES and ROBERT P. STOUT, South Bethlehem, Pa., assignors to Bethlehem Steel Company, South Bethlehem, Pa., a Corporation of Pennsylvania. Filed Sept. 14, 1904. Serial No. 224,440.

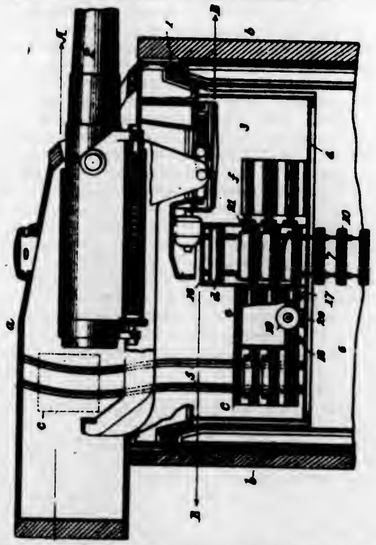

Claim.—1. In ammunition-elevating mechanism, the combination with a gun, of two elevators and an intermediate transfer-car adapted to transfer ammunition from the handling-room to the gun.

2. In ammunition-elevating mechanism, the combination with a gun, of an elevating-car adapted to deliver ammunition at the breech of the gun, a second elevator adapted to deliver ammunition at the lower station of the elevating-car, and a transfer-car located between said elevators at said lower station.

3. In ammunition-elevating mechanism, the combination with a gun, of an elevator adapted to deliver ammunition at the breech of the gun, a second elevator adapted to raise ammunition from the handling-room, said elevators being out of register with each other, and a transfer-car movable to register with said elevators alternately.

4. In ammunition-elevating mechanism, the combination with a gun, of an elevator adapted to raise ammunition from the handling-room, a second elevator adapted to deliver the ammunition at the breech of the gun, a transfer-car between said elevators, a rammer adapted to move the ammunition from the first elevator to the transfer-car, and a second rammer adapted to move the ammunition from the transfer-car to the second elevator.

5. In ammunition-elevating mechanism, the combination with a gun, of a chain elevator adapted to raise the ammunition from the handling-room, an elevating-car adapted to deliver the ammunition at the breech of the gun, a transfer-car between said elevators, a series of rammers adapted to transfer the ammunition from the chain elevator to the transfer-car, and a second series of rammers adapted to transfer the ammunition from the transfer-car to the elevating-car.

6. The combination with a turret and a gun mounted therein, said turret having a floor extending over the handling-room, of an elevator extending through an opening in said floor from the handling-room into the turret, a cover extending over said opening and elevator, a second elevator within the turret, and a transfer-car between said elevators.

7. The combination with a turret and a gun mounted therein, said turret having a floor extending over the handling-room, of a chain elevator supported on said floor and provided with flights adapted to hold ammunition, a transfer-car movable on said floor, and a plurality of rammers adapted to move a number of sections of ammunition simultaneously from said chain elevator to said car.

8. In an ammunition-elevating mechanism, the combination with a gun, of an elevator adapted to raise the ammunition from the handling-room, a second elevator adapted to deliver the ammunition at the breech of the gun, and means, including a rammer, for transferring the ammunition from the first-mentioned elevator to the second elevator.

9. The combination with a turret and a gun mounted therein, said turret having a floor extending over the handling-room, of a chain elevator supported on said floor and extending through an opening in the floor to the handling-room, and a casing or cover over said elevator and opening, said elevator being provided with pivoted flights, and means for folding said flights upon the chains within said casing whereby a casing of minimum size may be used.

10. In ammunition-hoisting mechanism, the combination with a chain elevator, a transfer-car, and an elevating-car, of a multiple rammer adapted to move several sections of ammunition simultaneously from the chain elevator to the transfer-car, and a second multiple rammer located between the branches of the chain elevator and adapted to move several sections of ammunition from the transfer-car to the elevating-car.

11. The combination with a turret, and a gun mounted therein, said turret having a floor extending over the handling-room, of an elevating apparatus supported on and extending through an opening in said floor, and a normally closed casing extending over said elevator, whereby sparks are prevented from passing below the turret-floor said casing having openings for the passage of ammunition and means for normally closing the same.

12. The combination with a turret, and a gun mounted therein, said turret having a floor extending over the handling-room, of an elevating apparatus supported on and extending through an opening in said floor, a normally closed casing extending over said elevator, said casing having openings through which the ammunition is discharged into the turret, and shutters for normally closing said openings.

13. In ammunition-elevating mechanism, the combination with a gun, of an elevator adapted to raise the ammunition from the handling-room, a second elevator adapted to deliver ammunition at the breech of the gun, and a transfer-car between the upper station of the first-named elevator and the lower station of the second elevator, the said stations being laterally displaced and the car being movable to register with each of said stations.

14. In ammunition-elevating mechanism, the combination with a turret and a gun mounted therein, of an elevator adapted to raise ammunition from the handling-room into the turret, a second elevator within the turret adapted to deliver ammunition at the breech of the gun, the upper station of the former elevator and the lower station of the latter being out of register, and an intermediate transfer-car movable to register with each of said stations and adapted to hold a charge of ammunition.

15. In ammunition-elevating mechanism, the combination with a turret and a gun mounted therein, of an elevator adapted to raise ammunition from the handling-room to the turret, a second elevator adapted to deliver the ammunition at the breech of the gun, each of said elevators being adapted to simultaneously hold a plurality of sections of ammunition and the upper station of the first-named elevator and the lower station of the second elevator being at the same elevation, but out of register with each other, a horizontally-movable transfer-car arranged between said stations and adapted to register with each of them, and rammers adapted to transfer the ammunition from the first elevator to the transfer-car and from the said transfer-car to the second elevator.

809,456. AUTOMATIC-DUMPING ELEVATOR-CAGE. WILLIAM J. NEWMAN, Chicago, Ill. Filed Aug. 18, 1904. Serial No. 221,176.

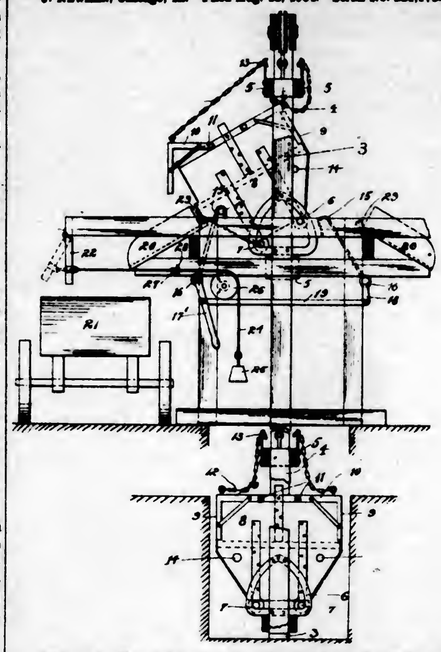

Claim.—1. The combination of an elevator-frame, heart-shaped supports secured to said frame, a dumping-hopper or box mounted on shafts having their ends carried in said supports, the arrangement being such that said hopper will normally rest in upright position, but may be swung to dump at either side.

2. In an automatic-dumping elevator, the combination of a slidable cage-frame, substantially heart-shaped bearings in said frame, a hopper resting on two shafts having their ends in engagement with said bearings, and adapted to be supported thereby, the bottom of said hopper being at some distance above said shafts, springing doors for said hopper, catches on said hopper, and means for engaging said catches when the elevator is being raised in order to automatically dump the same.

3. The combination with an elevator-cage or the like, of a dumping-platform, two pairs of trunnions or the like for supporting said platform, bearings in said cage for said trunnions, the arrangement being such that the platform may be tipped in either direction, said bearings forming guides for one pair of said trunnions when the other pair are acting as pivots.

4. The combination with an automatic-dumping elevator adapted to dump on either side and provided with dumping-rods, of pairs of hooks mounted on either side of the main frame, and means whereby either of said pairs of hooks may be thrown into position for engaging its corresponding rod, the opposite pair of hooks being simultaneously thrown out of position for engagement.

5. The combination of oppositely-disposed dumping-hooks for an elevator, shafts on which said hooks are mounted, a lever on one of said shafts, and means connecting between said lever and the other shaft whereby a movement of the lever will cause the corresponding movement of both shafts.

6. In a dumping-elevator, the combination of a slidable cage, bearings in said cage, a dumping-platform supported at some distance above said bearings, a pair of shafts having their ends resting in said bearings for supporting said platform, the arrangement being such that the platform may be tipped in either direction, one of said shafts acting as a pivot while the other shaft is guided in said bearings to control the dumping action.

7. In a dumping-elevator, the combination of a slidable cage, bearings in said cage, a pair of shafts having their ends resting in said bearings, a dumping-hopper mounted on said shafts and adapted to swing in either direction upon one of said shafts, one shaft act-

ing as a pivot and the other as a guide, swinging doors for said hopper and means connecting between said doors and said cage whereby one of the doors will be opened when the hopper is swung toward its corresponding side, and means for dumping said hopper.

8. In an apparatus of the character set forth, the combination with a discharge-chute for heavy materials adapted to discharge into wagons, of a swinging spill-board, and means for holding said spill-board in normal position in front of the chute, whereby the material will strike said board to prevent undue striking against the wagons.

9. In an apparatus of the character set forth, the combination with a discharge-chute adapted to discharge into wagons or the like, of a pivoted spill-board and a weight for yieldingly holding said spill-board in normal position to receive the force of material discharged through said chute.

809,457. CURTAIN-HOLDER FOR BUGGY-TOPS. CYRUS W. NOBLE and EARL O. MCHENRY, Hoytville, Ohio. Filed June 10, 1905. Serial No. 264,713.

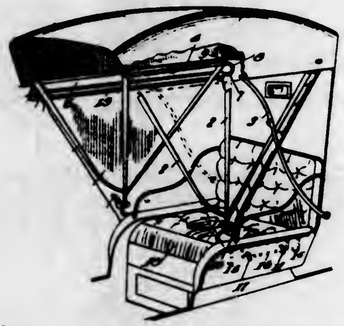

Claim.—1. In combination, a carriage-top embodying a plurality of bows, curtain-holders arranged at opposite sides of the top, each curtain-holder having permanent connection at one end with one of the bows of the top, the opposite end of each curtain-holder having detachable connection with another of the bows of the top, whereby said curtain-holders may be lowered, and curtains carried by said holders.

2. In combination, a carriage-top embodying a plurality of bows, a curtain-holder pivotally connected at one end with one bow, and detachably connected at its other end with a second bow, and a curtain carried by said holder.

3. In combination, a carriage-top embodying front and rear bows, a curtain-holder pivoted at one end to the upper end portion of the rear bow, means for detachably connecting the front end of the curtain-holder with the upper portion of the front bow, and a curtain carried by said holder.

4. In combination, a carriage-top embodying front and rear bows, a curtain-holder arranged at the upper portion of the top and connected with said front and rear bows, means admitting of lowering and holding said curtain-holder in a lowered position, and a curtain carried by said holder.

5. In combination, a carriage-top embodying a plurality of bows, curtain-holders arranged at opposite sides of the top, each curtain-holder having pivotal connection with the upper end of a side of the rear bow, a catch at the upper end of each side of the front bow adapted to coact with the other end of the adjacent curtain-holder to hold the same in operative position, but admitting of lowering the holder to permit collapsing of the top, and catches arranged to engage ends of the curtain-holders after the same have been lowered, and curtains carried by said holders.

6. In combination, a carriage-top embodying a plurality of bows, a curtain-holder comprising a bar pivoted at one end to one bow and detachably connected at its opposite end to a second bow, a curtain-holder mounted upon said bar, and a curtain carried by said holder.

7. In combination, a carriage-top embodying front and rear bows, a curtain-holder comprising a bar pivoted at one end to the upper end portion of a side of the rear bow, means for detachably connecting the opposite end of said bar with the front bow, and means for detachably connecting said opposite end of the bar to the lower portion of the rear bow after said bar has been lowered.

809,458. SMOKE-CONSUMING FURNACE. WALLACE T. PAXSON, Washington, D. C., assignor, by direct and mesne assignments, to Jacob B. Maxwell, Washington, D. C. Filed Apr. 28, 1905. Serial No. 257,204.

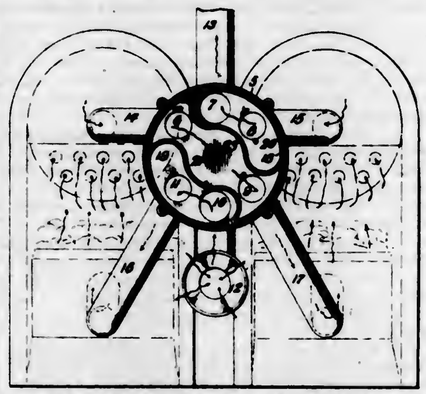

Claim.—1. In a smoke-consuming furnace, furnaces positioned side by side, a pipe leading from the smoke-space of each furnace, a valve-casing into which said pipes open, a revoluble valve mounted in the casing and formed with oppositely-positioned chambers and a passage between the chambers, downdraft-pipes leading from the valve-casing into the opposite furnaces under the grates thereof, and means to turn the valve to cut off and establish communication between determined pipe-openings in the casing.

2. The combination with adjacently-positioned furnaces the pipes 14 and 15 leading from the smoke-spaces in the furnaces, the draft-pipes 12, 13, and the downdraft-pipes 16, 17, of an inclosed revoluble valve into which all said pipes open, said valve being adapted to cut off and to establish communication between determined pipe-ports, a shaft to turn the valve and extended to the front of the furnace, an arm on the end of the shaft provided with a handle, and a graduated dial over which the arm turns.

809,459. BRIDGE FOR STRINGED MUSICAL INSTRUMENTS. REGINALD H. PAYNE, Aylesbury, England. Filed Dec. 5, 1904. Serial No. 235,539.

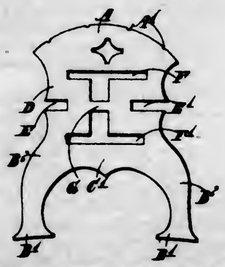

Claim.—1. A bridge for a stringed musical instrument having resilience increasing gradually from one side to the other.

2. A bridge for stringed instruments comprising a string-bearing bar unsupported between its ends and a pair of resilient supporting members, one at each end of the bar, having different resiliency.

3. A bridge for stringed musical instruments comprising a string-bearing bar A, and members D D' supporting the bar at its ends, and differing in resiliency substantially as set forth.

4. A bridge for a stringed musical instrument comprising a string-bearing bar A, members D D' supporting the bar at its ends, and of different resiliency, and a connecting-bar C between the members substantially as set forth.

809,460. MOTOR-CONTROLLER. ADOLPH PRIESMEYER, Cleveland, Ohio, assignor to The Van Dorn-Iliett Electric Company, Cleveland, Ohio, a Corporation of Ohio. Filed May 26, 1905. Serial No. 262,262.

Claim.—1. In motor-controllers, the combination with an electric motor; of a circuit for its armature connections; means for automatically breaking said circuit when the magnetic flux of the motor reaches a predetermined quantity; and a manually-operable switch-disk adapted, when it is actuated to its "off" position, to close the break in the circuit made by said automatically-operating means.

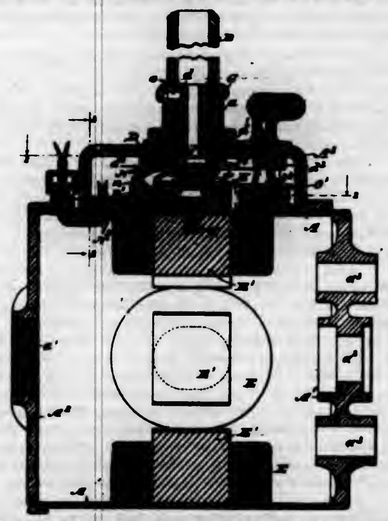

2. In motor-controllers, the combination with an electric motor; of a circuit for its armature connections; means for automatically breaking said circuit when the magnetic flux of the motor reaches a predetermined quantity; a manually-operable switch-disk adapted, when it is actuated to its "off" position, to close the break in the circuit made by said automatically-operating means; and a short-circuiting switch included in said circuit and rendered operative during the actuation of said switch-disk to its "on" position.

3. In motor-controllers, the combination with an electric motor; of a circuit for its armature connections; a solenoid included in said circuit; circuit-breaking means adapted to be operated by the inward stroke of the core of said solenoid, such inward stroke of said core being effected when the magnetic flux of the motor reaches a predetermined quantity; a manually-operable switch-disk adapted, when it is actuated to its "off" position, to close the break in the circuit made by said circuit-breaking means; and means for effecting the outward stroke of said core.

4. In motor-controllers, the combination with an electric motor; of a circuit for its armature connections; a solenoid included in said circuit; circuit-breaking means adapted to be operated by the inward stroke of the core of said solenoid, such inward stroke of said core being effected when the magnetic flux of the motor reaches a predetermined quantity; a manually-operable switch-disk adapted, when it is actuated to its "off" position, to close the break in the circuit made by said circuit-breaking means; means for effecting the outward stroke of said core; and a short-circuiting switch included in said circuit and rendered operative during the actuation of said switch-disk to its "on" position.

5. In motor-controllers, the combination with an electric motor; of a circuit for its armature connections; means for automatically breaking said circuit when the magnetic flux of the motor reaches a predetermined quantity; a rotatory short-circuiting switch included in said circuit; a series of fixed contact-clips supporting said switch; manually-operable switching means adapted, when they are actuated to their "off" position, to close the break in the circuit made by said automatically-operating means, the actuation of said manually-operable switching means effecting the rotation of said short-circuiting switch, the latter contacting with said clips during the actuation of the switching means to their "on" position, so as to render said short circuit operative.

6. In motor-controllers, the combination with an electric motor; of a circuit for its armature connections; means for automatically breaking said circuit when the magnetic flux of the motor reaches a predetermined quantity, including a solenoid, a core therefor, a pivoted lever connected at one end to said core, a knife-switch, and switch-poles, said knife-switch held to engagement with the other end of said lever and held to contact with said switch-poles, when said core is in its outermost position; means for effecting the outward stroke of said core; and a manually-operable switch-disk adapted, when it is actuated to its "off" position, to close the break in the circuit made by said automatically-operating means.

7. In motor-controllers, the combination with an electric motor; of a circuit for its armature connections; means for automatically breaking said circuit when the magnetic flux of the motor reaches a predetermined quantity, including a solenoid, a core therefor, a pivoted lever connected at one end to said core, a knife-switch, and switch-poles, said knife-switch held to engagement with the other end of said lever and held to contact with said switch-poles, when said core is in its outermost position; means for effecting the outward stroke of said core; a manually-operable switch-disk adapted, when it is actuated to its "off" position, to close the break in the circuit made by said automatically-operating means; and a short-circuiting switch included in said circuit and rendered operative during the actuation of said switch-disk to its "on" position.

8. In motor-controllers, the combination with an electric motor; of a circuit for its armature connections; means for automatically breaking said circuit when the magnetic flux of the motor reaches a predetermined quantity, including a solenoid, an adjustable core therefor, a pivoted lever connected at one end to said core, a pivoted element held to engagement with the other end of said lever, when said core is in its outermost position, two switch-poles, and a knife-switch connected to said pivoted element and normally held by the latter to contact with said switch-poles; means for effecting the outward stroke of said core; and a manually-operable switch-disk adapted, when it is actuated to its "off" position, to close the break in the circuit made by said automatically-operating means.

9. In a portable electrically-operated drill, the combination of an electric motor provided with a suitable casing; a drill-spindle mounted in the latter; gearing connecting said motor and spindle; a manually-operable controller for said motor; and means for automatically actuating said controller to assume the "off" position when the magnetic flux of the motor reaches a predetermined quantity.

809,461. KETTLE AND LID SECURING AND OPERATING MEANS THEREFOR. CHARLES S. PIERCE, Duluth, Minn. Filed Apr. 24, 1905. Serial No. 257,023.

Claim.—1. The combination of a kettle or similar receptacle provided with a handle or bail having a downwardly-extending member intermediate of its ends, a kettle-lid slidably mounted on said downwardly-extending member, and a finger-hold on said lid whereby the same may be manually lifted or slid upon said rod.

2. A kettle or equivalent utensil, having a removable lid, a button mounted on said lid, a rod or bolt extending loosely through said button and lid and secured at one end to a handle provided for lifting said kettle and adapted to extend over the top of the same.

3. A kettle, or equivalent utensil, having a handle adapted to extend over the same, a rod terminating at one end at or in said handle and immovable therein and adapted to extend downwardly therefrom, a kettle-lid journaled on said rod and adapted to slide upon the same, and a finger-hold mounted on said lid whereby the same may be manually lifted, or slid upon said rod.

4. The combination of a kettle, a lid for the same, a button mounted upon said lid, a thimble projected through said button and lid and secured in such position, a swinging handle adapted to extend over said kettle, a rod or bolt terminating at one end at or in said handle and immovable therethrough and extending at the opposite end loosely through said thimble, and lid-retaining means engaging said rod or bolt at the opposite side of said lid from said handle, substantially as described.

809,462. LANTERN. ALBERT R. PRITCHARD, Rochester, N. Y. Filed Sept. 22, 1905. Serial No. 279,027.

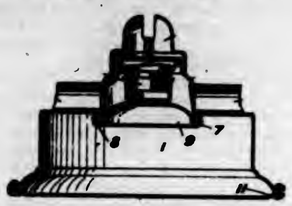

Claim.—1. The combination of a font having an opening in its upper surface provided with a downwardly-turned flange, and an air-chamber having an edge fitting within and against said flange and provided with side openings for the air-tubes of the lantern, the said two edges being rolled together whereby the said side openings are brought into registry with the top of the font when the said two edges are rolled together.

2. The combination of a font having an opening in its upper surface provided with a downwardly-turned flange, an air-chamber having an edge fitting within and against said flange and provided with side openings for the air-tubes of the lantern, the said two edges being rolled together whereby the said side openings are brought into registry with the top of the font when the said two edges are rolled together, and a burner-support having an edge rolled in with the edges of the font and of the air-chamber.

809,463. FILTER. ELLWOOD W. ROBERTS, Philadelphia, Pa., assignor, by mesne assignments, to Roberts Manufacturing Company, Incorporated, a Corporation of New Jersey. Filed May 26, 1903. Serial No. 158,866.

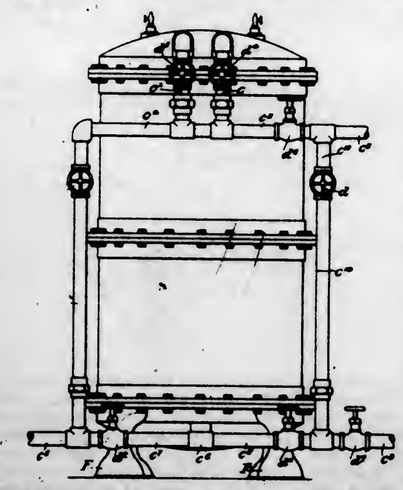

Claim.—1. A filter consisting of a casing containing filtering material, said casing including a portion having a partition extending across it and a head also having a partition placed to form a continuation of the partition in the first portion, said casing being provided with an inlet and an outlet for liquid to be filtered substantially as described.

2. A filter-casing, containing filtering material having a head with a vertical partition extending across the same and a body portion to said casing having a partition formed in continuation of the partition in the head, with means for forming a joint between said two partitions, said casing being provided with an inlet and an outlet for liquid to be filtered substantially as described.

3. A filter consisting of a casing containing filtering material including a substantially cylindrical section or sections and a head-section, one of the cylindrical sections having a vertical partition extending across it and the head-section also having a partition formed in continuation of the first partition, said casing being provided with an inlet and an outlet for liquid to be filtered substantially as described.

4. A casing for a filter, the same containing filtering material consisting of two sections each having a partition, one of said partitions being formed with a recess for the reception of the end of the other partition so as to form a substantially continuous surface therewith, said casing being provided with an inlet and an outlet for liquid to be filtered substantially as described.

5. A filter-casing containing filtering material, said casing including two sections each having a partition, one of said partitions being formed with a recess and the end of the other partition being tapered and adapted to enter the recess, with packing for said recess, said casing being provided with an inlet and an outlet for liquid to be filtered substantially as described.

6. A filter having openings for the entrance and exit of fluid and including a plurality of sections, certain of the same having partitions provided with means for forming a relatively tight joint between them, with filtering material filling the same below the portions having the partitions and partially filling the sections on both sides of said partitions, substantially as described.

7. A filter provided with openings for the entrance and exit of fluid and consisting of a plurality of sections including a head, said sections being mounted one upon the other, partitions extending vertically above one another across a plurality of the upper sections, and having means for forming a relatively tight joint between their adjacent ends, with filtering material in the lower portion of the filter below the partitions, said material extending into the portions of the filter on both sides of the partitions, substantially as described.

8. A casing for a filter, the same containing filtering material, including sections having partitions extending across them in substantially the same plane, the end of one of the partitions being enlarged and recessed, packing in said recess, said enlarged end being placed to receive the end of the partition of the other section, said end of the other section being sharpened along the edge contacting with the packing, said casing being provided with an inlet and an outlet for liquid to be filtered substantially as described.

9. A filter-casing having a partition in its lower portion provided with filtering material, said partition having an opening or series of openings through it with a plurality of perforated covers for each of said openings, each of said covers coacting with the other so that said covers are retained in position over the openings, said covers being of material curved to project beyond the surface of the partition, said casing having openings for the entrance and exit of fluid treated, substantially as described.

10. A filter-casing having a partition in its lower portion, said partition having an opening or a series of openings through it with a plurality of perforated covers for each of said openings, the covers being formed of curved material and one of the same having a portion extending above the partition and the other projecting below said partition, said casing containing filtering material and being provided with openings for the entrance and exit of fluid treated, substantially as described.

11. A casing having a partition extending across it, said partition being provided with openings each of which is surrounded by annular recesses in both the upper and lower faces of the partition, with two perforated covers for each opening, said covers having portions entering the recesses and means for holding the covers in position, said casing containing filtering material and being provided with openings for the entrance and exit of fluid treated, substantially as described.

12. A casing having a partition extending across it, said partition having a series of openings, each of which is surrounded by annular recesses, there being a recess in the upper and one in the lower face of the partition, two perforated covers for each opening, each extending into one of the recesses and projecting from opposite sides of the partition, and a bolt for connecting said covers, said casing containing filtering material and being provided with openings for the entrance and exit of fluid treated, substantially as described.

13. In a filter, the combination of a casing, having openings for the entrance and exit of fluid treated, a partition having a series of openings and extending across the lower portion of the casing, a pair of perforated covers of curved material projecting beyond the surface of the partition for each opening, one projecting above and the other below said partition, means for holding said covers in position and granular material confined between each pair of said covers, substantially as described.

14. In a filter, the combination of a casing, having openings for the entrance and exit of fluid treated, a partition extending across said casing and provided with openings, a pair of similar perforated covers for each of the openings projecting from opposite faces of the partition, means for holding said covers in position, means for making a tight joint between the edges of the covers and the partition, and granular material between each pair of covers, substantially as described.

15. A filter-casing containing filtering material in combination with a perforated partition across the same, said casing having a surface for the reception of the said partition, packing between the said surface and the partition, the edge of the partition being beveled so that the portion thereof nearest the center engages the packing before the portion farther from said center, said casing having openings for the entrance and exit of fluid substantially as described.

16. A filter-casing consisting of a plurality of sections, one of said sections having a surface for the reception of a ring of packing, a partition extending across the casing, packing on said surface for engagement by the edge of the partition, said edge being formed to force the packing outwardly from the center thereof, openings through said partition, perforated covers for said openings and a body of filtering material carried upon said partition, said casing having openings for the entrance and exit of fluid substantially as described.

17. A filter-casing having a vertically-placed partition extending across it and provided with an opening in its wall extending on both sides of said partition, filtering material in the casing with a plate of transparent material covering said opening and means for forming a tight joint between itself and the edge of the partition and the side of the casing, said casing having openings for the entrance and exit of fluids under treatment substantially as described.

18. A filter-casing having a partition extending across its upper portion and provided with an opening extending on both sides of said partition, filtering material in the casing, a plate of glass closing said opening, with means for projecting light into the casing, said casing having openings for the entrance and exit of fluids under treatment substantially as described.

19. A filter-casing having a partition extending across its upper portion and provided with an opening extending on both sides of said partition, filtering material in the casing, a plate of glass closing said opening, and a mirror supported so as to be capable of projecting light into the casing on either side of the partition, said casing having openings for the entrance and exit of fluids under treatment substantially as described.

20. A filter-casing having a partition extending across its upper portion and provided with an opening extending on both sides of said partition, filtering material in the casing, a plate of glass closing said opening, and a mirror hinged to the casing so as to be free to swing in a position which will make it possible to project light into the casing on either side of the partition, said casing having openings for the entrance and exit of fluids under treatment substantially as described.

21. A casing having a partition extending across it, and provided with an opening extending on both sides of the partition, filtering material in the casing, a plate of glass closing said opening, and packing between the wall of the casing and the plate and between the edge of the partition and the plate with means for retaining said plate in position, said casing having openings for the entrance and exit of fluids under treatment substantially as described.

22. A casing having a partition extending vertically across it and provided with an opening extending on either side of said partition, filtering material in the casing, a plate of glass covering said opening, a frame hinged in a line substantially coincident with the plane of the vertical partition and a mirror carried in said frame so as to be free to project light into the casing on either side of the partition, said casing having openings for the entrance and exit of fluids under treatment, substantially as described.

809,464. DRESS OR SKIRT GAGE. IDA M. ROUSE, Kansas City, Mo. Filed Aug. 1, 1905. Serial No. 272,263.

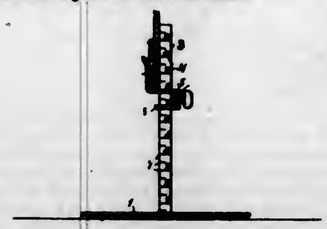

Claim.—1. In a skirt-gage, the combination with a base, of a vertical standard mounted thereon, a skirt-support comprising a U-shaped body having the two parallel arms disposed horizontally one above the other, said arms having perforations respectively through which the standard extends, the body being vertically slidable upon the standard, and one of the arms of the body being provided with means for engaging and holding the lower edge of a part of a skirt.

2. In a skirt-gage, the combination with a base, of a vertical graduated standard mounted thereon, a skirt-support comprising a U-shaped body having the two parallel arms disposed horizontally one above the other, the arms being vertically slidable upon the standard, one arm being disposed so as to indicate the graduations on the standard and provided with means for engaging and holding the lower edge of a part of a skirt, and releasable means for securing the said body to the standard.

3. In a skirt-gage, the combination with a base, of a vertical standard mounted thereon, a skirt-support comprising a U-shaped body the parallel arms of which are disposed horizontally one above the other and slidable vertically on the standard, one arm having means for engaging and holding the lower edge of a part of a skirt, and the vertical part of the U-shaped body having a transverse screw-threaded hole, and a securing-screw mounted in said threaded hole in the body and adapted to bear against the standard.

4. In a skirt-gage, the combination with a base, of a vertical standard mounted thereon and having a series of transverse graduations, a skirt-support comprising a U-shaped body the parallel arms of which are disposed horizontally one above the other and slidable vertically each upon the standard, one arm having means for engaging and holding the lower edge of a part of a skirt and disposed so as to indicate the graduations on the standard, the vertical portion of the U-shaped body having a transverse screw-threaded hole, and a securing-screw mounted in said threaded hole and adapted to bear against said standard.

5. In a skirt-gage, the combination with a base, of a vertical standard mounted thereon, a skirt-support comprising a U-shaped body the parallel arms of which are disposed horizontally one above the other and slidable vertically upon the standard, one arm having thereon an upwardly-extending arm between which and the standard the skirt is adapted to be held, the vertical portion of the body connecting the horizontal arms having a transverse screw-threaded hole, and a securing-screw mounted in said hole and adapted to bear against the standard.

6. In a skirt-gage, the combination with a base, of a vertical standard mounted thereon and having a series of transverse graduations, a skirt-support comprising a U-shaped body the parallel arms of which are disposed horizontally one above the other and slidable vertically upon the standard, one of said arms having an upwardly-extending arm between which and the standard the lower edge of a skirt is adapted to be held, the arm having the upwardly-extending arm being disposed so as to indicate the graduations, the vertical portion of the U-shaped body connecting the parallel arms having a transverse threaded hole, and a securing-screw mounted in said hole and adapted to bear against the standard.

7. In a skirt-gage, the combination with a base, of a vertical standard mounted thereon, a skirt-support comprising a U-shaped body having the parallel arms disposed horizontally one above the other and slidable vertically upon the standard, one arm having an upwardly-extending resilient arm between which and the standard the lower edge of a skirt is adapted to be held, the vertical portion of the body connecting the parallel arms having a transverse screw-threaded hole, and a securing-screw fitted in said hole and adapted to bear against said standard.

8. In a skirt-gage, the combination with a base, of a vertical standard mounted thereon and having a series of transverse graduations, a skirt-support comprising a U-shaped body the parallel arms of which are disposed horizontally one above the other and slidable vertically on said standard, one arm being disposed so as to indicate the graduations and having extending upwardly therefrom a resilient arm between which and the standard the lower edge of the skirt is adapted to be held, the vertical portion of the body connecting the parallel arms having a transverse screw-threaded hole, and a securing-screw mounted in said hole and adapted to bear against the standard.

809,465. SKIRT-FASTENER. WILLIAM D. ROY and EDWARD H. ROY, Nashville, Tenn. Filed Mar. 18, 1905. Serial No. 250,575.

Claim.—A garment-fastener comprising a plate adapted to be

secured to the garment part and provided upon its outer side with a longitudinal open-ended socket or housing forming a keeper, one of

3. A connecting-link for a drop-handle, comprising a skeleton link having an opening at one end to receive the handle and another

ing a cutting-jaw and cheeks on each side of said jaw between which said jaw moves to cut both ends of the cheroot, substantially as de-

tween which said jaw is movable, a pivoted plate against which the cheroot is pressed by said jaw, means for imparting a lateral motion

secured to the garment part and provided upon its outer side with a longitudinal open-ended socket or housing forming a keeper, one of the open end portions of the keeper being transversely enlarged to provide a flared mouth, a lock-plate adapted for attachment to a second garment part and coöperating with the keeper aforesaid when forced into the mouth of the latter, teeth arranged longitudinally of the lock-plate, a side of the keeper being provided with an opening, a lock-pawl disposed exterior of the keeper at a side thereof and pivoted to the outer side of the plate carrying said keeper, said lock-pawl having one end passing through the opening in the side of the keeper to engage the teeth of the lock-plate, a finger-piece for the pawl, a spring between the pawl and the adjacent outer side of the keeper to normally hold the pawl in engagement with the teeth of the lock-plate, and a projection extended from the lock-plate near an end thereof to limit the movement of the same in introducing it into the keeper or socket.

809,466. **ENGINE-BED.** FREDERICK W. SALBOH, Burlington, Iowa, assignor to Murray Iron Works Company, Burlington, Iowa. Filed Mar. 3, 1904. Serial No. 196,369.

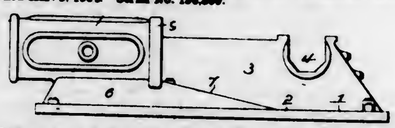

Claim.—1. A single casting comprising a continuous horizontal base, a longitudinal web located to one side of the longitudinal axis of the base and extending approximately from end to end of the base and provided at one end with a recess for a shaft-bearing, an enlargement rising from said horizontal base and disposed at one side of and integral with said web, and a guide-barrel upon said enlargement, said guide-barrel integral with the said enlargement and with the longitudinal web and the longitudinal web rising upwardly from the base above the axis of the guide-barrel and above the axis of the shaft-bearing.

2. A single casting comprising a continuous base, a longitudinal web located to one side of the longitudinal axis of the base and terminating at one end in a solid enlargement extending laterally from said web to a point approximating the opposite side of the base and a guide-barrel integral with said enlargement at the opposite side of the base from the web, the end of the web farthest removed from said enlargement having a recess for the reception of a bearing for a crank-shaft, said longitudinal web extending upwardly from the base and beyond the axis of the guide-barrel and above the axis of the bearing of the crank-shaft.

809,467. **DROP-HANDLE FOR COFFINS.** GEORGE A. SCHERR, Cincinnati, Ohio. Filed Jan. 27, 1905. Serial No. 242,576.

Claim.—1. In a drop-handle, the combination of the handle proper, skeleton links by which the same is supported, projections near each end of these links, sheet-metal ornamental shells having perforations adapted to receive the projections on the links after being bent over and around them to cover the same and attaching-brackets to which these links are pivotally connected.

2. An independent attaching-bracket for a drop-handle, made of sheet metal and consisting of lugs to receive the pivotal connection of the handle, a base from which these lugs project in one direction and flanges projecting from said base in an opposite direction, they being intended and adapted to rest with their edges directly against the object to which the drop-handle is to be secured.

3. A connecting-link for a drop-handle, comprising a skeleton link having an opening at one end to receive the handle and another opening at its other end to receive a pivot-pin a sheet-metal shell of limited and even thickness to cover this link and means to attach one to the other.

4. In a drop-handle, the combination of the handle proper, links one at each end thereof which receive each at one of their ends the handle and are provided at their other ends with an opening adapted to receive a pivot-pin, an attaching-bracket for each link adapted to be connected to the side of the coffin and provided with two projecting lugs spaced to receive between them the perforated end of a link and also provided with a corresponding opening to receive a pivot-pin and with curved slots concentric with this opening, and pins at each connected end of the links, one passing through the openings in the lugs and in the link between them and the other seated in the link and projecting from each side thereof and extending into the slots of the adjacent lugs, whereby a twofold and positive connection is provided for each link to its attaching-bracket.

809,468. **FLEXIBLE ELECTRICAL CONDUCTOR.** GEORG E. SCHMIDGEN, Nuremberg, Germany. Filed May 4, 1904. Serial No. 207,859.

Claim.—1. The herein-described product consisting of an inner or central flexible core and an outer conducting-cord wound about the core in spaced helical convolutions the said cord being composed of a central flexible core and a conductor wound about said core in close helical convolutions.

2. The herein-described product consisting of a core and an outer conducting-cord wound about the core in spaced helical convolutions, the said cord being composed of a flexible core and conductor wound about the said core in helical convolutions.

809,469. **MACHINE FOR THE PRODUCTION OF CHEROOTS.** JOHANN R. SCHMITT, Frankfort-on-the-Main, Germany, assignor to Maschinenfabrik für Tabakindustrie Gesellschaft mit Beschränkter Haftung, Frankfort-on-the-Main, Germany. Filed Jan. 11, 1905. Serial No. 240,601.

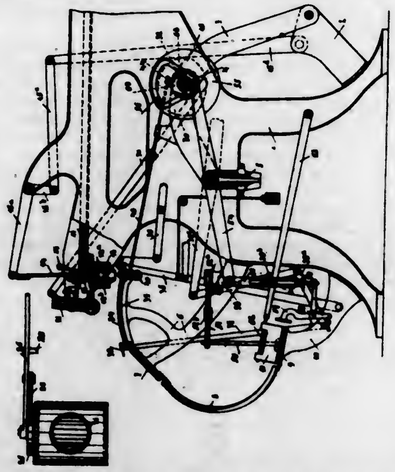

Claim.—1. In a machine for the production of cheroots and the like, the combination with a pressing device receiving loose tobacco, said pressing device comprising a rammer and a movable table having an opening through which the bunch is free to fall, means for moving said rammer, of a rolling-apron beneath said table, means for applying the wrapper to the bunch, a chute and a cutting device to which the cheroot is led by said chute, said cutting device comprising a cutting-jaw and cheeks on each side of said jaw between which said jaw moves to cut both ends of the cheroot, substantially as described.

2. In a machine for the production of cheroots and the like, the combination with a pressing device receiving loose tobacco, said pressing device comprising guides, table mounted in said guides, a rammer adapted to move between said guides, said table and said rammer being concaved corresponding to the form of the bunch, means for moving said table, means for moving said rammer, of means for applying the wrapper to the bunch, a chute, and a cutting device to which the cheroot is led from said chute and adapted to cut both ends of the cheroot simultaneously, substantially as described.

3. In a machine for the production of cheroots and the like, the combination with a pressing device receiving loose tobacco, said pressing device comprising guides, a table mounted in said guides, a rammer reciprocated between said guides, said table and said rammer being concaved corresponding to the form of the bunch, and said table having an opening through which the bunch is ejected onto the rolling-apron, means for moving the table, means for imparting a two-stage downward movement to the rammer so as first to press the tobacco, and when the table has moved to bring the opening beneath said rammer to force the bunch through said opening, the rolling-apron, means for applying the wrapper to the bunch, a chute, and a cutting device to which the cheroot is brought through said chute, and adapted to cut both ends of the cheroot simultaneously.

4. In a machine for the production of cheroots and the like, the combination with a pressing device receiving loose tobacco, said pressing device comprising a pivoted plate, a spring pressing on said plate and serving to give preliminary pressure to the tobacco, a rammer, a movable table having an opening through which the bunch is free to fall, means for moving said rammer, of a rolling-apron beneath said table, means for applying the wrapper to the bunch, means for supplying paste to the wrapper, a chute and a cutting device to which the cheroot is led by said chute, said cutting device comprising a cutting-jaw, cheeks on each side of said jaw between which said jaw moves to cut both ends of the cheroot and a pivoted plate against which the cheroot is pressed by said jaw, substantially as described.

5. In a machine for the production of cheroots and the like, the combination with a pressing device receiving loose tobacco, said pressing device comprising a moving rammer and a moving table of a rolling-apron beneath said table and receiving the bunch from said table, means for applying the wrapper to the bunch, means for delivering paste to the wrapper, said paste-delivering means comprising a vertically-movable paste-container, a drum rotatably mounted on said container and formed with grooves, and means for rotating said drum to release the paste, a chute, and a cutting device to which the cheroot is led from said chute, substantially as described.

6. In a machine for producing cheroots and the like, the combination with a pressing device of a rolling-apron receiving the bunch from said pressing device, means for applying the wrapper to the bunch, means for supplying paste to the wrapper, said paste-supplying means comprising a paste-containing cylinder, means for reciprocating said cylinder, a grooved drum carried by said cylinder, a ratchet-wheel coaxial with said drum, a pawl turning said ratchet-wheel, a lever to which said pawl is pivoted and means for oscillating said lever, a chute, and a cutting device to which the cheroot is led from said chute, substantially as described.

7. In a machine for the production of cheroots and the like, the combination with a pressing device, of means for applying the wrapper to the bunch, a chute through which the cheroot is fed to the cutting device, and means for cutting the ends of the cheroot simultaneously, said cutting means comprising a cutting-jaw the length of which corresponds to the length of the cheroot, two cheeks between which said jaw is movable, and means for moving said jaw between said cheeks so as to cut both ends of the cheroot, substantially as described.

8. In a machine for the production of cheroots and the like, the combination with a pressing device of means for applying the wrapper to the bunch, a chute through which the cheroot is led to the cutting device and said cutting device comprising a cutting-jaw 46, a pivoted plate 62 against which the cheroot is pressed by said jaw, and cheeks between which said jaw is moved to cut the ends of the cheroot simultaneously.

9. In a machine for the production of cheroots and the like, the combination with a pressing device of means for applying the wrapper to the bunch, a chute through which the cheroot is led to the cutting device, said cutting device comprising a cutting-jaw, cheeks between which said jaw is movable, a pivoted plate against which the cheroot is pressed by said jaw, means for imparting a lateral motion to said plate, and means for raising said plate, substantially as described.

10. In a machine for the production of cheroots and the like, the combination with a pressing device, of means for applying a wrapper to the bunch, a chute through which the cheroot is led to the cutting device, said cutting device comprising a cutting-jaw, cheeks between which said jaw is movable, a pivoted plate 62 against which the cheroot is pressed by said jaw, means for imparting a lateral motion to said plate, and means for raising said plate, substantially as described.

11. In a machine for the production of cheroots and the like, the combination with a pressing device of means for applying a wrapper to the bunch, a chute through which the cheroot is led to the cutting device, said cutting device comprising a cutting-jaw and cheeks through which said jaw is moved, a pivoted plate against which the cheroot is pressed by the cutting-jaw, a plate 57 serving to position the cheroot in front of said jaw, a lever serving to move said cutting-jaw, and means connecting said lever with said plate 57 so as to operate said jaw and said lever from the same point, substantially as described.

12. In a machine for the production of cheroots and the like the combination with a pressing device of means for applying a wrapper to the bunch, a chute leading the cheroot to the cutting device, said cutting device comprising a cutting-jaw, cheeks between which said jaw is moved a pivoted plate 61 against which the cheroot is pressed by said jaw, a plate 57 serving to position the cheroot in front of said jaw, a lever 54 actuating the cutting-jaw, a link 60 connecting said lever with said plate 57, and a lever 63 carrying the plate 61 and having a pin entering a slot in said link 60, in order on the movement of said lever 54 to raise said plate 61 periodically, as described.

809,470. **GRAIN-CONVEYER.** JAMES B. SCHUMAN, Indianapolis, Ind., assignor of three-fourths to Augustin Boice, Indianapolis, Ind. Filed Dec. 13, 1904. Serial No. 236,494.

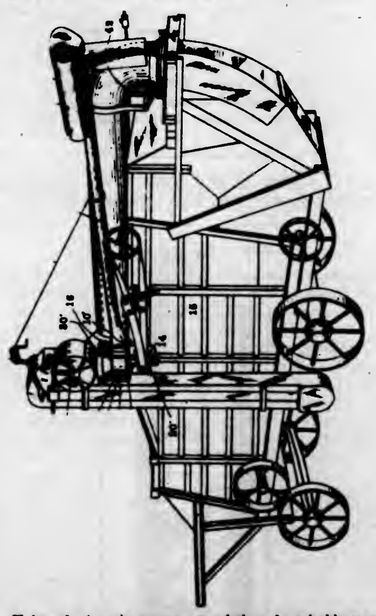

Claim.—1. A grain-conveyer consisting of a suitable support, a drum journaled thereon, a discharge-spout communicating with said drum and hinged thereto to swing in a plane at an angle to the plane of the drum, means for holding said spout in various positions of adjustment, a throwing-wheel mounted in said drum, a door arranged in the entrance to said drum, and means for automatically opening and closing said door.

2. A grain-conveyer consisting of a drum, a discharge-spout leading therefrom, a throwing-wheel arranged in said drum, a hop-

per loading to said throwing-wheel, a door for closing said hopper, and speed-controlled means dependent upon the speed of the throwing-wheel for determining the position of the door.

3. A grain-conveyer consisting of a receiver, a spout leading therefrom, means for driving the grain through said receiver and spout, a door normally closing entrance to said receiver, and speed-controlled means dependent upon the speed of the grain-driving means for opening and closing said door.

4. The combination, with a threshing-machine, and a grain-elevator, of a grain-conveyer consisting of a drum journaled on a suitable support so as to swing in a horizontal plane beneath the discharge-point of the elevator, a discharge-spout hinged to said drum, the arrangement being such that the discharge end of the spout may be carried to either side of the thresher, and a throwing-wheel arranged in said drum.

5. A grain-conveyer consisting of a suitable support, a drum journaled thereon to swing in a horizontal plane, a discharge-spout communicating with said drum and hinged thereto to swing in a plane at an angle to the plane of the drum, means for holding said spout in various positions of adjustment, a throwing-wheel mounted in said drum, a door closing entrance to said drum, and speed-controlled means carried by the throwing-wheel for automatically operating said door.

6. A grain-conveyer consisting of a receiver, a throwing-wheel mounted therein, a hopper leading into said throwing-wheel, a door arranged to close said hopper, a brake-annulus pivoted on said hopper, interacting portions between said door and said annulus for determining the position of the door, and speed-controlled brake-arms carried by the throwing-wheel and adapted to engage the annulus.

7. In a grain-conveyer, the combination, with a spout and means for driving grain therethrough, of a honeycomb structure arranged in said spout at the point of change of direction therein to receive a limited quantity of grain upon which subsequently-arriving grain will impinge.

8. The combination, with a threshing-machine, of a grain-elevator arranged to receive the threshed grain and elevate the same above the top of the thresher, a grain-conveyer consisting of a drum journaled on a suitable support to swing in a horizontal plane below the discharge of the grain-elevator, a throwing-wheel arranged therein, and a discharge-spout attached to said drum in a plane above the top of the thresher whereby the discharge end of said spout may be swung to the opposite side of the thresher over the top thereof.

809,471. **WATER OR FLUID GAGING TUBE.** GORHAM T. SHAWBURY, Cheyenne, Wyo. Filed Feb. 7, 1905. Serial No. 244,632.

Claim.—1. In a water or fluid gaging tube, a tube of any suitable non-transparent material, provided with a plurality of apertures arranged in any predetermined order along the length of said tube; a nipple threaded to each aperture; a transparent disk seated in said nipple; and a ring-shaped cap arranged to removably secure said transparent disk to said nipple.

2. In a water or fluid gaging tube, the combination of a metal tube adapted to water-gage-valve fittings, and provided with a plurality of threaded apertures arranged in vertical rows along its length, with a plurality of nipples removably threaded to said apertures; a cap-ring threaded to the outer end of said nipple; and a glass disk arranged to be clamped between said cap-ring and said nipple.

3. In a water or fluid gaging tube, the combination of a tube, through its operative gaging body portion, having round end portions, adapted to be operatively mounted in water-gage valves, and provided with a plurality of independent and renewable light and sight inlet eyelet-windows arranged to admit light to the interior of said tube, and arranged along the length of said tube, said windows comprising nipples threaded to said tube, a cap-ring threaded to each of said nipples, a pliable washer in said cap-ring, and a glass disk secured between said nipple and washer and said cap-ring.

4. In a water or fluid gaging tube, a tube adapted to be connected to water-gage-valve fittings provided with guard-rods; a pair of curved plates loosely hinged to said guard-rods, and arranged to fold over said tube.

5. In a water or fluid gaging tube, the combination of the tube operatively connected to water-gage fittings, provided with guard-rods, and provided with a plurality of light and sight inlet eyelet-windows, with a hood comprising two curved plates each of which is hinged to one of said guard-rods and arranged to swing and overlappingly fold over said tube; means including lugs for locking said hood-plates in a folded position.

6. In a water or fluid gage, the combination with the gaging-tube, the valve-fittings, the guard-rod plates, and the guard-rods, with a hood arranged to fold over said tube and comprising a pair of curved plates, one of each of which is pivotally hinged to a guard-rod, to swing and fold together around said tube; an outward-curved lip on the free edge of one of said plates, provided with a stepped shoulder; apertures in said lip, and lugs on the edge of the opposite plate, adapted to enter said apertures, when said plates are folded over said tube, and lock said plates together.

7. In a water or fluid gaging tube, an operative gaging-tube, provided with guard-rods and one or more curved plates pivotally connected to said guard-rods and arranged to be folded around said tube.

809,472. **COMPOSITION OF MATTER.** BENJAMIN C. SEWTON, Rutland, Vt., assignor to Sexton and Evans, New York, N. Y., a Copartnership. Filed Apr. 6, 1904. Serial No. 201,836.

Claim.—A composition of matter comprising tin, zinc and aluminium with chlorid of sodium in substantially the following proportions: twelve parts of tin, two parts of zinc, one part of aluminium and one per cent. of chlorid of sodium.

809,478. **ACETYLENE-GAS PLANT.** WILLIAM J. STIBBON, Minneapolis, Minn. Filed Dec. 2, 1904. Serial No. 236,178.

Claim.—1. In a gas-generating plant of the character described, the combination with an underground basin and gas-generating means coöperating therewith, of a gasometer having an underground well, an underground dry well and gas-conveying pipes leading from the said gas-generating means, through said dry well, and to said gasometer, substantially as described.

2. The combination with a generating-basin having concrete walls and base, of a gas-reservoir embedded in the concrete bottom of said basin and provided with a plurality of stand-pipes extending upward through said basin, detachable gas-generators coöperating with the upper ends of said stand-pipes, and a gasometer receiving from said embedded gas-reservoir, substantially as described.

3. The combination with a generating-basin and a supporting-ledge, of a stand-pipe extending upward through said basin, a storage-reservoir receiving from said stand-pipe, a generating-dome provided within with a carbid-holder, telescopically engageable over said stand-pipe, said dome having a laterally-projecting supporting-flange coöperating with said supporting-ledge to hold said dome with its lower end closed by the water in said basin, but with its carbid-holder out of contact therewith, substantially as described.

809,478.

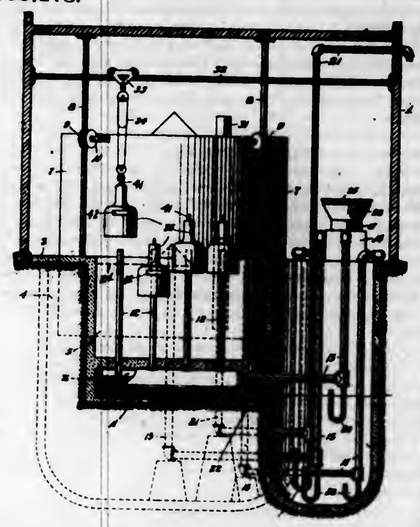

809,474. **WATER-GAGE MECHANISM.** THOMAS STRINGER, Girard, Ohio. Filed Mar. 3, 1905. Serial No. 248,314.

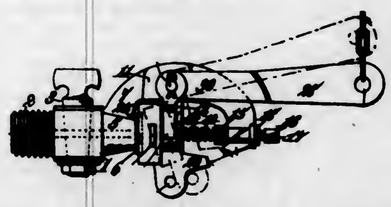

Claim.—1. In a device of the class set forth, the combination with a tap having an open end, of a carrier pivotally supported adjacent to the open end of the tap and located exteriorly of the latter, the said carrier being transversely disposed with respect to the tap, a flexible occluder removably held on a portion of the carrier to engage the open end of the tap, exteriorly-located resilient means for automatically closing the carrier and occluder and exerting a pressure force on the said carrier in longitudinal alinement with the tap, and devices for releasing the occluder and simultaneously moving the carrier, said devices providing two independent points for opening the occluder and moving the carrier therewith.

2. In a device of the class set forth, the combination with a tap having an open end surrounded by a flange, of a depending carrier pivotally supported at its upper extremity by and located wholly exteriorly of the tap and provided with a flexible occluder coöperating directly with the open end of the tap, the occluder having a recess to inclose the flanged open end of the tap, and adjustable resilient means for automatically closing the carrier and occluder carried by the latter and exerting a longitudinal pressure on the carrier, and a pivoted lever device having depending members embracing and loosely engaging opposite portions of the carrier to open the latter against the resistance of the resilient means.

3. In an attachment of the class set forth, the combination with a tap having an open extremity, of a carrier pivotally supported by and exteriorly of the tap and provided with a yielding occluder to engage the open extremity of the tap, the said carrier being disposed in a plane at right angles to the position of the tap, an adjustable resilient means bearing against the outer side of the carrier and exerting a longitudinal pressure on the latter and the occluder to hold the occluder normally closed against the open extremity of the tap, and means coöperating with the carrier to swing the latter and the occluder outwardly away from the tap against the resistance of the said resilient means.

4. In an attachment of the class set forth, the combination with a tap, of a depending pivotally-mounted carrier having an occluder to coöperate with a part of the tap and also provided with a lower terminal operating means, an adjustable device for automatically closing the carrier and occluder, and an operating-lever having depending members bearing against opposite portions of the carrier.

5. In an attachment of the class set forth, the combination of a tap having an open extremity provided with an outwardly-projecting bracket, a carrier movably depending from said bracket, and having an occluder to coöperate with the extremity, an adjustable closing-spring interposed between the outer end of the bracket and the carrier, the spring exerting a direct longitudinal pressure against the carrier and occluder, and means for opening the carrier against the resistance of the spring.

6. In an attachment of the class set forth, the combination of a tap having a bracket projecting outwardly therefrom and terminating at its free end in a stop projection, a carrier movably depending from the bracket and having an occluder thereon to engage a portion of the tap, the carrier also having a stop projection to engage that on the bracket, a spring interposed between the outer end of the bracket and carrier for automatically closing the carrier, and means for opening the carrier against the resistance of the spring.

7. In an attachment of the class set forth, the combination of a tap having a bracket projecting outwardly therefrom, a carrier movably depending from the bracket, an occluder removably held on a part of the carrier to engage the tap, a key extending through the occluder and part of the carrier with which it engages, and devices for opening and closing the carrier and occluder.

8. In an attachment of the class set forth, the combination of a tap having supporting means projecting outwardly therefrom, a carrier movably depending from the supporting means and having an occluder to engage a part of the tap the outer terminal of the supporting means projecting beyond the carrier, an adjusting-screw mounted in the outer terminal of the supporting means, a spring connected at opposite extremities to the carrier and screw, the spring exerting a direct longitudinal pressure against the carrier and occluder, and means for opening the carrier against the resistance of the spring.

9. In an attachment of the class set forth, the combination of a tap having supporting means projecting outwardly therefrom and terminating in a seat and a stop device, a carrier movably depending from the supporting means and having an occluder to engage one terminal of the tap and also provided with a stop projection to contact with the stop device of the supporting means, an adjusting-screw mounted in the seat of the supporting means, a spring connected at opposite extremities to the carrier and screw, and means for opening the carrier against the resistance of the spring.

809,475. **MOTOR-VEHICLE.** THOMAS L. STURTEVANT, Quincy, and THOMAS J. STURTEVANT, Wellesley, Mass., assignors to Sturtevant Mill Company, Portland, Me., a Corporation of Maine. Filed June 6, 1905. Serial No. 263,987.

Claim.—1. In a motor-vehicle, the combination with a vehicle-frame comprising side beams, of an opposed-cylinder engine-frame arranged crosswise of said vehicle-frame and forming a rigid transverse part of said vehicle-frame, said engine-frame being disposed between the front and rear axles of the vehicle and with the cylinder portions of said engine-frame inside of or between the outside parts of said side beams and approximately central, vertically, of the said side beams.

2. In a motor-vehicle, the combination with a vehicle-frame comprising side beams, of an opposed-cylinder engine-frame arranged crosswise of said vehicle-frame between the front and rear axles of the vehicle and with the cylinder portions of said engine-frame approximately central, vertically, of the said side beams, and with the horizontal inlet and exhaust valves of the engine located below the said side beams.

3. In a motor-vehicle, the combination with a vehicle-frame comprising side beams, of an opposed-cylinder engine-frame arranged crosswise of said vehicle-frame between the front and rear axles of the vehicle and with the cylinder portions of said engine-frame approximately central, vertically, of the said side beams, and having sparking plugs mounted on the upper portions of the cylinders of the engine-frame.

4. In a motor-vehicle, a chassis or vehicle frame comprising side beams, combined with an opposed-cylinder engine-frame form-

ing a rigid transverse part of said vehicle-frame and supported by said side beams and between the outside parts of the latter, with the axes of the cylinder portions of the engine-frame between the lines of the upper and lower parts of said side beams.

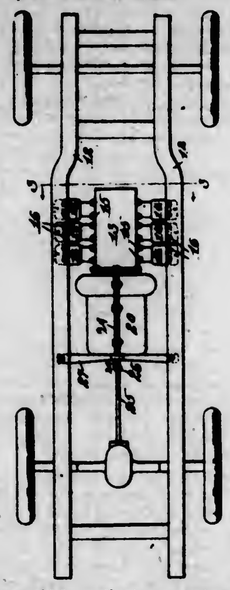

5. In a motor-vehicle, a chassis or vehicle frame comprising side beams, combined with an opposed-cylinder engine-frame forming a rigid transverse part of said vehicle-frame and arranged crosswise the chassis and supported by and within the outer faces or parts of said side beams, with the axes of the cylinder portions of the engine-frame between the lines of the upper and lower parts of said side beams, said engine-frames supporting horizontal inlet and exhaust valves which are disposed below the lower lines of the said side beams.

6. In a motor-vehicle, a chassis or vehicle frame comprising side beams, combined with an opposed-cylinder engine-frame forming a rigid transverse part of the vehicle-frame and arranged crosswise the chassis and connected with said side beams, with the axes of the cylinder portions of the engine-frame between the lines of the upper and lower parts of said side beams, and sparking plugs mounted on the upper portions of the engine-cylinders.

7. In a motor-vehicle, the combination with a chassis or vehicle frame, of a horizontal, opposed-cylinder explosion engine or motor supported by said chassis or frame and arranged crosswise of the latter with its cylinder portions laterally between the outer faces or parts of the side beams of said frame, so that the said side beams can assist in resisting the shock of the explosions of the said engine or motor, and with the inlet and exhaust valves of the said engine or motor below the said side beams.

8. In a motor-vehicle, the combination with a chassis or vehicle frame, of a horizontal, opposed-cylinder explosion engine or motor supported by said chassis or frame and arranged crosswise of the latter with its cylinder portions laterally between the outer faces or parts of the side beams of said frame, so that the said side beams can assist in resisting the shock of the explosions of the said engine or motor, and with the sparking plugs of the said engine or motor mounted upon the upper parts of the said cylinders.

9. In a motor-vehicle, the combination with a chassis or vehicle frame, of a horizontal, opposed-cylinder explosion engine or motor supported by said chassis or frame and arranged crosswise of the latter with its cylinder portions laterally between the outer faces or parts of the side beams of said frame, so that the said side beams can assist in resisting the shock of the explosions of the said engine or motor, and with the inlet and exhaust valves of the said engine or motor below the said side beams, and also with the sparking plugs of the said engine or motor mounted upon the upper parts of the said cylinders.

10. In a motor-vehicle, the combination with a chassis or vehicle frame comprising two angular-flanged side beams of inverted-L shape in cross-section, of an opposed-cylinder explosion engine or motor arranged crosswise of the said frame and hung from the upper flanges of the said side beams and having the axes of its cylinders between the lines of the upper and lower parts of the said side beams, so that the latter are adapted to resist shocks of explosions of the said engine or motor with a minimum tendency to twist the said side beams.

11. In a motor-vehicle, the combination with a chassis or vehicle frame comprising two angular-flanged side beams of inverted-L shape in cross-section, of an opposed-cylinder explosion engine or motor arranged crosswise of the said frame and hung from the upper flanges of the said side beams and having the axes of its cylinders between the lines of the upper and lower parts of the said side beams, so that the latter are adapted to resist shocks of explosions of the said engine or motor with a minimum tendency to twist the said side beams, the inlet and exhaust valves of the said engine or motor being below the said side beams and the sparking plugs of the said engine or motor being mounted upon the upper portions of said cylinders.

12. In a motor-vehicle, the combination with a chassis or vehicle frame, of an explosion engine or motor supported on said frame crosswise of the latter, with its cylinder portions between the upper and lower lines of the said side beams, a clutch and gearing casing rearward of the engine-frame, a driving-shaft in said clutch and gearing casing in line with the engine-shaft, a working shaft in said clutch and gearing casing below the said driving-shaft and geared thereto, and a power-transmitting shaft connected with said working shaft and approximately in line with the latter.

13. In a motor-vehicle, the combination with a chassis or vehicle frame, of an engine or motor frame, a gear-casing rigid with and partly supported by said motor-frame, a driving or power shaft connected with the engine or motor, a power-transmitting or working shaft below and geared to the said power-shaft and having its bearings in said casing, and through which latter shaft power is communicated to the driving-wheels of the vehicle.

14. In a motor-vehicle, the combination with a chassis or vehicle frame, of an engine or motor frame, a gear-casing rigid with and partly supported by said motor-frame, a driving or power shaft connected with the engine or motor, a power-transmitting or working shaft below and geared to the said power-shaft and through which latter shaft power is communicated to the driving-wheels of the vehicle, and an automatic clutch within said casing.

15. In a motor-vehicle, the combination with a chassis or vehicle frame, of an engine or motor frame, a gear-casing rigid with and partly supported by said motor-frame, a driving or power shaft connected with the engine or motor, a power-transmitting or working shaft below and geared to the said power-shaft and through which latter shaft power is communicated to the driving-wheels of the vehicle, an automatic clutch and a fly-wheel both within said casing.

809,476. **WEED-PULLER.** PAUL M. THAYER, Plymouth, Ind. Filed July 26, 1904. Serial No. 217,906.

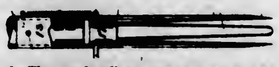

Claim.—1. The weed-puller consisting of a handle and a series of pointed sharp-edged knives attached thereto and made of spring metal so as to adapt them to yield convergingly when pressed into the ground.

2. The implement herein described, consisting of a handle and a series of pointed and sharp-edged knives arranged in a small circle around the bottom of the handle, the implement being adapted to insert the knives in the ground and to be turned after insertion so as to effect a clean severation of the surrounding dirt and lateral roots and enable the easy extraction of the weed.

809,477. **DISK JOINTER FOR PLOWS.** PERCY R. THORNE and RAYMOND D. WELTON, Vincennes, Ind. Filed May 26, 1905. Serial No. 262,263.

Claim.—1. A jointer of the character described comprising upper and lower attaching-plates, means for clamping said upper plate to the plow-beam, means whereby said plates are connected together to permit them to be adjusted laterally, a depending arm arranged on said lower plate, a jointer-standard adjustably secured to said arm, and a disk jointer detachably connected to the lower end of said standard, substantially as described.

2. A jointer of the character described comprising an upper attaching-plate, adjustable clamping-bolts to secure the forward end of said plate to the plow-beam, adjustable clamping-bars to secure the rear end of said plate to the beam, a downwardly-projecting right-angularly-disposed, horizontally-slotted extension formed on the forward edge of said upper plate, a transversely-slotted lower attaching-plate adjustably connected to said upper plate, a depending obliquely-disposed arm formed integrally with said lower attaching-plate, said arm having formed therein a longitudinally-disposed channel and a longitudinally-disposed slot, a jointer-standard adjustably mounted in said channel, a bolt adapted to pass through said standard and through the slot in said arm to adjustably secure said standard to said arm, and a disk jointer adapted to be secured to the lower end of said standard, substantially as described.

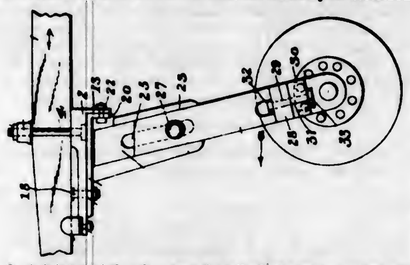

3. A jointer of the character described comprising upper and lower attaching-plates, means for clamping said upper plate to the plow-beam, means whereby said plates are connected together to permit them to be adjusted laterally, a depending arm arranged on said lower plate, a jointer-standard adjustably secured to said arm, an apertured enlargement formed on the lower end of said standard, a right-angularly-formed bearing-bracket secured to said enlargement, a jointer-shaft arranged in said bracket, and a disk jointer secured on said shaft, substantially as described.

4. A jointer of the character described comprising upper and lower attaching-plates, means for clamping said upper plate to the plow-beam, means whereby said plates are connected together to permit them to be adjusted laterally, a depending arm arranged on said lower plate, a jointer-standard adjustably secured to said arm, an apertured enlargement formed on the lower end of said standard, said enlargement having a roughened lower surface, a right-angularly-formed bearing-bracket, having a roughened upper surface to engage the roughened surface of said enlargement, an attaching-bolt adapted to be passed through the aperture in said enlargement and an alined aperture in said bracket, a horizontally-disposed bearing-box arranged in said bracket, a jointer-shaft mounted in said box, a bushing arranged between said shaft and said boxing, a plate secured to said shaft, near one end of the same, a nut adapted to be screwed on the other end of the shaft, a disk jointer arranged on the end of said shaft adjacent to said plate, bolts to secure said disk to said plate, and a nut adapted to be screwed on the end of said shaft against the outer face of said disk, substantially as described.

809,478. **TRUCK.** PATRICK TWOMEY, New York, N. Y. Filed Feb. 11, 1905. Serial No. 245,941.

Claim.—1. A truck comprising a frame having uprights, a platform mounted at the upper extremities thereof, cross-bars connecting the uprights, pairs of wheels upon which the frame is supported, and a steering-shaft journaled in the cross-bars and connected with one of the pairs of wheels, said steering-shaft terminating below the platform.

2. A truck comprising a wheeled frame having opposite ways and provided with downwardly and inwardly curved end portions.

3. A truck comprising a wheeled frame having opposite ways, an endless series of connected bars movable over the ways, and a locking device movable between the bars.

4. A truck comprising a wheeled frame, a conveyer mounted upon the frame and furnishing a platform, and a chute pivoted upon the frame below one extremity of the conveyer.

5. A truck comprising a wheeled frame having supporting-ways, a flexible, endless traveling platform having its upper run movable over the ways, and means to lock said flexible platform against movement.

6. A truck comprising a wheeled frame having elevated supporting-ways, a flexible, endless traveling platform having its upper run movable over the ways, a chute having its upper end pivotally connected to the frame at a point below the discharge portion of the traveling platform, and means to adjust the chute and support it in adjusted position.

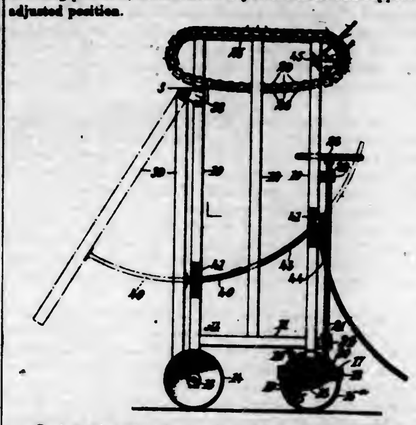

7. A truck comprising a wheeled frame having elevated supporting-ways, a flexible, endless traveling platform having its upper run movable over the ways, a chute having its upper end pivotally connected to the frame at a point below the discharge portion of the traveling platform, and means to adjust the chute and support and lock it in adjusted position.

8. A truck comprising a wheeled frame, an elevated platform mounted thereon, a chute pivoted upon the frame, and an operating member including two sections, one of which is connected with the chute and the other pivoted to the first-named section, each of said sections having retaining means which may engage the frame.

9. A truck comprising a wheeled frame, an elevated platform supported thereon, a chute having its upper end pivoted to one side of the frame, under one end of the platform, and curved operating-bars pivotally connected together and pivotally connected to the chute, said frame having guides through which said operating-bars extend, and said bars having stops to coact with said guides to lock the bars to the frame and secure the chute in adjusted position.

10. A truck comprising a wheeled frame having guide-openings in its front and rear sides, an elevated platform supported on said frame, a chute having its upper end pivoted to one side of the frame under the discharge portion of the platform, and curved operating-bars pivotally connected together and pivotally connected to the chute, said operating-bars extending through the guide-openings in the frame and having stop devices to coact with the sides of said openings to lock said bars and hence said chute in adjusted position.

809,479. **VOTING-MACHINE.** CLARENCE M. WARNER, Cambridge, Ill. Filed Apr. 20, 1905. Serial No. 256,260.

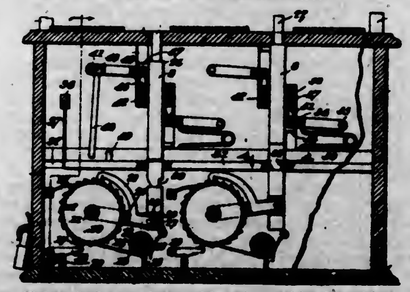

Claim.—1. In a voting-machine, the combination with a cabinet, of a series of key-guideways and a series of slide-guideways disposed at substantially right angles to the key-guideways, a series of keys mounted in the guideways and provided at their front sides with corresponding locking-notches and at their rear sides with cor-

responding inclined notches, and a series of locking-slides mounted in the slide-guideways, each slide having its forward end bifurcated to straddle the adjacent key and lie in engagement with the rear end of the next in front slide, the back of each bifurcation being inclined and normally engaging the inclined notch of the adjacent key, the rear end of each slide being alined with and in front of the locking-notch of the adjacent key, each key being provided with shoulders located respectively above and below the adjacent locking-slide for contact therewith to limit movement of the key in opposite directions.

2. In a voting-machine, a series of slidable voting-keys provided in corresponding sides with notches and at their opposite corresponding sides with cams, and a series of locking-slides having their ends successively abutted and their forward ends bifurcated to straddle the respective keys, the backs of the bifurcations being normally in engagement with the respective cams, and each slide being movable under the influence of the adjacent cam to move the slide into engagement with the notch of the next adjacent key to lock the same, the bifurcation of each slide being of a length to receive the adjacent key throughout the movement of the slide in opposite directions.

3. In a voting-machine, a series of slidable voting-keys provided in corresponding sides with notches and at their opposite corresponding sides with cams, and a series of locking-slides having their ends successively abutted and their forward ends notched to receive the respective keys with the backs of the notches normally in engagement with the respective cams, each slide being movable under the influence of the adjacent cam to move said slide into engagement with the notch of the next adjacent key to lock the same, and each key being provided with shoulders at opposite sides of the adjacent locking-slide for contact therewith to limit the depression and the elevation of the key.

809,480. LAWN-SWING. HENRY W. WATSON, Danville, Ky., assignor of one-fourth to Henry C. Bright, Danville, Ky. Filed July 31, 1905. Serial No. 272,168.

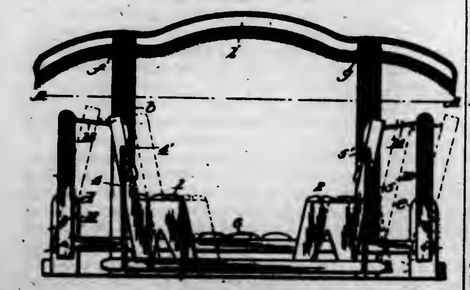

Claim.—1. A lawn-swing having, in combination, a supporting-frame, a pair of seats and a seat-frame common to both movable together horizontally but rigidly connected with each other, a horizontally-movable foot-platform, swinging supports for said seats and said platform respectively having axes of motion parallel with each other, and means for transmitting motion from said platform to said seats.

2. A lawn-swing having, in combination, a supporting-frame, a pair of vis-à-vis seats and a seat-frame common to both movable together horizontally but rigidly connected with each other, a horizontally-movable foot-platform between said seats, swinging supports for said seats and said platform respectively having axes of motion parallel with each other, and means for transmitting motion from said platform to said seats.

3. A lawn-swing having, in combination, a supporting-frame, a pair of seats and a seat-frame common to both movable together horizontally but rigidly connected with each other, a horizontally-movable foot-platform, swinging supports for said seats and said platform respectively having axes of motion parallel with each other, and means for transmitting motion from said platform to said seats, the platform and seats moving at each impulse in opposite directions.

4. A lawn-swing having, in combination, a supporting-frame, a pair of seats and a seat-frame common to both movable together horizontally but rigidly connected with each other, a horizontally-movable foot-platform, swinging supports for said seats and said platform respectively having axes of motion parallel with each other, and motion-increasing devices for transmitting motion from said platform to said seats.

5. A lawn-swing having, in combination, a supporting-frame, a seat-frame movable horizontally, a horizontally-movable foot-platform, swinging supports for said seat-frame and platform respectively having axes of motion parallel with each other, and motion-increasing devices transmitting motion from said platform to said seat-frame the two moving at each impulse in opposite directions.

6. A lawn-swing having, in combination, a supporting-frame, a pair of vis-a-vis seats having upwardly-extending backs with side bars and a seat-frame common to both seats movable together horizontally but rigidly connected with each other, a horizontally-movable foot-platform, swinging supports for said seat-frame and said platform respectively having axes of motion parallel with each other the supports of said platform being in the form of lever-frames interacting therewith below their pivots and having side bars located behind those of the respective seats and extended above their pivots to any desired extent, and motion-transmitting links connecting the upper ends of the side bars of said lever-frames with those of the seats, respectively, substantially as hereinbefore specified.

809,481. CRANE MECHANISM. JOHN R. WHITTEMORE, Erie, Pa. Filed May 16, 1905. Serial No. 260,330.

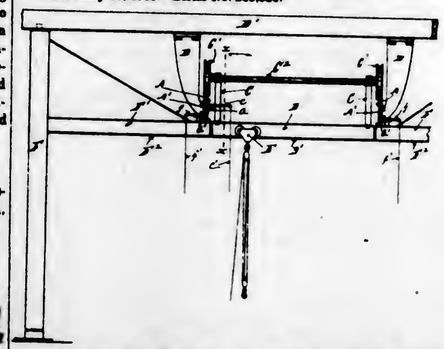

Claim.—1. The combination of a traveling crane, a transverse horizontal trolley-track thereon, a jib-crane on one side of the line of travel of the traveling crane, a horizontal trolley-track thereon on the same horizontal plane with the trolley-track on the traveling crane, means for locking the jib-crane trolley-track at right angles to the line of travel of the traveling crane, means for locking the traveling crane so that the trolley-track thereon will coincide with the trolley-track on the jib-crane when it is at right angles to the line of travel of the traveling crane, and a trolley-hoist adapted to operate over both of said trolley-tracks when they coincide as aforesaid and pass from one to the other, substantially as set forth.

2. The combination of a traveling crane, tracks therefor supported from above, a transverse horizontal track on said crane below the track-support thereof, a series of jib-cranes on one or both sides of the traveling-crane supports, horizontal trolley-tracks on said jib-cranes on the same horizontal plane with the trolley-track on the traveling crane, means for locking each of said jib-cranes at right angles to the track-support of the traveling crane, latch mechanism for locking the traveling crane in line with each of said jib-cranes when at right angles with the track-support so that the trolley-track on the traveling crane will coincide with the trolley-track on the jib-crane opposite thereto, and a trolley-hoist adapted to travel over the trolley-track on the traveling crane and the trolley-track on the jib-crane coinciding therewith, and from one to the other, substantially as set forth.

809,482. CRANE-LOCKING MECHANISM. JOHN R. WHITTEMORE, Erie, Pa. Filed June 5, 1905. Serial No. 264,695.

Claim.—1. In a locking device for cranes, a locking-lever pivoted to one crane and adapted to engage another crane, a trolley-hoist stop adapted to be engaged by the locking-lever, and means for operating the locking-lever, substantially as set forth.

2. In a locking mechanism for cranes, a locking-lever pivoted to the trolley-hoist track of one crane, and adapted to engage the trolley-hoist track of another crane, a lever-latch on said other crane adapted to be engaged and raised by said locking-lever, trolley-hoist stops secured to both trolley-hoist crane-tracks, means on said locking-lever and said lever-latch for engaging and locking said stops, and means for raising said locking-lever, substantially as set forth.

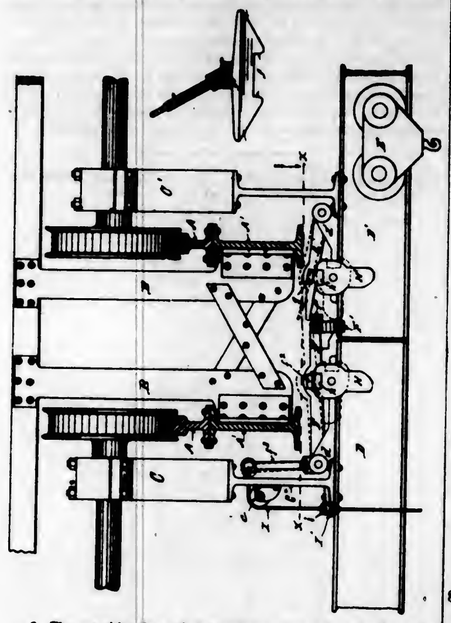

3. The combination of two cranes, transverse trolley-hoist tracks on both of said cranes adapted to be brought into coincidence, a locking-lever pivoted on the trolley-hoist track of one crane and projecting beyond the end thereof, inclined lateral projections on the end of the locking-lever having a slot between them adapted to automatically engage the top of the trolley-hoist track of the other crane when the two cranes are brought into coincidence, a lever-latch pivoted to the top of the trolley-hoist track on the second crane adapted to be engaged and raised by the end of the locking-lever on the trolley-hoist track of the first-named crane, swinging trolley-hoist stops pivoted on the top of both trolley-hoist tracks under the locking-lever and lever-latch thereon, lugs on said locking-lever and said lever-latch adapted to engage notches in said swinging stops, and means for raising the locking-lever and the lever-latch so as to release said swinging stops without unlocking the trolley-hoist tracks from each other, substantially as set forth.

809,483. LOCKING DEVICE FOR CRANES. JOHN R. WHITTEMORE, Erie, Pa. Filed June 9, 1905. Serial No. 264,496.

Claim.—1. The combination of a traveling crane, a jib-crane, a stationary stop on the traveling-crane support, a locking-lever pivoted to the jib-crane adapted to engage said stationary stop and the traveling crane, and means for operating said locking-lever, substantially as set forth.

2. The combination in a crane, of a trolley-hoist track a trolley-hoist operative thereon, a locking-lever pivoted to said crane, an arm on said locking-lever adapted to operate as a trolley-hoist stop when the locking-lever is raised and means for raising said locking-lever, substantially as set forth.

3. The combination of a traveling crane, a trolley-hoist track thereon, a trolley-hoist operative on said track, a stop mechanism on said track, means on the traveling-crane-track support for automatically operating said stop mechanism, a stationary stop on the traveling-crane-track support, a jib-crane, a trolley-hoist track thereon, a locking-lever pivoted thereto adapted to engage said stationary stop and the trolley-hoist track on the traveling crane, and lock them together and against lateral movement, an arm on said locking-lever adapted to operate as a trolley-hoist stop when the locking-lever is raised, and means for operating said locking-lever, substantially as set forth.

809,483.

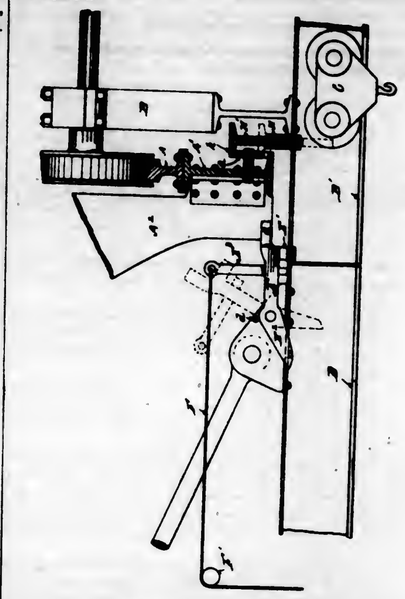

809,484. COMBINED FILE AND BINDER FOR NEWSPAPERS AND SUCH LIKE MATERIAL. JOSEPH WILSON, Christchurch, New Zealand. Filed Nov. 29, 1904. Serial No. 234,777.
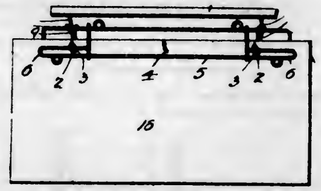
Claim.—1. In a file for newspapers and the like, in combination, a narrow oblong-shaped frame, upwardly-projecting sharpened hooks secured upon the frame whereon sheets of paper are impaled, a flap that is hinged to the frame that has loops or incisions through which the hooks come when the flap is brought over the hooks in order to hold or lock the papers on the file, a guard-piece likewise hinged to the frame that is adapted to come over the points of the hooks and spring-catches on the guard-wire supports that engage with the stems of the spikes, substantially as specified.

2. In a file for newspapers, letters and such like not requiring alphabetical arrangement in which the matter filed may also be longitudinally bound, a narrow oblong-shaped frame, and three upwardly-projecting sharpened hooks on the frame, in combination with a cord that is passed through the eyes in the outer pair of hooks preparatory to placing matter on the file, and when the file is full withdrawn from the outer pair of hooks and its free ends threaded both ways respectively through the eye in the central hook and the papers withdrawn from the file, a flap that is hinged to the frame that has loops or incisions through which the hooks come when the flap is brought over the hooks in order to lock the papers on the file, a guard-piece likewise hinged to the frame that is adapted to come over the points of the hooks and spring-catches upon the guard-wire supports that engage with the stems of the spikes, substantially as described and as illustrated.

3. A file for letters and the like requiring alphabetical arrangement, comprising a file having three spikes and curved pieces 14 adapted to engage with the ends of the spikes in which latter are eyes, in combination with a cord that is threaded through the eyes in the spikes said file being constructed so that one, two or three spikes,

may be operated independently of each other, or altogether as set forth.

closure for the lower ends of the outer and intermediate drums and having the openings 6 between them and the opening 7 at the lower

gear-teeth upon their circumferences, a shaft, springs secured at their ends to the gear of the vehicle and to said shaft, gear-wheels

thereof, a sheave or pulley, a series of antifriction-balls arranged in each end of the hub thereof, a removable cone-bushing carried in

may be operated independently of each other, or altogether as set forth.

809,485. SAW. FREDERICK A. WEBER, Lawrenceburg, Ind. Filed Sept. 11, 1905. Serial No. 277,971.

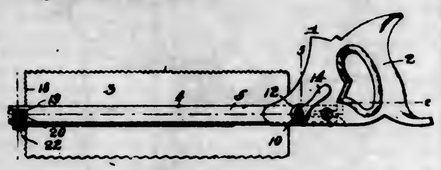

Claim.—1. A saw having a slidably-mounted blade provided with rack-teeth along one edge, and a screw having its thread engaged with said teeth for adjusting said blade.

2. A saw comprising a handle, a back, a blade slidable in said back and having rack-teeth, a worm-screw having its thread engaging said rack-teeth for adjusting one end of said blade, and means for clamping the other end thereof.

3. A saw comprising a handle, a back, a blade having rack-teeth upon its outer end, a worm-screw mounted in the outer end of said back and having its thread engaged with said rack-teeth, and means for clamping the inner end of said blade.

4. A saw comprising a handle, a slotted back, a saw-blade slidable in the latter and having its outer end formed with rack-teeth, a worm-screw journaled in the recessed outer end of said back and having its thread engaged with said rack-teeth, a finger-piece for operating said worm-screw, and means for clamping the inner end of said blade.

5. A saw comprising a handle formed with a recessed portion, a back consisting of two opened members connected together and recessed at their outer ends and formed with aliming longitudinal slots at their inner ends, a guide-screw in said handle extending through said slots, a clamping-bolt in said handle and extending through said slot, a blade slidable between the members of said back and having cutting-teeth on its longitudinal or side edges and rack-teeth on its outer end, a worm-screw in the recess in the outer end of said back and having its thread engaged with said rack-teeth, and a knob or finger-piece for rotating said worm-screw, substantially as described.

809,486. RADIATOR. WILLIS H. WYANT, Tabor, Iowa. Filed Mar. 6, 1905. Serial No. 248,506.

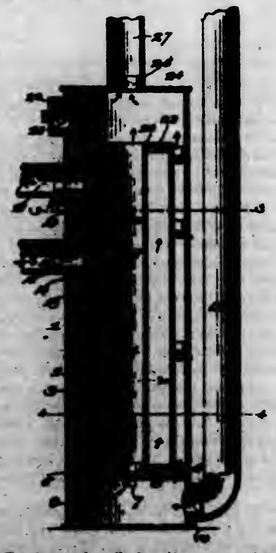

Claim.—The herein-described radiator comprising the outer drum open at its upper end, the intermediate drum in the outer drum, the inner drum in the intermediate drum, the base-plate forming a closure for the lower ends of the outer and intermediate drums and having the openings 6 between them and the opening 7 at the lower end of the inner drum, the top plate forming a closure for the upper end of the intermediate drum and having the central opening through which the upper end of the inner drum extends, the smoke-flue connections 15, 20, extending from the intermediate drum through one side of the outer drum, the downwardly-directed deflector in the space between the intermediate and inner drums and having the horizontally-disposed upper portion closing said space on one side of the inner drum, disposed between the flue connections and having an opening, and the damper to cover and uncover said opening.

809,487. RAILWAY-FROG. THOMAS L. BERNHAM, Deward, Mich. Filed Oct. 13, 1905. Serial No. 282,581.

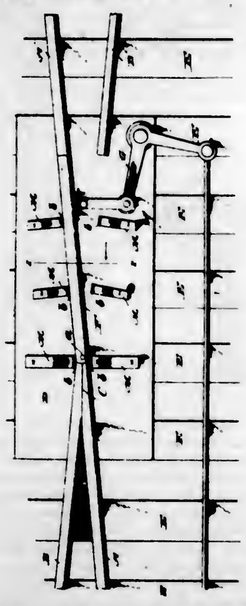

Claim.—The herein-described railway-frog, comprising sleepers or ties, the smooth bed-plate D superposed on the sleepers or ties, the rails A and B arranged on the plate D, and having their adjacent end portions reduced and brought together and fixed with respect to each other and also having a concave seat at their terminus, rails A' and B' having their ends arranged a slight distance apart and on the plate D, the horizontally-swinging point pivoted to the plate D adjacent to the terminus of rails A and B and having a head, a base and a web interposed between the head and base and also having a convex heel disposed in the said concave seat, and sets of braces arranged on and fixed to the plate D and disposed at opposite sides of the point; said braces having their inner ends shaped to snugly occupy the space between the head and base of the point.

809,488. WAGON ATTACHMENT. WRIGHT W. CAIN, Kosciusko, Miss. Filed Sept. 13, 1905. Serial No. 278,280.

Claim.—1. In combination with a vehicle having wheels mounted upon the axles thereof, the hubs of the rear axles of the vehicle having gear-teeth upon their circumferences, a shaft, springs secured at their ends to the gear of the vehicle and to said shaft, gear-wheels fixed to said shaft and adapted to be thrown into mesh with the gear-teeth of said hub, whereby said shaft may be rotated to bring said springs under tension, gear-rings fastened to the rear wheels of the vehicle and having teeth on their inner marginal edges, gear-wheels carried by said shaft and adapted to engage the teeth of said gear-rings, and means for throwing said gear-wheels into and out of mesh with the gear-teeth upon said hubs and rings, as set forth.

2. In combination with a vehicle having wheels mounted upon the axles thereof, the hubs of the rear axles of the vehicle having gear-teeth upon their circumferences, a shaft, springs secured at their ends to the gear of the vehicle and to said shaft, gear-wheels fixed to said shaft and adapted to be thrown into mesh with the gear-teeth of said hub, whereby said shaft may be rotated to bring said springs under tension, gear-rings fastened to the rear wheels of the vehicle and having teeth on their inner marginal edges, gear-wheels carried by said shaft and adapted to engage the teeth of said gear-rings, longitudinally-movable bars in which said shaft has a bearing, and means for moving said bars, whereby said gear-wheels may be thrown into and out of mesh with the gear-teeth upon said hubs and the teeth of said rings, as set forth.

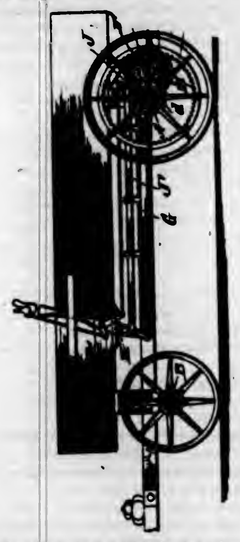

3. In combination with a vehicle having wheels mounted upon the axles thereof, the hubs of the rear axles of the vehicle having gear-teeth upon their circumferences, a shaft, springs secured at their ends to the gear of the vehicle and to said shaft, gear-wheels fixed to said shaft and adapted to be thrown into mesh with the gear-teeth of said hub, whereby said shaft may be rotated to bring said springs under tension, gear-rings fastened to the rear wheels of the vehicle and having teeth on their inner marginal edges, gear-wheels carried by said shaft and adapted to engage the teeth of said gear-rings, longitudinally-movable bars in which said shaft has a bearing, a crank-shaft mounted upon the vehicle and to which said bars are pivotally connected, a portion of said shaft forming a lever for rocking the same, and means for holding the shaft from rotation when out of gear, as set forth.

4. In combination with a vehicle having wheels mounted upon the axles thereof, the hubs of the rear axles of the vehicle having gear-teeth upon their circumferences, a shaft, springs secured at their ends to the gear of the vehicle and to said shaft, gear-wheels fixed to said shaft and adapted to be thrown into mesh with the gear-teeth of said hub, whereby said shaft may be rotated to bring said springs under tension, gear-rings fastened to the rear wheels of the vehicle and having teeth on their inner marginal edges, gear-wheels carried by said shaft and adapted to engage the teeth of said gear-rings, longitudinally-movable bars in which said shaft has a bearing, a crank-shaft mounted upon the vehicle and to which said bars are pivotally connected, a portion of said shaft forming a lever for rocking the same, a pawl riding upon one of the gear-wheels, a rod to which said pawl is connected, and a lever connected to one of said bars and to which said rod is fastened, as set forth.

809,489. SASH-PULLEY. CHARLES J. CALEY, New Britain, Conn., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn., a Corporation of Connecticut. Filed July 3, 1905. Serial No. 268,073.

Claim.—1. A sash-pulley comprising a frame having a face-plate and two side arms connected thereto, with passages through said side arms and countersunk enlargements around the outer sides thereof, a sheave or pulley, a series of antifriction-balls arranged in each end of the hub thereof, a removable cone-bushing carried in the passage in each side arm, a shoulder on each bushing located in the countersunk portion of the side arm, one of said bushings having a drilled hole and the other bushing having a tapped hole, and a screw passing freely through the drilled hole of the one bushing and taking into the tapped hole in the other bushing.

2. In a sash-pulley, the combination of a frame having yielding side arms, a sheave having a series of ball-bearings at each end of its hub, removable cone-bushings seated in openings in said side arms and having shoulders abutting against the outer faces thereof, and a screw for adjusting said bushings with regard to said bearings.

809,490. SAFETY SCAFFOLD-SUPPORT. PETER CAPORALE, Hartford, Conn. Filed Sept. 29, 1905. Serial No. 280,673.

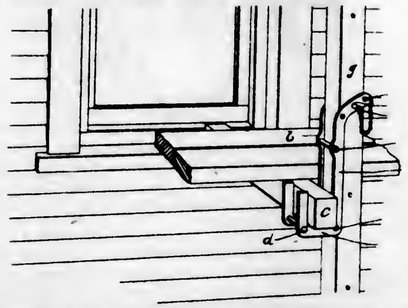

Claim.—1. In a scaffold-support the side members braced from and secured to one another, rearwardly-extending ears at the upper ends of said side members, by means of which the device may be secured in place, a U-shaped recess formed at the lower end of the device by extending the ends of said members forwardly and then upwardly, and brace-bars providing a stop to hold said U-shaped recess free from the part to which the device is attached.

2. In a scaffold-support the side arms, U-shaped on their lower ends, rearwardly-extending ears lying at each side of the scaffold-upright, brace-bars connecting the side members, and means for securing the whole to the upright.

3. A scaffold-flooring support consisting of two side members U-shaped at their lower ends, brace-bars connecting the side members, holes oppositely arranged in the upper ends of the side members, and a securing-pin adapted to pass through said holes and a hole in the upright.

4. The combination with a scaffold including uprights, floor-beams, a platform, of means secured to the uprights for securing the floor-beams, said means comprising side members, brace-bars securing said side members together, attaching-ears formed by extending the upper ends of the side members rearwardly adapted to lie one on each side of the upright, registering holes in said attaching-ears, and the upright, a pin extending through the holes in the ears and upright, the lower ends of the side members being bent forwardly and upwardly forming a recess to receive and retain said flooring-beams.

809,491. TRIPLE VALVE. ROBERT B. CHAPMAN, Colorado City, Colo. Filed Sept. 29, 1904. Serial No. 225,268.

Claim.—1. The combination with an auxiliary reservoir of an air-brake system, of a triple valve having a pipe connection connected at its end with the triple valve and reservoir and forming connection therebetween, a valve-stem guide separate from and arranged in said pipe connection, and a check-valve arranged in such connection and having a stem coöperating with such guide; substantially as described.

2. The combination, with a triple valve and the auxiliary reservoir 3, of a connection between the triple valve and reservoir comprising the pipes 6 and 7 joined by the union-nut 8 and communicating directly between the triple valve and reservoir, a check-valve

guide arranged in one of the pipes and clamped therein by the union-nut 8, and a check-valve 11 within the pipe 6; substantially as de-

tached pawl or dog carried by said post and fulcrumed therein and adapted to engage the inner surface of the casing, a casing secured to the

by an auxiliary weight in one direction so that the outer end of said

guide arranged in one of the pipes and clamped therein by the union-nut 8, and a check-valve 11 within the pipe 6; substantially as described.

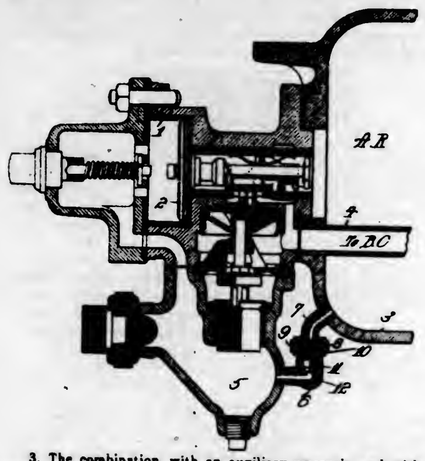

3. The combination, with an auxiliary reservoir, and with a triple valve having a drain-cup 5, of two pipes 6, 7 communicating between such cup and the reservoir, the separate guide 9 in the pipe 6, and a check-valve 11 in such communication and guided by said guide; substantially as described.

809,492. PROCESS FOR ELECTROLYTIC PRODUCTION OF LUSTROUS METALLIC COATINGS UPON METALS. ALEXANDER CLASSEN, Aachen, Germany. Filed Sept. 28, 1905. Serial No. 280,454.

Claim.—1. The process for the production of lustrous metallic coatings on metals by electrolysis, which consists in adding to the electrolytic bath in which the metal articles are to be treated one or more glucosides.

2. The process for the production of lustrous metallic coatings on metals by electrolysis, which consists in adding to the electrolytic bath in which the metal articles are to be treated, extract of plants, or parts of plants, containing a glucoside.

3. The process for the production of lustrous metallic coatings upon metals, which consists in placing the metal to be treated in an electrolytic bath containing a glucoside, allowing the metal to remain in such bath until a lustrous metallic coating is produced thereon, and then removing the coated metal from the bath.

4. The process for the production of lustrous metallic coatings upon metals, which consists in placing the metal to be treated together with the metal which is to form a coating in an electrolytic bath containing extract of licorice-root, allowing the metal to remain in such bath until a lustrous metallic coating is produced thereon, and then removing the coated metal from the bath.

5. The process for the production of lustrous metallic coatings upon metals, which consists in providing an electrolytic bath composed of zinc sulfate, sodium sulfate, zinc chlorid, boric acid, water and licorice-root embraced within an electric circuit, placing the metal in such bath, allowing the metal to remain in the bath until a lustrous metallic coating is produced thereon, and then removing the coated metal from the bath.

6. The process for the production of lustrous metallic coatings upon metals, which consists in providing an electrolytic bath embraced within an electric circuit and composed of a solution of twenty kilos crystallized zinc sulfate, four kilos crystallized sodium sulfate, one kilo zinc chlorid and 0.5 kilo boric acid in one hundred liters water, adding the extract of five kilos licorice-root, placing the metal in such bath, allowing the metal to remain in the bath until a lustrous metallic coating is produced thereon, and then removing the coated metal from the bath.

809,493. BINDER. FREDERICK A. CLEVELAND, New York, N. Y. Filed May 17, 1905. Serial No. 260,788.

Claim.—1. In a binder, the combination of a pair of clamping members, a post attached to one of said clamping members, an unattached pawl or dog carried by said post and fulcrumed therein and adapted to engage the inner surface of the casing, a casing secured to the other of said clamping members adapted to telescope over said post, an auxiliary weight coöperating with said pawl or dog to accelerate the action of the same, substantially as described.

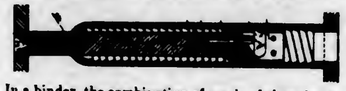

2. In a binder, the combination of a pair of clamping members, a post having a slot at the lower end thereof attached to one of said clamping members, an unattched pawl or dog carried by said post and fulcrumed therein and adapted to engage the inner surface of a casing, a casing secured to the other of said clamping members adapted to telescope over said post, an auxiliary weight coöperating with said pawl or dog to accelerate the action of the same, substantially as described.

3. In a binder, the combination of a pair of clamping members, a post having a slot at the lower end thereof attached to one of said clamping members, an unattched pawl or dog carried by said post in said slot and fulcrumed therein in such a manner that the bottom of said slot forms a stop to limit the movement of said pawl or dog, a casing secured to the other of said clamping members adapted to telescope over said post, an auxiliary weight coöperating with said pawl or dog to accelerate the action of the same, substantially as described.

4. In a binder, the combination of a pair of clamping members, a post attached to one of said clamping members, an unattached pawl or dog carried by said post and fulcrumed therein and adapted to engage the inner surface of a casing, a casing having a serrated inner surface secured to the other of said clamping members and adapted to telescope over said post, an auxiliary weight coöperating with said pawl or dog to accelerate the action of the same, substantially as described.

5. In a binder, the combination of a pair of clamping members, a post attached to one of said clamping members, an unattached pawl or dog carried by said post and fulcrumed therein and adapted to engage the inner surface of a casing, a casing having a threaded inner surface secured to the other of said clamping members and adapted to telescope over said post, means for rotating said post in said casing, an auxiliary weight coöperating with said pawl or dog to accelerate the action of the same, substantially as described.

6. In a binder, the combination of a pair of clamping members, a post having a chamber at the lower end thereof attached to one of said clamping members, an unattached pawl or dog carried by said post and fulcrumed therein and adapted to engage the inner surface of a casing, a casing secured to the other of said clamping members adapted to telescope over said post, an auxiliary weight located in said chamber in said post and coöperating with said pawl or dog to accelerate the action of the same, substantially as described.

7. In a binder, the combination of a pair of clamping members, a post having a slot at the lower end thereof, said slot being partially closed by means of a stop member secured therein, an unattached pawl or dog carried by said post in said slot and fulcrumed against said stop member and adapted to engage the inner surface of a casing, a casing secured to the other of said clamping members adapted to telescope over said post, an auxiliary weight coöperating with said pawl or dog to accelerate the action of the same, substantially as described.

8. In a binder, the combination of a pair of clamping members, a post attached to one of said clamping members, an unattached pawl or dog carried by said post and having one end thereof adapted to be fulcrumed therein and the other end thereof adapted to engage the inner surface of a casing, a casing secured to the other of said clamping members adapted to telescope over said post, an auxiliary weight coöperating with said pawl or dog to accelerate the action of the same, substantially as described.

9. In a binder, the combination of a pair of clamping members, a post attached to one of said clamping members, an unattached pawl or dog carried by said post and having one end thereof curved to fulcrum therein and the other end thereof adapted to engage the inner surface of a casing, a casing secured to the other of said clamping members adapted to telescope over said post, an auxiliary weight coöperating with said pawl or dog to accelerate the action of the same, substantially as described.

10. In a binder, the combination of a pair of clamping members, a post attached to one of said clamping members, an unattached pawl or dog carried by said post and having one end thereof formed on a circular arc to fulcrum therein and the other end thereof adapted to engage the inner surface of a casing, a casing secured to the other of said clamping members, adapted to telescope over said post, an auxiliary weight coöperating with said pawl or dog to accelerate the action of the same, substantially as described.

11. In a binder, the combination of a pair of clamping members, a post having a slot at the lower end thereof, said slot being partially closed by means of a stop member secured therein, a stop member having a portion thereof adapted to form a fulcrum for a pawl or dog, an unattached pawl or dog carried by said post in said slot and having one end thereof adapted to be fulcrumed against said stop member and the other end thereof adapted to engage the inner surface of a casing, a casing secured to the other of said clamping members adapted to telescope over said post, an auxiliary weight coöperating with said pawl or dog to accelerate the action of the same, substantially as described.

12. In a binder, the combination of a pair of clamping members, a post having a slot at the lower end thereof, said slot being partially closed by means of a stop member secured therein, a stop member having a portion thereof curved to form a fulcrum for a pawl or dog, an unattached pawl or dog carried by said post in said slot and having one end thereof curved to adapt it to be fulcrumed against said stop member and the other end thereof adapted to engage the inner surface of a casing, a casing secured to the other of said clamping members adapted to telescope over said post, an auxiliary weight coöperating with said pawl or dog to accelerate the action of the same, substantially as described.

13. In a binder, the combination of a pair of clamping members, a post having a slot at the lower end thereof, said slot being partially closed by means of a stop member secured therein, a stop member having a portion thereof formed on a circular arc to provide a fulcrum for a pawl or dog, an unattached pawl or dog carried by said post in said slot and having one end thereof formed on a circular arc to adapt it to be fulcrumed against said stop member and the other end thereof adapted to engage the inner surface of a casing, a casing secured to the other of said clamping members adapted to telescope over said post, an auxiliary weight coöperating with said pawl or dog to accelerate the action of the same, substantially as described.

14. In a binder, the combination of a pair of clamping members, a post having a slot at the lower end thereof, said slot being partially closed by means of a stop member secured therein, a stop member having a portion thereof formed on a circular arc to provide a fulcrum for a pawl or dog, an unattached pawl or dog carried by said post in said slot and having one end thereof formed on a circular arc to adapt it to be fulcrumed against said stop member and having at the other end thereof a projection adapted to engage coöperating projections on the inner surface of a casing, a casing having projections from the inner surface thereof adapted to engage said projection on said pawl or dog, said casing being secured to the other of said clamping members and adapted to telescope over said post, an auxiliary weight coöperating with said pawl or dog to accelerate the action of the same, substantially as described.

809,494. BINDER. FREDERICK A. CLEVELAND, New York, N. Y. Filed July 7, 1905. Serial No. 268,699.

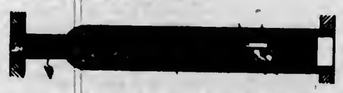

Claim.—1. In a binder, the combination of a pair of clamping members, a post attached to one of said members, an oscillatory pawl or dog carried by said post and adapted to engage the inner surface of a casing, a casing secured to the other of said clamping members and adapted to telescope over said post, an auxiliary weight coöperating with said pawl or dog to lock the same in engagement with said casing, substantially as described.

2. In a binder, the combination of a pair of clamping members, a post having a slot at the lower end thereof attached to one of said clamping members, an oscillatory pawl or dog carried by said post in said slot and adapted to engage the inner surface of a casing, a casing secured to the other of said clamping members adapted to telescope over said post, an auxiliary weight coöperating with said pawl or dog to accelerate the action of the same, substantially as described.

3. In a binder, the combination of a pair of clamping members, a post having a slot at the lower end thereof attached to one of said clamping members, an oscillatory pawl or dog carried by said post in said slot in such a manner that the movement thereof is limited by an auxiliary weight in one direction so that the outer end of said pawl will engage the inner surface of a casing, a casing secured to the other of said clamping members and adapted to telescope over said post, an auxiliary weight coöperating with said pawl or dog to hold the same in engagement with said casing, substantially as described.

4. In a binder, the combination of a pair of clamping members, a post attached to one of said clamping members, an oscillatory pawl or dog carried by said post and adapted to engage the inner surface of a casing, a casing having a serrated inner surface secured to the other of said clamping members and adapted to telescope over said post, an auxiliary weight coöperating with said pawl or dog to lock the same in engagement with said casing, substantially as described.

5. In a binder, the combination of a pair of clamping members, a post attached to one of said clamping members, an oscillatory pawl or dog carried by said post and adapted to engage the inner surface of a casing, a casing having a threaded inner surface secured to the other of said clamping members and adapted to telescope over said post, means for rotating said post in said casing, an auxiliary weight coöperating with said pawl or dog to hold the same in engagement with said casing, substantially as described.

6. In a binder, the combination of a pair of clamping members, a post having a recess at the lower end thereof attached to one of said clamping members an oscillatory pawl or dog carried by said post in said recess and adapted to engage the inner surface of a casing, a casing secured to the other of said clamping members and adapted to telescope over said post, an auxiliary weight located in a chamber in said post coöperating with said pawl or dog to lock the same in engagement with said casing, substantially as described.

7. In a binder, the combination of a pair of clamping members, a post having a slot at the lower end thereof, an oscillatory pawl or dog pivotally attached to said post in said slot and having a portion thereof adapted to engage the inner surface of a casing, a casing secured to the other of said clamping members and adapted to telescope over said post, an auxiliary weight coöperating with said pawl or dog to lock the same in engagement with said casing, substantially as described.

8. In a binder, the combination of a pair of clamping members, a post having a slot at the lower end thereof, an oscillatory pawl or dog pivotally attached to said post in said slot having a portion thereof adapted to engage the inner surface of a casing and having a portion thereof adapted to engage an auxiliary weight to hold the same in position, a casing secured to the other of said clamping members and adapted to telescope over said post, an auxiliary weight coöperating with said pawl or dog to lock the same in engagement with said casing, substantially as described.

9. In a binder, the combination of a pair of clamping members, a post attached to one of said clamping members, an oscillatory pawl or dog pivotally attached to said post, having a portion thereof adapted to engage the inner surface of a casing and a portion thereof flattened to engage an auxiliary locking-weight, a casing secured to the other of said clamping members and adapted to telescope over said post, an auxiliary weight coöperating with said pawl or dog to lock and hold the same in engagement with said casing, substantially as described.

10. In a binder, the combination of a pair of clamping members, a post attached to one of said clamping members, an oscillatory pawl or dog pivotally attached to said post, having a portion thereof adapted to engage the inner surface of a casing and a portion thereof adapted to be engaged by an auxiliary weight, a casing secured to the other of said clamping members and adapted to telescope over said post, an auxiliary weight coöperating with said pawl or dog to hold the same in engagement with said casing and adapted to drop out of engagement with the pawl when the clamping members are reversed in position thus rendering the pawl inoperative and allowing the clamping members to be separated, substantially as described.

11. In a locking device, the combination of a pair of telescoping members, an oscillatory pawl or dog carried by the inner of said members, an auxiliary weight carried by said inner member and so located in relation to said pawl as to lock the same in an operative position and adapted to drop out of engagement with said pawl when the members are reversed in position thus rendering the pawl inoperative and allowing the telescoping members to be separated, substantially as described.

12. In a binder, the combination of a pair of clamping members, a post having a slot at the lower end thereof, an oscillatory pawl or dog pivotally attached to said post in said slot, said slot having a portion thereof forming a stop to limit the movement of said pawl in one

direction, an auxiliary weight located in a chamber adjacent to said slot in said post and adapted to limit the movement of said pawl in the opposite direction when the members are in one position and adapted to fall out of engagement with said pawl when the position of the members is reversed, a casing secured to the other of said clamping members and adapted to telescope over said post, substantially as described.

13. In a binder, the combination of a pair of clamping members, a post attached to one of said members, an oscillatory pawl or dog carried by said post and adapted to engage the inner surface of a casing, a casing secured to the other of said clamping members and adapted to telescope over said post, and an auxiliary member adapted to engage and lock said pawl or dog and adapted to fall out of engagement with the same when the binder is reversed.

14. In a binder, the combination of a pair of clamping members, a post attached to one of said members, an oscillatory pawl or dog carried by said post and adapted to engage the inner surface of a casing, a casing secured to the other of said clamping members, and adapted to telescope over said post, and an auxiliary member carried in a recess in said post adapted to engage and lock said pawl or dog and adapted to fall out of engagement with the same when the binder is reversed.

15. In a binder-lock, in combination, a pair of telescoping members, an oscillatory pawl or dog carried by one of said members and adapted to engage the other of said members, and an auxiliary member adapted to engage and lock said pawl or dog and adapted to fall out of engagement when the device is reversed.

809,495. BINDER. FREDERICK A. CLEVELAND, New York, N. Y. Filed July 7, 1905. Serial No. 268,660.

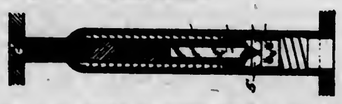

Claim.—1. In a binder, the combination of a pair of clamping members, a post attached to one of said clamping members, an unattached sliding pawl or dog carried by said post and adapted to engage the inner surface of a casing, a casing secured to the other of said clamping members adapted to telescope over said post, an auxiliary weight coöperating with said pawl or dog to slide the same into engagement with said casing, substantially as described.

2. In a binder, the combination of a pair of clamping members, a post having a slot at the lower end thereof attached to one of said clamping members, an unattached sliding pawl or dog carried in said slot in said post and adapted to engage the inner surface of a casing, a casing secured to the other of said clamping members adapted to telescope over said post, an auxiliary weight coöperating with said pawl or dog to slide the same into engagement with said casing, substantially as described.

3. In a binder, the combination of a pair of clamping members, a post having a slot at the lower end thereof attached to one of said clamping members, an unattached sliding pawl or dog carried by said post in said slot in such a manner that the bottom of said slot forms a stop to limit the movement of said pawl or dog, a casing secured to the other of said clamping members adapted to telescope over said post, an auxiliary weight coöperating with said pawl or dog to slide the same into engagement with said casing, substantially as described.

4. In a binder, the combination of a pair of clamping members, a post attached to one of said clamping members, an unattached sliding pawl or dog carried by said post and adapted to engage the inner surface of a casing, a casing having a serrated inner surface secured to the other of said clamping members and adapted to telescope over said post, an auxiliary weight coöperating with said pawl or dog to slide the same into engagement with said casing, substantially as described.

5. In a binder, the combination of a pair of clamping members, a post attached to one of said clamping members, an unattached sliding post or dog carried by said post and adapted to engage the inner surface of a casing, a casing having a threaded inner surface secured to the other of said clamping members and adapted to telescope over said post, means for rotating said post in said casing, an auxiliary weight coöperating with said pawl or dog to slide the same into engagement with said casing, substantially as described.

6. In a binder, the combination of a pair of clamping members, a post having a recess at the lower end thereof attached to one of said clamping members, an unattached sliding pawl or dog carried by said post in said recess and adapted to engage the inner surface of a casing, a casing secured to the other of said clamping members adapted to telescope over said post, an auxiliary weight located in a chamber in said post coöperating with said pawl or dog to slide the same into engagement with said casing, substantially as described.

7. In a binder, the combination of a pair of clamping members a post having a slot at the lower end thereof, said slot being partially closed by means of a slot member secured therein, an unattached sliding pawl or dog carried by said post in said slot adapted to slide upon said stop member and to engage the inner surface of a casing, a casing secured to the other of said clamping members and adapted to telescope over said post, an auxiliary weight coöperating with said pawl or dog to slide the same into engagement with said casing, substantially as described.

8. In a binder, the combination of a pair of clamping members, a post attached to one of said clamping members, an unattached sliding pawl or dog carried by said post and having one end thereof adapted to engage an auxiliary weight and the other end thereof adapted to engage the inner surface of a casing, a casing secured to the other of said clamping members adapted to telescope over said post, an auxiliary weight coöperating with said pawl or dog to slide the same into engagement with said casing, substantially as described.

9. In a binder, the combination of a pair of clamping members, a post attached to one of said clamping members, an unattached sliding pawl or dog carried by said post and having one end thereof beveled to engage an auxiliary weight and the other end thereof adapted to engage the inner surface of a casing, a casing secured to the other of said clamping members adapted to telescope over said post, an auxiliary weight coöperating with said pawl or dog to slide the same into engagement with said casing, substantially as described.

10. In a binder, the combination of a pair of clamping members, a post attached to one of said clamping members, a pair of unattached sliding pawls or dogs carried by said post and having the outer ends thereof adapted to engage the inner surface of a casing, a casing secured to the other of said clamping members, adapted to telescope over said post, an auxiliary weight coöperating with said pawls or dogs to slide the same into engagement with said casing, substantially as described.

11. In a binder, the combination of a pair of clamping members, a post attached to one of said clamping members, a pair of separable unattached pawls or dogs carried by said post and having the outer ends thereof adapted to engage the inner surface of a casing, a casing adapted to telescope over said post, said casing being secured to the other of said clamping members, an auxiliary weight coöperating with said pawls or dogs to separate the same and cause the outer ends thereof to engage said casing, substantially as described.

12. In a binder, the combination of a pair of clamping members, a post having a slot at the lower end thereof, said slot being partially closed by means of a stop member secured therein and having the upper portion thereof form an angle with the axis of said post, a stop member having the upper portion thereof forming a sliding surface interior of said slot, an unattached sliding pawl or dog carried by said post in said slot adapted to slide on said stop member and having the outer end thereof adapted to engage the inner surface of a casing, a casing secured to the other of said clamping members and adapted to telescope over said post, an auxiliary weight coöperating with said pawl or dog to slide the same into engagement with said casing, when the members are in the operative position and when said members are reversed in position said weight being adapted to fall out of engagement with said pawl or dog allowing it to drop out of engagement with said casing against the angular upper portion of the slot in which it is carried allowing the post and casing to be separated, substantially as described.

13. In a binder, the combination of a pair of clamping members, a post attached to one of said clamping members, said post having a recess at the lower end thereof and a chamber opening into said recess, a pair of unattached sliding pawls or dogs carried by said post in said recess and having the outer ends thereof adapted to engage the inner surface of a casing, a casing secured to the other of said clamping members and adapted to telescope over said post, an auxiliary weight carried by said post in said chamber, said weight having one end thereof wedge-shaped and adapted to engage said pawls or dogs and slide the same outwardly into engagement with said casing when the members are in the operative position and to move out of engagement with said pawls or dogs allowing the same to slide inwardly and to drop out of engagement with said casing when the members are reversed in position, substantially as described.

14. In a binder, the combination of a pair of clamping members, a post attached to one of said clamping members, said post having a slot at the lower end thereof and a chamber opening into said slot, a pair of unattached separable pawls or dogs carried by said post in said slot having the outer ends thereof adapted to engage the inner surface of a casing and having the inner ends thereof beveled to engage an operating-weight, a casing secured by the other of said clamping members and adapted to telescope over said post, an auxiliary operating-weight carried by said post in said chamber, said weight having one end thereof wedge-shaped and adapted to engage the beveled portion of said pawls or dogs and to move and to hold the same in engagement with said casing when the members are in the operative position and to move out of engagement with said pawls or dogs allowing the same to drop out of engagement with said casing when the members are reversed in position, substantially as described.

809,496. BINDER. FREDERICK A. CLEVELAND, New York, N. Y. Filed July 7, 1905. Serial No. 268,665.

Claim.—1. In a binder, the combination of a pair of clamping members, a post having a tapered shank at the lower end thereof attached to one of said clamping members, a member having a serrated surface carried by said post on said shank and adapted to engage the inner surface of a casing, a casing secured to the other of said clamping members and adapted to telescope over said post, substantially as described.

2. In a binder, the combination of a pair of clamping members, a post having a tapered shank at one end thereof attached to one of said clamping members, a member having a serrated surface carried by said post on said shank in such a manner that the movement thereof is limited in one direction so that the outer surface of said member will engage the inner surface of a casing, a casing secured to the other of said clamping members and adapted to telescope over said post, substantially as described.

3. In a binder, the combination of a pair of clamping members, a post having a conical portion at the lower end thereof attached to one of said clamping members, a semicircular member having a serrated surface carried by said post on said conical portion and adapted to engage the inner surface of a casing, a casing secured to the other of said clamping members and adapted to telescope over said post, substantially as described.

4. In a binder, the combination of a pair of clamping members, a post having a conical-shaped portion with a stop at one end thereof, a semicircular dog having a serrated surface carried by said post on said conical-shaped portion and adapted to engage the inner surface of a casing, a casing secured to the other of said clamping members and adapted to telescope over said post, substantially as described.

5. In a binder, the combination of a pair of clamping members, a post having a conical-shaped portion with a stop at one end thereof, a pair of semicircular dogs having a serrated surface carried by said post on said conical-shaped portion and adapted to engage the inner surface of a casing, a casing secured to the other of said clamping members and adapted to telescope over said post, substantially as described.

6. In a binder, the combination of a pair of clamping members, a post having a tapered shank forming a portion thereof, a semicircular dog having a serrated surface carried by said post on said tapered portion and adapted to engage the inner surface of a casing, a casing secured to the other of said clamping members and adapted to telescope over said post, substantially as described.

7. In a binder, the combination of a pair of clamping members, a post having a tapered shank forming a portion thereof a pair of semicircular dogs having a serrated surface carried by said post on said tapered portion and adapted to engage the inner surface of a casing, a casing secured to the other of said clamping members and adapted to telescope over said post, substantially as described.

8. In a binder, the combination of a pair of clamping members, a post having a tapered shank with a stop portion at one end of said shank, a semicircular dog having a serrated surface carried by said post on said tapered portion and adapted to be operated by gravity to the larger end of said shank when the members are in one position and to engage the inner surface of a casing, a casing secured to the other of said clamping members and adapted to telescope over said post, substantially as described.

9. In a binder, the combination of a pair of clamping members, a post having a tapered shank with a stop portion at one end of said shank, a pair of semicircular dogs having a serrated surface carried by said post on said tapered portion and adapted to be operated by gravity to the larger end of said shank when the members are in one position and to engage the inner surface of a casing, a casing secured to the other of said clamping members and adapted to telescope over said post, substantially as described.

10. In a binder, the combination of a pair of clamping members, a post having a tapered shank portion, a dog having a serrated surface carried by said post on said tapered portion and adapted to be operated by gravity to the larger end of said shank and to engage the inner surface of a casing when the members are in one position and adapted to be operated by gravity to the smaller end of said shank out of engagement with said casing when the members are reversed in position, a casing secured to the other of said clamping members and adapted to telescope over said post, substantially as described.

11. In a binder, the combination of a pair of clamping members, a post having a tapered shank portion, a pair of dogs having a serrated surface carried by said post on said tapered portion and adapted to be operated by gravity to the larger end of said shank and to engage the inner surface of a casing when the members are in one position and adapted to be operated by gravity to the smaller end of said shank out of engagement with said casing when the members are reversed in position, a casing secured to the other of said clamping members and adapted to telescope over said post, substantially as described.

809,497. FIRE-RESISTING CABINET. WILLIS V. DICK, Columbus, Ohio. Filed Feb. 7, 1905. Serial No. 244,642.

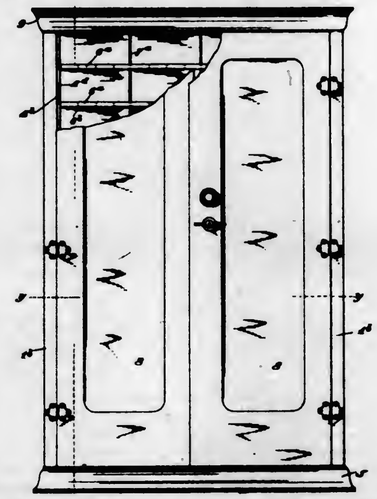

Claim.—1. In a fire-resisting cabinet, the combination with a base, of end and back walls of sheet metal, said end wall having an inwardly-standing vertical terminal portion 1ª and said back wall having an outwardly-standing vertical terminal, a tie-piece for connecting the said terminals of said end and back walls consisting of a doubly and oppositely grooved piece in which said terminals project, and means for securing said piece to said terminals.

2. In a fire-resisting cabinet, the combination with a base, of end and back walls of sheet metal, a tie-piece and brace for connecting the vertical terminals of said end and back walls and bracing the same, consisting of strip of metal bent to form a double groove into which the said terminals project and a wing to constitute the brace.

3. In a fire-resisting cabinet, the combination with the interior and exterior end walls, said interior end walls being provided with shelf-receiving grooves, of a doubly-grooved strip for connecting the vertical terminals of said walls, said strip being notched to permit the insertion of the shelves into said grooves.

4. In a cabinet, a shelf consisting of a sheet of metal having its outer edge beat and folded to form a bracing-bead, portions of which

extend in opposite directions from said edge and notches in each of the edges of said flange to receive partitions.

5. In a cabinet, a shelf consisting of a sheet of metal having its outer edge bent and folded at said edge to form a bracing-bead for the shelf and notches in said bead to receive partitions.

6. In a cabinet, a shelf consisting of a sheet of metal bent along its rear edge to form a ridge and notches in said ridge to receive partitions.

7. In a cabinet, a shelf consisting of a sheet of metal bent upwardly and downwardly along its rear edge to form ridges at its upper and lower sides, and notches in said ridges to receive partitions.

8. In a cabinet, a shelf consisting of a sheet of metal bent and folded at its outer edge to form a strengthening-bead, notches in said bead to receive the forward portion of the edge of a partition, and said shelf bent along its rear edge to form a ridge or rib and notches in said last-named rib to receive the rear portion of the edge of a partition.

9. In a fire-resisting cabinet, the combination with a suitable base, of the vertical casing thereof comprising an outer wall of sheet metal made in three pieces, to wit, end portions 1 having back portions 1^a integral therewith extending partially across the back, and portions 1^b integral with the end portions extending partially across the front and a portion 2 connecting the edges of the portions 1^a at the back, and an inner wall also of sheet metal extending parallel to the outer wall and joined thereto at or near the edge of the wall 1^b, substantially as described.

809,498. **CONFECTIONER'S SIZING AND CUTTING MACHINE.** GEORGE F. DICKSON, Chicago, Ill., assignor to Confectioners and Bakers Supply Co., a Corporation of Illinois. Filed Dec. 10, 1904. Serial No. 236,286.

Claim.—1. In a sizing and cutting machine for candy and the like, the combination of a supporting-bed, a series of sizing and cutting rolls journaled in parallel relation above said bed in supporting-heads, which in turn are journaled above said bed, means for locking said heads at points in their circular adjustment, and means for feeding the material along said bed, substantially as set forth.

2. In a sizing and cutting machine for candy and the like, the combination of a supporting-frame, a bed secured to said frame, heads or supports journaled in said frame and adapted for a turning adjustment, a sizing-roll and a cutting-roll journaled in parallel relation in said heads, and means for feeding the material along said bed, substantially as set forth.

3. In a sizing and cutting machine for candy and the like, the combination of a supporting-frame, a bed secured to said frame, vertically-adjustable slides on said frame, heads or supports journaled on said slides and adapted for a turning adjustment thereon, a sizing-roll and a cutting-roll journaled in parallel relation on said heads, and means for feeding the material along said bed, substantially as set forth.

4. In a sizing and cutting machine for candy and the like, the combination of a supporting-frame, a bed secured to said frame, heads or supports journaled in said frame and adapted for a turning adjustment, a sizing-roll and a cutting-roll journaled in parallel relation in said heads, and a feed-roll journaled in the main frame beneath the rolls aforesaid, substantially as set forth.

5. In a sizing and cutting machine for candy and the like, the combination of a supporting-bed, a series of sizing and cutting rolls journaled in parallel relation above said bed in supporting-heads, which in turn are journaled above said bed, means for locking said heads at points in their circular adjustment, and means for feeding the material along said bed, substantially as set forth.

6. In a sizing and cutting machine for candy and the like, the combination of a supporting-frame, a bed secured to said frame, heads or supports journaled in said frame and adapted for a turning adjustment, a sizing-roll and a cutting-roll journaled in parallel relation in said heads, means for securing said heads at the required turning adjustment, and means for feeding the material along said bed, substantially as set forth.

7. In a sizing and cutting machine for candy and the like, the combination of a supporting-frame, a bed secured to said frame, vertically-adjustable slides on said frame, heads or supports journaled in said slides and adapted for a turning adjustment thereon, a sizing-roll and a cutting-roll journaled in parallel relation on said heads, means for securing said heads at the required turning adjustment, and means for feeding the material along said bed, substantially as set forth.

8. In a sizing and cutting machine for candy and the like, the combination of a supporting-frame, a bed secured to said frame, heads or supports journaled in said frame and adapted for a turning adjustment, a sizing-roll and a cutting-roll journaled in parallel relation in said heads, means for securing said heads at the required turning adjustment, and a feed-roll journaled in the main frame beneath the rolls aforesaid, substantially as set forth.

9. In a sizing and cutting machine for candy and the like, the combination of a supporting-frame, a bed secured to said frame vertically-adjustable slides on said frame, heads or supports journaled on said slides and adapted for a turning adjustment thereon, a sizing-roll and a cutting-roll journaled in parallel relation on said heads, means for securing said heads at the required turning adjustment, and a feed-roll journaled in the main frame beneath the rolls aforesaid, substantially as set forth.

10. In a sizing and cutting machine for candy and the like, the combination of a supporting-frame, a bed secured to said frame, heads or supports journaled in said frame and adapted for a turning adjustment, a sizing and a cutting roll journaled in parallel relation in said heads, means for securing said heads at the required turning adjustment, the same comprising a disk carried by the journal-shaft of said heads and provided with peripheral notches and a spring latch-bolt on the main frame adapted for engagement with said notches, and means for feeding the material along said bed, substantially as set forth.

11. In a sizing and cutting machine for candy and the like, the combination of a supporting-frame, a bed secured to said frame, vertically-adjustable slides on said frame, heads or supports journaled on said slides and adapted for a turning adjustment thereon, a sizing-roll and a cutting-roll journaled in parallel relation on said heads, means for securing said heads at the required turning adjustment, the same comprising a disk carried by the journal-shaft of said heads and provided with peripheral notches and a spring latch-bolt on the main frame adapted for engagement with said notches, and means for feeding the material along said bed, substantially as set forth.

12. In a sizing and cutting machine for candy and the like, the combination of a supporting-frame, a bed secured to said frame, heads or supports journaled in said frame and adapted for a turning adjustment, a sizing-roll and a cutting-roll journaled in parallel relation in said heads, means for imparting positive rotation to said sizing and cutting rolls, and means for feeding the material along said bed, substantially as set forth.

13. In a sizing and cutting machine for candy and the like, the combination of a supporting-frame, a bed secured to said frame, vertically-adjustable slides on said frame, heads or supports journaled on said slides and adapted for a turning adjustment thereon, a sizing-roll and a cutting-roll journaled in parallel relation on said heads, means for imparting positive rotation to said sizing and cutting rolls, and means for feeding the material along said bed, substantially as set forth.

14. In a sizing and cutting machine for candy and the like, the combination of a supporting-frame, a bed secured to said frame, heads or supports journaled in said frame and adapted for a turning adjustment, a sizing-roll and a cutting-roll journaled in parllael relation on said heads, a feed-roll journaled in the main frame beneath the rolls aforesaid, and means for imparting positive rotation to the sizing, cutting and feed rolls, substantially as set forth.

15. In a sizing and cutting machine for candy and the like, the combination of a supporting-frame, a bed secured to said frame, vertically-adjustable slides on said frame, heads or supports journaled on said slides and adapted for a turning adjustment thereon, a sizing-roll and a cutting-roll journaled in parallel relation on said heads, a

feed-roll journaled in the main frame beneath the rolls aforesaid, and means for imparting positive rotation to the sizing, cutting and feed rolls, substantially as set forth.

16. In a sizing and cutting machine for candy and the like, the combination of a supporting-frame, a bed secured to said frame, heads or supports journaled in said frame and adapted for a turning adjustment, a sizing-roll and a cutting-roll journaled in parallel relation on said heads, the said cutting-roll comprising a series of circular blades secured together in separated relation and a series of clearing-bars loosely arranged between said blades, and means for feeding the material along said bed, substantially as set forth.

17. In a sizing and cutting machine for candy and the like, the combination of a supporting-frame, a bed secured to said frame, vertically-adjustable slides on said frame, heads or supports journaled on said slides and adapted for a turning adjustment thereon, a sizing-roll and a cutting-roll journaled in parallel relation on said heads, said cutting-roll comprising a series of circular blades secured together in separated relation and a series of clearing-bars loosely arranged between said blades, and means for feeding the material along said bed, substantially as set forth.

18. In a sizing and cutting machine for candy and the like, the combination of a supporting-frame, a bed secured to said frame, heads or supports journaled in said frame and adapted for a turning adjustment, a sizing-roll and a cutting-roll journaled in parallel relation on said heads, the said cutting-roll comprising a series of circular blades secured together in separated relation and a series of clearing-bars loosely arranged between said blades, and a feed-roll journaled in the main frame beneath the rolls aforesaid, substantially as set forth.

19. In a sizing and cutting machine for candy and the like, the combination of a supporting-frame, a bed secured to said frame, vertically-adjustable slides on said frame, heads or supports journaled on said slides and adapted for a turning adjustment thereon, a sizing-roll and a cutting-roll journaled in parallel relation on said heads, said cutting-roll comprising a series of circular blades secured together in separated relation and a series of clearing-bars loosely arranged between said blades, and a feed-roll journaled in the main frame beneath the rolls aforesaid, substantially as set forth.

809,499. **TOOL FOR GRINDING GLASS PLATES.** FRIEDERICH FRANS, Corona, N. Y. Filed Jan. 31, 1905. Serial No. 243,496.

Claim.—1. A tool for grinding glass plates, mirrors or the like, comprising a series of blades placed side by side, the thickness of each of said blades and the shape of the upper and lower edges thereof corresponding with the respective line to be ground, said upper and lower edges serving as the cutting edges of the tool, the vertical side edges of each blade being sloped rearward and outward rendering the front surface narrower than the rear surface thereof, and means for fastening the blades to each other after adjustment, substantially and for the purpose as specified.

2. A tool for grinding glass plates, mirrors or the like, comprising a series of blades placed side by side, the thickness of each of said blades and the shape of the upper and lower edges thereof corresponding with the respective line to be ground, said upper and lower edges serving as the cutting edges of the tool, one of the vertical side edges of each blade being sloped rearward and outward and the other being cut so as to conform with a portion of any figure desired to represent a setting, and means for fastening the blades to each other after adjustment, substantially and for the purpose as specified.

809,500. **WINDOW-VENTILATOR.** GEORGE W. FROELICH, Chicago, Ill. Filed Jan. 23, 1905. Serial No. 242,227.

Claim.—1. In a window-ventilator, the combination with an outer frame, of plates on the sides of said frame, each provided at its upper end with a horizontal groove or hinge-socket, an inner frame, and hinge-sections upon the rear surface and at the sides thereof adapted to ride in said sockets.

2. In a window-ventilator, the combination with an outer frame, of plates mounted on the rear walls of said frame, each provided at its upper end with a horizontal groove or socket, an inner frame, hinge-plates upon the rear surface and near the edges of said frame, each plate carrying at its lower end a cylindrical portion adapted to ride in one of said sockets, and stops carried by the outer frame adapted to limit the movement of said inner frame.

3. In a window-ventilator, the combination with an outer metal frame, of plates mounted on the rear walls of said frame, each provided at its upper end with a horizontal groove or socket, an inner metal frame, a hinge-plate upon the rear surface and at each side of said frame carrying at its lower end a cylindrical portion adapted to ride in one of said grooves, and inwardly-turned flanges at the top and bottom of said outer frame, extending on opposite sides of the inner frame to serve as stops therefor.

4. In a window-ventilator, the combination with an outer metal frame composed of two U-shaped sections united at their ends by couplers, each coupler comprising two vertical plates, united by a web extending between opposite sides of said plates, the upper end of the lower plate having a horizontal groove therein, and an inner frame carrying upon its rear surface and at its sides plates having enlarged and rounded lower ends seated in said horizontal grooves.

5. In a window-ventilator, the combination with an outer frame consisting of two U-shaped members formed of angle-iron arranged to bring two flanges in opposition to form front and rear jambs, the remaining flanges forming top, bottom and sides of the frame, hinge-sections connecting said U-shaped members and having webs lying flush with the sides of said outer frame and abutting end to end therewith, said sections having front and rear extensions overlapping the front and rear jambs and provided with shoulders receiving the ends thereof, the lower extensions having horizontal grooves in their upper ends, an inner frame formed of angle-iron, hinge-sections for said frame having hinge portions seated in said grooves and forming the swinging axes of said inner frame, and stops engaging the upper and lower ends of said inner frame on opposite sides thereof.

809,501. **ANTIVIBRATION DEVICE FOR VEHICLES.** GEORGES GRILLIER, Chicago, Ill., assignor to The Automobile Importing Company, Chicago, Ill., a Corporation. Filed Apr. 26, 1905. Serial No. 257,495.

Claim.—1. An antivibration device for vehicles, comprising two arms pivoted together and having respectively a casing and a friction-ring in contact therebetween, the pivot-bolt connecting the arms having a tapered sleeve-nut which fits in a tapered socket in one of the arms.

2. An antivibration device for vehicles, comprising two arms pivoted together, one arm having a circular casing around the pivot, and the other arm having a split ring within the casing and in continuous frictional contact therewith, and means to expand or contract the ring to vary the friction.

3. An antivibration device for vehicles, comprising two arms pivoted together, one arm having a cylindrical casing around the pivot and the other arm carrying a split ring within the casing and in frictional contact therewith, and a tapered bolt between the split ends of the ring, adjustable to expand or contract the ring.

4. An antivibration device for vehicles, comprising two arms pivoted together, one arm having a cylindrical casing around the pivot and the other arm having a cap-plate covering the end of the cylinder, a split ring secured to the cap-plate, and a tapered bolt secured to the plate and located between the ends of the split ring.

809,502. GAME-BOARD. NELSON T. HALE, Baldwinville, Mass.; Ashley G. Hale administrator of said Nelson T. Hale, deceased. Filed July 7, 1903. Serial No. 164,885.

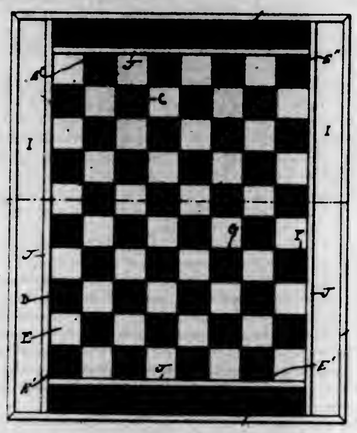

Claim.—In a game apparatus, a board having a checkered surface, having rectangular spaces on each side and rectangular spaces on each end interposed between the spaces on the side, said end spaces being of different identity, each of the transverse rows of the checkered surface having playing-surfaces of equal number, the outer row at each end having identities differing from each other and the remaining rows, and a series of playing-pieces comprising two sets uniform as to marking, certain of said pieces carrying a valuation, and certain of said pieces having no valuation but acting as checks, said sets being of different identities but each set corresponding with an identity of one of the outer transverse rows of the checkered surface, and the identity of one of the rectangular end spaces.

809,503. STEAM-BOILER. CHARLES W. HAWKES, Chicago, Ill. Filed Aug. 21, 1905. Serial No. 275,043.

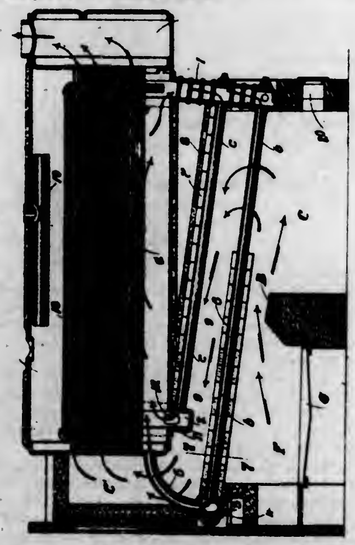

Claim.—1. A boiler comprising a series of superposed water-tube sections, a fire-tube section surmounting the same, a water-leg connecting one end of the respective water-tube sections with the adjacent end of the fire-tube section, and independent means for connecting the opposite ends of the respective water-tube sections with the fire-tube section, the space between the water-tube sections communicating with the fire-tube section at the end adjacent to said water-leg, substantially as set forth.

2. A boiler comprising a series of superposed water-tube sections, a fire-tube section surmounting the same, a water-leg connecting one end of the respective water-tube sections with the adjacent end of the fire-tube section, a smoke box or flue leading from the fire-tube section at the end adjacent to said water-leg, and independent means for connecting the opposite ends of the respective water-tube sections with the adjacent end of the fire-tube section, the space between the water-tube sections communicating with the fire-tube section at the end opposite the smoke-box, substantially as set forth.

3. A boiler comprising two superposed water-tube sections, the front end of the lower section being extended forwardly beyond that of the upper section, a fire-tube section surmounting the aforesaid water-tube sections, a water-leg depending from the rear end of the shell of the fire-tube section and establishing communication between said shell and the rear ends of the water-tube sections, a water-saddle communicating with the front end of the shell of the fire-tube section and with the front end of the upper water-tube section, a header communicating with the front end of the lower water-tube section, and a series of circulating-pipes establishing communication between said header and the shell and saddle of the fire-tube section respectively, substantially as set forth.

4. A boiler comprising two superposed water-tube sections, a fire-tube section surmounting the same, a water-leg depending from the rear end of the fire-tube section and establishing communication between said section and the adjacent ends of the water-tube sections, a water-saddle establishing communication between the front of the fire-tube section and the upper water-tube section, a header into which the front end of the lower water-tube section leads, circulating-tubes establishing communication between the header and the saddle and the front of the fire-tube section respectively, a partition-wall formed in connection with the lower water-tube section and extending a suitable distance rearwardly, a partition-wall formed in connection with the upper water-tube section for substantially the full length of the latter, and a smoke box or flue leading from the rear of the fire-tube section, substantially as set forth.

5. In a boiler, an upper fire-tube section, a lower water-tube section, an intermediate water-tube section, a rear water-leg depending from the fire-tube section and establishing communication with the rear ends of the water-tube sections, the latter being disposed in substantially parallel planes and inclining forward and upward toward the fire-tube section, a front water-saddle establishing communication between the fire-tube section and the intermediate or upper water-tube section, the lower water-tube section extending forwardly beyond the front of the fire-tube section, a header at the front upper end of the lower water-tube section, and a series of circulating-pipes connecting the header with the fire-tube section and tapping the latter at a point or plane above the upper end of the intermediate or upper water-tube section, substantially as set forth.

6. In combination with a boiler-furnace having a fire-box and bridge-wall, a boiler comprising a lower water-tube section, an upper water-tube section, a fire-tube section surmounting the aforesaid sections, means for establishing communication between the several sections, a partition-wall formed in connection with the lower water-tube section and extending a suitable distance rearwardly beyond the bridge-wall, a partition formed in connection with the upper water-tube section whereby a conduit is formed between said partitions for the passage of the combustion products, said conduit communicating with one end of the fire-tube section, substantially as set forth.

7. In a boiler, an upper fire-tube section, a lower water-tube section, an intermediate or upper water-tube section spaced therefrom and forming a conduit therewith, a smoke-box at the rear end of the fire-tube section, means for directing the combustion products rearwardly along the base of the lower water-tube section, thence forwardly through said conduit into the front end of the fire-tube section, thence rearwardly through the fire-tube section into the smoke-box, substantially as set forth.

809,504. MOLD-FORMING MECHANISM. GEORGE HEHNEGREN, Kimballton, Iowa, assignor to Henningsen & Jensen, a Firm. Filed Sept. 26, 1905. Serial No. 280,444.

Claim.—1. Mold-forming mechanism, in combination, comprising an inner mold 6 and an outer mold 27; said inner mold having a central rotatable shaft 12, and rigidly-mounted brackets 7 mounted upon the inner wall 1 of said mold; the plate 16 rigidly mounted upon said shaft; the links 10 pivotally mounted upon said brackets 7 and upon said plate 16; the flanges 3 and 4 adapted to make engagement one with the other; the clasp 23 adapted to make engagement with eyes 24; the handles 26; the cover 33; the rim-molds 31 and 35; said outer mold having the flanges 28 and 29 and clasps 30 substantially as shown and described.

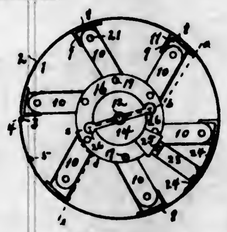

2. Mold-forming mechanism, in combination, comprising an inner mold 6 and an outer mold 27; said inner mold having a central rotatable shaft 12, and rigidly-mounted brackets 7 mounted upon the inner wall 1 of said mold; said brackets being formed of integral and substantially rectangular sheets of metal incised substantially upon the lines *f g* to form leaves 11 adapted to be used as pivotal bearings for said rods 22; the plate 16 rigidly mounted upon said shaft; the links 10 pivotally mounted upon leaves 11 of brackets 7, the opposite end of said links being pivotally mounted upon said plate 16; the flanges 3 and 4 adapted to make engagement one with the other; the flange 5 adapted to make engagement with flange 3; the clasp 23 adapted to make engagement with eyes 24; the handles 26; the cover 33; said rim-mold 31 having the slot 32 said outer mold having the flanges 28 and 29 and clasps 30, substantially as shown and described.

809,505. CAR-TRUCK. JAMES M. HOPKINS, Chicago, Ill. Filed June 5, 1905. Serial No. 263,709.

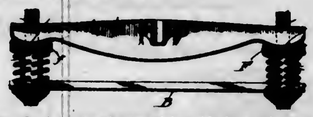

Claim.—1. A car-truck comprising side frames having openings therein, spring-caps within the upper portion of said openings and a bolster having its ends engaging said spring-caps, said spring-caps and said bolster being interlocked by ball-and-socket joints covering substantially the entire top surfaces of said spring-caps and permitting a rocking movement of the bolster upon the spring-caps in a direction transverse to the length of the bolster.

2. A car-truck comprising side frames having openings therein, a spring-plank having its ends within said side openings, springs upon said spring-plank, spring-caps for said springs and a bolster projecting through said side-frame openings, said bolster and said spring-caps being connected by ball-and-socket joints covering substantially the entire top surfaces of said spring-caps and permitting a rocking movement of the bolster upon the spring-caps in a direction transverse of the bolster.

3. A car-truck comprising side frames having openings therein, a spring-plank having its ends within said opening, springs upon said spring-plank, spring-caps for said springs provided with sockets covering substantially the entire top surface of said spring-caps, and a bolster having its ends provided with transversely-curved offsets to enter the correspondingly-curved sockets of said spring-caps.

809,506. SAFETY-MATCH BOX. JULIUS KARPEN, Chicago, Ill. Filed Feb. 1, 1904. Serial No. 191,286.

Claim.—1. A commercial box of matches, said box comprising the usual slide and cover, provided with a plurality of removable striking-panels arranged along one side thereof, and conforming to the size and contour of said side.

2. A commercial box of matches, said box comprising the usual slide and cover, provided with a plurality of removable striking-panels arranged along one side thereof, said panels being formed of a continuous folded blank provided with tear lines or divisions, whereby said panels when folded will conform to the size and contour of the side of said box.

3. A commercial box of matches, said box comprising the usual slide and cover, provided with a plurality of removable striking-panels arranged along one side thereof, said panels being formed of a continuous folded blank having scalloped edges and tear lines or divisions intersecting said edges and coincident with the scallops, whereby said panels when folded will conform to the size and contour of the side of said box.

4. A commercial box of matches provided with a plurality of striking-panels arranged exteriorly along one edge thereof and conforming to the size and contour of said side, and a binder embracing said panels and said box.

809,507. HEATER. JULIUS L. KLEBER, Quincy, Ill. Filed Aug. 1, 1904. Serial No. 219,071.

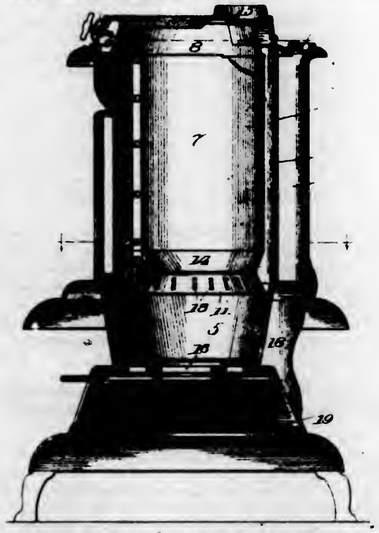

Claim.—1. In a heater of the character described, the combination of a drum, a combustion-chamber, a heating-chamber above the combustion-chamber, a dome above the heating-chamber, an annular air-receiving chamber located in the dome adjacent to its outer wall and having its inlet-opening at the front of the heater, an air-distributing ring in the combustion-chamber, a vertical ventiduct within the heating-chamber at the back thereof and connecting the receiving-chamber and the distributing-ring, and a hot-air chamber outside of the drum behind the ventiduct, a part of the drum forming a wall for both the hot-air chamber and the ventiduct.

2. In a heater of the character described, the combination of a drum, a combustion-chamber, a heating-chamber above the combustion-chamber, a dome, an annular air-receiving chamber located in the dome adjacent to its outer wall and having its inlet-opening at the front of the heater, a hollow air-distributing ring in the combustion-chamber and having an inwardly and upwardly inclined wall provided with openings through which the air is discharged downwardly in the combustion-chamber, a vertical ventiduct within the heating-chamber at the back thereof and connected at one end to the back of the receiving-chamber and at its other end to the back of the distributing-ring, and a hot-air chamber outside of the drum, a part of the drum forming a wall for both the hot-air chamber and the ventiduct.

809,508. LANTERN. DAVID C. KLINE, Rochester, N. Y., assignor to Albert R. Pritchard, Thomas B. Pritchard, and Henry A. Strong, all of Rochester, N. Y., The Firm of Pritchard Manufacturing Company. Filed Dec. 9, 1904. Serial No. 236,165.

Claim.—1. In a tubular lantern, a globe-holder tube having opposite perforations through its side, and deflector-plates each fastened by one edge inside said tube and opposite the said perforations and gradually diverging from the inner side of the globe-tube whereby air may pass around all the edges of the deflector-plate except the edge by which it is fastened to the globe-holder tube, an outer tube

around the globe-holder tube, having opposite perforations connecting with the side tubes, the side tube perforations and the perforations through the globe-holder tube being substantially at right angles to each other.

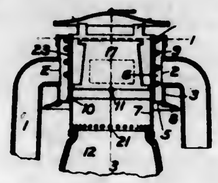

2. In a tubular lantern, a globe-holder tube having opposite perforations through its sides and one or more vertical ribs, deflector-plates each fastened by one edge inside said tube opposite one of said perforations and gradually diverging from the inner side of the globe-holder tube, whereby air may pass around all the edges of the deflector-plate except the edge by which it is fastened to the globe-holder tube, an outer tube around the globe-holder tube having opposite perforations connecting with the air-tubes, the air-tube perforations and the perforations through the globe-holder tube being substantially at right angles to each other, one or more guides for said ribs in said outer tube, and spring means for holding the two tubes in position.

3. In a tubular lantern, air-tubes, an outer tube having opposite perforations through its sides connecting with the air-tubes, a globe-holder tube inside the outer tube having opposite perforations through its sides out of line with the perforations in the outer tube, and a deflector-plate opposite each perforation in the globe-holder tube and fastened at one edge inside said globe-holder tube and open to the interior of said globe-holder tube around its remaining edges.

809,509. **MOTOR-CAR.** FREDERICK W. LANCHESTER, Edgbaston, Birmingham, England. Filed June 3, 1905. Serial No. 263,579.

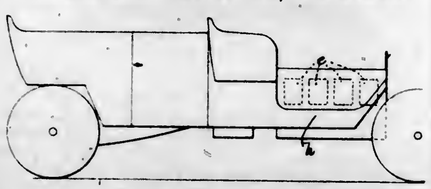

Claim.—1. A motor-vehicle in which the motor is situated in the leg-space of the front seat and in proximity to the dashboard of the vehicle, substantially as and for the purposes set forth.

2. A motor-vehicle in which the motor is situated in the leg-space forward of the front seat of the vehicle and to the rear of the dashboard, the motor equally dividing said space longitudinally, substantially as and for the purposes set forth.

3. A motor-vehicle having the motor situated in the leg-space forward of the front seat of the vehicle and to the rear of the dashboard; the motor dividing the leg-space longitudinally and its center of weight being considerably to the rear of the centers of the front wheels, a rear seat and a side entrance for said seat, substantially as described.

4. A motor-vehicle having a chassis-frame consisting of a transverse tubular member and a plurality of longitudinal members secured thereto, some of the members which are nearest the longitudinal center of the car extending forward and supporting the motor while others more remote from said center extend to the rear, substantially as described.

5. A motor-vehicle having a chassis-frame consisting of a transverse tank to which are secured four longitudinal members the inner two of said members being extended forward to support the engine while the outer two extend rearward, substantially as described.

6. A motor-vehicle having a chassis-frame consisting of a transverse tank to which are secured four longitudinal members the inner two of said members being extended forward to carry the fore suspension while the other two members extend rearward to carry the rear suspension, a front seat on said tank and a motor carried on the forward members, said motor dividing the front leg-space longitudinally, substantially as described.

809,510. **WATER-LEVEL REGULATOR.** WILLIAM J. LANE and ORRIN LANE, Poughkeepsie, N. Y. Filed Feb. 15, 1905. Serial No. 245,701.

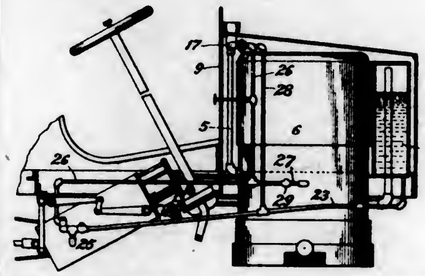

Claim.—1. An automatic water-level regulator for a steam-boiler comprising a pipe connected at one end to the normal water-level of the boiler, a pipe connected to said first-named pipe, a frame in which said second-named pipe is located and in which it is secured at one end, a lever pivoted in the frame, an adjustable connection between said lever and said second-named pipe, and a valve in the water-supply connections to be actuated by the movement of said lever.

2. An automatic water-level regulator for a steam-boiler comprising a pipe connected at one end to the normal water-level of the boiler, an expansible body connected to said pipe, a lever mounted independent of said expansible body and in operative relation thereto, means for adjusting the lever relatively to said expansible body, a spring-opened valve adapted to be closed by the movement of the lever, and adjustable means for regulating the movement of the valve.

809,511. **INTERLOCKING CLEVIS.** NILS M. LIEN, Langhei, Minn. Filed Sept. 11, 1905. Serial No. 277,974.

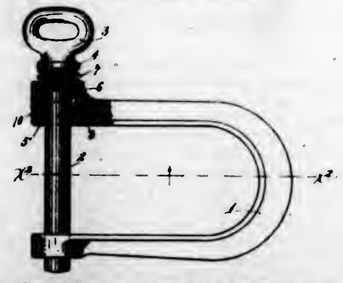

Claim.—The combination with an integrally-formed yoke 1, of a pin 2 fitting seats in the prongs thereof, one prong of said yoke having a longitudinal groove 8, lock-notch 10 and countersunk segmental groove 9 connecting said groove 8 and lock-notch 10, and said pin 2 having a single projecting lock-lug 5 adapted to be passed through said grooves 8 and 9 and to be seated in said lock-notch 10, and a coiled spring surrounding said pin 2, reacting against the yoke of said pin and normally holding said lock-lug 5 engaged with said lock-notch 10, substantially as described.

809,512. **MACHINE FOR CUTTING AND PRESSING CANISTERS, &c.** RICHARD VON DER LINDE, Crefeld, Germany. Filed May 20, 1903. Serial No. 161,314.

Claim.—1. A machine for cutting and flattening sheet-metal cans, provided with a knife for cutting the can, and with a movable pressure-plate for flattening the cut can, substantially as specified.

2. A machine for cutting and flattening sheet-metal cans, provided with a divided knife for cutting a can, and with means for flattening the cut can, substantially as specified.

3. A machine for cutting and flattening sheet-metal cans, provided with a divided knife for cutting a can, and with a pair of hinged pressure-plates adapted to flatten the cut can, substantially as specified.

4. A machine for cutting and flattening sheet-metal cans, provided with a divided knife, a pair of vertically-movable hinged pressure-plates, and means for spreading said plates, substantially as specified.

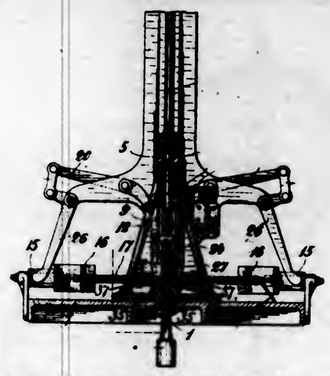

5. A machine for cutting and flattening sheet-metal cans, provided with a pair of reciprocating grippers adapted to center a can, a knife for cutting the can, and a pair of hinged pressure-plates adapted to flatten the cut can, substantially as specified.

6. A machine for cutting and flattening sheet-metal cans, provided with a pair of reciprocating grippers adapted to center a can, a knife for cutting the can, a pair of hinged pressure-plates adapted to flatten the cut can, and a finger pivoted to one of the grippers and adapted to engage the flattened can, substantially as specified.

809,513. **FOLLOWER-REST FOR LATHES.** WILLIAM LODGE and NICHOLAS D. CHARD, Cincinnati, Ohio, assignors to the Lodge & Shipley Machine Tool Company, Cincinnati, Ohio, a Corporation. Filed June 26, 1905. Serial No. 267,063.

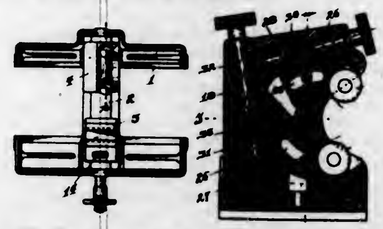

Claim.—1. In a machine of the class described, a carriage, a follower-rest having a guideway connection with the carriage, means for reciprocating the follower-rest on the carriage, said follower-rest consisting of a stock having a curved way formed in its side, segments supported in said way, the exposed ends of the segments forming jaws adapted to engage the periphery of the work in the rear of the tool, and means for adjusting and clamping said segments into said way, substantially as described.

2. In a machine of the class described, a carriage attachment consisting of a stock formed with a curved way, segments adjustably clamped in said way, the front ends of said segments being provided with antifriction-bearings constituting jaws adapted to form a lateral bearing engagement with the periphery of the work in the rear of the tool, substantially as described.

809,514. **BOTTLE-WASHING MACHINE.** CHARLES H. LOEW and HENRY G. MILLER, Cleveland, Ohio, assignors to The Loew Supply & Manufacturing Company, Cleveland, Ohio, a Corporation of New Jersey. Filed Nov. 20, 1903. Serial No. 182,106.

Claim.—1. In a bottle-washing machine, the combination of a soaking-tank, an endless and flexible traveling bottle-conveyer formed with bottle-racks arranged transversely to said conveyer and formed with large openings at their outer sides for the passage of the bottle-bodies and with smaller registering openings at their inner sides for the passage of the bottle-necks and for support of the bottle-breasts, guides and supports for guiding the conveyer through the tank with the bottle-necks pointing in an upward direction, guides and supports for the conveyer to present its large openings outward to receive the bottles to be soaked before entering the tank, guides and supports for the conveyer arranged above the tank to invert the racks to present the bottle-necks toward the tank to discharge their contents as they leave the tank, and guides and supports arranged outside of the tank to present the bottle-racks inclined with their large openings outward to discharge the empty bottles.

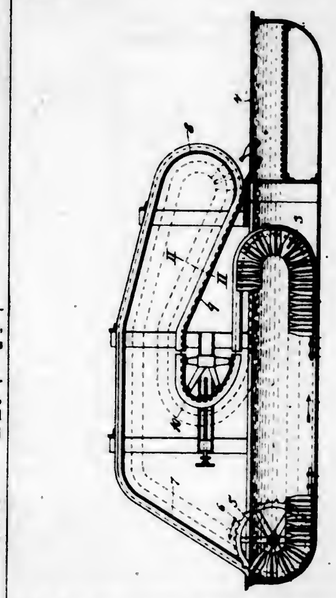

2. In a bottle-washing machine, the combination of a soaking-tank, an endless and flexible traveling bottle-conveyer formed with bottle-racks arranged transversely to said conveyer and formed with large openings at their outer sides for the passage of the bottle-bodies and with smaller registering openings at their inner sides for the passage of the bottle-necks and for support of the bottle-breasts, guides and supports for guiding the conveyer through the tank with the bottle-necks pointing in an upward direction, guides and supports for the conveyer to present its large openings outward to receive the bottles to be soaked before entering the tank, guides and supports for the conveyer arranged above the tank to invert the racks to present the bottle-necks toward the tank to discharge their contents as they leave the tank, and guides and supports arranged outside of the tank to present the bottle-racks inclined with their large openings outward to discharge the empty bottles, and means for spreading said bottles substantially as specified.

3. In a bottle-washing machine, the combination of a soaking-tank, an endless traveling bottle-conveyer consisting of two endless chains and transverse bottle-racks secured at their ends to the chains and formed with bottle-pockets having large outer openings for the passage of the bottle-bodies and small inner openings for the passage of the bottle-necks and support of the bottle-breasts, guides and supports in the tank for the conveyer-chains to conduct the same through the tank with the small openings of the racks pointing in an upward direction, guides and supports for the conveyer and arranged to present the large openings of the pockets for the reception of the bottles to be soaked before entering the tank, guides and supports for the conveyer for presenting the small openings of the bottle-pockets toward the tank as the conveyer leaves the same, guides and supports for the conveyer for presenting the bottle-pockets inclined and with their large openings presenting outward to discharge the empty bottles, and means opposed to the large openings of the bottle-pockets to retain the bottles in the same when said openings are pointing downward.

809,515. **ELECTRICAL RAILWAY SIGNALING SYSTEM.** MILTON H. LOUDON, Kansas City, Mo. Filed June 20, 1905. Serial No. 265,893.

Claim.—1. An electrical railway signaling system embodying a normally closed main circuit including a source of electrical energy,

a rheostat and a solenoid-magnet operatively connected with the engineer's brake-valve, and a normally open local circuit including a telephone and a Morse sounder, the two circuits being opened or closed by the telephone-hook.

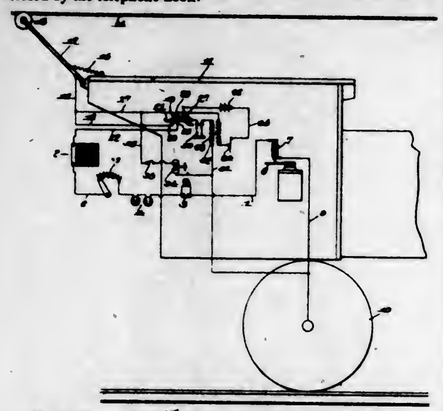

2. An electrical railway signaling system embodying a normally closed main circuit including a source of electrical energy, a rheostat, visual and audible signaling mechanism, and a solenoid-magnet operatively connected with the engineer's brake-valve, and a normally open local circuit including a telephone and a Morse sounder, and means actuated by the telephone-receiver either to open or to close the two circuits.

3. In an electrical railway signaling system, a normally closed main circuit including a source of electrical energy, a rheostat, and an electrically-actuated element operatively connected with the engineer's brake-valve, and a normally open circuit including a Morse sounder and a telephone, the opening and closing of the two circuits being controlled by the telephone-hook.

4. In an electrical railway signaling system, a normally closed main circuit including visual and audible signaling mechanism, and a solenoid-magnet combined with the engineer's brake-valve, and a normally open local circuit including a telephone.

809,516. **TENT.** EDGAR B. MANN, Waterbury, Conn., assignor to Adelaide B. Mann, Waterbury, Conn. Filed Mar. 23, 1905. Serial No. 251,694.

Claim.—1. A foldable tent having a sectional center post, the lower section of which is attached to and forms a support for the upper section during the erecting and striking of the tent, and is detachable to leave a clear space below the upper section when the tent is in use, corner-posts, rafters connecting the corner-posts to the upper end of said upper section, a slide movable on said upper section, and stretcher members extending between the rafters and the slide.

2. A foldable tent having a center piece formed of upper and lower detachable sections, the lower section constituting a support for the upper section during the erecting and striking of the tent, and being detachable to leave a clear space below the upper section when the tent is in use, corner-posts, rafter members extending between the upper end of the upper section and the corner-posts, a slide movable on said upper section, stretcher members extending between the outer ends of the rafters and the slide, and means for locking said slide to the lower portion of said upper section.

3. A folding-tent frame, including a center post formed of upper and lower detachable sections, the lower section serving to support the upper section during erecting and striking, and being detachable to leave a clear space under the upper section when the tent is in use, corner-posts, rafters or stretchers pivotally connected to the corner-posts, the rafters having a pivotal connection with the upper end of the upper section of said center post, and the stretchers forming a truss and supporting the upper section of the center post.

4. In a folding-tent frame, a sectional center post, of which the lower section forms a support for the upper during erecting and striking of the tent, and is detachable to afford a clear space below the upper section when the tent is in use, said upper section being non-circular in form, a slide having a non-circular opening mounted on said upper section, a head-plate secured to the upper section, corner-posts, stretchers extending between the slide and the corner-posts, and rafters pivotally connected to the head-plate and to the upper ends of the stretchers.

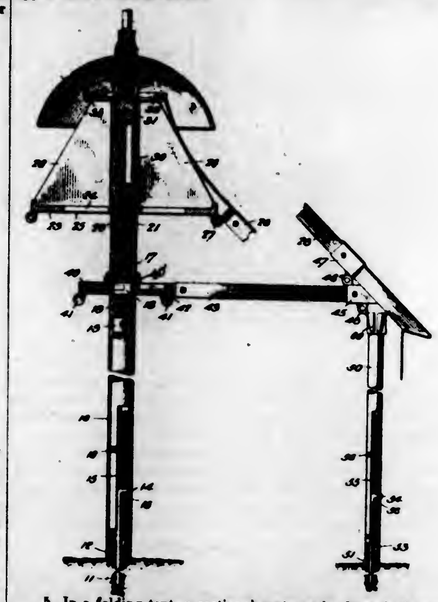

5. In a folding tent, a sectional center pole, formed of metal tubing, a head-plate carried by the pole and provided with a plurality of air-escape openings, a top plate also carried by the pole and provided with similar openings, said top plate being provided with a peripheral groove to receive the top of the tent fabric, vertical partitions extending between the head-plate and top plate, and forming channels for the passage of air, and a protecting-hood carried by the pole and extending over the top plate.

6. In tents, a hollow post, open at its lower end and provided with a slotted wall, and a ground-pin arranged within the post and having a driving-head extending through the slot

7. A tent-post formed of a tube open at its lower end and provided with a slotted wall, there being recesses formed in the walls of the slot, a driving-pin arranged in the post and having an arm projecting through the slot to form a driving-head, said arm being insertible in any one of the recesses to lock the post to the ground.

8. In a tent-post, a hollow tube having at its lower end a ferrule provided with a tapered opening and having a vertical slot, the edges of which are recessed, and a ground-pin arranged within the tube and having an arm projecting through the slot and forming a driving-head.

809,517. **STEAM-BOILER.** GEORGE MARSHALL, Fremont, Nebr. Filed June 12, 1905. Serial No. 264,837.

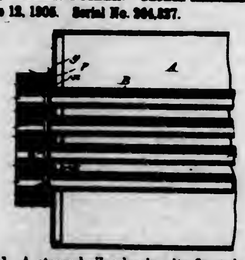

Claim.—1. A steam-boiler having its fire-tubes projecting beyond the tube-sheet and beaded as described, and a metallic protecting-plate resting in close contact with the tube-sheet, and having holes registering with the tubes, the walls of the holes being formed to closely surround the beaded ends of the tubes, being flared or inclined outwardly and inclined or curved inwardly by being calked around the beaded ends of the tubes to tightly fit them.

2. The combination of a tube-sheet, fire-tubes projecting therethrough and beaded as described, a protecting-plate secured to the tube-sheet, being in close contact therewith and having holes registering with the tubes, the walls of the said holes being formed to fit the beaded ends of the tubes and being calked thereto to make a tight joint, and a protecting-wall made in separable flanged sections, applied to the plate and completely covering its front face and its four edges.

3. The combination of the boiler-head, the fire-tubes, the protecting-plate secured to the boiler-head, the metal frame-pieces attached to the plate and the sectional protecting-wall connected with the frame-pieces.

4. The combination of the fire-tubes, the boiler-head, the protecting-plate attached thereto, the frame-pieces attached to the plate and the protecting-wall having interlocking connections with the frame-pieces and recesses to expose the fastening devices of the frame-pieces, and the wall-sections for filling said recesses.

809,518. **MARINE BOILER.** GEORGE MARSHALL, Fremont, Nebr. Filed Sept. 11, 1905. Serial No. 277,978.

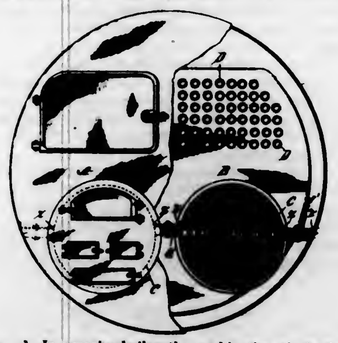

Claim.—1. In a marine boiler, the combination of a horizontal furnace flue or casing, a boiler-shell surrounding it, and partitions fitting the boiler-shell and the furnace flue or casing which separate the water in the lower portion of the boiler from that in the upper portion.

2. In a marine boiler, the combination of a horizontal furnace flue or casing, a boiler-shell surrounding it, and a partition fitting the boiler-shell, and calked to the furnace flue or casing which separates the water in the lower portion of the boiler from that above it.

3. The combination in a marine boiler of the boiler-shell, the flue and a partition for separating the water in the lower portion of the boiler from that in the upper portion which comprises a body portion and a metal plate secured thereto which is calked to the flue and shell.

4. A marine boiler comprising a shell, and a plurality of horizontal furnace flues or casings, and partitions separating the water in the lower portion of the boiler from that in the upper portion arranged between the furnace flues or casings and the shell and between adjacent flues.

5. The combination with a marine boiler having an inclosing shell and a corrugated furnace-flue, of a partition for separating the water in the lower portion of the boiler from that in the upper portion, comprising a cast-metal bar corrugated to conform to the corrugations of the flue and a metal plate attached thereto which is also corrugated and closely fits the flue and the boiler-shell.

809,519. **METALLIC HOOP.** GEORGE L. MEADE, Cleveland, Ohio. Filed June 7, 1905. Serial No. 264,113.

Claim.—1 A metallic hoop having beads at the edges formed by curling the metal, and lapped ends one of which fits at its edges under the beads on the other end.

2. A metallic hoop comprising a strap having beads at the edges which meet at the ends, one end being narrowed and fitting at its edges under the beads on the other end.

809,520. **HEADING-MACHINE.** REMUS C. MEYER, Cleveland, Ohio, assignor to The Champion Machinery Company, Cleveland, Ohio, a Corporation of Ohio. Filed Jan. 2, 1904. Serial No. 187,404.

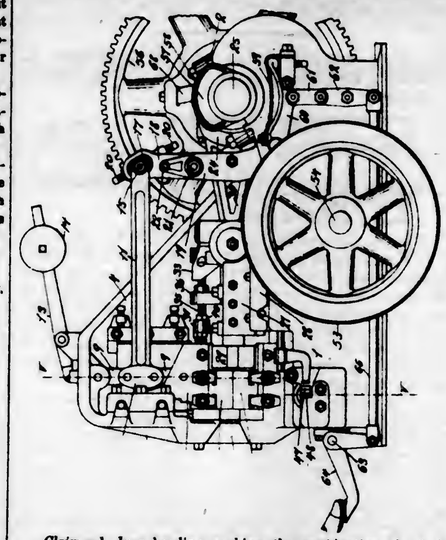

Claim.—1. In a heading-machine, the combination of a bed-frame having an overhanging upright front forming a feed-opening open at three sides, a stationary clamping-die supported in the bottom of said feed-opening with its die-face in a horizontal plane, a vertically-movable clamping-die guided in the overhanging front of the frame to act against the stationary die and having means for moving it, and a heading slide and die having means for reciprocating it and guided to slide in the plane of the die-face of the stationary clamping-die.

2. In a heading-machine, the combination of a bed-frame having a horizontal guide and an upright frame portion at its front formed with a vertical guide and a feed-opening beneath said guide and open at three sides, a heading-slide and die in the horizontal guide, means for reciprocating such slide, a stationary clamping-die horizontally supported to have its upwardly-facing die-face in the plane of motion of the heading-die and beneath the vertical guide of the upright front portion of the frame, a movable clamping-die having its downwardly-facing die-face opposed to the face of the stationary die and vertically movable in the guide in the upright front portion toward and from the stationary die, and means for reciprocating said movable die.

3. In a heading-machine, the combination with a clamping slide and die guided to reciprocate, an arm connected to said slide to reciprocate the same, and a rock-arm having means for rocking it, of an arm pivoted to said rock-arm and having the slide-operating arm pivoted to its end, and a break-pin inserted through the rock-arm and the pivoted arm to normally keep the latter rigid to the former and to part when subjected to undue strain.

4. In a heading-machine, the combination with a clamping slide and die guided to reciprocate, an arm connected to said slide to reciprocate the same, two rock-arms, and means actuating said rock-arms, of an arm pivoted between said rock-arms and having the slide-operating arm pivoted to it, and a break-pin inserted through the arm and the rock-arms.

5. In a heading-machine, the combination with a heading-slide guided to reciprocate, a clamping slide and die guided to reciprocate, toggles connected to said slide, and an arm pivoted to said toggle to flex and straighten the same, of forked rock-arms having said toggle-arm pivotally connected to them and having rollers in their branches, a main shaft having means for rotating it and having a crank the cheeks of which are straddled by the forked rock-arms and are formed into cams against which the rollers bear, and a pitman connected to the crank and to the heading-die.

6. In a heading-machine, the combination with a pair of clamping-dies and a reciprocating heading slide and die, of a shaft journaled to rock parallel with said slide and provided with an adjust-

able gage at one end to swing into the path of the heading-die when the latter recedes and with a radial arm, and a web upon the heading-die and formed with an inclined groove engaging the radial arm and rocking the shaft as the slide is reciprocated.

809,521. **INK-DISTRIBUTER FOR PRINTING-PRESSES.** JOSEPH S. MCKINLEY, Cincinnati, Ohio. Filed June 7, 1905. Serial No. 264,080.

Claim.—1. In a machine of the class described, a bed, an ink-distributing sleeve-roll, a main inking-roll contacting the same, a worm-rod passing through the sleeve, a thread-engager carried by the sleeve, means for holding said rod stationary, consisting of an upright rod secured at its lower end to the bed and projecting above the same, a horizontal rod extended toward the bed, a vertically-depending rod to the lower end of which the worm-rod is secured, and adjustable connections between said rods adapted to make adjustments in various planes, substantially as described.

2. In a machine of the class described, an inking-roll, a contacting ink-distributing sleeve-roll, a rod having a single worm-thread at one end with devices at each end of the thread for reversing the thread-engager, means for holding said rod rigidly within said sleeve, a thread-engager swiveled in the end of the sleeve and having a spring-controlled engagement with the worm, and a bearing-bushing secured to the sleeve within the same engaging the rod and adapted to rotate thereon while being reciprocated on the rod by the worm-driving mechanism, substantially as described.

809,522. **DUMP-CAR.** THOMAS R. MCKNIGHT, Aurora, Ill., assignor to Western Wheeled Scraper Company, Aurora, Ill., a Corporation of Illinois. Filed July 11, 1903. Serial No. 165,118.

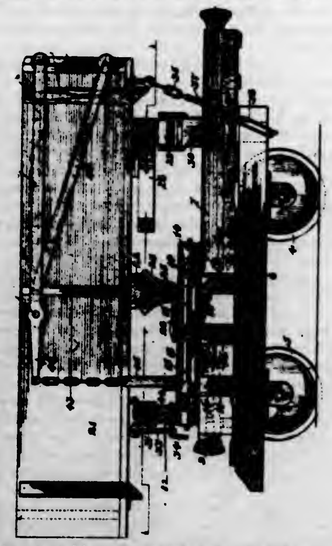

Claim.—1. A dump-car, consisting of a wheeled truck, a tilting car-body having an open end, an edgewise-movable gate therefor, a rotary support on which said car-body rests, and means rotating with the car-body for automatically holding up the end gate when the car-body is tilted to dump the load.

2. A dump-car, consisting of a wheeled truck, a car-body having an open end, an end gate therefor pivotally connected with the car-body, and means for securing said end gate out of operative position to expose the open end of the car-body when the car-body is in its normal position, substantially as described.

3. A dump-car, consisting of a wheeled truck, a car-body having an open end, an end gate therefor, a pivoted lever connecting said end gate with the car-body, and means for securing said end gate up out of operative position when the car-body is in its normal position to expose the open end of the car-body, substantially as described.

4. A dump-car, consisting of a wheeled truck, a tilting car-body open at one end, an edgewise-movable end gate therefor, means pivotally supporting said car-body so that it may be rotated upon the truck, and means rotating with the car-body for holding up the end gate out of operative position when the car-body is tilted to dump the load, substantially as described.

5. A dump-car, consisting of a wheeled truck, a tilting car-body open at one end, an edgewise-movable end gate therefor, means pivotally supporting the car-body so that it may be rotated upon the truck, and means rotating with the car-body for holding up the end gate out of operative position when the car-body is tilted to dump the load, substantially as described.

6. A dump-car, consisting of a wheeled truck, a tilting car-body having an open end, an edgewise-movable end gate therefor, a rotary support on which said car-body rests, and means connected with said support for holding up the end gate out of operative position when the car-body is tilted to dump the load, substantially as described.

7. A dump-car, consisting of a wheeled truck, a tilting car-body having an open end, an edgewise-movable end gate therefor, a turn-table on which said car-body is mounted, and means connected with the upper portion of said turn-table for holding up the end gate out of operative position when the car-body is tilted to dump the load, substantially as described.

8. A dump-car, consisting of a wheeled truck, a car-body having an open end, an edgewise-movable end gate therefor, a turn-table on which said car-body rests, a lever for operating said end gate, and means connecting said lever with the rotary portion of said turn-table and arranged to operate said lever to hold the end gate out of operative position when the car-body is tilted, substantially as described.

809,523. **MACHINE FOR CLEARING LAND.** CHARLES H. MCNALLY, Waipahu, Hawaii. Filed May 1, 1905. Serial No. 258,235.

Claim.—1. In a machine of the class described, a cutting-drum, comprising wheels provided with radial slots in their peripheries, a series of knives extending between said wheels and having their ends engaging corresponding slots in the respective wheels and reciprocatory clearing-bars slidably mounted between the knives.

2. In a machine of the class described, a cutting-drum, comprising wheels provided with radial slots in their peripheries, a series of knives extending between said wheels and having their ends engaging corresponding slots in the respective wheels, and means for cleaning said knives, said means comprising flat bars slidable between the knives, and rods connecting diametrically opposite bars.

3. In a machine of the class described, a cutting-drum having a peripheral series of radial knives extending longitudinally of said drum, and reciprocatory bars between the knives for cleaning the latter.

4. In a machine of the class described, a cutting-drum comprising a pair of wheels journaled upon a supporting-axle, a series of radial knives connected at their ends to said wheels, and reciprocatory bars between the knives for cleaning the latter.

5. A machine of the class described, comprising a frame in three parts hinged together, the end parts of said frame supported on axles with wheels, means for turning said axles for the purpose of guiding the machine, and a bar attached to the sides of the central portion of the frame, on which a cutting-drum revolves when the machine is hauled in either direction by cables attached to the ends of the frame.

6. A machine of the class described, comprising a frame hinged in three parts, axles with wheels supporting the ends of the frame, means for steering the machine, a cutting-drum axled to the central part of the frame, and means for cleaning the knives of said cutting-drum.

7. A machine of the class described, comprising a central rectangular frame A hinged to two triangular end frames B, axles 12 with wheels 13 supporting the outer ends of the end frames B, means for turning the axles 12, and a bar 17 secured to the central frame A and on which a cutting-drum C is adapted to revolve when the machine is hauled in either direction by means of cables attached to clevises 25 at the end of the frames B.

8. In a machine of the class described, a cutting-drum C, comprising the wheels 19 having radial slots 20 similarly arranged in their peripheries, projecting knives 21 secured in corresponding slots 20 by means of hook-bolts 22, a flat bar 23 in each space between the projecting knives 21, and bolts 24 connecting same to the corresponding flat bar 23 on the opposite side of the cutting-drum, substantially in the manner and for the purpose described.

809,524. **TRIMMING MECHANISM OF STEREOTYPE-CASTING MACHINES.** THOMAS M. NORTH, London, England, assignor to Linotype and Machinery Limited, London, England. Filed Feb. 20, 1905. Serial No. 246,607.

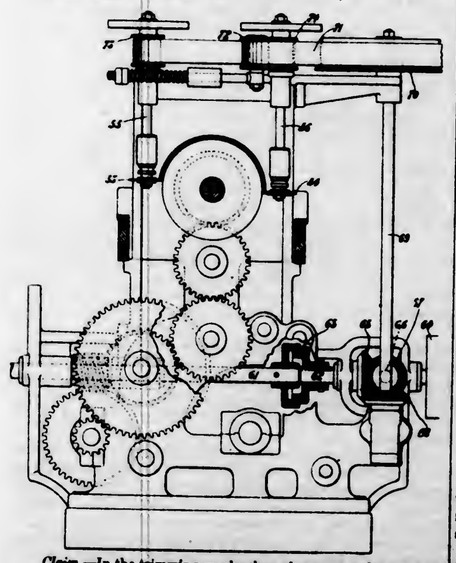

Claim.—In the trimming mechanism of apparatus for automatically casting stereotype printing-plates, the combination of the trimming-saws, a shaft adapted to rotate the saws when itself rotated, a two-part first-driven shaft one part in constant operative connection with the first-named shaft and the other part in constant operative connection with the plate-moving mechanism, and a clutch adapted to engage and disengage the two said parts with and from each other.

809,525. **MOTOR-VEHICLE.** ALBERT NUNAMAKER, Cleveland, Ohio. Filed Apr. 26, 1905. Serial No. 257,434.

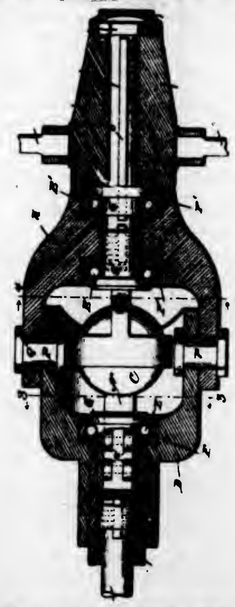

Claim.—1. The combination, in a mechanism of the class stated, of an axle and a wheel-spindle having non-circular recesses in their ends, and a universal joint between the same having connecting-necks fitting in said recesses and having longitudinal movement therein.

2. The combination, in a mechanism of the class stated, of an axle and a wheel-spindle having non-circular recesses in their ends, and a universal joint having connecting-necks fitting in said recesses and having lengthwise movement therein, and rollers between said necks and the walls of the recesses.

3. In a mechanism of the kind described, in combination, an axle, a wheel-spindle having a universal joint therewith, a casing over the axle, a yoke pivotally connected to the casing and having a sleeve over the spindle, bearings between the spindle and the sleeve, bearing-rings at both the inner and outer ends of the sleeve, upon the outside thereof, the ring at the outer end being screwed on the sleeve for adjustment, and a wheel-hub mounted upon said bearings and connected to the spindle.

4. The combination with a motor-vehicle axle-casing having at the outer end a pivoted steering member, of a spindle, a wheel mounted thereon to turn therewith, bearing rings and rollers between the spindle and said members, one of which rings backs against the inner end of the wheel-hub, and an adjusting-nut screwed on the end of the spindle against the outer end of the hub.

809,526. **MACHINE FOR FILLING DRY BATTERIES.** PHILIP P. NUNGESSER, Cleveland, Ohio, assignor to The Nungesser Electric Battery Co., Cleveland, Ohio, a Corporation of Ohio. Filed Aug. 5, 1905. Serial No. 272,668.

Claim.—1. In a machine for filling dry batteries, a main frame, a vertically-reciprocating shaft having a fixed bearing in said frame, a ratchet-head rotatably suspended upon the lower end of said shaft, and tamping-bars fixed in the lower portion of said head.

2. In a machine for filling dry batteries, a vertically-reciprocating shaft and actuating means connected with the upper end thereof, a ratchet-head rotatably secured on the lower end of said shaft, a

pawl to engage said ratchet and a pivoted arm carrying said pawl and having a slotted end engaged on said shaft, and tamping-bars fixed in said rotatable head, whereby when said shaft is raised said head and tamping-bars are raised with it.

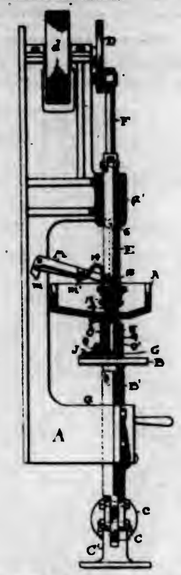

3. In a machine for filling dry batteries, a vertically-reciprocating shaft and a separable ratchet-head rotatably secured on the lower end thereof, said head comprising an upper ratchet-ring and an inverted cup threaded into said ring, tamping-bars secured in said head, a pawl to rotate said head, and an arm carrying said pawl on the main frame and having a slotted engagement with said vertically-reciprocating shaft

4. In a machine for filling dry batteries, a main frame, a vertically-reciprocating shaft having a straight-line bearing in said frame, said shaft provided with a longitudinal slot between its ends and an axial bore in its lower end opening into said slot, a rod for controlling the carbon element through said bore and slot, and a cross-piece fixing said rod to the main frame and traversing the slot in the said shaft.

5. In a machine for filling dry batteries, a main frame, a vertically-reciprocating shaft having a fixed vertical bearing in the frame, operating mechanism therefor supported on said frame and linked to the upper end of said shaft, in combination with a ratchet-head on the lower end of said shaft beneath said bearing, tamping-bars secured to said head and a rod to carry a carbon element having a fixed support and extending axially through the lower portion of said shaft and through the head thereon.

6. In a machine for making dry batteries, a main frame and a vertically-reciprocating shaft, in combination with a stand and a cup-holder fixed thereon axially beneath said shaft, a rotatable head on said shaft provided with tamping-bars adapted to extend within said cup-holder, and a hopper for the depolarizing material adjustably supported upon said stand apart from said cup-holder, whereby the hopper is held aloof from the cup and the lining therein.

7. In a machine for filling dry batteries, a main frame and a vertically-reciprocating shaft having a bearing in the front thereof, crank-actuating mechanism linked to the top of said shaft and a rotatable head suspended on the bottom thereof, tamping-bars on said head and pawl-and-ratchet mechanism to rotate said head, and a carbon-supporting rod extending through the lower portion of said shaft and fixed axially in said shaft and independently thereof.

8. In a machine for filling dry batteries, a main frame, a vertically-slidable standard supported by said frame at its front, a counterweighted lever engaging the lower end of said standard, a stand fixed on the top of said standard and a cup-holder fixed on said table having a hinged side, in combination with a vertically-reciprocating shaft, a head rotatable horizontally on said head and tamping-bars fixed to said head, means to rotate said head and a carbon-supporting rod extending axially through said shaft and head and supported independently thereof.

809,527. CAN-OPENER. HERBERT B. RAY, Bridgeport, Conn. Filed Apr. 8, 1905. Serial No. 254,497.

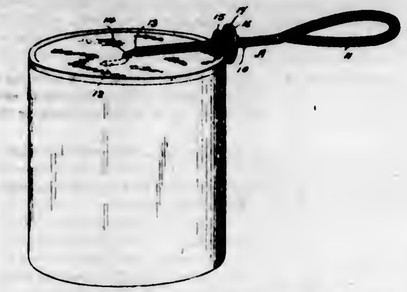

Claim.—1. A can-opener comprising a shank having a prong adapted to be forced through the center of a can-top and a cutter free to both rotate and slide on the shank and comprising a cutting-disk, a rest adapted to engage the edge of a can and a guide-disk adapted to engage the outer face of a can, the relative sizes of said disks being such as to permit the guide-disk to project below the plane of the top edge of the can when the cutting-disk is severing the top of the can.

2. A can-opener comprising a shank having a prong adapted to be forced through the center of a can-top and a cutter free to both rotate and slide on the shank and comprising a cutting-disk convex on its inner face and having a forwardly-projecting cutting edge, for the purpose set forth, a rest to engage the edge of a can and a guide-disk to engage the outer face of said can to retain the cutter in operative position, the relative sizes of said disks being such as to permit the guide-disk to project below the plane of the top edge of the can when the cutting-disk is severing the top of the can.

3. The cutter B comprising a rotary cutting-disk, a rest adapted to engage the edge of a can and a guide-disk adapted to engage the outer face of a can, said disks and rest being integral, and the relative sizes of said disks being such as to permit the guide-disk to project below the plane of the top edge of the can when the cutting-disk is severing the top of the can.

809,528. HEN'S NEST. CHARLES T. REED, Syracuse, Kans. Filed July 17, 1905. Serial No. 270,000

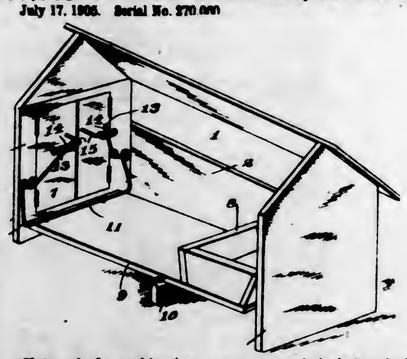

Claim.—1. In combination, a nest-receptacle including inclosing sides, a door for said receptacle, a pivoted platform mounted in the receptacle, a nest upon said platform, a lever pivoted at a point between its ends and connected at one end with the platform, the opposite end of the lever having a loose sliding connection with said door as specified.

2. In combination a nest-receptacle embodying inclosing sides, a door for said receptacle, a platform fulcrumed in the receptacle, a nest mounted on the platform, a cam applied to the door, and a lever connected with the platform and coacting with said cam to effect opening and closing of the door on movement of the platform.

3. In combination, a nest-receptacle embodying inclosing sides, doors for the receptacle, a platform fulcrumed in the receptacle, a nest supported upon the platform at one side of the fulcrum thereof, and at the end remote from the doors, and means for connecting the

opposite ends of the platform with the doors including levers having a sliding connection with the latter.

4. In combination, a nest-receptacle, doors therefor, a platform pivoted between its ends in the receptacle, engaging members carried by the doors including loops, levers connected with the loops and with the adjacent end of the platform aforesaid, and a nest supported by the opposite end of the platform and upon the opposite side of the fulcrum thereof.

5. In combination, a nest-receptacle, doors therefor, engaging members projected from the inner sides of the doors and including loops inclined with regard thereto, levers pivoted to the receptacle, each lever having one end thereof operating in the loop of the adjacent engaging member, a pivoted platform in the nest-receptacle having operative connection with the levers aforesaid, and a nest supported by said platform.

6. In combination, a nest-receptacle embodying inclosing sides, a door for said receptacle, a platform fulcrumed in the receptacle, a cam attached to one side of the door, and a lever pivoted between its ends to the receptacle, one end of the lever being connected with the platform, the opposite end of the lever having operable connection with the cam of the door, whereby when said platform is moved the door is actuated.

809,529. ELECTRIC LAUNDRY-IRON. EARL H. RICHARDSON, Ontario, Cal., assignor to Pacific Electric Heating Company, Ontario, Cal., a Corporation of California. Filed Apr. 25, 1905. Serial No. 257,286.

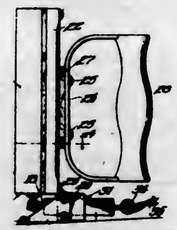

Claim.—1. A laundry-iron having a hollow body with extra metal portions in each corner, and means in the metal at each corner for directly heating the exposed corners of the iron.

2. In a laundry-iron, a body with a toe, a core the end of which is in the toe, and resistance-wire wound on the core, whereby the toe is directly electrically heated.

3. In a laundry-iron, a body with toe and heel corners, cores with ends projecting into the toe and heel corners, and resistance-wire wound on the cores.

4. In a laundry-iron, a body with a toe having a recess, a core with a tongue tightly fitting said recess, and resistance-wire wound on the core.

5. In a laundry-iron, a body with a toe having recesses diverging toward the rear, cores with tongues tightly fitting the recesses, and resistance-wire wound on the cores.

6. In a laundry-iron, a body with toe and heel corners having recesses, cores with tongues tightly fitting the recesses, and resistance-wire wound on the cores.

7. A core, the face of which has one flat portion and the remainder convex, and resistance-wire wound on the core.

8. In an electric laundry-iron, a body with a sole, a core, the face of which has one flat portion and the remainder convex, wire wound on the core, the flat face of the core being arranged parallel with and close to the body with an intervening sheet of non-electrical conducting material.

9. In an electric laundry-iron, a hollow body, the heel and toe corner portions of which have recesses, a pair of cores with their ends close together at the front and diverging toward the rear, each end of each core having a tongue which tightly fits in the adjacent corner-recess, and resistance-wire wound on the core.

10. In an electric laundry-iron, a hollow body the heel and toe corner portions of which have recesses, a pair of cores with their ends close together at the front and diverging toward the rear, each end of each core having a tongue which tightly fits in the adjacent corner-recess, resistance-wire wound on the core, and binding-posts projecting through the body with their inner ends lying between the cores, the wire on the cores being connected with the binding-posts.

11. In an electric laundry-iron, a hollow body, the heel and toe corner portions of which have recesses, a pair of cores with their ends close together at the front and diverging toward the rear, each end of each core having a tongue which tightly fits in the adjacent corner-recess, resistance-wire wound on the core, binding-posts projecting through the body with their inner ends lying between the cores, the wire on the cores being connected with the binding-posts, and a suitable cover detachably fastened to the body.

12. In an electric laundry-iron, a hollow body, the heel and toe corner portions of which have recesses, a pair of cores with their ends close together at the front and diverging toward the rear, each end of each core having a tongue which tightly fits in the adjacent corner-recess, resistance-wire wound on the core, binding-posts projecting through the body with their inner ends lying between the cores, the wire on the cores being connected with the binding-posts, and a hood attached to the body and protecting the external portions of the binding-posts and forming a stand for the iron.

13. In an electric laundry-iron, a hollow body, the heel and toe corner portions of which have recesses, a pair of cores with their ends close together at the front and diverging toward the rear, each end of each core having a tongue which tightly fits in the adjacent corner-recess, resistance-wire wound on the core, binding-posts projecting through the body with their inner ends lying between the cores, the wire on the cores being connected with the binding-posts, and a hollow lug formed on the rear of the body for receiving and guiding a switch-plug.

14. In an electric laundry-iron, a hollow body the heel and toe corners of which have recesses, a pair of cores with their ends close together at the front and diverging toward the rear, each end of each core having a tongue which tightly fits in the adjacent corner-recess, resistance-wire wound on the core, binding-posts projecting through the body with their inner ends lying between the cores, the wire on the cores being connected witn the binding-posts, and a hollow lug formed on the rear of the body for receiving and guiding a switch-plug, the lug forming an extension of the hood and combining therewith to form a stand for the iron.

15. In a laundry-iron, a body with a toe, a core the end of which is in the toe, resistance-wire wound on the core, binding-posts carried by the body and connected with the wire, terminals carried by the binding-posts, and a hollow lug on the rear end of the body protecting the ends of the terminals and adapted to receive and guide a switch-plug into contact with the terminals or to hold the plug slidably free from the terminals.

16. In a laundry-iron, a body with a toe, a core the end of which is in the toe, resistance-wire wound on the core, binding-posts carried by the body and connected with the wire, terminals carried by the binding-posts, a hollow lug on the rear of the body protecting the ends of the terminals, and a hood attached to the lug covering the terminals and forming with the lug a stand for the iron.

17. In an electric laundry-iron, a body, electric heating means in said body, terminals for the electric heating means extending outside the body, and a hood protecting the terminals and forming a stand for the iron.

18. In an electric laundry-iron, a body, electric heating means in said body, terminals for the electric heating means extending outside the body, and a hood protecting the terminals and forming a stand for the iron, the free edge of the hood being formed in a roll.

19. In an electric laundry-iron, a body, electric heating means in said body, terminals for the electric heating means extending outside the body, and a hood protecting the terminals and forming a stand for the iron, the free edge of the hood being formed in a roll, the bottom face of which lies below the rear part of the hood whereby the iron is supported in a position tipped back from the perpendicular when stood on end.

20. In combination with an electrically-heated movable implement the current for which is supplied from a stationary point through a wire leading therefrom to the movable implement, means for connecting the wire with the implement embracing a member intermediate the end fastening of the wire and the flexible section of the wire, around which member the wire is wound with one or more turns, whereby as the implement is moved, abrupt bending or kinking of the wire is prevented where the wire joins the implement.

21. In combination with an electrically-heated movable implement, the current for which is supplied from a stationary point through a wire leading therefrom to the movable implement, means for connecting the wire with the implement embracing a switch-plug, a T on the end of the plug, the wire passing over the curved face of the cross-bar of the T.

22. In combination with an electrically-heated movable implement, the current for which is supplied from a stationary point through a wire leading therefrom to the movable implement, means

for connecting the wire to the implement comprising a switch-plug,

2. A diamond having a curved and polished front running en-

teal inner edge cooperating with the outer edge of the rim-flange,

tering-disk arranged within said casing, means for actuating said

for connecting the wire to the implement comprising a switch-plug, a round member over which the conducting-wire is wound, and means on the plug for supporting the round member near the end of the plug, whereby as the implement is moved abrupt bending or kinking of the wire is prevented where the wire joins the implement.

23. In combination with an electrically-heated movable implement the current for which is supplied from a stationary point through a wire leading therefrom to the movable implement, means for connecting the wire to the implement comprising a switch-plug, and a T on the end thereof, the wire passing over the T, whereby as the implement is moved abrupt bending or kinking of the wire is prevented where the wire joins the implement.

24. A laundry-iron having a body with a toe, and means for imparting a relatively greater heat to the toe than to the main part of the body.

25. An electric laundry-iron having a body with a toe, and means for imparting a relatively greater electric heat to the toe than to the main part of the body.

26. A laundry-iron having a body with a toe and heel, and means for imparting a relatively greater heat to the toe and heel corners than to the main part of the body.

27. An electric laundry-iron having a body with a toe and heel, and means for imparting a relatively greater electric heat to the toe and heel corners than to the main part of the body.

28. In an electrically-heated device, in combination with the element to be heated, a core, resistance for heating the core, and means for securing an uninterrupted heat-conducting connection between the core and body to be heated.

29. In an electrically-heated device, in combination with the element to be heated, a core, resistance for heating the core, the core having intimate contact with the element to be heated.

30. A laundry-iron having a body with a heel, and means for imparting a relatively greater heat to the corners of the heel than to the main part of the body.

809,530. PNEUMATIC-TIRE COVER. WILLIAM A. SANKEY, Sutton, England, assignor to Frank Reddaway, Manchester, England. Filed Jan. 24, 1905. Serial No. 243,544.

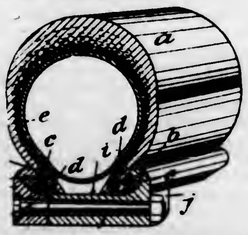

Claim.—1. A tire-cover having beaded edges and a wire embedded in each of said edges, layers of canvas in such tire-cover part of which are secured around the cores of the beaded edges and the remainder around the wires in such edges, substantially as described.

2. The combination in a vehicle-wheel having its periphery provided with lateral recesses, a channeled rim fitting on said periphery and having lugs engaging in the said recesses, said channeled rim being formed of a stationary part and a removable part, bolts passing through the lugs of the removable and stationary parts to hold said parts together and a cover held in said channeled rim, substantially as described.

809,531. DIAMOND. ERNST G. H. SCHENCK, Orange, N. J. Filed May 3, 1904. Serial No. 206,980.

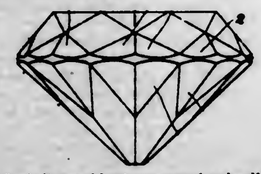

Claim.—1. A diamond having a curved and polished facet running at least part way about the girdle, and provided on its top and bottom with flat polished facets which meet said girdle-facet in curved edges.

2. A diamond having a curved and polished facet running entirely around the same at its girdle and provided at at least one side thereof with flat, polished facets which meet said girdle-facet in curved edges and at obtuse angles.

3. A diamond having a flat polished facet lying in a curved plane and running at least part way around said stone, and provided at at least one side thereof with flat polished facets which meet said facet in curved edges and at obtuse angles.

4. A diamond having a flat, polished facet lying in a circular plane substantially concentric with the axis of the said stone and running entirely around its girdle, and provided on its top and bottom with flat, polished facets which meet said girdle-facet in curved edges and at obtuse angles.

5. A diamond having a flat, polished facet lying in a circular plane running entirely around the same, said stone at at least one side of said facet being provided with a plurality of flat and polished facets each of which meets said circular facet in a curved edge and at an obtuse angle

6. A diamond having a flat, polished facet lying in a circular plane running entirely around the same at its girdle and whose axis is substantially coincident with the axis of said stone, said stone being provided on both top and bottom thereof with a continuous series of flat and polished facets entirely surrounding said girdle-facet, each of which facets meets said girdle-facet in a curved edge and at an obtuse angle.

809,532. DEVICE FOR CUTTING BUTTER. HERMAN SCHRACKENBERG, Hoboken, N. J. Filed Oct. 25, 1904. Renewed July 15, 1905. Serial No. 269,207.

Claim.—1. A device for cutting butter comprising a block having a cutting-wire connected to one side thereof, and a guiding-finger arranged upon the other side opposite the point of attachment, of the wire.

2. A device for cutting butter comprising a block having a projection at one side and a guiding-finger upon the opposite side, a cutting-wire attached to the projection and adapted to engage the guiding-finger, as set forth.

3. A device for cutting butter comprising a block having a concaved inner face and provided with a handle upon the outer face, said block having a projection upon one side and a guiding-finger upon the opposite side, and a cutting-wire connected to the projection and adapted to engage the guiding-finger, said cutting-wire having a handle connected to its free end, as set forth.

809,533. WHEEL-RIM. CHARLES S. SCOTT, Cadiz, Ohio, assignor of one-half to Frank A. Selbering, Akron, Ohio. Filed May 3, 1905. Serial No. 258,649.

Claim.—1. A wheel-rim having a rim-flange with an eccentric outer edge, and a rotatable auxiliary flange codperating therewith, substantially as described.

2. A wheel-rim having a rim-flange with an eccentric outer edge, and a rotatable auxiliary flange having inner and outer edges shaped as eccentric circles, the inner edge of the auxiliary flange being juxtaposed to the outer edge of the rim-flange, substantially as described.

3. A wheel-rim having a rim-flange with an eccentric frusto-conical edge, and a rotatable auxiliary flange, having a frusto-conical inner edge cooperating with the outer edge of the rim-flange, substantially as described.

4. A wheel-rim having a rim-flange with an eccentric outer edge and a filling-piece spaced to leave a groove at the inner face of the rim-flange, in combination with an auxiliary flange rotatable in the groove and codperating with the rim-flange, substantially as described.

5. A wheel-rim having a rim-flange with an eccentric outer edge, a rotatable auxiliary flange codperating therewith, and a pneumatic tire forcing the auxiliary flange against the rim-flange when inflated, substantially as described.

6. A wheel-rim having a rim-flange with an eccentric outer edge, a rotatable auxiliary flange having inner and outer edges shaped as eccentric circles, the inner edge of the auxiliary flange being juxtaposed to the outer edge of the rim-flange, and a pneumatic tire forcing the auxiliary flange against the rim-flange when inflated, substantially as described.

809,534. LATCH. AMOS SHEPARD, Plantsville, Conn., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn., a Corporation. Filed Apr. 4, 1905. Serial No. 253,780.

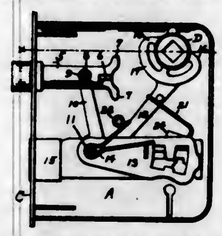

Claim.—1. The combination of a latch-bolt with a lever operatively connected with the said latch-bolt and pivoted to the latch-case, a roll-back having two wings, a slide for engaging the said lever, the said slide having two arms for engagement with the wings of the said roll-back, and spring-arms acting on the said lever and slide to return the parts to their normal position.

2. The combination of a latch-bolt with a spring-pressed lever operatively connected with the said latch-bolt, a roll-back having two wings, and a spring-pressed slide interposed between the said roll-back and lever and acting to operate the said lever in the direction for withdrawing the latch-bolt when the roll-back is turned in either direction.

3. The combination of a latch-bolt with a spring-pressed lever operatively connected with the said latch-bolt, a roll-back having two wings, and a spring-pressed slide interposed between the said roll-back and lever and having two end faces at one end and one end face on the opposite end, the three end faces of the said slide being in position for engagement with the said wings and lever.

4. The combination of the latch-case with a latch-bolt, a spring-pressed lever pivoted on the tumbler-post of the said latch-case with the free end of the said lever operatively connected with the said latch-bolt, a roll-back, and a spring-pressed slide operatively connecting the said roll-back and lever, whereby the said slide is moved in a direction to withdraw the latch-bolt when the roll-back is turned in either direction.

5. The combination of a latch-bolt with a lever pivoted to the latch-case and operatively connected with the said lever, a roll-back having two wings, a slide interposed between the said roll-back and lever, and a single spring with one arm pressing against the said lever to move it toward the said slide, and with its other arm pressing against the said slide to move it toward the said roll-back.

809,535. COMBINED FAN AND SCORE-CARD. WILL STEEL, Texarkana, Ark. Filed Jan. 12, 1905. Serial No. 240,810.

Claim.—1. In a game-register, a casing provided with a plurality of display-openings, a pointer movable over the face of the casing, registering-dials arranged within said casing, means for actuating said dials for successively displaying a numeral at said openings, a dial-locking mechanism, and means for releasing said locking mechanism, said releasing mechanism also serving to rotate the pointer.

2. In a game-register, a casing provided with a plurality of display-openings, a pointer movable over the face of the casing, registering-dials arranged within said casing, means for actuating said dials for successively displaying a numeral at said openings, a dial-locking mechanism, and means for releasing said locking mechanism and simultaneously rotating the pointer.

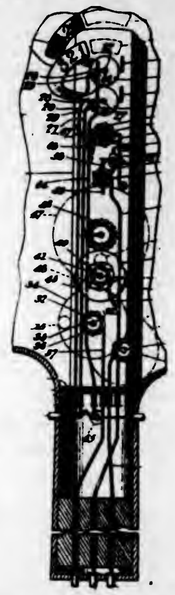

3. In a game-register, a casing provided with display-openings, a pointer movable over the face of the casing, a plurality of registering-dials arranged within said casing, means for actuating said dials for successively displaying a numeral at said openings, a dial-locking mechanism, means for releasing said locking mechanism and simultaneously rotating the pointer, and means for returning said dials to their normal position.

4. In a game-register, a casing provided with display-openings, a pointer movable over the face of the casing, registering-dials arranged within the casing, means for actuating said dials for successively displaying a numeral at said openings, a dial-locking mechanism, means for releasing said locking mechanism and simultaneously rotating the pointer, and means for moving said pointer out of operable engagement with the lock-releasing means.

5. In a game-register, a casing provided with display-openings, a plurality of dials carried by the casing, a pointer movable over the face of the casing, an index movable over the back of said casing, means for rotating the pointer and simultaneously actuating some of the dials to successively display a numeral at said openings, and means for operating one of said dials and rotating the index.

6. In a game-register, a casing provided with a handle and having display-openings formed therein, a plurality of dials arranged within the casing, spring-pressed rods for actuating the dials to successively display a numeral at said openings, and push-buttons carried by the handle of the casing and operatively connected to said spring-pressed rods.

7. In a game-register, a casing provided with a handle and having a display-opening formed therein, a plurality of registering-dials arranged within the casing, rods for independently actuating said dials for successively displaying a numeral at said openings, push-buttons carried by the handle, and levers forming a pivotal connection between the rods and the push-buttons.

8. In a game-register, a casing provided with a handle and having display-openings formed therein, a plurality of registering-dials arranged within the casing, a perforated partition extending transversely across the handle, rods extending through the perforations in the partition and engaging said dials for actuating the latter to successively display a numeral at said openings, push-buttons carried by the handle of the casing, levers forming a pivotal connection between the rods and the push-buttons, and springs arranged on the rods and interposed between the levers and said transverse partition.

9. In a game-register, a casing provided with a terminal handle and having a plurality of picture-receiving openings formed in one wall thereof, there being a plurality of display-openings also formed in said wall, a pointer movable over the surface of the casing with a step-by-step movement and adapted to register with the picture-receiving openings, a plurality of registering-dials mounted in the casing, means for actuating said dials for successively displaying a numeral at the display-openings, and means for rotating the pointer.

10. In a game-register, a casing provided with display-openings, a pointer movable over the face of the casing, an index movable over the back thereof, registering-dials carried by the casing, means for actuating said dials to successively display a numeral at said openings, means for locking said dials against backward movement, and means for simultaneously releasing the locking means and dial-actuating means to permit the dials to return to normal position, said releasing means serving to rotate the pointer.

11. In a game-register, a casing provided with display-openings, registering-dials arranged within the casing, spring-pressed rods for actuating said dials to successively display a numeral at said openings, means for locking said dials against backward movement, a toothed rod for releasing the locking mechanism, and means pivoted to said toothed rod and engaging the actuating-rods for disengaging the latter from the dials.

12. In a game-register, a casing provided with display-openings, registering-dials arranged within the casing, spring-pressed rods provided with stop-lugs for actuating said dials to successively display a numeral at said openings, means for locking said dials against backward movement, a toothed rod for releasing said locking mechanism, and a loop pivoted to said toothed rod and engaging the stop-lugs on the spring-rod for disengaging the latter from the actuating-dials.

13. In a game-register, a casing provided with display-openings, a pointer movable over the face of the casing, registering-dials arranged within the casing, means for actuating the dials for successively displaying a numeral at said openings, means for locking said dials against backward movement, means for releasing said locking means and simultaneously rotating the pointer with a step-by-step movement, and means for moving the pointer out of operative engagement with the locking means.

14. In a game-register, a casing provided with display-openings, a pointer movable over the face of the casing, registering-dials arranged within the casing, means for actuating the dials for successively displaying a numeral at said openings, a bracket, a toothed wheel journaled in the bracket and carrying the pointer, a rod for rotating the wheel with a step-by-step movement, a cam engaging the bracket, and means for rotating the cam to move the toothed wheel out of operative engagement with said rod.

15. In a game-register, a casing provided with display-openings, a pointer movable over the face of the casing, a plurality of registering-dials arranged within said casing, one of which is provided with transfer-teeth for engaging the teeth of the adjacent dial, means for operating said dials for successively displaying a numeral at said openings, means for locking all of said dials against backward movement, and means for releasing the locking means and simultaneously rotating the pointer.

16. In a game-register, a casing provided with display-openings, a pointer movable over the face of the casing, registering-dials arranged within the casing, means for actuating the dials for successively displaying a numeral at said openings, a spring-bracket, a toothed wheel journaled in the bracket and carrying the pointer, a rod for rotating the wheel with a step-by-step movement, a cam adapted to engage the bracket and provided with an index movable over the back of the casing, and means for rotating the cam to thereby move the toothed wheel out of operative engagement with said rod.

809,536. **RAIL-JOINT.** CHARLES H. STEPHENS, Bartlett, Tex. Filed Aug. 17, 1905. Serial No. 274,699.

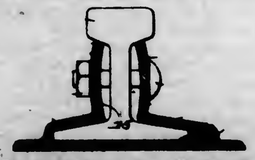

Claim.—1. The combination with a rail, of a splice-bar engaging one side of the rail and provided with a lateral extension spaced from the adjacent portion of the splice-bar to form a pocket for the reception of the base of the rail, said extension being provided with a terminal upwardly-projecting flange defining a shoulder adapted to engage the adjacent longitudinal edge of the base of the rail and having its upper and lower faces converging toward the free end of the extension, a mating splice-bar engaging the opposite side of the rail and having a correspondingly-shaped groove formed therein for the reception of the flange, and means for clamping the splice-bars to the rail and in engagement with each other.

2. The combination with a rail, of a splice-bar having one end thereof bowed and engaging one side of the rail and its opposite end provided with a lateral extension spaced from the adjacent portion of the splice-bar to form a pocket for the reception of the base of the rail, said extension being provided with a terminal upwardly-projecting flange defining a vertical shoulder adapted to engage the adjacent longitudinal edge of the base of the rail and having its upper and lower faces inclined in opposite direction toward the free end of the extension, a mating splice-bar having a bowed portion for engagement with the opposite side of the rail and provided with a longitudinal groove corresponding in shape to the flange and adapted to receive the latter, and bolts passing through the rail and bowed portions of the splice-bars for clamping said splice-bars to the rail and in engagement with each other.

809,537. **TIRE FOR WHEELED VEHICLES.** FRANK H. STERLING, London, England. Filed Dec. 6, 1904. Serial No. 235,755.

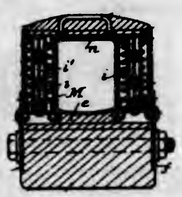

Claim.—1. The combination, with a wheel-rim, of spiral springs secured around the said rim, bridge-pieces arranged around the said springs, pivotal connections between the adjacent ends of the said bridge-pieces, and flexible connections arranged radially between the said wheel-rim and bridge-pieces and limiting the outward movements of the said bridge-pieces.

2. The combination, with a wheel-rim, of rows of spiral springs secured around the said rim, bridge-pieces bearing directly upon and secured to the outer end portions of the said springs, and links pivotally connecting the adjacent edges of the said bridge-pieces.

3. The combination, with a wheel-rim, of rows of spiral springs secured around the said rim, a series of articulated bridge-pieces connected to the outer end portions of the said springs, and a series of flexible connections arranged radially between the said rim and bridge-pieces.

4. The combination, with a wheel-rim, of rows of spiral springs secured around the said rim, a series of articulated bridge-pieces connected to the outer end portions of the said springs, and cores of elastic material arranged inside the said springs.

5. The combination, with a wheel-rim, of rows of spiral springs secured around the said rim, a series of articulated bridge-pieces connected to the outer end portions of the said springs, tubular cores of elastic material arranged inside the said springs, and flexible connections arranged radially between the said rim and bridge-pieces inside the said tubular cores.

6. The combination, with a wheel-rim, of a ring secured to the middle portion of the said rim, retaining-plates secured to the sides of the said rim, endless rings secured between the said ring and plates, rows of spiral springs having their inner end portions secured to the said endless rings, and a series of articulated bridge-pieces connected to the outer end portions of the said springs.

7. The combination, with a wheel-rim, of rows of spiral springs secured around the edges of the said rim, a series of articulated bridge-pieces connected to the outer end portions of the said springs, and an inflatable air-tube arranged at the middle part of the said rim between the said rows of springs.

8. The combination, with a wheel-rim, of rows of spiral springs secured around the said rim, a series of articulated bridge-pieces connected to the outer end portions of the said springs, and flexible connections arranged in inclined positions between the said rim and bridge-pieces and preventing the outer portions of the said springs from moving circumferentially of the said rim.

809,538. **HAY-STACKER.** ARGUS M. STEVENS and GEORGE B. STEVENS, Malvern, Kans. Filed Sept. 9, 1905. Serial No. 277,794.

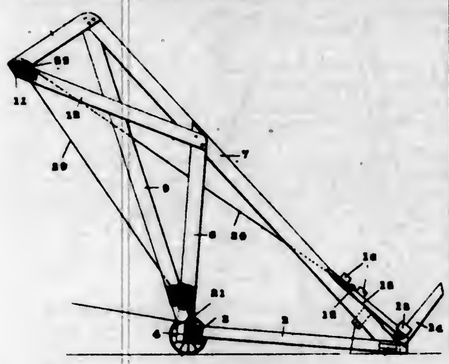

Claim.—1. In a hay-stacker, the combination with a sill-frame, of inclined carrier-tracks supported thereon, delivery-tracks at the upper end of said carrier-track, and an X-shaped truss-frame supporting said delivery-tracks.

2. In a hay-stacker, the combination with a sill-frame, of uprights carried thereby, overhanging carrier-tracks secured to said sill-frame and uprights, delivery-tracks at the upper ends of said carrier-tracks, and an X-shaped truss-frame supporting the upper end of said carrier-tracks and said delivery-tracks.

3. A carrier for hay-stackers comprising an L-shaped frame having runner-beams which straddle the track-beams of the stacker-frame.

4. A carrier for hay-stackers comprising an L-shaped frame having runner-beams, supporting-rollers carried by said runner-beams, and guides projecting from said runner-beams to hold the carrier in position on the tracks of the stacker-frame.

5. A carrier for hay-stackers comprising an L-shaped frame, and projecting guides on the bed portion thereof, which enter between the tracks of the stacker-frame and guide the carrier in its movements thereon.

6. A carrier for hay-stackers comprising an L-shaped frame having downwardly-projecting wedge-shaped guides adapted to enter between the tracks of the stacker-frame and hold the carrier in position thereon.

7. A carrier for hay-stackers comprising an L-shaped frame, runner-beams adapted to straddle the stacker-tracks, supporting-rollers on the under side of said runner-beams at the rear of the carrier, and antifriction-rollers on the upper side of said runner-beams at the front.

809,539. **MUSICAL INSTRUMENT.** HANS STOCKMEIER, Baltimore, Md. Filed Sept. 18, 1905. Serial No. 278,806.

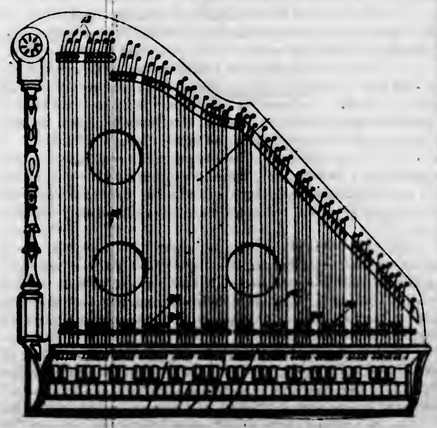

Claim.—1. In a musical instrument, the combination with a sounding-board and strings, of a keyboard, key-actuated levers operable from the keyboard, a pivotally-mounted bell-crank lever having one of its arms connected to one of the levers, a picking-finger carried by the opposite arm of the bell-crank lever, the finger being movable with the lever in one direction, and being movable independently of the lever in the opposite direction, and a bridle for insuring return movement of said finger.

2. In a musical instrument, the combination with the sounding-board and strings, of a picking-finger, a lever carrying the same, said finger having a laterally-extended flange for engagement with the lever in order to limit pivotal movement of the finger in one direction, and a bridle for insuring return movement of the picking-finger to initial position.

3. In a musical instrument, the combination with the sounding-board and strings, of a key-actuated lever, a bell-crank lever operatively connected to said lever, a picking-finger pivotally mounted on said bell-crank lever, and arranged to positively engage with the string during movement in one direction, and moving freely past the string in the opposite direction, a bridle for insuring return of the picking-finger to proper position, and a damper also carried by said bell-crank lever.

809,540. **TRANSMISSION-GEARING.** MORTON C. TALCOTT, Hartford, Conn. Filed Oct. 14, 1905. Serial No. 283,790.

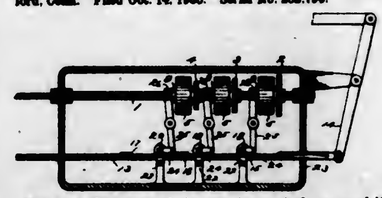

Claim.—1. In a transmission-gearing, a shaft, gears of different diameters loose on the shaft, clutches adapted to connect the gears with the shaft, a bar bearing racks, pinions adapted to be successively rotated by the racks, and connections between the pinions and the clutches for operating the clutches, substantially as specified.

2. In a transmission-gearing, a shaft, gears of different diameters loose on the shaft, a drum keyed to the shaft adjacent to each gear, a clutch-band encircling each drum and connected with the adjacent gear, a wedge movable upon the shaft for tightening each band upon the adjacent drum, a bar bearing racks, pinions adapted to be successively rotated by the racks, and a connection between the pinions and the wedges for moving the wedges when the pinions are rotated, substantially as specified.

3. In a transmission-gearing, a shaft, gears of different diameters loose on the shaft, a clutch for connecting each gear with the shaft, a bar bearing racks, pinions adapted to be successively rotated by the racks, frictional means for retaining the pinions against rotation when disengaged from the racks, and levers connected with the clutches and adapted to be oscillated by the rotations of the pinions, substantially as specified.

4. A power-transmission element consisting of a shaft, a gear loose on the shaft, a lever connected with the gear, a drum fixed to the shaft adjacent to the gear, a band encircling the drum and having one end connected with the gear and the other end attached to the lever that is connected with the gear, and a wedge movable longitudinally on the shaft and adapted to engage the lever for contracting the band upon the drum, substantially as specified.

5. In a transmission-gearing the combination of clutches, a bar bearing racks, pinions adapted to be successively rotated by the racks, and connections between the pinions and the clutches for operating the clutches by the rotations of the pinions, substantially as specified.

809,541. **SCISSORS.** RUDOLF THEIS, Solingen, Germany. Filed Jan. 6, 1906. Serial No. 290,896.

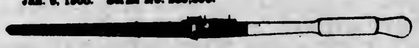

Claim.—Scissors provided with a pair of pivoted cutting members of which the first member is perforated back of the pivot, a spring engaging the pivot and extending forwardly and backwardly thereof, the front of the spring bearing directly upon the outer side of the first member in front of the pivot, and the beak of the spring bearing upon the inner side of the second member back of the pivot, whereby

the cutting edges of the members are forced against each other, substantially as specified.

809,542. **OIL-TANK INDICATOR.** WILLIAM TORBT, Jr., San Pedro, Cal., assignor of seven-eighths to T. J. Brundage and one-eighth to Robert K. Brundage, Farmersville, Cal. Filed Feb. 6, 1905. Serial No. 244,515.

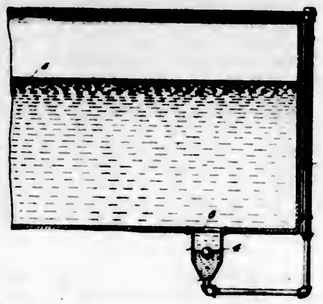

Claim.—1. An oil-indicating device comprising a brine-containing valve disposed below the tank containing the oil, brine in said valve; a stopper in said valve having a specific gravity greater than the oil and less than the brine therein; an indicator-tube in communication with said valve; disposed on the outside of the tank containing the oil and brine in the indicator-tube.

2. Means to indicate the level of oil in an oil-tank comprising a valve disposed below and communicating with the oil-tank; a valve-stopper in said valve having a specific gravity greater than oil and less than brine; an indicator-tube in communication with said valve and disposed on the side of the tank containing the oil; brine in said valve and in the indicating-tube.

3. In an oil-indicator having a valve in the bottom thereof with a stopper therein of a specific gravity greater than oil and less than brine and having an indicator-tube in communication therewith located without and below the elevation of the tank containing the oil and having an extension projecting upwardly from said indicator-tube to a point level with the top of the tank containing the oil; brine in said valve and indicator-tube and a light, transparent oil in the extension-pipe above said indicator-tube.

4. In a device to indicate the quantity of crude oil in a tank comprising a valve disposed below the tank and having therein a valve-stopper of a specific gravity greater than the oil and less than the brine and having also an indicator-tube communicating with said valve and having in said indicator-tube and valve a liquid having a specific gravity greater than oil, the herein-described extension-tube disposed above the indicator-tube and having therein a transparent liquid of a like specific gravity with the crude oil.

5. The herein-described means to indicate the level of crude oil in a tank comprising the valve disposed below and communicating with the tank 1, the indicator-tube 3 communicating with said valve; a stopper 4 in said valve having a specific gravity greater than crude oil and less than brine; brine in said valve and in said indicator-tube.

809,543. **PIG-BROODER.** HENRY B. VAIL, Arlington, Ohio. Filed June 20, 1905. Serial No. 266,183.

Claim.—1. In a device of the class described, the combination of, an animal-pen with a stall disposed therein and with its walls supported above the floor of the pen.

2. In a device of the class described, the combination of, an animal-pen with a stall suspended within the pen and with its walls above the floor of the pen.

3. In a device of the class described, the combination of, an animal-pen, a stall suspended within and with its walls above the floor of the pen, and means for bracing the stall from displacement.

4. In a device of the class described, the combination of, an animal-pen, a stall disposed within and with its walls above the floor of the pen, and means for varying the width of the stall.

5. In a device of the class described, the combination of, an animal-pen, a stall suspended within and with its walls above the floor of the pen, and means for varying the width of the stall.

6. In a device of the class described, the combination of, an animal-pen, a stall suspended within and with its walls above the floor of the pen, means for bracing the stall against displacement, and means for varying the width of the stall.

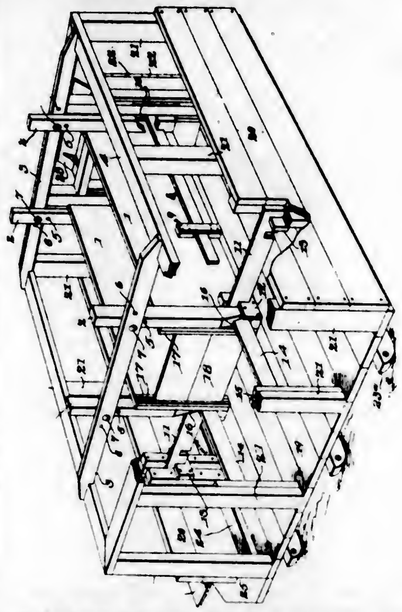

7. In a device of the class described, an animal-pen, a pair of beams removably extending across the pen, and a pair of stall-walls suspended from the beams and with their lower edges above the floor of the pen.

8. In a device of the class described, an animal-pen, a pair of beams removably extending across the pen, a pair of stall-walls suspended from the beams and with their lower edges above the floor of the pen, an end gate disposed to close the open end of the stall, and means for bracing the stall against displacement.

9. In a device of the class described, an animal-pen, a pair of beams removably extending across the pen, a pair of stall-walls pivotally suspended from the beams and with their lower edges above the floor of the pen.

10. In a device of the class described, the combination of, an animal-pen, a pair of beams removably extending across the pen, a pair of stall-walls pivotally suspended from the beams and with their lower edges above the floor of the pen, an end gate disposed to close the open end of the stall, and means for bracing the stall against displacement.

11. In a device of the class described, an animal-pen, a foldable stall, and means for suspending the stall within the pen with a space between the lower edge of the stall-walls and the pen-floor.

12. In a device of the class described, the combination of, an animal-pen, a covered feed-box opening into said pen, a foldable stall, and means for suspending the stall within the pen with an open end registering with the feed-box and with an open space between the lower edge of the stall-walls and the pen-floor.

13. In a device of the class described, the combination of, an animal-pen, a foldable stall, means for suspending the stall within the pen with an open space between the lower edge of the stall-walls and the pen-floor, and means for bracing the stall against displacement.

14. In a device of the class described, the combination of, an animal-pen, a covered feed-box opening into said pen, a foldable stall, means for suspending the stall within the pen with an open end registering with the feed-box and with an open space between the lower edge of the stall-walls and the pen-floor, and means for bracing the stall against displacement.

15. In a device of the class described, the combination of, an animal-pen, a folding and adjustable stall, means for suspending the stall within the pen with a space between the lower edge of the stall-walls and the pen-floor, and means for varying the width of the stall.

16. In a device of the class described, the combination of, an animal-pen, a covered feed-box opening into said pen, a foldable and adjustable stall, means for suspending the stall within the pen with an open end registering with the feed-box and with an open space between the lower edge of the stall-walls and the pen-floor, and means for varying the width of the stall.

17. A device of the class described comprising, an animal-pen, a foldable and adjustable stall, means for suspending the stall within the pen with an open space between the lower edge of the stall-walls and the pen-floor, means for securing the stall against displacement, and means for varying the width of the stall.

18. A device of the class described comprising, an animal-pen, a covered feed-box opening into said pen, a foldable and adjustable stall, means for suspending the stall within the pen with an open end registering with the feed-box and with an open space between the lower edge of the stall-walls and the pen-floor, means for securing the stall against displacement, and means for varying the width of the stall.

809,544. **GATE-LATCH.** GEORGE WARNER, Dearborn, Mont. Filed Mar. 25, 1899. Renewed June 19, 1905. Serial No. 266,043.

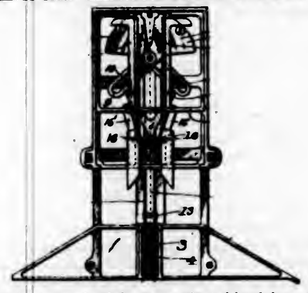

Claim.—1. A gate-latch having a pivoted latch-bar adapted to engage by gravity in its engaging recess, in combination with a vertically-moving stop-bolt, a trigger mechanism for said stop-bolt arranged in the path of the latch-bar and adapted to be operated by the latch-bar in a closing movement of the gate, to release the stop-bolt and allow the same to move downward into a position to prevent a rebound of the gate, substantially as set forth.

2. A gate-latch comprising in combination, a latch-bar, a pair of vertically-movable stop-bolts, locking-triggers for said stop-bolts, a pair of pivoted levers for raising said stop-bolts, and means whereby the movement of the latch-bar operates said triggers, substantially as set forth.

3. A gate-latch comprising in combination, a latch-bar, a central recess in the latch-frame for receiving said bar, a vertically-movable stop-bolt, a locking-trigger for said stop-bolt, and means whereby the movement of the latch-bar in the central recess of the latch-frame operates said trigger, substantially as set forth.

4. A gate-latch comprising in combination, a latch-bar, a central recess in the latch-frame for receiving said bar, a pair of vertically-movable stop-bolts, locking-triggers for said stop-bolts, a pair of pivoted levers for raising said stop-bolts, and means whereby the movement of the latch-bar in the central recess of the latch-frame operates said trigger, substantially as set forth.

809,545. **CARPET-STRETCHER.** SERBEN J. WEVER, Sheller, Ill. Filed Apr. 17, 1905. Serial No. 256,075.

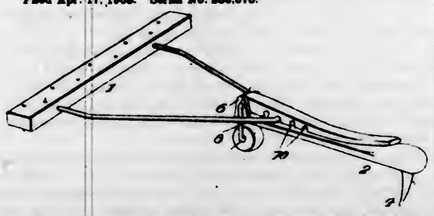

Claim.—In a carpet-stretcher, the combination of a floor-dog, a carpet-engaging member, a lever, connecting means between the lever and the carpet-engaging member, a pivot-rod carried by the floor-dog and forming a pivot for the lever, said rod being extended and formed with a journal member beneath the floor-dog, and a roller mounted upon said journal member.

809,546. **TABLE-SPREAD SUPPORT.** SERBEN J. WEVER, Sheller, Ill. Filed Aug. 23, 1905. Serial No. 275,469.

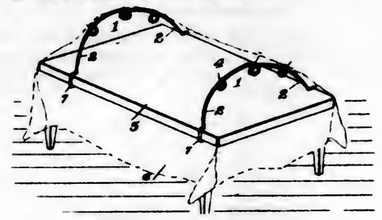

Claim.—1. A table-spread support comprising a frame embodying integral spring-arms, hooks carried by the said arms for engagement with a table and so connected with the arms as to be held in such engagement by the spring action thereof, and members carried by the hooks for holding the frame in an upright position.

2. A table-spread support comprising a frame composed of oppositely-extending arms, hooks at the ends of said arms for engagement with a table to attach the frame thereto, and extensions projecting laterally from the hooks for coöperation with the object engaged thereby to brace the frame and hold it in an upright position when affixed to the table.

3. A table-spread support comprising a frame composed of oppositely-extending arms, and hooks at the ends of said arms for engagement with a table to attach the frame thereto, each hook being extended laterally to form a brace extension for holding the frame in an upright position, the brace extensions of the hooks projecting in opposite directions.

4. As a new article of manufacture, a table-spread support comprising an integral frame embodying oppositely-extending curved arms made from a single length of spring-wire, the wire being coiled upon itself at a point between its ends to form a spring for the arms, each arm being coiled to form a spring-loop, the lower extremities of each arm being formed with an integral hook, the terminals of each hook being extended laterally in opposite directions to form brace members for the purpose specified.

809,547. **HEATING DEVICE FOR OIL-PRESSES.** JAMES W. WINFREY, Ashdown, Ark. Filed May 11, 1905. Serial No. 260,001.

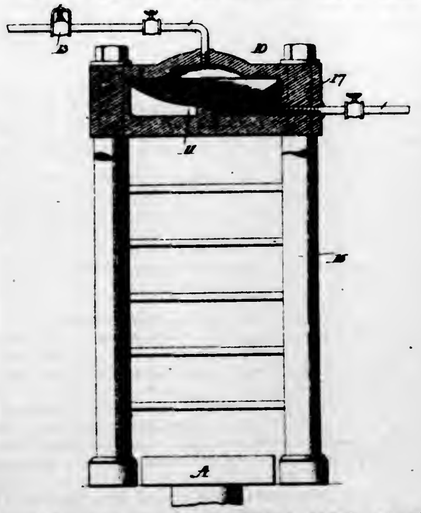

Claim.—An oil-press having a hollow head-block, and a plurality of strengthening-ribs arranged within the interior of the block

fer bracing the lower central portion of the latter, said ribs being inclined upward from the central portion toward the outer edges of said block, a steam-supply pipe entering the upper portion of the hollow head, and an exhaust-pipe leading from the lower portion of said head, the supply-pipe being provided with a reducing-valve for governing the quantity of steam admitted to said head.

809,548. MATRIX AND PUNCH CUTTING MACHINE. LINN B. BENTON, New York, N. Y., assignor to American Type Founders Company, New York, N. Y., a Corporation of New Jersey. Filed Feb. 17, 1899. Serial No. 705,735.

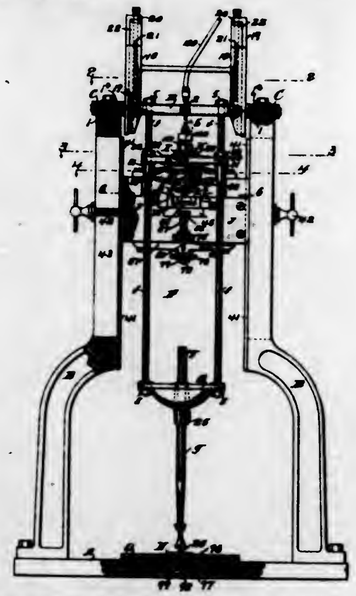

Claim.—1. The combination with swinging tracing-frame F having pairs of pivots 1, 2 forming a universal joint, and a follower actuated by said frame, one of said pairs of pivots being adjustable toward and from the follower independently of the other pair of said pivots, of screws for adjusting said adjustable pivots, and removable bearing-blocks limiting the movement of the pivots by the screws, substantially as described.

2. The combination with swinging tracing-frame F and plate E by which it is suspended, of frame D in which plate E is pivoted, and vertical pivot-bars 19 mounted on pivots 1 in the machine-frame and on which the frame D is vertically adjustable with plate E, substantially as described.

3. The combination with swinging tracing-frame F and suspending frame D and plate E, of vertical pivot-bars 19 having arms 20 and screws 21 passing through said arms for adjusting the frame D on the pivot-bars 19, substantially as described.

4. In a matrix-cutting machine, a matrix-holder having independently-adjustable side gages for the matrix-blank, and an end gage adjustable independently of the side gages, substantially as described.

5. In a matrix-cutting machine, a matrix-holder having independently-adjustable side gages for the matrix-blank, an end gage adjustable independently of the side gages, a top gage, and means for clamping the matrix-blank against the top gage and end gage, substantially as described.

6. In a matrix-cutting machine, a matrix-holder having independently-adjustable side gages an adjustable top gage and an adjustable end gage for the matrix-blank, and means for clamping the matrix-blank against the top gage and end gage, substantially as described.

7. In a matrix-cutting machine, a matrix-holder having independently-adjustable side gages and a top gage for the matrix-blank, and a vertical gage against which the matrix-blank is set up, and a clamp adapted to force the matrix-blank vertically against the lower face of the top gage and horizontally against the vertical gage, substantially as described.

8. In a matrix-cutting machine, a matrix-holder having a top gage for the matrix-blank, and a vertical gage against which the matrix-blank is set up, and a wedge-plate adapted to be forced under the matrix-blank and toward the vertical gage, substantially as described.

9. A matrix-holder having the base *k* provided with side flanges *k'*, *k²*, adjusting-screws 83, 84 in said flanges, gage-blocks 86, 87, a top gage, and adjustable end gage 91, substantially as described.

10. A matrix-holder having the base *k* provided with side flanges *k'*, *k²*, adjusting-screws 83, 84 in said flanges, gage-blocks 86, 87, an adjustable top gage, and adjustable end gage 91, substantially as described.

11. A matrix-holder having the base *k* provided with side flanges *k'*, *k²*, adjusting-screws 83, 84 in said flanges, gage-blocks 86, 87, adjustable top gages 88, 89, and adjustable end gage 91, substantially as described.

12. A matrix-holder having the base *k* provided with side flanges *k'*, *k²*, adjusting-screws 83, 84 in said flanges, gage-blocks 86, 87, adjustable top gages 88, 89, adjustable end gage 91, and wedge-plate 85 on the base *k*, substantially as described.

13. A matrix-holder having a top gage and a vertical gage for one edge of the matrix-blank, and wedge-plate 85 adapted to move toward the vertical gage below the matrix-blank, substantially as described.

14. A matrix-holder having a top gage and an adjustable end gage 91, gage-block 92 behind the gage 91, and wedge-plate 85 moving toward the gage 91, substantially as described.

15. The combination with standards B, of vertically-adjustable block J supported on said standards, vertically-adjustable block 50 set into block J, and a work-carrying block sliding into a groove in block 50, substantially as described.

16. The combination with block 50 having a groove and bolt 54 having head 55 entering said groove, of a work-carrying block sliding in said groove and having a T-groove 51 receiving head 55, and means for adjusting bolt 54 to lock the work-carrying block down on block 50, substantially as described.

17. The combination with block 50, of screw-threaded sleeve 70 secured thereto, adjusting-bolt 72 entering said sleeve, a micrometer-disk for rotating said bolt in the sleeve to move the latter, and screw-sleeve 77 inclosing the bolt 72 for moving the bolt longitudinally with the disk and sleeve, substantially as described.

18. The combination with block 50, of screw-threaded sleeve 70 secured thereto, adjusting-bolt 72 entering said sleeve, a micrometer-disk for rotating said bolt, screw-sleeve 77 for moving the bolt longitudinally with the disk and sleeve, and nut 79 on the bolt outside the sleeve 77, substantially as described.

19. The combination with a swinging tracing-frame, and pivots 1, 1, and 2, 2, by which the frame is mounted, of a tracer for controlling the frame, a follower actuated by the frame, means for adjusting one set of said pivots independently of the other set and of the follower to vary one component of the tracing movement relatively to the other component in transmission to the follower, and a pattern-holder adjustable angularly in the plane of tracing movement, substantially as set forth.

20. The combination with a swinging tracing-frame, and pivots 1, 1, and 2, 2, by which the frame is mounted, of a tracer for controlling the frame, a follower actuated by the frame, means for adjusting one set of said pivots independently of the other set and of the follower to vary one component of the tracing movement relatively to the other component in transmission to the follower, and a pattern-holder and work-holder adjustable angularly in the plane of tracing movement, substantially as set forth.

21. The combination with swinging tracing-frame F, and pivots 1, 1, and 2, 2, by which the frame is suspended above the follower, of a follower actuated by the frame, and means for adjusting one set of said pivots vertically independently of the other set and of the follower to vary one component of the tracing movement relatively to the other component in transmission to the follower, and a pattern-holder adjustable angularly in the plane of tracing movement, substantially as described.

22. The combination with swinging tracing-frame F, pivots 1, 1, and 2, 2, by which the frame is suspended, and a follower actuated by the frame, of means for adjusting one set of said pivots vertically independently of the other set and of the follower to vary one component of the tracing movement relatively to the other component in transmission to the follower, and a pattern-holder adjustable angularly in the plane of tracing movement and a tracer having its tracing portion oblong in cross-section with its two dimensions such as to compensate for the difference between the ratios in which the two components of the tracing movement are modified, substantially as described.

23. The combination with a tracer, a pattern, a universal joint having axes movable relatively to each other a swinging frame suspended from said universal joint and actuated by the tracing movement, and a follower actuated by said swinging frame to reproduce a pattern, of means for varying the relative angular position of the frame and pattern in planes parallel with the plane of tracing movement, and means for adjusting the universal joint to vary the ratios in which the components of the tracing movement are transmitted from the tracer to the follower, to produce back-sloped or italicized designs, substantially as described.

24. The combination with a tracer, a pattern, a universal joint having axes movable relatively to each other a swinging frame suspended from said universal joint and actuated by the tracing movement, and a follower actuated by said swinging frame to reproduce a pattern, of means for adjusting the work and the pattern angularly to the frame in planes parallel with the plane of tracing movement, and means for adjusting the universal joint to vary the ratios in which the components of the tracing movement are transmitted from the tracer to the follower, to produce back-sloped or italicized designs, substantially as described.

25. The combination with a tracer, a universal joint having axes movable relatively to each other a swinging frame suspended from said universal joint and actuated by the tracing movement, and a follower actuated by said swinging frame to reproduce a pattern, of a pattern-holder rotatable in a plane parallel with the plane of tracing movement, and means for adjusting the universal joint to vary the ratios in which the components of the tracing movement are transmitted from the tracer to the follower, to produce back-sloped or italicized designs, substantially as described.

26. The combination with a tracer, a universal joint having axes movable relatively to each other a swinging frame suspended from said universal joint and actuated by the tracing movement, and a follower actuated by said swinging frame to reproduce a pattern, of means for adjusting the work and the pattern angularly to the frame in the plane of tracing movement including a work-holder and a pattern-holder, both rotatable in planes parallel with the plane of tracing movement, and means for adjusting the universal joint to vary the ratios in which the components of the tracing movement are transmitted from the tracer to the follower, to produce back-sloped or italicized designs, substantially as described.

27. The combination with a support having a circular unthreaded opening with an enlarged outer threaded portion, of pivot-screw 1 therein having a reduced unthreaded pivot portion and enlarged screw-head, and set-screw 1ª engaging the unthreaded portion of the pivot-screw 1, substantially as described.

809,549. WIRE-FENCE LOCK. GOTTLOB W. BEUTELL, San Diego, Cal. Filed Feb. 16, 1905. Serial No. 245,986.

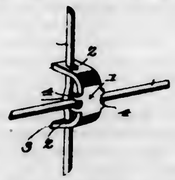

Claim.—1. As a new article of manufacture, a lock for crossed wires comprising parallel arms separated by a space greater than the thickness of the member to be spanned and provided with alined openings exceeding the diameter of the member to be received therethrough, a back connecting the arms at one end of the device and the other ends of the arms being free and beveled, said arms capable of being bent at their connection with the back, and a seat carried by the back and opening in the direction of the open side of the lock.

2. A substantially U-shaped metallic lock for crossed wires having its arms separated by a space exceeding the diameter of the wire to be spanned and provided with alined openings exceeding the diameter of the wire to be received therethrough, the free ends of the arms being beveled upon their inner sides, and spaced projections carried by each edge of the back and extending toward the open side of the device, each pair of projections being spaced to snugly receive a wire, and the arms capable of being bent apart upon their connections with the back.

809,550. PROCESS OF MAKING BORIC ACID, &c. HENRY BLUMENAU, Jr., Daggett, Cal., assignor to American Borax Company, Pittsburg, Pa., a Corporation of California. Filed Mar. 24, 1905. Serial No. 251,207.

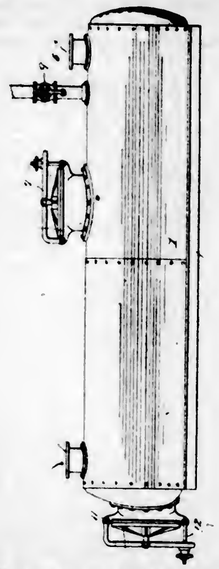

Claim.—The process of producing boric acid, borax, or the like, consisting in generating sulfur dioxid continuously by burning sulfur in a vessel, supplying said vessel continuously with air under pressure, introducing sulfur into the vessel without interrupting the process, temporarily diverting a portion of the sulfur dioxid to the outside atmosphere during the introduction of the sulfur, leading the sulfur-dioxid gas into the presence of ore of the character described, which is finely divided and mixed with water in suitable proportions, resulting in decomposing the ore and freeing boric acid or the like, which is taken up by the water in solution, and separating the product by evaporation.

809,551. UMBRELLA ATTACHMENT. MARGARET A. BRUNNER, New York, N. Y. Filed Mar. 20, 1905. Serial No. 251,165.

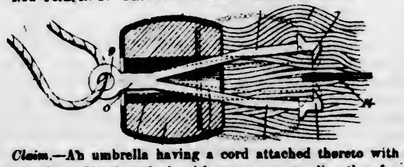

Claim.—A'n umbrella having a cord attached thereto with a tassel, said tassel having a body with streamers extending therefrom, and a fastening device passing through said body and concealed by said streamers.

809,552. WOODWORKING-MACHINE. JOHN BUFFELEN, Tacoma, Wash. Filed Sept. 20, 1904. Serial No. 224,481.

Claim.—1. In a woodworking-machine, the combination of a fixed cutting-tool, an adjustable track, a carriage adapted to hold the wood to be worked mounted on said track, and adjustable legs supporting each end of said carriage upon said track whereby the position of the work on the carriage relatively to the cutting-tool can be varied; with means for rotating the work as it travels.

2. In a woodworking-machine, the combination of a fixed cutting-tool, an adjustable track, a carriage supported at its ends by said track and carrying the object to be operated on, a feed-screw beside the track, a traveling nut on said screw, and a pin-and-slot connection between said carriage and said traveling nut whereby said carriage is forced along said track irrespective of the adjustment of said track.

3. In a woodworking-machine, the combination of a fixed cut-

17. The combination of the base, vertically-adjustable screw-

screws attached to the sides thereof

3. In a woodworking-machine, the combination of a fixed cutting-tool, an adjustable track, a carriage adjustably supported at its ends upon and relatively to said track, a feed-screw and traveling nut thereon, and a pin-and-slot connection between said carriage and said traveling nut whereby said carriage is moved along said track irrespective of the adjustment of said track and of said carriage; with means for rotating the work as it travels.

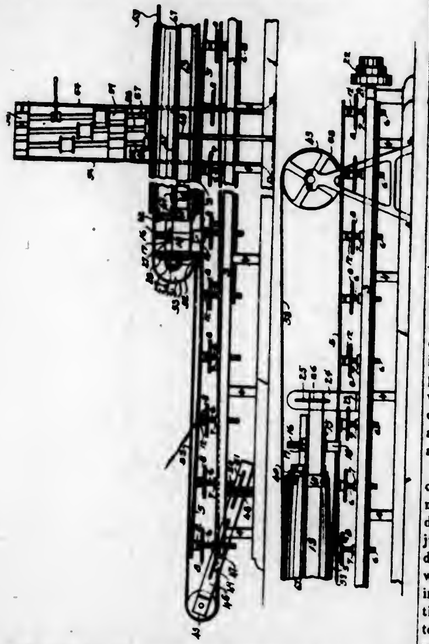

4. In a woodworking-machine, the combination of a fixed tool, an adjustable track, a carriage supported at its ends by said track, a feed-screw beside the track, a traveling nut on said screw, an upwardly-extending arm secured to said traveling nut and having a slot therein, and a roller-pin secured to said carriage and engaging in said slot whereby the longitudinal motion of said traveling nut is communicated to said carriage irrespective of the vertical movements of the carriage.

5. In a woodworking-machine, the combination of a fixed cutting-tool, a pair of parallel bendable rails, a series of screw-posts for bending and adjustably supporting each of said rails, operative means connecting the screw-posts in one series with the corresponding opposite screw-posts in the other series whereby the opposite posts may be simultaneously and correspondingly adjusted, and a traveling carriage adapted to hold the wood to be worked and being supported at each end by said rails; with means for rotating the work as it travels.

6. In a woodworking-machine, the combination of a carriage, rotatably mounted face-plates thereon adapted to hold an article to be turned, a knife-holder on the carriage adjacent said face-plates and movable radially thereof, a knife mounted on said holder, a spring adapted to move the holder and withdraw said knife from the article to be turned, and means adapted to engage the holder and move the knife into contact with the article against the action of said spring as the carriage moves, with means for rotating the work as it travels, substantially as described.

7. In a machine for turning columns, the combination of a track, means for varying it vertically, a carriage, adjustable screws supporting and guiding the carriage on the track, and means on said carriage for engaging and supporting the column to be operated upon at its opposite ends with means for rotating the work as it travels.

8. In a machine for turning columns, the combination of a track, means for varying it vertically, a carriage, adjustable screws supporting and guiding the carriage on the track, and means on said carriage for engaging and supporting the column to be operated upon at its opposite ends: with means for rotating the column on the carriage during its travel, means for moving said carriage along said track, and a rotating cutting-tool adjacent to the path of the carriage and stationary relative thereto, adapted to operate upon the column as the latter moves therepast.

9. In combination, a base, a horizontally-disposed track thereon, means for vertically adjusting the track relative to the base, a horizontally-disposed carriage provided with vertically-adjustable rollers running upon said track; and rotatable face-plates on said carriage, adapted to support the object to be operated upon; with a feed-screw, a traveling nut thereon, and a loose connection between said nut and the carriage, for reciprocating the carriage on the track irrespective of the adjustment thereof, and a cutter adapted to operate on the object as it is moved therepast, substantially as described.

10. In a machine for turning wooden columns, the combination of a base, a horizontally-arranged track supported on said base, means for adjusting the track vertically relative to the base, a horizontally-disposed column-supporting carriage provided with rollers mounted on and guided by said track, and independently-adjustable column-supporting devices or heads on said carriage between which the object to be operated on is mounted; with a rotary cutting-tool adjacent to the carriage and adapted to operate upon the column as it is moved therepast, and means for rotating said column as it is moved past the cutter, substantially as described.

11. In a machine for turning columns, the combination of a base, a track mounted thereon, means for adjusting all or part of the track, a carriage supported on and guided by said track, rotatable devices on said carriage for supporting the column to be operated upon at its opposite ends, means for varying the relative height of said supporting devices, and means for moving said carriage along said track; with a stationary series of rotary cutting-tools adjacent to the path of the carriage and adapted to successively operate upon the column as the latter is moved therepast, and means for rotating said column as it is moved past the cutter, substantially as described.

12. In a machine for turning wooden columns, the combination of a base, a horizontally-arranged track supported on said base, means for vertically bending or undulating the track, a horizontally-disposed carriage, adjustable screw-legs provided with rollers adjustably supporting the carriage on said track, column-supporting devices on said carriage adjustable one toward the other and between which the column is mounted, and means for rotating said supporting devices during the linear movement of the carriage; with a cutting-tool adjacent to the path of the carriage and stationary relative to the base adapted to operate upon the columns as it is moved therepast, substantially as described.

13. In a machine for turning wooden columns, the combination of a base, a horizontally-arranged vertically-bendable track supported on said base, a horizontally-disposed carriage provided with adjustable rollers mounted on and guided by said track, and rotatable supporting devices on said carriage between which the object to be operated on is mounted; with a horizontally-arranged feed-screw, and a traveling nut thereon having a sliding engagement with the carriage; and a cutting-tool adjacent to the carriage adapted to operate upon the objects, substantially as described.

14. In combination, a base, a horizontally-disposed track thereon, adjustable screws for supporting and vertically adjusting the track relative to the base, a horizontally-disposed carriage provided with vertically-adjustable rollers running upon said track; rotatable face-plates on said carriage, adapted to support the object to be operated upon; a rotary cutting-tool mounted beside the path of the carriage, and adapted to operate upon the object on the carriage as it moves therepast and means for rotating the work as it travels, substantially as described.

15. In combination, a base, a horizontally-disposed track thereon, means for adjusting the track relative to the base, a horizontally-disposed carriage moving upon said track; rotatable face-plates on said carriage adapted to support the object to be operated upon, a pulley mounted on the carriage, gearing between said pulley and one of the face-plates, pulleys at opposite ends of the frame, and an endless belt or rope running over said pulleys to impart rotation to the object, a cutting-tool mounted beside the path of the carriage, and means for rotating said tool to operate upon the object on the carriage as it is moved therepast, substantially as described.

16. In combination, a base, a horizontally-disposed track thereon, screws for supporting and vertically adjusting the track relative to the base, a horizontally-disposed carriage running upon said track; rotatable face-plates on said carriage adapted to support the object to be operated upon; means for reciprocating the carriage on the track, a cutting-tool mounted in a frame beside the path of the carriage, and means for rotating said tool to operate upon the object on the carriage as it is moved therepast, substantially as described.

17. The combination of the base, vertically-adjustable screws attached to the sides thereof, a vertically-bendable track supported on said screws; a reciprocating carriage provided with vertically-adjustable carrying-rollers mounted on said track; rotatable face-plates at the ends of the carriage adapted to carry the column to be operated on; a pulley mounted on said carriage, gearing between the pulley and the adjacent face-plate; fixed and adjustable pulleys at opposite ends of the base-frame, an endless rope running over said pulleys and that on the carriage, a driven pulley for driving said rope; and means for reciprocating said carriage, substantially as described.

18. In combination, a base, a horizontally-disposed track thereon, means for vertically adjusting the track, a horizontally-disposed carriage running upon said track; rotatable heads or face-plates on said carriage adapted to support the object to be operated upon, a pulley mounted on the carriage, gearing between said pulley and one of the face-plates, pulleys at opposite ends of the frame, and an endless belt or rope running over said stationary and moving pulleys to impart rotation to the object, a cutting-tool mounted beside the path of the carriage adapted to operate upon the object on the carriage as it is moved therepast, substantially as described.

19. In combination, a base, a horizontally-disposed track thereon, adjustable screws for supporting and vertically adjusting the track relative to the base, a horizontally-disposed carriage provided with vertically-adjustable rollers running upon said track; rotatable heads or face-plates on said carriage, adapted to support the object to be operated upon, a pulley mounted on the carriage, gearing between said pulley and one of the face-plates, pulleys at opposite ends of the frame, and an endless belt or rope running over said stationary and moving pulleys to impart rotation to the object, a series of cutting-tools mounted in a frame beside the path of the carriage and fixed relatively thereto, and means for rotating said tools to operate upon the object on the carriage as it is moved therepast, substantially as described.

20. In combination, a base, a horizontally-disposed track thereon, adjustable screws for supporting and vertically adjusting the track relative to the base, a horizontally-disposed carriage provided with vertically-adjustable rollers running upon said track; rotatable heads or face-plates on said carriage, adapted to support the object to be operated upon, a feed-screw, a traveling nut thereon, and loose connections between said nut and the carriage for reciprocating the carriage on the track, a series of cutting-tools mounted in a frame beside the path of the carriage and fixed relatively thereto, and means for rotating said tools to operate upon the object on the carriage as it is moved therepast, substantially as described.

21. In combination, a base, a horizontally-disposed track thereon, adjustable screws for supporting and vertically adjusting the track relative to the base, a horizontally-disposed carriage provided with vertically-adjustable rollers running upon said track; rotatable heads or face-plates on said carriage, adapted to support the object to be operated upon, a feed-screw, a traveling nut thereon, and loose connections between said nut and the carriage for reciprocating the carriage on the track; a cutting-tool beside the path of the carriage adapted to operate upon the object on the carriage as it is moved therepast, substantially as described.

22. In combination, a base, a horizontally-disposed track thereon, adjustable screws for supporting and vertically adjusting the track relative to the base, a horizontally-disposed carriage provided with vertically-adjustable rollers running upon said track; rotatable heads or face-plates on said carriage, adapted to support the object to be operated upon, a pulley mounted on the carriage, gearing between said pulley and one of the face-plates, pulleys at opposite ends of the frame, and an endless belt or rope running over said stationary and moving pulleys to impart rotation to the object; means for reciprocating the carriage on the track; cutting-tools mounted in a frame beside the path of the carriage and fixed relatively thereto, and means for rotating said tools to operate upon the object on the carriage as it is moved therepast, substantially as described.

23. The combination of the base, vertically-adjustable screws attached to the sides thereof, a vertically-bendable track supported on said screws; a reciprocating carriage provided with vertically-adjustable carrying-rollers mounted on said tracks; rotatable face-plates at the ends of the carriage adapted to carry the column to be operated on; means for reciprocating said carriage comprising a longitudinal screw-shaft in the frame, a traveling nut thereon, a slidable connection between said nut and the carriage, and means for rotating said screw; with a rotatable cutter adjacent to the path of the carriage adapted to operate upon the object mounted on the carriage as it moves therepast.

24. The combination of the base, opposite vertically-adjustable screws attached to the sides thereof, opposite vertically-bendable tracks supported on said screws; a reciprocating carriage provided with vertically-adjustable carrying-rollers mounted on said tracks; rotatable face-plates at the ends of the carriage adapted to carry the column to be operated on; a pulley mounted on said carriage, gearing between the pulley and the adjacent face-plate; fixed and adjustable pulleys at opposite ends of the base-frame, and an endless rope running over said pulleys and that on the carriage; with a longitudinal screw-shaft in the frame, a traveling nut thereon, a slidable connection between said nut and the carriage, and means for rotating said screw; and rotatable cutters adapted to operate upon the object mounted on the carriage as it moves therepast.

25. In a woodworking-machine, the combination of a fixed cutting-tool, a traveling carriage adapted to hold the wood to be worked, means for rotating said wood in said carriage, an adjustable track for said carriage, and adjustable legs supporting each end of said carriage upon said track whereby the position of the object on the carriage may be varied.

26. In a woodworking-machine, the combination of a longitudinally-movable carriage rotatably carrying the article to be turned, a longitudinally-adjustable knife-holder secured to said carriage, a knife slidably mounted thereon, a spring adapted to withdraw said knife from the article to be turned, a flat spring secured to said carriage and adapted to engage said knife and an adjustable stationary arm adapted to press forward said flat spring and said knife as said carriage travels.

27. In a woodworking-machine, the combination of a cutting-tool, a pattern-track, a carriage adapted to hold the work mounted on said track, means for adjusting the carriage upon the track to vary the position of the work relatively to the cutting-tool, and means for rotating the work as it is moved past the cutting-tool.

28. In a woodworking-machine, the combination of a fixed cutting-tool, a pattern-track, a work-supporting carriage mounted on said track, means for adjusting the ends of the carriage relatively to the track so as to vary the position of the work relatively to the tool; means for moving the carriage on the track, and means for rotating the work on the carriage as the latter travels.

29. In combination, a base, a horizontally-disposed pattern-track thereon, a horizontally-disposed carriage moving upon said track, rotatable face-plates on said carriage adapted to support the object to be operated upon, a pulley mounted on the carriage, gearing between the pulley and one of the face-plates, pulleys at opposite ends of the frame, and an endless belt or rope running over said pulleys to impart rotation to the object as the carriage travels, and a cutter beside the path of the carriage adapted to operate on the object as it moves therepast, substantially as described.

30. In a woodworking-machine, the combination of a fixed cutting-tool, a pattern-track, a carriage adapted to hold the object to be worked, mounted on said track, means for moving the carriage on the track, and means for rotating the work on the carriage as it travels; with means mounted on and traveling with the carriage for annularly grooving the object, substantially as set forth

31. In a machine for making columns, the combination of a pattern-track, a carriage movable thereon; heads on the carriage for supporting the column, means for moving the carriage on the track, and means for rotating the column as it travels; with a cutter beside the track of the carriage adapted to operate on the column as it moves therepast, and a cutter mounted on the carriage adapted to groove the column while it travels, substantially as described.

809,553. **HORSESHOE.** CHARLES A. CAMPBELL and JAMES REAGAN, Philadelphia, Pa. Filed Jan. 16, 1905. Serial No. 241,193.

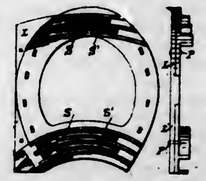

Claim.—1. A horseshoe provided on the lower face, at the toe and heel, with a series of curved calks extending entirely across the shoe from side to side, and spaced to allow channels or grooves therebetween the grooves or channels being made narrower, in cross-section, at the bottom than at the top, to permit sand or dirt to enter the decreased entrance and become packed within the same,

and to leave more of the roughened surface exposed as the calks wear away, substantially as specified.

2. In a horseshoe provided on the edge at the toe and heel, with projections extending laterally, in combination with grooves and channels and interlocking spurs and further secured to the shoe by means of rivets, substantially as shown and described.

3. A horseshoe provided with curved calks or cleats forming grooves or channels between said calks, and a series of elongated slots made through the body of the shoe at the bottom of each groove, to retain dirt, sand or grit, to prevent slipping, substantially as shown and set forth.

809,554. MACHINE FOR MOLDING ARTICLES FROM PLASTIC MATERIALS. HENRY W. H. COLE, Brooklyn, N. Y., assignor to The Briquetting Company, New York, N. Y., a Corporation of New Jersey. Filed Apr. 30, 1904. Serial No. 206,657.

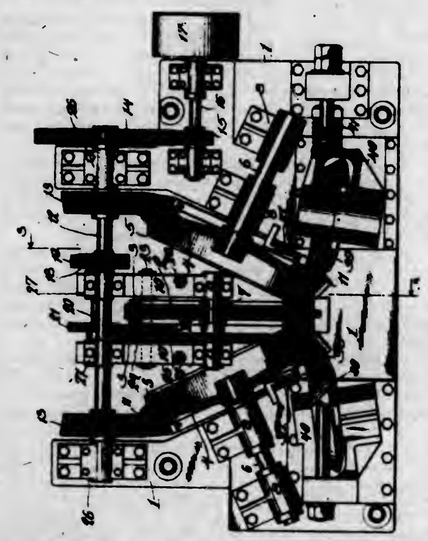

Claim.—1. In a machine of the class described, the combination with an intermediate mold-wheel having oppositely-disposed independent lateral mold-recesses, of two mold-wheels arranged upon opposite sides of said intermediate wheel, and having lateral mold-recesses in register with the respective mold-recesses of the said intermediate mold-wheel, and means for driving the said mold-wheels and retaining their respective mold-recesses in register.

2. In a machine of the class described, the combination with an intermediate mold-wheel having two oppositely-disposed lateral molding-faces, of two mold-wheels arranged upon opposite sides of said intermediate wheel, and having lateral molding-faces in register with the molding-faces of the said intermediate mold-wheel, and means for driving the said mold-wheels, including gear-wheels for engaging the peripheries of the two said outer mold-wheels.

3. In a machine of the class described, the combination with an intermediate mold-wheel having two oppositely-disposed lateral molding-faces, of two mold-wheels arranged upon opposite sides of said intermediate wheel, and having lateral molding-faces in register with the molding-faces of the said intermediate mold-wheel, yielding pressure-rolls engaging the outer mold-wheels opposite the pressure-point, and means for driving the said mold-wheels.

4. In a machine of the class described, the combination with an intermediate mold-wheel having two oppositely-disposed lateral molding-faces, of two mold-wheels arranged upon opposite sides of said intermediate wheel, and having lateral molding-faces in register with the mold-faces of the said intermediate mold-wheel, said outer mold-wheels arranged to slide longitudinally in their bearings, spring pressure-rolls engaging said mold-wheels opposite the pressure-point and resisting said longitudinal movement, and means for driving said mold-wheels.

5. In a machine of the class described, the combination with a plurality of mold-wheels having lateral molding-faces in register with each other, and shafts upon which said mold-wheels are mounted, the axes of rotation of said wheels arranged obliquely to each other, of bearings rotatably supporting the shafts of said mold-wheels and permitting limited longitudinal movement thereof, spring pressure-rolls engaging said mold-wheels, substantially opposite the pressure-point, and means for driving the said mold-wheels.

6. In a machine of the class described, the combination with a plurality of mold-wheels having lateral molding-faces in register with each other, the axes of rotation of said wheels arranged obliquely to each other, said wheels having outwardly-projecting peripheral teeth, of driving-wheels therefor engaging said peripheral teeth, and a single shaft upon which both said driving-wheels are mounted.

7. A machine for the purpose specified, having an intermediate mold-wheel with two lateral molding-faces, each lying in a plane at right angles to the axis of the wheel, two similar oblique mold-wheels situated at the respective opposite sides of said intermediate wheel, each of said oblique wheels having a conical, bevel molding-face in tangential contact with a lateral face on said intermediate wheel, the molds, and means for rotating said mold-wheels.

8. A machine for the purpose specified, having oblique mold-wheels 4 and an intermediate mold-wheel 2, said wheels carrying recessed molds in their molding-faces and having in each mold-recess an automatic ejector for the briquets.

9. A machine for the purpose specified having two oblique mold-wheels, and an intermediate mold-wheel, said wheels carrying recessed molds in their molding-faces, and having also means for driving said wheels in unison from their peripheries and means for pressing together their molding-faces.

809,555. RAIL AND TIE FASTENER. ALFRED S. DERIEMER, Reading, Pa. Filed Sept. 5, 1905. Serial No. 277,088.

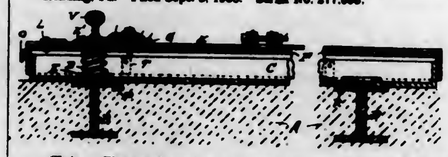

Claim.—The combination of a railway-tie comprising an approximately rectangular box, a cover capable of vertical movement, springs interposed between the vertical walls of said box and cover, a cup-like receptacle formed in the base of said box near either end, a coiled spring located in each of said receptacles, a clamping device formed of two plates, one of which is permanently secured to the tie and the other movably secured to the top of said permanent plate, said plates having serrated meeting faces, bars passing under said clamping-plates and under the rail and formed with a hook at their outer ends adapted to engage the base of the rail and lugs formed on their inner ends, a bolt passing through the lugs on the two oppositely-disposed bars and adapted to draw them together, with metal I-shaped beams on which the ties rest and to which they are removably secured, and a bed of concrete in which said beams are completely embedded, leaving only their upper surfaces exposed.

809,556. DIAL-LOCK. LOUIS A. DEUBEL, Chicago, Ill. Filed Oct. 27, 1904. Serial No. 230,188.

Claim.—1. In a dial-lock, the combination with a dial-carrying plate, of rotary dials disposed upon the plate and having stems passing through the plate and provided with lugs, separable elements having slots adapted for the passage of the said stems and lugs whereby said elements are locked together, the said plate having hinge-plates at each end, and one of said hinge-plates being secured to one of said separable elements, and means arranged to cover the edges of both hinge-plates when said dial-carrying plate is in locked position.

2. In a dial-lock, the combination with a dial-carrying plate, of rotary dials disposed upon the plate and having stems passing through the plate and provided with lugs, separable elements having slots adapted for the passage of the said stems and lugs whereby said elements are locked together, the said plate having inwardly-extending hinge-plates at each end, and one of said hinge-plates being secured to one of said separable elements, the said dial-carrying plates having aprons arranged, when said plate is in locked position, to cover the edges of both hinge-plates.

809,557. LOOSE-LEAF BINDER. ERNEST G. DUMAS, Lowell, Mass. Filed Sept. 11, 1905. Serial No. 277,886.

Claim.—1. In a loose-leaf binder, a lower cover comprising a binder member, posts arising from the lower binder member, an upper cover comprising a binder member, a recess in the upper binder member, a plate secured in the recess, orifices in the upper binder member and in the plate for the passage of said posts, fixed jaws, and levers forming clamps therewith about the posts, springs at the ends of the levers, set-screws bearing against the levers, and depressions in the upper binder member to receive the set-screws.

2. In a loose-leaf binder, a plate, a fixed clamp-jaw, a pivoted clamp-jaw cooperating therewith, a spring carried by the lever, and a set-screw adapted to operate the lever, combined with a binder member recessed for the plate with depressions for the set-screws, and orifices for the posts, a lower binder member, and posts rising therefrom as described.

3. In a loose-leaf binder, a lower cover, and posts rising therefrom, combined with an upper cover including a clamp-plate with orifices for the posts, clamp-jaws fixed thereto, clamp-jaws pivoted thereto, set-screws, and half-elliptic springs adapted to operate the pivoted jaws, rubber caps for the posts, and a binder member recessed for the plate, cut away for the set-screws and pierced for the posts as described.

4. In a loose-leaf binder, an upper binder member and a lower binder member; posts arising from the lower binder member; openings in said upper binder member through which said posts pass; and means contained in the upper binder member for clamping said binder members comprising for each post, a fixed jaw, a lever-jaw pivoted at one end near said post, a half-elliptic spring carried by the other end of the pivoted jaw, a set-screw bearing against the free end of the pivoted jaw in opposition to the half-elliptic spring, and a depression in the upper binder member to receive said set-screw.

5. In a loose-leaf binder; a lower binder member; a plurality of posts arising therefrom; a complementary upper binder member comprising a recess for a plate, openings for the passage of the posts, and depressions for set-screws; combined with a plate fitted into the recess, a plurality of fixed jaws arranged to adjoin said openings and to conform to the surface of the posts, a plurality of lever-jaws pivoted at one end near said openings and shaped to conform to the surface of the posts and with an elongated free arm, a plurality of half-elliptic springs one centrally carried by the end of the long arm of each pivoted jaw whereby its ends bear against the side of the recess, a plurality of set-screws carried by said plate and adapted to bear against the side of the long arm of the pivoted jaw opposite to the half-elliptic springs; and rubber caps for said posts as described.

809,558. POULTRY-SHIPPING COOP. FRANK M. GAULT, Oklahoma, Okla. Filed Sept. 2, 1904. Serial No. 223,266.

Claim.—As an article of manufacture, a rectangular, inclosed shipping-coop A, comprising a floor *c*, sills *a* and *a'*, supporting the floor, vertical rods *e* inserted into the sills *a* and *a'*, by right-angled projections, for side and end walls, and bent at their upper ends to form a roof G, having a central opening B, a door D, provided with a fastening device E, substantially as described.

809,559. CRATE FOR TRANSPORTING POULTRY. FRANK M. GAULT, Oklahoma, Okla. Filed Apr. 5, 1905. Serial No. 253,963.

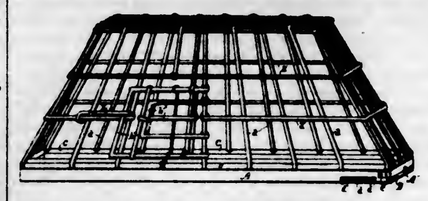

Claim.—1. A crate for transporting poultry, comprising an upper part or cage, formed of upwardly and inwardly inclined wire loops, having their feet removably secured in the sills, and a divisional and sectional base, whereby the respective parts may be detached, collected and shipped in separate packages, substantially as described.

2. In a crate for transporting poultry, the combination with a divisional and sectional base, comprising the detachable sills A A', the removable floor-pieces B, provided with staples *h h*, of an inwardly-tapering cage formed of wire loops *a* encircled with rib-wires *a'* and provided with a suitable door substantially as described.

3. In a transportation poultry-coop consisting of a tapering cage portion, its base being secured to sills providing a supporting-seat for the sliding removable bottom; the locking-pins *d' d'* secured in the ends of the longitudinal springs *d*, the said springs being firmly secured to the outer surface of the side sills, substantially as described and for the purposes set forth.

809,560. COMBINED SPARKER AND GOVERNOR FOR GAS-ENGINES. DAVID F. GRAHAM and FRANK A. FOX, Stamford, Conn., assignors, by mesne assignments, to The Bissbuth Horseless Vehicle Company, Middletown, Conn., a Corporation of Maine. Filed Mar. 11, 1903. Serial No. 147,239.

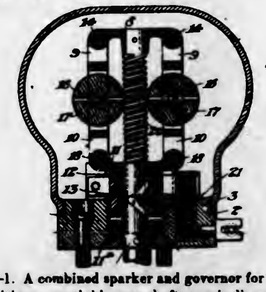

Claim.—1. A combined sparker and governor for explosive-engines, comprising a revoluble cam-shaft; a spirally-grooved sleeve mounted upon said shaft; a cam surrounding said sleeve and provided with projections entering the grooves of the sleeve and having an internally-threaded recess at its upper end; ignition-contacts operated by said cam; and a governor comprising an upper head fixed to said shaft, a lower movable head having an externally-threaded extension engaging the threaded recess in the cam and screwed partially home, toggle-levers connecting said heads, and weights on said levers, whereby the cam is given both a reciprocatory and a rotary movement, substantially as set forth.

2. A combined sparker and governor for explosive-engines, comprising a revoluble cam-shaft, a sleeve mounted upon said shaft and having oppositely-located exterior spiral grooves, a cam surrounding said sleeve and provided with interiorly-projecting pins entering said grooves, ignition-contacts operated by said cam, a movable governor-head connected to said cam by a threaded connection screwed partially home, a stationary governor-head carried by said shaft, and a centrifugally-acting connection between the two heads, for the purpose set forth.

3. A combined sparker and governor for explosive-engines, comprising a revoluble cam-shaft, a sleeve mounted upon said shaft

and having exterior spiral grooves, a cam surrounding said sleeve and provided with interiorly-projecting pins entering said grooves, ignition-contacts operated by said cam, a movable governor-head connected to said cam by a threaded connection screwed partially home, a stationary governor-head secured on said shaft, weighted toggle-arms connecting the two heads, and a coil-spring on said shaft tending to move the movable governor-head away from the stationary governor-head, whereby the cam is given both a reciprocatory and a rotary movement on said shaft, substantially as set forth.

4. A combined sparker and governor for explosive-engines, comprising a base, contact-springs secured to said base, ignition-contacts for said springs, contact-rollers carried by said springs, a revoluble cam-shaft extending through said base, a stationary governor-head carried by said shaft, a spirally-grooved sleeve mounted on said shaft, a cam surrounding said sleeve between said contact-springs and having projections entering the grooves of the sleeve, a movable governor-head connected to said cam by a threaded connection screwed partially home, and pivotal connections between said governor-heads, for the purpose set forth.

5. A combined sparker and governor for explosive-engines, comprising a revoluble cam-shaft, a spirally-grooved sleeve mounted on said shaft, a cam surrounding said sleeve and provided with pins entering the grooves of the sleeve and also provided with diametrically opposite cam-surfaces, a contact-spring on each side of said cam, rollers carried by said springs, contacts for the free ends of said springs, and a movable governor-head connected to said cam by a threaded connection screwed partially home, whereby said cam will be advanced and rotated to spread said springs apart and against their contacts, substantially as set forth.

809,561. **MECHANISM FOR CONSTRUCTING FLEXIBLE METAL TUBES AND ARMORING FLEXIBLE HOSE OR OTHER TUBES.** EDWIN T. GREENFIELD, Monticello, N. Y. Filed Dec. 3, 1904. Serial No. 235,309.

Claim.—1. A machine for forming flexible metal tubes or armoring flexible tubes, such as hose, with spirally-wound strips of metal, embracing means for forming a strengthening corrugation or bead in the direction of the length of the strips, and additional means for giving to said strips spiral tubular conformation.

2. A machine for forming flexible tubes from strips of metal embracing means for giving to said strips strengthening corrugations or beads in the direction of their length; in combination with means for giving them spiral tubular conformation, and additional means for guiding the strips from the first-named means to and through the latter.

3. A machine for forming flexible tubes from strips of metal, embracing means for giving to said strips a concave or convex cross-section and simultaneously producing a longitudinal strengthening corrugation or bead therein; in combination with additional means for giving to said strips spiral tubular conformation.

4. A machine for forming flexible tubes from a strip of metal, embracing means for simultaneously giving to said strip a concave or a convex cross-section and a longitudinal strengthening corrugation or bead; in combination with means for forming the same into successive tubular spirals and additional means for guiding the strip or strips continuously to the tube-forming means.

5. A machine for forming flexible tubes from strips of metal, embracing means for giving to two such strips respectively convex and concave cross-sections and an additional longitudinal strengthening corrugation or bead in each; in combination with means for causing said strips to assume a conjoint spiral relation such that the concave and convex spirals interlock.

6. In a machine for forming tubes from strips of metal a screw-threaded forming-die; in combination with a housing or guideway for giving to the strip an initial tubular conformation on entering the die, and additional means for forcing the strip endwise through the guideway and the die.

7. In a machine for forming tubes from a strip of metal a forming-die screw-threaded interiorly at such pitch as will give the desired spiral convolutions to the strip; in combination with a housing or guideway adapted with the die to give to the strip an initial tubular and spiral conformation; together with means for forcing the strip endwise through the guideway and the screw-threaded die.

8. In a machine for forming tubes from a strip of metal, means for giving to the strip a convex or concave cross-section and for simultaneously advancing or feeding the same forward; in combination with a forming-die screw-threaded interiorly with threads which conform in cross-section with the convex or concave formation of the strip; together with a housing or guideway located concentric with the first thread of the die and adapted to give to the strip its initial tubular and spiral conformation.

9. In a machine for forming tubes from strips of metal, means for advancing or feeding the same forward endwise; in combination with a forming-die screw-threaded internally with threads which conform to the shape and width of the strip and a housing or guideway concentric with the first thread of the die for giving to the strip as it is forced into the die its initial curvature and spiral convolution.

10. A forming-die screw-threaded internally and provided with a side opening coinciding with one of the threads thereof; in combination with a curvilinear guideway substantially concentric with said thread for giving to a strip of metal when forced into the die an initial curvature and spiral conformation.

11. In a machine for forming tubes from strips of metal a die screw-threaded internally and provided with a side opening coinciding with one of the threads thereof; in combination with a curvilinear guideway substantially concentric with said thread; together with additional means for forcing a strip of metal through the side opening between the thread and the concentric means and successively through the remaining threads of the die.

809,562. **COMBINATION-GAGE.** FREDERICK GUMPF, Massillon, Ohio. Filed Aug. 14, 1905. Serial No. 274,188.

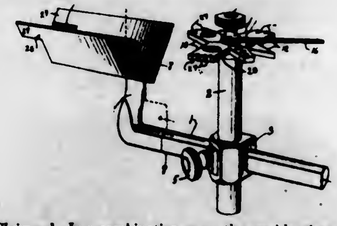

Claim.—1. In a combination-gage, the combination of bars located at right angles to each other and adjustable with reference to each other, one of said bars provided with a tool-holding trough, and the other bar provided with a gage-disk, and means for holding the gage-disk in fixed adjustment, and means for holding the adjustable bars in fixed adjustment, substantially as and for the purpose specified.

2. In a combination-gage, the combination of bars located at right angles to each other and adjustable with reference to each other, one of said bars provided with a trough, and the other bar provided with a gage-disk, said gage-disk provided with angled edges of different angularities, and means for holding the gage-disk in fixed adjustment, and means for holding the bars in fixed adjustment, substantially as and for the purpose specified.

3. In a combination-gage, the combination of bars located at an angle one to the other, one of said bars provided with a gage-disk and the other with a trough, said gage-disk provided with angled edges having different angularities, apertures formed in the gage-disk of different diameters, and said gage-disk provided with screw-pitch notches, and means for holding the adjustable bars in fixed adjustment, substantially as and for the purpose specified.

4. In a combination-gage, the combination of adjustable bars located at an angle one to the other, one of said bars provided with a gage-disk, said gage-disk provided with varying reëntrant angles, said gage-disk provided with screw-pitch notches and means for holding the adjustable bars in fixed adjustment, and a trough carried by the other of the adjustable bars, substantially as and for the purpose specified.

5. In a combination-gage, the combination of adjustable bars, means for holding the adjustable bars in fixed adjustment, one of said bars provided with a gage-disk having edges of different angularities, a center-rule rotatable concentrically with the gage-disk, means for holding said center-rule in fixed relation with the gage-disk, and means for holding the gage-disk, and center-rule against rotation, and a trough carried by the other of the adjustable bars, substantially as and for the purpose specified.

6. In a combination-gage, the combination of adjustable bars, one of said bars provided with a gage-disk, said gage-disk rotatably mounted upon its bar, and a trough carried by the other adjustable bar, said trough provided with a cut-out portion, substantially as and for the purpose specified.

809,563. **VENDING-MACHINE.** HANS K. HANSEN, Sioux City, Iowa. Filed Mar. 16, 1905. Serial No. 250,448.

Claim.—1. In a vending-machine, the combination with a reservoir, of a pair of delivery-plates having article-engaging surfaces extending, respectively, in opposite directions, said plates being arranged one above the other and spaced for a distance approximately equal to the diameter of the articles in the magazine, a pinion connected to the plates, a rack-bar engaging said pinion, and means for operating said rack-bar.

2. In a vending-machine, the combination with a reservoir, of a pair of delivery-plates having article-engaging surfaces extending, respectively, in opposite directions, and spaced vertically from each other for a distance approximately equal to the diameter of the articles in the magazine, a pinion arranged between the plates, a rack-bar intermeshing with the pinion, means for moving said rack-bar in one direction, means for automatically locking said rack-bar at the limit of its inward movement, an operating-rod, and means controllable by the operating-rod for releasing said rack-bar.

3. In a vending-machine, the combination with a reservoir, of a plurality of sets of delivery-plates, each set being formed of two superposed plates having article-engaging surfaces extending, respectively, in opposite directions, a pinion arranged between said plates, a slidable rack-bar having teeth intermeshing with the pinions, an operating-rod for effecting inward movement of the rack-bar, a pawl for locking the rack-bar at the limit of its inward movement, a spring for restoring the rack-bar to its initial position, and means carried by the operating-rod for engaging and moving said pawl to release position.

809,564. **SHUTTLE FOR RIBBON-LOOMS.** WILHELM HAUSMANN, Barmen, Germany. Filed Apr. 21, 1905. Serial No. 256,602.

Claim.—In a shuttle for looms, the shuttle-body provided with a thread-guide G fixed rigidly to the body of the shuttle behind the bobbin B and of parabolic shape in its longitudinal direction and also in transverse direction on the rear part of the same, the whole as described and illustrated and for the purpose set forth.

809,565. **SELF-PLAYING MECHANISM FOR INSTRUMENTS.** FREDERICK W. HEDGLAND, Chicago, Ill. Filed July 21, 1905. Serial No. 270,605.

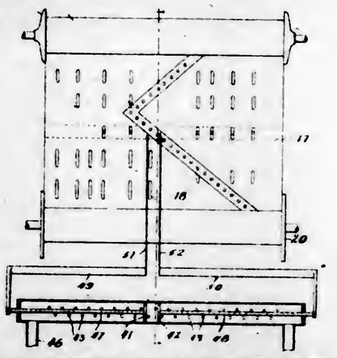

Claim.—1. In a self-playing organ, the combination with a solo-manual and an accompaniment-manual, of a music-sheet controlling both manuals and employing the same perforations for both, means whereby the sheet causes the operation of both manuals, and means whereby the operator may silence the notes of the solo-manual not embraced in the solo, such means consisting of the plungers and the cylinder containing the plungers and having perforations connected to the action of the solo-manual.

2. The combination with an instrument having no less than two manuals, of a perforated music-sheet controlling the manuals, and means under the control of the operator whereby he may silence all the notes except the solo-notes upon one manual without interfering with the accompaniment upon the other manual.

3. In an automatic musical instrument, the combination of a solo-manual, an accompaniment-manual, means for playing both manuals automatically and means under the control of the operator for silencing at will such notes as he may desire on the solo-manual while permitting the playing of the notes of the accompaniment upon the other manual.

4. The combination with the automatic playing mechanism embodying a perforated music-sheet, of a two-manual organ, embodying a solo-manual and an accompaniment-manual, both manuals being controlled by the same perforations in the music-sheet, of means whereby the operator selects such of the notes upon the sheet as he wishes to play upon the solo-organ and silences the others upon the same organ.

5. The combination with the automatic playing mechanism of a two-manual organ or similar instrument employing a perforated music-sheet, of means whereby the operator may select and permit the notes of a solo to be played together with an accompaniment, while he prevents the sounding by the solo register of the notes occurring in the music-sheet other than those of the solo.

6. The combination with the solo-manual, the accompaniment-manual, the music-sheet and means whereby the sheet controls both

manuals, of means for normally silencing all the notes of the solo-manual, and means for selecting such of the notes of the solo-manual as are to be played with the accompaniment, substantially as set forth.

7. The combination with the automatic playing mechanism embodying a perforated music-sheet, of a two-manual organ, embodying a solo-manual and an accompaniment-manual, both manuals being controlled by the same perforations in the music-sheet, of means whereby the operator selects such of the notes upon the sheet as he wishes to play upon the solo-organ and silences the others upon the same organ, and means whereby the operator may silence the notes of the solo-manual not embraced in the solo, such means consisting of the plungers and the cylinder containing the plungers and having perforations connected to the action of the solo-manual.

8. The combination with the automatic playing mechanism embodying a perforated music-sheet, of a two-manual organ, embodying a solo-manual and an accompaniment-manual, both manuals being controlled by the same perforations in the music-sheet, of means whereby the operator selects such of the notes upon the sheet as he wishes to play upon the solo-organ and silences the others upon the same organ, means whereby the operator may silence the notes of the solo-manual not embraced in the solo, such means consisting of the plungers and the cylinder containing the plungers and having perforations connected to the action of the solo-manual, and means whereby the operator may select and permit the notes of a solo to be played together with an accompaniment, while he prevents the sounding by the solo register of the notes occurring in the music-sheet other than those of the solo.

9. The combination with the automatic playing mechanism embodying a perforated music-sheet, of a two-manual organ, embodying a solo-manual and an accompaniment-manual, both manuals being controlled by the same perforations in the music-sheet, of means whereby the operator selects such of the notes upon the sheet as he wishes to play upon the solo-organ and silences the others upon the same organ, means whereby the operator may silence the notes of the solo-manual not embraced in the solo, such means consisting of the plungers and the cylinder containing the plungers and having perforations connected to the action of the solo-manual, means whereby the operator may select and permit the notes of a solo to be played together with an accompaniment, while he prevents the sounding by the solo register of the notes occurring in the music-sheet other than those of the solo, and means whereby the sheet controls both manuals and the operation of the plungers.

10. The combination with the automatic playing mechanism embodying a perforated music-sheet, of a two-manual organ, embodying a solo-manual and an accompaniment-manual, both manuals being controlled by the same perforations in the music-sheet, of means whereby the operator selects such of the notes upon the sheet as he wishes to play upon the solo-organ and silences the others upon the same organ, means whereby the operator may silence the notes of the solo-manual not embraced in the solo, such means consisting of the plungers and the cylinder containing the plungers and having perforations connected to the action of the solo-manual, means whereby the operator may select and permit the notes of a solo to be played together with an accompaniment, while he prevents the sounding by the solo register of the notes occurring in the music-sheet other than those of the solo, means whereby the sheet controls both manuals and the operation of the plungers, and means whereby the sheet controls the operation of the solo-register.

11. The combination with the automatic playing mechanism embodying a perforated music-sheet, of a two-manual organ, embodying a solo-manual and an accompaniment-manual, both manuals being controlled by the same perforations in the music-sheet, of means whereby the operator selects such of the notes upon the sheet as he wishes to play upon the solo-organ and silences the others upon the same organ, means whereby the operator may silence the notes of the solo-manual not embraced in the solo, such means consisting of the plungers and the cylinder containing the plungers and having perforations connected to the action of the solo-manual, means whereby the operator may select and permit the notes of a solo to be played together with an accompaniment, while he prevents the sounding by the solo register of the notes occurring in the music-sheet other than those of the solo, means whereby the sheet controls both manuals and the operation of the plungers, means whereby the sheet controls the operation of the solo-register, and means whereby the operator may silence the accompaniment-manual.

12. The combination with the automatic playing mechanism embodying a perforated music-sheet, of a two-manual organ, embodying a solo-manual and an accompaniment-manual, both manuals being controlled by the same perforations in the music-sheet, of means whereby the operator selects such of the notes upon the sheet as he wishes to play upon the solo-organ and silences the others upon the same organ, means whereby the operator may silence the notes of the solo-manual not embraced in the solo, such means consisting of the plungers and the cylinder containing the plungers and having perforations connected to the action of the solo-manual, means whereby the operator may select and permit the notes of a solo to be played together with an accompaniment, while he prevents the sounding by the solo register of the notes occurring in the music-sheet other than those of the solo, means whereby the sheet controls both manuals and the operation of the plungers, means whereby the sheet controls the operation of the solo-register, means whereby the operator may silence the accompaniment-manual, and means whereby the sheet controls the operation of the accompaniment-manual.

13. The combination with the automatic playing mechanism embodying a perforated music-sheet, of a two-manual organ, embodying a solo-manual and an accompaniment-manual, both manuals being controlled by the same perforations in the music-sheet, of means whereby the operator selects such of the notes upon the sheet as he wishes to play upon the solo-organ and silences the others upon the same organ, means whereby the operator may silence the notes of the solo-manual not embraced in the solo, such means consisting of the plungers and the cylinder containing the plungers and having perforations connected to the action of the solo-manual, means whereby the operator may select and permit the notes of a solo to be played together with an accompaniment, while he prevents the sounding by the solo register of the notes occurring in the music-sheet other than those of the solo, means whereby the sheet controls both manuals and the operation of the plungers, means whereby the sheet controls the operation of the solo-register, means whereby the operator may silence the accompaniment-manual, means whereby the sheet controls the operation of the accompaniment-manual, and means whereby the operator may silence the solo-register.

14. The combination with the automatic playing mechanism embodying a perforated music-sheet, of a two-manual organ, embodying a solo-manual and an accompaniment-manual, both manuals being controlled by the same perforations in the music-sheet, of means whereby the operator selects such of the notes upon the sheet as he wishes to play upon the solo-organ and silences the others upon the same organ, means whereby the operator may silence the notes of the solo-manual not embraced in the solo, such means consisting of the plungers and the cylinder containing the plungers and having perforations connected to the action of the solo-manual, means whereby the operator may select and permit the notes of a solo to be played together with an accompaniment, while he prevents the sounding by the solo register of the notes occurring in the music-sheet other than those of the solo, means whereby the sheet controls both manuals and the operation of the plungers, means whereby the sheet controls the operation of the solo-register, means whereby the operator may silence the accompaniment-manual, means whereby the sheet controls the operation of the accompaniment-manual, means whereby the operator may silence the solo-register, and means whereby the sheet controls the operation of the solo-register.

15. The combination with the automatic playing mechanism embodying a perforated music-sheet, of a two-manual organ, embodying a solo-manual and an accompaniment-manual, both manuals being controlled by the same perforations in the music-sheet, of means whereby the operator selects such of the notes upon the sheet as he wishes to play upon the solo-organ and silences the others upon the same organ, means whereby the operator may silence the notes of the solo-manual not embraced in the solo, such means consisting of the plungers and the cylinder containing the plungers and having perforations connected to the action of the solo-manual, means whereby the operator may select and permit the notes of a solo to be played together with an accompaniment, while he prevents the sounding by the solo register of the notes occurring in the music-sheet other than those of the solo, means whereby the sheet controls both manuals and the operation of the plungers, means whereby the sheet controls the operation of the solo-register, means whereby the operator may silence the accompaniment-manual, means whereby the sheet controls the operation of the accompaniment-manual, means whereby the operator may silence the solo-register, means whereby the sheet controls the operation of the solo-register, and means whereby the operator may silence the accompaniment-manual.

16. The combination with the automatic playing mechanism embodying a perforated music-sheet, of a two-manual organ, embodying a solo-manual and an accompaniment-manual, both manuals being controlled by the same perforations in the music-sheet, of means whereby the operator selects such of the notes upon the sheet as he wishes to play upon the solo-organ and silences the others upon the same organ, means whereby the operator may silence the notes of the solo-manual not embraced in the solo, such means consisting of the plungers and the cylinder containing the plungers and having perforations connected to the action of the solo-manual, means whereby the operator may select and permit the notes of a solo to be played together with an accompaniment, while he prevents the sounding by the solo register of the notes occurring in the music-sheet other than those of the solo, means whereby the sheet controls both manuals and the operation of the plungers, means whereby the sheet controls the operation of the solo-register, means whereby the operator may silence the accompaniment-manual, means whereby the sheet controls the operation of the accompaniment-manual, means whereby the operator may silence the solo-register, means whereby the sheet controls the operation of the solo-register, means whereby the operator may silence the accompaniment-manual, and means whereby the sheet controls the operation of the accompaniment-manual.

17. The combination with the automatic playing mechanism embodying a perforated music-sheet, of a two-manual organ, embodying a solo-manual and an accompaniment-manual, both manuals being controlled by the same perforations in the music-sheet, of means whereby the operator selects such of the notes upon the sheet as he wishes to play upon the solo-organ and silences the others upon the same organ, means whereby the operator may silence the notes of the solo-manual not embraced in the solo, such means consisting of the plungers and the cylinder containing the plungers and having perforations connected to the action of the solo-manual, means whereby the operator may select and permit the notes of a solo to be played together with an accompaniment, while he prevents the sounding by the solo register of the notes occurring in the music-sheet other than those of the solo, means whereby the sheet controls both manuals and the operation of the plungers, means whereby the sheet controls the operation of the solo-register, means whereby the operator may silence the accompaniment-manual, means whereby the sheet controls the operation of the accompaniment-manual, means whereby the operator may silence the solo-register, means whereby the sheet controls the operation of the solo-register, means whereby the operator may silence the accompaniment-manual, means whereby the sheet controls the operation of the accompaniment-manual, and means whereby the operator may silence the solo-register.

18. The combination with the automatic playing mechanism embodying a perforated music-sheet, of a two-manual organ, embodying a solo-manual and an accompaniment-manual, both manuals being controlled by the same perforations in the music-sheet, of means whereby the operator selects such of the notes upon the sheet as he wishes to play upon the solo-organ and silences the others upon the same organ, means whereby the operator may silence the notes of the solo-manual not embraced in the solo, such means consisting of the plungers and the cylinder containing the plungers and having perforations connected to the action of the solo-manual, means whereby the operator may select and permit the notes of a solo to be played together with an accompaniment, while he prevents the sounding by the solo register of the notes occurring in the music-sheet other than those of the solo, means whereby the sheet controls both manuals and the operation of the plungers, means whereby the sheet controls the operation of the solo-register, means whereby the operator may silence the accompaniment-manual, means whereby the sheet controls the operation of the accompaniment-manual, means whereby the operator may silence the solo-register, means whereby the sheet controls the operation of the solo-register, means whereby the operator may silence the accompaniment-manual, means whereby the sheet controls the operation of the accompaniment-manual, means whereby the operator may silence the solo-register, and means whereby the sheet controls the operation of the solo-register.

19. The combination with the automatic playing mechanism embodying a perforated music-sheet, of a two-manual organ, embodying a solo-manual and an accompaniment-manual, both manuals being controlled by the same perforations in the music-sheet, of means whereby the operator selects such of the notes upon the sheet as he wishes to play upon the solo-organ and silences the others upon the same organ, means whereby the operator may silence the notes of the solo-manual not embraced in the solo, such means consisting of the plungers and the cylinder containing the plungers and having perforations connected to the action of the solo-manual, means whereby the operator may select and permit the notes of a solo to be played together with an accompaniment, while he prevents the sounding by the solo register of the notes occurring in the music-sheet other than those of the solo, means whereby the sheet controls both manuals and the operation of the plungers, means whereby the sheet controls the operation of the solo-register, means whereby the operator may silence the accompaniment-manual, means whereby the sheet controls the operation of the accompaniment-manual, means whereby the operator may silence the solo-register, means whereby the sheet controls the operation of the solo-register, means whereby the operator may silence the accompaniment-manual, means whereby the sheet controls the operation of the accompaniment-manual, means whereby the operator may silence the solo-register, means whereby the sheet controls the operation of the solo-register, and means whereby the operator may silence the accompaniment-manual.

20. The combination with the automatic playing mechanism embodying a perforated music-sheet, of a two-manual organ, embodying a solo-manual and an accompaniment-manual, both manuals being controlled by the same perforations in the music-sheet, of means whereby the operator selects such of the notes upon the sheet as he wishes to play upon the solo-organ and silences the others upon the same organ, means whereby the operator may silence the notes of the solo-manual not embraced in the solo, such means consisting of the plungers and the cylinder containing the plungers and having perforations connected to the action of the solo-manual, means whereby the operator may select and permit the notes of a solo to be played together with an accompaniment, while he prevents the sounding by the solo register of the notes occurring in the music-sheet other than those of the solo, means whereby the sheet controls both manuals and the operation of the plungers, means whereby the sheet controls the operation of the solo-register, means whereby the operator may silence the accompaniment-manual, means whereby the sheet controls the operation of the accompaniment-manual, means whereby the operator may silence the solo-register, means whereby the sheet controls the operation of the solo-register, means whereby the operator may silence the accompaniment-manual, means whereby the sheet controls the operation of the accompaniment-manual, means whereby the operator may silence the solo-register, means whereby the sheet controls the operation of the solo-register, means whereby the operator may silence the accompaniment-manual, and means whereby the sheet controls the operation of the accompaniment-manual.

21. The combination with the automatic playing mechanism embodying a perforated music-sheet, of a two-manual organ, embodying a solo-manual and an accompaniment-manual, both manuals being controlled by the same perforations in the music-sheet, of means whereby the operator selects such of the notes upon the sheet as he wishes to play upon the solo-organ and silences the others upon the same organ, means whereby the operator may silence the notes of the solo-manual not embraced in the solo, such means consisting of the plungers and the cylinder containing the plungers and having perforations connected to the action of the solo-manual, means whereby the operator may select and permit the notes of a solo to be played together with an accompaniment, while he prevents the sounding by the solo register of the notes occurring in the music-sheet other than those of the solo, means whereby the sheet controls both manuals and the operation of the plungers, means whereby the sheet controls the operation of the solo-register, means whereby the operator may silence the accompaniment-manual, means whereby the sheet controls the operation of the accompaniment-manual, means whereby the operator may silence the solo-register, means whereby the sheet controls the operation of the solo-register, means whereby the operator may silence the accompaniment-manual, means whereby the sheet controls the operation of the accompaniment-manual, means whereby the operator may silence the solo-register, means whereby the sheet controls the operation of the solo-register, means whereby the operator may silence the accompaniment-manual, means whereby the sheet controls the operation of the accompaniment-manual, and means whereby the operator may silence the solo-register.

22. The combination with the automatic playing mechanism embodying a perforated music-sheet, of a two-manual organ, embodying a solo-manual and an accompaniment-manual, both manuals being controlled by the same perforations in the music-sheet, of means whereby the operator selects such of the notes upon the sheet as he wishes to play upon the solo-organ and silences the others upon the same organ, means whereby the operator may silence the notes of the solo-manual not embraced in the solo, such means consisting of the plungers and the cylinder containing the plungers and having perforations connected to the action of the solo-manual, means whereby the operator may select and permit the notes of a solo to be played together with an accompaniment, while he prevents the sounding by the solo register of the notes occurring in the music-sheet other than those of the solo, means whereby the sheet controls both manuals and the operation of the plungers, means whereby the sheet controls the operation of the solo-register, means whereby the operator may silence the accompaniment-manual, means whereby the sheet controls the operation of the accompaniment-manual, means whereby the operator may silence the solo-register, means whereby the sheet controls the operation of the solo-register, means whereby the operator may silence the accompaniment-manual, means whereby the sheet controls the operation of the accompaniment-manual, means whereby the operator may silence the solo-register, means whereby the sheet controls the operation of the solo-register, means whereby the operator may silence the accompaniment-manual, means whereby the sheet controls the operation of the accompaniment-manual, means whereby the operator may silence the solo-register, and means whereby the sheet controls the operation of the solo-register.

23. The combination with the automatic playing mechanism embodying a perforated music-sheet, of a two-manual organ, embodying a solo-manual and an accompaniment-manual, both manuals being controlled by the same perforations in the music-sheet, of means whereby the operator selects such of the notes upon the sheet as he wishes to play upon the solo-organ and silences the others upon the same organ, means whereby the operator may silence the notes of the solo-manual not embraced in the solo, such means consisting of the plungers and the cylinder containing the plungers and having perforations connected to the action of the solo-manual, means whereby the operator may select and permit the notes of a solo to be played together with an accompaniment, while he prevents the sounding by the solo register of the notes occurring in the music-sheet other than those of the solo, means whereby the sheet controls both manuals and the operation of the plungers, means whereby the sheet controls the operation of the solo-register, means whereby the operator may silence the accompaniment-manual, means whereby the sheet controls the operation of the accompaniment-manual, means whereby the operator may silence the solo-register, means whereby the sheet controls the operation of the solo-register, means whereby the operator may silence the accompaniment-manual, means whereby the sheet controls the operation of the accompaniment-manual, means whereby the operator may silence the solo-register, means whereby the sheet controls the operation of the solo-register, means whereby the operator may silence the accompaniment-manual, means whereby the sheet controls the operation of the accompaniment-manual, means whereby the operator may silence the solo-register, and means whereby the sheet controls the operation of the solo-register.

24. The combination with the automatic playing mechanism embodying a perforated music-sheet, of a two-manual organ, embodying a solo-manual and an accompaniment-manual, both manuals being controlled by the same perforations in the music-sheet, of means whereby the operator selects such of the notes upon the sheet as he wishes to play upon the solo-organ and silences the others upon the same organ, means whereby the operator may silence the notes of the solo-manual not embraced in the solo, such means consisting of the plungers and the cylinder containing the plungers and having perforations connected to the action of the solo-manual, means whereby the operator may select and permit the notes of a solo to be played together with an accompaniment, while he prevents the sounding by the solo register of the notes occurring in the music-sheet other than those of the solo, means whereby the sheet controls both manuals and the operation of the plungers, means whereby the sheet controls the operation of the solo-register, means whereby the operator may silence the accompaniment-manual, means whereby the sheet controls the operation of the accompaniment-manual, means whereby the operator may silence the solo-register, means whereby the sheet controls the operation of the solo-register, means whereby the operator may silence the accompaniment-manual, means whereby the sheet controls the operation of the accompaniment-manual, means whereby the operator may silence the solo-register, means whereby the sheet controls the operation of the solo-register, means whereby the operator may silence the accompaniment-manual, means whereby the sheet controls the operation of the accompaniment-manual, means whereby the operator may silence the solo-register, means whereby the sheet controls the operation of the solo-register, and means whereby the operator may silence the accompaniment-manual.

25. The combination with the automatic playing mechanism embodying a perforated music-sheet, of a two-manual organ, embodying a solo-manual and an accompaniment-manual, both manuals being controlled by the same perforations in the music-sheet, of means whereby the operator selects such of the notes upon the sheet as he wishes to play upon the solo-organ and silences the others upon the same organ, means whereby the operator may silence the notes of the solo-manual not embraced in the solo, such means consisting of the plungers and the cylinder containing the plungers and having perforations connected to the action of the solo-manual, means whereby the operator may select and permit the notes of a solo to be played together with an accompaniment, while he prevents the sounding by the solo register of the notes occurring in the music-sheet other than those of the solo, means whereby the sheet controls both manuals and the operation of the plungers, means whereby the sheet controls the operation of the solo-register, means whereby the operator may silence the accompaniment-manual, means whereby the sheet controls the operation of the accompaniment-manual, means whereby the operator may silence the solo-register, means whereby the sheet controls the operation of the solo-register, means whereby the operator may silence the accompaniment-manual, means whereby the sheet controls the operation of the accompaniment-manual, means whereby the operator may silence the solo-register, means whereby the sheet controls the operation of the solo-register, means whereby the operator may silence the accompaniment-manual, means whereby the sheet controls the operation of the accompaniment-manual, means whereby the operator may silence the solo-register, means whereby the sheet controls the operation of the solo-register, means whereby the operator may silence the accompaniment-manual, and means whereby the sheet controls the operation of the accompaniment-manual.

manuals, of means for normally silencing all the notes of the solo-manual, and means for selecting such of said notes as are embraced in the solo and allowing them to sound.

809,566. **SEWING-MACHINE FEED AND LOOP-TAKER ACTUATING MECHANISM.** MARTIN HEBLER, Hinsboth, N. J., assignor to The Singer Manufacturing Company, a Corporation of New Jersey. Filed June 13, 1905. Serial No. 264,769.

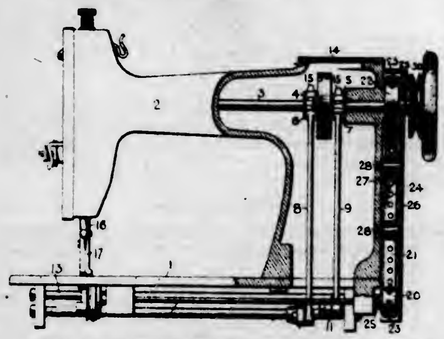

Claim.—1. In a sewing-machine, the combination with the frame comprising a bed-plate and a hollow bracket-arm, and a rotary main shaft journaled in the bracket-arm, of stitch-forming mechanism comprising a loop-taker and a rotary shaft mounted beneath the bed-plate for imparting a rotating motion to said loop-taker, feeding mechanism disposed beneath the bed-plate, metallic connections disposed within and inclosed by said bracket-arm intermediate the main shaft and feeding mechanism, pulley-wheels mounted upon the main and looper shafts external to said bracket-arm, a non-metallic belt connecting said pulley-wheels, a housing inclosing said pulley-wheels and connecting-belt, and means for removably securing said housing to said bracket-arm.

2. In a sewing-machine, the combination with the frame comprising a bed-plate and a hollow bracket-arm formed with two closed vertical compartments one removable from the other and means for securing the same together, and a rotary main shaft journaled in said bracket-arm and extending through the upper portion of both of said compartments, of a plurality of lower shafts mounted beneath the bed-plate, pulley-wheels applied to said main shaft and one of the lower shafts within the removable compartment of said bracket-arm and a non-metallic belt connecting said pulleys, and metallic connections within the other compartment of said bracket-arm intermediate said main shaft and others of the lower shafts.

809,567. **TABLEWARE AND LIKE ARTICLES.** GUSTAVE A. HENCKEL, East Orange, N. J. Filed July 27, 1905. Serial No. 271,427.

Claim.—1. In a tableware article, the combination with a base having a socket and a spring clamping-thimble therein, said thimble comprising a spiral spring, of a receptacle having a stem within said socket and thimble and gripped and held by the latter, the convolutions of said spring surrounding said stem.

2. In a tableware article, the combination with a base having a socket and a spring clamping-thimble therein, said thimble comprising a spiral spring, said base having also a steadying-skirt, of a receptacle adapted to be received and steadied by said skirt, said receptacle having a stem within said socket and thimble and gripped and held by the latter, the convolutions of said spring surrounding said stem.

3. As an article of manufacture, a separable base for tableware, comprising a base-piece having a socket adapted to receive the projecting stem of a receptacle, said socket having within it a spiral spring arranged axially, its convolutions adapted to surround and grip such stem, said spring forming a clamping-thimble.

809,568. **CLOTHES-PIN BASKET.** SAMUEL W. HURLBURT, Creston, Iowa, assignor of one-half to Lansing W. Hurlburt, Creston, Iowa. Filed Oct. 7, 1904. Serial No. 227,582.

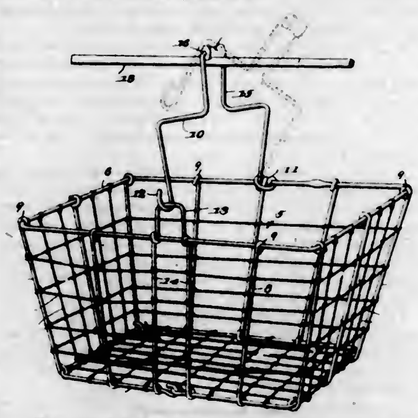

Claim.—1. A device of the class described comprising a receptacle, a handle pivoted to the receptacle and having its free end provided with a terminal hook adapted to detachably engage the receptacle and its intermediate portion bent upwardly beyond the general plane of the top of said handle to form a loop adapted to receive the clothes-line, said handle extending in a substantially horizontal plane on each side of the loop, and a roller journaled on the handle at said loop.

2. A device of the class described comprising a receptacle formed of an upper and lower horizontal frame connected by vertical stays, a handle having one end thereof pivoted to the upper frame and engaging each side of one vertical stay and its opposite end provided with a terminal hook, the intermediate portion of said handle being bent to form an upwardly-extending loop provided with a roller, and a keeper adapted to engage the terminal hook of the handle and formed by extending the intermediate pair of stays on one side of the basket above the general plane of the upper frame.

809,569. **STAMP-AFFIXING MACHINE.** OLIVER W. JOHNSON, Cleveland, Ohio. Filed Dec. 20, 1904. Serial No. 237,676.

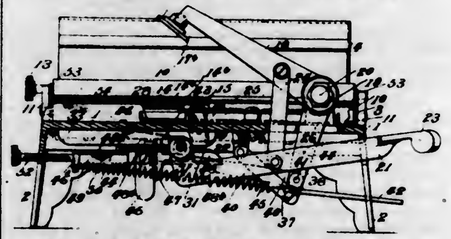

Claim.—1. In a stamping-machine, the combination of a support, a cutter-bar pivoted to the support, a cutter carried by said cutter-bar, a crank-arm projected from the cutter-bar, a moistener movable upon the support, a link connection between the moistener and the crank-arm aforesaid, a lever pivoted to the support and operably connected with the cutter-bar, an actuating-bar mounted upon the support and connected with the crank-arm aforesaid, and a stamp-holder movably mounted upon the support for actuation by the actuating-bar aforementioned.

2. In a stamping-machine, the combination of a support, a carriage movably mounted upon the support, a stamp-holder upon said carriage, cutting mechanism including a pivoted cutter-bar, a crank-arm projected from said cutter-bar, a moistener slidably mounted upon the support, a link connecting the moistener with the crank-arm, an operating-lever pivoted to the support and operably connected with the cutter-bar, an actuating-bar slidable upon the support and pivotally connected with the crank-arm aforesaid, an engaging member extended from the actuating-bar, and coöperating with the carriage to advance the same at a step-by-step movement, and means for disengaging the actuating-bar from the carriage.

3. In a stamping-machine, the combination of a support, a movable stamp-holder adapted to receive a sheet of stamps, cutting mechanism, means for feeding the stamps from the holder to expose a longitudinal row of stamps to the action of the cutting mechanism, means for actuating the holder to advance the row of stamps as the same are severed, and means other than the aforesaid actuating means for adjusting the holder to properly aline transverse perforations separating the stamps with relation to the cutting mechanism.

4. In a stamping-machine, the combination of a support, a carriage movably mounted thereon, cutting mechanism, a stamp-holder upon said carriage, an actuating-bar coöperating with the carriage to advance the same, means for normally holding the actuating-bar in coöperation with the carriage, a lock device coöperating with the carriage to position the same at in ascertained adjustment, and means for adjusting the lock device to properly aline transverse perforations separating sheets of stamps with relation to the cutting mechanism.

5. In a stamping-machine, the combination of a support, a carriage reciprocally mounted thereon, cutting mechanism, a stamp-holder upon the carriage and adapted to receive a sheet of stamps to be fed to the cutting mechanism, an actuating-bar engaging the carriage to advance the same, means for operating said actuating-bar, a guide member coöperating with the actuating-bar, a lock device carried by the guide member and coacting with the actuating-bar to position the carriage at an ascertained adjustment, and means for adjusting the guide member aforesaid to thereby adjust the carriage to properly aline transverse perforations separating stamps relative to the cutting mechanism.

6. In a stamping-machine, the combination of a support, a carriage mounted upon the support, a stamp-holder mounted upon the carriage, a cutting-plate carried by the support, a pivotally-moving cutter-bar, a cutter carried by said cutter-bar and coöperating with said cutter-plate, means for feeding the stamps from the stamp-holder to the cutting mechanism, an actuating-bar connected with the cutter-bar and engaging the carriage to impart movement thereto, a moistener, and means for disengaging the actuating-bar from the carriage.

7. In a stamping-machine, the combination of a support, a carriage reciprocally mounted thereon, a stamp-holder upon the carriage, an actuating-bar engaging the carriage, means for actuating said bar, means for normally holding said bar in engagement with the carriage, and means for throwing the actuating-bar out of coöperation with the carriage.

8. In a stamping-machine, the combination of a support, a carriage reciprocally mounted thereon, a stamp-holder upon the carriage, an actuating-bar engaging the carriage, means for actuating said bar, means for normally holding said bar in engagement with the carriage, and a lock device coöperating with the actuating-bar aforesaid to position the carriage at an ascertained adjustment.

9. In a stamping-machine, the combination of a support, a carriage reciprocally mounted thereon, a stamp-holder upon the carriage, an actuating-bar engaging the carriage, means for actuating said bar, means for normally holding said bar in engagement with the carriage, means for throwing the actuating-bar out of coöperation with the carriage and a lock-pawl coöperating with the actuating-bar to position the carriage at an ascertained adjustment.

10. In a stamping-machine, the combination of a support, a carriage mounted thereon, a stamp-holder mounted upon the carriage, a moistener slidably mounted upon the support, a tank, and a spring-actuated roller partially immersed in the tank and adapted to contact with the under side of the moistener, as specified.

11. In a stamping-machine, the combination of a support, a reciprocally-mounted carriage upon said support, a stamp-holder carried by said support, feeding-rollers mounted upon the carriage to feed stamps from the stamp-holder, a cutting-plate arranged upon the support, a cutter-bar pivoted to the support, a cutter carried by said bar and coöperating with the cutting-plate, a plurality of lugs and teeth projecting from the carriage, an actuating-bar normally engaging the teeth of the carriage, a lock device coöperating with said actuating-bar to fix the position of the carriage, a moistener reciprocally mounted upon the support, and connections whereby the actuating-bar, the moistener and the cutter-bar are simultaneously operated.

12. In a stamping-machine, the combination of a stamp-holder adapted to receive a sheet of stamps, and cutting mechanism embodying a bed-plate and a cutter coöperating with said plate and having cutting edges extending at an angle to each other, the plate and cutter being arranged to effect cutting action approximately from a point at the angle at which the cutting edges of the cutter meet.

13. In a stamping-machine, the combination of a stamp-holder adapted to receive a sheet of stamps, and cutting mechanism embodying cutting elements, each having coöperating cutting edges extending at an angle to each other, the said elements being arranged to begin cutting from the angle at which the cutting edges of each element meet.

809,570. **UNDERREAMER.** FREDERICK W. JONES, Santa Paula, Cal., assignor to Edward North and Edward Double, Los Angeles, Cal. Filed Aug. 30, 1904. Serial No. 223,668.

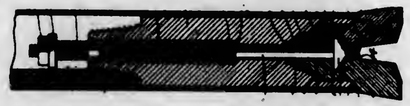

Claim.—1. An underreamer of the class described comprising a centrally-bored mandrel having a cylindrical recess in its lower end, a recess above said cylindrical recess, a beveled shoulder between said upper recess and said cylindrical recess, a rod movable longitudinally in the bore of the mandrel and having a head on its lower end and a pair of cutters recessed on their opposing inner sides to receive the lower portion of said rod and the head of said rod, each of said cutters having a semicylindrical portion of a diameter to fit in the cylindrical recess of the mandrel, a semiconical upper portion to fit in the upper recess of the mandrel, a beveled shoulder to engage the upper beveled shoulder of the mandrel, a lower portion of a diameter exceeding that of the cylindrical recess of the mandrel, a beveled shoulder between the semicylindrical portion and the said portion of enlarged diameter, the said portions of enlarged diameter having their inner opposing sides oppositely beveled to form wedge-shaped openings between them.

2. An underreamer comprising a centrally-bored mandrel having a cylindrical recess in its lower end and a recess above said cylindrical recess, a beveled shoulder or abutment between said recesses, a spring-actuated rod slidable in said central bore, said rod having a head at its lower end, tilting slips tiltingly mounted on said head, said slips provided with cutting edges and with shoulders adapted to contact with said beveled shoulder or abutment.

3. An underreamer comprising in combination a centrally-bored mandrel having a cylindrical recess in its lower end and a second and smaller recess above said cylindrical recess, an inclined or beveled shoulder or abutment being provided between said recesses, a spring-actuated rod slidable in said mandrel, said rod provided with a pivot-head and underreaming bits or slips tiltingly mounted on said head, said bits provided with underreaming-faces and with shanks adapted to extend up into said recesses, said shanks having reduced upper portions adapted to fit within the upper recess.

4. An underreamer comprising a hollow mandrel, a spring-actuated rod slidable therein, said mandrel having at its lower end a cylindrical chamber and an inner and smaller chamber above said cylindrical chamber, an inclined or beveled abutment formed between the adjoining ends of the walls of said chambers, reaming-bits mounted on said rod and provided with surfaces adapted to contact with said inclined shoulder or abutment to tilt said bits.

5. An underreamer comprising a mandrel having a recess or chamber in its bottom and an inclined or beveled abutment in the said chamber, a spring-actuated rod slidable in said mandrel, said spring-actuated rod having a head of a form similar to an arrow-head, tilting slips or bits having sockets corresponding to the wings of said arrow-head into which said arrow-head is adapted to fit, said slips or bits provided with shanks adapted to be drawn up into said chamber and provided with inclined shoulders adapted to abut against said beveled or inclined shoulders in said chamber to tilt said slips or bits on said arrow-head as said slips or bits are drawn inward into said chamber.

6. An underreamer comprising a hollow mandrel furnished in

its lower end with a chamber provided at an intermediate portion with an inclined or beveled portion or abutment, a spring-actuated rod sliding through said chamber and extending up in said mandrel, two jaws pivoted to said rod respectively furnished at their upper ends with shanks extending above the pivot and into said chamber and furnished at their intermediate portions and above said pivot with inclined shoulders adapted to contact with said inclined abutment in said chamber.

7. An underreamer comprising a hollow mandrel furnished in its lower end with a chamber provided at an intermediate portion with an inclined or beveled portion or abutment, a spring-actuated rod sliding through said chamber and extending up in said mandrel, two jaws pivoted to said rod respectively furnished at their upper ends with shanks extending above the pivot and into said chamber, furnished above said pivot with inclined shoulders adapted to contact with said inclined abutment in said chamber, said shanks of said bits being of sufficient length to abut against the surface of the end wall of said chamber.

8. An underreamer comprising a mandrel provided in its lower end with an inwardly-extending chamber or socket, said chamber provided intermediate its length with an inclined or beveled abutment, a spring-actuated rod slidably mounted in said mandrel and extending through said socket or chamber up into the mandrel, two slips or bits pivoted to said rod and respectively furnished at their upper ends with shanks extending above the pivotal point to enter the upper end of said socket or chamber, said bits provided above said pivotal point with inclined shoulders adapted to abut against said inclined abutment in said socket or chamber to tilt said bits, said bits also provided with shoulders adapted to abut against the end of said mandrel.

9. An underreamer comprising a centrally-bored mandrel having a cylindrical recess in its lower side and a recess above said cylindrical recess, a shoulder or abutment between said recesses, a spring-actuated rod slidable in said central bore, said rod having a head at its lower end, tilting slips tiltingly mounted on said head, said slips provided with cutting edges and with inclined or beveled shoulders adapted to contact with said shoulder or abutment.

10. An underreamer comprising in combination a mandrel having a cylindrical chamber in its lower end and a tapering chamber above said cylindrical chamber and forming an inward extension thereof, a spring-actuated rod slidably mounted in said mandrel and extending up from said cylindrical chamber into said mandrel, reaming bits or slips tiltingly mounted on the lower end of said rod, said bits or slips having shanks extending above said lower end of said rod, said shanks having tapered upper ends corresponding to said tapered chamber, said bits or slips adapted to contact with the walls of said chambers and provided with shoulders adapted to contact with the end of said mandrel when said bits are in operative position.

11. An underreamer comprising a mandrel, a spring-actuated rod slidable therein, said mandrel having at its lower end a cylindrical chamber and an inner and smaller chamber above said cylindrical chamber, an abutment formed between the adjoining ends of the walls of said chambers, reaming-bits mounted on said rod and provided with surfaces adapted to contact with said abutment to tilt said bits.

12. An underreamer comprising in combination a mandrel having a cylindrical chamber in its lower end and a tapering chamber above said cylindrical chamber and forming an inward extension thereof, a spring-actuated rod slidably mounted in said mandrel and extending up from said cylindrical chamber into said mandrel, the end of said rod in said cylindrical chamber being formed in the shape of an arrow-head, reaming bits or slips having sockets to receive the wings of said arrow-head and tiltingly mounted thereon, said bits or slips having shanks extending above said lower end of said rod and into said tapering chamber, the upper ends of said shanks being tapered to correspond to said tapered chamber, said bits or slips adapted to contact with the walls of said chambers and abut against the end wall of said tapered chamber and provided with shoulders adapted to abut against the end of the mandrel when in operative position.

13. An underreamer comprising a centrally-bored mandrel having a cylindrical chamber in its lower end and a recess above said cylindrical recess, a beveled or inclined shoulder or abutment formed between said recesses, a spring-actuated rod slidably mounted in said central bore, said rod having an arrow-head-shaped end in said cylindrical chamber, bits or slips having sockets corresponding to and adapted to receive the wings of said arrow-head and having shanks extending up into said cylindrical chamber and recess thereabove and provided with shoulders to abut against said abutment, said bits or slips abutting against the end wall of said recess when in operative position.

14. An underreamer comprising in combination, a mandrel, a spring-actuated rod slidable therein, said mandrel having in its lower end a cylindrical chamber and an inner and smaller chamber above said cylindrical chamber, an inclined or beveled abutment formed between the adjoining walls of said chambers, said rod provided with an arrow-head-shaped end, reaming-bits provided with sockets corresponding to and adapted to receive the wings of said arrow-head and thereby tiltingly supported on said rod, said bits provided with surfaces adapted to contact with said inclined shoulder or abutment to cause the bits to tilt.

15. An underreamer comprising a mandrel provided in its lower end with an inwardly-extending socket or chamber, said chamber provided intermediate its length with an inclined shoulder or abutment, a spring-actuated rod slidably mounted in said mandrel and extending through said socket or chamber up into the mandrel, two slips or bits pivoted to said rod and respectively furnished at their upper ends with shanks extending above the pivotal point to enter the upper end of said socket or chamber, said bits or slips provided with inclined shoulders above said pivot-point to abut against said inclined abutment in said socket or chamber to tilt said bits.

809,571. POI-MACHINE. ERNST KÖPKE, Honolulu, Hawaii. Filed Dec. 1, 1904. Serial No. 235,069.

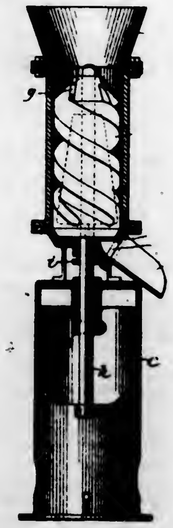

Claim.—1. A machine for making poi or the like, comprising a vertical cylindrical body, its lower head having an outlet, a feeding-hopper at top of body, a supporting-base, a centrally-located shaft, means for revolving same, a drum mounted on the shaft within the cylinder between the hopper and head, said drum having beveled ends and spiral grooves in its surface tapering toward the lower end, and knives or cutting edges on the upper beveled end of said drum, substantially as described.

2. In a machine for making poi and the like, the cylindrical body, a recessed head at its lower end having an outlet, a shaft revoluble within the body and carrying a spirally-grooved drum having a beveled lower end fitting the recessed head, knives or cutting edges on the upper end of said drum and means for raising or lowering said shaft whereby the distance between the lower end of the drum and the head may be adjusted, substantially as described.

3. In a machine for making poi or the like, the cylindrical body, a recessed head at its lower end, a centrally-located shaft revoluble within the body and carrying a cylindrical drum beveled at both ends and having spiral grooves in its surface between the beveled ends, and knives or cutting edges fastened to the upper beveled end of said drum, the grooves in the drum tapering toward its lower beveled end, substantially as described.

4. In a machine for making poi or the like, the combination of

a vertical body having a feeding-hopper at its upper end and a central shaft and spirally-grooved drum revoluble therein, knives on the upper end of said drum, a base on which the body is mounted, a bevel-pinion supported in a sleeve-bearing in the base, a driving-gear journaled in the base above the wheel, the drum-shaft passing down into the base and through the pinion and connected thereto by a spline, a bearing for the lower end of the shaft, and means for adjusting the bearing.

809,572. TUFTING-MACHINE. WILLIAM B. LATIMER, Utica, N. Y., assignor to H. R. Latimer, Utica, N. Y. Filed Mar. 5, 1903. Serial No. 146,360.

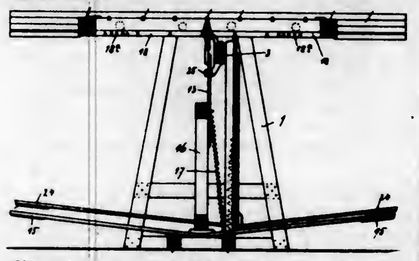

Claim.—1. In a tufting-machine, the combination of a tufting-table having holders for securing the washers in definite locations thereon, of a mechanism arranged under the table for spreading the prongs of the staple, after being passed through the washer, the table and staple-spreading mechanism being relatively movable to provide for having the staples and spreading mechanism register with more than one washer-holder, substantially as set forth.

2. In a tufting-machine, the combination of a series of staple-expanders supported and arranged in the machine, of a movable table having washer-holders adapted to be shifted with reference to the expanding devices to cause the washer positions to register with the expanders, substantially as set forth.

3. A washer-holder for tufting-machines, having a base part and a projection adapted to be received in the opening of the washer and substantially fill the same diametrically, said projection being grooved or cut away on its sides to provide passages for the tufting-button prongs, and the base part cut away to afford clearance-spaces, for the expanded tufting-button prongs when being removed, substantially as set forth.

4. The combination in a tufting-machine of a table, having a washer-receiving projection adapted to be received in the opening of the tufting-button washer, said projection being elongated in one direction to substantially fill the opening in the washer diametrically, and being comparatively narrow in the other direction, whereby openings are provided for the prongs of the tufting-button, and a clenching device arranged below said projection, consisting of a pair of simultaneously-opening jaws adapted to engage and spread the prongs of the button, substantially as set forth.

5. In a tufting-machine, the combination of a tufting-table, having means for securing the tufting-button washer in position thereon, an opening through the table at the washer position and a spreader for the prongs of the tufting-button, consisting of a pair of simultaneously-opening jaws, and mechanism for operating same, substantially as set forth.

6. The combination in a tufting-machine of a table, having an opening, a point or projection supported in said opening adapted to be received in the opening of the tufting-button washer and fill the washer-opening diametrically in one direction, while affording openings for the prongs of the tufting-button at the sides of the diametrical line, a pair of simultaneously-opening spreading jaws located beneath the said projection and having their hinging-joint substantially parallel with the plane of the said projection, substantially as set forth.

7. The combination in a tufting-machine of a table movably supported, having means for securing tufting-button washers in position thereon, with an opening beneath said washer when in position, spreading mechanism for the prongs of the tufting-button supported on the frame in position to operate on the prongs of the tufting-button, the said tufting-table being movable to bring one or more of the washer positions to register with the spreading mechanism, substantially as set forth.

8. The combination in a tufting-machine of a movable table, having means for securing the washers of tufting-buttons in position thereon, with an opening beneath the washer positions, a spreading mechanism for the prongs of the tufting-buttons, consisting of a pair of simultaneously-opening jaws hinged together, and said hinging-point being supported close to the under side of the table by an arm from the main frame, substantially as set forth.

9. The combination of a tufting-table having projections adapted to pass into or through the openings in the tufting-washers, and locate and hold them, of an expanding mechanism arranged below the table and adapted to operate after the button is placed in its final position simultaneously on both prongs of the tufting-button to bend the prongs to secure the washer, substantially as set forth.

10. The combination in a tufting-machine of a table, washer-holders having a fixed projection adapted to be received in the washer-opening and of a form to substantially fill the washer-opening diametrically and afford passages at each side for the prongs of the button through the washer-opening, and a movable button-prong bender arranged immediately beneath the washer-holder, substantially as set forth.

11. A holder for a tufting-button washer for tufting-machines, consisting of a base, having a projection adapted to pass into or through the opening in the washer, elongated in one direction to substantially fill the opening in the washer diametrically, while affording clearances for the prongs of the tufting-button at either side, said base being cut away to make provision for placing the button without spreading the prongs materially, and to permit the removal of the button and washer after the prongs have been spread, substantially as set forth.

809,573. BURIAL-CASKET. MONROE S. LEECH, Chicago, Ill. Filed Aug. 21, 1905. Serial No. 274,999.

Claim.—1. In a casket, a flat glass base thicker near its outer edge, a glass cover interfitting with said base, and a metallic reinforcing means underlying said base and inturned over the edges thereof to protect the same.

2. In a casket, a flat glass base thicker near its outer edges provided with a channel in its thickest portion, a glass cover interfitting in said channel, a metallic reinforcing means extending under the base, and inturned over the edge thereof.

3. In a casket, a flat glass base thicker near its outer edges, a glass cover, metallic reinforcing means extending under the base and inturned over the edges thereof, and handles secured to the inturned portion of said metallic reinforcing means.

809,574. ORNAMENTAL COMB. WALTON J. METCALF and JOHN W. PROBERTS, Leominster, Mass. Filed Mar. 16, 1905. Serial No. 250,410.

Claim.—1. In a comb of the character described, a suitable back and teeth, the said back having an opening, an ornamental plate lying against the back of the comb and exposed through the opening, a retaining-band, bearing against the plate and clips carried by the comb, and bent to overlie the outer surface of the retaining-band, substantially as described.

2. In a comb of the character described, a suitable body and teeth, the said body having suitably-shaped openings, plates fitting within the openings, a retaining-band having a flat surface bearing against each of said plates, the outer surface of said retaining-bands being convex, flexible clips carried by the comb and adapted to over-

lie the convex surface of the retaining-band, the ends of the said clips extending toward and terminating near the back of the comb.

2. In a device of the character described, a comb having a back provided with openings, plates fitting within the openings, the back of said comb, around each opening, being recessed to form a seat for the plate, a retaining-band having a flat contacting surface in engagement with the plate, flexible clips carried by the comb and adapted to overlie the outer surface of the retaining-band.

809,575. POWER-SLEDGE. PETER C. MOSS, Elwood, Ind., assignor to American Sheet and Tin Plate Company, Pittsburg, Pa., a Corporation of New Jersey. Filed Nov. 30, 1904. Serial No. 234,282.

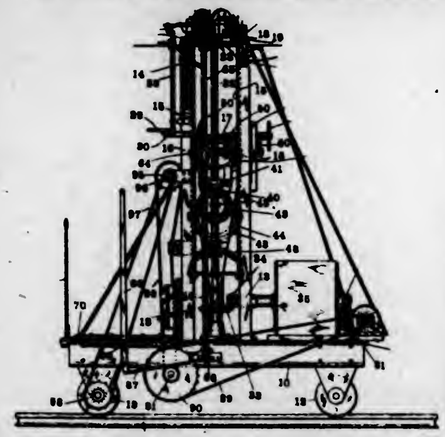

Claim.—1. In a power-sledge, the combination with a portable carriage, of a cross-head carried thereby, a plurality of threaded vertical shafts journaled on the portable carriage and engaging said cross-head, intermediate connections between said several threaded shafts for causing simultaneous movement thereof, a reciprocating hammer-carriage mounted on the cross-head, means for reciprocating said hammer-carriage on the cross-head, a vertically-reciprocable hammer mounted on the hammer-carriage, and means for reciprocating said hammer.

2. In a power-sledge, the combination with a portable carriage, of a cross-head carried by said carriage and vertically adjustable thereon, a hammer-carriage mounted on said cross-head and horizontally reciprocable thereon, a hammer carried by the hammer-carriage and vertically reciprocable thereon, a motor mounted on the portable carriage, and intermediate independently-controllable connections between said motor and the hammer-carriage and hammer whereby the hammer-carriage and hammer may be independently or simultaneously reciprocated.

3. In a power-sledge, the combination with a portable carriage, of a cross-head carried thereby, means for vertically adjusting said cross-head on the carriage, a hammer-carriage horizontally reciprocable on said cross-head, a horizontal shaft journaled on the cross-head, a splined driving connection between said shaft and the hammer whereby said hammer may be vertically reciprocated by rotation of the shaft, a crank-and-pitman driving connection for the hammer-carriage, means for varying the effective length of the crank thereof, a motor, and intermediate independently-controllable driving connections between said motor and said shaft and said crank, substantially as and for the purpose set forth.

809,576. TOBACCO-MOISTENING APPARATUS. HENRY J. MURRAY, Courtney, N. D. Filed Aug. 15, 1904. Serial No. 220,731.

Claim.—1. Apparatus of the class set forth, comprising an inclosing case, means for permitting a current of air to pass through said case, a series of troughs in the case, a water-supply tank, means for feeding water from said tank to said troughs, means for regulating the feed-supply, means for preventing the water overflowing said troughs, a series of trays in said case, and diffusing-cloths on said trays and projecting into said troughs.

2. A device of the class set forth, consisting, in combination, of an inclosing case, means for permitting a current of air to circulate in said case, a trough in the case, a water-supply tank, a feed connection between said tank and trough, means controlled by the humidity in said case for regulating said feed connection, means for preventing the water overflowing said trough, a tray in said case, and a diffusing-cloth on said tray and lapping into said trough.

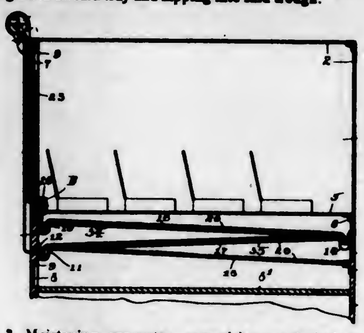

3. Moistening apparatus, comprising an inclosing case, a source of liquid-supply, a trough in said case, a feed connection between said source of liquid-supply and trough, means affected by the humidity in said case for automatically regulating the feed-supply, means for permitting a current of air to pass through said case to diffuse the liquid therein, means for checking the supply of liquid to said trough, a tray provided with openings passing therethrough, and a diffusing-cloth on said tray and lapping into said trough.

4. A device of the class set forth, consisting, in combination, of an inclosing case, a series of trays having openings passing therethrough, troughs in said case adjoining said trays, diffusing-cloths resting on said trays and lapping into said troughs, a water-supply tank, a feed connection between said tank and troughs, and means for checking the supply of water to said troughs, for the purposes specified.

809,577. HARNESS-TUG. JAMES S. MCKENZIE, Atlanta, Ga. Filed Nov. 26, 1904. Serial No. 234,676.

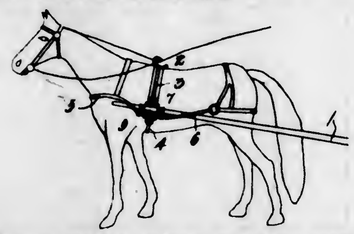

Claim.—A combined shaft-tug and holdback comprising a shaft-tug frame consisting of two plates permanently secured to a shaft, a holdback-rod permanently and yieldingly mounted in the tug-frame and buckles secured to the opposite ends of said holdback-rod for detachably connecting the holdback-strap and the breast-strap, and buckles above and below the tug-frame plates, substantially as described.

809,578. SPARKING PLUG. WILLIAM OTTAWAY, Aurora, Ill., assignor to Aurora Automatic Machinery Company, Aurora, Ill., a Corporation of Illinois. Filed Feb. 15, 1904. Serial No. 193,666.

Claim.—A sparking plug comprising an insulating-sleeve, a stem which passes through the sleeve and is provided with a head at its inner end, a packing interposed between said head and an opposing surface or shoulder on said sleeve, a cap applied to the outer end of said sleeve, a second cap which slides on the first-named cap and the head of which is perforated for the passage of the said stem, a nut on the stem adapted to bear against said second cap, and a spring interposed between said caps and acting to exert endwise tension on said stem.

809,579. COMBINED TWEEZERS, NEEDLE, AND EYE-CURETTE. ERNESTO PASTORE, New Haven, Conn. Filed May 18, 1905. Serial No. 260,971.

Claim.—The herein-described article consisting of a pair of tweezers comprising a flat central portion, legs extending downward therefrom, the central portion provided with a screw-threaded opening, a threaded shank arranged to be turned into said opening and carrying a needle-point at its lower end, said shank formed with a collar below its upper end, screw-threads above said collar, a loop inserted into the upper end of said shank, and a cap adapted to set over said loop and be turned onto said shank to a bearing on said collar whereby the shank and cap form a handle for the needle and also for the tweezers, and the tweezers or the needle form a handle for the loop, substantially as described.

809,580. FLOOR WAXING, POLISHING, AND CLEANING MACHINE. FRANK B. REICHENBACH, Los Angeles, Cal. Filed Jan. 26, 1905. Serial No. 242,718.

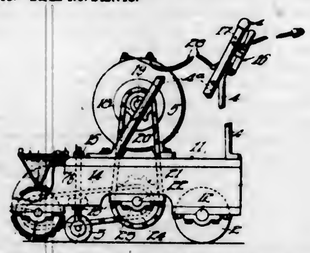

Claim.—1. A floor-waxing machine comprising a truck-frame, a motor on said frame, a rotary brush mounted on said frame, and connected to be driven by the motor, and a receptacle on the frame for supplying wax to said brush, said receptacle having a perforate bottom against which the brush wipes in its rotation.

2. A floor-waxing machine comprising a truck-frame, a motor on said frame, a rotary brush detachably mounted on said frame and connected to be driven by the motor, and a receptacle detachably mounted on the frame for applying wax to said brush, said receptacle having a perforate bottom against which the brush wipes in its rotation.

3. A floor waxing and polishing machine comprising a truck-frame, a motor on said frame, a shaft on the frame connected to be driven by the motor and interchangeable rotary waxing and polishing devices detachably mounted on said shaft, and a wax-carrying receptacle detachably mounted on the frame and having an opening for exposing the wax to the rotary waxing device.

4. A floor-waxing machine comprising a truck-frame, a motor on said frame, a rotary brush mounted on said frame and connected to be driven by the motor and a receptacle on the frame for supplying wax to the brush and roller means for engaging the floor and adjustably connected to the frame to adjust the height of the part of the frame carrying the rotary brush.

5. A machine for operating upon floors comprising a truck-frame, a motor on said frame, a rotary brush mounted on said frame and connected to be driven by the motor, a receptacle on the frame for supplying fluid to said brush and roller means for engaging the floor and adjustably connected to the frame to adjust the height of the part of the frame that carries the brush.

809,581. PACKING. CLEMENT RENTSCH, Philadelphia, Pa. Filed May 29, 1904. Serial No. 210,308.

Claim.—1. A packing comprising a pair of wedge members having the cross-sectional shape of right-angle isosceles triangles and having the side of one arranged in sliding contact with the hypotenuse of the other thereby forming a V-shaped groove, and a soft absorbent cushion arranged in the groove in contact with said members and having its face exposed on both sides of the packing whereby it can lubricate freely, substantially as described.

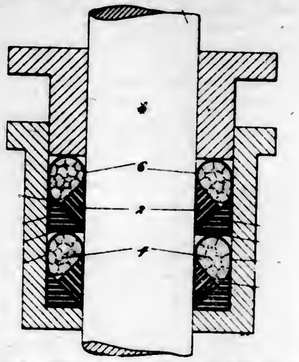

2. A packing comprising a pair of wedge members having the cross-sectional shape of right-angle isosceles triangles and having the side of one arranged to slide in contact with the hypotenuse of the other thereby forming a V-shaped groove, and a soft absorbent cylindrical cushion arranged in the groove and supported by said members to afford a lubricant-space and having its faces exposed on both sides of the packing whereby it can lubricate freely, substantially as described.

809,582. MACHINE FOR PEELING VEGETABLES. HENRY ROBINSON, Brooklyn, N. Y. Filed Jan. 7, 1905. Serial No. 240,047.

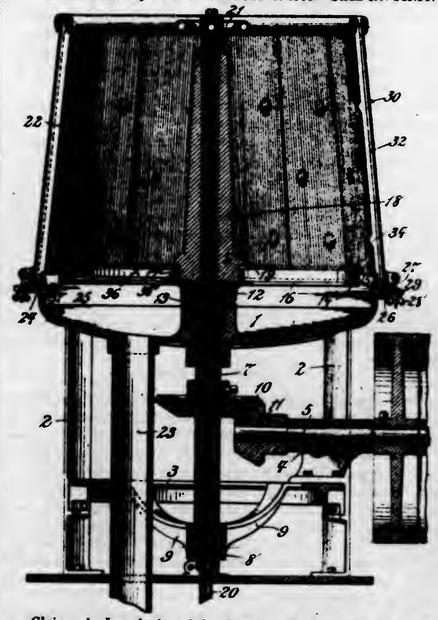

Claim.—1. In a device of the class described, an impelling and abrading member comprising a rotary disk composed of a horizontal flat striated portion and a raised portion extending from near the circumference inward and having two sides sloping down to the flat striated portion of said disk, substantially as described.

2. In a device of the class described, an impelling and abrading member comprising a rotary disk composed of a number of horizontal flat striated portions separated by raised portions at intervals extending from near the circumference inward, substantially as described.

3. In a device of the class described, an impelling and abrading member comprising a rotary disk composed of a horizontal flat striated portion and a rounded raised portion rising gradually from near the center toward the circumference, substantially as described.

4. In a device of the class described, an impelling and abrading member comprising a rotary disk composed of a horizontal flat striated portion, and a rounded raised portion bounded by two approximately radial edges extending from near the circumference inward and having a striated surface, substantially as described.

5. In a device of the class described, an impelling and abrading member comprising a rotary disk composed of a horizontal flat striated portion and a rounded raised portion bounded by two approximately radial edges extending from near the circumference inward, and having its surface striated at a material angle to the radii of the disk, substantially as described.

6. In a device of the class described, a containing vessel and a removable lining therefor the surface of which is striated and provided with rounded knobs adapted to enter the concavities of potatoes and the like, substantially as described.

7. In a device of the class described, a containing vessel and a removable lining therefor composed of vertical sections the surface of each of which is striated and provided with rounded knobs adapted to enter the concavities of potatoes and the like, substantially as described.

8. As an article of manufacture, an abrading element for peeling-machines comprising a striated strip having side ribs tapered at their ends, substantially as described.

9. As an article of manufacture, an abrading element for peeling-machines, comprising a striated strip having non-parallel sides and tapering ends, and provided with knobs on its striated surface, substantially as described.

10. As an article of manufacture an abrading element for peeling-machines comprising a striated strip with non-parallel sides and having ribs along said sides which ribs have tapering ends, substantially as described.

11. As an article of manufacture, an abrading element for peeling-machines, comprising a concave strip with non-parallel sides and tapering ends, and having striations on its concave surface making an acute angle with the median line of the strip, substantially as described.

12. As an article of manufacture, an abrading element for peeling-machines comprising a flat striated plate conforming roughly in outline to a sector of a circle and having isolated knobs on the working portion of its striated surface, substantially as described.

13. In a peeling-machine, a horizontal bowl having an upturned circular edge and a removable pot resting on said edge and having a deep circular lip fitting snugly within the edge of said bowl and having its inner surface sloping downward away from the center of the bowl, substantially as described.

14. In a peeling-machine, a horizontal bowl having an upturned circular edge and a removable pot provided with a bottom ring having an exterior flange extending upward and a deep interior lip fitting snugly within said bowl and having its inner surface sloping downward away from the center of the bowl, substantially as described.

809,583. **BISMUTH DISALICYLATE AND PROCESS OF MAKING SAME.** BRUNO R. SEIFERT, Radebeul, near Dresden, Germany, assignor to Chemische Fabrik von Heyden Aktiengesellschaft, Radebeul, near Dresden, Germany. Filed Oct. 10, 1905. Serial No. 282,159.

Claim.—1. The manufacture of bismuth disalicylate which consists in causing a normal bismuth salt to act on a solution of a salicylic salt, the base of which forms a soluble salt with the acid of the bismuth salt, and in removing the free salicylic acid from the product of reaction by neutralization or extraction with indifferent solvents at a temperature at which the bismuth disalicylate is not yet split up into salicylic acid and bismuth monosalicylate, substantially as and for the purpose specified.

2. As a new article of manufacture the new salt, bismuth disalicylate, a chemical combination of one atom of bismuth with two molecules of salicylic acid, forming a whitish powder of neutral reaction, which is split up into free salicylic acid and bismuth monosalicylate by boiling water, substantially as and for the purpose specified.

809,584. **LIFTING-JACK.** JOHN J. SHANNON, Bangor, Me. Filed July 20, 1905. Serial No. 271,722.

Claim.—1. In a device of the character described, a block, said block being adapted to support a jack and being independent thereof, connections on the block adapted to engage the rim of a wheel, and means carried by the block for adjusting said block with relation to the wheel.

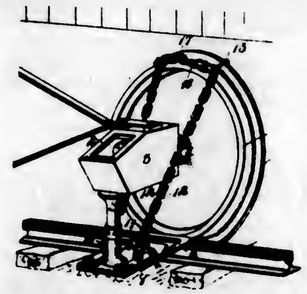

2. In a device of the character described, a block, said block being adapted to support a jack and being independent thereof, connections on the block adapted to engage the rim of a wheel, a brace carried by the block to engage the wheel, said brace being adjustable with relation to the block.

3. In a device of the character described, a block, said block being adapted to support a jack and being independent thereof, connections on the block adapted to engage the rim of a wheel, a slotted brace adapted to engage the wheel through the block and slots of the brace, the connections of the block engaging the eyebolts and causing them to bind against the brace.

4. In a device of the character described, a block adapted to support a jack, a brace for the block, said brace being approximately U-shaped, the parallel arms of the brace being slotted, eyebolts passing through the block and the slots of the brace, binding means for the eyebolts engaging the brace, and connections between the eyebolts and the rim of a wheel.

5. In a device of the character described, a block adapted to support a jack, a brace for the block, said brace being approximately U-shaped, the parallel arms of the brace being slotted, reinforcing-stripe carried by the block, eyebolts passing through the reinforcing-stripe, block, and slots of the brace, the eyes of the bolts bearing on the reinforcing-stripe, binding means on the bolts engaging the brace, and connections between the eyebolts and the rim of a wheel.

809,585. **MIXING AND MEASURING APPARATUS.** ROBERT C. SMITH, Oak Park, Ill. Filed Mar. 7, 1905. Serial No. 248,909.

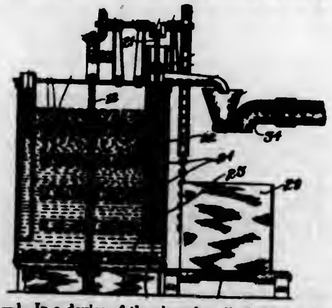

Claim.—1. In a device of the class described, the combination with a tilting vessel having two compartments, of a raw-water pipe discharging into the two compartments of said tilting vessel alternately, a tank for chemical fluid, a measuring-pump for pumping chemical fluid from said tank and delivering it to said tilting vessel, a rock-shaft, a crank on said rock-shaft connected with the pump-rod of said pump, and gearing connecting the tilting vessel mechanically with said rock-shaft, the ratio and adjustment of said gearing being such as to cause an upward stroke of said pump-rod in unison with each single oscillation of said tilting vessel.

2. In a device of the class described, the combination with a tilting vessel having two compartments, of a raw-water pipe discharging into the two compartments of said tilting vessel alternately, a chemical-supply tank, a measuring-pump for pumping chemical fluid from said supply-tank and discharging alternately into the two compartments of said tilting vessel, said pump being actuated by the movements of said tilting vessel, a rock-shaft, a crank on said rock-shaft connected with the pump-rod of said pump, gearing connecting said tilting vessel mechanically with said rock-shaft, the ratio and adjustment of said gearing being such that each single oscillation of said tilting vessel causes a predetermined upward stroke of said pump-rod.

3. In a device of the class described, the combination with a tilting vessel having two compartments, of a raw-water pipe discharging into the two compartments of said tilting vessel alternately, a chemical-supply tank, a stirring device in said chemical-supply tank, a reciprocating measuring-pump for pumping chemical fluid from said tank and delivering it to said tilting vessel, a rock-shaft, a crank on said rock-shaft connected with the pump-rod of said pump, gearing connecting said stirring device with said rock-shaft, and gearing connecting said tilting vessel mechanically with said rock-shaft, the ratio and adjustment of said gearing being such that each single oscillation of said tilting vessel causes a predetermined upward stroke of said pump-rod.

4. In a device of the class described, the combination with a chemical-supply tank, of stirring mechanism in said tank, a tilting vessel having two compartments, a raw-water pipe discharging alternately into the two compartments of said tilting vessel, a measuring-pump for pumping chemical fluid from said supply-tank and discharging alternately into the two compartments of said tilting vessel, said pump being actuated by the movements of said tilting vessel by means of connecting-gearing serving to cause a complete up-and-down stroke of said pump in unison with each single oscillation of said tilting vessel, and gearing for connecting said tilting vessel mechanically with said stirring mechanism.

5. In a device of the class described, the combination with a chemical-supply tank, of a tilting vessel having two compartments, a raw-water pipe discharging alternately into the two compartments of said tilting vessel, and a measuring-pump for pumping chemical fluid from said supply-tank and discharging alternately into the two compartments of said tilting vessel, said pump being actuated by the movements of said tilting vessel by means of connecting-gearing serving to cause a complete up-and-down stroke of said pump in unison with each single oscillation of said tilting vessel.

6. In a device of the class described, the combination with a chemical-supply tank, of a tilting vessel having two compartments, a raw-water discharge-pipe discharging alternately into the two compartments of said tilting vessel, a single measuring-pump for pumping chemical fluid from said tank and delivering it into the tilting vessel, said pump being actuated by the movements of said tilting vessel, a gearing between said pump serving to cause both an upward and a downward stroke of said pump in unison with each single oscillation of said tilting vessel, and means for adjusting the stroke of the pump relatively to a given movement of said tilting vessel.

809,586. **GOLD-SEPARATOR.** EBEN J. STERLING, Brooklyn, N. Y. Filed Feb. 1, 1905. Serial No. 243,699.

Claim.—1. In a gold-separator, the combination of a tank, a circular rack above said tank, a rotatable shaft extending upwardly through said tank, means for operating said shaft, a hub rotatable with and slidable on said shaft, means for sliding said hub on said shaft, arms secured to said hub, elevators rotatably mounted on said arms, laterally-extending shafts for operating said elevators, said shafts rotatably mounted on said arms and having gears on their inner ends and upwardly-extending shafts rotatably mounted on said arms and having gears on their lower ends meshing with the gears on the laterally-extending shafts and gears on their upper ends rotatable therewith and slidable thereon and meshing with said circular rack, substantially as described.

2. In a gold-separator, the combination of a tank, a circular rack above said tank, a pipe projecting up through said tank and having an exterior annular chamber provided with outlet-openings leading into said tank, a rotatable shaft extending upwardly through said pipe, means for operating said shaft, a hub rotatable with and slidable on said shaft, means for sliding said hub on said shaft, arms secured to said hub, elevators rotatably mounted on said arms, laterally-extending shafts for operating said elevators, said shafts rotatably mounted on said arms and having gears on their inner ends and upwardly-extending shafts rotatably mounted on said arms and having gears on their lower ends meshing with the gears on the laterally-extending shafts and gears on their upper ends rotatable therewith and slidable thereon and meshing with said circular rack, substantially as described.

3. In a gold-separator, the combination of a tank, a circular rack above said tank, a rotatable shaft extending upwardly through said tank, a hub rotatable with and slidable on said shaft, means for sliding said hub on said shaft, arms secured to said hub, scrapers carried by said arms, elevators rotatably mounted on said arms, laterally-extending shafts for operating said elevators, said shafts rotatably mounted on said arms and having gears on their inner ends and upwardly-extending shafts rotatably mounted on said arms and having gears on their lower ends meshing with the gears on the laterally-extending shafts and gears on their upper ends rotatable therewith and slidable thereon and meshing with said circular rack, substantially as described.

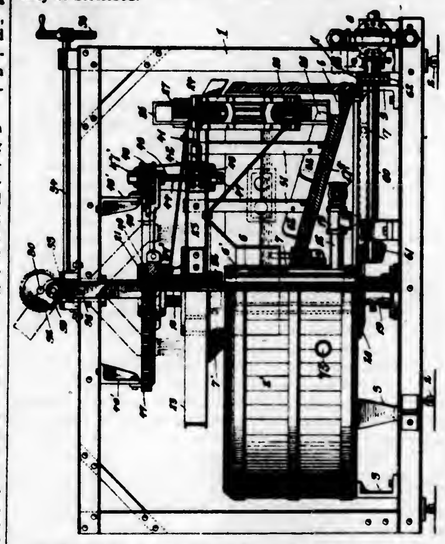

4. In a gold-separator, the combination of a tank, a circular rack above said tank, a rotatable shaft extending upwardly through said tank, means for operating said shaft, a hub rotatable with and slidable on said shaft, a block on the upper end of said shaft, a shaft rotatably mounted on said block and having a worm-wheel on one end and a disk on the other end, links having their upper ends pivoted to said worm-wheel and disk and their lower ends pivoted to said hub, a rotatable shaft having a worm meshing with said worm-wheel, arms secured to said hub, elevators rotatably mounted on said arms, laterally-extending shafts for operating said elevators, said shafts rotatably mounted on said arms and having gears on their inner ends and upwardly-extending shafts rotatably mounted on said arms and having gears on their lower ends meshing with the gears on the laterally-extending shafts and gears on their upper ends rotatable therewith and slidable thereon and meshing with said circular rack, substantially as described.

5. In a gold-separator, the combination of a tank, a circular rack above said tank, a rotatable shaft extending upwardly through said tank, means for operating said shaft, a hub rotatable with said shaft, arms secured to said hub, elevators rotatably mounted on said arms, laterally-extending shafts for operating said elevators, said shafts rotatably mounted on said arms and having gears on their inner ends and upwardly-extending shafts rotatably mounted on said arms and having gears on their lower ends meshing with the gears on the laterally-extending shafts and gears on their upper ends rotatable therewith and meshing with said circular rack, substantially as described.

6. In a gold-separator, the combination of a tank, a circular rack above said tank, a rotatable shaft extending upwardly through said tank, means for operating said shaft, a hub rotatable with said shaft, arms secured to said hub, scrapers secured to said arms, elevators rotatably mounted on said arms, laterally-extending shafts for operating said elevators, said shafts rotatably mounted on said arms and having gears on their inner ends and upwardly-extending shafts rotatably mounted on said arms and having gears on their

lower ends meshing with the gears on the laterally-extending shafts

having means for engagement with the lower, and a support from the

lower ends meshing with the gears on the laterally-extending shafts and gears on their upper ends rotatable therewith and meshing with said circular rack, substantially as described.

7. In a gold-separator, the combination of a tank, a circular rack above said tank, a pipe projecting up through said tank and having an exterior annular chamber provided with outlet-openings leading into said tank, a rotatable shaft extending upwardly through said pipe, means for operating said shaft, a hub rotatable with said shaft, arms secured to said hub, elevators rotatably mounted on said arms, laterally-extending shafts for operating said elevators, said shafts rotatably mounted on said arms and having gears on their inner ends and upwardly-extending shafts rotatably mounted on said arms and having gears on their lower ends meshing with the gears on the laterally-extending shafts and gears on their upper ends rotatable therewith and meshing with said circular rack, substantially as described.

809,587. LOOSE-LEAF BINDER. LEON SUSSMAN, Bayonne, N. J., assignor of one-half to Samuel Wilner and Rhea R. Wilner, New York, N. Y. Filed Dec. 31, 1904. Serial No. 239,076.

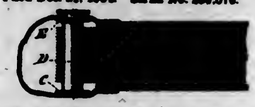

Claim.—1. A binder or holder for leaves and the like, comprising two sets of connected members, the members of one set being adapted to enter those of the other set, spring-pressed plungers mounted in the members of one set, and locking mechanism, operated by the movement of said plungers, to connect one set of members with the other, or disconnect it therefrom.

2. A binder or holder for leaves or the like, comprising a socket roughened on its inner surface, a slide adapted to be inserted into the said socket, a spring-pressed plunger in the slide, and means, operated by the movement of said plunger, for locking the slide to the socket, or releasing it therefrom.

3. A binder or holder for leaves or the like, comprising a socket roughened on its inner surface, a slide adapted to be inserted into the said socket, a spring-pressed plunger movable in the slide, and elastic means, controlled by the movement of the plunger, for locking the slide to the socket, or releasing it therefrom.

4. A binder or holder for leaves or the like, comprising a socket, a slide adapted to enter the said socket, a plunger movable in the slide, mechanism operated by the movement of said plunger, for locking said slide to the socket or releasing it therefrom, and a catch for holding the plunger in its releasing position.

5. A binder or holder for leaves or the like, comprising a set of connected sockets, a set of connected slides adapted to enter the said sockets, connected plungers movable in the said slides, locking mechanism operated by the movement of said plungers for locking said slides to the sockets or releasing them, and a catch for holding the plungers in the releasing position.

6. A binder or holder for leaves or the like, comprising a strip or bar and sockets carried thereby, another strip or bar carrying slides adapted to enter the said sockets, connected plungers movable in the said slides, locking mechanism, operated by the movement of said plungers, to connect or disconnect the said slides and sockets, and a catch for holding the plungers in the releasing position.

809,588. RACE-COURSE FOR AUTOMOBILES. JOHN B. THOMAS and JASPER LYNES, Lakewood, N. J. Filed Apr. 1, 1905. Serial No. 253,274.

Claim.—1. A race-track for automobiles, comprising two straight portions crossing one another at different levels, each end of each straight portion being connected with each end of the other portion by means of loops.

2. A race-track for automobiles, comprising two straight portions crossing one another at different levels, each end of each straight portion being connected with each end of the other portion by means of loops, the straight portions being at least twice as wide as the looped portions.

3. A race-track for automobiles, comprising a plurality of track portions crossing at different levels, and loops connecting said track portions, there being a plurality of loops each having one end connected with the same end of one of the crossing track portions.

4. A race-track for automobiles, comprising two tracks crossing at different levels, means for joining the ends, and a grand-stand built around the crossing-point of the two tracks.

5. In a race-track for automobiles, two tracks crossing at a different level, a grand-stand consisting of one or more bridges spanning each track, and means for connecting the ends of the bridges.

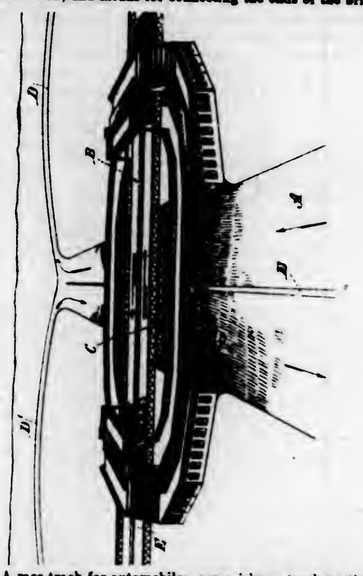

6. A race-track for automobiles, comprising a track portion, a plurality of tracks crossing such track portion and each arranged at a level different from that of the track portion, and dissociated loops connecting said tracks with the track portion and forming a continuous course therewith.

809,589. AMUSEMENT APPARATUS. EDWIN S. TIMMONS, Chicago, Ill. Filed May 5, 1905. Serial No. 259,936.

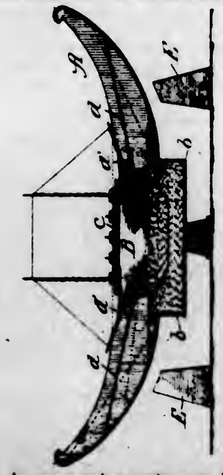

Claim.—1. An amusement apparatus comprising, in combination, a water-receptacle, means for moving the receptacle to agitate the water therein, a boat supported by the water in said receptacle and means for preventing the boat from striking against the walls of the receptacle.

2. An amusement apparatus comprising, in combination, an oblong water-receptacle, means for rocking said receptacle to agitate the water therein, a boat supported by the water in said receptacle and means for preventing the boat from striking against the walls of the receptacle.

3. An amusement apparatus comprising, in combination, a water-receptacle, means for moving said receptacle to agitate the water therein, a boat supported by the water in said receptacle and means for preventing the boat from striking against the walls of the receptacle.

4. An amusement apparatus comprising, in combination, a water-receptacle, means for rocking said receptacle, buffers located below the opposite end portions of the said receptacle, a boat supported by the water in said receptacle, and means for preventing the boat from striking against the walls of the receptacle.

5. An amusement apparatus comprising, in combination, a water-receptacle, bearings therefor between its ends, means for rocking said receptacle on its bearings, a boat supported by the water in said receptacle and means for preventing the boat from striking against the walls of the receptacle.

6. An amusement apparatus comprising, in combination, a water-receptacle, bearings on which said receptacle is pivotally mounted between its ends, gear and pitman rocking means for the receptacle, a boat supported by the water and means for preventing the boat from striking against the walls of the receptacle.

7. An amusement apparatus comprising, in combination, a water-receptacle, means for moving said receptacle for agitating the water therein, a boat supported by the water in said receptacle and means for maintaining the boat in substantially the same longitudinal position relative to the receptacle comprising resilient connections secured to said boat and said receptacle.

8. An amusement apparatus comprising, in combination, a water-receptacle, means for moving said receptacle to agitate the water therein, a boat supported by the water in said receptacle, and means for maintaining the boat in substantially the same longitudinal position with relation to the receptacle, comprising spring-equipped rods secured to the opposite ends of the boat and receptacle respectively.

9. An amusement apparatus comprising, in combination, a water-receptacle, means for moving said receptacle to agitate the water therein, a boat supported in the water in said receptacle, means for preventing the boat from striking the walls of the receptacle, a stationary platform adjacent to said receptacle and a gang-plank adapted to be raised and lowered to span the space between the boat and said platform.

809,590. PUMP-REGULATOR. JAMES P. WATSON and FREDERICK L. JAHN, Philadelphia, Pa., assignors to The Watson & McDaniel Company, a Corporation of Pennsylvania. Filed July 14, 1905. Serial No. 269,897.

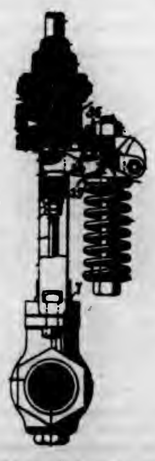

Claim.—1. In a pump-regulator, a case, a steam-inlet and an outlet therefor, balanced steam-valves in the case, a stem for the valves, a framework supported on the case, a hydraulic cylinder supported on the framework and in alinement with the case, a chambered piston in the cylinder and adjustably connected to the valve-stem; a passage from the pump to the hydraulic cylinder; a spring supported out of alinement with the valves and piston, with means to adjust its tension; a lever fulcrumed upon the framework, a seat for the spring having means for engagement with the lever, and a support from the end of the lever opposite its fulcrum, which enters and is seated in the piston's chamber at a point near the head of the piston and where it receives its pressure.

2. In a pump-regulator, the combination of balanced steam-valves, and a stem therefor, a hydraulic piston adjustably connected to the stem and in alinement therewith, a lever fulcrumed at its outer end and extending to the hydraulic piston, a spring adjustably suspended between the lever's fulcrum and the hydraulic piston and whereby the spring is placed out of alinement with the valves and piston and its movement is less than the movement of the valves and piston, depressions in the lever, a spring-seat having projections engaging the depressions, and a supporting means for the piston which engages the lever and extends to the point of pressure on the piston.

3. In a pump-regulator, a case with steam connections thereto and therefrom, a framework for the case and a hydraulic cylinder thereon in alinement with the case, a piston in the cylinder and adjustably secured to the valve-stem in direct alinement, a passage from a pump to the hydraulic cylinder, a lever pivotally supported at its outer end, a spring adjustably supported upon the framework and bearing upon the lever between its pivot and the piston to decrease its movement relative to the piston and valves, a speed limit adapted for adjustment to contact and restrict the lever's movement and the opening of the steam-valves, and a means of support from the lever to the piston which at one end engages the lever and at its opposite and engages the piston at its end which is subjected to hydraulic pressure.

4. In a pump-regulator, steam-valves and a hydraulic piston adjustably connected, a spring adapted to resist the pressure on the piston and seated upon a lever whereon is also seated an end bearing-support adapted to support the piston at its point subjected to pressure.

5. In a pump-regulator, steam-valves and a hydraulic piston adjustably connected, a spring supported in manner for its less movement than the movement of the valves and piston, and seated upon a lever having a pin-support for the piston and whereby the the piston is supported at its point subjected to pressure.

809,591. BLANK STAMPING OR IMPRESSING MACHINE. GEORGE W. HERNS, Cleveland, Ohio. Filed June 14, 1903. Serial No. 161,706.

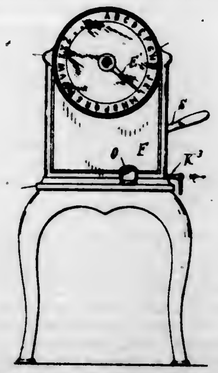

Claim.—1. In a machine of the type set forth the combination with a matrix table or platen provided with a series of pivoted matrices, springs for holding said matrices in normal or non-operative position, means for moving said platen or table comprising an indicator a pivoted weight adapted to operate upon an individually-positioned matrix a blank-holder located in juxtaposition to said weight said blank-holder being movable so as to present successively a new surface to be operated upon, means for moving said blank-holder and means for feeding the blank to said blank-holder and ejecting the previously-completed blank from said blank-holder, said latter means comprising grasping-jaws an anvil located between said grasping-jaws means for opening and closing said jaws, and means for raising and lowering the anvil within said jaws, substantially as and for the purpose set forth.

2. The combination with a series of pivoted dies, and the movable weight, of a blank-holding chuck, means for simultaneously no-

tuating the said chuck and weight, an anvil-block operating in said

tioning, temporarily holding, releasing, and delivering the blank

a metallic angle-frame having one angle secured to the body portion,

809,594. SELF-ACTING MULTISPINDLE-MACHINE. HENRY

tuating the said chuck and weight, an anvil-block operating in said chuck, and a slide arranged beneath the said block and having an inclined face for raising and lowering the same.

3. The combination with the movable die and the means for actuating the same, of a blank-holding chuck comprising inner and outer shells, means for contracting the upper end of the inner shell as it is lowered, an anvil-block slidably mounted in the inner shell of the said chuck, and means for sliding said block in said shell, substantially as described.

4. The combination with the dies and the actuating means therefor, of a blank-holding clutch comprising an outer shell provided on its interior with an inclined surface, and an inner shell having its upper portion formed with a series of jaws having their outer surfaces inclined and being adapted to engage the inclined portion of the outer shell, means for holding the said shell in a depressed state within the outer shell, an anvil-block operating within the inner shell, and means for elevating the said inner shell and anvil-block.

5. In combination with the dies and the means for actuating the same, a chuck, an anvil-block arranged in the chuck, a blank-feed means, and a slide for simultaneously actuating said anvil-block and blank-feeding means.

6. In combination with the chuck comprising inner and outer shells, the inner shell having spring-arms engaging an inclined flange of the outer shell, an anvil-block arranged in said chuck, means for successively elevating the inner shell and anvil-block respectively, and means for feeding blanks to said chuck operated by said last-named means.

7. In combination with a chuck and a die, an ejecting means arranged in the chuck, a means for operating the said ejecting means, and means connected directly to said last-named means for feeding blanks to the chuck.

8. In combination with the chuck comprising coöperating inner and outer shells, an ejecting means arranged in the chuck, and a slide formed with cam-faces for successive engagement with the said inner shell and ejecting means respectively.

9. In combination with the blank-holding means, and the dies, means for bringing the said dies successively over said blank-holding means, a weighted lever for engagement with said dies, a pair of levers arranged one above the other, a cam-lever adapted when engaged by the upper of the first-named levers to actuate the lower thereof, said upper lever when operated elevating said weighted lever, and means carried on the inner end of said lower lever for imparting an intermittent movement to said blank-holding means.

10. In a machine of the type set forth, the combination with the blank-holding means, the dies, and the ejecting means operating through the said blank-holding means, of a blank-feeding means, and means rigidly connected to said last-named means, for releasing the blank in said holding means and actuating the ejecting means.

11. In a stamping-press, printing mechanism having individual die elements, mechanism comprising means for positioning, temporarily holding, releasing and delivering a blank, and means for effecting a stamping of the characters in a circle upon the blank while temporarily held.

12. In a stamping-press, printing mechanism having individual die elements, means for moving a blank into a position with its edge lapped by the printing mechanism, and also for temporarily holding the blank in and delivering it from such position, and means for effecting a stamping of the characters in a circle upon the blank.

13. In a stamping-press, printing mechanism having individual die elements, blank-handling mechanism comprising means for positioning, temporarily holding, releasing and delivering a blank, and means for effecting a spacing action, through relative movement of the blank and die elements, for stamping the characters in a circle upon the blank.

14. In a stamping-press, printing mechanism having a plurality of die elements, means for selecting individual die elements with reference to the printing position, blank-handling mechanism comprising means for positioning, temporarily holding, releasing, and delivering a blank, and means for effecting a stamping of the characters in a circle upon a blank.

15. In a stamping-press, printing mechanism having individual die elements, blank-handling mechanism having a rotatable anvil-support for the blank and also having means for positioning, temporarily holding, releasing, and delivering the blank, selecting means for the die elements, and means for effecting character-spacing through the movement of the anvil-support.

16. In a stamping-press, printing mechanism having individual die elements, blank-handling mechanism having a step-by-step rotated anvil-support for the blank and also having means for positioning, temporarily holding, releasing, and delivering the blank, and selecting means for the die elements.

17. In a stamping-press, printing mechanism having individual die elements, blank-handling mechanism having a rotatable anvil-support for the blank and also having means for positioning, temporarily holding, releasing, and delivering the blank, selecting means for the die elements, and operating mechanism having means for actuating the die elements and also for effecting a character-spacing through the medium of the anvil-support.

18. In a stamping-press, blank-handling mechanism having an anvil-support for the blank and also comprising means for positioning, temporarily holding, releasing, and delivering a blank, a die-holder arranged in overlapping relation to the anvil-support and having a plurality of die elements, means for selecting the individual die elements and operating mechanism comprising means for actuating the selected die element, and also for effecting a character-spacing movement of the blank.

19. In a stamping-press, blank-handling mechanism having an anvil-support for the blank and spacing mechanism coöperating with the anvil-support, said blank-handling mechanism also comprising means for positioning, temporarily holding, releasing, and delivering a blank, a die-holder bearing an overlapping relation to the anvil-support and having a plurality of die elements, means for selecting the individual die elements, and operating mechanism comprising means for actuating the said spacing mechanism for the anvil-support and also for actuating the selected die element.

20. In a machine of the class described, printing mechanism having individual die elements, blank-handling mechanism including an anvil-support for the blank and comprising means for positioning, and delivering the blank, a holding device for clamping and releasing the automatically-positioned blank upon the anvil, and controlling mechanism comprising means for setting and releasing the holding device respectively after the positioning of the blank and at the completion of the stamping operation.

21. The combination with the dies, a pivoted weight and operating means therefor of a blank-holding chuck, comprising inner and outer shells, means for contracting the upper portion of the inner shell, an anvil-block operating in said inner shell, and a slide formed with cams adapted to elevate successively the inner shell of the chuck and the anvil-block.

22. The combination with the dies, a weight, and the actuating means therefor, of the blank-hopper, a chuck, means for feeding the blanks from the hopper to the chuck, a finger engaging the upper face of the blanks when arranged in the chuck, an anvil-block operating in the chuck, means for elevating the anvil-block for ejecting the blank, and means for rotating the said chuck.

809,592. **METALLIC WALL-CLOSET.** DAVID H. WATTS, Jr., Philadelphia, Pa. Filed Dec. 7, 1904. Serial No. 235,864.

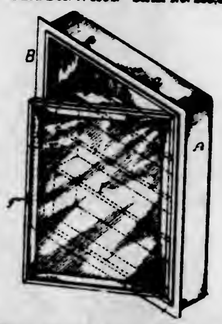

Claim.—1. The combination in a closet, of a metallic body portion arranged to fit in the space between the two walls of a partition, and a frame secured to the open end of the body portion and overlapping one wall forming a finish, and a door hung to said frame, substantially as specified.

2. The combination of a body portion, lugs thereon, an angle-frame having one member secured to the lugs, the other member extending through one wall of the partition, a facing-frame secured to the angle-frame, and a door hung to the facing-frame, substantially as specified.

3. The combination in a closet, of a body portion adapted to be mounted between the walls of a partition, lugs on the body portion, a metallic angle-frame having one angle secured to the body portion, the other angle extending through one wall of the partition and a metallic angle facing-strip overlapping the wall and secured to the angle-frame, substantially as specified.

4. The combination in a closet, of a body portion made of cast metal and enameled on the inside, shelf-supports secured to the body portion, shelves mounted thereon, a metallic angle-frame having one member secured to the body portion, the other member extending through one wall of the partition, an angle facing-frame having one member overlapping one of the members of the angle-frame and the other member overlapping the wall of the partition, and a door pivoted to the facing-frame, substantially as specified.

5. The combination in a closet, of a body portion, a frame secured to the body portion, a door, concealed pivots by which the door is hung to the frame, and a washer on the pivot between the lower portion of the door and the frame, substantially as specified.

6. The combination in a closet, of a partition, studding therein, a cast-metal body portion having lugs and having its inner surface enameled, a metallic angle-frame, screws fastening one member of the frame to the lugs of the body portion, the other member of the frame extending through the wall of the partition and flush with the outer surface thereof, an angle facing-frame, screws fastening one member of the said facing-frame to the angle-frame, the other member of the facing-frame overlapping the wall of the partition, a door mounted in the facing-frame, concealed pivots by which the door is hung to the frame, said door being made in the form of a frame, a glass mounted in the frame, and a backing for the glass also mounted in the frame, substantially as specified.

809,593. **DEVICE FOR REMOVING MINING AND OTHER DEBRIS.** SIMON W. WERLE, Bakersfield, Cal. Filed Feb. 6, 1905. Serial No. 244,473.

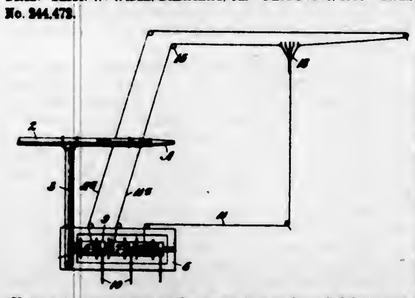

Claim.—1. An apparatus for removing rock and debris, said apparatus comprising drums loosely mounted upon a motor-driven shaft, means for engaging said drums with or disengaging them from the shaft, a rake, a rope extending from the rake to one of said drums, direction-pulleys around which the rope passes, other ropes connecting with opposite sides of the rake, direction-pulleys around which the last-named ropes pass, and independent winding-drums with which said ropes are connected and by which the rake is placed in position.

2. An apparatus for the removal of rocks and debris, said apparatus consisting of a rake, a rope and direction-pulleys by which the rake may be drawn across the territory to be cleared, other ropes attached to the sides of the rake through which power may be applied to transfer the rake to any desired point to embrace the material to be removed.

3. In an apparatus for removing rock and debris, a rake consisting of bent arms having their outer ends adapted to engage the material to be moved, a central shank to which said arms converge and are fixed, a swiveled rope connection carried by the end of the shank, spacing-blocks by which the outer ends of the arms are maintained in position and means for attaching ropes upon opposite sides whereby the device may be moved laterally.

4. In an apparatus for moving rocks and debris, a rake composed of curved arms, adapted to engage the material, a central shank to which said arms converge and are secured, a caster-wheel upon which the shank is supported, a swivel attachment for a rope by which the rake and its load may be moved, spacing-blocks by which the outer ends of the arms are maintained in position, means carried by opposite sides of the rake for the attachment of ropes whereby transverse movement in positioning of the rake may be effected with relation to the material to be moved.

809,594. **SELF-ACTING MULTISPINDLE-MACHINE.** RUDOLF WERNER-ARNOLD, Horgen, Switzerland, assignor to The Firm of Werner & Co., Horgen, Switzerland. Filed Oct. 9, 1903. Serial No. 176,821.

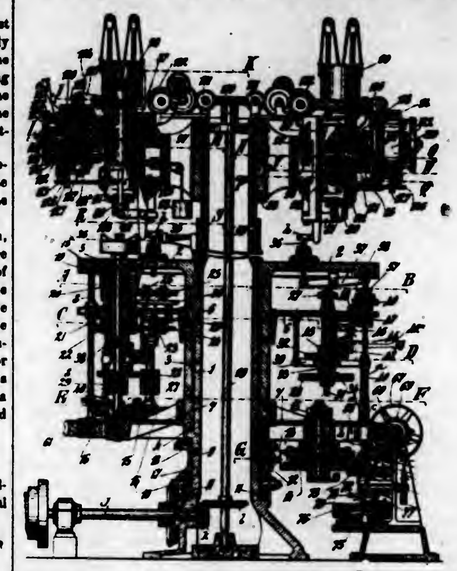

Claim.—1. In a self-acting multispindle-machine, the combination of a number of work-spindles and a rotary frame; of a corresponding number of tool slides or carriages arranged around the axis of the rotary frame, with means to operate each tool separately and independently of the other tools, said means including means for giving the tool a longitudinal feed and means for giving it a transverse feed, controlling means for such feeds adapted to permit the longitudinal feed, the transverse feed or both feeds together relative to the article under treatment.

2. In a self-acting multispindle-machine, the combination of a number of work-spindles and a rotary frame; of a corresponding number of tool slides or carriages arranged around the axis of the rotary frame, with means to operate each tool separately and independently of the other tools, said means including means for giving the tool a longitudinal feed and means for giving it a transverse feed, controlling means for such feeds adapted to permit the longitudinal feed, the transverse feed or both feeds together relative to the article under treatment, means for returning the tool into its initial position after completing its allotted partial machining of the article situated opposite to it.

3. In a self-acting multispindle-machine, the combination of a number of work-spindles and a rotary frame; of a corresponding number of tool slides or carriages arranged around the axis of the rotary frame, with means to operate each tool separately and independently of the other tool, said means including means for giving the tool a longitudinal feed and means for giving it a transverse feed, controlling means for such feeds adapted to permit the longitudinal feed, the transverse feed or both feeds together relative to the article under treatment, means for returning the tool into its initial position after completing its allotted partial machining of the article situated opposite to it, means to rotate the rotary frame relatively to the tools at any desired variable intervals of time, and means adapted to permit said rotation to be utilized for bringing the feed movement of the tools in operation.

4. In a self-acting multispindle-machine, a rotary frame and a number of rotary work-spindles mounted in a circle at equal distances apart in said frame, in combination with a corresponding number of tool slides or carriages arranged around the axis of the rotary frame, with means to operate each tool separately and independently of the other tools, said means including means to give the tool a longitudinal feed and means to give it a transverse feed, controlling means for such feeds adapted to permit the longitudinal feed, the transverse feed or both feeds together relative to the article under treatment, means to return the tool into its initial position after

completing its allotted partial machining of the article situated op-

other tools, each of said mechanisms including means for giving the

completing its allotted partial machining of the article situated opposite to it, means to set the said tool-feeding mechanisms into operation, and means on the frame coacting therewith; a separate mechanism situated outside of the machine and provided with its own driving power for rotating the rotary frame relatively to the tools at any desired variable intervals of time.

5. In a self-acting multispindle-machine, a rotary frame, a number of work-spindles mounted in a circle at equal distances apart in said frame, and a corresponding number of independent tool slides or carriages arranged around the axis of the rotary frame, means to rotate the work-spindles and move each of these spindles in the direction of its length separately and independently of the other work-spindles, and means for reversing the direction of movement of the work-spindles at desired intervals of time.

6. In a self-acting multispindle-machine, a rotary frame and a number of work-spindles mounted therein, in combination with a corresponding number of tool slides or carriages arranged around the axis of the frame, means to yieldingly hold each slide in normal position, means to laterally traverse the slides and against the action of their holding means, a tool-holder in each slide, means to normally hold each tool-holder in raised position, and means to feed each tool-holder toward the work-spindles and against the action of their holding means.

7. In a self-acting multispindle-machine, a rotary frame and a number of work-spindles mounted therein, in combination with a number of tool slides or carriages arranged around the axis of the frame a weight to yieldingly hold each tool-slide in normal position, means to traverse the slides and against the action of the weight, a tool-holder in each slide, a weight to hold each holder away from the work-spindles, and means to feed each tool-holder toward the work-spindles against the action of its respective weight.

8. In a self-acting multispindle-machine, a rotary frame and a number of work-spindles mounted therein, in combination with a number of tool slides or carriages arranged around the axis of the frame, means to yieldingly hold each slide in normal position, mechanism to traverse each slide, a tool-holder, means to normally hold each tool-holder away from the work, mechanism to feed each tool-holder to the work against the action of its holding means, means for setting said mechanisms into operation and means on the frame coacting therewith.

9. In a self-acting multispindle-machine, a rotary frame and a number of work-spindles mounted therein, in combination with a number of tool slides or carriages arranged around the axis of the machine, means on each carriage to traverse the slide, a tool-holder in each slide, means on each carriage to feed the tool-holder, cams on each carriage to control the operation of both of said means, mechanism to drive said means, a device on the table to set said mechanism in operation, and a central driving device common to all of the carriages.

10. In a metal-working machine, a work-spindle, in combination with a tool slide or carriage, said tool-slide containing a spindle, a controlling-cam and a gear-wheel fixed on the spindle, a drum revolubly on the spindle having an external-toothed ring, two slidable pins mounted in the drum and planet-gears having clutch-faces on the pins and a gear-train clutched and operated by each planet-gear, one of said trains capable of traversing the carriage and the other of feeding the tool, said pins operated by the cam, and mechanism to rotate the drum.

11. In a self-acting multispindle-machine, a rotary frame and a number of work-spindles mounted therein, in combination with a number of tool slides or carriages arranged around the axis of the frame, means to yieldingly hold each tool-carriage in normal position, a spindle fixed to the carriage, a controlling-cam and a gear-wheel fixed on the spindle, a tool-holder in each carriage, means to yieldingly hold it away from its work, a drum having an external worm-ring, two slidable pins mounted in the drum, a planet-gear having a clutch-face on each pin and meshing with the gear on the spindle, a gear-train clutched and driven by each planet-gear, one of said trains of gear to traverse the carriage and the other to feed the tool-holder, a continuously-driven worm on each carriage means to move the worm into engagement with the drum by the movement of the rotary frame and a step on the drum to throw said worm out of engagement to permit the carriage and tool-holder to return to normal position.

12. In a multispindle-machine, a pillar, a rotary frame and a friction-ring mounted thereon, a number of work-spindles mounted in the frame, means to drive the friction-ring, means driven by the friction-ring to operate the work-spindles, a corresponding number of tool-slides mounted around the pillar above the frame, with mechanism for operating each tool separately and independently of the other tools, each of said mechanisms including means for giving the tool a longitudinal feed and means for giving it a transverse feed, controlling means for said feeds and a driven element common to all of said mechanisms to drive them.

13. In a self-acting multispindle-machine, a number of work-spindles mounted in a circle at equal distances apart in a rotary frame common to all of them and a corresponding number of independent tool slides or carriages arranged around the axis of the rotary frame, means to rotate the work-spindles and move each of these spindles in the direction of its length separately and independently of the other work-spindles, said means including a friction-drive with driving friction-cylinder, friction-bowls all driven by the friction-cylinder and a worm driving-gear for each work-spindle, the worm-shaft of these gears being freely movable in the direction of its length and adapted to utilize the thrust of the worm-wheel in the direction of the length of the worm-shaft to press the friction-bowls against the driving friction-cylinder with a force which increases with the thrust of the worm-wheel.

14. In a self-acting multispindle-machine, a central pillar, a drum 88 adjustable along the pillar, a number of tool slides or carriages mounted on the drum, with means to operate each tool separately and independently of the other tools, said means including means for giving the tool a longitudinal feed, means for giving it transverse feed, and controlling means for such feeds adapted to permit the longitudinal feed, the transverse feed or both feeds together relative to the article under treatment, and driving mechanism common to all the means to operate the tools, substantially as described.

15. In a multispindle-machine, a pillar, a rotary frame and a driven friction-ring mounted thereon, a number of work-spindles mounted in the frame, a number of tool-slides mounted around the pillar, a gear-wheel mounted on each spindle, separate means to rotate each gear-wheel driven from said ring, a mechanism to feed each spindle toward its tool driven from said spindle, and means on the frame for intermittently engaging said mechanism to set the same in operation.

16. In a self-acting multispindle-machine, a rotary frame, a number of work-spindles mounted in a circle at equal distances apart in said frame, a corresponding number of independent tool slides or carriages arranged around the axis of the rotary frame, means to rotate the work-spindles, a driven friction-ring having oppositely-situated friction-surfaces, friction-bowls and a worm driving-gear for each work-spindle driven by a bowl, the worm-shaft of the gears being freely movable in the direction of its length to contact the driving-bowl with either one of said surfaces, and a mechanism to move each worm-shaft in the direction of the axis to reverse the direction of rotation of the work-spindle at desired intervals of time.

17. In a self-acting multispindle-machine, a number of tool carriages or slides arranged around the axis of the machine, means to operate each tool separately and independently of the other tools, said means including means to give the tool a longitudinal feed and means to give it a transverse feed, controlling means for such feeds adapted to permit the longitudinal feed, the transverse feed or both feeds together relative to the article under treatment, a number of work-holding spindles mounted in said frame, mechanism to rotate said spindles, means to feed the spindles to and from the tools.

18. In a self-acting multispindle-machine, a rotary frame, a number of tool-slides mounted around the axis of the frame, means to operate each tool separately and independently of the other tools and a device on the frame to set the same in operation, said means including means to give the tool a longitudinal feed, and means to give it a transverse feed, controlling means for both of said feeds adapted to permit the longitudinal feed, the transverse feed or both feeds together relative to the article under treatment, a number of work-holding spindles in the frame, means to separately and independently rotate said spindles, mechanism to feed said spindles to and from the tools and means to set said mechanism into operation.

19. In a self-acting multispindle-machine, a rotary frame, a number of tool-slides mounted around the axis of the frame, means to operate each tool separately and independently of the other tools and a device on the frame to set the same in operation, said means including means to give the tool a longitudinal feed, and means to give it a transverse feed, controlling means for both of said feeds adapted to permit the longitudinal feed, the transverse feed or both feeds together relative to the article under treatment, a number of work-holding spindles in the frame, means to separately and independently rotate said spindles, means set in operation by the rotation of the frame to feed said spindles to and from the tools, and mechanism operated by the means to feed each spindle to control its feed independently of the feed of the other spindles.

20. In a self-acting multispindle-machine, a rotary frame, a number of tool-slides mounted around the axis of the frame, means to operate each tool separately and independently of the other tools and a device on the frame to set the same in operation, work-spindles mounted in the frame, a driven friction-ring having two friction-surfaces, a worm, worm-shaft and bowl capable of longitudinal movement, whereby said bowl can engage either of the friction-surfaces, mechanism driven by the worm to rotate the spindles, a loose gear-wheel having a clutch-face driven from its adjacent work-spindle, planet-gearing, a clutch actuated by the rotation of the frame to connect said planet-gearing to the loose gear-wheel, mechanism operated by the planet-gearing to move the worm-shaft and reverse the rotation of the spindle and means to control the number of reversals of rotation of each spindle.

21. In a self-acting multispindle-machine, a rotary frame, a number of tool-slides mounted around the axis of the frame, a number of work-holding spindles in the frame, means to operate each tool separately and independently of the other tools and a device on the frame to set said means in operation, a driven friction-ring having two oppositely-situated inclined friction-surfaces, a worm, a worm-shaft and a bowl on the shaft, a gear-wheel and a long pinion on each spindle, said gear-wheel driven from the worm, a shaft 31 mounted within the frame for each spindle, a loose gear having a clutch-face and a pinion thereon, a disk on shaft 31, a planet-wheel thereon, means to connect the loose gear and disk, a fixed pinion with which said planet-wheel gears, a rod to move the worm-shaft, a lever thereon, means on the planet-wheel to transmit movement to the lever to oscillate the rod, a notched element on the rod and a ratchet-wheel operated by the lever and in slidable engagement with the notched element to disconnect the loose gear.

22. The combination with a central pillar, of a rotary frame thereon, a ring having oppositely-situated friction-surfaces thereon, work-spindles in the frame, mechanism frictionally driven from the ring to rotate and axially move each spindle, controlling means to permit the axial movement of each spindle independently of the others and to determine the number of axial movements thereof to be driven by either one or the other of the friction-surfaces, a drum on the pillar, as many tool-carriages as there are spindles mounted on the drum, means to operate each tool separately and independently of the other tools, means common to all of the tool-operating means to drive the latter, and means on the frame to set said tool-operating means, and the mechanism to rotate the spindles in operation.

23. In a self-acting multispindle-machine, a rotary frame, a peripheral worm-ring thereon, a worm to drive the worm-ring, a continuously-driven shaft in alinement with the worm, a fixed internal-toothed ring, a pinion gearing therewith having an adjustable pin mounted therein, change-gears driven from the shaft to drive the pinion, lever mechanism in the path of said pin to throw the clutch into engagement to operate the worm and means on the frame to throw the clutch out of engagement.

24. In a multispindle-machine, the combination with a pillar, a frame and a driven friction-ring thereon, said ring having oppositely-positioned friction-surfaces; of a work-holding spindle mounted in the frame, a pinion thereon, a worm, worm-shaft and friction-bowl mounted on the frame and longitudinally movable to cause said bowl to contact with either of the friction-surfaces on the ring, gearing connecting the pinion and worm and means to axially move the worm, worm-shaft and bowl at desired intervals of time to change the direction of rotation of the spindle, substantially as set forth.

25. In a multispindle-machine, the combination with a pillar, a rotary frame thereon, a work-holding spindle mounted in the frame and mechanism to rotate the spindle; of mechanism driven by the spindle and means on the frame to set the mechanism in operation when the frame rotates to feed the work-holding spindle longitudinally.

26. In a multispindle-machine, the combination with a pillar, a rotary frame, indexing mechanism therefor, a work-holding spindle mounted in the frame to have both longitudinal and rotary motion, and a continuously-driven friction-ring on the pillar below the frame having oppositely-situated friction-surfaces; of a pinion through which the spindle can slide but not rotate, a long pinion fixed on the spindle, a worm, worm-shaft and bowl on the worm-shaft, gearing connecting said first-named pinion and worm to rotate the spindle, an idle clutch-wheel driven by the long pinion, mechanism clutched into gear with the idle wheel to feed the work-holding spindle in a longitudinal direction, including means to automatically reverse the feed of the spindle, and means to control the number of reversals both of the feed and the rotation of the spindle, substantially as described.

27. In a multispindle-machine, the combination with a pillar, a rotary frame, indexing mechanism therefor, a work-holding spindle mounted to rotate and longitudinally move in the frame, a screw on the spindle and a rotatable nut on the screw; of a worm, worm-shaft and bowl on the worm-shaft, a two-part rod capable of oscillation connected to the worm-shaft, the upper part of said rod longitudinally movable, gearing connecting the spindle and worm, a vertical shaft mounted in the frame, an idle clutch gear-wheel driven from the spindle, planet-gearing, a fixed element on the pillar, a lever to depress the upper part of said two-part rod and operated from the fixed element during the indexing of the frame, planet-gearing mounted on the vertical shaft to oscillate the rod, a clutch member between it and the idle gear-wheel, operated by the upper part of said rod, gearing connecting the vertical shaft and rotatable nut, and means on the rod actuated from the planet-gearing to control the number of oscillations of the rod and thereby the number of reversals of the spindle, substantially as and for the purposes set forth.

809,595. BELL PUSH, PULL, &c. LAWRENCE S. WILES, Whippa Cross, England. Filed May 1, 1905. Serial No. 258,334.

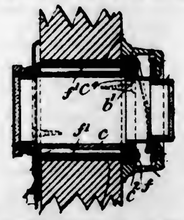

Claim.—1. In means for illuminating bell-actuating devices, a hole or way through the object to which the device is affixed, a tubular movable hand-operated device in alinement with said hole at the front thereof, a disk of a material which will allow the passage of light at the front end of said tubular device, a similar disk at the near end of said hole and means actuated by said tubular device for sounding a bell, substantially as described.

2. In means for illuminating bell-actuating devices, a hole or way through the object to which the device is affixed, a tubular movable hand-operated device in alinement with said hole at the front thereof, a disk of a material which will allow the passage of light at the front end of said tubular device, a similar disk at the rear end of said hole, electric contacts adapted to be brought into engagement by the movement of the tubular device and means for connecting the leads of an electric-bell system with said contacts, substantially as described.

3. In means for illuminating bell-actuating devices, a hole or way through the object to which the device is affixed, a tubular movable hand-operated device in alinement with said hole at the front thereof, a disk of a material which will allow the passage of light in the front end of said tubular device, a similar disk at the rear end of the hole or way, an insulating-ring carrying electrical contact devices adapted to be brought into engagement by the movement of the tubular device, means for connecting the leads of an electric-bell system with said contacts, a screw-thread upon the exterior of the insulating-ring, a flange upon the tubular device, an insulating-washer upon the inner face of said flange and means for inclosing said parts while exposing the transparent or translucent disk of the tubular device, substantially as described.

4. In means for illuminating bell-actuating devices, a hole or way through the object to which the device is affixed, a tubular push-piece in alinement with said hole at the front thereof, a disk of a material which will allow the passage of light in the front end of said push-piece, a similar disk at the rear end of said hole or way, an insulating-ring fixed with said object and carrying electrical contact devices adapted to be brought into engagement by the movement of the push-piece, means for connecting the leads of an electric-bell system with said contacts, a screw-thread upon the exterior of the insulating-ring, a flange upon the tubular push-piece, an insulating-washer upon the inner face of said flange and a perforated cap fitting upon the push-piece and screwing upon the insulating-ring, substantially as described.

5. In means for illuminating bell-actuating devices, a hole or way through the object to which the device is affixed, a length of tube passing through said hole, a tubular push-piece working in the front end of said tube, a disk of a material which will allow the pas-

completing its allotted partial machining of the article situated opposite to it, means to set the said tool-feeding mechanisms into operation, and means on the frame connting therewith; a separate mechanism situated outside of the machine and provided with its own driving power for rotating the rotary frame relatively to the tools at any desired variable intervals of time.

5. In a self-acting multispindle-machine, a rotary frame, a number of work-spindles mounted in a circle at equal distances apart in said frame, and a corresponding number of independent tool slides or carriages arranged around the axis of the rotary frame, means to rotate the work-spindles and move each of these spindles in the direction of its length separately and independently of the other work-spindles, and means for reversing the direction of movement of the work-spindles at desired intervals of time.

6. In a self-acting multispindle-machine, a rotary frame and a number of work-spindles mounted therein, in combination with a corresponding number of tool slides or carriages arranged around the axis of the frame, means to yieldingly hold each slide in normal position, means to laterally traverse the slides and against the action of their holding means, a tool-holder in each slide, means to normally hold each tool-holder in raised position, and means to feed each tool-holder toward the work-spindles and against the action of their holding means.

7. In a self-acting multispindle-machine, a rotary frame and a number of work-spindles mounted therein, in combination with a number of tool slides or carriages arranged around the axis of the frame a weight to yieldingly hold each tool-slide in normal position, means to traverse the slides and against the action of the weight, a tool-holder in each slide, a weight to hold each holder away from the work-spindles, and means to feed each tool-holder toward the work-spindles against the action of its respective weight.

8. In a self-acting multispindle-machine, a rotary frame and a number of work-spindles mounted therein, in combination with a number of tool slides or carriages arranged around the axis of the frame, means to yieldingly hold each slide in normal position, mechanism to traverse each slide, a tool-holder, means to normally hold each tool-holder away from the work, mechanism to feed each tool-holder to the work against the action of its holding means, means for setting said mechanisms into operation and means on the frame connting therewith.

9. In a self-acting multispindle-machine, a rotary frame and a number of work-spindles mounted therein, in combination with a number of tool slides or carriages arranged around the axis of the machine, means on each carriage to traverse the slide, a tool-holder in each slide, means on each carriage to feed the tool-holder, cams on each carriage to control the operation of both of said means, mechanism to drive said means, a device on the table to set said mechanism in operation, and a central driving device common to all of the carriages.

10. In a metal-working machine, a work-spindle, in combination with a tool slide or carriage, said tool-slide containing a spindle, a controlling-cam and a gear-wheel fixed on the spindle, a drum revoluble on the spindle having an external-toothed ring, two slidable pins mounted in the drum and planet-gears having clutch-faces on the pins and a gear-train clutched and operated by each planet-gear, one of said trains capable of traversing the carriage and the other of feeding the tool, said pins operated by the cam, and mechanism to rotate the drum.

11. In a self-acting multispindle-machine, a rotary frame and a number of work-spindles mounted therein, in combination with a number of tool slides or carriages arranged around the axis of the frame, means to yieldingly hold each tool-carriage in normal position, a spindle fixed to the carriage, a controlling-cam and a gear-wheel fixed on the spindle, a tool-holder in each carriage, means to yieldingly hold it away from its work, a drum having an external worm-ring, two slidable pins mounted in the drum, a planet-gear having a clutch-face on each pin and meshing with the gear on the spindle, a gear-train clutched and driven by each planet-gear, one of said trains of gear to traverse the carriage and the other to feed the tool-holder, a continuously-driven worm on each carriage means to move the worm into engagement with the drum by the movement of the rotary frame and a stop on the drum to throw said worm out of engagement to permit the carriage and tool-holder to return to normal position.

12. In a multispindle-machine, a pillar, a rotary frame and a friction-ring mounted thereon, a number of work-spindles mounted in the frame, means to drive the friction-ring, means driven by the friction-ring to operate the work-spindles, a corresponding number of tool-slides mounted around the pillar above the frame, with mechanisms for operating each tool separately and independently of the other tools, each of said mechanisms including means for giving the tool a longitudinal feed and means for giving it a transverse feed, controlling means for said feeds and a driven element common to all of said mechanisms to drive them.

13. In a self-acting multispindle-machine, a number of work-spindles mounted in a circle at equal distances apart in a rotary frame common to all of them and a corresponding number of independent tool slides or carriages arranged around the axis of the rotary frame, means to rotate the work-spindles and move each of these spindles in the direction of its length separately and independently of the other work-spindles, said means including a friction-drive with driving friction-cylinder, friction-bowls all driven by the friction-cylinder and a worm driving-gear for each work-spindle, the worm-shaft of these gears being freely movable in the direction of its length and adapted to utilize the thrust of the worm-wheel in the direction of the length of the worm-shaft to press the friction-bowls against the driving friction-cylinder with a force which increases with the thrust of the worm-wheel.

14. In a self-acting multispindle-machine, a central pillar, a drum 88 adjustable along the pillar, a number of tool slides or carriages mounted on the drum, with means to operate each tool separately and independently of the other tools, said means including means for giving the tool a longitudinal feed, means for giving it transverse feed, and controlling means for such feeds adapted to permit the longitudinal feed, the transverse feed or both feeds together relative to the article under treatment, and driving mechanism common to all the means to operate the tools, substantially as described.

15. In a multispindle-machine, a pillar, a rotary frame and a driven friction-ring mounted thereon, a number of work-spindles mounted in the frame, a number of tool-slides mounted around the pillar, a gear-wheel mounted on each spindle, separate means to rotate each gear-wheel driven from said ring, a mechanism to feed each spindle toward its tool driven from said spindle, and means on the frame for intermittently engaging said mechanism to set the same in operation.

16. In a self-acting multispindle-machine, a rotary frame, a number of work-spindles mounted in a circle at equal distances apart in said frame, a corresponding number of independent tool slides or carriages arranged around the axis of the rotary frame, means to rotate the work-spindles, a driven friction-ring having oppositely-situated friction-surfaces, friction-bowls and a worm driving-gear for each work-spindle driven by a bowl, the worm-shaft of the gears being freely movable in the direction of its length to contact the driving-bowl with either one of said surfaces, and a mechanism to move each worm-shaft in the direction of the axis to reverse the direction of rotation of the work-spindle at desired intervals of time.

17. In a self-acting multispindle-machine, a number of tool carriages or slides arranged around the axis of the machine, means to operate each tool separately and independently of the other tools, said means including means to give the tool a longitudinal feed and means to give it a transverse feed, controlling means for such feeds adapted to permit the longitudinal feed, the transverse feed or both feeds together relative to the article under treatment, a rotary frame, a number of work-holding spindles mounted in said frame, mechanism to rotate said spindles, means to feed the spindles to and from the tools.

18. In a self-acting multispindle-machine, a rotary frame, a number of tool-slides mounted around the axis of the frame, means to operate each tool separately and independently of the other tools and a device on the frame to set the same in operation, said means including means to give the tool a longitudinal feed, and means to give it a transverse feed, controlling means for both of said feeds adapted to permit the longitudinal feed, the transverse feed or both feeds together relative to the article under treatment, a number of work-holding spindles in the frame, means to separately and independently rotate said spindles, mechanism to feed said spindles to and from the tools and means to set said mechanism into operation.

19. In a self-acting multispindle-machine, a rotary frame, a number of tool-slides mounted around the axis of the frame, means to operate each tool separately and independently of the other tools and a device on the frame to set the same in operation, said means including means to give the tool a longitudinal feed, and means to give it a transverse feed, controlling means for both of said feeds adapted to permit the longitudinal feed, the transverse feed or both feeds together relative to the article under treatment, a number of work-holding spindles in the frame, means to separately and independently rotate said spindles, means set in operation by the rotation of the frame to feed said spindles to and from the tools, and mechanism operated by the means to feed each spindle to control its feed independently of the feed of the other spindles.

20. In a self-acting multispindle-machine, a rotary frame, a number of tool-slides mounted around the axis of the frame, means to operate each tool separately and independently of the other tools and a device on the frame to set the same in operation, work-spindles mounted in the frame, a driven friction-ring having two friction-surfaces, a worm, worm-shaft and bowl capable of longitudinal movement, whereby said bowl can engage either of the friction-surfaces, mechanism driven by the worm to rotate the spindles, a loose gear-wheel having a clutch-face driven from its adjacent work-spindle, planet-gearing, a clutch actuated by the rotation of the frame to connect said planet-gearing to the loose gear-wheel, mechanism operated by the planet-gearing to move the worm-shaft and reverse the rotation of the spindle and means to control the number of reversals of rotation of each spindle.

21. In a self-acting multispindle-machine, a rotary frame, a number of tool-slides mounted around the axis of the frame, a number of work-holding spindles in the frame, means to operate each tool separately and independently of the other tools and a device on the frame to set said means in operation, a driven friction-ring having two oppositely-situated inclined friction-surfaces, a worm, a worm-shaft and a bowl on the shaft, a gear-wheel and a long pinion on each spindle, said gear-wheel driven from the worm, a shaft 31 mounted within the frame for each spindle, a loose gear having a clutch-face and a pinion thereon, a disk on shaft 31, a planet-wheel thereon, means to connect the loose gear and disk, a fixed pinion with which said planet-wheel gears, a rod to move the worm-shaft, a lever thereon, means on the planet-wheel to transmit movement to the lever to oscillate the rod, a notched element on the rod and a ratchet-wheel operated by the lever and in slidable engagement with the notched element to disconnect the loose gear.

22. The combination with a central pillar, of a rotary frame thereon, a ring having oppositely-situated friction-surfaces thereon, work-spindles in the frame, mechanism frictionally driven from the ring to rotate and axially move each spindle, controlling means to permit the axial movement of each spindle independently of the others and to determine the number of axial movements thereof to be driven by either one or the other of the friction-surfaces, a drum on the pillar, as many tool-carriages as there are spindles mounted on the drum, means to operate each tool separately and independently of the other tools, means common to all of the tool-operating means to drive the latter, and means on the frame to set said tool-operating means, and the mechanism to rotate the spindles in operation.

23. In a self-acting multispindle-machine, a rotary frame, a peripheral worm-ring thereon, a worm to drive the worm-ring, a continuously-driven shaft in alinement with the worm, a fixed internal-toothed ring, a pinion gearing therewith having an adjustable pin mounted therein, change-gears driven from the shaft to drive the pinion, lever mechanism in the path of said pin to throw the clutch into engagement to operate the worm and means on the frame to throw the clutch out of engagement.

24. In a multispindle-machine, the combination with a pillar, a frame and a driven friction-ring thereon, said ring having oppositely-positioned friction-surfaces; of a work-holding spindle mounted in the frame, a pinion thereon, a worm, worm-shaft and friction-bowl mounted on the frame and longitudinally movable to cause said bowl to contact with either of the friction-surfaces on the ring, gearing connecting the pinion and worm and means to axially move the worm, worm-shaft and bowl at desired intervals of time to change the direction of rotation of the spindle, substantially as set forth.

25. In a multispindle-machine, the combination with a pillar, a rotary frame thereon, a work-holding spindle mounted in the frame and mechanism to rotate the spindle; of mechanism driven by the spindle and means on the frame to set the mechanism in operation when the frame rotates to feed the work-holding spindle longitudinally.

26. In a multispindle-machine, the combination with a pillar, a rotary frame, indexing mechanism therefor, a work-holding spindle mounted in the frame to have both longitudinal and rotary motion, and a continuously-driven friction-ring on the pillar below the frame having oppositely-situated friction-surfaces; of a pinion through which the spindle can slide but not rotate, a long pinion fixed on the spindle, a worm, worm-shaft and bowl on the worm-shaft, gearing connecting said first-named pinion and worm to rotate the spindle, an idle clutch-wheel driven by the long pinion, mechanism clutched into gear with the idle wheel to feed the work-holding spindle in a longitudinal direction, including means to automatically reverse the feed of the spindle, and means to control the number of reversals both of the feed and the rotation of the spindle, substantially as described.

27. In a multispindle-machine, the combination with a pillar, a rotary frame, indexing mechanism therefor, a work-holding spindle mounted to rotate and longitudinally move in the frame, a screw on the spindle and a rotatable nut on the screw; of a worm, worm-shaft and bowl on the worm-shaft, a two-part rod capable of oscillation connected to the worm-shaft, the upper part of said rod longitudinally movable, gearing connecting the spindle and worm, a vertical shaft mounted in the frame, an idle clutch gear-wheel driven from the spindle, planet-gearing, a fixed element on the pillar, a lever to depress the upper part of said two-part rod and operated from the fixed element during the indexing of the frame, planet-gearing mounted on the vertical shaft to oscillate the rod, a clutch member between it and the idle gear-wheel, operated by the upper part of said rod, gearing connecting the vertical shaft and rotatable nut, and means on the rod actuated from the planet-gearing to control the number of oscillations of the rod and thereby the number of reversals of the spindle, substantially as and for the purposes set forth.

809,595. BELL PUSH, PULL, &c. LAWRENCE S. WILKS, Whippa Cross, England. Filed May 1, 1905. Serial No. 258,334.

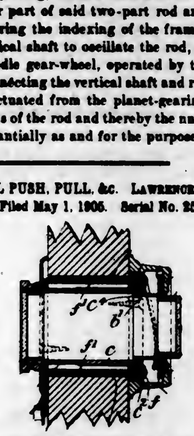

Claim.—1. In means for illuminating bell-actuating devices, a hole or way through the object to which the device is affixed, a tubular movable hand-operated device in alinement with said hole at the front thereof, a disk of a material which will allow the passage of light at the front end of said tubular device, a similar disk at the rear end of said hole and means actuated by said tubular device for sounding a bell, substantially as described.

2. In means for illuminating bell-actuating devices, a hole or way through the object to which the device is affixed, a tubular movable hand-operated device in alinement with said hole at the front thereof, a disk of a material which will allow the passage of light at the front end of said tubular device, a similar disk at the rear end of said hole, electric contacts adapted to be brought into engagement by the movement of the tubular device and means for connecting the leads of an electric-bell system with said contacts, substantially as described.

3. In means for illuminating bell-actuating devices, a hole or way through the object to which the device is affixed, a tubular movable hand-operated device in alinement with said hole at the front thereof, a disk of a material which will allow the passage of light in the front end of said tubular device, a similar disk at the rear end of the hole or way, an insulating-ring carrying electrical contact devices adapted to be brought into engagement by the movement of the tubular device, means for connecting the leads of an electric-bell system with said contacts, a screw-thread upon the exterior of the insulating-ring, a flange upon the tubular device, an insulating-washer upon the inner face of said flange and means for inclosing said parts while exposing the transparent or translucent disk of the tubular device, substantially as described.

4. In means for illuminating bell-actuating devices, a hole or way through the object to which the device is affixed, a tubular push-piece in alinement with said hole at the front thereof, a disk of a material which will allow the passage of light in the front end of said push-piece, a similar disk at the rear end of said hole or way, an insulating-ring fixed with said object and carrying electrical contact devices adapted to be brought into engagement by the movement of the push-piece, means for connecting the leads of an electric-bell system with said contacts, a screw-thread upon the exterior of the insulating-ring, a flange upon the tubular push-piece, an insulating-washer upon the inner face of said flange and a perforated cap fitting upon the push-piece and screwing upon the insulating-ring, substantially as described.

5. In means for illuminating bell-actuating devices, a hole or way through the object to which the device is affixed, a length of tube passing through said hole, a tubular push-piece working in the front end of said tube, a disk of a material which will allow the pas-

cage of light in the front end of said push-piece, a similar disk at the rear end of said tube, an insulating-ring screwing into the front end of the tube and carrying electrical contact devices adapted to be brought into engagement by the movement of the push-piece, means for connecting the leads of an electric-bell system with said contacts, a screw-thread upon the exterior of the insulating-ring, a flange upon the tubular push-piece, an insulating-washer upon the inner face of said flange and a perforated cap fitting upon the push-piece and screwing upon the insulating-ring, substantially as described.

6. In means for illuminating bell-actuating devices, a tubular push-piece arranged within one end of a hole or way through the object to which the device is attached, said push and opposite end of said hole or way each being furnished with a disk of material which will allow of the passage of light, substantially as described.

809,596. **REVOLVING AND RECLINING CHAIR.** HUBERT WITTE, St. Louis, Mo., assignor to St. Louis Car Company, St. Louis, Mo., a Corporation. Filed July 7, 1905. Serial No. 268,650.

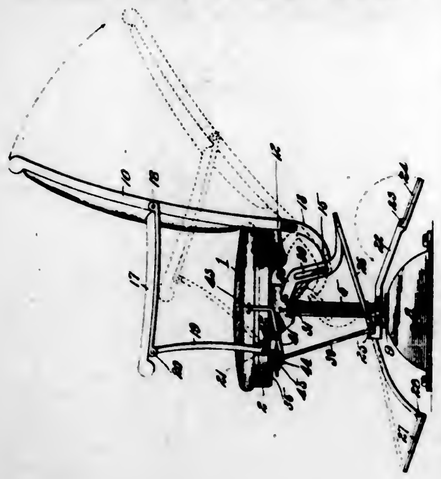

Claim.—1. In a chair of the character described, the combination of a seat, a post by which said seat is supported, a swingingly-supported chair-back, a foot-rest arm fixed to said post, and a reciprocating foot-rest member loosely connected to said chair-back and operating in said foot-rest arm, substantially as set forth.

2. In a chair of the character described, the combination of a seat, a post by which said seat is supported, a chair-back swingingly supported, a link having pivotal connection with said seat and loosely fitted to said chair-back, a foot-rest arm fixed to said post and provided with eyes, and a reciprocating foot-rest member loosely connected to said link and operating in the eyes of said foot-rest, substantially as set forth.

3. In a chair of the character described, the combination of a seat, a post by which said seat is supported, a chair-back swingingly supported, a link having pivotal connection with said seat and loosely fitted to said chair-back, a foot-rest arm fixed to said post, and a reciprocating foot-rest member loosely connected to said link and operating in said foot-rest arm, substantially as set forth.

4. In a chair of the character described, the combination of a seat, a post by which said seat is supported, a chair-back swingingly supported, a link having pivotal connection with said seat and loosely fitted to said chair-back, a foot-rest arm fixed to said post, a reciprocating foot-rest member loosely connected to said link and operating in said foot-rest arm, and a rack-bar connected to said chair-back and arranged to hold said back and link from movement, substantially as set forth.

5. In a chair of the character described, the combination of a seat, a chair-back swingingly connected to said seat, a slotted link having pivotal connection with said seat, and a reciprocating foot-rest member pivoted to said link, said chair-back being provided with an arm having a gudgeon operating in the slot in said link, substantially as set forth.

7. In a chair of the character described, the combination of a seat, a chair-back swingingly connected to said seat, a slotted link having pivotal connection with said seat, a reciprocating foot-rest member pivoted to said link, said chair-back being provided with an arm having a gudgeon operating in the slot in said link; and a rack-bar pivoted to said chair-back arm and arranged to hold it from movement, substantially as set forth.

809,597. **CAR-PLATFORM GATE.** HUBERT WITTE, St. Louis, Mo., assignor to St. Louis Car Company, St. Louis, Mo., a Corporation. Filed Oct. 19, 1905. Serial No. 283,289.

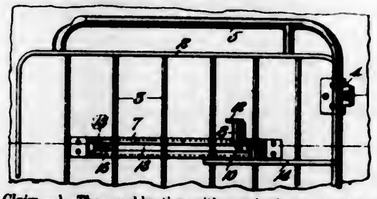

Claim.—1. The combination with a swinging gate, of a guide, a link connected to said gate and arranged to operate in said guide, and a retaining-bolt supported by said guide and arranged to engage said link, substantially as set forth.

2. The combination with a swinging gate, of a link connected to said gate, a guide in which said link operates and a spring retaining-bolt carried by said guide, substantially as set forth.

3. The combination with a swinging gate, of a guide, of a link connected to said gate and provided with a tooth, and a retaining-bolt arranged to engage said tooth; said link being arranged to operate in said guide, substantially as set forth.

4. The combination with a swinging gate, of a channel-guide, a link pivoted to said gate and provided with studs arranged to operate in the channel in said guide, and a retaining-bolt arranged to engage said link to hold it from movement in said guide; said link being provided with a tooth to be engaged by said retaining-bolt, substantially as set forth.

809,598. **HAY-LOADER.** SAMUEL M. WILKIE, Marcus, Iowa. Filed Apr. 13, 1905. Serial No. 255,422.

Claim.—1. In a hay-loader, the combination with a portable frame, of an elevating-carrier, a coöperating extendible and retractable carrier, driving connections for operating said carriers during the movement of said frame, and mechanism for automatically reversing the extending and retracting movement of said horizontal carrier during operation.

2. In a hay-loader, the combination with a portable frame, of an endless elevating and delivering carrier moving thereon, one portion thereof inclined and the other portion thereof substantially horizontal, mechanism for automatically extending and retracting the horizontal portion longitudinally, and mechanism for automatically actuating said carrier during the movement of said frame.

3. In a hay-loader, the combination with a portable frame, of an endless elevating and delivering carrier moving upon said frame, one portion thereof inclined and the other portion thereof substantially horizontal, said horizontal portion adapted to be automatically extended and retracted longitudinally during the movement of said frame and carrier, driving connections for actuating said carrier, and mechanism for automatically reversing the extending and retracting movement of the horizontal portion of said carrier during its operation.

4. In a hay-loader, the combination with a portable frame, of an elevating-carrier, a coöperating delivery-carrier adapted to be extended and contracted, mechanism for automatically extending and retracting said delivery-carrier during operation, driving connections for actuating said carrier, and a floating guard-frame overlying said elevating-carrier and yieldingly retaining the hay thereupon during its upward movement.

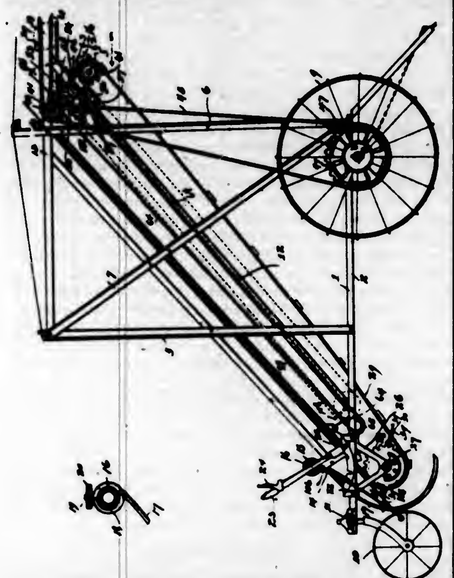

5. In a hay-loader, the combination of a main wheeled frame, a rake suspended therefrom, an inclined elevating-carrier frame portion, a horizontal carrier-frame portion connected with the upper part of said inclined frame portion, an endless carrier traveling upon said inclined and horizontal frame portions, mechanism for telescoping said carrier within itself to extend and retract the delivery end thereof, and mechanism for actuating the carrier.

6. In a hay-loader, the combination with a main wheeled frame comprising an inclined carrier-frame portion and a horizontal extension connected with the upper end thereof, of an endless carrier mounted to travel upon said frame and extension, a support for the delivery end of said carrier mounted to reciprocate longitudinally on the horizontal extension of the frame, mechanism for automatically reciprocating and reversing the movement of said support, and mechanism for actuating said carrier.

7. In a hay-loader, the combination of a main wheeled frame comprising upwardly-inclined guides and horizontally-disposed guides at the upper ends of said inclined guides, a carrier-support at the receiving end of the carrier, a movable carrier-support mounted to reciprocate upon said horizontally-disposed guides and supporting the delivery end of the carrier, an intermediate carrier-support mounted to reciprocate upon the inclined guides, an endless carrier trained around said several supports, mechanism for holding said movable supports in various positions of adjustment, and mechanism for operating the endless carrier.

8. In a hay-loader, the combination of a main wheeled frame comprising upwardly-inclined guides and horizontally-disposed guides at the upper ends of said inclined guides, a carrier-support at the receiving end of the carrier, a movable carrier-support mounted to reciprocate upon said horizontally-disposed guides and supporting the delivery end of the carrier, an intermediate carrier-support mounted to reciprocate upon the inclined guides, an endless carrier trained around said several supports, mechanism for holding said movable supports in various positions of adjustment, mechanism for operating the endless carrier, comprising mechanism for imparting a determined rate of travel to one portion of the carrier, and mechanism for imparting a different rate of travel to another portion of the carrier, for the purpose set forth.

9. In a hay-loader, the combination of a main wheeled frame, a rake suspended at the rear end of said frame, an inclined carrier-frame extending from the rake upwardly and forwardly, a horizontal frame extension connected with the upper end of the inclined frame portions, an endless carrier supported upon said inclined and horizontal frame portions, a bodily-shiftable carrier-support mounted to reciprocate upon the horizontal frame extension and supporting the delivery end of said carrier, a take-up carrier-support movably mounted to reciprocate upon the inclined frame portion and engaging with the intermediate portion of the endless carrier, tension-cable and guide-pulley connections between said movable intermediate carrier-support and said movable delivery end carrier-support, and driving connections for actuating said carrier.

10. In a hay-loader, the combination of a main wheeled supporting-frame, a rake operatively supported from the rear end of said frame, a rotatable carrier-support located in proximity to said rake, a horizontal frame extension connected with the upper part of the main frame, rotatable carrier-supports located at or near the junction of the horizontal frame extension with the main frame but spaced apart vertically, a rotatable carrier-support shiftably mounted upon the horizontal frame extension, an endless carrier trained around said several specified supports, a pair of inclined guides located at the respective sides of the carrier and between the upper and lower laps of the inclined portions thereof, an intermediate carrier-support mounted to reciprocate bodily upon said inclined guides and around which the looped back intermediate portion of the carrier extends, driving connections from one of the main supporting-wheels to one of said carrier-supports engaged with, and supporting one of the outer laps of the endless carrier, driving connections to a carrier-support engaging the intermediate or looped back portion of the carrier, and means for throwing said second driving connections out of gear, as and for the purpose set forth.

11. In a hay-loader, the combination of a wheeled main frame comprising lower horizontal side-bar members, cross-frame members connecting said side-bar members, a pair of vertical uprights at each side and spaced apart longitudinally, horizontal extension side-frame members connected with said uprights at the upper ends of the latter and extending forward freely beyond said uprights, the projecting portions of said upper horizontal side-frame members being provided with ways to constitute guides, inclined guide-frame members provided with ways, extending from the intermediate portions of the upper guide members obliquely downwardly and rearwardly to the lower horizontal frame, a rake operatively suspended from the rear end of said main frame, a lower carrier-support rotatably supported in proximity to said rake and in alinement with said inclined guide members, transversely opposite rotatable carrier-supports located respectively above and below said inclined guides and adjacent to the junction of the guides with the upper horizontal guide members, the shaft of one of said carrier-supports constituting the main drive-shaft, an intermediate carrier-support mounted to reciprocate upon said inclined guides, a carrier-support mounted to reciprocate upon the horizontal guide-frame members and constituting a support for the delivery end of the carrier, an endless carrier trained around said several supports, substantially as described, driving connections from one of the supporting-wheels of the loader to said main shaft, driving connections from said main shaft to the transversely opposite carrier-support, a carrier-support engaging and supporting the lower lap of the horizontal extendible portion of the carrier at the juncture of said horizontal extendible portion with the inclined portion of the carrier, change-speed driving connections between said main shaft and the latter carrier-support, an automatically-acting mechanism for alternately throwing said change-speed mechanism into gear and locking it against rotation.

12. In a hay-loader, the combination of a wheeled main frame comprising lower horizontal side-bar members, cross-frame members connecting said side-bar members, a pair of vertical uprights at each side and spaced apart longitudinally, horizontal extension side-frame members connected with said uprights at the upper ends of the latter and extending forward freely beyond said uprights, the projecting portions of said upper horizontal side-frame members being provided with ways to constitute guides, inclined guide-frame members provided with ways extending from the intermediate portions of the upper guide members obliquely downwardly and rearwardly to the lower horizontal frame, a rake operatively suspended from the rear end of said main frame, a lower carrier-support rotatably supported in proximity to said rake and in alinement with said inclined guide members, transversely opposite rotatable carrier-supports located respectively above and below said inclined guides and adjacent to the junction of the guides with the upper horizontal guide members, the shaft of one of said carrier-supports constituting the main drive-shaft, an intermediate carrier-support mounted to reciprocate upon said inclined guides, a carrier-support mounted to reciprocate upon the horizontal guide-frame members and constituting a support for the delivery end of the carrier, an endless car-

rier trained around said several supports, substantially as described, driving connections from one of the supporting-wheels of the loader to said main shaft, driving connections from said main shaft to the transversely opposite carrier-support, a carrier-support engaging and supporting the lower lap of the horizontal extendible portion of the carrier at the juncture of said horizontal extendible portion with the inclined portion of the carrier, change-speed driving connections between said main shaft and the latter carrier-support, automatically-acting mechanism for alternately throwing said change-speed mechanism into gear and locking it against rotation, and tension-cables connected with the carrier-support bodily movable on the inclined guides, extending thence around pulleys located on the lower parts of said inclined guides, thence over intermediate guides and around pulleys located at the ends of the horizontal guide-frame members and thence to and connected with the bodily-movable carrier-support traveling upon said horizontal guide-frame members.

13. In a hay-loader, the combination with a portable frame provided with rake-teeth, of an elevating-carrier, a coöperating extendible and retractable carrier, mechanism for automatically operating and reversing the bodily movement of said carrier; a pair of carrier-supporting wheels located upon said frame in front of and in proximity to said rake-teeth, a plurality of rock-shafts extending between the peripheral portions of said carrier-supporting wheels, each provided with a series of radially-extending pick-up fingers, cranks upon said rock-bars provided with cam-engaging portions, and a fixed cam adjacent to the path of travel of said cranks whereby a variable movement of the rock-bar is imparted during the rotation of the rock-bar-carrying wheels, substantially as described.

14. In combination with a wheeled trailer-frame provided with supporting-wheels and an axle rotatable therewith, of an automatic hitching mechanism comprising a winding-drum mounted upon said axle, a traction-cable engaging said winding-drum, driving connections between the axle and the winding-drum, an automatic throw-off for disengaging said driving connections at a predetermined time, and an automatic dogging mechanism for preventing the unwinding of the cable and which is brought into action when the winding-drum is thrown out of gear.

15. In combination with a wheeled trailer-frame provided with supporting-wheels and an axle rotatable therewith, of an automatic hitching mechanism comprising a winding-drum, mounted upon said axle, a traction-cable engaging said winding-drum, driving connections between the axle and the winding-drum, means for imparting a longitudinal travel of a part upon said axle proportionate to the number of revolutions of the axle, a clutch mechanism constituting a driving connection between axle and the winding-drum, and operative connections between said traveling member and clutch mechanism whereby the latter is thrown out of gear at the end of a predetermined time.

16. In combination with a wheeled trailer-frame provided with supporting-wheels and a shaft rotatable therewith, a sleeve rotatable upon said shaft, a clutch having splined engagement with the shaft and adapted to interengage with the sleeve to lock the latter against rotation, a winding-drum splined upon the sleeve and provided with an external screw-thread, a fixed support with which said screw-thread is interengaged and whereby a longitudinal movement of the drum is imparted by the rotation of the latter, a traction-cable connected with the drum, and a dogging mechanism operating to automatically engage and hold the traction-cable from unwinding when the drum is released; said clutch mechanism being located in the path of travel of the drum, whereby the clutch is disengaged at the end of a predetermined number of revolutions of the drum.

809,599. **ROLLER SIDE BEARING FOR RAILWAY-CARS.** Henry S. Woods, Chicago, Ill. Filed June 16, 1905. Serial No. 265,562.

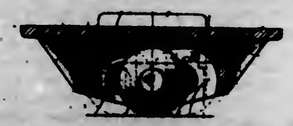

Claim.—1. In a roller-bearing for railway-cars, an elongated chambered casting formed with integral side and end walls and open at its bottom, the side walls being provided on their inner faces with inwardly-opening channels or ways, a roller mounted in said casting and adapted to project through the open bottom thereof for contact with a lower bearing-surface, and provided with end bearings or trunnions which enter said channels and made of a diameter less than the vertical width of the channels, and an elongated bearing-plate in the top of the casting, one of said end walls being provided with an opening through which the plate is admitted longitudinally to the chambered casting, and the said wall of the casting, at the margin of said admission-opening, being upset against the end of the bearing-plate to constitute a stop to hold the latter in place.

2. In a roller-bearing for railway-cars, an elongated chambered casting formed with integral top, side and end walls and open at its bottom, the side walls being provided on their inner faces with inwardly-opening channels or ways, a roller mounted in said casting and adapted to project through the open bottom thereof for contact with a lower bearing-surface and provided with end bearings or trunnions which enter said channels and made of a diameter less than the vertical width of said channels, and an elongated bearing-plate fitted to the lower face of the top wall of the casting, one of the end walls of the casting being provided with an opening through which the plate is admitted longitudinally to the chambered casting, and the casting being provided with a ledge between which and the top of the casting is received a margin of the bearing-plate the said end wall of the casting at said admission-opening being upset against the end of said plate to constitute a stop to hold the plate in place.

3. In a roller-bearing for railway-cars, an elongated chambered casting provided with a downwardly-facing bearing-surface and formed with integral side and end walls and open at its bottom, the side walls being provided on their inner faces with inwardly-opening channels or ways, and a roller mounted in said chambered casting and adapted to project through said open bottom for contact with a lower bearing-surface, said roller being provided with end bearings or trunnions which enter said channels or ways and made of a diameter less than the vertical width of said channels, the end walls of the casting being curved complementally to the cylindric surface of the roller and serving as stops to engage and arrest the travel of the roller endwise of said bearing-casting.

809,600. **SEWING-MACHINE.** William M. Ahnebrink, New Haven, Conn., assignor to The Edwin J. Toof Company, New Haven, Conn., a Corporation of New Jersey. Filed Oct. 7, 1904. Serial No. 227,536.

Claim.—1. In a sewing-machine, the combination with a rotary loop-taker, of a non-rotary body portion supported in position with a thread-receiving space between it and said loop-taker and also having means for directing one side of a thread-loop engaged by the loop-taker into said thread-receiving space, and a forked loop-holder attached to said body portion and also having connection with the loop-taker to be movable therewith.

2. In a sewing-machine, the combination with a rotary loop-taker, of a non-rotary body portion supported in position with a thread-receiving space between it and said loop-taker and also having means for directing one side of a thread-loop engaged by the loop-taker into said thread-receiving space, and a forked loop-holder pivotally attached to said body portion and also having connection with the loop-taker to be movable therewith.

3. In a sewing-machine, the combination with a rotary loop-taker, of a non-rotary body portion supported by said loop-taker in position with a thread-receiving space therebetween and also having means for directing one side of a thread-loop engaged by the loop-taker into said thread-receiving space, and a forked loop-holder attached to said body portion and also having connection with the loop-taker to be movable therewith.

4. In a sewing-machine, the combination with a rotary loop-taker, of a non-rotary body portion removably supported by said loop-taker in position with a thread-receiving space therebetween and also having means for directing one side of a thread-loop engaged by the loop-taker into said thread-receiving space, and a forked loop-holder attached to said body portion and also having connection with the loop-taker to be movable therewith.

5. In a sewing-machine, the combination of a rotary loop-taker and a non-rotary body portion, the said loop-taker and body portion being provided, one with a groove and the other with a flange extending into said groove, and a forked loop-holder attached to said body portion and also having connection with the loop-taker to be movable therewith.

6. In a sewing-machine, the combination of a rotary loop-taker and a non-rotary body portion, the said loop-taker and body portion being provided, one with a groove and the other with a flange extending into said groove, a forked loop-holder attached to said body portion and also having connection with the loop-taker to be movable therewith, and a movable retainer for removably retaining said body portion in connection with the loop-taker.

7. In a sewing-machine, the combination of a rotary loop-taker having a groove, a non-rotary body portion having a flange extending into the groove of said loop-taker, a forked loop-holder attached to said body portion and also having connection with the loop-taker to be movable therewith, and a movable retainer for engaging with the flange of said body portion to removably retain the latter in connection with the loop-taker.

8. In a sewing-machine, the combination of a rotary loop-taker having a groove, a non-rotary body portion having a flange extending into the groove of said loop-taker, a forked loop-holder attached to said body portion and also having connection with the loop-taker to be movable therewith, a pivoted retainer for engaging with the flange of said body portion to removably retain the latter in connection with the loop-taker, and a latch for holding said retainer in operative retaining position.

809,601. **TROLLEY-WIRE CLAMP.** Edmond L. Baker, Roanoke, Va. Filed Feb. 24, 1906. Serial No. 247,163.

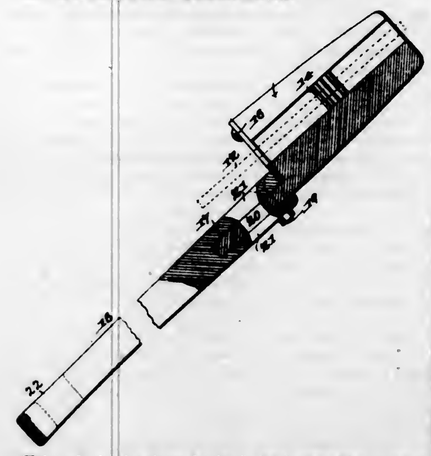

Claim.—1. A wire-clamp having a head comprising a single casting provided with a longitudinal channel which is tapered forwardly and intersects opposite ends of the head, one side of the head being provided with a longitudinal slot intersecting the channel throughout its length and forming an entrance-opening thereinto, a plate secured to the rear end of the head to close the channel and provided with a slot intersecting one edge of the plate and communicating with the entrance-slot of the channel, and a loose clamping-roller working in the channel.

2. A wire-clamp comprising a head and a handle, the head consisting of a single casting having a longitudinal channel intersecting opposite ends of the head and tapered toward the outer end thereof, one side of the head being provided with a longitudinal slot intersecting the ends of the head and one side of the channel throughout its length, the other side of the head being provided with a longitudinal extension having a handle connected thereto and offset at one side of the channel, a plate secured to the rear end of the head and closing the channel and provided with a slot communicating with the channel and the entrance-opening thereof, and a clamping-roller working loosely within the channel.

3. In a clamping device, a rigid head member having a longitudinal channel with walls diverging rearwardly and with one wall provided with a longitudinal concavity and a constricted longitudinal opening, a cylindrical member mounted loosely in said cavity and in opposed relation to the groove and a plate covering the rearward end of the cavity and provided with an opening registering with the groove.

4. In a clamping device, a head member having a rearwardly-projecting lug and with a longitudinal cavity with the walls diverging toward the rear end, a contracted channel communicating with said cavity at one side through one wall of the head member, a stop-plate detachably connected to said head member and extending over the larger end of said cavity and with a recess of less size than said larger end and coinciding with said channel, a cylindrical member operative in said cavity and retained therein by said stop-plate for bearing upon a wire inserted into said cavity through said channel and coinciding recess, a handle member of non-conductive material and provided with a socket bearing over said lug and against said stop-plate, and means for securing said handle member to said lug.

5. As a new article, a clamping device comprising a head member having means for detachable coupling to a conductor-wire and provided with a projecting lug with a transverse aperture through the same, and a handle member of non-conductive material and provided with a socket fitting over said lug and secured thereto and having transverse apertures in alinement with the aperture in said lug.

809,602. **PORTABLE SCALE.** Elias E. Barakat, Washington, D. C. Filed Sept. 13, 1905. Serial No. 278,273.

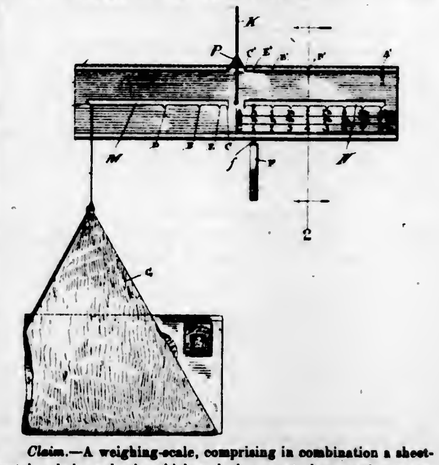

Claim.—A weighing-scale, comprising in combination a sheet-metal scale-beam having thickened edges, central supporting means therefor, there being a longitudinal slot in each half of the beam, a weight slidably carried in one of said slots, a scale-pan slidably carried in the other slot, both slots being graduated, the weight-slot with equivalent marks and the object-slot with marks set at distances in increasing multiple from the center, and a counterpoise slidably engaging the upper edge of the weight-arm, said edge being graduated to correspond with the graduations of the object-slot.

809,603. **FLUSH.** Andrew J. Barr, Mansfield, Ohio, assignor of one-half to Herman B. Homberger, Mansfield, Ohio. Filed Feb. 25, 1905. Serial No. 247,291.

Claim.—1. In a flush-valve mechanism, in combination with a reservoir of a standard having an aperture formed in the center thereof in alinement with the reservoir and secured to the upper portion of said reservoir, a tapered orifice formed in said standard at right angles therewith, a rotatable tapered pin fitted to said orifice having a portion made eccentric and adapted to aline with the reservoir permitting the water from the inlet-pipe to flow into the reservoir, a rod hooked to the eccentric portion of the pin with the opposite end hooked to a valve located in the lower portion of the reservoir.

2. A flushing device composed of a reservoir, with both ends interiorly screw-threaded, a support having one end exteriorly threaded and adapted to engage with the screw-threaded top of the reservoir, an inlet-aperture formed in said standard communicating with

the reservoir, a tapered orifice formed in the support transverse to said aperture, a tapered pin fitted thereto, an eccentric formed on said pin in direct alinement with the inlet-aperture of the support, a rod pivotally journaled to said eccentric on one end, an outlet-bushing fitted to the lower portion of the reservoir having a valve-seat formed thereon, a valve fitted to said bushing and connected to the opposite end of said rod, an operating-lever secured to the projecting end of the tapered pin.

3. In a flushing device, a reservoir having an inlet and outlet in alinement with each other, a support having enlarged projecting portions attached to the upper portion of the reservoir, an inlet-aperture formed therein, a tapered orifice formed transverse to and intersecting said inlet-aperture, a tapered pin fitted to said orifice having an eccentric portion, a bushing fitted to the lower portion of the reservoir with a valve-seat formed thereon, a rod pivotally connected to said valve and tapered pin, a lever secured to said pin providing a means of opening the valve when movement is imparted to the pin.

4. A flushing-valve mechanism comprising a reservoir and support, a tapered pin having an eccentric portion formed thereon fitted to the support, a bushing secured to the lower portion of the reservoir, a valve, a rod adapted to pivotally connect said valve and tapered pin, an operating-lever attached to said pin substantially as described and for the purpose set forth.

5. In a flush for closets, comprising a reservoir with a support attached to the upper portion, said support having an aperture communicating with the reservoir, a tapered orifice formed in said support intersecting with said aperture, a tapered pin having an eccentric portion fitted to said orifice, a bushing adapted to form a valve-seat secured to the lower portion of the reservoir, a valve adapted to contact with said valve-seat, a rod pivotally connecting said valve and tapered pin, a lever secured to the projecting end of the pin as described and set forth.

809,604. **SAFETY-RAZOR.** SAMUEL G. BROSIUS, Washington, D. C. Filed Feb. 21, 1905. Serial No. 246,694.

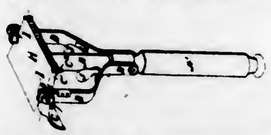

Claim.—1. In a safety-razor, the combination with a handle, of a shield member mounted thereon, a razor-blade, a supporting member for the razor-blade mounted on said handle, and means interposed between the handle and one of said members and movable longitudinally of the handle, whereby the said razor blade and shield may be moved clear of each other, substantially as described.

2. In a safety-razor, a handle having a shield mounted thereon, a razor-blade, a member for holding the razor-blade, and means interposed between said member and the handle and movable longitudinally thereof to lift the blade free of the shield, substantially as described.

3. In a safety-razor, a handle having a shield mounted thereon, a razor-blade, a member fulcrumed on the handle for holding the razor-blade, and means interposed between the said member and handle and movable longitudinally thereof to lift the blade and permit it to swing free of the shield, substantially as described.

4. In a safety-razor, a handle having a shield mounted thereon, a razor-blade, a member for supporting the razor-blade having a yielding connection with the handle and movable longitudinally thereof and normally holding the razor-blade in operative relation with the shield, whereby the razor-blade may be lifted free of the shield, substantially as described.

5. In a safety-razor, a handle having a shield mounted thereon, a razor-blade, a member for supporting the razor-blade having a yielding pivotal connection with the handle and normally retaining the blade in operative relation with the shield and movable longitudinally of the handle to lift the blade and permit it to swing free of the shield, substantially as described.

6. In a safety-razor, a handle having a shield mounted thereon, a razor-blade, a member for holding the blade normally in operative relation with the shield and movable longitudinally of the handle and having a pivotal connection therewith, whereby the blade is adapted to be lifted and swung free of the razor-shield, substantially as described.

7. In a safety-razor, a handle having a shield mounted thereon, a razor-blade, a spring-retained member for holding the blade normally in operative relation with the shield and movable longitudinally of the handle, and having a pivotal connection therewith, whereby the blade is adapted to be lifted and swung free of the razor-shield, substantially as described.

8. In a safety-razor, a handle having a shield mounted thereon, a member movable longitudinally of the handle for supporting the razor-blade, and adapted to be moved so as to lift the said blade free of the shield, a double-edged razor-blade pivotally mounted in said movable member, whereby it may be rotated in its bearings to reverse the cutting edge, substantially as described.

9. In a safety-razor, a razor-blade having notches in its ends, a handle having a razor-shield mounted thereon, and a two-armed fork mounted on said handle provided with grooved clips rotatably mounted thereon and adapted to fit in the notches of the said razor-blade to hold it in position, substantially as described.

10. In a safety-razor, a razor-blade having curved ends, a handle provided with a razor-shield, and a fork having two arms pivotally mounted on said handle normally holding said razor-blade and adapted to be pressed apart to release the said blade, substantially as described.

11. In a safety-razor, a razor-blade, a handle provided with a razor-shield, a two-armed fork movable longitudinally of the handle normally retaining said blade in position, each of the arms thereof having a clip for engaging the razor-blade and adapted to be pressed apart to release the said blade, substantially as described.

12. In a safety-razor, a razor-blade, a handle, a razor-shield having razor-stops thereon, a fork mounted on the said handle and provided with clips to hold the razor-blade in place on said shield and against said stops, and a spring bearing against the fork, substantially as described.

13. In a safety-razor, a razor-blade, a handle, a razor-shield having a razor-guard, a fork movably mounted on the said handle and provided with clips to hold the said razor-blade in position, razor-stops on the said guard, and a spring on the handle for automatically setting the razor-blade against said stops, substantially as described.

14. In a safety-razor, a razor-blade, a handle, a razor-shield mounted thereon and provided with razor-blade rests, in combination with a fork movably mounted on the said handle, and a spring on the handle connected with the fork for normally holding the razor-blade in position on said rests, substantially as described.

15. In a safety-razor, a razor-blade, a handle provided with a razor-shield, in combination with a two-armed fork provided with clips rotatably mounted in the arms thereof and having knobs for turning the said blade, substantially as described.

16. In a safety-razor, a razor-blade, a razor-shield mounted on the handle, a supporting member having clips to hold the said razor-blade in position, cornered bearings on the said member on which the clips are rotatably mounted, in combination with spring-clamps adapted to hold the said clips and the razor-blade in their several positions, substantially as described.

17. In a safety-razor, a handle, a razor-shield and a fork movably mounted on said handle, a razor-blade supported in the fork, and a spring connection between the fork and handle, substantially as described.

18. In a safety-razor, a razor-blade, a handle having slots in its side, a trunnion-bar moving therein, a spring in the said handle to hold the said trunnion-bar in place, in combination with a razor-shield secured to the said handle, and a fork mounted on the said trunnion-bar and adapted to hold the said razor-blade in position, substantially as described.

19. In a safety-razor, a razor-blade, a handle and a trunnion-bar moving therein and having one side flattened, a spring having a spring-block to hold the trunnion-bar in place, in combination with a razor-shield secured to the said handle, and a fork mounted on the said trunnion-bar and adapted to hold the said razor-blade in its several positions, substantially as described.

20. In a safety-razor, a razor-blade, a handle provided with a trunnion-bar moving therein, a spring having a spring-block adapted to hold the trunnion-bar in place, in combination with a razor-shield secured to the said handle, and a fork mounted on the said trunnion-bar to hold the said razor-blade in its several positions, substantially as described.

21. In a safety-razor, a razor-blade, a handle provided with a resilient fork movably mounted thereon, a spring connection between the handle and fork, the arms of said fork normally holding the razor-blade in position, substantially as described.

22. In a safety-razor, a razor-blade, a razor-shield, a handle provided with a fork movably mounted thereon, and a spring connecting the fork and handle, substantially as described.

23. In a safety-razor, a handle having a razor-shield, a razor-blade having two cutting edges, in combination with a two-armed fork movably secured to said handle, each arm of said fork having a clip rotatably mounted therein, the said blade being held by the clips and free to turn therewith to present either of the said edges, substantially as described.

24. In a safety-razor, a handle having a razor-shield secured thereto, trunnions and a fork longitudinally movable on the handle, in combination with a razor-blade held in position on the said razor-shield, through the agency of the said fork and adapted to swing clear of the said razor-shield, substantially as described.

25. In a safety-razor, a handle having a razor-shield secured thereto, trunnions and a two-armed fork longitudinally movable on the handle, each arm of the said fork having clips, in combination with a razor-blade held in position on the said razor-shield by the said clips and being adapted to swing clear of the said razor-shield, through the agency of the said fork, substantially as described.

26. In a safety-razor, a razor-blade, a handle having a razor-shield secured thereto and provided with a two-armed fork longitudinally movable on the said handle, the said arms having clips adapted to turn therein and to hold the said razor-blade in its several positions, in combination with a controlling-spring, substantially as described.

27. In a safety-razor, a razor-blade, a handle provided with a razor-shield having beveled notches on its sides, a two-armed fork movable longitudinally on the said handle and having clips adapted to fit into the said bevel-notches and to hold the said razor-blade in position, substantially as described.

28. In a safety-razor, a razor-blade, a handle provided with a razor-shield, a two-armed fork mounted upon the said handle, each arm provided with a clip having a rounded edge groove, the said clips being adapted to hold the said blade in position, substantially as described.

29. In a safety-razor, a razor-blade, a handle having a razor-shield secured thereto, razor-stops on the front of the said shield, trunnions and fork-arms mounted thereon and adapted to support the said fork, in combination with means for automatically adjusting the said blade against the said razor-stops, substantially as described.

30. In a safety-razor, a handle having an upper and a lower part detachably secured together, a razor-shield mounted on the upper part of the said handle, trunnions and fork-arms movably mounted thereon, in combination with a razor-blade held in position on the said shield through the agency of the said fork, substantially as described.

31. In a safety-razor, spring-fork arms provided with a razor-blade mounted thereon, and a razor-shield, in combination with push-bars between the arms of the fork to spread the arms of the said fork in releasing the said blade from the said arms, substantially as described.

32. In a safety-razor, a razor-shield, a handle provided with spring-fork arms pivotally secured thereto and having a razor-blade mounted thereon, in combination with back stops adapted to prevent the razor-blade from being swung back, substantially as described.

809,605. **COMPUTING DEVICE.** GEORGE M. BROWN, Otto, N. Y. Filed July 27, 1905. Serial No. 271,801.

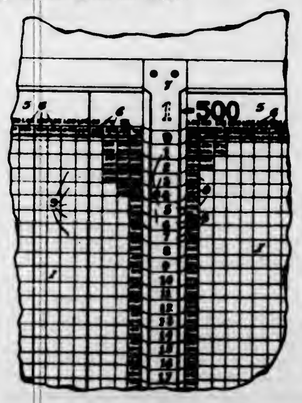

Claim.—1. A computing device of the character described which is divided into a number of main divisions designated by the hundreds, each of said main divisions being divided into a number of columns for the different prices, and each of the columns being subdivided into one hundred spaces, each of which contains two figures, one of them giving the value of the quantity of goods designated by the number of hundreds marked upon the main division plus the quantity designated by the position of the space in the column, said value being according to the price value of the column, while the opposite figure gives the value of that quantity of goods plus one thousand units of the goods.

2. The combination of a computing device of the character described which is divided into a number of main divisions designated by the hundreds, each of said main divisions being divided into a number of columns for the different prices, and each of the columns being subdivided into one hundred spaces, each of which contains two figures, one of them giving the value of the quantity of goods designated by the number of hundreds marked upon the main division plus the quantity designated by the position of the space in the column, said value being according to the price value of the column, while the opposite figure gives the value of that quantity of goods plus one thousand units of the goods, and a rod located over the table and parallel with the price-columns, said rod being divided into one hundred transverse divisions corresponding to the one hundred spaces in the price-columns and numbered from 0 to 99, said numerals designating the number of units to be added to the number of hundreds marked upon the main division in determining the quantity of goods, the device being made so that the rod can be brought to any desired portion of the table.

3. The combination of a cylinder having a table of the character described on the surface thereof, said table being divided into a number of main divisions running longitudinally of the cylinder, each of the main divisions being divided into a number of columns for the different prices, and each of the columns being subdivided into one hundred spaces, each of which contains two figures, one of them giving the value of the quantity of goods designated by the number of hundreds marked upon the main division plus the quantity designated by the position of the space in the column, said value being according to the price value of the column, while the opposite figure gives the value of that quantity of goods plus one thousand units of the goods, and a fixed rod located adjacent the cylinder and parallel with the price-columns, said rod being divided into one hundred transverse divisions corresponding to the one hundred spaces in the price-columns and numbered from 0 to 99, said numerals designating the number of units to be added to the number of hundreds marked upon the main division in determining the quantity of goods, the cylinder being adapted to rotate so as to bring any desired portion of the table around to the rod.

809,606. **GAME APPARATUS.** FREDERICK W. BURNS, Boston, Mass. Filed Aug. 2, 1905. Serial No. 272,286.

Claim.—1. An elongated, rectangular alley having a pocket at one end, and a return-duct leading from the pocket to the opposite end of the alley, a group of pins fixedly suspended above the alley in front of the pocket, a normally depending, pivotally-connected extension on each pin, adapted to be hit and swung upward by a ball traversing the alley, a single instrumentality to automatically lock an extension in either its depending, normal position, or in abnormal position when swung upward, and manually-controlled means to simultaneously restore to depending position such extensions as have been swung upward.

2. An elongated, rectangular alley, a group of swinging pin-like members suspended above the alley in front of the pocket and normally depending toward the alley, a spring connected with each member to retain it either in normal, or in abnormal position, and means to simultaneously restore to normal position all members abnormally positioned.

3. An elongated, rectangular alley, a group of pins fixedly suspended above one end thereof and beveled at their lower ends, an extension pivotally connected with each pin and beveled correspondingly, a spring to retain the beveled portions of the pin and extension in contact and thereby maintain the extension alined with the pin, and also to retain the extension elevated when swung rearwardly, a resetting member for each extension, and manually-controlled means to act through the resetting members of all abnormally-positioned extensions and simultaneously reset them.

4. An elongated alley having a pocket at one end and longitudinal side gutters leading thereto, a return-conduit from the pocket

guide and provided with spaced recesses adapted to register with

vided with a notch 6; of a stationary bar 5 engaging the notch, a shuttle-thread hook, an oscillating bar 9 on which the said hook is

to the opposite end of the alley, a group of vertically-adjustable, two-part pins suspended above the alley, in front of the pocket, the lower part or extension of each pin being pivoted to the fixed upper part, a single instrumentality to hold the extensions in alinement with the upper parts, and also at an angle thereto when struck by a ball traversing the alley, and means manually operated from the front end of the alley to simultaneously restore to alined position all extensions which have been previously moved into abnormal position.

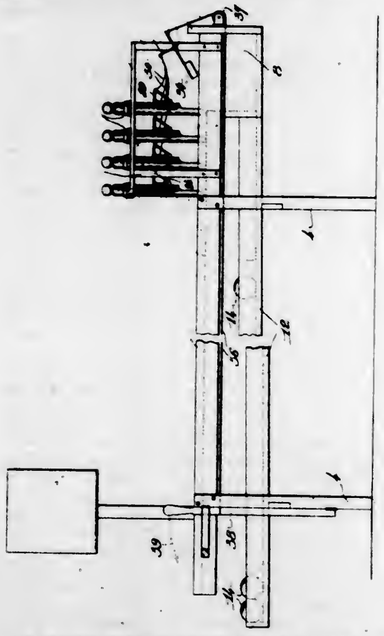

5. An elongated alley, an overhead frame at one end, a group of triangularly-arranged pins suspended from the frame, a depending extension pivoted on the lower end of each pin and normally in alinement therewith and in the path of a ball traversing the alley, engagement of the ball with an extension swinging the latter upward, a single instrumentality to automatically retain the extensions in depending or in upturned position, and manually-controlled means to reset the extensions in depending position, in alinement with the pins to which they are pivoted.

809,607. **TEA-STRAINER HOLDER.** ABRAHAM CHUNDELAH, San Francisco, Cal. Filed Nov. 5, 1904. Serial No. 231,562.

Claim.—1. As an article of manufacture a holder of the character described comprising a single piece of wire bent to form opposed jaws and opposed finger-holds and an intermediate spring-hinge, said jaws adapted to grip the exterior of a vessel, said wire being extended substantially laterally to and provided with means forming a swivel-support for a straining-basket.

2. As an article of manufacture, a holder of the character described comprising a single piece of wire fashioned to form opposed jaws at one portion and opposed finger-holders at another and opposite portion, and a spring portion intermediate of the jaws and finger-holds, said jaws adapted to grip the outside of a vessel and said wire having one terminal extended laterally so that it may extend forward of the spout of the vessel, and said extended terminal having means forming a swivel-support for a straining-basket.

3. As an article of manufacture, a holder of the character described comprising opposed jaws and opposed finger-holds and an intermediate hinge portion, and a rod projecting laterally from the jaw portion and having its outer end provided with means forming a swivel-support for a straining-basket.

809,608. **GATE-LATCH.** JOHN S. DRENNAN, Cleburne, Tex. Filed May 22, 1905. Serial No. 261,610.

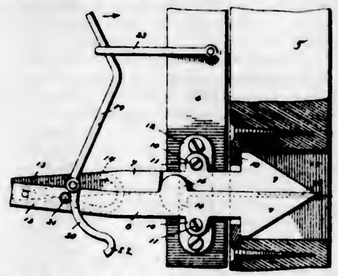

Claim.—1. A gate-latch comprising pivoted arms having hooked front ends, the inner edges of said ends being raised and engaging behind each other; a spring fastened to the rear ends of the arms for holding the hooked ends spread out; and a lever pivoted to one of the arms, and engaging the other arm for spreading said rear ends and drawing the hooked ends together.

2. A gate-latch comprising pivoted arms having hooked front ends which are normally spread out, the inner edges of said ends being raised and engaging behind each other; and emans for drawing the hooks together.

809,609. **WINDOW-SASH.** HARRY W. J. EDBROOKE and FREDERICK LINDQUIST, Chicago, Ill. Filed Mar. 2, 1905. Serial No. 248,010.

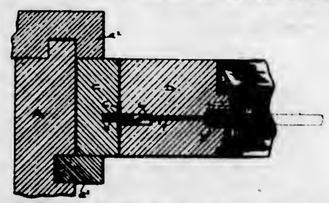

Claim.—1. In combination with a frame and a sash mounted therein, said sash having two-part stiles as described, and the parts of the stiles having registering vertical grooves formed in their adjacent faces, a metal locking-bar arranged in said grooves, and means for operating said bar said means comprising an eccentrically-pivoted and recessed lever connected with said bar and a spring adapted to lock said lever in its adjusted positions.

2. In combination with a frame and a sash mounted therein, said sash having two-part stiles as described, and the parts of the stiles having registering vertical grooves formed in their adjacent faces and metal channel-bars arranged in said grooves, a metal locking-bar arranged in said channel-bars, and means for operating said locking-bar, said means comprising a hollow box secured to the inner face of the sash-stile, a recessed lever eccentrically pivoted in said box and a strap connecting said lever and said locking-bar one end of said strap fitting the recess in said lever.

3. In combination with a frame and a sash mounted therein, said sash having two-part stiles as described and the parts of each stile having registering vertical grooves formed therein, channel-bars fixed in said grooves, a metal locking-bar arranged in said channel-bars, and means for operating said locking-bar, said means comprising a box secured to the stile, a slotted recessed and notched lever eccentrically pivoted in said box, a strap connected with said locking-bar and having a pin fitting the slots in the lever, one end of said bar adapted to move in the recessed portion of the lever, and a spring adapted to engage the notches in said lever and hold it in its adjusted positions.

809,610. **DOOR-LOCK.** CHARLES F. FRINGER, Lithia, Va. Filed Sept. 20, 1904. Serial No. 224,895.

Claim.—In a lock, an inclosing casing having a transverse bolt-guide and provided with a plurality of tumbler-guides disposed at right angles thereto, a locking-bolt slidably mounted in the bolt-guide and provided with spaced recesses adapted to register with the tumbler-guides when the bolt is projected, said bolt being provided with an elongated slot and having one end thereof terminating in a handle, a tapering key-guide formed in the casing and intersecting the tumbler-guides, tumblers provided with transverse openings slidably mounted in the tumbler-guides and adapted to engage the recesses in the bolt, one of said tumblers being shorter than the other and having the lower wall of its recess inclined toward the handle of the bolt, a tapering key fitting in the key-guide and having a shoulder at its enlarged end for engagement with the adjacent wall of the casing, said key being provided with a plurality of spaced lateral lugs increasing in size toward said shoulder and having terminal curved portions adapted to engage the transverse openings in the sliding tumblers for actuating the same when the key is tilted upon the forward terminal of the key-guide as a fulcrum, a pin projecting from the casing and adapted to engage the walls of the slot in the sliding bolt for limiting the longitudinal movement of the latter, and a plate detachably secured to the casing and forming a cover for said lock.

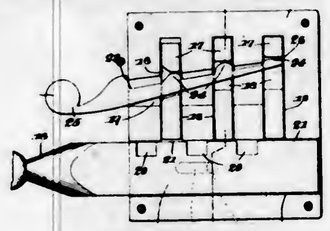

809,611. **NET-MAKING MACHINE.** ALEXANDER O. HANNER and GUSTAV HANNER, Christiania, Norway. Filed Sept. 23, 1904. Serial No. 225,639.

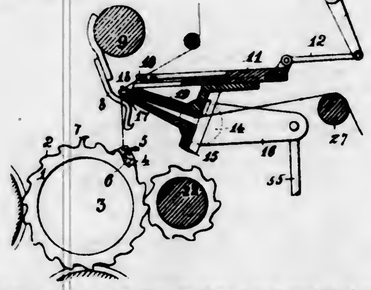

Claim.—1. In a net-making machine, a hook capable of engaging a shuttle-thread to form a loop, a needle capable of carrying a bight of the warp-thread through the shuttle-thread loop to bring it in the path of a warp-thread hook, a shuttle, a toothed ring surrounding said shuttle, means to support said ring, a toothed wheel to impart rotary motion to said ring and a warp-thread hook on said ring.

2. In a net-making machine the combination with a shuttle-thread loop-forming hook, a shuttle and a warp-thread hook of a warp-thread needle, means to move the needle longitudinally, guides for the shuttle and the warp-thread in the proximity of the needle, and means to alternately bring these guides close to the knot-forming point and to lift them above the shuttle-thread loop-former.

3. In a net-making machine a rocking frame, a wing on the same projecting toward the knot-forming point, a shuttle, a guide-comb for the shuttle-threads on the edge of said wing, a support on said rocking frame, means to impart a reciprocating motion to said support in a direction parallel to the axis of the rocking frame, a wing on said support extending toward the edge of the wing on the rocking frame and a guide-comb for the warp-threads on the edge of said wing, a slide on the rocking frame, means to move the same in a direction at right angles to the motion of the support and warp-thread needles mounted on said slide.

4. In a net-making machine, the combination with a rotatable toothed shuttle-carrier having a hook thereon, a toothed wheel engaging the shuttle-carrier and a shuttle mounted in the carrier having a perforated plate 4 projecting at one side of the carrier and provided with a notch 6; of a stationary bar 5 engaging the notch, a shuttle-thread hook, an oscillating bar 9 on which the said hook is mounted, a warp-thread needle, a slide on which the needle is mounted, mechanism to move said slide to give the needle longitudinal movement, a support for said slide, means to move the support laterally, a frame 15 in which the support is mounted, means to rock the frame, a comb on the support and a comb on the frame having upwardly-bent teeth, said combs opposite one another and between which the finished net passes, means to laterally move the bar 9, substantially as described.

5. In a net-making machine, the combination with a toothed shuttle-carrier, a hook thereon, means to rotate the carrier and a shuttle-thread loop-forming hook; of a warp-thread needle having a bend back of its eye, means to rock the needle into position to be projected through the shuttle-thread hook, means to project the needle through the loop to carry the warp-thread into the path of the shuttle-carrier hook, whereby the point of said hook will pass the needle at its bend and loop the warp-thread around the shuttle, substantially as described.

6. In a net-making machine, a rocking frame having a comb at its front, a support mounted to move laterally in the frame and having a comb at its front, said support having a free space for the passage of the finished net between its under side and the top of the rocking frame, a slide mounted to move in the support transversely and warp-thread needles mounted on the slide, substantially as described.

809,612. **MEANS FOR SUPERHEATING STEAM.** FRANK A. HAUGHTON, Schenectady, N. Y. Filed Mar. 20, 1905. Serial No. 250,975.

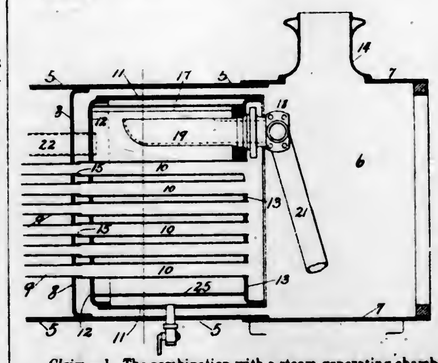

Claim.—1. The combination with a steam-generating chamber, of a superheater, a baffle-plate located in the superheating-chamber to deflect the steam entering the chamber and separate the water therefrom, and a plate located in the lower portion of the superheating-chamber under which the separated water passes.

2. The combination with a steam-generating chamber, of a superheating-chamber, a pair of baffle-plates located in the superheating-chamber to deflect the steam entering the chamber and separate the water therefrom, and a plate located in the lower portion of the superheating-chamber under which the separated water passes.

3. The combination with a steam-generating chamber, of a superheating-chamber, a baffle-plate located in the superheating-chamber, a pipe leading from the generating-chamber to the portion of the superheating-chamber on one side of the baffle-plate, means to convey the steam from the superheating-chamber located on the other side of the baffle-plate, said baffle-plate being arranged to suddenly change the direction of flow of the steam thereby separating moisture or water from the steam and a plate located in the lower portion of the chamber under which the separated water passes.

4. The combination with a steam-generating chamber, of a superheating-chamber, a pair of baffle-plates located in the chamber, pipes leading from the generating-chamber to the portion of the superheating-chamber between the plates and the shell of the chamber, means arranged between the plates to convey the steam from the superheater, said plates being arranged to suddenly change the direction of flow of the steam, thereby separating moisture or water from the steam, and a plate located in the lower portion of the chamber under which the separated water passes.

5. The combination with a tubular boiler having an extended

shell, of a superheater consisting of a closed chamber provided with a plurality of fire-tubes and a plurality of baffle-plates, said plates extending longitudinally of the superheater-chamber, means for introducing steam from the boiler to the superheater into the space outside the plates, means for withdrawing the steam from the superheater from the space between the plates, said chamber being separated from the boiler, but contained within the extended shell and fire-tubes in the chamber registering with the tubes of the boiler.

6. The combination with a steam-generating chamber, of a superheater and means located in the superheating-chamber to deflect the steam entering the chamber and separate the water therefrom, and a plate located in the lower portion of the superheating-chamber under which the separated water passes.

809,613. **RAILWAY-CAR.** LOUIS A. HOSER, St. Louis, Mo. Filed Apr. 28, 1905. Serial No. 257,899.

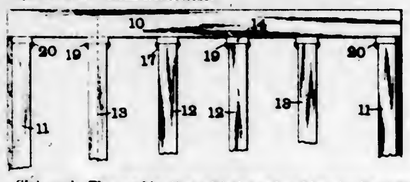

Claim.—1. The combination with the end and longitudinal sills of a car, of a timber-pocket adapted to receive the end of a longitudinal sill and having its lower end permanently open, and means for securing said timber-pocket to said end sill.

2. The combination with the end and longitudinal sills of a car, of a timber-pocket adapted to receive the end of a longitudinal sill and having its lower end permanently open, said longitudinal sill being provided on its upper face with a recess to receive the flange of said pocket.

3. In a railway-car, the combination with end and longitudinal sills of substantially the same depth, of a timber-pocket adapted to receive the end of a longitudinal sill and having its lower end permanently open, and means for securing said timber-pocket to said end sill.

4. The combination with the end and longitudinal sills of a car, of a timber-pocket adapted to receive the end of a longitudinal sill and having its lower end permanently open, means for securing said timber-pocket to the end sill, and means for securing said timber-pocket to the longitudinal sill.

5. The combination with the end and longitudinal sills of a car, of a timber-pocket adapted to receive one end of a longitudinal sill and having its lower end permanently open, a hollow boss provided with a screw-hole for securing said timber-pocket to the end sill, and a lug for securing said timber-pocket to the longitudinal sill.

6. The combination with the end and longitudinal sills of a car, of a timber-pocket adapted to receive the end of a longitudinal sill and having one end permanently open, a hollow boss provided with a screw-hole for securing said timber-pocket to the end sill, a pair of lugs carried by said timber-pocket, and a bolt passing through said lugs and the longitudinal sill in said pocket

809,614. **INTERNAL-COMBUSTION ENGINE.** HENRY C. HOLLOWAY, Gilroy, Cal., assignor of one-half to William De Hart, Watsonville, Cal. Filed Feb. 6, 1905. Serial No. 244,486.

Claim.—1. An internal-combustion engine comprising a cylinder closed at both ends, a piston, a piston-rod extending through the stuffing-box in one head, connecting with the cross-head and crank-shaft, inlet and outlet passages contiguous to the lower cylinder-head, automatically-operating valves by which gas is admitted to the cylinder and transmitted therefrom, said valves operated by and during the movement of the single power-piston, a receiver for the compressed gas, an independent combustion-chamber intermediate between said receiver and the cylinder, and a valve controlling the transmission of gas from the receiver to the combustion-chamber.

2. An internal-combustion engine, comprising a cylinder having passages at opposite sides, a piston reciprocating in said cylinder, automatically-controlled inlet and outlet valves through which the impelling medium is transmitted by the movement of the piston, a receiver and a combustion-chamber above the same with a valve between the two and operating in a plane parallel with the piston, and a valve-controlled opening between the combustion-chamber and the working end of the cylinder.

3. In an internal-combustion engine, a cylinder, piston-passages at opposite sides of the inner end of the cylinder said passages being essentially in line, automatically-operating valves through which the impelling medium is first drawn into the cylinder and then compressed and forced out, a receiving-chamber at one side of cylinder and into which the compressed gas passes, a combustion-chamber at one side of the cylinder and in line with the receiver and connecting with the receiver, and a mechanically-operated valve movable in a plane parallel with the piston and through which the compressed gas is admitted to the combustion-chamber, a passage between the combustion-chamber and the working end of the cylinder, and a manually-operated valve controlling said passage.

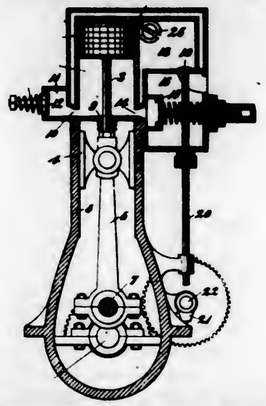

4. In an internal-combustion engine, a cylinder with reciprocating piston, inlet and outlet valves communicating with opposite sides of the lower end of the cylindar, a receiver on the outside of the cylinder and into which the impelling medium is compressed by the reciprocations of the engine-piston and the opening of said valves, a combustion-chamber on the outside of the cylinder in line with the receiver and intermediate between the receiver and the working end of the cylinder, a mechanically-operating valve through which the compressed gas is delivered to the combustion-chamber, a port opening from the combustion-chamber into the working end of the cylinder, a valve controlling the passage through said port and a mechanically-actuated exhaust-valve connecting with the combustion-chamber.

809,615. **PAD-HOLDER.** LOUIS J. HOPKINS, Torrington, Conn. Filed May 1, 1905. Serial No. 259,237.

Claim.—A device for the purpose specified consisting of a bed-plate having its two ends turned upward and serrated, a bowed spring clamping-plate having downwardly-turned serrated ends adapted to pass between the ends of the bed-plate, a pad extending across the under face of the bed-plate and over the serrated ends thereof and beneath the edges of the clamping-plate, and means for connecting the clamping-plate with the bed-plate whereby the pad is held in position, substantially as described.

809,616. **HEADSTONE AND GRAVE-MARKER.** AARON H. HOWARD, Salina, Mich. Filed Feb. 23, 1905. Serial No. 247,970.

Claim.—A device of the class described comprising a substantially rectangular curbing adapted to be placed over a grave and provided at one end with an integral transverse reinforcement, a substantially U-shaped bar embedded in the walls of the curbing and having its terminal portions inclined toward the center of the transverse reinforcement, and a tombstone secured to said reinforcement and having a socket formed in the top thereof for the reception of a flagstaff, there being an opening in the rear wall of the tombstone communicating with said socket.

809,616.

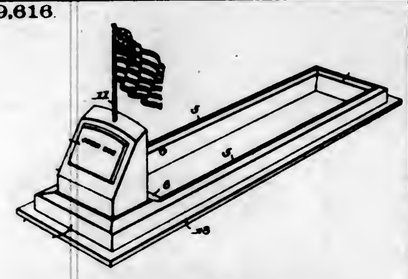

809,617. **VENTILATOR FOR BASEMENTS AND THE LIKE.** PETER H. JACKSON, San Francisco, Cal. Filed June 5, 1905. Serial No. 263,781.

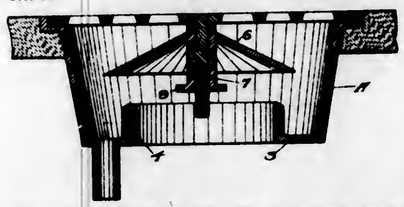

Claim.—In a ventilator, the combination with a casting having a perforated cover, a central air-passage and a gutter or trough with a discharge-passage, of a fixed bolt depending from the cover and extending approximately into said air-passage, a cone adapted as a cover for the air-passage said cone capable of rotation relative to the fixed bolt whereby it breaks up and pulverizes the caked mud which will accumulate and clog the ventilator, said cone having a long bearing on the bolt and said bolt and bearing having a threaded engagement one with the other, and said bearing provided with means by which the cone may be rotated relative to the bolt.

809,618. **LOADING AND UNLOADING DEVICE.** ALVIN W. KEECH, Hilo, Hawaii. Filed Oct. 15, 1903. Serial No. 177,806.

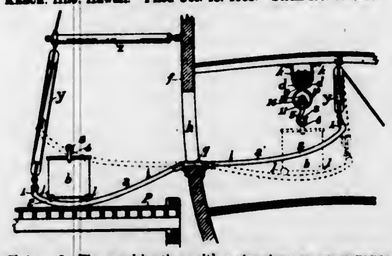

Claim.—1. The combination with a structure or conveyance to be loaded or unloaded, of an arm hinged exteriorly of the structure, means for raising and lowering the arm, a second arm pivotally secured within the structure and forming a continuation of the external arm and a carrier adapted to be supported by the arms.

2. A device of the kind described comprising a carrier designed to enter or come out of a structure or conveyance, through a suitable port therein, and a hinged arm adapted to transfer said carrier to or from the structure or conveyance and momentarily retain it in proximity to said port, substantially as described.

3. A loading and unloading device comprising a track within the structure or conveyance to be loaded or unloaded, an arm hinged to said track, and a carrier adapted to be transferred by said arm to or from the track and structure or conveyance, substantially as described.

4. A device of the kind described comprising a hinged arm, a carrier adapted to be transferred thereby, means for raising and lowering the arm, and an adjustable stop for limiting the downward movement of the arm relatively to the carrier, substantially as described.

5. A device of the kind described comprising one or more arms or tracks, and a carrier adapted to travel along the same, including a truck, a container with a bail having pendants, a hook grasping said bail between its said pendants, and an intermediate hanger permitting a rotary and an oscillatory movement of said hook with relation to said truck and adapted to maintain them rigidly connected after adjustment, substantially as described.

6. A device of the kind described comprising an arm having parallel members, arched braces interconnecting said members, a truck in hinge connection with said arm, and a suspended wheeled carrier adapted to ride on the members of the arms and the connected track, and means for oscillating the arm on its hinge connection, substantially as described.

7. A loading and unloading device comprising a pivotally-supported track-arm, a stop located at the outer free end of the track-arm, the track-arm being substantially U-shaped at a point near its outer end, means for raising and lowering the track-arm and a carrier supported by and traveling on the arm, the contact of the carrier and stop being cushioned owing to the U-shaped portion of the arm.

8. A loading and unloading device comprising a pivotally-supported track-arm, means for raising and lowering the track-arm and a carrier supported by and traveling on the arm, the carrier provided with a bail, a boss secured to the bail, corresponding enlargements on the boss and spaced apart from each other and a hook having a contour conforming to the contours of the enlargements, the hook received between the enlargements.

9. A loading and unloading device comprising a pivotally-supported track, a carrier supported and traveling upon the arm, means for raising and lowering the arm, a guide-member loosely engaging the arm and a stop carried by the guide member and impinged by the arm for limiting the movement of the arm in one direction.

10. A loading and unloading device comprising a suitably-supported movable track-arm, consisting of a single piece of material bent at its outer end, to form parallel rails, braces connecting the rails, means for raising and lowering one end of the arm and a carrier traveling on the arm.

11. A loading and unloading device comprising a track-arm pivotally supported at one end, a truck adapted to travel on the arm, the truck comprising wheels, a slotted hanger connected to the wheels, a suspending device secured to the hanger and projecting through the slot, a carrier supported upon the truck and means for raising and lowering the arm.

12. A loading and unloading device comprising a suitable track, a truck traveling thereon, the truck consisting of wheels, a circular hanger connected to the wheels, a segmental block seated therein, a suspending device passing loosely through the hanger and block and an adjusting member to which the suspending device is secured within the hanger.

13. A loading and unloading device comprising a track-arm, a truck traveling thereon, the truck consisting of wheels a circular hanger connected to the wheels, a segmental block seated in the hanger, a corrugated block resting upon the segmental block, a suspending device passing loosely through the hanger and blocks, and a corrugated adjusting member rigidly secured to the suspending device and engaging the corrugated block.

14. The combination with a structure, of a track pivotally supported externally of the structure, a track pivotally supported interiorly of the structure and forming a continuation of the external track, means for adjusting the interior track at a variety of different elevations and a carrier adapted to travel the tracks.

15. The combination with a structure, of a track pivotally supported exteriorly thereof, a second track supported interiorly of the structure and forming a continuation thereof, an elevated railway secured adjacent one of the tracks, the track movable toward and from the railway, a carrier adapted to be received on the tracks and means on the railway for engaging the carrier to support it independently of the track.

16. The combination with a structure, of a track secured exteriorly of the structure, a second track secured interiorly of the structure, a rail-section stationarily secured to the structure to connect the track-sections and means for adjusting at least one of the tracks at various elevations.

17. The combination with a structure having an opening therein, of a rail-section rigidly secured to one wall of the opening, a track-section pivotally secured to one end of the rail-section and extending exteriorly of the structure, a second track-section pivotally secured to the opposite end of the rail-section and extending interiorly of the structure, a carrier supported by the tracks and means for adjusting at least one of the tracks at various elevations.

18. The combination in a loading and unloading device, of a suitably-supported track, a carrier adapted to be supported by the track, a railway supported upon a different plane from that occupied by the track, means on the railway adapted to engage and support the carrier independently of and previously or subsequently to the track, and means for moving the one relative to the other.

809,619. **BRACELET.** PHILIP H. LESTER, Attleboro Falls, Mass., assignor to T. I. Smith Co., North Attleboro, Mass. Filed June 3, 1905. Serial No. 263,572.

Claim.—1. A two-part tubular bracelet having a spring-actuated concealed hinge consisting of a member having a body portion with a forked end, a member having a body portion with a tongue adapted to enter the forked end of the adjacent member in which it is pivotally secured by a pin, a tube, a coiled spring in the tube one end of which is secured to the member having the tongue and the other end secured to a bar crossing the outer end of the tube, a catch stamped substantially U-shaped from sheet metal the arms of which are rounded on the ends, one arm having a notch and a push-teat adapted to extend through a slot in the bracelet, and means for securing the hinge and catch, whereby the bracelet is opened against the tension of the coiled spring without forming a gap or opening in the hinge-joint of the bracelet, and closed automatically by the tension of the coiled spring, as described.

2. In a bracelet, the combination with the half *a* having the end a' and the half *b* having the end b' of a bracelet, of a spring-actuated concealed hinge *c* consisting of a member c' having the body portion c^3 with the forked end c^3, a member c^4 having the body portion c^5, the tongue c^6 adapted to enter the forked end c^3 in which it is pivotally secured by the pin c^7 forming the pintle of the hinge, and the slot c^8 extending into the body portion c^5, a tube c^9, a coiled spring c^{10} in the tube, one end of the spring being secured to the member c^4 in the slot c^8 by the pin c^{11} and the other end to the bar c^{12} extending across the outer end of the tube c^9, and means for securing the hinge in the bracelet, as described.

3. In a bracelet, the combination with the half *a* having the end a', the end a^2 in which is the slot a^3, and the half *b* having the end b' and the end b^2 in which is the inwardly-extending lip b^3, of a spring-actuated concealed hinge *c* consisting of a member c' having the body portion c^3 with the forked end c^3, a member c^4 having the body portion c^5, and the tongue c^6 adapted to enter the forked end c^3 in which it is pivotally secured by the pin c^7 forming the pintle of the hinge, and the slot c^8 extending into the body portion c^5, a tube c^9, a coiled spring c^{10} in the tube, one end of the spring being secured to the member c^4 in the slot c^8 by the pin c^{11} and the other end to the bar c^{12} extending across the outer end of the tube c^9, and a U-shaped catch *d* having the arm d' with the rounded end d^2 and the arm d^3 with the rounded end d^4, the notch d^5 and the outwardly-extending push-teat d^6, means for securing the hinge *c* in the ends a' and b' of the bracelet, and means for securing the catch *d* in the end a^2 of the bracelet, as described.

809,620. **STEERING MECHANISM FOR MOTOR-VEHICLES.** THEODORE P. HEUSNER, St. Louis, Mo., assignor to St. Louis Car Company, St. Louis, Mo., a Corporation. Filed Aug. 7, 1905. Serial No. 273,153.

Claim.—1. In a steering mechanism, the combination of a connecting member leading to a steering-wheel, a rocking member having a lever-arm fitted to said connecting member, means for supporting said rocking member, a staff, and a cam fitted to said staff and having its working face disposed in a plane oblique to the axis of said staff and opposed to said rocking member to impart movement thereto, substantially as set forth.

2. In a steering mechanism, the combination of a connecting member leading to a steering-wheel, a rocking member having a lever-arm fitted to said connecting member and having a pair of diverging arms, means for supporting said rocking member, a staff, and a cam fitted to said staff; said cam having a working face disposed obliquely relative to the axis of said staff and opposing the diverging arms of said rocking member, substantially as set forth.

3. In a steering mechanism, the combination of a connecting member leading to a steering-wheel, a rocking member having a lever-arm fitted to said connecting member and diverging arms, bearing-balls seated in said diverging arms, a staff, and a cam fitted to said staff; said cam having a working face disposed obliquely to the axis of said staff and bearing against said bearing-balls to impart movement to said rocking member by pressure against its diverging arms, substantially as set forth.

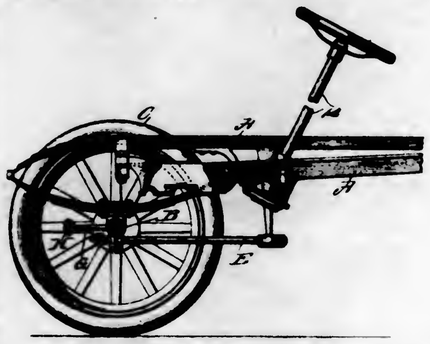

4. In a steering mechanism, the combination of a connecting member leading to a steering-wheel, a rocking member having a lever-arm fitted to said connecting member and having diverging arms, a casing in which said rocking member is supported, a staff journaled in said casing, and a cam fixed to said staff and having a working face oblique to the axis of said staff and opposing the diverging arms of said rocking member, substantially as set forth.

5. In a steering mechanism, the combination of a connecting member leading to a steering-wheel, a rocking member having a lever-arm fitted to said connecting member and having diverging arms, a casing in which said rocking member is supported, a staff journaled in said casing, and a cam fixed to said staff and having a working face oblique to the axis of said staff and opposing the diverging arms of said rocking member; said cam having a sleeve surrounding said staff and positioned between it and a portion of said casing and being provided with a stop arranged to engage said casing portion, substantially as set forth.

6. In a steering mechanism, the combination with a steering-wheel-connecting member, of a rocking member united to said connecting member, a cam-disk for rocking said rocking member, means for adjusting said cam-disk with respect to said rocking member, substantially as set forth.

7. In a steering mechanism, the combination of a steering-wheel-connecting member, an armed rocking member united to said connecting member, a cam-disk opposing the arms of said rocking member and provided with a sleeve, a casing member in which the sleeve of said cam member is fitted, and means for operating against said sleeve for adjusting said cam member relative to the arms of said rocking member, substantially as set forth.

8. In a steering mechanism, the combination of a steering-wheel-connecting member, an armed rocking member united to said connecting member, a cam-disk opposing the arms of said rocking member and provided with a sleeve, a casing member in which the sleeve of said cam member is fitted, and a bearing-cap fitted to said casing member and arranged to impart movement to said cam-disk through the medium of its sleeve, substantially as set forth.

9. In a steering mechanism, the combination of a steering-wheel-connecting member, an armed rocking member united to said connecting member, a cam-disk opposing the arms of said rocking member and provided with a sleeve, a casing member in which the sleeve of said cam-disk is fitted, a bearing-cap fitted to said casing member and arranged to impart movement to said cam-disk through the medium of its sleeve, and a jam-nut arranged to hold said bearing-cap, substantially as set forth.

10. In a steering mechanism, the combination of a steering-wheel-connecting member, a rocking member for actuating said connecting member, and a cam-disk for operating said rocking member having a rim at its edge and provided with an oil-duct located adjacent to said rim, substantially as set forth.

809,621. **BOTTLING-MACHINE.** ERNEST L. HELLER, Louisville, Ky. Filed Apr. 17, 1905. Serial No. 255,676.

Claim.—1. In a bottling-machine, a receptacle, a supply-pipe thereto provided with a valve having an operating-arm, a delivery-valve communicating with said receptacle and provided with an oscillating bottle-tube for operating the same, an operating-arm carried by said delivery-valve, and means extending directly between the arms upon said supply and delivery valves for operating them simultaneously by the movement of the bottle-tube in the insertion and withdrawal of a bottle.

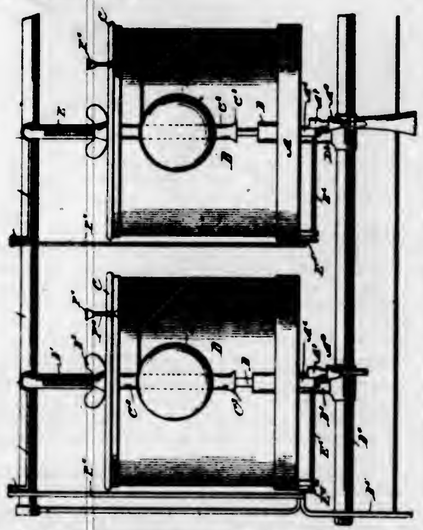

2. In a bottling-machine, a measuring-receptacle, a bottom plate upon which said receptacle rests, a top plate therefor, and means for adjusting said plates at different distances from each other to receive receptacles of different height or capacity.

3. In a bottling-machine, a measuring-receptacle, a bottom plate, a post extending upward therefrom, a top plate provided with a depending sleeve surrounding said post, a float slidably mounted upon said sleeve, and a valve carried by said float to close a vent-opening in said top plate.

4. In a bottling-machine, a measuring-receptacle, a bottom plate, a post extending upward therefrom, a top plate provided with a depending sleeve surrounding said post, a float slidably mounted upon said sleeve, a valve carried by said float to close a vent-opening in said top plate, a laterally-disposed arm carried by said float to support said valve, and a stop-flange at the lower end of said sleeve.

5. In a bottling-machine, a base-plate provided with a seat therein, a packing disposed upon said seat, a supply-pipe communicating with the base beyond said seat, a delivery-pipe communicating with the bottom of said base, an open-ended receptacle seated upon said packing, a vertically-disposed post carried by said plate and provided with a threaded upper end adapted to extend above receptacles of different capacities, a top plate disposed at the upper end of said receptacle, and a holding-nut threaded upon said post to engage said top plate.

809,622. **SHOE.** JAMES N. MOULTON, Haverhill, Mass., assignor to The Waterproof Welt & Filler Co., Hartford, Conn., a Corporation of Delaware. Filed Mar. 14, 1905. Serial No. 249,994.

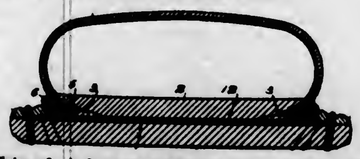

Claim.—1. A shoe comprising an upper, an inner sole having the usual channel in its bottom, a welt, an integral strip of yielding and elastic waterproof material lying between the welt and the upper, these parts being secured together by a row of stitches passing through the yielding and elastic strip and into the channel in the inner sole, whereby the elastic strip closes around the stitches as the shoe is sewed, thus making the structure waterproof, and an outer sole secured to the welt.

2. A shoe comprising an upper, an inner sole having the usual channel in its bottom, a welt, an integral strip of yielding and elastic waterproof material lying between the welt and the upper, these parts being secured together by a row of stitches passing through the yielding and elastic strip and into the channel in the inner sole whereby the elastic strip closes around the stitches as the shoe is sewed, thus making the structure waterproof, an outer sole secured to the welt, and a waterproof sole-filling material between the outer and the inner soles, the edge of the yielding and elastic strip lying closely in contact with the sole-filling material.

3. A shoe comprising an upper, an inner sole having the usual channel in its bottom, a welt, an integral strip of yielding and elastic waterproof material lying between the welt and the upper, these parts being secured together by a row of stitches passing through said strip and into the channel in the inner sole, whereby said strip closes around the stitches as the shoe is sewed, thus making the structure waterproof, an outer sole secured to the welt, and a waterproof sole-filling material between the inner and outer soles, the edges of said material extending underneath the welt.

4. A shoe comprising an upper, an inner sole, a welt, an integral strip of waterproof filling material lying between the welt and the upper, said parts being secured together by a row of stitches, an outer sole secured to the welt, and a filling material having a relatively thick central portion and a relatively thin edge between the soles, the thin edge lying between the welt and the outer sole.

809,623. **WATERPROOF SOLE.** JAMES N. MOULTON, Philadelphia, Pa., assignor to John R. Reynolds, Hartford, Conn. Filed May 18, 1904. Serial No. 208,515.

Claim.—1. A waterproof protector and filler for welted shoes to be interposed between the inner and outer soles thereof, said protector including a body portion comprising a sheet of waterproof material and a filler-section attached thereto, and a relatively thin flexible waterproof edge, the thicker body portion serving as a filler for the cavity between the soles.

2. A waterproof protector and filler for welted shoes to be interposed between the inner and outer soles thereof, said protector comprising a sheet of rubber, a reinforcing-sheet and a filler-section, the filler-section being of a size to be contained within the cavity existing between the inner and outer soles and bounded by the edge of the welt and forming in connection with the rubber and the reinforcing-sheet a body portion, the rubber extending beyond the body portion and forming a thin flexible edge to overlie the seam by which the welt is secured to the upper and inner soles.

3. A waterproof protector and filler for welted shoes to be interposed between the inner and outer soles thereof, comprising a sheet of rubber, a filler-section secured to the sheet of rubber, said section being of a size to be contained within the cavity existing between the inner and outer soles, and a reinforcing-sheet on the side of the rubber sheet opposite to that on which the filler-section is mounted, the filler-section, rubber and reinforcing-sheet forming a body portion and the rubber and reinforcing-sheet extending beyond the body portion and forming a relatively thin flexible edge to overlie the seam by which the welt, upper and inner soles are secured together.

4. A shoe comprising an upper, an inner sole and a welt stitched together, an outer sole, and a waterproof protector or filler interposed between the inner and outer soles, said protector including a body portion comprising a sheet of waterproof material and a filler-section and a relatively thin flexible waterproof edge, the thicker body portion serving as a filler for the cavity between the soles, and the thin flexible waterproof edge serving to overlie the seam by which the welt, upper and inner sole are secured together.

5. A shoe comprising an upper, an inner sole and a welt stitched together, an outer sole, a waterproof protector and filler interposed between the inner and outer soles, said protector comprising a sheet of rubber, a reinforcing-sheet and a filler-section, the filler-section being contained within the cavity existing between the inner and outer soles and bounded by the edge of the welt, and forming in connection with the rubber sheet and the reinforcing-sheet a body portion, the rubber extending beyond the body portion and forming a

18. The combination in a loading and unloading device, of a suitably-supported track, a carrier adapted to be supported by the track, a railway supported upon a different plane from that occupied by the track, means on the railway adapted to engage and support the carrier independently of and previously or subsequently to the track, and means for moving the one relative to the other.

809,619. **BRACELET.** PHILLIP H. LESTER, Attleboro Falls, Mass., assignor to T. I. Smith Co., North Attleboro, Mass. Filed June 3, 1905. Serial No. 263,572.

Claim.—1. A two-part tubular bracelet having a spring-actuated concealed hinge consisting of a member having a body portion with a forked end, a member having a body portion with a tongue adapted to enter the forked end of the adjacent member in which it is pivotally secured by a pin, a tube, a coiled spring in the tube one end of which is secured to the member having the tongue and the other end secured to a bar crossing the outer end of the tube, a catch stamped substantially U-shaped from sheet metal the arms of which are rounded on the ends, one arm having a notch and a push-teat adapted to extend through a slot in the bracelet, and means for securing the hinge and catch, whereby the bracelet is opened against the tension of the coiled spring without forming a gap or opening in the hinge-joint of the bracelet, and closed automatically by the tension of the coiled spring, as described.

2. In a bracelet, the combination with the half *a* having the end *a'* and the half *b* having the end *b'* of a bracelet, of a spring-actuated concealed hinge *c* consisting of a member *c'* having the body portion c^3 with the forked end c^4, a member c^5 having the body portion c^6, the tongue c^7 adapted to enter the forked end c^4 in which it is pivotally secured by the pin c^7 forming the pintle of the hinge, and the slot c^8 extending into the body portion c^6, a tube c^9, a coiled spring c^{10} in the tube, one end of the spring being secured to the member c^5 in the slot c^8 by the pin c^{11} and the other end to the bar c^{12} extending across the outer end of the tube c^9, and means for securing the hinge in the bracelet, as described.

3. In a bracelet, the combination with the half *a* having the end *a'*, the end a^2 in which is the slot a^3, and the half *b* having the end *b'* and the end b^2 in which is the inwardly-extending lip b^3, of a spring-actuated concealed hinge *c* consisting of a member *c'* having the body portion c^3 with the forked end c^4, a member c^5 having the body portion c^6, and the tongue c^7 adapted to enter the forked end c^4 in which it is pivotally secured by the pin c^7 forming the pintle of the hinge, and the slot c^8 extending into the body portion c^6, a tube c^9, a coiled spring c^{10} in the tube, one end of the spring being secured to the member c^5 in the slot c^8 by the pin c^{11} and the other end to the bar c^{12} extending across the outer end of the tube c^9, and a U-shaped catch *d* having the arm *d'* with the rounded end d^2 and the arm d^3 with the rounded end d^4, the notch d^5 and the outwardly-extending push-teat d^6, means for securing the hinge *c* in the ends *a'* and *b'* of the bracelet, and means for securing the catch *d* in the end a^2 of the bracelet, as described.

809,620. **STEERING MECHANISM FOR MOTOR-VEHICLES.** THEODORE P. MEINHARD, St. Louis, Mo., assignor to St. Louis Car Company, St. Louis, Mo., a Corporation. Filed Aug. 7, 1905. Serial No. 273,199.

Claim.—1. In a steering mechanism, the combination of a connecting member leading to a steering-wheel, a rocking member having a lever-arm fitted to said connecting member, means for supporting said rocking member, a staff, and a cam fitted to said staff and having its working face disposed in a plane oblique to the axis of said staff and opposed to said rocking member to impart movement thereto, substantially as set forth.

2. In a steering mechanism, the combination of a connecting member leading to a steering-wheel, a rocking member having a lever-arm fitted to said connecting member and having a pair of diverging arms, means for supporting said rocking member, a staff, and a cam fixed to said staff; said cam having a working face disposed obliquely relative to the axis of said staff and opposing the diverging arms of said rocking member, substantially as set forth.

3. In a steering mechanism, the combination of a connecting member leading to a steering-wheel, a rocking member having a lever-arm fitted to said connecting member and diverging arms, bearing-balls seated in said diverging arms, a staff, and a cam fitted to said staff; said cam having a working face disposed obliquely to the axis of said staff and bearing against said bearing-balls to impart movement to said rocking member by pressure against its diverging arms, substantially as set forth.

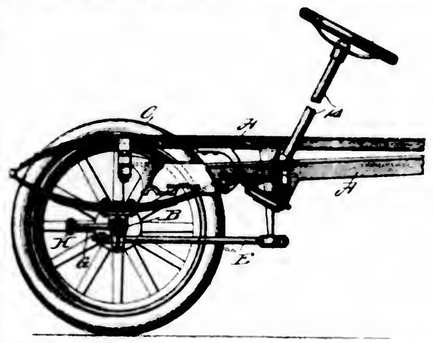

4. In a steering mechanism, the combination of a connecting member leading to a steering-wheel, a rocking member having a lever-arm fitted to said connecting member and having diverging arms, a casing in which said rocking member is supported, a staff journaled in said casing, and a cam fixed to said staff and having a working face oblique to the axis of said staff and opposing the diverging arms of said rocking member, substantially as set forth.

5. In a steering mechanism, the combination of a connecting member leading to a steering-wheel, a rocking member having a lever-arm fitted to said connecting member and having diverging arms, a casing in which said rocking member is supported, a staff journaled in said casing, and a cam fixed to said staff and having a working face oblique to the axis of said staff and opposing the diverging arms of said rocking member; said cam having a sleeve surrounding said staff and positioned between it and a portion of said casing and being provided with a stop arranged to engage said casing portion, substantially as set forth.

6. In a steering mechanism, the combination with a steering-wheel-connecting member, of a rocking member united to said connecting member, a cam-disk for rocking said rocking member, means for adjusting said cam-disk with respect to said rocking member, substantially as set forth.

7. In a steering mechanism, the combination of a steering-wheel-connecting member, an armed rocking member united to said connecting member, a cam-disk opposing the arms of said rocking member and provided with a sleeve, a casing member in which the sleeve of said cam member is fitted, and means for operating against said sleeve for adjusting said cam member relative to the arms of said rocking member, substantially as set forth.

8. In a steering mechanism, the combination of a steering-wheel-connecting member, an armed rocking member united to said connecting member, a cam-disk opposing the arms of said rocking member and provided with a sleeve, a casing member in which the sleeve of said cam member is fitted, and a bearing-cap fitted to said casing member and arranged to impart movement to said cam-disk through the medium of its sleeve, substantially as set forth.

9. In a steering mechanism, the combination of a steering-wheel-connecting member, an armed rocking member united to said connecting member, a cam-disk opposing the arms of said rocking member and provided with a sleeve, a casing member in which the sleeve of said cam-disk is fitted, a bearing-cap fitted to said casing member and arranged to impart movement to said cam-disk through the medium of its sleeve, and a jam-nut arranged to hold said bearing-cap, substantially as set forth.

10. In a steering mechanism, the combination of a steering-wheel-connecting member, a rocking member for actuating said connecting member, and a cam-disk for operating said rocking member having a rim at its edge and provided with an oil-duct located adjacent to said rim, substantially as set forth.

809,621. **BOTTLING-MACHINE.** ERNEST L. MILLER, Louisville, Ky. Filed Apr. 17, 1905. Serial No. 256,076.

Claim.—1. In a bottling-machine, a receptacle, a supply-pipe thereto provided with a valve having an operating-arm, a delivery-valve communicating with said receptacle and provided with an oscillating bottle-tube for operating the same, an operating-arm carried by said delivery-valve, and means extending directly between the arms upon said supply and delivery valves for operating them simultaneously by the movement of the bottle-tube in the insertion and withdrawal of a bottle.

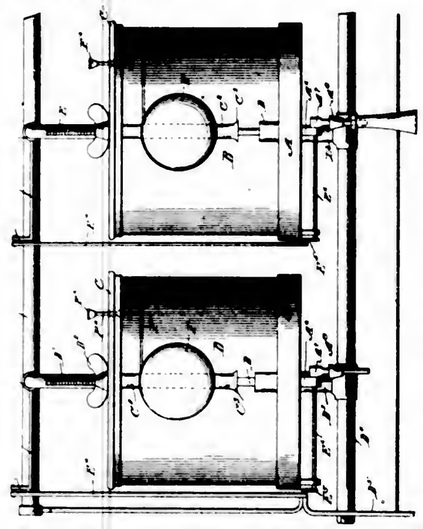

2. In a bottling-machine, a measuring-receptacle, a bottom plate upon which said receptacle rests, a top plate therefor, and means for adjusting said plates at different distances from each other to receive receptacles of different height or capacity.

3. In a bottling-machine, a measuring-receptacle, a bottom plate, a post extending upward therefrom, a top plate provided with a depending sleeve surrounding said post, a float slidably mounted upon said sleeve, and a valve carried by said float to close a vent-opening in said top plate.

4. In a bottling-machine, a measuring-receptacle, a bottom plate, a post extending upward therefrom, a top plate provided with a depending sleeve surrounding said post, a float slidably mounted upon said sleeve, a valve carried by said float to close a vent-opening in said top plate, a laterally-disposed arm carried by said float to support said valve, and a stop-flange at the lower end of said sleeve.

5. In a bottling-machine, a base-plate provided with a seat therein, a packing disposed upon said seat, a supply-pipe communicating with the bottom of said base, an open-ended receptacle seated upon said packing, a vertically-disposed post carried by said plate and provided with a threaded upper end adapted to extend above receptacles of different capacities, a top plate disposed at the upper end of said receptacle, and a holding-nut threaded upon said post to engage said top plate.

809,622. **SHOE.** JAMES N. MOULTON, Haverhill, Mass., assignor to The Waterproof Welt & Filler Co., Hartford, Conn., a Corporation of Delaware. Filed Mar. 14, 1905. Serial No. 249,994.

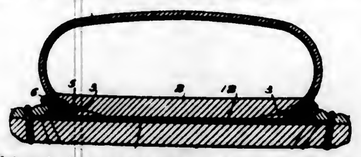

Claim.—1. A shoe comprising an upper, an inner sole having the usual channel in its bottom, a welt, an integral strip of yielding and elastic waterproof material lying between the welt and the upper, these parts being secured together by a row of stitches passing through the yielding and elastic strip and into the channel in the inner sole, whereby the elastic strip closes around the stitches as the shoe is sewed, thus making the structure waterproof, and an outer sole secured to the welt.

2. A shoe comprising an upper, an inner sole having the usual channel in its bottom, a welt, an integral strip of yielding and elastic waterproof material lying between the welt and the upper, these parts being secured together by a row of stitches passing through the yielding and elastic strip and into the channel in the inner sole whereby the elastic strip closes around the stitches as the shoe is sewed, thus making the structure waterproof, an outer sole secured to the welt, and a waterproof sole-filling material between the outer and the inner soles, the edge of the yielding and elastic strip lying closely in contact with the sole-filling material.

3. A shoe comprising an upper, an inner sole having the usual channel in its bottom, a welt, an integral strip of yielding and elastic waterproof material lying between the welt and the upper, these parts being secured together by a row of stitches passing through said strip and into the channel in the Inner sole, whereby said strip closes around the stitches as the shoe is sewed, thus making the structure waterproof, an outer sole secured to the welt, and a waterproof sole-filling material between the inner and outer soles, the edges of said material extending underneath the welt.

4. A shoe comprising an upper, an inner sole, a welt, an integral strip of waterproof filling material lying between the welt and the upper, said parts being secured together by a row of stitches, an outer sole secured to the welt, and a filling material having a relatively thick central portion and a relatively thin edge between the soles, the thin edge lying between the welt and the outer sole.

809,623. **WATERPROOF SOLE.** JAMES N. MOULTON, Philadelphia, Pa., assignor to John R. Reynolds, Hartford, Conn. Filed May 18, 1904. Serial No. 208,515.

Claim.—1. A waterproof protector and filler for welted shoes to be interposed between the inner and outer soles thereof, said protector including a body portion comprising a sheet of waterproof material and a filler-section attached thereto, and a relatively thin flexible waterproof edge, the thicker body portion serving as a filler for the cavity between the soles.

2. A waterproof protector and filler for welted shoes to be interposed between the inner and outer soles thereof, said protector comprising a sheet of rubber, a reinforcing-sheet and a filler-section, the filler-section being of a size to be contained within the cavity existing between the inner and outer soles and bounded by the edge of the welt and forming in connection with the rubber and the reinforcing-sheet a body portion, the rubber extending beyond the body portion and forming a thin flexible edge to overlie the seam by which the welt is secured to the upper and inner soles.

3. A waterproof protector and filler for welted shoes to be interposed between the inner and outer soles thereof, comprising a sheet of rubber, a filler-section secured to the sheet of rubber, said section being of a size to be contained within the cavity existing between the inner and outer soles, and a reinforcing-sheet on the side of the rubber sheet opposite to that on which the filler-section is mounted, the filler-section, rubber and reinforcing-sheet forming a body portion and the rubber and reinforcing-sheet extending beyond the body portion and forming a relatively thin flexible edge to overlie the seam by which the welt, upper and inner soles are secured together.

4. A shoe comprising an upper, an inner sole and a welt stitched together, an outer sole, and a waterproof protector or filler interposed between the inner and outer soles, said protector including a body portion comprising a sheet of waterproof material and a filler-section and a relatively thin flexible waterproof edge, the thicker body portion serving as a filler for the cavity between the soles, and the thin flexible waterproof edge serving to overlie the seam by which the welt, upper and inner sole are secured together.

5. A shoe comprising an upper, an inner sole and a welt stitched together, an outer sole, a waterproof protector and filler interposed between the inner and outer soles, said protector comprising a sheet of rubber, a reinforcing-sheet and a filler-section, the filler-section being contained within the cavity existing between the inner and outer soles and bounded by the edge of the welt, and forming in connection with the rubber sheet and the reinforcing-sheet a body portion, the rubber extending beyond the body portion and forming a

relatively thin flexible edge which overlies the seam by which the welt is secured to the upper and inner sole.

6. A shoe comprising an upper, an inner sole and a welt stitched together, an outer sole, a waterproof protector and filler interposed

a floor having a depression near each end and a vertical web at each side thereof extending beyond the ends of the floor, an inclined web extending in front and rear of the depression of the floor, and ribs connecting the inner end of the inclined web to the floor proper, all

securing the plate to the arm, one side of said curved portion having a forwardly-turned elongated blade-supporting portion, means for adjustably holding the blade thereon, and the opposite edge of said curved portion having a laterally-turned portion engaging the blade and bracing the same.

close proximity to the lower end of the upper belt, sheaves arranged in about the same horizontal plane at a point adjacent to the horizontal median line of the door, an operating-shaft extending transversely through the door below the two last-mentioned sheaves, a lever fixed to and normally depending from the outer end of the shaft,

relatively thin flexible edge which overlies the seam by which the welt is secured to the upper and inner sole.

6. A shoe comprising an upper, an inner sole and a welt stitched together, an outer sole, a waterproof protector and filler interposed between the inner and outer soles, said protector comprising a sheet of rubber, a filler-section, said filler-section being secured to the sheet of rubber and being contained within the cavity existing between the inner and outer soles, and a reinforcing-sheet on the side of the rubber sheet opposite to that on which the filler-section is mounted, the filler-section, rubber sheet and reinforcing-sheet forming a body portion and the rubber and reinforcing-sheet extending beyond the body portion and forming a relatively thin flexible edge which overlies the seam by which the welt, upper and inner sole are secured together.

809,624. **BOBBIN-HOLDER.** THOMAS J. MURDOCK, Franklin, Mass., assignor to Murdock and Gob Company, Franklin, Mass. Filed Dec. 29, 1903. Serial No. 186,908.

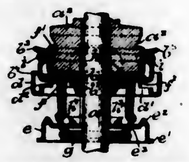

Claim.—1. A bobbin-holder having a plurality of pivoted locking-jaws, an endless coiled spring, two spring-plates having clamping-arms formed integral therewith and held in contact with the locking-arms by the endless coiled spring, and means for operating the locking-jaws to firmly secure the bobbin in the holder when in the locked position, substantially as described.

2. A bobbin-holder having a plurality of locking-jaws for locking a bobbin-head in the holder, means for automatically opening or closing the locking-jaws, and two spring-plates having clamping-arms formed integral therewith and held in contact with the locking-jaws in their locked position by an endless coiled spring to firmly secure the bobbin-head in the holder.

3. A bobbin-holder having a plurality of locking-jaws, an operating-frame in connection with the locking-jaws, spring-plates provided with clamping-arms formed integral therewith and in contact with the locking-jaws, an endless coiled spring and bends in the locking-jaws acting as cams on the clamping-arms to assist the coiled spring to force the locking-jaws inward by a downward movement of a bobbin on the operating-frame to lock a bobbin-head in the holder, as described.

4. In combination, a bobbin-holder having a plurality of pivoted locking-jaws, a movable frame carrying the locking-jaws pivoted in the frame, an operating-frame in connection with the locking-jaws, a fixed frame, means for securing the fixed frame to a spindle, spring clamping-arms in the fixed frame in contact with the locking-jaws, bends in the locking-jaws acting as cams on the clamping-arms to force and lock the locking-jaws into a groove in the peripheral surface of the head of a bobbin, when the operating-frame is forced downward by the bobbin-head, and an endless spiral spring in connection with the lower ends of the locking-jaws below the pivots to open the jaws when the bobbin is moved upward, as described.

5. In combination with a bobbin-holder, clamping-arms stamped from sheet metal to form a plate b^3 with two clamping-arms b^3 b^3, apertures b^4 b^4, and a central opening b^5 for securing the plate b^3 in the holder, as described.

6. A bobbin-holder having a plurality of locking-jaws, a movable frame carrying the locking-jaws, the plate *e* provided with the thread-catching points e^3 and the lip e' and on which the locking-jaws are pivoted, a fixed frame, spring-plates provided with clamping-arms secured to the fixed frame, and an endless spiral spring in connection with the clamping-jaws, as described.

809,625. **CAR TRUCK-BOLSTER.** GEORGE C. MURRAY, Washington, D. C. Filed June 19, 1905. Serial No. 265,094.

Claim.—1. In a car truck-bolster, an integral cast-metal compression member having a floor and vertical side flanges extending at the ends of the bolster beyond said floor, a tension member embracing the ends of the floor and embraced between said flanges at the ends of the floor, and separate spring-seats secured to both said members and lying between the vertical flanges.

2. In a car truck-bolster, the compression member consisting of a floor having a depression near each end and a vertical web at each side thereof extending beyond the ends of the floor, an inclined web extending in front and rear of the depression of the floor, and ribs connecting the inner end of the inclined web to the floor proper, all being integral.

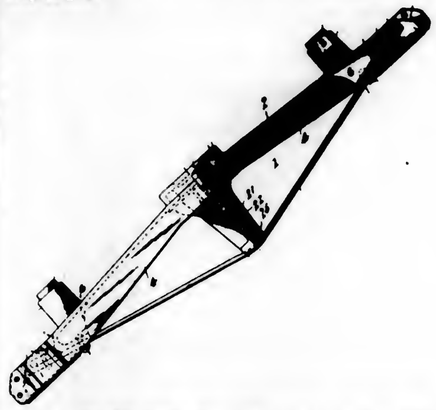

3. In a car truck-bolster, the combination of a cast-metal compression member having a floor with depressions near the ends and inclined webs under the same, a central king-post, and a tension member secured in the depressed portion of the floor, passing round the inclined webs, and under the king-post, and secured to said inclined web.

4. In a car truck-bolster, the combination with a compression member having side webs and an inclined web near its ends, and a tension member folded round said inclined web between the side webs, of a detachable spring-seat secured between said side webs and having a flange extending under said side webs.

809,626. **COMBINED SCRAPER AND SHOVEL-PLOW.** NEAL MCLAUGHLIN, Jethro, Ark. Filed May 15, 1905. Serial No. 260,596.

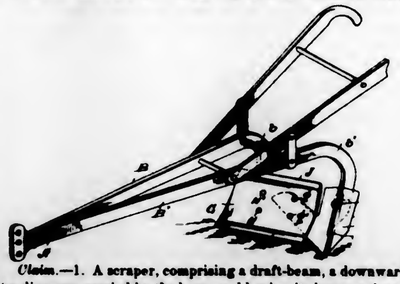

Claim.—1. A scraper, comprising a draft-beam, a downwardly-extending arm carried by the beam and having its lower end rounded, a blade-supporting member having a curved portion corresponding to the curve of the beam, means for clamping said plate on the arm, means carried by the plate for securing the blade thereto, and a forwardly-turned portion carried by the curved portion of the plate for engaging and bracing the blade.

2. A scraper, comprising a draft-beam, a downwardly-extending arm carried by the beam and having its lower end rounded, a blade-supporting member having a vertically-disposed curved portion resting against the arm, and having a horizontal elongated slot therein, a bolt passing through the slot and clamping the plate to the arm, one side of said curved portion having a laterally-turned blade-supporting surface, means for adjustably holding the blade thereon, and the opposite edge of said curved portion having a laterally-turned portion engaging the blade and bracing the same.

3. A scraper, comprising a draft-beam, a downwardly-extending arm carried by the beam and having its lower end rounded, a blade-supporting member having a vertically-disposed curved end corresponding to the rounded end of the arm and resting against the same, and having a horizontal elongated slot therein intermediate the upper and lower ends; a bolt passing through the slot and arm and

securing the plate to the arm, one side of said curved portion having a forwardly-turned elongated blade-supporting portion, means for adjustably holding the blade thereon, and the opposite edge of said curved portion having a laterally-turned portion engaging the blade and bracing the same.

809,627. **BRAKE-SHOE.** WILLIAM H. NAHACK, Ballston, N. Y. Filed May 2, 1905. Serial No. 258,460.

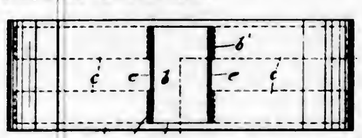

Claim.—1. A brake-shoe comprising a body, and a lug having longitudinal and transverse openings therein and provided with imperforate portions extending longitudinally of and embedded in said body.

2. A brake-shoe comprising a body, and a lug having longitudinal and transverse openings therein and provided with portions thereof embedded in said body, the parts being so constructed and arranged that the material which forms the body surrounds and covers certain portions of the lug and enters between imperforate parts of the same.

3. A brake-shoe comprising a body, and a lug having longitudinal and transverse openings therein and consisting in part of bifurcated portions partially embedded in said body.

4. A brake-shoe comprising a cast-metal body, and a lug of stronger material having longitudinal and transverse openings therethrough and provided with bifurcated portions embedded in said body.

5. As a new article of manufacture, a brake-shoe lug consisting of a top portion, side pieces extending from such portion, and a plurality of arms extending from said side pieces, the latter being at right angles to the longitudinal direction of said arms.

6. As a new article of manufacture, a brake-shoe lug consisting of a top portion, a plurality of side pieces springing from the lateral edges of said top portion, and a plurality of arms extending outward from the bases of said side pieces.

7. A brake-shoe comprising a body, and a lug consisting of a top portion, a plurality of side pieces springing from the lateral edges of said top portion, and a plurality of arms extending outward from the bases of said side pieces, said arms being embedded in said body.

8. A brake-shoe comprising a flanged body, and a lug consisting of a top portion, side pieces extending from such portion, a plurality of arms extending from said side pieces, the latter being at right angles to the longitudinal direction of such arms, and a wing projecting from one of said arms, the arms and wing being embedded in said body and its flange.

9. A brake-shoe comprising a body having a flange on one side, and a lug consisting of a top portion, a plurality of side pieces springing from the lateral edges of said top portion, a plurality of arms extending outward from the bases of said side pieces, and wings projecting from the edges of said arms which are adjacent said flanges, the arms being embedded in said body and said wings in the flange.

809,628. **MULTIPLE BOLT.** JOHN H. PRETSMAN, Greenville, Ohio. Filed Sept. 15, 1905. Serial No. 278,087.

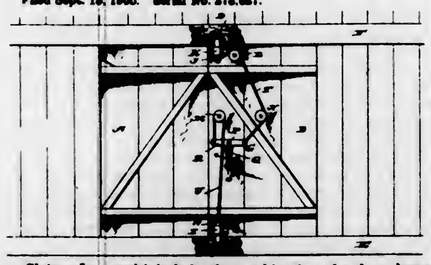

Claim.—In a multiple bolt, the combination of a door, lower and upper vertically-movable bolts arranged in guides on the inner side of the door, a sheave mounted on the inner side of the door in close proximity to the lower end of the upper bolt, sheaves arranged in about the same horizontal plane at a point adjacent to the horizontal median line of the door, an operating-shaft extending transversely through the door below the two last-mentioned sheaves, a lever fixed to and normally depending from the outer end of the shaft, a T-lever having a head fixed at its middle on the inner end of the shaft and also having a pendent stem, a cable passed around the first-mentioned sheave and one of the other sheaves and connecting the lower end of the upper bolt and one end of the head of the T-lever, and a cable passed over the remaining sheave and connecting the opposite end of the head of the T-lever and the upper end of the lower bolt.

809,629. **BURIAL-VAULT MOLD.** JOHN M. PRUETT and JACOB C. SIMPSON, Rockville, Ind. Filed June 21, 1905. Serial No. 266,231.

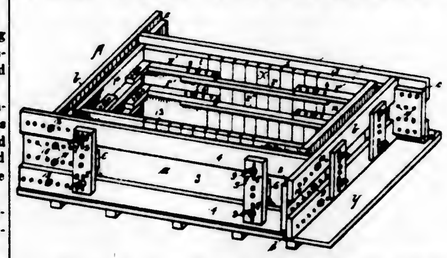

Claim.—1. In an adjustable burial-vault mold, the combination of an adjustable outer form, composed of four independent walls, adapted to be assembled together in various positions, to render various-sized forms, suitable bolts adapted to hold said walls together with an adjustable inner form, consisting of four separate and independent walls, adapted to be assembled together in various positions to render various-sized forms, backs and bolts adapted to fasten the respective corners of the said form together, a cover-form consisting of four separate and independent walls adapted to be assembled together in various positions to render various sizes of cover-forms, and means of holding said walls in assemblage and one or more angular dividing-strips adapted to fit into the cover-form, all substantially as shown and described and for the purpose set forth.

2. In an adjustable and collapsible burial-vault mold, the combination of an outer form, comprising four separate walls composed of a main panel, two adjustable molding-strips movably attached thereto, and two cleats attached to the main panel and adapted to adjustably retain the molding-strips, and means of fastening said walls together, with an adjustable inner form comprising four separate adjustable walls, composed of a series of perpendicular panels adjustable three-piece extension-rails, means of attaching said extension-rails to said panels and corner-blocks adapted to unite abutting walls thereof, said outer and inner forms being adapted to be spaced relatively one to the other, and an adjustable cover-form comprising four separate walls, adapted to be assembled together in various positions, relatively, to each other, one or more angular dividing-strips adapted to fit into the cover-form, all substantially as described and for the purpose set forth.

809,630. **TROLLEY ATTACHMENT.** EDWARD D. ROCKWELL, Bristol, Conn. Filed May 17, 1905. Serial No. 260,766.

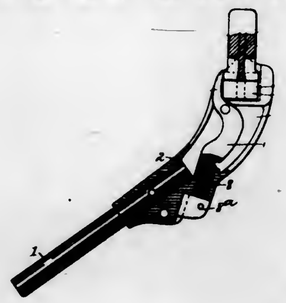

Claim.—1. A trolley-harp arranged to removably receive a trolley-wheel, and an emergency-contact arranged to replace said wheel and to be held against rotation by the wheel-retaining means.

2. A trolley-harp arranged to removably receive a trolley-wheel, an emergency-contact having an upwardly-extending part provided with a groove for the reception of a trolley-wire, and supports extending laterally from the contact and arranged to be received by the wheel-retaining means.

3. An emergency-contact made of metal and having an upwardly-projecting part providing a groove for the reception of a trolley-wire, laterally-extending supports therefor and guards to prevent interference of a trolley-wire.

4. In combination with a trolley-harp having arms at its outer end arranged to removably receive a trolley-wheel, an emergency-contact arranged to replace said wheel and to be entirely held and supported on said arms by the wheel-retaining means.

5. In combination with a trolley-harp having side arms with grooves therein for removably receiving a trolley-wheel, an emergency-contact arranged to replace said wheel and be held against rotation by said grooves.

6. In combination with a trolley-harp having side arms with grooves therein for removably receiving a trolley-wheel, an emergency-contact arranged to replace said wheel and be supported and held against rotation by means of said grooves.

7. In combination with a trolley-harp having side arms with grooves therein for removably receiving a trolley-wheel, an emergency-contact arranged to be supported and held against rotation by means of said grooves, said contact having an upwardly-projecting part with a groove for the reception of a trolley-wire.

8. In combination with a trolley-harp having side arms with grooves therein for removably receiving a trolley-wheel, an emergency-contact arranged to replace said wheel, supports extending laterally from the contact and arranged to be received by said grooves, and guards to prevent interference of a trolley-wire.

9. In combination with a trolley-harp having side arms with grooves arranged therein, means for closing the open ends of said grooves, and an emergency-contact non-rotatably held and supported by means of said grooves, and an upwardly-projecting part provided with a groove for the reception of a trolley-wire.

10. In combination with a trolley-harp having side arms each provided with angularly-shaped grooves, means for closing the entrance to said grooves, an emergency-contact non-rotatably held by means of laterally-extending, angularly-shaped supports located in said grooves, the contact having an upwardly-extending part with a groove for the reception of a trolley-wire.

11. In combination with a trolley-harp having branching arms each provided with an angularly-shaped groove, means for closing the entrance to said groove, and an emergency-contact having laterally-extending, angularly-shaped supports to fit the grooves in said harp, an upwardly-projecting part having a groove for the reception of a trolley-wire, and laterally-extending guards or wings to prevent interference of a trolley-wire.

809,631. BROODER. NATHANIEL SALTONSTALL, Battlecreek, Mich. Filed Mar. 11, 1904. Serial No. 197,615.

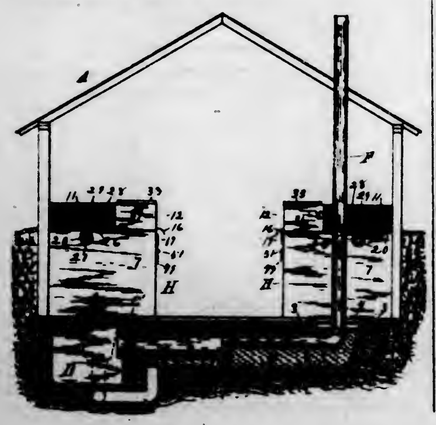

Claim.—1. The combination of a continuous series of brooders having warm-air compartments formed beneath them, a heating-chamber located beneath said compartments and hermetically sealed therefrom, timbers arranged upon said hermetically-sealed compartments to form an inclosing framework, doors hinged to said timbers above said hermetically-sealed compartments to form a separate dead-air chamber, means for adjusting said doors, and doors opening into said compartments, substantially as set forth.

2. The combination of a continuous series of brooders having warm-air compartments formed beneath them, said brooders comprising an inclosure within an outer housing, ventilators leading from the exterior and communicating with said compartments, traps provided for said ventilators, and ventilators communicating between said warm-air compartments and the surrounding housing, and a heating-chamber located beneath said compartments and hermetically sealed therefrom, substantially as, and for the purpose set forth.

3. The combination of a continuous series of brooders having warm-air compartments formed beneath them, said brooders comprising an inclosure within an outer housing, the forward end thereof forming a hover connectively united at its sides with said housing by wire lattice, doors opening from said housing into said inclosures and means for opening and closing said doors, substantially as set forth.

4. A hover mounted upon a warm-air compartment, the flooring of said hover comprising in part a thin metallic heat-radiating surface, the top and ends of said hover being transparent, said top being detachable and its ends capable of vertical adjustment, for the purpose set forth.

5. A hover mounted upon a warm-air compartment, a removable transparent top covering, and vertically-adjustable end doors, coil-springs attached at one end thereof to the inner walls of said hover, their opposite ends being attached to said doors, spurs at either inner end of said doors, and apertures alined therewith in the ends of said side walls adapted to engage said spurs and prevent said doors from sliding on their bearings, substantially as set forth.

6. The combination with a brooder, of side walls having their bottoms rabbeted to form grooves along either side of the flooring thereof, a pocket arranged at one end of the brooder beneath the flooring thereof, a paper coil operative within said pocket, a covering to said pocket arranged to permit the placing of said coil within said pocket and also arranged to permit the unwinding of said coil over said flooring from the opposite end of the brooder through said grooves of the side walls, substantially as, and for the purpose set forth.

7. The combination with heating-chambers, of brooders continuously alined on the covering to said chambers, longitudinal pockets alined along the rear edge of said covering within said brooders, paper coils operative within said pockets, coverings to said pockets arranged to permit the unwinding of said paper coils from the forward end of said brooders, all arranged to work substantially as, and for the purpose set forth and described.

8. The combination with a housing, of brooders located within said housing, means for heating said brooders, said brooders comprising inclosures one end of which comprises a sash formed within said housing and provided with double transparent glass, openings within said sash, transparent doors hinged at their upper edges within said openings and adapted to open inwardly, said doors having notches at their lower edges, wire lattice at either side of said sash, a hover united at either side to said inclosure, for the purpose set forth.

9. The combination with a housing, of brooders located within said housing, means for heating said brooders, said brooders comprising inclosures one end of which comprises a sash formed within said housing and provided with double transparent glass, openings within said sash, transparent doors hinged at their upper edges within said openings and adapted to open inwardly, said doors having notches at their lower edges, wire lattice at either side of said sash, a hover united at either side to said inclosure, said hovers comprising opaque sides a removable transparent top and vertically-adjustable ends, substantially as, and for the purpose set forth.

10. The combination with heating-chambers, of brooders alined on the coverings to said chambers, said brooders comprising rearward inclosures encompassed at the rear ends by sash having transparent glass provided with openings having overhung doors provided with notches in their lower edges, adapted to swing inwardly; at the sides by wire lattice; at their forward ends by hovers comprising opaque sides, removable transparent tops and vertically-adjustable transparent end doors, substantially as, and for the purpose set forth.

11. The combination with heating-chambers of brooders alined on the covering to said chambers, said brooders comprising a rearward inclosure encompassed at one end by a transparent double-glass sash having an inwardly-opening door with a notch at its lower side; at the side by wire lattice-work and at the forward end by a hover comprising opaque sides, a removable transparent top and vertically-adjustable ends, the forward part of the flooring to said hovers consisting of a thin metallic plate, a pocket in the rear end of said brooders, a coil of paper in said pocket adapted to be unwound from the front end of said hover, and means for retaining said paper coil in said pocket, substantially as, and for the purpose set forth.

809,632. ANCHOR EMERGENCY AIR-BRAKE. CHARLES Z. SANDERS, Sacramento, Cal. Filed May 1, 1905. Serial No. 258,427.

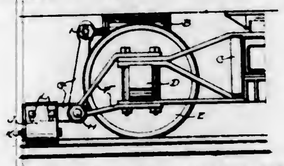

Claim.—1. In a car, the combination with a truck-frame, of two yokes, each having bifurcated arms secured to the top and bottom of said truck-frame, said yokes having their convergent arms terminating in an enlarged portion, a fulcrum-shaft supported in said enlarged portions, a bell-crank lever fulcruming on said shaft, a brake-shoe carried by one arm of the lever, and connection with a source of power by the other arm of said lever, substantially as set forth.

2. The combination with a truck-frame, of a yoke having bifurcated arms secured to the top and bottom of said frame, a fulcrum-shaft carried by said yoke, a bell-crank lever mounted on said shaft, a brake-shoe carried by one of the arms of said lever, and means connected with the other arm of the lever to operate the latter and the shoe, substantially as set forth.

3. In a car, the combination with a truck-frame, of two yokes carried by said frame, a fulcrum-shaft supported by said yokes, a bell-crank lever mounted on the fulcrum-shaft, a brake-shoe on one arm of the lever and means connected with the other arm to operate the lever, substantially as set forth.

4. In a car, the combination with a truck-frame, of two yokes carried by said frame, a fulcrum-shaft supported by said yokes, a bell-crank lever mounted on the fulcrum-shaft, a brake-shoe on one arm of the lever, a pressure-cylinder on the car, and a piston-rod therefor connected with the other arm of the lever, to operate the latter, substantially as set forth.

5. In a car the combination with the truck-frame, of a hanger thereon, a bell-crank lever fulcrumed on the hanger, a brake-shoe to engage the rail carried by one arm of the lever, and pressure means connected with the other arm of the lever to operate the latter, said brake-shoe having hinged movable sections to grip the opposite sides of the rail, substantially as set forth.

6. In a car the combination with the truck-frame, of a hanger thereon, a bell-crank lever fulcrumed on the hanger, a brake-shoe to engage the rail carried by one arm of the lever, pressure means connected with the other arm of the lever to operate the latter, said brake-shoe having hinged movable sections to grip the opposite sides of the rail, said lever having a limited movement independent of said clamp-sections, substantially as set forth.

7. In a car the combination with the truck-frame of a hanger thereon, a bell-crank lever fulcrumed on the hanger, a brake-shoe to engage the rail carried by one arm of the lever, pressure means connected with the other arm of the lever to operate the latter, said brake-shoe having hinged movable sections to grip the opposite sides of the rail, said lever having a limited movement independent of said clamp-sections, and means for maintaining said clamp-sections normally out of contact with the rail, substantially as set forth.

8. In a car, a suitably-fulcrumed bell-crank lever, having one of its members wedge shape, in cross-section, a sectional clamp-shoe carried by said arm, the incline surface of said arm engaging corresponding surfaces on said sections to operate the latter clamp fashion, and means to rock the lever, substantially as set forth.

809,633. SUBMARINE MINING. EDGAR F. SCHEIBE, New York, N. Y., assignor, by direct and mesne assignments, to Submarine Gold Mining Company, a Corporation of New York. Filed Mar. 1, 1905. Serial No. 247,904.

Claim.—1. In combination, a support arranged to rest on the bottom, and a caisson supported thereby and adapted to extend to the bottom to permit expulsion of the water therefrom within the area of the caisson.

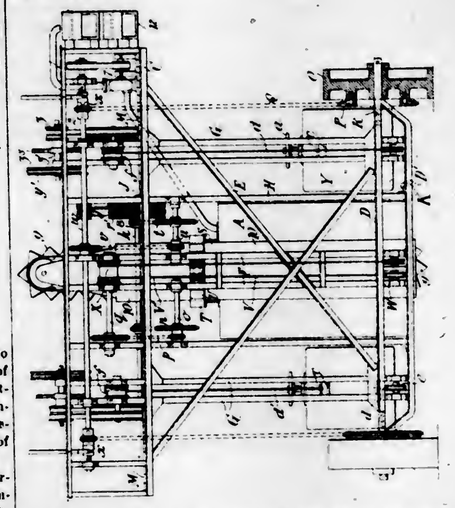

2. In combination, a support arranged to rest on the bottom, and a caisson supported thereby and vertically movable relatively thereto and adapted to extend to the bottom to permit expulsion of the water therefrom within the area of the caisson.

3. In combination, a support arranged to rest on the bottom, a caisson supported thereby and vertically movable relatively thereto, and guides for said caisson carried by said support.

4. In combination, a support arranged to rest on the bottom, a caisson supported thereby, and a cable attached to said caisson and passing downward to a lower point of said support whereby the caisson may be pulled down.

5. In combination, a support arranged to rest on the bottom, a caisson supported thereby and adapted to extend to the bottom to permit expulsion of the water therefrom within the area of the caisson, and means for moving said support along on the bottom.

6. A caisson provided with means for moving it along while supported on the bottom and adapted to extend to the bottom to permit expulsion of the water therefrom within the area of the caisson.

7. In combination, a support arranged to rest on the bottom, a caisson supported thereby, and a tank carried by said support and adapted to be filled or emptied to be used as a weight or as a float.

8. In combination, a support arranged to rest on the bottom, a caisson supported thereby, and a tank carried by said support and adapted to be adjusted vertically on said support.

9. In combination, a support arranged to rest on the bottom, a caisson supported thereby, and a platform at the top of said support so as to be ordinarily out of reach of waves.

10. In combination, a support arranged to rest on the bottom, a caisson supported thereby, and a sand-elevator passing outside of the caisson to a point approximately level with the lower edge of the caisson.

11. In combination, a caisson and a sand-elevator attached to the outside of said caisson so as to be lowered therewith and having its lower end approximately level with the lower edge of the caisson.

809,634. SAFETY-SPOUT FOR RECEPTACLES CONTAINING VOLATILE INFLAMMABLE LIQUIDS. LUDWIG SCHÖN, Vienna, Austria-Hungary. Filed Mar. 14, 1901. Serial No. 51,208.

Claim.—1. In safety bungs and taps or spouts for receptacles for volatile inflammable liquids, the combination with the orifice of an outwardly-projecting neck, and a wire-gauze diaphragm inserted into the outer end of the neck, the said diaphragm having, in the clear of the neck, a ring-shaped, plane, marginal portion and a shallow cup-shaped central portion, substantially as and for the purpose described.

2. In a safety-tap for receptacles for volatile inflammable liquids, the combination with the tap-hole of an outwardly-projecting neck, a wire-gauze diaphragm inserted into the outer end of the neck, a spout adapted to be secured to the neck, a wire-gauze diaphragm inserted into the outer end of the spout, and a valve adapted to close the said neck between the receptacle and diaphragm, substantially as and for the purpose described.

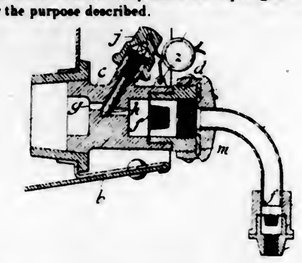

809,685. CAR JOURNAL-BOX. JOHN R. SCHRADER, Buffalo, N. Y. Filed Dec. 5, 1904. Serial No. 235,467.

Claim.—1. In a car journal-box, the combination with the body thereof and a car-axle, of a bearing-block provided with an oil-pocket in its curved under side, an opening leading through the block from said pocket to the top thereof, and a groove in the top of said block which communicates with the opening and terminates at the block end over the axle, whereby the rotation of the car-axle fills the oil-pocket and forces oil through the opening to the top whence it flows through the groove to its termination and then downward by gravity upon the car-axle to produce an automatic overhead oil-feed, substantially as set forth.

2. In a car journal-box, the combination with the body thereof and a car-axle, of a bearing-block provided with a series of oil-pockets in its curved under side, and a groove in its side connected by openings with said oil-pockets: said groove extending to one end of the block over the axle whereby oil is conducted to the end of the bearing-block over the car-axle, for the purposes specified.

3. In a car journal-box, the combination with the body thereof and a car-axle, of a bearing-block provided with a series of oil-pockets in its curved under side, a plurality of grooves in its top side extending to at least one end of said bearing-block and over the axle whereby the oil may drop by gravity upon the axle, and openings extending from the oil-pockets to the grooves, whereby when the car is traveling the rotation of the axle will force oil into the recesses and up through the openings into the top grooves thereby producing an automatic overhead feed directly upon the car-axle.

4. In a car journal-box, the combination with the body thereof and the car-axle, of a bearing-block upon said axle having a longitudinal series of enlarged pockets on its under curved side, one or more grooves in the top of said block extending the full length thereof and vertical channels connecting said enlarged pockets with the groove or grooves whereby the axle is adapted to pick up oil from the box and to convey it to the pockets and thence through the channels to the aforesaid groove or grooves from which latter the oil returns by gravity to lubricate the axle.

809,686. WIRE STRAIGHTENING AND CUTTING-OFF MACHINE. FRANKLIN B. SHUMAN, New Haven, Conn. Filed Nov. 24, 1903. Serial No. 182,846.

Claim.—1. The combination, in a machine of the character described, comprising a head, a driving-shaft journaled therein, a wire-feed roll mounted thereon, a second wire-feed roll in close proximity to the wire-feed roll of the driving-shaft, said driving-shaft carrying a driving-pulley and cam, a cutter-holder reciprocally supported in close proximity to said head, a driving-pin operatively mounted in said holder and adapted to be engaged by said cam to actuate said holder to sever a section of wire, for the purpose set forth.

2. The combination, in a machine of the character described, comprising a head, a driving-shaft, carrying a wire-feed roll, journaled therein, a second wire-feed roll mounted in said head, said shaft carrying a driving-pulley and cam, a cutter-holder reciprocally supported in close proximity to said head, a driving-pin operatively mounted in said holder to be engaged by said cam to actuate said holder forward to sever a wire section, a spring to serve as a shock-arrester when the wire is being severed and also to return the holder to its normal position, means for locking the driving-pin when said holder is in its normal position, for the purpose set forth.

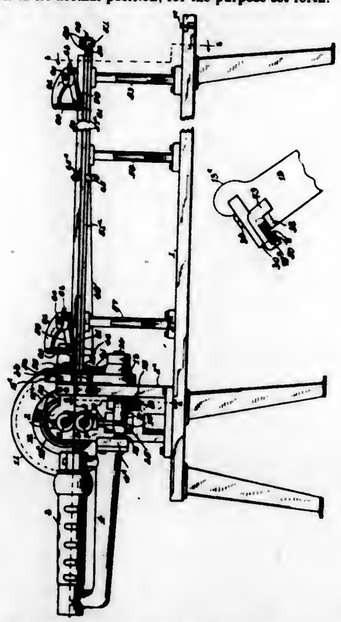

3. The combination, in a machine of the character described, comprising a head, a driving-shaft carrying a wire-feed roll, a cam and a driving-pulley, a second wire-feed roll journaled in a box located in said head, said box adapted to be tilted so that the second roll is carried to and from the first-named roll, a weighted lever fulcrumed in said head and in contact with said box, a cutter-holder reciprocally supported in close proximity to said head, a driving-pin operatively mounted in said holder to be engaged by said cam to actuate the holder to cut a section of wire, means on said holder to actuate the weighted lever and permit the said second wire-feed roll to temporarily drop away from the wire after a section has been severed therefrom, means for returning said cutter-holder and its driving-pin to their normal positions, for the purpose set forth.

4. The combination, in a machine of the character described, comprising a head, a reciprocating cutter-holder, a cam for actuating said holder to sever a section of wire, an adjustable stop against which said holder rests when in its normal position and to adjust the position of the cutter with respect to the cutting-die, for the purpose set forth.

5. The combination, in a machine of the character described, comprising a head, a driving-shaft journaled therein, wire-feed rolls one of which is mounted on said shaft together with a driving-pulley and a cam, said head having a wire-cutting die, a reciprocating cutter-holder carrying a cutter, a driving-pin operatively mounted in said holder to be engaged by said cam to actuate said holder to sever a section of wire, means on said cam to carry said pin out of engagement with that portion of the cam that actuates said holder to cut the wire, a locking-bolt to retain said pin in its normal position, a trip-wire to actuate said bolt, for the purpose set forth.

6. In a machine of the character described, a cutter-holder, a driving-pin carried by said holder operatively mounted therein, a cam to engage said pin to actuate said cutter-holder, for the purpose set forth.

7. The combination, in a machine of the character described, comprising a cutter-holder carrying a driving-pin operatively mounted therein, a cam to engage said pin to actuate said holder to cut a section of wire, an adjustable stop to engage said holder when not in action, for the purpose set forth.

8. The combination, in a machine of the character described, comprising a head carrying feed-rolls and cutting-dies, a driving-shaft carrying a driving-pulley and cam, a cutter-holder carrying a cutter and a spring-actuated driving-pin, said pin engaged by the cam to actuate said holder forward to sever a section of wire, a spring to act both as a buffer for the holder in its forward movement and to return it to its normal position, a stop to limit its backward movement, a locking-bolt for said driving-pin, a trip-wire, means for connecting said wire with the locking-bolt to release the driving-pin, for the purpose set forth.

9. In a machine of the character described, a reciprocating cutter-holder, a driving-pin operatively mounted therein, a cam to engage said pin to actuate said holder to cut a section of wire, a projection on said cam to return the pin to its normal position and means for temporarily locking it in such position, for the purpose set forth.

10. The combination, in a machine of the character described, comprising a head carrying feed-rolls, one of which rolls is mounted on a shaft journaled in a movable support, a weighted lever engaging said support, a cutter-holder reciprocally supported in close proximity to said head, means on said holder to actuate said weighted lever and temporarily release one of said feed-rolls from its engagement with the wire, for the purpose set forth.

11. The combination, in a machine of the character described, comprising a head, feed-rolls mounted on shafts, one of said shafts journaled in the head, the other shaft journaled in a tilting box located in said head, a manually-operated adjusting-block to engage said box and maintain its roll in feeding engagement with the wire, for the purpose set forth.

12. The combination, in a machine of the character described, comprising a guide-bar having a longitudinal groove therein to receive the wire, a supporting-bar for said guide-bar, a support for said supporting-bar, the grooved face of said guide-bar resting on its supporting-bar, said guide-bar adapted to have a lateral sliding movement on its supporting-bar to discharge a section of wire therefrom, for the purpose set forth.

13. The combination, in a machine of the character described, comprising a guide-bar having a longitudinal groove in one of its faces, a supporting-bar, the grooved face of the guide-bar operatively resting thereon, a reciprocally-operating cutter-holder to engage and move the guide-bar laterally on its support to discharge a section of wire therefrom, for the purpose set forth.

14. The combination, in a machine of the character described, comprising a guide-bar having a longitudinal groove therein to receive the wire, a supporting-bar, the grooved face of the guide-bar resting thereon, a reciprocally-operating cutter-holder to engage and move the guide-bar laterally on its support to discharge a section of wire therefrom, means connected with said bar to maintain its parallelism with its supporting-bar throughout its entire length, for the purpose set forth.

15. The combination, in a machine of the character described, comprising a guide-bar having a longitudinal groove in one of its faces to receive the wire, a support for said bar, said grooved face resting on said support, a reciprocating cutter-holder to engage said bar to actuate it laterally on its support to discharge a section of wire, means for maintaining the parallelism of said bar with its support, means for returning said bar to its normal position, for the purpose set forth.

16. The combination, in a machine of the character described, comprising a guide-bar having a longitudinal groove in one of its faces to receive the wire, a support for said bar with said grooved face resting thereon, said bar adapted to have a lateral sliding movement on its support and parallel therewith, for the purpose set forth.

17. In a machine of the character described, a guide-bar having a longitudinal groove in one of its faces for the wire, a stationary supporting-bar on which said guide-bar is slidably mounted to move laterally, for the purpose set forth.

18. The combination, in a machine of the character described, comprising a guide-bar for the wire, a support for said bar, a reciprocating cutter-holder, adjustable means on said holder to engage said bar to actuate it laterally on its support to discharge a section of wire therefrom, means for maintaining the parallelism of said bar with its support, means for automatically returning said bar to its normal position, for the purpose set forth.

19. The combination, in a machine of the character described, comprising a guide-bar having a longitudinal groove in one of its faces to receive the wire, a support for said bar, said bar adapted to have a lateral sliding movement thereon and parallel therewith, a clamp adjustably secured to said support, an overhanging lip of said clamp embracing the upper surface of the bar to prevent its lifting from its support, for the purpose set forth.

20. The combination, in a machine of the character described, comprising a guide-bar having a longitudinal groove in one of its faces, a support for said bar, means for actuating said bar laterally on its support, links having one of their ends pivotally supported adjacent to said bar, the other ends on said bar whereby the parallelism of said bar with its support is maintained when said guide-bar is in motion, means for automatically returning the guide-bar to its normal position, for the purpose set forth.

21. The combination, in a machine of the character described, comprising a guide-bar for the wire, a stationary supporting-bar therefor, means for effecting a lateral sliding movement of the guide-bar on its supporting-bar, means for maintaining the parallelism of the guide-bar with its supporting-bar, and means for automatically returning said guide-bar to its normal position, for the purpose set forth.

22. The combination, in a machine of the character described, comprising a guide-bar for the wire, a supporting-bar therefor, wire-receiving brackets on which said supporting-bar rests, means for actuating said guide-bar laterally on its supporting-bar, links pivotally supported on said brackets and guide-bar whereby said bars are maintained in parallel alinement with each other, arms adjustably supported outside of said bars and carrying springs at their free ends to connect with the guide-bar to automatically effect the return of said bar to its normal position, for the purpose set forth.

23. The combination, in a machine of the character described, comprising a guide-bar for the wire, a supporting-bar therefor, means for actuating the guide-bar laterally on its supporting-bar, links pivotally supported adjacent to said bars and also on the guide-bars to maintain said bars in parallel relation with each other, a projection on said links adapted to engage said supporting-bar to maintain the engagement of said bars with each other, for the purpose set forth.

24. The combination, in a machine of the character described, comprising a guide-bar for the wire and a supporting-bar therefor, means for laterally actuating said guide-bar, a weighted lever pivotally supported adjacent to said guide-bar and also on the same to maintain both of said bars in parallel relation with each other and to automatically return said guide-bar to its normal position, for the purpose set forth.

25. The combination, in a machine of the character described, comprising a guide-bar and a supporting-bar therefor, means for actuating said guide-bar, a weighted lever pivotally supported adjacent to said bar and on the same to maintain both of said bars in parallel relation with each other, and to automatically return said guide-bar to its normal position, means on said lever to engage the supporting-bar to maintain said bars in contact with each other, for the purpose set forth.

26. The combination, in a machine of the character described, comprising a guide-bar having a longitudinal groove to receive the wire, a supporting-bar for said guide-bar, means for actuating said guide-bar laterally on its support, a second guide-bar and its supporting-bar in linear alinement with the first-named bars, means whereby both guide-bars move in lateral unison, means whereby all of said bars are maintained in parallel relation with each other, means for returning both guide-bars to their normal position, for the purpose set forth.

27. The combination, in a machine of the character described, comprising a guide-bar having a longitudinal groove to receive the wire, a supporting-bar for said guide-bar, a cutter-holder carrying a cutter, a driving-pin operatively mounted in said holder, a cam to actuate said holder through the medium of said driving-pin, a stop-rod located in the guide-bar groove, a trip-wire connected with said rod and adapted to release the driving-pin and bring it into engagement with the cam, means on said holder to engage with and actuate the guide-bar laterally on its supporting-bar to discharge a section of wire therefrom, for the purpose set forth.

28. The combination, in a machine of the character described, comprising a head having a cutting-die, a driving-shaft journaled in said head, feed-rolls, one of which rolls is mounted on said shaft, said shaft also carrying a driving-pulley and cam, a reciprocating cutter-holder carrying a cutter, a driving-pin operatively mounted in said holder, a guide-bar for the wire, a supporting-bar for said guide-bar, means on the holder to engage the guide-bar, means for locking the driving-pin in its normal or retreated position, means for releasing said pin to bring it in contact with the cam and by such contact to actuate the cutter-holder to sever a section of wire, and, by means of the engagement of said holder with the guide-bar, said bar is moved laterally on its support to discharge such severed sections, means for maintaining said bars in parallel relation with each

other, and means for automatically returning the guide-bar to its

the hub, all extending across the chamber from side to side, recesses

when the door is in a closed position the rock-arm occupies a posi-

in direction of its length, and means for holding the said pin in different positions, thereby controlling the hammer movement.

other, and means for automatically returning the guide-bar to its normal position, for the purpose set forth.

29. The combination, in a machine of the character described, comprising duplicate guide-bars having longitudinal grooves to receive the wire, said bars operatively connected together, an independent supporting-bar for each of said guide-bars, means for actuating said bars on their supports, means for maintaining said guide-bars in parallel relation with their supporting-bars and in linear alinement with each other, and means for returning the guide-bars to their normal position.

30. The combination, in a machine of the character described, comprising feed-rolls having a plurality of circumferential grooves, a support for said rolls, a side wall, packing, substantially the thickness of one of said grooves interposed between said side wall and rolls to bring the first groove of the rolls in line with the wire, the second groove of the rolls being adapted to be brought in line with the wire by the removal of said packing, said rolls adapted to be reversed, for the purpose set forth.

809,637. **ROTARY MOTOR.** IRA H. SPENCER, Hartford, Conn., assignor to American Water Softener Company, Philadelphia, Pa., a Corporation of New Jersey. Filed Jan. 14, 1905. Serial No. 241,012.

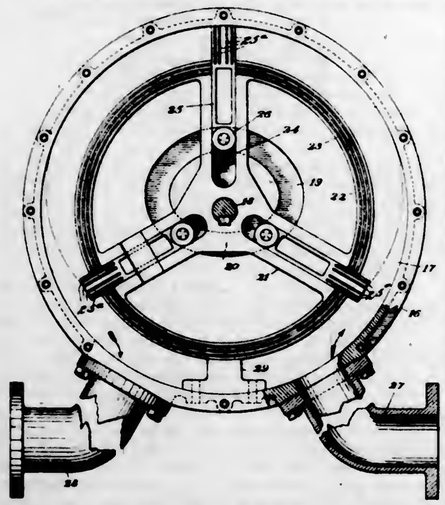

Claim.—1. In a fluid-motor, a shell having a cylindrical chamber communicating with supply and exhaust ports therefrom, with a cam-groove located in a wall of the chamber, a spider mounted to rotate in the chamber and including a rim forming the inner wall of the chamber with arms connecting the rim to the hub, and extending across the chamber from side to side and with piston-recesses formed on the outer face of each of said arms and extending through the rim, pistons having branches at each end thereof located in said recesses and engaging the wall of the shell, projections from said arms extending into the cam-grooves, and an abutment extending across the chamber.

2. In a fluid-motor, a shell having a cylindrical chamber communicating with supply and exhaust ports located therein with a cam located in a wall of the chamber, a spider mounted to rotate in the chamber and including a rim and arms connecting the rim and hub, all extending across the chamber from side to side, with recesses extending across the rim near the outer end of each of the arms and radially-extending recesses along opposite sides of each of the arms opening into the crosswise recesses, pistons having branches located in the recesses on opposite sides of the arms with their ends located in the crosswise recesses, said pistons extending across the chamber from side to side, projections from the branches on the pistons into the cam-groove, and an abutment extending across said chamber.

3. In a fluid-motor, a shell having a cylindrical chamber communicating with supply and exhaust ports located therein with a cam-groove in the wall of the chamber, a spider mounted to rotate in the chamber and including a rim and arms extending from the rim to the hub, all extending across the chamber from side to side, recesses extending through the rim and located on opposite sides of each of said arms, pistons each having branches located in the recesses on opposite sides of an arm, said pistons each extending across the chamber, concentric grooves formed in the edge of the rim, and grooves extending radially along the edges of said pistons.

809,638. **HOPPER-BOTTOM CAR.** JOHN S. STEVENSON, Detroit, Mich. Filed Apr. 1, 1905. Serial No. 253,323.

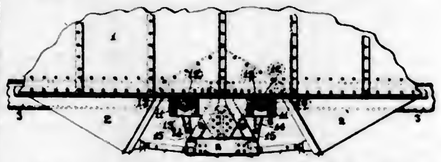

Claim.—1. In a hopper-bottom car, the combination with plate-girder side walls, a center sill, a central cross-ridge arranged between the plate-girder sides and above the plane of the center sill and a cross-beam carried by the plate-girder sides in a plane beneath the center sill, for supporting said center sill; substantially as described.

2. In a hopper-bottom car, the combination with hoppers, of a pair of doors closing the openings thereof, a beam having a channel of varying depths, the central part being the deepest, said beam being riveted to the lower edges of said doors, a cap-plate fastened to said beam at the point where the channel is deepest, and a door-operating mechanism connected to said beam between the doors; substantially as described.

3. The combination with a pair of hopper-doors, of a pressed-steel channel-shaped beam riveted to the lower edges thereof, a channel in said beam being of varying depths, the central part being the deepest, a cap-plate between the doors, and a spacer interposed between the cap-plate and the channeled portion of said beam; substantially as described.

4. The combination with a hopper-door, of a channeled beam riveted thereto, a cap-plate riveted to the beam, a pipe in the channel of said beam and in line with said cap-plate, a screw-eye having nuts impinging against the outer faces of said channel and said cap-plate, and a door-operating mechanism connected to said screw-eye; substantially as described.

5. The combination with a hopper-door, of a link pivotally connected thereto, rollers carried by said link, a fixed abutment with which the link coöperates when the door is closed, and guides for said rollers; substantially as described.

6. The combination with hopper-doors, of links pivotally connected thereto, rollers on the inner ends of said links, abutment-blocks against which the links rest when the doors are closed, beams 8 to which said abutment-blocks are riveted, and guides 9 riveted to the ends of said beams, said guides coöperating with said rollers; substantially as described.

7. The combination with center sills, of a cross-beam arranged thereunder, a transverse cross-ridge arranged above the center sills, hopper-doors hinged to the legs of said cross-ridge, longitudinally-disposed beams riveted to the under side of the cross-beam, abutment-blocks and guides on said last-mentioned beams, and links pivotally connected to the hopper-doors and coöperating with said abutment-blocks and guides; substantially as described.

8. The combination with a hopper-door, of a link pivotally connected thereto at one end, the opposite end of said link carrying rollers, and guides for said rollers, which guides have an oblique portion approximately parallel to the plane of the doors in their closed position; substantially as described.

9. The combination with a hopper-door, of links pivotally connected thereto at one end, said links carrying rollers at their opposite ends, and a guide for said rollers, said guide having substantially vertical portions at its upper and lower extremities, and an intermediate obliquely-disposed portion; substantially as described.

10. The combination with a hopper-door, of an operating mechanism therefor comprising a rock-arm 14, links 15 and 17, rollers 16 at the pivotal connection between said links, channeled members 9 forming guides for said rollers, and an abutment-block; substantially as described.

11. The combination with a hopper-door, of a link pivotally connected thereto at one end, a guide for the opposite end of said link, another link pivotally connected to the guided end of said first-mentioned link, a rock-arm connected to said other link, whereby

when the door is in a closed position the rock-arm occupies a position of dead-center, and an abutment-block for supporting the guided end of said first-mentioned link when the door is closed; substantially as described.

809,639. **BROILER.** JOHN M. STOUER, Cleveland, Ohio, assignor to the Prince Stoker Oil Stove Company, Cincinnati, Ohio. Filed June 13, 1905. Serial No. 265,060.

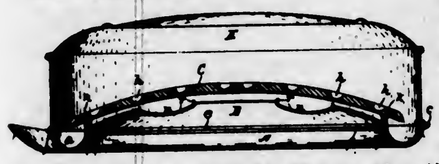

Claim.—1. A broiler consisting of a metal ring and a grid mounted upon the ring, and a sheet-metal dome held by the ring beneath the grid, the dome and the grid being crowning with space between.

2. A broiler comprising a metal ring and a grid mounted thereon, and a sheet-metal dome upon the ring beneath the grid, the dome having slots with peripheral upwardly-projecting lips, the grid and the dome having a common seat upon the ring.

3. A broiler consisting of a ring or body having a flange and a horizontal circular ledge adjacent to the flange, and a grid upon the ring having a downwardly-projecting circular flange resting upon said ledge, and a sheet-metal dome having a peripheral flange adapted to rest upon said ledge between the flanges of the ring and the grid.

4. A broiler consisting of a ring or body having an upwardly-projecting circular flange *c* and a horizontal circular ledge at the base of the flange on its convex side, and a grid having a downwardly-projecting circular flange *k* adapted to rest upon the ledge, and a sheet-metal dome having a peripheral downwardly-turned flange adapted to rest upon said ledge between said opposing flanges *c k*, the opposing faces of said flanges *c k* and the flange of the dome all having an equal and similar slant.

5. A broiler consisting of a ring or body having an upwardly-projecting circular flange *c* and a horizontal circular ledge at the base of the flange on its convex side, and a grid having a downwardly-projecting circular flange *k* adapted to rest upon the ledge, and a sheet-metal dome having a peripheral downwardly-turned flange adapted to rest upon said ledge between said opposing flanges *c k*, the lower edge of the flange *k* in contact with the ledge being formed with a series of openings.

809,640. **GUN.** AUDLEY H. STOW, Hunter, W. Va. Filed Aug. 11, 1903. Serial No. 169,128.

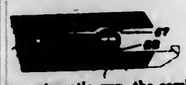

Claim.—1. In an automatic gun, the combination of the hammer and means for cocking the same automatically, a sear, and a controlling-piece with which the hammer engages, to determine the hammer action.

2. In an automatic gun, the combination of the hammer, means for cocking the same automatically, a sear, and movable controlling-piece with which the hammer engages, to control the hammer action.

3. In an automatic gun, the combination of the hammer, means for cocking the same, a sear, and a controlling-pin having cross-sections of different form, each cross-section of the pin controlling the hammer action according to a predetermined system.

4. In an automatic gun, the hammer, means for cocking the same automatically, a trigger-sear, a trigger-sear trip, and a movable controlling-piece having a series of bearing-surfaces, each bearing-surface controlling the hammer to operate in a predetermined manner, all combined.

5. In an automatic gun, the combination of the hammer, means for cocking the same, a trigger-sear, a trigger-sear trip, and a movable controlling-pin having cross-sectional areas of different dimensions, and engaging the trigger-sear trip to determine the hammer action.

6. In an automatic gun, the hammer and means for cocking the same, a controlling-pin extending through the frame and movable in direction of its length, and means for holding the said pin in different positions, thereby controlling the hammer movement.

7. In an automatic gun, the hammer and means for cocking the same, the movable controlling-pin extending through the frame and varying in cross-section, a pawl on the hammer which pawl engages the sections of said pin to govern the hammer action according to the position of the controlling-pin, and means for holding the controlling-pin in adjusted position, all combined.

8. In a magazine-gun, a magazine, a vertically-movable carrier, a carrier-lever connected to said carrier, two pivots supporting said lever on variable fulcrums, and a spring acting to raise or lower said carrier according to the position of the bearing-fulcrum.

9. In a magazine-gun, the carrier, a carrier-lever pivotally connected thereto, a plurality of fulcrums on one or the other of which the carrier is supported, and a spring operating to both raise and lower the carrier, all combined.

10. In a magazine-gun, the combination of a carrier, a lever pivotally connected thereto, two pivot-pins projecting from the carrier-lever, a frame having two slots in which said pivot-pins may play, and a spring connected to the carrier-lever between said pins.

11. In a magazine-gun, the combination of a carrier, carrier-lever pivotally connected thereto, two pivot-pins projecting from said lever, and a spring connected to the lever between said pins, and slots in the frame in which said pins play, one of said slots having a shoulder on which the pin rests when in elevated position.

12. In a magazine-gun, the combination of a carrier, a carrier-lever pivotally connected thereto and supported on one or the other of two fulcrums, a spring connected to said lever between the fulcrums, the breech-bolt and a lever connected thereto; and a carrier-lever catch connected to said breech-bolt lever.

13. In a magazine-gun, a longitudinally-moving breech-bolt, a return-lever pivotally connected thereto, a vertically-moving cartridge-carrier and a carrier-lever pivotally connected thereto, variable fulcrums supporting said carrier-lever, and means connected with the return-lever by which the carrier-lever may be shifted on its fulcrums.

14. In an automatic gun, the combination of a cylindrical longitudinally-reciprocating breech-bolt, a vertically-moving carrier having a chamber neatly fitting said bolt and the cartridge-body used in the gun, and means for reciprocating the carrier, so that the backward-movement of the bolt permits the cartridge-shell to recoil into the carrier at the instant of firing.

15. In an automatic gun, a vertically-movable cartridge-carrier having a cylindrical bore which receives the cartridge, a longitudinally-reciprocating breech-bolt which fits said bore, and means for closing the breech-bolt through the chamber in the carrier, and means for lifting the carrier so that its chamber is in line with the breech-bolt.

16. In a magazine-gun, the combination of a vertically-reciprocating carrier, the trigger, and a carrier-catch connected to and operated by the trigger.

17. In a magazine-gun, the combination of a vertically-reciprocating cartridge-carrier, a trigger, and a carrier-catch pivoted in the frame and connected to the trigger.

18. In a magazine-gun, the combination of a reciprocating bolt, a firing-pin carried thereby, a spring-actuated firing-pin catch in the breech-bolt having an inclined surface, and the hammer engaging said incline to release the firing-pin before striking it.

809,641. **VEHICLE-TIRE.** JAMES A. SWINEHART, Akron, Ohio. Filed Apr. 3, 1904. Serial No. 201,948.

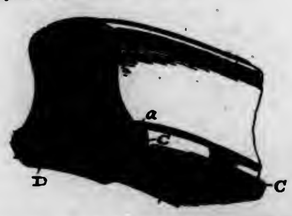

Claim.—1. In vehicle-tires, a metallic rim having opposite incurved edges about its periphery, in combination with a solid continuous rubber tire in said rim provided with side ribs engaged beneath said edges, a binding material interposed between said rim and tire and cemented to both, and cross-wires extending transversely

other, and means for automatically returning the guide-bar to its normal position, for the purpose set forth.

29. The combination, in a machine of the character described, comprising duplicate guide-bars having longitudinal grooves to receive the wire, said bars operatively connected together, an independent supporting-bar for each of said guide-bars, means for actuating said bars on their supports, means for maintaining said guide-bars in parallel relation with their supporting-bars and in linear alinement with each other, and means for returning the guide-bars to their normal position.

30. The combination, in a machine of the character described, comprising feed-rolls having a plurality of circumferential grooves, a support for said rolls, a side wall, packing, substantially the thickness of one of said grooves interposed between said side wall and rolls to bring the first groove of the rolls in line with the wire, the second groove of the rolls being adapted to be brought in line with the wire by the removal of said packing, said rolls adapted to be reversed, for the purpose set forth.

809,637. **ROTARY MOTOR.** IRA H. SPENCER, Hartford, Conn., assignor to American Water Softener Company, Philadelphia, Pa., a Corporation of New Jersey. Filed Jan. 14, 1905. Serial No. 241,012.

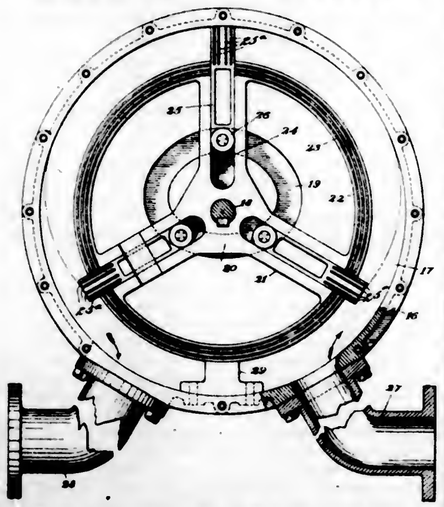

Claim.—1. In a fluid-motor, a shell having a cylindrical chamber communicating with supply and exhaust ports therefrom, with a cam-groove located in a wall of the chamber, a spider mounted to rotate in the chamber and including a rim forming the inner wall of the chamber with arms connecting the rim to the hub, and extending across the chamber from side to side and with piston-recesses formed on the outer face of each of said arms and extending through the rim, pistons having branches at each end thereof located in said recesses and engaging the wall of the shell, projections from said arms extending into the cam-groove, and an abutment extending across the chamber.

2. In a fluid-motor, a shell having a cylindrical chamber communicating with supply and exhaust ports located therein with a cam located in a wall of the chamber, a spider mounted to rotate in the chamber and including a rim and arms connecting the rim and hub, all extending across the chamber from side to side, with recesses extending across the rim near the outer end of each of the arms and radially-extending recesses along opposite sides of each of the arms opening into the crosswise recesses, pistons having branches located in the recesses on opposite sides of the arms with their ends located in the crosswise recesses, said pistons extending across the chamber from side to side, projections from the branches on the pistons into the cam-groove, and an abutment extending across said chamber.

3. In a fluid-motor, a shell having a cylindrical chamber communicating with supply and exhaust ports located therein with a cam-groove in the wall of the chamber, a spider mounted to rotate in the chamber and including a rim and arms extending from the rim to the hub, all extending across the chamber from side to side, recesses extending through the rim and located on opposite sides of each of said arms, pistons each having branches located in the recesses on opposite sides of an arm, said pistons each extending across the chamber, concentric grooves formed in the edge of the rim, and grooves extending radially along the edges of said pistons.

809,638. **HOPPER-BOTTOM CAR.** JOHN S. STEVENSON, Detroit, Mich. Filed Apr. 1, 1905. Serial No. 253,323.

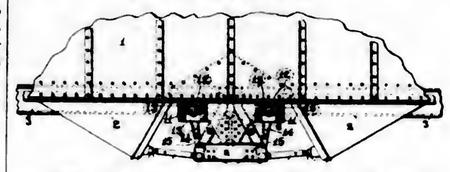

Claim.—1. In a hopper-bottom car, the combination with plate-girder side walls, a center sill, a central cross-ridge arranged between the plate-girder sides and above the plane of the center sill and a cross-beam carried by the plate-girder sides in a plane beneath the center sill, for supporting said center sill; substantially as described.

2. In a hopper-bottom car, the combination with hoppers, of a pair of doors closing the openings thereof, a beam having a channel of varying depths, the central part being the deepest, said beam being riveted to the lower edges of said doors, a cap-plate fastened to said beam at the point where the channel is deepest, and a door-operating mechanism connected to said beam between the doors; substantially as described.

3. The combination with a pair of hopper-doors, of a pressed-steel channel-shaped beam riveted to the lower edges thereof, a channel in said beam being of varying depths, the central part being the deepest, a cap-plate between the doors, and a spacer interposed between the cap-plate and the channeled portion of said beam; substantially as described.

4. The combination with a hopper-door, of a channeled beam riveted thereto, a cap-plate riveted to the beam, a pipe in the channel of said beam and in line with said cap-plate, a screw-eye having nuts impinging against the outer faces of said channel and said cap-plate, and a door-operating mechanism connected to said screw-eye; substantially as described.

5. The combination with a hopper-door, of a link pivotally connected thereto, rollers carried by said link, a fixed abutment with which the link coöperates when the door is closed, and guides for said rollers; substantially as described.

6. The combination with hopper-doors, of links pivotally connected thereto, rollers on the inner ends of said links, abutment-blocks against which the links rest when the doors are closed, beams 8 to which said abutment-blocks are riveted, and guides 9 riveted to the ends of said beams, said guides coöperating with said rollers; substantially as described.

7. The combination with center sills, of a cross-beam arranged thereunder, a transverse cross-ridge arranged above the center sills, hopper-doors hinged to the legs of said cross-ridge, longitudinally-disposed beams riveted to the under side of the cross-beam, abutment-blocks and guides on said last-mentioned beams, and links pivotally connected to the hopper-doors and coöperating with said abutment-blocks and guides; substantially as described.

8. The combination with a hopper-door, of a link pivotally connected thereto at one end, the opposite end of said link carrying rollers, and guides for said rollers, which guides have an oblique portion approximately parallel to the plane of the doors in their closed position; substantially as described.

9. The combination with a hopper-door, of links pivotally connected thereto at one end, said links carrying rollers at their opposite ends, and a guide for said rollers, said guide having substantially vertical portions at its upper and lower extremities, and an intermediate obliquely-disposed portion; substantially as described.

10. The combination with a hopper-door, of an operating mechanism therefor comprising a rock-arm 14, links 15 and 17, rollers 16 at the pivotal connection between said links, channeled members 9 forming guides for said rollers, and an abutment-block; substantially as described.

11. The combination with a hopper-door, of a link pivotally connected thereto at one end, a guide for the opposite end of said link, another link pivotally connected to the guided end of said first-mentioned link, a rock-arm connected to said other link, whereby

when the door is in a closed position the rock-arm occupies a position of dead-center, and an abutment-block for supporting the guided end of said first-mentioned link when the door is closed; substantially as described.

809,639. **BROILER.** JOHN M. STORER, Cleveland, Ohio, assignor to the Prince Meikos Oil Stove Company, Cincinnati, Ohio. Filed June 13, 1905. Serial No. 265,669.

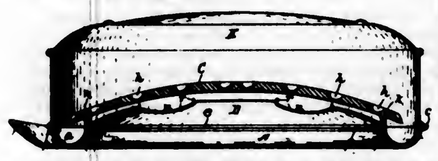

Claim.—1. A broiler consisting of a metal ring and a grid mounted upon the ring, and a sheet-metal dome held by the ring beneath the grid, the dome and the grid being crowning with space between.

2. A broiler comprising a metal ring and a grid mounted thereon, and a sheet-metal dome upon the ring beneath the grid, the dome having slots with peripheral upwardly-projecting lips, the grid and the dome having a common seat upon the ring.

3. A broiler consisting of a ring or body having a flange and a horizontal circular ledge adjacent to the flange, and a grid upon the ring having a downwardly-projecting circular flange resting upon said ledge, and a sheet-metal dome having a peripheral flange adapted to rest upon said ledge between the flanges of the ring and the grid.

4. A broiler consisting of a ring or body having an upwardly-projecting circular flange *e* and a horizontal circular ledge at the base of the flange on its convex side, and a grid having a downwardly-projecting circular flange *k* adapted to rest upon the ledge, and a sheet-metal dome having a peripheral downwardly-turned flange adapted to rest upon said ledge between said opposing flanges *e k*, the opposing faces of said flanges *e k* and the flange of the dome all having an equal and similar slant.

5. A broiler consisting of a ring or body having an upwardly-projecting circular flange *e* and a horizontal circular ledge at the base of the flange on its convex side, and a grid having a downwardly-projecting circular flange *k* adapted to rest upon the ledge, and a sheet-metal dome having a peripheral downwardly-turned flange adapted to rest upon said ledge between said opposing flanges *e k*, the lower edge of the flange *k* in contact with the ledge being formed with a series of openings.

809,640. **GUN.** AUDLEY H. STOW, Hunter, W. Va. Filed Aug. 11, 1905. Serial No. 268,122.

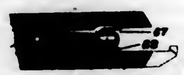

Claim.—1. In an automatic gun, the combination of the hammer and means for cocking the same automatically, a sear, and a controlling-piece with which the hammer engages, to determine the hammer action.

2. In an automatic gun, the combination of the hammer, means for cocking the same automatically, a sear, and movable controlling-piece with which the hammer engages, to control the hammer action.

3. In an automatic gun, the combination of the hammer, means for cocking the same, a star, and a controlling-pin having cross-sections of different form, each cross-section of the pin controlling the hammer action according to a predetermined system.

4. In an automatic gun, the hammer, means for cocking the same automatically, a trigger-sear, a trigger-sear trip, and a movable controlling-piece having a series of bearing-surfaces, each bearing-surface controlling the hammer to operate in a predetermined manner, all combined.

5. In an automatic gun, the combination of the hammer, means for cocking the same, a trigger-sear, a trigger-sear trip, and a movable controlling-pin having cross-sectional areas of different dimensions, and engaging the trigger-sear trip to determine the hammer action.

6. In an automatic gun, the hammer and means for cocking the same, a controlling-pin extending through the frame and movable in direction of its length, and means for holding the said pin in different positions, thereby controlling the hammer movement.

7. In an automatic gun, the hammer and means for cocking the same, the movable controlling-pin extending through the frame and varying in cross-section, a pawl on the hammer which pawl engages the sections of said pin to govern the hammer action according to the position of the controlling-pin, and means for holding the controlling-pin in adjusted position, all combined.

8. In a magazine-gun, a magazine, a vertically-movable carrier, a carrier-lever connected to said carrier, two pivots supporting said lever on variable fulcrums, and a spring acting to raise or lower said carrier according to the position of the bearing-fulcrum.

9. In a magazine-gun, the carrier, a carrier-lever pivotally connected thereto, a plurality of fulcrums on one or the other of which the carrier is supported, and a spring operating to both raise and lower the carrier, all combined.

10. In a magazine-gun, the combination of a carrier, a lever pivotally connected thereto, two pivot-pins projecting from the carrier-lever, a frame having two slots in which said pivot-pins may play, and a spring connected to the carrier-lever between said pins.

11. In a magazine-gun, the combination of a carrier, carrier-lever pivotally connected thereto, two pivot-pins projecting from said lever, and a spring connected to the lever between said pins, and slots in the frame in which said pins play, one of said slots having a shoulder on which the pin rests when in elevated position.

12. In a magazine-gun, the combination of a carrier, a carrier-lever pivotally connected thereto and supported on one or the other of two fulcrums, a spring connected to said lever between the fulcrums, the breech-bolt and a lever connected thereto; and a carrier-lever catch connected to said breech-bolt lever.

13. In a magazine-gun, a longitudinally-moving breech-bolt, a return-lever pivotally connected thereto, a vertically-moving cartridge-carrier and a carrier-lever pivotally connected thereto, variable fulcrums supporting said carrier-lever, and means connected with the return-lever by which the carrier-lever may be shifted on its fulcrums.

14. In an automatic gun, the combination of a cylindrical longitudinally-reciprocating breech-bolt, a vertically-moving carrier having a chamber neatly fitting said bolt and the cartridge-body used in the gun, and means for reciprocating the carrier, so that the backward movement of the bolt permits the cartridge-shell to recoil into the carrier at the instant of firing.

15. In an automatic gun, a vertically-movable cartridge-carrier having a cylindrical bore which receives the cartridge, a longitudinally-reciprocating breech-bolt which fits said bore, and means for closing the breech-bolt through the chamber in the carrier, and means for lifting the carrier so that its chamber is in line with the breech-bolt.

16. In a magazine-gun, the combination of a vertically-reciprocating carrier, the trigger, and a carrier-catch connected to and operated by the trigger.

17. In a magazine-gun, the combination of a vertically-reciprocating cartridge-carrier, a trigger, and a carrier-catch pivoted in the frame and connected to the trigger.

18. In a magazine-gun, the combination of a reciprocating bolt, a firing-pin carried thereby, a spring-actuated firing-pin catch in the breech-bolt having an inclined surface, and the hammer engaging said incline to release the firing-pin before striking it.

809,641. **VEHICLE-TIRE.** JAMES A. SWINEHART, Akron, Ohio. Filed Apr. 3, 1904. Serial No. 201,948.

Claim.—1. In vehicle-tires, a metallic rim having opposite inverted edges about its periphery, in combination with a solid continuous rubber tire in said rim provided with side ribs engaged beneath said edges, a binding material interposed between said rim and tire and cemented to both, and cross-wires extending transversely

through said tire and binding material and engaged at their ends beneath said incurved edges, substantially as described.

2. In a vehicle-tire, the combination of a metallic rim having inturned side edges with an elastic tire having side projections adapted to fit within said rim, and provided with metallic bars embedded diagonally of the tread and within said tire and adapted to engage and lock beneath said rim edges, and a binding material fastened to both said rim and tire adapted to fix and hold said bars in their locking position, substantially as described.

809,642. **CENTRIFUGAL MACHINE FOR SCREENING PULP.** CHARLES W. THOMAS, Nutley, N. J., assignor of one-half to Charles Smith, Belleville, N. J. Filed Apr. 8, 1904. Serial No. 202,208.

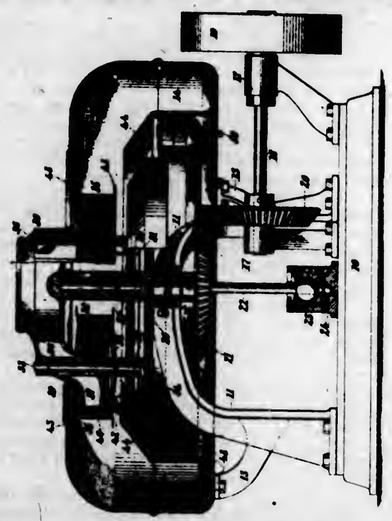

Claim.—1. In a machine of the character described, a series of vertical cylindrical screen vessels having perforated side walls, means for revolving said vessels around a central vertical axis, means for rotating said vessels on their own independent axes in a direction reversely to that of their revolving motion, and means for delivering the material to be screened to said vessels and directly against the perforated side walls of same and in a fixed direction with relation to said vessels so that as said material is thus delivered the said vessels present new surfaces to receive the same and the material within the vessels is thrown, by the main centrifugal action, to that side thereof which has just passed from said delivery means, combined with means for receiving the material which passes through said perforated walls; substantially as set forth.

2. In a machine of the character described, the series of discharge-spouts leading from a source of supply of the material to be screened, and a series of vertical cylindrical screen vessels having perforated side walls and openings in their upper and lower ends, said spouts passing directly into said vessels and into approximately near relation to the side walls of same and having their discharge ends pointed to said perforated side walls so as to deliver the material directly against the same, combined with means for revolving said vessels around a central vertical axis, means for rotating said spouts to follow said vessels, means for rotating said vessels on their own independent axes so that they may present new surfaces to said discharge-spouts, and means for receiving the material which passes through said perforated side walls; substantially as set forth.

3. In a machine of the character described, a vertical rotary shaft 22, a horizontal frame 29 to be rotated thereby, a series of gear-wheels 34 and vertical spindles 33 carried by said frame, a central stationary gear-wheel 26, and the series of intermediate pinion-wheels 46 connecting said gear-wheels 34 with said gear-wheel 26, combined with the screen vessels secured to said spindles 33 and having perforated side walls, means for supplying said vessels with the material to be screened, and means for imparting motion to said shaft 22; substantially as set forth.

4. In a machine of the character described, a vertical rotary shaft 22, a horizontal frame 29 to be rotated thereby, a series of gear-wheels 34 and vertical spindles 33 carried by said frame, a central stationary gear-wheel 26, and the series of intermediate pinion-wheels 46 connecting said gear-wheels 34 with said gear-wheel 26, combined with the screen vessels secured to said spindles 33 and having perforated side walls, the rotary feed-hopper connected with said shaft and having the radial spouts to discharge into said vessels, and means for imparting motion to said shaft 22; substantially as set forth.

5. In a machine of the character described, a horizontal rotary frame 29, a series of gear-wheels 34 and vertical spindles 33 carried by said frame, a central stationary gear-wheel 26, and the series of intermediate pinion-wheels 46 connecting said gear-wheels 34 with said gear-wheel 26, combined with the screen vessels secured to said spindles 33 and having perforated side walls, means for supplying said vessels with the material to be screened, and means for imparting rotary motion to said frame; substantially as set forth.

6. In a machine of the character described, a horizontal rotary frame 29, a series of gear-wheels 34 and vertical spindles 33 carried by said frame, a central stationary gear-wheel 26, and the series of intermediate pinion-wheels 46 connecting said gear-wheels 34 with said gear-wheel 26, combined with the screen vessels secured to said spindles 33 and having perforated side walls, means for supplying said vessels with the material to be screened, and means for imparting rotary motion to said frame, said means for supplying said vessels comprising a rotary feed-hopper having radial discharge-spouts leading directly into said vessels and terminating at one side of the center thereof in approximately near relation to the perforated walls of said vessels; substantially as set forth.

7. In a machine of the character described, the series of discharge-spouts leading from a source of supply of the material to be screened, a series of vertical cylindrical screen vessels having perforated side walls and each receiving the discharge from one of said spouts, means for revolving said vessels around a central vertical axis, means for rotating said spouts to follow said vessels, and means for rotating said vessels on their own independent axes in a direction reversely to that of their revolving motion, said spouts passing directly into said vessels and into approximately near relation to the side walls of same and having their discharge ends pointed to said perforated side walls so as to deliver the material directly against the same, combined with means for receiving the material which passes through said perforated walls; substantially as set forth.

8. In a machine of the character described, the series of spouts leading from a source of supply of the material to be screened, and a series of vertical cylindrical screen vessels having perforated side walls and each receiving the discharge from one of said spouts, said spouts being arranged to deliver the material directly against said perforated side walls, combined with means for revolving said vessels around a central vertical axis, means for rotating said spouts to follow said vessels, means for rotating said vessels on their own independent axes in a direction reversely to that of their revolving motion, means for receiving the material which passes through said perforated side walls, and means for receiving the material which fails to pass through said walls; substantially as set forth.

9. In a machine of the character described, a rotary frame 29, a series of gear-wheels 34 and spindles 33 carried by said frame, a central stationary gear-wheel 26, and the series of intermediate pinion-wheels 46 connecting said gear-wheels 34 with said gear-wheel 26, combined with the screen vessels secured to said spindles 33 and having perforated side walls, means for supplying said vessels with the material to be screened, and means for imparting rotary motion to said frame, substantially as set forth.

10. In a centrifugal pulp-screen, a central shaft, a series of individual screens mounted upon and revolving with said shaft, and means for revolving each of the series of individual screens upon its own axis, said means consisting of a stationary gear concentric with the central shaft, said stationary gear being operatively connected to the shafts of the individual screens by idler-gears located between the stationary gear and driving-gears on the individual shafts; substantially as described.

11. In a centrifugal machine for screening paper-pulp and the like, a vertical cylindrical screen vessel having an opening in its lower end and having perforated side walls, means for revolving said vessel around an axis exterior thereto, means for rotating said vessel on its own independent axis, and means for delivering the material to be screened to said vessel and directly against the vertical perforated side wall of same and in a fixed direction with relation to said vessel, whereby said vessel may constantly present new surfaces to receive said material, the perforations in said side walls being adapted to permit the good pulp only to pass through them, while the slivers and tailings escape through the lower end of said vessel; substantially as set forth.

12. In a centrifugal machine for screening paper-pulp and the like, a vertical cylindrical screen vessel having an opening in its lower end and having perforated side walls, means for revolving said vessel around an axis exterior thereto, means for rotating said vessel on its own independent axis in a direction reversely to that of its revolving motion, and means for delivering the material to be screened to said vessel and directly against the vertical perforated side wall of same and in a fixed direction with relation to said vessel, whereby said vessel may constantly present new surfaces to receive said material, the perforations in said side walls being adapted to permit the good pulp only to pass through them, while the slivers and tailings escape through the opening in the lower end of said vessel; substantially as set forth.

809,643. **MEANS FOR CONTROLLING MERCURY-VAPOR ELECTRIC LAMPS.** PERCY H. THOMAS, East Orange, N. J., assignor to Cooper Hewitt Electric Company, New York, N. Y., a Corporation of New York. Filed Apr. 23, 1904. Serial No. 204,047.

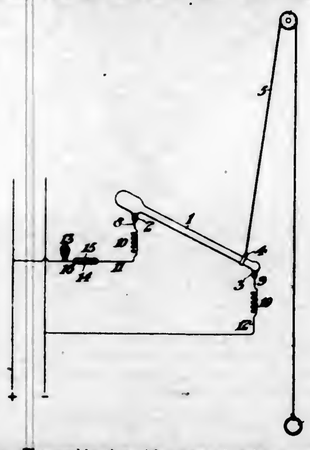

Claim.—The combination with a vapor electric apparatus which is adapted to be started by rupturing a conducting film or bridge between the electrodes, of a carbon filament in series with apparatus and a ballast also in series with the apparatus, said ballast having a positive temperature coefficient.

809,644. **ELEVATOR-GATE.** GEORGE D. THOMPSON, Arlington Heights, Ohio. Filed Aug. 7, 1905. Serial No. 273,152.

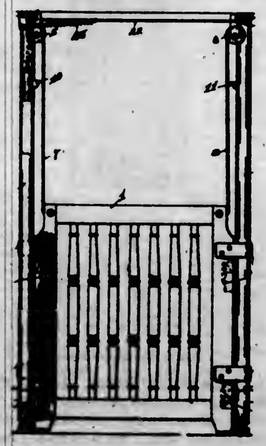

Claim.—1. In combination with an elevator-car, a vertically-sliding counterbalanced gate, having top and bottom latches, a rotatable member having top and bottom catches in different vertical lines, and means actuated by the car to rotate said member whereby one of the catches is moved out and the other into position for engagement with its coöperating latch on the gate, substantially as described.

2. In combination with an elevator-car, a vertically-sliding counterbalanced gate, having top and bottom latches, a rotatable member having corresponding top and bottom catches projected in different vertical lines, means for holding said rod yieldingly in normal position with the bottom catch and latch in engagement, and means actuated by the car for rotating said member to release the bottom catch and to throw the top catch into position for engaging the top catch when the gate is raised, substantially as described.

3. In combination with an elevator-car, a vertically-sliding gate, having top and bottom latches, a rotatable tube at the side of the gateway, a counterbalance for the gate sliding in said tube, a top and bottom catch radially projected from the tube in different vertical lines, means for holding said tube in the given position yieldingly, and means actuated by the car for turning said tube to release one catch and latch and engage another, substantially as described.

4. In combination with an elevator-car, a vertically-sliding gate having top and bottom latches on each side, a rotatable tube on each side of the gateway, counterbalances for said gate sliding in said tubes, top and bottom catches on each tube radially projected in different vertical lines, means connecting said tubes whereby they rotate in unison, means for holding said tubes yieldingly in a given position, and means actuated by the car for rotating said tubes whereby one set of catches and latches are released and the other set of catches thrown into position to engage their coöperating latches, substantially as described.

5. In combination with an elevator-car, a vertically-sliding gate having latches, a rotatable member having catches in different vertical lines, and means actuated by the car to rotate said member whereby the catches are moved into and out of position, substantially as described.

6. In combination with an elevator-car, a vertically-sliding gate having latches, rotatable members having catches in different vertical lines, vertical guide connections between said members and the gate, and means actuated by the car to operate said catches, substantially as described.

7. In combination with an elevator-car, vertical tubes rotatably mounted in the sides of the gateway, a sliding gate between said tubes having counterbalances sliding within said tubes, said tubes having catches extending radially in different vertical lines, coöperating latches on the gate, and vertical guide connections projected from the gate and engaging around the tubes, substantially as described.

809,645. **VENTILATING APPARATUS.** CHARLES H. TREAT, Detroit, Mich., assignor to American Blower Company, Detroit, Mich., a Corporation of Michigan. Filed July 5, 1904. Serial No. 215,209.

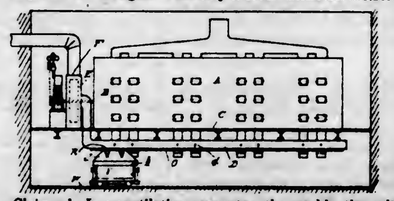

Claim.—1. In a ventilating apparatus, the combination with a member having discharge-openings longitudinally thereof, of a draft-conduit having a series of separated inlet-openings extending longitudinally thereof in line with said discharge-openings, a series of dampers controlling the inlet-openings, means for independently operating the dampers, a traveling receptacle movable in operative relation with any one of said conduit-openings and its corresponding discharge-opening, and a hood for the receptacle having openings, one for filling the receptacle from the chute and the other for communicating with the inlet-openings.

2. In a ventilating apparatus, the combination with a draft-conduit provided with a damper-controlled inlet-opening, of a chute adjoining the conduit, and a movable hood adapted to fit over a receptacle to be filled from the chute, the hood having an opening to

register with the chute and another affording communication with the conduit through said inlet.

3. In a ventilating apparatus, the combination with a draft-conduit provided with an inlet-opening, of a chute adjoining the conduit, an open-bottom hood having an auxiliary opening in its side registering with the end of said chute to admit the chute contents and an open top registering with the inlet-opening in the conduit, and a receptacle arranged below the open bottom of the hood.

4. In a ventilating apparatus, the combination with a member having discharge-openings, of an air-conduit provided with a corresponding series of inlet-openings, means for inducing a draft through said conduit, and a hood mounted for travel longitudinally of the discharge-openings and conduit and having an exit-opening adapted to be brought in registration with any of the inlets in said conduit.

5. In a ventilating apparatus, the combination of a member having discharge-openings, a substantially horizontal draft-conduit having a series of damper-controlled inlet-openings extending lengthwise thereof, and a hood mounted upon the conduit for longitudinal travel and having an exit-opening adapted to register with any of the conduit-inlets.

6. In a ventilating apparatus, the combination with a series of ovens or retorts, of a series of chutes arranged to receive the retort contents, a draft-conduit having a plurality of damper-controlled inlet-openings corresponding in number to and arranged in line with the chutes, and a traveling hood adapted to be moved into operative relation with any one of the chutes and the corresponding conduit-inlet.

7. In a ventilating apparatus, the combination with a horizontally-extending draft-conduit having a series of damper-controlled inlets formed in its lower wall, of a discharging member having a series of outlets, a receptacle arranged beneath the discharging member and conduit for relative longitudinal travel, and a hood for said receptacle mounted for travel longitudinally of the latter and the conduit, the said hood having openings, one for filling the receptacle from the chute and the other for communicating with the inlets.

8. In a ventilating apparatus, the combination with a discharging member having a series of discharge-openings, of a draft-conduit having a series of inlets corresponding in number to and arranged in line with said discharge-openings, and a traveling hood adapted to fit over a receptacle to be filled from the discharging member, the hood having an opening to register with the discharge-opening and an opening affording communication with the conduit through said inlets.

9. In a ventilating apparatus, the combination with a series of ovens or retorts, of a series of chutes arranged to receive the retort contents, a draft-conduit having a plurality of inlet-openings corresponding in number to and arranged in line with the chutes, and a traveling hood adapted to be moved into operative relation with any one of the chutes and the corresponding conduit-inlet.

10. In a ventilating apparatus, the combination with a member having discharge-openings, of an air-conduit provided with a corresponding series of inlet-openings, means for inducing a draft through said conduit, a hood mounted for travel longitudinally of the discharge-openings and conduit and having an exit-opening adapted to be brought in registration with any of the inlets in said conduit, and a traveling receptacle movable in operative relation with any one of said conduit-openings and the corresponding discharge-opening.

809,646. COMBINED PEN-RACK AND INKSTAND-HOLDER. LEDA TIFFENY, New York, N. Y. Filed Jan. 16, 1905. Serial No. 241,202.

Claim.—1. As an article of manufacture, an inkstand-holder composed of a shell having a ledge, said ledge being provided with means for holding an inkstand, and also provided with means for supporting the shell and maintaining the ledge substantially horizontal.

2. As an article of manufacture, an inkstand-holder composed of a shell having a ledge, the latter being provided with means for holding an inkstand, and said ledge having mechanically combined therewith a leg for supporting the same substantially horizontal.

3. An inkstand-holder composed of a shell having a ledge, the latter having secured thereto a plurality of supporting-legs, and the shell having the bottom of its body portion shaped or formed to produce another supporting-leg, the said legs being disposed in triangular relation, so as to afford a substantial support for the shell.

4. An inkstand-holder composed of a shell having a ledge, the latter having means secured thereto for holding an inkstand, and the body of the said shell being carved, or otherwise ornamented, so as to produce a support for a penholder.

5. The article of manufacture described, composed of a shell having means on its bottom for supporting it, and having its body portion carved and ornamented so as to produce one or more supports for a penholder.

6. An inkstand-holder comprising a body portion having a laterally-extended ledge, and means for supporting said holder comprising an integral extension thereof and one or more legs detachably secured thereto, whereby the holder may be supported with its bottom free from the table, &c., and its ledge substantially horizontal, irrespective of the shape, form or configuration of said bottom.

7. An inkstand-holder comprising a body portion having an extended ledge and also having means for supporting the body portion free from the table, &c., a device for holding an inkstand supported by the ledge, and a clamping means for securing the supporting means and holding device to the ledge.

809,647. ELECTRIC CELL. KUHAIRO TSUKAMOTO, Tokyo, Japan. Filed Jan. 14, 1904. Serial No. 189,066.

Claim.—In an electric cell the combination of an outer casing having located therein a carbon tube containing graphite, manganese dioxid, potassium chlorid, potassium permanganate and ammonium chlorid, a fibrous substance bound around the carbon tube, and a mixture composed of ammonium chlorid, potassium chlorid, gypsum, mercuric sulfate, and dextrin located between the inner surface of the shell and the fibrous or blotting paper located around the carbon tube, substantially as and for the purpose specified.

809,648. FEED CONCENTRATOR. LEWIS R. TILLOTT, Angels Camp, Cal. Filed Feb. 6, 1904. Serial No. 192,269.

Claim.—1. In a concentrator, the combination of a shaft, means for revolving said shaft, a worm thereon, a frame, drums on said frame, an endless concentrating-belt around said drums, a worm-wheel meshing with said worm and operatively connected with one of said drums to revolve the same, and positive means independent of the connection with the worm-wheel for imparting a longitudinal reciprocation to said shaft, whereby is produced a comparatively rapid oscillation of the worm-wheel and a corresponding longitudinal reciprocation of the belt in addition to its slow advance, substantially as described.

2. In a concentrator, the combination of a shaft, means for revolving said shaft, a worm thereon, a frame, drums on said frame, an endless concentrating-belt around said drums, a worm-wheel meshing with said worm and operatively connected with one of said drums to revolve the same, and means for imparting a longitudinal reciprocation to said shaft, said means comprising a cam on said shaft, and a device engaging said cam, whereby is produced a comparatively rapid oscillation of the worm-wheel and a corresponding longitudinal reciprocation of the belt in addition to its slow advance, substantially as described.

3. In a concentrator, the combination of a shaft, means for revolving said shaft, a worm thereon, a frame, drums on said frame, an endless concentrating-belt around said drums, a worm-wheel meshing with said worm and operatively connected with one of said drums to revolve the same, and means for imparting a longitudinal reciprocation to said shaft, said means comprising a conical cam on said shaft, a roller engaging said cam, and means for adjusting said roller to and from the axis of the cam, whereby is produced a comparatively rapid oscillation of the worm-wheel and a corresponding longitudinal reciprocation of the belt in addition to its slow advance, substantially as described.

4. In a concentrator, the combination of a shaft, means for revolving said shaft, a worm thereon, a frame, drums on said frame, an endless concentrating-belt around said drums, a worm-wheel meshing with said worm and operatively connected with one of said drums to revolve the same, and means for imparting a longitudinal reciprocation to said shaft, said means comprising a conical cam on said shaft having a flattened central surface, a roller engaging said cam, and means for adjusting said roller to and from the axis of the cam, whereby is produced a comparatively rapid oscillation of the worm-wheel and a corresponding longitudinal reciprocation of the belt in addition to its slow advance, substantially as described.

5. The combination of a frame, a shaft mounted therein, a worm wheel on said shaft, a worm engaging said worm-wheel, a shaft for the worm, bearings therefor secured to said frame, said shaft being slidable in said bearings, means for turning the shaft in said bearings and positive means independent of the connection with the worm-wheel for reciprocating the shaft therein, whereby, in addition to the slow rotary movement of the worm-wheel shaft a comparatively rapid oscillating movement is imparted thereto, substantially as described.

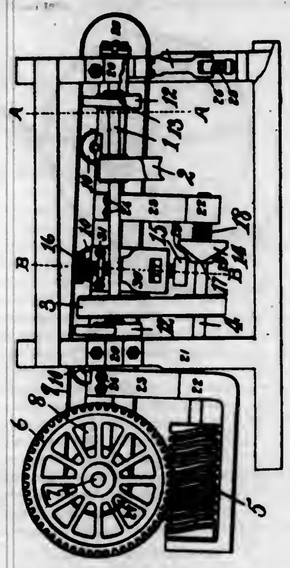

809,649. AUTOMATIC ATTACHMENT FOR CARBONATING APPARATUS. HENRY W. VAN DER VAART, San Francisco, Cal. Filed Apr. 11, 1905. Serial No. 254,996.

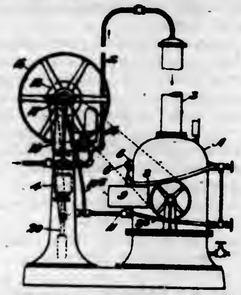

Claim.—A carbonating apparatus having in combination a fluid-chamber, a pump supplying said chamber, a lever fulcrumed between its ends, a weight adjustable on the lever at one side of its fulcrum-point, a chamber suspended from the lever at the opposite side of its fulcrum-point, pipes connecting the carbonating-chamber with opposite portions of the suspended chamber, a crank-shaft and connections by which the pump is driven, a pulley loose on said shaft and provided with a clutch member, a companion clutch member slidable on the shaft, a lever fulcrumed between its ends having one end engaging the slidable clutch member, a link connected to the opposite end of the last lever, a bell-crank lever having one arm connected to said link, and a link connecting the opposite arm of the bell-crank lever with an arm of the first lever.

809,650. COMBINED HOT-WATER BAG AND SYRINGE. MARGARET VAN TASSEL-BECK, Cleveland, Ohio, assignor of one-half to Elmer E. Bellamy, Cleveland, Ohio. Filed June 25, 1904. Serial No. 214,128.

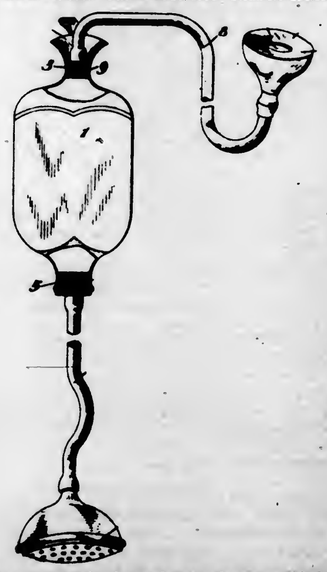

Claim.—As a new article of manufacture, the convertible hot-water bag, syringe and spray herein described, comprising a hot-water bag, flexible tubes for attachment to opposite ends thereof and respectively provided with a connection for a faucet, and a discharge-head, whereby a circulation directly from the faucet through the bag and the discharge-head may be obtained, and the force of the head of

water from the faucet, as well as the weight of water in the bag utilized, and stoppers for substitution for the said flexible tubes, to close the openings at the ends of the bag and enable the latter to be used for the purpose of a hot-water bag.

809,651. PROCESS FOR PRODUCING MULTICOLORED PHOTOGRAPHIC PROOFS. SOLON VATHIS, Paris, France. Filed July 26, 1905. Serial No. 271,622.

Claim.—1. A process for producing multicolored photographic proofs, consisting in exposing a sensitized surface, toning said surface, fixing the image thereon, and submitting said surface to the action of varying degrees of heat at the places where coloration is required at a minimum temperature of 55°, substantially as described.

2. A process for producing multicolored photographic proofs, consisting in exposing a sensitized surface, toning said surface in a solution of hydrochloric acid and chlorid of gold, fixing the image thereon, and submitting said surface to the action of varying degrees of heat at the places where coloration is required at a minimum temperature of 55°, substantially as described.

3 A process for producing multicolored photographic proofs, consisting in exposing a sensitized surface, toning said surface in a solution of hydrochloric acid and chlorid of gold, fixing the image thereon, and submitting said surface to the action of varying degrees of reflected heat at the places where coloration is required at a minimum temperature of 55°, substantially as described.

4. A process for producing multicolored photographic proofs, consisting in exposing a sensitized surface, toning said surface in a solution of hydrochloric acid and chlorid of gold, fixing the image thereon, submitting said surface to the action of varying degrees of heat at the places where coloration is required at a minimum temperature of 55°, and placing said proofs in water, substantially as described.

809,652. BUTTONHOLE. HENRY WALDEN, Philadelphia, Pa. Filed Nov. 1, 1904. Serial No. 231,009.

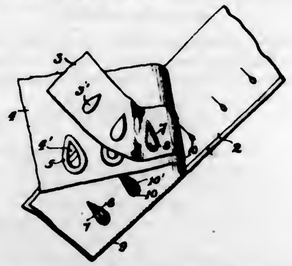

Claim.—1. A buttonhole-stay comprising a metallic stay having a hole therein, and a leather stay having a hole therein, said leather stay having a flap folded over said metallic stay, substantially as specified.

2. In a buttonhole, a stay having a hole therein, a leather member having a hole therein registering with the hole in said stay, means for securing said stay to said member, and a second leather member secured to said first member, said second member having a hole therein which registers with and partially covers the holes in said stay and first member, substantially as specified.

3. In a buttonhole, a sheet-metal stay having a hole therein, a lining and an interior reinforcing-piece having holes therein registering with the holes in said stay, means for fastening said elements together about said holes, and an outer piece joined to said lining and having a hole therein registering with the hole formed by joining said elements, substantially as specified.

809,653. APPARATUS FOR VENTILATING MINES. MICHAEL J. WARD, Rhinesville, Pa. Filed Apr. 11, 1904. Serial No. 202,627.

Claim.—1. An apparatus for ventilating mines comprising a fan and casing therefor, with openings in the sides thereof, curved flanges upon the opposite walls of said casing and of sufficient length to form closed compartments by the rotating blades of the fan, a nozzle adapted to direct compressed air into the space intermediate said flanges and the circumferential wall of the casing, the wall of the casing opposite the lower ends of said flanges being apertured, and a pipe leading away from the casing, as set forth.

2. An apparatus for ventilating mines comprising a casing, a shaft journaled in said casing, fan-blades upon said shaft, said blades having oppositely-disposed recesses cut in from the edges thereof, curved flanges projecting from the inner faces of the side walls of the casing over which said recesses pass as the blades rotate, a nozzle extending into a tubular projection of the casing and having an exit end adjacent to the upper ends of said flanges, the circumferential wall of the casing having an exit-aperture opposite the lower ends of said flanges, and a pipe leading from the casing, as set forth.

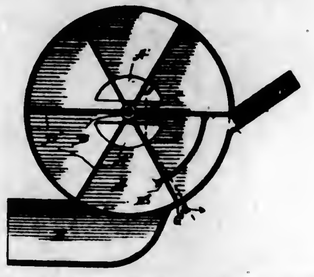

3. A ventilating apparatus for mines comprising a casing having a tubular extension upon the circumference thereof and an exit passage-way, the opposite walls of the casing having apertures for the inlet of fresh air, a shaft journaled in said casing, blades fixed to said shaft and having their opposite edges scalloped adjacent to their inner ends, each blade having elongated recesses cut in from the opposite edges thereof, intermediate the outer marginal edges of said scallops and the free ends of the blades, curved flanges oppositely disposed and fastened to the side walls of the casing and over which said recesses are adapted to pass, a nozzle positioned in said tubular extension of the casing, having an exit end opposite the upper ends of said flanges, the circumference of said casing having an exit-aperture opposite the lower ends of said flanges, as set forth.

809,654. EXHAUST-MUFFLER. LOUIS T. WEISS, Brooklyn, N. Y. Filed Aug. 18, 1905. Serial No. 274,742.

Claim.—1. An exhaust-muffler, having an expansion-chamber which receives the exhaust from the engine, said chamber having an outlet for the exhaust, and automatic means controlling said outlet and opening and closing the latter alternately.

2. An exhaust-muffler, having an expansion-chamber, which receives the exhaust from the engine and which has an outlet for the exhaust, and an automatic, moving valve which closes and opens said outlet alternately, said openings and closings corresponding to the times of the exhaust of the engine.

3. An exhaust-muffler, having a chamber open to the exhaust, said chamber having also an outlet for the exhaust, and a rotating, ported valve controlling the said outlet.

4. An exhaust-muffler, having a chamber open to the exhaust, said chamber having also an outlet for the exhaust, a moving valve controlling said outlet, and a spring which holds said valve yieldingly up to its seat, said spring being so disposed as to yieldingly oppose the pressure of the exhaust-gases.

5. An exhaust-muffler, having an expansion-chamber open to the exhaust, and said chamber having also an outlet-port 3 for the exhaust, a rotating arbor 6, a valve 4 on said arbor and provided with a port 5 adapted to be put into coincidence with the port 3 by rotation of the valve, and spring 10, which holds said valve yieldingly up to its seat.

809,655. AUTOMOBILE-BODY. ALLIE R. WELCH and FRED S. WELCH, Pontiac, Mich. Filed May 29, 1905. Serial No. 262,781.

Claim.—1. An inclosed carriage-body divisible along the line of the upper edges of the sides of the seats and back of the front and rear seat, substantially as shown and for the purpose described.

2. A carriage-body divisible along the line of the upper edges of the sides of the seats and back of the rear seat, and bolts extending from the top of the upper portion of the body and engaging the lower part of the body.

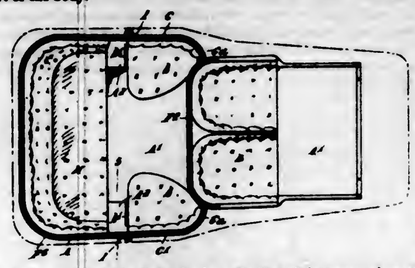

3. A carriage-body divisible along the line of the upper edges of the sides of the seats and back of the rear seat, and bolts extending from the top of the upper portion of the body within the wall thereof and engaging the lower part of the body.

4. A carriage-body provided with a rear inclosed portion extending laterally beyond the front portion, and a door hinged to the rear portion and bending inward to meet the front portion.

5. A carriage-body provided with a rear inclosed portion extending laterally beyond the front portion, and a door hinged to the rear portion and bending inward to meet the front portion, said door being provided with an inwardly-extending seat secured thereto.

6. In a carriage-body, the combination of a door having an inwardly-extending seat secured thereto, and means for securing said door when in its closed position, independent of the seat.

7. In a carriage-body, the combination of a door having an inwardly-extending seat secured thereto, a ledge upon said body, said door being provided with a portion adapted to pass over and rest upon said ledge when the door is closed.

8. In a carriage-body, the combination of a door having an inwardly-extending seat thereto, a ledge upon said body, said door being provided with a portion adapted to pass over and rest upon said ledge when the door is closed, and interlocking projections I.

9. In a carriage-body, the combination of a door having an inwardly-projecting seat, ledges A^1, A^2, said door being provided with portions adapted to pass over and rest upon said ledges, interlocking projections I, and means for securing said door in its closed position.

10. A carriage-body provided with a rear inclosed portion extending laterally beyond the front portion, a door having an inwardly-extending seat hinged to the rear portion and adapted to close against the forward portion.

809,656. AUTOMOBILE-FRAME. ALLIE R. WELCH and FRED S. WELCH, Pontiac, Mich. Filed May 29, 1905. Serial No. 262,782.

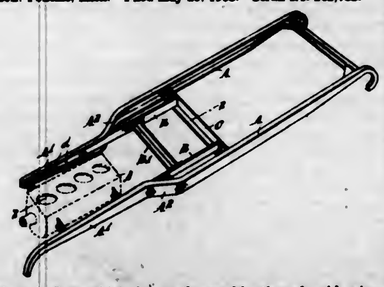

Claim.—1. In a vehicle-frame, the combination of a side piece bent inward for a portion of its length and a strip rigidly secured to the bent-in portion of said side piece, extending beyond said bent-in portion at a distance from said side piece and rigidly secured toward its end to said side piece.

2. In a vehicle-frame, the combination of two side pieces bent inward for adjacent portions of their lengths, a strip rigidly secured to the bent-in portion of each of said side pieces extending beyond said bent-in portion at a distance from said pieces and means for rigidly securing said strips together and to the side pieces at points remote from said bent-in portions of the side pieces.

3. In a vehicle-frame, the combination of two side pieces bent inward for adjacent portions of their lengths, a strip rigidly secured to the bent-in portion of each of said side pieces extending beyond said bent-in portion at a distance from said pieces and means for rigidly securing said strips together and to the side pieces at points remote from said bent-in portions of the side pieces, and a brace extending between said bent-in portions of the side pieces.

4. In a vehicle-frame, the combination of two side pieces bent inward for adjacent portions of their lengths, a strip rigidly secured to the bent-in portion of each of said side pieces extending beyond said bent-in portion at a distance from said pieces and means for securing said strips rigidly together and to the side pieces at points remote from said bent-in portions of the side pieces, and a brace extending between said strips.

5. In a vehicle-frame, the combination of two side pieces bent inward for adjacent portions of their lengths, a strip secured to the bent-in portion of each of said side pieces, extending beyond said bent-in portion at a distance from said pieces, means for securing said strips rigidly together and to the side pieces at points remote from said bent-in portions of the side pieces, and a crank-case secured to said bent-in portions of the side frames, and serving as a brace therefor.

6. In a vehicle-frame, the combination of a side piece U-shaped in cross-section bent inward for a portion of its length and a strip rigidly secured to the bent-in portion of said side piece within the hollow of the U-shaped cross-section with its edges abutting against the flanges, said strip extending beyond said bent-in portion at a distance from said side piece and rigidly secured toward its end to said side piece.

809,657. SOFA-BED. GEORGE N. WERNEL, Cincinnati, Ohio. Filed Aug. 14, 1905. Serial No. 274,089.

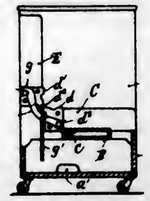

Claim.—1. In a sofa-bed the combination of a seat, a back, a hinge coupling the seat and the back, a latch pivoted to the seat and having a hook adapted to removably engage a projection upon the back, and a dependent rod pivoted to the latch for disengaging the latch from the projection on the back when the seat is raised.

2. In a sofa-bed the combination of a base, brackets secured to the base, a seat reciprocating in the brackets, a back, a hinge coupling the back and the seat, a latch pivoted to the member of the hinge attached to the seat and having a hook at the other end, a stud projecting from the member of the latch attached to the back and adapted to engage the hook, a block secured to the base, and a dependent rod pivoted to the latch and adapted to engage the block when the seat is brought forward and raised.

809,658. BRAKE-SHOE. HORACE L. WINSLOW, Chicago, Ill. Filed Feb. 17, 1905. Serial No. 245,909.

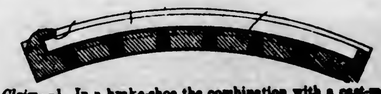

Claim.—1. In a brake-shoe the combination with a cast-metal body, of a strengthening-plate located at the back of said body, and a plurality of staggered projections extending from the longitudinal edges of said plate and embedded in said body.

2. In a brake-shoe the combination with a cast-metal body, of a strengthening-plate comprising parallel sections located at the back of said body, and projections extending from the longitudinal edges of the sections of said plate and embedded in said body.

3. In a brake-shoe the combination with a cast-metal body, of a strengthening-plate located at the back of said body, projections extending from said plate and embedded in said body, inserts in the wearing-surface of the shoe, and means for securing said inserts to said back plate.

4. In a brake-shoe the combination with a cast-metal body, of a strengthening-plate located at the back of said body, projections extending from the longitudinal edges of said plate and embedded in said body, and inserts in the wearing-surface of the shoe secured to said projections.

5. In a brake-shoe the combination with a cast-metal body, of a strengthening-plate located at the back of said body, projections extending from the longitudinal edges of said plate, and embedded in said body, said projections forming a dovetailed channel, inserts in the wearing-surface of the shoe, and dovetailed lugs on said inserts engaged with the channels between said projections.

6. In a brake-shoe the combination with a cast-metal body, of a strengthening-plate comprising parallel sections located at the back of said body, projections extending from the longitudinal edges of the parallel sections of said plate and embedded in said body, the projections on each section forming a dovetailed channel, inserts in the wearing-surface of the shoe, and dovetailed lugs on said inserts received within said channels.

7. In a brake-shoe the combination with a cast-metal body, of a strengthening back plate formed in two parts arranged end to end, outwardly-projecting ears formed integrally with the inner ends of the two parts of said plate, said ears having holes therethrough for the passage of a fastening-key.

8. In a brake-shoe the combination with a cast-metal body, of a strengthening back plate formed in two parts arranged end to end, outwardly-projecting ears formed integrally with the inner ends of the two parts of said plate, said ears having holes therethrough for the passage of a fastening-key, and strengthening-flanges formed integrally with the outer ends of said ears.

9. In a brake-shoe the combination with a cast-metal body and key-lug formed integrally therewith, of a strengthening back plate formed in two parts located at each side of said lug, outwardly-projecting ears formed integrally with the inner ends of the two parts of said plate, said ears having holes therethrough registering with the keyhole in said lug.

10. In a brake-shoe the combination with a cast-metal body, of a strengthening back plate formed in two parts arranged end to end, outwardly-projecting ears formed integrally with the inner ends of the two parts of said plate, said ears having holes therethrough for the passage of a fastening-key, each part of said plate comprising parallel sections and projections extending from the longitudinal edges of the parallel sections of said plate and embedded in said body.

11. In a brake-shoe the combination with a cast-metal body, of a strengthening back plate formed in two parts located end to end, inserts in the wearing-surface of the shoe and means for securing said inserts to said back plate.

12. In a brake-shoe the combination with a cast-metal body, of a strengthening back plate formed in two parts located end to end, outwardly-projecting ears formed integrally with the inner ends of the two parts of said plate, said ears having holes therethrough for the passage of a fastening-key, each part of said plate comprising parallel sections, projections extending from the longitudinal edges of each section of the two parts of said plate and embedded in said body, inserts in the wearing-surface of the shoe, and means for securing said inserts to said projections.

13. In a brake-shoe the combination with a cast-metal body, of a strengthening-plate located at the back of said body, and inserts secured to said plate and forming portions of the wearing-surface of the shoe.

14. A brake-shoe comprising a back plate, a plurality of inserts carried by said plate, and a body cast around and locked to said inserts.

15. A brake-shoe comprising a back plate, depending lips on the back plate, inserts having a dovetailed connection with said lips, and a body having a dovetailed connection with said inserts.

16. A brake-shoe comprising a back plate, a body, an attaching-lug integral with the body and made in the shape of a hook, and a hook on the plate forming an inside lining for said lug.

17. A brake-shoe comprising a back plate, a body cast on the back plate, an attaching-hook on said back plate, and a lug cast integrally with said body engaging the outer surface of said hook to strengthen the same.

809,659. **PURIFIER FOR GAS.** BERNE C. WESTWORTH, Deer Isle, Me. Filed June 16, 1905. Serial No. 265,552.

Claim.—1. A purifier for gas comprising a filter-box, a rotary valve fast to said box and having an inlet-passage leading through said valve into said box and an outlet-passage leading from said box out through said valve, a valve-casing having a cylindrical chamber in which said valve is journaled, an inlet-passage through the valve-casing with which a feed-pipe and the inlet-passage in the valve are adapted to connect, an outlet-passage through the valve-casing with which the outlet-passage in the valve and a burner-tube are adapted to connect, means for rotating said valve and filter-box to close said inlet and outlet passages, and a drain-passage through said valve-casing to the outside air with which said gas-outlet passage in the valve connects when the valve and box are reversed to close the gas-passages.

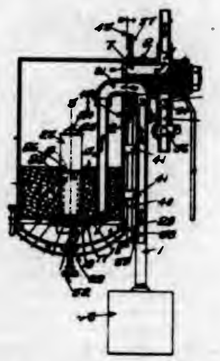

2. A purifier for gas comprising a reversible filter-box, a valve-casing, a valve connected with said box and having a passage leading from the feed-pipe through the valve-casing and valve into said filter-box and a passage leading from said filter-box through the valve and casing into a house-supply pipe, means for reversing said box and valve, thereby closing said valve inlets and outlets, and a drain-passage through the valve-casing with which one of the passages in the valve connects when the valve and filter-box are reversed.

3. A purifier for gas having a rotatable filter-box, an opening in the bottom of the box, a cover for said opening, a valve connected with the upper part of said box and having a passage connecting therethrough with an inlet-pipe, a passage leading therethrough to an outlet-pipe, a diaphragm dividing the filter-box into two chambers, a pipe leading from said inlet-passage of the valve into the lower chamber, a pipe leading from said lower chamber and projecting up some distance into the upper chamber, perforations in the upper portion of said second tube, a filtering material in said upper chamber below said perforations, a thimble over the upper end of said second pipe and extending down into said filtering material, means for turning said filter-box and valve to reverse the ends of the box, and close the gas inlets and outlets of the valve, and an outlet-passage for drawing off the filtering material from the box when the box is in the said reversed position.

4. A purifier for gas having a filter-box, a valve connected with the upper part of said box and having a passage connecting therethrough with an inlet-pipe, a passage leading therethrough to an outlet-pipe, a diaphragm dividing the filter-box into two chambers, a pipe leading from said inlet-passage of the valve into the lower chamber, a pipe leading from said lower chamber and projecting up some distance into the upper chamber, perforations in the upper portion of said second tube, a filtering material in said upper chamber below said perforations, and a thimble over the upper end of said second pipe and extending down into said filtering material.

5. A purifier for gas having a filter-box, a valve connected with the upper part of said box and having a passage connecting therethrough with an inlet-pipe, a passage leading therethrough to an outlet-pipe, a diaphragm dividing the filter-box into two chambers, a pipe leading from said inlet-passage of the valve into the lower chamber, a pipe leading from said lower chamber and projecting up some distance into the upper chamber, perforations in the upper portion of said second tube, a filtering material in said upper chamber below said perforations, and a thimble over the upper end of said second pipe and extending down into said filtering material, said thimble being formed with teeth on its lower end.

6. A purifier for gas having a rotatable filter-box, an opening in the bottom of the box, a cover for said opening, a valve connected with the upper part of said box and having a passage connecting therethrough with an inlet-pipe, a passage leading therethrough to an outlet-pipe, a diaphragm dividing the filter-box into two chambers, a pipe leading from said inlet-passage of the valve into the lower chamber, a pipe leading from said lower chamber and projecting up some distance into the upper chamber, perforations in the upper portion of said second tube, a filtering material in said upper chamber, a tube of fabric inclosing the perforated portion of the pipe, and a thimble over the upper end of said pipe outside of said fabric tube and extending down into the filtering material.

7. A purifying apparatus for gas having a box divided by a diaphragm into an upper and lower chamber, an inlet-pipe for the impure gas leading into the lower chamber, an upright tube leading from the interior of the lower chamber up some distance into the upper chamber, perforations in the upper portion of the said tube, filtering material partially filling the upper chamber but not extending up to the said perforations in said tube, a thimble or hood on the upper end of said tube and extending down into said filtering material, and an outlet for the gas from the filter-box above the filtering material.

8. A purifying apparatus for gas having a box divided by a diaphragm into an upper and lower chamber, an inlet-pipe for the impure gas leading into the lower chamber, an upright tube leading from the interior of the lower chamber up some distance into the upper chamber, perforations in the upper portion of the said tube, filtering material partially filling the upper chamber but not extending up to the said perforations in said tube, a casing of filtering fabric surrounding the perforated portion of said tube, and a thimble or hood on the upper end outside of said fabric tube and extending down into the filtering material, and an outlet for the gas from the filter-box after it has passed through the filtering material.

9. A reversible filter-box for purifying gas having an opening in the lower end of the box, a cover for said opening, means for clamping said cover in a closed position with gas-tight joint, a diaphragm dividing the box into an upper and lower chamber, an inlet-tube for the impure gas leading into the lower chamber, a removable pipe having a screw-threaded connection with a socket in said diaphragm and extending up into the said upper chamber, an opening from the lower chamber into said pipe, ports in the upper portion of said pipe opening into the upper chamber, a filtering material in said upper chamber, but not reaching up to said ports, and a deflector on the upper end of said pipe extending down into said filtering material, means for inverting said box and closing the inlet and outlet for the gas, and an outlet-passage which connects with the portion of the box which becomes the lower end when the box is in the inverted position.

10. A rotary filter-box for purifying gas having an opening in the lower end of the box, a cover for said opening, a hinged clamp which holds said cover closed, means for turning said box into an inverted position, a slide-rod hinged at one end to the hinge edge of said clamp, and forked at its other end, and a notched plate with which said fork engages when the said rod is moved by the opening of said clamp.

809,660. **INTERCHANGEABLE LOCK AND CHAIN STITCH SEWING-MACHINE.** WILLIAM M. ASHERMAN, New Haven, Conn., assignor to The Edwin J. Teaf Company, New Haven, Conn., a Corporation of New Jersey. Filed May 2, 1904. Serial No. 206,883.

Claim.—1. In a sewing-machine, the combination with a reciprocating needle, a loop-taker, a forked loop-holder operative for receiving the needle-thread loop after it has been released by the loop-taker and holding the same in an open or distended condition across the path of the needle and thereafter releasing the loop subsequent to the passage thereinto of the needle, and means for actuating the loop-holder, of a guard coöperating with the said loop-holder when in loop-holding position for retaining the thread-loop thereon.

2. In a sewing-machine, the combination with a reciprocating needle, a loop-taker, a forked loop-holder operative for receiving the needle-thread loop after it has been released by the loop-taker and holding the same in an open or distended condition across the path of the needle and thereafter releasing the loop subsequent to the passage thereinto of the needle, and means for actuating the loop-holder, of a stationary guard coöperating with the said loop-holder when in loop-holding position for retaining the thread-loop thereon.

3. In a sewing-machine, the combination with a reciprocating needle, a loop-taker, a forked loop-holder operative for receiving the needle-thread loop after it has been released by the loop-taker and holding the same in an open or distended condition across the path of the needle and thereafter releasing the loop subsequent to the passage thereinto of the needle, and means for actuating the loop-holder, of a guard carried by the needle-plate of the sewing-machine coöperating with the said loop-holder when in loop-holding position for retaining the thread-loop thereon.

4. In a sewing-machine, the combination with a reciprocating needle, a loop-taker, a reciprocating forked loop-holder operative for receiving the needle-thread loop after it has been released by the loop-taker and holding the same in an open or distended condition across the path of the needle and thereafter releasing the loop subsequent to the passage thereinto of the needle, and means for actuating the loop-holder, of a stationary guard coöperating with the said loop-holder when in loop-holding position for retaining the thread-loop thereon.

5. In a sewing-machine, the combination with the needle and a loop-taker, of a forked loop-holder operative for receiving the needle-thread loop after it has been released by the loop-taker and holding the same in an open or distended condition across the path of the needle and thereafter releasing the loop subsequent to the passage thereinto of the needle, means for actuating the loop-holder, and a cam-lever carried by said loop-holder for coöperating with a stationary part of the machine to hold the loop-holder in an inoperative position.

6. In a sewing-machine, the combinaton with the needle and a loop-taker, of a forked loop-hoder operative for receiving the needle-thread loop after it has been released by the loop-taker and holding the same in an open or distended condition across the path of the needle and thereafter releasing the loop subsequent to the passage thereinto of the needle, a rock-shaft carrying said loop-holder, and means for operating said rock-shaft.

7. In a sewing-machine, the combination with the needle and a loop-taker, of a forked loop-holder operative for receiving the needle-thread loop after it has been released by the loop-taker and holding the same in an open or distended condition across the path of the needle and thereafter releasing the loop subsequent to the passage thereinto of the needle, a rock-shaft carrying said loop-holder and having a crank-arm, and means for engaging said crank-arm to operate the rock-shaft.

8. In a sewing-machine, the combination with the bed-plate thereof having a hanger at its under side, a rotary loop-taker supported in said hanger, and a reciprocating needle, of a forked loop-holder operative for receiving the needle-thread loop after it has been released by the loop-taker and holding the same in an open or distended condition across the path of the needle and thereafter releasing the loop subsequent to the passage thereinto of the needle, a rock-shaft supported by the hanger and having the said loop-holder and a crank-arm attached thereto at opposite sides of said hanger, and means for engaging said crank-arm to operate the rock-shaft and connected loop-holder.

809,661. **FEEDING MECHANISM FOR SEWING-MACHINES.** WILLIAM M. ASHERMAN, New Haven, Conn., assignor to The Edwin J. Teaf Company, New Haven, Conn., a Corporation of New Jersey. Filed May 4, 1904. Serial No. 206,580.

Claim.—1. In a sewing-machine, a feed device, means for imparting a horizontal movement to said feed device comprising a reciprocatory actuating device, a rock-shaft having two arms one of which is connected with the feed device, a toggle having connection with the second rock-shaft arm, and means including a pivoted lever and a plurality of links operatively connecting the said actuating device and the said toggle, and means for imparting a vertical movement to the feed device.

2. In a sewing-machine, a feed device, means for imparting a horizontal movement to said feed device comprising a reciprocatory actuating device, a rock-shaft having two arms one of which is connected with the feed device, a toggle having connection with the second rock-shaft arm, and a pivoted lever having its opposite ends

operatively connected through the medium of links with the said actuating device and the said toggle respectively, and means for imparting a vertical movement to the feed device.

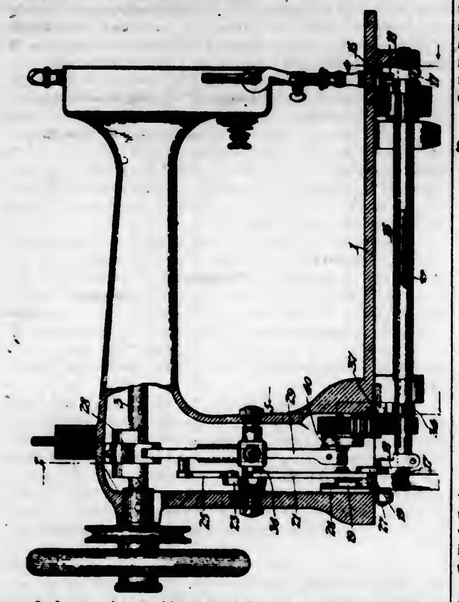

3. In a sewing-machine, a feed device, means for imparting a horizontal movement to said feed device comprising a driving-shaft, a pitman-lever operated from said shaft, a rock-shaft having two arms, one of which is connected with the feed device, a toggle having connection with the second rock-shaft arm, and a pivoted lever having connection with the pitman-lever through the medium of a link and also having connection with said toggle through the medium of a second link, and means for imparting a vertical movement to the feed device.

4. In a sewing-machine, a feed device, means for imparting a horizontal movement to said feed device comprising a driving-shaft, a pitman operated from said shaft and forming part of the shuttle-actuating mechanism, a rock-shaft having two arms one of which is connected with the feed device, a toggle having connection at one end with the second arm of the rock-shaft and at its opposite end having connection with an adjustable support, and a pivoted lever having one arm thereof connected with the said pitman through the medium of a link and its other arm connected with the said toggle through the medium of a second link, and means for imparting a vertical movement to the feed device.

5. In a sewing-machine, a feed device, means for imparting a horizontal movement to said feed device comprising a rock-shaft having two arms one of which is connected with the feed device, a toggle having connection with the second rock-shaft arm, a pivoted lever having connection with said toggle through the medium of a link, and means for actuating said lever and moving the same and the connected link to and from a position at or adjacent to a dead-center, and means for imparting a vertical movement to the feed device.

809,662. **INHALER.** JOSHUA BARKER, New York, N. Y. Filed Aug. 11, 1905. Serial No. 273,701.

Claim.—1. In an inhaler, the combination of a casing; a perforate receptacle within said casing; a partition extending between said receptacle and casing, the latter being provided with an opening on each side of said partition.

2. In an inhaler, the combination of a casing; a perforate receptacle within said casing; a partition extending between said casing and said receptacle; another perforate receptacle within said casing; another partition extending between said casing and said last-named receptacle; the casing being provided with an opening where the said receptacles adjoin, and with further openings located at the other ends of said receptacles.

809,663. **ICE-CREAM MOLD AND DIPPER.** ARTHUR H. BENNETT, Buffalo, N. Y., assignor to The Bennett Manufacturing Company, Buffalo, N. Y., a Corporation of South Dakota. Filed Feb. 10, 1905. Serial No. 244,999.

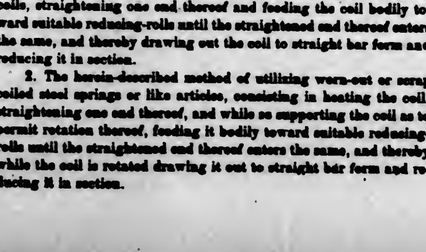

Claim.—1. In an ice-cream dipper, the combination of a mold or vessel, a handle extending therefrom and having a shank secured to the side of the vessel and provided with an angular eye or washer which extends across the closed end of the vessel, a scraper arranged in the vessel, and a spindle connected with the scraper and passing through said eye or washer, substantially as set forth.

2. In an ice-cream dipper, the combination of a mold or vessel, a handle extending therefrom and having a double shank secured to the side of the vessel and provided with an angular eye which is arranged at the closed end of the vessel, said handle, shank and eye being formed of a continuous piece of wire, and a rotary scraper having an operating-spindle passing through the closed end of the vessel and said eye, substantially as set forth.

3. In an ice-cream dipper, the combination of a mold or vessel, a handle extending therefrom and having a double shank secured to the side of the vessel and terminating in an eye arranged substantially parallel with the handle and secured to the closed end of the vessel, said handle, shank and eye being bent from a single piece of wire the end portions of which are curved to form the eye, and a rotary scraper having an operating-spindle passing through the closed end of the vessel and said eye, substantially as set forth.

4. In an ice-cream dipper, the combination of a mold or vessel, a scraper arranged therein, a spindle connected with the scraper and passing through the closed end of the vessel, a thumb-nut applied to the projecting end of the spindle, and a stop-screw engaging the bore of the nut and bearing against the spindle, substantially as set forth.

5. In an ice-cream dipper, the combination of a mold or vessel, a scraper arranged therein, a spindle connected with the scraper and passing through the closed end of the vessel, the spindle having a tapered outer end, a thumb-nut applied to the protecting end of the spindle, and a locking-screw engaging the bore of the nut and having a split inner end adapted to be expanded by the tapered end of the spindle, substantially as set forth.

809,664. **METHOD OF UTILIZING WORN-OUT RAILROAD OR LIKE SPIRAL STEEL SPRINGS.** JOHN BERGMANN, Pittsburg, Pa. Filed Mar. 9, 1904. Serial No. 197,266.

Claim.—1. The herein-described method of utilizing worn-out or scrap coiled steel springs or like articles, consisting in heating the coils, straightening one end thereof and feeding the coil bodily toward suitable reducing-rolls until the straightened end thereof enters the same, and thereby drawing out the coil to straight bar form and reducing it in section.

2. The herein-described method of utilizing worn-out or scrap coiled steel springs or like articles, consisting in heating the coil, straightening one end thereof, and while so supporting the coil as to permit rotation thereof, feeding it bodily toward suitable reducing-rolls until the straightened end thereof enters the same, and thereby while the coil is rotated drawing it out to straight bar form and reducing it in section.

809,664

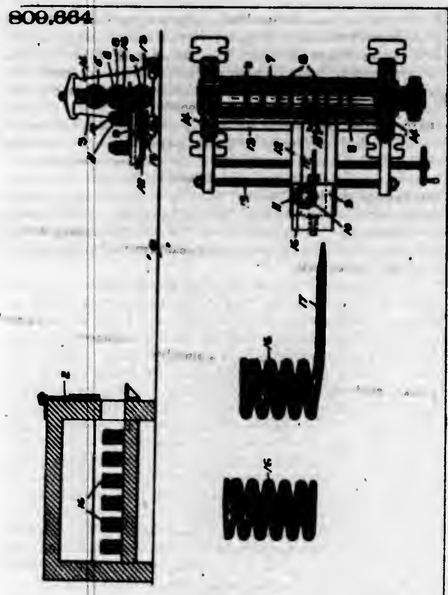

809,665. **HOLDER FOR MATCH-BOXES.** JOHN BERRYMAN, Clifton, Bristol, England. Filed Sept. 1, 1905. Serial No. 276,705.

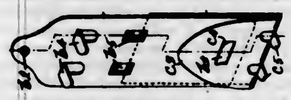

Claim.—1. A match-box holder, comprising top and bottom parts, the top part comprising a plate provided near its upper end with forwardly-directed lugs and at a predetermined distance below said lugs with backwardly and downwardly directed tongues, said plate being also provided near its lower end with a forwardly and upwardly directed tongue; and the bottom part being also composed of a plate the lower end of which is bent forwardly and upwardly to form a spring-tongue having a transverse opening, and said bottom part being also provided at its lower end with forwardly-directed lugs, substantially as shown and described.

2. A match-box holder, composed of top and bottom parts, the top part being composed of a plate provided at its upper end with forwardly-directed lugs and beneath said lugs with backwardly and downwardly directed tongues; and the bottom part being also composed of a plate having forwardly-directed lugs at its lower end and provided with a forwardly and upwardly directed spring-tongue, and means for locking the lower end of the top part and said spring-tongue together, substantially as shown and described.

809,666. **WHEEL-HUB.** CHARLES C. BRADANT and WILLIAM C. BRADFORD, Alpena, Mich. Filed Apr. 12, 1905. Serial No. 255,132.

Claim.—1. In a wheel-hub, the combination of a central portion, a casing loosely surrounding the said central portion, a spring contained in the casing and interposed between the same and the central portion for sustaining said central portion and preventing the transmission of shock and jar thereto, antifriction devices interposed between the said spring and the central portion, antifriction devices interposed between the spring and the casing, and one or more other springs interposed between and connected to the central portion and the casing and adapted to connect the casing and the central portion so as to yieldingly transmit motion from one to the other.

2. In a wheel-hub, the combination of a central portion, a casing loosely surrounding the said central portion, a spring contained in the casing and arranged between the casing and the central portion and free from one of said parts; the said spring being designed to sustain the central portion and prevent the transmission of shock and jar thereto, and one or more other springs interposed between and fixed to the central portion and the part of the casing surrounding the central portion so as to transmit motion from the former to the latter.

3. In a wheel-hub, the combination of a central portion, a casing loosely surrounding the said central portion, a spring contained in the casing and arranged between the casing and the central portion and free from one of said parts; the said spring being designed to sustain the central portion and prevent the transmission of shock and jar thereto, and other springs interposed between the central portion and the casing; the latter springs having bights at their inner ends provided with lateral trunnions journaled in the central portion and also having their outer ends connected to the casing.

4. In a wheel-hub, the combination of a central portion, a casing loosely surrounding the said central portion, an annulus arranged in the casing, antifriction devices interposed between the annulus and the casing, a sleeve surrounding the central portion, antifriction devices interposed between the sleeve and the central portion, a coiled spring surrounding the sleeve and connected to the sleeve and the annulus, and other springs arranged at the side of the coiled spring and interposed between and connected to the central portion and the casing.

5. In a wheel-hub, the combination of a central portion having a collar provided with transverse sockets, a washer removably secured on said central portion and having transverse sockets, a casing loosely surrounding the central portion and having interior teats or projections, and springs having apertures receiving said teats or projections and also having trunnions disposed in the sockets of the collar and washer.

6. In a wheel-hub, the combination of a central portion having a collar provided with transverse sockets, and also having a shoulder *p* and exterior threads *q*, a nut mounted on said central portion in engagement with the thread *q* thereof and bearing a collar, a washer interposed between said nut and the shoulder *p*, and having transverse sockets, a ring, of yielding material, surrounding the nut and interposed between the collar thereon and the washer, a casing loosely surrounding the central portion and having interior teats or projections, a flexible, bellows-like wall connecting the ring and the casing, springs having apertures receiving the teats or projections of the casing and also having lateral trunnions disposed in the sockets of the collar and washer, and a coiled spring arranged in the casing alongside the first-mentioned springs and surrounding the central portion and interposed between the same and the casing.

809,667. **GUARD FOR VENT-PIPES.** CORNELIUS H. BRESH New York, N. Y. Filed Nov. 18, 1903. Serial No. 181,596.

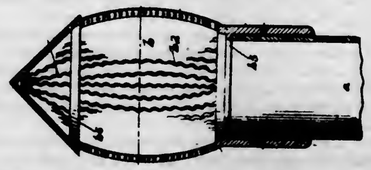

Claim.—1. A guard for vent-pipes, comprising a plurality of vertically-disposed ribs or bars connected at their lower ends with a circular bottom portion, adapted to be placed on a vent or ventilating pipe, and at their upper ends with a conical top having similar ribs or bars all of said ribs or bars being corrugated, substantially as described.

2. A guard for vent-pipes, comprising a body portion composed of a plurality of vertically-arranged flat ribs or bars, having their greatest extent in a radial direction, said ribs or bars being connected at their lower ends with a pipe member adapted to be secured to a vent or ventilating pipe and at their upper ends with a bend forming

the lower part of a conical top having similarly-disposed flat bars, all of said ribs or bars being corrugated, substantially as described.

3. A guard for vent-pipes, comprising a bottom portion of unbroken circular form, a body portion composed of flat ribs or bars having their greatest extent in a radial direction and a conical top portion having similarly-disposed flat bars, the top bars not being continuous with those of the body portion but united thereto by a ring or band to which both series of bars are connected, the outer surface of the top bars being flush with the outer surface of the said ring or band substantially as described.

809,668. HEDDLE-MAKING MACHINE. EDMOND CHARPENTIER and JOSEPH REMBLER, Verviers, Belgium. Filed May 29, 1905. Serial No. 262,269.

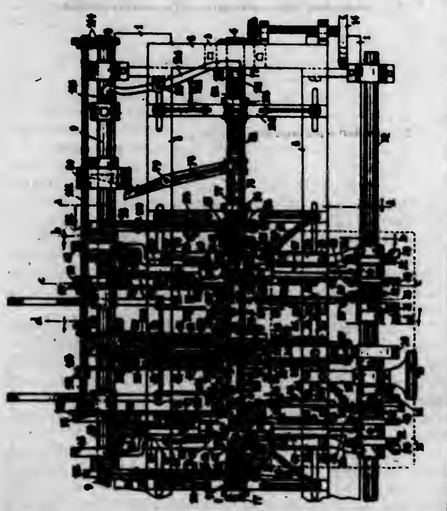

Claim.—1. In a machine for manufacturing metallic healds for looms by means of blanks formed of a double wire section, previously cut to the desired length, the combination with a suitable frame, a main shaft arranged in the center line and above said frame, a cam-shaft on each side and above said main shaft, and a secondary frame above the main frame; of a plurality of reciprocating and tipping forks adapted to receive the blanks one by one, a plurality of movable claws, and stationary supports adapted to receive the blanks from said tipping forks and hold the same during the formation of the eyes of the heald, means for reciprocating and tipping said forks, means for rotating said claws; longitudinally-movable spindles in line with said stationary supports, eye-forming studs carried thereby, reciprocating means for folding the ends of the blank around said studs, longitudinally-reciprocating matrices adapted to be brought over said studs after the folding of the ends of the blank, pairs of oppositely-arranged claws adapted to clamp between them the portions of the blank adjacent to the extreme eyes of the heald, means for rotating said studs and matrices for twisting the eyes of the heald, means for simultaneously forming the central eye of the heald, means for disengaging the completed heald from the eye-forming studs, and means for taking the completed heald from said retaining-claws, substantially as set forth.

2. In a machine for manufacturing metallic healds of the class described, the combination with a main frame, a main shaft arranged in the center line and above said frame, a cam-shaft on each side of and above said main shaft and suitable connections between the latter and the cam-shafts; of a plurality of reciprocating and tipping forks adapted to receive one blank at a time, means on one of said cam-shafts for reciprocating and tipping said forks, a plurality of oppositely-arranged coöperating claws, two suitable supports carried by certain claws and adapted to receive the blank from said forks when tipped and hold the same during the formation of the heald, means on the cam-shafts for moving said claws toward each other when the blank is received upon said supports and between said claws, suitable guides for the ends of the blank, eye-forming studs arranged in line with said supports and adapted to be engaged by the end portions of the blank, reciprocating slide-blocks near said guides, horizontally-swinging levers on said slide-blocks, adapted to engage the end portions of the blank and fold the same around the eye-forming studs, oppositely-arranged means for closing the eyes formed around said studs, reciprocating coöperating claws adapted to clamp between them the portions of the blank adjacent to the extreme eyes, means for forming simultaneously the central eye of the heald between the stationary supports, means for twisting the portions of the heald adjacent to the extreme eyes, means for twisting the portions of the blank adjacent to the central eye, means for causing the several pairs of claws to produce a supplemental clamping action upon the blank during the twisting thereof, means for disengaging the completed heald from the eye-forming devices, and means for taking the completed heald from said supports, substantially as set forth.

3. In a machine for manufacturing metallic healds of the class described, the combination with a main frame, a main shaft arranged in the center line and above said frame, a cam-shaft on each side of and above said main shaft, and suitable connections between the latter and the cam-shafts; of a plurality of reciprocating and tipping forks adapted to receive one blank at a time, means on one of said cam-shafts for reciprocating and tipping said forks, a plurality of oppositely-arranged coöperating claws, horizontally-reciprocating slide-blocks carrying said claws, stationary guideways for said slide-blocks, cams for reciprocating the same toward and apart from each other, means for causing the claws to produce an elastic pressure upon the blank between them, fork-shaped supports carried by certain claws and adapted to receive the blank from the aforesaid forks so that the same lies between the claws and is held by the latter during the formation of the heald, suitable guides for the ends of the blank, eye-forming studs arranged in line with said supports and adapted to be engaged by the end portion of the blank, reciprocating slide-blocks near said guides, horizontally-swinging levers on said slide-blocks adapted to engage the end portions of the blank and fold the same around the eye-forming studs, oppositely-arranged means for closing the eyes formed around said studs, reciprocating coöperating claws adapted to clamp between them the portions of the blank adjacent to the extreme eyes, means for forming simultaneously the central eye of the heald between the stationary supports, means for twisting the portions of the heald adjacent to the extreme eyes, means for twisting the portions of the blank adjacent to the central eye, means for causing the several pairs of claws to produce a supplemental clamping action upon the blank during the twisting thereof, means for disengaging the completed heald from the eye-forming devices, and means for taking the completed heald from said supports, substantially as set forth.

4. In a machine for manufacturing metallic healds of the class described, the combination with a main frame, a main shaft arranged in the center line and above said frame, a cam-shaft on each side of and above said main shaft and suitable connections between the latter and the cam-shafts; of a plurality of reciprocating and tipping forks adapted to receive one blank at a time, means on one of said cam-shafts for reciprocating and tipping said forks, a plurality of oppositely-arranged coöperating claws, horizontally-reciprocating slide-blocks carrying said claws, stationary guideways for said slide-blocks, cams for reciprocating the same toward and apart from each other, means for causing the claws to produce an elastic pressure upon the blank between them, fork-shaped supports carried by certain claws and adapted to receive the blank from the aforesaid forks so that the same lies between the claws and is held by the latter during the formation of the heald, a toothed pinion journaled on a stationary part between said claws, means carried by said pinion and adapted to separate the wires of the blank for the formation of the central eye of the heald, means for rotating said pinion at a given moment for twisting the portions of the blank adjacent to said central eye, suitable guides for the ends of the blank, eye-forming studs arranged in line with said supports and adapted to be engaged by the end portions of the blank, means for folding said end portions around said studs for the formation of the extreme eyes of the heald, oppositely-arranged means for closing the eyes formed around said studs, means for clamping between them the end portions of the blank, means for twisting the portions of the blank adjacent to the extreme eyes, means for causing the several pairs of clamping means to produce a supplemental clamping action during the twisting of the several portions of the blank, means for disengaging the completed heald from the eye-forming devices, and means for taking the completed heald automatically from the supports carried by the central claws, substantially as set forth.

5. In a machine for manufacturing metallic healds of the class described, the combination with a main frame, a main shaft arranged in the center line and above said frame, a cam-shaft on each side of and above said main shaft and suitable connections between the latter and the cam-shafts; of a plurality of reciprocating and tipping forks adapted to receive one blank at a time, means on one of said cam-shafts for reciprocating and tipping said forks, a plurality of oppositely-arranged coöperating claws, horizontally-reciprocating slide-blocks carrying said claws, stationary guideways for said slide-blocks, cams for reciprocating the same toward and apart from each other, means for causing the claws to produce an elastic pressure upon the blank between them, fork-shaped supports carried by certain claws and adapted to receive the blank from the aforesaid forks so that the same lies between the claws and is held by the latter during the formation of the heald, a toothed pinion journaled on a stationary part between said claws, means carried by said pinion and adapted to separate the wires of the blank for the formation of the central eye of the heald, means for rotating said pinion at a given moment for twisting the portions of the blank adjacent to said central eye, suitable guides for the ends of the blank, eye-forming studs arranged in line with said supports and adapted to be engaged by the end portions of the blank, means for folding said end portions around said studs for the formation of the extreme eyes of the heald, oppositely-arranged means for closing the eyes formed around said studs, means for clamping between them the end portions of the blank, means for twisting the portions of the blank adjacent to the extreme eyes, means for causing the several pairs of clamping means to produce a supplemental clamping action during the twisting of the several portions of the blank, means for disengaging the completed heald from the eye-forming devices, and means for taking the completed heald automatically from the supports carried by the central claws, substantially as set forth.

6. In a machine for manufacturing metallic healds of the class described, the combination with a main frame, a main shaft arranged in the center line and above said frame, a cam-shaft on each side of and above said main shaft and suitable connections between the latter and the cam-shafts; of a plurality of reciprocating and tipping forks adapted to receive one blank at a time, means on one of said cam-shafts for reciprocating and tipping said forks, a plurality of oppositely-arranged coöperating claws, horizontally-reciprocating slide-blocks carrying said claws, stationary guideways for said slide-blocks, cams for reciprocating the same toward and apart from each other, means for causing the claws to produce an elastic pressure upon the blank between them, fork-shaped supports carried by certain claws and adapted to receive the blank from the aforesaid forks so that the same lies between the claws and is held by the latter during the formation of the heald, a toothed pinion journaled on a stationary part between said claws, a pointed pin arranged horizontally in the interior of the hub of said pinion, a horizontal slot in the latter through which the blank is brought into engagement with said pointed pin when the blank-carrying supports are moved forwardly, means for rotating said pinion at a given moment for twisting the portion of the blank adjacent to said central eye, suitable guides for the ends of the blank, eye-forming studs arranged in line with said supports and adapted to be engaged by the end portions of the blank, means for folding said end portions around said studs for the formation of the extreme eyes of the heald, oppositely-arranged means for closing the eyes formed around said studs, means for clamping between them the end portions of the blank, means for twisting the portions of the blank adjacent to the extreme eyes, means for causing the several pairs of clamping means to produce a supplemental clamping action during the twisting of the several portions of the blank, means for disengaging the completed heald from the eye-forming devices, and means for taking the completed heald automatically from the supports carried by the central claws, substantially as set forth.

7. In a machine for manufacturing metallic healds of the class described, the combination with a main frame, a main shaft arranged in the center line and above said frame, a cam-shaft on each side of and above said main shaft and suitable connections between the latter and the cam-shafts; of a plurality of reciprocating and tipping forks adapted to receive one blank at a time, means on one of said cam-shafts for reciprocating and tipping said forks, a plurality of oppositely-arranged coöperating claws, horizontally-reciprocating slide-blocks carrying said claws, stationary guideways for said slide-blocks, cams for reciprocating the same toward and apart from each other, means for causing the claws to produce an elastic pressure upon the blank between them, fork-shaped supports carried by certain claws and adapted to receive the blank from the aforesaid forks so that the same lies between the claws and is held by the latter during the formation of the heald, a toothed pinion journaled on a stationary part between said claws, means carried by said pinion and adapted to separate the wires of the blank for the formation of the central eye of the heald, a circular disk arranged on the main shaft of the machine and rotating with the same, a number of teeth on the periphery of said disk and adapted to mesh with said toothed pinion at a given moment to rotate the same and twist the portions of the blank adjacent to said central eye, means for temporarily locking the toothed pinion against rotation, suitable guides for the ends of the blank, eye-forming studs arranged in line with said supports and adapted to be engaged by the end portions of the blank, means for folding said end portions around said studs for the formation of the extreme eyes of the heald, oppositely-arranged means for closing the eyes formed around said studs, means for clamping between them the end portions of the blank, means for twisting the portions of the blank adjacent to the extreme eyes, means for causing the several pairs of clamping means to produce a supplemental clamping action during the twisting of the several portions of the blank, means for disengaging the completed heald from the eye-forming devices, and means for taking the completed heald automatically from the supports carried by the central claws, substantially as set forth.

8. In a machine for manufacturing metallic healds of the class described, the combination with a main frame, a main shaft arranged in the center line and above said frame, a cam-shaft on each side of and above said main shaft, and suitable connections between the latter and the cam-shafts; of a plurality of reciprocating and tipping forks adapted to receive one blank at a time, means on one of said cam-shafts for successively reciprocating and tipping said forks, a plurality of oppositely-arranged coöperating claws, horizontally-reciprocating slide-blocks carrying said claws, stationary guideways for said slide-blocks, a cam on one cam-shaft for actuating the claws on one side against the action of suitable springs, said springs, a suitable cam on the main shaft, a vertically-swinging lever adapted to be engaged at a given moment by said cam and press the claws on the other side strongly against the opposite claws, fork-shaped supports carried by certain claws and adapted to receive the blank from the aforesaid forks so that the same lies between the claws and is held by the latter during the formation of the heald, suitable guides for the ends of the blank, eye-forming studs arranged in line with said supports and adapted to be engaged by the end portion of the blank, reciprocating slide-blocks near said guides, horizontally-swinging levers on said slide-blocks adapted to engage the end portions of the blank and fold the same around the eye-forming studs, oppositely-arranged means for closing the eyes formed around said studs, reciprocating coöperating claws adapted to clamp between them the portions for the blank adjacent to the extreme eyes, means for forming simultaneously the central eye of the heald between the stationary supports, means for twisting the portions of the heald adjacent to the extreme eyes, means for twisting the portions of the blank adjacent to the central eye, means for causing the several pairs of claws to produce a supplemental clamping action upon the blank during the twisting thereof, means for disengaging the completed heald from the eye-forming devices, and means for taking the completed heald from said supports, substantially as set forth.

9. In a machine for manufacturing metallic healds of the class described, the combination with a main frame, a main shaft arranged in the center line and above said frame, a cam-shaft on each side of and above said main shaft, and suitable connection between the latter and the cam-shafts; of a plurality of reciprocating and tipping forks adapted to receive one blank at a time, means on one of said cam-shafts for reciprocating and tipping said forks, a plurality of oppositely-arranged coöperating claws, two suitable supports carried by certain claws and adapted to receive the blank from the forks when tipped and hold the same during the formation of the heald, means on the cam-shafts for moving said claws toward each other when the blank is received upon said supports and between said claws, suitable guides for the ends of the blank, eye-forming studs arranged in line with said supports and adapted to be engaged by the end portions of the blank, reciprocating slide-blocks near said guides, horizontally-swinging levers on said slide-blocks, adapted to engage the end portions of the blank and fold the same around the eye-forming studs, oppositely-arranged means for closing the eyes formed around said studs, reciprocating coöperating claws adapted to clamp between them the portions of the blank adjacent to the extreme eyes, means for forming simultaneously the central eye of the heald between the stationary supports, means for twisting the portions of the heald adjacent to the extreme eyes, means for twisting the portions of the blank adjacent to the central eye, means for causing the several pairs of claws to produce a supplemental clamping action upon the blank during the twisting thereof, means for disengaging the completed heald from the eye-forming devices, and means for taking the completed heald from said supports, substantially as set forth.

10. In a machine for manufacturing metallic healds of the class described, the combination with a main frame, a main shaft arranged in the center line and above said frame, a cam-shaft on each side of and above said main shaft and suitable connections between the latter and the cam-shafts; of a plurality of reciprocating and tipping forks adapted to receive one blank at a time, means on one of said cam-shafts for reciprocating and tipping said forks, a plurality of oppositely-arranged coöperating claws, two suitable supports carried by certain claws and adapted to receive the blank from said forks when tipped and hold the same during the formation of the heald, means on the cam-shafts for moving said claws toward each other when the blank is received upon said supports and between said claws, suitable guides for the ends of the blank, eye-forming studs arranged in line with said supports and adapted to be engaged by the end portions of the blank, reciprocating slide-blocks near said guides, horizontally-swinging levers on said slide-blocks adapted to engage the end portions of the blank and fold the same around the eye-forming studs, oppositely-arranged means for closing the eyes formed around said studs, reciprocating coöperating claws adapted to clamp between them the portions of the blank adjacent to the extreme eyes, means for forming simultaneously the central eye of the heald between the stationary supports, means for twisting the portions of the heald adjacent to the extreme eyes, means for twisting the portions of the blank adjacent to the central eye, means for causing the several pairs of claws to produce a supplemental clamping action upon the blank during the twisting thereof, means for disengaging the completed heald from the eye-forming devices, and means for taking the completed heald from said supports, substantially as set forth.

11. In a machine for manufacturing metallic healds of the class described, the combination with a main frame, a main shaft arranged in the center line and above said frame, a cam-shaft on each side of and above said main shaft and suitable connections between the latter and the cam-shafts; of a plurality of reciprocating and tipping forks adapted to receive one blank at a time, means on one of said cam-shafts for reciprocating and tipping said forks, a plurality of oppositely-arranged coöperating claws, horizontally-reciprocating slide-blocks carrying said claws, stationary guideways for said slide-blocks, cams for reciprocating the same toward and apart from each other, means for causing the claws to produce an elastic pressure upon the blank between them, fork-shaped supports carried by certain claws and adapted to receive the blank from the aforesaid forks so that the same lies between the claws and is held by the latter during the formation of the heald, suitable guides for the ends of the blank, eye-forming studs arranged in line with said supports and adapted to be engaged by the end portion of the blank, reciprocating slide-blocks near said guides, horizontally-swinging levers on said slide-blocks adapted to engage the end portions of the blank and fold the same around the eye-forming studs, oppositely-arranged means for closing the eyes formed around said studs, reciprocating coöperating claws adapted to clamp between them the portions of the blank adjacent to the extreme eyes, means for forming simultaneously the central eye of the heald between the stationary supports, means for twisting the portions of the heald adjacent to the extreme eyes, means for twisting the portions of the blank adjacent to the central eye, means for causing the several pairs of claws to produce a supplemental clamping action upon the blank during the twisting thereof, means for disengaging the completed heald from the eye-forming devices, and means for taking the completed heald from said supports, substantially as set forth.

12. In a machine for manufacturing metallic healds of the class described, the combination with a main frame, a main shaft arranged in the center line and above said frame, a cam-shaft on each side of and above said main shaft and suitable connections between the latter and the cam-shafts; of a plurality of reciprocating and tipping forks adapted to receive one blank at a time, means on one of said cam-shafts for reciprocating and tipping said forks, a plurality of oppositely-arranged coöperating claws, two suitable supports carried by certain claws and adapted to receive the blank from said forks when tipped and hold the same during the formation of the heald, means on the cam-shafts for moving said claws toward each other when the blank is received upon said supports and between said claws, suitable guides for the ends of the blank, eye-forming studs arranged in line with said supports and adapted to be engaged by the end portions of the blank, reciprocating slide-blocks near said guides, horizontally-swinging levers on said slide-blocks adapted to engage the end portions of the blank and fold the same around the eye-forming studs, oppositely-arranged means for closing the eyes formed around said studs, reciprocating coöperating claws adapted to clamp between them the portions of the blank adjacent to the extreme eyes, means for forming simultaneously the central eye of the heald between the stationary supports, means for twisting the portions of the heald adjacent to the extreme eyes, means for twisting the portions of the blank adjacent to the central eye, means for causing the several pairs of claws to produce a supplemental clamping action upon the blank during the twisting thereof, means for disengaging the completed heald from the eye-forming devices, and means for taking the completed heald from said supports, substantially as set forth.

13. In a machine for manufacturing metallic healds of the class described, the combination with a main frame, a main shaft arranged in the center line and above said frame, a cam-shaft on each side of and above said main shaft and suitable connections between the latter and the cam-shafts; of a plurality of reciprocating and tipping forks adapted to receive one blank at a time, means on one of said cam-shafts for reciprocating and tipping said forks, a plurality of oppositely-arranged coöperating claws, horizontally-reciprocating slide-blocks carrying said claws, stationary guideways for said slide-blocks, cams for reciprocating the same toward and apart from each other, means for causing the claws to produce an elastic pressure upon the blank between them, fork-shaped supports carried by certain claws and adapted to receive the blank from the aforesaid forks so that the same lies between the claws and is held by the latter during the formation of the heald, suitable guides for the ends of the blank, eye-forming studs arranged in line with said supports and adapted to be engaged by the end portion of the blank, reciprocating slide-blocks near said guides, horizontally-swinging levers on said slide-blocks adapted to engage the end portions of the blank and fold the same around the eye-forming studs, oppositely-arranged means for closing the eyes formed around said studs, reciprocating coöperating claws adapted to clamp between them the portions of the blank adjacent to the extreme eyes, means for forming simultaneously the central eye of the heald between the stationary supports, means for twisting the portions of the heald adjacent to the extreme eyes, means for twisting the portions of the blank adjacent to the central eye, means for causing the several pairs of claws to produce a supplemental clamping action upon the blank during the twisting thereof, means for disengaging the completed heald from the eye-forming devices, reciprocating matrices on each side of the machine and adapted to be moved over said eye-forming studs, square spindles carrying said reciprocating matrices, means for rotating the matrices when they are engaged

over the eye-forming studs, means for rotating simultaneously central eye-forming devices, means for causing the several pairs of claws to produce a supplemental clamping action during the rotation of the eye-forming devices, means for disengaging the heald from the eye-forming devices, and means for taking the completed heald from said retaining-supports, substantially as set forth.

10. In a machine for manufacturing metallic healds of the class described, the combination with a main frame, a main shaft arranged in the center line and above said frame, a cam-shaft on each side of and above said main shaft, and suitable connection between the latter and the cam-shafts; of a plurality of reciprocating and tipping forks adapted to receive one blank at a time, means on one of said cam-shafts for reciprocating and tipping said forks, a plurality of oppositely-arranged coöperating claws, two suitable supports carried by certain claws and adapted to receive the blank from the forks when tipped and hold the same during the formation of the heald, means on the cam-shafts for moving said claws toward each other when the blank is received upon said supports and between said claws, suitable guides for the ends of the blank, eye-forming studs arranged in line with said supports and adapted to be engaged by the end portions of the blank, reciprocating slide-blocks near said guides, horizontally-swinging levers on said slide-blocks, adapted to engage the end portions of the blank and fold the same around the eye-forming studs, oppositely-arranged means for closing the eyes formed around said studs, reciprocating coöperating claws adapted to clamp between them the portions of the blank adjacent to the extreme eyes, means for forming simultaneously the central eye of the heald between the stationary supports, reciprocating matrices on each side of the machine and adapted to be moved over said eye-forming studs, square spindles carrying said reciprocating matrices, means for reciprocating the matrices on said square spindles, toothed pinions on the latter, means for temporarily locking said pinions against rotation, and means for disengaging said locking means at a given moment, circular disks on the main shaft, toothed peripheral portions on said disk adapted to mesh with said pinions when the same are unlocked, to rotate said pinions, the square spindles and the matrices, means for simultaneously rotating the central eye-forming devices, means for causing the several clamping-claws to produce a supplemental clamping action during the rotation of the square spindles and the central eye-forming devices, horizontally-swinging levers on the frame of the machine and normally engaging the ends of said square spindles, cams on one cam-shaft for actuating said levers so that the spindles and therefor the eye-forming studs are brought nearer to each other for disengaging the eyes from said studs, means for raising the complete heald above said studs, and means for taking the complete heald from its supports, substantially as set forth.

11. In a machine for manufacturing metallic healds of the class described, the combination with a main frame, a main shaft arranged in the center line and above said frame, a cam-shaft on each side of and above said main shaft, and suitable connection between the latter and the cam-shafts; of a plurality of reciprocating and tipping forks adapted to receive one blank at a time, means on one of said cam-shafts for reciprocating and tipping said forks, a plurality of oppositely-arranged coöperating claws, two suitable supports carried by certain claws and adapted to receive the blank from forks when tipped and hold the same during the formation of the heald, means on the cam-shafts for moving said claws toward each other when the blank is received upon said supports and between said claws, suitable guides for the ends of the blank, eye-forming studs arranged in line with said supports and adapted to be engaged by the end portions of the blank, reciprocating slide-blocks near said guides, horizontally-swinging levers on said slide-blocks, adapted to engage the end portions of the blank and fold the same around the eye-forming studs, oppositely-arranged means for closing the eyes formed around said studs, reciprocating coöperating claws adapted to clamp between them the portions of the blank adjacent to the extreme eyes, means for forming simultaneously the central eye of the heald between the stationary supports, reciprocating matrices on each side of the machine and adapted to be moved over said eye-forming studs, square spindles carrying said reciprocating matrices, means for reciprocating the matrices on said square spindles, toothed pinions on the latter, grooved sockets attached to said pinions, balance-levers supported on the frame of the machine in proximity to said pinions, pins carried by said balance-levers and normally engaging the grooved sockets to hold the pinions against rotation, means for holding said pins in engagement with said sockets, cams on one cam-shaft adapted to engage said balance-levers and disengage said pins from said sockets, circular disks on the main shaft, toothed peripheral portions on said disks adapted to mesh with said pinions when the same are unlocked, to rotate said pinions, the square spindles and the matrices, means for simultaneously rotating the central eye-forming devices, means for causing the several clamping-claws to produce a supplemental clamping action during the rotation of the square spindles and the central eye-forming devices, horizontally-swinging levers on the frame of the machine and normally engaging the ends of said square spindles, cams on one cam-shaft for actuating said levers so that the spindles and therefore the eye-forming studs are brought nearer to each other for disengaging the eyes from said studs, means for raising the complete heald above said studs, and means for taking the complete heald from its supports, substantially as set forth.

12. In a machine for manufacturing metallic healds of the class described, the combination with a main frame, a main shaft arranged in the center line and above said frame, a cam-shaft on each side of and above said main shaft, and suitable connection between the latter and the cam-shafts; of a plurality of reciprocating and tipping forks adapted to receive one blank at a time, means on one of said cam-shafts for reciprocating and tipping said forks, a plurality of oppositely-coöperating claws, two suitable supports carried by certain claws and adapted to receive the blank from forks when tipped and hold the same during the formation of the heald, means on the cam-shafts for moving said claws toward each other when the blank is received upon said supports and between said claws, suitable guides for the ends of the blank, eye-forming studs arranged in line with said supports and adapted to be engaged by the end portions of the blank, reciprocating slide-blocks near said guides, horizontally-swinging levers on said slide-blocks, adapted to engage the end portions of the blank and fold the same around the eye-forming studs, oppositely-arranged means for closing the eyes formed around said studs, reciprocating coöperating claws adapted to clamp between them the portions of the blank adjacent to the extreme eyes, means for forming simultaneously the central eye of the heald between the stationary supports, reciprocating matrices on each side of the machine and adapted to be moved over said eye-forming studs, square spindles carrying said reciprocating matrices, means for reciprocating the matrices on said square spindles, toothed pinions on the latter, means for temporarily locking said pinions against rotation, and means for disengaging said locking means at a given moment, circular disks on the main shaft, toothed peripheral portions on said disks adapted to mesh with said pinions when the same are unlocked, to rotate said pinions, the square spindles and the matrices, means for simultaneously rotating the central eye-forming devices, means for causing the several clamping-claws to produce a supplemental clamping action during the rotation of the square spindles and the central eye-forming devices, horizontally-swinging levers on the frame of the machine and normally engaging the ends of said square spindles, cams on one cam-shaft for actuating said levers so that the spindles and therefore the eye-forming studs are brought nearer to

each other for disengaging the eyes from said studs, vertically-movable bars arranged below the eye-forming studs and adapted to engage and raise the heald above the same after the disengagement of said studs, means for normally pulling said vertical bars downwardly, cams on the main shaft, means engaged by said cams to raise said vertical bars, and means for taking the complete heald from its supports, substantially as described.

14. In a machine for manufacturing metallic healds of the class described, the combination with a main frame, a main shaft arranged in the center line and above said frame, a cam-shaft on each side of and above said main shaft, and suitable connection between the latter and the cam-shafts; of a plurality of reciprocating and tipping forks adapted to receive one blank at a time, means on one of said cam-shafts for reciprocating and tipping said forks, a plurality of oppositely-coöperating claws, two suitable supports carried by certain claws and adapted to receive the blank from forks when tipped and hold the same during the formation of the heald, means on the cam-shafts for moving said claws toward each other when the blank is received upon said supports and between said claws, suitable guides for the ends of the blank, eye-forming studs arranged in line with said supports and adapted to be engaged by the end portions of the blank, reciprocating slide-blocks near said guides, horizontally-swinging levers on said slide-blocks, adapted to engage the end portions of the blank and fold the same around the eye-forming studs, oppositely-arranged means for closing the eyes formed around said studs, reciprocating coöperating claws adapted to clamp between them the portions of the blank adjacent to the extreme eyes, means for forming simultaneously the central eye of the heald between the stationary supports, reciprocating matrices on each side of the machine and adapted to be moved over said eye-forming studs, square spindles carrying said reciprocating matrices, means for reciprocating the matrices on said square spindles, toothed pinions on the latter, means for temporarily locking said pinions against rotation, and means for disengaging said locking means at a given moment, circular disks on the main shaft, toothed peripheral portions on said disks adapted to mesh with said pinions when the same are unlocked, to rotate said pinions, the square spindles and the matrices, means for simultaneously rotating the central eye-forming devices, means for causing the several clamping-claws to produce a supplemental clamping action during the rotation of the square spindles and the central eye-forming devices, horizontally-swinging levers on the frame of the machine and normally engaging the ends of said square spindles, cams on one cam-shaft for actuating said levers so that the spindles and therefore the eye-forming studs are brought nearer to each other for disengaging the eyes from said studs, means for raising the complete heald above said studs, an auxiliary shaft arranged in proximity to the heald-retaining supports, means for rotating said auxiliary shaft, a plurality of heald takers or pickers secured to said rotating shaft and capable of taking the completed heald from its supports, and means for receiving the heald from said takers and conveying the same to a suitable receptacle, substantially as set forth.

15. In a machine for manufacturing metallic healds of the class described, the combination with a main frame, a main shaft arranged in the center line and above said frame, a cam-shaft on each side of and above said main shaft, and suitable connection between the latter and the cam-shafts; of a plurality of reciprocating and tipping forks adapted to receive one blank at a time, means on one of said cam-shafts for reciprocating and tipping said forks, a plurality of oppositely-coöperating claws, two suitable supports carried by certain claws and adapted to receive the blank from forks when tipped and hold the same during the formation of the heald, means on the cam-shafts for moving said claws toward each other when the blank is received upon said supports and between said claws, suitable guides for the ends of the blank, eye-forming studs arranged in line with said supports and adapted to be engaged by the end portions of the blank, reciprocating slide-blocks near said guides, horizontally-swinging levers on said slide-blocks, adapted to engage the end portions of the blank and fold the same around the eye-forming studs, oppositely-arranged means for closing the eyes formed around said studs, reciprocating coöperating claws adapted to clamp between them the portions of the blank adjacent to the extreme eyes, means for forming simultaneously the central eye of the heald between the stationary supports, reciprocating matrices on each side of the machine and adapted to be moved over said eye-forming studs, square spindles carrying said reciprocating matrices, means for reciprocating the matrices on said square spindles, toothed pinions on the latter, means for temporarily locking said pinions against rotation, and means for disengaging said locking means at a given moment, circular disks on the main shaft, toothed peripheral portions on said disks adapted to mesh with said pinions when the same are unlocked, to rotate said pinions, the square spindles and the matrices, means for simultaneously rotating the central eye-forming devices, means for causing the several clamping-claws to produce a supplemental clamping action during the rotation of the square spindles and the central eye-forming devices, horizontally-swinging levers on the frame of the machine and normally engaging the ends of said square spindles, cams on one cam-shaft for actuating said levers so that the spindles and therefore the eye-forming studs are brought nearer to each other for disengaging the eyes from said studs, means for raising the complete heald above said studs, an auxiliary shaft arranged in proximity to the heald-retaining supports, means for rotating said auxiliary shaft, a plurality of heald takers or pickers secured to said rotating shaft and capable of taking the completed heald from its supports, a second auxiliary shaft, chain-wheels on both auxiliary shafts, and chains passing around said chain-wheels to receive the heald from said takers, and a suitable receptacle at the end of the chains to receive the heald from the same, substantially as set forth.

16. In a machine for manufacturing metallic healds of the class described, the combination with a main frame, a main shaft arranged in the center line and above said frame, a cam-shaft on each side of and above said main shaft, and suitable connection between the latter and the cam-shafts; of a plurality of reciprocating and tipping forks adapted to receive one blank at a time, means on one of said cam-shafts for reciprocating and tipping said forks, a plurality of oppositely-arranged coöperating claws, two suitable supports carried by certain claws and adapted to receive the blank from said forks when tipped and hold the same during the formation of the heald, means on the cam-shafts for moving said claws toward each other when the blank is received upon said supports and between said claws, suitable guides for the ends of the blank, eye-forming studs arranged in line with said supports and adapted to be engaged by the end portions of the blank, reciprocating slide-blocks near said guides, horizontally-swinging levers on said slide-blocks adapted to engage the end portions of the blank and fold the same around the eye-forming studs, oppositely-arranged means for closing the eyes formed around said studs, reciprocating coöperating claws adapted to clamp between them the portions of the blank adjacent to the extreme eyes, means for forming simultaneously the central eye of the heald between the stationary supports, reciprocating matrices on each side of the machine and adapted to be moved over said eye-forming studs, square spindles carrying said reciprocating matrices, means for rotating the matrices when they are engaged over the eye-forming studs, means for rotating simultaneously the central eye-forming devices, means for causing the several pairs of claws to produce a supplemental clamping action during the rotation of the eye-forming devices, means for holding the square spindles yieldingly in the direction of their length, so as to permit the same to follow the tension of the blank to a given extent, means for disengaging the heald from the eye-forming devices, and means for taking the completed heald from its supports, substantially as set forth.

809,669. APPARATUS FOR MEASURING AND MARKING THE DISTANCE FROM THE GROUND OF SKIRTS, &c. SAMUEL D. CHEYNE, Belfast, Ireland. Filed Oct. 10, 1905. Serial No. 282,091.

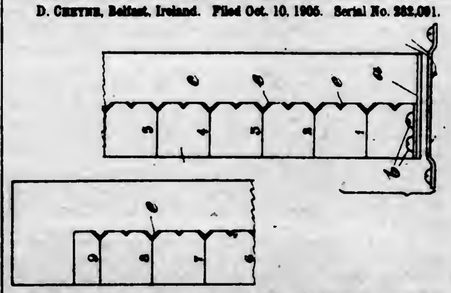

Claim.—1. An apparatus for measuring and marking the distance from the ground of skirts and other garments consisting of a base to which two uprights are fitted at a short distance apart from one another, one of said uprights being marked off with divisions and provided with notches in which the chalk or the like can be rested when marking the garment, substantially as described.

2. An apparatus for measuring and marking the distance from the ground of skirts and other garments comprising, in combination

a base, two uprights fitted to the base and situated a short distance apart from one another, one of said uprights being marked off with divisions and provided with notches in which the chalk or the like can be rested when marking the garment, substantially as described.

809,670. FIRE-ESCAPE. JAMES C. COVERT, Watervliet, N. Y. Original application filed Sept. 19, 1904, Serial No. 225,097. Divided and this application filed Jan. 7, 1905. Serial No. 240,075.

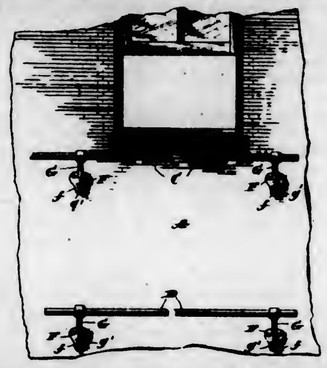

Claim.—1. In a fire-escape, the combination with a plurality of base or supporting members adapted to be secured at desired points upon a building, a hand or foot rail, and a corresponding plurality of supporting-arms carried by and shiftable relative to the said hand or foot rail adapted to be brought into registration with and connected to said base or supporting members.

2. In a fire-escape, the combination with a plurality of base or supporting members adapted to be secured at desired points upon a building, a hand or foot rail, and a corresponding plurality of supporting-arms carried by and shiftable relative to the said hand or foot rail adapted to be brought into registration with and connected to said base or supporting members, said supporting-arms and the base or supporting members being separable in a vertical direction.

3. In a fire-escape, the combination with a plurality of base or supporting members adapted to be secured at desired points upon a building, a hand or foot rail, and a corresponding plurality of supporting-arms carried by and shiftable relative to the said hand or foot rail adapted to be brought into registration with and connected to said base or supporting members, in combination with means for temporarily locking the arms and base members together.

4. In a fire-escape, the combination with a plurality of base or supporting members adapted to be secured at desired points upon a building, a hand or foot rail, and a corresponding plurality of supporting-arms carried by and shiftable relative to the said hand or foot rail adapted to be brought into registration with and connected to said base or supporting members, said supporting-arms and the base or supporting members being separable in a vertical direction, in combination with means for temporarily locking the arms and base members together.

5. In a fire-escape, the combination with a plurality of base or supporting members adapted to be secured at desired points upon a building, a hand or foot rail, and a corresponding plurality of supporting-arms carried by and shiftable relative to the said hand or foot rail adapted to be brought into registration with and connected to said base or supporting members, in combination with means for temporarily locking the arms and base members together, and means for preventing turning of the rail when engaged by the hand or foot when in use.

6. In a fire-escape, the combination with a plurality of base or supporting members adapted to be secured at desired points upon a building, a hand or foot rail, and a corresponding plurality of supporting-arms carried by and shiftable relative to the said hand or foot rail adapted to be brought into registration with and connected to said base or supporting members, said supporting-arms and the base or supporting members being separable in a vertical direction, in combination with means for temporarily locking the arm and base members together, and means for preventing turning of the rail when engaged by the hand or foot when in use.

7. In a fire-escape, the combination with a plurality of base or supporting members adapted to be secured at desired points upon a building, a hand or foot rail, and a corresponding plurality of supporting-arms carried by and shiftable relative to the said hand or foot rail adapted to be brought into registration with and connected to said base or supporting members, in combination with means for preventing turning movement of the rail while engaged by the hand or foot when in use.

8. In a fire-escape, the combination with a plurality of base or supporting members adapted to be secured at desired points upon a building, a hand or foot rail, and a corresponding plurality of supporting-arms carried by and shiftable relative to the said hand or foot rail adapted to be brought into registration with and connected to said base or supporting members, said supporting-arms and the base or supporting members being separable in a vertical direction, in combination with means for preventing turning movement of the rail while engaged by the hand or foot when in use.

809,671. SHOT-MAKING MACHINE. PERCY F. COWING, New York, N. Y. Filed June 26, 1905. Serial No. 267,266.

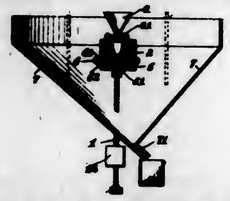

Claim.—1. In a machine for converting molten metal into small solid particles, an approximately cylindric rotatable vessel having a peripheral emission-aperture so restricted in size as substantially to emit only small particles of metal, said aperture being located near the open end of said vessel and at approximately its greatest diameter.

2. In a machine for converting molten metal into small solid particles, an approximately cylindric vessel rotatable on a vertical axis and having a peripheral emission-aperture so restricted in size as substantially to emit only small particles of metal, said aperture being located near the open end of said vessel and at approximately its greatest diameter.

3. In a machine for converting molten metal into small solid particles, an approximately cylindric rotatable vessel having its wall pierced by a plurality of emission-apertures so restricted in size as substantially to emit only small particles of metal, said apertures being located near the open end of said vessel and at approximately its greatest diameter.

4. In a machine for converting molten metal into small solid particles, an approximately cylindric rotatable vessel having an open mouth and a peripheral emission-aperture so restricted in size as substantially to emit only small particles of metal, said aperture being located below said mouth, and means for feeding a supply of metal into said mouth.

5. In a machine for converting molten metal into small solid particles, an approximately cylindric rotatable vessel having a peripheral emission-aperture so restricted in size as substantially to emit only small particles of metal, said aperture being located near the open end of said vessel and at approximately its greatest diameter, and means for maintaining the metal in said vessel in a molten condition.

6. In a machine for converting molten metal into small solid particles, an approximately cylindric rotatable vessel having a peripheral emission-aperture so restricted in size as substantially to emit only small particles of metal, said aperture being located near the open end of said vessel and at approximately its greatest diameter, a burner for heating the exterior of said vessel, and a non-conducting jacket surrounding said vessel and spaced away therefrom for holding the heated products of combustion in contact therewith.

7. In a machine for converting molten metal into small solid particles, an approximately cylindric rotatable vessel having a peripheral emission-aperture so restricted in size as substantially to emit only small particles of metal, said aperture being located near the open end of said vessel and at approximately its greatest diameter, and a baffle-wall so located with relation to said emission-aperture as that the particles of metal escaping from said aperture will strike against said baffle before chilling.

8. In a machine for converting molten metal into small solid particles, a rotary vessel having a constricted emission-aperture near its open end, in combination with a baffle suitably supported in said vessel and spaced away from the inner wall of said vessel.

9. In a shot-making machine, a rotary vessel having a contracted mouth and constricted peripheral emission-apertures, in combination with a baffle suitably supported in said vessel and providing an annular space between its periphery and the inner wall of said vessel.

10. In a shot-making machine, a rotary vessel having a contracted mouth and constricted peripheral emission-apertures, in combination with an annular baffle having a central opening and a peripheral diameter slightly less than the interior diameter of the vessel, and means for supporting said baffle within said vessel.

11. In a shot-making machine, a rotary vessel, a cap secured on said vessel and having a contracted mouth and a baffle having an annular portion of less diameter than the interior of said vessel, and upwardly-extending arms having outturned portions for fitting between the upper edge of said vessel and said cap.

809,672. AUTOMATIC INDICATING AND REGULATING HYGROMETER. STUART W. CRAMER, Charlotte, N. C. Filed Jan. 9, 1905. Serial No. 240,181.

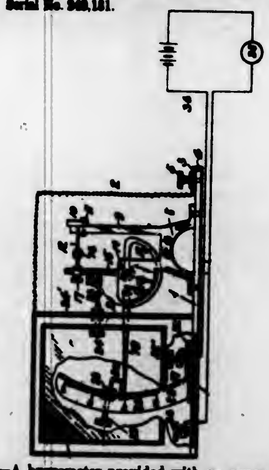

Claim.—A hygrometer provided with an expansible and contractible member, a shaft, an arm on the shaft connected to said member, a crank-arm secured to said shaft, a needle pivotally supported and connected to the crank-arm beyond its pivotal support, a tongue for making contact therewith, and a graduated scale; in combination with an electromagnet for operating a valve, a source of electrical energy, and electrical connections between the needle of the hygrometer, the magnet, and said source of electrical energy.

809,673. CAN-OPENER. JAMES W. DAVIS, Alto, Tex., assignor of one-half to Marshall B. McBee, Alto, Tex. Filed June 13, 1905. Serial No. 265,004.

Claim.—1. A base provided with a standard having a laterally-extending head, a cutting-blade fixed to said head relative to a can, a supporting-arm carried by said standard, a screw mounted upon said arm, and a can-support secured to the upper end of said screw to rotate therewith and move the can into cutting relation with said blade.

2. A base provided with a standard having a laterally-extending head, a cutting-blade fixed to said head relative to a can, a supporting-arm carried by said standard, a screw mounted upon said arm, a can-support secured to the upper end of said screw to rotate therewith and move the can into cutting relation with said blade, a centering-pin carried by the head in alinement with said screw, and means for adjusting said cutting-blade relative to said pin.

809,674. CRANE. WILLIAM B. HOSKINS, Madison Mills, Ohio. Filed Mar. 14, 1905. Serial No. 249,805.

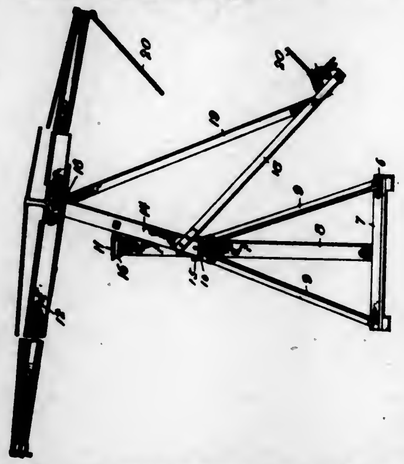

Claim.—1. In a crane, in combination, a post, a rotatable frame mounted on the post and having uprights inclined backwardly from the perpendicular, a boom fulcrumed on top of said uprights, and a winch carried by the frame and having its rope connected to the boom.

2. In a crane, in combination, a post having upper and lower bearings, a frame rotatably supported on said bearings and having uprights extending above the top of the post and inclined backwardly from the perpendicular, a boom fulcrumed on top of the uprights, and a winch carried by the frame and connected to the boom.

809,675. TYPE-WRITING MACHINE. JACOB FRIEDL, New York, N. Y., assignor to Union Typewriter Company, Jersey City, N. J., a Corporation of New Jersey. Filed Apr. 5, 1904. Serial No. 201,777.

Claim.—1. In a type-writing machine, the combination with a pivotally-mounted type-bar, of a type-bar hanger, and means, mounted in the hanger and independently movable therein, for preventing longitudinal movement of the bar at the printing moment.

2. In a type-writing machine, the combination with a pivotally-mounted type-bar, of a type-bar hanger, and means on the type-bar and on the hanger for preventing longitudinal movement of the bar at the printing moment, the means on the hanger being independently movable.

3. In a type-writing machine, the combination of a pivotally-mounted type-bar having a catch and a type-bar hanger provided with a rotary cooperating device to be engaged by said catch.

4. In a type-writing machine, the combination of a pivotally-mounted type-bar, a catch on said bar in rear of said pivot, a type-bar hanger, and a rotary step on said hanger to cooperate with said catch.

5. In a type-writing machine, the combination of a pivotally-mounted type-bar provided with a catch V-shaped in cross-section, and a type-bar hanger provided with a V-shaped step to cooperate with said catch.

6. In a type-writing machine, the combination of a pivotally-

mounted type-bar provided with a rearwardly-extending arm terminating in a catch that is V-shaped in cross-section, and a type-bar hanger provided with a coöperating device having a V-shaped groove.

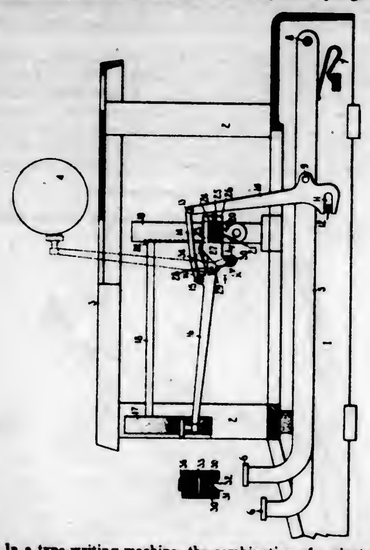

7. In a type-writing machine, the combination of a pivotally-mounted type-bar having a rearwardly-extending hook-shaped arm, and a type-bar hanger having a coöperating roll provided with a V-shaped groove.

8. In a type-writing machine, the combination of a pivotally-mounted type-bar having a rearwardly-extending hook-shaped arm, a type-bar hanger provided with downwardly-extending supporting portions, and an independently-movable coöperating stop mounted therein and adapted to be engaged by said hook-shaped arm to prevent the bar from moving lengthwise.

9. In a type-writing machine, the combination of a type-bar, a hanger, a guide in the hanger, said guide being independently movable and coöperating with the type-bar to control it longitudinally.

10. In a type-writing machine, the combination of a type-bar, a hanger, and a pivotally-mounted guide in the hanger and coöperating with the type-bar to guide it longitudinally and laterally.

11. In a type-writing machine, the combination of a type-bar and an individual longitudinal guide for the bar adapted to be moved thereby and to coöperate therewith at and near the printing-point.

12. In a type-writing machine, the combination of a type-bar and an individual longitudinal and lateral guide for the bar adapted to be moved thereby and to coöperate therewith at and near the printing-point.

13. In a type-writing machine, the combination of a type-bar, a hanger, and a guide pivotally mounted in the hanger and adapted to coöperate with the type-bar, at and near the printing-point, to guide it longitudinally.

14. In a type-writing machine, the combination of a type-bar, a hanger, and a guide pivotally mounted in the hanger and adapted to coöperate with the type-bar, at and near the printing-point, to guide it longitudinally and laterally.

15. In a type-writing machine, the combination of a rotary longitudinal type-bar guide and a part coacting therewith, the two being brought into coöperation by the movement downward from normal position of one of the coacting parts.

16. In a type-writing machine, the combination of a rotary longitudinal and lateral type-bar guide and a part coacting therewith the two being brought into coöperation by the movement downward from normal position of one of the coacting parts.

17. In a front-strike type-writing machine, a type-bar having a portion normally projecting rearwardly from its pivot and adapted to coact with a rotary longitudinal type-bar guide below the pivot.

18. In a front-strike type-writing machine, a type-bar having a portion normally projecting rearwardly from its pivot and adapted to coact with a rotary longitudinal and lateral type-bar guide below the pivot.

19. In a type-writing machine, a hanger having a longitudinal type-bar guide pivotally mounted therein.

20. In a type-writing machine, a hanger having a longitudinal and lateral type-bar guide pivotally mounted therein.

21. In a type-writing machine, a type-bar having a beveled portion adapted to coöperate with a grooved roller to guide the type-bar longitudinally and laterally.

809,676. SICKLE. PEARL B. FLETCHER, Ridge, Oreg., assignor of one-half to Kenneth George Warner, Pendleton, Oreg. Filed Apr. 26, 1905. Serial No. 257,491.

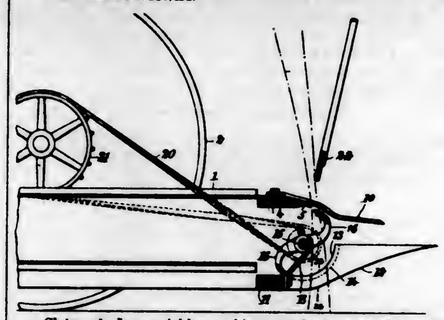

Claim.—1. In a sickle-machine, a wheel-mounted draper, spaced guides extending downward and forward at an incline at the forward end of the draper, a sickle-blade arranged at the forward end of the draper, the said guides being tapered at the sides, lower guides alternating with the first-named guides, a shaft, and pressers mounted on said shaft and operating between the upper and lower guides.

2. In a sickle mechanism, a wheel-mounted draper, a bar extended across the forward end thereof, a sickle-blade mounted on the bar, guides extended at a forward and downward incline from said bar, the said guides being tapered at the sides, a bottom cross-bar, guides extended forward from said bottom cross-bar and alternating with the first-named guides, the said lower guides being curved and channeled at their inner ends, a shaft, pressers consisting of oppositely-extended arms mounted on said shaft and having broadened ends and adapted to pass through said channels of the lower guides, the said broadened ends being concaved, and means operated by a forward movement of the machine for rotating the shaft.

3. In a sickle-machine, a wheel-mounted draper, a thin blade arranged at the forward end of the draper, guide-fingers extended forward from said blade and tapered at the opposite sides, lower guide-fingers, a shaft, pressers mounted on said shaft, each consisting of oppositely-extended curved arms having broadened concaved ends, and guard-plates extended between the pressers and covering the front portion of the shaft.

4. In a sickle-machine, a wheel-mounted draper, a blade arranged at the forward end of the draper, guide-fingers extended forward from said blade, lower guides alternating with the first-named guides, and a presser coacting with the blade.

5. In a sickle-machine, the lower guides having their under sides curved upward and forward and their inner ends at the upper side curved upward and forward and channeled, and rotary presser-arms movable through said channels.

6. In a sickle-machine, the combination with a blade and guide-fingers, of a rotary shaft, and oppositely-curved presser-arms arranged on said shaft, the ends of said arms being concaved.

809,677. STARTING-COMPENSATOR FOR ALTERNATING-CURRENT MOTORS. EDWARD P. CUMMINGS, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed June 24, 1904. Serial No. 213,941.

Claim.—1. The combination with a compensator for starting an alternating-current motor, of a plurality of fuses, and means for connecting said compensator and fuses alternately with the motor-circuit.

2. The combination with a switch having contact-segments, of a compensator having its coils connected to fingers coöperating with said segments, and fuses connected to a second set of fingers adapted to make contact with said segments.

3. In combination, a switch having contact-segments and movable into a neutral position and into two operative positions, one at each side of said neutral position, two sets of contact-fingers one on each side of said segments, compensator-coils connected to one set and fuses connected to the other set, said segments engaging one set of said fingers when the switch is in one operative position, and engaging the other set of said fingers when the switch is in the other operative position.

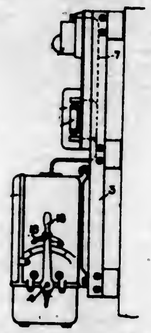

4. The combination with a switch having contact-segments alternately connected with line-terminals and motor-terminals, of two sets of coöperating fingers, compensator-coils connected with one set, and fuses connected with the other set and with the line-terminals, the latter set of fingers coöperating only with the segments connected with the motor-terminals.

5. The combination with an alternating-current motor, of a plurality of fuses, a switch for connecting said fuses respectively in the legs of the circuit, and a motor in series with one of said fuses.

6. The combination with a compensator, of a plurality of fuses, a switch for connecting the compensator and fuses alternately with the terminals of an alternating-current motor, and means for compelling the compensator to be so connected before the fuses are.

7. The combination with a compensator, of a switch movable both ways from a neutral position, and a pivoted latch normally preventing said switch from being moved in one direction.

8. The combination with a motor-starting compensator, of a switch movable one way from a neutral position to a starting position and the other way to a running position, a switch-handle having a lug, and a pivoted latch engaging therewith and provided with a shoulder and an inclined surface adjacent thereto.

9. The combination with a circuit-controlling device having a handle movable both ways from a neutral position, and provided with a lug, of a pivoted latch engaging said lug by gravity and having on its under side a shoulder and a double incline, whereby when the lug is under the incline, a quick movement of the handle will throw the latch high enough to permit the lug to pass by the shoulder before the latch can fall.

10. The combination with a handle movable both ways from a given position, of a lug, and a pivoted latch engaging said lug by gravity and having on its under side a shoulder and a double incline adjacent thereto, said lug and latch being relatively movable lengthwise of said latch.

11. In combination, a motor, a source of alternating current, compensator-coils, fuses, and means for connecting said motor to said source alternately through said coils and said fuses.

12. In combination, a motor, a source of alternating current, compensator-coils, fuses, and means for connecting said motor to said source alternately through said coils and said fuses, said means comprising a movable switch member and two sets of contact-fingers, one set connected to the compensator-coils and the other to the fuses.

809,678. SEMAPHORE-SIGNAL ATTACHMENT. CHARLES H. GILL, Litchfield, Ill. Filed Feb. 1, 1905. Serial No. 243,705.

Claim.—1. In a signal-controlling device, a receptacle, a closure connected for swinging upwardly from said receptacle, a hook attached to said closure rearwardly of its connected end and disposed with its open side toward the free end of the same, a movable signal member, means for actuating said signal member and coupling means between said signal-actuating means and said hook, whereby the weight of said closure maintains the signal member in one position and automatically releasable by the opening of said closure.

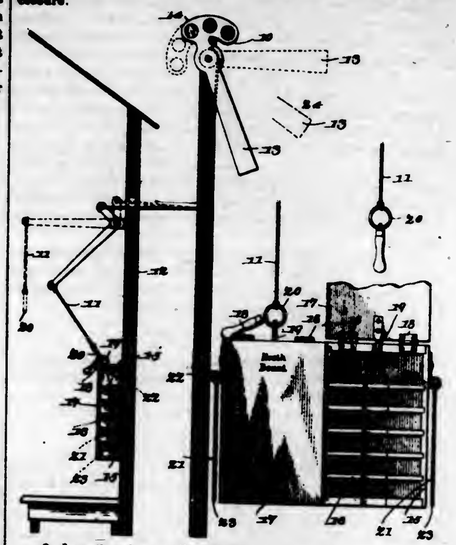

2. In a signal-controlling device, a receptacle, a closure connected for swinging upwardly from said receptacle, a hook attached to said closure rearwardly of its connected end and disposed with its open side toward the free end of the same, a semaphore-signal arm swinging from one end, means for actuating said arm, and coupling means between said signal-actuating means and said hook, whereby the weight of said closure maintains said semaphore-arm in one position and automatically releasable by the opening of said closure.

809,679. CONDENSER. JOHN F. GRACE, New York, N. Y., assignor to Henry R. Worthington, New York, N. Y., a Corporation of New Jersey. Filed Oct. 1, 1904. Serial No. 226,762.

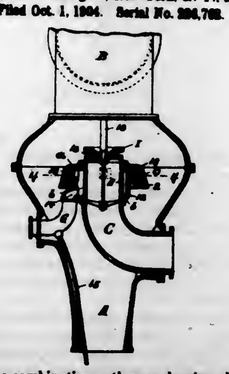

Claim.—1. The combination with a condensing-chamber, of an air collector and cooler therein consisting of a bell opening downwardly, a casing forming an air-chamber within said bell, air-passages connecting the bell with the air-chamber and inclined forwardly in the direction of movement of the air, and an air-discharge pipe connected with said air-chamber.

2. The combination with a condensing-chamber, of an air collector and cooler therein consisting of a bell opening downwardly, a casing forming an air-chamber within said bell, air-passages connecting the bell with the air-chamber and inclined forwardly in the direction of movement of the air, projections on the inner side of the bell, and an air-discharge pipe connected with said air-chamber.

3. The combination with an injector condensing-chamber and its condensing-water pipe and spraying devices, of a casing through which the condensing water passes to the spraying devices, an air-

chamber within said casing having its inner side cooled by the condensing water, an air-collecting bell outside said chamber over which the water is sprayed, air-passages from said bell to said air-chamber inclined forwardly in the direction of movement of the air, and an air-discharge pipe connected with said air-chamber.

4. The combination with an injector condensing-chamber and its condensing-water pipe and spraying devices, of a casing through which the condensing water passes to the spraying devices, an air-chamber within said casing having its inner side cooled by the condensing water, an air-collecting bell outside said chamber over which the water is sprayed, air-passages from said bell to said air-chamber inclined forwardly in the direction of movement of the air, ribs on the inner side of said bell extending transversely to the movement of the air, and an air-discharge pipe connecting with said air-chamber.

5. The combination with the casing *b* having air-chamber *c*, an air-discharge pipe from said chamber, bell *a* inclosing said casing and having ribs 2, and passages through the casing connecting the bell and air-chamber, substantially as described.

809,680. METHOD OF MAKING PIPES OF ARTIFICIAL STONE. JOSEPH HALL, Cheltenham, England. Filed Oct. 5, 1903. Serial No. 176,947.

Claim.—1. A method of manufacturing a concrete pipe, said method consisting in molding a moist concrete mixture to shape by centrifugal force and simultaneously removing liquid therefrom, comprising the molded pipe, and afterward allowing it to set.

2. A method of manufacturing a concrete pipe, said method consisting in molding a moist concrete mixture to shape by centrifugal force and simultaneously removing liquid therefrom, subjecting the molded pipe to external and internal pressure, and allowing the resulting pipe to set.

3. The herein-described method of manufacturing a concrete pipe, said method consisting in molding a moist concrete mixture to shape by centrifugal force, simultaneously separating liquid therefrom, then subjecting the partly-finished pipe to radial inward pressure, and afterward allowing the pipe to set.

4. The herein-described method of manufacturing a concrete pipe, said method consisting in subjecting a liquid mass of concrete mixture to rotary motion and limiting its outward movement so as to cause it to assume the required tubular shape by centrifugal force, separating liquid from said mass during the rotary motion, compressing the partly-finished pipe externally while still rotating but at a slower speed, arresting the motion of said pipe, and allowing it to set.

5. The herein-described method of manufacturing a concrete pipe, said method consisting in molding a liquid mass of concrete to a tubular shape by centrifugal force and simultaneously removing water therefrom also by centrifugal force, subjecting the partly-finished and dried pipe to external pressure while firmly supporting the inner surface thereof, and allowing said pipe to set.

809,681. STRAP-LOOP. HARRY HART, Milwaukee, Wis. Filed May 4, 1905. Serial No. 258,570.

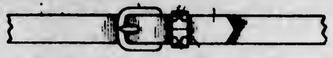

Claim.—1. In a strap-loop, the combination of a strap member having a turned-under end, a loop-strap passed into the space between the turned-under end of the strap member and the main portion of said strap member, the ends of said loop-strap being carried over the strap member and brought together, a clasp arranged at the joint of the abutting ends of the loop-strap, said clasp provided at opposite edges with teeth or serrations, and at opposite ends with prongs, the toothed or serrated edges being bent around the edges of the loop-strap and thence beneath said strap and the teeth or serrations forced upwardly into the material of the strap, and the end prongs of the clasps being forced downwardly through the loop-strap and bent beneath the same, and means for securing the turned-over end of the strap member to the main portion of said strap member and for also securing the loop in the space therebetween.

2. In a device of the character described, the combination of a strap member with its end turned under, a loop-strap with its intermediate portion passing through the space between the turned-under end of the strap member and the main body thereof, fastening means passing through the main body of the strap member, the loop-strap and the turned-under end of the strap member, and a metal clasp joining the ends of the loop-strap, said clasp having integral end and side prongs the former passing through the loop-strap ends and clenched thereto and the latter passing around the loop-strap ends and clenched thereto.

809,682. RAILWAY-TIE. THOMAS R. HARLEY, Houghton, Mich. Filed Mar. 7, 1905. Serial No. 248,866.

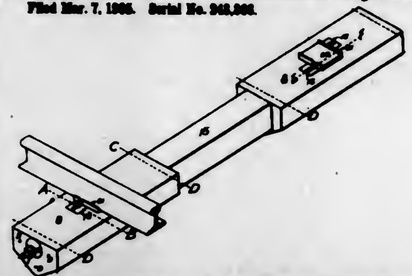

Claim.—1. A railway-tie of plastic material, comprising rail-supporting blocks having opposite tapers on the under side, a center block, metal strips extended longitudinally through the several blocks, and metal strips arranged transversely in the bearing-blocks.

2. A railway-tie comprising bearing-blocks tapered on the bottom, a center block, a tie-rod extended through the several blocks, fastening devices on the ends of said rod, and metal strips extended longitudinally through the blocks.

3. A railway-tie of plastic material, comprising bearing-blocks, and metal bearings or casings casted in said blocks and adapted to receive wooden blocks the said blocks having downward and outward openings in line with said bearings.

4. A railway-tie of plastic material, comprising bearing-blocks having openings extended vertically through them, metal bearings arranged in said openings, the inner surfaces of opposite walls of the bores being inclined inward and downward for a portion of the distance near the bottom, and metal strips extended longitudinally through the blocks.

5. A railway-tie of plastic material, comprising bearing-blocks having vertical openings, bearings arranged in said openings, channel-plates mounted on the blocks, and resilient plates arranged in the channel-plates.

6. A railway-tie consisting of plastic material and comprising bearing-blocks, a center block abutting at its ends with the bearing-blocks, the said several blocks having a longitudinal opening or bore, curved plates arranged in the bearing-blocks and extending over said bore near its ends, and a clamping-bar passing through said bore.

809,683. STEAM GENERATOR AND SUPERHEATER. FRANK A. HASBROUCK, Schenectady, N. Y. Filed Oct. 3, 1904. Serial No. 227,053.

Claim.—1. A tubular boiler divided by a suitable partition into two chambers, one being adapted to form a steam-generator and the other to act as a superheater and means to retard the transmission of heat from a plurality of the tubes to the generating-chamber.

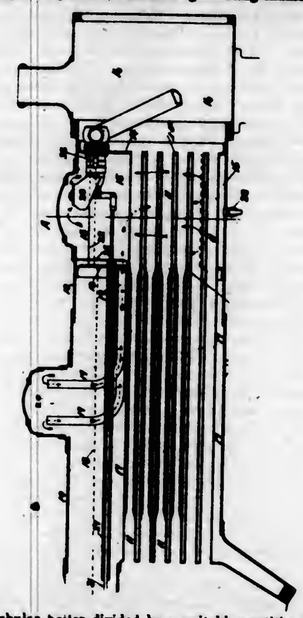

2. A tubular boiler divided by a suitable partition into two chambers, one being adapted to form a steam-generator and the other to act as a superheater and screens carried by a plurality of the tubes in the generating-chamber to retard the transmission of heat from the tubes to the generating-chamber whereby a greater degree of heat is delivered to the superheater.

3. A tubular boiler divided by a suitable partition into two chambers, one being adapted to form a steam-generator and the other to act as a superheater and linings in a plurality of the tubes in the generating-chamber to retard the transmission of heat from the tubes to the generating-chamber whereby a greater degree of heat is delivered to the superheater.

4. A tubular boiler divided by a suitable partition into two chambers, one being adapted to form a steam-generator and the other to act as a superheater and short sections of tubing expanded in a plurality of the tubes in the generating-chamber to retard the transmission of heat from the tubes to the generating-chamber whereby a greater degree of heat is delivered to the superheater.

5. In a tubular boiler wherein steam is generated at one end of the boiler and superheated at the other end thereof, means interposed between the gases of combustion and the heating-surfaces of the generator to retard the transmission of heat to the generator.

6. A tubular boiler divided by a suitable partition into a generating and superheating chamber, with suitable steam connections, the tubes of the boiler being continuous and passing through both chambers, in combination with means interposed between the heating-surfaces of the generator-chamber and the gases of combustion to retard the transmission of heat to the generator.

7. The combination with a steam generator and superheater of a plurality of fire-tubes passing through the water-space of the generator and into the superheater, at least one of said fire-tubes being provided with means to retard or diminish the transmission of heat to the water in the generator.

8. The combination with a steam generator and superheater of a plurality of fire-tubes passing through the water-space of the generator and into the superheater, at least one of said fire-tubes being provided with a screen to retard or diminish the transmission of heat to the water in the generator, thereby enabling the gases of combustion passing through the fire-tubes to deliver to the superheater a higher degree of temperature.

9. The combination with a steam generator and superheater of a plurality of fire-tubes passing through the water-space of the generator and into the superheater, at least one of said fire-tubes being provided with a lining in a portion of the tube in the generating-chamber to retard or diminish the transmission of heat to the water in the generator, thereby enabling the gases of combustion passing through the fire-tubes to deliver to the superheater a higher degree of temperature.

10. The combination with a steam generator and superheater of a plurality of fire-tubes passing through the water-space of the generator and into the superheater, a plurality of said fire-tubes being provided with means to retard or diminish the transmission of heat to the water in the generator.

11. The combination with a steam generator and superheater of a plurality of fire-tubes passing through the water-space of the generator and into the superheater, a plurality of said fire-tubes being provided with a screen to retard or diminish the transmission of heat to the water in the generator, thereby enabling the gases of combustion passing through the fire-tubes to deliver to the superheater a higher degree of temperature.

12. The combination with a steam generator and superheater of a plurality of fire-tubes passing through the water-space of the generator and into the superheater, a plurality of said fire-tubes being provided with a lining in a portion of the tube in the generating-chamber to retard or diminish the transmission of heat to the water in the generator, thereby enabling the gases of combustion passing through the fire-tubes to deliver to the superheater a higher degree of temperature.

13. A tubular boiler divided by a suitable partition into two chambers, one being adapted to form a steam-generator and the other to act as a superheater, a baffle-plate arranged longitudinally of the superheater in a vertical plane, an open pipe leading from the generating-chamber to the portion of the superheater on one side of the baffle-plate and means to control the exit of steam from the superheater arranged on the other side of the baffle-plate.

14. A tubular boiler divided by a suitable partition into two chambers, one being adapted to form a steam-generator and the other to act as a superheater, a pair of baffle-plates arranged longitudinally of the superheater, open pipes leading from the generating-chamber to the portion of the superheater between the plates and the shell of the superheater and means to control the exit of steam arranged between the baffle-plates.

15. A tubular boiler divided by a suitable partition into two chambers, one being adapted to form a steam-generator and the other to act as a superheater, a baffle-plate located longitudinally of the superheater in a vertical plane, an open pipe leading from the generating-chamber to the portion of the superheater on one side of the baffle-plate, means to control the exit of steam from the superheater arranged within the superheater on the other side of the baffle-plate, said baffle-plate being arranged to suddenly change the direction of flow of the steam near the bottom of the superheater, thereby separating moisture or water carried by the steam from the steam, depositing same at the bottom of the superheater, and means for drawing off said collected moisture from the superheater.

16. A tubular boiler divided by a suitable partition into two chambers, one being adapted to form a steam-generator and the other to act as a superheater, a pair of baffle-plates located longitudinally of the superheater, open pipes leading from the generating-chamber to the portion of the superheater between the plates and the shell of the superheater, means to control the exit of steam arranged between the baffle-plates, said baffle-plates being arranged to suddenly change the direction of flow of the steam, thereby separating moisture or water carried by the steam from the steam, and means for drawing off said collected moisture from the superheater.

17. A tubular boiler divided by a suitable partition into two chambers, one being adapted to form a steam-generator and the other to act as a superheater, a throttle located in the superheating-chamber a tube extending from the superheating-chamber to the back end of boiler through which the operating-rod of the throttle is adapted to pass.

18. A tubular boiler divided by a suitable partition into two chambers, one being adapted to form a steam-generator and the other to act as a superheater, a pair of baffle-plates arranged in the superheater, open pipes leading from the generating-chamber to the portion of the superheater between the plates and the shell of the superheater and means to control the exit of steam arranged between the baffle-plates.

19. The combination with a steam-generator of a superheater, a pair of baffle-plates arranged in the superheater, open pipes leading from the boiler to the portion of the superheater between the plates

and the shell of the superheater and means to control the exit of

Claim.—1. A gage comprising a base-rule, a vertical rule slid- and shanks projecting from the blades and fastened to the

and the shell of the superheater and means to control the exit of steam arranged between the baffle-plates.

20. The combination with a steam-generator, of a superheater, a pair of baffle-plates arranged longitudinally of the superheater, open pipes leading from the generating-chamber to the portion of the superheater between the plates and the shell of the superheater and means to control the exit of steam arranged between the baffle-plates.

809,684. CURTAIN-STRETCHER. FREDERICK M. HAYNES, Buffalo, N. Y. Filed Jan. 26, 1905. Serial No. 243,697.

Claim.—1. A curtain-stretcher comprising a divided bar the sections of which are connected by a joint consisting of reduced portions or tongues arranged on the inner opposing ends of said sections, each tongue having oblique shoulders at its inner and outer ends which converge toward the inner side of the respective section, said tongues overlapping each other and each bearing with its oblique outer shoulder against the oblique inner shoulder of the other tongue, and means for detachably connecting said tongues, substantially as set forth.

2. A curtain-stretcher comprising a divided bar the sections of which are connected by a joint consisting of reduced portions or tongues arranged on the inner opposing ends of said sections, each tongue having oblique shoulders at its inner and outer ends which converge toward the inner side of the respective section, each tongue having its inner shoulder undercut on a bevel and its outer shoulder beveled correspondingly and said tongues overlapping each other and each engaging its oblique beveled outer shoulder with the oblique undercut inner shoulder of the other tongue, and means for detachably connecting said tongues, substantially as set forth.

809,685. LINER FOR CENTRIFUGAL LIQUID-SEPARATORS. CARL D. HELLSTRÖM, Nyfors, Sweden. Filed June 9, 1905. Serial No. 264,468.

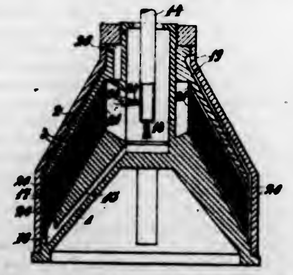

Claim.—1. A liner for centrifugal liquid-separators consisting of a plurality of superposed and spaced funnel-like plates, provided with apertures 17 near their outer periphery, with a rib 20 extending along the same and situated outside the said apertures, and with ribs 4 extending from the said periphery inward toward the center of the plate, causing the full milk led to the periphery of the liner to rise through the apertures and spread in all the spaces.

2. The combination of a liner for centrifugal liquid-separators, consisting of a plurality of superposed and spaced funnel-like plates provided with apertures 17 near the outer periphery, with a rib 20 extending along the same and formed by the plate edge being bent upward, and further with ribs 4 extending from the said rib, inward toward the center of the plate, and of a central feeding-chamber communicating through bottom channels 15 with the said apertures of the liner, situated one above the other, for the introducing of the full milk into all the spaces at the periphery of the liner, substantially as described.

3. The combination of a liner for centrifugal liquid-separators, which liner consists of superposed and spaced funnels, provided near the periphery with apertures 17 and with a rib 20, extending along the periphery of the funnel, and with ribs 4 extending from the said rib inward toward the center of the funnel, and of a central feeding-chamber, communicating through bottom channels 15 with the said apertures 17 and an inlet-tube 14, which, in addition to an aperture leading the full milk to the bottom channels 15, has a side opening 24, leading a part of the full milk into the spaces between the funnels, at the inner edges of same.

4. A liner for centrifugal liquid-separators consisting of superposed and spaced funnel-shaped plates, provided near the periphery with apertures 17, leading the full milk to the spaces between the funnels, and with ribs 20, 21 formed by the outer and inner edges respectively of the plate being bent upward, and with ribs 4 extending from the periphery of the plate toward the center of same and forward in the rotary direction, and further with apertures 22 in the inner edge rib 21, through which the cream can leave the space between the plates, and with apertures 23 in the said rib 21, through which a part of the full milk is led from the center of the liner into the said space, substantially as described and for the purpose set forth.

5. A liner for centrifugal liquid-separators consisting of superposed and spaced funnel-like plates, provided near the periphery with apertures 17, with a rib 20 extending along the periphery of the plate and formed by the edge being bent upward, with ribs 4, extending from the said rib 20 inward toward the center of the plate, and with ribs 11 extending along the outer edge of the plate at some distance from the same, a passage being provided between the said rib 11 and the opposite transversal rib 4 and also between the rib 11 and the next plate, so that the light part of the liquid can pass along the surface of said plate, substantially as described and for the purpose set forth.

6. A liner for centrifugal liquid-separators consisting of superposed, spaced funnel-shaped plates, provided with apertures 17, leading the full milk to the spaces between the plates, and with ribs 4 which owing to their radial position on the plate and in combination with ribs 20, 21, formed by the inner and outer edges of the plate being bent upward, divide the space into sections, each provided with an inlet-opening 17 and an outlet-opening 18, and further with ribs 8, 9 situated nearer the inner edge of the plate in comparison with the said ribs 4 and forming a continuation of the same after an interval 10, substantially as described and for the purpose set forth.

7. In liner for centrifugal liquid-separators consisting of superposed, spaced funnel-like plates provided at the periphery with apertures 17 for the introducing of the full milk, and near the periphery with apertures 18 forming outlet-openings for the blue milk, the said apertures 17 and 18 being provided inside a rib extending along the periphery of the plate and formed by the edge being bent upward, and further with ribs 4 and 8, 9 extending in an oblique direction to the radius of the plate between the outer edge and the inner edge of the plate but leaving a passage 10 for the light part of the liquid, so that it can pass to the outlet-opening 22 at the inner edge of the plate.

8. A liner for centrifugal liquid-separators consisting of superposed spaced funnel-like plates provided with ribs concentric with or substantially concentric with the center of the funnel, some ones 20, 11 of the said ribs being situated near the outer edge of the plate and other ones 9, 21 near the inner edge of the same, and with apertures 17 near the outer edge for the introducing of the full milk into the spaces between the plates, and with apertures 18 forming outlet-openings for the blue milk, and further with ribs 4, and 8, 9 which form an angle with the said ribs and divide the space into sections, each having an inlet-opening 17 and an outlet-opening 18 substantially as described and for the purpose set forth.

9. A liner for centrifugal liquid-separators consisting of superposed spaced funnel-like plates provided at their inner and outer edges with ribs concentric or substantially concentric with the center of the funnels, inlet-openings 17 and outlet-openings 18 for the full milk and the blue milk respectively, outlet-openings 22 for the cream, ribs 4, guiding the full milk along the plate-surface inward toward the center of the plate, and angular ribs 8, 9 forming a further guide for the cream toward the outlet-opening 22, substantially as described and for the purpose set forth.

10. A liner for centrifugal liquid-separators consisting of superposed, spaced funnel-like plates, provided near their periphery with inlet-openings for the full milk and outlet-openings for the blue milk, and on the upper side with ribs, extending from the periphery of the plate inward toward the center of the plate in an oblique direction and causing the full milk to spread on the upper side of the plate or funnel, and on their under side with ribs 11, guiding the blue milk separated from the full milk and passing outward toward the outlet-opening 18, substantially as described and for the purpose set forth.

809,686. RAFTER-CAGE. EDWIN H. HOOVER, Pontiac, Mich. Filed Oct. 20, 1904. Serial No. 229,230.

Claim.—1. A gage comprising a base-rule, a vertical rule slidably mounted on the base-rule, an angle-rule, means for pivotally and slidably connecting the angle-rule to the vertical rule, said angle-rule lying in engagement with the end of the base-rule.

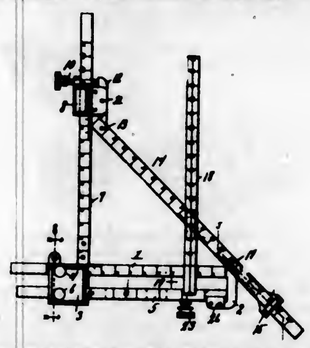

2. A gage comprising a base-rule, a vertical rule longitudinally movable on the base-rule, a hypotenuse-rule longitudinally movable at each end with respect to the vertical rule and to the base-rule respectively, and a rule slidable upon the base-rule and intersecting the line of the hypotenuse-rule.

3. A gage comprising a base-rule, a vertical rule, a hypotenuse-rule, a spacing-rule parallel with the base-rule, and a rule movable longitudinally of the base and spacing rule and intersecting the line of the hypotenuse-rule.

4. A gage comprising a base-rule, a block slidable thereon, a rule mounted on said block extending at right angles to the base-rule, a movable head upon said last-mentioned rule, a hypotenuse-rule pivoted at its upper end to said head and having a slidable engagement at its lower end with the base-rule.

5. A gage comprising rule members describing a right angle, movably joined at the point of union, a hypotenuse-rule, means for slidably and pivotally connecting one end of the hypotenuse-rule to one of said rule members, and means for affording a longitudinally-movable engagement between the opposite end of the hypotenuse-rule and the other of said rule members.

6. A gage comprising rule members describing a right angle, movably joined at the point of union, a hypotenuse-rule, means for slidably and pivotally connecting one end of the hypotenuse-rule to one of said rule members and means for affording a longitudinally-movable engagement between the opposite end of the hypotenuse-rule and the other of said rule members, and an auxiliary rule member movably mounted upon one of the first-mentioned rule members and intersecting the hypotenuse-rule.

7. A gage comprising a base-rule, a block movable thereon, a spacing-rule movable in said block and parallel with said base-rule, a rule member rigidly mounted on said block and extending at right angles to the base-rule, a hypotenuse-rule crossing between the ends of said rule members, and an auxiliary rule mounted to slide upon the base-rule and spacing-rule and intersecting the hypotenuse-rule.

8. A gage comprising a base-rule, a block movable on the base-rule and attachable thereto, a vertical rule fixed in said block and extending at right angles to the base-rule, a head movable upon said vertical rule, a pivoted arm on said head, a screw engaging one end of said arm, a hypotenuse-rule pivoted at its upper end to the other end of said arm, and a guide for lower end of said hypotenuse-rule affording a longitudinally-movable engagement thereof with the end of the base-rule.

9. A gage comprising a base-rule, a vertical rule movably mounted on the base-rule, a head slidably mounted on said vertical rule, a pivoted arm on said head, means for actuating said arm, a hypotenuse-rule pivoted at its upper end to said pivoted arm, an arm pivoted to the end of the base-rule having a guide at the end thereof, the lower end of the hypotenuse-rule passing through said guide.

809,687. MILL. HENRY A. HOWARD, Sherburne, N. Y. Filed Jan. 5, 1903. Serial No. 238,754.

Claim.—A grinding-mill having a curb or casing, opposed grinding disks or heads located therein and having their peripheries spaced from the facing of the curb, and clearing members comprising U-shaped blades embracing the flanged peripheries of the disks, and shanks projecting from the blades and fastened to the outer faces of the grinding-heads one arm of said U-shaped blade lying outward from the periphery of the grinding-head between the same and the facing of the curb, for the purpose specified.

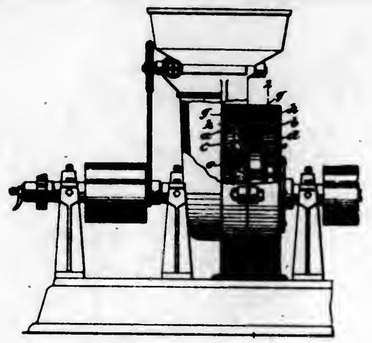

809,688. HORSESHOE. JAMES HOWARD, Millvale, Pa., assignor of one-fourth to J. Irving Allshouse, Stanton, Pa., and one-fourth to W. N. Barkhouse, Baxter, Pa. Filed June 2, 1905. Serial No. 263,462.

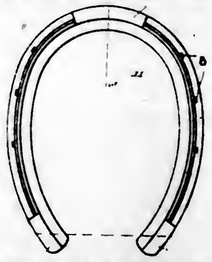

Claim.—1. A horseshoe of the character described formed of three strips of metal rolled to form a substantially T-shaped strip of metal, the vertical portion of said strip of metal having a sharpened edge, substantially as described.

2. A horseshoe of the character described consisting of stripes of iron and a strip of steel rolled to form a substantially T-shaped strip having a sharpened edge, substantially as described.

809,689. EXCAVATING-MACHINE. ALFRED F. HUBER, Chicago, Ill. Filed July 3, 1905. Serial No. 268,067.

Claim.—1. In an excavating-machine, a frame or platform; a crane; a bucket-arm having a gear-rack thereon; a pinion in mesh with said gear-rack; a sprocket-wheel mounted on the axis of said pinion, a winding-drum; a rope, cable or the like having one end wound upon said drum connected with said bucket-arm to move the latter in the arc of a circle about said pinion, said rope or cable passing over a series of pulleys one of which has a driving sprocket-wheel portion for driving said first-mentioned sprocket-wheel; a sprocket-chain which connects said sprocket-wheels, whereby simultaneous rotary and longitudinal movement may be imparted to said bucket-arm, and a clutch mechanism for throwing the pinion meshing with said gear-rack in and out of operative connection with said drum and cable.

2. In an excavating-machine, the combination with a pivotally-movable crane having a bucket-arm and bucket mounted thereon, of a winding-drum; a rope and series of pulleys connecting said bucket and drum for raising and lowering the former by the latter, and a mechanism driven by said rope for imparting longitudinal movement to said bucket-arm.

3. In an excavating-machine, a crane; a revoluble and longitudinally movable bucket-arm; a reel and cable arranged to raise and lower said arm, and a mechanism driven by said cable for moving said arm longitudinally; a shaft upon which said reel is revolubly mounted, clutch members upon, respectively, said reel and shaft and at opposite ends thereof, the clutch members at one end of the

reel and shaft being arranged to rotate in one direction and the

to clamp a pen therebetween and the said sleeve, a finger-block hav-

of the boats carried by said carrier elements, substantially as de-

reel and shaft being arranged to rotate in one direction and the clutch members at the opposite end of the reel and shaft arranged to rotate in the opposite direction, and means for shifting said shaft and reel relatively to each other, whereby the motion of the reel may be reversed, as specified.

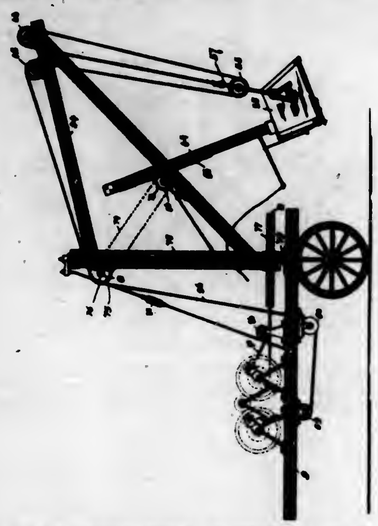

4. In an excavating-machine, the combination with a crane, of a bucket-arm revolubly and longitudinally movable upon said crane, a reel and cable arrangement for raising and lowering said arm in a circular arc; a mechanism driven by said cable for simultaneously moving said arm longitudinally; a driving-shaft; a pair of driven shafts arranged to be rotated by said driving-shaft in the same direction; sleeve-shafts or reels mounted on said driven shafts for longitudinal and rotary movements thereupon, said sleeve-shafts or reels having female clutch members at opposite ends thereof, and said driven shafts having male clutch members adapted to coöperate with said female clutch members, the male clutch member at one end of each of said driven shafts being arranged to be rotated by said driving-shaft in one direction and the male clutch members at the opposite ends of said driven shafts being arranged to be rotated by said driving-shaft in the opposite direction; means for shifting said sleeve-shafts or reels from one set of clutch members to the other to reverse the direction of motion, and means whereby one of said reels is caused to rotate said crane while the other reel operates said bucket-arm to move same revolubly and longitudinally

5. In an excavating-machine; a platform; a crane revolubly mounted thereupon; means for adjusting the axis of rotation of said crane; a bucket-arm having a bucket thereon; a reel or drum 25 and a cable arranged to raise and lower said bucket-arm in a circular arc, a mechanism driven by said cable adapted to, simultaneously with the raising and lowering of said bucket-arm in a circular arc, move said arm longitudinally; said reel 25 having female clutch members 27 and 28 on opposite ends thereof; a shaft 13 upon which said reel is rotatively and longitudinally movable, said shaft having thereon male clutch members 19 and 20 adapted to coöperate with, respectively, said female clutch members 27 and 28; means whereby said shaft drives one of said female clutch members, when connected therewith, in one direction of rotation, while the same shaft is adapted to drive the other female clutch member in the opposite direction of rotation when connected with the latter member, a lever for shifting said female clutch members in and out of engagement with the respective male clutch members; a reel 26 similar to reel 25 and a shaft 14 similar to shaft 13, said reel 26 and shaft 14 having coöperating clutch members identical to, and relatively movable as, the clutch members for reel 25 and shaft 13, and means whereby said crane is revolved by said reel 26.

809,690. RAZOR-BLADE HOLDER. JAMES H. HUNT, Hamilton, Ohio. Filed May 16, 1905. Serial No. 260,696.

Claim.—1. A razor-blade holder, comprising body-plates having handle and jaw sections, the jaw-sections being adapted to receive a razor-blade between them, a confining-loop which is slid over the outer end portions of the jaw-sections of the said plates, and a wedge-block adapted to be introduced between opposing faces of the handle-sections of the plates.

3. A razor-blade holder, comprising upper and lower body-plates, each body-plate comprising a handle and a jaw-section, the opposing faces of the said body-plates being straight throughout their length but the outer faces of the jaw-sections of said plates being beveled downward in direction of their forward ends, a loop which is slid over the outer end portions of the said body-plates, engaging with the beveled surfaces of the jaw-sections of said plates, and a wedge-block which is introduced between the handle-sections of the plates when the loop 15 is in position thereon.

3. A razor-blade holder, consisting of an upper and a lower body-plate, each body-plate comprising a handle and a jaw section, the inner faces of the body-plates being straight throughout their length and the outer faces of the jaw-sections of the said plates being beveled from a point near the handle downward and outward, so that said body-plates are thinnest at their outer ends, a loop which receives the said body-plates at their inner ends and engages with the beveled surfaces thereof, and a wedge-block which is introduced between the handle-sections of the said body-plates, the wedge-block having its upper and lower faces curved at its side edges.

809,691. HORSE-BLANKET PIN. MERWIN L. JACOBY, Canton, Ohio. Filed June 9, 1905. Serial No. 264,491.

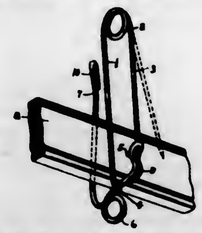

Claim.—As an improved article of manufacture, a horse-blanket pin constructed of a single piece of wire and comprising a shank, spring-coiled loops one located upon the shank and the other located at the base of a spring-shank and the spring-shank extended therefrom, a pin extended from the spring-coil formed upon the shank, a pin-holding guard-loop adapted to hold and guard the point of the pin, said loop consisting of two members, one continued from the second spring-coiled loop and the other member passing through said loop, all arranged substantially as and for the purpose specified.

809,692. PENHOLDER. OLE JOHNSON, Cedarhome, Wash. Filed Mar. 31, 1905. Serial No. 253,269.

Claim.—1. A penholder comprising a handle, a pen-receiving sleeve carried by the handle, said sleeve being provided with a longitudinal slot, a spring clamping member arranged to clamp a pen therebetween and said sleeve, a finger-block having grooves formed in its sides, said block being engaged in said slot and being provided with an inclined under face adapted to engage the said spring clamping member.

2. A penholder comprising a handle, a pen-receiving sleeve carried by the handle, said sleeve being provided with a longitudinal slot, a spring clamping member pivoted in said sleeve and arranged to clamp a pen therebetween and the said sleeve, a finger-block having grooves formed in its sides the said grooves being arranged to receive the sides of the said slot, said finger-block being provided with an inclined under face adapted to engage the said spring clamping member.

809,693. MECHANICAL MOVEMENT. GRAY W. JOHNSTON, New York, N. Y. Filed Mar. 27, 1905. Serial No. 252,244.

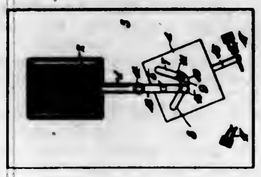

Claim.—1. The combination with a solenoid of a reciprocable driving member operated by said solenoid, a pivotally-mounted driven member capable of swinging movement transversely of said driving member, the pivot of the driven member being in line with the direction of movement of said driving member and said driving member being constrained to move in the line of said pivot, and the driven member being provided with angularly-arranged walls diverging from the apex formed at their meeting-point, to opposite sides of said pivot, and a connecting element pivoted to said driving member and dependent therefrom and carrying a projection adapted to ride upon and engage said walls, alternately, being shifted from one to the other by gravity together with the camming action of said walls upon successive movements of the driving member in the same direction.

2. The combination with a reciprocable driving member, of a pivotally-mounted driven member capable of swinging movement transversely of said driving member, the line of reciprocation of said driving member always containing the pivot of the driven member, the said driven member being provided with a substantially V-shaped slot whose branches diverge to points on opposite sides of the pivot and whose central portion is enlarged, forming pockets on opposite sides of the apex formed at the intersection of the upper or inner walls of said branches, a connecting element pivoted to said driving member and carrying a projection which is movable in said slot, which seats itself in one or the other of said pockets by virtue of gravity and the camming action of said slots when said driving member is in retracted position, and which engages the walls of said slot, alternately, upon successive movements of said driving member in the same direction, and frictional means for retaining said driven member at the limit of its movement in each direction, whereby the driven member is moved in alternate directions upon each reciprocation of the driving member.

3. In a device of the class described, a support or frame, a solenoid disposed upon said frame, contacts also mounted on said frame, a member pivoted upon said frame to swing into engagement with said contacts alternately and having cam-surfaces thereupon, a core slidably mounted in said solenoid, a link pivoted to said core and having a part engaging said cam-surfaces, frictional means for holding the pivoted member in either of its extreme positions, whereby said pivoted link is cammed into engagement with alternate cam-surfaces upon the pivoted member at successive actuations of the core of the solenoid.

4. The combination of a reciprocating driving member, a guide therefor arranged to constrain the movement of said reciprocating member in a right line, a pivotally-mounted driven member capable of swinging movement transversely of said driving member, the pivot of the driven member being in line with the direction of movement of said driving member, and the driven member being provided with angularly-arranged walls diverging from the apex formed at their meeting-point, to opposite sides of said pivot, and a connecting element pivoted to said driving member and carrying a projection adapted to engage said walls, alternately, upon successive movements of the driving member in the same direction.

809,694. BEET-HARVESTER. CHARLES L. JOLLY, Salinas, Cal., assignor of one-third to Stansfield Sherwood, Salinas, Cal. Filed May 31, 1905. Serial No. 262,227.

Claim.—1. In a beet-harvester, the combination of endless traveling beet-carrier elements, and beet-top cutters disposed in the path of the beets carried by said carrier elements, substantially as described.

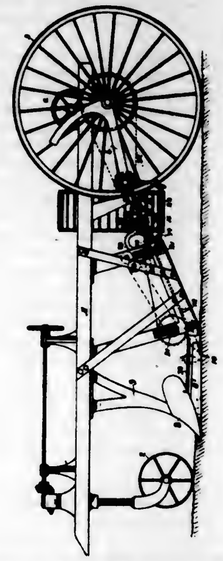

2. In a beet-harvester, the combination of means to uproot the beets, means to engage and carry the uprooted beets, and means to cut off the tops of the beets, to which top-cutting means the said carrying means convey the beets, substantially as described.

3. A beet-harvesting apparatus, consisting of a wheeled frame, a pair of plows supported therefrom with parallel adjacent landsides and moldboards to turn the earth outwardly from the row of beets, a blade extending between the rear ends of the landsides adapted to sever the tap-roots and lift the beets from the ground, carrying-belts for the beets and guide-rods between which the upper part of the beet passes and is transmitted to carrying-belts.

4. In a beet-harvesting apparatus, a wheeled frame, means for raising and lowering the frame upon its wheels and guiding the same, a pair of plows fixed to the frame having adjacent parallel landsides and moldboards adapted to turn the earth outwardly away from the row of beets, a cutting and lifting blade at the rear of the landsides and guides between which the beets are maintained upright as they pass rearwardly, a pair of endless traveling belts between which the beets are delivered from said guides, and a cutter revolving transversely to the line of travel and contiguous to the upper ends of the carrying-belts.

5. In an apparatus for harvesting beets, a wheeled frame with means for raising, lowering and steering, a pair of plows supported therefrom, with parallel adjacent landsides and outwardly-turning moldboards, a lifting and cutting blade at the rear of the landsides and guides between which the beets are transmitted rearwardly, a pair of endless traveling belts between which the beets are delivered, said belts having their transverse bars concaved toward each other to retain the beets in a central position, and elastic arms fixed with relation to the traveling belts and between which the beets are carried by the belt.

6. In a beet-harvesting apparatus, a wheeled and vertically-adjustable frame, with plows and lifting-blade by which the beets are extricated from the ground, adjustable endless belts between which the beets are delivered and by which they are carried upwardly and rearwardly, a cutter with means for intermittently rotating it transversely to the line of travel of the beets, and a stop against which each beet strikes as it arrives at the upper end of the carrying-belts, said stop acting to engage the mechanism by which the cutter is revolved.

7. In an apparatus for harvesting beets, plows, lifters and carrying-belts by which the beets are transmitted to the point where the tops are to be severed, a shaft having one member of a clutch fixed to and revolvable therewith, a second member turning loosely upon the shaft and carrying a cutter which is revolvable transversely to the line

of travel of the beets, said clutch member being slidable upon the shaft, an arm carried by said member with which arm the beets come in contact as they reach the upper end of the carrying-belt, whereby the clutch members are engaged and the knife is revolved to sever the top of the beet.

8. In an apparatus for harvesting beets, means for extracting the beets from the ground and conveying them upwardly and rearwardly and presenting the tops in the line of travel, a revoluble shaft, one member of the clutch carried thereby, a sleeve carrying the second member of the clutch and loosely slidable upon the shaft, a knife carried by and revoluble with the sleeve, a stop also carried by the sleeve and forming a point of contact for the beet as it arrives in position to have the top severed whereby the clutch members are engaged and the knife revolved, a cam carried by the movable clutch member, and a fixed arm adapted to engage the cam and retract and disengage the clutch member after a single revolution of itself and the cutter.

9. In a beet-harvesting apparatus, a wheeled frame, plows carried thereby, a lifting-blade, guides and endless traveling belts by which the beets are successively transferred, a transversely and intermittently revoluble cutter by which the tops of the beets are severed when presented, an endless traveling and transversely-movable belt upon which the beets are received after the tops have been severed, and by which they are delivered at one side of the line of travel of the apparatus.

10. In a device for removing the tops from beets, a carrier by which the beets are transmitted, a cutter revoluble transversely to the line of travel of the beets, and means actuated by the movement of the beets whereby the cutter is revolved to sever the top of each beet.

11. In a device for removing the tops from beets, a carrier by which the beets are transmitted successively, a cutter revoluble periodically transversely to the line of travel of the beets, a stop with which the beets come in contact, and mechanism controlled by the stop and actuated by each contact whereby the knife is revolved and a top severed.

12. In a device for removing tops from beets, a traveling carrier for the beets, a cutter revoluble periodically and transversely, a clutch mechanism and a stop against which an approaching beet comes in contact, said stop engaging the clutch and causing a single revolution of the cutter.

13. In a device for removing the tops from beets, a traveling beet-carrier, a cutter revoluble transversely to the line of travel of the beets, a normally disengaged clutch member through which the cutter is actuated, a stop against which the beets come in contact and through which the clutch is engaged to revolve the cutter, and a cam and arm engaged thereby to disengage the clutch and stop the cutter after each revolution.

14. In a harvester of the character described, the combination with an unearthing device, of a cutter for severing the tops of the beets, and a beet-arighting device for delivering the beets and presenting their top ends to said cutter, substantially as described.

15. In combination with means for clearing earth from opposite sides of a row of beets, means to uproot the beets, a cutter for severing the tops of the beets, and means to convey the beets thereto, substantially as described.

16. The combination with means for clearing earth from opposite sides of a row of beets, of means to uproot the beets, a cutter for severing the beet-tops, and means for relatively moving the beets and said cutter that said cutter may sever the beet-tops, substantially as specified.

17. In a machine of the class described, the combination of means for separating vegetables from the earth, means located above the surface of the earth for cutting the tops off of the vegetables, and means for delivering said vegetables from said separating means to said cutting means, substantially as specified.

809,695. CASING FOR WHEELS, &c., AND TRACK THEREFOR. HENRY F. KEIL, Brooklyn, N. Y. Filed May 27, 1904. Serial No. 210,142.

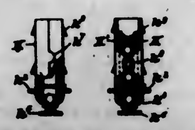

Claim.—A sheave-casing K formed in two parts, in the meeting edges of the ends of which parts is formed a step or dovetailed joint k^2, and in the sides of which are formed integral bearings k^3 for a sheave-wheel made by respectively indenting or concaving the central portions of the said two sides, on the side faces of which casing are also formed a plurality of integral extensions, some of the extensions k^3 projecting outwardly, and some of the said extensions projecting laterally to constitute practically horizontal gage-plates or guides k^5, and other of the extensions k^3 being made in depending form, in combination with a sheave-wheel and a track or way.

809,696. CASING FOR WHEELS, &c., AND TRACK THEREFOR. HENRY F. KEIL, Brooklyn, N. Y. Filed May 27, 1904. Serial No. 210,143.

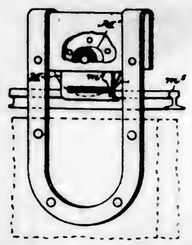

Claim.—1. As a new article of manufacture a sheave-casing having one or more integral depending converging or concave resilient lips or flanges to engage and be snapped upon and partly inclose the head of a track or way, and terminating in outwardly-turned edges.

2. As a new article of manufacture a sheave-casing having depending self-acting, interlocking and clamping means consisting of one or more integral converging or concave resilient lips or flanges to engage and be snapped upon and partly inclose the head of a track or way, and terminating in outwardly-turned edges, and also formed with horizontal gage-plates or guides.

3. As a new article of manufacture a sheave-casing having one or more integral depending converging or concave resilient lips or flanges to engage and be snapped upon and partly inclose the head of a track or way, and terminating in outwardly-turned edges, and also formed with an uneven portion in the face thereof for the purpose set forth.

809,697. TRACK OR WAY. HENRY F. KEIL, Brooklyn, N. Y. Filed July 19, 1904. Serial No. 217,194.

Claim.—1. As a new article of manufacture, a track or way constructed from one piece of sheet metal and comprising in its construction securing-plates, a tubular head, and an intermediate bipartite neck or web located in a different plane from that of the securing-plates, whereby unobstructed undercut paths or passages are formed below the head, both the sides and top of which are constructed and arranged to form bearings for a wheel.

2. As a new article of manufacture a track or way constructed from one piece of sheet metal and comprising in its construction securing-plates, a tubular head, and an angularly-disposed intermediate bipartite neck or web connecting said tube and securing-plate, whereby the latter is disposed at a distance from said securing-plates and in a plane parallel thereto, whereby unobstructed undercut paths or passages are formed below the head, both the sides and top of which are constructed and arranged to form bearings for a wheel.

809,698. DISPLAY-MIRROR. WILLIAM V. D. KELLEY, Newark, N. J., assignor of one-half to Howard S. Jones, Brooklyn, N. Y. Filed Apr. 7, 1905. Serial No. 254,294.

Claim.—1. A display-mirror comprising a glass plate, a transparent silvered coating on one side thereof, a transparent varnish over said silvered coating, and a translucent coating for said varnish, substantially as described.

2. A display-mirror comprising a glass plate, a transparent silvered coating on one side thereof, a transparent varnish over said silvered coating, and a protected light-transmitting coating over said varnish, said protective coating having a surface not easily scratched, substantially as described.

3. A display-mirror comprising a glass plate, a transparent silvered coating on one side thereof, a transparent varnish over said silvered coating, and a protective light-transmitting colored coating over said varnish, substantially as described.

4. A display-mirror comprising a glass plate, a transparent silvered coating on one side thereof, a transparent varnish over said silvered coating, and a coating for said varnish, said coating comprising a pigment paint, adapted to transmit light, substantially as described.

5. The process of forming a display-mirror consisting in thinly silvering a glass plate, applying a transparent varnish thereto, and applying to said varnish a translucent coating, substantially as described.

6. The process of forming a display-mirror consisting in thinly silvering a glass plate, applying a transparent varnish thereto, and applying to said varnish while wet a translucent coating, substantially as described.

7. A display-mirror comprising a glass plate, a transparent silvered coating on one side thereof, a transparent varnish over said silvered coating, and a coating over said varnish whereby reflection from an object behind the mirror is prevented, substantially as described.

8. A display-mirror comprising a glass plate, a silvered coating on one side thereof, a pigment coating over said silvered coating adapted to transmit light, substantially as described.

809,699. CLINOMETER. BERNARD KERR, Jr., Toledo, Ohio. Filed Jan. 19, 1905. Serial No. 241,746.

Claim.—1. In an instrument of the class described, a stock having an opening therein a pair of spaced rings mounted in said opening and having the scales i and i' thereon, a radially-disposed inwardly-projecting arm on each ring, a chair pivotally mounted between said arms and having a pointer at each end thereof adapted to register with said scales, a spirit-glass mounted in said chair, means for turning said chair, and a pin h' and nut h for causing a compression of said arms to lock the chair against movement.

2. In an instrument of the class described, a stock having a transverse opening and a socket intersecting a portion of said opening, a pair of laterally-spaced scale-rings mounted in said opening, arms radiating in parallelism from each side of said rings in position to rest upon the bottom of said bore, connection between the arms of each pair, a plate secured to the stock over said bore and having openings provided in its ends, and a tube secured to and suspended from each opening with its end terminating in juxtaposition to the pair of arms disposed thereunder for the purpose described.

3. In an instrument of the class described, a stock having a horizontal opening therein and vertically-bored portions at the sides of said opening, a frame for supporting a spirit-glass within said opening and having arms projecting from each side thereof longitudinally of said stock and seating on the bottom of said bored portions, and tubes suspended in the bored portions of said stock over the arms at each side of said frame, and a cementitious substance deposited in said tubes and upon said arms for the purpose described.

4. In an instrument of the class described, a stock having an opening therein and borings intersecting a portion of said opening, a scale-ring and spirit-glass mounted in said opening, the said ring having arms radiating from its periphery and disposed in the bored portion of the stock, and a tube suspended in the bored portion of the stock above each radiating arm for the purpose described.

5. In an instrument of the class described, a stock having a transverse opening and borings intersecting substantially half of said opening, a pair of rigidly-spaced rings mounted in said opening and each having arms radiating in parallelism from each side thereof, a plate connecting the lower edges of the parallel arms whereby a trough-like bracket is formed, and a tube suspended within the bored portion of the stock with its lower end terminating in juxtaposition to said plate whereby a cementitious substance may be deposited therein and flow over the plate and between the connected arms.

6. In an instrument of the class described, the combination with a stock having sockets formed in the base thereof, of a base-strip or shoe having portions countersunk within said sockets and each provided with an aperture, a screw within each countersunk portion of the base-strip and having its threaded end passed through the aperture therein and threaded within the associated socket, and means for causing an outward movement of the base-strip when a screw is loosened.

809,700. THERMOSTATIC SWITCH FOR INCANDESCENT ELECTRIC LAMPS. JOHN V. A. KERNEY, Jr., New Haven, Conn. Filed Apr. 1, 1905. Serial No. 253,366.

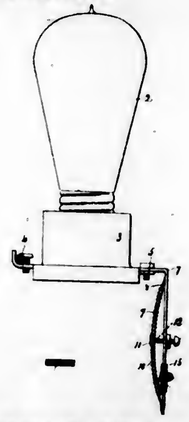

Claim.—The herein-described thermostatic switch for incandescent electric lamps consisting of a bracket connected with an incandescent electric lamp, a bowed plate secured at both ends to one face of said bracket, a contact-screw mounted in said bracket and normally in contact with said bowed plate, electric connection between the bowed plate and one wire of the lighting-circuit and between the bowed plate and the bracket, said bowed plate adapted under heat developed directly by the power of the current of the lighting-circuit to expand and move out of electric contact with the bracket whereby the circuit is broken, substantially as described.

809,701. FIRE-POT AND GRATE. STEFAN KNAPP, Detroit, Mich. Filed Feb. 24, 1905. Serial No. 247,055.

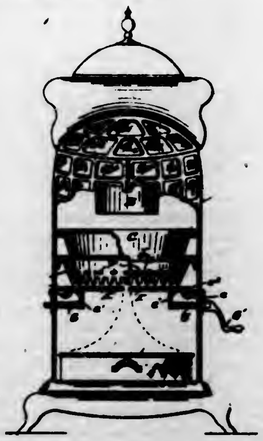

Claim.—1. In combination with a stove or furnace provided with a magazine, a fire-pot, an auxiliary fire-pot, a series of bars

adapted to rest in supports with which the auxiliary fire-pot is provided, said supports being so arranged that the bars, when in position, are below the fire-pot and equidistant from each other, a grate below the auxiliary fire-pot, said grate being in two parts, hinged to opposite sides of the stove-casing, each part being provided with a lug on its under side, and a screw threaded through each side of the stove-casing, below the grate, adapted to bear against the lugs on said grate, substantially as shown and described.

2. In combination with a stove or furnace provided with a magazine, a fire-pot, an auxiliary fire-pot, a series of bars adapted to rest in supports with which the auxiliary fire-pot is provided, said supports being so arranged that the bars, when in position, are below the fire-pot and equidistant from each other, a grate below the auxiliary fire-pot, said grate being in two parts, each of which is provided with a perforated hinge member, a hinge-pin of greater length than the width of said perforated member and upon which said member is mounted to slide and to turn, said hinge-pin being rigidly secured to the stove-casing, each part of the grate being provided with a lug on its under side, and a screw threaded through each side of the stove-casing, below the grate, adapted to bear against the lugs on said grate, substantially as shown and described.

809,702. EYEGLASSES AND SPECTACLES. JOSEPH KOVACS, Newark, N. J. Filed Sept. 19, 1905. Serial No. 279,080.

Claim.—The herein-described means for changing the focal distance of a pair of eyeglasses or spectacles, comprising a supplemental lens provided with a spring-clamp formed from a blank comprising an oblong body portion provided at one end with a projecting member and at the opposite end with a projecting finger, the body portion being provided with a longitudinal spring-tongue which is cut from the central portion thereof, said end member and said tongue being formed into a U-shaped clamp in which the supplemental lens is secured, and said finger being formed into a spring-ring and in connection with said body portion of the blank forming a clamp to engage one of the lenses of the eyeglasses or spectacles, substantially as shown and described.

809,703. TABLE. GEORGE J. KRAEMER, London, England, and EDOUARD ELLER, Geneva, Switzerland. Filed May 17, 1905. Serial No. 260,806.

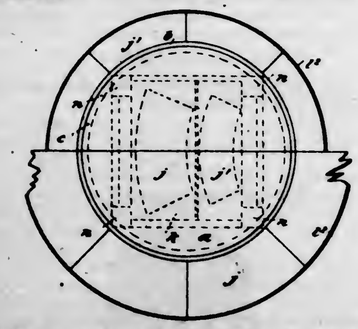

Claim.—1. An extensible table comprising a top having a downwardly-directed recess adjacent to its edge, extensible supports carried by said top for projection beyond said edge, extension-sections for resting upon said supports, each section having an upwardly-directed flange for engaging said recess, and means for maintaining said flange in said recess and for preventing downward displacement of the edge of the extension carrying said flange.

2. An extensible table comprising a top having a downwardly-directed flange and recess adjacent to its edge, a supporting-face below said flange and recess, said flange being interrupted for the insertion of a cooperative locking member into said recess and between the top and such support, and a number of extension members each having a recess for receiving the flange and a flange for entering the recess.

3. In an extensible table, the combination with a circular table-top having a downwardly-projecting flange and a downwardly-opening recess at its under side near its edge, of series of extension members for surrounding said table-top and each having an upwardly-directed flange and an upwardly-opening recess for engagement with the recess and flange of said table-top, a support carried by the table-top for maintaining said engagement, said table-top flange being interrupted by a gap for the passage of the flanges of the several extension members into the recess of the table-top, and extensible supports for the said members.

4. In an extensible table, the combination with a circular table-top, of an annular metallic plate carried by the edge of the table-top and having an annular groove adjacent its lower edge, a series of extension members for surrounding said table-top, a metallic plate upon the under side of each of said members and projecting beyond the inner edge thereof, and having at its upper edge a segmental flange for engagement with said groove, a member fast with the table-top for sustaining such engagement, said table-groove having an opening into it for the passage of the flanges of said extension members, radial grooves in said sustaining member for extensible supports, and extensible supports therein.

5. In an extensible table, the combination with a circular table-top, of an annular metallic plate carried by the edge of the table-top and having an annular groove adjacent its lower edge, a series of extension members for surrounding said table-top, a metallic plate upon the under side of each of said members and projecting beyond the inner edge thereof, and having at its upper edge a segmental flange for engagement with said groove, a member fast with the table-top for sustaining such engagement, said table-groove having an opening into it for the passage of the flanges of said extension members, radial grooves in said sustaining member for extensible supports, and radial recesses for heads on such supports, extension-supports shiftable in said grooves and each having a head for engaging the plate upon the supported extension member.

809,704. MOTOR-PLOW. HENRY J. KYLE, Tipton, Ind. Filed June 9, 1905. Serial No. 264,622.

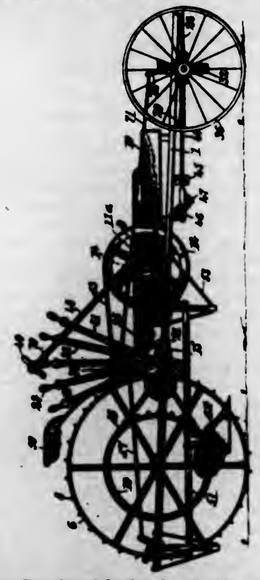

Claim.—In a plow of the class described, in combination, a frame comprising forwardly-diverging side stringers and having a wheel-space formed in the rear portion thereof, a main driving-wheel rotatably mounted in said frame in said wheel-space, means for driving said wheel, springs attached to the forward extremity of said frame and having laterally-disposed necks attached to said side stringers, an axle attached to the under side of said stringers and wheels mounted upon said axle.

809,705. COMBINED RAILWAY DRAW-HEAD AND AIR COUPLING. LOUIS LEBOUVE, Chicago, Ill. Filed Nov. 21, 1904. Serial No. 233,789.

Claim.—1. In an air or steam pipe coupling device, the combination with a suitably-chambered head, of an aperture in said head, a check-valve for said aperture, a projecting nipple from said chamber, and a check-valve for said nipple, said nipple being adapted to enter the aperture of a corresponding head to unseat the check-valve in said aperture.

2. The combination with a chambered draw-head or the like, of an aperture leading from said chamber, a pipe or nipple extending from said chamber, slots or the like in the outer end of said nipple, a ball-valve for closing said aperture, a second ball-valve for closing the opening through said nipple, the arrangement being such that when said device is brought into cooperative relation with a corresponding device, one or more of the ball-valves will be opened to admit the passage of a fluid.

3. In a draw-head or the like, provided with chambers connected with the train-pipes, the combination of an aperture leading from said chamber, said aperture being provided with a rubber bushing, a nipple leading from said chamber having slots or openings in its outer end, ball-valves in said chamber adapted to close said aperture and said nipple, a corresponding draw-head provided with suitably-disposed similar apertures and projecting nipples, the arrangement being such that when the draw-heads are connected, the projecting nipples will unseat the balls closing the apertures in the opposite draw-heads.

4. A draw-head having in its bottom a transverse chamber, a pipe connected with the chamber, and a projection extending outwardly from the draw-head and provided with an aperture communicating with said chamber, said projection adapted to extend into an aperture in a corresponding draw-head and communicating with a like chamber therein, and valves adapted to close said apertures when the draw-heads are uncoupled.

5. An automatic car and hose-pipe coupling, comprising similar draw-heads having flat contact-faces and an arm each interlocking with a pin in the other, a lateral recessed hook on said arm, a chamber in the base of each draw-head, a conical tubular nipple extending outwardly from each chamber and adapted for connection in a bushed opening leading to the chamber in the other draw-head, automatic valves for closing said opening and said nipple, and hose-pipe connections on each coupler opening into the chamber therein.

809,706. ELECTRIC ALTERNATING-CURRENT MACHINE. KARL A. LINDSTRÖM, Vesterås, Sweden. Filed June 20, 1905. Serial No. 265,573.

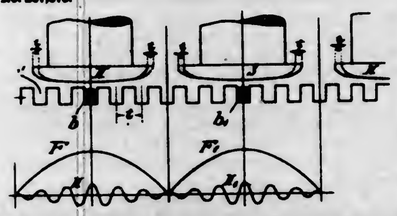

Claim.—1. An alternating-current machine having the armature-winding placed in more or less open slots in the armature-core, and poles of the magnetic field so placed in relation to the two halves of an armature-winding that the waves of tension of higher order, the so-called overtones, induced by certain of the poles in the armature-circuit on account of the discontinuity of the magnetic field caused by the slots of the armature-core, are displaced practically half a period in relation to the corresponding overtones induced by the other poles, substantially as and for the purpose set forth.

2. An alternating-current machine having the armature-winding placed in more or less open slots in the armature-core, and every other distance between the middle lines of the pole-plates of the magnetic field so much greater than the intermediate distances as the distance between the middles of adjacent slots in the armature-core, substantially as and for the purpose set forth.

809,707. PNEUMATIC TRAIN-CONTROL SYSTEM. JOHN B. LIST, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Oct. 16, 1903. Serial No. 177,494.

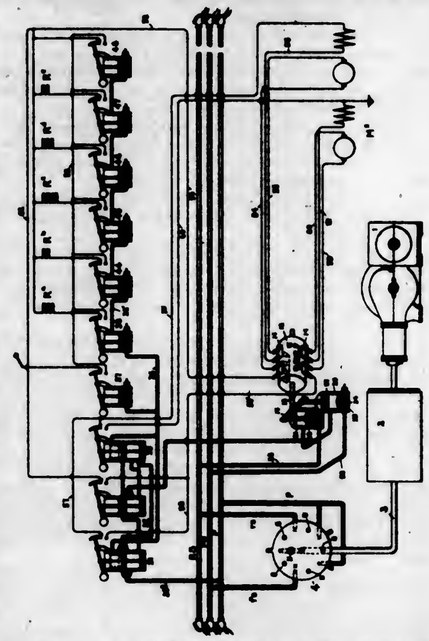

Claim.—1. A motor-controller of the separately-actuated-contact type, comprising speed-controlling contacts operated by fluid-pressure, and means for automatically regulating the rate at which said contacts close.

2. A motor-controller of the separately-actuated-contact type, comprising resistance-controlling contacts operated by fluid-pressure, and means for automatically retarding the successive operation of said contacts.

3. A motor-controller of the separately-actuated-contact type, comprising resistance-controlling contactors adapted to be operated by fluid-pressure, means for admitting fluid-pressure to the first of said contactors, and means whereby each contactor automatically admits pressure to the next.

4. A motor-controller of the separately-actuated-contact type, comprising resistance-controlling contactors adapted to be operated by fluid-pressure, means for admitting fluid-pressure to the first of said contactors, means whereby each contactor automatically admits pressure to the next, and means for automatically retarding the flow of pressure between said contactors.

5. A motor-controller of the separately-actuated-contact type, comprising resistance-controlling contactors adapted to be operated by fluid-pressure, means for admitting fluid-pressure to the first of said contactors, means whereby each contactor automatically admits pressure to the next, and a time-limiting device for automatically retarding the flow of pressure into said contactors.

6. A motor-controller of the separately-actuated-contact type, comprising resistance-controlling contactors adapted to be operated by fluid-pressure, means for admitting fluid-pressure to the first of said contactors, means whereby each contactor automatically admits pressure to the next, and a pneumatic valve controlling the flow of pressure into each contactor.

7. A motor-controller of the separately-actuated-contact type, comprising resistance-controlling contactors adapted to be operated by fluid-pressure, means for admitting fluid-pressure to the first of said contactors, means whereby each contactor automatically admits pressure to the next, a valve-chest adjacent to each contactor through

which the pressure passes, and a piston in the valve-chest controlling the outlet therefrom.

8. A motor-controller of the separately-actuated-contact type, comprising resistance-controlling contactors adapted to be operated by fluid-pressure, means for admitting fluid-pressure to the first of said contactors, means whereby each contactor automatically admits pressure to the next, means for automatically retarding the flow of pressure into said contactors, and means for permitting an unobstructed flow from said contactors.

9. A motor-controller of the separately-actuated-contact type, comprising a plurality of cylinders, movable abutments in said cylinders, contacts actuated by said abutments, pipes connecting said cylinders, and pneumatic valves in said pipes for controlling the flow of compressed fluid from one cylinder to another.

10. A motor-controller of the separately-actuated-contact type, comprising contact elements each consisting of two cylinders in tandem, a movable abutment in each cylinder attached to a common rod, and a contact-arm connected with said rod.

11. In a fluid-pressure motor-controller, the combination with a contact-arm, of two movable abutments, one for closing it and the other for opening it.

12. In a fluid-pressure motor-controller, the combination with two contact-arms, of two movable abutments for each arm, one for closing it and the other for opening it, each closing abutment receiving fluid-pressure from the working side of the opening abutment for the other arm.

13. In a fluid-pressure motor-controller, the combination with two contact-arms, of two movable abutments for each arm, one for closing it and the other for opening it, pipes connecting the working side of each opening abutment with the working side of the other closing abutment, and a single pipe for conveying the fluid-pressure from each closing abutment to other apparatus, said pipe being closed by the closing abutments when the contact-arms are open.

14. In a fluid-pressure motor-controller, the combination with a reversing-switch, of a series switch, parallel switches, a trolley-switch and resistance-controlling switches, movable abutments for actuating all of said switches by fluid-pressure, and pipe connections for holding the parallel switches open when the series switch closes, and vice versa.

15. In a fluid-pressure motor-controller, the combination with three train-pipes, of a reversing-switch connected with two of said pipes, a series switch, trolley-switch and resistance-switches all in series with said reversing-switch and actuated by a single charge of air from either of said pipes, and parallel switches connected with the third pipe and in series with the trolley-switch and resistance-switches and operated by a single charge of air from said third pipe.

16. In a fluid-pressure motor-controller comprising reversing and resistance controlling and series and parallel controlling switches, the combination with train-pipes connected to the motor-controller, of a valve for admitting fluid-pressure to said pipes in succession to operate the parts of the controller and for exhausting all of said pipes when changing from one pipe to another.

17. In a fluid-pressure motor-controller, the combination of a valve having a turning plug containing two circumferential grooves, one longitudinal groove connecting with one of said circumferential grooves, and several longitudinal grooves connecting with the other, an air-supply pipe leading to the first circumferential groove, an exhaust-port leading to the other, and a plurality of train-pipes adapted to connect with the several longitudinal grooves.

18. In a controller for electric motors, the combination with a plurality of separately-actuated contacts for varying the motor speed, of a pneumatic actuating device for each contact, and pneumatic means for controlling said devices from a distance by compressed fluid under substantially constant pressure.

19. The combination with a plurality of motors, of a plurality of master-controllers connected by pipes in multiple relation, and separate individually and pneumatically actuated contacts regulated by the master-controller for connecting the motors in series and parallel.

20. In a system of train control, the combination with a plurality of cars united to form a train, of motors for propelling the train mounted upon more than one of the cars, separate pneumatically-actuated contacts for connecting the motors in series and in parallel, and a master-controller for pneumatically regulating the operation of said contacts.

21. In a system of train control, the combination with a plurality of electric motor-cars united to form a train, of a plurality of separate pneumatically-actuated contacts on each car for changing the grouping of the motors, a master-controller mounted on each motor-car, and pneumatic connections whereby the master-controllers may operate the motor-controllers.

22. In a system of train control, the combination with a plurality of electric motor-cars united to form a train, of a plurality of separately-actuated contacts for changing the resistance of the motor-circuits, pneumatic mechanism for operating said contacts automatically and successively by compressed fluid at substantially constant pressure, a master-controller on each motor-car, and pneumatic connections between the master-controllers and the said mechanism.

23. In a system of motor control, a plurality of contacts operating in automatic succession, pneumatic actuating means for said contacts, and means controlled by the current in the motor-circuit for automatically regulating the rate at which said contacts close.

24. A motor-controller of the separately-actuated-contact type, comprising speed-controlling contacts operated by fluid-pressure, and means for automatically checking the successive operation of said contacts without affecting the contacts already operated.

25. A motor-controller of the separately-actuated-contact type, comprising successively-operating speed-controlling contacts operated by fluid-pressure, and means controlled by the current in the motor-circuit for checking the progression of said contacts without affecting the contacts already operated.

26. A motor-controller of the separately-actuated-contact type, comprising resistance-controlling contactors adapted to be operated by fluid-pressure, means for admitting compressed fluid to the first of said contactors, means whereby each contactor automatically admits the compressed fluid to the next, and means controlled by current in the motor-circuit for automatically retarding the flow of compressed fluid to said contactors.

27. A motor-controller of the separately-actuated-contact type, comprising successively-operating contactors adapted to be operated by fluid-pressure, means for admitting the compressed fluid to the first of said contactors, means whereby each contactor automatically admits the compressed fluid to the next, a pneumatic valve controlling the flow of compressed fluid to each contactor, and means for operating said valve to check the progression of the contactors.

28. A motor-controller of the separately-actuated-contact type, comprising successively-operating contactors adapted to be operated by fluid-pressure, means for admitting compressed fluid to the first of said contactors, means whereby each contactor automatically admits compressed fluid to the next, a pneumatic valve controlling the flow of compressed fluid to each contactor, and means controlled by the current in the motor-circuit for operating said valve to check the progression of the contactors without affecting those already operated.

29. In a system of motor control, a controller comprising a plurality of separately-actuated contacts, pneumatic actuating means for said contacts, and automatic means for compelling said contacts to be operated in succession.

30. In a system of motor control, a controller comprising a plurality of separately-actuated resistance-controlling, series and parallel contacts, pneumatic actuating means for said contacts, a master-controller and suitable connections for causing the operation of certain of said contacts, and automatic means for causing other of said contacts to be operated in succession.

31. In a system of motor control, a controller comprising a plurality of separately-actuated contacts, pneumatic actuating means for said contacts, a master-controller and suitable connections for causing the operation of certain of said contacts, and automatic means for compelling other of said contacts to be operated in succession.

32. In a system of motor control, a controller comprising a plurality of separately-actuated contacts, pneumatic actuating means for said contacts, automatic means for compelling said contacts to be operated in automatic succession, and means for checking the rate of succession.

33. In a system of motor control, a controller comprising a plurality of separately-actuated contacts, pneumatic actuating means for said contacts, automatic means for causing said contacts to be operated in automatic succession, and automatic means for checking the rate of succession.

34. In a system of motor control, a controller comprising a plurality of separately-actuated contacts, pneumatic actuating means for said contacts, a master-controller and suitable connections for causing the operation of certain of said contacts, automatic means for causing other of said contacts to be operated in automatic succession, and automatic means for checking the automatic succession of the contacts.

35. In a system of motor control, a controller comprising a plurality of separately-actuated contacts, pneumatic actuating means for said contacts, a master-controller and suitable connections for causing the operation of certain of said contacts, automatic means for compelling other of the contacts to be operated in automatic succession, and means for checking the automatic succession of the contacts.

36. In a system of motor control, a pneumatically-actuated motor-controller, a pneumatically-actuated reversing-switch, a source of compressed-fluid supply, means under the control of the operator for regulating the admission of compressed fluid to the actuating means for the reversing-switch, and means controlled by the actuating means for the reversing-switch for regulating the admission of compressed fluid to the controller-operating means.

37. In a system of train control, each of a plurality of cars having a reversing-switch, a motor-controller and operating means therefor, two train-pipes operatively related to said operating means, and means for admitting compressed fluid to said pipes for operating the reversing-switches to give forward and reverse motor connections and for operating the several motor-controllers.

38. In combination, a pneumatically-actuated switch, a reversing-switch, and pneumatically-actuated means for actuating said reversing-switch and for controlling the admission of compressed fluid to the actuating means for the pneumatically-actuated switch.

39. A motor-controller comprising a plurality of separate contacts, pneumatic actuating means therefor, and means whereby the operation of certain of said contacts is made dependent upon the operation of certain others of said contacts.

40. A motor-controller comprising a plurality of separate contacts and automatic, pneumatic actuating means therefor, the arrangement of parts being such that the operation of certain of said contacts is dependent upon the operation of certain others of said contacts.

809,708. JOURNAL-BEARING. ARTHUR LIPSCHUTZ, St. Louis, Mo. Filed June 17, 1905. Serial No. 265,727.

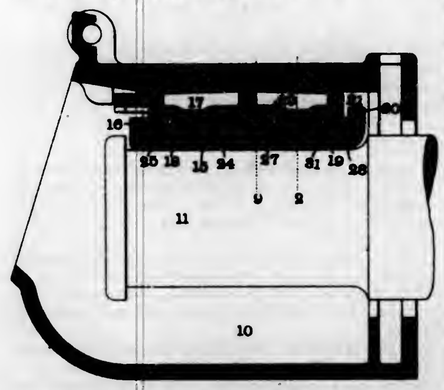

Claim.—1. The combination with a journal-box, of a brass having a plurality of depressed flat bearings extending across its upper face, and a wedge interposed between said journal-box and brass and having on its under face projecting bearings coöperating with the depressed bearings on said brass.

2. The combination with a journal-box, of a brass having a depressed flat bearing extending across its upper face, and a wedge interposed between said journal-box and brass and having a projecting bearing coöperating with the depressed bearing on said brass, said projecting bearing being of sufficiently less width than said depressed bearing to permit end play between said bearings.

3. The combination with a journal-box, of a brass, said brass having a plurality of depressed flat bearings extending across its upper face, and a wedge interposed between said journal-box and brass and having projecting bearings coöperating with the depressed bearings of said brass, said projecting bearings being of sufficiently less width than said depressed bearings to permit end play between said bearings.

4. The combination with a journal-box, of a brass having a plurality of depressed flat bearings extending across its upper face, a wedge interposed between said journal-box and brass, and having on its lower face projecting bearings coöperating with the depressed bearings on said brass, and lugs carried by said wedge between the projecting bearings thereon for limiting lateral movement of said brass.

809,709. TRUNK. THOMAS J. LIVERS, Norfolk, Va. Filed Sept. 13, 1905. Serial No. 278,113.

Claim.—1. In a device of the class described, a receptacle having a movable tray, a movable cover for the receptacle, rails on which the tray travels, said rails being pivotally connected at one end with the receptacle, and means for elevating the other ends of the rails upon movement of the cover to open position.

2. In a device of the class described, a receptacle having a movable cover, rails pivoted at one end to the receptacle and having their other ends operatively connected with the cover for vertical movement thereby and a tray arranged for movement on the rails.

3. In a device of the class described, a receptacle having a movable cover, a movable way operatively connected at one end with the receptacle and at its other end with the cover for movement therewith in a vertical plane, and a tray arranged for movement on the way.

4. In a device of the class described, a receptacle, rails pivoted at one end thereof to said receptacle and having their other ends provided with relatively movable sections adapted to form continuations of the rails, links pivoted to said sections and to the cover of said receptacle, whereby movement of the latter to open position will elevate the adjacent ends of the rails, and a tray arranged to travel on the rails.

5. In a device of the class described, a receptacle having a lid or cover, rails pivoted at one end thereof to the receptacle and having their other ends provided with links pivoted to the said lid or cover, thus forming a tray rest and stay for the support of the lid, combined.

809,710. FOLDING BED AND CABINET. NATHAN LUI, New York, N. Y. Filed Aug. 29, 1905. Serial No. 276,212.

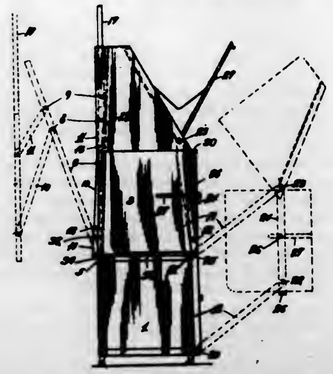

Claim.—1. In an article of the character set forth, a base-section, a mattress-frame pivoted thereto, posts, a bureau-plate carried thereby, and brace-bars pivotally connected to said posts and frame and adapted to support the latter.

2. In an article of the character set forth, a base-section, a mattress-frame pivoted thereto, vertical posts, gudgeons formed on said posts, uprights adapted to engage with said gudgeons, a bureau-plate carried by the uprights, brace-bars pivotally connected to said posts and frame and adapted to support the latter, and means for limiting the rearward movement of the frame when it is moved to its upright position.

3. In an article of the character set forth, a base-section, an upper section, a frame carrying the upper section and adapted to maintain it in a horizontal plane, means adapted to allow horizontal play in the frame for said section, and means adapted to swing the frame and upper section over the base-section to the floor.

4. In an article of the character set forth, a base-section, a frame pivotally connected to the said base-section and adapted to swing over it to the floor, an upper section, a support therefor carried by the frame, and guides formed in the sides of the upper section adapted to allow it horizontal play on its support on the frame.

5. In an article of the character set forth, a base-section, a frame pivotally connected to the said base-section and adapted to swing over it to the floor, an upper section, a support therefor carried by the frame, and guides formed in the sides of the upper section adapted to allow it horizontal play on its support on the frame, said frame being adapted to maintain the upper section in a horizontal plane as it swings to and from the floor.

6. In an article of the character set forth, a base-section, a frame pivotally connected to the said base-section and adapted to swing over it to the floor, an upper section, a support therefor carried by the frame, and guides formed in the sides of the upper section adapted to allow it horizontal play on its support on the frame.

7. In an article of the character described, a base-section, an upper section, a frame carrying said upper section, upper and lower extension-bars pivoted to said frame and base-section, and a topmost section formed on a continuation of the upper pair of extension-bars.

8. In an article of the character described, a base-section, an upper section, a frame carrying said upper section, upper and lower extension-bars pivoted to said frame and base-section, and a topmost section formed on an inclined continuation of the upper pair of extension-bars.

9. In an article of the character set forth, a base-section, an upper section, a frame carrying said upper section, upper and lower extension-bars pivoted to said frame and base-section, a topmost section formed on an inclined continuation of the upper pair of extension-bars, and a downwardly-swinging lid hung on the pivot of the upper extension-bars and frame.

10. In an article of the character set forth, a base-section, an upper section, a frame carrying said upper section, upper and lower extension-bars pivoted to said frame and base-section, a topmost section formed on an inclined continuation of the upper pair of extension-bars, a downwardly-swinging lid hung on the pivot of the upper extension-bars and frame, and a stop for said lid.

11. In an article of the character set forth, a base-section, a mattress, supporting-strips for the same hinged to the base-section, and a plurality of hinges formed in the side strips adapted to permit them to be folded back on themselves.

12. In an article of the character set forth, a base-section, an upper section, a frame carrying the upper section, extension-bars pivoted to said frame and base-section adapted to swing the upper section over the base-section to the floor, a mattress supporting-strips for the same hinged to the base-section and provided with a plurality of hinges, and means adapted to secure the strips in their extended position when the upper section has been swung over to the floor.

13. In an article of the character set forth, a base-section, an upper section, a frame carrying said upper section, upper and lower extension-bars pivoted to said frame and base-section, a topmost section formed of an inclined continuation of the upper pair of extension-bars, a mattress, supporting-strips therefor hinged to the base-section and provided with a plurality of hinges, and means adapted to secure the strips to the upper extension-bars and topmost section when in its extended position.

14. In an article of the character set forth, a base-section, an upper section, a frame carrying said upper section, upper and lower extension-bars pivoted to said frame and base-section, a topmost section formed on an inclined continuation of the upper pair of extension-bars, a mattress, a mattress-frame hinged to the base-section and having its side portions provided with a plurality of hinges, pins on the upper pair of extension-bars and the topmost section, and apertures in the mattress-frame adapted to engage with said pins to secure the mattress-frame when in its extended position.

15. In an article of the character set forth, a base-section, upper sections, means adapted to swing the upper sections over and to the same horizontal plane at the base-section, a mattress-frame pivoted to the base-section, posts, means adapted to support the mattress-frame in its extended position and to maintain the posts in a vertical plane when they are moved from the extended to the upright position.

16. In an article of the character set forth, a base-section, an upper section, a frame carrying the upper section, extension-bars pivoted to the frame and base-section adapted to swing the upper section over the base-section to the floor, a mattress-frame pivoted to the base-section, posts, and brace-bars pivotally connected to said posts and frame and adapted to support the latter.

17. In an article of the character set forth, a base-section, an upper section, a frame carrying the upper section and adapted to maintain it in a horizontal plane, means adapted to allow horizontal play in the frame for said section, extension-bars pivoted to the frame and base-section adapted to swing the frame and upper section over the base-section to the floor, a mattress-frame pivoted to the base-section, posts, and brace-bars pivotally connected to said posts and mattress-frame adapted to support the latter.

18. In an article of the character described, a base-section, an upper section, a frame carrying said upper section, upper and lower extension-bars pivoted to said frame and base-section, a topmost section formed on an inclined continuation of the upper pair of extension-bars, a mattress-frame pivoted to the base-section, posts, brace-bars pivotally connected to said posts and mattress-frame and adapted to support the latter, supporting-strips for said mattress hinged to the base-section and provided with a plurality of hinges, and means on the upper pair of extension-bars and topmost section adapted to secure the supporting-strips in their extended position.

809,711. TURBINE. ERNST MAHR, Cannstatt, Germany. Filed Sept. 28, 1903. Serial No. 176,735.

Claim.—1. In a turbine-wheel, curved paddles arranged in concentric circles, the line of curvature of the paddles in one circle intersecting the paddles in the other circle, and the two sets of paddles having fixed relation one to the other, with their concave sides opposed.

2. In a turbine-wheel, curved paddles arranged in concentric circles, the line of curvature of each paddle in one circle intersecting the next preceding paddle in the other circle, and the two sets of paddles having fixed relation one to the other, with their concave sides opposed.

3. In a turbine-wheel, curved paddles arranged in concentric circles, the line of curvature of each paddle in one circle intersecting at an acute angle the next preceding paddle in the other circle, and the two sets of paddles having fixed relation one to the other, with their concave sides opposed.

4. In a turbine-wheel, curved paddles so arranged in concentric circles as to be tangent thereto, the line of curvature of the individual paddles in one circle intersecting at an acute angle the line of curvature of the succeeding paddle in the other circle and the two sets of paddles having fixed relation one to the other.

5. In a turbine-wheel, curved paddles arranged in concentric circles between side plates, the line of curvature of the paddles in one circle intersecting the line of curvature of the paddles in the other circle, and the two sets of paddles having fixed relation one to the other with their concave surfaces opposed.

6. In a turbine-wheel, curved paddles arranged in concentric circles, each set of paddles being mounted for rotation in the same direction the line of curvature of the paddles in one circle intersecting the line of curvature of the paddles in the other circle, and the concave surfaces of the paddles in the two circles being opposed.

7. In a turbine-wheel, curved paddles arranged in concentric circles, each set of paddles being mounted for rotation in the same direction the line of curvature of the individual paddles in one circle intersecting the line of curvature of the succeeding paddle in the other circle, and the concave surfaces of the paddles in the two circles being opposed.

8. In a turbine-wheel, curved paddles arranged in concentric circles, each set of paddles being mounted for rotation in the same direction the line of curvature of the individual paddles in one circle intersecting at an acute angle the line of curvature of the succeeding paddle in the other circle, and the concave surfaces of the paddles in the two circles being opposed.

9. In a turbine-wheel, curved paddles so arranged in concentric circles as to be tangent thereto, the line of curvature of the individual paddles in one circle intersecting at an acute angle the line of curvature of the succeeding paddle in the other circle, and the concave surface of the paddles in the two circles being opposed.

809,712. DEVICE FOR TEACHING PENMANSHIP. RALPH W. MATHER, Minneapolis, Minn. Filed May 24, 1905. Serial No. 262,694.

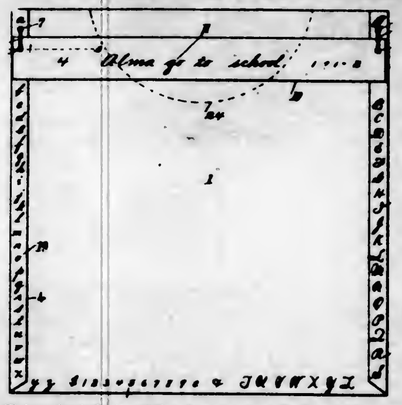

Claim.—1. A device of the character described, comprising an envelop, a writing-base having sets of alined openings therein at the side edges near adjacent corners thereof, a stack of copy-slips having openings therethrough near the ends thereof, and fastening means for said slips inserted through the latter openings and through those of each set in the base, said base forming the back of the envelop.

2. A device of the character described, comprising an envelop having a back constituting a writing-base for a practice-sheet and having the side edges of the front thereof turned over the corresponding edges of said back and secured, the device being formed, near adjacent corners thereof, with sets of alining openings extending through the three thicknesses of material thus provided, a stack of copy-slips having openings therethrough near the ends, and fastening means for said slips extending through the latter openings and through those of each set of said alining openings.

3. A device of the character described, comprising an envelop having a back constituting a writing-base for a practice-sheet and having the side edges of the front thereof turned over the corresponding edges of said back and secured, the device being formed, near adjacent corners thereof, with sets of alining openings extending through the three thicknesses of material thus provided, a stack of copy-slips having openings therethrough near the ends, and fastening-cords for said slips extending through the latter openings and through those of each set of said alining openings.

809,713. WATERPROOF SHOE. PERRY G. MATHEW, Grand Rapids, Mich. Filed Oct. 31, 1904. Serial No. 230,736.

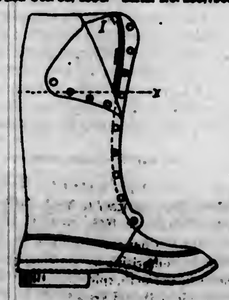

Claim.—1. A shoe, the leg of which is composed of a back, a front and a segmental piece, the back and front being cemented together along their side edges, the back being seamless, and the front having a slit extending downward therefrom, from the upper edge thereof, and the segmental piece fitting into said slit to spread the front.

2. A shoe, the leg of which is composed of a back, a front and a segmental piece, the back and front being cemented together along their side edges, and the front having a depending portion constituting a vamp, and also having a slit extending downward from the upper edge thereof, the said segmental piece being fitted permanently in said slit and serving to spread the front.

3. A shoe, the leg of which is composed of a back, a front and a segmental piece, the back and front being attached together along their side edges, and the front having a depending vamp and a slit extending downward thereinto from its upper edge, the said segmental piece being fitted permanently in the slit and serving to spread the front, and lacing devices connected with the attached portions of the front and back.

4. A shoe including a lining, gum pieces stretched over the leg and foot of the lining and overlapping each other, and a leg surrounding the lining and consisting of a front, a back and a segmental piece, the front and back being cemented together along their side edges, and the front having a depending vamp portion and a slit extending downward thereinto from its upper edge, said segmental portion being permanently fitted in said slit and serving to spread said front.

809,714. STORE-SERVICE APPARATUS. CHARLES J. MILLER, Minneapolis, Minn. Filed Oct. 7, 1904. Serial No. 227,880.

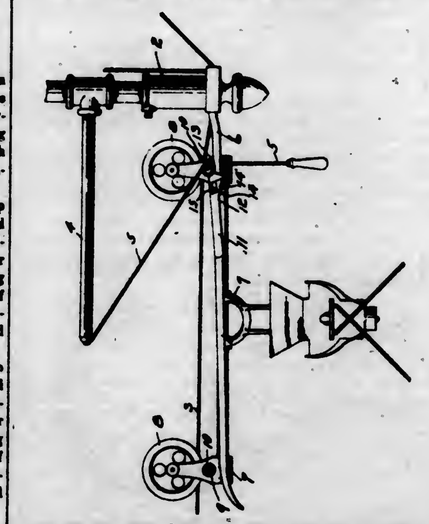

Claim.—1. The combination, with a station and way, of friction-arms beneath said way, a carrier, a propelling device therefor, and means provided in connection with said arms for offering a yielding resistance to the passage of said carrier.

2. In a device of the class described, the combination, with friction-arms, of plates pivoted thereon at one end, and having beveled opposite ends, and springs provided between the beveled ends of said plates and said arms.

3. In a device of the class described, the combination, with friction-arms, of means for offering a yielding resistance to the passage of the carrier thereover, and means for adjusting said resisting means to vary the degree of resistance, substantially as described.

4. In a device of the class described, the combination, with friction-arms, of plates pivoted thereon at one end, and having beveled or inclined opposite ends, springs provided between said plates and arms, and pivoted dogs carried by said arms and arranged to engage said plates and lock them in different positions with respect to said arms, substantially as described.

5. The combination, with a station and line-wire and a carrier-

propelling device, of a carrier, and means for offering a yielding resistance to the discharge of said carrier from said station.

6. The combination, with a station and a line-wire, and a carrier-propelling device, of a carrier, and means for offering a yielding resistance to the entrance of said carrier into a station and its discharge therefrom.

7. The combination, with a station, a way and a carrier-propelling device, of a carrier, and yielding plates having beveled ends against which said carrier is normally in contact when at the station, substantially as described.

8. The combination, with a station and a way, of a carrier, pivoted plates beveled at one end in the path of said carrier, and springs provided in connection with said plates.

9. The combination, with friction-arms, of plates pivoted thereon; springs provided between said plates and arms, and pivoted dogs arranged to engage said plates and lock them in different positions with respect to said arms.

809,715. **BOWLING-ALLEY.** DAVID MILLER, Evanston, Ill. Filed May 3, 1904. Serial No. 206,169.

Claim.—1. In a bowling-alley, in combination, a pin-table, a horizontal ball-track leading thereto and on substantially the same plane therewith, and an upwardly-inclined rigid ball-deflector interposed between the track and the table.

2. In a bowling-alley, in combination, a pin-table having a downward lateral incline and pin-seats of uniform height on the table.

3. In a bowling-alley, in combination, a pin-table having a downward lateral incline from the center in each direction and pin-seats of uniform height on the table.

4. In a bowling-alley, in combination, a pin-table having lateral inclines, pin-seats of uniform height on the table, a ball-track leading to the table, and an upwardly-inclined ball-deflector located between the track and the table.

809,716. **HARROW.** EDWARD R. MILLER, Wytheville, Va. Filed May 3, 1905. Serial No. 258,005.

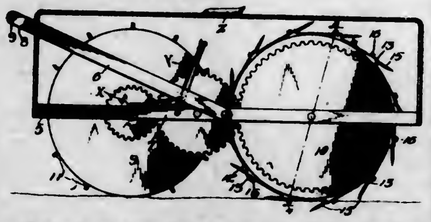

Claim.—1. An implement of the class described comprising a revolubly-mounted drum and teeth carried by the drum said teeth being adjustable to extend at different distances beyond the periphery of the drum and being also adjustable longitudinally of the drum.

2. In a harrow the combination with a revoluble drum of projections carried by the drum and having pockets therewithin teeth engaged in the pockets and adjustable to extend to different distances thereof, and means for holding the teeth at different points of their adjustment said teeth extending at tangents to the drum and in the same direction.

3. An implement of the class described comprising a frame, a traction-drum revolubly mounted in the frame, a harrow-drum revolubly mounted in the frame, connections between the two drums for simultaneous rotation in the same direction and at different rates of speed, teeth carried by the harrow-drum and extending at tangents thereto in the same direction and draft appliances shiftable to lie at opposite ends of the frame.

4. An implement of the class described comprising a frame a pair of drums journaled in the frame, spikes carried by one of the drums, clamping-bands engaged with the other drum for movement longitudinally thereof, said bands being adapted to be clamped upon the drum to hold them against movement thereupon, projections carried by the bands and having pockets therein, teeth engaged in the pockets and adjustable to extend at different distances therefrom, means for holding the teeth at different points of their adjustment said teeth extending in the same direction and at a tangent to the drum and connections between the drums for simultaneous rotation thereof at different rates of speed.

809,717. **LATHE ATTACHMENT.** GEORGE H. MOSS, Fairmont, W. Va. Filed Mar. 13, 1905. Serial No. 249,882.

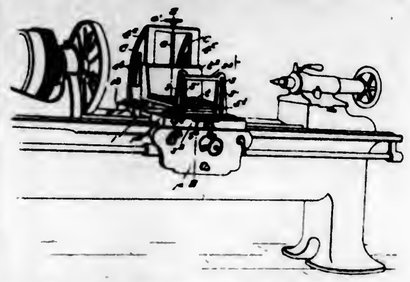

Claim.—1. In combination with a lathe-carriage having a front and a rear rail; a standard projected vertically from the rear rail of the lathe-carriage, a second standard projected vertically from the front rail thereof, the said second standard being slotted vertically, a supplemental carriage or bed member extended over the lathe-carriage, said bed member having guides at its opposite edges for engaging the front and rear standards, means operatively mounted on the rear standard for adjusting the bed member and holding it to its adjusted position.

2. An attachment for lathes of the character described, comprising in combination, the ⌐-shaped standard whose pendent members terminate in right-angled feet to engage the angle-corner of the rear rail of a lathe-carriage, a pair of vertically-slotted standards adapted to be fastened on the top of the front rail of the lathe-carriage, a supplemental carriage or bed member, having guides at the outer edge to coact with the slotted front standards, its rear edge merging with a vertical back, the latter having means for riding on and being rigidly secured to the pendent members of the ⌐-shaped frame, and having a threaded socket on its rear face, and the feed-screw mounted on the cross-head of the frame and engaging the socket on the back of the bed member.

3. In combination with the lathe-carriage having a front and a rear rail, a ⌐-shaped standard projected vertically from the rear rail of the carriage, a second standard projected vertically from the front rail thereof, said second standard including a pair of upwardly-projecting slotted members, a supplemental carriage or bed member extending over the lathe-carriage, said bed member having guides at its opposite edges for engaging the first-mentioned standard, bolts passing through said slotted members and entering the supplemental bed member, and means operatively mounted on the rear standard for adjusting the bed member and holding it to its adjusted position.

4. In combination with the lathe-carriage having a front and a rear rail, a ⌐-shaped standard projected vertically from the rear rail of the carriage, a second standard projected vertically from the front rail thereof, said second standard including a pair of upwardly-projecting slotted members, a supplemental carriage or bed member extending over the lathe-carriage, said bed member having guides at its opposite edges for engaging the first-mentioned standard, bolts passing through said slotted members and entering the supplemental bed member, and means operatively mounted on the rear standard for adjusting the said member and holding it to its adjusted position, said supplemental bed member having a plurality of transverse slots and provided with bolt-receiving apertures, substantially as shown and described.

809,718. **LEATHER-SHAGGING MACHINE.** WILLIAM H. MOORE, Salem, Mass., assignor to Moore Leather Machine Company, Kittery, Me. Filed Jan. 2, 1903. Serial No. 36,035.

Claim.—1. In a leather-coloring machine the combination of a carrier for the skins comprising a bar and means for conducting the same in a predetermined path, coloring means which are arranged on opposite sides of said path and are adapted to apply the color to the skins as they are carried doubled over said bar, and a flexible apron which is connected to said bar at one edge.

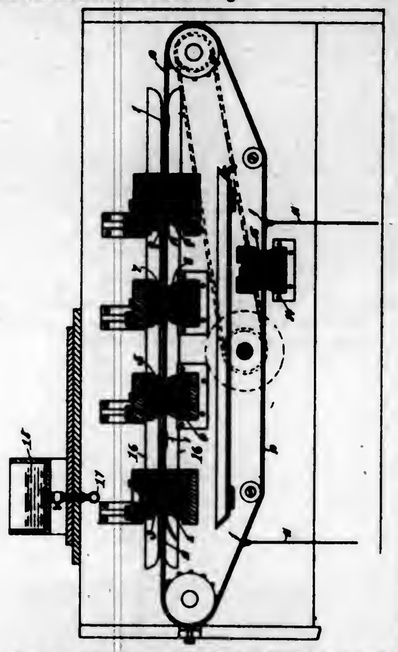

2. In a leather-coloring machine the combination of a carrier for the skins comprising a bar and means for conducting the same in a predetermined path, coloring means which are arranged on opposite sides of said path and are adapted to apply the color to the skins as they are carried doubled over said bar, and a flexible sheet-metal apron which is pivotally connected to said bar at one edge.

3. In a leather-coloring machine the combination of a carrier for the skins comprising a bar and means for conducting the same in a predetermined path, coloring means which are arranged on opposite sides of said path and are adapted to apply the color to the skins as they are carried doubled over said bar, a flexible sheet-metal apron, a stiffening-strip which is secured to one edge of said apron, a pair of hinges which connect the ends of said strip and said apron to said bar so that said apron may swing with respect thereto.

4. In a leather-coloring machine the combination of a carrier for the skins, comprising two endless chains, a carrier-bar which is connected to said chains, means for driving said chains and for conducting said rod in a predetermined path, coloring means which are arranged on opposite sides of said path and are adapted to apply the coloring to the skins as they are carried doubled over said bar, an apron which is connected to said bar at one edge, so that said bar may rotate with respect thereto, and means for removing the coloring-matter from the surface of said apron as it returns to again pass between the color-applying means.

5. In a leather-coloring machine the combination of a carrier for the skins, comprising two endless chains, a carrier-bar which is connected to said chains, means for driving said chains and for conducting said rod in a predetermined path, coloring means which are arranged on opposite sides of said path and are adapted to apply the coloring to the skins as they are carried doubled over said bar, an apron which is connected to said bar at one edge, so that said bar may rotate with respect thereto, and means for removing the coloring-matter from the surface of said apron as it returns to again pass between the color-applying means, said means comprising a pair of stationary absorbent-pads between which the bar and apron are conducted by said chains.

6. In a leather-working machine, the combination with a pair of liquid-applying devices, means for supplying them with liquid material, and a pair of cleaning devices, of a two-faced skin-support, and means for moving it between the liquid-applying devices and the cleaning devices.

7. In a leather-working machine the combination with a pair of liquid-applying devices, means for supplying them with liquid material, and a pair of absorbent-pads, of a two-faced skin-support, and means for moving it between the liquid-applying devices and said pads.

8. In a leather-working machine the combination with a carrier, a two-faced skin-support which is pivotally connected thereto, a pair of liquid-applying devices, a pair of cleaning devices, and means for conducting said support between said liquid-applying devices and said cleaning devices successively.

9. In a leather-working machine, the combination of a pair of liquid-applying devices, means for supplying them with liquid material, a flexible two-faced skin-support, and means for moving it between said liquid-applying devices, substantially as described.

10. In a leather-working machine, the combination of a pair of liquid-applying devices, means for supplying them with liquid material, a flexible two-faced skin-support, a pair of endless chains to which said flexible skin-support is connected, and means for moving said chains to carry the skin-support between said liquid-applying devices, substantially as described.

11. In a leather-working machine, the combination of a pair of liquid-applying devices, means for supplying them with liquid material, a flexible two-faced skin-support, a pair of endless chains to which said flexible skin-support is pivotally connected, and means for moving said chains to carry the skin-support between said liquid-applying devices, substantially as described.

12. In a leather-working machine, the combination of a pair of liquid-applying devices, and means for conducting liquid material thereto, an impervious skin-support having oppositely-disposed faces each of greater area than half the area of one side of the skins to be placed thereon, and means for moving said support between said liquid-applying devices, substantially as described.

13. In a leather-working machine, the combination of a pair of liquid-applying devices, means for supplying them with liquid material, a two-faced skin-support and means for moving it between said liquid-applying devices, and a cleaning device over which said skin-support is drawn, substantially as described.

14. In a leather-working machine, the combination of a pair of liquid-applying devices, means for supplying them with liquid material, a two-faced skin-support and means for moving it between said liquid-applying devices, and a stationary cleaning device over which said skin-support is drawn, substantially as described.

15. In a leather-working machine, the combination of a pair of liquid-applying devices disposed one above the other, means for conducting liquid material to the uppermost of said devices, a two-faced skin-support and means for moving it between said liquid-applying devices in an endless path, and a cleaning device for one face of said support which is disposed on the same side of said path as the uppermost liquid-applying device, substantially as described.

16. In a leather-working machine, the combination of a pair of suitably-driven endless chains, a pair of front and a pair of rear sprockets over which said chains pass, a two-faced skin-support which is connected to both of said chains and extends between them, a pair of liquid-applying devices between which said support is drawn as it is advanced from said front to said rear sprockets, and a stationary cleaning device for one face of said support over which said support is drawn as it is returned from said rear to said front sprockets, substantially as described.

17. A leather-working machine comprising a two-faced skin-support, means for moving the same in a predetermined path, means arranged on opposite sides of said path for applying liquid material to a skin as it is carried by said support, and means, likewise arranged, for removing the liquid from portions of the support uncovered by the skin, substantially as described.

18. In a leather-working machine, a pair of liquid-applying devices and means for conducting liquid material thereto, a pair of flexible-faced pads, a two-faced skin-support, and means for moving it between said liquid-applying devices and said pads successively, substantially as described.

19. In a leather-working machine, the combination of a pair of liquid-applying devices and means for supplying them with liquid material, a two-faced non-absorbent skin-support, and means for conducting the same between said liquid-applying devices, substantially as described.

20. A leather-working machine comprising a pair of liquid-applying devices and means for supplying them with liquid material, a pair of combined rubbing-in and cleaning devices, a pair of independently-cleaning devices, a two-faced skin-support, and means for moving it between said liquid-applying devices, said combined rub-

bing-in and cleaning devices and said independent cleaning devices successively, substantially as described.

809,719. RAILWAY-SWITCH STAND. EDWARD L. HERGAN, Little Rock, Ark. Filed Apr. 12, 1905. Serial No. 255,169.

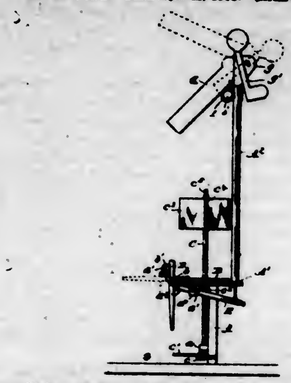

Claim.—1. In a switch-stand, the combination with the supporting-frame, of a member for operating the switch-points, an operating-lever for said member, means for locking the lever in the positions to which the switch may be thrown, a signaling device, and means for operating the latter automatically and independently of the operating-lever when the switch is fully thrown.

2. In a switch-stand, the combination with the supporting-frame, of a member for operating the switch-points, a pivoted operating-lever for said member, means for locking said pivoted lever in the positions to which the switch may be thrown, a signaling device, and means for operating the latter automatically when the pivoted lever is in position to be locked and to hold the signaling device in an operative position during the movement of the switch-operating member from one position to another.

3. In a switch-stand, the combination with a supporting-frame and signaling device, of a movable member for operating the switch-points and provided with recesses in the under side thereof, and a pivoted member counterbalanced so as to operate the signaling device and so that one end thereof will engage the under side of the aforesaid member and enter the recesses therein.

4. In a switch-stand, the combination with the supporting-frame having notches therein, a disk for operating the switch-points rotatable on said frame and provided with a slot, a lever pivoted in said slot and adapted to engage the notches in the supporting-frame, a pivoted member one end of which is adapted to engage the disk and enter the slot therein, and a signaling device connected to said pivoted member.

5. In a switch-stand, the combination with the supporting-frame having notches therein, a disk for operating the switch-points rotatable on said frame and provided with a slot, a lever pivoted in said slot and adapted to engage the notches in the supporting-frame, a member pivoted beneath the rotatable disk with one end engaging the under side thereof and having a portion adapted to enter the slot therein, and a signaling device connected to the pivoted member.

6. In a switch-stand, the combination with the supporting-frame having notches therein, a disk for operating the switch-points rotatable on said frame and provided with a slot and a recess at different points, a lever pivoted in the slot, a member pivoted beneath the disk so that one end of the former will engage the under side of the latter and enter the slot and recess therein, and a signaling device connected to the pivoted member.

7. In a switch-stand, the combination with the supporting-frame having notches therein, a disk rotatably mounted on the frame and adapted to operate the switch-points, said disk having a slot and a recess at different points, a lever pivoted in the slot and adapted to engage the notches in the supporting-frame, a yoke pivoted under the disk so that one end thereof will engage the under side of the disk and enter the slot and notch therein, said end of the yoke being adapted to be engaged by the lever when the latter is swung upon its pivot, and a signaling device connected to the yoke.

8. In a switch-stand, the combination with the platform having notches therein, a disk rotatable on the platform and adapted to operate the switch-points, said disk having a slot therein, a lever pivoted in the slot and adapted to engage the notches in the platform, a yoke pivoted under the disk and having a portion adapted to enter the slot in the disk in the path of the movement of the pivoted lever, a lug on said lever adapted to engage the yoke, and a pivoted signal-blade or semaphore connected to the yoke and operated thereby.

9. In a switch-stand, the combination with the supporting-frame comprising a platform and an upright or post, said platform having notches therein, a disk rotatably mounted on the platform for operating the switch-points and having a slot therein, a lever pivoted in said slot and adapted to engage the notches in the platform, a yoke pivoted under the platform with one end thereof bearing against the under side of the disk and adapted to enter the slot therein, a reflecting medium on the upright, a signal-arm pivoted on the upright and connected to the yoke, and a shutter on the signal-arm adapted to screen the reflecting medium, substantially as herein shown and described.

809,720. BASIN-COCK. PHILIP MUELLER, Decatur, Ill., assignor to H. Mueller Manufacturing Company, Decatur, Ill., a Corporation of Illinois. Filed May 20, 1905. Serial No. 261,263.

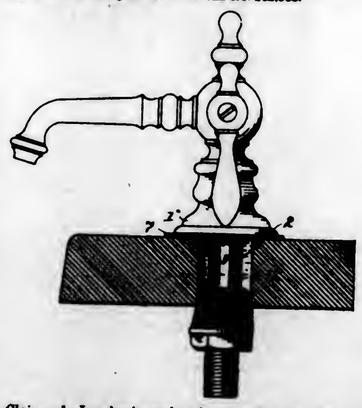

Claim.—1. In a basin-cock, a base to sit on the slab, a longitudinally-ribbed extension to pass through the hole of the slab, a threaded end of the ribbed extension, a washer conforming to the ribbed extension and having a corrugated or roughened bearing-surface, and a nut for the threaded end of the extension.

2. In a basin-cock, a base to sit on the slab, a longitudinally-ribbed extension to pass through the hole of the slab, a threaded end of the ribbed extension, a conical, fluted washer conforming to the ribbed extension, and a nut for the threaded end of the extension.

809,721. WIRE STRETCHER AND STRINGER. WILLIAM F. MYERS, Broken Bow, Nebr., assignor of one-half to Charles H. Lehnen. Filed Feb. 23, 1905. Serial No. 247,742.

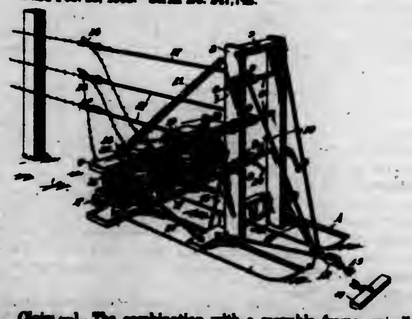

Claim.—1. The combination with a movable frame, spindles thereon for the support of spools of wire, of a spool-brake, hooks extending from the frame to the spool-brake and a brake-lever adapted to be hooked to one of the spool-spindles and exert pressure upon the spool-brake.

2. The combination with runners, cross-pieces secured thereto, uprights extending upward from the runners, guy-rods extending from the upper end of the uprights and from the forward cross-piece to a common point, and means connecting the guy-rods at such point, of spindles extending upward from the rear cross-piece, spools, a spool-brake, a brake-lever, and means extending from the spool-brake to the forward cross-piece for supporting the spools and their spindles at their upper ends.

3. The combination with a frame, comprising runners, uprights and cross-pieces, of means for anchoring the machine, rods extending therefrom to the uprights and one of the cross-pieces, spindles on one of the cross-pieces, a brake, and rods extending from the brake to one of the cross-pieces.

809,722. AUTOMATIC VALVE FOR WATER-CLOSETS. JOSEPH C. McCABE, Weston, W. Va., assignor of one-fourth to William J. Alexander, one-fourth to William H. Hoyt, and one-fourth to John O'Hare, Norwalk, Ohio. Filed Sept. 17, 1904. Serial No. 224,515.

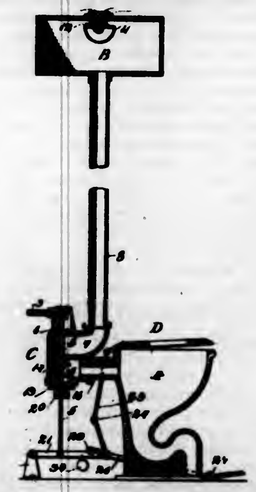

Claim.—1. In a device of the character specified, the combination of a closed tank, an inlet-valve thereto, an outlet-valve therefrom, a stem for said inlet and outlet valves, an operating-lever connected with said stem, a bowl, a movable seat thereon, a draw-rod having a break-joint, connecting said movable seat with said operating-lever, a treadle-lever having a slotted connection with said operating-lever, and an air-outlet valve in said tank, adapted to be closed automatically when the tank is filled.

2. In a device of the character specified, the combination of an inlet-chamber, a valve-chamber, an outlet-chamber, a tank connected with the valve-chamber, an air-outlet valve in said tank adapted to be closed automatically when the tank is filled, an inlet-valve between said inlet-chamber and valve-chamber, an outlet-valve between said valve-chamber and said outlet-chamber, a valve-stem connecting said inlet and outlet valves and having a passage communicating with said inlet and outlet chambers, a bowl, a passage leading from said outlet-chamber to said bowl, an operating-lever connected with said valve-stem, a movable seat, a draw-rod connecting said seat with said operating-lever and having a break-joint therein, a foot-lever having a slotted connection with said operating-lever, and a weight attached to said operating-lever.

809,723. CREDIT-ACCOUNTING APPLIANCE. FIRST A. McCARTHY, Lisbon, Ohio. Filed July 27, 1905. Serial No. 271,421.

Claim.—1. Credit-accounting appliances including a frame provided with a plurality of studs having each a spring mounted removably thereon, and a plurality of bill-holding leaves mounted in the frame and engaged by the springs.

2. Credit-accounting appliances including a frame having upright ends provided with slots having undercut journal-bearings at the sides of the bottoms thereof, bill-holding leaves having journals mounted in the bearings, and springs mounted on the frame and engaging the leaves.

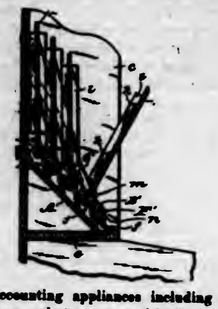

3. Credit-accounting appliances including a case, a frame mounted in the case, a button mounted in the back of the case and cooperating with the frame, bill-holding leaves mounted in the frame, and springs mounted in the frame engaging the leaves.

4. In credit-accounting appliances, the combination of a frame-base having a groove in the top thereof and also having upright ends one or both of which is provided with a plurality of studs, and springs mounted on the studs having each an arm seated in the groove and also a movable arm, with bill-holding leaves pivoted in the frame ends and engaged by the movable arms of the springs.

5. In credit-accounting appliances, the combination with a frame having journal-bearings, and bill-holding leaves having journals mounted in the bearings, of studs attached to the frame, springs coiled about the studs removable therefrom and engaging the leaves, and means for normally holding the springs on the studs.

809,724. TOBACCO-STRIPPING MACHINE. JOSEPHUS H. McINTOSH, Providence, R. I. Filed Mar. 8, 1905. Serial No. 248,963.

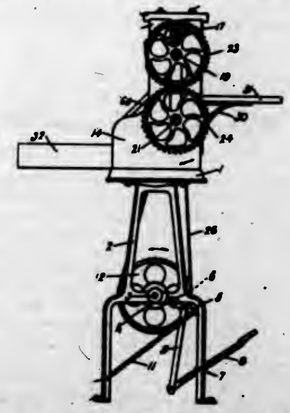

Claim.—1. In a machine of the character described, the combination with a pair of stripping-rolls, of a plate upon the periphery of one of the rolls, a recess in said roll, a cutter mounted in the second roll adapted to register with said plate, and a pair of pinching-jaws in the second roll adapted to register in said recess.

2. In a machine of the character described, the combination with a pair of stripping-rolls, one of which rolls is provided with a peripheral recess, of pinching-jaws mounted in the second roll and adapted to register in said recess.

3. In a machine of the character described, the combination with a pair of stripping-rolls, one of which is provided with a peripheral recess, of pinching-jaws in the second roll, adapted to register in said recess, and means for actuating the jaws.

4. In a machine of the character described, the combination with a pair of stripping-rolls, one of which is provided with a peripheral recess, of pinching-jaws in the second roll adapted to register in said recess, means for actuating said jaws, a cutter slidably mounted in one of the rolls adapted to contact with the periphery of the other roll, and means for reciprocating the cutter.

5. In a machine of the character described, the combination with a pair of stripping-rolls, one of which is provided with a peripheral recess, of a pair of pinching-jaws adapted to register in said recess, means for actuating said jaws, a cutter slidably mounted in one of the rolls adapted to contact with the periphery of the other roll, and means for reciprocating the cutter.

809,725. APPARATUS FOR TRANSFERRING PHOTOGRAPHIC IMAGES. ALBERT MEYER, Berlin, Germany. Filed Jan. 31, 1905. Serial No. 243,722.

Claim.—1. The herein-described apparatus for transferring photographic images, comprising a base presenting upwardly a non-adhesive rest extending into close proximity to the transfer sheet, strip or body of the sensitive material, and means for moving the sensitive material over said rest, substantially as described.

809,727. GAS-FIXTURE. PATRICK J. HEVERN, Haverhill, Mass. Filed Feb. 23, 1905. Serial No. 246,508.

controlling said heating-circuit, and a thermostat and an electromagnetic device in the motor-circuit for opening and closing said

5. In a machine of the character described, the combination with a pair of stripping-rolls, one of which is provided with a peripheral recess, of a pair of pinching-jaws pivotally mounted in the second roll and adapted to register with said recess, shanks upon said jaws, a spring intermediate the shanks a pin upon one of the shanks, a pivoted lever contacting with the second shank, and with the pin, a slidable bar contacting with the first shank, and means for reciprocating the bar.

6. In a machine of the character described, the combination with a pair of stripping-rolls, one of which is provided with a peripheral cutter-plate, of a cutter mounted in the second roll, a flange upon the cutter-plate, spring means contacting with the flange for retaining the knife in elevated position, a slidable bar provided with a beveled shoulder mounted in the second roll and resting upon the flange, and means for reciprocating the bar.

7. In a machine of the character described, the combination with the bed of supports upon the bed, a stripping-roll provided with a peripheral recess mounted in the supports, a second stripping-roll also mounted in the supports and resting upon the first roll, adjustable spring means in the supports for retaining the rolls in contact with each other; pinching-jaws mounted in the second roll adapted to register in said recess, a flange upon the jaws, a reciprocating cutter in one roll adjacent the pinching-jaws, a flange upon the cutter, a slidable bar contacting with one of the shanks, a second slidable bar engaging the cutter-flange, and means upon the supports contacting with the rolls for reciprocating both bars.

8. In a machine of the character described, the combination with the bed of supports upon the bed, a pair of stripping-rolls mounted in the supports, cam-plates upon the supports adjacent the ends of one roll, pinching-jaws in said roll, a cutter also in said roll, slidable bars in said roll for actuating the jaws and cutter projecting beyond the ends of the roll and contacting with the cam-plates, and springs in the roll and engaging the bars for forcing the bars outwardly.

809,725. **DUPLICATING APPARATUS.** LOUIS C. NEFF, New York, N. Y. Filed Apr. 18, 1905. Serial No. 256,326.

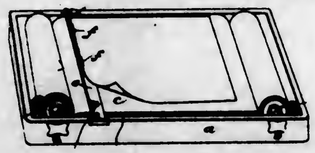

Claim.—1. A paper-guide attachment for duplicating apparatus, comprising a base presenting upwardly a non-adhesive rest extending into close proximity to the transfer sheet, strip or body of the apparatus, and carrying thereon angularly-arranged stops.

2. A paper-guide attachment for duplicating apparatus, comprising a base presenting upwardly a non-adhesive rest extending into close proximity to the transfer sheet, strip or body of the apparatus and carrying thereon angularly-arranged stops, and means whereby said base may be fixed relatively to said sheet, strip or body.

3. A paper-guide attachment for duplicating apparatus, comprising a base presenting upwardly a non-adhesive rest extending into close proximity to the transfer sheet, strip or body of the apparatus, and carrying thereon angularly-arranged adjustable stops, whereby the margins on said rest may be varied.

4. A paper-guide attachment for duplicating apparatus, comprising a base presenting upwardly a non-adhesive rest extending into close proximity to the transfer sheet, strip or body of the apparatus, and carrying thereon angularly-arranged adjustable stops, whereby the margins on said rest may be varied, said rest having a plurality of angularly-arranged gage-lines adjacent to said stops.

5. A paper-guide attachment for duplicating apparatus, comprising a base presenting upwardly a non-adhesive rest extending into close proximity to the transfer sheet, strip or body of the apparatus, and carrying thereon angularly-arranged adjustable stops, whereby the margins on said rest may be varied, and means whereby said base may be fixed relative to said sheet, strip or body.

6. A paper-guide attachment for duplicating apparatus, comprising a base presenting upwardly a non-adhesive rest extending into close proximity to the transfer sheet, strip or body of the apparatus, and carrying thereon angularly-arranged stops, said base having bearings on each end thereof, and screws adapted to enter said bearings and force said base upon said sheet, strip or body.

7. A paper-guide attachment for duplicating apparatus, comprising a base presenting upwardly a non-adhesive rest extending into close proximity to the transfer sheet, strip or body of the apparatus, and carrying thereon angularly-arranged stops, said base having slotted bearings on each end thereof, and channeled screws adapted to enter said slots and move said base toward and from said sheet, strip or body.

8. A paper-guide attachment for duplicating apparatus comprising a base presenting upwardly a non-adhesive rest extending into close proximity to the transfer sheet, strip or body of the apparatus, and carrying thereon angularly-arranged stops, said base having slotted bearings on each end thereof, channeled screws adapted to enter said slots and move said base toward and from said sheet, strip or body, and a metallic face-plate adapted to receive said screws and to be attached to the support for said sheet, strip or body.

9. A paper-guide attachment for duplicating apparatus comprising a base presenting upwardly a non-adhesive rest extending into close proximity to the transfer sheet, strip or body of the apparatus, and carrying thereon angularly-arranged adjustable stops consisting of a plurality of pivotal top stops spaced apart and a pivotal side stop forming a geometrical angle with said top stops.

10. A paper-guide attachment for duplicating apparatus comprising a base presenting upwardly a non-adhesive rest extending into close proximity to the transfer sheet, strip or body of the apparatus, and carrying thereon angularly-arranged adjustable stops consisting of a plurality of pivotal top stops spaced apart, and a pivotal side stop forming a geometrical angle with said top stops, said base having bearings on each end thereof, and screws adapted to enter said bearings and force said base upon said sheet, strip or body.

11. A paper-guide attachment for duplicating apparatus comprising a base presenting upwardly a non-adhesive rest extending into close proximity to the transfer sheet, strip or body of the apparatus, and carrying thereon angularly-arranged adjustable stops consisting of a plurality of pivotal top stops spaced apart, and a pivotal side stop forming a geometrical angle with said top stops, said base having bearings on each end thereof, and screws adapted to enter said bearings and force said base upon said sheet, strip or body, said rest having a plurality of angularly-arranged gage-lines adjacent to said stops.

12. A paper-guide attachment for duplicating apparatus comprising a base presenting upwardly a non-adhesive rest extending into close proximity to the transfer sheet, strip or body of the apparatus, and carrying thereon angularly-arranged adjustable stops consisting of a plurality of pivotal top stops spaced apart, and a pivotal side stop forming a geometrical angle with said top stops, said base having slotted bearings on each end thereof, and channeled screws adapted to enter said slots and move said base toward and from said sheet, strip or body, said rest having a plurality of angularly-arranged gage-lines adjacent to said stops.

809,726. **CORD-CLAMP.** EDWARD NELSON, Jersey City, N. J. Filed Dec. 9, 1904. Serial No. 236,183.

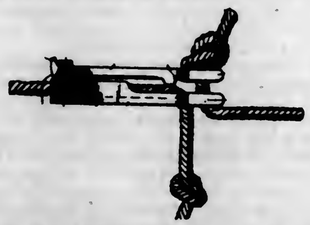

Claim.—A cord-clamp comprising a body-plate formed in its upper side with a longitudinal groove and provided at one end with a loop, said plate also being provided between its center and opposite end with upright flanges arranged on opposite sides of the contiguous portion of the groove and connected adjacent their outer ends by a transverse arched portion overlying the groove, and a lever member having one end bent to form a hook, the concaved side of the hook engaging the arched portion and forming a pivoting portion on which the lever is adapted to swing and the concaved side of the hook forming a cam or eccentric face to clamp the cord against the underlying grooved portion of the body-plate, the opposite end of said lever having a loop to aline with the loop of the body-plate and a depending serrated projection adjacent thereto to engage and clamp the cord against the grooved face of the body-plate, adjacent to the loop thereof, substantially as described.

809,727. **GAS-FIXTURE.** PATRICK J. HAVERN, Haverhill, Mass. Filed Feb. 28, 1903. Serial No. 145,889.

Claim.—In a gas-fixture, the combination of a burner, and a gas-supply pipe, the latter being coiled above the flame into the form of a hood or cone closed at the top, for the purpose of serving as a bell to protect the ceiling against burning and discoloration.

809,728. **ELECTRICAL HEATING SYSTEM.** ARTHUR D. NEWTON, Hartford, Conn., assignor to General Electric Company, a Corporation of New York. Filed July 3, 1901. Serial No. 215,860.

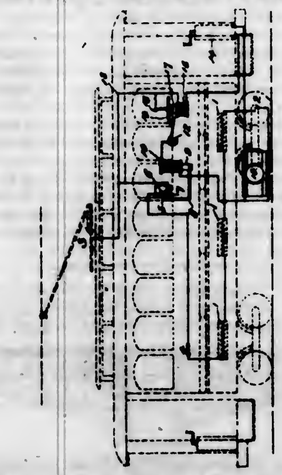

Claim.—1. In combination, a source of current-supply, a heating-circuit and a circuit including a translating device connected to said source of current-supply, a switch in said heating-circuit, and means responsive to the mutual action of the local temperature and the current in the circuit containing the translating device for operating said switch.

2. In a car-heating system, a source of current-supply, a heating-circuit and a motor-circuit connected to said source of current-supply, and governing means for said heating-circuit responsive to the mutual action of the temperature in the car and the current in the motor-circuit.

3. In combination, a source of current-supply, a heating-circuit and a motor-circuit connected to said source of supply, a switch for controlling said heating-circuit, and a thermostat and an electroresponsive device in the motor-circuit for opening and closing said switch.

4. In combination, a source of current-supply, a heating-circuit and a motor-circuit connected to said source of current-supply, a switch for controlling said heating-circuit, and a thermostat and electroresponsive device in the motor-circuit tending to operate said switch upon variations in the local temperature and in the motor-current.

5. In combination, a source of current-supply, a heating-circuit and a motor-circuit connected to said source of current-supply, a switch in said heating-circuit, an electromagnet for operating said switch, a switch controlling the circuit of said electromagnet, and means responsive to variations in local temperature and in current in said motor-circuit for opening and closing said latter switch.

6. In combination, a source of current-supply, a heating-circuit and a motor-circuit connected to said source of current-supply, a switch in said heating-circuit, an electromagnet for operating said switch, a switch controlling the circuit of said electromagnet, a thermostat operating to produce relative movements of the members comprising said latter switch upon variations in local temperature, and an electromagnet in the motor-circuit also arranged to produce relative movements of the members of said latter switch upon variations in the motor-current.

809,729. **TRESTLE.** JOSEPH M. NORMAND, Springfield, Ohio, assignor to The Ridgely Trimmer Company, Springfield, Ohio, a Corporation of West Virginia. Filed Feb. 27, 1905. Serial No. 247,404.

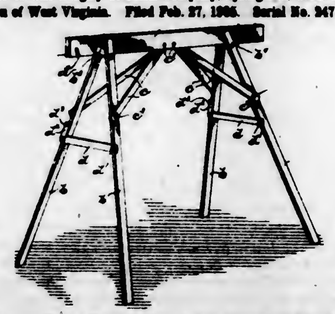

Claim.—1. In a device as described, a beam, spreading legs connected together in pairs by means which support said beam, and permit the upper ends of said legs to embrace said beam above said support, links pivotally attached to said legs at one end and at their opposite ends pivoted to said beam intermediate said legs and the adjacent ends of said beam, and braces for holding said structure in its erect position, substantially as specified.

2. In a knockdown trestle as described, the combination, with a beam, of spreading legs, a swinging connection between each pair of spreading legs and the beam, the swinging connection of one pair of legs being of sufficient length to pass beyond the end of the beam, and a sliding engagement between the last-named swinging connection and the beam to bring the connected legs within the limit of the beam when folded, substantially as specified.

3. In a device as described, the combination of a beam, spreading legs therefor connected in pairs, a notch in the under side of said beam adjacent to one end thereof, a swinging link connecting one pair of spreading legs and the beam, and having its pivotal connection with the beam substantially midway between the adjusted position of said legs and said notch, a notch in the upper side of said beam and adjacent to the opposite end; a swinging link connecting the second pair of legs and said beam, and having its pivotal connection substantially midway between the adjusted position of said legs and the end of the beam, and means for maintaining said legs in their adjusted positions.

4. In a device as described, a beam, spreading legs therefor connected in pairs, braces for maintaining said legs in relation to the beam, a longitudinal slot in the under side of said beam adapted to receive said braces when in the folded position, and transverse notches in said beam adapted to receive the connecting means of said spreading legs when in folded position, substantially as and for the purpose specified.

5. A folding trestle comprising a beam, spreading legs, the upper ends of which are adapted to extend on each side of said beam

and embrace the same, a support for said beam which also forms the

and embrace the same, a support for said beam which also forms the means for connecting said legs in pairs, connecting-links pivotally securing said legs with said beam at points intermediate said legs and the ends of said beam, and braces for maintaining said structure in its erect position, substantially as specified.

6. A folding trestle comprising a beam, spreading legs having jaws at the upper end thereof to clamp the beam, means connecting said legs and sustaining the weight of the beam, pivoted links connecting said spreading legs and beam at points intermediate of the adjusted position of said legs and the extremity of the beam, and braces secured to said beam and engaging said legs, substantially as specified.

7. In a folding trestle, a beam, spreading legs adapted to clamp said beam, swinging links connecting said legs and beam at points intermediate the adjusted position of the legs and the ends of the beam, and a slotted connection between one of said links and the beam whereby the link will be permitted to swing on varying radii, substantially as and for the purpose specified.

8. In a folding trestle, the combination with a beam of spreading legs, means for supporting the beam upon the upper ends of said legs, swinging connections and supports secured to said beams whereby one pair of legs may be moved from a position below said beam to a position above and then in alinement with said beam, while being maintained in substantial parallelism therewith, substantially as and for the purpose specified.

809,780. BUTTON-GUARD FOR COLLARS. FREDERICK H. HOBBS, Detroit, Mich. Filed Apr. 11, 1904. Serial No. 202,897.

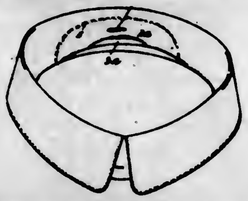

Claim.—A turndown collar comprising a turndown portion, a neckband having an inner and outer member, the inner member of which is provided with a buttonhole at the center of the back portion, and buttonholes at the ends thereof and the outer member covering the back buttonhole of the inner member.

809,781. WATERPROOF COMPOUND. OTTOKAR H. NOWAK, Chicago, Ill., assignor of one-half to Eugene Smith, Chicago, Ill. Filed Apr. 14, 1905. Serial No. 255,651.

Claim.—1. A compound for the purpose described comprising a preparation of dioxynaphthylmethane soluble in water and an albuminoid.

2. A compound for the purpose described comprising a preparation of dioxynaphthylmethane soluble in water and casein.

3. A compound for the purpose described comprising a preparation of dioxynaphthylmethane soluble in water, an albuminoid and a coloring ingredient.

4. A compound for the purpose described comprising a preparation of dioxynaphthylmethane soluble in water, and an adhesive.

5. A compound for the purpose described comprising a preparation of dioxynaphthylmethane soluble in water, an albuminoid and a solvent.

6. A compound for the purpose described comprising a preparation of dioxynaphthylmethane soluble in water, casein and a solvent.

7. A compound for the purpose described comprising a preparation of dioxynaphthylmethane soluble in water, an albuminoid and water.

8. A compound for the purpose described comprising a preparation of dioxynaphthylmethane soluble in water, casein, and water.

809,782. CROSS-BEARER. ALLEN B. OSTRANDER, Paterson, N. J., assignor to American Car & Foundry Company, St. Louis, Mo., a Corporation of New Jersey. Filed July 7, 1905. Serial No. 268,609.

Claim.—1. In a cross-bearer for cars, the combination with center sill, comprising members having outwardly-disposed upper flanges, of webs secured to and projecting from opposite sides of the center sill, said webs having flanges on their upper edges which project beneath the outwardly-disposed flanges of the center-sill members to which they are secured, the top edges of the webs at all other portions being not lower than the tops of the center sill, and a pressed-steel compression member secured to the bottom of each web and connected to the webs of the center-sill members; substantially as described.

3. In a cross-bearer for cars, the combination with a center sill, of webs secured to and projecting from opposite sides of the center sill, and a pressed-steel compression member secured to the bottom of each web, the inner ends of said pressed-steel compression members abutting the center sills, from which point they gradually diminish in width toward the outer ends of said webs; substantially as described.

4. In a cross-bearer for cars, the combination with a center sill, outwardly-projecting webs carried by said center sill, and pressed-steel channel members 13 connected to the bottoms of said webs and having their inner ends abutting the center sill; substantially as described.

5. In a cross-bearer for cars, the combination with a center sill, webs connected to the sides of the center sill and having their bottom edges below the neutral axis of the center sill, and pressed-steel compression members secured to the bottoms of said webs and to the sides of the center sill, said compression members having downwardly-projecting flanges wider near the center sill than near the outer ends of said webs; substantially as described.

6. In a cross-bearer for cars, the combination of center-sill members spaced apart and having outwardly-projecting integral flanges, webs connected to the center-sill members and having portions above the top flanges, said webs being secured to the under sides of the top flanges, pressed-steel channel compression members secured to the bottoms of said webs, and a straight flat tension member secured to the tops of said web and passing over the center sill; substantially as described.

7. The combination with a center sill having a boxed-in diaphragm connecting the center-sill members and of a height equal to the height of the center sill, a continuous cover-plate for the center sill and connected to said diaphragm, the webs 10 and 11 connected to said center-sill member, side sills connected to the ends of the webs, and compression members connected to the center sill and webs and terminating short of the side sills; substantially as described.

809,783. CROSS-BEARER. ALLEN B. OSTRANDER, Paterson, N. J., assignor to American Car & Foundry Company, St. Louis, Mo., a Corporation of New Jersey. Filed July 7, 1905. Serial No. 268,610.

Claim.—1. In a cross-bearer for cars, the combination with a center sill, oppositely-flanged web members carried by the center sill and arranged in pairs back to back, a tension member connected to the upper flanges of the web members, and U-shaped brackets whose flanges are connected to the bottom flanges of the web members; substantially as described.

2. In a cross-bearer for cars, the combination with a center sill, pairs of web members secured to the respective outer sides of the center sill, and a pressed-steel bracket connecting the respective web members of each pair to the respective webs of the center-sill member; substantially as described.

3. In a cross-bearer for railway-cars, the combination with center-sill members spaced apart, a filler between the center-sill members comprising pairs of webs, a continuous top cover-plate connected to the center-sill members and the filler, pairs of web members projecting in opposite directions from the center-sill members, and a channel-section secured to the under side of each diaphragm on the outer sides of the center-sill members; substantially as described.

2. In a cross-bearer for cars, the combination with a center sill comprising members having outwardly-disposed upper flanges, of webs secured to and projecting from opposite sides of the center sill, said webs having flanges on their upper edges which project beneath the outwardly-disposed flanges of the center-sill members to which they are secured, the top edges of the webs at all other portions being not lower than the tops of the center sill, and a pressed-steel compression member secured to the bottom of each web and connected to the webs of the center-sill members; substantially as described.

3. In a cross-bearer for cars, the combination with a center sill, of webs secured to and projecting from opposite sides of the center sill, and a pressed-steel compression member secured to the bottom of each web, the inner ends of said pressed-steel compression members abutting the center sills, from which point they gradually diminish in width toward the outer ends of said webs; substantially as described.

4. In a cross-bearer for cars, the combination with a center sill, outwardly-projecting webs carried by said center sill, and pressed-steel channel members 13 connected to the bottoms of said webs and having their inner ends abutting the center sill; substantially as described.

5. In a cross-bearer for cars, the combination with a center sill, webs connected to the sides of the center sill and having their bottom edges below the neutral axis of the center sill, and pressed-steel compression members secured to the bottoms of said webs and to the sides of the center sill, said compression members having downwardly-projecting flanges wider near the center sill than near the outer ends of said webs; substantially as described.

6. In a cross-bearer for cars, the combination of center-sill members spaced apart and having outwardly-projecting integral flanges, webs connected to the center-sill members and having portions above the top flanges, said webs being secured to the under sides of the top flanges, pressed-steel channel compression members secured to the bottoms of said webs, and a straight flat tension member secured to the tops of said web and passing over the center sill; substantially as described.

7. The combination with a center sill having a boxed-in diaphragm connecting the center-sill members and of a height equal to the height of the center sill, a continuous cover-plate for the center sill and connected to said diaphragm, the webs 10 and 11 connected to said center-sill member, side sills connected to the ends of the webs, and compression members connected to the center sill and webs and terminating short of the side sills; substantially as described.

809,783. CROSS-BEARER. ALLEN B. OSTRANDER, Paterson, N. J., assignor to American Car & Foundry Company, St. Louis, Mo., a Corporation of New Jersey. Filed July 7, 1905. Serial No. 268,610.

Claim.—1. In a cross-bearer for cars, the combination with a center sill, oppositely-flanged web members carried by the center sill and arranged in pairs back to back, a tension member connected to the upper flanges of the web members, and U-shaped brackets whose flanges are connected to the bottom flanges of the web members; substantially as described.

2. In a cross-bearer for cars, the combination with a center sill, pairs of web members secured to the respective outer sides of the center sill, and a pressed-steel bracket connecting the respective web members of each pair to the respective webs of the center-sill member; substantially as described.

3. In a cross-bearer for railway-cars, the combination with center-sill members spaced apart, a filler between the center-sill members comprising pairs of webs, a continuous top cover-plate connected to the center-sill members and the filler, pairs of web members projecting in opposite directions from the center-sill members, a channeled pressed-steel section secured to the under side of each pair of web members and to the outer side of each center-sill member, and a top member connecting the respective pairs of outwardly-projecting web members; substantially as described.

4. In a cross-bearer for cars, the combination with a center sill, pairs of web members secured to and projecting from opposite sides of the center sill, and a channeled pressed-steel bracket secured to the bottom of each pair of web members the inner ends of said brackets being of greatest dimensions and abutting the center sill, from which point they gradually diminish in width toward the outer ends of said web members; substantially as described.

5. In a cross-bearer for cars, the combination with a center sill, pairs of web members connected to the outer sides of the center sill and having their bottom edges below the neutral axis of the center sill, and pressed-steel brackets secured to the bottoms of said pairs of web members to connect the adjacent members together, said brackets being secured to the sides of the center sill and having outstanding channeled portions; substantially as described.

6. In a cross-bearer for cars, the combination of center-sill members spaced apart and having outwardly-projecting integral flanges, pairs of web members connected to the center-sill members and having oppositely-disposed top flanges secured to the under sides of the top flanges of the center-sill members, channel-brackets substantially U shape in cross-section secured to the bottoms of said web members and connecting them together in pairs, the inner ends of said brackets abutting the center-sill members, and a tension member secured to the top flanges of said pairs of web members and passing over the center-sill members; substantially as described.

7. In a cross-bearer for cars, the combination of center-sill members spaced apart and having outwardly-projecting integral flanges, pairs of web members connected to the center-sill members and having oppositely-disposed top flanges secured to the under sides of the top flanges of the center sill, channel-brackets secured to the bottoms of said web members and connecting them together in pairs, and a straight flat tension member secured to the tops of said pairs of web members and passing over the center sill; substantially as described.

8. The combination with a center sill having a diaphragm-filler comprising two webs arranged back to back and having oppositely-disposed flanges connected to the center-sill members, said filler being of a height equal to the height of the center sill, a continuous cover-plate for the center sill and connected to said filler, pairs of web members connected to the outer sides of said center sill and having outwardly-disposed flanges, channel side sills having inwardly-disposed flanges between which the outwardly-disposed flanges of the last-named web members are confined, and top and bottom members connecting the outwardly-disposed flanges of the respective last-named web members; substantially as described.

9. In a cross-bearer for cars, the combination of center-sill members spaced apart and having outwardly-projecting integral flanges, web members connected to the center-sill members and having top and bottom flanges, said web members terminating short of the bottom flanges of the center-sill members, and pressed-steel brackets secured to the outer sides of the webs of the center-sill members and to the bottoms of the first-mentioned web members, said brackets being wider at their ends near the center sill than at their ends near the side sills of the car, and said brackets being above the lower edges of the center sill; substantially as described.

809,784. CROSS-BEARER. ALLEN B. OSTRANDER, Paterson, N. J., assignor to American Car & Foundry Company, St. Louis, Mo., a Corporation of New Jersey. Filed July 12, 1905. Serial No. 269,255.

Claim.—1. A cross-bearer comprising a continuous flat top member, a continuous bottom member, the ends of the top and bottom member being connected, gusset-plates secured to the top and bottom members near their ends, car side sills to which the said top and bottom members are terminally secured, and diagonal braces connected to the side sills and to the top members; substantially as described.

2. In a railway-car, the combination with a center sill, of side sills, a flat plate tension member passing over the top of the center sill and beneath the side sills, a compression member passing below the center sill and connected to the tension member and side sills, and braces connected to the top plate tension member and to the side sills; substantially as described.

3. In a railway-car, the combination with a center sill, of side sills, a flat plate tension member passing over the top of the center sill and beneath the side sills, a compression member passing below the center sill and connected to the tension member and side sills, and pressed-steel braces connected to the top plate tension member and to the side sills; substantially as described.

4. In a railway-car, the combination with a center sill, of side sills, a flat plate tension member passing over the top of the center sill and beneath the side sills, a compression member passing below the center sill and connected to the tension member and side sills, and pressed-steel braces having ribs 18 connected to the top plate tension member and to the side sills; substantially as described.

5. In a railway-car, the combination with a center sill and side sills, of a flat plate tension member passing over the center sill and under the side sills, angles comprising a compression member and extending from side sill to side sill, a gusset interposed between the angles and connected to the top plate tension member, braces connected to the side sills and the tension member, and braces connected to the compression member and the center sills; substantially as described.

6. In a railway-car, the combination with a center sill and side sills, of a flat plate tension member passing over the center sill and under the side sills, angles comprising a compression member and extending from side sill to side sill, a gusset interposed between the angles and connected to the top plate tension member, and braces connected to the side sills and the tension member; substantially as described.

7. In a cross-bearer for cars, a flat plate tension member, a rolled-shape compression member, a strut, webs connecting the compression and tension members near their ends, and braces connecting the compression member and the strut; substantially as described.

8. In a railway-car, a cross-bearer having a continuous flat top tension member, a rolled-shape bottom compression member, web members connecting the top and bottom members, and diagonal braces connected to the top of the flat top tension member and to the upper portions of the side sills and forming supports for the nailing-strips of the floor; substantially as described.

9. In a railway-car, the combination with the center sills and the side sills thereof, of a flat plate tension member passing over the top of the center sill and beneath the side sills, a compression member passing beneath the center sill and secured to the side sills, and pressed-steel braces 17 connected to the top of the tension member and to the upper portion of the side sills; substantially as described.

10. In a railway-car, the combination with the center sill and the side sills, a diaphragm interposed between the center sill members and having its top edge below the neutral axis of the center sill, angles connected to the diaphragm and extending to points adjacent the top of the center sill, a tension member passing over the top of the center sill and extending from side sill to side sill, a compression member passing below the center sill and extending from side sill to side sill, and webs connecting the compression and tension members; substantially as described.

11. In a railway-car, the combination with the center sill and the side sills, a diaphragm interposed between the center-sill members and having its top edge below the neutral axis of the center sill, angles connected to the diaphragm and extending to points adjacent the top of the center sill, a tension member passing over the top of the center sill and extending from side sill to side sill, a compression member passing below the center sill and extending from side sill to side sill, webs connecting the compression and tension members, and braces connected to the top of the compression member and to the side sills; substantially as described.

12. In a railway-car, the combination with the center sill and the side sills, a diaphragm interposed between the center-sill members and having its top edge below the neutral axis of the center sill, angles connected to the diaphragm and extending to points adjacent the top of the center sill, a tension member passing over the top of the center sill and extending from side sill to side sill, a compression member passing below the center sill and extending from side sill to side sill, webs connecting the compression and tension members, and braces connected to the compression member and to the center sill; substantially as described.

13. In a railway-car, the combination with the center sill and the side sills, a diaphragm interposed between the center-sill mem-

bers and having its top edge below the neutral axis of the center sill, angles connected to the diaphragm and extending to points adjacent the top of the center sill, a tension member passing over the top of the center sill and extending from side sill to side sill, a compression member passing below the center sill and extending from side sill to side sill, webs connecting the compression and tension members, braces connected to the top of the compression member and to the side sills, and braces connected to the compression member and to the center sill; substantially as described.

809,785. CROSS-BEARER. ALLEN H. OSTRANDER, Paterson, N. J., assignor to American Car & Foundry Company, St. Louis, Mo., a Corporation of New Jersey. Filed July 15, 1905. Serial No. 270,206.

Claim.—1. A cross-bearer comprising a continuous flat top member, a continuous channel bottom member, a center sill interposed between the top and bottom member, and braces 22 connected to the center sill and channel; substantially as described.

2. A cross-bearer comprising a flat top member, a channel bottom member, a strut interposed between the top and bottom members, side sills to which the top and bottom members are secured, braces connecting the top member and side sills, and braces connecting the strut and channel bottom member; substantially as described.

3. A cross-bearer comprising a flat top member, a channel bottom member, a center sill interposed between the top and bottom members, terminally connecting-plates 11 and 13 carried by the top and bottom members, respectively, and side sills to which said connecting-plates are secured; substantially as described.

4. In a railway-car, the combination with the center sill and side sills thereof, of a tension member passing over the top of the center sill, a compression member passing below the center sill and connecting-plates 11 and 13 terminally carried by the tension and compression members and beneath the side sills to which they are secured; substantially as described.

5. In a railway-car, the combination with a center sill and side sills, of a flat plate tension member passing over the top of the center sill and beneath the side sills, a continuous channel compression member passing beneath the center sill and secured to the bottoms of the side sills, said channel having depending flanges; substantially as described.

6. In a railway-car, the combination with a center sill and side sills, of a flat plate tension member passing over the top of the center sill and beneath the side sills, a continuous channel compression member passing beneath the center sill and secured to the bottoms of the side sills, said channel having depending flanges, and braces connected to the channel compression member and the center sill; substantially as described.

7. In a railway-car, the combination with a center sill and side sills, of a flat plate tension member passing over the top of the center sill and beneath the side sills, a continuous channel compression member passing beneath the center sill and secured to the bottoms of the side sills, said channel having depending flanges, and braces connected to the top tension member and the upper portion of the side sills; substantially as described.

8. In a railway-car, the combination with a center sill and side sills, of a flat plate tension member passing over the top of the center sill and beneath the side sills, a continuous channel compression member passing beneath the center sill and secured to the bottoms of the side sills, said channel having depending flanges, braces connected to the channel compression member and to the center sill, and braces connected to the top tension member and the upper portion of the side sills; substantially as described.

9. In a railway-car, the combination with the channel center-sill members having outwardly-turned flanges, a diaphragm 5 interposed between the channel center-sill members, angles connected to the diaphragm and to the center-sill members, a flat plate tension member passing over the center sill and extending from side sill to side sill, a channel compression-member passing beneath the center sill and extending from side sill to side sill, braces connected to the channel compression member and to the center sill, braces connected to the tension member and to the upper portion of the side sills, and connecting-plates carried by the ends of the compression and tension members and secured to the bottoms of the respective side sills; substantially as described.

809,786. BOLSTER. ALLEN H. OSTRANDER, Paterson, N. J., assignor to American Car & Foundry Company, St. Louis, Mo., a Corporation of New Jersey. Filed Aug. 24, 1905. Serial No. 275,644.

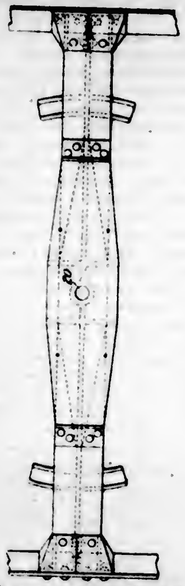

Claim.—1. In a railway-car, the combination with side sills, of a cast bolster having a continuous lower member projecting beneath the side sills and secured thereto, the portions of said lower member which project beneath the side sills being deflected downwardly; substantially as described.

2. In a railway-car, the combination with side sills, of a cast bolster having an upper member deflected upwardly from its central portion and having its opposite ends deflected downwardly, a continuous lower member extending beneath the side sills and secured thereto, and connections between the upper member and the side sills; substantially as described.

3. In a railway-car, the combination with side sills, comprising members having inwardly-disposed flanges, of a cast bolster having a central vertical web and top and bottom members the lower member being secured to the under side of the inwardly-disposed flanges of the side sills, and fastening devices arranged in pairs and connecting the respective ends of the webs and top members of the bolster to the vertical portions of the angle side sills; substantially as described.

4. A cast-steel bolster having a vertical web provided with transversely-extending reinforcing-ribs and tapered longitudinally-extending reinforcing-ribs connected therewith and top and bottom members, the bottom member extending beyond the ends of the web and the ends of the top member being deflected downwardly; substantially as described.

5. A cast-steel bolster having a web and top and bottom members, of pressed-steel fastening devices connected to the web and to the top member of the bolster and the sides of the car, and rivets passing through the side members of the car and the bottom member of the bolster; substantially as described.

6. A cast-steel bolster having top and bottom members and a web connecting them, and fastening devices for securing the ends of the bolster to the car side, said fastening devices having means for engagement with the upper member of the bolster and the web; substantially as described.

7. The combination with the side sills of a car, of a body-bolster having upper and lower members, and fastening devices for connecting the bolster to the car sides and arranged in pairs with webs back to back, parts of the webs being secured together and parts being spaced apart to receive the web of the bolster, said fastening devices also engaging the upper member of the bolster; substantially as described.

809,787. DIPPING-FRAME FOR COATING CANDIES. PANAYIOTIS PANOUSIAS, New York, N. Y. Filed May 6, 1905. Serial No. 259,114.

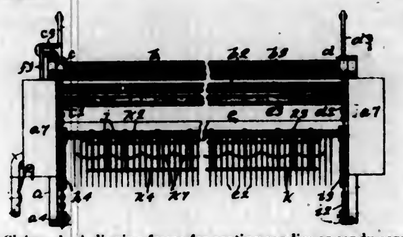

Claim.—1. A dipping-frame for coating candies or candy-cores provided with a horizontally-movable open-work candy-support, a rotatable open-work holder mounted thereover, and spacing and marking devices suspended from the support of the rotatable holder, substantially as shown and described.

2. A dipping-frame for coating candies or candy-cores provided with a horizontally-movable open-work candy-support, a rotatable open-work holder mounted thereover, spacing and marking devices suspended from the support of the rotatable holder, and means for moving said support upwardly and forwardly, substantially as shown and described.

3. A dipping-frame for coating candies or candy-cores, comprising rigidly-connected end members, a horizontally-movable open-work candy-support in the bottom portion thereof, a rod mounted longitudinally of said frame and provided with L-shaped guides in the end portions thereof whereby said rod may be moved upwardly and forwardly or backwardly and downwardly, a rotatable open-work candy-holder connected with said rod and spacing and marking devices suspended from said rod, substantially as shown and described.

4. A dipping-frame for coating candies or candy-cores, comprising rigidly-connected end members, a horizontally-movable open-work candy-support in the bottom portion thereof, a rod mounted longitudinally of said frame and provided with L-shaped guides in the ends thereof whereby said rod may be moved upwardly and forwardly or backwardly and downwardly, a rotatable open-work candy-holder connected with said rod and spacing and marking devices suspended from said rod, and means for operating said candy-support and said rod, substantially as shown and described.

5. A dipping-frame for coating candies or candy-cores comprising rigidly-connected end members provided with horizontal slots in the bottom portion thereof, an open-work candy-support movable in said slots, said end members being also provided with slots which range upwardly and forwardly or backwardly and downwardly, a rod mounted in said slots and adapted to move therein, an open-work candy-holder rotatably connected with said rod, spacing and marking devices suspended from said rod, and means for moving the open-work candy-support forwardly and backwardly and for operating said rod in the slots in which it is mounted, substantially as shown and described.

6. A dipping-frame for coating candies or candy-cores, provided with a horizontally-movable candy-support, comprising a bar having forwardly-directed needles or pins, a rod mounted over said bar and movable upwardly and forwardly and backwardly and downwardly, an open-work candy-holder rotatably connected with said rod and spacers and markers rigidly connected with and suspended from said rod, substantially as shown and described.

7. A dipping-frame for coating candies or candy-cores, provided with a horizontally-movable candy-support, comprising a bar having forwardly-directed needles or pins, a rod mounted over said bar and movable upwardly and forwardly and backwardly and downwardly, an open-work candy-holder rotatably connected with said rod and spacers and markers rigidly connected with and suspended from said rod, and means for operating said candy-support and said rod comprising a rotatable shaft mounted longitudinally of the bottom portion of the frame, an arm connected with one end thereof and provided with angular slots in which the ends of said bar operate, another rotatable rod mounted in the top portion of said frame, means whereby the last-named rod may be operated by said arm, and devices connected with the last-named rod for moving the rod with which the candy-holder and candy spacers and markers are connected, substantially as shown and described.

8. A dipping-frame for coating candies or candy-cores, said frame being provided with end handles, a forwardly and backwardly movable open-work candy-support, a rotatable open-work candy-holder mounted over said support and movable upwardly and forwardly and backwardly and downwardly, and spacing and marking devices connected with the support of the open-work candy-holder and movable therewith, substantially as shown and described.

9. A dipping-frame designed for use in coating candies or candy-cores, said frame being provided with rigidly-connected end members, a horizontally-movable candy-support mounted in the bottom thereof and extending longitudinally thereof and provided with forwardly-directed needles or pins, a rod mounted longitudinally of the frame over the candy-support and movable upwardly and forwardly and backwardly and downwardly, an open wire-work candy-holder connected with said rod and spacing and marking devices suspended from said rod, substantially as shown and described.

10. A dipping-frame designed for use in coating candies or candy-cores, said frame being provided with rigidly-connected end members, a horizontally-movable candy-support mounted in the bottom thereof and extending longitudinally thereof and provided with forwardly-directed needles or pins, a rod mounted longitudinally of the frame over the candy-support and movable upwardly and forwardly and backwardly and downwardly, an open wire-work candy-holder connected with said rod, and spacing and marking devices suspended from said rod, said spacing and marking devices being spoon-shaped in cross-section and provided in their lower back portions with recesses, substantially as shown and described.

11. A dipping-frame for use in coating candies or candy-cores provided with a horizontally-movable candy-support, comprising parallel needles or pins, an open-work candy-holder mounted thereover and movable upwardly and forwardly or backwardly and downwardly, and candy spacing and marking devices suspended from the support of the rotatable candy-holder, substantially as shown and described.

12. In a dipping-frame for coating candies or candy-cores, a horizontally-movable open-work candy-support mounted in the bottom portion of said frame, a rod mounted in the end portions of said frame and extending longitudinally thereof over the candy-support and movable in L-shaped guides formed in the ends of said frame, a rotatable rod mounted in the top back portion of said frame and provided with end arms, chains connected with said arms and with the opposite ends of said first-named rod, said chains being passed around roller-guides arranged forwardly and backwardly of the opposite ends of said first-named rod, means for operating the rotatable rod, a rotatable open-work candy-holder connected with the first-named rod and candy spacers and markers suspended from said first-named rod, substantially as shown and described.

13. A dipping-frame for coating candies or candy-cores, provided with a longitudinally-arranged and forwardly and backwardly movable candy-support, and spacing and marking devices suspended over said support longitudinally thereof, substantially as shown and described.

14. A dipping-frame for coating candies or candy-cores, provided with a longitudinally-arranged open-work candy-support, means for moving said support forwardly and backwardly, and means for holding candies on said support while the latter is being agitated, substantially as shown and described.

15. A dipping-frame for coating candies or candy-cores, said frame being provided with a forwardly and backwardly movable open-work candy-support, spacing and marking devices arranged thereover and means for holding the candies on said support, while the latter is being agitated, substantially as shown and described.

809,788. DUST-ALLAYER FOR AUTOMOBILES. WILLIAM H. PARKER, Royalsok, Mich. Filed Mar. 11, 1905. Serial No. 249,868.

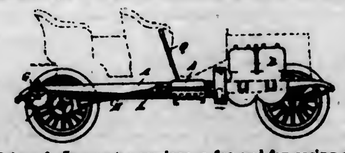

Claim.—1. In a motor-carriage, a fan and fan-casing disposed in the rear thereof, said fan-casing having a longitudinal opening

transverse to the line of travel of said carriage and adapted to deliver forcibly a sheet of air through said opening, means for varying the opening of said fan-case, and means for driving said fan connected with the propelling means of said carriage, substantially as described.

2. In combination with a road-carriage, a fan and fan-case disposed in the rear thereof and transversely to the line of travel thereof and adapted to deliver a sheet of air rearwardly, connecting means for driving said fan in said casing, said means being driven from the propelling-engine of said vehicle, and means for disconnecting said fan from said propelling-engine, substantially as described.

3. The combination with the running-gear of a traveling carriage, a fan and fan-case disposed at the rearward end thereof and adapted to deliver a sheet of air rearwardly, means upon said fan-case whereby the direction of the delivery of said air may be controlled and means for driving said fan in said fan-case, substantially as described.

809,739. ADHESIVE AND PROCESS OF MAKING SAME. FREDERICK H. PAYNE, Richmond, Va. Filed Apr. 14, 1905. Serial No. 255,659.

Claim.—1. The process of making an adhesive from evaporated sulfite liquor which consists in combining therewith a mixture of oil and resin, substantially as set forth.

2. The process of making an adhesive from evaporated sulfite liquor which consists in mixing a quantity of resin with a quantity of oil until the mixture is of substantially the same specific gravity as the sulfite and then mixing said mixture with said sulfite, substantially as set forth.

3. An adhesive composed of sulfite liquor combined with a mixture of oil and resin, substantially as set forth.

4. An adhesive consisting of a mixture of sulfite liquor, oil and resin in substantially the proportions set forth.

5. The process of treating evaporated sulfite liquor which consists in mixing therewith a quantity of oil, which has previously been combined with a substance that will combine with said sulfite, substantially as set forth.

809,740. LUBRICATOR FOR CRANK AND SIMILAR SHAFTS. THOMAS S. PATTERSON, New York, N. Y. Filed Jan. 4, 1904. Renewed Nov. 15, 1905. Serial No. 287,622.

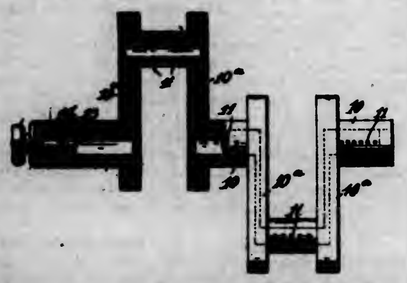

Claim.—1. As an improved article of manufacture, a crank-shaft having a bore extending from end to end, the said bore being reduced in the crank-arms and continuing through the crank-pins and the shaft being provided with outlet-ports at its bearing-points, the said ports gradually increasing in number as the distance from the filling end of the shaft increases.

2. As an improved article of manufacture, a crank-shaft having a longitudinal bore extending from end to end, the bore being largest in the main portions of the shaft, smaller through the crank-pins and still smaller through the crank-arms and the shaft being provided at its bearing-points with outlet-ports.

809,741. CABINET-INDEX. CHARLES H. PAYNE, Milligan, Tenn. Filed June 20, 1904. Serial No. 213,717.

Claim.—1. The combination with a cabinet having columns of compartments, each column being designated by a letter of the alphabet, and a compartment of each column being designated by a letter of the alphabet forming the second letter of recorded words; of volumes within said compartments and in which the words are recorded, said volumes being indexed according to the third letters of the words therein.

2. An index comprising a cabinet having columns of compartments therein, the columns being designated by different letters of the alphabet, tabs secured to one wall of each compartment and containing letters of the alphabet designating the second letters of recorded words adapted to be placed within the compartment, and indexed recorded words within each compartment, said words being indexed according to their third letters.

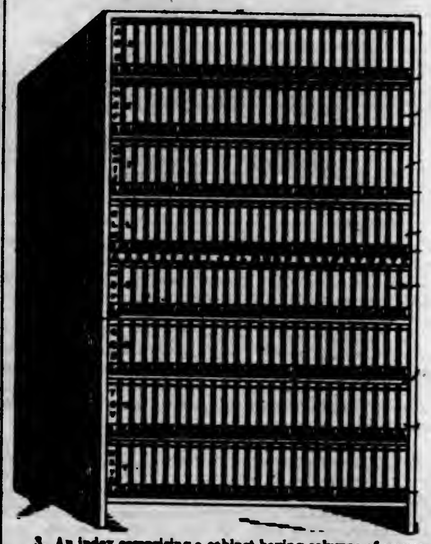

3. An index comprising a cabinet having columns of compartments therein, said columns being designated by different letters of the alphabet, a flexible tab secured within each compartment, each tab containing letters of the alphabet designating the second letters of recorded words adapted to be placed within said compartment, a volume in each compartment having words recorded therein and indexed according to the third letters of the words, a device secured to the front end of each volume and projecting from the cabinet and adapted to be grasped, and a flexible connection between each volume and one wall of its compartment.

809,742. STORAGE-BATTERY PLATE. DAVID P. FERRY, Chicago, Ill. Filed June 2, 1903. Serial No. 159,457.

Claim.—1. As an article of manufacture, a storage-battery grid, comprising three flat superimposed lead members, the two outer members being provided with a plurality of vertically-disposed columns of obliquely-arranged outwardly-tapering apertures, the obliquely-arranged apertures of one member being arranged at an angle to the obliquely-arranged apertures of the other member, and the intermediate member being provided with evenly-distributed small openings or perforations.

2. As an article of manufacture, a storage-battery grid having its opposite sides provided with parallel and obliquely-arranged outwardly-tapering pockets arranged in a plurality of vertically-disposed columns, the pockets at one side being arranged at an angle to the pockets at the other side, and having also a perforated web separating the pockets at one side from the pockets at the other side.

3. As an article of manufacture, a storage-battery grid composed of superimposed plates having upwardly-extending projections adapted to form a terminal for the battery-plate, and having also strengthening or reinforcing portions tapering downwardly from said terminal.

809,743. CROSS-ARM FOR CARRYING HIGH-TENSION WIRES. EVAN B. P. PEFFERT, Indianapolis, Ind., assignor of one-half to Samuel Bowser, Indianapolis, Ind. Filed Aug. 19, 1904. Serial No. 221,340.

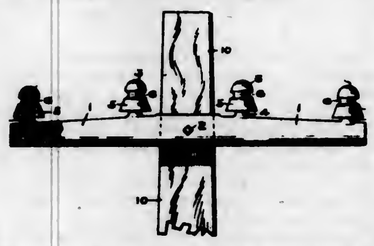

Claim.—The combination with a support, of a cross-arm made entirely of glass, said arm having holes for bolting the same to the pole, and said arm having integral vertical pins terminating with integral insulator-knobs, said knobs having circumferential grooves, and downwardly and outwardly flaring flanges integral with the knobs between the grooves and the arm.

809,744. LOCOMOTIVE-PEDESTAL. FREDERICK H. RANDELL, Waterville, Me. Filed Oct. 7, 1905. Serial No. 281,747.

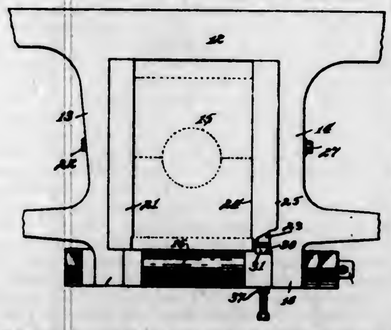

Claim.—1. In a pedestal, the combination with the side member and a bearing-box, of a shoe arranged to engage the side of the bearing-box, and a wedge member arranged between the shoe and the side member.

2. In a pedestal, the combination with the side member and the bearing-box, of a shoe arranged to engage the side of the bearing-box, a wedge member arranged between the shoe and the side member, and means for adjusting the wedge member.

3. In a pedestal, the combination with the side member and a bearing-box, of a shoe arranged to engage the side of the bearing-box, a wedge member arranged between the shoe and the side member, means for adjusting the wedge member, and means for preventing vertical movement of the shoe.

4. In a pedestal, the combination with the bearing-box, of a shoe arranged to engage the side of the bearing-box, and a wedge member arranged between the shoe and the side of the pedestal, each side of the pedestal being inclined.

5. In a pedestal, the combination with the side member and a bearing-box, of a substantially channel-shaped shoe arranged to engage the side of the bearing-block, and a wedge inserted between the shoe and the pedestal.

6. In a pedestal, the combination with the side member and a bearing-box of a substantially channel-shaped shoe arranged to engage the bearing-box by its flat side with the side portions embracing the side member, and a wedge member inserted in the channeled portion of the shoe and engaging the shoe and side member with its opposite converging sides, the wedge being substantially rectangular in section.

7. In a pedestal, the combination of a side member having an inclined face, a bearing-box, a substantially channel-shaped shoe arranged to engage the bearing-box by its flat side with the channeled portions embracing the side of the bearing-box, and a wedge member inserted in the channeled portion of the shoe and engaging the shoe and said side member with its opposite converging sides, the wedge being substantially rectangular in section.

8. In a pedestal, the combination with the side member and a bearing-box, of a shoe arranged to engage the side of the bearing-box, a wedge member arranged between the shoe and the side member, means for adjusting the wedge member, the side of the pedestal having a transverse aperture, the shoe having a threaded aperture registering with said aperture in the side member, the wedge having a vertically-extending slot registering with said apertures, and a bolt passing through the side member and wedge and tapped into the shoe.

9. In a pedestal, the combination with a bearing-box and a wedge located between the side of the box and the side member, of a pedestal, the bottom portion of the pedestal having a bore therein registering with the lower end of the wedge, a plate located on top of the lower member and having a threaded aperture registering with said aperture in the latter member, and an adjusting-bolt passing through said registering apertures and engaging the wedge.

10. In a pedestal, the combination with a bearing-box, a wedge located between the bearing-box and the side member of the pedestal, of a transverse brace at the bottom of the pedestal having a vertical aperture in alinement with the end of the wedge, the brace having a slotted portion around said aperture in its upper face, a plate having a threaded aperture and fitted into said slot with the aperture registering with said aperture in the brace, and a bolt passing through said registering apertures and engaging the wedge.

11. In a pedestal, the combination with a bearing-box, and a wedge located between the bearing-box and the side member of the pedestal, of a transverse brace at the bottom of the pedestal provided with vertical apertures disposed in alinement with the bottom of the wedge, the brace having a transverse slotted portion in its top including said apertures, a plate located in the slotted portion of the brace and provided with threaded apertures registering with said apertures, and bolts located in said registering apertures and engaging the wedge.

12. In a pedestal, the combination with the side member and a bearing-box, of a shoe arranged to engage the side of the bearing-box, a wedge located between the shoe and the side member of the pedestal, the bottom portion of the pedestal having a bore therein registering with the lower extremity of the wedge, and a plate having a threaded aperture and located on top of the lower member and registering with said aperture in the latter member, and an adjusting-bolt passing through the aperture in the lower member, and threaded through the aperture in said plate engaging the said wedge.

13. In a pedestal, the combination of a side member having an inclined face, a bearing-box, a substantially channel-shaped shoe arranged to engage the bearing-box by its flat side with the channeled portions embracing the side of the bearing-box, a wedge member inserted in the channeled portion of the shoe and engaging the shoe and said side member with its opposite tapering sides, the wedge being substantially rectangular in section, the bottom member of the pedestal having a bore therein registering with the lower extremity of the wedge, a plate located on the bottom member and having a threaded aperture registering with said aperture in the latter member, and an adjusting bolt passing through said registering apertures.

14. In a pedestal, the combination with the side member and a bearing-box, of a shoe arranged to engage the side of the box, a wedge located between the bearing-box and the shoe, a transverse brace at the bottom of the pedestal provided with vertical apertures disposed in alinement with the bottom of the wedge, the brace having a transverse slotted portion in its top including said apertures, a plate located in the slotted portion of the brace and provided with threaded apertures registering with said apertures, and bolts located in said registering apertures and engaging the wedge.

809,745. HARNESS SNAP AND SLIDE. [illegible]

809,745. HARNESS SNAP AND SLIDE. JOHN RIEDERER, Racine, Wis. Filed Mar. 3, 1905. Serial No. 248,196.

Claim.—1. In combination a slide having side ears with rigid projecting trunnions, and a snap-hook having its shank provided with a U-shaped cross-head comprising the transverse portion and the upwardly-extending arms at their extremities formed with bearing-openings, said arms extending up at the side faces of said ears and said bearing-openings loosely receiving said trunnions.

2. In combination, a breast-strap slide having side walls, and a hook having a U-shaped cross-head comprising upwardly-elongated side arms with their upper ends arranged at the side faces of said walls, said arms and walls having trunnions and bearing-openings, whereby the slide and hook are pivotally joined to rock on an axis transversely of the slide.

3. A breast-strap slide having a bottom strap-receiving surface and side ears provided with alined outwardly-projecting trunnions, the axial line of said trunnions being adjacent said strap-receiving surface, in combination with a snap-hook having a U-shaped head, the upper ends of the arms of which have bearing-openings receiving said trunnions, substantially as described.

4. A breast-strap slide having depending side ears formed with outwardly-projecting trunnions, in combination with a snap-hook having a U-shaped head, the upper ends of the arms of which having bearing-openings receiving said trunnions, substantially as described.

809,746. HOSE-COUPLING. SAMUEL M. RHOADS, Philadelphia, Pa. Filed May 20, 1905. Serial No. 261,200.

Claim.—1. A coupling comprising interlocking sections, one of said sections having a portion to fit within the other, a gasket within the latter section disposed to form a space for the reception of said portion and to bear against the inner face thereof, interconnecting valve and valve-operating devices carried by the respective sections, and means for maintaining the valve in closed position when the sections are separated, the valve-operating section being adapted to open the valve when the sections are connected and being provided with air-passages for the escape of fluid-pressure to act upon the gasket, substantially as described.

2. A coupling comprising interlocking male and female members, the male member being provided with a projection to enter the female member, a gasket within the female member adapted to bear against said projection, a valve axially arranged within the male member, an axially-arranged valve-operating device arranged within the female member, said operating device being adapted to engage and turn the valve to open or closed position when the members are connected or disconnected, the valve-operating device being provided with ports for the escape of fluid to subject the gasket at all times to fluid-pressure.

3. A coupling comprising male and female members provided with interlocking means adapted to be engaged and disengaged by a longitudinal and rotary movement of one member relative to the other member, the male member being provided with a projection to enter the female member, a valve-casing axially disposed within the male member and provided with ports, a rotary valve disposed within said casing and provided with cooperating ports and an outer coupling end, means for maintaining the valve in adjusted position, a gasket within the female member adapted to bear against the projection on the male member, and an axially-arranged valve-operating device disposed within the female member provided with an interlocking portion to engage the valve, and with ports for the passage of fluid to place the gasket under pressure, said valve and valve-operating device being thrown into and out of coupling engagement by the longitudinal movement of one section upon the other section and actuated to open or close the valve by the rotary movement of one section upon the other section.

809,747. HANGER OR BAR FOR OVERHEAD ELECTRIC TROLLEY-WIRES. ABRAHAM RICHARDSON and THOMAS S. JONES, Blackpool, England, assignors of six-eighths to Joseph Heap, Henry Heap, James Bailey, Thomas Brierley, Robert Billington, and James Haydock, Blackpool, England. Filed Feb. 6, 1905. Serial No. 244,274.

Claim.—1. An ear or hanger for supporting or holding up electric conductor-wires constructed with two jaws to grip the wires, upwardly-extending shanks to said jaws with an inclined recess a loose nut placed in the said recess, a collar placed over the shanks and the insulator-bolt fitting into the nut and a flange thereon abutting against the collar to draw the nut up and force the collar down substantially as described.

2. In an ear or hanger the combination with the jaws A and B provided with shanks D and formed with an inclined recess *d* of the loose nut H placed thereon, the collar E fitting over the shanks, and the insulator-bolt G engaging with the nut H to draw the nut up and force the collar down over the shank substantially as described and shown.

809,748. SAFETY DEVICE FOR TWO-REVOLUTION PRINTING-PRESSES. MAX ROCKSTROH, Dresden-Heidenau, Germany. Filed Aug. 7, 1905. Serial No. 273,151.

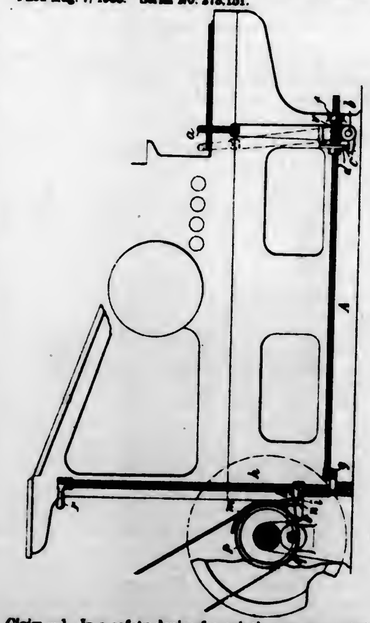

Claim.—1. In a safety device for printing-presses, a belt-shifting device having a braking device, a throw-off lever having an arm projecting over the form of the machine and pivotally mounted to the frame thereof, and a spring-controlled rod connected to the belt-shifting device and adapted to be actuated by the throw-off lever.

2. In a safety device for printing-presses, a throw-off lever having an arm projecting over the form of the latter, a belt-shifting element having a braking device for the fly-wheel of the press, a spring-controlled rod engaging the belt-shifting element, and means for setting the rod in an operative position, said throw-off lever maintaining the rod in a set position and adapted to release the same when the hand of the operator is brought in contact therewith.

3. In a printing-press, a safety device including a throw-off lever adapted to extend over the face of the form of the press, a belt-shifting device, a brake member cooperative with the latter for arresting the fly-wheel of the press, a spring-actuated rod connected with the belt-shifting element, and a hand-operable lever for setting the rod in an operative position, said throw-off lever adapted to release the rod for operating the belt-shifting element and brake member when the hand of the operator contacts with said throw-off lever.

809,749. AUTOMATIC CUT-OFF. HOWE G. ROSS and JAMES R. ROSS, Empire, Ohio, assignors of one-third to Fred G. Porter, Wellsville, Ohio. Filed June 27, 1905. Serial No. 267,268.

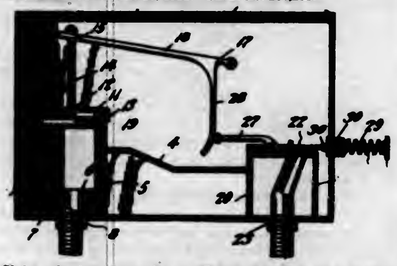

Claim.—1. An automatic cut-off comprising a casing provided with an inlet-port and an outlet-port, a guide arranged on each side of the outlet-port, a valve mounted within said guides for horizontal movement and provided with an arm, means controlled by gas-pressure and normally engaging the arm of said valve, said means being adapted to move and retain the valve over the outlet-port when and during the time the gas-pressure is cut-off, and to be moved out of the path of said arm by the gas-pressure when reëstablished.

2. An automatic cut-off comprising a casing provided with an inlet-port and an outlet-port, a guide arranged on each side of the outlet-port, a valve mounted within said guides for horizontal movement and provided with an arm, an L-shaped lever mounted within the casing and having one of its ends disposed to normally engage the arm of the valve, means having connection with said L-shaped lever and controlled by gas-pressure, said means being adapted to rock the L-shaped lever, whereby to move and retain the valve over the outlet-port when and during the time the gas-pressure is cut off, and to be operated to move the said L-shaped lever out of engagement with the arm of the valve by the gas-pressure when reëstablished, and means independent of the first-named means by which the valve may be moved to open the outlet-port after the reëstablishment of the gas-pressure.

3. An automatic cut-off comprising a casing provided with an inlet-port and an outlet-port, a valve for said outlet-port and adapted for movement in a horizontal direction, means controlled by gas-pressure and normally engaging said valve, said means being adapted to move and retain the valve over the outlet-port when and during the time the gas-pressure is cut off, and to be moved out of the path of said valve by the gas-pressure when reëstablished, and means independent of the first-named means by which the valve may be moved to open the outlet-port after the reëstablishment of the gas-pressure.

4. An automatic cut-off comprising a casing provided with an inlet and an outlet port, a valve for said outlet-port and adapted for movement in a horizontal direction, a lever mounted within the casing and normally engaging said valve, means controlled by gas-pressure and having engagement with said lever, said means being adapted to operate the lever to move and retain the valve over the outlet-port when and during the time the gas-pressure is cut off, and to be moved to withdraw the lever from engagement with said valve by the gas-pressure when reëstablished, and means independent of the first-named means by which the valve may be operated to open the outlet-port after the reëstablishment of the gas-pressure.

809,750. SAFETY DEVICE FOR SCARF-PINS. HERMAN B. ROSENBLUM, New York, N. Y. Filed May 11, 1905. Serial No. 259,952.

Claim.—A pin provided near the pointed end thereof and in one side thereof with a longitudinal groove having a transverse keeper, and a short slide mounted in said groove and held therein by said keeper, said slide being movable longitudinally in said groove and the ends thereof being so formed as to prevent its removal from said groove, either end of said slide being adapted to be projected by the longitudinal movement thereof in the direction of said end, substantially as shown and described.

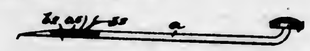

809,751. BEAN-HARVESTER. CARL RUEHLE, Orangeville, Ill. Filed Aug. 10, 1905. Serial No. 273,569.

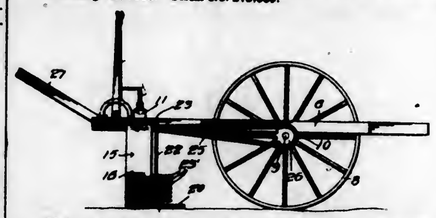

Claim.—1. An implement of the class described comprising a longitudinal beam having a broadened portion intermediate of its ends and having a longitudinal slot in the broadened portion, brackets carried by the broadened portion, an axle revolubly mounted in the brackets, a wheel mounted upon the axle for rotation therewith and extending through the slot, pulling mechanism carried by the rearward portion of the beam, beaters carried by the pulling mechanism, and connections between said beaters and the axle for operation of the former when the latter is revolved.

2. An implement of the class described comprising a longitudinal beam, transverse beams hinged at their inner ends to the longitudinal beam adjacent to the rearward end thereof, rotatable plant-beating mechanisms carried by the beams, a ground-wheel, connections between the ground-wheel and the beating mechanism for operation of the latter when the ground-wheels are revolved, and means for moving the transverse beams upon their hinges to bring the beating mechanisms into and out of operative position.

3. An implement of the class described comprising a beam, laterally-extending beams carried by the first-named beam and each having a plurality of openings therein, pairs of arcuate plates disposed with their concave surfaces toward each other and having stems at their upper ends removably engaged in the openings, the lower ends of the plates of each pair lying in close relation, the inner plate of each pair having a bearing therein, a shaft journaled in said bearing, plates carried by the second-named beams and in which the upper ends of the shafts are revolubly engaged, laterally-extending fingers carried by the shafts and arranged to engage plants disposed between the plates, guides carried by each pair of plates and arranged to direct plants between the plates, a shaft journaled upon the first-named beam, connections between said shaft and the first-named shafts for simultaneous rotation thereof, and a ground-wheel carried by the second-named shaft.

809,752. SALUTE-GUN. WALTER D. RYAN, West Lynn, Mass. Filed Apr. 28, 1904. Serial No. 204,562.

Claim.—1. The combination in a salute-gun of a structure having a main passage, and a branch passage formed in two parts out of line with each other, a slide-valve having a passage and movable to bring said passage into line with one or other of the parts of the branch passage, and a plunger movable in the main passage for operating the valve and exploding a cartridge, substantially as described.

2. The combination in a salute-gun of a structure provided with two passages opening into a common chamber in different lines, a valve in said chamber having a passage and movable to bring said passage in line with either of said other passages, a spring active on said valve, with a plunger for moving the valve in opposition to said spring, substantially as described.

3. A toy including an elongated tubular body, a plunger therein, a magazine for cartridges, a valve movable by the plunger for successively delivering cartridges from said magazine to the tubular

body and a spring independent of the plunger and directly operative

body and a spring independent of the plunger and directly operative upon the valve, said spring tending to move said valve in opposition to the plunger, substantially as described.

4. A toy including a plunger, a structure having an exploding-chamber placed to be entered by the plunger, a magazine, a spring, and a valve actuated thereby independently of said plunger, said valve being movable by the plunger in opposition to said spring and being placed to receive cartridges from the magazine and deliver the same to said exploding-chamber, substantially as described.

5. The combination of a tubular body having its bore provided with a striking-plate, a plunger movable within the bore, a valve mechanically independent of the plunger and of the body, having a portion projecting into said bore so as to be engaged and actuated by the plunger, a spring directly operative upon the valve to move it in opposition to the plunger, and a magazine, said valve being formed to receive a cartridge from the magazine and deliver the same to the bore of the body, and both the plunger and said body being extended so as to permit one of the same being held in position while the other is operated, substantially as described.

6. The combination of a tubular body having within it a branched passage, a magazine, a spring-actuated valve having an opening normally in communication with one branch of said passage, with a plunger in the other branch of the passage and placed to engage the valve to move it in opposition to its spring so that its opening will communicate with the magazine, substantially as described.

7. The combination of a tubular structure having a plunger and a valve having a beveled end projecting into the path of the plunger, a spring tending to retain the valve in such position, and a magazine, said valve having an opening which communicates with the magazine when the valve projects into the path of the plunger and with the bore of the tubular structure when said valve is moved back by the plunger, substantially as described.

8. The combination of a tubular body having a magazine attached to its side and provided with a chamber communicating with said magazine and with its bore, a valve in said chamber having through it a passage, a spring normally holding the valve so that its passage connects with the bore of the body, and a plunger in the body for moving the valve so that its passage connects with the magazine, substantially as described.

9. The combination of a tubular body having a transverse opening at its lower end, a plunger movable in the body, a valve carried by the body and movable by the plunger in a straight line substantially at right angles thereto, means in addition to the plunger for positively moving said valve and a magazine connecting with the valve-chamber, there being a passage from the valve-chamber entering the bore of the body between the valve and the transverse opening at the lower end thereof, substantially as described.

10. The combination of a tubular body having a metallic end section, and provided with a chamber connecting with its bore, a plunger movable in the body and in said section, a valve movable in the chamber of the body and provided with an inclined portion, and means for normally holding said portion of the valve in the path of said plunger, said valve having in it an opening normally connecting with the passage from the bore of the body, substantially as described.

11. The combination of a tubular body having a magazine, a valve, and a plunger for causing the valve to successively connect with the magazine and the tubular bore of the body, said valve being movable in a line substantially at right angles to the line of the plunger and being placed to be engaged by the end of the same, substantially as described.

12. The combination in a salute-gun of a body having two communicating passages extending adjacent to each other, a magazine connected to one passage, a plunger in the other passage and a valve having portions normally extending into both passages, said valve being placed to be moved by engagement with the end of the plunger, substantially as described.

13. The combination of a tubular body having in it two passages, a plunger in one passage, a magazine connected to the other, and a valve operated by the plunger normally extending into both passages, the portion of said valve which extends into the plunger-passage being inclined to the line of movement of said plunger, and the plunger and magazine being adjacent to each other on the same side of the valve when said plunger is in its raised position, substantially as described.

14. The combination of a tubular body having in it two passages, a plunger in one passage, a magazine connected to the other, and a valve normally extending into both passages, the portion of said valve which extends into the plunger-passage being inclined to the line of movement of said plunger, with a spring tending to retain said inclined portion of the valve projected into the plunger-passage, substantially as described.

15. The combination of a tubular body provided with a striking-plate, a plunger movable within the bore of said body, a valve operated by engagement with the end of the plunger, a spring acting directly on the valve and tending to move it in opposition to the plunger, and a magazine, said valve being formed to receive a cartridge from said magazine and deliver the same to the bore of the tubular body, and said body and the plunger being both of relatively great length so as to permit of one of the same being held while the other is operated, substantially as described.

809,758. WINDOW-SCREEN. EUGENE D. SEGAR, Randolph, Vt., assignor to Porter Screen Manufacturing Company, Burlington, Vt. Filed Apr. 21, 1905. Serial No. 256,770.

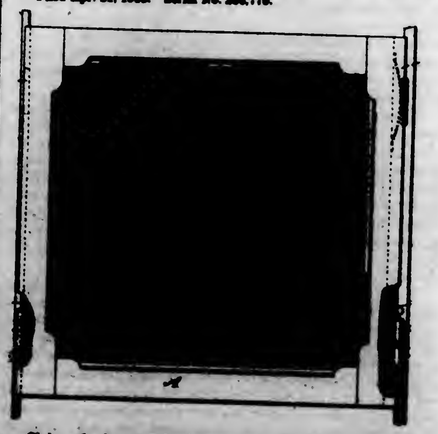

Claim.—1. A screen having grooved side bars adapted to run upon rails, a metallic bowed spring-strip arranged in one of the grooves, and a shoe of ⊔ cross-section, mounted upon and secured to the summit of the bowed spring-strip, in such manner as to be capable of slight fore-and-aft tilting movement thereon, as and for the purposes hereinbefore set forth.

2. A screen having grooved side bars adapted to run upon rails, a metallic bowed spring-strip having nicks in its side edges arranged in one of the grooves and a bearing-shoe of ⊔ cross-section mounted on the summit of the bowed spring-strip having integral side prongs bent over the side edges, and interned onto the under side of the spring-strip, and seated in said nicks, substantially as hereinbefore set forth.

809,754. CHARGING APPARATUS FOR BLAST-FURNACES. GIDEON C. BRACKENRIDGE, Allegheny, Pa. Filed Aug. 26, 1903. Serial No. 170,220.

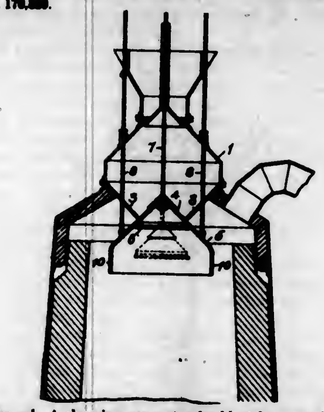

Claim.—1. A charging apparatus for blast-furnaces, having in combination a feed-hopper, a distributing-bell arranged below the hopper, and having an opening in line with and of a diameter not less than the diameter of the opening in the hopper, means for raising and lowering the distributing-bell, a main bell adapted to close the openings in the hopper and distributing-bell, and movable through the latter to closed or normal position, substantially as set forth.

2. A charging apparatus for blast-furnaces having in combination a feed-hopper, a main bell closing said hopper, a distributing-bell having an opening in line with and of a diameter not less than the diameter of the opening in the hopper and connected with the main bell, whereby its movement from the hopper is controlled by the main bell and means for raising and lowering said bells, substantially as set forth.

3. A charging apparatus for blast-furnaces having in combination a feed-hopper, a distributing-bell having an opening in line with and of a diameter not less than the diameter of the opening in the hopper, means for raising and lowering the distributing-bell, a main bell adapted to close the hopper and when lowered to direct the contents of the hopper through or over the distributing-bell, and means for raising and lowering the main bell, substantially as set forth.

4. A charging apparatus for blast-furnaces, having in combination a feed-hopper, a distributing-bell having an opening in line with and of a diameter not less than the diameter of the opening in the hopper and provided with a deflecting-curtain, means for raising and lowering the distributing-bell, a main bell adapted to close the hopper and to direct when lowered the contents of the hopper through or over the distributing-bell and means for raising and lowering the main bell, substantially as set forth.

809,755. TOOL. HENRY A. SMITH, Elgin, and WILLIAM F. FRENZ, Dundee, Ill.; said Frenz assignor of one-fourth to said Smith. Filed Sept. 22, 1904. Serial No. 225,452.

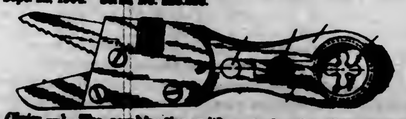

Claim.—1. The combination with a stock, of a die rotatably mounted thereon, a plate formed to hook over one end of said stock, means for additionally securing said plate to said stock, a spring-pressed dog mounted in a pocket formed in said plate and arranged to lock said die against rotation, and means for moving said dog out of locking position.

2. The combination of a support, a flanged die rotatably mounted thereon, an embossed plate removably secured to said support so as to clamp said die in place, a spring-pressed bolt mounted in said embossed plate and arranged to engage the periphery of said die at a plurality of points successively, so as to lock said die against rotation, and adapted to be disengaged from said die, so as to permit the rotation of said die with reference to said support and said plate.

3. An attachment for a tool-handle, provided with an opening therethrough, comprising a plate so formed as to hook over said handle, said to be also secured thereto by separate attaching means, combined with a spring-pressed bolt carried by said plate and adapted to have locking engagement with a die when mounted in said opening.

809,756. BAG-FASTENER. EDWIN G. STAUDE, Minneapolis, Minn. Filed Sept. 6, 1904. Serial No. 223,393.

Claim.—1. As a new article of manufacture, a bag-fastener consisting of a flexible ribbon having a rib on one side extending from end to end of the ribbon and formed by making a longitudinal depression or groove in the other side, and said ends being oppositely turned to form hooks and the rib on one hook entering the groove or depression in the other hook when they are placed together whereby lateral movement of one hook with respect to the other when the fastener is in use is prevented.

2. As a new article of manufacture, a bag-fastener consisting of a flexible metallic ribbon having a rib on one side extending from end to end along the middle line of the ribbon and formed by making a longitudinal depression in the other side, the ends of said ribbon being oppositely turned to form hooks that are adapted to interlock, substantially as described.

3. As a new article of manufacture, a bag-fastener consisting of a flexible ribbon adapted to be folded in a circular form around the closed mouth of a sack and having its ends oppositely turned to form hooks which interlock with one another when the fastener is in place on the sack, one of said hooks having a longitudinal rib to enter a correspondingly-arranged groove provided in the other hook whereby lateral movement of one hook with respect to the other is prevented, substantially as described.

4. As a new article of manufacture, a bag-fastener comprising a flexible ribbon of spring material adapted to be folded into a circular form around the closed mouth of the sack and having oppositely-turned ends to form hooks which interlock one with another when the fastener is in use, one of said hooks having a depression to receive a correspondingly-shaped elevation on the other hook whereby when the hooks are interlocked lateral movement of one with respect to the other will be prevented, substantially as described.

809,757. PLOW. SAMUEL H. STEELE, Canaan, Ind. Filed Jan. 18, 1904. Serial No. 189,503.

Claim.—An improvement of the character described comprising a frame, including a beam, sills secured against the side faces of the beam and diverging rearwardly beyond the rear end of the beam, said sills being reduced intermediate their ends in lateral thickness to form parallel portions, a shaft passing through the reduced portions of the sills, rollers mounted upon said shaft, one of the rollers being disposed between said sills and one roller adjacent the outer face of each sill, the intermediate roller being of greater length than

the end rollers, a blade bridging the rear ends of the aforesaid sills, cultivator-shovels secured to the sills between the blade and the aforesaid rollers, a supplemental beam secured upon and projecting slightly forwardly of the first-named beam and having means for attachment of draft appliances, posts upon the rear end portions of the sills, vertically-spaced braces secured transversely of the posts at the upper end of the latter, handles secured to the supplemental beam and passed rearwardly and upwardly between and attached to the side braces, and a shoe secured against the under side of the first-named beam and the adjacent portions of the sills, said shoe having an integral forward extension extending upwardly at its front edge and secured to the supplemental beam.

809,758. CIGAR-BUNCHING DEVICE. NICHOLAS THIELEN, Chicago, Ill. Filed Oct. 31, 1904. Serial No. 230,753.

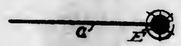

Claim.—1. A cigar-bunching device comprising a split rod and means for securing both members thereof together, antifriction-rollers at the ends of said rod, an apron having a curved end, and a curved rod secured in said end, said curved rod being adapted to be straightened to be received in and clamped in said split rod, thereb throwing the middle portion of said apron forward to make same fuller at its middle portion than at its ends.

2. A cigar-bunching device, comprising in combination, a split rod having reduced threaded ends, antifriction-rollers journaled on said reduced ends nuts, engaging said ends to secure the two parts together, each member of said split rod being provided at its middle portion with a longitudinally-disposed groove and a recess extending from one edge of the groove to the adjacent edge of the member to provide a longitudinal slot in said rod when said members are fitted together, and an apron provided at one end with an inclosed rod adapted to be received in said grooves in said member to hold said apron against removal.

3. A cigar-bunching device, comprising in combination, a split rod having reduced threaded ends, antifriction-rollers journaled on said reduced ends, nuts engaging said ends to secure the two parts together, each member of said split rod being provided at its middle portion with a longitudinally-disposed groove and a recess extending from one edge of the groove to the adjacent edge of the member to provide a longitudinal slot in said rod when said members are fitted together, and an apron provided at one end with an inclosed rod adapted to be received in said grooves in said member to hold said apron against removal, said end of said apron being convex and the rod curved in accordance therewith, whereby when said rod is straightened to fit said grooves the middle portion of the apron will be thrown outwardly to provide greater fullness between the side edges thereof than at the said edges.

809,759. HOSE-COUPLING. RICHARD TOOLE and JOHN J. MCDONNELL, Portage, Pa. Filed Aug. 22, 1904. Serial No. 221,316.

Claim.—1. In a hose-coupling, the combination of a tubular member having a cone-shaped enlargement, a cone-shaped cup carried by said member, another member adapted to be connected to said member, a cone-shaped cup carried by said member and adapted to fit within the first-named cup, said cup having recesses formed therein, spring-pressed levers mounted in said recesses and adapted to engage in the first-named cup, resilient gaskets mounted between said members, substantially as described.

2. A hose-coupling consisting of two members, one adapted to fit within the other, a cone-shaped enlargement carried by one of said members, a cone-shaped cup carried by said member, cone-shaped cup carried by the other of said members, said member having recesses formed therein, and means to detachably secure the last-named member within the first-named member, substantially as described.

809,760. DISPLAY DEVICE FOR MILLINERY ARTICLES. [illegible], New York, N. Y. Filed July 13, 1905. Serial No. 269,628.

Claim.—1. A display device for an article of millinery, as a hat, comprising a standard, upwardly and outwardly extending arms for supporting the article, provided with arcuate slots, a spring-controlled sleeve slidable on the standard, having branches corresponding to said arms and to which the inner ends of the arms are pivoted, and a plate mounted on the standard having corresponding radial branches provided with pins extending through said slots, said arms being slidable on said pins.

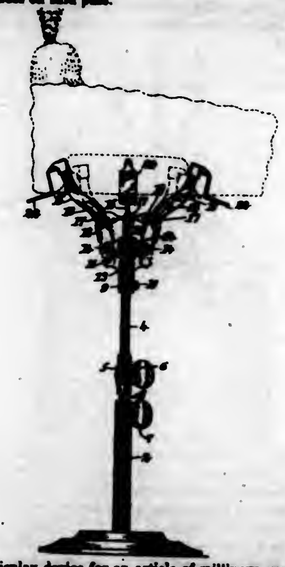

2. A display device for an article of millinery, as a hat, comprising a standard having an annular shoulder a suitable distance from the upper end thereof, and provided at such end with a set-screw, upwardly and outwardly extending arms for supporting the article, provided with arcuate slots, a spring-controlled sleeve slidable on the standard, having branches corresponding to said arms and to which the inner ends of the arms are pivoted, and a plate mounted on said shoulder and held in position by said set-screw, having corresponding radial branches provided with pins extending through said slots, said arms being slidable on said pins.

809,761. ELECTROSTATIC INFLUENCE-MACHINE. RENE THURNEY, Decamps-Nord, Hem., assignor to General Electric Company, a Corporation of New York. Filed June 20, 1904. Serial No. 213,769.

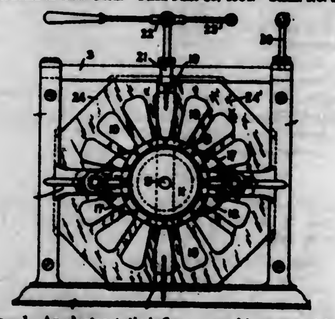

Claim.—1. An electrostatic influence-machine, comprising two sets of vanes revolving in parallel planes but in opposite directions, and stationary collectors projecting into the space between the two sets.

2. An electrostatic influence-machine, comprising two sets of vanes revolving in parallel planes, and a stationary dielectric diaphragm between them.

3. An electrostatic influence-machine, comprising two strong disks of insulating material, metallic vanes radiating from said disks, and means for rotating said disks in opposite directions in parallel planes.

4. An electrostatic influence-machine, comprising a shaft, a strong disk of insulating material secured thereon, a quill sleeved on said shaft and carrying a second disk of insulating material, a set of radiating metallic vanes on each disk, and means for rotating said disks in opposite directions.

5. An electrostatic influence-machine, comprising a shaft, a strong disk of insulation secured thereon, a quill sleeved on said shaft and carrying a second disk of insulation, radiating metallic vanes on each disk, and gearing connecting said shaft and quill to cause them to rotate in opposite directions.

6. In an electrostatic influence-machine, the combination with two strong disks of insulation, of metallic vanes radiating therefrom and having metallic extensions on the peripheries thereof, and brushes touching said peripheries at diametrically opposite points.

7. In an electrostatic influence-machine, the combination with two sets of insulated metallic vanes revolving in opposite directions, of two collectors located at opposite points between said sets, and two pairs of grounded brushes for touching the outside of said vanes just before they pass the collectors.

8. In an electrostatic influence-machine, a frame composed of a base, columns and horizontal brackets connecting said columns, said frame being cast in integral similar halves.

9. In an electrostatic influence-machine, the combination with a frame comprising a base, columns, connecting-brackets and a cross-bar, of two plates of dielectric secured in said frame with a space between their adjacent edges.

10. In an electrostatic influence-machine, the combination with a stationary dielectric diaphragm, of two sets of insulated vanes rotating in opposite directions on opposite sides of the same, collectors projecting between the sets in an opening in said diaphragm, and two grounded brushes for each set adapted to touch the outside of said vanes just before they reach the collectors.

809,762. TELAUTOGRAPHIC AND OTHER ELECTRIC CIRCUITS. GORDON S. TIFFANY, New York, N. Y., assignor to The Gray National Telautograph Company, New York, N. Y., a Corporation of Virginia. Filed Apr. 23, 1901. Serial No. 56,611.

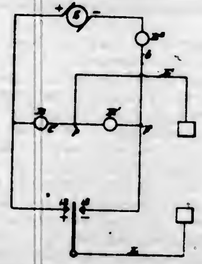

Claim.—1. The combination of a source of electrical energy, a reversing-switch, the contacts of which are in connection with the positive and negative poles of the source of electrical energy, a shunt forming a connection between the poles of the source of electrical energy, a circuit connecting to the reversing-switch and to said shunt, said shunt having a resistance on each side of its point of connection to said circuit, and an adjusting resistance between one of the poles of the source of electrical energy and the point of connection of the shunt and the reversing-switch to the line leading to said pole, substantially as described.

2. The combination of a source of electrical energy, positive and negative mains leading therefrom, a shunt connecting said mains having three resistances R, R' and R² arranged in series therein, a reversing-switch one contact of which is in connection with the shunt between two of said resistances, R' and R², and the other contact of which is in connection with the main with which the shunt connects beyond the remaining resistance, R, and a circuit connecting to the reversing-switch and to the shunt between the resistance R and the intermediate resistance R', substantially as described.

3. In a telautographic transmitter, the combination with a current-reversing switch connected to an operating-circuit and means for throwing said switch in accordance with the movement of the transmitting-pen, of two conducting members adapted to be in connection with positive and negative poles respectively of a source of electrical energy and with which members the contacts of the reversing-switch are in connection, a shunt connecting said members, and a return from said operating-circuit connecting to said shunt, said shunt having a resistance on each side of its point of connection to said return, substantially as described.

4. In a telautographic transmitter, the combination with a current-reversing switch connected to line and means for throwing said switch in accordance with the direction of movement of the transmitting-pen, of two conducting members adapted to be in connection with positive and negative poles respectively of a source of electrical energy and with which members the contacts of the reversing-switch are in connection, a shunt connecting said members and a return from line connecting to said shunt, said shunt having a resistance on each side of its point of connection to said return, substantially as described.

5. In a telautographic transmitter, the combination of means for sending to line to-and-fro impulses of high electromotive force corresponding in number with the movement in extent of the transmitting-pen, and means for sending to line a current of low electromotive force corresponding in polarity with the direction of movement of the transmitting-pen, said last-mentioned means comprising a reversing-switch connected to line, means for throwing said switch in accordance with the direction of movement of the transmitting-pen, two conducting members adapted to be in connection with positive and negative poles of a source of electrical energy and with which members the contacts of the reversing-switch are in connection, a shunt connecting said members, and a return from line connecting to said shunt, said shunt having a resistance on each side of its point of connection to said return, substantially as described.

6. In a telautographic apparatus, the combination of a circuit including a source of electrical energy capable of supplying only a unidirectional current, a line-circuit, and means for shunting into said line-circuit from the first said circuit currents of either positive or negative polarity, substantially as described.

809,763. CONVEYER. ALFRED TOSKINS, Pittsburg, Pa. Filed Jan. 26, 1905. Serial No. 243,040.

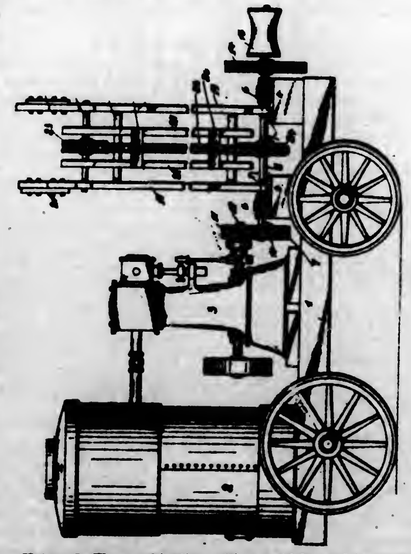

Claim.—1. The combination with a vehicle, and an engine mounted on the vehicle, of a conveyer-frame pivotally mounted on the vehicle and composed of separable sections, transverse frames and longitudinally-disposed guide-rails carried by said frames, a shaft extending longitudinally of the vehicle, a winding-drum on the outer end of said shaft, a sprocket-wheel carried by said shaft between the said guide-rails, a second shaft carried by the conveyer-frame, a sprocket-wheel carried by said second shaft, an endless chain passing over said sprocket-wheels, carriers attached to said chain and traveling on said guide-rails, a second shaft arranged

parallel to said first shaft, means for imparting motion from said engine to said second shaft, and for imparting motion from said second shaft to said first-named shaft, and a winding-drum carried by said second shaft.

2. In an apparatus of the type described, the combination with a vehicle, of a conveyer pivotally mounted upon said vehicle, said conveyer consisting of a plurality of sections, an endless chain mounted upon said conveyer, carriers mounted upon said chain, means carried by said vehicle to operate said chains comprising an engine, a plurality of shafts having intermeshing gear-wheels, and winding-pulleys carried by said shafts, substantially as described.

809,764. FILLING APPARATUS FOR LIQUIDS. ROYAL C. WHITE, Chicago, Ill. Filed Jan. 19, 1905. Serial No. 241,902.

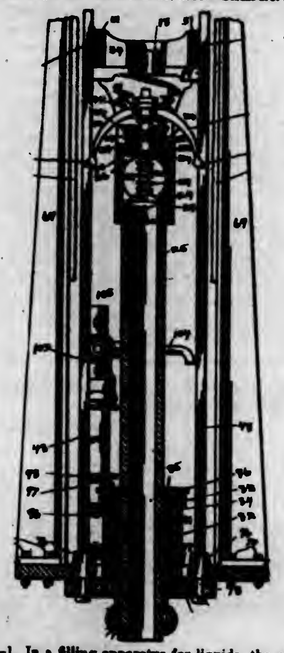

Claim.—1. In a filling apparatus for liquids, the combination of a fluid-pressure cylinder closed at the top and bottom, a piston in said cylinder, a piston-rod downwardly extending from the piston and passing through the closed lower end of the cylinder, a cross-bar attached to the lower end of the piston-rod, a supply-head for liquid connected with the cross-bar, a filling-tube entered at its upper end into the liquid-supply head, a valve within the liquid-supply head controlling the admission of liquid to the filling-tube, a stem for the valve, and means carried by the stem for raising the stem and valve at the limit of the descent of the filling-tube, substantially as described.

2. In a filling apparatus for liquids, the combination of a fluid-pressure cylinder closed at the top and bottom, a piston in said cylinder, a piston-rod downwardly extending from the piston and passing through the closed lower end of th cylinder, a cross-bar attached to the lower end of the piston-rod, a supply-head for liquid connected with the cross-bar, a filling-tube entered at its upper end into the liquid-supply head, a valve within the liquid-supply head controlling the admission of liquid to the filling-tube, a stem for the valve, a yoke mounted on the stem and engaging a fixed stop at the limit of the descent of the filling-tube for raising the stem and valve, substantially as described.

3. In a filling apparatus for liquids, the combination of a fluid pressure cylinder closed at the top and bottom, a piston on said cylinder, a piston-rod downwardly extending from the piston and passing through the closed lower end of the cylinder, a cross-bar attached to the lower end of the piston-rod, a supply-head for liquid connected with the cross-bar, a filling-tube entered at its upper end into the liquid-supply head, a valve within the liquid-supply head controlling the admission of liquid to the filling-tube, a stem for the valve, a yoke mounted on the stem, a rest for the yoke on the stem, and a lock holding the yoke against upward movement for the yoke to engage a fixed stop and raise the stem and valve at the limit of the descent of the filling-tube, substantially as described.

4. In a filling apparatus for liquids, the combination of a fluid-pressure cylinder closed at the top and bottom, a piston in said cylinder, a piston-rod downwardly extending from the piston and passing through the closed lower end of the cylinder, a cross-bar attached to the lower end of the piston-rod, a supply-head for liquid connected with the cross-bar, a filling-tube having its upper end entered into the liquid-supply head and provided with a seating-face, a valve within the liquid-supply head seating against the face of the filling-tube and controlling the admission of liquid to the filling-tube, a stem for the valve, a spring encircling the stem and holding the valve normally seated, a yoke carried by the stem and adapted to engage a fixed stop and raise the valve and stem against the resistance of the spring as the filling-tube reaches the limit of its descending movement, substantially as described.

5. In a filling apparatus for liquids, the combination of a filling-head having a chamber to receive liquid, a nozzle opening into the chamber of the filling-head for supplying liquid to the chamber, a filling-tube having its upper end entered into the supply-head and in communication with the chamber of the supply-head, a valve seating around the end of the filling-tube in the supply-head and controlling communication between the chamber of the supply-head and the filling-tube, a spring holding the valve normally seated, a stem for the valve, and a yoke carried by the stem and operating to lift the stem and valve at the limit of descent of the filling-tube, substantially as described.

6. In a filling apparatus for liquids, the combination of a cylinder closed at the top and bottom, a piston in said cylinder, a piston-rod downwardly extending from the piston and passing through the closed lower end of the cylinder, a cross-bar attached to the lower end of the piston-rod, a supply-head for liquid and a filling-tube carried by the cross-bar, sliding bars one on each side of the cylinder, a cross-head connecting the sliding bars, a sealing-head carried by the sliding bars and through which the filling-tube passes, and a breakable connection between the cross-bar carrying the supply-head and filling tube and the cross-head of the sliding bars for operating the sealing-head with the initial movement of the filling-tube, substantially as described.

7. In a filling apparatus for liquids, the combination of a cylinder closed at the top and bottom, a piston in said cylinder, a piston-rod downwardly extending from the piston and passing through the closed lower end of the cylinder, a cross-bar attached to the lower end of the piston-rod, a supply-head for liquid and a filling-tube carried by the cross-bar, sliding bars one on each side of the cylinder, a cross-head connecting the sliding bars, a sealing-head carried by the sliding bars and through which the filling-tube passes, a catch on the cross-bar, an arm pivotally mounted on the cross-head and a catch carried by the arm for making and breaking the connection between the cross-bar and the cross-head, substantially as described.

8. In a filling apparatus for liquids, the combination of a cylinder closed at the top and bottom, a piston in said cylinder, a piston-rod downwardly extending from the piston and passing through the closed lower end of the cylinder, a cross-bar attached to the lower end of the piston-rod, a supply-head for liquid and a filling-tube carried by the cross-bar, sliding bars one on each side of the cylinder, a cross-head connecting the sliding bars, a sealing-head carried by the sliding bars and through which the filling-tube passes, a breakable connection between the cross-bar and cross-head for operating the sealing-head with the initial downward movement of the filling-tube, pawls carried by the cross-head, and fixed racks with which the pawls engage for holding the sealing-head against upward movement, substantially as described.

9. In a filling apparatus for liquids, the combination of a cylinder closed at the top and bottom, a piston in said cylinder, a piston-rod downwardly extending from the piston and passing through the closed lower end of the cylinder, a cross-bar attached to the lower end of the piston-rod, a supply-head for liquid and a filling-tube carried by the cross-bar, sliding bars one on each side of the cylinder, a cross-head connecting the sliding bars, a sealing-head carried by the sliding bars and through which the filling-tube passes, a breakable connection between the cross-bar and cross-head for operating the sealing-head with the initial downward movement of the filling-tube, pawls carried by the cross-head, a spring holding the pawls in engagement, and fixed racks with which the pawls engage for holding the sealing-head against upward movement, substantially as described.

10. In a filling apparatus for liquids, the combination of a cross-bar carrying a supply-head and a filling-tube, slidable bars carrying a sealing-head through which the filling-tube passes, a cross-head for the sliding bars and a detachable connection between the cross-bar and cross-head for operating the sealing-head with the initial downward movement of the filling-tube, substantially as described.

11. In a filling apparatus for liquids, the combination of a cross-bar carrying a supply-head and a filling-tube, slidable bars carrying a sealing-head through which the filling-tube passes, a cross-head for the sliding bars, a catch on the cross-bar, an arm pivotally mounted on the cross-head, and a catch on the arm adapted to be engaged with the catch on the cross-bar and interlock the cross-bar and cross-head to operate the sliding head with the initial downward movement of the filling-tube, substantially as described.

12. In a filling apparatus for liquids, the combination of a cross-bar carrying a supply-head and a filling-tube, slidable bars carrying a sealing-head through which the filling-tube passes, a cross-head for the sliding bars, a catch on the cross-bar, an arm pivotally mounted on the cross-head, a catch on the arm adapted to be engaged with the catch on the cross-bar and interlock the cross-bar and cross-head to operate the sliding head with the initial downward movement of the filling-tube, pawls carried by the cross-head, and fixed racks with which the pawls engage to hold the sealing-head against retraction from the upward movement of the filling-tube, substantially as described.

13. In a filling apparatus for liquids, the combination of a cross-bar carrying a supply-head and a filling-tube, slidable bars carrying a sealing-head through which the filling-tube passes, a cross-head for the sliding bars, a catch on the cross-bar, an arm pivotally mounted on the cross-head, a catch on the arm adapted to be engaged with the catch on the cross-bar and interlock the cross-bar and cross-head to operate the sliding head with the initial downward movement of the filling-tube, pawls carried by the cross-head, fixed racks with which the pawls engage to hold the sealing-head against retraction from the upward movement of the filling-tube, a lug on each pawl, and a stop on the cross-bar for each lug, engaging the lug and releasing the pawls from engagement with the racks, substantially as described.

14. In a filling apparatus for liquids, the combination of a frame carrying a filling-tube and a sealing-head, and having at its extreme upper end a rearwardly-extending ear, a fixed plate located rearwardly of the upper end of the frame and having forwardly-extending ears in line with and receiving the ear at the upper end of the frame, and a pivot connecting the ears of the frame and plate and arranged off center in relation to the frame for automatically swinging the lower end of the frame rearwardly and out of line with the filling-hole of the package, and when in line allowing the full weight of the suspended parts to rest on the package in the act of sealing the package, substantially as described.

15. In a filling apparatus for liquids, the combination of a frame carrying a sealing-head and a filling-tube, an ear at the extreme upper end of the frame and rearwardly extending, a fixed plate located rearwardly of the upper end of the frame and furnishing a support for the ear of the frame, and a pivot connection between the ear and the fixed plate and located off center in relation to the frame for allowing the lower end of the frame with the sealing-head and filling-tube to swing automatically rearward out of line with the filling-hole of the package, and when in line allowing the full weight of the suspended parts to rest on the package in the act of sealing the package, substantially as described.

16. In a filling apparatus for liquids, the combination of a frame carrying a filling-tube and a sealing-head, a pivoting-ear at the extreme upper end of and on the rear side of the frame, a pivoting-pin for the ear, and a fixed plate located rearward of the upper end of the frame and furnishing a support for the pivoting-ear of the frame and the pivoting-pin, with the pivoting-pin off center in relation to the frame for suspending the frame at its extreme upper end and from its rear side to swing automatically rearward and clear the filling-hole of the package from the filling-tube and sealing-head, and to allow the full weight of the suspended parts to rest on the package in the act of sealing the package, substantially as described.

17. In a filling apparatus for liquids, a slidable filling-tube having a free discharge at its lower end closed by a valve at its upper end, in combination with a venting-valve located on the exterior of and adjacent to the upper end of the filling-tube and automatically closed by the pressure within the filling-tube when entered into and discharging within the package, and automatically opened by pressure of outside air for admitting air as the liquid discharges from the filling-tube during withdrawal from the package, substantially as described.

18. In a filling apparatus for liquids, a reciprocating filling-tube having a free discharge at its lower end, a valve controlling the admission of liquid at the upper end of the filling-tube, and a vent-valve located on the exterior of and adjacent to the upper end of the filling-tube and below the controlling-valve for admitting liquid and automatically closed against the admission of air by pressure within the filling-tube when entered into and discharging within the package, and automatically opened by pressure of outside air to admit air with the ascent of the filling-tube as the liquid discharges during withdrawal from the package, substantially as described.

809,765. ORE-CONCENTRATOR. GEORGE M. WHITNEY, Lawson, Colo. Filed May 20, 1905. Serial No. 261,260.

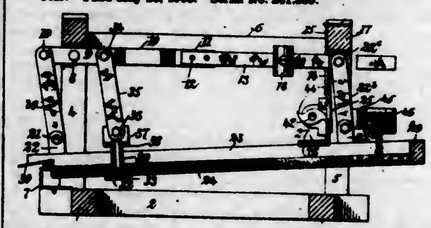

Claim.—1. An ore-concentrator, comprising a bed for the ore to be separated, tubes therethrough for the discharge of the mineral portions of the material, other tubes having movable relation with said first-named tubes for regulating such discharge, a supporting member for the second-mentioned tubes, and a vertically-swinging member connected with the said supporting member.

2. An ore-concentrator, comprising a reciprocatory bed for the ore to be separated, tubes therethrough for the discharge of the mineral portions of the material, other tubes having movable relation with said first-named tubes for controlling such discharge, a supporting member for the second-mentioned tubes, and a vertically-swinging weighted member connected with the said supporting member.

3. An ore-concentrator, comprising a bed for the ore to be separated, having tubes therethrough for the discharge of the mineral portions of the material, other tubes for regulating such discharge, controlled by the weight of the ore on the bed, a supporting member for the second-mentioned tubes, a vertically-swinging weighted member, and links connecting the said weighted member with the supporting member for the tubes.

4. An ore-concentrator, comprising a bed for the ore to be separated, the said bed having openings therethrough, a series of tubes fitting in the openings for the discharge of the mineral portions of the material, and means for regulating such discharge controlled by the weight of ore on the bed, the said means comprising a second series of tubes for inclosing the upper ends of those of the first series, and a vertically-movable member for supporting and operating the said second series of tubes.

5. An ore-concentrator, comprising a bed for the ore to be separated, tubes extending through the bed for the discharge of the mineral portions of the ore, other tubes having movable relation with said first-named tubes for regulating such discharge, a supporting member for the second-mentioned tubes, a vertically-swinging weighted member connected by links with the supporting member, and links connecting the said weighted member with the bed.

6. An ore-concentrator, comprising a bed for the ore to be separated, having tubes therethrough for the discharge of the mineral portions of the pulverized quartz-rock, other tubes having movable relation with said first-named tubes for regulating such discharge, controlled by the weight of the ore on the bed, and a vertically-movable member for supporting the second-mentioned tubes.

7. An ore-concentrator, comprising a forwardly and downwardly inclined reciprocatory bed for the ore to be separated, having tubes therethrough for the discharge of the mineral portions of the pulverized quartz-rock, other tubes having movable relation with said first-named tubes, for regulating such discharge, the same being controlled by the weight of the ore on the bed, and a vertically-movable member for supporting the second-mentioned tubes.

8. An ore-concentrator, comprising a forwardly and downwardly inclined reciprocatory bed for the ore to be separated, having tubes therethrough for the discharge of the mineral portions of the

pulverized quartz-rock, by gravity, other tubes having movable relation with said first-named tubes for regulating such discharge automatically, the same being controlled by the weight of the ore on the bed, a vertical swinging bifurcated yoke having a rearwardly-extending bar, a suspending-link therethrough for the forward end of the bed, and an adjustable weight on said bar.

9. An ore-concentrator, comprising a forwardly and downwardly inclined reciprocatory bed for the ore to be separated, having tubes therethrough for the discharge of the mineral portions of the pulverized quartz-rock, by gravity, other tubes having movable relation with said first-named tubes for regulating such discharge, automatically, controlled by the weight of the ore on the bed, a vertically-movable member for supporting the second-mentioned tubes, a vertically-swinging yoke carrying an adjustable weight, and suspending-links therefrom for the forward end of the bed.

10. An ore-concentrator, comprising a forwardly and downwardly inclined reciprocatory bed for the ore to be separated, means therein for the discharge of the mineral portions of the pulverized quartz-rock by gravity, means for regulating such discharge automatically, controlled by the weight of the ore on the bed, the first-named means embodying a series of tubes fitted to and extending through the bed, a corresponding series of tubes for inclosing the upper ends thereof, and a vertically-movable member for supporting the second-mentioned tubes, and the last-named means embodying a vertically-swinging yoke carrying an adjustable weight, and suspending-links therefrom for the forward end of the bed, said vertically-movable member being operated from said yoke.

11. An ore-concentrator, comprising a bed for the ore to be separated, means therein for the discharge of the mineral portions of the pulverized quartz-rock, means for regulating such discharge, controlled by the weight of the ore on the bed, said first-named means embodying a series of tubes fitted to and extending through the bed a distance from the forward end thereof, a corresponding series of tubes for inclosing the upper ends of those of the first series, a guided vertically-movable supporting member therefor in and through which the tubes of the second-mentioned series are fitted, a vertically-swinging weighted yoke, and pivoted links therefrom to which the said vertically-movable supporting member is connected at the ends.

12. An ore-concentrator, comprising a supporting-frame, a downwardly and forwardly inclined bed, links pivotally supporting the rearward portion of the bed from the frame, the bed being provided at its forward end with a chute and an abutment, an abutment on the frame against which the first-named abutment strikes on the forward movement of the bed, a weighted member pivoted on the frame above the forward end of the bed, and connected at its forward end by links with the bed, means for moving the bed rearwardly, springs for imparting a return movement to the bed, the said bed being provided with means for the discharge of the heavy mineral portions of the material, and means carried by the pivoted weighted member for regulating such discharge.

13. An ore-concentrator comprising a frame, a bed, links pivotally supporting the rearward portion of the bed from the frame, the bed being provided at its forward end with a chute for the discharge of the lighter portions of the material, and with an abutment, an abutment on the frame and against which the first-named abutment strikes, a pivoted member having a rear extension provided with an adjustable weight, links connecting said pivoted weighted member with the forward portion of the bed, a transverse member carried by the bed near its rearward end and having an upward projection, a rotatable shaft provided with a cam for engaging said projection, spring-plates secured at their upper ends to the frame and at their lower ends to the transverse member, means for supplying the ore to the bed, means for the discharge of the heavy mineral portions of the material, and means connected with said pivoted weighted member for regulating said discharge.

14. An ore-concentrator, a downwardly and forwardly inclined bed, links pivotally supporting the rearward portion thereof from members of the frame, said bed being closed at its rearward end, and provided at its open forward end with an inclined chute having a vertical face constituting an abutment, a transverse abutment against which the first-named abutment strikes in the forward movements of the bed, a pivoted yoke having a rearwardly-extending bar provided with an adjustable weight, a plate having a vertical slot in which the free portion of said bar is guided, links pivoted to the parallel extremities of the yoke, and supporting the forward portion of the bed, a transverse member connecting the sides of the bed near its rearward end, and having a central upstanding projection, spring-plates secured at their upper ends to the frame, and at their lower ends to said transverse member on either side of said plate, a feed-trough for supplying the ore to the bed, and cooperating means from the yoke and on the bed for automatically discharging the mineral portions of the pulverized quartz-rock from the lighter or waste portions thereof by gravity.

809,766. **RANGE CONSTRUCTION.** MATTHEW F. ALLEN, Nashville, Tenn. Filed Feb. 27, 1904. Serial No. 196,809.

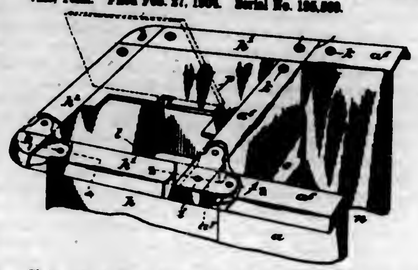

Claim.—1. A stove, having a body formed of sheet metal, the lower portion of which is provided with an inwardly-extending horizontal flange, said flange being split at the corners of the body so that the parts thereof will overlap one another, said overlapping parts being secured together.

2. A stove, having a body formed of sheet metal, the lower portion or base of which is corrugated and provided with an inturned flange, for the purpose specified, said flange being divided or split at the corners of the body, and the sections of the flange being rigidly fastened one on the other at said corners.

3. A stove having a sheet-metal body with an integral top rim formed by bending the upper edges of the body outward and thence downward, the top rim being divided at the corners of the stove, and a corner-iron fastened in between the sections of the top rim at said corners.

4. A stove, having a sheet-metal body with an integral top rim formed by bending the upper edges of the body outward and thence downward, the top rim being divided at the corners of the stove, and a corner-iron fastened in between the sections of the top rim at said corners, the said corner-iron comprising a main portion lying level with the top rim, and wings projected oppositely under the sections of the top rim.

5. A stove, having a sheet-metal body with an integral top rim formed by bending the upper edges of the body outward and thence downward, the top rim being divided at the corners of the stove, and a corner-iron fastened in between the sections of the top rim at said corners, the said corner-iron comprising a main portion lying level with the top rim and wings projected oppositely under the sections of the top rim, and the corner-iron further having a downwardly-projected leg arranged to lie against the adjacent corner of the stove body.

6. The combination of a stove-body having a rim, a reservoir having a rim, and a junction-iron fastened to said rims, the junction-iron having projecting members arranged at right angles to each other, and a downwardly-extending angular flange at the junction of said members and engaging a corner of the body.

7. The combination of a stove-body provided with a top rim having openings at the corners, angle-irons secured to two corners of the body and having its members extending under the top rims of said body, and a reservoir having a top rim, the front and back rims of the reservoir extending partly over the angle-irons into contact with the front and back rims of the body and secured to said angle-irons.

8. The combination with a stove-body including the fire-box, of a reservoir comprising side, end and bottom walls, the side walls being projected beyond the inner end wall and fastened to the body, and a water-back attached to the inner end wall and projected into the fire-box.

9. The combination of a stove-body having a top rim, a reservoir main part constituting front and back sides and an outer end wall and having a top rim with an opening or break therein, junction-irons fastened to the body and reservoir-rims, and a corner-iron fastened in the break or opening in the reservoir-rim.

809,767. **WIRE-STRETCHER.** SCOTT ARMES, Montgomery, Ind. Filed May 21, 1903. Serial No. 158,022.

Claim.—As an article of manufacture a wire-stretcher comprising a face-plate having an opening therethrough, said opening being enlarged at one end, a washer disposed in said enlargement, threaded rod slidably and removably engaged in the opening and washer, a threaded sleeve removably engaged with the rod and bearing against the washer, a rotating crank formed integral with the sleeve, said rod being bifurcated at one end and having its resultant spaced portions turned outwardly and in the direction of the other end of the rod to form hooks, chains removably engaged with the hooks, hooks carried by the chains, wire-engaging plates adapted for the reception of fencing therebetween, attaching-bolts engaged in the plates, and yokes removably engaged with certain of said bolts, the second-named hooks being engaged with the yokes.

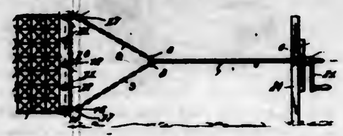

809,768. **TRUCK-BOLSTER.** JOHN C. BARBER, Chicago, Ill. Filed May 4, 1903. Serial No. 156,758.

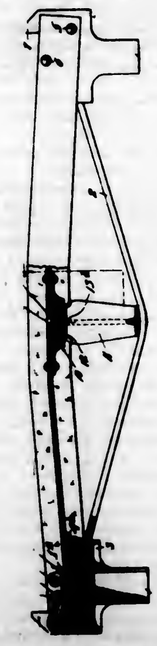

Claim.—1. In a trussed truck-bolster, the combination with a flanged compression member having its web cut at the ends thereof, leaving the ribs 1^b, of caps or joint-blocks resting against the end portions of the web of said compression member, and having grooves in their sides receiving said ribs 1^b, and thereby interlocking the said parts, and a tension-bar having its ends bent and interlocked with the said caps or blocks, substantially as described.

2. In a trussed truck-bolster, the combination with tension and compression members rigidly attached at their ends, of a king-post or strut interposed between the intermediate portions of said compression and tension members, and mounted for oscillatory movement to and from operative position, substantially as described.

3. In a trussed truck-bolster, the combination with tension and compression members, united at their ends, of a two-part king-post or strut interposed between the intermediate portions of said two members, and made up of two parts, one being rigidly secured to said compression member, and the other having a pivotal movement into and out of engagement with said tension member, substantially as described.

809,769. **SWINGLETREE.** JOHN A. BUCHANAN, Pittsburg, Pa. Filed Nov. 10, 1904. Serial No. 232,169.

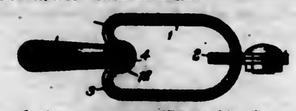

Claim.—1. A tree or means for attaching horses to wagons, having along one edge inwardly-projecting flanges and with ribs along its opposite edge, said ribs projecting alternately in opposite directions, substantially as set forth.

2. A hollow tree or means for attaching horses to wagons having flat or approximately flat sides and provided with ribs along one edge in combination with an attaching U-shaped part or member provided with journals projecting between adjacent ribs on the tree and a strap surrounding the tree and provided with bearings for said journals, substantially as set forth.

3. A hollow tree or means for attaching horses to wagons having flat or approximately flat sides and provided with ribs along one edge in combination with an attaching U-shaped part or member having outwardly-projecting journals projecting between adjacent ribs on the tree and a strap surrounding the tree and provided with bearings for said journals and having an opening or slot for the projection of the body or U-shaped part therethrough, substantially as set forth.

4. A tree or means for attaching horses to wagons having a groove along its front edge, a slotted strap surrounding the tree, a U-shaped part or member projecting through the slot in the strap and having journals arranged in the groove in the tree and bearing on the portions of the strap forming the sides of the slot, substantially as set forth.

5. A hollow tree or means for attaching horses to wagons having flat or approximately flat sides, and provided along one edge with a series of longitudinal ribs projecting alternately in opposite directions, the outer walls of the outer ribs being in the planes of the flat sides of the tree.

809,770. **ASYMMETRIC CELL.** MAX BÜTTNER, Wilmersdorf-Berlin, Germany. Filed Aug. 4, 1904. Serial No. 219,583.

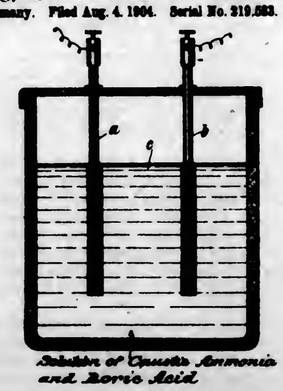

Claim.—In an asymmetric cell, the combination with an aluminium anode and a cathode of any metal, of an electrolyte consisting of a solution of caustic ammonia and boric acid.

809,771. **AUTOMATIC SPEED-REGULATOR FOR INTERNAL-COMBUSTION ENGINES.** JOHN G. CALLAN, Lynn, Mass., assignor to General Electric Company, a Corporation of New York. Filed Oct. 28, 1903. Serial No. 178,172.

Claim.—1. A speed-governing device for explosive-engines, comprising means sensitive to fluctuation in speed of the engine for progressively reducing the charge of explosive mixture to a predetermined point and in further continuation of the governing action for maintaining the charge constant at said point while simultaneously delaying the ignition of the charge.

2. A speed-governing device for explosive-engines, comprising means sensitive to acceleration of speed of the engine for progressively reducing the charge of explosive mixture and simultaneously

advancing the ignition of the charge to a predetermined point and

spring carried thereby having a free end, which end impresses its li-

19. In a governor, the combination of a ring or support, a de-

for, and means located on each car-platform whereby the switch may

advancing the ignition of the charges to a predetermined point and for then maintaining the charges constant at said point while simultaneously and progressively delaying the ignition of the constant charges.

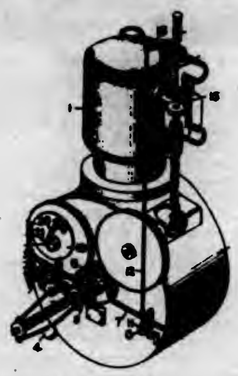

3. A speed-governing device for explosive-engines, which comprises means sensitive to variations in the speed of the engine, and means controlled thereby which during increase in speed above normal first simultaneously varies the charges of the explosive mixture and the time of ignition thereof to a certain point, and then varies only the time of ignition of the charges.

4. A speed-governing device for explosive-engines, consisting of means sensitive to variations in the speed of the engine, and means actuated thereby adapted to reduce the charges of explosive mixture, and at a predetermined point adapted to maintain the charges constant and to retard the time of ignition of the charges in accordance with increase in speed of the engine.

5. A speed-governing device for explosive-engines, consisting of a means sensitive to changes in speed of the engine, a single actuating member operatively related thereto, a valve mechanism controlled by the actuating member and adapted to progressively reduce the charges of explosive mixture in accordance with increase of speed, an ignition-regulating device controlled also by the actuating member, and means codperating with said actuating member for permitting said mechanism and device to progressively and simultaneously reduce the charges and advance the time of ignition or to progressively and successively reduce the charges and retard the time of ignition.

6. A speed-governing device for explosive-engines, consisting of means sensitive to changes in speed of the engine, a swinging beam actuated thereby, a variable cut-off-valve gear operatively connected with the beam, adjustable means for arresting the swing of the beam in one direction to limit the variation of the cut-off-valve gear, a circuit-breaker also operatively connected with said beam and adjustable spring-actuated pivots adapted separately to cooperate with the swinging beam to differentially actuate the circuit-breaker.

7. In a governing device for explosive-engines, the combination of a valve for varying the supply of combustible to the engine, an adjustable sparking device for igniting the charge, a speed-responsive means, and a lost-motion connection between the valve, sparking device and the speed-responsive means which first actuates the valve through its range of movement to progressively throttle the charge and then the sparking device, to retard the time of ignition.

8. In a governing device for explosive-engines, the combination of a valve for varying the supply of combustible to the engine, an adjustable sparking device for igniting the charge, a speed-responsive means, and an actuator which under the progressive movement of the speed-responsive means simultaneously moves the valve and advances the sparking device to a predetermined point and is then operatively disconnected from the valve and retards the sparking device.

809,772. GOVERNOR-GOVERNOR. JOHN C. GALLAH and FRED-ERIC R. C. DEAN, Lynn, Mass., assignors to General Electric Company, a Corporation of New York. Filed June 19, 1901. Serial No. 213,574.

Claim.—1. A governor comprising a rotating element, and a coiled spring carried thereby having a free end, and a regulator acted upon by the spring.

2. A governor comprising a rotating element, and a coiled spring carried thereby having a free end, which end increases its distance from the axis of rotation under predetermined changes in speed.

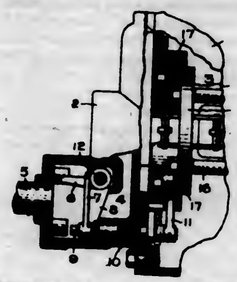

3. A governor comprising a rotating element, and a coiled spring mounted thereon having a free end whose axis is parallel with that of the rotating element.

4. A governor comprising a rotating element, and a flat coiled spring mounted thereon having its inner end fastened to the said element with its outer end free to move in a plane at right angles to the plane of the rotating element.

5. A governor comprising a rotating element, a coiled spring mounted thereon having a free end, a regulator acted upon by the spring, and a means for preventing excess movement of the said free end.

6. A governor comprising a rotating element, a coiled spring mounted thereon having a free end, and a damping device which surrounds the orbit of said free end

7. A governor comprising a rotating element, a coiled spring mounted thereon having a free end, a damping device which surrounds the orbit of said free end, and a support for the damper.

8. A governor comprising a revolving element, a clock-spring carried thereby which has flattened turns and a free end, and a regulating device acted upon by the free end of the spring.

9. A governor comprising a revolving element, a coiled spring having flattened turns and free end, and a means for securing the spring to the revolving element in such a position that the free end moves in a plane at right angles to that of the element.

10. A governor comprising a revolving element, a coiled spring mounted thereon and having a free end, and a device which is located within the orbit of said free end and is engaged thereby when the speed of said element exceeds a certain amount.

11. A governor comprising a revolving element, a coiled spring mounted thereon and having a free end, a device which is located within the orbit of said free end and is engaged thereby when the speed of said element exceeds a certain amount, and a damper for preventing excess movement of the end of said spring.

12. A governor comprising a rotating element, a coiled spring mounted thereon having a free end, which tends to wind up or close under conditions of increasing speed, a stationary damper surrounding the orbit of said free end, and a device which extends through the damper into the path of the free end.

13. A governor comprising a rotating element, a coiled spring mounted thereon having a free end, a regulating device acted upon by the spring, and a counterbalance for said spring.

14. A governor comprising a rotating element, a coiled spring mounted thereon having a free end, a second spring of similar characteristic arranged to balance the first, and a regulator acted upon by the springs.

15. A governor comprising a rotating element, a coiled spring mounted thereon having a free end, a valve, and a means acted upon by the free end of the spring for controlling the valve.

16. A governor comprising a rotating element, a coiled spring mounted thereon, and which has a free end that tends to wind up when rotated above a certain speed, and a means for attaching the spring to the element so that its plane of operation is at right angles to that of the element.

17. In a governor, the combination of a support, a flat spring mounted thereon, a stud for supporting the spring under an initial tension, and means for indicating the proper position of the stud with respect to the support.

18. In a governor, the combination of a support, a flat coiled spring, a stud carried by the support and arranged to impart initial movement to the spring and also to form its sole support, and an indicator for showing the correct angular position of the stud on the support.

19. In a governor, the combination of a ring or support, a device mounted thereon which is normally restrained and operates under emergency conditions, an adjustable means for clamping the device to the ring or support, and an indicator which is a measure of the restraining force opposing the action of said device.

20. A governor comprising a revolving element, a spring carried thereby which is bent in the form of a curve and is provided with a free end, and a regulating device which is acted upon by the free end of the spring under definite speed conditions.

21. A governor comprising a revolving element, a spring which is bent in the form of a curve and is secured to the revolving element and has an end that is free to move toward and away from the axis of rotation as the speed changes, and a regulating device which is caused to assume a given position by reason of the action of the free end of the spring upon a definite increase in speed.

22. A governor comprising a revolving element, a spring carried thereby which is bent in the form of a curve and has a free end that moves toward and away from the axis of rotation as the speed of said element changes, a damper for preventing overtravel of the free end of the spring, and a regulating device which is acted upon by the free end of the spring before it engages the damper.

23. A governor comprising a revolving element, a spring carried thereby which is secured to the element and has a free end that moves toward and away from the axis of rotation as the speed of the element changes, a damper surrounding the orbit of the free end of the spring which has an opening therein through which the free end of the spring acts, and a regulator which is under the control of the free end of the spring.

24. A governor comprising a revolving element, a coiled spring carried thereby which is fixed at one point and has a free actuating end, the turns of the spring being initially flattened so that the turns will center themselves about the point of support under normal speed conditions, a damper surrounding the orbit of the free end of the spring, and a regulator that is acted upon by the spring before its free end is restrained by the damper.

809,773. EMERGENCY OPERATING MEANS FOR REVERSING SWITCHES. FRANK B. CASE, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Aug. 23, 1904. Serial No. 221,832.

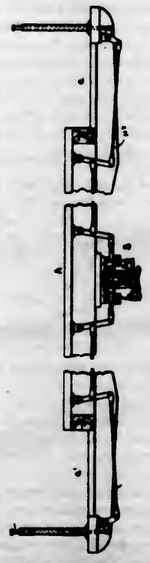

Claim.—1. A motor reversing-switch, service-operating devices therefor and means located on each car-platform whereby the switch may be operated to move it in one direction only.

2. A motor reversing-switch, service-operating devices therefor and means located at one end of the car for moving the switch in one direction, and means at the other end of the car for moving the switch in the opposite direction.

3. A motor reversing-switch, service-operating devices therefor, and means located at one end of the car whereby the switch may be reversed when it is set to cause the car to be propelled forwardly with respect to that end of the car.

4. A motor reversing-switch, service-operating devices therefor, and means located at one end of the car whereby the switch may be operated to move the switch to its reverse position relatively to that end of the car, but not to its forward position.

5. A motor reversing-switch, service-operating devices therefor, and means operable from each end of the car for throwing the switch to its reverse position relatively to that end of the car.

6. A motor reversing-switch, service-operating devices therefor, and means operable from each end of the car for throwing the switch to its reverse position relatively to that end of the car, but not to its forward position.

7. A motor reversing-switch, service-operating devices therefor, manually-operated mechanism for moving said switch, and means for returning said manually-operated mechanism to its normal position after it has performed its function.

8. A motor reversing-switch, service-operating devices therefor, a lever, means for bringing the lever into contact with the movable member of the switch for operating it, and means for returning the lever to its normal position after it has performed its function.

9. A motor reversing-switch, a pair of levers arranged adjacent the movable member thereof but disconnected therefrom, and an operative connection extending from each lever to one end of the car for actuating the lever.

10. A motor reversing-switch, a pair of levers mounted adjacent the movable member thereof but disconnected therefrom, a connection extending from one lever to one end of the car, and a second connection extending from the other lever to the other end of the car.

11. A motor reversing-switch, a pair of bell-crank levers pivotally mounted adjacent the movable member of the switch and each having an arm operatively associated with said movable member, and a connection extending from each lever to one end of the car.

809,774. SYSTEM OF CONTROL. FRANK B. CASE, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed June 13, 1905. Serial No. 264,763.

Claim.—1. In a system of control, in combination, a motor-circuit, a pneumatic controlling system, a circuit-breaker in said motor-circuit, and means operable upon the exhaustion of said pneumatic controlling system while the motor-circuit remains energized to trip said circuit-breaker.

2. In a system of control, in combination, a motor-circuit, a pneumatic controlling system, a circuit-breaker in said motor-circuit, and means operable upon the exhaustion of said pneumatic system for tripping the circuit-breaker when the motor-circuit remains energized but not when the motor-circuit is deenergized.

3. In a system of motor control, in combination, a motor-circuit, a pneumatic controlling system, a circuit-breaker, means for setting said circuit-breaker, means for tripping said circuit-breaker on overload in the motor-circuit, and means for tripping the circuit-breaker upon the exhaustion of the pneumatic controlling system while the motor-circuit remains energized.

4. In a system of control, in combination, a motor-circuit, a pneumatic controlling system, a circuit-breaker, a piston in said pneumatic system, an electromagnet in said motor-circuit, and means codperating with said piston and said electromagnet for tripping the circuit-breaker upon the exhaustion of the air from said piston while said electromagnet remains energized.

5. In a system of control, a motor-circuit, a pneumatic controlling system, a circuit-breaker, a piston in said pneumatic system, an electromagnet in said motor-circuit, and means codperating with said piston and said electromagnet for tripping said circuit-breaker upon the exhaustion of air from said piston while the said electromagnet remains energized, the arrangement being such that the circuit-breaker is not tripped when the exhaustion of the piston and the deenergization of the electromagnet take place simultaneously.

6. In a system of control, a motor, a controller arranged to connect said motor to a source of current-supply, electromagnetic actuating means therefor, a reversing-switch, actuating means for said

reversing-switch, and means associated with the actuating means for the reversing-switch for completing a circuit through the controller-actuating means after the reversing-switch has been fully operated.

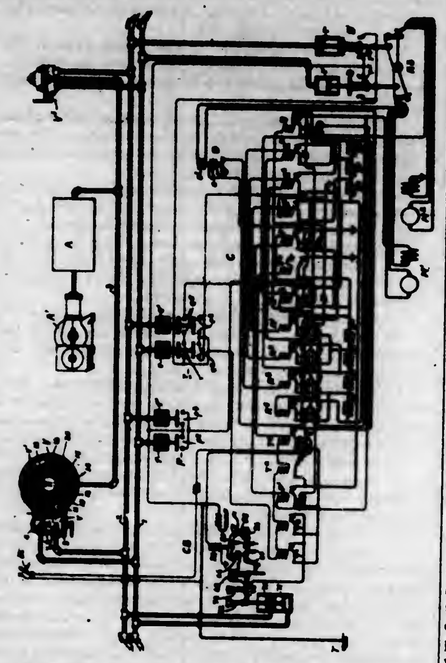

7. In a system of control, a motor, a controller arranged to connect said motor to a source of current-supply, actuating means for said controller, a reversing-switch, a piston for actuating said reversing-switch, a yielding connection between said piston and said reversing-switch, and means associated with said piston for controlling the energizing-circuit of the controller-actuating means.

8. In a system of control, a motor, a controller arranged to connect said motor to a source of current-supply, actuating means for said controller, a reversing-switch, a piston for actuating said switch, a yielding connection between said piston and said switch, and contacts associated with said piston for controlling the energizing-circuit of said controller-actuating means, the said yielding connection being arranged to maintain said contacts open except when the pressure upon the piston is greater than that required to operate the reversing-switch.

9. In a system of control, a motor, a controller for connecting said motor to a source of current-supply, electromagnetic actuating means for said controller, a controlling-circuit for said actuating means, a reversing-switch, a pneumatically-actuated piston, a spring between said piston and said switch, and contacts associated with said piston and arranged in said controlling-circuit.

10. In a system of control, a motor, a controller for connecting said motor to a source of current-supply, electromagnetic actuating means for said controller, a controlling-circuit for said actuating means, a reversing-switch, a pneumatically-actuated piston, a spring between said piston and said switch, and contacts associated with said piston and located in said controlling-circuit, the tension of the spring being such that said contacts are closed only upon a greater pressure than that required to operate said reversing-switch.

11. In a system of control, a plurality of motors, a motor-controller arranged to connect said motors to a source of current-supply in series with each other and to connect them in a closed circuit when the controller is in its "off" position, means controlled by current from said source of supply for operating said controller, a reversing-switch for said motors, and means independent of the current from said source of supply for operating said reversing-switch.

12. In a system of control, a plurality of motors, a controller having normally closed contacts for connecting said motors in a closed circuit and normally open contacts arranged to connect the motors to a source of current-supply, electromagnetic actuating means for said contacts, means for connecting said actuating means to said source of supply, a reversing-switch, and independent means for operating said switch.

13. In a system of control, a plurality of motors, a motor-controller comprising a plurality of contacts for connecting said motors to a source of current-supply, and normally closed contacts for connecting said motors in a closed circuit, electromagnetic controlling means for said contacts, an actuating-circuit for said controlling means arranged to cause said normally closed switches to open when others of said switches are closed, a reversing-switch, and means for operating said reversing-switch without operating the controller-contacts.

14. In a system of control, a plurality of motors, a motor-controller including normally closed contacts arranged to connect said motor in a closed circuit, a source of current-supply, means controlled by current from said source of supply for operating the controller and opening said contacts, a reversing-switch, and means independent of said current for operating said switch.

15. In a system of control, a plurality of motors, a motor-controller arranged to connect said motors to a source of current-supply and including normally closed contacts arranged to connect said motors in a closed circuit, means controlled by current from said source of supply for operating said controller and opening said contacts, a reversing-switch, and means independent of the current furnished by said source of supply for operating said reversing-switch.

16. In a system of control, a plurality of motors, a motor-controller adapted to return to its "off" position when otherwise free and arranged to connect said motors in a closed circuit when in its "off" position and to connect them to a source of current-supply in series with each other when in a running position, means controlled by current from said source of supply for maintaining said controller in a running position, a reversing-switch, and means for operating said reversing-switch independently of said current.

17. In a system of control, a plurality of motors, a motor-controller of the separately-actuated contact type arranged to connect said motors in closed circuit when the controller is in its "off" position, a reversing-switch, electromagnetic actuating means for said controller-contacts, controlling-relays for said actuating means, and pneumatically-actuated means for operating said relays and said reversing-switch.

18. In a system of control, a plurality of motors, a controller having normally closed contacts for connecting said motors in a closed circuit and normally open contacts for connecting said motors to a source of current-supply, electromagnetic actuating means for said contacts, a governing system independent of the current from said source of supply for connecting said contact-actuating means to said source of supply, a reversing-switch, and means connected with said governing system for operating said reversing-switch.

809,775. CALF-WEANER. WILLIAM B. CHANDLER, Bicampo, Tex. Filed Feb. 13, 1905. Serial No. 246,316.

Claim.—1. A calf-weaner comprising a plate having a recess in its upper edge, sleeves carried by the plate at opposite sides of the recess, said sleeves having inwardly-extending flanges at their ends, rods slidably engaged in the sleeves and lying normally with their inner ends in close relation, said rods extending outwardly of the sleeves, collars carried by the rods within the sleeves, and springs engaged with the rods between their collars and the outermost flanges of the sleeves, said springs being arranged to hold the rods yieldably in their normal positions.

2. As an article of manufacture a calf-weaner comprising a plate having a recess in one of its edges extending thereinto, the portions of the plate at the sides of the recess being curved laterally and inwardly to form aligning sleeves, the metal at the ends of the sleeves being crimped inwardly to form flanges, rods slidably disposed in the sleeves and lying normally with their inner ends in close relation, said rods extending outwardly beyond the sleeves, collars carried by the rods within the sleeves, and helical springs engaged with the rods between the collars and the outermost flanges of the sleeves to hold the rods yieldably in their normal positions.

809,776. SHUTTLE-MOTION FOR LOOMS. MADISON L. CHRISTIAN and HARRY B. REYNOLDS, Clinton, Iowa, assignors to American Wire Cloth Company, Clinton, Iowa, a Corporation of Iowa. Filed May 17, 1905. Serial No. 260,767.

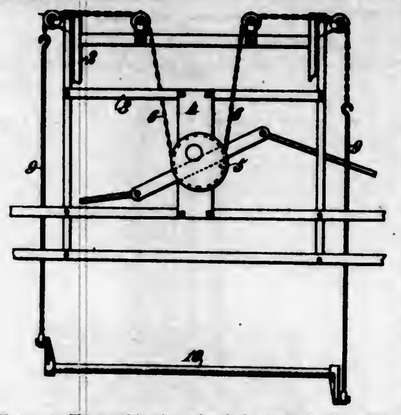

Claim.—1. The combination of a lathe-frame having chain-wheels, guides on the loom-framework, and chains connected with the wheels for turning the same, and passing over the guides, the points on the guides engaged by the chains being in alinement with each other and with the axis of motion of the lathe-frame.

2. The combination of a lathe-frame having chain-wheels, sheaves on the loom-framework, and chains connected with said chain-wheels and passing over the sheaves, the points of contact of the sheaves engaged by the chains being in line with each other and with the axis of motion of the lathe-frame.

3. The combination of a lathe-frame having circular chain-wheels eccentrically mounted, sheaves on the loom-framework, and chains connected with the said chain-wheels and passing over the sheaves, the points on the sheaves which are engaged by the chain-wheels being in line with each other and with the axis of motion of the lathe-frame.

4. The combination of a lathe-frame having chain-wheels, sheaves on the loom-framework, chains connected with said chain-wheels and passing over the sheaves, the points of contact of the sheaves engaged by the chains being in line with each other and with the axis of motion of the lathe-frame, and sheaves mounted on said loom-framework in horizontal alinement with said first-mentioned sheaves and over which the chains pass.

5. The combination of a lathe-frame having circular chain-wheels eccentrically mounted, sheaves on the loom-framework, chains connected with the chain-wheels and passing over the sheaves, the points on the sheaves which are engaged by the chains being in line with each other and with axis of motion of the lathe-frame, and sheaves on the loom-framework over which the chains pass and in horizontal alinement with the first-mentioned sheaves.

809,777. RAZOR-STROP. GEORGE W. COLLINS, St. Joseph, Mo. Filed July 12, 1905. Serial No. 269,277.

Claim.—1. In a razor-strop the combination of a pair of strop members secured together end to end by a flexible connection, a ring passing through the space between said strop members and engaging the flexible connection, a handle pivotally connected with said ring, a center plate composed of rigid material and having convex surfaces on its opposite sides, said plate being provided with a longitudinal slot opening from one end and with a flat surface at the other end, said flat surface engaging said ring whereby the plate is prevented from springing from the strop at this end, a plate located over the end of the two strop members and the slot end of the center plate, said plate having a hook, and a screw passing through the slot, said last-named plate holding the ends of the strop members to the center plate and adjustably securing the center plate against lateral motion with respect to the body of the strop.

2. A razor-strop having a pair of strop members, adjustable means located between them for supporting them, said means comprising a plate having an open-ended slot in its end, and means for adjustably securing the plate to the strop members at any desired point along said slot.

3. A razor-strop having a pair of flexible strop members loosely connected together, a supporting-plate located between said members and having a longitudinal slot in one end, an adjusting-screw adapted to pass through said slot and said members for adjustably securing the plate to the strop members and a handle loosely connected with said strop members.

4. A razor-strop having a pair of strop members, means located between them for supporting them, said means comprising a plate having convex faces against which the strop members loosely engage, a handle swingingly connected with the strop at the end of the center piece and a suspending loop at the opposite end of the strop.

5. A razor-strop comprising a pair of flexible strop members secured together end to end, a handle loosely connected with said members at a point adjacent to that at which they are secured together, said members being free to move with respect to each other at all points along their surfaces, and a convex plate located between said members.

809,778. LADDER ATTACHMENT FOR PIPES. JOHN F. COLLINS, Buffalo, N. Y. Filed Sept. 12, 1905. Serial No. 278,177.

Claim.—1. The combination with a pipe, of two clamping-collars having perforated lugs, a bar having an eye at each end adapted to be held between said lugs and having also laterally-extending rungs and bolts, passing through said lugs and the eyes of said bar to clamp the collar to the pipe and to clamp the bar between said lugs.

2. The combination with a pipe, of two clamping-collars formed each in two parts having outstanding lugs, two bars arranged on opposite sides of the pipe and having eyes at their ends, said bars having also oppositely-extending rungs, and bolts passing through said lugs and the eyes of said bars to clamp said collars to the pipe and to clamp the bars between the lugs on said collars.

3. The combination with a pipe, of two clamping-collars on said pipe, and two bars arranged on opposite sides of said pipe and having their ends secured to said collars, said bars having laterally-extending rungs and the rungs on one bar being on planes between the rungs of the other bar.

809,779. WINDOW-BLIND SLAT-FASTENER. MICHAEL J. COGAN, Port Chester, N. Y. Filed Mar. 11, 1905. Serial No. 249,867.

Claim.—1. In a window-blind, a bar having pivotal connection with the upper and lower sets of slats, a crank-shaft mounted to swing on the lower end of the blind and having a horizontal portion engaging in said bar, a handle on said crank-shaft, and a spring-yielding plate having channels on its outer face for receiving said handle.

2. In a window-blind, a bar consisting of sections, the upper section being pivotally connected to the upper slats of the blind, while the lower section is pivoted to the lower slats of the blind, a metal plate connecting the sections and having a cut-away portion for receiving the parting-strip of the blind, a plate secured to the

lower end of the blind, a crank-shaft mounted to swing in said plate and having pivotal connection with the lower section of said bar, a

3. In a door-hanger the combination, with two bars, of a part

a plurality thereof on one side in position relatively to a plurality on

means whereby the cigar end may release the restraining means,

lower end of the blind, a crank-shaft mounted to swing in said plate and having pivotal connection with the lower section of said bar, a handle on said shaft, and a spring-yielding plate having channels for receiving said handle.

809,780. CHIMNEY-HOLDER. ANGUS R. COOPER, Mobile, Ala. Filed June 22, 1905. Serial No. 266,418.

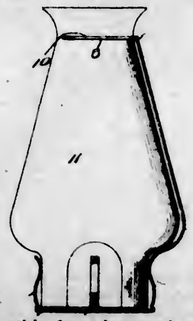

Claim.—As an article of manufacture, a lamp-chimney support comprising a lamp-burner gallery having chimney-engaging fingers, one of said fingers having a vertically-extended portion formed integrally therewith, and a chimney-engaging member carried by the upper end of said extended portion, said member including bowed arms having spaced outwardly-turned ends.

809,781. DOOR-HANGER. MYRON COMEY, Brooklyn, N. Y., assignor to Reliance Ball Bearing Door Hanger Company, New York, N. Y., a Corporation of New York. Filed Aug. 26, 1903. Serial No. 170,777.

Claim.—1. In a door-hanger the combination with two outside bars and an intermediate bar, one of said elements being movable with respect to the other, of a plurality of movable antifriction devices on each side of the intermediate bar and between it and the outside bars, and means for retaining a plurality of antifriction devices on one side of the intermediate bar in position relatively to a plurality of antifriction devices on the other side thereof.

2. In a door-hanger the combination, with two outside bars and an intermediate bar, one of said elements being movable with respect to the other, of a plurality of movable antifriction devices on each side of the intermediate bar and between it and the outside bars, and means for retaining a plurality of antifriction devices on one side of the intermediate bar in position relatively to a plurality of antifriction devices on the other side thereof, said antifriction devices being divided equally to provide an equal number thereof on both sides of the intermediate bar.

3. In a door-hanger the combination, with two bars, of a part movable between and along the bars, a plurality of antifriction devices between each bar and the said part, and means for spacing and for maintaining the spacing of antifriction devices on each side of said part.

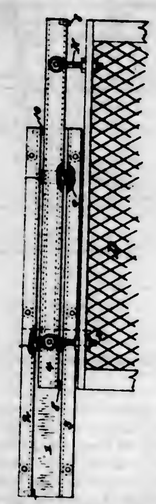

4. In a door-hanger the combination, with two outside bars and an intermediate bar, one of said elements being movable with respect to the other, of a spacing-strip provided on each side with a plurality of projections each having an aperture therein, and movable antifriction devices arranged in said apertures.

5. In a door-hanger the combination, with two outside bars and an intermediate bar, one of said elements being movable with respect to the other, of a plurality of movable antifriction devices arranged on each side of the intermediate bar and between it and the adjacent outside bar, a retainer for each antifriction device and a strip securing together each and all of said retaining devices on both sides of the intermediate bar.

6. In a door-hanger the combination, with a movable body, of a plurality of movable antifriction devices arranged on each side thereof, and means for retaining a plurality of antifriction devices on one side of said movable body in fixed relative position with regard to a plurality of antifriction devices on the other side thereof.

7. In a door-hanger the combination, with two outside bars and an intermediate bar, one of said elements being movable with respect to the other, of a plurality of movable antifriction devices arranged on each side of said intermediate bar and between it and the adjacent outside bar, and a movable spacing device comprising a strip provided with a plurality of projections from each side thereof—each of said projections having its outer end bent at substantially right angles to the strip and provided with an aperture and arranged between the intermediate bar and the adjacent outside bar and containing in said aperture one of the aforesaid antifriction devices.

8. In a door-hanger the combination, with two outside bars and an intermediate bar, one of said elements being movable with respect to the other, of a plurality of movable antifriction devices on each side of the intermediate bar and between it and the outside bars, and means for retaining all of said antifriction devices in fixed relative position.

9. In a door-hanger the combination, with two outside bars and an intermediate bar, one of said elements being movable with respect to the other, of a plurality of movable antifriction devices on each side of the intermediate bar and between it and the outside bars, and a member having its major portion adjacent to said intermediate bar and portions thereof bent to project between the intermediate bar and each of said outside bars, said bent portions being provided with apertures in which said antifriction devices are contained.

10. In a door-hanger the combination with two outside bars and an intermediate bar, one of said elements being movable with respect to the other, of a plurality of movable antifriction devices arranged on each side of said intermediate bar, a spacer for retaining

a plurality thereof on one side in position relatively to a plurality on the other side; and pins arranged near the ends of said bars to engage said spacer and readjust it relatively to the bars when it becomes displaced.

809,783. COMBINED CIGAR CUTTER AND LIGHTER. WILLIAM H. CRAWFORD, Chickasaw, Va. Filed May 11, 1905. Serial No. 259,953.

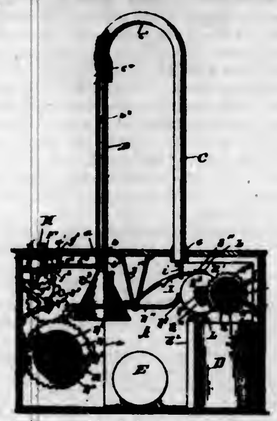

Claim.—1. In a combined cigar cutter and lighter, the combination of a box provided with a slot, a burner-support pivotally mounted in the slot and provided with a reservoir at its lower end within the box, a burner on the support, a contact-point adjacent to the support, a contact-point supported above and in front of the first-named contact-point, an extinguisher supported above the burner, an electric battery, a spark-coil, an electrical connection between the contact-points and including the battery and spark-coil, a cutter-plate for cutting cigar ends, slidably mounted on the lower face of the box-top beneath an opening therein adapted to receive the end of the cigar, a connection between the cutter-plate and the burner-support whereby the reciprocation of the latter will vibrate the former, a spring-actuated lug, means for restraining the movement of the lug, means whereby said restraining means may be released by the end of the cigar, means on the cutter-plate engaged by the lug, to move the plate rearwardly, and tilt the burner-support forwardly, means engaging the lower end of the burner-support to hold the parts in such position, a spring-actuated lug for releasing said holding means, means for restraining the movement of the lug, and means whereby the first-named lug may release said restraining means.

2. In a combined cigar cutter and lighter, the combination of a burner, a swinging support for the burner, means for feeding the burner with fluid, means for igniting the burner comprising a contact-point on the burner, a contact-point adjacent thereto, and in the path of travel of the contact-point on the burner, an open electrical circuit including a battery and a spark-coil, and closed by the conjunction of the contact-points, a cigar-end-cutter plate slidably mounted beneath an opening in the box-top for receiving the end of the cigar to be cut, a connection between the cutter-plate and the swinging support, whereby the rearward movement of the cutter-plate swings the support forward, means for moving the cutter-plate rearwardly, means for restraining said moving means, means whereby the cigar end in the opening in the box-top, may release said restraining means, means for holding the cutter-plate in its rearward position, moving means for releasing the holding means, means for restraining the movement of the releasing means, means whereby the cutter-plate-moving means may release the restraining means, whereby the parts return to their normal position, and means for extinguishing the burner.

3. In a combined cigar cutter and lighter, the combination of the box, a swinging support pivotally mounted in the box-top, a burner on the support, means for igniting and extinguishing the burner operated by the movement of the support, a cutter-plate for clipping the ends of cigars movably mounted beneath an opening in the box-top, means whereby the rearward movement of the cutter-plate may swing the support forwardly, means to move the cutter-plate rearwardly, means to restrain the cutter-plate-moving means, means whereby the cigar end may release the restraining means, means for holding the cutter-plate in its rearward position, moving means for releasing the holding means, means for restraining the movement of the releasing means, and means whereby the cutter-plate-moving means may release the restraining means.

4. In a combined cigar cutter and lighter, the combination of a casing, a swinging support mounted in the top of the casing, and provided with a burner, means for igniting and extinguishing the burner operated by the movement of the support, a cutter-plate for coöperating with an opening in the casing, to clip the ends of cigars inserted through the opening, a connection between the cutter-plate and the swinging support, whereby movement of the former imparts motion to the latter, means to move the plate rearwardly, means to restrain the moving means, means whereby the cigar end may release the restraining means, means to hold the cutter-plate in its rearward position, moving means to release the holding means, means to restrain the releasing means, and means whereby the cutter-plate-actuating means may release the restraining means.

5. In a combined cigar cutter and lighter, the combination of a casing, a swinging support mounted in the top of the casing and provided with a burner, means for igniting and extinguishing the burner, operated by the movement of the swinging support, a cutter-plate coöperating with an opening in the casing to clip the ends of cigars inserted through the opening, means for actuating the swinging support from the movement of the cutter-plate, normally inactive means for moving the cutter-plate rearwardly, means whereby the cigar end may actuate the cutter-plate-moving means, means for holding the cutter-plate in its rearward position, means for releasing said holding means, and means whereby the cutter-plate-moving means may actuate the releasing means.

6. In a combined cigar cutter and lighter the combination of a casing, a swinging support mounted in the top of the casing and provided with a burner, means for igniting and extinguishing the burner operated by the swinging of the support, a cutter-plate coöperating with an opening in the casing to clip the end of a cigar inserted through the opening, means for actuating the swinging support synchronously with the cutter-plate, normally inactive means for moving the cutter-plate in one direction, means whereby the cigar end may actuate the cutter-plate-moving means, means for holding the cutter-plate at the end of its movement, normally inactive means for releasing the holding means, and means whereby the cutter-plate-moving means may actuate the releasing means.

7. In a combined cigar cutter, and lighter, the combination of a swinging support provided with a burner, means for igniting and extinguishing the burner operated by the swinging of the support, a cigar-cutter for clipping the end of a cigar inserted in the cutter, means for actuating the cutter and for swinging the support forwardly, means for holding the support in its forward position, moving means for actuating the cutter and swinging the support and subsequently releasing the holding means, and means whereby said moving means, may be actuated by the insertion of the cigar end into the cutter.

8. In a combined cigar cutter and lighter, the combination of a swinging support, provided with a burner, a cigar-cutter for clipping the end of a cigar inserted in the cutter, a single means for actuating the cutter and for swinging the support in one direction, means for holding the support from swinging in the opposite direction, means for releasing the holding means, and means whereby the insertion of the cigar end into the cutter may actuate the cutter-actuating means, and the releasing means.

9. In a combined cigar cutter and lighter, the combination of a swinging support provided with a burner, means whereby the burner is ignited and extinguished by the swinging of the support, a cigar-cutter for clipping the ends of cigars inserted in the cutter, means for synchronously actuating the cutter and swinging the support, and means whereby said means may be actuated by the insertion of the cigar end into the cutter.

10. In a combined cigar cutter and lighter, the combination of a support provided with a burner, a cigar-cutter for clipping the ends of cigars inserted into the cutter, means acting in sequence for actuating the cutter and igniting and extinguishing the burner, and means whereby the insertion of the cigar end into the cutter may actuate the said means.

11. In a combined cigar cutter and lighter the combination of a burner, means whereby to clip the end of a cigar, means whereby to ignite the burner, means to extinguish the burner, means actuating each of the said means in the order named, and means whereby the end of the cigar may actuate the said actuating means.

12. In a combined cigar cutter and lighter, the combination of

a burner, a cigar-cutter for clipping the end of a cigar inserted into the cutter, means for igniting and extinguishing the burner, means whereby the insertion of the cigar end into the cutter may actuate the igniting and extinguishing means.

13. In a combined cigar cutter and lighter the combination of a swinging support, provided with a burner, means whereby the swinging of the support in one direction ignites the burner, means whereby the swinging of the support in the opposite direction extinguishes the burner, a cigar-cutter for clipping the end of a cigar inserted in the cutter, means for actuating the cutter and swinging the support, and means whereby the insertion of the cigar end into the cutter may actuate the last-named means.

809,783. SASH-BALANCE. HERBERT A. CROCKETT, Patten, Me. Filed Mar. 31, 1905. Serial No. 253,699.

Claim.—1. In a sash-balance, in combination, a guide-bar, a lazy-tongs guided thereupon, a resilient bow having extensions attached to said lazy-tongs, and means for attaching a sash-cord to said sash-balance.

2. In a device of the class described, in combination, a guide-bar, a sleeve slidably mounted thereon, a lazy-tongs having its extremity attached to said sleeve, a resilient bow attached to the arms of said lazy-tongs and tending to extend said lazy-tongs, and means for attaching a cord to said device.

3. In a device of the class described, in combination, a lazy-tongs, a resilient bow at one extremity thereof and having extensions attached to the arms of said tongs and constraining same, said bow lying substantially in the plane of said tongs, means for fixing one end of said device to a support, and means for attaching the other end of said device to a sash.

809,784. AUTOMATIC FRICTION-GOVERNOR IN FLY-WHEELS. THADDEUS L. CUMMINGS, Spencer, Iowa. Filed May 28, 1904. Serial No. 210,266.

Claim.—1. In an apparatus of the class described, the combination of a driving member, a fly-wheel secured thereto, oppositely-disposed forwardly-projecting pins on the fly-wheel, oppositely-disposed curved levers each provided with a series of perforations for engaging the pins, cotter-pins for securing the levers on the pins, springs normally retaining the levers in their inward positions, balls on the corresponding ends of the levers, oppositely-disposed rearwardly-projecting brackets on the fly-wheel, brake-shoes on the face of the fly-wheel adjacent to the brackets, rock-levers pivoted to the brackets and provided with forwardly-extending arms for engaging the levers, a spring connecting the forwardly-extending arms, inwardly-extending arms on the rock-shaft, and provided with brake-shoes, a disk loosely mounted on the driving member for engaging the brake-shoes on the fly-wheel and for engagement by the brake-shoes on the inwardly-extending arms of the rock-shaft.

2. In an apparatus of the class described, the combination of a driving member, a fly-wheel secured thereto, oppositely-disposed forwardly-projecting pins on the fly-wheel, oppositely-disposed curved levers each provided with a series of perforations for engaging the pins, means for securing the levers on the pins, a spring for retaining the levers in their inward positions, balls on the corresponding ends of the levers, oppositely-disposed rearwardly-projecting brackets on the fly-wheel, brake-shoes adjacent to the brackets and secured to the fly-wheel, rock-levers pivoted to the brackets and provided with forwardly-extending arms for engaging the levers, a spring connecting the forwardly-extending arms, inwardly-extending arms on the rock-shaft, a disk loosely mounted on the driving member, and means on the inwardly-extending arms of the rock-shaft for engaging the disk and forcing the same against the brake-shoes on the fly-wheel.

3. In an apparatus of the class described, the combination with a driving member, of a fly-wheel secured thereto, oppositely-disposed curved levers pivoted on the front face of the fly-wheel and provided with balls at their free ends, rearwardly-projecting brackets on the fly-wheel, rock-shafts pivoted in the brackets and each provided with a forwardly-extending arm for engaging the curved levers, brake-shoes secured to the fly-wheel adjacent to the brackets, a disk loosely mounted on the driving member, and means on the rock-shaft for engaging the disk and forcing the same into contact with the brake-shoes on the fly-wheel.

4. In a friction-governor, the combination of the driving member, a fly-wheel secured thereto, oppositely-disposed curved levers pivoted on the forward face of the fly-wheel and provided with balls at their free ends, rock-shafts pivoted on the rear face of the fly-wheel, means on the rock-shafts for engaging the curved levers, a disk loosely mounted on the driving member, and means on the rock-shafts for engaging the rear face of the disk to force the same into contact with the fly-wheel.

5. In a friction-governor, the combination of the driving member, a fly-wheel secured thereto, weighted levers pivoted on the front face of the fly-wheel, rock-shafts pivoted on the rear face of the fly-wheel, a disk loosely mounted on the driving member, an arm on each rock-shaft for engagement by the weighted levers, and means on the rock-shafts for engaging the disk to force the same into contact with the fly-wheel.

6. In a friction-governor, the combination of a driving member, a fly-wheel secured thereto, a disk loosely mounted on the driving member, means on one face of the fly-wheel for forcing the disk into contact therewith, and means on the other face of the fly-wheel to actuate said engaging means, on the attainment of a predetermined speed by the driving member.

7. In a friction-governor the combination of a driving member, a fly-wheel secured thereto, a driven member adjacent to the fly-wheel, means on one face of the fly-wheel for engaging the driven member, and means on the other face for actuating said engaging means on the attainment of a predetermined speed by the driving member.

809,785. BASEL. GUSTAF L. R. DAHLBERG, Allwood, N. J. Filed May 4, 1905. Serial No. 258,756.

Claim.—1. The combination in an easel formed of a single piece, of the face-plate, and the backstay composed of the two wings, said wings being partly separated from the face-plate by score-lines to enable the backstay to be set in a position for supporting the face-plate in use and being provided with openings having curved sides, the face-plate having also a flap partly separated from it by a score-line, said flap being provided with ears arranged to engage with the two openings in the wings when the latter are bent back and the flap bent down, substantially as described.

2. The combination in an easel formed of a single piece, of the face-plate, and the backstay composed of the two wings, said wings being partly separated from the face-plate by score-lines to enable the backstay to be set in a position for supporting the face-plate in use, the locking-flap partly separated from the face-plate by a score-line and provided with ears on each side cut from the material of the side wings, the side wings having openings therethrough to receive the locking-ears, the upper margins of said openings being longer than the lower margins thereof and the side margins being curved, substantially as and for the purposes set forth.

809,786. AUTOMATIC TRAP OR VALVE FOR DRAINING HEATING SYSTEMS. JAMES H. DAVIS, Chicago, Ill. Filed July 8, 1905. Serial No. 268,774.

Claim.—1. A device of the kind described, comprising a shell provided with an inlet, and with an outlet in the base, a float provided with a depending marginal edge and a valve inclosed by the marginal edge with its face above the horizontal plane of the lower extreme of the margin, in combination with a removable thimble for the outlet with its top forming a valve-seat elevated above the floor of the shell, and an air-duct extending from the outlet to the space above the line of flotation.

2. A device of the kind described, comprising a shell provided with an outlet positioned in its base, an inlet, and an inverted-cup-shaped float provided with a depending stem carrying a valve positioned above the horizontal plane of the lower margin of the float, in combination with a removable thimble in the outlet with its upper end extending above the floor of the shell and terminating in an elevated valve-seat and an air-duct extending from the outlet to the space above the line of flotation.

3. A device of the kind described, comprising a shell provided with an outlet positioned in its base, an inlet, a depending wall before the inlet extending below the horizontal plane of the same, and an inverted-cup-shaped float provided with a depending stem carrying a valve above the horizontal plane of the lower margin of the float, in combination with a removable thimble for the outlet arranged with its upper end extending above the floor of the shell in line with the valve and providing an elevated seat for the valve and an air-duct extending from the outlet to the space above the line of flotation.

4. A device of the kind described, comprising a shell provided with an outlet positioned in its base the opening to which is elevated above the floor of the shell, an inlet, a depending wall before the inlet extending below the horizontal plane of the same, in combination with an inverted-cup-shaped float provided with a depending stem with a valve on its lower end in line with the outlet and constructed to control the same and an air-duct extending from the outlet to the space above the line of flotation.

5. A device of the kind described, comprising a shell provided with an outlet positioned in its base, an inlet, a depending wall before the inlet extending below the horizontal plane of the same, and an inverted-cup-shaped float provided with a depending stem carrying a valve in line with the outlet, in combination with a removable thimble for the outlet arranged with its upper end extended above the floor of the shell providing an elevated seat for the valve, an air-duct extending from the outlet to the space above the line of flotation, and means for freeing the duct of dust.

6. A device of the kind described, comprising a shell provided with an inlet and an outlet, guiding-rods for a vertically-movable float, an air-duct extending from the outlet to and longitudinally through one of the guiding-rods and a removable thimble for the entrance to the outlet, in combination with a float provided with means loosely embracing the guiding-rods and provided with a part arranged to normally close the end of the thimble and control the discharge.

7. A device of the kind described, comprising a shell provided with an inlet and an outlet, guiding-rods for a vertically-movable float, an air-duct extending from the outlet to and longitudinally through one of the guide-rods, and a removable thimble for the entrance to the outlet, in combination with a float provided with means loosely embracing the guide-rods, and a depending rod carried by the float provided at its lower end with a part constructed to seat upon the end of the thimble to normally close the same and by the operation of the float to control the discharge.

809,787. ALTERNATING-CURRENT MOTOR. MAX DÉRI, Vienna, Austria-Hungary, assignor to Stanley Electric Manufacturing Company, Pittsfield, Mass. Filed May 2, 1904. Serial No. 206,027.

Claim.—1. In an alternating-current motor, a single-phase primary winding, a rotor-winding short-circuited at a number of points indivisible by the number of poles of the motor, and means for supplying exciting-currents to the rotor-winding to produce a field at an angle to that due to the primary winding.

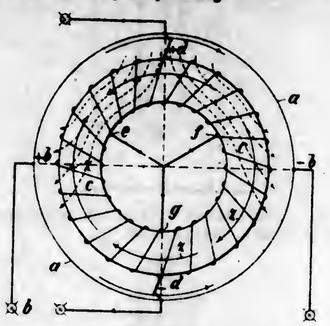

2. In an alternating-current motor, a single-phase primary winding, a rotor-winding short-circuited at a number of points indivisible by the number of poles of the motor, and means for supplying to the rotor-winding currents in phase with the primary current to produce a field at an angle to that due to the primary winding.

3. In an alternating-current motor, a single-phase primary winding, a rotor-winding short-circuited at a number of points indivisible by the number of poles of the motor, commutator-brushes arranged on a line at an angle to the line of magnetization produced by the primary winding, and connections from said brushes to a source of current substantially in phase with the primary current.

4. In an alternating-current motor, a single-phase primary winding, a rotor-winding short-circuited at a number of points indivisible by the number of poles of the motor, commutator-brushes arranged on a line at an angle to the line of magnetization produced by the primary winding, connections from said brushes to a source of current substantially in phase with the primary current, and a reversing-switch in said connections.

5. In an alternating-current motor, a single-phase primary winding, a rotor-winding short-circuited at a number of points indivisible by the number of poles of the motor, commutator-brushes arranged on a line at an angle to the line of magnetization produced by the primary winding, and a transformer having its primary in series with the primary winding of the motor and its secondary connected to said brushes.

6. In an alternating-current motor, a single-phase primary winding, a rotor-winding short-circuited at a number of points indivisible by the number of poles of the motor, commutator-brushes arranged on a line at an angle to the line of magnetization produced by the primary winding, a transformer having its primary in series with the primary winding of the motor and its secondary connected to said brushes, and a reversing-switch in circuit with one of the windings of said transformer.

7. In an alternating-current motor, a single-phase primary winding, a rotor-winding short-circuited at three points per pair of poles, and means for supplying exciting-currents to the rotor-winding to produce a field at an angle to that due to the primary winding.

8. In an alternating-current motor, a single-phase primary winding, a rotor-winding short-circuited at three points per pair of poles, commutator-brushes arranged on a line at an angle to the line of magnetization produced by the primary winding, and connections from said brushes to a source of current substantially in phase with the primary current.

809,788. VEHICLE-BODY CONSTRUCTION. STONEWALL J. DOWLING, Waxahachie, Tex. Filed July 5, 1905. Serial No. 268,767.

Claim.—An angle-iron for a buggy or vehicle body comprising an L-shaped member, a reinforce-strip arranged within the member at the junction of the sections, said member terminating at a point above the lower end of the member, a foot extending from the lower end of the member, arms extending from the upper edges of each of the sections of the members, the inner surfaces of each section being recessed intermediate its ends, said recess extending beyond the reinforce-strip; said sections, arms and reinforce-strip being provided with apertures.

809,788.

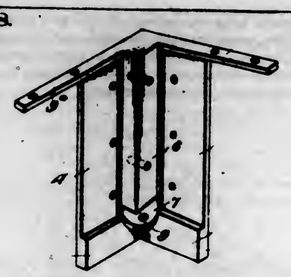

809,789. STOPPER-VALVE. ARTHUR T. DUNCAN, Clinton, Mo. Filed Oct. 17, 1905. Serial No. 283,151.

Claim.—1. A stopper-valve including an interiorly-threaded cap having side openings, and a packing member extending into and seated in said openings.

2. The combination with an exteriorly-threaded tubular member, of a threaded cap fitted thereto and having opposite side openings, and a packing member engaging said openings.

3. The combination with an exteriorly-threaded tubular member, of a cap having threaded engagement therewith and provided with oppositely-disposed side openings, and a packing member disposed within the cap for engagement with the extremity of the threaded tube and having its ends extended into the opposite side openings of the cap.

809,790. FEED FOR COAL-CUTTING MACHINES. FRANK BICKERSLEY, Crofton, near Wakefield, England. Filed Feb. 27, 1905. Serial No. 247,608.

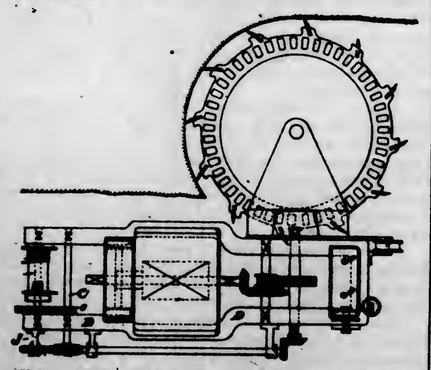

Claim.—1. The combination of a bodily-movable coal-cutting machine, carrying a motor device thereon, with means for controlling the feed of said machine up to its work, said means including a drum, a hauling-rope passing over said drum, and gearing between said motor and said drum, said gearing including a worm-wheel loosely and slidably mounted on the drum-operating shaft and provided with a clutch member, a corresponding clutch member fastened to said operating-shaft, a spring normally holding said clutch members in engagement with each other, substantially as described.

2. The combination of a bodily-movable coal-cutting machine, carrying a motor device thereon, with means for controlling the feed of said machine up to its work, said means including a drum, a hauling-rope passing over said drum, and gearing between said motor and said drum, said gearing including a worm-wheel loosely and slidably mounted on the drum-operating shaft and provided with a clutch member, a corresponding clutch member fastened to said operating-shaft, a spring normally holding said clutch members in engagement with each other, and means for adjusting said spring, substantially as described.

809,791. COMPOUND GAS-ENGINE. JOHN W. ESSENHUTH, Brooklyn, N. Y., assignor to The Elizabeth Horseless Vehicle Co., a Corporation of Maine. Filed May 25, 1905. Serial No. 262,201.

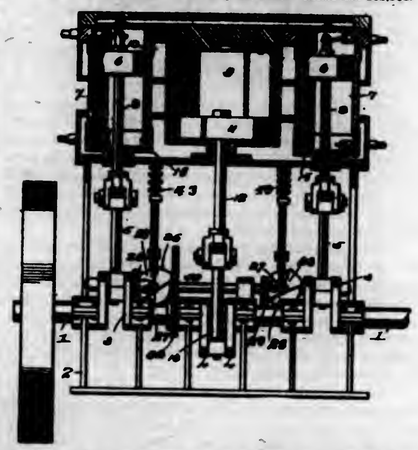

Claim.—1. In a gas-engine, the combination with high-pressure cylinders, of a low-pressure cylinder adapted to be operated by the exhaust from the same, piston-valves mounted in pockets or recesses formed in the engine-casing between said cylinders for controlling the movement of the gaseous mixture, the said valves being arranged in pairs and moving upon each other in said pockets but controlling different ports, telescoping stems secured to the said valves, and cams for engaging the valve-stems so as to reciprocate the valves independently of each other, substantially as described.

2. In a gas-engine, the combination with suitable cylinders, of pistons moving therein for operating a power-shaft, piston-valves for regulating the admission of explosive compounds to the said pistons, the said valves occupying pockets or recesses formed in the engine-frame between the cylinders so as not to be exposed, two valves being arranged to move upon each other in each pocket or recess, valve-stems secured to said valves, one of the said valve-stems passing through the other so that the valves may be operated independently of each other, cams applied side by side upon a cam-shaft and extending in different directions upon the same for engaging the valve-stems to operate the valves, substantially as described.

3. In a gas-engine, the combination with suitable cylinders and pistons operating therein, of piston-valves for admitting explosive mixtures against each end of the said pistons, said valves being hollow and having flat adjoining faces working on each other so that one finds a bearing upon the other, each of the said valves having ports for permitting the gaseous mixtures to pass through them, each valve controlling a different set of ports, springs for moving the valves in one direction and cams for operating them in the other direction, substantially as described.

4. In a gas-engine, the combination with high-pressure cylinders and a low-pressure cylinder, of valves for admitting an explosive mixture to the said high-pressure cylinders, said valves being cylindrical and hollow, valves for discharging the vitiated gases from the said high-pressure cylinders into the low-pressure-cylinder, and valves for regulating the exhaust of the said low-pressure cylinder, said valves being semicylindrical in form and sliding upon each other, whereby they may be compactly mounted in the said engine, substantially as described.

5. In a gas-engine, the combination of high-pressure cylinders, a low-pressure cylinder mounted between them and adapted to receive the exhaust from each end of each of the high-pressure cylinders, pistons moving in each of the said cylinders, piston-rods connecting the said pistons with a suitable power-shaft, electrodes mounted in each end of each high-pressure cylinder, counting electrodes secured to the piston-rods of the high-pressure cylinders and arranged upon each side of the pistons so as to explode the gaseous mixtures upon opposite sides of the pistons, valves arranged in pairs for controlling the gaseous mixtures in the engine, the engine-framing being provided with sockets for receiving the said valves, each pair of valves being adapted to just fill the diameter of the said sockets, the said valves also being formed of hollow casings having suitable ports formed therein and being provided with adjacent bearing-surfaces so that they slide upon each other, and means for moving the said valves independently of each other, substantially as described.

809,792. PIPE-COUPLING. JOHN P. BUSTA, Newton, Mass. Filed Dec. 2, 1904. Serial No. 235,127.

Claim.—1. A pipe-coupling comprising a metallic casing formed in one piece with a rectangular internal groove, providing an inner flange, an annular rim and an outer flange, and a contracted portion having a slightly-expanded end.

2. A pipe-coupling comprising a metallic casing formed in one piece with a rectangular internal groove providing an inner flange, an annular rim and an outer flange, and a contracted portion having a slightly-expanded end which terminates in an infolded reinforcing internal flange providing a rounded extremity to the casing.

809,793. ELECTROSTATIC VOLTMETER. JAMES FERGUSON, Glasgow, Scotland, assignor to Kelvin & James White, Limited, Glasgow, Scotland. Filed Mar. 20, 1904. Serial No. 200,603.

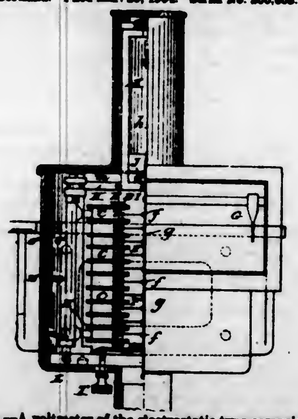

Claim.—A voltmeter of the electrostatic type comprising a case, a coating of insulating material on the interior surface of said case, a coating of conductive material on the interior surface of said insulating-coating, a fixed system of coils within said case, a vertical back of insulating material fitted to each set of fixed coils, a coating of conductive material on the exposed surface of said back, and a movable system of vanes to which the conductive coating of said backs is permanently connected.

809,794. RAILROAD SYSTEM. HANNIBAL C. FORD, Jamaica, N. Y. Filed Sept. 12, 1905. Serial No. 278,194.

Claim.—1. In a railroad system, a track divided into sections, and electrical connections for setting a train-stop absolutely to enforce a home or danger signal, but releasably to enforce a caution-signal depending on the speed of a following train.

2. In a railroad system, a track divided into sections, a train-stop corresponding to each caution-signal, and means whereby said train-stop is rendered ineffective when the speed of a following train falls below a certain amount.

3. In a railroad system, a track divided into sections, means whereby caution-signal circuits are successively opened by the passage of a train, each caution-signal circuit constituting a branch of a circuit operating a train-stop.

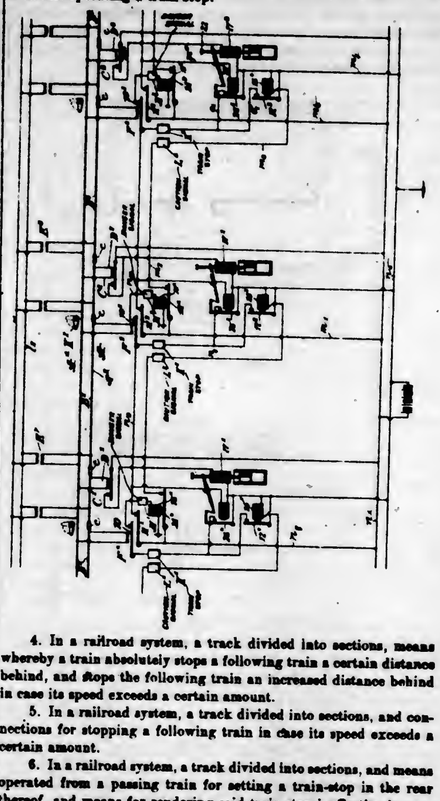

4. In a railroad system, a track divided into sections, means whereby a train absolutely stops a following train a certain distance behind, and stops the following train an increased distance behind in case its speed exceeds a certain amount.

5. In a railroad system, a track divided into sections, and connections for stopping a following train in case its speed exceeds a certain amount.

6. In a railroad system, a track divided into sections, and means operated from a passing train for setting a train-stop in the rear thereof, and means for rendering said train-stop ineffective in case the speed of the following train is below a certain value.

7. In a railroad system, a track divided into sections, and means operated from a passing train for setting a train-stop in the rear thereof, and means for rendering said train-stop operable only in case the speed of the following train exceeds a certain value.

8. In a railroad system, electrical connections for displaying a home signal in the rear of a train, means whereby such home signal displays a distant signal farther in the rear, a train-stop, and means whereby said train-stop is absolutely effective as long as the home signal is displayed and is effective for high-speed trains only as long as the distant signal is displayed.

9. In a railroad system, a track divided into sections, means whereby said sections are short-circuited by the passage of a train, a magnet which releases a slowly-movable part actuated by the short-circuiting of one section, and a second magnet actuated by the following section for releasing its armature unless held up by said part.

10. In a railroad system, a track divided into sections, means whereby a train-stop is made effective at the entrance to a section, after, but not while, a train is located thereon, and means whereby said train-stop can be rendered ineffective by trains below a certain speed after the preceding train has traversed a certain distance.

11. In a railroad system, a track divided into sections, and means whereby a preceding train causes behind it a traveling zone of variable influence, and means whereby a following train is absolutely stopped or stopped in case its speed is too great, according to its penetration into such zone.

809,795. METHOD OF MAKING SOLIDIFIED ANTISEPTIC COMPOUNDS. DAVID GERBER, Baltimore, Md., assignor to Gerber Coral Manufacturing Company of West Virginia, Baltimore, Md. Filed Dec. 28, 1904. Serial No. 238,183.

Claim.—1. The method of making a solidified antiseptic compound containing volatile ingredients which consists in subjecting a mixture of glycerin and stearate of soda to a temperature of about 220° Fahrenheit, then reducing said mixture to and maintaining it at a temperature of about 125° Fahrenheit and while at said temperature mixing therewith the volatile ingredients.

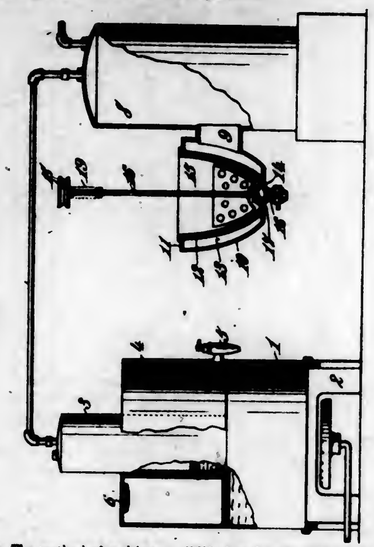

2. The method of making a solidified antiseptic compound containing stearoptens and alcohol, which consists in subjecting a mixture of glycerin and stearate of soda to a temperature of about 220° Fahrenheit then reducing the temperature of the mixture to and maintaining it at about a temperature of 125° Fahrenheit, and then while at such temperature mixing therewith the stearoptens and alcohol.

3. The method of making a solidified antiseptic compound containing stearoptens and alcohol, which consists in subjecting a mixture consisting of ninety-four parts, by weight, of glycerin and six parts, by weight, of stearate of soda to a temperature of about 220° Fahrenheit for from three to five hours, then reducing the temperature of the mixture to and maintaining it at about 125° Fahrenheit, and while at such temperature mixing therewith the stearoptens and alcohol.

809,796. ELECTRIC TARGET-SETTING APPARATUS. GUSTAV GRADENIGK, Berlin, Germany, assignor to Phœnix Elektrotechnische Gesellschaft M. B. H., Berlin, Germany, a Corporation of Germany. Filed July 1, 1905. Serial No. 267,671.

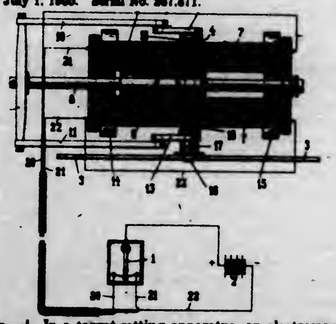

Claim.—1. In a target-setting apparatus, an electromagnet, a core slidable therein, and a target shiftable directly by said core.

2. An electromagnet, a core shiftable therein, and a target shiftable in either of two directions by said core.

3. An electromagnet, a core slidable therein, and a target partially rotatable by said core.

4. An electromagnet, a target, and means for transmitting oscillatory motion to the latter from the former.

5. An electromagnet, a core slidable therein, a target, and means for converting the reciprocatory movement of said core into an oscillatory movement and transmitting the latter to said target.

6. In a target-setting apparatus, an electromagnet, a core slidable therein, a spindle, a target mounted thereon, and means connecting said spindle and core whereby the former is partially rotated upon the actuation of said electromagnet.

7. In a target-setting apparatus, an electromagnet, a core slidable therein, a spindle, a target mounted on said spindle, a guide-rod carried by said core, a cross-head fixed to said guide-rod, cranks attached to said spindle, and connecting-rods connecting said cranks with said cross-head.

8. In a target-setting apparatus, an electromagnet, a core slidable therein, a spindle extending transversely through said electromagnet, cranks applied to said spindle at either side of said electromagnet, a reciprocatory cross-head operable by said core, connecting-rods connecting said cross-head with said cranks, and a target mounted on said spindle.

9. A target-setting apparatus including an electromagnet having two coils, a core movable in opposite directions by said coils when the same are energized, a shiftable target, and a connection between said target and said core.

10. A target-setting apparatus including an electromagnet having two coils arranged side by side, a core movable through said coils, a circuit for each of said coils, means for independently closing and opening each circuit, and a target in operative connection with said core.

11. An electromagnet, a target shiftable thereby, and hydraulic means in connection with said electromagnet for locking the target in position.

12. An electromagnet embodying a casing; a liquid contained in said casing, a core slidable in the electromagnet and movable through said liquid, a target shiftable by said core, and means for regulating the flow of said liquid from one part of said casing to another part thereof.

13. An electromagnet comprising a casing to contain a liquid, a core for said electromagnet movable in such liquid, a target shiftable by said core, a pipe connected at each end with said casing, and a valve in said pipe.

14. In a target-setting apparatus, a target, means for shifting the same, a hydraulic cushioning and locking means, and electrical means for controlling the latter.

15. In a target-setting apparatus, a target, a device for shifting the same, a hydraulic stop device including a valve, and electrical means for operating said valve.

16. In a target-setting apparatus, a target, a device for shifting the same, a hydraulic cushioning device for the target including a valve, and an electromagnet the core of which is connected to said valve.

17. In a target-setting apparatus, a target, an electrical device for shifting the same, a stop device, and electrical means included in the circuit of said first device for operating said stop device.

18. In a target-setting apparatus, in combination, a target, an electromagnet for shifting the same, a circuit in which said electromagnet is included, means for locking said target against movement, and an electromagnet for actuating said locking means included in the circuit of said first electromagnet.

809,797. ARTIFICIAL HAND. ARCHIBALD GROGAN, London, England, assignor to Lionel Hanbury Webber, Onslow Gardens, England. Filed June 20, 1905. Serial No. 267,578.

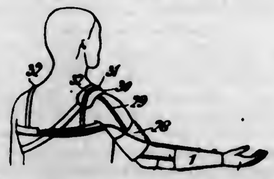

Claim.—1. The combination with an artificial hand having articulated fingers, of flexible wires attached to the top joints of the fingers, means actuated by the expansion of the chest for pulling the wires, and coils formed in the length of the wires.

2. The combination with an artificial hand having articulated fingers, of an expansible band surrounding the chest, and connections between the band and the fingers.

3. The combination with an artificial hand having articulated fingers, of an expansible band surrounding the chest, a core connected to one end of the hand, a closely-coiled helix surrounding the core, and connections between the core and the fingers.

4. The combination with an artificial hand having articulated fingers, of an expansible band surrounding the chest, a core connected to one end of the hand, a closely-coiled helix surrounding the core, and spring connections between the core and the fingers.

5. The combination with an artificial hand having articulated fingers, of means actuated by the expansion of the chest for flexing the fingers, and means for clamping the fingers in the flexed position.

809,798. MEANS FOR CONTROLLING OVERHEAD ELECTRIC CARRIERS. HENRY M. HARDING, New York, N. Y. Filed Apr. 21, 1903. Serial No. 153,900.

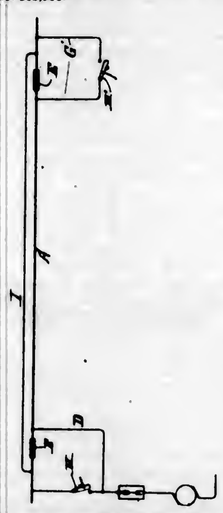

Claim.—1. A means for controlling overhead electric carriers consisting of a main conductor, a section at each end thereof, a resistance between each of said sections and the main line of such a character that insufficient current flows through said sections to move the loaded carrier, and means for fully energizing said sections, substantially as described.

2. A means for controlling overhead electric carriers consisting of a main conductor, a section at each end thereof, a resistance between each of said sections and the main line of such a character that insufficient current flows through the said sections to move the loaded carrier, and means for fully energizing said sections from either end of the line, substantially as described.

809,799. OVERHEAD ELECTRIC CARRIER. HENRY M. HARDING, New York, N. Y. Filed Oct. 13, 1903. Serial No. 176,713.

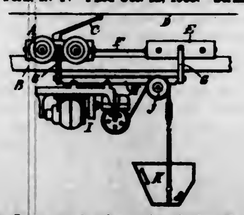

Claim.—1. In an overhead carrying device, the combination of a telpher adapted to travel along a rail, a supporting-trailer connected to said telpher and also adapted to travel along said rail, a connecting device supported from and below the telpher and trailer, and a weight-carrying device.

2. In an overhead carrying device, the combination of a telpher adapted to travel along a rail, a supporting-trailer also adapted to travel along said rail, a connection between the telpher and the trailer, a spreader supported from the telpher and trailer and a hoisting and weight-carrying device, substantially as described.

3. In an overhead carrying device, the combination of a telpher adapted to travel along a rail, a supporting-trailer connected to said telpher and adapted to travel along said rail, a connecting-beam supported from said telpher and trailer, and a hoisting device carried by said connecting-beam, substantially as described.

4. In an overhead carrying device, the combination of a telpher adapted to travel along a rail, a supporting-trailer connected to said telpher and adapted to travel along said rail, a spreader connected to and suspended below said telpher and trailer and a hoisting and weight-carrying device also connected to the telpher and trailer, substantially as described.

5. In an overhead carrying device, the combination of a telpher adapted to travel along a rail, a supporting-trailer connected to said telpher adapted to travel along said rail, and a beam supported from said telpher and trailer, substantially as described.

6. In an overhead carrying device, the combination of a telpher, a supporting-trailer connected to the telpher, said telpher and trailer being adapted to travel, links connected to the telpher and trailer, and a spreader connected to the links by a swivel connection, substantially as described.

7. In an overhead carrying device, the combination of a telpher and trailer, the telpher and trailer adapted to travel along a rail, a pivoted connection between the telpher and trailer, hangers extending from the telpher and trailer, and a spreader pivotally connected to the hangers.

8. In an overhead carrying device, the combination of a telpher and trailer, said telpher and trailer being adapted to travel along a rail, the telpher and trailer being pivotally connected to each other, hangers suspended from the telpher and trailer, a connecting-beam connected to the hangers by swivel-joints, and a hoisting device connected to said beam.

809,800. RAIN-GUARD FOR SIGNALS. REINHOLD HERMAN, Crafton, Pa., assignor to General Electric Company, a Corporation of New York. Filed June 14, 1905. Serial No. 265,164.

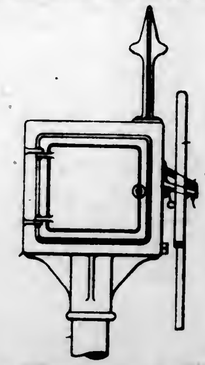

Claim.—1. In combination with a casing, a shaft extending through said casing, a rain-guard secured to said casing and extending over the outer end of said shaft, and a semaphore-casting supported from the outer end of said shaft, the portion of said casting engaging said shaft extending downward away from said guard so as not to engage therewith in the range of movement of said casting.

2. In combination with a casing, a shaft extending through said casing, a semaphore-casting carried on said shaft outside said casing, and a rain-guard secured to said casing and extending over said shaft and through an aperture in said casting.

3. In combination with a casing, a shaft extending through said casing, a semaphore-casting carried on said shaft outside said casing, and a rain-guard secured to said casing and extending over the entire length of said shaft, said casting being provided with an aperture to permit the guard to pass through it.

4. In combination with a casing, a shaft extending through said casing, a semaphore-casting carried on said shaft outside said

casing, and a rain-guard secured to said casing extending over said shaft and through an aperture in said casting and provided with lateral gutters adapted to discharge water at the outer end of said guard

5. In combination with a casing, a shaft extending through said casing, a semaphore-casting carried on said shaft outside said casing, and a rain-guard secured to said casing extending over said shaft and through an aperture in said casting and provided with lateral gutters adapted to discharge water at the outer end of said guard and having a depending flange at its outer end.

6. In combination with a casing, a shaft extending through said casing, a semaphore-casting carried on said shaft outside said casing, and a rain-guard secured to said casing extending over the entire length of said shaft and arranged to discharge water at its outer end, said semaphore-casting being provided with an aperture to permit the guard to pass through it.

809,801. LEVER-ACTUATED WEDGE BREECH-BLOCK. MAX HERBORN, Essen-on-the-Ruhr, Germany, assignor to Fried. Krupp Aktiengesellschaft, Essen-on-the-Ruhr, Germany. Filed Mar. 31, 1905. Serial No. 253,602.

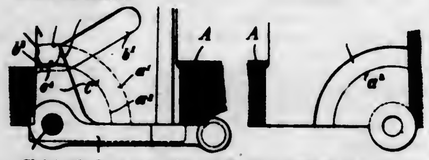

Claim.—1. In a gun, the combination with the breech, the breech-block, and the operating-lever journaled in one of said parts and engaging the other part by its free end, of a boss on said free end of the operating-lever, the part in which the lever is journaled being provided with a curved groove in which said boss engages, whereby the shock caused by firing the gun is transmitted directly to the breech and removed from the fulcrum of the operating-lever.

2. In a gun, the combination with the breech, and the breech-block, of the operating-lever journaled in one of said parts and having connection with the breech-block to move it transversely of the bore of the gun, the said part having a groove concentric with the journal of the operating-lever, and means on the lever movable in the concentric groove.

3. In a gun, having a breech-block and an operating-lever journaled in the breech and engaging the breech-block by its free end; a boss on said free end of the operating-lever, and a curved groove in the breech engaged by said boss whereby the shock caused by firing the gun is transmitted directly to the breech and removed from the fulcrum of the operating-lever.

4. In a gun having a fulcrumed crank-lever and a wedging breech-block, formed with a groove engaged by a stud on the free end of the crank-lever; a boss formed on the side of the free end of the crank-lever opposite the stud, and a groove formed in the side wall of the gun-breech, concentric with the crank-lever fulcrum, and engaged by the boss when the breech is closed, whereby the effect of firing is transmitted directly through the stud and boss to the breech.

5. In a gun, the combination with the breech, the breech-block, the operating-lever journaled in the breech, and means on one side of the lever engaging the breech-bolt to transmit motion thereto, of means on the opposite side of the lever engaging the breech to transmit to the breech the shock imparted to the lever and relieve the fulcrum thereof.

809,802. VARIABLE-SPEED MECHANISM. SILAS L. HESTWOOD, Minneapolis, Minn. Filed June 12, 1904. Serial No. 212,262.

Claim.—1. The combination, with two expansible pulleys one having sliding heads and the other a sliding and a non-sliding head, the sliding head of the latter pulley being free to recede from the other head by the tension of the belt to contract the pulley, of means for moving the heads of the former pulley in the same direction but at different speeds to expand that pulley.

2. The combination, with the expansible pulleys, one having sliding heads and the other a sliding and a non-sliding head, a belt connecting said pulleys, the sliding head of one pulley receding from its non-sliding head under tension of the belt to contract the pulley, of a cam mechanism arranged to move the heads of the other pulley in the same direction but at different speeds to expand that pulley.

3. The combination, with an expansible pulley having sliding heads, of a second expansible pulley having one sliding and one non-sliding head, a belt connecting said pulleys, and mechanism for expanding one pulley and allowing a corresponding contraction of the other, substantially as described.

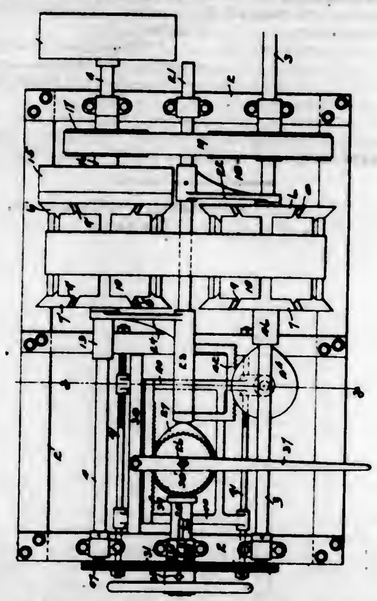

4. The combination, with the expansible pulleys, one having sliding heads and the other a sliding and a non-sliding head, and a belt connecting said pulleys, of mechanism for moving the sliding head of one pulley toward its stationary head to expand the pulley and for moving one sliding head of the other pulley toward the other sliding head of the same pulley and allowing said other sliding head to recede under tension of the belt at a greater speed to contract the the pulley.

5. The combination, with the expansible pulleys and a connecting-belt, of pivoted cams, mechanism arranged to rotate said cams and to contract one pulley and expand the other, and mechanism for moving said cams without rotating them to contract or expand both of said pulleys simultaneously.

6. The combination, with a shaft, of an expansible pulley having sliding heads thereon, a second shaft, a second expansible pulley having a sliding and a non-sliding head, a belt connecting said pulleys, and an arm engaging one of the sliding heads of said first-named pulley, means engaging the other sliding head of said first-named pulley and the sliding head of the second pulley to move them toward their opposite heads to expand said second-named pulley and also move said arm to allow the tension of the belt to separate the heads of said first-named pulley and contract it, substantially as described.

7. The combination, with a shaft, of an expansible pulley having sliding heads thereon, a second shaft and a second expansible pulley having a sliding and a non-sliding head, a belt connecting said pulleys, a longitudinally-movable rod provided with an arm arranged to engage one of the heads of said first-named pulley, and mechanism for moving the opposite sliding head of said first-named pulley toward the other head and also moving said arm at a greater speed to release said other head and allow the contraction of said first-named pulley and also moving the sliding head of said second-named pulley toward its non-sliding head, substantially as described.

8. The combination, with a shaft, of an expansible pulley having sliding heads thereon, a second shaft and a second pulley having a sliding and a non-sliding head, a belt connecting said pulleys, arms engaging one of the sliding heads of said first-named pulley and the sliding head of said second-named pulley upon opposite sides of their respective pulleys, and mechanism for moving said arms in the same direction to expand one pulley and contract the other.

9. The combination, with an expansible pulley having sliding heads, of a second expansible pulley having a sliding and a non-sliding head, a belt connecting said pulleys, means for moving the sliding head on one pulley toward its non-sliding head to expand that pulley and allowing the separation of the sliding heads of the other pulley to contract it, and cam devices provided in connection with said moving means, substantially as described.

10. The combination, with a shaft, of an expansible pulley having sliding heads thereon, a second shaft and a second expansible pulley having a sliding and a non-sliding head, a belt connecting said pulleys, a longitudinally-movable rod provided with an arm engaging one of the sliding heads of said first-named pulley, a cam engaging the opposite head of the same pulley, an arm loosely mounted on said rod and engaging the sliding head of said second-named pulley, a sleeve having a longitudinal movement with said rod, a second cam arranged between and engaging said sleeve and loosely-mounted arm, and mechanism for rotating said cams simultaneously and to move said rod lengthwise to expand one pulley and contract the other.

11. The combination, with the expansible pulleys, one having two sliding heads and the other having a sliding and a non-sliding head, of a cam mechanism arranged to move one of the two sliding heads of one pulley toward the other head of the same pulley and allowing said other head to move in the same direction but at a greater rate of speed and also moving the one sliding head toward its non-sliding head, substantially as described.

12. The combination, with the expansible pulleys and a connecting-belt, of mechanism for moving the head of one pulley toward its opposite head to cause the expansion of that pulley and simultaneously moving both heads of the other pulley in the same direction but at different speeds to contract that pulley.

13. The combination of two expansible pulleys, one having sliding heads and the other a sliding and non-sliding head, the sliding head of the latter pulley being free to recede from the other head through the tension of the belt to contract that pulley, of mechanism operating during a portion of its movement to move the heads of the former pulley in opposite directions to expand that pulley.

809,803. NAIL-PULLER. WILLIS F. HOUSE, Bridgeport, Conn., assignor to The Bridgeport Hardware Manufacturing Company, Bridgeport, Conn., a Corporation of Connecticut. Filed June 5, 1905. Serial No. 263,719.

Claim.—In an implement of the character described, the combination with a handle comprising a handpiece and a barrel having internal grooves and shoulders at the lower ends of said grooves and having holes through its sides near the upper end of the barrel, a nail-puller having a shank of substantially uniform diameter, said shank having surface scorings at a distance from its upper end greater than the depth of the space within the barrel and having a cross-pin the ends of which are fitted to slide in the grooves of the barrel, and a guard comprising a metal washer having the edge of its central opening rigidly engaged with said scorings of the shank.

809,804. CONTAINER-PUNCH. WILLIS F. HOUSE, Bridgeport, Conn., assignor to The Bridgeport Hardware Manufacturing Company, Bridgeport, Conn., a Corporation of Connecticut. Filed June 5, 1905. Serial No. 263,720.

Claim.—1. In a device of the character described, the combination with an inverted-U-shaped die-jaw, of a cover having side pieces which lie on the outer side of the jaw and form shoulders to facilitate opening of the cover, for the purpose set forth, and a spring for retaining the cover in either the open or closed position.

2. In a device of the character described, the combination with an inverted-U-shaped die-jaw, of a cover pivoted to the jaw and having slots which receive the side walls of the jaw, a tongue lying within the jaw and side pieces lying on the outer sides of the jaw and form shoulders to facilitate opening of the cover and a spring for retaining the cover in either the open or closed position.

3. In a device of the character described the combination with an inverted-U-shaped die-jaw, of a cover hinged to the jaw and having a tongue lying within the jaw and a spring secured to the jaw, the free end of which passes through the tongue and is provided with an oblique bend, the angles of which act to retain the cover in either the open or closed position.

4. In a device of the character described, the combination with a U-shaped die-jaw having a depression at the pivotal point and between the walls of the depression a washer, of a cover hinged to the jaw and having a tongue lying within the jaw and a spring upon the jaw, one end of which engages the washer, the other end passing through the tongue of the cover and having an oblique bend, the angles of which act to retain the cover in either the open or closed position.

809,805. SYSTEM FOR PUMPING OIL-WELLS. ROSS J. HOFFMAN, Bradford, Pa., assignor to Hoffman Manufacturing Company, Bradford, Pa. Filed Apr. 17, 1905. Serial No. 256,147.

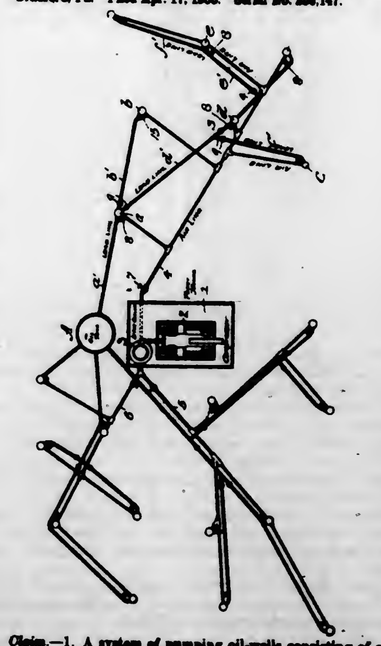

Claim.—1. A system of pumping oil-wells consisting of a plurality of pumps, a pipe or main for conveying compressed air, branches leading therefrom to the several pumps, lead-lines for con-

veying oil from the several pumps, connections between the said lead-lines and the compressed-air supply-pipe for introducing compressed air into the lead-lines, substantially as described.

2. A system of pumping oil-wells consisting of a plurality of pumps, means for supplying compressed air, branches leading therefrom to the several pumps, lead-lines for conveying oil from the several pumps, connections between the said lead-lines and the compressed-air pipes for introducing air into the lead-lines and a single valve for controlling the compressed-air supply to the several pumps, substantially as described.

3. In combination, in an oil-well system, a plurality of pumps, lead lines for conveying the oil from the said pumps, said lead-lines being in connection with each other to convey the oil to one delivery-point, means for introducing compressed air into the lead-lines, and check-valves in the lead-lines to prevent back pressure, substantially as described.

4. A system of pumping a plurality of oil-wells comprising a pump for each well driven positively on both strokes and having means for adjusting the action of each pump to the capacity of its well in relation to the capacity of the other wells, a source of power for operating the pumps, pipe-lines extending from the source of power to the pumps and a single controlling-valve to control the supply of power to all the pumps whereby wells of varying capacity may be pumped off in the same period of time and the pumps started or stopped by the manipulation of a single controlling-valve

5. In a system of pumping oil-wells, the lead-lines, compressed-air pipes and a valve having a large and small passage therethrough, said small opening being adapted in size to admit sufficient air for liquefying the gas and the large opening admitting enough air to clear the oil-delivery pipe, substantially as described.

809,806. METHOD OF PRODUCING OIL FROM OIL-WELLS. ROSS J. HOFFMAN, Bradford, Pa., assignor to Hoffman Manufacturing Company, Bradford, Pa. Filed Apr. 17, 1905. Serial No. 256,148.

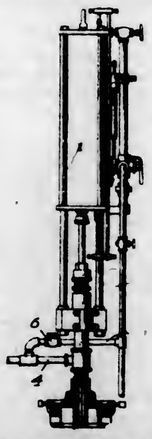

Claim.—1. The herein-described method consisting in introducing compressed air into the oil from the well to thereby condense the gas associated with said oil, substantially as described.

2. The herein-described process of recovering oil from the gas associated with oil discharged from gas-wells consisting in introducing compressed air into the said oil, substantially as described.

3. The herein-described process consisting in introducing compressed air into the oil-delivery pipe leading from the gas-well, substantially as described.

4. The herein-described process consisting in pumping the oil-well by a compressed-air-driven pump and introducing a part of the compressed-air supply into the oil-delivery pipe, substantially as described.

5. The herein-described method, consisting in pumping the oil from the well and introducing compressed air into the pumped oil to condense the gases, substantially as described.

809,807. SPADE. BENJAMIN C. JEWETT, Ridgegrove, Iowa. Filed July 3, 1905. Serial No. 268,694.

Claim.—A skeleton spade formed of two parts and consisting of a head having integral tine-sections and a sharpened blade having integral tine-sections, the tine-sections of the head and blade being permanently connected at points between the center and head of the spade and the tines formed by the sections being of constantly-decreasing thickness from the head to the blade, one of said tines having beveled side faces.

809,808. FERTILIZER-DISTRIBUTER. CHARLES JOHNSON, Cortland, N. Y. Filed Oct. 17, 1903. Serial No. 177,437.

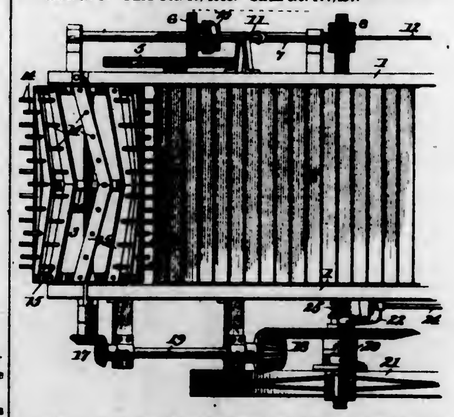

Claim.—1. A fertilizer-distributer comprising a spreader provided with an end piece provided with peripheral recesses at each end and a head midway the ends, slats secured at their outer ends in the recesses of one of the end heads and at their inner ends to the central head, the slats at one end of the spreader being arranged at an angle to those at the opposite end, and teeth carried by the said slats.

2. In a fertilizer-distributer, the combination with a vehicle-body and an axle, and wheels for supporting the same; of a shaft journaled at one end of the body, means for transmitting rotary motion thereto from an axle, heads upon the shaft, oppositely-disposed series of slats secured upon the heads, said series being arranged at angles to each other, and teeth extending from the slats.

809,809. PLUNGER-LUBRICATOR. LOUIS A. B. JOHNSON, Philadelphia, Pa. Filed Mar. 30, 1905. Serial No. 252,696.

Claim.—1. The combination with a substantially vertical rod to be lubricated, of an annular container forming a reservoir extending around the same, but constructed to retain lubricant out of direct contact with said rod and a secondary container in communication with and under the first container, said second container alone having an opening onto the surface of the rod substantially as described

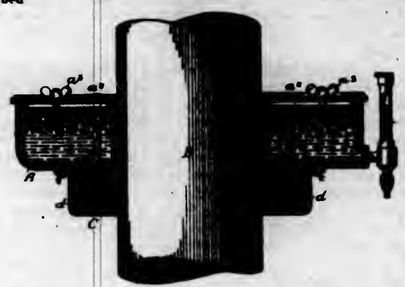

2. The combination with a substantially vertical rod to be lubricated, of an annular container surrounding said rod and opening onto the same, and a reservoir having a plurality of valve-controlled openings in communication with said container, substantially as described.

3. The combination with a substantially vertical rod to be lubricated, of two annular containers extending around said rod, one over the other, the upper container having an opening or openings into the lower container and said lower container opening directly onto the rod, substantially as described.

4. The combination with a substantially vertical rod to be lubricated, of a reservoir for lubricant extending around the rod, an annular container connected to the reservoir by a passage other than along said rod, said container surrounding and opening onto the rod, with a body of packing in the container in engagement with the rod, substantially as described.

5. The combination with a substantially vertical rod to be lubricated, of a reservoir for lubricant, an annular container having a plurality of openings from said reservoir and surrounding and opening onto the rod, with a body of packing in the container, and means extending in the container between its wall and the packing for pressing the latter into engagement with the rod, substantially as described.

6. The combination with a substantially vertical rod to be lubricated, of a reservoir constructed to hold lubricant out of direct contact with said rod, an annular container connected thereto by a passage or passages other than along said rod, said container surrounding and opening onto the rod and having within it a body of packing, with an annular spring extending between said packing and the wall of the container for pressing the packing into engagement with the rod, substantially as described.

7. The combination with a substantially vertical rod to be lubricated, of an annular reservoir, and an annular container surrounding the rod having an opening onto the rod, with a valve or valves for controlling the flow of fluid from the reservoir to said container, substantially as described.

8. The combination with a substantially vertical rod to be lubricated, of an annular reservoir and an annular container both extended around the rod, said container having within it a body of packing in engagement with said rod, with a valve or valves for controlling the flow of fluid from the reservoir to the container, substantially as described.

9. The combination with a substantially vertical rod to be lubricated, of two annular containers extending around said rod and disposed one over the other, one of said containers opening onto the rod and communicating with the other container through openings in the bottom thereof, with a valve or valves for controlling the flow of fluid through said openings, substantially as described.

10. The combination with a substantially vertical rod to be lubricated, of a reservoir, a container so disposed as to deliver lubricant to the rod, there being a passage or passages connecting said reservoir and the container, with a valve or valves for controlling the flow of fluid through said passage or passages, and automatic mechanism actuated by the rod for controlling the operation of said valves, substantially as described.

11. The combination with a substantially vertical rod to be lubricated, of a reservoir, an annular container extending around said rod, a valve or valves for controlling the flow of fluid from the reservoir to said container, and a roller or rollers in engagement with the rod operatively connected to said valve or valves, substantially as described.

12. The combination with a substantially vertical rod to be lubricated, of a reservoir, a container having an opening onto the rod, there being passages between the reservoir and the container, a valve or valves controlling the flow of fluid through said passages, a roller having means pressing it against the rod, and a disk frictionally held in engagement with the roller and operatively connected to the valve or valves, substantially as described.

13. The combination with a substantially vertical rod to be lubricated, of a reservoir, a container opening onto the rod, a series of valves controlling passages between the reservoir and the container, a series of rollers adjacent to the rod, means for pressing the rollers into engagement with the rod, friction-disks for the rollers, and rods connecting said disks with the valves, substantially as described.

14. The combination with a substantially vertical rod to be lubricated, of a reservoir, a container opening onto the rod, and under said reservoir, a valve controlling a passage between the reservoir and the container, a roller operatively engaging the rod, and clutch mechanism connecting the roller and the valve, with means for preventing opening of the valve except when the rod moves in a predetermined direction, substantially as described.

809,810. INCANDESCENT GAS-LAMP. JOHN F. W. JOST, Philadelphia, Pa. Filed Nov. 29, 1904. Serial No. 234,721.

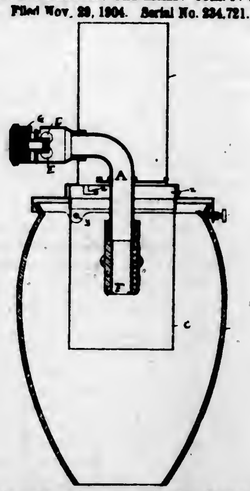

Claim.—1. In an incandescent gas-lamp, a Bunsen burner having a downwardly-opening mouth and provided with air-inlets, and a chimney surrounding the lower portion of said burner and extending below the level of said mouth and having an air-inlet below said level so as to cause the mantle carried at said burner-mouth to be struck by an upward current of air which envelops the outside of the mantle, the tube of said burner passing through the wall of said chimney with a tight fit, and the air-inlets of the Bunsen burner being located exteriorly of the chimney which thus forms a shield interposed between said air-inlets and the path of the combustion products.

2. In an incandescent gas-lamp, a Bunsen burner having a downwardly-opening mouth and provided with air-inlets, and a chimney surrounding the lower portion of said burner and having an air-inlet at the bottom, so as to cause the mantle carried at said burner-mouth to be struck by an upward current of air which envelops the outside of the mantle, the tube of said burner passing through the wall of said chimney with a tight fit, and the air-inlets of the Bunsen being located exteriorly of the chimney which thus forms a shield interposed between said air-inlets and the path of the combustion products.

3. In an incandescent gas-lamp, a chimney for creating a current of air, a Bunsen burner having a downwardly-opening mouth

located in said air-current so that the mantle located at said mouth

located in said air-current so that the mantle located at said mouth will be struck and enveloped by said upward current of air, the tube of said burner passing through the chimney-wall and being provided with air-inlets exteriorly thereof, so that the chimney forms a shield interposed between said air-inlets and the path of the combustion products.

809,811. DEVICE FOR RENDERING BOTTLES NON-REFILLABLE. PIERRE JOFFRE, Paris, France. Filed Apr. 15, 1905. Serial No. 255,670.

Claim.—1. In a device for preventing the refilling of bottles, the combination of a casing, a member arranged in said casing and having a valve-seat in the bottom thereof, there being passages extending laterally from said valve-seat and upwardly at the sides of said member, a valve coöperating with said valve-seat, and means carried by the casing for unseating said valve when the bottle is tilted.

2. In a device such as described, the combination, with a casing, of a cup-shaped member arranged therein and provided in its bottom with a valve-seat, there being passages leading laterally from said valve-seat and upwardly at the sides of said member, a valve coöperating with said valve-seat, a member covering said cup, a spring interposed between said covering member and said valve, and gravity-actuated means for unseating said valve against the tension of said spring.

809,812. PAPER BOTTLE, CUP, OR OTHER CONTAINER. JAMES C. KINNEY, Philadelphia, Pa., assignor to American Paper Bottle Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Jan. 21, 1905. Serial No. 242,127.

Claim.—1. As a new article of manufacture a tubular body portion having an internal flat flange at one end forming with the side wall a straight annular cavity, a bottom having a flat flange, said bottom fitting tightly against the inner walls of the body and its flange extending into the annular cavity of the body, with a solid locking-disk pressed into the cavity formed by the body and bottom so as to force the end of the flange of the body against the flange of the bottom at a point close to the bottom, substantially as described.

2. As a new article of manufacture a tubular body portion having an internal flat flange at one end forming with the side wall a straight annular cavity, a bottom having a flat flange, said bottom fitting tightly against the inner walls of the body and its flange extending into the annular cavity of the body, with a solid locking-disk pressed into the cavity formed by the body and bottom so as to force the end of the flange of the body against the flange of the bottom at a point close to the bottom, a cementing material applied between the flange of the body and the flange of the bottom, substantially as described.

3. As a new article of manufacture a tubular body portion having an internal flat flange at one end forming with the side wall a straight annular cavity, a bottom having a flat flange, said bottom fitting tightly against the inner walls of the body and its flange extending into the annular cavity of the body, with a solid locking-disk pressed into the cavity formed by the body and bottom so as to force the end of the flange of the body against the flange of the bottom at a point close to the bottom, a cement applied to the corners of the bottom so as to cement the flange of the body to the flange of the bottom, and the locking-disk to the bottom, substantially as described.

4. As a new article of manufacture a tapered tubular body portion narrower at the bottom than at the top, and having an internal flat flange bent up from the bottom forming with the side wall a straight annular cavity, a bottom portion having a depending flat flange extending into the annular cavity of the body, and fitting tightly against the walls of the body, with a locking-disk less in thickness than the depth of the flange of the body and having a straight edge, said locking-disk forced into the cavity formed by the body and bottom, whereby the flange of the body is forced hard against the flange of the bottom at a point close to the bottom so as to make a tight fit between the bottom and the body, the tapered extension of the body preventing the displacement of the disk, substantially as described.

809,813. MANUFACTURE OF PAPER BOTTLES, CUPS, &c. JAMES C. KINNEY and HENRY R. HEYL, Philadelphia, Pa., assignors to American Paper Bottle Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Jan. 27, 1905. Serial No. 243,969.

Claim.—1. The process herein described of manufacturing paper receptacles, said process consisting in making a tube, turning a flange on one end of the tube to form a straight annular cavity, forcing a flanged bottom into the tube from the opposite end to that flanged, so that the flange of the bottom will rest in the straight annular cavity, and forcing a locking-block into the flanged end of the tube under pressure whereby the flange of the tube is held to the flange of the bottom by the locking-block, substantially as described.

2. The process herein described of making tubular receptacles, said process consisting in making a paper tube, flanging one end of said tube to form a straight annular cavity, forcing a flanged bottom partly into the tube from the opposite end to that flanged, placing cement in the corner of the flanged bottom and forcing the flanged bottom farther into the tube so that the flange of the bottom will fit snugly in the straight annular cavity of the tube, forcing a locking-disk into the flanged end of the receptacle so as to press the flange of the body portion of the cylinder against the flange of the bottom at a point near the bottom, the cement fastening the flange of the body portion to the flange of the bottom, and the locking-disk to the bottom, substantially as described.

3. The process herein described of making tubular receptacles, said process consisting in making a paper tube, flanging one end of said tube to form a straight annular cavity, forcing a flanged bottom, with cement applied to the corner of said flanged bottom, into the tube so that the flange of the bottom will fit snugly in the straight annular cavity of the tube, forcing a locking-disk into the flanged end of the receptacle so as to press the flange of the body portion of the tube against the flange of the bottom at a point near the bottom, the cement fastening the flange of the body portion to the flange of the bottom, and the locking-disk to the bottom, substantially as described.

809,814. APPARATUS FOR AUTOMATICALLY LIGHTING GAS-LAMPS. WILHELM KNOLL, Königswusterhausen, Germany. Filed Aug. 22, 1905. Serial No. 275,282.

Claim.—1. In apparatus for automatically lighting from a pilot-jet and extinguishing gas-lamps by means of the variations of the pressure in the mains which contains a float carrying a mercury seal for closing and opening a dip-pipe through which gas is supplied by the main burner.

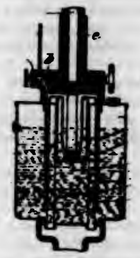

2. The arrangement of the dip-pipe in such a manner that it can be raised and lowered from the outside of the float-chamber for the purpose of adjusting the seal.

3. The arrangement of the float with a deep cup in its top containing the mercury seal and of a dip-pipe that can be raised and lowered from the outside of the float-chamber.

4. The arrangement of a dip-pipe provided with a screw-threaded part screwed into a tapped hole in the cover of the float-chamber and of a detachable socket carrying the burner-head round the upper part of the dip-pipe for the purpose of adjusting the dip-pipe by turning it after removal of the socket.

5. The arrangement or combination of a dip-pipe screwed through a tapped hole in the cover of the float-chamber, a socket or bush rotatably mounted on said cover, means adapted to turn the dip-pipe round by turning the socket or bush and means adapted to lock the socket or bush on the cover.

809,815. CLOTHES-LINE PULLEY. HANNA KOCHER, Paterson, N. J. Filed Mar. 31, 1905. Serial No. 253,106.

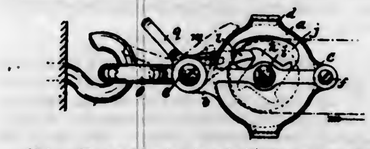

Claim.—The combination, in a clothes-line pulley, of the pulley-block, the pulley proper journaled therein, a pawl-and-ratchet connection between the pulley-block and the pulley proper, and a rope-holding dog carried by the pawl and projecting into proximity to the perimeter of the pulley, substantially as described.

809,816. ELASTIC-FLUID TURBINE. AUGUST H. KRUSE, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed July 20, 1904. Serial No. 217,094.

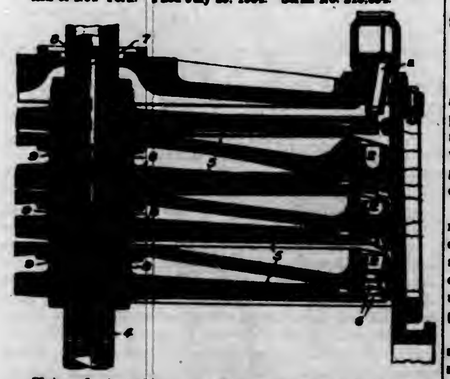

Claim.—1. A turbine comprising a casing, a shaft therein which tends to expand less rapidly than the casing, sets of buckets on the shaft, devices for discharging motive fluid against the buckets, and ports in the shaft which are disposed out of the path of the fluid passing from one set of buckets to another for admitting fluid to the shaft to accelerate the heating and expansion thereof.

2. An elastic-fluid turbine which is divided into stages, each stage being provided with a wheel-compartment, bucket-wheels in the compartments, a shaft for the wheels which tends to expand at a different rate from the walls of the stages, devices for admitting fluid to and directing its passage through the stages, and a means for causing the shaft to expand substantially with and at the same rate as the walls of the stages.

3. A turbine comprising stages, each stage having a wheel-compartment, bucket-wheels in the compartments, a shaft for the wheels extending axially through the stages which tends to expand at a different rate from the latter, discharging devices arranged to deliver motive fluid against the buckets and cause the fluid to traverse a path parallel to the shaft and adjacent the walls of the stages, and means for acting on the shaft in a manner to cause it to expand substantially simultaneously with and at the same rate as the stages.

4. A multistage turbine having a tubular shaft containing ports communicating with the several stages to permit the idle fluid therein to pass through the shaft from a point of high to a point of low pressure, and means for closing the bore of the shaft between two or more of said stages.

5. A multistage turbine having a tubular shaft containing ports communicating with the several stages, and means for automatically closing the bore of the shaft between two or more stages when the shaft has expanded a certain amount.

6. A multistage turbine having a tubular shaft containing ports communicating with the several stages, and a thermostatic valve for closing the bore of the shaft between two stages.

7. A multistage turbine having a tubular shaft containing ports communicating with the several stages, a thin metallic tube in the bore of said shaft, a valve carried by said tube, and a valve-seat in the shaft.

8. A multistage turbine having a casing which expands more rapidly in the high-pressure stages than in the low, a wheel-carrying shaft extending through the stages which is located out of the normal path of the motive fluid and tends to expand less rapidly than the casing, and a means for heating the portion of the shaft in the high-pressure stage or stages to a greater extent than the portion in the low-pressure stage.

9. A turbine comprising a casing, diaphragms therein which divide it into compartments, a shaft extending axially through the casing which tends to expand less rapidly than the latter, bucket-wheels in the compartments which are carried by the shaft, and a conduit in the shaft which connects a point of high pressure in the casing with a point of low pressure for causing motive fluid to pass therethrough for heating the shaft to accelerate its expansion.

10. A multistage turbine, comprising a casing and a wheel-carrying shaft, one of which expands more rapidly than the other owing to the difference in surfaces exposed to the motive fluid, and a means which utilizes the idle fluid in one or more stages for subjecting one of said turbine elements to the heating effects of said fluid to reduce the tendency to unequal expansion.

809,817. SAFETY-GATE FOR DRAWBRIDGES. JOHN B. LAMBOIS, Brussels, Wis., assignor of one-half to Gabriel Pierre, Brussels, Wis. Filed Sept. 1, 1905. Serial No. 276,748.

Claim.—1. The combination with a drawbridge of an abutment, a gate vertically slidable adjacent the end of the abutment, a strut pivotally connected at its lower end to the abutment, a lever pivoted upon the upper end of the strut and with one end pivotally connected with the gate, a weight carried on the end of the lever opposite the gate, a roller mounted on the gate and a cam carried by the bridge disposed to engage and depress the roller.

2. The combination with a drawbridge of an abutment, a beam mounted transversely and movable vertically of the abutment, a gate carried by the beam, a strut pivoted at its lower end to the abutment, a lever fulcrumed upon the strut and at one end to the beam, a weight carried by the lever at the end opposite the beam, a roller mounted upon the beam and a cam carried by the bridge-span disposed to engage and depress the roller.

3. The combination with a drawbridge of an abutment, a guide secured to the abutment, a beam slidably mounted and vertically movable upon the guide and disposed transversely of the bridge, a gate carried upon the beam, a strut pivoted at its lower end to the abutment, a lever fulcrumed upon the strut and with one end pivot-

ed to the beam, a weight carried by the lever at the end opposite the beam, a roller mounted upon the beam and a cam carried by the bridge to engage and depress the roller.

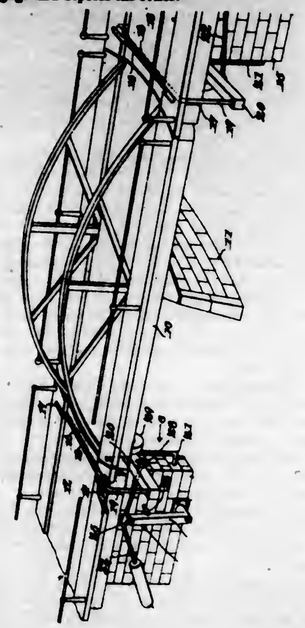

809,818. ELEVATING AND SIGHTING ATTACHMENT FOR GUNS. OTTO LAUBER and FRIEDRICH STOCK, Essen-on-the-Ruhr, Germany, assignors to Fried. Krupp Aktiengesellschaft, Essen-on-the-Ruhr, Germany. Filed Mar. 27, 1905. Serial No. 252,365.

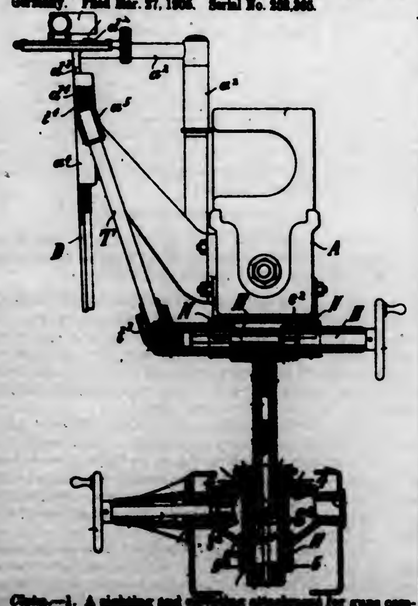

Claim.—1. A sighting and [illegible] attachment for guns comprising a plurality of eccentrically-arranged screw-spindles, a sight, means mounted independent of the screw-spindles and through which the sight is controlled, and driving means for rotating one of the screw-spindles and operating the sight-controlling means.

2. In a gun elevating and sighting attachment, means for changing the angle of elevation of the gun, means for adjusting the sight, relatively to the gun, and a driving mechanism common to both said means imparting corresponding movements thereto simultaneously in opposite directions and maintaining the sight at a substantially fixed height.

3. In a gun elevating and sighting attachment, means for changing the angle of elevation of the gun, means for adjusting the sight relatively to the gun, a driving mechanism common to both said means, and additional driving mechanism moving the gun and sight together.

4. In a gun, the combination with the gun-barrel and the rear sight, mounted to partake in the elevation of the gun-barrel, of means operating when elevation is imparted to the gun-barrel for moving the rear sight through the same angle and in the direction opposite to the movement of the gun-barrel.

5. In a gun, the combination with the gun-barrel and the rear sight, mounted to partake in the elevation of the gun-barrel, means for elevating the gun-barrel and the rear sight, and means actuated by said elevating means for moving the rear sight through the same angle and in the opposite direction to the movement of the gun-barrel.

6. In a gun, the combination with the gun-barrel and the rear sight, mounted to partake in the elevation of the gun-barrel, means for elevating the gun-barrel and the rear sight together, and means for elevating the gun-barrel and the rear sight together and for simultaneously moving the rear sight through the same angle but in the opposite direction to the movement of the gun-barrel, causing the rear sight to remain stationary during the last-mentioned movements.

7. A sighting and elevating mechanism for guns, comprising a sight, means for controlling the same, an elevating mechanism embodying a bearing adapted to be trunnioned on the part to be elevated and a screw-spindle turning on the bearing but held against axial movement thereon; and driving mechanism for the screw having connection with the sight-controlling means to maintain the sight unchanged relatively to the target when the screw is rotated to adjust the gun.

809,819. DEVICE FOR SECURING THE GUN-BARRELS OR THE CRADLES OF PORTABLE GUNS IN THE TRAVELING POSITION. OTTO LAUBER, Essen-on-the-Ruhr, and KARL THEILE, Berbeck, near Essen-on-the-Ruhr, Germany, assignors to Fried. Krupp Aktiengesellschaft, Essen-on-the-Ruhr, Germany. Filed May 31, 1905. Serial No. 263,263.

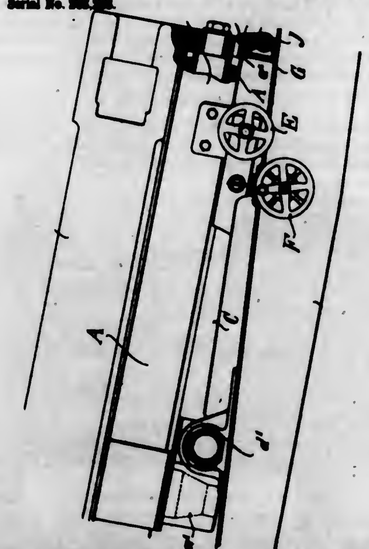

Claim.—1. The combination with the mount, the part to be elevated, and elevating and horizontal training mechanisms, of means

positively securing the part to be elevated to the mount in such a manner that the parts are prevented from moving either vertically or laterally relatively to one another, and the elevating and horizontal training mechanisms are relieved of all shock.

2. The combination with the mount, the part to be elevated and elevating and horizontal training mechanisms, of a seat on the mount in which the part to be elevated is adapted to fit to hold said part against lateral movement relatively to the mount, and means for holding said part in the seat.

3. In a portable gun, means for securing an adjustable part of the gun in the traveling position, comprising a claw swingingly mounted on a relatively fixed part of the gun and adapted to engage said adjustable part, an axially-movable shaft on which said claw is mounted, and means carried by said shaft and locking and unlocking the claw on the axial movement of the shaft.

4. In a portable gun, means for securing the adjustable gun-barrel or cradle in the traveling position, comprising a seat in which the adjustable part is confined against lateral movement and a swinging claw adapted to lock the said part in its said seat.

5. In a portable gun, the combination with the mount and the cradle or gun-barrel vertically and horizontally adjustable thereon; of means for fixing the said adjustable member in the traveling position on the mount; said means comprising a claw journaled on the mount and adapted to engage the member to be secured, means for securing the claw in such engagement, and a channel-seat on the mount in which the member to be secured is held by the claw.

6. In a portable gun, the combination of a mount having a seat, an adjustable cradle or barrel member adapted to rest in said seat when in traveling position, means for locking the adjustable member on its seat, a shaft controlling the locking means, an arm extending from said shaft, and a pin on said arm having a seat in a relatively fixed part of the gun, to hold the shaft against turning; said shaft being axially movable to release it and permit its turning movement.

809,820. MEANS OF SECURING SHIELDS TO PORTABLE GUNS. OTTO LAUBER, Essen-on-the-Ruhr, Germany, assignor to Fried. Krupp Aktiengesellschaft, Essen-on-the-Ruhr, Germany. Filed July 26, 1905. Serial No. 271,695.

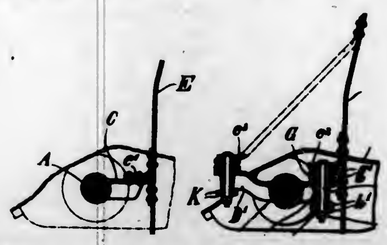

Claim.—1. In a portable gun, the combination with the wheel-axle, of a protecting-shield having both rigid and cushioned connections with the wheel-axle.

2. In a portable gun, the combination with the wheel-axle and the mount, of a protecting-shield having both rigid and cushioned connections with the axle on each side of the mount.

3. In a portable gun, the combination with the wheel-axle, of a rigid protecting-shield extending over the width of the space between the wheels, and cushioned connections between the shield and the axle absorbing vibration from the axle.

4. In a portable gun, the combination with the wheel-axle, of a protecting-shield, rearwardly-projecting arms rigidly connecting the shield to the axle, double arms projecting both forward and rearward from the axle, each having at one end cushioned connections with the shield, and braces having cushioned connection with each of said double arms, and rigid connections with the shield.

5. A portable wheeled gun-mount having a shield extending across the space between the wheels, single-arm shield-carriers projecting rearwardly from the axle near each wheel, and rigidly connected with the shield, two-armed shield-carriers projecting from the axle on either side of the body of the mount having their rear arms in cushioned connection with the shield, and upwardly-inclined braces having their lower ends in cushioned connection with the forward arms of said two-armed shield-carriers, and their upper ends in rigid connection with the shield.

809,821. RECOIL-GUN. OTTO LAUBER, Essen-on-the-Ruhr, Germany, assignor to Fried. Krupp Aktiengesellschaft, Essen-on-the-Ruhr, Germany. Filed Aug. 10, 1905. Serial No. 273,869.

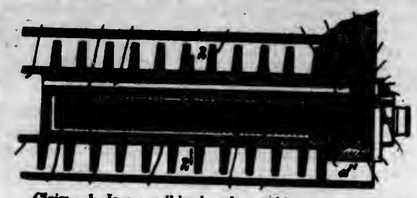

Claim.—1. In a recoil-brake, the combination with the brake-cylinder, of a housing having a chamber closed to the brake-cylinder to receive the securing-screw, and a passage leading through said housing along the side of the screw-chamber and opening into the brake-cylinder.

2. In a recoil-brake, the combination with the brake-cylinder, of a housing extending from one end thereof and having an eccentrically-positioned screw-receiving chamber closed to the brake-cylinder and a fluid-introducing passage located in the thickest portion of the housing-wall and opening into the brake-cylinder.

3. In a recoil-brake of the character described, the means for securing the brake-cylinder to the gun, the housing for said means provided with a passage leading from the exterior to the fluid-space of the brake-cylinder, and the means for holding the securing means in position, projecting into the passage in the housing.

4. In a recoil-brake of the character described, the means for securing the brake-cylinder to the gun, the housing for said means provided with a passage leading from the exterior to the fluid-space of the brake-cylinder, the means for closing said passage toward the exterior, and the means for holding the securing means in position projecting into the passage in the housing and engaging said closing means.

809,822. HOLDER FOR ROTARY TOOL-OPERATING MACHINES. CHARLES H. LAWTON, Springfield, Mass. Filed Apr. 5, 1905. Serial No. 254,032.

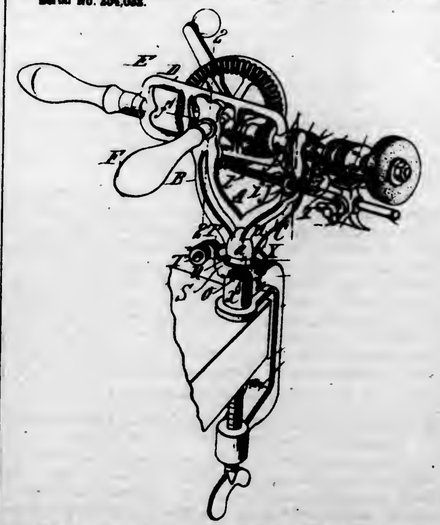

Claim.—1. In a device of the character described, a screw-clamp having formed thereon one member of a swivel-joint, a bracket-extension having a base, constituting the fellow member of said swivel-joint, a plurality of supporting and fastening devices on said bracket-extension for uniting thereto a rotary tool-operating machine, and means embodied in one of said machine supporting and fastening devices for also supporting and adjustably fastening to the said bracket-extension a tool-rest support.

2. In a device of the character described, the combination with a bracket-support comprising upwardly-divergent members, B and C,

one B thereof having an aperture *b* transversely therethrough and the other having in its side a recess *g*, and the sidewise-located cheeks constructed with the notches *i*, *i*, and tool-confining means coacting with said apertured portion of said bracket member B, of the clamp G located adjacent the recessed side of bracket-arm C, the eye-ended bolt in said recess and protruding through both said arm C and the clamp, and having the fastening-nut, and a work-rest-supporting bar, slidably engaged through the eye of said bolt, and having double rests or engagements in said notches, *i*, *i*.

3. In a device of the character described, the combination with a swivel bracket-support comprising upwardly-divergent members, B and C, one B thereof having an aperture *b* transversely therethrough and the other having the sidewise-located notches *i*, *i* and means for confining said bracket in a fixed position, of tool-confining means coacting with said apertured portion of said bracket member B, the clamp G located adjacent the side of bracket-arm C, the eye-ended bolt protruding through both said arm C and the clamp, and having the fastening-nut, and a work-rest-supporting bar L, slidably engaged through the eye of said bolt, and having double rests or engagements in said notches *i i*, and a double work-rest, reversibly carried on said bar.

809,823. **DEVICE FOR UNSHIPPING ENDLESS TRAVELING ROPES FROM THEIR PULLEYS.** GEORG LEUR, Berlin, Germany. Filed Sept. 20, 1904. Serial No. 225,260.

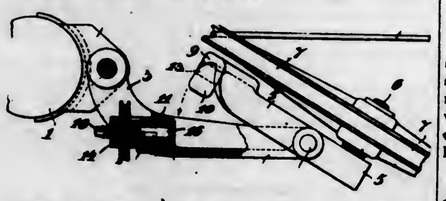

Claim.—1. In a device of the character described, the combination of a pulley, a rope passing over said pulley, a swinging mounting for said pulley, a swinging arm to which said mounting is jointed, means for securing said mounting and arm together, and automatically-operated mechanism for releasing said securing means to permit swinging movement of the mounting relatively to the arm.

2. In a device of the character described, the combination of a pulley, a rope passing over said pulley, a swinging mounting for said pulley, a swinging arm to which said mounting is jointed, a pin passing through perforations in said arm and said mounting for securing them together, and automatically-operated mechanism for withdrawing said pin from the mounting to allow the mounting to swing relatively to the arm.

3. In a device of the character described, the combination of a pulley, a rope passing over said pulley, a swinging mounting for said pulley, a swinging arm to which said mounting is jointed, a pin passing through perforations in said arm and said mounting for securing them together, and automatically-operated mechanism for withdrawing said pin from the mounting to allow the mounting to swing relatively to the arm; said mechanism comprising a pulley fixed against axial movement and having screw-thread connection with said pin, and a rope adapted to extend to a distant point and wound upon the pulley to impart rotation thereto upon a change in the relative positions of the pulley and the distant point.

809,824. **FENCE-POST.** OTTO F. LIEBE and GEORGE REYBOUR, Ypsilanti, Mich. Filed Feb. 29, 1906. Serial No. 303,510.

Claim.—1. A fence-post having formed thereon a spiral thread, adjustable fence-wire-supporting devices adapted to engage the thread on said post whereby the same may be screwed up or down on the post, and means whereby the fence-wires are secured to said supporting devices, substantially as described.

2. A fence-post having formed thereon a screw-thread running from the top to the bottom of the posts, collars having an interior thread formed thereon to engage the thread on said post whereby said collars may be shifted up and down on the post and wire-attaching hooks formed on said collars by which the line-wires of a fence may be attached thereto, substantially as described.

3. A fence-post having formed thereon a spiral thread, adjustable fence-wire-supporting devices adapted to engage the thread on said post whereby the same may be screwed up or down on the post, means whereby the fence-wires are secured to said supporting devices, and means whereby the post is firmly held in the ground, substantially as described.

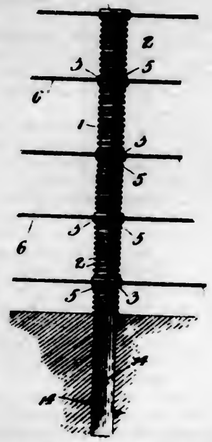

4. A fence-post having formed thereon a spiral thread, adjustable fence-wire-supporting devices adapted to engage the thread on said post whereby the same may be screwed up or down on the post, means whereby the fence-wires are secured to said supporting devices, and barbs struck out of the sides of the post near the lower end of the same to form retaining devices whereby the post will be firmly held in the ground, substantially as described.

809,825. **ELECTRIC METER.** WILLIAM J. LLOYD, Pittsfield, Mass., assignor to Stanley Electric Manufacturing Company, Pittsfield, Mass., a Corporation of New Jersey. Filed May 10, 1904. Serial No. 207,944.

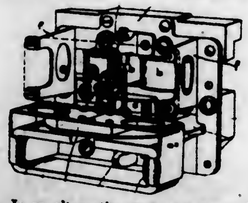

Claim.—1. In an alternating-current meter; a U-shaped core, potential coils carried thereby, a C-shaped core having intermediate projecting poles facing the poles of the first core and its ends extending into proximity to the poles of the first core, a current-coil carried between said projecting poles, and a conducting-disk disposed between said cores.

2. In an alternating-current meter, a U-shaped core, potential coils carried thereby, a C-shaped core forming with the first core a nearly-closed magnetic circuit and having intermediate projecting poles facing the poles of the first core, a current-coil carried between said projecting poles, and a conducting-disk disposed between said cores.

3. In an alternating-current meter, a U-shaped core, potential coils carried on the poles thereof, a current-coil carried between said poles, a C-shaped core forming with the first core a nearly-closed magnetic circuit and having intermediate projecting poles facing the poles of the first core, a second current-coil carried between said projecting poles, and a conducting-disk disposed between said cores.

4. In an alternating-current meter, a conducting-disk, means for producing a flux threading said disk, a magnetic member adapted to offer a shunt-path for said flux, and short-circuited members subjected respectively to the flux through said disk and to the flux through said shunt-path.

5. In an alternating-current meter, a conducting-disk, potential coils, magnetic cores arranged to direct a portion of the flux of said coils through said disk and to shunt a portion around said disk, and short-circuited members subjected respectively to the flux through said disk and to the flux shunted around said disk, said members being proportioned to produce a phase displacement of the flux through said disk of ninety degrees from the phase of the potential impressed on said coils.

6. In an alternating-current meter, a U-shaped core, potential coils carried thereby, a C-shaped core forming with the first core a nearly-closed magnetic circuit and having intermediate projecting poles facing the poles of the first core, a current-coil carried between said projecting poles, a conducting-disk disposed between said cores, short-circuited members on the ends of the U-shaped core, and short-circuited members near the ends of the C-shaped core.

7. In an alternating-current meter, a conducting-disk, means for producing a flux threading said disk, a magnetic member adapted to offer a shunt-path for said flux, and a short-circuited member subjected to the flux through said shunt-path.

8. In an alternating-current meter, a U-shaped core, potential coils carried thereby, a C-shaped core forming with the first core a nearly-closed magnetic circuit and having intermediate projecting poles facing the poles of the first core, a conducting-disk disposed between said cores, and short-circuited members carried near the ends of said C-shaped core.

809,826. **WEIGHING-SCALE.** JOHN LORENTSEN, Duluth, Minn. Original application filed Oct. 13, 1904. Serial No. 228,283. Divided and this application filed Feb. 15, 1905. Serial No. 245,757.

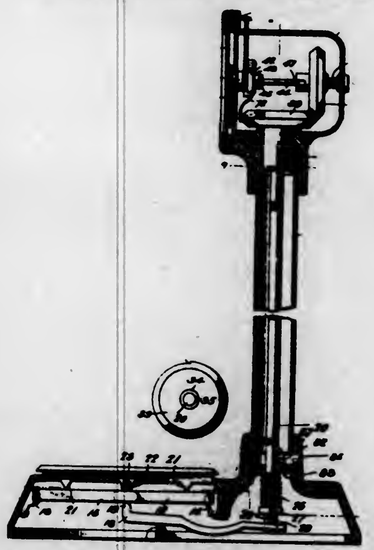

Claim.—1. In a weighing-scale, a platform, a shaft, an indicating means operable by the shaft, a revoluble friction-disk, means for transmitting movement from the platform to said disk, a second disk carried by said shaft, and a spring acting on said second disk and tending to force the same into engagement with the first disk.

2. In a weighing-scale, a platform, an endwise-movable bar to which the platform is connected, a pin or lug projecting from the bar, a helically-grooved cam-sleeve mounted on said bar and into which said pin or lug extends, means for preventing longitudinal movement of the cam-sleeve, a friction-disk secured to the sleeve, a shaft, and a second disk carried by the shaft and engaging the first disk.

3. The combination in a weighing-scale, of a movable platform, a vertically-movable bar connected to the platform, a pin or lug projecting from the bar, a hollow sleeve encircling the bar and provided with a cam-slot into which said pin or lug extends, an internally-grooved bushing, a pin projecting from the sleeve and entering said groove, a friction-disk secured to the sleeve, a shaft, indicating mechanism, means for connecting the indicating mechanism and the shaft, and a second friction-disk carried by the shaft and engaging said first friction-disk.

4. The combination in a weighing-scale, of a base, U-shaped platform-levers pivotally supported by their cross-bars, a platform resting on the levers, a knife-edge on which the free ends of the levers are supported, a lever carrying a knife-edge, a knife-edge on which the lever is pivoted, an indicating means, and means for connecting the lever and indicating means.

5. In a weighing-scale, the combination with a base, of a pair of U-shaped platform-levers, supports on which the cross-bars of said levers are pivoted, the free ends of one lever being within the lines of the free ends of the other lever, a knife-edge on which the free ends of both levers rest, a lever carrying the knife-edge, a knife-edge on which the lever is pivoted, an indicating means, and means for connecting the lever and the indicating means.

809,827. **CONVEYER.** GEORGE LUCAS, Passaic, N. J. Filed Dec. 7, 1904. Serial No. 235,511.

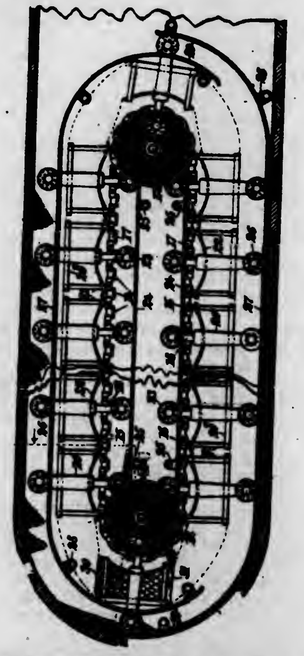

Claim.—1. A conveyer comprising inner and outer tracks, carriers coacting with both tracks, and flexible material connecting and extending through the carriers.

2. In a conveyer, the combination with a series of traveling carriers, each comprising a main generally U-shaped supporting member and secondary supporting members mounted at each side thereof, of a strip of flexible material attached to and supported by the carrier members.

3. In a conveyer, the combination with a series of traveling carriers, each comprising a main generally U-shaped supporting member, secondary supporting members mounted at each side thereof and inwardly-curved bottom bars connecting the supporting members, of a strip of flexible material attached to and supported by the carrier members.

4. In a conveyer, the combination with a series of traveling carriers, each comprising a generally U-shaped member, of a strip of flexible material attached to and supported by the carrier members, rolls journaled upon the carriers, and tracks with which the rolls contact.

5. A conveyer comprising a chain consisting of links, each having a recess with oppositely-inclined walls, carriers provided with outwardly-converging arms lying within the recesses and contacting with the inclined walls, and means for securing the carriers to the links.

6. A conveyer comprising toothed wheels, a chain consisting of pivoted links operating upon the wheels and having spaces formed between adjacent links to receive the teeth, and carriers fixed to the links between their pivotal points.

809,828. REGISTERING OR INDICATING DEVICE FOR TURNSTILES. ALBERT MARSH, London, England. Filed Mar. 11, 1905. Serial No. 249,699.

Claim.—1. In a registering or indicating turnstile, the combination of hinged spring contact-arms, a disk carrying said arms, a spindle passing through said disk, bosses on said spindle situated above and below the disk, means for clutching the disk so as to be operated by said spindle in one direction of rotation and a keeper or arrester for the contact-arms.

2. In a registering or indicating turnstile, the combination with the turnstile-shaft of a spindle having a cross-pin or key therein a disk freely mounted on said spindles radial hinged spring contact-arms on said disk a boss above and a boss below the said disk, a pawl on the upper boss and teeth on the upper face of the disk for said pawl to engage, a keeper or arrester and a stop on said keeper.

3. In a registering or indicating turnstile, the combination of hinged spring contact-arms a disk carrying said arms a spindle passing through said disk, bosses on said spindle situated above and below the disk, means for clutching the disk so as to be operated by said spindle in one direction of rotation, and a contact-piece for establishing electrical connection with an electricity-generator and indicator.

4. In a registering or indicating turnstile, the combination of hinged spring contact-arms a disk carrying said arms a spindle passing through said disk, bosses on said spindle situated above and below the disk, means for clutching the disk so as to be operated by said spindle in one direction of rotation, a spring keeper or arrester and a stop on said spring-keeper.

5. In a registering or indicating turnstile, the combination of hinged spring contact-arms a disk carrying said arms a spindle passing through said disk, bosses on said spindle situated above and below the disk, means for clutching the disk so as to be operated by said spindle in one direction of rotation and a keeper or arrester for the contact-arms, and a contact-piece for establishing electrical connection with an electricity-generator and indicator.

6. In a registering or indicating turnstile, the combination with the turnstile-shaft of a spindle having a cross-pin or key therein a disk freely mounted on said spindle radial hinged spring contact-arms on said disk a boss above and a boss below the said disk, a pawl on the upper boss and teeth on the upper face of the disk for said pawl to engage, a keeper and arrester and a stop on said keeper, a contact-piece for establishing electrical connection with an electricity-generator and indicator.

7. In a registering or indicating turnstile, the combination of hinged spring contact-arms a disk carrying said arms a spindle passing through said disk, bosses on said spindle situated above and below the disk, means for clutching the disk so as to be operated by said spindle in one direction of rotation, a spring keeper or arrester and a stop on said spring-keeper, a contact-piece for establishing electrical connection with an electricity-generator and indicator.

809,829. STREET-CAR FENDER. WILLIAM MARTIN, Wilkinsburg, Pa. Filed Sept. 1, 1905. Serial No. 276,733.

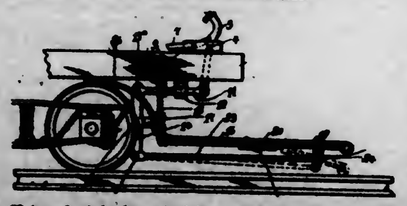

Claim.—1. A fender embodying a stationary section supported beneath the floor of the car, and a section hinged thereto, a lever fulcrumed in bearings secured to the floor of the car, means operatively connecting said lever with said hinged section, whereby to impart movement to the latter when said lever is moved, means to hold said lever normally against movement, means for positively imparting movement to said lever when released by said holding means.

2. A fender embodying a stationary section, a section hinged thereto, a lever fulcrumed in bearings secured to the floor of the car, means operatively connected to said hinged section and to said lever, spring-held means for holding said lever, and adapted to be released from engagement therewith, means for imparting movement to said lever when released by said holding means.

3. A fender embodying a stationary section, supported by the floor of a car, and a section hinged to said stationary section, a lever fulcrumed in bearings secured to the car, means operatively connecting said lever with said hinged section whereby to vary the movement of the same with the movement of said lever, means to lock said lever against movement, means for imparting movement to said lever when released by said locking means, said lever being adapted to be moved by the foot, and thereby restored to initial position, and means for returning said locking means into positive engagement with said lever when the latter has been restored to initial position.

809,830. SCREEN FOR PHOTOGRAPHIC CAMERA-LENSES. HENRY S. MILLER, Fond du Lac, Wis. Filed May 6, 1904. Serial No. 206,753.

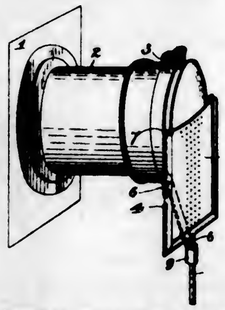

Claim.—1. A foraminous screen effective for the full exposure of the lenses or their exposure to a modified degree for the purpose set forth.

2. The combination with a photographic camera-lens of a screen having an opaque surface or area and provided with numerous perforations produced directly therein in pyramidal form or outline, in the line of the lens.

809,831. TELEPHONE-TRANSMITTER. JOHN S. MILLER, Erie, Pa. Filed Oct. 19, 1904. Serial No. 229,171.

Claim.—1. In a telephone-transmitter, the combination of a non-vibrating back plate; a washer of fibrous and non-conducting material forming a container; and dampener mounted on the back plate; an electrode arranged within the washer, the electrode being of less thickness than the washer; granulated conducting material in the cavity with the electrode; a ring of conducting material arranged outside of said washer and mounted within the case but insulated from the case and back plate; and a diaphragm mounted on said ring and in electric contact with said ring and being connected with the back plate through the electrode and material in the cavity and the washer.

2. In a telephone-transmitter, the combination of the case A having a cavity therein for containing the transmitting parts; a non-vibrating back plate secured to the case and closing said cavity; a fibrous washer mounted on the back plate; transmitting material arranged in the washer; the diaphragm H arranged over the washer and in contact with the transmitting material; the ring H' on which the diaphragm is arranged; the packing-rings h and h' for sealing the space between the diaphragm and the back plate, and for insulating the diaphragm from the back plate and case; the terminal J; and means for connecting said terminal with the diaphragm.

3. In a telephone-transmitter, the combination of the case A having a cavity therein for containing the transmitting parts; a non-vibrating back plate secured to the case and closing said cavity; a fibrous washer mounted on the back plate; transmitting material arranged in the washer; the diaphragm H arranged over the washer and in contact with the transmitting material; the ring H' on which the diaphragm is arranged; the packing-rings h and h' for sealing the space between the diaphragm and the back plate, and for insulating the diaphragm from the back plate and case; the terminal J; means for connecting said terminal with the diaphragm; and the shell K secured to the back of the case and inclosing the plate.

809,832. PAPER-MAKING MACHINE. JOHN W. MOORE and JOSEPH A. WHITE, Philadelphia, Pa. Filed Mar. 15, 1899. Serial No. 709,173.

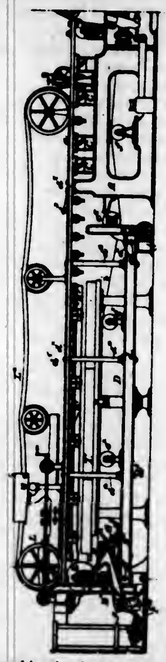

Claim.—1. The combination in a paper-making machine, of a shake-frame having flexible side frames connected to each other, each of said frames consisting of upper and lower members, with means rigidly connecting the same whereby the upper member is carried by the lower member, standards having secured to them flexible suspension-plates attached to one end of the shake-frame, and a fixed member to which the lower members of the shake-frame are rigidly attached, with means for vibrating the shake-frame, substantially as described.

2. The combination in a paper-making machine, of a fixed frame, a fixed standard, a shake-frame consisting of upper and lower side members and an end frame, means for securing the members of the shake-frame rigidly together, a rigid connection between the lower side rails and the fixed standard, and a rigid connection between the upper side rails and the fixed frame, means for supporting the free end of the shake-frame, and means for vibrating said end, substantially as described.

3. The combination of the shake-frame of a paper-making machine, consisting of upper and lower rails connected together, an end frame secured to the ends of the said rails, the lower rails being each made of two channel-bars, with a space between them, columns extending from the lower to the upper rails, tie-bolts extending through the upper rails and the columns and through the space between the channel-bars of the lower rails and means for supporting the said shake-frame, substantially as described.

4. The combination in a paper-making machine, of a shake-frame having upper and lower rails, the lower rails made up of two spaced members, a standard, a flexible plate suspended from said standard and passing through the space between the members of the lower rails, and a bracket carried by the lower rails to which said flexible plate is clamped, substantially as described.

5. The combination in a paper-making machine, of a shake-frame having upper and lower rails, the lower rails each consisting of two members spaced, a bracket secured to each lower rail, a standard, a bolt adjustable in said standard, a flexible suspension-plate hung from said bolt and secured to the bracket on the lower rails of the shake-frame, a clamp-block between which and an extension of the standard the flexible plate is clamped, a portion of the clamp-block extending over the standard, and a set-screw by which the clamp-block, bolt, and flexible plate can be raised to adjust the shake-frame, substantially as described.

809,833. APPARATUS FOR THE PRODUCTION OF GLOBOIDAL WORM-WHEELS. GUSTAV MOTZKE, Rottenhofstedt, near Essen-on-the-Ruhr, Germany, assignor to Fried. Krupp, Essen-on-the-Ruhr, Germany. Filed Sept. 3, 1901. Serial No. 74,141.

Claim.—1. The combination of a rotatable tool-carrier provided with a lateral and an arcuate recess, a bit-holder, means securing the bit-holder in the arcuate recess and to the tool-carrier and radially-adjustable cutters disposed radially in an arc on the bit-holder and controllable for adjustment by way of the lateral recess.

2. In a rotary tool for constructing globoidal worm-wheels, a plurality of cutting-bits arranged and shiftable in an arc concentric with the circumference of the wheel to be cut.

3. The combination with the tool-carrier, of a plurality of radially-positioned cutting-bits forming and shiftable in an arc.

809,834. CEMENT-BRICK PRESS. HORACE B. MURDOCK, Detroit, Mich. Filed Feb. 21, 1905. Serial No. 246,730.

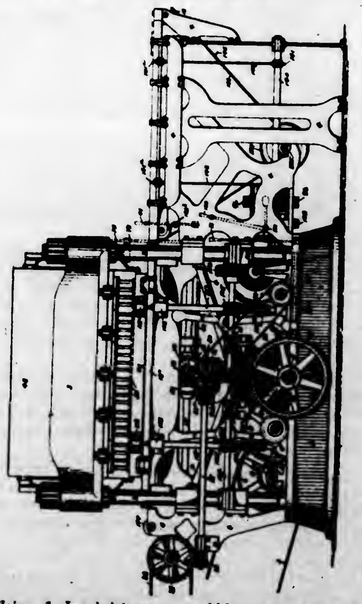

Claim.—1. In a brick-press, a mold-box, means for loosely filling said box with brick-making material, means for tamping said loose material, means for refilling said box, and means for pressing the fresh and tamped material into a finished brick, substantially as described.

2. In a brick-press, a mold-box, means for loosely filling said box with brick-making material, means for tamping said loose material, means for refilling said box, means for pressing the fresh and tamped material into a finished brick, and means for displacing said brick from beneath said pressing means, substantially as described.

3. In a brick-press, a mold-box, means for loosely filling said

box with brick-making material, means for tamping said loose material, means for refilling said box, means for pressing the fresh and tamped material into a finished brick, and automatic means for displacing said brick from beneath said pressing means, substantially as described.

4. In a brick-press, a mold-box, means for tamping the material therein, means for removing said box from beneath the tamper, means for pressing the material after such removal, means for stripping said mold from the brick after being pressed and means for removing the pressed brick from the machine, substantially as described.

5. In a brick-press, a mold-box, a stationary and a movable table, a tamping mechanism above the former and a pressing-punch above the latter, and means for mechanically moving said box from one table to the other, substantially as described.

6. In a brick-press, a mold-box, a stationary and a movable table, a tamping mechanism above the former and a pressing-punch above the latter, means for moving said box from one table to the other, and means for filling said box with material during its passage, substantially as described.

7. In a brick-press, an open-ended feed-chute, a mold-box, a stationary tamping-table, a movable pressing-table, means for moving said box from one table to the other under said chute, and means for closing said chutes, during the period of said operations, substantially as described.

8. In a brick-press, a reciprocating tamp, a stationary table thereunder, a stationary pressing-punch, a reciprocating table thereunder, a feed-chute between said tables, a mold-box, and means for moving said box from one table to the other and under said chute, substantially as described.

9. In a brick-press, a mold-box, means for tamping the material therein, means for mechanically moving said box onto a pressing-table, means for moving said pressing-table against a pressing-punch, and means for stopping its movement when said table is in its highest position, substantially as described.

10. In a brick-press, a pressing-punch and a reciprocating table thereunder, means for placing a filled mold-box on said table, while at a low level, automatic means for stopping the movement of said table at its highest level, when said box is in contact with said punch, and also when slightly withdrawn, and means for stripping the mold-box from the brick while said table is in the latter-named position, substantially as described.

11. In a brick-press, a brick-material feeder and a mold-box, means for moving said box past said feeder to loosely fill the same, means for tamping said loose material, means for moving said box back past said feeder to refill the same, and means for pressing said fresh and tamped material into a finished brick, substantially as described.

12. In a brick-press, a brick-material feeder and a mold-box means for moving said box past said feeder to loosely fill the same, means for tamping said loose material, means for moving said box back past said feeder to refill the same, means for pressing said fresh and tamped material into a finished brick, and automatic means for removing said brick from operative position, substantially as described.

13. In a brick-press, a feed-chute and a mold-box, a pressing and a tamping mechanism, means for moving said box from one of said mechanisms to the other and back again beneath said chute, and means for removing said tamped and pressed brick from operative position, substantially as described.

14. In a brick-press, a feed-chute, a mold-box and palette therefor, means for moving said box and palette beneath said chute, thereby loosely filling the same, to a tamping mechanism, means for operating said tamping mechanism, means for again passing said box and palette beneath said chute, thereby refilling the same, to a pressing mechanism, means for operating said pressing mechanism, and means for removing said tamped and pressed brick from operative position by the motion of a new incoming palette, substantially as described.

15. In a brick-press, a pressing-punch and a table thereunder, means for placing a filled mold-box with its palette on said table, means for bringing said table and punch together to press the brick, and means controlled by said actuating means for bringing forward a new palette when the brick is finished, substantially as described.

16. In a brick-press, a pressing-punch and a table thereunder, means for placing a filled mold-box with its palette on said table, means for bringing said table and punch together to press the brick, means for stripping the box from the finished brick, and means for bringing forward a new palette when the brick is finished, substantially as described.

17. In a brick-press, a pressing-punch and a table thereunder, means for placing a filled mold-box with its palette on said table, means for bringing said table and punch together to press the brick, and automatic means controlled by said actuating means for bringing forward a new palette when the brick is finished, substantially as described.

18. In a brick-press, a pressing-punch and a table thereunder, means for placing a filled mold-box with its palette on said table, means for bringing said table and punch together to press the brick, and means controlled by said actuating means for bringing forward a new palette when the brick is finished, and for placing a second new palette in proper position to be brought forward at the proper time, substantially as described.

19. In a brick-press, a pressing-punch and a table thereunder, means for placing a filled mold-box with its palette on said table, means for bringing said table and punch together to press the brick, and automatic means controlled by said actuating means for bringing forward a new palette when the brick is finished, and for placing a second new palette in proper position to be brought forward at the proper time, substantially as described.

20. In a brick-press, a pressing-punch and a table thereunder, means for placing a filled mold-box with its palette on said table, means for bringing said table and punch together to press the brick, means for stripping the box from the finished brick, means for bringing forward a new palette, and means for placing the mold-box thereon ready to be refilled, substantially as described.

21. In a brick-press, a pressing-punch and a table thereunder, means for placing a filled mold-box with its palette on said table, means for bringing said table and punch together to press the brick, means for stripping the box from the finished brick, means for bringing forward a new palette, and means controlled by the means for bringing forward the new palette for placing the mold-box thereon ready to be refilled, substantially as described.

22. In a brick-press, a pressing-punch and a table thereunder, means for placing a filled mold-box with its palette on said table, means for bringing said table and punch together to press the brick, means for stripping the box from the finished brick, means controlled by said actuating means for bringing forward a new palette and for placing the mold-box thereon ready to be refilled, substantially as described.

23. In a brick-press, a pressing-punch and a table thereunder, means for placing a filled mold-box with its palette on said table, means for bringing said table and punch together to press the brick, means for stripping the box from the finished brick, and means controlled by said actuating means for bringing forward a new palette, for placing the mold-box thereon, and for placing a second new palette in proper position to be brought forward at the proper time, substantially as described.

24. In a brick-press, a pressing-punch and a table thereunder, means for placing a filled mold-box with its palette on said table, means for bringing said table and punch together to press the brick, means for stripping the box from the finished brick, a carrier for bringing forward a new palette, and means for returning said carrier to its normal position, substantially as described.

25. In a brick-press, a pressing-punch and a table thereunder, means for placing a filled mold-box with its palette on said table, means for bringing said table and punch together to press the brick, means for stripping the box from the finished brick, a carrier for bringing forward a new palette, and means controlled by the movement of said carrier for returning the same to its normal position, substantially as described.

26. In a brick-press, a pressing-punch and a table thereunder, means for placing a filled mold-box with its palette on said table, means for bringing said table and punch together to press the brick, a carrier controlled by said actuating means for bringing forward a new palette, and means controlled by the movement of said carrier for returning the same to its normal position, substantially as described.

27. In a brick-press, a pressing-punch and a table thereunder, means for placing a filled mold-box with its palette on said table, means for bringing said table and punch together to press the brick, means for stripping the box from the finished brick, and means controlled by said actuating means for bringing forward a new palette, for placing the mold-box thereon, for returning the means for bringing forward the new palette to its normal position, and for placing a second new palette in proper position to be brought forward at the proper time, substantially as described.

28. In a brick-press, means for placing a palette and mold-box therefor in the machine, means for filling the box, means for moving the palette and box under a tamp, means for operating the tamp, means for again filling said box, means for moving the box and palette beneath a punch, means for pressing the material with said punch, means for stripping the pressed brick of its mold-box and means for removing the palette and finished brick from the machine, substantially as described.

29. In a brick-press, means for feeding a palette in the machine, means for placing a mold-box on said palette, a feed-chute, means for moving said palette and box under said chute and beneath a tamp, means for operating said tamp on the material fed into said box, means for moving said palette and box back under said chute and beneath a punch, means for closing said feed-chute after the passage of said box, means for pressing the material in said box with said punch, means for stripping the pressed brick of its mold-box, and means for removing the palette and finished brick from the machine, substantially as described.

30. In a machine of the class designated, a tamping mechanism comprising a cam, a reciprocating tamp controlled thereby, means for revolving said cam, a rock-shaft, a dog on said shaft, means on said tamp with which said dog engages to lock the former against movement, a similar locking means for said cam, means for rocking said shaft to disengage said dogs, and means for actuating said revolving means, substantially as described.

31. In a machine of the class designated, a tamping mechanism comprising a cam, a reciprocating tamp controlled thereby, means for revolving said cam, means for locking said cam and tamp against movement, means for releasing said locking means, and means controlled by said releasing means for actuating said revolving means, substantially as described.

32. In a brick-press, a feed-chute, a mold-box, means for moving said box past said chute to fill the same, and means for closing said chute after the passage of said box comprising, a movable gate, a spring-hook attached to said gate, means on said mold-box for engaging said hook, and means for exerting a pressure on said hook to disengage the same when said gate has been moved in position beneath said chute, substantially as described.

33. In a brick-press, a feed-chute, a mold-box, means for moving said box past said chute to fill the same, and means for closing said chute after the passage of said box comprising, a movable gate, a spring-hook attached to said gate, means on said mold-box for engaging said hook, a rod having one end in contact with said hook and its other attached to one end of a lever pivoted to said gate, and means for actuating the other end of said lever when the gate has been moved in position beneath the chute, whereby said rod exerts a pressure on said hook and releases the same, substantially as described.

34. In a brick-press, a mold-box and means for stripping said box from the finished brick comprising a vertically-movable stripper-hook, a lug on said box, and means for bringing said hook into engagement with said lug during its movement, substantially as described.

35. In a brick-press, a mold-box and means for stripping said box from the finished brick comprising a vertically-movable stripper-hook, a lug on said box, means for bringing said hook into engagement with said lug during its movement, and means for locking said members in such engagement, substantially as described.

36. In a brick-press, a mold-box and means for stripping said box from the finished brick comprising a vertically-movable bar, a member pivoted therein having a hook at one end and an extended tailpiece at the other, a lug on said box, and a guide through which said member passes adapted to press upon said tailpiece and bring and lock said hooked end and lug in engagement, substantially as described.

809,885. ALTERNATING-CURRENT MACHINERY. ADDAMS S. MCALLISTER, New York, N. Y. Filed Mar. 8, 1905. Serial No. 249,697.

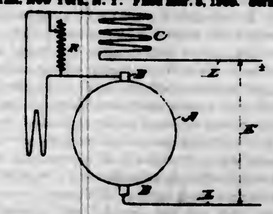

Claim.—1. The combination of an alternating-current machine, having a rotor provided with a commutator means for nullifying the rotor magnetism, and means for maintaining a predetermined power factor at different speeds.

2. The combination of an alternating-current machine, having a rotor provided with a commutator, a field-winding, a compensating winding adapted to nullify the rotor magnetism, and means for controlling the power factor of said machine at different speeds.

3. The combination of an alternating-current machine, having a rotor provided with a commutator, a field-winding, a compensating winding adapted to nullify the rotor magnetism, and adjustable means for causing said machine to take current either in phase or leading with respect to the line electromotive force.

4. The combination of an alternating-current machine, having a rotor provided with a commutator, a stator provided with field and compensating windings, and means connected with a stator-winding for maintaining a predetermined power factor at different speeds.

5. The combination of an alternating-current machine, having a rotor provided with a commutator, a field-winding, and a compensating winding adapted to nullify the rotor magnetism, and a non-inductive resistance in shunt to said field-winding, and adapted to maintain the power factor at unity.

6. The combination of an alternating-current machine, having a rotor provided with a commutator, a field-winding, and a compensating winding adapted to nullify the rotor magnetism, and an adjustable non-inductive resistance in shunt to said field-winding, and adapted to maintain the power factor at unity.

7. The combination of an alternating-current machine having a rotor provided with a commutator, a field-winding, and a non-inductive resistance in shunt to said field-winding, and adapted to improve the power factor.

8. The combination of an alternating-current machine having a rotor provided with a commutator, a field-winding, and an adjustable non-inductive resistance in shunt to said field-winding, and adapted to improve the power factor.

9. The combination of an alternating-current machine having field and armature members connected in series, and means for superposing a current in the armature-circuit in quadrature to the working current.

10. The combination of an alternating-current machine having field and armature members connected in series, and means for superposing a current in the armature-circuit in leading quadrature to the working current.

11. The combination of an alternating-current machine having field and armature members connected in series, a compensating winding adapted to nullify the rotor magnetism, and means for superposing a current in the armature-circuit in quadrature to the working current.

809,886. TAILOR'S MEASURE. FRED NORDSTROM, New York, N. Y. Filed Aug. 21, 1905. Serial No. 275,116.

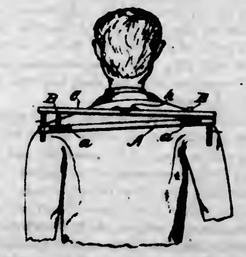

Claim.—1. The herein-described tailor's measure, the same being composed of separate bars, shoulder-pieces applied upon one bar and scales or measures and a level applied upon the other bar, the parts being combined and arranged for operation, substantially as set forth.

2. In a measure of the character herein set forth, the combination with the lower bar of the adjustable shoulder-pieces mounted in connection therewith, said bar being slotted to receive gages or measures, substantially as and for the purposes set forth.

3. In a measure of the character herein set forth, the combination with the lower bar of adjustable shoulder-pieces, said shoulder-pieces being each provided with a tang passing through the said bar, and sliding pieces connected with the tangs, substantially as shown.

4. In a measure of the character herein set forth, the combination with the lower bar having adjustable shoulder-pieces applied thereon, of an upper bar having a fixed scale or measure at each end

gage the contact-piece of a cut-out, the opposite end of said fuse-plug being open, a cartridge-fuse removable from said open end, and

teeth, an inner sleeve slidable upon said stock and provided with transverse apertures, pawls operating through said apertures for engagement with said ratchet-teeth, an outer sleeve rotative upon

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809,889. STRAM-GENERATOR. JOHN W. PAYNE, Alexandria Bay, N. Y., assignor of one-third to Gorham Lyle Olds, Alexandria Bay, N. Y. Filed July 29, 1903. Serial No. 167,322.

4. In a measure of the character herein set forth, the combination with the lower bar having adjustable shoulder-pieces applied thereon, of an upper bar having a fixed gage or measure at each end and having a spirit-level, the parts being arranged and combined substantially as shown.

5. In a measure of the character herein set forth, the combination of two bars curved as explained, the shoulder-pieces adjustably mounted on one of the bars, and the gage or scales mounted on the other bar and arranged to pass through slots in the first bar, substantially as shown and described.

809,887. **FUSE-PLUG.** HENRY T. PARRY, Philadelphia, Pa. Filed Nov. 23, 1904. Serial No. 234,659.

Claim.—1. The combination in a fuse-plug of a metallic shell and a plate at one end of the same, together forming the terminals of the plug, spring-clips respectively in permanent electrical connection with said terminals, and a cartridge-fuse having terminals placed to be engaged by said clips, substantially as described.

2. The combination in a fuse-plug of a metallic shell having at one end a metallic plate, respectively forming with said shell the terminals of the plug, a cartridge-fuse, and clips for said fuse respectively in electrical connection with said plug-terminals, a clip or clips extending beyond the end of the shell, substantially as described.

3. In a fuse-plug the combination of a fuse-carrier, a metallic shell of less length than said carrier, a clip or clips connected to the shell and projecting beyond the same for engaging one terminal of the fuse-carrier, a terminal plate, and a second clip connected thereto for engaging the second terminal of the fuse-carrier, substantially as described.

4. In a fuse-plug the combination of a metallic shell having an insulating-lining and a piece of insulating material permanently closing one of its ends, a plate carried by said closing-piece having connected to it a spring-clip, with a second spring-clip permanently connected to the shell, both of said clips being constructed to have the circuit between them completed through a fuse, substantially as described.

5. The combination in a fuse-plug of a metallic shell and a plate respectively forming the terminals of the plug, two clips respectively connected to said terminals, one of said clips being within the shell and the other outside of the same, with a removable cover fitting on the end of the shell having the outer clip, substantially as described.

6. The combination in a fuse-plug of a threaded shell having a cover of insulating material screwed over one end, a terminal piece at the other end of said plug and spring-clips respectively in permanent electrical connection with the shell and with the terminal piece, substantially as described.

7. The combination of a metallic shell, an end piece therefor of insulating material, a terminal piece carried by said end piece, a metallic clip or clips within the shell in connection with the terminal piece, a second clip or clips connected to the shell and extending beyond the end of the same, and a fuse having terminal pieces shaped to electrically connect with said two clips, substantially as described.

8. The combination of a metallic shell, an end piece of insulating material therefor, a terminal piece carried by said end piece, a metallic clip or clips within the shell in connection with the terminal piece, a second clip or clips connected to the shell and extending beyond the end of the same, and a fuse having terminal pieces shaped to electrically connect with said two clips, the end of the shell having the projecting clip or clips being provided with a removable cover, substantially as described.

9. The combination in a fuse-plug of a shell, an insulating-lining therefor, a spring-clip, a device for electrically connecting said clip and shell, said device also holding said lining in position, a terminal plate insulated from the shell, and a spring-clip connected to said plate, said two clips being shaped to receive a cartridge-fuse, substantially as described.

10. In a fuse-plug, the combination of a casing having terminals including a terminal plate at one end of said casing adapted to engage the contact-piece of a cut-out, the opposite end of said fuse-plug being open, a cartridge-fuse removable from said open end, and means permanently carried by the casing for forming electrical connection between the terminals of said cartridge-fuse and the terminals of the plug, substantially as described.

11. In a fuse-plug, a metallic shell having an insulated terminal plate at one end adapted to engage a contact-piece in a cut-out, the opposite end of said fuse-plug being open, a cartridge-fuse removable from said open end, and means for forming electrical connection between the terminals of said cartridge-fuse and the shell and terminal plate respectively, with a removable cover independent of said connecting means for closing the open end of said shell, the electrical circuit of the plug being independent of said cover, substantially as described.

12. The combination in a fuse-plug of a supporting-body, a metallic shell and a terminal piece on said body, a cartridge-fuse, and means electrically connected to the shell and to the terminal piece for respectively forming electrical connection with the terminals of the fuse, the fuse having an indicator-opening in a portion of its body beyond the end of the plug when said fuse is in position in the plug, substantially as described.

13. The combination in a fuse-plug of a metallic shell and a terminal piece adapted for engagement with the terminals of a cut-out, a cartridge-fuse, and terminal clips respectively connected to the shell and to the said terminal piece, said clips being constructed to be electrically connected by the cartridge-fuse, said fuse projecting beyond one end of the metallic shell so that its indicator-opening is visible while the fuse is in such position as to complete the circuit between the terminals of the plug, substantially as described.

809,888. **WRENCH.** ARTHUR W. PARFITT, New London, Wis., assignor of one-half to Albert G. Westphal, Hortonia, Wis. Filed Aug. 11, 1905. Serial No. 273,777.

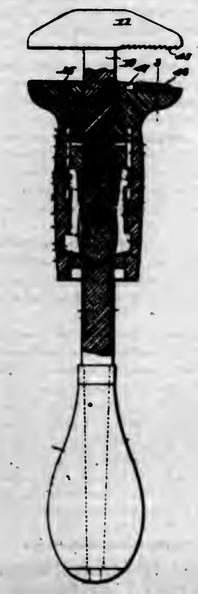

Claim.—1. In a wrench, a stock having a stationary jaw at one end and a handle at the other end and provided with spaced transverse teeth, an inner sleeve slidable upon said stock, pawls associated with said inner sleeve for engaging said transverse teeth, an outer sleeve rotative upon said inner sleeve, a movable jaw slidable upon said stock and having said outer sleeve coupled rotatively thereto, and means whereby said pawls are caused to engage said ratchet-teeth and lock said sleeves and movable jaw to said stock when said outer sleeve is disposed in one position and released therefrom when said outer sleeve is disposed in another position.

2. In a wrench, a stock having a stationary jaw at one end and a handle at the other end and provided with spaced transverse teeth, an inner sleeve slidable upon said stock, pawls operating through said inner sleeve for engaging said teeth and provided with outwardly-extending lugs at the ends, an outer sleeve rotative upon said inner sleeve and provided with spaced apertures inclined at one side for receiving the lugs at one end of said pawls and with annular channels decreasing in depth at one end for receiving the lugs at the other end of the pawls and decreasing in depth toward one end and inclined to the transverse plane of the stock, a movable jaw slidable upon said stock and having said sleeve coupled rotatively thereto, whereby when said outer sleeve is rotated in one direction said pawls will be depressed at one end for engagement with said teeth and said movable jaw forcibly adjusted longitudinally of the stock and released therefrom when the outer sleeve is rotated in the other direction.

teeth, an inner sleeve slidable upon said stock and provided with transverse apertures, pawls operating through said apertures for engagement with said ratchet-teeth, an outer sleeve rotative upon said inner sleeve, a movable jaw slidable upon said stock and having said outer sleeve coupled rotatively thereto, and means whereby said pawls will be caused to engage said ratchet-teeth and lock said movable jaw to said stock when said outer sleeve is disposed in one position and disconnected therefrom when the outer sleeve is disposed in another position.

3. In a wrench, a stock having a stationary jaw at one end and a handle at the other end and provided with spaced transverse teeth, an inner sleeve slidable upon said stock, pawls operating through said inner sleeve for engaging said teeth and provided with outwardly-extending lugs at the ends, an outer sleeve rotative upon said inner sleeve and provided with spaced apertures inclined at one side for receiving the lugs at one end of said pawls and with annular channels decreasing in depth at one end for receiving the lugs at the other end of said pawls, a movable jaw slidable upon said stock and having said outer sleeve coupled rotatively thereto, whereby when said outer sleeve is rotated in one direction said pawls will be depressed at one end for engagement with said teeth and released therefrom when the outer sleeve is rotated in the other direction.

4. In a wrench, a stock having a stationary jaw at one end and a handle at the other end and provided with spaced transverse teeth, an inner sleeve slidable upon said stock, pawls operating through said inner sleeve for engaging said teeth and provided with outwardly-extending lugs at the ends, an outer sleeve rotative upon said inner sleeve and provided with spaced apertures inclined at one side for receiving the lugs at one end of said pawls and with annular channels decreasing in depth at one end for receiving the lugs at the other end of the pawls and decreasing in depth toward one end and inclined to the transverse plane of the stock, a movable jaw slidable upon said stock and having said sleeve coupled rotatively thereto, whereby when said outer sleeve is rotated in one direction said pawls will be depressed at one end for engagement with said teeth and said movable jaw forcibly adjusted longitudinally of the stock and released therefrom when the outer sleeve is rotated in the other direction.

5. In a wrench, a stock having a stationary jaw at one end and a handle at the other end and provided with spaced transverse teeth, an inner sleeve slidable upon said stock, pawls operating through said inner sleeve for engagingsaid teeth, an outer sleeve rotative upon said inner sleeve and provided with an internal annular channel, a movable jaw slidable upon said stock and provided with a rib for engaging said channel whereby said outer sleeve and movable jaw are rotatively coupled, and means whereby said pawls are caused to engage said teeth and lock said sleeve and movable jaw to said stock when said outer sleeve is disposed in one position and released therefrom when the outer sleeve is disposed in another position.

6. In a wrench, a stock having a stationary jaw at one end and a handle at the other end and provided with spaced transverse teeth, an inner sleeve slidable upon said stock, pawls operating through said inner sleeve for engaging said teeth and provided with outwardly-extending lugs at the ends, an outer sleeve rotative upon said inner sleeve and provided with spaced apertures inclined at one side for receiving the lugs at one end of said pawls and with annular channels decreasing in depth at one end for receiving the lugs at the other end of said pawls, and with longitudinal channels leading from said annular channels through one end of the outer sleeve, a movable jaw slidable upon said stock and having said outer sleeve coupled rotatively thereto, whereby when said outer sleeve is rotated in one direction said pawls will be depressed at one end for engagement with said teeth and released therefrom when the outer sleeve is rotated in the other direction.

7. In a wrench, a stock having a stationary jaw at one end and a handle at the other end and provided with spaced transverse teeth, an inner sleeve slidable upon said stock, pawls operating through said inner sleeve for engaging said teeth and provided with outwardly extending lugs at the ends, an outer sleeve rotative upon said inner sleeve and provided with spaced apertures inclined at one side for receiving the lugs at one end of said pawls and with annular channels decreasing in depth at one end for receiving the lugs at the other end of said pawls, and with stop-pins extending in the paths of said lugs to limit the movement in one direction, a movable jaw slidable upon said stock and having said outer sleeve coupled rotatively thereto, whereby when said outer sleeve is rotated in one direction said pawls will be depressed at one end for engagement with said teeth and released therefrom when the outer sleeve is rotated in the other direction.

809,889. **STEAM-GENERATOR.** JOHN W. PAYNE, Alexandria Bay, N. Y., assignor of one-third to Gorham Lyle Olds, Alexandria Bay, N. Y. Filed July 20, 1903. Serial No. 166,382.

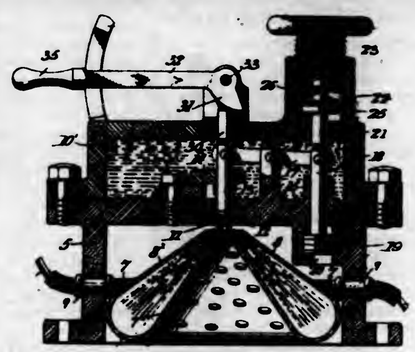

Claim.—1. In a steam-generator, a flasher, comprising a substantially conical bowl having inner and outer conical walls, the lower ends of which are connected, the distance between said walls gradually decreasing toward the contracted open top of the bowl, said walls being provided with perforations, and means for spraying water into the bowl.

2. In a device of the class specified, a steam-chamber, a flasher therein, a water-chamber having a ported communication with the steam-chamber, a valve for the port, a plunger exposed to the steam-pressure, means connecting the valve and plunger, means for regulating operative movement of the plunger, a throttle-lever, and a cam carried by the throttle-lever and adapted to close the valve to stop the flow of water to the steam-chamber.

809,840. **SHOVEL.** FREDERICK S. C. PERKINS, San Saba, Tex. Filed Sept. 9, 1905. Serial No. 277,743.

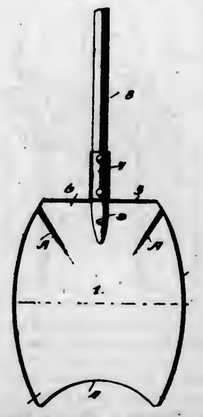

Claim.—A shovel comprising a dished blade of greater length than width and of maximum width and dish along its central transverse line, the forward edge of the blade being formed with an arcuate concavity and the side edges of the blade being beveled to form cutting edges which converge from the center toward the front and rear edges of the blade, the upper or rear end of the blade having an oblique truncate triangular portion, a socket carried by said triangular portion, and a handle applied to the socket.

809,841. **EXPLOSION-ENGINE.** GUSTAV PETERS, Tegel, Germany. Filed Apr. 18, 1904. Serial No. 203,673.

Claim.—The combination of the oppositely-moving pistons, a cylinder in which the oppositely-moving pistons work, having a working chamber at each end thereof, a working chamber between

and common to both the pistons and exhausts, each common to one

passage to give a high current density in the electrodes and effect the

and common to both the pistons and exhausts, each common to one end working chamber and the middle working chamber and controlled by a piston, means simultaneously admitting an explosive mixture into the end working chambers, and means for admitting an explosive mixture between the pistons.

809,842. APPARATUS FOR THE PRODUCTION OF CALCIUM CARBID. EDGAR F. PRICE, GEORGE B. COX, and JAMES G. MARSHALL, Niagara Falls, N. Y., assignors to Union Carbide Company, Niagara Falls, N. Y., a Corporation of Virginia. Filed Oct. 19, 1904. Serial No. 228,169.

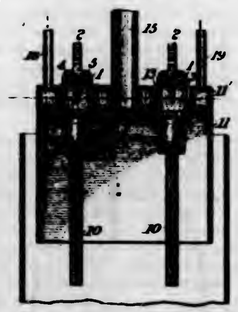

Claim.—1. In an electric furnace for the production of calcium carbid, and in combination with a feed-supply of lime and carbon, electrodes consisting of graphite rods of reduced cross-section, means for supplying to the electrodes an electric current of sufficient amperage to give a high current density in the electrodes and effect the reduction of the charge, means for substantially excluding oxidizing gases within the charge from the sides of said rods and means for withdrawing heat from the ends of the electrodes remote from the zone of reduction, as set forth.

2. In an electric furnace for the production of calcium carbid, and in combination with a feed-supply of lime and carbon, electrodes each consisting of spaced graphite rods, means for supplying to the electrodes an electric current of sufficient amperage to give a high current density in the electrodes and effect the reduction of the charge, a jacket surrounding the electrode-rods for excluding gases therefrom, and means for withdrawing heat from the ends of the electrodes remote from the zone of reduction, as set forth.

3. In an electric furnace for the production of calcium carbid, and in combination with a feed-supply of lime and carbon, electrodes consisting of graphite rods of reduced cross-section, means for supplying to the electrodes an electric current of sufficient amperage to give a high current density in the electrodes and effect the reduction of the charge, means for substantially excluding oxidizing gases from the sides of the rods and for supporting them against breakage, and means for withdrawing heat from the ends of the electrodes remote from the zone of reduction, as set forth.

4. In an electric furnace for the production of calcium carbid, and in combination with a feed-supply of lime and carbon, electrodes consisting of graphite rods of reduced cross-section, means for supplying to the electrodes an electric current of sufficient amperage to give a high current density in the electrodes and effect the reduction of the charge, a reinforcing and protecting body of relatively high resistance surrounding said rods, and means for withdrawing heat from the ends of the electrodes remote from the zone of reduction, as set forth.

809,843. BOLT-CLIPPER. JOHN PULVITT, Alvarado, Tex. Filed Sept. 22, 1905. Serial No. 279,705.

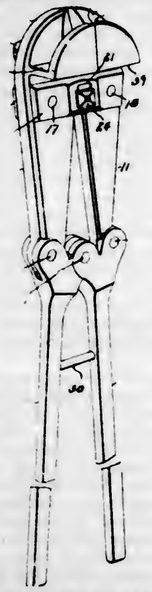

Claim.—In an implement of the class described, two reversely-disposed jaw members having wings extending laterally therefrom and terminating in projections extending parallel to the side faces of the jaws the adjacent faces of said projections having cutting edges, said jaw members having overlapping ears extending intermediately therefrom and united by a pivot having extended ends, side plates pivoted to said jaw members and having slots bearing over the extended ends of said pivot and means for actuating the jaw members.

809,844. BALING-PRESS. JOHN W. REYNOLDS, Erin, Tenn. Filed Aug. 24, 1905. Serial No. 275,202.

Claim.—1. An apparatus of the class described, comprising in combination with a baling-press having a laterally-movable reciprocating plunger, of an S-shaped cam for coöperating with said plunger to reciprocate the same, and means for releasing said plunger from said cam at times.

2. An apparatus of the class described, comprising the combination with a baling-press having a laterally-movable reciprocating plunger, of a double-cam member, means for rotating said cam member, said plunger and cam being coöperatively arranged, means for releasing said plunger from said cam member at times, substantially as shown and described.

3. An apparatus of the class described, comprising in combination with a press having a laterally-movable reciprocating plunger, of a shaft mounted in a plane at right angles to the plane of reciprocation of the plunger, a double-cam member secured to said shaft, means for rotating said shaft, said cam member and said plunger being coöperatively connected, means for holding said plunger in engagement with said cam, and means for releasing said plunger from said cam at times, substantially as shown and described.

4. An apparatus of the class described, comprising the combination with a laterally-movable reciprocating member, of a power mechanism for reciprocating said member and comprising an S-shaped cam member having double-cam portions, said double-cam portions being separated at the center of the S-shaped member to leave a passage-way, means for rotating said cam member and means for forcing the reciprocating member through said cam passage-way when in alinement therewith, substantially as shown and described.

5. An apparatus of the class described, comprising the combination with a baling-press having a laterally-movable reciprocating plunger, an S-shaped cam member, means for rotating said S-shaped cam member to engage said reciprocating plunger to reciprocate the same in one direction, spring devices for reciprocating the plunger in the opposite direction, said cam member having means for permitting the plunger to be disengaged therefrom at times, substantially as shown and described.

6. An apparatus of the class described, the combination with a baling-press having a laterally-movable reciprocating plunger, an S-shaped cam member, means for rotating said S-shaped cam member to engage said reciprocating plunger to reciprocate the same in one direction, spring devices for reciprocating the plunger in the opposite direction, said cam member having a passage midway its ends to permit the plunger becoming released from the cam as it comes in alinement with said passage substantially as shown and described.

7. An apparatus of the class described, comprising in combination with a press having a laterally-movable reciprocating plunger, of a cam member adapted to engage the end of said plunger to move it in one direction, a spring member secured to the plunger to move it in the opposite direction, said cam member comprising an S-shaped member having a double-cam face and a central passage, means for holding the plunger in engagement with the cam-face and means for imparting rotary motion to the cam, substantially as shown and described.

8. An apparatus of the class described, comprising in combination with a baling-press having a laterally-movable reciprocating plunger, of a power mechanism therefor, said power mechanism comprising a drive-shaft vertically mounted in the central longitudinal plane of the press, an S-shaped cam member secured to said shaft, a sweep-arm secured to said shaft for rotating the same, said S-shaped cam member including a plurality of cam portions spaced apart to form a passage-way, a friction-roller on the end of said plunger for coöperating with the cam, means for holding the plunger with its friction-roller in engagement with the cam, means for releasing said plunger from said cam and forcing it through the passage-way thereof as the friction-roller comes in alinement therewith substantially as shown and described.

9. An apparatus of the class described, comprising in combination with a baling-chamber, and a plunger including a piston-rod and a piston-head longitudinally reciprocable with respect to said baling-press, of an S-shape cam for coöperating with said piston to reciprocate the same means for releasing said piston from said cam at times, said piston being laterally movable in a plane at right angles to the axis of the cam, means for normally holding said piston in a longitudinal plane with the axis of the cam and means for moving said piston in one direction when released from said cam substantially as shown and described.

10. An apparatus of the class described, the combination with a reciprocating member having lateral movement, of a power mechanism for reciprocating said member and comprising an S-shaped cam member having double-cam portions, said double-cam portions being separated at the center of the S-shaped cam member to leave a passage-way, means for rotating said cam member, means for forcing the reciprocating member through said cam passage-way when in alinement therewith, means for normally holding said reciprocating member in alinement with said cam passage-way, substantially as shown and described.

809,845. VARIABLE-SPEED MECHANISM. RICHARD H. ROSSWARNE, Covington, Ky. Filed July 13, 1905. Serial No. 269,530.

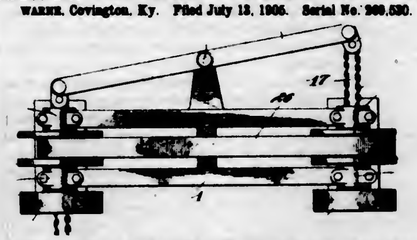

Claim.—1. In an expansible pulley, a volute rim, spiral guides on opposite sides of the rims, and means engaging the rim for moving it on the guides while the guides are held stationary, to expand and contract the pulley.

2. In an expansible pulley, a rim, spiral guides on the opposite sides of the rim, and means engaging the rim at one end only to wind and unwind the same.

3. In an expansible pulley, a rim, and mechanical means engaging the rim at the inner end only to wind and unwind the same.

4. In an expansible pulley, the combination with a pair of members each having a spiral track thereon, of a plurality of bars supported at opposite ends on tracks and adapted to travel thereon, said bars gradually increasing in height from the outer end of the spirals to the inner ends, means connecting said bars, and means engaging the inner bar to cause the bars to travel on the tracks.

5. In an expansible pulley, the combination with a pair of members having spiral tracks thereon, of a plurality of bars supported at opposite ends on the tracks and adapted to travel thereon, means connecting the bars, and means engaging only the inner bar to cause the bars to travel on the tracks.

6. In an expansible pulley, the combination with a pair of members having spiral tracks thereon, of a continuous rim guided by said tracks, to expand and contract the pulley, and means engaging only the inner end of the rim to expand and contract the pulley.

7. In an expansible pulley, the combination of a pair of members having spiral tracks thereon, supports of varying height adapted to travel on said tracks, an expansible rim surrounding the supports, and means engaging the rim to cause it to travel on the track members while the track members are stationary.

8. The combination with a pair of spiral track members, of a rim, a plurality of connected bars adapted to travel on said tracks, a rotary member mounted between the spiral members, a link connecting the rotary member and the bars, and means for rotating the rotary member.

9. The combination with a pair of spiral track members, of a rim adapted to travel on said track members, a rotary member located between the track members, a link connecting the rotary member and the rim, and means for rotating the rotary member.

10. The combination with a pair of spiral track members, of a rim adapted to travel on the spiral track members, a rotary nut having connection with the rim to cause the rim to travel on the track members, and a screw movable axially through the nut.

11. The combination with the rim and a mounting for the same permitting it to move in a spiral direction, of a rotary nut connected to the rim to cause the rim to move on its mounting and a screw movable axially within the nut to cause the latter's rotation.

12. The combination of a pair of axially-movable screws, a connection between the screws for causing them to move simultaneously in opposite directions, a pair of pulleys having rims adapted to travel in a spiral direction, a rotary nut for each pulley receiving rotation from one of the screws, and connection between each nut and one of the rims.

13. The combination with a pair of disks, each having a hollow bearing and a spiral groove, of a rim adapted to travel in said groove, a screw having an axially-interrupted portion, and movable axially within the hollow bearings, a key connecting the two disks and extending through the hollow bearings and preventing the turning of the screws, a nut surrounding the screw between the disks, and connection between the nut and the rim.

14. The combination with a pair of disks, each having a hollow bearing and a spiral groove, of a rim adapted to travel in said groove, a screw having an axially-interrupted portion and movable axially within the hollow bearings, a key connecting the two disks and extending through the hollow bearings and preventing the turning of the screws, a nut surrounding the screw between the disks, and a link connection between the nut and the rim.

15. The combination with the spiral track members, of bars traveling on said members and gradually increasing in height from the outer end of the spiral and means for causing the bars to travel on the track members.

16. The combination with the spiral track members, of bars traveling on said members and gradually increasing in height from the outer end of the spiral, the inner bars being convex on their outer faces, and a continuous expansible rim secured to said bars and means for causing the bars to travel on the track members.

17. The combination of a pair of members, each having a spiral track thereon, the distance between the portions of each spiral track gradually diminishing toward the center, and a rim movable on the spiral tracks.

809,846. METHOD OF MANUFACTURING LINED OR ENVELOPED TUBES OF PARCHMENT-PAPER. GUSTAV H. SACHSENRÖDER, Barmen, Germany. Filed Jan. 7, 1905. Serial No. 240,102.

Claim.—A method of manufacturing lined or enveloped tubes of parchment-paper, consisting in passing a strip of paper through a parchmentizing bath, then uniting by pressure said strip as it leaves the bath with a correspondingly wide strip of material to form a composite strip, then bending said composite strip together in the direction of its length to have the longitudinal edges thereof overlap, uniting the overlapping edges of said strip together by pressure to form the tube, and then passing the completed tube through a water-bath to complete the parchmentizing thereof.

809,847. CONTROLLER FOR TURBINES. FREDERICK SANDERSON, Rugby, England, assignor to General Electric Company, a Corporation of New York. Filed July 3, 1905. Serial No. 268,696.

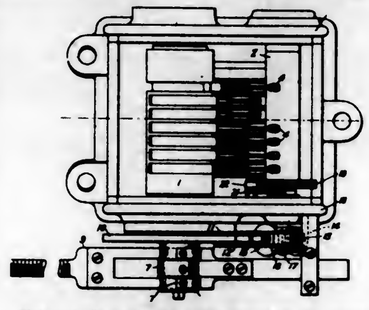

Claim.—1. In an electric-circuit controller, the combination of a cam-cylinder, switch members adapted to be actuated by the cam-cylinder in predetermined order, and means for causing the switch members to open the circuit with a quick movement, substantially as described.

2. In an electric-circuit controller, the combination of a rotatable cam-cylinder, one or more switch-levers actuated thereby, a rotatable contact member, and intermittently-operated mechanism driven by the cam-cylinder for causing the contact member to be rotated in a step-by-step manner.

3. In an electric-circuit controller, the combination of a rotatable contact-cylinder, switch members adapted to make contact therewith, a cam-cylinder for moving the switch members into and out of engagement with the contact-cylinder, a device for imparting a step-by-step movement to the cam-cylinder, and means operated by said device for turning the contact-cylinder step by step.

4. An electric-circuit controller comprising a rotatable cam-cylinder, switch members actuated thereby, a rotatable contact-cylinder adapted to be engaged by the switch members, a cam-disk attached to the cam-cylinder, a spring-controlled lever actuated by the cam-disk, a ratchet-wheel arranged to rotate the contact-cylinder, and a pawl engaging with the ratchet-wheel and actuated by the lever.

5. In a circuit-controller, the combination of a contact element, a plurality of switch members arranged to make contact therewith, a device having cam projections thereon for actuating the switch members, a second cam moving with the device and having projections thereon which alternate with those on the device, and a spring-pressed means acting on and insuring a step-by-step movement of the second cam and a quick break of the circuit by the switch members.

6. In a circuit-controller, the combination of a cam which has a to-and-fro motion, a contact member, switch members actuated by the cam and adapted to make and break circuit on the contact member, and means for driving the contact member from the cam which transforms the step-by-step motion of the cam into rotary motion of the switch member.

7. In a circuit-controller, the combination of a moving element, a means for oscillating it, a second moving element, means driven by the first element for rotating the second, and switch members actuated by one element and contacting with the second.

809,848. GOVERNOR FOR SUCTION GAS-PRODUCERS. ERICH SARNEKE, Lansing, Mich., assignor to American Suction Gas Producer Company, Lansing, Mich., a Corporation of Michigan. Filed June 26, 1905. Serial No. 267,139.

Claim.—1. A governor of the character described comprising a stationary casing forming a gas-chamber and connected with the gas supply and outlet conduits, and a balanced displacement member within said casing for varying the capacity of said gas-chamber.

2. A governor of the character described comprising a stationary casing containing a gas-chamber connected with the gas supply and outlet conduits, and a hydrostatically-balanced displacement member within said casing for varying the capacity of said gas-chamber.

3. A governor of the character described comprising a stationary casing inclosing a gas-chamber connected with the gas supply and outlet conduits, a bell hydrostatically balanced within said casing, and a connection between the chamber within said bell and the external atmosphere.

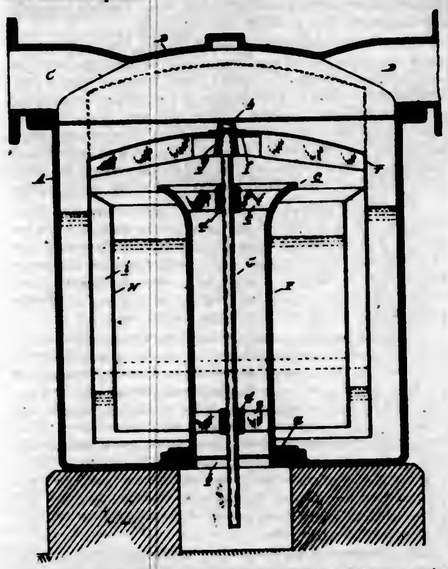

4. A governor of the character described comprising a casing containing a gas-chamber connected with gas supply and outlet conduits, a displacement-bell hydrostatically balanced within said casing and a guide-stem and coöperating bearing depending axially and vertically from said bell, substantially as described.

5. A governor of the character described comprising a cylindrical casing containing a gas-chamber connected with gas supply and outlet conduits, a cylindrical bell hydrostatically balanced within said casing, a central tube within said casing and bell through which communication is established between the chamber in the bell and the external atmosphere, an axially and vertically arranged guide-stem depending from said bell, and a bearing within said central tube with which said stem slidingly engages.

6. A governor of the character described comprising a casing inclosing a gas-chamber, alined induction and eduction gas-conduits connecting with said casing, and a displacement member within said casing for varying the capacity of the gas-chamber.

7. A governor of the character described comprising a cylindrical casing, a cap for the upper end of said casing having induction and eduction gas-conduits connected therewith and in alinement with each other, and a displacement-bell hydrostatically balanced within said casing.

809,849. GAS-PRODUCER. ERICH SARNEKE, Lansing, Mich., assignor to American Suction Gas Producer Company, Lansing, Mich., a Corporation of Michigan. Filed June 26, 1905. Serial No. 267,140.

Claim.—1. In a gas-producer, the combination with a casing containing a fuel-chamber and a hearth upon which the mass of fuel is normally supported, of means for temporarily supporting the fuel above the hearth comprising a series of separate grate-bars, and parallel centrally-enlarged guide-bearings through which said bars may be successively inserted and forced through the mass of fuel.

2. In a gas-producer, the combination with a casing containing a fuel-chamber and a hearth upon which the fuel in said chamber is normally supported, of means for temporarily supporting the fuel above said hearth comprising a series of separate grate-bars, and a bed within said casing at one side of the fuel-chamber having centrally-enlarged slots forming parallel guide-bearings through which said bars may be successively inserted or removed.

3. In a gas-producer, the combination with a casing containing a fuel-chamber and a hearth for normally supporting the fuel within said chamber, of the bed H arranged at one side of said casing having the parallel slots therein, the grate-bar G separately insertible through said slots and extending in parallel relation across the fuel-chamber above the hearth, and the detachable cap I for closing said slotted bed when the bars are removed.

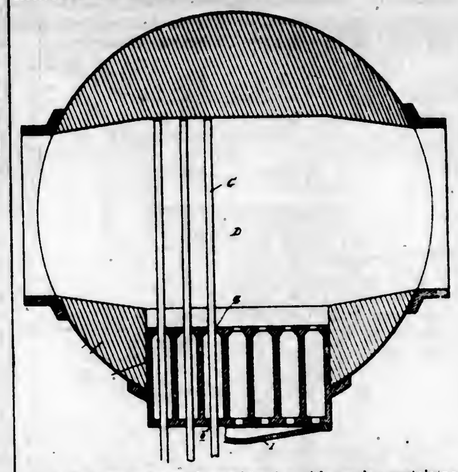

4. In a gas-producer, the combination with a casing containing a fuel-chamber and a hearth upon which the mass of fuel is normally supported, of a grate insertible into said chamber above the hearth to form a temporary support for the fuel, and a centrally-enlarged bearing at the side of the casing through which the grate is inserted forming a support for the projecting portion of the latter.

5. In a gas-producer the combination with a casing containing a fuel-chamber and a hearth upon which the mass of fuel is normally supported, of a removable bed-plate inserted within a slot in one side of said casing above the hearth for the purpose described.

6. In a gas-producer, the combination with a casing containing a fuel-chamber and a hearth for normally supporting the fuel within said chamber, of a bed-plate inserted within a slot in said casing above the hearth forming a guide-bearing and support for temporary grate-bars, said bed-plate being removable to provide access to the fire-pot for dislodging adhering clinkers.

809,850. BOTTLE-CORKING MACHINE. ROBERT J. SCHLOSSER and HENRY R. FISHER, Warren, Pa., assignors to The Pisc Company, Warren, Pa., a Corporation of Pennsylvania. Filed Nov. 1, 1904. Serial No. 230,989.

Claim.—1. A bottle-corking machine involving a cork-guide plate having an opening for the passage of a cork, the wall of said opening having embedded therein a flexible washer saturated with a lubricant to facilitate the passage of the cork therethrough.

2. A bottle-corking machine embodying a cork-feeding mechanism, said mechanism comprising a forwardly and rearwardly movable pivoted cork-guide plate having an opening for the passage of a cork, and a forwardly and rearwardly movable cork-feed plate having an opening for the passage of a cork and coöperating with said guide-plate, combined with means for moving the said plates.

3. A bottle-corking machine embodying a forwardly and rearwardly movable pivoted cork-guide plate having a plurality of openings for the passage of corks, and a forwardly and rearwardly movable cork-feed plate having a plurality of openings corresponding to the number of the openings in the cork-guide plate and coöperating with said guide-plate, combined with means for suitably moving the said plates.

4. A bottle-corking machine embodying a cork-feeding mechanism comprising a forwardly and rearwardly movable pivoted cork-guide plate having an opening for the passage of a cork, the wall of said opening having embedded therein a flexible washer saturated with a lubricant to facilitate the passage of a cork, and a forwardly and rearwardly movable cork-feed plate having an opening for the passage of a cork and coöperating with said guide-plate, combined with means for suitably operating the said plates.

5. A bottle-corking machine embodying a cork-feeding mechanism comprising a forwardly and rearwardly movable pivoted cork-guide plate having a plurality of openings for the passage of

corks, the wall of each of said openings having embedded therein a flexible washer saturated with a lubricant to facilitate the passage of the corks, and a forwardly and rearwardly movable cork-feed plate having a plurality of openings corresponding in number to the openings in the guide-plate and coöperating with said guide-plate, combined with means for suitably operating said plates.

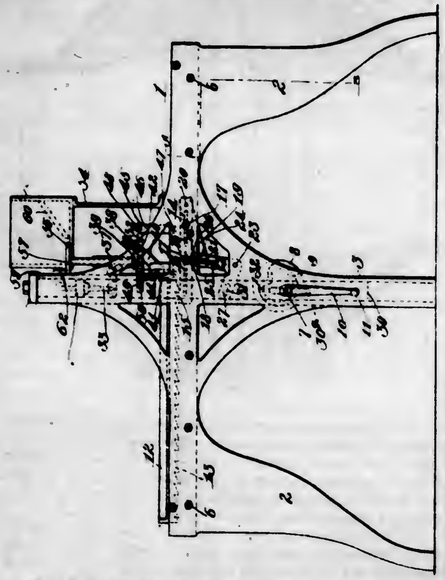

6. A bottle-corking machine involving a cork-feeding mechanism comprising a forwardly and rearwardly movable pivoted cork-guide plate having a tapering opening for the passage of a cork, the wall of said opening having embedded therein a flexible washer saturated with a lubricant to facilitate the passage of a cork, and a forwardly and rearwardly movable cork-feed plate having an opening for the passage of a cork, said opening in the feed-plate coöperating with the opening in the guide-plate, combined with means for operating the said plates.

7. A bottle-corking machine involving a cork-feeding mechanism comprising a forwardly and downwardly and rearwardly and upwardly movable pivoted cork-guide plate having an opening for the passage of a cork, and a forwardly and downwardly and rearwardly and upwardly movable cork-feed plate having an opening for the passage of a cork, the opening in the feed-plate coöperating with the opening in the guide-plate, combined with means for operating said plates.

8. A bottle-corking machine involving a cork-feeding mechanism comprising a forwardly and downwardly and rearwardly and upwardly movable pivoted cork-guide plate having a tapering opening for the passage of a cork, and a forwardly and downwardly and rearwardly and upwardly movable cork-feed plate having an opening for the passage of a cork, the opening in the feed-plate coöperating with the opening in the guide-plate, combined with means for operating said plates.

9. A bottle-corking machine embodying a cork-feeding mechanism comprising a forwardly and downwardly and rearwardly and upwardly movable pivoted cork-guide plate having a tapering opening for the passage of a cork, the wall of said opening having embedded therein a flexible washer saturated with a lubricant to facilitate the passage of a cork, and a forwardly and downwardly and rearwardly and upwardly movable cork-feed plate having an opening for the passage of a cork, the opening in the feed-plate coöperating with the opening in the guide-plate, combined with means for suitably operating said plates.

10. A bottle-corking machine embodying a cork-feeding mechanism comprising a cork-guide-plate having a passage for a cork, a cork-feed plate having a passage for a cork, said plates coöperating with each other, and means for moving forwardly said feed-plate in advance of the guide-plate and then moving forwardly the two plates in unison.

11. A bottle-corking machine embodying a cork-feeding mechanism comprising a cork-guide plate having a passage for a cork, a cork-feed plate having a passage for a cork, said plates coöperating with each other, and means for moving said feed-plate in advance of the guide-plate and then moving the two plates in unison forwardly and downwardly and upwardly and rearwardly.

12. A bottle-corking machine embodying a cork-feeding mechanism comprising a cork-feed tube, a movable feed-plate provided with an opening adapted to receive a cork from said tube, a cork-guide plate provided with a cork-passage and arranged in operative relation with respect to said feed-plate, said passage in said guide-plate coöperating with said opening in said feed-plate, and means for moving said feed-plate in advance of the guide-plate to shut off the discharge of corks from said tube and then moving the two plates in unison forwardly and downwardly and rearwardly and upwardly.

13. A bottle-corking machine embodying a cork-feeding mechanism comprising a cork-feed tube, a forwardly-movable feed-plate provided with an opening adapted to receive a cork from said tube, a forwardly-movable cork-guide plate provided with a cork-passage and arranged in operative relation with respect to said feed-plate, said passage in said guide-plate coöperating with said opening in said feed-plate, and means for operating said plates.

14. A bottle-corking machine embodying a cork-feeding mechanism comprising a cork-feed tube, a feed-plate provided with a cork-receiving opening coöperating with the discharge end of said feed-tube, a cork-guide plate having a cork-passage and arranged below and adapted to support said feed-plate, said passage in said guide-plate coöperating with the opening in the feed-plate, a pair of pivoted levers for supporting said guide-plate; a pair of pins carried by the guide-plate, an oscillatory arm connected with said feed-plate and adapted to operate said feed-plate in advance of said guide-plate and to engage said pins of the guide-plate for operating the said plates in unison, and a reciprocatory element engaging with and adapted to operate said arm.

15. A bottle-corking machine embodying a cork-feeding mechanism comprising a plurality of cork-feed tubes, a feed-plate provided with a plurality of cork-receiving openings coöperating with the discharge end of said feed-tubes, a cork-guide plate having a plurality of cork-passages and arranged below and adapted to support said feed-plate, said passages in said guide-plate coöperating with the openings in the feed-plate, a pair of pivoted levers for supporting said guide-plate, a pair of pins carried by the guide-plate, an oscillatory arm connected with said feed-plate and adapted to operate said feed-plate in advance of said guide-plate and to engage said pins of the guide-plate for operating said plates in unison, and a reciprocatory element engaging with and adapted to operate said arm.

16. A bottle-corking machine involving a bottle-feeding mechanism comprising a carrier, a cog-rack secured to the lower face thereof, a toothed pulling-arm adapted to engage with the teeth of said rack for intermittently moving said carrier, a pair of crank-arms for operating said toothed pulling-arm forwardly and rearwardly, causing said arm to travel over the teeth of the rack when moved forwardly and engaging in the teeth of the rack when moved rearwardly, and a pair of bell-crank levers for operating said crank-arms.

17. A bottle-corking machine involving a bottle-feeding mechanism comprising a carrier, a cog-rack secured to the lower face thereof, a toothed pulling-arm adapted to engage with the teeth of said rack for intermittently moving said carrier, a pair of crank-arms for operating said toothed pulling-arm forwardly and rearwardly, causing said arm to travel over the teeth of the rack when moved forwardly and engaging in the teeth of the rack when moved rearwardly, a pair of bell-crank levers for operating said crank-arms, and a reciprocating element for operating said bell-cranks.

18. A bottle-corking machine involving a bottle-corking mechanism comprising a movable carrier, a cog-rack carried thereby, a shifting means engaging with the cog-rack for imparting movement to the carrier, and means for varying the point of engagement between said shifting means and said rack to change the extent of the movement of the carrier.

19. A bottle-corking machine involving a movable carrier, a cog-rack carried thereby, a shiftable pulling-arm adapted to engage with the teeth of said rack for imparting an intermittent movement to the carrier, said arm provided with guide-slots, a combined guide and supporting means extending through said slots, crank-arms for operating said pulling-arm, a pair of bell-cranks connected with said crank-arms and adapted to operate them, an adjustable connection between said crank-arms and said bell-cranks for varying the throw of said cranks, thereby changing the extent of movement of the carrier, and a reciprocatory element for operating the bell-cranks.

20. A bottle-corking machine involving a cork-supplying mechanism comprising a hopper having an inclined chute arranged therein, an agitator-plate mounted in the hopper and provided with openings, said hopper provided with a discharge means coöperating with the openings in the plate, a vibratory arm for agitating said plate, means for retaining said plate in position, and a reciprocatory element for operating said vibratory arm.

21. A bottle-corking machine involving a bottle-feeding mechanism, a lever mechanism for imparting movement to said feeding mechanism, a cork-feeding mechanism, a lever mechanism for operating said cork-feeding mechanism, a cork-driving mechanism, a reciprocatory element operatively connected with said lever mechanisms and said cork-driving mechanism for operating said mechanisms, a rotatable cam mechanism for operating said reciprocatory element, and means for operating said rotatable cam mechanism.

22. A bottle-corking machine involving a bottle-carrier, a lever mechanism engaging therewith for imparting an intermittent movement thereto, a cork-driving mechanism, a cork-feeding means, a lever mechanism connected with said cork-feeding means for operating it, a reciprocatory element having a portion of its length toothed and engaging with the lever mechanism for the cork-feeding means for operating said mechanism, said element connected with said cork-driving mechanism for operating it, means carried by said element and engaging in the lever mechanism for operating the carrier for operating it, and means for operating said element.

23. A bottle-corking machine involving a bottle-carrier, a lever mechanism engaging therewith for imparting an intermittent movement thereto, a cork-driving mechanism, a cork-feeding means, a lever mechanism connected with said cork-feeding means for operating it, a reciprocatory element having a portion of its length toothed and engaging with the lever mechanism for the cork-feeding means for operating said mechanism, said element connected with said cork-driving mechanism for operating it, means carried by said element and engaging in the lever mechanism for operating the carrier for operating it, a cam mechanism engaging with and operating said element, and means for operating said cam mechanism.

24. A bottle-corking machine involving a bottle-feeding mechanism, a cork-feeding mechanism, a cork-driving mechanism, a cork-supplying mechanism coöperating with said cork-feeding mechanism and provided with an agitator, a reciprocatory element adapted to operate said agitator and said bottle-feeding, cork-feeding and cork-driving mechanisms, said element provided with a pair of pins, and means engaging said pins for imparting a reciprocatory movement to said element.

25. A bottle-corking machine involving a bottle-feeding mechanism, a cork-feeding mechanism, a cork-driving mechanism, a cork-supplying mechanism coöperating with said cork-feeding mechanism and provided with an agitator, a reciprocatory element adapted to operate said agitator and said bottle-feeding, cork-feeding and cork-driving mechanisms, said element provided with a pair of pins, and rotatable means engaging said pins for imparting a reciprocatory movement to said element.

809,851. ROASTER. JOHN H. SCOTT, Philadelphia, Pa. Filed June 14, 1905. Serial No. 265,120.

Claim.—1. In a roaster, a suitable pan, a frame mounted to rotate therein, dippers on the frame, and spits run through the frame and having ends bent to embrace the edges of the frame.

2. In a roaster, a suitable pan, a frame mounted to rotate in the pan, dippers on the frame, spits run through the frame at the side of the axis, said spits having hooked ends to engage the frame.

3. In a roaster, a pan, a frame having end apertures, mounted to rotate therein, a handle for turning the frame, dippers on the frame, spits run through the apertures of one end of the frame and having their ends lying in the apertures of the opposite end of the frame, and hooks on the spits adapted to embrace the edges of the frame.

809,852. BALL-BEARING TROLLEY-WHEEL BUSHING. HARLOW SHARPE, Reading, Pa. Filed Apr. 4, 1905. Serial No. 253,805.

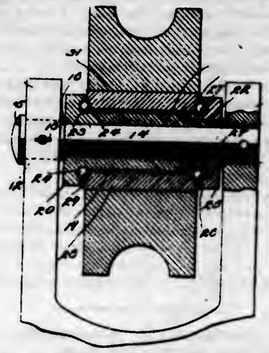

Claim.—1. The combination with a trolley-wheel rim and a trolley-harp having a cross-sectionally-angular pin engaged therein of a sleeve having a cross-sectionally-angular longitudinal passage in which the pin is snugly fitted, said sleeve comprising a major end portion a reduced middle portion and a further reduced and threaded end portion and having a ball-race in the angle between the major and intermediate portions, a bearing-cone engaged upon the threaded portion of the sleeve and having a race, a ring disposed about the sleeve and having end races in coöperative relation to the races of the sleeve and cone respectively, said ring being snugly fitted in the rim, and balls in the races.

2. A bushing for trolley-wheels comprising a sleeve comprising a major end portion, an intermediate reduced portion and a further reduced end portion provided with threads, said sleeve having a race in the angle between its major and intermediate portions, a cone engaged upon the threaded end portion of the sleeve and provided with a race, and a ring encircling the sleeve and having end races in coöperative relation to the sleeve and cone respectively and bearing-balls engaged in the races.

809,853. GAME-BOARD. ISAAC SILVERMAN, Syracuse, N. Y., assignor of one-half to James Spohn, Syracuse, N. Y. Filed Mar. 6, 1905. Serial No. 248,578.

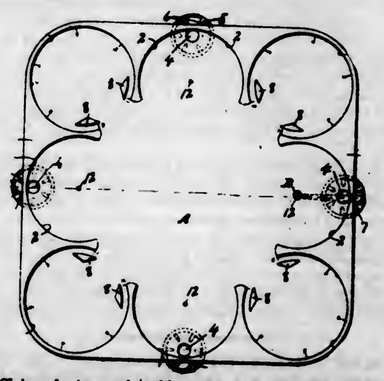

Claim.—1. A game-board having a series of circular ball-races, one of which is provided with an opening in its bottom and a receptacle underlying the opening and having a series of compartments for receiving the ball.

2. A rectangular game-board having a circular raceway in each corner and one in each side, each raceway having its side toward the center of the board open, one of the raceways having an opening in its bottom substantially midway between its ends.

3. A game-board having a raised marginal flange formed with curved ball-races having open sides facing the center of the board, some of the races being provided with pockets to receive the ball and an underlying receptacle for each pocket, each receptacle having a series of compartments to receive the ball.

4. A game-board having a raised marginal flange formed with curved ball-races having open sides facing the center of the board, some of the races being provided with pockets to receive the ball and a revoluble receptacle centrally under each pocket and having a series of radial compartments to receive the ball.

5. A game-board having a flat bottom with four sides, and a raised marginal flange extending around the sides and corners of the bottom, said flange having a series of circular recesses open at the side toward the center of the board, alternate recesses each having an opening in its bottom and its open side located in a line tangential to one side of one of the other recesses.

6. A game-board having four sides and a raised flange surrounding said sides and corners of the bottom, the corners and sides of the flange each having a circular recess open at one side toward the center of the board, the bottom of each side recess having an aperture therethrough, and revoluble receptacles underlying the apertures and each provided with a series of numbered compartments.

809,854. **SHIPPING-CRATE.** FRANK SOCHUREK, Sr., Milwaukee, Wis. Filed Oct. 31, 1904. Serial No. 230,668.

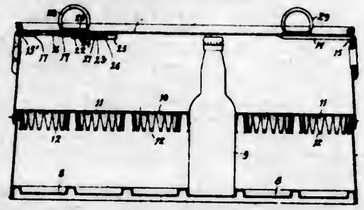

Claim.—1. In a bottle-crate, the combination with a box or receptacle consisting of an upper and a lower section, the lower section provided with a bottom piece and the upper section turned upwardly at its lower edges and extending horizontally to form an integral horizontal partition, the said partition provided with openings for the passage of the bottles therethrough, and the upper edge of the lower section of the box being fitted against and secured to the upturned bead at the lower edges of the upper section, of means within the box for supporting the lower ends of the bottles.

2. In a bottle-crate, the combination with a box or receptacle consisting of an upper and a lower section, the lower section provided with a bottom piece and the upper section turned upwardly at its lower edges and extended horizontally to form an integral horizontal partition, the said partition provided with openings for the passage therethrough of the bottles, and the bordering edges of said openings having spring-fingers depending therefrom, and the upper edge of the lower section of the box being fitted against and secured to the upturned bead at the lower edge of the upper section, of means within the box for supporting the lower ends of the bottles.

3. A bottle-crate consisting of a box or receptacle comprising an upper and a lower section, the lower section having its lower edges bent upwardly and extended horizontally to form an integral raised bottom piece adapted for supporting the lower ends of bottles, and the upper section turned upwardly at its lower edges, and extended horizontally to form an integral horizontal partition, the said partition provided with openings for the passage of the bottles, and the upper edge of the lower section of the box being fitted against and secured to the upturned bead at the lower edge of the upper section.

809,855. **MACHINE FOR SEWING LOOPED FABRICS.** HYRAM SHAW, New York, N. Y., and FRANK L. HINMAN, Stamford, Conn.; said Hinman assignor to said Shaw. Filed May 13, 1904. Serial No. 207,969.

Claim.—1. In a machine for sewing looped fabrics, the combination of a bed-plate provided with an opening, a rotatable looper-point ring guided on said bed-plate and provided on its lower surface with a plurality of gear-teeth, a driving-shaft mounted on said bed-plate within said point-ring and above said opening, a second shaft mounted in bearings beneath said bed-plate and carrying a ratchet-wheel, a gear-wheel on said second shaft meshing with the gear-teeth on said point-ring, an eccentrically-mounted pawl on said driving-shaft extending downwardly through the opening in the bed and engaging said ratchet-wheel, a needle and a looper adjacent said looper-point ring, and means for transmitting movement from said driving-shaft to said needle and looper.

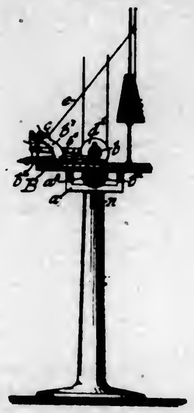

2. In a machine for sewing looped fabrics, the combination of an upright supporting-standard, a yoke supported on the same, a bed-plate mounted on the yoke, a driving-shaft journaled on the bed-plate, a looper-point ring guided in the bed-plate and provided with a circular rack at the under side, a second shaft supported in bearings at the under side of the bed-plate and passing through the yoke, a pinion on the second shaft meshing with the circular rack on the looper-point ring, means for transmitting intermittent rotary motion from the driving-shaft to the second shaft, an oscillating needle, a laterally-reciprocating looper, and mechanism supported on the bed-plate for transmitting motion to the needle and looper.

809,856. **AUGER-BIT.** JACOB STEIN, Coal Valley, Pa., assignor of one-third to Luther K. Yoder and one-fourth to Franklin A. Barnsdell, Pittsburg, Pa. Filed Oct. 7, 1905. Serial No. 281,844.

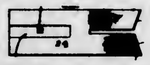

Claim.—1. The combination of an auger consisting of a blade having a straight flat end portion, which end portion is slotted centrally of its width, and with threaded openings intersecting the slot, of a blade having a longitudinally-disposed groove on each side and a transversely-disposed slot, said blade entering the slot in the auger and the grooves in the blade receiving the side walls of the slot in the auger and a screw extending through the threaded openings in the auger, and through the slot in the bit.

2. The combination with an auger having a flattened end portion, said end portion being provided with a longitudinally-disposed slot forming side arms, and a transverse opening intersecting said slot, of a bit having a longitudinally-disposed groove on each side and a transverse opening extending from the bottom of one groove to the bottom of the other groove, said bit seating in the slot in the end portion of the auger and said grooves in the bit receiving the side arms of the end portion of the auger and a fastening device passing through the opening in the end portion of the auger and the opening in the bit.

809,857. **SLIDE-GATE VALVE.** ALFRED STENWALL, Kewanee, Ill. Filed Dec. 24, 1904. Serial No. 238,206.

Claim.—1. In a slide-gate valve, the combination with the valve-body provided with a passage therethrough, of a chamber disposed at an angle to the passage and communicating therewith, rack-teeth disposed on the walls of the chamber, a valve-stem carrying an integral gear-pinion and a swiveled yoke toward its lower end, the yoke being formed with an opening therethrough, gates provided with projections on their inner faces adapted to enter the opening of the yoke, and provided along their edges with spur-teeth in mesh with the teeth of the gear-pinion on the valve-stem and with the rack-teeth disposed on the walls of the chamber, and cams on the ends of the projections of the gates, adapted to engage each other when the gates approach their seats, thus to spread the gates apart and cause them firmly to engage their seats.

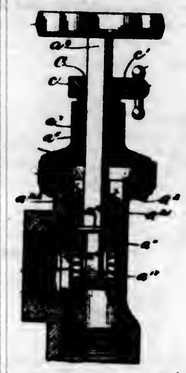

2. In a slide-gate valve, the combination with the valve-body provided with a passage therethrough, of a chamber disposed at an angle to the passage and communicating therewith; rack-teeth disposed on the walls of the chamber; a valve-stem carrying a gear-pinion; a gate-carrying member, comprising a substantially horizontal plate or bar swiveled on the valve-stem at its lower end, and a yoke depending from the plate and provided with an opening therethrough; gates provided with projections on their inner faces adapted to enter the opening of the yoke, and provided along their edges with spur-teeth in mesh with the teeth of the gear-pinion on the valve-stem and with the rack-teeth disposed on the walls of the chamber.

3. In a slide-gate valve, the combination with the valve-body provided with a passage therethrough, of a chamber disposed at an angle to the passage and communicating therewith; rack-teeth disposed on the walls of the chamber; a valve-stem carrying a gear-pinion; a gate-carrying member, comprising a substantially horizontal plate or bar swiveled on the valve-stem at its lower end, and an armed or forked yoke depending by its forks from the plate, said yoke being provided with an opening through its lower portion; gates provided with projections on their inner faces adapted to enter the opening of the yoke, and provided along their edges with spur-teeth in mesh with the teeth of the gear-pinion on the valve-stem and with the rack-teeth disposed on the walls of the chamber.

4. In a slide-gate valve, the combination with the valve-body provided with a passage therethrough, of a chamber disposed at an angle to the passage and communicating therewith; a hood secured over said chamber and formed with a barrel portion having a central bore; a valve-stem passing through the bore of the hood, depending into the chamber, and carrying a gear-pinion toward its lower end; means exerting pressure on the valve-stem whereby the same is frictionally held in any desired position of vertical adjustment; a gate-carrying member, comprising a substantially horizontal plate or bar swiveled on the valve-stem at its lower end, and an armed or forked yoke depending by its forks from the plate, said yoke being provided with an opening through its lower portion; gates provided with projections on their inner faces adapted to enter the opening of the yoke, and provided along their edges with spur-teeth in mesh with the teeth of the gear-pinion on the valve-stem and with the rack-teeth disposed on the walls of the chamber.

809,858. **WRENCH.** FRANCIS M. STRAUSS, Boulder, Colo., assignor of one-half to Lewis W. Goddard, Boulder, Colo. Filed Aug. 11, 1905. Serial No. 273,749.

Claim.—1. A wrench comprising the combination with a fixed jaw and a handle having a rack-face, of a sliding jaw longitudinally movable on said handle, a threaded arm secured to said sliding jaw, an internally-threaded collar on said threaded arm, said collar having external rings for coöperating with the rack portion of the handle, means at the free end of the arm for locking the same with the handle and a spring device carried by the handle for engaging the free end of the arm to force it away from the handle, substantially as shown and described.

2. A wrench of the character stated, comprising the combination with the fixed jaw and a handle having a rack portion, of a movable jaw longitudinally slidable on said handle, an arm pivotally secured to said slidable jaw, said arm comprising a head portion and a threaded shank, an internally-threaded collar on said threaded shank, said collar having external rings for coöperating with the rack portion of the handle, a U-shaped locking-pawl pivotally secured to the said threaded shank at its free end and adapted to lock over said handle and spring devices carried by the handle for engaging the arm to force it away from the handle, substantially as shown and described.

3. A wrench of the character stated, comprising the combination with the fixed jaw and a handle having a rack portion, of a movable jaw longitudinally slidable on said handle, an arm pivotally secured to said slidable jaw, said arm comprising a head portion and a threaded shank, an internally-threaded collar on said threaded shank, said collar having external rings for coöperating with the rack portion of the handle, a U-shaped locking-pawl pivotally secured to the said threaded shank its free end and adapted to lock over the said handle, said portion having a finger end, and a locking-spring secured to said pawl in said finger end for locking with said handle, substantially as shown and described.

4. A wrench of the class described, comprising the combination with a fixed jaw and a handle integrally secured thereto, of a movable jaw longitudinally slidable on said handle, an arm pivotally secured to the sliding jaw, said arm and said sliding jaw having co-operating shoulders, a collar longitudinally adjustable on said arm, said collar having external rings for coöperating with the rack portion of the handle, a locking-pawl pivotally secured to the free end of said arm for locking with said handle, and a spring device carried by the handle for engaging the free end of the arm to force it away from the handle, substantially as shown and described.

5. A wrench comprising the combination with a fixed jaw and a handle having a rack-face and a grooved portion, of a sliding jaw longitudinally movable on said handle, and a threaded arm pivotally secured to said sliding jaw, an internally-threaded collar on said threaded arm, said collar having external rings for coöperating with the rack portions of the handle, means at the free end of the arm for locking the same with the handle, said free end of the arm adapted to rest in the grooved portion of the handle and a spring in the grooved portion of the handle for engaging the free end of the arm to force it away from the handle substantially as shown and described.

809,859. **WATER-GAGE.** FRED J. STULP, Muskegon, Mich. Filed Dec. 17, 1904. Serial No. 237,219.

Claim.—1. A water-gage for boilers having in combination a gage-glass of greater length than the distance between the horizontal attachment-holes of the boiler, and horizontal boiler-attachment devices for said glass having bent tubular extensions branching therefrom having vertically-threaded end portions for connection with said glass, substantially as specified.

2. A water-gage for boilers having in combination a gage-glass, and horizontal boiler-attachment devices for said glass having bent tubular extensions branching therefrom having vertically-threaded end portions for connection with said glass, substantially as specified.

3. A water-gage for boilers having in combination a gage-glass, and horizontal boiler-attachment devices for said glass having bent tubular extensions branching therefrom having vertically-threaded

and portions for connection with the glass, valves, and valve-controlling stems projecting through the outer ends of said attachment devices, substantially as specified.

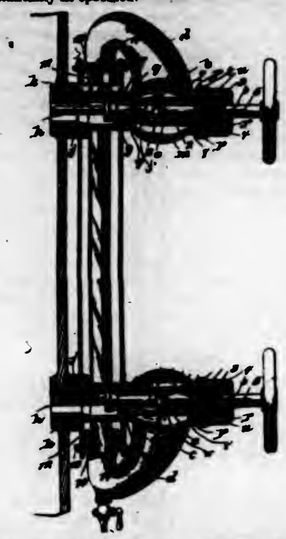

4. A water-gage for boilers having in combination the gage-glass, boiler-attachment devices having vertical portions for connection with the glass and horizontal portions for connection with the boiler, removable valve-cases in said horizontal portions, and valves in said cases, substantially as specified.

5. A water-gage having in combination the gage-glass, boiler-attachment devices therefor having horizontal threaded portions for connection with the attachment-holes of a boiler, said horizontal portions having bent tubular extensions provided with terminal vertical portions for connection with said glass, removable valve-cases in said horizontal portions, and valves in said cases, substantially as specified.

6. A water-gage for boilers, having a swell-chambered boiler-attachment device, and, in connection therewith, a removable valve-case communicating with the chamber of the attachment device, and a valve in said case having a sectional valve-stem, substantially as specified.

7. A water-gage for boilers, having a chambered boiler-attachment device, and in connection therewith a threaded removable valve-case communicating with the chamber of said attachment device, a valve in said case having a hollow threaded controlling-valve-stem section, a spring within the same, and an automatically-movable valve-stem section, engaging said spring, substantially as specified.

8. In a water-gage for boilers, an internally-threaded boiler-attachment device, a valve having an externally-threaded valve-stem and a removable internally and externally threaded valve-case engaging said attachment device and valve-stem, substantially as specified.

9. In combination with a boiler-attachment device of a water-gage having interior threads at each end of its chambered portion, of a removable tubular valve-case having at its inner end a subsurface thread, at its outer end of a wrench-seat collar, and a packing-nut thread and adjacent to said collar a superficially-projecting thread, substantially as specified.

10. A long-range water-gage for boilers consisting of horizontal boiler-attachment devices having bent extensions terminating in vertical mouth portions, a glass gage-tube connected to said extensions, threaded removable valve-cases in said attachment devices, sectional automatic stop-valves, and means for operating said valves as check-valves, substantially as specified.

809,860. **MEANS FOR MAKING MILK PRODUCTS AND RECOVERING MILK FLUIDS.** CHARLES M. TAYLOR, Jr., Philadelphia, Pa. Continuation of application Serial No. 169,504, filed June 6, 1903. This application filed July 23, 1904. Serial No. 217,669.

Claim.—1. Apparatus of the class described comprising the combination of a partition impermeable to the buttery or fatty constituents and permeable to the other constituents, a non-absorbent spacer, having drain-openings, arranged in contact with one face of the partition, and devices for receiving the non-buttery constituents, substantially as described.

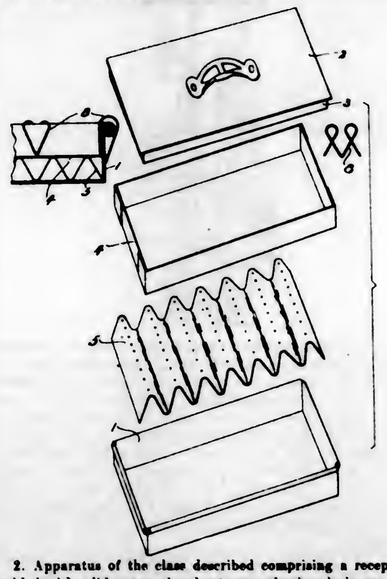

2. Apparatus of the class described comprising a receptacle provided with a lid, a non-absorbent spacer having drain-openings and arranged upon the bottom of the receptacle, and a partition arranged above the spacer and impermeable to the fatty or buttery constituents and permeable to the other constituents, substantially as described.

3. In apparatus of the class described the combination with a partition impermeable to the fatty or buttery constituents and permeable to the other constituents, of a corrugated non-absorbent sheet provided with openings or drains, arranged in contact with one face of the partition, substantially as described.

809,861. **SUCTION APPARATUS FOR DAIRY PRODUCTS.** CHARLES M. TAYLOR, Jr., Philadelphia, Pa. Continuation of application Serial No. 137,942, filed Oct. 20, 1903. This application filed July 23, 1904. Serial No. 217,669.

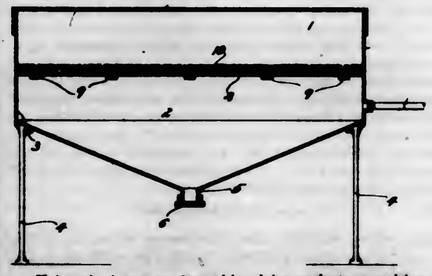

Claim.—1. Apparatus for making dairy products comprising a housing provided with a cream-chamber and a vacuum-chamber, a perforated support interposed between the two, and a layer of material carried by said perforated support and permeable by the watery and impermeable by the fatty constituents of cream, substantially as described.

2. Means for making a dairy product comprising a housing provided with a cream-chamber and a vacuum-chamber and supports interposed between the two chambers, a perforated sheet detachably carried by said supports, a layer of material superposed on said sheets and permeable by the watery and impermeable by the fatty constituents of cream, substantially as described.

3. Means for making dairy products comprising a housing provided with a lid and with a bottom sloping to a discharge-orifice, a closure for said orifice, supports for the housing, perforated supports dividing the housing into a cream-chamber above and a vacuum-chamber below, exhaust connections for the vacuum-chamber, a layer of material superposed on said supports and permeable by the watery constituents and impermeable by the fatty constituents of cream, substantially as described.

4. Apparatus for making dairy products comprising a cream-chamber, a second chamber, a perforated support between the two, a layer of material carried by said support and permeable by the watery and impermeable by the fatty constituents of cream, and means adapted to create a lower atmospheric pressure in the second chamber than in the first chamber, substantially as described.

809,862. **ADJUSTABLE STILT.** JOHN TREMBLE, Caribou, Me. Filed May 19, 1905. Serial No. 261,200.

Claim.—1. An adjustable stilt comprising an upright and a rod, means for adjustably clamping the same together, a handle carried by the rod, an adjustable foot-rest carried by the upright, substantially as specified.

2. An adjustable stilt comprising an upright and a rod, grooves throughout the entire length of the upright, clamps for securing the upright and rod together, a handle upon the rod, and an adjustable foot-rest carried by the upright, substantially as specified.

3. An adjustable stilt comprising an upright and a rod, grooves at equal distances apart throughout the entire length of the upright, a sleeve clamped in the groove nearest the upper end of the upright, the rod being adapted to slide in said sleeve, a split sleeve secured to the lower end of the rod, said split sleeve being adapted to engage any one of the grooves, a handle upon the upper end of the rod, a foot-rest adjustably secured upon the upright, substantially as specified.

4. An adjustable stilt comprising an upright and a rod, grooves at equal distances apart throughout the entire length of the upright, a block at the base of the upright, the ends of the block being curved up, a sleeve clamped in the groove nearest the upper end of the upright, the rod being adapted to slide in said sleeve, a handle upon the upper end of the said rod, a split sleeve secured to the lower end of the rod and adapted to engage any one of the grooves in the upright, means for clamping said split sleeve, a U-shaped clip adapted to engage any one of the grooves, a foot-rest carried by the said clip, substantially as specified.

809,863. **COMBINED SEEDING AND MANURE-SPREADING MACHINE.** DOMENICO TOSCANI, Rocca Imperiale, Italy. Filed June 29, 1905. Serial No. 267,559.

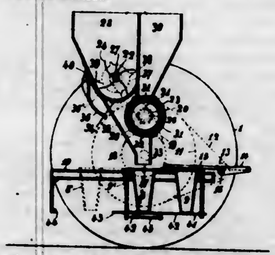

Claim.—1. A seeding and manure-spreading machine comprising a movable frame, with two lines of hoppers, made to slide under a fixed feeding-box containing the seed and the manure, a plate sliding under the lower ends of the hoppers and provided with holes through which the seed and manure fall, means for discharging the seed, and the manure from the box into the hoppers and means whereby at the end of the course of the movable frame with the hoppers, the plate with the holes is caused to stop and its holes to come in correspondence with the openings of the hoppers.

2. A seeding and manure-spreading machine, comprising a stationary box having compartments for containing the seed and manure, each having an opening in its bottom, a chamber beneath and communicating with the seed-compartment, a channel beneath and communicating with said chamber, a rotatable drum within the chamber, having cups for receiving seed from the seed-compartment and delivering them to said channel, another channel leading from the opening in the bottom of the manure-compartment to said first-named channel, and a reciprocatory frame supported beneath the first-named channel, provided with sets of hoppers disposed a suitable distance apart.

3. A seeding and manure-spreading machine, comprising a stationary box having compartments for containing the seed and manure, each having an opening in its bottom, a chamber beneath and communicating with the seed-compartment, a channel beneath and communicating with said chamber, a rotatable drum within the chamber, having cups for receiving seed from the seed-compartment and delivering them to said channel, another channel leading from the opening in the bottom of the manure compartment to said first-named channel, and a reciprocatory frame supported beneath the first-named channel, provided with sets of hoppers disposed a suitable distance apart, said hoppers being provided with a spring-controlled valve-plate associated with the outlets thereof.

809,864. **INSULATED RECEPTACLE FOR PANEL AND SWITCH BOARDS.** WILLIAM C. TRESCOTHICK, Plainville, Conn., assignor to The Trumbull Electric Manufacturing Company, Plainville, Conn., a Corporation of Connecticut. Filed Feb. 18, 1905. Serial No. 246,231.

Claim.—1. In combination with a panel or switchboard provided with circuit-terminals, a pair of contact members removably attached to the panel and connected respectively with said circuit-terminals, a tubular insulating-casing inclosing said contacts and resting upon the panel and a locking member intermediate one of said contacts and the tubular insulating member for locking the latter in position upon the panel.

2. In combination with a panel or switchboard provided with circuit-terminals, a pair of contact members removably secured to the base and connected respectively with said circuit-terminals, a tubular insulating-shell fitting over said contacts and a locking member arranged to fit within the insulating-tube and engage the contact member whereby said insulating-tube is locked in position upon the panel.

3. In combination with a panel or switchboard provided with circuit-conductors, a stud-contact connected with one of said conductors, a threaded sleeve-contact engaging the other of said conductors but insulated from the stud-contact, said parts being detachably mounted upon the panel, a shell of insulating material encircling said contacts and a locking-sleeve threaded to fit the threaded sleeve-contact and engage and lock the insulating-shell upon the panel.

4. In combination with a panel or switchboard provided with circuit-terminals, a center contact connected with one panel-terminal, a threaded sleeve-contact connected with the other panel-terminal and clamped in position on the panel by the center contact, a shell of insulating material surrounding the contacts and provided at its upper edge with a beveled surface, and a locking member having a flange overlying said beveled surface and provided with means for securing it to the threaded sleeve-contact whereby the insulating-sleeve is locked in position upon the panel.

809,865. **COMBINED TELEGRAPH AND TELEPHONE SYSTEM.** CARLO TURCHI, Ferrara, Italy. Filed Apr. 15, 1903. Serial No. 152,726.

Claim.—1. In a system of simultaneous telegraphy and telephony, the combination of a single circuit, telegraph instruments in said circuit, condensers between said circuit and the earth, a transformer having three windings one of which is inserted in series with the main circuit, a microphone-circuit connected in series with another of the windings of the transformer, a closed circuit connected

in series with the remaining winding of the transformer and divided into two branches, an iron core having the branches wound about it in opposite directions, and a telephone-receiver receiving the magnetic flux from the core.

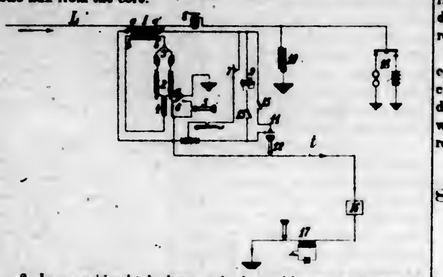

2. In a combined telephone and telegraphic system, the combination with the main wire containing the telegraphic instruments, of a receiver-circuit, and a closed induction-circuit between the main wire and the receiver-circuit receiving both the telegraphic and the telephonic frequencies provided with means for eliminating the telegraphic frequencies by causing the difference between the two frequencies to act on the receiver.

3. In a combined telephone and telegraphic system, the combination with the main wire containing the telegraphic instruments, of a closed induction-circuit receiving the impulses from the main wire and divided into two branches, a core having the branches wound about it in different directions and a telephone-receiver receiving the magnetic flux from the core.

4. In a combined telephone and telegraphic system, the combination with the main wire containing the telegraphic instruments, of a receiver-circuit, and a closed induction-circuit between the main wire and the receiver-circuit provided with means for eliminating the telegraphic frequencies, and a microphone-circuit connected with the main wire independently of the closed induction-circuit.

5. In a combined telephone and telegraphic system, the combination with the main wire containing the telegraphic instruments, of a receiver-circuit, and a closed induction-circuit between the main wire and the receiver-circuit provided with means for eliminating the telegraphic frequencies, a microphone-circuit connected with the main wire independently of the closed induction-circuit, and a relay between the receiving-circuit and the microphone-circuit.

6. In a combined telegraph and telephone system, the combination with a single main wire, of telegraph instruments in circuit with the main wire, a winding in the main wire, a closed circuit having a winding adjacent the winding of the main wire and divided into two branches, a core having the branches of the closed circuit wound about it in opposite directions, a receiver-circuit, and a winding in the receiver-circuit receiving the magnetic flux from the core of the closed circuit.

7. In a combined telegraph and telephone system, the combination with a single main wire, of telegraph instruments in circuit with the main wire, a winding in the main wire, a closed circuit having a winding adjacent the winding of the main wire and divided into two branches, a core having the branches of the closed circuit wound about it in opposite directions, a receiver-circuit, a winding in the receiver-circuit receiving the magnetic flux from the core of the closed circuit, a microphone-circuit, and a winding in the microphone-circuit adjacent the winding in the main wire.

8. In a combined telegraph and telephone system, the combination with a single main wire, of telegraph instruments in circuit with said main wire, a winding in the main wire, a closed circuit having a winding adjacent the winding of the main wire and divided into two branches, a core having the branches of the closed circuit wound about it in opposite directions, a receiver-circuit, a winding in the receiver-circuit receiving the magnetic flux from the core of the closed circuit, a microphone-circuit, a winding in the microphone-circuit adjacent the winding in the main wire, and a relay between the receiver-circuit and the microphone-circuit.

9. In a system of simultaneous telegraphy and telephony, the combination of a line-wire, telegraph instruments connected with the line-wire, condensers connecting the line-wire and a conductor, a receiver-circuit, a conductor interposed between the line-wire and the receiver-circuit divided into two branches, a core having the branches wound about it in opposite directions and from which the receiver-circuit receives magnetic flux, and a microphone-circuit connected with the line-wire independently of the two branches.

10. In a system of simultaneous telegraphy and telephony, the combination with a single line-wire containing the telegraphic instruments, a conductor divided into two branches and branched from the line-wire, a core having the branches of the branched conductor wound about it in opposite directions, and a receiving-circuit receiving magnetic flux from the core.

11. In a system of simultaneous telegraphy and telephony, the combination with the line-wire and its telephonic apparatus, of a circuit connected at one end to the line, and at the other to the earth, divided in two branches each containing condensers and inductances, wound differentially around a core from which a telephone-receiver receives inductively the magnetic flux.

809,866. MAIL-BOX. THOMAS J. R. TURNER, Taylor, Iowa. Filed Sept. 12, 1905. Serial No. 278,202.

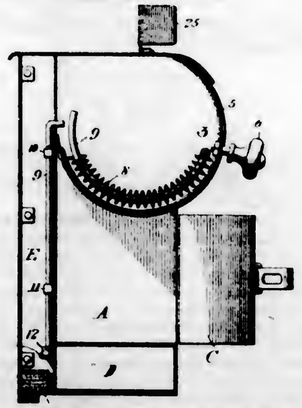

Claim.—1. A mail-box comprising a compartment for incoming mail, a closure controlling communication with said compartment, a compartment for outgoing mail adapted to be opened and closed, means for locking said compartment for outgoing mail in closed position, said closure engaging with said locking means to unlock the last-mentioned compartment when said closure is open, and means for automatically opening the last-mentioned compartment.

2. A mail-box comprising a compartment for incoming mail, a closure controlling communication with said compartment, said closure when open permitting access to the upper portion of said compartment, but extending across and closing communication with the lower portion of said compartment; a compartment for outgoing mail adapted to be opened and closed, means for locking said compartment for outgoing mail in closed position; the said closure engaging with said locking means to unlock the last-mentioned compartment when said closure is open.

3. A mail-box comprising a compartment for incoming mail, a closure controlling communication with said compartment, a door to said compartment, a compartment for outgoing mail adapted to be opened and closed, means for locking said compartment for outgoing mail in closed position; said closure engaging with said locking means to unlock the last-mentioned compartment when said closure is open.

4. A mail-box comprising a compartment for incoming mail, a closure controlling communication with said compartment, a compartment for outgoing mail adapted to be opened and closed, means for locking said closure in open position; said compartment for outgoing mail engaging the said locking means to unlock said closure when the last-mentioned compartment is closed.

5. A mail-box comprising a compartment for incoming mail, a closure controlling communication with said compartment, a compartment for outgoing mail adapted to be opened and closed, means for locking said compartment for outgoing mail in closed position, said closure engaging with said locking means to unlock the last-mentioned compartment when said closure is open, means for locking said closure in open position; said compartment for outgoing mail engaging with said closure-locking means to unlock said closure when the last-mentioned compartment is closed.

6. A mail-box comprising a compartment for incoming mail, a closure controlling communication with said compartment, a compartment for outgoing mail adapted to be opened and closed, means for locking said compartment for outgoing mail in closed position, said closure engaging with said locking means to unlock the last-mentioned compartment when said closure is open, automatic means for opening the last-mentioned compartment, and means for locking said closure in open position; said compartment for outgoing mail engaging with said locking means to unlock said closure when the last-mentioned compartment is closed.

809,867. BALING-PRESS. JOSEPH UHERBE, Greenbush, Tex. Filed Mar. 9, 1905. Serial No. 249,296.

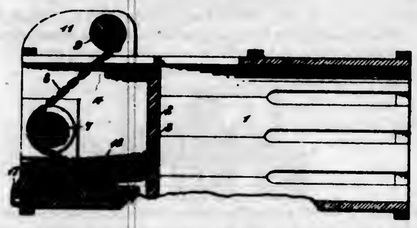

Claim.—A press of the character described, comprising a casing having a feed-opening in its upper side and having a drum mounted on its upper side near one end, and further provided in its lower side at the said end with a longitudinally-disposed guide-element; a plunger in the casing having vertical, longitudinally-disposed, parallel side walls bearing between the upper and lower sides of the casing and on opposite sides of and guided by said guide element, a pulley mounted between said parallel side walls of the plunger and carried by the latter, a flexible element engaging said pulley and connecting said drum and said guide element, and a spring connected to the casing and the plunger, said spring acting to retract the plunger, and said drum, flexible element and pulley acting to move the plunger in the opposite direction.

809,868. MARTINGALE AND CONNECTION. FRANK R. VICKERY, Jewell, Iowa, assignor of one-half to William L. Frizzell, Davenport, Iowa. Filed May 27, 1905. Serial No. 262,675.

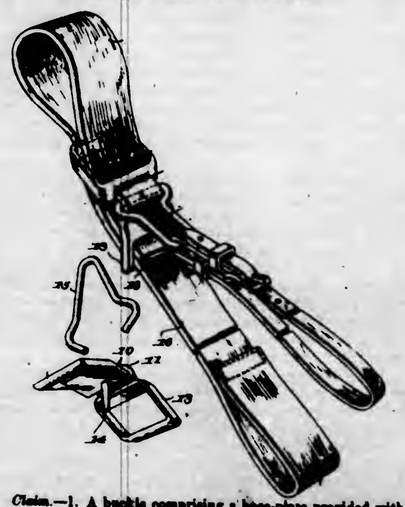

Claim.—1. A buckle comprising a base-plate provided with a flat bearing-surface and having one end thereof bent at an angle to said bearing-surface and provided with an opening forming a terminal loop, a second loop arranged at a reverse angle to the terminal loop, a yoke connecting the base-plate and the second loop, a stud projecting from the bearing-surface of the base-plate, and a link mounted for swinging movement in the connecting-yoke.

2. A buckle comprising a base-plate provided with a flat bearing-surface and having one end thereof bent at an angle to said bearing-surface and provided with an opening forming a terminal loop, a second loop inclined in the reverse direction and having one end thereof disposed in alinement with the free end of the terminal loop, a yoke connecting the second loop and the adjacent end of the base-plate and having its intermediate portion bowed, a stud projecting from the bearing-surface of the base-plate at its juncture with the yoke, and a link engaging the bowed portion of the yoke and mounted for swinging movement in said yoke.

809,869. BLEACHING FIBERS. JAMES WAKEFIELD, Cockermouth, England. Filed Sept. 15, 1904. Serial No. 224,547. (Specimens.)

Claim.—1. The process of bleaching textile yarn or fabrics of vegetable origin which consists in treating the material with a mixed solution of bleaching-powder and permanganate of potash and then with bisulfite of soda in solution, substantially as described.

2. The process of bleaching textile yarns or fabrics of vegetable origin which consists in treating the material with a mixed solution of bleaching-powder and permanganate of potash and then with an acidulated solution of a bisulfite substantially as described.

809,870. PLOW. STEPHEN S. WEAVER, Carrollton, Mo. Filed Feb. 15, 1905. Serial No. 245,733.

Claim.—1. In a plow, the combination with the share and subsoiler, the beam and handles, of two pulverizer-blades located behind the subsoiler, beams rigidly attached to said blades and extending upwardly and forwardly into connection with a part of the plow, standards connected respectively with the beams and adjustable thereon toward and from each other, a tie-rod extending between and connecting the beams, and means for adjustably connecting the standards respectively with the handles.

2. In a plow, the combination with the share and subsoiler, the beam and handles, of two pulverizer-blades located behind the subsoiler, beams rigidly attached to the pulverizer-blades and extending upwardly and thence forwardly in connection with a part of the plow, horizontally-extending lugs respectively attached to the beams, standards having at their lower ends lugs engaged with the lugs on the beams of the pulverizer-blades, means for adjustably connecting said lugs together, means for adjustably connecting the standards respectively with the handles, and a tie-rod extending between the beams of the pulverizer-blades.

809,871. PROCESS FOR PRODUCING COMPOUND INGOTS. MORRIS WEBB, Philadelphia, Pa. Filed Mar. 28, 1905. Serial No. 252,513.

Claim.—1. The process of making compound ingots of different materials in different parts, which consists in pouring molten materials of different composition into a mold side by side, and heating the materials at their point of interflowing.

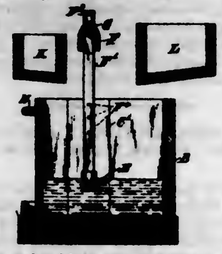

2. The process of making compound ingots of different materials in different parts, which consists in pouring molten materials of different compositions into a mold side by side, heating the materials at their point of interflowing, and cooling one of said materials in advance of the other.

3. The process of making compound ingots of different material in different parts, which consists in pouring molten materials in a mold side by side, heating the mold only at the point of interflowing of the molten materials, and maintaining a dividing-block at the point of interflowing of the material and through the disturbed portion thereof until the two materials are, though in a liquid state, without motion.

4. The process of making compound ingots of different material in different parts, which consists in pouring molten materials in a mold side by side, maintaining a dividing-block at the point of interflowing of the material and through the disturbed portion thereof until the two materials are, though in a liquid state, without motion, and heating the materials at the point of interflowing.

5. The process of making compound ingots of different materials in different parts, which consists in maintaining a heated dividing-block at the point of interflowing of the materials until the materials are without motion and then removing the dividing-block and permitting the materials to mix.

809,872. **CAR-DOOR LOCK.** WILLIAM F. WENDT, Altoona, Pa. Filed Nov. 3, 1904. Serial No. 231,260.

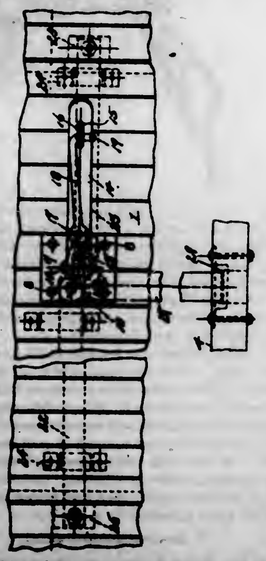

Claim.—In a car-door bolt, the combination with the car-door, and the car-door frame having oppositely-arranged side bolt-sockets, and a lower threshold bolt-socket, of a bearing fitted to the car-door, a rocker-spindle turning in said bearing and provided at its inner end with a rocking tumbler-plate having a pair of oppositely-arranged side cars and a single pendent bottom car, a pair of horizontally-operating reciprocatory locking-bars respectively pivoted at their inner ends to the opposite side cars of the tumbler-plate and having their outer ends engaging the side bolt-sockets, and a third vertical locking-bar having its upper end pivotally connected to the bottom car of the tumbler-plate and its lower end engaging the threshold bolt-socket, and a lever-hasp having a pivotal connection at one end with the outer end of the rocker-spindle and a separable fastening connection at its other end with the car-door.

809,873. **PANEL CUT-OUT AND RECEPTACLE.** FRANK T. WHEELER, Plainville, Conn., assignor to The Trumbull Electric Manufacturing Company, Plainville, Conn., a Corporation of Connecticut. Filed Feb. 18, 1905. Serial No. 246,263.

Claim.—1. In combination with a panel or switchboard provided with circuit-terminals, a pair of contact members removably secured to the base and connected respectively with said circuit-terminals, one of said contacts clamping the other in position upon the panel, and an insulating-casing inclosing said contacts removably interlocked with respect to one of them and resting against the panel.

2. In combination with a panel or switchboard provided with circuit-conductors, a stud-contact connected with one of said conductors, a threaded sleeve-contact engaging the other of said conductors and surrounding the stud-contact but insulated therefrom, said parts being detachably mounted on the panel, and a shell of insulating material encircling said contact and detachably mounted upon the panel through engagement with the tubular contact member.

3. In combination with a panel or switchboard provided with circuit-terminals, a center contact connected with one panel-terminal, a threaded sleeve-contact connected with the other panel-terminal and clamped in position on the panel by the center contact, and a shell of insulating material detachably secured upon the panel through interengagement with the tubular contact and surrounding the center and tubular contact members.

4. In combination with a panel or switchboard provided with removable circuit-terminals, a center contact connected with one panel-terminal, a threaded sleeve-contact connected with the other panel-terminal and clamped in position on the board by the center contact, and a sectional insulating-sleeve detachably secured upon the panel through interengagement of one of said sections with the tubular contact.

5. In combination with a panel or switchboard provided with circuit-terminals extending along its surface, a center contact connected with one panel-terminal, a threaded sleeve-contact connected with the other panel-terminal, said sleeve-contact and circuit-terminals being clamped with reference to each other by the center contact, a sectional insulating-casing comprising a plurality of tubular sections, the adjacent meeting edges of said sections being tapered to engage each other, and intervengaging screw-thread connections between one of said insulating-sections and the contact-sleeve for clamping the several sections in position against the panel and surrounding the tubular contact.

6. In combination with a panel or switchboard having circuit-conductors arranged upon its surface, and arranged in extension one with the other, an insulating-bushing intermediate the adjacent overlying ends of said circuit-terminals, a threaded sleeve-contact in engagement with one of said circuit-terminals and insulated from the other, a stud-contact having a screw-threaded engagement with the other of said circuit-terminals with an insulating-bushing interposed between it and the threaded sleeve-contact, said stud-contact serving to clamp the various parts in position, and an insulating-sleeve surrounding the threaded sleeve-contact and held in position upon the panel through interengagement with said threaded sleeve-contact.

7. In combination with a panel or switchboard provided with circuit-terminals, a pair of contact members removably secured to the base and connected respectively with said circuit-terminals and a sectional insulating-sleeve detachably secured upon the panel through interengagement of one of said sections with one of the contact members, the base-section of said tubular contact having openings through its side walls through which the panel-terminals extend.

809,874. **BUCKLE.** FRANK T. WHEELER, Wheatley, Ark. Filed May 26, 1905. Serial No. 262,604.

Claim.—A buckle comprising straight side pieces having their opposite ends bent upwardly in a similar manner and connected by cross-bars, said side pieces being provided with upwardly-extending lugs having openings therein, an intermediate cross-bar located adjacent the upwardly-extending lugs, and a thumb-lever pivotally mounted in the openings in the before-mentioned lugs and provided with a stud adapted to engage with the openings in a long line, the intermediate cross-bar performing the double function of holding the long line in engagement with the stud and of serving as an attaching means for a short line.

809,875. **ARTIFICIAL LIMB.** GEORGE B. WILKINS, Oshkosh, Wis. Filed June 14, 1904. Serial No. 213,182.

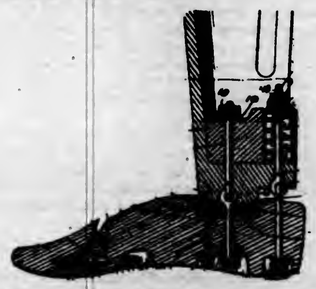

Claim.—1. An artificial limb, comprising a lower leg portion and a foot, and an ankle-joint connecting them, a heel-cord comprising bolt-sections one section of which is carried by the leg portion while the other section is rigidly secured in the heel, nuts holding the heel-section in place, a disk engaging the threads on the lower end of the lower bolt-section, the said disk being capable of adjustment to project beyond the lower face of the heel to different degrees for controlling the elevation of the heel in the shoe of the wearer.

2. An artificial limb comprising a leg-section and a foot, the said foot having a socket formed in its upper surface, an adjustable base-plate extending over the bottom of said recess, means for adjusting said plate to different angles in said socket a yielding seat covering said base-plate and within the socket, means for preventing the rotation of said seat within the socket, a beveled projection upon the end of the leg-section and resting upon the yielding seat, and means for connecting the leg-section with the foot, said means extending through the seat and base-plate.

3. An artificial limb, comprising a leg-section, and foot, the said foot having a socket formed therein, a base-plate arranged in the bottom of the socket, means extending upwardly through the foot and engaging the base-plate from beneath for tipping it in the socket, a yielding seat within the socket and resting upon the base-plate, means carried by the yielding seat and engaging the socket for preventing the turning of the said yielding seat in the socket, a beveled projection upon the end of the leg-section and resting upon the said seat and a jointed bolt for holding the leg-section in position and permitting the leg-section to rock upon the said yielding seat.

4. An artificial limb, comprising a hollow leg-section and a foot, said foot having a leg-receiving socket formed therein, an extension formed upon the leg-section, having a beveled lower end, permitting a rocking movement of said leg-section in said socket, an ankle-bolt having upper and lower sections carried by the leg and foot respectively and provided with an articulating joint at the point of contact between the leg and foot, and a heel-bolt having sections carried by the leg and foot and having an articulating joint at the said point of movement at the ankle.

5. An artificial limb, comprising a leg-section and a foot-section, a hinged toe secured to the foot-section, a transversely-extending bearing projecting from the toe, a corresponding socket-bearing being formed across the end of the foot-section, bolts for drawing the bearings together and yet permitting of their movement with relation to each other and a transversely-arranged cushion or elastic pad the foot-section having a recess for receiving the said pad and holding the same beneath the axis of movement of the toe, the said pad extending the entire length of the bearings beneath the same.

6. An artificial leg, comprising a leg portion and a foot portion, a recess being formed in the said foot portion, a tapered yielding pad mounted in said recess, a tipping plate supporting the said pad, and means for holding the leg-section upon said pad.

809,876. **ARTIFICIAL LIMB.** GEORGE B. WILKINS, Oshkosh, Wis. Filed Jan. 26, 1905. Serial No. 243,126.

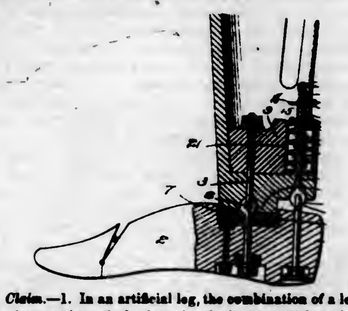

Claim.—1. In an artificial leg, the combination of a leg portion and a foot portion, of a heel-tension device, comprising a bolt, a tension-washer having its periphery extending beyond the walls of the leg portion, and means for locking the same in different positions.

2. A tension-controlling device for artificial legs, comprising a bolt, a compression-spring, an elongated washer mounted on the bolt and having at one end a spring-compressing portion, and at the other end a projecting hand-engaging portion by which the washer may be turned for adjustment, and means for holding the washer in its adjusted positions.

3. A tension-controlling device for artificial limbs, comprising a bolt for connecting the parts of the limb, a compression-spring carried by the bolt, a washer engaging threads upon the bolt and having a cylindrical body portion and end flanges, one flange engaging the spring for compressing it and the other flange forming an annular projection upon the washer by which it may be turned for adjustment.

4. An antirattling tension-adjusting device for artificial limbs, comprising a bolt, a tension-spring, a washer for compressing the spring and a cushioning material carried by the said washer and engaging surrounding parts of the artificial limb to prevent the rattling of the parts.

5. A tension-controlling device for the articulating joint of an artificial leg, comprising a bolt connecting the parts, a spring surrounding the bolt and fitting in a socket in one of the parts, the said bolt having threads upon its ends, an elongated washer mounted on the threaded bolt and projecting into the said socket at one end for maintaining a proper tension upon the spring, the other end of the washer projecting outside the socket and formed with roughened edges whereby it may be easily turned by hand.

6. A tension device for the joints of artificial limbs, comprising a tension-spring, a washer engaging the spring, a detent engaging the washer for holding it in its adjusted positions, and means for holding the detent normally in contact with the washer.

7. A tension-controlling device for the joints of artificial limbs, comprising a spring, a compressing-washer having an operating-flange, a locking-washer mounted adjacent to the flange and means carried thereby for gripping the edge of the flange on the compressing-washer.

8. A tension-controlling device for the joints of artificial limbs, comprising a tension-spring, a compressing-washer therefor, a locking-washer capable of engaging the tension-washer and holding it against turning, a spring for holding the locking-washer against the tension-washer and means for adjusting the tension of the said latter spring.

9. A tension-controlling device for the articulating joints of artificial limbs, comprising a spring, a tension-bolt passing through the

same having a threaded end, a herf or groove formed in the said bolt, a spring-compressing washer mounted upon the bolt, a locking-washer also mounted upon the bolt and having a detent engaging the groove in said bolt, and means carried by the said washer and capable of gripping the spring-compressing washer for preventing its turning upon the bolt.

10. A tension-controlling device for the joints of artifical limbs, comprising a coiled spring, a bolt passing through the same, having a threaded end and a groove formed therein, a washer for compressing the spring mounted upon the bolt, a locking-washer also mounted upon the bolt provided with an inwardly-extending detent or finger engaging the groove and a movable gripping-arm mounted upon the locking-washer and capable of engaging the spring-compressing washer for preventing its turning.

11. A tension device for the heel-bolt of an artificial leg, comprising a bolt, a tension-spring surrounding the same, a compressing-washer mounted on the said bolt and engaging the spring, the bolt being provided with an elongated groove, a locking-washer provided with means engaging said groove, a pivoted arm carried by the locking-washer and provided with gripping means for engaging the spring-compressing washer, the arm being also capable of being turned out of engagement with the compressing-washer when it is to be adjusted and means for actuating the locking-washer in engagement with the compressing-washer.

12. A tension device for the heels of artificial legs, comprising a jointed heel-bolt, the said leg being provided with a socket surrounding the same, a spring mounted in the socket and surrounding the bolt, an antirattling washer engaging the bolt, one end of the washer being provided with yielding packing material projecting from the periphery thereof, the packed end of such washer being made to just fit the bore of the recess in the leg, a projecting washer-operating flange having notches in its periphery by which it may be turned for adjusting the washer, and locking means mounted on the bolt and capable of engaging the said notches for preventing the turning of the spring-compressing washer.

13. A tension device for artificial-limb heel-bolts, comprising a bolt, a tension-spring surrounding the same, an elongated washer, the washer being formed with an elongated sleeve portion engaging the bolt, and annular flanges at each end thereof, a washer of yielding material secured to one of said flanges, one or more plates for holding the washer in position against said flange, and means engaging the other flange for preventing the turning of the compressing-washer upon the bolt after it has been adjusted.

14. A tension device for the heels of artificial legs, comprising a heel-bolt having a threaded and grooved end portion, a compression-spring surrounding the bolt, a washer engaging the spring, the said washer having end flanges separated upon the body portion of the washer, one of said washers engaging the spring while the other projects beyond the periphery of the leg, projections formed upon the said projecting flange, a locking-washer mounted upon the bolt having a detent engaging the groove therein, a spring-controlled arm carried by the locking-washer, a detent projecting from the arm and capable of engaging the projections on the flange of the compressing-washer, an adjusted collar mounted upon the bolt, and a spring interposed between the collar and the locking-washer for holding it normally against the spring-compressing washer.

809,877. **BINDER ATTACHMENT.** ALBERT WILLIAMS, Joliet, Mont. Filed June 30, 1905. Serial No. 268,892.

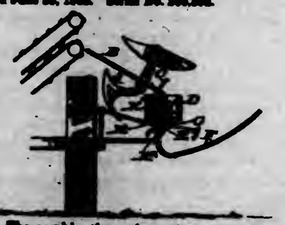

Claim.—1. The combination substantially as herein described of the binder-deck, the angle-bar extending beneath the lower edge thereof and having an upper horizontal wing, and a depending vertical wing, bundle-carrier fingers below the said angle-bar, the saddles or packing-blocks recessed in their lower edges to receive the horizontal wing of the angle-bar and extending laterally beyond the said angle-bar to form a broad rest or seat for the box, the box on said saddles, and the bolts extending upwardly through the saddles and the bottom of the box and secured within the latter and having their lower ends hooked to engage beneath the upright wing of the angle-bar, substantially as set forth.

2. The combination with the deck and the bundle-carrier fingers, of the angle-bar below the deck, the box above the angle-bar, and the bolts connected with the box and having a hooked engagement with the angle-bar, substantially as set forth.

3. The combination of the deck, the angle-bar below the deck, the saddles or packing-blocks recessed in their lower faces to fit the angle-bar, the box, and means for securing the box, saddles and angle-bar together, substantially as set forth.

4. In a seed-saving attachment for binders, the combination of the deck, a box, and saddles or packing-blocks adapted to fit below the box, and having their lower faces recessed to fit the finger-supporting bar and means for supporting such bar below the deck, substantially as set forth.

5. A seed-saving attachment for binders consisting in combination with the deck of the box below the deck, the saddles or packing-blocks fitted beneath the box and recessed in their lower faces and having vertical openings adjacent to said recess, the finger-supporting bar and the bolts for securing the saddles or packing-blocks, said bolts having their lower ends hooked into engagement with the finger-supporting bar, substantially as set forth.

6. The combination with the deck, of the angle-bar below the deck, the box between the angle-bar and deck and the bolts connected with the box and hooked at their lower ends into engagement with the angle-bar, substantially as set forth.

7. The combination in a harvester with the deck, the box below the deck, the saddles or packing-blocks extending transversely beneath the box and the harvester-frame having the angle-bar upon which said saddles or packing-blocks rest, of the bolts connected with the box and hooked at their lower ends into engagement with the angle-bar, substantially as set forth.

8. The combination of the deck, the angle-bar below the deck, the saddles or packing-blocks upon the angle-bar, the box upon the saddles and below the deck and the bolts extending upwardly through the saddles and the bottom of the packing-box and having their lower ends hooked for engagement with the angle-bar, substantially as set forth.

809,878. **STARTING DEVICE FOR ELECTRIC MOTORS.** HOWARD B. WILSON, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Mar. 10, 1904. Serial No. 197,484.

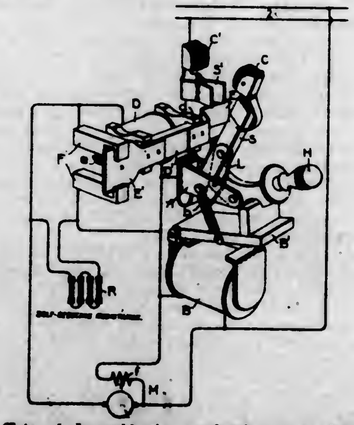

Claim.—1. In combination, an electric motor, and means for starting the same comprising a self-reducing resistance connected in the motor-circuit, and automatic means for cutting said resistance out of circuit when its ohmic value is reduced to a predetermined amount.

2. In combination, an electric motor, and means for starting the same comprising a self-reducing resistance connected in the motor-circuit, a switch-contact arranged to cut said resistance out of circuit, and automatic means for actuating said switch-contact when the potential drop in said resistance falls to a predetermined amount.

3. In combination, an electric motor, and means for starting the same comprising a self-reducing resistance connected in the motor-circuit, a magnet-winding connected in a circuit in which the current varies when the ohmic value of said resistance changes, and a switch-contact controlled by said magnet-winding and arranged to cut said resistance out of circuit.

4. The combination of an electric motor, and means for starting the same comprising a self-reducing resistance connected in the motor-circuit, a magnet-winding connected in a circuit in which the current decreases when the ohmic value of said resistance decreases, and a switch-contact controlled by said winding and arranged to cut said resistance out of circuit.

5. The combination of an electric motor, and means for starting the same comprising a self-reducing resistance connected in the motor-circuit, a magnet-winding connected in shunt to said resistance, and a switch-contact controlled by said magnet-winding and arranged to short-circuit said resistance when the potential drop in said resistance falls to a predetermined value.

6. The combination of an electric motor, and means for starting the same comprising a self-reducing resistance connected in the motor-circuit, a switch-contact adapted to short-circuit said resistance, means tending to move said contact to short-circuit said resistance, and a magnet-winding connected in shunt to said resistance and adapted to restrain said switch-contact until the potential drop in said resistance falls to a predetermined value.

7. In a motor-starting device, a self-reducing resistance, a switch-contact arranged when moved to short-circuit said resistance, a switch adapted to close the motor-circuit and arranged to put a strain upon said contact, and a magnet connected in shunt to said resistance and adapted to restrain said contact until the potential drop in said resistance falls to a predetermined value.

8. In combination, an electric motor, and means for starting the same comprising a magnetite resistance connected in the motor-circuit, and automatic means for short-circuiting said resistance when the potential drop therein falls to a predetermined value.

9. In combination, an electric motor, and means for starting the same comprising a magnetite resistance connected in the motor-circuit, a switch-contact arranged to cut said resistance out of circuit, and automatic means for actuating said switch-contact when the resistance of said magnetite falls to a predetermined value.

10. A motor-starting device comprising a resistance body having a negative temperature coefficient, means for including it in circuit on starting, and automatic means for cutting it out after the motor has started.

11. A motor-starting device comprising a resistance unit of conducting-oxid, a switch, and means for cutting out the unit when it has been heated a determinate degree.

12. In a starting-switch for electric motors, a movable switch member adapted to establish when moved the running connections for the motor, a magnet-winding adapted to restrain said member at starting, and means independent of the speed of the motor for impressing an automatically-decreasing voltage on said magnet.

13. In a starting-switch for electric motors, a movable switch member adapted to establish when moved the running connections for the motor, a magnet-winding adapted to restrain said member at starting, and means independent of the speed of the motor for impressing an automatically-decreasing voltage on said magnet, said switch member being arranged to short-circuit said magnet when moved to running position.

809,879. **ANCHOR-POST.** RICHARD WELSH, Grand Junction, Iowa. Filed Jan. 30, 1905. Serial No. 243,893.

Claim.—1. In an anchor-post, a body portion, a shaft rotatably mounted in the body portion, arms pivotally mounted near the lower end of said shaft and capable of being moved from a position inside of the post to a position partially outside of the post as the shaft is rotated.

2. In a device of the class described, the combination of a body portion, a shaft mounted in the body portion and capable of vertical movement therein, arms pivotally mounted near the lower end of said shaft and connected therewith so arranged that as the shaft is moved in one direction the arms may be forced from a position inside of the post to a position partially outside of the post, and as the shaft is moved in the opposite direction, the arms may be withdrawn to a position inside of the post.

3. In a device of the class described, the combination of a body portion, a shaft rotatably mounted in the body portion and capable of vertical movement therein, arms pivotally mounted near the lower end of said shaft and connected therewith, so arranged that as the shaft is rotated in one direction the arms may be forced from a position inside of the post to a position partially outside of the post, and as the shaft is rotated in the opposite direction the arms may be withdrawn to a position inside of the post, and means for rotating said shaft.

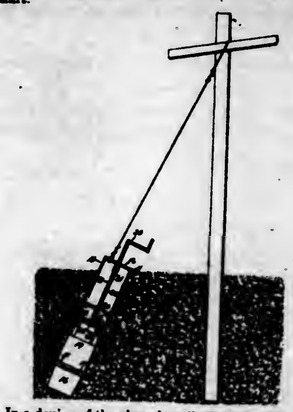

4. In a device of the class described, the combination of a body portion having a V-shaped lower end, two openings extending through the lower part of said body portion and adjacent to said V-shaped portion, a supporting-arm, an anchor-support extending across the interior of said body portion, having a screw-threaded opening therein, a screw-threaded shaft mounted in said anchor-support and designed to coact with the screw-threaded portion thereof, anchor-arms pivotally mounted near the lower end of said shaft and connected therewith designed to work in the openings in the lower end of said body portion as the shaft is rotated.

5. In a device of the class described, the combination of a body portion having a V-shaped lower end and two openings extending from the exterior to the interior of said body portion, anchor-arms designed to work in said openings mounted on the interior of said body portion, a screw-threaded shaft, means for supporting said screw-threaded shaft on the interior of said body portion, and means for rotatably and pivotally connecting the lower end of said shaft with said arms, for the purposes stated.

809,880. **FLEXIBLE COUPLING.** TOM A. WOOLLEDGE and ERNEST A. WARD, Birmingham, England. Filed Apr. 24, 1905. Serial No. 257,269.

Claim.—A flexible coupling comprising two closely-coiled members, one of said members terminating in a closely-coiled expansible shank having a portion of its length substantially conoidal in contour and the remaining portion cylindrical, said cylindrical portion of said shank adapted to extend in the other of said members so as to interlock therewith, thereby connecting the members together.

809,881. **VEHICLE-WHEEL.** WALTER WRIGHT, Glasgow, Scotland, assignor to S. Stevenson & Company, Glasgow, Scotland. Filed Feb. 20, 1905. Serial No. 246,020.

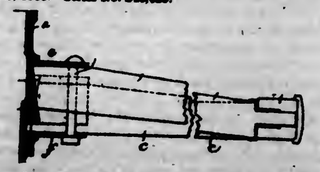

Claim.—In a wheel, the combination of a hub provided with a plurality of radial wedge-shaped pockets having inclined bottom surfaces, flanges surrounding the hub and forming the sides of said

pockets, a spoke in each of said pockets, each spoke having

the lower end of said spoke, a bushing-piece interposed

pockets, a spoke in each of said pockets, packing-pieces interposed alternately between the sides of the spokes and the flanges, and means for securing the flanges together.

809,883. CLAMP. JOHN WHEELEY, Philadelphia, Pa., assignor to Joseph B. Wrigley, Gettysville, N. J. Filed Aug. 31, 1905. Serial No. 276,659.

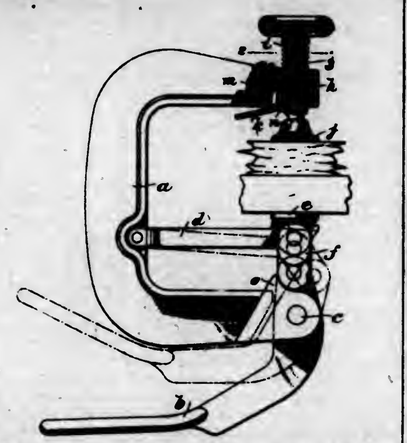

Claim.—1. In a clamp, the combination, with an adjustable clamping-jaw, of a second clamping-jaw, a pivoted lever carrying the second jaw, a handle-lever pivoted between its ends, and a link connecting one end of the handle-lever with the second clamping-jaw.

2. In a clamp, the combination with the yoke, of an adjusting-screw at one end thereof, a clamping-jaw movable by said screw, a lever pivoted to the yoke, a clamping-jaw carried by the lever, a toggle between the second jaw and the other end of the yoke, and means to operate the toggle.

3. In a clamp, the combination with the yoke, of an adjusting-screw at one end thereof, a clamping-jaw movable by said screw, a lever pivoted to the yoke, a clamping-jaw carried by said lever, a handle pivoted near its end to the other end of the yoke, and a link connecting the end of the handle with the clamping-jaw lever.

4. In a clamp, the combination with the yoke, of a clamping-jaw carried at one end of the yoke, a lever pivoted on the yoke, a second clamping-jaw carried by said lever, a handle pivoted on the other end of the yoke, and a link connecting the handle and the clamping-jaw lever.

5. In a clamp, the combination, with the yoke, of a clamping-jaw carried at one end of the yoke, a second clamping-jaw, a handle pivoted near one end at the other end of the yoke, a link connecting the end of said handle and the second clamping-jaw, a pivoted lever connecting the second jaw and yoke, and a lug on the handle limiting the movement of the toggle.

6. In a clamp, the combination with the yoke, of an adjusting-screw at one end thereof, a clamping-jaw carried at the end of the screw, a spring-latch on the yoke adapted to engage a groove in the screw to hold the latter to its adjusted position, a second clamping-jaw, and means, connecting the second clamping-jaw with the yoke, adapted to move the second clamping-jaw toward the first clamping-jaw into a definite position with respect to the yoke.

7. In a clamp, the combination with the yoke, of an adjusting-screw at one end thereof, a clamping-jaw carried at the end of the screw, a spring-latch on the yoke adapted to engage a groove in the screw to hold the latter to its adjusted position, a lever pivoted on the yoke, a second clamping-jaw carried by said lever, a handle pivoted at the other end of the yoke, and a link connecting said handle and clamping-jaw lever.

8. In a clamp, the combination with the yoke of a threaded nut at one end thereof, an adjusting-screw, having longitudinal grooves, working in said nut, a clamping-jaw jointed to the end of said screw, a spring-latch extending into a slot in the nut, a projection on said latch adapted to engage either of said grooves, an arm on the latch extending without said slot whereby the latch may be operated to submit said projection, a lever pivoted to said yoke, a second clamping-jaw on the free end of said lever, a handle pivoted near one end to the other end of the yoke, a link connecting said clamping-jaw lever and handle end, and a lug on the yoke adapted to engage the joint between said link and handle when the latter is operated to move the second jaw to clamping position.

809,883. BUTTON. EMMEL ESCHBACHER, Scottdale, Pa. Filed Aug. 1, 1905. Serial No. 272,269.

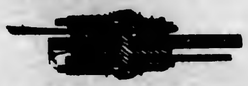

Claim.—1. In combination, a button-plate provided with oppositely-disposed shanks formed with heads, means for securing the button-plate to a garment, and spring-actuated locking members coöperating with the shanks and held in place by the heads.

2. In combination, a button-plate provided with oppositely-disposed shanks formed with heads, a holding-plate formed with prongs adapted to pass through a garment and engage the button-plate, a locking member formed with an opening and a spring-lock to engage one of the shanks, and a second locking member formed with an opening and a spring-lock to engage the other shank.

3. In a button, the combination with a button-plate provided with oppositely-disposed headed shanks, means securing the button-plate to a garment, a locking-plate formed with an opening and an adjacent spring-actuated lock which coöperates with one shank, and a second locking-plate formed with an opening and an adjacent spring-actuated lock which coöperates with the second shank.

809,884. SHUTTER BOWER AND FASTENER. IDA EISENBRAUN, CHARLES F. EISENBRAUN, and HARRY C. EISENBRAUN, Frederick, Md. Filed May 11, 1905. Serial No. 259,916.

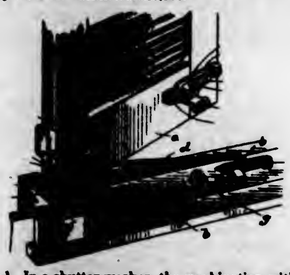

Claim.—1. In a shutter-worker, the combination with a brace-rod having a pivotal end provided with a stud directed toward the other end of the rod, of a double-branch bracket having parallel arms connected at their ends by a bridge portion, and provided with apertures having offsets oblique toward the base of the bracket, substantially as specified.

2. In a shutter-worker, the combination with a bracket having separate arms provided with apertures having oblique offsets, of a pull-plate having a forward projecting lower end provided with a catch-hole having beveled front and rear edges, and a brace-rod having pivotal and distal arms, substantially as specified.

3. In a shutter-worker, a pull-plate having a middle attachment portion, a lower forward projecting portion having a bevel-edge catch-hole, and a forward and upward projecting pull portion having a wide elongated aperture, substantially as specified.

4. In a shutter-worker, the combination with a brace-rod having an integral downward-directed pivotal end provided with a stud near its lower end directed toward the other end of said rod, of a double-branch reversible bracket provided with bearings for said pivotal end having alined offsets directed toward the base of said bracket, said stud being normally out of line with said offsets and prevented from coming in line therewith by the interference of the shutter with the brace-rod, substantially as specified.

809,885. IMPACT-FUSE. LOUIS ARENDSOTH, Rittershaid, near Hasa-on-the-Ruhr, Germany, assignor to Fried. Krupp Aktiengesellschaft, Hasa-on-the-Ruhr, Germany. Filed May 26, 1905. Serial No. 262,493.

Claim.—1. In an impact-fuse, the combination with a longitudinally-movable primer-bolt, of centrifugally-operated securing means movable transversely of the bolt to release said bolt, and means projecting into the path of travel of said securing means and constructed to be moved out of the path of said securing means, when said securing means is moved by centrifugal force, to permit the securing means to unlock the primer-bolt, and to move again into the path of the securing means to prevent the said securing means again locking the primer-bolt.

2. The combination with the centrifugally-operated securing means of a fuse, of means moved by the securing means during its outward travel and adapted to enter the path of travel of the securing means after the passage of said securing means to prevent the return thereof.

3. The combination with the centrifugally-operated securing device of a fuse, of means projecting into the path of travel of the movable part of said securing device and holding said part in the secured position; said means being adapted to be displaced by the movable part of the securing device to permit the outward movement thereof and rebounding to secure said part in its outer position.

809,886. HORSE-COLLAR. CLARENCE L. ALLEN, Atlanta, Ga., assignor to Cotton Collar Company, Atlanta, Ga., a Corporation of Georgia. Filed Nov. 24, 1902. Serial No. 132,660.

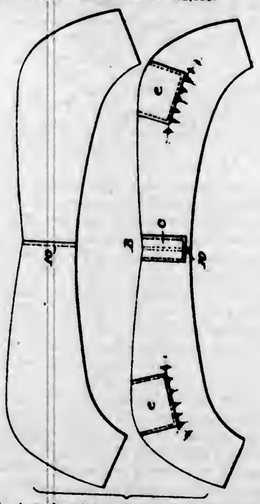

Claim.—1. A casing for a horse-collar section consisting of a tube or bag of fabric having its edges connected by inside seams with a line of puckers at one side of the casing, and a line of stitches parallel to one edge of the casing and extending through said puckers and separating the casing into rim and body portions, substantially as set forth.

2. The combination in a horse-collar section, of a casing of textile fabric consisting of blanks with the edges meeting and sewed together at the inside and divided into hame and body portions by a line of stitching at the outside, substantially as set forth.

3. The combination in a horse-collar section, of a casing of textile fabric consisting of blanks with the edges meeting and sewed together by seams at the inside and divided into hame and body portions by a line of stitching at the outside, and with a line of puckers through which the said line of stitching extends, substantially as set forth.

4. A casing for a horse-collar consisting of two curved strips of fabric joined at the edges with the seams at the inside, one strip wider than the other and with a seam puckering a portion thereof, and the two strips connected by an outside row of stitches extending parallel to the folded edge of the wider strip and through the puckered portion, substantially as set forth.

5. A collar-casing consisting of two pieces of fabric of different widths, one having a series of puckers, the two connected together at the edges and by a line of stitches extending through the puckers, forming a main portion and a rim portion, substantially as set forth.

809,887. SELF-CENTERING DIVIDERS. CHRISTIAN ARNDT, Latrobe, Pa. Filed July 21, 1905. Serial No. 270,063.

Claim.—1. An instrument of the class described consisting of a head having a vertically-disposed opening formed therein, a pin slidably mounted in said opening, legs pivotally connected to said head, the upper ends of said legs having substantially segment-shaped gears adapted to mesh with one another, a segment-shaped bar having a contracted screw-threaded end passing through one of said legs, a knob screwing on said end and formed with a recess, a spring seating in said recess and surrounding said contracted end, said bar extending through the other of said legs, arms pivotally connected to said legs, a sleeve slidably mounted upon said pin and connected to said arms, springs mounted on said pin above and below said sleeve means to lock said segment-shaped bar in engagement with one of said legs, and means to lock said sleeve in engagement with said pin, substantially as described.

2. An instrument of the class described consisting of a head having a vertically-disposed opening formed therein, a pin slidably mounted in said opening, legs pivotally connected to said head, the upper ends of said legs having substantially segment-shaped gears meshing with one another, a segment-shaped bar connected to one of said legs and extending through the other of said legs, arms pivotally connected to said legs, means carried by said pin to limit the movement of the sleeve thereon a sleeve slidably mounted on said pin and connected to said arms, and means to lock said sleeve in engagement with said pin.

809,888. WHEEL FOR PLANTERS. GEORGE C. AVERY, Louisville, Ky., assignor to B. F. Avery & Sons, Louisville, Ky., a Corporation of Kentucky. Filed Nov. 17, 1905. Serial No. 287,894.

Claim.—1. A ground-wheel for planters, comprising a pair of radially-corrugated, interlocking sections, and means for securing said sections together.

2. A ground-wheel for planters, comprising interlocking, radially-corrugated sections, an axle extending through said sections, means for fixedly securing said sections and axle against independent, rotary movement, and means for securing said sections upon said axle.

3. A wheel for planters, comprising a pair of interlocking, concavo-convexed, radially-corrugated sections, and an axle extending through said sections.

4. A wheel for planters, comprising a pair of sections or disks, each section provided with a corrugated edge, and an axle connecting said sections.

5. A wheel, comprising an axle provided with a lug, a pair of sections carried by said axle, one of said sections provided with a

notch, said lug seated within said notch, the lug and notch constituting means for preventing independent rotary movement of said notched section and axle, and interlocking means formed upon the edges of said sections and adapted to prevent independent rotary movement of the same.

6. A wheel, comprising concave-convexed sections, each section provided with a corrugated edge, the edges of said sections interlocking, thereby preventing independent movement of said sections, an axle extending through said sections, and means formed upon said axle and one of said sections and being capable of preventing independent rotary movement of said axle and section.

7. A wheel, comprising dished sections, the sections in engagement at their outer edge, locking means formed upon the engaging faces of said sections and being capable of preventing independent movement thereof, a transverse member connecting said sections, and locking means formed upon said member and one of said sections and adapted to prevent independent, rotary movement of said section and member.

8. A wheel, comprising an axle, sections carried by said axle, the sections in engagement at their outer edge, locking means formed upon the engaging portions of said sections, and locking means formed upon said axle and one of said sections.

9. A wheel, comprising sections, the sections engaging at their outer edges, locking means formed upon the engaging portions of said sections, each section provided with a central aperture and a notch, an axle extending through the apertured portions of said sections, and a lug formed upon said axle and secured within the notch of one of the sections.

10. A wheel, comprising sections, corrugations formed upon each of said sections, an axle engaging said sections, and means for fixedly securing said sections to said axle.

11. A ground-wheel for planters, comprising dished or concave-convexed sections, said sections in engagement at their outer edge, a corrugation formed upon each of said sections, an axle engaging said sections, and means for fixedly securing said sections to said axle.

12. A wheel, comprising concave-convexed sections, said wheel provided with a roughened periphery, and means for locking said sections against independent, rotary movement.

13. A wheel, for planters, comprising a hollow body provided with outwardly-bulged or convexed sides, and radial corrugations formed upon one of said sides.

14. A wheel for planters, comprising a hollow body provided with outwardly-bulged or convexed corrugated sides.

15. A wheel for planters, comprising a hollow body provided with outwardly-bulged or convexed sides, and a roughened surface formed upon said body.

809,889. CHURN. DUE AYERS and JAMES D. SLOAN, Mount Vernon, Mo. Filed Aug. 17, 1905. Serial No. 274,622.

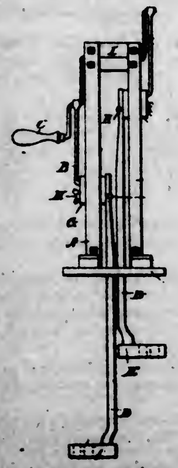

Claim.—1. The combination, with the dashers and vertically-movable dasher-rods, of the upright supports, the head-blocks between the upper ends thereof to which they are firmly bolted, the cranks on the outside of the uprights, provided with a straight part having its bearing in the said head-blocks, the dasher-rods vertically movable inside of the uprights, the pitmen connected to the cranks, and slide-blocks on the uprights through the intervention of which the pitmen are connected to the dasher-rods.

2. The combination, with the dashers and vertically-movable dasher-rods, of the upright supports, the head-blocks between the upper ends thereof to which they are firmly bolted, the cranks on the outside of the uprights, provided with a straight part having its bearing in the said head-blocks, the dasher-rods vertically movable inside of the uprights, the pitmen, each pivoted at its upper end to the crank, two-part slides adapted to move on the uprights—one part on the outside and the other part on the inside—a clamping-bolt connecting the two parts of each slide and securing the upper end of the dasher-rod to the inner part of the slide, the lower end of the pitman being pivoted to the outer part of the slide.

809,890. MEANS FOR SETTING AND SPOTTING TENPINS. JOHN C. BACKUS, Smithport, Pa. Filed Apr. 6, 1905. Serial No. 254,202.

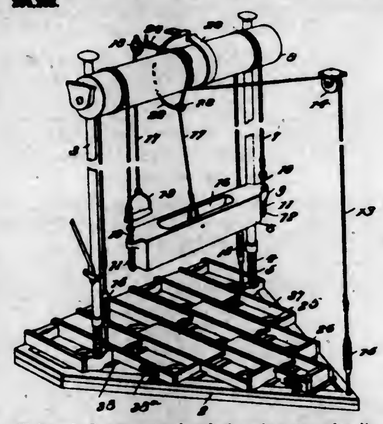

Claim.—1. In apparatus for placing pins upon a bowling-alley and in combination with a carrier for receiving the pins and movable toward the bed of the alley to deposit the pins thereon and movable away from the bed of the alley so as to obviate obstruction thereof, a brake mechanism coöperating with said carrier for controlling its movements.

2. In apparatus for placing pins upon a bowling-alley and in combination with a carrier for receiving the pins and movable toward the bed of the alley to deposit the pins thereon and movable away from the bed of the alley so as to obviate obstruction thereof, a counterbalance for the carrier, and a brake for controlling the movements of the counterbalanced carrier.

3. In apparatus for placing pins upon a bowling-alley and in combination with a carrier for receiving the pins and movable toward the bed of the alley to deposit the pins thereon and movable away from the bed of the alley so as to obviate obstruction thereof, a counterbalance for the carrier, a coöperating brake, and means for simultaneously controlling the counterbalance and brake.

4. In apparatus for placing pins upon a bowling-alley and in combination with a carrier for receiving the pins and movable toward the bed of the alley to deposit the pins thereon and movable away from the bed of the alley so as to obviate obstruction thereof, a brake mechanism coöperating with the carrier, a counterbalance, and operating means for the counterbalance adapted to effect release of the brake mechanism when actuated to relieve the carrier wholly or in part of the influence of its counterbalance.

5. In apparatus for placing pins upon a bowling-alley and in combination with a carrier for receiving the pins and movable toward the bed of the alley to deposit the pins thereon and movable away from the bed of the alley so as to obviate obstruction thereof, a brake mechanism embodying an operating-lever, a counterbalance, and an operating-cord for said counterbalance adapted to positively actuate said operating-lever when drawn upon to overcome the force of the counterbalance wholly or in part so as to simultaneously effect release of the brake and permit free movement of the carrier.

6. In apparatus for placing pins upon a bowling-alley and in combination with a carrier for receiving the pins and movable toward the bed of the alley to deposit the pins thereon and movable away from the bed of the alley so as to obviate obstruction thereof, a brake mechanism comprising an operating-lever having a crank portion and a curved arm, a counterbalance for the carrier, and an operating-cord for the counterbalance having a portion deflected by the brake-operating lever and adapted to actuate the latter and effect release of the brake when said operating-cord is pulled upon.

7. In apparatus for placing pins upon a bowling-alley and in combination with a carrier for receiving the pins and movable toward the bed of the alley to deposit the pins thereon and movable away from the bed of the alley so as to obviate obstruction thereof, a brake mechanism coöperating with the carrier and comprising an operating-lever having a crank portion and a curved arm provided with an eye, a counterbalance, and an operating-cord connected with the counterbalance and passed through the eye of the brake-operating lever for actuating the latter simultaneously with the operation of the counterbalance.

8. In apparatus for placing pins upon a bowling-alley and in combination with a carrier for receiving the pins and movable toward the bed of the alley to deposit the pins thereon and movable away from the bed of the alley to as to obviate obstruction thereof, a roller, a counterbalance, connecting means between the counterbalance, roller and carrier, a brake coöperating with said roller, and an operating-cord for simultaneously actuating the counterbalance and brake.

9. In apparatus for placing pins upon a bowling-alley and in combination with a carrier for receiving the pins and movable toward the bed of the alley to deposit the pins thereon and movable away from the bed of the alley so as to obviate obstruction thereof, a roller, a counterbalance, connections between the counterbalance, roller and carrier, a brake coöperating with said roller, a brake-operating lever, and an operating-cord connected with said counterbalance and passed around said roller and normally deflected between the roller and counterbalance by the brake-operating lever, said operating-cord when actuated serving to simultaneously release the brake and relieve the carrier wholly or in part of the influence of the counterbalance.

10. In apparatus for placing pins upon a bowling-alley and in combination with a carrier for receiving the pins and movable toward the bed of the alley to deposit the pins thereon and movable away from the bed of the alley so as to obviate obstruction thereof, a roller, a counterbalance, connections between the roller, counterbalance and carrier, a brake-band encircling the roller, a brake-operating lever having a crank portion in connection with one end of said brake-band and having its opposite end portion curved to extend around the roller, and an operating-cord connected to the counterbalance and normally deflected by said brake-operating lever and adapted to simultaneously release the brake and relieve the carrier wholly of the influence of its counterbalance

11. In apparatus for setting the pins of bowling-alleys, the combination of a carrier provided with pin-openings, pin-guides arranged about the pin-openings, a pin-shifter, and means for positively transmitting pressure from the pin-shifter to the pin-guides to effect separation or spreading of the latter.

12. In apparatus for setting pins of bowling-alleys, the combination of a carrier provided with pin-openings, pin-guides coöperating with the pin-openings for properly positioning the pins, a pin-shifter to effect delivery of the pins upon the alley, and means for transmitting pressure from the pin-shifter to the pin-guides loosely mounted in the carrier.

13. In apparatus for setting pins of bowling-alleys, the combination of a carrier provided with pin-openings, pin-guides coöperating with the pin-openings for properly positioning the pins, a pin-shifter to effect delivery of the pins upon the alley, and pressure-pins loosely mounted in the carrier and supported by the pin-guides and adapted to spread the latter when the pin-shifter is resting upon the carrier.

14. In apparatus for setting the pins of bowling-alleys, the combination of a carrier provided with pin-openings, pin-guides coöperating with the respective pin-openings, and spring connections forming the sole supporting means for the pin-guides and having positive attachment with the pin-guides and carrier and normally tending to yieldingly press coöperating pin-guides together for controlling and properly positioning the pins.

15. In apparatus for setting the pins of bowling-alleys, the combination of a carrier provided with pin-openings, pin-guides coöperating with the respective pin-openings, spring-arms attached to and projected from the pin-guides, and other arms having connection with the first-mentioned spring-arms and rigidly attached to the carrier.

16. In apparatus for setting the pins of bowling-alleys, the combination of a carrier provided with pin-openings, pin-guides coöperating with the respective pin-openings, spring-arms attached to and projected from the pin-guides, and other arms having connection with the first-mentioned spring-arms and rigidly attached to the carrier, the arms attached to the carrier having pendent portions embracing outer sides of the first-mentioned arms to prevent lateral displacement of the pin-guides.

17. In apparatus for setting the pins of bowling-alleys, the combination of a carrier provided with pin-openings, pin-guides coöperating with the respective pin-openings, spring-arms attached to and projected from the pin-guides, and other arms having connection with the first-mentioned spring-arms and rigidly attached to the carrier, the arms attached to the carrier having pendent portions embracing outer sides of the first-mentioned arms to prevent lateral displacement of the pin-guides, said pendent members being connected at their lower ends by means of a cross-bar which serves to limit the movement of the pin-guides.

18. In apparatus for setting the pins of bowling-alleys, the combination of a carrier provided with pin-openings, pin-guides coöperating with the pin-openings to effect correct positioning of the pins, spring-arms 29 attached to the pin-guides, other arms 31 attached to the carrier, spring-coils connecting the arms 29 and 31, members 33 pendent from the arms 31 and embracing the arms 29, and a cross-bar 32 connecting the lower ends of the members 33, the several parts of the connections between the pin-guides and carrier being of integral formation.

19. In apparatus for setting the pins of bowling-alleys, the combination of a carrier provided with pin-openings, and coöperating pin-guides loosely connected with the carrier and movable into and out of contact with the pins, said pin-guides being concave upon their inner or engaging faces and having their ends inclined and in parallel planes, the concavity of each pin-guide being such with reference to the pins as to admit of the lower portion of a guide touching a side of the pin at a central point, and the upper portion touching a side of the pin at two points, the latter corresponding approximately to the intersection of the engaging face with opposite sides of the pin-guide.

20. In apparatus for setting pins of bowling-alleys, the combination of a carrier adapted to receive the pins and movable toward and from the plane of the alley to deposit the pins thereon and admit of its unobstructed use, a pin-shifter mounted upon the carrier and adapted to receive a combined vertical and longitudinal movement, operating means pendent from the pin-shifter for actuating the latter as the carrier reaches the limit of its movement toward the plane of the alley preliminary to discharging the pins thereon, said operating means consisting of a block, a telescopic guide connection between said block and carrier, and an operating-bar between the pin-shifter and block.

21. In apparatus for setting pins of bowling-alleys, the combination of a carrier adapted to receive the pins and movable toward and from the plane of the alley to deposit the pins thereon and admit of its unobstructed use, a pin-shifter mounted upon the carrier and adapted to receive a combined vertical and longitudinal movement, operating means pendent from the pin-shifter for actuating the latter as the carrier reaches the limit of its movement toward the plane of the alley preliminary to discharging the pins thereon, said operating means consisting of a block, a telescopic guide connection between said block and carrier, and an operating-bar between the pin-shifter and block, and jointed to each to admit of said bar having a swinging movement.

22. In apparatus for setting pins of bowling-alleys, the combination of a carrier adapted to receive the pins and movable toward and from the plane of the alley to deposit the pins thereon and admit of its unobstructed use, a pin-shifter mounted upon the carrier and adapted to receive a combined vertical and longitudinal movement, operating means pendent from the pin-shifter for actuating the latter as the carrier reaches the limit of its movement toward the plane of the alley preliminary to discharging the pins thereon, said operating means consisting of a block, a telescopic guide connection between said shifter and block, said operating-bar having pivotal connection with the pin-shifter and link connection with said block and adapted to rock upon the latter.

23. In apparatus for setting pins upon bowling-alleys, the combination of a carrier provided with pin-openings and movable toward and from the plane of the alley to deposit the pins thereon and

admit of its unobstructed use, and reducers for each of said pin-openings to admit of adapting the apparatus for different sizes of pins.

24. In apparatus for setting pins upon bowling-alleys, the combination of a carrier provided with pin-openings and movable toward and from the plane of the alley to deposit the pins thereon and admit of its unobstructed use, and reducers for each of said pin-openings to admit of adapting the apparatus for different sizes of pins, said reducer having pendent pin-guides.

25. In apparatus for setting pins upon bowling-alleys, the combination of a carrier provided with pin-openings and movable toward and from the plane of the alley to deposit the pins thereon and admit of its unobstructed use, and reducers for each of said pin-openings to admit of adapting the apparatus for different sizes of pins, said reducer having pendent guides and a vertical abutment or stop.

26. In apparatus for setting pins upon bowling-alleys, the combination of a carrier provided with pin-openings and movable toward and from the plane of the alley to deposit the pins thereon and admit of its unobstructed use, and reducers for each of said pin-openings to admit of adapting the apparatus for different sizes of pins, said reducer having pendent spaced pin-guides and a vertical abutment or stop.

809,891. **INK-WELL.** STEPHEN G. BALDWIN, Marion, Ind. Filed Mar. 30, 1905. Serial No. 253,226.

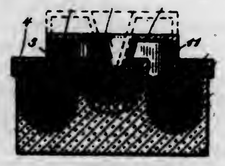

Claim.—1. An ink-well comprising a chamber to receive a yielding mass, and an ink-receptacle, a cover having a pen-opening extending down into said ink-receptacle, and a portion thereof extending within said yielding mass, said yielding mass being of such character as to support the said cover at any desired height, said cover being constructed to compress the air under the same and force the ink up into said pen-opening and hold the ink up in said pen-opening, substantially as described.

2. An ink-well comprising a chamber to receive a sealing material and an ink-receptacle, a cover having a pen-opening extending into said ink-receptacle, and a portion thereof extending into said sealing material, said cover being held within said sealing material at any desired height to compress the air under said cover to force the ink up into said pen-opening and to hold the ink up in said pen-opening, substantially as described.

809,893. **VIOLET DYE AND PROCESS OF MAKING SAME.** OSCAR BALLY and MAX H. ISLER, Mannheim, Germany, assignors to Badische Anilin & Soda Fabrik, Ludwigshafen-on-the-Rhine, Germany, a Corporation. Filed Jan. 21, 1905. Serial No. 242,571.

Claim.—1. The process for the production of anthracene coloring-matters by treating with caustic alkali a hereinbefore-defined benzanthrone compound.

2. The process for the production of anthracene coloring-matters by treating with caustic alkali a hereinbefore-defined benzanthrone compound, obtainable by condensing together a beta-amido-anthraquinon body and glycerin.

3. The process for the production of anthracene coloring-matters by treating with caustic alkali a hereinbefore-defined benzanthrone compound, obtainable by condensing together beta-amido-anthraquinon and glycerin.

4. As new articles of manufacture, the anthracene coloring-matters which can be obtained by treating with caustic alkali a benzanthrone, which coloring-matters dissolve in concentrated sulfuric acid yielding from green to violet solutions, and which dissolve in alkaline hydrosulfite yielding from blue to reddish-brown vats which dye vegetable fiber substantively giving red-blue to green-blue shades.

5. As new articles of manufacture, the anthracene coloring-matters which can be obtained by treating with caustic alkali a benzanthrone obtainable by condensing together a beta-amido-anthraquinon body and glycerin, which coloring-matters dissolve in concentrated sulfuric acid yielding from green to blue solutions, and which dissolve in alkaline hydrosulfite yielding blue vats which dye vegetable fiber substantially giving violet shades.

6. As a new article of manufacture, the anthracene coloring-matter which can be obtained by treating with caustic alkali the benzanthrone obtainable by condensing together beta-amido-anthraquinon and glycerin, which coloring-matter dissolves in concentrated sulfuric acid yielding a blue solution and which dissolves in alkaline hydrosulfite yielding a blue vat, which dyes vegetable fiber substantially giving violet shades.

809,893. **ANTHRACENE COMPOUND AND PROCESS OF MAKING SAME.** OSCAR BALLY, Mannheim, and HUGO WOLFF, Ludwigshafen-on-the-Rhine, Germany, assignors to Badische Anilin & Soda Fabrik, Ludwigshafen-on-the-Rhine, Germany, a Corporation. Filed Oct. 10, 1905. Serial No. 282,184.

Claim.—1. The process for the production of anthracene compounds by condensing a hereinbefore-defined alpha-amidoanthraquinon body with glycerin.

2. The process for the production of anthracene compounds by condensing a hereinbefore-defined alpha-amidoanthraquinon body with glycerin in the presence of sulfuric acid.

3. The process for the production of anthracene compound by condensing alpha-amidoanthraquinon with glycerin in the presence of sulfuric acid.

4. As new articles of manufacture the anthracene compounds obtainable by condensing a hereinbefore-defined alpha-amidoanthraquinon body with glycerin, which compounds contain a benzanthrone grouping and which, when dry, consist of brown powders which are soluble in concentrated sulfuric acid yielding yellow to brown solutions with green fluorescence and which on melting with caustic alkali yield violet-blue coloring-matters.

5. As a new article of manufacture the anthracene compound obtainable by condensing alpha-amidoanthraquinon with glycerin, which compound contains a benzanthrone grouping and which, when dry, consists of a brown powder which is soluble in concentrated sulfuric acid yielding a yellowish-brown solution with a green fluorescence and which on melting with caustic alkali yields a violet-blue coloring-matter.

809,894. **ANTHRACENE COMPOUND AND PROCESS OF MAKING SAME.** OSCAR BALLY, Mannheim, and HUGO WOLFF, Ludwigshafen-on-the-Rhine, Germany, assignors to Badische Anilin & Soda Fabrik, Ludwigshafen-on-the-Rhine, Germany, a Corporation. Filed Oct. 11, 1905. Serial No. 282,260.

Claim.—1. The process for the production of anthracene compounds by condensing a hereinbefore-defined halogen anthracene body with glycerin.

2. The process for the production of anthracene compounds by condensing a hereinbefore-defined halogen anthracene body with glycerin in the presence of sulfuric acid.

3. The process for the production of anthracene compounds by condensing beta-chlor-anthraquinon with glycerin in the presence of sulfuric acid.

4. As new articles of manufacture the anthracene compounds obtainable by condensing a hereinbefore-defined halogen anthracene body with glycerin, which compounds contain a benzanthrone grouping and also contain halogen, and which, when dry, consists of from green to yellow powders, which are soluble in concentrated sulfuric acid yielding reddish-brown to reddish-yellow fluorescent solutions, and which on melting with caustic alkali yield coloring-matters which from an alkali hydrosulfite vat dye vegetable fiber substantively.

5. As a new article of manufacture the anthracene compound obtainable by condensing beta-chlor-anthraquinon with glycerin, which compound contains a benzanthrone grouping and also contains chlorin and which, when dry, consists of a green powder which is soluble in concentrated sulfuric acid yielding a reddish-brown solution with a yellowish-brown fluorescence and which on melting with caustic alkali yields a blue-violet coloring-matter which from an alkaline hydrosulfite vat dyes vegetable fiber substantively.

809,895. **FAUCET.** JOSEPH G. BRADLEY, Baltimore, Md. Continuation of application Serial No. 178,103, filed Sept. 20, 1903. This application filed Mar. 30, 1905. Serial No. 253,911.

Claim.—1. In a device of the class described, the combination of a body having a valve-seat, a valve arranged to engage the seat at the pressure side thereof, a horizontal shaft mounted on the body at

the opposite side of the valve-seat and connected with the valve, an upwardly-extending weighted arm connected with the shaft at one end and arranged at an inclination when the valve is open, whereby it is adapted to close the valve automatically, and stops arranged on the body in the path of the arm for limiting the movement thereof in opening and closing.

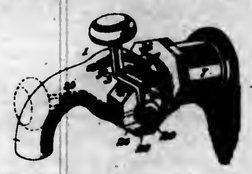

2. In a device of the class described, the combination of a body having a seat, a valve arranged to engage the seat at the pressure side thereof, a horizontal shaft mounted on the body at the opposite side of the valve-seat and connected with the valve, a weighted arm connected with the shaft and arranged to swing upwardly to open the valve and movable downwardly automatically by its own weight to close the same, the extent of movement of the valve corresponding with the movement of the weighted arm, whereby the valve will be properly seated when the arm is at the limit of its downward movement, and stops for limiting the movement of the weighted arm in opening and closing the valve.

809,896. **LIQUID-SOAP HOLDER.** EDWARD A. BENNER, Philadelphia, Pa. Filed Sept. 21, 1904. Renewed Dec. 6, 1905. Serial No. 290,607.

Claim.—A soap-holder consisting of a body having a discharge-nozzle at bottom, a valve for said nozzle, an elbow-shaped lever carrying said valve, a spring pressing said lever for causing the closing of said valve and means on the holder forming the bearing for said lever and means on the holder forming the connection of said spring, the outer limb of said lever projecting outwardly and downwardly from the angle of the lever and forming a guard for said spring.

809,897. **BURIAL-VAULT.** JOSEPH P. BENNING, Otway, Ohio. Filed Apr. 17, 1905. Serial No. 255,669.

Claim.—In a burial-vault, the combination with the base formed of layers of concrete, and metal interposed between the concrete, one of said layers having a groove therein; of a metal hood, oppositely-extending channeled portions at the edges of the hood and adapted to be seated within the groove, concrete layers upon opposite faces of the hood and supported by the channeled portions.

809,898. **PUZZLE.** JOHN BERGAN, Pittsburg, Pa. Filed Apr. 20, 1904. Serial No. 204,022.

Claim.—1. A puzzle having a channel, in combination with two or more movable objects adapted to traverse the same, said channel having a chasm in its bottom in which one of said objects may lodge so as to enable the other object or objects to pass over it, said channel being of sufficient depth at each point to retain said object or objects therein during each passage.

2. A puzzle having a circuitous covered channel, in combination with two or more movable objects adapted to traverse the same, said channel being of a width and of a depth less than that of two of said objects and having a chasm in its bottom in which one of said objects may lodge so as to enable the other object or objects to pass over it.

3. In a puzzle, a base-piece provided with a circuitous channel, a cover for said channel, two or more balls distinguishable from each other adapted to traverse the channel, said channel being of a width and of a depth less than the diameter of two balls, and having a chasm in which one of said balls may lodge so as to enable the other ball or balls to pass over it.

4. A puzzle having a circuitous channel provided with corrugated portions and a series of chasms in its bottom.

5. A puzzle having a circuitous covered channel, a series of balls distinguishable from each other and adapted to traverse the channel, said channel being of a width and of a depth less than the diameter of two balls and having corrugated portions and a series of chasms in its bottom, one only of said chasms being of sufficient depth to accommodate one of the balls in such manner that the other ball or balls may pass over it.

809,899. **CAGE FOR MINE AND ELEVATOR SHAFTS.** WILLIAM BLACK, Rices Landing, Pa. Filed Feb. 6, 1905. Serial No. 244,451.

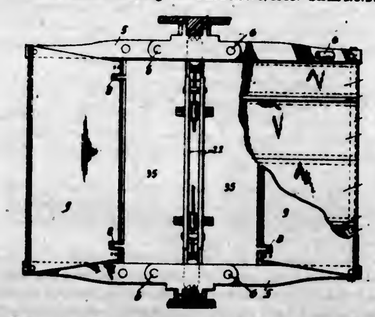

Claim.—1. A cage of the type described comprising sills, flooring supported by said sills, said flooring consisting of channel-shaped plates and braces extending through the depending edges of said plates, through said sills a track supported on said flooring, bolsters from which the sills are supported and vertical and oblique braces connecting said bolsters with said sills.

2. A cage of the type described, consisting of parallel sills, transverse braces securing said sills together, a floor composed of channel-shaped plates, said braces extending through said plates, tracks mounted on said floor, bolsters arranged above the sills, vertical braces connecting said bolsters to said sills, transverse braces connecting said bolsters together, and plates hinged to said last-named transverse braces and constituting the roof of the cage.

3. A cage of the type described, comprising metallic sills, transverse braces connecting said sills, a metallic flooring mounted on said braces, metallic bolsters, vertical braces, angularly-disposed braces connecting said sills with said bolsters, transverse braces connecting said bolsters together and plates hinged to said last-named braces and constituting the top of the cage.

4. The combination in an elevator-cage of sills, channel-shaped plates arranged between said sills having depending flanges, braces extending between and passing through the sills and passing through the depending flanges of said channel-plates, and tracks arranged between said channel-plates, said braces extending through said tracks.

809,900. PROCESS OF MAKING KETONES. HENRY S. BLAIR-SMITH, Mount Vernon, N. Y. Original application filed July 27, 1903, Serial No. 167,627. Divided and this application filed May 9, 1905. Serial No. 259,621.

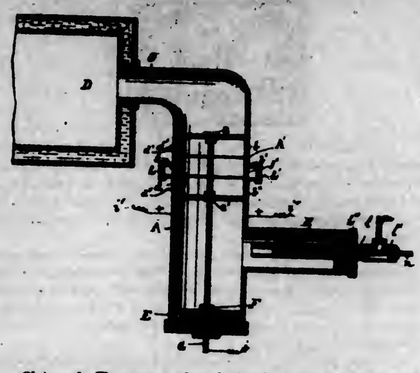

Claim.—1. The process of producing ketones which consists in exposing carbon acid in a volatile or gaseous state to the action of hydrocarbon and heat.

2. The process of producing ketones which consists in performing a reaction between a carbon acid and hydrocarbon at a temperature below the dissociating-point of the ketone produced.

3. The process of producing ketones which consists in conveying a carbon acid and hydrocarbon in contact with a heated surface and collecting and condensing the product.

4. The process of producing ketones which consists in performing a reaction between a carbon acid and a hydrocarbon and removing excess of heat during transformation.

5. The process of producing ketones which consists in inducing a reaction between a carbon acid and hydrocarbon and abstracting the excess heat therefrom thus preventing elevation of temperature above the dissociating-point of the product desired.

6. The process of producing acetone which consists in exposing acetic acid to the action of methane and heat.

7. The process of making ketones which consists in oxidizing hydrocarbon by the action of a carbon acid while maintaining the temperature below the dissociating-point of the ketone by refrigeration.

8. The process of making ketones which consists in heating a composition containing a carbon acid and hydrocarbon until the hydrocarbon becomes oxidized and abstracting the excess of heat evolved during reaction by refrigeration.

9. The process of making ketones which consists in heating a composition containing a carbon acid and hydrocarbon to a temperature at which a part of the oxygen content of the acid has an affinity for the hydrogen of the hydrocarbon to the exclusion of carbon and maintaining the reaction while regulating the temperature by refrigeration.

10. The process of making ketones, which consists in exposing a substance capable of yielding a carbon oxy-acid anhydrid to the action of heat, to the action of hydrocarbon and heat.

11. The process of making ketones, which consists in exposing a substance capable of yielding carbonic anhydrid (CO_2) by the action of heat, to the action of hydrocarbon and heat.

809,901. CONCRETE-BLOCK MACHINE. JOHN A. BLAKE and JAY KENNEDY, Wabash, Ind. Filed Apr. 3, 1905. Serial No. 253,204.

Claim.—1. A machine for pressing concrete blocks, comprising a base having its beams extended at one end, an upright mounted on each extension, a strut-bar between said uprights and the base and provided with box-loops forming guides for the presser-bars, loops on the base in line with those on the strut-bar, the presser-heads operating one above the other and having their carrier-bars movable longitudinally in the aligned loops of the base and strut-bar, a rocker between said carrier-bars, links connecting said rocker with the carrier-bars, a handle for operating the rocker, a revolving carrier comprising a block having a base portion, top beams, a central block from which said top beams diverge, the mold-boxes carried by said top beams and comprising the base-frames, the inner and outer sections hinged at their lower edges and having openings for the core-blocks, the end sections hinged to the side sections, lock devices for holding the box closed, the boxes being movable successively by the turning of the carrier into register with the press-heads, the core-blocks, the slide-bars connected with said blocks, means for operating the blocks, a plate on the base, ball-bearings between said plate and the base of the carrier-shaft and a tie-rod holding said shaft to the base-plate, substantially as and for the purposes set forth.

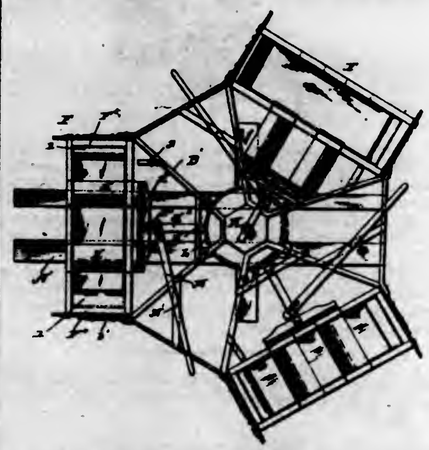

2. In a machine substantially as described the combination with a revolving carrier having a series of mold-boxes and upper and lower press-heads between which the mold-boxes may be successively presented by the revolution of the carrier, of means for operating the opposite press-heads simultaneously and reciprocally whereby the object may be pressed without being moved out of its plane of movement, core-blocks movable transversely through their respective mold-boxes and means in connection with the revolving carrier for operating the irrespective core-blocks, substantially as set forth.

3. The combination of a main frame and series of mold-boxes having hinged sides and ends, a carrier revolving on the main frame and supporting the series of mold-boxes, upper and lower press-heads between which the mold-boxes may be successively presented core-blocks movable through the hinged sides of their respective boxes and means for operating the press-heads reciprocally, substantially as set forth.

4. The combination with pressing devices and a revolving carrier having a circular series of mold-boxes, of core-blocks movable transversely through their respective mold-boxes and individual operating devices for the several core-blocks, such devices and core-blocks being movable with their respective mold-boxes, substantially as set forth.

5. The combination with the press-box and its movable bottom plate, of the press-head arranged to operate said bottom plate, a pallet or platen arranged to be lifted by the bottom plate and means for supporting each pallet or platen when raised, substantially as set forth.

6. The combination in an apparatus, substantially as described, of pressing devices, a revolving carrier having a series of mold-boxes arranged to be presented successively to the pressing devices, core-blocks movable transversely across their respective mold-boxes and means supported by the carrier for operating their respective core-blocks, substantially as set forth.

7. In an apparatus substantially as described, a press-box having a movable bottom plate arranged for operation by the press-head, pivoted dogs engaged by said bottom plate and a pallet or platen arranged to be lifted by the bottom plate and supported in raised position by the dogs.

8. In an apparatus, substantially as described, a revolving carrier, a series of mold-boxes thereon, core-blocks for each of said boxes and means supported adjacent to the boxes for operating their respective core-blocks, substantially as set forth.

9. The combination in an apparatus, substantially as described of the upper and lower pressing devices, the press-boxes having a movable bottom plate arranged for operation by the lower pressing devices, a pallet or platen arranged to be lifted by the bottom plate, and dogs arranged for engagement by said bottom plate and adapted to support the pallet or platen in raised position, substantially as set forth.

10. The combination in an apparatus substantially as described, of a main frame having a base portion and an upright thereon, a strut-bar extending between the base and upright and provided with loops forming guides for the carrier-bars of the press-heads, loops on the base in alinement with those on the strut-bar, the press-heads having their carrier-bars movable in the aligned loops, means for operating said press-heads reciprocally, the mold-boxes and a movable carrier for same, substantially as set forth.

809,902. MACHINE FOR THE MANUFACTURE OF GLASSWARE. CHARLES H. BLUE, Wheeling, W. Va. Filed Mar. 30, 1903. Serial No. 149,785.

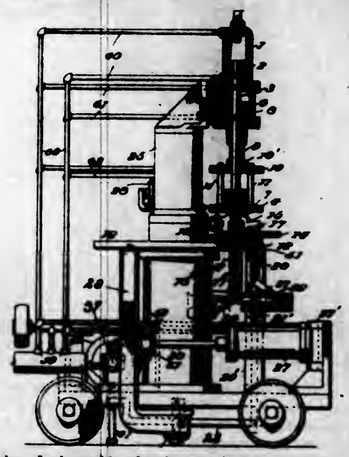

Claim.—1. A machine for the manufacture of glassware, including a movable mold-carrier, a plurality of mold-sections carried thereby, a vertically-movable press-bottom for each mold, a blow-bottom for each mold-section, means for moving the press-bottom up into operative position while the carrier is moving, and means for dropping the press-bottom while the carrier is stationary at the pressing-point.

2. A machine for the manufacture of glassware, including a movable mold-carrier, a plurality of mold-sections carried thereby, a vertically-movable bottom for each mold, means for moving the bottom into operative position while the mold-carrier is moving and means for depressing the bottom out of operative position while the carrier is stationary at the pressing-point.

3. A machine for the manufacture of glassware, including an intermittently-movable mold-carrier, a plurality of mold-sections carried thereby, a vertically-movable bottom for said mold-sections, a movable plunger and a movable plunger-ring for said mold-sections, and a continuously-rotating shaft provided with counting means controlling the movements of said movable members.

4. A machine for the manufacture of glassware, including an intermittently-movable mold-carrier, a plurality of mold-sections carried by the mold-carrier, a member for moving the carrier intermittently, movable bottoms for said mold-sections, a movable plunger and a movable plunger-ring coacting with said mold-sections, pressure-cylinders operatively connected with the carrier movable member the plunger and the plunger-ring, valves controlling the pressure to said cylinders, and a continuously-rotating shaft controlling said valves.

5. A machine for the manufacture of glassware including a movable mold-carrier, a mold carried thereby, a vertically-movable bottom for said mold, means for elevating the bottom while the carrier is moving, a movable support for said bottom when it is elevated, and means for moving said support to depress said bottom while the mold-carrier is stationary.

6. A machine for the manufacture of glassware, including a movable mold-carrier, a mold carried thereby, a vertically-movable bottom for said mold, means for elevating the press-bottom to operative position, a laterally-movable support for said bottom when elevated, and means for moving the support laterally and permitting the bottom to drop.

7. A machine for the manufacture of glassware, including a movable mold-carrier, a mold carried thereby, a vertically-movable press-bottom for said mold, a blow-bottom therefor, an incline adapted to move the press-bottom into operation during the movement of the said carrier, and means for dropping said press-bottom after the pressing operation.

8. A machine for the manufacture of glassware, including a movable mold-carrier, a mold carried thereby, a vertically-movable press-bottom for said mold, a blow-bottom therefor, an incline adapted to move the press-bottom into operative position by the movement of said carrier, a movable support at the upper end of the incline for said press-bottom, and means for moving said support and causing said press-bottom to drop after the pressing operation.

9. A machine for the manufacture of glassware, including an intermittently-movable mold-carrier, a plurality of molds carried thereby, a pressure-actuated mechanism moving said mold-carrier, a pressure-actuated vertically-movable plunger and blow-head, a vertically and a horizontally movable bottom for said molds actuated in sequence by the movement of said mold-carrier, valves for the said pressure-actuated mechanism, and a member controlling said valves in relative sequence to the said coöperating mechanism as described.

10. A machine for the manufacture of glassware, including an intermittently-movable mold-carrier, a plurality of molds carried thereby, a pressure-actuated mechanism moving said mold-carrier, pressure-actuated press and blow mechanisms a lock for the said mold-carriers when at rest, valves controlling the pressure for said pressure-actuated mechanism, and means controlling the valves in sequence as described and actuating the lock to release the carrier after the operation of the pressing and blowing and in advance of the movement of the carrier.

11. A machine for the manufacture of glassware, including an intermittently-movable mold-carrier, a plurality of molds carried thereby, a plunger adapted to coact with said molds, mechanisms for actuating the carrier and the plunger, a movable bottom actuated by the movement of the carrier, and a controlling member directly controlling the movement of the carrier and the plunger, and through the movement of the carrier controlling the movement of the bottom.

809,903. DREDGER-SLEEVE. WILLIAM F. BOWERS, San Francisco, Cal. Filed Apr. 28, 1905. Serial No. 257,286.

Claim.—A flexible pipe connection comprising two cylindrical rubber portions adapted to fit the pipe-sections to be connected and a single rubber bulbous enlargement intermediate of said cylindrical portions and integral therewith, substantially as described.

809,904. EMERGENCY ELECTRIC-LIGHTING ARRANGEMENT FOR THEATERS AND SIMILAR BUILDINGS. FRITZ BEARS, Berlin, Germany. Filed Mar. 21, 1905. Serial No. 251,267.

Claim.—1. An electric emergency-lighting system for buildings, consisting of several sources of energy located in the basement of a building, a plurality of circuits extending therefrom from floor to floor throughout the building, said circuits being removed from and being independent of each other throughout their length, and lamps connected in said circuits in the respective stages or floors of the building, substantially as described.

2. An electric emergency-lighting system for buildings, consisting of several sources of energy located in the basement of a building, a plurality of circuits extending therefrom in vertical lines from floor to floor throughout the building, said vertical circuits being removed from and being independent of each other throughout their vertical length, and lamps connected in said circuits in the respective stages or floors of the building, substantially as described.

3. An electric emergency-lighting system for buildings, consisting of several sources of energy located in the basement of a building, a plurality of circuits extending therefrom from floor to floor throughout the building, said circuits being removed from and be-

ing independent of each other throughout their length, and double lamps connected in said circuits in the respective floors of the building, substantially as described.

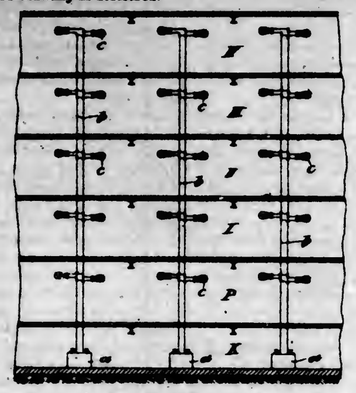

809,905. OVERSHOE-FASTENER. WATSON O. BROOKWAY, Threeoaks, Mich. Filed June 19, 1905. Serial No. 265,982.

Claim.—1. The herein-described clamp having means to attach it to a shoe and comprising the stationary jaw member 4 having the offset portion at its center, the swinging jaw member having its inner end pivotally connected to the offset portion of the stationary jaw member, and the spring-plate 10 pivotally connected to the upper end of the stationary jaw member for lateral movement to enable the free end of the spring-plate to bear on the free end of the swinging jaw member, to press the latter toward the stationary jaw member, or to be disengaged from the said swinging jaw member.

2. The herein-described clamp comprising a socket member for attachment to a shoe, a resilient head for engagement with the socket member, a pivot projecting outwardly from said head, the stationary jaw member secured on the pivot and having the offset portion at its center, the swinging jaw member having its inner end pivotally connected to the offset portion of the stationary jaw member, and the spring-plate mounted on the pivot for lateral movement with reference to the stationary jaw member, to engage and disengage the swinging jaw member.

809,906. FENCE. JAMES H. BROWN, St. Charles, Ill., assignor of one-half to Harry D. Kirk, Chicago, Ill. Filed Dec. 18, 1904. Serial No. 237,551.

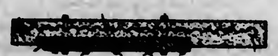

Claim.—In combination, a fence-post of rectangular cross-section having its sides converging toward the top and a recess in one of its faces; a strip for the fastening of fence-wires, adapted to fit the recess in said post whereby the position of the strip in the post is predetermined; and a plurality of separate hoops of different sizes adapted to encircle said post and strip and come to a tight bearing independently of each other and independently of the elevation of the strip in the post, and said strip when seated projecting in front of the surface of the post whereby the hoops when forced downward relatively to the strip force the strip inward toward the post notwithstanding the rectangular cross-section of the latter.

809,907. METAL CAR-ROOF. JOHN C. CAMPBELL, Chicago, Ill. Filed May 26, 1904. Serial No. 209,149.

Claim.—1. A car-roof comprising roof-sheets having their ends [illegible] with inverted eave-flanges, the eave portion of one at least of said sheets being provided with a laterally-extending portion overlapping the joint between adjoining sheets, and retaining-plates engaging the inverted eave-flanges of the roof-sheets.

2. A car-roof comprising roof-sheets having their ends formed with downwardly-extending U-shaped eave-flanges, the inner portions of said eave-flanges being shorter than the outer portions thereof, said outer portions being arranged to overlap, and retaining plates or strips engaging the U-shaped eave-flanges of said roof-sheets.

3. A car-roof comprising roof-sheets having their edges formed with interlocking flanges and having their ends formed with U-shaped eave-flanges, the inner portions of said eave-flanges being arranged to abut and the outer portions of said eave-flanges being arranged to overlap, in combination with retaining plates or strips having flanges interlocking with the eave-flanges of the roof-sheets.

4. A metal car-roof comprising roof-sheets extending transversely of the car and having flanged interlocking edges, the edges of the sheets being formed at their centers with cut-away spaces and with upturned flanges about said spaces in combination with saddle-blocks and retaining-bolts for holding said sheets in position.

5. A car-roof, comprising metal sheets extending transversely of the car and having their outer ends reverted to form U-shaped bends at the eaves of the roof, in combination with metal retaining-plates secured to the car and extending lengthwise thereof, the free edges of said retaining-plates being rebent to form flanges that set within the U-shaped eave-flanges of the roof-sheets, the said U-shaped flanges of the roof-sheets and the rebent flanges of the retaining-plates being spaced both laterally and edgewise of the latter to permit universal play between the roof-sheets and the car, said roof-sheets being unsecured to the car-roof other than substantially at the ridge, by said flanges, and at the ends of the car.

809,908. SYSTEM OF CONTROL. FRANK B. CARR, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Oct. 1, 1904. Serial No. 226,705.

Claim.—1. In a system of train control, in combination with motor-controllers including means for determining the direction of rotation of the motors upon one or more cars, of controller-actuating means including a source of power local to each car, and a pneumatic train system for governing the action of the controller-actuating means, said train system being operative to give proper motor connections upon the reversal of one or more cars of a train.

2. In a system of train control, in combination with motor-controllers including means for determining the direction of rotation of the motors upon one or more cars, of controller-actuating means including a source of power local to each car, and a pneumatic train system for governing the operation of the controller-actuating means, said train system being operative to give the proper motor connections upon the reversal of one or more cars of a train.

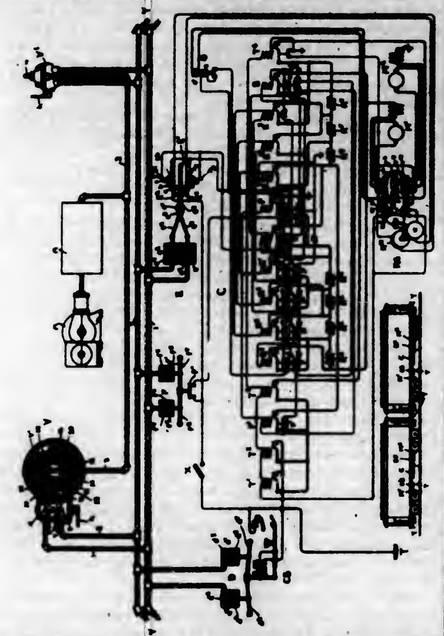

4. In a system of train control, in combination with motor-controllers on one or more cars, of an automatic controller-actuating system local to each motor-car, and a pneumatic train system for governing its operation.

5. In a system of train control, in combination with motor-controllers upon one or more cars, of an automatic controller-actuating system including a source of power local to each car, and a train system including relays for governing the operation of the controller-actuating system.

6. In a system of train control, in combination with motors of one or more cars of an automatic control system local to each car, relays for controlling the operation of the automatic control system, and a pneumatic train-line for operating said relays.

7. In a system of train control, in combination with motor-controllers on one or more cars of an electric control system local to each motor-car, and a pneumatic train system for governing its operation.

8. In a system of train control, in combination with motor-controllers upon one or more cars, of electromagnetic controller-actuating means including a switch local to each car, and a pneumatic train system for operating said switch.

9. In a system of train control, in combination with motor-controllers upon one or more cars, of an automatic electromagnetic controller-actuating system local to each car, and a pneumatic train system for governing the operation of the controller-actuating system.

10. In a system of train control, in combination with series-parallel motor-controllers upon one or more cars, of actuating means including a source of power therefor local to each car, and a pneumatic train system for governing the operation of said actuating means.

11. In a system of train control, in combination with series-parallel motor-controllers upon one or more cars, of automatic actuating means therefor local to each car, and a pneumatic train system for governing the operation of said actuating means.

12. In a system of train control, in combination with series-parallel controllers upon one or more cars, of an electromagnetic controller-actuating system local to each car, and a pneumatic train system for governing said controller-actuating system or systems.

13. In a system of train control, in combination with motor-controllers upon one or more cars, of controller-actuating means including a source of power local to each car, and a pneumatic train system including two train-pipes for governing the operation of the controller-actuating means.

14. In a system of train control, in combination with motor-controllers upon one or more cars, of automatic controller-actuating means local to each car, and a pneumatic train system including two train-pipes for governing the operation of said controller-actuating means.

15. In a system of train control, in combination with motor-controllers on one or more cars, of automatic controller-actuating means local to each car, two train-pipes, controlling devices for said controller-actuating means operatively related to said train-pipes, and means for admitting compressed fluid to said train-pipes.

16. In a system of train control, in combination with motor-controllers on one or more cars, of an electromagnetic control system local to each car, and a pneumatic train system including two train-pipes for governing the action of the electromagnetic control system.

17. In a system of train control, in combination with series-parallel motor-controllers on one or more cars, of controller-actuating means including a source of power local to each car, and a pneumatic train system including two train-pipes for governing the action of the controller-actuating means.

18. In a system of train control, in combination with motor-controllers upon one or more cars, of controller-actuating means local to each car, relays operatively associated with said controller-actuating means, and two train-pipes connected to said relays.

19. In a system of train control, in combination with motor-controllers on one or more cars, of an electric control system local to each car and supplied with current from a contact-shoe carried by the car, and a pneumatic train system for governing the operation of the electric control system or systems.

20. In a system of train control, in combination with motor-controllers on one or more cars, of an electric control system local to each car and supplied with current from a contact-shoe carried by the car, and a pneumatic train system including two train-pipes for governing the action of the electric control system or systems.

21. In a system of train control, in combination with motor-controllers on one or more cars, of an electric control system local to each car and supplied with current from a contact-shoe carried by its car, relays operatively associated with said electric control system or systems, train-pipes connected to said relays, and means for supplying said train-pipes with compressed fluid.

22. In a system of train control, in combination with motor-controllers on one or more cars, of an electric control system local to each car and supplied with current from a contact-shoe carried by its car, controlling-relays associated with said electric control system or systems, two train-pipes connected to said relays, and means for supplying said train-pipes with compressed fluid.

23. In a system of train control, in combination with motor-controllers of the separately-actuated contact type on one or more cars, of automatic actuating means for the controller-contacts local to each car, and a pneumatic train system for governing the action of the actuating means for the contacts.

24. In a system of train control, in combination with motor-controllers of the separately-actuated contact type on one or more cars, of automatic actuating means for the controller-contacts local to each car, and a pneumatic train system including two train-pipes for governing the action of the automatic actuating means for the contacts.

25. In a system of train control, in combination with motor-controllers of the separately-actuated contact type on one or more cars, of an automatic actuating system for the controller-contacts local to each car, relays for governing the action of said automatic actuating system or systems, and two train-pipes connected to said relays.

26. In a system of train control, in combination with motor-controllers of the separately-actuated contact type on one or more cars, of automatic contact-actuating means local to each car, pistons or diaphragms for governing the action of said contact-actuating means, and two train-pipes in direct communication with said pistons or diaphragms.

27. In a system of train control, in combination with motor-controllers of the separately-actuated contact type on one or more cars, of an electric control system for the controller-contacts local to each car and supplied with current from a collector-shoe carried by its car, and a pneumatic train system for governing the action of said electric control system or systems.

28. In a system of train control, in combination with motor-con-

trollers of the separately-actuated contact type on one or more cars, [illegible] tor-controller, controller-actuating means and a plurality of pairs of

pipes, pistons or diaphragms operatively associated with said con- [illegible] magnetic controller-actuating means, pneumatically-actuated de-

trollers of the separately-actuated contact type on one or more cars, of an electromagnetic control system for the controller-contacts located on each car and supplied with current by a collector-shoe carried by its car, and a pneumatic train system including two train-pipes for governing the action of said electromagnetic control system or systems.

29. In a system of train control, in combination with motor-controllers of the separately-actuated contact type on one or more cars, of an automatic control system arranged to actuate some or all of the controller-contacts in automatic succession local to each car, and a pneumatic train system for governing the action of said automatic control system or systems.

30. In a system of train control, in combination with motor-controllers of the separately-actuated contact type on one or more cars, of means local to each car for operating some or all of the controller-contacts in automatic succession, a governing-relay for the contacts adapted to progress automatically, and a train-pipe connected to said relay.

31. In a system of train control, in combination with motor-controllers of the separately-actuated contact type on one or more cars, of an electric system local to each car for operating some or all of the controller-contacts in automatic progression, and a pneumatic train system for governing said electric system or systems.

32. In a system of train control, in combination with motor-controllers of the separately-actuated contact type, of an electric system local to each car for operating the controller-contacts in automatic progression, a piston or diaphragm operatively associated with said electric system for controlling its action and a train-pipe in direct communication with said piston or diaphragm, and means for supplying said train-pipe with compressed fluid.

33. In a system of train control, in combination with motor-controllers of the separately-actuated contact type on one or more cars, of an electric control system local to each car arranged to actuate some of the controller-contacts in automatic progression, pneumatically-operated relays for governing the action of said electric control system, and two train-pipes connected to said relays.

34. In a system of train control, in combination with motor-controllers on one or more cars, of an electric control system local to each car, a pneumatic train system for governing the action of the electric control system, and a manually-operated valve for governing the train system.

35. In a system of train control, in combination with motor-controllers of the separately-actuated contact type on one or more cars, of contact-actuating means local to each car and arranged to close certain of the contacts in automatic succession, pneumatically-actuated devices for controlling said contact-actuating means and less in number than the number of contacts, train-pipes connected to said pneumatically-actuated devices, and means for supplying said train-pipes with compressed fluid.

36. In a system of train control, in combination with motor-controllers of the separately-actuated contact type on one or more cars, of contact-actuating means local to each car and arranged to close certain of the contacts in automatic succession, pneumatic controlling devices for governing the action of said contact-actuating means, said pneumatic controlling devices being less in number than the number of contacts, train-pipes, and means for supplying said train-pipes with compressed fluid.

37. In a system of train control, in combination with motor-controllers of the separately-actuated contact type on one or more cars, of local contact-actuating means, pneumatically-actuated relays for controlling said contact-actuating means, the number of relays being less than the number of contacts, train-pipes connected to said relays, and means for supplying said train-pipes with compressed fluid.

38. In a system of train control, in combination with motor-controllers of the separately-actuated contact type on one or more cars, of a control system local to each car arranged to actuate some of the controller-contacts in automatic progression, a plurality of governing-relays including a relay for governing the actuating means of the contacts arranged to progress automatically, the relays having different settings, train-pipes connected to said relays, and means for supplying said pipes with fluid varying in degree of compression.

39. In a system of train control, one or more cars having a motor-controller, controller-actuating means and a pair of pneumatically-actuated devices for controlling said controller-actuating means local thereto, train-pipes for connecting corresponding devices of each pair, and means for admitting compressed fluid to said train-pipes.

40. In a system of train control, one or more cars having a motor-controller, controller-actuating means and a plurality of pairs of pneumatically-actuated devices for controlling said controller-actuating means local thereto, train-pipes for connecting corresponding devices of each pair, and means for admitting compressed fluid to said train-pipes.

41. In a system of train control, one or more cars having a motor-controller, controller-actuating means and a pair of pneumatically-actuated devices for controlling said controller-actuating means local thereto, train-pipes connected to corresponding devices, and means for admitting compressed fluid to said train-pipes, the direction of motion of the car or train being determined by the order in which the train-pipes are energized.

42. In a system of train control, one or more cars having motor-controllers, controller-actuating means and pneumatically-actuated devices having different settings for controlling said controller-actuating means local thereto, two train-pipes connected to said devices, and means for supplying said pipes with compressed fluid varying successively in degree of compression.

43. In a system of train control, one or more cars having motor-controllers, controller-actuating means and pneumatically-actuated devices for controlling said controller-actuating means local thereto, two train-pipes operatively associated with said devices, and means for admitting compressed fluid successively to said train-pipes, the order in which the fluid is admitted to said train-pipes determining the direction of movement of the car or train.

44. In a system of train control, one or more cars having a motor-controller, electromagnetic actuating means therefor including an energizing-circuit having a switch and a pneumatically-actuated switch-actuating device local thereto, a train-pipe connected with said switch-actuating devices, and means for admitting compressed fluid to said train-pipe.

45. In a system of train control, one or more cars having a motor-controller, electromagnetic actuating means therefor including an energizing-circuit having a switch and a pneumatically-actuated switch-operating means local thereto, two train-pipes operatively related to said switch-operating means, and means for admitting compressed fluid successively to said train-pipes, the order in which fluid is admitted to said train-pipe determining the direction of movement of the car or train.

46. In a system of train control, one or more cars having local thereto motor-controllers, controller-actuating means and pneumatically-actuated devices controlling said controller-actuating means and having settings so arranged that said devices are effective under widely-different pressures, a train-pipe, and means for admitting compressed fluid to said train-pipe.

47. In a system of train control, one or more cars having local thereto motor-controllers, controller-actuating means and devices for controlling said controller-actuating means arranged to be pneumatically actuated under widely-different fluid-pressure, a train-pipe connected to said devices, and means for admitting said train-pipe fluid varying successively in degree of compression.

48. In a system of train control, a motor-controller and an electromagnetic controller-actuating system upon one or more cars, a train-pipe, pistons or diaphragms in open communication with said train-pipe and operatively associated with said controller-actuating system for controlling the same, and a motorman's valve for admitting compressed fluid to said train-pipe.

49. In a system of train control, a motor-controller and an electromagnetic controller-actuating system upon one or more cars, a plurality of pistons or diaphragms operatively associated with each of said systems for controlling the same, train-pipes in open communication with said pistons or diaphragms, and means for connecting said train-pipe to a source of compressed-fluid supply.

50. In a system of train control, a motor-controller and an electromagnetic controller-actuating system upon one or more cars, a group of pistons or diaphragms operatively associated with each of said systems for controlling the same, the individual pistons or diaphragms of each group having different settings, a train-pipe in open communication with said pistons or diaphragms, and means for admitting to said pipe fluid varying successively in degree of compression.

51. In a system of train control, a motor-controller and electromagnetic controller-actuating means on one or more cars, pneumatically-actuated devices for controlling said controller-actuating means, two train-pipes connected to said devices, and a motorman's valve for admitting compressed fluid to said pipes, the direction of movement of the car or train being determined by the pipe to which fluid is first admitted.

52. In a system of train control, a motor-controller and automatic controller-actuating means upon one or more cars, a train-pipe, pistons or diaphragms operatively associated with said controller-actuating means and in open communication with said train-pipe, and a motorman's valve for admitting compressed fluid to said train-pipe.

53. In a system of train control, a motor-controller and an automatic controller-actuating system upon one or more cars, a group of pistons or diaphragms operatively related to each controller-actuating system for controlling the same, said pistons or diaphragms being arranged to operate under widely-differing pressures, a train-pipe in open communication with said pistons or diaphragms, and means for admitting compressed fluid to said train-pipe.

54. In a system of train control, a motor-controller and an automatic controller-actuating system upon one or more cars, pairs of pistons or diaphragms operatively related to each of said systems for controlling the same, train-pipes in open communication with corresponding pistons or diaphragms of the pairs, and means for admitting compressed fluid to said train-pipes, the arrangement being such that both train-pipes are energized during each cycle of motor connections, the direction of movement of the car or train being determined by the pipe which is first energized.

55. In a system of train control, a motor-controller and an automatic controller-actuating system upon one or more cars, a group of pairs of pistons or diaphragms operatively associated with each of said controller-actuating systems, train-pipes in open communication with corresponding pistons or diaphragms of each pair, and means for admitting compressed fluid to said train-pipes, the direction of movement of the car or train being determined by the train-pipe to which fluid is first admitted.

56. In a system of train control, a motor-controller and an automatic controller-actuating system upon one or more cars, a group of pairs of pistons or diaphragms operatively associated with each of said controller-actuating systems, the pairs of pistons of each group having different settings, train-pipes in open communication with corresponding pistons or diaphragms of each pair, and means for admitting to said train-pipes fluid varying successively in degree of compression, the direction of movement of the car or train being determined by the pipe which first receives compressed fluid.

57. In a system of train control, a motor-controller and an automatic controller-actuating system on one or more cars, a piston or diaphragm operatively related to each of said controller-actuating systems for determining the relative connections of the motors and the resistance in the motor-circuit, respectively, said pistons or diaphragms being set for operation under widely-varying degrees of pressure, a train-pipe in open communication with said pistons or diaphragms, and a motorman's valve for connecting said train-pipe to a source of compressed-fluid supply.

58. In a system of motor control, in combination with a motor-controller including means for determining the direction of rotation of the motor or motors, of controller-actuating means, and a pneumatic system including relays for governing the operation of the controller-actuating means.

59. In a system of motor control, in combination with a motor-controller, of an automatic control system including a source of power, a pneumatic system for governing the operation of the automatic control system, said pneumatic system including a controlling-valve.

60. In a system of motor control, a motor-controller, an automatic controller-actuating system, a pneumatically-actuated relay for governing said controller-actuating system, and a pneumatic system for controlling said relay.

61. In a system of motor control, a motor-controller, an automatic controller-actuating system, and a pneumatic system for governing the action of the controller-actuating means, said pneumatic system including two pipes and a control-valve common to said pipes.

62. In a system of control, a motor-controller, automatic controller-actuating means, pneumatically-actuated devices for governing the action of said controller-actuating means, two pipes connected to said pneumatically-actuated devices, and means for supplying said pipes with compressed fluid.

63. In a system of motor control, a motor-controller, an electromagnetic control system, and a pneumatic system for governing the operation of said electromagnetic control system, said pneumatic system including a controlling-valve.

64. In a system of motor control, a motor-controller, electromagnetic controller-actuating means, pneumatically-actuated devices for governing the operation of the controller-actuating means, and means for operating said pneumatically-actuated devices.

65. In a system of motor control, a motor-controller, electromagnetic controller-actuating means, pneumatically-actuated devices for governing the operation of the controller-actuating means, two pipes associated with said pneumatically-actuated devices, and means for supplying said pipes with compressed fluid.

66. In a system of motor control, a motor-controller comprising a plurality of separately-actuated contacts, means including a source of power for operating some or all of said contacts in automatic progression, and a pneumatic system for governing the action of said means for operating the contacts.

67. In a system of motor control, a motor-controller comprising a plurality of separately-actuated contacts, means for actuating said contacts in automatic progression, a pneumatic relay for controlling the operation of said means for actuating the contacts, and means for operating said relay.

68. In a system of motor control, a motor-controller, electromagnetic controller-actuating means, a piston or diaphragm operatively related to said controller-actuating means for governing the operation, a pipe in open communication with said piston or diaphragm, and means for controlling the admission of compressed fluid to said pipe.

69. In a system of motor control, a motor-controller comprising separately-actuated contacts, means for operating said contacts in automatic succession, pneumatically-actuated devices for governing the operation of the contact-operating means and less in number than the number of contacts, and means for supplying said pneumatically-actuated devices with compressed fluid.

70. In a system of motor control, a motor-controller of the separately-actuated contact type, means for actuating the controller-contacts and a portion thereof in automatic progression, pneumatic controlling system for governing the action of the means for actuating the controller-contacts and including means for checking the automatic progression of the contacts without affecting those already operated.

71. In a system of motor control, a motor-controller of the separately-actuated contact type, an electromagnetic system arranged to actuate the controller-contacts and a portion thereof in automatic progression, pneumatic controlling means for said electromagnetic system, including means for checking the automatic progression of contacts without affecting the contacts already actuated.

72. In a system of train control, in combination with motor-controllers of the separately-actuated contact type of actuating means for the controller-contacts local to each car and arranged to actuate said contacts in whole or in part in automatic progression and a pneumatic train system for governing the actuating means for the controller-contacts, said train system including a motorman's valve and the arrangement of parts being such that the automatic progression of contacts may be checked from the motorman's valve without affecting the control already actuated.

73. In a system of motor control, a motor-controller comprising a plurality of separate contacts, actuating means arranged to operate said contacts in automatic progression, maintaining means for said contacts, and a pneumatic control system including means for rendering said actuating means inoperative at any stage of the automatic progression of the contacts without affecting the maintaining means of the contacts already operated.

74. In a system of motor-control, a motor-controller comprising a plurality of contacts, actuating means arranged to operate said contacts in automatic progression and means for maintaining them in their actuated positions, a pneumatic control system including a valve, and means for rendering the actuating means inoperative from the valve at any stage of the automatic progression of the contacts.

75. In a system of motor-control, a motor-controller comprising a plurality of separate contacts, actuating means arranged to operate said contacts in automatic progression, and a pneumatic control system including means for rendering said actuating means inoperative at any stage of the automatic progression of the contacts.

76. In a system of train control, one or more cars having a motor-controller comprising separate contacts, actuating means arranged to operate said contacts in automatic progression and contact-maintaining means, a pneumatic train system including means for rendering the several actuating means inoperative at any stage of the automatic progression of the contacts without affecting the maintaining means for the contacts already actuated.

77. In a system of motor control, a motor-controller comprising a plurality of separate contacts, electromagnetic controlling means for said contacts including an actuating-circuit for actuating said contacts in automatic progression, and a pneumatic control system including means for rendering the actuating-circuit inoperative at any stage in the automatic progression of the circuits.

78. In a system of motor control, a motor-controller comprising a plurality of contacts, electromagnetic controlling means for said contacts including an actuating-circuit for operating said contacts in automatic progression and a maintaining-circuit, and a pneumatic control system including means for rendering the actuating-circuit inoperative at any stage in the progression of the contacts without affecting the maintaining-circuit of the contacts already actuated.

79. In a system of train control, one or more cars having a motor-controller comprising a plurality of contacts, electromagnetic actuating means arranged to operate said contacts in automatic progression and electromagnetic maintaining means for said contacts, a pneumatic train system including means for rendering the several actuating means inoperative at any stage of the automatic progression

80. In a system of train control, one or more cars having a motor-controller comprising a plurality of separate contacts, electromagnetic controlling means for said contacts including an actuating-circuit for actuating said contacts in automatic progression and a maintaining-circuit, a pneumatic train system including means for rendering said actuating-circuit inoperative at any stage of the automatic progression of the contacts without affecting the maintaining-circuits of the contacts already actuated.

81. In a system of train control, one or more cars having a motor-controller comprising a plurality of separate contacts, actuating means arranged to operate said contacts in automatic progression, contact-maintaining means and pneumatic controlling devices for said actuating and maintaining means, a train-pipe connected to said devices, and means for admitting compressed fluid to said train-pipe.

82. In a system of train control, one or more cars having a motor-controller comprising a plurality of contacts, actuating means arranged to operate said contacts in automatic progression, contact-maintaining means and pneumatic controlling devices for said actuating and maintaining means, said devices having different settings, a train-pipe connected to said devices and means for supplying compressed fluid to said train-pipe.

83. In a system of train control, one or more cars having a motor-controller comprising a plurality of separate contacts and electromagnetic controlling means including an actuating-circuit for actuating said contacts in automatic progression and maintaining-circuits for said contacts, a pneumatic train system including a motorman's valve and means whereby the several actuating-circuits may be rendered inoperative from said motorman's valve without affecting the maintaining-circuits of the contacts already actuated.

84. In a system of control, a motor-controller comprising a plurality of separate contacts, actuating means arranged to operate said contacts in automatic progression and maintaining means for said contacts, a pneumatic control system including a relay for controlling the actuating means and a second relay for controlling the maintaining means.

85. In a system of train control, one or more cars having a motor-controller comprising a plurality of contacts, actuating means arranged to operate said contacts in automatic progression, contact-maintaining means and pneumatic control devices for said actuating and said maintaining means, a train-pipe connected to said devices, and means for controlling the pressure in said train-pipe so as to render said actuating means inoperative at any stage of the automatic progression of the contacts without affecting the maintaining means of the contacts already actuated.

86. In a system of train control, one or more cars having a motor-controller comprising a plurality of contacts, actuating means adapted to operate said contacts in automatic progression, contact-maintaining means and pneumatic control devices having different settings, a train-pipe and a motorman's valve arranged so that the train-pipe pressure may be varied in order to cause said several actuating means to be rendered inoperative at any stage in the automatic progression without affecting the contacts already actuated.

87. In a system of train control, one or more cars having a motor-controller comprising a plurality of contacts, electromagnetic controlling means for said contacts including an actuating-circuit for operating said contacts in automatic progression and a maintaining-circuit, and pneumatic devices having different settings for controlling said circuits, a train-pipe and means for admitting to said pipe fluid varying successively in degree of compression.

88. In a system of train control, one or more cars having a motor-controller comprising contacts, electromagnetic controlling means including an actuating-circuit for operating said contacts in automatic progression and a maintaining-circuit, and pneumatic devices having different settings for controlling said circuits, a train-pipe connected to said devices, and means for controlling the pressure in said pipe in such a manner that the several actuating-circuits may be rendered inoperative at any stage in the automatic progression of the contacts without affecting the maintaining-circuits of the contacts already actuated.

89. In a system of motor control, a motor-controller, an automatic control system and a pneumatic system for governing the action of the control system, said pneumatic system including a valve whereby the motor-controller may be caused to progress intermittently by a series of steps or to progress continuously through the same steps.

90. In a system of train control, in combination with motor-controllers upon one of more cars, of an automatic control system local to each car, and a pneumatic train system for governing the operation of the automatic control system or systems, said train system including a motorman's valve whereby the motor-controller may be caused to progress by a series of intermittent steps or to progress continuously through the same series of steps.

91. In a system of train control, in combination with motor-controllers on one or more cars, of an electric control system local to each car and a pneumatic train system for governing said electric control system, the arrangement of parts being such that the motor controller or controllers may be made to progress by a series of intermittent steps or to progress automatically and continuously through the same steps.

92. In a system of motor control, a motor-circuit, a plurality of pairs of circuit-controlling pistons or diaphragms, the operation of both pistons or diaphragms of one pair and one piston or diaphragm of each of the other pairs serving to make a complete cycle of circuit connections.

93. In a system of motor control, a motor-circuit, contacts therein, contact-controlling means, a plurality of pairs of pneumatically-actuated devices for controlling said contact-controlling means, the operation of both devices of one pair and one device of each of the other pairs serving to make a complete cycle of motor connections.

94. In a system of train control, in combination with motor-controllers upon one or more cars, of controller-actuating means and one or more pairs of pistons or diaphragms for governing said controller-actuating means local to each car, train-pipes pneumatically connected to corresponding pistons or diaphragms, and means for supplying compressed fluid to said train-pipes.

95. In a system of train control, in combination with motor-controllers on one or more cars, of controller-actuating means and one or more pairs of pistons or diaphragms for governing the action of said controller-actuating means local to each car, train-pipes pneumatically connected to corresponding pistons or diaphragms and a motorman's valve for connecting said train-pipes successively to a source of compressed-fluid supply.

96. In a train-control system, two train-pipes, a motor-circuit upon one or more cars, a plurality of pairs of circuit-controlling pistons or diaphragms arranged on each of said cars and connected to said train-pipes, the operation of both pistons or diaphragms of one pair and one piston or diaphragm of each of the other pairs serving to make a complete cycle of circuit connections.

97. In a train-control system, two train-pipes, one or more cars having a motor-circuit and a plurality of controlling pistons or diaphragms connected in pairs to said train-pipes, both pistons or diaphragms of one of the pairs being operated during each complete cycle of motor connections, and the direction of movement of the car or train depending upon the order in which the pistons or diaphragms of said latter pair are operated.

98. In a system of motor control, a plurality of motors, two pipes, means controlled by fluid-pressure in one of said pipes for closing the main circuit, connecting the motors in series and cutting resistance out of the motor-circuit, and means controlled by the fluid-pressure in the other pipe for connecting the motors in parallel.

99. In a system of motor control, a plurality of motors, two pipes, means controlled by fluid-pressure in either of said pipes for closing the main circuit, connecting the motors in series and cutting the resistance out of the motor-circuit, and means controlled by fluid-pressure in the other of said pipes for connecting the motors in parallel.

100. In a system of motor control, a plurality of motors, two pipes, means controlled by fluid-pressure in either of said pipes for connecting the motors in series and accelerating them, and means controlled by fluid-pressure in the other of said pipes for connecting the motors in parallel, the direction of rotation of the motors being determined by the order in which fluid-pressure is admitted to the train-pipes, together with means for connecting said pipes to a source of compressed-fluid supply.

101. In a system of motor control, a plurality of motors, two pipes, means controlled by fluid-pressure in either of said pipes for connecting the motors in series and accelerating them, and means controlled by fluid-pressure in the other pipe for connecting the motors in parallel, together with a motorman's valve for connecting the train-pipes with a source of compressed-fluid supply.

102. In a system of train control, a motor-controller, a controller-actuating means on one or more cars, controlling devices arranged to operate under widely-varying degrees of fluid-pressure operatively related to said controller-actuating means, a train-pipe communicating with said devices, and means for supplying said train-pipe with fluid varying successively in degree of compression applied.

103. In a system of train control, a motor-circuit upon each of a plurality of cars, two train-pipes, a plurality of movable switch members upon each car for controlling the circuit connections, a plurality of actuating devices for each of said members communicating with said train-pipes, and means for admitting compressed fluid into the train-pipes.

104. In a system of train control, a motor-circuit upon each of a plurality of cars, two train-pipes, a plurality of movable switch members upon each car for controlling the circuit connections, a plurality of actuating devices for each of said members in communication with said train-pipes, the order in which the fluid is admitted to the train-pipes determining the direction of movement of the car or train.

105. In a system of train control, controllers on one or more cars for varying the speed and the direction of rotation of the motors, automatic electromagnetic actuating means for said controllers local to said car or cars, relays for connecting said actuating means to local current-collecting devices, and a train-line for controlling said relays.

106. In a system of train control, motor-controllers on one or more cars comprising a series of separately-actuated contacts arranged to be operated in part in automatic succession, local electromagnetic actuating means for said controllers, relays for connecting said actuating means to local current-collecting devices and including a relay for governing the operation of the contacts arranged to be actuated in automatic succession, and a train-line for controlling said relays.

107. In a system of train control, motor-controllers on one or more cars comprising a series of separately-actuated contacts arranged to be operated in part in automatic succession, automatic electromagnetic actuating systems for said controllers local to said car or cars, and a train system for governing said actuating systems including relays arranged to connect said actuating systems to local current-collecting devices.

809,909. MANUFACTURE OF ARTIFICIAL MOTHER-OF-PEARL. PETER C. D. CASTLE, Bebington, England. Filed Aug. 24, 1903. Serial No. 170,046.

Claim.—1. As a new article of manufacture a hard block of artificial substance formed of the pearly matter of shells, cementitious matter and a soft pulverulent alkaline-earth silicate pressed into a hard block.

2. As a new article of manufacture a substance formed of finely-powdered pearly matter of shells, cementitious matter and finely-ground mica pressed into a hard mass.

3. As a new article of manufacture, an artificial substance composed of finely-powdered pearl-shell and gum-sandarac.

4. As a new article of manufacture an artificial substance formed of finely-powdered pearly matter, gum-sandarac and a finely-powdered mineral silicate having a saponaceous feel.

5. The process of manufacturing artificial mother-of-pearl, which consists in mixing pulverized pearly matter of shells, finely-ground white mineral matter, gum-sandarac, and a solvent; and subjecting the mass thus produced to pressure in the presence of heat.

6. The improved process of manufacturing artificial mother-of-pearl, which consists in pulverizing the solid materials which enter into the composition and mixing them with gum-sandarac and a solvent; pressing the mass thus produced in the presence of heat; and finally cooling the mass while the pressure is maintained thereon.

809,910. PIPE-LAYING DEVICE. GRAHAM DU LEY, Omaha, Nebr., assignor of one-third to Abram B. Hunt and one-third to Charles J. Collins, Omaha, Nebr. Filed July 1, 1905. Serial No. 267,262.

Claim.—1. In a pipe-laying device the combination with the bed or anchor plate provided at one end with the downwardly-extending bent end portion which extends crosswise of the length of the anchor-plate, ears extending upwardly from said anchor-plate, yoked legs of the yoked operating-lever pivoted to said ears, a handle secured to said yoked operating-lever, yoked ends of the yoked connecting-link pivotally secured intermediate of the legs of the yoked operating-lever, a gripping-collar having the shank pivoted to the opposite yoked end of said connecting-link and a lip or stop depending from the lower side of said link at the gripping-collar end to prevent the collar from working out at a less angle than a right angle to the pipe gripped and carried by said grip-collar, when the collar is in its backward movement upon the pipe being laid.

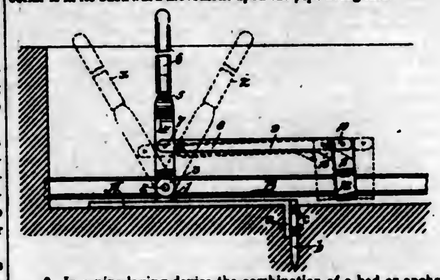

2. In a pipe-laying device the combination of a bed or anchor plate, and having one end bent at right angles thereto, there being ears extending upward from the top of said anchor-plate, an operating-lever having a yoked end and pivotally secured to said ears, a connecting-link having a yoked end and pivotally intermediate the legs of said first-mentioned yoke, and clutch or grip collar pivoted to the opposite end of said connecting-link, and there being a lip depending from said last-mentioned end of said link, to prevent the collar from working at an angle less than a right angle to a pipe being laid in its backward movement upon the pipe.

3. As a new article of manufacture, a pipe-laying device, comprising an approximately rectangular plate provided at one end with the downwardly-projecting end portion extending crosswise of the length of the plate, an operating-lever pivoted to said plate, and means for gripping the pipe adapted to be laid, substantially as shown and described.

809,911. SEWING-MACHINE BOBBIN-WINDER. GEORGE M. RAMEY and JOHN S. PENOR, Bridgeport, Conn., assignors to Wheeler & Wilson Manufacturing Company, Bridgeport, Conn., a Corporation of Connecticut. Filed May 26, 1905. Serial No. 262,233.

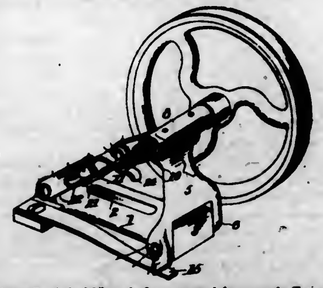

Claim.—1. A bobbin-winder, comprising a spindle, a driving-pulley thereon, a spindle carrier or standard, a spring tending to throw said standard out of operative position, and a latch to hold the standard in operative position, said latch including a pair of levers whose adjacent ends are pivoted together and whose opposite ends are pivoted respectively to said standard and the base on which the latter is mounted, thereby forming a toggle between said base and standard to hold the latter in operative position, and means actuated by the filling of the bobbin for shifting the knuckle of said toggle out of alinement with its pivotal extremities.

2. A bobbin-winder, comprising a spindle, a driving-pulley thereon, a spindle carrier or standard, a spring tending to throw said spindle-carrier out of operative position, and a latch to hold the spindle-carrier in operative position, said latch including a pair of

levers whose adjacent ends are pivoted together and whose opposite ends are pivoted respectively to said spindle-carrier and the base on which the latter is mounted, thereby forming a toggle between said base and spindle-carrier to hold the latter in operative position, a stop for limiting the movement of said levers in advancing the parts to operative position, and means actuated by the filling of the bobbin for shifting the knuckle of said toggle out of alinement with its pivotal extremities to release the winder from operative position.

3. A bobbin-winder, comprising a spindle, a driving-pulley thereon, a spindle carrier or standard, a spring tending to throw said standard out of operative position, and a latch to hold the spindle-carrier in operative position, said latch including a pair of levers whose adjacent ends are pivoted together and whose opposite ends are pivoted respectively to said spindle-carrier and the base on which the latter is mounted, thereby forming a toggle between said base and spindle-carrier to hold the latter in operative position, a stop for limiting the movement of said levers in advancing the parts to operative positions, and adjustable means actuated by the filling of the bobbin for shifting the knuckle of said toggle out of alinement with its pivotal extremities, whereby the quantity of thread wound upon the bobbin may be regulated.

4. A bobbin-winder, comprising a spindle, a driving-pulley thereon, a pivoted standard on which the spindle is mounted, a spring tending to throw said standard out of operative position, and a latch to hold the standard in operative position, said latch including a bell-crank lever one arm of which extends in close proximity to the bobbin to be wound and is adapted to be engaged and actuated thereby and the other arm of which is connected to a lever pivoted to the base.

5. In a bobbin-winder, comprising a spindle, a driving-pulley thereon, a pivoted standard on which the spindle is journaled, a spring tending to throw said standard out of operative position, and a latch to hold the standard in operative position, said latch including a bell-crank lever one arm of which extends in close proximity to the bobbin to be wound and is adapted to be engaged and actuated thereby and the other arm of which is connected to a lever pivoted to the base and provided at one end with a thumb-piece which overlaps one arm of said bell-crank and serves as a stop to position said levers for holding the winder in engagement with the driving agent.

6. A bobbin-winder, comprising a spindle, and a driving-pulley thereon, a pivoted standard on which the spindle is journaled, a spring tending to throw said standard out of operative position, and a latch to hold the standard in operative position, said latch including a bell-crank lever one arm of which comprises a resilient adjustable tripping-finger or trigger secured to said lever by an adjusting-screw and extending in close proximity to the bobbin to be wound and adapted to be engaged and actuated thereby, the other arm of said bell-crank connected to a lever pivoted to the base and provided at one end with a thumb-piece which overlaps one arm of said bell-crank and serves as a stop to position said levers for holding the winder in engagement with the driving agent.

7. A bobbin-winder, comprising a base, a standard pivoted on said base and having an eccentrically-arranged lateral projection at or near its bottom, a spindle mounted on said standard, a driving-pulley on said spindle, a spring secured to the base and adapted to bear upon the lateral projection in such manner as to normally throw the standard out of operative position, and a breakdown latch to hold the standard in operative position.

8. A bobbin-winder, comprising a standard or spindle-carrier suitably mounted upon a base, a spring tending to throw said standard out of operative position, a spindle journaled within said standard and having on one end a driving-pulley, and at the other end provided with a shoulder whose edge adjacent the bearing is housed within a recess in said standard whereby the thread is guarded from winding between said shoulder and bearing.

9. A bobbin-winder, comprising a standard or spindle-carrier suitably mounted upon a base, a spring tending to throw said standard out of operative position, a latch for holding said standard in operative position, a spindle journaled within said standard and having on one end a driving-pulley and its other end provided with a shoulder or stop whose edge adjacent the bearing is housed within a recess in said standard and whose periphery is tapered in a direction toward the bobbin position, whereby thread inadvertently wound thereon may be easily removed.

809,912. WAGON. HENRY L. FRAHM, Harvard, Ill., assignor to Hunt, Helm, Ferris & Company, Harvard, Ill., a Corporation of Illinois. Filed Feb. 23, 1905. Serial No. 247,033.

Claim.—1. In a device of the class described, the combination with a wagon-bed, of an axle swiveled thereto, hounds secured to the axle, a tongue pivoted to the hounds and devices on the hounds and handle which engage when the handle is swung up to prevent relative lateral movement.

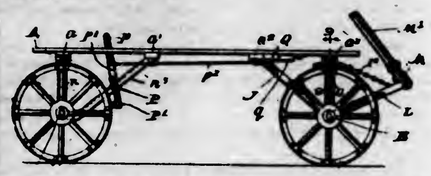

2. In a device of the class described, the combination with a wagon-bed, of an axle swiveled thereto, hounds secured to the axle, a tongue pivoted to the hounds to swing vertically and means constructed and arranged to engage the tongue when swung up to prevent its lateral movement.

3. In a device of the class described, the combination with a wagon-bed, of an axle swiveled thereto, hounds secured to the axle, a tongue pivoted to the hounds, mutually engaging portions on the tongue and hounds above the pivot, said engaging portions being constructed and arranged to engage when the tongue is swung up to prevent its lateral movement.

4. In a device of the class described, the combination with a wagon-bed, of an axle swiveled thereto, hounds secured to the axle, a tongue pivoted to the hounds, a notch on one of said parts and a lug on the other, said notch and lug being constructed and arranged to engage when the tongue is swung up to prevent relative lateral movement of the tongue and hounds.

5. In a device of the class described, the combination with a wagon-bed, of an axle swiveled thereto, hounds secured to the axle, a tongue pivoted to the hounds, a notch on the hounds, and a lug on the tongue engaging therewith to prevent lateral movement between the tongue and hounds when the tongue is swung back.

6. In a device of the class described, the combination with a wagon-bed and an axle swiveled thereto, of hounds pivoted to the axle, means for limiting the downward movement of the hounds, a tongue pivoted to the hounds, and means independent of the pivot for preventing relative lateral movement between the tongue and hounds when the tongue is swung up.

7. In a device of the class described, the combination with a wagon-bed and an axle swiveled thereto, of hounds in the form of a V-shaped casting secured to the axle, projecting ends on the legs of said casting, a tongue pivoted between said projecting arms, a notched cross-bar behind said arms, a lug on the tongue engaging with the notch in the cross-bar when the tongue is swung back.

8. In a device of the class described, the combination with a wagon-bed and an axle swiveled thereto, of hounds in the form of a V-shaped casting pivoted to the axle, projecting ends on the legs of said casting, a tongue pivoted between said projecting ends, a notched cross-bar behind said ends, a lug on the tongue engaging with the notch in the cross-bar when the tongue is swung back, and means for limiting the downward movement of the hounds.

9. In a device of the class described, the combination with a wagon-bed and turn-table, of an arch secured to the turn-table, an axle secured to the arch, a bracket on the center of the axle having an upwardly-projecting boss, a king-bolt entering said boss, a projecting lug on one side of said boss, and an oppositely-inclined edge on the other, and a brace surrounding said boss and secured at the opposite end to the wagon-bed, said brace being adapted to be first placed under said lug and swung down over said inclined edge, and when so positioned to be incapable of vertical removal, except upon angular movement.

10. In a device of the class described, the combination with a wagon-bed and turn-table, of a downwardly-open channel-iron secured to the turn-table, a brace having a central portion lying in said channel-iron and having two downwardly and outwardly extending legs, a second brace having a central portion lying in said channel-iron below said first brace and having downwardly and outwardly extending legs of less slant than the legs on said first brace, an axle, and brackets on the axle to which the adjacent ends of the braces are secured.

11. In a device of the class described, the combination with a wagon-bed and turn-table, of a downwardly-open channel-iron secured to the turn-table, a brace having a central portion lying in said channel-iron, and having two downwardly and outwardly extending legs, a second brace having a central portion lying in said channel-iron below said first brace and having downwardly and outwardly extending legs of less slant than the legs on said first brace, an axle, and brackets on the axle to which the adjacent ends of the braces are secured, said brackets being split and secured on said axle by clamping means.

12. In a device of the class described, the combination with a wagon-bed, of a brace having a central portion and two downwardly and outwardly extending legs, a second brace having a central portion lying below the central portion of the first-named brace, and downwardly and outwardly extending legs of less slant than the legs on the first-named brace, an axle, and brackets on the axle to which the adjacent ends of the legs are secured, said brackets being split and secured on the axle by clamping means.

13. The combination with a wagon-bed and a turn-table, of an arch secured to the turn-table and an axle secured to the arch, a bracket on the center of the axle having an upwardly-projecting boss, a king-bolt entering said boss and a bracket secured to the wagon-bed and surrounding said boss, said bracket being adapted to pass freely over said boss when in an abnormal position and to be rigidly secured to said boss when in its normal position.

14. In a device of the class described, the combination with the front axle of a wagon, of a pair of hounds pivotally secured to the axle, and a tongue pivotally secured to the hounds, whereby when the tongue is swung back its pivot upon the hounds will rise.

15. The combination with the front axle of a wagon, of a pair of hounds pivotally secured thereto and of sufficient length to reach when swung up substantially to the level of the wagon-bed, and a tongue pivotally secured to the end of said hounds.

809,913. WAGON. HENRY L. FRAHM, Harvard, Ill., assignor to Hunt, Helm, Ferris & Company, Harvard, Ill., a Corporation of Illinois. Filed Feb. 23, 1905. Serial No. 247,033.

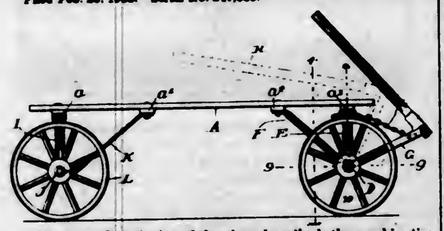

Claim.—1. In a device of the class described, the combination with a wagon-bed and a front axle swiveled thereto, of the hounds pivoted to said axle, means for limiting the downward swing of the hounds and a tongue swiveled to the hounds.

2. In a device of the class described, the combination with a wagon-bed and a front axle swiveled thereto, of the hounds secured to the front axle, a channel-piece secured to the hounds, and a tongue pivoted to the channel-piece and having an end held therein against lateral movement when the tongue is swung upward.

3. In a device of the class described, the combination with a wagon-bed and a front axle swiveled thereto, of the hounds secured to the front axle, a squared channel-piece secured to the hounds and a tongue having a squared end pivoted to the channel-piece, said squared end being adapted to fit the channel-piece when the tongue is swung up.

4. In a device of the class described, the combination with a wagon-bed and a front axle swiveled thereto, of the hounds pivoted to the axle, means for limiting the downward movement of the hounds, a channel-piece secured to the hounds and a tongue pivotally secured to said channel-piece and having an end adapted to fit therein when the tongue is swung up.

5. In a device of the class described, the combination with an axle and a support passed over the same and supporting the wagon-bed, of a bracket perforated to receive the axle and having a notch to receive the support and a brace running from the wagon-bed to said bracket.

6. In a device of the class described, the combination with an axle and a support passed over the same and supporting the wagon-bed, of a bracket perforated to receive the axle and having a notch to receive the support and a brace running from the wagon-bed to said bracket, said bracket being provided with a flange against which one of the wheels of the wagon can run.

7. In a device of the class described, the combination with a wagon-bed, of an arched member supporting the same, said arched member being channel-shaped in cross-section, an axle extending through perforations in the main web of said arched member, and wheels mounted upon the ends of the axle outside of said arched member.

8. In a device of the class described, the combination with a wagon-bed, of an arched member supporting the same, said arched member being channel-shaped in cross-section, an axle extending through perforations in the main web of said arched member, perforated caps mounted upon the axle outside of said arched supporting member and wheels mounted upon the axle outside of said caps.

809,914. LOOSE-LEAF LEDGER. ROBERT J. FRANK, Chicago, Ill., assignor to Standard Audit Company, Chicago, Ill., a Corporation of Illinois. Filed June 26, 1905. Serial No. 267,522.

Claim.—1. In a loose-leaf ledger, the combination of a pair of side frames mounted in movable relation to each other, rack mechanism upon one of such side frames, a rack-operating shaft rotatably mounted upon the other side-frame member and provided with tooth mechanism in engagement with such rack mechanism, a locking-socket member, and mechanism connected with the rack-operating shaft and movable into and out of locking engagement with such socket member.

2. In a loose-leaf ledger, the combination of a pair of side frames mounted in movable relation to each other, rack mechanism upon one of such side frames, a rack-operating shaft rotatably mounted upon the other side-frame member and provided with tooth mechanism in engagement with such rack mechanism, a locking-socket, a locking element connected with the rack-operating shaft and movable into and out of engagement with such locking-socket, and a spring for holding such locking mechanism in engagement with the locking-socket.

3. In a loose-leaf ledger, the combination of a pair of side-frame members mounted in movable relation to each other, rack mechanism upon one of such side-frame members, a rack-operating shaft mounted upon the other side-frame member having tooth mechanism in engagement with such rack mechanism and provided with an angular end portion, and mechanism mounted in engagement with such angular end portion for holding it locked and thereby holding the side-frame members in fixed relation to each other.

4. In a loose-leaf ledger, the combination of a pair of side-frame members mounted in movable relation to each other, rack mechanism upon one of such side-frame members, a rack-operating shaft mounted upon the other side frame having tooth mechanism in engagement with such rack mechanism and provided with an angular end portion, a socket member, and an angular locking-sleeve slidably mounted upon the angular end portion of such shaft and movable into and out of locking engagement with such socket member.

5. In a loose-leaf ledger, the combination of a pair of side-frame members mounted in movable relation to each other, rack mechanism upon one of such side-frame members, a rack-operating shaft mounted upon the other side-frame member having tooth mechanism in engagement with such rack mechanism and provided with an angular end portion, a socket member, an angular locking-sleeve slidably mounted upon the angular end portion of such shaft and movable into and out of locking engagement with such socket member, and means for automatically moving such locking-sleeve into locking engagement with the socket member.

6. In a loose-leaf ledger, the combination of a pair of side-frame members mounted in movable relation to each other, rack mechanism upon one of such side-frame members, a rack-operating shaft mounted upon the other side-frame member having tooth mechanism in engagement with such rack mechanism and provided with an angular end portion, a socket member, an angular locking-sleeve slidably mounted upon the angular end portion of such shaft and movable into and out of locking engagement with such socket

member, and a spring in engagement with such locking-sleeve for holding it yieldingly in locking position.

809,915. **GEARING.** CHARLES R. GARDNER, Providence, R. I., assignor to Brown & Sharpe Manufacturing Company, Providence, R. I., a Corporation of Rhode Island. Original application filed Mar. 1, 1900, Serial No. 7,07,206. Divided and this application filed Oct. 11, 1900. Serial No. 32,702.

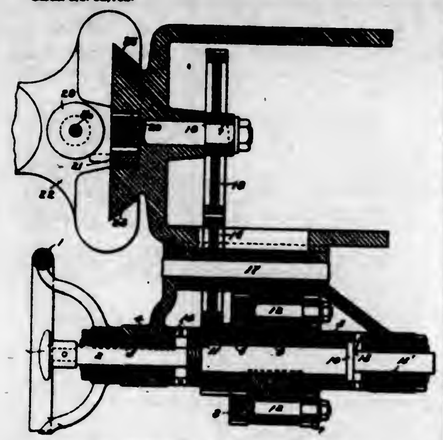

Claim.—The combination of a rotatable and slidable shaft, a sun-gear loosely mounted on said shaft, a differential gear loosely mounted on said shaft, a planet-gear carrier secured on said shaft and rotated thereby, planet-gears mounted in said carrier and connecting said sun and planet gears, a stationary clutch member for engaging said sun-gear, and a clutch member secured to revolve with said shaft, whereby a sliding of said shaft will serve to engage one of said clutch members and to disengage the other, substantially as described.

809,916. **CONTROLLING DEVICE FOR MOTOR-VEHICLES.** JOHN C. GALLAGHER, Elmira, N. Y. Filed Nov. 5, 1904. Serial No. 231,511.

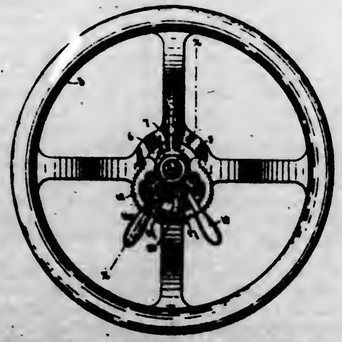

Claim.—1. The combination, with a steering shaft and wheel, of a tubular standard through which the shaft passes and a revolvable control-rod mounted upon the standard at one side and projecting above the hub of the steering-wheel.

2. The combination, with a steering shaft and wheel, of a tubular standard through which the shaft passes, an extension rising from the standard through an opening provided therefor in the wheel adjacent to the hub, a control-rod mounted at one side of the standard and passing through said extension, and means for operating said rod secured thereto above the extension.

3. The combination, with a steering shaft and wheel, of a tubular standard through which the shaft passes, an extension rising from the standard through an opening provided therefor in the wheel around the hub, a control-rod mounted at one side of the standard and passing through said extension, and means for operating said rod secured thereto above the extension.

4. The combination, with a steering shaft and wheel, of a tubular standard through which the shaft passes, an extension rising from the standard through an opening around the wheel-hub, a revolvable control-rod passing through the extension, a lever for operating said rod, a toothed segment attached to the extension, and a spring-actuated locking-pin on the lever, to engage the segment.

5. The combination, with a steering shaft and wheel, of a tubular standard for the shaft, revolvable control-rods mounted on the standard, levers for operating said rods, and an adjustable link connection between said levers.

6. The combination, with revolvable control-rods, of an adjustable connection between the rods, whereby they may be set at different angular positions relatively to one another and both operated simultaneously.

7. The combination, with a steering shaft and wheel, of a tubular standard for the shaft, one or more revolvable control-rods mounted parallel with and outside the standard, said rods passing up through an opening provided therefor in the steering-wheel, and a lever or levers for operating said rod or rods in line with and projecting out toward the rim of the wheel for the purpose set forth.

809,917. **ELECTRIC HEATER FOR OIL-WELLS AND METHOD OF MAKING SAME.** BENJAMIN F. GARDNER, Chicago, Ill., assignor to the Petroleum Electric Producing Company, Chicago, Ill., a Corporation of the District of Columbia. Filed Apr. 5, 1905. Serial No. 253,894.

Claim.—1. An electric heater comprising a metallic pipe, a non-vitreous insulating-covering on said pipe, a layer of non-metallic resistance material incased in said insulating material, and electrodes embedded in said resistance material, one of said electrodes being connected to the source of electric current and the other being grounded.

2. An electric heater comprising a metallic pipe, a layer of non-vitreous insulating material, a layer of non-metallic resistance material and a layer of non-vitreous insulating material, said layers being superposed one upon the other and upon said pipe, and electrodes embedded between the resistance material and one of the layers of insulating material, one of said electrodes being connected to the source of electric current and the other being grounded to the pipe.

3. An electric heater comprising a metallic pipe, a layer of non-vitreous insulating material, a layer of non-metallic resistance material and a layer of non-vitreous insulating material, said layers being superposed one upon the other and upon said pipe, and electrodes embedded between the resistance material and one of the layers of insulating material, said materials being bound together and upon said pipe in a homogeneous mass, one of said electrodes being connected to the source of electric current and the other being grounded to the pipe.

4. The herein-described method of making an electric heater which consists in wrapping upon a metallic pipe a layer of non-vitreous insulating material, a layer of non-metallic resistance material, and a layer of non-vitreous insulating material, said layers being superposed one upon the other, applying electrodes between the layer of resistance material and one of the layers of insulating material at the time said layers are arranged in place, and finally vulcanizing the same.

809,918. **REMOVABLE HEAD FOR BARRELS.** ALEXANDER JARDIM, Philadelphia, Pa. Filed Dec. 13, 1904. Serial No. 236,702.

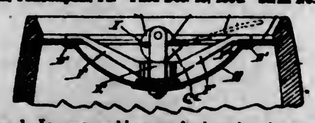

Claim.—1. In a removable cover for barrels, a head secured in one end of the barrel, said head being provided in the center with an

oblong opening, a removable cover also formed oblong so as to pass through the opening into the interior of the barrel, said cover being slightly larger than the opening so as to fit against the under side of the plate, a spanner extending across the opening, each end of the spanner resting upon the upper side of the plate, a stud extending upward from the cover adapted to be guided in the spanner so as to slide vertically relative thereto, a disk eccentrically pivoted to the upper end of the stud and adapted to bear against the upper surface of the spanner, means for turning said disk, and means for locking the same in position, as specified.

2. In a removable cover for barrels, a head secured in one end of the barrel, said head being provided in the center with an oblong opening, a concaved cover also formed oblong so as to pass through the opening into the interior of the barrel, said cover being slightly larger than the opening so as to fit against the under side of the plate, the periphery of said cover being provided with an annular groove into which packing or sealing material may be held, a spanner extending across the opening through the plate, each end of the spanner resting upon the upper side of the plate, lugs extending downward from the spanner adapted to fit inside of the walls of the opening of the plate, projections extending inward from opposite sides of the opening of the plate against which said studs are adapted to contact when the cover and spanner are in their normal positions, a lug extending upward from the cover, the upper end of said lug being bifurcated, the central portion of the spanner adapted to fit and slide between the prongs of the lug, a disk pivoted eccentrically to the upper end of the lug between the prongs, a notch formed in the periphery of the disk in which a lever may be inserted for turning the same, a widened portion formed upon the disk adapted to contact the stud when the cover is locked in place, said disk provided with an opening through which a cotter-pin may be inserted upon the opposite side of the stud from the widened portion to lock the disk against movement in either direction, as specified.

809,919. **PNEUMATIC MOTOR.** LAWRENCE U. JONES, Cincinnati, Ohio. Filed Dec. 5, 1904. Serial No. 235,545.

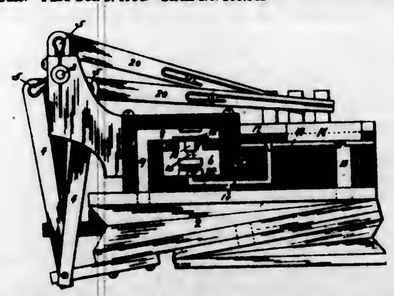

Claim.—1. In a pneumatic motor the combination with a bellows, of a bellows-passage communicating therewith, a valve-passage leading from the bellows-passage to the exhaust-passage; an exhaust-passage communicating with the valve-passage by way of a port; a valve controlling said port; a pneumatic placed in said exhaust-passage operating said valve; a pneumatic-passage leading from said pneumatic in the exhaust-passage to the outer air with a pneumatic-port at the outer end thereof; an air-passage communicating with said bellows, having an air-port at the outer end thereof, the pneumatic-port and air-port being controlled by a single slide-valve, substantially as described.

2. In a pneumatic motor the combination with a bellows, of a bellows-passage communicating therewith; a valve-passage leading from the bellows-passage to the exhaust-passage; an exhaust-passage communicating with the valve-passage by way of a port; a valve controlling said port; a pneumatic placed in said exhaust-passage operating said valve; a pneumatic-passage leading from said pneumatic in the exhaust-passage to the outer air with a pneumatic-port at the outer end thereof; an air-passage communicating with said bellows, having an air-port at the outer end thereof, the pneumatic-port and air-port being controlled by a single slide-valve, which alternately opens and closes said ports; and means for operating said slide-valve by the collapse of the bellows, substantially as described.

3. In a pneumatic motor the combination with a bellows, of a driving-shaft having bellows and valve-cranks; links connecting the bellows with said cranks; a bellows-passage and valve-passage leading from the bellows to the exhaust-passage, through a port in said exhaust-passage; a valve controlling said port; a pneumatic operating said valve; a pneumatic-passage leading from said pneumatic in said exhaust-passage to the outer air, having a pneumatic-port at the outer end thereof; an air-passage leading from the bellows to the outer air, having an air-port at the outer end thereof, the pneumatic-port and air-port being controlled by a single slide-valve which alternately opens and closes said ports; and means for operating said slide-valve by the collapse of the bellows, substantially as described.

4. In a pneumatic motor the combination with a bellows 2 of a driving-shaft 3, having bellows and valve-cranks 5; links 4 connecting the bellows 2 with said cranks; a bellows-passage 9 and valve-passage 8 leading from the bellows 2 to the exhaust-passage 6, through a port 7 in said exhaust-passage; a valve 12 controlling said port; a pneumatic 14 operating said valve; a pneumatic-passage 16 leading from said pneumatic in said exhaust-passage to the outer air, having a pneumatic-port 17 at the outer end thereof; an air-passage 10 leading from the bellows 2 to the outer air, having an air-port 11 at the outer end thereof, the pneumatic-port 17 and air-port 11 being controlled by a single slide-valve 18 which alternately opens and closes said ports; and the pitman 20 connecting the valve 18 with the driving-shaft 3, by means of which the valve 18 is operated by the collapse of the bellows 2, substantially as described.

5. In a pneumatic apparatus, a structure providing an exhaust-passage 6, a valve-passage 8 communicating with said exhaust-passage by the port 7 and a valve 12 controlling said port; a bellows-passage 9 communicating with said valve-passage; a pneumatic-passage 16 adapted to control a pneumatic in said exhaust-passage, said pneumatic-passage terminating in a pneumatic-port 17; an air-passage 10 having an air-port 11 and a single slide-valve controlling the ports 17 and 11, and means for operating said slide-valve, substantially as described.

809,920. **POST AND CARLINE FOR RAILWAY-CAR FRAMES.** WILLIAM P. KIESEL, Jr., Altoona, Pa. Filed June 27, 1905. Serial No. 267,234.

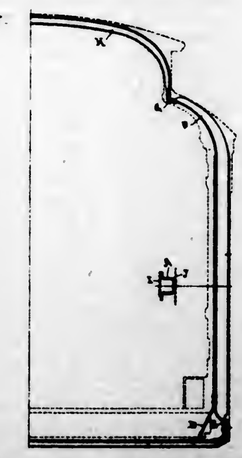

Claim.—1. In a car-frame, the combination, with a shaped metal post, of a carline formed as an integral cantaliver extension from the upper end thereof, the cantaliver at its base being of dimensions equal in strength with the post and gradually diminishing, as to said dimensions, as it bends toward the center of the car.

2. The combination, in a car-frame, of a shaped metal post, a lower-deck carline joined to the post in the form of an integral tapering cantaliver extension thereof, and an upper-deck carline smaller in cross-section than the post joined at its ends to the carlines projecting from opposite posts.

3. The combination, in a car-frame, of a post and carline formed in one piece of steel of U-shaped cross-section, the sides thereof being reinforced by outturned flanges along the legs of the U.

4. The combination, in a car-frame, of a post and carline formed in one piece of steel of U-shaped cross-section, the depth of the U

being gradually decreased where the carline bends toward the center of the car.

5. The combination, in a car-frame, of a post and lower-deck carline formed in one piece of steel of U-shaped cross-section, the carline portion tapering to smaller dimensions at its inward end, and an upper-deck carline similar in cross-section but of smaller dimensions than the post joined at its ends to the carline projecting from opposite posts.

6. The combination, in a car-frame, of a combined post and carline of steel pressed into U-shaped cross-section and a cover-plate riveted to the flanged side thereof.

7. The combination, in a car-frame, of a combined post and carline of steel pressed into U-shaped cross-section with inside and outside cover-plates riveted thereto.

8. The combination, in a steel car-frame, of channel side sills, posts of U-shaped cross-section riveted thereto at opposite sides of the car, lower-deck carlines formed by incurved extensions from said posts, longitudinal angle-bars riveted to the free ends of said carlines, and one-piece upper-deck carlines of U-shaped cross-section having their ends riveted to the longitudinal bars in line with the lower-deck carlines.

809,921. STEEL UNDERFRAME FOR RAILWAY-CARS. WILLIAM F. KIESEL, Jr., Altoona, Pa. Filed Aug. 23, 1905. Serial No. 275,269.

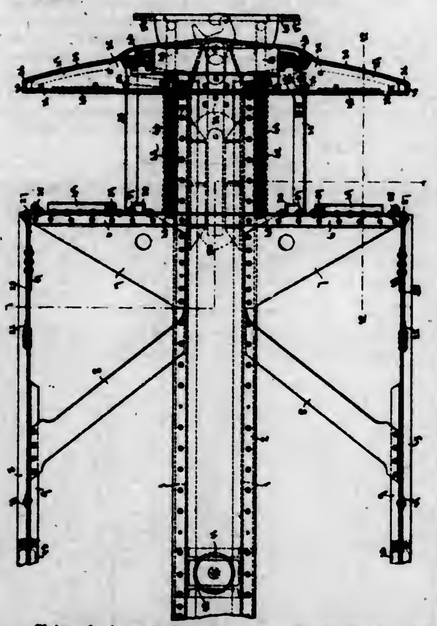

Claim.—1. An underframe for railway-cars comprising a center sill, center plates near each end upon which the center sill rests, and means for distributing and transferring the entire load of the superstructure to the center sill at points distant from the center plates.

2. An underframe for railway-cars constructed without body-bolsters and comprising a center sill in combination with end sills and intermediate cross-bearers so positioned as to distribute and transfer the entire load of the superstructure to the center sill.

3. An underframe for railway-cars constructed without body-bolsters and comprising a center sill in combination with center plates, end sills and intermediate cross-bearers so located relatively to one another that the entire load of the superstructure will be transferred by the end sills and cross-bearers to the center sill and so distributed that the stresses in the center sill over the center plates and near the center of the car will require practically the same section modulus throughout.

4. In an underframe constructed without body-bolsters, the combination of a center sill, cantaliver end sills projecting laterally from the center sill, cantaliver cross-bearers projecting laterally from the center sill intermediate the end sills, side sills joining the outer ends of the end sills and cross-bearers, and center plates attached to the center sill between the end sills and cross-bearers.

5. An underframe for railway-cars constructed without body-bolsters and comprising a box-girder center sill, center plates attached to the under side of the center sill near each end, end sills and intermediate cross-bearers projecting laterally from the center sill at points distant from the center plates and so spaced therefrom as to distribute and transfer the entire load of the superstructure to the center sill, and side sills joining the outer ends of the end sills and cross-bearers.

6. In an underframe, the combination, with a center sill, of an end sill comprising triangular plates flanged around the sides and projecting in vertical position from each side of the center sill, the upper side flanges of said plates being in horizontal alinement with the top of the center sill, and horizontal gusset-plates riveted to the upper flanges of said plates and to the top of the center sill.

7. In an underframe, the combination, with a center sill, of an end sill comprising vertical cantaliver-plates projecting from each side of the center sill, the upper sides of said cantalivers being in horizontal alinement with the top of the center sill, a transverse frame member passing across the center sill and riveted to the top of the cantalivers, and triangular gusset-plates riveted in horizontal position between the cantilivers and the transverse member and to the top of the center sill at each side thereof.

8. In an underframe, the combination of a center sill, end sills, intermediate cross-bearers, side sills joining the outer ends of the end sills and cross-bearers, oppositely-inclined diagonal braces between the center sill and side sills in the spaces between the end sills and cross-bearers, and triangular gusset-plates in the angles between the end sills and center sill.

9. In an underframe, the combination of a center sill, end sills, intermediate cross-bearers, side sills joining the outer ends of the end sills and cross-bearers, vertical side trusses spanning the spaces between the end sills and cross-bearers and also the central spaces between cross-bearers, of which trusses the side sills constitute the lower chords, and center plates attached to the center sill near each end between the end sills and cross-bearers.

10. In an underframe, the combination of a center sill, end sills, intermediate cross-bearers, angle-bar side sills joining the outer ends of the end sills and cross-bearers, vertical steel side trusses spanning the spaces between the end sills and cross-bearers and having the side-sill angle-bars for lower chords, wood sills resting in the angle of the angle-bar side sills, and wood side trusses spanning the central spaces between cross-bearers with the wood sills for lower chords.

11. In an underframe, the combination of a center sill, end sills, intermediate cross-bearers, angle-bar side sills joining the outer ends of the end sills and cross-bearers, oppositely-inclined diagonal braces extending out from the sides of the center sill and attached at their outer ends to reinforcing-angles on the inside of the side sills in the spaces between the end sills and cross-bearers, and transverse braces extending out from the sides of the center sill to the side sills in the spaces between the cross-bearers.

12. In an underframe, the combination of a center sill, cantaliver end-sill plates projecting out from each side thereof, angle-bar side sills having vertical limbs attached to the outer ends of said plates and outwardly-projecting horizontal limbs, and cantaliver cross-bearer plates projecting out from the sides of the center sill intermediate the ends, the horizontal limbs of the side sills resting upon and being secured to the outer ends of the cross-bearer plates.

13. In an underframe, the combination of a center sill, cantaliver end-sill plates projecting out from each side thereof and having their upper sides in horizontal alinement with the top of the center sill, angle-bar side sills having vertical limbs attached to vertical outer ends of the end-sill plates and outwardly-projecting horizontal limbs positioned below the level of the top of the center sill, and cantaliver cross-bearer plates projecting out from the sides of the center sill intermediate the ends, the upper sides of said cross-bearer plates being downwardly inclined and projecting beneath the horizontal limbs of the side sills at their outer ends.

14. In an underframe constructed without body-bolsters, the combination of a box-girder center sill, center plates attached to the bottom cover-plate thereof adjacent the ends, reinforcing-brackets inside the center-sill girder over the center plates, and cantaliver end sills and cross-bearers projecting out from the sides of the center sill at points to the front and rear of the center plates.

15. In an underframe constructed without body-bolsters, the combination of a box-girder center sill, center plates attached to the under side thereof, cantaliver end sills at each end beyond the center plates, cantaliver cross-bearers disposed at points between the center plates, side sills joining the outer ends of the end sills and cross-bearers, and oppositely-inclined diagonal braces between the center sill and side sills in the spaces at each side of the center plates.

16. In an underframe for railway-cars, a box-girder center sill extending from end to end of the car, platform end sills supported by the center sill at each end, and car-body end sills comprising vertically-disposed reinforced plates attached to and projecting from each side of the center sill back of the platform.

17. In an underframe for railway-cars, a box-girder center sill projecting beyond the car-body at each end, car-body end sills comprising vertical plates attached to and projecting from the sides of the girder, end castings projecting from the ends of the girder, and platform end sills carried by said castings.

18. In an underframe for railway-cars, a center sill projecting beyond the car-body at each end, car-body end sills projecting from the sides of the center sill, platform end sills supported by the projecting ends of the center sills, and longitudinal angle-braces between the car-body end sills and the platform end sills at each side of the center sill, said braces being so positioned as to act as top risers for the platform-steps.

19. In an underframe for railway-cars, a center sill projecting beyond the car-body, an end casting provided with lateral arms attached to the end of the center sill, a platform end sill supported by said arms, a car-body end sill projecting from the sides of the center sill, and longitudinal braces extending from said end sill to the arms of the end casting at each side of the center sill.

20. In an underframe for railway-cars, a box-girder center sill projecting beyond the car-body, an end casting secured between the vertical members of the girder and provided with laterally-projecting arms, cantaliver end sill plates projecting from the sides of the girder at the end of the car-body, angle brace-bars extending between the end sill-plates and the arms of the end casting, and a platform end sill carried by said arms.

21. In an underframe for railway-cars, a center sill projecting beyond the car-body, a car-body end sill carried thereby, a platform end sill supported at the end of the center sill, longitudinal brace-plates extending between the car-body end sill and the platform end sill at each side of the center sill and serving as risers for the top car-steps, and hanger-plates attached to both end sills to support the steps.

22. In an underframe for railway-cars, a box-girder center sill extending continuously from end to end of the car and an end casting attached thereto at each end, said castings being provided with laterally-projecting arms having guideways therein to receive the stems of a buffer-plate.

23. In an underframe for railway-cars, a box-girder center sill in combination with an end casting fastened between the vertical members thereof, said end casing having arms projecting at each side beyond the end of the center sill, guideways in said arms to receive the spring-stems of a vestibule buffer-plate, and a platform end sill suppotted by said casting.

24. The end casting 31 having arms 39 and guideways 45, substantially as herein described.

25. A platform end sill comprising a transverse horizontal plate, an end casting having laterally-projecting arms positioned beneath said plate, a vertical cover-plate passing around and secured to the end casting and to the horizontal plate, and means for attaching the end casting to the center sill of a car-underframe.

26. A platform end sill comprising the flanged horizontal plate 32, the end casting 31, and the vertical cover-plates 33 and 34 riveted around the sides thereof substantially as herein described.

27. In an underframe for railway-cars, the combination, with a box-girder center sill extending out under the car-platform and car-body end-sill plates projecting from the sides thereof, of an end casting riveted between the vertical members of the girder, lateral arms projecting from the end casting beyond the center sill, angle brace-bars extending out from the end-sill plates parallel to the center sill and fastened to said arms, a horizontal platform end-sill plate resting upon and riveted to center sill, end casting and brace-bars, and vertical cover-plates riveted to the sides of the platform and sill-plate at front and rear, the front cover-plate being also riveted to the arms of the end casting, and the rear cover-plates being riveted to the brace-bar.

28. In an underframe for railway-cars, the combination, with a center sill extending out under the car-platform and vertical car-body end-sill plates projecting from the sides thereof back of the platform, of a platform end-sill support at the end of the center sill, a vestibule buffer-plate, buffer-stems mounted in guideways on said support, said stems passing back at each side of the center sill through guides on the body end-sill plates, and springs on the stems between said plates and said support.

809,922. RUFFLING MECHANISM FOR SEWING-MACHINES. ALEXANDER LAMBERSEN, Bridgeport, Conn., assignor to Wheeler & Wilson Manufacturing Company, Bridgeport, Conn., a Corporation of Connecticut. Filed Nov. 8, 1904. Serial No. 231,883.

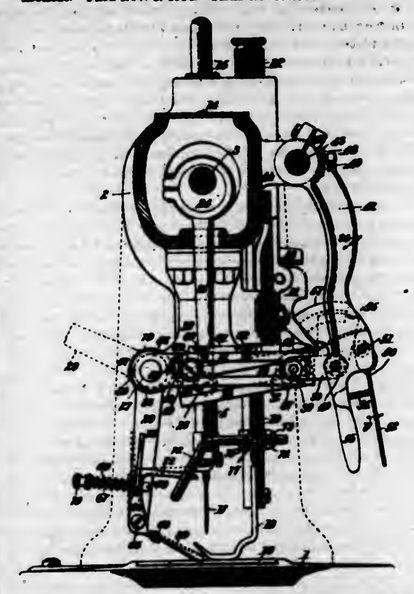

Claim.—1. The combination of stitch-forming mechanism including a needle-actuating shaft, a ruffling mechanism comprising rock-levers having separate pivotal supports, means to couple said levers adjustably to vary the throw of the crimping-blade, a connection between said coupled levers and the needle-actuating shaft by means of which said levers are rocked, a vibrating crimping-blade actuated by said levers, and a hand-lever connected with the means for coupling said rock-levers for controlling the extent of vibration thereof and suspending its vibration at will.

2. The combination of a stitch-forming mechanism including a needle-actuating shaft, a ruffling mechanism including a vibrating crimping-blade, a rock-shaft from which said crimping-blade derives motion, a lever on said shaft having a vibrating connection with the needle-actuating shaft, a spring-impelled hand-operated lever having a movable connection with the rock-lever, and a spring-catch on said hand-lever for engaging said rock-lever.

3. The combination of a stitch-forming mechanism including a needle-actuating shaft, and a ruffling mechanism including a crimping-blade, a vibrating lever upon which said blade is mounted, a rock-shaft supporting said lever, a rock-shaft-actuating lever, a connection between said actuating-lever and the needle-actuating shaft, and a hand-actuated lever connected with the rock-shaft-actuating lever and adapted to arrest the movement of said crimping-blade and also to change the amplitude of vibration of said crimping-blade at will.

4. The combination of a stitch-forming mechanism including a needle-actuating shaft, and a ruffling mechanism including a rock-lever, a connection between said rock-lever and the needle-actuating shaft whereby it is vibrated, a crimping-blade, a rock-shaft from which said crimping-blade derives motion, a lever on said rock-shaft, a shiftable coupling connecting this rock-shaft lever with the rock-lever, and a hand-lever linked to said coupling and adapted to move lengthwise of the levers to change the throw of the crimping-blade lever and also to arrest its movement without arresting the movement of the rock-lever connected with the needle-actuating shaft.

5. The combination of a stitch-forming mechanism including a needle-actuating shaft, and a ruffling mechanism including a vibrating crimping-blade lever, a rock-shaft on which said lever is mounted, a connection between said rock-shaft and the needle-actuating shaft by which the rock-shaft is actuated, and means to control the extent of movement or throw of the rock-shaft, comprising a slotted lever fixed to said shaft and coupled with the needle-shaft connection

to derive motion from it, one or more stops on said slotted lever, a hand-lever, and a connection between said hand-lever and said slotted lever movable within said slotted lever to an extent limited by said stops.

6. The combination of a stitch-forming mechanism including a needle-actuating shaft, and a ruffling mechanism including a vibrating crimping-blade lever, a rock-shaft on which said lever is mounted, a connection between said rock-shaft and the needle-actuating shaft by which the rock-shaft is actuated, and means to control the extent of movement or throw of the rock-shaft, comprising a slotted lever fixed to said shaft and coupled with the needle-shaft connection to derive motion from it, a stop longitudinally adjustable in said slotted lever, a hand-lever, and a connection between said hand-lever and said slotted lever movable within said slotted lever to an extent limited by said stop.

7. In a ruffling mechanism for sewing-machines, a crimping-blade, a lever upon which it is mounted, a rock-shaft having a hub provided with holes, and a reduced axial extension, a hollow hub on said crimping-blade lever mounted on said extension, and provided with pins to engage the holes in the hub of the shaft, and a spring permitting longitudinal movement of the lever on the shaft and serving to hold the pins in engagement with the holes when said lever is adjusted into operative and inoperative positions, respectively.

8. The combination of a stitch-forming mechanism including a needle-actuating shaft, a cloth-feeding mechanism, a vibrating crimping-blade lever, a rock-shaft on which said lever is mounted, a connection between said rock-shaft and the needle-actuating shaft by which the rock-shaft is actuated, and means to control the operation and likewise the extent of throw of the rock-shaft, comprising a longitudinally-slotted lever fixed to said rock-shaft and coupled with the needle-actuating shaft connection, a hand-lever adjustably connected with the slotted lever, a catch on said hand-lever adapted to arrest the movement of the slotted lever and when released to permit a relative movement of the hand-lever and slotted lever, and a stop to limit the relative movement of the hand-lever and slotted lever.

809,923. **RETAINING-STALL FOR CALVES.** ALLEN A. LEWIS, Hanlon, Iowa. Filed Mar. 30, 1905. Serial No. 252,573.

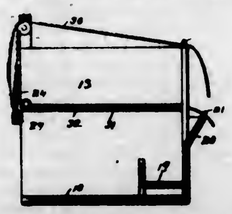

Claim.—1. In a device of the class described, a series of partitions forming stalls, means for securing the partitions in position relative to each other, a manger at the forward portion of the stalls, a retaining-bar at the rear of the partitions, a rope attached to said retaining-bar for raising the retaining-bar from its lower limit of movement, and a second rope secured to the retaining-bar and designed to draw the bar to its lower inner limit of movement.

2. In a device of the class described, a series of partitions forming stalls, means for securing the partitions in position relative to each other, a manger at the forward portion of the stalls, a retaining-bar at the rear of the partitions, a rope attached to said retaining-bar for raising the retaining-bar from its lower limit of movement, and a retaining device at the forward end of one of the partitions for securing the rope in various positions.

3. In a device of the class described, a series of partitions forming stalls, means for securing the partitions in position relative to each other, a manger at the forward portion of the stalls, a retaining-bar at the rear of the partitions, a rope attached to said retaining-bar for raising the retaining-bar from its lower limit of movement, and a retaining device in front of one of said partitions for securing the second rope in position for retaining the retaining-bar at its lower inner limit of movement.

4. In a device of the class described, a series of partitions forming stalls, means for securing the partitions in position relative to each other, a manger at the forward portion of the stalls, a retaining-bar at the rear of the partitions, a rope attached to said retaining-bar for raising the retaining-bar from its lower limit of movement, and a second rope secured to the retaining-bar and designed to draw the bar to its lower inner limit of movement, and a retaining device at the forward end of one of the partitions for securing the rope in various positions.

5. In a device of the class described, a series of partitions forming stalls, means for securing the partitions in position relative to each other, a manger at the forward portion of the stalls, a retaining-bar at the rear of the partitions, a rope attached to said retaining-bar for raising the retaining-bar from its lower limit of movement, a second rope secured to the retaining-bar and designed to draw the bar to its lower inner limit of movement, a retaining device at the forward end of one of the partitions for securing the rope in various positions, and a retaining device in front of one of said partitions for securing the second rope in position for retaining the retaining-bar at its lower inner limit of movement.

6. In a device of the class described, a series of partitions forming stalls, means for securing the partitions in position relative to each other, a series of pivotally-mounted supporting-rods attached to the rear of said partitions, a retaining device secured to the lower ends of said rods, a rope secured to said retaining device, passing over one of said partitions to the forward end of it, a retaining device for maintaining the rope in various positions, a second rope secured to said retaining-bar and passing through one of said partitions to a point in front of the partition, a retaining device for maintaining the rope in various positions, said ropes and retaining devices being designed to support and secure said retaining-bar in any position in its limit of movement.

809,924. **COMBINED HARNESS SNAP AND SLIDE.** JOHN RECHNEY, Racine, Wis. Original application filed Mar. 3, 1905. Serial No. 248,196. Divided and this application filed June 14, 1905. Serial No. 265,214.

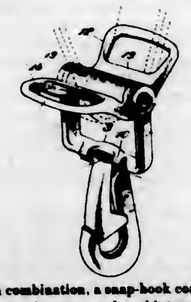

Claim.—1. In combination, a snap-hook comprising a shank or hook portion having at its upper end, and integral therewith, the U-shaped cross-head comprising elongated upwardly-projecting arms with bearing-openings in their upper ends, a breast-strap slide having side ears pivotally confined to said arms, and an idler-roller arranged transversely of the slide and between said ears and rotating on an axis concentric with the axis of the pivotal connection between the slide and said arms.

2. In combination, a snap-hook comprising a shank or hook proper at its upper end having a U-shaped cross-head comprising the elongated upwardly-extending arms, a slotted breast-strap slide pivotally joined to the upper ends of said arms which extend beside the side faces of said slide, and an idler-roller arranged transversely of said slide and forming the bottom strap-receiving surface thereof, substantially as described.

3. In combination, a slide having a bottom opening with cross-bars on opposite sides thereof, a hook having upwardly-extending arms, a rivet passing through the upper ends of said arms and through the sides of said slide and longitudinally of said opening, and an idler-roller on said rivet between the sides of the slide and said cross-bars, substantially as described.

4. A combined harness snap and slide, comprising a slide-frame having side walls and cross-bars between said side walls and spaced a distance apart, an idler-roller arranged between the side walls and cross-bars and forming the bottom strap-receiving surface of the slide, and a snap-hook having a top head pivotally connected with said side walls, substantially as described.

809,935. **GLASS-FURNACE.** SILAS G. RISBARDSON, Jr., Toledo, Ohio. Original application filed July 2, 1904, Serial No. 214,022. Divided and this application filed Apr. 20, 1905. Serial No. 256,559.

Claim.—1. A glass-furnace which comprises a heating-chamber and a plaining-chamber, in free communication with each other above the metal-line of the plaining-chamber, a melting-pot mounted in the heating-chamber, a metal-conduit leading from the outlet of the melting-pot into the plaining-chamber, said furnace being provided with an air-port interposed between the heating-chamber and the plaining-chamber, below said conduit.

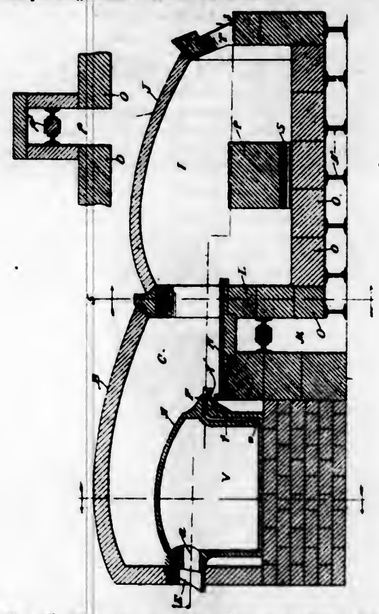

2. A glass-furnace, comprising a heating-chamber, a substantially closed melting-pot mounted in said heating-chamber, said pot being provided with a feed-port opening outside of said heating-chamber, and with an outlet-port discharging into the furnace, said furnace being also provided with a plaining-chamber, a conduit arranged to receive metal from said pot and to take it into said plaining-chamber, said furnace being also provided with an air-port interposed between the plaining-chamber and the heating-chamber, and below the level at which said conduit crosses said air-port.

3. In a glass-furnace, the combination with a heating-chamber, of a melting-pot mounted in said chamber and having a feed-in opening at one end and arranged to discharge into said heating-chamber, a plaining-chamber, means for conducting the product of said pot from the heating-chamber to the plaining-chamber, and means for passing the flame and gases through said heating-chamber and around said pot, so as to reduce the contents of said pot and maintain the fluidity of the contents of said plaining-chamber.

REISSUES.

12,434. **WIRE-FENCE FABRIC.** THOMAS LEYWILLER, Tremont, Ill. Filed Nov. 2, 1904. Serial No. 231,189. Original No. 769,228, dated Sept. 6, 1904.

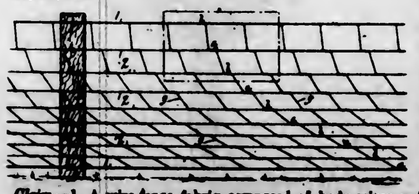

Claim.—1. A wire-fence fabric, composed of body-wires and selvage-strands, of stay-wires extending obliquely across the body-wires from selvage-strand to selvage-strand and at each succeeding point of intersection with the selvage-strands and body-wires twisted therewith alternately over and under, substantially as specified.

2. In a wire-fence fabric, the combination of a series of body-wires, and stay-wires, extending obliquely across the body-wires from selvage to selvage, the twist of adjacent stays with corresponding body-wires being alternately over and under and having the twists measured along the body-wires in the same direction, substantially as specified.

3. In a wire-fence fabric, the combination of a series of body-wires and selvage-strands, stay-wires extending obliquely across the series of body-wires and twisted with adjacent body-wires alternately over and under, and adjacent stays twisted with corresponding body-wires alternately over and under and having the twists measured along the body-wires in the same direction, substantially as specified.

4. In a wire-fence fabric, the combination of a series of body-wires and selvage-strands, stay-wires extending obliquely across the body-wires from selvage to selvage and twisted with adjacent body and selvage wires, alternately over and under and having the twists of the stays and body-wires measured along the body-wires in the same direction, and short longitudinally-presented extensions of each stay where they are twisted with the selvage-strands, substantially as specified.

5. In a wire-fence fabric, the combination of a series of running-wires, of stay-wires bearing obliquely across the running-wires and twisted with the running-wires where they intersect, the twist of the stay-wires as they bear diagonally across the fabric from right to left being alternately over and under and having their twists uniform in a line bearing diagonally across the fabric from left to right, substantially as specified.

6. In a wire fence, the combination of a series of body-wires and selvage-wires, stay-wires intertwisted with the body-wires and selvage-wires and alternate stay-wires where they intersect with the body and selvage wires being intertwisted therewith alternately over and under, that portion of the body-wires where they intertwist with the stay-wires inclined slightly out of horizontal, while that portion of each body-wire intermediate each twist is inclined slightly out of horizontal but in an opposite direction to the incline of the twisted portion.

7. A wire fence, composed of body-wires and selvage-wires, of stay-wires extending across the body-wires from selvage-wire to selvage-wire and each stay at each succeeding point of intersection with the selvage and body wires twisted therewith alternately over and under, the stay-sections between the selvage and body wires bearing in oblique lines and always in advance of their twists with the lower selvage-wire and behind their twists with the upper selvage-wire, substantially as specified.

8. In a wire-fence fabric, the combination of running-wires, stay-wires extending obliquely across the running-wires, adjacent stay-wires where they intersect with corresponding running-wires twisted therewith alternately over and under both across the running-wires and measured along corresponding running-wires, substantially as specified.

9. A wire fence, composed of body-wires and selvage-strands, of stay-wires extending obliquely across the body-wires from selvage-strand to selvage-strand and forming an arc between their ends, the said stays at each succeeding point of intersection with the selvage-strands and body-wires twisted therewith alternately over and under, substantially as specified.

12,435. **MERRY-GO-ROUND.** CHARLES F. WERNER, New York, N. Y. Filed Oct. 24, 1905. Serial No. 284,283. Original No. 773,549, dated Oct. 18, 1904.

Claim.—1. In an apparatus of the class described, the combination of a plurality of pairs of shafts arranged in a circle and provided with sprocket-wheels, devices operating in connection with said shafts for turning the alternate pairs of shafts in opposite directions, tracks or ways arranged at the opposite sides of the sprocket-wheels of the separate pairs of shafts and crossing each other between said pairs, a plurality of pairs of drive-chains arranged in said tracks or ways and equaling in number one-half the number of pairs of shafts, and vertically-arranged supports connected with said drive-chains, substantially as shown and described.

2. In an apparatus of the class described, a platform, a plurality of pairs of shafts passing vertically through said platform, sprocket-wheels connected with said shafts, means for turning the separate pairs of shafts in opposite directions, tracks or ways ar-

ranged at the opposite sides of the alternate pairs of shafts and crossing each other between said pairs, a plurality of pairs of drive-chains mounted in said tracks or ways and in connection with which said sprocket-wheels operate, and vertically-arranged rods connected with said chains and provided with supports, substantially as shown and described.

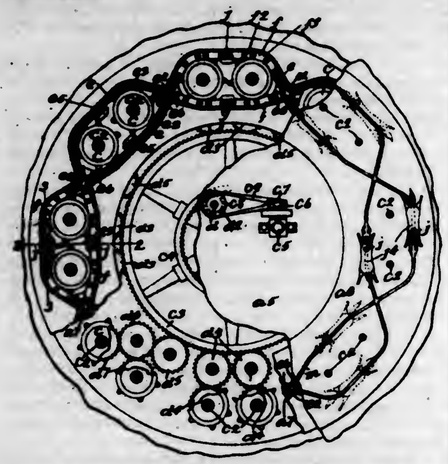

3. An apparatus of the class described comprising top and bottom portions, a plurality of vertical shafts arranged in pairs and the ends of which are mounted in said top and bottom portions, sprocket-wheels connected with the upper and lower ends of said shafts, tracks or ways at the opposite sides of the sprocket-wheels of each of said pairs of shafts in the top and bottom portions of the apparatus and crossing each other between said pairs, a plurality of pairs of drive-chains placed in said tracks or ways in the top and bottom portions of the apparatus and adapted to operate in connection with said sprocket-wheels, vertically-arranged rods connecting the bottom and top drive-chains, supports connected with said rods and means for turning the separate pairs of shafts in opposite directions, substantially as shown and described.

4. An apparatus of the class described, comprising a central drive-wheel, a plurality of pairs of shafts arranged in a circle around said drive-wheel, said pairs of shafts being geared in connection with said drive-wheels so as to be turned in opposite directions and being also provided with sprocket-wheels, tracks or ways arranged on the opposite sides of the sprocket-wheels of the separate pairs of shafts and crossing each other between said pairs, a plurality of pairs of drive-chains mounted in said tracks or ways and equaling in number one-half the pairs of shafts and sprocket-wheels, and vertically-arranged supports connected with said chains, substantially as shown and described.

5. In an amusement apparatus of the class described, endless tracks or ways which intercept each other at intervals, drive-chains of predetermined length movable in said tracks or ways, and devices for moving said chains in opposite directions in said tracks or ways, substantially as shown and described.

6. In an amusement apparatus of the class described, endless tracks or ways which intercept each other at intervals, drive-chains of predetermined length movable in said tracks or ways and devices for moving said chains in opposite directions in said tracks or ways, said chains being also provided with supports, substantially as shown and described.

7. In an amusement apparatus of the class described, a plurality of endless tracks or ways arranged to cross each other at intervals, drive-chains of predetermined length mounted in said tracks or ways, vertically-arranged supports connected with said drive-chains and means for moving said chains in opposite directions through said tracks or ways, substantially as shown and described.

8. In an amusement apparatus of the class described, a plurality of endless tracks or ways arranged in the same horizontal plane and crossing each other at intervals, chains of predetermined length mounted in said tracks or ways and provided with supports, and means for moving said chains in opposite directions through said tracks or ways, substantially as shown and described.

9. In an amusement apparatus of the class described, an endless irregular track or way, drive-chains of predetermined lengths mounted in said track or way, and means for moving said chains through said track or way, substantially as shown and described.

10. In an amusement apparatus of the class described, an endless irregular track or way, drive-chains of predetermined lengths mounted in said track or way, and means for moving said chains through said track or way, said chains being also provided with supports, substantially as shown and described.

DESIGNS.

37,777. BACK FOR BRUSHES, HAND-MIRRORS, AND SIMILAR ARTICLES. SIDNEY A. KELLER, New York, N. Y., assignor to Webster Company, North Attleboro, Mass., a Corporation of Rhode Island. Filed July 12, 1905. Serial No. 269,419. Term of patent 7 years.

Claim.—The ornamental design for a back for brushes, hand-mirrors and similar articles, as shown.

37,778. BACK OF HAND-MIRRORS OR SIMILAR ARTICLES. SIDNEY A. KELLER, New York, N. Y., assignor to Jacob Bernheim, New York, N. Y., trading as Woodside Sterling Company, a Firm. Filed Dec. 2, 1905. Serial No. 289,464. Term of patent 7 years.

Claim.—The ornamental design for the back of a hand-mirror or similar article, as shown.

37,779. CONDIMENT-HOLDER. FRANCIS SCHERMER, Vincennes, Ind., assignor to Vincennes Novelty Manufacturing Company, Vincennes, Ind., a Corporation of Indiana. Filed Dec. 1, 1905. Serial No. 288,994. Term of patent 3½ years.

Claim.—The ornamental design for a condiment-holder, as shown.

37,780. SUPPORTING BASE OR STANDARD FOR CANDELABRA. HENRY B. BEACH and HENRY KAYSER, Meriden, Conn., assignors to The International Silver Company, Meriden, Conn., a Corporation of New Jersey. Filed Dec. 5, 1905. Serial No. 289,439. Term of patent 7 years.

Claim.—The ornamental design for a supporting base or standard for candelabrum, as shown.

37,781. CUP OR ORNAMENT. HENRY B. BEACH and HENRY KAYSER, Meriden, Conn., assignors to The International Silver Company, Meriden, Conn., a Corporation of New Jersey. Filed Dec. 5, 1905. Serial No. 289,440. Term of patent 7 years.

37,781.

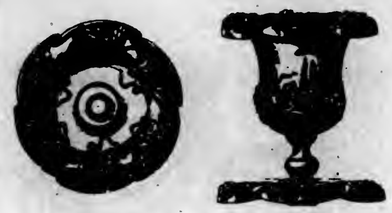

Claim.—The ornamental design for a cup, as shown.

37,782. WAGON-BODY. WILL S. COFFMAN, Columbia, Tenn. Filed Aug. 14, 1905. Serial No. 274,231. Term of patent 14 years.

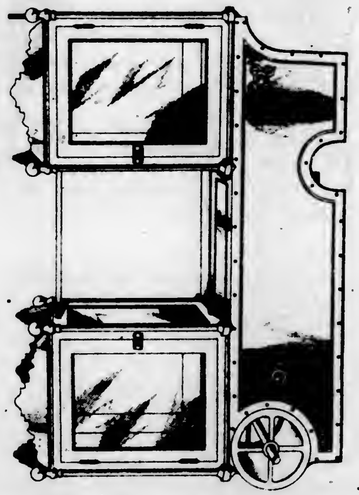

Claim.—The ornamental design for a wagon-body, as shown.

37,783. LEVERS LACE. CHARLES W. BIRKIN, Nottingham, England. Filed Oct. 21, 1905. Serial No. 283,857. Term of patent 3½ years.

Claim.—The ornamental design for Levers lace as shown.

37,784. PORTIÈRE. MOSES HARBURGER, New York, N. Y. Filed Dec. 4, 1905. Serial No. 290,318. Term of patent 7 years.

Claim.—The ornamental design for a portière as shown.

37,785. PORTIÈRE. MOSES HARBURGER, New York, N. Y. Filed Dec. 4, 1905. Serial No. 290,319. Term of patent 7 years.

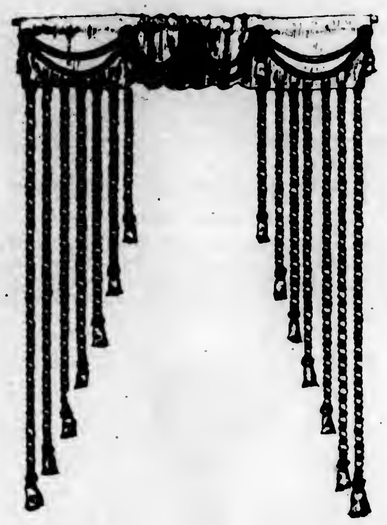

Claim.—The ornamental design for a portière as shown.

TRADE-MARKS

PUBLISHED JANUARY 9, 1906.

The following trade-marks have been adjudged entitled to registration under the act of February 20, 1905, and are published in compliance with section 6 of said act. Said section provides:

"Any person who believes he would be damaged by the registration of a mark may oppose the same by filing notice of opposition, stating the grounds therefor, in the Patent Office within thirty days after the publication of the mark sought to be registered, which said notice of opposition shall be verified by the person filing the same before one of the officers mentioned in section two of this act. If no notice of opposition is filed within said time the Commissioner shall issue a certificate of registration therefor, as hereinafter provided for."

Marks which are stated to have been "Used ten years" are registrable under the last proviso of section 5 of said act, which is as follows:

"And provided further, That nothing herein shall prevent the registration of any mark used by the applicant or his predecessors, or by those from whom title to the mark is derived, in commerce with foreign nations or among the several States, or with Indian tribes, which was in actual and exclusive use as a trade-mark of the applicant or his predecessors from whom he derived title for ten years next preceding the passage of this act."

Section 14 of said act provides for the following fee:

"On filing notice of opposition to the registration of a trade-mark, ten dollars."

SER. No. 186. FLAVORING EXTRACTS. JORDAN STABLER CO., Baltimore, Md. Filed Apr. 1, 1905. Used ten years.

STERLING

£

The word "STERLING" and a representation of the sign of the English pound-mark.

SER. No. 871. COTTON-CLOTH BUFF-WHEELS. WILLIAMSVILLE MANUFACTURING COMPANY, Killingly, Conn. Filed Apr. 4, 1905. Used ten years.

The character "A 1" inclosed in an ellipse, together with the words "WILLIAMSVILLE MFG. CO. KILLINGLY, CONN."

SER. No. 485. AXES, HATCHETS, AND ADZES. THE COLLINS COMPANY, Collinsville, Conn. Filed Apr. 6, 1905. Used ten years.

SER. No. 485.

COLLINS.

The word "COLLINS."

SER. No. 1,132. CHAINS, FOBS, CHATELAINES, AND CHAIN-TRIMMINGS. CHARLES R. HARRIS, North Windham, Conn. Filed Apr. 11, 1905.

The representation of a bullfrog on the bank of a pool.

SER. No. 1,323. PRESERVED OLIVES. CHARLES GULDEN, New York, N. Y. Filed Apr. 13, 1905.

BON TON

The words "BON TON."

SER. No. 1,331. YARNS OF ALL DESCRIPTIONS. WM. H. HORSTMANN COMPANY, Philadelphia, Pa.; New York, N. Y.; Boston, Mass.; Baltimore, Md.; Detroit, Mich., and Paris and Lyons, France. Filed Apr. 13, 1905. Used ten years.

SER. No. 1,881.

The allegorical figure of Columbia represented as being seated with a distaff in one hand and surrounded by a flock of sheep in the foreground of a scene showing trees with foliage and a hillock, and the word "COLUMBIA."

SER. No. 1,355. GLOVES AND MITTENS. THE JOSEPH N. EISENDRATH COMPANY, Chicago, Ill. Filed Apr. 13, 1905.

ASBESTOL

The word "ASBESTOL."

SER. No. 1,559. BRAKE-SHOES. AMERICAN BRAKE SHOE & FOUNDRY COMPANY, New York, N. Y. Filed Apr. 14, 1905.

A three-sided figure formed of two vertical bars or arms and a cross-bar connecting the upper ends of the two vertical bars.

SER. No. 1,611. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio. Filed Apr. 15, 1905. Used ten years.

TEXAN

The word "TEXAN."

SER. No. 1,719. AUTOMATIC FIRE-EXTINGUISHING APPARATUS. INTERNATIONAL SPRINKLER CO., Philadelphia, Pa. Filed Apr. 15, 1905.

The representation of the terrestrial globe, the same being surrounded by a relatively heavy circular border. Upon this globe is placed the representation of a sprinkler-head.

SER. No. 1,727. WHISKY. DAVID WISE & CO., Chicago, Ill. Filed Apr. 15, 1905.

GOLDEN AGE

The words "GOLDEN AGE."

SER. No. 1,809. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio. Filed Apr. 15, 1905.

TREASURY

The word "TREASURY."

SER. No. 1,817. LIQUID MEDICINAL PREPARATION USED AS AN ANTISEPTIC, GERMICIDE, AND HEALING AGENT. HENRY HEIL CHEMICAL CO., St. Louis, Mo. Filed Apr. 17, 1905.

BOROBENPHENE

The word "BOROBENPHENE."

SER. No. 1,822. WHISKY. NATHAN M. URI, Louisville, Ky. Filed Apr. 17, 1905. Used ten years.

Brookwood

The word "BROOKWOOD."

SER. No. 1,823. WHISKY. NATHAN M. URI, Louisville Ky. Filed Apr. 17, 1905. Used ten years.

KENTON
CLUB

The words "KENTON CLUB."

SER. No. 1,824. WHISKY. NATHAN M. URI, Louisville, Ky. Filed Apr. 17, 1905. Used ten years.

The word "INTERNATIONAL" within parallel lines which cross a shield outline design.

SER. No. 1,900. LYE AND POTASH. EAGLE LYE WORKS, Milwaukee, Wis. Filed Apr. 17, 1905.

EAGLE

The word "EAGLE" associated with a circular panel having thereupon the representation of an eagle with outstretched wings, standing upon a rock, with one foot resting upon a can bearing the word "LYE."

SER. No. 1,917. WHISKY. A. A. WOLF & CO., Pittsburg, Pa. Filed Apr. 17, 1905.

Africander

The word "AFRICANDER" and the picture of two horses and their riders racing past a judges' stand, inclosed in an oval picture-frame border.

SER. No. 2,586. WHISKY. THE WEISSMAN COMPANY, Cleveland, Ohio. Filed Apr. 21, 1905.

AULD LANG SYNE

The words "AULD LANG SYNE" and a picture of a household scene, showing two men seated at a table drinking and clasping each other's hands, with a woman and another man looking on. The picture is enclosed by an oval design, at each side of which are stems and heads of grain. At the lower left-hand side of the picture is a double circle inclosing a monogram composed of the letters "T W Co" and at the lower right-hand side is a double circle inclosing a thistle design.

SER. No. 3,086. REMEDIES FOR MALARIAL DISEASES. PARIS MEDICINE CO., St. Louis, Mo. Filed Apr. 26, 1905.

FEBRILINE
-OR-
LYON'S
Tasteless Syrup of Quinine

The words "FEBRILINE OR LYON'S TASTELESS SYRUP OF QUININE."

SER. No. 3,119. WHISKY. ROSE-GRAND DIST. CO., Owensboro, Ky. Filed Apr. 26, 1905.

SER. No. 3,119.

Old
Kentucky
Colonel

The words "OLD KENTUCKY COLONEL" and a picture of a fanciful old Kentucky colonel holding a whisky-glass in his hand.

SER. No. 3,230. CARBORUNDUM ABRASIVE MATERIAL. THE CARBORUNDUM COMPANY, Niagara Falls, N. Y. Filed Apr. 27, 1905.

The representation of an Indian's head on a dark circular background.

SER. No. 3,282. SILKS AND SATINS. WILLIAM SKINNER MANUFACTURING COMPANY, Holyoke, Mass.; New York, N. Y.; Boston, Mass.; Chicago, Ill., and Philadelphia, Pa. Filed Apr. 27, 1905.

SKINNER'S

The word "SKINNER'S."

SER. No. 3,471. LINIMENT FOR MAN AND BEAST. JAMES J. WALSH, Quincy, Ill. Filed Apr. 28, 1905.

COMMON-SENSE

The hyphenated word "COMMON-SENSE."

SER. No. 3,505. CIGARS. WILLIAM BOUCHER, Baltimore, Md. Filed Apr. 28, 1905.

A monogram of the letters "W B" associated with the words "HAND" and "MADE."

SER. No. 3,582. UNDERSHIRTS AND UNDERDRAWERS. H. Lehn & Co., New York, N. Y. Filed Apr. 26, 1905. Used ten years.

The representation of a desert scene with a lion in the foreground surrounded by a circular band, on which appear the words "STUTTGARTER NORMAL SANITARY UNDERWEAR" and scrolls flowing from said band, on which appear the words "IMPROVED SYSTEM. GUARANTEED PURE WOOL."

SER. No. 3,858. PLUG, CUT-PLUG, AND SMOKING TOBACCO. JOSEPH G. DILL, INC., Richmond, Va. Filed May 1, 1905.

The word "VALISE" and the representation of a negro boy carrying upon his head a valise or suit-case having centrally located thereon an oval field bearing the name J. G. Dill.

SER. No. 3,926. CALCINED PLASTER, A MANUFACTURED PRODUCT OF GYPSUM OR PLASTER-ROCK. CALVIN TOMKINS. New York, N. Y. Filed May 1, 1905. Used ten years.

The words "STANDARD PLASTER" appear upon a standard or banner. Associated with the above is a rayed background, the monogram "C T," and the words "HILLSBOROUGH ROCK CALCINED PLASTER, CALVIN TOMKINS, NEW YORK."

SER. No. 3,974. SPICES. B. B. Dunkin & Co., New York, N. Y. Filed May 3, 1905.

XXX

The letters "X X X."

SER. No. 4,077. DRIED, SMOKED, PICKLED, SALTED, AND CANNED FISH. WILLIAM T. SMITH, Gloucester, Mass. Filed May 3, 1905. Used ten years.

The representation of a fish with the word "FISHERS."

SER. No. 4,172. GREASE ADAPTED FOR USE AS A LUBRICANT OR DRESSING. KENT LUBRICATING COMPANY, Milwaukee, Wis. Filed May 3, 1905. Used ten years.

The representation of a Ferris wheel within a fair-ground and a crowd of people appearing at its base.

SER. No. 4,478. WHISKY. MARYLAND DISTILLING CO., Chicago, Ill. Filed May 6, 1905.

The words "KING MARYLAND" and a design showing a barrel with arms and legs, a bottle for the neck and a crown for the head, standing on and bordered by stems, leaves, and heads of grain. On the barrel is a monogram composed of the letters and abbreviation "M D Co" inclosed by the representation of a wreath.

SER. No. 4,508. WHISKY. KAUFMANN, BAER & Co., Cincinnati, Ohio. Filed May 6, 1905.

J. O'R.

The letters "J. O' R."

SER. No. 4,638. WHISKIES. MEADOWBAR, PENNSYLVANIA DISTILLING COMPANY, Meadville, Pa. Filed May 8, 1905.

SER. No. 4,638.

The arbitrary word "PURYO" superposed across the representation of a heart-shaped figure, upon which latter is seated an allegorical female figure having wings and holding a trumpet.

SER. No. 4,716. MALT WHISKY. WORMSER, LUYKEN & Co., San Francisco, Cal. Filed May 8, 1905.

The representation of a wax seal having a central circular depression, and two loops of ribbon extending from its upper side and two streamers below. Upon the circular depression in the seal the words "FORRESTER'S WHISKEY CO." appear, arranged in circular form, while between the word "FORRESTER'S" and the words "WHISKEY CO." the words "PURE MALT" appear in a straight line across the center of the seal.

SER. No. 4,794. WHEAT-FLOUR. THORNTON & CHESTER MILLING CO., Buffalo, N. Y. Filed May 9, 1905. Used ten years.

The representation of a shield having the letters and character "T & C" arranged as a monogram thereon.

SER. No. 4,821. DYEING PREPARATION. EDWARD C. FOSTER, Providence, R. I. Filed May 9, 1905.

AZONIL

The word "AZONIL."

SER. No. 4,939. LINER, SLEEVE-BUTTONS, COLLAR-BUTTONS, STUDS, AND BLOUSE-BUTTON SETS. STANDARD BUTTON COMPANY, Attleboro, Mass. Filed May 10, 1905.

SER. No. 4,939.

A shell-like figure with a border of scroll design, on the face of the figure being two dollar-marks.

SER. No. 5,148. WHISKY. KAUFMANN, BAER & Co., Cincinnati, Ohio. Filed May 11, 1905. Used ten years.

The words "WALTON CLUB" and a design showing a fish within a scroll outline which is crossed by a landing-net and a fish pole and line.

SER. No. 5,170. RUBBER HOSE. GORHAM RUBBER COMPANY, San Francisco, Cal. Filed May 11, 1905.

AMAZON

The word "AMAZON."

SER. No. 5,352. WHISKY. I. MICHELSON & BROS., Cincinnati, Ohio. Filed May 12, 1905. Used ten years.

The words "LORD BACON," associated with the representation of a fanciful coat of arms comprising winged dragons rampant against a shield having thereupon a monogram of the letters, character, and abbreviation "I M & BROS," with stalks of rye rising from the top of the shield.

SER. No. 5,488. WHISKY. MUELLER, WATERS AND KOSHER, Lebanon, Ky. Filed May 13, 1905. Used ten years.

The word "CUMBERLAND."

SER. No. 5,544. WHISKY. FRANK KISSOW, Jr., Cleveland, Ohio. Filed May 13, 1905.

OLD TOWN CLUB

The words "OLD TOWN CLUB," associated with the picture of a club-house, in front of which are trees and benches, the picture being inclosed in a rectangular border.

SER. No. 5,585. CHEESE. PHENIX CHEESE CO., South Edmeston, N. Y. Filed May 13, 1905. Used ten years.

The word "EXCELSIOR" arranged between two circles, there being a diamond arranged within the inner circle, having therewithin the letters "L X C R," the "X" being superimposed upon the "C."

SER. No. 5,666. WHEAT-FLOUR. THE MODEL MILLING & ELEVATOR COMPANY, Greeley, Colo. Filed May 15, 1905.

SNOW-FLAKE

The word "SNOW-FLAKE."

SER. No. 5,768. YEAST-POWDER. RUMFORD CHEMICAL WORKS, Providence, R. I. Filed May 16, 1905. Used ten years.

RUMFORD
YEAST POWDER

The words "RUMFORD YEAST POWDER."

SER. No. 5,833. BLOOD REMEDIES OR PURIFIERS FOR BOTH INTERNAL AND EXTERNAL USE, AXEL L. FRIEDAL, New York, N. Y. Filed May 16, 1905.

HYGIAVERUS

The word "HYGIAVERUS."

SER. No. 5,850. ANTISEPTIC COMPOUND. PER HAKANSSON, Malmö, Sweden. Filed May 16, 1905.

SALUBRIN

The word "SALUBRIN."

SER. No. 5,909. LAUNDRY BLUING. THE RUBI COMPANY, South Bend, Ind. Filed May 17, 1905.

The representation of a red Greek cross with the words "RED CROSS" thereupon.

SER. No. 5,980. COTTON DUCK. MOUNT VERNON-WOODBERRY COTTON DUCK COMPANY, Baltimore, Md. Filed May 18, 1905. Used ten years.

WOODBERRY

The word-symbol "WOODBERRY" in the arc of a circle, used in conjunction with a representation of rays in a smaller arc of a circle.

SER. No. 6,088. CYCLE-SADDLES. J. B. BROOKS & CO., LIMITED, Birmingham, England. Filed May 19, 1905. Used ten years.

BROOKS

The word "BROOKS."

SER. No. 6,225. BEER. UNITED BREWERIES COMPANY, Chicago, Ill. Filed May 22, 1905.

The words "BULL FROG," in connection with a picture of a frog which appears leaping between the two words.

SER. No. 6,325. RUBBER NIPPLES FOR NURSING-BOTTLES. THE SEAMLESS RUBBER CO., New Haven, Conn. Filed May 22, 1905.

A picture of Geraldine Doyle.

SER. No. 6,296. FRUIT WINE. LOUIS ROSENWINE, Chicago, Ill. Filed May 23, 1905.

DIANA

The word "DIANA," with the representation of the goddess Diana and a stag in an oval design, with ornamental panel and scroll-work at each side of the same.

SER. NO. 6,331. WHISKY. H. W. HUGULEY COMPANY, Boston, Mass. Filed May 23, 1905.

AMOR

The word "AMOR" and a fanciful design of a panel and circle for description. Above the circle is an outline of a winged dragon-head surmounting a heraldic roll, and the same is bordered by fanciful line and scroll work.

SER. No. 6,482. WHISKY. THE I. TRAGER CO., Cincinnati, Ohio. Filed May 24, 1905. Used ten years.

The word "EDELHOF" and the design of a fanciful coat of arms showing a barrel-head with the motto "HONOR BY FIDES," two bears, and a deer-head, with grain, a tent, and trees in the background inclosed in a circle.

SER. No. 6,483. WHISKY. THE I. TRAGER CO., Cincinnati, Ohio. Filed May 24, 1905. Used ten years.

Forest Hollow

The words "FOREST HOLLOW."

SER. No. 6,522. WINE. ITALIAN SWISS COLONY, San Francisco, Cal. Filed May 24, 1905.

The word "TIPO" and the design of a Greek cross in a fanciful circular figure surmounted by a crown and inclosed in a wreath with three overlapping medals at each side.

SER. No. 6,580. WINE. ITALIAN SWISS COLONY, San Francisco, Cal. Filed May 25, 1905.

The representation of a Greek cross and a crown and wreath inclosed within a circular design with ornamental lines and scroll-work at the top, bottom, and sides of the same.

SER. No. 6,583. WHISKY. FREIBERG, MEYER & CO., Cincinnati, Ohio. Filed May 25, 1905.

HANCOCK CLUB

The words "HANCOCK CLUB" and a portrait of General Hancock inclosed in a circular frame.

SER. No. 6,607. GIN. NATIONAL DISTILLING CO., Milwaukee, Wis. Filed May 26, 1905.

The words "GOLD BULLION," the word "BULLION" being in a ribbon design and the whole surrounded by a circle.

SER. No. 6,684. BRANDY. HENRY CARVE & Co., San Francisco, Cal. Filed May 26, 1905. Used ten years.

The name "WALDEN," above which is a monogram of the letters, character, and abbreviation "H C & Co," arranged between two bunches of grapes hanging from grape-vines, all inclosed in an ornamental border.

SER. No. 6,662. WHISKY. HARRY KAHN, Cincinnati, Ohio. Filed May 26, 1905.

The word "BUDWEISER," above which is a monogram composed of the letters and abbreviation "E D Co" on a fanciful scroll design with incurved corners and extended in ornamental form at the top, bottom, and at each side, which extensions are crossed by a circular band.

SER. No. 6,705. TABLETS FOR DISEASES OF THE ENTIRE DIGESTIVE TRACT. THE ILLINOIS LABORATORIES, Chicago, Ill. Filed May 26, 1905.

Nature

The word "NATURE."

SER. No. 6,750. NATURAL AND ARTIFICIAL WHALEBONE. DARNEL HOUR, Pinxbury, England. Filed May 26, 1905.

The representation of the head and shoulders of a man attired in a fur cap and overcoat, having mountains in the background, arranged within an oval-shaped border, in connection with the word "GREENLANDER."

SER. No. 6,970. GINGER-ALE. GEORGE F. HOWARD Co., Worcester, Mass. Filed May 29, 1905.

SER. No. 6,970.

The words "COLD BLAST," accompanied by the representation of a still standing upright on a support which raises it from the floor.

SER. No. 7,016. WHISKY. JOHN D. ULRICH, Brooklyn, N. Y. Filed May 29, 1905.

The words "WHITE ELEPHANT," associated with the picture of an elephant resting his fore feet upon a barrel, upon the head of which appears a monogram of the letters "J D U," and flying a streamer from his trunk, upon which appear the words "WHITE ELEPHANT."

SER. No. 7,036. LEATHER BOOTS AND SHOES. ISRAEL LEVINSTEIN, Baltimore, Md. Filed May 30, 1905.

The arbitrary word "SAIF-TI" associated with a representation of a safe and a bulldog, the words "SAFE INVESTMENT" being printed on the safe.

SER. No. 7,128. LEATHER BOOTS AND SHOES. ISRAEL LEVINSTEIN, Baltimore, Md. Filed May 31, 1905.

A representation of an ax and a man climbing a helve, with the hyphenated word "KLIM-AX" upon the head of the ax.

SER. No. 7,021. CIGARS. JOSEPH WEINBERG, Dayton, Ohio. Filed June 2, 1905.

The word "OPPORTUNITY" and the signature of John J. Ingalls below the bust portrait of the late Senator Ingalls inclosed in a circular border and the words "I KNOCK UNBIDDEN ONCE AT EVERY GATE." A scroll ornamentation is above the same.

SER. No. 7,269. SILK AND MIXED COTTON AND SILK PIECE GOODS. THE B. MAKOVER Co., New York, N. Y. Filed June 3, 1905.

B·H·M

The letters "B · H · M," with a dot between the letters "B" and "H" and "H" and "M."

SER. No. 7,322. CORSETS. ROYAL WORCESTER CORSET Co., Worcester, Mass. Filed June 3, 1905.

GOLF

The word "GOLF."

SER. No. 7,327. CORSETS. ROYAL WORCESTER CORSET Co., Worcester, Mass. Filed June 3, 1905.

Sapphire

The word "SAPPHIRE."

SER. No. 7,430. HORSE-NAILS. THE CAPEWELL HORSE NAIL COMPANY, Hartford, Conn. Filed June 5, 1905. Used ten years.

A check formed of intersecting lines on the under or beveled face of the nail-head.

SER. No. 7,489. ENVELOPS. TRANSO-PAPER COMPANY, Chicago, Ill. Filed June 5, 1905.

Transo

The word "TRANSO."

SER. No. 7,565. CROUSTADES. FREDERICK BRAUNSDORF, New York, N. Y. Filed June 7, 1905.

ST. JACQUES

The words "ST. JACQUES."

SER. No. 7,599. LEATHER BOOTS AND SHOES. P. W. MINOR & SON, Batavia, N. Y. Filed June 7, 1905.

TREADEASY

The word "TREADEASY."

SER. No. 7,606. LIQUID DISINFECTANTS. MARY ESTELLA PLATT, New York, N. Y. Filed June 7, 1905. Used ten years.

A circular disk, the representation of a bottle arranged upon it, and the word "PLATT" written upon the disk across the representation of the bottle.

SER. No. 7,641. RUBBER HEELS FOR BOOTS AND SHOES. P. W. MINOR & SON, Batavia, N. Y. Filed June 8, 1905.

TREADEASY

The word "TREADEASY."

SER. No. 7,665. WHISKY. H. W. HUGGLEY COMPANY, Boston, Mass. Filed June 8, 1905.

MYOPIA CLUB

The words "MYOPIA CLUB" and an oval design showing a cross-country ride of two men on horseback, one of them jumping a fence. Trees are shown in the background.

SER. No. 7,671. WHISKY. HANEMAN, GOLDSMITH & Co., New York, N. Y. Filed June 4, 1905. Used ten years.

THE "400"

The word and number "THE" "400," with quotation-marks before and after the number, and the monogram "H G & Co."

SER. No. 7,685. COCKTAILS. GEORGE F. HEWETT CO., Worcester, Mass. Filed June 5, 1905.

Gilnorkie

The word "GILNOCKIE" and the monogram composed of the letters "G F H" in a shield design.

SER. No. 7,695. WHISKY. JAS. E. PEPPER & CO., Lexington, Ky. Filed June 6, 1905. Used ten years.

HENRY CLAY

The words "HENRY CLAY."

SER. No. 7,702. GIN. HENRY R. MYERS, Covington, Ky. Filed June 6, 1905. Used ten years.

FULTON

The word "FULTON."

SER. No. 7,704. WHISKY. JOS. A. MAGNUS & Co., Cincinnati, Ohio. Filed June 6, 1905. Used ten years.

The words "SAND MOUNTAIN," in connection with a picture representing a mountain distillery, at the right of which is shown a corncrib and at the left a mill and a rocky elevation, at the base of which bags of corn are piled. In the distance are shown mountains.

SER. No. 7,782. THREAD OF SILK, COTTON, OR FLAX FOR SEWING, STITCHING, CROCHETING, EMBROIDERING, KNITTING, OR ANY OTHER USE. THE NONOTUCK SILK COMPANY, Northampton and Boston, Mass. Filed June 9, 1905.

The representation of the head of a kitten surmounting a spool of silk thread suspended from the kitten's mouth, associated with the word "CORTICELLI."

SER. No. 7,751. CHOCOLATES AND BONBONS. R. L. PERRY CO., Boston, Mass. Filed June 9, 1905.

ALPINE

The word "ALPINE."

SER. No. 7,813. WOOLEN CLOTHS. AMERICAN WOOLEN COMPANY, Boston, Mass. Filed June 10, 1905.

Two pairs of concentric circles inclosing the head of a merino ram, under which head are the letters "A. W. Co."

SER. No. 7,900. FILES AND RASPS. NICHOLSON FILE COMPANY, Providence, R. I., and Beaver Falls, Pa. Filed June 12, 1905.

GT. WESTERN

The words "GT. WESTERN."

SER. No. 7,901. FILES AND RASPS. NICHOLSON FILE COMPANY, Providence, R. I. Filed June 12, 1905. Used ten years.

The words "GREAT WESTERN" on a representation of a file, the letters "G W F Co" in the form of a monogram, and an illustrated representation of the works where the goods are made.

SER. No. 7,981. LACING-HOOKS AND LACING-STUDS. TUBULAR RIVET & STUD COMPANY, Boston, Mass. Filed June 13, 1905.

A monogram of the letters, character, and abbreviation "T R & S Co."

SER. No. 8,080. DYESTUFF. CASSELLA COLOR COMPANY, New York, N. Y. Filed June 14, 1905.

ALIZARINE LANACYL BLUE

The words "ALIZARINE LANACYL BLUE."

SER. No. 8,084. DYESTUFF. CASSELLA COLOR COMPANY, New York, N. Y. Filed June 14, 1905.

Immedial Indone

The words "IMMEDIAL INDONE."

SER. No. 8,102. FILES, RASPS, AND HANDLES, AND HOLDERS THEREFOR. NICHOLSON FILE COMPANY, Providence, R. I. Filed June 14, 1905. Used ten years.

NICHOLSON

The word "NICHOLSON."

SER. No. 8,108. LIQUID DENTIFRICES. THE AMERICAN PEROXIDE AND CHEMICAL COMPANY, New York, N. Y. Filed June 14, 1905.

FLORAFOAM

The word "FLORAFOAM."

SER. No. 8,190. WORM-POWDER. DR. HESS & CLARK, Ashland, Ohio. Filed June 15, 1905.

SER. No. 8,190.

A pictorial illustration showing the heads of a horse, cow, sheep, hog, and fowl, the picture being inclosed or framed by the representation of a worm and against a rectangular panel of contrasting color and associated with the words "DR. HESS WORM POWDER."

SER. No. 8,224. WHISKY. H. GROVES SONS, Madison, Wis. Filed June 15, 1905.

The words "HENRY KNOX," beneath which is a bust picture of Henry Knox in uniform with epaulets on the shoulders, and each side of the head are leaves and heads of grain.

SER. No. 8,265. HOSIERY. JOHN BLOCH & Co., Philadelphia, Pa. Filed June 15, 1905. Used ten years.

A central shield having on its field the representation of a lion rampant and above said lion a border of conventional design. The shield is surmounted by a helmet, above which appears a lion's head. Above the lion's head and below the shield are scrolls, and surrounding all of said features is a frame of irregular and fanciful shape.

SER. No. 8,281. WHISKY. J. T. S. BROWN & SONS, Louisville, Ky. Filed June 15, 1905. Used ten years.

OLD PRENTICE

The words "OLD PRENTICE."

SER. No. 8,410. POPCORN. THE ALBERT DICKINSON COMPANY, Chicago, Ill. Filed June 17, 1905.

SER. No. 8,645.

SER. No. 8,804.

SER. No. 8,938. WHISKY. HERMAN L. BROWNING, Fort Worth, Tex. Filed June 24, 1905.

SER. No. 8,410. POPCORN. THE ALBERT DICKINSON COMPANY, Chicago, Ill. Filed June 17, 1905.

SNOW BALL

The words "SNOW BALL."

SER. No. 8,628. WHISKY. P. J. BOWLIN LIQUOR CO., St. Paul, Minn. Filed June 21, 1905.

The word "FRIARS," below which is a picture of two friars, one holding a glass of whisky and the other a flask and glass, the whole surrounded by an ornamental line border, four heads of grain included in the border.

SER. No. 8,637. WINE. P. J. BOWLIN LIQUOR CO., St. Paul, Minn. Filed June 21, 1905.

The word "MINERVA," above which is the representation of a shield, upon which is the monogram composed of the letters and abbreviation "P J B L Co.," and on either side of the shield is a cluster of grape-vines and leaves and three bunches of grapes.

SER. No. 8,641. COFFEE. HULMAN & Co., Terre Haute, Ind. Filed June 21, 1905.

The word "DAUNTLESS" inclosed in a fanciful scroll outline, above which is a picture of a warrior wearing a coat of mail with sword and shield, with rocks at each side and in the background, within a circle.

SER. No. 8,645. BAKING-POWDER. HULMAN & Co., Terre Haute, Ind. Filed June 21, 1905.

CLABBER

The word "CLABBER" and a picture of a house scene on an oblong panel with rounded corners with a woman churning and a woman, children, and a cat in the background. The woman in the background holds a goose on her lap, and in the lower right-hand corner is a bucket and a bench.

SER. No. 8,649. WHISKY. LEE LEVY & Co., St. Louis, Mo. Filed June 21, 1905.

The words "JOHN HART" and the picture and facsimile signature of John Hart. The picture is inclosed in a heart-shaped figure with scrolls at each side.

SER. No. 8,742. MEDICINE FOR DIPHTHERIA AND RHEUMATISM. FREDERICK H. BOSWORTH, Boston, Mass. Filed June 21, 1905. Used ten years.

ALPHA

The word "ALPHA."

SER. No. 8,754. PRESSED GLASSWARE. A. H. HEISEY & Co., Inc., Newark, Ohio. Filed June 22, 1905.

The letter "H" inclosed in a diamond-shaped figure.

SER. No. 8,804. SOLE-LEATHER. S. H. FRANK & Co., San Francisco, Cal. Filed June 23, 1905. Used ten years.

SER. No. 8,804.

An oval figure inclosing a horizontally-arranged cross and the words, character, and abbreviation "KIRBY & Co., SANTA CRUZ."

SER. No. 8,908. WHISKY. J. & A. FRENNING, Cincinnati, Ohio. Filed June 24, 1905.

The word "PUCK" and a fanciful picture of a Puck figure holding a bottle.

SER. No. 8,909. WHISKY. THE MCCART MOSSET CO., Cleveland, Ohio. Filed June 24, 1905.

The letters and word "M AND M," in connection with a fancy dotted double circle inclosing a monogram composed of the word, letters, and abbreviations "THE McC M Co."

SER. No. 8,930. WHISKY. JESSE MOORE HUNT Co., San Francisco, Cal. Filed June 24, 1905. Used ten years.

The words "JESSE MOORE" inclosed in a dotted circle, on the top of which is a pair of deer-horns, and beneath which is a monogram of the letters and abbreviation "J M H Co.," the whole being on the design of a barrel-head.

SER. No. 8,938. WHISKY. MILTON L. BROWNE, Fort Worth, Tex. Filed June 24, 1905.

TARPON CLUB

The words "TARPON CLUB."

SER. No. 8,940. WHISKY. MILTON L. BROWNE, Fort Worth, Tex. Filed June 24, 1905. Used ten years.

Myrtle Springs

The words "MYRTLE SPRINGS."

SER. No. 8,952. WHISKY. KAUFMANN BROS. & Co., Toledo, Ohio. Filed June 24, 1905.

Esmond

The word "ESMOND," associated with a monogram composed of the letters, character, and abbreviation "K B & Co" inclosed in the outline of a shield surmounted by a helmet and bordered by a fanciful scroll-design.

SER. No. 8,978. CHAMPAGNE AND STILL WINE. F. KOEHRL & BROS., INC., San Francisco, Cal. Filed June 24, 1905.

Grand Pacific

The words "GRAND PACIFIC."

SER. No. 8,999. COCOA AND CHOCOLATE FOR USE AS A CONFECTION. HAWLEY & HOORE, New York, N. Y. Filed June 24, 1905.

A No. 1.

A monogram of the letters and numeral "A No. 1."

SER. No. 9,047. MEDICINE FOR THE TREATMENT OF RHEUMATISM, LITHEMIA, GOUT, LUMBAGO, AND NEURALGIA. HORACE OLIVER HUBLEY, Louisville, Ky. Filed June 26, 1905.

The word "AURICOL."

SER. No. 9,106. WHISKY. L. & A. SCHAAFF, St. Louis, Mo. Filed June 26, 1905. Used ten years.

AMELIORATED

The word "AMELIORATED."

SER. No. 9,111. BITTERS. FRANKEL ROSENTHAL AND DAHLER, St. Paul, Minn. Filed June 26, 1905.

FIRESIDE

The word "FIRESIDE," below which is a picture of an old man and woman sitting before an open grate. The man is holding in his right and upraised hand a glass of liquor. On the mantel above the grate appear a liquor-bottle, clock, and vase, and on the wall above these are hung a pipe and a picture. At the left side of the grate is a rocking-chair in which a cat is lying. The picture is inclosed in a fancy-shaped line outline.

SER. No. 9,117. WHISKY. HURLEY & CO., Boston, Mass. Filed June 26, 1905.

PARROT

The word "PARROT," underneath which is the representation of a parrot standing on a branch inclosed in a circle. In front of the picture is a scroll representing the parrot speaking the words "TRY PARROT RYE."

SER. No. 9,118. WHISKY. HURLEY & CO., Boston, Mass. Filed June 26, 1905.

CHERRY CLUB

The words "CHERRY CLUB," beneath which is a fanciful design of a scroll inclosing a representation of a clump of trees and a winding path about them.

SER. No. 9,240. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y. Filed June 27, 1905.

SER. No. 9,240.

A conventional scroll-like frame of flowers and curves inclosing the representation of a female figure seated on a stone bench having her lower limbs draped and one foot extended to support a cupid standing thereon and joining hands with the female.

SER. No. 9,320. OVERALLS. H. W. CARTER & SONS, Lebanon, N. H. Filed June 28, 1905. Used ten years.

CARTER'S Railroad Overalls

The pictorial representation of a locomotive and train of cars and associated therewith the words "CARTER'S RAILROAD OVERALLS."

SER. No. 9,321. OVERALLS. H. W. CARTER & SONS, Lebanon, N. H. Filed June 28, 1905. Used ten years.

THE ORIGINAL Lebanon Overalls

The pictorial representation of a locomotive and a train of cars and associated therewith the words "THE ORIGINAL LEBANON OVERALLS."

SER. No. 9,376. HAIR RESTORATIVES. S. R. VAN DUSER, New York, N. Y. Filed June 29, 1905. Used ten years.

Mrs. S. A. Allen's
WORLD'S
Hair Restorer.

The words "MRS. S. A. ALLEN'S WORLD'S HAIR RESTORER."

SER. No. 9,377. LIQUID COMPOSITION FOR USE ON THE HEAD AND HAIR. S. R. VAN DUSER, New York, N. Y. Filed June 29, 1905. Used ten years.

MELROSE
FAVORITE
HAIR RESTORER

The words "MELROSE FAVORITE HAIR RESTORER."

SER. No. 9,385. CANNED SARDINES. CLARENCE B. RUSSELL, Boston, Mass. Filed June 29, 1905.

SER. No. 9,385.

BONNE BOUCHE

The words "BONNE BOUCHE."

SER. No. 9,420. TONIC. COLBURN BIRES & CO., Peoria, Ill. Filed June 30, 1905. Used ten years.

GRANT'S
Calisaga and Iron
TONIC

The words "GRANT'S CALISAGA AND IRON TONIC" with the fanciful scroll ornamentation beneath the word "GRANT'S," around the word "AND," and above and below and at each end of a rectangular panel inclosing the word "TONIC."

SER. No. 9,421. WHISKY. WILLIAM H. LEE & CO., St. Louis, Mo. Filed June 30, 1905. Used ten years.

BILLY LEE'S

The words "BILLY LEE'S."

SER. No. 9,434. WHISKY. J. & R. MAHONEY, Portsmouth, Va. Filed June 30, 1905. Used ten years.

ARLINGTON

The word "ARLINGTON."

SER. No. 9,451. CREAM-SEPARATOR. THE DE LAVAL SEPARATOR COMPANY, New York and Poughkeepsie, N. Y. Filed June 30, 1905.

HUMMING BIRD

The words "HUMMING BIRD."

SER. No. 9,497. MALT EXTRACT. BERNHEIM DISTILLING CO., INC., Louisville, Ky. Filed June 30, 1905. Used ten years.

SHAW'S

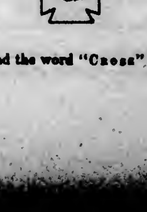

The word "SHAW'S" above a circle surrounded by radiations and containing the word "SHAW'S."

SER. No. 9,531. RUBBER INSULATING COMPOUND. THE OKONITE COMPANY, LIMITED, New York, N. Y. Filed June 30, 1905.

OKONITE

The word "OKONITE."

SER. No. 9,581. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y. Filed July 1, 1905.

A design displaying a panel with many fleurs-de-lis arranged in regular order, surrounded by two heavy lines with diamonds between, inclosed by a border of trident-like spikes pointing outward.

SER. No. 9,589. LEATHER BOOTS AND SHOES. JOHN H. CROSS, Lynn, Mass. Filed July 1, 1905.

A Maltese cross and the word "CROSS" thereon.

SER. No. 9,789. CHEMICAL PLASTERS. M. R. KELLY & Co., Joliet, Ill. Filed July 3, 1905.

HONEST JOHN

The words "HONEST JOHN," associated with the picture of a man in a standing position representing "Honest John" and dressed in the costume of a farmer, with top boots and a slouch hat and holding the front of his coat in his hands at each side.

SER. No. 9,752. FRESCO, CALCIMINE, AND WALL-PAPER CLEANER. CLIMAX CLEANER MFG. CO., Cleveland, Ohio. Filed July 3, 1905.

CLIMAX

The word "CLIMAX."

SER. No. 9,880. CIGARS. H. H. GATO CIGAR COMPANY, Key West, Fla. Filed July 7, 1905.

The representation of a flying eagle, on which is seated a female figure in flowing robes and with a star ornamentation in her hair, the right arm being extended upwardly and pointing to a star from which radiates rays of light, the left arm being extended downwardly and wreath in the hand. In the lower foreground, to the left, is a landscape showing a town and a bridge in the distance, and to the right a tropical scene. On the left-hand side of hand, pointing to the star, is the word "LA" and on the right-hand side the word "BOVERELLA," said words being arranged in fancy capital letters.

SER. No. 9,881. CIGARS. H. H. GATO CIGAR COMPANY, Key West, Fla. Filed July 7, 1905. Used ten years.

SER. No. 9,881.

The bust portrait of Eduardo H. Gato in an elliptical border, below which, on a flowing ribbon, are the words "EDUARDO H. GATO" in block-faced capital letters. To the right and left are shields, above which, on the right, is a representation of a landscape, consisting of factory buildings with hills in the background, and above the left shield is a landscape consisting of a harbor with hills in the background and tropical plants in the foreground.

SER. No. 9,894. LYE AND POTASH. EAGLE LYE WORKS, Milwaukee, Wis. Filed July 7, 1905.

A label printed in red, with a checkered upper and lower border, alternating black and yellow, the word "EAGLE" printed upon the upper part of the label in a color sharply contrasting with the label and above a scroll of contrasting color, having a central circular disk of black bearing an eagle in sharply-contrasting color, with wings outstretched with one foot upon a red can.

SER. No. 9,972. CORSETS. KABO CORSET COMPANY, Chicago, Ill. Filed July 10, 1905.

LaBelle

The words "LA BELLE."

SER. No. 10,059. MINERAL WATERS. SOLON VERDOPOLIS CO., Solon Springs, Wis. Filed July 11, 1905. Used ten years.

The words "SOLON SPRINGS" and a design showing a portion of a globe bearing a map of the upper Mississippi valley and lakes Superior, Michigan, Huron, and Erie. On the central portion of the map is shown a gushing spring, above which is the picture of a fish, the whole being inclosed in a circle.

SER. No. 10,061. BLOOD TONIC OR NUTRIMENT. CHARLES HAMBERGER COMPANY, Chicago, Ill. Filed July 11, 1905.

Salsanit

The word "SALSANIT."

SER. No. 10,080. TRAVELING TOILET-CASES. WM. B. DISSOW, New York, N. Y. Filed July 11, 1905.

The Gem

The words "THE GEM."

SER. No. 10,125. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y. Filed July 12, 1905.

A rectangular design in which many five-pointed leaves are arranged with their stems leading to a group of berries at the center. Other groups of berries appear at each end and along the sides.

SER. No. 10,126. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y. Filed July 12, 1905.

A rectangular design having a border of conventional rosettes surrounding an inner panel of small squares shaded to represent minute pyramids.

SER. No. 10,127. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y. Filed July 12, 1905.

A basket-like design in which parallel groups of four lines are interwoven with similar lines perpendicular thereto.

SER. No. 10,128. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y. Filed July 12, 1905.

A rectangular design in which the central figure consists of four ray-like prongs pointing outward from an inner circle in connection with intertwined scrolls. The central figure is inclosed by four connected arches. The rest of the design displays vines conventionally suggesting grapevines bearing grapes.

SER. No. 10,129. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y. Filed July 12, 1905.

A rectangular design having as a central figure a large rosette suggesting a flower, which is placed upon a background of basket-work, inclosed by a frame with loops at the corners. Along the sides and end of the frame, between the loops, are displayed conventional scrolls.

SER. No. 10,180. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y. Filed July 12, 1905.

A rectangular design having an inner panel inclosed by a conventional border. In the center is an eight-pointed rosette, from which extends on each side a conventional pointed figure. At each end is an ornamental curved frame inclosing the figure of two monkeys. At the corners of the panel are conventional oak leaves.

SER. No. 10,182. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y. Filed July 12, 1905.

A rectangular design having a border of globules surrounding a rectangle of light circles inclosing four-pointed figures. At the

center is a plain dark rectangle surrounded by a leafless vine with many flowers.

SER. NO. 10,133. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y. Filed July 12, 1905.

A rectangular design having a border of conventional leaves and flowers. At the center is a rosette, from which extends toward the sides and ends four fleur-de-lis figures, alternately arranged with scrolls and inclosed by a circle. The rest of the design is occupied by a vine-like scroll.

SER. NO. 10,136. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y. Filed July 12, 1905.

A design having three large leaves at each corner. Within a central circle four open flowers are arranged alternately with four buds which spring from an inner circle containing a figure composed of four buds. At the sides and ends is lattice-work of rough branches.

SER. NO. 10,142. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y. Filed July 12, 1905.

A rectangular design displaying a central rosette supporting at each end an elaborate vase surmounted by two sea-horses. At each side of the design are two winged sea-horses, and in each corner a vine-like scroll appears with a bird perched thereon.

SER. NO. 10,143. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y. Filed July 12, 1905.

A rectangular design with an outer frame having scrolls at the corners. A central panel with rounded ends displays at each end two branches with leaves and berries and an elaborate scroll. In the center a round rosette-like figure is displayed.

SER. NO. 10,144. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y. Filed July 12, 1905.

A rectangular design having at the center a diamond-shaped leaf device and at each end a stork with outspread wings. The rest of the design is covered by conventional scrolls of vines and leaves.

SER. NO. 10,154. WHISKY. UNITED WINE AND TRADING COMPANY. New York, N. Y. Filed July 12, 1905.

DUNWOODIE

The word "DUNWOODIE."

SER. NO. 10,298. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio. Filed July 14, 1905.

The representation of an electric or motor bicycle.

SER. NO. 10,299. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio. Filed July 14, 1905.

The representation of a safety-bicycle.

SER. NO. 10,301. DRAPERY AND UPHOLSTERY TEXTILE FABRICS. THE RIDDLEFORD MANUFACTURING COMPANY, Riddlefords and Philadelphia, Pa. Filed July 14, 1905.

A panel having a representation of an Egyptian column at each end and inclosing a representation of pyramids, a sphinx, and palm-trees.

SER. NO. 10,388. ANTISEPTIC. RICHARD S. WALKER, Hillsdale, Tex. Filed July 15, 1905.

Single Stroke

The words "SINGLE STROKE," in connection with the representation of the sphere encircled by a dragon, together with the representation of St. George on a winged horse in the act of spearing the dragon, the words "SINGLE STROKE" appearing on a banner streaming from the spear.

SER. NO. 10,450. ANNUAL PUBLICATION EMBODYING A COMPLETE INDEX TO THE NAMES AND ADDRESSES OF ALL MANUFACTURERS IN THE UNITED STATES. THE INDUSTRIAL PRESS, New York, N. Y. Filed July 17, 1905.

THE MECHANICAL INDEX

The words "THE MECHANICAL INDEX."

SER. NO. 10,576. CIGARS. H. H. GATO CIGAR COMPANY, Key West, Fla. Filed July 19, 1905. Used ten years.

The representation of a cowboy riding a horse at full speed and waving a lasso. In the background the picture of two horses running at full speed. Above the picture of the cowboy is the word "LASSO" in fancy capital letters.

SER. NO. 10,588. LIQUID DRESSING FOR BOOTS AND SHOES. C. L. HAUTHAWAY & SONS, INCORPORATED, Portland, Me., and Boston, Mass. Filed July 20, 1905. Used ten years.

The words "PEERLESS GLOSS" arranged upon an oblong bordered panel. Above the word "PEERLESS" is the word "HAUTHAWAY'S." Below the word "GLOSS," within the panel, is the monogram "C L H & SONS" inclosed in a circle of ornamental design. Below the circle are the words "FOR LADIES' & CHILDREN'S BOOTS, SHOES &c." The words "BOOTS, SHOES, &c.," are represented as printed upon a folded ribbon.

SER. NO. 10,589. LIQUID DRESSING FOR LEATHER BOOTS AND SHOES. C. L. HAUTHAWAY & SONS, INCORPORATED, Portland, Me., and Boston, Mass. Filed July 20, 1905. Used ten years.

The words "IDEAL DRESSING" printed on a blue shield having an ornamental outline and border. Above the shield is the word "HAUTHAWAY'S." Below the word "DRESSING," on the shield, are the words "FOR LADIES & CHILDREN'S SHOES." Below the shield is an open space surrounded by a blue border of ornamental design.

SER. NO. 10,644. MEDICINE FOR STOPPING EXCESSIVE PERSPIRATION. FREDRICK BOSTTCHER, Peoria, Ill. Filed July 21, 1905.

ODORA

The word "ODORA."

SER. NO. 10,701. PRINTED AND DYED TEXTILE FABRICS. THE RIDDLEFORD MANUFACTURING COMPANY, Riddlefords and Philadelphia, Pa. Filed July 22, 1905. Used ten years.

The words "STEEL GREY" and "FAST BLACK," associated with an obverse and reverse representation of a medal, the obverse bearing the words "AMERICAN INSTITUTE NEW YORK" and a representation of the coat of arms of said institute and the reverse bearing the words "AWARDED TO WM. SIMPSON & SONS FOR SUPERIOR CAMBRIC PRINTS. 1869," the whole being inclosed in a border having fancy corners.

SER. NO. 10,711. LIQUID COMPOUND USED AS A SUBSTITUTE FOR COURT-PLASTERS WHICH HAS MEDICINAL PROPERTIES. THE DOUGLAS MANUFACTURING COMPANY, Newark, N. J. Filed July 22, 1905.

The representation of a knife and torch crossed.

SER. NO. 11,114.

SER. NO. 11,811.

PANSY

SER. NO. 11,472. UPHOLSTERERS' NAILS. THE TRAUT & HINE MFG. CO., New Britain, Conn. Filed Aug. 10, 1905.

The representation of a knife and torch crossed.

SER. No. 10,765. LAXATIVES. THE PARAGRIPE COMPANY, Louisville, Ky. Filed July 24, 1905.

The words "CHERRY CHIPS and the representation of a bunch of cherries and a best picture of a child in the act of placing a chip in its mouth, the whole being surrounded by a rectangular border.

SER. No. 10,341. COTTON DUCK. MOUNT VERNON-WOODBERRY COTTON DUCK COMPANY, Baltimore, Md. Filed July 26, 1905. Used ten years.

AVONDALE

The word "AVONDALE."

SER. No. 11,004. COFFEE. THE INDEPENDENCE COFFEE AND SPICE CO., Pueblo, Colo. Filed July 29, 1905.

The words "BREAKFAST CALL" associated with the representation of a maid ringing a bell in a hallway surrounded by a wreath of coffee-plant branches.

SER. No. 11,096. PISTOLS. COLT'S PATENT FIRE ARMS MANUFACTURING COMPANY, Hartford, Conn. Filed Aug. 1, 1905.

POCKET POSITIVE.

The words "POCKET-POSITIVE."

SER. No. 11,114. LAGER-BEER. F. A. POTH & SONS, INCORPORATED, Philadelphia, Pa. Filed Aug. 1, 1905. Used ten years.

SER. No. 11,114.

The representation of a heraldic robe surmounted by a crown with a Maltese cross, and on the face of the robe in a shield within which is displayed a goblet of foaming beer with the words "POTH'S EXTRA" and a paraph across the face of the representation and above the words and character "F. A. POTH & SONS, INCORPORATED" and beneath the word "BEER" and all inclosed within a double border.

SER. No. 11,148. THE VARIETY OF PEACH-TREE KNOWN AS THE ELIZABETH PEACH. SHEED & WOOD, Tyler, Tex. Filed Aug 2, 1905.

Yellow Swan

The words "YELLOW SWAN."

SER. No. 11,222. WOOL BLANKETS. SIMON LEVI, Terre Haute, Ind. Filed Aug. 3, 1905

FORT HARRISON

The words "FORT HARRISON," together with a pictorial illustration of a fort and a body of water in the foreground.

SER. No. 11,259. WHISKY. SAMUEL LIEBERMAN, Brooklyn, N. Y. Filed Aug. 4, 1905.

The word "MARATHON," associated with a barrel displaying upon the head thereof a monogram of the letters "S L" with two lion-supporters surmounted by crowns.

SER. No. 11,311. GANNED SALMON. JOSEPH G. MEGLER, Brookfield, Wash. Filed Aug. 7, 1905. Used ten years.

SER. No. 11,311.

PANSY

The name "PANSY."

SER. No. 11,313. CANNED SALMON. JOSEPH G. MEGLER, Brookfield, Wash. Filed Aug. 7, 1905.

GOLDEN POPPY

The name or brand "GOLDEN POPPY."

SER. No. 11,346. FLAX PACKING. DURHAM, CARRIGAN & HAYDEN CO., San Francisco, Cal. Filed Aug. 7, 1905. Used 4th years.

PLYMOUTH

The word "PLYMOUTH."

SER. No. 11,467. WHEAT-FLOUR. WM. A. COOMBS MILLING COMPANY, Coldwater, Mich. Filed Aug. 10, 1905.

A circular device containing in the lower section the words "ROB ROY" upon a scroll, above which is the picture of three men in Highland costume upon a bank overlooking a body of water, representing the Scottish chief Rob Roy and his two sons. In the distance is shown a mountain and sky and upon the lake or body of water a sail. Around the border, shown at intervals, is the representation of Scottish plaids. Above this picture in the segment of a circle are displayed the words, letters, and abbreviation "W. A. COOMBS MILLING CO." At the bottom of the device, immediately below the words "ROB ROY," the word and abbreviation "COLDWATER, MICH." in a panel. On one side of the central picture is the word "ROLLER" and upon the opposite side the word "PATENT," both upon scroll-shaped figures.

SER. No. 11,472. UPHOLSTERERS' NAILS. THE TRAUT & HINE MFG. CO., New Britain, Conn. Filed Aug. 10, 1905.

MATCHLEATHER

The word "MATCHLEATHER."

SER. No. 11,479. WHEAT-FLOUR. THE PURCELL MILL & ELEVATOR COMPANY, Purcell, Ind. Ter. Filed Aug. 10, 1905.

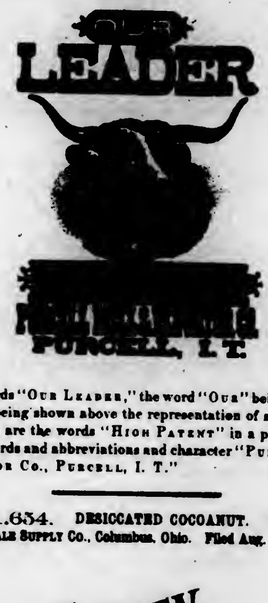

The words "OUR LEADER," the word "OUR" being in a panel, said words being shown above the representation of a steer's head, below which are the words "HIGH PATENT" in a panel or frame above the words and abbreviations and character "PURCELL MILL & ELEVATOR CO., PURCELL, I. T."

SER. No. 11,654. DESICCATED COCOANUT. THE CITIZENS' WHOLESALE SUPPLY CO., Columbus, Ohio. Filed Aug. 15, 1905.

GOLDEN RULE

The words "GOLDEN RULE" and a representation of a shield bearing a monogram of the letters "C W S Co," above which is a scroll bearing the words "GOLDEN RULE," and above the scroll, in the corners of the shield, two stars appear, while in the bottom angle of the shield a single star appears.

SER. No. 11,710. NEEDLES. CHARLES H. CROWLEY, New York, N. Y. Filed Aug. 16, 1905. Used ten years.

The representation of a lighthouse, an expanse of water, and a ship, together with the word "HELIX."

SER. No. 11,811. GANNED SALMON. JOSEPH G. MEGLER, Brookfield, Wash. Filed Aug. 7, 1905. Used ten years.

SER. No. 11,781. COTTON DUCK. HOGANSVILLE MANUFACTURING COMPANY, Hogansville, Ga. Filed Aug. 12, 1905.

The representation of the insect commonly called the "yellow jacket."

SER. No. 11,790. CANNED VEGETABLES AND FRUITS. STEPHEN J. SENECA. Havre de Grace, Md. Filed Aug. 19, 1905.

The representation of a red Greek cross, upon which appear the words "RED CROSS BRAND."

SER. No. 11,796. CONDENSED MILK AND EVAPORATED CREAM. ADAM ROTH GROCERY COMPANY, St. Louis, Mo. Filed Aug. 19, 1905. Used ten years.

SQUIRREL.

The word "SQUIRREL" and the representation of a squirrel sitting upon a branch eating a nut.

SER. No. 11,868. SHEATHING-PAPER. W. H. RANKIN COMPANY, Elizabeth, N. J. Filed Aug. 21, 1905.

The representation of a double-headed arrow, with the word "EMPIRE" between the heads.

SER. No. 11,948. MONTHLY MAGAZINE. REVIEW PUBLISHING COMPANY, New York, N. Y. Filed Aug. 26, 1905.

THE
FURNITURE
TRADE
REVIEW
AND
INTERIOR
DECORATOR

The words "THE FURNITURE TRADE REVIEW AND INTERIOR DECORATOR."

SER. No. 12,040. PITCH. WARREN-BERRY COMPANY, Philadelphia, Pa. Filed Aug. 26, 1905.

The letter "E" upon a diamond-shaped background.

SER. No. 12,096. RYE WHISKY. THE HENRY B. GILPIN CO., Baltimore, Md. Filed Aug. 30, 1905. Used ten years.

MANHATTAN

The word "MANHATTAN" inclosed in a double rectangular border.

SER. No. 12,097. RYE WHISKY. THE HENRY B. GILPIN CO., Baltimore, Md. Filed Aug. 30, 1905. Used ten years

ARMSTRONG

The word "ARMSTRONG" inclosed by a double rectangular border.

SER. No. 12,098. RYE WHISKY. THE HENRY B. GILPIN CO., Baltimore, Md. Filed Aug. 30, 1905.

OLD TERRAPIN

The words "OLD TERRAPIN" inclosed by a double rectangular border.

SER. No. 12,204. LEAD-PENCILS. EAGLE PENCIL COMPANY, New York, N. Y. Filed Sept. 2, 1905.

The representation of an eagle with outstretched wings holding pencils in its beak and talons.

SER. No. 12,205. PENHOLDERS. EAGLE PENCIL COMPANY, New York, N. Y. Filed Sept. 2, 1905.

The representation of an eagle with outstretched wings holding pencils in its beak and talons.

SER. No. 12,225. BLOTTING-PAPER. STANDARD PAPER M'F'G. CO., Manchester, Va. Filed Sept. 5, 1905.

"IMPERIAL"

The word "IMPERIAL" inclosed in quotation-marks.

SER. No. 12,306. WATCHES. ELGIN NATIONAL WATCH CO., Elgin, Ill. Filed Sept. 7, 1905.

Elgin Natl Watch Co

The words and abbreviations "ELGIN NATL WATCH CO.," written in script.

SER. No. 12,355. BROOMS. AMERICAN BROOM & BRUSH CO., Amsterdam, N. Y. Filed Sept. 7, 1905.

A.B.&B.Co's
BEST

The letters, character, abbreviation, and word "A. B. & B. Co's. BEST."

SER. No. 12,356. BROOMS. AMERICAN BROOM & BRUSH CO., Amsterdam, N. Y. Filed Sept. 7, 1905.

YOUNG LADIES'
CHOICE

The words "YOUNG LADIES CHOICE."

SER. No. 12,357. BROOMS. AMERICAN BROOM & BRUSH CO., Amsterdam, N. Y. Filed Sept. 7, 1905.

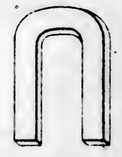

MAGNET

The word "MAGNET," associated with the representation of a magnet.

SER. No. 12,358. BROOMS. AMERICAN BROOM & BRUSH CO., Amsterdam, N. Y. Filed Sept. 7, 1905.

SUCCESS

The word "SUCCESS."

SER. No. 12,360. BROOMS. AMERICAN BROOM & BRUSH CO., Amsterdam, N. Y. Filed Sept. 7, 1905.

GILT
EDGE

The words "GILT EDGE."

SER. No. 12,398. HARNESS. STUDEBAKER BROTHERS MANUFACTURING COMPANY, South Bend, Ind. Filed Sept. 8, 1905.

StudeBaker

The word "STUDEBAKER" arranged in the particular and distinctive form of script shown in the drawing.

SER. No. 12,502. MACARONI, SPAGHETTI, VERMICELLI, AND NOODLES. ANGER BAKING CO., New York, N. Y. Filed Sept. 12, 1905.

The representation of a baby's head in a circular figure, such representation being the reproduction of a portrait of the son of the said John A. Anger.

SER. No. 12,708. CIGARS. PAUL B. WATSON, Salisbury, Md. Filed Sept. 18, 1905.

EL-MARDO

The words "EL-MARDO."

SER. No. 13,187. LEATHER BELTING. PATTERSON, GOTTFRIED & RUSTON, Limited, New York, N. Y. Filed Oct. 2, 1905.

A right-angled triangle represented in red.

SER. No. 13,277. PIANOS. THE STERN PIANO MFG. COMPANY, New York, N. Y. Filed Oct. 4, 1905.

The Majestic

The words "THE MAJESTIC."

SER. No. 13,271. ANTISEPTIC HEALING-OIL. PARIS MEDICINE CO., St. Louis, Mo. Filed Oct. 4, 1905.

The representation of a mechanic standing in front of a piece of machinery, wearing a cap and an apron, and represented as applying a bandage to an injured hand.

SER. No. 13,272. ANTISEPTIC HEALING-OIL. PARIS MEDICINE CO., St. Louis, Mo. Filed Oct. 4, 1905.

The representation of a boy gazing at one of his hands which he has cut with a penknife, which he holds in his other hand. A stick which he has been whittling, as well as a chip cut therefrom, are shown as falling to the ground.

SER. No. 13,307. RHEUMATIC CURE. OLD VETERAN RHEUMATIC CURE COMPANY, Adairville, Ky. Filed Oct. 5, 1905.

OLD VETERAN

The words "OLD VETERAN."

SER. No. 13,324. BLOOD, NERVE, AND BRAIN FOOD PUT UP IN TABLET FORM. MAURICE H. GROSSMAN, Philadelphia, Pa. Filed Oct. 5, 1905.

The words "VIMEN" and "TONE" with a hyphen between the words. These words are arranged within a scroll border, and the letters composing the words decrease in size from the outer ends inwardly.

SER. No. 13,607. COTTON PIECE GOODS. CAULIS & CO., New York, N. Y. Filed Oct. 14, 1905.

The representation of a stirrup, a hound jumping through the stirrup, and crossed horns at the back of the hound and appearing at the front of the stirrup, together with the word "HIGHLAND."

SER. No. 13,458. REMEDY FOR ASTHMA. TAFFE ASTHMALENE COMPANY, New York, N. Y. Filed Oct. 9, 1905.

ASTHMALENE

The word "ASTHMALENE."

SER. No. 13,761. RHEUMATIC CURE. RENAL PHARMACAL CO., Mount Vernon, N. Y. Filed Oct. 19, 1905.

TRI-URI-CIDE

The hyphenated word "TRI-URI-CIDE."

SER. No. 13,762. REMEDY FOR DIABETES. RENAL PHARMACAL CO., Mount Vernon, N. Y. Filed Oct. 19, 1905.

Diabe-Renal

The hyphenated word "DIABE-RENAL."

SER. No. 13,771. COTTON DAMASK. ROSEMARY MANUFACTURING COMPANY, Roanoke Rapids, N. C. Filed Oct. 19, 1905.

CELTIC

The word "CELTIC."

SER. No. 13,876. REMEDY FOR EPILEPSY. ANTHONY K. MANSON, Washington, D. C. Filed Oct. 26, 1905.

TRISSELION

The word "TRISSELION."

SER. No. 13,927. COTTON, SILK, HEMP, AND OTHER FIBER THREADS. THE SIMMER MANUFACTURING COMPANY, New York, N.Y. Filed Oct. 26, 1905. Used ten years.

SER. No. 18,927.

SINGER

The word "SINGER."

SER. No. 14,392. LARD. THE CUDAHY PACKING CO., Chicago, Ill., and South Omaha, Nebr. Filed Nov. 7, 1905.

REX

The word "REX."

SER. No. 14,393. BEEF EXTRACT. THE CUDAHY PACKING CO., Chicago, Ill., and South Omaha, Nebr. Filed Nov. 7, 1905.

REX

The arbitrarily-selected word "REX."

SER. No. 14,396. LARD. THE CUDAHY PACKING CO., Chicago, Ill., and South Omaha, Nebr. Filed Nov. 7, 1905.

The letter "C" inclosed in a diamond figure.

SER. No. 14,429. SHEETINGS. CAREY, RAYNE & SMITH COMPANY, (INCORPORATED.) New York, N. Y. Filed Nov. 8, 1905.

The representation of a cow, associated with which are the words "CREAM OF THE MILL."

SER. No. 14,401. MEN'S LEATHER SHOES. HAMILTON-BROWN SHOE COMPANY, St. Louis, Mo. Filed Nov. 8, 1905.

SER. No. 14,401.

Character

The word "CHARACTER."

SER. No. 14,657. HOSIERY. O'CALLAGHAN & FERGUS, New York, N. Y. Filed Nov. 15, 1905.

The representation of a partly-dressed child shown seated upon a chair and in the act of putting on its stockings, said representation being inclosed by an elliptical border or outline and associated with the words "THE LITTLE BEAUTY HOSE."

SER. No. 14,541. LEATHER BOOTS AND SHOES. LYNCHBURG SHOE CO., Lynchburg, Va. Filed Nov. 13, 1905.

The word "EQUIVALENT," associated with the picture of a young man holding a shoe in one hand and a bag of money in the other.

SER. No. 14,561. MALT EXTRACT. VALENTIN BLATZ BREWING CO., Milwaukee, Wis. Filed Nov. 13, 1905.

The representation of a six-pointed star upon which is produced the representation of a hop-blossom, to the stem of which are attached a number of barley-stalks extending to either side of the blossom, and upon the blossom in turn is inscribed a monogram of the letters "V B."

SER. No. 14,696. BLEACHED AND UNBLEACHED SHIRTINGS AND SHEETINGS, CAMBRICS, AND LONG CLOTH. GREENELL WILLIS & Co., New York, N. Y. Filed Nov. 16, 1905.

The words "BLUE GRASS," associated with the representation of a woman on horseback within a rectangular border, the background having a diagonal bar.

SER. No. 14,697. BLEACHED AND UNBLEACHED SHIRTINGS AND SHEETINGS, CAMBRICS, AND LONG CLOTH. GREENELL WILLIS & Co., New York, N. Y. Filed Nov. 16, 1905.

The phrase "THE NATION FIRST LAST AND ALL THE TIME," associated with the representation of crossed and sheathed cavalry or Rough Riders' swords.

SER. No. 14,698. BLEACHED AND UNBLEACHED SHIRTINGS AND SHEETINGS, CAMBRICS, AND LONG CLOTH. GREENELL WILLIS & Co., New York, N. Y. Filed Nov. 16, 1905.

SER. No. 14,698.

The words "OLD RELIABLE," associated with the representation of the stern portion of a sailing vessel and of a helmsman having hold of the steering-wheel and looking into the compass in front of him, a portion of the boom and sail of the vessel appearing over the head of the helmsman, all being contained within a border.

SER. No. 14,699. BLEACHED AND UNBLEACHED SHIRTINGS AND SHEETINGS, CAMBRICS, AND LONG CLOTH. GREENELL WILLIS & Co., New York, N. Y. Filed Nov. 16, 1905.

ROUGH RIDER

The words "ROUGH RIDER," associated with the representation of a mounted cavalryman in the uniform of the Rough Riders in the late Spanish-American war.

SER. No. 14,701. BLEACHED AND UNBLEACHED SHIRTINGS AND SHEETINGS, CAMBRICS, AND LONG CLOTH. GREENELL WILLIS & Co., New York, N. Y. Filed Nov. 16, 1905.

The word "STARLIGHT," associated with the representation of a nude figure partially draped on a starry field.

SER. No. 14,702. BLEACHED AND UNBLEACHED SHIRTINGS AND SHEETINGS, CAMBRICS, AND LONG CLOTH. GRINNELL WILLIS & Co., New York, N. Y. Filed Nov. 16, 1905.

ONWARD

The word "ONWARD," associated with the representation of a man clad in the buckskin dress of a pioneer with a powder-horn at one side, a gun in one hand, and in the act of stepping onward.

SER. No. 14,706. BLEACHED AND UNBLEACHED SHIRTINGS AND SHEETINGS, CAMBRICS, AND LONG CLOTH. GRINNELL WILLIS & Co., New York, N. Y. Filed Nov. 16, 1905.

The words "THE SPIRIT OF OUR FOREFATHERS," associated with the representation of two old-fashioned guns in a crossed position.

SER. No. 14,708. BLEACHED AND UNBLEACHED SHIRTINGS AND SHEETINGS, CAMBRICS, AND LONG CLOTH. GRINNELL WILLIS & Co., New York, N. Y. Filed Nov. 16, 1905.

The words "THE VILLAGE BELLE," associated with the profile representation of a female appearing within a wreath of morning-glories.

SER. No. 14,724. LEATHER BOOTS AND SHOES. F. MAYER BOOT & SHOE CO., Milwaukee, Wis. Filed Nov. 16, 1905. Used ten years.

The word "MAYER."

SER. No. 14,744. BLEACHED AND UNBLEACHED SHIRTINGS AND SHEETINGS, CAMBRICS, AND LONG CLOTH. GRINNELL WILLIS & Co., New York, N. Y. Filed Nov. 17, 1905.

The word "CONQUEROR," associated with the representation of a male figure in erect posture on a central panel, the figure being nude except for a breech-cloth, a torch on a panel at each side of the figure, and a border inclosing the panel.

SER. No. 14,729. LEATHER BOOTS AND SHOES. HERMAN SHOE COMPANY, Brockton and Boston, Mass. Filed Nov. 16, 1905.

FREAK

The word "FREAK."

SER. No. 14,748. BLEACHED AND UNBLEACHED SHIRTINGS AND SHEETINGS, CAMBRICS, AND LONG CLOTH. GRINNELL WILLIS & Co., New York, N. Y. Filed Nov. 17, 1905.

The words "SUMMER-TIME," associated with the representation of a bust figure of a female and flowers emblematic of summer-time, the flowers consisting of a branch of roses and a garland of violets, the female figure appearing surrounded by a portion of the branch of roses and a portion of the garland.

SER. No. 14,749. BLEACHED AND UNBLEACHED SHIRTINGS AND SHEETINGS, CAMBRICS, AND LONG CLOTH. GRINNELL WILLIS & Co., New York, N. Y. Filed Nov. 17, 1905.

The word "HOMEWARD" and the representation of a working schooner under sail on the water, all appearing within a border.

SER. No. 14,752. BLEACHED AND UNBLEACHED SHIRTINGS AND SHEETINGS, CAMBRICS, AND LONG CLOTH. GRINNELL WILLIS & Co., New York, N. Y. Filed Nov. 17, 1905.

The words "STORM KING," associated with the representation of the bust of a man with folded arms and appearing in clouds.

SER. No. 14,753. BLEACHED AND UNBLEACHED SHIRTINGS AND SHEETINGS, CAMBRICS, AND LONG CLOTH. GRINNELL WILLIS & Co., New York, N. Y. Filed Nov. 17, 1905.

The words "TRUE BLUE," associated with the representation of an Indian fighting scene, showing a few United States soldiers in different positions and grouped around a regimental flag in the act of repulsing an attack by mounted Indians appearing in the background.

SER. No. 14,755. BLEACHED AND UNBLEACHED SHIRTINGS AND SHEETINGS, CAMBRICS, AND LONG CLOTH. GRINNELL WILLIS & Co., New York, N. Y. Filed Nov. 17, 1905.

The words "DRAGON-FLY," associated with the representation of a dragon-fly and sweet-peas.

SER. No. 14,889. WHISKY. W. P. SQUIRE & Co., Louisville, Ky. Filed Nov. 21, 1905. Used ten years.

SER. No. 14,889.

GREENDALE

The word "GREENDALE."

SER. No. 14,892. WHISKY. W. P. SQUIRE & CO., Lawrenceburg, Ind. Filed Nov. 21, 1905. Used ten years.

CHIMNEY CORNER

The words "CHIMNEY CORNER."

SER. No. 14,929. HOSIERY. THE SHEBOYGAN KNITTING COMPANY, Sheboygan, Wis. Filed Nov. 23, 1905.

GOLD SILK

The words "GOLD SILK."

SER. No. 14,960. ORGANS. W. W. PUTNAM & CO., Staunton, Va. Filed Nov. 24, 1905. Used ten years.

Putnam

The word "PUTNAM."

SER. No. 14,970. BELT-FASTENERS. GEBHER, TWEED & CO., New York, N. Y. Filed Nov. 24, 1905. Used ten years.

BLAKE'S BELT STUD

The words "BLAKE'S BELT STUD."

SER. No. 14,980. DRIED AND EVAPORATED FRUITS. GRIFFIN & SKELLEY CO., San Francisco, Cal. Filed Nov. 25, 1905.

The word "ARROW" transversed by an arrow and the representation of a standing Indian pulling a bow and directing or aiming an arrow.

SER. No. 15,043. PUMICE SOAP. IOWA SOAP COMPANY, Burlington, Iowa. Filed Nov. 28, 1905. Used ten years.

BARR'S MECHANIC

The words "BARR'S MECHANIC."

SER. No. 15,106. RECORDS FOR TALKING-MACHINES. VICTOR TALKING MACHINE COMPANY, Camden, N. J. Filed Dec. 1, 1905.

VICTROLA

The word "VICTROLA."

SER. No. 15,107. TALKING-MACHINES AND PARTS THEREOF. VICTOR TALKING MACHINE COMPANY, Camden, N. J. Filed Dec. 1, 1905.

VICTROLA

The word "VICTROLA."

SER. No. 15,183. METAL-POLISH. HIMES & COOK, Boston, Mass. Filed Dec. 4, 1905.

RUBY-RUB

The word "RUBY-RUB" and the representation of a shield.

SER. No. 15,190. PERIODICAL. ADAM H. DUNN, Chicago, Ill. Filed Dec. 4, 1905.

Two concentric circles with the words "THE METHODISTS" printed in the space between the said two concentric circles, the roof and spire of a church appearing within the inner circle, with the spire projecting beyond the outer circle.

SER. No. 15,197. ASPHALT. WARREN CHEMICAL & MANUFACTURING COMPANY, New York, N. Y. Filed Dec. 4, 1905. Used ten years.

ANCHOR

The word "ANCHOR."

SER. No. 15,254. FILES AND RASPS. CARVER FILE COMPANY, Philadelphia, Pa. Filed Dec. 7, 1905.

A triangle containing the representation of a file upright.

SER. No. 15,267. TOBASCO CATCHUP AND TOMATO CATCHUP. JOSEPH CAMPBELL COMPANY, Camden, N. J. Filed Dec. 8, 1905.

A panel with an upper red portion and a lower white portion with the word "CAMPBELL'S" upon the red portion in characteristic script type.

SER. No. 15,268. CHILI SAUCE, TOBASCO SAUCE, AND SALAD-DRESSING. JOSEPH CAMPBELL COMPANY, Camden, N. J. Filed Dec. 8, 1905.

A panel with an upper red portion and a lower white portion with the word "CAMPBELL'S" upon the red portion in characteristic script type.

Ser. No. 15,279. GRAIN-SEPARATORS. AMERICAN SEPARATOR Co., Bainbridge, N. Y. Filed Dec. 8, 1905. Used ten years.

American

The word "AMERICAN."

Ser. No. 15,894. BALL-BEARINGS. THE HIRS-DORRIT MANUFACTURING Co., Philadelphia, Pa. Filed Dec. 13, 1905.

D.W.F.

The letters "D. W. F."

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TRADE-MARKS

REGISTERED JANUARY 9, 1906.

48,614. PORTLAND, NATURAL-ROCK, AND IMPROVED CEMENT. AMERICAN CEMENT COMPANY, Philadelphia, Pa.
The word "GIANT."
Filed June 20, 1905. Serial No. 8,575. PUBLISHED NOVEMBER 14, 1905.

48,615. PORTLAND, NATURAL-ROCK, AND IMPROVED CEMENT. AMERICAN CEMENT COMPANY, Philadelphia, Pa.
The words "IMPROVED UNION."
Filed June 20, 1905. Serial No. 8,578. PUBLISHED NOVEMBER 14, 1905.

48,616. PORTLAND, NATURAL-ROCK, AND IMPROVED CEMENT. AMERICAN CEMENT COMPANY, Philadelphia, Pa.
The word "VALLEY."
Filed June 20, 1905. Serial No. 8,579. PUBLISHED NOVEMBER 14, 1905.

48,617. CIGARS. BALSA HERMANOS, Vera Cruz, Mexico.
The words "FLOR DE BALSA."
Filed August 19, 1905. Serial No. 11,794. PUBLISHED NOVEMBER 14, 1905.

48,618. INKSTANDS. EMBY DAVIS, New York, N. Y.
The words "DAVIS AUTOMATIC."
Filed August 7, 1905. Serial No. 11,323. PUBLISHED NOVEMBER 14, 1905.

48,619. LAMP-CHIMNEYS. FRANZ EULER & Co., New York, N. Y.
The representation of a shield displaying an owl perched on a bar, the shield depending from a helmet, the latter and the shield being flanked by scrolls and the helmet being surmounted by a small winged shield.
Filed June 15, 1905. Serial No. 8,264. PUBLISHED NOVEMBER 14, 1905.

48,620. LARD. GILLESPIE BROS. & Co., New York, N. Y.
The word "GIRASOL."
Filed July 27, 1905. Serial No. 10,922. PUBLISHED NOVEMBER 14, 1905.

48,621. CANDY. HAWLEY & HOOPS, New York, N. Y.
The word "PREMIUM."
Filed April 5, 1905. Serial No. 474. PUBLISHED MAY 30, 1905.

48,622. SPOOL-COTTON. JOHN J. CLARK & Co., Pawtucket, R. I.
The representation of a beehive inclosed within a circle, above which is an ornamental curved panel bearing the letters and abbreviation "C. T. Co." and underneath which are the words and abbreviation "COMPLEX THREAD Co.," the whole being surrounded by a circular ornamental border.
Filed August 18, 1905. Serial No. 11,760. PUBLISHED NOVEMBER 14, 1905.

48,623. DRESS GOODS AND CLOAKINGS. C. R. O'DONALD & Co., Boston, Mass.
The words "SHAWNEE WOOLEN MILLS" superimposed on a picture of Tecumseh, the well-known chief of the Shawnee tribe of Indians.
Filed July 15, 1905. Serial No. 10,405. PUBLISHED NOVEMBER 14, 1905.

48,624. GLOVES. THE BUFFALO RUBBER MANUFACTURING COMPANY, Buffalo, N. Y.
The word "NEARVELVET."
Filed July 18, 1905. Serial No. 10,504. PUBLISHED NOVEMBER 14, 1905.

48,625. INCANDESCENT MANTLES AND SUPPORTS THEREFOR. THE CLEVELAND GAS AND ELECTRIC FIXTURE COMPANY, Cleveland, Ohio.
The word "SUNBURST."

Filed August 17, 1905. Serial No. 11,734. PUBLISHED NOVEMBER 14, 1905.

48,626. CLOVER-SEED. THE JESSUP-WHEELAN Co., San Francisco, Cal.
The word "CALBURCLO."
Filed October 10, 1905. Serial No. 13,466. PUBLISHED NOVEMBER 14, 1905.

48,627. COLLAR AND CUFF BUTTONS. THE KING COLLAR BUTTON Co., New York, N. Y.
The words "TWENTIETH CENTURY."
Filed October 9, 1905. Serial No. 13,428. PUBLISHED NOVEMBER 14, 1905.

48,628. LEATHER-POLISH. WHITTEMORE BROTHERS AND COMPANY, Cambridge, Mass.
The word "CLEANSHINE."
Filed May 31, 1905. Serial No. 7,118. PUBLISHED NOVEMBER 14, 1905.

48,629. GLOVES. ABRAHAM & STRAUS, New York, N. Y.
The word "NOVA."
Filed April 18, 1905. Serial No. 2,184. PUBLISHED NOVEMBER 14, 1905.

48,630. GLOVES. JACOB ADLER & Co., New York, N. Y.
The word "TRYON."
Filed June 13, 1905. Serial No. 8,056. PUBLISHED NOVEMBER 14, 1905.

48,631. PIN-RETAINERS. GEORGE J. CAPEWELL, Jr., Hartford, Conn.
The representation of a perspective view of a keystone with two stick-pins extending obliquely back of it and one extending horizontally across the front, each stick-pin having a stick-pin retainer thrust upon it. On the face of the keystone is a light circular space, occupying which is the representation of an owl roosting on the horizontally-arranged scarf-pin. On the face of the keystone there are also two pin-retainers and the words "AUTOMATIC GRIP." Extending across the lower part of the keystone is a white ribbon, on which appear the words "PIN RETAINER."
Filed May 2, 1905. Serial No. 4,031. PUBLISHED NOVEMBER 14, 1905.

48,632. INKSTANDS. EMBY DAVIS, New York, N. Y.
The word "AUTOMATIC."
Filed August 7, 1905. Serial No. 11,324. PUBLISHED NOVEMBER 14, 1905.

48,633. INKSTANDS. EMBY DAVIS, New York, N. Y.
The words "THE DAVIS."
Filed August 7, 1905. Serial No. 11,325. PUBLISHED NOVEMBER 14, 1905.

48,634. LEATHER BOOTS AND SHOES. G. A. CREIGHTON & SON, Lynn, Mass.
The conventional representation of a water-lily and water-lily leaves with intertwined stems, the ends of which are arranged in scrolls, associated with the words "CREIGHTON'S WATER PROOF SHOE."
Filed May 31, 1905. Serial No. 7,124. PUBLISHED NOVEMBER 14, 1905.

48,635. OILED CLOTHING. J. H. ROWE COMPANY, Portland, Me., and Gloucester, Mass.
The words "VICTOR BRAND."
Filed June 12, 1905. Serial No. 7,957. PUBLISHED NOVEMBER 14, 1905.

48,636. OILED CLOTHING. J. H. ROWE COMPANY, Portland, Me., and Gloucester, Mass.
The hyphenated word "TIP-TOP" in connection with the figure of a top.

Filed June 12, 1905. Serial No. 7,999. PUBLISHED NOVEMBER 14, 1905.

48,637. PAINT, VARNISH, AND SASH-TOOL BRUSHES. JOHN L. WHITING & SON CO., Boston, Mass.

A sectional view of a brush and handle, the handle having a head of prongs or projections arranged between the bristles and surrounded by a ferrule, with the words, abbreviation, and character "JOHN L. WHITING & SON, BOSTON" on the bristles.

Filed April 20, 1905. Serial No. 3,570. PUBLISHED NOVEMBER 14, 1905.

48,638. LEATHER BOOTS AND SHOES. JOHN W. RUSS Co., Haverhill, Mass.

The word "DICTATOR."

Filed June 7, 1905. Serial No. 7,569. PUBLISHED NOVEMBER 14, 1905.

48,639. COTTON PIECE GOODS. MASSACHUSETTS COTTON MILLS, Lowell, Mass.

The representation of a pine-tree constituting the main feature of a landscape representing a lake with hills in the background and a stag in the foreground.

Filed May 11, 1905. Serial No. 5,238. PUBLISHED NOVEMBER 14, 1905.

48,640. LATHER-BRUSHES, SHAVING-BRUSHES, AND PAINT-BRUSHES. RUBBER AND CELLULOID HARNESS TRIMMING CO., Newark, N. J.

The words "HARD RUBBER SET."

Filed September 29, 1905. Serial No. 13,127. PUBLISHED NOVEMBER 14, 1905.

48,641. LATHER-BRUSHES, SHAVING-BRUSHES, AND PAINT-BRUSHES. RUBBER AND CELLULOID HARNESS TRIMMING CO., Newark, N. J.

The words "HARD RUBBER SET AND BOUND."

Filed September 29, 1905. Serial No. 13,128. PUBLISHED NOVEMBER 14, 1905.

48,642. BRACELETS. THE D. F. BRIGGS CO., Attleboro, Mass.

The word "CARMEN."

Filed June 3, 1905. Serial No. 7,370. PUBLISHED NOVEMBER 14, 1905.

48,643. COATS, VESTS, TROUSERS, OVERALLS, AND JUMPERS. THE MILLER MANUFACTURING COMPANY, Fort Worth, Tex.

The word "HAWK" and the representation of a hawk perched upon the limb of a tree.

Filed May 5, 1905. Serial No. 4,417. PUBLISHED NOVEMBER 14, 1905.

48,644. NATURAL-ROCK OR HYDRAULIC CEMENT, LIME, AND PLASTER. THE NEWARK LIME & CEMENT MFG. CO., Newark, N. J., and Rondout, N. Y.

The words and abbreviation "OLD NEWARK CO." inclosed in an irregular broken border.

Filed May 1, 1905. Serial No. 3,927. PUBLISHED NOVEMBER 14, 1905.

48,645. COTTON PIECE GOODS. THE RENFREW MANUFACTURING COMPANY, Adams, Mass.

The representation of three intertwined circular bands or rings.

Filed June 17, 1905. Serial No. 8,438. PUBLISHED NOVEMBER 14, 1905.

48,646. BUTTONS AND STUDS. T. I. SMITH CO., North Attleboro, Mass.

The word "TISCO."

Filed June 12, 1905. Serial No. 7,978. PUBLISHED NOVEMBER 14, 1905.

48,647. PORTLAND, NATURAL-ROCK, AND IMPROVED CEMENT. AMERICAN CEMENT COMPANY, Philadelphia, Pa.

The word "SUN."

Filed June 26, 1905. Serial No. 8,869. PUBLISHED NOVEMBER 14, 1905.

48,648. PORTLAND, NATURAL-ROCK, AND IMPROVED CEMENT. AMERICAN CEMENT COMPANY, Philadelphia, Pa.

The word "EGYPT."

Filed June 26, 1905. Serial No. 8,871. PUBLISHED NOVEMBER 14, 1905.

48,649. WITHDRAWN.

48,650. WHISKY. M. C. BEAM & COMPANY, Gethsemane, Ky.

The words "OLD TROUT."

Filed August 1, 1905. Serial No. 11,112. PUBLISHED NOVEMBER 14, 1905.

48,651. CIGARS, CHEROOTS, AND CIGARETTES MADE OF CIGAR-TOBACCO. CAYEY-CAGUAS TOBACCO COMPANY, New York, N. Y., and Island of Porto Rico.

The representation of the bust of a woman inclosed in a wreath of tobacco-leaves, at the bottom of which wreath is a crown. Said wreath is set in the midst of a tobacco-field, and above said wreath is the word "AMORIFE."

Filed September 23, 1905. Serial No. 12,941. PUBLISHED NOVEMBER 14, 1905.

48,652. KNIT UNDERWEAR AND HOSIERY. CHAS. A. STEVENS & BROS., Chicago, Ill.

The word "FASHIODA."

Filed June 22, 1905. Serial No. 8,780. PUBLISHED NOVEMBER 14, 1905.

48,653. COTTON PLAIDS AND STRIPES. SAMUEL A. CROZER & SON, Upland, Pa.

The word "ALABAMA" produced upon an ornamental bar.

Filed April 20, 1905. Serial No. 3,645. PUBLISHED NOVEMBER 14, 1905.

48,654. CERTAIN NAMED PAPER. DENNISON & SONS, New York, N. Y.

The word "COLONIAL" and the representation of a fanciful female head upon which appears a coronet.

Filed April 24, 1905. Serial No. 2,910. PUBLISHED NOVEMBER 14, 1905.

48,655. BUTTER. EBEN F. DUDLEY, Owosso, Mich.

The representation of a four-leaf clover on the knot of a bow appearing on a contrasting background bounded by intersecting circles, the background appearing within a rectangular dotted field containing spaced representations of a four-leaf clover.

Filed May 3, 1905. Serial No. 4,145. PUBLISHED NOVEMBER 14, 1905.

48,656. FABRIC HOSE. EUREKA FIRE HOSE COMPANY, Jersey City, N. J.

The words "EUREKA PEERLESS."

Filed July 22, 1905. Serial No. 10,725. PUBLISHED NOVEMBER 14, 1905.

48,657. CORN-STARCH AND LAUNDRY STARCH. FRANCIS H. LEGGETT & COMPANY, New York, N. Y.

The word "PREMIER."

Filed June 19, 1905. Serial No. 8,488. PUBLISHED NOVEMBER 14, 1905.

48,658. CORN-STARCH AND LAUNDRY STARCH. FRANCIS H. LEGGETT & COMPANY, New York, N. Y.

The word "NABOB."

Filed June 23, 1905. Serial No. 8,823. PUBLISHED NOVEMBER 14, 1905.

48,659. FINE KID SHOES. GREEN-WHEELER SHOE CO., Fort Dodge, Iowa.

The words "HAPPY HOME."

Filed April 17, 1905. Serial No. 1,863. PUBLISHED MAY 30, 1905.

48,660. SUSPENDERS AND BRACES. HARRIS SUSPENDER CO., New York, N. Y.

The word "OPERA."

Filed April 8, 1905. Serial No. 732. PUBLISHED NOVEMBER 14, 1905.

48,661. BRACES AND SUSPENDERS. HARRIS SUSPENDER CO., New York, N. Y.

The word "WEIR."

Filed April 8, 1905. Serial No. 786. PUBLISHED NOVEMBER 14, 1905.

48,662. PAINT, VARNISH, AND SASH-TOOL BRUSHES. JOHN L. WHITING & SON CO., Boston, Mass.

A sectional view of a brush and handle having prongs or projections and a tapering plug arranged between the bristles and surrounded by a ferrule, with the words, abbreviation, and character "JOHN L. WHITING & SON, BOSTON" on the bristles.

Filed April 20, 1905. Serial No. 3,574. PUBLISHED NOVEMBER 14, 1905.

48,663. PAINT, VARNISH, AND SASH-TOOL BRUSHES. JOHN L. WHITING & SON CO., Boston, Mass.

The representation of a sectional view of a brush and its handle representing the tapering handle passing through the head, having prongs or projections arranged between the bristles and surrounded by a ferrule, with the words, abbreviation, and character "JOHN L. WHITING & SON, BOSTON" on the bristles.

Filed April 20, 1905. Serial No. 3,576. PUBLISHED NOVEMBER 14, 1905.

48,664. CONDENSED SOUPS. JOSEPH CAMPBELL COMPANY, Camden, N. J.

A band the upper half of which is red and the lower half white, with the word "CAMPBELL'S" appearing in the upper half.

Filed April 24, 1905. Serial No. 2,779. PUBLISHED NOVEMBER 14, 1905.

48,665. DEXTRIN. NORDDEUTSCHE KARTOFFELMEHL-FABRIK MIT BESCHRÄNKTER HAFTUNG, Kästrin, Germany.

The representation of a heraldic eagle rampant.

Filed April 1, 1905. Serial No. 206. PUBLISHED NOVEMBER 14, 1905.

48,666. PAINT FOR METALLIC SURFACES. RINALD BROS., Philadelphia, Pa.

The words "BESSEMER PAINT."

Filed May 8, 1905. Serial No. 4,726. PUBLISHED NOVEMBER 14, 1905.

48,667. WHEAT-FLOUR. SANDS, TAYLOR & WOOD COMPANY, Boston, Mass.

The words "KING ARTHUR," associated with the representation of a mounted knight bearing a banner on which is the representation of a cross. On the breast of the knight is the representation of a cross, and in the background are shown the buildings of an oriental city.

Filed April 7, 1905. Serial No. 730. PUBLISHED NOVEMBER 14, 1905.

48,668. RYE-FLOUR. THE BOUTWELL MILLING & GRAIN CO., Troy, N. Y.

The words "UPPER HUDSON."

Filed September 5, 1905. Serial No. 12,219. PUBLISHED NOVEMBER 14, 1905.

48,669. PEANUT-BUTTER. THE JEL-NUT MANUFACTURING COMPANY, Baltimore, Md.

The hyphenated word "JEL-NUT."

Filed June 15, 1905. Serial No. 8,258. PUBLISHED NOVEMBER 14, 1905.

48,670. UPRIGHT PIANOS. THE JOHN CHURCH COMPANY, Cincinnati, Ohio.

The word "HARVARD."

Filed April 24, 1905. Serial No. 2,781. PUBLISHED NOVEMBER 14, 1905.

48,671. SYRUPS, MOLASSES, AND SORGHUM. THE M. H. ALEXANDER CO., Cincinnati, Ohio.

The word "STAR," under which is the design of a star.

Filed May 3, 1905. Serial No. 4,110. PUBLISHED NOVEMBER 14, 1905.

48,672. WHISKY. VAN VLEET-MANSFIELD DRUG CO., Memphis, Tenn.

The words "SWEET PEERN."

Filed August 2, 1905. Serial No. 11,178. PUBLISHED NOVEMBER 14, 1905.

48,673. CIGARS. JOSEPH WEINREICH, Dayton, Ohio.

The words "JUSTICE STORY," together with a bust-picture of an elderly man with spectacles, the picture being inclosed in an oval frame. On one side of the picture there is a representation of Justice holding a scale evenly balanced in one hand, with a sheet of unrolled parchment in the other hand. On the other side of the picture is a group of books, a roll of paper, an unfolded sheet of paper or parchment, and an inkstand supported on the books. On each side of the picture is a spray of leaves.

Filed June 19, 1905. Serial No. 8,530. PUBLISHED NOVEMBER 14, 1905.

48,674. CANNED SARDINES. WILLIAM UNDERWOOD COMPANY, Boston, Mass.

The letters "V B."

Filed September 8, 1905. Serial No. 12,392. PUBLISHED NOVEMBER 14, 1905.

48,675. CHEWING-GUM. AMERICAN CHICLE CO., New York, N. Y.

The representation of City Hall Park in New York city as it appeared before the present post-office building was built, the representation including St. Paul's Chapel, the Astor House, and a street scene in the foreground, associated with the words "ADAMS' NEW YORK CHEWING GUM, SHAPTED AND SCENTLESS."

Filed June 15, 1905. Serial No. 8,162. PUBLISHED NOVEMBER 14, 1905.

48,676. WHISKY. BELMONT DISTILLERY CO., Louisville, Ky.

The representation of a bell.

Filed April 17, 1905. Serial No. 1,861. PUBLISHED JULY 18, 1905.

48,677. WHISKY. BELMONT DISTILLERY CO., Louisville, Ky.

The representation of a bell, associated with a scroll containing the word "BELMONT."

Filed April 17, 1905. Serial No. 1,862. PUBLISHED JULY 18, 1905.

48,678. MEDICATED LOZENGES. JOHN I. BROWN & SON, Boston, Mass.

The words "BROWN'S BRONCHIAL TROCHES."

Filed July 3, 1905. Serial No. 9,637. PUBLISHED NOVEMBER 14, 1905.

48,679. RAZORS. CHALLENGE CUTLERY CORP., Bridgeport, Conn.

The word "CHALLENGE."

Filed April 15, 1905. Serial No. 1,780. PUBLISHED NOVEMBER 14, 1905.

48,680. REMEDY FOR INTERNAL OR EXTERNAL USE. CURTIS AND BROWN MANUFACTURING COMPANY, (LIMITED,) New York, N. Y.

The words "BROWN'S HOUSEHOLD PANACEA."

Filed July 27, 1905. Serial No. 10,874. PUBLISHED NOVEMBER 14, 1905.

48,681. WHISKY. HILMAR EHRMANN, Louisville, Ky.

The word "BARONY," associated with the representation of an old-style gentleman in a fancy frame.

Filed June 17, 1905. Serial No. 8,436. PUBLISHED NOVEMBER 14, 1905.

48,682. MEDICINAL PREPARATIONS. FAIRCHILD BROS. & FOSTER, New York, N. Y.

The word "PEPULE."

Filed April 17, 1905. Serial No. 1,976. PUBLISHED NOVEMBER 14, 1905.

48,683. ANODYNE. DR. M. F. GROVES' SON AND CO., Philadelphia, Pa.

The pictorial representation of a group including a woman and children, the woman holding an infant and represented as in the act of administering medicine to the infant, the surroundings of the picture representing an interior.

Filed May 5, 1905. Serial No. 4,373. PUBLISHED NOVEMBER 14, 1905.

48,684. SALVE. EARLE G. HARRELL, Camilla, Ga.

The word "THYMOLATUM."

Filed July 31, 1905. Serial No. 11,045. PUBLISHED NOVEMBER 14, 1905.

48,685. MEDICATED CONFECTIONS. WILLIAM HOLLOWAY, Philadelphia, Pa.

The words "HOLLOWAY'S VEGETABLE VERMIFUGE CONFECTIONS," associated with a home scene inclosed within an ornamental flower-border, the scene showing the representation of two women, one seated and the other standing, and children gathered about as if eager to receive the remedy, which one of the women appears to be dispensing.

Filed July 28, 1905. Serial No. 10,942. PUBLISHED NOVEMBER 14, 1905.

48,686. BITTERS. WILLIAM HOLLOWAY, Philadelphia, Pa.

The abbreviation and name "DOCT. HOOFLANDS," associated with the words "CELEBRATED GERMAN BITTERS" and the representation of a knight in sitting posture leaning upon a shield, with his arms and weapons of war lying on the ground opposite him, and the letters and words forming the facsimile signature "C. N. JACKSON."

Filed July 28, 1905. Serial No. 10,944. PUBLISHED NOVEMBER 14, 1905.

48,687. WHISKY. F. W. HUNT & CO., Boston, Mass.

The compound word "BOW-KNOT" and the pictorial representation of a bow-knot.

Filed June 19, 1905. Serial No. 8,492. PUBLISHED NOVEMBER 14, 1905.

48,688. WHISKY. F. W. HUNT & CO., Boston, Mass.

The words "ANTLERS CLUB."

Filed June 10, 1905. Serial No. 8,478. PUBLISHED NOVEMBER 14, 1905.

48,689. LIQUID REMEDY. ELISABETH A. NEER, Paterson, N. J.

The word "KEYSTONE," in combination with the abbreviation and word "DR. NEER'S" and an ellipse inclosing a portrait of the late Dr. David Neer, of Paterson, N. J.

Filed June 8, 1905. Serial No. 7,951. PUBLISHED NOVEMBER 14, 1905.

48,690. MALT EXTRACTS. OTTO HUBER BREWERY, Brooklyn, N. Y.

The words "BOTTLED VIGOR" and the representation of an uplifted arm and hand, which appears below the said words, the hand containing a bottle bearing the hyphenated letters "O-H," from which rays of light radiate, and the hyphenated letters "O-H," which appear beneath the arm.

Filed April 17, 1905. Serial No. 1,951. PUBLISHED NOVEMBER 14, 1905.

48,691. DRILLS AND REAMERS. PATTERSON, GOTTFRIED & HUNTER, LIMITED, New York, N. Y.

A right-angled triangle represented in red.

Filed October 2, 1905. Serial No. 13,183. PUBLISHED NOVEMBER 14, 1905.

48,692. SAWS OF ALL KINDS. PATTERSON, GOTTFRIED & HUNTER, LIMITED, New York, N. Y.

A right-angled triangle represented in red.

Filed October 2, 1905. Serial No. 13,185. PUBLISHED NOVEMBER 14, 1905.

48,693. PUNCHES OF ALL KINDS. PATTERSON, GOTTFRIED & HUNTER, LIMITED, New York, N. Y.

A right-angled triangle represented in red.

Filed October 2, 1905. Serial No. 13,189. PUBLISHED NOVEMBER 14, 1905.

48,694. ANTISEPTIC. HENRY C. POPE, Birmingham, Ala.

The word "PANACENE."

Filed July 29, 1905. Serial No. 10,999. PUBLISHED NOVEMBER 14, 1905.

48,695. TIRE-BOLTS. RUSSELL, BURDSALL & WARD BOLT & NUT CO., Port Chester, N. Y.

The word "KEYSTONE."

Filed April 21, 1905. Serial No. 2,555. PUBLISHED NOVEMBER 14, 1905.

48,696. HEAVE CURE. MARION W. SAVAGE, Minneapolis, Minn.

The representation of a horse in the act of coughing, the walls of the chest being broken away, showing the position of the lungs. Below the representation of the horse are the words "HEAVE CURE" and above a panel bearing the word "INTERNATIONAL," all on a dark background.

Filed May 12, 1905. Serial No. 5,316. PUBLISHED NOVEMBER 14, 1905.

48,697. WHISKY. SHIFF, MAYER & CO., Cincinnati, Ohio.

The word "CLINGSTONE."

Filed June 7, 1905. Serial No. 7,891. PUBLISHED NOVEMBER 14, 1905.

48,698. LARD. SWIFT AND COMPANY, Chicago, Ill.

The words "SILVER LEAF."

Filed May 15, 1905. Serial No. 5,730. PUBLISHED NOVEMBER 14, 1905.

48,699. ROTARY PRINTING-MACHINES ADAPTED TO BE OPERATED BY HAND. THE AMERICAN MULTIGRAPH CO., Cleveland, Ohio.

The words "THE GAMMETER MULTIGRAPH."

Filed May 8, 1905. Serial No. 4,628. PUBLISHED NOVEMBER 14, 1905.

48,700. ANTIPYRETIC AND ANALGESIC. THE AMMONOL CHEMICAL CO., New York, N. Y.

The word "AMMONOL."

Filed June 5, 1905. Serial No. 7,468. PUBLISHED NOVEMBER 14, 1905.

48,701. CANDY. THE CHANDLER AND RUDD COMPANY, Cleveland, Ohio.

The word "SUNSHINE" disposed in an arc above the representation of a rising sun.

Filed May 2, 1905. Serial No. 4,036. PUBLISHED NOVEMBER 14, 1905.

48,702. WHEELBARROWS AND THE PARTS THEREOF. THE KILBOURNE & JACOBS MANUFACTURING COMPANY, Columbus, Ohio.

The word "CHAMPION."

Filed September 20, 1905. Serial No. 12,819. PUBLISHED NOVEMBER 14, 1905.

48,703. WHEELBARROWS AND THE PARTS THEREOF. THE KILBOURNE & JACOBS MANUFACTURING COMPANY, Columbus, Ohio.

The word "BOSS."

Filed September 20, 1905. Serial No. 12,821. PUBLISHED NOVEMBER 14 1905.

48,704. WHEELBARROWS AND THE PARTS THEREOF. THE KILBOURNE & JACOBS MANUFACTURING COMPANY, Columbus, Ohio.

The words "PAN AMERICAN."

Filed September 20, 1905. Serial No. 12,822. PUBLISHED NOVEMBER 14, 1905.

48,705. TONIC. THE NUTROLACTIS CO., New York, N. Y.

The word "NUTROLACTIS."

Filed June 5, 1905. Serial No. 7,492. PUBLISHED NOVEMBER 14, 1905.

48,706. METALLIC ALLOY AND ARTICLES OF WHICH SUCH ALLOY FORMS A PART. THE RIVERSIDE METAL CO., Riverside, N. J.

The word "OMEGA."

Filed April 21, 1905. Serial No. 2,590. PUBLISHED NOVEMBER 14, 1905.

48,707. SEWING-MACHINES AND PARTS THEREOF. UNION SPECIAL MACHINE COMPANY, Chicago, Ill.

The representation of two padlocks with a link uniting the loops, associated with the words "UNION SPECIAL DOUBLE LOCKED STITCH," all inclosed within an ellipse.

Filed April 3, 1905. Serial No. 239. PUBLISHED NOVEMBER 14, 1905.

48,708. WHISKY. VAN VLEET-MANSFIELD DRUG CO., Memphis, Tenn.

The words "MOSSY DELL."

Filed August 2, 1905. Serial No. 11,177. PUBLISHED NOVEMBER 14, 1905.

48,709. ANTISEPTICS. JAMES T. WETHERALD, Boston, Mass.

The word "PAXTINE."

Filed June 17, 1905. Serial No. 8,431. PUBLISHED NOVEMBER 14, 1905.

48,710. BORING-MACHINES. AJAX MFG. CO., Allegheny, Pa.

The word "AJAX."

Filed June 15, 1905. Serial No. 8,193. PUBLISHED NOVEMBER 14, 1905.

48,711. UNDERWAISTS. EDWARD HENRY HORWOOD, New York, N. Y.

The words "LITTLE BEAUTY."

Filed April 14, 1905. Serial No. 1,539. PUBLISHED JUNE 20, 1905.

48,712. MOTHPROOF BAGS. THOMAS MANAHAN, New York, N. Y.

The words "SEA SHORE."

Filed May 27, 1905. Serial No. 6,774. PUBLISHED NOVEMBER 14, 1905.

48,713. WHEAT-FLOUR. JOHN MCALEER & SONS, Philadelphia, Pa.

The representation of a sheaf of wheat, in front of which is a loaf of bread resting on a platter, associated with the words "BIG LOAF."

Filed September 5, 1905. Serial No. 12,947. PUBLISHED NOVEMBER 14, 1905.

48,714. TWINE AND BINDER-TWINE. PLYMOUTH CORDAGE COMPANY, Plymouth, Mass.

The representation of an upright sheaf of grain bearing the words "PLYMOUTH TWINE."

Filed June 16, 1905. Serial No. 8,288. PUBLISHED NOVEMBER 14, 1905.

48,715. FIBROUS ROPE AND TWINE. PLYMOUTH CORDAGE COMPANY, Plymouth, Mass.

The pictorial representation of a sailing vessel at sea.

Filed June 16, 1905. Serial No. 8,300. PUBLISHED NOVEMBER 14, 1905.

48,716. FIBROUS OR TEXTILE ROPE AND TWINE. PLYMOUTH CORDAGE COMPANY, Plymouth, Mass.

The pictorial representation of a steamboat or steamer at sea.

Filed June 16, 1905. Serial No. 8,301. PUBLISHED NOVEMBER 14, 1905.

48,717. FIBROUS OR TEXTILE ROPE AND TWINE. PLYMOUTH CORDAGE COMPANY, Plymouth, Mass.

The pictorial representation of a man-of-war or battleship at sea.

Filed June 16, 1905. Serial No. 8,302. PUBLISHED NOVEMBER 14, 1905.

48,718. DRY, PICKLED, AND CANNED FISH. REED AND GAMAGE, Gloucester, Mass.

The word "DAINTY."

Filed April 27, 1905. Serial No. 3,243. PUBLISHED JULY 4, 1905.

48,719. KNIVES AND SLICERS. MONTGOMERY G. RODRAMEL, Minneapolis, Minn.

The letters "M. G. R."

Filed April 18, 1905. Serial No. 2,122. PUBLISHED NOVEMBER 14, 1905.

48,720. GLASS AND METAL ADVERTISING-SIGNS. RODWELL SIGN CO., Buffalo, N. Y.

The word "BRILLIANT."

Filed May 15, 1905. Serial No. 5,699. PUBLISHED NOVEMBER 14, 1905.

48,721. GLASS AND METAL ADVERTISING-SIGNS. RODWELL SIGN CO., Buffalo, N. Y.

The word "RODWELL."

Filed May 15, 1905. Serial No. 5,700. PUBLISHED NOVEMBER 14, 1905.

48,722. HAY-LOADERS. SANDWICH MANUFACTURING CO., Sandwich Ill.

The words "THE CLEAN SWEEP."

Filed June 2, 1905. Serial No. 7,214. PUBLISHED NOVEMBER 14, 1905.

48,723. HAY-BALING PRESSES. SANDWICH MANUFACTURING CO., Sandwich, Ill.

The word "SOUTHWICK."

Filed June 2, 1905. Serial No. 7,216. PUBLISHED NOVEMBER 14, 1905.

48,724. HAY-BALING PRESSES. SANDWICH MANUFACTURING CO., Sandwich, Ill.

The word "SANDWICH."

Filed June 2, 1905. Serial No. 7,218. PUBLISHED NOVEMBER 14, 1905.

48,725. SPRINGWORK AND WIRE-SPRING SUPPORTS FOR CHAIRS, SOFAS, BEDS, AND CARRIAGE-SEATS. STAPLES & HANFORD CO., Newburgh, N. Y.

The letters and character "S & H."

Filed May 25, 1905. Serial No. 6,619. PUBLISHED NOVEMBER 14, 1905.

48,726. SPADES, SHOVELS, AND SCOOPS. THE AVERY STAMPING COMPANY, Cleveland, Ohio.

The hyphenated word "NEVER-BREAK."

Filed September 29, 1905. Serial No. 13,142. PUBLISHED NOVEMBER 14, 1905.

48,727. CARD GAMES. THE CINCINNATI GAME CO., Cincinnati, Ohio.

The word "LENNALOTT."

Filed September 28, 1905. Serial No. 13,108. PUBLISHED NOVEMBER 14, 1905.

48,728. BEER. THE JOHN EICHLER BREWING CO., New York, N. Y.

The word "EICHLER."

Filed September 25, 1905. Serial No. 12,947. PUBLISHED NOVEMBER 14, 1905.

48,729. WHEELBARROWS AND THE PARTS THEREOF. THE KILBOURNE & JACOBS MANUFACTURING COMPANY, Columbus, Ohio.

The word "VICTOR."

Filed September 19, 1905. Serial No. 12,790. PUBLISHED NOVEMBER 14, 1905.

48,730. WHEELBARROWS AND THE PARTS THEREOF. THE KILBOURNE & JACOBS MANUFACTURING COMPANY, Columbus, Ohio.

The word "PALMETTO."

Filed September 19, 1905. Serial No. 12,791. PUBLISHED NOVEMBER 14, 1905.

48,731. WHEELBARROWS AND THE PARTS THEREOF. THE KILBOURNE AND JACOBS MANUFACTURING COMPANY, Columbus, Ohio.

The word "STAR."

Filed September 19, 1905. Serial No. 12,792. PUBLISHED NOVEMBER 14, 1905.

48,732. LAGER-BEER. THE LOUIS BERGDOLL BREWING COMPANY, Philadelphia, Pa.

The word "BERGDOLL."

Filed August 31, 1905. Serial No. 12,113. PUBLISHED NOVEMBER 14, 1905.

48,733. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.

The representation of a panel displaying a central rosette inclosed by a circle surrounded by a curved figure with four points extending to the ends and sides, the side points inclosing a conventional leaf-spray, while the end points inclose leaf designs with a rosette inclosed in a circle. The corners of the panels are filled by conventional sprays of leaves and flowers.

Filed June 27, 1905. Serial No. 9,230. PUBLISHED NOVEMBER 14, 1905.

48,734. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.

The representation of a panel with an outer line of dots and a conventional border of curved lines intertwined, within which is a rectangular line of dots inclosing a central panel displaying a conventional scroll design having on each side and at each corner a grotesque animal.

Filed June 27, 1905. Serial No. 9,231. PUBLISHED NOVEMBER 14, 1905.

48,735. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.

The representation of a rectangular design having a fan-like figure at each corner and a conventional block figure at each side. Surrounded by two lines which avoid the figures mentioned is a central device displaying sprays of leaves and at each end a shield showing three crowns.

Filed June 27, 1905. Serial No. 9,232. PUBLISHED NOVEMBER 14, 1905.

48,736. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.

The representation of a rectangular panel having two inclosing lines and displaying at the center a rosette within two circles. At each end and beside the central circular design is a leaf-like conventional scroll, and in the center of each end a grotesque human face appears.

Filed June 27, 1905. Serial No. 9,236. PUBLISHED NOVEMBER 14, 1905.

48,737. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.

The representation of a rectangular panel having a conventional border and displaying two stork-like figures with grotesque heads and long necks intertwined at the center and crossing a framework with a diamond center and lines extending therefrom to each side and end. In diagonally opposite corners are designs of four leaves inclosed by a small frame, and adjacent thereto is a somewhat larger frame. In the remaining corners are detached griffin-like wings. A number of small ball-like dots are scattered over the design.

Filed June 27, 1905. Serial No. 9,238. PUBLISHED NOVEMBER 14, 1905.

48,738. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD CO., New York, N. Y.

The representation of a panel having a conventional flower border surrounding an inner panel, at the center of which is a rosette inclosed by two concentric circles, between which is displayed a conventional flower-like band. At each end of the central device is a spray of leaves and flowers.

Filed June 27, 1905. Serial No. 9,239. PUBLISHED NOVEMBER 14, 1905.

48,739. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.

The representation of two sea-serpents arranged about a circular device representing the rays from a strong light. The tail of each fish curves about a similar ray device at each end of the design. A curved line inclosing the entire design, following the contour thereof, but slightly overlapped at the ends and sides by the fins of the fish figures.

Filed July 12, 1905. Serial No. 10,137. PUBLISHED NOVEMBER 14, 1905.

48,740. CANNED FRUITS AND VEGETABLES. THE SCUDDERS-GALE GROCER COMPANY, St. Louis, Mo.

The word "ROBIN" and the pictorial representation of a robin perched upon a branch with leaves in the background.

Filed April 1, 1905. Serial No. 217. PUBLISHED SEPTEMBER 5, 1905.

48,741. CASE LINING, SHEATHING, INSULATING, AND ROOFING PAPERS. THE STANDARD PAINT COMPANY, New York, N. Y.

The word "UNIVERSAL."

Filed April 13, 1905. Serial No. 1,414. PUBLISHED AUGUST 8, 1905.

48,742. PAPERS PREPARED WITH MOISTURE-RESISTANT SUBSTANCES. THE STANDARD PAINT COMPANY, New York, N. Y.

The word "HERCULES."

Filed April 13, 1905. Serial No. 1,416. PUBLISHED AUGUST 8, 1905.

48,743. ROPE, CORD, AND TWINE. THE SCHLICHTER JUTE CORDAGE CO., Philadelphia, Pa.

The word "KEYSTONE" and the representation of a keystone, used singly or together.

Filed June 20, 1905. Serial No. 8,599. PUBLISHED NOVEMBER 14, 1905.

48,744. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio.

The word "MOTORETTE."

Filed April 15, 1905. Serial No. 1,608. PUBLISHED NOVEMBER 14, 1905.

48,745. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio.

The words "IVORY PINOCHLE."

Filed May 4, 1905. Serial No. 4,246. PUBLISHED NOVEMBER 14, 1905.

48,746. HANDCUFFS AND LEG-IRONS. TOWER & LYON CO., New York, N. Y.

The words "DOUBLE LOCK."

Filed June 15, 1905. Serial No. 8,176. PUBLISHED NOVEMBER 14 1905.

48,747. POLICE-TWISTERS. TOWER & LYON CO., New York, N. Y.

The word "PERFECT."

Filed June 15, 1905. Serial No. 8,177. PUBLISHED NOVEMBER 14, 1905.

48,748. NAIL-PULLERS. TOWER & LYON CO., New York, N. Y.

The word "CYCLOPS."

Filed July 28, 1905. Serial No. 10,975. PUBLISHED NOVEMBER 14, 1905.

48,749. COMPOUNDS FOR BRAZING METALS. AMERICAN BRAZING COMPANY, New York, N. Y., assignor to The American Ferrofix Brazing Company, a Corporation of Connecticut.

The word "FERROFIX."

Filed June 10, 1905. Serial No. 7,802. PUBLISHED NOVEMBER 14, 1905.

48,750. FLUXES FOR BRAZING METALS. AMERICAN BRAZING COMPANY, New York, N. Y., assignor to The American Ferrofix Brazing Company, a Corporation of Connecticut.

The word "BORFIX."

Filed June 10, 1905. Serial No. 7,803. PUBLISHED NOVEMBER 14, 1905.

48,751. TOOTH-POWDER. CURTIS AND BROWN MANUFACTURING COMPANY, (LIMITED,) New York, N. Y.

The words "BROWN'S CAMPHORATED SAPONACEOUS DENTIFRICE."

Filed July 27, 1905. Serial No. 10,873. PUBLISHED NOVEMBER 14, 1905.

48,752. LEATHER AND LEATHER AND CLOTH BOOTS, SHOES, AND SLIPPERS. GEO. F. DANIELS & CO., Boston, Mass.

The words "GOOD LUCK."

Filed April 6, 1905. Serial No. 350. PUBLISHED NOVEMBER 14, 1905.

48,753. HAIR COMBS, RETAINERS, ORNAMENTS, AND PINS. KRAUS & GLAUBERG CO., New York, N. Y.

The words "CROWN BRAND" and the symbol of a crown between the same.

Filed August 8, 1905. Serial No. 11,426. PUBLISHED NOVEMBER 14 1905.

48,754. HAIR COMBS, RETAINERS, ORNAMENTS, AND PINS. KRAUS & GLAUBERG CO., New York, N. Y.

The word "ULOCHT."

Filed August 8, 1905. Serial No. 11,436. PUBLISHED NOVEMBER 14, 1905.

48,755. WHISKY. KREMELSHEIMER BROS., Seattle, Wash.

The words "OLD LINE," associated with a representation of the Baltimore Washington monument partly inclosed in a circle which is bordered by ornamental dots and lines.

Filed July 3, 1905. Serial No. 9,703. PUBLISHED NOVEMBER 14, 1905.

48,756. DIPROPYL-BARBITURIC ACID. E. MERCK, Darmstadt, Germany.

The word "PROPONAL."

Filed May 16, 1905. Serial No. 5,848. PUBLISHED NOVEMBER 14, 1905.

48,757. WEED-DESTROYER. WILLIAM J. READE, New York, N. Y.

The word "HERBICIDE."

Filed August 23, 1905. Serial No. 11,999. PUBLISHED NOVEMBER 14, 1905.

48,758. STEEL-HARDENING SOLUTION. FREDERICK W. SANGSTER, Rochester, N. Y.

The word "KALUX."

Filed August 7, 1905. Serial No. 11,398. PUBLISHED NOVEMBER 14, 1905.

48,759. WHISKY. STRAUS BROTHERS COMPANY, Chicago, Ill.

The words "GERMANIA CLUB" and the design of a statue of a woman on a pedestal and holding a crown in her right hand and a sword in her left hand.

Filed August 10, 1905. Serial No. 11,513. PUBLISHED NOVEMBER 14, 1905.

48,760. WHISKY. STRAUS BROTHERS COMPANY, Chicago, Ill.

The word "HECLA," associated with a monogram composed of the letters and abbreviation "S B Co."

Filed August 10, 1905. Serial No. 11,517. PUBLISHED NOVEMBER 14, 1905.

48,761. MEDICAL PREPARATIONS. THE MALTINE COMPANY, Brooklyn, N. Y.

The word "MALTO."

Filed May 3, 1905. Serial No. 4,084. PUBLISHED NOVEMBER 14, 1905.

48,762. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.

A device shown as upon a solid ground upon which are displayed certain framework, borders, scrolls, and floral designs. Within a central ring is a bunch of flowers consisting of two full-blown roses with leaves and small flora. The whole of the combined symbols form a quadrangular entablature, with corners slightly rounded, of greater length than width. Above and below the central ring appear similar floral designs, which partially overlap said ring and, extending laterally, form wreaths, which extend on either side to fleur-de-lis. The floral ornamentation, wreaths, and fleur-de-lis are surrounded with a plain-line border circular at its middle portion, but with Gothic arch-like extensions above and below, and this line border is surrounded by another line border following the inner configuration, except that it terminates in ornamental bends or turns on either side opposite to the fleur-de-lis. At each corner of the panel, within a quadrangular light line, the space is nearly filled up with floral designs, each of the same character.

Filed June 27, 1905. Serial No. 9,222. PUBLISHED NOVEMBER 14, 1905.

48,763. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.

The representation of a design many times repeated upon a panel or parallelogram to give the effect of many parallel diagonal lines crossing each other and inclosing dark diamond-shaped figures. The appearance of light lines is gained by four light parallel strokes or lines at each side of each dark diamond, and at each corner of each dark diamond a smaller light diamond space appears, the whole effect resembling a plaid design.

Filed June 27, 1905. Serial No. 9,226. PUBLISHED NOVEMBER 14, 1905.

48,764. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.

The representation of a rectangular panel having a conventional border suggesting fleur-de-lis and a conventional design in each corner. A central panel inclosed by two lines and an outer row of large dots displays a conventional scroll suggesting sprays of oak-leaves intertwined.

Filed June 27, 1905. Serial No. 9,228. PUBLISHED NOVEMBER 14, 1905.

48,765. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.

The representation of a rectangular device having a border of rosettes with larger corner-rosettes inclosing a central panel, upon which are displayed a number of fan-like figures resembling peacocks' tails so closely arranged as to cover the entire surface.

Filed June 27, 1905. Serial No. 9,229. PUBLISHED NOVEMBER 14, 1905.

48,766. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.

The representation of a rectangular panel displaying at the center a design of four egg-shaped figures with dotted borders, each containing a conventional oak-leaf spray. In each corner is a conventional scroll displaying an animal head.

Filed June 27, 1905. Serial No. 9,233. PUBLISHED NOVEMBER 14, 1905.

48,767. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.

The representation of a rectangular panel having a conventional border inclosing a central parallelogram displaying a leaf-like design starting from the center and spreading toward the ends, the leaves resembling oak-leaves. At each end is a vase of flowers, and in each corner is a cupid holding out in one hand a tiny representation of a playing-card.

Filed June 27, 1905. Serial No. 9,234. PUBLISHED NOVEMBER 14, 1905.

48,768. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.

The representation of a panel displaying at two corners a monkey having a very long tail twisted about the limbs of the opposite monkey. In each of the other corners are shown three wasp-like insects.

Filed June 27, 1905. Serial No. 9,235. PUBLISHED NOVEMBER 14, 1905.

48,769. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.

The representation of a rectangular panel with an ornamental border inclosing a design consisting of four conventional scrolls of branches and leaves inclosing a central figure of four partial circles with a central rosette. In each corner is a bird perched upon the scroll and represented as singing.

Filed June 27, 1905. Serial No. 9,237. PUBLISHED NOVEMBER 14, 1905.

48,770. CHEMICALS FOR THE CERAMIC ARTS. THE ROESSLER & HASSLACHER CHEMICAL CO., New York, N. Y.

The representation of a heart-shaped shield having a flat top portion showing the letters and abbreviation "R H C Co" thereon with two bands below said letters, the character "A 1" appearing on said heart-shaped portion and two olive branches encircling said shield.

Filed May 23, 1905. Serial No. 6,370. PUBLISHED NOVEMBER 14, 1905.

48,771. CREAM FOR THE SKIN. MME. TOUSSAUD MFG. CO., Chicago, Ill.

The words "PERSPIRO CREAM" and a portrait of Agnes Wing, a member of the firm.

Filed August 30, 1905. Serial No. 12,066. PUBLISHED NOVEMBER 14, 1905.

48,772. WHISKY. VAN VLEET-MANSFIELD DRUG CO., Memphis, Tenn.

The words "GAYOSO CLUB."

Filed August 2, 1905. Serial No. 11,176. PUBLISHED NOVEMBER 14, 1905.

48,773. WHISKY. VAN VLEET-MANSFIELD DRUG CO., Memphis, Tenn.

The words "CHICKASAW CLUB."

Filed August 2, 1905. Serial No. 11,180. PUBLISHED NOVEMBER 14, 1905.

LABELS

REGISTERED JANUARY 9, 1906.

12,594.—*Title:* "HAWAIIAN RELISH." (For a Relish.) TROPIC FRUIT COMPANY, LIMITED, Wahiawa, Territory of Hawaii. Filed December 9, 1905.

12,595.—*Title:* "SHERBET PINEAPPLE." (For Cut, Grated, or Chopped Pineapple.) TROPIC FRUIT COMPANY, LIMITED, Wahiawa, Territory of Hawaii. Filed December 9, 1905.

12,596.—*Title:* "PINEAPPLE (SHORT SQUARES)." (For Cut Pineapple.) TROPIC FRUIT COMPANY, LIMITED, Wahiawa, Territory of Hawaii. Filed December 9, 1905.

12,597.—*Title:* "HAWAIIAN PINEAPPLE (LONG SQUARES)." (For Cut Pineapple.) TROPIC FRUIT COMPANY, LIMITED, Wahiawa, Territory of Hawaii. Filed December 9, 1905.

12,598.—*Title:* "ROYAL JELLY POWDER." (For Jelly-Powder.) THEODORE L. WITKOP, Buffalo, N. Y. Filed December 12, 1905.

12,599.—*Title:* "HOTEL ASTOR COFFEE." (For Coffee.) B. FISCHER & Co., New York, N. Y. Filed September 23, 1905.

12,600.—*Title:* "VAMOCHA BRAND MOCHA AND JAVA COFFEE." (For Canned Coffee.) THE UNITED STATES PRINTING COMPANY, Brooklyn, N. Y. Filed December 14, 1905.

12,601.—*Title:* "M. A. C." (For Cigars.) JOSEPH J. FOSTER, St. Louis, Mo. Filed December 13, 1905.

12,602.—*Title:* "POLLOCK'S GEMS." (For Cigars and Stogies.) ROBERT POLLOCK, a Firm, Pittsburg, Pa. Filed December 15, 1905.

12,603.—*Title:* "LADY GERTRUDE." (For Cigars.) THE J. J. WIEDMANN CIGAR BOX CO., St. Louis, Mo. Filed December 13, 1905.

12,604.—*Title:* "BUCKEYE CIGAR." (For Cigars.) JOHN W SMITH, Cincinnati, Ohio. Filed December 15, 1905.

12,605.—*Title:* "KEETON GOLD." (For Dental Gold.) THE KEETON-WILLIAMS GOLD COMPANY, Kansas City, Mo. Filed November 27, 1905.

12,606.—*Title:* "A A DENTAL MOUTH WASH." (For Mouth-Wash.) ATLANTA ANTISEPTIC CO., Atlanta, Ga. Filed December 9, 1905.

12,607.—*Title:* "MONOGRAM MILLS." (For Dress Goods.) BATTELLE, HURD & Co., New York, N. Y. Filed December 5, 1905.

12,608.—*Title:* "WILBORINE SALVE." (For Salve.) THE WILBORINE SALVE CO., Belleville, Ill. Filed December 11, 1905.

12,609.—*Title:* "J. C. CRUMP'S SALVE." (For Salve.) J. C. CRUMP, Isleton, Cal. Filed December 19, 1905.

12,610.—*Title:* "J. C. CRUMP'S HOOF OINTMENT." (For Hoof-Ointment.) J. C. CRUMP, Isleton, Cal. Filed December 19, 1905.

12,611.—*Title:* "DR. OLGA SCHILLER'S GRAY HAIR RESTORER." (For Gray-Hair-Restorer Tonic.) RUDOLPH J. KRUGER, St. Paul, Minn. Filed December 1, 1905.

12,612.—*Title:* "DISTRICT MESSENGER BOY." (For a Game.) MCLAUGHLIN BROS., New York and Brooklyn, N. Y. Filed December 14, 1905.

12,613.—*Title:* "X RAY POLISH." (For a Cleaning Preparation.) CHARLES E. BRAASCH, New York, N. Y. Filed November 25, 1905.

PRINTS

REGISTERED JANUARY 9, 1906.

1,552.—*Title:* "FERGUSON'S WHITE SEAL." (For Bread.) BOSTON BANK NOTE CO., Boston, Mass. Filed December 11, 1905.

1,553.—*Title:* "FERGUSON'S WHITE SEAL." (For Pies.) BOSTON BANK NOTE CO., Boston, Mass. Filed December 11, 1905.

1,554.—*Title:* "FERGUSON'S MINCE PIES." (For Mince Pies.) BOSTON BANK NOTE CO., Boston, Mass. Filed December 11, 1905.

1,555.—*Title:* "WOLFE'S SCHNAPPS." (For Schiedam Schnapps.) UDOLPHO WOLFE COMPANY, New York, N. Y. Filed December 14, 1905.

1,556.—*Title:* "JUST AS GOOD." (For a Popcorn Confection.) SEVERSON & JOHNSON, Colorado Springs, Colo. Filed December 12, 1905.

1,557.—*Title:* "THE NEW CREMO VICTORIA." (For Cigars.) AMERICAN CIGAR CO., New York, N. Y. Filed December 14, 1905.

1,558.—*Title:* "C. POYET INC. CANDIES." (For Candies.) GROSSMAN PAPER BOX CO., Cleveland, Ohio. Filed December 16, 1905.

1,559.—*Title:* "ARROWETTE." (For Cough Medicine.) DWIGHT F. SHELDON, Rochester, N. Y. Filed November 29, 1905.

1,560.—*Title:* "FINE BRACES." (For Braces.) GROSSMAN PAPER BOX CO., Cleveland, Ohio. Filed December 16, 1905.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

BEALL v. SHUMAN.

Decided October 28, 1905.

1. INTERFERENCE—ORIGINALITY—DERIVATION BY S. FROM B. THROUGH ANOTHER—EVIDENCE.

Where B. claims conception of the invention and disclosure to an associate of S. prior to S.'s alleged date of conception and is corroborated as to both matters by credible witnesses and the associate is discredited by his denial that the invention was so disclosed to him and the weight of circumstances is in favor of derivation by S. from B. through the associate, *Held* that the testimony of S. and the associate to independent invention by S. and the inference unfavorable to B. from inactivity in connection with the invention are overcome and that B. is entitled to an award of priority of invention.

2. SAME—SAME—EVIDENCE—SIMILARITY OF INVENTION AND OPPORTUNITY OF DERIVATION.

Held that the mere appearance of two parties with the same invention identical in many novel and distinct details raises some suspicion of derivation by one from the other, and where one of these parties is proved to have been in possession of the invention prior to any date of possession proved by the other party and it is shown that opportunity for derivation by the later party from the earlier party occurred prior to such proved date of possession by the later party the suspicion of derivation, in the absence of satisfactory evidence to the contrary, becomes conviction, and it must be held that the later party did, in fact, obtain the invention from the earlier party.

3. SAME—SAME—SAME—INACTIVITY OF PARTY—NOTICE OF ADVERSE CLAIM.

Where B. was not active in obtaining patents or in the reduction to practice and promotion of the invention which was carried on by S., but produces evidence in support of his claim that he supposed S. to be carrying out B.'s conception in the business of the common employer of B. and S., *Held* that in the absence of proof that B. in the period of his inactivity had notice of S.'s adverse claim no inferences strongly unfavorable to B. can be drawn from his inactivity.

4. SAME—EVIDENCE—DISCREPANCY BETWEEN TESTIMONY AND APPLICATION AS TO EXTENT OF THE INVENTION.

Where B. carefully omitted from his applications, prepared from S.'s patents, features of invention disclosed in the patents to S. and which B. in testifying claims to have invented, *Held* that the inference from these facts that B. did not originate the inventions in issue is too remote to stand against satisfactory evidence that B. did originate the invention in issue.

5. TESTIMONY—LEADING QUESTIONS.

Where some leading questions were asked in the course of the examination of witnesses, *Held* that their testimony as a whole was, nevertheless, sufficiently free from dependence upon the suggestion of counsel to be entitled to acceptance without diminution of weight on account of this objection.

APPEAL from Examiners-in-Chief.

REMOVABLE PILES FOR FORMING CONCRETE PILINGS.

Messrs. John B. Thomas & Co. and *Mr. W. S. Duvall* for Beall.

Messrs. Howson & Howson for Shuman.

ALLEN, *Commissioner:*

This is an appeal by Shuman from the decision of the Examiners-in-Chief awarding priority of invention to Beall upon an issue expressed in twenty-six counts, of which the following define the inventions involved sufficiently for the purposes of this decision:

1. As a device for forming in the ground an opening for the subsequent reception of concrete or other fluid or plastic material, the within-described removable preparatory pile having an enlarged point which is removable with the pile, substantially as specified.

2. As a device for forming in the ground an opening for the subsequent reception of concrete or other fluid or plastic material, a removable preparatory pile having an opening extending through the point, whereby air can enter the space below the point as the pile is withdrawn, substantially as specified.

4. As a device for forming in the ground an opening for the subsequent reception of concrete or other fluid or plastic material, a removable pile having an opening therein which extends through the point, and a valve which closes as specified.

6. As a device for forming in the ground an opening for the subsequent reception of concrete or other fluid or plastic material, a removable pile having an enlarged point, and an opening through which air can enter the space below the point of the pile as the latter is withdrawn, substantially as specified.

7. As a device for forming in the ground an opening for the subsequent reception of concrete or other fluid or plastic material, a removable preparatory pile having an opening therethrough and an enlarged point secured to said pile and also having a relief-opening therein through which air can enter the space below the point as the pile is withdrawn, substantially as specified.

17. As a device for forming in the ground an opening for the subsequent reception of concrete or other fluid or plastic material, a removable preparatory pile having an enlarged point which is detachable from the pile, whereby said pile can be removed from the opening formed thereby, leaving the point at the bottom of the opening to form the base or foundation for the permanent pile, substantially as specified.

19. As a device for forming in the ground an opening for the subsequent reception of concrete or other fluid or plastic material, a removable preparatory pile having a detachable non-metallic point, substantially as specified.

21. As a device for forming in the ground an opening for the subsequent reception of concrete or other fluid or plastic material, a removable preparatory pile having a detachable point composed of concrete, substantially as specified.

The inventions relate to the formation of concrete piles by driving a preparatory pile into the ground, withdrawing the same, and filling the opening formed with concrete. The counts are drawn to the removable preparatory pile and are limited to one or more of the various features thereof, such as an enlarged head for shattering the earth in driving to reduce friction in removal, the opening through the pile to admit air below the same and prevent suction during withdrawal, the valve for the air-opening at the point of the pile, and a detachable point or head for the pile, which remains in the ground as a base for concrete which is filled in upon the same.

Shuman claims to have conceived the inventions in issue and to have disclosed them to others in the first half of October, 1902, and to have reduced them to practice later in the same month. He applied for the patents in interference in January and in April of 1903, and the patents issued in July of that year. Beall claims to have conceived the inventions and to have disclosed them to others in the first

part of August, 1902. His applications in interference were filed in April, 1904. Beall alleges that Shuman is not an original inventor of the inventions in issue, but derived the same from Beall through Stewart, to whom Beall claims to have disclosed these inventions in August, 1902. As Shuman's patents issued before Beall's applications were filed, the burden is upon Beall to establish his case by proof beyond reasonable doubt. Both the Examiners-in-Chief and the Examiner of Interferences found Beall's conception of the invention and his disclosure thereof to others before Shuman's alleged date of conception to be proved. The Examiner of Interferences found that Beall disclosed the inventions to Stewart before Shuman's alleged conception thereof, that Shuman and Stewart were partners regarding these inventions, that derivation of the inventions by Shuman should be presumed from this relation, and that the judgment should be in favor of Beall. The Examiners-in-Chief found that Stewart had knowledge of Beall's invention prior to Shuman's alleged disclosure and that the Cranford Company (the employer of Beall and Stewart) reduced the invention to practice through Stewart and with the assistance of Shuman. They also awarded priority to Beall.

The conclusion of the tribunals below that Beall should prevail in this proceeding is, in my opinion, correct. It is not necessary to set forth here detailed consideration of the testimony. Full and careful analysis of the evidence is given in the decision of the Examiner of Interferences. The principal features of the case, as I view the same, may be stated, however. Beall testifies that he conceived the inventions on August 6, 1902, and made disclosures thereof the same day in part to Parsons (Q. 21, Beall's printed record, p. 22) and fully to Breniser, Davis, and Stewart. (Qs. 24–29, Beall's printed record, pp. 23–29.) The disclosure which is alleged to have been made to Parsons covers the subject-matter of some but not that of all of the counts of the issue; but the inventions claimed to have been explained to Breniser, Davis, and Stewart cover all of the counts. (Qs. 28 and 32, Beall's printed record, pp. 24 and 29.) Parsons testifies that Beall's disclosures to him were made substantially as alleged by Beall some time in August, 1902. (Qs. 12–14, Beall's printed record, p. 146.) Beall is corroborated in his allegations of full disclosure of the invention by Breniser (Beall's printed record, pp. 133 and 134, Qs. 26–33) and by Davis. (Beall's printed record, pp. 82 and 83, Qs. 17–25.) Both Breniser and Davis fix the time of these disclosures as when the trial piles were driven in the construction of the Stoneleigh Court foundations. (Beall's printed record, p. 131, Qs. 10–13; p. 81, Qs. 5–10.) That these piles were driven in August, 1902, is testified to by Brennan, (Beall's printed record, p. 163, Q. 7,) as well as by Parsons and Beall.

Beall stated on the stand that Stewart was present when the invention was disclosed to Breniser and Davis in August, 1902, and that the invention was fully explained to Stewart at that time. He also testified that Stewart suggested the preservation of secrecy in regard to the invention until Shuman, Stewart's brother-in-law and a professional inventor and patentee, could be consulted about it, and Beall says that he accepted these suggestions. (Beall's printed record, pp. 27 and 28.) Beall is corroborated in this by Breniser (Beall's printed record, pp. 136 and 137, Qs. 67, 68, 64, 67, 68) and by Davis. (Beall's printed record, pp. 81–85, Qs. 9, 15, 21, 28, and 22–26.) Stewart denies that the invention was disclosed to him by Beall; but no other direct evidence is offered to contradict the statement of Beall, Breniser, and Davis that it was so disclosed. The testimony of Beall, Breniser, and Davis was not weakened on cross-examination. Their reputation for veracity is unimpeached. Some leading questions were asked in the course of their examination; but their testimony, taken as a whole, is sufficiently free from dependence upon the suggestion of counsel to be entitled to acceptance without diminution of weight on account of this objection.

It is contended by Shuman that the evidence of conception of the invention by Beall and of Beall's disclosure to Stewart before Shuman's claimed date of conception is overcome by the evidence to the contrary which is found in Beall's conduct subsequent to his alleged conception and disclosure. Presumptions from conduct are often stronger than the direct testimony of witnesses; but in this case when all the circumstances are considered and the inferences deducible from the actions of both parties are weighed the prior conception of the invention and disclosure to Stewart alleged by Beall must, in my opinion, be regarded as established.

It is urged by Shuman that Beall did not show the interest in the reduction to practice and use of the invention which he should have shown had he in fact been the inventor thereof. Beall did not frequent the scene of the work where the invention was first put into practical operation. This work was done by the Cranford Company. It was carried on with Stewart as immediate superintendent and under the general supervision of Shuman. It was carried on throughout a period of several months; but Beall, like Stewart, was an employee of the Cranford Company. It appears that he was very busy with the work of the company during the practical development of the invention in parts of the city remote from the spot where this was being carried out. His position with the Cranford Company undoubtedly enabled him to keep posted on the general progress of the work in which the invention was being applied. It does not seem unreasonable to me, in view of all the circumstances and conditions, that Beall should have considered his work upon the invention to have ended with his disclosure thereof to Stewart and that he should have felt thereafter that he had only to await the reduction to practice by Shuman for the Cranford Company before the organization of a company by the Cranfords in which he would be benefited according to the proportionate value of his conception to the total efforts expended upon the invention. Shuman has not proved that Beall during the period of his inactivity had notice of Shuman's adverse claim, and in the absence of such proof no inferences strongly unfavorable to Beall can be drawn from such inactivity. The same explanation covers Beall's failure to press the invention personally upon the head of the Cranford Company or to take steps toward procuring patents until after the fact that Shuman's claim was adverse to his had been brought home to him.

Another matter urged in discredit of Beall's claim to original conception of the invention and disclosure thereof to Stewart is not so readily understood. Beall's applications, which were prepared from Shuman's patents and which follow the latter to a large extent word for word,

omit all reference to a distinct and important feature of the inventions disclosed by Shuman. Yet Beall testifies that this feature was included among his original inventions and that it was shown on a sketch which he claims to have made during the disclosure to Breniser, Davis, and Stewart and to have given to Stewart for Shuman's consideration shortly thereafter. This omission was evidently intentional in the preparation of Beall's applications. Beall claims that he supposed the feature in question to have been included in his cases and suggests that it was omitted through some misunderstanding upon the part of his attorneys. Though it is difficult to appreciate how so decided a misunderstanding could arise if ordinary care were used in describing the invention to the attorneys, I am still unable to find this matter sufficient to discredit Beall and the witnesses to his early conception of the invention and disclosure to Stewart. The inference that Beall did not have the inventions in issue in August, 1902, from the fact that he now claims to have also had at that time another different but allied invention, which was shown in the Shuman patent, but carefully excluded from Beall's patent, is too remote to stand against the direct evidence presented by Beall that he did have the invention in issue at that time.

The improbability of an inventor delivering a completely-conceived invention for development to a stranger, as Beall claims to have delivered his to Shuman, is also urged in discredit of Beall's case. Beall's conduct in this respect does not seem to me to be so remarkable when Stewart's position with the Cranford Company is considered. It was to Stewart that the invention is claimed to have been communicated by Beall, and it was through the Cranford Company that Beall would naturally expect to see his invention put into practical operation and made remunerative.

The single element of Beall's case remaining after proof of his conception of the invention and communication thereof to Stewart prior to Shuman's claimed date of conception is communication of the invention by Stewart to Shuman. The direct evidence upon this point is the testimony of Stewart and Shuman that the invention was not thus communicated, but was originated by Shuman upon suggestions by Stewart of the desirability of concrete piling. In finding the disclosure by Beall to Stewart proved it must be held that Stewart, who flatly denies such disclosure, is impeached. This leaves Shuman's testimony to original inventorship practically unsupported, and his unsupported testimony is of no weight against the strong presumption from the circumstances that the invention was derived by him from Beall through Stewart. The mere appearance of two parties with the same invention identical in many novel and distinct details raises some suspicion of derivation by one from the other, and where one of these parties is proved to have been in possession of the invention prior to any date of possession proved by the other party and it is shown that opportunity for derivation by the later party from the earlier party occurred prior to such proved date of possession by the later party the suspicion of derivation in the absence of satisfactory evidence to the contrary becomes conviction, and it must be held that the later party did, in fact, obtain the invention from the earlier party. Shuman lays much stress upon the absence of direct evidence of his derivation from Beall; but the indirect evidence found in Beall's earlier conception and disclosure to Stewart and in the close association between Stewart and Shuman at the time that Shuman claims to have conceived the invention supports the inference that the invention was, in fact, derived by Shuman from Beall, and this inference is only to be defeated by proof that the invention was not so derived by Shuman. Such proof for Shuman is wanting. Evidence that the invention was reputed to be Shuman's in the Cranford office and at the development thereof in the field was introduced; but this evidence is intrinsically of little value and is offset by evidence of the same kind that the invention was Beall's (Beall's printed record, p. 86, Qs. 49–52; p. 138, Qs. 76 and 77) and by the testimony of Cranford. Cranford is Shuman's witness. He is considerably interested in the company organized for the exploitation of Shuman's patents, (Shuman's printed record, pp. 250–252, Qs. 132–140;) yet the obvious conclusion from his testimony is that he had no satisfactory evidence in favor of the claims of either party when the controversy arose. (Shuman's printed record, p. 233, X-Qs. 37 and 38; p. 234, X-Qs. 49–58; p. 241, X-Qs. 88–92; p. 243, X-Q. 100; p. 245, X-Q. 106; p. 247, X-Qs. 117–120; p. 265, X-Qs. 202 and 203.)

I am satisfied that this case must be disposed of in favor of Beall on the more important portions of the entire mass of evidence, which have been already referred to. It may be mentioned, however, in addition to the matters already discussed, that Beall's case is also slightly strengthened by the general testimony to early possession of an invention in piling given by the witnesses Merriam and Mullett, while inferences unfavorable to Shuman's case must be drawn from his gratuitous distribution of stock to many employees of the Cranford Company, who became witnesses in this case, taken in connection with Stewart's letter stating that these gifts were made where it might become necessary to ask favors. (Shuman's printed record, p. 49, RD. Q. 149, p. 112, Qs. 76–78.) Inferences unfavorable to Shuman must also be drawn from Stewart's allegation of invention in concrete piling prior to Shuman's interest in this subject (Beall's printed record, pp. 157 and 158, Qs. 34 and 35; Shuman's printed record, p. 249, X-Qs. 126–131) and from the attitude taken by Stewart in his letter to Shuman of March 29, 1904, in which he proposes to divide stock equally with Shuman. (Shuman's printed exhibit of letters not printed in the record, p. 9.)

The decision of the Examiners-in-Chief affirming the decision of the Examiner of Interferences awarding priority of invention to Beall is affirmed.

MCKEE *v.* BAKER.

Decided December 18, 1905.

1. INTERFERENCE—MOTIONS FOR DISSOLUTION—DELAY IN BRINGING—EXCUSES.

Where excuses offered for delay in bringing motion for dissolution do not cover the period in which the motion should have been brought or some of the subsequent period, but apply only to the latter portion of the subsequent period *Held* that the motion should not be transmitted.

2. SAME—SAME—SAME—SAME.

Where it is not shown that a party went diligently to work upon his case at the proper time to discover whether a motion for dissolution should be brought nor that he was prevented from making the necessary investigation and bringing the motion within the period fixed by the rules, *Held* that the motion should not be transmitted.

2. SAME—SAME—SAME—SAME.

The rule requiring motions to be brought within a fixed time is a wholesome one, and its enforcement requires that motions be not accepted when brought after the expiration of that time except where circumstances are shown which made it impossible to bring the motion within the regular period or under which the party could not reasonably be expected to have brought it therein.

ON PETITION.

CHARGING DEVICES FOR BLAST-FURNACES.

Mr. Jesse B. Fay for McKee.

Mr. P. T. Dodge for Baker.

ALLEN, *Commissioner:*

This is a petition by McKee to restore jurisdiction to the Examiner of Interferences to consider transmission of a motion for dissolution brought by McKee after the expiration of the time regularly fixed for bringing such motions.

An order was issued on June 22, 1905, pointing out that McKee had failed to allege in his preliminary statement a date of conception prior to the filing date of Baker and giving notice that judgment would be rendered against McKee unless he should show cause on or before July 12, 1905, why such action should not be taken. On July 15, 1905, the Examiner of Interferences found that cause had not been shown and rendered judgment of priority of invention in favor of Baker. The limit of appeal was fixed as August 4, 1905. On August 3, 1905, appeal was taken by McKee from the judgment against him upon priority to the Examiners-in-Chief. On October 25, 1905, McKee filed motions for dissolution and for transmission to the Primary Examiner. These motions were accompanied by a showing of reasons for the delay in bringing them and by this petition for restoration of jurisdiction to the Examiner of Interferences.

The reasons for the delay in bringing the motion are set forth in the affidavit of the attorney for McKee. It is alleged that upon August 24, 1905, McKee prepared an order for a copy of the file-wrapper and contents of Baker's application, but that the copy was not received until October 7, 1905, and that the time between the latter date and the filing of the motion was required for study of the case and preparation of the motion. The delay throughout the period from June 22, 1905, when McKee was required to show cause why judgment should not be entered against him, until August 24, 1905, when the order for a copy of Baker's application was prepared, is accounted for as follows: It is alleged that McKee placed a certain construction upon the claims in issue when suggested to him by the Primary Examiner and adopted them, but that later, at a time not appearing, after study of the prior art and conferences with persons versed in the art, he thought that the claims were anticipated and thereupon promptly secured an appointment with the Primary Examiner to obtain the views of the latter upon the question of anticipation. It is further alleged that the appointment was made for August 24, 1905, and that the interview was had upon that date and that the first order for a copy of Baker's application was prepared immediately thereafter.

The showing is entirely insufficient to excuse the delay prior to August 24, 1905. It is consequently unnecessary to pass upon the showing made for the delay subsequent to that date. The reasons given for the delay prior to August 24, 1905, are not of a compelling nature. It has not been shown that McKee went diligently to work upon his case upon receiving the order to show cause of June 22 to discover whether a motion for dissolution should be made, nor has it been shown that McKee was prevented from making the necessary investigation and bringing the motion for dissolution prior to July 12, 1905, the last day of the period in which the rules permit such motions to be filed as a matter of course. The rule requiring motions to be brought within a fixed time is a wholesome one, and its enforcement requires that motions be not accepted when brought after the expiration of that time except where circumstances are shown which made it impossible to bring the motion within the regular period or under which the party could not reasonably be expected to have brought it therein.

The petition is denied.

KLEPETKO v. BECKER.

Decided December 18, 1905.

1. INTERFERENCE—MOTIONS FOR DISSOLUTION—STATEMENTS OF FACTS—TRANSMISSION.

Where nothing in the statement of the facts upon which a motion to dissolve on the ground of irregularity in declaration was based is directed to anything other than the patentability of claims, the rights of the parties to make claims, or the identity in meaning of claims when read in the respective cases, *Held* that the motion was properly refused transmission as to this ground.

2. SAME—SAME—SAME—SAME.

Where no facts are alleged in support of a motion for dissolution on th ground of non-patentability except such as relate to the right of a party to make claims, *Held* that the motion was properly refused transmission as to the ground of non-patentability.

3. SAME—SAME—SAME—SAME.

In order to restrict, so far as possible, the labor of investigation and consideration on the part of the Office and on the part of the parties against whom motions for dissolution are brought to the exact matters by reason of which the moving party believes the interference should be dissolved, it is believed that the motion should set forth the specific facts relied upon to show that the interference should not continue.

4. SAME—SAME—SAME—SAME.

In setting forth facts in motions for dissolution the distinctions between the general grounds of dissolution which have been pointed out in *Woodward* v. *Nesston*, (86 O. G., 490,) *Owens* v. *Richardson*, (111 O. G., 1037,) and *Kecsander* v. *Hodges and Hodges* (118 O. G., 836) must be carefully observed. The observance of these distinctions is necessary to the logical presentation of the questions raised and to the avoidance of confusion in the matter of appeals.

5. SAME—SAME—SAME—SAME.

Where the motion does not state facts of such nature as might form proper basis for dissolution upon the general ground upon which the facts are alleged, the motion is not sufficiently clear and definite, and it should not be transmitted as to those grounds to which such objections apply.

APPEAL on motion.

ROASTING-FURNACE.

Mr. Emil Starck for Klepetko.

Mr. G. F. De Wein for Becker.

ALLEN, *Commissioner:*

This is an appeal by Klepetko from the decision of the Examiner of Interferences refusing to transmit to the Primary Examiner the motion of Klepetko for dissolution of the interference so far as said motion relates to the grounds of irregularity in declaration and non-patentability of counts 1 and 2 of the issue.

The motion alleges all of the grounds mentioned in Rule

122. The following statement is made of the facts upon which the contention of irregularity is based:

This irregularity consists in framing issues which, if truly expressing the construction shown by one party cannot at the same time truly express the construction of the opposite party; in forcing into the interference *issues* which express the construction of but one of the parties the determination of the question of priority of which could only affect one party to the interference and not the other; in forcing the parties to contest issues whose language is ambiguous and in which the terms "inlet" and "outlet" are used to express a relation which is at variance with the drawings illustrating the parties' inventions; in forcing the parties to contest an issue in which the *feed-pipe* of the junior party is made the equivalent of the *outlet-pipe* of the senior party; in that the Examiner has admitted into the interference the broad issues 1 and 2 without previously exhausting the citation against them of the best references at his command as provided by Rule 66, and ignoring the statutory requirement that an interference can only be declared between parties claiming the same "patentable" invention; that the Examiner's assumption that issues 1 and 2 are patentable in direct opposition to his record contention that issues 3 and 4 are not patentable (these issues having been allowed by the Board of Appeals) is unwarranted, and places him in the inconsistent attitude of allowing broad claims to one party after having denied narrow claims to the opposite party; that since an interference can, under section 4904 only be declared when "in the opinion of the Commissioner" one application interferes with another, it was incumbent on the Examiner to reject issues 1 and 2 and have the question of their patentability referred to the Examiners-in-Chief so that the same tribunal which had passed upon the patentability of a *part* of the issues, could pass upon the patentability of *all* of them.

I find nothing in this statement which is directed to anything other than the patentability of the claims in issue, the rights of the parties to make these claims, or the identity in the meaning of the claims when read in the applications of the respective parties. Such being the case, the Examiner of Interferences properly refused to transmit the motion as to the ground of irregularity in declaration. No facts are alleged in support of the allegation of the motion that the counts are not patentable except such as relate to the right of Becker to make the claims. The refusal to transmit the motion as to this ground was therefore also proper.

In order to restrict, so far as possible, the labor of investigation and consideration on the part of the Office and on the part of the parties against whom motions for dissolution are brought to the exact matters by reason of which the moving party believes the interference should be dissolved, it is believed that the motion should set forth the specific facts relied upon to show that the interference should not continue. This is deemed to be logical and proper extension of the practice initiated in *Vreeland* v. *Fessenden* v. *Schloemilch*, (117 O. G., 2633.) In setting forth such facts the distinctions between the general grounds of dissolution which have been pointed out in *Woodward* v. *Nesston*, (86 O. G., 490,) *Owens* v. *Richardson*, (111 O. G., 1037,) and *Kecsander* v. *Hodges and Hodges* (118 O. G., 836) must be carefully observed. The observance of these distinctions is necessary to the logical presentation of the questions raised and to the avoidance of confusion in the matter of appeals. Where the motion does not state facts of such nature as might form proper basis for dissolution upon the general ground upon which the facts are alleged, the motion is not sufficiently clear and definite, and it should not be transmitted as to those grounds to which such objections apply.

The decision of the Examiner of Interferences refusing to transmit the motion as to the grounds of irregularity in declaration and non-patentability of issues is affirmed.

WHITTINGHAM v. AUTOMATIC SWITCH COMPANY.

Decided December 18, 1905.

1. TRADE-MARK OPPOSITION—APPEAL UPON INTERLOCUTORY ORDER—PLEADINGS.

Where exception taken to applicant's answer on ground of impertinence was overruled by Examiner of Interferences, *Held* that no appeal from this action would be entertained.

2. SAME—SAME—SAME.

In overruling the exceptions to the answer the Examiner of Interferences denied to opponent no substantial rights, nor is it understood wherein opponent would be subjected to hardships by erroneous decisions of the Examiner overruling such exceptions sufficient to justify the general hardship in delay, labor, and expense which would be imposed upon parties by permitting interlocutory appeals in these cases.

ON PETITION.

MOTOR STARTERS AND REVERSERS.

Mr. Clifton V. Edwards for Automatic Switch Company.

Mr. Robert Watson for Whittingham.

ALLEN, *Commissioner:*

This is a petition from the action of the Examiner of Interferences overruling the exception taken by opponent to the answer of the applicant in the above-entitled opposition to registration of trade-mark.

The exception is based on the ground of impertinence. The matter alleged to be impertinent is pointed out, and it is prayed that the same may be expunged. The question was considered by the Examiner of Interferences, who found that portion of the matter excepted to was clearly relevant and that the remainder of such matter was not so clearly impertinent as to justify striking it from the record. He therefore overruled the exception, and the opponent brings this petition for review of that action.

It is a settled principle of procedure that no appeal will lie from an interlocutory order refusing to strike out parts of pleadings as redundant, irrelevant, or sham. (*8 Encyclopædia Pleading and Practice*, 112, note 5, and *2 American Digest, Century Edition*, sec. 704, a, b, n.) No reason appears why an exception to this principle should be made in cases of the class presented by this petition. In overruling such exceptions to answers the Examiner of Interferences denies to opponents no substantial rights, nor is it understood wherein opponents would be subjected to hardships by erroneous decisions of the Examiner overruling such exceptions sufficient to justify the general hardship in delay, labor, and expense which would be imposed upon parties by permitting interlocutory appeals in these cases.

Appeal dismissed.

EX PARTE WALTON.

Decided December 18, 1905.

ABANDONMENT OF APPLICATION BY FAILURE TO PROSECUTE—SUFFICIENCY OF AMENDMENT.

Where certain formal objections are raised and the claims are finally rejected, an amendment curing the formal objections will not save the case from abandonment, even though by curing the formal objections the scope of the claims is changed. A final rejection must be met by an appeal and not by an amendment changing the scope of the claims.

ON PETITION.

DESIGN FOR SECTIONAL HORSESHOE-PADS.

Mr. Albert L. Lawrence for the applicant.

ALLEN, *Commissioner:*

This is a petition from the decision of the Primary Examiner holding the case to be abandoned because of failure to make responsive action within the year allowed by law.

It appears that on October 15, 1903, certain formal objections were made and the claim was finally rejected. No further action was taken by applicant until the end of the year, when an amendment was filed curing the formal objections which had been raised. The Examiner then

held the case to be abandoned, on the ground that an amendment merely curing formal defects was not a proper response to an action raising formal objections and also finally rejecting the claim. From this action the applicant has brought this petition.

Petitioner contends that his action was responsive, because the amendment in the matters of form, which included a cancellation of a certain portion of the drawing, made the words of the claim mean something different from what they meant before, and that therefore such amendment changed the scope of the claim; but even admitting that this is true the action was nevertheless not such action as the condition of the case required. When claims are finally rejected and formal objections are made, the only proper action to take is to remove the formal objections and to file an appeal to the Examiners-in-Chief. Rule 68 of the Rules of Practice provides that claims cannot be amended in matter of substance after a final rejection, and this has been affirmed in a long line of decisions. It is clear, therefore, that an amendment changing the scope of the claims was not a proper response to a final rejection.

The Examiner's position is correct, and the petition is denied.

EX PARTE FITZHUGH.

Decided December 18, 1905.

PROSECUTION BY ASSIGNEES OF PART INTEREST—INVENTOR MISSING.

Where assignees of half interest petition for permission to prosecute the case, alleging that inventor has disappeared, and it appears that the inventor has a habit of absenting himself, and the application has not been acted upon by the Office, *Held* that the petition is premature and may be renewed in case it shall appear to be necessary to permit prosecution by the assignees to save the case from abandonment.

ON PETITION.

FEED-BOXES.

Mr. William L. Fitzhugh pro se.

ALLEN, *Commissioner:*

This is a petition by Iten and Elkins, assignees of one-half interest in the above-entitled application, that they be permitted to appoint an attorney to prosecute the case. The petitioners state that the inventor has disappeared and that they have been unable to communicate with him, though strenuous efforts have been made to do so. The petition is supported by affidavits stating that the inventor cannot be found. In one of these affidavits the affiant states that he is aware of the habit of the inventor in this case to absent himself for long periods of time without leaving any address where he may be communicated with regarding his applications for patent. This application has not yet received action by the Office. Action therein on the part of the applicant may properly be taken at any time within the year following the Office action. It may well be that the applicant intends to act in this case within that time, and no good reason appears for believing that he will not do so.

The petition must be denied at this time; but the assignees may renew the same in case it shall appear to be necessary that they be permitted to take action in the case to save the same from abandonment.

EX PARTE CASIN.

Decided December 18, 1905.

ABANDONMENT OF APPLICATION BY FAILURE TO PROSECUTE—APPLICANT BOUND BY ACTS OF ATTORNEY.

Where applicant's attorneys place the case in condition for final action and final action is given, the applicant cannot secure an extension of the time allowed by law by revoking the power of attorney and filing a request for further explanation, even though such request is filed within the year.

ON PETITION.

MANUFACTURE OF ELECTRIC INCANDESCENT LAMPS.

Mr. Francis M. F. Casin pro se.

ALLEN, *Commissioner:*

This is a petition from a decision of the Primary Examiner holding the case to be abandoned by failure of the applicant to take responsive action within the year allowed by law.

On May 23, 1904, division was required on certain specified lines, in response to which applicant filed an amendment relating to the description and claims and traversing the Examiner's requirement for division, setting forth certain reasons why the requirement was improper. In reply to this the Examiner on August 19, 1904, reconsidered the question of division in the light of the arguments presented and made the requirement final. It seems from an examination of the record that when reconsideration was asked applicant understood perfectly the Examiner's position on the question of division. The next action was a request that action be given on the merits of the claims in order that the question might be included in an appeal to the Examiners-in-Chief, which request was properly refused by the Examiner. The next letter received in the Office, July 31, 1905, was written by the applicant in person after having revoked the power of attorney formerly given by him. The case was not reached in the regular course of business until after August 19, 1905, the expiration of the year allowed by law, and as the said letter did not dispose of the questions previously raised the Examiner held it to be unresponsive and that the application was therefore abandoned. This letter of July 31, 1905, is very indefinite, being couched in very vague and uncertain language; but apparently its sole purpose was to raise a question as to the clearness of the Examiner's requirement. Whether or not the applicant could actually understand the requirement is deemed to be immaterial, because his attorney evidently understood the requirement when it was made in the first instance and when it was made final, and it may be observed that if applicant could not understand the requirement it was because of his lack of knowledge of the law and procedure and not because of the Examiner's failure to make his position clear; but in any event an applicant is bound by the acts of his attorney and cannot obtain an extension of the time allowed by law for action by dismissing his attorney and then asserting that the prior actions were not understood. If this were permitted, the prosecution of the case might be continued indefinitely.

The action of July 31, 1905, was clearly not responsive to the previous Office actions, and the application is therefore held to be abandoned. The petition is denied.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

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Designs	4	No. 37,786 to No. 37,789, inclusive.
Trade-Marks	236	No. 48,774 to No. 49,009, inclusive.
Labels	None.	
Prints	1	No. 1,561.
Reissues	2	No. 12,436 to No. 12,437, inclusive.
Total issue	700	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	1	.....	Nevada	.....	.....
Alaska, District of	.....	.....	New Hampshire	.....	2
Arizona Territory	.....	.....	New Jersey	21	4
Arkansas	1	.....	New Mexico Ter't'y	.....	1
California	12	6	New York	62	50
Colorado	4	.....	North Carolina	1	1
Connecticut	12	2	North Dakota	1	.....
Delaware	.....	2	Ohio	41	43
District of Columbia	3	2	Oklahoma Territ'y	3	.....
Florida	1	.....	Oregon	3	.....
Georgia	3	.....	Pennsylvania	30	23
Hawaii Territory	.....	.....	Porto Rico	.....	.....
Idaho	.....	.....	Rhode Island	4	3
Illinois	34	20	South Carolina	.....	1
Indian Territory	2	.....	South Dakota	5	1
Indiana	16	6	Tennessee	4	13
Iowa	40	.....	Texas	9	8
Kansas	7	.....	Utah	2	1
Kentucky	4	6	Vermont	1	.....
Louisiana	1	.....	Virginia	5	2
Maine	4	1	Washington	2	.....
Maryland	1	2	West Virginia	6	1
Massachusetts	26	12	Wisconsin	1	2
Michigan	14	.....	Wyoming	1	.....
Minnesota	4	4	U. S. Revenue Cutter Service	.....	.....
Mississippi	3	1		.....	.....
Missouri	13	6	Total to citizens of the United States	421	226
Montana	2	.....			
Nebraska	2	.....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina	.....	.....	Netherlands	1	.....
Austria-Hungary	4	1	Newfoundland	.....	.....
Belgium	1	.....	New South Wales	.....	.....
Brazil	.....	.....	New Zealand	.....	.....
British West Indies	.....	.....	Norway	.....	.....
Canada	5	.....	Persia	.....	.....
Cape Colony	.....	.....	Queensland	.....	.....
Chile	.....	.....	Roumania	.....	.....
China	.....	.....	Russia	.....	.....
Costa Rica	.....	.....	San Salvador	.....	.....
Cuba	1	.....	Scotland	2	.....
Denmark	.....	.....	South Africa	.....	.....
Ecuador	.....	.....	Spain	.....	.....
England	8	2	Sweden	2	.....
France	5	.....	Switzerland	.....	.....
Germany	10	8	Transvaal, South Africa	.....	.....
Haiti	.....	.....	Victoria	.....	.....
Ireland	.....	.....	Western Australia	.....	.....
Italy	.....	.....			
Japan	1	.....	Total to citizens of foreign countries	40	11
Java	.....	.....			
Mexico	.....	.....			

Drawings.

PRECAUTIONS TO BE OBSERVED IN FORWARDING DRAWINGS TO THE UNITED STATES PATENT OFFICE.

Where drawings are to be filed in connection with an application for Letters Patent in the United States Patent Office, each sheet, before it can be accepted by the Office as a part of the application, must be signed in the name of the inventor at the lower right-hand corner, either by him or by an attorney whose written authorization from the applicant is filed in connection with the application. This signature must also be attested by two witnesses, each of whom should sign the drawing at the lower left-hand corner of the sheet. The signatures should never be written on a line parallel with the longer edges of the sheet, one of the shorter edges being always regarded, for the purpose of locating the signatures, as the lower edge of the sheet. The signatures must all be within the margin-lines of the sheet and below the lines of the drawing. The title of the invention should be written with pencil on the back of each sheet of drawings.

When there are filed on the same day two or more applications by the same inventor, each of the documents and drawings belonging to the same application should have placed thereon the same letter or number, which should be different from the letter or number placed upon those of any other of the applications.

It is desirable that all parts of the complete application, including the drawings, be deposited in the Office at the same time. Should, however, the other parts of the application be filed before the drawings are sent, the latter when forwarded should be accompanied by a letter stating the number of sheets inclosed, and that the drawings are to be filed with the other parts of the application, giving the date at which such other parts were filed in the Office, the name of the inventor, and title of the invention. If the application has received a serial number, that should also be given, and it should be indorsed with pencil on the back of each sheet of drawings. The letter should also state, if such be the case, that the new drawings are to be substituted for those previously filed.

Drawings should be rolled—never folded—for transmission, and should be incased in a substantial mailing-tube.

Printed Copies of Patents.

A printed copy of the complete specification and drawings of any patent published herein can be obtained for five cents.

PATENTS

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business January 9, 1906.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
	Under one month.			
303	XV. Bread, Pastry, and Confections, Making, Coating, Laminated Sheets and Fabrics, Fuel, Glass, Hydraulic Lime and Cement, Paper-Making, Paving, and Plastics.	Jan. 2	Oct. 30	357
322	XXXVI. Curtains, Shades, and Screens, Drafting, Driers, Measuring Instruments, and Wind-Wheels.	Dec. 27	Dec. 1	234
378	XXXVIII. Artesian and Oil Wells, Bottles and Jars, Care of Live Stock, Fishing and Trapping, Stationery, Stone-Working.	Dec. 27	Oct. 31	346
303	XVII. Linotyping, Printing, Matrix-Making, Nut and Bolt Locks.	Dec. 26	Oct. 10	340
154	XI. Boot and Shoe Making, Boots, Shoes, and Leggings, Button, Eyelet, and Rivet Setting, Leather Manufacturing, Nailing and Stapling, Check-Controlled Apparatus, Whips and Whip Apparatus.	Dec. 26	July 14	375
128	II. Bee Culture, Dairy, Label-Affixers, Paper Files and Binders, Presses, Store-Service, Tobacco, etc.	Dec. 23	Sept. 28	204
321	I. Tillage, etc., Fences, and Railway Draft Appliances.	Dec. 22	Nov. 23	204
379	XXIII. Acoustics, Coin-Handling, Horology, Recorders, Registers, Optics, Signals, Time Controlling Mechanism.	Dec. 22	Aug. 28	612
304	XXXIV. Railways, Railway-Brakes, Rolling-Stock.	Dec. 20	Nov. 24	370
133	XXII. Air-Guns, Ammunition and Explosive Devices, Boats and Buoys, Catapults and Targets, Firearms, Marine Propulsion, Ordnance, Ships.	Dec. 20	Sept. 19	244
332	X. Carriages and Wagons	Dec. 20	Sept. 12	734
164	XXXIII. Canes, Canopies, Cutlery, Domestic Cooking Vessels, Electricity, Medical and Surgical, Electric Signaling, Fireproof Buildings, Harness, Masonry, Tents, and Umbrellas.	Dec. 20	July 11	729
112	XXI. Textiles, Carding, Knitting, Spinning, Weaving, etc.	Dec. 19	June 19	571
178	III. Annealing and Tempering, Coating with Metal, Electrochemistry, Metal-Founding, Metallurgy, Shaping Fluid Metal.	Dec. 18	Dec. 4	271
327	XVIII. Steam-Engineering, etc	Dec. 18	Oct. 4	348
307	XIV. Cutting and Punching Sheets and Bars, Farriery, Metal-Bending, Metal-Ornamenting, Metal Personal Wear, Making, Sheet-Metal Ware, Making, Tools, Wire-Working.	Dec. 18	Aug. 7	301
107	XXXVII. Electricity, Conductors, Lighting, Special Apparatus.	Dec. 18	Apr. 24	685
148	XXXII. Carbonating Beverages, Dispensing Beverages, Dispensing-Cans, Metallic Shipping and Storing Vessels, Packaging Liquids, Paper Receptacles, Refrigeration, Wooden Receptacles.	Dec. 16	Sept. 1	7606
318	VI. Bleaching and Dyeing, Chemicals, Explosives, Fertilizers, Medicines, Preserving, Sugar and Salt.	Dec. 15	Oct. 26	301
137	VIII. Beds, Chairs, Furniture, Kitchen and Table Articles, Store Furniture.	Dec. 13	Aug. 28	548
324	XII. Elevators, Journal-Boxes, Lubricators, Machine Elements, Pulleys and Shafting.	Dec 12	Oct. 7	447
123	XIX. Stoves and Furnaces and Steam-Boiler Furnaces.	Dec. 12	June 15	641
183	XXX. Fluid-Pressure Regulators, Lamps and Gas-Fittings, Type-Writing Machines.	Dec. 12	May 8	508

Applications Under Examination—Continued.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
232	IV. Bridges, Conveyers, Cranes and Derricks, Excavating, Hoisting, Hydraulic Engineering, Loading and Unloading, and Towers.	Dec. 11	Dec. 11	262
144	XXIV. Apparel, Apparel Apparatus, Sewing-Machines, Surgery, Toilet.	Dec. 11	Sept. 25	512
244	XXXV. Baggage, Buckles, Buttons, and Clasps, Card, Picture, and Sign Exhibiting, Deposit and Collection Receptacles, Package and Article Carriers, Packing and Storing Vessels, Photography.	Dec. 9	Nov. 2	545
105	XXVI. Electricity, Generation, Electric Heaters, Electric Railways, Motive Power.	Dec. 9	June 19	656
	Between one and two months.			
109	XVI. Telegraphy and Telephony	Dec. 8	Dec. 1	253
172	XXXI. Alcohol, Charcoal and Coke, Distillation, Gas, Heating and Illuminating, Hides, Skins, and Leather, Liquid Coating Compositions, Oils, Fats, and Glue, Water Purification.	Dec. 7	Nov. 20	228
167	V. Fine Arts, Bookbinding, Harvesters, Jewelry, and Music.	Dec. 5	Nov. 17	324
312	VII. Velocipedes, Clutches, Fire-Escapes, Games and Toys, Ladders, Mechanical Motors, and Paper Manufactures.	Dec. 5	Oct. 16	492
375	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, Washing Apparatus.	Dec. 5	July 25	597
142	IX. Baths and Closets, Fire-Extinguishers, Hydraulic Motors, Pumps, Sewerage, and Water Distribution.	Dec. 4	June 10	979
147	XXIX. Coopering, Roofs, Wheelwright-Machines, Wooden Buildings, Wood-Sawing, Wood-Turning, Woodworking-Tools.	Dec. 2	Sept. 11	350
382	XXVIII. Air and Gas Engines, Air and Gas Pumps, Pneumatics.	Dec. 1	May 26	801
179	XX. Artificial Limbs, Builders' Hardware, Dentistry, Locks and Latches, Safes, Undertaking.	Nov. 23	July 3	374
330	XIII. Arms, Projectiles, and Explosive Charges, Making, Metal-Working, Needle and Pin Making.	Nov. 16	Sept. 2	568
	Between two and three months.			
315	XXV. Butchering, Mills, Threshing, and Vegetable Cutters and Crushers.	Nov. 6	July 27	474

Total number of applications awaiting action 17,471

159	TRADE-MARKS, DESIGNS, LABELS AND PRINTS.			
	Between one and two months.			
	Trade-Marks	Nov. 11	Nov. 1	3852
	Under one month.			
	Designs	Dec. 30	Dec. 18	56
	Labels and Prints	Jan. 5	Jan. 4	9

Trade-Marks.

The publication of trade-marks under the act of February 20, 1905, in the OFFICIAL GAZETTE, commenced May 2, 1905, and will appear in each weekly number of the GAZETTE thereafter.

Extra copies of the trade-mark portion of the GAZETTE, which will be sold separately, may be obtained single or in quantities for five cents each. Coupons will be taken in payment therefor.

PATENTS

GRANTED JANUARY 16, 1906.

809,926. COMBINED STEP-LADDER AND IRONING-TABLE. ALPHEUS J. ALSPACH, Chicago, Ohio. Filed Mar. 10, 1905. Serial No. 249,458.

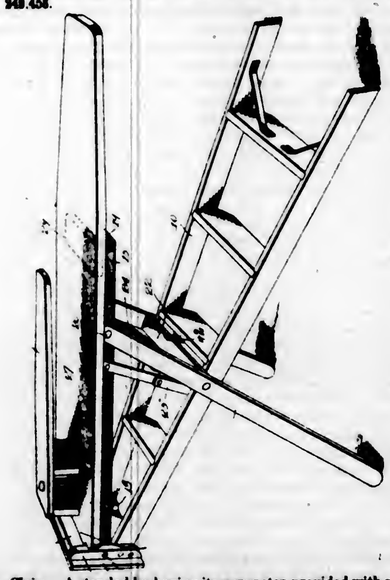

Claim.—A step-ladder having its upper step provided with a depending cleat, a supporting-leg pivotally connected to said step and formed in two sections pivotally united, the upper section being coupled to the step-ladder by jointed bars and the lower section having a transverse member for bearing upon the ladder portion and against said jointed bars when the lower section is partly collapsed, and an ironing-board for resting upon the upper section with one end bearing beneath said cleat.

809,927. BREAST-STRAP SLIDE AND ATTACHMENT. JOHN S. ANDERSON, St. Louis, Mo., assignor to North & Judd Manufacturing Company, New Britain, Conn., a Corporation of Connecticut. Filed July 22, 1905. Serial No. 270,748.

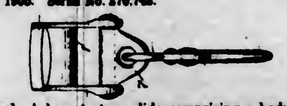

Claim.—1. A breast-strap slide comprising a body having an arched portion 1, depending flanges 2 and 3, end pieces 4 and 5, a headed pivot-pin 6, and a solid or block 7 pivoted on said pin and having an eye with rounded edges for the swinging attachment of a snap-hook or other device.

2. A breast-strap slide comprising the combination of a body having an arched portion 1 and the side flanges 2 and 3, a pivot-pin 6 carried by the side flanges, a solid block 7 pivotally mounted on said pin, and a fastener having an eye 9 loosely hung in the eye of said block so as to permit it to swing freely back and forth and from side to side.

809,928. STOCK-WATERING TANK. WILLIAM BARBOUR, Oxford, Iowa. Filed Apr. 18, 1905. Serial No. 256,371.

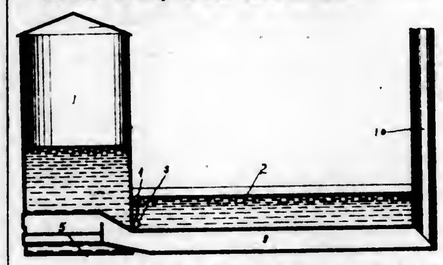

Claim.—1. In a device of the character described a stock-watering trough, a water-reservoir adjacent thereto, a fire-box located near the bottom of said reservoir and a flue connected with the said fire-box passing under the said watering-trough.

2. In a device of the character described a stock-watering trough, a water-reservoir adjacent thereto and in communication therewith, a float-actuated valve controlling the flow of water from the reservoir to the trough, a fire-box located near the bottom of the said reservoir, and a flue connected with the said fire-box passing under the said watering-trough.

3. In a device of the character described a stock-watering trough, a water-reservoir adjacent thereto, a fire-box located near the bottom of said reservoir, and a flue connected with the said fire-box extending horizontally and arranged and adapted to heat the water in the said watering-trough.

4. In a device of the character described a stock-watering trough, a water-reservoir adjacent thereto and in communication therewith, a float-actuated valve controlling the flow of water from the reservoir to the trough, a fire-box located near the bottom of said reservoir and a flue connected with the said fire-box, adapted to convey the heated gases produced by the combustion in the fire-box adjacent to the water in the said watering-trough.

5. In a device of the character described a stock-watering trough, a water-reservoir adjacent thereto, a fire-box located near the bottom of said reservoir and a flue connected with the said fire-box adapted to convey the heated gases produced by the combustion in the fire-box adjacent to the water in the said watering-trough.

809,929. INTERCOMMUNICATION TELEPHONE SYSTEM. RICHARD M. BEARD, New York, N. Y. Filed Nov. 4, 1903. Serial No. 180,064.

Claim.—1. An intercommunication telephone system consisting of the combination of interwiring connecting three or more stations with one another, telephone apparatus at each station, signal-sending apparatus at each station, a separate group of wiring for said telephone and signal-sending apparatus, located at each station, signal-receiving apparatus and a separate group of wiring therefor at each station, and devices at the respective stations for electrically connecting the interwiring between any two stations, first to one group of wiring at one station, and then to the other group at the same station, said interwiring comprising independent wires for respectively connecting the apparatus at each one of the stations, with the apparatus at each one of the remaining stations.

2. An intercommunication telephone system consisting of the combination of interwiring connecting three or more stations with one another, telephone apparatus at each station, signal-sending apparatus at each station, a group of wiring for said telephone and sig-

nal-sending apparatus, located at each station, signal-receiving apparatus and a group of wiring therefor at each station, and devices at the respective stations for electrically connecting the interwiring between any two stations, first to one group of wiring at one station, and then to the other group at the same station, said interwiring consisting of a common return-wire for all the stations, and independent wires respectively connecting the apparatus at each one of the stations, with the apparatus at each one of the remaining stations, said devices consisting of a switch, two of whose terminals are connected to said interwiring, two to one of said groups, and the remaining two to the other group.

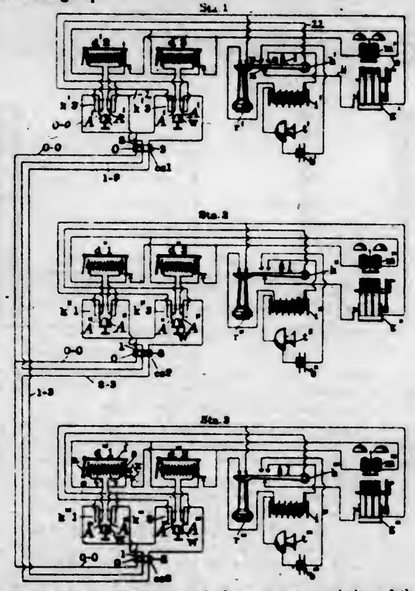

3. An intercommunication telephone system consisting of the combination of interwiring connecting three or more stations with one another, telephone apparatus at each station, signal-sending apparatus at each station, a group of wiring for said telephone and signal-sending apparatus, located at each station, signal-receiving apparatus and a group of wiring therefor at each station, and devices at the respective stations for electrically connecting the interwiring between any two stations, first to one group of wiring at one station, and then to the other group at the same station, said interwiring consisting of a common return-wire for all the stations, and independent wires respectively connecting the apparatus at each one of the stations, with the apparatus at each one of the remaining stations, said devices consisting of a switch, two of whose terminals are connected to said interwiring, two to one of said groups, and the remaining two to the other group, and a wedge for controlling the connections of all the terminals.

4. An intercommunication telephone system consisting of the combination of telephone and signal apparatus located, at each of three or more stations, a system of interconnecting lines comprising independent wires for connecting each station respectively with each one of the other stations, a system of local wiring for connecting up the apparatus at each station, which last-named system includes an independent balanced circuit for the telephone apparatus, and electric switches at each station for cutting in the said telephone apparatus at that station on any pair of wires, while maintaining it disconnected from any of the other pairs of wires, whereby when any two stations are telephonically connected, no other station can listen into either said two stations.

5. An intercommunication telephone system consisting of the combination of telephone and signal apparatus, located at each of three or more stations, a system of interconnecting lines comprising independent wires for connecting each station respectively with each one of the other stations, a system of local wiring for connecting up the apparatus at each station, said last-named system including an independent balanced circuit for the telephone apparatus, and electric switches at each station for cutting in the said telephone apparatus at that station on any pair of wires, while maintaining it disconnected from any of the other pairs of wires, whereby when any two stations are telephonically connected, no other station can listen in to either said two stations, said telephone apparatus consisting of a transmitter, receiver and induction-coil located at each of said stations, and an electric generator for supplying a current to said telephone apparatus, and said signal apparatus consisting of a single audible signal located at each of said stations, as many visual signals at each station, as there are stations less one, and an electric generator for operating said signal apparatus.

6. An intercommunication telephone system consisting of the combination of telephone, signal-sending and signal-receiving apparatus, located at each of three or more stations, a common return-wire for the apparatus at all the stations, and independent wires respectively connecting the apparatus at each one of the stations with the apparatus at each one of the remaining stations, two groups of local wiring at each station, keys at each station, each group of wiring being connected to a separate pair of contact-springs on the keys by an independent pair of wires, one group including the telephone and signal-sending apparatus, switching contacts located in and forming a part of the apparatus located in this last-named group, the other group being the signal-receiving group of wiring, and including visual signals and an audible signal, other switching contacts forming a part of each visual mechanism and operated thereby, the audible signal being connected in multiple with each visual signal through each pair of said switching contacts, whereby the audible signal may operate simultaneously with any one of the visual signals.

7. An intercommunication telephone system, consisting of a telephone instrument located at each of three or more different stations, signals at each station, a device at each station for operating the signals at each one of the other stations, a system of interconnecting lines comprising independent wires, for connecting the apparatus at each station respectively with the apparatus at each one of the other stations, and means at each station for including any of said apparatus in circuit with the interconnecting lines leading to any other station, said means, when connected for telephoning, including only the telephone instrument in said circuit, said telephone instrument being connected with said means in a balanced independent local circuit, while the signals alone are included in circuit with the wires leading to the other stations, whereby complete privacy is secured between any two or more telephones which are connected for telephoning and at the same time each busy station is maintained available to be signaled by other stations.

8. An intercommunication telephone system consisting of the combination of telephone, signal-sending, signal-receiving and switching apparatus, a system of interwiring connecting the above elements, said telephone apparatus consisting of a telephone instrument located at each of three or more stations, said signal-sending apparatus comprising a device at each of said stations for operating signals at any other station, said signal-receiving apparatus including signals at each station to indicate the station from which the signals are operated, and the said switching apparatus consisting of a means at each station for cutting in, either the said telephone apparatus at that station, or the said signal-sending apparatus, on any pair of wires, while maintaining it disconnected from any of the other pairs of wires, and for simultaneously cutting out the signal-receiving apparatus at the same said station from the said first-named pair of wires, and a balanced independent local circuit for the said telephone apparatus at each station and in which said telephone is wired to said means.

9. An intercommunication telephone system consisting of the combination of interwiring connecting three or more stations with one another, telephone apparatus at each station, signal-sending apparatus at each station, a separate group of wiring the said telephone and signal-sending apparatus, located at each station, signal-receiving apparatus including a means for indicating the stations from which signals come, and a separate group of wiring therefor at each station, and devices at the respective stations for electrically connecting the interwiring between any two stations, first to one group of wiring at one station, and then to the other group at the same station.

10. An intercommunication telephone system consisting of the combination of telephone and signal apparatus, located at each of three or more stations, a common return-wire for all the stations, a single wire connection from each station to each other station, a system of local wiring for connecting up the apparatus at each station, said last-named system including an independent balanced circuit for the telephone apparatus, and electric switches at each station for cutting in the said telephone apparatus at that station on any one or more of the pairs of wires, while maintaining it disconnected from any of the other pairs of wires, whereby when any two or more stations are telephonically connected, no other station can listen in on the circuit connecting said two or more stations.

11. An intercommunication telephone system consisting of the combination of telephone and signal apparatus, located at each of three or more stations, a common return-wire for all the stations, a single wire connection from each station to each other station, a system of local wiring for connecting up the apparatus at each station, said last-named system including an independent balanced circuit for the telephone apparatus, and electric switches at each station for cutting in the said telephone apparatus at that station on any one or more of the pairs of wires, while maintaining it disconnected from any of the other pairs of wires, whereby when any two or more stations are telephonically connected, no other station can listen in on the circuit connecting said two or more stations, said telephone apparatus consisting of a transmitter, receiver and induction-coil located at each of said stations, and an electric generator for supplying a current to said telephone apparatus, and said signal apparatus consisting of a single audible signal located at each of said stations, as many visual signals at each station, as there are stations less one, and an electric generator for operating said signal apparatus.

12. An intercommunication telephone system consisting of the combination of telephone and signal apparatus, located at each of three or more stations, a common return-wire for all the stations, a single wire connection from each station to each other station, a system of local wiring for connecting up the apparatus at each station, and electric switches at each station for cutting in the said telephone apparatus at that station on the common return-wire and on any one or more of the single wires, while maintaining it disconnected from any of the other single wires, and for simultaneously cutting out the signal apparatus at the same station from the said first-named single wire or wires.

13. An intercommunication telephone system consisting of the combination of interwiring connecting three or more stations with one another, telephone apparatus at each station, signal-sending apparatus at each station, a separate group of wiring for said telephone and signal-sending apparatus, located at each station, signal-receiving apparatus and a separate group of wiring therefor at each station, and devices at the respective stations for electrically connecting the interwiring between any two stations, first to the signal-receiving group of wiring at one station, and then to the telephone and signal-sending group of wiring at the same station, said interwiring comprising independent wires for respectively connecting the apparatus at each one of the stations, with the apparatus at each one of the remaining stations.

14. An intercommunication telephone system consisting of the combination of telephone, signal-sending, signal-receiving and switching apparatus, a system of interwiring connecting the above elements, said telephone apparatus consisting of a telephone instrument located at each of three or more stations, said signal-sending apparatus comprising a device at each of said stations for operating signals at any other station, said signal-receiving apparatus including signals at each station to indicate the station from which the signals are operated, independent local circuits for the telephone apparatus and for the signal-receiving apparatus, a local circuit for the signal-sending apparatus in multiple with the telephone local circuit, the said switching apparatus consisting of a means at each station for cutting in either the said telephone apparatus at that station, or the said signal-sending apparatus, on any pair of wires, while maintaining it disconnected from any of the other pairs of wires, and for simultaneously cutting out the signal-receiving apparatus at the same said station from the said first-named pair of wires.

15. An intercommunication telephone system, consisting of the combination of telephone, signal-sending, signal-receiving and switching apparatus, a system of interwiring connecting the above elements, said telephone apparatus consisting of a telephone instrument located at each of three or more stations, said signal-sending apparatus comprising a device at each of said stations for operating signals at any other station, said signal-receiving apparatus including signals at each station to indicate the station from which the signals are operated, and the said switching apparatus consisting of a means at each station for cutting in the said telephone apparatus at that station on any one or more of the pairs of wires, while maintaining it disconnected from any of the other pairs of wires, and for simultaneously cutting out both the signal-sending and the signal-receiving apparatus at the same said station from the said first-named one or more pairs of wires.

16. An intercommunication telephone system consisting of the combination of telephone, signal-sending, signal-receiving and switching apparatus, a system of interwiring connecting the above elements, said telephone apparatus consisting of a telephone instrument located at each of three or more stations, said signal-sending apparatus comprising a device at each of said stations for operating signals at any other station, said signal-receiving apparatus including signals at each station to indicate the station from which the signals are operated, and the said switching apparatus consisting of a means at each station for cutting in, either the said telephone or signal-sending apparatus, or the said signal-receiving apparatus at that station, on any pair of wires, while maintaining it disconnected from any of the other apparatus at the same station, and when the said telephone apparatus is cut in on the said any pair of wires, maintaining it in a balanced local circuit.

17. In an intercommunication telephone system, two groups of local wiring at each station, keys at each station, each group of wiring being connected to a separate pair of contact-springs on the keys by an independent pair of wires, one group including the telephone and signal-sending apparatus, switching contacts located in and forming a part of the apparatus located in this last-named group, the other group being the signal-receiving group of wiring, and including visual signals and an audible signal, other switching contacts forming a part of each visual mechanism and operated thereby, the audible signal being connected in multiple with each visual signal through each pair of said switching contacts, whereby the audible signal may operate simultaneously with any one of the visual signals.

18. In an intercommunication telephone system between three or more stations, an organization of interconnecting lines comprising independent wires for respectively connecting any one of said stations with either one of the other stations, a telephone at each station and normally out of circuit, a balanced local circuit at each station and in which said telephone is maintained when connected with any of said interconnecting lines, and separate switches at each station, one for connecting each interconnecting line with the said telephone, and to connect any two telephones at different stations together over the corresponding interconnecting lines it being necessary to close two of said switches, one switch at the station calling and one switch at the station called, whereby, when any two or more of said stations are mutually connected together in a circuit for telephoning, no other station can connect in or listen on the last-named circuit.

19. An intercommunication telephone system consisting of the combination of interwiring connecting three or more stations with one another, telephone apparatus at each station, signal-sending apparatus at each station, a group of wiring for said telephone and signal-sending apparatus, located at each station, signal-receiving apparatus and a group of wiring therefor at each station, and devices at the respective stations for electrically connecting the interwiring between any two stations, first to one group of wiring at one station, and then to the other group at the same station, said interwiring comprising independent wires, for respectively connecting the apparatus at each one of the stations, with the apparatus at each one of the remaining stations, said devices consisting of a switch, two of whose terminals are connected to said interwiring, two to one of said groups, and the remaining two to the other group.

20. An intercommunication telephone system consisting of the combination of interwiring connecting three or more stations with one another, telephone apparatus at each station, signal-sending apparatus at each station, a group of wiring for said telephone and signal-sending apparatus, located at each station, signal-receiving apparatus and a group of wiring therefor at each station, and devices at the respective stations for electrically connecting the interwiring between any two stations, first to one group of wiring at one station, and then to the other group at the same station, said interwiring comprising independent wires, for respectively connecting the apparatus at each one of the stations, with the apparatus at each one of the remaining stations, said devices consisting of a switch, two of whose terminals are connected to said interwiring, two to one of said groups, and the remaining two to the other group, and a wedge for controlling the connections of all the terminals.

21. An intercommunication telephone system consisting of the combination of telephone, signal-sending and signal-receiving apparatus, located at each of three or more stations, a system of interconnecting lines comprising independent wires, for respectively connecting the apparatus at each one of the stations with the apparatus at each one of the remaining stations, two groups of local wiring at each station, keys at each station, each group of wiring being connected to a separate pair of contact-springs on the keys by an independent pair of wires, one group including the telephone and sig-

nal-sending apparatus, switching contacts located in and forming a

Claim.—1. In a tray-forming machine, the combination, with

nal-sending apparatus, switching contacts located in and forming a part of the apparatus located in this last-named group, the other group being the signal-receiving group of wiring, and including visual signals and an audible signal, other switching contacts forming a part of each visual mechanism and operated thereby, the audible signal being connected in multiple with each visual signal through each pair of said switching contacts, whereby the audible signal may operate simultaneously with any one of the visual signals.

22. An intercommunication telephone system consisting of the combination of interwiring connecting three or more stations with one another, telephone apparatus at each station, signal-sending apparatus at each station, a separate group of wiring for said telephone and signal-sending apparatus, located at each station, signal-receiving apparatus and a separate group of wiring therefor at each station, and devices at the respective stations for electrically connecting the interwiring between any two stations, to either one of the said groups of wiring at one station and at the same time maintaining the interwiring between said any two stations disconnected from the other said group of wiring at the same station, said interwiring comprising independent wires for respectively connecting the apparatus at each one of the stations, with the apparatus at each one of the remaining stations.

23. An intercommunication telephone system consisting of the combination of interwiring connecting three or more stations with one another, telephone apparatus at each station, signal-sending apparatus at each station, a separate group of wiring for said telephone and signal-sending apparatus, located at each station, signal-receiving apparatus including a means for indicating the stations from which signals come, and a separate group of wiring therefor at each station, and devices at the respective stations for electrically connecting the interwiring between any two stations, first to one group of wiring at one station, and then to the other group at the same station, and for disconnecting either of said groups of wiring from the interwiring between said any two stations when the other said group is connected thereto.

24. An intercommunication telephone system consisting of the combination of interwiring connecting three or more stations with one another, telephone apparatus at each station, signal-sending apparatus at each station, a separate group of wiring for said telephone and signal-sending apparatus, located at each station, signal-receiving apparatus and a separate group of wiring therefor at each station, and devices at the respective stations for electrically connecting the interwiring between any two stations, first to the signal-receiving group of wiring at one station, and then to the telephone and signal-sending group of wiring at the same station, and for disconnecting either of said groups of wiring from the interwiring between said any two stations when the other said group is connected thereto, said interwiring comprising independent wires for respectively connecting the apparatus at each one of the stations with the apparatus at each one of the remaining stations.

809,930. **BOX-TRAY-FORMING MACHINE.** JOHN H. RIGGS and JOHN H. RIGGS, Crawfordsville, Ind. Filed Oct. 26, 1904. Serial No. 230,276.

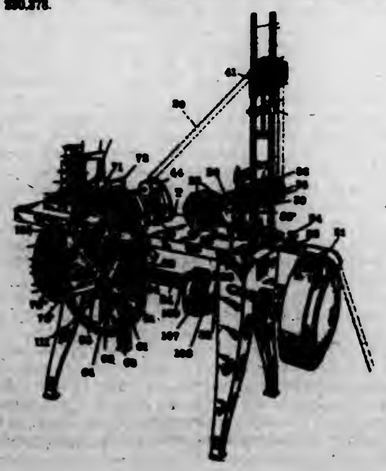

Claim.—1. In a tray-forming machine, the combination, with a tray-forming plunger and means for reciprocating the same, of a work-table having an aperture therethrough one dimension of which is slightly greater than the plunger, a pair of bending-levers arranged beyond the aperture and each provided with means for engaging the ends of the flaps upturned by passage through the aperture to bend said ends around the plunger, means for actuating said bending-levers, a pair of spring-pressed rollers arranged beyond the folding-levers and at right angles thereto upon opposite sides of the path of movement of the forming-plunger, a drying-wheel provided with a plurality of tray-receiving pockets, and means for bringing said tray-receiving pockets into successive alinement with the forming-plunger.

2. In a tray-forming machine, the combination, with a tray-forming plunger and means for reciprocating the same, of a work-table having an aperture therethrough one dimension of which is slightly greater than the plunger, a pair of bending-levers arranged beyond the aperture and each provided with means for engaging the ends of the flaps upturned by passage through the aperture to bend said ends around the plunger, each of said bending-levers being provided with a portion arranged to be engaged by the plunger during its forming movement to throw said bending-levers, a pair of spring-pressed rollers arranged beyond the folding-levers and at right angles thereto upon opposite sides of the path of movement of the forming-plunger, a drying-wheel provided with a plurality of tray-receiving pockets, and means for bringing said tray-receiving pockets into successive alinement with the forming-plunger.

3. In a tray-forming machine, the combination with a driving-shaft rotating in one direction and a tray-forming mechanism operated thereby, of a drying-wheel journaled on said shaft and provided with a plurality of tray-receiving pockets, said shaft tending to rotate the drying-wheel in the direction of its rotation, a catch for preventing rotation of the drying-wheel in that direction, and means for intermittently moving said drying-wheel angularly in the direction opposite to the rotation of the driving-shaft.

4. In a machine of the class described, the combination with a work-table, means for cutting material into desired blanks, means for forming said material, means for feeding the material to the work-table, and means for applying glue to the blanks, of a series of idlers over which the material is bent first in one direction and then in the other, the last of said idlers being arranged in conjunction with the work-table on the work side thereof whereby the final bend of the material gives it a tendency to move away from the work-surface of the table.

809,931. **BALING-PRESS.** JAMES L. COLEMON, Woolsey, Ind. Ter. Filed July 11, 1905. Serial No. 269,186.

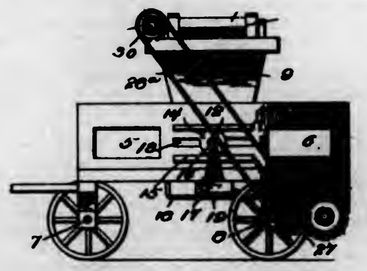

Claim.—1. In a baling-press, in combination, a press-box having a middle receiving-chamber and end baling-chambers, the side walls of the middle chamber having slots, and tracks on the outside above and below said slots, a reciprocating plunger in the box having a bar projecting through said slots, rollers on the ends of the bar which travel on said tracks, and means connected to the ends of the bar to reciprocate the plunger.

2. In a baling-press, in combination, a press-box having a middle receiving-chamber and end baling-chambers, the side walls of the middle chamber being slotted, a reciprocating plunger in the box, having a bar projecting through the slots, a cross-head reciprocating under the box and having upwardly-projecting castings rigidly mounted thereon and connected to the ends of the bar, a crank-shaft extending across under the box, and a pitman connected to the crank-shaft and to the cross-head at the middle thereof.

809,932. **NON-REFILLABLE BOTTLE.** JAMES F. CONNELL, Belle, Kans. Filed Apr. 7, 1905. Serial No. 254,263.

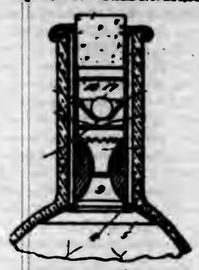

Claim.—1. In an antirefilling bottle, the combination of the neck 1, the tube 3 insertible in the neck, an annular projection at the lower extremity of the tube, a flexible washer above said projection, means for preventing displacement of the tube, and valve means in the length of the tube.

2. In an antirefilling bottle, the combination of the neck 1, the tube 3 insertible in the neck 1, the annular flange 4 at the lower extremity of the tube 3 and of substantially the diameter of the interior of the neck, a flexible washer secured to the tube above the annular flange and adapted to be clamped between the flange and the bottle as specified, means for preventing displacement of the tube, and valve means in the length of the tube 3.

3. In an antirefillable bottle, the combination of the neck thereof, a tube insertible in the neck and provided at its lower end portion with a projection, a washer fitted upon the tube and comprising a flexible disk adapted to hug the tube snugly as the same is forced into the neck, and to expand when said washer is received in the body of the bottle, the washer cooperating with the projection at the end of the tube to prevent displacement of said tube from the neck, and valve means in the length of the tube.

4. In an antirefilling bottle, the combination of the neck 1, the tube 3 insertible in the neck, the annular projection 4 at the lower extremity of the tube, the flexible washer 5, stop means at the upper extremity of the tube for preventing displacement thereof, and valve means in the length of the tube.

5. In an antirefilling bottle, the combination of the neck 1, the valve 10 in the length of the neck, a plate above the valve having an aperture therein, the valve being of hollow formation and having the outer end thereof open and arranged below the aperture in the aforesaid plate, a valve-plate above the apertured plate aforesaid and provided with a valve-opening above the aperture in said plate, and the valve 17 operating upon the valve-plate.

809,933. **HARNESS MECHANISM FOR LOOMS.** RANDOLPH CROMPTON, Worcester, Mass. Filed June 15, 1904. Serial No. 213,092.

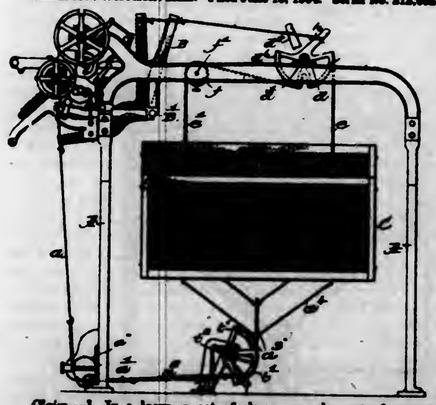

Claim.—1. In a loom, a set of sheaves, and a set of sectors mounted above the harness-frames, straps directly connecting the sectors to one end of the harness-frames, and other straps passing over said sheaves and connecting the sectors to the opposite end of the harness-frames, said sectors having notched extensions with either notch of which may be engaged a part of the harness-connecting cords to thereby vary the extent to which any harness-frame may be raised.

2. In a loom, a set of notched harness-levers, a set of harness-frames, a series of sheaves, a series of sectors having notched extensions and disposed between said jacks and harness-frames, connections between said notched jacks and said notched sectors and adjustable in the notches of said jacks or sectors for the purposes set forth, and straps directly uniting the sectors to the harness-frames at one end, and other straps united with said sectors passed thence over said sheaves and joined to the harness-frames at their other end.

3. In a loom, a set of harness-jacks, a set of harness-frames, a series of sheaves and a series of sectors having notched extensions and disposed between the jacks and harness-frames, connections between the said extensions and jacks, and straps directly connecting the sectors to one side of the harness-frame and other straps passing over said sheaves and connected to the other side of said frame and the sectors.

4. In harness mechanism for looms, a harness-frame, a harness-lever, another lever, a strap attached to one end of said frame and led directly to and connected with said other lever, a sheave, and a second strap attached to the opposite end of said harness-frame and led over said sheave and connected with said other lever.

5. In harness mechanism for looms, a harness-frame, a sector-lever mounted on the loom-frame over said harness-frame, a sheave sustained at the top of the loom-frame, two straps connected with such harness-frames near its opposite ends, each of said straps being united to said sector-lever, one of said straps being passed over said sheave whereby when said lever is moved in one direction, both said straps will be wound thereon and raise the connected harness-frame.

6. In harness mechanism for looms, a harness-frame, a sector-lever mounted on the loom-frame above said harness-frame, a harness-lever, means to connect said harness-lever with said sector-lever, a sheave, and straps connected with said harness-frame and with said sector-lever, one of said straps passing over said sheave, the ends of both said straps being wound on the lower sector-shaped end or part of said lever.

7. In a loom, a set of harness-frames, a set of sheaves, and a set of sectors mounted above the harness-frames, said sectors having notched extensions with either notch of which may be engaged a part of the harness-connecting cords to thereby vary the extent to which any harness-frame may be raised, a sector-lever located below the harness-frame and having notched extensions, and means connecting said extensions and harness-levers.

809,934. **WORKING ROLLED METALS.** JOHN V. CULLEN, Lebanon, Pa. Filed Jan. 23, 1905. Serial No. 242,215.

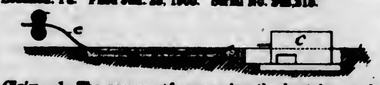

Claim.—1. The process of conserving the heat in metal bars while hot-working the same which consists in protecting the trailing portion thereof by means of a loose comminuted heat-conserving material.

2. The improvement in the process of hot-working rolled metals which consists in subjecting bars direct from the rolls to further progressive hot-working while trailing them through a comminuted heat-conserving material.

3. The improvement in the process of making rivets and the like from heated bars, which consists in passing the hot bars through a loose comminuted heat-conserving material while successively subjecting the forward portion thereof to the required forging treatment.

809,935. **CELLULOSE ACETATE.** ARTHUR HENRIQUES and THEODOR RECEUIL, Eberfeld, Germany, assignors to Farbenfabriken of Elberfeld Co., New York, N. Y., a Corporation of New York. Filed Feb. 20, 1903. Serial No. 144,326. (Specimens.)

Claim.—The herein-described new cellulose acetate, characterized by being a derivative of cellulose, being soluble in hot alcohol of seventy per cent. and being produced by treating cellulose with a mixture of acetic anhydrid and sulfuric acid which is in a wet state a whitish voluminous mass and represents when dry yellowish hard lumps, the acetate being precipitated therefrom by the addition of much water in the shape of fine light flakes; the alcoholic solution solidifying in the cold to a gelatinous mass and being capable of

forming transparent flexible sheets and films by evaporation of its solutions, substantially as hereinbefore described.

809,936. BIT-BRACE JAW. REMBERT C. HALLECK, Southington, Conn., assignor to Peck, Stow & Wilcox Company, Southington, Conn., a Corporation of Connecticut. Filed Apr. 7, 1905. Serial No. 254,692.

Claim.—A bit-brace jaw comprising the two independent jaw members having their opposing surfaces longitudinally grooved and their rear ends transversely slotted, and a bowed spring, shaped to afford its spring action in the bow or curve, located wholly between said jaws with arms in said grooves, and the bow adapted to play through the slots in the rear ends of said jaws as said rear ends approach each other.

809,937. AMUSEMENT APPARATUS. SAMUEL M. FRIEDE, Chicago, Ill., assignor of one-half to Henry W. Carter, Chicago, Ill. Filed June 15, 1904. Serial No. 212,711.

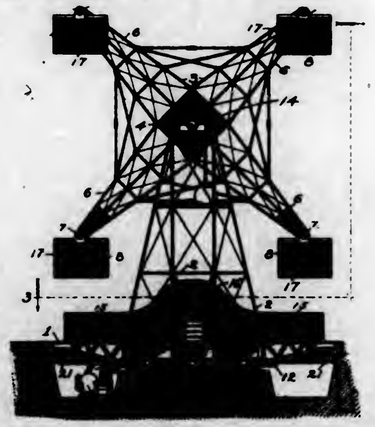

Claim.—1. An amusement apparatus, comprising a rotary platform, a carrier mounted on a horizontal axis and supported over the center of said platform, observation-cars suspended from said carrier, means for rotating the platform, and means for rotating the carrier independently of the rotation of the platform, substantially as described.

2. An amusement apparatus, comprising a turn-table, means for maintaining the turn-table continuously in rotation, a carrier mounted on a horizontal axis approximately intersecting the vertical axis of the turn-table and supported centrally on said platform, observation-cars suspended from said carrier, a landing-place on the platform at which passengers may enter the cars, and means for rotating the carrier to bring the cars in succession to the landing-place, substantially as described.

3. An amusement apparatus, comprising a rotary platform, a carrier mounted on a horizontal axis and supported centrally on said platform, observation-cars suspended from said carrier, a landing-place on the platform, and means for giving independent rotary movement to the carrier to bring the cars in succession to the landing-place, substantially as described.

4. An amusement apparatus, comprising a rotary platform, towers rising from said platform, a rotary carrier mounted between said towers with its axis approximately over the center of the platform, observation-cars suspended from said carrier, means for rotating the platform, and means for giving intermittent rotary movement to said carrier independently of the rotation of the platform, substantially as described.

5. An amusement apparatus, comprising a rotary platform, a rotary carrier mounted upon a horizontal shaft supported over the center of the platform, observation-cars suspended from the carrier in pairs arranged back to back on opposite sides of the carrier and having outwardly-facing seats, means for rotating the platform, and means for giving intermittent rotary movement to the carrier independently of the rotation of the platform, substantially as described.

6. An amusement apparatus, comprising a rotary platform, a rotary carrier mounted upon a horizontal axis and supported over the center of the platform, observation-cars suspended from the carrier, and mirrors in the cars cutting off the view of the carrier and reflecting the open fronts of the cars, substantially as described.

7. An amusement apparatus, comprising a rotary platform, towers rising from said platform, a rotary carrier mounted between said towers on a shaft supported approximately over the center of the platform, observation-cars suspended from said carrier a landing-place for the observation-cars located near the center of the platform at the foot of the tower, means for rotating the platform, and means for giving independent rotary movement to the carrier to bring the cars in succession to the landing-place, substantially as described.

809,938. COMBINED FITTING FOR CLOSETS AND SINKS. JOHN L. FRUDE, New York, N. Y. Filed Oct. 17, 1904. Serial No. 228,741.

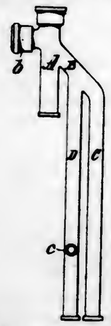

Claim.—A combination-fitting for closets and sinks which consists of a body portion adapted to form part of a main vent-pipe, a downwardly-inclined lateral extension thereof and a number of vertical pipes opening downwardly therefrom of sufficient length to create an effective draft for reventing purposes; one of said vertical pipes serving as a revent for a closet and another of said vertical pipes having a side opening at some portion of its length, whereby said pipe is adapted to serve as a combined waste and vent for a sink bath-tub or washbasin.

809,939. APPARATUS FOR RECOVERING PRECIOUS METALS. EDWARD J. GARVIN, Portland, Oreg., assignor to Garvin Cyanide Extraction Company, a Corporation of Oregon. Filed June 16, 1905. Serial No. 265,485.

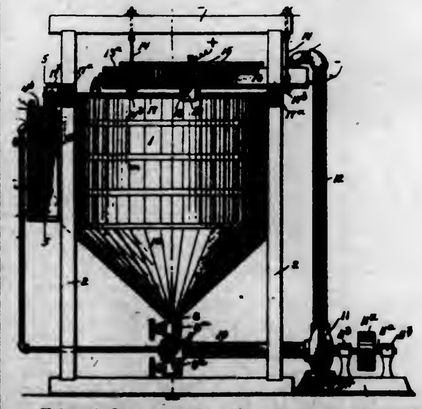

Claim.—1. In an apparatus of the class described, the combination with a main tank for receiving the pulverized ore and solvent, of a separating-tank including means for separating the material, attached to the main tank near its top, and an amalgamating-tank including means for amalgamating the material suspended above the main tank, and means for causing a continuous circulation of the materials and solution through said tanks.

2. In an apparatus of the class described, the combination with a main tank to receive the pulverized ore and the solution, of a separating-tank including means for separating the materials in communication with the upper portion of the main tank, an amalgamating-tank including means for amalgamating the material arranged to discharge into the main tank, means for drawing the lighter solution through the separating-tank from the main tank and for drawing the pulverized material from the main tank and mixing it with the solution drawn from the separating-tank and forcing such mixture into the amalgamating-tank, substantially as shown and described.

3. In an apparatus of the class described, the combination with a main tank to receive the pulverized ore and the solution, of a separating-tank in communication with the upper portion of the main tank, an amalgamating-tank arranged to discharge into the main tank, means for drawing the lighter solution through the separating-tank from the main tank and for drawing the pulverized material from the main tank and mixing it with the solution drawn from the separating-tank and forcing such mixture into the amalgamating-tank, means within the separating-tank for separating the metal from the solution and means within the amalgamating-tank for separating the metal from the solution and ore, substantially as shown and described.

4. In an apparatus of the class described, the combination with a main tank to receive the pulverized ore and the solution, of a separating-tank in communication with the upper portion of the main tank, an amalgamating-tank arranged to discharge into the main tank, means for drawing the lighter solution through the separating-tank from the main tank and for drawing the pulverized material from the main tank and mixing it with the solution drawn from the separating-tank and forcing such mixture into the amalgamating-tank, means within the separating-tank for separating the metal from the solution and means within the amalgamating-tank for separating the metal from the solution and ore, and means for agitating the amalgamating-tank, substantially as shown and described.

5. In an apparatus of the class described, the combination with a main tank for receiving the pulverized ore and the solution, of a separating-tank, said separating-tank having an inlet in communication with the main tank near the upper portion thereof, and having an outlet in the plane below the inlet of the separating-tank, a plurality of partitions within said separating-tank, said separating-tank having a concaved bottom, a rotatable cylindrical member mounted for rotation within the bottom of said separating-tank, said partitions adapted to be connected to the positive pole of a source of electric energy, said cylindrical member adapted to be connected to the negative pole of a source of electric energy, a valved offtake-pipe communicating with the outlet of the separating-tank, a pump in communication with said valved offtake-pipe of the separating-tank, a valved offtake-pipe for said main tank also in communication with said pump, an amalgamating-tank arranged to discharge into said main tank, a pipe connection from said pump adapted to discharge into said amalgamating-tank, and means within said amalgamating-tank for extracting the metal from the material therein by amalgamation, substantially as shown and described.

6. In an apparatus of the class described, the combination with a main tank for receiving the pulverized ore and the solution, of a separating-tank, said separating-tank having an inlet in communication with the main tank near the upper portion thereof, and having an outlet in the plane below the inlet of the separating-tank, a plurality of partitions within said separating-tank, said separating-tank having a concaved bottom, a rotatable cylindrical member mounted for rotation within the bottom of said separating-tank, said partitions adapted to be connected to the positive pole of a source of electric energy, said cylindrical member adapted to be connected to the negative pole of a source of electric energy, a valved offtake-pipe communicating with the outlet of the separating-tank, a pump in communication with said valved offtake-pipe of the separating-tank, a valved offtake-pipe for said main tank also in communication with said pump, an amalgamating-tank arranged to discharge into said main tank, a pipe connection from said pump adapted to discharge into said amalgamating-tank, and means within said amalgamating-tank, for extracting the metal from the material therein by amalgamation, and means within the separating-tank for extracting the metal from the solution within the tank by amalgamation, substantially as shown and described.

7. In an apparatus of the class described, the combination with a main tank for receiving the pulverized ore and the solution, of a separating-tank, said separating-tank having an inlet in communication with the main tank near the upper portion thereof, and having an outlet in the plane below the inlet of the separating-tank, a plurality of partitions within said separating-tank, said separating-tank having a concaved bottom, a rotatable cylindrical member mounted for rotation within the bottom of said separating-tank, said partitions adapted to be connected to the positive pole of a source of electric energy, said cylindrical member adapted to be connected to the negative pole of a source of electric energy, a valved offtake-pipe communicating with the outlet of the separating-tank, a pump in communication with said valved offtake-pipe of the separating-tank, a valved offtake-pipe for said main tank also in communication with said pump, an amalgamating-tank arranged to discharge into said main tank, a pipe connection from said pump adapted to discharge into said amalgamating-tank for extracting the metal from the material therein by amalgamation, and means within the amalgamating-tank for electrolytically extracting the metal from the material within the tank substantially as shown and described.

8. In an apparatus of the class described, a main tank or receptacle, a separating-tank having separating means in communication with the main tank near its top, and an amalgamating-tank having means for amalgamating the material, suspended above the main tank, said main tank adapted to receive ore and solvent, said ore and solvent adapted to separate in said main tank into lighter and heavier strata to permit drawing off the heavier strata and the lighter strata separately, means for drawing off the contents of the main tank, circulating, agitating and passing the lighter strata through the precipitating or separating tank and returning the same to the heavier strata, while simultaneously drawing the heavier strata from the bottom of the main tank and passing it back into the amalgamating-tank, substantially as shown and described.

9. In an apparatus of the class described, the combination with a main tank adapted to receive the ore and the solvent, said ore and solvent adapted to separate into lighter and heavier strata in said main tank, a separating-tank in communication with said main tank at a point in line with the lighter material, means within said separating-tank for separating the metal from its solution, means for drawing off the spent solvent from the separating-tank after the metal has been separated therefrom, and for drawing off the heavier material from the main tank and mixing said spent solvent with said heavier material to cause it to dissolve said heavier material and for forcing said solution of heavy material and solvent back into the main tank, substantially as shown and described.

10. An apparatus of the class described, a main tank adapted to receive the ore and solvent, a separating-tank having an inlet in communication with the main tank at a point near its top, means within said separating-tank for separating the ore from its solution as the solution passes therethrough, an outlet for said separating-tank, an outlet for said main tank near the bottom thereof, a pipe connected with the outlet from the separating-tank and the lower outlet from the main tank to receive the discharged materials from the main tank and the separating-tank, an amalgamating-tank arranged above the separating-tank and adapted to discharge into said separating-tank, means connected with said pipe which receives the discharge from the main and separating tanks for forcing the combined materials into the amalgamating-tank, and means in the amalgamating-tank for separating the metal from its ore and solution, substantially as shown and described.

11. An apparatus of the class described, a main tank adapted to receive the ore and solvent, a separating-tank having an inlet in communication with the main tank at a point near its top, means within said separating-tank for separating the ore from its solution as the solution passes therethrough, an outlet for said separating-tank, an outlet for said main tank, near the bottom thereof, a pipe connected with the outlet from the separating-tank and the lower outlet from the main tank to receive the discharged material from the main tank and the separating-tank, an amalgamating-tank arranged above the separating-tank and adapted to discharge into said separating-tank, means connected with said pipe which receives the discharge from the main and separating tanks for forcing the combined materials into the amalgamating-tank, means in the amalgamating-tank for separating the metal from its ore and solution, and means for agitating said separating-tank.

12. An apparatus of the class described, a main tank adapted to receive the ore and solvent, a separating-tank having an inlet in communication with the main tank at a point near its top, means within said separating-tank for separating the ore from its solution as the solution passes therethrough, an outlet for said separating-tank, an outlet for said main tank near the bottom thereof, a pipe connected with the outlet from the separating-tank and the lower outlet from the main tank to receive the discharged materials from the main tank and the separating-tank, an amalgamating-tank arranged above the separating-tank and adapted to discharge into said separating-tank, means connected with said pipe which receives the discharge from the main and separating tanks for forcing the combined materials into the amalgamating-tank, means in the amalgamating-tank for separating the metal from its ore and solution, said means for separating the metal from its solution into the separating-tank comprising an amalgamating material, and electrolytic separating devices.

13. An apparatus of the class described, a main tank adapted to receive the ore and solvent, a separating-tank having an inlet in communication with the main tank at a point near its top, means within said separating-tank for separating the ore from its solution as the solution passes therethrough, an outlet for said separating-tank, an outlet for said main tank near the bottom thereof, a pipe connected with the outlet from the separating-tank and the lower outlet from the main tank to receive the discharged material from the main tank and the separating-tank, an amalgamating-tank arranged above the separating-tank and adapted to discharge into said separating-tank, means connected with said pipe which receives the discharge from the main and separating tanks for forcing the combined materials into the amalgamating-tank, means in the amalgamating-tank for separating the metal from its ore and solution, said means for separating the metal from its solution into the separating-tank comprising an amalgamating material and electrolytic separating devices, and said separating means within the amalgamating-tank comprising an amalgamating material and supplemental electrolytic devices substantially as shown and described.

14. An apparatus of the class described comprising in combination a supporting-frame, a main tank mounted thereon said tank having a conical bottom and a valved outlet, a junction member into which said valved outlet of the main tank discharges, a valved off-take for said junction member, a separating-tank mounted on said supporting-frame and having an inlet in communication with the main tank near its top and an outlet at a point below its inlet, said separating-tank having its sides provided with a plurality of grooves, a plurality of metal plates held in said grooves and forming anodes, a cathode mounted in said separating-tank below said anodes, said cathode comprising a cylindrical member consisting of end disks, metallic strips connecting said end disks together, said cathode being rotatably mounted in said separating-tank, said separating-tank having a concaved bottom adapted to receive mercury to cover the lower portions of said cathode, a valved pipe connection communicating with said junction member and the outlet of said separating-tank, an amalgamating-tank loosely mounted on said supporting-frame above said main tank and having a discharge-outlet adapted to discharge into said main tank, said amalgamating-tank having its sides provided with grooves, a plurality of metallic plates held in said grooves to form anodes, the lower edges of said plates being held in a plane below the upper edge of the outlet of said amalgamating-tank to form a trap, a metal plate within said amalgamating-tank below said last-named plates and forming a cathode, said amalgamating-tank adapted to contain mercury, a pump in connection with said junction member, and arranged to pump the material from said junction member into said amalgamating-tank, and means mounted on the supporting-frame and in connection with the amalgamating-tank for agitating the same, substantially as shown and described.

15. In an apparatus of the class described, the combination with a main tank adapted to receive ore and solvent to permit the same to separate into lighter and heavier strata, a separating or precipitating tank in communication with said main tank at a point in line with the lighter material, and an amalgamating-tank arranged to discharge into the main tank, means within said separating-tank for separating the material from its solution, means for drawing off the spent solvent from the separating-tank after the metal has been separated therefrom, and for drawing off the heavier material from the main tank to mix the spent solvent with the heavier material and for forcing said mixture of solvent and heavy material back into the amalgamating-tank and into the main tank, all being arranged substantially as shown and described.

16. In an apparatus of the class described, the combination with a separating-tank, an amalgamating-tank and a main tank adapted to receive ore and solvent which is adapted to separate into lighter and heavier strata during the process of agitation or circulation in said main tank for separating the solvent from ore, to pass the same through the separating or precipitating tank at a point in line with the lighter material, means within said separating-tank for separating the material from its solution, means for drawing off the spent solvent from the separating-tank after the metal has been separated therefrom, and after drawing off the heavier material from the main tank to mix the spent solvent therewith and for forcing said mixture of heavy material and ore back into the amalgamating-tank and into the main tank, substantially as shown and described.

809,940. **TILE-MOLDING MACHINE.** ALLEN GLEED, Scranton, Iowa, assignor of one-half to Silas G. Kinne, Scranton, Iowa. Filed Jan. 27, 1905. Serial No. 242,917.

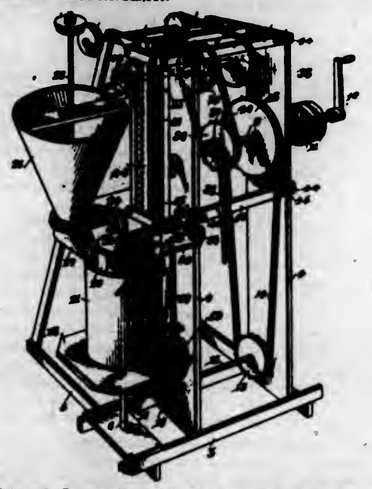

Claim.—1. In a machine of the class described, the combination with a rotatable mold-supporting table, of movable means for feeding material to a mold placed on the table, driving means, gearing connecting the driving means and table, and gearing connecting the driving and feeding means, said gearing including a clutch that permits the rotation of the mold-supporting table independently of the feeding means.

2. In a machine of the class described, the combination with a rotatable mold-support, of a movable tamping device coacting with the table, driving means, gearing connecting the driving means and table, and gearing connecting the driving means and tamping device, said latter gearing including a clutch whereby the tamper can be stopped while the table will continue to revolve.

3. In a machine of the class described, the combination with a rotatable mold-support, of movable means for feeding material to a mold placed on the support, driving means, gearing connecting the driving means and support, gearing connecting the driving and feeding means, said gearing including a clutch whereby the feeding means may be stopped while the support continues to revolve, and means normally stationary with respect to the support and coacting with the mold placed thereon for finishing an article in said mold.

4. In a machine of the class described, the combination with a rotatable mold-support, of a movable tamping device coacting therewith, driving means, gearing connecting the driving means and support, gearing connecting the driving means and tamping device, said latter gearing including a clutch by means of which the tamping device can be stopped and the support rotated independently of the movement thereof, and means coacting with a mold placed on the support for finishing an article made in such mold, said means being normally stationary with respect to the support.

5. In a machine of the class described, the combination with a supporting-frame, of a rotatable table, a driving-shaft, gearing connecting the driving-shaft and table for rotating the latter, feeding means including a rotatable agitator, a reciprocatory tamper, gearing connecting the driving-shaft and the tamper and agitator, said gearing including a clutch by means of which the tamper and agitator can be stopped and the table rotated independently thereof, a mold detachably supported on the table, and a finishing-scraper movably mounted on the supporting-frame and coacting with the mold.

6. In a machine of the class described, the combination with a supporting-frame, of a rotatable mold-supporting table, a guide, bars disposed transversely of the guide and frame and having a longitudinal sliding engagement with one of the same to permit the adjustment of the guide toward and from the axis of rotation of the table, and means for holding the bars against such movement to hold the guide in different positions with respect to the axis of rotation of the table.

7. In a machine of the class described, the combination with a supporting-frame, of a rotatable mold-supporting table, a guide, holding-bars secured to the guide and slidable longitudinally of the supporting-frame to carry the guide toward and from the axis of rotation of the table, and bolts for clamping the bars against movement to the frame to hold the guide against movement.

8. In a machine of the class described, the combination with a reciprocatory tamper, of means for reciprocating the tamper, said means including a device that engages the tamper, and means permitting the relative lateral movement between the tamper and device when the same are in engagement with each other.

9. In a machine of the class described, the combination with a reciprocatory tamper, of driving means for reciprocating the tamper, said means including a device that engages the tamper, and means for yieldingly maintaining the device and tamper in positions to coact, said yielding means permitting the movement of the driving means independently of the tamper.

10. In a machine of the class described, the combination with a reciprocatory tamper having a rack, of means for reciprocating the tamper, said means including a rotatable mutilated gear that meshes with the rack, and means for yieldingly maintaining the rack and gear in position to coact, but permitting the movement of the latter independently of the former.

11. In a machine of the class described, the combination with a reciprocatory tamper having a rack, of means for reciprocating the tamper, said means including a gear having yieldingly-projected teeth.

12. In a machine of the class described, the combination with a reciprocatory tamper having a rack, of means for reciprocating the tamper, said means including a mutilated gear having a tooth-segment yieldingly supported thereon and arranged to mesh with the rack.

13. In a machine of the class described, the combination with a reciprocatory tamper having a rack, of means for reciprocating the tamper including a gear that meshes with the rack, and means for yieldingly urging the rack toward the gear.

14. In a machine of the class described, the combination with a reciprocatory tamper, of means for reciprocating the tamper, said means including a rotatable mutilated gear, a rack carried by the tamper and meshing with the gear, and a yielding guide engaging the rack to urge the same toward the gear.

15. In a machine of the class described, the combination with a rotatable mold-support, of a reciprocatory tamper coacting therewith and including a rack, a rotatable mutilated gear coacting with the rack to elevate the tamper, a guide bearing against the rack, and springs bearing against the guide to urge the same and the rack toward the gear.

16. In a machine of the class described, the combination with a rotatable mold-table, of a supporting-table located alongside the same, a vertically-reciprocating tamper coöperating with the table and having a rack, driving means connected to the table for rotating the same, a rotatable mutilated gear having connections with the driving means and meshing with the rack to elevate the same, said gear including a yieldingly-projected tooth-section, a guide bearing against the rack of the tamper, and springs engaging the guide.

17. In a machine of the class described, the combination with a stationary supporting-frame, of a rotatable mold-supporting table movable with respect to the frame, a mold mounted on the table, and a journal-bracket movably mounted on the supporting-frame and having a journal-bearing on the upper portion of the mold.

18. In a machine of the class described, the combination with a stationary supporting-frame, of a rotatable mold-supporting table having a centering device thereon, a mold mounted on the table and centered by said device, and a journal-bracket movably mounted on the supporting-frame and held against rotation, said bracket having a journal-bearing detachably engaging the mold in line with the axis of rotation thereof and coacting with the upper portion of the mold.

19. In a machine of the class described, the combination with a supporting-frame, of a rotatable mold-supporting table having a journal-pin, a mold mounted on the table and centered on said pin, a cap for the mold, and a journal-bracket movably mounted on the supporting-frame and coacting with the cap.

20. In a machine of the class described, the combination with a supporting-frame, of a rotatable mold-supporting table having an upstanding journal-pin, a mold comprising a base-plate centered on the table by said pin, inner and outer walls carried by the base-plate, a cap for the inner walls, said cap having an upstanding journal-pin, and a journal-bracket pivotally mounted on the frame and having a box that receives the journal-pin of the cap.

21. In a machine of the class described, the combination with a rotatable mold-support, of a mold mounted thereon, a brush mounted adjacent to the mold-support and operating about the base of the mold, a scraper operating on the mold, and common supporting means for the scraper and brush.

22. In a machine of the class described, the combination with a rotatable mold-support, of a mold mounted thereon and having an open top, means for feeding material to the mold through the open top, a supporting-frame, a swinging bracket mounted on the frame, a finishing-scraper carried by the bracket and operating on the open top of the mold, and a brush also supported by said bracket operating about the base of the mold.

809,941. **WATER-CONDUCTOR.** GOTTLIEB GLÖCKLER, Stuttgart, Germany. Filed Mar. 3, 1905. Serial No. 248,206.

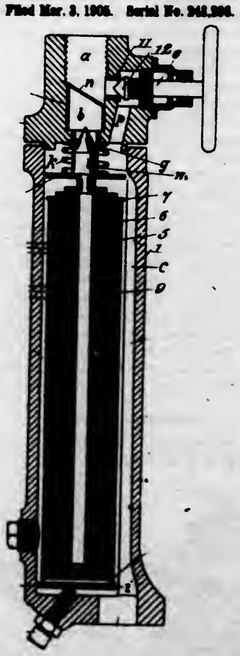

Claim.—1. In a conductor, the combination of a casing open at both ends, a valve in said casing and a thermostatic device for automatically closing said valve when the temperature rises too high, said device consisting of a series of plain cylindrical tubes and a series of cylindrical tubes arranged alternately and concentrically in relation to said first-named series, said second-named series being provided with horizontal flanges at the top and at the bottom, said flanges projecting in opposite directions, whereby both series of tubes are loosely supported in contact with each other, a support for the outer cylindrical tube of the first-named series, and means for adjusting said support, substantially as described.

2. In a steam water-conductor, the combination of a casing normally open at both ends, a valve adapted to automatically close the passage in said casing when the temperature rises too high, a spring normally holding said valve open, and a thermostatic device for automatically closing said valve when steam begins to flow through said casing, consisting of a series of plain cylindrical

tubes, a second series of cylindrical tubes alternating with said first-named series, both series of tubes being arranged concentrically, said second-named series being provided with flanges at the top and bottom extending in opposite directions, said valve being connected to the inner tube of said series, a perforated plate for supporting the outer tube of said series of tubes, and a screw for adjusting said plate, substantially as described.

3. In a steam water-conductor, the combination of a casing provided with a passage therethrough, a sieve in said passage, a valve adapted to close said passage, a spring for normally holding said valve open, and a thermostatic device for automatically closing said valve when steam flows through the casing, consisting of a series of plain cylindrical tubes, a second alternately-arranged series of cylindrical tubes, said two series being composed of metals of different expansibilities under the influence of heat, said second series of tubes being provided with horizontal flanges extending in opposite directions, whereby the whole series of tubes is supported, the one upon the next, a perforated plate on which the outer tube rests, and a screw for adjusting said plate, substantially as described.

4. In a steam water-conductor, the combination of a casing provided with a passage therethrough, said passage being enlarged on one side to provide for a free flow of fluid therethrough, a valve adapted to close said passage, a spring normally holding said valve open, and a thermostatic device adapted to automatically close said valve against the tension of said spring when steam flows through said casing, said device consisting of a series of plain tubes composed of metal of one expansibility, alternating with a second series of cylindrical tubes composed of metal of a different expansibility, said second series being provided with oppositely-extending flanges at the top and at the bottom, whereby all the tubes are supported the one on the other, a perforated plate on which the outer tube rests, a screw for adjusting said plate, and a sieve located in said passage, substantially as described.

5. In a steam water-conductor, the combination of a casing provided with a passage whereby hot water may normally flow unimpeded therethrough, a sieve in said passage, a valve in said casing and adapted to close said passage, a spring normally holding said valve open, a thermostatic device for automatically closing said valve against the tension of the spring when steam enters the casing, consisting of a series of cylindrical brass tubes arranged concentrically with relation to each other, and a second series of cylindrical iron tubes provided with oppositely-projecting flanges at the top and the bottom, said iron tubes being arranged alternately with relation to said brass tubes, a perforated plate for supporting the outer brass tube, a screw for adjusting said plate, a sieve in said passage, and a control-screw in the side of the casing, substantially as described.

809,942. **CULTIVATOR.** JAMES J. GREEN, Bremen, Ga. Filed Sept. 13, 1905. Serial No. 279,015.

Claim.—1. In combination with a main beam, a pair of rigid parallel beams extending outwardly therefrom on each side, the rear beam being grooved across its upper side, spring-teeth having their shanks bolted to the forward beams and lying in the grooves in the rear beams, and supplemental beams a^2 bolted down on top of the rear beams, thereby rigidly confining the teeth in said grooves for the purpose set forth.

2. In combination with a frame carrying spring cultivating-teeth, of a series of spring-supported wheels attached to the frame and adapted to bear upon the ground, the front wheels being supported on the frame and the rear wheels on the resilient portions of the teeth.

3. In combination with a cultivator-frame carrying a series of cultivator-teeth, of one or more ground-engaging wheels at the forward end of the frame, and a pair of resiliently-supported wheels at the rear of the teeth, and supported on the teeth.

4. In combination with a cultivator-frame carrying a series of cultivator-teeth, of one or more ground-engaging wheels at the forward end of the frame, a pair of resiliently-supported wheels at the rear of the teeth and supported thereon, and means for vertically adjusting the said rear wheels.

5. In combination with a frame carrying a series of spring cultivator-teeth, a resiliently-supported wheel on the frame forward of the teeth, and a pair of resiliently-supported wheels at the rear of the teeth, and means for vertically adjusting these wheels, said means as well as the resilient supports of the wheels being supported on the teeth.

6. In a cultivator the combination of a frame carrying a series of cultivator-teeth having curved resilient body portions, a spring-supported wheel or wheels on the frame in front of the teeth, curved resilient bars C depending behind the teeth and each carrying a ground-engaging wheel, and means for vertically adjusting and locking the free wheel-carrying ends of these resilient bars.

7. In a cultivator carrying a series of curved spring-teeth, a ground-engaging wheel or wheels at the front of the frame, and a pair of ground-engaging wheels at the rear of the teeth one wheel being arranged at each side of the machine and each wheel being carried by a resilient bar extending rearwardly and downwardly behind the adjacent tooth, and means for vertically swinging the wheel-carrying ends of these resilient bars, for the purpose set forth.

8. A cultivator comprising a frame carrying a series of curved spring-teeth, a front wheel or wheels, a pair of ground-engaging wheels behind the teeth and means for supporting them one at each side of the frame, and means for vertically adjusting these wheels, these adjusting means embodying a pair of rearwardly-extending handles.

9. In a cultivator the combination of a frame carrying a series of curved spring-teeth, of a ground-engaging wheel or wheels at the forward end of the frame and a pair of ground-engaging wheels behind the teeth, a supporting-bar for each wheel pivoted at its forward end and carving down behind the adjacent tooth, and means embodying a rearwardly-extending handle for vertically adjusting the wheel-carrying end of each of said bars.

10. A cultivator comprising a frame carrying a series of spring-teeth, a ground-engaging wheel or wheels at the front end of the machine and a pair of ground-engaging wheels at the rear of the machine, each of these wheels being supported by a rearwardly and downwardly extending bar lying behind one of the cultivator-teeth, an adjusting and locking loop embracing said bar and the shank of the adjacent tooth, and means for adjusting this loop for the purpose set forth.

11. In a cultivator the combination of a frame carrying a series of curved spring-teeth, of a supporting wheel or wheels at the forward end of the frame and a pair of ground-engaging wheels at the rear of the teeth, each wheel being supported on a curved resilient bar pivotally supported at its forward end, means for vertically adjusting the free rear end of this bar, said means embodying a slidable loop engaging said bar and the adjacent tooth-shank, a bar carrying this loop at its rear end, and a handle connected to this latter-bar, substantially as set forth.

809,943. **BALE-TIE MACHINE.** ALVAH M. GRIFFIN, East St. Louis, Ill., assignor to New Process Steel & Wire Company, East St. Louis, Ill., a Corporation. Filed Jan. 23, 1905. Serial No. 242,438.

Claim.—1. In a bale-tie machine, the combination of a loop-form, means for folding the wire around said form, a twister-head, a pair of twister-fingers independently pivoted to said head and arranged to engage the folded wire, and reciprocating arms free of connection with said fingers for carrying said fingers into engagement with said wire, substantially as set forth.

2. In a bale-tie machine, the combination of a loop-form, means for holding the wire around said form, a hollow spindle, a twister-head carried by said spindle, twister-fingers carried by said twister-head, a reciprocating collar mounted on said spindle and having means for engaging said twister-fingers, a spring-controlled bell-crank for actuating said collar, and means for actuating said bell-crank; said bell-crank consisting of an unyielding arm and a resilient arm, substantially as set forth.

3. In a bale-tie machine, the combination of a hollow spindle, a twister-head carried by said spindle, twister-fingers carried by said head, a reciprocating collar mounted on said spindle and having means for engaging said twister-fingers, a bell-crank for actuating said collar, a trip-wheel for engaging with said bell-crank, an anti-friction-roller on said bell-crank arranged to ride upon a support over which the bell-crank operates and an antifriction-roller of said bell-crank to receive the impingement of the bell-crank-actuating portion of said trip-wheel, substantially as set forth.

4. In a bale-tie machine, the combination of a hollow spindle, a twister-head carried by said spindle, twister-fingers pivoted to said head, a reciprocating collar mounted on said spindle, a pair of arms carried by said collar and arranged to be moved toward said twister-fingers, rollers mounted in said arms, a bell-crank having one of its arms arranged in engagement with said collar, an antifriction-roller mounted on the other arm of said bell-crank, a runway on which said roller operates, and a trip-wheel arranged for engagement with the last-named arm of said bell-crank, substantially as set forth.

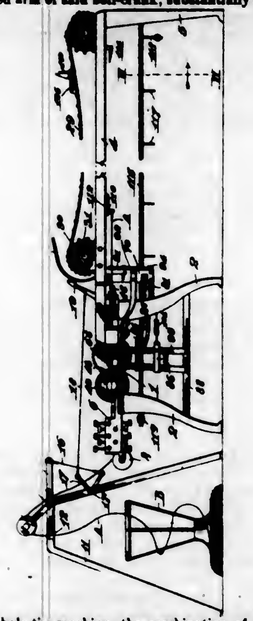

5. In a bale-tie machine, the combination of a loop-forming mechanism, a conveyer, a wire-carried arm connected to said conveyer and adapted to engage the loop of the wire, and stripping-fingers having beveled lower sides to receive the loop and discharge it from engagement with said wire-carrier arm, substantially as set forth.

6. In a bale-tie machine, the combination of a loop-forming mechanism, a conveyer, a wire-carrier arm connected to said conveyer and adapted to receive said loop, a track-rail in the course of travel of said conveyer and on which said wire-carrier arm travels, and stripper-fingers supported by said track-rail; said stripper-fingers having beveled lower sides and being adapted to free the loop from said carrier-arm, substantially as set forth.

7. In a bale-tie machine, the combination of loop-forming mechanism, a conveyer, a wire-carrier arm pivoted to said conveyer and having a finger for receiving the wire loop, a track-rail in the course of travel of said conveyer, a roller carried by said carrier-arm adapted to ride on said track-rail, and guide-fingers for directing the travel of said roller as said loop-receiving finger is moved into position to receive the loop, substantially as set forth.

8. In a bale-tie machine, the combination of a tie-producing mechanism, a power-shaft by which said mechanism is operated, a clutch for controlling the operation of said power-shaft, and means for controlling said clutch consisting of a lever, connections leading to said lever from said clutch, and a bell-crank connected to said lever and having a roller over which the wire delivered to the machine passes, whereby said bell-crank is caused to be moved to actuate said clutch when feeding of the wire is interrupted, substantially as set forth.

9. In a bale-tie machine, the combination with mechanism for forming the bale-ties, of a tie-catcher, a latch for retaining said catcher in tie-receiving position, a primary counting-wheel actuated by said tie-forming mechanism, and a secondary counting-wheel actuated by said primary counting-wheel and arranged to trip said latch and free said catcher after a predetermined number of ties have been deposited thereon, substantially as set forth.

10. In a bale-tie machine, the combination with mechanism for forming bale-ties, of a tie-catcher, a latch for retaining said catcher in tie-receiving position, a counting-wheel arranged to trip said latch, a rocking rod actuated by the tie-forming mechanism, a pawl carried by said rod and arranged for engagement with said counting-wheel, and means for carrying said pawl to said counting-wheel, a shaft driven by the wire passing through the machine, a spring-pressed collar on said shaft controlling said pawl-actuating means, and a pendulum fixed to said shaft and controlling said collar, substantially as set forth.

809,944. **CHAIR.** JAMES B. HANSEM, Washington, D. C. Filed Feb. 1, 1904. Serial No. 191,660.

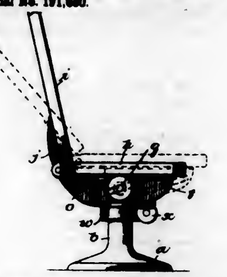

Claim.—1. In a chair, the combination of a base, a support revolubly mounted on said base, a back hinged to said support, said support extending underneath said seat and being hinged to said back at or near a line passing through the vertical center thereof, means for adjusting said seat and back relatively to each other, and means for securing said back and seat against movement after the desired adjustment has been made, substantially as described.

2. In a chair, the combination of a perforated base, a chair-bottom, a back hinged thereto, a plate pivoted to said chair-back and supported by said base, a second plate carried by said chair-bottom, and means for adjustably securing said plates together, substantially as described.

3. In a chair, the combination of a hollow base, a chair-bottom provided with a downwardly-extending plate, a chair-back hinged to said chair-bottom, a curved plate hinged to said chair-back and provided with a spindle engaging said base, and means for adjustably clamping said plates together, substantially as described.

4. In a chair, the combination of a perforated base, a chair-bottom provided with a downwardly-extending slotted plate, a chair-back hinged thereto, a curved plate pivoted to said chair-back and provided with a spindle engaging said base, and means passing through one of the slots in said first-named plate for clamping said plates together, substantially as described.

5. In a chair, the combination of a base provided with a central perforation, the upper part of which is reamed out to form an aperture the upper part of which is in the shape of an inverted cone a chair structure provided with a correspondingly-shaped spindle, a spring between the lower end of said spindle and said base, a plate carried by said chair structure and provided with a friction-collar, and means for tightening said friction-collar to prevent rotation of the chair structure upon said base, substantially as described.

6. In a chair, the combination of a base provided with an upwardly-extending central portion, said portion being provided with a cylindrical recess reamed out at the top, a chair-back, a curved plate attached to said chair-back and provided with a spindle engaging the recess in said base, a second plate parallel to said first-named plate and pivoted on said chair-back, a chair-bottom, a downwardly-extending slotted plate attached to said bottom, locking and guiding means for said three plates passing through said slots, a downwardly-extending part on said last-named plate, a friction-collar carried by said extension, and means for tightening said friction-collar, substantially as described.

809,945. **FEED-REGULATING DEVICE FOR SEWING-MACHINES.** MARTIN HEELAN, Elizabeth, N. J., assignor to The Singer Manufacturing Company, a Corporation of New Jersey. Filed June 12, 1905. Serial No. 264,770.

Claim.—1. In a feeding mechanism for sewing-machines, the combination with a rotary shaft, a transversely-adjustable feed-actu-

cating eccentric mounted upon said shaft, a rock-shaft, a connecting-rod intermediate said eccentric and rock-shaft, adjusting means applied to and adapted to rotate with said eccentric for shifting the same transversely of its supporting-shaft, and a rotary operating device disposed at one side of said shaft and normally disconnected from the adjusting means of said eccentric but adapted to engage the same for varying the eccentricity of said eccentric laterally upon its supporting-shaft.

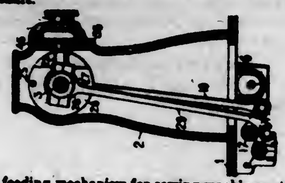

2. In a feeding mechanism for sewing-machines, the combination with a rotary shaft, a transversely-adjustable feed-actuating eccentric mounted upon said shaft, a rock-shaft, a connecting-rod intermediate said eccentric and rock-shaft, adjusting means applied to and adapted to rotate with said eccentric for shifting the same transversely of its supporting-shaft, an endwise-movable rotary spindle disposed radially at one side of said shaft and adapted for operative engagement with the adjusting means of said eccentric, means for maintaining said spindle normally retracted from operative relation with said adjusting means, and a locking device for preventing the rotation of said spindle in retracted position.

3. In a feeding mechanism for sewing-machines, the combination with a rotary shaft, a collar fixed thereon, a feed-eccentric movably mounted on said fixed collar, an adjusting-screw for determining the lateral position of said eccentric in relation to its supporting-collar, an endwise-movable rotary spindle mounted in a fixed support and adapted to register with said adjusting-screw and operatively engage the same for turning it, and means for preventing the disengagement of said spindle from the adjusting-screw excepting in certain predetermined axial positions of the same.

4. In a feeding mechanism for sewing-machines, the combination with a rotary shaft, a collar fixed thereon, a feed-eccentric movably mounted on said fixed collar, an adjusting-screw for determining the lateral position of said eccentric in relation to its supporting-collar, an endwise-movable rotary spindle mounted in a fixed support and adapted to register with said adjusting-screw and operatively engage the same for turning it, a dial carried by said spindle and a stationary pointer cooperating therewith, and means for preventing the disengagement of said spindle from the adjusting-screw intermediate the graduations of said dial.

5. In a feeding mechanism for sewing-machines, the combination with a rotary shaft, a collar fixed thereon, a feed-eccentric movably mounted on said fixed collar, an adjusting-screw for determining the lateral position of said eccentric in relation to its supporting-collar, an endwise-movable rotary spindle mounted in a fixed support and adapted to register with said adjusting-screw and operatively engage the same for turning it, a dial carried by said spindle and provided with a series of peripheral notches, and a stationary pointer-finger cooperating with said dial and provided with a tooth adapted to enter one of said peripheral notches in the dial in the retracted position of said spindle from operative relation with said adjusting-screw but to permit said dial to be rotated freely for the rotation of said adjusting-screw by said spindle.

6. In a feeding mechanism for sewing-machines, the combination with a rotary shaft, a collar fixed thereon, a feed-eccentric movably mounted on said fixed collar, an adjusting-screw for determining the lateral position of said eccentric in relation to its supporting-collar, an endwise-movable rotary spindle mounted in a fixed support and adapted to register with said adjusting-screw and operatively engage the same for turning it, a spring for maintaining said spindle normally retracted from operative engagement with said adjusting-screw, a dial carried by said spindle, and a stationary pointer-finger cooperating with said dial in indicating the axial position of said spindle and provided with a stop-shoulder for operatively engaging said dial to limit the movement of said spindle under the action of its retracting-spring.

809,946. SPRING-GEAR FOR VEHICLES. CHARLES A. HERRICK, Buffalo, N. Y., assignor to Pratt & Letchworth Company, Buffalo, N. Y. Filed Jan. 12, 1905. Serial No. 240,752.

Claim.—1. A connecting-frame for the side springs of vehicle-spring gears, comprising four angle-shaped corner-pieces having longitudinal arms which extend substantially parallel with and are connected to the side springs, and transverse arms which extend inwardly from the longitudinal arms, the inner ends of the transverse arms of opposite corner-pieces being secured together substantially midway between the side springs, substantially as set forth.

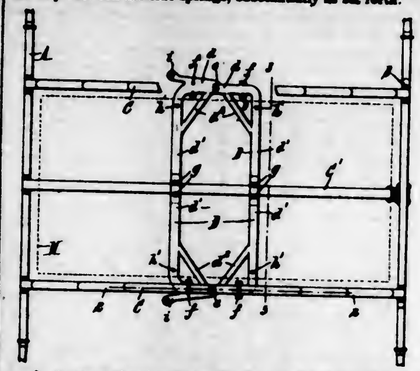

2. A connecting-frame for the side springs of vehicle-spring gears, comprising four corner-pieces, each having a longitudinally-extending arm and a transversely-extending arm, the ends of the longitudinal arms of the pieces at each side of the gear overlapping and being secured together and to the side spring, and the inner ends of the transverse arms of opposite corner-pieces overlapping and being secured together substantially midway between the side springs, substantially as set forth.

3. A connecting-frame for the springs of vehicle-gears having side springs and a center longitudinal member, comprising four angle-pieces having longitudinal arms which extend substantially parallel with and are attached to the side springs, and transverse arms which extend toward and terminate substantially at said center member of the gear, the inner ends of the transverse arms of the corner-pieces being secured to said center member of the gear, substantially as set forth.

4. In a vehicle-spring gear, the combination of side springs, and a connecting-frame comprising four angle-shaped corner-pieces having longitudinal arms which extend substantially parallel with and are connected to the side springs, and transverse arms which extend inwardly from the longitudinal arms, the inner ends of the transverse arms of opposite corner-pieces being secured together substantially midway between the side springs, substantially as set forth.

809,947. BATHING-HAT. FLORENCE B. HERNDON, Dallas, Tex. Filed Dec. 1, 1904. Serial No. 234,054.

Claim.—1. A bathing-hat comprising a brim having a central opening, crown secured at its edge to the brim and the edge of the central opening, and a band comprising two thicknesses of material connected at their inner edges, the outer edges thereof being secured one to the inner face of the crown and the other to the under face of the brim.

2. A bathing-hat comprising a brim having a central opening and having a flexible stiffening-strip at its periphery, a crown secured at its edge to the brim at the edge of the central opening, a band comprising two thicknesses of material connected at their inner edges, the outer edges thereof being secured one to the inner face of the crown and the other to the under face of the brim to prevent leakage of water between the brim and the crown, devices carried by the crown at opposite points thereof and devices carried by the brim at opposite points of its periphery and adapted for engagement with the first-mentioned devices to hold the opposite points of the brim raised.

809,948. PACKAGE. JOHN HUSS, Port Huron, Mich. Filed July 11, 1904. Serial No. 216,163. (Model.)

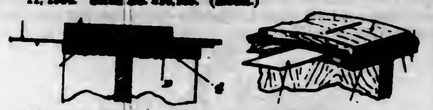

Claim.—1. In a package, a cylindrical body formed of a continuous web, wound into a plurality of plies, the outer and inner plies terminating adjacent to but slightly spaced from each other and the connecting portion of the web being bent therebetween in place.

2. In a package, a cylindrical body formed of a continuous web, wound into a plurality of plies, the outer and inner plies terminating adjacent to, but slightly spaced from, each other and the connecting portion of the web being bent therebetween, in place to produce a substantially cylindrical form.

3. In a package, a cylindrical body formed of a continuous web, wound into a plurality of plies, the edges of the outer and inner ply terminating adjacent to each other with a space between equal to the thickness of the intervening ply or plies and portion of the latter being bent between said edges to maintain the true cylindrical form.

4. A package, comprising a cylindrical body, formed from a continuous web of appreciable thickness, wound into a plurality of plies, the outer and inner ply terminating adjacent to, but slightly spaced from, each other the connecting portion of said web being bent in place, a circular head snugly fitting within said body and a surrounding hoop closely fitting the outer surface of said body.

5. A package, comprising a cylindrical body formed from a continuous web wound into a plurality of plies, the ends of the web terminating adjacent to but slightly short of each other on opposite faces of an intermediate ply, a plurality of hoops surrounding said body and closely fitting the same, whereby that portion of the body in contact with the hoops is forced and held in substantially cylindrical form and the edge of the outer ply is consequently placed under tension, for the purpose described.

6. A package, comprising a cylindrical body formed from a continuous web wound into a plurality of plies, the inner and outer ply terminating adjacent to but slightly short of each other on opposite faces of an intermediate ply, inner and outer hoops attached to said body and closely fitting the same, whereby that portion of the body in contact with the hoops is forced and held substantially cylindrical, thus causing a bending of the material between the adjacent ends of the web, whereby the resiliency of the material will place the outer end of the web under tension.

7. In a package, the combination with a cylindrical body, of a pair of chime-hoops secured within said body and arranged on opposite sides of the head and a tie within said body directly connecting said hoops.

8. In a package, the combination with a cylindrical body, of a pair of chime-hoops secured within said body on opposite sides of the head and a tie connecting said hoops, passing between the same and the head and said body.

9. In a package, the combination with a cylindrical body, of a pair of chime-hoops secured within said body upon opposite sides of the head and a tie connecting said hoops, comprising a strip of sheet metal passing between said hoops and edges of the head and the body.

10. In a package, the combination with a cylindrical body, of a pair of chime-hoops secured therein on opposite sides of the head and a tie between said hoops comprising a strip of metal passing between said hoops and the edges of the head and the body and bent at opposite ends to form hooks, embracing said hoops.

11. In a package, the combination with a cylindrical body, of a pair of chime-hoops secured therein on opposite sides of the head, a tie between said hoops, comprising a strip of metal passing between said hoops and the edges of the head and the body and bent at opposite ends to form hooks, embracing said hoops, and securing-nails passing through said bent ends, the hoop, the strip between the hoop and the cylinder, and into the cylinder.

12. In a package of the class described, the combination of two head-supporting hoops, a head interposed between said hoops, a flat metal strip placed between said hoops, head and the shell of said package, the ends of said strip being folded around said hoops and secured thereto and to said shell, substantially as described.

809,949. WIRE-STRETCHER. JOHN HERSHAMP and OSMAR SHUMAKER, Charlottesville, Va. Filed May 1, 1905. Serial No. 258,269.

Claim.—1. A device of the kind described comprising a shank having a bifurcated portion, a lateral projection, carried by one member of the bifurcated portion, a lever pivoted in the bifurcation and overlapping the projection, a rib formed on the lever, a slotted plate pivoted upon the projection and overlapping the lever, one edge of said plate having a flange adapted to coact with the rib, and a pin carried by the lever and projecting into the slot of the plate.

2. A device of the kind described comprising a shank having a bifurcated portion, said portion being curved adjacent to its end, a stop-block carried in the bifurcation, an angled lever pivoted in the bifurcation and adapted to engage the stop-block, a lateral projection carried by one of the bifurcated members, the angled end of the lever working upon said projection, a rib carried by the lever, a plate pivoted upon the projection and longitudinally slotted, said plate having a curved flanged edge adapted to engage the rib of the lever and a pin carried by the lever adapted to project into and work in the slot of the plate.

809,950. SCALE-MARKINGS FOR RULES, &c. ISAAC W. HEYSINGER and ALLEN LATHAW, Philadelphia, Pa.; said Heysinger assignor to said Lathaw. Filed Feb. 28, 1905. Serial No. 247,728.

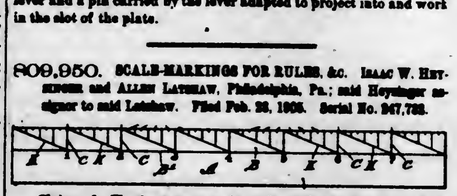

Claim.—1. The improvement in scale-markings for measuring devices, consisting of a rule or bar, a series of transverse, main divisional cross-markings, extending inward from the free margin of said bar, and of equal height, and a series of diagonal lines extending from the marginal end of each of said main divisional cross-markings to the top of the next succeeding main cross-marking, and a series of subdivisional coördinates parallel with said main cross-markings, and connecting said diagonals with the free margin of said bar, together with a series of numerals or the like contiguous to said markings, and adapted to interpret the same, substantially as described.

2. As an article of manufacture, a measuring-rule having one portion thereof longitudinally flat, and the remaining portion beveled to the measuring-margin of said rule, said bevel provided with the divisional markings of said rule, and the flat portion without said markings, said markings consisting of a series of equal, parallel main divisional lines extending across said bevel and at right angles to the margin thereof, said main divisional lines dividing said bevel into a continuous series of rectangular parallelograms, said parallelograms divided by diagonal markings, into two equal right-angled triangles, and subdivisional cross-markings parallel to said main divisional markings, extending from the free margin of the bevel of said rule to the said diagonal, and suitable numerals or the like adapted to interpret the lengths of the same along said margin, substantially as and for the purposes required.

3. As an article of manufacture, a measuring device having its measuring-margin divided into a series of parallelograms, the long sides thereof coincident with said margin, and said parallelograms divided each into two equal right-angled triangles, the apex of each marginal triangle constituting the beginning-point of the longitudinal measurements of each of said parallelograms, and the subdivisional cross-markings extending from the free margin thereof to the said diagonal, and subordinate subdivisions composed of parallel, and equally-directed smaller right-angled triangles, within said main triangles, the subordinate cross-markings thereof, to indicate subordinate lengths along said margin, parallel with the other cross-markings, and connecting said free margin with said subordinate diagonals, substantially as and for the purposes described.

4. As an article of manufacture a measuring device consisting of a base, and along said base a series of right-angled triangles, the apices thereof turned toward the beginning of said base, and the bases of each of said triangles constituting the point of departure of the next succeeding triangle, and a series of cross-markings extending across said triangles, at equal distances along said margin, and at right angles thereto, said cross-markings proportionate, along each triangle, to the altitude of the base of said triangle as com-

pared with the longitudinal measurements along the free margin thereof, substantially as described.

5. A longitudinal measuring device consisting of a bar of suitable length, the upper surface divided longitudinally into two lateral segments, one of said segments left plain, and the body thereof adapted to give substance and weight to said measuring device, and the other of said segments provided with a series of elongated rectangles constituting main divisions, and with a graduated series of longitudinal subdivisions, indicated by cross-markings extending, at right angles from the free margin thereof inward across said marked segment, said subordinate cross-markings having a proportionate and gradually-increased height from said margin, corresponding to the gradually-increased length along said margin, but said cross-markings not equal in actual heights to the lengths of said marginal measurements, substantially as described.

809,951. FLY-PAPER HOLDER. JOHN W. HIXSON, St. Joseph, Mo. Filed Mar. 28, 1905. Serial No. 251,492.

Claim.—1. A fly-paper holder comprising a curved member, paper-fastening devices on said member, a socket member attached to the curved member, and a bracket for engaging in said socket member.

2. A fly-paper holder comprising a transversely-curved plate, rings under the plate, wires extended from said rings to connection with the plate near its ends, a bracket having a portion for engaging in said rings, and spring-clips on the lower edges of said plate.

809,952. MEDICINE-GLASS. CHARLES W. HOOPA, Garrett, Pa. Filed Feb. 28, 1905. Serial No. 247,736.

Claim.—1. As a new article of manufacture a glass formed in a single piece of material comprising a graduated body having an integral conical cover provided with an outlet which is eccentrically arranged therein, said body being adapted to hold liquids when placed in a vertical or horizontal position; and a flange of varying width surrounding the outlet and integral with the body, the widest portion of the flange being located at the center of the top and having a recess therein, the bottom of which curves gradually from the outlet to the edge of the flange, whereby liquid is caused to flow from the outlet and over all portions of the bottom of the recess.

2. As a new article of manufacture a glass formed in a single piece and having an integral top provided with an outlet, said outlet being surrounded by a flange having a spoon-shaped recess therein constituting a secondary receptacle, the bottom of said secondary receptacle being gradually curved from the outlet-opening to the outlet end of the recess.

809,953. ROASTING-FURNACE. OTTOKAR HOFMANN, Argentine, Kans., assignor to The United Zinc and Chemical Company, Kansas City, Mo., a Corporation of New Jersey. Filed Feb. 19, 1904. Serial No. 194,269.

Claim.—1. The combination in a roasting-furnace, of a pipe, hollow radial arms extending therefrom, and water-supply pipes arranged to deliver water into said arms said water-supply pipes being provided with spraying means, substantially as set forth.

2. The combination in a roasting-furnace, of a pipe, hollow radial arms extending therefrom, and water-supply pipes provided with means to spray water in regulated streams into said arms, substantially as set forth.

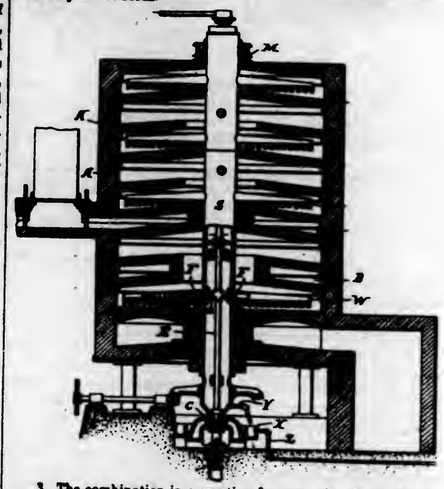

3. The combination in a roasting-furnace, of a pipe, hollow radial arms extending therefrom, water-supply pipes provided with means to spray water into said arms, and passages whereby steam can escape from the arms into said pipe, substantially as set forth.

4. The combination in a roasting-furnace, of the successive hearths, a hollow shaft or pipe 8 extending through the hearths, and supported to rotate, hollow arms carried by the shaft, a water-pipe extending through the shaft 8, and branches extending from the water-pipe into said arms and each provided with openings for spraying water into the arms, substantially as set forth.

5. The combination in a roasting-furnace, of the successive hearths, a hollow shaft 8 extending through the hearths, and supported to rotate, hollow arms carried by the shaft, a water-pipe extending through the shaft 8, and branches extending from the water-pipe into said arms and each provided with openings for spraying water into the arms, said openings being proportioned to the amount of water to be sprayed, substantially as set forth.

6. The combination in a roasting-furnace, of the successive hearths, a hollow shaft 8 extending through the hearths, and supported to rotate, hollow arms carried by the shaft, a water-pipe extending through the shaft 8, branches extending from the water-pipe into said arms and each provided with means for spraying water into the arms, a free outlet at the lower end of the shaft 8, a discharge-pipe Y communicating therewith, and a trough X below the discharge-pipe, whereby to prevent accumulations of water in the shaft, substantially as set forth.

7. The combination in a roasting-furnace, of a shaft, hollow arms extending radially from the shaft, water-supply pipes and means on said pipes for spraying water against the inner faces of the side walls of each arm, substantially as set forth.

8. The combination in a roasting-furnace, of a shaft, hollow arms extending radially through the shaft, water-pipes arranged within and extending longitudinally of the arms, each of said pipes being provided with water-spraying means, and means for supplying water to said pipes, substantially as set forth.

809,954. MORTISING-TOOL. FREDERICK K. HUBER, Colton, Tex. Filed Mar. 21, 1905. Serial No. 251,206.

Claim.—1. A device of the character described, comprising a body, and a longitudinally-movable, swinging cutting-tool slidably connected to the body.

2. A device of the character described, comprising a body, a longitudinally-movable, swinging cutting-tool slidably connected to the body, and means to limit the sliding movement of the tool.

3. A device of the character described, comprising a body, a longitudinally-movable, swinging cutting-tool slidably connected to the body, and means for adjustably limiting the sliding and longitudinal movement of the tool.

4. In a device of the character described, the combination of a body, of a carriage slidably mounted therein, a swinging, cutting device longitudinally movable within the carriage, and adjustable means for limiting the longitudinal movement of the cutting device.

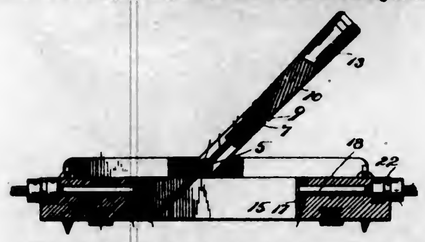

5. In a device of the character described, the combination with a body, of a carriage movable thereon, a swinging, cutting device longitudinally movable within the carriage, adjustable means for limiting the longitudinal movement of the cutting device, and adjustable means for limiting the movement of the carriage.

6. In a device of the character described, the combination with a body, of a carriage movably mounted therein, a swinging member mounted upon the carriage, and a cutting device longitudinally movable within said member.

7. In a device of the character described, the combination with a body, of a carriage movably mounted therein, a swinging member mounted upon the carriage, a cutting device longitudinally movable within said member, and adjustable means for limiting the movement of the cutting device within the swinging member.

8. A device of the character described, comprising a body having an elongated opening therein, and adjustable stop devices within the opening, and a swinging cutting device longitudinally movable within the carriage.

9. A device of the character described, comprising a body having an elongated opening and adjustable stop devices within the opening; a carriage mounted upon the body, a yoke movably connected to the carriage, a cutting device longitudinally movable within the yoke and movable therewith, and means to limit the longitudinal movement of the cutting device within the yoke.

10. In a device of the character described, the combination with a body, guide devices adjustably connected thereto and means for securing the body to a structure, said body having an elongated opening therein; of a carriage mounted upon the body, a yoke movably connected to the carriage, a cutting device longitudinally movable within the yoke and movable therewith, and means to limit the longitudinal movement of the cutting device within the yoke.

809,955. PHOTOMECHANICAL PRINTING. JOHN W. IPPERS, New York, N. Y., assignor to Albert Henry Walker, trustee, New York, N. Y. Filed July 6, 1905. Serial No. 268,344.

Claim.—The following process in photomechanical printing: making a half-tone photograph of a graduated picture or design, through a half-tone screen: making a sensitive gelatin plate on an elastic base: exposing that sensitive gelatin plate to light, through that half-tone photograph: developing that exposed gelatin plate, by bathing it in water, and thereby swelling into relief those areas of the gelatin plate which were under the dark areas of the half-tone photograph, while leaving in depression those areas of the gelatin plate which were under the translucent areas of the half-tone photograph, during the exposure: drying that developed gelatin plate in air: applying glycerin solution to the relief areas of that gelatin plate: applying ink to the depressed areas of that gelatin plate: transferring ink from the depressed areas of that inked gelatin plate to the periphery of a metal roller, by pressing that periphery directly and powerfully upon that gelatin plate; and etching away the uninked areas of that periphery; all substantially as described.

809,956. AMUSEMENT DEVICE. CHARLES H. JARDEN, New York, N. Y. Filed Oct. 10, 1905. Serial No. 282,166.

Claim.—1. In an amusement device, a stationary body representing a vehicle, means whereby the occupants may be seated to face either forwardly or rearwardly, and connections for imparting rocking movements to the stationary body.

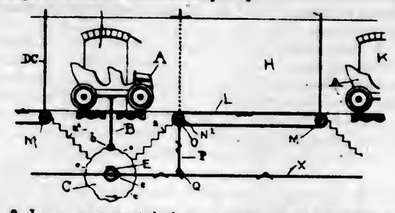

2. In an amusement device, a stationary body representing a vehicle, means for reversing said body to face either forwardly or rearwardly, and connections for imparting rocking movements to the stationary body.

3. In an amusement device, a stationary body representing a vehicle, connections for imparting rocking movements to said body, a flexible body representing a roadway, and connections for moving said flexible body toward the stationary body.

4. In an amusement device, a stationary body representing a vehicle, a flexible body representing a roadway a main shaft and connections therefrom for respectively rocking the stationary body and for moving the flexible body toward the stationary body.

5. In an amusement device, a stationary body representing a vehicle, means whereby the occupants may be seated to face either forwardly or rearwardly, traveling bands representing scenery at opposite sides of the body and means to incline said bands toward each other in the direction viewed by the occupants of the stationary body.

6. In an amusement device, a stationary body representing a vehicle, and connections for imparting rocking movements to said body, said connections including a rotatable barrel provided with peripheral projections and means for rotating said barrel and moving it lengthwise.

809,957. ENVELOP PRINTING AND ADDRESSING MACHINE. MICHAEL P. KENNA, Dubuque, Iowa. Filed Aug. 22, 1904. Renewed May 2, 1905. Serial No. 258,505.

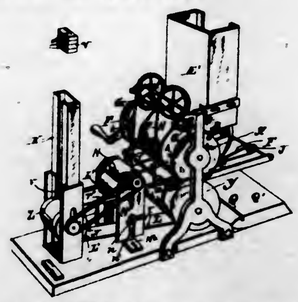

Claim.—1. In a machine of the character described, the combination with two superposed rollers, of a conveyer belt or chain passing between the rollers, a magazine for printing-slugs, means carried by the belt for engaging the slugs and carrying them between the rollers, and inking devices intermediate the magazine and the said rollers.

2. In a machine of the character described, the combination with two superposed rollers, of a conveyer belt or chain passing between the rollers, a magazine for printing-slugs arranged above the belt, catches carried by the belt adapted to engage the slugs and carry them between the rollers and inking devices intermediate the magazine and the said rollers.

3. In a machine of the character described, the combination with two superposed rollers, of a conveyer belt or chain passing between the rollers, a magazine for printing-slugs, means carried by the belt adapted to engage the slugs and carry them between the rollers, a support over which the conveyer-belt travels and inking devices arranged at a point adjacent to and above the said support.

4. In a machine of the character described, the combination with two superposed rollers, of a conveyer belt or chain passing be-

tween the rollers, means for effecting the engagement of one of the

to receive the inner ends of the outer pastiche, and means for locking

tween the rollers, means for effecting the engagement of one of the rollers and the belt as the latter travels around said roller, a magazine for printing-slugs, means for effecting the engagement of the belt and the slugs, and inking devices intermediate the magazine and the rollers.

5. In a machine of the character described, the combination with two superposed rollers, of a conveyer belt or chain passing between the rollers, a magazine for printing-slugs, means for effecting engagement of the belt with the slugs, inking devices intermediate the magazine and rollers, an inclined chute arranged to effect the disengagement of the slugs from the belt and a galley into which the chute is adapted to discharge the disengaged slugs.

6. In a machine of the character described, the combination with two superposed rollers, of a conveyer belt or chain passing between the rollers, a magazine for printing-slugs, means for effecting engagement of the belt with the slugs, inking devices intermediate the magazine and the rollers, an inclined chute arranged to effect the disengagement of the slugs from the belt, and a transversely-adjustable galley into which the chute is adapted to discharge the disengaged slugs.

7. In a machine of the character described, the combination with two superposed rollers, the lower one of which is provided with circumferential grooves, of a conveyer belt or chain passing between the rollers, a magazine for printing-slugs, means for effecting engagement of the belt and slugs, an inclined chute provided with projecting points or spurs adapted to enter the grooves in the roller, and a galley into which the chute is adapted to discharge the disengaged slugs.

8. In a machine of the character described, the combination with two superposed rollers, the lower one having circumferential grooves, of a conveyer belt or chain passing between the rollers, a magazine for printing-slugs, each slug having extensions at the ends to travel in the grooves of the roller, means for effecting the engagement of the belt with the slugs, an inclined chute having projecting points or spurs adapted to enter the grooves in the roller and to disengage the slugs from the belt and a galley into which the chute is adapted to discharge the disengaged slugs.

9. In a machine of the character described, the combination with two superposed rollers, of a conveyer belt or chain passing between the rollers, a magazine for printing-slugs, means carried by the belt for engaging the slugs and carrying them between the rollers, inking devices intermediate the magazine and the said rollers, an envelop-receptacle arranged with its discharge end adjacent to the circumference of the upper roller, clips carried by the upper roller and means for feeding the envelops successively into a position to be grasped by the said clips, and means for operating the clips in the manner and for the purposes specified.

10. In a machine of the character described, the combination with two superposed printing-rollers, of a conveyer belt or chain passing between the rollers, a magazine for printing-slugs, means carried by the belt for engaging the slugs and carrying them between the rollers, inking devices intermediate the magazine and the said rollers, an envelop-receptacle arranged at an inclination with its discharge end adjacent to the circumference of the upper roller, clips carried by the upper roller, feed-tapes arranged to convey the envelops along the receptacle, means for imparting a step-by-step movement to the tapes and means for operating the clips in the manner and for the purpose specified.

11. In a machine of the character described, the combination with two superposed printing-rollers, of a conveyer belt or chain passing between the rollers, a magazine for printing-slugs, means carried by the belt for engaging the slugs and carrying them between the rollers, inking devices intermediate the magazine and the said rollers, an envelop-receptacle arranged at an inclination with its discharge end adjacent to the circumference of the upper roller, clips carried by the upper roller, feed-tapes arranged to convey the envelops along the receptacle, rollers at the ends of the receptacle and upon which the said tapes run, a ratchet-wheel on the shaft of the lower roller, a lever also mounted at one end on the said shaft, a cam on the shaft of the upper printing-roller and upon which cam the opposite end of the lever bears and a pawl on said lever engaging the ratchet-wheel, all arranged for coöperation as described.

809,958. STOCK-TANK. FRED KNEWSY, Holton, Mich. Filed Dec. 2, 1904. Serial No. 235,434.

Claim.—1. The combination with a base, semicylindrical sections adapted to rest on said base, the outer sections having end pieces and an inner section bent at its ends to form a sleeve adapted to receive the inner ends of the outer sections, and means for locking the sections to the base.

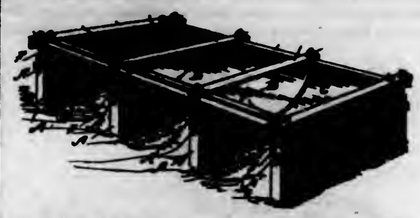

2. A device of the kind described comprising a base, interlocking sections semicylindrical in cross-section, angled bars arranged on the sides of the said sections, angled bars on the ends of the sections, eyes carried by the base, hooks connected to the end bars and adapted to engage a portion of the said eyes, transverse strips, flanged intermediate their ends and bearing on the side bars, and hooks secured to the side bars and adapted to engage a portion of the eyes.

809,959. PROCESS OF SEPARATING MINERALS. EDMUND B. KIRBY, Rossland, Canada. Filed Dec. 14, 1903. Serial No. 185,033.

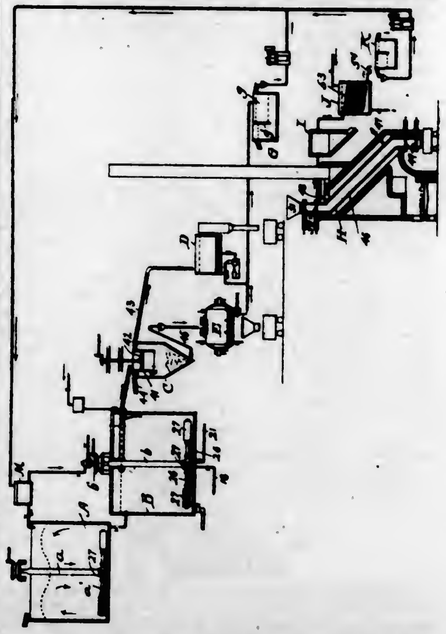

Claim.—1. The process of separating ores, which consists in mixing together pulverized mineral material, a considerable quantity of water, and a substance immiscible in water, but of less specific gravity, and which will, in the presence of water, adhere to some of the mineral particles and not to others; in violently agitating the mass so as to break up said immiscible substance into minute globules; in allowing said mass to settle whereby a considerable quantity of the mineral particles having become coated with said substance will float to the top of the mass, and in gently agitating the portion thereof which settles, and in blowing into the same a gas for the purpose of assisting the flotation of said substance and the mineral particles coated therewith; in removing the floating layer, and in separating the mineral particles from said immiscible substance, substantially as specified.

2. The process of separating ores, which consists in mixing together pulverized mineral material, a considerable quantity of water, and a solution of bitumen in a light hydrocarbon liquid, the proportion of bitumen in solution being substantially sufficient to insure the coating and entrainment of the mineral particles; in violently agitating this mixture to break up said solution into fine globules; in allowing the mass to settle, and then gently agitating the same and blowing in gas to insure the flotation of said solution and the mineral particles coated thereby; in removing the floating layer; and separating the mineral particles from the solution, substantially as specified.

3. The process of separating ores, which consists in mixing together pulverized mineral material, a considerable quantity of water, and a solution of bitumen in a light hydrocarbon liquid, the proportion of bitumen in solution being substantially sufficient to insure the coating and entrainment of the mineral particles; in violently agitating this mixture to break up said solution into fine globules; in allowing the mass to settle, and then gently agitating the same and blowing into it a gas and some of the said solution to insure the flotation of said solution and the mineral particles coated thereby; in removing the floating layer; and separating the mineral particles from the solution, substantially as specified.

4. The process of separating minerals, which consists in mixing together the pulverized mineral material a considerable quantity of water, and a solution of bitumen in a light hydrocarbon liquid; in allowing the same to settle, and removing therefrom the floating layer of said solution and the mineral particles which have been coated thereby; and in filtering the material so removed, substantially as specified.

5. The process of separating minerals, which consists in mixing together the pulverized mineral material, a considerable quantity of water, and a solution of bitumen in a light hydrocarbon liquid, the proportion of bitumen in solution being substantially sufficient to insure the coating and entrainment of the mineral particles; in gently agitating this mixture and blowing gas into the same to assist the flotation of said solution and the mineral particles which have been coated thereby; in removing said floating layer; and filtering the same, substantially as specified.

6. The process of separating minerals which consists in mixing together the pulverized mineral material, a considerable quantity of water, and a solution of bitumen in a distillable hydrocarbon liquid, the proportion of bitumen in solution being substantially sufficient to insure the coating and entrainment of the mineral particles; in allowing the same to settle, and removing therefrom the floating layer of said solution and the mineral particles which have been coated thereby; in filtering the material so removed; and in distilling the concentrate residue and condensing the hydrocarbon vapors driven off, substantially as specified.

7. The process of separating minerals, which consists in mixing together the pulverized mineral material, a considerable quantity of water, and a solution of bitumen in a distillable hydrocarbon liquid; in gently agitating this mixture and blowing gas into the same to assist in the flotation of said solution and the mineral particles which have been coated thereby; in removing the floating layer, and filtering the same; and in distilling the concentrate residue and condensing the hydrocarbon vapors driven off, substantially as specified.

8. The process of separating minerals, which consists in mixing together the pulverized mineral material, a considerable quantity of water, and a solution of bitumen and kerosene; in gently agitating this mixture, and in blowing a gas into the same to assist in the flotation of said solution and the mineral particles which have been coated thereby; and in separating said solution and mineral particles, substantially as specified.

9. The process of separating minerals, which consists in mixing together the pulverized mineral material, a considerable quantity of water, and a solution of bitumen in kerosene, and in vigorously agitating this mixture so as to break up said solution into minute globules; in gently agitating said mixture and blowing a gas into the same to assist in the flotation of said solution and the mineral particles coated thereby; in removing the floating layer; in washing and filtering the same; and finally in distilling the concentrate residue and condensing the hydrocarbon vapors driven off, substantially as specified.

809,960. CABINET-WORK FOR SEWING-MACHINE TABLES. THOMAS KENNEY, Lakewood, Ohio. Filed Sept. 26, 1905. Serial No. 280,155.

Claim.—1. Cabinet-work for a sewing-machine table comprising a table-top; a drawer-case arranged in under an end of the table-top and comprising a horizontally-arranged top and shelves spaced vertically to form compartments, with the top of the drawer-case attached to the table-top, and the drawers in the aforesaid compartments, with each drawer provided at its forward end and inner side with a laterally and inwardly projecting extension provided with a compartment, and each shelf being provided at its forward end and inner side with a laterally and inwardly projecting extension arranged to afford bearing to the extension of the drawer on the said shelf.

table-top and provided at its forward end with a laterally and inwardly projecting cover-forming extension, and the drawers in the aforesaid compartments, with each drawer provided at its forward end and inner side with a laterally and inwardly projecting extension provided with a compartment, with the compartment of the extension of the upper drawer arranged to be covered by the aforesaid cover-forming extension of the top of the drawer-case in the inner and closed position of the last-mentioned drawer.
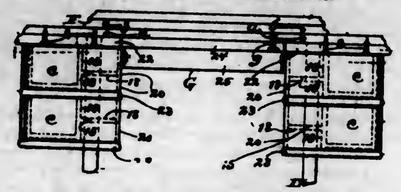
2. Cabinet-work for a sewing-machine table comprising a table-top; a suitably-supported drawer-case arranged in under an end of the table-top and comprising a horizontally-arranged top and a shelf arranged a suitable distance below the last-mentioned top, with the said top of the drawer-case provided at its forward end with a laterally and inwardly projecting cover-forming extension, and the drawer in the compartment formed between the shelf and the top of the drawer-case and provided at its forward end and inner side with a laterally and inwardly projecting extension provided with a compartment, with the compartment of the extension of the drawer arranged to be covered by the aforesaid cover-forming extension of the top of the drawer-case in the inner and closed position of the drawer.

3. Cabinet-work for a sewing-machine table comprising a table-top; a suitably-supported drawer-case arranged in under an end of the table-top and comprising a compartment for a forwardly and rearwardly movable drawer, a drawer in the said compartment, which drawer is provided at its forward end and inner side with a laterally and inwardly projecting extension provided with a compartment.

4. Cabinet-work for a sewing-machine table comprising a table-top; a drawer-case arranged in under an end of the table-top and comprising a horizontally-arranged top and shelves spaced vertically to form compartments, with the top of the drawer-case attached to the table-top, and the drawers in the aforesaid compartments, with each drawer provided at its forward end and inner side with a laterally and inwardly projecting extension provided with a compartment, and each shelf being provided at its forward end and inner side with a laterally and inwardly projecting extension arranged to afford bearing to the extension of the drawer on the said shelf.

5. Cabinet-work for a sewing-machine table, comprising a table-top; a drawer-case arranged in under an end of the table-top and comprising a horizontally-arranged top and a drawer-receiving compartment next below the last-mentioned top, with the drawer-top arranged next below the table-top and provided at its forward end and inner side with a laterally and inwardly projecting cover-forming extension, and a drawer in the said compartment, which drawer is provided at its forward end and left-hand side with a laterally and inwardly projecting extension having a compartment formed therein and arranged to be covered by the aforesaid extension of the drawer-top in the closed position of the drawer.

6. Cabinet-work for a sewing-machine table, comprising a table-top; a drawer-case arranged in under an end of the table-top and comprising a horizontally-arranged top frame and a drawer-receiving compartment next below the said top frame, with the latter arranged next below and removably attached to the table-top and provided at its forward end and inner side with a laterally and inwardly projecting cover-forming extension, and a drawer in the said compartment, which drawer is provided at its forward end and inner side with a laterally and inwardly projecting extension having a compartment formed therein and arranged to be covered by the aforesaid extension of the top frame of the drawer in the closed position of the drawer.

7. Cabinet-work for a sewing-machine table, comprising a table-top; two drawer-cases arranged in under opposite ends respectively of the table-top and comprising each a horizontally-arranged top and a drawer-receiving compartment next below the said drawer-top, with the latter arranged next below the table-top and provided at its forward end and inner side with a laterally and inwardly projecting cover-forming extension; a drawer in the said compartment, which drawer is provided at its forward end and inner side with a

laterally and inwardly projecting extension having a compartment formed therein and arranged to be covered by the aforesaid extension of the drawer-top in the closed position of the drawer.

8. Cabinet-work for a sewing-machine table, comprising a table-top; two drawer-cases arranged in under opposite ends respectively of the table-top and comprising each a horizontally-arranged top and a drawer-receiving compartment next below the said drawer-top, with the latter arranged next below the table-top; a drawer for the said compartment, and a central drawer arranged and extending between the drawer-cases and having a front pivoted vertically near one extremity to the table-top, with the upper portion of the said front projecting forwardly of the lower portion of the said front and arranged flush at its outer surface and corresponding in dimension vertically with the forward edges of the tops of the drawer-cases.

9. Cabinet-work for a sewing-machine table, comprising a table-top; two drawer-cases arranged in under opposite ends respectively of the table-top and comprising each a horizontally-arranged top and a drawer-receiving compartment next below the said drawer-top, with the latter arranged next below the table-top and provided at its forward end and inner side with a laterally and inwardly projecting cover-forming extension; a drawer in the said compartment, which drawer is provided at its forward end and inner side with a laterally and inwardly projecting extension having a compartment formed therein and arranged to be covered by the aforesaid extension of the drawer-top in the closed position of the drawer, and a central drawer arranged and extending between the extensions of the drawers of the two drawer-cases, said central drawer having a front pivoted vertically near one extremity to the table-top, with the upper portion of the said front projecting forwardly of the lower portion of the said front and arranged flush at its outer surface and corresponding in dimension vertically with the forward edges of the tops of the drawer-cases.

10. The combination, with the table-top of a sewing-machine table and the metal legs or frames arranged below the table-top a suitable distance from opposite ends respectively of the table-top, of drawer-cases arranged next below the table-top at the outer sides of the aforesaid legs or frames and comprising each a top arranged next below the table-top at the outer side of the adjacent leg or frame, and a drawer supported from each drawer-case next below the top of the said drawer-case and movable forwardly and rearwardly in opening and closing respectively, which drawer is provided at the forward end and inner side with a laterally and inwardly projecting extension which has a compartment and is arranged forward of and instrumental in concealing the adjacent leg or frame, and the top of each drawer-case being provided at its forward end and inner side with a laterally and inwardly projecting extension arranged to cover the compartment in the extension of the aforesaid drawer of the said case in the closed position of the drawer.

11. The combination, with the table-top of a sewing-machine table and the metal legs or frames arranged below the table-top a suitable distance from opposite ends respectively of the table-top, of drawer-cases arranged below the table-top at the outer sides of the aforesaid legs or frames, and a drawer supported from each drawer-case and movable forwardly and rearwardly in opening and closing respectively, which drawer is provided at the forward end and inner side with a laterally and inwardly projecting extension which has a compartment and is instrumental in concealing and abuts against the adjacent leg or frame in the closed position of the drawer.

12. The combination, with the table-top of a sewing-machine table and the metal legs or frames arranged below the table-top a suitable distance from opposite ends respectively of the table-top, of drawer-cases arranged below the table-top at the outer sides of the aforesaid legs or frames, and a drawer supported from each drawer-case and movable forwardly and rearwardly in opening and closing respectively, which drawer is provided at the forward end and inner side with a laterally and inwardly projecting extension arranged forward of and instrumental in concealing the adjacent leg or frame.

809,961. RAILWAY-TIE. JOHN P. LANGSNER, Cincinnati, Ohio, assignor of one-fourth to William H. Pridmore, Cincinnati, Ohio. Filed Apr. 27, 1905. Serial No. 257,782.

Claim.—1. A railway-tie member, a chair member adapted to be housed within said tie member, clamp members or levers, adapted to bear upon the under side of said tie member and to engage the rail base-flanges and a locking member effective to stride one of said clamp members and to interlock therewith and with said tie member and the base-flange of a rail.

2. A railway-tie member, a chair member adapted to be housed within said tie member, clamp members or levers adapted to bear upon the under side of said tie member and to engage the rail base-flanges, and a locking member effective to stride one of said clamp members and having a reversely-curved end portion adapted to extend down through an opening in said tie member and in under the latter, and means for securing the opposite end of said locking member in place.

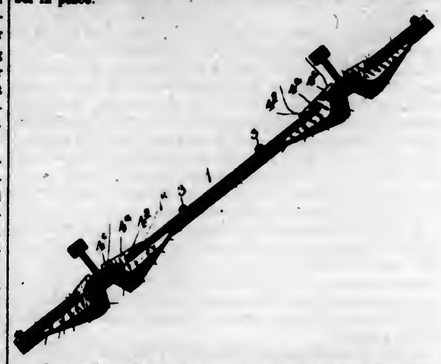

3. A railway-tie member, a chair member adapted to be housed within said tie member, clamp members or levers adapted to bear upon the under side of said tie member and to engage the rail base-flanges, and a locking member effective to stride one of said clamp members and to extend down through an opening in said tie member and means for securing the opposite end of said locking member in place.

4. A railway-tie member, a chair member adapted to be housed within said tie member, clamp members or levers adapted to bear upon the under side of said tie member and to engage the rail base-flanges, and a locking member having a slotted reversely-curved end portion, effective to stride one of said clamp members and to extend down through an opening in said tie member and means for securing the opposite end of said locking member in place.

809,962. WRENCH AND ANALOGOUS ARTICLE. OSCAR A. LAKE, Adrian, Mich. Filed Feb. 6, 1905. Serial No. 244,573.

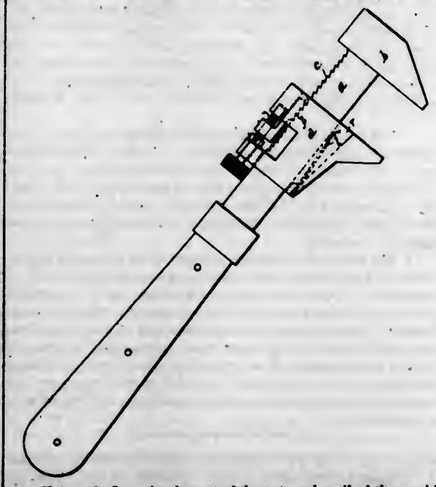

Claim.—1. In an implement of the nature described the combination of a shank provided with a fixed jaw and toothed upon the side thereof opposite said jaw, a sliding jaw provided with a sleeve passing entirely around said shank and movable longitudinally thereupon, and constructed with an open recess on the outside thereof forming two shoulders adjacent to the teeth of the shank, a dog engaged with said sleeve to engage the teeth of the shank having an arm extending into said recess, and a screw to engage said arm and the adjacent shoulders of the sleeve, the sleeve of the sliding jaw cut away on the side of the fixed jaw forming a wedge-shaped chamber to permit the sliding jaw to tilt upon the shank to permit the disengagement of the dog from the shank, and a free movement of the sliding jaw longitudinally upon the shank, the sliding jaw arranged to be tilted toward the fixed jaw by pressing the rear end of said screw toward said shank.

2. In an implement of the nature described the combination of a shank provided with a fixed jaw and toothed upon the side thereof opposite said jaw, a sliding jaw provided with a sleeve surrounding said shank and movable longitudinally thereupon and constructed with an open recess on the outer side thereof adjacent to the teeth of the shank, said sleeve provided with an orifice enlarged at the end thereof toward the fixed jaw and on the side of the fixed jaw, to permit the tilting of the sliding jaw, a dog engaged with said sleeve on the side thereof opposite the sliding jaw to engage the shank, a screw to engage the dog, and a spring within said orifice of the sleeve to hold the dog in normal engagement with the shank, whereby the dog may be lifted out of engagement with the shank by tilting the sliding jaw and moved longitudinally thereof substantially as set forth, the sliding jaw arranged to be tilted toward the fixed jaw by pressing the rear end of said screw toward the shank.

3. In an implement of the nature described, the combination of a shank provided with a fixed jaw and toothed on the side thereof opposite the jaw, a sliding jaw provided with a sleeve mounted on said shank and constructed with an open recess on the outer side thereof adjacent to the teeth of the shank and arranged to permit the tilting of the front end of the jaw upon the shank, a dog of rectangular form engaged within the recess of said sleeve, said dog having a toothed portion at its forward end projecting under the forward end of the sleeve, and a screw to engage the opposite end of the dog, said dog movable with the tilting of the jaw, the sliding jaw arranged to be tilted toward the fixed jaw by pressing the rear end of said screw toward the shank.

4. In an implement of the nature described the combination of a shank provided with a fixed jaw and toothed upon the side thereof opposite said jaw, a sliding jaw provided with a sleeve surrounding said shank and movable longitudinally thereupon, a dog engaged with said sleeve on the side thereof opposite the sliding jaw to engage the teeth of the shank, and a screw to engage the dog, the sleeve of the sliding jaw constructed to tilt upon the shank to permit the disengagement of the dog from the shank, and the free movement of the sliding jaw longitudinally upon the shank, said screw passing through the fixed jaw.

809,963. FLANGED-JOINT CASING FOR HEAT-INSULATING PIPES. MICHAEL J. LOUGHRAN, New York, N. Y. Filed Aug. 11, 1904. Serial No. 220,286.

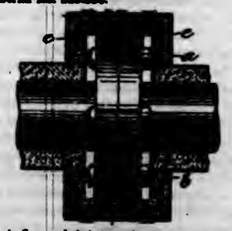

Claim.—1. A flanged-joint casing comprising semicylindrical sections of heat-insulating character and embodying end flanges forming contracted openings, and a metal reinforce for each section and having turned-edge portions, said reinforce being positively combined with and reinforcing the peripheral portion and end flanges respectively, of its section.

2. A flanged-joint casing comprising semicylindrical sections of heat-insulating character and embodying end flanges forming contracted openings and regularly disposed with respect to the peripheral portions of their sections, and a metal reinforce for each section, having turned-edge portions, said reinforce being embedded between the inner and outer surfaces of the peripheral portion and end flanges respectively, of its section.

3. A flanged-joint casing comprising semicylindrical sections of heat-insulating character and embodying end flanges forming contracted openings and regularly disposed with respect to the peripheral portions of their sections, and a reinforce of wire fabric, for each section and having turned-edge portions, said reinforce being positively embedded in and reinforcing the peripheral portion and end flanges respectively, of its section.

4. A flanged-joint casing comprising semicylindrical sections of heat-insulating character and embodying end flanges forming contracted openings, a metal reinforce for each section and having turned-edge portions, said reinforce being positively combined with and reinforcing the peripheral portions and end flanges respectively, of its section, and a textile-fabric covering secured to the peripheries and end flanges of both sections, as well as to the contacting edges of said sections, said covering being disposed to form a flexible connection for both sections at one side and a joint-overlying flap at the other side.

809,964. CUSHION-TREAD AND THE LIKE FOR BOOTS AND SHOES. LOUIS R. LOEWENHERZ and HERBERT W. NEWTON, Boston, Mass. Filed Mar. 20, 1905. Serial No. 250,980.

Claim.—1. A cushion-tread for boots and shoes comprising, essentially a lift, a socket applied to the said lift, a sleeve or jacket removably fitting within the said socket, a cushioning-plug contained within the said sleeve or jacket, and one or more latches locking the sleeve or jacket and its contained plug within the said socket.

2. A cushion-tread for boots and shoes comprising, essentially, a lift, a socket seated within a hole in said lift, a cushioning-plug provided with an inclosing jacket entering the said socket, and one or more latches whereby the jacketed plug is removably locked in place within the said socket.

3. In a cushion-tread for boots and shoes, in combination, a block of cushioning material, a sleeve or jacket inclosing a portion of the length of the said block and provided with means for preventing withdrawal of the block therefrom, a lift, a socket applied to the said lift and within which the said sleeve or jacket removably fits, and one or more latches locking the sleeve or jacket and its contained plug in place within the sleeve.

4. In a tread for boots and shoes, in combination, a lift, a socket seated within a hole in said lift and provided with means whereby it is secured against withdrawal, a plug removably fitting within the said socket, and one or more latches whereby the said plug is locked in place within the said socket.

5. In a cushion-tread for boots and shoes, in combination, a lift, a socket seated within a hole in said lift and radially enlarged at its inner end, whereby it is secured against withdrawal, a block of cushioning material, a sleeve or jacket containing said block, provided with an inwardly-projecting catch to retain the latter within the same, and removably fitting within said socket, and means to lock the said sleeve or jacket in place within the said socket.

6. A cushion-tread for boots and shoes comprising, essentially, a lift provided with a socket, a cushioning-plug provided with a sleeve or jacket removably fitting within the said socket, and one or more latches applied to the said sleeve or jacket and held by the cushioning material in engaging position, whereby the plug is secured within the socket through engagement of the latches with the latter.

7. A tread for boots and shoes comprising, essentially, a lift, a socket seated within a hole in said lift, a plug entering the said socket from the exterior of the latter, and one or more elastically-operated latches whereby the plug is retained in place within the socket.

809,965. FISHING DEVICE. ANDREW O. LUTHER, Eagle Lake, Minn. Filed Filed July 21, 1902. Serial No. 116,478.

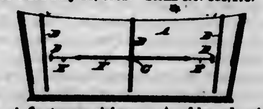

Claim.—1. A float comprising a pair of boards with their bottom edges weighted and arranged parallel and their lower portions diverging from each other, and braces for rigidly holding the boards in such position; in combination with a rod having a flexible connection at each end with the side of one of the boards, a ring slidable on the rod, and a fishing-line carried by the ring.

2. In a device of the character described, a float, a yielding spring-wire rod having a flexible connection at each end with the float, a ring slidable on the rod, and a fishing-line carried by the ring.

3. In a device of the character described, a fleet, a yielding spring-rod connected to the fleet in a horizontal position, a ring slidable on the rod, and a fishing-line passed through the ring, whereby the fleet may be trolled at a distance by means of the fishing-line and when the direction of pull is changed the yielding nature of the spring-rod causes it to bow to offer less resistance to the passage of the ring to the other end thereof.

809,966. STOPPING AND STARTING DEVICE FOR MOTOR-DRIVEN APPARATUS. WALTER B. MANEY, New York, N. Y., assignor to Pike Adding Machine Company, Orange, N. J., a Corporation of New Jersey. Filed Aug. 1, 1905. Serial No. 272,575.

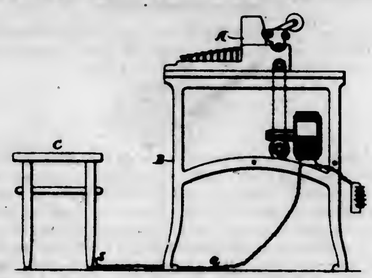

Claim.—1. The combination with a machine and its motor and a movable stool for the operator, of a stopping and starting device arranged upon the stool to be shifted by the presence of the operator, and a flexible connection between said device and the motor, of a character to permit the stool to be shifted to different positions, substantially as set forth.

2. The combination with a machine, its electric motor and a movable stool, of a switch upon the stool, a spring separating the terminals of the switch and arranged to be compressed when the stool is occupied, and a flexible connection between the switch and motor, of a character to permit the stool to be shifted to different positions, substantially as set forth.

809,967. GATE. BENJAMIN H. MARTIN, Bay City, Mich. Filed Oct. 5, 1905. Serial No. 281,402.
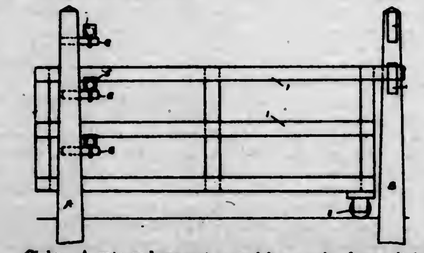
Claim.—A gate and support comprising a pair of oppositely-located posts, a plurality of rigid catches projecting from one post, a plurality of brackets mortised into the remaining post and extending in a direction approximately opposite to that in which the catches extend, rollers swiveled in said brackets, an adjustable gate-frame supported on certain only of the rollers, one rail of the gate being projected beyond the frame and adapted to overlap one of the posts and rest in one of the catches to support the free end of the gate, the gate-frame adapted to be raised and lowered and to be supported on certain only of the rollers, the remaining rollers being out of use, the rail extension adapted to engage one or the other of the catches depending upon the position of the gate-frame.

809,968. ROPE-DRIVE. THOMAS S. MILLER, South Orange, N. J. Filed Feb. 21, 1903. Serial No. 144,423.

Claim.—1. In combination, a revolving shaft, a driving member revolubly fixed thereon, a rope-drum revolubly loose thereon, an interposed clutch, automatically-operating mechanism revolving with the shaft whereby said clutch is set and manually-controlled mechanism whereby the same is unset.

2. In combination, a revolving shaft, a driving member revolubly fixed thereon, a rope-drum revolubly loose thereon, an interposed clutch, a clutch-setting motor revolving with the shaft and a clutch-unsetting actuator having stationary bearings.

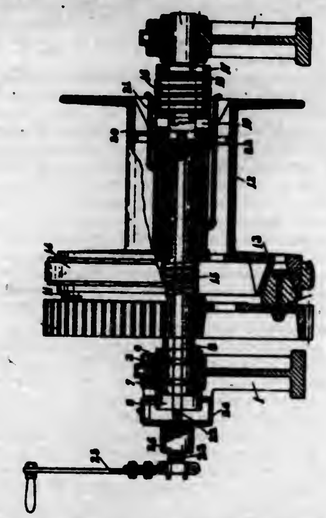

3. In combination, a revolving shaft, a driving member revolubly fixed thereon, a rope-drum revolubly loose thereon, an interposed clutch, a clutch-setting motor revolving with the shaft and a manually-controlled mechanism whereby the clutch is unset.

4. In combination, the shaft, the driving member and rope-drum thereon, the interposed friction members, automatically-operating mechanism whereby said friction members are set and a thrust-pin in said shaft cooperating with said automatic mechanism.

5. In combination, the shaft, the driving member and rope-drum thereon, an interposed clutch, automatically-operating mechanism whereby said clutch is set and manually-controlled mechanism having a longitudinal movement on the shaft whereby the clutch is unset.

6. In combination, the shaft, the driving member, and rope-drum thereon, the interposed friction members, a spring interposed between the driving member and the drum tending to unset said friction members, a more powerful spring at the opposite end of said drum tending to set said friction members and mechanism whereby the pressure of the latter spring is controlled.

7. In combination, a driving and driven members, the interposed friction members, mechanism tending to set said friction members, mechanism tending to unset said friction members and means whereby the relative power exerted by said mechanisms may be controlled for the setting or unsetting of said friction members.

8. In combination, a revolving shaft, a driving member revolubly fixed thereon, a rope-drum revolubly loose thereon, an interposed clutch, automatically-operating mechanism whereby said clutch is set, means whereby the power of said mechanism is adjusted and manually-controlled mechanism whereby said clutch is unset.

9. In combination, a revolving shaft, a driving member revolubly fixed thereon, a rope-drum revolubly loose thereon, a clutch interposed between the drum and the driving member, a thrust-bearing carried by the shaft, automatically-operating mechanism for setting said clutch interposed between the thrust-bearing and the drum, and means whereby the power on said mechanism is adjusted and controlled.

10. In combination, a shaft, a driving member thereon, a rope-drum, an interposed clutch, a clutch-setting motor revolving with the drum and a manually-operated device extending through said driving member whereby said clutch is unset.

11. In combination, a revolving shaft, a driving member revolubly fixed thereon, a rope-drum revolubly loose thereon, an interposed clutch, a clutch-setting motor revolving with the shaft and a thrust-pin concentric with the shaft whereby the clutch is unset.

12. In combination, a longitudinally-fixed shaft, a driving member thereon, a rope-drum, an interposed clutch, an automatically-operating clutch-setting mechanism, a clutch-unsetting actuator having stationary bearings, a connection through which the clutch is unset by the movement of said actuator.

13. A rope-drum, in combination with the following controlling devices, viz: a friction-brake, a friction-clutch, an automatically-operating motor revolving with the drum whereby the clutch is set and a manually-operated device whereby the clutch is unset.

14. A rope-drum, in combination with the following controlling devices, viz: a friction-clutch, a clutch-setting spring having both its thrust-bearings rotating with the drum, and a manually-operated clutch-unsetting mechanism.

809,969. GLASS-MOLDING APPARATUS. MCCLELLAND MYERS, Mexico, Pa. Filed Mar. 23, 1905. Serial No. 251,499.

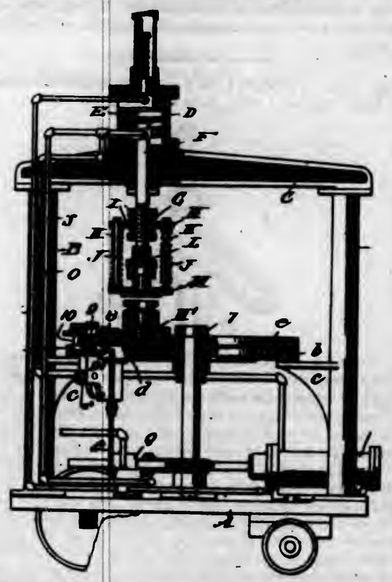

Claim.—1. In a glass-molding apparatus, a stationary table, a shaft journaled centrally of the table and extending therethrough, a second table held by the shaft and arranged over the stationary table, a ratchet fixed on the shaft beneath the stationary table, an arm arranged on the shaft, a dog carried by the arm to engage the ratchet, means for oscillating the arm, and molds carried by the movable table.

2. In a glass-molding apparatus, a stationary table, a shaft journaled centrally thereof and extending therethrough, a second table held by the shaft and arranged above the stationary table, a ratchet fixed on the shaft, a slotted arm arranged on the shaft, a dog carried by the arm to engage the ratchet, a rod, means passing through the slot of the arm to pivotally secure the rod to the arm, and means for reciprocating the rod.

3. In a glass-molding apparatus, a stationary table, a shaft journaled centrally thereof and extending therethrough, a second table held by the shaft and arranged above the stationary table, a ratchet fixed on the shaft, a slotted arm arranged on the shaft, a dog carried by the arm to engage the ratchet, a rod, means passing through the slot of the arm to pivotally secure the rod to the arm, a guide for the rod and fluid means for reciprocating the rod.

4. In a glass-pressing machine, a stationary table, a movable table thereon, means for rotating the movable table, molds on the movable table, means whereby the movement of the table actuates portions of the molds, means for alternately rotating and arresting the movable table, means for holding it in its arrested position, a suitably-operated presser and means whereby the table-arresting means controls the presser-operating mechanism and the table-operating mechanism.

5. In a glass-pressing machine, a stationary table, a table movable with relation to the stationary table, molds carried by the movable table, means whereby the movement of the table actuates certain portions of the molds, means for holding the tables in certain relation, a presser acting in conjunction with the top of the molds, means under the control of the table-holding device for projecting the presser and means for retracting the presser when the table is released.

6. In a glass-pressing machine, a stationary table, a movable table, molds carried by the movable table, means whereby the movement of the table actuates certain portions of the molds, means for holding the tables in certain relation, a presser acting in conjunction with the top of the molds, means under the control of the table-holding device for projecting the presser, means for retracting the presser when the table is released, and means for actuating the table at the time the presser is being retracted.

7. In a glass-molding apparatus, a stationary table, a movable table arranged thereover, molds carried by the movable table, means carried by the molds for both threading and ejecting, means for rotating the movable table, and means carried by the movable table acting in conjunction with the stationary table for operating the threading and ejecting means when the movable table is rotated.

8. In a glass-molding apparatus, a suitable frame, a stationary table thereon, a table movable with relation to the stationary table, molds carried by the movable table adapted to mold the article in its upright position, means for pressing the material from the exterior and top, means for actuating the presser, means for rotating the table, means for retracting the presser, means intermittently holding the stationary table in fixed relation to the movable table, means for releasing the movable table and means for simultaneously controlling the presser-operating mechanism and table-actuating mechanism.

9. In a glass-molding machine, a suitable frame, a stationary table supported thereon, camming-grooves in the table, a rotatable table acting in conjunction with the stationary table, means for intermittently rotating the table, means for intermittently retaining the rotatable table stationary, molds carried by the movable table, a presser acting in conjunction with the molds successively, means carried by the movable table and coacting with the camming-grooves of the stationary table for operating portions of the molds as and for the purposes described.

10. In a glass-molding apparatus, a stationary table, a shaft extending through the stationary table, a movable table on the shaft coacting with the stationary table, molds carried by the movable table, means on the molds for threading the article internally, means carried by the movable table whereby the threading apparatus is actuated, means whereby the rotation of the movable table with relation to the stationary table causes the actuation of the threading means, and means for intermittently rotating the table, substantially as described.

11. In a glass-molding machine, a suitable frame, a table supported thereon, camming-grooves in the table, a rotatable table acting in conjunction with the stationary table, a shaft on which the rotatable table is mounted, a ratchet-wheel on the shaft, a ratchet engaging the wheel, means for operating the ratchet to intermittently rotate the table, means for intermittently retaining the tables stationary, molds carried by the movable table, a presser acting in conjunction with the molds successively, means carried by the movable table and coacting with the camming-grooves of the stationary table for operating portions of the molds as and for the purposes described.

12. In a glass-molding machine, a stationary table, a movable table arranged thereover, molds carried by the movable table, threading-sleeves carried by the movable table and extending within the molds, means for rotating the movable table and means carried by the movable table acting in conjunction with the stationary table for operating the threading-sleeve and extract the same when the movable table is rotated.

13. In a glass-molding machine, a stationary table, a movable table arranged thereover, molds carried by the movable table, bolts carried by the table extending within the molds, a threading-sleeve rotatable on each of the bolts, means for rotating the movable table, means whereby the rotation of the movable table rotates the threading-sleeve, and ejecting means carried by the bolts.

14. In a glass-molding machine, a stationary table, a movable table arranged thereover, molds carried by the movable table, bolts carried by the table extending within the molds, a threading-sleeve rotatable on each of the bolts, means for rotating the movable table, means whereby the rotation of the movable table rotates the threading-sleeve, and ejecting means carried by the bolts, passing through the sleeves.

15. In a glass-molding machine, a stationary table, a movable table arranged thereover, molds carried by the movable table, bolts

carried by the table extending within the molds, a threading-sleeve rotatable on each of the bolts, means for rotating the movable table, means whereby the rotation of the movable table rotates the threading-sleeve, the upper portions of the bolts being reduced and passing through the sleeves.

16. In a glass-molding apparatus, a table, molds carried by the table, bolts carried by the table extending within the molds, a sleeve on each of the bolts, and means for reciprocating the sleeve on the bolt.

17. In a glass-molding apparatus, a table, molds carried by the table, bolts carried by the table extending within the molds, a sleeve on each of the bolts, and means for simultaneously reciprocating and rotating the sleeve on the bolt.

18. In a glass-molding apparatus, a table, molds carried by the table, bolts carried by the table extending within the molds, a sleeve threaded on each of the bolts, and means for rotating the sleeve on the bolt.

19. In a glass-molding apparatus, a table, molds on the table, bolts on the table extending within the molds, a sleeve threaded on the bolt, a pinion on the sleeve and means meshing with the pinion to rotate the sleeve on the bolt.

20. In a glass-molding machine, a movable table, molds on the movable table, a presser-head to coact with the molds successively, means for operating the head, means for intermittently moving the table, means for arresting the movement of the table, and suitable connections whereby the arresting means controls the operating means of the presser-head, and table-moving means.

21. In a glass-molding machine, a movable table, means for moving the table, a rod engaging the table to hold the table against movement, said rod having a notch, a spring-pressed rod engaging the notch when the rod is released from the table.

22. In a glass-molding machine, a movable table, means for moving the table, a rod engaging the table to hold the table against movement, said rod having a notch, a spring-pressed rod engaging the notch when the rod is released from the table, and means for disengaging the spring-lever from the notch.

23. In a glass-molding machine, a movable table, means for moving the table, a rod engaging the table to hold the table against movement, said rod having a notch, a spring-pressed rod engaging the notch when the rod is released from the table, and means whereby the movable table disengages the spring-lever from the notch.

24. In a glass-molding machine, a movable table, lugs on the table, means for moving the table, a rod normally engaging the table to arrest the movement thereof, means for releasing the rod from the table, a spring-pressed rod to engage the rod when released from the table, and a pivoted rod connected to the spring-rod, said pivoted rod being so arranged as to be engaged by the lugs of the movable table to release the spring-rod from the rod of the table.

809,970. **DAMPER-LEVER FLANGE FOR PIANO-ACTIONS.** WILLIAM W. MCCALL, Kansas City, Mo., assignor of one-fifth to William F. Stone and one-fifth to Ursula L. McCall, both of Kansas City, Mo. Filed Jan. 3, 1905. Serial No. 239,213.

Claim.—1. The combination in a one-piece flange of a base portion, a neck portion extending from said base, a depending offset on said neck, an upwardly-curved spring portion extending from said offset, a lip on the end of said spring portion, and an overlapped strengthening portion on said base, substantially as set forth.

2. In combination with a suitable rail, a device of the class described comprising a base portion secured to said rail, a neck portion extending outwardly from said base, a curved offset portion depending from said neck, a curved spring portion continuing from said offset, and a lip on the end of said spring portion, substantially as set forth.

3. In combination with a suitable rail, a device of the class described comprising a base portion secured to said rail, a neck portion extending outwardly from said base, an offset portion depending from said neck, and a spring portion extending upwardly and inwardly from said offset, and a suitable lever having a perforation therein fitting over said spring and offset portions, substantially as set forth.

809,971. **PLUMBER'S TRAP.** JOHN F. MCCARTHEY, Worcester, Mass. Filed Jan. 2, 1904. Serial No. 187,412.

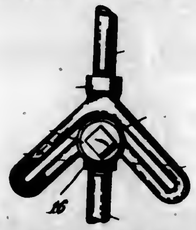

Claim.—1. As an article of manufacture, a plumber's trap comprising a cylindrical barrel with inclined return-bend passages opening into the sides of the barrel directly opposite each other, both of said return-bends lying in a single vertical plane, whereby the water entering the barrel through said bends will form two directly-opposed streams producing a scouring or cleaning action in the barrel.

2. As an article of manufacture, a plumber's trap consisting of a central horizontal barrel, inclined return-bend passages opening into the sides of the barrel directly opposite each other, and both of said return-bends being in one vertical plane, whereby the water entering the barrel through the return-bends will form two opposing streams producing a scouring action inside the barrel, and each of said return-bends being located entirely at one side of the vertical plane through the axis of the barrel, a connection for an outlet-pipe at one end of the barrel, and a clean-out plug at the other end of the barrel.

809,972. **GRUB-PULLER.** SAMUEL F. MCGOWN, Dixi, Ky. Filed Oct. 21, 1905. Serial No. 283,884.

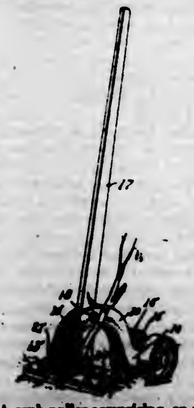

Claim.—1. A grub-puller comprising, an arched frame-piece, a jaw rigidly carried at one end of the frame-piece and an axle rigidly carried at the other, bearing-wheels mounted upon the axle, a lever pivoted to the frame, and a jaw rigidly carried by the lever in opposed relation to the jaw of the frame.

2. A grub-puller comprising, spaced and arched frame-pieces, a jaw rigidly carried at one end of the frame-pieces and an axle rigidly carried at the other spaced bearing-wheels mounted upon the axle and upon opposite sides of the frame-pieces, a lever pivoted to and between the frame-pieces, and a jaw carried rigidly by the lever in opposed relation to the jaw of the frame.

3. A grub-puller comprising, spaced and arched frame-pieces bent reversely outward at one end, a jaw member rigidly secured to the outturned end and disposed transversely of the frame, an axle rigid with and transverse of the frame at the end opposite the jaw, spaced bearing-wheels mounted upon the axle and upon opposite sides of the frame, a lever pivoted to and between the frame-pieces adjacent the crest of the arch, and a jaw rigidly carried by the lever in opposed relation to and parallel with the jaw of the frame.

809,973. **FOLDING SCAFFOLD-BRACKET.** JAMES MCINTYRE, Edmonton, Canada. Filed May 20, 1905. Serial No. 261,229.

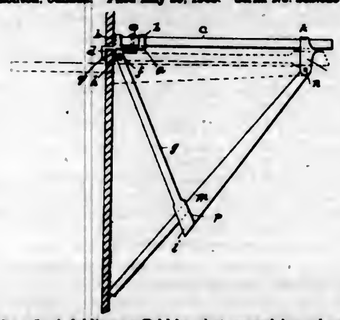

Claim.—1. A folding scaffold-bracket comprising a horizontal supporting-arm, a folding supporting-brace jointedly connected with said arm toward the outer end thereof, a swinging brace jointedly connected with the supporting-arm toward the inner end thereof, said supporting-brace formed with a shoulder intermediate ends thereof and said swinging brace with a stirrup or loop to encircle the supporting-brace and to engage the shoulder to hold the two braces in working position, the supporting-arm provided with means for engaging the same in place upon a building.

2. A folding scaffold-bracket comprising a supporting-arm, a folding supporting-brace, a coupling toward the outer end of the supporting-arm to which the supporting-brace is jointedly connected, a bracket-head upon the opposite end of the supporting-arm, and a swinging brace jointedly connected with the bracket-head, and provided with a stirrup at its opposite end encircling the supporting-brace, said supporting-brace provided with a shoulder to engage the stirrup, said bracket-head constructed to be engaged upon a building.

3. A folding scaffold-bracket comprising a supporting-arm, a folding supporting-brace, a coupling toward the outer end of the supporting-arm to which the supporting-brace is jointedly connected, a bracket-head upon the opposite end of the supporting-arm provided with bands spaced one from the other to receive the inner end of the supporting-arm, a swinging brace jointedly connected with the bracket-head and provided with a stirrup at its outer extremity encircling the supporting-brace, means passed through the inner end of the supporting-arm and bracket-head between said bands to connect said arm with the head, the supporting-brace provided with a shoulder to engage the swinging brace and said bracket-head constructed with a hook to engage the side of a building substantially as and in the manner described.

809,974. **TRUSS-FRAME FOR CARS.** WILLIAM R. MCKEEN, Jr., Omaha, Nebr. Filed May 10, 1905. Serial No. 260,507.

Claim.—1. In a car-frame, in combination, a continuous sill extending entirely about the lower portion thereof, a plurality of continuous longitudinal and cross members each of which is secured to said sill at two points and extends upwardly from one of said points across the car and thence downwardly to the other thereof and a longitudinal sill stretched directly between and secured to the ends of said first-mentioned sill said continuous sill comprising integral portions extending entirely about each end of the car-frame.

2. In a car-frame, in combination, a continuous sill extending entirely about the lower portion thereof, a continuous member substantially parallel to said sill and extending entirely about the upper portion of the car, a plurality of cross members each of which is secured to said sill at two points and extends upwardly adjacent said upper member from one of said points, across the car and thence downwardly to the other of said points and a longitudinal sill stretched directly between and secured to the ends of said first-mentioned sill, said side plate being rigidly secured to each of said cross members and being adapted to hold the same in fixed relative position.

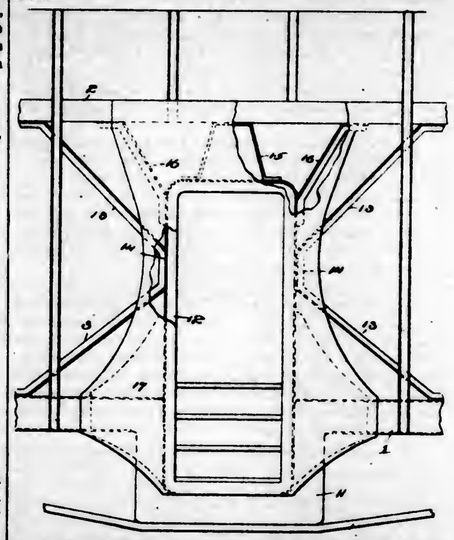

3. In a car-frame, in combination, a sill, a plurality of cross members each of which is secured to said sill at two points and extends upwardly from one of said points, across the car and thence downwardly to the other of said points, a longitudinal member secured to said sill at each end thereof extending upwardly from said ends and throughout the length of the car, said longitudinal member resting outside and adjacent to said cross members and a rigid continuous member extending entirely about the upper portion of the frame and rigidly secured to said longitudinal and said cross members and adapted to maintain the same in fixed relative position.

4. In a car-frame, in combination, a continuous sill extending entirely about the lower portion thereof, a plurality of substantially straight members within said sill extending from one end to the other thereof, a plurality of continuous members each of which is secured to said sill at two points and extends upwardly from one of said points, across the car and thence downwardly to the other of said points and a rigid continuous member extending entirely about the upper portion of the frame and secured to each of said continuous members and adapted to hold the same in fixed relative position.

5. In a car-frame, in combination, an integral sill extending entirely about the lower portion thereof, and a plurality of substantially straight longitudinal members positioned within and stretched directly between the ends thereof.

6. In a car-frame, in combination, a sill curved about one end of the car, an upper member substantially parallel to said sill curved about said end, a cross member secured to said sill at two points and extending upwardly from one of said points, arched across the car, and thence downwardly to the other of said points, a longitudinal member secured to said sill adjacent the end thereof and extending upwardly and arched toward the center of the car, said longitudinal member passing adjacent said upper member and said cross member, and an arched brace extending from said upper member to said longitudinal member, said arched brace lying in a plane inclined with respect to that of said longitudinal member.

7. In a car-frame, in combination, an integral sill having a portion dropped below the main portion thereof, and a truss-rod secured to said sill at each side of said depressed portion and stretched under and in engagement with the same.

8. In a car-frame, in combination, upper and lower members, bars, of a door-frame interposed therebetween, a continuous brace

1. In a filing box or drawer front, a label-holder and a handle in contact with a layer of paper saturated with bicarbonate of sodi-

8. In a car-frame, in combination, upper and lower members, said lower member having a portion depressed below the main portion thereof, and a sheet provided with an opening, said sheet being secured to said upper member and to said lower member adjacent the depressed portion thereof.

9. In a car-frame, in combination, a sill having a portion depressed below the main portion thereof, an upper side plate, a door-frame fitted within said depressed portion of said sill, and braces, each of which is secured to said door-frame and extends upwardly and downwardly therefrom to said side plate and said sill respectively.

10. In a car-frame, in combination, a sill having a portion depressed below the main portion thereof, a side plate, a door-frame fitted within said depressed portion of said sill, a pair of braces secured to said frame each of which extends upwardly and downwardly therefrom and is connected with said side plate and said sill respectively, and means connecting the upper portion of said frame with said side plate.

11. In a car-frame, in combination, a sill having a rectangular portion depressed below the main portion thereof, a side plate, a door-frame fitting said depressed portion, a pair of braces each of which is secured at its central portion to one side of said door-frame and extends therefrom upwardly and downwardly to said side plate and said sill, a pair of braces from the upper portion of said frame to said upper side plate, and a member interposed between and secured to the top of said frame and said side plate.

12. In a car-frame, in combination, a continuous sill extending entirely about the lower portion thereof, said sill being provided with a portion depressed below the main portion thereof, a continuous upper member extending about the car, a plurality of continuous members each of which is secured to said sill at two points and extends upwardly from one of said points, across the car and thence downwardly to the other point of attachment, a door-frame secured within the depressed portion of said sill, and means connecting said frame with said upper member.

13. In a car-frame, in combination, a sill, a side plate, a plurality of continuous members each of which is secured to said sill at two points and extends upwardly from one of said points, across the car and thence downwardly to the other of said points, said sill being provided with a portion depressed below the main portion thereof, a door-frame within said depressed portion, and means connecting said door-frame with said side plate.

14. In a car-frame, in combination, a continuous sill extending entirely about the lower portion of the car and curved around it at the ends thereof, a continuous upper member extending entirely about the upper portion of said car substantially parallel to said sill, continuous longitudinal and cross members each of which is secured to said sill at two points and extends upwardly from one of said points, is arched across the car and thence extends downwardly to the other of said points, said longitudinal member passing adjacent said upper member and said cross members and said sill being provided with a portion depressed below the main portion thereof, a door-frame fitting within said depressed portion of said sill, a pair of braces each of which is secured to said door-frame at the sides thereof and extends upwardly and downwardly from said frame to said upper member and said sill respectively, and means connecting the upper portion of said frame with said upper member.

15. In a car-frame, a sill and an upper side plate extending about one end of the frame, a longitudinal rib secured to said sill at the front of said frame and extending upwardly adjacent said side plate and thence forwardly and curved ribs or braces inclined to the plane of said longitudinal rib and connecting the same with said side plate.

16. In a car-frame, the combination of a floor-sill formed of a continuous bolt, a roof-plate also formed of a continuous bolt, intermediate longitudinal lower sills extending throughout the length of and connecting the rounded end portions of the bolt-sill, a longitudinal rib connecting the rounded end portions of the bolt roof-plate, and transverse roof-ribs and vertical side studs, each of said roof-ribs being formed integral with and continuous of a side stud on each side of the frame, said plate being secured to each of said vertical side studs and being adapted to maintain the same in fixed relative position.

17. In a car-frame, the combination of a continuous sill formed with a depression intermediate its length, a door-frame fitted in said depression, a roof-plate above said door-frame and diagonal braces connecting the sides of said door-frame with said sill and with said roof-plate.

18. In a car-frame, the combination with upper and lower members, of a door-frame interposed therebetween, a continuous brace at each side of said door-frame connecting the same with said upper and lower members, inverted substantially U-shaped braces connecting the upper end of said door-frame with said upper member and diagonal braces connecting the corners of said door-frame with said upper plate.

19. In a car-frame, the combination of an integral sill formed with a depression intermediate its length, a door-frame mounted therein, and a truss-rod engaging said depression as a strut.

20. In a car-frame, in combination, an upper plate extending about the end of the frame, a longitudinal rib secured to said upper plate at the end of the frame and arched toward the center of the frame and a plurality of curved ribs inclined to the plane of said longitudinal rib and connecting the same with said upper plate.

21. In a car-frame in combination an upper side plate, a sill, said sill having a portion depressed below the main portion thereof, a rigid metallic frame fitted within and embraced by said depressed portion of said sill and means rigidly connecting the upper portion of said frame with said side plate.

22. In a car-frame in combination, an integral side sill formed with a substantially U-shaped drop intermediate its ends and a rigid metallic door-frame secured within and embraced by said dropped portion of said sill, said frame being positioned substantially within the plane of said sill.

23. In a car-frame in combination a side sill having an integral portion depressed below the main portion of said sill and a rigid door-frame fitted within and embraced by and bracing the sides of the depressed portion of said sill, said frame being positioned substantially within the plane of said sill.

24. In a car-frame, in combination, an upper side plate curved about one end of the frame and a plurality of converging arched roof-ribs secured to said side plate and extending inwardly therefrom.

809,975. ANDIRON. JOHN T. MCLAIN, Stonypoint, N. C. Filed May 13, 1905. Serial No. 260,572.

Claim.—The combination of a pair of andirons, a cross-bar connecting said andirons at the upper front portions thereof, and a fender hanging on the rear side of said cross-bar and provided with depending fingers straddling said andirons, and with supporting-hooks engaging the cross-bar and extending forward to form handles, said fender being adapted to be swung rearward to move the fuel or to stir the fire.

809,976. FILING BOX OR DRAWER. REUBEN H. OREM, Cartersville, Ohio. Filed June 9, 1905. Serial No. 264,697.

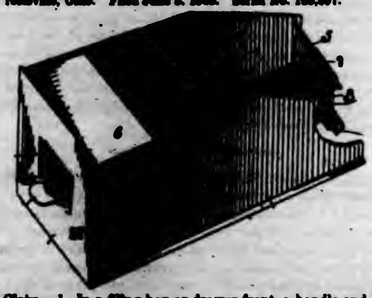

Claim.—1. In a filing box or drawer front, a handle and label-holder integral with the front, the former being a portion of the front bent outside the box and the latter a portion thereof bent within the box.

2. In a filing box or drawer front, a label-holder and a handle integral with the front and consisting of portions bent in opposite directions from the body thereof, the portion containing the opening from which the handle is bent being bent to form a label-holder.

3. In a box or drawer, a front having a handle integral therewith and a label-holder integral therewith and formed of a single tongue extending each side of the handle.

809,977. FLEXIBLE PIPE. ARTHUR O'REAR, Chicago, Ill. Filed Feb. 2, 1903. Renewed Sept. 23, 1905. Serial No. 279,051.

Claim.—1. A flexible pipe comprising a plurality of sections each fitted together by means affording a universal joint and providing a central bore extending therethrough, and a spiral spring fitting closely to said sections and producing longitudinal compression of the pipe while holding the sections in operative relation.

2. A flexible pipe comprising a plurality of sections spherically concave on one side and complementally convex on the other, and provided with a central bore extending therethrough, said sections interfitting to provide a plurality of universal joints and a spiral spring fitted to said sections and producing longitudinal compression.

3. A flexible pipe comprising a plurality of sections spherically concave on one side and complementally convex on the other, and provided with a central bore extending therethrough, said sections interfitting to provide a plurality of universal joints and a spiral spring fitted to said sections and producing longitudinal compression, a bar integral with each section and affording connection for the ends of said spring.

4. A flexible pipe comprising a plurality of spherically-concave and spherically-convex members complemental each with the other, and adapted when brought together to afford universal joints and flexible means fitting closely thereto and acting to hold said sections in operative relation while producing longitudinal compression thereon.

5. A device of the class described comprising a plurality of interfitting sections together affording a plurality of universal liquid and fluid tight joints, flexible means fitting closely to said sections and acting to hold the same in operative relation and terminal fittings on said pipe adapted to afford connection with other parts of a pipe system.

809,978. ELECTRIC SAFETY-FUSE. HARRY L. OGLE, Peru, Ind., assignor to Peru Electric Manufacturing Company, Peru, Ind., a Corporation of Indiana. Filed May 26, 1904. Serial No. 209,511.

Claim.—1. An electric fuse consisting of an inclosing case provided with a main fuse connected with the terminals of the case, an auxiliary fuse connected to the main fuse, a layer of paper saturated with a sensitive chemical material adapted to be discolored upon blowing of the fuse, the auxiliary fuse being in contact therewith, and a covering of transparent material, substantially as set forth.

2. An electric fuse consisting of an inclosing case provided with a main fuse connected with the terminals of the case, an auxiliary fuse connected to the main fuse at each end and having an intermediate corrugated portion, a layer of paper saturated in a sensitive chemical material adapted to be discolored upon blowing of the fuse, the corrugated portion of the auxiliary fuse being in contact therewith, and a covering of transparent material, substantially as set forth.

3. An electric fuse consisting of an inclosing case provided with a main fuse connected with the terminals of the case, an auxiliary fuse connected to the main fuse, a layer of paper saturated in a sensitive chemical material adapted to be discolored upon blowing of the fuse, the auxiliary fuse being in contact therewith, and a covering of transparent material, with an outer wrapping device having a corresponding sight-opening, substantially as set forth.

4. An electric fuse consisting of an inclosing case provided with a main fuse connected with the terminals of the case, an auxiliary fuse connected to the main fuse, a portion of said auxiliary fuse being in contact with a layer of paper saturated with bicarbonate of sodium, with a covering of mica, substantially as set forth.

5. An electric fuse consisting of an inclosing case, provided with a main fuse connected with the terminals of the case, an auxiliary fuse connected to the main fuse, a portion of said auxiliary fuse being in contact with a layer of paper saturated in bicarbonate of sodium, with a covering of mica, and an outer wrapping having an opening adapted to correspond therewith, substantially as set forth.

809,979. TYPE-WRITING MACHINE. CHARLES H. PETTIBONE, Brooklyn, N. Y., assignor, by mesne assignments, to Mercantile Manufacturing Company, a Corporation of New York. Filed Sept. 12, 1903. Renewed May 5, 1905. Serial No. 259,027.

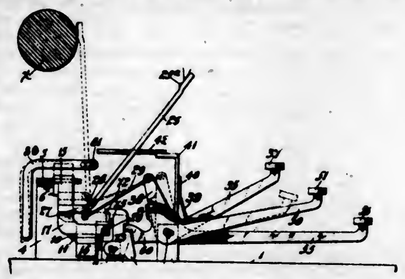

Claim.—1. In a type-writing machine, the combination of a shiftable carrier, a type-bar mounted upon said carrier, a group of key-bars operatively connected with the type-bar carrier, a plurality of stops independent of the connection between the key-bars and carrier, said stops being adapted to arrest the carrier in its normal and shifted positions, and means actuated by some of said key-bars for operating said stops, substantially as set forth.

2. In a type-writing machine, the combination of a shiftable carrier, a type-bar mounted upon said carrier, and a key-bar suitably connected with said type-bar carrier, with a plurality of stops, one of which is arranged to normally engage the carrier for limiting its movement, while another of which is normally in disengaged position, and means for operating said stops, substantially as set forth.

3. In a type-writing machine, the combination of a shiftable carrier, a type-bar mounted upon said carrier and a group of key-bars, one of which is suitably connected with said type-bar carrier, with a plurality of stops, one of which is arranged to normally engage the carrier for limiting its movement, and another of which is normally in disengaged position, and means actuated by some of said key-bars for operating said stops, substantially as set forth.

4. In a type-writing machine, the combination of a shiftable carrier, a type-bar mounted upon the carrier, and a key-bar connected with the type-bar carrier, with a pair of limiting dogs or stops, and means for operating said dogs or stops, one of said dogs being formed with two engaging shoulders for arresting the carrier in two shifted positions, and the other of said dogs being formed with a single engaging shoulder for holding the carrier in a third or normal position, substantially as set forth.

5. In a type-writing machine, the combination of a shiftable carrier, a type-bar mounted upon the carrier, and a group of three key-bars, suitably connected with the type-bar carrier, with a pair of limiting dogs or stops, and means of engagement between two of said key-bars and said dogs or stops for operating them, one of said dogs being formed with two engaging shoulders for arresting the carrier in two shifted positions, and the other of said dogs being formed with a single engaging shoulder for holding the carrier in its normal position, substantially as set forth.

6. In a type-writing machine, the combination of a shiftable carrier, a type-bar mounted upon said carrier, a plurality of key-bars having a common connection with the type-bar carrier, dogs or stops independent of said connection and adapted to limit the movement of the carrier, and means actuated by some of said key-bars for shifting the position of the dogs or stops, substantially as set forth.

7. In a type-writing machine, the combination of a shiftable carrier, a type-bar mounted upon said carrier, a plurality of key-bars pivoted upon a common fulcrum and having a common connection with the type-bar carrier, dogs or stops independent of said connection and adapted to limit the movement of the carrier, means of engagement between the key-bars, and means operated by some of said

key-bars for shifting the position of the dogs or stops, substantially

being arranged in different vertical and horizontal planes, a shift-

having an opening for the passage of the film, and means controlled

inclosed fuse of limited resistance connected with said terminal con-

key-bars for shifting the position of the dogs or stops, substantially as set forth.

8. In a type-writing machine, the combination of a shiftable carrier, a type-bar mounted upon said carrier, a bell-crank key-lever connected with said carrier, key-levers arranged upon opposite sides of said bell-crank key-lever and formed with inwardly-projecting fingers which are adapted to engage said bell-crank, and a pair of limiting dogs or stops operated by said key-levers, substantially as set forth.

9. In a type-writing machine, the combination of a shiftable carrier, a type-bar mounted upon said carrier, a bell-crank key-lever connected with said carrier, key-levers arranged upon opposite sides of said bell-crank key-lever and formed with inwardly-projecting fingers which are adapted to engage said bell-crank, a pair of carrier-limiting dogs or stops, and arms projecting from the outer key-bars and operatively engaging said dogs or stops, substantially as set forth.

10. In a type-writing machine, the combination of a shiftable carrier supporting a type-bar, a pair of pivotally-mounted dogs or stops adapted to limit the movement of the type-bar carrier, pivotally-mounted key-bars formed with rearwardly-projecting fingers which engage said dogs or stops for operating them, and means connecting said key-bars with the carrier, substantially as set forth.

11. In a type-writing machine, the combination of a shiftable carrier, a type-bar mounted upon said carrier, a pair of pivotally-mounted dogs or stops adapted to limit the movement of the carrier, two pivotally-mounted key-bars formed with rearwardly-projecting fingers which engage said dogs or stops for operating them, a third pivotally-mounted key-bar, means connecting said third key-bar with the carrier, and means of engagement between the dog-operating key-bars and said third key-bar, substantially as set forth.

12. In a type-writing machine, the combination of a shiftable carrier carrying a type-bar, a pair of pivotally-mounted dogs formed with rearwardly-projecting carrier-engaging shoulders, and forwardly-presented slots or recesses, a pair of pivotally-mounted key-bars having rearwardly-projecting fingers which engage in said forwardly-presented recesses of the dogs, and means operatively connecting said key-bars with the carrier, substantially as set forth.

13. In a type-writing machine, the combination of a shiftable carrier, a type-bar mounted upon said carrier, a pair of pivotally-mounted dogs formed with rearwardly-projecting carrier-engaging shoulders, and forwardly-presented slots or recesses, a pair of pivotally-mounted key-bars having rearwardly-projecting fingers which normally engage in said forwardly-presented recesses of the dogs, and are adapted to move out of the recesses into engagement with the forward faces of the dogs to rock the dogs upon their pivots and lock them in their carrier-engaging position, and means operatively connecting said key-bars with the carrier, substantially as set forth.

14. In a type-writing machine, the combination of a shiftable carrier, a type-bar mounted upon said carrier, a pair of limiting dogs or stops pivotally mounted upon the base of the machine, each dog being formed with a downwardly-presented lug, a rearwardly-presented carrier-engaging shoulder, and a forwardly-presented slot or recess, a pair of key-bars pivotally mounted upon the machine-frame and formed with rearwardly-projecting fingers engaging the slots or recesses of the dogs, and means operatively connecting said key-bars with the type-bar carrier, substantially as set forth.

15. In a type-writing machine, the combination of a vertically-shiftable carrier formed with guide portions and a stop portion, guide-plates in which said carrier is slidingly mounted, a type-bar pivoted upon said carrier, a key-bar connected with the type-bar and adapted to move the type-bar and carrier through its type-bar connection, and dogs adapted to engage said stop portion for limiting the movement of the carrier, substantially as set forth.

16. In a type-writing machine, the combination of the parallel horizontal guide-plates 5, 10, formed with vertical guide-slots 6, 11, a vertically-shiftable carrier formed with rectangular oppositely-extended guiding or plate portions 15, 16, which operate in the slots 6, 11, of the guide-plates, a type-bar mounted upon the carrier, a key-bar connected with the carrier, and means for limiting the movement of the carrier, substantially as set forth.

17. In a type-writing machine, the combination of horizontal guide-plates formed with vertical guide-slots, a vertically-shiftable carrier formed with rectangular guiding or plate portions which operate in the slots of the guide-plates and a forwardly-projecting stop-finger, a type-bar pivoted upon the carrier, a key-bar connected with the type-bar, and dogs adapted to engage the stop-finger for limiting the movement of the carrier, substantially as set forth.

18. In a type-writing machine, the combination of the horizontal guide-plates formed with vertical guide-slots, said guide-plates being arranged in different vertical and horizontal planes, a shiftable carrier formed of two connected rectangular or plate portions which operate in the slots of said guide-plates, a type-bar mounted upon said carrier, a key-bar connected with said carrier, and means for limiting the movement of the carrier, substantially as set forth.

19. In a type-writing machine, the combination of a vertically-shiftable carrier formed with a forwardly and laterally projecting stop-finger, a type-bar mounted upon said carrier, a key-bar connected with said carrier, a stop-dog adapted to engage the stop-finger of the carrier, and means for operating said stop-dog, substantially as set forth.

809,980. ROLLER-SKATE. EDVARD PETTERS, Upsala, Sweden. Filed Oct. 26, 1905. Serial No. 284,263.

Claim.—1. In a device of the character described, a pair of crossed arms pivotally connected together, wheels journaled on the lower ends of said arms, a treadle or foot-plate located below the point of pivotal connection of the arms and suspended from the upper ends of the arms, and means whereby the separation of the lower ends of the arms imparts rotary motion to one of the wheels, substantially as described.

2. In a device of the character described, a pair of crossed arms pivotally connected together and each consisting of two members, cross-rods connecting said members, wheels carried at the lower ends of said arms, a foot-piece or treadle suspended from the cross-rods, and driving connections to one of the wheels operated by the spreading of the arms, substantially as described.

3. In a device of the character described, a pair of pivoted arms, a foot-piece supported by said arms, a driving-wheel carried at the lower end of one arm, driving connections to said wheel operated by the spreading of the arms and a steering-wheel pivotally carried by the other arm, substantially as described.

4. In a device of the class described, a pair of arms pivotally connected together, wheels at the lower ends of said arms, driving connections to one of said wheels for rotating it when the arms are separated, means for normally keeping said arms pressed toward each other, a foot-piece carried by said arms adapted to receive the pressure of the foot to separate said arms, and locking means for holding said foot-piece depressed and the arms separated, substantially as described.

809,981. APPARATUS FOR EXHIBITING MOVING PICTURES. NICHOLAS POWER, New York, N. Y. Filed Mar. 6, 1904. Serial No. 197,261.

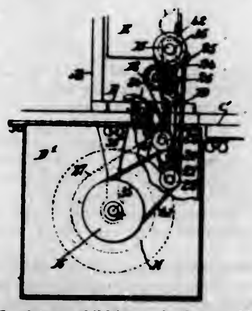

Claim.—1. In picture-exhibiting and other machines, a spool upon which a web is to be wound, a spindle for said spool, a driving-pulley for the spindle, said pulley comprising a section fast upon the spindle and a tension-controlled section also mounted on said spindle and adapted to rotate independently of the other section, and a belt for imparting motion to said pulley and said spindle.

2. In picture-exhibiting apparatus, a flame-shield comprising a non-inflammable plate disposed adjacent to the light-aperture and

having an opening for the passage of the film, and means controlled by the tension upon the film for preventing a flame from following the film through the opening in the plate.

3. In picture-exhibiting apparatus, a flame-shield comprising a non-inflammable plate arranged adjacent to the danger-point, and a valve controlled by the tension upon the film for preventing flame from following the film beyond the plate.

4. In picture-exhibiting machines, a film-receptacle having an opening therein, and a device controlled by the tension upon the film to prevent a flame from following the film through the opening in the receptacle.

5. In picture-exhibiting machines, a receptacle for a spool of film, an opening in said receptacle through which the film passes, a chute surrounding the said opening, and a damper-valve partially within the said receptacle and partially within the said chute, and having normal bearing against a film passing through the said opening in the receptacle, as described.

6. In picture-exhibiting machines, a receptacle for a spool of films, having an opening therein and a chute around the opening, a damper or cut-off valve extending through the opening into the said chute and having the end within the chute adapted for light frictional engagement with the film, the opposite end of the said damper or cut-off valve being weighted, as described.

7. A moving-picture apparatus provided with a flame-shield, comprising a non-inflammable plate arranged above the light-aperture in proximity to the danger-point and adapted to protect the portion of the film above said aperture from the flames when the portion of the film in front of the same is on fire.

8. In picture-exhibiting machines, a film-receptacle having an opening in the wall thereof for the passage of the film, means for supporting a spool of film within the receptacle, and automatically-operative means for preventing the passage of a flame through the opening into the interior of the receptacle.

9. In picture-exhibiting machines, a film-receptacle having means for supporting the spool of film within the receptacle and having an opening in the wall for the passage of the film, of a valve in close proximity to said opening and through which the film passes.

10. In picture-exhibiting machines, a film-receptacle having means for rotatably securing a spool of film therein, and having an opening in the wall for the passage of the film, and a device controlled by the tension upon the film for preventing the passage of flame through the opening and into the receptacle.

11. In picture-exhibiting machines, a receptacle for a spool of film having an opening for the passage of the film, a spindle extending into the receptacle and adapted to receive a spool of film, automatically-operative means for preventing the passage of a flame through the opening and into the interior of the receptacle, and means outside of the receptacle for rotating the spindle to wind film upon the spool.

12. In picture-exhibiting machines, a film-receptacle adapted to protect the film from fire and having an opening for the passage of the film, automatically-operative means for preventing the passage of the flame through said opening, a spindle extending within the receptacle and adapted to receive a spool of film, and means outside of the receptacle for rotating the spindle to wind the film upon the spool, said rotating means being adapted to maintain a substantially uniform tension upon the film.

13. In moving-picture machines, the combination with a pair of film-spools arranged on opposite sides of the light-aperture, of a receptacle for each spool adapted to protect the film thereon from fire, each receptacle having an opening for the passage of the film, and automatically-operative means associated with each receptacle for preventing the passage of flame through the opening and into the receptacle.

14. In moving-picture machines, the combination with a pair of film-spools arranged on opposite sides of the projection-aperture, of a receptacle for each spool adapted to protect the film thereon from fire, each receptacle having an opening for the passage of the film, automatically-operative means associated with each receptacle for preventing the passage of a flame through the opening and into the receptacle, and means associated with one of the receptacles for rotating the spool therein to wind the film thereon.

809,982. ELECTRIC SAFETY-FUSE. CHARLES W. EDWARDS, Peru, Ind., assignor to The Peru Electric Manufacturing Company, Peru, Ind., a Corporation of Indiana. Filed May 25, 1904. Serial No. 209,512.

Claim.—In an electric fuse, the combination of a cylindrical shell or casing provided with similar terminal circuit-contacts, an inclosed fuse of limited resistance connected with said terminal contacts, an outer spring device secured on the side of the main shell adapted to be bent down against the surface thereof for its full length, a thread device attached to the end of said spring passing through an opening in the shell and looped around the fuse, adapted to retain the spring in a retracted position closely against the shell under tension, and to allow it to rise with the thread device exposing both the spring and thread to view, upon burning of the fuse, substantially as set forth.

809,983. CAN. JOHN F. ROSS, Toronto, Canada, assignor to William Edwin Ross, Percy Forster Ross, and Charles Fred Vanhorn, Toronto, Canada. Filed Sept. 2, 1904. Serial No. 223,161.

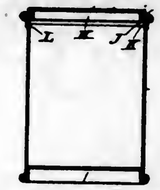

Claim.—1. A can-body comprising a blank of sheet metal bent into cylindrical form, the said can-body for a suitable distance from its top downward being enlarged so as to form an inward-projecting annular shoulder, and soldering material filling the joint on the inside of said can-body so that it will be flush with the inner surface thereof, the walls of said can-body, from said shoulder downward being parallel to each other, the walls of said can-body from said shoulder upward being parallel to each other, the upper edges of said can-body being provided with an outwardly-turned beading, and a circular lid or cover comprising the top integrally provided on its edge with an annular flange which overhangs an inwardly-formed portion with which is integrally formed an outwardly-extending flange with which is integrally formed a downwardly-extending flange which tightly fits against the whole of the inner circumference of said can-body it is in contact with above said inwardly-projecting annular shoulder so as to make same oil and water tight, the relation of the outside diameter of the top of said lid to the internal diameter of said can-body being such that there is an annular space left between the annular flange of said lid and the upper edge of said can-body.

2. A circular lid or cover comprising the top integrally provided on its edge with an annular flange which overhangs an inwardly-formed portion with which is integrally formed an outwardly-extending flange with which is integrally formed a downwardly-extending flange, the diameter of said lid being greatest when measured through said downwardly-extending flange.

809,984. HAY-ELEVATOR. DAVID B. ROWLAND and PETER BACHER, Canton, Ohio, assignors to The Hay Manufacturing Company, Canton, Ohio, a Corporation of Ohio. Filed May 9, 1904. Serial No. 207,267.

Claim.—1. In a hay-elevator of the class described, a track or way provided with a stop-block, a carriage adapted to travel thereon, said carriage provided with non-swiveled and swiveled portions, the swiveled portion thereof provided with locking-dogs spaced from each other and carried by the swiveled portion of the carriage-frame, said dogs provided with hooked ends, and arms spaced from said hooked lower ends, an elevating-head carrying a pulley, and said elevating-head provided with lateral axial projections, and grooves arranged to receive the lateral axial projections, substantially as and for the purpose specified.

2. In a hay-elevator of the class described, a track or way and a stop-block secured thereto, a carriage adapted to travel upon the track or way, said carriage consisting of frames swiveled together, the swiveled portion of said frame provided with a flaring opening at its lower portion, grooves leading from said flaring opening, an elevating-head provided with axial projections adapted to enter the flaring opening, dogs spaced from each other and pivoted to the

frame, said spaced dogs provided with arms adapted to be engaged by the lateral axial projection of the elevating-head, and hooks on the upper portions of said arms, a sleeve slidingly embracing the

2. In tire and other valves, a valve member having an ingress-duct, a valve-seat, and a valve-chamber, within its interior and a

projectiles, the method herein described which consists in charging

frame, said upsead dogs provided with arms adapted to be engaged by the lateral axial projection of the elevating-head, and hooks adapted to engage the lateral axial projections of the elevating-head, and a dog adapted to lock the upsead dogs in engagement with the axial projections of the elevating-head, substantially as and for the purpose specified.

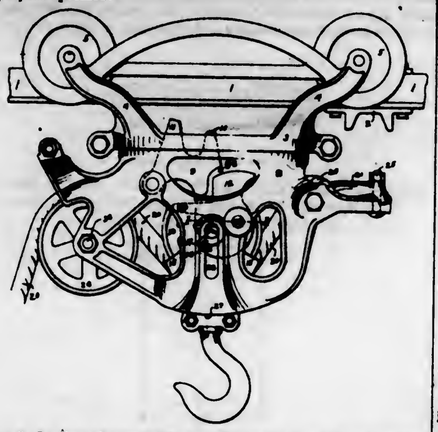

3. In a hay-elevator of the class described, a track or way, a carriage adapted to travel upon said track or way, a rope-clamp fixed to the frame of the carriage and adapted to clamp the rope, an elevating-rope and an elevating-head, pulleys carried by the elevating-head and the carriage, said pulleys mounted upon sleeves having oblique ends and oblique shoulders adapted to abut against the oblique ends of the sleeves, substantially as and for the purpose specified.

4. In a hay-elevator of the class described, a track or way, a stop-block fixed thereto, a carriage adapted to travel upon said track or way, said carriage consisting of an upper section and a lower section, the upper and lower sections swiveled together in a horizontal plane, the swiveled portion of said frame provided with hollow studs, dogs mounted upon the hollow studs and in spaced relation to each other, said dogs adapted to engage the elevating-head and release the locking-dog from the stop-block of the truck or way all arranged, substantially as and for the purpose specified.

5. In a hay-elevator of the class described, a carriage mounted upon a track, a clamp provided with downward-extending flanges, and a rib, said clamp adapted to engage the elevating-rope, and an elevating-rope located between the clamps and the carriage-frame, substantially as and for the purpose specified.

6. The combination of a hay-carrier, of an elevating-head carrying a pulley, the frame of said elevating-head provided with lateral projections, locking-dogs mounted on the carrier and adapted to swing longitudinally to the carrier-frame and from a common center transverse to the carrier-frame and adapted to engage the projections on the elevating-head, said dogs provided with arms, and closed grooves adapted to receive and guide the lateral projections, substantially as and for the purpose specified.

809,885. INCANDESCENT-ELECTRIC-LAMP REMOVER, REPLACER, AND CLEANER. CHARLES J. REDDOCK, Kansas City, Mo. Filed July 24, 1905. Serial No. 271,126.

Claim.—1. In a device of the character described, a handle provided at its upper portion with longitudinal grooves and openings, resilient arms arranged in said grooves and having their lower portions extending through the openings, the lower terminals of said arms being bent upwardly against the outer surface of the handle, shoulders on the upper portions of said arms, a sleeve slidingly embracing the handle and the arms to regulate the tension of the latter, the movement of said sleeve being limited by the lower terminals of the arms and the shoulders, and resilient loops carried by the upper portions of the arms, substantially as described.

2. In a device of the character described, a handle provided at its upper portion with longitudinal grooves and openings, resilient arms arranged in said grooves and having their lower portions extending through the openings, the lower terminals of said arms being bent upwardly against the outer surface of the handle, shoulders on the upper portions of said arms, a sleeve slidingly embracing the handle and the arms to regulate the tension of the latter, the movement of said sleeve being limited by the lower terminals of the arms and the shoulders, resilient loops carried by the upper portions of the arms, and a guide-cup arranged between the lower portions of the loops and provided with a centrally-disposed opening, substantially as and for the purpose specified.

3. In a device of the character described, a handle provided at its upper portion with longitudinal grooves and openings, resilient arms arranged in said grooves and having their lower portions extending through the openings, the lower terminals of said arms being bent upwardly against the outer surface of the handle, shoulders on the upper portions of said arms, a sleeve slidingly embracing the handle and the arms to regulate the tension of the latter, the movement of said sleeve being limited by the lower terminals of the arms and the shoulders, resilient loops carried by the upper portions of the arms, and a guide-cup arranged between the lower portions of the loops and provided with a centrally-disposed opening, for the purpose set forth and described.

4. In a device of the character described, a handle provided at its upper portion with longitudinal grooves and openings, resilient arms arranged in said grooves and having their lower portions extending through the openings, the lower terminals of said arms being bent upwardly against the outer surface of the handle, shoulders on the upper portions of said arms, a sleeve slidingly embracing the handle and the arms to regulate the tension of the latter, the movement of said sleeve being limited by the lower terminals of the arms and the shoulders, resilient loops carried by the upper portions of the arms, and flexible tubing covering the entire surface of the loops, substantially as described.

809,886. TIRE AND OTHER VALVES. GEORGE H. F. SCHRADER, New York, N. Y., assignor to A. Schrader's Son, Incorporated, New York, N. Y., a Corporation of New York. Filed Feb. 6, 1897. Serial No. 622,297.

Claim.—1. In tire and other valves, a valve member comprising a complete valve, consisting of a shell having an ingress-duct leading through its outer end, a seat, a valve-chamber, a valve proper in said chamber closing against said seat and an egress-duct, inclosed in its interior, said shell having a smooth outer wall surrounding said chamber and fitting within the interior of a tire-tube, having a projecting flange outwardly of said wall, and a packing-recess R formed in the cylindrical wall of said shell inwardly of said flange, a ring of packing material surrounding said shell and fitting said recess and held against accidental escape by the lower side of said recess, and a union surrounding said flange for removably coupling said member to a tire-tube, and a valve proper within said chamber.

2. In tire and other valves, a valve member having an ingress-duct, a valve-seat, and a valve-chamber, within its interior, and a valve proper in said chamber, said member having an outer cylindrical wall surrounding said chamber, for fitting within the socket of a tire-tube, and having a projecting flange beyond said wall, for projecting across the end of such tube, said member having an annular recess R cut in the cylindrical surface of said shell inwardly of said flange and having a groove in said flange, and a packing-ring in said groove and recess held against accidental escape by the lower side of said recess and prevented from undue lateral expansion by the outer side of said groove, and a coupling surrounding said flange for separately coupling said member to such tube.

3. In tire and other valves, the combination with a metal tube adapted to be fixed to a tire, having a screw-thread and a long, smooth cylindrical socket having an aperture communicating between the socket and its tire end, of a valve member constituting a complete valve, having a shell having an ingress-duct, a valve-seat surrounding said duct, a valve-chamber, and an egress-duct, and having an external long, smooth wall below said seat fitting the socket in said tube with a sliding fit and inclosed throughout its major portion therein, said valve member having a flange projecting over the edge of said tire-tube, and having an annular recess in said shell and a groove on the under side of said flange, and a packing-ring in said groove and recess, a valve proper inclosed within said shell, and means separably coupling said valve member within the socket of said tube, whereby the valve proper is protected within said shell, and the shell is protected within said tube, said shell being of such a length relatively to the clear socket in said tube that it is entirely free or unsupported at its lower end to insure a leak-tight joint at said packing-ring.

809,987. TIE-PLATE. JOHN M. SELLERS, Chicago, Ill., assignor to Sellers Manufacturing Company, Chicago, Ill., a Corporation of Illinois. Filed May 15, 1905. Serial No. 260,886.

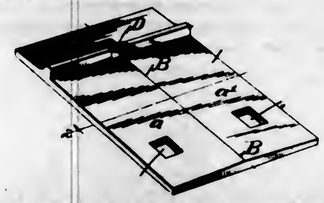

Claim.—1. A tie-plate formed with a crown extending transversely of the rail, bearing-faces sloping in opposite directions from said crown to opposite edges of the plate, and a continuous rail-retaining flange extending transversely of said crown and provided with a continuous vertical face adapted to engage the edge of a rail-flange to prevent lateral displacement of the rail.

2. A tie-plate formed with a crown extending transversely of the rail, bearing-faces sloping in opposite directions from said crown to opposite edges of the plate, and a continuous rail-retaining flange extending transversely of said crown and provided with a continuous vertical face adapted to engage the edge of a rail-flange to prevent lateral displacement of the rail, said plate being provided with a spike-hole extending through said flange on said plate and arranged to receive a spike which will be thereby so located as to cooperate with said flange in retaining a rail in position.

809,988. INDICATING THE TRAJECTORY OF PROJECTILES. JOHN D. SEMPLE, Sewickley, Pa. Filed June 28, 1905. Serial No. 267,442.

Claim.—1. As an improvement in the art of indicating the trajectory of projectiles the method herein described, which consists in charging the projectile with a suitable material and causing a discharge of the material into the atmosphere by pressure applied from a source independent of said material during the flight of the projectile.

2. As an improvement in the art of indicating the trajectory of projectiles, the method herein described which consists in charging the projectile with a suitable material and a discharge of the material by applying thereto an expansive force from a source independent of said material during the flight of the projectile.

3. As an improvement in the art of indicating the trajectory of projectiles the method herein described, which consists in charging the projectile with a suitable material and causing a discharge of the material by subjecting it to centrifugal action during the flight of the projectile.

4. As an improvement in the art of indicating the trajectory of projectiles, the method herein described which consists in charging the projectile with a suitable material and causing a discharge of the material by a siphoning action.

5. As an improvement in the art of indicating the trajectory of projectiles, the method herein described which consists in charging a material into the projectile and causing the material to flow from the projectile by rotating the latter independent of the material.

809,989. SEWING-MACHINE. ORA D. SHAW, Boston, Mass. Filed Mar. 9, 1903. Serial No. 147,014.

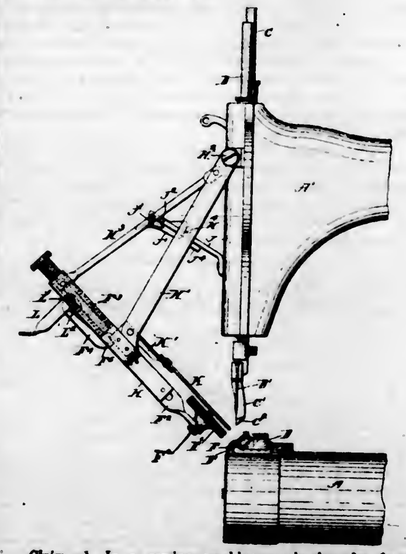

Claim.—1. In a sewing-machine mechanism for forming stitches, an adjustable work-support having an inclined face, a presser-foot having an inclined lower end adapted to act as a guide and gage, a movable feed device having an inclined working face parallel to the plane of the inclined face of the work-support, an inclined rotatable work-holding device yieldably held against the work and adapted to press the same against said feed device.

2. In a machine having mechanism for forming stitches, an adjustable work-support having an inclined face, a presser-foot having an inclined lower end adapted to form a guide and gage, a feed device having its face parallel to the plane of the inclined face of said support, a movable frame, a yieldable rotatable presser-foot on said frame, and means for regulating the said presser-foot.

3. An attachment for sewing-machines, having a vertically-movable needle, an adjustable work-support having an inclined face, a presser-foot having a beveled end adapted to form a guide, a feed device, a movable frame, a yieldable member on the latter and provided with a wheel forming a presser-foot, means for moving said member, and means for holding the frame in a fixed position.

4. In a sewing-machine, a stitch-forming mechanism, a presser-foot having an inclined end, a swinging frame having a movable support, a rotatable presser-foot carried by the latter, a work-support having an inclined face, a feed device, means for locking the frame in a fixed position, and means for holding said support in an operative position.

5. In a sewing-machine, a stitch-forming mechanism, a presser-foot having an inclined end, a work-support having a recessed

curved inclined face, a feed device provided with an inclined face, a pivotally-connected frame, a movable bar yieldingly supported therein, a rotatable presser-foot and a guide-plate carried on said bar, a hand-operable means for actuating said bar, and means for holding said frame in a fixed position.

6. In a sewing-machine, mechanism for forming stitches, a work-support having an inclined face, a presser-foot having an inclined lower end and adapted to act as a guide and gage, a feed device having a working face parallel to the plane of the inclined face of the work-support, an inclined rotatable work-holding device yieldingly held against the work and adapted to press the same against said feed device.

7. In a sewing-machine, mechanism for forming stitches, a work-support having an inclined face, a presser-foot having an inclined end and adapted to act as a guide and gage, a feed device having its working face parallel to the plane of the inclined face of the said work-support, a swinging frame pivoted to the head of the machine, an inclined rotatable presser-foot wheel on said frame adapted to act with the said feed device, and means for holding said swinging frame in a fixed position.

8. In a sewing-machine, mechanism for forming stitches, a work-support having an inclined face, a presser-foot having an inclined lower end and adapted to act as a guide and gage, a feed device having a working face parallel to the plane of the face of the work-support, a swinging frame pivoted to the head of the machine, an inclined rotatable presser-foot wheel on said frame adapted to act with the said feed device, an inclined holding and guide plate attached to said swinging frame, and means for holding said swinging frame in a fixed position.

9. In a sewing-machine, a feed device, a swinging frame attached to the head of the machine, an inclined rotatable presser-foot wheel adapted to act with said feed device, an inclined support and guide-plate adjustably attached to said swinging frame and coöperating with said wheel, and means for holding said swinging frame in a fixed working position.

809,990. **WINDOW-SASH.** JOHN H. SHEPHERD, Huron, Ohio. Filed Oct. 8, 1904. Renewed June 15, 1905. Serial No. 265,435.

Claim.—1. The combination, with a window-frame having a single vertical groove in each of its side portions, of channel-shaped guides provided with extension side flanges which form two parallel guide-grooves, said guides being secured in the said vertical grooves, slidable window-sashes, and flat guide-plates secured to the said sashes and engaging with the said guide-grooves.

2. The combination, with a window-frame having grooves in its side and top portions, of guides formed of spring sheet metal and secured in the said grooves, said guides being channel-shaped in cross-section and provided with extension side flanges which form guide-grooves, slidable window-sashes, and flat guide-plates secured to the said sashes and engaging with the said guide-grooves.

809,991. **DUSTLESS ATTACHMENT FOR BROOMS.** FRANK SHERMAN, Adaxeen, Iowa. Filed July 7, 1905. Serial No. 268,761.

Claim.—1. A device of the class described comprising a reservoir having opposed resilient wings adapted to engage the handle of a broom, a tubular spraying member adapted to be embedded among the fibers of the broom and provided with a plurality of spaced orifices for the escape of the liquid, and a feed-pipe between the reservoir and spraying member.

2. A device of the class described comprising a reservoir having means for detachably connecting to the handle of a broom, a tubular spraying member with the upper side in wedge form to facilitate the insertion among the fibers of the broom, and provided with a plurality of spaced orifices, and a feed-pipe between the reservoir and spraying member.

3. A device of the class described comprising a reservoir having means for detachably connecting to the handle of a broom, a tubular spraying member adapted to be embedded among the fibers of the broom and provided with spaced discharge-orifices and with perforated ears extending from the ends, a feed-pipe between said reservoir and spraying member, and a tie-wire attached at the ends in the perforated ears and extending around the brush portion of the broom.

809,992. **HEATER.** JACOB SILVERBERG, Pittsburg, Pa. Filed Mar. 16, 1905. Serial No. 250,621.

Claim.—1. A flat-iron heater comprising sides and ends, said heater being triangular in cross-section and formed with a plurality of iron-supports on each side arranged side by side, and said heater being also provided with exit-openings at its apex extending from end to end.

2. A flat-iron heater comprising sides and ends, said heater being triangular in cross-section and formed with a plurality of iron-supports on each side arranged side by side, and said heater being also provided with exit-openings at its apex extending from end to end and said openings on one side being adapted to break joint with the like openings on the opposite side.

3. A flat-iron heater comprising sides and ends, said heater being triangular in cross-section and formed with a plurality of iron-supports on each side arranged side by side, and said heater being also provided with exit-openings at its apex extending from end to end and said iron-supports being pointed and curved for conforming in shape to the body portion of the irons.

4. A flat-iron heater formed of sheet metal and comprising sides and ends, said heater having its sides formed from one piece of sheet metal and bent to form a triangular shape in cross-section and having a plurality of iron-supports on each side arranged side by side, and said heater being also provided with exit-openings at its apex extending from end to end.

5. A flat-iron heater formed of sheet metal and comprising sides and ends, said heater having its sides formed from one piece of sheet metal and bent to form a triangular shape in cross-section and having a plurality of iron-supports on each side arranged side by side, and said heater being also provided with exit-openings at its apex extending from end to end and said openings on one side being adapted to break joint with the like openings on the opposite side.

6. A flat-iron heater formed of sheet metal and comprising sides and ends, said heater having its sides formed from one piece of sheet metal and bent to form a triangular shape in cross-section and having a plurality of iron-supports on each side arranged side by side, and said heater being also provided with exit-openings at its apex

extending from end to end and said iron-supports being pointed and curved for conforming in shape to the body portion of the irons.

809,993. **CABLE-HANGER.** FREDERICK W. SONS, Ridgewood, N. J. Filed Dec. 16, 1903. Serial No. 185,267.

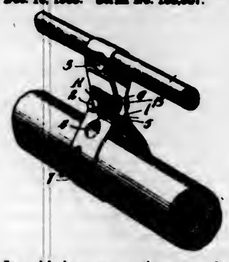

Claim.—1. In cable-hangers, a sinc strap formed with gripe and with keyhole-slots adjacent the ends of the same, a headed sinc stud rigidly riveted to said strap intermediate said slots, there being yieldable integral locking-flanges adjacent said slots to coöperate therewith and to prevent the accidental displacement of said stud in said slots.

2. In cable-hangers, a hanger-strap formed with keyhole-slots adjacent its ends, a headed stud rigidly secured to said strap intermediate said slots, there being movable locking-flanges formed adjacent said slots to coöperate therewith.

3. In cable-hangers, a sinc strap formed with gripe and with keyhole-slots adjacent the ends of the same, a headed sinc stud riveted to said strap between said slots, said strap being formed with yieldable integral locking-flanges adjacent said slots to substantially close said slots and to confine said stud in the reduced ends of said slots to prevent accidental displacement of the same.

809,994. **VESTIBULE-CURTAIN HOOK.** HENRY SPRINGER, St. Louis, Mo. Filed May 6, 1905. Serial No. 259,437.

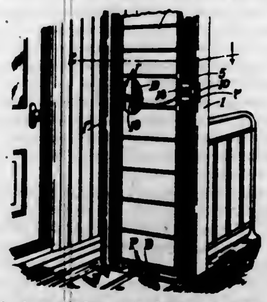

Claim.—1. A vestibule-curtain hook comprising a swinging hook on one car for engaging the free end of the curtain on the adjacent car, a suitable support for the hook, a pin passed through the hook and into the support for retaining the hook in position for engagement with the end of the curtain aforesaid, and a cord secured to the pin and adjacent car respectively for withdrawing the pin upon parting of the cars and thus releasing the hook and the curtain held thereby, substantially as set forth.

2. A vestibule-curtain hook comprising a swinging member or hook in one car, said member having a perforated base for the reception of a pin, a support for the hook, a socket formed in the support and registering with the perforation in the base and adapted to receive the pin passed through said perforation, a cord connecting the outer end of the pin to the adjacent car, said hook adapted to engage the free end of a curtain carried on the adjacent car, the parts operating substantially as and for the purpose set forth.

3. In a car, a post having a suitable pocket or cavity, a reinforcing-plate for the edges of the pocket, ears on said plate, a hook hinged between said ears and adapted to swing into and out of said pocket, the base of the hook being perforated for the reception of a suitable pin, the post having a socket at one end of the pocket adapted to register with the perforation when the hook is swung out of the pocket, means for coupling the pin to the adjacent car, the latter carrying a curtain whose free end is adapted to be connected to the hook when the latter is swung out of the pocket, the parts operating substantially as and for the purpose set forth.

809,995. **ELECTRIC METER.** WILLIAM STANLEY, Great Barrington, Mass. Filed Mar. 7, 1903. Serial No. 242,869.

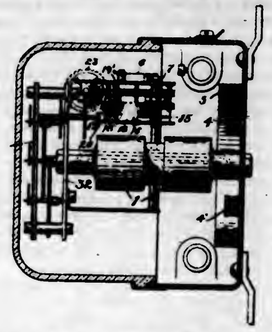

Claim.—1. In a meter, the combination of a main series winding, an auxiliary winding at an angle thereto, a needle subject to the action of both windings, and having its axis of rotation substantially at right angles to the axes of both of said windings and means for periodically energizing said auxiliary winding so as to give the needle periodical impulses and maintain it in motion so long as current is passing through the series winding.

2. In a meter, the combination of a main winding carrying the current to be measured, an auxiliary winding having its axis at an angle relatively to that of the main winding, means for periodically energizing said auxiliary winding, and an oscillating needle within the influence of both windings, and having its axis of rotation substantially at right angles to the axes of both of said windings, and means for converting the oscillatory movement of the needle into rotary movement, and means for recording the amount of said rotary movement.

3. In a meter, the combination of a main series winding, an auxiliary winding at an angle thereto, a needle subject to the action of both windings, and means for periodically energizing said auxiliary windings by currents passed through said auxiliary winding alternately in opposite directions so as to give the needle periodical impulses and maintain it in motion when current is passing through the series winding.

4. In a meter, the combination of a main winding carrying the current to be measured, an auxiliary winding having its axis at an angle relatively to that of the main winding, an oscillating needle within the influence of both of said windings and means for energizing said auxiliary winding alternately in opposite directions so as to give said needle an impulse during its movement in each direction, and means for producing by said oscillating needle a rotary motion in one direction, and means for indicating the amount of said rotary movement.

5. In a meter, the combination of a main series winding, and an auxiliary winding at right angles thereto, an oscillating needle within the influence of both windings, and a commutator controlled by said needle for reversing the current through said auxiliary windings.

6. In a meter the combination of a main winding carrying the current to be measured, an auxiliary winding having its axis at right angles to the axis of said main winding, a swinging needle within the influence of both windings, and means for causing the current to pass through said auxiliary winding alternately in opposite directions, so as to assist in maintaining said needle in motion so long as current flows in said main winding.

7. In a meter, the combination of a main winding carrying the current to be measured, an auxiliary winding having its axis at right angles to the axis of said main winding, a swinging needle within the influence of both windings, and two resistances in series having a common point between at which one terminal of said auxiliary winding is connected, and means for causing said auxiliary winding then connected to shunt said resistances alternately.

8. In a meter, the combination of a main series winding 1, a shunt-winding 2, a needle 13 within the influence of both of said

windings, means for periodically energizing said auxiliary winding,

hundred and twenty degrees in phase, and on the other side by an

15. The method of electric distribution herein set forth, which

said magnetomotive forces three-phase currents whose potential is

windings, means for periodically energizing said auxiliary winding, abutments 18 18' oscillated by said needle, star-wheels 19 19' coöperating with said abutments and geared to each other and an integrating-train geared to said star-wheels.

9. In a meter, the combination of a main winding carrying the current to be measured, an auxiliary winding having its axis at right angles to the axis of the main winding, a swinging needle within the influence of both windings, and two auxiliary resistances in series, having a common point between them at which one terminal of said auxiliary winding is connected, and means for causing said auxiliary winding thus connected to shunt said resistances alternately, and a high main resistance in series with said auxiliary resistances.

10. In a meter, the combination of a series winding, a shunt-circuit having a main and two auxiliary resistances therein, an auxiliary winding having one of its terminals connected to said shunt-circuit between said auxiliary resistances, a needle subject to the influence of both of said windings, means for registering an amount proportional to the number of oscillations of said needle, a toothed controlling member oscillating with said needle and connected to the other terminal of said auxiliary winding, two insulated and offset toothed members meshing with said toothed controlling member, and means for electrically connecting one of said two offset members first to the outside of one of said auxiliary resistances and then to the outside of the other of said auxiliary resistances.

11. In a meter, the combination of a main winding carrying the current to be measured, an auxiliary winding having its axis at an angle relatively to that of the main winding, an oscillating needle within the influence of both windings, a circuit containing two resistances having a common point between them to which one terminal of said auxiliary winding is connected, a toothed master member to which the other terminal of said auxiliary winding is connected, and insulated toothed portions electrically connected respectively to points on said shunt-circuit outside said resistances and adapted to be engaged by said geared master member, said insulated toothed members being offset relatively to one another.

12. In a meter, a series winding, a shunt-circuit having a main resistance 5 and two auxiliary resistances 4 4' therein, an auxiliary winding having one terminal connected between said auxiliary resistances, and a needle subject to both of said windings, and means actuated by said needle for connecting the other terminal of said auxiliary winding alternately with each of the outer terminals of said auxiliary resistances.

809,996. SYSTEM OF ELECTRICAL DISTRIBUTION. CHARLES P. STEINMETZ, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Apr. 13, 1894. Serial No. 507,304.

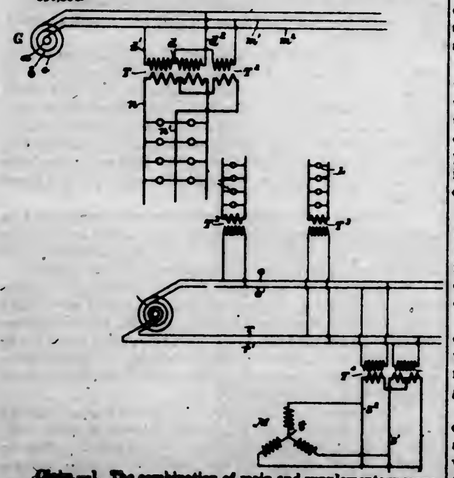

Claim.—1. The combination of main and supplementary transformers, interconnected as described, with one terminal of the windings of the supplemental transformer coupled to a central point of the corresponding winding of the main transformer, and wound for such different ratios of transformation that the resultant electromotive forces on one side of the transformer differ by approximately one hundred and twenty degrees in phase, and on the other side by approximately ninety degrees.

2. The combination of a main transformer and a supplementary transformer connected to the main transformer at a point dividing the electromotive force of the main transformer into two substantially equal parts, and so proportioned that the resultant electromotive forces generated in the supplementary transformer and the respective halves of the main transformer are substantially equal to that of the main transformer, as described.

3. The combination with main and supplementary sources of electromotive force differing by substantially ninety degrees in phase, and interconnected with one terminal of the supplementary source coupled to a central point in the main source, and having relative values such that the resultant electromotive forces generated by the supplemental source and the respective halves of the main source are substantially equal to the electromotive force of the main source.

4. The combination in a system of electrical distribution, of a source of three-phase currents differing by substantially one hundred and twenty degrees in phase, with means for converting such currents into quarter-phase currents differing substantially ninety degrees in phase, and translating devices operated by the quarter-phase currents, as set forth.

5. In an apparatus for the transformation of multiphase alternating currents, the combination of two alternating-current transformers, with a connection from one end of one coil of one transformer with approximately the middle point of a coil of the other transformer.

6. An apparatus for transforming multiphase alternating currents in which the different currents bear a symmetrical phase relation to one another into a second system of multiphase alternating currents in which the phases are symmetrically related, which consists of two transformers, one coil or a portion thereof of one transformer being connected to an intermediate point in a coil of the second transformer.

7. In a system of transmitting power by electricity, the combination of means for producing two-phase currents, phase-transforming devices by which said two-phase currents are transformed into three-phase currents, line-circuits extending therefrom to a distance, and means located at said distant point or points by which said three-phase currents are utilized.

8. The combination of windings having an intermediate point of one connected to a terminal of another, means for generating in the active portions of said windings currents differing in phase by substantially ninety degrees, and leads upon which these currents appear combined as three-phase currents.

9. The combination of windings in which electromotive forces are adapted to be generated, and connections between an intermediate point of one winding and the other winding, the voltages of said windings being related to each other as the ratio between a side and altitude of an equilateral triangle.

10. The combination of two alternating-transformer windings, the active voltages of which have approximately the same ratio as that between a side and altitude of an equilateral triangle, connections between the lower voltage winding and the middle point of the other winding, and a system of conductors for conveying three-phase currents connected with the remaining terminals of said windings, and a system of conductors for conveying two-phase currents connected to the other transformer-windings.

11. The combination of two alternating-current transformers, a source of two alternating currents differing in phase ninety degrees, connections therefrom with the primary coils of said transformers, and a connection from one terminal of the secondary coil of one of said transformers with an intermediate point in the secondary of the other transformer.

12. The combination of two windings having one terminal of one of the windings coupled to an intermediate point in the other winding, and means for maintaining in said windings electromotive forces differing in phase from each other by substantially ninety degrees.

13. The combination of two windings, means for generating in each of the windings an electromotive force having a definite phase-angle with respect to the electromotive force generated in the other winding, a connection between one terminal of one of the windings and an intermediate point in the other winding, and leads extending from the free terminals of said windings.

14. The combination of a plurality of transformer-windings, and a connection between the end or approximately the end of one winding and approximately the middle point of another of said windings.

15. The method of electric distribution herein set forth, which consists in generating three-phase currents, transmitting the same to a desired point or points, converting such currents into quarter-phase currents, and utilizing such last-named currents for operating translating devices.

16. The method of electrical distribution, which consists in generating three-phase currents, transmitting the same to a desired point or points by interconnected circuits, converting such currents into quarter-phase currents, and distributing such last-named currents to translating devices by interconnected circuits, as set forth.

17. The method of rendering three-phase and quarter-phase current systems of electrical distribution convertible, which consists in resolving the electromotive forces constituting one such system into component electromotive forces substantially ninety degrees apart in phase, changing the relative value of the components so that when recombined they will form resultant electromotive forces having the desired difference of phase, and recombining such electromotive forces, as described.

18. The method of transmitting electric energy required for operating multiphase apparatus by alternating currents having two phases, which consists in transmitting three-phase alternating currents to a distance, transforming the same into two-phase alternating currents, and utilizing such transformed currents.

19. The method of transmitting electric energy required for operating multiphase apparatus by alternating currents having three phases, which consists in generating two-phase alternating currents, transforming the same into three-phase alternating currents, and transmitting the energy in the form of three-phase currents to a distance and there utilizing the energy thus transmitted.

20. The method of multiphase alternating-current distribution, which consists in generating alternating currents of a given number of phases, transforming the same into alternating currents of a greater number of phases, transmitting the alternating currents thus produced and utilizing the same.

21. The method of transmitting electrical energy to and utilizing the same at a distance, which consists in conveying over lines of conductors three or more alternating currents dephased with reference to each other, from a distant source to, or near the place of consumption, generating there, by the combined inductive action of these currents, two separate alternating magnetic fluxes in quadrature, and generating by the separate inductive influence of these fluxes electric working currents, substantially as described.

22. The method of transmitting electrical energy to and utilizing the same at a distance, which consists in conveying over lines of conductors three or more alternating currents, dephased with reference to each other, from a distant source to, or near the place of consumption, generating there, by the combined inductive action of these currents, two separate alternating magnetic fluxes in quadrature, and generating by the separate inductive influence of these fluxes two-phase alternating working currents, substantially as described.

23. The method which consists in generating alternating currents of a given number of phases, changing the potential of the currents thus generated and at the same time transforming the currents into alternating currents of a greater number of phases.

24. The method which consists in producing two-phase alternating currents, transforming the same into three-phase alternating currents, transmitting the energy in the form of three-phase alternating currents, and utilizing the energy thus transmitted.

25. The hereinbefore-described method of multiphase distribution which consists in generating alternating currents of a given number of phases, changing the potential of the currents thus generated, and at the same time transforming the currents into alternating currents of a greater number of phases and transmitting the latter currents.

26. The method of transmitting power by electricity, which consists in producing two-phase alternating currents, producing thereby alternating magnetomotive forces of different phase, producing by said magnetomotive forces three-phase currents, and utilizing said currents.

27. The method of transmitting power by electricity, which consists in producing alternating currents of a determined number of phases, producing thereby alternating magnetomotive forces of different phase, producing by said magnetomotive forces alternating currents of a relatively greater number of phases, and utilizing said currents.

28. The method of transmitting power by electricity, which consists in producing two-phase alternating currents, producing thereby alternating magnetomotive forces of different phase, producing by said magnetomotive forces three-phase currents whose potential is changed in relation to the primary currents, and utilizing the energy of said three-phase currents.

809,997. METAL-TURNING APPARATUS. RICHARD H. STEVENS, Rumhall, Pa. Filed June 19, 1905. Serial No. 266,667.

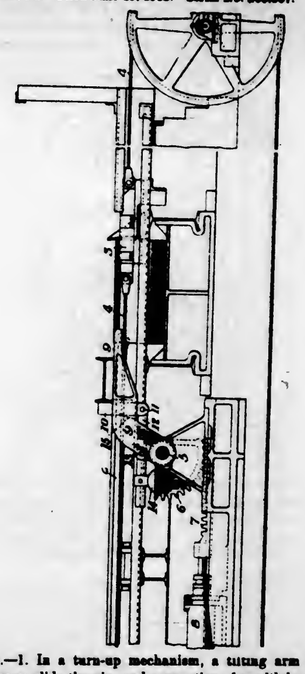

Claim.—1. In a turn-up mechanism, a tilting arm having a movable bar or slide therein, and connections for withdrawing said bar; substantially as described.

2. In a turn-up device, a tilting arm having a hole or guide therein, a transverse bar in said hole, and means for automatically withdrawing the bar when the weight of the beam is removed from it; substantially as described.

3. In a turn-up device, a tilting arm, a transverse sliding bar therein, and mechanism for automatically withdrawing the bar when the arm is in vertical position; substantially as described.

4. In a turn-up device, a tilting arm having a hole or guide therein, a transverse bar in said hole, and a weight for automatically withdrawing the bar when the weight of the beam is removed from it; substantially as described.

809,998. MANUFACTURE OF ARTIFICIAL FUEL. AUGUST STILLEMEN, New York, N. Y. Filed Feb. 21, 1905. Serial No. 246,805.

Claim.—1. The herein-described process of producing solid petroleum for fuel which consists in mingling, approximately, seventy-five parts by weight of petroleum, sixteen parts by weight of turpentine, two parts by weight of sodium palmitate or sodium stearate, then adding five parts by weight of caustic soda and two parts by weight of water and heating and agitating, substantially in the manner explained.

2. As a new article of manufacture, the herein-described artificial fuel composed of, approximately, seventy-five parts by weight of petroleum, sixteen parts by weight of turpentine, two parts by weight of sodium palmitate or sodium stearate, to which has been added five parts by weight of caustic soda and two parts by weight of water, the whole agitated and heated, substantially in the manner set forth.

809,999. RAILWAY SIGNALING. SAMUEL D. STROHM, Philadelphia, Pa. Filed Aug. 29, 1891. Serial No. 404,148.

Claim.—1. An electric motor car having an electric motor, a source of electrical supply, circuit connections therefor, a shunt or branch circuit including magnetic devices, contact-brushes carried by the car, contact devices with which said brushes are adapted to coact, said devices being arranged along the line of way, station appurtenances in front of and behind said contact devices, and in circuit therewith, a sliding bar carried by the car, controlling mechanism also carried by the car and adapted to be actuated by said bar, said mechanism being controlled by said magnetic devices, a frame for said brushes and bar, and means for shifting said frame.

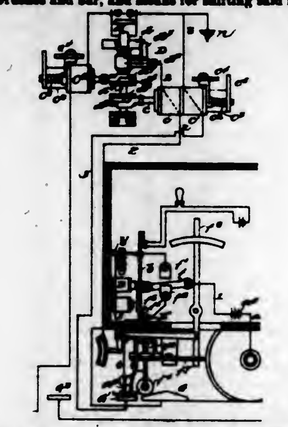

2. In a railway, groups of separate alining contact-plates located at predetermined points along the line of way, said plates being insulated from each other, and one of them having reversely-inclined contact-surfaces, in combination with circuit-controlling mechanisms carried by a car, and station appurtenances in circuit with said contact-plates.

3. In a railway, the combination with a source of electrical supply, of a car or vehicle, a driving-motor thereon, electrical connections between the same and the source of supply, a hand-lever acting on a suitable controller for governing the speed or power of said motor, a suitable switch for governing the action of the motor and controllable independently of said hand-lever and irrespective of the position thereof, a mechanically-operated arm for engaging with and actuating said switch, an electromagnet for effecting the engagement between said arm and said switch, said magnet being included in the electrical connections between the source of supply and a track-contact, a contact carried by the car or vehicle and connected with said magnet, and a track-contact adapted to be engaged by said contact carried by the car.

4. In a railway, the combination with a source of electrical supply, of a car or vehicle, a driving-motor thereon, electrical connections between the same and the source of supply, a hand-lever acting on a suitable controller for governing the speed or power of said motor, an electric switch for governing the action of said motor, and controllable independently of said hand-lever and irrespective of the position thereof, a mechanically-operated arm for engaging with and actuating said switch, an electromagnet for effecting the engagement between the said arm and said switch, said magnet being included in the electrical connections between the source of supply and a track-contact, a contact carried by the car or vehicle and connected with said magnet, and means along the line of way for effecting the action of said magnet when the line of way for a predetermined distance is clear.

5. In a railway, the combination with a source of electrical supply, of a car or vehicle, a driving-motor thereon, electrical connections between the same and the source of supply, a manual device acting on a suitable controller for governing the speed or power of said motor, an electric switch for governing the circuit of said motor, a mechanically-operated arm for engaging with and operating said switch, an electromagnet for effecting the engagement between said arm and said switch, said magnet being in shunt-circuit with said controller, and means along the line of way for governing the circuit of said magnet.

810,000. RAILWAY-CAR. ALBERT W. SULLIVAN and WILLIAM RENSHAW, Chicago, Ill. Filed May 18, 1904. Serial No. 208,223.

Claim.—1. In a car of the class described, the combination of a supporting-framework comprising side sills formed of flanged metal beams, upper "plates" formed of flanged metal beams, and standards formed of metal channel-beams having solid end blocks welded to the web and flanges of the channel-beams to form an integral structure therewith, and means for securing the standards to the flanged beams.

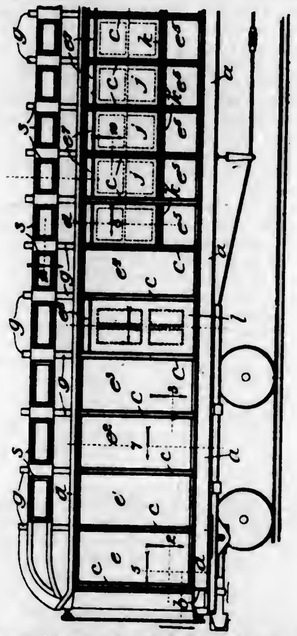

2. In a car of the class described, the combination of flanged metal beams, and metal channel-beams having solid end blocks welded to the web and flanges of the channel-beams to form an integral structure therewith, and means for securing the channel-beams to the flanged beams.

3. In a car of the class described, the combination of a supporting-framework, side plate-girders therefor formed of metal I-beam side sills, metal "plates" formed of angle-beams, side posts interposed between and secured to such side sills and plates and formed of two separated channel-beams arranged back to back, and sheet-metal filler members arranged between such separated channel-beams which form the side posts and are secured to the web portions thereof diminishing in thickness from the end toward the center of the car, substantially as described.

4. In a car of the class described, the combination of a supporting-frame portion formed of metal members, a superstructure frame portion formed of metal members, an exterior sheet-metal filler secured to the metal superstructure, an interior lining, and brackets for securing said interior lining to the exterior sheet-metal filler, substantially as described.

5. In a car of the class described, the combination of a metal supporting-frame portion, a superstructure frame portion formed of metal members, an exterior sheet-metal filler secured to the superstructure frame portion, brackets secured to the exterior sheet-metal filler, and interior-finish lining secured to the brackets and strips of insulating material interposed between the interior lining and the brackets, substantially as described

6. In a car of the class described, the combination of a supporting-frame portion formed of metal members, a superstructure frame portion formed of metal members, an exterior shell secured thereto, an interior lining, brackets for securing said interior lining to the exterior shell of the metal superstructure so as to provide a uniform interior finish, a floor portion formed of metal base-plates secured to the metal supporting-frame, and an upper floor portion—such as wood and similar material—detachably secured thereto, substantially as described.

7. In a car of the class described, the combination of a metallic supporting-frame, a superstructure formed of a metal "plate" supported by a plurality of metal posts formed of channel-beams secured thereto and to the metal supporting-frame, sheet-metal fillers secured to and between each pair of channel-beam side posts so as to form an exterior shell, metal carlines secured to the upper plate and forming a skeleton roof member, a metal covering therefor, an inner-finish lining for the roof of the car, and brackets independently supporting the same upon the exterior shell of the car so as to provide an air-space between such lining and the roof structure substantially from end to end of the car, substantially as described.

8. In a car of the class described, the combination of side sills formed of metal I-beams, upper "plates" formed of metal angle-beams, side posts formed of metal box-beams having solid forged ends, rivets for securing the forged ends of the box-beams to the metal side sills and metal plates, and "carlines" secured to the upper "plates," substantially as described.

9. In a car of the class described, the combination of side sills formed of metal I-beams, upper "plates" formed of inverted metal T-beams, side posts formed of metal box-beams having solid forged ends riveted to the upper flange of the I-beam side sills and to the head of the inverted metal T-beam, "carlines" transversely arranged and forming the skeleton roof-frame riveted to the inner side of the vertical web portion formed of inverted-T beams, an exterior roof-covering A riveted to the outer portion of the vertical web formed of inverted-T beams, metal filler-plates secured to the metal side posts so as to form the exterior skin or surface of the car, brackets secured to such exterior sheet-metal filler, and interior-finished lining portions secured to the brackets, substantially as described.

10. In a car of the class described, the combination of side sills formed of metal I-beams, upper "plates" formed of metal angle-beams, side posts formed of metal box-beams having solid end blocks welded to the web and flanges of the channel-beams, and rivets for securing the forged ends of the box-beams to the metal side sills and metal plates.

11. In a car of the class described, the combination of a supporting-frame portion formed of metal members, a superstructure frame portion formed of metal members, an exterior metallic shell secured thereto, an interior lining, brackets for securing such interior lining to the exterior shell of the car, a floor portion formed of metal base-plates secured to the metal supporting-frame, an upper-floor portion detachably secured thereto, and an interposed layer of asbestos or similar lining material arranged between the metallic under-floor and the upper-floor portions, substantially as described.

12. In a car of the class described, a corner-support comprising spaced side channel-beams arranged back to back and having solid forged ends, a similar end channel-beam having its back adjacent the side flanges of the first-mentioned channel-beam and spaced therefrom, a side filler between the side channel-beams and an end filler between the side flanges of the side channel-beams and the back of the end channel-beams, and rivets securing the parts together.

810,001. METAL BOX-BEAM. ALBERT W. SULLIVAN, St. Louis, Mo., and WILLIAM RENSHAW, Chicago, Ill. Filed Dec. 16, 1904. Serial No. 236,962.

Claim.—As a new article of manufacture, a wrought-metal channel-beam having on one or each end a head or base portion composed of a separate block, inserted between the flanges and web of the channel-beam, and with the same welded into an integral solid body, said block having its lower face in the plane of the end of the channel-beam and its outer side in the plane of the outer sides of the flanges of the beam.

810,002. VERTICAL BOILER. TOSABURO SUDZUKI, Sumatra, Japan. Filed May 17, 1905. Serial No. 260,751.

Claim.—1. A vertical boiler comprising a unitary structure provided with horizontal partition-walls forming a lower water-chamber, an upper evaporating-chamber, and an intermediate combustion-chamber, said combustion-chamber having an inlet and an outlet for the passage of products of combustion, a plurality of tubes located in the path of travel of said products of combustion and connecting said water and evaporating chambers, a circulating-tube centrally disposed within said combustion-chamber, a feed-water tube located within said circulating-tube and extending throughout the length thereof, said feed-water tube having on its upper end a flange overhanging said circulating-tube, and a feed-water pipe projecting downwardly within said feed-water tube.

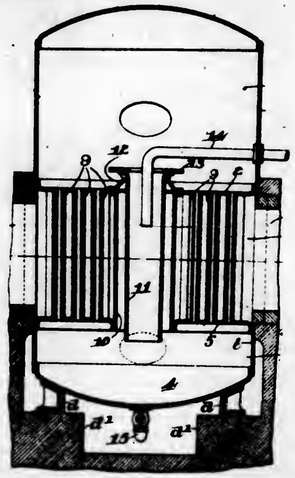

2. In a vertical boiler the combination of a lower water-chamber, an upper evaporating-chamber, an intermediate combustion-chamber closed to said water and evaporating chambers, a plurality of tubes in said combustion-chamber connecting said water and evaporating chambers, a relatively enlarged circulating-tube for said combustion-chamber, a pair of deflecting-partitions extending on opposite sides of said inlet and outlet toward each other in said combustion-chamber, one of said partitions engaging said tube, the remaining partition being spaced apart permitting the products of combustion to travel in a circuitous path from said inlet to said outlet.

3. A feed-water heater for boilers of the class described comprising an outer water-tube, an inner tube inclosed by and separated from said outer tube, a feed-water pipe projecting downwardly in said inner tube, the latter having a flange overhanging the said outer tube.

4. In a vertical boiler the combination of a lower water-chamber, an upper evaporating-chamber, an intermediate combustion-chamber having horizontally-disposed ingress and egress passages causing the products of combustion to travel in a horizontal path from said ingress to egress passages.

5. In a vertical boiler the combination of a lower water-chamber, an upper evaporating-chamber, an intermediate combustion chamber having horizontally-disposed ingress and egress passages relatively restricted with respect to said combustion-chamber causing the products of combustion to travel in a substantially horizontal path from said ingress to egress passages.

6. In a vertical boiler the combination of a lower water-chamber, an upper evaporating-chamber, a plurality of tubes connecting said water and evaporating chambers, an intermediate combustion-chamber having horizontally-disposed ingress and egress passages causing the products of combustion to travel in a horizontal path from said ingress to egress passages.

7. In a vertical boiler the combination of a lower water-chamber, an upper evaporating-chamber, a plurality of tubes connecting said water and evaporating chambers, an intermediate combustion-chamber having horizontally-disposed ingress and egress passages relatively restricted with respect to the combustion-chamber causing the products of combustion to travel in a substantially horizontal path from said ingress to egress passages.

8. In a vertical boiler the combination of a lower water-cham-

ber; an upper evaporating-chamber, an intermediate combustion-chamber having an inlet and an outlet, a plurality of tubes connecting said water and evaporating chambers, deflecting-partitions extending from opposite sides of said outlet and inlet into said combustion-chamber, one of said partitions engaging a tube, the remaining partition being spaced apart causing the products of combustion to travel in a circuitous path from the inlet to the outlet.

810,008. WIRE-STRETCHER. LAFE SWANK, Anderson, Ind., assignor to Dwiggins Wire Fence Company, Anderson, Ind., a Corporation of Indiana. Filed Oct. 28, 1905. Serial No. 284,814.

Claim.—1. A tool of the class described comprising a lever, an arm pivoted thereto, a coacting jaw also pivoted to the arm adjacent the short end of the lever, and means arranged between the adjacent ends of the lever and jaw for preventing the wire from lying closely upon the arm.

2. A tool of the class described comprising a lever, an arm pivoted thereto, a coacting jaw also pivoted to the arm adjacent the short end of the lever, means arranged between the adjacent ends of the lever and jaw for preventing the wire from lying closely upon the arm, and a finger 13 carried by the fulcrum end of the arm.

3. A tool of the class described comprising an arm having a rib on its upper face, a lever pivoted upon the upper face of said arm and provided with a recess on its under side near the short end to receive one end of said rib, and a jaw pivotally mounted on the arm and adapted to coöperate with the short end of the lever and provided with a recess on its under side adapted to receive the other end of said rib.

4. A tool of the class described comprising an arm having a rib on its upper face, a lever pivoted upon the upper face of said arm and provided with a recess on its under side near the short end to receive one end of said rib, a jaw pivotally mounted on the arm and adapted to coöperate with the short end of the lever and provided with a recess on its under side adapted to receive the other end of said rib, and a finger 13 rising from the face of the arm at its fulcrum end.

810,004. CABLE-HANGER. FRANK C. TABLER, St. Louis, Mo., assignor to Thomas R. Fowler, St. Louis, Mo. Filed Feb. 6, 1905. Serial No. 244,468.

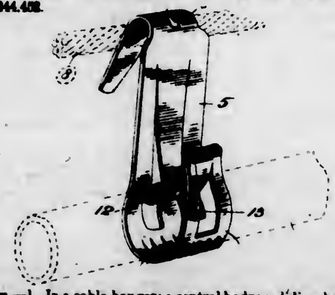

Claim.—1. In a cable-hanger: a central body; a sliding hook extending from the central body; a restricted bearing extending downwardly from the hook to engage the supporting-cable; a gripping-hook extending downwardly from the opposite end of the central body; a spring-clamp extending from the central body to press the cable downwardly into the gripping-hook, and teeth extending upwardly from the gripping-hook to engage the cable.

2. In a cable-hanger: a central body; a sliding hook extending from the central body; a gripping-hook extending downwardly from the opposite end of the central body; a spring-clamp extending from the central body to press the cable downwardly into the gripping-hook and a second spring-clamp extending from the gripping-hook in opposition to the first spring-clamp.

3. In a cable-hanger: a central body; a sliding hook extending from the central body; a gripping-hook extending from the opposite end of the central body; teeth carried by the gripping-hook and a spring-clamp in position to press the cable into the gripping-hook against the teeth.

810,005. PACKAGE-WRAPPING MACHINE. EDWARD J. TIBBETT and PHILIPP FUNCK, Rochester, N. Y., assignors to Thomas B. Dunn, Rochester, N. Y. Filed Apr. 21, 1904. Serial No. 204,295.

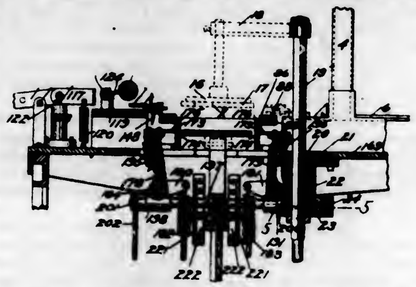

Claim.—1. In a package-wrapping machine, the combination of a folder; a magazine for the article to be wrapped; means for discharging articles successively therefrom; a supply of wrappers; means for transferring the wrappers successively to the folder; a vertical shaft; a carrier supported horizontally upon said vertical shaft for taking articles discharged from the magazine and delivering them successively to the folder; means for swinging the carrier circularly around the axis of its shaft in a path between the magazine and the folder; means for moving said carrier in the direction of the axis of its said shaft to the path of the carrier at one end of its path, whereby the carrier is caused to pick up the article, and at the other end, whereby the carrier is made to deposit it within the folder; and means for releasing the article from the carrier when delivered to the folder.

2. In a package-wrapping machine, the combination of the folder; a magazine for the articles to be wrapped; means for discharging articles successively therefrom; a supply of wrappers; means for transferring the wrappers successively to the folder; a vertical shaft; a carrier supported horizontally upon said vertical shaft, for taking articles discharged from the magazine and delivering them successively to the folder; means for swinging the carrier upon its vertical shaft in a path between the magazine and the folder; a spring for moving said carrier in the direction of the axis of said shaft at one end of its path, whereby the carrier is caused to pick up the article, and also at the other end of its path, whereby the carrier is made to deposit said article within the folder; and means for releasing the article from the carrier when delivered to the folder.

3. In a package-wrapping machine, the combination of a folder; a magazine for the articles to be wrapped; means for discharging the articles successively therefrom; a supply of wrappers; means for transferring the wrappers successively to the folder; an oscillating carrier supported horizontally upon a vertical shaft, to take articles discharged from the magazine and deliver them successively to the folder; a spring to swing said carrier horizontally around its vertical shaft from the magazine to the folder; a spring to pull it down upon the article discharged from the magazine, and to pull it down to the folder; rotary cams; connections between the cams and the carriers; whereby the latter is both returned to the magazine, and elevated after each descent.

4. In a package-wrapping machine, the combination of a folder; a magazine for the articles to be wrapped; means for discharging the articles successively therefrom; a supply of wrappers; means for transferring the wrappers successively to the folder; an oscillating carrier to take articles discharged from the magazine and deliver them successively to the folder; a spring to pull said carrier down upon the article discharged from the magazine, and to pull said carrier down to the folder, after it has been swung thereto; a spring to swing it from the magazine to the folder; a pinion on the shaft of said carrier; a reciprocating rack, whereby said carrier is oscillated; rotary cams; connections between said cams and the shaft of said carrier, and said rack, respectively, whereby said carrier is, respectively, elevated after each descent, and swung from the folder to the magazine.

5. In a package-wrapping machine, the combination of a folder; a magazine for the articles to be wrapped; means for discharging the articles successively therefrom; a magazine for wrappers; a spring-actuated reciprocating frame adapted to convey a wrapper to the folder; spring-actuated plates upon said frame to engage a wrapper at its corners; positive means for returning the frame; means for transferring the wrappers one at a time from their magazine to the reciprocating frame; a carrier for taking the articles from their magazine and delivering them successively above the wrapper as it lies above the folder; means for forcing the article and the wrapper down through said frame into the folder in proper relative positions for wrapping.

6. In a package-wrapping machine, the combination of a folder; a magazine for the articles to be wrapped; means for discharging the articles successively therefrom; a magazine for wrappers; a reciprocating frame adapted to receive a wrapper and to convey it to the folder; means for transferring the wrappers successively from their magazine to the reciprocating frame; a spring adapted to move the frame from the wrapper-magazine to the folder; an oscillating carrier horizontally supported upon a vertical shaft and adapted to take articles discharged from the magazine and deliver them successively to the folder; a spring adapted both to pull said carrier down upon the article discharged from the magazine at one end of its path, and to pull it into said folder at the other end of its path; a spring adapted to swing said carrier upon its vertical shaft from the magazine to the folder; a driven shaft; cams upon said shaft; connections between said cams and the reciprocating frame and carrier, respectively, whereby said parts are returned to their respective initial positions after each action of said springs, said cams being so placed upon said shaft as to cause said operations to take place in proper sequence.

7. In a package-wrapping machine, the combination of a folder; a magazine for the article to be wrapped; means for discharging articles successively therefrom; a supply of wrappers; means for transferring such wrappers successively to the folder; a vertical shaft; a carrier for taking successively the articles to be discharged from the magazine, and placing them upon wrappers, means for moving the carrier circularly around the axis of its shaft in a path between the magazine and the folder; means for moving said carrier in the direction of the axis of said shaft at one end of its path, to pick up the article, and at the other end of its path, both to deposit the article within the folder, and to force the wrapper into the folder with the article; and means for releasing the article from the carrier when delivered to the folder.

8. In a package-wrapping machine, the combination of a folder; a magazine for the articles to be wrapped; means for discharging articles successively therefrom; a magazine for cut outer wrappers; a reciprocating frame adapted to receive the wrappers one at a time and to convey them to the folder; means for transferring the wrappers from their magazine to the reciprocating frame; means for supporting a roll of inner wrapping material; means for severing wrappers of proper length therefrom; means for transferring the inner wrapper successively, when severed, to the folder, above the outer wrappers, respectively, a carrier to take the articles discharged from the magazine, to swing horizontally to the folder, and to descend with the articles into the folder, thereby forcing down into the folder beneath the article both inner and outer wrappers in proper relative position for folding and means for operating said carrier.

9. In a package-wrapping machine, the combination of a folding-box; means for depositing an article and wrapper therein; a vertical reciprocating platen adapted to form the floor of a folding-box during the operation of wrapping; means for wrapping the wrapper around the article; a spring adapted to lower the platen with a package upon it from the folding-box after the article has been wrapped; means for removing the package from the platen when the latter has been lowered away from the folding-box; a rotary cam; and connections between the cam and the platen, whereby the platen is held up against the folding-box during the operation of folding, and is returned to the folding-box against the resistance of the spring, after the package has been removed from it.

810,006. AUTOMATIC SAFETY ATTACHMENT FOR STAMP-MILLS. JAMES C. H. VAUGHT, Lead, S. D. Filed Mar. 20, 1904. Serial No. 199,525.

Claim.—1. The combination with a tappet, and a cam for actuating the same, of a safety attachment for stamp-mills, comprising a tappet-support normally arranged beyond the path of the tappet, and means located beneath the cam-actuated tappet and arranged to be directly operated by the tappet for moving the said support into the path of the said tappet, whereby the latter will be supported out of operation.

2. The combination with a tappet, and a cam for actuating the tappet, of a tappet-support normally arranged out of the path of the tappet, and means located beneath the cam-actuated tappet and arranged to be directly engaged by the said tappet for carrying the support into the path of the same, whereby the tappet will be supported in an elevated position beyond the cam.

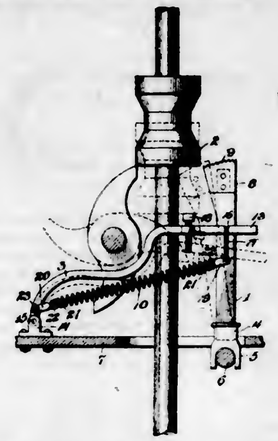

3. The combination with a tappet, and a cam for actuating the same, of a safety attachment for stamp-mills, comprising a tappet-support, a tripping device located beneath the said tappet and holding the tappet-support normally out of the path of the tappet and arranged to be directly engaged by the tappet, whereby the support will be released, and means for automatically moving the support into the path of the tappet, when the said support is released.

4. The combination with a tappet, and a cam for actuating the same, of a safety attachment for stamp-mills, comprising a spring-actuated support, and a tripping device located below and normally holding the support out of the path of the tappet and operable by direct engagement with the tappet for releasing the support, said support being extended above the tripping device.

5. The combination with a tappet, and a cam for actuating the same, of a safety attachment for stamp-mills, comprising an automatically-movable tappet-support, a tripping device located beneath and normally holding the tappet-support out of the path of a tappet, and an adjustable device carried by the tripping device and arranged to be directly engaged and operated by the tappet.

6. A safety attachment for stamp-mills, comprising a tappet-support, a pivotally-mounted tripping device detachably engaging the support for holding the same normally out of the path of the tappet, said tripping device being arranged to be directly engaged and operated by the tappet, and a spring for maintaining the support in engagement with the tripping device and for moving the support into the path of the tappet when the said support is tripped, said support being extended above the tripping device.

7. A safety attachment for stamp-mills, comprising a tappet-support having a combined guide and keeper, a tripping device operating within the combined guide and keeper and provided with means for engaging the same, and a spring for maintaining the keeper in engagement with the tripping device and for actuating the supporting device when the same is tripped.

8. A safety attachment for stamp-mills, comprising a tappet-support having a combined guide and keeper, a tripping device consisting of a pivoted bar or member extending into the combined guide and keeper and provided with means for engaging the same, and a spring connected with the combined guide and keeper and with the tripping device.

9. The combination with a tappet, and a cam for actuating the same, of a safety attachment for stamp-mills, comprising an upright automatically-movable oscillatory tappet-supporting finger, and means located beneath the cam-actuated tappet for setting and tripping the finger, said means being arranged to be directly engaged and operated by the tappet.

10. A safety attachment for stamp-mills, comprising an upright oscillatory tappet-supporting finger provided at its upper end with a cap having an inclined corrugated face which extends upward and outward from the tappet when in engagement with the same, means for actuating the finger, and a tripping device arranged to be directly engaged and operated by the tappet.

810,007. METHOD OF MAKING CLEVIS-IRONS. WILLIAM S. WARD, Plantsville, Conn., assignor to The H. D. Smith & Company, Plantsville, Conn., a Corporation. Filed June 10, 1905. Serial No. 264,743.

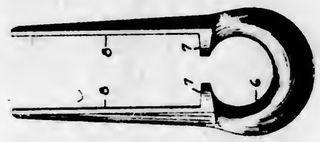

Claim.—The herein-described method of producing clevis-irons which consists in striking up a blank from a bar of iron by drop-forging in dies, with the blades and eye all substantially in one plane, then trimming off the fin or surplus metal and finally twisting the iron of the eye portion at its smaller diameter to bring the blades into their proper position.

810,008. CAR-COUPLING. EDWIN C. WASHBURN, Minneapolis, Minn. Filed Nov. 21, 1904. Serial No. 233,565.

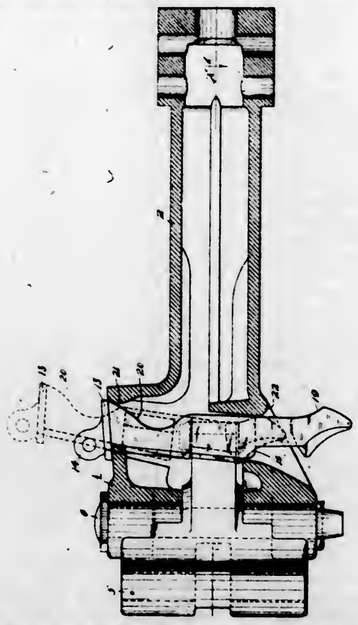

Claim.—1. A coupler having a draft-bar, knuckle and lock-dog, with said dog arranged to lift and set on the tail of said knuckle for automatic unlocking, and the tail of said knuckle being cut away or formed with a cam on its rear, operating to force said lock-dog into alinement with its seat under the closing movement of the knuckle, substantially as described.

2. A coupler having a draft-bar, knuckle and lock-dog, said dog being arranged to set on the tail of said knuckle, for automatic uncoupling, and having a vertical shouldered surface, and said knuckle having a vertical cam-surface acting on the vertical shouldered surface of said dog, to force said dog back under the closing movement of said knuckle, substantially as described.

3. A car-coupler having the pivoted knuckle, and a lock-dog, the tail of said knuckle having a vertical cam-surface 9, and said lock-dog having an under shoulder 15 and an upper shoulder 16, said shoulder 15 being engageable with the tail of the knuckle to set the dog for uncoupling, and said cam-surface 9 operating on said dog between said shoulders 15 and 16, to force said dog back and drop said shoulder 16 onto the tail of said knuckle under the closing movement of the knuckle, substantially as described.

4. A coupler having a hollow guard-arm formed with a Y-shaped binder-reinforcing web adapted to carry the tension strain on the guard-arm to the head of the coupler, substantially as described.

5. A coupler having a draft-bar, pivoted knuckle, and vertical-moving lock-dog, said dog being arranged to be set on the tail of said knuckle for automatic uncoupling, and being cut away at its back so as to unlock when the coupler is pulled out beyond its normal limit, substantially as described.

6. In a car-coupler, a combination with a coupler-head, of a pivoted knuckle and a coöperating vertical movable lock-dog, said dog having a shoulder adapted to rest upon the tail of the knuckle when the said dog is raised and swung forward, a coöperating cam-surface on the dependent tail of said dog, and on said coupler-head arranged to be engaged and to force said dog forward when the shoulder of said dog is raised for engagement with the tail of the knuckle, substantially as described.

7. A coupler having a knuckle and a vertically-movable lock-dog, which dog is cut away at its back so that the dog will lift into an unlocking position when the coupler-head is torn loose and is arranged to be set on the tail of the knuckle by a forward and upward swinging movement, for automatic uncoupling, and having a cam projection that coöperates with a cam-surface on the tail of said knuckle, to force said knuckle open when said dog is raised above its unlocking position, substantially as described.

8. A coupler having a knuckle and a vertically-movable lock-dog, which dog is cut away at its back so that the dog will lift into an unlocking position when the coupler-head is torn loose and is arranged to be set on the tail of the knuckle by a forward and upward swinging movement, for automatic uncoupling, having a cam projection that coöperates with a cam-surface on the tail of said knuckle, to force said knuckle open when said dog is raised above its unlocking position, said dog at all times being held against movements transversely of the coupler-head, substantially as described.

810,009. BEAN CLEANING AND POLISHING MACHINE. ERNEST E. WERP, Oxford, Mich. Filed Sept. 30, 1904. Serial No. 226,615.

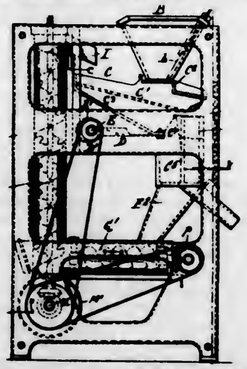

Claim.—1. In a bean cleaning and polishing machine, a hopper, a spiral conveyor suitably inclosed, suitable chutes for delivering beans from the hopper into the conveyer, a screen for receiving and separating the beans from the polishing agent when discharged by the conveyer, a chute for receiving the beans and returning them to the conveyer for a second passage through the polishing agent, and means for receiving the polishing agent when separated from the beans by the screen and returning it to the spiral conveyer, substantially as described.

2. In a bean cleaning and polishing machine, a multiple-feed hopper, a plurality of horizontal conveyers, a corresponding number of vertical conveyers suitably inclosed, means for delivering beans from the feed-hopper to the horizontal conveyers, a screen to separate the beans from the polishing agent as they are discharged by the vertical conveyer, suitable chutes to discharge the beans from the machine when separated from the polishing agent, and chutes to return the polishing agent back to the conveyers, substantially as described.

3. In a bean cleaning and polishing machine, a multiple-feed hopper, a plurality of horizontal conveyers, a corresponding number of vertical conveyers, means for delivering the beans from the feed-hopper to the horizontal conveyer, a screen for receiving and separating the beans discharged from the vertical conveyer, a chute to receive the beans discharged by the screen, means for returning them to the horizontal conveyer for a second passage through the polishing agent, and means for returning the polishing agent to the conveyers, substantially as described.

4. In a bean cleaning and polishing machine, a multiple-feed hopper, a plurality of horizontal conveyers, a corresponding number of vertical conveyers suitably inclosed, means for delivering the beans from the hopper to the horizontal conveyers, means for separating the beans from the polishing agent as they are discharged by the vertical conveyer, suitable chutes to discharge the beans from the machine when separated from the polishing agent, and means for discharging the polishing agent from the machine, substantially as described.

810,010. PORTABLE GRAIN ELEVATOR AND CONVEYER. GUSTAVE WERNELMANN and EDWARD H. OVERHOLT, Streator, Ill., assignors to The Wernelmann Manufacturing Company, a Corporation of Illinois. Filed June 24, 1903. Serial No. 162,866.

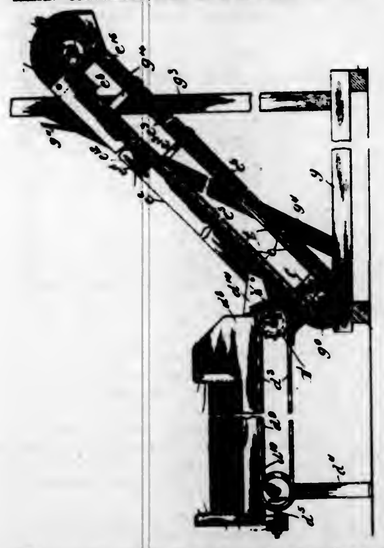

Claim.—1. The combination with a supporting-frame, of supporting-wheels, a main driving-shaft journaled on the frame on a chain elevator pivoted at one end thereon, means for adjusting the free end of the elevator to a desired height, a shaft journaled on the lower end of the elevator, a receiving-chain conveyer pivoted on the shaft and positioned to turn upwardly into the elevator, legs pivoted at the outer end of the receiving-conveyer and on which one of the shafts for the conveyer is journaled, means for adjusting the tension of the conveyer-chain comprising bolts acting to swing said legs on their pivots.

2. The combination with a supporting-frame, of wheels beneath the same, a main driving sprocket-shaft journaled transversely at one end of the frame, metallic elevator-trough pivoted at one end thereon, endless chains provided with transverse lugs and passing around the sprocket-wheels on said driving-shaft, and similar sprockets at the outer end of the conveyer-troughs, a sprocket-shaft journaled transversely on the lower end of the elevator, a receiving-conveyer pivoted thereon in position to turn upwardly into the elevator, said conveyer comprising a sheet-metal box open at the top and the end adjacent to the elevator, legs at the outer end of the same, a sheet-metal hopper hinged in one side of said conveyer and provided with flanged ends acting to engage the side walls thereof when turned outwardly, a conveyer-chain having transverse lugs thereon driven from the sprocket-wheels on said shafts and means for tightening the conveyer-chain operated by movement of the legs thereof on their pivots.

3. In a device of the class described the combination with a wheeled frame, an elevator pivoted thereto at one end and comprising conveyer-troughs having integral sheet-metal bottom and side walls bent to form trough-sections and rigidly bolted together with the butts directed upwardly in the upper and downwardly in the lower trough, a strap of metal connecting corresponding side walls of the upper and lower troughs at the joints, washers countersunk on the inner sides engaging the outer sheet at the joints and conical headed bolts engaging through the top and acting to draw the sheet inwardly thereby countersinking the bolt-head therein,

4. The combination with upper and lower conveyer-troughs of sheet metal having integral bottom and side walls, of a sprocket-shaft at each end and between the troughs, endless chains secured over the sprockets thereon and connected by transverse lugs and a rigid extension on the bottom of the upper trough filling the space between the chains above and below and bearing on the upper shaft and acting to prevent material clogging the elevator.

5. The combination in an elevator of two sheet-metal troughs built of sectional lengths secured together at the ends, sprocket-shafts journaled at the ends and between the troughs, endless transversely-connected elevator-chains extending around said sprockets, an adjustable guide at the upper end of said trough, said troughs each comprising a solid shell of metal joined with the butts directed with the travel of the chain, a receiving-conveyer comprising a sheet-metal box open at the top and one end and pivoted on the lower end of the elevator and conveyer chains movable therein and acting to deliver the contents into the elevator.

6. The combination with an elevator of the class described, of a receiving-conveyer pivoted on the lower end thereof and adapted to be turned upwardly into the elevator and comprising a box open at the top and at the end adjacent the elevator, legs at the outer end of the conveyer, a hinged outwardly-swinging side on the box forming a hopper, an endless conveyer-chain movable along the bottom of the box, means for tightening the conveyer-chain operated by movement of the conveyer-legs, and chute-boards also pivoted on the elevator and extending up on the sides of the receiving-conveyer and acting to direct material into the elevator.

7. In a chain elevator the combination with a sheet-metal trough comprising a plurality of trough-sections each having integral bottom and side walls and having the transverse lap of the sections directed with the travel of the chain, of sprocket-shafts journaled at the top and bottom thereof, sprocket-chains operated thereby, a metallic fitting engaged on the shaft and forming a continuation of the bottom of the trough, a hood at the upper end of the elevator, parallel guide-slides on each side of the same extending parallel with the troughs, a sliding block between said guide-slides and in which the shaft is journaled, bolts secured on said blocks, a transverse bar at the outer end of the hood through which the bolts extend and nuts engaged on said bolts and acting to move the shafts longitudinally of the troughs and tighten the chain.

8. In a chain elevator the combination with a sheet-metal trough comprising a plurality of trough-sections each having integral bottom and side walls and having the transverse lap of the sections directed with the travel of the chain, of sprocket-shafts journaled at the top and bottom thereof, sprocket-chains operated thereby, a metallic fitting engaged on the shaft and forming a continuation of the bottom of the trough and shaped to support the chain to and from the sprocket-wheels and acting to prevent kinking thereof, a hood at the upper end of the elevator, parallel guide-slides on each side of the same extending parallel with the troughs, a sliding block between said guide-slides and in which the shaft is journaled, bolts secured on said blocks, a transverse bar at the outer end of the hood through which the bolts extend and nuts engaged on said bolts and acting to move the shafts longitudinally of the troughs and tighten the chain.

9. The combination in an elevator, of sprocket-chains, parallel sheet-metal troughs therefor comprising sections having integral bottom and side walls and having the laps directed oppositely in the respective troughs and with the travel of the chain thereon, a sprocket-shaft at one end of the conveyor on which the same is pivotally supported, a hood at the opposite end of the trough, a sprocket-shaft adjustably journaled therein and over which the chain is trained, means for adjusting the tension of said chain by movement of the upper sprocket-shaft and a fitting forming a continuation of the bottom of the upper trough and secured on the sprocket-shaft between the laps of the chains and serving to direct the chain around the sprockets without kinking.

10. The combination with a sheet-metal receiving-conveyor, of a hinged side flanged at the ends forming a hopper, a driving-shaft on which said conveyor is pivoted, sprocket-wheels thereon, legs at the outer ends of the conveyor, a sprocket-shaft journaled thereon, endless, transversely-connected chains trained over said sprocket-

wheels with the upper run thereof movable over the bottom of the conveyor and means operated by adjustment of the legs of the conveyor for tightening the chains.

11. The combination with a sheet-metal receiving-conveyer, of a side thereon adapted to turn outwardly and forming a hopper, a sheet-metal elevator pivotally connected with said conveyer, a driving-shaft on which the elevator is pivoted at the end adjacent to said conveyer, sprocket-wheels on said shaft, a sprocket-shaft at the upper end of the elevator, endless, transversely-connected elevator-chains passing around the sprocket-wheels on the driving-shaft and the upper sprocket-shaft and a guide at each end of the conveyer provided with a rounded end and affording a continuation of the bottom.

12. The combination with a sheet-metal receiving-conveyer, of a side thereon adapted to turn outwardly and forming a hopper, a sheet-metal elevator adjustably engaged thereon, pivotally-supported means on said elevator adapted to direct material thereinto a driving-shaft on which the elevator is pivoted, sprocket-wheels on said shaft, a sprocket-shaft at the upper end of the elevator, endless, transversely-connected elevator-chains passing around the sprocket-wheels on the driving-shaft and the upper sprocket-shaft, a guide rigidly secured at the lower end of said elevator and a movable guide at the upper end, said guides being provided with rounded outer ends.

13. In a device of the class described the combination with a receiving-conveyer, of a chain elevator adjustably connected therewith, a double trough adapted to carry said chain, means for adjusting said chain, a guide rigidly secured at the lower end of said elevator and a movable guide at the upper end thereof projecting from beneath the upper trough and provided with a downwardly-turned outer end.

14. In a device of the class described the combination with a receiving-conveyer, of a double trough adjustably engaged thereon, a sprocket-shaft journaled at each end of said trough, an endless-chain conveyer carried on said sprockets, a transverse guide slidably engaged beneath the upper trough and having a rounded end adapted to direct material thereover and a downwardly-opening hood at the upper end of said trough.

15. In a device of the class described the combination with a receiving-conveyer positioned for a wagon-box to dump its contents directly thereinto, of an elevator positioned to receive the material therefrom, a sprocket-shaft at the top of the elevator, extensible adjusting-rods supported on each end thereof, a sprocket-shaft journaled at the lower ends of said adjusting-rods and driving-chains trained over the sprockets on said shafts and tightened by the extension of the adjusting-rods.

16. In a device of the class described an upper and a lower elevator-trough each comprising a plurality of overlapping sections having integral bottom and side walls, countersunk washers in suitable apertures in the overlapping ends of said sections, bolts provided with conical heads adapted to seat in said washers flush with the upper surface of said troughs and straps connecting corresponding sections of said troughs at the joints.

17. In a device of the class described the combination with upper and lower connected conveyer-troughs each comprising a plurality of overlapping sheet-metal sections, of countersunk washers seated in the overlapping ends of said sections, bolts securing said sections together and provided with conical heads adapted to seat in said washers flush with the upper surface of the troughs and a conveyer adapted to travel in said troughs.

810,011. RAILWAY SIGNALING APPARATUS. JESSE WHEATLEY, East Molesey, England. Filed May 15, 1905. Serial No. 260,675.

Claim.—1. A railway signaling apparatus characterized by a "line-clear" pedal, a "danger-pedal," a striking arm or lever and a pedal-rail connected up to said pedals and operated by the flange of a wheel substantially as described.

2. A railway signaling apparatus characterized by a "line-clear" pedal, a "danger-pedal," weighted levers connected to said pedals, means for locking said weighted levers and a pedal-rail connected to said locking means and operated by the flange of a wheel substantially as described.

3. A railway signaling apparatus characterized by a "line-clear" pedal, a "danger-pedal," weighted levers connected to said pedals, means for locking and unlocking said weighted levers, means for partly disconnecting the apparatus from the semaphore and a pedal-rail connected to said locking and unlocking means and operated by the flange of a wheel substantially as described.

4. In a railway signaling apparatus of the kind set forth a device for partly disconnecting the apparatus from the semaphore with reference to Figs. 4 and 5 of the accompanying drawings consisting of a box or casing, upper and lower grooves to said casing, rods controlled by weights sliding in said casing, the upper rod being cranked and provided with a nose to engage the end of the lower rod so as to draw back the same, and means such as inclines on said casing to effect the release of the lower rod substantially as described.

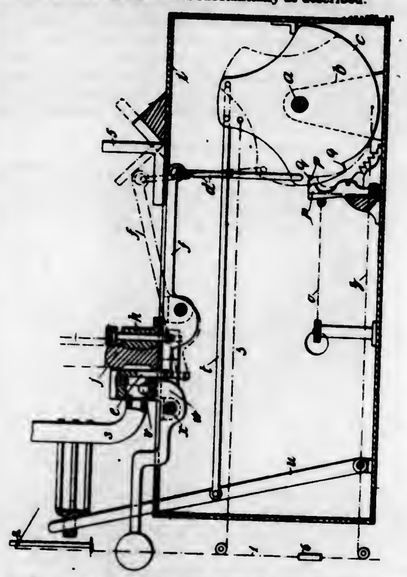

5. In a railway signaling apparatus the combination with the danger-pedal, striking-arm and anvil and pedal-rail of a band of detonators and means for effecting the positive feed of said band to said anvil substantially as described.

6. In a railway signaling apparatus the combination with the danger-pedal, striking-arm and anvil and pedal-rail of a band of detonators and means for effecting the positive feed of said band to said anvil and means for preventing the premature explosion of a succeeding detonator substantially as described.

7. In a railway signaling apparatus the combination with the danger-pedal, striking-arm and pedal-rail of a pivotal anvil, a band of detonators to cross said anvil and means for effecting the positive feed of said band to said anvil or to withdraw said detonators from off the anvil to give "line clear" substantially as described.

810,012. WOVEN PILE FABRIC. MATTHEW J. WHITTALL, Worcester, Mass. Filed June 26, 1902. Serial No. 113,260.

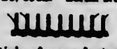

Claim.—1. As an article of manufacture, a single-ply pile fabric having its filling-threads all in a single weft plane and having a number of figuring-warps, each of which, after having been called, is carried through to the back of the fabric and there shown separate from the other figuring-warps before it is again associated therewith.

2. As an article of manufacture, a single-ply two-shot pile fabric having all its filling-threads in a single weft plane and having a number of figuring-warps, the unselected ones of which pass alternately under and over successive filling-threads, while each figuring-warp, after having been called, is carried through to the back of the fabric and there shown separate from the rest of the figuring-warps before being associated therewith.

810,013. WOVEN PILE FABRIC. MATTHEW J. WHITTALL, Worcester, Mass. Filed June 26, 1902. Serial No. 113,262.

Claim.—1. As an article of manufacture, a single-ply three-shot pile fabric, having its weft-threads arranged in a single plane and having a number of figuring-warps, each of which, after having been called, is carried through the back of the fabric and there shown separate from the other figuring-warps before being again associated therewith.

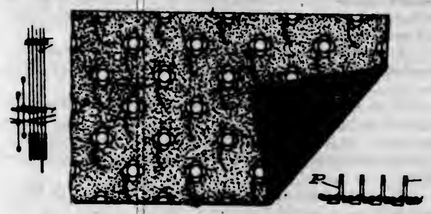

2. As an article of manufacture, a single-ply three-shot pile fabric, having its filling-threads arranged in a single plane and having a number of figuring-warps, the unselected ones of which pass alternately under two filling-threads and then over one filling-thread, while each figuring-warp, after having been called, is carried through to the back of the fabric and there shown separate from the rest of the figuring-warps before being again associated therewith.

810,014. BREAST-STRAP SLIDE. BERNHOE M. WIESTHAN, New Britain, Conn., assignor to North & Judd Manufacturing Company, New Britain, Conn., a Corporation of Connecticut. Filed Sept. 27, 1905. Serial No. 280,294.

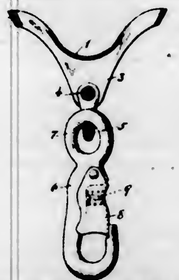

Claim.—1. A breast-strap slide comprising a body portion having depending ears, a pivot-shaft secured in said ears, a U-shaped yoke pivotally mounted on said shaft, and a fastener having a solid eye loosely hung from said yoke so as to swing freely back and forth and from side to side.

2. A breast-strap slide comprising a body member for the attachment of the strap and having depending ears, a U-shaped yoke having its arms pivotally supported from said ears, and a fastener loosely hung on said yoke by a solid eye with an opening larger than the end of one arm of the yoke member to permit its assembling and operation, substantially as described.

810,015. ICE-BOX. PAUL H. WOLFRAM, Chicago, Ill. Filed July 23, 1904. Serial No. 217,092.

Claim.—1. In an ice-box of the kind described, the combination comprising a main body composed of the walls A, frame B and roof F; an ice-chest G supported on said frame B near the roof F for the storage of ice, said ice-chest having closed sides g' and end g^2 and open-work front and bottom g^3; a vestibule C formed by the wall A and partitions c' and c^2 and provided with an outside door D and inside door D' connecting the vestibule with the main chamber E; the top of said vestibule being open near the roof F and adapted to cause the air entering through the outside doorway to pass upward to the roof F and into said ice-chest, and from there into the main chamber E; a main chamber E inclosed by the walls A and beneath the ice-chest G, said chamber being provided with front doors O and a shelf P, having an end partition P'; rails Q adapted to support meat-hooks R; a curtain-partition T supported on the frame B and extending from the wall A on the one side and over the partition P' on the other from the side g' of the ice-chest G down over the rails Q and shelf P, thereby forming a small inclosure in the chamber E, said inclosure being open at the top and adapted to cause the air entering through the open doors O to pass into the ice-chest G; and a deflector E' suitably supported on the frame B and vestibule C, and extending across the chamber E adapted to receive and deflect part of the air passing downward from the ice-chest G and thereby causing a circulation of air in said chamber; and a plurality of apertures U provided with flaps V, said apertures and flaps being adapted to allow a change of air to take place in said chamber E through the opening and closing of the doors D and O in said ice-box, substantially as described and for the purposes specified.

2. In an ice-box of the kind described, the combination comprising a main body; an ice-chest G suitably arranged near the roof F; a vestibule C arranged within said main body and opening near the roof and over said ice-chest, and having suitable entrances D and D'; a main chamber E arranged to be entered from said vestibule and having front doors O and a shelf P; a movable partition T within said chamber E and inclosing the shelf P and doors O, and adapted to cause the air entering said doors to pass through the ice-chest G before entering the chamber E, and a deflector E' adapted to cause the circulation of the air passing from the ice-chest into the chamber E, substantially as described and for the purposes specified.

3. In an ice-box of the kind described, the combination of a main body A and B; a vestibule C and main chamber E, said vestibule forming the main entrance into said chamber; a front door O opening into said chamber; a shelf P and movable partition T in the interior of the chamber E forming a small inclosure bounded by the partition T, shelf P and front wall and door O, said inclosure being open at the top; and an ice-chest into which said vestibule and said small inclosure open, substantially as described and for the purposes specified.

4. In an ice-box of the kind described, the combination of a main body A and B, a vestibule C and main chamber E separated from said vestibule by a partition c^2, with a deflector E', said deflector being attached to said partition and supported thereby and extending from the front to the rear walls of said main chamber, and projecting outward from said partition in a curved form, substantially as described and for the purposes specified.

810,016. IMPRESSION MECHANISM OF CYLINDER PRINTING-MACHINES. HENRY A. W. WOOD, New York, N. Y., assignor to Campbell Printing Press & Manufacturing Company, New York, N. Y., a Corporation of New York. Filed Mar. 8, 1897. Renewed Apr. 24, 1905. Serial No. 257,094.

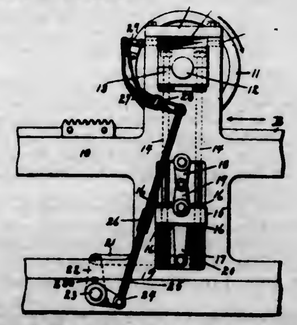

Claim.—1. The combination in a printing-press of the framing, vertically-movable beams mounted thereon, an impression-cylinder

journaled in said boxes, means for raising and lowering said boxes,

7. The combination in an artificial belt with [illegible]

journaled in said boxes, means for raising and lowering said boxes, and a locking mechanism for locking the top sections of the boxes to the framing so as to resist the thrust of impression.

2. The combination in a printing-press of the framing, vertically-moving boxes or frames mounted therein, covers or caps arranged above said boxes, an impression-cylinder journaled in said boxes, means for raising and lowering said boxes, and a locking mechanism interposed between said boxes and said covers or caps for locking the boxes in their lowest position.

3. The combination in a printing-press of the framing, vertically-moving boxes or frames mounted therein, covers or caps arranged above said boxes, an impression-cylinder journaled in said boxes, means for raising and lowering said boxes, sliding wedges interposed between said boxes and caps, and means for actuating said wedges to lock the boxes in their lowest positions.

4. The combination in a printing-press of the framing, vertically-moving boxes mounted in the framing, caps arranged above said boxes, an impression-cylinder journaled in said boxes, means for raising and lowering said boxes, sliding wedges arranged between said boxes and said caps, and means connected to the raising and lowering mechanism for actuating said wedges to lock the boxes in their lowest positions.

5. The combination in a printing-press of the framing, vertically-moving boxes arranged therein, a shaft journaled in said boxes carrying the impression-cylinder, caps arranged above said boxes, sliding wedges arranged between said boxes and said caps, a toggle mechanism for raising and lowering said boxes, mechanism for actuating the toggle mechanism, and connections therefrom to actuate said wedges to lock the boxes in their lowest positions.

6. The combination in a printing-press of the framing, vertically-moving boxes mounted therein, a shaft carrying the impression-cylinder journaled in said boxes, sliding wedges arranged between said boxes and said caps, rods extending from said boxes and connecting to a yoke, toggles arranged between said yoke and the framing, an oscillating shaft connecting by levers, and links to operate said toggles, and levers mounted on said oscillating shaft connecting by links to levers connected to said sliding wedges to move said wedges to lock the boxes in their lowest positions.

7. The combination in a printing-press of the framing, vertically-moving boxes mounted therein, a shaft carrying the impression-cylinder journaled in said boxes, sliding wedges arranged between said boxes and said caps, rods extending from said boxes and connecting to a yoke, toggles arranged between said yoke and the framing, an oscillating shaft connecting by levers, and links to operate said toggles, and levers mounted on said oscillating shaft connecting by adjustable links to levers connected to said sliding wedges to move said wedges to lock the boxes in their lowest positions.

810,017. ARTIFICIAL BAIT. JASPER L. ACKERMAN, Monticello, Ind. Filed Apr. 19, 1905. Serial No. 256,302.

Claim.—1. An artificial bait comprising the body-sections adapted to fit together at their inner sides, an intermediate device extending longitudinally between said sections and beyond the ends thereof, cup-like clamps on said extensions for engaging the ends of the body-sections, and holding the same together, and spinners on such extensions beyond said cup-like clamps substantially as set forth.

2. An artificial bait comprising the detachable body-sections, an intermediate device extending between the same, and means in connection with said intermediate device for securing fish-hooks.

3. An artificial bait comprising a pair of detachable body-sections fitting face to face, means extending beyond the ends of said sections, and cup-like clamps on said means for holding the sections together, substantially as set forth.

4. An artificial bait comprising detachable body-sections, devices held between the same, and means in connection with said devices for securing a fish hook or hooks, substantially as described.

5. An artificial bait comprising two sections fitting face to face and means for securing the sections together, substantially as set forth.

6. The combination in an artificial bait, of the detachable sections fitting face to face, devices extending beyond the ends of the sections, spinners on said extensions, and means for detachably connecting the sections of the body, substantially as set forth.

7. The combination in an artificial bait, with body-sections detachably connected, of intermediate devices between said detachable sections and provided with means for securing a fish hook or hooks substantially as set forth.

8. An artificial bait having detachable body-sections, and a device between the same and having an inwardly-facing hook or hooks for securing a fish-hook, substantially as set forth.

9. An artificial bait comprising a body composed of detachable sections, an intermediate device between said sections and clamping devices on said intermediate device for engaging the ends of the detachable sections for holding the same together, substantially as set forth.

10. An artificial bait comprising a body composed of detachable sections, an intermediate device between said sections and extended at its ends beyond the same, spinners on such extensions and clamping devices operating in connection with said intermediate device for securing the sections of the body together.

11. An artificial bait comprising the detachable body-sections, means engaging the ends of the sections for securing the ends together, and hook-securing devices held between the sections, substantially as set forth.

12. An artificial bait comprising the detachable body-sections and means engaging the ends of the sections for securing the same together, substantially as set forth.

13. An artificial bait comprising detachable body-sections fitting face to face, and devices for securing these sections together and including means extending between the sections, substantially as set forth.

14. An artificial bait comprising the detachable body-sections and means for securing the sections together and including devices engaging with the sections at the ends thereof substantially as set forth.

15. The combination of the detachable body-sections, an extensible rod extending between the said sections and projecting beyond the ends thereof, and cup-like clamps on said rod for engaging with the ends of the body-sections, substantially as set forth.

16. The combination of the body-sections, a rod extending between the same, and rods between the body-sections and having the returned ends forming hooks for securing the fish-hooks, substantially as set forth.

17. An artificial bait comprising a body composed of detachable sections, an intermediate device between the said sections and clamping devices operating in connection with said intermediate device for securing the sections of the body together, substantially as set forth.

810,018. REPEATING ATTACHMENT FOR PHONOGRAPHS. EDWARD L. AIKEN, East Orange, N. J., assignor to New Jersey Patent Company, West Orange, N. J., a Corporation of New Jersey. Filed June 24, 1905. Serial No. 266,863.

Claim.—1. In a return attachment for phonographs and allied talking-machines, the combination with a traveling sound-box and means for progressively moving the same when in its operative position, of a return-screw shaft, and means for elevating said sound-box comprising a sleeve traveling on said return-screw shaft, and a cam rotatably mounted on said sleeve, substantially as set forth.

2. In a return attachment for phonographs and allied talking-machines, the combination with a traveling sound-box and means for progressively moving the same when in its operative position, of a return-screw shaft, and means for elevating said sound-box comprising a sleeve traveling on said return-screw shaft and a cam rotatably mounted on said sleeve on a bearing whose axis is inclined to the axis of said return-screw shaft, substantially as set forth.

3. In a return attachment for phonographs and allied talking-machines, the combination with a traveling sound-box and means for progressively moving the same when in its operative position, of a return-screw shaft, and means for elevating said sound-box comprising a sleeve traveling on said return-screw shaft and a cam rotatably mounted on said sleeve on a bearing eccentric to the axis of said return-screw shaft, substantially as set forth.

4. In a return attachment for phonographs and allied talking-machines, the combination with a traveling sound-box and means for progressively moving the same when in its operative position, of a return-screw shaft and means for elevating said sound-box comprising a sleeve traveling on said return-screw shaft and a cam rotatably mounted on said sleeve on a bearing whose axis is inclined and eccentric to the axis of said return-screw shaft, substantially as set forth.

5. In a return attachment for phonographs and allied talking-machines, the combination with a traveling sound-box and means for progressively moving the same when in its operative position, of a return-screw shaft, and means for elevating said sound-box comprising a sleeve traveling on said return-screw shaft, a cam rotatably mounted on said sleeve, and means for holding said sleeve against rotation, substantially as set forth.

6. In a return attachment for phonographs and allied talking-machines, the combination with a traveling sound-box and means for progressively moving the same when in its operative position, of a return-screw shaft, and means for elevating said sound-box comprising a sleeve traveling on said return-screw shaft, a cam rotatively mounted on said sleeve on a bearing whose axis is inclined to the axis of said return-screw shaft, and means for holding said sleeve against rotation, substantially as set forth.

7. In a return attachment for phonographs and allied talking-machines, the combination with a traveling sound-box and means for progressively moving the same when in its operative position, of a return-screw shaft, and a lifting-cam traveling back and forth on the return-screw, and means for operating said cam, substantially as set forth.

8. In a return attachment for phonographs and allied talking-machines, the combination with a traveling sound-box and means for progressively moving the same when in its operative position, of a return-screw shaft and a lifting-cam traveling back and forth on the return-screw, said cam being provided with means for engaging the thread of the return-screw, substantially as set forth.

9. In a return attachment for phonographs and allied talking-machines, the combination with a traveling sound-box and means for progressively moving the same when in its operative position, of a return-screw shaft, a lifting-cam, a sleeve traveling back and forth on the return-screw shaft and rotatably supporting said cam, said sleeve being apertured, and means rotatable with the cam for engaging the thread of the return-screw through said aperture, substantially as set forth.

10. In a return attachment for phonographs and allied talking-machines, the combination with a traveling sound-box and means for progressively moving the same when in its operative position, of a return-screw shaft, a lifting-cam traveling back and forth on the return-screw, and means rotating with said shaft for operating said cam at the end of its forward travel, substantially as set forth.

11. In a return attachment for phonographs and allied talking-machines, the combination of a traveling sound-box and means for progressively moving the same when in its operative position, of a return-screw shaft, a lifting-cam traveling back and forth on the return-screw shaft, and means rotating with and adjustable on said shaft for operating said cam at the end of its forward travel, substantially as set forth.

12. In a return attachment for phonographs and allied talking-machines, the combination with a traveling sound-box and means for progressively moving the same when in its operative position, of a return-screw shaft, a lifting-cam traveling back and forth on the return-screw shaft and means rotating with said shaft for operating said cam at the end of its rearward travel, substantially as set forth.

13. In a return attachment for phonographs and allied talking-machines, the combination of a traveling sound-box and means for progressively moving the same when in its operative position, of a return-screw shaft, a lifting-cam traveling back and forth on the return-screw shaft and means rotating with and adjustable on said shaft for operating said cam at the end of its rearward travel, substantially as set forth.

14. In a return attachment for phonographs and allied talking-machines, the combination with a traveling sound-box and means for progressively moving the same when in its operative position, of a return-screw shaft, a lifting-cam traveling back and forth on the return-screw shaft, and means rotating with said shaft for operating said cam, substantially as set forth.

810,019. CEMENT-BLOCK MACHINE. GORHAM J. APGAR, Robinson, Ill. Filed Feb. 13, 1905. Serial No. 245,457.

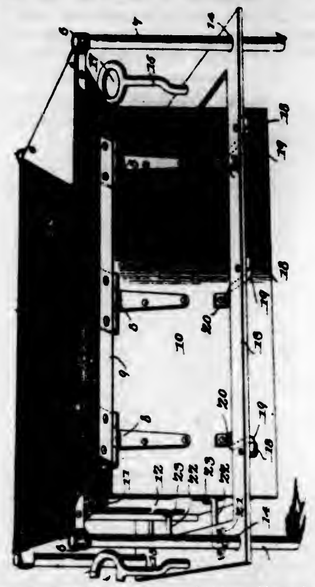

Claim.—1. A mold comprising a hopper, side and end walls pivoted thereto, and a vertically-slidable operating member for moving said walls to open and closed positions.

2. A mold comprising a hopper, side and end walls pivoted thereto, a vertically-slidable member for moving said walls to open and closed positions, and means for operating said member.

3. A mold having movable walls, an operating member surrounding said walls and adapted to move the latter to open and closed positions, and a pivotal connection between said walls and the operating member.

4. A mold having pivoted walls, a vertically-slidable member surrounding said walls and adapted to move the latter to open and closed positions, a pivotal connection between said walls and the slidable member, and means for operating said member.

5. A mold having movable side and end walls, a vertically-slidable frame surrounding said walls and spaced from the latter for moving the same to open and closed positions, and a pivotal connection between said walls and frame.

6. A mold comprising a hopper, side and end walls pivoted to the hopper, uprights for supporting said hopper, a frame mounted for vertical movement on the uprights, and a pivotal connection between said walls and frame.

7. A mold comprising a hopper, side and end walls pivoted to the hopper, uprights for supporting said hopper, a frame mounted for vertical movement on the uprights, and links pivoted to the frame and walls, respectively.

8. A mold comprising a hopper, side and end walls pivoted to the hopper, uprights for supporting said hopper, a frame mounted for vertical movement on the uprights, and handles secured to the frame for reciprocating the latter to thereby open and close said walls.

9. A mold comprising a hopper, side and end walls pivoted to the hopper, uprights for supporting said hopper, a frame mounted for vertical movement on the uprights, a pivotal connection between said walls and frame, and means for limiting the vertical movement of the latter.

10. A mold comprising a hopper provided with supporting-brackets, side and end walls pivoted to the hopper, uprights seated in said brackets, a frame surrounding the pivoted walls and pro-

vided with openings for the reception of the uprights, links pivoted

ares forming a cavity adapted to receive the body of a vessel with its

vided with openings for the reception of the uprights, links pivoted to the walls and frame, respectively, and rods carried by the frame and having their free ends provided with terminal handles.

11. A portable mold comprising a hopper having side and end walls pivoted thereto, and a combined carrying and operating member serving during its initial movement to move said walls to open and closed positions.

12. A portable mold comprising a hopper having side and end walls pivoted thereto, a vertically-slidable operating member for moving said walls to open and closed positions, and handles carried by the operating member for elevating and carrying said mold.

810,020. FILTER. CLARENCE R. APPLEGATE, Evansville, Ind., assignor of five-eighths to Simon A. Schmitt, Vanderburg county, Ind. Filed July 26, 1905. Serial No. 271,131.

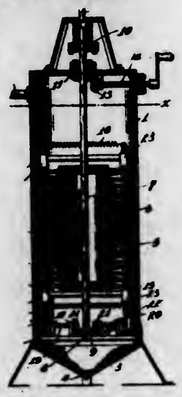

Claim.—1. In a filter, the combination with a porous filtering-cylinder and a cleaning-brush therefor, of means coöperating with the brush and filtering-cylinder whereby relative turning or rotation of the brush and filtering-cylinder continuously in a given direction and relative simultaneous reciprocation or to-and-fro movement of said brush and filtering-cylinder may be obtained.

2. In a filter, the combination with a rotary porous filtering-cylinder, of a reciprocating brush bearing thereagainst, and means for rotating said cylinder and reciprocating said brush at the same time to cleanse the cylinder.

3. In a filter, the combination with a rotary porous filter-cylinder and a rotary pipe on which said cylinder is carried, of a reciprocatory brush bearing against said cylinder and gearing and a pitman operatively connecting said brush with the rotary pipe aforesaid, whereby the brush is reciprocated as the cylinder rotates.

4. In a filter, the combination with a porous filtering-cylinder and a rotary pipe on which said cylinder is carried, of a reciprocatory brush bearing against said cylinder, upper and lower guides for said brush, and means operated from said rotary pipe for reciprocating said brush.

5. In a filter, the combination with a filter-casing, of a porous filtering-cylinder, a rotary pipe on which said cylinder is carried, upper and lower slotted guides extending across said filter-casing, brushes playing in said slotted guides, springs connecting the brushes together to keep them against the cylinder, and gearing and pitmen connecting the rotary pipe with the brushes, whereby the brushes are made to reciprocate as the cylinder revolves.

810,021. DOOR-CHECK. LUDWIG AUERBACH, New York, N. Y. Filed Dec. 24, 1904. Serial No. 238,182.

Claim.—1. In a door-check, the combination, with a casing, of a spindle turning in step-and-neck bearings in the bottom and cover of said casing, the intermediate portion of said spindle being square in cross-section, a plunger provided with a square socket slidable on the intermediate portion of said spindle and with bottom openings, and having an exterior thread or rib guided in helical grooves formed in the inner wall of the casing, a spring-actuated valve below said bottom openings, a helical spring interposed between the plunger and cover, and a regulable channel connecting the lower portion of the casing with the upper portion thereof.

2. In a door-check, the combination, with a casing attached to the door, of a rotatable spindle turning in step-and-neck bearings in the bottom and cover of said casing, a plunger provided with a square socket guided on said spindle and with openings extending therethrough, said plunger having an exterior rib guided in helical grooves formed in the inner wall of the casing, a spring-actuated valve below said plunger-openings, a helical spring interposed between the plunger and cover, a channel connecting the lower portion of the casing below the plunger with the upper portion thereof above said plunger, and a screw-plug for regulating the passage of liquid through said channel.

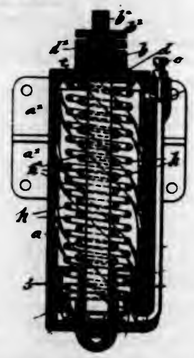

3. The combination, with a door, of a casing attached to the door, a spindle supported in step-and-neck bearings in the bottom and cover of said casing, said spindle being square in cross-section within the casing and having ends of circular cross-section rotatable in the bottom and cover, and a square upper end provided with an adjusting-column, a connecting-lever applied to the outer square ends of said spindle, a link connecting the outer end of said lever with the door-casing, a plunger guided by a rib in helical grooves formed in the inner wall of said casing and slidable on the square portion of said spindle, and a helical spring interposed between said plunger and the cover of said casing.

810,022. METHOD OF PRODUCING VITRIFIED BRICK, TILE, AND VARIOUS SHAPES. RALPH BAGGALEY, Pittsburg, Pa. Filed Dec. 23, 1903. Serial No. 186,235.

Claim.—1. The method herein described of utilizing the silicate-of-iron slag from copper-smelting furnaces for the production of vitrified articles, which consists in flowing the molten slag into molds to completely fill the same, confining the slag at the rapidly-cooling marginal portions of the mold in closed molds, and applying pressure to the central hotter portions of the slag, and subsequently cooling and annealing; substantially as described.

2. The method herein described of utilizing the silicate-of-iron slag from copper-smelting furnaces for the production of vitrified articles, which consists in flowing the molten slag into molds to completely fill the same, confining the slag at the rapidly-cooling marginal portions thereof and applying pressure to the central hotter portions of the slag, and subsequently cooling and annealing the molded articles in a body of comminuted material such as dry sand or granulated slag; substantially as described.

810,023. COLLAPSIBLE DIE FOR WIRING OR BRADING. LEONHARD BAUMER, Toledo, Ohio, assignor to The Lenhoss Manufacturing Co., Toledo, Ohio. Filed Nov. 16, 1904. Serial No. 233,080.

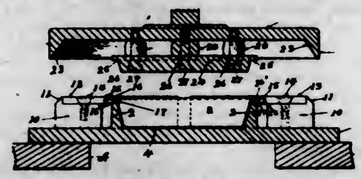

Claim.—1. In a wiring-die, the combination with a die-base adapted to rest on a press-bed and having a wall around its central area forming a cavity adapted to receive the body of a vessel with its unwired flange resting on and projecting over the top of the wall, of a plurality of pairs of guides on the base, the guides of each pair being parallel with a different line radial to the base center and the pairs being at intervals around the cavity-wall; die-blocks mounted on the guides and adapted to move convergingly toward and divergingly from the wall of the cavity; a die-plate mounted on each die-block having an inwardly-projecting portion provided with a grooved face semicircular in cross-section, the top portion of the die-grooves being adapted when the blocks are moved inward to engage the edge of the vessel-flange; a curved incut in the outer top portion of the cavity-wall opposite the grooves of the die-plates adapted to receive a wire; springs adapted to yieldingly hold the die-blocks normally diverged; a cushion press-disk adapted to be secured to a press-plunger and to be moved thereby to first engage a vessel in the cavity and press it on the wall and then simultaneously engage and converge the die-blocks until the grooves of the die-plates meet end to end around the curved incut of the wall.

2. In a wiring-die, the combination with a die-base adapted to rest on a press-bed and having a wall around its central area forming a cavity adapted to receive the body of an incomplete vessel with its unwired flange resting on and projecting over the top of the wall, of a plurality of pairs of guides on the base, the guides of each pair being parallel with a different line radial to the base center and the pairs being at intervals around the cavity-wall; die-blocks mounted on the guides and adapted to move convergingly toward or divergingly from the wall of the cavity, said die-blocks having outer faces that are arcs of a common circle, ends that are radial to the same circle, and inner faces that are parallel with the cavity-wall, said die-blocks being adapted to be converged to meet around and parallel with the cavity-wall of the base; a grooved die extension from the upper portion of the inner face of each of the die-blocks adapted when the die-blocks are converged around the wall to meet end to end and form a continuous groove, semicircular in cross-section, around the top portion of the cavity-wall; a curved incut in the outer top portion of the cavity-wall opposite the grooves of the die-blocks; springs adapted to yieldingly hold the die-blocks normally diverged; a bevel around the outer top portions of the die-blocks; a press-disk adapted to be secured to a press-plunger and provided with a cushioned plate to engage the vessel and a circumferential flange beveled to engage the bevels of the die-blocks, said cushioned plate being below the level of the flange and adapted to first engage the projecting flange of a vessel in the cavity and yieldingly press it on the wall as the plunger descends, and said beveled flange being thereafter adapted to simultaneously engage and converge the die-blocks and force their grooved die extensions into engagement with the vessel-flange, substantially as set forth.

810,024. TYPE-WHEEL ALINEMENT. CHARLES A. BENNETT, Dover, N. J. Filed Apr. 26, 1905. Serial No. 257,471.

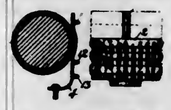

Claim.—1. In a type-writer machine, the combination of guiding studs or projections arranged vertically above and below the printing position and a type-wheel, having all its type-faces confined to three rows, and having recesses corresponding to each type-face, one of the studs being adapted to coöperate with the recesses of the middle or bottom row, and the other stud being adapted to coöperate with the recesses of the upper row, depending on the vertical position of the type-wheel.

2. In a type-writing machine, the combination of a type-wheel having all of its type-faces contained within three rows, and three rows of recesses or perforations in the body of the type-wheel corresponding to the type-faces, with guiding and centering means adapted to be relatively extended into one of said recesses immediately preceding the instant of printing.

3. In a type-writing machine, a type-wheel having three cases of type-faces, each completely contained in a single row and having three rows of recesses or perforations corresponding to the positions of the type-faces, substantially as described and for the purpose specified.

4. In a type-writing machine, a paper-guide frame, projections or studs carried thereby above and below the printing position, and a type-wheel having three complete rows of type comprising three cases and having three rows of recesses or perforations corresponding to said type and adapted to coöperate with said projections, at the time and for the purpose specified.

5. In a type-writing machine, the combination of three projections or studs arranged vertically above and below the printing position, and a type-wheel having three rows of type and recesses corresponding to each type, adapted to coöperate with said projections immediately before the printing position.

810,025. MACHINE FOR MOLDING CONCRETE BLOCKS. WALTER C. BENNETT and JOHN F. SHYPANG, Toledo, Ohio. Filed Aug. 3, 1905. Serial No. 272,282.

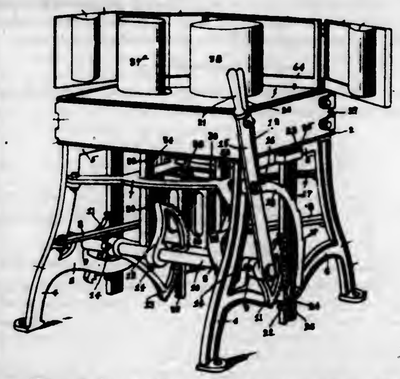

Claim.—1. In a machine for molding concrete blocks, the combination with a mold-table having openings for the projection of cores above the table from beneath, of cores for the openings, an articulated mold adapted to surround one or more of the core-openings, means to project the cores singly or collectively through their respective openings into the mold, and to withdraw them therefrom, substantially as set forth.

2. In a machine for molding building-blocks, the combination of a support, a table provided with core-openings, mounted on the support, a core for each opening, means to jointly or severally project the cores different distances through their respective table-openings, and withdraw them therefrom, means to support the cores at different distances of projection through and above the table, and a plurality of articulated mold-boxes severally adapted either to individual or to collective use of the cores therein for the formation of complementary hollow structural blocks, substantially as set forth.

3. The herein-described molding-machine comprising a support, a mold-table mounted on the support, and provided with core-openings, a core for each opening, an upwardly and downwardly movable mold-frame surrounding the table, a rock-shaft journaled on the support, toothed segments mounted on the shaft, each adapted to be tightened or loosened thereon, stems for the cores and the mold-frame, each movable upwardly and downwardly in guides of the support, racks for the stems intermeshing with the segments, and adapted to move the stems as moved by the segments, a lever for the rock-shaft adapted to rock the segments jointly or severally as tightened on the shaft and thereby move the racks to severally or collectively project or withdraw the cores and the mold-frame, means to lock the lever at different distances of its movement and support the cores or the mold-frame at different elevations, and articulated molds adapted to be located on the table around the core-openings, substantially as set forth.

4. In a machine for molding concrete blocks, the combination with a box table-top mounted on a support, of a mold-frame telescopically mounted around the table-top and movable upwardly to raise portions of its sides and ends above the level of the table-top and form therewith a mold-box, and downwardly to withdraw the frame, means to raise and lower the mold-frame, means to support the mold-frame at different distances of its movement and a movable pallet mounted on the table-top and fitting the raised portions of the sides and ends of the mold-frame as a bottom.

5. In a machine for molding hollow wall-blocks, the combination with a table-top provided with core-openings, a movable core for each opening, and mechanism for projecting the cores through their respective openings singly or collectively, of a plurality of mold-

boxes respectively adapted to receive one or more of the cores and to

adapted to be unlocked and connected directly to the line wire, and

boxes respectively adapted to receive one or more of the cores and to form therewith complementary wall-blocks of different forms for the same or different courses, said mold-boxes comprising end plates hinged to the ends of one side plate, one removable side plate, and a half-core for one or both the end plates, adapted to form halves of joint-openings adapted to connect the central core-openings of blocks above and below the joint, substantially as set forth.

6. In a machine for molding concrete wall-blocks, the combination with a table-top provided with one elongated and one cylindrical core-opening, a movable core for each opening, and mechanism for jointly or severally projecting the cores through their respective openings, of two hinged mold-boxes one adapted to receive therein the elongated core and form therewith a hollow wall-block having half-joint openings, and the other to receive both the elongated and cylindrical core and form therewith a chimney-block having an extension adapted to bond with the wall-block, substantially as set forth.

810,026. SAMPLE-DISPLAY CASE. GEORGE F. BROSS, St. Louis, Mo. Filed Sept. 11, 1905. Serial No. 278,042.

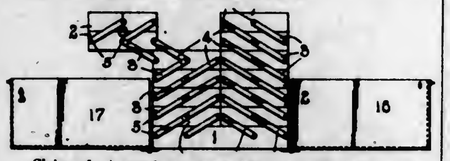

Claim.—1. A sample-case comprising a plurality of trays, metal reinforcements on the inside of the tray ends and extending across the end and partially around the sides, pivots connected to said reinforcements and extending through the tray ends, and links connected to said pivots; substantially as described.

2. A sample-case comprising a plurality of trays, metal reinforcements at the ends of the trays, pivots passing through the reinforcements and the tray ends, said pivots having heads on the inner sides of the reinforcements, and links connected to said pivots; substantially as described.

3. A sample-case comprising a plurality of trays having reinforcements on the inner ends of less depth than the heights of the trays, bottoms for the trays secured to the ends thereof, and not to the reinforcements, pivots carried by the reinforcements and projecting through the tray ends, and links connected to the pivots; substantially as described.

4. A sample-case comprising a bottom tray 1, a plurality of trays carried thereby, links 3 and 4 for connecting said trays one to the other, pivots 5 projecting through said links and through the tray ends, a reinforcement on the inside of each tray end and engaged by said pivots, and covers hinged to the tray 1 for inclosing said remaining trays; substantially as described.

810,027. ELECTRIC SIGNAL. CHARLES C. BLAKE, Brookline, Mass. Filed Aug. 19, 1905. Serial No. 274,577.

Claim.—1. A selective signal system consisting of a transmitting-station having a series of pendulums adapted to send electric impulses of different periodicity over a line-wire when connected thereto; a series of way-stations each provided with a pendulum device adapted to respond to the vibrating of one only of said transmitting-pendulums, an electric-lamp signal and a semaphore-arm which becomes operative when the unison of vibrations is established between the transmitter and receiver.

2. A selective signal system consisting of a transmitting-station having a series of independent pendulums adapted to send electric impulses of different periodicity over a line-wire when connected thereto, each pendulum normally locked in a retracted position and adapted to be unlocked and connected directly to the line-wire, and when unlocked to operate a circuit-closing device and send characteristic impulses to line; a series of way-stations each provided with a pendulum device arranged to respond to the vibrations of one only of the transmitting-pendulums, having a signal-lamp in a normally open circuit and a semaphore-arm locked to safety position, with means, when said pendulum device becomes responsive to said characteristic impulses, to close the lamp-circuit and unlock the semaphore-arm.

3. A selective signal system consisting of a transmitting-station having a series of independent pendulums adapted to send electric impulses of different periodicity over a line-wire when connected thereto, each pendulum normally locked in a retracted position and adapted to be unlocked and connected directly to the line-wire, and when unlocked to operate a circuit-closing device and send characteristic impulses to line, a local and second circuit-closing device with means for actuating the same and for maintaining the pendulum vibrations; a series of way-stations each provided with a pendulum device arranged to respond to the vibrations of one only of the transmitting-pendulums, having a signal-lamp in a normally open circuit and a semaphore-arm locked to safety position, with means when said pendulum device becomes responsive to said characteristic impulses to close the lamp-circuit and unlock the semaphore-arm.

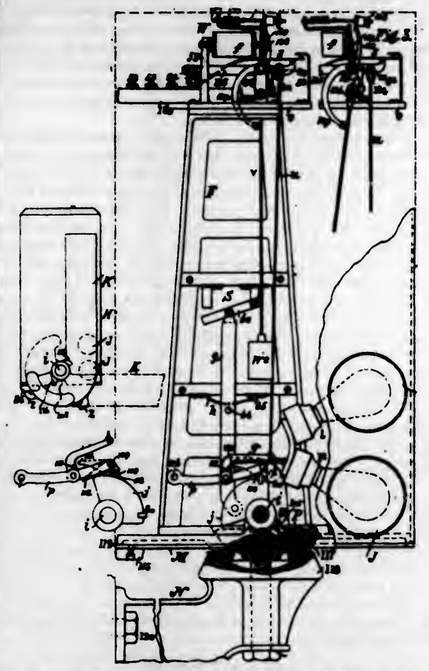

4. A selective signal system consisting of a transmitting-station having a series of independent pendulums adapted to send electric impulses of different periodicity over a line-wire when connected thereto, each pendulum normally locked in a retracted position and adapted to be unlocked and connected directly to the line-wire, and when unlocked adapted to operate a circuit-closing device and send characteristic impulses to line; a series of way-stations each provided with an electromagnetic device arranged to respond to the vibrations of one only of the transmitting-pendulums, having a signal-lamp in a normally open circuit, and a semaphore-arm locked to safety position with means, when said electromagnetic device becomes responsive to said characteristic impulses, to close the lamp-circuit and unlock the semaphore-arm, and ground the electromagnet of the device at the selected station.

5. A selective signal system consisting of a transmitting-station having a series of independent pendulums adapted to send electric impulses of different periodicity over a line-wire when connected thereto, each pendulum normally locked in a retracted position and adapted to be unlocked and connected directly to the line-wire, and when unlocked to operate a circuit-closing device and send characteristic impulses to line, a local and second circuit-closing device with means for intermittently actuating the same and for maintaining the pendulum vibrations; a series of way-stations each provided with an electromagnetic pendulum device arranged to respond to the vibrations of one only of the transmitting-pendulums, having a signal-lamp in a normally open circuit and a semaphore-arm locked to safety position, with means when said pendulum device becomes responsive to said characteristic impulses to close the lamp-circuit, unlock the semaphore-arm, and ground the electromagnet of the device at the selected station.

6. A selective signal system consisting of a transmitting-station

having a series of independent pendulum devices adapted to send electric impulses of different periodicity over a line-wire when connected thereto, and means for maintaining the said impulses at a uniform rate of vibration; a series of way-stations each provided with an electromagnetic pendulum device arranged to respond to the vibrations of one only of the transmitting-pendulums, a lamp in a normally open grounded circuit from a trolley-wire, a semaphore-arm locked to safety position, and means to close the lamp-circuit, unlock the semaphore-arm, and ground the electromagnet of the selected device.

7. A selective signal system consisting of a transmitting-station having a series of independent pendulum devices adapted to send electric impulses of different periodicity over a line-wire when connected thereto, means for maintaining the impulses at a uniform rate of vibration, the pendulum of each device being held in a retracted position and provided with a releasing mechanism arranged to be operative when connected to the line-wire a series of way-stations each provided with an electromagnetic pendulum device arranged to respond to the vibrations of one only of the transmitting-pendulums, the magnets of each device being included in the line-circuit, a source of current a lamp in an open circuit to ground from the source of current, a semaphore-arm locked to safety position, with means to close the lamp-circuit, unlock the semaphore-arm and ground the magnet of the selected device.

8. A selective signal system consisting of a transmitting-station having a series of independent pendulum devices adapted to send electric impulses of different periodicity over a line-wire when connected thereto, means for maintaining the impulses at a uniform rate of vibration, the pendulum of each device being held in a retracted position and provided with releasing mechanism arranged to be operative when connected to the line-wire; a series of way-stations each provided with an electromagnetic pendulum device arranged to respond to the vibrations of one only of the transmitting-pendulums, the magnets of each device in the line-circuit, a source of current, a normal lamp in an open circuit to ground from the source of current, a second lamp in a branch circuit with means for automatically including the latter lamp in the said open circuit and for intermittently shunting the same, a semaphore-arm locked to safety position with means to close the lamp-circuit, unlock the semaphore-arm and ground the magnet at the selected device.

9. A selective device consisting of a base part upon which rests a frame part, having concave and convex portions fitting into each other secured by a bolt and nut, the base part provided with means for attachment to a support or foundation; the frame part provided with a shaft carrying a semaphore-arm and a cam, a locking device, circuit-switches, an electromagnetic pendulum device composed of an electromagnet, its combined armature and adjustable spring-lever, a pendulum, with latching means for engaging with and operating a circuit-closer, the locking device and the said circuit-switches.

10. A selective signal system consisting of a transmitting-station having a series of independent pendulum devices adapted to send characteristic electric impulses over a line-wire, each pendulum normally held in a retracted position by a locking device, and having latching mechanism independently operating two circuit-closers whereby said impulses are sent to line when a pendulum device is connected therewith and unlocked, and a local magnet is energized to cause the pendulum to maintain its maximum rate of vibration; a line-wire normally disconnected at the transmitting-station, extending to a series of way-stations each provided with an electromagnetic pendulum device arranged to respond to the vibrations of one only of the transmitting-pendulums provided with a magnet its armature combined by an elastic connection with a lever for vibrating the receiving-pendulum provided with latching means, a lamp in an open and grounded circuit from a source of current, a semaphore-arm held to safety position by a locking device, with means to close the lamp-circuit, unlock the semaphore-arm and ground the magnet at the selected device.

11. The combination with a circuit-closer having a depending pawl, of a pendulum in the form of a lever of the first order provided with a catch on its short arm, and an adjustable weight upon its long arm, means for vibrating the pendulum consisting of an electromagnet, an armature therefor with a lever attached thereto whose lower end bears upon the long arm of the pendulum.

12. The combination with a circuit-closer having a depending pawl, of a pendulum in the form of a lever of the first order provided with a catch on its short arm, and an adjustable weight upon its long arm, means for vibrating the pendulum consisting of an electromagnet, an armature therefor with a lever in elastic connection therewith whose lower end bears upon the long arm of the pendulum.

13. Means for closing an electric circuit, consisting of a pendulum provided with a beveled catch, a pivoted lever whose free end is adapted to bear upon a circuit-closer and to carry a suspended pawl or latch, an electromagnet, its armature with a lever attached thereto whose lower end bears upon the pendulum.

14. Means for closing an electric circuit consisting of a pendulum provided with a beveled catch, a pivoted lever whose free end is adapted to bear upon a circuit-closer and to carry a suspended pawl or latch, an electromagnet, its armature with a lever in elastic connection therewith whose lower end bears upon the pendulum-rod.

15. A double circuit-closing device consisting of a pendulum provided with two beveled catches, two levers from which are suspended a pawl or latch, an electromagnet, its armature and a lever attached thereto whose lower end bears upon the pendulum-rod.

16. A locking and releasing device for signals, composed of a semaphore-arm upon a shaft secured to a frame with a cam having a pin or spline, a long lever pivoted to the frame, a short lever pivoted to the center of said long lever having an abutment or projection and a rod attached to its free end, a latch pivoted to the free end of the long lever whose free end is adapted to rest upon the abutment with a slot in the heel of the latch to embrace the said spline.

17. A pendulum locking and releasing device, consisting of a frame, a rod provided with a hole at its upper end out of center with a hole in the frame, its lower end connected to a lever pivoted to a support, said lever provided with notches to engage the end of the pendulum-rod, with a plug adapted to enter said holes and raise said rod.

18. A selective signal system consisting of a transmitting-station provided with a plurality of independent and normally detached means for transmitting electric impulses of different periodicity over a normally open line-wire; a series of way-stations each provided with a pendulum device adapted to respond to one of said transmitted periodicities only, and a semaphore-arm which becomes operative when the unison of frequencies is established between the transmitter and receiver.

19. A selective signal system consisting of a transmitting-station having a series of independent pendulums adapted to send electric impulses of different periodicity over a line-wire when connected thereto, each pendulum normally locked in a retracted position and adapted to be unlocked and connected to the line-wire, and when unlocked to operate a circuit-closing device and send characteristic impulses to line; a series of way-stations each provided with a pendulum device arranged to respond to the vibrations of one only of the transmitting-pendulums, having a normally locked signal adapted to be displayed when said pendulum device becomes responsive to its characteristic impulses.

20. Means for closing an electric circuit responsive to characteristic impulses, consisting of an electromagnet, a pendulum provided with a lifting-catch adapted to be vibrated by the armature of said magnet and a circuit-closing device having a suspended pawl in the path of said catch, whereby when said pendulum becomes responsive to said impulses its catch will engage with the pawl and operate the circuit-closing device.

21. A selective signal system consisting of a transmitting-station provided with means for transmitting electric impulses of different periodicity over a line-wire; a series of way-stations each provided with a pendulum device consisting of an electromagnet, a pendulum provided with a lifting-catch adapted to be vibrated by the armature of said magnet, and a circuit-closing device having a suspended pawl in the path of the catch, whereby when said pendulum becomes responsive to said impulses its catch will engage with the pawl and operate the circuit-closing device.

22. Means for closing an electric circuit responsive to characteristic impulses; consisting of an electromagnet, a pendulum provided with a lifting-catch adapted to be vibrated by the armature of said magnet, a circuit-closing device having a suspended pawl in the path of said catch, and a semaphore-arm; whereby when said pendulum becomes responsive to said impulses its catch will engage with the pawl, operate the circuit-closing device, and display the semaphore-arm.

810,028. DUMPING-WAGON. FRANK BLOOMINGDALE, Voorheesville, N. Y. Filed July 21, 1905. Serial No. 270,609.

Claim.—1. In a dumping-wagon, the combination with a wagon of a pair of friction-rollers mounted adjacent to the rear wheels of said wagon; a shaft carrying said friction-rollers; a series of sheaves attached to the frame of said wagon and to the box; a cable passing over said sheaves attached to said box at one end and to the shaft carrying said friction-rollers at the other end; a means for causing

said friction-rollers to engage said wheels; a rack; a gear and pinion engaging said rack; a lever and dog for operating said gear and pinion; a connection between said rack and said box.

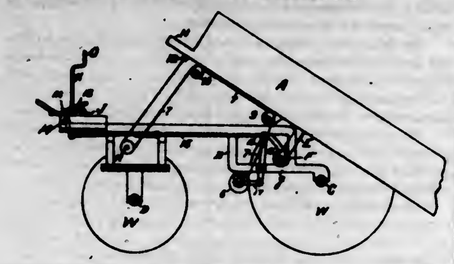

2. In a dumping-wagon; the combination with a wagon of a dumping-box connected therewith; a rack; a gear and pinion engaging said rack; a lever and dog for operating said gear and pinion; a connection between said rack and said box so connected up that by the operation of said lever said wagon may be moved forward or backward on its frame, substantially as described.

3. In a dumping-wagon, a movable box; a means for causing said box to move; a pair of friction-rollers; a clutch connected with the shaft upon which said friction-rollers are mounted; a means for causing said friction-rollers to be engaged by said clutch when the rollers are moved in one direction and to be disengaged when moved in the opposite direction; a means for setting said friction-rollers in contact with the wheels of said wagon and removing the same from contact therewith, substantially as described.

4. In a dumping-wagon; a movable box; a means for causing said box to move; a pair of friction-rollers; a shaft upon which said friction-rollers are mounted; a clutch connected with said shaft; a means for causing said friction-rollers to be engaged by said clutch when the rollers are moved in one direction and to be disengaged when moved in an opposite direction; a means for setting said friction-rollers in contact with the wheels of said wagon; and removing the same from contact therewith; with a rack; a gear and pinion engaging said rack; a lever and dog for operating said gear and pinion; a connection between said rack and said box, substantially as described.

5. In a dumping-wagon, the combination with a wagon of a pair of friction-rollers mounted adjacent to the rear wheels of said wagon; a shaft carrying said friction-rollers; a series of sheaves attached to the frame of said wagon and to the box; a cable passing over said sheaves attached to said box at one end and to the shaft carrying said friction-rollers at the other end; a means for causing said friction-rollers to engage said wheels; a clutch connected with said shaft, a means for causing said friction-rollers to be engaged by said clutch when the rollers are moved in one direction and to be disengaged when moved in the opposite direction.

810,039. BALING-PRESS. CLARENCE B. BOWEN, Denver, Colo. Filed Apr. 17, 1905. Serial No. 255,126.

Claim.—1. In a baling-press, the combination with a baling-chamber and plunger-beam, of a power-shaft provided with a trip-lever, a swing-lever fulcrumed on the frame, and a flexible device connecting the swing-lever and the plunger-beam, and acting to move the latter in the direction of pressure.

2. In mechanism of the class described, the combination of a plunger-beam, a power-shaft, a trip-lever fast on the power-shaft, a swing-lever fulcrumed on the frame, the trip-lever being arranged to act on the swing-lever and the plunger-beam, and a flexible connection between the swing-lever and the forward extremity of the plunger-beam, the said connection passing around the power-shaft which is engaged by said connection during a portion of the forward movement of the plunger.

3. In operating mechanism for baling-presses, the combination of a plunger-beam, a power-shaft, a trip-lever mounted on the power-shaft and having antifrictional rollers in its extremities, the forward extremity of the plunger-beam being provided with a pocket adapted to receive the roller extremities of the trip-lever, a swing-lever fulcrumed on the frame on the opposite side of the power-shaft from the plunger-beam, and a connection between the swing-lever and the forward extremity of the plunger-beam, the said connection comprising a flexible device whose extremities are connected with the swing-lever, the said flexible device also passing around a suitable bearing with which the plunger-beam is provided, the flexible device being also in position to engage the power-shaft, as the plunger-beam moves forwardly.

4. In mechanism of the class described, the combination of a plunger-beam, a power-shaft, a trip-lever, a swing-lever and a connection between the swing-lever and the forward extremity of the plunger-beam, comprising two flexible devices having their extremities connected with the swing-lever above and below, the said devices also passing around suitable bearings with which the plunger-beam is provided, substantially as described.

5. In mechanism of the class described, the combination with a plunger-beam, of a power-shaft provided with a trip-lever, a swing-lever suitably fulcrumed on the frame, and a flexible connection between the swing-lever and the plunger-beam comprising a chain and a wheel, the extremities of the chain being connected with one member and the wheel being mounted on the other member, the chain passing around the wheel for the purpose set forth.

810,080. COOLER. BENJAMIN BERNON, Detroit, Mich., assignor to Bernon Manufacturing Company, Detroit, Mich., a Corporation of Michigan. Filed Sept. 28, 1903. Serial No. 174,021.

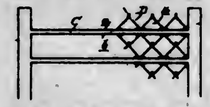

Claim.—1. In a cooler, a liquid-conduit comprising a flattened tube having the parallel walls thereof in close proximity, and an inwardly-extending rib on said tube for holding said parallel walls spaced from each other, and a radiating flange sleeved upon said tube.

2. In a cooler, the combination of a liquid-conduit formed of a flattened tube having parallel walls thereof in close proximity, and an inwardly-extending rib on said tube formed by seaming the adjoining ends of said tube, for holding said parallel walls spaced from each other.

3. In a cooler, the combination with a flattened liquid-conduit of a radiating flange therefor, formed of sheet metal struck up to form oppositely-angled flanges, and slitted at the angle to be sleeved on said conduit.

4. In a cooler the combination with a flattened liquid-conduit of a plurality of radiating flanges therefor, each comprising a sheet-metal blank struck up to form oppositely-angled flanges, and slitted to be sleeved on said conduit, said flanges being arranged in series on said conduit, alternately oppositely inclined to form transversely-extending air-passages and being apertured for air circulation, transverse to said passages.

5. In a cooler the combination of a plurality of parallel flattened liquid-conduits, and a series of radiating flanges on each conduit, formed from sheet metal, and struck up to form oppositely-angled flanges, and slitted at the angle to be sleeved on said conduits, said flanges being alternately arranged so that together they form diamond-shaped conduits with the flanges in one series inserted between adjacent flanges in the parallel series.

6. In a cooler, the combination with a plurality of fluid-conduits, of separately-formed flanges projecting therefrom and arranged at oppositely-disposed angles, the flanges on adjacent tubes interlocking.

7. In a cooler, the combination with a conduit, of a radiating flange therefor, struck up to form oppositely-angled flanges, and apertured through the angle portion to be sleeved on said conduit.

8. In a cooler, a series of liquid-conduits and oppositely-disposed radiating flanges arranged in criss-cross fashion in the space between the conduits to form a series of closely-associated air-passages therebetween, said flanges being apertured for the reception of said conduits.

9. In a cooler, the combination of a liquid-conduit comprising a flattened tube having parallel walls in close proximity and a radiating flange sleeved upon said tube of an inwardly-extending bead or corrugation in the wall of said tube, the said bead or corrugation constituting a means for holding the parallel walls spaced from each other and affording a means of expansion for said conduit in case of freezing.

810,081. PRESS FOR MAKING GLASS ARTICLES. HENRY M. BROOKFIELD, New York, N. Y. Filed Apr. 6, 1903. Serial No. 151,269.

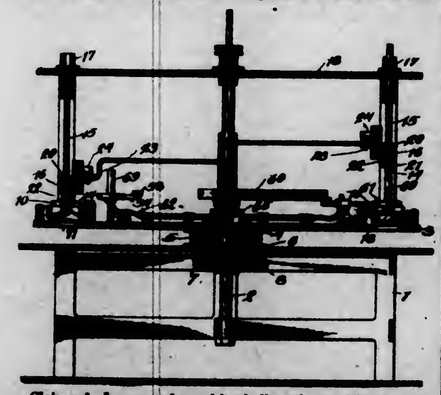

Claim.—1. In a press for making hollow glass articles, the combination of a mold consisting of three sections, each section divided vertically, so arranged that the second section can be opened and moved out of operative position and the third section moved into its place and closed, a plunger, cam-surfaces connected with the plunger and cooperating with the other cam-surfaces to open and close the sections of the mold at proper times, and means to form the glass in the third section of the mold.

2. In a press for making hollow glass articles, the combination of a mold consisting of three sections, each section divided vertically, so arranged that the second section can be opened and moved out of operative position and the third section moved into its place and closed, means for opening and closing the sections of the mold at proper times, a plunger to give the article a preliminary forming in the second section of the mold, and a blowing device adapted to blow the glass so as to fill the interior space of the third section, and a cam to move the blowing device into operative position over the mold, and a spring to move the blowing device away from the mold.

3. The combination of a mold for making hollow glass articles, a plunger, means for operating the plunger, the blower-head 61, a pivoted lever carrying the blower-head, means for operating the lever so as to bring the blower-head over or away from the mold, the spring 57, and means for causing the plunger to press the blower-head down on the mold and the valve 67 and the pins 68.

4. In a press for making hollow glass articles, the combination of a mold consisting of three sections, each section divided vertically, so arranged that the second section can be opened and moved out of operative position and the third section moved into its place and closed, rock-shafts connected with the parts of the mold, cam-surfaces connected with the rock-shafts, a cross-head, a plunger carried by the cross-head, cam-surfaces on the cross-head cooperating with the other cam-surfaces to open and close the sections of the mold at the proper times, and means to form the glass in the third section of the mold.

5. In a press for making hollow glass articles, the combination of a mold consisting of three sections, each section divided vertically, so arranged that the second section can be opened and moved out of operative position and the third section moved into its place and closed, rock-shafts connected with the parts of the mold, cam-surfaces connected with the rock-shafts, a cross-head, a plunger carried by the cross-head, cam-surfaces on the cross-head cooperating with the other cam-surfaces and springs acting in opposition to the cam-surfaces, the parts being arranged to open and close the sections of the mold at the proper times, and means to form the glass in the third section of the mold.

6. In a press for making hollow glass articles, the combination of a mold consisting of three sections, each section divided vertically, so arranged that the second section can be opened and moved out of operative position and the third section moved into its place and closed, means for opening and closing the first and second sections of the mold at the proper times, rock-shafts connected with the parts of the third section of the mold, arms carried by said rock-shafts, cam-surfaces connected with the rock-shafts, a cross-head, a plunger carried by the cross-head, cam-surfaces on the cross-head cooperating with the other cam-surfaces to open or close the third section of the mold, a spring connecting the arms on the rock-shafts and acting in opposition to the cam-surfaces, latches to engage the arms, and pawls carried by the cross-head and adapted to trip the latches, substantially as set forth.

7. In a press for making hollow glass articles, the combination of a rotary table, a plurality of molds rotating with the table, each mold consisting of three sections, each section divided vertically, so arranged that the second section can be opened and moved out of operative position, and the third section moved into its place and closed, a plurality of cross-heads one for each mold, guides rotating with the table in which the cross-heads reciprocate, a plurality of plungers one carried by each cross-head, cam-surfaces connected with the parts of each mold, cam-surfaces connected with each cross-head and cooperating with the other cam-surfaces to open and close the sections of the mold at the proper times, a stationary cam to operate the cross-heads, and means to form the glass in the third section of each mold, substantially as set forth.

8. In a press for making hollow glass articles, the combination of a rotary table, a plurality of molds rotating with the table, each mold consisting of three sections, each section divided vertically, so arranged that the second section can be opened and moved out of operative position, and the third section moved into its place and closed, a plurality of cross-heads one for each mold, guides rotating with the table in which the cross-heads reciprocate, a plurality of plungers one carried by each cross-head, cam-surfaces connected with the parts of each mold, cam-surfaces connected with each cross-head and cooperating with the other cam-surfaces to open and close the sections of the mold at the proper times, a stationary cam to operate the cross-heads, and a plurality of blowing devices, one for each mold, adapted to blow the glass so as to form it in the third section of the mold.

9. In a press for making hollow glass articles, the combination of a rotary table, a plurality of molds rotating with the table, each mold consisting of three sections, each section divided vertically, so arranged that the second section can be opened and moved out of operative position, and the third section moved into its place and closed, a plurality of cross-heads one for each mold, guides rotating with the table in which the cross-heads reciprocate, a plurality of plungers one carried by each cross-head, cam-surfaces connected with the parts of each mold, cam-surfaces connected with each cross-head and cooperating with the other cam-surfaces to open and close the sections of the mold at the proper times, a stationary cam to operate the cross-heads, and a plurality of blowing devices, one for each mold, adapted to blow the glass so as to form it in the third section of the

mold, and means automatically actuated to move the blowing devices into and out of operative position at the proper times.

10. In a press for making hollow glass articles, the combination of a rotary table, a plurality of molds rotating with the table, each mold consisting of three sections, each section divided vertically, so arranged that the second section can be opened and moved out of operative position, and the third section moved into its place and closed, a plurality of cross-heads one for each mold, guides rotating with the table in which the cross-heads reciprocate, a plurality of plungers one carried by each cross-head, cam-surfaces connected with the parts of each mold, cam-surfaces connected with each cross-head and coöperating with the other cam-surfaces to open and close the sections of the mold at the proper times, a stationary cam to operate the cross-heads, and a plurality of blower-heads, one for each mold, rotating with the table and connected with a source of fluid under pressure, and a valve in each blower-head, and a stationary cam to operate the blower-heads at the proper times.

11. In a press for making hollow glass articles, the combination of a rotary table, a plurality of molds rotating with the table, each mold consisting of three sections, each section divided vertically, so arranged that the second section can be opened and moved out of operative position, and the third section moved into its place and closed, a plurality of cross-heads one for each mold, guides rotating with the table in which the cross-heads reciprocate, a plurality of plungers one carried by each cross-head, cam-surfaces connected with the parts of each mold, cam-surfaces connected with each cross-head and coöperating with the other cam-surfaces to open and close the sections of the mold at the proper times, a stationary cam to operate the cross-heads, and a plurality of blower-heads, one for each mold, rotating with the table and connected with a source of fluid under pressure, and an automatic valve in each blower-head, and a stationary cam to operate the blower-heads at the proper times.

810,082. PROPELLER. ALEXANDER T. BROWN, Syracuse, N. Y. Filed Apr. 12, 1902. Serial No. 102,863.

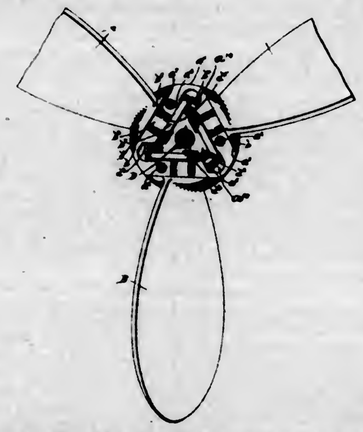

Claim.—1. The combination with the shaft of a reversible propeller, of the divided hub, the reversible blades pivoted between the front and rear sections of the hub and provided with the cranks, the sliding head movable lengthwise of the shaft and having flanges contiguous to the cranks, pin-and-slot connections between the cranks and the flanges, said flanges being situated in planes tangential to the shaft, and each crank rotating in a plane parallel with and closely adjacent a flange, said plane cutting the proximate flange transversely near its base, substantially as and for the purpose described.

2. In combination, a shaft, a hollow propeller-hub mounted on the shaft and having two series of substantially flat engaging faces within its internal cavity, each face of either series being opposed to a face of the other series and arranged substantially parallel with said opposing face, said hub having openings leading from the cavity through the outer surface of the hub, blades having their inner ends provided with spindles journaled in the openings, cranks within the cavity projecting from the spindles and engaging one series of said faces, and an adjusting member connected to the cranks within the cavity for moving the blades on their axes, said adjusting member being provided with a plurality of faces engaging the other series of said faces of the hub, substantially as described.

3. In combination, a shaft, a hollow propeller-hub mounted on the shaft and having two series of triangularly-arranged engaging faces within its internal cavity, each face of either series being opposed to a face of the other series and arranged substantially parallel with said opposing face, said hub having openings leading from the cavity through the outer surface of the hub, blades having their inner ends provided with spindles journaled in the openings, cranks within the cavity projecting from the spindles and engaging one series of said triangularly-arranged faces, and an adjusting member connected to the cranks within the cavity for moving the blades on their axes, said adjusting member being provided with triangularly-arranged faces engaging the other series of said faces of the hub, substantially as described.

4. In combination, a shaft, a hollow propeller-hub mounted on the shaft and having its internal cavity formed with a main part and openings leading from said main part, blades having their inner ends provided with spindles journaled in the hub, and an adjusting member movable in the main part of the cavity and connected to the spindles for moving the blades on their axes, the adjusting member being provided with projecting arms extended into said openings and having faces abutting against the contiguous walls of said openings, substantially as described.

5. In combination, a shaft, a hollow propeller-hub mounted on the shaft and having its internal cavity formed with a main part and triangularly-arranged openings leading from said main part, triangularly-arranged blades having their inner ends provided with spindles journaled in the hub and an adjusting member movable in the main part of the cavity and connected to the spindles for moving the blades on their axes, said adjusting member being provided with triangularly-arranged arms projecting into the openings and having faces abutting against the contiguous walls of said openings, substantially as described.

6. In combination, a shaft, a hollow propeller-hub mounted on the shaft and having its internal cavity formed with a main part of angular cross-section and openings extending from each angle of said main part, one of the walls of each of said openings forming substantially a continuation of one of the angularly-arranged sides of the main part of the cavity, angularly-arranged blades having their inner ends provided with spindles journaled in the hub, and an adjusting member arranged in the main part of the cavity and provided with angularly-arranged arms connected to the spindles for moving the blades on their axes and projecting into the openings and having faces abutting against the contiguous walls of said openings, substantially as described.

7. In combination, a shaft, a hollow propeller-hub mounted on the shaft and having two series of engaging faces within its internal cavity, each face of either series being opposed to a face of the other series and arranged substantially parallel with said opposing face, said hub having openings leading from the cavity through the outer surface of the hub, blades having their inner ends provided with spindles journaled in the openings, cranks within the cavity provided on the spindles, said cranks having outer faces engaging one series of the faces of the hub, and inner faces substantially parallel with said outer faces, and an adjusting member having projecting arms connected to the cranks for moving the blades on their axes, each of said projecting arms being provided with substantially parallel faces respectively engaging the opposing inner face of the crank connected thereto and the contiguous face of the other series of said faces of the hub, substantially as described.

8. In combination, a shaft, a hollow propeller-hub mounted on the shaft and having two series of triangularly-arranged engaging faces within its internal cavity, each face of either series being opposed to a face of the other series and arranged substantially parallel with said opposing face, said hub having triangularly-arranged openings leading from the cavity through the outer surface of the hub, blades having their inner ends provided with spindles journaled in the openings, cranks within the cavity provided on the spindles, said cranks having outer faces engaging one series of the triangularly-arranged faces of the hub and inner faces substantially parallel with said outer faces, pivotal pins projecting from the inner faces of the cranks, and an adjusting member having triangularly-arranged projecting arms formed with open-ended slots extending inwardly from their end surfaces for receiving the pivotal pins and permitting their ready detachment from the adjusting member, each of said projecting arms being provided with substantially parallel faces respectively engaging the inner face of the opposing crank connected thereto and the contiguous face of the other series of said triangularly-arranged faces of the hub, substantially as described.

9. In a triple-blade propeller, the combination with a drive-shaft, of a hub mounted thereon having a cavity therein triangular in cross-section and openings leading from each angle thereof into the body of the hub, blades having spindles journaled in said hub, a triangular head arranged in said cavity having extensions from the angles thereof projecting into said openings with one of their faces abutting against the adjacent walls of the latter, arms fixed to said spindles arranged between the sides of the head and the adjacent walls of the cavity within the hub, pivotal connections between said arms and said extensions, and means for reciprocating the head, substantially as described.

10. The combination with the shaft of a reversible propeller, of the divided hub, the reversible blades pivoted between the front and rear sections of the hub and provided with the cranks, the sliding head movable lengthwise of the shaft and having notched flanges adapted to engage with the cranks, said flanges being situated in planes tangential to the shaft, and each crank rotating in a plane parallel with and closely adjacent the flange it engages, said plane cutting the proximate flange transversely near the bottom of its notch.

11. The combination with the shaft of a reversible propeller, of the divided hub, the reversible blades pivoted between the front and rear sections of the hub and provided with cranks, the sliding head movable lengthwise of the shaft and having notched flanges adapted to engage the cranks, said cranks each rotating in a plane parallel with and closely adjacent a flange and closely adjacent the shaft and within a circle passing through the notches, said notches being distant from the shaft by less than the length of a crank.

12. The combination with the shaft of a reversible propeller, of the divided hub, the reversible blades pivoted between the front and rear sections of the hub, and provided with cranks and provided with stems and with bosses having their outer surfaces curved to correspond with the hub, the sliding head having the flanges, the pin-and-slot connections between the crank-arms and the flanges, and the slide attached to the head, said hub being cut away on the exterior to form seats for bosses and having its wall thickened on the side adjacent the crank-stems, all substantially as set forth, whereby the contour of the bosses and hub are made continuously similar and the crank operatively supported in close proximity to the shaft.

13. The combination with the shaft of a reversible propeller, of the divided hub, the reversible blades pivoted between the front and rear sections of the hub and provided with cranks and provided with stems and bosses, the sliding head having the flanges, the pin-and-slot connections having the crank-arms and the flanges, and the slide attached to the head, said hub being cut away on the exterior to form seats for bosses, and having its wall thickened on the side adjacent the crank-stems, all substantially as set forth, whereby the crank is operatively supported in close proximity to the shaft.

14. In a propeller, the combination of a shaft, a sliding head supported by the shaft and having a plane surface with a slotted flange projecting from one side thereof, a propeller-blade, a crank on said blade lying on the said plane surface of the slide, a crank-pin playing in the slot of the flange, the crank being constructed and arranged to bear against the flange of the slide as the position of the blade is changed, and a hub in which the blade is mounted to turn.

810,083. SECTIONAL CASE. CLARENCE P. BYRNES, Pittsburg, Pa. Filed Jan. 15, 1901. Serial No. 43,262.

Claim.—1. In sectional cases, a pair of superimposed sections having irregular joints at their ends, and a single separating-partition forming the top of one section and the bottom of the next, said partition crossing the line of the joints between the sections; substantially as described.

2. In sectional cases, a pair of superimposed sections having end joints on irregular lines extending through the end boards, and a single separating-partition having a part thereof secured to one of said sections and crossing the line of the end joints between the sections; substantially as described.

3. A pair of superimposed sectional cases, having an irregular joint, and a single horizontal partition having a part secured to one of said sections, and crossing the line of the joint so as to butt against the end board of the next section, said partition concealing a portion of the joint; substantially as described.

4. In sectional cases, a pair of superimposed sections having irregular joints at their ends, a single separating-partition between the sections, and crossing the line of the joints between them, and exterior cover-strips secured to one section and covering the end joints between the sections; substantially as described.

5. In sectional cases, a pair of separate superimposed sections, each section having an end swinging door, the top and bottom edges of the doors fitting neatly together, and a projecting cover-strip secured to one door and covering the horizontal joint between the doors; substantially as described.

6. In sectional cases, a pair of separate superimposed sections with interfitting end joints, said sections having horizontally-swinging doors hinged to their ends, and mechanism for securing the doors rigidly together to swing as one, the doors when closed lying in a plane in front of the edge of the partition between the sections; substantially as described.

7. In sectional cases, a pair of superimposed sections with interfitting end joints, each section having a movable door and a strip secured along the horizontal edge of one door and covering the joint between the top of one door and the bottom of the next, the doors when closed lying in a plane in front of the edge of the partition between the sections; substantially as described.

8. In sectional cases, a pair of superimposed receiving-sections, each having a back and sides with an open end, said sections having interfitting side joints between them arranged to prevent sidewise displacement of one section relative to the other, intermediate adjustable shelves in the sections, and separate swinging doors, one for each section, pivoted upon vertical axes at the edges of the sections and arranged to swing horizontally; substantially as described.

9. In adjustable cases, a pair of superimposed sections having end swinging glass doors, with their adjacent horizontal rails fitting together, a cover-strip for the joint between the doors, and a latch device on one of said doors; substantially as described.

10. In sectional cases, a pair of superimposed sections, one of the sections having an intermediate shelf therein, a separating-partition between the sections, each section having a door opening endwise, one of said doors having a horizontally-extending rail portion covering the horizontal front joint between the sections; substantially as described.

11. In sectional cases, a pair of separate superimposed sections having a separating-partition, said sections having irregular joints crossing a part of said partition, and cover-strips secured to one section and covering the joints; substantially as described.

12. In sectional cases, a pair of superimposed sections, each section having an end swinging door with their horizontal edges fitting together, a cover-strip arranged to conceal the horizontal joint between the doors, and cover-strips secured to one section and covering the end joints between the sections; substantially as described.

13. In sectional cases, a pair of separable superimposed sections with end joints, each section having an end swinging door, a dowel-pin connection between the adjacent rails of the doors of the two sections, a cover-strip for the joint between the doors, and a latch device secured to one door at a point adjacent to the joint with the other door; substantially as described.

14. In sectional cases, a pair of separable vertical sections having a single separating-partition and with an irregular end joint between them, a cover-strip hiding the joint, and a vertical strip for the end face of the case of substantially the same width as the cover-strip; substantially as described.

15. In sectional cases, a pair of superimposed receiving-sections, each having a back and sides with an open end, said sections having interfitting side joints between them arranged to prevent sidewise displacement of one section relative to the other, intermediate adjustable shelves in the sections, and separate swinging doors, one for each section, pivoted upon vertical axes at the edges of the sections and arranged to swing horizontally, the top rail of one door fitting neatly against the bottom rail of the next door above; substantially as described.

16. In sectional cases, a pair of superimposed receiving-sections, each having an open end and provided with a back and sides, a transverse piece connecting the sides of the section and arranged to prevent outward bulging, said sections having interfitting side joints to prevent sidewise displacement of one section relative to the other, intermediate adjustable shelves in the sections, separate doors, one for each section, pivoted on vertical axes at the edges of the sections, the side rails of the doors being arranged to hide the end joints of the

connecting-piece between the sides, when the door is closed; substantially as described.

17. In sectional cases, a pair of superimposed receiving-sections, each having an open end and provided with a back and sides, a transverse piece connecting the sides of the section and arranged to prevent outward bulging, said sections having interfitting side joints to prevent sidewise displacement of one section relative to the other, intermediate adjustable shelves in the sections, separate doors, one for each section, pivoted on vertical axes at the edges of the sections, the side rails of the doors being arranged to hide the end joints of the connecting-piece between the sides, when the door is closed, the top rail of one door embracing the extreme top portion of the bottom rail of the next door below and fitting neatly against the bottom rail of the next door above; substantially as described.

18. In sectional cases, a pair of superimposed receiving-sections, which have open ends, each section having a back and sides, interfitting joints between the sections arranged to prevent displacement of one relative to the other, said sections having adjustable shelves, a top and bottom section, adapted to close the open end of the adjacent respective preceding section, means for preventing sidewise bulging of each section, and separate swinging doors extending entirely across the front of the section pivoted on vertical axes at the edges of the sections and arranged to swing horizontally; substantially as described.

19. In sectional cases, a pair of superimposed receiving-sections, each having an open end and comprising a back and sides, a top and bottom section having closed fronts, said sections having interfitting joints arranged to prevent displacement of one section relative to the other, intermediate shelves in the receiving-sections, means for preventing the sides of said sections from bulging outwardly, said means comprising transverse pieces connecting the sides, the receiving-sections having swinging doors extending entirely across the front of the section pivoted on vertical axes at the edges of the sections and arranged to swing horizontally; substantially as described.

20. In sectional cases, a pair of superimposed receiving-sections, each having an open end and comprising a back and sides, a top and bottom section having closed fronts, said sections having interfitting joints arranged to prevent displacement of one section relative to the other, intermediate shelves in the receiving-sections, means for preventing the sides of said sections from bulging outwardly, said means comprising transverse pieces connecting the sides, the receiving-sections having swinging doors pivoted on vertical axes at the edges of the sections and arranged to swing horizontally, the top rail of one door fitting neatly against the bottom rail of the next door to close the joint between the sections; substantially as described.

21. In a sectional case, a pair of similar superimposed receiving-sections, each having an open end and provided with a back and sides, a transverse piece connecting the sides of the section and arranged to prevent outward bulging, said sections having interfitting top and bottom joints to prevent displacement of one section relative to the other, intermediate adjustable shelves in the sections, and separate doors, one for each section, pivoted on vertical axes at the edges of the sections, the top and bottom rails of the doors fitting together when closed to hide any shelf or connecting-piece between the two sections; substantially as described.

22. In sectional cases, a pair of superimposed receiving-sections, each having an open end and provided with a back and sides, a transverse piece connecting the sides of each section to prevent bulging of said sides, said sections having interfitting joints at their sides which prevent sidewise displacement of one section relative to the other, an intermediate shelf in each section, separate doors for each section, each door being pivoted on a vertical axis at the side edge of the section, the side rails of the doors when closed hiding the end joints of the transverse connecting-piece, the top rail of one door fitting neatly to the bottom rail of the door of the next section above; substantially as described.

23. In sectional cases, a pair of superimposed receiving-sections, each having an open end and provided with a back and sides, a transverse horizontally-extending piece connecting the sides of each section to prevent bulging of said sides, said sections having interfitting joints at their sides which prevent sidewise displacement of one section relative to the other, an intermediate shelf in each section, separate doors for each section, each door being pivoted on a vertical axis at the side edge of the section, the side rails of the doors when closed hiding the end joints of the transverse connecting-piece.

810,084. CAN-FILLING APPARATUS. ANTONIO CERRUTI, San Francisco, Cal., assignor to California Fruit Canners Association, San Francisco, Cal., a Corporation of California. Filed Jan. 31, 1905. Serial No. 243,516.

Claim.—1. A can-filling apparatus, comprising a liquid-containing vessel, a flexible resting-plate for the cans, sloping from each end down into said vessel and continuing along its bottom, the emerging end of said plate having an adjustable connection with said vessel whereby the plate may be adjusted longitudinally thereof to vary the inclination of said emerging end.

2. A can-filling apparatus, comprising a liquid-containing vessel, a resting-plate for the cans, sloping from each end down into said vessel and continuing along its bottom, said plate having one end disposed to receive the cans and direct them down into the liquid, and the other end disposed to direct the emerging cans to their destination, and means for adjusting the plate longitudinally and thereby varying the inclination of the emerging-slope thereof, and means for advancing the cans along said resting-plate.

3. A can-filling apparatus, comprising a liquid-containing vessel, a resting-plate for the cans, sloping from each end down into said vessel and continuing along its bottom, said plate having one end disposed to receive the cans and direct them down into the liquid, and the other end disposed to direct the emerging cans to their destination, a variable connection for the delivery end of said resting-plate adapted to vary the inclination of its emerging-slope, and means for advancing the cans along said resting-plate.

4. A can-filling apparatus, comprising a liquid-containing vessel, a flexible resting-plate for the cans, sloping from each end down into said vessel and continuing along its bottom, said plate having one end disposed to receive the cans and direct them down into the liquid and the other end disposed to direct the emerging cans to their destination, means for varying the inclination of said plate at its discharge end by a longitudinal adjustment thereof, fixed guides above and parallel with the resting-plate, to hold the cans down thereon, and means for advancing the cans along said resting-plate.

5. A can-filling apparatus, comprising a liquid-containing vessel, a resting-plate for the cans, sloping from each end down into said vessel and continuing along its bottom, said plate having one end disposed to receive the cans and direct them down into the liquid, and the other end disposed to direct the emerging cans to their destination, fixed guides above and parallel with the resting-plate, to hold the cans down thereon, an overlying screen secured to said guides and parallel with said plate to confine the contents of the cans while passing through the liquid, and means for advancing the cans along said resting-plate.

6. A can-filling apparatus comprising a liquid-containing vessel, a traveling conveyer therein, suitable guides for directing the conveyer into and out of said vessel by an entrance and an emerging slope and along the bottom of the vessel, a resting-plate for the cans lying above and conforming to the course of the conveyer, arms on the conveyer to engage the cans and carry them forward on the resting-plate through the liquid in the vessel, and to discharge them from the end of said plate, and means for varying the inclination of the emerging-slope of the resting-plate.

7. A can-filling apparatus comprising a liquid-containing vessel having sloping ends, a traveling conveyer therein, suitable guides for directing the said conveyer through the liquid in said vessel in a course conforming to the sloping ends and bottom thereof, a resting-plate for the cans lying above and conforming to the course of the conveyer, arms on the conveyer to engage the cans and carry them forward on the resting-plate through the liquid in the vessel and to discharge them from the end of said plate, and a variable connection for the delivery end of said resting-plate adapted to vary the inclination of the emerging-slope of said plate.

8. A can-filling apparatus comprising a liquid-containing vessel, a traveling conveyer therein, suitable guides for directing said conveyer into and out of said vessel by an entrance and an emerging slope and along the bottom thereof, a flexible resting-plate for the cans lying above and conforming to the course of the conveyer, means for varying the inclination of the emerging end of said plate by a longitudinal adjustment thereof, arms on the conveyer to engage the cans and carry them forward on the resting-plate through the liquid in the vessel and to discharge them from the end of said plate, and fixed guides above and parallel with the plate to hold the cans down upon said plate as they pass through the liquid.

9. A can-filling apparatus comprising a liquid-containing vessel, a traveling conveyer therein, suitable guides for directing said conveyer into and out of said vessel by an entrance and an emerging slope and along the bottom thereof, a resting-plate for the cans lying above and conforming to the course of the conveyer, arms on the conveyer to engage the cans and carry them forward on the resting-plate through the liquid in the vessel, and to discharge them from the end of said plate, fixed guides above and parallel with the plate to hold the cans down upon said plate as they pass through the liquid, and an overlying screen secured to said guides and parallel with the plate to cover the open tops of the cans during their passage through the liquid.

10. A can-filling apparatus comprising a liquid-containing vessel having sloping ends, a traveling conveyer therein, suitable guides for directing said conveyer through the liquid in said vessel in a course conforming to the sloping ends and bottom thereof, a resting-plate for the cans lying above and conforming to the course of the conveyer, arms on the conveyer to engage the cans and carry them forward on the resting-plate through the liquid in the vessel and to discharge them from the end of said plate, means for adjusting to varying angles the emerging-slope of said resting-plate, and overlying fixed guides for holding the cans down upon the plate, as they pass through the liquid vessel.

11. A can-filling apparatus comprising a liquid-containing vessel having sloping ends, a traveling conveyer therein, suitable guides for directing the conveyer through the liquid in said vessel in a course conforming to the sloping ends and bottom thereof, a resting-plate for the cans lying above and parallel with the conveyer, arms on the conveyer to engage the cans and carry them forward on the resting-plate through the liquid in the vessel and to discharge them from the end of the said plate, means for adjusting to varying angles the emerging-slope of said resting-plate, overlying fixed guides for holding the cans down upon the plate as they pass through the liquid vessel, and an overlying screen secured to said guides to cover the open tops of the cans during their passage through the liquid.

12. A can-filling apparatus, comprising a liquid-containing vessel, a resting-plate for the cans, sloping from each end down into said vessel and continuing along its bottom, said plate having one end disposed to receive the cans and direct them down into the liquid, and the other end disposed to direct the emerging cans to a conveyer, means for advancing the cans along said resting-plate, the said conveyer arranged adjacent the discharge end of said resting-plate, and a variable connection for the delivery end of said resting-plate.

810,085. APPARATUS FOR DRAWING GLASS. JAMES A. CHAMBERS, Allegheny, Pa., assignor to William J. Patton, Allegheny, Pa. Filed Feb. 15, 1905. Serial No. 245,731.

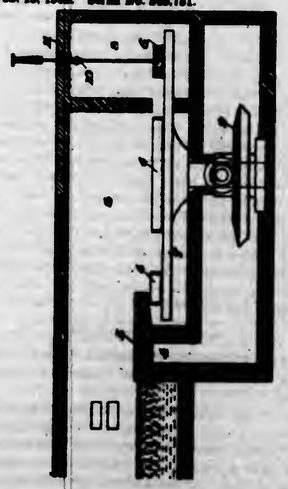

Claim.—1. In a glass-drawing apparatus, a tank-furnace having a heated pot-chamber, and a close drawing-chamber communicating therewith, in combination with a carrier, having a pot or receptacle, said carrier being adapted to carry the pot or receptacle from the pot-chamber to the drawing-chamber and then back to the pot-chamber, substantially as described.

2. A tank-furnace having a pot-chamber and a casting-outlet leading from the tank to the pot-chamber, and a drawing-chamber in combination with a carrier having pots or receptacles and means for so moving the carrier intermittently as to bring the pots or receptacles from the pot-chamber to the drawing-chamber and then back to the pot-chamber, substantially as described.

3. In a glass-drawing apparatus a heated chamber communicating with the tank-chamber, and containing a carrier having pots or receptacles, means for feeding glass from the tank into said pots or receptacles, a drawing-chamber through which the carrier moves, said chamber having an opening in the roof thereof, glass-drawing apparatus adapted to draw the glass through said opening, and means for so moving the carrier intermittently as to bring the pots or receptacles from the pot-chamber to the drawing-chamber, and then back to the pot-chamber, substantially as described.

810,086. FOLDING BED. JOHN H. CHATEN, Los Angeles, Cal. Filed Dec. 27, 1904. Serial No. 238,291.

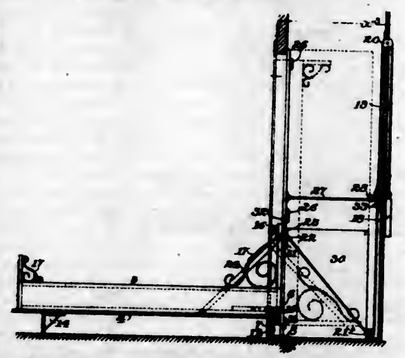

Claim.—1. The combination of a wall-casing having a recess, a bed folding thereinto, a closure-door hinged at the sides of the recess and swinging rearwardly into said recess, counterweight means for the bed and connections from said counterweight means to said door to operate the same.

2. A wall-casing having a recess, a bed mounted to fold into said recess, doors hinged at the sides of the recess and swinging forwardly to close the recess, or rearwardly into the recess, said doors being provided with spring-hinges tending to close the same, and connections between the folding bed and the doors to turn the doors rearwardly into the recess when the bed is folded.

3. A wall-casing having a recess, a bed mounted to fold into said recess, doors hinged at the sides of the recess and swinging forwardly to close the recess or rearwardly into the recess to open the same, said doors being provided with spring-hinges tending to close the same, and connections between the folding bed and the doors to turn the doors rearwardly into the recess when the bed is folded, said connections comprising cords connected to the bed and to the doors and guiding-pulleys for said cords.

4. A wall-casing having a recess, a bed folding thereinto, counterweight devices comprising weights, suspending-cords connected thereto and to the bed, and pulleys over which said cords pass, folding doors closing the upper part of the recess and cords connected to said doors, and to the aforesaid cords to turn said doors rearwardly into the recess as the counterweights descend.

5. A wall-casing having a recess, a base-piece extending across the front of the recess and closing the bottom of said recess when the bed is down, male and female members being provided for removably holding said base-piece non-rotatably in position, and a folding bed pivotally mounted on said base-piece to fold into the recess.

6. A wall-casing having a recess, a base-piece extending across the front of the recess and provided with means for removably holding the same non-rotatively in position and a folding bed detachably mounted on said base-piece to fold into the recess.

7. A wall-casing having a recess, a bed folding thereinto and having a headboard closing the lower part of the recess when the bed is lowered, closure means hinged at the sides of the recess for closing the part of the recess above the said headboard and closure means hinged at the sides of the recess for closing the recess below the aforesaid closure means.

8. A wall-casing having a recess, a bed folding thereinto and having a headboard closing the lower part of the recess when the bed is lowered, closure means hinged at the sides of the recess for closing the part of the recess above the said headboard and closure means hinged at the sides of the recess for closing the recess below the aforesaid closure means, and latch means connecting the upper and lower closure means together.

810,037. SANDING AND POLISHING MACHINE. DE LASKI T. CLEMONS, Hornellsville, N. Y., assignor of two-thirds to J. Feytrenet and J. F. Richardson, Hornellsville, N. Y. Filed May 2, 1905. Serial No. 258,443.

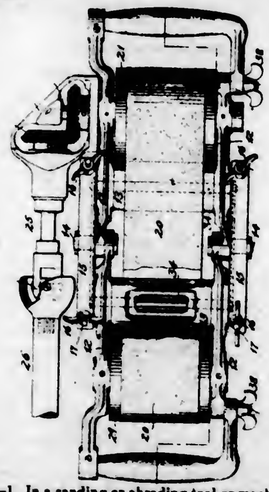

Claim.—1. In a sanding or abrading tool or machine, the combination with a frame consisting of two parts having a yielding jointed connection, of a drum or roller mounted in each part of said frame, an endless abrading-belt passing about said drums or rollers, and power-operated means for driving one of said drums or rollers to operate said belt.

2. A power-operated sanding or abrading tool or machine, comprising a frame consisting of two parts having a jointed or pivoted connection, combined with springs serving to hold the two portions of said frame in approximate alinement with each other, a drum or roller mounted in each portion of the said jointed or pivoted frame, an endless belt passing around said drums or rollers, and power-operated means for driving one of said rollers.

3. A power-operated sanding or abrading tool or machine, comprising a frame consisting of two parts having a jointed or pivoted connection, combined with springs serving to hold the two portions of said frame in approximate alinement with each other, a drum or roller mounted in each portion of the said jointed or pivoted frame, an endless belt passing around said drums or rollers, and a pad connected with said frame and adapted to press upon the belt so as to hold the same against the surfaces to be sanded or polished.

4. In a sanding or abrading tool or machine, the combination with a frame, of drums or rollers, an endless abrading-belt passing about said drums or rollers, a shaft on which one of said drums or rollers is mounted, a bevel-gear on said shaft, a journal-box pivoted on said frame, and a driving-shaft journaled in said box and having a bevel-gear meshing with the first-named bevel-gear.

5. In a sanding or abrading tool or machine, the combination with a two-part frame having a yielding connection, of drums or rollers, an endless abrading-belt passing about said drums or rollers, a shaft on which one of said drums or rollers is mounted, a bevel-gear on said shaft, a journal-box pivoted on said frame, and a driving-shaft journaled in said box and having a bevel-gear meshing with the first-named bevel-gear.

810,038. DUST-GUARD. EDWARD DENEGRE, Chicago, Ill., assignor to McCord & Company, Chicago, Ill., a Corporation of New Jersey. Filed Jan. 6, 1904. Serial No. 187,165.

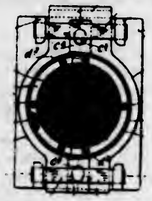

Claim.—1. The combination with a journal-box, of a guard-plate, a sectional packing-ring, and means for yieldingly clamping said parts to the box, the said guard-plate being interposed between the packing-ring and the box, and said packing-ring being removable, from the box independently of the guard-plate, substantially as described.

2. The combination with a journal-box, of a guard-plate, a sectional packing-ring seated in the outer face of the guard-plate, and means for yieldingly clamping said parts to the box, the said guard-plate being interposed between the packing-ring and the box, and said packing-ring being removable from the box independently of the guard-plate, substantially as described.

3. The combination with a journal-box, of a sectional guard-plate, a sectional packing-ring, and means for yieldingly clamping said parts to the box, the said guard-plate being interposed between said packing-ring and the box, and the said packing-ring being removable from the box independently of the guard-plate, whereby the packing-ring or the entire dust-guard can be removed at will, without the separation of the axle and the box, substantially as described.

810,039. DUST-GUARD. EDWARD DENEGRE, Chicago, Ill. Filed July 6, 1905. Serial No. 268,836.

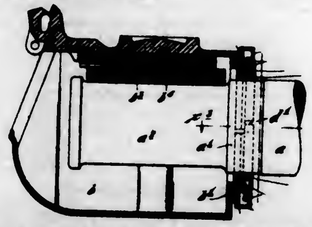

Claim.—1. The combination with a journal-box, of a guard-plate having means for detachable engagement with said box, a packing-ring interposed between said guard-plate and said box and directly engaging and packing both the axle and the box, which packing-ring is made up of a plurality of sections and is provided with a conical spring-engaging surface, and a spiral helical spring reacting at its large end against said detachable guard-plate and with its smaller end directly engaging and reacting against the conical surface of said packing-ring, substantially as described.

2. The combination with a journal-box, of a guard-plate having means for detachable engagement with said box, a packing-ring interposed between said guard-plate and said box and directly engaging and packing both the axle and the box, which packing-ring is made up of a plurality of loosely-connected sections having overlapped ends, said packing-ring having a conical spring-engaging surface, and a spiral helical spring reacting at its large end against said detachable guard-plate and with its smaller end directly engaging and reacting against the conical surface of said packing-ring, substantially as described.

810,040. AUTOMATIC VALVE FOR FIRE-EXTINGUISHERS. JOHN H. DORSEY, Brookline, Mass. Filed Nov. 7, 1902. Serial No. 130,290.

Claim.—1. An automatic valve for fire-extinguishers, having, in combination, a water-valve chamber, a water-supply pipe and a dry pipe connected therewith, a water-valve in the said chamber for closing the water-pipe against the pressure of the water, an air-valve between the dry pipe and the water-valve chamber for closing the dry pipe held closed by the air-pressure, and connections between the said valves for holding the water-valve closed including members provided with inclined friction-surfaces through which the force is transmitted from the air-valve to the water-valve, so that increased pressure on the water-valve is increasingly resisted by the friction between the said inclined surfaces, substantially as described.

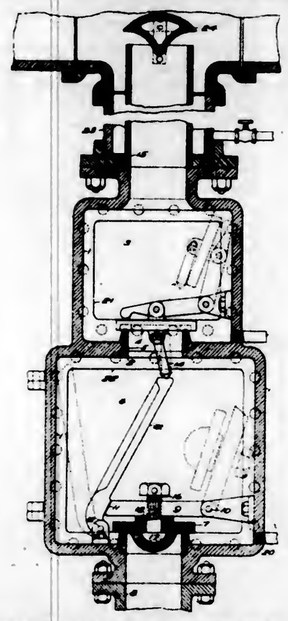

2. An automatic valve for fire-extinguishers, having, in combination, a water-valve chamber, a water-supply pipe and a dry pipe connected therewith, a water-valve in the said chamber for closing the water-pipe against the pressure of the water, an air-valve between the dry pipe and the water-valve chamber, for closing the dry pipe, held closed by the air-pressure, and connections between the said valves for holding the water-valve closed, comprising a locking-lever engaging the water-valve to hold it closed, and a link connection between the lever and the air-valve, substantially as described.

3. An automatic valve for fire-extinguishers, having, in combination, a water-supply pipe, an air-pipe, a water-valve for closing the water-pipe against the pressure of the water, an air-valve between the dry pipe and the water-valve, for closing the air-pipe, held closed by the air-pressure, and connections between the two valves for holding the water-valve closed by the air-pressure, comprising a lever engaging the water-valve and a strut engaging the said lever and pivotally connected with the air-valve, substantially as described.

4. An automatic valve for fire-extinguishers, having, in combination, a water-valve chamber, a water-supply pipe and a dry pipe connected therewith, a water-valve in the said chamber for closing the water-pipe against the pressure of the water, an air-valve between the dry pipe and the water-valve, for closing the dry pipe, held closed by the air-pressure, and connections between the said valve for holding the water-valve closed, comprising a lever, the lever and water-valve having cooperating inclined surfaces, substantially as described.

5. An automatic valve for fire-extinguishers, having, in combination, a dry pipe, an air-valve, a water-pipe, a water-valve, automatic means for releasing the water-valve on a drop in pressure in the dry pipe, and a closed reservoir in communication with the dry pipe, the connection between the reservoir and the dry pipe being arranged to divert into the reservoir water returning from the dry-pipe system, so as to prevent the formation of a water column above the air-valve, substantially as described.

6. An automatic valve for fire-extinguishers, having, in combination, a dry pipe, an air-valve, a water-pipe, a water-valve, automatic means for releasing the water-valve on a drop in pressure in the dry pipe, an annular reservoir surrounding a vertical part of the dry pipe, an opening between the top of the reservoir and the dry pipe, and means for diverting into said opening any water returning from the dry-pipe system, substantially as described.

7. An automatic valve for fire-extinguishers, having, in combination, a water-supply pipe, a dry pipe, a water-valve for closing the water-pipe against the pressure of the water, an air-valve for closing the dry pipe, a pivoted arm to which the dry-pipe valve is attached, a locking-lever engaging the water-valve, and a strut connecting the locking-lever and the air-valve, the strut being inclined to the air-valve, substantially as described.

8. An automatic valve for fire-extinguishers, having, in combination, a water-supply pipe, a valve for holding it closed against the pressure of the water, a dry pipe, an air-valve for closing the dry pipe held closed by the air-pressure, a locking-lever pivoted to the valve-casing and engaging at an intermediate point a surface connected to the water-valve, and a strut engaging the free end of the said lever and the said air-valve, substantially as described.

9. An automatic valve for fire-extinguishers, having, in combination, a water-supply pipe, a water-valve for holding it closed against the pressure of the water, a dry pipe, an air-valve between the dry pipe and the water-valve for closing the dry pipe, held closed by the air-pressure, a locking-lever pivoted to the valve-casing near the water-valve seat, the said lever being inclined to the plane of the water-valve, and a strut engaging the air-valve and the said lever, substantially as described.

10. An automatic valve for fire-extinguishers, having, in combination, a water-supply pipe, a water-valve for holding it closed against the pressure of the water, a dry pipe, an air-valve between the dry pipe and the water-valve for closing the dry pipe, held closed by the air-pressure, a locking-lever pivoted to the valve-casing and engaging the water-valve, and a strut connecting the locking-lever and the air-valve, the said lever and strut being inclined to the said valves and to each other, substantially as described.

11. An automatic valve for fire-extinguishers, having, in combination, a casing provided with an inlet-port and an outlet-port for water, the ports being substantially in line with each other, a water-valve for closing the inlet-port against the pressure of the water, an air-valve for closing the outlet-port held closed by air-pressure, and a mechanism interposed between the valves for holding the water-valve in its closed position until the air-pressure upon the air-valve is relieved, the said mechanism including opposed inclined friction-surfaces and the valves and mechanism assuming, when the valves are open, a position out of line with the ports so as to form an unobstructed passage between them, substantially as described.

810,041. BRIDGE-GUARD WHIP. JAMES H. DONALDSON, Chicago, Ill. Filed May 20, 1904. Serial No. 208,943.

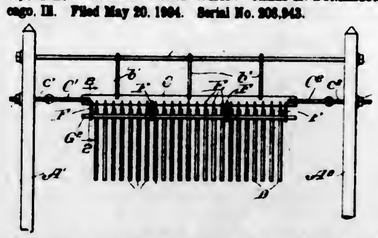

Claim.—1. In a bridge-guard whip, the combination with a transverse support, of a plurality of rods depending from said support, and means preventing the movement of said rods relatively to said support by the wind.

2. In a bridge-guard whip, the combination with a transverse support, of a plurality of rods depending from said support, and transverse bars located on either side of said rods adjacent their upper ends to prevent said rods being swung relatively to the transverse support by the wind.

3. In a bridge-guard whip, the combination with a transverse support, of a plurality of rods depending from said support, hangers depending from said support on opposite sides of said rods, and transverse bars supported by said hangers adjacent the upper ends of the rods.

4. In a bridge-guard whip, the combination with a transverse support, a plurality of ratan rods pivotally secured to said support at their upper ends, and means for preventing said rods being swung relatively to said support by the wind.

5. In a bridge-guard whip, the combination with a pair of posts

5. In a bridge-guard whip, the combination with a pair of posts one located at each side of a railroad-track, of a transverse rod supported at its opposite ends near the upper ends of said posts, a transverse strip suspended by said rod, tie-rods uniting the ends of said strip to the posts, and a plurality of rods depending from said strips.

6. In a bridge-guard whip, the combination with a pair of posts one located at each side of a railroad-track, of a transverse rod supported at its opposite ends near the upper ends of said posts, a transverse strip suspended by said rod, tie-rods uniting the ends of said strip to the posts, a plurality of rods depending from said strip, and means for preventing the movement of said rods relatively to said strip by the wind.

7. In a bridge-guard whip, the combination with a pair of posts one located at each side of a railroad-track, of a transverse rod supported at its opposite ends near the upper ends of said posts, a transverse strip suspended by said rod, tie-rods uniting the ends of said strip to the posts, a plurality of rods depending from said strip, and transverse bars located on either side of said rods adjacent their upper ends to prevent them from being swung relatively to said strip by the wind.

8. In a bridge-guard whip, the combination with a pair of posts one located at each side of a railroad-track, of a transverse rod supported at its opposite ends near the upper ends of said posts, a transverse strip suspended by said rod, tie-rods uniting the ends of said strip to the posts, a plurality of rods depending from said strip, hangers depending from said strip and extending downwardly to opposite sides of said rods, and transverse bars supported by said hangers adjacent the upper ends of the rods.

810,042. **MOORING DEVICE.** WILLIAM D. DUNCAN, Boston, Mass. Filed May 6, 1905. Serial No. 259,134.

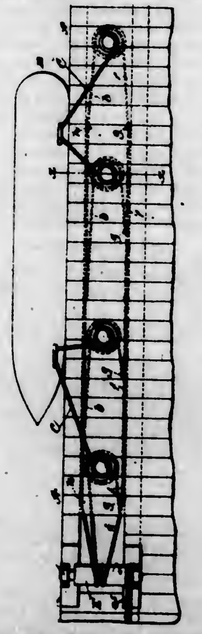

Claim.—1. A mooring device adapted to be sustained on a wharf or dock and having connected therewith one end of a hawser led out from a vessel, and flexible means for turning said mooring device to release the hawser therefrom.

2. A mooring device adapted to be mounted on a wharf or dock, and provided with a horn or projection, combined with means for partially rotating said device.

3. A mooring device adapted to have connected therewith one end of hawser, and means to revolve said mooring device to discharge said hawser.

4. A mooring device provided with a drum and adapted to have one end of a hawser connected therewith, combined with a cable connected with said drum, and means to move said cable, said cable when moved causing the mooring device to disengage itself from the hawser.

5. A plurality of mooring devices, adapted to be mounted on a wharf or dock, and provided with a horn or projection, combined with flexible means leading to said mooring devices for revolving the same simultaneously to release a vessel.

810,043. **CHEESE-CUTTER.** FRANK P. DUNN, Anderson, Ind., assignor to Simpson Computing Scale Company, Elkhart, Ind., a Corporation. Filed Mar. 28, 1904. Serial No. 200,306.

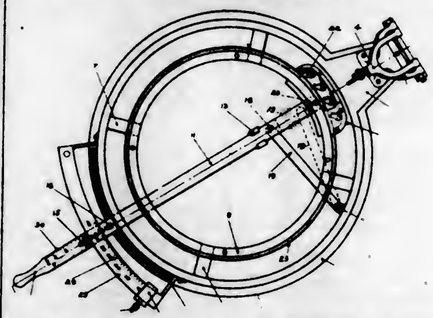

Claim.—1. In a cheese-cutter, the combination of a rotary cheese-plate, an extensible lever comprising telescoping sections for rotating the plate, a clutch connection between the lever and plate, and an adjustable fulcrum for the lever operated by the telescopic movement of the lever-sections.

2. In a cheese-cutter, the combination of a rotary cheese-plate, an extensible operating-lever, a clutch between the plate and lever, an adjustable fulcrum for the lever operated by the movement of one part of the lever, and price-indicating marks on the lever.

3. In a cheese-cutter, a movable plate an extensible operating-lever therefor, a movable fulcrum for the lever, operated by the movement of one part of the lever and means for locking the lever at its points of extension.

4. In a cheese-cutter, the combination of a frame, a rotary cheese-plate, a lever for rotating the same, a clutch between the lever and plate, a fulcrum for the lever, and a link on which the fulcrum is supported, said link being pivoted on the frame, and said lever being formed in sections, whereby said fulcrum may be adjusted.

5. In a cheese-cutter, the combination of a rotary cheese-plate, of an extensible lever for operating the same, a clutch between the lever and plate, an adjustable fulcrum for the lever, and means for adjusting the fulcrum by the adjustment of the lever.

6. In a cheese-cutter, the combination of a frame, a rotary cheese-plate, a lever for operating the same comprising an upper and a lower section slidingly engaged together, a fulcrum on the lower section, a link extending from the fulcrum to a stationary pivot on the frame, a clutch between the upper section of the lever and the plate, a stationary segment on the frame having weight indications thereon, an adjustable stop on the segment, price indications on the lever adjacent to the segment, and means for securing the two sections of the lever together at various points of adjustment.

810,044. **PROCESS OF BURNING CERAMIC WARE.** BYRON E. BLOOMS, Brooklyn, N. Y., assignor to Combustion Utilities Company, New York, N. Y., a Corporation of New York. Filed Feb. 21, 1905. Serial No. 246,669.

Claim.—1. The process of burning ceramic ware which consists in subjecting a penetrable mass of said ware to a voluminous slow-burning flame produced by passing through a bed of solid fuel an artificially-accelerated draft-current containing free oxygen and diluent neutral products of combustion in predetermined proportions, and increasing the proportion of the diluent as the high temperature zone of the ware extends.

2. The process of burning ceramic ware which consists in subjecting the ware to a voluminous slow-burning flame produced with a dilute air-draft, and varying the composition of said draft in accordance with the temperature attained by the ware.

3. The process of burning ceramic ware which consists in causing a flame of artificially-retarded combustion to penetrate a mass of the ware under forced draft, and elongating the flame by a predetermined variation in its composition as the burning progresses.

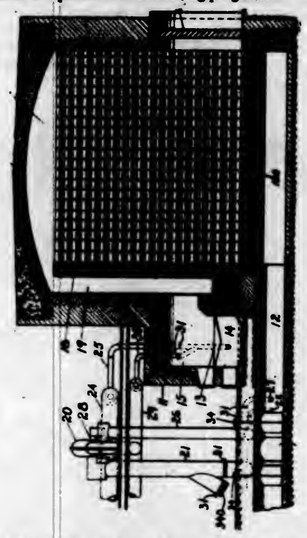

4. The process of burning ceramic ware which consists in subjecting the ware to a voluminous slow-burning flame produced with an artificially-strengthened air-draft containing products of combustion in predetermined proportion, and increasing the force of said draft as the high-temperature zone extends.

5. The process of burning ceramic ware which consists in projecting a flame from a fuel-bed with an artificially-forced draft-current containing products of combustion in sufficient amount to suppress the natural intensity of combustion, causing said frame to penetrate the ware, and increasing the proportion of said products in the draft-current as the temperature of the ware increases.

6. The process of burning ceramic ware which consists in projecting a flame from a fuel-bed with an artificially-forced draft-current containing products of combustion in sufficient amount to suppress the natural intensity of combustion, causing said flame to penetrate the ware, and increasing the force of the draft-current as the zone of high temperature extends.

7. The process of burning ceramic ware which consists in projecting from a fuel-bed into a penetrable mass of the ware a flame produced with an artificially-strengthened draft-current containing products of combustion in sufficient amount to retard the combustion of and inflate said flame, and regulating the composition of the flame with reference to the condition of the ware.

8. The process of burning ceramic ware which consists in producing a voluminous slow-burning flame with a predetermined proportion of products of combustion in the draft-current supplied to the fire, applying said flame under artificially-strengthened draft to a stationary mass of ceramic ware, and maintaining it in operation with the increasing flame volume from the time the ware loses its water and reaches an ignition-sustaining condition until it is completely burned.

9. The process of burning ceramic ware which consists in projecting from a fuel-bed into a mass of the ware, a voluminous slow-burning flame produced with products of combustion and free oxygen in predetermined proportion in the draft-current, and alternately increasing and decreasing the proportion of products to produce alternations of reducing and oxidizing quality in the flame.

10. The process of burning ceramic ware which consists in driving off the water from the green ware with a low-temperature heating agent, and then when the ware has reached a condition capable of sustaining ignition, subjecting it to a voluminous slow-burning flame produced with a predetermined proportion of products of combustion in the draft-current supplied to the fire, increasing the volume of said flame as burning proceeds.

11. The process of burning ceramic ware which consists in subjecting the ware in a kiln-chamber to a voluminous flame of artificially-retarded combustion produced with products of combustion and air in the draft-current supplied to the fire, and preheating the air by the heat from burned ware in a different kiln-chamber.

12. The process of treating ceramic ware which consists in subjecting it to the heat of a flaming fuel-bed through which is passed a predetermined proportion of products of combustion, and subjecting the flame to the igniting influence of a refractory heat-retainer in advance of the ware until the major part of its combustion is completed.

13. The process of burning ceramic ware which consists in diluting and dilating fire-gases with products of combustion and with air in such relative proportions as to give a tardily-burning mixture, passing such mixture through a hot-walled ignition-flue, thoroughly admixing the gases and inaugurating combustion therein, and continuing the combustion in immediate proximity to the ware to be burned.

14. The process of burning ceramic ware which consists in burning a penetrable mass of such ware in a kiln with a gradually-elongating flame.

810,045. **WINDOW-LOCK.** ELIAS STEINBOUSER and ROSANNAH L. MORRIS, San Jose, Cal. Filed Feb. 27, 1905. Serial No. 247,464.

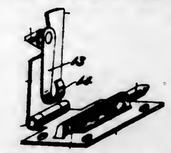

Claim.—A sash-fastener having in combination two flat plates hinged together along their meeting edges one of said plates adapted to be fixedly secured on the top rail of the lower sash and having a housing which extends parallel with the hinge of said plates said housing having a closed rear end and a longitudinally-extending slot offset at the front end, a spring in the rear portion of the housing, a bolt slidable in the housing and normally projected by the spring, said bolt having a knob operable in the slot of the housing, a turnable bolt mounted in the other plate said bolt having a conically-shaped head and lateral wings or projections, and a handle-piece by which the bolt is turnable, a plate adapted to be secured to the upper sash having keyhole-slots engageable by the head and wings of the turnable bolt, and a plate adapted to be secured to the window-casing having openings engageable by the spring-actuated locking-bolt.

810,046. **BARREL-LOCKING DEVICE FOR BREAKDOWN GUNS.** ASHLEY H. FOX, Philadelphia, Pa. Filed Aug. 12, 1905. Serial No. 273,878.

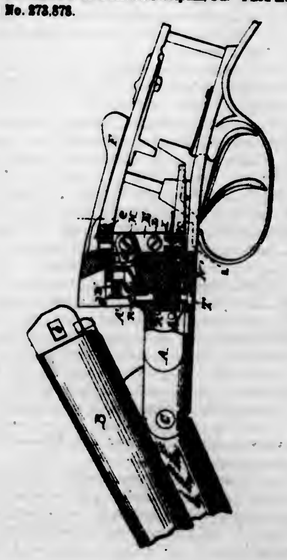

Claim.—1. In a breech-loading breakdown gun the breech-frame having a hole, combined with a locking-bolt arranged in the breech-frame for locking the barrels, an upright spindle journaled in the breech-frame and having a lateral arm terminating in a ball-shaped head, a spring located in the hole in the breech-frame, a follower resting against the spring and having a diameter less than the diameter of the hole so as to form a clearance-space between it and the hole and also provided on its outer end with a concave recess into which the ball-shaped head of the lateral arm is received, and a connection between the spindle and the locking-bolt whereby the latter may be operated by rocking the spindle.

2. In a breech-loading breakdown gun, the breech-frame having a hole, combined with a cylindrical rotary locking-bolt opened in the breech-frame in line with its center for locking the barrels, an upright spindle journaled in the breech-frame and having a spring, a lateral arm terminating in a ball-shaped head, a spring located in the hole in the breech-frame, a follower resting against the spring and having a diameter less than the diameter of the hole so as to form a clearance-space between it and the hole and also provided on its outer end with a concave recess into which the ball-shaped head of the lateral arm is received, and a connection between the spindle and the locking-bolt consisting of a pendulum-lever having a ball-shaped head extending into the body of the rotary locking-bolt and contacting therewith only at its cylindrical head whereby it may be operated by rocking the spindle.

3. In a breech-loading breakdown gun, the combination of the barrels, a rotary locking-bolt revolving on an axis substantially parallel to the axis of the bore of the barrel and having an oblique hole D′, a rocking spindle having a hand-lever by which to rock it, spring devices to normally rock the spindle when the pressure on the hand-lever is released, and a pendulum-lever G hinged to the vertical rocking spindle on a transverse axis and provided on its end with a ball-shaped head G′ which fits into the oblique aperture in the locking-bolt whereby the bolt is given a rotary motion and contact between the pendulum-lever and the walls of the hole in the locking-bolt is prevented except adjacent to the ball-shaped head.

4. In a breech-loading breakdown gun the breech-frame combined with a rotary locking-bolt rotating on an axis substantially parallel to the axis of the barrels, a rocking spindle journaled in the breech-frame to the rear of the locking-bolt, and a pendulum-lever hinged to the rocking spindle and forming a ball-and-socket connection with the rotary locking bolt.

5. In a breech-loading breakdown gun, the combination of the breech-frame, a locking-bolt for the barrels carried by the breech-frame, an upright rocking spindle having a hand-lever and journaled in the breech-frame and also having a lateral-extending arm terminating in a ball-shaped head, a coil-spring carried by the breech-frame, a follower resting against the coil-spring at one end and having the other end recessed to receive the cylindrical-shaped head of the lateral arm of the spindle, and connections between the rocking spindle and the locking-bolt.

6. In a breech-loading breakdown gun, the breech-frame having a hole S extending upwardly from the bottom, in combination with a rotary cylindrical locking-bolt arranged in the breech-frame, spring-controlled means for rotating the locking-bolt, a trip R arranged in the hole adapted to lock the locking-bolt in open position, a coil-spring R′ adapted to press the trip upward also arranged in the hole and removable together with the trip downward through the bottom of the hole in the breech-frame, and means for closing the lower part of the hole in the breech-frame for holding the said spring and trip within the said hole and putting the spring under tension.

7. In a breech-loading breakdown gun, the breech-frame having a hole S extending upwardly from the bottom, in combination with a rotary cylindrical locking-bolt arranged in the breech-frame, spring-controlled means for rotating the locking-bolt, a trip R arranged in the hole adapted to lock the locking-bolt in open position, a coil-spring R′ adapted to press the trip upward also arranged in the hole and removable together with the trip downward through the hole in the breech-frame, a trigger-plate fitting against the lower part of the breech-frame, and means for closing the lower part of the hole in the breech-frame for holding the said spring and trip within the said hole and putting the spring under tension consisting of a screw T extending through the trigger-plate and screwed into the lower part of the hole S.

8. In a breech-loading breakdown gun, the combination of a rotary locking-bolt, spring-actuated means for rotating the bolt to lock the barrels, a trip to lock the locking-bolt in its open position, a spring to move the trip into locking position, a breech-frame inclosing the rotary locking-bolt and having an aperture of a diameter larger than the diameter of the trip and spring and open entirely through to the bottom, and removable means for sealing the bottom of the said aperture and applying a pressure to the spring to create an upward thrust upon the trip.

810,047. **PLUMBING SYSTEM.** JOHN L. PRUIN, New York, N. Y. Filed Oct. 17, 1904. Serial No. 228,740.

Claim.—A plumbing system composed of a main vent-pipe and a main waste-pipe extending from floor to floor of a building, a combination receiving-T located in said main waste-pipe and adapted to receive the discharge of a number of washbasins, closet-bowls, sinks, and bath-tubs, and vent the same individually, and a multifold interconnecting fitting which connects said T with said main vent-pipe at a substantially higher level between said floors whereby said individual venting is accomplished.

810,048. **MACHINE FOR MAKING COIL-SPRINGS.** JOHN F. GAIL, Kenosha, Wis., assignor to The Simmons Manufacturing Company, Kenosha, Wis., a Corporation of Wisconsin. Filed Mar. 3, 1904. Serial No. 196,494.

Claim.—1. The combination of coiling mechanism; a press; and means provided with a coil-gripping device and serving to convey coils from the coiling mechanism to the press.

2. The combination of coiling mechanism; a press; knotting mechanism; and means for conveying coils from the coiling mechanism to the press and from the press to the knotting mechanism.

3. The combination of coiling mechanism; a press; knotting mechanism; nesting mechanism; and means for transferring coils progressively through the machine.

4. The combination of coiling mechanism; a press; and an oscillating carrier operating to transfer coils from the coiling mechanism to the press.

5. The combination of coiling mechanism; a press; and a carrier provided with means for simultaneously removing coils from the coiling mechanism and the press.

6. The combination of coiling mechanism; a press; and an oscillating carrier provided with means for simultaneously conveying coils from the coiling mechanism and the press.

7. The combination of coiling mechanism; a press; and a swinging carrier provided with two pair of jaws spaced to receive coils from the coiling mechanism and the press.

8. The combination of coiling mechanism; a press; knotting mechanism; and a suitably-actuated carrier provided with coil-engaging means corresponding with each of said named mechanisms and located adjacent thereto in one position of said carrier, for the purpose set forth.

9. The combination of coiling mechanism; a press; knotting mechanism; nesting mechanism; and an oscillating carrier provided with suitably-spaced coil-engaging means and operating to simultaneously transfer the coils from the point wherein they are being operated upon respectively to the next succeeding points of operation, for the purpose set forth.

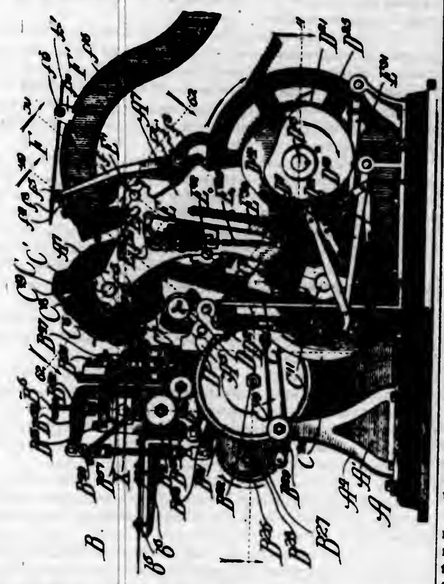

10. The combination of coiling mechanism; a press; knotting mechanism; nesting mechanism; said mechanism being arranged in a curved path, and a pivotally-supported carrier equipped with a plurality of pairs of jaws adapted to oscillate between adjacent mechanisms, for the purpose set forth.

11. The combination of coiling mechanism; a press; knotting mechanism provided with gripping devices and suitable knotters, the discharge-point of the coiling mechanism, the press, and the gripping devices of the knotting mechanism being arranged on a curve, an oscillating carrier provided with a plurality of properly-spaced coil-engaging means, and means for moving the gripping devices of the knotting mechanism with relation to the knotters, for the purpose set forth.

12. The combination of coiling mechanism; a press, located in the rear of the coiling mechanism and having its axis substantially parallel with the axis of the coil formed in the coiling mechanism; and means equipped with a coil-gripping device and serving to transfer the coil parallel with itself from the coiling mechanism to the press.

13. The combination of coiling mechanism; a press; and an oscillating carrier provided with means for gripping the coil at an intermediate portion, said carrier operating to transfer coils from the coiling mechanism to the press.

14. The combination of coiling mechanism; a press; an oscillating carrier, and a pair of coil-gripping jaws forming a part of said carrier and operating to transfer coils from the coiling mechanism to the press.

15. The combination of coiling mechanism having wire-bending means and feed-rolls for forcing the wire through said bending means, said wire-bending means operating to form the coil and project it at right angles to the path of the entering wire; a press having its axis parallel with the coil when formed; and a coil-transferrer provided with coil-gripping means and serving to move the coil to and position the same for the press, for the purpose set forth.

16. The combination of coiling mechanism; a press comprising a pair of presser-heads equipped with fingers for entering the coils and provided with perforations for receiving the opposite fingers, respectively, and means for transferring the coils from the coiling mechanism to the press.

17. The combination of coiling mechanism; a press having a reciprocating member provided with a finger for entering the coil; and a swinging carrier provided with a pair of coil-gripping jaws having a range of movement from the coiling mechanism to the path of the reciprocating member of the press.

18. The combination of coiling mechanism; a press; coil-rotating means coacting with the press; and a carrier serving to transfer coils from the coiling mechanism to the press.

19. The combination of coiling mechanism; a press comprising reciprocating presser-heads; coil-rotating devices coacting with said presser-heads; and a carrier serving to transfer coils from the coiling mechanism to the press.

20. The combination of coiling mechanism; a press comprising reciprocating presser-heads; coil-rotating members having a pivotal movement with relation to said presser-heads and also a movement of reciprocation with the presser-heads; and means for transferring the coils from the coiling mechanism to the press.

21. The combination of coiling mechanism; a press comprising reciprocating presser-heads mounted on guides, one of said guides being rotatable; coil-rotating members rotatably connected with said presser-heads and having a movement of reciprocation therewith; actuating means for said coil-rotating members operated through the medium of said rotatable guide; and coil-transferring means, for the purpose set forth.

22. The combination of coiling mechanism; a press having reciprocating presser-heads equipped with coil-entering fingers; knotting mechanism; and a carrier equipped with a front pair of gripping-jaws and a pair of gripping-jaws in the rear thereof; actuating means for the first-named pair of jaws; and actuating means for the second-named jaws operating to close the same prior to the closure of the first-named pair of jaws, for the purpose set forth.

23. The combination of coiling mechanism; a press comprising reciprocating presser-heads equipped with coil-entering fingers, coil-rotating devices moving reciprocatingly with said heads and rotatably mounted with relation thereto; knotting mechanism; and coil-transferring means, for the purpose set forth.

24. The combination of coiling mechanism; a press comprising reciprocating presser-heads equipped with coil-entering fingers, coil-rotating devices moving reciprocatingly with said heads and rotatably mounted with relation thereto; knotting mechanism; coil-transferring means, comprising a carrier equipped with suitably-spaced pairs of jaws serving to receive intermediate portions of the springs; and actuating means for the jaws.

25. The combination of coiling mechanism; a press; knotting mechanism provided with transversely-reciprocating longitudinally-oscillating gripping devices and knotters located a short distance from the normally advanced positions of the gripping devices, and a carrier provided with means for moving the coils progressively through the machine.

26. The combination of coiling mechanism; a press; knotting mechanism provided with reciprocating swinging gripping devices and with knotters removed somewhat from the paths of reciprocation of the gripping devices, gages coacting with said gripping devices to measure the lengths of the projections employed in making the knots; and a carrier provided with suitable coil-engaging means and operating to move the coils progressively through the machine.

27. The combination of coiling mechanism; a press; knotting mechanism; and an intermittently-actuated carrier provided with a plurality of gripping devices and serving to move the coils step by step through the machine.

28. The combination of coiling mechanism; a press; knotting mechanism provided with coil-gripping means and with means coacting therewith to measure the length of a projection to be employed in making a knot; and coil-transferring means operating to move the coils progressively through the machine.

29. The combination of coiling mechanism; a press; coil-rotating means coacting with said press; knotting mechanism provided with coil-gripping devices and means coacting therewith for measuring the length of a projection to be employed in making a knot; and coil-transferring means serving to move the coils progressively through the machine.

30. The combination of coiling mechanism; a press; a rotating shaft; a swinging coil-carrier provided with jaws, and cams on said shaft serving to actuate said jaws.

31. The combination of mechanisms for forming and operating upon a coil; and a coil-carrier comprising spring-closed jaws and cams for opening said jaws.

32. The combinations of mechanisms for forming and operating upon coils; a rotating shaft; a coil-carrier swinging thereon; a plurality of pairs of spring-closed jaws forming a part of said carrier and

suitably spaced with relation to said mechanisms; and cams on said

suitably spaced with relation to said mechanisms; and cams on said shaft for opening said jaws.

33. The combination of coiling mechanism; a press; knotting mechanism comprising suitable knotters and reciprocating gripping devices having a movement of rotation, when at the inner ends of their traverses, to carry the coil to and from the knotters; and a carrier serving to move the coils progressively through the machine.

34. In a machine of the character described, the combination of a press; knotting mechanism; and a carrier serving to transfer the coils from the press to the knotting mechanism.

35. In a machine of the character described, the combination of a press; knotting mechanism; and a carrier provided with a plurality of pairs of jaws serving simultaneously to transfer coils to and from the press and the knotting mechanism.

36. In a machine of the character described, the combination of a press having a reciprocating member; knotting mechanism; and an oscillating carrier provided with three pairs of jaws, one pair of jaws serving to transfer the coil to the press, another pair serving to transfer the coil from the press to the knotting mechanism, and the third pair serving to transfer the coil away from the knotting mechanism.

37. In a machine of the character described, the combination of a press provided with reciprocating presser-heads having inward extensions adapted to enter a coil; knotting mechanism comprising suitable knotters and reciprocating gripping devices having an oscillating movement to transfer the coil to and from the knotters; and an oscillating carrier provided with a plurality of pairs of jaws and serving to move the coils progressively through the machine.

38. In a machine of the character described, the combination of a press provided with reciprocating presser-heads; coil-rotating devices rotatively mounted with relation to said presser-heads; a rock-shaft equipped with gear-segments serving to actuate the coil-rotating devices; knotting mechanism equipped with suitable knotters and with gripping devices operating to carry the coil to and from the knotters; and a carrier provided with a plurality of coil-engaging devices and operating to transfer coils to and from the press and to and from the gripping devices of the knotting mechanism.

39. In a machine of the character described, the combination of a press; knotting mechanism provided with suitable knotters and gripping devices; and an oscillating pivoted carrier provided with a plurality of pairs of coil-gripping jaws, for the purpose set forth.

40. In a machine of the character described, the combination of a press; knotting mechanism; nesting mechanism; and a carrier serving to move the coils progressively through the machine.

41. In a machine of the character described, the combination of a press; knotting mechanism equipped with suitable knotters and with gripping devices serving to carry the coil to and from the knotters; nesting mechanism; and an oscillating carrier provided with a plurality of pairs of jaws operating to transfer coils to and from the press, to and from the gripping devices of the knotting mechanism, and to the nesting mechanism.

42. In a machine of the character described, the combination of a press; knotting mechanism; nesting mechanism comprising a receiver and a nester; and a carrier serving to move the coils progressively till they come within the grasp of the nester, for the purpose set forth.

43. In a machine of the character described, the combination of knotting mechanism; nesting mechanism; and means for transferring coils from the knotting mechanism to the nesting mechanism.

44. In a machine of the character described, the combination of knotting mechanism equipped with a suitable knotter and coil-gripping means serving to transfer the coils to and from the knotter; nesting mechanism comprising a suitable receiver and an oscillating nester; and a carrier provided with means for transferring coils to and from the gripping means of the knotting mechanism and to the nester of the nesting mechanism.

45. In a machine of the character described, the combination of knotting mechanism comprising knotting-pinions, gears meshing therewith, shafts for said gears equipped at their lower ends with cam-engaging gears, cam-wheels engaging said last-named gears, and gripping devices serving to carry the coil to and from the knotting-pinions; nesting mechanism; and a carrier serving to transfer coils from the gripping devices of the knotting mechanism to the nesting mechanism.

46. In a machine of the character described, the combination of knotting mechanism; nesting mechanism comprising a receiver provided with an opening having flaring walls and a nester serving to advance the coils from the contracted portion of the receiver; and a carrier serving to transfer coils from the knotting mechanism into the contracted portion of the receiver.

47. In a machine of the character described, the combination of a press; coil-rotating means operatively connected with said press; knotting mechanism comprising a suitable knotter and gripping means for carrying the coils to and from the knotter, a gage operatively mounted with relation to said gripping means and serving to regulate the length of the projection of the wire to be employed in making the knot; and a carrier serving to move the coils progressively through the machine.

48. In a machine of the character described, the combination of a press; a coil-rotating device operatively mounted with relation thereto; knotting mechanism comprising suitable knotters and reciprocating gripping devices having an oscillating movement at the inner ends of their traverses; and gages operatively mounted with relation to said gripping devices; and a carrier serving to move the coils progressively through the machine.

49. In a machine of the character described, the combination of a press; a coil-rotating device operatively mounted with relation thereto; knotting mechanism comprising suitable knotters; reciprocating gripping devices having an oscillatig movement at the inner ends of their traverses; and gages operatively mounted with relation to said gripping devices; nesting mechanism; and a carrier provided with means for transferring coils to and from the press, to and from the gripping devices of the knotting mechanism, and to the nesting mechanism.

50. The combination of mechanisms for coiling, and operating upon springs; nesting mechanism; and means for transferring the coils progressively through the machine.

51. The combination of coiling mechanism; knotting mechanism independent thereof; and means for transferring coils from the coiling mechanism to the knotting mechanism.

52. The combination of coiling mechanism; knotting mechanism; nesting mechanism; and means for transferring coils progressively through the machine.

53. In a machine of the character described, the combination of mechanism for operating upon a coil-spring; nesting mechanism; and an oscillating carrier serving to deliver springs to the nesting mechanism.

54. In a machine of the character described, the combination of mechanism for operating upon coil-springs; nesting mechanism comprising a receiving-chute, and a nester coacting therewith; and means for moving the springs progressively through the machine to a point within reach of the nester.

55. In a machine of the character described, the combination of mechanism for operating upon coil-springs; nesting mechanism comprising a receiving-chute having a contracted portion and a nester operating to move the springs along said chute; and an oscillating carrier serving to move the springs progressively through the machine and deposit them within the contracted portion of said receiving-chute.

56. In a machine of the character described, the combination of mechanism for operating on coil-springs; nesting mechanism comprising a receiving-chute having a flaring opening for admission of springs, and a nester operating to move the springs along said chute; and an oscillating carrier provided with a pair of jaws serving to grasp each spring at an intermediate portion and carry the same into said flaring opening of the receiver and deposit the same within reach of the nester.

57. In a machine of the character described, the combination of mechanism for operating upon coil-springs; nesting mechanism comprising a receiver provided at its receiving end with means for retaining a spring and a nester coacting with said receiver; and an oscillating carrier provided with jaws serving to deposit the springs successively within grasp of the retaining means of said receiver.

58. In a machine of the character described, the combination of mechanism for operating upon coil-springs; means for transferring the springs from said mechanism; and nesting mechanism comprising a receiving-chute and an oscillating nester having a depressible hook serving to engage the springs as they are successively deposited within the receiving end of the receiver and convey the same along the receiver.

59. In a machine of the character described, the combination of mechanism for operating upon coil-springs of a given length; and nesting mechanism comprising a receiving-chute having walls holding the springs compressed and a nester provided with a depressible hook serving to engage the springs at the receiving end of the receiver and transfer them along the receiver.

60. In a machine of the character described, the combination of mechanism for operating upon coil-springs; and nesting mechanism comprising a receiving-chute having a contracted receiving end, an oscillating nester serving to move the springs along the receiver, and projections extending from the contracted portion of the receiver into the adjacent portion of the receiver and serving to direct the end rings of the entering coil-spring into the spaces provided therefor in the nested springs for the purpose set forth.

61. In a machine of the character described, the combination of a swinging coil-carrier provided with a pair of jaws; and nesting mechanism comprising a receiving-chute having a contracted front end provided with flaring downward extensions, the front end of the receiver being open to allow said jaws to swing to their elevated position; and an oscillating nester, for the purpose set forth.

62. In a machine of the character described, the combination of a swinging coil-carrier provided with a pair of jaws; and nesting mechanism comprising a receiving-chute having a contracted front end provided with flaring downward extensions, the front end of the receiver being open to allow said jaws to swing to their elevated position; and an oscillating nester equipped with a depressible hook, for the purpose set forth.

63. In a machine of the character described, the combination of a swinging coil-carrier provided with a pair of jaws; and nesting mechanism comprising a receiving-chute having a contracted front end provided with flaring downward extensions, the front end of the receiver being open to allow said jaws to swing to their elevated position; and an oscillating nester equipped with a depressible hook provided with an actuating-arm, and a friction-rod connected with said arm.

64. In a machine of the character described, the combination of knotting mechanism equipped with a suitable knotter, and provided with a transversely-reciprocating longitudinally-oscillating gripping device, and provided with a gage comprising a transversely-reciprocating slide and a revoluble gage-head connected therewith, the gripping device serving to carry the end ring of the spring to the knotter; nesting mechanism; and means for transferring coils from the knotting mechanism to the nesting mechanism.

65. In a machine of the character described, the combination of knotting mechanism comprising a pair of transversely-reciprocating longitudinally-oscillating gripping devices, a pair of reciprocating revoluble gages coacting with said gripping devices and serving to adjust the positions of the ends of the spring with relation to the adjacent clamping members of the gripping devices, and suitably-actuated knotters into which the end rings of the spring are carried in the oscillation of the gripping devices; nesting mechanism; and a carrier provided with a plurality of pairs of jaws, one pair serving to deliver springs to the gripping devices of the knotting mechanism, and another pair serving to receive springs from said gripping devices and transfer them to the nesting mechanism.

66. The combination of coiling mechanism; knotting mechanism; nesting mechanism; and a carrier serving to transfer the coils parallel with themselves, in a longitudinal plane, progressively, to the nesting mechanism.

67. The combination of coiling mechanism; a press; knotting mechanism; nesting mechanism; and an intermittently-actuated swinging carrier provided with three pairs of jaws arranged in a longitudinal plane and serving to move the coils progressively to the nesting mechanism.

68. The combination of coiling mechanism serving to form a transversely-extending coil, a press located in the rear of and beneath the point of formation of the coils; knotting mechanism provided with transversely-reciprocating longitudinally-oscillating gripping devices located in the rear of and somewhat above the press; nesting mechanism having the receiving end located in the rear of and somewhat above the gripping devices of the knotting mechanism; and an intermittently-actuated swinging carrier provided with a plurality of pairs of jaws arranged on a curve in a longitudinal plane, for the purpose set forth.

69. In a machine of the character described, the combination of coiling mechanism adapted to produce a transversely-extending coil; a press comprising transversely-reciprocating presser-heads adapted to approach near to the longitudinal central plane of the machine; knotting mechanism comprising suitable knotters and transversely-reciprocating longitudinally-oscillating gripping devices adapted to approach near to the longitudinal central plane of the machine before swinging; nesting mechanism having a receiving end located above and in the rear of said gripping devices, assuming the latter to be at the inner ends of their traverses and in their normally advanced position, a rotating shaft located above said press, an intermittently-actuated carrier having its axis concentric with said shaft and provided with a plurality of pairs of jaws, cams on said shaft for actuating the jaws, cams on said shaft for swinging one of said gripping devices of the knotting mechanism, and suitably-actuated cams for swinging the other gripping device of the knotting mechanism.

70. The combination of coiling mechanism for forming a transversely-extending coil; a press comprising reciprocating presser-heads; knotting mechanism comprising suitable knotters and transversely-reciprocating longitudinally-oscillating gripping devices; nesting mechanism provided with an oscillating nester, a rotating shaft in the rear of and below the knotting mechanism and equipped with cams for actuating the knotters, a cam for oscillating the nester, and cams for reciprocating the presser-heads, a rotating shaft located above the press, a swinging carrier mounted thereon and provided with a plurality of pairs of jaws, cams on said last-named shaft for actuating said jaws, cams on said last-named shaft adapted to engage one of said gripping devices when the latter is at the inner end of its traverse, and suitable cams for engaging the other one of said gripping devices when the latter is at the inner end of its traverse, for the purpose set forth.

71. The combination of coiling mechanism for forming transversely-extending coils; a press comprising reciprocating presser-heads; coil-rotating devices coanected with said presser-heads; knotting mechanism comprising knotting-pinions; transversely-reciprocating longitudinally-oscillating gripping devices and transversely-reciprocating revoluble gages coacting with said gripping devices; nesting mechanism equipped with an oscillating nester, a rotating shaft below said press equipped with cams for actuating one of the gripping devices of the knotting mechanism when said gripping device is at the inner end of its traverse, with a cam for oscillating a carrier, and with a cam for actuating the coil-rotating devices, a shaft in the rear of said first-named shaft equipped with cams for reciprocating the presser-heads, cams for actuating the knotting-pinions, a cam for actuating the nester, and a cam for reciprocating the gripping devices of the knotting mechanism, a rotating shaft located above said press and equipped with jaw-actuating cams and with cams for oscillating the other gripping device of the knotting mechanism, when the latter is at the inner end of its traverse, and a swinging carrier having its axis coincident with said last-named shaft and provided with actuating means engaging the appropriate cam of said first-named shaft and equipped with a plurality of pairs of jaws.

72. In a machine of the character described, the combination of knotting mechanism comprising knotting-pinions, a pair of transversely-reciprocating plungers, gripping devices rotatable upon said plungers, cams for oscillating said gripping devices when the latter are at the inner ends of their traverses; nesting mechanism; and a coil-carrier.

73. In a machine of the character described, the combination of knotting mechanism comprising a pair of reciprocating plungers, spring-held gripping devices mounted thereon and reciprocated thereby, cams for oscillating said gripping devices when at the inner ends of their traverses; suitably-actuated knotting-pinions; nesting mechanism; and a coil-carrier.

74. In a machine of the character described, the combination of knotting mechanism comprising suitably-actuated knotting-pinions, a pair of reciprocating plungers, spring-held gripping devices mounted on said plungers, cams serving to oscillate said gripping devices when at the inner ends of their traverses, a second pair of transversely-reciprocating plungers, slides in which the inner ends thereof are journaled, gage-heads on the inner end of said last-named plungers, means for rotating the gage-heads through the medium of their plungers; nesting mechanism; and a carrier.

75. In a machine of the character described, the combination of knotting mechanism comprising suitably-actuated knotting-pinions, transversely-reciprocating longitudinally-oscillating gripping devices, a pair of transversely-reciprocating rotatable plungers equipped at their inner ends with gages, rock-arms feathered on said plungers, cams serving to actuate said rock-arms; nesting mechanism; and a carrier.

76. In a machine of the character described, the combination of knotting mechanism comprising transversely-reciprocating longitudinally-oscillating gripping devices, a pair of transversely-reciprocating plungers equipped at their inner ends with gages, rock-arms having feathered connection with said plungers, a pair of knotting-pinions, a rotating shaft equipped with cams serving to actuate said rock-arms and with wheels serving to actuate said knotting-pinions; nesting mechanism comprising a suitable receiver, an oscillating nester, and means connected with said rotating shaft for oscillating said nester; and a carrier.

77. In a machine of the character described, the combination of knotting mechanism provided with suitably-actuated knotters, and shouldering devices for forming shoulders on the spiral adjacent to the knots; nesting mechanism; and a carrier.

78. The combination of coiling mechanism, equipped with suitable feed-rolls and gears, a rotating shaft geared to the coiling mechanism, a swinging carrier having its axis coincident with said shaft and provided with a plurality of pairs of jaws, cams on said shaft for actuating said jaws, cams on said shaft for oscillating a gripping device of the knotting mechanism, a second shaft geared to the coiling mechanism, and equipped with a cam serving to actuate said carrier and with a cam serving to actuate coil-rotating devices; a press comprising transversely-reciprocating presser-heads, coil-rotating devices connected with said presser-heads, a rock-shaft for actuating the last-named devices and in turn actuated from said last-named cam, a third rotating shaft geared to the second-named rotating shaft and equipped with cams serving to reciprocate the presser-heads; knotting-pinions, wheels on said third-named shaft serving to actuate said knotting-pinions, a pair of reciprocating plungers, a wheel on said third-named shaft serving to actuate said plungers; gripping devices carried by said plungers, a cam on said second-named shaft and a cam on said third-named shaft for oscillating one of said gripping devices, a second pair of transversely-reciprocating revoluble plungers, cams on said third-named shaft for reciprocating and rotating said last-named plungers, a receiver, an oscillating nester coacting therewith and a cam on said third-named shaft for actuating said nester.

79. The combination of coiling mechanism, including means for feeding a wire for forming the coils, and severing the coils from the wire; mechanisms for completing the springs; a carrier equipped with a plurality of coil-engaging means and serving to move the springs progressively through the machine; and means for interrupting the feed of the wire to permit severing.

80. In a machine of the character described, the combination of coiling mechanism, including means for feeding the wire, means for severing the wire, and a reciprocating coiling-roll having suitable actuating means provided with adjusting means including a forwardly-extending adjusting-handle; mechanisms for operating upon the spring in the rear of the coiling mechanism; and a carrier serving to move the springs progressively through the machine.

81. The combination of coiling mechanism; a press in the rear of the coiling mechanism; and a carrier in the rear of the coiling mechanism, said coiling mechanism comprising suitable feed-rolls, a shaft geared thereto, a second shaft in front of the first-named shaft and geared thereto and provided with a cam, an arm engaging said cam, a rock-arm adjustably connected with the rear end of said first-named arm and connected with a rock-shaft, and a reciprocating coiling-roll actuated from said rock-shaft.

82. The combination of coiling mechanism; a press in the rear of the coiling mechanism; and a carrier in the rear of the coiling mechanism, said coiling mechanism comprising suitable feed-rolls, a shaft geared thereto, a second shaft in front of the first-named shaft and geared thereto and provided with a cam, an arm engaging said cam, a rock-arm adjustably connected with the rear end of said first-named arm and connected with a rock-shaft, an adjusting-rod extending upwardly and forwardly from the adjusting means of said first-named rock-arm, a second rock-arm on said rock-shaft, and a coiling-roll reciprocated from said last-named rock-arm.

83. The combination of coiling mechanism; mechanisms for completing the spring; a carrier; and means for starting and stopping the machine, including a friction-clutch and a friction-brake connected with the driving-shaft of the coiling mechanism.

84. The combination of coiling mechanism; mechanisms for completing the spring; a carrier; and means for starting and stopping the machine, including a friction-clutch and a friction-brake connected with the driving-shaft of the machine and a hand-lever having a portion located between the clutch and brake, whereby movement of the hand-lever in one direction serves to throw the clutch into operation and movement of the hand-lever in the opposite direction serves to release the clutch and throw the brake into operation.

85. The combination of a suitable frame; coiling mechanism located at the front end of the machine and provided at one side of the machine with driving-gear, a hand-lever mounted adjacent to the driving-gear and having a handle extending from within reach at the opposite side of the machine; mechanisms in the rear of the coiling mechanism for completing the springs; and a carrier serving to move the springs progressively through the machine.

86. In a machine of the character described, the combination of knotting mechanism comprising suitably-actuated knotting-pinions, transversely-reciprocating longitudinally-oscillating gripping devices equipped with shouldering devices; means for actuating said shouldering devices when the knotting operations are completed; nesting mechanism; and a carrier.

87. In a machine of the character described, the reciprocating bending-roll, in combination with a rock-shaft serving to reciprocate the same; a rock-arm fixed to and actuated with said rock-shaft; a cam-arm D^{29}; an adjusting-screw joining said cam-arm to said last-named rock-arm; and an adjusting-rod having universal connection with said screw.

88. The combination of coiling mechanism having wire-bending means and feed-rolls for forcing the wire through said bending means, said wire-bending means operating to form the coil and project it at right angles to the path of the entering wire; independent knotting mechanism; and means for moving the formed springs from the place of formation and delivering them to the knotting mechanism, for the purpose set forth.

89. In a machine of the character described, an oscillating coil-carrier equipped with a plurality of pairs of jaws; means for opening and closing the jaws; and means for oscillating the carrier comprising a rock-arm, a rotating cam actuating said rock-arm, and connecting means between said rock-arm and said carrier.

90. In a machine of the character described, an oscillating carrier provided with a plurality of pairs of jaws equipped with pinion-segments; levers pivoted on the carrier and equipped with segments serving to actuate the jaws; and rotating cams serving to actuate said levers.

91. In a machine of the character described, an oscillating carrier provided with a plurality of pairs of jaws equipped with pinion-segments; bell-crank levers pivoted on the carrier and equipped with gear-segments; and rotating cams engaging the free ends of said bell-crank levers.

92. In a machine of the character described, an intermittently-actuated pivoted carrier, including pairs of jaws, each pair of jaws provided with intermeshing pinion-segments; a lever for each pair of jaws equipped with a segment meshing with a pinion-segment; and rotating cams actuating said levers.

93. In a machine of the character described, a press comprising a fixed transverse guide and a revoluble transverse guide; presser-heads reciprocable on said guides; coil-rotating devices rotatable on said presser-heads and equipped with pinion-segments; and gear-segments feathered on said revoluble shaft and having a movement of reciprocation with said presser-heads and serving to actuate the coil-rotating devices through the medium of said pinion-segments.

94. In a machine of the character described, a pair of reciprocating presser-heads connected to permit movement in opposite directions; a flexible connection joined to one of said presser-heads and passing over a pulley; a cam-arm connected with said flexible connection; and a cam actuating said cam-arm.

95. In a machine of the character described, a press comprising reciprocating presser-heads provided with inwardly-projecting coil-entering fingers and with perforations at each presser-head for the fingers of the companion presser-head; coil-rotating disks rotatably mounted with relation to said presser-heads and equipped with radial fingers; and means for actuating the coil-rotating disks when the latter are in engagement with the spring, for the purpose set forth.

96. In a machine of the character described, a pair of reciprocating presser-heads in combination with a pair of coil-rotating disks journaled on trunnions at the inner sides of the presser-heads, for the purpose set forth.

97. In a machine of the character described, a pair of reciprocating presser-heads; a rock-shaft extending through said presser-heads; a pair of coil-rotating disks rotatably mounted at the inner sides of the presser-heads and equipped with pinion-segments; and a pair of gear-segments splined upon the rock-shaft, for the purpose set forth.

98. In a machine of the character described, a pair of reciprocating presser-heads; a rock-shaft extending through said presser-heads; a pair of coil-rotating disks rotatably mounted at the inner sides of the presser-heads and equipped with pinion-segments; and a pair of gear-segments splined upon the rock-shaft, one of said gear-segments being internally toothed and the other externally toothed, for the purpose set forth.

99. In a machine of the character described, a pair of plungers; a rock-lever connected therewith; a rock-arm serving to actuate said rock-lever; a cam-wheel, serving to actuate said arm; gripping devices mounted upon said plungers; means for rotating the gripping devices on the plungers; and knotting-pinions.

100. In a machine of the character described, the combination of transversely-reciprocating longitudinally-oscillating gripping devices; a pair of reciprocating gages coacting therewith; means on the gripping devices for clamping the spiral near the extremities of the wire after the operation of the gages; means on the gripping devices for clamping the end rings of the spring; a frame member provided with means for engaging the ends of the wire and bending them across the end rings of the spring; and suitably-actuated knotters, for the purpose set forth.

101. In a machine of the character described, the combination of suitably-reciprocated plungers; gripping devices mounted thereon and equipped with gripper-slides; cams mounted on the plungers and connected with said gripper-slides; and means for yieldingly holding said cams when the gripping devices are rotated to carry the spring to the knotter.

102. In a machine of the character described, the combination of reciprocating plungers; gripping devices pivoted thereon; cams for oscillating the gripping devices on the plungers when the gripping devices are at the inner ends of their traverses; gripper-slides connected with the gripping devices; cams rotatably mounted with relation to said gripping devices and equipped with arms moving on yieldingly-held guides; and knotters to which the spring is carried when the gripping devices are oscillated on their plungers.

103. In a machine of the character described, a gripping device for the knotting mechanism, comprising a member pivotally supported on a plunger; a finger projecting from said member; a clamping finger coacting with said first-named finger and pivoted on said first-named member; and a plunger serving to move the pivoted finger.

104. In a machine of the character described, a gripping device for the knotting mechanism, comprising an oscillating member mounted on a plunger; a fixed gripping member carried by said oscillating member; a gripper-slide coacting with said gripping member; a cam rotatable with relation to said oscillating member and connected with said gripper-slide; means for yieldingly holding said cam when the oscillating member is swung upon its plunger, thereby to actuate the gripper-slide; a pin for engaging the coil near one end of the wire; a pivoted finger coacting with said pin; and means for closing the pivoted finger.

105. In a machine of the character described, a suitably-actuated plunger; an oscillating member mounted thereon and reciprocated thereby; a frame member provided with a guide for said member, permitting said member to be swung in one direction; a spring holding said member normally in engagement with its guide; a cam for swinging the oscillating member on its plunger; and means carried by the oscillating member for clamping a spring.

106. In a machine of the character described, a pair of suitably-actuated plungers; a pair of oscillating members mounted to swing on said plungers; transverse guides for said oscillating members permitting the latter to be swung in one direction; means for yieldingly holding said oscillating members normally in engagement with their guides; cams serving to swing said oscillating members on their plungers; gripping members fixed on said oscillating members; gripper-slides coacting therewith; cams serving to actuate the gripper-slides during oscillation of said first-named members on their plungers; clamps for engaging the spiral near the ends of the wire; means for actuating said clamps before the gripping devices have completed their rearward swing; a frame member provided with means for engaging and bending the ends of the wire and suitably-actuated knotting-pinions, for the purpose set forth.

107. In a machine of the character described, the combination with the pivoted clamping member of a gripping device; of a plunger equipped with a spring serving to actuate said pivoted member, said spring yielding to permit the gripping device to be swung rearwardly.

108. In a machine of the character described, the combination with the member E^3 of a gripping device; of a gripper-slide; a cam E^6 connected with said gripper-slide; and a yielding guide-rod E^{10} through the medium of which the cam E^6 is yieldingly held when the member E^3 is swung rearwardly, for the purpose set forth.

109. In a machine of the character described, the combination of a pair of transversely-reciprocating longitudinally-oscillating gripping devices equipped with pivoted clamping-fingers; and a pair of suitably-actuated plungers serving to actuate said clamping-fingers when the gripping devices are at the inner ends of their traverses.

110. The combination with the transversely-reciprocating rearwardly-swinging member E^3 of knotting mechanism; of a forked rotatable shouldering-stud e^{31}; and means for rotating said shouldering-stud while the member E^3 is at the rearward end of its swing.

111. In a machine of the character described, the combination of a pair of transversely-reciprocating longitudinally-oscillating gripping devices; a frame member provided with guides extending transversely of the machine; a pair of reciprocating slides connected with said guides; gages rotatably connected with said slides; pins carried by said gripping devices; clamping members coacting with said pins, the gages serving to properly locate the ends of the wire with relation to said pins; means on said frame member for engaging the ends of the wire and bending them about said pins as the gripping devices are swung rearwardly; and knotters; for the purpose set forth.

112. In a gripping device for knotting mechanism a member E^9 equipped with a member e^{32}; and a gripper-slide e^{33} coacting therewith.

113. In a gripping device for knotting mechanism, a member E^9 equipped with a member e^{32}; and a gripper-slide e^{33} coacting therewith, and equipped with a central projection e^{41}, for the purpose set forth.

114. In a gripping device for knotting mechanism, the combination with a swinging member E^3, of a forked pin e^{31} equipped with an actuating-arm E^{36}.

115. In a gripping device for knotting mechanism, the combination with a member E^3, of a forked pin e^{31} equipped with an actuating-arm E^{36} and a pivoted clamping member e^{41} coacting with said pin.

116. A gage device comprising a slide E^{21} and a gage-head E^{24} rotatably connected therewith and equipped with a finger e moving over the face of the slide.

117. In mechanism of the character described, the combination of a member E^3; a forked pin e^{31} journaled therein and provided with an actuating-arm E^{36}; and a rock-shaft journaled on the frame of the machine and provided with an arm adapted to engage the arm E^{36} when the spring is in engagement with the knotter.

118. In a machine of the character described, the combination with a pair of reciprocating slides, of rock-shafts equipped with gages at their inner ends and rotatably connected with said slides; rock-arms splined on the shafts; and cams actuating said rock-arms.

119. The combination of coiling mechanism having wire-bending means and feed-rolls for forcing the wire through said bending means, said wire-bending means operating to form the coil and project it at right angles to the path of the entering wire; knotting mechanism located in alinement with the coil when formed; and means for moving the coil in a path between the planes of the ends of the formed spring to bring the coil into the grasp of the knotting mechanism.

120. Knotting mechanism comprising knotters; and means for gripping a coil at its two ends and transferring the same to the knotters.

121. Knotting mechanism comprising oppositely-turned properly-spaced knotting-pinions; and means for gripping a coil at its two ends and transferring the same to the knotting-pinions.

122. Knotting mechanism comprising oppositely-turned properly-spaced knotting-pinions; means for gripping a coil at its two ends and transferring the same to the knotting-pinions; and gages operating to measure the lengths of the knot-forming portions of the wire preparatory to the knotting operation, for the purpose set forth.

123. Knotting mechanism, comprising knotters; swinging gripping devices serving to grip the coil at its ends and transfer the same to the knotters; gages serving to adjust the ends of the coil; and shoulders for bending the ends of the spring during the swinging movement of the gripping devices.

124. In a machine of the character described, nesting mechanism comprising a receiving-chute equipped at its front end with means for retaining a spring; and an oscillating arm equipped with a suitably-controlled depressible hook, for the purpose set forth.

125. In nesting mechanism, the combination of a curved receiving-chute; an oscillating arm; a hook pivoted thereon having an actuating-arm; a rod connected with said last-named arm; and a stationary friction device connected with said rod.

126. In nesting mechanism, the combination of a curved receiving-chute provided at its front end with spring-retaining means; an oscillating arm; a hook pivotally connected therewith and provided with an actuating-arm; a rod connected with said last-named arm and provided with a stop for the hook and a friction device engaging said rod.

127. The combination of a receiving-chute F^7; a pair of oscillating arms embracing the front portion of said chute; a hook pivotally supported on said arms and provided with an actuating-arm; a rod pivotally connected with said last-named arm; and a pair of spring-held friction-blocks engaging said rod.

128. In nesting mechanism, the combination of a coil-receiving chute provided at its front end with a contracted portion f^{13} and depending flaring guides f^{21} and with rearwardly-extending springs f^{22}; and means for withdrawing the coiled springs from the contracted portion of the receiving-chute.

129. Nesting mechanism, comprising a curved receiving-chute

810,050. CONCRETE OR CEMENT POST OR ANALOGOUS

Claim.—1. In a roller-driving device for printing-presses, a

130. Nesting mechanism, comprising a curved receiving-chute having a contracted front end and rearwardly-extending springs projecting from the contracted portion of the chute into the adjacent portion thereof; a pair of arms *f* supported by a rock-shaft *f'*, a depending cam-actuated rock-arm *f*^{3}; a coil-engaging hook *f*^{4}; and a friction-held actuating-rod for said hook, for the purpose set forth.

130. Nesting mechanism comprising a receiver; and means for delivering a spring thereinto transversely of the receiver and flexing the spring to permit the succeeding coil to enter in nesting.

131. Nesting mechanism comprising a receiving-chute; means for nesting coils and moving the same along the chute; and means for delivering coils to the chute transversely thereof.

132. In combination with mechanism for forming coil-springs, a carrier, comprising a pivoted jaw-support; a pair of jaws pivoted thereon; a rotating cam; and jaw-actuating means operated by said cam.

133. The combination of coiling mechanism; nesting mechanism; and means for advancing coils from the coiling mechanism to the nesting mechanism.

134. The combination of coiling mechanism having wire-bending means and feed-rolls for forcing the wire through said bending means, said wire-bending means operating to form the coil and project it at right angles to the path of the entering wire; mechanism equipped with coil-grippers serving to grasp the coils and convey them from the coiling mechanism, and mechanisms coöperating with said grippers and serving to perform the operations of pressing and knotting the spring, for the purpose set forth.

135. The combination of coiling mechanism; independent knotting mechanism; and a suitably-actuated carrier provided with coil-engaging means and serving to transfer coils from the coiling mechanism to the knotting mechanism.

136. In a machine of the character described, the combination of mechanism for operating upon a coil-spring; nesting mechanism; and means for automatically advancing the coils to the nesting mechanism.

137. The combination of coiling mechanism having wire-bending means and feed-rolls for forcing the wire therethrough, said wire-bending means constructed and operating to form the coil and project it at substantially right angles to the path of the entering wire; and automatic means for performing the knotting operation and advancing the coils, for the purpose set forth.

138. The combination of coiling mechanism having wire-bending means and feed-rolls for forcing the wire therethrough, said wire-bending means constructed and operating to form the coil and project it at substantially right angles to the path of the entering wire; knotting mechanism actuated and timed to coöperate therewith; and automatic means serving to bring the coil and knotting mechanism into operative engagement, for the purpose set forth.

810,049. SPUR. BENJAMIN G. GILBOUSE, Chicago, Ill. Filed Apr. 8, 1905. Serial No. 254,519.

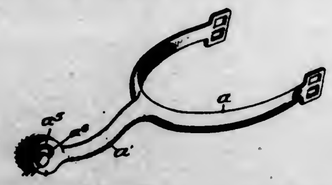

Claim.—1. In a spur, the combination with a rim and a bifurcated neck carried thereby having an enlarged end provided with a slot having shoulders corresponding with the sheathed and projected positions of the rowel, respectively, and a rowel having an axis received by and shiftable in said slot, for the purpose set forth.

2. In a spur, the combination with a rim and a neck carried thereby having an enlarged end provided with a channel of great enough depth to sheath a rowel, a rowel in said channel slidably connected with said enlarged end, and means for securing the rowel in either its projected or sheathed position, at will.

3. In a spur, the combination with a rim and neck carried thereby having bifurcations having enlarged ends and provided with an upwardly-bowed slot having shoulders corresponding with the projected and sheathed positions of a rowel, and a rowel mounted between said bifurcations and having an axis shiftable in said slot, for the purpose set forth.

810,050. CONCRETE OR CEMENT POST OR ANALOGOUS STRUCTURE. GEORGE F. GREBER, Detroit, Mich. Filed Mar. 15, 1905. Serial No. 250,194.

Claim.—1. A concrete, cement or analogous structure having in combination therewith a perforated nailing-strip located upon one of the outer faces of the structure, a clamping device having a perforated body to engage the face of the nailing-strip and provided with flanges at the extremities of the body thereof projecting over the lateral edges of the nailing-strip, and a bolt separable from the clamping device passed through the perforated nailing-strip, and the perforated body of the clamping device and engaged with the cement structure to secure the clamping device and nailing-strip to said structure.

2. In combination a concrete, cement or analogous structure a perforated nailing-strip upon one face thereof, a clamping device formed of sheet metal having a perforated body to extend crosswise over the face of the strip and provided with flanges at the extremity of the body thereof, a bolt separable from the clamping device and passed through the perforated body of the device and perforated nailing-strip and engaged with the cement structure to hold the nailing-strip in place, said clamping device provided with flanges at the extremities of said body projecting over the lateral edges of the nailing-strip for the purpose described, horizontal fence-wires, and staples driven into the outer face of said nailing-strip to hold the wires in place.

3. In combination a concrete, cement or analogous structure, a perforated nailing-strip upon one face thereof, a clamping device having flanges at its extremities to extend crosswise over the face and over the lateral edges of the strip, and a bolt separable from the clamping device passed through the clamping device and engaged with said structure to hold the nailing-strip in place, said structure provided with an integral cap toward the upper end thereof projecting over the upper end of the nailing-strip, and over the corresponding face of the body of the structure.

4. A concrete, cement, or analogous structure provided with a nailing-strip secured upon one face of the structure, and extending across the full width of said structure, a flanged clamping device to engage across the face of the nailing-strip, and a bolt separable from the clamping device and passed through the clamping device and through the post to secure the clamping device and nailing-strip to the body of the structure, the flanges of the clamping device projecting over the lateral edges of the nailing-strip and upon the lateral surfaces of the cement structure.

810,051. INK-ROLLER-DRIVING MECHANISM FOR PRINTING-PRESSES. RUSSELL HALL, Taunton, Mass., assignor to The Huber-Hodgman Printing Press Company, Taunton, Mass. Filed June 14, 1905. Serial No. 265,126.

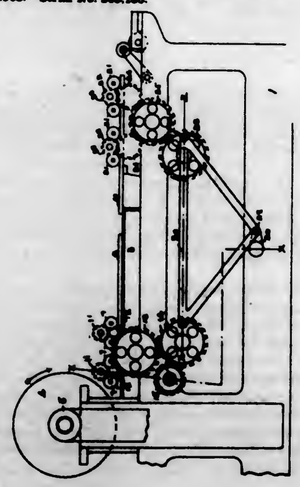

Claim.—1. In a roller-driving device for printing-presses, a driving member, a driven member, and an intermediate member or idler, a connecting-rod between the driving and driven members, and connecting-rods between the idler and each of the other members substantially as shown and described.

2. In a roller-driving device for printing-presses, a driving member, a driven member and an intermediate driven member or idler, crank-pins and connecting-rods operatively connected with said members substantially as shown and described.

3. In a printing-machine having groups of inking-rollers located some distance apart, a driving member connected with a driven member by means of a connecting-rod and crank-pins, and a second driven member or idler connected with said driving and driven members by means of connecting-rods and crank-pins, said second driven member being so located in relation to the said driving and driven member as to prevent any dead-center in the operation of the mechanism.

4. A roller-driving device for printing-presses, consisting of the following instrumentalities, a connecting-rod or yoke operating in connection with three crank-pins which are respectively carried by a driving member, a driven member and a driven idler member, together with suitable gearing substantially as shown.

5. In a roller-driving device for printing-presses, the combination of the rollers, a driving crank member, a driven crank member, a second driven crank member or idler, a connecting-rod or yoke connecting all three of the said crank members, and suitable gearing between the said driven crank member and the rollers, substantially as shown.

6. In a roller-driving device for printing-presses, a crank-driving member 14, connecting means between said crank-driving member and the reciprocating bed 3, a driven crank member 26, a driven crank member or idler 29, a connecting-rod or yoke 20, connecting all three of the said crank members, and suitable gearing between the driven crank member 26 and the rollers 21.

810,052. HINGE. ELIJAH C. HALL, Braintree, Mass. Filed Nov. 12, 1904. Serial No. 232,469.

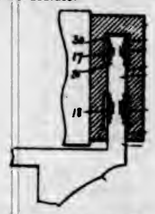

Claim.—1. In a hinge, in combination, a member provided with a pintle having a non-circular section and a circular section, and a coöperating socketed member provided with a non-circular section to coöperate with the non-circular section of the pintle and lock the socketed member from turning, and having an enlarged section to coöperate with the non-circular section of said pintle to permit the socketed member to turn, substantially as described.

2. In a hinge, in combination, a member provided with a pintle having a non-circular section and a circular section, a coöperating socketed member provided with a non-circular section to coöperate with the non-circular section of the pintle and lock the socketed member from turning, and having an enlarged section to coöperate with the non-circular section of said pintle to permit the socketed member to turn, a lip or projection on the circular section, and a shoulder in the socketed member, substantially as described.

3. In a hinge, in combination, a stationary member provided with a pintle having a non-circular section intermediate its ends, and a movable socketed member closed at its upper end and provided with a non-circular section coöperating with the non-circular section of the pintle to lock the socketed member from turning and having an enlarged section to coöperate with the non-circular section of said pintle to permit the socketed member to turn, substantially as described.

810,053. FLASK FOR MOLDING CONCRETE BLOCKS. JOHN HAHN, Minneapolis, Minn. Filed Feb. 23, 1905. Serial No. 247,573.

Claim.—1. In a device of the character described, the combination with end plates 2 and a side plate 6, of a rock-shaft mounted for vertical adjustments and provided with a lever for rocking it, and a bottom plate and a side plate carried by said rock-shaft to and from operative position, substantially as described.

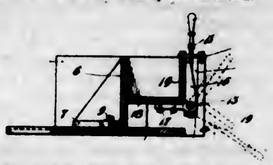

2. In a device of the character described, the combination with laterally-adjustable end and side plates 2 and 6 respectively, of a vertical adjustable rock-shaft 13 provided with an operative lever 14, and with L-shaped levers 16, and a bottom plate 18 and a side plate 19, supported by said levers 16 and movable by said rock-shaft, to and from operative position, substantially as described.

3. The combination with a bed-plate 1, of the end plates 2 and side plate 6 mounted for relative lateral adjustments on said bed-plate, vertically-adjustable bearings 12 mounted in said end plates, a rock-shaft mounted in said bearings and provided with an operating-lever 14 and with L-shaped levers 16, and a bottom plate 18 and side plate 19, mounted on and carried by said levers 16, substantially as described.

810,054. NUT-TAPPING MACHINE. SETH H. HUNTLIAN, Providence, R. I. Filed Jan. 10, 1905. Serial No. 240,413.

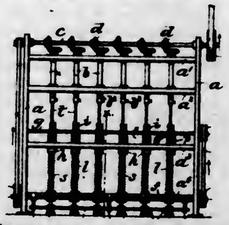

Claim.—1. In a nut-tapping machine, the combination with a series of suitably-mounted revoluble taps and a corresponding series or number of spring-pressed holders for the nut-blanks arranged with respect to said taps, of chutes from which the nut-blanks are fed to said holders, treadle-levers operatively connected with and arranged to retract the several blank-holders, and a power-actuated device adapted to engage with and control the movements of the treadle-levers, substantially as described and for the purpose set forth.

2. In a nut-tapping machine, the combination with a vertically-movable nut-blank holder, a revoluble tap arranged in alinement with said holder and a rocking blank containing a chute communicating with and taking its movement from said holder.

3. In a nut-tapping machine, having a revoluble tap, the combination therewith of a vertically-movable spring-pressed nut-blank holder located below and in alinement with the tap, and a vibratory feeding-chute connected with the holder and taking its movement therefrom.

4. In a nut-tapping machine, the combination with a plurality of revoluble taps, and a corresponding number of endwise-movable mechanically-actuated holders adapted to receive nut-blanks singly therein and subject them to the cutting action of said taps, of a revoluble shaft *g*, a plurality of chutes pivotally connected to the holders and mounted to vibrate or swing on said shaft having their inner ends directly communicating with said holders, and traveling belts *p* mounted in the base of the chutes for feeding the blanks therefrom into the holders, said belts being driven by power transmitted from said shaft.

5. In a nut-tapping machine, the combination with a revoluble tap, a nut-blank holder movable endwise relative to said tap, a swinging chute taking its motion from said holder, and a downwardly-slanting continuously-traveling belt mounted upon two rollers, one fixed and the other mounted on the movable holder, said belt extending through an opening formed in the base of the chute, of means for automatically depressing the holder after the blank therein has been tapped, thereby at the same time increasing the tension upon said belt and causing it to mechanically feed the next succeeding nut-blank from the chute into the holder, substantially as described.

6. In a nut-tapping machine, the combination with a revolubie tap, of an endwise-movable holder for the nut-blank, a vibratory feed-chute pivotally connected to the holder and taking its movement therefrom, and a feed-belt, a plurality of rollers, said belt being mounted upon said rollers, one fixed and the other mounted on the movable holder, the tension of said belt being affected by the movement of said holder and regulating the feed of the nut-blanks to the holder as the position of the latter varies.

810,055. ENGINE-VALVE. ROBERT C. HOLMAN, Hamilton, Ohio. Filed Sept. 16, 1905. Serial No. 278,266.

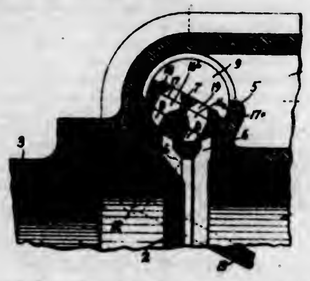

Claim.—1. In a valve-engine, the combination, substantially as set forth, of a cylindrical valve-seat having a port leading to a cylinder, a bonnet closing one end of the valve-seat, a main valve fitted to rock in said seat and provided with a longitudinal line of ports extending through it and having a valve-seat formed upon its back, a cut-off valve fitted to slide longitudinally upon the seat formed on the back of the main valve and having a longitudinal line of ports extending through it, a valve-stem connected with said cut-off valve and projecting through said bonnet, and means for rocking the two valves in unison and for reciprocating the cut-off valve relative to the main valve.

2. In an engine-valve, the combination, substantially as set forth, of a cylindrical valve-seat having a port leading to a cylinder, bonnets closing the ends of said seat, a main valve fitted to rock in said seat and provided with a longitudinal line of ports extending through it and having a valve-seat formed upon its back, a cut-off valve fitted to slide longitudinally upon the seat formed upon the back of the main valve and having a longitudinal line of ports extending through it, a valve-stem connected with said cut-off valve and projecting through one of said bonnets, a cam-bar mounted for reciprocation in a line at right angles to the axis of the main valve, connections for reciprocating the cam-bar, and connections between the valve-stem and cam-bar whereby the reciprocations of the cam-bar effect the reciprocation of the cut-off valve relative to the main valve.

3. In an engine-valve, the combination, substantially as set forth, of a cylindrical valve-seat having several parallel ports leading to a cylinder, bonnets closing the ends of said seat, several main valves fitted to rock in said seat and provided with several longitudinal lines of ports extending through it and having a valve-seat formed upon its back, a cut-off valve fitted to slide longitudinally upon the seat formed upon the back of the main valve and having a longitudinal line of ports extending through it, a valve-stem connected with said cut-off valve and projecting through one of said bonnets, a housing having a guideway in prolongation of the line of said stem and having also a guideway at right angles to and intersecting the first-mentioned guideway, a mortised plug sliding in the first-mentioned guideway, a connection between said valve-stem and plug, a cam-bar mounted for reciprocation in a line at right angles to the axis of the main valve, connections for reciprocating the cam-bar, and connections between the valve-stem and cam-bar whereby the reciprocations of the cam-bar effect the reciprocation of the cut-off valve relative to the main valve.

4. In an engine-valve, the combination, substantially as set forth, of a cylindrical valve-seat having several parallel ports leading to a cylinder, longitudinal guide-ribs carried by the main valve at each side of the valve-seat formed upon its back, a cut-off valve fitted to slide longitudinally between the guide-ribs and upon the seat formed upon the back of the main valve and having a longitudinal line of ports extending through it, a valve-stem connected with said cut-off valve and projecting through one of said bonnets, a cam-bar mounted for reciprocation in a line at right angles to the axis of the main valve, connections for reciprocating the cam-bar, and connections between the valve-stem and cam-bar whereby the reciprocations of the cam-bar effect the reciprocation of the cut-off valve relative to the main valve.

5. In an engine-valve, the combination, substantially as set forth, of a cylindrical valve-seat having a port leading to a cylinder, bonnets closing the ends of said seat, a main valve fitted to rock in said seat and provided with a longitudinal line of ports extending through it and having a valve-seat formed upon its back, a cut-off valve fitted to slide longitudinally upon the seat formed upon the back of the main valve and having a longitudinal line of ports extending through it, a valve-stem connected with said cut-off valve and projecting through one of said bonnets, a housing having a guideway in prolongation of the line of said stem, a plug mounted for reciprocation in said guideway, connections between said valve-stem and plug, a cam-bar mounted for reciprocation in said housing in a plane at right angles to the axis of the main valve, and connections between the cam-bar and plug whereby the reciprocations of the cam-bar effect the reciprocation of the cut-off valve relative to the main valve.

6. In an engine-valve, the combination, substantially as set forth, of a cylindrical valve-seat having a port leading to a cylinder, bonnets closing the ends of said seat, a main valve fitted to rock in said seat and provided with a longitudinal line of ports extending through it and having a valve-seat formed upon its back, a cut-off valve fitted to slide longitudinally upon the seat formed upon the back of the main valve and having a longitudinal line of ports extending through it, a valve-stem connected with said cut-off valve and projecting through one of said bonnets, a housing having a guideway in prolongation of the line of said stem, a plug mounted for reciprocation in said guideway, a swivel-coupling uniting said valve-stem and plug, a cam-bar mounted for reciprocation in said housing in a plane at right angles to the axis of the main valve, and connections between the cam-bar and plug whereby the reciprocations of the cam-bar effect the reciprocation of the cut-off valve relative to the main valve.

7. In an engine-valve, the combination, substantially as set forth, of a cylindrical valve-seat having a port leading to a cylinder, bonnets closing the ends of said seat, a main valve fitted to rock in said seat and provided with a longitudinal line of ports extending through it and having a valve-seat formed upon its back, a cut-off valve fitted to slide longitudinally upon the seat formed upon the back of the main valve and having a longitudinal line of ports extending through it, a valve-stem connected with said cut-off valve and projecting through one of said bonnets, a housing having a guideway in prolongation of the line of said stem, a transversely-mortised plug fitted to slide in said guideway, connections between said valve-stem and plug, a cam-bar fitted to slide transversely through said housing and mortised in a path at right angles to the axis of the main valve, and antifriction-rollers carried by said plug and straddling said cam-bar.

8. In an engine-valve, the combination, substantially as set forth, of a cylindrical valve-seat having a port leading to a cylinder, bonnets closing the ends of said seat, a main valve fitted to rock in said seat and provided with a longitudinal line of ports extending through it and having a valve-seat formed upon its back, a cut-off valve fitted to slide longitudinally upon the seat formed upon the back of the main valve and having a longitudinal line of ports extending through it, a valve-stem connected with said cut-off valve and projecting through one of said bonnets, a housing having a guideway in prolongation of the line of said stem and having also a guideway at right angles to and intersecting the first-mentioned guideway, a mortised plug sliding in the first-mentioned guideway, a connection between said valve-stem and plug, a cam-bar mounted to slide in the last-mentioned guideway and through the mortise in the plug, engaging surfaces carried by the plug and straddling the cam-bar, and a bolted joint of separation in said housing at right angles to the axis of the first-mentioned guideway and in the general plane of the last-mentioned guideway.

9. In an engine-valve, the combination, substantially as set forth, of a cylindrical valve-seat having several parallel ports leading to a cylinder, a first bonnet closing one end of said seat, a main valve fitted to rock in said seat and provided with several longitudinal lines of ports extending through it and having a valve-seat formed upon its back, a main-valve stem journaled in said bonnet and engaging said main valve within said valve-seat, a rocker-arm on the outer portion of said main-valve stem, a cut-off valve fitted to slide longitudinally upon the seat formed upon the back of the main valve and having several longitudinal lines of ports extending through it, a second bonnet closing the remaining end of said valve-seat, a cut-off-valve stem connected with said cut-off valve and projecting outwardly through said second bonnet, a housing supported by said second bonnet and having a first guideway in prolongation of the line of said cut-off-valve stem and having a second guideway at right angles to and intersecting the first guideway, a mortised plug fitted to slide in the first guideway, a coupling uniting the cut-off-valve stem with the plug, a cam-bar fitted to slide in the second guideway, and rolls carried by said plug and straddling the cam-bar.

810,056. BRAIDING-MACHINE. HENRY JANSSEN, Wyomissing, Pa., assignor to The Textile Machine Works, Wyomissing, Pa., Incorporated. Filed Feb. 13, 1905. Serial No. 245,814.

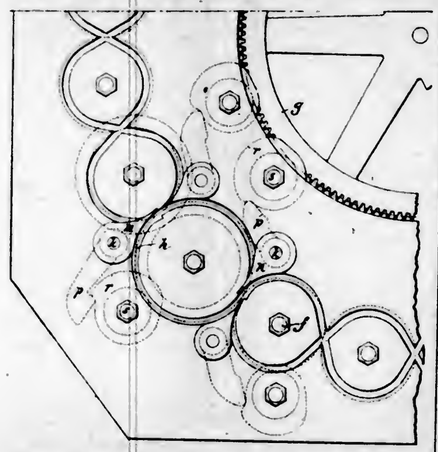

Claim.—1. In a braiding-machine the combination of two series of race circle-ways having a common terminal circle-way, separate series of bobbin-carriers therefor, a common terminal driving-head provided with an odd number of carrier-engaging horns for each series of carriers, means for rotating said driving-head with an angular velocity corresponding with such odd number of horns, a switch at each junction of said common terminal circle-way with an adjoining race circle-way, and a driving-head mechanism having switch-operating connections whereby alternating carriers of the two series are regularly guided in interlocking passes through the common circle-way and returned to their separate courses substantially as set forth.

2. In a braiding-machine the combination of two series of race circle-ways having a common terminal circle-way, separate series of bobbin-carriers therefor, a common terminal driving-head provided with an odd number of carrier-engaging horns for each series of carriers means for rotating said driving-head with an angular velocity corresponding with such odd number of horns, a pair of oppositely-arranged switches at each junction of said common terminal circle-way with an adjoining race circle-way, and double-acting switch-operating cams whereby alternating carriers of the two series are regularly guided in interlocking passes through the common circle-way and respectively returned to their separate courses during either the normal or reverse travel of the carriers substantially as set forth.

3. In a braiding-machine the combination of two series of race circle-ways having a common terminal circle-way, separate series of bobbin-carriers with driving-heads therefor, a common terminal driving-head provided with an odd number of carrier-engaging horns for each series of carriers means for rotating said driving-heads with an angular velocity corresponding with such odd number of horns, a spring-actuated switch at each junction of said common race circle-way with an adjoining race circle-way and provided with a cam-engaging arm, and a cam for each of said switches arranged in gear with the driving-head and adapted to turn and hold said switches as required to guide alternating carriers of the two series in interlocking passes through the common circle-way and return the several carriers to their separate courses, substantially as set forth.

4. In a braiding-machine the combination of two series of race circle-ways having a common terminal circle-way, separate series of bobbin-carriers therefor, a common terminal driving-head provided with an odd number of carrier-engaging horns for each series of carriers means for rotating said driving-head with an angular velocity corresponding with such odd number of horns, a switch at each junction of said common terminal circle-way with an adjoining race circle-way, and switch-operating mechanism whereby alternating carriers of two series are regularly guided in interlocking passes through the common circle-way and returned to their separate courses substantially as set forth.

5. In a braiding-machine the combination of two series of race circle-ways having a common terminal circle-way, separate series of bobbin-carriers therefor, a common terminal driving-head provided with an odd number of carrier-engaging horns for each series of carriers means for rotating said driving-head with an angular velocity corresponding with such odd number of horns, a pair of oppositely-arranged switches at each junction of said common terminal circle-way with an adjoining race circle-way, and switch-operating cams whereby alternating carriers of the two series are regularly guided in interlocking passes through the common circle-way and respectively returned to their separate courses during either the normal or reverse travel of the carriers substantially as set forth.

810,057. MECHANICAL MUSICAL-INSTRUMENT PLAYER. LAWRENCE U. JONES, Cincinnati, Ohio, assignor to The Baldwin Company, Hamilton, Ohio. Filed July 6, 1903. Serial No. 164,390.

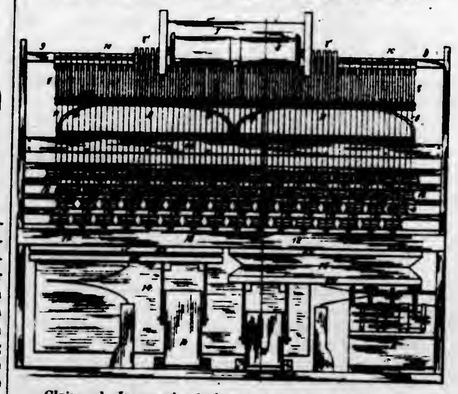

Claim.—1. In a mechanical musical-instrument player the key-levers 8 having a straight portion extending from the flange 10 to the striking-point 38, and a curved portion extending with a downward sweep from the flange 10 to the point of contact with the lifter-rods 11, substantially as described.

2. In a mechanical musical-instrument player the key-levers 8' having a straight portion extending from the flange 10 to the striking-point 38 and a curved portion extending with an upward sweep from the flange 10 to the point of contact with the lifter-rods 11, substantially as described.

3. In a mechanical musical-instrument player, the combination of the key-levers 8 having a straight portion extending from the flange 10 to the striking-point 38 and a curved portion extending with a downward sweep from the flange 10 to the point of contact with the lifter-rods 11 with the key-levers 8' having a straight portion extending from the flange 10 to the striking-point 38 and a curved portion with an upward sweep from the flange 10 to the point of contact with the lifter-rods 11, substantially as described.

4. In a mechanical musical-instrument player the combination of the primary valve-box 5, the intermediate valve-box 7 placed below and at the rear of the primary valve-box, and the striking-pneumatic 6 placed directly under the primary valve-box and in the front of the intermediate valve-box 7, the whole being under the action of the exhaust by means of the channels 20 leading from the intermediate valve-box to the primary valve-box, and the passages 21 leading from the intermediate valve-box to the striking-pneumatic, substantially as described.

5. In a mechanical musical-instrument player the combination of the primary valve-box 5, the intermediate valve-box 7 placed below and at the rear of the primary valve-box, the striking-pneumatics 6 placed directly under the primary valve-box and in front of the intermediate valve-box, and the attachable and detachable valve-shelf 36, secured to the front wall of the intermediate valve-box, said

valve-shelf having the striking-pneumatics attached to the same, the primary valve-box, the intermediate valve-box and the striking-pneumatics being under the action of the exhaust by means of the channels 20 leading from the intermediate valve-box, and the passages 21 leading from the intermediate valve-box to the striking-pneumatics, substantially as described.

6. In a mechanical musical-instrument player, the combination of a wind-chest, with an expression-box and an equalizing-bellows connected therewith; said wind-chest consisting of a box in which the top and bottom boards thereof are attached continuously to a rim; said wind-chest having an air-channel within the same separated by walls from the main air-space of the chest, and vents adapted to lead from said channel to the outside of said wind-chest, also vents connecting said channel and said main air-space with said expression-box; and passages leading from said main air-space to said equalizing-bellows, substantially as described.

7. In a mechanical musical-instrument player the combination of a wind-chest 13, consisting of a box in which the top and bottom boards thereof are attached continuously to a rim 46, and having a channel 54 within the same separated by walls 53 from the main air-space of said chest; with an intermediate valve-box 7 connected with the channel 54 by the vents 50; an expression-box 56 connected with said channel by the vent 51 and with the main air-space of said chest by the vent 52; an equalising-bellows 14 connected with said main air-space by the vents 48 and 49; and the exhaust-bellows 15 connected with said main air-space by the valve-holes 47, substantially as described.

810,058. VARIABLE-SPEED GEAR. PETER W. KANE, Mason City, Iowa. Filed Dec. 31, 1904. Serial No. 239,121.

Claim.—1. The combination with a cone of gears consisting of a plurality of parallel gear-wheels and a spiral gear crossing said gear-wheels and forming parts of the latter at the points of crossing, of a movable gear-wheel 16, means for guiding the latter automatically to follow the path of said spiral gear, said means adjustable to hold said movable gear in mesh with either of said parallel gear-wheels.

2. The combination with a pair of shafts, of a series of change-gears on one shaft, a sleeve-bearing having a gear-wheel thereon provided with oppositely-inclined screw-threads and a series of circular grooves therein, and a guide for shifting said sleeve-bearing to move said gear-wheel from one to another of said change-gears.

3. The combination with a cone of gears comprising parallel and spiral gears, of a shaft 13, a sleeve-shaft and the gear-wheel 16 movably mounted on said shaft 13, said sleeve-shaft having the oppositely-arranged spiral grooves and the circular grooves, and the guide 23 arranged to hold said sleeve-shaft stationary on shaft 13, or to move said sleeve-shaft along said shaft 13, substantially as and for the purpose set forth.

810,059. PROCESS OF PREVENTING THE FORMATION OF SCAFFOLDS IN KILNS. TOM C. KING, New York, N. Y., assignor to National Metallurgic Company, Jersey City, N. J., a Corporation of New Jersey. Filed Sept. 6, 1905. Serial No. 277,134.

Claim.—1. The herein-described method for removing scaffolds or rings of fused material from the sides of the kiln which consists in charging against said material, forming such rings or scaffolds, calcium fluorid.

2. The herein-described method of removing adhering masses of material from the sides of kilns or retorts which consists in charging against said material a requisite quantity of calcium fluorid to flux the same.

3. The herein-described method for removing adhering masses of fused material from the sides of the kiln which consists in charging against such adhering masses calcium fluorid and maintaining the material at a high temperature during the charging of said calcium fluorid against the same.

810,060. PACKING-CASE. GEORGE H. LOMERSON, Howard, Pa. Filed Sept. 16, 1905. Serial No. 278,148.

Claim.—1. A case for carrying explosives and explosive devices, comprising a soft and flexible body shaped to snugly receive and hold against casual movement therein the explosive or explosive devices, and having a layer of fireproof material and another layer of waterproof material, and a cover detachably connected to the body; the said cover being soft and yielding at its inner side and having at each side a layer of fireproof material and another layer of waterproof material.

2. In a case for carrying explosives and explosive devices, the combination with a body shaped to snugly receive and hold against casual movement therein the explosive or explosive devices and comprising an inner layer of felt, a corrugated layer surrounding the felt layer, a rubber layer surrounding the corrugated layer and an asbestos layer surrounding the rubber layer; of a removable cover connected to the body and having similarly-arranged layers of felt, corrugated material, rubber and asbestos.

810,061. PNEUMATIC-CUSHION WHEEL. CHARLES A. LEE, Kansas City, Kans., assignor of one-half to Albert J. Holmark, Kansas City, Kans. Filed June 26, 1905. Serial No. 267,471.

Claim.—1. A wheel, comprising a rigid inner portion having an encircling ring, a rigid outer portion having an inner circular ring and an outer encircling ring, a circular pneumatic cushion between the ring of the inner portion and the inner ring of the outer portion, and radial rods extending through the pneumatic cushion and the rings in contact therewith and clamping the latter tightly upon the former.

2. A wheel, comprising a rigid inner portion having an encircling ring, a rigid outer portion having an inner circular ring and an outer encircling ring, a circular pneumatic cushion between the ring of the inner portion and the inner ring of the outer portion, and radial rods extending through the pneumatic cushion and through the rings in contact therewith and secured rigidly to one of the portions of the wheel and provided with cap-screws at their opposite ends.

3. A wheel, comprising a rigid inner portion having an encircling ring, a rigid outer portion having an inner circular ring and an outer encircling ring, a circular pneumatic cushion between the ring of the inner portion and the inner ring of the outer portion, radial rods extending through the pneumatic cushion and through the rings in contact therewith and secured rigidly to one of the portions of the wheel and provided with cap-screws at their opposite ends, and cushions mounted on said rods and interposed between the cap-screws and the contiguous ring.

4. A wheel, comprising a rigid inner portion having an encircling ring, a rigid outer portion having an inner circular ring and an outer encircling ring, a circular pneumatic cushion between the ring of the inner portion and the inner ring of the outer portion and provided with radial tubular cross-pieces, and radial rods extending through the tubular cross-pieces and the rings in contact with the pneumatic cushion.

5. A wheel, comprising a rigid inner portion having an encircling ring provided with apertures, a rigid outer portion having an outer and an inner ring, the latter provided with slots in radial alinement with said apertures, a circular pneumatic cushion fitting between the ring of the inner portion and the inner ring of the outer portion and provided with radial tubular cross-pieces registering with said radially-alined apertures and slots, rods extending through the said tubular cross-pieces and the registering apertures and slots and secured rigidly at their inner ends to the inner portion of the wheel, cap-screws engaging the outer ends of said rods, and cushions upon the rods and interposed between said cap-screws and the inner ring of the outer portion of the wheel.

810,062. ROTARY ENGINE. GOTTLOB A. L. LIND, New Dorchester, Miss. Filed June 13, 1905. Serial No. 265,012.

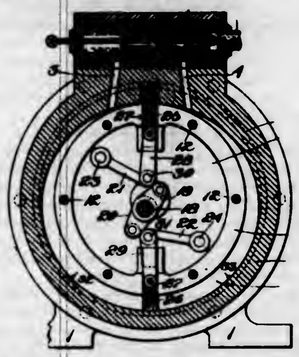

Claim.—1. The combination, with a rotary engine, having a cylinder, a piston, a carrier for said piston, and an engine-shaft driven by said carrier and piston, of a reversing-shaft having an eccentric crank-pin within said cylinder, and connections between said piston and crank-pin for maintaining said piston under positive control at all times.

2. The combination, with a rotary engine, having a cylinder, a piston, a carrier for said piston, and an engine-shaft driven by said carrier and piston, of a reversing-shaft having an eccentric crank-pin within said cylinder, and connecting means between said piston and crank-pin for maintaining a noiseless operation of the piston and its operating parts.

3. The combination, with a rotary engine, having a cylinder, a piston, a carrier for said piston, and an engine-shaft driven by said carrier and piston, of a reversing-shaft having an eccentric crank-pin within said cylinder, and means movable with said carrier and connected to said piston and crank-pin for positively moving said piston outwardly during the working travel of the piston.

4. The combination, with a rotary engine, having a cylinder, a piston, a carrier for said piston, and an engine-shaft driven by said carrier and piston, of a reversing-shaft having an eccentric crank-pin within said cylinder, an arm pivoted on said crank-pin, a link pivotally connected to said arm, and means cooperating with said link and arm for positively moving said piston out and in relatively to said cylinder.

5. The combination, with a rotary engine, having a cylinder, a piston, a carrier for said piston, and an engine-shaft driven by said carrier and piston, of a reversing-shaft having an eccentric crank-pin within said cylinder, an arm pivoted on said crank-pin, a lever pivoted to said carrier and arm, and a link pivotally connecting said lever and piston.

6. In a rotary engine, a cylinder, a piston-carrier, a piston radially movable in said carrier, means for automatically moving said piston, and packing-plates carried by said carrier and yieldingly engaging the opposite ends of said piston, said carrier and cylinder being relatively eccentric, and said packing-plates extending outwardly in said carrier coextensive with the outermost movement of said piston.

7. In a rotary engine, a cylinder, a piston-carrier, a piston radially movable in said carrier, means for automatically moving said piston, and packing-plates carried by said carrier and yieldingly engaging the opposite ends of said piston, said carrier and cylinder being relatively eccentric, and said packing-plates extending outwardly in said carrier coextensive with the outermost movement of said piston, and opposite packing-rings carried by said carrier and embracing the outer ends of said plates.

810,063. DUPLEX SMELTING-FURNACE. ROBERT LEIDEMANN, Osnabrück, Germany. Filed Mar. 10, 1905. Serial No. 249,444.

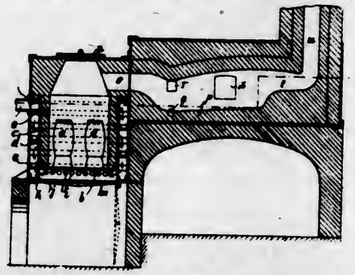

Claim.—1. In a duplex smelting-furnace, a primary hearth capable of being intensely heated, an inner refractory wall around said hearth, an outer metal casing surrounding said inner wall, air-passages in said outer casing, an air-inlet communicating with the said air-passages and with a source of air under pressure, a baffle-plate for directing the admission of the air in opposite directions from the said air-passages round the furnace to the said hearth, air-holes at the base of the primary hearth for admitting the air under pressure thereto, a movable plate adapted to shut off hermetically the ash-pit from the primary hearth, and a secondary hearth alongside the primary hearth and capable of being heated by the waste heat from the primary hearth.

2. In a duplex smelting-furnace a primary hearth, the air-inlet *f*, the hollow metallic jacket *d* surrounding said hearth, baffles *e* and dividing-plate *g* in said metallic jacket adapted to divide the blast and pass it in serpentine or zigzag directions around said hearth and discharge the heated blast beneath said hearth, the plate having perforations *i* for admitting air to the fuel on the hearth, the hinged plate *m* adapted to control the admission of air to the primary hearth from below the same, a secondary smelting-hearth and an escape to the outer air for the combustion products.

810,064. CATTLE-GUARD. WILLIAM D. LINSCOTT, Piedmont, S. D. Filed July 3, 1905. Serial No. 268,208.

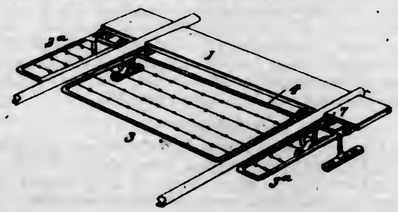

Claim.—In a cattle-guard, the combination of a movable platform, a gate normally in horizontal position and embodying sides pivotally connected at one end with the platform, and a rock-shaft having pivotal connection with the sides of the gate between the ends of the latter, said rock-shaft having end cranks pivotally mounted in suitable supports.

810,065. MACHINE FOR ASSEMBLING CARTRIDGE-CLIPS. OSBORN M. LIBBAY, Westpoint, N. Y. Filed Sept. 19, 1904. Serial No. 224,962.

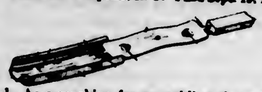

Claim.—1. As a machine for assembling the spring and body portions of a cartridge-clip, in combination, a table, a carrier for the clip-body, a guideway in said table for said carrier, a guideway in said table for the spring, said spring-guideway having a flanged portion overhanging the guideway and inclining downward, said guideways being at right angles and intersecting, means to move said spring in its guideway and the carrier in its guideway.

2. As a machine for assembling the spring and body portions of a cartridge-clip, in combination, a table, a carrier for the clip-body, a guideway in said table for said carrier, a guideway in said table for the spring, said guideways being at right angles and intersecting, means to move said spring in its guideway, and the carrier in its guideway, there being an orifice in said table at the point of juncture of said guideways, adapted to be covered by said carrier.

3. As a machine for assembling the spring and body portions of a cartridge-clip, in combination, a table, a carrier for the clip-body, a guideway in said table for said carrier, a guideway in said table for the spring, said guideways being at right angles and intersecting, means to move said spring in its guideway and the carrier in its guideway, there being an orifice in said table at the point of juncture of said guideways, adapted to be covered by said carrier, means to return the carrier and means to hold the clip from returning with the carrier.

4. As a machine for assembling the spring and body portions of a cartridge-clip, in combination, a table, a carrier for the clip-body, a guideway in said table for said carrier, a guideway in said table for the spring, said guideways being at right angles and intersecting, means to move said spring in its guideways and the carrier in its guideway, there being an orifice in said table at the point of juncture of said guideways, adapted to be covered by said carrier, and a pivoted hook or dog overhanging said orifice above said carrier and adapted to engage the clip.

5. As a machine for assembling the spring and body portion of a cartridge-clip, in combination, a table, a carrier for the clip-body, a guideway, in said table for said carrier, a guideway in said table for the spring, said guideways being at right angles and intersecting, a pivoted lever connected to said carrier, a spring acting to hold said lever in one position, a movable frame, said lever being in line of movement of one portion of said frame, another portion of said frame being in line with the spring-guide, and means to move said frame.

6. In a machine for assembling the spring and body portions of a cartridge-clip, a table having guideways at right angles to and intersecting each other, means to bring the spring within the body portion at the juncture of said guides, there being an orifice through the table at the point of juncture of the guideways, and means to cover and uncover said orifice.

7. In a machine for assembling the spring and body portions of a cartridge-clip, in combination, a table, means to move the spring on said table, a carrier for the body means to hold said carrier and contained clip-body in line of movement of the spring, there being an orifice in the table beneath the carrier at that point, means to move the carrier for the clip-body and means at that point to hold the clip-body from movement with the carrier.

8. In a machine for assembling the spring and body portions of a cartridge-clip, in combination, a table, means to move the spring in said table, a carrier for the clip-body, means to hold said carrier and contained clip-body in line of movement of the spring, there being an orifice in the table beneath the carrier at that point, and means at that point to hold the clip-body from movement.

810,066. LIFTING AND SEPARATING WHEEL. ALFRED HAGEN, Chemnitz, Prussia. Filed Mar. 4, 1905. Serial No. 248,762.

Claim.—1. An elevating and separating wheel having two series of pockets adapted to discharge at different elevations and formed by partitions, the partitions forming one series of pockets being penetrable to one constituent of a given mixture, while the partitions forming the other series of pockets are impenetrable to both constituents of said mixture, combined with separate discharge-receptacles arranged at different elevations to receive the materials dropped from the respective series of pockets.

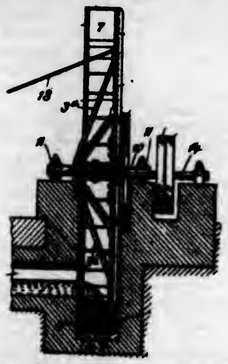

2. An elevating and separating wheel having two series of pockets formed in its interior by partitions arranged at different angles to the radii passing through them, combined with separate discharge-receptacles arranged at proper points to receive the materials dropped from the respective series of pockets.

3. An elevating and separating wheel having two series of pockets formed adjacent to its circumference by partitions, the partitions forming one series of pockets being penetrable to one constituent of a given mixture, while the partitions forming the other series of pockets are impenetrable to both constituents of said mixture, the partitions forming one series of pockets having a different angle of inclination to the wheel radii which pass through them from that which the partitions forming the other series of pockets have, combined with separate discharge-receptacles arranged at different elevations to receive the materials dropped from the respective series of pockets.

4. An elevating and separating wheel having two series of pockets formed within its rim by partitions, the partitions forming one series of pockets being imperforate, and those forming the second series being perforate, and placed one in advance of each one of the other series along the line of circumferential travel of the wheel, the partitions forming either one of said series of pockets being considerably inclined to the wheel radii passing through them, and those forming the other of said series of pockets being approximately parallel to the wheel radii passing through them.

5. An elevating and separating wheel having a series of water-tight pockets formed inside of its rim, and a series of perforate partitions placed in each pocket upon the bottom thereof and inclined toward the interior of said pocket.

6. An elevating and separating wheel having an annular space in its periphery divided into a series of buckets circumferentially disposed by a series of imperforate partitions, and a second series of perforated partitions overlying and separated from the first series of partitions.

7. An elevating and separating wheel having an annular space in its periphery, divided into a series of buckets by imperforate partitions and each bucket carrying a perforated partition.

8. An elevating and separating wheel having an annular space in its periphery divided into a series of buckets by imperforate partitions and each bucket divided into two pockets by means of a perforated partition angularly disposed to the imperforate partition forming the bottom of the bucket.

810,067. PLATE-HOLDER FOR PRINTING-PRESSES. HENRY A. MALEY, Boston, Mass. Filed Nov. 11, 1903. Serial No. 180,691.

Claim.—1. A clamp for a printing-press plate-holder, the same comprising a slotted flanged shoe formed to bear on a plate-holding bed, a disk formed to bear on the flange of said shoe and having an eccentric orifice, and a pivot-screw formed to pass through the orifice in the disk and the slotted shoe, the face of the flange of the shoe against which the disk bears being curved, substantially as and for the purpose set forth.

2. A clamp for a printing-press plate-holder, the same comprising a slotted shoe formed to bear on a plate-holding bed, said shoe having a top face or seat provided with a flange at one end substantially at right angles with the slot in the shoe, said flange having a curved face and an indicator on its top face, a disk formed to bear on said seat and provided with an eccentric orifice, the periphery of the disk bearing on the curved face of said flange, and a pivot engaged with said orifice and adapted to detachably engage said bed, said pivot passing through the slot in the shoe, said disk being also provided with a plurality of radial indicating members cooperating with the indicator on said flange, whereby various predetermined movements of the plate may be secured by a predetermined rotary movement of said disk.

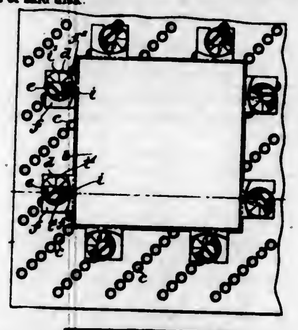

810,068. CANOPY-SUPPORT AND CHANDELIER. JOSIAH O. MOSS, Goshen, Ind., assignor of two-fifths to Albert J. Berkey, Goshen, Ind. Filed Dec. 30, 1904. Serial No. 239,695.

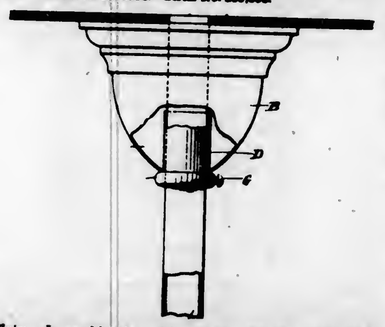

Claim.—In combination with a central pipe of a chandelier, a canopy mounted thereon, and a ring made of rigid material and slidably mounted on said pipe and adapted to hold the canopy in position, the upper edge of said ring extended to form a sleeve and adapted to extend inside of the canopy an appreciable distance and form, with the lower end of the canopy, a pocket, substantially as shown and described.

810,069. OVERHEAD TROLLEY HARP AND SHOE FOR ELECTRIC RAILWAYS. JOHN MILLER, Jr., Amesbury, Mass., assignor to William H. Biddle, Amesbury, Mass. Filed Mar. 17, 1905. Renewed Dec. 12, 1905. Serial No. 292,102.

Claim.—1. An overhead device of the kind described, comprising a trolley-pole, a harp mounted thereon, a shoe pivoted between the arms of said harp, and having a hollowed-out contact-surface along its upper edge, and means for normally maintaining said shoe with its said contact-surface tipped upwardly at its rear end approximately in line with said trolley-pole.

2. An overhead device of the kind described, comprising a harp, a shoe pivoted intermediate its ends in said harp, and having a contact-groove along its upper edge, the side walls of said shoe extending rearwardly and upwardly beyond said groove at the rear end thereof for maintaining contact with the wire under abnormal conditions, and means for normally maintaining said shoe tipped upwardly at its rear end in longitudinal alinement with said harp.

3. An overhead device of the kind described, comprising a trolley-harp, a shoe pivoted intermediate its length in said harp, said harp being provided with a stop for engaging said shoe and limiting its forward swinging movement.

4. An overhead device of the kind described, comprising a trolley-harp, a shoe pivoted intermediate its length in said harp, said harp being provided with a stop for engaging said shoe and limiting its rearward swinging movement.

5. An overhead device of the kind described, comprising a trolley-pole, a harp at the upper end thereof, an elongated contact-shoe pivoted intermediate its ends between the arms of said harp, said shoe having a continuous arched contact-surface extending lengthwise thereof to its opposite ends, and means for normally tipping said elongated shoe lengthwise of said pole and harp, thereby extending said contact-surface lengthwise above said pole and harp to a greater distance than when pressed down in running engagement with the trolley-wire.

6. An overhead device of the kind described, comprising a trolley-harp, a shoe pivoted intermediate its length in said harp, and means for normally swinging the rear end of said shoe upwardly.

7. An overhead device of the kind described, comprising a trolley-harp, a shoe pivoted intermediate its length in said harp, and a spring for normally swinging the rear end of said shoe upwardly.

8. An overhead device of the kind described, comprising a trolley-harp, a shoe pivoted intermediate its length in said harp, and a leaf-spring engaging at one end the forward end of said shoe and at its other end engaging said harp.

9. An overhead device of the kind described, comprising a trolley-harp, and a shoe pivoted intermediate its length in said harp, said shoe having an antifriction-roller at the rear end of its contact-surface.

10. An overhead device of the kind described, comprising a trolley-harp, a shoe pivoted intermediate its length in said harp, said shoe having an antifriction-roller at the rear end of its contact-surface, and an antifriction-roller at the forward end of said contact-surface.

810,070. WATER-CLOSET FLUSH-PIPE. CHARLES H. MOORE, New York, N. Y. Filed Dec. 19, 1901. Serial No. 86,602.

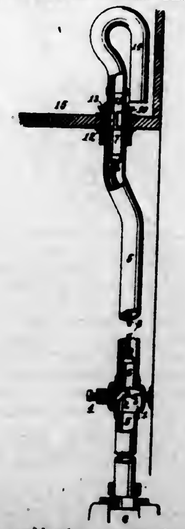

Claim.—1. In combination, a water-closet cistern having a valve-seat secured in the bottom, a cistern-valve on the valve-seat having a guide to conduct it to its seat, a passage for the escape of any accidental accumulation of water in the cistern when the cistern-

valve is closed, a flush-pipe connected to the cistern-valve seat and to a water-closet, slop-sink or the like and arranged to be empty except at times when the closet is being flushed, a rod and fitting in the flush-pipe operating in conjunction with a spindle and lever in the receptacle to lift the cistern-valve from its seat and having a certain amount of play between the cistern-valve and lever, a receptacle made separate from the flush-pipe and joined thereto, a cap or bonnet secured on an opening in the receptacle, a lever within the receptacle, and a spindle within a passage in the cap or bonnet whereby the lever in the receptacle is operated and lifts the cistern-valve from its seat and causes a continual outflow of water from the cistern after the lever has been operated and returned to its normal position, until the water contents of the said cistern are nearly exhausted.

2. In combination, a water-closet cistern having a valve-seat secured in the bottom, a cistern-valve on the valve-seat and having a guide to conduct it to its seat independent of the lifting-rod, a passage for the escape of any accidental accumulation of water in the cistern when the cistern-valve is closed, a flush-pipe connected to the cistern valve-seat and to a water-closet, slop-sink or the like and arranged to be empty, except at times when the closet is being flushed, a rod and fitting in the flush-pipe operating unconnectedly in conjunction with a spindle and lever in the receptacle to lift the cistern-valve from its seat, a receptacle made separate from the flush-pipe and joined thereto, a cap or bonnet secured on an opening in the receptacle, a lever within the receptacle, and a spindle within a passage in the cap or bonnet whereby the lever in the receptacle is operated and lifts the cistern-valve from its seat and causes a continual outflow of water from the cistern after the said lever has been operated and returned to its normal position, until the water contents of the said cistern are nearly exhausted.

810,071. DAMPER-OPERATING MECHANISM. CLAYTON MCPHERSON, Bridgeton, N. J. Filed Jan. 24, 1905. Serial No. 242,695.

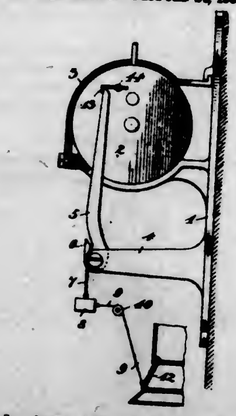

Claim.—In a device of the character described, the combination, with an alarm-clock, of a supporting-bracket, a lever mounted thereon, a hook formed on said lever, a weight, a loop or bail connected to said weight and supported by said hook, a latch-bar fixed on the alarm-winding shaft of said clock, and adapted to engage said lever and normally hold the same in position to support said weight until released by the alarm mechanism, and a cord connected with said weight and passing over a pulley, whereby the falling of the same when released from said lever will actuate other mechanism, substantially as described.

810,072. LOCK FOR BED-GATES. JAMES A. RIDDELLS, Sheffield, Ill., assignor to C. B. McCullough, Sheffield, Ill. Filed Sept. 30, 1905. Serial No. 280,256.

Claim.—1. In a device of the class named, the combination of the hand-lever 7, pivotally supported upon one part of the gate; the bolt 8, pivotally attached at its rear end to the upper end of the lever 7, and provided in its rear end with the notch 10; the spring 9, fixed in the rear of the bolt 8, and engaging the notch 10; means for guiding the bolt 8; and means for securing the free end of such bolt to the other part of the end-gate, substantially as shown and described.

2. In a device of the class named, the combination, with the parts 1 and 2 of an end-gate, of the leaf 3, fixed to the part 2, and provided in its free end with the opening 5; the keeper 6, fixed to the part 1, and engaging the hole 6; the bolt 8, suitably mounted on the leaf 3, and provided with the notch 10; the spring 9, in rear of the bolt 8, and engaging the notch 10; and means for suitably actuating the bolt 8, substantially as set forth.

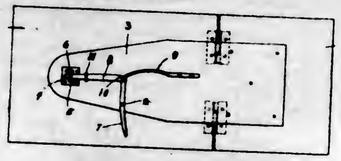

810,073. PORTABLE MELTING AND HEATING APPARATUS. HENRY B. NICHOLS, Philadelphia, Pa. Filed July 19, 1904. Serial No. 217,293.

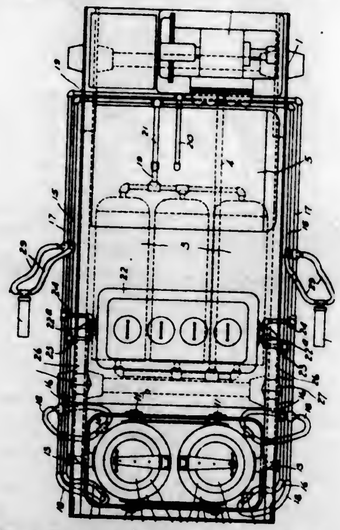

Claim.—1. In apparatus of the character described, the combination with a supporting vehicle, of a frame pivotally supported on said vehicle, a melting-pot or crucible pivotally supported in said frame, and means for heating said pot or crucible.

2. In apparatus of the character described, the combination with a supporting vehicle, of a frame supported by trunnions on said vehicle, and a melting-pot or crucible supported by trunnions in said frame, the last-named trunnions being arranged at right angles to those of the frame.

3. The combination with a supporting vehicle, of one or more melting-pots supported thereon, a ladle-heating stove adjacent to the said pot or pots, and a heat-conducting pipe or pipes leading from the combustion-chambers of said pot or pots to the said stove.

4. The combination with a supporting vehicle, of a melting-pot or crucible carried thereby and supported to maintain its vertical position, a ladle-heating stove also carried on the vehicle, and a jointed heat-conducting pipe leading from the combustion-chamber of the pot or crucible to the said stove.

810,074. DEVICE FOR USE IN THE MANUFACTURE OF RAIL-JOINTS. HENRY B. NICHOLS, Philadelphia, Pa. Filed July 19, 1904. Serial No. 217,292.

Claim.—1. The device for the purpose described, having end clamps arranged to fit around the joint-plates and rails, said clamps having damming portions which close the openings between the joint-plates and rails at the ends of the said plates and means for securing the same temporarily in place thereon.

2. The device for the purpose described, having end clamps arranged to fit around the joint-plates and rails, and having packing-seats, and means for securing said clamps in place.

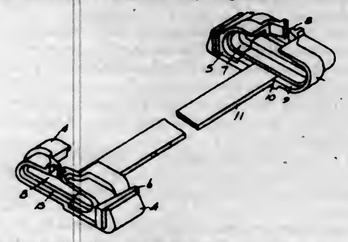

3. The device for the purpose described, comprising two end clamps arranged to fit around the rails and the end portion of the joint-plates, and a bottom dam supported by the end clamps.

4. A device for use in the manufacture of railway-rail joints, comprising two clamping devices having each a movable jaw, and packing-seats, and a bottom dam supported by the clamping devices.

5. A clamp for use in the manufacture of railway-rail joints, said clamp having the movable jaw 5, the recess 7 to seat the end of the joint-plate, the opening 8 to pass the rail, and seats for packing or luting material.

6. A clamping and damming device for use in the manufacture of railway-rail joints, said device having the movable jaw 5, and means for securing and releasing the same, the recess to seat the end of the joint-plate, the opening 8 to pass the rail, and the seats 9 and 13 for packing or luting material.

7. A device for the purpose described, consisting of end clamps formed with damming portions for closing the openings between the joint-plates and rails at the ends of said plates, and a bottom damming-piece carried by the said end clamps.

810,075. DEVICE FOR USE IN THE MANUFACTURE OF RAIL-JOINTS. HENRY B. NICHOLS, Philadelphia, Pa. Filed July 19, 1904. Serial No. 217,294.

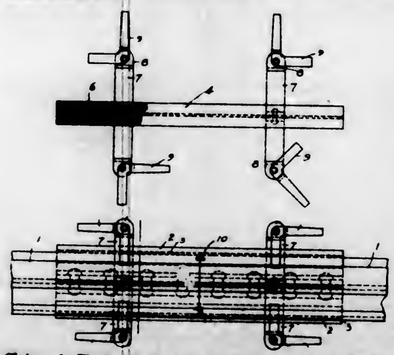

Claim.—1. The herein-described device for use in the formation of railway-rail joints, consisting of a dam arranged to seat over and close the longitudinal bottom opening between the base portions of joint-plates, and means for supporting said dam.

2. The herein-described device for use in the formation of railway-rail joints, consisting of an elongated bottom dam, carriers therefor, and securing devices on said carriers, and arranged to engage the joint to thereby hold the device in position.

3. The herein-described device for use in the formation of rail-joints, consisting of an elongated damming-strip having a refractory covering, carriers to which said strip is secured, and supporting devices pivoted to said carriers.

810,076. COLLAR. GUSTAV B. HOEHN, Detroit, Mich. Filed Sept. 15, 1904. Serial No. 224,982.

Claim.—A turn-down collar having a buttonhole at the rear in the neckband, and a tab on the neckband between the latter and the outer turned-down portion of the collar, covering the buttonhole and free at its upper edge, its lower edge being secured to the neckband.

810,076.

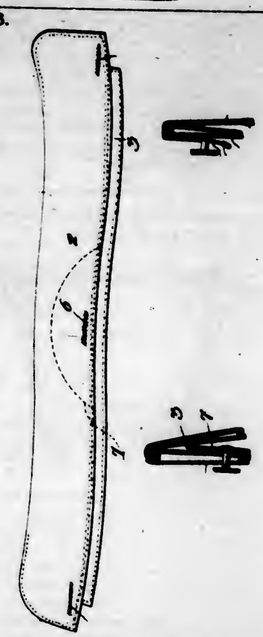

810,077. HOSE-SUPPORTER. JOHN D. O'BRIEN, Boston, Mass. Filed Aug. 23, 1905. Serial No. 275,088.

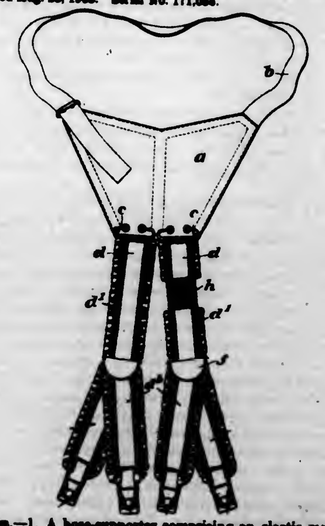

Claim.—1. A hose-supporter comprising an elastic member, a supplemental supporting member to limit the extension thereof and a second elastic member to preserve constant elasticity of said supporter.

2. A hose-supporter comprising an elastic member, a supplemental supporting member to limit the extension thereof, a plurality of elastic ends to preserve constant elasticity of the supporter and means to adjust said supporter between its extreme ends.

3. A hose-supporter comprising an elastic member, a supplemental supporting member to limit the extension thereof, a plurality of elastic ends to preserve constant elasticity of the supporter, and means to adjust said elastic member.

4. A hose-supporter comprising an elastic member, a supplemental supporting member to limit the extension thereof, a plurality of elastic ends to preserve constant elasticity of the supporter, and means to adjust said elastic member, said means consisting of a connection between the ends of the elastic member and the supplemental supporting member.

5. A hose-supporter comprising an elastic member, a supplemental supporting member to limit the extension thereof, a plurality of elastic ends to preserve constant elasticity of the supporter, and means to adjust said elastic member, said means consisting of a connection between the ends of the elastic member and the supplemental supporting member, and a slide on said connection.

6. A hose-supporter comprising an elastic member, a supplemental supporting member to limit the extension thereof, a plurality of elastic ends to preserve constant elasticity of the supporter, and means to adjust said elastic member, said means consisting of a connection between the ends of the elastic member and the supplemental supporting member, and a slide on said connection, said slide having a plurality of openings.

7. A hose-supporter comprising an elastic member, a supplemental supporting member to limit the extension thereof, a plurality of elastic ends to preserve constant elasticity of the supporter, and means to adjust said elastic member, said means consisting of a connection between the ends of the elastic member and the supplemental supporting member, and a slide on said connection, said slide having a plurality of openings, and said connection having a plurality of openings.

8. A hose-supporter comprising an elastic member, a supplemental supporting member to limit the extension thereof, a plurality of elastic ends to preserve constant elasticity of the supporter, and means to adjust said elastic member, said means consisting of a connection between the ends of the elastic member and the supplemental supporting member, and a slide on said connection, said slide having a plurality of openings, and said connection having a plurality of openings, and a pin to engage said openings.

810,078. HOSE-SUPPORTER. JOHN D. O'BRIEN, Boston, Mass. Filed Aug. 23, 1905. Serial No. 275,089.

Claim.—1. A hose-supporter comprising an elastic member, a supplemental supporting member to limit the extension thereof, a plurality of elastic ends to preserve constant elasticity of the supporter, and means to adjust said elastic member, said means consisting of a connection between the ends of the elastic member and the supplemental supporting member, and a slide on said connection.

2. A hose-supporter comprising an elastic member, a supplemental supporting member to limit the extension thereof, a plurality of elastic ends to preserve constant elasticity of the supporter, and means to adjust said elastic member, said means consisting of a connection between the ends of the elastic member and the supplemental supporting member, and a slide on said connection, said slide having a plurality of openings.

3. A hose-supporter comprising an elastic member, a supplemental supporting member to limit the extension thereof, a plurality of elastic ends to preserve constant elasticity of the supporter, and means to adjust said elastic member, said means consisting of a connection between the ends of the elastic member and the supplemental supporting member, and a slide on said connection, said slide having a plurality of openings, and said connection having a plurality of openings.

4. A hose-supporter comprising an elastic member, a supplemental supporting member to limit the extension thereof, a plurality of elastic ends to preserve constant elasticity of the supporter, and means to adjust said elastic member, said means consisting of a connection between the ends of the elastic member and the supplemental supporting member, and a slide on said connection, said slide having a plurality of openings, and said connection having a plurality of openings, and a pin to engage said openings.

810,079. MANUFACTURE OF HORSESHOES. THOMAS [illegible]

4. A hose-supporter comprising an elastic member, a supplemental supporting member to limit the extension thereof, a plurality of elastic ends to preserve constant elasticity of the supporter, and means to adjust said elastic supporting members.

5. A hose-supporter comprising a waist-supported belt and a plurality of supporters attached to the front thereof, each comprising an elastic member having a plurality of constantly elastic supporting ends, and a supplemental supporting member with adjusting means for the purpose described.

810,078. STEAM-BOILER. ALFRED PARFITT, Topeka, Kans. Filed Mar. 29, 1905. Serial No. 251,009.

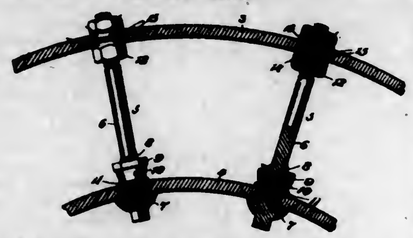

Claim.—1. In a boiler, the combinaton with a shell-sheet, of a fire-box crown-sheet, a radial stay-bolt connecting the sheets and having a head that fits against the inner face of the crown-sheet, said bolt having a shank, that portion of which that is adjacent to the head being threaded and screwed into the crown-sheet, said shank having its outer end connected to the shell-sheet, and a nut screwed upon the threaded portion of the shank and having a tapered inner end that coacts with the outer face of the crown-sheet.

2. In a boiler, the combination with spaced sheets, of a shank connected to one of the sheets and passing through the other, and clamping devices mounted on the shank and having tapered opposing faces that coact with the opposite faces of said other sheet.

3. In a boiler, the combination with spaced sheets, of a shank connected to one of the sheets and passing through the other, said other sheet having its faces recessed about the shank, and clamping devices mounted on the shank and having tapered opposing faces that fit in the said recesses.

4. In a boiler, the combination with spaced sheets, of a shank connected to one of the sheets and passing through the other, and clamping devices adjustably mounted on the shank and having rounded opposing faces that coact with the faces of said other sheet about the shank.

5. In a boiler, the combination with spaced sheets, of a shank connected to one of the sheets and having a threaded outer end passing through the other sheet, said other sheet having its faces recessed about the shank, and clamping-nuts screwed upon the threaded portions of the shank on opposite sides of said other sheet and having rounded faces that fit in the recessed portions of said sheet.

6. In a boiler, the combination with a shell-sheet, of a fire-box crown-sheet, a radial stay-bolt having threaded inner and outer portions that pass through the sheets, a head on the inner end of the shank bearing against the inner face of the crown-sheet, a nut threaded on the inner portion of the shank and having a tapered end that coacts with the outer face of the crown-sheet, and nuts threaded on the outer portion of the shank on opposite sides of the shell-sheet and having their opposing faces rounded, said shell-sheet being recessed about the shank to receive the rounded faces of the nuts.

7. In a boiler, the combination with spaced sheets, one of said sheets having a portion thinner than the surrounding portions of the same sheet, of a stay-bolt connecting the spaced sheets, said bolt engaging the said thinner portion of the one sheet and being spaced from the thicker surrounding portions of the same, said thinner portion bending or buckling to permit the relative expansion and contraction of the sheets.

8. In a boiler, the combination with spaced sheets, one of said sheets comprising sections arranged flat against each other and one of said sections being thinner than the other, of a connection between the spaced sheets, said connection being engaged with the thinner section and spaced from the thicker section and said thinner section bending or buckling to permit the relative expansion and contraction of the sheets.

9. In a boiler, the combination with spaced sheets, one of said sheets comprising overlying sheet-sections located flat upon each other, of a connection between the spaced sheets, said connection being free from the inner sheet-section and engaged with the outer sheet-section.

10. In a boiler, the combination with a crown-sheet, of a comparatively thick shell-sheet having openings therethrough, a supplemental sheet-section secured thereupon and extending over a plurality of the openings, a fire-box sheet, and a plurality of stay-bolts engaged at their inner ends with the fire-box sheet, said stay-bolts passing through the openings of the shell-sheet and being engaged with the supplemental sheet.

11. In a boiler, the combination with inner and outer sheets, of a stay-bolt connecting the sheets, a sleeve fitted upon the bolt and bearing against one of the sheets, and a nut threaded upon the intermediate portion of the bolt between and in spaced relation to the sheets, said nut bearing against the inner end of the sleeve to force the outer end of the same against the sheet.

12. In a boiler, the combination with inner and outer sheets, of a stay-bolt connecting the sheets, a sleeve fitted upon the bolt and having a tapered end that bears against one of the sheets, and a nut threaded upon the bolt and bearing against the sleeve to force the tapered end thereof against the sheet.

810,079. KNIFE-WIPER FOR LINOTYPES. FRANK A. PETTIT, Kansas City, Mo. Filed Apr. 6, 1905. Serial No. 254,126.

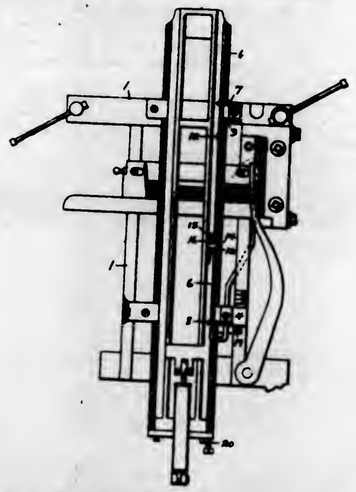

Claim.—1. In a linotype-machine, in combination with the first elevator, a vertically-movable knife-wiper rod, a knife-wiper, and means, carried by said elevator, and controllable by the operator, for raising the stroke of the knife-wiper when recasting mixed five-inch slugs; substantially as described.

2. In a linotype-machine, in combination with the first elevator, a vertically-movable knife-wiper rod, a knife-wiper, two projections carried by said rod, a pawl carried by the elevator and movable by the operator, for engaging the upper projection and lifting said wiper-rod to a greater or less height; substantially as described.

3. In a linotype-machine, in combination with the first elevator, a vertically-movable knife-wiper rod, a knife-wiper, guides for said rod, said guides being stationary with respect to the elevator, an upper collar and a lower collar fixed upon said rod, a bracket carried by the elevator and adapted to depress the lower collar, and a pawl pivoted on said bracket and capable of lifting the upper collar to a greater or less height, depending on the position of the pawl; substantially as described.

4. In a linotype-machine, in combination with the front trimming-knives; a knife-wiper having a portion 16 which engages the edges of the knives, and having a bent portion 16^a which touches the outer face of one of the knives; substantially as described.

5. In a linotype-machine, in combination with the front trimming-knives, a knife-wiper having a bent portion 16^a which touches the outer face of one of the knives, and having a downwardly-projecting portion 16^b; substantially as described.

810,080. MANUFACTURE OF HORSESHOES. WILLIAM PELLINGTON, Bridgtoo, England. Filed Oct. 26, 1901. Serial No. 79,891.

Claim.—The herein-described process for the manufacture of horseshoes with cushion cavities, which consists in bending a bar to a horseshoe shape, forming laterally-projecting flanges along the edges of the bar, shaping the said flanges to be thicker along their outer edges than their inner, and bending the said flanges to have their inner walls converge outwardly by pressing the bar through a perforated tool, substantially as set forth.

810,081. KEY-HOLDER. ROBERT H. PIPER, Waterbury, Conn. Filed Oct. 26, 1904. Serial No. 229,903.

Claim.—1. The key-ring comprising a disk, the edge of which is formed with a circumferential groove, a ring-section fitting in said groove, the ends of said ring-section being bent back in opposite directions, parallel with said ring-sections, the integral curved members terminating in eyes which contact with each other, and the ring-section, as set forth.

2. A key-ring comprising an inner ring-section, the opposing ends of which are bent back in opposite directions parallel with said ring, the integral curved members terminating in eyes which contact with each other and with the inner ring-section.

3. The key-ring comprising a disk, a ring-section of wire embracing said disk, the ends of said ring-section being bent back in opposite directions, the integral curved members terminating in eyes which contact with the ring, said curved members being parallel with the inner ring-section, as set forth.

810,082. MEASURING DEVICE. HENRY RAAB and JACOB M. WOLFSON, New York, N. Y. Filed Aug. 21, 1905. Serial No. 275,077.

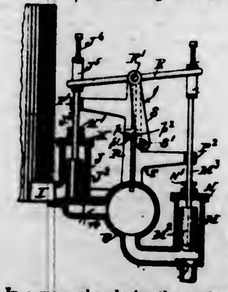

Claim.—1. In a measuring device the combination of a cylinder, a piston therein, means to move the piston, means to indicate the position of the piston, an inlet-valve chamber and an outlet-valve chamber connected with the cylinder, a valve in each chamber, a valve-spindle extending from each valve, a loop connected to each valve-spindle, a beam journaled adjacent to the cylinder and having its ends extending through the loops of the valve-spindles, and means to move the said beam.

2. In a measuring device the combination of a cylinder, a piston therein, means to move the piston, means to indicate the position of the piston, an inlet-valve chamber and an outlet-valve chamber connected with the cylinder, a valve in each chamber, a valve-spindle extending from each valve, a loop connected to each valve-spindle, a beam journaled adjacent to the cylinder and having its ends extending through the loops of the valve-spindles, and means connected with each loop to bear against the said beam and raise the said valves.

3. In a measuring device the combination of a cylinder, a piston therein, means to move the piston, means to indicate the position of the piston, an inlet-valve chamber and an outlet-valve chamber connected with the cylinder, a valve in each chamber, a valve-spindle extending from each valve, a loop connected to each valve-spindle, a beam journaled adjacent to the cylinder and having its ends extending through the loops of the valve-spindles, a screw threaded through each loop, arranged to bear against the beam and thereby raise the valves.

4. In a measuring device the combination of a cylinder, a piston therein, means to move the piston to various positions, means to indicate the position of the piston, an inlet-valve chamber and an outlet-valve chamber connected with the cylinder, a valve in each chamber, a stem for each valve, and a loop extending from each stem, a bracket extending from the cylinder, a journal-bearing supported on the bracket, a shaft in the bearing, a beam supported on the shaft, the ends of the beam engaging the said loops, a vent-pipe extending from the cylinder, a vent-valve connected with the vent-pipe, an arm extending from the shaft to move the same, a second arm connected to the shaft, and a connection between the second arm and the vent-valve.

5. In a measuring device the combination of a cylinder, a piston therein, means to move the piston to various positions, means to indicate the position of the piston, an inlet-valve chamber and an outlet-valve chamber connected with the cylinder, a valve in each chamber, a stem for each valve, and a loop extending from each stem, a bracket extending from the cylinder, a journal-bearing supported on the bracket, a shaft in the bearing, a beam supported on the shaft, the ends of the beam engaging the said loops, a vent-pipe extending from the cylinder, a vent-valve connected with the vent-pipe, an arm extending from the shaft to move the same, means to lock the arm in different positions, a second arm connected to the shaft, and a connection between the second arm and the vent-valve.

6. The combination of a reservoir, a conduit extending therefrom, an inlet-valve chamber connected with the conduit, a conduit leading from the inlet-valve chamber, a cylinder connected with the latter conduit, a piston in the cylinder, means to move the piston to various positions, means to clamp the piston in place, an indicator adjacent to the piston to indicate its position, a conduit leading from the cylinder, an outlet-valve chamber connected with the latter conduit, a bracket extending from the cylinder, a shaft journaled on the bracket, a beam secured to the shaft, an arm fastened to the shaft, a handle on the arm, a spring-latch connected to the handle to clamp the arm in different positions, a second arm extending from the shaft, a vent-valve having a through-port and a cross-port connected with the cylinder, a connection between the second arm and the vent-valve, a valve in each valve-chamber, and a spindle for each valve arranged to engage with the beam.

810,083. CURRENT-MOTOR. JOHN RAUSCHER, St. Paul, Minn. Filed Mar. 22, 1904. Serial No. 199,488.

Claim.—1. A device of the class set forth, consisting of a boat, an opening in said boat, a trough below said opening, the mouth of which has sides and a floor which flares downwardly, vertical shutters sliding in the bow of the boat to close the mouth of said trough, a rack on each shutter, a shaft adjoining said shutters, a shifting pinion feathered on said shaft and adapted to engage the racks on the shutters, means for turning said shaft, and dog mechanism back of said racks.

2. A device of the class set forth, consisting of a boat, an opening in said boat, a trough below said opening, a mouth at one end of said trough, means for modifying the size of said mouth, wheels in said opening, a wall surrounding said opening, a shifting frame, on said wall, on which said wheels are journaled, means for permitting said frame to rise vertically, chains passing around the peripheries of said wheels, each link of which consists of a bar having a split end admitting the opposite end of the corresponding link, a pivot through the connecting ends of said links and a bracket on each bar, paddles attached to said brackets in inclined position and corresponding substantially in width and length with the transverse dimensions of said trough, transverse brace-rods between said links, power-transmitting mechanism connected with said wheels, and means for taking up the slack of said mechanism when the frame on which the wheels are journaled moves upward.

3. A device of the class set forth, consisting of a boat, an opening in said boat, a trough below said opening, wheels in said opening, chains carried by said wheels, each link of said chain consisting of a bar, pivot connections at each end of said bar and a bracket on each bar, a paddle attached to the brackets of each pair of links in in-

ained position and agreeing in width and length with the transverse dimensions of said trough, transverse brace-rods between each pair of links, and power-transmitting mechanism connected with said wheels.

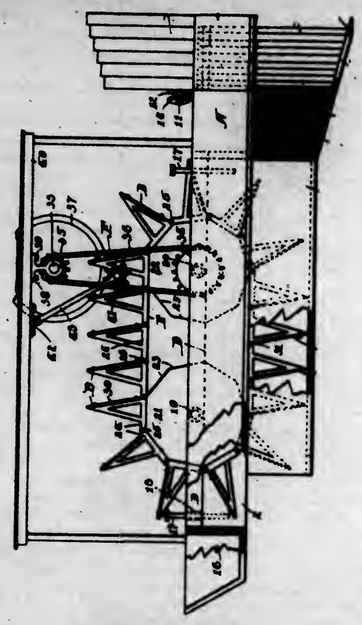

810,084. NUT-LOCK. HARRY R. ROSENBERG, Winona, Minn. Filed Sept. 21, 1905. Serial No. 279,445.

Claim.—1. A nut-lock comprising a spiral strip of resilient metal provided with a securing extension, said strip being recessed to permit overlapping of the coils of said spiral, substantially as described.

2. A nut-lock comprising a spiral strip of resilient metal provided with a securing extension at one end, said strip being recessed to permit overlapping of the coils of said spiral, substantially as described.

3. A nut-lock comprising a spiral strip of resilient metal provided with a securing extension, said strip being recessed to permit overlapping of the coils of said spiral, and a spring-dog carried by said spiral, substantially as described.

4. A nut-lock comprising a spiral strip of resilient metal provided with a securing extension projecting beyond said spiral, said strip being recessed at the intersection of said extension with the coil of the spiral to permit overlapping of the coils of said spiral, substantially as described.

5. A nut-lock comprising a spiral strip of resilient metal provided with a securing extension, said strip being provided with interlocking recesses to lock the spiral against distortion and unwinding, substantially as described.

6. A nut-lock comprising a spiral strip of resilient metal provided with a securing extension at one end, said extension and spiral being provided with interlocking recesses at their intersection to permit overlapping of the coils of said spiral and to lock said spiral against distortion and unwinding, substantially as described.

7. A nut-lock comprising a spiral strip of resilient metal adapted to be applied around a bolt between the nut and the part clamped, said strip being recessed to permit overlapping of the coils of said spiral, whereby said coils provide a spring-seat against diametrically opposite portions of the nut, and a spring-dog extending from the spiral above the plane of such spring-seat, substantially as described.

810,085. DUMPING-WAGON. DAVID M. ROWE, Oglesby, Ill. Filed Aug. 7, 1905. Serial No. 272,154.

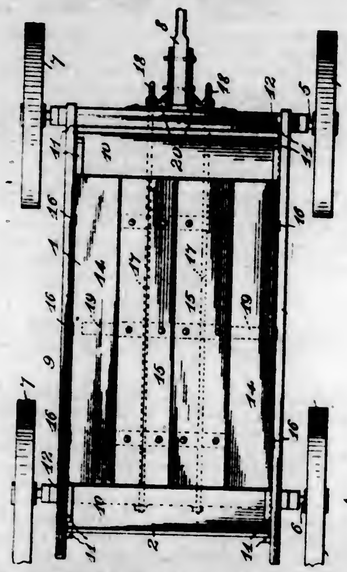

Claim.—1. A dumping-wagon comprising a body, a section hinged to one side of the same, a shaft, a section secured upon said shaft, an arm upon the last-mentioned section adapted to engage said hinged section to elevate and support the same, and means for operating said shaft, substantially as described.

2. A dumping-wagon comprising a body, a section hinged to one side of the same, a shaft, a section secured upon said shaft, an arm upon the last-mentioned section adapted to engage said hinged section to elevate and support the same, a lever secured upon said shaft and a latch for locking said lever, substantially as described.

3. A dumping-wagon comprising a body consisting of two parallel sides, two inclined ends, two outer bottom sections hinged to said sides, parallel shafts, intermediate bottom sections secured upon said shafts, arms upon said intermediate sections adapted to engage said outer sections to elevate and support the same, levers upon the forward ends of said shafts and locking devices for said levers, substantially as described.

810,086. ART OF MAKING STARCH. WILLIAM F. RUDEL, Aurora, Ind., assignor to Albert T. Gridley, Aurora, Ind. Filed Feb. 15, 1905. Serial No. 245,699.

Claim.—1. In the manufacture of chemical starch from corn, adding to the milk or liquor after it is separated from the hulls caustic soda until the liquor will titrate about twelve ten-thousandths ($\frac{12}{10000}$), then after the starch has been separated from the gluten and settled upon the runs, placing it in the washing-tubs, bringing it again to the liquid state and again adding caustic soda to the liquor until it titrates about thirty ten-thousandths ($\frac{30}{10000}$) and finally removing it from the ovens when the caustic soda in the lumps has been reduced to not more than five ten-thousandths ($\frac{5}{10000}$), substantially as hereinbefore set forth.

2. The method, substantially as herein described, for manufacturing starch from corn, which consists of the following steps: First steeping the corn in hot water at a temperature of from 150° to 160° Fahrenheit, then grinding the corn and separating the hulls from the milk, then adding caustic soda to the milk until it titrates about twelve ten-thousandths ($\frac{12}{10000}$), passing the milk so saturated over the runs to separate the starch from the slop and gluten, then placing the settled starch in the washing-tubs, adding sufficient water to bring it to the liquid state and again adding caustic soda until the fluid titrates about thirty ten-thousandths ($\frac{30}{10000}$), then running the liquor into settling-boxes and allowing it to settle for twelve hours or until it is ready for the crusting-room.

810,087. CARBURETER. STEPHEN P. SANDERS, Cupertino, Cal. Filed May 10, 1905. Serial No. 259,733.

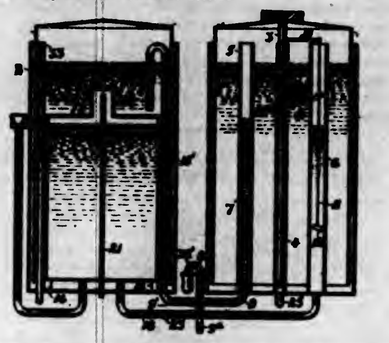

Claim.—1. A carbureting-machine having in combination two water-containing tanks, a bell in each tank, a receptacle submerged in one of said tanks and containing a liquid hydrocarbon, two tubes fixed to the bottom of the other tank and rising above the water-level thereof, one of said tubes containing an absorbent filling, means connecting the hydrocarbon-receptacle of the one tank with one of the tubes of the other tank, an air-supply connecting with the tube containing the filling, a pivotally-mounted bucket suspended from the bell and operatable in the tube which receives the hydrocarbon from the receptacle, a pipe connection between the two tubes, and means whereby on the raising of the bell the bucket is elevated to deliver its charge of hydrocarbon into the pipe connection for saturating the filling of the other tube, said bell, in its descent, forcing the carbureted air out of said filled tube, and means conducting the carbureted air to the bell of the other tank.

2. In a gas-machine the combination of a water-containing tank, a bell therein, a carbureter comprising a tube fixed in the tank and provided with an absorbent filling, said tube opening into the top of the bell, a second tube in said tank and means for delivering hydrocarbon to said second tube, a transverse connection between the two tubes, and means including a pivotally-suspended bucket operatable in the hydrocarbon and connected with the bell, for delivering predetermined quantities of liquid from the second tube into the first tube above the filling thereof.

3. In a gas-machine, the combination of a source of liquid-hydrocarbon supply, a gas-receiver, a tank to contain water, a bell in said tank, a carbureter in the tank and discharging into the bell, said carbureter comprising a tube submerged in the tank and containing an absorbent filling, said tube having its upper end open, means for delivering predetermined quantities of liquid from said source of supply into the carbureter, said delivery means including a pivotally-suspended bucket operatable in the hydrocarbon and connected with the bell, means whereby on the lifting of the bell a charge of air is drawn thereinto and through the carbureter, and connections between the interior of the bell and said receiver and through the carbureter whereby on the falling of the bell the air previously drawn thereinto is made to pass again through the carbureter.

4. A carbureting-machine having in combination two water-tanks placed side by side, a receiver for liquid hydrocarbon submerged in one of said tanks, two open-ended tubes fixed in the other tank and substantially submerged therein, and extending above the water-level thereof, one of said tubes containing a filling of absorbent material, and the other tube connecting with and adapted to hold liquid hydrocarbon, a bell for each tank, a tiltable bucket operatable in the liquid-holding tube and connected to move with the bell of that tank, a pipe forming a transverse connection between the two tubes and into which pipe the bucket empties its charge at intervals, means for vaporizing the liquid delivered to the tube containing the filling, and means for delivering the carbureted air to the bell of the other tank.

5. In a gas-machine, the combination of a carbureter having an absorbent filling, a carbureted-air receiver, connections between the carbureter and receiver means for delivering a predetermined quantity of liquid into said carbureter, said means including a tubular hydrocarbon-receiver being ovoidal in cross-section and a tubular bucket closed at one end and open at the other end and operable therein to make periodic delivery of hydrocarbon to the carbureter, and means for inducing a current of air through said carbureter in one direction and for returning the same through the carbureter in an opposite direction to the receiver.

6. In a gas-machine, the combination of a water-tank, a bell therein, a carbureter in the tank and opening into the top of the bell, a gas-receiver connected with the carbureter, an oil-well in the tank, means for delivering liquid into said well, means operated by the bell to discharge the quantity of liquid from the well into the carbureter, said last-named means including a pipe connecting the oil-well with the carbureter, a suspended bucket operatable in the oil-well and tiltable to discharge into said connecting-pipe, and means connecting the bucket with the bell, connections between the carbureter and a source of air-supply, means for lifting the bell to induce a current of air through the carbureter and means to permit the bell to fall to expel the air so induced, through the carbureter.

7. In a gas-machine, a carbureter, a gas-receiver connected therewith, an oil-well connected with a source of supply, connections between the well and carbureter above the normal level of the liquid in the well, means for alternately creating suction and compression in the carbureter, and means operated by said suction and compression means for delivering a predetermined quantity of liquid from said well into the carbureter, said last-named means including a bucket connected to move with the bell and operatable in the oil-well, said bucket being tiltably mounted whereby it automatically discharges into the connection between said well and carbureter.

8. In gas-machine construction, the combination of a tank, a bell therein, a carbureter, a receiver connected with the carbureter, means to reciprocate the bell, an oil-well connected with the carbureter and means to deliver a predetermined quantity of liquid into said carbureter, said well being of greater diameter in one direction than in the other and said means for delivering liquid from said well into the carbureter including an elongated bucket supported intermediate of its ends and suspended from the bell, and trip means in the path of the bucket to effect its discharge.

810,088. CASKET-HANDLE. EDWARD R. SARGENT, New Haven, Conn., assignor to Sargent & Company, New Haven, Conn., a Corporation of Connecticut. Filed Sept. 10, 1903. Serial No. 172,663.

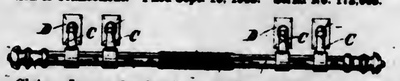

Claim.—In a casket-handle or similar article, the combination with a core or bar; of a series of tubes of substantially the same diameter extending in succession on said core or bar; a sleeve on said bar or core overlapping the extremities of adjoining tubes; and arms secured to said tubes, said core or bar extending from one arm to the other, whereby said handle may be elongated by separating the ends of adjoining tubes without disclosing said bar or core, substantially as described.

810,089. MAIL-BOX. EDWARD G. SEABOLDT, Sunbury, Pa. Filed Aug. 26, 1905. Serial No. 276,086.

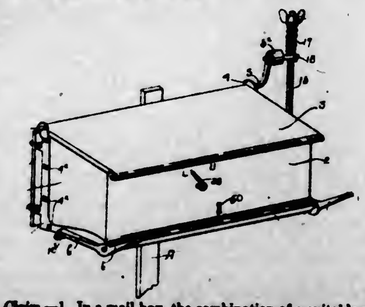

Claim.—1. In a mail-box, the combination of a suitable mounting-board, a body portion, a lid fitted thereto, a pivotally-mounted bottom, and bearing-plates adapted to secure said lid to the body portion thereof and to secure said body portion to the mounting-board.

2. In a mail deposit and delivery box, the combination of a body portion, a lid secured thereto, a bottom mounted on a longitudinal axis eccentrically of the width of said bottom, said axis being journaled in bearing-plates secured to the body portion and means connecting said bottom to said lid, substantially as described.

3. In a mail deposit and delivery box, the combination of a body portion, a lid therefor, a bottom mounted eccentrically of the width thereof and adapted to swing into a vertical position, and means connecting said bottom with said lid, so adapted that the closing of said lid will move said bottom into the closed position.

4. In a mail deposit and delivery box, the combination of a body portion, a bottom therefor adapted to be swung along a longitudinal axis, said bottom being of a different color from the body portion and automatically-operating means for securing and retaining said bottom in its closed position.

5. In a mail deposit and delivery box, the combination of a body portion, a lid therefor, a bottom mounted on a longitudinal axis eccentrically of the width, means connecting said bottom with the lid, said means consisting of a crank secured to the axis of the bottom, a rod pivoted at one end to said crank and the other end slidably connected with the lid, and so adapted that the bottom may be swung into an open position without opening said lid, substantially as described.

6. In a mail-box, the combination of a body portion, a lid with means thereon for securing the same by a locking member, said locking member being secured within the body portion and on the walls thereof, a bottom mounted on a longitudinal axis, independent means for supporting said bottom in a closed position, said supporting means adapted to be locked when said locking member is in the locking position, substantially as described.

7. In a mail-box the combination of a body portion, a locking-lever adapted to slide in brackets and fitted with a spring tending to return said locking-lever to the locking position, a bottom fitted to said body portion, means for placing same in a depending position, means for supporting said bottom in a closed position, said means adapted to be operable only when the locking-lever is in the unlocked position, substantially as described.

8. In a mail deposit and delivery box, the combination of a body portion, a bottom colored differently from the body portion mounted on a longitudinal axis eccentrically of the width and adapted to be swung for a signal, means for supporting said bottom in a closed position, said means consisting of a bar mounted in the bearing-plates, said bar being arranged to be rocked and adapted to be returned to its normal position and to be held there by an arm mounted thereon eccentrically.

9. In a mail-box, the combination of a locking-lever on the walls thereof, a plate attached thereto and adapted to engage a suitable shoulder when said locking-lever is in its unlocked position, to render said locking-lever impossible of locking the lid of said box, and a supporting means for the bottom thereof.

10. In a mail-box, the combination of a body portion, a lid, a bottom arranged to be swung on a longitudinal axis, a locking-lever slidably secured to the body portion, a plate attached to said lever and arranged to swing into the path of the bottom when said bottom is opened, and adapted to disengage the locking-lever when said bottom is swung into the closed position, substantially as set forth.

11. In a mail-box, the combination of a body portion, a locking-lever slidably arranged in grooves in brackets secured to the walls thereof, shoulders on said lever to hold the same in position and means whereby said shoulders are held in engagement with said grooves, and a spring fitted to said lever operating to slide said lever into the locking position whenever said shoulders are disengaged.

12. In a mail-box, the combination of a body portion, a lid fitted thereto, a shaft, a locking-lever secured to the walls of said body portion, said lever being slidable and connected by a suitable rod to an arm on said shaft, said shaft having fixed thereto a pointer arranged on the outside of the walls of the box and adapted to indicate by suitable symbols the position of said locking-lever.

13. In a mail deposit and delivery box, the combination of a body portion, a lid fitted with means for being locked, said means being slidable and actuated by a spring to insure engagement with the locking-lever in its locking position, a bottom mounted to swing on a longitudinal axis eccentrically of the width, a crank on said axis, a rod connecting the crank on said longitudinal axis with the lid in a slidable connection by means of an eyebolt, said eyebolt arranged to work against the spring on said rod, and a nut on said rod whereby the force of said spring may be adjusted.

14. In a mail-box, the combination of a body portion, a rod having a crank at one end thereof, a lid hinged on said rod, a bottom adapted to swing into a depending position and serve as a signal, means connecting said bottom with the lid, whereby the closing of the lid will also close the open bottom, and so adapted that the bottom may be swung open independently of the closed lid, substantially as set forth.

15. In a mail deposit and delivery box, the combination of a body portion, a bottom-supporting bar, a locking-lever secured on the front wall thereof and within the box, said lever adapted simultaneously to lock the lid and the bottom-supporting bar, said lever carrying a plate arranged to be positioned in the path of the open bottom and adapted to disengage the locking-lever from its unlocking position, when the bottom is brought into the closed position, and thus simultaneously lock the lid and the bottom, substantially as described.

810,090. CALCULATING-MACHINE. JOHN M. SHARP, Chattanooga, Tenn. Filed Apr. 28, 1904. Serial No. 205,862.

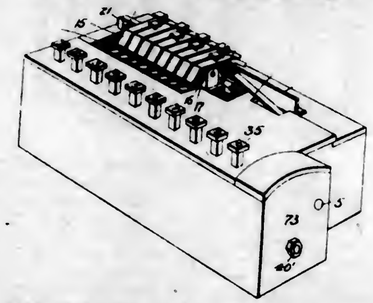

Claim.—1. In combination in a calculating-machine, a series of number-wheels, a carrier therefor spring means for moving the carrier in one direction, order-keys controlling the said means, a device for moving the carrier positively in the opposite direction digit-keys and connections therefrom for turning the number-wheels and for operating the said devices, substantially as described.

2. In combination in a calculating-machine, a series of number-wheels, a shifting carrier therefor, said number-wheels having internal teeth, a setting or turning device to engage said internal teeth and hold against movement axially of the number-wheels, order-keys with means controlled thereby for moving the carrier to bring the number-wheel of the desired order to engage the setting device and digit-keys with connections therefrom to the turning or setting device to turn the number-wheel to expose the desired digit, said connections including an adjustable part whereby the machine may be made to add or subtract, substantially as described.

3. In combination in a calculating-machine, a series of number-wheels, a shifting carrier therefor, said number-wheels having internal teeth, a setting or turning device to engage with said internal teeth, order-keys with means controlled thereby for moving the carrier to bring the number-wheel of the desired order to engage the setting device and digit-keys with connections therefrom to the turning or setting device to turn the number-wheel to expose the desired digit, substantially as described.

4. In combination in a calculating-machine, a series of number-wheels having internal teeth, a carrier for the number-wheels a turning or setting device to engage the internal teeth, order-keys with means controlled thereby for shifting the carrier to bring the desired number-wheel to engage the setting device, digit-keys with connections to the setting device for operating the same and means controlled by the operation of the digit-keys for shifting the carrier one step for each operation, to cause the number-wheels to successively engage the setting device, substantially as described.

5. In combination in a calculating-machine, a series of number-wheels, one for each order of digits, a shifting carrier therefor, a rotary shaft along which the carrier shifts, said shaft having associated therewith a number-wheel-setting device order-keys with means for arresting the carrier to correspond with the order-key operated and digit-keys with connections to said shaft for turning the number-wheels, substantially as described.

6. In combination in a calculating-machine, a series of number-wheels, a carrier therefor, said wheels having internal teeth, a shaft passing through the number-wheels and along which the group of number-wheels may shift, a setting device comprising a pin or projection associated with the said shaft and adapted to engage the internal teeth of the number-wheels; order-keys with means associated therewith for setting the number-wheel of the desired order into engagement with the said pin and digit-keys for turning the said shaft with the pin and thus turning the number-wheel to expose the digit desired, substantially as described.

7. In combination in a calculating-machine, a series of number-wheels, a carrier therefor, a series of order-keys each arranged to act as a stop, spring-controlled escapement mechanism for operating the carrier, a band arranged to be pressed by the order-keys for operating the escapement, a setting or turning device for the number-wheels to which they are brought by the movement of the carrier and digit-keys with connections to the said setting or turning device, substantially as described.

8. In combination in a calculating-machine, a series of number-wheels, a carrier therefor, order-keys on the carrier, a stop on the frame, arranged to be struck by any order-key when depressed spring-pressed escapement mechanism for operating the carrier, a band controlling the same arranged to be operated by the depression of an order-key, a turning or setting device for the number-wheels, digit-keys and connections therefrom to the turning or setting device, substantially as described.

9. In combination in a calculating-machine, a series of number-wheels, a carrier therefor said wheels having internal teeth, a turning or setting device for engaging the internal teeth an escapement mechanism for moving the carrier order-keys controlling the escapement, stop means, digit-keys connections therefrom to the setting device, and means for operating the carrier from the digit-keys comprising a pawl to act on a part of the escapement, and a lever-plate operated by any one of the digit-keys and serving to set the pawl ready to act said pawl having a spring to move it when the digit-key is released, substantially as described.

10. In combination in a calculating-machine for addition and subtraction, a series of number-wheels a carrier therefor, said wheels having internal teeth, a setting device to which the carrier moves the wheels consisting of a pin or projection to engage the said internal teeth, rotary means carrying the said pin, digit-keys and connections therefrom for operating the said pin-carrying means circumferentially in either direction, to rotate the pin in either direction to turn the number-wheels for addition or subtraction, substantially as described.

11. In combination in a calculating-machine, a series of number-wheels internally toothed, a sleeve along which the series of wheels may slide, a pin on said sleeve to engage the internal teeth, a shaft passing through the said sleeve digit-keys, connections therefrom for driving the shaft in either one direction or the other and means for transmitting the movement of the shaft to the sleeve, substantially as described.

12. In combination in a calculating-machine, a series of number-wheels, a carrier therefor said number-wheels having internal teeth a sleeve having a pin thereon to engage the internal teeth of the number-wheels a shaft passing through the said sleeve and movable longitudinally, a pinion on the said shaft, adding and subtracting toothed segments with either of which the said pinion may be engaged by shifting the shaft, digit-keys and means for operating the segments therefrom, substantially as described.

13. In combination in a calculating-machine, a series of number-wheels, a carrier therefor, said number-wheels having internal teeth, a sleeve, a pin thereon to engage the internal teeth, a shaft passing through the sleeve, digit-keys with means for driving the shaft in either direction from the said digit-keys and pawl-and-ratchet mechanism between the shaft and sleeve, substantially as described.

14. In combination in a calculating-machine, a series of number-wheels a carrier therefor, said wheels having internal gear-teeth, a sleeve having a pin to engage said gear-teeth a shaft within the sleeve arranged to be shifted longitudinally digit-keys, means for turning the shaft from the digit-keys in either one direction or the other according to the longitudinal position of the shaft and a screw-threaded head on the said shaft with a handle for turning the same said head turning in a fixed part to move the shaft longitudinally, substantially as described.

15. In combination in a calculating-machine, a series of number-wheels, a turning or setting device therefor, digit-keys for operating the said turning device, a carrier for the number-wheels, connections for moving the said carrier from the digit-keys and a key-lock arranged to be controlled by the operation of the said connections, substantially as described.

16. In combination in a calculating-machine, a series of number-wheels, a carrier therefor, digit-keys, connections for operating the carrier from the digit-keys comprising the lever-plate arranged below the keys to be operated thereby, and a key-lock comprising a pivoted frame held normally away from the keys when the lever-plate is in its upper position, substantially as described.

17. In combination in a machine of the class described, a series of vertically-extending keys, a number-wheel carriage, a lever with means between the same and the number-wheel carriage for operating it, said lever being arranged to be depressed by the keys, a key-lock, and springs for holding the unoperated keys up until the lock is set, said springs being normally compressed by the lever when in its uppermost position, substantially as described.

810,091. VEHICLE-TRUCK. WILLIAM H. SPRINGER, Peoria, Ill., assignor to Avery Manufacturing Company, Peoria, Ill., a Corporation of Illinois. Filed Apr. 4, 1903. Serial No. 151,126.

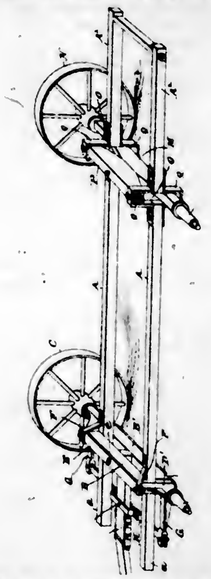

Claim.—1. The herein-described truck for threshing and separating mechanism, consisting of the combination of the rear wheels and axle, the front-axle beams, the side-sill bars A A adapted to support the thresher-frame and extending across the front-axle beams to points in front thereof, the support for the threshing-cylinder connected to the side sills at points in front of the front axle and at points in rear thereof, the front wheels in the transverse line of the said front-axle beams, the vertical hinges for the wheels, the lever-bars connected with the wheel-spindles, and the laterally-swinging draft devices connected with the said lever-arms, substantially as set forth.

2. In a truck for a threshing and separating mechanism, the combination of the bottom side sills A A adapted to support the threshing-cylinder, its supporting-frame and the band-cutting and feeding apparatus secured to and projecting forward from said frame and extending continuously from the cylinder-supporting framework backward to the rear axle, the front-axle beams situated on transverse lines behind the front ends of the said sills A A, the front wheels intersecting the horizontal planes of the said sills A A, the short stub axles or spindles for said front wheels hinged on vertical axes, the lever-arms connected to said stub-spindles, the laterally and vertically vibratable tongue and means for connecting said tongue with the said lever-arms, substantially as set forth.

3. In a truck for a threshing and separating mechanism, the combination of the framework supporting said mechanisms, the front wheels, wheel-supporting devices adapted to hold the axes of said wheels against vertical vibration, but permitting horizontal vibration thereof, the thresher-frame sills A A extending continuously forward of the said front-wheel axes, the rear wheels, the support for the rear wheels adapted to permit their axes to vibrate vertically in relation to the thresher-frame, and means for holding them against vibration horizontally, substantially as set forth.

4. In a truck for a threshing and separating mechanism, the combination of the framework adapted to support the threshing and racks located at opposed stations, travelers having gear meshing

a spiral spring surrounding the tube and bearing

4. In a truck for a threshing and separating mechanism, the combination of the framework adapted to support the threshing and straw-separating devices and having the bottom elongated sill-bars A A, the axle-loops O extending from below said sill-bars to points above them, the extension sill-bars A^2 at the rear of and secured to said loops, the rear axle passing through the said loops, the ground-wheels on the said axle, means for preventing the endwise movement of the axle relatively to the frame, but permitting it to rock vertically, the front wheels situated behind the front ends of the sill-bars A A, and each adapted to be turned horizontally on an independent vertical axis, substantially as set forth.

5. In a vehicle-truck, the combination of the elongated sills A A, the front-wheel-supporting devices arranged between the ends of the said sills in a plane transverse to the said sills and adapted to hold the wheels against vertical vibration but permitting the horizontal vibration thereof, the front wheels mounted on said supporting devices, the rear wheels, the support for the rear wheels adapted to permit their axes to vibrate vertically in relation to the sills A A, and means for holding the said rear wheels against vibration horizontally.

6. In a vehicle-truck, the combination of the bottom elongated sills A A, the axle-loops O extending from below the said sills to points above them, the extension-sills A^2 at the rear of and secured to the said loops, the rear axle passing through said loops, the ground-wheels on the said axle, means for preventing the endwise movement of the axle relative to the frame, but permitting it to rock vertically, the front axle, and the front wheels mounted thereon.

810,092. STORE-SERVICE APPARATUS. GUSTAV STAIB, New York, N. Y. Filed Feb. 10, 1905. Serial No. 245,005.

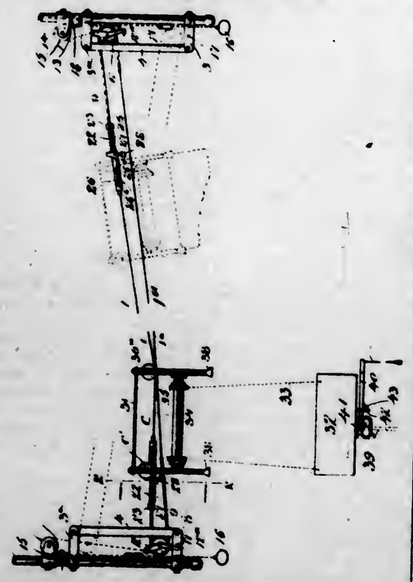

Claim.—1. A store-service apparatus comprising upwardly-disposed guides located at opposed stations, travelers guided by said guides, an endless connection between said travelers, wheels comprised in and connecting said travelers with said endless connection, and means for causing said wheels to rotate during the operation of the travelers for operating said endless connection by the vertical movement of one traveler to cause the other traveler to descend, substantially as described.

2. A store-service apparatus comprising a plurality of racks located at opposed stations, travelers having gears meshing with said racks, a conveyer-track extending between said stations, and means for causing the rotation of said gears to impart longitudinal movement to the track to operate the corresponding traveler, substantially as described.

3. A store-service apparatus comprising upwardly-disposed racks located at opposed stations, travelers having gears meshing with said racks, sprockets connected with said gears, and an endless track between said stations provided with chains meshing with said sprockets, whereby as one traveler is raised it will operate the track and chains to cause the opposite traveler to descend, substantially as described.

4. A store-service apparatus comprising upwardly-disposed racks located at opposed stations, travelers having gears meshing with said racks, sprockets connected with said gears, chains passing over said sprockets, wires connecting the corresponding ends of opposed chains, and means for elevating the travelers, whereby as one traveler rises the chains and wires will operate the gear of the other traveler to cause the latter to descend, substantially as described.

5. A store-service apparatus comprising a pair of upwardly-disposed guides located at opposed stations, racks associated with said guides, travelers at each station having rollers and gears for coacting with the associate guides and racks, said travelers having sprocket-wheels, an endless connection between the travelers provided with chains passing over said sprockets, and means for elevating the travelers, whereby when one traveler is elevated the chains and connection will be moved to cause the other traveler to descend, substantially as described.

6. A store-service apparatus comprising upwardly-disposed guides located at opposed stations, travelers guided by said guides, a track between said travelers, flexible connections for operating each traveler, pulleys over which such connections pass, a weight connected with the free portion of each connection, and pulleys over which said weights pass, whereby the lower free ends of the flexible connections are kept raised, substantially as described.

7. A store-service apparatus comprising guides located at opposed stations, travelers guided by said guides, a track connected with said travelers, locks connected with the travelers for holding them in a lowered position, means for raising said travelers and for simultaneously releasing said locks, substantially as described.

8. A store-service apparatus comprising upwardly-disposed guides located at opposed stations, travelers guided by said guides, a track connected with said travelers, hooks movably connected with said travelers, projections to receive said hooks, flexible connections connected with said hooks, and pulleys for said flexible connections, whereby when said connections are pulled the travelers will be unlocked and elevated, substantially as described.

9. A store-service apparatus comprising racks located at opposed stations, travelers provided with gears meshing with said racks, yokes connected with said travelers and provided with hooks, projections to be engaged by said hooks, flexible connections connected with said yokes, and pulleys receiving said connections, said hooks being supported in position to engage the projections when the travelers are lowered, the flexible connections when pulled serving to release the hook from the projections and elevate the travelers, substantially as described.

10. A store-service apparatus comprising pairs of upwardly-disposed guides located at opposed stations, means for supporting said guides to have a space between them, racks associated with said guides, travelers provided with rollers engaging the guides and also having gears engaging the racks, yokes movably connected with the travelers, hooks connected with the yokes, projections to be engaged by the hooks, flexible connections extending from the yokes, and pulleys receiving said connections, substantially as described.

11. A store-service apparatus comprising pairs of upwardly-disposed guides located at opposed stations, means for supporting said guides to have a space between them, racks associated with said guides, travelers provided with rollers engaging the guides and also having gears engaging the racks, yokes movably connected with the travelers, hooks connected with the yokes, projections to be engaged by the hooks, flexible connections extending from the yokes, pulleys receiving said connections, a weight associated with each traveler, a flexible connection extending from each weight and connected with the flexible connection of the corresponding traveler, and pulleys receiving the connections of the weights, whereby said weights keep the free part of the first-named connections elevated when not in use, substantially as described.

12. In a store-service apparatus the combination of a track, with a brake-shoe movably carried thereby and having an abutment at one end, means to suspend the brake-shoe upon the track, a spiral spring surrounding the track, and an abutment on the track, the spring being located between the abutment and the brake-shoe, substantially as described.

13. In a store-service apparatus the combination of a track, with a tube thereon, an abutment on the track adjacent to the tube, a spiral spring surrounding the tube and bearing against the abutment, and a brake-shoe mounted upon the tube and having an abutment, said shoe bearing against said spring, substantially as described.

14. In a store-service apparatus the combination of a track, with a tube thereon, an abutment on the track adjacent to the tube, a spiral spring surrounding the tube and bearing against the abutment, a brake-shoe mounted on the tube and having an abutment, said shoe bearing against the spring, and means to support the brake-shoe slidably upon the tube, substantially as described.

15. In a store-service apparatus the combination of a track, with a shoe mounted thereon, and a resilient stop for the shoe, said shoe having ledges on opposite sides and an abutment at one end, said ledges being depressed adjacent to the abutment to receive the wheel of the carrier, substantially as described.

16. In a store-service apparatus the combination of a track, with a tube mounted thereon, a brake-shoe having a recess on its under surface mounted upon said tube, a spring to resist the thrust of the shoe, said shoe having an abutment adjacent to the spring, and ledges on the shoe on the side of the abutment opposite the spring, substantially as described.

17. In a store-service apparatus the combination of a track, with a tube mounted thereon, a brake-shoe having a recess on its under surface mounted upon said tube, a spring to resist the thrust of the shoe, said shoe having an abutment adjacent to the spring, ledges on the shoe on the side of the abutment opposite the spring, and arms depending from the shoe to maintain the shoe upon the tube, substantially as described.

810,093. ENVELOP-SEALER. LOLA O. STAMBART, Portland, Oreg., assignor of two-thirds to O. W. Mielke, Portland, Oreg. Filed July 18, 1905. Serial No. 270,242.

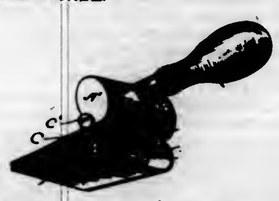

Claim.—1. The combination with a tank, of a moistening-pad connected to said tank, and spaced plates carried by said tank for sealing the article the under plate having a curved edge for the purpose described.

2. The combination with a tank of a frame detachably connected thereto, a pad carried by said frame, a roller carried by said frame under the pad, and plates extending from said tank adapted to engage the envelop and flap, for the purpose described.

3. The combination with a tank provided with a spaced metal plate extending therefrom, of a frame detachably secured to said tank to the rear of the plates, and a moistener carried by the frame, a roller journaled in said frame supporting the tank and plate for the purpose described.

4. The combination with a tank provided with spaced metal plate extending therefrom, an opening formed in said tank, a handle secured in said opening and a moistener carried by the tank, for the purpose described.

5. The combination with a tank provided with spaced metal plate extending therefrom, an opening formed in the under side of the tank a frame detachably secured to said tank, a pad carried by said frame, and extending up in the opening in the tank, a roller mounted on the frame and supporting the tank, and a removable handle connected to said tank, for the purpose described.

6. The combination with a tank provided with a screw-threaded neck, and having spaced plates extending therefrom, the under plate being cut away, an opening formed in the bottom of said tank, to one side, of a wire frame secured to one side of the tank, and projecting under the tank, a metal strip secured to said frame having downwardly-projecting ears, a pad secured on said strip, a roller journaled in said ears, and a handle secured in said screw-threaded neck of the tank, for the purpose described.

810,094. MECHANICAL FLY-TRAP. THOMAS W. THRESHER, Cheyenne, Okla. Filed Sept. 20, 1905. Serial No. 279,228.

Claim.—1. In a mechanical fly-trap, a casing having an aperture in the top thereof, a cylinder supported for rotation therein, a trap supported directly above the aperture in the top of the casing above said cylinder, a scraper directed from the rear edge of the aperture radially toward the cylinder, and a hood extending from the upper front edge of the casing over and beyond the front side of the cylinder.

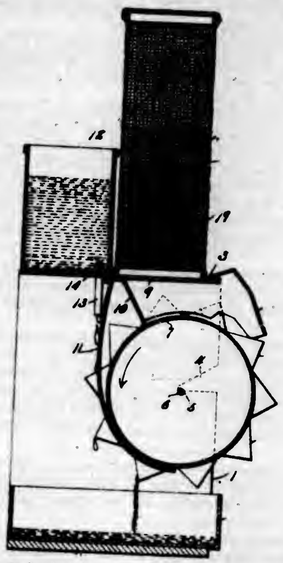

2. In a mechanical fly-trap, a casing having an aperture in the upper side thereof, a slowly-driven cylinder supported for rotation in said casing, a trap supported above the aperture, and a hood extending from the upper front edge of the casing forwardly over and beyond the front side of the cylinder.

3. In a mechanical fly-trap, a rectangular frame having an aperture in its upper side, a slowly-driven cylinder supported for rotation in the casing, a trap supported above the aperture, a hood extending from the upper front edge of the casing forwardly over and beyond the front side of the cylinder, a scraper directed from the rear edge of the aperture toward the cylinder, and a shield depending in rear of the scraper behind and beneath the cylinder.

4. In a mechanical fly-trap, a casing having an aperture in the top thereof, a cylinder supported for rotation therein, a trap supported directly above the aperture in the top of the casing above said cylinder, a scraper directed from the rear edge of the aperture radially toward the cylinder, a curved shield disposed in rear of the scraper and adjacent to the cylinder, and a hood extending from the upper front edge of the casing over the cylinder.

810,095. STOCKING AND PROCESS OF MANUFACTURING SAME. MAX THUN, Reading, Pa., assignor to Textile Machine Works, Wyomissing, Pa., a Corporation of Pennsylvania. Filed June 23, 1904. Serial No. 213,662.

Claim.—1. A stocking knitted throughout of the same yarn and having a foot portion thereof subsequently shrunken to vary the texture of such portion.

2. A varicolored stocking knitted throughout of the same yarn and having its upper portion dyed and its lower portion undyed and shrunken.

3. A varicolored stocking knitted throughout of the same yarn and thereafter dyed in the whole, the dyestuff being subsequently removed from the lower portion of its foot.

4. A varicolored stocking knitted throughout of the same yarn and thereafter dyed in the whole, the dyestuff being subsequently removed from the lower portion of its foot and such portion being shrunken to vary its texture.

5. A varicolored stocking knitted throughout of the same yarn and thereafter dyed in the whole, the dyestuff being subsequently removed from the lower portion of its foot and the original and dyed colors being intermixed to form a figured meeting line between them.

6. A varicolored stocking knitted throughout of the same yarn and thereafter dyed in the whole, the dyestuff being subsequently removed from the lower portion of its foot and the original and dyed colors being intermixed to form an interlocking stitch effect at the meeting line.

7. A varicolored stocking knitted throughout of the same yarn and thereafter dyed in the whole, the dyestuff being subsequently removed to provide an undyed foot portion and a figured upper portion.

8. The improved process of manufacturing stockings which consists in knitting the fabric throughout of the same yarn and subsequently shrinking a foot portion only, to vary its texture.

9. The improved process of manufacturing varicolored stockings which consists in knitting the fabric throughout of the same yarn, dyeing the upper portion, and shrinking the undyed foot portion.

10. The improved process of manufacturing varicolored stockings which consists in knitting the fabric throughout of the same yarn, dyeing the whole fabric, and subsequently removing the dyestuff from the foot portion.

11. The improved process of manufacturing varicolored stockings which consists in knitting the fabric throughout of the same yarn, dyeing the whole fabric, and subsequently removing the dyestuff from the foot portion and shrinking such portion.

12. The improved process of manufacturing varicolored stockings which consists in knitting the fabric throughout of the same yarn, dyeing the whole fabric, and subsequently removing the dyestuff solidly from the lower foot portion thereof and brokenly at the meeting line of said lower foot portion to produce an ornamental effect at said meeting line.

13. The improved process of manufacturing varicolored stockings which consists in knitting the fabric throughout of the same yarn, dyeing the whole fabric, and subsequently removing the dyestuff solidly from the lower foot portion thereof and brokenly at the meeting line of said lower foot portion to produce an interlocking stitch effect.

14. The improved process of manufacturing varicolored stockings which consists in knitting the fabric throughout of the same yarn, dyeing the whole fabric, and subsequently removing the dyestuff to produce an undyed foot portion and a figured upper portion.

15. The improved process of manufacturing varicolored stockings which consists in knitting the fabric throughout of the same yarn, impregnating the whole fabric with dyestuff, mounting the fabric upon an interior support and applying a dye-neutralizing agent to the foot portion of the stocking.

16. The improved process of manufacturing varicolored stockings which consists in knitting the fabric throughout of the same yarn, impregnating the whole fabric with oxidizing dyestuff, mounting the fabric upon an interior support, applying a dye-neutralizing agent to the foot portion of the stocking, and thereafter oxidizing the unneutralized dyestuff.

17. The improved process of manufacturing varicolored stockings which consists in knitting the fabric throughout of the same yarn, impregnating the whole fabric with oxidizing dyestuff, mounting the fabric upon an interior support, applying an alkaline dye-neutralizing agent to the foot portion of the stocking, and thereafter oxidizing the unneutralized dyestuff.

810,096. PIPE-WRENCH. JOHN H. VINSON, Boston, Mass., assignor to Louis C. Smith, Winthrop, Mass. Filed Jan. 24, 1905. Serial No. 242,468.

Claim.—1. In a wrench of the character described, a bar or shank provided with rack-teeth on its under side and a stationary jaw integral therewith; a movable jaw comprising the yoke or covering *h* and the solid working portion *e* substantially filling said yoke or covering; and a solid nut provided with a worm engaging the rack-teeth and having trunnions integral with the nut held in place in the portion *c* by said covering *h*, substantially as set forth.

2. In a wrench of the character described, a bar or shank provided with teeth on its under side, and a stationary jaw integral therewith; a movable jaw comprising the main or working portion *e*, and the yoke or covering *h* rigidly secured to the main portion and loosely embracing the said shank whereby the movable jaw can swing with relation to the shank; and a solid nut provided with a worm engaging the teeth and supported by said yoke or covering, substantially as set forth.

3. In a wrench of the character described, a bar or shank provided with rack-teeth on its under side and a stationary jaw integral therewith; a movable jaw comprising the yoke or covering *h* provided with the opposite openings *w* and with integral extensions *y* projecting into said openings, and a solid inserted working portion *e* provided with a recess substantially registering with and between said openings; and a nut provided with a suitable worm and having an annular groove *v* in its cylindrical portion into which the said parts *y* extend, said extensions *y* bearing against the opposite sides of the nut within the groove *v*, and said nut being supported by the inserted portion *e* and with its worm extending through the opposite openings in the covering portion *h*, for the purpose set forth.

810,097. WELL-BORING APPARATUS. ANDREW K. WALLIS, Sr., Jackson, Miss. Filed May 5, 1903. Serial No. 155,756.

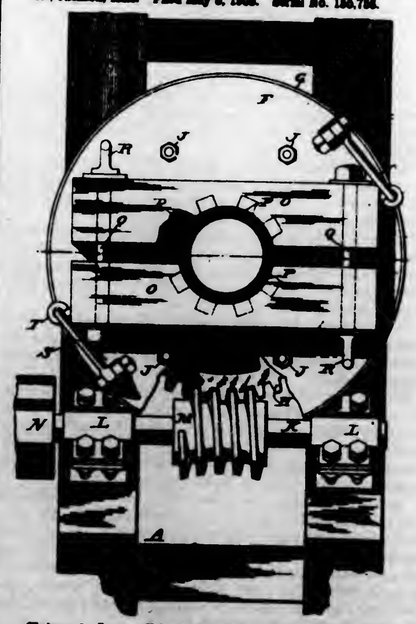

Claim.—1. In a well-boring machine, the combination of a rotatable table; a clamp comprising two blocks or timbers O, O, each having a semicircular recess formed in the face adjacent to the corresponding member; yielding plugs mounted in the blocks in line with said recesses; bolts Q extending through said blocks, one end of each bolt being provided with an enlarged eye R; and means for securing said members O to the table.

2. In a well-boring machine, the combination of a rotatable table; a clamp comprising two blocks or timbers O, O, each having a semicircular recess formed in the face adjacent to the corresponding member; yielding plugs mounted in the blocks in line with said recesses; bolts Q extending through said blocks, one end of each bolt being provided with an enlarged eye R; hooks pivotally secured to the table; and means for securing connection between said hooks and the blocks or timbers.

810,098. CORN-HUSKER. THEOPHIL P. WALTER, Beatrice, Nebr., assignor to The Beatrice Manufacturing Company, Beatrice, Nebr., a Corporation of Nebraska. Filed Mar. 26, 1905. Serial No. 252,481.

Claim.—1. In a corn-husker, the combination with a base member having a pivot-receiving opening, a plurality of sockets disposed radially with respect to said opening, and a slot arranged concentric to said opening, of a husk-engaging member comprising a body having at one end a pivot that engages in the pivot-receiving opening and at its other end an outstanding husk-engaging hook, said body, furthermore, being provided with an inset tooth that engages in the sockets, and holding means passing through the slot of the base member and engaging the body of the husk-engaging member.

2. In a corn-husker, the combination with a base member having an opening, of a husk-engaging member having an offset longitudinally-extending element at one end that engages in the opening and interlocks with the base member and an outstanding hook at its other end, and a device detachably engaging the husk-engaging member between its ends and between the hook and interlocked element, said device engaging the base member and holding the husk-engaging member against movement thereon.

3. In a corn-husker, the combination with a base member, of a husk-engaging member having a substantially flat body portion that rests against the base member and is provided with an outstanding curved hook at one end, the curved portion of said hook having a longitudinally-disposed strengthening-rib that terminates at the body portion to permit the same to lie upon the base member, and means for securing the husk-engaging member to the base member.

4. In a corn-husker, the combination with a base member having an opening, of a husk-engaging member having a substantially flat body portion that rests against the base member and is provided at one end with a longitudinally-extending element that engages in the opening and interlocks with the base member, said body portion being provided at its opposite end with an outstanding curved hook overhanging the body portion and terminating short of the longitudinally-extending element, said hook having a longitudinally-disposed strengthening-rib that terminates at the body portion to permit of the same lying upon the base member, and a device engaging the body portion and the base member to hold the former against movement on the latter.

5. In a corn-husker, the combination with a base member having a pivot-receiving opening, a plurality of sockets disposed radially with respect to said opening and a slot arranged concentric to said opening, of a husk-engaging member comprising a body having at one end a pivot that engages in the pivot-receiving opening and at its other end an outstanding husk-engaging hook, said body being furthermore provided with an inset tooth that engages in the sockets, and a holding-screw passing through the slot of the base member and engaging the body of the husk-engaging member.

6. In a corn-husker, the combination with a base member, of a husk-engaging member, one of said members having a plurality of sockets, the other having a tooth that engages in the sockets, a pivotal connection between the members, and means separate from the pivotal connection and connecting the members at one side thereof for holding the tooth in different sockets and the husk-engaging member against pivotal movement on the base member.

7. In a corn-husker, the combination with a base member having an opening and a socket, of a husk-engaging member comprising a body-plate having an offset integral lug at one end that engages in the opening, an outstanding integral hook at the other end, and an intermediate integral tooth that fits in the socket, and means independent of the lug and connecting the plate and base member at one side of said lug to hold the same against relative movement.

8. In a corn-husker, the combination with a base member, of a husk-engaging member mounted thereon and comprising a sheet-metal body-plate having an outstanding curved and overhanging hook, the curved portion of said hook being provided with a longitudinally-disposed stamped strengthening or stiffening rib that terminates short of the body-plate and the end of the hook.

9. In a corn-husker, the combination with a base member having an opening, of a husk-engaging member comprising a body portion that rests against the base member, said husk-engaging member having a longitudinally-disposed offset retaining-lug that projects beyond one end of the body portion and is movable through the opening into and out of engagement with the opposite side of the base member to that against which the body portion rests, and having at its other end an outstanding hook that extends toward the end having the lug, and a holding device connecting the base member and the body portion between the retaining-lug and the hook.

10. In a corn-husker, the combination with a wrist-strap having an extension-flap at one of its side margins, of a base secured to one end of the strap and extending over the flap, a palm-strap secured to the other end of the base, said base having an opening, a husk-engaging member comprising a body portion having an offset terminal retaining-lug that projects beyond the body portion and engages in the opening of the base, an outstanding hook located at the other end of the body portion and having a longitudinally-disposed stiffening-rib between its side edges, and a holding device connecting the body portion and the base.

810,099. WIRE-FENCE STRETCHER. ISAAC M. WARNER, Harvard, Ill., assignor to Frank C. Boss, Union City, Mich. Filed Oct. 5, 1905. Serial No. 281,440.

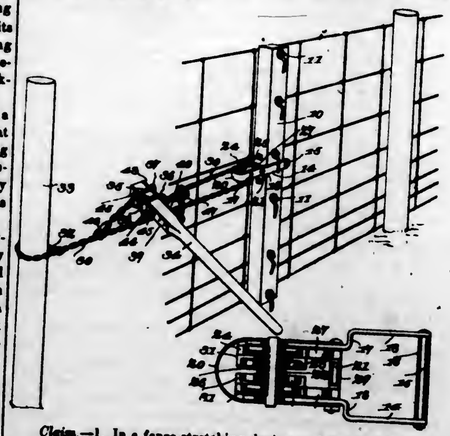

Claim.—1. In a fence-stretching device, a clamp member having means for attachment to the fence material to be stretched, spaced bars disposed opposite sides of said clamp member and extended inwardly and contracted intermediate their ends for bearing upon one face of said clamp member, a bolt coupling said spaced bars and bearing upon the opposite face of said clamp member, a clamp-bolt coupling the contracted portions of said spaced bars, a shaft journaled through the contracted portions of said spaced bars and extended beyond the same, a grip member having spaced peripheral recesses for receiving the links of a chain and carried by said shaft ratchets rotative with said grip member, pawls carried by said clamp-bolt and engaging said ratchets, a U-shaped guard, embracing said side members at their contracted ends and provided with apertures for receiving the extended ends of said shaft and through which the pawl-carrying clamp-bolt passes, means for connecting one end of said chain to a stationary structure and means for applying a strain to said chain to cause rotation of said chain-grip and ratchets.

2. In a fence-stretching device, a clamp member having means for connecting to the fence material to be stretched, a frame mov-

ably disposed upon said clamp member, a grip member having opposed peripheral recesses for receiving the links of a chain and rotatively mounted in said frame, ratchets rotative with said grip member, pawls carried by said frame and engaging said ratchets, a chain having means at one end for detachably coupling to a stationary structure and bearing around said grip member, a lever having reversely-disposed clips movably arranged thereon, a grab-hook attached to one of said clips for engaging said chain between the lever and the stationary structure, and a grab-hook connected to the other clip for engaging the chain between the lever and chain-grip member.

810,100. DISPENSING-CABINET. SETH WHEELER, Albany, N. Y. Filed Dec. 28, 1904. Serial No. 287,667.

Claim.—1. As a new article of manufacture, a dispensing-cabinet for toilet-paper having an opening in its bottom in close proximity to the back of the cabinet, the bottom of the cabinet arranged to support sheets of paper with the free edges thereof overhanging said opening and free to enter the same successively.

2. As a new article of manufacture, a dispensing-cabinet comprising a back adapted to be secured to a suitable support, a box having a hinged connection at its lower end with said back, said box having a bottom for supporting sheets of paper and having an opening at the hinged edge of the box, and means for locking the box to the back.

3. As a new article of manufacture, a dispensing-cabinet comprising a back having side flanges, a box or receptacle hinged at its lower end to the flanges of the back, a bottom in said box for supporting sheets of paper, the rear edge of said bottom spaced from the back to form a discharge-outlet for sheets of paper.

4. As a new article of manufacture, a dispensing-cabinet comprising a back adapted to be secured to a wall or other support, a receptacle having a bottom pivotally connected with the back and spaced at its rear edge therefrom to form a narrow delivery-opening when the cabinet is closed, substantially as and for the purpose set forth.

5. As a new article of manufacture, a dispensing-cabinet comprising a back adapted to be secured to a wall or other support, a box hinged at its lower end thereto, and the bottom of said box at its hinged edge bent back forming a discharge-opening through which the contents of the cabinet are to be withdrawn.

6. The combination with a cabinet for toilet-paper, a pin or short shaft extending through the front of said cabinet, a pointer secured on the outer end of the pin or shaft, an arm secured on the inner end of the shaft or pin, a lateral extension on said arm to rest on the package of paper in the cabinet, and move downwardly as the height of the package becomes reduced.

7. The combination with a cabinet for toilet-paper having a depressed or indented portion in its front or an equivalent curb surrounding the pointer, a pointer movable in said depressed portion or curb, an arm on the inside of the cabinet connected with the pointer, and a pin or extension of the arm supported on the top of the paper and adapted to move downward as the paper is removed through the bottom of the cabinet and turn the pointer to indicate the quantity of paper in the cabinet.

810,101. KNEADING-TRAY. WILLIAM C. BLACK, Plymouth, Ohio. Filed Oct. 31, 1904. Serial No. 230,510.

Claim.—A kneading-tray constructed of sheet metal and composed of a bottom, and rigid front, rear and side walls, the side walls having front tapering terminal portions forming openings and stiffening the bottom thereat, and the said front wall consisting of a roll extending above the bottom and also projecting below the same to form a depending stop for engaging the edge of a table.

810,102. BALING-PRESS BRAKE. WILLIAM S. BRADSHAW, San Jose, Cal. Filed Dec. 6, 1904. Serial No. 235,675.

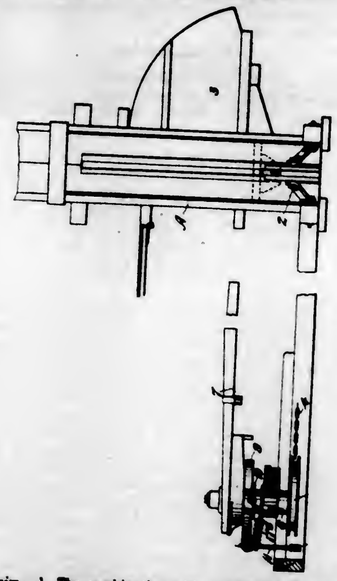

Claim.—1. The combination with a vertical baling-press, the follower-actuating mechanism thereof and a power-sweep, of a vertical column to which the sweep is fixed and through which the follower-actuating mechanism is operated, a member movable in unison with the column, a brake-shoe, and means for holding said shoe yieldingly in contact with said member for retarding the downward movement of the follower after the release of the sweep.

2. A baling-press having a vertically-movable follower, a vertical column, connections between the column and the follower for raising the latter to compress charges within the press-box, means whereby the column may be rotated, a friction member carried by the column, and a brake-shoe and means whereby it is held in contact with said friction member by an elastic pressure whereby the downward movement of the follower is retarded.

3. In a baling-press, a power mechanism, including a vertical column with a chain-pulley, and a sweep, an eccentric rim fixed to and revoluble with the column, a brake-shoe, a yielding support upon which the shoe is carried, and means by which the brake-shoe is held in contact with the rim by an elastic pressure.

4. A brake mechanism for baling-presses, comprising a follower, a power-sweep, intermediate mechanism through which power is transmitted to raise the follower, and a brake whereby the return movement of the follower is controlled, said brake consisting of an eccentrically-mounted rim, a shoe contacting with said rim, and means for applying pressure to said shoe.

5. A brake mechanism for baling-presses, comprising a follower, a power-sweep, intermediate mechanism through which power is transmitted to raise the follower, and a brake whereby the return movement of the follower is controlled, said brake consisting of a shoe, a swiveled yoke upon which the shoe is mounted, a rim eccentrically mounted upon the sweep-column, and means for applying pressure to force the shoe against the rim.

810,103. CORN-PLANTER. ANDREW J. BROWN, Chicago, Ill. Filed May 25, 1903. Serial No. 159,176.

Claim.—1. In a corn-planter, drive-wheels mounted on a rotatable axle; a main frame mounted on said axle; an auxiliary frame having one end hinged to the main frame, and provided at its opposite end with auxiliary wheels, and having side plates each provided with a concave seat formed in its upper edge; a rocking shaft connected with the main frame; means for partially rotating said shaft; cams secured on said shaft, and adapted to engage the said concave seats in the auxiliary frame; seed-hoppers supported by the main frame; feed-plates arranged in said hoppers; a cam-wheel secured on said axle, and encircled by an endless serpentine groove formed in its circumference, said groove crossing itself three times at equal intervals; a lever fulcrumed on the main frame, and having one of its ends connected with the said feed-plates, and provided at its opposite end with means adapted to travel in the groove in the cam-wheel.

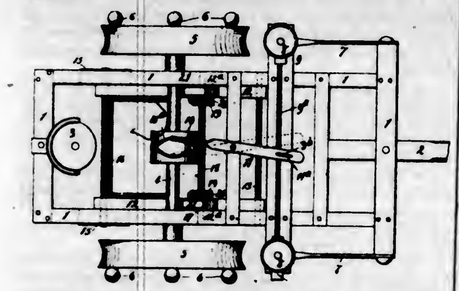

2. In a corn-planter, a main frame mounted on a main axle; an auxiliary frame having one end connected with the main frame, and provided at its opposite end with auxiliary wheels; a U-shaped foot-lever having its opposite sides fulcrumed on the auxiliary frame, and provided at each of its ends with a roller adapted to engage the under side of the main frame; and a cam-wheel mounted on the main axle, and encircled by a serpentine groove crossing itself three times, for the purpose described.

3. In combination with a planter or the like having drive-wheels and a main frame; an auxiliary frame having its front end hinged to the main frame, and provided at its rear end with auxiliary wheels, said auxiliary frame having side plates provided with concave seats formed in their upper edge; a rocking shaft supported by the main frame and provided with a lever for partially rotating same; and cams secured on said rocking shaft and adapted to engage the said concave seats in the auxiliary frame for the purpose described.

4. In combination with a planter or the like having drive-wheels and a main frame; an auxiliary frame having one end hinged to the main frame, and provided at its opposite end with auxiliary wheels; a U-shaped foot-lever having its opposite sides fulcrumed on the auxiliary frame, and provided at each of its ends with a roller adapted to engage the under side of the main frame for the purpose described.

810,104. CAR-COUPLING. SAMUEL P. BUSH, Columbus, Ohio. Filed May 13, 1905. Serial No. 260,263.

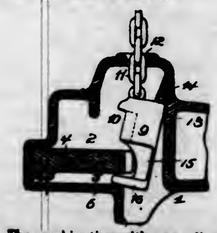

Claim.—1. The combination with a coupling-head and a knuckle pivotally supported therein, the tail of the knuckle having a depending shoulder, of a locking-block having a toe, adapted when the block is in a set position to rest on the floor of the coupling-head and in the path of the depending shoulder on the tail of the knuckle.

2. The combination with a coupling-head and a knuckle pivotally supported therein, the tail of the knuckle having a depending projection located near its inner or rear end, of a locking-block having a toe depending from its under side, the said toe adapted, when the block is in its set position, to rest on the floor of the coupling in the path of the projection on the tail of the knuckle and means for tilting the locking-block.

3. The combination with a coupling-head and a knuckle pivotally supported therein and provided with a depending shoulder near the rear end of its tail, of a locking-block having a toe adapted when the block is in a set position, to rest on the floor of the head in the path of the shoulder, and a shoulder in the path of vertical movement of the locking-block for tilting the block laterally, substantially as set forth.

4. The combination with a coupling-head having an opening in its bottom and a depending flange located to one side of said opening, and a knuckle pivoted in said head, the tail of said knuckle being provided with a depending shoulder near its rear end, of a vertically-movable and laterally-swinging locking-block having a toe depending therefrom, the said toe adapted, when the locking-block is in set position to rest on the floor of the coupling-head in the path of the shoulder on the tail of the knuckle, and means for tilting said locking-block.

5. A knuckle for car-coupling provided with a rearwardly-depending tail, the latter having a projecting shoulder located at the rear end of the tail for engaging and dislodging the locking-block.

810,105. CLEANING COMPOUND. JOHN CALLAHAN, Seattle, Washington. Filed May 3, 1905. Serial No. 258,722.

Claim.—1. A cleaning compound having incorporated therein silicate of soda, cutch and glucose.

2. A cleaning compound having incorporated therein a silicate, and an astringent extract and glucose.

3. A cleaning compound having incorporated therein an alkaline silicate, and an astringent.

4. A cleaning compound having incorporated therein a silicate and an astringent extract.

5. A cleaning compound composed of seventy-nine per cent. alkali, ten per cent. cutch, ten per cent. glucose, and one per cent. carmin.

810,106. JAR-CLOSURE FASTENER. FRANK CANFIELD, Denver, Colo., assignor to George W. Skinner, Jr., Denver, Colo. Filed Aug. 3, 1904. Serial No. 219,278.

Claim.—The combination with a jar or receptacle having a cap or closure which is highest in the center and provided with a shallow exterior concavity formed in its highest part, of a bail pivotally mounted on the body of the receptacle and extending upwardly over the cap, and a cam-lever having two sides connected at the top and whose lower edges are separated, the said lever having transverse openings in its sides through which the bail passes, whereby the lever is fulcrumed on the bail, the lever occupying a position crosswise of the bail, with its lower edges engaging the concavity when in the locked position.

810,107. DISTRIBUTER FOR FINELY-DIVIDED SUBSTANCES. ABRAHAM CORNBROOK, New York, N. Y. Filed Sept. 13, 1905. Serial No. 278,222.

Claim.—1. A cover for a receptacle for finely-divided substances, said cover provided with holes or perforations, a rod passing

through an opening in said cover and adapted to slide in said opening, a lateral extension to the inside of said rod, and pins projecting from said extension in substantially the same direction as said rod, and a spline on the rod engaging with a recess in the cover for keeping the pins in register with the perforations.

2. A cover for a receptacle for finely-divided substances, said cover provided with holes or perforations, a rod passing through an opening in said cover and adapted to slide in said opening, a lateral extension to the inside of said rod, and pins projecting from said extension in substantially the same direction as said rod, and a lateral extension or stop on the outside of said rod, and a tension-spring held between the cover and the inner lateral extension of the rod for keeping said pins away from said perforations unless positively drawn to or through the same against the action of the spring.

810,108. **PRESSURE-GOVERNOR.** RUDOLPH CONRADER, Erie, Pa. Filed June 3, 1904. Serial No. 211,054.

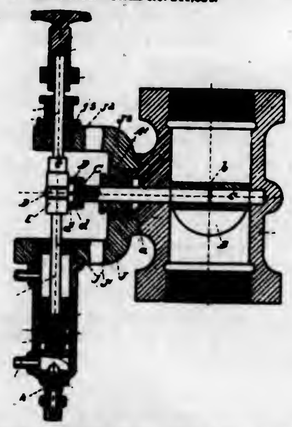

Claim.—1. In a pressure-governor, the combination of a valve-chamber; a butterfly-valve in said chamber; a stem extending from said valve to without the chamber; a pressure device and means for communicating the action of the pressure device to the valve-stem to oscillate the stem, said pressure device and means being arranged to close the valve with an increase of fluid-pressure upon the pressure device, and to open the valve with a decrease in pressure; and an adjustable stop for limiting the opening movement of the valve.

2. In a pressure-governor, the combination of a valve-chamber; a butterfly-valve in said chamber; a stem extending from said valve to without the chamber; a pressure device and means for communicating the action of the pressure device to the valve-stem to oscillate the stem, said pressure device and means being arranged to close the valve with an increase of fluid-pressure upon the pressure device, and to open the valve with a decrease in pressure; and adjustable stops for limiting the closing and opening movements of the valve.

3. In a pressure-governor, the combination of a valve-chamber; a valve in said chamber; a pressure device for controlling said valve, said pressure device comprising the cylinder H, a piston therein; and means connecting the valve; and adjustable stop *h* screwed into the end of the cylinder and adapted to contact the piston.

4. In a pressure-governor, the combination with the valve-chamber; a valve in said chamber; a pressure device for actuating said valve; a frame for supporting said pressure device, said pressure device comprising a cylinder; a piston therein; a stem connecting said piston with the valve-actuating mechanism; a counter-pressure mechanism operating upon said stem; and the adjusting-screw *h*' forming a guide and adjustable stop for the stem for limiting the closing movement of the valve.

5. In a pressure-governor the combination with the valve-chamber; an oscillatory valve therein; a stem extending from said valve to without the chamber; a crank on said stem; and a frame for carrying the pressure device comprising two arms extending each side of the crank; a pressure-cylinder on one of said arms; a yoke engaging said crank; and a stem extending from the pressure-cylinder to the yoke and from the yoke past the second arm on the frame; a spring-yoke on the stem; and springs connecting the spring-yoke to the opposite arm of the frame.

6. In a pressure-governor, the combination of the valve-chamber; an oscillatory valve therein; a stem extending from said valve to without the chamber; a frame J having the arms J' and J² thereon; a crank D on the stem; the yoke E engaging said crank; the stem F extending through the arm J' and the extension F' extending through the arm J²; a pressure device arranged on the arm J and adapted to operate on the stem F; a spring-pressure device adapted to operate upon the extension F' against the pressure device, said stem F being arranged in line with the crank-pin of the crank; and the adjustable stops *h* and *h*' for limiting the opening and closing movements of the valve.

7. In a governor, the combination with the valve-chamber; a butterfly-valve therein; a stem controlling said butterfly-valve; and valve-actuating means adapted to engage the stem for actuating the valve, said means being rotatively mounted relatively to the valve-chamber.

8. In a governor, the combination with the valve-chamber; a butterfly-valve therein; a stem controlling said butterfly-valve; and valve-actuating means adapted to engage the stem for actuating the valve, said means being rotatively mounted relatively to the valve-chamber and concentric to the valve-stem.

9. In a governor, the combination of the valve-chamber; a butterfly-valve therein; a stem controlling said valve; a valve-actuating means adapted to engage said stem and to actuate the valve, said means being rotatively mounted on the valve-chamber; and means for locking the means in adjustment.

10. In a pressure-governor, the combination of a valve-chamber; a butterfly-valve in said chamber; a stem for actuating said valve; a pressure device for actuating said valve through said stem; a frame carrying said pressure device, said frame being rotatively mounted relatively to said valve-chamber.

11. In a pressure-governor, the combination of the valve-chamber, a butterfly-valve therein; a stem extending from said valve to without the chamber; a crank on said stem; means for actuating said crank to actuate the valve; a frame supporting said means, said frame being rotatively mounted relative to said chamber; and means for adjusting the crank on the stem with a change in relation between the frame and the valve-chamber.

810,109. **VACUUM-GOVERNOR.** RUDOLPH CONRADER, Erie, Pa. Filed Jan. 23, 1905. Serial No. 242,280.

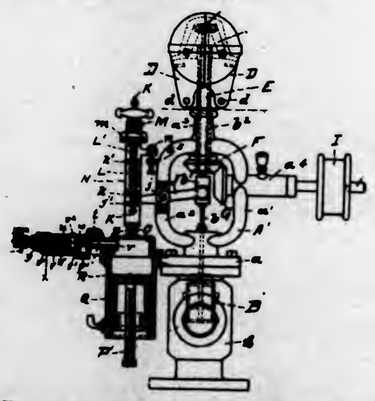

Claim.—1. In a vacuum-governor the combination of the centrifugal element; a centripetal element arranged to operate in opposition to said centrifugal element; and means controlled by the fluid to be pumped for acting upon one of said elements to vary the action of the governor.

2. In a vacuum-governor, the combination of the centrifugal element; a centripetal element arranged to operate in opposition to said centrifugal element; and means controlled by the fluid to be pumped for acting upon the centripetal element to vary the action of the governor.

3. In a vacuum-governor, the combination of a centrifugal element; a centripetal element arranged to act in opposition to said centrifugal element; means actuated by the fluid to be pumped for varying the relative strength of one of the elements within the limits of power exerted by the other element.

4. In a vacuum-governor, the combination of a centrifugal element; a centripetal element arranged to act in opposition to said centrifugal element; means actuated by the fluid to be pumped for varying the strength of the centripetal element within the limits of power exerted by the other element.

5. In a vacuum-governor, the combination of a centrifugal element; a spring-actuated centripetal element arranged to act in opposition to said centrifugal element; means actuated by the fluid to be pumped for varying the strength of the spring compriesd in said centripetal element.

6. In a vacuum pump-governor, the combination of a centrifugal element; a centripetal element comprising a plurality of springs, said centripetal element being arranged to act in opposition to said centrifugal element; and means actuated by the fluid to be pumped for throwing said springs into and out of action to vary the strength of the centripetal element.

7. In a vacuum pump-governor, the combination of a centrifugal element arranged to tend to move outwardly at the slowest speed at which the governor is designed to operate; a centripetal element arranged to act in opposition to said centrifugal element; means actuated by the fluid to be pumped for automatically varying the strength of one of said elements within the limits of power exerted by the other element.

8. In a vacuum pump-governor, the combination of a centrifugal element; a centripetal element arranged to operate in opposition to said centrifugal element; a pressure device having one side exposed to a constant pressure of the atmosphere and the opposite side to a pressure controlled by the fluid to be pumped; a counter-pressure device actuated by the fluid to be pumped and against the constant pressure; and means communicating the action of the pressure device to one of said elements of the governor.

9. In a vacuum pump-governor, the combination of a centrifugal element; a centripetal element arranged to operate in opposition to said centrifugal element; a pressure device having one side exposed to a constant pressure of the atmosphere and the opposite side to a pressure controlled by the fluid to be pumped; a counter-pressure device actuated by the fluid to be pumped and against the constant pressure; and means communicating the action of the pressure device to the centripetal element of the governor.

10. In a vacuum pump-governor, the combination of a centrifugal element; a centripetal element arranged to operate in opposition to said centrifugal element; a pressure device having one side exposed to a constant pressure of the atmosphere and the opposite side to a pressure controlled by the fluid to be pumped; a counter-pressure device actuated by the fluid to be pumped and against the constant pressure; and means communicating the action of the pressure device to the centripetal element of the governor, to increase the strength of the centripetal element relatively to the centrifugal element when the pressure of fluid to be pumped increases and decreases the strength of the centripetal element relative to the centrifugal element when said pressure decreases.

11. In a vacuum pump-governor, the combination of a centrifugal element; a centripetal element arranged to operate in opposition to said centrifugal element; a pressure device having one side exposed to a constant pressure of the atmosphere and the opposite side to a pressure controlled by the fluid to be pumped; a counter-pressure device actuated by the fluid to be pumped and against the constant pressure; and means communicating the action of the pressure device to one of said elements of the governor to vary the relative strength of one of said elements within the limits of power exerted by the other element.

12. In a vacuum pump-governor, the combination of a centrifugal element; a centripetal element arranged to operate in opposition to said centrifugal element; a pressure device having one side exposed to a constant pressure of the atmosphere and the opposite side to a pressure controlled by the fluid to be pumped; a counter-pressure device actuated by the fluid to be pumped and against the constant pressure; and means communicating the action of the pressure device to the centripetal element of the governor to vary the relative strength of said centripetal element relatively to the centrifugal element within the limits of power exerted by the centripetal element.

13. In a vacuum pump-governor, the combination of a centrifugal element; a centripetal element comprising a spring arranged to operate in opposition to the centrifugal element; a yoke against which said centripetal element is tensioned; a motor comprising the cylinder R, the pressure in which is below atmospheric pressure and controlled by the fluid to be pumped; the piston Q arranged in the cylinder and exposed to the atmosphere on one side and pressure on the cylinder at the opposite side; means for communicating the action of the piston to the yoke; and the counter-springs S operating against the pressure of the atmosphere on said piston.

14. In a vacuum-governor, the combination of a motor arranged to actuate said governor; means connecting said motor with a fluid-supply, said motor being arranged to act with a change of pressure in the rarefied fluid to be controlled; and means for intensifying the change of fluid-pressure on the motor over a change of pressure in the controlled fluid.

15. In a vacuum-governor, the combination of a motor arranged to actuate said governor; means for connecting said motor with a fluid supply which is below atmospheric pressure, said motor being arranged to act with a change of pressure in the rarefied pressure to be controlled; and means for intensifying the change of pressure in the motor over a change of pressure in the controlled fluid.

16. In a vacuum-governor, the combination of a motor arranged to actuate said governor; means for connecting said motor with a rarefied fluid, the pressure of which is to be controlled, said motor being arranged to act with a change of pressure in said fluid; and means for intensifying the change of fluid-pressure on the motor over a change of pressure in the controlled fluid.

17. In a vacuum-governor, the combination of a motor arranged to actuate said governor; means connecting said motor with a fluid-supply, said motor being arranged to act with a change of pressure in the rarefied fluid to be controlled; means for intensifying the change of fluid-pressure on the motor over a change of pressure in the controlled fluid; and means for controlling said intensifying action to vary the pressure on the motor in a fixed ratio to a change of pressure in the controlled fluid.

18. In a vacuum-governor, the combination of a motor arranged to actuate said governor, having one side exposed to a constant pressure as the atmosphere and the opposite side to fluid-pressure less than that of the atmosphere; a counter-pressure device acting against the constant pressure; means for varying said fluid-pressure as the pressure of the rarefied fluid to be controlled varies; and means for intensifying the change of said fluid-pressure over a change of pressure in the fluid to be controlled.

19. In a vacuum-governor, the combination of a motor arranged to actuate said governor, having an intake and an exhaust opening; means influenced by the fluid to be controlled for varying the capacity of one of said openings for varying the pressure on the motor.

20. In a vacuum-governor, the combination of a motor arranged to actuate said governor; means for connecting said motor with a vacuum-chamber, the fluid-supply of which is to be regulated, said motor having an intake-opening and an exhaust-opening into said connection, said motor being arranged to act as fluid is exhausted through said exhaust-opening and connection.

21. In a vacuum-governor, the combination of a motor arranged to actuate said governor; means for connecting said motor with a vacuum-chamber, the pressure of which is to be controlled, said motor having an intake-opening and an exhaust-opening into said means of connection, and being arranged to act as the fluid is drawn through the exhaust-opening and connection; and means for varying the relative capacities of said intake and exhaust opening.

22. In a vacuum-governor, the combination of a motor arranged to actuate said governor; means for connecting said motor with a vacuum-chamber, the pressure of which is to be controlled, said motor having an intake-opening and an exhaust-opening into said means of connection, and being arranged to act as the fluid is drawn through the exhaust-opening and connection; and means for varying the capacity of said exhaust-opening.

23. In a vacuum-governor, the combination of a motor arranged to actuate said governor; means for connecting said motor with a vacuum-chamber, the pressure of which is to be controlled, said motor having an intake-opening and an exhaust-opening into said means of connection, and being arranged to act as the fluid is drawn through the exhaust-opening and connection; and means for automatically varying the relative capacities of the intake and exhaust opening.

24. In a vacuum-governor, the combination of a motor arranged to actuate said governor; means for connecting said motor with a vacuum-chamber, the pressure of which is to be controlled, said motor having an intake-opening and an exhaust-opening into said means of connection, and being arranged to act as the fluid is drawn through the exhaust-opening and connection; and means influenced by the rarefied fluid to be controlled for automatically varying the relative capacities of said openings.

25. In a vacuum-governor, the combination of a motor for actuating said governor; means for connecting said motor with a vacuum-chamber, the fluid-supply of which is to be controlled, said

motor having an exhaust-opening into said means and an intake-opening; means for automatically varying the relative capacities of said openings with a variation of pressure in said connecting means; mechanism for controlling the extent of variation with a given variation of pressure in said connecting means; means for adjusting said mechanism to change the extent of variation in the relative capacities of the openings with a given variation of pressure in said connecting means.

26. In a vacuum-governor, the combination of a motor arranged to actuate said governor; means for connecting said motor with a vacuum-chamber, the pressure of which is to be controlled, said motor having an intake and exhaust opening leading to said connection; means for automatically varying the capacity of one of said openings with a variation of the rarefied fluid to be controlled; and means for controlling the extent of variation with a given variation of pressure in the controlled fluid.

27. In a vacuum-governor, the combination of a regulating-valve; a motor arranged to influence the regulating-valve; a counter-pressure mechanism varying in strength with the movement of the motor; means for connecting said motor with a vacuum-chamber, the pressure of which is to be controlled, said motor having an intake-opening and an exhaust-opening, the exhaust-opening leading to said connection; and means for automatically varying the relative capacities of said openings.

28. In a vacuum-governor, the combination of a regulating-valve; a motor arranged to influence the regulating-valve; a controlling-motor; means for connecting said controlling-motor with a vacuum-chamber, the pressure of which is to be controlled; means for applying the fluid-pressure on said regulating-motor to actuate it; and means controlled by said controlling-motor for intensifying the pressure on the regulating-motor over a change of pressure in said connecting means.

29. In a vacuum-governor, the combination of a regulating-valve; a regulating-motor arranged to influence said regulating-valve, said motor being provided with an intake-opening and an exhaust-opening; a controlling-motor; means for connecting said controlling-motor with a vacuum-chamber, the pressure of which is to be regulated; and a valve actuated by the controlling-motor and arranged to vary the relative capacities of said intake and exhaust openings.

30. In a vacuum-governor, the combination of a regulating-valve; a regulating-motor arranged to influence said regulating-valve, said motor being provided with an intake-opening and exhaust-opening; a controlling-motor, one side of which is exposed to the atmosphere and the other to the pressure of the fluid to be controlled; a counter-pressure device in said controlling-motor opposing the atmospheric pressure and assisting the fluid-pressure arranged to increase in strength with the movement of said motor; means for connecting said controlling-motor with a vacuum-chamber, the fluid-pressure of which is to be controlled; and a valve actuated by said controlling-motor and arranged to vary the capacity of one of said openings with a movement of said motor.

31. In a vacuum-governor, the combination of a regulating-valve; a regulating-motor arranged to influence said regulating-valve, said motor being provided with an intake-opening and exhaust-opening; a controlling-motor, one side of which is exposed to the atmosphere and the other to the pressure of the fluid to be controlled; a counter-pressure device in said controlling-motor opposing the atmospheric pressure and assisting the fluid-pressure arranged to increase in strength with the movement of said motor; means for connecting said controlling-motor with a vacuum-chamber, the fluid-pressure of which is to be controlled; and a valve actuated by said controlling-motor and arranged to vary the capacity of one of said openings with a movement of said motor; and means for adjusting the counter-pressure device to vary the movement of the controlling-motor with a given change of pressure in said connecting means.

32. In a vacuum-governor, the combination of a regulating-valve; a regulating-motor arranged to influence said regulating-valve, said motor being provided with an intake-opening and exhaust-opening; a controlling-motor, one side of which is exposed to the atmosphere and the other to the pressure of the fluid to be controlled; a counter-pressure device in said controlling-motor opposing the atmospheric pressure and assisting the fluid-pressure arranged to increase in strength with the movement of said motor; means for connecting said controlling-motor with a vacuum-chamber, the fluid-pressure of which is to be controlled; a valve actuated by said controlling-motor and arranged to vary the relative capacities of said openings with a movement of said motor and to control the exhaust-passage; and means for varying the valve-action in the opening to vary the relative capacities of the openings after the exhaust-passage is open.

33. In a vacuum-governor, the combination of a regulating-valve; a regulating-motor arranged to influence said regulating-valve, said motor being provided with an intake-opening and an exhaust-opening; a controlling-motor; means for connecting said controlling-motor with a vacuum-chamber, the fluid-pressure of which is to be controlled; and a needle-valve actuated by said controlling-motor and arranged in one of said openings.

34. In a vacuum-governor, the combination of a regulating-motor arranged to actuate the governor, said regulating-motor comprising the cylinder R, piston Q in said cylinder, said piston being exposed on one side to the atmosphere and the other side within the cylinder; a counter-pressure device acting against the atmosphere; a connection with the cylinder R having the intake t and exhaust-passage t'; the needle-valve U controlling the exhaust-passage t' and the controlling-motor comprising the cylinder V, piston W in said cylinder, the spring X arranged against the piston W, one side of the piston being exposed to the atmosphere; and a connection V' in communication with the exhaust-passage t' and cylinder V at the opposite side of the piston from its exposure to the atmosphere.

35. In a vacuum pump-governor, the combination of a centrifugal element; a centripetal element arranged to act in opposition to said centrifugal element; a motor actuated by the fluid for varying the relative strength of one of said elements; means influenced by the rarefied fluid to be controlled for varying the pressure on said motor as the pressure of the fluid to be controlled varies, and for intensifying the change of fluid-pressure on the motor over a change of pressure in the controlled fluid.

36. In a vacuum pump-governor, the combination of a centrifugal element and a centripetal element arranged to operate in opposition to said centrifugal element; a motor actuated by a fluid for varying the relative strength of one of said elements; means for connecting said motor with a vacuum-chamber, said motor being arranged to act with a change of pressure in a vacuum-chamber; and means for intensifying the change of pressure on the motor over the change of pressure in the chamber.

37. In a vacuum pump-governor, the combination of a centrifugal element; a centripetal element arranged to act in opposition to said centrifugal element; a motor actuated by a fluid for varying the relative strength of one of the elements relative to the other; means for connecting said motor with a vacuum-chamber, the fluid-supply of which is to be regulated said motor being arranged to act with a change of pressure in the chamber; and means for intensifying the change of fluid-pressure on the motor over a change of pressure in the chamber.

38. In a vacuum pump-governor, the combination of a centrifugal element; a centripetal element acting in opposition to said centrifugal element; a motor actuated by fluid for varying the strength of one of said elements relatively to the other; means for connecting said motor with a fluid-supply, said motor being arranged to act with a change of pressure in a vacuum-chamber; and means for intensifying the change of fluid-pressure on the motor over a change of pressure in the chamber; and means for controlling the extent of said intensifying action.

39. In a vacuum pump-governor, the combination of a centrifugal element and a centripetal element arranged to act in opposition to said centrifugal element; a motor influenced by the fluid to be controlled for varying the strength of the centripetal element; means for connecting said motor with a vacuum-chamber, said motor being arranged to act with a change of pressure in said means of connection, the fluid-pressure of which is to be controlled; and means for intensifying the change of fluid-pressure on the motor over a change of pressure in said means of connection.

40. In a vacuum pump-governor, the combination of a centrifugal element; a centripetal element arranged to act in opposition to said centrifugal element; a fluid-actuated motor for varying the strength of one of the elements within the limits of power exerted by the other element; means for connecting said motor with a fluid-supply, said motor being arranged to act with a change of pressure in a vacuum-chamber; and means for intensifying the change of fluid-pressure on the motor over a change of pressure in the chamber.

41. In a vacuum pump-governor, the combination of a centrifugal element; a centripetal element arranged to act in opposition to said centrifugal element; a motor for varying the relative strength of said elements, said motor having an intake-passage and an exhaust-passage; means for varying the relative capacities of said openings; and mechanism controlled by the fluid-pressure less than atmospheric pressure for actuating said means.

42. In a vacuum pump-governor, the combination of a centrifugal element; a centripetal element arranged to act in opposition to said centrifugal element; a motor for varying the relative strength of said elements; means for connecting said motor with a vacuum-chamber, the fluid-supply of which is to be regulated, said motor having an intake-opening and an exhaust-opening leading to said connection.

43. In a vacuum pump-governor, the combination of a centrifugal element; a centripetal element arranged to act in opposition to said centrifugal element; a motor arranged to vary the strength of the centripetal element; means for connecting said motor with a fluid-supply, said motor having an intake-opening and an exhaust-opening; means controlled by fluid-pressure less than atmospheric pressure for varying the capacities of said openings.

44. In a vacuum pump-governor, the combination of a centrifugal element; a centripetal element arranged to act in opposition to said centrifugal element; a motor arranged to vary the strength of the centripetal element; means for connecting said motor with a vacuum-chamber, the fluid-supply of which is to be regulated, said motor having an intake and exhaust opening to said means of connection.

45. In a vacuum pump-governor, the combination of a centrifugal element; a centripetal element, comprising a plurality of springs, said centripetal element being arranged to act in opposition to said centrifugal element; a motor for throwing said springs into and out of action to vary the strength of the centripetal element; means for connecting said motor with a fluid-supply, said motor having an intake and an exhaust opening; mechanism for varying the relative capacities of said openings; and devices controlled by pressure less than atmospheric pressure for influencing said mechanism.

46. In a vacuum pump-governor, the combination of a centrifugal element; a centripetal element arranged to act in opposition to said centrifugal element; a motor for varying the relative strength of said elements; a counter-pressure mechanism varying in strength with a movement of the motor, said motor having an intake and an exhaust passage; and devices controlled by pressure less than atmospheric pressure for varying the capacities of said openings.

47. In a vacuum pump-governor, the combination of a centrifugal element; a centripetal element arranged to act in opposition to said centrifugal element; a motor for varying the relative strength of said elements, said motor being provided with an intake-opening and an exhaust-opening; a controlling-motor; means for connecting said controlling-motor with a vacuum-chamber, the pressure of which is to be controlled; and a valve actuated by the controlling-motor and arranged to vary the relative capacities of said supply and vent openings.

48. In a vacuum pump-governor, the combination of a centrifugal element; a centripetal element arranged to act in opposition to the centrifugal element; a regulating-motor arranged to regulate the varying strength of said elements, said motor being provided with an intake and exhaust opening; a controlling-motor; a counter-pressure device on said controlling-motor arranged to increase in strength with a movement of said motor; means for connecting said controlling-motor, the pressure of which is to be controlled; a valve arranged to vary the capacity of one of said openings with a movement of said motor.

49. In a vacuum pump-governor, the combination of a centrifugal element; a centripetal element arranged to act in opposition to said centrifugal element; a regulating-motor arranged to vary the relative strength of said elements; a controlling-motor; a counter-pressure device on said controlling-motor arranged to increase in strength with a movement of said controlling-motor; means for connecting said controlling-motor with a vacuum-chamber, the fluid-supply of which is to be regulated; a valve actuated by said controlling-motor and arranged to vary the capacity of one of said openings with a movement of said motor; and means for adjusting the counter-pressure device to vary the movement of the controlling-motor with a given change of pressure in the means of connection.

50. In a vacuum pump-governor, the combination of a centrifugal element; a centripetal element arranged to act in opposition to said centrifugal element, said centripetal element comprising a plurality of springs; a regulating-motor arranged to actuate said centripetal element and to throw said springs into and out of action to vary the strength of the centripetal element relatively to the centrifugal element, said motor being subjected to atmospheric pressure on one side and the opposite side to a pressure less than atmospheric pressure; a counter-pressure device acting against the atmospheric pressure on said motor, said motor having an intake and exhaust opening; means of connection between said exhaust-opening and a vacuum-chamber, the fluid-supply of which is to be regulated; a controlling-motor having one side exposed to the atmosphere and the other to the fluid-pressure of the means of connection; a connection between said controlling-motor and said means of connection; and a counter-pressure device acting against the atmosphere acting on said controlling-motor; a screw adjustment for said counter-pressure device; an indicating-finger on said screw; and a dial in the path of said finger.

810,110. SASH-LOCK. CHARLES M. EVANS, Carmichaels, Pa. Filed Mar. 22, 1905. Serial No. 251,471.

Claim.—In a sash-fastener, the combination of a casing, the two bolts 6 and 9 mounted in said casing and slidable at right angles to each other, the finger-piece 7 projecting upwardly from the bolt 6 through the top of the casing, the casing having a slot therein in which the finger-piece 7 is adapted to slide, the finger-piece 10 at one side of the casing and carried by the outer end of the bolt 9, and the pin 11 projecting upwardly from the bolt 9 between the ends of the latter and arranged within the casing aforesaid, the bolt 6 being arranged adjacent the bolt 9 whereby the bolt 9 may be rotated so as to cause the pin 11 carried thereby to be thrown into a vertical position in engagement with the bolt 6, the pin 11 when in engagement with the bolt 6 preventing sliding movement of the bolt 9, but permitting free sliding movement of the bolt 6.

810,111. STOCK-WATERING APPARATUS. WILLIAM O. GARRETT, Maryville, Mo. Filed May 4, 1905. Serial No. 258,894.

Claim.—1. The combination of a tank, a valve-casing extending upward from the bottom of the tank and provided with a seat, a valve operating within the casing and provided with a stem extending upward from the same, a float having an opening of greater diameter than the valve-casing and resting upon the bottom of the tank when it is at the limit of its downward movement, and means for loosely connecting the stem of the valve with the float.

2. The combination with a tank having a depending flange, a heating-chamber located beneath the tank and fitting within the said flange, whereby it is interlocked with the tank, a heating device, and a supply-pipe piercing the heating-chamber and the tank and retaining the same in their interlocked relation.

3. The combination of a tank, a heating-chamber located beneath the same, a supply-pipe piercing the heating-chamber and rigidly secured to the tank, and adjustable means carried by the supply-pipe and engaging the heating-chamber.

4. The combination of a tank, a heating-chamber located beneath the same, a supply-pipe piercing the bottoms of the tank and the heating-chamber, a valve-casing arranged on the supply-pipe and engaging the upper face of the bottom of the tank, nuts mounted on the supply-pipe and engaging the lower faces of the bottoms of the

tank and the heating-chamber and clamping the said tank and heating-chamber together, and a valve operating in the valve-casing.

5. The combination of a heating-chamber composed of a bottom and upwardly-extending walls, one of the walls having a door, a tank supported by the walls of the heating-chamber and provided with a chimney-tube fixed to the bottom of the tank, a lamp mounted within the heating-chamber and located beneath the chimney-tube, said lamp being provided with an exteriorly-projecting reservoir, a water-supply pipe piercing the heating-chamber and the said tank and retaining the chimney-tube in position above the lamp, and means connected with the exteriorly-projecting portion of the reservoir for supplying the same with oil.

810,112. AUTOMATIC BELL-SIGNAL FOR RAILROAD-TRACK CROSSINGS. LINDSEY GASKINS, Hamilton, Va. Filed Aug. 14, 1905. Serial No. 274,091.

Claim.—1. An automatic railway-signal comprising a push-bar, a tension-spring connected to one end thereof, floating levers pivoted to said bar, a pair of springs connected to the ties and to the lower ends of each lever to maintain their normal floating positions, a crank connected to one end of said push-bar, a frame connected to be swung by said crank, and a bell fixed to the upper end of said swing-frame.

2. An automatic railway-signal comprising a push-bar, a tension-spring connected to one end thereof and a crank connected to the other end of said push-bar, a plurality of floating levers pivoted to said bar, a pair of springs connected to the ties and to the lower ends of each lever to maintain them in their normal floating positions, a swing-frame connected to and rising from said crank and having a yielding or spring function, and a bell fixed to the upper end of said swing spring-frame.

3. An automatic railway-signal consisting of a push-bar arranged upon the ties along the outer side of the rail, a retracting-spring connecting one end of said bar, a bell-carrying frame having a crank connection with the other end of said push-bar, a plurality of floating levers mounted in and movable with said push-bar projecting above and below it, and a pair of coil-springs connected to the lower end of each lever to balance it.

810,113. BRAKE MECHANISM OF LOOMS. ALBERT A. GOSSER, Jr., Worcester, Mass., assignor to Crompton & Knowles Loom Works, a Corporation of Massachusetts. Filed Feb. 27, 1905. Serial No. 247,417.

Claim.—1. In a loom, mechanism for releasing the brake from the brake-wheel independently of the shipper-lever, said mechanism comprising a pivoted lever connected with the brake-lever, and said brake-lever, an arm carried on said pivoted lever and adapted to engage a stationary part, which part acts to hold said arm from accidental movement, and means for moving said arm to cause it to engage said stationary part, the engagement of said arm with the stationary part causing the movement of the pivoted lever and the release of the brake from the brake-wheel.

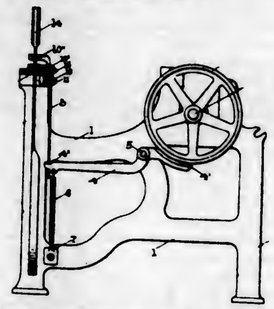

2. In a loom, the combination with mechanism for releasing the brake from the brake-wheel independently of the movement of the shipper-lever, said mechanism comprising a pivoted lever connected with the brake-lever, and said brake-lever, a rocking cam-arm carried on said pivoted lever, and having a cam-surface thereon, and adapted to engage a stationary part, which part acts to hold said cam-arm from accidental movement, and means for moving said cam-arm to cause it to engage said stationary part, the engagement of said cam-arm with said stationary part causing the movement of said pivoted lever and the release of the brake from the brake-wheel, of the shipper-lever adapted to engage and move said pivoted lever when said shipper-lever is moved to start the loom, and to hold the brake released from the brake-wheel, and release the cam-arm and allow it to return to its inoperative position.

810,114. CYLINDER-BORING MACHINE. JOSEPH H. GOULDSBERRY, Toutonia, W. Va. Filed Feb. 15, 1905. Serial No. 245,741.

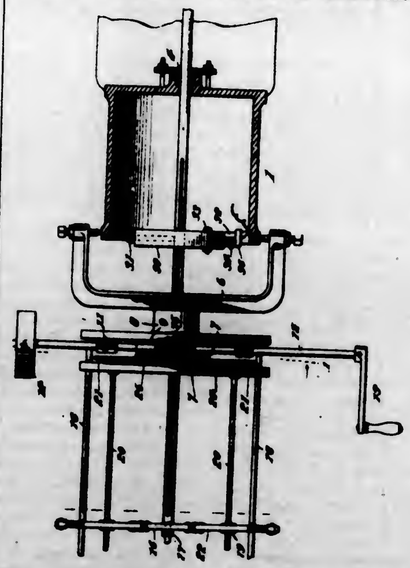

Claim.—1. In combination, a boring-bar, a head adjustable thereon and provided in one side with a recess and in an edge with a threaded opening, means for securing the head to the boring-bar in an adjusted position, a bit seated in the recess of said head and adjustable therein and provided with an offset or shoulder, a set-screw

threaded into the opening extended inward from the edge of the head and adapted to engage with said offset of the bit, and means for securing the bit to the head in an adjusted position.

2. In a tool of the character described, the combination of a framework, guide-rods supported thereby and extended therefrom, feed-screws mounted in said framework, a cross-head slidable upon said guide-rods and comprising movable portions between which said guide-rods and feed-screws are received, feed-nuts coöperating with the feed-screws and confined between the parts of the cross-head, fastening means for securing the parts of the cross-head when closed upon the guide-rods and feed-nuts, a bar rotatably mounted in the framework and cross-head and movable with the latter and slidable in said framework and provided with cutting mechanism, and operating-gearing between said rotatable bar and feed-screws and supported by the said framework.

3. In a machine of the character set forth, a framework comprising spaced members, guide-rods connecting said members and extended therefrom, feed-screws mounted in the framework, a cross-head slidable upon said guide-rods, a bar provided with cutting mechanism and mounted in said cross-head to move therewith and having both rotary and sliding movement in the framework, a driver mounted upon said bar and having a sliding-key connection therewith, pivoted frames mounted coaxially with the feed-screws, and a train of gearing mounted upon each of the pivoted frames and having connection with the respective feed-screws and adapted to be thrown into and out of gear with the aforesaid driver, the pivoted frames, trains of gearing and driver being arranged between the spaced members of the aforementioned framework.

4. A machine of the character described comprising a spider, clamp-screws fitted in the arms of said spider, a framework comprising spaced members, connecting means between said framework and spider, guide-rods connecting the spaced members of the framework and extended therefrom, feed-screws mounted in the framework, a cross-head having movable parts between which are received said guide-rods and feed-screws, feed-nuts confined between the movable parts of the cross-head and receiving the feed-screws, fastening means for securing the movable parts of the cross-head when closed upon the guide-rods and feed-nuts, a boring-bar provided with cutting mechanism mounted in the cross-head and framework and having both rotary and sliding movement with reference to said framework and movable with the cross-head, a driver mounted upon the boring-bar to turn therewith but admitting of said bar having sliding movement therethrough, frames pivoted coaxially with the feed-screws, and trains of gearing supported by said pivoted frames and connected with the respective feed-screws and adapted to be thrown into and out of gear with the said driver, the pivoted frames, trains of gearing and driver being arranged between the spaced members of said framework.

810,115. ABSORBENT BANDAGE AND MATERIAL THEREFOR. WILLARD R. GREEN, Muscatine, Iowa. Filed Feb. 20, 1904. Serial No. 196,729.

Claim.—1. An absorbent material for surgical purposes comprising a plurality of layers, one of which consists of sand or analogous granular material, and means for flushing the same.

2. An absorbent material for surgical purposes, comprising a mass or body of absorbent, a part thereof made up of a granular material treated with a pus solvent.

3. An absorbent material for surgical purposes made up of a body or mass of absorbent comprising fibrous material and a granular material.

4. An absorbent material for surgical purposes made up of a body or mass of absorbent comprising fibrous material and a granular material, the granular material being treated with a pus solvent and the fibrous material with an antiseptic.

5. An absorbent material for surgical purposes comprising a layer of fibrous material, and a layer of granular material intermingled with loose fibers.

6. An absorbent pad comprising a waterproof layer, a granular layer, a fibrous layer between the waterproof layer and the granular layer, an open texture facing for the granular layer, said waterproof layer and facing being drawn together and connected to inclose the granular layer and the fibrous layer.

7. In an absorption-pad, a waterproof layer, a granular layer, a fibrous layer between the waterproof layer and the granular layer, an open texture facing for the granular layer, said waterproof layer and facing being drawn together and fastened to inclose the granular layer and the fibrous layer and flushing means comprising an inlet at one side, and an outlet located at a distance from said inlet.

8. In an absorption-pad of the class specified a receiving and distributing granular member, a receiving and retaining fibrous member, means for connecting and retaining said granular and fibrous members, and means for flushing the interior of the pad while this is in use.

810,116. ABSORBENT BANDAGE. WILLARD R. GREEN, Muscatine, Iowa, assignor to The American Absorbent Fiber Company, Portland, Me., a Corporation of Maine. Filed June 10, 1904. Serial No. 211,925.

Claim.—1. An absorbent bandage comprising a filling of strands, and a pair of surface layers of different, open-mesh fabric.

2. An absorbent bandage comprising a cover-sheet, a filling of excelsior therein, and a surface formed of a plurality of different, open-mesh fabrics.

3. An absorbent bandage comprising a cover-sheet, an absorbent filling mass therein, and a plurality of surface sheets, one of lesser width than the other.

810,117. ABSORBENT BANDAGE. WILLARD R. GREEN, Muscatine, Iowa, assignor to The American Absorbent Fiber Company, Portland, Me., a Corporation of Maine. Filed June 10, 1904. Serial No. 211,926.

Claim.—1. In an absorbent bandage, the combination with a mass of absorptive stock, of a side-bracing member having transverse folded portions located within the mass and flexible for permitting the free bending of the bandage while resisting the collapse thereof by sidewise pressure.

2. In an absorbent bandage, the combination with a mass of absorbent material, of a side-bracing member so located as to resist the sidewise compression of the bandage.

3. In an absorbent bandage, the combination with a cover-sheet, of a mass of absorptive material therein, consisting of wood in the form of mingled strands disposed in upper and lower portions, and a flexible side-bracing member located between said portions.

4. In an absorbent bandage, the combination with a relatively compressible absorptive mass, of one or more relatively non-compressible side-brace elements located in the bandage for resisting lateral compression thereof.

5. In an absorbent bandage, the combination with a relatively compressible mass of absorptive material, of a plurality of side-brace elements disposed with their lengthwise dimension located transversely of the bandage, and having flexible connection for combining a series of the side-brace elements into a single member.

6. In an absorbent bandage, the combination with a cover-sheet having a reception-opening, of a relatively compressible absorptive mass in said cover-sheet, and a side-bracing member located

in said mass adjacent to said opening for resisting lateral compression of the mass and the collapse of the said opening.

7. An absorbent bandage comprising an absorbent mass, means for supporting the same, and means for maintaining said mass against sidewise compression and constructed to readily yield in certain directions and to permit the passage of fluid therethrough.

8. An absorbent bandage made up of a mass of absorbent material, a corrugated bracing member located in said bandage, and a cover-sheet.

9. An absorbent comprising a mass of wood in the form of ribbon mingled together and promiscuously arranged forming capillary spaces and chamber-spaces disposed throughout the mass, an inclosure for said mass for retaining the same within bounds, and means for distending said inclosure for preventing the compression of said mass and the collapse of the spaces within the same.

10. An absorbent bandage made up of a body of absorbent material, a corrugated and perforated member located in said bandage, and means for supporting the same.

810,118. ABSORBENT BANDAGE. WILLARD R. GREEN, Muscatine, Iowa, assignor to The American Absorbent Fiber Company, Portland, Me., a Corporation of Maine. Filed June 10, 1904. Serial No. 211,867.

Claim.—1. An absorbent bandage comprising a cover-sheet and an absorptive mass formed of mingled wood strands.

2. An absorbent bandage comprising a covering, and an absorptive mass of compacted excelsior of different degrees of fineness.

810,119. ABSORBENT BANDAGE. WILLARD R. GREEN, Muscatine, Iowa, assignor to The American Absorbent Fiber Company, Portland, Me., a Corporation of Maine. Filed June 10, 1904. Serial No. 211,868.

Claim.—1. In an absorbent bandage, the combination with a mass of absorptive material, of a receiving member having therein a series of chambers, and a cellular intermediate member having its cells running all in the same direction, located directly below the said receiving chambered member and between it and the said mass of absorptive material and in engagement one with the other.

2. A bandage comprising a cover-sheet, an absorptive mass therein, a cellular body having its cells running all in the same direction and directly imposed upon such mass and movable relative thereto to scrape the coagulated portions one from the other, a corrugated, perforated body directly imposed upon said cellular body, and an open-mesh fabric upon such corrugated body.

810,120. ABSORBENT BANDAGE. WILLARD R. GREEN, Muscatine, Iowa, assignor to The American Absorbent Fiber Company, Portland, Me., a Corporation of Maine. Filed June 10, 1904. Serial No. 211,869.

Claim.—In an absorbent bandage, the combination with a cover-sheet, of an absorbent mass contained therein and having the upper portion of such mass formed of relatively coarse woody strands intermingled together and a lower portion of relatively fine fiber, and a chambered, receiving-surface member located above said absorptive mass.

810,121. ABSORBENT BANDAGE. WILLARD R. GREEN, Muscatine, Iowa, assignor to The American Absorbent Fiber Company, Portland, Me., a Corporation of Maine. Filed June 10, 1904. Serial No. 211,930.

Claim.—1. In a bandage, the combination of a cover-sheet, an open-mesh receiving-sheet, a body of absorbent material within the cover-sheet, a member having throughout it a plurality of cell-spaces opening against such receiving-sheet and against the absorbent, and granular material within said cell spaces and in communication with the receiving-sheet.

2. In a bandage, the combination with a body of absorbent material, of means to maintain the said absorbent material in place and having an opening, a body of sand adjacent to said opening and upon the absorbent material, and means to separate the said body of sand into small portions, each portion lying at such opening.

3. A bandage comprising supporting means, a cellular structure carried thereby, and an absorbent material in each of the cells of said structure.

4. In a bandage, the combination with a sheet having an opening, of a thin open-mesh fabric covering the said opening, absorbent material within the sheet, a body of sand between the absorbent and the opening-cover, and means to distend the said opening and to maintain, at said opening, a surface on the sand of considerable area.

5. In a bandage, the combination with a body of absorbent material, means to hold the same in place, a chambered side-bracing member therein, and sand within and reinforcing the side-bracing member.

6. A bandage comprising supporting means, a body of absorbent material carried thereby, a cellular structure also carried thereby, and a granular absorbent in cells thereof.

7. A bandage comprising supporting means, absorbent material carried thereby, absorbent material of a different kind also carried thereby, and means for separating said last absorbent material into separate bodies or portions one from another.

8. A bandage comprising a cover-sheet, a body of fibrous absorbent material therein arranged to form a chamber-space, and sand or analogous granular material located within said chamber-space.

9. In a bandage, the combination with a body of absorbent material, open-mesh fabric at the opening thereof, means to maintain the fabric at the opening distended, and means carried by said distending means for communicating between such open-mesh fabric and the absorbent material.

10. A bandage comprising an absorbent body, a plurality of organized and separated bodies of sand or analogous granular material therein, and means for carrying the same.

11. A bandage comprising a cover-sheet, an absorbent body therein, a cellular structure thereon, and an open-mesh fabric surrounding such cellular structure.

12. A bandage comprising an absorptive mass, a body having a number of cell-spaces and made up of a number of thin narrow strips arranged to produce cells and adapted for receiving the matter for absorption and for distributing the same to the absorptive mass, and means within said cells for initially absorbing said matter.

13. A member for a bandage comprising a body having a number of cells, said cells being formed by the folding of a strip upon itself, and means to hold the strip in its folded form and to permit longitudinal compression of said member but to prevent longitudinal extension thereof.

810,122. ABSORBENT BANDAGE. WILLARD R. GREEN, Muscatine, Iowa, assignor to The American Absorbent Fiber Company, Portland, Me., a Corporation of Maine. Filed June 10, 1904. Serial No. 211,931.

Claim.—1. An absorbent bandage, comprising a body of absorbent material having a chamber-space within it, and means for maintaining said chamber-space to permit the passage of fluid therethrough and for preventing the closing of said absorptive material into such chamber-space

2. An absorbent bandage comprising a body of absorbent material substantially tubular in cross-section, means within the tube to maintain the inner walls of such tube from compression, a sheath about said body open at one side, and an open-mesh covering upon said body at the said open side.

3. In a bandage, the combination with a body of loosely-arranged absorbent material, having a chamber within such body, means to prevent the body from being pressed into such chamber, an impervious sheath about the major portion of such body leaving an open side, and a pervious sheath upon the said open side.

4. A bandage comprising a body of absorbent material arranged to form a chamber, an open cage within said chamber, an impervious sheathing covering the sides and body thereof, a pervious sheathing covering the top, and means having cellular passage-ways from such pervious material to the chamber within the cage.

5. In an article of the class described, the combination with a body having a chamber within it and extending longitudinally of such body, an open-mesh receiving-face upon such body and a plurality of passage-ways running from such face to the chamber and transversely disposed relatively thereto.

6. In an absorbent bandage, the combination of a resistant metallic cage, an absorbent about the cage, and a cover-sheet supporting the absorbent.

7. In an absorbent bandage, a mass of absorbent material, a chamber-forming cage located interiorly of such mass and having diagonally-disposed ribs affording slight yieldability crosswise of the bandage.

8. A bandage having a body of absorbent material, a chamber-forming cage within the same comprising a member embodying a number of diagonally-disposed crossed ribs, a sinuously-folded ribbon imposed thereon, and means for supporting and holding said elements together.

9. An absorbent bandage comprising a body of absorbent material substantially tubular in cross-section, means within the tube for maintaining the inner walls of the same from compression, and a sheath about said body open at one side.

10. An absorbent bandage comprising a cover having an opening, an absorbent material therein, and a side-bracing member located adjacent to said opening and having a series of perpendicularly-located cells or chambers.

810,123. ABSORBENT BANDAGE. WILLARD R. GREEN, Muscatine, Iowa, assignor to The American Absorbent Fiber Company, Portland, Me., a Corporation of Maine. Filed June 10, 1904. Serial No. 211,932.

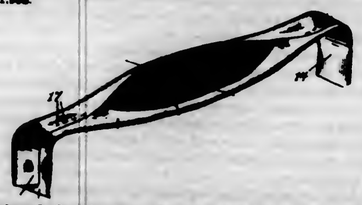

Claim.—1. In a bandage, the combination with a supporting member, of a body of absorbent material therein, a chamber-space-forming cage in the said absorbent material and a body of absorbent material loosely arranged within said cage.

2. In a bandage, the combination with a supporting member, of a body of absorbent material therein, and a chamber-space-forming member comprising a coil or helically-formed structure.

3. In a bandage, the combination with a supporting member, of a body of absorbent material therein, and a chamber-space-forming member comprising a coil or helically-formed structure, and an absorbent body of material disposed within said structure.

4. In a bandage the combination with a supporting member, of a body of absorbent material therein, and a chamber-space-forming member comprising a coil or helically-formed structure having a relatively flat or concaved upper surface.

5. In a bandage the combination with a supporting member, of a body of absorbent material therein, and a chamber-space-forming member comprising a plurality of parallelly-located, longitudinally-disposed coil or helically-formed structures.

810,124. ABSORBENT BANDAGE. WILLARD R. GREEN, Muscatine, Iowa, assignor to The American Absorbent Fiber Company, Portland, Me., a Corporation of Maine. Filed June 10, 1904. Serial No. 211,963.

Claim.—1. A bandage comprising a body of absorptive material, a body of sand or analogous granular material thereon, and a body comprising a number of cells upon such sand body, for passing fluid material to the sand and for preventing sidewise compression of the bandage.

2. A bandage comprising a body of absorbent material, a body of sand or analogous granular material thereon, and means thereon for preventing sidewise compression thereof.

3. A bandage comprising a cover-sheet, a body of fibrous absorbent material therein, a sack or layer of granular material thereon, a side-bracing member on said sack or layer of granular material and having cells, spaces or chambers for the passage of fluid therethrough, and a surface sheet over said side-bracing member.

810,125. ABSORBENT BANDAGE. WILLARD R. GREEN, Muscatine, Iowa, assignor to The American Absorbent Fiber Company, Portland, Me., a Corporation of Maine. Filed June 10, 1904. Serial No. 211,934.

Claim.—1. In an absorbent bandage, the combination of a body of absorbent material, a covering therefor, and an absorbent-retaining and bandage-side-bracing member located between the covering and said absorbent material.

2. An absorbent bandage comprising a cover-sheet, a coil-formed cage located therein, and absorbent material located within said cage, the organization being such that the cage incloses the absorbent material and the cover-sheet incloses the cage.

3. An absorbent bandage comprising a cover-sheet having an opening, a coil or helically-formed cage within said cover-sheet, absorbent material substantially all of which is located within said cage, the upper surface of which cage is of different formation from the under surface, and one or more surface sheets extending across the opening of the cover-sheet.

4. In an absorbent bandage, a retaining member comprising a plurality of flexible coils formed with their upper portions depressed, combined with an absorbent mass all substantially contained within said retaining member, and a surface sheet extending over the retaining member, whereby an open space is normally formed between said surface sheet and said retaining member with the absorbent material therein.

810,126. ABSORBENT BANDAGE. WILLARD R. GREEN, Muscatine, Iowa, assignor to The American Absorbent Fiber Company, Portland, Me., a Corporation of Maine. Filed June 16, 1904. Serial No. 211,993.

Claim.—1. In an absorbent bandage, the combination with a side-bracing member constructed with transversely-disposed spaces, of an absorbent mass formed in a strand and this folded to lie in said spaces, the folds of such absorbent mass forming cushion edges along the side-brace member.

2. In an absorbent bandage, the combination with a side-bracing member constructed with transversely-disposed spaces above and below said member in alternation, of an absorbent mass forming a strand and folded to lie in said spaces and having its folded ends forming cushion edges along the sides of the side-brace member.

3. In an absorbent bandage the combination of a member folded to form transversely-located spaces or channels, and an absorbent material in each of said transverse spaces or channels.

4. In an absorbent bandage, the combination with the chamber-space member, of a mass of absorbent material below said member, a strand of absorbent material disposed in transverse folds and located within the spaces of said chamber member, and supporting means for retaining said members assembled together.

5. In an absorbent bandage, the combination with a containing cover-sheet, of a lower mass of absorptive material contained in and supported by said cover-sheet, and a combined absorptive and transmitting device located above said lower mass and comprising a body of absorptive material and a space member having a series of spaces formed and separated by successive back-and-forth bends of the space member for containing the absorptive material of such combined member and to prevent such absorptive material from being subjected to undue compression.

6. In an absorbent bandage, the combination with a flexible space member consisting of a sheet of relatively resistant material folded to form successive transversely-disposed spaces and having openings communicating between said spaces, of an absorbent mass in the form of an extended strand disposed in said spaces, a mass of absorbent material below said space member, and means for retaining said member and the absorbent material below the same assembled together.

7. In an absorbent bandage the combination of a member having transversely-located spaces or channels, and one or more twisted strands of absorbent material disposed in said transverse spaces.

810,127. ABSORBENT BANDAGE. WILLARD R. GREEN, Muscatine, Iowa, assignor to The American Absorbent Fiber Company, Portland, Me., a Corporation of Maine. Filed June 16, 1904. Serial No. 211,993.

Claim.—1. A bandage comprising an absorbent, a number of members each having a plurality of cell-spaces imposed thereon, and means effective on the movement of the wearer to cause the said members to move one relative to the other and relative to the absorbent.

2. A bandage comprising an absorbent, means to support the same and having securing members, and a number of members having a plurality of cell-spaces and alternately connected to the respective securing member.

3. A bandage comprising an absorbent, means to support the same and having securing members, a series of superimposed members each having a plurality of cell-spaces and some of which are connected to the respective securing members and some of which are not so connected whereby upon movement of the bandage the cell-space members will slip one upon the other.

4. A bandage comprising an absorbent, a cover-sheet to contain the absorbent and having securing members at its ends, a number of members each having a plurality of cell-spaces the cell-spaces being differently located in the respective members, and said members having dissimilarity in width and being connected to the securing members.

5. A bandage comprising an absorbent mass, a cover-sheet surrounding and supporting the same and having a receiving-opening, and side-bracing means within the sheet at such opening to prevent the collapse of the opening and comprising a plurality of perforated plates imposed one upon the other and organized to permit their independent movement incident to change in side pressure upon the bandage.

6. A bandage comprising a body of absorptive material, means to inclose and support the same and provided with an opening, a side-bracing member comprising a plurality of perforated members adapted to move one upon the other and located at said opening and having a portion of the absorptive body between their sides and the casing.

7. A bandage comprising an absorbent body, a cover-sheet therefor having a receiving-opening, and side-bracing means within the sheet to prevent the collapse of the opening or bandage and comprising a plurality of perforated plates or members located in layers, and one or more having a different arrangement or construction from its companion member or members.

810,128. ABSORBENT BANDAGE. WILLARD R. GREEN, Muscatine, Iowa, assignor to The American Absorbent Fiber Company, Portland, Me., a Corporation of Maine. Filed June 16, 1904. Serial No. 211,997.

Claim.—1. A bandage comprising a body of absorptive material, a cover therefor provided with an opening, a member within said opening and provided with a series of cells or chamber-spaces, and absorptive material winding through the same, and presenting portions toward the opening of the bandage and toward the absorptive material respectively.

2. In a bandage, the combination with a cover-sheet, of a body having absorptive material therein, a member comprised of sheet material and bent upon itself to form a series of chamber-spaces, and strands of fibrous absorbent material wound about and through such member whereby some of the said spaces remain open and some of the same are partially filled with such absorbent strands.

3. An absorbent bandage, comprising a cover-sheet having an opening and a cell-spaced member adjacent to said opening, and having three longitudinal zones of cell-spaces, the inner zone of which is open and the cells in the side zones of which are partially closed by absorbent material.

4. A bandage comprising a cover having an opening, a framing member located in said cover, and strands of absorbent material wound from top to bottom around parts of such framing member.

5. A bandage comprising a cover provided with an opening, a framing member having a series of elongated walls forming cells or troughs located in said cover, and strands of absorbent material wound around some or all of the ends of such framing member from top to bottom.

6. A bandage comprising absorptive material, and a folded framing member therein having a series of alternately-located troughs or cells, some or all of which have a part thereof provided with either a bottom or a top wall.

7. A bandage comprising absorptive material, and a folded framing member therein having a series of alternately-located troughs or cells, some or all of which have a part thereof provided with either a bottom or a top wall, and some or all of which portions having a top or bottom wall are also provided with an end wall or walls.

8. A bandage comprising a cover-sheet having an opening, a mass of absorptive material within said cover-sheet, a member between said absorptive material and said opening and having a number of cells or chambers, some closed toward said opening and open toward the absorptive mass, and some open toward said opening and closed toward the absorptive mass, and some also open toward both the said opening and absorptive mass, and fibrous absorptive material traversing some of said cells or chambers.

9. A bandage comprising a cover-sheet, one or more strands of absorbent material located therein and each folded upon itself a relatively large number of times, and means located between the folds of said strands for separating them.

10. A bandage comprising a cover-sheet, a plurality of strands therein, parts of one strand crossing parts of another, and means for separating one strand from another at various points throughout the length thereof.

810,129. ABSORBENT BANDAGE. WILLARD R. GREEN, Muscatine, Iowa, assignor to The American Absorbent Fiber Company, Portland, Me., a Corporation of Maine. Filed June 16, 1904. Serial No. 212,997.

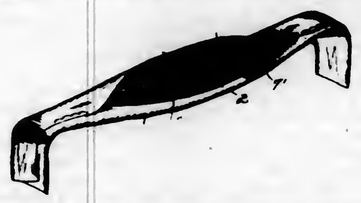

Claim.—1. An absorbent bandage comprising supporting means, and an absorbent material carried thereby and made up of fibers or strands located in layers, substantially all of the fibers or strands of one layer running lengthwise of the bandage and substantially all the fibers or strands of the other layer running crosswise thereof.

2. An absorbent bandage comprising supporting means, and an absorbent material carried thereby and made up of fibers or strands located in layers, substantially all of the fibers or strands of one layer running lengthwise of the bandage and substantially all the fibers or strands of the other layer running crosswise thereof, the fibers or strands of one or both layers being twisted.

3. An absorbent bandage comprising supporting means, and an absorbent material carried thereby and made up of fibers or strands located in layers, substantially all of the fibers or strands of one layer running lengthwise of the bandage and substantially all the fibers or strands of the other layer running crosswise thereof, the fibers or strands of one or both of the layers being folded upon itself a plurality of times.

4. An absorbent bandage comprising supporting means, and an absorbent material carried thereby and made up of fibers or strands located in layers, substantially all of the fibers or strands of one layer running lengthwise of the bandage and substantially all the fibers or strands of the other layer running crosswise thereof, the fibers or strands of one or both layers being twisted and folded upon itself a plurality of times.

5. An absorbent bandage comprising supporting means, and an absorbent material carried thereby and made up of woody or analogous fibers or strands located in layers, substantially all of the fibers or strands of one layer running lengthwise of the bandage and substantially all the fibers or strands of the other layer running crosswise thereof, and the strands or fibers of one or both of the layers being twisted to form a plurality of members located side by side.

6. An absorbent bandage comprising supporting means, and an absorbent fibrous material carried thereby and made up to form a plurality of twisted rope-like members located side by side

7. An absorbent bandage comprising supporting means, and an absorbent fibrous material carried thereby and made up to form a plurality of twisted rope-like members located side by side and disposed transversely of the supporting member.

8. An absorbent bandage comprising supporting means, and a mass of fibrous absorbent material carried thereby and twisted into one or more rope-like members each folded upon itself a plurality of times, one or more of which members is located transversely of the supporting means.

9. A bandage comprising a cover-sheet, an absorbent material located therein in a comparatively loose mass, and an absorbent material twisted and folded into a plurality of rope-like members.

10. A bandage comprising a cover-sheet, an absorbent material located therein in a comparatively loose mass, and an absorbent material twisted and folded into a plurality of rope-like members and running transversely of the cover-sheet.

11. An absorbent bandage comprising supporting means, an absorbent material carried thereby and comprising one or more strands each folded upon itself a plurality of times and running lengthwise of the cover-sheet, and one or more strands each folded upon itself a plurality of times and running crosswise of the cover-sheet.

12. An absorbent bandage comprising a cover-sheet, an absorbent material located therein and twisted and folded upon itself a number of times lengthwise of the cover-sheet, and an absorbent material twisted and folded upon itself a number of times crosswise of the cover-sheet.

13. In a bandage the combination of a body of absorptive material, a cover-sheet therefor having an opening, a plurality of surface sheets extending across said opening, one having its edges extending between the absorptive material and the other having its edges overlying the cover-sheet.

810,130. ABSORBENT BANDAGE. WILLARD R. GREEN, Muscatine, Iowa, assignor to The American Absorbent Fiber Company, Portland, Me., a Corporation of Maine. Filed June 13, 1904. Serial No. 212,275.

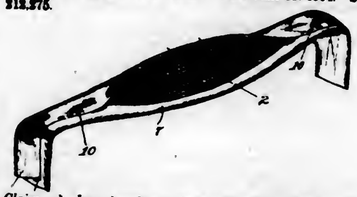

Claim.—1. In a bandage, the combination with a supporting member, of a body of absorbent material therein, and a chamber-space-forming member comprising a number of transversely-disposed coils of wire.

2. In a bandage, the combination with a supporting member, of a body of absorbent material therein, and a chamber-space-forming member comprising a number of transversely-disposed coils having greater diameter at the sides than at the center of the bandage.

3. In a bandage, the combination with a supporting member, of an absorptive mass therein, a space-forming member comprising a number of coils transversely disposed, and having a sinuous member resting thereon, and constituting a side brace.

4. An absorbent bandage comprising a supporting member, absorbent material therein, a series of coil-springs to press the same toward the sides and to form a chamber-space therein, and a side-bracing member upon said coil-springs.

5. In a bandage, the combination with a mass of absorptive material, of transversely-located means for supporting the same, a chamber-space-forming member within the absorptive mass, and comprising a number of helically-wound bodies, and a side-bracing member for said bandage.

810,131. ABSORBENT BANDAGE. WILLARD R. GREEN, Muscatine, Iowa, assignor to The American Absorbent Fiber Company, Portland, Me., a Corporation of Maine. Filed June 13, 1904. Serial No. 212,276.

Claim.—1. An absorbent bandage comprising an absorptive mass, a plurality of members imposed thereon and each provided with chambers or spaces located transversely of the bandage, and a member also having cells or spaces located transversely to the chambers or spaces of its companion members, and separating said first members.

2. An absorbent bandage made up of an absorptive material and a plurality of members having an organized arrangement of cells or chambers, a series of which are located transversely to a series of companion cells or chambers.

3. A bandage comprising a cover-sheet, a body of absorptive material having a chamber-space within it and a corrugated member within such chamber-space having coarse-mesh fabric fastened to its upper side, and a coarse-mesh receiving fabric at the opening of the cover-sheet and adjacent to the fabric upon the corrugated member.

4. In a bandage, the combination with a cover-sheet having an opening, of a mass of absorptive material within the cover-sheet and having a chamber-space located at such opening, a member adapted to brace such opening from sidewise closure and yieldable transversely, a cell-space-forming member beneath the same and readily flexible, and compressible longitudinally and transversely of the bandage, but non-compressible perpendicularly, and a member between such cell-space member and the absorptive material and comprising a folded perforated sheet having transverse troughs, some open directly to such cell-spaces and some open directly to the absorptive material and yieldable upon lines transverse of the bandage.

5. A bandage comprising a supporting member and a mass of material having an organized arrangement of coacting and communicating cells or chambers.

6. A bandage made up of a cover-sheath, an absorptive material so carried therein as to form a chamber, and means located in said chamber and dividing it up into an organized series of cells or spaces.

7. A bandage made up of a cover-sheath, an absorptive material so carried therein as to form a chamber and means located in said chamber and dividing it up into an organized series of cells or spaces, some of which are readily compressible in one direction but not in another, while others of which are readily compressible in a direction different from that in which their companion cells or spaces are compressible.

8. An absorbent bandage comprising a supporting member having within it an absorbent mass of material having unorganized interstices, and a mass of material having an organized series of cells or chambers, a part of such cell or chamber formed mass being so located as to keep the supporting member distended throughout a portion thereof to permit the passage of fluid to the absorbent mass.

9. An absorbent bandage made up of a mass of material having a series of capillary interstices for receiving the more fluid parts of the material for absorption and an organized cell-spaced means having comparatively larger cells for receiving the thicker fluids and chamber-cells for receiving and retaining the coagulative portions, the organization being such that one series of cells or chambers is located transversely to another.

10. In an absorbent bandage, the combination with a lower member consisting of absorptive material, of an upper member having chambers communicating with each other through openings for ventilation and for the passage of fluids and comprising resistance portions disposed transversely thereof for side bracing the bandage, and a flexible cellular and laterally-compressible intermediate member.

11. In a bandage, the combination with a mass of absorptive material, of a cover-sheet to support the same, a receiving-sheet of open-mesh material, a cell-spaced body in such absorptive mass, and a body having transverse corrugations disposed upon such cell-spaced body.

12. In a bandage, the combination with a mass of absorptive material, of a body comprising cells therein, a body comprising transverse passages upon its respective sides and intersected by perforations and resting upon such cellular body, portions of the absorptive mass being disposed at the ends of such chambers.

13. In an absorbent bandage, the combination with a mass of absorptive material, of a member supported thereabove and consisting of a sheet of material shaped to form two series of chambers, one series above and the other series below such sheet.

14. In an absorbent bandage, the combination with a cover-sheet having a receiving-opening, of a lower member therein consisting of a mass of absorptive material, and an upper member situate at said opening and comprising a series of chambers having openings communicating downwardly between said chambers and the absorbent material, and also having openings communicating laterally between successive chambers whereby said chambers serve the purpose of conduits for transmitting fluids downwardly to the lower member and also serve as means for ventilation of the bandage.

15. In a bandage, the combination with a body of absorptive material and a member thereabove comprised of a perforated corrugated sheet having a coarse-mesh fabric secured upon the summits of the corrugations.

810,132. **ABSORBENT BANDAGE.** WILLARD R. GREEN, Muscatine, Iowa, assignor to The American Absorbent Fiber Company, Portland, Me., a Corporation of Maine. Filed June 13, 1904. Serial No. 212,377.

Claim.—1. In a bandage, the combination with a supporting member, of an absorptive member comprising a rope formed of fibrous absorbent, and a series of troughs about which the rope is folded.

2. In a bandage, the combination with a supporting member, of an absorptive member comprising a rope formed of fibrous absorbent, and a series of perforated troughs about which the rope is folded transversely of the bandage.

3. In a bandage, the combination with a cover-sheet, of a body of absorptive material therein in the form of a rope folded upon itself a number of times, side bracing members in the form of troughs between some or all of the folds of the rope, and a body of absorptive material below such rope and side-bracing members.

4. In a bandage, the combination with a supporting member, of a body therein comprising a rope folded upon itself and trough-like receiving and distributing chamber-space-forming members between the folds, and a similarly-formed body imposed thereon.

5. In a bandage, the combination with a supporting member of a mass of absorbent therein, a rope folded upon itself and lying upon such mass and having trough-like receiving and distributing chamber-space-forming members between the folds and a similarly-formed body imposed thereon, having the absorbent members overlying the chamber-space-forming members in the first-mentioned series.

810,133. **ABSORBENT BANDAGE.** WILLARD R. GREEN, Muscatine, Iowa, assignor to The American Absorbent Fiber Company, Portland, Me., a Corporation of Maine. Filed June 13, 1904. Serial No. 212,378.

Claim.—1. A bandage comprising a sheet of absorptive material folded upon itself in lines transversely disposed to the length of the bandage, and having its various layers disposed perpendicularly to the bandage.

2. A bandage comprising a sheet of absorptive material folded upon itself in lines transversely disposed to the length of the bandage, and having its various layers disposed perpendicularly to the bandage, and side-bracing members between some or all of the layers.

3. A bandage comprising a sheet of absorptive material folded upon itself in lines transversely disposed to the length of the bandage, and having its various layers disposed perpendicularly to the bandage, and chamber-spaces between some of the folds.

4. An absorptive bandage, having means to support the same, of a body of absorptive material therein, comprising a sheet, one portion of which is made of relatively coarse compacted wood strands, and the other portion of which is made of a relatively fine compacted stock, the sheet being folded upon itself to form a number of folds, the planes of the layers whereof are perpendicularly disposed to the bandage and transversely thereto, and corrugated cell-space members between the folds.

5. In a bandage, the combination with a body of absorptive material, comprising a sheet of woody strands folded upon itself and having corrugated members interposed between the folds at the receiving-face of the bandage.

6. A bandage comprising supporting means, and a sheet or layer of absorbent material folded upon itself with its several layers perpendicularly disposed with relation to said supporting means.

7. A bandage comprising supporting means, a sheet or layer of absorbent material folded upon itself with its several layers perpendicularly disposed with relation to said supporting means, and means for separating some or all of the folds.

8. A bandage comprising a cover-sheet having an opening, and a sheet or layer of absorbent material folded upon itself transversely to the length of the cover-sheet, with its various layers disposed perpendicularly to the cover-sheet and with some of the folds thereof toward the opening of the cover-sheet.

810,134. **ABSORBENT BANDAGE.** WILLARD R. GREEN, Muscatine, Iowa, assignor to The American Absorbent Fiber Company, Portland, Me., a Corporation of Maine. Filed June 13, 1904. Serial No. 212,379.

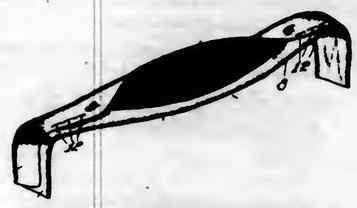

Claim.—1. A bandage comprising a supporting cover-sheet, a body of absorbent material therein, and a perforated receiving layer, made up of an absorptive mass of material, upon said body.

2. In a bandage, the combination with a cover-sheet, of a mass of absorptive material therein arranged in the form of folded layers, the lines of the folds running longitudinally of the bandage, and the layers being some of them perforated to produce a number of disconnected chamber-spaces located at various points within the said mass.

3. A bandage comprising a cover-sheet, an absorptive body within said sheet comprised of mingled woody strands and vegetable fiber, and so organized that the major portion of such mass will be composed of coarse stock and the upper or receiving layer or portion of a finer grade of stock.

4. In a bandage, the combination with means for supporting the mass, of a mass of fibrous absorbent material supported thereby and arranged in layers, the upper layer whereof is of a finer stock than the other layers, and some of which layers are provided with perforations making cell-spaces, and a side-bracing member comparatively unyielding transversely of the bandage and imposed between some of said layers and provided with openings.

5. An absorbent material for a bandage, arranged in the form of layers, each made up of a mass of absorptive stock, one or more of such layers having perforations to form a number of chambers or cell-spaces located at various points within the mass.

6. In a bandage, the combination with a cover-sheet having an opening, of an absorptive mass, composed of vegetable fiber and woody strands within said cover-sheet and comprising a perforated receiving layer adjacent to such opening, and a sheet arranged in a series of folds having the folds longitudinally of the bandage and provided with a number of cell-spaces, such sheet being made of a coarser stock than the receiving layer, an open-mesh cover-sheet at the said opening and leaving a chamber-space between it and such receiving layer, and a perforated side-bracing and distributing member below such perforated receiving member.

810,135. **ABSORBENT BANDAGE.** WILLARD R. GREEN, Muscatine, Iowa, assignor to The American Absorbent Fiber Company, Portland, Me., a Corporation of Maine. Filed June 13, 1904. Serial No. 212,380.

Claim.—1. In a bandage, the combination with a supporting member, of an absorbent member comprised of a composite sheet having cell-spaces within it bent upon itself a number of times.

2. A bandage comprising a supporting member, an absorbent member comprising two sheets of absorbent material having a sheet of corrugated material interposed between them, and such composite sheet bent upon itself a number of times.

3. A bandage comprising a supporting cover-sheet, an absorbent member comprising two sheets of absorbent material having a sheet of corrugated material interposed between them, and such composite sheet bent upon itself a number of times and resting edgewise upon the cover-sheet and the cell-spaces formed by the corrugated sheet occupying positions perpendicular to the face of the bandage.

4. An absorbent member for a bandage comprising layers or sheets of absorbent material combined with a corrugated sheet and folded upon itself a number of times, a fastening device at points in the member, whereby the excess of material had at a short fold of one sheet will be compensated for at the long fold of the same sheet.

5. A bandage comprising a plurality of sheets or layers of absorbent material folded upon itself a number of times and fastened at every third fold.

6. An absorbent material for surgical purposes, comprising a composite member made up of a plurality of layers fastened together, one of which is of cellular construction.

7. A bandage comprising a cover-sheet having an opening, and one or more layers of absorbent material folded upon itself a number of times and disposed edgewise in said sheet with one of its free edges toward said opening.

810,136. **ABSORBENT MATERIAL.** WILLARD R. GREEN, Muscatine, Iowa. Filed July 25, 1904. Serial No. 217,069.

Claim.—1. An absorbent material for surgical purposes comprising woody strands, and fiber intermingled therewith.

2. An absorbent material for surgical purposes comprising excelsior, and a vegetable fiber such for instance as cotton or linen fiber intermingled therewith.

3. An absorbent material for surgical purposes composed of two kinds of stock mingled together and consisting one of relatively large and rigid strands of ribbon-like formation, and the other of fiber distributed through the interior of the mass within spaces formed by the relative rigid strands, so that the strands keep open and expanded the fiber component of the mass, the two kinds of stock together forming the capillary and fluid-retaining interstices of the mass.

4. An absorbent material for surgical purposes consisting of a mass of woody or analogous strands intermingled with a mass of vegetable fiber such as cotton or linen fiber, the woody strands acting as a frame to maintain the fiber mass distended and against collapse upon the absorption of moisture.

810,137. **ABSORBENT MATERIAL.** WILLARD R. GREEN, Muscatine, Iowa. Filed July 25, 1904. Serial No. 217,070.

Claim.—1. As an article of manufacture, an absorbent body for surgical purposes consisting of a main portion composed of woody strands and one or more surface layers composed of fiber.

2. As an article of manufacture, an absorbent body for surgical purposes consisting of a main portion composed of a mixture of excelsior and fiber, and one or more surface layers of fiber upon said mass.

3. As an article of manufacture an absorbent mass for surgical purposes consisting of a main portion comprising intermingled woody strands of various sizes, and a surface layer composed of vegetable fiber, such as cotton or linen fiber

4. An absorbent material for surgical purposes consisting of a highly-absorbent mass of mixed strands and fiber, and a surfacing of cementitious fiber upon one side, and a vegetable fiber upon the other side.

5. As an article of manufacture, an absorbent mass for surgical purposes consisting of a body made up of intermingled woody strands or ribbons of various sizes, and a fibrous or filamentous surface layer on one or more faces thereof, the whole arranged in sheet form and partially divided into blocks or sections to permit ready detachment thereof.

810,138. ABSORBENT MATERIAL. WILLARD R. GREEN, Muscatine, Iowa. Filed July 26, 1904. Serial No. 217,971.

Claim.—An absorbent material for surgical purposes comprising commingled excelsior and wood fiber.

810,139. ABSORBENT MATERIAL AND FIBER-STOCK THEREFOR. WILLARD R. GREEN, Muscatine, Iowa. Filed July 26, 1904. Serial No. 217,972.

Claim.—1. An absorbent material for surgical purposes comprised of a mass of relatively fine, bent or curved, fibrous-paper clippings.

2. An absorbent material for surgical purposes comprising a mass made up of woody strands intermingled with fibrous-paper fragments or clippings.

3. An absorbent material for surgical purposes comprised of a mass of mixed excelsior and bent or curved fibrous-paper clippings cut from a sheet of material.

4. An absorbent for surgical purposes comprising a body of minute masses of fibrous material each having reversed curved faces to open up to the outside of the interspaces in each mass, mingled with a framework-forming absorbent.

810,140. COPPER-COOLER. HARRY HAHER, Chicago, Ill. Filed Sept. 27, 1905. Serial No. 280,267.

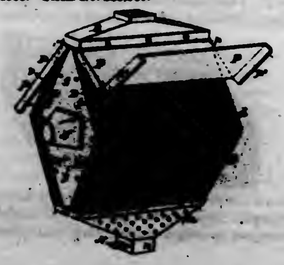

Claim.—1. In an apparatus of the class described, the combination of a leading-in spout and pyramidal funnel with inclined baffle-plates therein, downwardly-divergent and then convergent walls of fine wire-netting to form zigzag passages, a hopper into which said passages lead, the inner walls forming an air-chamber between said zigzag passages, and an air-pipe issuing from the middle portion of one end of said air-chamber, substantially as described.

2. In an apparatus of the class described, the combination of an upper funnel and inclined baffle-plates therein, a bottom hopper and a gate to control it, and between said upper funnel and bottom hopper, the wire-netting walls of two zigzag passages leading downwardly from said funnel into the bottom hopper, the walls of a diamond-shape air-chamber in the center, an air-pipe issuing from one side of said air-chamber, and a door in the opposite side, substantially as described.

3. In an apparatus of the class described, the combination of an upper funnel and inclined baffle-plates therein, a bottom hopper and a gate to control it and between said upper funnel and bottom hopper, the wire-netting walls of two divergent and then convergent passages leading downwardly from said funnel to the bottom hopper and foldable shutters hinged to rest upon the walls of the divergent passages, substantially as described.

810,141. BOOK-SUPPORT. ROBERT B. HALSELL and ALEXANDER B. CAMPBELL, Laurel, Miss. Filed May 5, 1905. Serial No. 259,614.

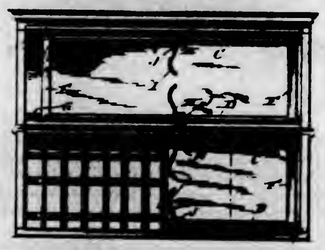

Claim.—1. In combination with a bookcase, a pair of rods extending longitudinally thereof; means for holding said rods within the case and an adjustable finger mounted upon each rod.

2. In combination with a bookcase, a frame adjustably secured therein and extending longitudinally thereof; and means carried by the frame for bearing against the last book of a series placed within the case.

3. In combination with a bookcase, a frame adjustably secured therein and extending longitudinally thereof; and a pair of fingers extending outwardly from the frame toward the front of the case, said fingers being adjustable longitudinally of the frame.

4. In combination with a bookcase, a pair of rods; a spring for securing each rod in place within the case; and an adjustable finger mounted upon each of said rods.

5. In combination with a bookcase, a frame having two longitudinally-disposed rods; a spring cooating with each rod to hold the frame in place; and a finger mounted upon and adjustable lengthwise of each rod.

6. In combination with a bookcase, a frame mounted therein, said frame comprising two longitudinally-disposed rods, and members connecting said rods; a pair of springs mounted upon the ends of the rods; and a bearing-finger mounted and longitudinally adjustable upon each of said rods.

7. In combination with a bookcase, a pair of longitudinally-disposed rods; connecting members for said rods; a coiled spring mounted upon one end of each of said rods; and a bearing-finger also mounted upon each of said rods, each finger having a coiled portion which encircles its rod, substantially as described.

8. In combination with a bookcase, means adjustably mounted therein and extending longitudinally thereof for limiting the movement of the books rearwardly within the case; and means adjustably mounted upon said first-mentioned means for holding the books in close contact with each other, substantially as described.

810,142. SHADE-ROLLER AND CURTAIN-POLE SUPPORT. JOSEPH KERR, Gibsonburg, Ohio. Filed Oct. 26, 1905. Serial No. 284,288.

Claim.—1. The combination with frame-embracing clamp members having overlapping slidably-associated shanks, of a pole-supporting bracket located transversely of the overlapped shanks, a roller-supporting bracket having a portion disposed alongside the overlapped shanks and adjustable with respect thereto, and a holding-bolt passing through the overlapped portions of the shanks, the pole-supporting bracket, and the roller-supporting bracket portion and constituting a clamp for all of the same.

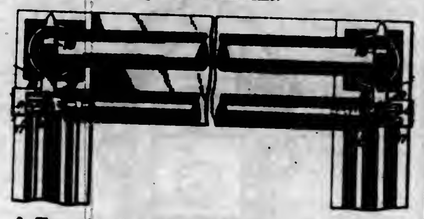

2. The combination with frame-embracing clamp members having overlapping slidably-associated shanks that are provided with longitudinally-disposed slots, of a pole-supporting bracket having an offset lower end disposed transversely of the shanks and provided with a slot, a roller-supporting bracket comprising an outstanding ear having an offset portion disposed longitudinally of the shanks and across the pole-supporting bracket, said offset portion having a slot, a holding-bolt passing through the various slots, and a clamping-nut threaded upon the bolt.

810,143. PHOTOGRAPHIC MASK. PERCY A. HELLBORN, Bushy, Scotland. Filed Apr. 24, 1905. Serial No. 257,262.

Claim.—An envelop or pocket within which bordered photographs may be printed, composed of a combined border-negative and picture-mask and a border-mask with picture-opening attached together in exact register as described.

810,144. PROCESS OF TREATING HIDES. FRANK B. HEMENWAY, Newcastle, Pa., assignor of two-thirds to Joseph M. Flannery and James J. Flannery, Pittsburg, Pa. Filed Dec. 27, 1904. Serial No. 238,264.

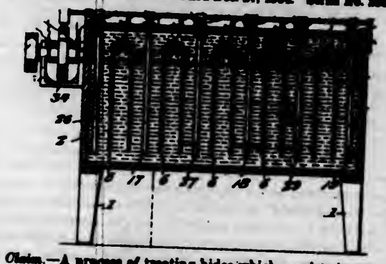

Claim.—A process of treating hides which consists in suspending a plurality of hides between a plurality of electrodes in such manner that each hide is disposed between one pair of electrodes, passing an electric current transversely through each hide, and reversing the direction of the current at suitable intervals.

810,145. TRACTION-ENGINE TENDER. CHARLES T. HITNER, Ringwood, Ohio. Filed June 24, 1905. Serial No. 266,797.

Claim.—1. In a traction-engine tender, the combination with a running-gear including spaced pivoted axles, of a reservoir mounted on the running-gear, and means for connecting both axles to the steering-gear of a traction-engine to effect their pivotal movement.

2. In a traction-engine tender, the combination with a running-gear including spaced pivoted axles, of a reservoir mounted on the running-gear, means for connecting the tender to a traction-engine, and means for effecting a differential turning movement of said axles.

3. In a traction-engine tender, the combination with running-gear including spaced pivoted axles, of means for connecting the running-gear to a traction-engine, and means connected to the axles at different distances from their pivot-caps to effect a differential movement of said axles, said means being attachable to the turning-gear of a traction-engine.

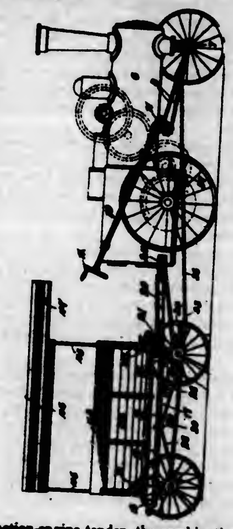

4. In a traction-engine tender, the combination with running-gear including a frame and spaced axles pivoted between their ends to the frame and having walls on opposite sides of their pivot-axes, of steering devices connected to both axles on opposite sides of their pivots, means for connecting said devices to the steering-gear of a traction-engine, and a reservoir mounted on the running-gear.

5. In a traction-engine tender, the combination with running-gear including spaced pivoted axles, of steering-cables connected to both axles on opposite sides of their pivots and connected to each other, and means for connecting said cables to the steering-gear of a traction-engine.

6. In a traction-engine tender, the combination with running-gear including a supporting-frame and spaced axles pivoted thereto, of steering-cables connected to both axles on opposite sides of their pivots, the corresponding cables of said axles being connected, and other cables for connecting said corresponding cables to the steering mechanism of a traction-engine.

7. In a traction-engine tender, the combination with running-gear including a supporting-frame and a plurality of wheeled axles, of spaced draft-links pivoted to the frame and having their front ends spaced apart, and means for pivotally connecting the front spaced ends of said links to the spaced portions of a traction-engine.

8. In a traction-engine tender, the combination with running-gear including a supporting-frame having a bolster, of wheels for supporting said frame, spaced links hinged to the bolster at their rear ends, and means for pivotally connecting the front ends of the links to a traction-engine.

9. In a traction-engine tender, the combination with running-gear including a supporting-frame having a bolster, axles pivoted to the supporting-frame, wheels journaled on the axles, spaced links hinged to the bolster at their rear ends, means for pivotally connecting the front ends of the links to a traction-engine, and means for connecting the said axles to the steering-gear of said engine.

10. In a traction-engine tender, the combination with running-gear including a reach-bar, bolsters mounted transversely on said bar, and axles pivoted to the front and rear ends of the reach-bar, of wheels journaled on the axle, spaced links pivotally connected to the front bolster and having means for attachment to a traction-engine, braces connecting the links, and means attached to both axles for connecting the same to the steering-gear of each engine.

11. In a traction-engine tender, the combination with a reach-bar having bolsters, of a reservoir mounted on the bolsters, axles pivoted to the reach-bar, means for connecting one of the bolsters to a traction-engine, and means for connecting the axles to the steering-gear of a traction-engine.

12. In a traction-engine tender, the combination with a reach-bar having bolsters, of a reservoir mounted on the bolsters, axles having ball-and-socket connections, respectively, with the front and rear ends of the reach-bar, braces connecting the axles and the reach-bar, links for pivotally connecting the front bolster to a traction-engine, and cables attached to both axles and having means for connecting the same with the steering-gear of a traction-engine.

13. In a traction-engine tender, the combination with a wheeled running-gear, of a reservoir mounted thereon, a roof supported over the reservoir and having a hood projecting from one end, and means carried by the end having the hood for connecting the running-gear to a traction-engine.

14. In a traction-engine tender, the combination with a wheeled running-gear, of a reservoir mounted thereon, a roof supported over the reservoir and having a hood projecting from one end, spaced links pivotally connected to the end of the running-gear beyond which the hood extends, and means for pivotally connecting the links to a traction-engine.

15. In a traction-engine tender, the combination with running-gear including bolsters, of a reservoir mounted on the bolsters, a roof supported over the reservoir and projecting beyond the front end of the same, means connected to the front bolster for pivotally attaching the same to a traction-engine, axles pivoted to the running-gear, and means for connecting both axles to the steering-gear of a traction-engine.

16. In a traction-engine tender, the combination with running-gear comprising a reach-bar, bolsters mounted thereon, and axles pivoted therebetween, of a reservoir mounted on the bolsters, a roof supported above the reservoir, wheels journaled on the axles, links pivoted to the front bolster and having means for pivotally connecting their front ends to a traction-engine, cables connected to the axles and to each other, and other cables connected to said first-mentioned cables and arranged to be secured to the steering-gear of the traction-engine.

17. In a traction-engine tender, the combination with a supporting-frame, of spaced axles pivoted thereto, means for connecting the frame to a traction-engine, and means for turning the axles, said means comprising devices arranged to be connected to the steering-gear of the engine, said devices being connected to the axles and closer to the pivot-axis of one than to the other to effect a differential turning movement of said axles upon the movement of the steering-gear.

810,146. COIL-SPRING. ELI HOGAN, Portland, Oreg. Filed June 14, 1905. Serial No. 265,266.

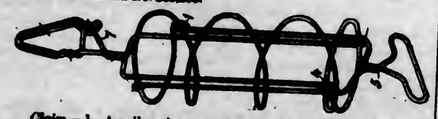

Claim.—1. A coil-spring connection device, consisting of a single piece of wire, formed in two looped straining or tension elements, and a coiled compression-spring held by its opposite ends between them.

2. A coil-spring connection device, consisting of a single piece of wire formed into two looped straining or tension elements, and a coiled compression-spring held by its ends between them, the straining or tension elements passing through the compression-spring.

3. A coil-spring connection device, consisting of a single piece of wire formed into two overlapping looped straining or tension elements, and a coiled compression-spring encircling the overlapping portions of the tension elements and held between the inner ends thereof.

810,147. TRUNK-LOCK. JOSEPH A. HOUSE, Stamford, Conn., assignor to The Yale & Towne Manufacturing Company, Stamford, Conn. Filed Feb. 28, 1905. Serial No. 247,788.

Claim.—1. In a combined hasp and lock, the combination with a member having a lock thereon, and side walls or bearings on opposite sides of the lock, and a hasp pivotally supported by the lock-case, and supported laterally by said side walls, of a member having a dowel to enter the lock and be engaged by the locking mechanism of the latter, and provided with a keeper to be engaged by the hasp.

2. In a combined hasp and lock, the combination with a member carrying a lock and hasp, and having walls forming lateral supports for the hasp when the latter is closed, of a second member having a dowel to enter the lock-casing and be engaged by the locking mechanism of the latter, and a keeper to be engaged by the hasp.

3. In a combined hasp and lock the combination with a member carrying a lock and a pivoted hasp, and provided with a recessed seat for the latter, of a second member having a dowel to enter the lock-casing and be engaged by the locking mechanism of the latter, and a keeper to be engaged by the hasp.

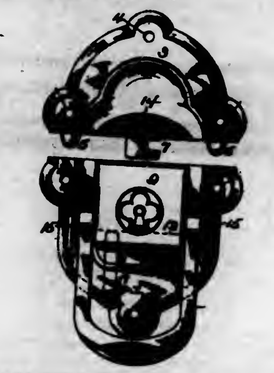

4. In a combined hasp and lock the combination with a member having a lock and a hasp, of a second member having a dowel to enter the lock and be engaged by the locking mechanism of the latter, side dowels entering seats in said first-mentioned member, and a keeper to be engaged by the hasp.

5. In a combined hasp and lock, the combination with a member having a lock thereon, and a hasp operating independently of the lock and pivotally supported by said member, of a second member having a dowel to enter the lock and be engaged by the locking mechanism of the latter, and provided with a keeper to be engaged by the hasp.

810,148. TOY OR EDUCATIONAL DEVICE. FRANK HORNBY, Liverpool, England. Filed July 23, 1901. Serial No. 69,311.

Claim.—1. In combination with a shaft having a groove extending longitudinally thereof; a member mounted upon said shaft and likewise provided with a groove upon its inner face; and an interlocking device formed of a piece of thin metal, said piece being bent or formed with a portion to embrace the shaft and with a laterally-projecting tongue, said tongue passing into the grooves and locking the shaft and member together, while the embracing portion remains without the member, substantially as described.

2. In combination with a shaft having a groove extending longitudinally thereof; a disk provided with a central opening and with a groove extending longitudinally of said opening, said disk being likewise provided with a groove *e* extending around the same and with a flanged tread *f*; and an interlocking device formed of a piece of thin metal, said piece being bent or formed with a portion to embrace the shaft and with a laterally-projecting tongue, said tongue passing into the grooves and locking the shaft and disk together, while the embracing portion remains without said member, substantially as described.

810,149. CONVEYER. GEORGE C. HENRY, Columbus, Ohio, assignor to Joseph A. Jeffrey, Columbus, Ohio. Filed Nov. 17, 1902. Serial No. 131,668.

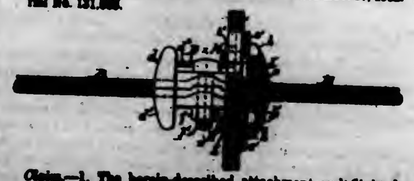

Claim.—1. The herein-described attachment and flight for a conveyer, it having the clamp or attachment formed in halves adapted to be clamped together and to form a bond of the cable therein, in combination with a detachable scraper or flight, and detachable means for securing the scraper or flight to the attachment, and means independent of the fastening devices for locking the flight against rotation on the attachment, substantially as set forth.

2. The herein-described attachment and flight for a conveyer, it having two separable halves adapted to be clamped to a cable or chain, said halves being formed with the curved-surfaced hub B at the rear end and the disk *d'* in combination with the detachable flight C formed in sections and adapted to be placed around the two parts of the attachment, and means for clamping the flight to the disk *d'* independently of the cable, substantially as set forth.

3. The herein-described attachment and flight for a conveyer, it comprising the clamp D formed in two halves adapted to be clamped to the cable or chain and having the flange *d'* arranged between the ends of the clamp and the two-part flight adapted to be placed around said clamp and to be detachably secured to said flange thereon, substantially as set forth.

4. The herein-described attachment and flight for a conveyer, it comprising the clamp or attachment formed in halves and adapted to be clamped to the cable or chain, said halves being formed with a flange *c'* and the rear hub part B, the flight formed in sections and adapted to be placed around the attachment and the bolts for detachably securing said flight to the flange *c'*, the hub part B being so shaped as to engage with the heads of the bolts and prevent them from turning when the flight is secured in place, substantially as set forth.

5. In a flight-conveyer, the combination of a two-part attachment adapted to be clamped to the cable or chain said halves being formed with a flange *c'* and one of them having a rib *d'*, and the two-part flight, fitted around said attachment and secured to said flange and having a recess adapted to receive said rib and to lock the flight against rotation independently of its fastening devices, substantially as set forth.

6. The herein-described attachment and flight for a conveyer, it comprising the clamp D formed of two halves adapted to be clamped to the cable or chain and having the enlarged convexly-curved ends for engaging with the teeth of a sprocket-wheel and the flange arranged between said ends, and the flight placed around said clamp and secured to the said flange, substantially as set forth.

7. In a cable conveyer the combination with the flexible cable, and a detachable laterally-extending circular flight or scraper surrounding said cable, of the attachment-clamp formed in two parts separable on a line longitudinally of the cable and detachably connected to the flight or scraper, the clamp having a convexly-faced enlargement or head at one side of the flight or scraper and one on the other side and both adapted to engage with the teeth of a sprocket-wheel irrespective of the axial position of the flight and adapted to relieve the flight or scraper of strains or pressure from the wheel, substantially as set forth.

810,150. WIRELESS TRANSMITTING AND RECEIVING MECHANISM FOR ELECTRIC WAVES. CHRISTIAN HÜLSMEYER, Düsseldorf, Germany. Filed Mar. 14, 1904. Serial No. 198,975.

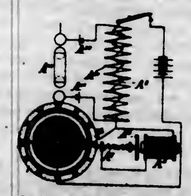

Claim.—1. In a device of the kind described the combination with an electric-wave transmitter, of an electric-wave receiver, each having synchronously-rotating contact-wheels, for automatically freeing the contact-wheels, means for actuating the receiver mechanism, after a predetermined space of time, means for preventing all other waves arriving at other moments actuating the receiver mechanism, and means for regulating the resistance of the coherer to a determined point, by varying the angle of the coherer, substantially as and for the purpose described.

2. In an electric-wave transmitter, the combination with the primary circuit of the inductorium and a manipulating-key, of an electromagnet inserted in the said circuit and actuating a spring stop-lever, a contact-wheel inserted in the said primary circuit, a stop-lug integral with the contact-wheel and in electrical contact with the said spring-lever when at rest, and completing the primary circuit, a contact-piece contact-piece on a contact-ring surrounding the contact-wheel and connected to the primary circuit, which it completes through the contact-wheel, when the lug of the latter, during the rotating touches the contact-piece of the contact-ring, and means for varying the moment at which the primary circuit is closed during the rotation of the contact-wheel, substantially as and for the purpose described.

3. In an electric-wave transmitter, the combination with the primary circuit of the inductorium and a manipulating-key of an electromagnet, inserted in the said circuit and actuating a spring stop-lever, a contact-wheel inserted in the said primary circuit, a stop-lug integral with the contact-wheel and in electrical contact with the said spring-lever when at rest, and completing the primary circuit, a contact-piece slidable and fixable in circular groove of a contact-ring, surrounding the contact-wheel and connected to the primary circuit, which it completes through the contact-wheel when the lug of the latter during its rotation, touches the contact-piece, the contact-ring being provided with a time-scale, substantially as and for the purpose described.

4. In an electric-wave receiver, the combination with a coherer-circuit of an electromagnet inserted in the coherer-circuit and acting upon a stop-armature, a contact-wheel rotating synchronously with the contact-wheel of the transmitter, and inserted in the coherer-circuit, by means of a stop-lug in contact with the said stop-armature when the contact-wheel is at rest, a movable contact disposed at a place corresponding to that of the contact-piece of the transmitter, and completing the circuit of the receiving apparatus, when the lug of the contact-wheel touches it during the rotation of the wheel, and means for removing the said contact out of the way of the said contact-lug when electric waves arrive at other moments than those corresponding to the closing of the contacts of the transmitter and receiver, substantially as and for the purpose described.

5. In an electric-wave receiver, the combination with a coherer-circuit of an electromagnet inserted in the coherer-circuit and acting upon a stop-armature, a contact-wheel rotating synchronously with the contact-wheel of the transmitter, and inserted in the coherer-circuit by means of the stop-lug in contact with the said stop-armature when the contact-wheel is at rest, a movable contact disposed at a place corresponding to that of the contact-piece of the transmitter and completing the circuit of the receiving apparatus, when the lug of the contact-wheel touches it during the rotation of the wheel, and electrically-connected contact-pieces surrounding the contact-wheel and completing by means of this contact-wheel and its contact-lug, the circuit of an electromagnet, inserted in the coherer-circuit, when electric waves arrive at other moments than those provided for by the adjustment of the apparatus, the said electromagnet by its armature withdrawing the movable contact from the way of the lug of the contact, and a lever, operated by the contact-lug, when the latter has passed the movable contact, substantially as and for the purpose described.

6. In a coherer for electric-wave receivers of the kind described, the combination with a glass vacuum-tube of a fixed piston, a movable piston, a body of coherer-powder located between the pistons, a suspension-spring for the movable piston within the tube, and means for inclining the glass tube to different angles so as to vary the pressure of the movable piston upon the body of coherer-powder, substantially as and for the purpose described.

7. In a coherer for electric-wave receivers of the kind described, the combination with a glass vacuum-tube, of a fixed piston and a movable piston containing between them a body of coherer-powder, a suspension-spring for the movable piston, a balancing support-plate, a lever system inclining more or less the said balancing support-plate, a solenoid-armature connected to the said lever system, and a counterweight also connected to the said lever system and counteracting the action of the said solenoid inserted in the circuit of the coherer, substantially as and for the purpose described.

8. In a receiver for wireless electric apparatus comprising a metallic casing, insulating-plates lodged in the recessed side walls of the casing, receiving-wires embedded in the insulating-plates and connected together at the entry-point of the casing, and a base-plate connected to the other end of the coherer and serving as earth-conductors, substantially as and for the purpose described.

810,151. STORM-TOP. WILLIAM A. HUSTIS, Terre Haute, Ind. Filed Mar. 30, 1905. Serial No. 253,262.

Claim.—1. The combination with a vehicle-body having a seat portion, of a rail of substantially the same shape as the edge of the seat portion, lugs on said seat portion downwardly-extending projections on the rail detachably engaging with said lugs upwardly-

extending projections on said rail and a rigid storm-top frame having vertical members bolted to said upwardly-extending projections.

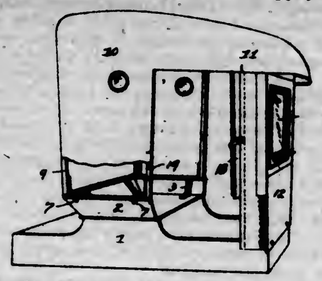

2. The combination with a vehicle-body having a seat portion, a rail of substantially the same shape as the edge of the seat portion, means for detachably securing the rail to the seat portion, a storm-top having its rear portion secured to said rail and having a depending front portion, bolts connecting the bottom part of said depending portion to the front of the vehicle-body, vertical rollers carried by said depending portion, said rollers being under spring tension and side curtains carried by said rollers.

3. The combination with a vehicle-body, of a storm-top and front carried thereby, spring-actuated side curtains for the sides of said top and a strip carried at the edge of each curtain interlocking with a part carried by the storm-top, substantially as described.

4. The combination with a vehicle-body, of a storm-top and front carried thereby, spring-actuated side curtains for the sides of said top, and a V-shaped strip carried at the edge of each curtain designed to receive the correspondingly-shaped frame member, substantially as described.

810,152. FEED MECHANISM FOR METAL SHEETS. OLIVER J. JOHNSON, Wheeling, W. Va. Filed Jan. 27, 1904. Serial No. 190,816.

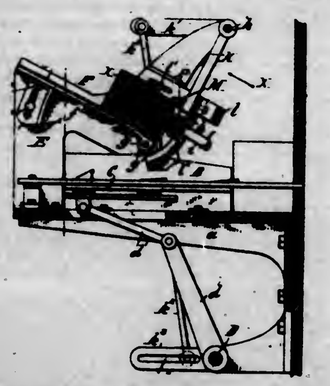

Claim.—1. The combination of a holder in which the blanks stand on edge, a stationary chute arranged in front of said holder and inclining downwardly toward the latter, a feed-arm arranged between said blank-holder and said chute and hung from above to swing back and forth between the holder and the chute, a feed device on said arm which is pressed against the faces of the blanks and to which the blanks adhere, and means for oscillating said feed-arm, whereby the blanks are removed from said holder and delivered to said chute with their front faces down, substantially as set forth.

2. The combination of an inclined holder in which the blanks stand on edge in an inclined position, a chute arranged in front of said holder and inclining in substantially the same direction as the blanks in the holder, a pivoted feed-arm arranged between said blank-holder and said chute, a feed device on said arm for holding the blanks, and means for oscillating said feed-arm, whereby the blanks are removed from said holder and delivered to said chute with their front faces down, said chute serving to strip the blanks from said feed device, substantially as set forth.

3. The combination of a holder for supporting a pile of blanks on edge, retaining-lips which engage the sides of the foremost blank to retain the blanks in the holder, an oscillating feed device for removing the blanks separately from said holder, and a stationary restraining device past which the blank secured to the feed device is carried by the latter and which bears against the edges only of the blanks to prevent the removal of more than one blank at a time from the holder, substantially as set forth.

4. The combination of a holder for supporting a pile of blanks on edge, a feed device for removing the blanks separately from said holder, and a stationary restraining device past which the blank secured to the feed device is carried and which occupies across the edge of the blank carried by the feed device to hold back succeeding blanks and prevent the removal of more than one blank at a time from the holder, substantially as set forth.

5. The combination of a holder for supporting a pile of blanks on edge, a feed device for removing the blanks separately from said holder, and a stationary restraining device past which the blank secured to the feed device is carried by the latter and which bears against the edges only of succeeding blanks to prevent the removal of more than one blank at a time from the holder, substantially as set forth.

6. The combination of a holder for supporting a pile of blanks on edge, a feed device for removing the blanks separately from said holder, and a yielding restraining-finger past which the blank secured to the feed device is carried by the latter and which bears against the edges only of succeeding blanks to prevent the removal of more than one blank at a time from the holder, substantially as set forth.

7. The combination of a holder for supporting a pile of blanks on edge, an oscillating feed device for removing the blanks separately from said holder, and a yielding restraining-finger past which the blank secured to the feed device is carried by the latter and which bears against the top edges only of succeeding blanks to prevent the removal of more than one blank at a time from the holder, substantially as set forth.

8. The combination of a holder for supporting a pile of blanks on edge, retaining-lips which engage the sides of the foremost blank to retain the blanks in the holder, an oscillating feed device for removing the blanks separately from said holder, and a yielding restraining device past which the blank secured to the feed device is carried by the latter and which bears against the step edges of the succeeding blanks to prevent the removal of more than one blank at a time from the holder, substantially as set forth.

9. The combination of a holder for supporting a pile of blanks on edge, an oscillating feed device for removing the blanks from said holder, an inclined chute to which the blanks are carried by said feed device, and a spring propelling device arranged above the path of the blanks, and which is engaged and deflected by the blank carried by the feed device and which throws the blank quickly down the chute when released from said feed device, substantially as set forth.

10. The combination of a frame, a horizontal supporting-rod, a blank-holder comprising bars mounted for vertical swinging and lateral adjustment on said supporting-rod, and brackets vertically adjustable on said frame, and on which said blank-holder bars are laterally adjustable, substantially as set forth.

11. The combination of a frame, a blank-holder supported thereby, a yoke having arms adjustably secured to said frame, a blank-chute secured to said adjustable yoke in front of said blank-holder, and a feed device arranged between said blank-holder and chute for carrying the blanks from the former to the latter, substantially as set forth.

810,153. LINOTYPE-MACHINE. DAVID S. KENNEDY, Brooklyn, N. Y., assignor to Mergenthaler Linotype Company, a Corporation of New York. Filed Feb. 3, 1898. Serial No. 668,903.

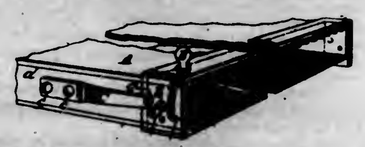

Claim.—1. The channeled linotype-magazine, in combination with the plate, B, adapted to cover and close the end of the magazine, said plate united to the magazine by sliding and turning end connections, substantially as shown, adapted to confine the plate against the end and also to permit it to lie closely upon the outside of the magazine when open.

2. In combination of a linotype-magazine with a cover-plate having angular ends, each end connected with the edge of the magazine by two slots and studs constructed substantially as shown, to permit the cover to be closed tightly over the end of the magazine or to be opened flatly against its side face.

3. In combination with the channeled magazine, the closing-plate having angular ends extended along the edges of the magazine and connected thereto by studs, substantially as shown, whereby the plate is adapted to fold against the outer surface of the magazine, and also adapted to close its end and to resist the escape of the matrices.

4. A linotype-magazine in combination with a cover-plate having angular ends, studs and slots connecting said parts, and a spring-catch to hold the cover in operative position.

810,154. COMBINED WEEDER AND HARROW. THOMAS J. KING, Richmond, Va. Filed Oct. 17, 1905. Serial No. 283,182.

Claim.—1. In a harrow, the combination of a harrow-frame, an oscillatory frame disposed longitudinally of the harrow-frame and fulcrumed at an intermediate point, harrow-teeth carried by the rear portion of the oscillatory frame, and an operating-bar connected with the oscillatory frame in advance and in rear of the pivotal point thereof for raising and lowering the harrow-teeth.

2. In a harrow, the combination of a harrow-frame, an oscillatory frame provided with a pair of levers disposed longitudinally of the harrow-frame and pivoted to the same at an intermediate point, a tooth-carrying bar connecting the rear portions of the levers, and a longitudinally-disposed operating-bar arranged at an inclination and connected with the front portions of the levers and with the tooth-carrying bar.

3. In a harrow, the combination of a harrow-frame, an oscillatory frame provided with longitudinal levers, and a front cross-bar connecting the levers, the latter being pivoted at an intermediate point, a tooth-carrying bar connecting the rear ends of the levers, an inclined operating-bar secured at its front end to the said cross-bar, and means for connecting the rear portion of the operating-bar with the tooth-carrying bar.

4. In a harrow, the combination of a harrow-frame provided with runners, an oscillatory frame having a front cross-bar and provided with side levers fulcrumed at an intermediate point on the sides of the harrow-frame, an inclined operating-bar disposed longitudinally of the harrow and secured at its front end to the said cross-bar, inclined rods or bars connecting the rear portion of the operating-bar with the tooth-carrying bar, and a pivoted supporting-bar mounted on the harrow-frame and arranged to engage the inclined bar for holding the latter in an elevated position.

5. In a harrow, the combination of a harrow-frame, an oscillatory tooth-carrying frame, and a foot mounted on the oscillatory frame and arranged to support the harrow to permit the same to be readily turned at the end of a row.

6. In a harrow, the combination of a harrow-frame, an oscillatory frame fulcrumed at an intermediate point, harrow-teeth carried by the rear portion of the frame, and a foot arranged on the front portion of the frame for supporting a harrow to permit the same to be turned at the end of a row.

7. In a harrow, the combination of a harrow-frame, an oscillatory frame fulcrumed at an intermediate point and provided at the back with harrow-teeth, a pivotally-mounted foot carried by the front portion of the oscillatory frame, and operating means connected with the oscillatory frame.

8. In a harrow, the combination of a harrow-frame, an oscillatory frame fulcrumed at an intermediate point and provided at the back with harrow-teeth, a pivotally-mounted foot carried by the front portion of the oscillatory frame, and an operating-lever connected with the oscillatory frame.

810,155. PROCESS FOR THE MANUFACTURE OF SHEET-METAL ELBOWS. WILLIAM H. KLAMER, Dubuque, Iowa. Filed Feb. 1, 1905. Serial No. 243,044.

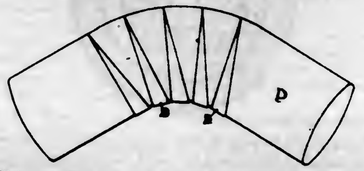

Claim.—1. The process of manufacturing sheet-metal elbows which consists of first forming flat plaits in a sheet-metal blank, forming the blank thus plaited into a tube, and then drawing out certain portions of the flat plaits to form the curve of the elbow leaving the undrawn-out portions of the plaits flat when the elbow is finished.

2. The process of making sheet-metal elbows which consists in cutting out a rectangular blank from the sheet of metal, plaiting or folding the blank crosswise with each plait of uniform width throughout its length, bending the plaited blank into a tube and then drawing out the plaits at such portions as desired to form the curve of the elbow and leaving the folds of the plaits flat and in contact with each other, the one outside and the other inside of the central sheet of the plait.

3. The process of manufacturing sheet-metal elbows, which consists of cutting out the blank, then forming flat plaits or folds crosswise of the blank, turning the blank into a tube with the plaits therein, and then drawing out part of the plaits at certain portions of the plaits and other plaits at different portions to form different elbows in the same tube.

4. The process of manufacturing sheet-metal elbows, which consists in cutting out a blank, plaiting the blank with flat plaits of threefold thickness or sheets, forming the blank into a tube with one thickness or sheet of the metal upon the outside and one upon the inside of the central sheet of the plait, then partially drawing out certain portions of the plaits to form the curve of the elbow.

5. The process of manufacturing corrugated sheet-metal elbows, which consists in cutting out a blank, forming threefold flat plaits therein, forming the plaited blank into a corrugated tube, and then drawing out certain portions of the flat plaits to form the curve of the elbow.

810,156. GUN-SIGHT. JOHN KLEINSCHMIDT, Kipling, Mich. Filed Jan. 9, 1905. Serial No. 240,266.

Claim.—1. In combination with a gun embodying a movable breech-block, a sight therefor comprising an attaching-plate secured to the rear end of the breech-block, a plate swivelly connected with the attaching-plate aforesaid, and a sight member adjustable upon the swiveled plate.

2. A sight comprising an attaching-plate adapted to be secured

to a gun, a plate swiveled to the attaching-plate, spaced lugs projected from the last-mentioned plate, an exteriorly-threaded sight-pin mounted in said spaced lugs and provided with a peep at one end, a nut arranged between the lugs and mounted upon the sight-pin for adjustment thereof, the sight-pin being longitudinally grooved, and a screw threaded into one of the lugs aforesaid and having one end thereof projected into the groove of the sight-pin so as to prevent rotation of the same on adjustment thereof.

3. A sight for guns comprising an attaching-plate, a plate swiveled to said attaching-plate, and a sight member adjustable upon the last-mentioned plate, the swiveled plate admitting of lateral adjustment of the sight as set forth.

810,157. SELF-LUBRICATING TROLLEY-WHEEL. ARTHUR R. KRAMER and OSCAR P. DUFF, Uniontown, Pa. Filed June 17, 1905. Serial No. 265,706.

Claim.—A cast wheel having a tubular hub, an integral oil-chamber between the hub and the rim of the wheel, an integral web within the chamber and extending between the inner and outer ends thereof, said web having a longitudinal passage closed at its outer end and extending through the hub into communication with the interior thereof, there being a lateral entrance-opening piercing the web into communication with the passage, one side of the chamber being provided with an opening adjacent the entrance-opening of the passage of the web, said opening serving for the removal of the core from the chamber, to permit filling of the chamber and to give access to the entrance-opening for removing obstructions therefrom, and a removable closure for the opening.

810,158. MACHINE FOR PRODUCING PRINTED RAILWAY-TICKETS. GABRIEL LAPOZE, Paris, France. Filed Apr. 12, 1901. Serial No. 55,302.

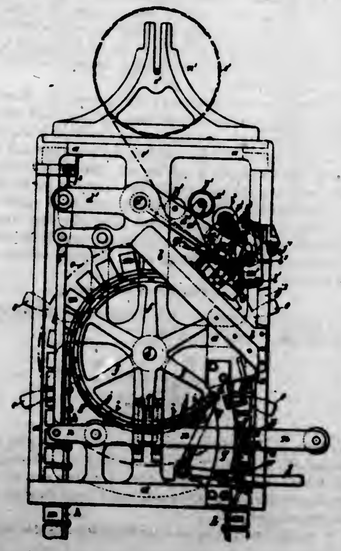

Claim.—1. A machine of the character described, comprising in combination a supporting-frame, a printing-table, two dies fixed parallel to each other on said table, an endless chain carrying a series of printing-blocks suitable for different stations arranged side by side and in two parallel series, which blocks when placed in the proper position relatively to the fixed dies compose the complete text of the ticket, a notched drum over which the said chain passes, means for turning the drum, two operating-levers, two printing-beams, means intermediate the said levers and the beams, whereby the latter may be operated by said levers, mechanism operated by the said beams for advancing strips of card the length of the width of a ticket in order that they may receive the impression from the fixed dies and block temporarily opposite to them, cutting devices and means intermediate said cutting devices and the beams whereby the tickets are cut off in the manner and for the purpose specified.

2. A machine of the character described, comprising in combination a supporting-frame, a printing-table, two dies fixed parallel to each other on said table, an endless chain carrying a series of printing-blocks suitable for different stations, arranged side by side in two parallel series, which blocks when placed in the proper position relatively to the fixed dies compose the complete text of the ticket, a notched drum over which the chain passes, means for turning the drum, two operating-levers, two printing-beams, means intermediate the levers and beams, whereby the latter may be operated by said levers, mechanism operated by said beams for advancing strips of card the length of the width of a ticket, cutting devices, means intermediate said cutting devices and the beams whereby the tickets are cut off, inking devices and means intermediate the beams and said inking devices whereby the latter will ink the blocks and dies after each cutting operation.

3. A machine of the character described, comprising in combination a supporting-frame, a printing-table, two dies fixed parallel to each other on said table, an endless chain carrying a series of printing-blocks suitable for different stations arranged side by side in two parallel series, a notched drum over which the chain passes, means for turning the drum, two operating-levers, two printing-beams, means intermediate the levers and beams, whereby the latter may be operated by the levers, two parallel ratchet-plates having their teeth reversed, said plates being secured to the supporting-frame and printing-table, as described, pawls on the operating-levers adapted to engage with the teeth of the ratchet-plate, as described, and stops arranged at both ends of the ratchet-plates and adapted to operate on the pawls in the manner set forth.

4. A machine of the character described, comprising in combination a supporting-frame, a printing-table, a die on said table, an endless chain carrying a series of printing-blocks, a notched drum over which the chain passes, means for turning the drum, an operating-lever, a printing-beam, means intermediate the lever and beam whereby the latter may be operated by the lever, mechanism operated by said beam for advancing a strip of card, cutting devices, and means intermediate said cutting devices and the beam whereby the tickets are cut off in the manner specified.

5. The combination of two fixed dies or blocks, a chain of blocks, means for operating the latter, two printing-beams, operating-levers, mechanism intermediate the latter and the beams, whereby the beams may be operated, and mechanisms operated by the beams to feed and cut a card strip and feed a record-strip in the manner and for the purpose set forth.

810,159. METHOD OF MANUFACTURING ARTIFICIAL TAILS FROM FUR. SIMON LEWIN, Schöneberg, near Berlin, and ADOLF BLUMENTHAL, Berlin, Germany. Filed June 21, 1905. Serial No. 266,268.

Claim.—1. The method of manufacturing artificial tails from fur consisting in removing the hide or skin from the hairs, connecting the latter with each other by a cementing medium so as to turn them into feathers and winding the thus produced feathers around a cord so as thereby to obtain the artificial tail desired, substantially as described.

2. The method of manufacturing artificial tails from fur consisting in removing the hide or skin from the hairs of two kinds of fur, connecting the hairs of each kind separately by means of a cementing medium, so as to turn them into feathers and winding the thus produced feathers alternately around a cord, in such a manner that a feather of one kind is located between two feathers of the other kind, substantially and for the purpose as described.

810,160. RUNNING-GEAR. FRANK D. LEMMENTHEIER, Patrick, Wyo. Filed July 19, 1905. Serial No. 270,419.

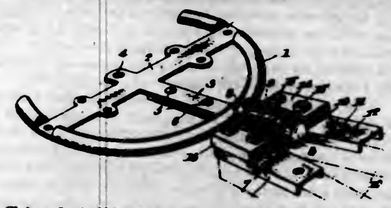

Claim.—1. A fifth-wheel having a cross-bar and a longitudinally-disposed radial bar, the latter being perforated at its forward extremity for the passage of a draw-bolt, in combination with a spindle member extending rearwardly from and in alinement with the radial bar and provided with a plurality of collars, two of said collars being disposed at the ends of the spindle member and one intermediate between the ends; a boxing for said spindle abutting upon the terminal collars and annularly grooved for engagement with the intermediate collar; and a reach member connected with said boxing.

2. A fifth-wheel having a cross-bar and a longitudinally-disposed radial bar, the latter being perforated at its forward extremity for the passage of a draw-bolt; in combination with a bar bolted upon the radial bar and having a rearwardly-extending spindle member provided with a plurality of collars; a boxing engaging said spindle member; and a reach member connected with said boxing.

810,161. CARTRIDGE-CLIP. ORESTES M. LEREAK, Westpoint, N. Y. Filed Feb. 11, 1905. Serial No. 245,199.

Claim.—1. A cartridge-clip, comprising a body and inserted spring and a flexible tongue projecting at each end thereof adapted to be bent into a groove in the cartridge-head.

2. In combination, a cartridge-clip, comprising a body and inserted spring, and a flexible tongue projecting at each end thereof, a plurality of cartridges, having grooved heads, in said clip, the tongues being bent into a groove in the head of the cartridge.

3. A cartridge-clip comprising a body and inserted spring, a tongue, projecting from each end of said spring, adapted to be bent into a groove in the cartridge-head.

4. A cartridge-clip comprising a body and inserted spring, and a tongue of flexible material, projecting from each end of said spring, adapted to be bent into a groove in the cartridge-head.

5. A cartridge-clip comprising a body and a soft-metal inserted spring, and a tongue of flexible material, projecting from each end of the spring, adapted to be bent into a groove in the cartridge-head.

6. A cartridge-clip comprising a body and inserted spring, the end of the body and spring being rounded.

7. A cartridge-clip comprising a body and inserted spring, the ends of the body being rounded, and a projecting tongue of flexible material at each end of the clip.

8. A cartridge-clip comprising a body and inserted spring, the ends of the spring being rounded, and a projecting tongue of flexible material at each end of the spring.

9. A cartridge-clip comprising a body and inserted spring, the end of the body and spring being rounded, and a projecting tongue of flexible material at each end of the clip.

10. In combination, a clip having a body portion and inserted spring and projecting tongues, of a plurality of cartridges having grooved heads inserted therein, each tongue being bent into the groove of the cartridge-head adjacent thereto.

810,162. HAMMERLESS DROP-DOWN GUN. CARL LOSSE, Liège, Belgium. Filed Apr. 1, 1905. Serial No. 253,570.

Claim.—1. In a drop-down gun, the combination with the breech and the stock, of a stock-connecting piece, removably secured to said breech and stock, a trigger and breech cover-plate made of a single piece, a trigger-guard, means for removably attaching the latter to said trigger-plate, vertically-projecting plates on said cover-plate, pivot-pins on said vertically-projecting plates for the reception of the several lock parts, and means for locking the barrels on the breech, substantially as set forth.

2. In a drop-down gun, the combination with the breech and the stock, of a stock-connecting piece removably secured to said breech and stock, a suitable recess provided in said stock-connecting piece, a trigger-plate arranged within the recess of said stock-connecting piece together with the triggers, sears and springs, a trigger-guard removably attached to said trigger-plate, a breech-covering plate made of a single piece with the trigger-plate, upwardly-extending projections on said cover-plate and made one with the latter, pivot-pins on said projections for the reception of the several lock parts, and means for locking the barrels of the gun on the breech, substantially as set forth.

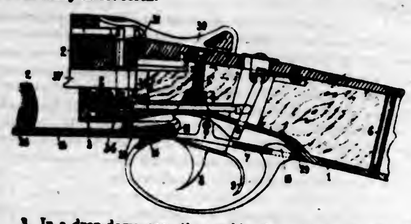

3. In a drop-down gun, the combination with the breech and the stock, a connecting-piece between the same, and a suitable recess in said connecting-piece, of a trigger and breech cover-plate made of a single piece, said trigger and breech cover-plate carrying the several parts of the lock housed partially within the recessed stock-connecting piece and partially within the forward end of the breech, substantially as set forth.

4. In a drop-down gun, the combination with the breech and stock, a suitably-shaped connecting-piece between the same, a trigger and breech cover-plate made of a single piece and carrying all the parts of the gun-locks; of the thumb-lever of the locking system, the downwardly-projecting pivot-pin of the same, an upper projection on the thumb-lever, engaging the upper locking-bolt, a lower projection engaging the lower locking-bolt arranged over the barrel-fastening, a rearward extension on the latter engaged by said lower locking-bolt, and means for preventing the lateral movements of the barrels in any case, substantially as set forth.

5. In a drop-down gun, the combination with the breech and stock, a suitably-shaped connecting-piece between the same, a trigger and breech cover-plate made of a single piece and carrying all the parts of the gun-locks; of the thumb-lever of the locking system, the downwardly-projecting pivot-pin of the same, an upper projection on the thumb-lever, engaging the upper locking-bolt, a lower projection engaging the lower locking-bolt arranged over the barrel-fastening, a rearward extension on the latter engaged by said lower locking-bolt, rearward extensions on both sides of the barrels, and corresponding recesses, on the sides of the breech, adapted to be engaged by said extensions when the gun is in the locked position, substantially as set forth.

810,163. APPARATUS FOR PRODUCING PERFECT COMBUSTION IN FURNACES. HARRY LOCKENBACH, San Francisco, Cal., assignor to William H. Kelly, San Francisco, Cal. Filed Dec. 8, 1904. Serial No. 236,668.

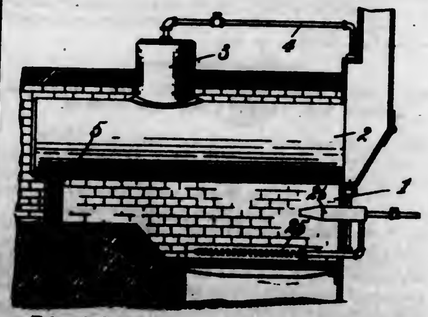

Claim.—1. In an apparatus of the character described, the combination with a furnace, and an oil-burner arranged to direct the flames into said furnace, of a coil of pipe, a pipe for supplying steam

to said coil, and a pipe for supplying steam from said coil to the burner, of a cast-iron casing for said coil formed in two sections one of said sections having a tortuous channel to receive said coil, corresponding in general form and dimensions with said coil, but sufficiently larger than the coil to permit the latter to expand freely therein, when subjected to a high degree of heat, said casing being placed in proximity to, but to one side of, and out of direct contact with, the flames from the burner, the whole of the coil of pipe between the entrance of the supply-pipe and the egress of the pipe to the burner being inclosed within said casing, substantially as described.

2. In an apparatus of the character described, the combination with a furnace, and an oil-burner arranged to direct the flames into said furnace, of a coil of pipe, a pipe for supplying steam to said coil, and a pipe for supplying steam from said coil to the burner, of a cast-iron casing for said coil formed in two sections each of said sections having a tortuous channel to receive said coil, corresponding in general form and dimensions with said coil, but sufficiently larger than the coil to permit the latter to expand freely therein, when subjected to a high degree of heat, said casing being placed in proximity to, but to each side of, and out of direct contact with, the flames from the burner, the whole of the coil of pipe between the entrance of the supply-pipe and the egress of the pipe to the burner being inclosed within said casing, substantially as described.

810,164. CLOSURE DEVICE FOR BOTTLES, JARS, AND SIMILAR VESSELS. EDWARD A. MATTHIAS, Liverpool, England. Filed Dec. 27, 1904. Serial No. 238,415.

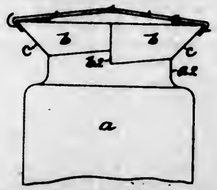

Claim.—A jar or similar vessel provided with a neck the top portion of which is inclined outwardly both inside and outside and provided at the bottom of the incline on the inner side with an annular shoulder and at the top of the incline on the outer side with segmental flanges or ribs on the opposite sides of the neck, the transverse width of which increases from one end thereof to the other and in opposite directions; and closure devices consisting of a packing-ring placed on said annular shoulder, a cap the perimeter of which is inclined inwardly and downwardly and provided at the bottom of the inclination with an annular recess adapted to receive said packing-ring, the diameter of the cap at the top and of the inwardly-inclined portion of the neck being such as to form a narrow annular space between the said cap and neck when the cap is in position, and a locking plate or strip placed transversely of the cap and adapted to turn thereon, said plate or strip being provided at its opposite ends with inwardly and downwardly directed tongues or projections adapted to engage the flanges or ribs at the top of the neck, and adjacent to the ends with downwardly and inwardly directed tongues or projections adapted to engage the edges of the cap and to enter the annular space between the cap and the top portion of the neck, substantially as shown and described.

810,165. SELF-DUMPING SCRAPER. JOHN F. MEDDERSALL, Springville, Utah. Filed Nov. 8, 1905. Serial No. 286,266.

Claim.—1. In a self-dumping scraper, the combination with a scraper-pan or scoop, of a dump-bar having a portion journaled to the pan and substantially straight arms extending forwardly at the sides of the pan which are provided with free ends to engage the ground, and a latch adapted to engage the dump-bar to hold the forwardly-extending arms raised and in substantially horizontal position, together with means for releasing said latch.

2. In a self-dumping scraper, the combination with a scraper-pan or scoop, of a dump-bar of substantially U shape having a crosspiece journaled to the back of the scraper-pan or scoop and substantially straight arms extending forwardly at the sides of the pan or scoop which are provided with free ends to engage the ground, a latch on the side of the pan or scoop adapted to engage one of said arms and hold the forwardly-extending arms raised and in substantially horizontal position, and means for releasing said latch.

3. In a self-dumping scraper, the combination with a scraper-pan or scoop, of a dump-bar having a portion journaled to the pan and arms extending forwardly at the sides of the pan which are provided with free ends to engage the ground, a spring latch-bar secured to the side of the pan and extending in a general up-and-down direction having a free portion provided with a latching-head adapted to engage and support the arm of the dump-bar, and means for releasing said latch-bar.

810,166. IRONING-BOARD. DANIEL NIMMER, Rochester, N. Y., assignor of one-half to George McElhatry, Rochester, N. Y. Filed May 5, 1904. Serial No. 206,606.

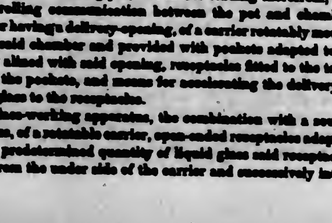

Claim.—1. The combination of a main ironing-board; a supplemental bosom and sleeve board; a U-shaped bracket having parallel sides, one above the other, one of which sides is adapted to lie upon the main board and the other to support the supplemental board; means for pivotally attaching the bracket to the main board near one of its ends, with the open end of the bracket directed toward said end of the main board, whereby said bracket is adapted to straddle the edge of said board; and means for pivotally attaching said supplemental board upon said bracket; substantially as shown and described.

2. The combination of a main ironing-board; a supplemental bosom and sleeve board; a bracket comprising two U-shaped members rigidly connected together, each having two corresponding parallel sides, one above the other, which are, respectively, adapted to lie upon the main board and to support the supplemental board; means for pivotally attaching the bracket to the main board near one of its ends, with the open end of the bracket directed toward said end of said main board, whereby said bracket is adapted to straddle the edge of said board; and means for pivotally attaching said supplemental board upon said bracket; substantially as shown and described.

3. The combination of a main ironing-board; a supplemental bosom and sleeve board; a bracket comprising the arms 9, 9 adapted to lie upon the main board, the connecting part 8 between said arms, adapted to act as a bearing for the bracket, the upright stems 10, 10, the arms 11, 11 above and parallel with the arms 9, 9, respectively, and adapted to support said supplemental board, and a bearing between said arms 11 11; means for attaching the bracket to the main board by the connecting part 8 whereby said bracket is adapted to turn over the edge of said board; and means for pivotally attaching said supplemental board to said bearing; substantially as shown and described.

810,167. MACHINE FOR AUTOMATICALLY SEGREGATING, MEASURING, AND DELIVERING MOLTEN GLASS. WALKER D. HOMMEDIEU, San Francisco, Cal. Filed Feb. 16, 1901. Serial No. 183,773.

Claim.—1. In a glass measuring and delivering apparatus, the combination with a melting-pot, a chamber leading therefrom, and means controlling communication between the pot and chamber, said chamber having a delivery-opening, of a carrier rotatably mounted beneath said chamber and provided with pockets adapted to be successively aligned with said opening, receptacles fitted to the table in line with the pockets, and means for accelerating the delivery of the molten glass to the receptacles.

2. In glass-working apparatus, the combination with a source of liquid glass, of a rotatable carrier, open-ended receptacles adapted to contain a predetermined quantity of liquid glass said receptacles depending from the under side of the carrier and successively interposed in the course of liquid-supply, and a closure for the bottom of said receptacles, said closure yieldingly supported independent of the carrier.

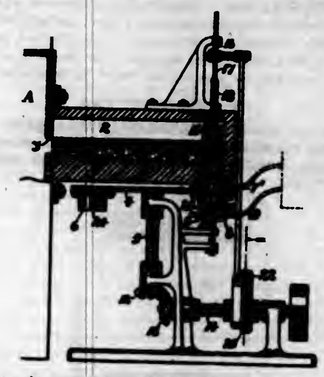

3. In a glass measuring and delivering apparatus, the combination with a source of liquid-glass supply of a perforated rotary table, means for giving said table a step-by-step movement and open-ended measuring-receptacles removably secured to, and depending from, the under side of said table in line with the perforations therein and interposable in the path of the liquid, and a depressible bottom closure supported independent of the table for said receptacles.

4. In a glass measuring and delivering apparatus, the combination with a source of liquid-glass supply having a delivery-aperture, of a rotary carrier, means for giving said carrier a step-by-step movement, open-ended measuring-receptacles depending from the under side of the carrier and aligned with pockets therein, said receptacles adapted to be successively brought into the path of the liquid, and a bottom closure for and supported relative to the path of the receptacles and independent of the carrier.

5. In a glass measuring and delivery apparatus, the combination with a source of liquid-glass supply, of a rotatable carrier having radially-disposed pockets, open-ended measuring-receptacles removably fitted to and depending from the under side of the carrier in line with the pockets, means for rotating the carrier to bring the receptacles successively in line with the liquid-outlet, and a closure yieldingly supported in line with the liquid-outlet and adapted to serve as a bottom for successive receptacles.

6. In a glass-measuring and delivery apparatus, the combination with a source of liquid-glass supply, of a rotatable carrier open-ended measuring-receptacles depending from the under side of the carrier and means whereby they are brought successively in the path of liquid-supply, and bottom closure means for said receptacles relative to the path thereof, said closure means including a yieldingly-supported plate.

7. In a glass measuring and delivering apparatus, the combination with a melting-pot and a chambered extension thereof adapted to contain molten glass and having a discharge-orifice, a rotatable carrier journaled beneath said extension, receptacles on said carrier registrable successively with said orifice, means within the chamber and operating through said discharge-orifice for aiding the feed to said receptacle, and means independent of said last-named feed-aiding means governing the discharge from the chamber.

8. In glass measuring and delivering apparatus, the combination with a melting-pot and a chambered extension thereof adapted to contain molten glass and having a discharge-orifice, a rotatable carrier, open-ended receptacles on said carrier registrable with said orifice, said carrier arranged to cooperate with the walls of said orifice as a slide-valve to control the flow of the liquid, and a part suitably supported relative to said orifice and arranged to cover and uncover the bottom of the receptacles in the rotation of the carrier.

9. In a glass measuring and delivering apparatus, the combination with a melting-pot and a glass-containing-chamber extension thereof having a discharge-orifice, of a table rotatable relative to said orifice, open-ended receptacles removably secured to the under side of said table and successively registrable with said orifice, a hollow perforated face-plate intermediate the chamber and table and registering with said orifice, connections between the interior of said face-plate and a source of cooling fluid-supply and a yieldingly-supported closure for the receptacles arranged relative to the path of movement of the latter and serving to cover the bottom of a receptacle during one step movement of the carrier and to uncover said receptacle during a succeeding step movement of said carrier.

10. In apparatus of the class described, the combination with a glass-containing chamber having a discharge-orifice and a rotatable table and means for imparting to the same a step-by-step movement, of an open-ended receptacle registrable with said orifice, a yieldingly-supported bottom closure for said receptacle located relative to said orifice said closure having a length approximately equal to the length of one step movement of the table, and means for causing said receptacle to traverse the space intermediate of the discharge end of said orifice and said closure.

11. In apparatus of the class described, the combination with a melting-pot, and a glass-containing chamber extending therefrom and having a discharge-orifice, of a rotatable carrier journaled beneath said extension, measuring-receptacles thereon registrable successively with said orifice, means for controlling the flow through the latter, and mechanical means for assisting in the filling of said receptacles.

12. In apparatus of the class described, the combination with a melting-pot, and a glass-containing chamber extending therefrom and having a discharge-orifice, of a rotatable carrier journaled beneath said extension, measuring-receptacles thereon registrable successively with said orifice, and mechanical means including a reciprocating plunger for assisting in the filling of said receptacles.

13. In apparatus of the class described, the combination with a glass-containing chamber having a discharge-orifice, of a rotatable carrier, measuring-receptacles thereon registrable successively with said orifice, and cooperating with the mouth of said orifice to control the flow through the latter, and mechanical means including a reciprocating plunger for assisting in the filling of said receptacles, and means for giving said plunger and carrier a coördinate movement.

14. In apparatus of the class described, the combination with a glass-containing chamber having a discharge-orifice a rotatable carrier, measuring-receptacles thereon registrable successively with said orifice, a plunger reciprocal in said orifice and means for giving said plunger and carrier a coördinate movement.

810,168. BASIN-COCK. PHILIP MUELLER, Decatur, Ill., assignor to H. Mueller Manufacturing Company, Decatur, Ill., a Corporation of Illinois. Filed May 20, 1905. Serial No. 261,097.

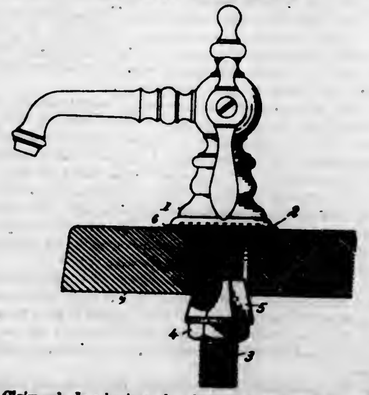

Claim.—1. In a basin-cock, a base to sit on the slab, a circular fluted extension to pass through a hole in the slab, a threaded end for the fluted extension, a fluted washer adapted to slide on the fluted extension, and a nut for the threaded end.

2. In a basin-cock, a base to sit on the slab, a circular fluted extension to extend through a hole in the slab, a threaded end for the fluted extension, an internally-fluted and externally-tapered washer adapted to slide on the fluted extension, and a nut for the threaded end.

3. In a basin-cock, a base to sit on the slab, a fluted extension to pass through the slab, a threaded end for the fluted extension, an internally-fluted and externally-tapered polygonal washer adapted to slide on the fluted extension, and a nut for the threaded end.

4. In a basin-cock, a base to sit on the slab, a fluted extension to

pass through the slab, a threaded end for the fluted extension, an internally-fluted and externally-tapered octagonal washer adapted to slide on the fluted extension, and a nut for the threaded end.

810,169. ELEVATOR-CAGE-DOOR OPENER. SUSSEX MURRAY and WILLIAM B. MURRAY, Washington, D. C. Filed May 31, 1905. Serial No. 262,094.

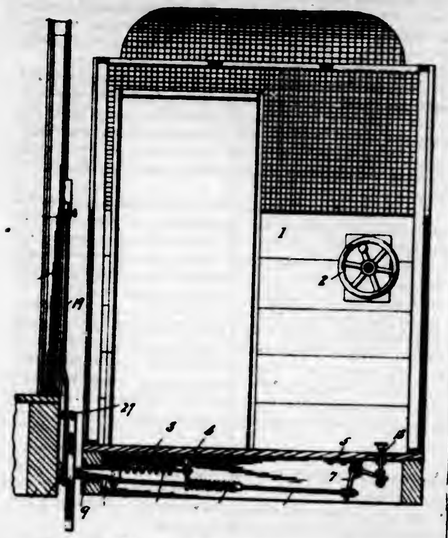

Claim.—1. The combination with an elevator-car, of a laterally-movable member with a cam-groove and flanges projecting over the same; a door to the elevator-well; and means operating to open said door adapted to be engaged by the cam-groove, and held from lateral disengagement by the flanges.

2. The combination with an elevator-car of a movable cam carried thereby; a well-door, a lever having a fixed fulcrum connected to the door in the path of movement of the cam to be engaged thereby, means for preventing accidental disengagement of the members, and means for operating said cam.

3. The combination with an elevator-car, of a laterally-movable member having a cam-groove therein, of a lever having a fixed fulcrum and provided with a member to engage said groove, means for preventing accidental disengagement of the parts, door-releasing means operated by the lever, and means for operating the cam.

4. The combination with an elevator-car, of a well-door and a pivoted latch thereon, a rod connected to said latch, and a slotted link connected to the rod, a pin in the door located in the slot, an operating-lever connected to the link, and means on the car adapted to engage said lever to release and open the door.

5. The combination with an elevator-car, of a well-door and a pivoted latch thereon, a rod connected to said latch, and a slotted link connected to the rod, a pin in the door located in the slot, an operating-lever connected to the link; a cam member on the car and means on the operating-lever to engage said cam to release and open the door.

6. The combination with a well-door and a lever connected to open the same, of an elevator-car and a laterally-movable member to engage said lever, an angular plunger integral with said member having bearings in the car-frame, a connecting-rod attached to the plunger, and means to operate said rod.

7. The combination with a well-door and a lever connected to release and open the same, of an elevator-car and a laterally-movable member to engage said lever, an angular plunger integral with said member having bearings in the car-frame, a connecting-rod attached to the plunger, a connecting-rod, a bell-crank lever, and a depressible foot-plunger.

8. The combination with a well-door and a lever connected to release and open the same, a roller on the lever; an elevator-car and a laterally-movable member having a cam-groove therein to engage said roller, a plunger integral with said member having bearings in the car-frame, a connecting-rod attached to the plunger, and means to operate said rod.

9. The combination with a well-door, of a lever connected to release and open the same, a flanged roller on the lever, a laterally-movable member adapted to engage said roller, said member having a cam-groove formed therein, flanges overhanging said groove, a plunger on the member having bearings in the car-frame, a connecting-rod attached to the plunger, and means for operating said rod.

810,170. ADJUSTABLE APPLIANCE FOR LADDERS. MORGAN POTTER, Fishkill-on-the-Hudson, N. Y., assignor to The Morgan Potter Company, Fishkill-on-the-Hudson, N. Y. Filed Sept. 21, 1904. Serial No. 225,209.

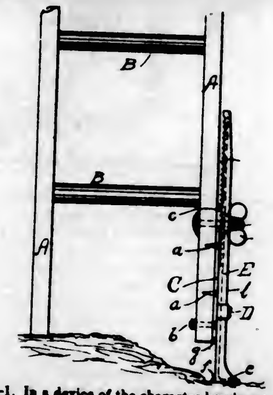

Claim.—1. In a device of the character herein set forth, a sliding piece slotted at its upper part and having serrations on its back and smooth at its lower part, a metallic bed-plate having serrations on its front at its upper part and smooth at its lower part, and having a bridge for crossing the lower portion of the sliding piece, a bolt passing through the serrated part of the bed-plate and through the slot in the sliding piece, the bolt being located above the cross-bridge, and a nut on the bolt, the parts being combined and arranged substantially as shown and described.

2. In a device of the character herein set forth, the combination with the metallic bed-plate, of rearwardly-extending side lugs for bearing on the rounded surface of a ladder-rail, substantially as and for the purposes set forth.

3. The combination with the metallic bed-plate having its outer face serrated at its upper part and smooth at its lower part; of the sliding piece having its inner face serrated at its upper part and smooth at its lower part and its body slotted longitudinally through the serrations, a locking-bolt passing through said slot and through the bed-plate, a thumb-nut on the bolt, longitudinal marginal ribs on the outer face of the sliding piece throughout its lower portion, and a cross-bridge on the bed-plate embracing said sliding piece and into whose angles said marginal ribs bear at points below the bolt.

810,171. CARDING-MACHINE. JAMES J. RAE, Cherry Valley, Mass., assignor of one-half to Channing Smith, Cherry Valley, Mass. Filed Feb. 10, 1905. Serial No. 245,602.

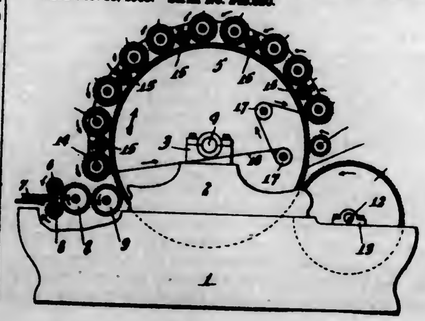

Claim.—1. In a carding-machine, the combination with the main cylinder, of the worker-rolls arranged in pairs, each one of a pair in engagement with the main cylinder, and the stripper-rolls, a stripper-roll for each pair of worker-rolls, and in engagement with each one of the pair, and also in engagement with the main cylinder, and means for rotating the workers and strippers in the same direction and opposite to the direction of rotation of the main cylinder, substantially as shown and described.

2. In a carding-machine, the combination with the main cylinder, of two worker-rolls in engagement therewith, and a stripper-roll in engagement with each of the worker-rolls, and also in engagement with the main cylinder, and means for rotating the workers and the strippers in the same direction and opposite to the direction of rotation of the main cylinder, substantially as shown and described.

3. In a carding-machine, the main cylinder, a worker-roll in engagement therewith and adapted to receive the material therefrom, a second worker-roll in engagement with the main cylinder, and adapted to receive the material therefrom, a stripper-roll in engagement with both worker-rolls, and adapted to receive the material therefrom, and also in engagement with the main cylinder, and adapted to transfer the material from both worker-rolls onto the main cylinder, and means for rotating the workers and strippers in the same direction and opposite to the direction of rotation of the main cylinder, substantially as shown and described.

810,172. BURIAL-CASE. LEWIS V. RATHBUN, Rochester, N. Y. Filed Mar. 18, 1905. Serial No. 250,627.

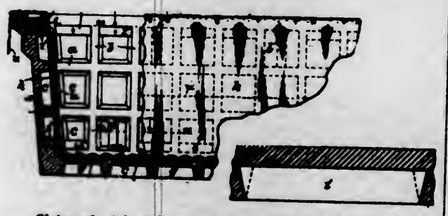

Claim.—1. A burial-case having a hollow body and a lid or cover therefor both made of cement, upholstery for the interior of the body with flaps loosely overhanging the rim of the body a cloth covering secured to the outer surfaces of said body and the lid, the cloth covering of said lid or cover extending in a loose mantle to cover the joint between the hollow body and its cover.

2. A burial-case comprising a hollow body or receptacle and a cover therefor, the interior of said hollow body being upholstered, and mantles connected with said upholstery within the body and adapted to be turned outward to overhang the hollow body or inward to overhang the said upholstery and a flexible-cloth covering secured to the cover and having a loose depending mantle to cover the joint between the body and cover.

3. A casket-body cover formed with internal intersecting ribs with tapered openings therein, at the points of intersection, conical pins in said openings at the intersection of the ribs, and upholstery secured to said pins and bearing against said pins and ribs.

810,173. LINOTYPE-MACHINE. JOSEPH R. SAFFERT, Brooklyn, N. Y., assignor to Manufacturers' Linotype Company, a Corporation of New York. Filed Oct. 24, 1905. Serial No. 284,179.

Claim.—1. In a linotype-machine a series of guides and matrices suspended therefrom in combination with an aligning-rib to engage the matrices and automatic means for changing the distance between the guides and the rib.

2. In a linotype-machine the combination of endless guides, notched matrices suspended therefrom, an aligning-surface to engage the matrices, automatic means for changing the distance between the guides and the aligning-surface and means for moving the matrices into forcible engagement with the rib.

3. In a linotype-machine the base-frame and the aligning-rib and aligning-slide thereon in combination with the top frame containing the matrix-guides, the pendent matrices adapted to engage the aligning-rib, and means for raising the top frame.

4. In combination, the base-frame with means to align the matrices, the vertically-movable top frame with its matrix-guides, the matrices, the eccentric to raise the top frame and automatic means for actuating the eccentric.

810,173.

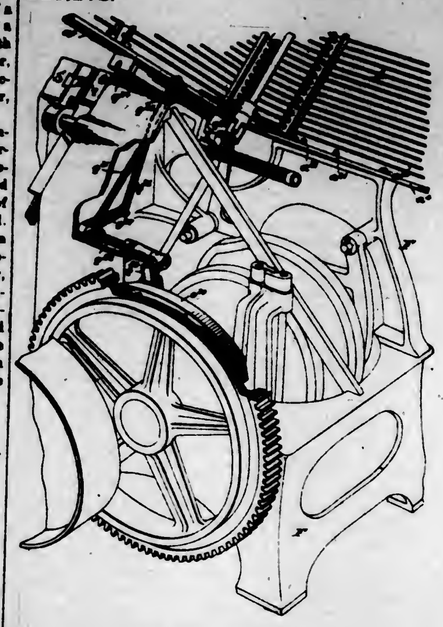

810,174. OSCILLATING ELECTRIC FAN. GUSTAV SITTHAHN, Brooklyn, N. Y., assignor to Herbert Stanley Brown, New York, N. Y. Filed June 11, 1903. Serial No. 111,094.

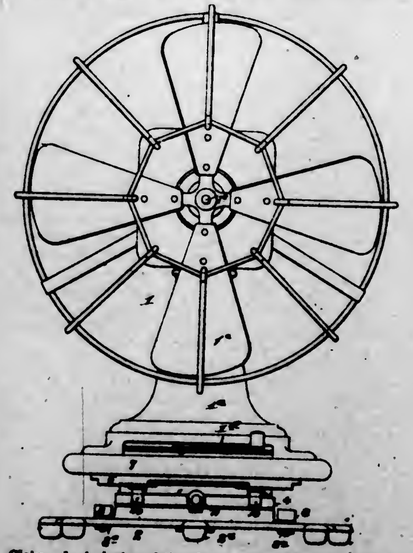

Claim.—1. A device of the character described comprising a movable member, a fan and its motor pivotally connected therewith at one side of the axis of said member, and stops to cause said member and fan to oscillate, substantially as described.

2. A device of the character described comprising a pivoted member, means to control its swinging movements, and a fan and its motor pivotally connected with said member at one side of the pivot of

the latter, whereby the stoppage of said member will cause said fan and motor to swing on its pivot, substantially as described.

3. The combination of a base, a member pivotally connected therewith, a fan and its motor pivotally connected with said member at a point eccentric to the pivot of the member, and stops to cause said member to swing on its pivot, substantially as described.

4. In a device of the character described the combination of a base, a member pivotally carried thereby, stops to limit the oscillations of said member, a fan and its motor pivotally carried by said member at a point eccentric to the pivot of the latter, and stops to cause said fan and motor to oscillate, substantially as described.

5. The combination of a base, a member pivotally connected therewith, stops connected with said base on opposite sides of said pivot to limit the oscillations of said member, a support for a fan and motor pivotally carried by said member at a point eccentric to the pivot thereof, and stops to control the oscillations of said support, substantially as described.

6. The combination of a base, a member pivotally carried thereby, stops adjustably carried by said base to be engaged by an abutment on said member, a support for a fan and its motor pivotally carried by said member at a point eccentric to the pivot of the latter stops adjustably connected with said support, and a buffer or abutment on said member to coact with said stops, substantially as described.

7. In a device of the character described the combination of a base and a fan and its motor, with a pair of pivots interposed between said base and motor, means for connecting the fan and motor with one of said pivots, said pivots being disposed eccentrically to each other whereby the fan and motor may oscillate on its vertical axis with relation to one pivot and may oscillate bodily on an arc described around the other pivot, and stops for causing such movements of the fan to occur, substantially as described.

8. An electric fan and its motor provided with supporting devices comprising an oscillatory member pivotally supported, a pivotal support alined with the vertical axis of the fan and mounted on said member eccentrically of the axis of the latter, and stops to coact with said member and pivotal support, whereby the fan and motor will be caused to oscillate or move from side to side through the medium of the back pressure of the air-currents propelled from the fan, substantially as described.

9. A device of the character described comprising a movable member, a fan-support pivotally connected therewith, an arm pivotally connected with said member, means to retard the movements of said arm, and stops connected with said fan to be stopped by said arm, substantially as described.

10. A device of the character described comprising a base, a member pivotally connected with said base, stops connected with the latter, an arm pivotally connected with said member, means to retard the movements of said arm, a fan-support pivotally connected with said member, and stops connected with said fan to encounter said arm to cause the fan to swing on its axis, substantially as described.

11. In a fan for agitating the air, a movable member and a fan and its motor pivotally connected therewith at one side of the movable support of said member, whereby the resistance of the outside air to the fan caused by the current produced by the fan-vanes will be in a line to one side of the connection of said member with its base, and cause said member, fan-support and fan to turn.

12. In a device of the character described the combination of two parallel pivots, one hinged upon the other, a motor and its fan supported to oscillate as a unit on one of said pivots, and means for limiting the extent of angular movement of each pivot.

13. An oscillating device for a motor-driven fan consisting of the combination of a hinged or pivoted support in two parts or sections, one of which is connected to the other by a hinge or pivot, a motor and fan located upon one section, and means for automatically limiting the extent of the movement of each part or section.

14. An oscillating device for a motor-driven fan consisting of a support in two sections, a ball-bearing pivot for the first section, a ball-bearing pivot for the second section parallel to the pivot for the first section, a motor and fan located on the second section and means for limiting the extent of the movement of each section.

15. A device of the character described, comprising a member mounted for movement in a horizontal plane, a fan and motor connected with said member and capable of movement in a horizontal plane in common with said member under actuation of the air proceeding from the fan and also capable of movement relatively to said member, and means for causing the relative movement of said movably-mounted member and said fan and fan-carrier to vary the direction of the said common movement of the same.

810,175. MITER-BOX AND SAW-GUIDE. JAMES H. SMITH, Wenger, Ont. Filed Aug. 2, 1905. Serial No. 272,202.

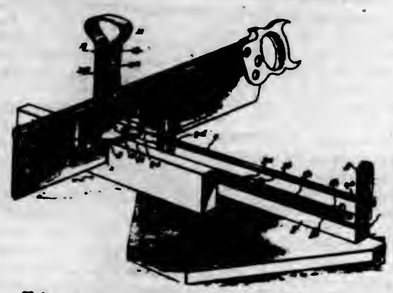

Claim.—1. An apparatus of the class described, comprising a base, a straight-edge block secured thereto, a supporting-frame adjustably secured to said block, a rod adjustably supported in said frame, and a saw-guide universally adjustably secured to said rod, substantially as shown and described.

2. In an apparatus of the class described, the combination with a base, and a straight-edge block secured thereto, of a supporting-frame adjustably secured to said block, a rod adjustably supported in said frame, and a saw-guide adjustably secured to said rod.

3. In an apparatus of the class described, a base and a straight-edge block secured thereto, a supporting-frame adjustably secured to said block, a rod adjustably supported in said frame, a saw-guide comprising a pair of saw-engaging members, means for adjustably connecting said saw-engaging members together, and means for adjustably connecting one of said saw-engaging members to said rod.

4. In an apparatus of the class described, a base, a straight-edge block secured thereto, a supporting-frame comprising a U-shaped member having a slotted base portion and slotted standards at each end of said base portion, bolts passing through said straight-edge block and said base portion of the U-shaped supporting-frame to adjustably secure the frame to the block, a rod passing through the slotted standards of said supporting-frame and adjustably secured thereto, a saw-guide comprising a pair of saw-engaging members each consisting of a sheet-metal plate, a block carried by each of said sheet-metal plates for engaging the saw, a pair of semicircular guides disposed at right angles to each other and pivotally secured to one of said plates, said semicircular guides passing through apertures in said rod, and means for securing said guides to said rods in their various adjusted positions and means for securing said saw-engaging members together substantially as shown and described.

5. In an apparatus of the class described, a base, a straight-edge block secured thereto, a supporting-frame comprising a U-shaped member having a slotted base portion and slotted standards at each end of said base portion, bolts passing through said straight-edge block and said base portion of the U-shaped supporting-frame to adjustably secure the frame to the block, a rod passing through the slotted standards of said supporting-frame and adjustably secured thereto, a saw-guide comprising a pair of saw-engaging members each consisting of a sheet-metal plate, a block carried by each of said sheet-metal plates for engaging the saw, a pair of semicircular guides disposed at right angles to each other and pivotally secured to one of said plates, said semicircular guides passing through apertures in said rod, and means for securing said guides to said rods in their various adjusted positions and means for securing said saw-engaging members together, said last-named means comprising a bow-spring secured to said plates.

6. In an apparatus of the class described, a base, a straight-edge block secured thereto, a supporting-frame comprising a U-shaped member having a slotted base portion and slotted standards at each end of said base portion, bolts passing through said straight-edge block and said base portion of the U-shaped supporting-frame to adjustably secure the frame to the block, a rod passing through the slotted standards of said supporting-frame and adjustably secured thereto, a saw-guide comprising a pair of saw-engaging members each consisting of a sheet-metal plate, a block carried by each of said sheet-metal plates for engaging the saw, a pair of semicircular guides disposed at right angles to each other and pivotally secured to one of said plates, said semicircular guides passing through apertures in said rod, and means for securing said guides to said rods in their various adjusted positions and means for securing said saw-engaging members together, said last-named means comprising a bow-spring secured to said plates, and means for adjusting said saw-engaging members toward each other.

7. An apparatus of the class described, comprising a base, a straight-edge elongated block secured at the rear edge of said base, a supporting-frame consisting of an elongated slotted base portion secured to said elongated straight-edge block, bolts passing through said block and said slotted base portion of the supporting-frame for adjustably securing the same to the block, said supporting-frame also comprising slotted end standards, an elongated rod adjustably held in said slotted end standards, means on said rod for holding the same in position on said standards, said rod having one end provided with a vertical and a horizontal slot, a saw-guide consisting of a pair of sheet-metal plates dovetailed in cross-section, a pair of saw-engaging blocks having dovetailed portions held by said plates, a bow-spring secured to said plates to hold the saw-engaging members in position, an adjusting-bolt carried by said bow-spring for adjusting the saw-engaging members toward each other, one of said plates having a pair of ears stamped therefrom and arranged in parallel vertical planes, a semicircular arcuate member pivotally secured to said ears and passing through the horizontal slot of the rod, said last-named plate having a pair of ears stamped therefrom and arranged in horizontal planes midway between the first-mentioned ears, a second semicircular arcuate member pivotally secured to said last-named ears and passing through the vertical slot of the rod and set-screws carried by said rod for coöperating with said semicircular arcuate members to lock them in their adjusted positions all being arranged substantially as shown and described.

8. An apparatus of the class described, comprising a base, a straight-edge elongated block secured at the rear edge of said base, a supporting-frame consisting of an elongated slotted base portion secured to said elongated straight-edge block, bolts passing through said block and said slotted base portion of the supporting-frame for adjustably securing the same to the block, said supporting-frame also comprising slotted end standards, an elongated rod adjustably held in said slotted end standards, means on said rod for holding the same in position on said standards, said rod having one end provided with a vertical and a horizontal slot, a saw-guide consisting of a pair of sheet-metal plates dovetailed in cross-section, a pair of saw-engaging blocks having dovetailed portions held by said plates, a bow-spring secured to said plates to hold the saw-engaging members in position, an adjusting-bolt carried by said bow-spring for adjusting the saw-engaging members toward each other, one of said plates having a pair of ears stamped therefrom and arranged in parallel vertical planes, a semicircular arcuate member pivotally secured to said ears, and passing through the horizontal slot of the rod, said last-named plate having a pair of ears stamped therefrom and arranged in horizontal planes midway between the first-mentioned ears, a second semicircular arcuate member pivotally secured to said last-named ears and passing through the vertical slot of the rod and set-screws carried by said rod for coöperating with said semicircular arcuate members to lock them in their adjusted positions, said saw-engaging blocks having upwardly-extending edges for coöperating with the rib of a stiff-back saw to form guides therefor, all being arranged substantially as shown and described.

810,176. POWER-TRANSMISSION MECHANISM. JOHN H. TRAUERNICHT, Charleston, W. Va., assignor to Universal Electric Equipment Company, Birmingham, Ala., a Corporation of Alabama. Filed Feb. 13, 1905. Serial No. 245,267.

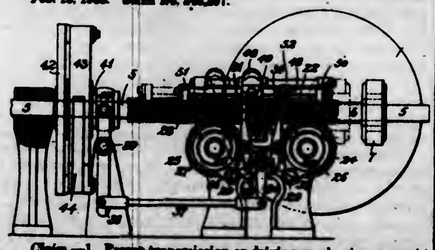

Claim.—1. Power-transmission or driving mechanism comprising, in combination, driving and driven shafts, a slidable sleeve or hollow shaft splined on the driven shaft having a friction-wheel and having right-hand and left-hand screws, a friction-disk or face-wheel driven by the driving-shaft and coactive with said friction-wheel, means for engaging one screw or the other to shift the friction-wheel toward and from the center of the friction-disk, and actuating mechanism governed by the speed of one shaft for automatically operating said means to compensate for variations in rate of speed of the driving-shaft.

2. Power-transmission or driving mechanism comprising, in combination, driving and driven shafts, a slidable sleeve or hollow shaft splined on the driven shaft, a friction-wheel carried thereby right-hand and left-hand screws on the driven shaft, a friction-disk or face-wheel driven by the driving-shaft and coactive with said friction-wheel, idle worm-wheels engaging said screws, and means automatically controlled by the speed of the driven shaft for checking rotation of either worm-wheel to shift said sleeve and thereby adjust the position of said friction-wheel with relation to said friction-disk to compensate for variations in the rate of rotation of the driving-shaft.

3. Power-transmission or driving mechanism comprising, in combination, a driven shaft, a slidable sleeve or hollow shaft splined thereon having oppositely-threaded screws and a friction-gear also carried thereby, a coactive driving friction-disk or face-wheel, idle worm-wheels in mesh with said screws, brake-bands or friction-rings associated with the hubs or flanges of said worm-wheels, an interposed brake-actuating lever connected with said brake-bands for applying or tightening one or the other, and actuating mechanism therefor automatically governed by the speed of rotation of the shaft.

4. Power-transmission or driving mechanism comprising, in combination, a driven shaft, a slidable sleeve or hollow shaft splined thereon having oppositely-threaded screws and a friction-gear also carried thereby, a coactive driving friction-disk or face-wheel, idle worm-wheels in mesh with said screws, brake-bands or friction-rings associated with the hubs or flanges of said worm-wheels, brake-trips pivoted to the free ends of said bands and spring-forced apart, an interposed, brake-actuating lever having opposite arms engaging said trips and adapted to apply one brake or the other when said lever is rocked, automatic actuating mechanism for said lever, and trippets carried by said sleeve adapted to engage said brake-trips and disengage them from the brake-actuating lever to release the brakes.

5. Power-transmission or driving mechanism comprising, in combination, driving and driven shafts, a slidable sleeve or hollow shaft splined on the driven shaft having a friction-wheel and having right-hand and left-hand screws, a friction-disk or face-wheel driven by the driving-shaft and coactive with said friction-wheel, means for engaging one screw or the other to shift the friction-wheel toward and from the center of the friction-disk, and actuating mechanism governed by the speed of one shaft for automatically operating said means to compensate for variations in rate of speed of the driving-shaft, said actuating mechanism comprising a centrifugal governor on the driven shaft and operative connections between the same and said screw-engaging devices.

6. Power-transmission or driving mechanism comprising, in combination, driving and driven shafts, a slidable sleeve or hollow shaft splined on the driven shaft having a friction-wheel and having a right-hand and left-hand screws, a friction-disk or face-wheel driven by the driving-shaft and coactive with said friction-wheel, idle worm-wheels engaging said screws, and means automatically controlled by the speed of the driven shaft for checking rotation of either worm-wheel to shift said sleeve and thereby adjust the position of said friction-wheel with relation to said friction-disk to compensate for variations in the rate of rotation of the driving-shaft, and means carried by said slidable sleeve for positively releasing the breaking of the worm-wheels as the friction-wheel is moved to one or the other of its extreme positions.

7. Power-transmission or driving mechanism comprising, in combination, driving and driven shafts, a friction-wheel on said driven shaft, coactive friction-disks or face-wheels driven by said driving-shaft and arranged at opposite sides of said friction-wheel, and means for moving one of said disks or face-wheels into driving contact with said friction-wheel when the driving-shaft rotates in one direction and the other when said driving-shaft rotates in the opposite direction.

8. Power-transmission or driving mechanism comprising, in combination, a driven shaft, a friction-wheel carried thereby, and driving friction-disks or face-wheels at opposite sides of the periphery of said friction-wheel, said driving-wheels having parallel threaded hubs, and power-applying pulleys engaging said hubs, said pulleys being internally threaded.

9. Power-transmission or driving mechanism comprising, in combination, a driven shaft, a friction-wheel carried thereby, and confronting driving face-wheels or friction-disks at opposite sides of the periphery of said friction-wheel, each face-wheel having a limited movement longitudinally of its axis and having a threaded hub.

internally-threaded pulleys engaging said hubs, said pulleys being confined against lateral movement, and the threads of both hubs being substantially parallel or in the same direction.

10. Power-transmission or driving mechanism comprising, in combination, driving and driven shafts, a slidable sleeve or hollow shaft splined on the driven shaft, a friction-wheel carried thereby right-hand and left-hand screws on said driven shaft, a friction-disk or face-wheel driven by the driving-shaft and coactive with said friction-wheel, and automatic means for engaging one screw or the other to shift the friction-wheel toward and from the center of the friction-disk to compensate for variations in rate of speed of the driving-shaft.

11. Power-transmission or driving mechanism comprising, in combination, driving and driven shafts, a slidable sleeve or hollow shaft splined on the driven shaft, a friction-wheel carried thereby right-hand and left-hand screws on said driven shaft, a friction-disk or face-wheel driven by the driving-shaft and coactive with said friction-wheel, idle worm-wheels engaging said screws, and means automatically controlled by the speed of one of said shafts for checking rotation of the worm-wheels to shift said sleeve and thereby adjust the position of said friction-wheel with relation to said friction-disk to compensate for variations in the rate of rotation of the driving-shaft.

12. Power-transmission or driving mechanism comprising, in combination, a friction-disk or face-wheel, a slidable shaft having oppositely-threaded screws and having a friction-gear coactive with said friction-disk or face-wheel, and automatic means for engaging the screws to shift said shaft.

13. Power-transmission or driving mechanism comprising, in combination, a friction-disk or face-wheel, a slidable shaft provided with oppositely-threaded screws and a friction-gear carried by said shaft and coactive with said friction-disk or face-wheel, idle worm-wheels in mesh with said screws, and an automatic brake adapted to check rotation of the brake-wheels.

14. Power-transmission or driving mechanism comprising, in combination, a driven shaft, a slidable sleeve or hollow shaft splined thereon having oppositely-threaded screws and a friction-gear also carried by said sleeve, a coactive driving friction-disk or face-wheel, idle worm-wheels in mesh with said screws, brake-bands or friction-rings associated with the hubs or flanges of said worm-wheels, an interposed T-shaped lever having opposite arms connected with said brake-bands, and actuating mechanism connected with the medial arm of said T-shaped lever.

15. Power-transmission or driving mechanism comprising, in combination, a driven shaft, a slidable sleeve or hollow shaft splined thereon having a friction-wheel and oppositely-threaded screws, a driving friction-disk or face-wheel coactive with said friction-wheel, automatic screw-engaging devices adapted for shifting the position of the friction-wheel with respect to the driving friction-disk, and automatic screw-releasing devices for preventing shifting of said friction-wheel beyond certain limits.

16. Power-transmission or driving mechanism comprising, in combination, a driven shaft, a slidable sleeve or hollow shaft splined thereon having oppositely-threaded screws and a friction-gear also carried thereby, a driving friction-disk or face-wheel coactive with said friction-gear, idle worm-wheels in mesh with said screws, spring brake-bands surrounding the hubs or flanges of said worm-wheels, each brake-band having a fixed end, brake-trips pivoted to the free ends of said bands and spring-forced apart, an interposed T-shaped lever having opposite arms engaging said trips and adapted thereby to apply one brake or the other, a centrifugal governor on the shaft and operative connections between the same and the medial arm of said T-shaped lever, and trippets carried by said sleeve adapted to engage said brake-trips and thereby disengage them from said T-shaped lever to release the brakes.

17. Power-transmission or driving mechanism comprising, in combination, driving and driven shafts, a slidable sleeve or hollow shaft splined on the driven shaft having a friction-wheel and having right-hand and left-hand screws, a friction-disk or face-wheel driven by the driving-shaft and coactive with said friction-wheel, speed-controlled means for engaging said screws for shifting said sleeve to adjust the position of said friction-wheel with relation to said friction-disk, and means carried by said sleeve for disengaging or releasing said screw-engaging means as the friction-wheel is moved to one or the other of the extreme positions.

810,177. TRIGGER MECHANISM FOR SMALL-ARMS. SAMUEL JOHN TAUSSIG, Trieste, Austria-Hungary. Filed June 13, 1903. Serial No. 161,233.

Claim.—1. In a trigger mechanism of the character described, the combination with the trigger, of two coacting elements operated from the trigger comprising a striker having a head, and a sear, two bearing-points formed on one of the coacting surfaces of the said two coacting elements, said bearing-points operating to give an interval of rest after the disengagement of one of the coacting elements from the first bearing-point on the other element and before it is released from the second bearing-point.

2. In a trigger mechanism of the character described the combination with the trigger of two coacting elements operable from the trigger comprising a striker having a head and a sear, and a series of bearing-points formed on one of the coacting elements, said bearing-points operating to give a series of intervals of rest after the disengagement of one of the coacting elements from the first bearing-point on the other element and before it is released from the final bearing-point for the purpose specified.

3. The combination with a trigger *f*, of a sear *d*, operated by the trigger, a striker having a head *b*, and two bearing-points formed on the head operating to give an interval of rest after the disengagement of the sear from the first bearing-point of the striker-head and before it is released from the second bearing-point.

810,178. RAILWAY-CROSSING. RICHARD H. WALTON, Los Angeles, Cal. Filed Sept. 13, 1905. Serial No. 278,343.

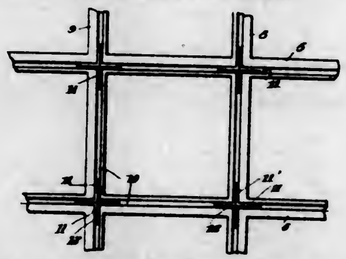

Claim.—A bridge for railway-rail crossings comprising a body having a plurality of resilient tapered arms adapted to fit into the flange-channels of the railway-rail crossing at their intersection, said body being raised slightly above the bottom of the flange-channels, and the ends of the arms resting upon the bottom of the flange-channels and having central grooves in the top of the arms and body.

810,179. APPARATUS FOR MEASURING WATTS IN ELECTRICAL CIRCUITS. HERBERT WILSON, London, England. Filed Dec. 17, 1904. Serial No. 237,275.

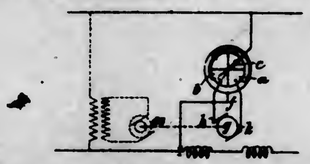

Claim.—1. Apparatus for measuring the watts in electrical systems comprising, in combination with the primary conductors, a secondary electric system, means for producing between two points in the secondary system a potential which varies with the current in the work-circuit and is always proportional thereto, an electrometer, means connecting the pairs of quadrants of said electrometer to the said two points in the secondary system, and means connecting the case and the needle of the electrometer to the points between which the watts are to be measured.

2. Apparatus for measuring the watts in electrical systems comprising, in combination with the primary conductors, a secondary electric system, means for producing between two points in the secondary system a potential which varies directly with the current in the work-circuit, an electrometer, means connecting the pairs of quadrants of said electrometer to said two points in the secondary system, means connecting the case and the needle of the electrometer to the points between which the watts are to be measured, and means connecting one of the pairs of quadrants to the case.

3. Apparatus for measuring the watts in electrical systems comprising, in combination with a plurality of primary conductors, a plurality of secondary electrical systems, means for producing between two points in each such a system a potential which varies directly with the current in one of the primary conductors, a plurality of electrometers, means connecting the pairs of quadrants in each electrometer to the two points in one of the secondary systems, and means connecting the cases and needles of the electrometers to the points between which the watts are to be measured.

4. Apparatus for measuring the watts in electrical systems comprising, in combination with a plurality of primary conductors, a plurality of secondary electric systems, means for producing between two points in each such system a potential which varies directly with the current in one of the primary conductors, a plurality of electrometers and insulating means connecting the spindles of their needles together, means connecting the pairs of quadrants in each electrometer to the two points in one of the secondary systems, and means connecting the cases and needles of the electrometers to the points between which the watts are to be measured.

5. Apparatus for measuring the watts in electrical systems comprising, in combination with a plurality of primary conductors, a plurality of secondary electric systems, means for producing between two points in each such system a potential which varies directly with the current in one of the primary conductors, a plurality of electrometers, means connecting the pairs of quadrants in each of said electrometers to the two points in one of the secondary systems, means connecting the cases and needles of the electrometers to the points between which the watts are to be measured, and means connecting one pair of quadrants in each electrometer to the case.

6. Apparatus for measuring the watts in electrical systems comprising, in combination with the primary conductors, a dynamo-electric machine the field of which is produced by the current in the work-circuit, means for driving the armature of said machine at constant speed, a secondary electric system connected to the brushes of the machine, an electrometer, the pairs of quadrants of which are in the secondary system, and means connecting the case and needle of the electrometer to the points between which the watts are to be measured.

7. Apparatus for measuring the watts in electrical systems comprising, in combination with a plurality of primary conductors, a plurality of dynamo-electric machines through the field-coils of each of which the primary current of one of said conductors is taken, means for driving the armature of each machine at constant speed, a plurality of secondary electric systems each connected to the brushes of one of the machines, a plurality of electrometers the pairs of quadrants of which are in the respective secondary systems, and means connecting the cases and needles of said electrometers to the points between which the watts are to be measured.

8. Apparatus for measuring the watts in electrical systems comprising, in combination with a plurality of primary conductors, a plurality of dynamo-electric machines through the field-coils of each of which the primary current of one of said conductors is taken, means for driving the armature of each machine at constant speed, a plurality of secondary electric systems each connected to the brushes of one of the machines, a plurality of electrometers and insulating means connecting their spindles, the pairs of quadrants in each electrometer being connected in one of the secondary systems, and means connecting the cases and needles of the electrometers to the points between which the watts are to be measured.

9. Apparatus for measuring the watts in alternating-current systems comprising, in combination with two primary conductors carrying working currents of different phases and two other primary conductors each earthed at one point and connected to one end of a phase-winding in the generating-station, two dynamo-electric machines the field-coil of each of which is connected in one of the earthed primary conductors, means for driving the armatures of said machines at constant speed, two electrometers and insulating means connecting the spindles of their needles, means connecting the pairs of quadrants in each electrometer each to one of the brushes of the dynamo-electric machines, and connections between the cases of the electrometers and earth, and between the needles of the electrometers and the respective primary conductors carrying the working currents.

10. Apparatus for measuring the watts in alternating-current systems comprising, in combination with two primary conductors carrying working currents of different phases and two other primary conductors each earthed at one point and connected to one end of a phase-winding in the generating-station, two dynamo-electric machines the field-coil of each of which is connected in one of the earthed primary conductors, means for driving the armatures of said machines at constant speed, two electrometers and insulating means connecting the spindles of their needles, means connecting the pairs of quadrants in each electrometer each to one of the brushes of the dynamo-electric machines, and connections between the cases of the electrometers and earth between the cases and one pair of quadrants in each, and between the needles of the electrometers and the respective primary conductors carrying the working currents.

810,180. ARTIFICIAL LIMB. HARRIS C. WHITEHURST, Kansas City, Mo. Filed May 2, 1905. Serial No. 258,455.

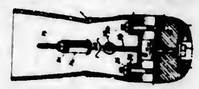

Claim.—1. In a device of the class described, a hollow ankle, a suitable foot carrying an ankle-joint, lugs 34 integral with and projecting into said ankle, and means carried by said lugs for supporting said ankle-joint.

2. In a device of the class described, a hollow ankle and suitable foot, a pair of lugs integral with and projecting into said ankle at opposite sides thereof, a pin carried by said lugs, and a heel-cord carried by said pin and connected with said foot.

3. In a device of the class described, in combination with a hollow ankle, a foot portion pivotally connected with said ankle, a pair of brackets projecting from opposite sides from the rear of said ankle, a pin mounted in said brackets, a sleeve 37 on said pin, and a heel-cord supported on the sleeve on said pin, substantially as and for the purpose set forth.

4. In a device of the class described, in combination with a suitable foot, a hollow ankle pivotally connected with said foot, a pair of brackets 23 projecting inwardly from the rear of said ankle, a pin extending through said brackets having a head at one end and a threaded pocket in the other end, a screw adapted to fit within said pocket, the heads of said pin and said screw being countersunk in said ankle, and a heel-cord carried by said pin and anchored in the heel of said foot.

810,181. SHEEP-SHEARING TABLE. ALBERT BARTH, Pawpaw, Ill., assignor to S. A. John, Pawpaw, Ill., and J. L. Kratz, Columbus, Ohio. Filed Feb. 27, 1905. Serial No. 247,406.

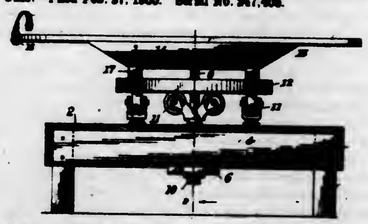

Claim.—A sheep-shearing table, comprising a stationary table and the revolving table rotatably mounted thereon, caster-wheels rigidly secured on the top of the stationary table, a bearing-plate underneath the revolving table and resting on said caster-wheels, a pivot-bolt rigidly secured to the stationary table, an aperture intermediate of the bearing-plate through which said pivot-bolt passes, allowing the revolving table to rotate upon the stationary table, substantially as described.

810,182. PUMP. HENRI BRAU, Paris, France. Filed June 27, 1903. Serial No. 163,534.

Claim.—The combination with a lower reservoir and an inwardly-opening valve arranged in the bottom thereof, of an upper reservoir, a tube leading from the latter down within the lower reservoir to a point somewhat below the upper end of the lower reservoir whereby when water is within the latter an air-space will be formed above the surface of the water as described, and a piston fitting loosely within the tube, all arranged as and for the purpose set forth.

810,182.

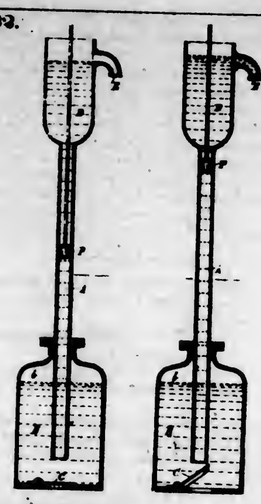

810,183. BRACELET. ANTHONY H. BLAIR, North Attleboro, Mass. Filed Sept. 13, 1905. Serial No. 278,296.

Claim.—1. In a device of the class described, the combination of a pair of curved members and a link slidably connecting adjacent ends thereof, said link being curved in an opposite direction to said members.

2. In a device of the class described, the combination of a pair of curved members and an oppositely-curved link seated in and slidably connecting adjacent ends thereof, and yielding means for holding one end of said link in one of said ends.

3. In a device of the class described, the combination of a pair of curved tubular members, disks located in adjacent ends of said members, a slot in each of said disks, a link passing through the slot in each disk, and yielding means for holding one end of said link in one of said members.

4. In a device of the class described, the combination of a pair of members having perforated end disks, a link passing through said perforations and terminating at one end within one member in a head, and yielding means in the other of said members for holding the other end of said link.

5. In a device of the class described, the combination of a pair of adjacent ends, a disk having a perforation located in each of said ends, a fastening passing through one of said perforations and forming a spring-catch at its outer end, and a hook at its inner end, substantially as and for the purpose specified.

6. In a device of the class described, the combination of a pair of members, one of said members being tubular, a link located in and slidably connecting one pair of adjacent ends, a fastening for the other pair of adjacent ends and located in the said tubular member, said fastening forming a catch on its external end, and a hook on its internal end, and a spring fastened at one end to said hook and at the other end to the end of the said link located in said tubular member, substantially as and for the purpose specified.

810,184. CARVED GUM-FORM. WILLIAM BRADBURY, Salt Lake City, Utah. Filed July 6, 1905. Serial No. 268,968.

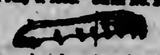

Claim.—A section-rim shaped to fit between the teeth and cheeks of the face, carrying a carved gum-form, shaped similar to the natural gums, with the lower part cut to fit over the artificial teeth, that are attached to the foundation-cast of a model for a denture.

810,185. COVER FOR SHIPS' HATCHWAYS. HENRY BURRELL, Glasgow, Scotland. Filed Jan. 7, 1904. Serial No. 188,621.

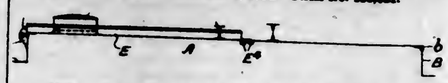

Claim.—1. In a closure for ships' hatchways the combination with the cover comprising a door proper having a plain bottom surface, of an outside beam, stiffening-bars at right angles connected with said beam, a coaming, a stiffening-bar for said coaming, compressible material interposed between the coaming and the cover for making a tight joint between the same, bars pivoted on said coaming having wedge-sockets, and wedges located in said sockets for securing the cover in position when driven home, substantially as shown and described.

2. In a closure for ships' hatchways the combination with the cover comprising a door proper having a plain bottom surface, of an outside beam, stiffening-bars at right angles connected with said beam, a coaming, a stiffening-bar for said coaming, a gasket for making a tight joint between the same, bars pivoted on said coaming having wedge-sockets, and wedges located in said sockets for securing the cover in position when driven home, substantialy as shown and described.

3. In a closure for ships' hatchways the combination with the cover comprising a door proper having a plain bottom surface, of an outside beam, stiffening-bars at right angles connected with said beam, a coaming, a stiffening-bar for said coaming, a rope-gasket for making a tight joint between the same, bars pivoted on said coaming having wedge-sockets, and wedges located in said sockets for securing the cover in position when driven home, substantially as shown and described.

4. In a closure for ships' hatchways the combination with the cover comprising a door proper having a plain bottom surface, of an outside beam, stiffening-bars at right angles connected with said beam, a coaming, a stiffening-bar for said coaming, compressible material interposed between the coaming and the cover for making a tight joint between the same, bars pivoted on said coaming having wedge-sockets, and wedges located in said sockets for securing the cover in position when driven home, said wedges being so secured in the sockets as to be incapable of accidental absolute removal from such sockets, substantially as shown and described.

5. In a closure for ships' hatchways the combination with the cover comprising a door proper having a plain bottom surface, of an outside beam, stiffening-bars at right angles connected with said beam, a coaming, a stiffening-bar for said coaming, a gasket for making a tight joint between the same, bars pivoted on said coaming having wedge-sockets, and wedges located in said sockets for securing the cover in position when driven home, said wedges being so secured in the sockets as to be incapable of accidental absolute removal from such sockets, substantially as shown and described.

6. In a closure for ships' hatchways the combination with the cover comprising a door proper having a plain bottom surface, of an outside beam, stiffening-bars at right angles connected with said beam, a coaming, a stiffening-bar for said coaming, a rope-gasket for making a tight joint between the same, bars pivoted on said coaming having wedge-sockets, and wedges located in said sockets for securing the cover in position when driven home, said wedges being so secured in the sockets as to be incapable of accidental absolute removal from said sockets, substantially as shown and described.

810,186. SMOKING ATTACHMENT FOR HARVESTER-BINDERS. JAMES GALBRA, Hamilton, Canada, assignor of one-half to George Skelton Hughson, Hamilton, Canada. Filed July 9, 1903. Serial No. 164,963.

Claim.—1. In a machine of the class described, the combination with the binder-deck, of a bar extending lengthwise thereof, a knotter-shaft located parallel therewith and carrying ejector-arms, arms extending from said bar to the opposite side of the knotter-shaft, a supplemental shaft journaled in said arms with means for operating it, and supplemental ejector-arms carried by said supplemental shaft, substantially as described.

2. In a machine of the class described, the combination with the binder-deck, and the knotter-shaft carrying ejector-arms, of a bar extending lengthwise of the binder-deck on one side of the knotter-shaft, arms extending from said bar to the opposite side of the knotter-shaft, bearings in the ends of the arms, a supplemental shaft journaled in said bearings; supplemental ejector-arms on said supplemental shaft, a crank-arm on the supplemental shaft, and a pitman connected to said crank-arm with means for operating the pitman, substantially as described.

3. In a machine of the class described, the combination with the binder-deck and the knotter-shaft carrying ejector-arms, of a bar extending lengthwise of the binder-deck on one side of the knotter-shaft, arms extending from said bar to the opposite side of the knotter-shaft, bearings in the ends of the arms, a supplemental shaft journaled in said bearings, supplemental ejector-arms on said supplemental shaft, a crank-arm on the supplemental shaft, and a pitman connected to said crank-arm, a spindle located above the knotter-shaft having an end crank connected to said pitman and means for driving said spindle, substantially as described.

4. In a machine of the class described, the combination with the binder-deck and the knotter-shaft carrying ejector-arms, of a bar extending lengthwise of the binder-deck on one side of the knotter-shaft, arms extending from said bar to the opposite side of the knotter-shaft, a supplemental shaft journaled in bearings in said arms, supplemental ejector-arms carried by said supplemental shaft, a crank-arm on said supplemental shaft, a spindle located above the knotter-shaft having a crank-arm, a rod or pitman connecting said crank-arm with the arm on the supplemental shaft, and means for driving said spindle, substantially as described.

5. In a machine of the class described, the combination with the binder-deck and the knotter-shaft carrying ejector-arms, of a bar extending lengthwise of the binder-deck on one side of the knotter-shaft, arms extending from said bar to the opposite side of the knotter-shaft, a supplemental shaft journaled in bearings in said arms, supplemental ejector-arms carried by said supplemental shaft, a crank-arm on said supplemental shaft, a spindle located above the knotter-shaft having a crank-arm, a rod or pitman connecting said crank-arm with the arm on the supplemental shaft, and means for driving said spindle, comprising a sprocket-wheel on the end of the spindle, a pusher-shaft, a sprocket-wheel on the end thereof, and a sprocket-chain connecting said sprocket-wheels, substantially as described.

6. In a device of the class described, the combination with the binder-deck, of a knotter-shaft above the deck, ejector-arms carried by said knotter-shaft, a supplemental shaft arranged parallel with the knotter-shaft with means for supporting it, supplemental ejector arms carried thereby a crank-arm on the supplemental shaft, a spindle provided with a crank-arm, a rod connecting said crank-arms, a gear-wheel for rotating the spindle and means for controlling the movement of said spindle, substantially as described.

7. In a device of the class described, the combination with the binder-deck, of a knotter-shaft above the deck, ejector-arms carried by said knotter-shaft, a supplemental shaft arranged parallel with the knotter-shaft with means for supporting it, a crank-arm on the supplemental shaft, a spindle provided with a crank-arm, a rod connecting said crank-arms, a sprocket-wheel on the end of the spindle, a pusher-shaft, a sprocket-wheel thereon, and a sprocket-chain connecting said sprocket-wheels, substantially as described.

8. In a machine of the class described, the combination with the binder-deck and knotter-shaft carrying the ejector-arms, of a supplemental shaft carrying supplemental ejector-arms with means for oscillating said shaft, and retaining-arms pivoted on said supplemental shaft, a spring tending normally to depress said arms and means for holding said arms elevated against the tension of the spring, substantially as described.

9. In a machine of the class described, the combination with the binder-deck and knotter-shaft carrying ejector-arms, of a supplemental shaft carrying supplemental ejector-arms, means for oscillating said shaft, sheaf-retaining arms pivotally supported on said supplemental shaft, a spring tending to normally depress said arms, and manually-controlled means for holding said retaining-arms elevated against the tension of the spring, substantially as described.

10. In a machine of the class described, the combination with the binder-deck and knotter-shaft carrying ejector-arms, of a supplemental shaft carrying supplemental ejector-arms, means for oscillating said shaft, sheaf-retaining arms pivotally supported on said supplemental shaft, a spring tending normally to depress said arms, and manually-controlled means for holding said retaining-arms elevated against the tension of the spring, said means including a crank-arm connected with one of the arms and a cord connected to said crank-arm and extending into reach of the operator, substantially as described.

11. In a machine of the class described, the combination with the binder-deck and knotter-shaft, of a supplemental shaft located above the deck and parallel with the knotter-shaft with means for operating it, ejector-arms carried by said supplemental shaft for ejecting the sheaves, retaining-arms connected to move in unison and pivotally mounted on said supplemental shaft, an arm pivoted on the shaft and connected to one of the retaining-arms, a spring acting on said arm and tending to depress the retaining-arms, and manually-controlled means for normally holding said retaining-arms elevated against the tension of the spring, substantially as described.

12. In a machine of the class described, the combination with the binder-deck and knotter-shaft, of a supplemental shaft located above the deck and parallel with the knotter-shaft with means for operating it, ejecting-arms carried by said supplemental shaft for ejecting the sheaves, retaining-arms connected to move in unison and pivotally mounted on said supplemental shaft, an arm pivoted on the shaft and connected to one of the retaining-arms, a pin on said arm, a spring acting on said pin and tending to depress the retaining-arms, a cord connected to the said arm, and means for holding the end of the cord, substantially as described.

13. In a machine of the class described, the combination with the binder-deck and knotter-shaft, of a supplemental shaft located above the deck and parallel with the knotter-shaft with means for operating it, ejecting-arms carried by said supplemental shaft for ejecting the sheaves, retaining-arms connected to move in unison and pivotally mounted on said supplemental shaft, an arm pivoted on the shaft and connected to one of the retaining-arms, a pin on said arm, a spring acting on said pin and tending to depress the retaining-arms, a cord connected to the said arm, and means for holding the end of the cord, said means comprising a forked arm on the frame and stop on the cord for engaging said fork, substantially as described.

14. In a machine of the class described, the combination with the binder-deck, of an apron angular in cross-section having one edge secured to the lower edge of the binder-deck, and having slots to permit operating mechanism to project therethrough, substantially as described.

15. In a machine of the class described, the combination with the binder-deck, of an apron angular in cross-section having one edge secured to the lower edge of the binder-deck and having slots to permit operating mechanism to project therethrough, and a second apron secured to the outer edge of said first-named apron, substantially as described.

16. In a machine of the class described, the combination with the binder-deck, of an apron angular in cross-section having one edge secured to the edge of the binder-deck and forming a continuation thereof, said apron having slots, a second apron secured to the opposite edge of said apron, a vertically-disposed apron secured to the

angular apron at one end, and an additional vertical apron carried by the frame and in the place of said first vertical apron, substantially as described.

17. In a machine of the class described, the combination with the binder-deck and sheaf binding and ejecting mechanism, of a horizontally-disposed receiving-apron secured to the lower edge of the binding-deck, a second apron secured to the outer edge of said receiving-apron, vertically-disposed aprons at the end of said receiving and said second aprons, and shock-binding mechanism, substantially as described.

18. In a machine of the class described, the combination with the binder-deck and sheaf binding and ejecting mechanism, of a horizontally-disposed receiving-apron secured to the lower edge of the binding-deck, a second apron secured to the outer edge of said receiving-apron, vertically-disposed aprons at the end of said receiving and said second aprons, means for compressing and binding the grain and a suitable shock-carrier, substantially as described.

19. In a shocker, the combination with the counter-shaft and knotter-shaft and arms located on the counter-shaft outside of the knotter-shaft and the spindle and driving connections between the spindle and countershaft, of the sprocket-wheel on the spindle, a clutch mechanism connecting said sprocket-wheel and said spindle and provided with a dog a packer-shaft and driving connection between such sprocket-wheel and the packer-shaft, a lever suitably pivoted in the frame and having one end designed to engage with said dog and means for tilting such lever, so as to free the dog and allow the sprocket-wheel and mechanism driven therefrom to operate and deliver the sheaf as and for the purpose specified.

20. In a shocker, the combination with the counter-shaft knotter-shaft and packer-shaft and arms located on the counter-shaft outside of the knotter-shaft and the spindle and driving connections between the spindle and counter-shaft, of the sprocket-wheel on the spindle, a clutch mechanism between said sprocket-wheel and said spindle and driving connection between such sprocket-wheel and the packer-shaft, a lever suitably pivoted in the frame a dog on the clutch mechanism designed to be engaged by one end of said lever, a rod supported on the binder-deck and extending longitudinally thereof and an arm on the front end of the rod and a rod connecting such arm with the lever aforesaid and means for oscillating the rod by the delivery of the sheaf as and for the purpose specified.

21. In a shocker, the combination with the counter-shaft knotter-shaft and packer-shaft and arms located on the counter-shaft outside of the knotter-shaft and the spindle and driving connections between the spindle and counter-shaft, of the sprocket-wheel on the spindle, a clutch mechanism between said sprocket-wheel and said spindle a dog on said clutch mechanism and driving connection between such sprocket-wheel and the packer-shaft, a lever suitably pivoted in the frame and having one end designed to engage with said dog, a rod supported on the binder-deck and extending longitudinally thereof and an arm on the front end of the rod and a rod connecting such arm with the lever aforesaid, an arm on the opposite end of the longitudinally-supported rod and means for depressing such arm operated by the delivery of the sheaf as and for the purpose specified.

22. In a shocker, the combination with the counter-shaft knotter-shaft and packer-shaft and arms located on the counter-shaft outside of the knotter-shaft and the spindle and driving connections between the spindle and counter-shaft, of the sprocket-wheel on the spindle, a clutch thereon having a dog, and driving connections between such sprocket-wheel and the packer-shaft, a lever suitably pivoted in the frame and having one end designed to engage with said dog, a rod supported on the binder-deck and extending longitudinally thereof and an arm on the front end of the rod and a rod connecting such arm with the lever aforesaid, an arm on the opposite end of the longitudinally-supported rod, for the purpose specified.

23. In a shocker, the combination with the bar I' suitably pivoted in the binder-deck and the double arm or dog pivotally secured on the outer end thereof and spring-held, of a counter-wheel suitably journaled and having ratchet-teeth engaged by the dog and the ejecter-arm arranged in proximity to the upper arm of said dog and means for moving the ejecter-arm to cause it to engage said upper arm and to throw the dog downwardly and move the ratchet-wheel the space of one teeth upon the delivery of every sheaf, substantially as described.

24. In a shocker, the combination with the sheck knotter-shaft supported on the binder-deck and the sprocket-wheel loosely supported on the shaft and provided with a collar having a series of teeth in its periphery, of an internal collar provided with an arm spring-held and a dog pivoted on the end of the arm, such arm being normally out of the path of the teeth, a counter-wheel, means for rotating such counter-wheel, a face-tooth extending laterally from the counter-wheel, a bar supported in suitable guideways in the frame and designed to normally extend underneath the dog supported on the arm pivoted in the collar aforesaid, said bar having a bent end, a lever pivoted on the frame and secured to the bent end of the bar, a spring for normally holding the bent end of the bar to the frame, the said lever being designed to be thrown outwardly by the tooth on the face of the counter-wheel on said counter-wheel completing its revolution, so as to release the dog and bind the sprocket-wheel to the shaft as and for the purpose specified.

25. In a sheaf-compressor, the combination with the compressor-arm supported on a suitable shaft and suitably operated, of a bar normally held in proximity to the compressor-arm and means for throwing such bar underneath the compressor-arm when the shock is being bound as and for the purpose specified.

26. In a sheaf-compressor, the combination with the compressor-arm supported on a suitable shaft and suitably operated, of a bar located in proximity to the compressor-arm and provided with a bent end and roller, a supporting-bracket for the same a pin on the bar, a spiral spring encircling the bar and extending between the pin on the same and the bracket, a knotter-shaft, and a cam-wheel thereon provided with a face-cam and designed to coact with the roller on the end of the bar as and for the purpose specified.

27. In a shocker, the combination with the binder-deck, of a shock-knotter and shaft, means for driving the same from the binder mechanism, a rectangular extension-frame located at the front of the machine and swung on the knotter-shaft, a brace supporting the same, a needle-arm journaled on the outer edge of said frame, crank-arms on said needle-arm and said knotter-shaft and a link connecting said arms, substantially as described.

28. In a machine of the class described, the combination with the shock-carrier and means for delivering sheaves thereto, of a rocking shaft in proximity to the shock-carrier, a sleeve forming a bearing for said shaft, said sleeve being capable of a lateral swinging motion, a plurality of compressor-arms extending upward from said shaft, a needle-arm, and connections for rocking said shaft as the needle-arm moves forward, as and for the purpose specified.

29. In a shocker, the combination with the shock-carrier suitably supported on the frame, of the compressor-arms, the shaft carrying the same, the needle-arm, a suitable support for the compressor-arms shaft, means operated from the needle-arm for throwing the compressor-arms on the shock when the needle-arm moves forwardly and a spiral spring connecting the needle-arm with the compressor-arm shaft as and for the purpose specified.

30. In a shocker, the combination with the shock-carrier suitably supported on the frame, of the compressor-arms, the shaft carrying the same, the needle-arm, a suitable support for the compressor-arms shaft, arms on the compressor-arms shaft and rods connecting the arms to the needle-arm for moving the compressor-arms downwardly upon the inward movement of the needle as and for the purpose specified.

31. In a shocker, the combination with the main frame, the extension-frame located at the front of the machine and the shock-carrier, of the needle-arm journaled on the outer end of the extension-frame, the braces extending outwardly and downwardly from the extension-frame, a journal supported thereby at the outside of the shock-carrier, a rock-shaft mounted to rock in said journal, compressor-arms suitably secured to said shaft and means for imparting a rocking motion to said shaft when the needle-arm is caused to move inwardly, substantially as described.

32. In a shocker, the combination with the main frame, the extension-frame located at the front of the machine and the shock-carrier, of the needle-arm journaled on the outer end of the extension-frame, the braces extending outwardly from the extension-frame, a journal supported thereby at the outside of the shock-carrier, a rock-shaft mounted to oscillate in said journal, compressor crank-arms suitably secured to the compressor-arms shaft, arms on the compressor-arms shaft, a rod connecting one of the crank-arms to the needle-arm, an arm on the end of the needle-arm and a rod connecting the second crank-arm to such latter arm as and for the purpose specified.

33. In a device of the character described, a shock-carrier, means for delivering sheaves thereto to form a shock, and means for moving said shock-carrier longitudinally and elevating it to deliver the shock and for folding it, substantially as described.

34. In a device of the character described, a shock-carrier comprising a folding-frame, suitable means for supporting the same, means for delivering sheaves thereto, and means for moving said frame longitudinally and tilting and folding it, substantially as described.

35. In a shocker, a main frame, longitudinal rails supported thereby, trucks adapted to travel on said rails, a longitudinal bar connected to said trucks, bars extending horizontally from said longitudinal bar and a plurality of longitudinal shock-supporting bars secured to said horizontal bars, substantially as described.

36. In a shocker, a shock-carrier comprising the inner side bar, the laterally-extending bars, pivotal connections between the laterally-extending bars and the inner bar, the longitudinal bars pivotally connected to the laterally-extending bars, the extension-arm secured to the rearmost laterally-extending bar and means for throwing such arm down, so as to tilt the laterally-extending bars to lie substantially parallel with the inner side bar when the inner side bar is raised to the substantially vertical position and means for swinging said inner side bar to a vertical position as and for the purpose specified.

37. In a shocker, a shock-carrier comprising the inner side bar, the laterally-extending bars, pivotal connections between the laterally-extending bars and the inner bar, the longitudinal bars pivotally connected to the laterally-extending bars, the extension-arm secured to the rearmost laterally-extending bar, a bar pivotally connected to the extension-arm of the laterally-extending bar, suitable guideways in the carrier-frame for the same and means for operating the aforesaid bar, so as to fold the shocker as and for the purpose specified.

38. In a shocker, a shock-carrier comprising the inner side bar, the laterally-extending bars, pivotal connections between the laterally-extending bars and the inner bar, the longitudinal bars pivotally connected to the laterally-extending bars, the extension-arm secured to the rearmost laterally-extending bar, a bar having one end bent at an angle and the opposite end pivotally connected to the extension-arm of the lateral bar, suitable guides in the carrier-frame for the same, the operating-shaft suitably journaled on brackets on the frame, and the arm on the end of the operating-shaft provided with a notch as shown and for the purpose specified.

39. In a shocker, a shock-carrier comprising the inner side bar, the laterally-exteading bars, pivotal connections between the laterally-extending bars and the inner bar, the longitudinal bars pivotally connected to the laterally-extending bars, the extension-arm secured to the rearmost laterally-extending bar, a bar having one end bent at an angle and its opposite end pivotally connected to the extension of the lateral arm, suitable guides in the carrier-frame for the same, the operating-shaft suitably supported, the arm on the end of the operating-shaft provided with a notch and a guide on the inner side bar of the shock-carrier as and for the purpose specified.

40. In a shocker, the combination with the shock-carrier and supporting-rails suitably supported, of a carriage for supporting the front end of the shock-carrier on the rails, an operating-shaft provided with a suitable crank, a counter-shaft provided with an arm at one end, a pitman connecting such arm with the crank on the operating-shaft, an arm on the outer end of the counter-shaft and a pitman or rod connecting such arm to said carriage as and for the purpose specified.

41. In a shocker, the combination with a suitable carriage and a shock-carrier pivotally connected to the carriage at one end, of means for throwing the carriage rearwardly, an operating-shaft a frame suitably supported on the operating-shaft and provided at the end with a crank-arm pivotally connected to the center of the shock-carrier as and for the purpose specified.

42. In a shocker, the combination with the shock-carrier and the carriage supporting the front end thereof at the inside, of the operating-shaft, the frame supported thereon, the crank-arm having a pivotal connection to the side of the shock-carrier frame and the end of the frame supported on the operating-shaft as and for the purpose specified.

43. In a shocker, the combination with the shock-carrier and means for supporting and elevating the same and causing it to recede rearwardly, of the operating-shaft and a brake-shoe secured thereon and a band with which each brake-shoe comes in contact as and for the purpose specified.

44. In a shocker, the combination with the shock-carrier, the driving-shaft therefor and the knotter-shaft, of a sprocket drive-wheel loose on the shaft, clutch mechanism coacting therewith and provided with a releasing-dog, a trip-spindle, means connected to the knotter-shaft for driving the same, a face-wheel on said trip-spindle, a tooth on said face-wheel, and a bell-crank having one end adapted to normally engage said dog and the opposite end adapted to be engaged by the tooth on said face-wheel and to release the dog on said clutch mechanism, substantially as described.

45. In a shocker, the combination with the shock-carrier and drive-shaft, of a sprocket drive-wheel loose on the shaft, clutch mechanism coacting therewith and provided with a releasing-dog, a bell-crank designed to coact with the dog and spring-held, the shock knotter-shaft, a spindle located thereunder driving means between the knotter-shaft and the spindle and a face-wheel on the spindle provided with a tooth designed to come in contact with the end of the bell-crank as and for the purpose specified.

810,187. **PROTECTING-SLEEVE FOR SCREW-PROPELLER SHAFTS.** CARL W. CEDERVALL, Gothenburg, Sweden, administrator of Frans Reinhold Cedervall, deceased. Filed Apr. 3, 1904. Serial No. 201,199.

Claim.—1. A protecting-sleeve for screw-propeller shafts adapted to protect the part of the latter outside of the bushing in the stern-post and comprising rings adjustable in relation to each other, a piston-like ring fitted into an annular opening in one of said rings, and springs adapted to press the said piston-like ring outwardly from its seat, substantially as and for the purpose set forth.

2. A protecting-sleeve for screw-propeller shafts comprising two rings provided on the shaft and serving to protect that part of the same which is outside of the bushing in the stern-post, one of said rings fitted into the other and adjustable thereon; a piston-like ring fitted into an annular opening in the larger ring; and springs interposed between the piston-like ring and its seat on the larger ring to press the former outwardly from the latter, substantially as described and shown.

3. A protecting-sleeve for screw-propeller shafts comprising two rings provided on the shaft and serving to protect that part of the same which is outside of the bushing in the stern-post, one of said rings fitted by screw-threaded connection into the other and adjustable thereon; a piston-like ring fitted into an annular opening in the larger ring; springs interposed between the piston-like ring and its seat on the larger ring to press the former outwardly from the latter; an outer ring provided with an inwardly-extending flange and grooves and surrounding said larger ring, the larger ring being provided with a shoulder and pins which coöperate with the flange and grooves of the outer ring, substantially as and for the purpose described and shown.

810,188. **FOLDING SQUARE.** EDWARD L. COOK, Brattleboro, Vt. Filed Sept. 11, 1905. Serial No. 278,011.

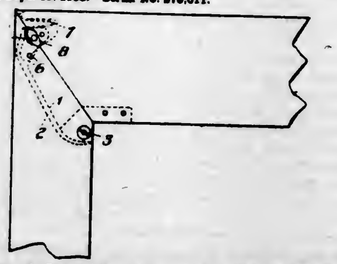

Claim.—1. In a folding square, the members pivoted together with a miter-joint, a tongue on one member entering a groove in the other member, a catch pivoted at the a pexof the joint, a spring keeping the hook end of the catch pressed upon the edge of the tongue, and a pin with which the catch is automatically caused to engage in closing the members.

2. In a folding square, the members pivoted together with a miter-joint, a spring-pressed catch pivoted at the apex of the joint on one member, a pin on the other member for the engagement by the catch, and an adjusting-screw in one member with its head within the joint at its apex for the purpose stated.

3. In a folding square, the members pivoted together with a miter-joint, a spring-pressed catch having a hook end pivoted at the apex of the joint on one member, a pin on the other member for engagement by the catch, and an adjusting-screw in the hook end of the catch for the purpose stated.

4. In a folding square, the members pivoted together with a miter-joint, a spring-pressed catch having a hook end pivoted at the

spool of the joint on one member, a pin on the other member for engagement by the catch, an adjusting-screw in one member with its head within the joint at its open, and an adjusting-screw in the hook end of the catch substantially as described for the purpose specified.

810,189. SAFETY DEVICE FOR HOISTING MECHANISMS.

WILLIAM COOPER, Denver, Colo. Filed May 5, 1904. Serial No. 206,422.

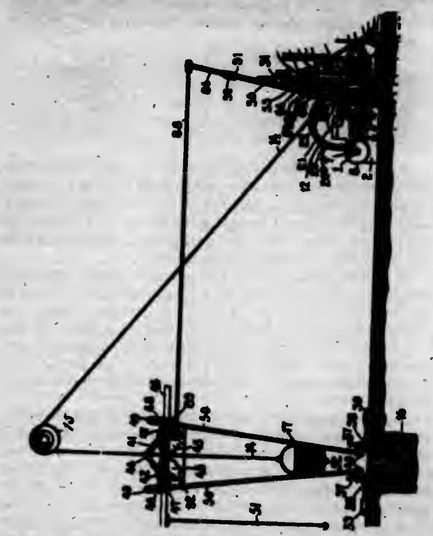

Claim.—1. In hoists, hoisting mechanism, a device for controlling said hoisting mechanism, a hoisting-receptacle operated by said hoisting mechanism, doors pivoted so as to extend substantially across the path of said hoisting-receptacle so that the ascension of said hoisting-receptacle beyond a predetermined point swings said doors upwardly and outwardly, operative connection between said doors and other operative connection between said doors and said controlling device so that the engagement of said doors by said receptacle actuates said controlling device.

2. In hoists, hoisting mechanism, a device for stopping said hoisting mechanism, a hoisting-receptacle operated by said hoisting mechanism, swing-doors pivoted on opposite sides of the path of said hoisting-receptacle and normally projecting into said path so that the ascension of said receptacle beyond a predetermined point swings said doors outwardly and upwardly, segmental gears rigidly carried by said doors and intermeshing and operative connection between said doors and said stopping device so that the engagement of said doors by said receptacle actuates said stopping mechanism.

3. In hoists, hoisting mechanism, a device for stopping said hoisting mechanism, a hoisting-receptacle operated by said hoisting mechanism, a pair of swing-doors pivoted at opposite sides of the path of said hoisting-receptacle and normally extending substantially across the same so that the ascension of said receptacle beyond a predetermined point swings said doors upwardly and outwardly, a cone-shaped guide adapted to leave said receptacle into proper engagement with said doors, intermeshing segmental gears rigidly attached to said doors and operative connection between said doors and said stopping device so that the engagement of said doors by said receptacle operates said stopping device.

810,190. URINE. WILLIAM COOPER, Providence, R. I. Filed Mar. 10, 1905. Serial No. 249,592.

Claim.—A union for pipes comprising an exteriorly-threaded male member having an annular, tapered rib on its inner end, a female member having an annular, tapered socket in its inner end and the annular orifice b^4, of even width throughout, extending beyond the bottom of the tapered socket and adapted to permit the metal of the rib to flow, and also having an exterior shoulder on the outer wall of said socket, and a collar interiorly threaded to engage the thread of the male member and having an inwardly-extending flange arranged to engage the exterior shoulder of the female member.

810,191. PICKING-MOTION FOR LOOMS. JOSEPH D. CROWTHER and ALFRED STEER, Huddersfield, England, assignors to Edward Hollingworth, Deberam, England. Filed May 26, 1905. Serial No. 262,112.

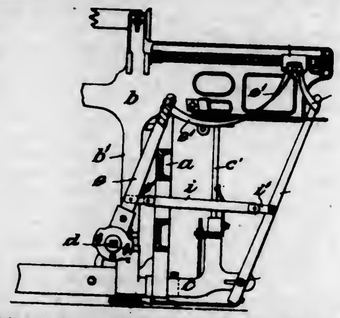

Claim.—1. In a picking-motion of a loom, the combination with a picking-stick, and a pulling-back stick, both connected with the picker, of a connection between said picking-stick, and pulling-back stick, said connection independent of the picker and its connecting-straps.

2. In a picking-motion of a loom, the combination with a picking-stick, and a pulling-back stick, both connected with the picker, of a flexible connection between said picking-stick, and pulling-back stick, said connection independent of the picker and its connecting-straps.

3. In a loom picking-motion of the class described, a picking-stick, and a pulling-back stick, and a connection intermediate said picking-stick and said pulling-back stick, said connection independent of the picker.

810,192. SMALL-ARM. GOTTFRIED DANNER, Przmyel, Austria-Hungary. Filed May 27, 1905. Serial No. 262,553.

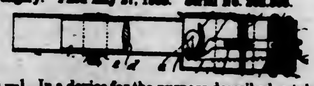

Claim.—1. In a device for the purpose described, a tube mounted parallel with the barrel of the weapon, a source of light within said tube, a reflector, a support for said reflector and source of light mounted for movement vertically and horizontally and a convex lens interposed between the reflector and the outer end of the tube, whereby the rays from said source of light are thrown upon the mark by the lens and the image of the light properly placed upon the mark relatively to the line of sight.

2. In a device for the purpose described, a tube mounted parallel with the barrel of the weapon, a lens in the fore part of said tube, a holder adjustable horizontally and vertically in the rear part of said tube, a reflector supported in said holder, and an electric lamp in front of said reflector.

3. In a device for the purpose described, a tube mounted parallel with the barrel of the weapon, a lens in the fore part of said tube, a holder adjustable horizontally and vertically in the rear part of said tube, a reflector supported in said holder, and an electric lamp in front of said reflector and springs bearing in different directions on said holder.

4. In a device for the purpose described, a tube mounted parallel with the barrel of the weapon, a lens in the fore part of said tube, a holder adjustable horizontally and vertically in the rear part of said tube, a reflector supported in said holder, and an electric lamp in front of said reflector, screws disposed at right angles to each other and passed through said holder, and springs surrounding said screws for adjustment of said holder.

810,193. SOAP-MOLDING MACHINE. FELIX DAHL, Hahn, Germany. Filed June 4, 1904. Serial No. 211,857.

Claim.—1. In a machine for effecting the solidification of liquid soap, in molds the combination of a revolving drum with recesses formed at the periphery thereof and constituting molds for the soap, a tank for receiving the liquid soap and supplying it to the molds, a jacket including the tank, partially surrounding the drum, and means for cooling the sides and bottoms of the molds during their revolution, substantially as described.

2. In a machine for effecting the solidification of liquid soap in molds the combination of a revolving drum with recesses formed at the periphery thereof and constituting molds for the soap, a tank for receiving the liquid soap and supplying it to the molds as they pass under it, a jacket including the tank, partially surrounding the drum, and means for cooling the sides and bottoms of the molds during their revolution, substantially as described.

3. In a machine for effecting the solidification of liquid soap in molds the combination of a revolving drum with recesses formed at the periphery thereof and constituting molds for the soap, a tank for receiving the liquid soap and supplying it to the molds as they pass under it and cooling devices for the molds applied to the interior and exterior of the drum, substantially as described.

4. In a machine for effecting the solidification of liquid soap in molds the combination of a revolving drum with recesses formed at the periphery thereof and constituting molds for the soap, a tank for receiving the liquid soap and supplying it to the molds, a jacket including the tank, partially surrounding the drum, means for cooling the sides and bottoms of the molds during their revolution, and means for mechanically removing the solidified soap from the machine, substantially as described.

5. In a machine for effecting the solidification of liquid soap in molds the combination of a revolving drum and recesses formed at the periphery thereof and constituting molds for the soap, a tank for receiving the liquid soap and supplying it to the molds as they pass under it, a cooling device for the molds applied to the interior of the drum, and a cooling-jacket arranged around the drum and open at one side for the purpose of removing the solidified soap, substantially as described.

810,194. LUBRICATOR. ERNEST DEHN, Buffalo, N. Y., assignor to Pearl Manufacturing Company, Buffalo, N. Y., a Corporation of New York. Filed June 20, 1905. Serial No. 266,017.

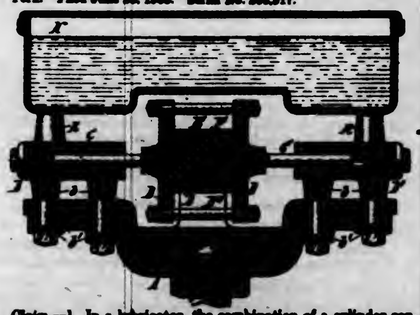

Claim.—1. In a lubricator, the combination of a cylinder containing a piston and having inlet and outlet chambers, valves arranged in said chambers and controlling the passages between the same and the cylinder, springs for closing said valves, and positive opening means for the valves constructed to operate the same alternately, substantially as set forth.

2. In a lubricator, the combination of a cylinder containing a piston and having inlet and outlet chambers connected therewith, valves arranged in said chambers and controlling the passages between the same and the cylinder, springs for closing said valves, and rotary cams arranged to alternately open said valves, substantially as set forth.

3. In a lubricator, the combination of a cylinder containing a piston and having inlet and outlet chambers connected therewith, valves arranged in said chambers and controlling the passages between the same and the cylinder, springs for closing said valves, a rotary shaft extending across the cylinder, cams mounted on said shaft, and thrust-rods interposed between said cams and said valves, substantially as set forth.

4. In a lubricator, the combination of a cylinder containing a piston and having inlet and outlet chambers connected therewith, and each provided in its rear end with a removable plug, valves arranged in said chambers and controlling the passages between the same and the cylinder, springs for closing said valves, and rotary cams arranged to alternately open the valves, substantially as set forth.

5. In a lubricator, the combination of a pair of opposing cylinders each provided with an inlet and an outlet chamber and inlet and outlet ports connecting each cylinder with its corresponding chambers, check-valves arranged in said chambers and controlling said inlet and outlet ports, pistons arranged in the cylinders, and an actuating-shaft arranged between the cylinders and carrying an eccentric which reciprocates said pistons and cams which operate said valves, substantially as set forth.

6. In a lubricator, the combination of a pair of opposing cylinders each provided on opposite sides with an inlet and an outlet chamber, inlet and outlet ports connecting each cylinder with its corresponding chambers, check-valves arranged in said chambers and controlling said inlet and outlet ports, springs for closing said valves, pistons arranged in said cylinders, and an actuating-shaft arranged between the cylinders and carrying an eccentric which reciprocates said pistons and cams which open said valves, substantially as set forth.

7. In a lubricator, the combination of a pair of opposing cylinders each provided on opposite sides with an inlet and an outlet chamber, corresponding chambers of the cylinders being arranged opposite or in line with each other, inlet and outlet ports connecting each cylinder with its corresponding chambers, check-valves arranged in said chambers and controlling said ports, springs for closing said valves, a shaft arranged transversely between said cylinders and provided in line with said inlet and outlet chambers with oppositely-arranged cams, the one adapted to open the inlet-valves alternately and the other to open the outlet-valves alternately, pistons arranged in said cylinders and means for actuating the pistons, substantially as set forth.

8. In a lubricator, the combination of a pair of opposing cylinders each provided on opposite sides with an inlet and an outlet chamber, inlet and outlet ports connecting each cylinder with its corresponding chambers, check-valves arranged in said chambers and controlling said inlet and outlet ports, springs for closing said valves, pistons arranged in said cylinders, a yoke connecting the pistons, an actuating-shaft arranged transversely between the cylinders and carrying an eccentric which reciprocates said yoke, oppositely-arranged cams mounted on said shaft in line with the check-valves of said inlet and outlet chambers, respectively, and thrust-rods interposed between said cams and said check-valves, substantially as set forth.

810,195. POWER-PRESS. JOHN H. DOMAN, Ypsilanti, Mich., assignor to Michigan Machinery Manufacturing Company, Ypsilanti, Mich., a Corporation of Michigan. Filed Jan. 24, 1905. Serial No. 242,503.

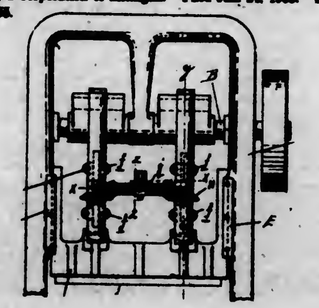

Claim.—1. In a press, the combination with the crank and movable platen, of an adjustable connecting-rod between said crank and platen comprising a plurality of sections, and a threaded shank adjustably connecting said sections, the adjacent ends of said sections forming square shoulders adapted to abut against each other and to be parallel when separated, and a shim or washer for insertion between said shoulders to receive the compression stress and to relieve the stress on the threads of the shank.

2. In a press, the combination with the crank and the movable platen, of a rod connecting said crank and platen, formed in a plurality of sections, a threaded shank of lesser cross-section than said sections of the rod, engaging central threaded apertures therein and forming a means of connecting and adjusting said sections toward or from each other, the adjacent faces of said sections being perpendicular to the axis of said shank and rod to form square shoulders parallel with each other and variable-spacing shims or washers for insertion between said shoulders to receive the compression stress and relieve the same from the threads of said shank.

3. In a press, the combination with the crank-shaft and movable platen, of a plurality of rods connecting the cranks and said platen, each rod comprising a plurality of sections and a central threaded shank adjustably connecting said sctions, a rotary shaft extending between said rods perpendicular thereto and having bearings in the central sections of said rods, bevel gear-wheels connecting said shaft and the threaded shanks of said rods and a ratchet connection to said shaft for rotating the same to simultaneously adjust said shanks and correspondingly lengthen or shorten said rods.

4. In a press, the combination with the crank-shaft and movable platen, of a plurality of rods connecting the cranks and platen, each comprising a plurality of sections having square abutting shoulders and a central threaded shank adjustably connecting said sections, the central sections of said rods projecting laterally toward each other, a shaft perpendicular to said rods journaled in bearings in said extensions of the central members, bevel gear-wheels on said shaft in recesses in said lateral extensions, bevel gear-wheels on said shanks intermeshing with said gear-wheels on said shaft and a ratchet connection to said shaft intermediate said lateral extensions for simultaneously rotating said shanks and correspondingly lengthening or shortening said rods.

5. In a press, the combination with the crank-shaft and movable platen, of a plurality of rods connecting the cranks and said platen, each rod comprising three sections, having square abutting shoulders and a threaded shank of lesser cross-section centrally connecting said sections, the central section of each rod being in a longitudinally-fixed position thereon and being provided with a lateral extension, a shaft perpendicular to said rods journaled in said lateral extensions of the central sections thereof, bevel gear-wheels fixed upon said shanks adjacent to said central sections and having a hub portion formed with square shoulders for abutting against said sections, bevel gear-wheels fixed upon said shaft and located in recesses in said lateral extensions and intermeshing with said bevel gear-wheels on said shanks, the threads on the opposite ends of said shanks being right and left and engaging correspondingly-threaded sockets in the end sections of said rods, said sockets being split and means for clamping said split sockets upon said threaded shanks.

6. In a press, the combination with the crank-shaft and movable platen, of a plurality of rods connecting the cranks and platen, each rod comprising three sections centrally connected by a threaded shank of lesser cross-section, the central section of said rod being sleeved upon said shank in a longitudinally-fixed position thereon and the end sections of said rod having respectively right and left threaded sockets for engaging corresponding threads on said shank, a bevel gear-wheel fixed on said shank adjacent to said central section and having square shoulders abutting thereagainst and against the adjacent end section, a rotary shaft perpendicular to said rods and journaled in bearings in said central sections and bevel gear-wheels on said shaft engaging with said bevel gear-wheels on said shanks, whereby the rotation of said shaft will adjust the end sections of said rods, to be equally spaced from the shoulders of said central section, and gear-wheel.

7. In a press, the combination with the crank-shaft and movable platen, of a rod connecting said crank and the platen formed in three sections, a shank of lesser cross-section centrally connecting said section having a right and left threaded engagement respectively with the end sections and being in longitudinally-fixed relation to said central section, said three sections having square shoulders for abutting with each other and maintaining a full cross-section of the rod at all points therein when said shoulders abut and shims for insertion between said shoulders when separated from each other to receive the compression stress and relieve the same from the threads of said shank.

8. In a press, the combination with the crank-shaft and movable platen, of a plurality of adjustable rods connecting the cranks and said platen, a shaft extending between said rods perpendicular thereto having a geared connection therewith and a ratchet-lever connected with said shaft for rotating the same to simultaneously and correspondingly adjust said rods both above and below said geared connecting-shaft.

9. In a press, the combination with a crank-shaft and movable platen, of a plurality of adjustable rods connecting said platen and the cranks, a shaft extending between said rods perpendicular to and having a gear connection therewith, a ratchet-wheel on said shaft and a ratchet-lever having a reversible pawl, whereby said shaft may be rotated in either direction by said lever to correspondingly and simultaneously adjust said rods both above and below said geared connecting-shaft.

810,196. ORE-WASHING PLANT. FREDERICK BOSSERT, Cincinnati, Ohio. Filed Apr. 6, 1905. Serial No. 254,089.

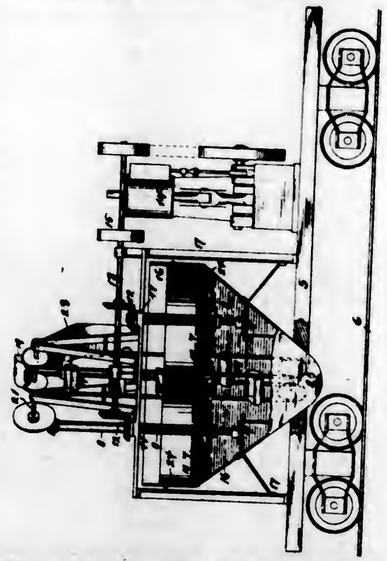

Claim.—1. In an ore-washing plant, the combination of a common water-tank, a group of circular ore-separators arranged therein, means to rotate them and stationary partitions in the upper part of the tank which surround each separator to confine the effect of the operation of the same to the space so surrounded.

2. In an ore-washing plant, the combination of a water-tank terminating below into a central conical pocket, circular ore-separators grouped therein around this pocket and each equidistant therefrom, means to operate them, a bucket elevator arranged in the central space surrounded by these separators and dipping into the pocket below, of the tank, to remove therefrom the waste material and a railway-car upon which all these parts are mounted.

810,197. MACHINE FOR MAKING METAL WHEELS. EMIL REINFELDT, Davenport, Iowa, assignor to Bettendorf Metal Wheel Company, a Corporation of Iowa. Filed Oct. 28, 1904. Serial No. 230,228.

Claim.—1. In a machine for making metal wheels the combination with the spoke-fastening means, of a hub-support adapted to sustain the hub on end, and cranked arms projecting laterally from said hub-support and adjustable around their longitudinal axes and adapted to sustain the rim; whereby the rim-support is adjustable vertically with reference to the hub-support.

2. In a machine for making metal wheels and in combination with spoke-fastening means, a flat frame, means for moving said frame bodily relatively to the spoke-fastening means and in the direction of the axis of the hub, an extension on the end of said frame adjustable in the direction of the axis of the spoke and adapted to give support to the hub, and arms extending laterally from said extension and adapted to support the rim.

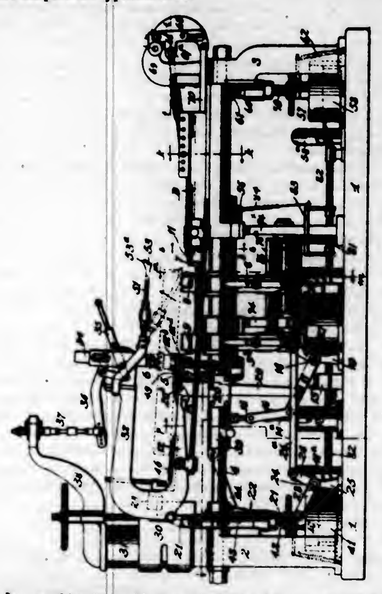

3. In a machine for making metal wheels, the combination of a support for the hub and rim, movable bodily in the direction of the longitudinal axis of the spoke, mechanism for fastening the inner end of the spoke to the hub, mechanism for fastening the outer end of the spoke to the rim, said latter mechanism comprising a spoke-clamp and a header movable relatively to the clamp toward the hub, and operative connections between said header and the hub and rim-support; whereby when the header advances to perform its functions it will move the hub and rim-support in the direction of the longitudinal axis of the spoke.

4. In a machine for making metal wheels, the combination of a support for the rim adapted to allow the rim to move in the direction of the axis of the spoke, means for sustaining the spoke in operative relation to the rim, mechanism for fastening the spoke to the rim, a rest adapted to bear against the outer face of the rim and movable in the direction of the longitudinal axis of the spoke, and connections between the rest and spoke-fastening means, constructed to advance the rest and rim, and maintain the rest in contact with the advancing rim while the spoke is being fastened to the rim.

5. In a machine for making metal wheels, the combination with a support for the rim adapted to allow the rim to move in the direction of the longitudinal axis of the spoke, of means for fixedly sustaining the spoke in relation to the rim to be fastened thereto, a heading device for the outer end of the spoke adapted when advanced to form a head thereon, a rest in position to bear against the outer face of the rim while the head is being formed and movable in the direction of the axis of the spoke, and means controlled by the advance of the heading device for moving said rest relatively to the header and in the direction of the axis of the spoke.

6. In a machine for making metal wheels, the combination with means for sustaining the rim in such manner that it may move bodily in the direction of the axis of the spoke, of means for sustaining the spoke in operative relation thereto, a heading device adapted when advanced to form a head on the outer end of the spoke, means for advancing said heading device, a rest in position to bear on the outer side of the rim adjacent the heading device, and means for moving said rest simultaneously with the heading device, in the direction of the same, but at less speed.

7. In a machine for making metal wheels, the combination of a support for the rim and hub adapted to allow the rim to move in the direction of the axis of the spoke, means for fixedly sustaining the spoke in operative relation to the hub and rim, means for fastening the spoke to the hub, a header adapted when advanced to form a head on the outer end of the spoke, a rest in position to bear against the outer face of the rim while the head is being formed, and means controlled by the movement of the header for moving the rest in the direction of the spoke-axis and relatively to the header in the direction of its heading movement.

8. In a machine for making metal wheels, the combination of a support for the rim and hub movable in the direction of the axis of the spoke, means for sustaining the spoke in operative relation to the hub and rim, means for fastening the spoke to the hub, a header adapted when advanced to form a head on the outer end of the spoke, a rest in position to bear against the outer face of the rim, means controlled by the movement of the header for moving the rest in the direction of the spoke-axis, and operative connections between said rest and the supporting device, adapted to move the support in the same direction as that imparted to the rest.

9. In a machine for making metal wheels, the combination of a hub-support adapted to sustain the hub on end and movable transversely of its longitudinal axis, means for supporting the rim in operative relation thereto, means for sustaining the spoke in operative relation to said hub and rim, means for fastening the inner end of the spoke to the hub, a header adapted by its advance to head the outer end of the spoke, a rest in position to bear against the outer face of the rim, and movable in the direction of the axis of the spoke, means for moving said rest, and operative connections between the rest and the hub-support, adapted to move the support in the same direction as that imparted to the rest.

10. In a machine for making metal wheels, the combination with a spoke-clamp adapted to grasp the spoke adjacent the inner face of the rim and formed to permit the spoke to be moved endwise relatively, a supporting device for the hub and rim adapted to hold said parts in operative relation to the spoke and movable in the direction of the axis of the spoke, means for fastening the inner end of the spoke to the hub, a heading device adapted when advanced to upset the outer end of the spoke, a rest in position to bear against the outer face of the rim, means for moving said rest simultaneously with, in the same direction of, but at less speed than the heading device, and means for moving the supporting device simultaneously with and at the same speed of the rest.

11. In a machine for making metal wheels, the combination of a support for the rim, means for sustaining the spoke, a clamp adapted to grasp the spoke near the inner face of the rim, means for moving the spoke and rim relatively to said clamp in the direction of the axis of the spoke, and an abutment independent of the clamp and adapted to bear firmly against the inner face of the rim as the latter approaches the clamp.

12. In a machine for making metal wheels, the combination of means for supporting the rim so that it may be moved in the direction of the axis of the spoke, means for sustaining the spoke in operative relation to the same, a heading device adapted by its advance to upset the outer end of the spoke, a rest in position to bear against the outer face of the rim and movable in the direction of the axis of the spoke, and an abutment in position to bear against the inner face of the rim and movable with the rest.

13. In a machine for making metal wheels, the combination with a support for the hub adapted to sustain the same on end, a relatively fixed arm above the support, hub-clamping mechanism sustained by the arm, means for supporting the rim on edge around the hub, an arm mounted on the first-named arm and formed with an abutment to bear against the inner face of the rim, means for sustaining the spoke in operative relation to the rim and hub, and means for fastening the spoke to the rim and hub.

14. In a machine for making metal wheels, the combinaton of means for supporting the rim and spoke in operative relations to be fastened together, mechanism for fastening the spoke to the rim, a sustaining device on which the lower edge of the rim is adapted to rest, and a finger adapted to bear on the upper edge of the rim.

15. In a machine for making metal wheels, the combination with a support for the rim, of means for sustaining the spoke in operative relation to the same, a rest in position to bear against the outer face of the rim, an abutment adapted to bear against the inner face of the rim, a sustaining device on which the lower edge of the rim is adapted to rest, and a finger adapted to bear on the upper edge of the rim.

16. In a machine for making metal wheels, the combination of a rim-support, means for sustaining the spoke in operative relation to the rim, a rest adapted to bear against the outer face of the rim, and a sustaining device on which the lower edge of the rim is adapted to rest, said sustaining device being carried by the rest.

17. In a machine for making metal wheels, the combination of a

hub-support movable in the direction of the axis of the spoke, means for sustaining the rim around the hub, means for holding the spoke in operative relation to said parts, a movable header for the outer end of the spoke, a sliding cap-plate operatively connected with the header, a rim-rest on the cap-plate, and links connecting said cap-plate operatively with the hub-support.

18. In a machine for making metal wheels, the combination with a horizontal vertically-movable hub-holding frame, of a rim-support carried by said frame, an actuating device for moving the frame vertically, vertical bars connected to the frame at one end of the same, vertical links connected with the frame at its other end, and operative connections between the bars and links and the actuating device.

19. In a machine for making metal wheels, the combination with the frame having a vertical standard formed with a vertical open guideway, of a hub-holding frame adapted to be moved in a direction longitudinally of the spoke, and formed with a guide-lug sliding in the guideway, means for moving said frame vertically, means for sustaining the hub and rim in operative relations to the spoke and means for fastening the spoke to the hub and rim.

20. In a machine for making metal wheels, the combination with a horizontal vertically-movable hub-holding frame, of a rim-support carried thereby, an actuating device for moving the frame vertically, and means for adjusting the ends of said frame independently and with relation to the actuating mechanism.

21. In a machine for making metal wheels, the combination of two spoke-clamps adapted to act respectively at opposite ends of the spoke, and each comprising opposing jaws pivoted between their ends on parallel axes and provided on one side of said axes with spoke-grasping surfaces, a longitudinally-extending rocking member formed on opposite sides with cam-surfaces adapted to engage the inner sides of the jaws of both clamps, and adapted to close the jaws on the spoke, an actuating cylinder and piston, and operative connections between the piston and said rocking member; whereby the rocking member serves to operate both clamps in unison.

22. In a machine for making metal wheels, the combination with means for supporting the hub and rim in operative relations, said supporting means being movable in the direction of the axis of the spoke to be secured, of a spoke-clamp adapted to grasp the spoke adjacent the hub and acting to permit a movement of the spoke endwise toward the hub only, a second spoke-clamp adapted to grasp the spoke adjacent the rim and acting to permit the spoke to be moved endwise, a heading device for the hub end of the spoke adapted to upset the spoke within the hub and against the holding action of the first-named clamp, a heading device for the opposite end of the spoke adapted when advanced toward the hub to upset the end of the spoke outside the rim, means controlled by the advance of this header for moving the rim and connected spoke and hub in the direction of the axis of the spoke and with relation to the clamp, and means for forming a shoulder on the spoke at the inner face of the rim when the spoke is moved endwise.

23. In a machine for making metal wheels, the combination of a support for the hub and rim movable vertically and horizontally, a cylinder 13, a piston therein operatively connected with said support, spoke-clamps, a cylinder 79, a piston therein operatively connected with said clamps, a hub-header, a cylinder 41, a piston therein operatively connected with the hub-header, a rim-header, a cylinder 56, a piston therein operatively connected with the rim-header, valves for the respective cylinders controlling the admission to and exit of fluid under pressure from the same, a common operating means for said controlling-valves, and connections between said operating means and the respective valves, said valves and connections being so formed and related that when the common operating means is actuated, cylinder 13 will be first opened to the exhaust, then pressure admitted to cylinder 79, then this cylinder opened to the exhaust, then pressure admitted to cylinder 56 and this cylinder opened to the exhaust, then cylinder 79 opened to the exhaust, and finally pressure admitted to cylinder 13.

810,198. METHOD OF MAKING METAL WHEELS. BERT. BUSHNELL, Davenport, Iowa, assignor to Bettendorf Metal Wheel Company, a Corporation of Iowa. Original application filed Oct. 20, 1904, Serial No. 229,332. Divided and this application filed Mar. 13, 1905. Renewed Dec. 8, 1905. Serial No. 290,609.

Claim.—1. The method of making metal wheels in which the spokes are secured to the hub in two ranks, which method consists in fastening all the spokes of one rank to the members of the wheel and then fastening the spokes of the other rank while hot, the rim being closed at any time prior to the fastening of the second rank.

2. The method of making metal wheels in which the spokes are secured to the hub in two ranks, which method consists in fastening together the hub, rim and spokes of one rank in such relations that the hub will occupy a position in a longitudinal direction beyond that it will occupy in the completed wheel, then fastening all the spokes of the other rank to the hub and closed rim while said spokes are hot; whereby the contraction of the spokes from cooling will draw the hub to the proper position and will place all the spokes under tension.

3. The method of making metal wheels in which the spokes are fastened to the hub in two rows or ranks, which consists in providing a hub with two rows of holes therearound, and a rim with holes spaced therearound at intervals, fastening all the spokes of one rank in place with their inner ends in the holes of one rank in the hub and their outer ends in every alternate hole in the rim, then fastening all the spokes of the other rank in place while hot with their inner ends in the holes of the second rank in the hub and their outer ends in the holes in the rim, the rim being closed at any time prior to the fastening of the second rank.

4. The method of making staggered wheels, which consists in fastening one rank of spokes to the hub and rim while the spokes are hot, allowing the secured spokes to contract, and then fastening the spokes of the other rank while hot, to the members of the wheel, the rim being closed at any time prior to the fastening of the second rank.

5. The method of making staggered wheels, which consists in providing a hub with two series of holes therearound, a closed rim, and spokes, fastening all the spokes of one rank to the hub and rim respectively, and then securing the spokes of the other rank while hot to the hub and rim.

810,199. VEHICLE-STEP. JOSEPH BERRY, Cleveland, Ohio. Filed May 15, 1905. Serial No. 260,630.

Claim.—The combination of a step-shank having an upwardly-recessed arch-shaped head, adapted to span the upper portion of an axle, and a separate clip extending through the recess and embracing said head and axle and arranged to secure the step-shank in place on a support.

810,200. RAILWAY-TIE. ELI T. FORRESTER, Hot Springs, S. D. Filed Oct. 17, 1903. Serial No. 177,163.

Claim.—1. A railway-tie made up of a series of alternating metallic and fibrous layers with metal layers at the top and bottom of the tie, and binding elements piercing the layers of the tie.

2. A railway-tie made up of a series of alternating metallic and fibrous layers with metal layers at the top and bottom of the tie, binding elements piercing the tie, each end portion of the tie being provided with a pair of spaced vertical openings, and track-fastening elements for said openings and provided with non-circular heads fitted in similarly-shaped seats in the bottom metallic layer of the tie.

3. A railway-tie pierced by a vertical opening, a bolt extending through the opening with its head at the under side of the tie, and a flanged rail-engaging element fitted to the upper end of the bolt to overlap the base of the rail and provided with a hub portion entering the opening in the tie.

4. A railway-tie pierced by a vertical opening having enlarged non-circular top and bottom portions constituting seats, a bolt extending through the opening with its head snugly fitted in the lower seat, and a flanged rail-engaging element fitted to the top of the bolt with its flange adapted to overhang and engage the base of the rail and provided with a hub portion entering the seat at the top of the opening in the tie.

5. A railway-tie made up of a series of alternating metallic and fibrous layers with metallic layers at the top and bottom of the tie, said tie being pierced by a vertical opening which is enlarged in the top metallic layer and also enlarged in the bottom metallic layer, a bolt passing through the opening with its head seated in the lower enlargement of the opening, and a flanged rail-engaging element fitted to the upper end of the bolt with its flange adapted to overhang and engage the base of the rail and provided with a hub portion entering the enlarged upper end of the opening in the tie.

6. A track-fastener comprising a bolt which is non-circular adjacent its threaded terminal, a rail-engaging element having a non-circular opening receiving the non-circular portion of the bolt, said element being provided with a series of substantially radial rail-engaging flanges which are successively provided upon their under faces with rail-engaging shoulders located at progressively-increasing distances from the bolt-opening, and a nut to hold the rail-engaging element upon the bolt.

7. The combination with a railway-tie having a bolt-opening therein which is enlarged at its upper end to form a non-circular seat, of a bolt extending through the opening and rising above the tie, a rail-engaging element fitted upon the bolt and having its lower side provided with a non-circular boss fitting the non-circular seat of the tie, said rail-engaging element having a series of substantially radial rail-engaging flanges which are successively provided upon their under sides with rail-engaging shoulders located at progressively-increasing distances from the bolt-opening, and means to hold the rail-engaging element upon the bolt.

8. As a new article of manufacture, a track-fastening element comprising a body pierced by a bolt-opening, the bottom of the body having a non-circular boss concentric with the bolt-opening, a concentric series of substantially radial rail-engaging flanges, and shoulders upon the under sides of the flanges and located at progressively-increasing distances from the bolt-opening.

810,201. POP SAFETY-VALVE. JORDAN W. GRANT, Portsmouth, Va. Filed June 8, 1905. Serial No. 264,232.

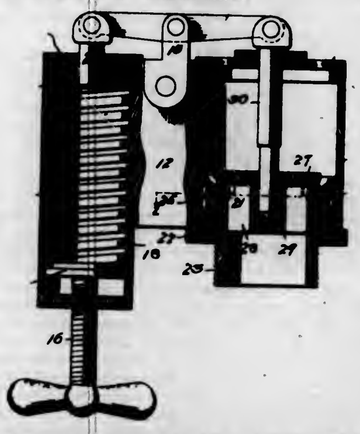

Claim.—A pop safety-valve, comprising a pair of integral parallel cylinders having a connecting-web and one constituting a valve-chamber and the other a spring-casing, a valve-seat secured within the lower portion of the chamber, a valve arranged on said seat, a perforated cap arranged at the top of the casing and removable therefrom for repair or renewal of the valve, a loose valve-stem guided in a central opening in the cap and entering a centrally-disposed recess in the valve, a compression-spring arranged in the casing, upper and lower disks at the ends of the spring, a stem extending from the upper disk, a pivot-ing carried by the web, a lever pivoted thereto and connected to said two stems, and an adjusting-screw passing through a threaded opening at the bottom of the casing and bearing on said lower disk.

810,202. TYPE-WRITING MACHINE. JOHN A. HASSINGTON, New York, N. Y. Filed Mar. 10, 1905. Serial No. 249,870.

Claim.—1. In type-writting machines, a pair of independent bearings, independent guide-supports and adjusting devices for each bearing, and a type-bar having an arched lower extremity, and foot members extending in opposite directions from and at an angle to the terminals of said arched extremity, each foot member having an independent pivotal connection with one of said bearings.

2. In type-writing machines, a pair of bearings, guide-supports, adjusting devices for the same, and a type-bar having a lower arched member and foot members extending horizontally in opposite directions from the ends of the arched member, which foot members are pivoted in said bearings.

3. In type-writing machines, a support, bearing-plates in pairs located on said support, adjusting devices for the bearing-plate, a type-bar having an arched lower member radially disposed with reference to the support, horizontal oppositely-disposed foot members extending from the ends of the arched member, toe extensions from the foot members, and pivotal connections between the bearing-plates and the toe extensions of the type-bar.

4. In type-writing machines, a supporting-plate, bearing-posts and pins carried by the supporting-plate and arranged in transverse rows, bearing-plates in pairs located upon the supporting-plate, said bearing-plates having semicircular offsets for engagement with the bearing-posts, their inner ends being upwardly curved beyond the inner edge of the supporting-plate, the outer ends of said bearing-plates having engagement with said pins, said bearing-plates being also provided with projections from one side face and with conical offsets at their curved inner ends, and type-bars having arched lower members radially disposed to the supporting-plate, and oppositely-extending horizontal foot members at the ends of the arched members, each foot member having a toe extension provided with a depression to receive the offsets from the inner ends of the bearing-plates, and adjusting-screws engaging with the projections on the bearing-plates as described.

810,203. WARDROBE-TRUNK. THOMAS J. HAMILTON, New York, N. Y. Filed June 17, 1905. Serial No. 265,696.

Claim.—1. In a wardrobe-trunk, the combination of a slide, bars adapted to support garments carried by said slide, and guides adapted to support said bars and relieve said slide of strain, substantially as described.

2. In a wardrobe-trunk, the combination of a slide, bars adapted to support garments carried by said slide and guides fixed to the trunk and adapted to support the ends of said bars and relieve said slide of strain, substantially as described.

3. In a wardrobe-trunk, the combination of a slide, bars adapted to support garment-hangers carried by said slide, and guides fixed to the trunk and adapted to support opposite ends of said bars and relieve said slide of strain, substantially as described.

4. In a wardrobe-trunk, the combination of a slide, clips movable thereon, bars supported by said clips and adapted to sustain garment-hangers, and parallel guides fixed to the trunk and adapted to support opposite ends of said bars and relieve said slide of strain, substantially as described.

5. In a wardrobe-trunk, the combination of a slide, clips movable thereon, transverse bars supported by said clips and adapted to

support garment-hangers, a follower movable on said slide, means to hold said follower against the garments, and guides fixed to the trunk and adapted to support the ends of said transverse bars and relieve said slide from strain, substantially as described.

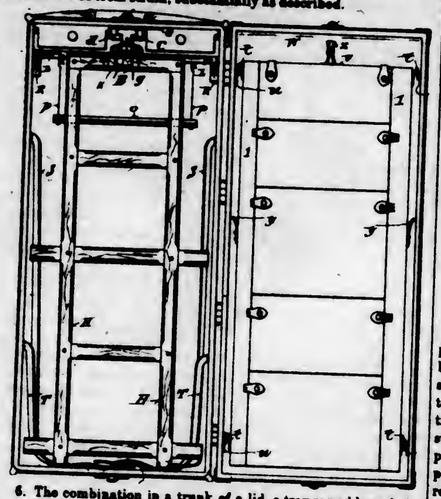

6. The combination in a trunk of a lid, a tray movable endwise therein, hooks and eyes for detachably connecting said tray with said lid, and a catch adapted to normally hold said tray against displacement, substantially as described.

7. The combination in a trunk, of a lid, a tray movable endwise therein, and devices for removably attaching said tray to said lid, substantially as described.

810,204. **FODDER-CUTTER.** FRANK G. HARRISON and ALBERT C. JACOBY, Massillon, Ohio, assignors to Williamson R. Harrison, Massillon, Ohio. Filed Aug. 15, 1903. Serial No. 169,599.

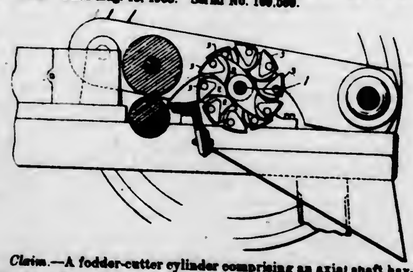

Claim.—A fodder-cutter cylinder comprising an axial shaft having a stop-collar with radial arms fixed thereon, a series of diametrically-disposed and spirally-arranged pairs of knife-arms with side shoulders mounted on the shaft, there being apertures for the shaft on the inner ends of the knife-arms and cutting-blades on the outer ends thereof and the inner parts of the knife-arms being halved to bring the arms of each pair in the same plane, and the side shoulders of the several knife-arms abutting respectively against the radial arms and the edges of the adjoining knife-arms, and a lock-collar set on the shaft against the last pair of knife-arms.

810,205. **TYPE-DISTRIBUTING MECHANISM.** HARRY C. HEMMIS, Chicago, Ill. Filed Aug. 24, 1905. Serial No. 275,095.

Claim.—1. In a type-distributing mechanism, the combination of two pocketed sections, one of which is movable relatively to the other to successively register its pockets with the pockets of the other section, and a means for giving said movable section a step-by-step movement, said movement being composed of relatively long or primary steps advancing the pockets of the movable section into registry or approximate registry, and each long or primary step being followed by a relatively short or secondary step to insure the registry of the pockets.

2. In a type-distributing mechanism, the combination of two pocketed sections, one of which is movable relatively to the other to bring its pockets successively into registry with the pockets of the second section, and a cam coacting with the movable section serving to impart thereto a step-by-step movement, the cam having a relatively long or primary step followed by a relatively short or secondary step, and the long or primary step of the cam serving to move the pockets of the movable section into approximate registry with the pockets of the other section, and the short or secondary step insuring registry of the pockets.

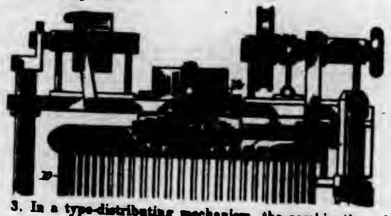

3. In a type-distributing mechanism, the combination of two pocketed sections, one of which is movable relatively to the other to bring its pockets successively into registry with the pockets of the second section, and a cam coacting with the movable section serving to impart thereto a step-by-step movement, the cam having a relatively long or primary step followed by a relatively short or secondary step, and the long or primary step of the cam serving to move the pockets of the movable section into approximate registry with the pockets of the other section, and the short or secondary step insuring registry of the pockets, and the cam having its said steps separated by a straight portion causing an interval between the said movements of the movable section.

810,206. **LOCKING DEVICE FOR MOTOR-CARS, AUTOMOBILES, AND THE LIKE.** ISAAC W. HETHERINGTON, Philadelphia, Pa. Filed Aug. 21, 1905. Serial No. 275,066.

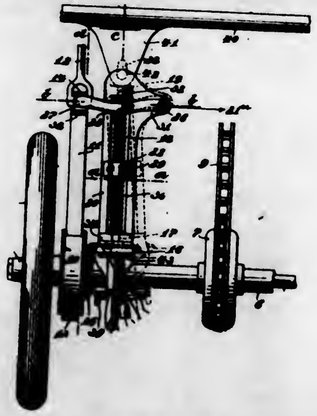

Claim.—1. In a wheeled vehicle, a locking device consisting of the combination of two operative units, the first unit secured permanently to the wheel or axle upon which said vehicle travels, and adapted, when properly connected with the second of said units, to communicate motion to an operative part thereof, and the second unit, detachably connected with said first unit, and adapted to be disconnected therefrom, said second unit provided with a primary moving part adapted to be directly moved by the movement of said first unit, in combination with a more slowly-moving secondary element connected therewith, and adapted to be moved along a definite line of travel, together with a fixed abutment against which said secondary element shall, after an interval, be arrested, and thereby arrest the movement of the primary moving part of said second unit, and of the connected first unit, and so arrest the travel of said vehicle, substantially as described.

2. In combination with the driving wheel and axle of a motor-car, or the like, provided with means for communicating motion to a second and detachable unit, said second unit consisting of a primary part adapted to be directly moved by the rotation of said wheel, and a secondary part and an abutment, said secondary part receiving a slower motion from said primary part, and operating a separately-moved part toward said abutment, provided therefor, by which the movement of said more slowly-moving part shall, after a considerable number of rotations of said wheel, be arrested, and so limit the travel of, and arrest the rotation of the wheel of said motor-car, substantially as described.

3. A locking device for motor-cars, and the like, consisting of a detachable frame carrying an elongated screw-threaded rod, and means for communicating rotary motion thereto, a screw-threaded block adapted thereto, and moved by the rotation thereof, and suitable fixed journals in said frame for the longitudinal bearings of said rod, and an abutment on said frame against which said block will impinge when its limit of travel has been reached, together with a toothed wheel secured to said screw-rod, and a corresponding toothed wheel on the wheel or axle of said motor-car, said frame adapted to be locked in place, with said toothed wheels meshed into each other, or moved apart so that said toothed wheels shall be disconnected from each other, substantially as described.

4. As an article of manufacture a detachable locking device for motor-cars and the like, consisting of a frame carrying a toothed gear-wheel and a longitudinal screw-rod secured thereto and extending along said frame, a screw-nut engaged with the threads of said screw-rod, means for preventing the rotation of said nut, a journaled bearing at each end for said screw-rod, a handle for moving the free end of said frame laterally, a pivot-bearing for the opposite end of said frame to connect the same with a fixed part of said car, and a toothed gear-wheel secured to one of the driving-wheels of said motor-car, and adapted to be detachably connected with, or disconnected from the said toothed wheel of said frame, the whole constructed to operate substantially as and for the purposes herein shown and described.

5. A freeway locking device for motor-cars, and the like, adapted to permit the said car to be moved a definite distance upon its running-gear, without interference, and to then arrest the further movement of said running-gear, consisting of a toothed wheel around the axle of one of the driving-wheels of said car, a pivoted frame laterally movable at one end, and having its free end provided with a toothed wheel adapted to gear in with said opposite toothed wheel on said axle, or be moved out of contact by moving said frame laterally away, and means for locking said frame either in or out of gear, said frame provided with an elongated screw-rod secured to and rotating with said toothed wheel of said frame, a nut made to be screwed along said rod, and prevented by suitable means from rotation thereupon, abutments for said nut at the ends of said rod, together with a pressure device, adapted to gradually retard the rotation of said rod and said toothed wheels, and the wheels of said motor-cars, said device interposed between said nut and an end of said rod, and adapted to operate by gradually increasing the pressure directly, or indirectly upon said car-wheel, substantially as, and for the purposes described.

6. A locking device for wheeled vehicles, consisting of a toothed bevel-wheel surrounding the axle and rigidly rotated with said vehicle-wheel, a frame pivotally secured to a fixed portion of said vehicle, and extending along to the axle thereof, said frame provided with a toothed bevel-wheel at its axle end adapted to be detachably meshed into the toothed bevel-wheel of said vehicle-wheel, a screw-threaded rod secured to said bevel-wheel on said frame, a screw-nut threaded on said rod, and protected against rotation thereupon, an abutment for said nut at the end of said rod, a handle for laterally moving said frame, in and out of gear with said bevel-wheel on said vehicle-wheel, and an independently-movable part interposed between said nut and said abutment at one of the ends of said rod, said movable part adapted to be struck by the advance of said nut, and said movable part operatively connected with the brake mechanism, so as to cause the brake to be gradually compressed against a brake-cylinder attached to said vehicle-wheel, substantially as described.

7. A locking device for motor-cars, and the like consisting of a detachable frame, movably secured to a fixed part of said car, and adapted to be moved to or fro along the driving-wheel axle of said car, said frame provided with a longitudinal screw-threaded rod, a toothed wheel rigidly connected therewith, a nut adapted to be screwed along said rod, and means for preventing the rotation of said nut, an abutment for said nut on said frame, an independently-movable part on said frame operated by the advance of said nut along said rod, said movable part constructed to operate a brake device on said car, together with a toothed wheel rigidly connected with a driving-wheel of said car, said frame adapted to be moved in one direction so as to put the two toothed wheels in gear with each other, or to be moved in an opposite direction so as to disconnect them, together with means for securely locking said frame in place with its gear connection either open or closed, substantially as described.

8. In combination with a motor-car, its driving wheel and axle, and means for propelling said car, a toothed gear-wheel upon said wheel and axle, a pivoted and laterally-movable frame, having its free end contiguous to said driving wheel and axle, a toothed gear-wheel on said frame adapted to be detachably connected with the toothed gear-wheel of said driving wheel and axle, a screw-rod secured to the gear-wheel of said frame, a nut on said rod, means for preventing rotation of said nut, an abutment for said nut at the end of said rod, a guide-opening in said frame at its free end constructed to accommodate the axle of said car within the same said frame, adapted to be moved and guided at its free end along said axle, and means for locking said frame with a gear connection between said toothed wheels, or locking them apart when separated from each other, together with a handle for operating said frame substantially as described.

9. A locking device for wheeled vehicles consisting of a laterally-movable frame carrying a gear-wheel, a screw-rod secured thereto, a screw-nut on said rod, means for preventing rotation of said nut, an abutment at the end of said rod, an independently-moving part along said rod, adapted to be engaged and forced along by the advance of said nut, an operative connection between said moving part, and a friction-brake on said vehicle, together with a gear-wheel secured to the wheel of said vehicle, said frame detachably connected with, or disconnected from making a gear connection with said vehicle-wheel, together with means for locking the gear-wheel of said frame to the gear-wheel of said vehicle-wheel, substantially as described.

10. In a locking device for wheeled vehicles consisting of a gear-wheel secured to one of the supporting-wheels thereof, a detachable frame with slow-motion mechanism, an abutment for the same, and a gear-wheel adapted to be detachably connected with the gear-wheel of said vehicle-wheel, together with means for locking said gear-wheels together, or apart, a supplementary device for moving said slow-motion mechanism into any desired position along said frame while said gear-wheels are disconnected from each other, substantially as and for the purpose set forth.

11. In combination with a vehicle-wheel supporting a toothed gear-wheel, a detachable frame supporting a gear-wheel adapted thereto, a screw-rod secured to said latter, a nut on said rod, means for preventing rotation of said nut, and an abutment for said nut at the ends of said rod, a supplemental nut-setting gear, and a handle adapted to operate the same, the whole so constructed, that when said frame is detached from said vehicle-wheel, said rod may be independently rotated by said supplemental gear and handle, and said nut screwed along said rod to any required position thereupon, substantially as described.

810,207. **POULTRY-COOP.** WILLIAM H. HODGES, Union Star, Mo. Filed Dec. 19, 1904. Serial No. 237,582.

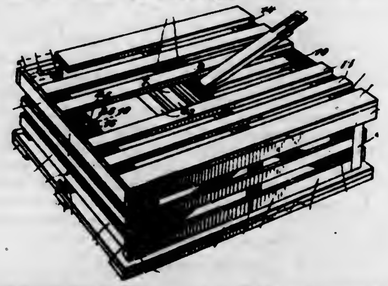

Claim.—1. In a knockdown coop or crate the combination of the bottom, ends and sides constructed to fold over said bottom, said sides and ends being so arranged that when they are in an upright position the sides are between the ends and support said ends in said upright position, a top for said coop or crate, a transverse brace on said top, said brace being constructed to engage said sides to hold the same in an upright position, substantially as described.

2. In a knockdown coop or crate, the combination of a bottom, folding ends and sides thereon, a top for said coop or crate, means on

the upper edge of said ends for holding the said top in position when said coop is in an upright position, and means carried on the side of said ends for engaging said top to hold the same in position when said coop is in a knocked-down or collapsed position, said engaging means on the side of said ends being brought into position for engaging said top when said ends are folded, substantially as described.

3. In a folding coop or crate, the combination of a bottom, end and side pieces thereon, a turn-button on the upper edge of said end pieces, a turn-button on the side of said end pieces, a cover or top adapted to be passed over said end and side pieces and adapted to be engaged by said turn-button on the upper edge of said end pieces when the coop is in an upright and open position, said top or cover being also adapted to be engaged by the turn-button on the side of said end pieces when the coop is in a folded or collapsed position, said turn-button on the side of said ends being brought into position to engage the said top when said sides are folded down substantially as described and for the purposes set forth.

810,208. RAIL-JOINT. WILLIAM M. HORNER and BENJAMIN F. LAMBE, Columbus, Ohio, assignors of one-third to William A. Horner, Steubenville, Ohio. Filed Sept. 21, 1905. Serial No. 279,490.

Claim.—1. In a rail-joint, the combination with two rails having openings formed therein adjacent to their ends, of a base-plate having openings formed therein, a flange carried by the one side of said base-plate and having slots formed therein, fish-bars adapted to embrace the web portions of said rails, said fish-bars having transversely-disposed openings formed therein adapted to aline with the openings of said rails, a headed plate adapted to extend through one of said openings, headed pins adapted to extend through the other of said openings, spikes passing through the ends of said pins and said plate, depending resilient strips carried by said spikes and adapted to lock said spikes in engagement with said pins and said plate, means to secure said rails to said base-plate, substantially as described.

2. In a rail-joint, the combination with rails, having openings formed therein, adjacent their ends, of a base-plate, fish-bars adapted to embrace the web portions of said rails, said fish-bars having openings formed therein adapted to aline with the openings of said rails, pins passing through some of said openings, a plate passing through the other of said openings, spikes adapted to pass through the ends of said pins and said plate, means carried by the upper ends of the spikes and engaging the pins and plate, respectively, to secure said spikes in said pins and said plate, and means to lock said rails in engagement with said base-plate, substantially as described.

3. In a rail-joint, the combination with rails having openings formed therein adjacent to their ends, of a base-plate, fish-bars adapted to embrace the web portions of said rails, pins passing through said fish-bars and said rails, a plate passing through said fish-bars and said rails, separate and independent means carried by the plate and by each of the pins respectively to lock said plate and said pins within said fish-bars, means to lock the last-named means in said pins and in said plate, and means to lock said rails in engagement with said base-plate, substantially as described.

810,209. STENOGRAPHIC TYPE-WRITING MACHINE. CHARLES R. KING, Indianapolis, Ind. Filed July 22, 1904. Serial No. 217,625.

Claim.—1. A stenographic type-writing machine including a base, a pillar supported on the base, an axle secured to the pillar, a platen supported by means of the axle so as to move rotatively and also longitudinally, a plurality of type-bars coöperating with the platen, paper-holding clips carried by the platen, a rack-bar mounted on the base and spring-pressed toward the platen, a device attached to the platen for coöperation with the rack-bar, a latch mounted on the base, a lever connected with the rack-bar for the control thereof and in coöperation with the latch, and mechanism coöperating with the platen for the rotation thereof and adapted to be operated by the simultaneous operations of all of the plurality of type-bars.

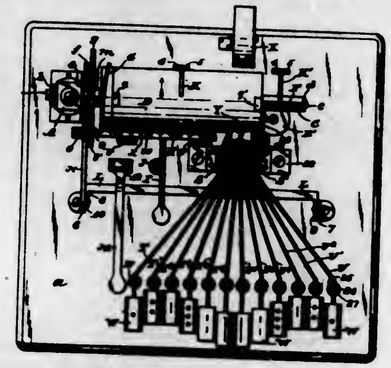

2. A stenographic type-writing machine including a base, a pillar supported on the base, an axle secured to the pillar, a platen mounted on the axle so as to rotate and also move longitudinally, means for rotating the platen, a plurality of type-bars coöperating with the platen, a rack-bar mounted on the base, an actuating device carried by the platen for coöperation with the rack-bar, a spool mounted on the base to hold a paper ribbon, a presser-roll supported by the base and coöperating with the platen to hold the ribbon thereto, means for holding the rack-bar out of contact with the actuating device, and a stop mounted on the base adapted to prevent the longitudinal movement of the platen.

3. A stenographic type-writing machine including a base, a pillar supported on the base, an axle secured to the pillar, a platen mounted on the axle so as to rotate and also move longitudinally, means for rotating the platen, a plurality of type-bars coöperating with the platen, a rack-bar mounted on the base, an actuating device carried by the platen for coöperation with the rack-bar, a spool mounted on the base for holding a paper ribbon, a presser-roll supported by the base and coöperating with the platen to hold the ribbon thereto, means for holding the rack-bar out of contact with the actuating device, a stop mounted on the base adapted to prevent the longitudinal movement of the platen, and a knife supported in proximity to the presser-roll.

4. A stenographic type-writing machine including a base, a pillar supported on the base, an axle secued to the pillar, a sleeve mounted rotatively on the axle and provided with a ratchet-wheel, a platen mounted on the sleeve so as to move longitudinally thereon, and also to rotate therewith, a plurality of type-bars coöperating with the platen, a rack-bar supported by the base and spring-pressed toward the platen, an actuating device carried by the platen for coöperation with the rack-bar, a latch supported by the base, a lever connected with the rack-bar and coöperating with the latch, and means coöperating with the ratchet-wheel and the type-bars adapted to rotate the sleeve and the platen.

5. A stenographic type-writing machine including a base, a pillar supported on the base, an axle secured to the pillar, a sleeve mounted rotatively on the axle and provided with a ratchet-wheel and also a gear-wheel, a platen mounted on the sleeve so as to move longitudinally thereon and also to rotate therewith, a plurality of type-bars coöperating with the platen, means coöperating with the ratchet-wheel and the type-bars adapted to rotate the platen and the sleeve, a pair of spools mounted on the base, an ink-ribbon wound on the spools, a rotative shaft mounted on the base and having a pinion engaging the gear-wheel, operating means connecting the shaft with one of the spools, a rack-bar supported by the base, and a device attached to the platen for coöperation with the rack-bar serving to move the platen longitudinally on the sleeve.

6. A stenographic type-writing machine including a base, a pillar supported on the base, an axle secured to the pillar, a sleeve mounted rotatively on the axle and provided with a gear-wheel, a platen mounted on the sleeve so as to move longitudinally thereon and also to rotate therewith, a plurality of type-bars coöperating with the platen, a rocking bar provided with a spacing-lever and adapted to be operated by the type-bars, means coöperating with the rocking bar and the platen to rotate the platen, a spring-pressed arm mounted on the base provided with a controlling-lever and supporting a rack-bar, a latch mounted on the base and engaging the controlling-lever, an actuating device carried by the platen and coöperating with the rack-bar, a pair of spools mounted on the base, an ink-ribbon wound on the spools, and means coöperating with the gear-wheel and the spools to operate the ribbon.

7. A stenographic type-writing machine including a base, a pillar supported on the base, an axle secured to the pillar, a sleeve mounted rotatively on the axle and provided with a ratchet-wheel, a platen mounted on the sleeve so as to move longitudinally thereon and also to rotate therewith, a plurality of type-bars coöperating with the platen, a rack-bar mounted movably on the base, a latch mounted on the base, a controlling-lever connected with the rack-bar and coöperating with the latch, an actuating device carried by the platen adapted to coöperate with the rack-bar, a rocking bar extending in proximity to parts of the type-bars so as to be operated thereby and provided with a movable arm, a rod connected to the movable arm of the rocking bar and provided with a catch coöperating with the ratchet-wheel, and a spacing-lever coöperating with the rocking bar.

8. A stenographic type-writing machine including a base, a pillar supported on the base, an axle secured to the pillar, a sleeve mounted rotatively on the axle, a platen mounted on the sleeve, a stand mounted on the base, a pivot supported by the stand, a plurality of type-bars mounted on the pivot and provided collectively with two identical sets of printing characters, one set of the characters being adapted to form or indicate the initial sounds of words, syllables or phrases and the other set the terminal sounds thereof, the characters consisting of dots and dashes, and mechanism coöperating with the sleeve and also with the type-bars to rotate the platen.

9. In a stenographic type-writing machine, the combination with a fixedly-supported pillar, of an axle having one end thereof adjustably attached to the pillar and provided with a collar at the opposite end thereof, a sleeve mounted rotatively on the axle between the pillar and the collar and provided with a feather at the outer side thereof, a platen having a hub provided with a slot receiving the feather of the sleeve, a cushion-collar on the sleeve with which the inner end of the platen-hub may have contact, a plurality of type-bars coöperating with the platen, a ratchet-wheel secured to the sleeve, mechanism coöperating with the ratchet-wheel for rotating the sleeve and the platen, a movable rack-bar, an actuating device carried by the platen coöperating with the rack-bar for moving the platen longitudinally on the sleeve, and a controlling-lever for the rack-bar connected therewith.

10. In a stenographic type-writing machine, the combination with a plurality of movable type-bars having operating-levers, of a fixedly-supported axle, a sleeve mounted rotatively on the axle and provided with a ratchet-wheel, a platen mounted on the sleeve so as to move longitudinally thereon and also to rotate therewith in proximity to the type-bars, a rocking bar extending in proximity to the operating-levers of the type-bars so as to be operated thereby and provided with an arm, a rod pivoted to the arm of the rocking bar and having a catch coöperating with the ratchet-wheel, and means for operating the rocking bar independently of the operating-levers of the type-bars.

11. In a stenographic type-writing machine, the combination of a base, a pillar mounted on the base, an axle secured to the pillar, a platen supported by means of the axle so as to move rotatively and also longitudinally, a plurality of type-bars coöperating with the platen, means for moving the platen rotatively and also longitudinally, a rocking bar journaled in the platen and having arms provided with clips coöperating with the platen, a spring coöperating to draw the clips against the platen, and a lever mounted on the platen and connected with the rocking bar for the operation of the clips.

12. In a stenographic type-writing machine, the combination of a base, a pillar mounted on the base, an axle secured to the pillar, a platen supported by means of the axle so as to move rotatively and also longitudinally, a plurality of type-bars coöperating with the platen, means for moving the platen rotatively and also longitudinally, paper-holding clips carried by the platen, and a spring-arm mounted on the base coöperating with the platen and provided with outwardly-extending lips for guiding the arm.

810,210. ARTICLE OF CHEWING-GUM. BENJAMIN A. LAWS, Pittsburg, Pa. Filed May 10, 1905. Serial No. 259,861.

Claim.—1. As a new article of manufacture, a piece of chewing-gum having a base of gum insoluble in water, said piece having a cavity therein charged with a liquid or semiliquid substance, the interior of the cavity being lined with a moisture-resisting material; substantially as described.

[redacted]

2. As a new article of manufacture, a piece of chewing-gum having a base of gum insoluble in water, said piece having a cavity therein charged with a liquid or semiliquid substance, the interior of the cavity being lined with a fatty matter; substantially as described.

810,211. SHEET-METAL CAN. ISAAC J. MARQUIS, Richmond, Va., assignor to American Can Company, New York, N. Y., a Corporation of New Jersey. Filed July 19, 1905. Serial No. 270,260.

Claim.—1. A tobacco or other can having a top or upper head furnished with a screw-threaded neck, provided with an inwardly-projecting flange at its upper edge, and a screw-cap having a segmental pouring-opening therein, and a rotary segmental closing-plate inside and pivoted to said screw-cap and fitting between and guided and supported by the screw-cap on the outside and said inturned flange of said screw-neck of the can-top on the inside, said rotary closing-plate having an integral lip fitting outside and engaging the marginal portion of the screw-cap adjacent to said opening therein, substantially as specified.

2. In a can, the combination with a top or upper head having a screw-neck provided with an inturned flange at its upper edge, of a screw-cap having a segmental opening therein, and a rotary closing-plate fitting inside the cap, and guided and supported at its outer circular portion by the inturned flange on said screw-neck, substantially as specified.

3. In a can, the combination with a top or upper head having a screw-neck provided with an inturned flange at its upper edge, of a screw-cap having a segmental opening therein, and a rotary closing-plate fitting inside the cap, and guided and supported at its outer circular portion by the inturned flange on said screw-neck, said closing-plate having an integral lip fitting outside and engaging the marginal rim portion of the screw-cap, substantially as specified.

4. In a can, the combination with a top or upper head having a screw-neck provided with an inturned flange at its upper edge, of a screw-cap having a segmental opening therein, and a rotary closing-plate fitting inside the cap and guided and supported at its outer circular portion by the inturned flange on said screw-neck, said closing-plate having an integral lip fitting outside and engaging the marginal rim portion of the screw-cap, said rotary closing-plate having also a projection for engagement of the nail to turn the same, substantially as specified.

810,212. BALE BINDER AND TIER. WILLIAM C. MORGANS and THOMAS GILLOON, Dubuque, Iowa. Filed Nov. 23, 1904. Serial No. 234,264.

Claim.—1. A bale-binder having a gripping device comprising a pair of jaws, one of said jaws being pivotally mounted and having resilient means for forcing it in one direction.

2. A bale-binder having a gripping device, comprising a pair of jaws, one of said jaws being stationary and the other being pivoted, a curved bar formed on the arc of a circle, with the point at which the second jaw is pivoted as a center, and a spring surrounding said bar and guided thereby, said spring being adapted to force the pivoted jaw into position opposite the stationary jaw.

3. In a bale-binder, the combination of a frame, means for moving material along the frame, a gripping device located at one side of the frame, and a needle for holding wire and advancing it across the frame to the gripping device; said gripping device comprising a pair of jaws, one of said jaws being pivoted and having means for forcing it toward the other.

4. In a bale-binder, the combination of a frame, means for moving the material thereacross, a gripping device for securing the end of the wire in front of the material, and a needle for holding the wire and advancing it across the material, said needle comprising a tube through which the wire passes; said gripping device comprising a pair of jaws, one of said jaws being pivotally mounted and having holding means for forcing it in one direction.

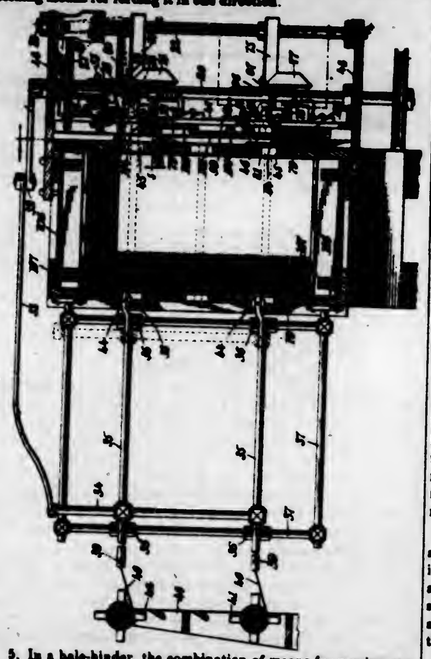

5. In a bale-binder, the combination of means for moving material to be formed into a bale, a gripping device for receiving the end of a wire and holding it in front of the material, means for advancing a wire across the space through which the material passes, into contact with the first-mentioned wire, means for twisting the wires together, said last-named means comprising a rotary shaft and a projection on the shaft having a slot for the wires, means for rotating said shaft comprising gearing connected therewith, and means for automatically stopping said shaft; comprising an inclined plane mounted upon the gearing, a roller adapted to be moved by said inclined plane, and a clutch connected with said roller.

6. In a bale-binder, the combination of means for moving material to be formed into a bale, a gripping device for receiving the end of a wire and holding it in front of the material, means for advancing a wire across the space through which the material passes, into contact with the first-mentioned wire, means for twisting the wires together; said last-named means comprising a rotary shaft and a projection on the shaft having a slot for the wires; a guide-plate located adjacent to said twisting means and adapted to receive the wires, and means for forcing the wire-advancing means toward the gripping device.

7. In a bale-binder, the combination of means for moving material to be formed into a bale, a gripping device for receiving the end of a wire and holding it in front of the material, means for advancing a wire across the space through which the material passes, into contact with the first-mentioned wire, means for twisting the wires together; said last-named means comprising a rotary shaft and a projection on the shaft having a slot for the wires; and a guide-plate located adjacent to said twisting means and adapted to receive the wires, said plate having a V-shaped opening to guide the wires into it, a slot at the bottom of said opening, and a bar extending across said slot.

8. In a bale-binder, the combination of means for twisting wires together, comprising a rotary shaft and a projection on the shaft having a slot for the wires and a guide-plate located adjacent to said twisting means and adapted to receive the wires, said plate having a V-shaped opening to guide the wires into it, a slot at the bottom of said opening, and a bar extending across said slot.

9. A bale-binder having a gripping device, a twisting device and a guide-plate located adjacent to said twisting device, said plate having a V-shaped opening located in front of the twisting device, a slot at the apex of said opening and extending therefrom, said slot being of sufficient width to allow the passage of a single wire but to prevent the passage of two wires twisted together, an opening at the end of the slot for permitting the passage of twisted wires, and a bar across the opening to prevent the wires from passing through it at certain times.

10. A bale-binder, comprising means for twisting wires together, said means having a rotary shaft and a projection on the shaft having a slot for the wires, means for rotating said shaft comprising gearing connected therewith, and means for automatically stopping said shaft, comprising an inclined plane mounted upon the gearing, a roller adapted to be moved by said inclined plane, and a clutch connected with said roller.

11. A bale-binder, comprising means for twisting a plurality of wires together and consisting of a rotary shaft, and a projection extending at right angles to the shaft and having a slot for receiving the wires, said slot being closed at its end and open at one side.

12. In a binder, the combination of means for moving material adapted to be formed into a bale, means for securing the end of a wire in front of the material, a needle for holding the wire and advancing it across the material, said needle comprising a tube through which the wire passes, and a cutter located adjacent to said securing means, for shearing the wire; said cutter comprising a pivoted blade and means for operating said blade comprising a link and a lever.

13. In a binder, the combination of means for moving material adapted to be formed into a bale, means for securing the end of a wire in front of the material, a needle for holding the wire and advancing it across the material, said needle comprising a tube through which the wire passes, and a cutter located adjacent to said securing means, for shearing the wire; said cutter comprising a pivoted blade, automatic means for oscillating said blade upon its pivot, and automatic means for throwing said oscillating means out of gear.

14. In a binder, the combination of means for moving material adapted to be formed into a bale, means for securing the end of a wire in front of the advancing material, a needle for holding the wire and advancing it across the material, and a cutter located adjacent to said securing means for shearing the wire; said cutter comprising a movable blade, means for moving the blade, and automatic means for throwing the moving means out of gear.

15. The combination of a main shaft, a second shaft, connections between said shafts for transmitting motion from one to the other, a clutch between said connections and the main shaft, means for automatically throwing said clutch out of operative position, a needle for wire, connections between the main shaft and said needle for reciprocating the needle, a plunger, connections between the main shaft and the plunger for operating the latter, a clutch for disengaging said connections from the plunger, and automatic means for operating said clutch.

16. The combination of a main shaft, a second shaft, a clutch on said main shaft whereby a portion thereof may be thrown out of engagement with the remainder, connections between said main shaft at a point beyond the clutch and the second shaft, a clutch member in the said second shaft, means for throwing said last-named clutch member, a gear on said second shaft, a cam-surface on the gear, means for causing said cam-surface to automatically throw said last-named clutch out of operative position, a shaft operatively connected with said gear, and a twisting device mounted on said last-named shaft.

17. In a bale-binder, the combination of a main shaft, a needle, means connected with the main shaft for intermittently forcing the needle across the binder, a bar having a projection located in the path of the material to be moved through the machine, a reciprocating bar having a catch adapted to be engaged by said first-named bar, whereby the motion of the first-named bar caused by the advancing material will reciprocate the second bar, and means connected with the second bar for disconnecting the main shaft from the needle.

18. In a bale-binder, the combination of a shaft, a needle, an arm connected with the needle, a clutch between the shaft and the arm, a plate for operating said clutch, a reciprocable bar having means for engaging said plate, and holding the clutch in disconnected position, and means for manipulating said bar when a bale is forced from the machine.

19. In a bale-binder, the combination of a main shaft, a needle, means connected with the main shaft for reciprocating the needle, a gripping device located in the path of the needle, a pivoted plate, means for holding said pivoted plate in such position as to force the needle toward the gripping device when the needle passes said plate in one direction, and yielding means for permitting the plate to move out of position when the needle passes in the other direction.

810,213. FARM-GATE. JACOB A. MYERS, St. Louis, Mo. Filed Aug. 14, 1905. Serial No. 274,177.

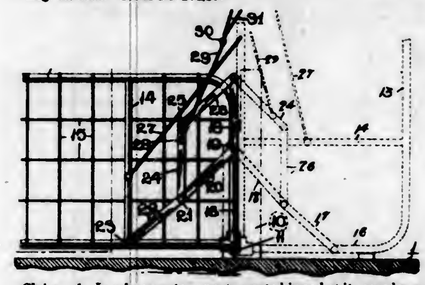

Claim.—1. In a farm-gate, a post, a gate hinged at its rear lower corner to said post, a double post on each side of the rear end of the gate, pivoted levers operating between said double post, connections between the inner ends of the levers and the gate, locking-links pivotally secured to the first-mentioned post, and to the gate, and flexible connections from the outer ends of the levers to the locking-links; substantially as specified.

2. In a farm-gate, a post, a gate hinged at its rear lower corner to said post, a double post positioned on each side of the rear end of the gate, pivoted levers operating between said double posts, rods connecting the inner ends of said levers to the gate, two sets of locking-links pivotally held together and arranged between the first-mentioned post and the gate so as to hold said gate locked in either open or closed position, and cables extending from the outer ends of the levers to the locking-links; substantially as specified.

810,214. CHECKREIN ATTACHMENT. JAMES A. MCCOMBS, Port Chester, N. Y. Filed Jan. 2, 1904. Serial No. 187,586.

Claim.—1. A checkrein attachment designed to connect a checkrein with the saddle-hook of a harness, comprising a strap having three holes formed therein longitudinally thereof and two of which are adjacent to the opposite ends thereof and the other intermediate of said ends, and a ring or link device through which one of the ends of the strap is passed and folded so that the hole therein will register with the intermediate hole in the strap, said end portion of the strap and the intermediate portion of the strap being secured together, the saddle-hook being adapted to be passed through the hole in the other end of the strap and through the said registering holes, substantially as shown and described.

2. A checkrein attachment designed to connect a checkrein with the saddle-hook of a harness, comprising a strap having three holes formed therein longitudinally thereof and two of which are adjacent to the opposite ends thereof and the other intermediate of said ends, and a ring or link device through which one of the ends of the strap is passed and folded so that the hole therein will register with the intermediate hole in the strap, said end portion of the strap and the intermediate portion of the strap being secured together, and the saddle-hook being adapted to be passed through the hole in the other end of the strap and through the said registering holes, and said last-named end of the strap being adapted to be bent at an angle to the intermediate portion thereof, substantially as shown and described.

3. A checkrein attachment adapted to be connected with a checkrein and to connect the checkrein with the saddle-hook of a harness, comprising a ring or link device, a strap one end of which is passed through said ring or link device and folded over and secured to the intermediate portion thereof, the folded end portion of the strap and the intermediate portion being provided withholes which register, and the opposite end portion of the strap being also provided with a hole, said last-named end portion being bent at an angle to the intermediate portion in connecting the attachment to the saddle-hook, and the saddle-hook being passed through the hole in said last-named end portion and through the holes in the first-named end portion and intermediate portion, substantially as shown and described.

810,215. VALVE-REMOVING APPARATUS. MARVIN A. NEELAND, Youngstown, Ohio. Filed Oct. 19, 1904. Serial No. 229,099.

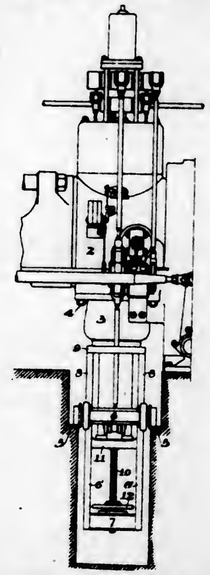

Claim.—1. A support mounted in a space below the valve-casing underneath an engine-cylinder, and movable vertically and sidewise in said space; substantially as described.

2. A vertically-movable support mounted in a space below the valve-casing underneath an engine-cylinder, and a sidewise-movable car on said support; substantially as described.

3. In an engine installation, a pit extending below the valve-casing underneath an engine-cylinder, said pit extending to one side of the engine, and mechanism arranged to lower the valve-seat within the pit and move it therein to one side of the engine; substantially as described.

4. In an engine installation having a valve-casing underneath an engine-cylinder, a pit underneath the valve and extending to one side of the engine, a car movable upon a track within said pit, and a vertical adjustable support upon the car arranged to register with the valve-seat in one position of the car; substantially as described.

5. In an engine installation having a valve-casing underneath an engine-cylinder, a pit underneath the valve extending to one side of the engine, a car movable within said pit, a vertically-movable support on the car, and screw mechanism for raising and lowering the said support; substantially as described.

6. In an engine installation having a valve-casing underneath an engine-cylinder, a pit beneath the valve extending to one side of the engine, a car movable within the pit and having vertically-extending guides, a vertical-movable frame within the guides, and hand-controlled screw mechanism for raising and lowering the support; substantially as described.

7. A valve-removing device comprising a horizontally-moving car having a vertically-moving frame arranged to be brought into position beneath a valve-case; substantially as described.

8. A vertically-movable support capable of being brought into position under the underneath valve-casing of a cylinder, said support being also capable of lateral movement from beneath said casing; substantially as described.

9. A U-shaped horizontally-movable car having a vertically-movable support with a U-shaped top member arranged to be brought into position beneath a valve-casing of a cylinder; substantially as described.

810,216. VALVE FOR BLOWING-ENGINES, &c. MARVIN A. NEELAND, Youngstown, Ohio. Filed Oct. 19, 1904. Serial No. 229,100.

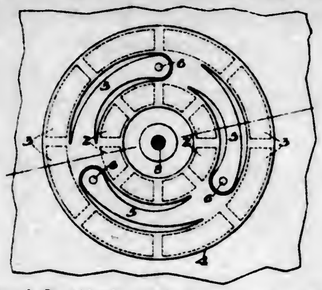

Claim.—1. In a blowing-engine or compressor, a thin sheet-metal valve having a tapered spring integral therewith; substantially as described.

2. In a blowing-engine or compressor, a thin sheet-metal valve having spring-strips out of registry with the air-ports, said strips being tapered; substantially as described.

3. In a blowing-engine or compressor, a thin sheet-metal plate with integral springs cut therefrom, the end of each spring being secured to the cylinder-head, and the spring being tapered from each end toward its central portion; substantially as described.

4. A blowing-engine or compressor having a valve comprising a thin sheet-metal plate having strip springs cut therefrom and free at one end, and a back-stop having ports in registry with the springs; substantially as described.

5. In a blowing-engine or compressor, an air-valve consisting of parallel strips of thin sheet metal united at intervals, with tapered springs between and integral with said strips, and a back-stop arranged to limit the lift of the valve and permit passage of air past each edge; substantially as described.

6. In a blowing-engine or compressor, a thin sheet-metal valve having integral strips cut therefrom with their free ends secured to the plate containing valve-ports, and arranged to normally draw the valve to its seat; substantially as described.

810,217. LUNA FOR HOLDING THE HOST. HERMAN F. NEER, New York, N. Y. Filed Aug. 25, 1905. Serial No. 275,849.

Claim.—1. In a luna, a stationary front member having a crystal therein, a rear hinged back member constructed mainly of metal but provided with a centrally-located crystal, the inner face of the said rear member being dished except at its margin, which is straight and a locking device for the hinged member of the luna.

2. In a luna, a fixed member having its front composed almost entirely of crystal and provided with an inner locking-band for the crystal the inner edge whereof is inclined downwardly and inwardly to an engagement with the inner face of the crystal, a rear hinged member adapted to be received within the front member, the said rear member being made principally of metal and being provided with a crystal at its central portion, the inner face of the said rear member being dished except at its margin which is straight, and a locking device for said rear member.

3. In a luna, a fixed front and a hinged rear member, each member being provided with a crystal, the rear member having a button extending outwardly from its rear face, a slide with which both members of the luna are connected, a spring-latch having hinged connection with the said slide, the said latch comprising a locking member having a spoon-shaped upper end adapted to receive the head of the said button, and a rearwardly-extending handle member for the purposes described.

810,218. GLASS-WORKING MACHINE. JOSEPH NORTH, Lancaster, Ohio. Filed Apr. 27, 1904. Serial No. 205,073.

Claim.—1. In a glass-working machine, the combination with a drawing-tool provided with a passage, of a movable member connected with the drawing-tool and serving to force a fluid through the passage.

2. In a glass-working machine, the combination with a drawing-tool provided with a passage, of a movable member connected with the drawing-tool and serving to force a fluid through the passage, and means for applying power to the movable member.

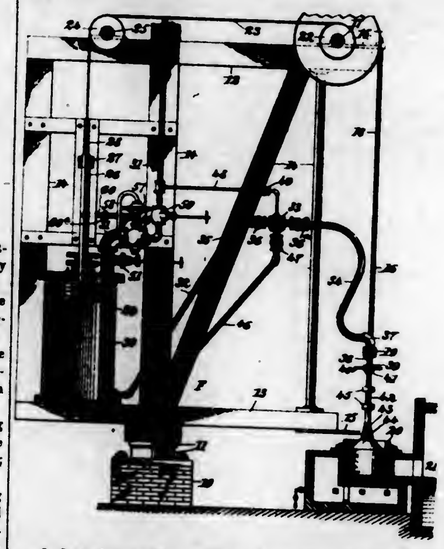

3. In a glass-working machine, the combination with a drawing-tool provided with a passage, of a movable member connected with the drawing-tool and serving to force a fluid through the passage, means for applying power to the movable member, and means for controlling the application of power.

4. In a glass-working machine, the combination with a drawing-tool provided with a passage, of a movable member connected with the drawing-tool and serving to force a fluid through the passage, means for applying power to the movable member, and automatic means for controlling the application of power.

5. In a glass-working machine, the combination with a drawing-tool provided with a passage, of a movable member connected with the drawing-tool and serving to force a fluid through the passage, means for applying power to the movable member, and means movable with the member for controlling the application of power.

6. A glass-working machine comprising a movable drawing-tool provided with a passage, and means for applying fluid-pressure both through the passage and to effect the movement of the tool.

7. A glass-working machine comprising a movable drawing-tool provided with a passage, means for applying fluid-pressure both through the passage and to effect the movement of the tool, and means for producing at least a partial vacuum in said passage.

8. In a glass-working machine, the combination with a drawing-tool, of a power-cylinder and its piston, said piston being connected with the drawing-tool, and means for controlling the application of power to the cylinder operable through the movement of the drawing-tool.

9. In a glass-working machine, the combination with a drawing-tool, of a power-cylinder and its piston, said piston being connected with the drawing-tool, a valve controlling the application of power to the cylinder, and automatic means for operating the valve

10. In a glass-working machine, the combination with a drawing-tool, of a power-cylinder and its piston, said piston being connected with the drawing-tool, a valve controlling the application of power to the cylinder, a variable weight connected with the valve, and means for shifting the weight through the movement of the drawing-tool.

11. The combination with a drawing-tool, of a piston connected therewith, a cylinder in which the piston operates, a pipe for delivering fluid-pressure to the cylinder, a valve in the pipe, a variable weight connected with the valve-spindle, and connections between the weight and drawing-tool.

12. The combination with a drawing-tool, of a piston connected therewith, a cylinder in which the piston operates, a pipe for delivering fluid-pressure to the cylinder, a valve in the pipe, and a diaphragm connected with the valve and under the influence of the pressure.

13. The combination with a drawing-tool, of a piston connected therewith, a cylinder in which the piston operates, a pipe for delivering fluid-pressure to the cylinder, a valve in the pipe, a diaphragm connected with the valve and under the influence of the pressure, a lever connected with the valve and diaphragm, and a movable weight associated with the lever.

14. The combination with a drawing-tool provided with a passage, of a piston connected therewith, a cylinder in which the piston operates, a pipe for delivering fluid-pressure to the cylinder at one side of the piston, and a pipe connected with the cylinder at the opposite side of the piston and with the tool-passage.

15. The combination with a drawing-tool provided with a passage, of a piston connected therewith, a cylinder in which the piston operates, a pipe for delivering fluid-pressure to the cylinder at one side of the piston, a pipe connected with the cylinder at the opposite side of the piston and with the tool-passage, and a valve in each of the pipes.

16. The combination with a drawing-tool provided with a passage, of a piston connected therewith, a cylinder in which the piston operates, a pipe for delivering fluid-pressure to the cylinder at one side of the piston, a pipe connected with the cylinder at the opposite side of the piston and with the tool-passage, and an automatic controlling-valve in the delivery-pipe.

17. The combination with a drawing-tool provided with a passage, of a piston connected therewith, a cylinder in which the piston operates, a pipe for delivering fluid-pressure to the cylinder at one side of the piston, a pipe connected with the cylinder at the opposite side of the piston and with the tool-passage, and a pipe joining the delivery-pipe and drawing-tool pipe.

18. The combination with a drawing-tool provided with a passage, of a piston connected therewith, a cylinder in which the piston operates, a pipe for delivering fluid-pressure to the cylinder at one side of the piston, a pipe connected with the cylinder at the opposite side of the piston and with the tool-passage, and means for producing at least a partial vacuum in the drawing-tool pipe.

19. The combination with a support, of a cable passing over the support, a drawing-tool provided with a passage connected with the cable at one side of the support, a cylinder, a piston operating in the cylinder and connected with the cable at the other side of the support, and a communication between the cylinder and the tool-passage.

20. The combination with a support, of a cable passing over the support, a drawing-tool connected with the cable at one side of the support, a cylinder, a piston operating in the cylinder and connected with the cable at the other side of the support, a pipe for delivering fluid-pressure to the cylinder, a valve in the pipe, and a chain connected with the valve-spindle and movable with the cable

21. In a glass-working machine, the combination with a rotatable frame, of means for supplying pressure extending axially of the frame, and a drawing-tool carried by the frame and operable through said pressure.

22. In a glass-working machine, the combination with a rotatable frame, of a drawing-tool and a power-cylinder carried by the frame, and connections between the cylinder and the drawing-tool.

23. In a glass-working machine, the combination with a rotatable frame, of a drawing-tool and a power-cylinder carried by the frame, connections between the cylinder and the drawing-tool, and a supply-pipe for the cylinder extending axially of the frame.

24. In a glass-working machine, the combination with a pipe for supplying a fluid under pressure, a union member rotatable upon one end of the pipe and provided with a hand-wheel, and a drawing-tool having the companion member of the union connected with the supply-pipe.

810,219. MOUNTED SCREEN-BIN. EDWIN S. PHILIPS, Kennett Square, Pa., assignor to The American Road Machine Company, Kennett Square, Pa., a Corporation of Pennsylvania. Filed Aug. 15, 1905. Serial No. 274,204.

Claim.—1. In a mounted screen-bin, the combination, with the carrying-frame, of a bin-frame and a screen-frame, each movable vertically with relation to each other and the carrying-frame, and means for simultaneously raising or lowering the bin-frame and screen-frame.

2. In a mounted screen-bin, the combination with the carrying-frame, of a bin-frame and a screen-frame and means to move the screen-frame vertically a determinate distance relatively to the carrying-frame and simultaneously therewith the bin-frame vertically a less distance.

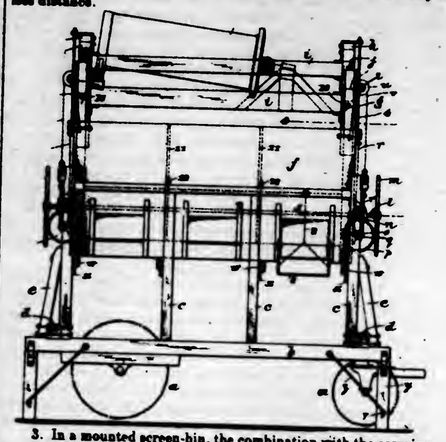

3. In a mounted screen-bin, the combination with the carrying-frame, of a bin-frame movable vertically in guides in the carrying-frame, a screen-frame movable vertically in guides in the bin-frame, and means for simultaneously moving the bin-frame and screen-frame vertically at different speeds relatively to the carrying-frame.

4. In a mounted screen-bin, the combination with the carrying-frame, of a bin-frame and a screen-frame each movable vertically with relation to each other and the carrying-frame, a shaft extending longitudinally of the bin-frame and supported thereon, a hand-wheel at each end thereof, and connections from the shaft to both the bin-frame and the screen-frame for elevating or lowering them simultaneously.

5. In a mounted screen-bin, the combination with the carrying-frame, of a bin-frame and a screen-frame each movable vertically with relation to each other and the carrying-frame, cross-shafts one at each end of, and supported on, the bin-frame, means to turn said shafts and connections from the shafts to both the bin-frame and the screen-frame for elevating or lowering them simultaneously.

6. In a mounted screen-bin, the combination with the carrying-frame, of a bin-frame and a screen-frame each movable vertically with relation to each other and the carrying-frame, pulleys supported on the bin-frame, chains one end of each connected to the screen-frame and the other end to the carrying-frame and between its ends engaging its corresponding pulley, and means to raise or lower the bin-frame, thereby, through the said chains and pulleys, simultaneously raising or lowering the screen-frame relatively to the bin-frame.

7. In a mounted screen-bin, the combination with the carrying-frame, of a bin-frame and a screen-frame each movable vertically with relation to each other and the carrying-frame, pulleys supported on the bin-frame, chains one end of each connected to the screen-frame and the other end to the carrying-frame and between its ends engaging its corresponding pulley, other chains secured at one end to the carrying-frame, cross-shafts turning in bearings on the bin-frame, pulleys on the cross-shafts engaging the last-named chains respectively, and means to turn said shafts.

8. In a mounted screen-bin, the combination with the carrying-frame, of a bin-frame and a screen-frame, each movable vertically with relation to each other and the carrying-frame, chains connected to the screen-frame, pulleys supported on the bin-frame and engaged by the respective chains, other chains connected to the screen-frame, other pulleys supported on the bin-frame and engaged by the last-named chain respectively, and means to turn the last-named pulleys.

9. In a mounted screen-bin, the combination with the carrying-frame, of a bin-frame and a screen-frame each movable vertically with relation to each other and the carrying-frame, chains connected at one end to the screen-frame and at the other end to the carrying-frame, pulleys on the bin-frame about which the respective chains extend, other chains connected at one end to the screen-frame and at the other end to the carrying-frame, other pulleys on the bin-frame about which the last-named chains respectively extend, and means to turn the last-named pulleys.

10. In a mounted screen-bin, the combination with the carrying frame, of a bin-frame and a screen-frame each movable vertically with relation to each other and the carrying-frame, chains connected

to the screen-frame, pulleys supported on the bin-frame and engaged by the respective chain, other chains connected to the screen-frame, other pulleys supported on the bin-frame and engaged by the last-named chains respectively, shafts to which the last-named pulleys are secured, a worm-wheel secured to each shaft, a driving-shaft, and a worm on the driving-shaft engaging each worm-wheel.

11. In a mounted screen-bin, the combination with the carrying frame, of a bin-frame and a screen-frame each movable vertically with relation to each other and the carrying-frame, chains connected at one end to the screen-frame and at the other to the carrying-frame, pulleys on the bin-frame about which said chains respectively extend, other chains connected at one end to the screen-frame and at the other end to the carrying-frame, other pulleys on the bin-frame about which the last-named chains respectively extend, a shaft, a hand-wheel thereon, worms on the shaft, worm-wheels driven by the worms, and shafts to which the worm-wheels and last-named pulleys are secured.

12. In a mounted bin, the combination with the screen-frame, the upright posts of the carrying-frame having guides, the upright posts of the bin-frame vertically movable in said guides and having guides in which the screen-frame is vertically movable, raising mechanism for simultaneously lifting the bin-frame on the guiding-posts of the carrying-frame and the screen-frame on the guiding-posts of the bin-frame, a support engaging the carrying-frame and bin-frame for holding the latter in its elevated position, and a support engaging the bin-frame and screen-frame for holding the latter in its elevated position, thereby relieving the strain on the raising mechanism.

13. In a mounted screen-bin, the combination with the carrying-frame, of a bin-frame telescoping within the carrying-frame, a screen-frame telescoping within the bin-frame, a shaft extending lengthwise of the bin-frame and extending beyond the ends thereof, and turning in bearings thereon, hand-wheels one at each end of the shaft, worms on the shaft one near each hand-wheel, worm-wheels one engaging each worm, a shaft at each end of the bin-frame and extending crosswise thereof and turning in bearings thereon, a worm-wheel on each cross-shaft engaging the corresponding worm, two pulleys on each cross-shaft, rods, one secured to each corner of the screen-frame, chains, each secured at one end to its corresponding rod and at the other end to the carrying-frame and between its ends engaging its corresponding pulley, a second cross-shaft at each end of the bin-frame, two pulleys thereon, and chains, each secured at one end to the screen-frame and at the other end to the carrying-frame and between its ends engaging the corresponding pulley.

810,220. REINFORCING DEVICE FOR CONCRETE STRUCTURES. ARTHUR S. PENNOCK, Morristown, N. J. Filed Mar. 17, 1905. Serial No. 250,571.

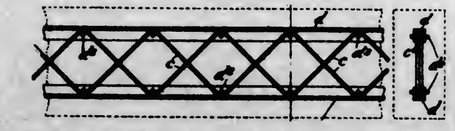

Claim.—1. A device of the class described, comprising parallel side bars and connecting-rods arranged diagonally between said bars and crossing each other at regular intervals centrally and longitudinally between said bars, said connecting-rods being connected with said bars so as to prevent their outward and inward movement, and said connecting-rods being continuous, substantially as shown and described.

2. A reinforcing device for use in concrete and similar structures, comprising parallel side bars and connecting-rods arranged diagonally between said bars and crossing each other at regular intervals centrally and longitudinally between said bars, said connecting-rods being connected with said bars so as to prevent their outward and inward movement, and said connecting-rods being continuous, and said bars being provided with attaching devices around which said rods are passed, substantially as shown and described.

3. A reinforcing device for use in concrete structures, said device comprising parallel bars having holes punched therethrough at regular intervals, and continuous connecting-rods arranged diagonally between said bars and crossing each other in opposite directions and formed into loops which pass through said holes and through which hoy-pins are passed on the outer sides of said bars, substantially as shown and described.

4. A reinforcing device for use in concrete structures, comprising parallel side bars, and connecting-rods arranged between said bars and extending longitudinally thereof and arranged diagonally and crossing each other at regular intervals longitudinally and centrally of the space between said bars, said bars being provided with holes through which said connecting-rods are passed, substantially as shown and described.

810,221. TENSION OR REINFORCING DEVICE FOR USE IN CONCRETE STRUCTURES. ARTHUR S. PENNOCK, Morristown, N. J. Filed May 10, 1905. Serial No. 259,668.

Claim.—1. A tension or reinforcing device of the class described, comprising a bar and continuous rods bent at regular intervals to form oppositely-directed loops or elbows, said rods being placed together side by side so that the side portions of the loops or elbows cross each other, and the loops or elbows which project in the same direction being secured to said bar, substantially as shown and described.

2. A tension or reinforcing device of the class described, comprising a channel-bar and continuous rods bent at regular intervals to form loops or elbows, said rods being placed together side by side so that the side portions of said loops or elbows cross each other and the loops or elbows which extend in the same direction being secured in said bar, substantially as shown and described.

3. A tension or reinforcing device of the class described, comprising a channel-bar and continuous rods bent at regular intervals to form loops or elbows, said rods being placed together side by side so that the side portions of said loops or elbows cross each other and the loops or elbows which extend in the same direction being secured in said bar by means of pins passed through the side walls thereof and through said loops or elbows, substantially as shown and described.

4. A tension or reinforcing device of the class described, comprising a bar and a plurality of continuous rods bent at regular intervals to form oppositely-directed loops or elbows, said rods being placed side by side so that the side portions of the loops or elbows cross each other and the loops or elbows which project in the same direction being permanently secured to said bar, substantially as shown and described.

810,222. VEHICLE-PLATFORM. WINFRED R. REYNOLDS and WILLIAM F. GROSAU, New York, N. Y. Filed Mar. 30, 1905. Serial No. 253,203.

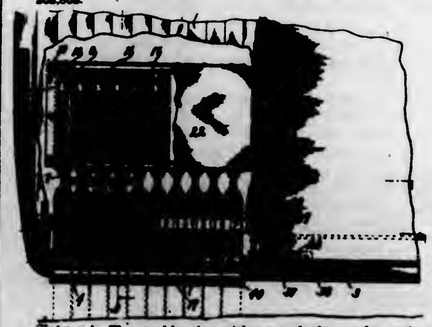

Claim.—1. The combination with a car-platform, of a sectional auxiliary platform secured underneath the car-platform and means for extending the several sections laterally from the car-platform.

2. The combination with a car-platform, of a sectional auxiliary platform secured underneath the car-platform and means for extending the several sections laterally from the car independently of one another.

3. The combination with a vehicle, of a platform mounted to slide laterally from the side of the vehicle in a horizontal plane and means for operating the platform.

4. The combination with a vehicle, of a platform mounted to slide laterally from the side of the vehicle in a horizontal plane and means for automatically operating the platform.

5. The combination with a vehicle, of a platform mounted to slide in a horizontal plane beyond the side of the vehicle, means for operating the platform and means under the control of a door opening to the platform for controlling the operation of the platform-operating means.

6. The combination with a vehicle, of a sectional platform mounted to move into an extended position at the exterior of the vehicle and means for operating the said sections independently of one another.

7. The combination with the stationary platform of a car, of an auxiliary platform mounted to slide outwardly and inwardly from and toward the stationary platform and means for applying compressed fluid to move the auxiliary platform.

8. The combination with a car, of a platform composed of several sliding sections, cylinders, one for each section, pistons working in the cylinders and connected with the sections and means for admitting compressed fluid to the cylinders to operate the pistons.

9. The combination with a car provided with a door, of a sliding platform, means for applying a compressed fluid to operate the sliding platform and a valve actuated by the door for controlling the action of the compressed fluid on the sliding platform.

10. The combination with a car, of a platform composed of sliding sections, a cylinder and piston for each sliding section, means for operating the sliding sections in one direction by compressed fluid and springs for operating the sections in the opposite direction.

11. The combination with a car, of a platform composed of sliding sections, a cylinder and piston for each section, means for simultaneously operating the sliding sections in one direction and means for operating the sections in the opposite direction independently of one another.

12. The combination with a car, of a platform composed of sliding sections, springs for forcing the sections outwardly into operative position, means for forcing the sections inwardly against the tension of the springs and means for locking the sections in their inward adjustments.

13. The combination with a car, of a platform having a sliding movement out and in at the exterior of the car, means for placing the platform under the action of compressed fluid to operate it, and a differential valve for controlling the admission and discharge of the compressed fluid.

14. The combination with a suitable support, of a platform comprising several sections in juxtaposition in a plane and means for sliding the several sections independently beyond the margin of the support.

810,223. APPARATUS FOR DEGREASING SUBSTANCES. HENRY ROESEN, Philadelphia, Pa., assignor to Emanuel Printz, Philadelphia, Pa. Filed Jan. 5, 1905. Serial No. 239,723.

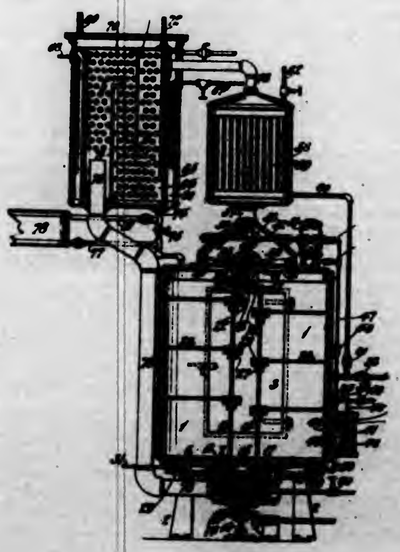

Claim.—In a device of the character described, an operating-tank adapted to be filled with decreasing material, supports for the material to be treated therein, a condenser, conduit leading from the top and bottom of the tank to said condenser, and a propeller above said supports adapted to rotate in two directions, whereby the air or vapor in said tank is removed therefrom by drawing the same through the upper conduit, while the substances are in part submerged by the material that is in the tank and forcing the air or vapor through the lower conduit, after all the material has been withdrawn or changed into vapor.

810,224. GAME APPARATUS. FRANK L. SACKETT, Fredonia, N. Y. Filed Apr. 8, 1901. Serial No. 54,896.

Claim.—1. A game-board having a playing-field, comprising a friction-surface and a relatively smaller smooth horizontal playing-surface substantially flush with the friction-surface and constituting an integral portion of said game-board and having a goal therein.

2. A game-board having a playing-field, comprising a friction-surface and a relatively smaller smooth surface upon which the game-piece is adapted to rest and be glided, said smooth surface being substantially flush with said friction-surface and having a goal therein.

3. A game-board having a playing-field comprising a friction-surface and a relatively smaller smooth surface, said latter surface having a single goal substantially in the center thereof and presenting a flat substantially horizontal unobstructed surface from said goal to the friction-surface, said flat surface being of considerably greater area than the goal whereby the game-piece may rest and be glided thereon.

4. A game-board having a playing-field comprising a friction-surface B, a smooth surface H, and a smooth horizontal playing-surface C substantially flush with said friction-surface and having a single goal located substantially centrally thereof.

5. A game-board having a playing-field comprising a friction-surface B, a smooth surface H and a smooth horizontal playing-surface C substantially flush with said friction-surface and having a single goal located substantially centrally thereof and projections located on said friction-surface.

6. A game-board having a playing-field, comprising a friction-surface and a relatively smaller smooth horizontal surface substantially flush with the friction-surface and constituting an integral portion of said game-board and having a goal therein, and side portions projecting above said playing-field, said side portions comprising a series of independent depressible sections.

7. A game-board having a playing-field, comprising a friction-surface and a relatively smaller smooth horizontal surface substantially flush with the friction-surface and constituting an integral portion of said game-board and having a goal therein, and side portions comprising a series of independent depressible sections and means for holding said sections normally in an elevated position.

810,225. PRINTING AND FOLDING MACHINE. WALTER SCOTT, Plainfield, N. J. Filed Feb. 19, 1897. Serial No. 624,268.

Claim.—1. The combination of a rotating carrier provided with a plurality of non-rotating folding-blades, rotating cams for protruding said folding-blades, and mechanism for rotating said cams and said carrier in different times, substantially as described.

2. The combination of a rotating carrier, a non-rotating folding-blade movable radially thereof, a rotating cam, and connection between said cam and said blade having a part coacting with and revolving about the same axis as said cam but in a different time, substantially as described.

3. The combination of a rotating carrier, a plurality of folding-blades movable radially thereof, a rotating cam, and an independent connection between said cam and each of said blades having a part coacting with and rotating about the same axis as but at a rate of speed different from that of said cam, substantially as described.

4. The combination of a rotating carrier, an in-and-out movable non-rotating folding-blade thereon, and a cam revolving about the same axis as but independently of said carrier and at a different rate of speed and connected with said blade to control the protrusion of the same, substantially as described.

5. The combination of a rotating carrier, a plurality of in-and-

out movable folding-blades thereon, and a cam revolving about the same axis as said carrier but at a different rate of speed and connected independently with said blades to control the protrusion thereof, substantially as described.

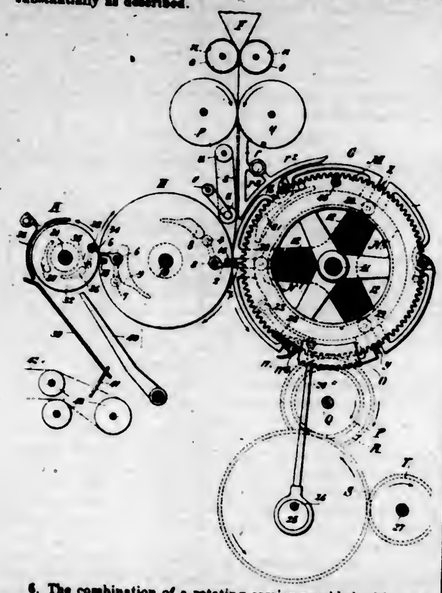

6. The combination of a rotating carrier provided with a plurality of folding-blades, and moving cams connected with said blades at each end of the carrier for causing the protrusion of said blades each during non-consecutive revolutions of the carrier, substantially as described.

7. The combination of a rotating carrier provided with a plurality of folding-blades, and rotating cams connected with said blades at each end of the carrier for causing the protrusion of said blades each during non-consecutive revolutions of the carrier, substantially as described.

8. The combination of a rotating carrier provided with a plurality of folding-blades, and rotating cams having the same axis of rotation as said carrier and connected with said blades at each end of the carrier for causing the protrusion of said blades each during non-consecutive revolutions of the carrier, substantially as described.

9. The combination of a rotating carrier provided with a plurality of folding-blades, rotating cams connected with said blades at each end of the carrier, mechanism for rotating said cams in time different from that of the carrier, said mechanism having disconnectible parts, and means for locking said cams against motion while said mechanism is disconnected, substantially as described.

10. The combination of a rotating carrier provided with a plurality of folding-blades, rotating cams having the same axis of rotation as said carrier and connected with said blades at each end of the carrier, mechanism for rotating said cams in time different from that of the carrier, said mechanism having disconnectible parts, and means for locking said cams against motion while said mechanism is disconnected, substantially as described.

11. The combination of a rotating carrier provided with a plurality of reciprocating folding-blades, rotatory cams for protruding said blades, mechanism provided with disconnectible parts for rotating said cams and said cylinder in different times, and means for locking said cams against motion, substantially as described.

12. The combination of a rotating carrier provided with a plurality of folding-blades, movable cams for protruding said blades, and mechanism provided with disconnecting parts for operating said cams and for locking them against motion, substantially as described.

13. The combination of cylinder G, three non-rotative folding-blades mounted thereon, cams N connected with said folding-blades, and mechanism for revolving said cylinder and said cams in different times, substantially as described.

14. The combination of an internal guide or V-shaped former, a pair of rolls at the apex thereof, and a collar on at least one of said rolls, said collar being of a diameter somewhat greater than the diameter of the corresponding roll and being adjustable longitudinally relatively to its said roll and coacting with a web-margin, substantially as described.

15. The combination of an internal guide or V-shaped former, a pair of rolls at the apex thereof, and collars on said rolls, said collars being of diameters somewhat greater than the diameters of their respective rolls, and one collar per roll being adjustable longitudinally relatively to its roll, and said adjustable collars coacting with a web-margin, substantially as described.

16. The combination of an internal guide or V-shaped former, a pair of rolls at the apex thereof, and collars adjustable longitudinally of said rolls, each collar being of greater diameter than its own roll and said adjustable collars coacting with a web-margin, substantially as described.

17. The combination of a web-press whose two impression-cylinders rotate in opposite directions and perfect a web, a second web-press whose impression-cylinders all rotate in one direction, and a third (perfecting) web-press, with mechanism for driving the impression-cylinders of the third press in opposite directions or in the same direction, whereby two webs may be printed upon on both sides and one of them may receive multicolored impressions upon one side or may be perfected merely with but one color upon each side, substantially as described.

18. The combination of a web-press whose two impression-cylinders rotate in opposite directions and perfect a web, a second web-press whose impression-cylinders all rotate in one direction, and a third (perfecting) press, with mechanism for driving the impression-cylinders of the third press in opposite directions or in the same direction, said presses being one above another, a web-associator, and a folding-machine to which the associated webs are taken, whereby two webs may be printed upon on both sides and one of the webs may receive multicolored impressions upon one side or may be perfected merely with but one color on a side, substantially as described.

19. The combination of a web-press having its impression-cylinders geared together to rotate in opposite directions, a second web-press having a pair of impression-cylinders, disconnectible gearing for connecting said pair of impression-cylinders to cause them to rotate in opposite directions, and disconnectible gearing between a cylinder of the first press and the first impression-cylinder of the second press for driving the last-named cylinder in the same direction as the second-impression cylinder of the second press, whereby each press may perfect its own web, or one web may be run through both presses and receive impressions on but one side in one of said presses, substantially as described.

20. The combination of the impression-cylinders i of press C, impression-cylinders i^2 i^3 of press D, gears 46 47 connecting the last-named cylinders, one of said gears being movable along or disengageable from its shaft, and gears 48 49 50 connecting the first impression-cylinder of press C with the first impression-cylinder of press D, one of said gears 48 49 50 being movable along or disengageable from its shaft, substantially as described.

21. The combination of a pair of impression-cylinders arranged adjacent each other, disconnectible gearing between said cylinders for driving them in opposite directions, a second pair of impression-cylinders, said pairs of cylinders being arranged one over the other, form-cylinders coacting with said impression-cylinders, said pairs of impression-cylinders and their coöperating form-cylinders constituting two perfecting-presses, and disconnectible gearing between a cylinder of the press containing said second pair of impression-cylinders and the first impression-cylinder of the press containing said first-named pair of impression-cylinders, said last-named gearing being arranged for driving said first impression-cylinder in the same direction as its companion impression-cylinder, substantially as described.

22. The combination of a plurality of web-perfecting presses, a brake mechanism for and coacting with a cylinder of each press, a power-controller, a lever, and means for connecting said lever with said controller and with said brake mechanisms, whereby said brakes are applied and taken off as the power is taken off and put on, with driving mechanism for said presses, connecting by a single gear with the power-shaft, substantially as described.

23. The combination of a plurality of web-perfecting presses, a brake mechanism for and coacting with a cylinder of each press, a power-controller, rock-shaft 60, mechanism for connecting said controller and said brake mechanisms with said shaft to be operated simultaneously, means for actuating said shaft, and driving mechanism for said presses connecting by a single gear with the power-shaft, substantially as described.

24. The combination of a plurality of web-perfecting presses, a brake mechanism for and coacting with a cylinder of each press, a power-controller, rock-shaft 50, a lever on said shaft, mechanism for connecting said lever with said controller and with said brake mechanisms, and driving mechanism for said presses connecting by a single gear with the power-shaft, substantially as described.

25. The combination of a plurality of web-perfecting presses, a brake mechanism for and coacting with a cylinder of each press, a drive-shaft, a single gear on said shaft and connected with all of said presses to drive the same, tight and loose pulleys on said shaft, a slow-speed pulley on said shaft between said tight and loose pulleys, a belt-shifter, and connections whereby said brake mechanisms are operated simultaneously with the shifter as the latter moves the belt onto and off the loose pulley, substantially as described.

26. The combination of a plurality of web-perfecting presses, a brake mechanism for and coacting with a cylinder of each press, a drive-shaft, a single gear on said shaft and connected with all of said presses to drive the same, tight and loose pulleys on said shaft, a slow-speed pulley on said shaft between said tight and loose pulleys, a belt-shifter, an operating-lever, and connections between said lever and said shifter and said brake mechanisms for operating the same, substantially as described.

27. The combination of a number of web-perfecting presses placed one above another, a brake mechanism for and coacting with a cylinder of each press, gearing connecting said presses with a common source of power, and means for simultaneously operating all said brake mechanisms as the power is thrown off, substantially as described.

28. The combination of a number of web-printing presses arranged one above another, a drive-shaft geared with all said presses, a brake mechanism for and coacting with a cylinder of each press, a power-controller, and means for simultaneously operating said controller and said brake mechanisms, substantially as described.

29. The combination of a plurality of rotary printing-presses provided each with a brake mechanism coacting with a cylinder thereof, a common driving power for said presses, a power-controller, and means for simultaneously actuating said controller and said brake mechanisms, substantially as described.

30. The combination of a rotating carrier provided with grippers, a cylinder receiving sheets folded from said carrier, and means for guiding the sheets to the carrier in a direction cutting across (secantwise) the same at a point adjacent the point where the sheets are folded off from the carrier, substantially as described.

31. The combination of a rotating carrier provided with folding-off devices, grippers on said carrier, means for feeding sheets to said grippers in a direction which cuts across the carrier or in secantwise thereof at a point adjacent that where the sheets are folded off, and a delivery-cylinder coacting with said carrier, substantially as described.

32. The combination of a transverse web-cutting device, a rotating carrier provided with grippers, and a sheet-guideway from said cutting device to said carrier directing the sheets to said carrier secantwise thereof and having a space or opening adjacent the cylinder into which the grippers push the tails of the sheets that may be on the carrier as the grippers open and seize the heads of the following sheets, substantially as described.

810,226. VAPOR-LAMP. EDWARD SMITH, Peoria, Ill. Filed Sept. 28, 1904. Serial No. 226,517.

Claim.—1. A vapor-lamp of the character described, comprising a combustion-chamber having a mantle thereon, a jet-orifice in its side and near its top, and a cut-off valve at its top, a vapor-generator alongside the combustion-chamber, a regulating-valve to control the flow of vapor from the said valve to the combustion-chamber and means connected to the vapor-generator to automatically close the top of the combustion-chamber when the valve is operated and allowing the escape of heated gases through the jet-orifice and their projection against the vapor-generator, substantially as described.

2. A vapor-lamp comprising a combustion-chamber having a mantle thereon a gasolene-vapor generator lying at the side of said chamber and mantle, a cut-off valve in the top of the combustion-chamber, there being a jet-orifice in the side of the chamber opposite the generator for the purposes described, and means coöperating with the two valves for automatically closing the cut-off valve when the needle-valve is operated.

3. In a gasolene-vapor lamp the combustion-chamber having a mantle thereon, a vapor-generator adjacent thereto substantially as described, a valve for controlling the vapor-supply to the lamp a cut-off valve for closing the top of the chamber automatically when the controlling-valve is operated, means between the cut-off valve and controlling-valve for causing the action described, there being a jet-orifice in the side of the generator near the top for escape of heated gases against the vapor-generator when said cut-off valve is closed.

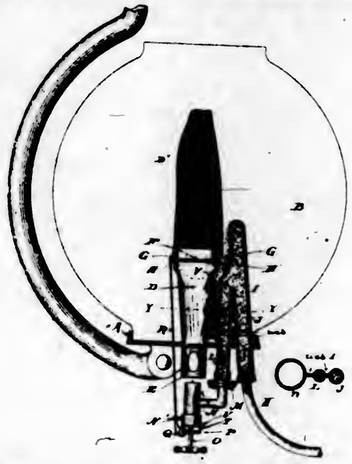

4. In a vapor-lamp, the combustion-chamber having a mantle thereon, a valve for controlling the gas admitted to such chamber, a vapor-generator adjacent to the combustion-chamber through which the gasolene must pass to reach the controlling-valve, a cut-off valve in the top of the combustion-chamber, means between the controlling-valve and the cut-off valve for closing the latter as the former is operated, there being a jet-orifice in the side of the combustion-chamber near its top and beneath the cut-off valve for allowing escape of heated gases therethrough for their projection against the vapor-generator substantially as described.

5. In a vapor-lamp, the combination of the combustion-chamber and its mantle, a vapor-generator adjacent to said chamber to which the controlling-valve of the lamp is connected, a jet-orifice in the side of the chamber near the top, a cut-off valve in the top of the combustion-chamber for inclosing the vapor therein and causing the escape of the heated gases through the said orifice and their projection against the vapor-generator, and a connection between the cut-off valve and the controlling-valve for closing the former by partially shutting the latter as and for the purposes described.

6. A vapor-lamp comprising a combustion-chamber having a mantle thereon, a combustion-chamber for the vapor, the same being positioned beside the said combustion-chamber for receiving heat from the latter and its mantle, there being a jet-orifice in the side of the combustion-chamber near its top, and a rocking cut-off valve at the top of the said combustion-chamber, operated automatically by the turning of the controlling-valve of the lamp, the said cut-off valve inclosing the heated gases and causing them to pass out through the said orifice and means between and connecting said valves for causing the action described.

7. A vapor-lamp comprising the combustion-chamber D having the mantle D' thereon, the vapor-generator J, L situated close to said combustion-chamber and extending close up to and opposite the mantle as shown, the needle-valve O beneath the combustion-chamber and connected with the said generator for entering vapor into said chamber, the cut-off valve F in the top of the latter member, a rod member R for rocking the said valve F to open or close the chamber containing it, said rod having attachment with the valve O, the operation of the latter adapted to operate the cut-off valve also automatically for the purposes described, there being a jet-orifice beneath the cut-off valve in the side of the combustion-chamber opposite the vapor-generator as described and shown.

810,227. AUTOMATIC BRAKE. GEORGE W. SIMS, Alliance, Ohio, assignor to The Alliance Machine Company, Alliance, Ohio, a Corporation of Ohio. Filed Aug. 29, 1904. Serial No. 223,557.

Claim.—1. In an automatic brake, the combination of a driv-

ing-shaft; a member screw-threaded thereon; a second member journaled on said shaft and fixed longitudinally thereof; and a device adapted to be actuated by the longitudinal movement of said first member to frictionally connect said two members.

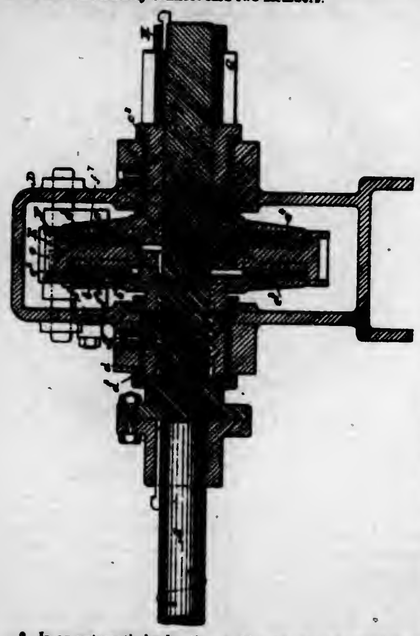

2. In an automatic brake, the combination of a driving-shaft; a member screw-threaded thereon; a second member journaled on said shaft and rotatably fixed relatively to said first member; and a device adapted to be actuated by the longitudinal movement of said first member to frictionally connect said two members.

3. In an automatic brake, the combination of a driving-shaft provided with an externally-threaded portion; an internally-threaded member mounted upon the threaded portion of said driving-shaft and movable longitudinally of the axis of said shaft; a second member journaled upon said driving-shaft and rotatably fixed relatively to said first member; and a friction device actuated by the longitudinal movement of the latter for frictionally connecting said two members.

4. In an automatic brake, the combination of a driving-shaft provided with an externally-threaded portion; an internally-threaded member mounted upon the threaded portion of said driving-shaft and movable longitudinally of the axis of said shaft; a second member journaled upon said driving-shaft, fixed longitudinally of the axis thereof, and rotatably fixed relatively to said first member; and a friction device actuated by the longitudinal movement of the latter for frictionally connecting said two members.

5. In an automatic brake, the combination of a driving-shaft provided with an externally-threaded portion; an internally-threaded member mounted upon the threaded portion of said driving-shaft and movable longitudinally of the axis of said shaft; a second member journaled upon said driving-shaft and rotatably fixed relatively to said first member; friction devices actuated by the longitudinal movement of the latter; and a ratchet-wheel mounted intermediately of said two members and arranged to move in one direction of rotation of the shaft and fixed in the opposite direction.

6. In an automatic brake, the combination of a driving-shaft; a member mounted thereon and movable longitudinally of the axis thereof; means for causing such longitudinal movement; a second member journaled upon said shaft and fixed longitudinally of the axis thereof; said two members adapted to engage so as to be rotatably fixed relatively to each other; and friction devices mounted intermediately of said two members and actuated by the longitudinal movement of said first member.

7. In an automatic brake, the combination of a driving-shaft provided with an externally-threaded portion; an internally-threaded sleeve formed with a flange, engaging the threaded portion of said shaft, and having a limited movement longitudinally of the axis of the latter; a member journaled upon said driving-shaft, fixed longitudinally of the axis thereof, provided with a flange, and rotatably fixed relatively to said sleeve; and a ratchet-wheel and friction devices mounted intermediately of said flanges, said friction devices actuated by the longitudinal movement of said sleeve, and said ratchet-wheel arranged to move in one direction of rotation of the shaft and fixed in the opposite direction.

8. In an automatic brake, the combination of a driving-shaft provided with an externally-threaded portion; an internally-threaded sleeve formed with a flange, engaging the threaded portion of said shaft, and having a limited movement longitudinally of the axis of the latter; a member journaled upon said driving-shaft, fixed longitudinally of the axis thereof, provided with a flange, and engaging said sleeve so as to be rotatably fixed relatively thereto; a second member mounted intermediately of said flanges and arranged to move in one direction of rotation of said shaft and fixed in the opposite direction; friction devices mounted intermediately of said flanges respectively and said second member; and a pinion rotatably fixed relatively to said journaled member, and rotatable relatively to said shaft.

9. In an automatic brake, the combination of a driving-shaft provided with an externally-threaded portion; an internally-threaded sleeve mounted upon such threaded portion and provided with a flange; a member journaled to said driving-shaft and provided with a flange; a frame provided with bearings for said sleeve and journaled member; a disk mounted intermediately of said two flanges and provided with ratchet-teeth; friction devices mounted intermediately of said disk and said flanges respectively; a pawl having a fixed axis and arranged to engage said ratchet-teeth; and a pinion rotatably fixed to said journaled member, said sleeve and journaled member being rotatably fixed to each other, and arranged so that the former may have a limited movement longitudinally of the axis of the driving-shaft, said friction devices being actuated by the longitudinal movement of said sleeve.

10. In an automatic brake, the combination of a driving-shaft provided with an externally-threaded portion; an internally-threaded sleeve mounted upon such threaded portion and provided with a flange; a member journaled upon said driving-shaft; a member mounted intermediately of such sleeve and journaled member arranged to rotate in one direction of rotation of said driving-shaft, fixed in the opposite direction, and arranged to be frictionally engaged from opposite sides, said sleeve having a limited movement longitudinally of the axis of the driving-shaft, being rotatably fixed to said journaled member and separated from the latter a distance normally greater than the distance of such longitudinal movement.

11. In an automatic brake, the combination of a driving member; a driven member journaled thereon and fixed longitudinally thereof; a third member keyed to said driven member and longitudinally and rotatably movable with reference to said driving member; and a device adapted to be actuated by the longitudinal movement of said third member to frictionally connect said member with said driven member.

12. In an automatic brake, the combination with two rotatable members axially movable relatively to each other, of a friction-disk mounted therebetween and provided with ratchet-teeth and a flange on one side of said teeth, and a pawl having a fixed axis, one end of said pawl being adapted to engage said teeth and the other end to ride on said flange.

13. In an automatic brake, the combination of a driving-shaft, a member screw-threaded thereon; a second member journaled upon said shaft and keyed to said first member and a friction-disk mounted between said two members and provided with ratchet-teeth and a flange on one side of said teeth, and a pawl having a fixed axis, one end of said pawl being adapted to engage said teeth and the other end to ride on said flange.

810,228. FURNACE-ROOF. EDWIN B. SLICK, Pittsburg, Pa. Filed July 1, 1904. Serial No. 214,661.

Claim.—1. A metal-heating furnace having a roof inclined longitudinally, said roof being in a substantially flat longitudinal plane; substantially as described.

2. A continuous heating-furnace having a roof lying in a substantially flat plane and inclined longitudinally from one end of the heating-chamber to the other; substantially as described.

3. A heating-furnace roof containing rows of thick bricks with recesses in their side faces intermediate of the height of the brick-body, and depending hangers having a row of separated supports engaging the recesses of adjacent bricks; substantially as described.

4. A heating-furnace roof containing rows of thick bricks with recesses in their side faces intermediate of the height of the brick-body, and depending hangers having separated supports engaging the recesses of adjacent bricks, hangers being movable endwise of the row to move the support away from a brick and allow it to be removed; substantially as described.

5. A heating-furnace roof having rows of thick bricks with registering recesses in their side faces forming a continuous air-channel along the row, and hangers having a row of separated supports arranged to engage the recesses of adjacent bricks; substantially as described.

6. A heating-furnace roof having bricks with cut-away upper portions, and having side faces with transverse grooves extending across them, and bolts or hangers having a row of separated supports engaging the recesses of adjacent bricks; substantially as described.

7. A heating-furnace having a roof inclined longitudinally and formed of bricks lying in a substantially flat plane longitudinal of the furnace; substantially as described.

8. A heating-furnace having a roof inclined longitudinally in a substantially flat plane, said roof being made up of bricks suspended by overhead hangers; substantially as described.

9. A continuous heating-furnace having a roof lying in a substantially flat plane, and comprised of bricks suspended by overhead hangers, the furnace-chamber being contracted gradually in vertical height from one end toward the other, said furnace having an inlet and outlet at or near its opposite ends to receive a continuous row of metal blanks; substantially as described.

10. A continuous heating-furnace having a substantially flat roof formed of bricks suspended by overhead hangers, said roof being longitudinally inclined toward the floor of the furnace-chamber, said furnace-chamber having an inlet at one end leading from a source of heat, and an inlet at or near the other end to receive the row of metal blanks; substantially as described.

11. A continuous heating-furnace of longitudinal tunnel-form, having a substantially flat longitudinally-inclined roof, an inlet for metal blanks at or near the smaller end of the furnace-chamber, and an outlet for blanks of the row at or near the larger end, said furnace-chamber having a gaseous inlet at or near the larger end and a gaseous outlet at or near the smaller end; substantially as described.

810,229. WARMING-KETTLE. HERMAN STANGE, Cincinnati, Ohio. Filed Feb. 13, 1905. Serial No. 245,491.

Claim.—1. A device of the character described comprising an upper member having a closed bottom provided with a pendent flange extended around it and having a ledge extended outside the flange, spring-clips oppositely arranged upon said upper member and provided with hook-shaped ends beneath said ledge and a lower member open at its top to receive the pendent flange of the upper member and adapted to contain a heater and having side walls, the upper edges of which are provided with a continuous external bead for supporting engagement with the ledge of the upper member and for detachable engagement with the hook-shaped lower ends of the clips thereon.

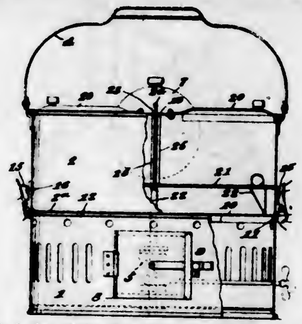

2. A device of the character described comprising an upper member having a closed bottom provided with a pendent flange extended around it and having a ledge extended outside the flange, spring-clips centrally pivoted upon said upper member and provided with hook-shaped lower ends beneath said ledge and devices pivotally held on the upper member for engagement with the upper ends of the clips to hold them against movement.

3. A device of the character described comprising a member having a closed bottom, side walls and an open top, a single perforated tray removably supported therein and extended across the entire surface of the bottom thereof, a central strip transversely extended across the top of the member and provided with a longitudinal slotted opening, a partition removably passed through the slotted opening of the strip and removably inserted in the member with its lower part rested on said tray to divide the interior of the member into compartments, guides engaged with said removable partition and covers hinged at oppoitse sides of said strip and adapted, when lowered, to close the open top of the member and, when raised, to afford access to the compartments at opposite sides of the partition.

4. A device of the character described comprising a member having a closed bottom, side walls and an open top, a central strip transversely extended across the top of the member and provided with a longitudinal slotted opening, a partition removably passed through said slotted opening of the strip and removably inserted in the member to divide its interior into compartments, guides engaged with said removable partition and covers hinged at opposite sides of the strip and adapted, when lowered, to close the open top of the member and, when raised to afford access to the compartments at opposite sides of the removable partition.

810,230. BIT-EXTENDER. WILLIAM B. SWAN, Seymour, Conn. Filed Aug. 18, 1905. Serial No. 274,813.

Claim.—In a bit-extender, an externally-threaded chuck provided with a tapering socket at its lower portion terminating in a centrally-located recess extending longitudinally into the body of the chuck, said body being formed with horizontal recesses adjacent to said longitudinal recess, a coil-spring in said recess, a bell-crank locking-lever having bearings in said horizontal recesses, said locking-lever comprising a long arm provided with a latch and a short arm extending transverse of the axis of the chuck, said short arm being arranged whereby it will be acted upon by the said spring to force the long arm to an unlocked position, and an internally-threaded sleeve for said chuck adapted to retain the locking-lever in a locked position.

810,231. DELIVERY MECHANISM FOR PRINTING-PRESSES. CHARLES B. SWIFT, Muskegon, Ind. Ter. Filed Jan. 14, 1905. Serial No. 241,026.

Claim.—1. A sheet-delivery mechanism comprising a rocking shaft, depending arms secured thereto comprising a fixed member

and a movable member pivoted to the fixed member, nippers carried by said arms, one of said nippers being stationary with relation thereto and the other being actuated by the movable member, and stationary stops arranged to engage alternately the movable member above and below its pivotal position to open the nippers.

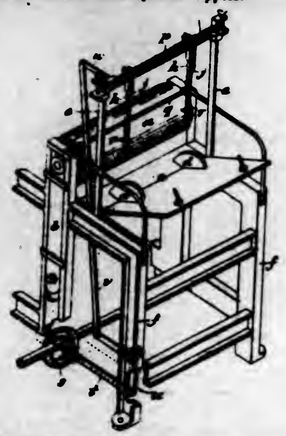

2. In a sheet-delivery mechanism for printing-presses, the combination with a rocking shaft, a depending member rigidly secured thereto, nippers secured to said member, one of said nippers being stationary with relation thereto and the other being pivoted and provided with gear-teeth, of a member pivoted to said fixed member and provided on its lower end with gear-teeth meshing with the movable nipper, and means for actuating said movable member independently of the movement of the fixed member, substantially as described.

3. In a sheet-delivery mechanism for printing-presses, the combination of the rocking shaft, a depending member fixed with relation thereto, nippers upon said fixed member, a movable member pivoted to the fixed member and engaging said nippers to open the same, a spring for normally holding the nippers in their closed position, stationary stops arranged to engage the movable member to open the nippers, and means for actuating the shaft.

4. In a sheet-delivery mechanism for printing-presses, the combination of a rocking shaft, a depending member fixed with relation thereto, nippers upon said fixed member, a movable member pivoted to said fixed member and offset at one end and operatively connected at the other end with said nippers, a fixed stop to engage said offset end of the movable member at one end of its path to open the nippers, and a fixed stop to engage the other end of said movable member at the other end of its path to open said nippers.

810,282. COMBINED POST AND WIRE-STRETCHER. GEORGE W. TRUMAN, Yosemite, Ky. Filed Sept. 6, 1905. Serial No. 277,207.

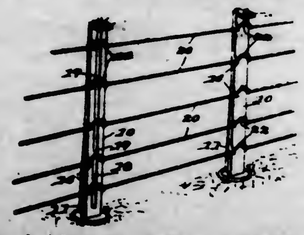

Claim.—1. A fence-post comprising a standard having one side thereof formed with a flat bearing-surface provided with spaced downwardly-extending wire-engaging lugs, a vertically-adjustable stretching-strip movable over the flat bearing-surface of the post and having its inner face provided with spaced notches adapted to engage the wires between the lugs for stretching said wires longitudinally of the post, and means for locking the stretching-strip in adjusted position.

2. A fence-post comprising a standard having one side thereof formed with a flat bearing-surface and one end with a laterally-projecting flange provided with a threaded opening, there being spaced downwardly-extending wire-engaging lugs formed on the opposite longitudinal edges of the flat side of the post, a vertically-adjustable stretching-strip movable over the flat bearing-surface of the post and having one end thereof threaded for engagement with the opening in the flange and its inner face provided with a series of spaced notches adapted to engage the wires between the lugs, and a nut threaded on the strip and engaging the flange for locking the stretching-strip in adjusted position.

810,283. BOOKCASE. FRED W. TOMEY, Grand Rapids, Mich. Filed Jan. 17, 1905. Serial No. 241,512.

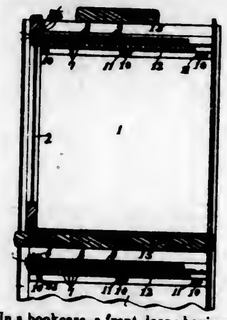

Claim.—1. In a bookcase, a front, loops having extensions provided with lateral recesses, screws in the inner side of the front and near the upper edge thereof, which screws engage the recesses in loop extensions, and a rod for supporting the front horizontally and rotatively mounted in said loops.

2. In a bookcase, a front having a horizontal groove in its inner surface, a rod rotative in the groove, means for supporting and guiding the rod in the case, loops surrounding the rod and having tangential extensions provided with lateral recesses, and screws inserted in the front and engaging the recesses.

3. In combination with the movable front and the ends of a bookcase, a horizontally-movable rod to support the front, a pinion rotative with the rod and longitudinally movable on one end of the same, a rack engaging the pinion and fixed on one end of the case, a plate spaced apart from said end of the case to form a channel therebetween to guide the pinion, a pinion on the other end of the rod, and a rack on the other end of the case to engage the said pinion.

4. In combination with the movable front and the ends of a bookcase, a horizontally-movable and rotative rod, means for attaching the front to the rod, pinions on the rod, and plates attached to the ends and having upwardly-projecting portions engaging the teeth of the pinions, and also having inwardly-pressed portions engaging the inner sides of the pinions.

5. In combination with the front and ends of a bookcase, a rod journaled on the front, rolls and pinions on the rod, and plates secured to the ends of the case and having upwardly-projecting teeth engaging the pinions, said plates also extending upward opposite the pinions to guide the same and thence extended horizontally to form tracks for the rolls.

6. In combination with the front and ends of a bookcase, a rotative rod attached to the front and supporting the same, a pinion on each end of the rod, said pinions being rotative with the rod, supports attached to the ends and having slots to receive the rod and also having an upper surface to support the front, and teeth on the supports to engage the teeth of the pinions.

7. In combination with the ends and the movable front of a bookcase, a rod journaled on the front and supporting the same, rolls rotative on the rod, pinions movable longitudinally of the rod and rotative therewith, and plates secured to the ends and having upwardly-projecting portions forming teeth to engage the pinions, said plates also having inwardly-pressed portions engaging the sides of the pinions, horizontally-extended portions supporting the rolls and traversed thereby, slots traversed by the rod, and upper horizontal portions to support the front.

8. In a bookcase, a front having a horizontal groove, a rod rotative in the groove, a roll on each end of the rod, a pinion on each end of the rod and rotative therewith, said pinions also being movable toward and from each other, ends having vertical rabbets and horizontal rabbets, and plates secured to the ends below the horizontal rabbets, said plates having portions forming teeth to engage the teeth of the pinions, inwardly-pressed vertical portions to engage the sides of the pinions, horizontal portions supporting the rolls and traversed thereby, slots traversed by the rod, and upper portions supporting the front.

810,284. DEVELOPING-MACHINE. WILLIAM M. TOWERS and HERBERT S. HARRINGTON, Rome, Ga., assignors of one-fourth to Edward C. Hume, Rome, Ga. Filed June 20, 1905. Serial No. 266,168.

Claim.—1. In apparatus of the character specified, the combination with a film-spool, of a cylindrical casing comprising telescoping sections, a cover for the open end of the casing, and provided with a screw-threaded opening, a stud-shaft journaled in the cover, and having its inner end cut away to fit the slot in the end of the film-spool, a crank on the outer end of the shaft, a support secured to the cover and extending into the casing, a clamp on the support, a bracket slidably mounted on the support, a set-screw in the bracket and engaging the support, a pin on the free end of the bracket for engaging the opposite end of the film-spool, and a screw-threaded plug for engaging the opening in the cover.

2. In apparatus of the character specified, the combination with a film-spool of a cylindrical casing comprising telescoping sections, a cover for the casing provided with an opening, means on the cover for engaging the slotted end of the film-spool and for rotating the same, a support secured to the cover and extending into the casing, a bracket slidably mounted thereon, a set-screw in the bracket and engaging the support, a pin on the free end of the bracket for engaging the opposite end of the film-spool, and means for closing the opening in the cover.

3. In apparatus of the character specified, the combination with a film-spool of a cylindrical casing comprising telescoping sections, a cover for the casing, means on the cover for engaging the slotted end of the film-spool and for rotating the same, a support attached to the cover and extending into the casing, a clamp on the support, means on the support for engaging the opposite end of the film-spool and means for adjusting the engaging means.

4. In apparatus of the character specified, the combination with a film-spool of a cylindrical casing comprising telescoping sections, a cover for the casing, means on the cover for engaging the slotted end of the film-spool, means for rotating said engaging means, means secured to the cover for engaging the opposite end of the film-spool and means for adjusting said last-named engaging means.

5. In apparatus of the character specified, the combination with a film-spool of a cylindrical casing, a cover for the casing, means on the cover for engaging the slotted end of the film-spool and for rotating the same, means connected with the cover for engaging the opposite end of the film-spool, and means for adjusting said engaging means.

810,285. ELECTRICAL MEASURING INSTRUMENT. THOMAS W. VARLEY, New York, N. Y., assignor of one-half to Walter B. Rugg, New York, N. Y. Filed Feb. 6, 1905. Serial No. 244,303.

Claim.—1. An electrical measuring instrument comprising a permanent magnetic field, a stationary coil adapted to shift the lines of force of the magnetic field, and a movable coil in the magnetic field normally in a balanced condition relative thereto but becoming unbalanced when the magnetic field is shifted.

2. An electrical measuring instrument comprising a permanent magnetic field, a stationary coil adapted to shift the lines of force of the magnetic field, a movable coil in the magnetic field normally in a balanced condition relative thereto but becoming unbalanced when the magnetic field is shifted and means for measuring the extent of movement of the movable coil.

3. An electrical measuring instrument comprising a permanent magnetic field, a stationary coil adapted to shift the lines of force of the magnetic field, a movable coil in the magnetic field normally in a balanced condition relative thereto but becoming unbalanced when the magnetic field is shifted, means for controlling the movement of the movable coil whereby said movement is caused to be proportional to the torque of the movable coil and means for measuring the extent of said movement.

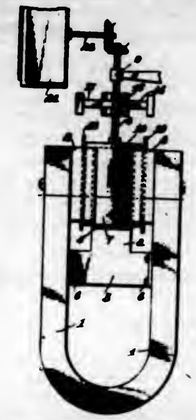

4. In an electrical measuring instrument a permanent magnet for creating a field, a stationary coil and a movable coil, said stationary coil being so located as to shift the permanent magnetic field in proportion to the current which it carries, the torque of movement of the movable coil being proportional to the product of the current in the movable and the fixed coils.

5. In an electrical measuring instrument a permanent magnet for creating a field, a stationary coil thereon and a movable coil, one of said coils being adapted to carry current proportional to the load and the other to carry current proportional to the pressure, said stationary coil being so located as to shift the permanent magnetic field in proportion to the current which it carries.

6. In an electrical measuring instrument a permanent magnet for creating a field, a stationary coil or coils for creating a field to distort or displace said permanent field, a movable-coil armature in a balanced condition with relation to said permanent field when no current is traversing the stationary coil, the armature-coil and the stationary coil carrying current proportional to the current and the voltage so as to produce a torque proportional to the energy consumed.

810,286. APPARATUS FOR DAMPING AND AFFIXING ADHESIVE STAMPS. BASTIAAN C. A. VORSTER, Amsterdam, Netherlands. Filed Apr. 27, 1905. Serial No. 257,674.

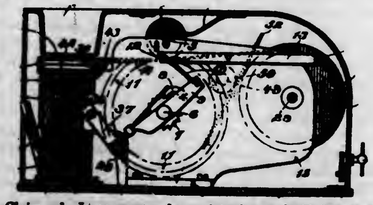

Claim.—1. In apparatus for moistening and affixing stamps of the kind herein described, the combination with a feed-drum for feeding stamps forward, of a ratchet-wheel secured thereto, a spring-actuated lever with pawl engaging said ratchet-wheel, a spring-supported frame surrounding the moistening-pad adapted to be depressed by a stamp-detaching instrument, and connecting means between said frame and said lever to actuate the latter by the depression and subsequent rising of the frame so as to turn the drum a distance corresponding to the length of a stamp substantially as described.

2. In apparatus for moistening and affixing stamps of the kind herein described, the combination with a drum for feeding stamps forward, of means to impart a step-by-step motion to said drum, consist-

ing of a spring-stud on a lever adapted to engage with recesses formed at equal distances apart around the periphery of the drum and of fly-wheel mechanism connected to said drum by gear-wheels, substantially as described.

3. In apparatus for moistening and affixing stamps of the kind herein described the combination with a feed-drum for feeding stamps forward, of a moistening-pad, of a transverse bar with sharp edge arranged at the side of the moistening-pad and adapted to cooperate with the edge of the detatching instrument to shear off the stamp on the pad when said instrument is pressed down thereon, substantially as described.

4. In apparatus for moistening and affixing stamps of the kind herein described the combination with a feed-drum for feeding stamp forward of a moistening-pad composed of three wicks arranged vertically side by side, and of thin transverse bars as a support for the stamp upon the pad, substantially as described.

810,237. MEANS FOR CONTROLLING THE LEVEL OF LIQUIDS. WILLARD WADSWORTH, Plainfield, N. J., assignor to William B. Wadsworth, Plainfield, N. J. Filed May 6, 1905. Serial No. 259,136.

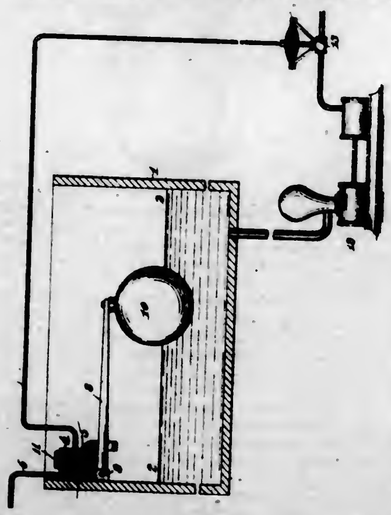

Claim.—1. In apparatus of the class described, the combination with a float, and oppositely-disposed inlet and exhaust valves directly engaged thereby, of a pump, a valve controlling motive fluid therefor, a fluid-pressure motor for said controlling-valve, and ducts controlled by said inlet and exhaust valves for admitting fluid under pressure to said motor, and exhausting same therefrom.

2. In apparatus of the class described, the combination with a pump, a valve for controlling motive fluid therefor, and a fluid-pressure motor for said valve, of a float, including a pivoted lever, and inlet and exhaust valves directly engaged by said float-lever, said inlet and exhaust valves arranged for admitting and exhausting fluid under pressure to and from said fluid-pressure motor.

3. In apparatus of the class described, the combination with a pump, a controlling-valve therefor, and a fluid-pressure motor 14 for said valve, of a float 10, a float-lever 8 pivoted at 9 to a valve-casing 3, inlet and exhaust valves 4 and 5, in said casing, and having a stem extending therethrough and engaging the float-lever 8, a spring 11, opposite movements of the valves 4 and 5, and an inlet and distributing pipe 6 and 7 for controlling passage of motive fluid to and from the fluid-pressure motor 14, substantially as set forth.

810,238. TOOL HOLDING AND ADJUSTING DEVICE. FRANK W. WATTS, Springfield, Mass. Filed Sept. 27, 1904. Serial No. 226,127.

Claim.—The combination with a tool carrier or holder having a cylindrical socket therein, opening to one side of the holder, and having a hole of smaller diameter continued from said socket through to the opposite side of the holder, and having a hole or bore penetrating the body of the holder and intersecting said cylindrical socket at the side thereof, a tool or cutter and a cylindrical hub appurtenant thereto, provided with teeth circumferentially arranged, and fitting and inclosed within said socket, a screw-shaft endwise non-movable, fitted and rotatable in said bore of the carrier, traversing the side of said socket, and screw engaging the teeth of said hub, and a bolt having at one end a head and receiving at the other end a nut, passed axially through the carrier and the tool, and said hub, and operative to bind the adjusted tool non-rotatably to the carrier.

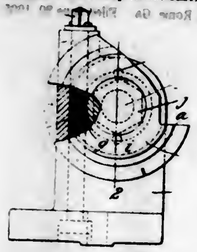

810,239. FEEDING ATTACHMENT FOR THRESHERS. NELS WALBERG and FRED J. MCARTHUR, Aberdeen, S. D. Filed Aug. 29, 1903. Serial No. 171,374.

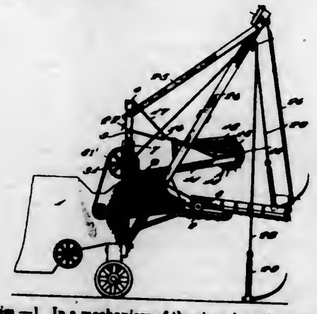

Claim.—1. In a mechanism of the class described, the combination with grain-conveying means, of a drum for actuating the same, a shaft for imparting movement to said drum, a clutch member carried by said shaft, bars fixed to said drum, gripping devices carried by said bars, and means for moving said drum into position for causing said gripping devices to engage said clutch member.

2. In a mechanism of the class described, the combination with grain-feeding means, of a drum for actuating the same, a shaft for driving said drum, a clutch member carried by said shaft, bars fixed to said drum formed with slotted end, gripping devices secured to said bars by attaching means passed through said slots, and rods engaging said gripping devices for spreading the same.

3. In a hoist for threshing-machines, the combination with a rotatably-mounted shaft, of a pulley fixed thereto formed with a clutch member, a drum mounted on said shaft, a bar carried by said drum, a pair of gripping devices adapted to engage the clutch member of said pulley, means adjustably connecting said bar to said grippers, means for adjustably spacing said grippers apart, and hoisting apparatus actuated by said drum.

4. In a hoist for threshing-machines, the combination with a rotatably-mounted shaft, of a clutch member carried thereby, a rotatably-mounted drum, bars connected to said drum and formed with slots at their end, gripping devices carried by said bars, means extending through said slots for adjustably securing said gripping devices to said bars, spacing-rods interposed between said gripping devices, means carried by said rod for adjustably spacing said gripping devices apart, said gripping devices being adapted to be moved into and out of engagement with said clutch member, and hoisting apparatus actuated by said drum.

810,240. ELECTRIC-MOTOR-CONTROLLER REGULATOR. PAUL A. WETZEL, Haywood, Ill. Filed June 14, 1905. Serial No. 265,213.

Claim.—1. In an electric controller-regulator of the kind described, the combination of a main body having a base, B, a cylindrical part B^3, a series of interior ratchet-teeth, B^4, and B^5, a series of studs, C and C', and a central aperture, B^6, said body being adapted to fit over an electric controller-rod and to be affixed to a controller, with a revoluble cover, D, having a central aperture, E, a jaw, F, adapted to receive the shank of a handle of an electric controller; and a pawl, J, pivotally attached to the inside of said cover, said pawl being adapted to be engaged by the studs, C and C', and to be deflected thereby into engagement with said ratchet-teeth; and means for returning said pawl from its deflected position to a normal position, J^4, substantially as described and for the purposes specified.

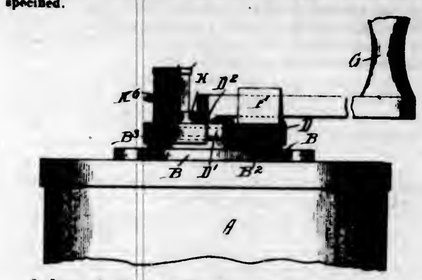

2. In an electric controller-regulator of the kind described a main body having a base, B, a cylindrical projection, B^3, a series of interior ratchet-teeth, B^4 and B^5, a series of studs, C and C', and an aperture, B^6; with a cover, D, having a central aperture, E, and a jaw, F; means for securing said cover on the base part, B^3, and of permitting the cover to be revolved thereon; and a pawl, J, pivotally supported in said cover, said pawl having a post, J^3, adapted to be engaged by the studs, C and C', and the pawl be hereby deflected when the cover is revolved, and means for returning said pawl from the deflected position to the normal position of rest, J^4, substantially as described and for the purposes specified.

3. In an electric controller-regulator of the kind described the combination of a main cylindrical body, having interior ratchet-teeth, studs and a central aperture, with a revoluble cover, having a central aperture, E, a jaw, F, and a stop-block, L, and a pawl, J, pivotally supported in said cover, said pawl being adapted to be engaged by the studs, C and C', in the said main body, and to be deflected thereby into engagement with the said ratchet-teeth when said cover is revolved; and means for returning said pawl from its deflected positions to a normal position, J^4, substantially as described and for the purposes specified.

4. In an electrical controller-regulator of the kind described, the combination of a main cylindrical body having a series of interior ratchet-teeth, and a series of studs, C and C', and a central aperture, B^6, and a cover, D, adapted to fit and to be revolved on said main body, said cover having a central aperture, E, a jaw, F, and stop-block, L; with a pawl, J, pivotally supported in said cover, said pawl being adapted to be engaged by the said studs and to be deflected thereby into engagement with the said ratchet-teeth when said cover is revolved on said main body; and means for returning said pawl when so deflected to a normal position of rest, J^4; substantially as described and for the purposes specified.

5. In an electric controller of the kind described the combination of a main cylindrical body having a series of interior ratchet-teeth, a series of studs and a central aperture, B^6, and a cover, D, adapted to fit and be revolved on said main body, said cover having a central aperture, E, a jaw, F, and a stop-block, L; with a pawl, J, pivotally supported in said cover, said pawl having a post, J^3, adapted to be engaged by the said studs, and to thereby deflect said pawl into engagement with the said ratchet-teeth when said cover is revolved on said main body; and means for returning said pawl when so deflected, to a normal position of rest; substantially as described and for the purposes specified.

6. In an electric controller-regulator of the kind described, the combination of a main cylindrical body having a series of interior ratchet-teeth, a series of studs and a central aperture, and a cover, D, revolubly attached to said main body, said cover having a central aperture, E, a jaw, F, a stop-block, L, and a pivot-stud, I, said stud having a countersunk recess, I', with a pawl, J, adapted to be supported on said pivot-stud, said pawl being provided with a spring, J^3, and a pin, J^4, actuated by said spring, and being thereby forced into the recess, I', in the pivot-stud, I, said spring and pin being adapted to hold said pawl in a position of rest on said pivot-stud, and to return it to said position when deflected therefrom; substantially as described and for the purposes specified.

7. In an electric controller-regulator of the kind described the combination of a main cylindrical body having a series of interior ratchet-teeth, a series of studs, C and C', a central aperture, B^6; and a cover, D, revolubly attached to said main body, said cover having a central aperture, E, a jaw, F, a stop-block, L, and a pivot-stud, I, with a pawl, J, supported on the said pivot-stud, said pawl having an arm, K, extending through a suitable slot, K', in the cover, D, and a pair of cups, K^2 and K^3, attached to said arm, and a box, K^4, covering said cups and arm; said box being provided with an air-valve, K^5, and being attached to said cover; substantially as described and for the purposes specified.

8. The combination with an electric controller of a controller-regulator herein described, comprising a main body having a series of ratchet-teeth, a series of studs, and a central aperture, said body being provided with a cover revolubly secured thereon, said cover having a central aperture, a jaw, a pivot-stud, and stop-block, and a pawl supported on said pivot-stud, said pawl being adapted to be engaged by said studs and to be thereby deflected into engagement with said ratchet-teeth; and means for returning said pawl from the deflected positions to a position of rest; and means for regulating the time of the movement of said pawl from engagement with said teeth to a position of rest; substantially as described and for the purposes specified.

9. The combination with an electric controller of a controller-regulator, herein described, comprising a main body having a series of ratchet-teeth, a series of studs, and a central aperture, and a cover revolubly secured on said main body, said cover having a central aperture, a jaw, a pivot-stud, and a stop-block, and a pawl supported on said pivot-stud, said pawl being adapted to be engaged by said series of studs, and to be thereby deflected when said cover is revolved and means for returning said pawl from the deflected positions to a position of rest; substantially as described and for the purposes specified.

810,241. APPARATUS FOR REDUCING THE ENDS OF TUBES. MALCOLM WILKINSON, Shelby, Ohio, assignor to Shelby Steel Tube Company, Pittsburg, Pa., a Corporation of New Jersey. Filed Sept. 10, 1904. Serial No. 223,906.

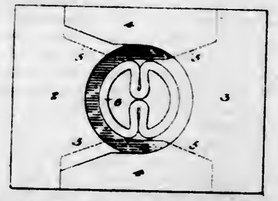

Claim.—1. Apparatus for reducing the ends of tubes, comprising dies adapted to hold the tube in flattened condition at opposite sides, and when so held to subject it to compression at the other sides at opposite points to cause the non-flattened sides to approach each other; substantially as described

2. Apparatus for reducing the ends of tubes, comprising dies having an initial cavity for the end portion of the tube, acting portions which first flatten the tube in said cavity, and other acting portions which subsequently compress the non-flattened sides of the flattened tube at right angles to the direction in which it was flattened, to force said sides toward each other and thereby cause them to fold inwardly; substantially as described.

3. Apparatus for reducing the ends of tubes, comprising dies having a plurality of interfitting slots and projections recessed to form an initial cavity for the tube, and having acting portions which first flatten the tube to general oval form without materially changing the length of its circumference, and subsequently compressing the non-flattened sides of the tube toward each other; substantially as described.

4. The combination of die parts formed with interfitted comb-like projections having an initial cavity adapted to compress and flatten the tube in one direction and when more fully closed to compress the tube at right angles thereto; substantially as described.

5. The combination of interfitting die parts having when fully opened middle inclined surfaces 5 which flatten the tube, and end portions 6 adapted to compress the non-flattened sides of the tube

after it has been flattened by the surfaces 5; substantially as described.

6. In apparatus for reducing the ends of tubes, dies having surfaces which first flatten the tube, and other surfaces which subsequently compress the non-flattened sides toward each other to therewith cause opposite portions of the flattened sides to fold inwardly toward each other; substantially as described.

810,242. SASH-OPERATING MECHANISM. ALVIN O. WOLF, Dayton, Ohio. Filed Mar. 31, 1904. Serial No. 200,267.

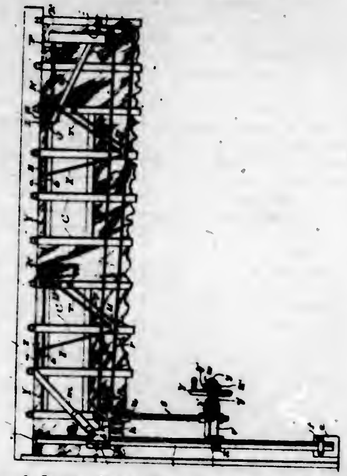

Claim.—1. In a sash-operating apparatus, the combination, with an inclosing structure comprising a ridge-pole and sashes, of a hanger connected with said ridge-pole, an upright, brace devices connected with said pole and upright, said hanger, upright and brace devices being located below the ridge-pole and laterally offset with respect to the vertical plane thereof, a cable, sash-rods directly connecting said cable with the sashes, to which their ends are respectively pivoted, supporting-wheels for said cable carried by said hanger and by said upright and brace devices respectively, and operating devices to rotate one of said wheels in either direction, substantially as described.

2. In a sash-operating apparatus, the combination, with hanger and brace devices, and reversible devices for supporting them at either side of a fixed part of the structure, of a cable, sash-rods connected thereto and adapted for connection with the sashes, supporting-wheels for said cable carried by said hanger and brace devices, and means to operate one of said supporting-wheels in either direction.

3. In a sash-operating apparatus, the combination, with a hanger, and brackets to connect it with a ridge-pole, of a wheel carried by said hanger, a column and brace devices to connect it with a house structure, a bearing-plate carried by the column and having mounted therein another supporting-wheel and operating-gears, hand-operated gears connected with the first-named gears, a cable mounted on the supporting-wheels, and brace-rods and sash-lifters connected with the cable and adapted respectively to connect with the house structure and the sashes.

4. In a sash-operating apparatus, the combination, with a column, of a bearing-plate connected thereto, a shaft in said bearing carrying a bevel-gear and a sprocket-wheel, a driving-shaft connected to said bearing and having a pinion meshing with said gear, another bearing-plate connected to the column and carrying a hand-operated pinion, and a gear-wheel meshing with said pinion and mounted on the driving-shaft.

5. In a sash-operating apparatus, the combination, with a column, of a bearing-plate connected thereto, a reversible fork connected to the bearing-plate and having a brace adapted for connection with a ridge-pole, and an arm on the column similarly adapted for connection with the ridge-pole, whereby the column and the parts it sustains may be held to, but at one side, of the ridge-pole.

6. In a sash-operating apparatus, the combination, with a ridge-pole and a hanger including a brace, of reversible brackets connected with the hanger and brace and adapted for connection with the ridge-pole, the reversibility of the brackets acting to sustain the hanger and braces at either side of such pole.

7. In a sash-operating apparatus, the combination, with a hanger, of a lever pivoted thereto, a cable-supporting wheel carried by the lever, and means to adjust the lever to vary the position of said wheel to affect the tension of the cable.

8. In a sash-operating apparatus, the combination, with a hanger and brace devices adapted for connection with a house structure, of a cable, sash-rods connected thereto and adapted to connect with the sashes, supporting-wheels for said cable carried by said hanger and brace devices, and operating devices to rotate one of said wheels in either direction, the other wheel being eccentrically mounted to lengthen the cable so as to compensate for the arc described by the sash-rods when the sashes are being lifted.

9. In a sash-operating apparatus, the combination, with a sash-operating cable, sash-rods secured to the cable and to the sash, wheels upon which the cable is carried, one of them being eccentrically mounted for the purpose set forth.

810,243. SHOW-CASE. GEORGE C. WRIGHT, Cleveland, Ohio. Filed Mar. 24, 1905. Serial No. 251,746.

Claim.—1. In a show-case, the combination with a glass front and a wooden back, of a glass end door comprising a single unframed glass plate carried by a vertical strip hinged to the back, said carrying being accomplished by a metal channel-shaped member secured to one end of the strip and projecting horizontally therefrom and extending onto and secured to the horizontal edge of the door.

2. In a show-case, the combination of a hinged strip, a glass door, a channel-shaped member secured to the strip and extending onto the upper edge of the glass door and secured to it, the vertical edge of the door opposite the strip being free from framing.

3. In a show-case, the combination of a glass door, consisting of a single plate of glass having its vertical edges unframed a swinging channel-shaped member extending along the upper edge of the glass door and secured to it, said member extending downwardly onto the far edge of the door to prevent its sagging.

4. In a show-case, the combination of a glass door, of a pair of channel-shaped members in which the upper and lower edges of the door seat respectively, said members being secured to the door, and a hinge construction connected with said members, the vertical edges of the door being unframed.

5. In a show-case, the combination with the back, a strip hinged thereto, a pair of members secured to said strip, a glass door seating at its upper and lower edges in said members respectively, the upper one of said members being channel-shaped and extending the full width of the door and having means passing onto the far edge thereof.

810,244. ELECTRIC-LAMP BRACKET. GEORGE C. WRIGHT, Cleveland, Ohio. Filed Mar. 30, 1904. Serial No. 200,696.

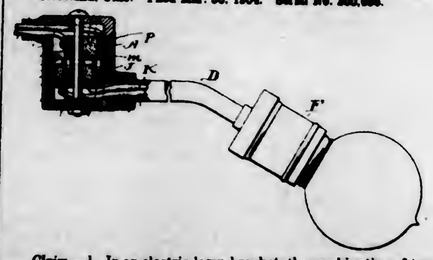

Claim.—1. In an electric-lamp bracket, the combination of two hollow members each comprising a cup-like body with a tubular extension, such cups being adapted to fit together, a pivot-bolt by which said members are pivotally connected, solid insulating-blocks secured in said members and having faces close to each other, a pair of arcual contact-plates carried by such face of one of the members, a pair of metal stripe set into slots in the other member and extending over onto the face of that member and adapted to be electrically connected with said arcual plates.

2. In an electric-lamp bracket, the combination of a hollow member having a tubular projection by which it may be fixed to a suitable support, a second hollow member which is pivotally connected to such fixed member and has a tubular projection, an insulating-block in one of said members, metallic contact-plates carried thereby, contact-wires entering the hollow member through said tubular projection and fastened to said contact-plates, an insulating-block in the other hollow member having slots in its sides, two metallic pieces which enter said slots and have their ends turned over onto the distant face of said block and are connected with two wires leading in from the corresponding tubular projection, said metallic pieces being electrically connected with members which contact with the metallic contact-plates first mentioned.

3. In an electric-lamp bracket, the combination of a hollow member, an insulating-block therein, metallic contact-plates carried thereby, contact-wires entering the hollow member and fastened to said contact-plates, a second hollow member which is pivotally connected to the member first mentioned, an insulating-block in said second hollow member having openings through it, two metallic pieces which occupy such openings and have their ends turned over upon the two faces of said last-mentioned block, the ends on the face nearest the other block being at different distance from the axis to enable individual connection between each of said metallic pieces and the corresponding contact-plate, and two wires whose ends occupy recesses in the block in said second hollow member and are connected with said metallic pieces by screws passing through said last-mentioned block.

4. In an electric-lamp bracket, the combination of a hollow member having a tubular projection by which it may be connected to a suitable support, a hollow member which is pivotally connected to said fixed member, an insulating contact-block in the fixed member, metallic contact-plates secured thereto, conductor-wires entering the hollow member through said tubular projection, and screws for fastening said wires to said contact-plates, an insulating-block in the other hollow bracket member having vertical slots in its sides, two metallic pieces having vertical members which enter said slots and have their ends turned over against the upper and lower faces of said contact-block, there being holes passing down through those metallic plates which lie against the upper surface of said insulating-block and down into said block, pins movable in said holes, spring-seated in said holes and forcing said springs outward, and lamp-wires, and screws for electrically connecting them to said metallic pieces, a hollow lamp-supporting arm secured to the movable bracket member, and lamp-socket secured to said arm.

810,245. CAN-HEADING MACHINE. BENJAMIN ADRIANCE and AMOS CALLESON, Brooklyn, N. Y.; said Calleson assignor to said Adriance. Filed June 17, 1903. Serial No. 161,777.

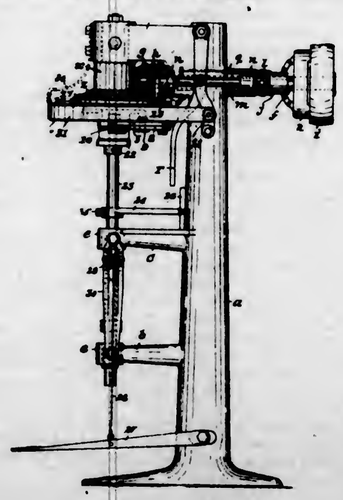

Claim.—1. The combination of means for holding the article to be shaped, means for shaping the article, and means for actuating the shaping means, all disposed with their axes approximately coincident, said third-named means being rotary with reference to said second-named means to bring the shaping means into and out of engagement with the article, and one of said first and second named means being rotary with reference to the other to cause the shaping means to travel around the article, substantially as described.

2. The combination, with means for holding the article to be shaped and means for shaping the same, said shaping means being movable rotatively around said holding means, of means, movable rotatively and concentrically with reference to the movement of said shaping means around the holding means, for actuating said shaping means to bring the same into shaping contact with said article, substantially as described.

3. The combination, with means for holding the article to be shaped, of a rotary part, a shaping-tool carried by said rotary part, and a cam engageable with said tool to actuate the same, said cam being rotary relatively to, and having its axis approximately coincident with that of, said rotary part, substantially as described.

4. The combination, with means for holding the article to be shaped, of a shaping-tool, a part carrying said tool, and a cam engageable with said tool to actuate the same, said holding means and the tool-carrying part and the cam being concentrically disposed and said cam being movable rotatively and relatively to said tool-carrying part, substantially as described.

5. The combination, with means for holding the article to be shaped, of a lever, means for guiding one end of said lever in approximate coincidence with the contour of the article being operated upon, a rotary part in which said lever is fulcrumed, a shaping-tool carried by said lever, and a cam engageable with and adapted to actuate said tool, said rotary part and said cam being concentrically disposed and the latter being revoluble relatively to the former, substantially as described.

6. The combination, with means for holding the article to be shaped, of a lever, means for guiding one end of said lever in approximate coincidence with the article being operated upon, a rotary part in which said lever is fulcrumed, a shaping-tool fulcrumed in said lever, and a cam engaging with and adapted to actuate said tool, said rotary part and said cam being concentrically disposed and the latter being revoluble relatively to the former, substantially as described.

7. The combination, with means for holding the article to be shaped, of shaping-tools, a rotary part carrying said tools, and cams engageable with said tools to actuate the same, said rotary part and the cams being concentrically disposed and the latter rotative relatively to the former, substantially as described.

810,246. WEATHER-BOARD GAGE. LEMAN C. ANDERSON, Indianapolis, Ind. Filed Mar. 13, 1905. Serial No. 249,903.

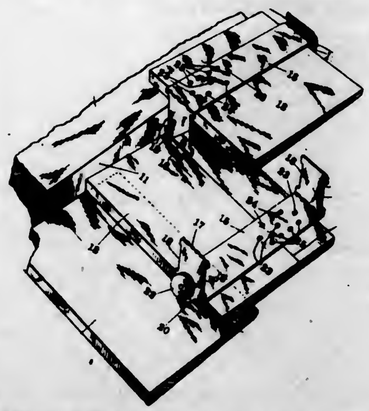

Claim.—1. A weather-board gage consisting of, a main body portion having a straight edge, and end pieces arranged at an angle to said body portion each with the end of an edge in the plane of the straight edge portion of the main body and an intermediate portion of said edge removed, an abutment carried by said tool and adapted

to engage the edge of a weather-board, the said main body being provided with means by which a marking instrument may be maintained at a predetermined distance from said abutment.

2. A weather-board gage consisting of, a main body having downturned ends, said main body having its edges straight, and said downturned ends having intermediate portions of their edges removed and the ends of their edges in the plane of the corresponding straight edges of the main body, an abutment carried by said tool and adapted to engage the edge of a weather-board, the said main body being provided with means by which a marking instrument may be maintained at a predetermined distance from said abutment.

3. A weather-board gage consisting of, a main body, and end members arranged at an angle thereto, said end members each having at its end a transverse projecting portion in the plane of the straight edge of the main body portion, an abutment carried by said tool and adapted to engage the edge of a weather-board, the said main body being provided with means by which a marking instrument may be maintained at a predetermined distance from said abutment.

4. A weather-board gage consisting of, a main body having ends downturned from said body at an angle thereto and one of said ends doubled back upon itself to form a spring portion the end of which projects above the main body, and means for adjusting said spring portion toward and from the main body, the said main body having perforations formed through it and arranged at various distances from the projecting portion of the spring member, and the said downturned portions having intermediate portions of their edges removed, for the purpose set forth.

5. A weather-board gage consisting of, a main body having ends downturned therefrom at an angle thereto, the said downturned portions having intermediate portions of their edges removed, a lip carried by the main body at one end and projecting from the surface opposite to that from which the adjacent downturned end projects, the said main body having formed through it a plurality of perforations at various distances from said projecting lip, for the purposes set forth.

810,247. FOLDING BABY-CARRIAGE AND CRADLE. IGNATIUS ANDREWS, New York, N. Y. Filed Jan. 7, 1905. Serial No. 240,006.

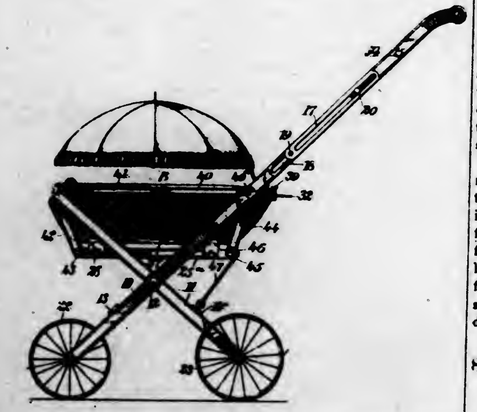

Claim.—1. In baby-carriages, a folding, wheel-supported support, a body provided with hinged side and end members, and spreader-bars for the side members, which spreader-bars also serve as supports for the end members, a rocking connection between the body and said support, and means for holding the body stationary.

2. In baby-carriages, crossed and pivotally-connected legs, wheels carried by the legs, a body comprising a bottom, hinged side and end members, spreader-bars for the side members adjustably connected therewith, which spreader-bars also serve as supports for the end members, pivotally-connected links pivotally connected with the legs at each side of the structure, suspension-links extending from the pivotally-connected links, which suspension-links are pivotally connected with the bottom portion of the body, and means for holding all the parts in folded position.

3. In baby-carriages, crossed and pivotally-connected legs, wheels carried by the legs, a body comprising a bottom, and hinged side and end members, spreader-bars for the side members adjustably connected therewith, which spreader-bars also serve as supports for the end members, pivotally-connected links pivotally connected with the legs at each side of the structure, suspension-links extending from the pivotally-connected links, which suspension-links are pivotally connected with the bottom portion of the body, means for holding all the parts in folded position, locking devices for the body, acting to hold it stationary, and a locking device for an end member of the body, for the purpose specified.

810,248. STEAM-VALVE. JAMES D. AUSTIN and EDWARD N. AUSTIN, Campbell Hill, Ill., assignors of one-third to Harvey Hoover, Campbell Hill, Ill. Filed Mar. 15, 1905. Serial No. 250,269.

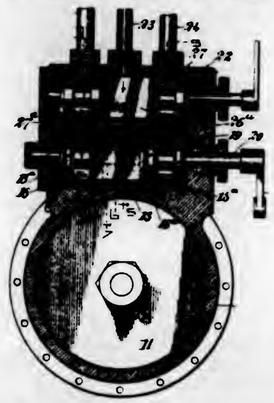

Claim.—1. In an engine, a piston-cylinder, a main-valve casing arranged therein, a reversing-valve casing having communication with the main-valve casing, a main valve in the first main casing and having a flattened body portion, oppositely-extended segmental flanges at the ends of the body portion, disks secured to and spaced from said flanges, packing-rings arranged in said disks and flanges, a reversing-valve in the reversing-valve casing and having a flattened body portion, oppositely-extended segmental flanges at the ends thereof, disks spaced from said flanges, and oppositely-extended cut-off wings arranged between the flanges and disks, the said reversing-valve being longitudinally tapered.

2. In an engine, a piston-cylinder, a main-valve casing arranged thereon, a reversing-valve casing having port communication with the main-valve casing, a main valve in the first-named casing having a flattened body portion, oppositely-extended segmental flanges at the ends of the body portion, disks secured to and spaced from said flanges, a reversing-valve in the reversing-valve casing having a flattened body portion, oppositely-extended segmental flanges at the ends thereof, disks spaced from said flanges, and oppositely-extended cut-off wings arranged between the flanges and disks.

810,249. METHOD OF REFINING COPPER. RALPH BAGGALEY, Pittsburg, Pa., CHARLES M. ALLEN, Lolo, Mont., and EDWARD W. LINDQUIST, Chicago, Ill.; said Allen and Lindquist assignors to said Baggaley. Filed June 5, 1905. Serial No. 263,693.

Claim.—1. The method of refining copper which consists in injecting into a bath of molten copper, granulated or comminuted hydrocarbon-gas-producing material, non-abrasive and of such nature that it will not melt and clog in the twyers at the temperature there present; substantially as described.

2. The method of refining copper which consists in injecting sawdust into a bath of molten copper; substantially as described.

3. The method of refining copper which consists in injecting sawdust into a bath of molten copper in a Bessemer converter after oxidation; substantially as described.

4. The method of refining copper which consists in injecting sawdust into a bath of molten copper in a Bessemer converter before oxidation is completed and utilizing air under pressure as the propelling medium; substantially as described.

5. The method of refining copper which consists in injecting with air-pressure into the molten copper before suboxid has been formed, hydrocarbon-gas-producing material of a non-abrasive kind in a granulated or comminuted form; substantially as described.

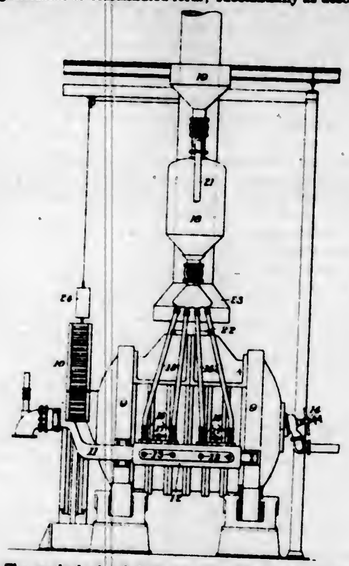

6. The method of refining copper which consists in injecting hydrocarbon-gas-producing material of a non-abrasive kind, in a granulated or comminuted form, into a molten bath of black or blister copper by means of an air-blast under pressure before the stage of oxidation has been reached where appreciable amounts of suboxid have been formed in the bath; substantially as described.

7. The method of refining copper, which consists in injecting sawdust into a molten bath of copper by means of an air-blast, before the completion of the converting operation and in the same vessel in which the converting action has brought the bath of molten copper to a point ready for refining; substantially as described.

8. The method of refining copper, which consists in injecting into a bath of molten copper, sawdust whose hydrocarbon-gas-producing power has been augmented with fusible hydrocarbon; substantially as described.

810,250. SUGAR-MACHINE. OTTO B. BARTH, Loveland, Colo. Filed Apr. 17, 1905. Serial No. 256,027.

Claim.—1. A machine of the class described, comprising a drum having a cylindrical perforated inner wall, divided into an upper and a lower compartment and provided with vacuum-pipes communicating with said compartments; a revoluble tubular perforated member in said drum, having an upper and a lower compartment and a screw-wing, the latter coacting with the inner wall of the drum, means to introduce steam and blue water respectively into the upper and lower compartments of the revoluble perforated tubular element, and means to discharge the sugar from the space between said perforated element and the perforated inner wall of the drum.

2. In a machine of the class described, the combination of a drum having an upper and a lower compartment and a perforated cylindrical inner wall, vacuum-pipes leading from the said compartments of the drum, a revoluble tubular perforated element in said drum, divided into upper and lower compartments and having a screw-wing to scrape the perforated inner wall of the drum, means to introduce steam and blue water respectively into the upper and lower compartments of said revoluble perforated element, and a revoluble valve in the bottom of the said drum in the space between said revoluble perforated element and the perforated inner wall of the drum, substantially as described.

3. A machine of the class described comprising a drum having a cylindrical perforated inner wall, divided into an upper and a lower compartment, and provided with vacuum-pipes communicating with said compartments; a revoluble tubular perforated member in said drum, having an upper and a lower compartment and a screw-wing, the latter coacting with the inner wall of the drum, means to introduce steam and blue water, respectively, into the upper and lower compartments of the revoluble perforated tubular element, means to discharge the sugar from the space between the said perforated element and the perforated inner wall of the drum, a compartment below the drum to receive the sugar discharged from the said space, and means to discharge sugar from said compartment.

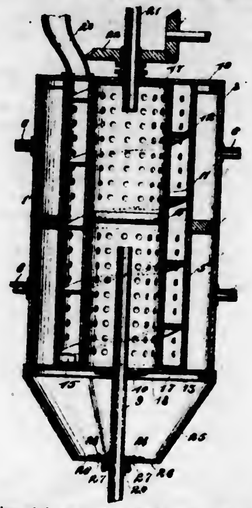

4. A machine of the class described comprising a drum having a cylindrical perforated inner wall, divided into an upper and a lower compartment, and provided with vacuum-pipes communicating with said compartments, a revoluble tubular perforated member in said drum, having an upper and a lower compartment and a screw-wing, the latter coacting with the inner wall of the drum, means to introduce steam and blue water, respectively, into the upper and lower compartments of the revoluble perforated tubular element, means to discharge the sugar from the space between the said perforated element and the perforated inner wall of the drum, a compartment below the drum to receive the sugar discharged from the said space, and means to automatically discharge sugar from the said compartment.

5. A machine of the class described comprising a drum having a cylindrical perforated inner wall, divided into an upper and a lower compartment, and provided with vacuum-pipes communicating with said compartments; a revoluble tubular perforated member in said drum, having an upper and a lower compartment and a screw-wing, the latter coacting with the inner wall of the drum, means to introduce steam and blue water, respectively, into the upper and lower compartments of the revoluble perforated tubular element, means to discharge the sugar from the space between the said perforated element and the perforated inner wall of the drum, a compartment below the drum to receive the sugar discharged from the said space, and spring-closed valves to automatically discharge sugar from said compartments.

810,251. MACHINE FOR WASHING SAND. RICHARD O. BIDWELL, South Vineland, N. J. Filed July 13, 1905. Serial No. 269,391.

Claim.—1. A device of the character described, comprising a number of inclined tanks or receptacles all arranged in longitudinal alinement with each other and one having one end overhanging the contiguous end of the other tank, and successive ones having lateral chutes or troughs discharging or delivering one into the other, means effective to take the contents of one tank to another and finally discharge the same from each end of the series of tanks, and means for feeding the material to be treated to one of the intermediate tanks.

2. A device of the character described, comprising a number of inclined tanks or receptacles, all arranged in longitudinal alinement with each other and one having one end overhanging the contiguous end of the other tank and successive ones having lateral

chutes or troughs discharging or delivering one into the other, endless belts of elevators arranged to take the contents of one tank to another and finally discharge the same from each end of the series of tanks and means for feeding the material to be treated to one of the intermediate tanks.

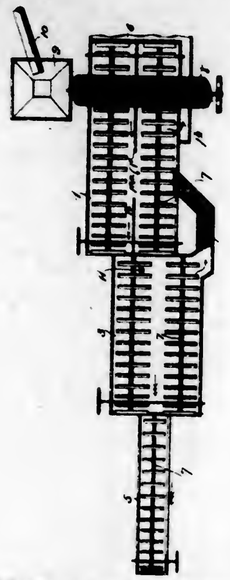

3. A device of the character described, comprising a number of inclined tanks or receptacles all arranged in longitudinal alinement with each other and one having one end overhanging the contiguous end of the other tank and effective to deliver one into the other and a settling-tank arranged intermediately of said inclined tanks, successive tanks having lateral troughs or chutes, one delivering into an adjoining inclined tank and the other delivering into said settling-tank, endless belts of elevators arranged to conduct the contents of one tank to the other, and finally dispose of the same and means for feeding the material to be treated to one of the intermediate tanks.

4. A device of the character described comprising a series of inclined tanks or receptacles, all arranged in longitudinal alinement with each other and one having one end overhanging the contiguous end of the other tank and an intermediate settling-tank supplied from one of said inclined tanks and delivering into another of the latter, said inclined tanks being equipped with endless belts of elevators effective to conduct the contents thereof, one to the other, and finally dispose of the same, and a sieve or screen superposed with relation to an intermediate one of said inclined tanks and adapted to deliver its screened contents thereinto and its unscreened contents beyond said tank.

5. A device of the character described, comprising a number of inclined tanks and a settling-tank, one of said inclined tanks having a trough or chute delivering laterally into an adjoining similar tank and a third inclined tank delivering in like manner into said settling-tank, two of the intermediate tanks being inclined in the same direction and the third intermediate tank being oppositely inclined about at the same general angle to the latter, and the end tanks being more precipitately inclined than the foregoing tanks and oppositely to one another, endless belts of elevators arranged in connection with said inclined tanks and effective to deliver the contents thereof at the upper ends of said end tanks, and a feeding or supplying sieve delivering its screened contents into one of said intermediate tanks.

810,252. TURBINE-ENGINE. GASTON C. B. DE BONNEMOSE, Paris, France. Filed Dec. 28, 1904. Serial No. 238,940.

Claim.—1. A rotary turbine device for the purpose specified, having a plurality of buckets composed of conduits, each conduit having a succession of alternating contractions and enlargements of its width, which latter increases in a direction from one end toward the other of the conduit, and having an undeviating central vein through said conduit.

2. A rotary turbine device for the purpose specified, having a plurality of buckets formed of laterally-undulating walls, and of partitions, the same being disposed to form conduits each with a succession of alternating contractions and enlargements of its width, which increase progressing in the direction from one end toward the other of the passage through the conduit, said passage having an undeviating central vein.

3. A rotary turbine device for the purpose specified, having a plurality of buckets, each provided with laterally-undulating walls, the undulations in said opposite walls being so disposed and alined as to form a succession of alternating contractions and enlargements of the passage through the conduit, and substantially normal to the flow of fluid in the turbine.

4. A rotary turbine device for the purpose specified, having a plurality of buckets, each provided with laterally-undulating walls, the undulations in said opposite walls being so disposed and alined as to form a succession of alternating contractions and enlargements of the passage through the conduit, and said buckets each provided at the fluid-outlet with a curved wall to utilize the live force remaining in changing the relative velocity of the fluid.

5. A rotary turbine device for the purpose specified, formed of a disk, hollow interiorly in such a manner as to present a series of undulations substantially normal to the flow of the fluid through the interior of said disk, the interior space thus formed augmenting in section from one end toward the other, as set forth.

6. A rotary turbine device for the purpose specified, formed of a disk, hollow interiorly in such a manner as to present a series of undulations substantially normal to the flow of fluid through the interior of the disk, and presenting also on its outer faces series of similar undulations, and an outer casing in which said disk rotates, said casing serving to receive the counter-pressure from the fluid.

7. A rotary turbine device for the purpose specified, consisting of a hollow disk constructed interiorly with a series of undulations substantially normal to the flow of the fluid within the disk, and with a series of undulations on each of its outer faces, and a casing in which the disk rotates, said casing having a series of undulalations on the inner faces of its walls, which are substantially normal to those of the disk.

8. A rotary turbine-engine, having a plurality of fixed adjutages for the supply of the fluid, a rotary part, a ring of buckets carried on the rotary part and separated by partitions provided at their inner ends each with a curved blade F, each bucket having a conduit for fluid extending through it, and said conduit having contractions formed by undulations in its lateral walls.

810,253. HYDROCARBON-BURNER. JOHN R. BOOKS, Nashville, Tenn. Filed June 24, 1905. Serial No. 266,741.

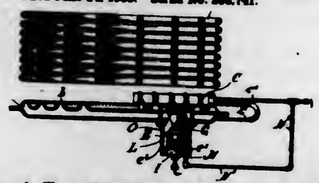

Claim.—1. The combination of a main burner, a casing open at the bottom and permanently attached to the main burner, a cup constituting an initial burner and having a detachable connection with the casing at its lower end, the lower member of the subburner detachably connected with the cup, and carrying a spraying-nozzle, the upper member of the subburner, means for supporting it on the cup or initial burner, a coil surrounding the upper member, and connected with the spraying-nozzle, a fuel-supply passage with which the coil is also connected, and a fuel-supply pipe detachably connected with the coil, the arrangement being such that all parts of the subburner are supported on the cup or initial burner and are detachable therewith and removable together through the bottom of the fixed casing.

2. The combination of the lower member of the subburner, a cup or initial burner surrounding it and detachably connected therewith, the upper member of the subburner, the yoke resting on the cup clamped thereto and supporting the upper member, a nozzle between the two members, a vapor-coil surrounding the burner, a supply-pipe to which the coil is detachably connected, a boss on the lower member of the burner and a detachable connection between the boss and the coil.

810,254. CLIMBING APPARATUS. HENRY BORNEMAN, Paterson, N. J. Filed Apr. 21, 1905. Serial No. 256,712.

Claim.—1. The combination of a guiding member, and coacting gripping members, the one having on each side of the axial line of the guiding member a projection and the other a recess corresponding projections and recesses fitting into each other, substantially as described.

2. The combination of a guiding member comprising two parts removably connected together, and coacting gripping members pivoted the one in the one and the other in the other of said guiding members, substantially as described.

3. The combination of a guiding member, and coacting gripping members pivoted therein, said gripping members having their gripping portions adjustable to and from each other in their respective gripping members, substantially as described.

810,255. EXPANSION-CONTROLLED APPARATUS. SEYMOUR W. BOUGHTON, Cleveland, Ohio. Filed Mar. 20, 1905. Serial No. 250,936.

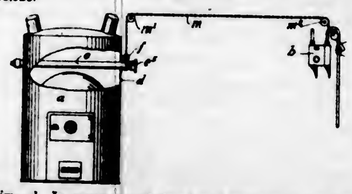

Claim.—1. In apparatus of the class described, the combination with two expansion members formed of materials having different coefficients of expansion, the same being adapted to be subjected to heat, of a retained part or detent associated therewith and held in place thereby, self-actuating mechanism, and connecting means operatively coupling said mechanism and detent, normally withholding the mechanism from actuation, substantially as described.

2. In a heat-controlled appliance, the combination with variably-expanding members, of a detent or retaining part normally gripped or held in place thereby, an opposing part associated with and tending to release said detent, means for connecting said parts, and mechanism adapted to be actuated by the opposing part upon the altered condition of the expanding members, substantially as set forth.

3. The combination with a gas-burning device, of an expansion device associated therewith comprising two members having different coefficients of expansion, a detent normally held securely by said expansion device during the prevalence of a predetermined temperature, a valve controlling the gas-supply to the aforesaid device, mechanism associated therewith normally tending to close the said valve, and connecting means operatively coupling said mechanism and detent, substantially as set forth.

4. The combination with a gas-burning stove or furnace, of an expansion device comprising metal parts unequally affected by heat, a detent or key firmly gripped or held by said device during the prevalence of a predetermined temperature, a valve or cut-off and mechanism associated therewith tending to close the same, and means connecting the detent and the valve; whereby the latter is normally held in an open position during the continuance of a predetermined temperature in said stove or furnace, substantially as set forth.

5. In an expansion device, the combination with the brass and iron expansion members, the same affording a receptacle for a key or detent, a bifurcated or spring-like detent readily inserted in the appropriate recess afforded by the expansion members under conditions of relatively low temperature, an opposing part sustained but normally tending to withdraw said detent from the expansion device, and means for operatively coupling said part and the detent, substantially as set forth.

6. In an expansion-controlled appliance, the combination with a tubular part and a coacting part formed of metals having a different coefficient of expansion, a suitable gripping-recess being provided therebetween, of a detent or wedge inserted in said recess and normally gripped by the expansion members while subject to a predetermined temperature, self-actuating mechanism normally withheld from operation while the detent is held in place, and means for operatively coupling said mechanism and the detent, substantially as set forth.

7. In an expansion-controlled appliance, the combination with a tubular part and a coacting part formed of metals having a different coefficient of expansion, a suitable gripping-recess being provided therebetween, of a detent or wedge inserted in said recess and normally gripped by the expansion members while subject to a predetermined temperature, self-actuating mechanism normally withheld from operation while the detent is held in place, and means for operatively coupling said mechanism and the detent, and electrically-actuated alarm apparatus brought into operation upon the release of the detent, substantially as set forth.

8. In an expansion-controlled appliance, the combination with a tubular iron member, of its coacting brass member contained therein, a slot or recess being provided in the said tubular member, means for adjusting the relative positions of the expansion members, a spring-like detent or key inserted in said slot or recess adapted to conform to varying degrees of expansion of the gripping parts, and a retaining part for temporarily holding the key in place, substantially as set forth.

9. In an expansion device, the combination with the brass and iron expansion members, the same affording a receptacle for a key or detent, a bifurcated or spring-like detent readily inserted in the appropriate recess afforded by the expansion members under conditions of relatively low temperature, an opposing part sustained but normally tending to withdraw said detent from the expansion device, and a retaining member for temporarily holding the key or detent within its receptacle, substantially as set forth.

810,256. SAFETY-BRAKE FOR ELEVATORS. BENTON S. BOWMAN, Millersburg, Pa. Filed July 20, 1905. Serial No. 271,719.

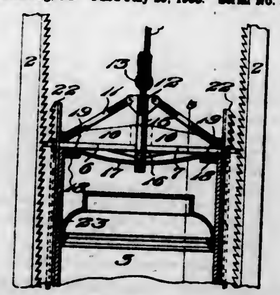

Claim.—1. In a safety-brake for elevators, the combination of guides provided with toothed racks, an elevator-car, spring-retracted dogs carried by the car to engage said racks, a head-frame fixed to the top of the car and comprising a base and side pieces forming a channeled guideway, a sliding fame having a stem operating in an opening in said base and adapted to be connected with and normally held inoperative by the hoisting-rope, a bowed spring disposed below the head-frame and slidably connected at its ends thereto and intermediately to the stem, divergently-arranged levers carried by said sliding frame and movable in the channeled guideway at their free ends to engage the dogs, and guide-pieces carried by the sliding frame to engage the side pieces of the head-frame.

2. In a safety-brake for elevators, the combination of guides provided with toothed racks, an elevator-car having upward extensions from its sides, spring-retracted dogs carried by the car to en-

gage said racks, a head-frame secured to said extensions and comprising a base and side pieces forming a channeled guideway, a bowed spring arranged beneath the base and slidably connected at its ends to the head-frame or extensions, a vertically-movable frame having a stem projecting through an opening in the base of the head-frame and intermediately connected with the bowed spring, said frame being adapted for connection with the hoisting-rope, divergently-arranged levers connected with said vertically-movable frame and movable in the channeled guideway to engage and project the dogs, and guide-pieces carried by said vertically-movable frame to engage the sides of the head-frame.

810,257. BLOWPIPE. WALTER M. BRADLEY, New Haven, Conn. Filed May 22, 1905. Serial No. 261,869.

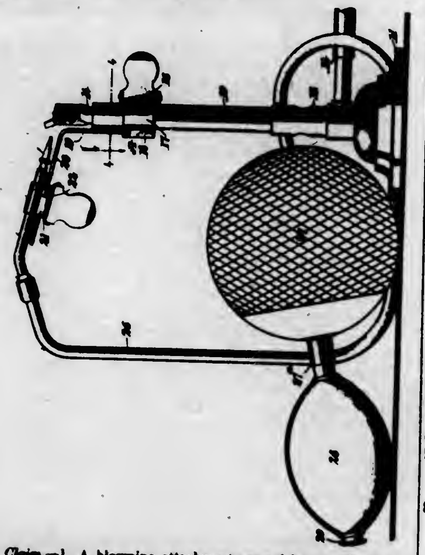

Claim.—1. A blowpipe attachment comprising a pair of pivoted jaws, an arm fixed to one of said jaws, a second pair of pivoted jaws engaging the arm, and a tube carried by one of these last-named jaws.

2. The combination with a burner-tube, of a pair of pivoted jaws for engaging the tube, an arm fixed to one of the said jaws, a second pair of pivoted jaws engaging the arm, a tube-section carried between the second pair of jaws, a flexible tube communicating with the tube-section, and a storage-bulb and a pressure-bulb, communicating with the flexible tube.

3. The combination with a burner-tube, of a pair of pivoted jaws for engaging the tube, an arm fixed to one of said jaws, a second pair of pivoted jaws engaging the arm, a tube-section carried between the second pair of jaws, and a storage-bulb and a pressure-bulb communicating with the tube-section.

810,258. GUN-SIGHT. WILFRED BRAITHWAITE, Biddeford, Conn. Filed Aug. 19, 1905. Serial No. 274,921.

Claim.—1. The combination with a rifle, of a sight-mounting, a plurality of individual stems movably secured in the mounting and means carried by each of said stems adapted to cooperatively contact to insure the proper position of either of the stems with relation to the barrel.

2. The combination with a rifle, of a sight-mounting therefor, a plurality of stems movably secured in said mounting, and projections carried by the stem designed for respective contact to insure a proper position of the stem in use.

3. The combination with a rifle, of a sight-mounting therefor, a plurality of stems pivotally connected to said mounting, each of said stems being hollow to adjustably receive sight-supporting pins, and a telescope removably secured to one of said sight-supporting pins.

4. The combination with a rifle, of a sight-mounting therefor, a plurality of stems pivotally connected to said mounting, each of said stems being hollow to adjustably receive sight-supporting pins, a telescope removably secured to one of said sight-supporting pins, said telescope comprising a barrel, and an adjustable section, the object end of the barrel being provided with a sight-receiving recess.

5. A gun-sight comprising a plate formed with projecting ears, and a plurality of sight-carrying stems, one of said stems having a single projecting leaf, and the other of said stems being formed with a pair of similar leaves, said latter leaves being spaced apart to receive the first-mentioned leaf between them, and all of the leaves being pivotally secured between the ears and the plate.

810,259. HOSE PULLER AND WRINGER. JAMES A. BRITTON, Bethlehem, Pa. Filed Jan. 26, 1905. Serial No. 242,328.

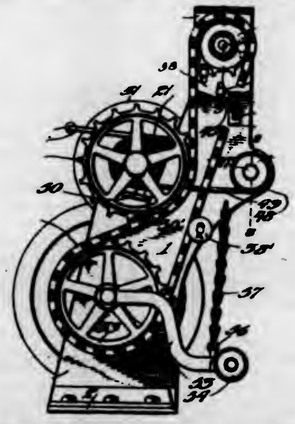

Claim.—1. A hose puller and wringer comprising a vertical supporting-frame having its upper portion disposed in rear of the plane of its lower portion, said frame being provided at the front with stop-shoulders at the junction of said portions, a drive-shaft journaled in the lower portion of the frame and carrying a driving-drum, a sprocket-wheel and operating means, a vertically-swinging frame pivotally mounted in the upper portion of the supporting-frame and adapted to engage said stops at the limit of its downward movement, a shaft journaled at the front of said pivoted frame and carrying a pressure-drum and a sprocket-wheel, a handle connected to the forward portion of the pivoted frame, a sprocket-wheel adjustably mounted upon the upper portion of the frame, a chain passing around said sprocket-wheel and the sprocket-wheel on the drive-shaft and having one of its stretches engaging the sprocket-wheel on the shaft of the pressure-drum, spring-arms attached at their forward ends to the front portion of the swinging frame to force the pressure-drum toward the driving-drum, and means adjustably connecting the rear ends of the spring-arms to the supporting-frame, whereby the pressure of said arms may be varied.

2. A device of the character described, comprising a frame, a stationary drum, a second drum movable toward and from the first drum, a pivoted support for said second drum, pressure devices comprising coil-springs having arms connected to and acting on said pivoted supports, and means associated with the coils of the springs for controlling the pressure and resistance thereof.

3. A device of the character described, comprising a frame, a stationary drum mounted therein, a second drum movable toward and from the first-named drum, a pivot-support for said first-named drum, bosses on the frame, coil-springs engaging said bosses and having arms connected with the pivoted support, heads for adjusting said springs, said heads being adapted to interlock with the bosses, and means for holding the heads in interlocking engagement.

4. In a device of the character described, a drum having a sectional hub composed of counterpart members provided with flanges forming a concaved seat, a concaved sectional rim formed of counterpart members seated between said flanges, a shaft extending through the hub, and means associated with said shaft for holding the counterpart hub and rim parts in assembled relation.

5. In a device of the character described, a drum having a sectional hub comprising counterpart cup-shaped members having their closed ends in abutting relation and their open ends provided with flanges forming a concaved seat, a concaved sectional rim formed of counterpart members occupying said seat and secured to said flanges, a shaft extending through the closed abutting ends of the head-sections, and means upon the shaft within the sockets of said section for clamping the same in assembled relation.

810,260. FENCE. SULLIVAN DUDLEY, Soldiers Home, Cal. Filed June 14, 1905. Serial No. 265,246.

Claim.—1. A fence of the character described, comprising fence-panels and supporting-posts therefor, an embedded post or support to which the panels are pivoted, an intermediate bracing-post pivoted to the embedded post or support and having a wide bearing thereon, and a band connecting the panel-posts and bracing-post together at their upper ends.

2. A fence of the character described, comprising the fence-panels having end posts rounded at their lower ends, embedded posts or supports to which the end posts of the fence-panels are pivoted at their lower ends, pintles D forming such pivots, an intermediate bracing-post having a slot through which the pintle passes and having a wide bearing on the embedded post or support, and a metal band pivoted to one of the panel-posts and engaging the companion posts.

810,261. STEERING-GEAR FOR TRACTION-ENGINES. PETER L. CANTELOU, Hillsboro, Tex. Filed June 26, 1905. Serial No. 267,161.

Claim.—1. The combination with a traction-engine, of a cylinder arranged beneath the body of the engine, a piston in said cylinder, piston-rods projecting through each end of the cylinder, a frame connected to the ends of the piston-rods and arranged to slide therewith, a yoke rigidly fixed to the front axle of the traction-engine, and a pivoted sliding connection between the frame and the yoke; substantially as specified.

2. In a steering-gear for traction-engines, a cylinder arranged beneath the body of the traction-engine, a piston operating in said cylinder, a piston-rod extending through each end of the cylinder, a frame carried by the ends of the piston-rod, a yoke rigidly secured to the front axle of the engine, a bearing at the apex of the yoke, a pin pivoted to the center of the frame of the piston-rod and arranged to slide in the bearing of the yoke, and means whereby fluid-pressure is admitted to each end of the cylinder; substantially as specified.

810,261.

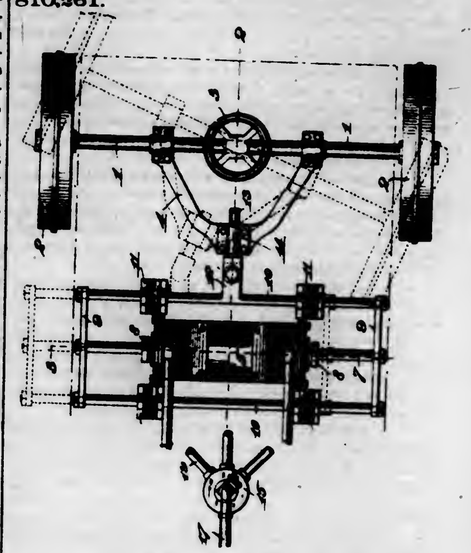

810,262. RAILWAY-TRAFFIC-CONTROLLING APPARATUS. CLARENCE W. COLEMAN, Westfield, N. J., assignor to The Hall Signal Company, a Corporation of Maine. Filed Mar. 2, 1904. Serial No. 196,130.

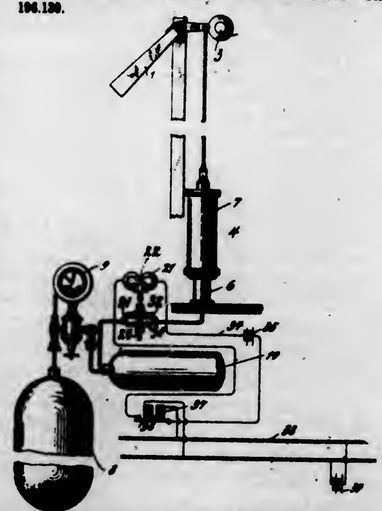

Claim.—1. In a railway-traffic-controlling apparatus, the combination of means for containing a storage-supply of liquefied gas, a motor, railway-traffic-controlling means, means for reducing the pressure of the gas, means for preventing the gas at the reduced pressure from rising above a predetermined point and means for admitting gas at a reduced pressure to said motor, substantially as described.

2. In a railway-traffic-controlling apparatus, the combination of means for containing a storage-supply of carbonic-acid gas, a motor, railway-traffic-controlling means, means for reducing the pressure of the gas, means for preventing the gas at the reduced pressure from rising above a predetermined point and means for admitting gas at a reduced pressure to said motor, substantially as described.

3. In a railway signal apparatus, the combination of means for containing a storage-supply of liquefied gas, a motor, a signal, means

for reducing the pressure of the gas, means for preventing the gas at the reduced pressure from rising above a predetermined point and means for admitting gas at a reduced pressure to said motor, substantially as described.

4. In a railway signal apparatus, the combination of means for containing a storage-supply of carbonic-acid gas, a motor, a signal, means for reducing the pressure of the gas, means for preventing the gas at the reduced pressure from rising above a predetermined point and means for admitting gas at a reduced pressure to said motor, substantially as described.

5. In a railway signal apparatus, the combination of means for containing a storage-supply of liquefied gas, a motor, a pivoted semaphore-blade, means for reducing the pressure of the gas, means for preventing the gas at the reduced pressure from rising above a predetermined point and means for admitting gas at a reduced pressure to said motor, substantially as described.

6. In a railway signal apparatus, the combination of means for containing a storage-supply of liquefied gas, a motor, a pivoted semaphore-blade, a weight for moving it in one direction, connections between the motor and the blade whereby the motor may move the blade in the opposite direction, means for reducing the pressure of the gas, means for preventing the gas at the reduced pressure from rising above a predetermined point, and means for admitting gas at a reduced pressure to said motor, substantially as described.

7. In a railway-traffic-controlling apparatus, the combination of means containing a storage-supply of liquefied gas, a motor, railway-traffic-controlling means, means for reducing the pressure of the gas, means for preventing the gas at the reduced pressure from rising above a predetermined point without diminishing the mass of gas that has passed the pressure-reducing means and means for admitting gas at a reduced pressure to said motor, substantially as described.

8. In a railway signal apparatus, the combination of means for containing a storage-supply of liquefied gas, a motor, a signal, means for reducing the pressure of the gas, means for preventing the gas at the reduced pressure from rising above a predetermined point without diminishing the mass of gas that has passed the pressure-reducing means and means for admitting gas at a reduced pressure to said motor, substantially as described.

9. In a railway signal apparatus, the combination of means for containing a storage-supply of liquefied gas, a motor, a pivoted semaphore-blade, means for reducing the pressure of the gas, means for preventing the gas at the reduced pressure from rising above a predetermined point without diminishing the mass of gas that has passed the pressure-reducing means and means for admitting gas at a reduced pressure to said motor, substantially as described.

10. In a railway signal apparatus, the combination of means for containing a storage-supply of carbonic-acid gas, a motor, a pivoted semaphore-blade, means for reducing the pressure of the gas, means for preventing the gas at the reduced pressure from rising above a predetermined point without diminishing the mass of gas that has passed the pressure-reducing means and means for admitting gas at a reduced pressure to said motor, substantially as described.

11. In a railway signal apparatus, the combination of means for containing a storage-supply of liquefied gas, a motor, a pivoted semaphore-blade, a weight for moving it in one direction, connections between the motor and the blade whereby the motor may move the blade in the opposite direction, means for reducing the pressure of the gas, means for preventing the gas at the reduced pressure from rising above a predetermined point without diminishing the mass of gas that has passed the pressure-reducing means and means for admitting gas at a reduced pressure to said motor, substantially as described.

12. In a railway-traffic-controlling apparatus, the combination of means for containing a storage-supply of liquefied gas, a motor, railway-traffic-controlling means, a reducing-valve, means for preventing a predetermined rise from the reduced pressure produced by the reducing-valve and an admission-valve for admitting gas at a reduced pressure to said motor, substantially as described.

13. In a railway-traffic-controlling apparatus, the combination of means for containing a storage-supply of carbonic-acid gas, a motor, railway-traffic-controlling means, a reducing-valve, means for preventing a predetermined rise from the reduced pressure produced by the reducing-valve and an admission-valve for admitting gas at a reduced pressure to said motor, substantially as described.

14. In a railway-traffic-controlling apparatus, the combination of means for containing a storage-supply of liquefied gas, a motor, railway-traffic-controlling means, a reducing-valve, an admission-valve for admitting gas at a reduced pressure to said motor and means for preventing the gas, after it passes the reducing-valve, from exerting a pressure upon said reducing-valve and admission-valve in excess of a predetermined amount, substantially as described.

15. In a railway-traffic-controlling apparatus, the combination of means for containing a storage-supply of a liquefied gas, a motor, railway-traffic-controlling means, a reducing-valve, an admission-valve for admitting gas at a reduced pressure to said motor, and means for preventing the rise in pressure of the gas above a predetermined amount after passing the reducing-valve, without diminishing the mass of gas that has passed the reducing-valve, substantially as described.

16. In a railway-traffic-controlling apparatus, the combination of means for containing a storage-supply of liquefied gas, a motor, railway-traffic-controlling means, a reducing-valve, an admission-valve for admitting gas at a reduced pressure to said motor, and means for preventing the gas, after it passes the reducing-valve, from exerting a pressure upon said reducing-valve and admission-valve in excess of a predetermined amount without diminishing the mass of gas that has passed the reducing-valve, substantially as described.

17. In a railway-traffic-controlling apparatus, the combination of means for containing a storage-supply of liquefied gas, a motor, railway-traffic-controlling means, means for reducing the pressure of the gas, means for admitting gas at a reduced pressure to said motor, and a reservoir for receiving the gas after it has passed the pressure-reducing means, substantially as described.

18. In a railway-traffic-controlling apparatus, the combination of means for containing a storage-supply of carbonic-acid gas, a motor, railway-traffic-controlling means, means for reducing the pressure of the gas, means for admitting gas at a reduced pressure to said motor, and a reservoir for receiving the gas after it has passed the pressure-reducing means, substantially as described.

19. In a railway signal apparatus, the combination of means for containing a storage-supply of liquefied gas, a motor, a signal, means for reducing the pressure of the gas, means for admitting gas at a reduced pressure to said motor, and a reservoir for receiving the gas after it has passed the pressure-reducing means, substantially as described.

20. In a railway signal apparatus, the combination of means for containing a storage-supply of liquefied gas, a motor, a pivoted semaphore-blade, means for reducing the pressure of the gas, means for admitting gas at a reduced pressure to said motor, and a reservoir for receiving the gas after it has passed the pressure-reducing means, substantially as described.

21. In a railway signal apparatus, the combination of means for containing a storage-supply of carbonic-acid gas, a motor, a pivoted semaphore-blade, means for reducing the pressure of the gas, means for admitting gas at a reduced pressure to said motor, and a reservoir for receiving the gas after it has passed the pressure-reducing means, substantially as described.

22. In a railway signal apparatus, the combination of means for containing a storage-supply of liquefied gas, a motor, a pivoted semaphore-blade, a weight for moving it in one direction, connections between the motor and the blade whereby the motor may move the blade in the opposite direction, means for reducing the pressure of the gas, means for admitting gas at a reduced pressure to said motor, and a reservoir for receiving the gas after it has passed the pressure-reducing means, substantially as described.

23. In a railway signal apparatus, the combination of means for containing a storage-supply of carbonic-acid gas, a motor, a pivoted semaphore-blade, a weight for moving it in one direction, connections between the motor and the blade whereby the motor may move the blade in the opposite direction, means for reducing the pressure of the gas, means for admitting gas at a reduced pressure to said motor, and a reservoir for receiving the gas after it has passed the pressure-reducing means, substantially as described.

24. In a railway-traffic-controlling apparatus, the combination of means for containing a storage-supply of liquefied gas, a motor, railway-traffic-controlling means, a reducing-valve, an admission-valve for admitting gas at a reduced pressure to said motor, and a reservoir for receiving the gas after it has passed the pressure-reducing means, substantially as described.

25. In a railway-traffic-controlling apparatus, the combination of means for containing a storage-supply of carbonic-acid gas, a motor, railway-traffic-controlling means, a reducing-valve, an admission-valve for admitting gas at a reduced pressure to said motor, and a reservoir for receiving the gas after it has passed the pressure-reducing means, substantially as described.

26. In a railway-traffic-controlling apparatus, the combination of means for containing a storage-supply of liquefied gas, a motor, railway-traffic-controlling means, means for reducing the pressure of the gas, means for preventing the gas at the reduced pressure from rising above a predetermined point, means for admitting gas at a reduced pressure to said motor, and means controlled by a train for controlling said gas-admitting means, substantially as described.

27. In a railway signal apparatus, the combination of means for containing a local storage-supply of liquefied gas, a motor, a signal, means for reducing the pressure of the gas, means for preventing the gas at the reduced pressure from rising above a predetermined point, means for admitting gas at a reduced pressure to said motor, and means controlled by a train for controlling said gas-admitting means, substantially as described.

28. In a railway signal apparatus, the combination of means for containing a storage-supply of liquefied gas, a motor, a pivoted semaphore-blade, means for reducing the pressure of the gas, means for preventing the gas at the reduced pressure from rising above a predetermined point, means for admitting gas at a reduced pressure to said motor, and means controlled by a train for controlling said gas-admitting means, substantially as described.

29. In a railway signal apparatus, the combination of means for containing a storage-supply of carbonic-acid gas, a motor, a pivoted semaphore-blade, means for reducing the pressure of the gas, means for preventing the gas at the reduced pressure from rising above a predetermined point, means for admitting gas at a reduced pressure to said motor, and means controlled by a train for controlling said gas-admitting means, substantially as described.

30. In a railway signal apparatus, the combination of means for containing a storage-supply of liquefied gas, a motor, a pivoted semaphore-blade, a weight for moving it in one direction, connections between the motor and the blade whereby the motor may move the blade in the opposite direction, means for reducing the pressure of the gas, means for preventing the gas at the reduced pressure from rising above a predetermined point, means for admitting gas at a reduced pressure to said motor, and means controlled by a train for controlling said gas-admitting means, substantially as described.

31. In a railway-traffic-controlling apparatus, the combination of means for containing a storage-supply of liquefied gas, a motor, railway-traffic-controlling means, means for reducing the pressure of the gas, means for preventing the gas at the reduced pressure from rising above a predetermined point without diminishing the mass of gas that has passed the pressure-reducing means, means for admitting gas at a reduced pressure to said motor, and means controlled by a train for controlling said gas-admitting means, substantially as described.

32. In a railway signal apparatus, the combination of means for containing a storage-supply of liquefied gas, a motor, a signal, means for reducing the pressure of the gas, means for preventing the gas at the reduced pressure from rising above a predetermined point without diminishing the mass of gas that has passed the pressure-reducing means, means for admitting gas at a reduced pressure to said motor, and means controlled by a train for controlling said gas-admitting means, substantially as described.

33. In a railway signal apparatus, the combination of means for containing a storage-supply of liquefied gas, a motor, a pivoted semaphore-blade, means for reducing the pressure of the gas, means for preventing the gas at the reduced pressure from rising above a predetermined point without diminishing the mass of gas that has passed the pressure-reducing means, means for admitting gas at a reduced pressure to said motor, and means controlled by a train for controlling said gas-admitting means, substantially as described.

34. In a railway signal apparatus, the combination of means for containing a storage-supply of carbonic-acid gas, a motor, a pivoted semaphore-blade, means for reducing the pressure of the gas, means for preventing the gas at the reduced pressure from rising above a predetermined point without diminishing the mass of gas that has passed the pressure-reducing means, means for admitting gas at a reduced pressure to said motor, and means controlled by a train for controlling said gas-admitting means, substantially as described.

35. In a railway signal apparatus, the combination of means for containing a storage-supply of liquefied gas, a motor, a pivoted semaphore-blade, a weight for moving it in one direction, connections between the motor and the blade whereby the motor may move the blade in the opposite direction, means for reducing the pressure of the gas, means for preventing the gas at the reduced pressure from rising above a predetermined point without diminishing the mass of gas that has passed the pressure-reducing means, means for admitting gas at a reduced pressure to said motor, and means controlled by a train for controlling said gas-admitting means, substantially as described.

36. In a railway-traffic-controlling apparatus, the combination of means for containing a storage-supply of liquefied gas, a motor, railway-traffic-controlling means, a reducing-valve, an admission-valve for admitting gas at a reduced pressure to said motor, means controlled by a train for controlling said admission-valve, and means for preventing the gas, after it passes the reducing-valve, from exerting a pressure upon said reducing-valve and admission-valve in excess of a predetermined amount, substantially as described.

37. In a railway-traffic-controlling apparatus, the combination of means for containing a storage-supply of carbonic-acid gas, a motor, railway-traffic-controlling means, a reducing-valve, an admission-valve for admitting gas at a reduced pressure to said motor, means controlled by a train for controlling said admission-valve, and means for preventing the gas, after it passes the reducing-valve, from exerting a pressure upon said reducing-valve and admission-valve in excess of a predetermined amount, substantially as described.

38. In a railway-traffic-controlling apparatus, the combination of means for containing a storage-supply of liquefied gas, a motor, railway-traffic-controlling means, a reducing-valve, an admission-valve for admitting gas at a reduced pressure to said motor, means controlled by a train for controlling said admission-valve, and means for preventing the rise in pressure of the gas above a predetermined amount after passing the reducing-valve, without diminishing the mass of gas that has passed the reducing-valve, substantially as described.

39. In a railway-traffic-controlling apparatus, the combination of means for containing a storage-supply of liquefied gas, a motor, railway-traffic-controlling means, a reducing-valve, an admission-valve for admitting gas at a reduced pressure to said motor, means controlled by a train for controlling said admission-valve, and means for preventing the gas, after it passes the reducing-valve, from exerting a pressure upon said reducing-valve and admission-valve in excess of a predetermined amount without diminishing the mass of gas that has passed the reducing-valve, substantially as described.

40. In a railway-traffic-controlling apparatus, the combination of means for containing a storage-supply of liquefied gas, a motor, railway-traffic-controlling means, means for reducing the pressure of the gas, means for admitting gas at a reduced pressure to said motor, means controlled by a train for controlling said admission-valve, and a reservoir for receiving the gas after it has passed the pressure-reducing means, substantially as described.

41. In a railway signal apparatus, the combination of means for containing a storage-supply of liquefied gas, a motor, a signal, means for reducing the pressure of the gas, an admission-valve for admitting gas at a reduced pressure to said motor, means controlled by a train for controlling said admission-valve, and a reservoir for receiving the gas after it has passed the pressure-reducing means, substantially as described.

42. In a railway signal apparatus, the combination of means for containing a storage-supply of carbonic-acid gas, a motor, a signal, means for reducing the pressure of the gas, an admission-valve for admitting gas at a reduced pressure to said motor, means controlled by a train for controlling said admission-valve, and a reservoir for receiving the gas after it has passed the pressure-reducing means, substantially as described.

43. In a railway signal apparatus, the combination of means for containing a storage-supply of liquefied gas, a motor, a pivoted semaphore-blade, means for reducing the pressure of the gas, an admission-valve for admitting gas at a reduced pressure to said motor, means controlled by a train for controlling said admission-valve, and a reservoir for receiving the gas after it has passed the pressure-reducing means, substantially as described.

44. In a railway signal apparatus, the combination of means for containing a storage-supply of liquefied gas, a motor, a pivoted semaphore-blade, a weight for moving it in one direction, connections between the motor and the blade whereby the motor may move the blade in the opposite direction, means for reducing the pressure of the gas, an admission-valve for admitting gas at a reduced pressure to said motor, means controlled by a train for controlling said admission-valve, and a reservoir for receiving the gas after it has passed the pressure-reducing means, substantially as described.

45. In a railway signal apparatus, the combination of means for containing a storage-supply of carbonic-acid gas, a motor, a pivoted semaphore-blade, a weight for moving it in one direction, connections between the motor and the blade whereby the motor may move the blade in the opposite direction, means for reducing the pressure

of the gas, an admission-valve for admitting gas at a reduced pressure to said motor, means controlled by a train for controlling said admission-valve and a reservoir for receiving the gas after it has passed the pressure-reducing means, substantially as described.

46. In a railway-traffic-controlling apparatus, the combination of means for containing a storage-supply of liquefied gas, a motor, railway-traffic-controlling means, a reducing-valve, an admission-valve for admitting the gas at a reduced pressure to said motor, means controlled by a train for controlling said admission-valve, and a reservoir for receiving the gas after it has passed the pressure-reducing means, substantially as described.

47. In a railway-traffic-controlling apparatus, the combination of means for containing a storage-supply of carbonic-acid gas, a motor, railway-traffic-controlling means, a reducing-valve, an admission-valve for admitting the gas at a reduced pressure to said motor, means controlled by a train for controlling said admission-valve, and a reservoir for receiving the gas after it has passed the pressure-reducing means, substantially as described.

48. In a railway signal apparatus, the combination of means for containing a storage-supply of liquefied gas, a motor, a signal, a reducing-valve, an admission-valve for admitting gas at a reduced pressure to said motor, means controlled by a train for controlling said admission-valve, and a reservoir for receiving the gas after it has passed the pressure-reducing means.

49. In a railway signal apparatus, the combination of means for containing a storage-supply of liquefied gas, a motor, a pivoted semaphore-blade, a reducing-valve, an admission-valve for admitting gas at a reduced pressure to said motor, means controlled by a train for controlling said admission-valve, and a reservoir for receiving the gas after it has passed the pressure-reducing means, substantially as described.

50. In a railway signal apparatus, the combination of means for containing a storage-supply of liquefied gas, a pivoted semaphore-blade, a weight for operating said blade in one direction, a motor for returning said blade, a reducing-valve, an admission-valve for admitting gas at a reduced pressure to said motor, means controlled by a train for controlling said admission-valve, and a reservoir for receiving the gas after it has passed the pressure-reducing means, substantially as described.

810,263. PROCESS OF UTILIZING LIQUEFIED GAS FOR RAILWAY-TRAFFIC-CONTROLLING APPARATUS. CLARENCE W. COLEMAN, Westfield, N. J., assignor to Hall Signal Company, a Corporation of Maine. Filed Dec. 12, 1904. Serial No. 236,456.

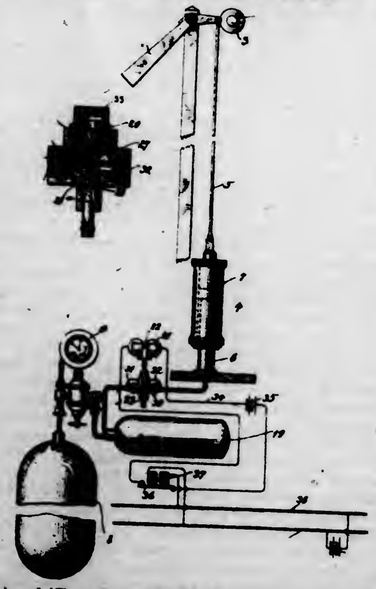

Claim.—1. The process of utilizing liquefied gas for controlling railway traffic, which consists in permitting a small quantity of the liquid to be converted into gas, permitting the gas to expand intermittently into a reservoir of large capacity, and intermittently allowing a small quantity of said gas to actuate a gas-pressure-applying device to control said traffic.

2. The process of utilizing liquefied gas for controlling railway traffic, which consists in permitting a small quantity of liquid to be converted into gas by reducing the pressure on the liquid, permitting the gas to expand intermittently into a reservoir of large capacity, supplying heat to the gas during and after such expansion and intermittently allowing a small quantity of said gas to actuate a gas-pressure-applying device to control said traffic.

3. The process of utilizing liquefied gas for controlling railway traffic, which consists in permitting a small quantity of the liquid to be converted into gas by reducing the pressure on the liquid, permitting the gas during short periods of time and intermittently to expand into a reservoir of large capacity, supplying heat to the gas during and after such expansion and intermittently allowing a small quantity of said gas to actuate a gas-pressure-applying device to control said traffic.

4. The process of utilizing liquefied gas for controlling railway traffic, which consists in permitting a small quantity of liquid to be converted into gas by reducing the pressure on the liquid, permitting the gas to expand during short periods of time and intermittently into a reservoir of large capacity, allowing the gas to remain in said reservoir for longer periods of time so as to permit a supply of heat to the gas and intermittently allowing a small quantity of said gas to actuate a gas-pressure-applying device to control the traffic

5. The process of utilizing carbonic-acid gas for controlling a railway-signal, which consists in automatically and intermittently reducing the pressure of the gas, intermittently permitting the gas to expand into a reservoir of large capacity and intermittently causing the gas to operate a railway-signal

6. The process of utilizing liquefied carbonic-acid gas for controlling a railway-signal, which consists in permitting a small quantity of the liquid to be converted into gas by reducing the pressure on the liquid, permitting the gas to expand intermittently into a reservoir of large capacity, supplying heat to the gas and intermittently allowing a small quantity of the gas to actuate a gas-pressure-applying device to control said signal.

7. The process of utilizing carbonic-acid gas for controlling a railway-signal, which consists in permitting the gas to expand during short periods of time and intermittently into a reservoir of large capacity allowing the gas to remain in said reservoir for longer periods of time and intermittently allowing a small quantity of the gas to actuate a gas-pressure-applying device to control the signal.

8. The process of utilizing carbonic-acid gas for controlling a railway-signal, which consists in automatically and intermittently reducing the pressure of the gas, supplying heat to the gas while its pressure is being reduced, allowing the gas to expand into a chamber of large capacity, supplying heat to the gas while in said chamber and intermittently permitting a part of the gas in said chamber to expand into a gas-pressure-applying device for actuating a railway-signal in one direction.

810,264. DUMPING-VEHICLE. JEREMIAH CROWIN, New York, N. Y. Filed Apr. 14, 1905. Serial No. 255,554.

Claim.—1. In a mechanism of the class described, the combination with a truck and a movable body, of a guide-plate provided with angular ends secured to said truck, a removable, substantially U-shaped member positioned upon said guide-plate and secured to said body, a shaft provided with a squared, outer end journaled upon said truck, a cog-wheel fixedly secured to said shaft, plates secured to one side of said truck, said plates provided with guiding means, a rack-bar provided with a longitudinal cut-out portion engaging said plates and guiding means, said rack-bar meshing with said cog-wheel, a stop formed upon one of said plates for limiting the forward movement of said rack-bar, a projection secured to said body, a connecting member provided with bifurcated ends secured to said projection of the body and one end of the rack-bar, parallel, angular members secured near the sides and upon the bottom of said body, and means for locking said body upon said truck.

2. The combination with a truck and a movable body, of a shaft carried by said truck, a pinion provided with an annular flange fixedly secured to said shaft, a plate provided with an angular extension carried by said truck, a slidable rack-bar carried by said truck and positioned between said annular flange of the pinion and the angular extension of said plate, the rack-bar thereby engaging said pinion, and means connecting said rack-bar to said body.

3. The combination with a truck and a movable body, of a guide-plate provided with angular ends secured to said truck, means connecting said guide-plate to said body, and means for moving said body off of or drawing the same upon said truck.

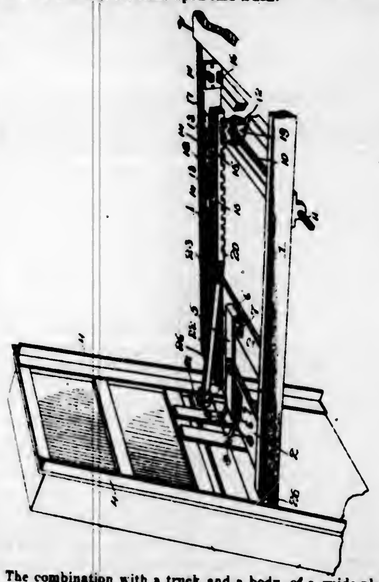

4. The combination with a truck and a body, of a guide-plate provided with beat ends, the ends of said guide-plate secured to said truck, means surrounding said guide-plate and secured to said body, and means for adjusting said body upon said truck.

5. The combination with a truck and a body, of a shaft journaled upon said body, a pinion provided with an annular flange fixedly secured to said shaft, a slidable rack-bar provided with a cut-out portion carried by said truck and meshing with said pinion, angular guiding means carried by said truck and engaging said rack-bar, and means connecting said rack-bar to said body.

6. In a dumping-vehicle, the combination with a truck and removable body carried thereby, of a pinion provided with an annular flange, carried by said truck, means for revolving said pinion, a rack-bar meshing with said pinion and carried by said truck and means connecting said body and rack-bar.

7. The combination with a truck and a body, of a guide-plate provided with beat ends, the ends of said plate engaging said truck, means connecting said plate to said body, and means for adjusting said body on said truck.

810,265. PEDESTAL-TABLE. GEORGE A. DAVIS, Grand Rapids, Mich. Filed Apr. 10, 1903. Serial No. 152,080.

Claim.—1. The combination with a table-top of a bridge-block secured thereto, a bridge secured to the bridge-block by two screws passing through the bridge into the bridge-block, a fulcrum between said fastening-screws, said fastening-screws and fulcrum so adjusted that the bridge may be tilted on said fulcrum, and pedestal-sections securely attached to the said bridges, substantially as described.

2. A pedestal extension-table comprising top sections and extension devices connecting the same, a two-part pedestal, bridge-blocks secured to each of the top sections, a bridge attached to the bridge-blocks of each section and to each of the sections of the pedestal, attaching means between each of said bridges and its bridge-blocks adapted to permit of a slight angular movement of the pedestal-section with respect to the top section to which it is attached, and a set-screw mounted on and extending through the bridge and engaging one of the adjoining and immediately-attached elements for adjustably tilting the pedestal-section with respect to the top section.

3. A pedestal extension-table comprising top sections and extension devices connecting the same, a two-part pedestal, bridge-blocks secured to each of the top sections, a bridge attached to the bridge-blocks of each section and to each of the sections of the pedestal, attaching means between each of said bridges and its bridge-blocks adapted to permit of a slight angular movement of the pedestal-section with respect to the top section to which it is attached, a metal plate secured upon one of the elements adjoining and immediately attached to one of said bridges, and a set-screw mounted on and extending through the bridge and bearing against said metal plate, whereby the pedestal-section may be tilted adjustably with respect to the top section.

4. In an extension-table, in combination with a sectional top, extension-supports therefor, and a sectional pedestal, of bridge-blocks secured to each of the top sections, a bridge secured to each of the pedestal-sections, attaching means extending through the bridges and engaging the bridge-blocks for loosely connecting the pedestal with the table-top and to permit of a slight angular movement of the pedestal-sections with respect to the sections of the top, and means extending through the bridges and engaging the bridge-blocks for tilting the pedestal-sections with respect to the sections of the top.

5. In an extension-table, in combination with a sectional top, extension-supports therefor, and a sectional pedestal, of bridge-blocks secured to each of the sections of the top, a bridge secured to each of the pedestal-sections, attaching means extending through the bridges and engaging the bridge-blocks for loosely connecting the pedestal with the table-top and to permit of a slight angular movement of the pedestal-sections with respect to the sections of the top, and adjustable means extending through the bridges and engaging the bridge-blocks for adjustable tilting the pedestal-sections with respect to the sections of the top.

810,266. LAMP-GUARD. EDWARD C. DICKERSON, Elgin, Ill. Filed Feb. 4, 1904. Serial No. 191,954.

Claim.—1. An electric-light-lamp guard formed from sheet metal and having end collar portions and flat longitudinal ribs formed integral with said collar portions, and lying substantially in radial planes passing through the longitudinal axis of the guard.

2. An electric-light-lamp guard formed of two parts, each part formed from a single piece of sheet metal and having end collar portions and flat longitudinal ribs formed integral with said collar portions and lying substantially in radial planes passing through the longitudinal axis of the guard.

3. An electric-light-lamp guard formed of two parts, each part being formed from a single piece of sheet metal having end collar portions and flat longitudinal ribs formed integral with said collar portions and lying in substantially radial planes passing through the longitudinal axis of the guard, and being outwardly bowed, one set of said collar portions being adapted to engage the lamp-socket for holding the guard in position.

810,267. GRAIN-DOOR. JOSEPH H. DRAKE, Blue Rapids, Kans. Filed Feb. 27, 1905. Serial No. 247,498.

Claim.—1. The combination with a car having a door-opening, of a hollow guide extending longitudinally of the car above the opening, a supporting member fixed upon the door and being movable through and rotatable in the guide, and an arm extending from the support and having means overlying and contacting with the guide during the rotation of the supporting member.

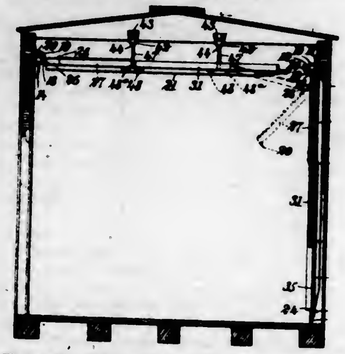

2. The combination with a car having a door-opening, of a hollow guide extending longitudinally of the car above the opening, a supporting member fixed upon the door and being movable through and rotatable in the guide, an arm extending from the support outside the guide, and a roll upon the arm contacting with the guide throughout the rotation of the supporting member.

3. A grain-car door, comprising a frame having side members and a cross-bar connecting the side members between their ends, and having its ends projecting beyond the same, a lower fixed door-section secured to the side members of the frame at one side of the cross-bar, and an upper door-section hinged at its upper edge to the frame and having its free lower edge engaging the cross-bar.

810,268. CURTAIN-FIXTURE. CLIFFORD H. DUNN, New York, N. Y. Filed Dec. 3, 1904. Serial No. 235,145.

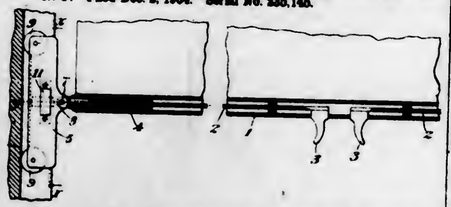

Claim.—1. In a fixture for a self-righting curtain the combination with a shade, of a curtain-stick, head-pieces movably secured to said stick and having antifriction-surfaces for contact with the window-frame, friction devices movably mounted in said head-pieces and adapted to engage the side of the groove in the window-frame, and means whereby the movement of the head-pieces on the stick withdraws the friction devices from operation, substantially as described.

2. In a fixture for a self-righting curtain, the combination with a shade of a curtain-stick comprising outwardly-pressed members, head-pieces movably secured to the ends of said members and having antifriction-surfaces for contact with the window-frame, movable friction devices carried by said head-pieces independent of the stick and adapted to engage the groove in the window-frame, and means whereby the movement of the head-pieces on the stick withdraws the friction devices from operation.

3. In a fixture for a self-righting curtain, the combination with a shade, of a curtain-stick comprising outwardly-pressed members, head-pieces movably secured to the ends of said members and having antifriction-surfaces for contact with the window-frame, friction devices movably mounted in said head-pieces independent of the stick and adapted to engage the side of the groove in the window-frame, means whereby the movement of the head-pieces on the stick withdraws the friction devices from operation, and whereby the inward movement of the curtain-stick members retracts the friction devices from operation, substantially as described.

4. In a fixture for a self-righting curtain, the combination with a shade, of a curtain-stick, head-pieces movably secured to said stick and having antifriction-surfaces for contact with the window-frame, friction devices movably mounted in said head-pieces and adapted to engage the groove in the window-frame, the friction devices having beveled surfaces and the curtain-stick having corresponding beveled surfaces whereby the movement of the head-pieces on the stick withdraws the friction devices from operation, substantially as described.

5. In a fixture for a self-righting curtain, the combination with a shade, of a curtain-stick comprising outwardly-pressed members, head-pieces movably secured to the ends of said members and having antifriction-surfaces for contact with the window-frame, friction devices movably mounted in said head-pieces and adapted to engage the groove in the window-frame, the friction devices having beveled surfaces and the curtain-stick having corresponding beveled surfaces, whereby the movement of the head-pieces on the stick withdraws the friction devices from operation, and means whereby the inward movement of the curtain-stick members retracts the friction devices within the head-pieces, substantially as described

6. In a fixture for a self-righting curtain, the combination with a shade, of a curtain-stick comprising pinch-handled outwardly-pressed members, head-pieces pivoted to the outer ends of said members and having antifriction-rollers mounted therein, a centrally-disposed friction device adapted to engage the groove in the window-frame, beveled surfaces on the friction devices and corresponding beveled surfaces on the curtain-stick whereby the movement of the head-pieces on the stick withdraws the friction device from operation, substantially as described.

7. In a fixture for a self-righting curtain, the combination with a shade of a curtain-stick comprising outwardly-pressed members, head-pieces movably secured to the ends of said members and having antifriction-surfaces for contact with the window-frame, a friction device movably mounted in said head-pieces and adapted to engage the groove in the window-frame, said friction devices having beveled surfaces and said stick having correspondingly beveled and obliquely-set terminals coacting with said beveled surfaces of the friction devices whereby the friction devices are withdrawn from operation when the head-pieces are tilted on the stick or when inward movement is imparted to the curtain-stick members, substantially as described.

8. In a fixture for a self-righting curtain, the combination with a shade, of a curtain-stick comprising pinch-handled outwardly-pressed members, head-pieces pivotally secured to the outer ends of said members, which members have slotted connections therewith, antifriction-surfaces on said head-pieces and centrally-disposed friction devices movably connected to the head and means whereby the friction devices are withdrawn from operative position when the head-pieces are tilted on the stick and when the curtain-stick members are moved inwardly, substantially as described.

9. In a fixture for a self-righting curtain, the combination with a shade, of a curtain-stick comprising pinch-handled outwardly-pressed members, head-pieces pivotally secured to the outer ends of said members, which members have slotted connections therewith, antifriction-surfaces on said head-pieces, centrally-disposed friction devices having beveled surfaces thereon, correspondingly beveled and obliquely-set terminals on said curtain-stick members whereby the friction devices are withdrawn from operative position when the head-pieces are tilted on the stick or when the curtain-stick members are moved inwardly, substantially as described.

10. In a fixture for a self-righting curtain, the combination with a shade, of a curtain-stick, a head-piece tiltable relative to the stick, a spring-pressed holding member adapted to engage the side of the groove in the window-frame, and means whereby the tilting of the head-piece relative to the stick withdraws the holding member from operation.

11. In a curtain-fixture, the combination with a shade, of a curtain-stick, a head-piece tiltable relative to the stick, a holding member adapted to engage the side of the groove in the window-frame, and means whereby the tilting of the head-piece withdraws the holding member from operation.

12. In a fixture for a self-righting curtain, the combination with a shade, of a curtain-stick, a head-piece tiltable relative to the stick, a holding member adapted to engage the side of the groove in the window-frame, means for withdrawing the holding member from operation, and means operatively associated with said last-mentioned means rendering the same automatically operable by the tilting of the head.

13. In a curtain-fixture, a longitudinally-movable stick, a head therefor, a holding device adapted to engage the side of a groove of a window-frame, said holding device being slidably mounted in the head and having a loose connection with the stick permitting transverse movement thereof relative to the stick, and means whereby the inward and outward movements of the stick relative to the head will impart like transverse movements to the holding device.

14. In a curtain-fixture, a longitudinally-movable stick, a head therefor, a spring-actuated holding device adapted to engage the side of a groove of a window-frame, said holding device being slidably mounted in the head for transverse movement relative to the stick, and a slidable engagement between the holding device and stick whereby the inward and outward movements of the stick relative to the head will impart like transverse movements to the holding device.

15. In a curtain-fixture, a longitudinally-movable stick, a head therefor, a holding device adapted to engage the side of a groove of a window-frame, said holding device being slidably mounted in the head for transverse movement relative to the stick, the said stick and holding device having a loose connection with one another, and one of said last-mentioned members having an inclined portion at said connection whereby inward and outward movement of the stick will impart like transverse movements to the holding device.

810,269. METHOD OF OPERATING ELECTRIC MOTORS. ARTHUR C. EASTWOOD, Cleveland, Ohio. Filed July 24, 1903. Serial No. 166,864.

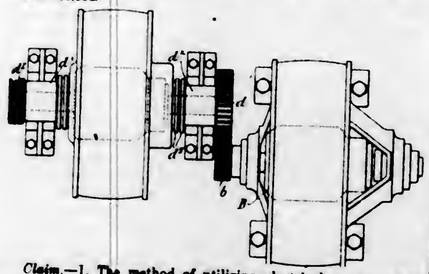

Claim.—1. The method of utilizing electrical energy, which consists in first transforming electrical energy from a source of supply into mechanical energy, transforming said mechanical energy into electrical energy, transforming a portion of said electrical energy into mechanical energy to drive a load and employing another portion of said electrical energy to directly control the rate at which electrical energy from the source of supply is transformed into mechanical energy, substantially as described.

2. The method of utilizing electrical energy, the same consisting in first transforming electrical energy from a source of supply into mechanical energy, transforming said mechanical energy into electrical energy, transforming a portion of said electrical energy into mechanical energy to drive a load, and causing the remainder of said electrical energy to automatically and directly determine the rate at which mechanical energy is utilized, substantially as described.

810,270. MACHINE FOR USE IN MAKING BASKETS OR OTHER RECEPTACLES. JOHN ERLUND, St. Joseph, Mich., and ENOS L. WALKER, St. Louis, Mo. Filed Nov. 16, 1903. Serial No. 181,395.

Claim.—1. A stapling-machine comprising a rotary form mounted to shift axially during its rotation and means for automatically producing the axial shift.

2. A machine for making band-like articles, comprising an intermittently-rotated form mounted to shift axially during its rotation and means for automatically producing the axial shift.

3. A stapling-machine, comprising an intermittently-rotated form provided with two rows of clench-blocks, each row extending circumferentially of the form in an irregular line, suitable staple forming and driving devices, said form being mounted to shift axially during its rotation, and means for automatically producing the axial shift whereby the said clench-blocks are successively presented in proper position beneath the staple forming and driving devices.

4. A machine for making band-like articles slightly higher at two opposite points than at intermediate points, comprising a rotary form provided with a plurality of clench-blocks, the said clench-blocks extending circumferentially of the form in an irregular line, suitable staple forming and driving devices, said form being mounted to shift axially during its rotation, and means for automatically producing the axial shift whereby said clench-blocks are successively presented to said staple forming and driving device.

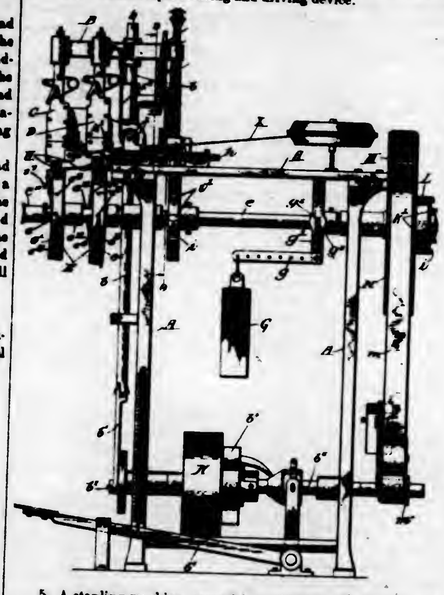

5. A stapling-machine, comprising suitable staple forming and driving devices, a rotary form having a truly circular circumference, said form being mounted to shift axially during its rotation and means for automatically producing the axial shift.

6. A machine for making band-like articles slightly higher at two opposite points than at intermediate points, comprising suitable staple forming and driving devices, an intermittently-rotated form mounted to shift axially during its rotation, and means for automatically producing the axial shift whereby the staples are inserted at points equidistant, or substantially equidistant, from the edges of said article.

7. A stapling-machine, comprising suitable staple forming and driving devices, an intermittently-rotated form mounted to shift axially during its rotation, and means for automatically producing the axial shift, said form being provided with an axially-adjustable handle and a plurality of pivoted arms for throwing the completed article off the form.

8. A stapling-machine, comprising staple forming and driving devices, an intermittently-rotated form provided with an axially-adjustable handle, and means operated thereby for throwing the completed article off the form, and a tilting guide for feeding the materials onto said form.

9. A stapling-machine, comprising suitable staple forming and driving devices, a rotary form mounted to shift axially during its rotation, and a tilting guide for feeding the materials onto said form and means for automatically producing the axial shift.

10. A stapling-machine, comprising suitable staple forming and driving devices, a rotary form, a stop device adapted and operative to automatically and intermittently interrupt the rotation of said form, and a trip device adapted and operative to automatically prevent said stop device from releasing said form immediately after the driving of the last staples.

11. A stapling-machine, comprising suitable staple forming and driving devices, a rotary form, a driven member, a yielding and continuously-acting frictional connection between said driven member and the rotary form, and a stop device for automatically and intermittently resisting and interrupting the rotary motion imparted through said connection from said driven member to said form, together with power-transmitting connections for operating said stop device at predetermined intervals, whereby the work is given an intermittent feeding movement and is always stationary while being

acted on; a power-operated automatic trip device adapted and operative to automatically prevent a continuance of said intermittent motion after the final operation is performed by the machine upon the work or article, and means for manually resetting the mechanism upon the substitution of fresh work for the finished article; and power-transmitting connections, independent of said continuously-acting frictional connection, for operating said trip device, and means for performing successive fastening operations on the work.

12. A stapling-machine, comprising suitable staple forming and driving devices, a rotary form adapted and operative to automatically shift axially during its rotation, a driven member, a yielding and continuously-acting frictional connection between said driven member and said form, and a stop device adapted and operative to automatically and intermittently resist and interrupt the rotary motion imparted to said form through said connection from said driven member, together with power-transmitting connections for operating said stop device at predetermined intervals, whereby the work is given an intermittent feeding movement and is always stationary while being acted on; a power-operated automatic trip device adapted and operative to automatically prevent a continuance of said intermittent motion after the final operation is performed by the machine upon the work or article, and means for manually resetting the mechanism upon the substitution of fresh work for the finished article; and power-transmitting connections, independent of said continuously-acting frictional connection, for operating said trip device and means for performing successive fastening operations on the work.

13. A stapling-machine, comprising suitable staple forming and driving devices, a rotary form provided on its inner face with a cam-like surface, a roll mounted in stationary bearings and adapted to engage said cam-like surface, and thereby cause the form to automatically shift axially during its rotation, and a pressure device for maintaining said form in contact with said roll.

14. A stapling-machine comprising suitable staple forming and driving devices, a rotary form mounted to shift axially during its rotation, means for automatically producing the axial shift, a spring-held pivoted guide for feeding the materials to said form, a driven member, a yielding frictional connection between said driven member and said form, and a stop device adapted to automatically and intermittently interrupt the rotary motion imparted to said form through said connection from the driven member.

15. A stapling-machine, comprising a rotary work-holder, a driven member, a yielding and continuously-acting frictional connection between said rotary work-holder and said driven member, and a stop device adapted and operative to automatically resist and interrupt the rotary movement imparted to said rotary work-holder through said connection from said driven member, together with power-transmitting connections for operating said stop device at predetermined intervals, whereby the work is given an intermittent feeding movement and is always stationary while being acted on; a power-operated automatic trip device adapted and operated to automatically prevent a continuance of said intermittent motion after the final operation is performed by the machine upon the work or article, and means for manually resetting the mechanism upon the substitution of fresh work for the finished article; and power-transmitting connections, independent of said continuously-acting frictional connection, for operating said trip device and means for performing successive fastening operations on the work

16. A stapling-machine, comprising suitable staple forming and driving devices, an intermittently-rotated form mounted to shift axially during its rotation, means for producing the axial shift, said form being provided with a pivot-hook having a spring adapting it to reach over and clamp the desired materials upon the said form.

17. A stapling-machine, comprising a rotary form, said form being provided with a pivoted hook composed of yieldingly-connected sections, said hook being also provided with a spring, whereby the hook may be distended and employed for clamping the desired materials upon the said form.

18. A stapling-machine, comprising suitable staple forming and driving devices, a form mounted to shift axially during its rotation, means including a roll and a cam-surface on the form for shifting the form in one direction, and means including a weight and a bell-crank-shaped lever for shifting the form in the other direction.

19. A stapling-machine comprising a rotary form, suitable staple forming and driving mechanism, and power-operated means for causing relative shift between the form and stapling mechanism in the direction of the axis of said form during the rotation of the form.

20. A machine comprising suitable means for forming and driving fastening devices, a rotary form for holding the work, a driven member, two frictional connections serving as medium of power-transmitting connection between said driven member and form, one of said connections being normally open and manually controlled, the other frictional connection being normally and at all times closed, and a positive stop device for intermittently interrupting the rotation of said form, whereby the continuous rotation of said driven member is converted into intermittent rotary motion on the part of said form by intermittingly presenting a positive resistance to the power transmitted through said connection, together with power-transmitting connections for operating said stop device at predetermined intervals, whereby the work is given an intermittent feeding movement and is always stationary while being acted on; a power-operated automatic trip device adapted and operative to automatically prevent a continuance of said intermittent motion after the final operation is performed by the machine upon the work or article, and means for manually resetting the mechanism upon the substitution of fresh work for the finished article; and power-transmitting connections, independent of said continuously-acting frictional connection, for operating said trip device and means for performing successive fastening operations on the work.

21. A machine comprising suitable means for forming and driving fastening devices, suitable means for holding and feeding the work, a driven member, a frictional connection arranged as medium of power-transmitting connection between the said driven member and the said means for holding and feeding the work, and a positive stop device for intermittently interrupting the movement of said means, whereby the continuous rotation of said driven member is converted into intermittent motion on the part of said means by intermittently presenting a positive resistance to the power transmitted through said connection, together with power-transmitting connections for operating said stop device at predetermined intervals, whereby the work is given an intermittent feeding movement and is always stationary while being acted on; a power-operated automatic trip device adapted and operative to automatically prevent a continuance of said intermittent motion after the final operation is performed by the machine upon the work or article, and means for manually resetting the mechanism upon the substitution of fresh work for the finished article; and power-transmitting connections, independent of said continuously-acting frictional connection, for operating said trip device and means for performing successive fastening operations on the work.

22. A machine for use in making baskets, comprising suitable means for forming and driving fastening devices, a rotary work-holding form, a driven member, and a frictional connection serving as medium of power-transmitting connection between said driven member and the rotary form, said connection comprising flat frictional surfaces clamped together with the proper degree of pressure by adjustable set-screws, whereby the continuous rotation of said driven member is converted into intermittent motion on the part of said form by intermittently presenting a positive resistance to the power transmitted through said connection, together with power-transmitting connections for operating said stop device at predetermined intervals, whereby the work is given an intermittent feeding movement and is always stationary while being acted on; a power-operated automatic trip device adapted and operative to automatically prevent a continuance of said intermittent motion after the final operation is performed by the machine upon the work or article, and means for manually resetting the mechanism upon the substitution of fresh work for the finished article; and power-transmitting connections, independent of said continuously-acting frictional connection, for operating said trip device and means for performing successive fastening operations on the work.

23. A machine comprising suitable means for forming and driving fastening devices, a rotary form for holding and feeding the work, a driven member, a frictional connection arranged as medium of power-transmitting connection between said driven member and form, and a positive stop device for intermittently interrupting the rotation of said form, whereby the continuous rotation of said driven member is converted into intermittent motion on the part of said form by intermittingly presenting a positive resistance to the power transmitted through said connection, together with power-transmitting connections for operating said stop device at predetermined intervals, whereby the work is given an intermittent feeding movement and is always stationary while being acted on; a power-operated automatic trip device adapted and operative to automatically prevent a continuance of said intermittent motion after the final operation is performed by the machine upon the work or article, and means for manually resetting the mechanism upon the substitution of fresh work for the finished article; and power-transmitting connections, independent of said continuously-acting frictional connection, for operating said trip device and means for performing successive fastening operations on the work.

24. In a machine of the character described, the combination of means for holding the work, means for driving fastening devices into the work, a driven member, a frictional power-transmitting connection, and a positive stop device adapted and operative to intermittently offer a positive resistance to the power transmitted from said driven member through said connection to produce relative intermittent feeding movement on the part of said means for holding the work and the means for driving the fastening devices, together with means for operating said stop device at predetermined intervals, whereby the work and means for driving the fastening devices have the said relative feeding movement and are always relatively stationary when the work is being acted on; a power-operated automatic trip device adapted and operative to automatically prevent a continuance of said intermittent motion after the final operation is performed by the machine upon the work or article, and means for manually resetting the mechanism upon the substitution of fresh work for the finished article; and power-transmitting connections, independent of said continuously-acting frictional connection, for operating said trip device and means for performing successive fastening operations on work.

25. A machine for use in making baskets, comprising a rotatable basket-form for the work, a power-driven member adapted for continuous rotation, and a frictional connection and a positive stop device adapted and operative to convert the continuous rotation of said member into intermittent rotation on the part of said form, said stop device operating independently of the work on the form, and independently of the connection between one member of the frictional connection and the said power-driven member, to intermittently stop the rotation of the other member of the frictional connection.

26. In a machine for use in making receptacles, comprising means for holding the work and driving fastening devices in the same, a drive-shaft, two independent power-transmitting means extending between said drive-shaft and the said means for holding the work and driving fastening devices, and an automatic positive stop device also operated by one of said power-transmitting means, the other power-transmitting means including a driven shaft intermittently interrupted in its rotation by said stop device, a member fixed to said shaft, a pulley loose on said shaft, means for holding the pulley and member in tight frictional connection, and a belt connecting said pulley with said drive-shaft.

27. A machine for use in making receptacles, comprising means for holding the work and driving fastening devices in the same, power-transmitting connections including a frictional connection and a shaft for operating one or more of the operative parts of said means, an automatic positive stop device for intermittently interrupting the rotation of said shaft, and connections independent of the work, and independent of the said frictional connection, for operating said stop device, said frictional connection comprising one member fixed to said shaft, another member loose on said shaft, and means for holding the two members in tight frictional connection.

28. In a machine for use in making baskets, endwise bodily-movable means for holding the work, power-transmitting connections including a frictional connection, a positive stop device for intermittently interrupting the motion communicated through said frictional connection, and connections independent of the work, and independent of the said frictional connection, for operating said stop device, said frictional connection comprising a shaft, a member loosely mounted on said shaft, a member fixed to said shaft, and means for holding said members in tight frictional connection with each other.

29. In a machine for making baskets, and in combination with suitable means for holding the work and driving fastening devices in the same, a frictional power-transmitting connection, a positive stop device for automatically interrupting the motion transmitted through said frictional connection, and connections independent of the work, and independent of said frictional connection, for operating said stop device, said frictional connections comprising a shaft, a member loose on said shaft, a member fixed to said shaft, and means for holding said members in tight frictional connection with each other.

810,271. MACHINE FOR STEAMING CLOTH. GUSTAV B. GRALOW, Crimmitschau, Germany, assignor of one-half to Ketting & Braun, Crimmitschau, Saxony, Germany. Filed Apr. 5, 1905. Serial No. 254,602.

Claim.—1. In a machine for steaming cloth a perforated cylinder in combination with a scraper adapted to remove from its inner surface the particles of the condensing water substantially as described.

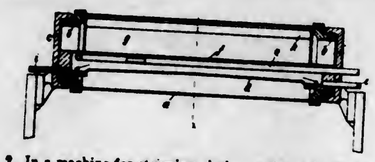

2. In a machine for steaming cloth a perforated cylinder with end rings revolving in stationary caps with ball-races in combination with a resilient scraper adapted to remove from its inner surface the particles of the condensing water substantially as described.

3. In a machine for steaming cloth a perforated cylinder in combination with a stationary scoop longitudinally extending through the cylinder, provided with a bottom inclined from the middle toward both ends, and carrying a resilient scraper adapted to remove from the inner surface of the cylinder the particles of the condensing water, substantially as described.

810,272. CRATE. DAVID GIBBS, Livonia, N. Y. Filed Apr. 4, 1905. Serial No. 253,853.

Claim.—As an article of manufacture, a crate comprising a bottom, sides connected with the bottom for movement into and out of operative position, said sides having vertical stripe against their inner faces adjacent to their ends, ends hinged to the bottom for movement to rest at times thereupon and at times to extend upwardly therefrom and to rest against the inner faces of the stripe when the sides are in erect position, long hooks pivotally connected with one of the sides inwardly of its end stripe and in spaced relation thereto, and hook-receiving eyes carried by the other side inwardly of its end stripe and in spaced relation thereto, said hooks being adapted for engagement in the eyes and when in such position, being arranged to lie against the inner faces of the ends to prevent inward movement of the latter.

810,273. NAPPING-MACHINE. HARRY S. GREENE, Woonsocket, R. I. Filed May 24, 1905. Serial No. 261,960.

Claim.—In a napping-machine, the combination with a drum equipped with napping-rollers and also with comparatively large rollers bearing card-clothing and alternating with the napping-rollers and having their axes arranged in a common circle with the axes of the napping-rollers; of a roller bearing wire-clothing and arranged outside the drum in a position to clean the card-clothing of the comparatively large rollers on the drum, a roller having longitudinal strips of material for cleaning the card-clothing of the napping-rollers of the drum; said strips being arranged to clear the comparatively large rollers and having long wires adapted to reach to and engage the card-clothing of the small napping-rollers, and a positive driving connection intermediate the drum and the second-mentioned cleaning-roller for driving the latter by the former.

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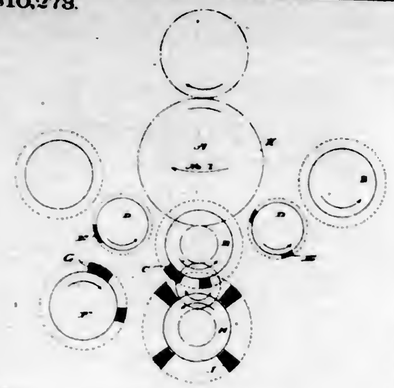

810,274. SUPPORT FOR HOISTING DEVICES. LOUIS GREENEY, New York, N. Y. Filed Oct. 14, 1905. Serial No. 282,786.

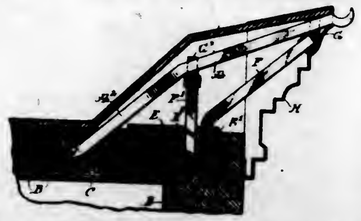

Claim.—1. A hoist-supporting device for buildings, comprising a hook-bar, and means for permanently securing the hook-bar to the building at the roof thereof, the hook of the said hook-bar projecting through the cornice of the building.

2. A hoist-supporting device for buildings, comprising a hook-bar having its outer end terminating in a hook and having its inner end forked and secured to roof-beams, the hook projecting beyond the face of the cornice of the building, a roof-beam chair and braces seated in the sockets formed therein.

3. A hoist-supporting device for buildings, comprising a hook-bar having its outer end terminating in a hook and having its inner end forked and secured to roof-beams, the hook projecting beyond the face of the cornice of the building, a roof-beam chair and braces seated in the sockets formed therein, each brace having a shoe for the hook-bar to rest on.

810,275. HAY-PRESS. THOMAS R. HACKWORTH, South Pittsburg, Tenn. Filed Feb. 24, 1905. Serial No. 247,169.

Claim.—1. In a device of the class described, a press-box having a baling-box extending from one end and a supporting base-frame extending from the other end, a plunger for reciprocation in said press-box and having an operating-beam extending therefrom, a spring connected to yieldably maintain said beam and plunger in withdrawn position, a stud extending from said base-frame in central alinement with said press-box, a trip-arm pivoted at one end to said base-frame with the body of trip-arm in alinement with the body of the beam and with a transverse recess near its free end, means for connecting the free end of said beam to the free end of said trip-arm and in central alinement therewith, and a crank-arm mounted for rotation and provided with a roller at the free end for engaging the body of said trip-arm centrally and passing through said recess at the terminal of the forward stroke to release the trip-arm.

2. The combination in a device of the class described, of a press-box having a spring-controlled plunger and operating-beam mounted for reciprocation, and with a base-frame extending rearwardly therefrom, a trip-arm pivoted by one end and movably connected by the free end of said beam and provided with a transverse recess near said free end, a crank-arm having depending ends terminating in semi-globular hubs, rollers having semispherical cavities engaging said hubs and maintained rotatively thereon by binding-bolts, said rollers engaging said trip-arm and passing through said recess at the end of the stroke, whereby the lateral strains are borne by the hubs and the pivot-pins relieved from lateral strains.

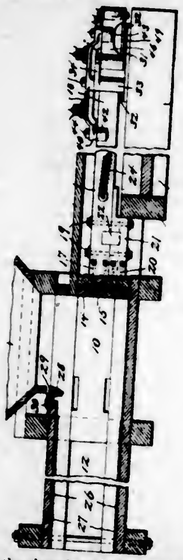

3. In a device of the class described, a press-box having a baling-box extending from one end and a supporting base-frame extending from the other end and provided with a transverse stop, a plunger mounted for reciprocation in said press-box, a beam extending rearwardly of said plunger and provided with a transverse recess, a stop member rigidly secured to said beam and bearing against said base-stop when the plunger is in withdrawn position and provided with a transverse recess for registration with the recess in said beam, a transverse chock for fitting in said recesses, a spring for holding said beam and its attached stop member yieldably in withdrawn position, and tripping means for moving said beam and its attached plunger and stop member in one direction and releasing the same for the return movement by the action of said spring.

4. In a device of the class described, a press-box having a baling-box extending from one end and a supporting base-frame extending from the other end and provided with a transverse stop, a plunger for reciprocation in said press-box and having an operating-beam extending therefrom provided with a transverse recess, a stop member rigidly secured to said beam for bearing against said base-stop when the beam is in withdrawn position and provided with a transverse recess for registration with the recess in said beam, a transverse chock fitting in said recess, a spring connected to yieldably maintain said beam and plunger in withdrawn position, a stud extending from said base-frame in central alinement with said press-box, a trip-arm pivoted by one end to said stud with the body of the trip-arm opposite the body of the beam and with a transverse recess near its free end, straps attached to opposite sides of the free end of said beam and pivoted to the opposite sides of the free end of said trip-arm, and a crank-arm mounted for rotation and provided with a roller at its free end for engaging said trip-arm and passing through said recess at the terminal of the forward stroke to release the trip-arm.

810,276. MOLD FOR DRAIN OR SEWER PIPES. JAMES B. HILL, Findlay, Ohio. Filed Aug. 30, 1905. Serial No. 276,695.

Claim.—1. A mold comprising a base provided with an upwardly-extending flange, a sectional inner shell engaging the adjacent walls of the flange, a sectional expanding ring resting on the base and serving to clamp the inner shell in engagement with said walls, an expansible outer shell of less height than the inner shell and spaced from the latter to favor an intermediate molding-chamber, inwardly-extending lugs secured to the upper end of the outer shell and adapted to engage the exterior walls of the inner shell, loops pivotally mounted on one longitudinal edge of the outer shell, and hooks pivotally mounted on the adjacent longitudinal edge of the shell and adapted to engage said loops for clamping the outer shell in engagement with the flange.

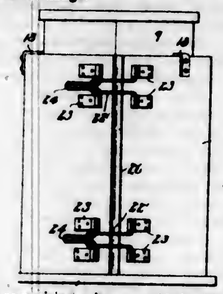

2. A mold comprising a base provided with an upwardly-extending flange, a sectional inner shell engaging said flange, a flat sectional expanding ring engaging the interior walls of the inner shell and provided with alined inwardly-extending operating-handles, a retaining-collar provided with a seating-groove for the reception of the upper end of the inner shell, a split expansible outer shell spaced from the inner shell, to form an intermediate molding-chamber and having one longitudinal edge thereof formed with a vertical groove adapted to receive the adjacent longitudinal edge of the outer shell, and means for clamping the outer shell in engagement with the flange.

810,277. ATTACHMENT FOR CHAIRS. VIRGINIA M. HOLLYDAY, Baltimore, Md. Filed Apr. 4, 1905. Serial No. 253,763.

Claim.—1. A double seat of the vis-à-vis type having a central support between the seats proper, the same being provided with two passages serving as hearing and speaking tubes and having open mouths which project rearward on opposite sides of the central support so that each set of such mouths is available for hearing and speaking by the person occupying the contiguous seat, substantially as described.

2. An improved article of furniture, comprising a double seat having backs and an intervening or middle portion forming a continuation thereof, and a horizontal bar C forming a rigid attachment of such middle portion, and provided with passages opening on opposite sides of the bar and arranged for convenience of use for hearing and speaking in the manner described.

3. A seat comprising two seats proper and a rigid vertical frame intervening the same and having at the top lateral projections each provided with a passage opening at one end on the rear side thereof or toward the back of the contiguous seat, the opposite end of the passage opening on the other side of the frame, as and for the purpose specified.

810,278. CURTAIN-FIXTURE. CHARLES L. HOPKINS, Albany, N. Y., assignor to The Curtain Supply Company, Newark, N. J., a Corporation of New Jersey. Filed Aug. 21, 1903. Serial No. 170,572.

Claim.—1. In a curtain-fixture, the combination of a window-frame, a roller mounted therein, a spring for rotating the roller, a curtain winding upon said roller, a winding-drum mounted upon the window-frame, a spring for rotating the winding-drum, a tape, winding upon said winding-drum, the end of the tape, being secured to the curtain, the power of the springs being opposed the one to the other whereby the curtain and tape are maintained in a tense condition, substantially as described.

2. In a curtain-fixture, the combination with a curtain, of flexible connections secured to the lower edge of the curtain, a rotatable drum upon which the flexible connections wind, means for impeding the rotation of the drum in one direction, the said drum having free rotation in the opposite direction, and spring means for rotating the drum, for the purpose set forth.

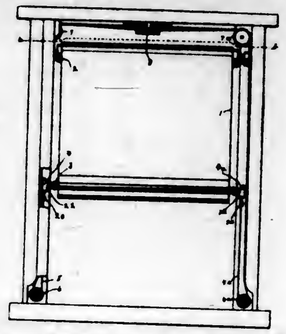

3. In a curtain-fixture, the combination with the curtain, of tapes secured to the curtain, a rotatable drum for taking up said tapes, a spring for rotating the drum, and means for frictionally resisting the rotation of the drum when the said drum is rotated in the direction to let off the tapes, substantially as and for the purpose described.

4. In a curtain-fixture, the combination of a window-frame, a spring-actuated roller mounted therein, a curtain winding upon the roller, a spring-rotated drum mounted upon the window-frame, a pair of tapes each having an end secured to the curtain, the other ends of the tapes being brought to the drum and winding thereon from opposite sides of said drum, for the purpose described.

5. In a curtain-fixture, the combination of a window-frame, a spring-actuated roller mounted therein, a curtain winding upon said roller, a curtain-stick for said roller, a spring-rotated drum mounted upon the upper portion of said window-frame, a pair of pulleys mounted on the lower portion of said window-frame, a pair of tapes each passing around one of said pulleys and having one end secured to one end of said curtain-stick, the other ends of the tapes being brought to the drum and winding thereon from opposite sides of said drum, substantially as described.

810,279. SHADE-FIXTURE. CHARLES L. HOPKINS, Albany, N. Y., assignor to The Curtain Supply Company, Newark, N. J., a Corporation of New Jersey. Filed Sept. 20, 1903. Serial No. 173,091.

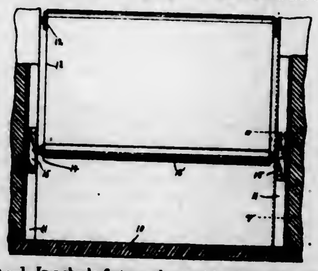

Claim.—1. In a shade-fixture, the combination with a spring-actuated shade, of a stick carried by the shade, shoes at the ends of the stick, a groove adjacent to the shade forming a guideway for the shoe, a yielding surface within the groove with which the shoe normally contacts, and a harder surface adjacent to the yielding surface with which the shoe may contact when the shade-fixture is tilted, for the purpose set forth.

2. In a shade-fixture, the combination with a shade, of a stick carried by the shade, an elongated, spring-pressed shoe at the end of the stick having a plurality of contact-points, a side post adjacent to the shade having a plurality of friction-surfaces of unlike frictional holding power, one of the contact-points of the shoe normally engaging a friction-surface having greater frictional holding power and one or more contact-points adapted to engage a friction-

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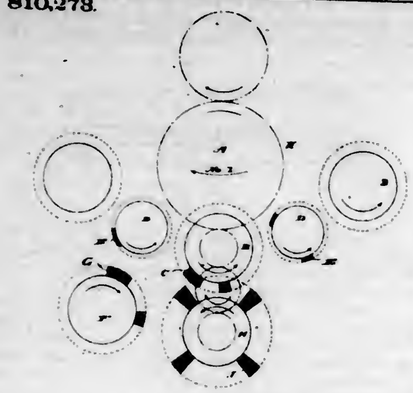

810,274. SUPPORT FOR HOISTING DEVICES. LOUIS GREENBEY, New York, N. Y. Filed Oct. 14, 1905. Serial No. 282,708.

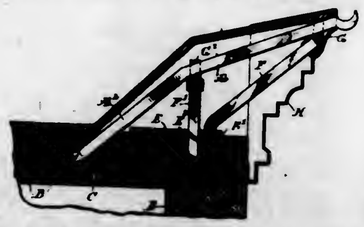

Claim.—1. A hoist-supporting device for buildings, comprising a hook-bar, and means for permanently securing the hook-bar to the building at the roof thereof, the hook of the said hook-bar projecting through the cornice of the building.

2. A hoist-supporting device for buildings, comprising a hook-bar having its outer end terminating in a hook and having its inner end forked and secured to roof-beams, the hook projecting beyond the face of the cornice of the building, a roof-beam chair and braces seated in the sockets formed therein.

3. A hoist-supporting device for buildings, comprising a hook-bar having its outer end terminating in a hook and having its inner end forked and secured to roof-beams, the hook projecting beyond the face of the cornice of the building, a roof-beam chair and braces seated in the sockets formed therein, each brace having a shoe for the hook-bar to rest on.

810,275. HAY-PRESS. THOMAS R. HACKWORTH, South Pittsburg, Tenn. Filed Feb. 24, 1905. Serial No. 247,169.

Claim.—1. In a device of the class described, a press-box having a baling-box extending from one end and a supporting base-frame extending from the other end, a plunger for reciprocation in said press-box and having an operating-beam extending therefrom, a spring connected to yieldably maintain said beam and plunger in withdrawn position, a stud extending from said base-frame in central alinement with said press-box, a trip-arm pivoted at one end to said base-frame with the body of trip-arm in alinement with the body of the beam and with a transverse recess near its free end, means for connecting the free end of said beam to the free end of said trip-arm and in central alinement therewith, and a crank-arm mounted for rotation and provided with a roller at the free end for engaging the body of said trip-arm centrally and passing through said recess at the terminal of the forward stroke to release the trip-arm.

2. The combination in a device of the class described, of a press-box having a spring-controlled plunger and operating-beam mounted for reciprocation, and with a base-frame extending rearwardly therefrom, a trip-arm pivoted by one end and movably connected by the free end of said beam and provided with a transverse recess near said free end, a crank-arm having depending ends terminating in semi-globular hubs, rollers having semispherical cavities engaging said hubs and maintained rotatively thereon by binding-bolts, said rollers engaging said trip-arm and passing through said recess at the end of the stroke, whereby the lateral strains are borne by the hubs and the pivot-pins relieved from lateral strains

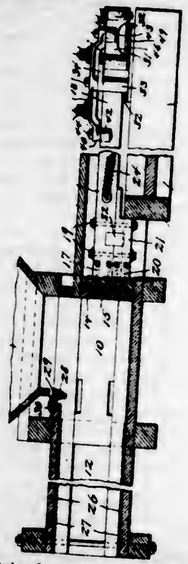

3. In a device of the class described, a press-box having a baling-box extending from one end and a supporting base-frame extending from the other end and provided with a transverse stop, a plunger mounted for reciprocation in said press-box, a beam extending rearwardly of said plunger and provided with a transverse recess, a stop member rigidly secured to said beam and bearing against said base-stop when the plunger is in withdrawn position and provided with a transverse recess for registration with the recess in said beam, a transverse chock for fitting in said recesses, a spring for holding said beam and its attached stop member yieldably in withdrawn position, and tripping means for moving said beam and its attached plunger and stop member in one direction and releasing the same for the return movement by the action of said spring.

4. In a device of the class described, a press-box having a baling-box extending from one end and a supporting base-frame extending from the other end and provided with a transverse stop, a plunger for reciprocation in said press-box and having an operating-beam extending therefrom provided with a transverse recess, a stop member rigidly secured to said beam for bearing against said base-stop when the beam is in withdrawn position and provided with a transverse recess for registration with the recess in said beam, a transverse chock fitting in said recess, a spring connected to yieldably maintain said beam and plunger in withdrawn position, a stud extending from said base-frame in central alinement with said press-box, a trip-arm pivoted by one end to said stud with the body of the trip-arm opposite the body of the beam and with a transverse recess near its free end, straps attached to opposite sides of the free end of said beam and pivoted to the opposite sides of the free end of said trip-arm, and a crank-arm mounted for rotation and provided with a roller at its free end for engaging said trip-arm and passing through said recess at the terminal of the forward stroke to release the trip-arm.

810,276. MOLD FOR DRAIN OR SEWER PIPES. JAMES B. HILL, Findlay, Ohio. Filed Aug. 30, 1905. Serial No. 276,426.

Claim.—1. A mold comprising a base provided with an upwardly-extending flange, a sectional inner shell engaging the adjacent walls of the flange, a sectional expanding ring resting on the base and serving to clamp the inner shell in engagement with said walls, an expansible outer shell of less height than the inner shell and spaced from the latter to favor an intermediate molding-chamber, inwardly-extending lugs secured to the upper end of the outer shell and adapted to engage the exterior walls of the inner shell, loops pivotally mounted on one longitudinal edge of the outer shell, and hooks pivotally mounted on the adjacent longitudinal edge of the shell and adapted to engage said loops for clamping the outer shell in engagement with the flange.

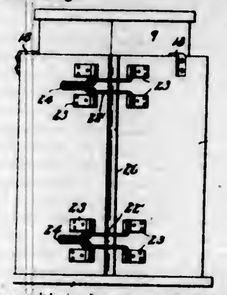

2. A mold comprising a base provided with an upwardly-extending flange, a sectional inner shell engaging said flange, a flat sectional expanding ring engaging the interior walls of the inner shell and provided with alined inwardly-extending operating-handles, a retaining-collar provided with a seating-groove for the reception of the upper end of the inner shell, a split expansible outer shell spaced from the inner shell, to form an intermediate molding-chamber and having one longitudinal edge thereof formed with a vertical groove adapted to receive the adjacent longitudinal edge of the outer shell, and means for clamping the outer shell in engagement with the flange.

810,277. ATTACHMENT FOR CHAIRS. VIRGINIA M. HOLLYDAY, Baltimore, Md. Filed Apr. 4, 1905. Serial No. 253,703.

Claim.—1. A double seat of the vis-à-vis type having a central support between the seats proper, the same being provided with two passages serving as hearing and speaking tubes and having open mouths which project rearward on opposite sides of the central support so that each set of such mouths is available for hearing and speaking by the person occupying the contiguous seat, substantially as described.

2. An improved article of furniture, comprising a double seat having backs and an intervening or middle portion forming a continuation thereof, and a horizontal bar C forming a rigid attachment of such middle portion, and provided with passages opening on opposite sides of the bar and arranged for convenience of use for hearing and speaking in the manner described.

3. A seat comprising two seats proper and a rigid vertical frame intervening the same and having at the top lateral projections each provided with a passage opening at one end on the rear side thereof or toward the back of the contiguous seat, the opposite end of the passage opening on the other side of the frame, as and for the purpose specified.

810,278. CURTAIN-FIXTURE. CHARLES L. HOPKINS, Albany, N. Y., assignor to The Curtain Supply Company, Newark, N. J., a Corporation of New Jersey. Filed Aug. 21, 1903. Serial No. 170,373.

Claim.—1. In a curtain-fixture, the combination of a window-frame, a roller mounted therein, a spring for rotating the roller, a curtain winding upon said roller, a winding-drum mounted upon the window-frame, a spring for rotating the winding-drum, a tape, winding upon said winding-drum, the end of the tape, being secured to the curtain, the power of the springs being opposed the one to the other whereby the curtain and tape are maintained in a tense condition, substantially as described.

2. In a curtain-fixture, the combination with a curtain, of flexible connections secured to the lower edge of the curtain, a rotatable drum upon which the flexible connections wind, means for impeding the rotation of the drum in one direction, the said drum having free rotation in the opposite direction, and spring means for rotating the drum, for the purpose set forth.

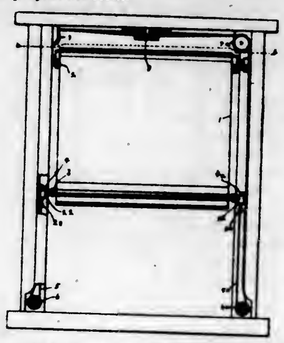

3. In a curtain-fixture, the combination with the curtain, of tapes secured to the curtain, a rotatable drum for taking up said tapes, a spring for rotating the drum, and means for frictionally resisting the rotation of the drum when the said drum is rotated in the direction to let off the tapes, substantially as and for the purpose described.

4. In a curtain-fixture, the combination of a window-frame, a spring-actuated roller mounted therein, a curtain winding upon the roller, a spring-rotated drum mounted upon the window-frame, a pair of tapes each having an end secured to the curtain, the other ends of the tapes being brought to the drum and winding thereon from opposite sides of said drum, for the purpose described.

5. In a curtain-fixture, the combination of a window-frame, a spring-actuated roller mounted therein, a curtain winding upon said roller, a curtain-stick for said roller, a spring-rotated drum mounted upon the upper portion of said window-frame, a pair of pulleys mounted on the lower portion of said window-frame, a pair of tapes each passing around one of said pulleys and having one end secured to one end of said curtain-stick, the other ends of the tapes being brought to the drum and winding thereon from opposite sides of said drum, substantially as described.

810,279. SHADE-FIXTURE. CHARLES L. HOPKINS, Albany, N. Y., assignor to The Curtain Supply Company, Newark, N. J., a Corporation of New Jersey. Filed Sept. 29, 1903. Serial No. 176,081.

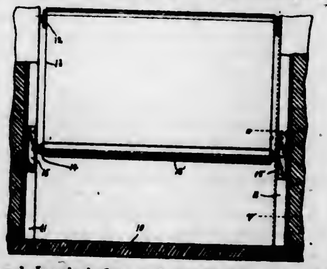

Claim.—1. In a shade-fixture, the combination with a spring-actuated shade, of a stick carried by the shade, shoes at the ends of the stick, a groove adjacent to the shade forming a guideway for the shoe, a yielding surface within the groove with which the shoe normally contacts, and a harder surface adjacent to the yielding surface with which the shoe may contact when the shade-fixture is tilted, for the purpose set forth.

2. In a shade-fixture, the combination with a shade, of a stick carried by the shade, an elongated, spring-pressed shoe at the end of the stick having a plurality of contact-points, a side post adjacent to the shade having a plurality of friction-surfaces of unlike frictional holding power, one of the contact-points of the shoe normally engaging a friction-surface having greater frictional holding power and one or more contact-points adapted to engage a friction-

surface having less frictional holding power when the shade-fixture is tilted, for the purpose set forth.

3. In a shade-fixture, the combination with the shade, of a stick carried by the shade, a shoe carried by the stick, a window-frame adjacent to the shoe, a frictional holding-surface upon the window-frame with which the shoe normally engages, and another surface upon the window-frame having less holding power upon the shoe than the first-named holding-surface and with which the shoe may engage when the shade-fixture is inclined.

4. In a shade-fixture, the combination with the shade and a stick carried thereby, of a shoe at the end of the stick, a plurality of opposing surfaces adjacent to the shoe with which the shoe may engage, said surfaces having unequal holding power upon the head, and said shoe, when in contact with either of said surfaces, being movable in both directions over the latter for the purpose set forth.

5. In a shade-fixture, the combination with the shade and a stick carried thereby, of shoes at the ends of the stick, a plurality of opposing surfaces adjacent to a shoe having unlike holding power, the shoe normally contacting only with an opposing surface having greater holding power but contacting with an opposing surface having less holding power when the fixture is tilted, for the purpose set forth.

810,280. FIBER-SCUTCHER. EDMUND B. HORINE, Nicholasville, Ky., assignor of one-half to Roscoe Horine Welch, Lexington, Ky. Filed June 13, 1905. Serial No. 265,102.

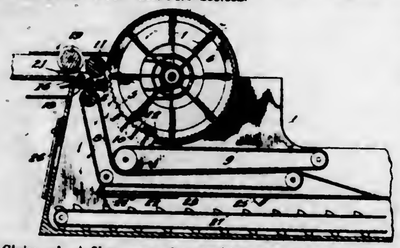

Claim.—1. A fiber-separating machine comprising a stationary casing having an inlet-opening, and an outlet-opening below the inlet-opening, a rapidly-revolving fan mounted in said casing, scutcher-plates mounted concentrically on said fan and having teeth in their outer edges, and a conveyer passing in close proximity to said outlet-opening for receiving the fiber therefrom, such conveyer being so constructed as to permit the chaff and other refuse being forced therethrough by the blast from the fan.

2. A fiber-separating machine comprising a stationary casing having an inlet-opening, and an outlet-opening below the inlet-opening, a rapidly-revolving fan mounted in said casing, scutcher-plates mounted concentrically on said fan and having teeth in their outer edges, said plates being arranged in zigzag form, with the apexes of the angular portions thereof intersecting a common plane perpendicular to the axis of rotation, and a conveyer moving in close proximity to said outlet opening.

3. A fiber-separating machine comprising a casing having an inlet-opening, a fixed bar forming the bottom of such opening, a series of feed-rollers adjacent to said bar, a pressure-roller for holding and crushing the stalks against said series of rollers, said casing having an outlet-opening beneath said bar, a rapidly-rotating fan mounted in said casing, a series of scutcher-plates arranged concentrically on said fan and having teeth in their outer edges, and a conveyer in close proximity to said outlet-opening.

4. A fiber-separating machine comprising a stationary casing having an inlet-opening, and an outlet-opening beneath said inlet-opening, a rapidly-revolving fan within said casing, scutcher-plates mounted on said fan, and means for preventing the fiber from being drawn inwardly through said outlet-opening by the suction or reaction of the fan.

5. A fiber-separating machine comprising a stationary casing having an inlet-opening, and an outlet-opening beneath said inlet-opening, a rapidly-revolving fan within said casing, scutcher-plates mounted on said fan, and a series of deflectors mounted on said casing beneath said outlet-opening for preventing the fiber from being drawn through said outlet-opening by the suction or reaction of the fan.

6. A fiber-separating machine comprising a stationary casing having an inlet-opening, and an outlet-opening beneath said inlet-opening, a rapidly-revolving fan within said casing, scutcher-plates mounted on said fan, and a series of doors for increasing the area of said outlet-opening, said doors when opened being at substantially right angles to said casing and acting as deflectors for preventing the fiber from being drawn inwardly through said outlet-opening by the suction or reaction of the fan.

7. A fiber-separating machine comprising a circular casing having an inlet-opening, a fixed bar forming the bottom of such inlet-opening, an outlet-opening beneath such bar, means for increasing the area of such outlet-opening, a conveyer movable in close proximity to such outlet-opening, a rapidly-revolving fan mounted in said casing, a series of scutcher-plates mounted at the periphery of such fan and encircling the latter, such plates being arranged in zigzag form and having teeth in their outer edges, a series of feed-rollers adjacent said fixed bar, and a pressure-roller mounted above said feed-rollers.

8. A fiber-separating machine having a feed-table, a rotary scutcher, means for holding the stalks while they are being acted upon by the scutcher, a roller mounted above the feed-table and means coöperating with such roller for equally distributing the stalks to said holding means.

9. A fiber-separating machine having a feed-table, a rotary scutcher, means for holding the stalks while they are being acted upon by the scutcher, and a roller mounted above said table having a right and left hand spiral extending from its center to each end.

10. A fiber-separating machine having a feed-table, a rotary scutcher, means for holding the stalks while they are being acted upon by the scutcher, a roller mounted above said table having a right and left hand spiral extending from its center to each end, and guide-plates extending upwardly from the bottom of the feed-table beneath said roller.

11. In a fiber-separating machine, a casing having an inlet-opening, feed-rollers, an upper roller for holding and crushing the stalks against said rollers, scutcher-plates rotating in the direction of their lengths, a fan, and conveyers traveling at a higher speed than the feed-rollers for exerting a pull on the fiber.

810,281. CURTAIN-FIXTURE. PAUL A. HOUGHTALING, Riverton, N. J., assignor to The Curtain Supply Company, Newark, N. J., a Corporation of New Jersey. Filed Jan. 9, 1905. Serial No. 240,212.

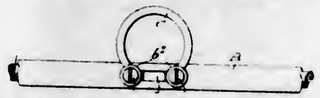

Claim.—1. In a curtain-controlling device, the combination of two shoe-rods connected to the lower portion of the curtain, and a substantially U-shaped spring joining said rods and tending to force them apart, substantially as described.

2. In a curtain-controlling device, the combination of a tubular curtain-rod, two shoe-rods within said curtain-rod, and a spring outside of the curtain-rod operatively associated with the ends of said shoe-rods, and tending to force them apart, substantially as described.

3. In a curtain-controlling device, the combination of a tubular curtain-rod, two shoe-rods within said curtain-rod, and a substantially U-shaped spring having its ends attached respectively to the said shoe-rods and tending to force them apart, substantially as described.

4. The combination of a pair of shoe-rods guided in the lower portion of a curtain, a substantially U-shaped spring connecting said rods and tending to force them apart, with pinch-handles for moving said rods toward each other against the action of the spring, substantially as described.

5. The combination of a tubular curtain-rod supported on the lower portion of a curtain, two shoe-rods, a substantially U-shaped spring operatively associated with said shoe-rods through a slot in the curtain-rod, and pinch-handles connected to said spring for moving together the shoe-rods, substantially as described.

6. The combination of a tubular curtain-rod, shoe-rods within the same, handles operatively associated with the shoe-rods and projecting through a slot in the curtain-rod, with a piece of spring material extending between said handles outside of said curtain-rod, substantially as described

7. The combination of a tubular curtain-rod, two shoe-rods therein, with a piece of spring material operatively associated with the ends of the shoe-rods and projecting above the same, with handles connected to the spring-piece, substantially as described.

8. A curtain-fixture including a pair of oppositely-disposed rods, pinch-handles operatively associated with said rods, and a spring bridging said handles for normally shifting the rods in opposite directions, said pinch-handles and spring being formed for joint attachment to said rods.

9. A curtain-fixture including a pair of oppositely-disposed rods, pinch-handles operatively associated with said rods, and a spring bridging said pinch-handles for normally shifting one of said rods in one direction, said pinch-handles and spring being formed for joint attachment to said rods.

10. A curtain-fixture including a pair of oppositely-arranged rods, and a bow spring bridging the space between said rods for relatively shifting said rods, in combination with means for fastening the ends of said spring to the ends of said rods.

11. A curtain-fixture including a pair of oppositely-arranged rods, and a bow spring bridging the space between said rods for relatively shifting one of said rods, in combination with means for fastening the ends of said spring to the ends of said rods.

12. A curtain-fixture including a pair of oppositely-arranged rods, a spring bridging said rods and connected thereto for relatively shifting said rods, and pinch-handles connected to and projecting outwardly from said spring, said pinch-handles and spring being formed for joint attachment to said rods.

13. A curtain-fixture including a pair of oppositely-arranged rods, a spring bridging said rods and connected thereto for relatively shifting one of said rods, and a pinch-handle projecting outwardly from said spring, said pinch-handle and spring being formed for joint attachment to said rods.

14. A curtain-fixture including a pair of oppositely-arranged rods and a bow spring operatively associated with the rods for relatively shifting one of them.

15. A curtain-fixture including a curtain-stick, a pair of oppositely-arranged rods therein, and a spring for relatively shifting one of said rods connected thereto at its inner end, said spring being arranged without the curtain-stick.

16. A curtain-fixture including oppositely-arranged rods, means for relatively shifting one of said rods comprising a spring having apertured portions, and screws passing through said apertured portions and engaging the rods to secure the springs in place.

17. A curtain-fixture including oppositely-arranged rods, means for relatively shifting one of said rods comprising a bow spring having apertured portions, and screws passing through said apertured portions and engaging the rods to secure the spring in place.

18. A curtain-fixture including oppositely-arranged rods, means for relatively shifting one of said rods comprising a spring having apertured portions, screws passing through said apertured portions and engaging the rods to secure the spring in place, and a pinch-handle projecting from said spring.

19. A curtain-fixture including oppositely-arranged rods, means for relatively shifting one of said rods comprising a bow spring having apertured portions, screws passing through said apertured portions and engaging the rods to secure the spring in place, and a pinch-handle projecting from said spring.

20. In a curtain-fixture, a holding part formed to engage the guideway of a window-frame, a bow spring for actuating the same, and a pinch-handle joined with said spring formed to project without said guideway.

21. In a curtain-fixture, a holding part formed to engage the guideway of a window-frame, a bow spring for actuating the same, and a pinch-handle integral with said spring formed to project without said guideway.

810,282. RECOIL-CHECK FOR VEHICLES. HENRY A. HOUSE, Bridgeport, Conn. Filed Apr. 20, 1905. Serial No. 256,621.

Claim.—1. A recoil-check adapted to arrest the sudden return of a vehicle-spring after compression comprising a casing expansible grippers adapted to have both a lateral and a longitudinal movement, within said casing, means for expanding said grippers under a sudden strain so as to temporarily check the recoil of the vehicle-spring, means to permit the moderate recovery of said spring, for the purpose set forth.

2. A recoil-check adapted to arrest the sudden return of a vehicle-spring after compression, comprising a casing, grippers adapted to have both a lateral and a longitudinal movement in said casing, means for expanding said grippers under a sudden strain so as to temporarily check the recoil of the vehicle-spring, means to permit the moderate recovery of said spring, for the purpose set forth.

3. A recoil-check adapted to arrest the sudden return of a vehicle-spring after compression comprising a casing, grippers adapted to frictionally engage the inner wall of said casing, toggle-arms on said grippers, a connecting-rod extending said arms to effect said frictional engagement, recovering-springs acting against said grippers, and adapted thereby to permit of a gradual recovery of the vehicle-spring, for the purpose set forth.

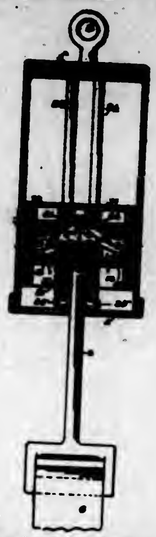

4. The combination, in a vehicle having compressible springs, of a recoil-check adapted to arrest the sudden recoil of said springs after compression, said recoil-check connected with the vertically-movable body portion of the vehicle and the axle or other like non-vertical movable part of the vehicle, said check comprising a casing, grippers located within said casing and adapted to have both a lateral and longitudinal movement therein, toggle-arms on said grippers, a connecting-rod adapted to actuate said grippers through the medium of said grippers and against the interior wall of the casing under the compression of the vehicle-springs and thus temporarily prevent the sudden recoil of said springs, recoil-springs within the casing to relieve the outward pressure of said grippers and permit the gradual recovery of the vehicle-springs, for the purpose set forth.

5. The combination, with a vehicle having compressible springs, of a recoil-check connected with the vertically-movable body portion of the vehicle and the axle or other like non-vertical movable part of the vehicle, one of said connections being flexible, said recoil-check comprising a casing, grippers within said casing and adapted to have both a lateral and a longitudinal movement therein and always in frictional contact with the interior wall of the casing toggle-arms pivotally supported on said grippers, a connecting-rod adapted to actuate said grippers against the interior wall of the casing under the compression of the vehicle-springs and thus temporarily check the sudden recoil of said springs, means to partially release the frictional contact of said grippers and permit the gradual recovery of the vehicle-springs, for the purpose set forth.

6. The combination, in a vehicle having compressible springs, of a recoil-check comprising a casing, a connecting-rod longitudinally movable therein, means for connecting the casing and connecting-rod to the vehicle, one to a vertically-movable part, and the other to a non-vertical movable part, grippers adapted to have both a lateral and longitudinal movement in the casing, toggle-arms having one of their ends pivotally supported to said grippers, their free ends operatively connected to said connecting-rod so that, when the vehicle-springs are compressed, said grippers are expanded forcibly against the casing to temporarily check the recoil of said springs, means for partially releasing the contact of said grippers to permit of their gradual recovery, for the purpose set forth.

7. The herein-described recoil-check comprising a casing, expansible grippers therein, toggle-arms having one of their ends pivotally supported on said grippers, a connecting-rod, the free ends of the grippers connected with said rods, studs secured to said casing and passing freely through said grippers, springs embracing said studs having a kicking-post both on the studs and grippers, for the purpose set forth.

8. The herein-described recoil-check comprising a dust-proof

casing, expansible grippers therein, toggle-arms having one of their ends pivotally supported on said grippers, a connecting-rod, the free ends of the grippers connected with said rods, studs secured to said casing and passing freely through said grippers, springs embracing said studs having a kicking-post both on the studs and grippers, for the purpose set forth.

810,283. FOLDING EGG-CRATE. ANDREW D. IRBIE, Forney, S. D. Filed May 6, 1904. Serial No. 206,602.

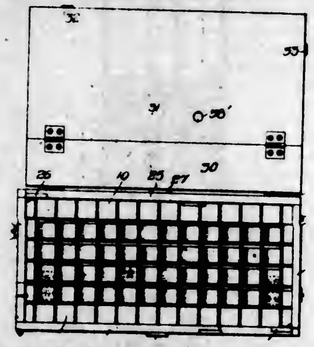

Claim.—A collapsible crate comprising a bottom including major and minor hinged members, a side hinged to said minor member of said bottom, ends each comprising a major and a minor member hinged together, the major member of one end being hinged to the said side at one of its ends and the minor member of the other end being hinged to the said side at the other of its ends, a second side hinged to the major member of the first-named end, a lid comprising a minor section hinged to the last-named side and a major member hinged to the minor section, the said major member of the bottom being adapted to lie with one of its faces against one of the faces of one of the major portions of one of the ends and a portion of one of the faces of one of the sides.

810,284. FOUNTAIN-PEN. FRANK M. KNEISS, Philadelphia, Pa. Filed Mar. 20, 1905. Serial No. 251,196.

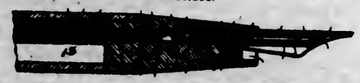

Claim.—1. A fountain-pen feeder of uniform depth from end to end and having its forward portion reduced in width to form a narrow tongue with parallel flat sides which extend substantially at right angles to the nib of the pen, said feeder having top and bottom grooves and fissures located in said grooves, said fissures and grooves all terminating at their inner ends in an enlarged interrupting space.

2. A fountain-pen feeder comprising a body portion and a tongue extending forward therefrom and, together with the body portion, being grooved to conduct the ink to the pen-nib, the tongue being provided near its outer end with air-holes extending through the sides of the tongue adjacent to the upper edge thereof.

3. A fountain-pen feeder having its body formed with a top groove in its forward portion and a bottom groove in its rear portion, each of said grooves being provided with auxiliary capillary fissures, and an enlarged interrupting space being left at the junction of said top and bottom grooves.

4. A fountain-pen feeder formed with a top groove in its forward portion and a bottom groove in its rear portion, said grooves terminating at their inner ends in an interrupting space formed by the junction of the grooves, both grooves being provided with capillary fissures which also terminate and lead into said space.

5. A fountain-pen feeder having a groove formed in its upper side under the pen-nib and provided with a drain formed in the upper edge of the feeder and leading from the outside of the feeder inward to the groove and located within the mouth of the pen.

810,285. PIANO-REPAIRER'S TOOL. SAMUEL H. KING, Marion, Ind., assignor of one-third to David A. Williams, Marion, Ind. Filed Oct. 6, 1905. Serial No. 281,669.

Claim.—1. A tool, substantially as herein described, comprising a guide-rod socketed in its outer end to engage with the end of a tune-pin and provided with a disk or piston and with a shank projecting therefrom, a pusher-cylinder having at its outer end an opening for the guide-rod and threaded within its opposite end, the stock threaded in said end of the cylinder and having a socket to receive the shank of the guide-rod, an extension, having a knob against which the operator may press, and a spring within the cylinder and bearing between the disk or piston and the stock, all substantially as and for the purpose set forth.

2. A tool for use in polishing piano tune-pins, comprising means for engaging against the end of a pin, and means movable thereover for shifting the polishing medium along the pin to be polished.

3. A tool for use in polishing piano tune-pins, comprising a rod to bear against the end of the pin to be polished, and a cylindrical pusher movable along and over the said rod whereby it may operate to push or shift the polishing medium along the pin to be polished.

4. A tool for use in polishing piano tune-pins, comprising a guide-rod to bear against the end of a pin, a cylindrical pusher movable over said rod and adapted to be shifted at one end along the pin to be polished, and a spring bearing between said rod and cylinder.

5. A tool for use in polishing piano tune-pins, comprising a guide-rod to bear against the outer end of a tune-pin, a cylinder over said guide-rod and movable along and beyond the outer end thereof, a spring for actuating the guide-rod, and a rod in connection with the cylinder and having a knob against which the operator may press in the use of the invention, substantially as set forth.

810,286. FURNACE-CHARGING APPARATUS. WILLIAM G. KRAMS, Sharon, Pa., assignor to The National Malleable Castings Company, Cleveland, Ohio, a Corporation of Ohio. Filed June 30, 1905. Serial No. 267,736.

Claim.—1. Furnace-charging apparatus comprising a traveling carriage or crane, a trolley thereon, a frame pivoted at the rear to a support depending from the trolley, a rotary charging-bar on the frame, and a flexible connection extending from the trolley and adapted to raise and lower the frame on its pivot; substantially as described.

2. Furnace-charging apparatus comprising a traveling carriage or crane, a trolley thereon, a frame pivoted at the rear to a support depending from the trolley, a motor on the frame, a rotary charging-bar on the frame, and a flexible connection extending from the trolley and adapted to raise and lower the frame on its pivot; substantially as described.

810,286.

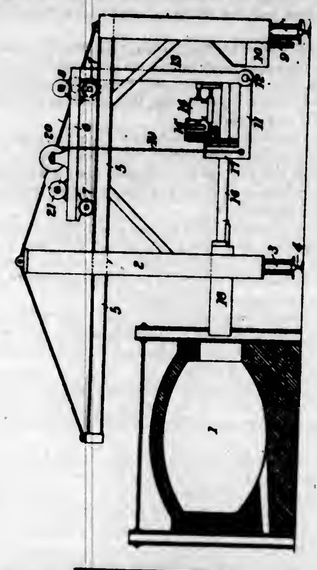

810,287. HORSE-HYDNER. JOHN B. LALLY, Frankfort, Kans. Filed June 28, 1905. Serial No. 267,370.

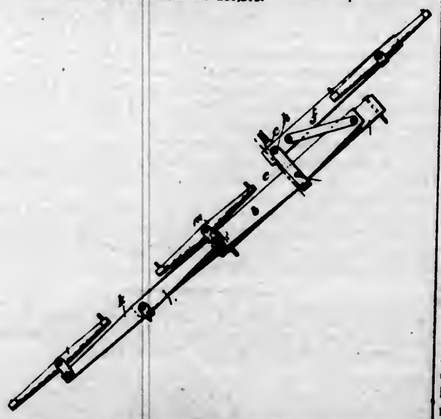

Claim.—In a three-horse evener of the character described, the combination of the base-bar, the lead-bar and its equipments secured on the base-bar, the draft-hook and its shank, the latter extending between said bars, the equalizer-bar supported on the shank of the draft-hook, the binding-clevis, a bolt securing the base-bar and lead-bar and shank of the draft-hook together and a bolt connecting the inner end of the equalizer-bar and shank of the draft-hook.

810,288. WRENCH. MARTIN M. LE MAY, Leighton, Ala. Filed Aug. 16, 1905. Serial No. 274,288.

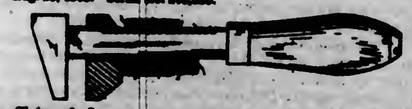

Claim.—1. In a wrench, a rigid jaw having a shank with rib projections on one edge, a slidable jaw having a tubular shank embracing the shank of the rigid jaw and formed with a slot to expose the rib projections of the latter, a boss on the shank of the slidable jaw, and an internally-threaded sleeve rotatably disposed on the shank of the slidable jaw between the latter and the said sleeve and having reversely- inclined faces at opposite ends and an unthreaded portion extending longitudinally therethrough to clear the rib projections of the shank on the rigid jaw.

2. In a wrench, a rigid jaw having a shank with rib projections on one edge, a slidable jaw having a shank embracing the shank of the rigid jaw and provided with a projection near its rear terminal, and an internally-threaded sleeve rotatably disposed on the shank of the slidable jaw and provided with reversely-inclined faces at opposite ends to jam the same between the slidable jaw and the projection to lock the said latter jaw in adjusted position.

3. In a wrench, a rigid jaw having a shank provided with rib projections, a slidable jaw having a shank embracing the shank of the rigid jaw and provided with a projection at a distance from the jaw thereof, and a sleeve rotatably disposed on and movable with the shank of the slidable jaw, the said sleeve having internal threads partially extending thereover, and reversely-inclined faces at opposite ends beginning and terminating at inner and outer portions of shoulders.

4. In a wrench, a rigid jaw having a shank with rib projections on one edge, a slidable jaw having a tubular shank to embrace the shank of the rigid jaw, said tubular shank being longitudinally slotted to expose the rib projections, and also provided with a boss at the rear extremity diametrically opposite the slot, and a sleeve having threads extending around a portion of the interior thereof, and the remaining part of the interior unthreaded, said sleeve being rotatably disposed on the shank of the slidable jaw and having reversely-inclined faces at the forward and rear ends to respectively engage the adjacent edge portions of the slidable jaw and the projection.

810,289. COLLAPSIBLE TAP. WILBUR A. LEONARD, New Haven, Conn., assignor, by mesne assignments, to The Geometric Tool Company, New Haven, Conn., a Corporation of Connecticut. Filed Jan. 26, 1905. Serial No. 243,104.

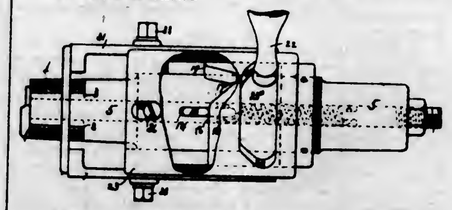

Claim.—1. A collapsible screw-thread-cutting implement, comprising a slotted stock, cutters in the slots, and a plunger longitudinally movable in the stock, with radial webs on the plunger projecting into the cutter-slots with wedge-surfaces to act on the cutters.

2. A collapsible screw-thread-cutting implement, comprising a slotted stock, cutters in the slots, a plunger longitudinally movable in the stock, wedge-surfaces between the plunger and cutters adapted to positively move the cutters upon the movement of the plunger, in combination with a pin in the plunger, a cam for said pin, an abutment-sleeve adapted for longitudinal movement on the stock, and means for operating the cam by the movement of said abutment-sleeve.

3. A collapsible screw-thread-cutting implement, comprising a slotted stock, cutters in the slots, a plunger longitudinally movable in the stock, wedge-surfaces between the plunger and cutters adapted to positively move the cutters upon the movement of the plunger, in combination with a cross-pin on the plunger, a cam-collar rotatable on the stock having oppositely-inclined cam-faces of different heights and means for causing either of said faces to move the plunger-pin.

4. A collapsible screw-thread-cutting implement, comprising a slotted stock, cutters in the slots, a plunger longitudinally movable in the stock, wedge-surfaces between the plunger and cutters adapted to positively move the cutters upon the movement of the plunger, in combination with a cross-pin on the plunger, a cam-collar rotatable on the stock and engaged by said cross-pin, a bank-stop for the collar, an operating-stud for the cam, an abutment-sleeve longitudinally movable on the stock, and means for preventing its rotation thereon, a cam-groove in the casing through which the cam-stud projects and a return-spring for the plunger.

5. In combination, a stock having radial slots for the cutters and a plunger having radial webs projecting into said radial slots to there engage said cutters to move them inwardly, and outwardly by longitudinal movement of the plunger.

810,290. DEVICE FOR LOADING SUGAR-CANE. GUSTAVE D. LUSH, New Orleans, La. Filed Aug. 22, 1905. Serial No. 275,321.

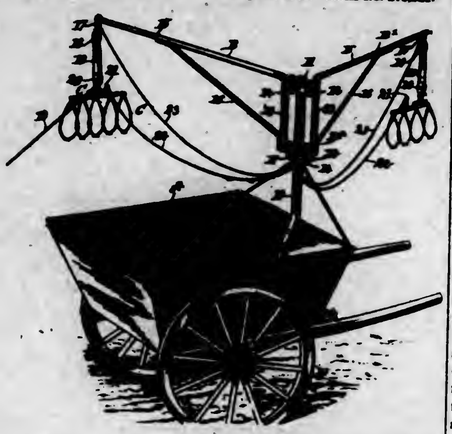

Claim.—1. A standard adapted for attachment to a vehicle, cranes removably mounted on said standard at opposite sides thereof and arranged to swing to and from each other, grapples, block-and-fall connections between the grapples and the cranes, independent shifting-cables for the cranes, and independent tripping-cables for the grapples.

2. A standard adapted for attachment to a vehicle-body, having cross-arms secured thereto, which arms terminate in knuckles at their outer ends, cranes adapted for removable and swinging connection with the standard, each crane comprising a vertical swing member and a carrying member at an angle to the swing member and having an upward and outward inclination, and pintles extending down from a side of the swing member, adapted to enter the knuckles on the cross-arms of the standard, a block connected with the outer end of the swing-arm of each crane, a grapple located beneath each of said blocks and provided with a trip-arm, a block connected with each grapple, an operating-rope connected with the blocks of the grapples and the blocks carried by the swing-arms of the cranes, a rope connected with the outer end of the swing-arm of each crane, and a second rope connected with the trip-arm of each grapple, all of said ropes being connected at their inner ends with the said standard.

810,291. INTERIOR BUILDING CONSTRUCTION. WILLIAM D. MANN, Chicago, Ill. Filed June 27, 1904. Serial No. 214,499.

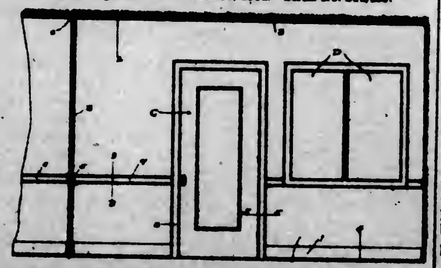

Claim.—1. The method of erecting and securing in position the interior walls of a building, which consists in first preparing the trim, then placing parts of the trim in position then erecting the wall exclusive of its plaster, then securing other parts of the trim in place, and then finishing the wall, substantially as described.

2. The method of erecting and securing in position the interior walls of a building, which consists in placing parts of the trim in position, then erecting the wall-frame, then placing other parts of the trim in position, and then plastering to the trim, substantially as described.

3. The method of building interior walls, which consists in first preparing a base-piece, chair and picture rails, then setting the base-piece and picture-rail in position, then erecting the wall-frame, then setting the chair-rails in position, and then plastering the wall-frame, substantially as described.

4. The method of building interior walls, which consists in first preparing a base-piece, a door-jamb, picture and chair rails, setting the base-piece and door-jamb in position, erecting the wall-frame, setting the railings in position, and then plastering the wall-frame, substantially as described.

5. The method of building interior walls, which consists in first preparing the trim, then setting certain parts of the trim in position on the floor, then erecting the wall-frame, then setting the other parts of the trim by securing them to the wall-frame, and finally finishing the wall-frame, substantially as described.

6. The step in the method of erecting and securing in position the interior walls of a building, which consists in placing parts of the trim in position on the wall-frame, and then plastering to the trim, substantially as described.

7. In interior building construction, a trim extending from the wall construction beyond the finish of the wall, whereby the trim can be first secured in position and then the wall finished, substantially as described.

8. In interior building construction, a trim consisting of a socket member adapted to receive the wall structure and to extend out beyond the same, in combination with a portion of the permanent wall structure fitting into said socket whereby the trim can be first set and then the wall structure built and finished, substantially as described.

9. The method of erecting interior walls, which consists in placing a socketed base-piece, a socketed picture-mold cap, and a socketed door-jamb in position, then building the wall-frame, and then plastering the same.

10. The method of erecting interior walls, which consists in placing a socketed base-piece, a socketed picture-mold cap and a socketed door-frame in position, then building the wall, then securing a chair-rail to the wall-frame, and then plastering such frame.

11. A trim for building constructions, consisting of a sheet-metal strip formed into the shape of the trim for opposite sides of the same wall, and filled with cement made in socket form to receive the wall structure, substantially as described.

12. The combination with an interior building-wall, of trim therefor, extending from the wall-frame through the finish, substantially as described.

13. The combination with an interior building-wall, of a trim therefor comprising a socket member adapted to receive the frame construction of the wall and to serve as trim for the opposite side of the wall, substantially as described.

810,292. SPOOL-HOLDER. JOHN W. MEAKER, Chicago, Ill., assignor, by mesne assignments, to Meaker Sales Company, a Corporation of Michigan. Filed Apr. 30, 1904. Serial No. 206,696.

Claim.—1. A spool-holder of the character described, consisting of a casing which is open at one side for the insertion and removal of a spool, spring-arms mounted within the casing having oppositely-curved faces adapted to embrace a spool and yieldingly bear upon opposite sides of its cylindrical surface, and a thread-passage through a wall of said casing.

2. A spool-holder of the character described, consisting of a casing which is open at one side for the insertion and removal of a spool, two pairs of spring-arms located at opposite ends of said casing and having their free ends directed toward the open side of said casing, said arms being adapted to embrace and yieldingly bear upon the edges of the end flanges of the spool at opposite sides thereof, and a thread-passage through the wall of the casing which is opposite said open side.

3. A spool-holder of the character described consisting of a casing which is open at one side for the insertion and removal of a spool, two pairs of spring-arms located at opposite ends of said casing and having their free ends directed toward the open side thereof, said arms being adapted to embrace and yieldingly bear upon the edges of the end flanges of the spool at opposite sides thereof, the arms of each pair which bear upon the same side of the spool being integrally connected together at their lower or free ends, and a thread-passage through the wall of the casing opposite its open side.

4. A spool-holder of the character described, consisting of a casing which is open at one side for the insertion and removal of a spool, spring-arms having oppositely-curved faces adapted to embrace a spool and yieldingly bear upon opposite sides of its cylindrical surface, said arms being formed integral with a plate which rests against the inner surface of the casing opposite its open side, and a guide-tube for the passage of the thread from the spool, said tube being inserted through said casing and said plate and forming an eyelet which connects the plate to the casing.

5. A spool-holder of the character described, consisting of a casing provided with an opening for the passage of the thread and a guide-tube which extends outwardly from the outer surface of the casing, and a thread-gripping device located on the wall of the casing at a distance from said guide-tube, said casing being provided at both sides of the space between the guide-tube and gripping device with outwardly-extending flanges.

6. A spool-holder of the character described, consisting of a casing provided with an aperture for the passage of the thread, and with a slot, and a plate secured to the inner surface of the casing and provided with arms which constitute spring-pressers and with a tongue which passes outwardly through said slot and forming with the edges or walls of the latter a thread-gripping device.

7. A spool-holder embracing a casing which is open at one side for the insertion and removal of a spool, said casing having a slot in the wall thereof which is opposite said open side, a plate within the casing provided with spring-arms for yieldingly engaging and holding a spool, and also with a tongue which passes outwardly through said slot, and a guide-tube for the thread forming an eyelet which secures the plate to the casing and which projects from the outer surface of the casing.

8. A spool-holder of the character described, consisting of a casing which is open on one side only for the insertion and removal of a spool, and which is provided with a slot in the wall opposite the open side, a plate within the casing provided with arms which form spring-pressers and with a tongue which passes outwardly through said slot and forms with the edges or walls of the slot a thread-gripping device, and an eyelet which secures said plate to the casing and which affords an exit-passage for the thread.

9. A spool-holder of the character described comprising a casing adapted to receive a spool and having interior spool-holding means, and having an aperture for the passage of the thread therefrom, said casing being provided with a slot or opening adapted to receive and hold a portion of a block of wax applied to the exterior of the casing.

10. As an article of manufacture, a spool-holder comprising a casing open on one side only for the insertion and removal of a spool, means within said casing for yieldingly holding a spool therein, said casing being provided with an aperture for the passage of thread from the spool, said aperture being located in the wall which is opposite the open side of said casing, said wall being joined on opposite edges by oblique walls, upon one of which is arranged a block of wax, the other of said oblique walls being provided with integrally-formed loops beneath which is inserted a strip of fabric, substantially as described.

810,293. PAPER-CABINET. JOHN W. MEAKER, Chicago, Ill., assignor, by mesne assignments, to Meaker Sales Company, a Corporation of Michigan. Filed Apr. 26, 1904. Serial No. 204,061.

Claim.—1. A paper-cabinet provided with a plurality of superposed paper-receiving shelves, with a sliding paper-support provided with a lateral and end ledges and with an adjustable paper-stop.

2. A paper-cabinet provided with a plurality of shelves the front edges of which are arranged in stepped or overlapped relation, the cabinet having a top wall which terminates at the rear of the front edge of the upper shelf and is provided with a hinged flap.

3. A paper-cabinet comprising bottom, top, side and end walls and having an inclined front, a series of shelves in said cabinet having their front edges in stepped relation, a cover hinged to the front edge of said bottom wall and adapted to form a forward continuation thereof when in its horizontal position, and a horizontal paper-support located below the lowermost shelf above the bottom wall and adapted to slide into and out of the cabinet and to rest upon the said cover when the latter is in its horizontal position and the said paper-support is in its extended position.

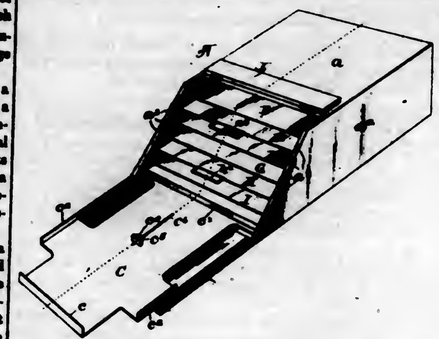

4. A paper-cabinet provided with a series of superposed paper-receiving shelves, the front edges of which are arranged in stepped relation, and having a cover hinged to the front edge of its bottom wall and a horizontal paper-support located beneath said shelves and adapted to slide into and out of the cabinet and to rest upon the cover when the latter is in its horizontal position and said paper-support is extended, said paper-support being provided with end and side ledges.

810,294. PAPER-CABINET. JOHN W. MEAKER, Chicago, Ill., assignor, by mesne assignments, to Meaker Sales Company, a Corporation of Michigan. Filed July 11, 1904. Serial No. 216,149.

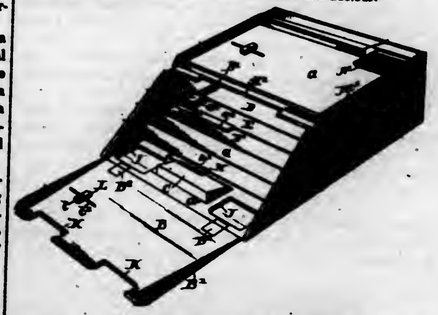

Claim.—1. A paper-cabinet embracing connected bottom, side and top walls having an open front inclined upwardly and rearwardly and provided with a plurality of paper-receiving shelves, the front edges of which are arranged in stepped relation, and with a flap hinged to the front edge of the bottom wall and, when swung downwardly into a horizontal position, forming a forward extension of the bottom wall and constituting with the front marginal portion of said bottom wall a paper-support, said cabinet also having on its lower wall at some distance inwardly from the edge thereof a ledge forming a stop for the inner edges of sheets of paper resting on the paper-support, and the said flap having a lateral guide ledge or shoulder for the side edges of said sheets of paper.

2. A paper-cabinet embracing connected bottom, side and top walls, having an open front inclined upwardly and rearwardly and provided with a plurality of paper-receiving shelves, the front edges of which are arranged in stepped relation, and with a flap hinged to the front edge of the bottom wall and, when swung downwardly into a horizontal position, forming a forward extension of the bottom wall and constituting with the front marginal portion of said bottom wall a paper-support, said cabinet also having on its lower wall at some distance inwardly from the edge thereof a ledge forming a stop for the inner edges of sheets of paper resting on the paper-support, and the said flap having a lateral guide ledge or shoulder for the side edges of said sheets of paper and also a laterally-adjustable stop.

3. A paper-cabinet provided with a series of superposed shelves, a flap hinged to the front edge of its lower wall, a ledge on the forward part of the bottom wall, said bottom wall having an aperture located between the side margin of the said bottom wall and the adjacent end of said ledge.

810,295. PAPER-CABINET. JOHN W. HEARNE, Chicago, Ill., assignor, by mesne assignments, to Meaker Sales Company, a Corporation of Michigan. Filed July 11, 1904. Serial No. 216,188.

Claim.—1. A paper-cabinet provided with superposed shelves having guide shoulders or ledges which extend from front to rear of the shelves and which are arranged in laterally-offset relation to each other.

2. A paper-cabinet provided with superposed shelves having guide shoulders or ledges which extend from front to rear of the shelves and are arranged in offset relation; said shelves also having in their front margins notches of progressively-increasing width from the bottom to the top of the cabinet.

3. A paper-cabinet provided with superposed shelves and having a top wall which forms a paper-support and is provided with a rear ledge and with an adjustable lateral ledge.

4. A paper-cabinet comprising superposed shelves, and having a top wall forming a paper-support, said top wall having stationary rear and lateral guide-ledges and an adjustable lateral stop.

5. A paper-cabinet comprising superposed shelves and a paper-support provided with rear and lateral guide-ledges, and with an aperture in line with the front surface of the rear guide-ledge.

6. A paper-cabinet provided with superposed shelves and having a top wall which forms a paper-support and is provided with rear and lateral guide-ledges, said top wall having an aperture located in line with the said rear guide-ledge.

7. A paper-cabinet provided with a series of superposed shelves, provided with lateral guide stripe or ledges which are adjustable laterally on the shelves.

8. A paper-cabinet provided with a series of superposed shelves, provided with rear guide-ledges that are adjustable toward and from the front edges of the shelves and with lateral guide-ledges that are adjustable laterally on said shelves.

810,296. STAND OR TABLE. JOHN W. HEARNE, Chicago, Ill., assignor, by mesne assignments, to Meaker Sales Company, a Corporation of Michigan. Filed Aug. 1, 1904. Serial No. 218,893.

Claim.—1. A table or stand having an open top and a pivotally-mounted leaf adapted to close said top, and to swing outwardly to form an extension of said table, a swinging support normally below said top having its pivotal supports located parallel with and adjacent to the ends of said leaf, suitable connections between said leaf and said support whereby the latter will be raised by the opening movement of said leaf, said leaf having a marginal edge which engages the swinging support between its axial line and its free end when said leaf is in its open position.

2. A table or stand having an opening in its top and a reversible leaf pivotally mounted in said opening, adapted to close the same and to be swung upwardly and outwardly to form an extension thereof, said leaf having its pivotal supports located at a distance from its marginal edge, a swinging support normally below said opening having its pivotal connections located adjacent to the axis of said leaf, a chain or cord having one end connected to said leaf and the other end connected to the free end of said support, a guide-pulley for said chain located at or near the rear end of said opening, whereby said support will be raised by the opening movement of said leaf, said leaf having a marginal edge adapted to move under a portion of said support to complete the lifting movement and maintain said support in its elevated position.

810,297. BUTTONHOLE-SEWING MACHINE. HENRY C. MILLER, Waterford, N. Y. Filed Apr. 19, 1902. Serial No. 103,749.

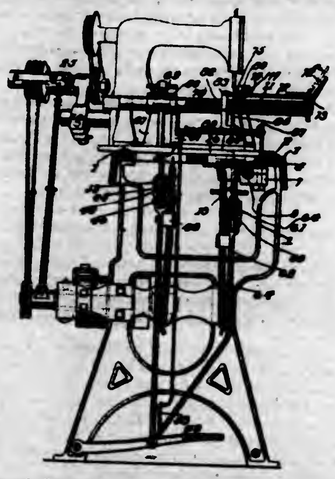

Claim.—1. In combination, two buttonhole cutting and stitching machines, gages, means for introducing a collar to the gages, devices for holding a collar while the machines simultaneously cut and stitch two buttonholes at predetermined points, mechanism for simultaneously operating the holding devices, and mechanism for operating the two machines.

2. In combination, two buttonhole cutting and stitching machines, a centralizing device, mechanism for holding a collar while the machines are operated simultaneously to cut and stitch buttonholes at predetermined points, and mechanism for operating the two machines.

3. In combination, buttonhole cutting and stitching machines, means for positioning a collar, gages, and devices for holding the collar for the machines to operate upon simultaneously to cut and stitch buttonholes in selected locations, means for operating the holding devices, and means for operating the buttonhole cutting and stitching machines.

4. In combination, a pair of buttonhole cutting and stitching machines, mechanism for introducing a collar to the machines, means for gaging the collar, means for clamping the collar after it has been gaged, and means for operating the pair of stitching and cutting machines.

5. In combination, a pair of buttonhole cutting and stitching machines, means located between the machines for positioning a collar, means simultaneously starting the machines, and means for independently starting the machines.

6. In combination, a pair of independently pivotally mounted buttonhole cutting and stitching machines, means for positioning a collar to be operated upon by the machines, mechanism for increasing or decreasing the distance between the machines, and mechanism for operating the pair of machines.

7. In combination, a pair of pivotally-mounted buttonhole cutting and stitching machines, means for positioning a collar to be operated upon by the machines, means for adjusting the machines to or from each other, mechanism for operating the machines, mechanism for simultaneously starting the machines and mechanism for independently starting the machines.

8. In combination a frame, a pair of buttonhole cutting and stitching machines having cutting-blades and stitching mechanism, the machines being pivotally mounted on the frame, the center of the cutting-blades of the respective machines being in alinement with the pivots, and means for positioning a collar to be operated upon.

9. In combination, a frame, a pair of buttonhole cutting and stitching machines having cutting-blades and stitching mechanism, the machines being independently mounted on the frame, the center of the cutting-blades of the respective machines being in alinement with the pivots, means for adjusting the machines to or from each other, and mechanism for positioning a collar to be simultaneously operated upon by the machines.

10. In combination, a pair of buttonhole cutting and stitching machines independently pivoted, each having a cutting-blade, and needle-stitching mechanism, the center of the cutting-blades being in alinement with the pivots, mechanisms for adjusting the machines to or from each other, means for positioning a collar to be simultaneously operated upon by the machines, mechanism for simultaneously operating the two machines, mechanism for simultaneously starting the machines and mechanism for independently starting the machines.

11. In combination, a frame, ways in the frame, a pair of buttonhole-stitching machines mounted to slide in the ways, each buttonhole-machine having cutting and stitching mechanism, means for increasing or decreasing the distance between the pair of buttonhole-machines, means for introducing a collar to the machines, gages, and means on each machine for holding a collar against the gages while buttonholes are being stitched and cut at predetermined points, and means for simultaneously operating the holding means.

12. In combination, a frame, ways in the frame, a pair of buttonhole-stitching machines mounted to slide in the ways, a rod having right and left hand threads, said threads engaging the buttonhole-stitching machines and adapted to adjust them in the ways to or from each other, means for positioning a collar to be simultaneously operated upon by the machines, mechanism for holding the collar after it has been positioned, and mechanism for starting the two machines.

13. In combination, buttonhole-stitching machines having starting mechanisms, flexible connections suspended from the starting mechanisms, a bar common to said connections, and means connected to said bar for operating it.

14. In combination, buttonhole-stitching machines having starting mechanisms, connections attached to the starting mechanisms, a bar common to said connections but normally out of contact therewith, and means connected to the bar for simultaneously actuating it to contact with and operate the connections attached to the starting mechanisms.

15. In combination, buttonhole-stitching machines having starting mechanisms, connections attached to the starting mechanisms, a bar common to said connections, means connected to said bar for actuating it to contact with and simultaneously operate the connections attached to the starting mechanisms, and a device for operating the starting mechanism of each stitching-machine, each operating device being positioned to actuate the bar and operate only the starting mechanism of a particular machine.

16. In combination, buttonhole-stitching machines having starting mechanisms, a bar positioned to simultaneously move the starting mechanisms, means connecting the bar and the starting mechanisms and a connection for moving the bar.

17. In combination, buttonhole-stitching machines having starting mechanisms, connections fastened to said starting mechanisms, means common to said connections for simultaneously operating the stitching-machines, and means for independently operating a single machine.

18. In combination, a pair of buttonhole-stitching machines, provided with means for clamping a collar, a centralizing device for positioning the center of the collar relative to the stitching-machines, said centralizing device comprising a table, an arm carrying a detent, means for holding the arm and detent in operative position and means for releasing the arm and detent.

19. In combination, a pair of buttonhole-stitching machines, means for holding a collar, and a centralizing device for positioning the center of the collar relative to the stitching-machines, said centralizing device comprising a table and a detent to engage the collar.

20. In combination, a pair of buttonhole-stitching machines, means for holding a collar, and a centralizing device for positioning the center of the collar relative to the stitching-machines, said centralizing device comprising a table, a detent, and means for locking the detent while engaging the collar.

21. In combination, a pair of buttonhole-stitching machines, means for holding a collar, and a centralizing device for positioning the center of the collar relative to the stitching-machines, said centralizing device comprising a table, a detent, means for holding the detent in contact with the collar, means for throwing the detent out of engagement with the collar when released, and means for actuating the detent-holding means.

22. In combination, a pair of buttonhole-stitching machines, gages adjacent the machines with which a collar engages, clamps for holding the collar after its position has been gaged, and a centralizing device for positioning the center of the collar relative to the stitching-machines, said centralizing device comprising a table, a detent to engage the collar, and means to disengage the detent from the collar.

23. In combination, a pair of buttonhole-stitching machines having starting mechanisms provided with flexible connections, connecting means common to both said flexible connections for simultaneously actuating them, and means for restoring the connecting means to normal position.

24. In combination, a frame having ways, a pair of buttonhole-stitching machines carried by the ways and connected together, a collar-support intermediate the pair of buttonhole-stitching machines, means for simultaneously moving the machines to or from each other an equidistance from a predetermined point on the collar-support, a corresponding scale and indicator adjacent each machine to indicate the adjustment of the machines, gages, means for holding a collar, and means for operating the two stitching-machines to stitch two buttonholes in the collar.

25. In combination, a frame having ways, a pair of buttonhole-stitching machines carried by the ways, means connecting the two machines together to move them to or from each other, a corresponding scale and indicator adjacent each machine, a pivoted mounting for each machine, and a corresponding scale and indicator adjacent each machine to indicate the relative angular position the machine will make buttonholes.

26. In combination, a pair of buttonhole-stitching machines, means for locating a collar, means imparting a simultaneous motion to the machines, means for simultaneously starting the machines, a detent for centralizing the collar, means for holding the detent in operative position and means for releasing the detent, said latter means being operated by the means for simultaneously starting the machines.

27. In combination, a pair of buttonhole-stitching machines, means adjacent each machine for gaging and holding a collar, a centralizing device for positioning the center of the collar relative to the stitching-machines, said centralizing device comprising a rod provided with a table, a spring-actuated arm having a detent to engage the collar, a latch for engaging the arm, a tilting arm to engage the latch, means for tilting the arm and means for simultaneously starting the stitching-machine.

28. In combination, a pair of buttonhole-stitching machines, means adjacent to each machine for gaging a collar, means for clamping the collar after it is gaged, and an adjustably-mounted centralizing device intermediate the machines for positioning the center of the collar relative to the stitching-machines.

29. In combination, a pair of buttonhole-stitching machines, and an adjustably-mounted centralizing device interposed to the stitching-machines for positioning the center of the collar relative to the stitching-machines, said device comprising a table, and spring-actuated arm, having a detent to engage a collar.

30. In combination, a pair of pivotally-mounted buttonhole cutting and stitching machines each machine having a cutting-blade and stitching mechanism, the center of each cutting-blade being in alinement with the center of the pivotal mounting of each machine, an adjustably-mounted centralizing device, and means for positioning a collar to simultaneously receive two buttonholes after it has been centralized.

31. In combination, a pair of buttonhole-stitching machines mounted to be adjusted toward or from each other, and pivoted to be turned horizontally and fixed, an adjustably-mounted centralizing device for positioning the center of the collar relative to the stitching-machines, and means for gaging a collar after it has been centralized.

32. In combination, a pair of buttonhole-stitching machines

mounted to be adjusted in a straight line to or from each other, and pivoted to be turned horizontally and fixed, an adjustably-mounted centralizing device for positioning the center of the collar relative to the stitching-machines, said centralizing device adapted to be moved at right angles to the straight-line adjustable movement of the stitching-machines.

33. In combination, a pair of buttonhole-stitching machines, mounted to be adjusted toward or from each other, and pivoted to be turned horizontally and fixed, a rod having right-and left hand threads to adjust the machines toward or from each other, an adjustably-mounted centralizing device comprising a bar mounted in bearings and provided with a table, and a spring-arm carrying a detent to engage a collar, a latch to engage the arm, and means for disengaging the arm from the collar.

34. In combination, a pair of buttonhole-stitching machines, each machine mounted to be pivotally turned horizontally and fixed, means for adjusting the machines toward or from each other, an adjustably-mounted centralizing device comprising a detent and means for latching the detent, means for starting the two machines simultaneously, said means operating the detent-latch to disengage the detent from the collar.

35. In combination, a pair of buttonhole-stitching machines having clamping mechanisms to hold the end portions of a collar, a centralizing device comprising a table, and an arm carrying a detent, and adapted to be folded down on the table, one or more devices extending outwardly from the arm and adapted to level the collar toward its ends when the arm is folded down.

36. In combination, a pair of buttonhole-stitching machines having clamping mechanisms to hold the end portions of a collar, a centralizing device comprising a table, and an arm carrying a detent and adapted to be folded down on the table, one or more adjustably-mounted devices extending outwardly from the arm and adapted to level the collar toward its ends when the arm is folded down.

37. In combination, a pair of buttonhole-stitching machines, mechanism for operating the machines, mechanism for simultaneously starting the two machines, mechanism for independently starting either of the machines, a cloth-clamping device adjacent each machine, means for holding the clamping devices down, and means for simultaneously releasing the clamping devices.

38. In combination, a pair of buttonhole-stitching machines, mechanisms for operating the machines, means for centralizing a collar relative to the stitching-machines, and means coacting with the centering means for leveling the collar toward the stitching-machines.

39. In combination, a buttonhole-stitching machine, means for positioning a collar to be operated upon by the machine, a gaging device, and means coacting with the collar-positioning means for leveling the collar toward the stitching-machine.

40. In combination, a pair of buttonhole-machines, each machine comprising essentially a stitching mechanism and a cutting-blade, said machines pivoted to be turned to make buttonholes at varying predetermined angles, and means for simultaneously adjusting the machines toward or from each other, without altering the predetermined angular adjustment of the cutting and stitching mechanism.

41. In combination, a pair of buttonhole-machines, each machine comprising essentially a stitching mechanism and a cutting-blade, each machine being pivoted to be independently turned to make buttonholes at varying predetermined angles, and means for simultaneously adjusting the machines toward or from each other without altering the predetermined angular adjustment of the cutting and stitching machines.

42. In combination, a pivotally-mounted buttonhole-machine comprising essentially a cutting-blade and stitching mechanism, the pivot of the machine being in alinement with the center of the cutting-blade while the line of stitching of the buttonhole is coincident with the center of the pivot means mounted independent of the cutting and stitching mechanism for holding an article to be stitched.

43. In combination, a collar-support, a bed-plate having ways, a pivotally-mounted base-plate, an adjustable guide-block working in said ways, a pivot connecting the swiveling base-plate and the guide-block, a buttonhole-stitching machine having a reciprocating needle mounted on said base-plate, and having the path of reciprocation of the needle coincident with the axis of said pivot.

44. In combination, a collar-support, a bed-plate formed with lengthwise ways, a movable guide-block working in said ways, mechanism for moving said guide-block in either direction, a swiveling base-plate supported on said bed-plate, a pivot connecting the base-plate with the guide-block, a buttonhole-stitching machine provided with a reciprocating needle, and mounted on said base-plate with the driving mechanism thereof relatively to one side of the center of the said pivot, and the path of the reciprocation of the needle coincident with the axis of said pivot.

45. In a stitching-machine, the combination with a collar-support, a bed-plate having ways, a guide-block adapted to be moved in either direction between said ways, a movable base-plate pivotally mounted on said guide-block, a buttonhole-stitching machine supported on said base-plate mechanism for moving said guide-block longitudinally, and means for indicating the movement of said block.

46. In combination a bed-plate, a guide-block adjustable in either direction in relation to said bed-plate, mechanism for moving said guide-block and holding it stationary when adjusted, a base-plate pivoted on said guide-block, and a buttonhole-stitching machine mounted on said base-plate, a stationary collar-supporting plate adapted to receive and support the middle portion of a collar, a detent adapted to hold a collar at its middle portion, and mechanism to hold said detent in engagement with the collar.

47. In a collar-stitching machine, the combination with a bed-plate, two movable guide-blocks, two base-plates, respectively pivoted on said guide-blocks and adapted for simultaneous movement in either direction, two similar buttonhole-stitching machines, having reciprocating needles, the machines respectively mounted on said movable guide-blocks, and pivotally connected therewith, the path of the reciprocating needles being coincident with the axis of the respective pivots, a driven mechanism actuating the operating mechanism of each machine, and a driving mechanism.

48. In a collar-stitching machine, the combination with two similar buttonhole-stitching mechanisms, driving mechanisms adapted to simultaneously actuate the respective machines, two pivotally-mounted base-plates respectively supporting said machines, two movable guide-blocks, adapted to be moved to equal distances and in opposite directions, and pivoting devices adapted to hold said base-plates with said guide-blocks, the axial lines of the needles being coincident with their respective pivoting devices, mechanism between the pivotal points for supporting the middle portion of the body of a collar, mechanism adapted to clamp the respective end portions of the collar, and mechanism adapted to move said collar, alternately, in opposite directions in relation to the said needles and to a distance equal to the length of a buttonhole.

49. In a collar-stitching machine, the combination with a bed-plate, two buttonhole-sewing machines supported on said bed-plate and adapted respectively to be turned in opposite directions each from a center coincident with the path of center of its needle, simultaneously-operated driving mechanism, a collar-supporting device adapted to support the middle portion of the collar midway between the respective needles of said machines, a detent adapted to engage with the middle portion of the collar, and mechanism for releasing the detent from its engagement with the collar.

50. In a collar-stitching machine, the combination with two similar buttonhole-stitching machines adapted to have the operating mechanism actuated simultaneously, a cloth-clamping mechanism on each machine adapted to clamp the respective ends of a collar to be stitched, a collar-supporting table between said two cloth-clamping mechanisms, a detent adapted to be engaged with the middle portion of a collar when placed on said supporting-table and be released from the same, means holding the detent in operative position a driven mechanism for simultaneously actuating the said machines, and mechanism adapted to move both cloth-clamping means simultaneously and alternately in opposite directions during the time the needle is being operated.

51. In a buttonhole-stitching machine, the combination with a table adapted to support the middle portion of a collar, an arm adapted to fold down on said table in a line transverse to the length of the collar, one or more leveling devices secured to said arm, and adapted to bear on a collar to flatten it out toward the outer ends of the collar.

52. In a buttonhole-stitching machine, the combination with cloth-clamping mechanism to hold the end portions of a collar, of a table adapted to support the middle portion of a collar, a detent operated for holding a collar on said table, and one or more cloth-leveling devices extending in opposite directions from the middle of the collar-supporting table.

53. In a collar-stitching machine, the combination with buttonhole-stitching machines operated by suitable driving mechanism, cloth-clamping mechanisms adapted to respectively clamp an end of a collar, of a collar-supporting table adapted to hold the middle portion of a collar on a plane with the lower clamping-plate of each of said cloth-clamping mechanisms, a collar-leveling device between said two cloth-clamping mechanisms adapted to flatten a collar longitudinally on the table, and a detent adapted for engagement with the middle of the collar.

54. In a collar-stitching machine, the combination with a supporting-table adapted to support the middle portion of a collar, a detent for engagement with a collar on said table, a buttonhole-stitching mechanism adapted to be engaged with an end portion of a collar, a gage-finger adapted to be adjusted and set for gaging the distance the end buttonhole is to be from a predetermined point in the collar.

55. In a collar-sewing machine, the combination with a pair of sewing-machines, means for centering and holding the article that predetermined points thereon may be operated upon by the sewing-machines to form buttonholes, means holding said latter means in operative position, mechanism for releasing the articles from said latter means, and mechanism for moving the article to be operated upon simultaneously and in the same direction.

56. In a collar-stitching machine, the combination with a pair of buttonhole-sewing machines, a material-supporting device located between the two sewing-machines, mechanism on said supporting device for locating and holding the material relative to the pair of sewing-machines and prior to the time the sewing-machines are operated, means for releasing said locating and holding mechanism, and mechanism for simultaneously moving the material when released to form and sew two buttonholes.

57. In a collar-stitching machine, means for centering the material with relation to the stitching mechanisms, duplicate stitching mechanisms for the ends of the material, and means for adjusting said stitching-machines to alter the direction of their lines of stitching.

58. In a collar-stitching machine, a bed-plate duplicate cutting and stitching machines, means for supporting material intermediate the duplicate stitching-machines, means for simultaneously moving the machines, and means for changing the radial positions of the stitching-machines with relation to the material.

59. In a collar-stitching machine, a collar-support, a frame, ways on the frame, duplicate guide-blocks adjustably carried by the ways, a stitching-machine fixed on each guide-block, and a server for simultaneously moving said guide-blocks in opposite directions on the ways, whereby to change the relative positions of the stitching mechanism.

60. In combination, a pair of buttonhole cutting and stitching machines, means for increasing or decreasing the distance between the two machines, starting mechanism for each stitching-machine, a bar, means connecting the bar and the starting mechanisms, and operative means connected to the bar.

61. In a collar-buttonhole-stitching machine, the combination with a pair of buttonhole-stitching machines which are adapted to be simultaneously moved toward or from each other, means for adjusting said pair of machines to alter the direction of their respective stitching-lines, means for holding the end portion of a collar in operative relation to the stitching mechanisms of the respective machines, and means for moving the body of the collar lengthwise in one direction a distance equal the length of a buttonhole and then in reversed direction a like distance.

62. In combination, a pair of buttonhole-stitching machines, each machine comprising essentially a cutting-blade and a stitching mechanism, means supporting a piece of material to simultaneously receive two buttonholes, means to permit the adjustment of the buttonhole-stitching machines independently to vary the angles of the buttonholes in relation to a medial line, and means adjacent the machines for holding the material while the buttonholes are formed.

63. In combination, a pair of buttonhole-stitching machines, each machine comprising essentially a cutting device and a stitching mechanism, means for increasing or decreasing the space between the two machines, mechanism for simultaneously operating the two machines and mechanism for independently operating either of the machines.

64. In combination, a pair of buttonhole cutting and stitching machines, means for increasing or decreasing the distance between the two machines, starting mechanism for each machine, a bar, means connecting the starting mechanisms and the bar, operative means connected to the bar, and means for restoring the operative means and bar to normal position after they have been operated.

65. In combination, a pair of buttonhole-stitching machines, each machine comprising essentially a cutting device, a stitching mechanism, a cloth-clamp and independent starting mechanism, and mechanism for simultaneously operating the two starting mechanisms.

66. In combination, two buttonhole cutting and stitching machines, an adjustable collar-centralizing device for positioning the center of the collar relative to the stitching-machines and mechanism for operating the two machines.

67. In combination, a pair of buttonhole-stitching machines, means adjacent each machine for gaging a collar, means for clamping the collar after it is gaged, and a device between the machines to introduce a collar to the gages to receive buttonholes at predetermined distances from the said device.

68. In combination, a buttonhole cutting and stitching machine, a gage, a movable collar-introducing device, means carried by said device for engaging a collar when delivering the latter to the stitching-machine, and means to increase or decrease the distance between the collar-engaging means and the stitching-machine.

69. In combination, a pair of buttonhole cutting and stitching machines, each machine having a cloth-holder, and a device between the two machines to introduce a collar to be clamped by the cloth-holders, and mechanism operating the stitching-machines.

70. In combination, two buttonhole cutting and stitching machines, a gage on one of the buttonhole-machines to gage the right-hand end of a collar, a gage on the other buttonhole-machine to gage the left-hand end of the collar, means for introducing a collar to the gages, devices for holding the ends of the collar while the two machines cut and stitch two buttonholes at predetermined points therein, mechanism for independently operating either machine.

71. In combination, two buttonhole cutting and stitching machines, a gage to gage the right-hand end of a collar, on one of the buttonhole-machines, a gage on the other buttonhole-machine to gage the left-hand end of the collar, means movable to or from the buttonhole-machine for introducing a collar to the gages, devices for holding the opposite end portions of a collar while being cut and stitched at predetermined points therein, mechanism for simultaneously operating the two buttonhole-machines, and means for simultaneously releasing the collar-holding devices.

72. In combination, a pair of buttonhole cutting and stitching machines, each machine comprising a stitching mechanism and a cutting-blade, means for supporting a collar to be operated upon by the pair of buttonhole-machines, means for securely holding the opposite ends of the collar, said means being located below the cutting-blade and needles of the respective buttonhole-machines, mechanism for simultaneously starting both machines, and mechanism for independently starting either machine.

73. In combination two buttonhole-machines, each machine provided with starting mechanism, a horizontal bar suspended beneath the said machines, connections between the ends of said bar and the starting mechanisms of the two machines, means for making both ends of the bar operative for simultaneously starting the machines, and mechanisms for making one end of the bar inoperative and the other end operative for independently starting either machine.

74. In combination, two independent sets of buttonhole-sewing mechanisms, each complete and operative in itself to make a buttonhole, each set having a clamp-plate and a gage, the gage of each set being similar to the gage of the other set, said gages being provided with means by which they are adapted to receive a collar therebetween and engage the same, the clamp-plates being cooperative to secure the collar in position relatively to the gages, and common means for starting both sets of sewing mechanisms.

75. In combination, a pair of buttonhole-machines, each machine comprising a needle, a cutting-blade and a clamping device, a centralizing device, an adjustable gage to gage the right-hand end of a collar on one buttonhole-machine, an adjustable gage to gage the left-hand end of the collar on the other buttonhole-machine, mechanism simultaneously opening the cloth-clamping devices to receive the end portions of a collar, the gages being located below the normal position of the cutting-blades and needles, mechanism for starting the machines, means for operating the centralizing devices, and means for automatically closing the cloth-clamping devices.

76. In combination, two buttonhole cutting and stitching machines, each machine comprising a stitching mechanism and a cutting-blade, a gage to gage the right-hand end of a collar on one of the machines, a gage to gage the left-hand end of a collar on the other machine, a cloth-clamping device on each machine, means for independently operating either cloth-clamping device, mechanism for simultaneously operating the cloth-clamping devices, mechanism for simultaneously operating the two machines, and mechanism for independently operating the machines.

77. In combination, a frame having ways, guide-blocks working in said ways, a pair of buttonhole-stitching machines mounted on said guide-blocks, means for moving the machines to or from each other, a corresponding scale and indicator adjacent each machine, a gage to gage the right-hand end of a collar on one of the machines, a gage to gage the left-hand end of the collar on the other

machine, means for holding the opposite ends of a collar, and means for simultaneously operating the two machines for cutting and stitching buttonholes.

78. In combination, a frame provided with two separate ways, a guide-block in each way, a buttonhole-machine mounted on each guide-block, mechanism for increasing or decreasing the distance between the two machines, a scale and an indicator for indicating the movement of both machines, a pivot connection between each machine and its guide-block, an angle-recording scale and an indicator adjacent each machine for indicating the angular position each machine is to be set in relation to the other for forming buttonholes at proper angles and means for holding the machines in position after they have been set.

79. In combination, a pair of buttonhole-sewing machines, one machine having a gage to receive the right-hand end of a collar, the other machine having a gage to receive the left-hand end of a collar, the gage of one machine being similar to the gage of the other machine, each machine having a cloth-clamping plate, means to introduce a collar between the gages, and mechanism for operating the pair of buttonhole-sewing machines.

80. In combination, two buttonhole-sewing machines, each machine comprising stitch-forming mechanism, a work-clamp, and means for producing a relative movement between said stitch-forming mechanism and work-clamp, and a centralizing device intermediate said buttonhole-sewing machines for centralizing the article being treated relative to the stitch-forming mechanisms and deliver said article on said work-clamps.

81. In combination, two buttonhole cutting and stitching machines and a collar-centralizing device having means against which a collar is placed, said means being operable to introduce and centralize a collar between the two buttonhole-machines.

82. In combination, two buttonhole-stitching mechanisms, and centralizing means which contact with an article to be operated upon to introduce the ends of said article to the stitching mechanisms to receive buttonholes, and means operating the stitching mechanisms.

83. In combination, two buttonhole-stitching mechanisms, and a centralizing device having engaging means on a line drawn through the center between the two buttonhole-stitching mechanisms, for introducing an article to said stitching mechanisms, the points in the ends of the article receiving the buttonholes being equidistance from the engaging means of the centralizing device.

84. In combination, two buttonhole-sewing machines, each machine comprising stitch-forming mechanism, a work-clamp, and means for producing a relative movement between said stitch-forming mechanism and work-clamp, and a centralizing device for centralizing the article being treated relative to the stitch-forming mechanisms and deliver said article on the said work-clamps.

85. In combination, two buttonhole-sewing machines, each machine comprising stitch-forming mechanism, a work-clamp, and means for producing a relative movement between said stitch-forming mechanism and work-clamp, and means for introducing and positioning an article on said work-clamps to insure operation of the stitching mechanisms at predetermined points on the article from a previously-formed buttonhole.

86. In a collar and cuff buttonhole stitching machine the combination of two buttonhole-machines having their needles located in a line parallel to the axis of an adjusting-screw, an adjusting-screw for regulating the distance between the needles along said line, a plate on a fixed support intermediate the needles, a work-guide and means upon said work-guide for locating the position of the article under treatment, substantially as described.

87. In a collar and cuff buttonhole stitching machine, the combination of two button-stitching machines, a main supporting-table therefor, means for varying the distance between the needles of said machines along a line parallel to the axis of the varying means, a work-supporting plate fixed in position intermediate the needles, and a work-locating guide coöperating with said work-supporting plate, substantially as described.

88. In a collar and cuff buttonhole stitching machine, the combination of two buttonhole-machines having their needles located in a line parallel to the axis of an adjusting-screw, an adjusting-screw for regulating the distance between the needles along said line, a plate on a fixed support intermediate the needles, a work-guide, means for adjusting the work-guide in a direction across the line between the needles, substantially as described.

89. In a collar and cuff buttonhole stitching machine, the combination of two buttonhole-machines having their needles located in a line parallel to the axis of an adjusting-screw, an adjusting-screw for regulating the distance between the needles along said line, a plate on a fixed support intermediate the needles, a work-guide, a graduated scale and an index coöperating therewith, substantially as described.

90. In a collar and cuff buttonhole stitching machine, the combination of two buttonhole-stitching machines having work-clamps, a supporting-table therefor, means for varying the distance between the needles of said machines along a line parallel to the axis of the varying means, a work-supporting plate fixed in position intermediate the needles, a work-locating guide coöperating with said work-supporting plate, and means for opening the two work-clamps.

91. In a collar and cuff buttonhole stitching machine, the combination of two buttonhole-stitching machines, a supporting-table therefor, means for varying the distance between the needles of said machines, an adjustable work-supporting plate positioned intermediate the needles, and a work-locating guide coöperating with the supporting-plate.

92. In a collar and cuff buttonhole stitching machine, the combination of two buttonhole-machines, a supporting-table therefor, means for varying the distance between the needles of said machines, a plate on a fixed support intermediate the needles, a work-guide cooperating with the plate, and a graduated scale and index coöperating therewith.

93. In a collar and cuff buttonhole stitching machine, the combination of two buttonhole-machines, means for varying the distance between the needles of said machine, a support, a plate adjustably mounted on the support, a work-guide coöperating with said plate, and means for adjusting the work-guide across the line between the needles.

94. In a collar and cuff buttonhole stitching machine, the combination of two buttonhole-machines, means for varying the distance between the needles of said machines, a fixed support intermediate the two machines, an article-introducing means carried by the support including a work-guide and a locating-guide.

95. In a collar and cuff buttonhole stitching machine, the combination of two buttonhole-stitching mechanisms, a support intermediate the mechanisms, a work-supporting plate, and a work-locating guide coöperating with said work-supporting plate.

96. In a collar and cuff buttonhole stitching machine, the combination of two buttonhole-machines, means for varying the distance between the needles of said machines, a support intermediate the machines, and movable means carrying a work-guide to deliver an article to the support and the buttonhole-machines.

97. In combination, two buttonhole-stitching machines a gage to gage the right-hand end of an article, a gage to gage the left-hand end of the article, a work-supporting plate fixed intermediate the needles of the buttonhole-machines, a work-guide, means for holding the ends of a collar while the two machines form buttonholes at predetermined points therein, and means for operating the buttonhole-machines.

98. In combination, two buttonhole-stitching mechanisms, means which contact with an article to be operated upon to move and introduce the ends of said article to the stitching mechanisms to receive buttonholes, and means operating the stitching mechanisms.

99. In combination, two buttonhole-stitching mechanisms, means which contact with an article to be operated upon to introduce the ends of said article to the stitching mechanisms to receive buttonholes, means operating the stitching mechanisms, and means for independently operating either stitching mechanism.

810,298. AIR-LOCK FOR CAISSONS. WILLIAM MCELVEEN, Jersey City, N. J., assignor to The Cookson Barrow and Machine Company, Jersey City, N. J., a Corporation of New Jersey. Filed June 22, 1905. Serial No. 266,493.

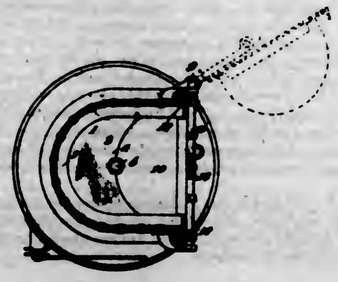

Claim.—1. In an air-lock for caissons, a casing having a stationary top portion extending partially over the upper end thereof, said casing having an opening in its side extending lengthwise thereof to permit of removing and replacing the bucket, and means for simultaneously closing said opening and that part of the top of the casing not covered by said stationary portion.

2. In an air-lock for caissons, a casing having a lower door, a stationary top portion extending partially over the upper end of said casing, a bushing for the hoisting-cable designed to be accommodated by the edge of said top portion in line with the center of the opening closed by said lower door, said casing having an opening in its side extending lengthwise thereof, and means for simultaneously closing said opening and that part of the top of the casing not covered by said stationary portion.

3. In an air-lock for caissons, a casing having an opening at its side extending lengthwise thereof, a door for closing said opening, and means for holding a hoisting-cable in fixed relation to said casing when said door is closed and for releasing the same when said door is opened to permit the bucket and cable to be removed through said opening.

4. In an air-lock for caissons, a casing, a fixed closure partially covering the upper end of said casing, said casing having an opening extending lengthwise thereof at its side, and a door for said opening having a closure at its upper end for coöperating with the fixed closure at the upper end of the casing.

5. In an air-lock for caissons, a casing having a stationary top portion extending partially over the upper end thereof, said top having its free edge beveled, said casing having an opening at its side, and a door for said opening having a ledge at its upper end for coöperating with the stationary top portion of said casing to form a complete closure for the upper end thereof, the edge of said ledge being designed to contact with the beveled edge of said top.

6. In an air-lock for caissons, the combination with the casing having an opening in its lower end, means for closing said opening, a stationary top portion extending partially over the upper end of said casing, a bushing removably accommodated by said top in line with the center of said lower opening, said top having portions of its inner face beveled, said casing being open throughout its side and at the part of its upper end not covered by said stop, of a door pivotally mounted upon said casing and forming a closure for said side and provided with locking devices, said door having a ledge forming a closure for the upper end of the casing and designed to be accommodated beneath the beveled portions of said top.

810,299. GAME APPARATUS. OLIVER E. PETTIT, Rockford, Ills. Filed Dec. 9, 1904. Serial No. 236,121.
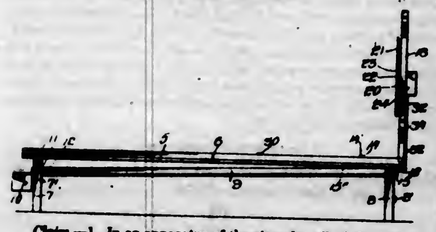
Claim.—1. In an apparatus of the class described the combination with a board adapted for the passage of projectiles thereover, of an upwardly-extending pin carried by the board and disposed to be struck by the projectiles, a stop-board hinged to the first-named board for movement to lie thereagainst or to extend at right angles thereto, said stop-board having an opening therethrough for the reception of the pin when the stop-board is in its first-named position, means for holding the stop-board with its perforations engaged by the pin, operative mechanism carried by the stop-board, and connections between the mechanism and the pin for operation of the mechanism when the pin is struck.

2. An apparatus of the class described, comprising a dial, a shaft rotatably mounted centrally of the dial, an indicator rotatably mounted upon the shaft for movement over the dial, connections between the shaft and the indicator for movement of the latter with the former in one direction, said indicator being arranged for movement independently of the shaft in the same direction, a motor connected with the shaft for operation thereof to rotate the indicator therewith, means for holding the motor against operation, said means lying normally yieldably in operative position, and means for moving the holding means out of operative position.

3. An apparatus of the class described comprising a board adapted for the passage of projectiles thereover, a dial, a shaft rotatably mounted in the dial, an indicator rotatably mounted upon the shaft for movement over the dial, connections between the shaft and the indicator constructed and arranged for movement of the indicator with the former in one direction, said indicator being movable independently of the shaft in the same direction, a motor connected with the shaft for rotation thereof to rotate the indicator therewith, a second rotatably-mounted shaft, connections between the second shaft and the motor for operation thereby, a finger carried by the second shaft, a stop arranged for movement into and out of the path of movement of the finger, said stop when in its first-named position being arranged for engagement by the finger to hold the motor against operation, said stop lying normally in such position, and means for moving the stop out of its normal position, said means being adapted for operation by projectiles moving over the surface of the board.

810,300. MACHINE FOR MAKING BLOCKS OR TILES. DANIEL I. PETTIT and JOHN B. PETTIT, Grand Junction, Iowa. Filed Mar. 11, 1905. Serial No. 249,619.

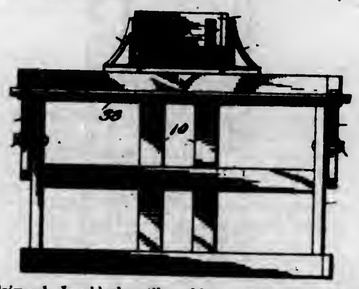

Claim.—1. In a block or tile making machine, the combination of a frame, a table vertically movable in said frame and provided with guide-slots, a mold bottom board supported upon the frame, adjustable side boards carried by the table, carriers to which said side boards are removably attached, an eccentric-head disposed below and carried by the table, radial bars or links connected at their inner ends with said head, fastenings sliding in said guide-slots and adjustably connecting the outer ends of the links with the carriers, a lever for operating the eccentric-head, and means for raising and lowering the table.

2. In a block or tile making machine, a mold-box comprising a bottom board, side boards adjustably related to said bottom board, carriers for the boards, and brackets upon the carriers to which said boards are detachably connected, said boards being connectible with and disconnectible from the brackets by a sliding movement.

3. In a block or tile making machine, a frame, a vertically-movable table provided with guides, a mold-box bottom supported by the frame, carriers on the table engaging said guides and adapted to be adjusted toward and from said mold-box bottom, brackets supported by the carriers, removable mold sides slidably engaging the brackets, means for raising and lowering the table, and means for adjusting the carriers.

4. In a block or tile making machine, a frame having a supporting-surface, a mold-box comprising a bottom board adapted to rest upon said surface and a series of side boards adjustable with relation to said bottom board, and means for enlarging said supporting-surface to provide for the support of bottom boards of different sizes.

5. In a block or tile making machine, a frame having supporting-posts to support the bottom board of a mold-box, and brackets detachably connectible with said posts for extending the supporting-surface.

6. In a block or tile making machine, the combination of a frame having a supporting-surface, a mold-box bottom board resting on said surface, brackets adapted to be connected to the frame to increase said supporting-surface, a vertically-movable table, carriers adjustably mounted on said table with relation to the bottom board, side boards detachably connected with the carriers and adapted to coöperate with the bottom board to form a mold-box, means for raising and lowering the table, and means for simultaneously adjusting the carriers.

810,301. APPARATUS FOR STORING AND CONVEYING LIQUID METALS. GARDNER VON PEIN, Bethlehem, Pa., assignor to Bethlehem Steel Company, South Bethlehem, Pa., a Corporation of Pennsylvania. Filed May 29, 1901. Serial No. 62,502.

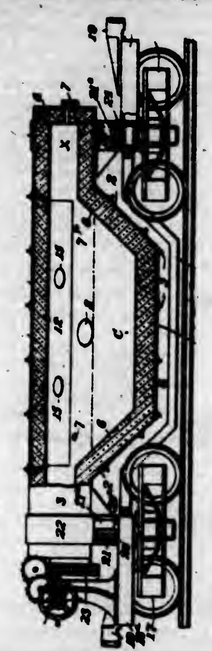

Claim.—1. An apparatus for storing and transporting molten metal consisting of a vessel and suitable trucks supporting the same, the vessel having an enlarged body portion and hollow contracted cylindrical ends containing burning-chambers and means for admitting fuel thereto, said ends turning in bearings on the trucks, substantially as set forth.

2. In an apparatus for storing and transporting molten metal, the combination of two trucks and a receptacle having a central portion extending downward between the trucks and hollow end portions extending over the trucks and adapted to turn in bearings on the trucks, substantially as set forth.

3. In an apparatus for storing and transporting molten metal, the combination of two trucks and a receptacle having a central portion extending downward between the trucks and hollow end portions extending over the trucks and adapted to turn in bearings on the trucks, and pouring-spouts on the body portion, substantially as set forth.

4. In an apparatus for storing and transporting molten metal, the combination of two trucks, a receptacle having a central portion extending downward between the trucks and hollow end portions extending over the trucks and adapted to turn in bearings on the trucks, a sector-gear 20 on one of the end portions, a transverse rock on the truck engaged thereby, a larger concentric sector-gear on said end portion, and a worm engaging the latter gear and turning in bearings of the truck, substantially as set forth.

810,302. SASH-HOLDER. ALBERT A. GOOD, Brookport, Ill. Filed July 25, 1905. Serial No. 271,174.

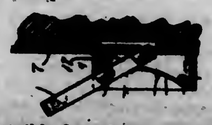

Claim.—As an article of manufacture, a window-sash lock comprising a body portion formed of a metallic plate bent to form parallel side portions and a connecting bottom piece and having sliding pairs of perforations formed in the side portions adjacent to the upper and lower ends thereof, attaching-screws engaged in the pairs of perforations, a dog pivoted upon one of the attaching-screws and extending oppositely beyond the body portion, one end of said dog being heavier than the other, a spring engaged with the other screw and a pin engaged in the side portions above the last-named screw, said spring resting against the pin and against the dog to hold the latter against downward movement of its lighter end.

810,303. SOMERSAULTING-VEHICLE. JOSEPH RAVEL and EDOUARD RAVEL, Paris, France, assignors to Charles Malden-Brunie, Paris, France. Filed Sept. 28, 1903. Serial No. 174,502.

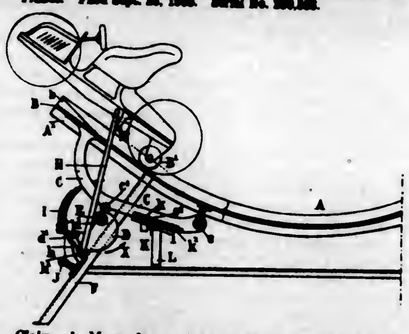

Claim.—1. Means for causing a vehicle to somersault across a gap in a track, comprising a plate arranged in the track and mounted upon a pivoted lever, a spring-actuated cam adapted to raise said lever and plate, a retaining device which prevents the rotation of the cam and means carried by the vehicle for unlatching said retaining device.

2. Means for causing a vehicle to somersault across a gap in a track, as described, comprising a plate movable upward in the track, said plate being mounted on a lever pivoted to the under side of the track, a cam adapted to raise said lever and plate, coiled springs upon the axle of the cam tending to rotate the same, a lateral projection on the cam, a lever mounted on an axle and engaging said projection, a second lever mounted on said axle and projecting into the track, and a striker upon the vehicle adapted to meet said second lever and to release the cam.

3. Means for causing a vehicle to somersault across a gap in a track, as described, comprising a cam-lifted plate in the track, said plate being mounted on a pivoted lever, and a laminated spring adapted to brake the cam movement after the plate has been raised.

4. Means for causing a vehicle to somersault across a gap in a track, as described, comprising a cam-lifted plate in the track, said plate being mounted on a pivoted lever, a sliding cushioning device upon the under side of the lever, an upstanding seat for said cushion, and an abutment on the seat.

810,304. PIPE-WRENCH. LOUIS V. REMSEN, San Bernardino, Cal. Filed July 20, 1905. Serial No. 271,752.

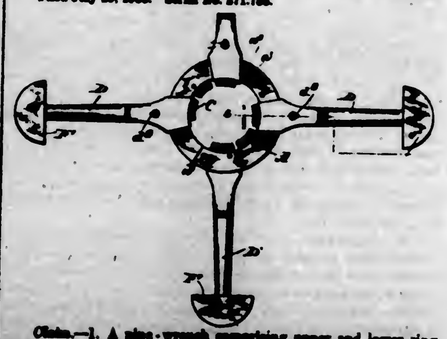

Claim.—1. A pipe-wrench comprising upper and lower ring shaped plates, spaced apart and divided diametrically into symmetrical sections, curved legs secured between the corresponding

ends of the sections, and extending between the plates of opposing sections, pins traversing the plates and the lugs for securing the sections together, a series of spacing-blocks secured between the plates of the sections, and provided with an inclined inner edge, springs secured to the ends of the blocks, gripping-jaws provided with inclined edges resting on the inclined edges of the blocks, and provided with transverse slots parallel to their inclined edges, screws traversing the plates of the rings and the slots, handles quadrantally arranged on the ring and comprising each a bar provided with a flanged plate, an oppositely-disposed flanged plate hinged to the bar and coacting with the first flanged plate to form a recess for receiving the rings, a lug on the second plate engaging the groove in the bar, a latch hinged to the second plate and traversing an opening in the bar, a spring on the latch, and grooved wheel-sections on the free ends of the bars.

2. In a pipe-wrench, the combination of a ring-shaped frame divided diametrically and the sections hinged together at one of their ends, means for connecting the free ends of the sections, a plurality of spring-actuated gripping-jaws slidably mounted in the frame, a plurality of handles radiating from the frame, and means whereby the individual handles may be detached from the frame.

3. In a pipe-wrench, the combination of a ring-shaped frame, comprising two symmetrical sections hinged together at one of their ends, means for securing the free ends of the sections together, a plurality of spring-actuated gripping-jaws movably mounted in the frame, and a plurality of detachable handles engaging the frame.

4. In a pipe-wrench the combination of a ring-shaped frame comprising two symmetrical sections hinged together at one of their ends, means for securing the free ends of the halves together, a plurality of spring-actuated gripping-jaws movably mounted in the frame, and means for constraining the movement of the jaws to a chord of the ring.

5. In pipe-wrenches, the combination of a circular frame having a central opening, a plurality of spring-actuated gripping-jaws movably mounted on the frame and projecting into the central opening, and means for restraining the movement of the jaws to a chord of the circular frame.

6. In a pipe-wrench, the combination of a circular frame having a central opening adapted to receive a pipe, a plurality of spring-actuated gripping-jaws movably mounted in the frame and projecting into the central opening, and means for restraining the movement of the operative face of the jaws to a tangent of the pipe.

7. In a pipe-wrench, the combination of a ring-shaped frame comprising two symmetrical sections hinged together at one of their ends, means for securing the free ends of the halves together, and a plurality of spring-actuated gripping-jaws movably mounted in the frame, and projecting beyond the inner circumference of the ring.

8. In a pipe-wrench, the combination of a circular frame having a central opening adapted to receive a pipe, and a plurality of spring-actuated gripping-jaws movably mounted in the frame and projecting into the central opening.

9. In a pipe-wrench, the combination of a circular frame having a central opening, a plurality of gripping-jaws projecting into the central opening, and means on the periphery of the frame for receiving a belt whereby to rotate the same.

810,305. WARP-TENSION. BOGERT REED, Stirling, N. J., assignor to Stirling Silk Manufacturing Company, Stirling, N. J., a Corporation of New Jersey. Filed Oct. 10, 1904. Serial No. 227,988.

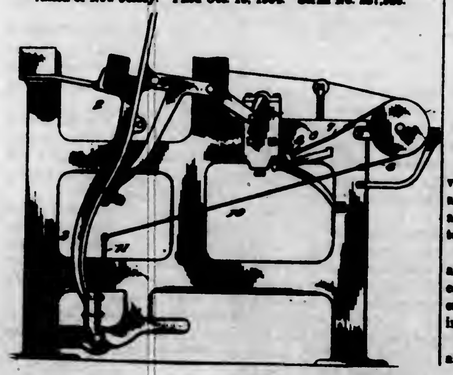

Claim.—In a power-loom, the combination of the lay, the lay-sword, a spring-arm attached at one end to the lay-sword, the warp-beam, a brake-pulley fast to an end of the warp-beam, a brake-band coöperating with said brake-pulley, rods attached to opposite ends of the brake-band, one of said rods having an end portion threaded and passed loosely through a part of the loom-frame, set-nuts fitted to the threaded end of the rod for adjustably connecting it to the loom-frame, and means connecting the other rod to the free end of the aforesaid spring-arm, substantially as set forth.

810,306. LINE-FASTENER. DAVID W. ROBBINS, New York, N. Y. Filed Nov. 5, 1904. Serial No. 231,469.

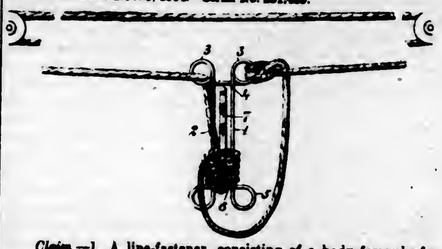

Claim.—1. A line-fastener, consisting of a body formed of a piece of wire bent to form straight and approximately parallel side members spaced apart, each formed with a laterally-projecting coil at its upper end, the coils extending in opposite directions and connected together by a cross-bar extending across the side members, the lower ends of the side members being bent to form eyes, said eyes projecting in opposite directions and connected by a cross-bar extending across the side members, and a sinuous tongue secured to the cross-bar connecting the eyes, between the side members and extending upwardly between the said side members in direction of the cross-bar connecting the coils.

2. A line-fastener, comprising straight and approximately parallel side members spaced apart, a pair of oppositely-arranged eyes at each end of the side member, the eyes of each pair projecting in opposite direction, a cross-bar connecting the eyes of each pair of eyes and extending across the side members, and a spring-tongue secured to one cross-bar between the side members, and extending between the said side members in direction of the other cross-bar.

3. A line-fastener, comprising two straight and approximately parallel side members, spaced apart, said members being connected together near each end by a cross-bar, and provided at one end with a pair of oppositely-arranged eyes, the eyes projecting in opposite directions, and a spring-tongue secured to one cross-bar between the side members, and extending between the said side members in direction of the other cross-bar.

810,307. TOOL-HOLDER. PEARL H. ROBINSON, Shelton, Conn., assignor to The O. K. Tool Holder Company, Shelton, Conn., a Corporation of New York. Filed May 29, 1905. Serial No. 262,744.

Claim.—1. A tool-holder comprising a head having a transverse recess, an undercut abutment at the forward end of the recess, an inclined carrier at the back of the recess, a slide upon the carrier adapted to engage a tool, and means for forcing the slide against a tool to lock it in place in the holder.

2. A tool-holder comprising a head having a transverse recess, an undercut abutment at the forward end of the recess, an inclined carrier at the back of the recess, a slide upon the carrier adapted to engage the tool, a spring acting to raise the slide and means for forcing the slide against the carrier to lock it in place in the holder

3. A tool-holder comprising a head having a transverse recess, an inwardly-inclined undercut abutment at the forward end of the

recess, an inclined carrier at the back of the recess, a threaded post, a spring-actuated slide upon the carrier adapted to engage a tool and a locking-nut on the post adapted to bear against the slide and force it against the tool to lock the latter in place in the recess.

4. A tool-holder comprising a head having a transverse downwardly and rearwardly inclined recess, an undercut inwardly-inclined abutment at the forward end of the recess, an inclined carrier at the back of the recess, a slide upon the carrier whose forward end is a downwardly and rearwardly inclined wall and means for forcing the slide against a tool to lock it in the recess.

5. A tool-holder comprising a head having a transverse recess, an undercut abutment at the forward end of the recess, an inclined carrier at the back of the recess, a slide upon the carrier adapted to engage a tool, a spring socketed in the carrier and slide respectively, both of said parts being provided with a shoulder against which an end of the spring bears to normally hold the slide raised and means for forcing a slide against a tool to lock it in place in the holder.

6. A tool-holder comprising a head having a transverse recess, an undercut abutment at the forward end of the recess, an inclined carrier at the back of the recess having grooves at its base, a U-shaped slide engaging the carrier and having ribs engaging the grooves and means for forcing the slide against a tool to lock the latter to the holder.

7. The combination with a tool-holder comprising a head having a transverse recess, an undercut abutment at the forward end of the recess, and an inclined slide having a downwardly and rearwardly inclined forward end, of a tool having a base whose forward end is downwardly and forwardly inclined to engage the abutment and whose rear end is downwardly and backwardly inclined for engagement by the slide and means for forcing the slide into engagement therewith.

8. The combination with a tool-holder comprising a head having a transverse recess, an inwardly-inclined undercut abutment at the forward end of the recess and an inclined slide having a downwardly and rearwardly inclined wall at its forward end, of a tool having a base whose forward end is a downwardly and forwardly inclined obtuse angle and whose rear end is a downwardly and rearwardly inclined wall, a spring for normally raising the slide and means for forcing the slide against the tool-base whereby the tool is centered and rigidly locked against movement in any direction.

810,808. MEANS OF CONVERTING CONSTANT OSCILLATORY MOTION INTO RECTILINEAR MOTION. BRUNO SALMEN and GUSTAV WALTHER, Chemnitz, Germany. Filed May 24, 1905. Serial No. 262,661.

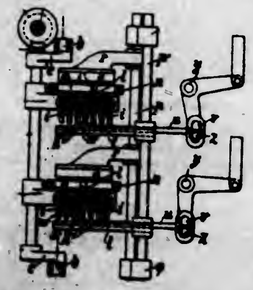

Claim.—1. In a device of the class described, the combination of an oscillatory member, elements carried by said member, a movable slide, and means severally engaging said elements with said slide for effecting varying movement of the latter, substantially as set forth.

2. In a device of the class described, the combination of an oscillatory member, elements carried by and spaced at different distances from the axis of said member, a movable slide, and means severally engaging said elements with said slide for effecting varying movement of the latter, substantially as set forth.

3. In a device of the class described, the combination of an oscillatory member, mechanism carried thereby, a movable slide, and means engaging said mechanism with said slide for effecting varying movement of the latter, substantially as set forth.

4. In a device of the class described, the combination of an oscillatory member, elements carried by said member, a reciprocating member, and means engaging said elements with said reciprocating member for varying the degree of reciprocation of the latter, substantially as set forth.

5. In a device of the class described, the combination of an oscillatory member, elements carried by said member, a reciprocating member, and means severally engaging said elements with said reciprocating member for varying the degree of reciprocation of the latter, substantially as set forth.

6. In a device of the class described, the combination of an oscillatory member, elements carried by said member, a reciprocating member, means severally engaging said elements with said reciprocating member for varying the degree of reciprocation of the latter, and means restoring said elements to a normal position, substantially as set forth.

7. In a device of the class described, the combination of a plurality of oscillating members, operating-pins for said members arranged at unequal distances from the axis of said members, a reciprocating member, and means for severally engaging the pins with said member.

8. In a device of the class described, the combination of a plurality of oscillatory members, each provided with a series of operating-pins, reciprocating members, and means for severally engaging said pins with said reciprocating members.

9. In a device of the class described the combination of an oscillating shaft provided with an arm, a series of vertically-displaceable operating-pins mounted in said arms, a slotted reciprocating slide, a selector device for severally engaging said pin with said slide, and a restoring-strip for disengaging said pins from said slide.

10. In a device of the class described, the combination of an oscillating shaft provided with an arm, a series of vertically-displaceable operating-pins, spring-actuated retaining devices for said pins, a slotted reciprocating slide, a selector device for severally engaging said pins with said slide, and a restoring-strip for disengaging said pins from said slide.

810,809. SANDER. SAMUEL T. SIBBOOS and WALTER T. MOORE, Columbus, Ohio. Filed Aug. 15, 1905. Serial No. 274,266.

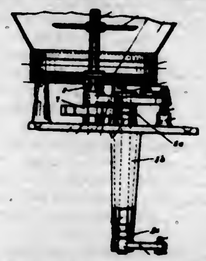

Claim.—1. A device of the character described, having a cut-off itself, of practically bell-crank formation, adapted to move in an arc, in a vertical plane, and provided with a cleaner entering the discharge-outlet and serving to loosen the contents of the member having said outlet.

2. A device of the character described, having a cut-off itself of practically bell-crank formation, pivoted at one angle or horn to move in an arc, in a vertical plane and effective to close the discharge-outlet, and means for actuating said cut-off.

3. A device of the character described, having a cut-off itself of practically bell-crank formation and pivoted at one angle or horn to move in the plane of the discharge-outlet and to effect the closing thereof, a lever, means for actuating said lever and a pitman effecting connection between said lever and cut-off.

4. A device of the character described, having a cut-off effective to close the discharge-outlet, a lever and means for actuating said lever comprising a pedal or otherwise actuated shaft equipped with an arm, a link between said arm and lever, and a pitman effecting connection between said lever and an arm of said cut-off.

5. A device of the character described, comprising a cut-off effective to close the discharge-outlet, a lever, means for actuating said lever including a pedal or otherwise actuated shaft equipped with a fixed arm, a link between said arm and lever, a pitman effecting connection between said lever and an arm of said cut-off and a spring effective to hold said parts in normal position.

6. A device of the character described, comprising a regulator suitably supported in position upon a hopper-bottom member and arranged to vary the size of the discharge-outlet and its housing equipped with a cut or holding.

7. A device of the character described, comprising a hopper member, a pedal or otherwise actuated shaft having a fixed arm, a cut-off to close the discharge-outlet, an agitator arranged in said hopper member and having its shaft equipped with a ratchet-pinion, a lever connected to said ratchet-equipped shaft and carrying a spring-pressed dog or pawl engaging said ratchet-pinion, a pitman connecting said lever and an arm of said cut-off, a link effecting connection between said lever and arm, and a spring holding the aforesaid parts in normal effective position.

810,810. MAGAZINE. WILLIAM A. SPARKS, Beloit, Kans. Filed Apr. 19, 1905. Serial No. 256,491.

Claim.—1. A device of the class described comprising a tube arranged for the reception of cartridges, said tube being open at its rearward end, means located within the tube for urging cartridges disposed within the tube toward the open end of the latter, and a rod mounted upon the tube and having angular end portions, said rod being arranged for movement to bring its end portions into and out of position for engagement by cartridges within the tube to prevent movement of the latter and being arranged to lie with one of its end portions in position for engagement by cartridges, when its other end portion is out of such position, said rod being also movable to lie with both of its end portions out of such position.

2. A device of the class described comprising a tube arranged for the reception of cartridges and being open at its rearward end, a spring-actuated plunger located within the tube and arranged to urge cartridges toward the rearward end of the tube, spaced ears mounted upon the tube adjacent to the rearward end thereof, said tube having an opening therein forwardly of the ears, a rod mounted in the ears, said rod having angular end portions and being arranged for movement to bring its rearward end portion into and out of position to project over the open end of the tube and to bring its forward end portion into and out of position to extend into the tube through the second-named opening thereof, and means for holding the rod yieldably with its rearward end portion projected over the end of the tube and with its forward end portion disengaged from the opening, the rearward end portion when in its normal position and the forward end portion when in position to extend through the opening being adapted for engagement by cartridges within the tube to prevent movement of the cartridges under the action of the spring-actuated means.

3. A device of the class described comprising a tube open at its rearward end and arranged for the reception of cartridges, a sleeve engaged with the rearward portion of the tube, spaced ears carried by the sleeve, a rod journaled in the ears and having angular end portions, means for moving cartridges through the tube toward the rearward end thereof, said rod being movable to bring its end portions successively into and out of the path of movement of the cartridges and means for holding the rod yieldably with one of its end portions in such position.

810,811. ELECTRORESPONSIVE DEVICE. ELMER A. TREFFINGER, Geneva, Ill. Filed Dec. 17, 1904. Serial No. 237,362.

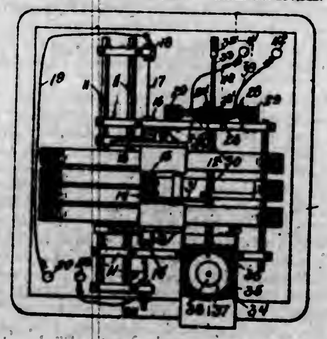

Claim.—1. In a current-responsive device adapted for actuation by feeble currents, two horseshoe-magnets arranged with opposite poles in proximity to leave therebetween two spaces constituting two strong magnetic fields, a coil having its two sides in said spaces and adapted for connection in a line, means for suspending said coil for oscillation, means for retarding the oscillation of said coil, and working parts associated with the coil to derive their working power from the oscillation of said coil.

2. In a current-responsive device two magnets arranged with opposite poles in separated arrangement in such proximity that they jointly create two magnetic fields, and a coil supported for oscillation with its windings passing between said poles of the magnets, one side of such winding lying in each magnetic field, and said coil being arranged for connection in a circuit.

3. In a current-responsive device, two magnets arranged with opposite poles in separated arrangement in such proximity that they jointly create two magnetic fields, a coil adapted for connection in an electric circuit having its windings passing between the said poles of the magnets, one side lying in each magnetic field, said coil being supported for deflection, and working parts associated with the coil to derive their working power from its oscillation.

4. In a current-responsive device, permanent magnets arranged with the poles of one between the poles of the other, a coil suspended for oscillation with its windings passing down between the proximate poles of the magnets on one side and up between the opposite proximate poles of the magnets on the other side, and working devices connected with the coil for actuation by its oscillation.

5. In a current-responsive device, two magnets arranged with opposite poles in separated arrangement in such proximity that they jointly create two magnetic fields, a coil adapted for connection in an electric circuit having its windings passing between said poles of the magnets, one side of such coil lying in each magnetic field, and said coil being supported for deflection; working parts associated with the coil to derive their working power from its oscillation, and means for retarding the oscillation of the coil, arranged to effect a greater retardation of the movement of the coil in one direction than of its movement in the other direction.

6. In a current-responsive device two magnets arranged with opposite poles in separated arrangement in such proximity that they jointly create two magnetic fields, a coil adapted for connection in an electric circuit having its windings passing between said poles of the magnets, one side of the coil lying in each magnetic field, and said coil being supported for deflection, contact parts comprising a movable member adapted to be operatively moved by deflection of the coil in one direction and a dash-pot operatively associated with the coil arranged to effect a greater retardation of the movement of the coil in the direction to operate the contact than to its movement in the opposite direction.

7. In a current-responsive device, a pair of permanent magnets, arranged with their opposite poles in separated but proximate relation to create two strong magnetic fields, a single coil supported for oscillation with its sides respectively in said fields, said coil being adapted for connection in an electric circuit, and signaling devices operatively connected with said coil for actuation by movement thereof in one direction.

8. A relay comprising two permanent horseshoe-magnets arranged with the poles of one in each separated, proximate relation to the poles of the other as to establish therebetween two strong joint magnetic fields, a coil mounted for deflection with its windings passing between two proximate poles of the magnets one side and between the remaining poles on the other and adapted for connection in a main circuit, contact devices arranged for connection in another circuit, and operative connections between the movable element of said contact devices and the oscillating coil whereby said contact devices are actuated by movement of the coil.

9. A relay comprising a permanent magnet arranged to constitute a magnetic field, a coil supported for oscillation in the field, means for retarding the oscillation of said coil, contact devices including a movable part and operative connection between the movable part of the contact device and the oscillating coil.

10. In combination, a pair of horseshoe-magnets with their opposing poles in proximity and parallelism in a common plane, a single coil adapted for connection in a circuit suspended with its sides passing between the opposite consting poles of the two magnets, a contact device, a dash-pot connected with the contact device, and an operative connection between the coil and said connected parts whereby movement of the coil actuates the contact device and is retarded by the dash-pot.

11. In combination, a pair of magnets with their opposing poles

arranged in proximity to jointly create two strong magnetic fields, a coil adapted for connection in a circuit supported for deflection with its sides respectively in said two fields, a dash-pot having its movable element suspended, a connection between said coil and the suspension of the dash-pot, and working parts associated with the coil to derive their working power from oscillation of the coil.

810,312. PROCESS OF AGING DYED FABRICS. PAUL F. VOGEL, St. Louis, Mo., assignor of one-half to Walter W. Calmore, Philadelphia, Pa. Filed May 28, 1903. Serial No. 159,302.

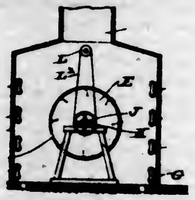

Claim.—1. The herein-described process of aging and fixing colors in dyed fabrics, which consists in subjecting the fabrics to the action of an oxidizable dye, then subjecting the fabrics to the action of air, and continuously rotating the fabrics, the temperature of the air being slowly increased and then decreased to fall to normal when the goods are removed, and finally in aging the fabrics by continuously moving the same through an atmosphere at or below normal temperature.

2. The herein-described process of aging and fixing colors in dyed fabrics which consists in subjecting the fabrics to the action of an oxidizable dye, removing the fabrics, and subjecting the same to the action resulting from their continuous movement in a slowly increasing and decreasing temperature which is allowed to fall to normal when the goods are removed, and finally aging the fabrics in a temperature below normal.

810,313. FRUIT-CARRIER. CHARLES A. WELLMAN, Ottumwa, Iowa. Filed Mar. 27, 1905. Serial No. 252,309.

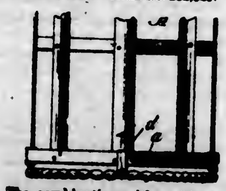

Claim.—1. The combination with a shipping-case, of a wire frame, a series of rollers loosely mounted thereon, and clasps attached to said wire frame and adapted to engage the case and hold said roller-carrier frame away from the case, substantially as specified.

2. The combination with a shipping-case, of an annular frame formed of wire, a series of rollers thereon, and connections between said case and frame that are adapted to hold said frame and rollers a short distance away from said case, substantially as specified.

3. The combination with a shipping-case, of a wire frame, a series of rollers mounted thereon, and clasps attached to said wire frame, said clasps being adapted to embrace the lower edge of the case, substantially as specified.

4. The combination with a shipping-case, of a wire frame, a series of rollers mounted thereon, and clasps attached to said wire frame, said clasps being adapted to embrace the lower edge of the case and being provided with shoulders on which the lower edge of the case is adapted to rest, substantially as specified.

810,314. CURRENT-MOTOR. ARTHUR WHEELER and ROBERT B. GROVES, Mile City, Mont. Filed Jan. 28, 1905. Serial No. 243,698.

Claim.—1. The combination with a support, of a water-wheel mounted thereon with its axis above the water-line, said water-wheel having a blade movable pivotally into an inoperative position, and a lock for securing said blade in operative position and for releasing the same, substantially as described.

2. The combination with a support, of a water-wheel mounted thereon, with its axis above the water, said wheel having a pivoted blade movable into an inoperative position, and a stop mounted on said support and movable into the path of the blades of the wheel, substantially as described.

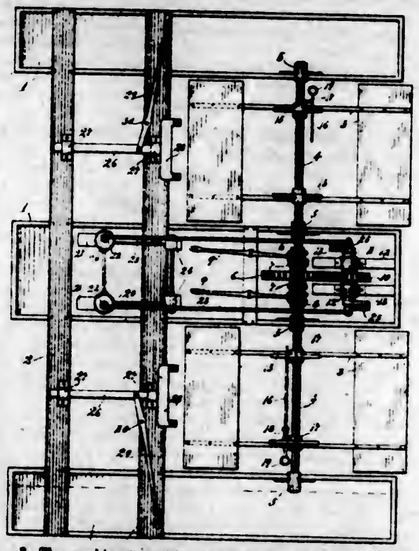

3. The combination with a floating support, of a water-wheel mounted on said support, with its axis above the water, said wheel having a blade movable pivotally into an inoperative position, a lock for securing said blade in an operative position, and for releasing the same, and a stop mounted on said support and movable into the path of the blades of said wheel, to positively stop said wheel when its pivoted blade is released, substantially as described.

4. The combination with a floating support, of a pair of water-wheels mounted thereon, with their shafts in axial alinement, a gear loosely mounted on the adjacent ends of the two shafts, a pair of clutches for connecting said wheels to said gear, arranged to couple said wheels with the blades of the one set ahead of the blades of the other, a gear meshing with the aforesaid gear, a pair of oppositely-projecting cranks connected to said latter gear, a pair of pumps mounted on said support, and connections between said two pumps and said two cranks, substantially as described.

810,315. HYDRAULIC SWIVEL. JAMES A. WIGEN, Jr., Beaumont, Tex. Filed Apr. 3, 1905. Serial No. 253,562.

Claim.—1. In a hydraulic swivel, a tubular, suspended water-stem, having an annular groove in its exterior near its upper end, in combination with a swivel-stem surrounding the same, means for suspending the said swivel-stem, a series of antifriction-balls fitting in the groove of said water-stem to suspend the same and prevent its endwise displacement, a stuffing-box attached to said swivel-stem and grooved at the top to fit the said balls, and a cap screwing down on the said stuffing-box and also grooved to fit the said balls, the grooves in said cap and stuffing-box permitting the said swivel-stem to turn independently on the said water-stem substantially as set forth.

2. In a hydraulic swivel the combination of a water-stem having an annular groove E' with a swivel-stem concentrically arranged thereon, a part screwed on the upper end of the said swivel-stem and having an annular groove G' in its top in proximity to groove E' and a cap H screwed on said part thus grooved in its top, recessed on its under side above the screw-threads to provide an oil-space, having a duct and plug for the supply thereof and further provided with a groove H' in proximity to the grooves before mentioned, means for supporting the said swivel-stem and a series of antifriction-balls, fitting in the three grooves aforesaid to connect the said water-stem to the said swivel-stem and permit swiveling motion but suspend the said water-stem from the said swivel-stem and prevent vertical displacement substantially as set forth.

3. In a hydraulic swivel, the combination of a water-stem and a swivel-stem, concentrically arranged, with means for supporting said water-stem from said swivel-stem and means for suspending said swivel-stem, the latter means including a pair of bearing-plates and interposed antifriction devices and the said plates being provided with overlapping flanges, independent of any other part of the machine, for excluding dust and other foreign matter from said antifriction devices substantially as set forth.

4. In a hydraulic swivel, the combination of a water-stem and a swivel-stem, concentrically arranged, with means for supporting said water-stem from said swivel-stem and means for suspending said swivel-stem, the latter means including a pair of bearing-plates and interposed antifriction devices and the said plates being provided with overlapping flanges, independent of any other part of the machine, for excluding dust and other foreign matter from said antifriction devices substantially as set forth.

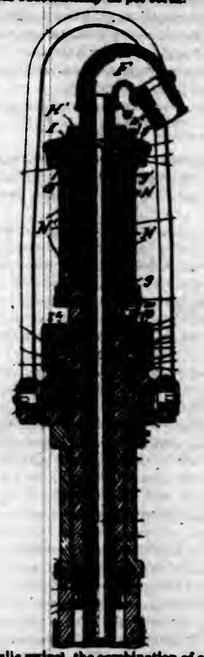

5. In a hydraulic swivel the combination of a water-stem and a swivel-stem, concentrically arranged, of means for supporting said water-stem by said swivel-stem, a ball and trunnion-block for suspending the said swivel-stem, a bearing-plate fixed on said trunnion, an upper bearing-plate turning on the same and having an oil-trough in its upper face, whence a duct extends down to its lower face, a nut threaded on said swivel-stem provided with an oil-supply duct for said trough and bearing against said upper bearing-plate to hold it in position and a series of antifriction devices interposed between the said two bearing-plates, the latter being constructed to leave an oil-space between them about the said antifriction devices and provided with means for excluding dust and other foreign material from the latter substantially as set forth.

6. In a hydraulic swivel, the combination of a water-stem and a swivel-stem, concentrically arranged, with means connecting the stems but allowing the swiveling action, a ball and trunnion-block provided with antifriction devices and bearing-plates, for suspending the said swivel-stem, and a spring-sleeve entered on the said swivel-stem for contact with the lower side of the said trunnion substantially as set forth.

7. In a hydraulic swivel, the combination of a water-stem and a swivel-stem, concentrically arranged, of means for connecting said stems together but allowing swiveling action, a block sleeved on said swivel-stem and provided with means for suspending the latter, a sleeve in contact with the under side of said block, a screw-threaded coupling arranged to hold said sleeve against said block and a depending tubular stem connected to said coupling substantially as set forth.

810,316. EMERGENCY RAIL-BRAKE. POWELL O. ADAMS, Corsicana, Tex. Filed July 6, 1903. Serial No. 164,194.

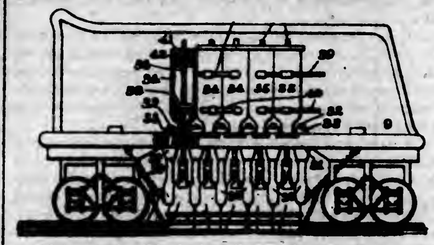

Claim.—1. A rail-brake for railway-trains comprising a pair of brake-levers mounted on each side of a train and swinging transversely above the rails of the track, means adapting said levers to grasp the rails yieldingly at the point of contact, means for lowering said levers in position for grasping the rails, and means for applying yielding pressure to said levers to cause the same to grasp the rails.

2. In a pneumatic rail-brake the combination of a series of levers mounted transversely the rails of the railway-track and adapted to grasp said rails yieldingly at the point of contact and pneumatic-pressure-regulated pistons connected to said levers whereby power is yieldingly applied to said levers.

3. In a pneumatic rail-brake the combination of a series of pairs of levers, movable fulcrums for said levers, pneumatic-pressure-controlled means for changing the position of the fulcrums, each pair of levers being mounted transversely the rails and adapted to grasp the rails, rail-engaging rollers at the points of contact, and pneumatic-pressure-regulated means connected to said levers for operating the same.

4. In a pneumatic rail-brake the combination of a series of pairs of levers mounted on each side of a train of cars, each pair of levers being arranged transversely above the rail and adapted to grasp the rail yieldingly at the point of contact, means for lowering said levers, and means for applying pneumatic pressure to said levers for operating the same.

5. In a pneumatic rail-brake the combination of a series of levers mounted on each side of a train of cars, a movable fulcrum for each series of levers, pneumatic-pressure-regulated pistons for changing the positions of said fulcrums, said levers being arranged in pairs and each pair having a transverse swinging movement and adapted to grasp the rail, and a pneumatic cylinder provided with a suitable piston connected to each pair of levers.

6. In a pneumatic-pressure rail-brake the combination of a plurality of levers, a series of levers being mounted on each side of a train, said levers being arranged in pairs and each pair having a transverse swinging movement and adapted to grasp the rail, rail-engaging rollers at the points of contact, an adjustable fulcrum for each series of levers, and means for applying pneumatic pressure to said levers for operating the same.

7. In a pneumatic-pressure rail-brake the combination of a plurality of levers, a series of levers being mounted on each side of a train, said levers being arranged in pairs and each pair having a transverse swinging movement, the lower end of each lever constituting a brake-shoe and provided with means for grasping the rail yieldingly at the point of contact, a fulcrum for each series of levers, means for lowering said fulcrums to operative positions, and means for applying pneumatic pressure to said levers for operating the same.

8. In a pneumatic rail-brake the combination of a plurality of levers, a series of levers being mounted on each side of a train, said levers being arranged in pairs and the lower end of each lever constituting a brake-shoe and the brake-shoe being provided with means adapting the same to grasp the rail yieldingly at the point of contact, a fulcrum for each series of levers, means for raising and lowering said fulcrums, and a pneumatic cylinder for each pair of levers provided with a piston connected to each pair of levers.

9. In a pneumatic-pressure rail-brake the combination of a plurality of levers, a series of levers being mounted on each side of a

tuate, said levers being arranged in pairs and each pair having a transverse swinging movement and adapted to grasp the rail, a fulcrum for each series of rails, pneumatic cylinders provided with suitable pistons for raising said fulcrums, and means for operating said levers.

10. In a pneumatic rail-brake the combination of a plurality of levers arranged in pairs and each pair having a transverse swinging movement and adapted to grasp a rail and pneumatic-pressure-regulated pistons connected to said levers, each lever being provided with a bearing-roller.

11. In a pneumatic rail-brake the combination of a plurality of levers arranged in pairs, a fulcrum being mounted on each side of a train, pneumatic cylinders provided with suitable pistons and piston-rods connecting said pistons and said fulcrums, and pneumatic cylinders provided with suitable pistons and piston-rods connecting the last-named pistons to said levers.

12. In a pneumatic rail-brake the combination of a plurality of levers arranged in pairs, a series of levers being mounted on each side of the train, said levers being arranged in pairs adapted to grasp the rails, brake-cylinders provided with suitable pistons connected to said levers for causing said levers to engage the rails, release-cylinders provided with suitable pistons for disengaging said levers, suitable pipes connected to said cylinders for supplying the same with pneumatic pressure, and means for switching the pressure from the brake-cylinders to the release-cylinders and vice versa.

810,317. DRIVING MECHANISM. ANDREW J. ALLISON, Mount Sylvan, Tex. Filed Dec. 1, 1904. Serial No. 235,971.

Claim.—1. The combination with a driven member, of a rock-lever, a ratchet mechanism connected with the driven member for rotating it, connections between the rock-lever and ratchet mechanism for operating the latter, a toggle-lever connected at one end to the rock-lever and at its opposite end to a fixed support, a treadle and connections between the treadle and a link of the toggle-lever for shifting the links of the lever alternately from one side to the other of their aligning positions when the treadle is oscillated.

2. The combination with a rotatable driven member, of a rock-lever, a pair of ratchet mechanisms connected between the rock-lever and the driven member and adapted to alternately impart motion to the driven member as the lever is rocked, a toggle-lever connected at one end of the rock-lever and pivoted at its opposite end to a fixed support, a treadle and a connection between the treadle and one of the toggle-links for shifting said links from one side to the other of their aligning positions.

810,318. VALVE-BAG. ABRAHAM H. BAUER, Cleveland, Ohio, assignor to Baker Valve Bag Company, Cleveland, Ohio, a Corporation of West Virginia. Filed Feb. 2, 1903. Serial No. 141,562.

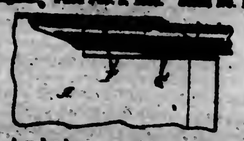

Claim.—1. A valve-bag, comprising a body of comparatively inflexible material, with a valve-opening therethrough, and an inner valve extension composed of comparatively flexible material.

3. A valve-bag, comprising a body of material comparatively impervious to air, with a valve-opening therethrough, and an inner valve extension composed of material which permits the air to pass, such material being flexible while the material of the bag is comparatively inflexible.

5. A valve-bag, comprising a bag-body, with a top portion consisting of parts folded together substantially as shown and so as to leave an opening into the bag between such folded parts, and an extension-piece applied to said bag at the inner end of such opening.

6. A valve-bag, comprising a bag proper, with top portions folded and secured together, and a valve extension part inserted in such folds, so as to leave a valve-opening formed partly by the material of the bag and partly by such extension.

7. A valve-bag, comprising a bag proper of paper, with an opening therethrough, and a strengthening-piece of cloth surrounding said opening.

8. A valve-bag, comprising a bag proper of paper, with an opening therethrough, and a strengthening-piece of cloth surrounding said opening, said strengthening-piece projecting inwardly to form a valve extension.

9. A valve-bag, comprising a bag proper of relatively inflexible material, with an opening therethrough, and a strengthening-piece surrounding said opening, said strengthening-piece projecting inwardly to form a valve extension and of flexible material.

10. A valve-bag, comprising a bag proper, with narrow folded-over portions lying one on the other, said portions secured to each other except at one end, so as to leave an opening between them, and a strengthening fabric surrounding such opening.

11. A valve-bag, comprising a bag proper, with narrow folded-over portions lying one on the other, said portions secured to each other except at one end, so as to leave an opening between them, and an inwardly-projecting valve extension surrounding such opening.

12. A valve-bag, comprising a bag proper, with narrow folded-over portions lying one on the other, said portions secured to each other except at one end, so as to leave an opening between them, and an inwardly-projecting strengthening-valve extension portion surrounding the opening, strengthening the same and forming an inner valve portion.

13. A valve-bag, having a square folded top, a filling-opening in said top in position to be closed by one of the folds of said top, and a strengthening-piece adjacent to said fold, as set forth.

14. A paper valve-bag, having a diamond-folded top, a filling-opening in said top, said opening adjacent to and in position to be closed by one of the primary folds of said top, and a cloth strengthening-piece adjacent to said primary fold, as set forth.

15. A valve-bag, having a square folded top, a lateral filling-opening extending between the folds of said top and in position to be closed by one of said folds, and a cloth strengthening-piece adjacent to the valve fold as set forth.

16. A paper valve-bag, having a diamond-folded top, a lateral filling-opening extending between the folds of said top and in position to be closed by one of the primary folds, and a cloth strengthening-piece adjacent to the valve fold, as set forth.

17. A paper valve-bag, having a diamond-folded top, a lateral filling-opening extending between the folds of said top and in position to be closed by one of the primary folds and a cloth strengthening-piece adjacent to and extending beyond the edge of the valve fold, as set forth.

810,319. V-BLOCK. RICHARD BAARS, New York, N. Y. Filed July 23, 1904. Serial No. 217,270.

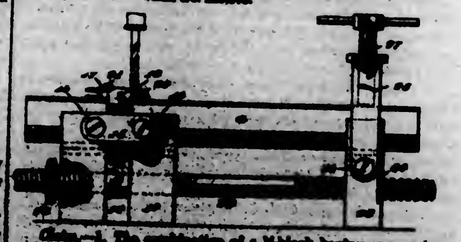

Claim.—1. The combination of a V-block having an opening therethrough, a work-holding device having a corresponding open-

ing therethrough, a rod extending through said openings and provided with threads from one end and annular teeth from the other, a nut on the threaded portion of the rod, and means on the work-holding device for engaging said teeth to hold the V-block and said work-holding device in adjusted relation to each other.

2. The combination of a V-block proper, a horizontal gage-bar, vertically-adjustable means sustaining the gage-bar over the V-block, a horizontally-adjustable tool-holder mounted on the gage-bar, and means for securing the tool-holder to the gage-bar, the latter and the tool-holder having opposite notches therein to admit an operating-tool.

3. The combination of a V-block proper, a horizontal gage-bar, vertically-adjustable means sustaining the gage-bar over the V-block, a horizontally-adjustable tool-holder mounted on the gage-bar, and means for securing the tool-holder to the gage-bar, the tool-holder being U-shaped and fitting the gage-bar transversely thereof, and the latter and the tool-holder having corresponding notches therein to admit a tool.

810,320. SAWMILL-CARRIAGE. CLYDE G. BOSH, Pine Bluff, Ark. Filed June 7, 1905. Serial No. 264,186.

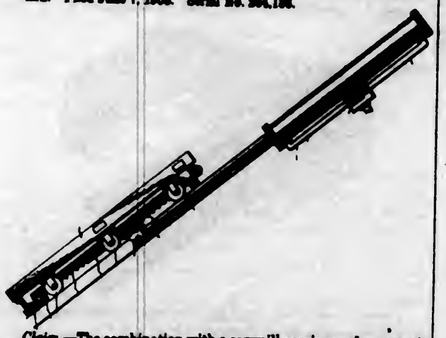

Claim.—The combination with a sawmill-carriage, of a supporting-bracket applied thereto and having downwardly-projecting terminal flanges, a guide-rod supported by said flanges, a head slidably mounted on the guide-rod and provided with an angular face to engage the bracket to hold said head from rotation, a regulating-plate on the guide-rod adjacent to one of said flanges, springs upon the guide-rod between the head and the other flange and the head and regulating-plate, means for imparting motion to the head to reciprocate the carriage, and means for adjusting the regulating-plate, the construction being such that the parts of the device are supported by said bracket, whereby the device is adapted for attachment to any ordinary sawmill-carriage.

810,321. METALLIC RAILROAD-TIE. SAMUEL T. CARROLL, Crothers, Pa. Filed June 10, 1905. Serial No. 264,614.

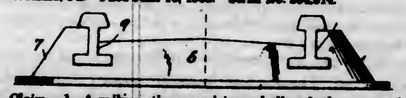

Claim.—1. A railway-tie comprising a hollow body open at its top and bottom and including spaced downwardly-diverging sides and connected downwardly-diverging end portions that extend above the sides, and a base-flange extending continuously about the sides and ends of the body portion, said body portion having rail-receiving sockets opening through the angles between the sides and the upwardly-extending portions of the ends.

2. A railway-tie comprising laterally-spaced sides that diverge downwardly and connected ends that diverge downwardly and project above the sides, there being rail-receiving sockets opening through the angles between the sides and the upwardly-projecting portions of the ends.

810,322. RAIL-BAG CATCHER. JOHN F. CHERRY, Louisville, Ky., assignor of two-fifths to Joseph Schaefer and two-fifths to John J. Sullivan, Louisville, Ky. Filed July 5, 1905. Serial No. 268,183.

Claim.—1. In a device of the class described, a support, a bearing member pivotally connected therewith and having an opening and a pair of oppositely-disposed recesses communicating with said opening, a bag-receiving member having a shank journaled for rotation in and for movement longitudinally of the opening and an angular portion adapted to seat in either of the recesses, and a coupling-pin engaged through the bearing member and shank for fixing said shank against longitudinal movement.

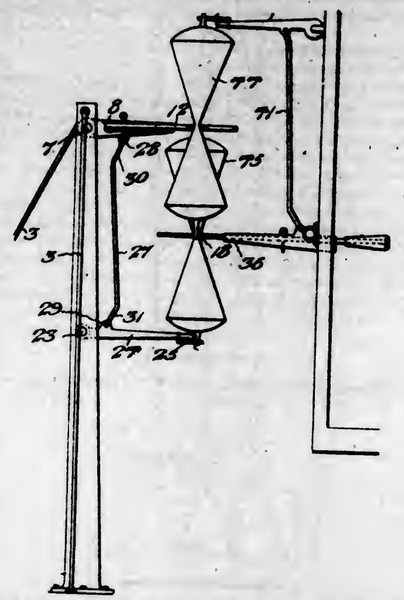

2. In a device of the class described, a support, a bearing member pivotally connected therewith, a bag-engaging member journaled for rotation in the bearing member, interlocking connections between the members to prevent rotation of the engaging member, the latter being adapted for longitudinal movement to effect its release, and a coupling-pin entered through and for fixing the members against relative longitudinal movement.

3. In a device of the class described, a support, a bearing member pivotally connected therewith and provided with a recess, a bag-engaging member rotatively engaged with the bearing member and having a portion designed to seat in said recess, said engaging member being longitudinally movable relative to the bearing member for seating said portion in or unseating it from the recess, and a coupling-pin for fixing the parts against relative longitudinal movement.

810,323. SWITCH-OPERATING DEVICE. WILLIAM A. GREEN, Houston, Tex. Filed July 12, 1905. Serial No. 269,269.

Claim.—1. In a switch-operating mechanism, a plurality of switches, a longitudinally-movable traction element, a pair of reversely-movable depressible shoes connected with and for moving the element respectively in reverse directions, and operative connections between the element and switches for operating and imparting simultaneous movement to the latter.

2. In a switch-operating mechanism, a plurality of switches operatively connected for simultaneous movement, a longitudinally-movable traction element, a pair of reversely-disposed bell-crank levers connected with said element, reversely-movable depressible shoes connected respectively with and for operating the levers to move the element in reverse direction, and operative connections between the element and switches for throwing the latter in opposite directions upon depression of the respective shoes.

3. In a switch-operating mechanism, a plurality of switches, a system of levers connecting the switches for simultaneous movement, a longitudinally-movable element, a pair of depressible shoes operatively connected with the element for moving the same in reverse directions, and operative connections between the element and one of the levers for actuating the latter to move the switches.

4. In a switch-operating mechanism, a plurality of underground

casings, tubular sections connecting the casings, a longitudinally-movable element extended between the casings within the tubular sections, reversely-disposed bell-crank levers housed respectively in said casings and connected for moving the element in reverse directions, a lever operated by the element, and a switch connected for operation by the lever.

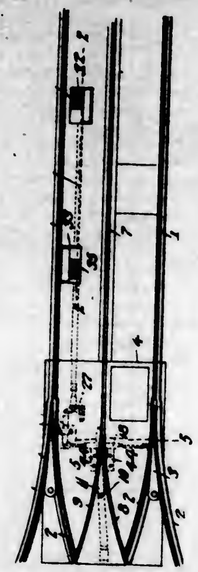

810,324. EGG-CARRIER. NELSON H. CLARK and ROBERT L. CLARK, Mannsville, N. Y. Filed Jan. 6, 1905. Serial No. 240,834.

Claim.—1. A package adapted for the transportation of fragile articles and comprising a body-section having recesses in the upper edges of opposite sides, the recesses being at or near the central portion of the sides, partitions in the body-section dividing the body into pockets, a tray-cover for the body-section fitting within the same, the top of said cover when in position being below the plane of the upper edge of the body-section, and a bail having its side members pivoted to the side portions of the body-section at one side of the center and adjacent to the bottom edges of said sides, the said bail being adapted to engage the recesses in the sides of the body-section and bear on the top surface of the tray-cover to hold the tray-cover in position, as described.

2. A package consisting of a body-section having opposing recesses in the upper edges of opposing surfaces, a bail having the terminal portions of its side members pivotally attached to the side portions of the body at one side of the center thereof, the upper section of which bail in its locking position is arranged to enter the said recesses, supports within the body, and an inverted-tray-shaped cover for the body, engaging with the said supports, the top of the cover when in position being below the plane of the upper edge of the body-section and adapted to be held in position by the said bail, for the purpose described.

3. The combination with the body of a receptacle having recesses in the upper edges on opposite sides, a bail pivotally attached to the body, extending upwardly from its pivotal point and across the upper portion of the body, the said bail at the intersection of its members being provided with upwardly-extending loops, the members of which loops, in the locking position of the bail are located at the outer and inner surfaces of the said side members of the body of the receptacle at the aforesaid recesses therein, partitions dividing the said body of the receptacle into a series of pockets, the ends of which partitions are beveled downwardly and outwardly, and an inverted tray-cover adapted to be held in engagement with the said partitions by means of the said bail, the marginal portions of which tray-cover enter the spaces between the ends of the partitions and the adjacent surfaces of the body of the receptacle, as set forth.

4. A package consisting of a body-section having opposing recesses in the upper edges of opposite sides, a bail having side members pivotally attached to the sides of the body-section, and an upper or connecting member extending across the upper portion of the body, the bail at the intersection of the upper and side members being provided with upwardly-extending loops, the members of said loops, when the bail is in locking position, extending down at the inner and outer surfaces of the sides of the body at the said recesses, and a separable tray-cover for the body-section adapted to be held in place by the bail, as set forth.

810,325. PIANO PEDAL-GUARD. MARGARET B. CLEMENTS, Eastman, Ga. Filed July 20, 1905. Serial No. 271,617.

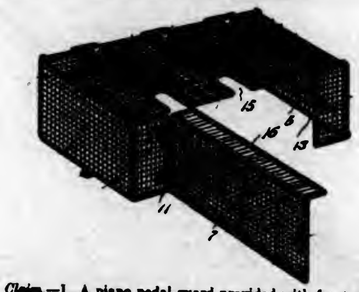

Claim.—1. A piano pedal-guard provided with front and rear sets of slots, and means for closing either set of slots.

2. A piano pedal-guard provided with sets of openings, and reversible closures for closing either set of openings.

3. A piano pedal-guard provided with openings for the passage of a pedal-rod located at different distances from the front wall of the piano, and a reversible closure for closing either opening.

4. A piano pedal-guard provided with an open front and a doorway in its rear, and formed in the front and rear edges of its top wall with slots, a hinged door for closing said doorway, said door being provided with an extension to partly close the rear slots, and reversible closures for closing either the front or the rear slots at will.

5. A piano pedal-guard comprising an oblong rectangular casing formed of a wire frame having a body of woven material, said casing being provided with an open front side and having a doorway in its rear side, the top wall of the casing being provided in its front and rear edges with slots, a hinged door at the rear side adapted to close said doorway and provided with a projection to partially close the rear slots, and pivoted closures upon the top wall reversible to close either set of slots.

810,326. CAR-FENDER. JOSEPH B. COMMON, Liverpool, England, assignor to Thomas Hurtland, New York, N. Y. Filed Sept. 19, 1905. Serial No. 279,289.

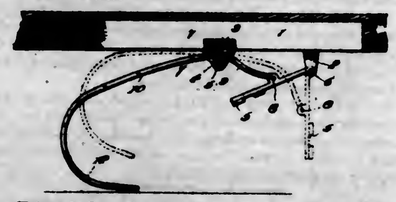

Claim.—1. In a safety device for cars, a tray or fender designed to be moved vertically toward and away from a track, a vertically-suspended gate designed to be swung in the arc of a circle, a connection between said tray and said gate having a curved or cam-shaped portion, a rigid support for said connection through which the latter is movable, whereby the longitudinal movement of said connection consequent upon the swing of the gate will effect the movement of said tray.

2. In a safety device for cars, a tray or fender, a gate, brackets designed to be rigidly secured to a car-frame, rods connecting the tray with the gate, said rods being longitudinally curved and movable in said brackets, whereby said tray is caused to move vertically upon the swinging of said gate.

3. In a safety device for cars, a tray or fender, a gate, a rigid support secured to a car-frame, a rod connecting the tray with the gate, said rod being longitudinally movable in said support and having an upwardly-curved portion normally intermediate the support and the gate, and a relatively straight portion intermediate the support and the tray whereby in the normal positions of the parts the relatively straight portion is in engagement with the support and upon swinging the gate the rod moves rearwardly and its curved portion engages the support, for the purpose stated.

4. In a safety device for cars, a tray or scoop, a gate, supports designed to be secured to a car-frame and to which said gate is pivoted, brackets also designed to be secured to the car-frame, and rods pivoted to said gate, movable longitudinally in said brackets and forming the side bars of said tray, said rods being curved longitudinally, for the purpose stated.

810,327. FOUNTAIN-PEN. MARTIN R. CROSSMAN, Boston, Mass. Filed May 29, 1905. Serial No. 262,781.

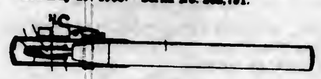

Claim.—In a fountain-pen, a holder, a pen-point, a cap to fit over the holder and pen-point, an antisweating-cap of a size to be received within first-mentioned cap and of a shape to fit tightly over the pen-point and means carried by the pen to sustain said antisweating-cap when the latter is not in use.

810,328. CATTLE-GUARD. ANDREW DEVAN, Missoula, Mont. Filed May 29, 1905. Serial No. 262,543.

Claim.—1. A cattle-guard consisting of a pair of members extending in the same direction and forming a pocket, said members being arranged between a pair of rail-ties, and said members further having the upper edges thereof serrated.

2. A cattle-guard consisting of a front and a rear member extending at an inclination and suitably connected together, thereby forming a pocket, said members adapted to be interposed between a pair of rail-ties and each of said members having its upper edge serrated.

3. A cattle-guard comprising a front and a rear member extending at an inclination, one of said members secured to a tie and the other of said members being resilient, said members suitably connected together at their lower ends to form a pocket.

4. A cattle-guard comprising a front and rear member extending at an inclination, one of said members secured to a tie and the other of said members being resilient, said members suitably connected together at their lower ends to form a pocket, and each of said members having its upper edge serrated.

5. A cattle-guard adapted to be interposed between a pair of ties and comprising a fixed and a resilient inclined member, said movable member projecting away from one of the ties and the other of said members fixed to the other of said ties.

6. A cattle-guard adapted to be interposed between a pair of ties and comprising a fixed and a resilient member suitably connected together at their lower ends and spaced apart to form a pocket, one of said members fixed to one of said ties, said members having a serrated edge.

7. The combination with a railway-tie having an inclined bearing-surface, of a cattle-guard comprising a front and a rear member extending at an inclination and having serrated edges, said members suitably spaced apart to form a pocket, and one of said members resting upon said bearing-surface and fixed to said tie.

8. The combination with a railway-tie having an inclined bearing-surface, of a cattle-guard comprising a front and a rear member extending at an inclination and having serrated edges, said members suitably spaced apart to form a pocket, and one of said members resting upon said bearing-surface and fixed to said tie, said fixed member having a portion thereof extending at a greater inclination than the remaining portion thereof.

9. A cattle-guard consisting of a piece of sheet-metal material bent to form a front and rear inclined member terminating at their lower ends in a body portion adapted to rest upon the track-bed, one of said members being of less length than the other of said members and both of said members having their top edges serrated, said members being suitably spaced apart to form a pocket.

10. A cattle-guard consisting of a piece of sheet-metal material bent to form front and rear inclined members terminating at their lower ends in a body portion adapted to rest upon the track-bed, one of said members being of less length than the other of said members and both of said members having their top edges serrated, said members being suitably spaced apart to form a pocket, combined with a railway-tie having an inclined bearing-surface for said longer member, and means for securing said elongated member to the said tie.

11. A cattle-guard comprising a plurality of sections and each consisting of a piece of sheet-metal material bent to form front and rear inclined members terminating at their lower ends in a body portion adapted to rest upon the track-bed, one of said members being of less length than the other of said members and both of said members having their top edges serrated, said members being suitably spaced apart to form a pocket, combined with a railway-tie having an inclined bearing-surface for said longer member, and means for securing said elongated member to the said tie.

810,329. DUST AND SCRAP BAG AND HOLDER. EMILY DYETT, New York, N. Y. Filed Dec. 2, 1904. Serial No. 235,274.

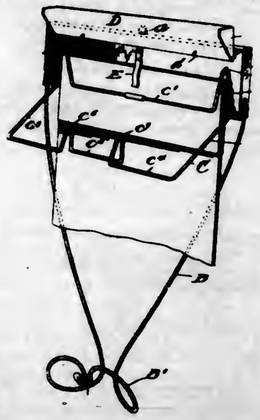

Claim.—1. In a bag-holding device, the combination with the supporting-frame, comprising the rigid back provided with the means for supporting the same and a wire frame connected to said back and provided at its lower end with a supporting-loop for receiving the bottom of the bag, said back being provided with means for engaging the inner portion of the mouth of the bag to support the same, of a rigid open frame connected to said back adapted to surround the mouth of the bag, and having a front cross-piece forward of said back, provided with portions for engaging the outer and also the inner side of the front portion of the mouth of the bag for holding the bag in open position, substantially as described.

2. In a bag-holding device, the combination with the vertical supporting-frame provided at its lower end with a support for the bottom of the bag and having at its upper end a vertically-disposed spring-clip, of an open rectangular frame hinged to the upper part of the main frame and provided with means for maintaining it in an angle to the main frame, said open frame being adapted to surround a bag and having an outer cross-piece at a distance from the main frame provided with separated portions for engaging the inner and outer sides of the front portion of the mouth of the bag and a cover hinged to said main frame above the said open frame and adapted to be supported thereby, substantially as described.

3. In a bag-holding device, the combination with the supporting-frame comprising the rigid back and a wire frame connected thereto having the ends of the wire connected to said back and the central portion formed into a supporting-loop for receiving the bot-

tom of the bag, an open frame formed of wire, pivotally connected to said hook, and provided with a rear clamping member for engaging said hook below the pivotal connection therewith, and having its front part provided with a clip to receive the front part of the mouth of the bag, and a cover pivoted to the hook and adapted to engage said pivoted frame when in closed position and be supported thereby, substantially as described.

4. In a bag-holding device, the combination with the supporting-frame comprising the rigid hook provided with means for supporting it in a vertical position and a wire frame connected to said hook and provided at its lower end with outwardly and upwardly bent portions for supporting the bottom of the bag, a spring-clip secured centrally to the rigid hook adjacent to its upper end, a rigid rectangular open frame pivotally connected to said hook and provided with a downwardly-extending clamping member adjacent to said hook for maintaining said open frame at an angle to said hook, said open frame being constructed to surround the mouth of the bag and having a front piece parallel to and at a distance from said hook provided with separate portions for engaging the inner and outer sides of the front portion of the mouth of the bag and a cover hinged to said hook above said open frame and adapted to be supported thereby, substantially as described.

5. In a bag-holding device, the combination with a supporting-frame comprising the hook, and a wire frame having its ends secured to said hook, and its central portion bent into a supporting-loop to support a bag to be filled, the upwardly-bent portion of said loop being provided with a supporting-hook, of an open frame pivoted to said hook and provided with a clamping portion to engage said hook and having its front portion provided with a vertically-disposed clip to engage a portion of the mouth of the bag, and a cover pivoted to said hook and adapted to engage and be supported by said pivoted frame, substantially as described.

810,330. APPARATUS FOR MEASURING ELECTRIC RESISTANCES. SIDNEY EVERSHED, Ilkeston, England, assignor to Messrs. Evershed and Vignoles Limited, Chiswick, England, a Corporation. Filed Feb. 27, 1904. Serial No. 195,611.

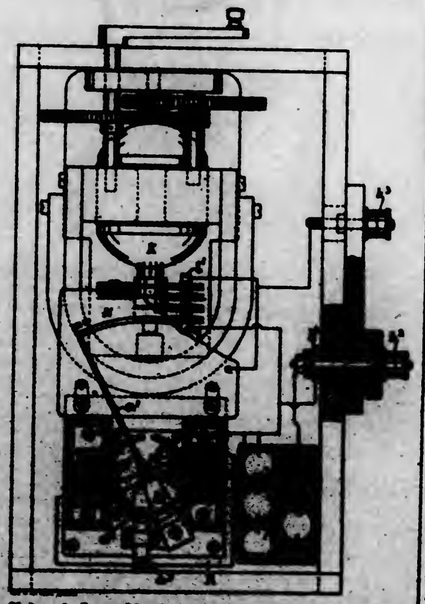

Claim.—1. In combination, a generator of electric current; an electrometer in close proximity to the generator having a rotatable index-pointer and equatorial plate thereon, in stable equilibrium throughout its range as regards gravitational or torsional forces; four quick-quadrants mounted electrically in two pairs, grouped about the rotatable index-pointer; electrically-guarded insulations for the connection between one pair of quadrants and an external terminal; an electrical resistance connecting the two pairs of quadrants; and adapted to cause a difference of potential between them and a portable box inclosing the whole apparatus.

2. In combination, a generator of electric current; an electrometer in close proximity to the generator, having a rotatable index-pointer in stable equilibrium throughout its range as regards gravitational or torsional forces; electrically-guarded insulations to avoid leakage; and a portable box inclosing the whole apparatus.

3. In combination, a generator of electric current; an electrometer in close proximity to the generator, having a rotatable index-pointer in stable equilibrium throughout its range as regards gravitational or torsional forces; two pairs of quadrants grouped about the rotatable index-pointer; insulations under one pair of quadrants, about an external terminal, and under the resistances; guard metal plates adjoining said insulations; connections to the said guard-plates from a terminal of the current-generator to avoid leakage; and a portable box inclosing the whole apparatus.

4. In combination, a generator of electric current; an electrometer in close proximity to the generator, having a rotatable index-pointer in stable equilibrium throughout its range as regards gravitational or torsional forces; a sector metallic plate upon the index-pointer axis, a magnet acting upon the said sector-plate as a magnetic brake; and a dial-plate with the framework carrying the movable system metallically connected together and to one terminal of the electric-current generator.

810,331. STOPPER RETAINING AND EXTRACTING DEVICE. WILLIAM L. GALLAGHER, Point Rayes Station, Cal. Filed Sept. 13, 1905. Serial No. 278,282.

Claim.—A vessel having a neck, a stopper adapted to be seated in the latter and provided with a transverse opening, a flexible element threaded through said opening and bent in reverse directions across the top of the stopper and thence downward to form depending portions terminating at their lower ends in loops, the element being thereafter wrapped around the neck to present a pair of independent superposed coils terminating in loops having interlocking engagement with the loops on the arms, the terminals of the element being finally crossed and twisted.

810,332. SHOULDER-FORM. ALEXANDER H. GRAHAM, New York, N. Y. Filed June 2, 1905. Serial No. 263,469.

Claim.—1. As a new article of manufacture, a shoulder-form for garments comprising a fabric sheet having a shoulder and curved lengthwise and crosswise, and a flattened neck end, the contour of the form being in compound curves.

2. As a new article of manufacture, a shoulder-form for garments comprising a fabric sheet having a flattened neck end, a padded shoulder and curved lengthwise and crosswise and elevated above the neck end, and a series of apertures from the neck end to the pads, the whole contour of the form being in compound curves, substantially as shown and described.

810,333. SHOULDER AND SLEEVE FORM. ALEXANDER H. GRAHAM, New York, N. Y. Filed June 10, 1905. Serial No. 264,888.

Claim.—1. As a new article of manufacture, a shoulder-form for garments comprising a tapering portion adapted to extend into the shoulder of the garment, and a wing extending upwardly and outwardly from and at an angle to said portion.

2. As a new article of manufacture, a shoulder-form for garments, comprising a shoulder portion having a tapering arm adapted to extend the length of the shoulder, and a wing extending throughout the outer edge of the shoulder portion and projecting from the latter upwardly and outwardly in shoulder shape.

810,334. BOTTLE-SEAL. ANDREW L. GREEN, Lake City, Fla. Filed Aug. 5, 1905. Serial No. 272,502.

Claim.—1. The combination with a receptacle having the edge of its mouth formed with a notch, of a cap arranged for threaded connection with the receptacle and provided with a key to engage said notch to prevent movement of the cap in one direction.

2. The combination with a receptacle having its mouth edge formed with a notch having a vertical wall, of a cap adapted for threaded connection with the receptacle, and a key centered intermediately of the cap and adapted to rest in the notch and against said vertical wall in the cap is in sealing position on the receptacle.

3. A bottle having a threaded neck, the free edge of said neck being formed with a notch, and a cap adapted for connection with the threaded neck, said cap being provided with an interior key to engage the notch with the bottle-neck when the cap has been moved to the limit of its sealing position.

4. A bottle having a threaded neck, the free edge of said neck being formed with a notch having a vertical wall, and an inclined bottom, said inclined bottom extending in the direction of the operative projection of the threads, a cap arranged for threaded connection with the bottle, and a key centered to the cap and adapted to engage said notch when the cap has been entered to the limit of its sealing position on the bottom of the cap on its sealing-neck.

5. A bottle-cap comprising a disk and a circumferentially-depending flange, and a key arranged laterally and intermedially of the cap, said key projecting from the disk portion of the cap adjacent the depending flange.

6. A sealing-cap comprising a disk portion and an integrally-depending circumferential flange, and a key secured to the under side of the disk portion and arranged radially thereof, said key having a projecting portion spaced from the disk adjacent the circumferential flange.

810,335. SELF-ADJUSTING SAFETY-LOCK. FRANK S. HOLT and JAMES P. STOUT, Wheeling, W. Va. Filed Sept. 22, 1905. Serial No. 279,284.

Claim.—1. In a selective party-line system, the combination with a battery, a continuous metallic line, normally open connections leading from said line to a series of stations, automatic switching mechanism at each station, and mechanism arranged to complete the circuit through said connection at any station and then cut out the battery from the continuous line.

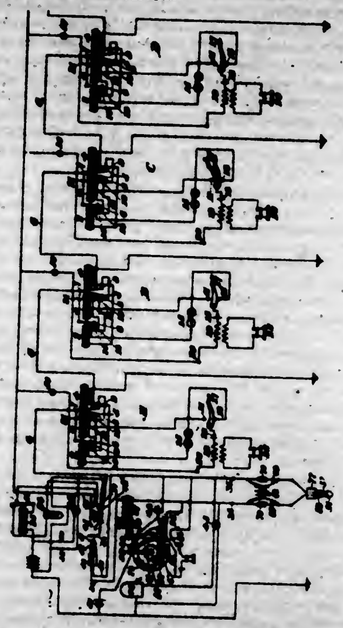

2. A central station having a local signal-circuit, a continuous metallic line extending from the central station, connections leading from said line to a series of stations, automatic switching mechanism at each station, mechanism arranged to complete the circuit at any station, a battery normally included in circuit with the continuous line, and means adapted to cut out the battery from the continuous line and to connect it to a local signal-circuit.

3. A central station, a continuous metallic line extending therefrom, a second line extending therefrom and broken at a series of stations, automatic switch mechanism for bridging up the broken line successively through each station, automatic switch mechanism at each station, including a polarized magnet and arranged to connect the stations to the metallic circuit, and means at central station for sending a reverse current to actuate the polarized switch system at any desired station; substantially as described.

4. A central station having a step-by-step indicator, a continuous metallic line extending from the indicator, a second broken metallic line extending from the indicator and having a station at each break, a ground-circuit at each station, automatic switch mechanism for bridging up the broken line successively through each station, and automatic switch mechanism at each station, including a polarized magnet, and arranged to break the ground-circuit and connect the station to the metallic circuit and mechanism at central station for sending a reverse current to actuate the polarized switch system at any desired station; substantially as described.

5. In a telephone system the combination with a central exchange, of lines extending therefrom to a plurality of subscribers, telephonic apparatus at each subscriber, a polarized relay at each subscriber for controlling the corresponding telephonic apparatus, a non-polarized relay at each subscriber for controlling the continuity of the circuit through a pair of said lines, current-flow in one direction from the central exchange causing operation of the non-polarized relays at the subscribers whereby the line controlled thereby is made continuous to the desired subscriber, and means upon current-flow in another direction from the central exchange for sending the telephonic apparatus at the desired subscriber to be connected with the lines upon operation of the polarized relay.

6. In a telephone system the combination with a central ex-

change, of lines extending therefrom to a plurality of party-substations, signaling apparatus at each substation, a polarized relay at each substation controlling the connection of said signaling apparatus with the line, one of said lines being normally broken at each substation, a non-polarized relay at each substation for controlling the continuity of the normally broken line, a source of current at the central exchange, current-flow from said source through the lines in one direction causing successive actuation of the non-polarized relays at the substations whereby the normally broken line may be rendered continuous to a desired substation, means upon current-flow from said source through the lines in the opposite direction causing the actuation of the polarized relay at the desired substation whereby the signaling apparatus at said substation is connected with the lines, and means at the central exchange for sending signaling-current through the lines whereby the signaling apparatus at the desired substation may be selectively actuated.

7. In a telephone system the combination with a central exchange, of lines extending therefrom to a plurality of substations, normally disconnected sections of line connecting the successive substations, a relay at each substation adapted upon actuation to close the line-sections terminating thereat, and means upon current impulse in one direction from the central exchange for causing actuation of the successive relays at the substations whereby the disconnected sections may be connected together to offer a continuous line to a desired substation, signaling apparatus at each substation normally disconnected from the lines, and a second relay at each substation controlling the connection of the signaling apparatus with the line, current impulses from the central exchange in an opposite direction causing actuation of only the second relay at the desired substation whereby the signaling apparatus at its substation is connected with the central exchange exclusive of the signaling apparatus at other substations.

8. In a telephone system the combination with a central exchange, of telephone-lines extending therefrom to a plurality of party-substations, one of said lines being normally discontinuous at each substation, a relay at each substation for controlling the continuity thereat of the normally broken line, signaling apparatus at each substation, a second relay for controlling the connection of said signaling apparatus with the lines and with the central exchange, means at the central exchange for sending current impulse of one polarity into the lines and successively serially through the two relays at each substation until the desired substation is reached, these current impulses causing the actuation of only the first relays whereby said relays are disconnected from circuit and the normally broken line rendered continuous to the desired substation, means at the central exchange for sending impulses into the lines of opposite polarity to cause current-flow of opposite polarity serially through the two relays at the desired substation, the second relay being responsive to this current-flow of opposite polarity whereby the signaling apparatus at the desired substation only is operatively connected with the lines.

9. In a telephone system the combination with a central exchange, of telephone-lines extending therefrom to a plurality of party-substations, one of said lines being normally broken at each substation, a non-polarized relay at each substation adapted upon actuation to close the normally broken line thereat, signaling apparatus at each substation normally disconnected from the lines, a polarized relay at each substation controlling the connection of said signaling apparatus with the lines, said relays being normally connected serially in circuit with the preceding section of the normally broken line and with the armature of the non-polarized relay, means at the central exchange for sending current impulses of one polarity through a normally broken line, whereby the relays at each substation are successively connected in circuit, said current-flow of one polarity causing actuation only of the non-polarized relay whereby the normally broken line is rendered continuous to the desired substation, means at the central exchange, when the desired substation is reached, for sending a current of opposite polarity over the built-up line, whereby both relays at the desired substation are actuated and whereby the signaling apparatus at the desired substation is connected with the central exchange upon actuation of the polarized relay, and means at the central exchange for sending a signaling-current through the lines to actuate the selected substation signaling apparatus.

10. In a telephone system the combination with a central exchange, of telephone-lines extending therefrom to a plurality of party-substations, one of said lines being normally broken at each substation, a relay at each substation controlling the continuity of the normally broken line thereat, signaling apparatus at each substation, a second relay controlling the connection of said signaling apparatus with the line, said first and second relays being connected serially in circuit, means upon current-flow in one direction from the central exchange into the first section of the normally broken line for causing current-flow through the first and second relays at the first substation, means for allowing actuation of only the first relay, whereby the first section is directly connected with the following section leading to the second substation, whereby the normally broken line may be rendered continuous to any desired substation, means at the central exchange for sending current impulses of opposite polarity through the built-up line and serially through the first and second relays at the desired substation, said second relay being responsive to the current of opposite polarity, whereby the signaling apparatus at the desired substation is connected with the lines and with the central exchange.

11. In a telephone system the combination with a central exchange, of lines extending therefrom to a plurality of substations, one of said lines being normally broken at each substation, a relay at each substation controlling the continuity of the normally broken line thereat, signaling apparatus at each substation, a second relay controlling the connection of said signaling apparatus with the line, said first and second relays being connected serially in circuit, means upon current-flow in one direction from the central exchange into the first section of the normally broken line for causing current-flow through the first and second relays at the first substation, means for allowing actuation of only the first relay, whereby the first section is directly connected with the following section leading to the second substation, whereby the normally broken line may be rendered continuous to any desired substation, means at the central exchange for sending current impulses of opposite polarity through the built-up line and serially through the first and second relays at the desired substation, said second relay being responsive to the current of opposite polarity, whereby the signaling apparatus at the desired substation is connected with the lines and with the central exchange, and a restoring-relay at each substation adapted upon actuation from the central exchange to restore the switch mechanisms of the first and second relays to their normal positions.

12. In a telephone system the combination with a central exchange, of lines extending therefrom to a plurality of substations, one of said lines being normally broken at each substation, a relay at each substation controlling the continuity of the normally broken line thereat, signaling apparatus at each substation, a second relay controlling the connection of said signaling apparatus with the line, said first and second relays being connected serially in circuit, means upon current-flow in one direction from the central exchange into the first section of the normally broken line for causing current-flow through the first and second relays at the first substation, means for allowing actuation of only the first relay, whereby the first section is directly connected with the following section leading to the second substation, whereby the normally broken line may be rendered continuous to any desired substation, means at the central exchange for sending current impulses of opposite polarity through the built-up line and serially through the first and second relays at the desired substation, said second relay being responsive to the current of opposite polarity, whereby the signaling apparatus at the desired substation is connected with the lines and with the central exchange, and a restoring-relay at each substation adapted upon actuation to restore the other relays and circuits to their normal positions.

13. In a telephone system the combination with a central exchange, of lines extending therefrom to a plurality of party-substations, signaling apparatus at each substation, a relay at each substation controlling the connection of the signaling apparatus with the lines, one of said lines being normally broken at each substation, a second relay at each substation adapted upon actuation to close the broken line thereat, whereby the broken line may be rendered continuous to any desired substation, a restoring-relay at each substation adapted upon actuation to restore the switch mechanisms of the other relays to their normal positions.

14. In a telephone system the combination with a central exchange, of lines extending therefrom to a plurality of party-substations, one of said lines being normally broken at each substation, a relay at each substation controlling the continuity of the normally broken line thereat, signaling apparatus at each substation, a second relay controlling the connection of said signaling apparatus with the line, said first and second relays being connected serially in circuit, means upon current-flow in one direction from the central exchange into the first section of the normally broken line for causing current-flow through the first and second relays at the first substation, means for allowing actuation of only the first relay, whereby the first section is directly connected with the following section leading to the second substation, whereby the normally broken line may be rendered continuous to any desired substation, means at the central exchange for sending current impulses of opposite polarity through the built-up line and serially through the first and second relays at the desired substation, said second relay being responsive to the current of opposite polarity, whereby the signaling apparatus at the desired substation is connected with the lines and with the central exchange, and a restoring-relay at each substation adapted upon actuation from the central exchange to restore the switch mechanisms of the first and second relays to their normal positions.

15. In a telephone system the combination with a central exchange, of lines extending therefrom to a plurality of party-substations, telephonic apparatus at each substation, a source of current at the central exchange, an indicator-relay at the central exchange, actuation of the telephonic apparatus at any substation causing closure of a circuit through said source and said relay, actuation of said relay causing disconnection of said source from the lines and connection of said source to a local circuit including an indicating-signal.

16. In a telephone system the combination with a central exchange, of lines extending therefrom to a plurality of party-substations, telephonic apparatus at each substation normally disconnected from the line, a relay at each substation controlling the action of said telephonic apparatus with the line, a source of current and indicating mechanism at the central exchange, actuation of the telephonic apparatus at a calling-substation causing the closure of a circuit through said relay, said source of current and said signaling apparatus, whereby the telephonic apparatus is connected in circuit by the relay, and means upon actuation of the indicating apparatus for causing disconnection of said source from the lines thereby to prevent connection of the telephonic apparatus with the line at other substations.

17. In a telephone system the combination with a central exchange, of lines extending therefrom to a plurality of party-substations, telephonic apparatus at each substation normally disconnected from circuit, a relay at each substation controlling the connection of said telephonic apparatus with the lines, a source of current and a relay at the central exchange, means upon actuation of the telephonic apparatus at one substation for closing a circuit through said source of current to said substation-relay and central-exchange relay, actuation of the substation-relay causing connection of the telephonic apparatus with the line and with the central exchange, and actuation of said central-exchange relay causing disconnection thereby of said source from the line and connection of said source in a local circuit with an indicating-signal, the telephonic apparatus at other substations being prevented from connection with the lines upon disconnection therefrom of said source.

18. The combination with a central station, of a line running from said central station broken at a series of substations, electromagnetic mechanism controlled from the central station adapted to build up a non-inductive circuit through said broken line to any desired substation, a return-circuit from said substations to said central station, electric signaling apparatus at each of said substations, a second line connecting all of said substations with the central station, and electromagnetic mechanism controlled from said central station adapted to connect the said second line with the signaling apparatus at any of said substations, substantially as described.

19. The combination with a central station, of a line running from said central station broken at a series of substations, electromagnetic mechanism controlled from the central station adapted to build up a non-inductive circuit through said broken line to any desired substation, other electromagnetic mechanism controlled from said central station adapted to break said electric circuit at said substations, a return-circuit from said substations to said central station, electric signaling apparatus at each of said substations, a second line connecting all of said substations with the central station, and electromagnetic mechanism controlled from said central station adapted to connect the said second line with the signaling apparatus at any of said substations, substantially as described.

20. In combination, a central station, three lines leading therefrom to a series of substations, one of said lines being normally broken at each substation, electromagnetic selective apparatus at each of said substations adapted to be connected in series with one of said lines and adapted to be connected in multiple with either of the other two lines, and electromagnetic mechanism at each of said substations controlled from the central station adapted to automatically connect said selective apparatus in series with the broken line, and adapted to automatically disconnect the multiple connections of said selective apparatus with one of the other two lines, substantially as described.

21. In combination, a central station, three lines leading therefrom to a series of substations, one of said lines being normally broken at each substation, electromagnetic selective apparatus at each of said substations adapted to be connected in series with one of said lines and adapted to be connected in multiple with either of the other two lines, and electromagnetic mechanism adapted to automatically connect said selective apparatus in series with the broken line, substantially as described.

22. In combination, a central station, three lines leading therefrom to a series of substations, one of said lines being normally broken at each substation, electromagnetic selective apparatus at each of said substations adapted to be connected in series with one of said lines and adapted to be connected in multiple with either of the other two lines, and electromagnetic mechanism controlled from the central station adapted to automatically connect said selective apparatus in series with the broken line, substantially as described.

23. In combination, a central station, three lines leading therefrom to a series of substations, one of said lines being normally broken at each substation, electromagnetic selective apparatus at each of said substations adapted to be connected in series with one of said lines and adapted to be connected in multiple with either of the other two lines, and electromagnetic mechanism at each of said substations controlled from the central station adapted to automatically connect said selective apparatus in series with the broken line, and to automatically disconnect the multiple connections of said apparatus with one of the other two lines, substantially as described.

24. In combination, a central station, three lines leading therefrom to a series of substations, one of said lines being normally broken at each substation, electromagnetic selective apparatus at each of said substations adapted to be connected in series with one of said lines and adapted to be connected in multiple with either of the other two lines, and neutral electromagnetic mechanism adapted to automatically connect said selective apparatus in series with the broken line, substantially as described.

25. In combination, a central station, three lines leading therefrom to a series of substations, one of said lines being normally broken at each substation, electromagnetic selective apparatus at each of said substations adapted to be connected in series with one of said lines and adapted to be connected in multiple with either of the other two lines, and neutral electromagnetic mechanism adapted to automatically connect said selective apparatus in series with the broken line and to automatically disconnect the multiple connections of said selective apparatus with one of the other two lines, substantially as described.

26. In combination, a central station, three lines leading therefrom to a series of substations, one of said lines being normally broken at each substation, electromagnetic selective apparatus at each of said substations adapted to be connected in series with each one of said lines and adapted to be connected in multiple with either of the other two lines, and neutral electromagnetic mechanism controlled from the central station adapted to automatically connect said selective apparatus in series with the broken line, substantially as described.

27. In combination, a central station, three lines leading therefrom to a series of substations, one of said lines being normally broken at each substation, electromagnetic selective apparatus at each of said substations adapted to be connected in series with one of said lines and adapted to be connected in multiple with either of the other two lines, and neutral electromagnetic mechanism controlled from the central station adapted to automatically connect said selective apparatus in series with the broken line and to automatically disconnect the multiple connections of said selective apparatus with one of the other two lines, substantially as described.

28. In a selective party-line telephone system, the combination with a series of substations, electromagnetic selective apparatus at each of said substations, a connecting-line normally broken at each of said substations, a second line normally connected to the selective apparatus at each of said substations, a third line adapted to be connected in circuit with the selective apparatus at each of said substations, and neutral electromagnetic mechanism adapted to automatically connect said selective apparatus in series with the broken line, means adapted to automatically build up and restore said broken line and to break the normal connection with said second line and to connect said selective apparatus in circuit with said third line, the selective apparatus at any one substation being identical with that at all other substations, substantially as described.

29. In a selective party-line telephone system, the combination with a series of substations, of electromagnetic selective apparatus at each of said substations, a connecting-line normally broken at each of said substations, a second line normally connected to the selective apparatus at each of the substations, a third line adapted to be connected in circuit with the selective apparatus at each of the said substations, and electromagnetic means controlled from the central station adapted to automatically build up and restore said broken line and to break the normal connection with the said second line, and to connect said selective apparatus in circuit with said third line, the selective apparatus at any one substation being identical with that at all other substations, substantially as described.

30. In a selective party-line telephone system, the combination with a series of substations, of electromagnetic selective apparatus at each of said substations, a connecting-line normally broken at said substations, a second line normally connected with the selective apparatus at each of said substations, a third line adapted to be connected in circuit with the selective apparatus at each of said substations, and electromagnetic means adapted to automatically build up

and restore said broken line and to break the normal connection with said second line and to connect said selective apparatus in circuit with said third line, the selective apparatus at any one substation being identical with that at all other substations, substantially as described.

31. In a selective party-line telephone system, the combination with a series of substations, of suitable selective apparatus at each of said substations, a line connecting said substations normally broken at each of said substations, telephone instruments at each of said substations normally disconnected from said line, and means for connecting said telephone instruments in circuit with said broken line, substantially as described.

32. In a selective party-line telephone system, the combination with a series of substations, of suitable selective apparatus at each of said substations, a line adapted to connect said substations normally broken at each substation, a second line normally connected to the selective apparatus at each of said substations, telephone instruments at each of said substations normally disconnected from said lines, and means for connecting said telephone instruments in circuit with said broken line, substantially as described.

33. In a selective party-line telephone system, the combination with a series of substations, of suitable selective apparatus at each of said substations, a line adapted to connect said substations but normally broken at each of said substations, a second line normally connected with the selective apparatus at each of said substations, a third line adapted to be connected in multiple with the selective apparatus at each of said substations, telephone instruments at said substations normally disconnected from said broken line, and means adapted to connect said telephone instruments in circuit with said broken line, substantially as described.

34. The combination with a central station, of a line running from said central station broken at a series of substations, neutral electromagnetic mechanism adapted to build up a non-inductive electrical path through said broken line, a return-circuit from said substations to said central station, electric signaling apparatus at each of said substations, a second line connecting all of said substations with the central station, and electromagnetic mechanism adapted to connect said signaling apparatus in circuit with two of said lines, substantially as described.

35. The combination with a central station, of a line running from said central station broken at a series of substations, neutral electromagnetic mechanism controlled from the central station adapted to build up a non-inductive electrical path through said broken line to any desired substation, a return-circuit from said substations to said central station, electric signaling apparatus at each of said substations, a second line connecting all of said substations with the central station, and electromagnetic mechanism controlled from the central station adapted to connect said signaling apparatus in circuit with two of said lines, substantially as described.

36. The combination with a central station, of a line running from said central station broken at a series of substations, neutral electromagnetic mechanism controlled from the central station adapted to build up a non-inductive electrical path through said broken line to any desired substation, electric signaling apparatus at each of said substations, a second line connecting all of said substations with the central station, and electromagnetic mechanism controlled from said central station adapted to connect said signaling apparatus in circuit with two of said lines, substantially as described.

37. The combination with a central station, of a line running from said central station broken at a series of substations, electromagnetic mechanism controlled from the central station adapted to build up a non-inductive electrical path through said broken line to any desired substation, a return-circuit from said substations to said central station, electric signaling apparatus at each of said substations, a second line connecting all of said substations with the central station, and electromagnetic mechanism controlled from said central station adapted to connect one of said lines with the signaling apparatus at any one of said substations, substantially as described.

38. The combination with a central station, of a line running from said central station broken at a series of substations, neutral electromagnetic mechanism controlled from the central station adapted to build up a non-inductive circuit through said broken line to any desired substation, a return-circuit from said substations to said central station, electric signaling apparatus at each of said substations, a second line connecting all of said substations with the central station, and electromagnetic mechanism controlled from said central station adapted to connect said signaling apparatus in circuit with two of said lines, substantially as described.

39. The combination with a central station, of a line running from said central station broken at a series of substations, neutral electromagnetic mechanism controlled from the central station adapted to build up a non-inductive circuit through said broken line to any desired substation, other electromagnetic mechanism controlled from said central station adapted to break said electric circuit at said substations, a return-circuit from said substations to said central station, electric signaling apparatus at each of said substations, a second line connecting all of said substations with the central station, and electromagnetic mechanism controlled from said central station adapted to connect said signaling apparatus in circuit with two of said lines, substantially as described.

40. The combination with a central station, of a line running from said central station broken at a series of substations, electromagnetic mechanism controlled from the central station adapted to build up a non-inductive circuit through said broken line to any desired substation, other electromagnetic mechanism controlled from said central station adapted to break said electric circuit at said substations, a return-circuit from said substations to said central station, electric signaling apparatus at each of said substations, a second line connecting all of said substations with the central station, and electromagnetic mechanism controlled from said central station adapted to connect said signaling apparatus in circuit with two of said lines, substantially as described.

41. The combination with a central station, of a line running from said central station broken at a series of substations, electromagnetic mechanism controlled from the central station adapted to build up a non-inductive circuit through said broken line to any desired substation, other electromagnetic mechanism controlled from said central station adapted to break said electric circuit at said substations, a return-circuit from said substations to said central station, electric signaling apparatus at each of said substations, a second line connecting all of said substations with the central station, electromagnetic mechanism at each of said substations controlled from said central station adapted to connect said signaling apparatus in circuit with two of said lines, substantially as described.

42. The combination with a central station, of a line running from the said central station broken at a series of substations, automatic mechanism adapted to build up said broken line, a return-circuit from said substations to said central station, electric signaling apparatus at each of said substations, a second line connecting all of said substations with the central station, and mechanism adapted to connect said signaling apparatus in a non-inductive circuit with two of said lines, substantially as described.

43. The combination with a central station of a line running from said central station broken at a series of substations, electromagnetic mechanism adapted to build up a non-inductive electrical path through said broken line, return-circuits from said substations to said central station, electric signaling apparatus at each of said substations, a second line connecting all of said substations with the central station, and electromagnetic mechanism adapted to connect said signaling apparatus in a non-inductive circuit with two of said lines, substantially as described.

44. The combination with a central station, of a line running from said central station broken at a series of substations, electromagnetic mechanism controlled from the central station adapted to build up a non-inductive electrical path through said broken line to any desired substation, a return-circuit from said substations to said central station, electric signaling apparatus at each of said substations, a second line connecting all of said substations with the central station, and electromagnetic mechanism controlled from said central station adapted to connect said signaling apparatus in a non-inductive circuit with two of said lines, substantially as described.

45. The combination with a central station, of a line running from said central station broken at a series of substations, electromagnetic mechanism controlled from the central station adapted to build up a non-inductive electrical path through said broken line to any desired substation, other electromagnetic mechanism controlled from said central station adapted to break said electric circuit at said substations, a return-circuit from said substations to said central station, electric signaling apparatus at each of said substations, a second line connecting all of said substations with the central station, and electromagnetic mechanism controlled from said central station adapted to connect one of said lines with the signaling apparatus at any one of said substations, substantially as described.

46. The combination with a central station, of a line running from said central station broken at a series of substations, electromagnetic mechanism controlled from the central station adapted to build up a non-inductive electrical path through said broken line to any desired substation, other electromagnetic mechanism controlled from said central station adapted to break said electric circuit at said substations, a return-circuit from said substations to said central station, electric signaling apparatus at each of said substations, a second line connecting all of said substations with the central station, and electromagnetic mechanism controlled from said central station adapted to connect said signaling apparatus in a non-inductive circuit with two of said lines, substantially as described.

810,386. **STRETCHER.** THOMAS J. BOWMAN, New Vienna, Ohio. Filed Dec. 17, 1903. Serial No. 185,333.

Claim.—In a stretcher, an expansible action comprising a coil-spring, handle having slotted ends in the ends of the spring and provided with longitudinal openings intersected by transverse openings, a non-expansible element extended longitudinally through the spring and having its terminals seated in the longitudinal openings of the shanks, and pins entered through the transverse openings in said shanks and terminals of the elements for connecting the latter with the heads.

810,387. **WHEEL.** GUSTAVE L. HEISER, Waverly, Iowa, assignor of one-fourth to Christian A. Peterman, and one-fourth to Glenn C. Hohenboken, both of Waverly, Iowa. Filed Mar. 3, 1905. Serial No. 248,272.

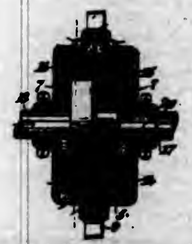

Claim.—In a wheel, a hollow hub, consisting of two sections bolted together and having peripheral socket members for spokes, an axle extended through the hub and having a longitudinal channel opening outward at the end, oppositely-wound springs in the hub having their outer ends secured to the hub and their inner ends secured in said channel, and keys in the channel to prevent lateral movement of the springs.

810,388. **TEMPORARY BINDER.** FRED S. JORDAN, Westminster, Mass. Filed Aug. 22, 1904. Serial No. 221,504.

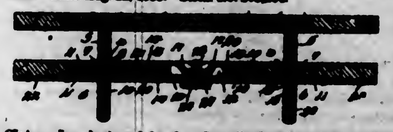

Claim.—In a device of the class described, a clamping member, a pair of binder-posts carried thereby, a second clamping member having openings to receive said posts and provided with opposite longitudinal recesses communicating with an intermediate opening, a pair of locking members having opened arms disposed respectively in said recesses and adapted for locking engagement with the posts, an actuating member disposed in the intermediate opening and having a head movable between the adjacent ends of the locking members for moving the latter to locking position, and springs arranged to act on the locking members for automatically moving them to releasing position.

810,389. **STEREOPTICON.** GEORGE KLEMM, Chicago, Ill. Filed Sept. 12, 1904. Serial No. 224,069.

Claim.—1. In a dissolving-stereopticon the combination with a plurality of lanterns, of means for pivotally supporting one lantern above another to permit vertical and lateral oscillation, a bracket projecting upwardly from the lower lantern, a cooperating bracket depending from the upper lantern into the horizontal plane of said upwardly-projecting bracket, means for adjusting said brackets laterally toward and away from each other, and means interposed between the lanterns for relatively vertically oscillating the same.

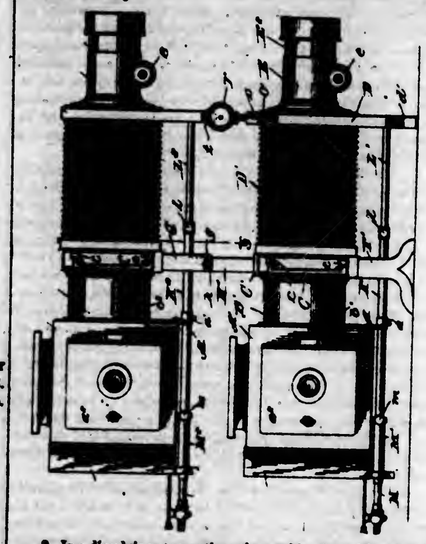

2. In a dissolving-stereopticon the combination with a plurality of lanterns, of means for supporting one lantern above another to permit vertical and lateral oscillation, a bracket projecting upwardly from the lower lantern, a cooperating bracket depending from the upper lantern into the horizontal plane of said upwardly-projecting bracket, means for adjusting said brackets laterally toward and away from each other, and means interposed between the lanterns for relatively vertically oscillating the same.

3. In a dissolving-stereopticon the combination with a plurality of lanterns, of means for supporting one lantern above another to permit vertical and lateral oscillation, a pair of brackets projecting upwardly from the lower lantern a cooperating pair of brackets depending from the upper lantern, and a horizontal screw-threaded rod journaled in the upwardly-projecting brackets and extending through screw-threaded holes in the depending brackets.

4. In a dissolving-stereopticon the combination with a plurality of lanterns, of means for supporting one lantern above another to permit vertical and lateral oscillation, a pair of brackets projecting upwardly above the supporting-frame of the objective lens of the lower lantern, a cooperating pair of brackets depending from the supporting-frame of the objective lens of the upper lantern, and a screw-threaded rod journaled in the upwardly-projecting brackets and extending through screw-threaded holes in the depending brackets.

5. In a dissolving-stereopticon the combination with a plurality of lanterns, of brackets depending from the slide-holder of the upper lantern having horizontal slots in their lower ends, cooperating brackets projecting upwardly from the slide-holder of the lower lantern, screws extending through said slots and engaging the upper ends of the lower brackets, and means for oscillating the upper lantern relatively to the lower lantern vertically and laterally upon said screws as fulcrums.

6. In a dissolving-stereopticon the combination with a plurality of lanterns, of brackets depending from the slide-holder of the upper lantern having horizontal slots in their lower ends, cooperating brackets projecting upwardly from the slide-holder of the lower lantern, screws extending through said slots into engagement with the upper ends of the lower brackets, a pair of brackets projecting upwardly from the supporting-frame for the objective lenses of the lower lantern, a cooperating pair of brackets depending from the supporting-frame of the objective lens of the upper lantern, a screw-threaded rod

journaled in the pair of upwardly-projecting brackets and extending through screw-threaded holes in the pair of depending brackets, and means interposed between the lanterns for relatively vertically oscillating the same.

7. In a dissolving-stereopticon the combination with a plurality of lanterns, of brackets depending from the slide-holder of the upper lantern having horizontal slots in their lower ends, coöperating brackets projecting upwardly from the slide-holder of the lower lantern, screws extending through said slots into engagement with the upper ends of the lower brackets, a pair of brackets projecting upwardly from the supporting-frame for the objective lenses of the lower lantern, a coöperating pair of brackets depending from the supporting-frame of the objective lens of the upper lantern, a screw-threaded rod journaled in the pair of upwardly-projecting brackets and extending through screw-threaded holes in the pair of depending brackets, and means interposed between the lower lantern and the brackets projecting upwardly above the objective-lens-supporting frame thereon for raising and lowering said brackets.

8. In a dissolving-stereopticon the combination with a plurality of lanterns, of brackets depending from the slide-holder of the upper lantern having horizontal slots in the lower ends, coöperating brackets projecting upwardly from the slide-holder of the lower lantern, screws extending through said slots into engagement with the upper ends of the lower brackets, a pair of brackets projecting upwardly from the supporting-frame for the objective lenses of the lower lantern, a coöperating pair of brackets depending from the supporting-frame of the objective lens of the upper lantern, a screw-threaded rod journaled in the pair of upwardly-projecting brackets and extending through screw-threaded holes in the pair of depending brackets, ears having vertical screw-threaded holes projecting laterally from each side of the objective-lens-supporting frames of the lower lantern, right and left screw-threaded rods engaging the holes through said ears, lateral ears carried by the brackets projecting upwardly above the objective-lens-supporting frame through which said rods rotatably extend, and means for rotating said rods in opposite directions.

9. In a dissolving-stereopticon, the combination with a plurality of lanterns, of brackets depending from the slide-holder of the upper lantern having horizontal slots in their lower ends, coöperating brackets projecting upwardly from the slide-holder of the lower lantern, screws extending through the said slots into engagement with the upper ends of the lower brackets, means for oscillating the upper lantern laterally with respect to the lower lantern, and means interposed between the objective-lens-supporting frames of the lanterns for adjusting the same at each point toward and away from each other.

810,840. SPRINGLESS LOCK. HENRY K. HESS, Lawton, Okla. Filed July 6, 1904. Serial No. 215,969.

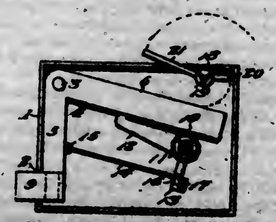

Claim.—1. In a device of the class described, a casing, a latch-bolt pivoted therein and comprising a pair of arms, one of said arms being substantially horizontal and acting by gravity to maintain the bolt normally in latching position, a knob-spindle rotatively disposed in the casing at a point beneath and adjacent to the free end of the horizontal arm, and a pair of projections carried by the spindle, one of said projections being adapted to operate upon the horizontal arm of the bolt for moving the latter to non-latching position, and the other projection being operatively connected with the other arm of the bolt for acting upon the latter when the spindle is reversely rotated.

2. In a device of the class described, a casing, a latch-bolt, pivotally mounted therein and comprising a vertical and a substantially horizontal arm, said horizontal arm acting by gravity to maintain the bolt normally in latching position, a knob-spindle rotatively disposed in the casing beneath and adjacent to the free end of the horizontal arm, a pair of projections carried by the spindle, one of said projections being adapted to act upon the horizontal arm of the bolt for moving the latter to non-latching position, and a rigid element connecting the other of said projections with the vertical arm of the bolt for moving the latter to unlatched position when the spindle is rotated reversely.

810,841. BOX. RICHMOND S. A. MOORE, Ridgedale, Tenn. Filed Sept. 2, 1905. Serial No. 276,886.

Claim.—1. A box formed with circumferentially-arranged ribs, and a cover therefor having means to engage one of said ribs to lock the cover against movement in either direction.

2. A box formed with diametrically opposite ribs, an abutment projecting from one of said ribs, a cover to coöperate with said box, said cover being provided with lugs to engage beneath the ribs and with means to engage said abutment.

3. A box comprising a body having a vertically-arranged neck, diametrically-arranged ribs formed on said neck, an abutment depending from one of said ribs, a cover arranged to inclose said neck, lugs projecting inwardly from the cover and adapted to ride beneath the ribs, and a spring carried by the cover to engage said abutment.

4. A box comprising a body, a neck of less diameter than said body and projecting therefrom, diametrically-opposed ribs arranged circumferentially on said neck, a cover equal in diameter to the diameter of the body, lugs projecting inwardly from said cover, and adapted to ride beneath the ribs on the neck, and a spring carried by the cover and arranged to engage one of said ribs.

5. A box comprising a body, a neck of less diameter than said body and projecting therefrom, diametrically-opposed ribs arranged circumferentially on said neck, an abutment depending from one of said ribs, a cover equal in diameter to the diameter of the body, lugs projecting inwardly from said cover and adapted to ride beneath the ribs on the neck, and a spring carried by the cover and arranged to engage said abutment.

6. A box formed with a rib, a cover for the box, and means carried by the cover to engage said rib to lock the cover against movement in either direction.

810,842. HEAT-NON-CONDUCTING MATERIAL. GUSTAV H. HELLER, Kiel, and EDUARD JANSE, Hamburg, Germany. Filed Aug. 29, 1904. Serial No. 222,222.

Claim.—A heat-non-conducting material consisting of refractory clay, fibers of amianthus, infusory earth, ground cork, vegetable fibers, yeast and nitrate of alumina, these substances being mixed so as to form a pasty mass, or pressed into shells, plates or blocks suitable to be used for covering steam-boilers, pipes, tanks or the like, for the purpose and substantially as set forth.

810,843. CONCRETE-BLOCK MOLD. JOHN M. PETTIJOHN, Terre Haute, Ind. Filed May 22, 1905. Serial No. 261,255.

Claim.—1. The combination in a mold, of a hopper, a mold-box formed by separable sides and ends, hinged at their upper edge to the hopper, means whereby the mold may be lifted from the molded block, and means connecting the lifting means with the hinged sides and ends of the mold-box, whereby said mold-box sides and ends are imparted swinging action, substantially as described.

2. The combination in a mold, of a hopper, a mold-box having separable sides and ends hinged at their upper edge to the hopper, a rigid frame surrounding the mold-box, and arms hingedly connecting the mold-box, sides and ends, with the surrounding frame, substantially as described.

810,844. LAWN-TRIMMER. EDWARD PIERCE and EDWARD LANE, Burlington, Iowa. Filed Mar. 30, 1905. Serial No. 252,255.

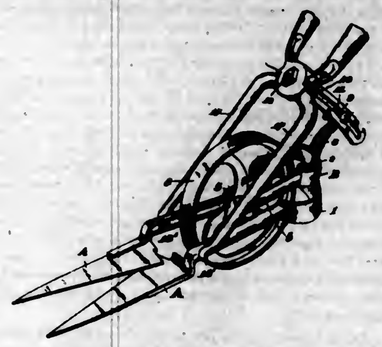

Claim.—1. A lawn-trimmer comprising a frame, means for supporting the latter as it is pushed along the ground, shears carried by the frame, handles connected with the shears, a shank on the frame, and means extending from the handles to the shank for varying the angle or inclination of the handles with respect to the shears and maintaining such angle or inclination.

2. A lawn-trimmer comprising a support, a frame, shears carried by the frame and sustained by the support and handles connected with the rear end of the frame in rear of the support and with the shears forward of the support whereby a predetermined relation between shears and handles is maintained and the position of the shears is within the control of the operator at all times.

3. A lawn-trimmer comprising shears, a frame to which they are secured, cross-levers connected with the shears and a segment adjustably connected with the frame, upon which segment the levers are fulcrumed.

4. In lawn-trimmers, the combination with spring-shears, a frame rigidly secured to said shears, and a wheel upon which the frame is supported, of a segment adjustably connected with the frame, cross-levers fulcrumed on the segment and connected with the blades of the shears.

5. In lawn-trimmers, the combination with spring-shears, a frame rigidly secured to said shears, and a wheel upon which the frame is supported, of a segment adjustably connected with the frame, cross-levers fulcrumed on the segment and connected with the blades of the shears, and shoulders or stops formed on the levers for limiting the spread of the shears.

6. In a lawn-trimmer, the combination with spring-shears, a frame having a lug to which the shears are secured, the frame provided with a pair of forwardly-projecting jaws, a wheel journaled between the jaws and a rearwardly-projecting shank, of a segment connected with the shank, cross-levers fulcrumed on said segment and connected with the blades of the shears.

7. In a lawn-trimmer, the combination with spring-shears, a frame having a lug to which the shears are secured, the frame provided with a pair of projecting jaws, a wheel journaled between the jaws, and a rearwardly-projecting shank, of a segment adjustably connected with the shank, cross-levers fulcrumed on said segment, and connected with the blades of the shears.

810,845. TELEPHONE PARTY-LINE SYSTEM. ARTHUR F. POOLE and FRANK B. MAIS, Wheeling, W. Va. Filed Oct. 17, 1902. Serial No. 127,113.

Claim.—1. The combination with a central station, of a line running from said central station broken at a series of substations, electromagnetic mechanism controlled from the central station adapted to build up a non-inductive electrical path through said broken line to any desired substation, electric signaling apparatus at each of said substations, a second line connecting all of said substations with the central station, electromagnetic mechanism at each of said substations controlled from said central station adapted to connect said signaling apparatus in circuit with said lines, and means at each of said substations affording a secondary control over the electromagnetic connecting apparatus at the corresponding substation, substantially as described.

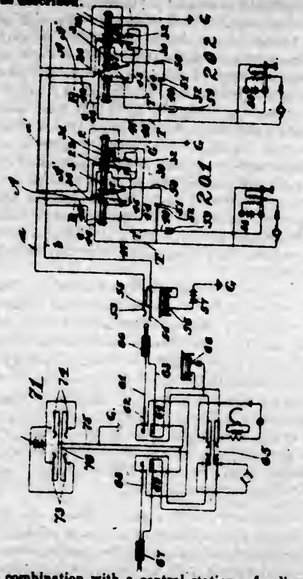

2. The combination with a central station, of a line running from said central station broken at a series of substations, electromagnetic mechanism controlled from the central station adapted to build up a non-inductive circuit through said broken line to any desired substation, a return-circuit from said substations to said central station, electric signaling apparatus at each of said substations, a second line connecting all of said substations with the central station, electromagnetic mechanism at each of said substations controlled from said central station adapted to connect the said second line with the signaling apparatus at any of said substations, and means at each of said substations affording a secondary control over the electromagnetic connecting apparatus at the corresponding station, substantially as described.

3. The combination with a central station, of a line running from said central station broken at a series of substations, a return-circuit from said substations to said central station, electric signaling apparatus at each of said substations, a second line connecting all of said substations with the central station, electromagnetic mechanism at each of said substations controlled from said central station adapted to connect the said second line with the signaling apparatus at any of said substations, and means at each of said substations affording a secondary control over the electromagnetic connecting apparatus at the corresponding station, substantially as described.

4. The combination with a central station, of a line running from said central station broken at a series of substations, electromagnetic mechanism controlled from the central station adapted to build up a non-inductive circuit through said broken line to any desired substation, other electromagnetic mechanism controlled from said central station adapted to break said electric circuit at said substations, a return-circuit from said substations to said central station, electric signaling apparatus at each of said substations, a second line connecting all of said substations with the central station, electromagnetic mechanism at each of said substations controlled from said central station adapted to connect the said second line with the signaling apparatus at any of said substations, and means at each of said substations affording a secondary control over the electromagnetic connecting apparatus at the corresponding station, substantially as described.

5. In a selective party-line system, the combination with switching mechanism comprising a means of recovery for making or breaking electric circuits, of electromagnetic means for actuating said mechanism, and means for causing current to flow through said electromagnetic means, the operation of said switching mechanism being accomplished wholly upon the cessation of said current-flow, substantially as described.

6. The combination with a central station, of a line running from the said central station broken at a series of substations, electromagnetic mechanism adapted to be actuated by suitable electrical impulses to build up a non-inductive circuit through said broken line to any desired station, other electromagnetic mechanism adapted to be actuated by a suitable electric impulse to break said electric circuit at said substations, a return-circuit from said substations to said central station, electric signaling apparatus at each of said substations, a second line connecting all of said substations with the central station, electromagnetic mechanism at each of said substations adapted to be actuated by an electric impulse of suitable polarity to connect the said second line with the signaling apparatus at any of the substations, means at each of the substations affording a secondary control of the electromagnetic connecting apparatus at the corresponding station, and means provided at the central station whereby the operator may control said electromagnetic mechanism by causing suitable electric impulses to flow therethrough, substantially as described.

7. The combination with a central station, of a line running from said central station broken at a series of substations, neutral electromagnetic mechanism controlled from the central station adapted to build up a non-inductive electrical path through said broken line to any desired substation, electric signaling apparatus at each of said substations, a second line connecting all of said substations with the central station, electromagnetic mechanism at each of said substations controlled from said central station adapted to connect said signaling apparatus in circuit with two of said lines, and means at each of said substations affording a secondary control over the electromagnetic connecting apparatus at the corresponding substation, substantially as described.

8. The combination with a central station, of a line running from said central station broken at a series of substations, electromagnetic mechanism controlled from the central station adapted to build up a non-inductive electrical path through said broken line to any desired substation, a return-circuit from said substations to said central station, electric signaling apparatus at each of said substations, a second line connecting all of said substations with the central station, electromagnetic mechanism at each of said substations controlled from said central station adapted to connect one of said lines with the signaling apparatus at any of said substations, and means at each of said substations affording a secondary control over the electromagnetic connecting apparatus at the corresponding station, substantially as described.

9. The combination with a central station, of a line running from said central station broken at a series of substations, electromagnetic mechanism controlled from the central station adapted to build up a non-inductive electrical path through said broken line to any desired substation, other electromagnetic mechanism controlled from said central station adapted to break said electrical path at said substations, a return-circuit from said substations to said central station, electric signaling apparatus at each of said substations, a second line connecting all of said substations with the central station, electromagnetic mechanism at each of said substations controlled from said central station adapted to connect one of said lines with the signaling apparatus at any of said substations, and means at each of said substations affording a secondary control over the electromagnetic connecting apparatus at the corresponding station, substantially as described.

10. The combination with a central station, of a line running from said central station broken at a series of substations, electromagnetic mechanism controlled from the central station adapted to build up a non-inductive circuit through said broken line to any desired substation, a return-circuit from said substations to said central station, electric signaling apparatus at each of said substations, a second line connecting all of said substations with the central station, electromagnetic mechanism at each of said substations controlled from said central station adapted to connect said signaling apparatus in circuit with two of said lines, and means at each of said substations affording a secondary control over the electromagnetic connecting apparatus at the corresponding station, substantially as described.

11. The combination with a central station, of a line running from the central station broken at a series of substations, a return-circuit from said substations to said central station, electric signaling apparatus at each of said substations, a second line connecting all of said substations with the central station, electromagnetic mechanism at each of said substations controlled from said central station adapted to connect said signaling apparatus in circuit with two of said lines, and means at each of said substations affording a secondary control over the electromagnetic connecting apparatus at the corresponding station, substantially as described.

12. In a selective party-line telephone system, the combination with a central station, of a line running therefrom to a series of substations normally broken at each of said substations, signaling apparatus at each of said substations normally disconnected from said broken line, and means whereby the control operator may connect the signaling apparatus at two of said substations in circuit simultaneously with said broken line, substantially as described.

13. In a selective party-line telephone system, the combination with a central station, of a line running therefrom to a series of substations normally broken at each of said substations, signaling apparatus at each of said substations normally disconnected from said broken line, and means whereby the central operator may connect the signaling apparatus at a plurality of said substations in circuit simultaneously with said broken line, substantially as described.

14. In a selective party-line telephone system, the combination with a central station, of lines running from the central station to a series of substations, one of said lines being normally broken at each substation, signaling apparatus at each substation normally disconnected from said broken line, and means controlled from each substation and from the central station, whereby the corresponding signaling apparatus may be connected with the broken line, substantially as described.

15. In a selective party-line system, the combination with a central station, of lines running from the central station to a series of substations, one of said lines being normally broken at each substation, signaling apparatus at each substation normally disconnected from said broken line, and means primarily controlled from the central station whereby any substation signaling apparatus may be connected with the broken line and secondarily controlled from each substation, whereby the corresponding signaling apparatus may be connected with the broken line, substantially as described.

16. In a selective party-line system, the combination with a central station, of lines running from the central station to a series of substations, one of said lines being normally broken at each substation, signaling apparatus at each substation normally disconnected from said broken line, and means controlled from each substation, and from the central station, whereby the corresponding signaling apparatus may be connected with the broken line, substantially as described.

17. In a selective party-line system, the combination with a central station, of lines running from the central station to a series of substations, one of said lines being normally broken at each substation, means for building up said broken line through any number of said substations, signaling apparatus at each substation normally disconnected from said broken line, and means controlled from each substation, and from the central station, whereby the corresponding signaling apparatus may be connected with said broken line, substantially as described.

810,846. PARTY-LINE SIGNALING SYSTEM. ARTHUR F. POOLE and FRANK B. HALL, Wheeling, W. Va. Filed Oct. 13, 1902. Serial No. 127,114.

Claim.—1. In a selective party-line system, the combination with the central station, of lines running therefrom to a series of substations, signaling apparatus at each of said substations normally disconnected from said lines, means at each substation absolutely controlled from the central station, and from the said substation, whereby the corresponding signaling apparatus may be connected with said lines, said means whereby an actuation of said first means controlled from the corresponding substation, establishes a condition such that the substation control at the other substations of the said first means is rendered ineffective, substantially as described.

2. In a selective party-line system, the combination with the central station of lines running therefrom to a series of substations, signaling apparatus at each of said substations, normally disconnected from said party-lines, means primarily controlled from the central station, and secondarily controlled from each substation, whereby the corresponding signaling apparatus may be connected with said lines and means whereby an actuation of said first means controlled from any one substation, establishes a condition such that the substation control at the other substations of said first means is rendered ineffective, substantially as described.

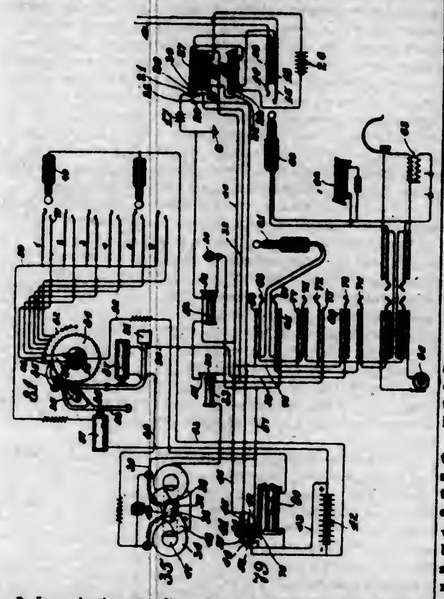

3. In a selective party-line system, the combination with a central station, of lines running therefrom to a series of substations, signaling apparatus at each of said substations normally operatively disconnected from said lines, means controlled from the central station whereby any of the signaling apparatus may be operatively connected with the said lines, said means being subject to a secondary control from each substation, the control exercised from any one substation serving secondarily to govern the operative connection of the signaling apparatus at the same substation with said lines, and means whereby an actuation of said first means due to the control exercised from any one substation establishes a condition such that the substation control at the other substations of the said first means is rendered ineffective, substantially as described.

4. In a selective party-line system, the combination with a central station, of lines running therefrom to a series of substations, signaling apparatus at each of said substations normally operatively disconnected from the said lines, means primarily controlled from the central station whereby the signaling apparatus at any substation may be operatively connected with the lines and secondarily controlled from each substation, the control exercised from any one substation serving secondarily to govern the operative connection of the signaling apparatus at the same substation with said lines, and means whereby an actuation of said first means due to the control exercised from the central station establishes a condition such that the substation control at the other substations of said first means is rendered ineffective, substantially as described.

5. In a selective party-line system, the combination with a central station, of lines running therefrom to a series of substations, signaling apparatus at each of said substations normally operatively disconnected from said lines, means primarily controlled from the central station whereby the signaling apparatus at any substation may be operatively connected with said lines and secondarily controlled from each substation, the control exercised from any one substation serving secondarily to govern the operative connection of the signaling apparatus at the same substation with said lines, and means whereby an actuation of said first means due to a control exercised either from the central station or any one substation establishes a condition such that the substation control at the other substations of the said first means is rendered ineffective, substantially as described.

6. In a selective party-line system, the combination with a central station, of lines running from the central station to a series of substations, one of said lines being normally broken at each substation, signaling apparatus at each of said substations normally disconnected from said broken line, means controlled from the central station whereby any of the signaling apparatus may be connected with the broken line, and means controlled from each substation whereby the corresponding signaling apparatus may be connected with the broken line, substantially as described.

7. In a selective party-line system, the combination with a central station, of lines running from the central station to a series of substations, one of said lines being normally broken at each substation, signaling apparatus at each substation normally disconnected from said broken line, means primarily controlled from the central station whereby any substation signaling apparatus may be connected with the broken line and secondarily controlled from each substation whereby the corresponding signaling apparatus may be connected with the broken line, and means intermediately set in operation by an actuation of said first means whereby the said broken line is built up, substantially as described.

8. In a selective party-line system, the combination with the central station, of lines running from the central station to a series of substations, one of said lines being normally broken at each substation, signaling apparatus at each substation normally disconnected from said broken line, means controlled from each substation whereby the corresponding signaling apparatus may be connected with said broken line, and means whereby an actuation of said first means controlled from any one substation establishes a condition such that the substation control at the other substations of the said first means is rendered ineffective, substantially as described.

9. In a selective party-line system, the combination with a central station, of lines running from the central station to a series of substations, one of said lines being normally broken at each substation, signaling apparatus at each substation normally disconnected from said broken line, means controlled from the central station whereby any of the signaling apparatus may be connected with said broken line, said means being secondarily controlled from each substation, whereby the corresponding signaling apparatus may be connected with said lines, and means whereby an actuation of said first means due to the control exercised from any one substation establishes a condition such that the substation control at the other substations of the said first means is rendered ineffective, substantially as described.

10. In a selective party-line system, the combination with a central station, of lines running from the central station to a series of substations, one of said lines being normally broken at each substation, signaling apparatus at each substation normally disconnected from said broken line, means primarily controlled from the central station whereby the signaling apparatus at any substation may be connected with the broken line, and secondarily controlled from each substation, whereby the corresponding signaling apparatus may be connected with said broken line, and means whereby an actuation of said first means due to a control exercised from the central station establishes a condition such that the substation control at the other substations of said first means is rendered ineffective, substantially as described.

11. In a selective party-line system, the combination with a central station, of lines running from the central station to a series of substations, one of said lines being normally broken at each substation, signaling apparatus at each substation normally disconnected from said broken line, means primarily controlled from the central station whereby the signaling apparatus at any substation may be connected with the broken line, and secondarily controlled from each substation, whereby the corresponding signaling apparatus may be connected with said broken line, and means whereby an actuation of said first means due to a control exercised either from central or from any one substation establishes a condition such that the substation control at the other substations of the said first means is rendered ineffective, substantially as described.

12. In a selective party-line system, the combination with a central station, of lines running from the central station to a series of substations, one of said lines being normally broken at each substation; and means secondarily controlled from any one substation and primarily set in operation at the central station, adapted to build up said broken line automatically, substantially as described.

13. In a selective party-line system, the combination with a central station, of lines running from the central station to a series of substations, one of said lines being normally broken at each substation, and means primarily controlled from the central station and secondarily controlled from any substation, adapted to build up said broken line automatically, substantially as described.

14. In a selective party-line system, the combination with a central station, of lines running from the central station to a series of sub-

stations, one of the lines being normally broken at each substation, means controlled and set in operation at the central station adapted to build up said broken line automatically, and means for secondarily controlling said first means from each of said substations, substantially as described.

15. In a selective party-line system, the combination with a central station, of lines running therefrom to a series of substations, one of said lines being normally broken at each of said substations, a line-signal associated with the said lines at the central station, means located at each substation adapted to cause the actuation of said line-signal, means set in operation by the actuation of said line-signal adapted to build up said broken line, substantially as described.

16. In a selective party-line system, the combination with a central station, of lines running therefrom to a series of substations, one of said lines being normally broken at each of said substations, a cord-circuit at the central station adapted for connection with said lines, a line-signal associated with the said lines at the central station, means located at each substation adapted to cause the actuation of said line-signal, means set in operation by the actuation of said line-signal adapted to build up said broken line, and means whereby the substation control of the line-signal is rendered ineffective upon connection of said cord-circuit with said lines, substantially as described.

17. In a selective party-line system, the combination with the central station, of lines running therefrom to a series of substations, one of said lines being normally broken at each of said substations, a line-signal associated with the said lines at the central station, means located at each substation adapted to cause the actuation of said line-signal, and means set in operation by the actuation of said line-signal but primarily controlled from the said central station, whereby the broken line is automatically built up, substantially as described.

18. In a selective party-line system, the combination with a central station, of lines running therefrom to a series of substations, one of said lines being normally broken at each of said substations, a cord-circuit at the central station adapted for connection with said lines, a line-signal associated with the lines at the central station, means located at each substation adapted to cause the actuation of said line-signal, means set in operation by the actuation of said line-signal but primarily controlled from the said central station, whereby the broken line is automatically built up, and means whereby the substation control of the line-signal is rendered ineffective upon the connection of said cord-circuit with said lines, substantially as described.

19. In a selective party-line system, the combination with the central station of lines running therefrom to a series of substations, one of said lines being normally broken at each substation, a cord-circuit at the central station adapted for connection with said lines, a line-signal associated with the lines at the central station, means located at each substation adapted to cause the actuation of said line-signal, means set in operation by the actuation of said line-signal but primarily controlled from said central station, whereby the broken line is automatically built up, and means whereby the substation control of said line-signal is rendered ineffective upon an actuation of the said line-signal caused from any one substation, substantially as described.

20. In combination, a source of electric current, a pole-changing switch associated therewith, an electromagnet adapted to actuate said pole-changing switch, switching means adapted to make connection with successive contacts, electromagnetic mechanism adapted to cause the step-by-step shifting of said switching means to successive contacts, and an electric circuit including the source of current, the switching means and the electromagnet adapted to actuate the pole-changing switch, said circuit being adapted to be completed through any predetermined contact, whereby the electromagnet will be energized to actuate the pole-changing switch upon a predetermined step of the switching means, substantially as described.

21. In combination, a source of electric current, a pole-changing switch associated therewith, an electromagnet adapted to actuate said pole-changing switch, switching means adapted to make connection with successive contacts, electromagnetic mechanism adapted to cause a one-step shifting of said switching means to a successive contact upon a cessation of current-flow therethrough, a periodically-interrupted electric current flowing through said electromagnetic mechanism, whereby a step-by-step shifting of said switching means is caused, and an electric circuit including the source of current, the switching means and the electromagnet adapted to actuate the pole-changing switch, said circuit being adapted to be completed through any predetermined contact, whereby the electromagnet will be energized to actuate the pole-changing switch upon a predetermined step of the switching means, substantially as described.

22. In combination, a source of electric current, a pole-changing switch associated therewith, an electromagnet adapted to actuate said pole-changing switch, switching means adapted to make connection with successive contacts, an electromagnet adapted to cause the one-step shifting of said switching means to a successive contact upon a cessation of current-flow therethrough, means adapted to cause a periodically-interrupted current to flow through said electromagnet, and an electric circuit including the source of current, the switching means and the electromagnet adapted to actuate the pole-changing switch, said circuit being adapted to be completed through any predetermined contact, whereby the electromagnet will be energized to actuate the pole-changing switch upon a predetermined step of the switching means, substantially as described.

23. In combination, a source of electric current, a pole-changing switch associated therewith, an electromagnet adapted to actuate said pole-changing switch, switching means adapted to make connection with successive contacts, an electromagnet adapted to cause the one-step shifting of said switching means upon a cessation of current-flow therethrough, means controlled from the central station adapted to cause a periodically-interrupted current to flow through said electromagnet, and an electric circuit including the source of current, the switching means and the electromagnet adapted to actuate the pole-changing switch, said circuit being adapted to be completed through any predetermined contact, whereby the electromagnet will be energized to actuate the pole-changing switch upon a predetermined step of the switching means, substantially as described.

24. In combination, a source of electric current, a pole-changing switch associated therewith, an electromagnet adapted to actuate said pole-changing switch, switching means adapted to make connection with successive contacts, electromagnetic mechanism adapted to cause the step-by-step shifting of said switching means to successive contacts, an electric circuit including the source of current, the switching means and the electromagnet adapted to actuate the pole-changing switch, a selector-jack connected with each of said contacts, and a selector-plug adapted for insertion within any of said jacks, thereby completing said electric circuit through any predetermined contact, whereby the electromagnet will be energized to actuate the pole-changing switch upon a predetermined step of the switching means, substantially as described.

25. In combination, a source of electric current, a pole-changing switch associated therewith, an electromagnet adapted to actuate said pole-changing switch, switching means adapted to make connection with successive contacts, electromagnetic mechanism adapted to cause the step-by-step shifting of said switching means to successive contacts, an electric circuit including the source of current, the switching means and the electromagnet adapted to actuate the pole-changing switch, a selector-jack connected with each of said contacts, a selector-plug adapted for insertion within any of said jacks, thereby completing said electric circuit through any predetermined contact whereby the electromagnet will be energized to actuate the pole-changing switch upon a predetermined step of the switching means, and means whereby the insertion of the selector-plug within any selector-jack will cause the restoration of the switching means to its normal condition, substantially as described.

26. In combination, a source of electric current, a pole-changing switch associated therewith, an electromagnet adapted to actuate said pole-changing switch, switching means adapted to make connection with successive contacts, electromagnetic mechanism adapted to cause the step-by-step shifting of said switching means to successive contacts, an electric circuit including the source of current, the switching means and the electromagnet adapted to actuate the pole-changing switch, a selector-jack connected with each of said contacts, a selector-plug adapted for insertion within any of said jacks, thereby completing said electric circuit through any predetermined contact, whereby the electromagnet will be energized to actuate the pole-changing switch upon a predetermined step of the switching means, and means whereby the removal of the selector-plug from any selector-jack will cause the restoration of the switching means to its normal condition, substantially as described.

27. In combination, a source of electric current, a pole-changing switch associated therewith, an electromagnet adapted to actuate said pole-changing switch, switching means adapted to make connection with successive contacts, electromagnetic mechanism adapted to cause the step-by-step shifting of said switching means to successive contacts, an electric circuit including the source of current, the switching means and the electromagnet adapted to actuate the pole-changing switch, means adapted to close or break said circuit through any predetermined contact, and means whereby the actuation of said means to close said circuit causes a restoration of said switching means to its normal condition, substantially as described.

28. In combination, a source of electric current, a pole-changing switch associated therewith, an electromagnet adapted to actuate said pole-changing switch, switching means adapted to make connection with successive contacts, electromagnetic mechanism adapted to cause the step-by-step shifting of said switching means to successive contacts, an electric circuit including the source of current, the switching means and the electromagnet adapted to actuate the pole-changing switch, means adapted to close or break said circuit through any predetermined contact, and means whereby the actuation of said means to break said circuit causes a restoration of said switching means to its normal condition, substantially as described.

29. In combination, a source of electric current, a pole-changing switch associated therewith, an electromagnet adapted to actuate said pole-changing switch, switching means adapted to make connection with successive contacts, electromagnetic mechanism adapted to cause the step-by-step shifting of said switching means to successive contacts, an electric circuit including the source of current, the switching means and the electromagnet adapted to actuate the pole-changing switch, a selector-jack connected with each of said contacts, a selector-plug adapted for insertion within any of said jacks, thereby completing said electric circuit through any predetermined contact, whereby the electromagnet will be energized to actuate the pole-changing switch upon a predetermined step of the switching means, and an auxiliary contact in each of said selector-jacks adapted to make momentary contact with said selector-plug upon insertion in or removal from said jack, said contact being adapted to close an electric circuit through electromagnetic mechanism adapted to cause the restoration of said switching means to its normal condition, substantially as described.

30. In combination, a source of electric currents, two circuits electrically connected therewith, means for causing the current-flow from said source to be intermittent, means for reversing the connection of the first of said circuits with said source of currents, and means adapted to disconnect the second circuit from said source during the reversal of the connection of said first circuit, substantially as described.

31. In combination, a source of electric currents, two circuits electrically connected therewith, means for causing the current-flow from said source to be intermittent, a pole-changing switch for reversing the connection of the first of said circuits with said source of currents, and means adapted to disconnect the second circuit from said source during reversal of the connection of said first circuit, substantially as described.

32. In a selective party-line system, the combination with a central station of three lines running therefrom to a series of substations, signaling apparatus at each of said substations normally operatively disconnected from said lines, means at each substation absolutely controlled from the central station and secondarily controlled from the said substation, whereby the corresponding signaling apparatus may be connected with two of said lines, and means whereby an actuation of said first means controlled from the corresponding substation, establishes a condition such that the substation control of the said first-mentioned means is rendered ineffective, substantially as described.

33. In a selective-party-line system, the combination with a central station of three lines running therefrom to a series of substations, signaling apparatus at each of said substations, normally operatively disconnected from said lines, means at each substation directly controlled from the said substation, whereby the corresponding signaling apparatus may be connected with two of said lines, and means whereby an actuation of said first means controlled from any substation, establishes a condition such that the substation control of the said first means is rendered ineffective, substantially as described.

34. In a selective party-line system, the combination with a central station of lines running from the central station to a series of substations, one of said lines being normally broken at each substation, signaling apparatus at each substation normally disconnected from said broken line, means controlled from each substation, whereby the corresponding signaling apparatus may be connected with the broken line, and means automatically set in operation by an actuation of said first means, whereby the said broken line is built up, substantially as described.

35. In a selective party-line system, the combination with a central station of lines running from the central station to a series of substations, one of said lines being normally broken at each substation, and means controlled from any one substation and set in operation at the central station, adapted automatically to build up a non-inductive circuit through said broken line, substantially as described.

36. In a selective party-line system, the combination with a central station of lines running from the central station to a series of substations, one of said lines being normally broken at each substation, and means primarily controlled from the central station, and secondarily controlled from any substation, adapted automatically to build up a non-inductive circuit through said broken line, substantially as described.

37. In a selective party-line system, the combination with a central station of lines running from the central station to a series of substations, one of said lines being normally broken at each substation, means controlled and set in operation at the central station, adapted automatically to build up a non-inductive circuit through said broken line and means for secondarily controlling said first means from each of said substations, substantially as described.

38. In a selective signaling party-line system, the combination with a central station of lines running therefrom to a series of substations, one of said lines being normally broken at each substation, a cord-circuit at the central station adapted for connection with said lines, a line-signal associated with said lines at the central station, means located at each substation, adapted to cause the actuation of said line-signal, and means whereby the substation control of the line-signal is rendered ineffective upon the connection of said cord-circuit with said lines, substantially as described.

39. In a selective party-line system, the combination with a central station, of lines running therefrom to a series of substations, one of said lines being normally broken at each substation, a cord-circuit at the central station adapted for connection with said lines, a line-signal associated with the lines at the central station, means located at each substation, adapted to cause the actuation of said line-signal, whereby the broken line is automatically built up, and whereby the substation control of said line-signal is rendered ineffective upon an actuation of the line-signal, caused by the control exercised from any one substation, substantially as described.

40. In combination a source of electric current, current-reversing means associated therewith, an electromagnet adapted to actuate said current-reversing means, switching means adapted to make connection with successive contacts, electromagnetic mechanism adapted to cause the step-by-step shifting of said switching means to successive contacts and an electric circuit including the source of current, the switching means and the electromagnet adapted to actuate the current-reversing means, said circuit being adapted to be completed through any predetermined contact whereby the electromagnet will be energized to actuate the current-reversing means upon a predetermined step of the switching means, substantially as described.

41. In combination, a source of electric current, current-reversing means associated therewith, an electromagnet adapted to actuate said current-reversing means, switching means adapted to make connection with successive contacts, electromagnetic mechanism adapted to cause a one-step shifting of said switching means to successive contacts upon a cessation of current-flow therethrough, a periodically-interrupted electric current flowing through said electromagnetic mechanism, whereby a step-by-step shifting of said switching means is caused, and an electric circuit including the source of current, the switching means and the electromagnet adapted to actuate the current-reversing means, said circuit being adapted to be completed through any predetermined contact whereby the electromagnet will be energized to actuate the current-reversing means upon a predetermined step of the switching means, substantially as described.

42. In combination, a source of electric current, current-reversing means associated therewith, an electromagnet adapted to actuate said current-reversing means, switching means adapted to make connection with successive contacts, electromagnetic mechanism adapted to cause the step-by-step shifting of said switching means to successive contacts, an electric circuit including the source of current, the switching means and the electromagnet adapted to actuate the current-reversing means, means adapted to close or break said circuit through any predetermined contact, and means whereby the actuation of said means to close said circuit, causes a restoration of said switching means to its normal condition, substantially as described.

43. In combination, a source of electric current, current-reversing means associated therewith, an electromagnet adapted to actuate said current-reversing means, switching means adapted to make connection with successive contacts, electromagnetic mechanism adapted to cause the step-by-step shifting of said switching

means to successive contacts, an electric circuit including the source of current, the switching means and the electromagnet adapted to actuate the current-reversing means, means adapted to close or break said circuit through any predetermined contact, and means whereby the actuation of said means to break said circuit, causes a restoration of said switching means to its normal condition, substantially as described.

44. In combination, a source of electric current, current-reversing means associated therewith, an electromagnet adapted to actuate said current-reversing means, switching means adapted to make connection with successive contacts, electromagnetic mechanism adapted to cause the step-by-step shifting of said switching means to successive contacts, an electric circuit including the source of current, the switching means and the electromagnet adapted to actuate the current-reversing means, a selector-jack connected with each of said contacts, a selector-plug adapted for insertion within any of said jacks, thereby completing said electric circuit through any predetermined contact whereby the electromagnet will be energized to actuate the current-reversing means upon the predetermined step of the switching means, substantially as described.

810,347. GAS-ENGINE. EDWIN F. PORTER and WALTER R. WHITING, Boston, Mass., assignors to American Rotary Engine Company, Boston, Mass., a Corporation of Maine. Filed Mar. 16, 1905. Serial No. 250,268.

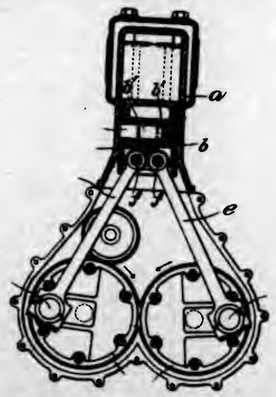

Claim.—1. In combination with a cylinder, a piston, two oppositely-rotating crank-shafts, and two pitmen connected to said crank-shafts, of means interposed between said pitmen and piston for loosely connecting the former to the latter to provide lost motion between the said parts.

2. The combination with a cylinder, a piston, two oppositely-rotating crank-shafts, a pitman connected to each crank-shaft, a pitman-block having separate studs or pivots for the pitman, and means for loosely connecting said pitman-block to said piston.

3. The combination with a cylinder, a piston, oppositely-rotating crank-shafts, a separate pitman for each crank-shaft, a pitman-block having separate studs or pivots for each pitman, and a pintle loosely connecting said pitman-block with said piston.

4. The combination with a cylinder, a piston, oppositely-rotating crank-shafts, pitmen connecting said crank-shafts to a member which is loosely mounted on and adapted to change its relative position with said piston.

5. The combination with a cylinder, a piston, oppositely-rotating crank-shafts, pitmen connecting said crank-shafts to a member which is loosely mounted on and adapted to change its relative position with said piston and accommodate itself to any unequal motion of said pitmen.

810,348. FURNACE. JACINTO BENEDICT PUGSLEY, Cleveland, Ohio. Original application filed Sept. 23, 1904, Serial No. 225,259. Divided and this application filed Feb. 6, 1905. Serial No. 244,694.

Claim.—1. In furnaces, a combustion-chamber, a bridge-wall, a wheeled grate arranged in the combustion-chamber and reversible to place either end adjacent to the bridge-wall.

2. In a heating plant, a furnace including a combustion-chamber, a turn-table arranged on the floor of the fire-room, and a wheeled grate movable between the combustion-chamber and the turn-table, the latter serving as a means for reversing the position of the grate.

3. In a heating plant, a furnace including a combustion-chamber, a turn-table arranged on the floor of the fire-room and provided with rails, rails leading from the edge of the turn-table to a point within the combustion-chamber, and a wheeled grate arranged on the rails, the turn-table serving as a means for reversing the position of the grate to present either end adjacent to the rear wall of the combustion-chamber.

810,349. VALVE-BAG. JOHN ROGERS, Cleveland, Ohio, assignor to Eaton Valve Bag Company, Cleveland, Ohio, a Corporation of West Virginia. Filed Feb. 29, 1904. Serial No. 196,617.

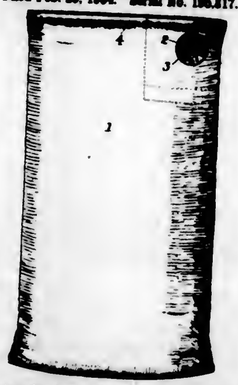

Claim.—1. A valve-bag, comprising a bag having an opening in the material of its body, and a valve beneath the opening and marginally secured to the body, as set forth.

2. A valve-bag, comprising a bag having an opening in the material of its body, and a valve beneath the opening and marginally secured to the body at different sides of the opening, as set forth.

3. A valve-bag, comprising a bag having an opening in its body, and a valve beneath the opening and marginally secured to the body except at one side of the opening, as set forth.

4. A valve-bag, comprising a bag having an opening in the material of its body, and a valve consisting of a separate piece beneath the opening and marginally secured to the body, as set forth.

5. A valve-bag, comprising a bag having an opening in the material of its body, and a valve consisting of a separate piece beneath the opening and marginally secured to the body at different sides of the opening, as set forth.

6. A valve-bag, comprising a bag having an opening in its body, and a valve consisting of a separate piece beneath the opening and marginally secured to the body except at one side of the opening, as set forth.

7. A valve-bag, comprising a bag having an opening in the material of its body, and a rectangular valve beneath the opening and marginally secured to the body, as set forth.

8. A valve-bag, comprising a bag having an opening in the material of its body, and a rectangular valve beneath the opening and marginally secured to the body at different sides of the opening, as set forth.

9. A valve-bag, comprising a bag having an opening in its body, and a rectangular valve beneath the opening and marginally secured to the body except at one side of the opening, as set forth.

10. A valve-bag, comprising a bag having an opening in its body, and a rectangular valve beneath the opening, said valve secured to the body along its upper end one side edge and pasted to the body along its lower edge, as set forth.

11. A valve-bag having a valve-controlled opening in the material of its body, both ends of said bag being folded and permanently closed, as set forth.

810,350. WITHDRAWN.

810,351. WITHDRAWN.

810,352. GAME-PIECE. FRANK L. SAGNETT, Fredonia, N. Y. Original application filed Apr. 3, 1901, Serial No. 54,696. Divided and this application filed Nov. 26, 1901. Serial No. 83,733.

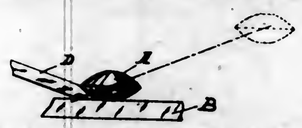

Claim.—1. A projectable game-piece consisting of a body portion having a materially-restricted base on which said game-piece is adapted to rest and to be glided, and having a maximum diameter in a plane substantially parallel to said base portion and of considerably greater diameter relative thereto, whereby said game-piece is adapted to be projected into the air by impact from suitable means, said game-piece moving substantially in the direction of impact, substantially as described.

2. A projectable game-piece consisting of a solid body portion having a materially-restricted flat base on which said game-piece is adapted to rest and to be guided, and having a maximum diameter in a plane substantially parallel to said base portion and of considerably greater diameter relative thereto, whereby said game-piece is adapted to be projected into the air by impact from suitable means, said game-piece moving substantially in the direction of impact, substantially as described.

3. A projectable game-piece consisting of a solid body portion, having parallel substantially flat portions on which said game-piece may be glided, and having maximum diameters in a plane parallel with and intermediate said flat portions, substantially as described.

4. A projectable game-piece provided with a materially-restricted base on which the same is adapted to rest and to be glided, having a maximum diameter at a distance from the base or surface, the diameter of consecutive sections taken parallel to the central plane containing the maximum diameter, decreasing from said plane to the base, whereby when said game-piece is struck by suitable means at a point between said maximum diameter and base, the said game-piece will be projected into the air without material revolution; substantially as described.

5. A projectable game-piece having a base portion upon which said game-piece is adapted to glide and an outwardly-tapering body portion whereby said game-piece is adapted to be projected into the air by impact from suitable means, said game-piece moving substantially in the direction of impact without material revolution; substantially as described.

6. In a game apparatus, in combination, a game-piece having a substantially flat base portion upon which said game-piece is adapted to glide, and an outwardly-tapering body portion whereby said game-piece is adapted to be projected into the air, and means for projecting the game-piece, said game-piece moving substantially in the direction of impact without material revolution.

7. In a game apparatus, in combination, a game-piece having a substantially flat base portion upon which said game-piece is adapted to glide, and an outwardly-tapering body portion whereby said game-piece is adapted to be projected into the air, and a cue having means for projecting the game-piece, said game-piece moving substantially in the direction of impact without material revolution.

8. In a game apparatus, in combination, a game-piece having a substantially flat base portion upon which said game-piece is adapted to glide, and an outwardly-tapering body portion whereby said game-piece is adapted to be projected into the air, and a cue having a beveled end for projecting the game-piece, said game-piece moving substantially in the direction of impact without material revolution.

810,353. VARIABLE CAM. HUGO SALMEN and GUSTAV WALSER, Chemnitz, Germany. Filed Nov. 11, 1904. Serial No. 232,216.

Claim.—1. A cam provided with offset operating-surfaces and intermediate switching-surfaces, offset and coincident with said operating-surfaces, and a member adapted for engagement with said switching-surfaces in passing from one operating-surface to the other.

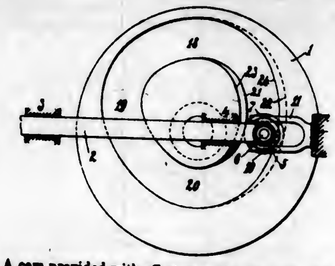

2. A cam provided with offset operating-surfaces and intermediate switching-surfaces, offset and coincident with said operating-surfaces, all of said surfaces terminating in a coincident surface, and a member adapted for engagement with said switching-surfaces in passing from one operating-surface to the other.

3. A closed cam provided with offset operating-grooves and an intermediate switching-groove, offset and coincident with the operating-grooves and relatively enlarged with respect thereto, and a roller loosely coöperating with said intermediate groove in passing from one operating-groove to the other.

810,354. HOSE-COUPLING. MICHAEL L. SCANLON, JOHN S. SCANLON, and ALLEN A. ARNOLD, Galion, Ohio; said Michael L. Scanlon and John S. Scanlon assignors of one-fourth of their right to Mary B. Scanlon, Galion, Ohio. Filed Apr. 27, 1905. Serial No. 257,603.

Claim.—1. The combination in a coupling, of abutting male members, a ring on one of said members having shoulders oppositely located thereon, a spring on this member, located in rear of the ring and confined in place by said ring and a shoulder on this member, a sleeve on the same member, supported by tension of the spring, an inner flange on the sleeve adapted for engagement with the spring, extensions on the sleeve, having inwardly-projecting edges, a similar sleeve, having adjustment on the other male member of the coupling, and extensions on the latter sleeve, having inwardly-projecting edges, the said sleeve extensions being spaced apart adapted to fit together, substantially as described.

2. The combination in a coupling, of male members, sleeves on the male members having separating adjustment and one thereof being adapted to be yieldingly held under tension, extensions on the abutting ends of the sleeves, having inwardly-projecting edges, a spring confined on one male member, supporting its sleeve under tension, and a ring on one male member having shoulders adapted for locking engagement with the inner projecting edges of extensions on a sleeve supported on the other male member, substantially as described.

3. The combination in a coupling, of male members, sleeves on the male members, having separating adjustment and one thereof being adapted to be yieldingly held under tension, extensions on the abutting ends of the sleeves, having inwardly-projecting edges, a spring confined on one male member, supporting its sleeve under tension, a ring on one male member having shoulders adapted for locking engagement with the inner projecting edges of the extensions on the other male member, adjustable jam-collars on one male member, a rib on the other male member, and means on the sleeve carried by said member adapted for engagement with the rib, when the sleeve is adjusted, substantially as described.

810,355. ORTHOPEDIC APPLIANCE FOR CURING KNOCK-KNEES, &c. OSKAR SEBELIEWSKI, Vienna, Austria-Hungary. Filed May 27, 1903. Serial No. 159,627.

Claim.—1. In an orthopedic appliance, the combination of a

shoe member, a brace secured to the shoe member and extending upward along the leg, means for securing the brace to the leg at its upper end, and a heel member pivotally secured to the rear of the shoe and arranged to swing upward from a position normally parallel with the shoe-bottom, and on a pivotal line located at one side of the heel.

2. In an orthopedic appliance, the combination with a shoe of a collapsible heel member having its bottom member pivoted along one of the lateral sides to swing upward from a position parallel with the shoe-bottom, a spring tending to normally retain the bottom member in a parallel position, and a jointed brace secured to the shoe for attachment to the leg of the wearer.

3. In an orthopedic appliance, the combination of a shoe, an upright plate rigidly secured along one of the lateral sides and extending downward, a plate pivotally connected with the lower edge of the upright plate, a plate secured to the bottom of said pivoted plate, a spring tending to retain the latter plates parallel with the bottom of the shoe, a flexible member connecting the lower plates with the shoe-bottom and inclosing the spring member and upright plate, a jointed brace secured to the shoe and extending upward, and a strap arranged to secure the upper end of the brace to the leg.

810,356. RULING DEVICE. DONALD P. SHANKWILER, South Bend, Ind. Filed Apr. 15, 1905. Serial No. 255,794.

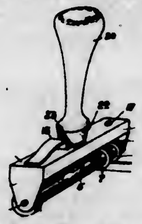

Claim.—1. In a ruling device, a frame having a roller journaled therein, a ruling-disk carried by the roller, a compartment in the frame, an inking-pad in the compartment normally held from engagement with the ruling-disk, and means accessible from the top of the frame for engaging said pad with the ruling-disk.

2. In a ruling device, a frame, a compartment in the frame, ruling-disks journaled in the frame and projecting into said compartment, inking-pads mounted in the compartment, one of which is normally held in contact with one of the ruling-disks, and a spring-arm secured to the frame and projecting above the same and adapted to be pressed to engage the other pad with the other ruling-disk.

3. In a ruling device, the combination, with a frame having ruling-disks journaled therein, and inking-pads mounted in the frame above said disks, of a spring-arm secured beneath the frame and carrying one of said inking-pads and also having a portion projecting above the frame to form a thumb-piece for engaging the pad with a ruling-disk.

810,357. ELECTRIC SWITCH FOR STREET ARC-LAMPS, &c. PIERRE H. F. STERN, New York, N. Y., assignor, by direct and mesne assignments, of one-third to David H. Arnold, one-third to Leroy H. Haskins, and one-third to William T. Lambert, all of New York, N. Y. Filed Feb. 10, 1905. Serial No. 245,647.

Claim.—1. An electric switch for arc-lamps, chandeliers, and the like, comprising fixed line-contacts connected with the line, a block moving with the lamp and carrying lamp-contacts connected with the lamp-circuit, and adapted to engage the lower ends of the line-contacts, and a movable block carrying auxiliary contacts, electrically connected with each other, the said block being controlled by the movement of the block carrying the lamp-contacts, the said auxiliary contacts being adapted to engage the upper ends of the line-contacts.

2. An electric switch for arc-lamps, chandeliers, and the like, comprising a fixed block, sets of contacts secured on said block and connected with the line, the contacts projecting beyond the bottom and top of the block, a block movable with the lamp and carrying lamp-contacts connected with the lamp-circuit and adapted to engage the lower projecting ends of said line-contacts, and a movable block carrying auxiliary contacts, adapted to engage the upper ends of said line-contacts, the movement of said block carrying the auxiliary contacts being controlled by the block carrying the lamp-contacts, the said auxiliary contacts being normally out of engagement with the line-contacts.

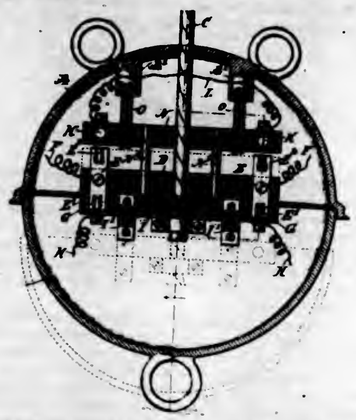

3. An electric switch for arc-lamps, chandeliers, and the like, comprising a fixed block, sets of contacts secured on said block and connected with the line, the contacts projecting beyond the bottom and top of the block, a block moving with the lamp and carrying contacts connected with the lamp-circuits and adapted to engage the lower projecting ends of the said line-contacts, a block having guided movement and controlled by the movement of the block carrying the lamp-contacts, the said block carrying auxiliary contacts adapted to engage the upper projecting ends of said line-contacts, the auxiliary contacts moving in contact with the line-contacts immediately previous to the lamp-contacts moving out of engagement with the line-contacts.

4. An electric switch for arc-lamps, chandeliers, and the like, comprising a fixed block of insulating material, sets of contact-plates secured on said block and connected with the line, the contact-plates projecting beyond the bottom and top of the block, a block of insulating material moving with the lamp and carrying contact-pins connected with the lamp-circuit, and adapted to engage the lower projecting ends of said line-contact plates, a block of insulating material provided with guide-pins arranged to slide in bearings in the said fixed block and adapted to rest on the upper surface of the block carrying the lamp-contact pins, the said block carrying auxiliary contact-pins electrically connected and adapted to engage the upper projecting ends of said line-contact plates, the movement of the block carrying the auxiliary contact-pins being controlled by the movement of the block carrying the lamp-contact pins, the said auxiliary contact-pins moving in contact with the line-contact plates immediately previous to the lamp-contact pins moving out of engagement with the line-contact plates, and the said auxiliary contact-pins being moved out of engagement with the line-contact plates after the lamp-contact pins have moved in engagement with the line-contact plates.

5. An electric switch for arc-lamps, chandeliers and the like, comprising a hanger made in two parts, of which one is fixed and the other movable toward and from the fixed hanger part, the movable hanger part carrying the lamp, double line-contacts fixed in the said fixed hanger part and connected with the line, a spring-pressed block carrying auxiliary contacts for engaging the line-contacts at one side, and a block fixed in the movable hanger part and carrying the lamp-contacts connected with the lamp-circuit, the said lamp-contact block engaging the said spring-pressed block, to move the latter against the tension of its springs.

6. An electric switch for arc-lamps, chandeliers and the like, comprising a hanger made in two parts, of which one is fixed and the other movable toward and from the fixed hanger part, the movable hanger part carrying the lamp, double line-contacts fixed in the said fixed hanger part and connected with the line, a spring-pressed block carrying auxiliary contacts for engaging the line-contacts at one side, the said block having guide-pins slidable in bearings on the said hanger part, and a block fixed in the movable hanger part and carrying the lamp-contacts connected with the lamp-circuit, the said lamp-contact block being adapted to engage the said guide-pins, to move the spring-pressed block against the tension of its springs.

7. An electric switch for arc-lamps, chandeliers, and the like, comprising fixed line-contacts consisting of sets of contact-plates connected with the line, contact-pins moving with the lamp and connected with the lamp-circuit, the said contact-pins being adapted to engage the line-contact plates, and auxiliary contact-pins controlled by the movement of the lamp-contacts and adapted to engage the said line-contact plates.

8. An electric switch for arc-lamps, chandeliers, and the like, comprising a hanger made in two parts, one part being fixed and the other movable toward and from the fixed part, the movable hanger part carrying the lamp, a block secured to the upper or fixed part of the hanger, sets of contact-plates secured at each end of said block and having their ends projecting respectively beyond the bottom and top of the block, the said contact-plates being connected with the line-wires, a block secured to the movable hanger part, contact-pins carried by said block and connected with the lamp-circuit, the said contact-pins being adapted to contact with the lower ends of said line-contact plates when the movable hanger part is in raised or normal position, and a spring-pressed block carrying contact-pins electrically connected with each other and adapted to contact with the upper ends of said contact-plates when the movable hanger part is in the lowered position.

810,358. RAILWAY-TRACK JACK. JOHN STEWART, New Glasgow, Canada. Filed Aug. 15, 1904. Renewed Dec. 13, 1905. Serial No. 292,186.

Claim.—1. The stand provided with the pocket I adapted to inclose link E and formed with the fulcrum F properly adjacent to said link.

2. The stand provided with the fulcrum F and the removable wear-plate F'.

3. The combination with the jam-nuts of the filling-ring and the link E interposed between said nuts, and operating as set forth.

4. The stand provided with the hook J in combination with the jam-nuts as set forth.

810,359. TYPE-WRITING MACHINE. BURNHAM C. STRICKLAND, Elizabeth, N. J., assignor to Union Typewriter Company, Jersey City, N. J., a Corporation of New Jersey. Filed Apr. 6, 1903. Serial No. 151,293.

Claim.—1. In a front-strike writing-machine, the combination of a series of rearwardly-striking type-bars; a series of key-bearing bell-cranks connected thereto; said bell-cranks comprising forwardly-extending key-bearing arms and downwardly-extending arms having elongated treads, and the points of said levers which are connected to said type-bars having a forward and backward movement; a fulcrum-plate upon which said treads have a rocker motion; said fulcrum-plate standing on edge; and a bar engaged by all of said treads for supporting the same against downward or upward displacement.

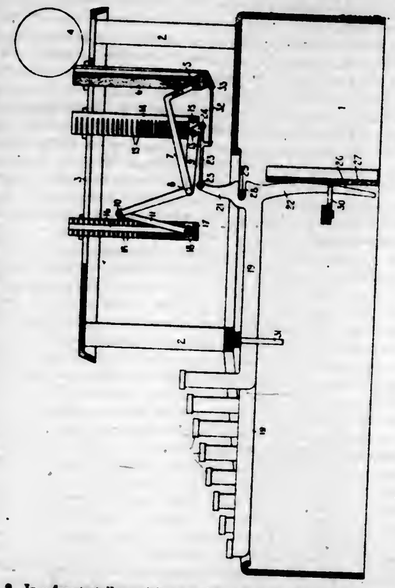

2. In a front-strike writing-machine, the combination of a series of rearwardly-striking type-bars; a series of levers connected to said type-bars and comprising forwardly-extending key-bearing arms and downwardly-extending arms having elongated curved treads, notches in the latter arms, a fixed transverse supporting-bar engaged by said notches, and an upright plate upon which said treads have a rocker motion.

3. In a front-strike writing-machine, the combination of a series of rearwardly-striking type-bars; a series of T-shaped levers comprising forwardly-extending key-bearing arms, upwardly-extending arms, and downwardly-extending arms having elongated treads; links extending forwardly between said type-bars and said upwardly-extending arms; notches in said levers; a fixed transverse bar engaged by said notches for preventing upward or downward displacement of said levers at their rear ends; and a fulcrum-plate upon which said downwardly-extending arms have a rocker motion.

4. In a front-strike writing-machine, the combination of a series of rearwardly-striking type-bars; a series of T-shaped levers comprising forwardly-extending key-bearing arms, upwardly-extending arms, and downwardly-extending arms having elongated treads; links extending forwardly between said type-bars and said upwardly-extending arms; notches in said downwardly-extending arms; a fulcrum-plate upon which the latter arms have a rocker motion; and a fixed transverse bar mounted upon said plate between the upper and lower edges thereof and engaged by said notches for preventing upward or downward displacement of said levers at their rear ends.

5. In a front-strike writing-machine, the combination of a series of rearwardly-striking type-bars; a series of T-shaped levers comprising forwardly-extending key-bearing arms, upwardly-extending arms, and downwardly-extending arms having elongated treads; links extending forwardly between said type-bars and said upwardly-extending arms; notches in said levers; a fixed transverse bar engaged by said notches for preventing upward or downward displacement of said levers at their rear ends; a fulcrum-plate upon which said downwardly-extending arms have a rocker motion; and returning-springs attached to said links and extending to a fixed support.

6. In a front-strike writing-machine, the combination of a system of rearwardly-striking type-bars; a system of levers comprising forwardly-extending key-bearing arms, downwardly-extending arms having elongated treads, and upwardly-extending arms connected to the type-bars; and a bearing-plate upon which said treads have a rocker motion; said upwardly-extending arms being shortest at the

middle of the system and being progressively longer from the middle to the sides of the system, and said downwardly-extending arms being longest at the middle of the system and being progressively shorter from the middle to the sides of the system.

7. In a front-strike writing-machine, the combination of a system of rearwardly-striking type-bars, a system of levers comprising forwardly-extending key-bearing arms, downwardly-extending arms having elongated treads, and upwardly-extending arms, a bearing-plate upon which said treads have a rocker motion; said upwardly-extending arms being shortest at the middle of the system and being progressively longer from the middle to the sides of the system, and said downwardly-extending arms being longest at the middle of the system and being progressively shorter from the middle to the sides of the system; links extending forwardly between said type-bars and said upwardly-extending arms; returning-springs attached to said links; and means for preventing upward or downward displacement of said downwardly-extending arms.

8. In a front-strike writing-machine, the combination of a series of radial links, a series of rearwardly-striking type-carriers pivoted upon the free ends of said links; a second series of radial links upon which said type-carriers are also pivoted; a series of T-levers comprising forwardly-extending key-bearing arms, upwardly-extending arms, and downwardly-extending arms; connections extending forwardly between one of said sets of radial links and said upwardly-extending arms; elongated treads formed on said downwardly-extending arms; a plate upon which said treads have a rocker motion; and a transverse bar for supporting the rear ends of said levers.

9. In a front-strike writing-machine, the combination of a series of rearwardly-striking type-bars; a series of T-shaped levers comprising forwardly-extending key-bearing arms, upwardly-extending arms, and downwardly-extending arms having elongated treads; links extending forwardly between said type-bars and said upwardly-extending arms; notches in said downwardly-extending arms; a fulcrum-plate upon which the latter arms have a rocker motion; and a fixed transverse bar mounted upon said plate between the upper and lower edges thereof and engaged by said notches for preventing upward or downward displacement of said levers at their rear ends; said forwardly-extending arms being attached to said cross-arms at points above said notches.

10. In a front-strike writing-machine, the combination of a series of rearwardly-striking type-bars, a series of key-bearing levers, a series of links connecting said type-bars to said levers; said levers having a series of upwardly-extending arms to whose upper ends said links are attached, said arms being shortest at the middle of the system, and increasing progressively in length from the middle to the sides of the system, and means for affording a change of fulcrum of said levers as they are depressed.

11. The combination with a series of type-bars of a series of T-shaped key-levers, a link connecting each type-bar to one arm of one of said levers, a key carried by another arm of said levers, said levers also having at their rear ends downwardly-extending arms provided with suitable bearings; said downwardly-extending arms being longest at the middle of the system and decreasing progressively in length from the middle to the sides of the system, and a co-operating bearing for the downwardly-extending arms of said levers.

12. In a type-writing machine, the combination of a front-strike jointed type-bar, and a key-lever operatively connected to said type-bar, said key-lever having a downwardly-extending arm and a bearing on which said arm rocks and changes its fulcrum.

13. In a type-writing machine, the combination of a series of segmentally-arranged type-bars, key-levers operatively connected thereto and having rocker-arms that afford a change of leverage as the key-levers are depressed, the rocker-arms at the center of the system having a greater extent of rocking movement on their bearings than those at the sides of the system.

14. In a type-writing machine, the combination of a series of segmentally-arranged type-bars, key-levers having connecting-arms of different lengths operatively connected to the type-bars and having rocker-arms that afford a change of leverage as the key-levers are depressed, the rocker-arms for the key-levers with the shorter connecting-arms having greater extents of rocking movement on their bearings than the rocker-arms for the key-levers having the longer connecting-arms.

810,360. TYPE-WRITING MACHINE. SUMNER G. SHERMAN, Hoboken, N. J., assignor to Union Typewriter Company, Jersey City, N. J., a Corporation of New Jersey. Filed Apr. 6, 1903. Serial No. 151,592.

Claim.—1. In a type-writing machine, the combination of a series of type-bars, a series of sublevers connected thereto, a series of key-bearing forwardly-extending levers pivoted at their rear ends to said sublevers, angular arms on the rear ends of said key-bearing levers, said angular arms being provided with elongated treads, and a support upon which said treads have a rocker motion in an up and down direction.

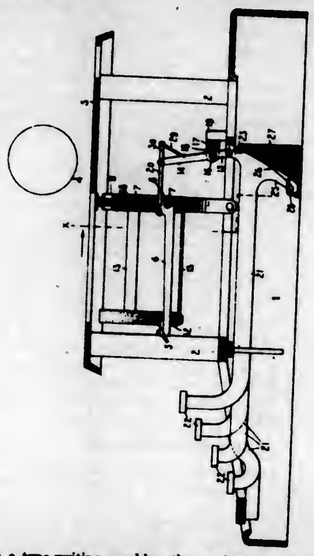

2. In a type-writing machine, the combination of a series of rearwardly-striking type-bars, a series of upstanding sublevers connected thereto, a series of key-bearing forwardly-extending levers pivoted at their rear ends to said upstanding levers, angular arms on the rear ends of said key-levers, said angular arms being provided with elongated treads, and a support upon which said treads have a rocker motion.

3. In a front-strike writing-machine, the combination of a series of rearwardly-striking type-bars, a series of key-bearing levers extending forwardly beneath the type-bars, upwardly-extending arms on said key-levers, downwardly-extending arms on said key-levers, a set of sublevers connected to one set of said arms and also connected to the type-bars, elongated treads on the other set of said arms, and a support along which said treads have a rocker motion.

4. In a front-strike writing-machine, the combination of a series of rearwardly-striking type-bars, a series of key-bearing levers extending forwardly and each having ramifications at its rear end, a set of sublevers connected to one set of ramifications and also connected to the type-bars, elongated treads formed on the other set of ramifications, and a support upon which said treads have a rocker motion.

5. In a front-strike writing-machine, the combination of a series of rearwardly-striking type-bars, a series of upstanding levers in rear of the type-bars, a series of key-operated levers each having ramifications at their rear ends, one set of ramifications being pivoted directly to the lower ends of said upstanding levers, and the other set of ramifications having elongated treads, and bearings along which said treads have a rocker motion.

6. In a front-strike writing-machine, the combination of a series of rearwardly-striking type-bars, a series of upstanding levers of the first order mounted in rear of said type-bars, links connecting said levers to said type-bars, T-shaped levers including forwardly-extending key-bearing arms, upwardly-extending arms which are pivoted directly to the lower arms of said upstanding levers, and downwardly-extending arms having elongated treads; and a support upon which said treads have a rocker motion.

7. In a front-strike writing-machine, the combination of a series of rearwardly-striking type-bars, a series of upstanding levers of the first order connected to said type-bars, and forwardly-extending key-levers pivoted to the lower arms and below the fulcrums of said upstanding levers; said key-levers having elongated treads; and a fixed support along which said treads have a rocker motion.

8. In a front-strike writing-machine, the combination of a series of rearwardly-striking type-bars, a series of upstanding sublevers in rear of said type-bars, each of said levers being fulcrumed between its ends, links connecting the upper ends of said levers to said type-bars, forwardly-extending T-shaped key-levers pivoted at one set of their cross-arms to the depending arms of said upstanding sublevers, elongated treads formed upon the other set of cross-arms, and means for supporting and guiding said treads during the movements of said key-levers.

9. In a front-strike writing-machine, the combination of a series of rearwardly-striking type-bars, a series of T-shaped key-levers, keys upon one set of arms of said key-levers, elongated treads upon another set of arms of said key-levers, a support along which said fulcrums have a rocker motion, and connections between the third set of arms of said key-levers and said type-bars; said connections including a set of sublevers.

10. In a front-strike writing-machine, the combination of a series of rearwardly-striking type-bars, a series of T-shaped key-levers, keys upon one set of arms of said key-levers, elongated treads upon another set of arms of said key-levers, a support along which said fulcrums have a rocker motion, and connections between the third set of arms of said key-levers and said type-bars; said connections including both a set of sublevers to which the last-mentioned key-lever arms are directly pivoted, and links extending from said sublevers to the type-bars.

11. In a front-strike writing-machine, the combination of a series of rearwardly-striking type-bars, a series of upstanding levers of the first order mounted in rear of said type-bars, links connecting said levers to said type-bars, T-shaped levers including forwardly-extending key-bearing arms, upwardly-extending arms which are pivoted directly to the lower arms of said upstanding levers, and downwardly-extending arms having elongated treads, and a support upon which said treads may have a rocker motion, said system of upstanding levers being less in width than said system of key-levers at the keyboard, and said system of key-levers converging rearwardly.

12. In a front-strike writing-machine, the combination of a series of rearwardly-striking type-bars, a series of upstanding levers of the first order mounted in rear of said type-bars, links connecting said levers to said type-bars, T-shaped levers including forwardly-extending key-bearing arms, upwardly-extending arms which are pivoted directly to the lower arms of said upstanding levers, and downwardly-extending arms having elongated treads; a support upon which said treads have a rocker motion; and a single transverse fulcrum-rod upon which said upstanding levers are pivoted; the upwardly-extending arms of said sublevers being shortest at the middle of the system and of progressively-increasing length from the middle to the sides of the system, and their downwardly-extending arms being of correspondingly-increasing lengths.

13. In a front-strike writing-machine, the combination of a series of rearwardly-striking type-bars, a series of upstanding levers of the first order mounted in rear of said type-bars, links connecting said levers to said type-bars, T-shaped levers including forwardly-extending key-bearing arms, upwardly-extending arms which are pivoted directly to the lower arms of said upstanding levers, and downwardly-extending arms having elongated treads; a support upon which said treads may have a rocker motion; and a single transverse fulcrum-rod upon which said upstanding levers are pivoted; the upwardly-extending arms of said sublevers being shortest at the middle of the system and of progressively-increasing length from the middle to the sides of the system, and their downwardly-extending arms being of correspondingly-increasing lengths, and the upwardly extending arms on the key-levers being longest at the middle of the system and progressively decreasing in length from the middle to the sides of the system.

14. In a front-strike writing-machine, the combination of a series of rearwardly-striking type-bars, a series of sublevers connected to the type-bars, and a series of key-bearing levers pivoted to the sublevers; one of said sets of levers having arms provided with elongated treads, the said sublevers vibrating on fixed pivots arranged above the key-levers; and a fixed support upon which said treads have a rocker motion during the type-bar movements.

15. In a type-writing machine, the combination with a series of rearwardly-striking type-bars, of a series of upstanding levers of the first order connected to said type-bars; said levers being fulcrumed in a transverse horizontal line, their upwardly-extending arms being shortest in the middle of the system and progressively increasing in length from the middle to the sides of the system, and their downwardly-extending arms being of correspondingly-increasing lengths but shorter than the upwardly-extending arms; a system of key-levers connected to said upstanding levers and having elongated treads; and a support upon which said treads have a rocker motion.

16. In a front-strike writing-machine, the combination of a series of rearwardly-striking type-bars, a series of upstanding levers of the first order mounted in rear of said type-bars, links connecting said levers to said type-bars, T-shaped levers including forwardly-extending key-bearing arms, upwardly-extending arms which are pivoted directly to the lower arms of said upstanding levers, and downwardly-extending arms having elongated treads; a support upon which said treads have a rocker motion; and a system of returning-springs connected to said upstanding levers.

17. In a type-writing machine, the combination of a series of types, a series of type-operating arms, a series of T-shaped levers pivoted at one set of their cross-arms to said type-operating arms, elongated treads formed upon the other set of said cross-arms, a fixed support having an elongated transverse tread along which said treads on the levers have a rocker motion to effect an automatic change of leverage, and a series of keys carried by the stem-like arms of the T-shaped levers.

18. In a type-writing machine, the combination of a series of type-bars, a series of key-bearing T-shaped levers, a series of sublevers to which said key-levers are pivoted at one set of their cross-arms, elongated treads formed upon another set of the arms of said T-levers, a support along which said treads may have a rocker motion, and a set of returning-springs.

19. In a type-writing machine, the combination of a series of type-bars, a series of key-bearing T-shaped levers, a series of sublevers to which said key-bearing levers are pivoted at one set of their cross-arms, elongated treads formed upon the other set of cross-arms of said T-levers, and a support along which said treads have a rocker motion; said treads being materially longer than the cross-arms that are pivoted to the sublevers.

20. In a type-writing machine, the combination of a series of type-bars, a series of keys, and two sets of levers between said keys and said type-bars; one set of said levers being pivoted to the other, and one set of said levers consisting of bell-cranks which carry said keys, and having arms provided with elongated treads; and a fixed support upon which said treads have a rocker motion.

21. In a type-writing machine, the combination of a series of type-bars and a series of key-bearing bell-cranks connected thereto; the fulcrum-arms of said bell-cranks having elongated treads; and arms upon which said fulcrum-arms are pivoted and whereby they are supported against endwise displacement: and a support along which said treads have a rocker motion.

22. In a type-writing machine, the combination of a series of type-bars; a series of T-shaped levers comprising forwardly-extending key-bearing arms, upwardly-extending arms, and downwardly-extending arms having elongated treads; a support along which said treads have a rocker motion; and a series of sublevers between said upwardly-extending arms and said type-bars.

23. In a type-writing machine, the combination of a type-bar and a key-operated lever connected thereto; said lever having an elongated curved tread portion; and a support along which said tread has a rocker motion; said support being curved in the direction of the length of said tread.

24. In a type-writing machine, the combination of a type-bar and key-operated lever connected thereto; said lever having an elongated curved tread portion; and a support along which said tread has a rocker motion; said support being curved in the direction of the length of said tread, the curve of the support nearly matching but having a different radius from the curve of the tread.

25. In a type-writing machine, the combination of a type-bar and a key-operated lever connected thereto; said lever having an elongated curved tread portion; and a support along which said tread has a rocker motion; said support being curved in the direction of the length of said tread, the tread curve being convex, and the support curve being concave and of greater radius than the tread curve.

26. In a type-writing machine, the combination with a type-bar of a key-lever connected thereto and having a downwardly and forwardly inclined angle-arm which is provided with an elongated tread; and a downwardly and forwardly inclined support along which said tread has a rocker motion; at least one of said tread and support elements being curved.

27. In a type-writing machine, the combination with a type-bar of a key-lever connected thereto and having a downwardly and forwardly inclined arm which is provided with an elongated convexly-curved tread; and a downwardly and forwardly inclined support along which said tread has a rocker motion.

28. In a type-writing machine, the combination with a type-bar

middle of the system and being progressively longer from the middle to the sides of the system, and said downwardly-extending arms being longest at the middle of the system and being progressively shorter from the middle to the sides of the system.

7. In a front-strike writing-machine, the combination of a system of rearwardly-striking type-bars, a system of levers comprising forwardly-extending key-bearing arms, downwardly-extending arms having elongated treads, and upwardly-extending arms, a bearing-plate upon which said treads have a rocker motion; said upwardly-extending arms being shortest at the middle of the system and being progressively longer from the middle to the sides of the system, and said downwardly-extending arms being longest at the middle of the system and being progressively shorter from the middle to the sides of the system; links extending forwardly between said type-bars and said upwardly-extending arms; returning-springs attached to said links; and means for preventing upward or downward displacement of said downwardly-extending arms.

8. In a front-strike writing-machine, the combination of a series of radial links, a series of rearwardly-striking type-carriers pivoted upon the free ends of said links; a second series of radial links upon which said type-carriers are also pivoted; a series of T-levers comprising forwardly-extending key-bearing arms, upwardly-extending arms, and downwardly-extending arms; connections extending forwardly between one of said sets of radial links and said upwardly-extending arms; elongated treads formed on said downwardly-extending arms; a plate upon which said treads have a rocker motion; and a transverse bar for supporting the rear ends of said levers.

9. In a front-strike writing-machine, the combination of a series of rearwardly-striking type-bars; a series of T-shaped levers comprising forwardly-extending key-bearing arms, upwardly-extending arms, and downwardly-extending arms having elongated treads; links extending forwardly between said type-bars and said upwardly-extending arms; notches in said downwardly-extending arms; a fulcrum-plate upon which the latter arms have a rocker motion; and a fixed transverse bar mounted upon said plate between the upper and lower edges thereof and engaged by said notches for preventing upward or downward displacement of said levers at their rear ends; said forwardly-extending arms being attached to said cross-arms at points above said notches.

10. In a front-strike writing-machine, the combination of a series of rearwardly-striking type-bars, a series of key-bearing levers, a series of links connecting said type-bars to said levers; said levers having a series of upwardly-extending arms to whose upper ends said links are attached, said arms being shortest at the middle of the system, and increasing progressively in length from the middle to the sides of the system, and means for affording a change of fulcrum of said levers as they are depressed.

11. The combination with a series of type-bars of a series of T-shaped key-levers, a link connecting each type-bar to one arm of one of said levers, a key carried by another arm of said levers, said levers also having at their rear ends downwardly-extending arms provided with suitable bearings; said downwardly-extending arms being longest at the middle of the system and decreasing progressively in length from the middle to the sides of the system, and a coöperating bearing for the downwardly-extending arms of said levers.

12. In a type-writing machine, the combination of a front-strike jointed type-bar, and a key-lever operatively connected to said type-bar, said key-lever having a downwardly-extending arm and a bearing on which said arm rocks and changes its fulcrum.

13. In a type-writing machine, the combination of a series of segmentally-arranged type-bars, key-levers operatively connected thereto and having rocker-arms that afford a change of leverage as the key-levers are depressed, the rocker-arms at the center of the system having a greater extent of rocking movement on their bearings than those at the sides of the system.

14. In a type-writing machine, the combination of a series of segmentally-arranged type-bars, key-levers having connecting-arms of different lengths operatively connected to the type-bars and having rocker-arms that afford a change of leverage as the key-levers are depressed, the rocker-arms for the key-levers with the shorter connecting-arms having greater extents of rocking movement on their bearings than the rocker-arms for the key-levers having the longer connecting-arms.

810,860. TYPE-WRITING MACHINE. DURHAM C. STOCKETT, Elizabeth, N. J., assignor to Union Typewriter Company, Jersey City, N. J., a Corporation of New Jersey. Filed Apr. 6, 1903. Serial No. 151,593.

Claim.—1. In a type-writing machine, the combination of a series of type-bars, a series of sublevers connected thereto, a series of key-bearing forwardly-extending levers pivoted at their rear ends to said sublevers, angular arms on the rear ends of said key-bearing levers, said angular arms being provided with elongated treads, and a support upon which said treads have a rocker motion in an up and down direction.

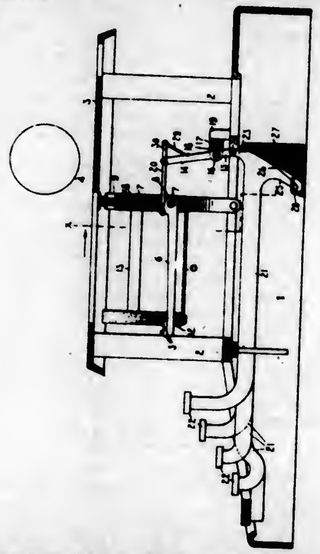

2. In a type-writing machine, the combination of a series of rearwardly-striking type-bars, a series of upstanding sublevers connected thereto, a series of key-bearing forwardly-extending levers pivoted at their rear ends to said upstanding levers, angular arms on the rear ends of said key-levers, said angular arms being provided with elongated treads, and a support upon which said treads have a rocker motion.

3. In a front-strike writing-machine, the combination of a series of rearwardly-striking type-bars, a series of key-bearing levers extending forwardly beneath the type-bars, upwardly-extending arms on said key-levers, downwardly-extending arms on said key-levers, a set of sublevers connected to one set of said arms and also connected to the type-bars, elongated treads on the other set of said arms, and a support along which said treads have a rocker motion.

4. In a front-strike writing-machine, the combination of a series of rearwardly-striking type-bars, a series of key-bearing levers extending forwardly and each having ramifications at its rear end, a set of sublevers connected to one set of ramifications and also connected to the type-bars, elongated treads formed on the other set of ramifications, and a support upon which said treads have a rocker motion.

5. In a front-strike writing-machine, the combination of a series of rearwardly-striking type-bars, a series of upstanding levers in rear of the type-bars, a series of key-operated levers each having ramifications at their rear ends, one set of ramifications being pivoted directly to the lower ends of said upstanding levers, and the other set of ramifications having elongated treads, and bearings along which said treads have a rocker motion.

6. In a front-strike writing-machine, the combination of a series of rearwardly-striking type-bars, a series of upstanding levers of the first order mounted in rear of said type-bars, links connecting said levers to said type-bars, T-shaped levers including forwardly-extending key-bearing arms, upwardly-extending arms which are pivoted directly to the lower arms of said upstanding levers, and downwardly-extending arms having elongated treads; and a support upon which said treads have a rocker motion.

7. In a front-strike writing-machine, the combination of a series of rearwardly-striking type-bars, a series of upstanding levers of the first order connected to said type-bars, and forwardly-extending key-levers pivoted to the lower arms and below the fulcrums of said upstanding levers; said key-levers having elongated treads; and a fixed support along which said treads have a rocker motion.

8. In a front-strike writing-machine, the combination of a series of rearwardly-striking type-bars, a series of upstanding sublevers in rear of said type-bars, each of said levers being fulcrumed between its ends, links connecting the upper ends of said levers to said type-bars, forwardly-extending T-shaped key-levers pivoted at one set of their cross-arms to the depending arms of said upstanding sublevers, elongated treads formed upon the other set of cross-arms, and means for supporting and guiding said treads during the movements of said key-levers.

9. In a front-strike writing-machine, the combination of a series of rearwardly-striking type-bars, a series of T-shaped key-levers, keys upon one set of arms of said key-levers, elongated treads upon another set of arms of said key-levers, a support along which said fulcrums have a rocker motion, and connections between the third set of arms of said key-levers and said type-bars; said connections including a set of sublevers.

10. In a front-strike writing-machine, the combination of a series of rearwardly-striking type-bars, a series of T-shaped key-levers, keys upon one set of arms of said key-levers, elongated treads upon another set of arms of said key-levers, a support along which said fulcrums have a rocker motion, and connections between the third set of arms of said key-levers and said type-bars; said connections including both a set of sublevers to which the last-mentioned key-lever arms are directly pivoted, and links extending from said sublevers to the type-bars.

11. In a front-strike writing-machine, the combination of a series of rearwardly-striking type-bars, a series of upstanding levers of the first order mounted in rear of said type-bars, links connecting said levers to said type-bars, T-shaped levers including forwardly-extending key-bearing arms, upwardly-extending arms which are pivoted directly to the lower arms of said upstanding levers, and downwardly-extending arms having elongated treads, and a support upon which said treads may have a rocker motion, said system of upstanding levers being less in width than said system of key-levers at the keyboard, and said system of key-levers converging rearwardly.

12. In a front-strike writing-machine, the combination of a series of rearwardly-striking type-bars, a series of upstanding levers of the first order mounted in rear of said type-bars, links connecting said levers to said type-bars, T-shaped levers including forwardly-extending key-bearing arms, upwardly-extending arms which are pivoted directly to the lower arms of said upstanding levers, and downwardly-extending arms having elongated treads; a support upon which said treads have a rocker motion; and a single transverse fulcrum-rod upon which said upstanding levers are pivoted; the upwardly-extending arms of said sublevers being shortest at the middle of the system and of progressively-increasing length from the middle to the sides of the system, and their downwardly-extending arms being of correspondingly-increasing lengths.

13. In a front-strike writing-machine, the combination of a series of rearwardly-striking type-bars, a series of upstanding levers of the first order mounted in rear of said type-bars, links connecting said levers to said type-bars, T-shaped levers including forwardly-extending key-bearing arms, upwardly-extending arms which are pivoted directly to the lower arms of said upstanding levers, and downwardly-extending arms having elongated treads; a support upon which said treads may have a rocker motion; and a single transverse fulcrum-rod upon which said upstanding levers are pivoted; the upwardly-extending arms of said sublevers being shortest at the middle of the system and of progressively-increasing length from the middle to the sides of the system, and their downwardly-extending arms being of correspondingly-increasing lengths, and the upwardly extending arms on the key-levers being longest at the middle of the system and progressively decreasing in length from the middle to the sides of the system.

14. In a front-strike writing-machine, the combination of a series of rearwardly-striking type-bars, a series of sublevers connected to the type-bars, and a series of key-bearing levers pivoted to the sublevers; one of said sets of levers having arms provided with elongated treads, the said sublevers vibrating on fixed pivots arranged above the key-levers; and a fixed support upon which said treads have a rocker motion during the type-bar movements.

15. In a type-writing machine, the combination with a series of rearwardly-striking type-bars, of a series of upstanding levers of the first order connected to said type-bars; said levers being fulcrumed in a transverse horizontal line, their upwardly-extending arms being shortest in the middle of the system and progressively increasing in length from the middle to the sides of the system, and their downwardly-extending arms being of correspondingly-increasing lengths but shorter than the upwardly-extending arms; a system of key-levers connected to said upstanding levers and having elongated treads; and a support upon which said treads have a rocker motion.

16. In a front-strike writing-machine, the combination of a series of rearwardly-striking type-bars, a series of upstanding levers of the first order mounted in rear of said type-bars, links connecting said levers to said type-bars, T-shaped levers including forwardly-extending key-bearing arms, upwardly-extending arms which are pivoted directly to the lower arms of said upstanding levers, and downwardly-extending arms having elongated treads; a support upon which said treads have a rocker motion; and a system of returning-springs connected to said upstanding levers.

17. In a type-writing machine, the combination of a series of types, a series of type-operating arms, a series of T-shaped levers pivoted at one set of their cross-arms to said type-operating arms, elongated treads formed upon the other set of said cross-arms, a fixed support having an elongated transverse tread along which said treads on the levers have a rocker motion to effect an automatic change of leverage, and a series of keys carried by the stem-like arms of the T-shaped levers.

18. In a type-writing machine, the combination of a series of type-bars, a series of key-bearing T-shaped levers, a series of sublevers to which said key-levers are pivoted at one set of their cross-arms, elongated treads formed upon another set of the arms of said T-levers, a support along which said treads may have a rocker motion, and a set of returning-springs.

19. In a type-writing machine, the combination of a series of type-bars, a series of key-bearing T-shaped levers, a series of sublevers to which said key-bearing levers are pivoted at one set of their cross-arms, elongated treads formed upon the other set of cross-arms of said T-levers, and a support along which said treads have a rocker motion; said treads being materially longer than the cross-arms that are pivoted to the sublevers.

20. In a type-writing machine, the combination of a series of type-bars, a series of keys, and two sets of levers between said keys and said type-bars; one set of said levers being pivoted to the other, and one set of said levers consisting of bell-cranks which carry said keys, and having arms provided with elongated treads; and a fixed support upon which said treads have a rocker motion.

21. In a type-writing machine, the combination of a series of type-bars and a series of key-bearing bell-cranks connected thereto; the fulcrum-arms of said bell-cranks having elongated treads; and arms upon which said fulcrum-arms are pivoted and whereby they are supported against endwise displacement; and a support along which said treads have a rocker motion.

22. In a type-writing machine, the combination of a series of type-bars; a series of T-shaped levers comprising forwardly-extending key-bearing arms, upwardly-extending arms, and downwardly-extending arms having elongated treads; a support along which said treads have a rocker motion; and a series of sublevers between said upwardly-extending arms and said type-bars.

23. In a type-writing machine, the combination of a type-bar and a key-operated lever connected thereto; said lever having an elongated curved tread portion; and a support along which said tread has a rocker motion; said support being curved in the direction of the length of said tread.

24. In a type-writing machine, the combination of a type-bar and key-operated lever connected thereto; said lever having an elongated curved tread portion; and a support along which said tread has a rocker motion; said support being curved in the direction of the length of said tread, the curve of the support nearly matching but having a different radius from the curve of the tread.

25. In a type-writing machine, the combination of a type-bar and a key-operated lever connected thereto; said lever having an elongated curved tread portion; and a support along which said tread has a rocker motion; said support being curved in the direction of the length of said tread, the tread curve being convex, and the support curve being concave and of greater radius than the tread curve.

26. In a type-writing machine, the combination with a type-bar of a key-lever connected thereto and having a downwardly and forwardly inclined angle-arm which is provided with an elongated tread; and a downwardly and forwardly inclined support along which said tread has a rocker motion; at least one of said tread and support elements being curved.

27. In a type-writing machine, the combination with a type-bar of a key-lever connected thereto and having a downwardly and forwardly inclined arm which is provided with an elongated convexly-curved tread; and a downwardly and forwardly inclined support along which said tread has a rocker motion.

28. In a type-writing machine, the combination with a type-bar

and a key-lever connected thereto and having a downwardly and forwardly inclined arm which is provided with an elongated convexly-curved tread; and a downwardly and forwardly inclined concave support along which said tread has a rocker motion; the curve of the support having greater radius than the curve of the tread.

29. In a type-writing machine, the combination of an upright elongated fulcrum, a member with an upright elongated tread that has a rocking movement on said fulcrum, a key connected to said member, and a type-bar operatively connected to said member.

30. In a type writing machine, the combination of an upright elongated fulcrum, a key-lever with an upright elongated tread that has a rocking movement on said fulcrum, a sublever actuated by said key-lever, and a type-bar operatively connected to said sublever.

31. In a type-writing machine, the combination of a series of type-bars and a series of key-operated bell-cranks connected thereto and having fulcrum-arms; the fulcrum-arms of said bell-cranks having elongated treads; and a fulcrum-plate whereon said treads have a rocker motion.

32. In a type-writing machine, the combination of a series of type-bars and a series of key-bearing bell-cranks connected thereto and having fulcrum-arms; the fulcrum-arms of said bell-cranks having elongated treads; and a fulcrum-plate whereon said treads have a rocker motion.

33. In a front-strike writing-machine, the combination of a series of rearwardly-striking type-bars; a series of bell-cranks comprising forwardly-extending key-bearing arms and angular arms, the latter being connected to said type-bars; the points of connection of said angular arms to said type-bars moving forwardly and rearwardly, and said bell-cranks having elongated treads; and a fulcrum-plate along which said treads have a rocker motion.

34. The combination with a type-bar of a three-arm lever, one arm of said lever bearing a key, another arm thereof being connected to said type-bar, and a third arm thereof having an elongated tread; and a bearing member along which said tread has a rocker motion and a change of fulcrum during the rocking motion.

35. In a front-strike writing-machine, the combination of a series of rearwardly-striking type-bars, a series of key-bearing levers extending forwardly beneath the type-bars, upwardly-extending arms on said key-levers, downwardly-extending arms also on said key-levers, connections between one set of said arms and said type-bars, elongated treads on the other set of said arms, and a support along which said treads have a rocker motion.

36. In a type-writing machine, the combination of a series of type-bars and a series of key-operated bell-cranks connected thereto; the fulcrum-arms of said bell-cranks having elongated treads; a fulcrum-plate whereon said treads have a rocker motion; and means for preventing said treads from becoming displaced longitudinally.

37. In a type-writing machine, the combination of a series of type-bars; a series of key-bearing bell-cranks connected thereto; the fulcrum-arms of said bell-cranks having elongated treads, a fulcrum-plate whereon said treads have a rocker motion, said fulcrum-plate being arranged on edge, and means for preventing longitudinal displacement of said treads.

38. In a front-strike writing-machine, the combination of a series of rearwardly-striking type-bars; a series of T-shaped levers comprising forwardly-extending key-bearing arms, upwardly-extending arms connected to said type-bars, and downwardly-extending-arms having elongated treads; means for preventing vertical displacement of said downwardly-extending arms; and a fixed fulcrum-plate upon which the latter arms have a rocker motion.

39. The combination with a type-bar, of a T-shaped key-lever; connections between said type-bar and one arm of said key-lever, said connections comprising a link, a key carried by another arm of said lever, and a bearing for the third arm of said lever which affords a change of fulcrum during the depression of the key-lever.

810,361. HYDROMETER TEST-JAR. FRANCIS STORR, Maywood N. J. Filed Apr. 24, 1905. Serial No. 257,205.

Claim.—1. A device of the character described, comprising integral communicating tubes, and a supporting lug or extension integral with the lower inner wall of one of said tubes.

2. A device of the character described, comprising a primary tube, an auxiliary tube parallel and integral with said primary tube, said auxiliary tube of less diameter than said primary tube, and a supporting lug or extension formed integral upon the lower inner wall of said auxiliary tube.

3. A device of the character described, comprising a primary, transparent tube, an auxiliary, transparent tube parallel and integral with said primary tube, said auxiliary tube being provided with a constricted portion, and an inwardly-extending lug or extension formed upon said constricted portion.

4. A device of the character described, comprising integral, parallel tubes, one of said tubes being provided with a constricted portion, and an inwardly-projecting lug or extension formed upon the inner wall of said constricted portion.

5. A device of the character described, comprising a primary tube, an auxiliary tube parallel and integrally connected at its bottom to the lower portion of said primary tube, said auxiliary tube of less diameter than said primary tube, said auxiliary tube being provided with a constricted portion near its lower end, and an inwardly-extending lug or extension formed upon the inner wall of said constricted portion of the auxiliary tube.

6. A device of the character described, comprising integral tubes, a constricted portion formed upon one of said tubes, and article-supporting means formed upon the inner wall of the constricted portion of said tube.

7. A hydrometer test-jar comprising two hollow receptacles in direct communication with each other, one of said tubes being smaller than the other, the larger of said tubes arranged to receive a hydrometer, and the smaller of said tubes arranged to loosely receive a thermometer, the lower portion of said tube being constricted and having inwardly-extending lugs made integral with the tube, said lugs arranged to support the thermometer in said tube.

810,362. STREET-CLEANING APPARATUS. NAPOLEON ST. PETER, Jr., Fairfield, Me., assignor of two-thirds to David King, Fairfield, Me., and Joseph Carlveau, Waterville, Me. Filed Mar. 2, 1904. Serial No. 196,186.

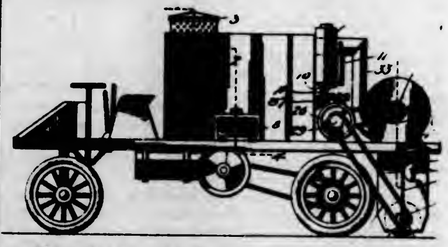

Claim.—In a street-cleaning device, a supporting-frame, a hood depending from the frame and formed with vertical slots and extending at one side beyond the frame, a brush-shaft vertically movable in said slots and having brushes, a second shaft extending through the upper portion of said hood and having segments, chains secured to said segments and connected with said brush-shaft, and a handle-lever fixed to one of the segments for operating the shaft, substantially as specified.

810,363. MATCH. ADOLF SWOBODA, Vienna, Austria-Hungary, assignor of one-half to Walter Bekmayer, Modling, near Vienna, Austria-Hungary. Filed July 12, 1905. Serial No. 269,422.

Claim.—1. The composition of matter consisting of powdered cork, iron minium, flour and water substantially as described and for the purpose specified.

2. The herein-described composition of matter as additional matter to igniting compounds for matches of all kinds consisting of three parts of weight of powdered cork, fifteen parts of weight of iron minium, twenty-three parts of weight of flour and forty parts of weight of water, substantially as described.

3. The herein-described composition of matter consisting of powdered cork, iron minium, flour and water in combination with an igniting compound for matches consisting of: fifty-seven parts of weight of chlorate of potassium, seven parts of weight of red chromate of potassium, seven parts of weight of amorphous phosphorus, fifteen parts of weight of powdered glass, thirty parts of weight of gum-arabic and forty parts of weight of water, substantially as described.

810,364. METHOD OF SAVING METAL VALUES FROM SLAG. CHARLES M. ALLEN, Lolo, Mont. Filed Sept. 1, 1904. Serial No. 223,994.

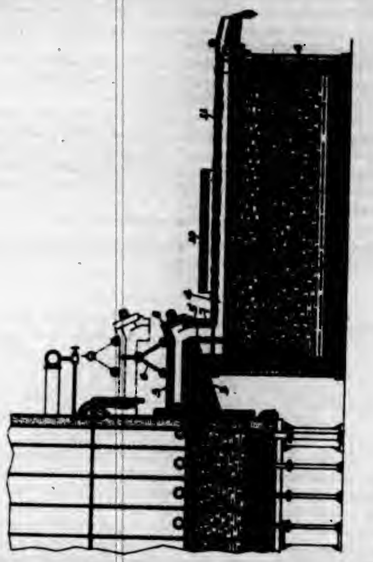

Claim.—1. The method of saving metal values from slags, which consists in withdrawing the slag and matte from beneath the surface of the molten bath, thereby trapping the blast, and permitting them to overflow from a furnace-spout into a forehearth or separating-chamber, and conserving the original heat of the matte and slag by protecting them from the chilling effect of air during their flow into the forehearth or separating-chamber; substantially as described.

2. The method of saving metal values from slags, which consists in withdrawing the slag and matte from beneath the surface of the molten bath, thereby trapping the blast, and permitting them to overflow from a furnace-spout into a forehearth or separating-chamber, and conserving the original heat of the matte and slag by covering them throughout their entire transit into the forehearth; substantially as described.

3. The method of saving metal values from slags, which consists in withdrawing the slag and matte from beneath the surface of the molten bath, thereby trapping the blast, and permitting them to overflow from a furnace-spout into a forehearth or separating-chamber, and conserving the original heat of the matte and slag by covering them with heat-radiating surfaces throughout their entire transit into the forehearth; substantially as described.

4. The method of saving metal values from slags, which consists in withdrawing the slag and matte from beneath the surface of the molten bath, thereby trapping the blast, and permitting them to overflow from a furnace-spout into a forehearth or separating-chamber, and conserving the original heat of the matte and slag by covering them with a practically air-tight conduit which extends around the course of the falling stream of slag, and into the slag-covering of the forehearth; substantially as described.

810,365. PIPE-WRENCH. HERBERT C. BARLOW, Goldendale, Wash. Filed June 29, 1905. Serial No. 267,482.

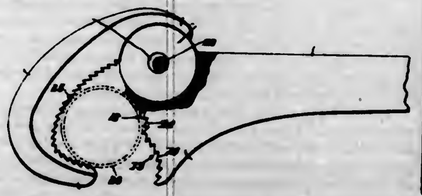

Claim.—In a wrench, a stock having a stationary jaw at one end with two or more concaved surfaces having transverse spaced teeth, and with semicircular spaced ears having a transverse pin disposed at one side of the center thereof, a movable jaw member having a hook at one end and with spaced transverse teeth in its inner face and a semicircular member bearing between said ears and with a transverse aperture for receiving said pin and larger than the same, said movable jaw having lateral shoulders bearing constantly upon said spaced ears at the side opposite from said terminal hook.

810,366. ROTARY EXPLOSION-ENGINE. PETER BARTOLETTI, Brownsville, Pa. Filed Feb. 3, 1905. Serial No. 243,998.

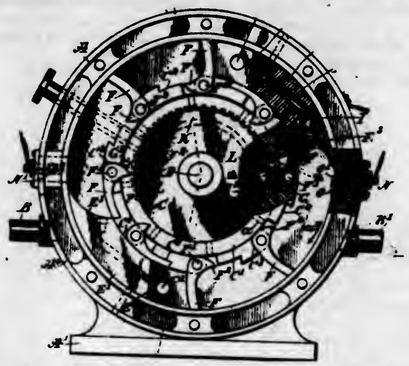

Claim.—1. A rotary explosion-engine comprising a cylinder, a piston mounted to turn concentrically therein, an abutment in the cylinder, between the peripheral face of the piston and the inner face of the cylinder, piston-heads fulcrumed on the said piston and adapted to fold into recesses in the said peripheral face of the piston, means for opening the piston-heads after passing the abutment, an air admission in the abutment, opening into the cylinder at the forward end of the abutment, and a gas-supply chest held in the cylinder, within the rim of the said piston, somewhat in advance of the said abutment, the said piston having ports adapted to register with the said chest.

2. A rotary explosion-engine comprising a cylinder, a piston mounted to turn concentrically therein, an abutment in the cylinder, between the peripheral face of the piston and the inner face of the cylinder, piston-heads fulcrumed on the said piston and adapted to fold into recesses in the said peripheral face of the piston, means for opening the piston-heads after passing the abutment, an air admission in the abutment, opening into the cylinder at the forward end of the abutment, and a gas-supply chest held in the cylinder, within the rim of the said piston, somewhat in advance of the said abutment, the said piston having ports adapted to register with the said chest, the ports being located in the rear of the pivotal ends of the piston-heads.

3. A rotary explosion-engine comprising a cylinder, a piston mounted to turn concentrically therein, an abutment in the cylinder, between the peripheral face of the piston and the inner face of the cylinder, piston-heads fulcrumed on the said piston and adapted to fold into recesses in the said peripheral face of the piston, means for opening the piston-heads after passing the abutment, an air admission in the abutment, opening into the cylinder at the forward end of the abutment, a gas-supply chest held in the cylinder, within the rim of the said piston, somewhat in advance of the said abutment, the said piston having ports adapted to register with the said chest, and an electric igniting device extending into the cylinder, in advance of the said abutment, the said igniting device having contacts adapted to be closed by the said piston-heads.

4. A rotary explosion-engine comprising a cylinder, a piston mounted to turn concentrically therein, an abutment in the cylinder, between the peripheral face of the piston and the inner face of the cylinder, piston-heads fulcrumed on the said piston and adapted to fold into recesses in the said peripheral face of the piston, means for opening the piston-heads after passing the abutment, an air admission in the abutment, opening into the cylinder at the forward end of the abutment, a gas-supply chest held in the cylinder, within the rim of the said piston, somewhat in advance of the said abutment, the said piston having ports adapted to register with the said chest, and check-valves for the said air admission and the said gas-supply chest.

8. A rotary explosion-engine comprising a cylinder provided with a plurality of spaced abutments, a piston mounted to turn continuously in the said cylinder and provided with piston-heads fluted on the rim of the piston and adapted to fold into recesses in the rim on coming in contact with the abutments, means for opening the piston-heads on leaving the abutments, an igniting device in front of each abutment, an exhaust in the rear of each abutment, a valved air admission in each abutment, and a gas-supply chest in the cylinder, provided with spaced connected chambers arranged in advance of the abutments, the said piston having ports in the rear of the piston-heads and adapted to register with the said chambers.

810,867. LAMP-JACK FOR TELEPHONE-SWITCHBOARDS. SIDNEY A. REYLAND, Elyria, Ohio, assignor to The Dean Electric Company, Elyria, Ohio, a Corporation of Ohio. Filed Nov. 26, 1904. Serial No. 234,302.

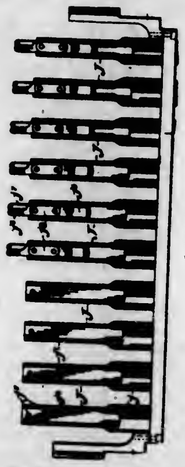

Claim.—1. A lamp-jack for telephone-switchboards formed of one piece of metal, having its front end inclosed in tubular form for a sufficient space to inclose the bulb of an incandescent lamp, and having its rear end extended and formed into a straight-sided channel, with contact-springs and interposed insulation fitted to and rigidly held within said channel, substantially as described.

2. A lamp-jack for telephone-switchboards formed from a single piece of metal comprising a tubular inclosing front portion, and an extended rear portion formed into a straight-sided channel, said tube and channel being lined with insulating material, substantially as described.

3. A lamp-jack strip for telephone-switchboards comprising a front bar or support of metal having a series of openings distributed along its length, transverse terminal securing members for said bar, and a series of metal jack-tubes having their front ends secured in the openings in the bar and their rear ends extended to receive and support contact-springs, substantially as described.

4. A lamp-jack strip for telephone-switchboards comprising a front bar or support of metal having a series of openings distributed along its length, transverse terminal securing members for said bar, and a series of metal jack-tubes having the front ends secured in the openings in the bar and their rear ends extended to receive and support contact-springs, together with insulating-linings for said tubes extending between the jack-contacts and the sides of the tube, and between the lamp-contacts and the same when a lamp is inserted, substantially as described.

5. A lamp-strip for telephone-switchboards comprising a metal front bar or support, metal jack-frames supported thereon by their front ends, contact-springs supported upon said frames, and a lamp in each jack having its terminals in contact with said springs, the front end of each jack-frame being formed as a tube of sufficient length to inclose the bulb of the lamp and so prevent cross-illumination, substantially as described.

6. In a telephone-switchboard, a tubular lamp-jack and a holding plate or strip therefor, an insulating-lining for said jack, and a circuit-finder comprising a holder frictionally supported on the jack, and a translucent or transparent body carried by said holder, substantially as described.

7. In a telephone-switchboard, a lamp-jack composed of a metal tube adapted to receive and inclose the bulb of an incandescent lamp, and having one side extended and carrying contact-springs for the lamp, substantially as described.

8. In a jack-strip for switchboards, an escutcheon-plate covering the openings of one or more jacks and pivoted to be turned so as to expose the same, substantially as described.

9. In a lamp-jack strip for telephone-switchboards, a front strip having jack-openings therein, an escutcheon-plate pivoted between and with its ends covering two of said openings in normal position, but adapted to be turned to expose the openings, and translucent windows or number-plates in said escutcheon, substantially as described.

810,868. EYEGLASSES. WALTER B. CAWOOD, Toledo, Ohio. Filed Jan. 30, 1905. Serial No. 243,285.

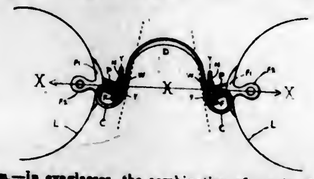

Claim.—In eyeglasses, the combination of a pair of lenses, a pair of lens-holders comprising flanges F′ and F², lens-posts inclined downwardly from flanges F′, side flanges F united at right angle to the inclined lens-posts, a nose-guard and a flexible metallic bridge-spring united intermediate of the post-flanges the bridge-spring comprising sectional portions consisting of an arch or dome D having extended portions or plates W said plates located beyond the post-flanges and parallel thereto, vertical convoluted portions C forming a direct continuation of plates W said convolutions looped in the vertical plane whereby the glasses may be spread apart longitudinally when applied to the nose of the wearer, the aforesaid bridge-spring united to the post-flanges by a yoke-plate and neck said yoke-plate seated intermediate of the post-flanges in the vertical plane the neck portion extending over the top of the post-flanges thence downward parallel with the flange and cojoining the aforesaid vertical convolution of the bridge-spring, the said metallic convolution adapted to enter the intermediate channel of the nose-guard substantially as and for the purpose specified.

810,869. KNOCKDOWN CRATE. JAMES M. DIVAN, Freeport, Ill., assignor of one-half to William Bolton, Montrose, Mo. Filed June 2, 1905. Serial No. 263,492.

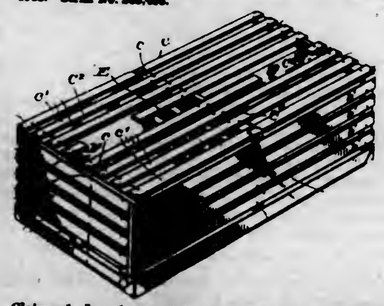

Claim.—1. In a device of the class described, the combination with a suitable bottom, foldable sides and top sections, of foldable end sections hinged to the ends of the bottom and arranged to swing down upon the same, and a central partition having a movable pivot connection with the bottom, whereby it can be erected at the center of the bottom, or folded down at the center of the same.

2. In a device of the class described, the combination with a suitable bottom, foldable sides and top sections, of foldable end sections hinged to the ends of the bottom and arranged to swing down upon the same, a central partition, projecting pins at the lower corners thereof, plates having slots supported by the bottom with which the pins engage, said slots extending substantially from the center of the bottom toward one end thereof, a distance equal to substantially half the height of the partition, whereby the partition can be erected at the center of the bottom, with the pins at one end of the slot, or folded down on the center of the bottom with the pins at the other ends of the slots.

3. In a device of the class described, the combination with a bottom, ends hinged at the ends thereof, sides hinged at the edges thereof and top sections hinged to the sides, of hooks at the free corners of the top sections, and corresponding hooks arranged in pairs at the centers of the tops of the ends, said hooks being constructed and arranged to engage mutually to hold the crate in its erected position.

4. In a device of the class described, the combination with a bottom, sides hinged thereto, top sections hinged to the side sections, and ends hinged to the ends of the bottom, of a partition pivoted to the bottom and arranged to swing down at the center thereof, an upward projection on said partition and a rotatable button on said projection arranged to engage with the adjacent edges of the top sections to look the crate in a closed position.

810,870. TIME-RECORDING APPARATUS. WILBUR I. POLLETT, Summit, N. J. Filed Nov. 6, 1905. Serial No. 285,962.

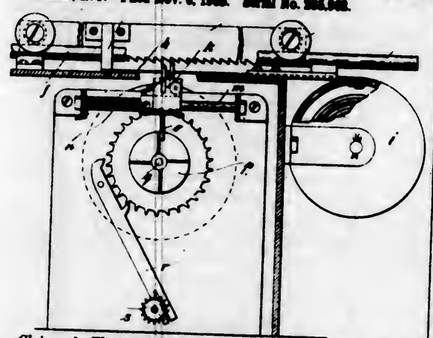

Claim.—1. Workman's time-recording apparatus comprising a card-holder and time-printing mechanism one bodily movable relatively to the other in the direction only of the maximum dimension of the card-holder, and a time-controlled motor progressively actuating such movable member automatically from one extreme position to the other extreme position correspondingly with the lapse of time to progressively bring to the impression-point consecutive portions of the printing-surface of a card representing a work period of a day.

2. Workman's time-recording apparatus comprising the combination of an impression device and a card-holder bodily movable relatively thereto in the direction only of the maximum dimension of the card-holder, and a time-controlled motor progressively actuating the card-holder automatically from one extreme position to the other extreme position correspondingly with the lapse of time to progressively bring to the impression-point consecutive portions of the printing-surface of a card representing a work period of a day.

3. Workman's time-recording apparatus comprising the combination of impression devices and a card-holder, one of said members being movable bodily relatively to the other in one straight line only from one extreme position to the other extreme position, and a time-controlled motor automatically actuating such movable member step by step corresponding with equal subdivisions of an hour to consecutively bring to the impression-point successive equally-spaced portions of the printing-surface of a card representing a work period of a day.

4. Workman's time-recording apparatus comprising the combination of impression devices and a card-holder, one of said members being bodily movable relatively to the other in the direction of the maximum dimension of the card-holder from one extreme position to the other extreme position, and time-controlled means automatically actuating said member step by step corresponding with equal subdivisions of an hour to consecutively bring to the impression-point successively equally-spaced portions of the printing-surface of a card representing a work period of a day.

810,871. ABSORBENT BANDAGE. WILLARD R. GREEN, Muscatine, Iowa. Filed Dec. 22, 1905. Serial No. 293,193.

Claim.—1. An absorbent material for surgical purposes, comprising a mass of grass of strand or ribbon like form treated to render the same curly, and mingled together, and a supporting member therefor.

2. An absorbent material for surgical purposes, comprising a mass of heat-treated curly grass intermingled with fiber, such for instance as a wood or vegetable fiber, and supporting means therefor.

810,872. STEERING-KNUCKLE FOR VEHICLES. JACKSON O. HAAS, Pottsville, Pa. Original application filed Oct. 21, 1904, Serial No. 229,461. Divided and this application filed Feb. 16, 1905. Serial No. 245,996.

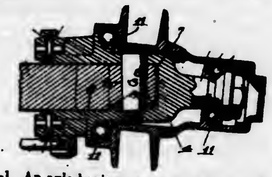

Claim.—1. An axle having an approximately cylindrical head, a steering-knuckle having a recess pivotally engaging said head, the lower wall of said recess constituting a flange concentric with the pivot, and a hook-shaped member upon the axle engaging said flange.

2. An axle having a forwardly-curved terminal end and provided with an approximately cylindrical head, in combination with a steering-knuckle having a recess receiving and pivotally engaging said head.

3. The combination with an axle terminating in an approximately cylindrical head, of a steering-knuckle pivotally engaging said head and provided with bosses upon its under side, and a bell-crank lever constituting a steering-arm and having apertures registering with said bosses and suitably connected therewith.

4. The combination with an axle having lateral extensions constituting a curved track and provided with an approximately cylindrical head, and a steering-knuckle having a flaring recess engaging said head pivotally and concentric with the curved track; the upper and lower walls of said recess constituting housings; and members mounted for rotation in said housings and engaging the curved track.

810,873. CEMENTING-MACHINE. WILLIAM F. LAUTENSCHLAGER, Cincinnati, Ohio, assignor of one-half to the Krippendorf-Dittmann Company, Cincinnati, Ohio, a Corporation. Filed Apr. 26, 1905. Serial No. 257,496.

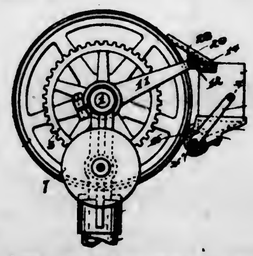

Claim.—1. A cementing-machine comprising a frame, a hollow spreading-roll journaled thereon, a driving-shaft journaled on said frame and extending into said hollow roll, means for rotating said roll, a cement-reservoir pivotally supported on said frame, having a distributing portion bearing against the surface of the roll, and a hollow cylindrical valve seated within said reservoir, and means for rotating said valve to adjust the delivery of cement, substantially as described.

2. A cementing-machine comprising a frame, a cement-supplying roll journaled upon said frame, driving mechanism comprising a

stud-shaft, provided with a fixed pulley and pinion supported at opposite ends, a shaft to which said cement-roll is fixed and journaled, a gear mounted on said shaft and fixed to said cement-roll and receiving motion from said pinion, said gear and pinion being mounted within the rim of the cement-roll, a cement-reservoir pivotally supported on said frame and detachable therefrom, its distributing portion being held by gravity against the surface of the roll, a valve seated within said reservoir, and a wiper detachably supported on the frame, having a bearing upon the periphery of the roll and projecting into the reservoir, substantially as described.

3. A cementing-machine comprising a frame, a cement-supplying roll journaled upon said frame, being provided with a glazed surface, means for driving said roll, a cement-reservoir detachably supported on said frame, provided with a roll-bearing surface held by gravity against the roll, a valve seated within said reservoir at each roll-bearing portion of the reservoir, and adapted to form a seal therewith and with the parts so arranged that the valve-opening is greater than the thickness of the cement applied to the surface of the roll, a wiper detachably supported on the frame, having a bearing upon the periphery of the roll and projecting into the reservoir, substantially as described.

4. A cementing-machine comprising a frame, a cement-supplying roll journaled upon said frame, means for driving said roll, a cement-reservoir detachably supported on said frame, and provided with a roll-bearing surface held by gravity against the roll, a valve seated within said reservoir at each roll-bearing portion of the reservoir, and adapted to form a seal therewith and with the parts so arranged that the valve-opening is greater than the thickness of the cement applied to the surface of the roll, a wiper detachably supported on the frame, having a bearing upon the periphery of the roll and projecting into the reservoir, substantially as described.

5. A cementing-machine comprising a frame, a cement-supplying roll journaled upon said frame, means for driving said roll, a cement-reservoir detachably supported on said frame, provided with a roll-bearing surface held by gravity against said roll, said bearing surface being provided with surplus cement receiving and distributing channels leading to the mouth of the valve, a valve seated within said reservoir at each roll-bearing portion of the reservoir, and adapted to form a seal therewith and with the parts so arranged that the valve-opening is greater than the thickness of the cement applied to the surface of the roll, and a wiper detachably supported on the frame, having a bearing upon the periphery of the roll and projecting into the reservoir, substantially as described.

6. In a cementing-machine, a cementing-roll provided with a glazed surface, a reservoir having an outlet-valve engaging against the roll and adapted to supply a coating of cement, and a wiper engaging said roll, substantially as described.

7. In a cementing-machine, a cementing-roll having a glazed surface, a reservoir provided with a cylindrical valve-outlet bearing against said roll, means for regulating said valve, and a wiper engaging said roll, substantially as described.

810,374. DOUBLE-SCREW SWIVEL LIFTING-JACK. WILLIAM C. MOSSER, Houston, Tex. Filed Nov. 8, 1904. Serial No. 231,961.

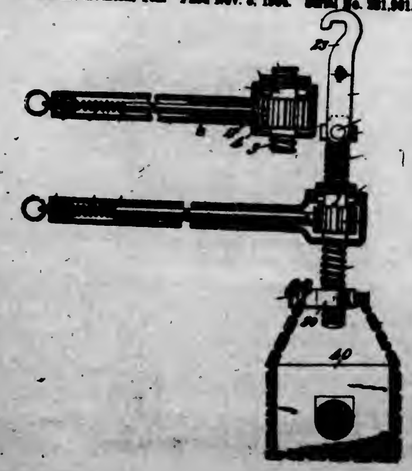

Claim.—1. In a lifting-jack, and in combination, a rod or shaft having a ratchet-wheel rigidly attached at its center, and having screw-threads of opposite pitch toward its ends, a hollow handle consisting of a box portion inclosing said ratchet-wheel and pawl and a handle portion, and a rod extending to the end of the handle, by which said pawl may be operated, and a nut at each end of the shaft, having threads corresponding with the threads of the shaft, each nut having means for attachment to external bodies.

2. In a lifting-jack, the combination of a screw-shaft having a fixed ratchet on its central portion and screw-threads of opposite pitch in the direction of its ends, a hollow handle having a box portion surrounding said ratchet, said box having a threaded cover and surrounding the ratchet-wheel, a spring-pressed pawl in the hollow handle and box and extending to the end of said handle, said pawl engaging said ratchet-wheel, and nuts with threads of opposite pitch at the opposite ends of said screw-shaft, each nut provided with means for attachment to an outside body.

810,375. GLASS-MANUFACTURING APPARATUS. MCCLELLAND MYERS, Mexico, Pa., assignor of one-half to John P. Hitchs, Indiana, Pa. Filed Feb. 17, 1904. Serial No. 193,976.

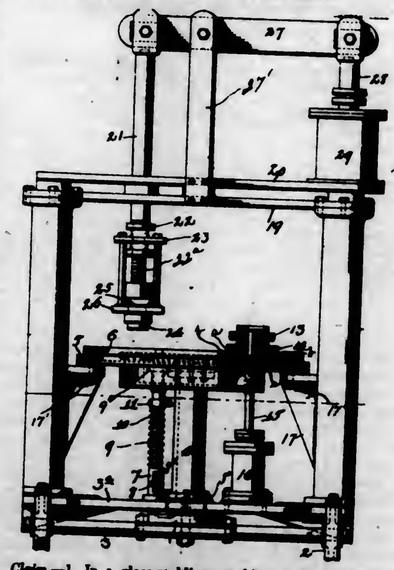

Claim.—1. In a glass-molding machine, a base, a stationary table having an aperture supported above the base, a table rotatably mounted on the stationary table, a sleeve on the base, said sleeve being provided with a slot, a latch having one end passing through the aperture of the stationary table, and normally engaging the rotatable table to hold the same against movement, the opposite end of the latch fitting within the sleeve, a collar on the latch, and a spring embracing the latch and contacting with the collar and sleeve to hold the latch in its normal position, and a treadle secured to the latch and extending through the slot of the sleeve.

2. In a glass-molding machine, a suitable truck, a table mounted and rotatable thereon, molds carried by the table, a presser-head, a rod for the presser-head, a nut threaded on the rod of the presser-head, a yoke connecting the presser-head to the nut on the rod thereof.

3. In a glass-molding machine, a suitable truck, a table mounted and rotatable thereon, molds carried by the table, means for arresting the table holding it at predetermined intervals, a presser-head operated thereabove in conjunction with the molds, a rod for the presser-head having a threaded lower end, a nut run on the threads thereof, a yoke connected to the nut, and to the presser-head.

4. In a glass-molding machine, a suitable truck, a table mounted and rotatable thereon, molds carried by the table, means for arresting the table holding it at predetermined intervals, a presser-head operated thereabove in conjunction with the molds, a rod for the presser-head having threaded lower ends, a nut run on the threads thereof, a yoke connected to the nut end to the presser-head, a lever suitably pivoted and connected to the upper end of the rod of the presser-head and means for oscillating the lever.

5. In a glass-molding machine, a suitable truck, a table mounted and rotatable thereon, the said table having a series of apertures and spring-pressed detent adapted to enter the apertures and arrest the table, molds carried by the table, a presser-head operating from above in conjunction with the mold, the said table being held by the detent with the molds successively under the said presser-head, an ejector carried by each mold and a piston-rod operated to lift the ejectors as they are successively brought into alinement with the said piston-rod.

6. In a glass-molding machine, a suitable truck, a table mounted and rotatable thereon, the said table having a series of apertures and spring-pressed detent adapted to enter the apertures and arrest the table, molds carried by the table, a presser-head operating from above in conjunction with the mold, the said table being held by the detent with the molds successively under the said presser-head, an ejector carried by each mold and a piston-rod operated to lift the ejectors as they are successively brought into alinement with the said piston-rod, a suitable rod for carrying the presser-head, a lever for operating the presser-head, a piston-rod for reciprocating the lever and a suitable cylinder and piston in conjunction with which the piston-rod operates.

7. In a glass-molding machine, a rotatably-mounted table, molds carried by the table, ejectors carried by the molds, and a piston-rod for operating the ejectors and means for holding the molds in alinement with the piston-rod.

8. In a glass-molding machine, a stationary table provided with an aperture, a table rotatably mounted thereon, molds carried by the rotatable table, ejectors for the molds adjusted to aline with the aperture of the stationary table, and a piston-rod passing through the aperture to engage the ejector for operating the same.

810,376. CASH INDICATOR AND RECORDER. JOHN H. MCCORMICK and JAMES D. MORRISON, Columbus, Ohio, assignors, by mesne assignments, to The International Register Company, Columbus, Ohio, a Corporation of Ohio. Filed Apr. 5, 1905. Serial No. 254,553.

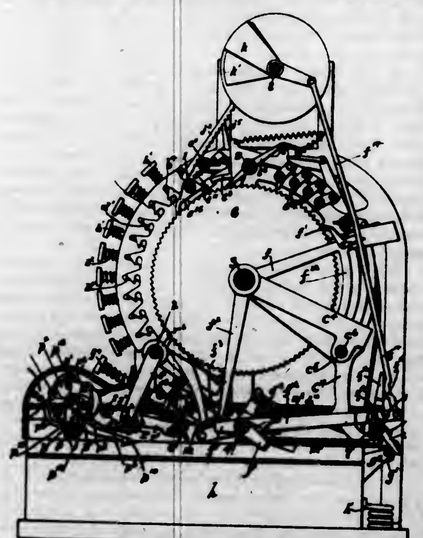

Claim.—1. In a cash-register, a keyboard having a series of keys arranged in groups, a series of registering-wheels also arranged in groups, each group comprising a wheel of different denomination corresponding to each group of keys, intermediate actuating devices common to all the registering-wheels and one for each denomination, each key of a series being adapted to unlock and determine the movement of the actuating device corresponding to said series, a movable part, such as a cash-drawer, adapted when released to operate said actuating devices, a pawl-lever for each registering-wheel, all the pawl-levers of one group being normally locked, and department-keys, each adapted to release the pawl-levers of one group and also the movable part, a series of printing-wheels also arranged in groups, one printing-wheel for each registering-wheel, said wheels being adapted to print on a common record-strip, and means as described for causing the printing-wheel of each registering-wheel actuated to contact with said recording-strip, substantially as specified.

2. In a cash-register, a keyboard, and a series of registering devices, each comprising a group of registering-wheels, intermediate actuating devices common to all the registering-levers, each of the keys in one group or series being adapted to unlock and determine the movement of one of said actuating devices, means whereby the registering-wheels of any series or group may be released so as to be actuated by the actuating devices, and printing-wheels also arranged in groups, one printing-wheel for each registering-wheel, and a recording-strip common to all the printing-wheels, and means as described for causing the printing-wheels corresponding to the registering-wheels operated to be brought in contact with the recording-strip so as to record the number registered on said wheels and each of them, substantially as specified.

3. The combination with a keyboard having keys arranged in groups or series, one group or series for each denomination, a series of printing-wheels also arranged in groups, each group comprising a wheel for each denomination represented on the keyboard, intermediate actuating devices, each of the keys of any series being adapted to unlock and determine the movement of the actuating device of said series, a lever connected to each of said printing-wheels and adapted when released to move with the actuating device of the denomination corresponding to said wheel, department-keys for releasing the levers of any group, a recording-strip common to all the printing-wheels, and means as described for bringing said recording-strip in contact with the wheels whose levers have been released when the actuating devices are operated, substantially as specified.

4. The combination with a keyboard, and keys arranged in groups representing different denominations, intermediate actuating devices, one for each group or series of keys, each key of said group or series being adapted to unlock and determine the position of its actuating device, a series of printing-wheels, one for each denomination represented by said keys, means as described for operating each of said printing-wheels by the movement of the actuating devices of the same denomination, and a recording-strip adjacent to said printing-wheels, and a moving part, such as a cash-drawer, adapted, by its opening and closing, to operate said actuating devices, and a connection from said moving part to the recording-strip whereby said strip is moved into contact with the printing-wheels operated by the actuating devices and advanced after said contact, substantially as specified.

5. In a cash-register, a keyboard having keys arranged in groups, intermediate actuating devices, one for each group, each key of each group being adapted to release and determine the movement of its actuating device, a movable part, such as a cash-drawer, adapted to operate all of said actuating devices when released, a series of printing-wheels also arranged in groups, each group constituting a department, each of which has a wheel corresponding to each series of keys, connections from each of said wheels to the actuating devices of corresponding denomination, a recording-strip mounted on movable rollers common to all the printing-wheels, releasing-keys for each department, and means as described for causing the recording-strip to contact with the printing-wheels of that department which has been released after the same have been moved by the actuating devices, substantially as specified.

6. In a cash-register, a series of registering devices each comprising registering-wheels of different denominations, a series of printing-wheels, one for each registering-wheel, means for normally locking each registering device including the printing-wheels, intermediate actuating devices, one corresponding to each denomination represented in the respective registering devices, and a keyboard having keys arranged in series, one series for each actuating device, said actuating device being common to all the registering devices, each key of each series being adapted to release and determine the movement of the actuating device of that series, a recording-strip common to all the registering devices, means for unlocking either of the registering devices to cause its registering and printing wheels to be simultaneously actuated by the actuating devices, a recording-strip common to all the printing-wheels and adapted to contact with those printing-wheels which have been released, and a type-bar adapted to contact with said recording-strip when some of said registering devices are released, and means for

withdrawing said type-bar from contact with said recording-strip when any registering device is actuated, substantially as specified.

7. In a cash-register, a series of cash-keys, and a series of normally inactive registering devices, a series of printing devices, one for each registering device, and special keys for said registering devices and said printing devices, said special keys being adapted when operated to put said registering and printing devices both into operative condition to register and record the amount indicated on said cash-keys, substantially as specified.

8. A series of cash-keys and a series of department-registering devices, a printing device for each registering device, intermediate actuating devices common to all the registering devices and printing devices, and special keys for simultaneously throwing into operative condition the registering and printing devices of each department, substantially as specified.

9. A series of department-registering devices and means for operating the same, a series of printing devices, one for each department and adapted to be operated simultaneously with the registering devices of said departments, and means for holding said registering and printing devices normally in an inoperative position, and special keys adapted to simultaneously release said printing and registering devices to cause them to act in unison from their common actuating devices, substantially as specified.

10. A series of department registering devices, and a series of printing devices, one for each depariment and adapted to print on a common recording-strip the amounts added on the respective registering devices, and means common to both series for operating the same.

11. A series of registering devices arranged in groups, and actuating-bars extending across all of said registering devices, movable keys for determining the movement of said actuating-bars, each of said bars representing a different denomination and having in each registering device a wheel corresponding thereto, engaging devices for said wheels actuated by said bars, printing-wheels, and connections from each of said engaging devices to a printing-wheel, a lock common to all the engaging devices of one group, and a special key for releasing said lock, and a connection from said key to its corresponding printing-wheels to cause the printing-wheels to be brought into operative position when the engaging devices are released, substantially as specified.

12. A series of cash-keys, and a series of printing-wheels, said printing-wheels being arranged in groups corresponding to departments, and intermediate actuating devices controlled by said cash-keys and adapted to operate said printing-wheels, said printing-wheels being adapted to print on a common record-strip, and special keys to throw said printing-wheels in an operative position to cause them to act on said common printing-strip, substantially as specified.

13. A series of cash-keys, and a series of printing-wheels arranged in groups, intermediate actuating devices to operate said printing-wheels, said actuating devices being controlled by the cash-keys, means for holding said printing-wheels in a normally inactive position, and special keys, one for each group, to bring said printing-wheels into an operative position, and interlocking devices connected with said special keys to lock all the other printing devices when one of said special keys is operated, substantially as specified.

14. A series of printing-wheels, cash-keys adapted through intermediate actuating devices to determine the movement of said printing-wheels, and special keys for bringing said printing devices into operative position, a cash-drawer adapted by its movement to operate said printing-wheels and a change-key adapted to unlock said drawer and at the same time lock all of said printing-wheels, a printing device connected to said change-key adapted to be brought into contact with a record-strip common to all of said printing devices when the drawer is opened by said change-key, substantially as specified.

15. A cash-register having registering devices, and printing-wheels arranged in groups, and adapted to print on a common record-strip, a series of cash-keys to control the actuating devices for said printing-wheels, means common to said registering devices and the printing-wheels to actuate the same simultaneously, means for feeding said printing-strip after the printing-wheels are operated against the same, said printing-strip being wider than the total width of said printing-wheels to form a blank space opposite the impression from either of said printing-wheels, substantially as specified.

16. The combination with a series of cash-keys and a series of printing-wheels arranged in groups, actuating devices controlled by said cash-keys and adapted to operate said printing-wheels, of a roller-frame containing a series of rollers extending across the printing-wheels of all the groups, and supporting a record-strip extending across said printing-wheels, and an inking-roller common to all of said printing-wheels and adjacent said frame, substantially as specified.

17. The combination with a series of cash-keys, of a series of printing-wheels arranged in groups, actuating devices controlled by said cash-keys and adapted to operate said printing-wheels, a pivoted frame having rollers carrying a printing-strip, an inclosing casing having an opening, one of said rollers being an impression-roller and arranged normally opposite said opening in the inclosing casing, special keys for bringing all the printing-wheels of one set or group into operative position, and means as described for oscillating said pivoted frame to carry the impression-roller opposite said printing-wheel and causing a contact between said impression-roller and printing-wheel, substantially as specified.

18. The combination with the printing-wheels and means for revolving the same, a pivoted frame having rollers supporting a record-strip, swinging arms for supporting said pivoted frame, means as described for revolving said frame to bring one of said rollers opposite said printing-wheels and for causing a movement of said frame toward said wheels by oscillating the swinging arms, substantially as specified.

19. The combination with the printing-wheels of a pivoted frame supported in swinging arms, supporting-rollers in said frame, and an impression-roller between said supporting-rollers, a printing-strip connected at each end to said supporting-rollers and passing over said impression-roller, means as described for turning said frame to bring said impression-roller opposite said printing-wheels and for moving said swinging arms to cause the strip to contact with said printing-wheels, substantially as specified.

20. The combination with the printing-wheels, rollers supporting a record-strip and an impression-roller over which said strip passes, a pivoted frame in which said rollers are journaled, swinging arms supporting said frame, means for turning said frame and oscillating said arms, and a ratchet device operated by the movement of said frame to partially revolve said rollers as said frame is moved, substantially as specified.

21. In a machine for registering and indicating the amounts of certain classes of transactions, such as cash sales, and for printing and indicating the amount of transactions of other classes, the combination of the registering mechanism, the indicating mechanism, and means for throwing or maintaining the registering mechanism out of operation when it is desired to print and indicate the amount of a transaction which is not to be registered upon the registering mechanism.

22. In a machine for registering the amounts of transactions of a given class, such as cash sales, and for recording and indicating the amounts of such transactions and also the amounts of other special classes of transactions, the combination with the operating mechanism or actuating devices of the machine, of a register positively actuated thereby to register the amounts of all cash transactions, printing and indicating devices also actuated thereby to print and indicate the amounts of all transactions of all classes, and means for rendering the registering mechanism inoperative at will whenever a transaction is to be recorded and indicated but not added upon the registering mechanism.

23. In a machine for registering the amounts of transactions of a given class, such as cash sales, and for recording and indicating the amounts of such transactions and also the amounts of other special classes of transactions, the combination, with the operating mechanism or actuating devices of the machine, of a register actuated thereby to register the amounts of all cash transactions, printing and indicating devices also actuated thereby to print and indicate the amount of all transactions of all classes, special indicating devices for indicating the character of the various transactions, and means for maintaining the registering mechanism out of operation at will when a transaction is to be recorded and indicated but not added upon the registering mechanism.

24. In a machine for registering the amounts of certain classes of transactions, such as cash sales, and for recording the amounts of transactions of other classes, the combination, with the operating mechanism, of a register adapted to be operated thereby for registering the amounts of cash transactions, printing means for printing the amounts of special transactions, value-keys for controlling the operation of the registering and printing mechanisms, a special key, means for preventing the operation of the operating mechanism until the special key is depressed, and means for maintaining the register out of operation when the special key is depressed.

25. In a machine for registering the amounts of certain classes of transactions, such as cash sales, and for recording the amounts of transactions of other classes, the combination with the operating mechanism, of a register adapted to be operated thereby for registering the amounts of cash transactions, printing means adapted to record the amounts of transactions not to be added on said register, value-keys for controlling the operation of the register and the printing means, a plurality of special keys representing different characters of transactions, means for preventing the operation of the operating devices until one of said special keys is depressed, and means for maintaining the register out of operation when any one of the said keys that does not represent cash transactions is depressed and the machine is then operated.

26. In a machine for registering and indicating the amounts of certain classes of transactions, such as cash sales, and for recording and indicating the amounts of transactions of other classes, the combination with the operating mechanism, of a register adapted to be operated thereby for registering the amounts of cash transactions, indicating devices for indicating the amounts of all transactions, printing means adapted to record the amounts of transactions not to be added upon the register, value-keys for controlling the operation of the register, the indicating devices and the printing means, a plurality of special keys representing different characters of transactions, means for preventing the operation of the operating devices until one of the special keys is depressed, and means for maintaining the register out of operation when any one of the said keys that does not represent cash transactions is depressed and the machine is then operated.

27. In a machine for registering and indicating the amounts of certain classes of transactions, such as cash sales and for recording and indicating the amounts of transactions of other classes, the combination, with the operating mechanism, of a register adapted to be operated thereby for registering the amounts of cash transactions, indicating devices adapted to be operated thereby for indicating all transactions, printing means adapted to record the amounts of transactions not to be added on the register, value-keys for controlling the operation of the register, the indicating devices and the printing means, a plurality of special keys representing different characters of transactions, means for indicating the character of the transaction made, means for preventing the operation of the operating devices until one of the said special keys is depressed, and means for maintaining the register out of operation when any one of the said keys that does not represent cash transactions is depressed and the machine is then operated.

28. In a registering-machine having operating mechanism, a register that is adapted to be operated by said mechanism, an indicating and a printing device, said devices being operated by said mechanism to indicate and record both the value and the character of every transaction, and means for rendering the register inoperative when a transaction is to be indicated and recorded that is not to be added on the register.

29. In a machine for indicating and recording the values and the character of transactions of various kinds, an operating mechanism that is normally held against movement, a special key representing "cash" transactions, a register that is adapted to be operated when the said special key is depressed and the operating mechanism released, a second special key representing transactions other than "cash" sales, means whereby the said register is thrown or maintained out of operative condition when the said second special key is depressed, means controlled by the latter key for releasing the operating mechanism, and a recording device for taking a permanent record of all transactions of all kinds.

30. In a cash-register, a plurality of registers, an operating mechanism therefor, means whereby any one of said registers may be caused to be operated by said mechanism, a bank of keys adapted to control any register and a recording device adapted to produce a record showing which of the said registers has been operated.

31. In a cash-register, a plurality of registers, an operating mechanism therefor, means whereby any one of said registers may be caused to be operated to the exclusion of all the other registers, a bank of keys adapted to control any register and a recording device adapted to produce a record showing which of the said registers has been operated.

32. In a cash-register, a printing device, a value-key and a department-key, and means requiring the operation of both of said keys before said printing device can be operated.

33. In a cash-register, a registering device, a printer, operating mechanism therefor, a series of keys for determining the movements of said registering and printing mechanism, means for rendering the said registering device inoperative with relation to the said mechanism, a special key for controlling said means, and interlocking mechanism to prevent the simultaneous depression of the cash and special keys.

34. In a cash-register, a registering device, operating mechanism therefor, a series of value-keys for determining the movements of said mechanism, means for throwing or maintaining the said registering device out of operative relation with the said mechanism a special key for controlling said means, interlocking mechanism to prevent the simultaneous depression of the value and the special keys, and a recording device operated by said mechanism and adapted to show that the special key has been depressed.

35. In a cash-register, a transverse shaft, register-operating mechanisms mounted on said shaft, keys for determining the extent of movement of said operating mechanisms, means for normally locking said mechanisms against operation, a plurality of special keys, means operated by either of said special keys for unlocking said mechanisms, a recording device and means controlled by said special keys for causing said recording device to show the character of the transaction.

36. In a cash-register, a series of special keys, an operating mechanism, means actuated by said keys for releasing said mechanism, a recording device adapted to show which of said keys has been used to release the mechanism, and means to prevent the simultaneous operation of two or more of said keys.

37. In a cash-register, a registering device, an operating mechanism therefor, a depressible key, means whereby the register is actuated after said key is depressed and when the said mechanism is operated, a second depressible key, means for throwing or maintaining said registering device out of operation when said second key is depressed, and a recording device adapted to show which of the said keys has been depressed.

38. In a cash-register, a plurality of registering devices, an operating mechanism therefor, means whereby any one of said registering devices may be placed in operative relation with said mechanism, an indicating device for showing at each operation of the machine which register is operating, and a recording device for keeping a continuous record of the various indications.

39. In a cash-register, a series of registering devices, an operating mechanism for said devices, means for placing any one of the said devices into operative relation with the operating mechanism at will, means to prevent the simultaneous operation of a second registering device, and a recording mechanism for showing which register has been operated.

40. In a cash-register, a transverse shaft, register-operating mechanisms mounted on said shaft, keys for determining the extent of movement of said operating mechanisms, means for normally locking said mechanisms against operation, a plurality of special keys, means operated by said keys for unlocking said mechanisms, and a recording device adapted to show which of said special keys has been operated.

41. In a cash-register, a registering device, means for maintaining the same out of operation, and a printing device adapted to produce a record showing that the register has not been operated.

42. In a cash-register, adapted to the use of a plurality of clerks or departments, a plurality of devices for separating the transactions of each clerk or department, and an additional means for recording and identifying the transactions in each of said departments.

43. In a cash register and indicator adapted to the use of a plurality of clerks or different characters of transactions, a plurality of devices for showing the variable amount or values of the total transactions of each clerk or each character of transactions, an additional means from which the same information can be obtained, said additional means affording a basis of comparison of the information furnished by the first means.

44. In a cash-register adapted to the use of a plurality of clerks or departments, a plurality of devices from which the total amount of the transactions by each clerk or department can be obtained, and a printing device for recording and identifying the transactions of each clerk or department, said printing device furnishing means for comparison with the total transactions in each of the first-mentioned devices.

45. In a cash-register adapted to the use of a plurality of clerks or departments, a plurality of devices for separating the transactions of each clerk or department, and showing the total thereof, a printing device for recording and identifying each transaction of each of the clerks or departments, whereby the same information as to the transactions in different departments may be obtained from different sources.

46. In a cash-register, a series of pairs of normally inoperative registers and recorders, means for operating the same, and means for rendering each of said pairs operative or inoperative as desired.

47. In a cash-register, a series of registers, separate means for

operating cash register, means for normally locking each of said operating means, a series of keys, one key for each register, by the depression of which the corresponding operating means is unlocked, and a printing device adapted to produce a record showing which of the operating means has been unlocked.

48. In a registering-machine, a series of registers, separate devices for operating the registers, a series of sets of recorders set from said operating devices, means for normally locking each of said devices, and means for unlocking any register and recorder desired.

49. In a cash-register, a bank of cash or value keys, a series of normally inoperative registers, a swinging frame controlled by said bank of keys, means for operating said registers from said frame, means for rendering operative any desired register, and means controlled by said frame for recording the amount added upon the register.

50. In a cash-register, a series of printing devices normally held out of printing position, means for setting any desired printer for printing the transaction and for throwing said printer into printing position, a platen carrying a strip of paper, and means for moving said platen and paper into contact with said printer.

51. In a cash-register, a plurality of department registering devices, means for operating the same, a plurality of printing devices, one for each department, and mechanism common to both series for setting the register-operating means and the printing devices simultaneously.

52. In a cash-register, a printing device, a value-key, and means for locking said printing device out of operative position upon the depression of said key.

53. In a cash-register, a recording device which is normally out of operative position, a value-key, a department-key, and means requiring the operation of both of said keys for placing said recording device in its operative position.

54. In a cash-register, a recording device that is normally out of inoperative position, a rock-shaft, and means on said shaft for throwing the recording device into operative position and for locking it into such position.

55. In a registering-machine, a plurality of sets of registering-wheels, a series of printing devices, and connections between said sets of registering-wheels and their corresponding printing devices such that each amount added on a register-wheel will be printed by the corresponding printing device.

56. In a cash-register, a series of sets of recorders, separate means for operating each of said sets of recorders, mechanism for normally locking each of said sets of recorders, and means for unlocking and rendering operative any recorder desired.

57. In a cash-register, the combination with a registering device, of a main yoke, a series of auxiliary yokes operated by the same, graduated step-segments connected to said yokes, keys for limiting the movements of said segments, a printer including type-carriers, and means connecting the type-carriers to the respective segments.

58. In a cash-register, the combination with a registering device, of a main yoke, a series of auxiliary yokes operated by the same, graduated step-segments connected with said auxiliary yokes, keys for controlling the movements of said segments, and type-carriers connected with the auxiliary yokes.

59. In a cash-register, the combination with a registering device, of a main yoke, a series of auxiliary yokes operated by the same, graduated step-segments connected with said auxiliary yokes, means for limiting the movements of the segments, and a printer including type-carriers, said type-carriers being moved proportionately with the segments.

60. In a cash-register, a main yoke, a series of auxiliary yokes operated thereby, graduated step-segments connected with the auxiliary yokes, means for limiting the movements of the segments, and a registering device, said device being operated proportionately with the segments.

61. In a cash-register, the combination with registering devices, of a main operating-yoke, a series of auxiliary yokes, devices for controlling the movements of these latter yokes, a printing device including type-carriers and means connecting the type-carriers to the respective auxiliary yokes.

62. In a cash-register, a registering device, a special key, means for maintaining the register out of operation when the key is actuated, a special indicator under the control of the special key, a bar for turning the indicator, said bar having a shoulder, a plate for engaging said shoulder and holding the indicator in set position between operations of the machine, and a recording device adapted to produce a record showing that the register has not been operated.

63. In a cash-register, a registering device, a special key, means for maintaining the register out of operation when the key is actuated, a special indicator under control of the special key, means for holding the indicator in its set position between successive operations of the machine and a recording device adapted to produce a record showing that the register has not been operated.

64. In a paper-feeding device for cash-registers, a supply-roller, a take-up roller, and a feed-roller, movable bearings for said take-up roller, and a spring for the latter roller which presses the same between the supply and the feed rollers.

65. In a cash-register, two separate recorders, a value-key, and means for placing one recorder in operative condition and locking the other recorder out of operative condition upon the depression of said key.

66. In a cash-register, the combination with a main yoke, of a series of auxiliary yokes operated thereby, means for limiting the movements of the auxiliary yokes, a series of type-carriers, means for maintaining an unbroken connection between the auxiliary yokes and type-carriers, a series of indicators, and means for connecting the indicators to the auxiliary yokes while the latter are moving in one direction only.

67. In a cash-register, the combination with a main yoke, of a series of auxiliary yokes operated thereby, means for limiting the movements of the auxiliary yokes, a series of type-carriers, means for maintaining an unbroken connection between the type-carriers and the auxiliary yokes, a platen, and means for returning the auxiliary yokes arranged to first operate the platen.

810,877. CASH REGISTER AND INDICATOR. JOHN H. McCONNICK, Columbus, Ohio, and JAMES D. MORRISON, Washington, D.C.

Original application filed Apr. 5, 1895, Serial No. 544,863. Divided and this application filed Nov. 20, 1905. Serial No. 288,686.

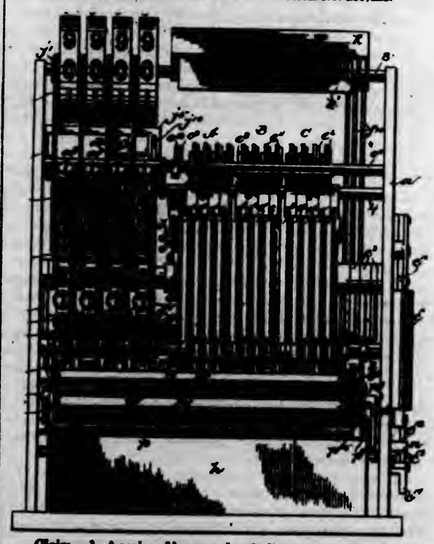

Claim.—1. A series of keys, and an indicator having numbers corresponding to each key, a rack-bar adapted to operate said indicator, and a pivoted lever attached to said rack-bar, an intermediate pivoted actuating device having on opposite sides of its pivotal center projections to engage said pivoted lever, one of said projections being stationary and the other movable, a movable part, such as a cash-drawer, for returning said actuating device to its normal position, and a connection from said movable part to the movable projection on said actuating device whereby said movable projection may be disengaged from said pivoted lever to permit the actuating device to return to its normal position while the indicator remains, substantially as specified.

2. The combination with a series of keys, and an intermediate actuating device, an indicating-wheel, a pivoted lever connected to said wheel so as to move therewith, said pivoted lever being normally connected to said actuating device on opposite sides of the pivotal center, and means as described for disengaging said pivoted lever on one side of its pivotal center when the actuating device is returned to its normal position, and a catch for retaining said indicator in the position to which it is moved by said actuating device, substantially as specified.

3. A series of keys, an intermediate actuating device, and a movable part, such as a cash-drawer, adapted by its movement to operate said actuating device, means for unlocking and determining the movement of said actuating device when a key is depressed, an indicating-wheel having a series of numbers corresponding to the number of keys, and a pivoted lever connected to said wheel, a connection from said actuating device to said pivoted lever on opposite sides of its pivotal center, a catch for retaining said indicating-wheel in the position to which it is moved by said actuating device, and means as described for disengaging the pivoted lever from said actuating devices on one side of the pivotal center when said actuating device is returned to its normal position, substantially as specified.

4. A series of keys arranged in groups, an intermediate actuating device for each group, and a registering-wheel for each actuating device, a pawl-lever having a pawl to engage with each of said registering-wheels and adapted to move with said actuating device, means connected with each of said keys for unlocking and determining the movement of the actuating device belonging to its series or group, and a movable part, such as a cash-drawer, to cause said actuating device to move to a predetermined distance and return to its normal position, transferring-pawls adjacent to each of said registering-wheels except the lowest in denomination, and means for engaging said transferring-pawls with said registering-wheel by a predetermined movement of the registering-wheel of the next lowest denomination and a spring-actuated lever adapted to be released when said actuating mechanism is returned to its normal position and to successively actuate said pawl-levers so as to move their respective registering-wheels a limited distance, substantially as specified.

5. In a cash-register, a series of registering-wheels, each representing a different denomination, means for independently actuating each of said registering-wheels to register units corresponding to the denomination of said wheel, pawl-levers for each of said registering-wheels except the lowest in denomination, said pawl-levers being adapted to be operated by a predetermined movement of the wheel of the next lower denomination to cause the pawl to engage with its registering-wheel, a series of rock-shafts each having a projecting finger and each connected to one of said pawl-levers, a spring-actuated lever adapted when released to contact with all of the fingers on said rock-shafts, and means for releasing said spring-actuated lever when the registering-wheel of any denomination has completed its movement, substantially as specified.

6. In a cash-register, registering devices and cash-keys, for determining the movement thereof, a cash-drawer connected to said registering devices so as to actuate the same by the movement of said cash-drawer, and a governor connected to said drawer and to said registering devices, said governor being adapted to insure a uniform speed of the same during its entire return movement and further adapted to regulate the speed of the registering devices, substantially as specified.

7. A cash-register having a normally closed cash-drawer and a connection from said drawer to the registering devices, a pivoted bar connected to said registering devices, and a speed-regulator connected to said bar, for causing the speed of said drawer to be uniform during its entire movement, and means on said bar to prevent the closing of said drawer after the operation of opening the same is begun, substantially as specified.

8. In a registering-machine, a plurality of indicators, a movable frame for each indicator, connections between each indicator and its frame for moving the indicator by the frame, and means for locking and unlocking said connections and frame.

9. In a registering-machine, a plurality of indicators, a movable member for each indicator, connections between each indicator and its member, means for locking each of said connections to its respective member when said members are moving in one direction, and means for unlocking said connections and members when the latter are moving in the opposite direction.

10. In a registering-machine, an indicator, a pivoted frame, connections between said indicator and frame, a pivoted latch on said frame for engaging and locking said connections to the frame while it is moving in one direction, and means for shifting said latch to unlock said connections from the frame so that the latch may move independently in the opposite direction.

11. In a registering-machine, a drawer, an indicator, a pivoted frame, a connection between said indicator and frame, a pivoted latch on said frame for engaging and locking said connection to the frame while it is moving in one direction, and means operated from the drawer for shifting said latch to unlock said connection from the frame so that the latter may move independently in the opposite direction.

12. In a cash-register, the combination with a register, of operating-levers for the same, an indicating device, an operating-lever for said indicating device, a movable locking device mounted on said former lever to lock into the last-mentioned lever, and a tripping means for actuating said locking device.

13. In a cash-register of the class described the combination with a registering mechanism, of pivoted operating devices for the same, an indicating device, operating-levers for said indicating device, and means for positively connecting the operating-levers and the pivoted operating devices whereby they are locked together upon the downward movement but released upon the upward movement.

14. In a cash-register, a registering device, a special key, means for maintaining the register out of operation when the key is actuated, a special indicator under the control of the special key, a bar for turning the indicator, said bar having a shoulder, and a plate for engaging said shoulder and holding the indicator in set position between operations of the machine.

15. In a cash-register, a drawer, an indicator, a pivoted frame, connections between said indicator and frame, a pivoted latch on said frame for engaging and locking said connections to the frame while it is moving in one direction and means operated from the drawer for shifting said latch to unlock said connections from the frame so that the latter may move independently in the opposite direction.

16. In a cash-register, an indicator, a pivoted frame, connections between said indicator and frame, a pivoted latch on said frame for engaging and locking said connections to the frame while it is moving in one direction, and means for shifting said latch to unlock said connections from the frame, so that the latter may move independently in the opposite direction.

17. In a cash-register, a series of registering-wheels, operating mechanism therefor, a transfer-pawl for each of said wheels except the one of lowest denomination, a rock-shaft for each of said pawls, said shafts being arranged successively one in advance of the other, and means for rocking said shafts to effect the transfer immediately after the movement of the operating mechanism has been substantially completed.

18. In a registering mechanism, a series of registering-wheels, operating mechanism therefor, transfer-lugs on said wheels, pawl-carriers mounted coaxially with the wheels, pawls on said carriers, means for normally holding said pawls out of engagement with their corresponding wheels, means controlled by said lugs for causing the pawls to drop into engagement with their wheels, and means for successively moving said pawl-carriers so that those pawls which have been dropped will move their wheels to effect a transfer, said movement of the wheels taking place immediately after the movement of the operating mechanism has been substantially completed.

19. In a cash-register, a series of registering-wheels, operating mechanism therefor, a pawl for each of said wheels except the one of lowest denomination, means for normally holding said pawls out of operative position, lugs on said wheels for causing said pawls to drop into operative position, means for moving said pawls, and a rock-shaft provided with means for lifting said pawls back out of operative position, said movement and lifting of the pawls taking place immediately after the movement of the operating mechanism has been substantially completed.

20. In a cash-register, a series of registering-wheels, operating mechanism therefor, lugs on said wheels, pawl-carriers pivoted coaxially with said wheels, pawls on said carriers, means for holding said pawls out of operative position, means controlled by said lugs for dropping the pawls into operative position, rock-shafts connected with said pawl-carriers, means for successively rocking said rock-shafts to move said pawl-carriers, and another rock-shaft provided with means for restoring said pawls to their original positions, said rock-shafts being moved after the movement of the operating mechanism has been substantially completed.

21. In a cash-register, a series of registering-wheels, operating mechanism therefor, transfer-lugs on said wheels, transfer-pawls, means for normally holding said pawls out of engagement with their respective wheels, means operated by said lugs for causing said pawls to drop into engagement with their wheels, a rock-shaft for each pawl, and means for rocking said shafts to move the pawls and to cause those pawls that are dropped to move their respective wheels, said movement of the wheels taking place immediately after the movement of the operating mechanism has been substantially completed.

22. In a cash-register, a series of registering-wheels, an operating mechanism therefor, a series of transfer-pawls for said wheels, a series of rock-shafts for moving said pawls, another rock-shaft for disconnecting said pawls from said wheels, and a common means for successively rocking all of said shafts, said movement of the shafts taking place after the movement of the operating mechanism has been substantially completed.

23. In a cash-register, an indicator, a rack-bar for rotating said indicator, means for moving said rack-bar, a latch for holding said rack-bar and indicator from overthrowing a cash-drawer, means controlled by said drawer for disengaging the latch, and a rock-shaft for tripping said means and permitting the same to again engage and hold the rack.

24. In a cash-register, an indicator, means for operating said indicator, a latch engaging said means and holding the indicator from overthrowing, means for withdrawing the latch and releasing the indicator, and means for tripping the latch so that it may again engage the operating means.

25. In a cash-register, the combination with an operating mechanism, of a series of amount-keys, a series of special keys normally inoperative in connection with the operating mechanism, a change or "No-sale" key normally operative and means operated by the amount-keys for rendering the special keys operative and the "No-sale" key inoperative.

26. In a cash-register, the combination with an operating mechanism, of a series of amount-keys, a cash-drawer, a drawer-latch, a series of special keys normally inoperative in connection with said latch, a change or "No-sale" key normally operative in connection with said latch, and means operated by the amount-keys for rendering the special keys operative and the "No-sale" key inoperative in connection with the latch.

27. In a cash-register, the combination with an operating mechanism, of a series of amount-keys, a cash-drawer, a special key controlling said drawer, and means operated by the amount-keys for rendering the special key inoperative, in relation to the drawer.

28. In a cash-register, the combination with an operating mechanism, of a series of amount-keys, a cash-drawer, a change or "No-sale" key for opening said drawer, a special indicator for said key, and means operated by the amount-keys for rendering the change or "No-sale" key inoperative in connection with the cash-drawer and indicator.

29. In a cash-register, the combination with an operating mechanism, means for normally holding said mechanism against operation, a key for releasing said mechanism, and a printing device set by the operation of the release-key.

30. In a cash-register, the combination with an operating mechanism, a cash-drawer by means of which said mechanism is operated, a "No-sale" key for opening said drawer and a printing device controlled by said "No-sale" key.

31. In a cash-register, in combination with an operating mechanism, of a series of amount-keys, a series of special keys, normally inoperative in connection with the operating mechanism, a change or "No-sale" key normally operative, means operated by the amount-keys for rendering the special keys operative and the "No-sale" key inoperative, and a printing device controlled by the "No-sale" key.

32. In a cash-register, the combination with an operating mechanism, of a series of amount-keys, a cash-drawer, a drawer-latch, a series of special keys normally inoperative in connection with said latch, a change or "No-sale" key normally operative in connection with said latch, means operated by the amount-key for rendering the special keys operative and the "No-sale" key inoperative in connection with the latch, and a printing device under control of the "No-sale" key.

33. In a cash-register, the combination with an operating mechanism, of a series of amount-keys, a cash-drawer, a special key controlling said drawer, means operated by the amount-keys for rendering the special key inoperative in relation to the drawer, and a printing device controlled by said special key.

34. In a cash-register, the combination with an operating mechanism, of a series of amount-keys, a cash-drawer, a change or "No-sale" key for opening said drawer, a special indicator for said key, means operated by the amount-keys for rendering the change or "No-sale" key inoperative in connection with the cash-drawer and indicator, and a printing device under control of the "No-sale" key.

810,378. [illegible] Queen S. Ferris, Rockford, Ill. Original application filed [illegible]. Divided and this application filed Oct. 19, 1903. Serial No. 177,855.

Claim.—4. A device of the class described, comprising a board adapted for the passage of projectiles thereover and having an opening at one end for the passage of said projectiles therethrough, legs hinged to the board and foldable to lie against the under surface thereof, a runway pivotally connected with certain of said legs and a supporting-brace connected with others of said legs and arranged to receive and support the runway, said runway being disposed to receive the projectile from the opening and being arranged to lie between the legs when the latter are in their folded positions.

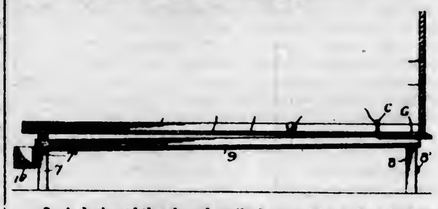

2. A device of the class described comprising a board adapted for the passage of projectiles thereover, pairs of legs hinged to the board adjacent to the opposite ends thereof, said legs being foldable to lie against the under surface of the board, a runway pivoted adjacent to one of its ends between one pair of the legs, and being disposed to receive projectiles from the board, said runway extending normally between the legs of the other pair, a brace carried by the last-named pairs of legs and arranged to receive the runway thereupon when the latter is in its normal position, said brace being located in a plane below the pivot-point of the runway, said runway being arranged to lie between the legs of both pairs and against the under surface of the board, when the legs are in their folded positions, and means co-operating with the runway and with one of the pairs of legs for holding the runway and the legs in their operative positions.

3. In a table of the class described, the combination with a board, of legs hinged to the board and foldable to lie against the under surface thereof, a runway pivoted to certain of said legs at one end and lying when in its normal position with its other end between others of said legs, said runway being arranged to receive projectiles from the board and being arranged to lie against the under surface of the board when the legs are in their folded positions, a support for the free end of the runway and means for holding the runway against movement with respect to the legs to hold the legs and the runway in their operative positions.

4. In a table of the class described, the combination with a board, of pairs of spaced legs hinged to the board at opposite ends thereof, said legs being foldable to lie against the under surface of the board, a runway pivoted at one end between one pair of said legs, and lying normally with its free end between the other pair, a brace carried by the last-named pair of legs and disposed to receive and support the free end of the runway, said runway being arranged to lie between the legs of both pairs and against the under surface of the board when the legs are in their folded positions, said brace being arranged to lie against the under face of the runway, when the latter and the legs are in their folded positions, means for holding the runway and the legs in operative position, and means for holding them in their folded positions.

810,379. MOTOR-VEHICLE. HARRY M. PEVE, Chicopee Falls, Mass., assignor, by mesne assignments, to Morton Trust Company, trustee, a Corporation of New York. Original application filed Oct. 23, 1899. Serial No. 734,689. Divided and this application filed Sept. 10, 1903. Serial No. 172,863.

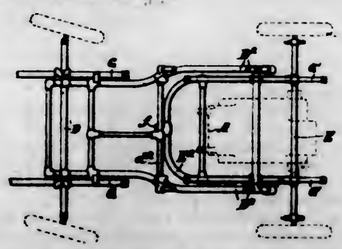

Claim.—1. In a motor-vehicle, the combination with a motor, driving-connections, driving-wheels and independent steering-wheels, of a two-part running-gear frame, one part of said frame supporting an axle which is held from movement in a horizontal plane and which is provided with independent steering-wheels, the second part supporting the motor, driving connections and the driven wheels in fixed relation therewith, said second part being suspended at one point from the first-named part whereby the wheels may accommodate themselves to an uneven surface without distortion of the motor and driving connections, and a spring connection between the two reach members.

2. In a motor-vehicle, the combination with a motor, driving connections, driving-wheels and independent steering-wheels, of a two-part running-gear frame, each part of which frame includes an axle member, said parts being connected to each other at a single point whereby the wheels may accommodate themselves to an uneven surface, and spring connections between the two reach members and between one of said reach members and the axle to which it is secured.

3. In a motor-vehicle, the combination with a motor, driving connections, driving-wheels and independent steering-wheels, of a two-part running-gear frame, each part of which frame includes an axle member and a frame-like reach member extending therefrom and toward the opposite axle, and a universal connection between the sections of the running-gear frame and intermediate the axles.

4. In combination in a motor-vehicle including a motor, driving-wheels, driving connections and independent steering-wheels, a running-gear frame comprising a pair of axles and two frame-like reach members extending therefrom, a universal connection between the two reach-members intermediate the axles, and a spring connection between the two reach members.

5. In combination in a motor-vehicle including a motor, driving-wheels, driving connections and independent steering-wheels, a running-gear frame comprising a pair of axles and two reach members extending from said axles toward each other, one of said reach members being spring-supported upon one axle, and a universal connection between the two reach members intermediate the axles.

6. In combination in a motor-vehicle including a motor, driving-wheels, driving connections and independent steering-wheels, a running-gear frame comprising a pair of axles, two reach members, a universal connection between the axles, and spring connections between said reach members adjacent to one of the axles.

7. In combination in a motor-vehicle including a motor, driving-wheels, driving connections and independent steering-wheels, a running-gear frame comprising a pair of axles, two reach members, a universal connection between said members and intermediate the axles, spring connections between said reach members intermediate the universal joint and one of the axle members.

8. In combination in a motor-vehicle including a motor, driving-wheels, driving connections, a non-pivotal axle, and independent steering-wheels pivoted upon said axle, a running-gear frame comprising two members supported upon said wheels respectively, one of said members carrying the motor and being pivotally mounted on the other member, said other member having intermediate spring connections with the non-pivotal axle.

9. In combination in a motor-vehicle including a motor, driving-wheels, driving connections and steering-wheels, a running-gear frame comprising a main member supporting a body or seats, springs at the rear end of said frame and a second member carrying the motor and driving mechanism having pivotal connections at its front end with the main member and directly connected to the rear axle without the interposition of springs.

10. In combination in a motor-vehicle including a motor, driving-wheels, driving connections and individually-pivoted steering-wheels, a running-gear frame comprising a motor-carrying frame and a second frame having a cross-bar on which the motor-carrying frame is pivoted, and spring connections intermediate the second frame and the axles, whereby the axles are held substantially in parallelism.

11. In combination in a motor-vehicle including a motor, driving-wheels, driving connections and steering-wheels, a running-gear frame comprising a motor-carrying frame and a second frame having longitudinal side bars between and on which the motor-carrying frame is hung.

12. In combination in a motor-vehicle including a motor, driving-wheels, driving connections and steering-wheels, a running-gear frame comprising a motor-carrying frame and a second frame having longitudinal side bars and a cross-bar on which the motor-carrying frame is pivoted.

13. In combination in a motor-vehicle including a motor, driving-wheels, driving connections and steering-wheels, a running-gear frame comprising a motor-carrying frame supported at one end at two points, and a second frame also supported at one end at two points and at the other end upon the first-named frame, said first-named frame being pivotally hung at its other end on the second frame.

14. In combination in a motor-vehicle including a motor, driving-wheels, driving connections and steering-wheels, a running-gear frame comprising a frame supported at two points and a second frame also supported at two points having a cross-bar on which the first-named frame is pivoted.

15. In combination in a motor-vehicle including a motor, driving-wheels, driving connections and steering-wheels, a running-gear frame comprising a frame supported at two points and a second frame having longitudinal side bars between and on which the first-named frame is hung.

16. In combination in a motor-vehicle including a motor, driving-wheels, driving connections and steering-wheels, a running-gear frame comprising a frame supported at two points and a second frame having longitudinal side bars and a cross-bar on which the first-named frame is pivoted.

17. In combination in a motor-vehicle including a motor, driving-wheels, driving connections and steering-wheels, a main frame adapted to support the body or seats, springs supporting said main frame, a second frame carrying the motor and transmission mechanism being at its forward end pivotally connected with the main frame, and having connections with the rear axle for holding it substantially at right angles therewith.

18. In combination with a motor-vehicle including a motor, a rear axle, driving connections from the motor to the rear axle, a front axle, and individually-pivoted wheels thereon, a running-gear frame comprising a member supported at two points from the rear axle and carrying the motor, and a second member supported at its forward end from the front axle and extending rearwardly with reach portions projecting beside the motor-carrying member, said second member having spring connections in the rear and being adapted to carry the body of the vehicle, and said motor-carrying member extending forwardly from the rear axle between the reach portions of the second member and being supported at its forward end pivotally upon the second member.

19. In combination in a motor-vehicle including a motor, driving-wheels, driving connections and steering-wheels, a running-gear frame comprising two members, one member carrying the motor and pivotally connected at its front end to the other member, and springs on the forward axle supporting the combined load of the forward ends of the two members, said other member having spring connections intermediate therewith and the rear axle.

810,380. BUNDLE-LOADER. JOHN S. RICHARDSON, Nowata, N. D., assignor to Walter Gregory, trustee, Minneapolis, Minn. Filed Dec. 8, 1903. Renewed Sept. 19, 1904. Serial No. 224,901.

Claim.—1. In a bundle-loader, the combination of an elevator, means for picking bundles up from the ground, and an endless apron arranged to receive from said means and discharge to the elevator, and comprising slats having forward sides disposed at right angles to its stretches, and also having rear sides the outer portions of which are beveled.

2. In a bundle-loader, the combination of an elevator, means for picking bundles up from the ground, an endless apron arranged to receive from said means and discharge to the elevator, a roller intermediate of the apron and the elevator for preventing the return of bundles from the latter to the former, and means for driving the apron and said roller.

3. A bundle-loader having a horizontal, rotary pick-up provided with blades disposed tangentially to its axis.

4. In a bundle-loader, a pick-up comprising a rotary shaft, brackets on said shaft, having arms disposed tangentially with respect to the shaft, and blades carried by said arms of the brackets and arranged parallel to the shaft.

5. In a bundle-loader, the combination of an elevator, a rotary pick-up comprising a shaft, and blades disposed tangentially with respect to the shaft, and an endless apron arranged to receive from the pick-up and discharge to the elevator, and comprising slats having forward sides disposed at right angles to its stretches, and also having rear sides the outer portions of which are beveled.

6. In a bundle-loader, the combination of a main frame, a traveling drive-wheel, an endless elevator, a rotary pick-up disposed at right angles to the elevator, an endless apron arranged to receive from the pick-up and discharge to the elevator, driving connections intermediate of the drive-wheel and the elevator, pick-up and apron,

22. In a cash-register, a series of registering-wheels, an operating mechanism therefor, a series of transfer-pawls for said wheels, a series of rock-shafts for moving said pawls, another rock-shaft for disconnecting said pawls from said wheels, and a common means for successively rocking all of said shafts, said movement of the shafts taking place after the movement of the operating mechanism has been substantially completed.

23. In a cash-register, an indicator, a rack-bar for rotating said indicator, means for moving said rack-bar, a latch for holding said rack-bar and indicator from overthrowing a cash-drawer, means controlled by said drawer for disengaging the latch, and a rock-shaft for tripping said means and permitting the same to again engage and hold the rack.

24. In a cash-register, an indicator, means for operating said indicator, a latch engaging said means and holding the indicator from overthrowing, means for withdrawing the latch and releasing the indicator, and means for tripping the latch so that it may again engage the operating means.

25. In a cash-register, the combination with an operating mechanism, of a series of amount-keys, a series of special keys normally inoperative in connection with the operating mechanism, a change or "No-sale" key normally operative and means operated by the amount-keys for rendering the special keys operative and the "No-sale" key inoperative.

26. In a cash-register, the combination with an operating mechanism, of a series of amount-keys, a cash-drawer, a drawer-latch, a series of special keys normally inoperative in connection with said latch, a change or "No-sale" key normally operative in connection with said latch, and means operated by the amount-keys for rendering the special keys operative and the "No-sale" key inoperative in connection with the latch.

27. In a cash-register, the combination with an operating mechanism, of a series of amount-keys, a cash-drawer, a special key controlling said drawer, and means operated by the amount-keys for rendering the special key inoperative, in relation to the drawer.

28. In a cash-register, the combination with an operating mechanism, of a series of amount-keys, a cash-drawer, a change or "No-sale" key for opening said drawer, a special indicator for said key, and means operated by the amount-keys for rendering the change or "No-sale" key inoperative in connection with the cash-drawer and indicator.

29. In a cash-register, the combination with an operating mechanism, means for normally holding said mechanism against operation, a key for releasing said mechanism, and a printing device set by the operation of the release-key.

30. In a cash-register, the combination with an operating mechanism, a cash-drawer by means of which said mechanism is operated, a "No-sale" key for opening said drawer and a printing device controlled by said "No-sale" key.

31. In a cash-register, in combination with an operating mechanism, of a series of amount-keys, a series of special keys, normally inoperative in connection with the operating mechanism, a change or "No-sale" key normally operative, means operated by the amount-keys for rendering the special keys operative and the "No-sale" key inoperative, and a priating device controlled by the "No-sale" key.

32. In a cash-register, the combination with an operating mechanism, of a series of amount-keys, a cash-drawer, a drawer-latch, a series of special keys normally inoperative in connection with said latch, a change or "No-sale" key normally operative in connection with said latch, means operated by the amount-key for rendering the special keys operative and the "No-sale" key inoperative in connection with the latch, and a printing device under control of the "No-sale" key.

33. In a cash-register, the combination with an operating mechanism, of a series of amount-keys, a cash-drawer, a special key controlling said drawer, means operated by the amount-keys for rendering the special key inoperative in relation to the drawer, and a printing device controlled by said special key.

34. In a cash-register, the combination with an operating mechanism, of a series of amount-keys, a cash-drawer, a change or "No-sale" key for opening said drawer, a special indicator for said key, means operated by the amount-keys for rendering the change or "No-sale" key inoperative in connection with the cash-drawer and indicator, and a printing device under control of the "No-sale" key.

810,378. TABLE. OLIVER B. PEYTON, Rockford, Ills. Original application filed Dec. 9, 1904, Serial No. 236,121. Divided and this application filed Feb. 16, 1905. Serial No. 245,892.

Claim.—1. A device of the class described, comprising a board adapted for the passage of a projectile thereover and having an opening at one end for the passage of said projectiles therethrough, legs hinged to the board and foldable to lie against the under surface thereof, a runway pivotally connected with certain of said legs and a supporting-brace connected with others of said legs and arranged to receive and support the runway, said runway being disposed to receive the projectile from the opening and being arranged to lie between the legs when the latter are in their folded positions.

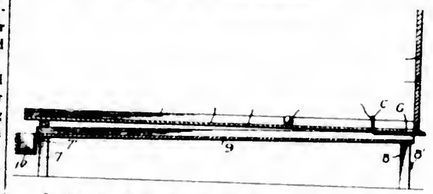

2. A device of the class described comprising a board adapted for the passage of projectiles thereover, pairs of legs hinged to the board adjacent to the opposite ends thereof, said legs being foldable to lie against the under surface of the broad, a runway pivoted adjacent to one of its ends between one pair of the legs, and being disposed to receive projectiles from the board, said runway extending normally between the legs of the other pair, a brace carried by the last-named pairs of legs and arranged to receive the runway thereupon when the latter is in its normal position, said brace being located in a plane below the pivot-point of the runway, said runway being arranged to lie between the legs of both pairs and against the under surface of the board, when the legs are in their folded positions, and means co-operating with the runway and with one of the pairs of legs for holding the runway and the legs in their operative positions.

3. In a table of the class described, the combination with a board, of legs hinged to the board and foldable to lie against the under surface thereof, a runway pivoted to certain of said legs at one end and lying when in its normal position with its other end between others of said legs, said runway being arranged to receive projectiles from the board and being arranged to lie against the under surface of the board when the legs are in their folded positions, a support for the free end of the runway and means for holding the runway against movement with respect to the legs to hold the legs and the runway in their operative positions.

4. In a table of the class described, the combination with a board, of pairs of spaced legs hinged to the board at opposite ends thereof, said legs being foldable to lie against the under surface of the board, a runway pivoted at one end between one pair of said legs, and lying normally with its free end between the other pair, a brace carried by the last-named pair of legs and disposed to receive and support the free end of the runway, said runway being arranged to lie between the legs of both pairs and against the under surface of the board when the legs are in their folded positions, said brace being arranged to lie against the under face of the runway, when the latter and the legs are in their folded positions, means for holding the runway and the legs in operative position, and means for holding them in their folded positions.

810,379. MOTOR-VEHICLE. HARRY M. POPE, Chicopee Falls, Mass., assignor, by mesne assignments, to Morton Trust Company, trustee, a Corporation of New York. Original application filed Oct. 23, 1899. Serial No. 734,490. Divided and this application filed Sept. 10, 1903. Serial No. 172,563.

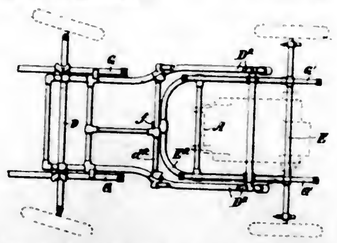

Claim.—1. In a motor-vehicle, the combination with a motor, driving connections, driving-wheels and independent steering-wheels, of a two-part running-gear frame, one part of said frame supporting an axle which is held from movement in a horizontal plane and which is provided with independent steering-wheels, the second part supporting the motor, driving connections and the driven wheels in fixed relation therewith, said second part being suspended at one point from the first-named part whereby the wheels may accommodate themselves to an uneven surface without distortion of the motor and driving connections, and a spring connection between the two reach members.

2. In a motor-vehicle, the combination with a motor, driving connections, driving-wheels and independent steering-wheels, of a two-part running-gear frame, each part of which frame includes an axle member, said parts being connected to each other at a single point whereby the wheels may accommodate themselves to an uneven surface, and spring connections between the two reach members and between one of said reach members and the axle to which it is secured.

3. In a motor-vehicle, the combination with a motor, driving connections, driving-wheels and independent steering-wheels, of a two-part running-gear frame, each part of which frame includes an axle member and a frame-like reach member extending therefrom and toward the opposite axle, and a universal connection between the sections of the running-gear frame and intermediate the axles.

4. In combination in a motor-vehicle including a motor, driving-wheels, driving connections and independent steering-wheels, a running-gear frame comprising a pair of axles and two frame-like reach members extending therefrom, a universal connection between the two reach-members intermediate the axles, and a spring connection between the two reach members.

5. In combination in a motor-vehicle including a motor, driving-wheels, driving connections and independent steering-wheels, a running-gear frame comprising a pair of axles and two reach members extending from said axles toward each other, one of said reach members being spring-supported upon one axle, and a universal connection between the two reach members intermediate the axles.

6. In combination in a motor-vehicle including a motor, driving-wheels, driving connections and independent steering-wheels, a running-gear frame comprising a pair of axles, two reach members, a universal connection between the axles, and spring connections between said reach members adjacent to one of the axles.

7. In combination in a motor-vehicle including a motor, driving-wheels, driving connections and independent steering-wheels, a running-gear frame comprising a pair of axles, two reach members, a universal connection between said members and intermediate the axles, spring connections between said reach members intermediate the universal joint and one of the axle members.

8. In combination in a motor-vehicle including a motor, driving-wheels, driving connections, a non-pivotal axle, and independent steering-wheels pivoted upon said axle, a running-gear frame comprising two members supported upon said wheels respectively, one of said members carrying the motor and being pivotally mounted on the other member, said other member having intermediate spring connections with the non-pivotal axle.

9. In combination in a motor-vehicle including a motor, driving-wheels, driving connections and steering-wheels, a running-gear frame comprising a main member supporting a body or seats, springs at the rear end of said frame and a second member carrying the motor and driving mechanism having pivotal connections at its front end with the main member and directly connected to the rear axle without the interposition of springs.

10. In combination in a motor-vehicle including a motor, driving-wheels, driving connections and individually-pivoted steering-wheels, a running-gear frame comprising a motor-carrying frame and a second frame having a cross-bar on which the motor-carrying frame is pivoted, and spring connections intermediate the second frame and the axles, whereby the axles are held substantially in parallelism.

11. In combination in a motor-vehicle including a motor, driving-wheels, driving connections and steering-wheels, a running-gear frame comprising a motor-carrying frame and a second frame having longitudinal side bars between and on which the motor-carrying frame is hung.

12. In combination in a motor-vehicle including a motor, driving-wheels, driving connections and steering-wheels, a running-gear frame comprising a motor-carrying frame and a second frame having longitudinal side bars and a cross-bar on which the motor-carrying frame is pivoted.

13. In combination in a motor-vehicle including a motor, driving-wheels, driving connections and steering-wheels, a running-gear frame comprising a motor-carrying frame supported at one end at two points, and a second frame also supported at one end at two points and at the other end upon the first-named frame, said first-named frame being pivotally hung at its other end on the second frame.

14. In combination in a motor-vehicle including a motor, driving-wheels, driving connections and steering-wheels, a running-gear frame comprising a frame supported at two points and a second frame also supported at two points having a cross-bar on which the first-named frame is pivoted.

15. In combination in a motor-vehicle including a motor, driving-wheels, driving connections and steering-wheels, a running-gear frame comprising a frame supported at two points and a second frame having longitudinal side bars between and on which the first-named frame is hung.

16. In combination in a motor-vehicle including a motor, driving-wheels, driving connections and steering-wheels, a running-gear frame comprising a frame supported at two points and a second frame having longitudinal side bars and a cross-bar on which the first-named frame is pivoted.

17. In combination in a motor-vehicle including a motor, driving-wheels, driving connections and steering-wheels, a main frame adapted to support the body or seats, springs supporting said main frame, a second frame carrying the motor and transmission mechanism being at its forward end pivotally connected with the main frame, and having connections with the rear axle for holding it substantially at right angles therewith.

18. In combination with a motor-vehicle including a motor, a rear axle, driving connections from the motor to the rear axle, a front axle, and individually-pivoted wheels thereon, a running-gear frame comprising a member supported at two points from the rear axle and carrying the motor, and a second member supported at its forward end from the front axle and extending rearwardly with reach portions projecting beside the motor-carrying member, said second member having spring connections in the rear and being adapted to carry the body of the vehicle, and said motor-carrying member extending forwardly from the rear axle between the reach portions of the second member and being supported at its forward end pivotally upon the second member.

19. In combination in a motor-vehicle including a motor, driving-wheels, driving connections and steering-wheels, a running-gear frame comprising two members, one member carrying the motor and pivotally connected at its front end to the other member, and springs on the forward axle supporting the combined load of the forward ends of the two members, said other member having spring connections intermediate therewith and the rear axle.

810,380. BUNDLE-LOADER. JOHN S. RICHARDSON, Nowesta, N. D., assignor to Walter Gregory, trustee, Minneapolis, Minn. Filed Dec. 8, 1903. Renewed Sept. 19, 1904. Serial No. 224,961.

Claim.—1. In a bundle-loader, the combination of an elevator, means for picking bundles up from the ground, and an endless apron arranged to receive from said means and discharge to the elevator, and comprising slats having forward sides disposed at right angles to its stretches, and also having rear sides the outer portions of which are beveled.

2. In a bundle-loader, the combination of an elevator, means for picking bundles up from the ground, an endless apron arranged to receive from said means and discharge to the elevator, a roller intermediate of the apron and the elevator for preventing the return of bundles from the latter to the former, and means for driving the apron and said roller.

3. A bundle-loader having a horizontal, rotary pick-up provided with blades disposed tangentially to its axis.

4. In a bundle-loader, a pick-up comprising a rotary shaft, brackets on said shaft, having arms disposed tangentially with respect to the shaft, and blades carried by said arms of the brackets and arranged parallel to the shaft.

5. In a bundle-loader, the combination of an elevator, a rotary pick-up comprising a shaft, and blades disposed tangentially with respect to the shaft, and an endless apron arranged to receive from the pick-up and discharge to the elevator, and comprising slats having forward sides disposed at right angles to its stretches, and also having rear sides the outer portions of which are beveled.

6. In a bundle-loader, the combination of a main frame, a traveling drive-wheel, an endless elevator, a rotary pick-up disposed at right angles to the elevator, an endless apron arranged to receive from the pick-up and discharge to the elevator, driving connections intermediate of the drive-wheel and the elevator, pick-up and apron,

and means comprised in said connections for throwing the elevator, pick-up and apron into and out of operation.

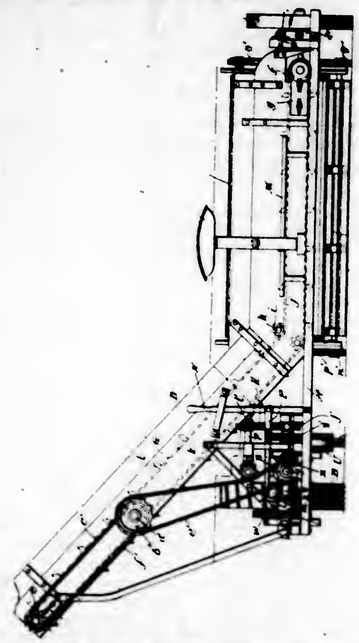

7. In a bundle-loader, the combination of a main frame, a traveling drive-wheel carried thereby, an endless elevator, a rotary pick-up disposed at right angles to the elevator, an endless apron arranged to receive from the pick-up and discharge to the elevator, a roller arranged intermediate of the apron and the elevator for preventing the return of bundles from the latter to the former, and driving connections intermediate of the drive-wheel and the elevator, pick-up, apron and roller.

8. In a bundle-loader, the combination of an elevator, a rotary pick-up disposed at an angle to the elevator and comprising a shaft and blades connected with and disposed tangentially to the shaft, an endless apron arranged to receive from the pick-up and discharge to the elevator, and comprising slats having forward sides disposed at right angles to its stretches, and also having rear sides, the outer portions of which are beveled, a roller intermediate of the discharge end of the apron and the elevator for preventing the return of bundles from the latter to the former, and means for driving the elevator, the pick-up, the apron and the roller.

9. The combination in a bundle-loader, of a main frame; a bar pivotally connected to the main frame, and carrying a doubletree or other suitable draft apparatus, a traveling wheel supporting said bar, and carried by a hanger pivotally connected to the bar so as to turn on its axis, a pole connected to said bar, and an adjustable connection between the main frame and the bar.

10. The combination in a bundle-loader, of a main frame, a bar pivotally connected to the main frame, and having an upright provided with a plurality of apertures, a doubletree or similar draft apparatus carried by the bar, a traveling wheel supporting the bar, and carried by a hanger pivoted to the bar so as to turn on its axis, a rod pivoted to the frame, and having an angular portion adapted to engage the apertures of the upright, and a pole pivoted to the bar.

11. In a bundle-loader, the combination with a horisontally-disposed, rotary pick-up adapted to be moved at a slight distance above the ground, and comprising blades disposed tangentially to its axis, and means for rotating said pick-up; of a conveyor arranged to receive bundles from the pick-up.

12. In a bundle-loader, the combination with a main frame suitably supported on carrying-wheels, of an endless elevator and means armed with long blades adapted to be entered under the bundles and to deliver them from the ground to said elevator.

13. In a bundle-loader, the combination with an endless elevator suitably sustained and carried upon a supporting-frame and wheels, of a rotary pick-up device armed with long blades adapted to be entered under the bundles and to deliver the bundles to said elevator.

14. In a bundle-loader, the combination, with a main frame and a traveling drive-wheel, of an endless conveyer carried and operated thereby and arranged to receive the bundles and deliver them upon the wagon, and means armed with long blades for picking up the bundles and depositing them upon the said elevator.

15. In a bundle-loader, the combination with an endless elevator suitably sustained and carried upon a supporting-frame and wheels, of a pick-up mechanism armed with long blades adapted to pick up the bundles and deliver them to the said elevator.

16. A bundle-loader having in combination an elevator for conveying the bundles to the wagon, and a horizontally-arranged pick-up mechanism for transferring the bundles to the elevator, such pick-up mechanism comprising a series of blades moving a slight distance above the ground and projecting forwardly in the direction of their movement so as to adapt them to lift the bundles from the ground.

17. The bundle-loader having in combination an elevator arranged transversely of the line of draft so as to adapt it to deliver bundles into a wagon located at the side of the loader, and a horizontal pick-up mechanism consisting of a series of blades moving in the direction of the draft and a slight distance above the ground and adapted to deliver the bundles to said elevator, a framework supporting said elevator and pick-up mechanism, and carrying and driving wheels.

18. A bundle-loader having in combination an elevator arranged across the line of draft and having one end lifted so as to adapt it to deliver the bundles into a wagon located at the side of the loader, a frame for supporting said elevator, driving and carrying wheels upon which the frame is mounted and from which the elevator is driven, a pick-up mechanism extending across the line of draft and having blades moving in line with the draft and acting to lift the bundles from the ground and deliver them to said elevator, and draft devices attached to said elevator-frame at one side of the pick-up mechanism.

810,381. TOOL-GRINDING DEVICE. JOHN RIDDELL and CASPER C. M. MORTENSEN, Schenectady, N. Y. Filed Aug. 3, 1905. Serial No. 272,347.

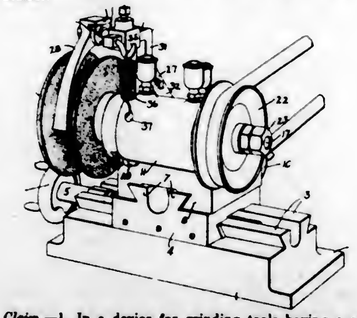

Claim.—1. In a device for grinding tools having a series of teeth movable in a definite path, the combination with the grinding-wheel and its driving means, of means controlled by the movement of the tool operated upon for causing the grinding-wheel to move toward each tooth as it passes said wheel.

2. In a device for grinding tools having a series of teeth movable in a definite path, the combination of a movable bearing-block in which the shaft of the grinding-wheel is journaled, and means controlled by the movement of the tool operated upon for moving said bearing-block whereby the grinding-wheel is caused to traverse each tooth of the tool at an angle to its path of motion.

3. In a device for grinding tools having a series of teeth movable in a definite path, the combination of a movable block in which the shaft of the grinding-wheel is journaled, and a controller-lever operatively connected to said block and extending into the path of the teeth to be actuated thereby, whereby the grinding-wheel is caused to traverse each teeth of the tool at an angle to its path of motion.

4. In a device for grinding tools having a series of teeth movable in a definite path, the combination of an oscillating bearing-block in which the shaft of the grinding-wheel is journaled eccentrically to the axis of oscillation, and means controlled by the movement of the tool operated upon for oscillating said bearing-block whereby the grinding-wheel is caused to traverse each tooth at an angle to its path of motion.

5. In a device for grinding tools having a series of teeth movable in a definite path, the combination of a bearing-support, an oscillating bearing-block carried thereby and in which the shaft of the grinding-wheel is journaled eccentric to the axis of oscillation, and an actuating-lever operatively connected to said block and extending into the path of said teeth whereby the grinding-wheel is caused to traverse each tooth at an angle to its path of motion.

6. In a device for grinding tools having a series of teeth movable in a definite path, the combination of a bearing-support, an oscillating bearing-block carried thereby in which the shaft of the grinding-wheel is journaled eccentrically to the axis of oscillation, and an actuating-lever fulcrumed upon said bearing-support, operatively connected to said bearing-block and extending into the path of said teeth whereby the grinding-wheel is caused to traverse each tooth at an angle to its path of motion.

7. In a device for grinding tools having a series of teeth movable in a definite path, the combination of a bearing-support, an oscillating bearing-block carried thereby in which the shaft of the grinding-wheel is journaled eccentrically to the axis of oscillation, and an actuating-lever fulcrumed upon said support adjustably connected to said bearing-block and extending at one end into the path of said teeth.

8. In a device for grinding tools having a series of teeth movable in a definite path, the combination of a bearing-support, an oscillating bearing-block in which the shaft of the grinding-wheel is journaled eccentrically to the axis of oscillation, an actuating-lever fulcrumed upon said support, operatively connected to said block and extending at one end into the path of said teeth to be actuated in one direction thereby, and a spring for returning the parts of the device to normal position after each escapement of the actuating-lever from a tooth.

9. In a device for grinding tools having a series of teeth movable in a definite path, the combination of an oscillating bearing-block in which the shaft of the grinding-wheel is journaled eccentrically to the axis of oscillation, and an actuating-lever operatively connected to said block and comprising a rear section fulcrumed to some stationary part and a forward section connected thereto by a spring-pressed knuckle-joint.

810,382. MOLD FOR CEMENT CONSTRUCTION-BLOCKS. MALVA M. ROBERTSON, Des Moines, Iowa. Filed Aug. 10, 1905. Serial No. 273,567.

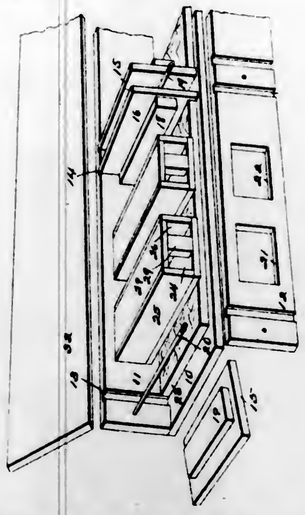

Claim.—In molds for forming construction-blocks containing air-channels, cores comprising a base having on its upper surface two transverse cleats having their ends beveled said base engaging the companion openings in the longitudinal side of the mold; side pieces mounted upon the upper surface of the base of the core and engaging the sides of the openings in the longitudinal sides; a top extending between the side pieces of the core and engaging the upper surfaces of the opening in the longitudinal sides; two blocks mounted between the base and top of the core designed as a support for the top substantially as shown and described.

REISSUES.

12,436. KRAUT-CUTTER. OLIVER E. THOMPSON, Ypsilanti, Mich. Filed June 29, 1905. Serial No. 267,669. Original No. 773,769, dated Nov. 1, 1904.

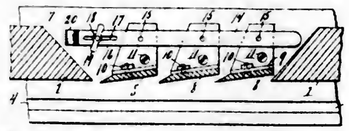

Claim.—1. In a kraut-cutting machine, the combination of a bed having a diagonal opening therein, knives set diagonally in said opening, brackets bolted to the face of said knives at their ends, said brackets having extending portions, pivot-pins passing through the extending portions of said brackets, said pivot-pins being of such length as to allow of a longitudinal movement of said knives as they tilt, a connecting-bar to which all of the brackets are independently pivoted, said bar being adjustable longitudinally to tilt the knives in unison and having a slot therein and a locking-bolt passing through said slot and engaging said frame.

2. The combination of a bed having a diagonal opening therein, knives set diagonally in said opening, brackets secured to said knives at their ends, pivot-pins passing through said brackets, said pins being of such length as to allow the knives to tilt and to have a slight longitudinally-reciprocatory movement, a connecting-bar to which all of the knives are independently pivoted, said bar being movable longitudinally to tilt the knives in unison, and means for locking said bar.

12,437. FRICTIONAL RETARDING MEANS FOR SPRING-VEHICLES. JULES M. M. TRUFFAULT, Paris, France, assignor of fifty-one one-hundredths to Edward Vassallo Hartford and forty-nine one-hundredths to George H. Hartford, both of Orange, N. J. Filed June 9, 1905. Serial No. 264,523. Original No. 695,508, dated Mar. 18, 1902.

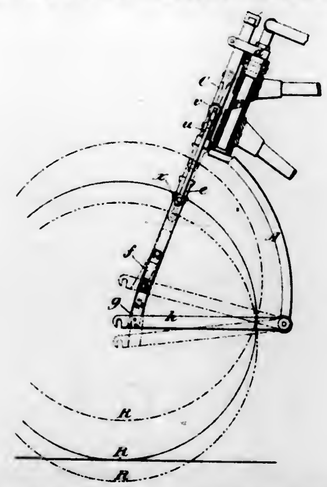

Claim.—1. In a vehicle, the combination with a supporting-spring between the parts of the vehicle movable relatively to each

other, of rotating frictional means between the parts which provides a yielding resistance to movement, said means producing a retarding effect on the reaction of the spring, substantially as described.

2. In a vehicle, the combination with the wheel thereof, the frame carried by said wheel and a spring interposed between said wheel and frame, of rotating frictional mechanism which provides a yielding resistance to the movements of the part, said means serving to materially and uniformly exert a retarding effect on the said movements of the parts in both directions, substantially as described.

3. A retarding device for vehicle-springs comprising rotating friction members, adjustable clamping means, and means for connecting the rotating members to the parts of a vehicle movable relatively to each other, substantially as described.

4. A retarding device for vehicle-springs, comprising a plurality of friction members, means for regulating the pressure between said members, and arms for connecting the said members to the parts of a vehicle movable relatively to each other, so that the movement of the friction members is less than the relative movement of the spring-separated parts, substantially as described.

5. A retarding device for vehicle-springs comprising a plurality of friction members, adjustable means for regulating the pressure between said members, and operating means for connecting said members to the parts of a vehicle between which the springs are interposed, the contacting area of the friction-surfaces of said members being substantially unvarying and uniform in extent irrespective of the relative position of said members, substantially as described.

6. A retarding device for vehicle-springs comprising a pair of rotating friction members, friction material between said members, a clamping-bolt for holding the parts together, and arms for connecting said friction members to the parts of the vehicle between which the springs are interposed, substantially as described.

7. A retarding device for vehicle-springs, comprising a plurality of friction members, means for regulating the pressure between said members, and arms for connecting the said members to the parts of a vehicle movable relatively to each other, the parts being so arranged that the movement of the friction members is less than the relative movement of the spring-separated parts, and a hinged connection at the outer end of one of said arms, substantially as described.

8. A retarding device for vehicle-springs comprising a pair of rotating friction members, friction material between said members, a clamping-bolt for holding the parts together and arms for connecting said friction members with the parts of the vehicle between which the springs are interposed, and a hinged connection on the outer end of one of said arms, substantially as described.

9. In a vehicle, the combination with a supporting-spring between the parts of the vehicle movable relatively to each other, of a plurality of friction members, means for regulating the pressure between said members, and means for connecting the friction members to the vehicle, the said members being so arranged as to produce a retarding effect upon the action of the spring and the contacting area of the friction-surfaces of the said members being substantially uniform and unvarying in extent, irrespective of the relative positions of the parts, substantially as described.

10. In a vehicle, the combination with a supporting-spring between the parts of the vehicle movable relatively to each other, of a plurality of friction members, means for regulating the pressure between said members, and means for connecting the friction members to the vehicle, the said members being so arranged as to produce a retarding effect upon the action of the spring, and the connecting means being arranged so that the movement of the friction members is less than the relative movement of the spring-separated parts, substantially as described.

11. In a vehicle, the combination with the wheel, the frame, the arms pivoted to the frame at one end, and the spring between said arms and frame, of the frictional pivot-bearings between the arms and the frame, each of these bearings comprising a bolt *o*, fixed in one of the parts and bearing cones *p* and *s*, and a nut *t*, the said cones and nut, and the coned leather washers *q* and *q'* in the eye of the other part, substantially as described.

DESIGNS.

37,786. HANDLE OF SPOONS, FORKS, OR SIMILAR ARTICLES. WILLIAM C. GORHAM, Providence, R. I., assignor to Gorham Manufacturing Company, Providence, R. I. Filed Dec. 6, 1905. Serial No. 290,662. Term of patent 14 years.

37,786.

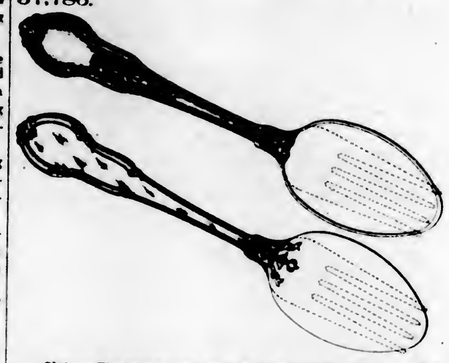

Claim.—The ornamental design for the handle of a spoon, fork or similar article, as shown.

37,787. BOTTLE. SAMUEL O. CARRUTHERS, Portland, Me. Filed Dec. 2, 1905. Serial No. 291,001. Term of patent 14 years.

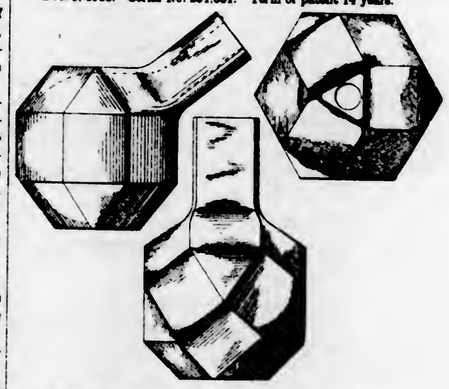

Claim.—The ornamental design for a bottle, as shown.

37,788. CARD-CASE OR SIMILAR ARTICLE. ALFRED SCHICKERLING, New York, N. Y., assignor to Schickerling Brothers & Company, New York, N. Y., a Corporation of New York. Filed Dec. 9, 1905. Serial No. 291,155. Term of patent 7 years.

Claim.—The ornamental design for a card-case or similar article, as shown.

37,789. BACK FOR PLAYING-CARDS. SAMUEL N. BARKER, Kalamazoo, Mich. Filed Nov. 9, 1905. Serial No. 286,615. Term of patent 14 years.

Claim.—The ornamental design for a back for playing-cards, as shown.

TRADE-MARKS

PUBLISHED JANUARY 16, 1906.

The following trade-marks have been adjudged entitled to registration under the act of February 20, 1905, and are published in compliance with section 6 of said act. Said section provides:

"Any person who believes he would be damaged by the registration of a mark may oppose the same by filing notice of opposition, stating the grounds therefor, in the Patent Office within thirty days after the publication of the mark sought to be registered, which said notice of opposition shall be verified by the person filing the same before one of the officers mentioned in section two of this act. If no notice of opposition is filed within said time the Commissioner shall issue a certificate of registration therefor, as hereinafter provided for."

Marks which are stated to have been "Used ten years" are registrable under the last proviso of section 5 of said act, which is as follows:

"And provided further, That nothing herein shall prevent the registration of any mark used by the applicant or his predecessors, or by those from whom title to the mark is derived, in commerce with foreign nations or among the several States, or with Indian tribes, which was in actual and exclusive use as a trade-mark of the applicant or his predecessors from whom he derived title for ten years next preceding the passage of this act."

Section 14 of said act provides for the following fee:

"On filing notice of opposition to the registration of a trade-mark, ten dollars."

SER. No. 1,122. HORSESHOES AND HORSESHOE-CALKS. ROWE PATENT SQUARE SHOULDER SHOE CALK CO., Hartford, Conn. Filed Apr. 11, 1905. Used ten years.

The representation of a horseshoe having four square-shouldered horseshoe-calks and three square-shouldefed horseshoe-calks arranged within the horseshoe.

SER. No. 1,600. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio. Filed Apr. 15, 1905.

CIRCUS

The word "CIRCUS."

SER. No. 1,602. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio. Filed Apr. 15, 1905.

HUSTLING JOE

The words "HUSTLING JOE."

SER. No. 1,610. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio. Filed Apr. 15, 1905.

LITTLE-DUKE

The word "LITTLE-DUKE."

SER. No. 1,849. SOLID AND LIQUID SOAPS. EDWARD A. OLDS, New York, N. Y. Filed Apr. 17, 1905. Used ten years.

Packer's

The word-symbol "PACKER'S."

SER. No. 1,928. CONDENSED MILK. THE KENNEWEG COMPANY, Cumberland, Md. Filed Apr. 17, 1905.

SER. No. 1,928.

The representation of a star of solid color and the words "STAR BRAND CONDENSED MILK."

SER. No. 3,318. LARYNGOSCOPES. WILLIAM BORKEL AND COMPANY, Philadelphia, Pa. Filed Apr. 27, 1905.

The letter "B" inclosed in a circle.

SER. No. 3,465. INTERNAL REMEDIES AND A REMEDY IN THE FORM OF SUPPOSITORIES FOR ANEMIA, NEURASTHENIA, BRONCHITIS, INFLUENZA, PULMONARY TUBERCULOSIS, CONVALESCENCE, VAGINITIS, LEUCORRHEA, ENDOMETRITIS, METRITIS, URETHITIS, HYPERTROPHY, SUBINVOLUTION, ULCERATION, AND GONORRHEA. THE KAHAMA CHEMICAL CO., St. Louis, Mo. Filed Apr. 28, 1905.

Kahama

The word "KAHAMA."

SER. No. 4,382. STOVES, RANGES, FURNACES, AND PARTS THEREOF, INCLUDING GRATES AND GRATE-BARS. SCRANTON STOVE WORKS, Scranton, Pa. Filed May 5, 1905.

The rim of a cog-wheel surrounding the representation of the Western Hemisphere. Extending across the center of the cog-wheel and hemisphere is a sectional representation of a grate-bar, upon which is the word "DOCKASH."

SER. No. 4,389. DEVICES FOR USE IN APPLYING ELECTRICITY TO THE HUMAN BODY FOR CURATIVE PURPOSES. JOHN WILSON GIBBS, New York, N. Y. Filed May 5, 1905.

ELECTRICURA

The word "ELECTRICURA."

SER. No. 4,578. TOILET-PINS. DINKELSPIEL, RAFFLOER & Co., New York, N. Y. Filed May 6, 1905.

QUEEN'S OWN

The words "QUEEN'S OWN."

SER. No. 4,804. GELATINOUS ELASTIC CAPSULES CONTAINING LIQUID OR SOLID MEDICINAL INGREDIENTS. HANCE BROS. & WHITE, Philadelphia, Pa. Filed May 9, 1905.

SOLULES

The word "SOLULES."

SER. No. 4,880. LIQUID EXTRACT OF SMOKE FOR PRESERVING MEATS. B. KRAUSER & BROTHER, Milton, Pa. Filed May 9, 1905.

The representation of a suspended string of hams with a man in the act of applying a liquid to the hams with a brush with one hand and having a bucket in his other hand.

SER. No. 4,968. COTTON PIECE GOODS. TREMONT & SUFFOLK MILLS, Lowell, Mass. Filed May 10, 1905. Used ten years.

TREMONT

The arbitrarily-selected word "TREMONT."

SER. No. 5,293. WATCH-CHAINS, FOB-CHAINS, NECK-CHAINS, LORGNETTE-CHAINS, BOA-CHAINS, BRACELET-CHAINS, CHAIN-LINKED BRACELETS, KEY-CHAINS, CHATELAINES, AND CHAIN-TRIMMINGS. PARKS BROS. & ROGERS, Providence, R. I. Filed May 12, 1905.

The representation of a four-leaf clover having upon the petals respectively the letters and character "P B & R."

SER. No. 5,374. WINE. PLEASANT VALLEY WINE CO., Rheims, N. Y. Filed May 12, 1905.

Great Western

The words "GREAT WESTERN."

SER. No. 5,546. WHISKY. WEIL RICHOLD LIQUOR CO., Mobile, Ala. Filed May 13, 1905. Used ten years.

SER. No. 5,546.

A BIG HIT

The words "A BIG HIT."

SER. No. 5,706. AUTOGRAPHIC REGISTERS. THE CARTER-CRUME CO., LIMITED, Niagara Falls, N. Y. Filed May 15, 1905. Used ten years.

INVINCIBLE

The word "INVINCIBLE."

SER. No. 6,007. LAMP GLASSES AND GLOBES. MACBETH-EVANS GLASS COMPANY, Pittsburg, Pa. Filed May 18, 1905. Used ten years.

SANDOW

The word "SANDOW" inclosed in a diamond-shaped figure.

SER. No. 6,086. GUNS, RIFLES, PISTOLS, REVOLVERS, AND PARTS THEREOF. THE WEBLEY & SCOTT REVOLVER & ARMS CO., LD., Birmingham, England. Filed May 19, 1905.

The representation of a bullet in longitudinal section surmounted by a pair of wings.

SER. No. 6,288. WHISKY. WRIGHT & TAYLOR, Louisville, Ky. Filed May 23, 1905. Used ten years.

DUNMORE

The word "DUNMORE."

SER. No. 6,481. WHISKY. THE I. TRAGER CO., Cincinnati, Ohio. Filed May 24, 1905. Used ten years.

DEERFIELD

The word "DEERFIELD."

SER. No. 6,515. WHISKY. CRIGLER & CRIGLER, Covington, Ky. Filed May 24, 1905. Used ten years.

Woodland

The word "WOODLAND" and a monogram composed of the letters and character "C & C" inclosed within a shield design with stems and heads of grain below and at each side of the shield.

SER. No. 6,521. WHISKY. I. MICHELSON & BROS., Cincinnati, Ohio. Filed May 24, 1905.

BONANZA KING

The words "BONANZA KING" and the fanciful bust picture of a man inclosed in an oval.

SER. No. 6,585. WHISKY. FREIBERG, MEYER & CO., Cincinnati, Ohio. Filed May 25, 1905. Used ten years.

KENTUCKY PLUME

The words "KENTUCKY PLUME" and the monogram "F M & Co" on a dark circular background.

SER. No. 6,631. WHISKY. MAX E. POLLASKY, Buffalo, N. Y. Filed May 25, 1905. Used ten years.

Old Diamond Wedding

The words "OLD DIAMOND WEDDING" and a monogram composed of the letter and abbreviation "S Co" within a diamond-shaped outline.

SER. No. 6,947. SHEET AND PICTURE GLASS. SIMON BACHE & COMPANY. New York, N. Y. Filed May 30, 1905.

The representation of a heart.

SER. No. 7,117. RIBBON, RIBBON BOWS, AND GALLOON BINDINGS FOR USE ON SLIPPERS. MARY B. MARTINE, New York, N. Y. Filed May 31, 1905.

A monogram composed of the letters "M B M" inclosed by two concentric oval lines between which appear the number and words "365 DAYS IN ADVANCE OF ALL COMPETITORS."

SER. No. 7,157. POTTERY, EARTHENWARE, AND CHINA. DOULTON & CO., LIMITED, Lambeth, London, England. Filed June 1, 1905. Used ten years.

DOULTON

The word "DOULTON."

SER. No. 7,158. POTTERY, EARTHENWARE, AND CHINA. DOULTON & CO., LIMITED, Lambeth, London, England. Filed June 1, 1905.

The representation of a lion standing on a crown with a crown on his head, associated with the words "ROYAL DOULTON ENGLAND" arranged in the form of a circle within which is a monogram of the letters "D D D D."

SER. No. 7,324. CORSETS. ROYAL WORCESTER CORSET CO., Worcester, Mass. Filed June 3, 1905. Used ten years.

Kid Fitting.

The words "KID FITTING."

SER. No. 7,325. CORSETS. ROYAL WORCESTER CORSET CO., Worcester, Mass. Filed June 3, 1905. Used ten years.

SER. No. 7,325.

Royal Worcester

The words "ROYAL WORCESTER."

SER. No. 7,328. CORSETS. ROYAL WORCESTER CORSET CO., Worcester, Mass. Filed June 3, 1905. Used ten years.

BON TON

The words "BON TON."

SER. No. 7,329. CORSETS. ROYAL WORCESTER CORSET CO., Worcester, Mass. Filed June 3, 1905.

DOWAGER

The word "DOWAGER."

SER. No. 7,330. CORSET STEELS AND CLASPS. ROYAL WORCESTER CORSET CO., Worcester, Mass. Filed June 3, 1905. Used ten years.

WILDFIRE

The word "WILDFIRE."

SER. No. 7,347. REMEDY FOR CHILLS, FEVER AND AGUE, AND MALARIAL DISEASES. DR. DECKER MEDICINE CO., Paterson, N. J. Filed June 3, 1905.

Shake No More

The words "SHAKE NO MORE."

SER. No. 7,434. LAMPS. CLARKE'S PYRAMID AND FAIRY LIGHT COMPANY, LIMITED, London, England. Filed June 5, 1905. Used ten years.

CRICKLITE

The word "CRICKLITE."

SER. No. 7,435. CANDLE-LAMPS. CLARKE'S PYRAMID AND FAIRY LIGHT COMPANY, LIMITED, London, England. Filed June 5, 1905. Used ten years.

BURGLAR'S HORROR.

The words "BURGLAR'S HORROR."

SER. No. 7,563. SOLID-GOLD BADGES. Ingos & Bushell, Providence, R. I. Filed June 7, 1905.

SER. No. 7,568.

A monogram composed of the capital letters "C F I."

SER. No. 7,581. COMPOUND FOR CURING BLOOD AND SKIN DISEASES, PUT UP IN THE FORM OF PILLS, POWDERS, OINTMENTS, SOAPS, AND PLASTERS. CHARLES B. KNOX, Johnstown, N. Y. Filed June 7, 1905.

SPIM

The word "SPIM."

SER. No. 7,774. STOVE-POLISHES AND STOVE-VARNISHES. JOHN M. WOLF COMPANY, Brooklyn, N. Y. Filed June 9, 1905.

STOVE REPAIRS

The words "STOVE REPAIRS" appearing on a blue band.

SER. No. 7,860. ARTIFICIAL PORTLAND, AND HYDRAULIC CEMENT. ROUND TOP CEMENT COMPANY, Bloomfield, N. J. Filed June 10, 1905. Used ten years.

ROUND TOP

The words "ROUND TOP."

SER. No. 7,966. WORSTED YARNS. S. B. & B. W. FLEISHER, INCORPORATED, Philadelphia, Pa. Filed June 12, 1905. Used ten years.

The representation of an annular-shaped figure, a bar projected from one side of the interior of said figure across and beyond the opposite portion of the same, and segments of circles within said figure respectively above and below the adjacent portion of the bar. On the bar is the name "FLEISHER'S," the initial letter "F" of which forms the commencement of said bar.

SER. No. 7,965. MEDICATED FOOD FOR HORSES, CATTLE, SHEEP, AND HOGS PREPARED FROM ROOTS, HERBS, BARKS, SEEDS, &c. THE UNITED STATES FOOD CO., Pleasant City, Ohio. Filed June 12, 1905.

The letters "U·S·" on a curved panel of contrasted color inclosed within a larger rectangular main panel, which latter also incloses at its top and bottom two oblong panels and an octagonal panel underneath the said curved panel, a barnyard scene with a watering-trough and animals in the foreground and a barn in the background being illustrated in the octagonal panel, there being also shown on opposite sides of the octagonal panel respectively the representation of the head of a sheep and the head of a hog and in the upper corners respectively of the main panel the representation of a bull and a horse, and the inclosed panels and said representations being partially surrounded by efflorescent borders.

SER. No. 8,174. CEREAL COFFEE. WHITMAN GROCERY COMPANY Orange, Mass. Filed June 15, 1905.

MALTA-COFFEENA

The word "MALTA-COFFEENA."

SER. No. 8,175. HANDCUFFS AND LEG-IRONS. TOWER & LYON CO., New York, N. Y. Filed June 15, 1905. Used ten years.

TOWER'S DOUBLE LOCK

The words "TOWER'S DOUBLE LOCK."

SER. No. 8,276. CHOCOLATES. WILLIAM L. GANSERT, Rock Island, Ill. Filed June 15, 1905.

AJAX

The word "AJAX."

SER. No. 6,947. SHEET AND PICTURE GLASS. STRONG BAGUE & COMPANY, New York, N. Y. Filed May 29, 1905.

The representation of a heart.

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SER. No. 7,394. CORSETS. ROYAL WORCESTER CORSET Co., Worcester, Mass. Filed June 3, 1905. Used ten years.

Kid Fitting.

The words "KID FITTING."

SER. No. 7,395. CORSETS. ROYAL WORCESTER CORSET Co., Worcester, Mass. Filed June 3, 1905. Used ten years.

SER. No. 7,325.

Royal Worcester

The words "ROYAL WORCESTER."

SER. No. 7,328. CORSETS. ROYAL WORCESTER CORSET Co., Worcester, Mass. Filed June 3, 1905. Used ten years.

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SER. No. 7,347. REMEDY FOR CHILLS, FEVER AND AGUE, AND MALARIAL DISEASES. DR. DECKER MEDICINE Co., Paterson, N. J. Filed June 3, 1905.

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The words "SHAKE NO MORE."

SER. No. 7,434. LAMPS. CLARKE'S-PYRAMID AND FAIRY LIGHT COMPANY, LIMITED, London, England. Filed June 5, 1905. Used ten years.

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The word "CRICKLITE."

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BURGLAR'S HORROR.

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The word "SPIM."

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The words "ROUND TOP."

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The representation of an annular-shaped figure, a bar projected from one side of the interior of said figure across and beyond the opposite portion of the same, and segments of circles within said figure respectively above and below the adjacent portion of the bar. On the bar is the name "FLEISHER'S," the initial letter "F" of which forms the commencement of said bar.

SER. No. 7,965. MEDICATED FOOD FOR HORSES, CATTLE, SHEEP, AND HOGS PREPARED FROM ROOTS, HERBS, BARKS, SEEDS, &c. THE UNITED STATES FOOD Co., Pleasant City, Ohio. Filed June 12, 1905.

The letters "U S" on a curved panel of contrasted color inclosed within a larger rectangular main panel, which latter also incloses at its top and bottom two oblong panels and an octagonal panel underneath the said curved panel, a barnyard scene with a watering-trough and animals in the foreground and a barn in the background being illustrated in the octagonal panel, there being also shown on opposite sides of the octagonal panel respectively the representation of the head of a sheep and the head of a hog and in the upper corners respectively of the main panel the representation of a bull and a horse, and the inclosed panels and said representations being partially surrounded by efflorescent borders.

SER. No. 8,174. CEREAL COFFEE. WHITMAN GROCERY COMPANY Orange, Mass. Filed June 15, 1905.

MALTA-COFFEENA

The word "MALTA-COFFEENA."

SER. No. 8,175. HANDCUFFS AND LEG-IRONS. TOWER & LYON Co., New York, N. Y. Filed June 15, 1905. Used ten years.

TOWER'S DOUBLE LOCK

The words "TOWER'S DOUBLE LOCK."

SER. No. 8,276. CHOCOLATES. WILLIAM L. GANSERT, Rock Island, Ill. Filed June 15, 1905.

AJAX

The word "AJAX."

SER. No. 8,810. LEATHER BOOTS AND SHOES. UPHAM BROS. CO., Stoughton, Mass. Filed June 16, 1905.

A shield divided into three panels, one extending transversely across the top thereof, in which is the word "UPHAM," there being a hammer and an awl crossed and disposed on the dividing-line of the two other panels, the shield being surmounted by a shoe.

SER. No. 8,811. LEATHER BOOTS AND SHOES. UPHAM BROS. CO., Stoughton, Mass. Filed June 16, 1905.

A conventional representation of a hub of a wheel, from which radiate spokes between which are arranged the letters "BESPOKE."

SER. No. 8,836. WINE. P. J. BOWLIN LIQUOR CO., St. Paul, Minn. Filed June 21, 1905.

The word "FORTUNA," above which is the representation of a shield upon which is the monogram "P J B L Co," and on either side of shield is a cluster of grape-vine and leaves and three bunches of grapes.

SER. No. 8,852. BUTTER MADE FROM NUTS. CHARLES G. PURDY, New York, N. Y. Filed June 14, 1905.

The letters "SOVOS" arranged in the form of a Greek cross, inclosed in a circle, and spelling the word "Sovos" when read in any direction—from the right or left, up or down.

SER. No. 8,752. PIG-LEAD, CALKING-LEAD, AND BAR-LEAD. SELBY SMELTING AND LEAD COMPANY, San Francisco, Cal. Filed June 22, 1905. Used ten years.

SELBY

The word "SELBY."

SER. No. 8,941. WHISKY. MILTON L. EPPSTEIN, Fort Worth, Tex. Filed June 24, 1905. Used ten years.

BILLY BAXTER

The name "BILLY BAXTER."

SER. No. 8,942. BITTERS. MILTON L. EPPSTEIN, Fort Worth, Tex. Filed June 24, 1905. Used ten years.

HEIDELBERG

The word "HEIDELBERG," associated with a representation of an oval panel within which appear the figures of a man and a woman sitting on clouds with the rays of the sun forming a background, the right arm of the woman being extended toward the man and with a goblet grasped in the hand of each.

SER. No. 9,179. CANNED MEATS. FRANCIS H. LEGGETT & COMPANY, New York, N. Y. Filed June 27, 1905.

EMPRESS

The arbitrary word "EMPRESS."

SER. No. 9,397. SAUCES AND RELISHES FOR MEATS, FISH, GAME, MACARONI, AND SOUP. RED SNAPPER SAUCE CO., Memphis, Tenn. Filed June 30, 1905.

The words "RED SNAPPER" and the representation of a fish known as "red snapper."

SER. No. 9,360. GERMICIDAL AND ANTISEPTIC LIQUID USED AS A TOOTH AND MOUTH WASH, THROAT-GARGLE, AND THROAT-SPRAY. FRANK R. TYLER, Staunton, Va. Filed June 28, 1905.

PROPHYTOL

The word-symbol "PROPHYTOL."

SER. No. 9,570. REMEDY FOR COLIC, CHOLERA, DIARRHEA, AND LIKE COMPLAINTS. CHAMBERLAIN MEDICINE CO., Des Moines, Iowa. Filed July 1, 1905. Used ten years.

The phrase "CHAMBERLAIN'S COLIC CHOLERA AND DIARRŒA REMEDY."

SER. No. 9,635. DENTIFRICE. FREDERICK F. INGRAM, Detroit, Mich. Filed July 3, 1905. Used ten years.

ZODENTA

The word "ZODENTA."

SER. No. 9,833. LAUNDRY STARCH. NEW YORK GLUCOSE CO., New York, N. Y. Filed July 6, 1905.

The representation of an elephant's head with a circular band about the same.

SER. No. 9,889. WHEAT-FLOUR. PITTSBURGH MILLING CO., Allegheny, Pa. Filed July 6, 1905.

DEFIANCE

The word "DEFIANCE."

SER. No. 9,870. HOSE-SUPPORTERS. CHRISTINA J. HIGLEY, New York, N. Y. Filed July 7, 1905.

Hold Fast

The words "HOLD FAST."

SER. No. 10,329. SOIL-PIPES, FITTINGS, AND CONNECTIONS THEREFOR. THE CROWN PIPE AND FOUNDRY CO., Jackson, Ohio. Filed July 14, 1905.

CROWN

The word "CROWN."

SER. No. 10,380. SILK DRESS MATERIAL. JOHN GOODWIN COMPANY, New York, N. Y. Filed July 15, 1905.

JIU-JITSU

The compound word "JIU-JITSU."

SER. No. 10,625. LIQUID PREPARATION FOR TREATMENT OF THE SCALP AND HAIR. FRANK P. WHITSEL, Garrett, Ind. Filed July 20, 1905.

The hyphenated word "DER-MO-TINE" and the representation of a winged hare inclosed in a circular border.

SER. No. 10,645. REMEDY FOR THE CURE OF LIVER COMPLAINTS, CONSTIPATION, AND BILIOUSNESS. J. JUNGHANN, New York, N. Y. Filed July 21, 1905.

CASCAROMAS

The word "CASCAROMAS."

SER. No. 10,667. DRIED, SMOKED, PICKLED, AND CANNED FISH. WILLIAM T. SMITH, Gloucester, Mass. Filed July 21, 1905. Used ten years.

OCEAN PEARL

The words "OCEAN PEARL."

SER. No. 10,884. CANNED FRUITS AND VEGETABLES. GEORGE FRANK, San Jose, Cal. Filed July 27, 1905.

SUNLIGHT

The word "SUNLIGHT."

SER. No. 10,885. DRIED FRUITS. GEORGE FRANK, San Jose, Cal. Filed July 27, 1905.

SUNLIGHT

The word "SUNLIGHT."

SER. No. 10,910. UNDERSHIRTS AND DRAWERS. HOWE & HOWE, Boston, Mass. Filed July 27, 1905.

HUB

The word "HUB."

SER. No. 10,968. PNEUMATICALLY-ACTUATED PIANOFORTES. ROTH & ENGELHARDT, New York, N. Y. Filed July 28, 1905.

Harmonist

The word "HARMONIST."

SER. No. 10,969. AIR-CUSHIONING HEEL-PADS AND INSOLES FOR BOOTS AND SHOES. THE COMFORT HEEL CUSHION COMPANY, Philadelphia, Pa. Filed July 28, 1905.

AIREZE

The word "AIREZE."

SER. No. 11,046. CASTOR-OIL IN THE FORM OF PELLETS. IRA ROBERT BLACKBURN, Dayton, Ohio. Filed July 31, 1905.

VICTORY
Castor-Oil-Pills

The words "VICTORY CASTOR OIL PILLS," together with an oblong rectangular frame, through the central portion of which the words "CASTOR OIL PILLS" extend.

SER. No. 11,119. REMEDIES FOR PULMONARY DISEASES. FISCHER CHEMICAL IMPORTING CO., New York, N. Y. Filed Aug. 2, 1905.

EOSOT

The word "EOSOT."

SER. No. 11,121. OILS USED IN MAKING PERFUME. HEINE & CO., New York, N. Y. Filed Aug. 2, 1905.

JASMINDOL

The word "JASMINDOL."

SER. No. 11,143. WHISKY. LOUIS BUSH, Washington, D. C. Filed Aug. 2, 1905.

GREY FRIAR

The words "GREY FRIAR" and the representation of a friar in a garb of gray in the foreground of a scene comprising a lawn, a walk, and trees, the same representing a courtyard of a monastery, the whole being inclosed within an oval border.

SER. No. 11,165. PREPARED FATTY, OLEAGINOUS, OR UNCTUOUS FOOD SUBSTANCES. THE N. K. FAIRBANK COMPANY, Chicago, Ill. Filed Aug. 2, 1905. Used ten years.

The representation of the head of a bovine partially inclosed by a wreath of sprigs and blossoms.

SER. No. 11,336. CRUCIBLE, TOOL, DRILL, AND PICK STEEL. DUNHAM, CARRIGAN & HAYDEN COMPANY, San Francisco, Cal. Filed Aug. 7, 1905.

C O C

The letters "C O C," the letter "O" within a diamond-shaped line border and a letter "C" located at each end and exterior to the diamond outline.

SER. No. 11,384. MEDICINAL PREPARATIONS FOR CURING DISEASES OF THE BLOOD, BRAIN, AND NERVES. HARRY G. BALLOU, Rhyolite, Nev. Filed Aug. 7, 1905.

Oriental Pearls

The words "ORIENTAL PEARLS."

SER. No. 11,474. WHISKY. THE PEN-MAR DISTILLING CO., Waynesboro, Pa. Filed Aug. 10, 1905. Used ten years.

PEN-MAR

The hyphenated word "PEN-MAR," associated with a fanciful shield design inclosing a quill-pen running through the word "MAR." A small star is shown in the left upper corner of the shield.

SER. No. 11,554. CHILDREN'S UNDERWAISTS. THE H. & W. COMPANY, Newark, N. J. Filed Aug. 11, 1905.

PANSY

The arbitrary word or designation "PANSY."

SER. No. 11,557. PAPER-FASTENERS. GENERAL SPECIALTY COMPANY, Philadelphia, Pa. Filed Aug. 11, 1905.

The representation of a tadpole and the word "TADPOLE."

SER. No. 11,572. BAKING-POWDER. PRICE BAKING POWDER COMPANY, Chicago, Ill. Filed Aug. 12, 1905. Used ten years.

The representation of a bunch of grapes resting upon a cornucopia held by a hand.

SER. No. 11,618. CLOTHES-PINS. JOHN H. MCBRIDE, Des Moines, Iowa. Filed Aug. 12, 1905.

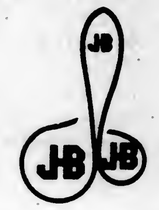

An irregular trefoil or triple-loop clothes-pin, in each lobe of which appears a monogram of the letters "J H B."

SER. No. 11,839. GARMENT-SUPPORTER CLASPS. HIRSH BROTHERS, New York, N. Y. Filed Aug. 21, 1905.

The representation of a hand, the word "THE," and the letter "E" upon the palm of the hand.

SER. No. 11,909. HEMOSTATIC, ASTRINGENT, BLOOD-PRESSURE-RAISING, AND STIMULATING PREPARATIONS FOR MEDICINAL OR SURGICAL PURPOSES. PARKE, DAVIS & CO., Detroit, Mich., and New York, N. Y. Filed Aug. 22, 1905.

ADRENALIN

The word "ADRENALIN."

SER. No. 11,917. LEATHER BOOTS AND SHOES. JNO. J. SCHULTHIS AND CO., Louisville, Ky. Filed Aug. 22, 1905.

The Ben Hur Shoe

The words "THE BEN HUR SHOE" and the representation of a man driving two horses attached to a chariot and running at full speed.

SER. No. 11,938. WHISKY. THE WINAND DISTILLING COMPANY OF BALTIMORE COUNTY, Baltimore, Md. Filed Aug. 22, 1905.

The representation of a barrel-head surrounded by a wreath with bowed ends fastened by a ribbon in the form of a bow from which scrolls extend laterally. On the head of the barrel appear the words and abbreviations "PIKESVILLE PURE RYE WHISKEY, THE WINAND DISTILLING CO. DISTILLERS. PIKESVILLE, MD."

SER. No. 12,279. CIGARETTES AND CIGARETTE-TOBACCO. HENRY PHILIP STRAUSS, New York, N. Y. Filed Sept. 6, 1905.

The word "LATTARD," associated with a panel, the latter being surrounded by scrolls, and mounted upon one corner of the panel is a mythical bird. Below the bird and to the right of the panel is an arboreal ornament apparently supporting the bird.

SER. No. 12,389. CANNED SARDINES. WILLIAM UNDERWOOD COMPANY, Boston, Mass. Filed Sept. 8, 1905.

The representation of a sea-gull with extended wings and carrying a fish in its beak, associated with the words "SEA GULL."

SER. No. 12,405. STEAM PUMPING-ENGINES AND STEAM-PUMPS. WHEELER CONDENSER & ENGINEERING CO., New York, N. Y. Filed Sept. 9, 1905. Used ten years.

WHEELER

The word "WHEELER."

SER. No. 12,408. CIGARS. THE BANNER CIGAR M'F'G. CO., Detroit, Mich. Filed Sept. 9, 1905.

A lion rampant above a banner with the words "ROYAL BANNER" prominently displayed thereon, associated with a corner of a house showing a portion of the wall and a tile roof, the wall bearing a sign "MANUFACTURED BY THE BANNER CIGAR M'F'G CO. DETROIT, MICH." The banner and lion are fastened to the corner of the house by a metal scroll; also a fanciful flag behind the lion and the banner, said flag having the upper corner next the flagstaff of blue with white castles displayed thereon, the remainder of the flag consisting of a red field with double narrow yellow horizontal stripes thereon.

SER. No. 12,693. BOOTS AND SHOES OF LEATHER AND OF LEATHER AND CLOTH. A. E. LITTLE & COMPANY, Lynn, Mass. Filed Sept. 11, 1905.

THE AUTO SHOE

The word "AUTO" shown as inclosed between two horizontal dashes and associated with the words "THE" and "SHOE."

SER. No. 13,270. CIGARS. CUESTA, REY & CO., West Tampa, Fla. Filed Oct. 4, 1905.

The representation of a youthful female figure with a low-cut yellow vest and yellow underskirt and red girdle and skirt, with green dotted veil depending from one shoulder to the waist, the figure standing upon a blue globe studded with gold stars and holding above its head with both hands a cigar-box marked "CUESTA, REY & CO.," with a background consisting of a river scene, including a steamer, bridge, and hotel with grounds and a blue shield in the sky on the right side, and Cuesta, Rey & Co's. factory, with trolley-cars and a red shield in the sky on the left side, together with four gold medals and a circular seal marked "CUESTA, REY & CO., TAMPA, FLA.," all associated with the words "LA UNICA."

SER. No. 13,503. HEADACHE SPECIFIC PUT UP IN TABULAR FORM. MIGRANOSE IMPORTING CO., Philadelphia, Pa. Filed Oct. 11, 1905.

SER. No. 13,508.

Migranose

The word "MIGRANOSE."

SER. No. 13,564. FACE-POWDER. JOSEPH TETLOW, Philadelphia, Pa. Filed Oct. 13, 1905.

Blanc Illusion

The title "BLANC ILLUSION."

SER. No. 13,748. TANNING EXTRACT. THE STAMFORD MANUFACTURING COMPANY, New York, N. Y. Filed Oct. 19, 1905.

CORONAX

The word "CORONAX" inclosed in a diamond-shaped figure.

SER. No. 13,899. PREPARATION FOR THE FACE AND SKIN TO REMOVE FRECKLES, TAN, MOTH PATCHES, SUNBURN, AND OTHER DISCOLORATIONS OF THE SKIN. CLARENCE D. EVANS, Healdsburg, Cal. Filed Oct. 24, 1905.

ARABALENE

The word "ARABALENE."

SER. No. 13,947. ALE. C. H. EVANS & SONS, Hudson, N. Y. Filed Oct. 26, 1905. Used ten years.

EVANS' ALE

The words "EVANS' ALE."

SER. No. 13,978. PERFUMERY. COLGATE & CO., New York, N. Y. Filed Oct. 27, 1905.

KNICKERBOCKER

The word "KNICKERBOCKER."

SER. No. 14,012. TOOTH-PASTE. JOHNSON & JOHNSON, New Brunswick, N. J. Filed Oct. 28, 1905. Used ten years.

Zonweiss

The word "ZONWEISS."

SER. No. 14,707. BLEACHED AND UNBLEACHED SHIRTINGS AND SHEETINGS, CAMBRICS, AND LONG CLOTH. GRINNELL WILLIS & CO., New York, N. Y. Filed Nov. 16, 1905.

The words "BLUEFIELD'S CHOICE," associated with the representation of a banana-tree with bananas thereon, the tree rising from a ground showing tropical plants thereon.

SER. No. 14,710. BLEACHED AND UNBLEACHED SHIRTINGS AND SHEETINGS, CAMBRICS, AND LONG CLOTH. GRINNELL WILLIS & CO., New York, N. Y. Filed Nov. 16, 1905.

The words "THE ORIGINAL AMERICAN," associated with the representation of crossed bows and arrows.

SER. No. 14,746. BLEACHED AND UNBLEACHED SHIRTINGS AND SHEETINGS, CAMBRICS, AND LONG CLOTH. GRINNELL WILLIS & Co., New York, N. Y. Filed Nov. 17, 1905.

AUTOMOBILE

The word "AUTOMOBILE," associated with the representation of an automobile containing a male and a female person.

SER. No. 14,747. BLEACHED AND UNBLEACHED SHIRTINGS AND SHEETINGS, CAMBRICS, AND LONG CLOTH. GRINNELL WILLIS & Co., New York, N. Y. Filed Nov. 17, 1905.

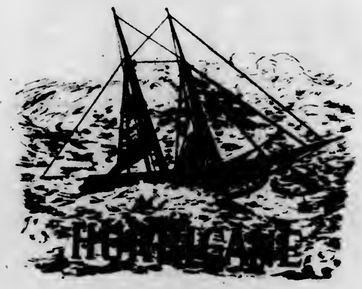

The word "HURRICANE," associated with the representation of a sailing vessel in a stormy sea.

SER. No. 14,750. BLEACHED AND UNBLEACHED SHIRTINGS AND SHEETINGS, CAMBRICS, AND LONG CLOTH. GRINNELL WILLIS & Co., New York, N. Y. Filed Nov. 17, 1905.

WHITE RIVER

The words "WHITE RIVER," associated with the representation of a mountain stream with an Indian paddling a canoe appearing in the foreground.

SER. No. 14,751. BLEACHED AND UNBLEACHED SHIRTINGS AND SHEETINGS, CAMBRICS, AND LONG CLOTH. GRINNELL WILLIS & Co., New York, N. Y. Filed Nov. 17, 1905.

MERRY MUSLIN

The words "MERRY MUSLIN," associated with the representation of three jolly gnomes.

SER. No. 15,139. BORAX SOAP. PACIFIC COAST BORAX COMPANY, San Francisco, Cal. Filed Dec. 2, 1905.

20-MULE-TEAM

The word-symbol "20-MULE-TEAM."

SER. No. 15,261. IMITATION LEATHER. FRANK W. WHITCHER, Boston, Mass. Filed Dec. 8, 1905.

KEDSTOK

The word "KEDSTOK."

SER. No. 15,272. HAT-FASTENERS. JOHN C. MORRISON, New York, N. Y. Filed Dec. 8, 1905.

BLESSING
HAT FASTENER

The words "THE BLESSING HAT FASTENER."

SER. No. 15,280. WALL PAINT OR COATING. ALABASTINE COMPANY, Grand Rapids, Mich. Filed Dec. 8, 1905.

A Greek cross, the outer ends of the arms of which cross are united by a circle. The word "ALABASTINE" is duplicated on the horizontal and upright arms of said cross, the letters of the vertically-extending word being arranged horizontally and being vertically alined and the third letter "A" being common to both words.

SER. No. 15,285. READY TAR-AND-FELT ROOFING. BARRETT MANUFACTURING COMPANY, New York, N. Y. Filed Dec. 8, 1905. Used ten years.

GAUNTLET

The representation of an iron glove coupled with the word "GAUNTLET."

SER. No. 15,292. ASPHALT ROOFING. STOWELL MANUFACTURING COMPANY, Jersey City, N. J. Filed Dec. 9, 1905.

EAGLE

The word "EAGLE," in combination with the emblematic device of a soaring eagle.

SER. No. 15,293. ASPHALT ROOFING. STOWELL MANUFACTURING COMPANY, Jersey City, N. J. Filed Dec. 9, 1905.

Two concentric circles, in the outer one of which are the words "MONARCH ROOFING," and in the inner circle is a lion's head. Between the jaws of the lion there is a roll upon which are inscribed the words "MONARCH ROOFING. STOWELL." the rest of corporate name being invisible.

SER. No. 15,304. TOILET, TOOTH, NAIL, HAND, HAIR, MILITARY, CLOTH, HAT, BATH, AND INFANT BRUSHES. JIRO SAKABE, New York, N. Y. Filed Dec. 9, 1905.

The letters "K M T," separated from each other by straight lines and arranged one above the other within a bordered shield-shaped figure.

SER. No. 15,316. WHEAT-FLOUR. THE RED STAR MILL & ELEVATOR COMPANY, Wichita, Kans. Filed Dec. 9, 1905.

SQUARE DEAL

The words "SQUARE DEAL."

SER. No. 15,341. MONTHLY PERIODICAL. THE FAMILY DOCTOR PUBLISHING CO., New York, N. Y. Filed Dec. 11, 1905.

THE
FAMILY DOCTOR

The words "THE FAMILY DOCTOR."

SER. No. 15,359. ELECTRIC TIME-SWITCHES. THE CRESCENT ELECTRICAL & MANUFACTURING COMPANY, Valparaiso, Ind. Filed Dec. 12, 1905.

CRESCENT

The word "CRESCENT."

Ser. No. 15,882. NEWSPAPER. MANUFACTURERS' RECORD PUBLISHING COMPANY, Baltimore, Md. Filed Dec. 12, 1905.

SOUTHERN FARM MAGAZINE

The words "SOUTHERN FARM MAGAZINE."

Ser. No. 15,882. MONTHLY MAGAZINE DEVOTED TO THE IMPROVEMENT OF CITIES AND TOWNS ALONG SANITARY AND ENGINEERING LINES. MUNICIPAL ENGINEERING COMPANY, Indianapolis, Ind. Filed Dec. 13, 1905.

MUNICIPAL ENGINEERING

The words "MUNICIPAL ENGINEERING."

SACKETT & WILHELMS
LITHOGRAPHING & PRINTING CO.
NEW YORK

TRADE-MARKS

REGISTERED JANUARY 16, 1906.

48,774. PORTLAND, NATURAL-ROCK, AND IMPROVED CEMENT. AMERICAN CEMENT COMPANY, Philadelphia, Pa.
The word "UNION." Used ten years.
Filed June 20, 1905. Serial No. 8,577. PUBLISHED NOVEMBER 21 1905.

48,775. MAINSPRINGS FOR WATCHES. AMERICAN WALTHAM WATCH CO., Waltham, Mass.
The word "RESILIENT." Used ten years.
Filed October 19, 1905. Serial No. 13,746. PUBLISHED NOVEMBER 21, 1905.

48,776. SMOKING AND CHEWING TOBACCO. JAMES A. CLARK, Bedford City, Va.
The word "ROSEDALE" inclosed in a diamond-shaped figure.
Filed August 18, 1905. Serial No. 11,770. PUBLISHED NOVEMBER 21, 1905.

48,777. WICKS, WEBS, AND WEBBINGS. FLETCHER MANUFACTURING COMPANY, Providence, R. I.
The representation of an uplifted arm holding a bow and issuing from a heraldic scroll.
Filed August 15, 1905. Serial No. 11,679. PUBLISHED NOVEMBER 21, 1905.

48,778. PREPARATIONS FOR CLEANING, POLISHING, AND PRESERVING. FRITZ SCHULZ JUN. AKTIENGESELLSCHAFT, Leipsic, Germany, and Lincoln, N. J.
A representation of the globe in connection with a red band or panel. The words "FRITZ SCHULZ JUN. LEIPZIG" appear within the globe.
Filed May 25, 1905. Serial No. 6,591. PUBLISHED NOVEMBER 21, 1905.

48,779. PREPARATIONS FOR CLEANING AND POLISHING. FRITZ SCHULZ JUN. AKTIENGESELLSCHAFT, Leipsic, Germany, and Lincoln, N. J.
A representation of the globe bearing the lines of longitude and latitude, associated with the words "FRITZ SCHULZ JUN. LEIPZIG."
Filed May 25, 1905. Serial No. 6,592. PUBLISHED NOVEMBER 21, 1905.

48,780. PREPARATIONS FOR POLISHING, CLEANING, AND PRESERVING LEATHER. FRITZ SCHULZ JUN. AKTIENGESELLSCHAFT, Leipsic, Germany, and Lincoln, N. J.
The word "GLOBIN."
Filed May 25, 1905. Serial No. 6,593. PUBLISHED NOVEMBER 21, 1905.

48,781. STOVE-POLISH. FRITZ SCHULZ JUN. AKTIENGESELLSCHAFT, Leipsic, Germany, and Lincoln, N. J.
The word "GLOBELINE."
Filed May 25, 1905. Serial No. 6,595. PUBLISHED NOVEMBER 21, 1905.

48,782. PETROLEUM BURNING OILS. GULF REFINING COMPANY, Port Arthur, Tex., and Pittsburg, Pa.
The word "HELIUM."
Filed June 22, 1905. Serial No. 8,762. PUBLISHED NOVEMBER 21, 1905.

48,783. PETROLEUM BURNING OILS. GULF REFINING COMPANY, Port Arthur, Tex., and Pittsburg, Pa.
The word "SOLIUM."
Filed June 22, 1905. Serial No. 8,763. PUBLISHED NOVEMBER 21, 1905.

48,784. PETROLEUM BURNING OILS. GULF REFINING COMPANY, Port Arthur, Tex., and Pittsburg, Pa.
The word "SUNBURST."
Filed June 22 1905. Serial No. 8,764. PUBLISHED NOVEMBER 21, 1905.

48,785. PETROLEUM BURNING OILS. GULF REFINING COMPANY, Port Arthur, Tex., and Pittsburg, Pa.
The word "LUSTERLITE."
Filed June 22, 1905. Serial No. 8,765. PUBLISHED NOVEMBER 21, 1905.

48,786. PETROLEUM BURNING OILS. GULF REFINING COMPANY, Port Arthur, Tex., and Pittsburg, Pa.
The word "RADIUM."
Filed June 22, 1905. Serial No. 8,766. PUBLISHED NOVEMBER 21, 1905.

48,787. PETROLEUM LUBRICATING OILS. GULF REFINING COMPANY, Port Arthur, Tex., and Pittsburg, Pa.
The representation of an Eskimo hunting seals, with a background of clouds and icebergs, and seals floating on cakes of ice in the foreground, the whole being inclosed in two concentric circles.
Filed June 22, 1905. Serial No. 8,768. PUBLISHED NOVEMBER 21, 1905.

48,788. CIGARS. HAVANA COMMERCIAL COMPANY, New York, N. Y.
The words, letters, and abbreviation "LA MERIDIANA DE P. M. Y CA.," the word "MERIDIANA" appearing on a scroll which surmounts a wreath inclosing the letters "DE P. M. Y CA." and also inclosing the word "HABANA."
Filed June 6, 1905. Serial No. 7,779. PUBLISHED NOVEMBER 21, 1905.

48,789. CERTAIN PROPRIETARY MEDICINES. DR. KILMER & CO., Binghamton, N. Y.
The facsimile signature "S. ANDRAL KILMER, M. D."
Filed July 31, 1905. Serial No. 11,022. PUBLISHED NOVEMBER 14, 1905.

48,790. PROPRIETARY MEDICINE. DR. KILMER & CO., Binghamton, N. Y.
The representation of a growing plant with its roots, the representation of a human kidney, the representation of a bladder, and the representation of a liver, stomach, and gall arranged on separate panels, associated with the words "CURES," "THE KIDNEY," "THE BLADDER," "THE LIVER, STOMACH, GALL," and the abbreviation, words, and character "DR. KILMER'S SWAMP ROOT KIDNEY, LIVER & BLADDER CURE."
Filed July 31, 1905. Serial No. 11,023. PUBLISHED NOVEMBER 14, 1905.

48,791. OINTMENT. DR. KILMER & CO., Binghamton, N. Y.
The letters and character "U & O," associated with which is the word "ANOINTMENT."
Filed July 31, 1905. Serial No. 11,025. PUBLISHED NOVEMBER 14, 1905.

48,792. PROPRIETARY MEDICINE. DR. KILMER & CO., Binghamton, N. Y.
The representation of a scroll lying on a rock and an Indian woman pointing to the scroll and a rising sun, associated with which are the abbreviation and words "DR. KILMER'S INDIAN COUGH CURE" and the words and character "THE QUICK CURE FOR COLDS, COUGHS, CATARRH, CROUP, BRONCHITIS, ASTHMA & CONSUMPTION" and the words "CONSUMPTION OIL."
Filed July 31, 1905. Serial No. 11,026. PUBLISHED NOVEMBER 14, 1905.

48,793. PROPRIETARY MEDICINE. DR. KILMER & CO., Binghamton, N. Y.
The abbreviation and words "DR. KILMER'S INDIAN COUGH CURE" on an ornamental background.

Filed July 31, 1905. Serial No. 11,027. PUBLISHED NOVEMBER 14, 1905.

48,794. PROPRIETARY MEDICINES. DR. KILMER & Co., Binghamton, N. Y.
The abbreviation and word "DR. KILMER'S."
Filed July 31, 1905. Serial No. 11,028. PUBLISHED NOVEMBER 14 1905.

48,795. PROPRIETARY REMEDY. DR. KILMER & Co., Binghamton, N. Y.
The representation of a bunch of leaves in black on a panel, associated with the words "AUTUMN LEAF EXTRACT."
Filed July 31, 1905. Serial No. 11,029. PUBLISHED NOVEMBER 14, 1905.

48,796. PROPRIETARY MEDICINE. DR. KILMER & Co., Binghamton, N. Y.
The hyphenated word "OCEAN-WEED," associated with the words "HEART REMEDY."
Filed July 31, 1905. Serial No. 11,030. PUBLISHED NOVEMBER 14, 1905.

48,797. PROPRIETARY REMEDY. DR. KILMER & Co., Binghamton. N. Y.
The abbreviation and words "DR. KILMER'S FEMALE REMEDY."
Filed July 31, 1905. Serial No. 11,031. PUBLISHED NOVEMBER 14. 1905.

48,798. PROPRIETARY REMEDY. DR. KILMER & Co., Binghamton, N. Y.
The words "AUTUMN-LEAF EXTRACT."
Filed July 31, 1905. Serial No. 11,032. PUBLISHED NOVEMBER 14, 1905.

48,799. PROPRIETARY REMEDY. DR. KILMER & Co., Binghamton, N. Y.
The word "PARILLA."
Filed July 31, 1905. Serial No. 11,033. PUBLISHED NOVEMBER 14, 1905.

48,800. PROPRIETARY MEDICINES. DR. KILMER & Co., Binghamton, N. Y.
A portrait of S. Andral Kilmer.
Filed July 31, 1905. Serial No. 11,034. PUBLISHED NOVEMBER 14, 1905.

48,801. PROPRIETARY REMEDY. DR. KILMER & Co., Binghamton, N. Y.
The representation of a heart with its principal arteries and veins, associated with the abbreviation and words "DR. KILMER'S OCEAN-WEED HEART REMEDY PERFECT BLOOD PURIFIER."
Filed July 31, 1905. Serial No. 11,035. PUBLISHED NOVEMBER 14, 1905.

48,802. LIQUID PAINT. NATURAL LIQUID PAINT Co., San Francisco, Cal.
The representation of a sarcophagus or mummy-case with concentric circles inscribed across the front and a bar transverse of the circle. In the upper half of the circle are the words and abbreviation "NATURAL LIQUID PAINT CO." and upon the transverse bar the word "PRESERVATIVE."
Filed October 12, 1905. Serial No. 13,516. PUBLISHED NOVEMBER 21, 1905.

48,803. CIGARS. HENRY T. OFFTERDINGER, Washington, D. C.
The words "AFTER DINNER."
Filed October 9, 1905. Serial No. 13,450. PUBLISHED NOVEMBER 21, 1905.

48,804. CERTAIN NAMED JEWELRY. PHOENIX JEWELRY Co., New York, N. Y.
The word "PHOENIX."
Filed June 5, 1905. Serial No. 7,500. PUBLISHED NOVEMBER 21, 1905.

48,805. SURGICAL BELTS AND BANDAGES. SHARP & SMITH, Chicago, Ill.
The letters and word "S AND S."
Filed June 7, 1905. Serial No. 7,577. PUBLISHED NOVEMBER 21, 1905.

48,806. CLOCKS. SPAULDING & Co., Chicago, Ill.
The representation of a sailor at a steering-wheel or helm.
Filed September 8, 1905. Serial No. 12,272. PUBLISHED NOVEMBER 21, 1905.

48,807. LAMPS, LANTERNS, AND PARTS THEREOF. FR. STÜBGEN & Co., Erfurt, Germany.
The representation of a flying bat. Used ten years.
Filed June 8, 1905. Serial No. 7,712. PUBLISHED NOVEMBER 21, 1905.

48,808. RAZOR-HONES, SHARPENING-STONES, AND SHARPENING-WHEELS. FRANZ SWATY, Marburg, Austria-Hungary.
The words "SWATY-STEIN ALUMIN."
Filed August 1, 1905. Serial No. 11,106. PUBLISHED NOVEMBER 21, 1905.

48,809. LEATHER BELTINGS. THE AMERICAN OAK LEATHER COMPANY, Cincinnati, Ohio.
The words "ROCK OAK."
Filed May 24, 1905. Serial No. 6,446. PUBLISHED JUNE 27, 1905.

48,810. CATAMENIAL BANDAGES. THE BORATED SPECIALTY COMPANY, New York, N. Y.
The letters "B. S. N."
Filed June 23, 1905. Serial No. 8,853. PUBLISHED NOVEMBER 21, 1905.

48,811. SIZING-STRENGTHENING COMPOUND. THE PAPYRHESION COMPANY, New York, N. Y.
The word "PAPYRHESION" on a background consisting in the representation of a piece of rope with frayed ends.
Filed June 15, 1905. Serial No. 8,261. PUBLISHED NOVEMBER 21, 1905.

48,812. COMPOUND FOR CLEANING. JOHN FRANKLIN WHITMAN, Philadelphia, Pa.
The representation of the head of a bulldog inclosed within a border of oval form, a rectangular bar being held within the open mouth of the dog bearing the word "GRITINA."
Filed October 19, 1905. Serial No. 13,755. PUBLISHED NOVEMBER 21, 1905.

48,813. WASHING PREPARATION IN A DRY OR POWDERED FORM. WILFORD M. WILLIAMS, Indianapolis, Ind.
The representation of a clock dial or face indicating the hour of nine o'clock and associated with the words "NINE O'CLOCK WASHING-TEA."
Filed August 2, 1905. Serial No. 11,206. PUBLISHED NOVEMBER 21, 1905.

48,814. SPURS, BITS, AND STIRRUPS. AUGUST BUERMANN, Newark, N. J.
The words "DOM PEDRO."
Filed May 23, 1905. Serial No. 6,367. PUBLISHED NOVEMBER 21, 1905.

48,815. WHISKY. JACOB CARTUN, Philadelphia, Pa.
The hyphenated word "ANTI-GRIPPINE."
Filed June 5, 1905. Serial No. 7,491. PUBLISHED NOVEMBER 21, 1905.

48,816. GIN. DR. C. BOUVIERS SPECIALTY Co., Louisville, Ky.
The representation of an oblong shield, across which appears a flying bird carrying a scroll in its bill, associated with the abbreviation, letter, and word "DR. C. BOUVIER'S."
Filed May 6, 1905. Serial No. 4,552. PUBLISHED NOVEMBER 21, 1905.

48,817. CLEANING AND POLISHING PREPARATIONS. FRITZ SCHULZ JUN. AKTIENGESELLSCHAFT, Leipsic, Germany, and Lincoln, N. J.
The word "GLOBE."
Filed May 25, 1905. Serial No. 6,594. PUBLISHED NOVEMBER 21, 1905.

48,818. PATENT-LEATHER, CALFSKINS, AND WAXED CALFSKINS. CORNELIUS HEYL, Worms, Germany.
The representation of a heraldic shield and two dragons bolding the same, associated with a monogram composed of the letters "C H" on the shield.
Filed October 11, 1905. Serial No. 13,462. PUBLISHED NOVEMBER 21, 1905.

48,819. COCKTAILS. SIGMUND HOCHSTADTER, New York, N. Y.
The representation of a filled wine or liquor glass, bearing a monogram composed of the letters and abbreviation "T H Co." About said glass are shown a number of dwarfs engaged in work upon the same, and below said glass and figures is disposed a band or ribbon. At one end of said band or ribbon is arranged a shield of ornamental outline and to the side of said shield and below said band or ribbon appears the signature "THE HOCHSTADTER Co." At the opposite ends of the band or ribbon are shown sprays of flowers and foliage extending upwardly from said band or ribbon.
Filed May 20, 1905. Serial No. 6,195. PUBLISHED NOVEMBER 21 1905.

48,820. BRUSHES. JOHN L. WHITING & SON Co., Boston, Mass.
The representation of a battle-ax having the letter "W" upon its blade. Used ten years.
Filed April 29, 1905. Serial No. 3,585. PUBLISHED NOVEMBER 21, 1905.

48,821. OAK-TANNED COWHIDE. KULLMAN, SALZ & COMPANY, San Francisco, Cal.
The word "MONARCH."
Filed June 19, 1905. Serial No. 8,548. PUBLISHED NOVEMBER 21, 1905.

48,822. WHISKY. MORRIS LANGE, Cincinnati, Ohio.
The words "DUKE OF YORK."
Filed June 16, 1905. Serial No. 8,315. PUBLISHED NOVEMBER 21, 1905.

48,823. TANNED LEATHER. LEAS & MCVITTY, INCORPORATED, Philadelphia, Pa.
The letters and character "L. & M."
Filed April 14, 1905. Serial No. 1,522. PUBLISHED NOVEMBER 21, 1905.

48,824. BANK-CHECKS. LEVEY BROS. & Co., Indianapolis, Ind.
The word and abbreviation "LEVEY IND'PLS." Used ten years.
Filed April 29, 1905. Serial No. 3,543. PUBLISHED NOVEMBER 21, 1905.

48,825. WHISKY. LOEB BLOOM & Co., Paducah, Ky.
The words "PADUCAH CLUB." Used ten years.
Filed May 24, 1905. Serial No. 6,465. PUBLISHED NOVEMBER 21, 1905.

48,826. WHISKY. MELINI & EAKIN, Albuquerque, N. Mex. Ter.
The words "ALVARADO CLUB."
Filed May 13, 1905. Serial No. 5,561. PUBLISHED NOVEMBER 21, 1905.

48,827. WHISKY. P. J. BOWLIN LIQUOR Co., St. Paul, Minn.
The word "STRONGHOLD."
Filed September 15, 1905. Serial No. 12,641. PUBLISHED NOVEMBER 21, 1905.

48,828. BUFFED LEATHER. P. RIELLY & SON, Newark, N. J.
The representation of a running stag.
Filed July 15, 1905. Serial No. 10,376. PUBLISHED NOVEMBER 21, 1905.

48,829. LEATHER FOR THE UPPERS OF SHOES. ROBERT H. FOERDERER, INCORPORATED, Philadelphia, Pa.
The word "VICI."
Filed September 30, 1905. Serial No. 13,162. PUBLISHED NOVEMBER 21, 1905.

48,830. CIGARS. S. S. PIERCE Co., Boston, Mass.
The words "LA MORA" on a panel above a figure of the head and shoulders of a female clad in Moorish costume, with floral adornments on either side in the foreground and a house interior with representations of slaves on either side in the background.
Filed June 5, 1905. Serial No. 7,393. PUBLISHED NOVEMBER 21, 1905.

48,831. SEEDS. THE ALBERT DICKSON COMPANY, Chicago, Ill.
The word "SUN." Used ten years.
Filed June 17, 1905. Serial No. 8,397. PUBLISHED NOVEMBER 21, 1905.

48,832. BED-BOTTOMS AND BEDSTEADS. THE NATIONAL SPRING BED COMPANY, New Britain, Conn.
The words "RIP VAN WINKLE SPRING BED" inclosed between two concentric circles.
Filed June 2, 1905. Serial No. 7,267. PUBLISHED NOVEMBER 21, 1905.

48,833. PAINTS, VARNISHES, COLORS, FILLERS, SURFACERS, STAINS, AND ENAMELS. THE THOMSON WOOD FINISHING Co., Philadelphia, Pa.
The word "SAMALOID."
Filed June 7, 1905. Serial No. 7,287. PUBLISHED NOVEMBER 21, 1905.

48,834. PAINTS, VARNISHES, FILLERS, STAINS, AND ENAMELS. THE THOMSON WOOD FINISHING Co., Philadelphia, Pa.
The word "ZAMBOLIO."
Filed June 7, 1905. Serial No. 7,588. PUBLISHED NOVEMBER 21, 1905.

48,835. BOOTS AND SHOES MADE OF LEATHER AND OF CANVAS. V. K. AND A. H. JONES Co., Lynn, Mass.
The word "MELBA" in script letters, the final strokes of the letter "M" of which incloses the other letters of the word.
Filed May 27, 1905. Serial No. 6,772. PUBLISHED NOVEMBER 21, 1905.

48,836. MEDICATED BLACKBERRY BRANDY. VAN VLEET-MANSFIELD DRUG Co., Memphis, Tenn.
The abbreviation and words "DR. MCCABE'S MEDICATED BLACKBERRY BRANDY" and the representation of a woman standing among blackberry bushes and fruit, holding in one hand a snake and pointing with the other toward the ground, all in the foreground of a minor scene comprising land, water, and pyramids. Used ten years.
Filed September 6, 1905. Serial No. 12,291. PUBLISHED NOVEMBER 21, 1905.

48,837. WHISKY. VAN VLEET-MANSFIELD DRUG Co., Memphis, Tenn.
The words "OLD SOUTHERN HOME" and the representation of a Southern mansion surrounded by trees, driveways, &c.
Filed September 6, 1905. Serial No. 12,293. PUBLISHED NOVEMBER 21, 1905.

48,838. BOYS' LEATHER BOOTS AND SHOES. WHITNEY WABEL & Co., Cleveland, Ohio.
The words "RUF AND TUF."
Filed August 31, 1905. Serial No. 12,128. PUBLISHED NOVEMBER 21, 1905.

48,839. BOOTS, SHOES, AND SLIPPERS MADE OF LEATHER. WINGO, ELLETT & CRUMP SHOE Co., Manchester, Va.
The words "QUALITY ROW."
Filed August 4, 1905. Serial No. 11,254. PUBLISHED NOVEMBER 21, 1905.

48,840. WHISKY. WOOLNER & COMPANY, Peoria, Ill.
The word "CRONIES."
Filed September 15, 1905. Serial No. 12,681. PUBLISHED NOVEMBER 21, 1905.

48,841. WHISKY. WOOLNER & COMPANY, Peoria, Ill.
The words "BETTER TIMES."
Filed September 15, 1905. Serial No. 12,682. PUBLISHED NOVEMBER 21, 1905.

48,842. WHISKY. WOOLNER & COMPANY, Peoria, Ill.
The word "EASTLAND" and a representation of the steamer *Eastland*.
Filed September 15, 1905. Serial No. 12,684. PUBLISHED NOVEMBER 21, 1905.

48,843. MACARONI, SPAGHETTI, VERMICELLI, AND NOODLES. ANGER BAKING Co., New York, N. Y.
The words "GOLDEN SEAL."
Filed September 12, 1905. Serial No. 12,503. PUBLISHED NOVEMBER 21, 1905.

48,844. LIQUID MEDICINAL PREPARATION. ANGLO-AMERICAN MEDICAL Co., Chicago, Ill.
The representation of a rose, associated with the hyphenated word "ANTI-SWEATINE."
Filed August 16, 1905. Serial No. 11,689. PUBLISHED NOVEMBER 21, 1905.

48,845. EMOLLIENT AND MEDICINAL PREPARATION. THOMAS ELLWOOD CARPENTER, Mount Kisco, N. Y.
The hyphenated word "LUBRI-CHONDRIN."
Filed August 29, 1905. Serial No. 12,068. PUBLISHED NOVEMBER 21, 1905.

48,846. LAGER-BEER. CHRISTIAN FEIGENSPAN, a Corporation, Newark, N. J.
The representation of a goblet filled with foaming beer held at the stem by a hand, a scroll with the word "FEIGENSPAN'S" being arranged thereon and extending midway over the goblet.
Filed August 28, 1905. Serial No. 12,012. PUBLISHED NOVEMBER 21, 1905.

48,847. PREPARATION FOR THE REMOVAL OF SUPERFLUOUS HAIR. MARSHALL M. CUSIC, Princeton, Ill.
The word "HAIRILLA."
Filed September 29, 1905. Serial No. 13,135. PUBLISHED NOVEMBER 21, 1905.

48,848. WHISKY. DREYFUSS, WEIL & Co., Paducah, Ky.
The word "ECLIPSE."
Filed September 15, 1905. Serial No. 12,650. PUBLISHED NOVEMBER 21, 1905.

48,849. WHISKY. DREYFUSS, WEIL & Co., Paducah, Ky.
The name "S. H. ROLLINS."
Filed September 15, 1905. Serial No. 12,651. PUBLISHED NOVEMBER 21, 1905.

48,850. INSECTICIDE. E. M. ECCLES, McKeesport, Pa.
The word "KILLERINE."
Filed September 2, 1905. Serial No. 12,163. PUBLISHED NOVEMBER 21, 1905.

48,851. BISCUITS AND CRACKERS. A. EXTON & Co. Trenton, N. J.
The word "EXTON." Used ten years.
Filed September 11, 1905. Serial No. 12,464. PUBLISHED NOVEMBER 21, 1905.

48,852. REMEDY FOR THE DISEASES OF WOMEN. GERSTLE MEDICINE Co., Chattanooga, Tenn.
The letters "G. F. P."
Filed June 3, 1905. Serial No. 7,333. PUBLISHED NOVEMBER 21, 1905.

48,853. BISCUITS. GRIGGS, COOPER AND COMPANY, St. Paul, Minn.
The representation of a red substantially rectangular panel having centrally disposed thereon a white disk with the word "WEYNOT" thereon.
Filed July 18, 1905. Serial No. 10,532. PUBLISHED NOVEMBER 21, 1905.

48,854. WHISKY. HOUCK & DIETER Co., El Paso, Tex.
The compound word "GLEN-ROCK," below which is a monogram composed of the letters, abbreviation, and character "H & D Co" inclosed in a double circle, on either side of which is a spray of grain.
Filed June 19, 1905. Serial No. 8,498. PUBLISHED NOVEMBER 21, 1905.

48,855. MEDICINAL AND CHEMICAL PREPARATIONS. DR. D. JAYNE & SON, Philadelphia, Pa.
The name "D. JAYNE."
Filed April 10, 1905. Serial No. 1,042. PUBLISHED NOVEMBER 21, 1905.

48,856. MEDICINAL AND CHEMICAL PREPARATIONS. DR. D. JAYNE & SON, Philadelphia, Pa.
The name "D. JAYNE," employed as a water-mark. Used ten years.
Filed April 10, 1905. Serial No. 1,043. PUBLISHED NOVEMBER 21, 1905.

48,857. MEDICINAL AND CHEMICAL PREPARATIONS. DR. D. JAYNE & SON, Philadelphia, Pa.
The signature of Dr. D. Jayne, founder of the firm of Dr. D. Jayne & Son.
Filed April 13, 1905. Serial No. 1,373. PUBLISHED NOVEMBER 21, 1905.

48,858. NATURAL WATER. WILLIAM B. MATTHEWS, Washington, D. C.
The words "CRYSTAL ROCK," associated with the representation of a rock.
Filed August 18, 1905. Serial No. 11,773. PUBLISHED NOVEMBER 21, 1905.

48,859. TONIC. JEREMIAH J. MCCROHAN, Chicago, Ill.
The word "IRONAL."
Filed August 28, 1905. Serial No. 11,941. PUBLISHED NOVEMBER 21, 1905.

48,860. WASH FOR TREATMENT OF AFFECTIONS OF THE EYE. WILLIAM C. LEHMANN, New York, N. Y.
The word "EYEGONAL."
Filed June 6, 1905. Serial No. 7,532. PUBLISHED NOVEMBER 21, 1905.

48,861. WHISKY. SCHAUB BROTHERS COMPANY, Chicago, Ill.
The name "WELLINGTON."
Filed September 15, 1905. Serial No. 12,669. PUBLISHED NOVEMBER 21, 1905.

48,862. CREAM FOR THE COMPLEXION AND WRINKLE LOTION. THE ARTESIA CREAM COMPANY, Waco, Tex.
The word "ARTESIA."
Filed May 24, 1905. Serial No. 6,470. PUBLISHED NOVEMBER 21, 1905.

48,863. BEEF-JUICE. THE BOVININE COMPANY, New York, N. Y.
The word "BOVININE." Used ten years.
Filed May 23, 1905. Serial No. 6,390. PUBLISHED NOVEMBER 21, 1905.

48,864. WHISKY. THE STAR DISTILLERY COMPANY, Cincinnati, Ohio.
The byphenated word "FORREST-KING."
Filed May 22, 1905. Serial No. 6,284. PUBLISHED NOVEMBER 21, 1905.

48,865. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio.
The word "TIGERS."
Filed April 15, 1905. Serial No. 1,563. PUBLISHED NOVEMBER 21, 1905.

48,866. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio.
The word "GAIGEL."
Filed April 15, 1905. Serial No. 1,564. PUBLISHED NOVEMBER 21, 1905.

48,867. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio.
The word "COLOMBIANO."
Filed April 15, 1905. Serial No. 1,569. PUBLISHED NOVEMBER 21, 1905.

48,868. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio.
The words "LOS LEONES."
Filed April 15, 1905. Serial No. 1,570. PUBLISHED NOVEMBER 21, 1905.

48,869. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio.
The word "BOSTON." Used ten years.
Filed April 15, 1905. Serial No. 1,571. PUBLISHED NOVEMBER 21, 1905.

48,870. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio.
The words "FULL HOUSE."
Filed April 15, 1905. Ser al No. 1,572. PUBLISHED NOVEMBER 21, 1905.

48,871. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio.
The words "COLUMBIA WHIST." Used ten years.
Filed April 15, 1905. Serial No. 1,573. PUBLISHED NOVEMBER 21, 1905.

48,872. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio.
The word "BIJOU."
Filed April 15, 1905. Serial No. 1,577. PUBLISHED NOVEMBER 21, 1905.

48,873. PLAYING-CARDS THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio.
The words "NATIONAL CLUB."
Filed April 15, 1905. Serial No. 1,580. PUBLISHED NOVEMBER 21, 1905.

48,874. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio.
The word "RAMBLER."
Filed April 15, 1905. Serial No. 1,582. PUBLISHED NOVEMBER 21, 1905.

48,875. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio.
The word "PICKET."
Filed April 15, 1905. Serial No. 1,586. PUBLISHED NOVEMBER 21, 1905.

48,876. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio.
The words "EL DORADO."
Filed April 15, 1905. Serial No. 1,587. PUBLISHED NOVEMBER 21, 1905.

48,877. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio.
The word "ALADDIN."
Filed April 15, 1905. Serial No. 1,590. PUBLISHED NOVEMBER 21, 1905.

48,878. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio.
The word "VICTORS."
Filed April 15, 1905. Serial No. 1,595. PUBLISHED NOVEMBER 21, 1905.

48,879. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co. Cincinnati, Ohio.
The word "MULTI."
Filed April 15, 1905. Serial No. 1,596. PUBLISHED NOVEMBER 21, 1905.

48,880. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio.
The words "NEW ERA."
Filed April 15, 1905 Serial No. 1,601. PUBLISHED NOVEMBER 21, 1905.

48,881. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio.
The words "VANITY FAIR."
Filed April 15, 1905. Serial No. 1,603. PUBLISHED NOVEMBER 21, 1905.

48,882. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio.
The word "IVORY."
Filed April 15, 1905. Serial No. 1,604. PUBLISHED NOVEMBER 21, 1905.

48,883. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio.
The word "SPORTSMAN'S."
Filed April 15, 1905. Serial No. 1,605. PUBLISHED NOVEMBER 21, 1905.

48,884. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio.
The word "CABINET."
Filed April 15, 1905. Serial No. 1,609. PUBLISHED NOVEMBER 21, 1905.

48,885. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio.
The word "APOLLO."
Filed April 15, 1905. Serial No. 1,612. PUBLISHED NOVEMBER 21, 1905.

48,886. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio.
The words "TROPHY WHIST."
Filed April 15, 1905. Serial No. 1,790. PUBLISHED NOVEMBER 21, 1905.

48,887. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio.
The words "YE WITCHES."
Filed April 15, 1905. Serial No. 1,792. PUBLISHED NOVEMBER 21, 1905.

48,888. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio.
The word "FAUNTLEROY."
Filed April 15, 1905. Serial No. 1,793. PUBLISHED NOVEMBER 21, 1905.

48,889. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio.
The word "ARROW."
Filed April 15, 1905. Serial No. 1,799. PUBLISHED NOVEMBER 21, 1905.

48,890. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio.
The word "TENNIS."
Filed April 15, 1905. Serial No. 1,801. PUBLISHED NOVEMBER 21, 1905.

48,891. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio.
The word "BICYCLE."
Filed April 15, 1905. Serial No. 1,803. PUBLISHED NOVEMBER 21, 1905.

48,892. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio.
The word "HELMET."
Filed April 15, 1905. Serial No. 1,805. PUBLISHED NOVEMBER 21, 1905.

48,893. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio.
The word "CADETS."
Filed April 15, 1905. Serial No. 1,807. PUBLISHED NOVEMBER 21, 1905.

48,894. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio.
The word "CRESCENT."
Filed April 15, 1905. Serial No. 1,811. PUBLISHED NOVEMBER 21, 1905.

48,895. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio.
The word "JUNIOR."
Filed April 28, 1905. Serial No. 3,533. PUBLISHED NOVEMBER 21, 1905.

48,896. MEDICINAL PREPARATIONS. WILLIAM R. WARNER & Co., Philadelphia, Pa.
The word "GALLACIN."
Filed April 14, 1905. Serial No. 1,492. PUBLISHED NOVEMBER 21, 1905.

48,897. MEDICINAL PREPARATIONS. WILLIAM R. WARNER & Co., Philadelphia, Pa.
The word "GALLINASIN."
Filed April 14, 1905. Serial No. 1,493. PUBLISHED NOVEMBER 21, 1905.

48,898. MEDICINAL PREPARATIONS. WILLIAM R. WARNER & Co., Philadelphia, Pa.
The word "CALLOSIN."
Filed April 14, 1905. Serial No. 1,495. PUBLISHED NOVEMBER 21, 1905.

48,899. MEDICINAL PREPARATIONS. WILLIAM R. WARNER & Co., Philadelphia, Pa.
The word "INGLUVIN."
Filed April 14, 1905. Serial No. 1,496. PUBLISHED NOVEMBER 21, 1905.

48,900. VEGETABLE AND FRUIT PRESERVES, JAMS, JELLIES, BUTTERS, AND MARMALADES. R. C. WILLIAMS & Co., New York, N. Y.
The words "ROYAL SCARLET," associated with the representation of a bow of ribbon with a seal appearing thereon, on which is a shield with a winged dial appearing thereon.
Filed July 1, 1905. Serial No. 9,561. PUBLISHED NOVEMBER 21, 1905.

48,901. MEDICINE OR REMEDY FOR DISEASES OF THE KIDNEYS AND BLADDER. VAN VLEET-MANSFIELD DRUG Co., Memphis, Tenn.
The words "ENGLISH REMEDY." Used ten years.
Filed August 2, 1905. Serial No. 11,186. PUBLISHED NOVEMBER 21, 1905.

48,902. REMEDY FOR COUGHS AND AILMENTS OF THE THROAT AND LUNGS. VAN VLEET-MANSFIELD DRUG Co., Memphis, Tenn.
The words "MANSFIELD'S HUNGARIAN COUGH BALSAM" and the representation of a sick-room scene, comprising a sick person seated in a chair, a nurse, and the representation of an angel in the act of presenting a remedy which the nurse is in the act of receiving. Used ten years.
Filed August 22, 1905. Serial No. 11,882. PUBLISHED NOVEMBER 21, 1905.

48,903. PILE-SALVE. VAN VLEET-MANSFIELD DRUG Co., Memphis, Tenn.
The word "MAGIC."
Filed August 22, 1905. Serial No. 11,886. PUBLISHED NOVEMBER 21, 1905.

48,904. LINIMENT. VAN VLEET-MANSFIELD DRUG Co., Memphis, Tenn.
The words "MANSFIELD'S MAGIC ARNICA LINIMENT" and the representation of two male figures, one upon crutches and appearing to be in pain or suffering and the other representing the

same person in the act of throwing away his crutches and appearing in a jubilant frame of mind. Used ten years.
Filed August 22, 1905. Serial No. 11,887. PUBLISHED NOVEMBER 21 1905.

48,905. SALVE. AID-ANT REMEDY CO., Concord, N. H.
The hyphenated word "AID-ANT."
Filed May 6, 1905. Serial No. 4,566. PUBLISHED NOVEMBER 21, 1905.

48,906. WAGONS. AUBURN WAGON CO., Martinsburg, W. Va.
The representation of a scroll containing the words "NEW SOUTH" and a sprig of cotton in bloom.
Filed September 12, 1905. Serial No. 12,485. PUBLISHED NOVEMBER 21, 1905.

48,907. SYRUPS, FLAVORINGS, TONICS, AND EXTRACTS FOR NON-INTOXICATING BEVERAGES. BOVRIL LIMITED, London, England, and Montreal, Canada.
The word "BOVRIL."
Filed October 6, 1905. Serial No. 13,383. PUBLISHED NOVEMBER 21, 1905.

48,908. BUTTERIN OR OLEOMARGARIN. BRAUN & FITTS, INC., Chicago, Ill.
The representation of a conventionalized horseshoe in connection with the words "GOOD LUCK."
Filed April 12, 1905. Serial No. 1,206. PUBLISHED NOVEMBER 21, 1905.

48,909. REMEDIES FOR CERTAIN NAMED DISEASES. BROWN MFG. CO., Greeneville, Tenn.
The word "RAMON'S." Used ten years.
Filed August 7, 1905. Serial No. 11,380. PUBLISHED NOVEMBER 21, 1905.

48,910. REMEDIES FOR CERTAIN NAMED DISEASES. BROWN MFG. CO., Greeneville, Tenn.
The word "NOSENA."
Filed August 28, 1905. Serial No. 12,056. PUBLISHED NOVEMBER 21 1905.

48,911. REMEDY FOR CERTAIN NAMED DISEASES. CAPUDINE CHEMICAL COMPANY, Raleigh, N. C.
The word "CAPU."
Filed August 21, 1905. Serial No. 11,874. PUBLISHED NOVEMBER 21, 1905.

48,912. CERTAIN NAMED LEATHER GOODS. C. F. RUMPF & SONS, INC., Philadelphia, Pa.
The representation of a keystone bearing the letter "R."
Filed April 11, 1905. Serial No. 1,161. PUBLISHED NOVEMBER 21, 1905.

48,913. METAL ORNAMENTS. C. F. RUMPF & SONS, INC., Philadelphia, Pa.
The representation of a keystone bearing the letter "R."
Filed June 14, 1905. Serial No. 8,131. PUBLISHED NOVEMBER 21, 1905.

48,914. HOSIERY. CHARLES TAYLOR & COMPANY, Wilmington, Del.
The words "THE GLADIATOR" and the representation of a Roman gladiator holding in one hand a dagger and supporting about midway of his height a circular shield and wearing a Roman helmet, the figure assuming an attitude of defiance or alertness.
Filed May 17, 1905. Serial No. 5,906. PUBLISHED NOVEMBER 21, 1905.

48,915. HOSIERY. CHARLES TAYLOR & CO., Wilmington, Del.
The word "GLADIATOR," the initial letter of said word being considerably larger than the other letters and containing a diminutive representation of a gladiator.
Filed June 2, 1905. Serial No. 7,377. PUBLISHED NOVEMBER 21, 1905.

48,916. RAZORS. HENRIK CLAUSS, Fremont, Ohio.
The words "NEW DEPARTURE."
Filed June 5, 1905. Serial No. 7,463. PUBLISHED NOVEMBER 21, 1905.

48,917. REMEDY FOR CHICKEN CHOLERA, ROUP, AND LIMBERNECK. JOHNATHAN ROBERT CRUMB, Bardstown, Ky.
The character "B" and the hyphenated numerals "4-11-44."
Filed June 16, 1905. Serial No. 8,268. PUBLISHED NOVEMBER 21, 1905.

48,918. WORM MEDICINE. CURTIS AND BROWN MANUFACTURING COMPANY, (LIMITED,) New York, N. Y.
The words "BROWN'S VERMIFUGE COMFITS OR WORM LOZENGES." Used ten years.
Filed July 27, 1905. Serial No. 10,873. PUBLISHED NOVEMBER 21, 1905.

48,919. CHOCOLATE AND COCOA. HENRIETTA J. DAMON. Danvers, Mass.
The words "CREAM CHOCOLATE."
Filed April 28, 1905. Serial No. 3,510. PUBLISHED NOVEMBER 21, 1905.

48,920. EXPLOSIVE-ENGINES, INTERNAL-COMBUSTION MOTORS, GAS AND GASOLENE ENGINES. C. H. A. DISSINGER & BRO., Wrightsville, Pa.
The word "CAPITAL."
Filed May 15, 1905. Serial No. 5,728. PUBLISHED NOVEMBER 21, 1905.

48,921. BAKING-POWDER, CREAM OF TARTAR, AND BAKING-SODA. E. R. DURKEE & Co., New York, N. Y.
The representation of a tiger's head and the full figure of a tiger, used singly or together.
Filed May 2, 1905. Serial No. 3,967. PUBLISHED NOVEMBER 21, 1905.

48,922. PREPARATION FOR THE CURE OF HORSE AILMENTS. DYER REMEDY COMPANY, Kansas City, Mo.
The representation of a group of mules' heads.
Filed August 7, 1905. Serial No. 11,379. PUBLISHED NOVEMBER 21, 1905.

48,923. CHOCOLATE AND COCOA. FRANCIS H. LEGGETT & COMPANY, New York, N. Y.
The word "NABOB."
Filed September 25, 1905. Serial No. 12,970. PUBLISHED NOVEMBER 21, 1905.

48,924. HAIR REMEDY. WALLACE G. GEETY, New York, N. Y.
The word "RESTORINE" in fancy irregular type.
Filed April 24, 1905. Serial No. 9,012. PUBLISHED NOVEMBER 21 1905.

48,925. MEDICAL PREPARATION OF SARSAPARILLA. GERSTLE MEDICINE CO., Chattanooga, Tenn.
The letters "S. J. S."
Filed June 3, 1905. Serial No. 7,334. PUBLISHED NOVEMBER 21, 1905.

48,926. FRUIT-PRESSES. HENIS FRUIT PRESS CO., New York, N. Y.
The representation of a circle, transversely of which is arranged the representation of an open fruit-press, while above and below the representation of the fruit-press are arranged, respectively, the words "HENIS" and "PRESS," both words being located within the circle. Used ten years.
Filed April 26, 1905. Serial No. 3,174. PUBLISHED NOVEMBER 21, 1905.

48,927. CANDIES OF ALL KINDS. J. G. MCDONALD CANDY CO., Salt Lake City, Utah.
The representation of a parrot upon a perch in the act of eating from a package of candy held in one raised foot.
Filed May 13, 1905. Serial No. 5,571. PUBLISHED NOVEMBER 21, 1905.

48,928. POCKET-KNIVES AND RAZORS. ADOLPH KASTOR & BROS., New York, N. Y.
The representation of a four-leaf clover.
Filed May 10, 1905. Serial No. 4,914. PUBLISHED NOVEMBER 21, 1905.

48,929. KNIT HOSIERY AND UNDERWEAR. M. & C. MAYER, New York, N. Y.
The representation of a knight in armor, holding in the one hand a sword and in the other a shield, standing in front of the representation of a stocking that extends with its upper or knee end at one side above and with its lower or foot end at the other side below said figure.
Filed April 8, 1905. Serial No. 775 PUBLISHED NOVEMBER 21, 1905.

48,930. MALT TONIC. MCAVOY BREWING CO., Chicago, Ill.
The representation of three hop-buds joined at their bases and superimposed upon a pair of barley-heads obliquely crossing each other and all arranged upon a circular disk and a large barley-head extending horizontally beneath the same and projecting on opposite sides thereof.
Filed September 5, 1905. Serial No. 12,220. PUBLISHED NOVEMBER 21 1905.

48,931. SOLDERS, NEWSPAPER METALS, AND BABBITT METALS. MECHANICAL METAL MFG. CO., Philadelphia, Pa.
The representation of a diamond-shaped figure inclosing the letter "M."
Filed May 20, 1905. Serial No. 6,349. PUBLISHED NOVEMBER 21, 1905.

48,932. COFFEE. MEYER BROTHERS COFFEE AND SPICE COMPANY, St. Louis, Mo.
The word "MORICO."
Filed September 16, 1905. Serial No. 12,705. PUBLISHED NOVEMBER 21, 1905.

48,933. PLOWS, LISTERS, CULTIVATORS, AND HARROWS. MORRISON MANUFACTURING COMPANY, Pierre, S. D., and Fort Madison, Iowa.
A representation of the globe, the sun rising above the same, and the representation of a plow resting upon the globe, with the words "MORRISON PLOWS ARE ALWAYS ON TOP," and a scroll beneath the globe having thereupon the name and address "THE MORRISON MFG. CO., FORT MADISON, IOWA."
Filed May 16, 1905. Serial No. 5,849. PUBLISHED NOVEMBER 21, 1905.

48,934. VACUUM-TUBES, X-RAY TUBES, AND PARTS THEREOF. C. H. F. MÜLLER, Hamburg, Germany.
The representation of a seal having a serrated edge, and arranged within the seal is a concentric circle, and between the concentric circle and the serrated edge is a star. The words "ORIGINAL MÜLLER RÖNTGENRÖHRE" are arranged about the seal.
Filed June 2, 1905. Serial No. 7,263. PUBLISHED NOVEMBER 21, 1905.

48,935. OINTMENTS. NATIONAL FOOD CO., Fond du Lac, Wis.
The words "USE IT."
Filed August 17, 1905. Serial No. 11,736. PUBLISHED NOVEMBER 21, 1905.

48,936. SCREW-DRIVERS AND SCREW-DRIVER HOLDERS. PATTERSON, GOTTFRIED & HUNTER, LIMITED, New York, N. Y.
The representation of a right-angled triangle in red.
Filed October 2, 1905. Serial No. 13,184. PUBLISHED NOVEMBER 21, 1905.

48,937. GRINDING AND POLISHING HEADS. PATTERSON, GOTTFRIED & HUNTER, LIMITED, New York, N. Y.
The representation of a right-angled triangle in red.
Filed October 2, 1905. Serial No. 13,186. PUBLISHED NOVEMBER 21, 1905.

48,938. FORGES, BLOWERS, AND TWYER-IRONS. PATTERSON, GOTTFRIED & HUNTER, LIMITED, New York, N. Y.
The representation of a right-angled triangle in red.
Filed October 2, 1905. Serial No. 13,190. PUBLISHED NOVEMBER 21, 1905.

48,939. MAY-APPLE PILLS. JOHN QUINCY PHILLIPS, Clinton, S. C.
The word "BOOZER."
Filed June 13, 1905. Serial No. 8,037. PUBLISHED NOVEMBER 21, 1905.

48,940. STOVES, RANGES, FURNACES, AND PARTS THEREOF. SCRANTON STOVE WORKS, Scranton, Pa.
The word "DOCKASH."
Filed May 5, 1905. Serial No. 4,333. PUBLISHED NOVEMBER 21, 1905.

48,941. HOSIERY. CHAS. SIMON'S SONS, New York, N. Y.
The representation of two boys pulling against each other at the ends of a stocking, upon which appear the letters "VERIBEST" and which is shown as stretched across a pole supported upon posts in front of a house. Associated with the mark are the words "VERIBEST" and "TEAR-PROOF."
Filed May 27, 1905. Serial No. 6,862. PUBLISHED NOVEMBER 21, 1905.

48,942. CONDENSED MILK. ST. CHARLES CONDENSING CO., St. Charles, Ill.
The word "PURITY," associated with the representation of a cow, with the word "CONDENSED" across the body of the said representation and the word "MILK" below the same.
Filed June 12, 1905. Serial No. 7,983. PUBLISHED NOVEMBER 21, 1905.

48,943. LAGER-BEER AND BOTTLED BEER. TERRE HAUTE BREWING CO., Terre Haute, Ind.
The representation of an eagle poised upon a cornucopia, the cornucopia being decorated with barley-heads and hop-blossoms. Athwart the eagle and cornucopia, in straight lines and in plain block letters, the following words are arranged: "THE PEOPLES CHOICE," the whole being surrounded by concentric circles.
Filed June 12, 1905. Serial No. 7,990. PUBLISHED NOVEMBER 21, 1905.

48,944. CASTOR-OIL. THE BAKER CASTOR OIL COMPANY, New York, N. Y.
The word "CRYSTAL." Used ten years.
Filed June 1, 1905. Serial No. 7,163. PUBLISHED NOVEMBER 21, 1905.

48,945. CANDY. THE BRADLEY SMITH & CO., New Haven, Conn.
The words "MADISON SQUARES."
Filed June 27, 1905. Serial No. 9,217. PUBLISHED NOVEMBER 21, 1905.

48,946. WRITING-INKS AND WRITING FLUIDS OF ALL KINDS. THE CARTER'S INK COMPANY, Boston, Mass.
The word "CARTER'S." Used ten years.
Filed May 26, 1905. Serial No. 6,702. PUBLISHED NOVEMBER 21, 1905.

48,947. ROLL-PAPER HOLDERS AND CUTTERS. THE CHAMPION PAPER CUTTER CO., Piqua, Ohio.
The word "BUCKEYE." Used ten years.
Filed September 13, 1905. Serial No. 12,521. PUBLISHED NOVEMBER 21, 1905.

48,948. ROLL-PAPER HOLDERS AND CUTTERS. THE CHAMPION PAPER CUTTER CO., Piqua, Ohio.
The word "CHAMPION." Used ten years.
Filed September 13, 1905. Serial No. 12,522. PUBLISHED NOVEMBER 21, 1905.

48,949. JACKS. THE DUFF MANUFACTURING COMPANY, Allegheny, Pa.
The word "BARRETT." Used ten years.
Filed September 16, 1905. Serial No. 12,701. PUBLISHED NOVEMBER 21, 1905.

48,950. MOLASSES. THE EASTERN REFINING CO., New York, N. Y.
The words, character, and abbreviations "BREGARO & CO., PONCE, P. R." Used ten years.
Filed May 15, 1905. Serial No. 5,623. PUBLISHED NOVEMBER 21, 1905.

48,951. PREPARATION FOR THE TREATMENT OF CERTAIN NAMED DISEASES. THE E. E. SUTHERLAND MEDICINE CO., Paducah, Ky.
The abbreviation and words "DR. BELL'S PINE-TAR-HONEY." Used ten years.
Filed June 9, 1905. Serial No. 7,739. PUBLISHED NOVEMBER 21, 1905.

48,952. STOVES, FURNACES, AND RANGES. THE FAVORITE STOVE & RANGE CO., Piqua, Ohio.
The representation of a circle, in the lower portion of which is a cloudy outline, from which is seen emerging the upper half of a rising sun, the rays of which radiate toward the periphery of the circle above the clouds, the words "FAVORITE STOVES AND RANGES" appearing within the circle.
Filed June 5, 1905. Serial No. 7,412. PUBLISHED NOVEMBER 21, 1905.

48,953. STOVES, FURNACES, AND RANGES. THE FAVORITE STOVE & RANGE CO., Piqua, Ohio.
The word "FAVORITE."
Filed June 5, 1905. Serial No. 7,413. PUBLISHED NOVEMBER 21, 1905.

48,954. CORN REMEDY. THE FOWLER MEDICINE COMPANY Rochester, N. Y.
The words "CORN KING." Used ten years.
Filed August 17, 1905. Serial No. 11,735. PUBLISHED NOVEMBER 21, 1905.

48,955. TRUNKS. THE J. F. PARKHURST & SON CO., Bangor Me.
The representation of a trunk, with the letters and character "P & S" thereon surrounded by a border.

Filed April 24, 1905. Serial No. 2,902. PUBLISHED NOVEMBER 21, 1905.

48,956. WHEELBARROW-WHEELS. THE KILBOURNE AND JACOBS MANUFACTURING COMPANY, Columbus, Ohio.
The word "LEWIS." Used ten years.
Filed October 2, 1905. Serial No. 13,202. PUBLISHED NOVEMBER 21, 1905.

48,957. ROLL-PAPER HOLDERS AND CUTTERS. THE KING MANUFACTURING CO., Piqua, Ohio.
The word "KING."
Filed September 13, 1905. Serial No. 12,510. PUBLISHED NOVEMBER 21, 1905.

48,958. AUTOMATIC CAR-COUPLINGS. THE MCCONWAY & TORLEY CO., Pittsburg, Pa.
The word "JANNEY." Used ten years.
Filed October 9, 1905. Serial No. 13,459. PUBLISHED NOVEMBER 21, 1905.

48,959. COUNTER-SHAFTS AND APPURTENANCES THERETO. THE MOSSBERG WRENCH COMPANY, Central Falls, R. I.
The hyphenated word "SIM-PULL."
Filed September 18, 1905. Serial No. 12,752. PUBLISHED NOVEMBER 21, 1905.

48,960. TYPE-WRITING MACHINES AND PARTS THEREFOR. THE OLIVER TYPEWRITER COMPANY, Chicago, Ill.
The word "OLIVER." Used ten years.
Filed September 11, 1905. Serial No. 12,472. PUBLISHED NOVEMBER 21, 1905.

48,961. WINES. THE ROSENBLATT CO., San Francisco, Cal.
The words "NATURE JUICE."
Filed August 24, 1905. Serial No. 11,982. PUBLISHED NOVEMBER 21, 1905.

48,962. SHOVELS, SPADES, AND SCOOPS. THE WYOMING SHOVEL WORKS, Wyoming, Pa.
The representation of a group of shovels arranged in the shape of the letter W.
Filed April 28, 1905. Serial No. 3,486. PUBLISHED NOVEMBER 21, 1905.

48,963. TONIC REMEDY FOR ANEMIA AND NERVOUS DISEASES. CHARLES JOSEPH ULRICI, New York, N. Y.
The hyphenated word "NEURO-STRENOTHINE."
Filed April 15, 1905. Serial No. 1,738. PUBLISHED NOVEMBER 21, 1905.

48,964. ROLL-PAPER HOLDERS AND CUTTERS. UNITED STATES PAPER CUTTER CO., St. Louis, Mo.
The word "CENTURY." Used ten years.
Filed September 13, 1905. Serial No. 12,523. PUBLISHED NOVEMBER 21, 1905.

48,965. ROLL-PAPER HOLDERS AND CUTTERS. UNITED STATES PAPER CUTTER CO., St. Louis, Mo.
The word "REX."
Filed September 13, 1905. Serial No. 12,524. PUBLISHED NOVEMBER 21, 1905.

48,966. REMEDY FOR CERTAIN NAMED DISEASES. VAN VLEET-MANSFIELD DRUG CO., Memphis, Tenn.
The words "WOOD'S PALATABLE CHILL TONIC." Used ten years.
Filed August 2, 1905. Serial No. 11,185. PUBLISHED NOVEMBER 21, 1905.

48,967. REMEDY FOR THE CURE OF RHEUMATISM. VAN VLEET-MANSFIELD DRUG CO., Memphis, Tenn.
The words "MANSFIELD'S RHEUMATIC COMPOUND" and the representation of a tropical scene comprising the representation of a tropical tree and fruit and two natives beneath the tree in the foreground of a minor scene comprising a native in a boat. Used ten years.
Filed August 22, 1905. Serial No. 11,888. PUBLISHED NOVEMBER 21, 1905.

48,968. PILLS FOR THE CURE AND ALLEVIATION OF DISEASES AND DISORDERS OF THE LIVER. VAN VLEET-MANSFIELD DRUG CO., Memphis, Tenn.
The words "WOOD'S ACTIVE LIVER PILLS." Used ten years.
Filed August 2, 1905. Serial No. 11,198. PUBLISHED NOVEMBER 21, 1905.

48,969. SALVES. WI-DA-HE COMPANY, Fairmount, Ind.
The hyphenated word "WI-DA-HE."
Filed August 3, 1905. Serial No. 11,223. PUBLISHED NOVEMBER 21, 1905.

48,970. SILK HAIR-NETS. A. HERBERT WOOLLEY & CO., Nottingham, England.
The word "ODIN."
Filed May 12, 1905. Serial No. 5,372. PUBLISHED NOVEMBER 21, 1905.

48,971. BITTERS. A. ZANMATTI & CO., New York, N. Y.
The compound word "BONA-VITA."
Filed August 19, 1905. Serial No. 11,799. PUBLISHED NOVEMBER 21, 1905.

48,972. WITHDRAWN.

48,973. CORSETS. ABRAHAM & STRAUS, New York, N. Y.
The representation of an ornamental circular border, within which is arranged the representation of a Maltese cross. The words "THE MARQUISE" appear above said cross, and the letters and character "A & S" are arranged below said cross.
Filed April 20, 1905. Serial No. 2,523. PUBLISHED NOVEMBER 21, 1905.

48,974. TEA. ACKER, MERRALL & CONDIT COMPANY, New York, N. Y.
The words "SOVEREIGN BLEND."
Filed September 12, 1905. Serial No. 12,491. PUBLISHED NOVEMBER 21, 1905.

48,975. WHEAT-FLOUR. ACME MILLING COMPANY, Indianapolis, Ind.
The representation of a large feather or plume across which are the words "WHITE PLUME" in two curved lines, and at one side of the lettering and plume is the representation of a knight wearing a plumed helmet and riding on a horse.
Filed June 26, 1905. Serial No 9,018. PUBLISHED NOVEMBER 21, 1905.

48,976. STRAW HATS. BRIGHAM HOPKINS COMPANY, Baltimore, Md.
The words "A GENTLEMAN'S HAT." Used ten years.
Filed June 10, 1905. Serial No. 7,871. PUBLISHED NOVEMBER 21 1905.

48,977. COFFEE. BROWNELL & FIELD COMPANY, Providence, R. I.
The word "AUTOCRAT."
Filed August 21, 1905. Serial No. 11,860. PUBLISHED NOVEMBER 21, 1905.

48,978. CANNED OR PRESERVED FRUITS AND VEGETABLES. C. W. BAKER & SONS, Aberdeen, Md.
The word "BAKER'S." Used ten years.
Filed May 1, 1905. Serial No. 3,888. PUBLISHED NOVEMBER 21, 1905.

48,979. YELLOW HORSE-HIDE GLOVES AND MITTENS. BOUTON AND GERMAIN CO., Ripon, Wis.
The word "KROMATE" inclosed within an ellipse.
Filed August 12, 1905. Serial No. 11,621. PUBLISHED NOVEMBER 21, 1905.

48,980. BUTTERIN OR OLEOMARGARIN. BRAUN & FITTS, INC., Chicago, Ill.
The words "SOLID GOLD" inclosed within a border.
Filed April 12, 1905. Serial No. 1,204. PUBLISHED NOVEMBER 21, 1905.

48,981. BUTTERIN OR OLEOMARGARIN. BRAUN & FITTS, INC., Chicago, Ill.
The word "HOLSTEIN."
Filed April 12, 1905. Serial No. 1,303. PUBLISHED NOVEMBER 21, 1905.

48,982. BUTTERIN AND OLEOMARGARIN. BRAUN & FITTS, INC., Chicago, Ill.
The words "FRUIT OF THE MEADOW" inclosed within a conventionalized border.
Filed April 13, 1905. Serial No. 1,343. PUBLISHED NOVEMBER 21, 1905.

48,983. MIXED WINTER AND SPRING WHEAT FLOUR. JAMES CHARLES, Marion, Ind.
The words "MAID OF THE MIST."
Filed May 29, 1905. Serial No. 7,017. PUBLISHED NOVEMBER 21, 1905.

48,984. DOG-BLANKETS. JAMES A. DAVIS, Boston, Mass.
The word "PRESTO."
Filed July 31, 1905. Serial No. 11,064. PUBLISHED NOVEMBER 21, 1905.

48,985. SEEDS AND PREPARED MIXTURES OF SEEDS AS FOOD FOR BIRDS AND FOWLS. E. R. DURKEE & Co., New York, N. Y.
The word "CHALLENGE."
Filed May 2, 1905. Serial No. 3,980. PUBLISHED NOVEMBER 21, 1905.

48,986. SPICES AND MUSTARD. E. R. DURKEE & Co., New York, N. Y.
The word "CHALLENGE."
Filed May 2, 1905. Serial No. 3,981. PUBLISHED NOVEMBER 21, 1905.

48,987. DRIED AND EVAPORATED FRUITS. GRIFFIN & SKELLEY CO., San Francisco, Cal.
The words "COMET BRAND."
Filed September 14, 1905. Serial No. 12,569. PUBLISHED NOVEMBER 21, 1905.

48,988. DRIED AND EVAPORATED FRUITS. GRIFFIN & SKELLEY CO., San Francisco, Cal.
The words "PEACOCK BRAND."
Filed September 14, 1905. Serial No. 12,570. PUBLISHED NOVEMBER 21, 1905.

48,989. DRIED AND EVAPORATED FRUITS. GRIFFIN & SKELLEY CO., San Francisco, Cal.
The words "THISTLE BRAND."
Filed September 14, 1905. Serial No. 12,571. PUBLISHED NOVEMBER 21, 1905.

48,990. OLIVES. CHARLES GULDEN, New York, N. Y.
The word "BANQUET."
Filed April 11, 1905. Serial No. 1,097. PUBLISHED NOVEMBER 21, 1905.

48,991. MEN'S SUSPENDERS AND BRACES. HARRIS SUSPENDER CO., New York, N. Y.
The word "HARRIS."
Filed April 8, 1905. Serial No. 784. PUBLISHED NOVEMBER 21, 1905.

48,992. WHEAT-FLOUR. HERZEL MILLING COMPANY, East St. Louis, Ill.
The words "MISSOURI BELLE" and the pictorial representation of the head of a lady within a circular border.
Filed June 2, 1905. Serial No. 7,231. PUBLISHED NOVEMBER 21, 1905.

48,993. DRESS-SHIELDS. I. B. KLEINERT RUBBER CO., New York, N. Y.
The word "KLEINERT'S." Used ten years.
Filed August 14, 1905. Serial No. 11,626. PUBLISHED NOVEMBER 21, 1905.

48,994. CANNED SOUPS. ELLIOTT H. KING, Brooklyn, N. Y.
The words "THE BANK" and the representation of an urn. The words are printed above the representation of the urn.
Filed April 15, 1905. Serial No. 1,736. PUBLISHED NOVEMBER 21, 1905.

48,995. JUTE BAGGING. LUDLOW MANFG. ASSOCIATES, Boston, Mass.
The word "DAISY." Used ten years.
Filed May 6, 1905. Serial No. 4,436. PUBLISHED NOVEMBER 21, 1905.

48,996. JUTE BAGGING. LUDLOW MANFG. ASSOCIATES, Boston, Mass.
The word "YORK." Used ten years.
Filed May 6, 1905. Serial No. 4,437. PUBLISHED NOVEMBER 21, 1905.

48,997. JUTE BAGGING. LUDLOW MANFG. ASSOCIATES, Boston, Mass.
The word "HUB." Used ten years.
Filed May 6, 1905. Serial No. 4,438. PUBLISHED NOVEMBER 21, 1905.

48,998. JUTE BAGGING. LUDLOW MANFG. ASSOCIATES, Boston, Mass.
The word "DIXIE." Used ten years.
Filed May 6, 1905. Serial No. 4,439. PUBLISHED NOVEMBER 21, 1905.

48,999. JUTE BAGGING. LUDLOW MANFG. ASSOCIATES, Boston, Mass.
The word "ORLEANS." Used ten years.
Filed May 6, 1905. Serial No. 4,439. PUBLISHED NOVEMBER 21 1905.

49,000. JUTE BAGGING. LUDLOW MANFG. ASSOCIATES, Boston, Mass.
The word "LUDLOW." Used ten years.
Filed May 6, 1905. Serial No. 4,441. PUBLISHED NOVEMBER 21, 1905.

49,001. COFFEE. MEYER BROTHERS COFFEE AND SPICE COMPANY, St. Louis, Mo.
The words "DEW DROP."
Filed September 16, 1905. Serial No. 12,704. PUBLISHED NOVEMBER 21, 1905.

49,002. COFFEE. MEYER BROTHERS COFFEE AND SPICE COMPANY, St. Louis, Mo.
The words "OLD JUDGE."
Filed September 16, 1905. Serial No. 12,706. PUBLISHED NOVEMBER 21, 1905.

49,003. SILK PIECE GOODS. NA KAU TRADING CORPORATION, New York, N. Y.
The pictorial illustration of a Japanese lady holding a sunshade across one shoulder and with the other hand holding the rim of the sunshade, associated with the words "NA KAU."
Filed April 18, 1905. Serial No. 2,160. PUBLISHED NOVEMBER 21, 1905.

49,004. KNIT UNDERWEAR. NORTHWESTERN KNITTING COMPANY, Minneapolis, Minn.
The words "THE MUNSING."
Filed June 26, 1905. Serial No. 9,068. PUBLISHED NOVEMBER 21, 1905.

49,005. FLOUR MADE FROM WHEAT. PILLSBURY-WASHBURN FLOUR MILLS COMPANY, LTD., Minneapolis, Minn.
The words "WASHBURN'S BEST." Used ten years.
Filed April 26, 1905. Serial No. 2,974. PUBLISHED NOVEMBER 21, 1905.

49,006. BAKING-POWDER. PRICE BAKING POWDER COMPANY, Chicago, Ill.
The word "PRICE'S." Used ten years.
Filed August 12, 1905. Serial No. 11,573. PUBLISHED NOVEMBER 21, 1905.

49,007. SEAMLESS WOVEN BAGS. STARK MILLS, Manchester, N. H.
The word "ROYAL."
Filed May 27, 1905. Serial No. 6,811. PUBLISHED NOVEMBER 21, 1905.

49,008. GARTERS. A. STEIN & Co., Chicago, Ill.
The word "FLEXO."
Filed May 26, 1905. Serial No. 6,641. PUBLISHED NOVEMBER 21, 1905.

49,009. WHEAT-FLOUR. THREEFOOT BROS. & Co., Meridian, Miss.
The words "OUR DAILY BREAD."
Filed June 19, 1905. Serial No. 8,522. PUBLISHED NOVEMBER 21, 1905.

LABELS

REGISTERED JANUARY 16, 1906.

(None.)

PRINTS

REGISTERED JANUARY 16, 1906.

1,561.—Title: "EVERY ONE TO THEIR OWN TASTE." (For Flour.) THE PIQUA FLOUR CO., Piqua, Ohio. Filed November 8, 1905.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

EX PARTE HAYES.

Decided October 26, 1905.

1. INVENTION—WATERPROOF CASING UPON ELECTROMAGNET.

Held that the provision of a waterproof casing upon an electromagnet which is to be used under water does not involve invention.

2. SAME—NON-MAGNETIC CASING UPON ELECTROMAGNET.

Held that the use of non-magnetic material for the casing of an electromagnet by one who does not claim to be the discoverer of the fact that magnetic material would interfere with the proper operation of the device cannot be regarded as patentable.

3. ANTICIPATION—INCASED ELECTROMAGNET.

An electromagnet having a waterproof casing of non-magnetic metal *Held* to be without patentable novelty, in view of a patent disclosing an electromagnet with a moisture-proof casing of non-magnetic material.

APPEAL from Examiners-in-Chief.

WATERPROOF ELECTROMAGNET.

Mr. Lincoln Sonntag and *Messrs. H. C. Evert & Co.* for the appellant.

ALLEN, *Commissioner:*

This is an appeal from the decision of the Examiners-in-Chief affirming the rejection by the Primary Examiner of the following claim:

In a waterproof electromagnet covers of non-magnetic metal inclosing the coils or windings of such magnet, substantially as and for the purposes described.

The reference is patent to Wellman December 10, 1895, No. 551,020.

The device to which the claim is drawn is an electromagnet provided with a waterproof casing of non-magnetic metal. The casing is made of non-magnetic material to avoid interference with the proper operation of the magnet. It is made waterproof, so that the magnet may be used under water without injurious effect upon its coils. I am of the opinion, aside from the reference which has been cited in this case, that the provision of a waterproof casing upon an electromagnet which is to be used under water does not involve invention and that the use of a non-magnetic material for the casing by one who does not claim to be the discoverer that magnetic material used for such purpose would interfere with the proper operation of the device cannot be regarded as patentable.

Moreover, the patent to Wellman, to which reference has been made, discloses an electromagnet the main feature of which is stated to be that it is so constructed that "it can be used on outside work, it being thoroughly protected from the atmosphere." It is also stated in Wellman's specification that "surrounding the magnet is a shell D extending from the top plate A' to a non-magnetic bottom plate A," and that "the several parts of the magnet are fastened securely together preventing moisture from gaining access to the interior of the magnet." It is further stated in said specification that the shell D is preferably made of non-magnetic material. The use of non-magnetic metal as the non-magnetic material of the Wellman magnet is clearly a mere matter of selection from various materials which might obviously be used and does not involve invention. If the Wellman magnet as ordinarily constructed would leak upon use under water, the joints thereof could certainly be packed and tightened to make the casing entirely waterproof in such use without the exercise of more than mechanical skill. The claim appealed, as well as the claim proposed on the appeal as a substitute therefor, is not patentable over the Wellman device.

The decision of the Examiners-in-Chief affirming the rejection by the Primary Examiner of the claim appealed is affirmed.

CARNELL *v.* GLASGOW *v.* COOK.

Decided December 18, 1905.

INTERFERENCE—DISSOLUTION—RIGHT TO MAKE CLAIM AND INTERFERENCE IN FACT CONFUSED.

The contention by an interferant that the opposing parties do not have a construction responding to certain language in the issue is one relating to the right to make the claim and not to interference in fact.

APPEAL on motion.

CARBURETERS.

Mr. Alfred M. Allen and *Mr. Paul Finckel* for Carnell.

Messrs. Bakewell & Cornwall for Glasgow.

Mr. E. G. Siggers for Cook.

ALLEN, *Commissioner:*

This is an appeal by Carnell from a decision of the Primary Examiner holding that there is an interference in fact as to all parties on the single count forming the subject-matter of the interference, that the claim is patentable to Glasgow and Cook, and that they had a right to make the same.

That part of the appeal relating to the right to make the claim and to the patentability thereof is dismissed, because there is no appeal from a favorable decision on those questions.

The argument on the question of interference in fact relates to that part of the claim couched in the words "and means for adjusting the active length of the spring." After quoting the issue appellant's brief states:

It is claimed on behalf of Carnell that neither Glasgow or Cook show any means of adjusting the active length of the spring.

In other words, the contention made is not that the terms quoted cannot be read on the different constructions with the same meaning, but that these terms cannot be properly used at all by the opposing parties. It is evident that the question presented is one going to the right to make the claim and not to the question of interference in fact.

The appeal is dismissed.

EX PARTE CLUETT, PEABODY & COMPANY.

Decided December 14, 1905.

1. TRADE-MARKS—PUBLICATION—REJECTION THEREAFTER WITHOUT OPPOSITION.

The Examiner may refuse registration after the publication of a trade-mark under section 6 of the Tade-Mark Act even where no notice of opposition is filed.

2. SAME—SAME—SECTION 6 CONSTRUED—PERMISSIVE, NOT MANDATORY.

The provision in section 6 of the act that the Commissioner "shall issue a certificate of registration" in case no notice of opposition is filed is permissive and is not mandatory.

3. SAME—SAME—SAME—RIGHT TO REJECT—INTENT.

Section 6 was intended to provide an additional means for determining the right of the applicant to registration, and not for the purpose of cutting off the right of the Office to consider and act upon any and all legitimate questions as to the applicant's right.

4. SAME—SAME—SAME—CONSIDERATION OF EVIDENCE.

It was not the intent of section 6 that this Office should reject an applicant upon evidence presented by one opposing and disregard the same evidence if discovered by its own efforts.

ON PETITION.

TRADE-MARK FOR GARMENTS.

Messrs. Mosher & Curtis for the applicants.

ALLEN, *Commissioner:*

This is a petition from the action of the Examiner of Trade-Marks in reëxamining and rejecting this application after publication in the OFFICIAL GAZETTE for the purpose of permitting opposition by interested parties under the provisions of section 6 of the act of February 20, 1905.

It appears that this application was duly considered by the Examiner and was passed for publication on May 18, 1905, and was published on June 6, 1905. No opposition was filed against registration; but the Examiner concluded thereafter that there was a statutory bar to the registration of the mark claimed and for that reason wrote a letter rejecting the application. This petition does not raise the question whether the Examiner was right in concluding that there is a statutory bar, but raises the question whether he has authority under the statutes to reject an application after publication, even where a statutory bar exists.

Section 6 of the act of February 20, 1905, after providing for publication of the mark for purposes of opposition, provides that—

> If no notice of opposition is filed within said time the Commissioner shall issue a certificate of registration therefor, as hereinafter provided for.

The question for determination is whether the word "shall" appearing in this clause is mandatory and absolutely precludes the rejection of an application after publication unless notice of opposition is filed.

In *Railroad Company* v. *Heckt* (95 U. S., 168) the Supreme Court said:

> As against the Government, the word "shall," when used in a statute, is to be construed as "may," unless a contrary intention is manifest.

In volume 25 of the *American and English Encyclopedia of Law* (p. 634) it is said:

> In all cases the question whether "shall" will be interpreted in the sense of "may" or will be construed as mandatory depends upon the intention of the legislature.

The intention of the Legislature, as gathered from the entire Trade-Mark Act and from the particular consideration of section 6 thereof, is clearly that the word "shall" is to be understood as permissive and not as mandatory. The purpose of the publication referred to in section 6 is to permit others to present to this Office evidence which will enable it to determine whether or not the application is entitled to registration. In other words, it merely provides a method of securing evidence upon which this Office is to base its action. It provides this method, because this Office has not the machinery for obtaining otherwise and by its own efforts all information bearing upon the right of the applicant to registration. It is perfectly clear, however, that it was not the intention of Congress to provide that this Office should disregard evidence which it secured by its own efforts and should reject the application upon exactly the same evidence if it is presented by some one interested in opposing the registration. This, however, would be the result of sustaining the petitioners' contention as to the meaning of the word "shall" in section 6 of the act.

It must be held that section 6 was intended to provide additional means for determining the right of the applicant to registration and not for the purpose of cutting off the right of this Office to consider and act upon any and all legitimate questions as to the applicant's right.

The petition is denied.

W. A. GAINES & CO. *v.* CARLTON IMPORTATION CO.

Decided December 18, 1905.

1. TRADE-MARKS—LACK OF INTERFERENCE—"OLD JAY" AND "OLD CROW."

A mark consisting of "Old Jay" and the representation of a jay does not so nearly resemble the words "Old Crow" and the representation of a crow as to mislead the public or deceive purchasers.

2. SAME—CONSTITUTIONALITY OF LAW—QUESTION FOR COURTS.

The question as to the constitutionality of the trade-mark law will not be determined upon opposition to the registration of a trade-mark, but will be left to the courts for determination.

APPEAL from Examiner of Interferences.

TRADE-MARK FOR WHISKY.

Mr. Jas. L. Hopkins and *Mr. John S. Barker* for Gaines & Company.

Mr. Frederic B. Keefer for Carlton Importation Company.

ALLEN, *Commissioner:*

This is an appeal by W. A. Gaines & Company from the decision of the Examiner of Interferences dismissing their notice of opposition to the registration of a trade-mark by the Carlton Importation Company.

The applicant's trade-mark consists of the representation of a jay bird perched upon the branch of a tree having upon each side "Old J" and beneath the words "Old Jay Rye." W. A. Gaines & Company filed notice of opposition to the registration of this mark on the ground that they are the owners of a mark which so nearly resembles the applicant's mark that confusion is likely to result. They say that they are "the sole and exclusive owners of the trade-mark for whisky consisting of the words 'Old Crow,' accompanied by with the picture of a crow."

The Carlton Importation Company filed a "demurrer" to the notice of opposition, which "demurrer" was sustained by the Examiner of Interferences on the ground that it is apparent upon the face of the papers that there is no such similarity between the marks as to cause confusion.

Both marks include the word "old," and both include the representation of a bird; but there the similarity ends. The jay, as disclosed in the application and in the specimens accompanying it, is entirely different in appearance from a crow and could by no possibility be mistaken therefor. The name "jay" is entirely different in sound from "crow" and suggests a different idea. If there is to be any confusion between the marks, it must be because of the association of the word "old" with the name of a bird. I am satisfied, however, that this one point of similarity is not sufficient to confuse the public nor to mislead purchasers exercising ordinary care.

The appellants here have raised the question as to the constitutionality of the Trade-Mark Act of February 20, 1905; but it is deemed unnecessary to discuss that matter. The question of constitutionality should be raised and determined in the courts upon registrations made under that act.

The Examiner was right in dismissing the opposition, and his decision is affirmed.

EX PARTE BERG.

Decided December 21, 1905.

1. AFFIDAVITS UNDER RULE 75—NOT ADMITTED AFTER FINAL REJECTION.

After a claim has been finally rejected on several references an antedating affidavit under Rule 75 tending to overcome one of the references cannot be admitted.

2. REOPENING EX PARTE CASE—ALLEGED STATEMENT OF NEW REASONS FOR REJECTION BY EXAMINER.

Where antedating affidavits under Rule 75 to overcome one of several references are filed after final rejection and in refusing consideration to such affidavits the Examiner states that the rejection could be sustained on the references other than the one attempted to be overcome, *Held* that this statement of the Examiner is not a statement of new reasons for rejection and does not operate to reopen the case.

ON PETITION.

HAMMOCKS OR COTS.

Mr. Henry A. Seymour for the applicant.

ALLEN, *Commissioner:*

This is a petition from the action of the Primary Examiner refusing to admit affidavits filed under Rule 75 after the case was under final rejection.

In the prosecution of the case the claims were rejected on certain references. The applicant amended them, after which they were rejected on the same references, together with an additional reference, which was apparently cited to meet the amendment. Thereafter reconsideration of the case was requested, which was given, and the claims were finally rejected. Applicant then sought to overcome the final rejection by filing affidavits antedating the reference last cited. The Examiner refused to admit the affidavits, on the ground that the consideration of the case was closed. In the letter refusing admission to or consideration of these affidavits the Examiner also stated that the claims were met in the references cited outside of this additional reference which the affidavits sought to overcome. Applicant urges that this statement that the claims were met by the other references alone was, in effect, a citation of new reasons for rejection and operated to reopen the case. This petition therefore presents two questions for decision—the propriety of the refusal to admit the affidavits and whether or not the Examiner unintentionally reopened the case.

As to the first question, it is thought that the Examiner properly refused to admit the antedating affidavits after final rejection. If the affidavits were admitted, the Examiner would have the burden of considering their sufficiency at least once, and perhaps twice, and if they were found to overcome the reference the final action would have to be withdrawn and probably new references cited in lieu of the prior ones, thus fully reopening the case. It might be urged that the presumption that other references might be found to take the place of the old cannot be indulged, because the Examiner is bound to cite in the first action the best references at his command; but it would not be practicable always to cite every anticipating reference, particularly as in this case, where the reference was cited to meet only one of several features.

The practice on the question here presented should be the same as that in filing amendments after final rejection. Therefore antedating affidavits should not be admitted without a duly-verified showing why they were not earlier presented. As well stated by the Examiner:

> The practice of the Office * * * requires the applicant in prosecution of his case to present at each step the best and all the reasons why the claims should be allowed. If references can be overcome by affidavits they should be presented at once for consideration by the Office, so that the case may, upon each action, take a decisive step toward completion.

In an attempt to comply with the requirements of the Examiner applicant made a verified showing as to why the affidavits were not earlier presented. In this showing it is stated that after the first rejection the advisability of filing the antedating affidavits was considered, but that the applicant refused to execute the affidavits, because it was unnecessary, as the references were not believed to meet the claims. This showing appears to constitute more of a reason for refusing the admission of the affidavits than for admitting them. If the applicant after apparently seeing the necessity of filing the affidavits deliberately refuses to file them and chooses to stand on the ground that the references do not meet the claims, he should abide by his election. To permit an applicant to exhaust one line of prosecution and then select another is to permit piecemeal action, which is not and should not be favored.

The second question presented is: Did the statement of the Examiner in his refusal to admit the affidavits, to the effect that the claims were met in the references other than that which it was attempted to antedate, amount to a reopening of the case? It is believed that it did not. The references cited in the case were cited to show the prior state of the art, and if at any time, even after final rejection, the Examiner should choose to rely on a part of that prior art instead of the whole of it as an anticipation no valid objection could be taken to such a course. A different view of the effect or pertinency of certain devices in the prior art does not constitute a new reason for rejection. There was therefore no impropriety in this expression of opinion of the Examiner after final action on the application, and it did not act to reopen the case.

The petition is denied.

THULLEN v. YOUNG AND TOWNSEND.

Decided December 21, 1905.

LIMIT OF APPEAL—MOTION TO EXTEND AFTER LIMIT EXPIRES—VERIFIED SHOWING.

After the expiration of a limit of appeal a motion to extend the limit will not be entertained except upon a verified showing in excuse for the delay.

ON PETITION.

SIGNALING SYSTEM.

Mr. George E. Cruse for Thullen.

Mr. George H. Benjamin for Young and Townsend.

ALLEN, *Commissioner:*

This is a petition by Young and Townsend asking that the Examiners-in-Chief be advised "that they should take jurisdiction of an appeal" from the decision of a Primary Examiner dissolving an interference filed more than three months after the limit of appeal had expired.

The limit of appeal expired July 5, 1905, and appeal was not taken until October 17, 1905. Under such circumstances in order to get consideration of the appeal by the Examiners-in-Chief a motion should have been brought to extend the limit of appeal to include the appeal taken October 17. The present petition will therefore be treated as a motion to extend the limit of appeal.

It is the well-settled practice of this Office, as announced in *Kletsker and Goesel* v. *Dodson* (109 O. G., 1336; C. D., 1904, 100) and other decisions, that an appeal filed after the expiration of the limit of appeal will not be entertained except upon a verified showing why it was not presented in proper time. Some reason for the delay is stated in support of the motion now presented; but it is not verified, and therefore will not be considered.

The motion is dismissed.

LINDSTROM v. LIPSCHUTZ.

Decided December 22, 1905.

1. INTERFERENCE—OFFICE CANNOT COMPEL WITNESS TO ANSWER—SUPPRESSION OF TESTIMONY.

The testimony of a witness may be suppressed on account of his refusal to furnish material evidence; but the Office has no machinery for compelling him to furnish such evidence.

2. SAME—STRIKING OUT ALLEGED SUPPLEMENTAL BRIEF.

Where at the hearing of a motion to compel a witness to answer certain questions or to suppress his deposition the interference was suspended for ten days to permit the parties to come to some agreement and a paper was thereafter filed in the case, in accordance with the agreement of counsel, to show that no agreement could be reached, *Held* that such paper will not be stricken out upon the allegation that it is a supplemental brief filed in violation of the rules.

SAME—EVIDENCE—CANNOT BE ADMITTED MERELY FOR INSPECTION OF OFFICE.

A letter which a party refused to introduce into evidence on the ground that it related to a secret invention cannot be filed in the Office merely for the inspection of the various tribunals who may consider the case. If the letter did not tend to affect the final judgment, there would be no reason for considering it, and if it did the opposing party would have a right to inspect and meet it as he might see fit.

ON MOTION.

DUMPING-CARS.

Mr. William H. Finkel and *Messrs. Babcock & Byrnes* for Lindstrom.

Mr. Charles G. Hawley and *Mr. Wallace Greene* for Lipschutz.

ALLEN, *Commissioner:*

This case presents for consideration a motion by Lindstrom, the opposing party, to place in evidence a certain private letter alleged to be material and a motion to suppress a supplemental brief filed by Lindstrom on this question, combined with a motion to suppress the entire deposition of Lindstrom, together with the exhibits referred to in said deposition, because of his failure to produce said letter and to answer other material and relevant interrogatories.

Motions to suppress testimony should be brought before and determined by the Examiner of Interferences in the first instance, and therefore this part of the motion cannot be entertained.

As to the production in evidence of the letter in question, it is well settled that this Office has no machinery for compelling a witness to answer or to produce evidence of any kind. The Office may at final hearing strike out or refuse to consider the testimony of a witness who refuses to furnish material evidence; but if a party is not satisfied with this remedy he must apply to a Federal court for the proper order compelling the witness to furnish the desired evidence.

In regard to striking out the supplemental brief it is to be said that the paper in question is not, strictly considered, a supplemental brief, although it is so entitled. At the hearing granted on the motion to compel the production of the letter it was stated that the Commissioner was without power to grant such an order, and it was suggested that possibly some agreement might be reached by the parties without going into court, and proceedings were therefore suspended for ten days for this purpose. It is stated by counsel for Lindstrom in his brief that after the hearing it was agreed between associate counsel that if their principals could not agree upon some settlement of the questions at issue counsel for Lindstrom should file in the case a statement to this effect. The so-called supplemental brief seems to have been filed merely for the purpose of carrying out this agreement, and whether this paper was filed in pursuance of any agreement or not is immaterial, as it was evidently filed for the purpose of calling attention to the fact that the party in whose behalf it was filed (Lindstrom) refused to put the letter in evidence or any part of it beyond that which was read by the witness during his cross-examination. This being the purpose of the paper, it is not objectionable.

The letter in question is a letter which was written by Lindstrom to his attorney. A certain portion of the letter was read by the witness on cross-examination; but he refused to read it all or to put it in evidence, on the ground that it related to other inventions, which it was his right to maintain in secrecy, according to the provisions of section 4008 of the Revised Statutes. While refusing to divulge the entire contents of the letter, the witness states that he is perfectly willing and, in fact, would prefer to submit the letter to the inspection of all the tribunals of this Office in order that they may satisfy themselves of its contents. The only reason for the consideration of the letter in any way is because of its probable effect in changing the final judgment, and it is obvious that if this should be its effect the opposing party would have a right to inspect it and to object to it or meet it by other evidence, as he might see fit. It is neither necessary nor proper to inspect a letter which is not properly in evidence in the case, and it cannot therefore be filed in the manner suggested.

The motion for an order compelling the witness to produce the letter in question and to answer certain questions and asking that the deposition of such witness be suppressed is dismissed. The motion to strike out the supplemental brief is denied.

EX PARTE RICHMOND.

Decided December 23, 1905.

1. AFFIDAVITS—FILED AFTER FINAL REJECTION AND DECISION ON APPEAL.

Where affidavits are presented after final rejection of the claims and decision by the Examiners-in-Chief on appeal purporting to show that the rejection of the claims was improper and it is alleged that the affidavits are based upon experiments made after the decision of the Examiners-in-Chief, *Held* that the experiments should have been made and the affidavits filed before the case was closed before the Primary Examiner and that the affidavits would not be admitted.

2. REOPENING CASE AFTER FINAL REJECTION—FOR NEW EVIDENCE—SHOWING REQUIRED.

Where the party fails to make his demonstration and to submit his evidence in response to the original rejection before prosecuting his case to final rejection, the case will not thereafter be reopened except upon showing of good and sufficient reasons why the evidence whose admission is sought was not earlier presented.

ON PETITION.

THERAPEUTIC APPARATUS.

Mr. F. B. Fetherstonhaugh for the applicant.

ALLEN, *Commissioner:*

This is a petition that the above-entitled application be reopened for the admission of affidavits presented for the first time after decision upon appeal to the Examiners-in-Chief.

The case was rejected by the Primary Examiner on the ground of inoperativeness. An argument was made in response to this rejection, in view of which the case was reconsidered and finally rejected. Appeal was then taken to the Examiners-in-Chief, who affirmed the rejection by the Primary Examiner. The applicant thereupon brought this petition, averring that since the decision of the Examiners-in-Chief experiments have been performed demonstrating the operativeness of the invention and requesting that the application be reopened for consideration by the Primary Examiner of affidavits to said experiments. The proper time for demonstrating the operativeness of the invention and presenting evidence thereof was in response to the original rejection for inoperativeness and before the prosecution of the case before the Primary Examiner had been closed by final rejection. Where the party fails to make his demonstration and to submit his evidence in response to the original rejection before prosecuting his case to final rejection, the case will not thereafter be reopened except upon showing of good and sufficient reasons why the evidence whose admission is sought was not earlier presented. No such showing is found in the present case.

The petition is denied.

LEMP v. RANDALL AND BATES v. THOMSON.

Decided December 26, 1905.

1. INTERFERENCE—MOTION FOR JUDGMENT ON RECORD—APPEAL.

Held that decisions of the Examiner of Interferences denying motions for judgment on the record should not be subject to review on appeal, as such decisions are not final determinations that judgment will not be rendered in favor of the moving parties.

2. SAME—SAME—SAME.

Denial of an appeal from decisions of the Examiner of Interferences refusing to render judgment on the record deprives the parties of no substantial right, while to permit appeals in such cases results in unnecessary delay, labor, and expense.

3. SAME—JUDGMENT ON RECORD.

Held that Rule 114 does not clearly and unmistakably require the Examiner of Interferences to render judgment against a party who has been called upon to show cause under that rule and who fails to take any action in response.

APPEAL on motion.

STEAM-GENERATING APPARATUS.

Mr. A. G. Davis and *Messrs. Lyons & Bissing* for Lemp.

Mr. Arthur F. Randall for Randall and Bates.

Mr. A. G. Davis and *Messrs. Lyons & Bissing* for Thomson.

ALLEN, *Commissioner:*

This is an appeal by Randall and Bates from the action of the Examiner of Interferences denying their motion that judgment be rendered against the party Lemp.

The Examiner of Interferences on May 12, 1905, issued an order stating that the preliminary statements of Lemp and Randall and Bates failed to allege dates of conception prior to the filing date of Thomson and giving notice that judgment would be rendered against Lemp and against Randall and Bates unless they should show cause on or before June 1, 1905, why such action should not be taken. On May 31, 1905, Randall and Bates brought a motion for dissolution, which was transmitted to the Primary Examiner on June 6, 1905, and proceedings were suspended pending determination thereof. On October 28, 1905, Randall and Bates brought their motion that judgment on the record be entered against Lemp in pursuance of the notice and order to show cause of May 12, 1905. The Examiner of Interferences pointed out that the motion of Randall and Bates for dissolution was based in part on the ground that Thomson had no right to the claims in issue and that the preliminary statement of Lemp did not fail to go back of the record date of Randall and Bates. He concluded that if upon the motion for dissolution pending it should be found that Thomson has, in fact, no right to claim the issue the question of priority between Lemp and Randall and Bates would be an open one before the Office and decided, for that reason, that judgment should not be rendered against Lemp at this time. It is from this decision that the present appeal is brought.

I am of the opinion, as was pointed out in the case of *The Gem Cutlery Company* v. *Leach*, (114 O. G., 2089,) that the decisions of the Examiner of Interferences denying motions for judgment on the record should not be subject to review on appeal. As stated in that case, such a decision is not a final one that judgment will not be rendered in favor of the party bringing the motion. Denial of an appeal in such cases as the present one deprives the parties of no substantial right, while to permit appeals in these cases results in unnecessary delay, labor, and expense.

While it is believed that the present appeal should not be entertained, I have nevertheless considered the contention that the refusal of the Examiner of Interferences to enter judgment against Lemp is in violation of Rule 114 sufficiently to satisfy myself that the rule does not clearly and unmistakably require the action sought by appellants. Appellants also allege that they will suffer hardship and

that confusion will result if their appeal is not entertained and the decision of the Examiner of Interferences reversed. I am unable, however, to see that such will be the case.

The appeal is dismissed.

DALTON *v.* HOPKINS *v.* NEWMAN.

Decided December 20, 1905.

STAY OF PROCEEDINGS—UNWARRANTED APPEAL—MOTION BY PARTY IDENTIFIED IN INTEREST WITH APPELLANT.

When a party to an interference who has no substantial standing therein takes an unwarranted appeal, *Held* that another party thereto who is identified in interest with the first-mentioned party would not be granted a suspension of proceedings pending decision upon said appeal in prolongation of previous extensive delay.

ON PETITION.

ADDING AND WRITING MACHINES.

Mr. J. D. Rippey and *Mr. G. R. Hamlin* for Dalton.

Mr. J. D. Rippey and *Mr. G. R. Hamlin* for Hopkins.

Messrs. Rector & Hibben for Newman.

ALLEN, *Commissioner:*

This is a petition by Hopkins for a stay of proceedings in the above-entitled interference.

The Examiner of Interferences refused to transmit to the Primary Examiner the motion of Dalton for dissolution of the interference. He also refused to order a stay of proceedings and fixed times for taking testimony, in accordance with which Hopkins's testimony-in-chief is to close on January 8, 1906. Dalton has taken an appeal from the decision of the Examiner of Interferences refusing to transmit his motion to dissolve, which appeal is fixed for hearing before me on January 4, 1906. Hopkins seeks a stay of proceedings pending a decision on the appeal, claiming that he should not be required to take testimony until it is finally decided that the interference is to go on. It appears that the filing date of Dalton is subsequent to that of Hopkins, as well as to that of Newman, and that Dalton filed no preliminary statement. The specific allegations of his motion for dissolution filed in response to the order to show cause why judgment should not be rendered against him relate solely to the question whether the interference should continue between himself and Newman. The motion contains, in addition to the specific allegations, the general allegation that there has been such irregularity in declaring the interference as will preclude proper determination of the question of priority of invention. No specific irregularity has been pointed out, and it must be presumed that this allegation of irregularity is merely a general statement, made under a loose practice recently in vogue, referring to the specific allegations that Newman has no right to claim the counts in issue. Under such circumstances the motion to dissolve is no answer to the order to show cause why judgment should not be rendered against Dalton as subsequent in date to the party Hopkins, and it appears that judgment was so rendered by the Examiner of Interferences. It further appears that the parties Dalton and Hopkins are one in interest in the prosecution of this interference. Dalton signed the preliminary statement in Hopkins's case as assignee therein, and Dalton and Hopkins are represented by the same attorneys. Under these circumstances no good reason is seen for granting a stay of proceedings. Dalton on the face of the record has no substantial standing in the interference, and Hopkins, identified with Dalton in interest, should not be permitted to prolong the extensive delay which has already occurred on account of Dalton's unwarranted appeal.

The petition is denied.

HEINTZELMAN AND CAMP *v.* VRAALSTAD AND DOYLE.

Decided December 27, 1905.

1. INTERFERENCE—DISSOLUTION—APPEAL ON MOTION—RIGHT TO CLAIM NOT CONSIDERED UNDER HEAD OF INTERFERENCE IN FACT.

Where it is contended upon appeal on motion to dissolve for non-interference in fact that a party has no right to make claims, *Held* that the question of right to make claims is different from that of interference in fact and will not be considered of such on appeal. (*Blackmore* v. *Hall*, 119 O. G., 2523.)

2. SAME—INTERFERENCE IN FACT.

Where, so far as the invention in issue is concerned, the same results are accomplished by substantially the same or equivalent means in the device of each party and the terms of the issue have the same meaning in each case, *Held* that there is interference in fact.

3. SAME—SAME—EFFECT OF DIFFERENCES IN THE DEVICES NOT INVOLVED IN THE ISSUE.

Where it is contended upon appeal on motion to dissolve for non-interference in fact that, in view of functions effected in appellees' apparatus which it is claimed are not effected in that of the appellants, the inventions claimed by the respective parties are essentially different, *Held* that the differences in function referred to related to specific differences in the devices to which the issue is limited and formed no basis for dissolution of the interference. (*Townsend* v. *Copeland* v. *Robinson*, 119 O. G., 2523.)

APPEAL on motion.

FIRE-BOXES.

Mr. J. Snowden Bell and *Mr. W. E. Schoenborn* for Heintzelman and Camp.

Mr. J. Nota McGill for Vraalstad and Doyle.

ALLEN, *Commissioner:*

This is an appeal by Heintzelman and Camp from the decision of the Primary Examiner denying their motion to dissolve the interference as to the ground of non-interference in fact.

Each count of the issue includes as an element "a fire-box which is unobstructed by arches or projections." The contentions of appellants are, in substance, first, that in view of the part marked "7" in Figure 1 of the appellees' drawing the appellees have no right to make a claim containing the limitation quoted, and, second, that in view of certain functions effected in appellees' apparatus in connection with the part "7" which, it is claimed, are not effected in appellants' apparatus, the inventions claimed by the respective parties are essentially different. The question of appellees' right to make the claims in issue is different from the question of interference in fact and will not be considered on this appeal. (*Blackmore* v. *Hall*, 119 O. G., 2523.) The functions effected in appellees' device in connection with the part 7, on which functions the appellants base their contention that the inventions in the two cases are essentially different, relate to specific differences in the devices of the respective parties to which the counts in issue are not limited and with which this interference has nothing to do. These differences afford no basis for holding that there is no interference in fact. (*Townsend* v. *Copeland* v. *Robinson*, 119 O. G., 2523.) So far as the invention in issue is concerned the same results seem to be accomplished by substantially the same or equivalent means in the device of each party, and the terms of the issue seem to have the same meaning in each case. Under these circumstances there is clear interference in fact.

The decision of the Primary Examiner refusing to dissolve the interference on the ground that there is no interference in fact is affirmed.

THE

OFFICIAL GAZETTE

OF THE

United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

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TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	1	.....	Nevada	.....	.....
Alaska Territory	1	.....	New Hampshire	3	1
Arizona Territory	.....	.....	New Jersey	19	2
Arkansas	2	.....	New Mexico Ter'y	1	.....
California	11	2	New York	71	57
Colorado	5	1	North Carolina	4	.....
Connecticut	13	5	North Dakota	2	.....
Delaware	2	1	Ohio	43	12
District of Columbia	4	1	Oklahoma Territ'y	3	.....
Florida	4	.....	Oregon	4	1
Georgia	6	2	Pennsylvania	50	20
Hawaii Territory	.....	.....	Porto Rico	.....	.....
Idaho	.....	.....	Rhode Island	3	1
Illinois	47	26	South Carolina	2	.....
Indian Territory	.....	.....	South Dakota	2	2
Indiana	12	5	Tennessee	3	4
Iowa	15	1	Texas	7	.....
Kansas	10	.....	Utah	1	.....
Kentucky	7	4	Vermont	.....	.....
Louisiana	4	3	Virginia	2	.....
Maine	.....	.....	Washington	11	1
Maryland	4	2	West Virginia	2	1
Massachusetts	22	18	Wisconsin	15	6
Michigan	13	4	Wyoming	2	.....
Minnesota	14	.....	U. S. Army	.....	.....
Mississippi	2	.....	U. S. Navy	.....	.....
Missouri	13	7			
Montana	1	.....	Total to citizens of the United States	478	189
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TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina	.....	.....	Netherlands	.....	.....
Austria-Hungary	2	.....	Newfoundland	.....	.....
Belgium	1	.....	New South Wales	.....	.....
Brazil	.....	.....	New Zealand	3	.....
British West Indies	.....	.....	Norway	.....	.....
Canada	5	1	Persia	.....	.....
Cape Colony	.....	.....	Queensland	.....	.....
Chile	.....	.....	Roumania	.....	.....
China	.....	.....	Russia	.....	.....
Costa Rica	.....	.....	San Salvador	.....	.....
Cuba	.....	.....	Scotland	.....	.....
Denmark	.....	.....	South Africa	.....	.....
Ecuador	.....	.....	Spain	.....	.....
England	14	1	Sweden	1	.....
France	3	.....	Switzerland	1	.....
Germany	10	1	Transvaal, South Africa	.....	.....
India	.....	.....	Victoria	2	.....
Ireland	.....	.....	Western Australia	.....	.....
Italy	.....	.....	Total to citizens of foreign countries	43	3
Japan	.....	.....			
Java	.....	.....			
Mexico	1	.....			

Drawings.

RULE 38.

38. When there are drawings the description will refer to the different views by figures and to the different parts by letters or numerals (preferably the latter).

RULE 52—EXTRACT.

(6) The different views should be consecutively numbered. Letters and figures of reference must be carefully formed. They should, if possible, measure at least one-eighth of an inch in height, so that they may bear reduction to one twenty-fourth of an inch; and they may be much larger when there is sufficient room. They must be so placed in the close and complex parts of drawings as not to interfere with a thorough comprehension of the same, and therefore should rarely cross or mingle with the lines. When necessarily grouped around a certain part, they should be placed at a little distance, where there is available space, and connected by short broken lines with the parts to which they refer. They must never appear upon shaded surfaces, and when it is difficult to avoid this, a blank space must be left in the shading where the letter occurs, so that it shall appear perfectly distinct and separate from the work. If the same part of an invention appear in more than one view of the drawing it must always be represented by the same character, and the same character must never be used to designate different parts.

It is suggested that numerals or letters be used without exponents.

Amendments.

RULE 73. In every amendment the exact word or words to be stricken out or inserted in the application must be specified and the precise point indicated where the erasure or insertion is to be made. All such amendments must be on sheets of paper separate from the papers previously filed, and written on but one side of the paper. Erasures, additions, insertions, or mutilations of the papers and records must not be made by the applicant.

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business January 16, 1906.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
	In arrears—Under one month.			
308	XV. Bread, Pastry, and Confections, Making, Coating, Laminated Sheets and Fabrics, Fuel, Glass, Hydraulic Lime and Cement, Paper-Making, Paving, and Plastics.	Jan. 6	Nov. 7	370
322	XXXVI. Curtains, Shades, and Screens, Drafting, Driers, Measuring Instruments, and Wind-Wheels.	Jan. 4	Dec. 13	251
378	XXXVIII. Artesian and Oil Wells, Bottles and Jars, Care of Live Stock, Fishing and Trapping, Stationery, Stone-Working.	Jan. 3	Nov. 6	358
321	I. Tillage, etc., Fences, and Railway Draft Appliances.	Jan. 2	Dec. 11	220
303	XVII. Linotyping, Printing, Matrix-Making, Nut and Bolt Locks.	Jan. 2	Oct. 21	347
148	XXXII. Carbonating Beverages, Dispensing Beverages, Dispensing-Cans, Metallic Shipping and Storing Vessels, Packaging Liquids, Paper Receptacles, Refrigeration, Wooden Receptacles.	Jan. 2	Sept. 5	615
154	XI. Boot and Shoe Making, Boots, Shoes, and Leggings, Button, Eyelet, and Rivet Setting, Leather Manufacturing, Nailing and Stapling, Check-Controlled Apparatus, Whips and Whip Apparatus.	Jan. 2	July 14	372
105	XXVI. Electricity, Generation, Electric Heaters, Electric Railways, Motive Power.	Jan. 2	July 3	680
175	III. Annealing and Tempering, Coating with Metal, Electro-chemistry, Metal-Founding, Metallurgy, Shaping Fluid Metal.	Dec. 30	Dec. 9	259
128	II. Bee Culture, Dairy, Label-Affixers, Paper Files and Binders, Presses, Store-Service, Tobacco, etc.	Dec. 30	Oct. 2	235
144	XXIV. Apparel, Apparel Apparatus, Sewing-Machines, Surgery, Toilet.	Dec. 28	Oct. 2	494
332	X. Carriages and Wagons	Dec. 28	Sept. 16	744
307	XIV. Cutting and Punching Sheets and Bars, Farriery, Metal-Bending, Metal-Ornamenting, Metal Personal Wear, Making, Sheet-Metal Ware, Making, Tools, Wire-Working.	Dec. 28	Sept. 7	284
379	XXIII. Acoustics, Coin-Handling, Horology, Recorders, Registers, Optics, Signals, Time Controlling Mechanism.	Dec. 27	Sept. 7	623
304	XXXIV. Railways, Railway-Brakes, Rolling-Stock.	Dec. 26	Dec. 5	376
172	XXXI. Alcohol, Charcoal and Coke, Distillation, Gas, Heating and Illuminating, Hides, Skins, and Leather, Liquid Coating Compositions, Oils, Fats, and Glue, Water Purification.	Dec. 26	Nov. 23	219
133	XXII. Air-Guns, Ammunition and Explosive Devices, Boats and Buoys, Catapults and Targets, Firearms, Marine Propulsion, Ordnance, Ships.	Dec. 26	Oct. 2	257
112	XXI. Textiles, Carding, Knitting, Spinning, Weaving, etc.	Dec. 23	June 26	557
107	XXXVII. Electricity, Conductors, Lighting, Special Apparatus.	Dec. 23	May 1	709
318	VI. Bleaching and Dyeing, Chemicals, Explosives, Fertilizers, Medicines, Preserving, Sugar and Salt.	Dec. 22	Oct. 26	313
163	XXX. Fluid-Pressure Regulators, Lamps and Gas-Fittings, Type-Writing Machines.	Dec. 22	May 8	580

Applications Under Examination—Continued.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
244	XXXV. Baggage, Buckles, Buttons, and Clasps, Card, Picture, and Sign Exhibiting, Deposit and Collection Receptacles, Package and Article Carriers, Packing and Storing Vessels, Photography.	Dec. 21	Nov. 2	579
164	XXXIII. Canes, Canopies, Cutlery, Domestic Cooking Vessels, Electricity, Medical and Surgical, Electric Signaling, Fireproof Buildings, Harness, Masonry, Tents, and Umbrellas.	Dec. 20	July 19	741
137	VIII. Beds, Chairs, Furniture, Kitchen and Table Articles, Store Furniture.	Dec. 19	Sept. 13	527
232	IV. Bridges, Conveyers, Cranes and Derricks, Excavating, Hoisting, Hydraulic Engineering, Loading and Unloading, and Towers.	Dec. 18	Dec. 18	263
109	XVI. Telegraphy and Telephony	Dec. 18	Dec. 2	257
327	XVIII. Steam-Engineering, etc	Dec. 18	Oct. 10	322
	Between one and two months.			
122	XIX. Stoves and Furnaces and Steam-Boiler Furnaces.	Dec. 13	July 14	652
324	XII. Elevators, Journal-Boxes, Lubricators, Machine Elements, Pulleys and Shafting.	Dec. 12	Oct. 9	467
167	V. Fine Arts, Bookbinding, Harvesters, Jewelry, and Music.	Dec. 11	Nov. 18	335
142	IX. Baths and Closets, Fire-Extinguishers, Hydraulic Motors, Pumps, Sewerage, and Water Distribution.	Dec. 7	June 14	1016
382	XXVIII. Air and Gas Engines, Air and Gas Pumps, Pneumatics.	Dec. 6	June 3	863
312	VII. Velocipedes, Clutches, Fire-Escapes, Games and Toys, Ladders, Mechanical Motors, and Paper Manufactures.	Dec. 5	Oct. 26	486
375	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, Washing Apparatus.	Dec. 5	Aug. 3	641
147	XXIX. Coopering, Roofs, Wheelwright-Machines, Wooden Buildings, Wood-Sawing, Wood-Turning, Woodworking-Tools.	Dec. 4	Sept. 18	340
179	XX. Artificial Limbs, Builders' Hardware, Dentistry, Locks and Latches, Safes, Undertaking.	Dec. 4	July 3	362
330	XIII. Arms, Projectiles, and Explosive Charges, Making, Metal-Working, Needle and Pin Making.	Nov. 20	Sept. 5	554
	Between two and three months.			
315	XXV. Butchering, Mills, Threshing, and Vegetable Cutters and Crushers.	Nov. 6	July 29	484

Total number of applications awaiting action 17,752

Room No.	Trade-Marks, Designs, Labels and Prints.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
159	*Between two and three months.*			
	Trade-Marks	Nov. 13	Nov. 4	3491
	Under one month.			
	Designs	Dec. 23	Dec. 19	54
	Labels and Prints	Jan. 16	Jan. 16	1

Trade-Marks.

The publication of trade-marks under the act of February 20, 1905, in the OFFICIAL GAZETTE, commenced May 2, 1905, and will appear in each weekly number of the GAZETTE thereafter.

Extra copies of the trade-mark portion of the GAZETTE, which will be sold separately, may be obtained single or in quantities for five cents each. Coupons will be taken in payment therefor.

PATENTS

GRANTED JANUARY 23, 1906.

810,883. HAME. JULIUS A. ALEXANDER, Pine Bluff, Ark. Filed May 2, 1903. Serial No. 155,220.

Claim.—A hame comprising an elongated trace-fastening plate having a series of vertically-arranged openings at one side thereof to register with similar openings in the hame, and bolts for securing the plate and hame together, the opposite side edge of the plate having a series of vertically-arranged hooks provided with inturned terminals, said plate being inwardly curved at its central portion to permit of one-half of its width to extend laterally beyond the inner edge of the hame, substantially as specified.

810,884. ELECTRIC LAMPLIGHTER. PETER W. ARDUINO and ARDUINO A. ARDUINO, Stamford, Conn. Filed Apr. 22, 1904. Serial No. 204,620.

Claim.—1. The combination with a lamp, of a carrier slidably mounted adjacent to the wick-tube thereof, electrical contacts an electro-incandescent body carried by the carrier, and movable therewith to bridge the contacts and lie in igniting relation to the wick of the lamp, a battery connected with the lamp and including an element movable into and out of active relation to the cooperating element, a plunger connected with the movable element, means for holding said plunger with the attached element normally and yieldably in its inactive position, means connected with the carrier for shifting it, a pin carried by the plunger and movable therewith to engage and actuate the carrier-shifting means, and pivoted links connected between said means and the plunger and adapted to fold when the pin moves toward the shifting means and to unfold and return the shifting means when the pin moves away from the shifting means.

2. The combination with a lamp, of a carrier slidably mounted adjacent to the wick-tube thereof, electrical contacts, an electro-incandescent body carried by the carrier and movable therewith to bridge the contacts and lie in igniting relation to the wick of the lamp, a battery connected with the lamp and including an element movable into and out of active relation to the cooperating element, a plunger connected with said movable element, means for holding said plunger with the element normally and yieldably in its inactive position, and means connected between the carrier and the plunger for shifting the carrier, said plunger having initial lost motion in both directions with respect to the carrier.

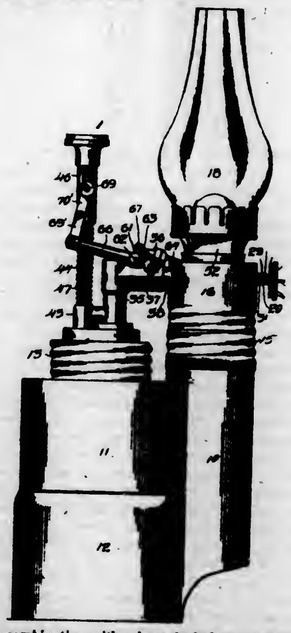

3. The combination with a lamp including a font and burner-head, of a battery including a jar, igniting means carried by the lamp, means carried by the battery for actuating the igniting means, the battery comprising a jar having an upper reduced portion, of means for holding the lamp and battery with their respective mechanisms in cooperative relation, said holding means comprising a collar carried by the font and engaging the jar and a cap removably engaged with the reduced portion of the jar and impinging against the collar.

810,885. CATTLE-TAG. MARCUS J. BARTLETT, Chicago, Ill. Filed July 5, 1904. Serial No. 215,441.

Claim.—1. A cattle-tag comprising a blank of suitable form to permit of being stamped directly from a strip or sheet of metal and having its ends bent upward and oppositely dovetailed and adapted to be sprung endwise into interlocking engagement with each other to form a closed loop.

2. A cattle-tag comprising a blank of suitable shape to permit of being stamped directly from a strip or sheet of metal, and having

no ends bent upward and oppositely dovetailed and adapted to be sprung endwise into interlocking engagement with each other, said blank being scored midway between said ends to cause said ends to register in interlocking engagement when the tag is bent to form a closed loop, substantially as described

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810,886. REPEATING TORPEDO-CANE. ROSCOE BEAN, Byron, Ohio. Filed Oct. 10, 1904. Serial No. 227,976.

Claim.—1. In an exploder of the character described, the combination, with a magazine, an explosion-chamber in communication with the magazine and a plunger operating to detonate the explosives in said chamber, of independently-movable cut-offs operating between the magazine and the explosion-chamber to feed and arrest the explosives by the action of the plunger, and means for successively actuating said cut-offs, substantially as described.

2. In an exploder of the character described, the combination, with a magazine, an explosion-chamber in communication therewith, and a plunger operating to detonate the explosives in the chamber, of cut-offs operating between the magazine and the explosion-chamber to feed and arrest the explosives, and cam-surfaces on the plunger to operate said cut-offs to feed and arrest the explosives.

3. In an exploder of the character described, the combination, with a magazine, an explosion-chamber in communication therewith, and a plunger to detonate the explosives in the chamber, of independently-movable feeding and arresting cut-offs operating between the magazine and the chamber, the normal tendency of one cut-off being to stand in cut-off position and the normal tendency of the other cut-off being to stand in non-cut-off position, and means whereby the action of the plunger successively actuates said cut-offs, substantially as described.

4. In an exploder of the character described, the combination, with a magazine, an explosion-chamber in communication therewith, and a plunger to detonate the explosives in the chamber, of independently-movable feeding and arresting cut-offs operating between the magazine and the chamber, the normal tendency of one cut-off being to stand in cut-off position and the normal tendency of the other cut-off being to stand in non-cut-off position, and cam-surfaces on the plunger to successively operate these cut-offs against their normal tendency to feed and arrest the explosives.

5. In an exploder of the character described, the combination, with a magazine, an explosion-place in communication therewith, and a plunger to detonate the explosives, of feeding and arresting cut-offs operating between the magazine and said explosion-place, the normal tendency of the one cut-off being to stand in cut-off position and the normal tendency of the other cut-off being to stand in non-cut-off position, and means to operate the cut-offs against their normal tendency alternately, and also to allow both of the cut-offs to stand in cut-off position during an intermediate interval.

6. In an exploder of the character described, the combination, with a magazine, an explosion-chamber in communication therewith, and a plunger to detonate the explosives in the chamber, of cut-offs composed of resilient wires secured to the magazine-tube and extending respectively partly across the bottom of the magazine and partly across the communication or passage between the magazine and the chamber, and having projecting contact ends, and cam-surfaces on the plunger arranged to alternately operate the cut-offs.

7. In an exploder of the character described, the combination, with a magazine, an explosion-chamber in communication therewith, and a plunger to detonate the explosives in the chamber, of cut-offs composed of spring-wires suitably secured and projecting respectively partly across the magazine and the passage or communication between it and the chamber, and cam-surfaces on the plunger arranged to alternately operate the cut-offs, and to permit both cut-offs to remain closed during an intermediate interval.

8. In an exploder of the character described, a tubular magazine-passage, having slots in the walls thereof, of independent cut-offs composed each of spring-wires extending, respectively, into said slots and within the magazine-passage in the path of the explosives, and means to operate said cut-offs.

9. In an exploder of the character described, the combination, with independent cut-offs, of a plunger having cam-surfaces adapted to operate each of said cut-offs.

10. In an exploder of the character described, the combination, with a magazine, an explosive-chamber in communication therewith, and a plunger to detonate the explosives in the chamber, of feeding and arresting cut-offs operating between the magazine and the chamber to feed and arrest the explosives, and springs for said cut-offs lying normally close to the body of the exploder, the plunger having cam-surfaces to actuate said springs to operate the cut-offs against the action of the springs, substantially as described.

11. In an exploder of the character described, the combination, with a magazine, an explosion place or chamber in communication therewith, and a plunger to detonate the explosives, of a feeding cut-off extending partly across the magazine and located and operating between the magazine and said explosion place or chamber, and including in its construction a spring adapted to move it back into position partly across the magazine, and supporting means located below said feeding cut-off and adapted to accommodate between it and the feeding cut-off an explosive, and to free such explosive when the plunger is moved from the anvil or firing-place.

810,887. RAILWAY-SIGNAL. MANASSEH W. BRAWN, Memphis, Mo. Filed Apr. 25, 1905. Serial No. 257,236.

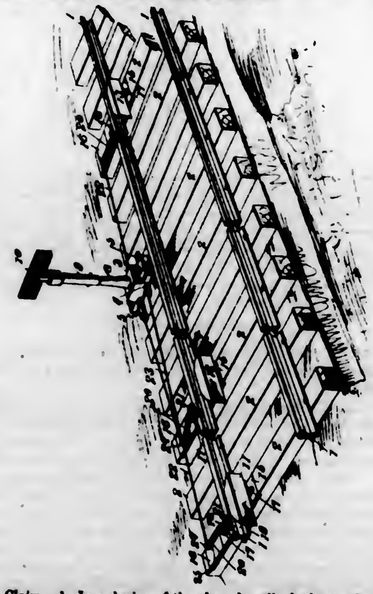

Claim.—1. In a device of the class described, the combination of a track, a casing at one side of the track, a toothed pinion mounted in said casing, a shaft connected with said pinion, a semaphore operable by said shaft spaced rack-bars having the teeth thereof in mesh with the teeth of the pinion, movable members in the length of the track upon opposite sides of the casing aforesaid to be actuated by the rolling-stock, and means connecting each of said movable members with a respective one of the rack-bars for actuation of the latter.

2. In a device of the class described, the combination of the main rails of a track, a casing at one side of the track, a toothed pinion mounted in said casing, a shaft connected with said pinion, a semaphore operable by said shaft, spaced rack-bars having the teeth thereof in mesh with the teeth of the pinion, movable rails in the length of the track upon opposite sides of the casing aforesaid, means connecting each of said movable rails with a respective one of the rack-bars for actuation of the latter, and another movable rail situated between the first-mentioned movable rails and operably connected with one of the rack-bars.

3. In a device of the class described, the combination of the main rails of a track, a casing at one side of the track, a pinion mounted in said casing, a shaft connected with said pinion, a semaphore carried by the shaft, spaced rack-bars having the teeth thereof in mesh with the teeth of the pinion and operating in the casing, the movable rails 11, 12 and 13 arranged in the length of the track for operation by the rolling-stock passing thereover, said movable rails being located adjacent main rails of the track, slides operating beneath the adjacent main rails and carrying the movable rails aforesaid, spaced plates arranged beneath said main rails and receiving the slides aforesaid therebetween, bell-crank levers operably connected with the slides at one end, the bell-crank levers connected with the rails 11 and 13 being connected with an end of opposite rack-bars in the casing, the bell-crank lever connected with the rail 12 being connected with an end of one of said rack-bars, and means for adjusting the connections between the rack-bars and the bell-crank levers.

810,888. MACHINE FOR EXPOSING AND DEVELOPING PHOTOGRAPHIC FILM. GEORGE C. BEMBLER, Oklahoma, Okla. Filed Mar. 12, 1904. Serial No. 197,846.

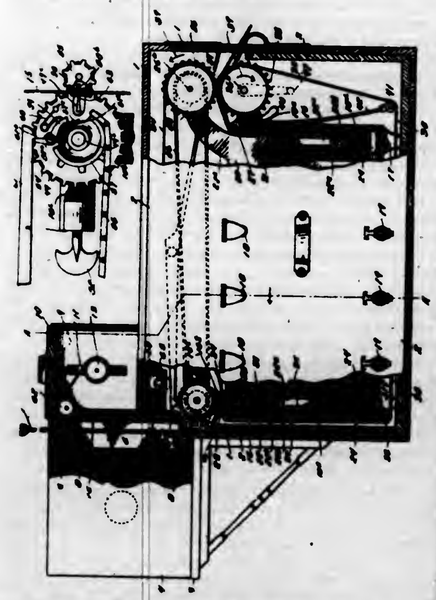

Claim.—1. An inclosing casing having an exposing-chamber and means for drawing sensitive film through said chamber for exposure, a tray within the casing for holding developing fluid, the tray having a series of rollers mounted across its bottom and a like series across its top, the upper rollers being supported by the tray-walls, the lower rollers being supported by a removable framework whereby they are removable from the tray between the upper rollers, a pair of aprons adapted to travel over said rollers and subject the exposed film to the action of the developing fluid, substantially as described.

2. An inclosing casing having means within it for exposing sensitive film to the light, a tray within the casing for holding developing fluid, rollers mounted across the upper part of the tray with their pintles supported by the tray-walls, a framework mounted within the tray, said framework having fingers extending down between the pintles of said rollers and supporting the pintles of the rollers at the bottom of the tray, a pair of aprons adapted to travel upon the rollers and subject the exposed film to the action of the developing fluid, substantially as described.

3. An inclosing casing having means for exposing sensitive film to the action of the light, a tray within the casing for holding developing fluid, a framework mounted within the tray, a pair of apron-driving rollers, one of said rollers being journaled in and supported by the tray and the other by the framework, a pair of aprons adapted to be driven through the developing fluid by said rollers and subject the exposed film to the action of said fluid, and an operative connection between the tray and said framework for causing said rollers to grip the aprons, substantially as described.

4. An inclosing casing having means within it for exposing sensitive film to the action of the light, a tray within said casing for holding developing fluid, a pair of rollers mounted in gripping contact with each other at each end of the tray, a framework mounted within the tray, one roller of each pair being supported by the tray and the other by the framework, a pair of aprons adapted to be driven by said rollers and subject the exposed film to the action of the developing fluid, and an elastic connection between the tray and the framework to cause said pairs of rollers to grip the aprons, substantially as described.

5. An inclosing casing having means for exposing sensitive film to the action of the light, a tray within said casing for containing developing fluid, a pair of apron-driving rollers mounted at each end of the tray, a series of apron-supporting rollers journaled across the top of the tray with their end pintles supported by the tray-walls, a second series of apron-supporting rollers journaled across the bottom of the tray, a framework mounted within the tray and having fingers extending down between the pintles of the first-named series of rollers, the lower ends of said fingers supporting the pintles of said second series of apron-supporting rollers, one roller of each said pair of apron-driving rollers being supported by the tray and the other by the framework, a pair of gripping-aprons adapted to be driven in contact with each other by said driving-rollers over the said supporting-rollers for subjecting the exposed film to the developing fluid, and an elastic connection between the tray and the framework for causing the apron-driving rollers to grip the aprons, substantially as described.

6. In a photographic and developing apparatus having a receptacle for the developer, flexible aprons movable into the receptacle, said aprons being provided with transverse rows of perforations.

7. In a photographic and developing apparatus having a receptacle for the developer, a pair of perforated flexible endless aprons movable into the receptacle, and adapted to contact the opposite surfaces of a film, substantially as described.

8. In a photographic and developing apparatus, flexible perforated belts adapted to carry the exposed film through the developing fluid in one direction, substantially as described.

9. An inclosing casing, means within the casing for holding a supply of sensitive film, a chamber in which to make the proper exposure of the film to the light, a pair of gripping-rollers adapted to draw the film through the exposing-chamber and having mechanism associated with them for severing the film at regular intervals after it is drawn through the chamber, a tray within the casing for containing developing fluid, a pair of gripping-aprons arranged to receive the severed portions of film from the gripping-rollers and carry them through the developing fluid in the tray, means for driving the gripping-rollers and the aprons, and means for stopping the movement of said rollers while each severed portion of film is drawn into the developing fluid by the aprons, substantially as described.

10. An inclosing casing adapted to contain a supply of sensitive film and having a chamber for making the proper exposure of said film to the light, a pair of gripping-rollers adapted to draw the film through the exposing-chamber and sever said film at regular intervals, a tray within the casing for containing developing fluid, a pair of endless aprons arranged to circulate through the developing fluid in the tray and carry the severed portions of film, mechanism for driving the gripping-rollers and the aprons, and means for permanently stopping the action of said rollers while the aprons continue in action, substantially as described.

11. A casing adapted to hold a supply of sensitive film and having means for properly exposing said film to the light, a drawer arranged to slide into the casing, a tray mounted within the drawer for holding developing fluid, and mechanism for subjecting the exposed film to the action of the fluid in the tray, said mechanism being supported by the drawer and being removable from the casing therewith, substantially as described.

12. A casing adapted to hold a supply of sensitive film and having means for making the proper exposure of said film to the light, a drawer arranged to slide into the casing, a tray mounted within the drawer for containing developing fluid, a pair of aprons mounted within the tray for carrying the exposed film through the developing fluid, a pair of rollers adapted to drive the aprons through the developing fluid, an end pintle of one of the rollers extending through the drawer-front and having a crank for driving it, substantially as described.

13. A casing having means for exposing sensitive film, a tray within the casing for holding developing fluid, means for subjecting the exposed film to the action of the developing fluid, the casing having the proper filling-funnels and emptying-cocks mounted permanently on the outside of one of its walls for said tray, said funnels and cocks having permanent communication with said tray through said wall, substantially as described.

14. An inclosing casing having an exposing-chamber and means for drawing film through said chamber within the casing, a receptacle within the casing for holding developing fluid, and a pair of perforated aprons adapted to grip the film within the casing and carry said film through the receptacle.

15. A casing attachable to a camera and having mechanism for exposing a sensitive film to the action of said camera, a drawer arranged to slide within and form a part of the casing, a tray mounted within the drawer for containing developing fluid, a pair of endless aprons mounted upon driving-rollers and arranged to carry the exposed film through the developing fluid, a shaft or pintle of one of the driving-rollers extending through a wall of the casing and having a crank for driving the aprons, and a pair of gripping-rollers adapted to feed the exposed film into engagement with the aprons, substantially as described.

16. A casing adapted to hold a supply of film and having a chamber in which to make the proper exposure of said film to the light, said chamber being attachable to a camera, a pair of gripping-rollers adapted to draw the film through said chamber, one of said rollers having a blade projecting from its face for severing the film at regular intervals, a tray within the casing for containing developing fluid, and a pair of gripping-aprons adapted to receive the severed portions of film from said gripping-rollers and carry them through the developing fluid, substantially as described.

17. A casing having within it a chamber adapted to hold a spool of sensitive film, an exposing-chamber for making the exposure of said film to the light, said exposing-chamber being attachable to a camera, a tray within the casing for containing developing fluid, said tray being mounted within a drawer portion removable from the casing, a pair of film-gripping rollers mounted over one end of the tray in lugs extending upward from said tray, a framework mounted within the tray, a pair of apron-gripping rollers mounted at each end of the tray, one roller of each pair being supported by the tray and the other by the framework, a pair of aprons adapted to be driven in gripping contact with each other by said apron-gripping rollers through the developing fluid, said aprons being arranged to receive the film from the film-gripping rollers and carry it through the developing fluid, substantially as described.

18. In a photographic and developing apparatus having a receptacle for the developer, flexible aprons movable in the receptacle, said aprons having transverse rows of perforations quincunxially arranged.

19. An inclosing casing having an exposing-chamber and means for drawing film through said chamber within the casing, a receptacle within the casing for holding fluid, and a pair of perforated aprons adapted to carry the film between them and within the casing through the receptacle and eject it from the casing.

20. A casing having an exposure-chamber to which a camera may be attached, a drawer working within the casing, a developer apparatus carried by the drawer, and means for securing the developer apparatus to the drawer, said means comprising a part of the developer apparatus.

21. An inclosing casing adapted to contain a supply of film and having a chamber for making the proper exposure of said film to the light, a pair of gripping-rollers adapted to draw the film through the exposing-chamber and cover said film at intervals, one of said rollers being movable with relation to the other, a receptacle within the casing for containing developing fluid, aprons arranged to pass through the fluid within the receptacle and carry the severed portions of the film, and means for driving the gripping-rollers and aprons.

22. An inclosing casing adapted to contain a supply of film and having a chamber for making the proper exposure of said film to the light, a receptacle within the casing for containing developing fluid, said receptacle having lugs provided with eyes and slots, a roller mounted in the eyes, a second roller mounted in the slots, means for forcing the rollers in the slots into contact with the other roller, said rollers being adapted to draw the film through the exposure-chamber, means carried by the rollers for severing the film at intervals, aprons arranged to pass through the fluid in the receptacle and carry the severed portions of the film, and mechanism for driving the rollers and the aprons.

23. An inclosing casing adapted to contain a supply of film and having a chamber for making the proper exposure of said film to the light, a receptacle within the casing for containing developing fluid, said receptacle having lugs provided with eyes and slots, a roller mounted in the eyes, a second roller mounted in the slots, blocks sliding in the slots and bearing against the roller, means for imparting movement to the blocks, said rollers being adapted to draw the film through the exposure-chamber and to sever the film at intervals, aprons arranged to pass through the fluid within the receptacle and to carry the severed portions of the film, and means for operating the rollers and the aprons.

24. An inclosing casing adapted to contain a supply of film and having a chamber for making the proper exposure of said film to the light, a receptacle within the casing for containing a developing fluid, said receptacle having lugs provided with eyes and slots, a roller mounted in the eyes, a second roller mounted in the slots, blocks sliding in the slots and bearing against the roller, a screw for operating said blocks, said rollers being adapted to draw the film through the exposure-chamber and to sever the film at intervals, aprons arranged to pass through the fluid within the receptacle and to carry the severed portions of the film, and means for operating the rollers and aprons.

25. An inclosing casing adapted to contain a supply of film and having an exposure-chamber for making the proper exposure of said film to the light, a pair of gripping-rollers adapted to draw the film through the exposure-chamber and sever the said film at intervals, a receptacle within the casing for containing a developing fluid, aprons arranged to pass through the fluid within the receptacle and to carry the severed portions of the film, and means for driving the rollers and the aprons.

26. An inclosing casing adapted to contain a supply of film and having an exposure-chamber for making the proper exposure of the film to the light, a pair of gripping-rollers adapted to draw the film through the exposing-chamber, a cutting-blade carried by one of the rollers for severing the film at intervals, a receptacle within the casing for containing developer fluid, aprons arranged to pass through the fluid in the receptacle and carry the severed portions of the film, and means for driving the gripping-rollers and the aprons.

27. An inclosing casing adapted to contain a supply of film and having a chamber for making the proper exposure of the film to the light, means within the casing for drawing the film through the exposure-chamber and severing the film at intervals, a receptacle within the casing for containing developing fluid, and means for carrying the severed portions of the film through said fluid.

28. An inclosing casing adapted to contain a supply of film and having an exposure-chamber for the proper exposure of the film to the light, gripping-rollers for drawing said film through the exposure-chamber, a cutting-blade carried by one of the rollers for severing the film at intervals, a receptacle within the casing for containing developing fluid, and means for carrying the severed portions of the film through the fluid.

29. An inclosing casing adapted to contain a supply of film and having a chamber for making the proper exposure of the film to the light, gripping-rollers for drawing said film through the exposure-chamber, a cutting-blade carried by one of the rollers for severing the film at intervals, said blade having its cutting edge toothed, a receptacle within the casing for containing developing fluid, and mean for carrying the severed portions of the film through the fluid.

30. An inclosing casing adapted to contain a supply of film and having a chamber for making the proper exposure of the film to the light, gripping-rollers for drawing said film through the exposure-chamber, one of said rollers being provided with a groove, a cutter-blade carried by the other roller adapted to extend within the groove and sever the film at intervals, a receptacle within the casing for containing developing fluid, and means for carrying the severed portions of the film through the fluid.

31. An inclosing casing adapted to contain a supply of film and having a chamber for properly exposing the film to the light, gripping-rollers for drawing said film through the chamber and to sever said film at intervals, aprons for carrying the severed portions of the film, a receptacle within the casing for containing developer fluid, said aprons being adapted to pass through said fluid, means for operating the aprons, and connections between the apron-operating means and the gripping-rollers for operating said rollers.

32. An inclosing chamber adapted to contain a supply of film and having an exposing-chamber for properly exposing said film to the light, gripping-rollers operatively connected one to the other for drawing said film through the exposing-chamber and to sever the film at intervals, a receptacle for holding developer fluid within the casing, and means for carrying the severed portions of the film through the fluid.

33. An inclosing casing adapted to contain a supply of film and having an exposing-chamber for making the proper exposure of said film to the light, gripping-rollers for drawing the film through the exposure-chamber, a toothed wheel carried by each roller meshing one with the other, a receptacle in the casing for holding the developer fluid, and means for carrying the film through the fluid.

34. An inclosing casing adapted to contain a supply of film and having a chamber for exposing said film to the light, gripping-rollers operatively connected one to the other for drawing said film through the exposure-chamber, said gripping-rollers also holding the film within the chamber taut, a receptacle within the casing for containing developer fluid, and means for carrying the severed portions of the film through the fluid.

35. An inclosing casing adapted to contain a supply of film and having an exposure-chamber for making a proper exposure of the film to the light, gripping-rollers for drawing said film through the exposure-chamber and to sever the film at intervals, a fluid-holder within the casing, aprons for carrying the severed portions of the film through the fluid contained within the holder, means for operating the aprons and means whereby the apron-operating means drives the gripping-rollers.

36. An inclosing casing adapted to contain a film and having a chamber for exposing said film to the light, gripping-rollers for drawing said film through the chamber and to sever the film at intervals, a fluid-holder within the casing, aprons for carrying the severed portions of the film through the fluid contained within the holder, driving-wheels for the aprons, and a connection between the driving-wheels and the gripping-rollers for operating said rollers.

37. An inclosing casing adapted to contain a film and having a chamber for exposing said film to the light, gripping-rollers for drawing said film through the chamber and to sever the film at intervals, a fluid-holder within the casing, aprons for carrying the severed portions of the film through the fluid contained within the holder, driving-wheels for the aprons, a connection between the driving-wheels and the gripping-rollers for operating said rollers, mechanism for operating the drive-wheels, and means for preventing movement of the drive-wheels in but one direction.

38. An inclosing casing adapted to contain a film and having a chamber for exposing said film to the light, gripping-rollers for drawing the film through the chamber and to sever the film at intervals, a fluid-holder in the casing, aprons for carrying the severed portions of the film through the fluid contained within the holder, driving-wheels for the aprons, a connection between the driving-wheels and gripping-rollers for operating said rollers, means for operating the drive-wheels, and means carried by the fluid-holder for preventing movement of the drive-wheels in but one direction.

39. An inclosing casing adapted to contain a supply of film and having a chamber for making proper exposure of the film to the light, gripping-rollers for drawing said film through the chamber and to cover the film at intervals, a fluid-holder arranged within the casing, aprons for carrying the severed portions of the film through the fluid contained within the holder, driving-wheels for the aprons, meshing gear-wheels carried by the drive-wheels, a detent secured to the holder and engaging the teeth of one of the gear-wheels for holding said wheels against movement in but one direction, a connection between the driving-wheels and gripping-rollers for operating said rollers, and means for operating the drive-wheels.

40. An inclosing casing adapted to contain a supply of film and having a chamber for making proper exposure of the film to the light, gripping-rollers for drawing said film through the chamber and to sever the film at intervals, a sprocket-wheel mounted loosely with relation to one of the rollers, means for causing the roller to travel with said sprocket-wheel, a fluid-holder within the casing, aprons for carrying the severed portions of the film through the fluid contained within the holder, drive-wheels for the aprons, a connection between the driving-wheels and the sprocket-wheel for operating the same, and means for operating the drive-wheels.

41. An inclosing casing having a supply of film therein and a chamber for exposing the film to the light, gripping-rollers for drawing said film through the chamber and to sever the film at intervals, a sprocket-wheel mounted loosely with relation to one of the rollers, a toothed extension formed on the sprocket-wheel, a detent carried by the roller for normally engaging the teeth of the extension, aprons for carrying the severed portions of the film, a fluid-holder within the casing, said aprons passing therethrough, drive-wheels for the aprons, and a connection between the drive-wheels and the sprocket-wheel for operating said sprocket.

42. An inclosing casing having a supply of film therein and a chamber for making a proper exposure of the film to the light, gripping-rollers for drawing said film through the chamber and to sever the film at intervals, a sprocket-wheel mounted loosely with relation to one of the rollers, a toothed extension on the sprocket-wheel, a detent carried by the roller normally engaging the toothed extension, a fluid-holder within the casing, aprons arranged to carry the severed portions of the film through the fluid contained within the holder, drive-wheels for the aprons, a connection between the drive-wheels and the sprocket-wheel for operating said sprocket-wheel, and means controlled by the drive-wheels for disengaging the detent from the toothed extension.

43. An inclosing casing adapted to contain a film and having a chamber for exposing said film to the light, gripping-rollers for drawing said film through the casing and to sever the film at intervals, a sprocket-wheel mounted loosely with relation to one of the rollers, a detent carried by the roller, an extension carried by the sprocket-wheel normally engaged by the detent, a lever pivoted within the casing adapted to disengage the detent from the extension, a fluid-holder within the casing, aprons for carrying the severed portions of the film through the fluid contained within the holder, a connection between the sprocket-wheel and driving-wheels for operating the rollers, and means for operating the wheels.

44. An inclosing casing adapted to contain a film and having a chamber for exposing said film, gripping-rollers for drawing the film through the casing and to sever the film at intervals, a sprocket-wheel mounted loosely with relation to one of the rollers, a detent carried by the roller normally engaging the sprocket-wheel to cause the same to rotate therewith, a lever pivoted within the casing adapted to disengage the said detent from the sprocket, a fluid-holder within the casing, aprons for carrying the severed portions of the film through the fluid contained within the holder, a connection between the sprocket-wheel and driving-wheels for operating the rollers, and means for operating the wheels.

45. An inclosing casing adapted to contain film and having a chamber for exposing said film, gripping-rollers adapted to draw the film through the casing and to sever the film at intervals, a sprocket-wheel mounted loosely with relation to one of the rollers, a detent carried by the roller normally engaging the sprocket-wheel to cause the same t rotate with the roller, a lever pivoted within the casing adapted to disengage said detent from the sprocket-wheel, a fluid-holder within the casing, aprons for carrying the severed portions of the film through the fluid contained within the holder, a connection between the driving-wheels and the sprocket-wheel for operating the same, means carried by one of the driving-wheels for causing the lever to disengage the detent from the sprocket-wheel, and means for operating the wheels.

46. An inclosing casing adapted to contain film and having a chamber for exposing said film, gripping-rollers adapted to draw the film through the chamber and to sever the film at intervals, a sprocket-wheel mounted loosely with relation to one of the rollers, a detent carried by the roller adapted to engage the sprocket-wheel to rotate therewith, a lever pivoted intermediate its length, one end of said lever being adapted to contact with the detent and disengage it from the sprocket-wheel, a fluid-holder within the casing, aprons for carrying the several portions of the film through the fluid contained within the holder, driving-wheels for the aprons, a connection between the driving-wheels, a pin carried by one of the driving-wheels for contacting with one end of the lever to force the opposite end out of contact with the detent, and means for operating the driving-wheels.

47. An inclosing casing having an exposing-chamber, means for drawing film through said chamber for exposing and severing the same, a receptacle within the casing for holding developing fluid, means for carrying the severed portions of film through the receptacle, said drawing means and carrying means being operatively connected and means whereby the drawing means is held positively inoperative independent of the carrying means.

48. An inclosing casing having an exposing-chamber, means for drawing film through said chamber for exposing and severing the same, a receptacle within the casing for holding the developing fluid, means for carrying the severed portions of film through the re-

ceptacle, said drawing means and carrying means being operatively connected, and a cam adapted to hold the drawing means inoperative independent of the carrying means.

49. An inclosing casing having an exposure-chamber, means for drawing film through said chamber for exposing and severing the same, a receptacle within the casing for holding developing fluid, means for carrying the severed portions of film through the receptacle, said drawing means and carrying means being operatively connected, and a cam operated from the exterior of the casing adapted to hold the drawing means inoperative independent of the carrying means.

50. An inclosing casing having means for exposing film, a receptacle within the casing for holding developing fluid, means for drawing the film, severing the same, and carrying the severed portions through the fluid in the receptacle, means for operating the same, and a stop for the operating means to indicate when a portion of the film has been severed and submerged within the fluid.

51. An inclosing casing having an exposing-chamber and a delivery-opening, means for drawing film through the chamber within the casing, a receptacle within the casing adapted to contain fluid, and a pair of perforated aprons adapted to grip and carry the film within the casing through the receptacle and to eject said film through the discharge-opening.

52. An inclosing casing having an exposing-chamber, means within the casing for drawing film through the exposing-chamber within the casing, a receptacle adapted to contain fluid within the chamber, means for carrying the film through the receptacle, and means arranged beneath the drawing means for guiding the severed portions to the conveyer means.

53. A casing having an exposing-chamber adapted to contain film, means for drawing said film within the casing and severing the same, a drawer fitting within the casing, a receptacle on said drawer adapted to contain fluid, means for carrying the severed films through the receptacle, and means secured to an edge of the drawer for guiding the severed films to the conveyer means.

54. An inclosing casing having an exposing-chamber adapted to contain film, means for drawing film within the casing and severing the same, developing apparatus within the casing, means for carrying the films through said developing apparatus, and a stationary apron to guide the films to said carrying means.

55. An inclosing casing having an exposing-chamber, adapted to contain film, means for drawing the film within the casing and severing the same, developing apparatus within the casing, means for carrying the films through said developing apparatus, and a depending stationary apron to guide the films to said carrying means.

56. A casing having an exposing-chamber adapted to contain film, means for drawing said film within the casing and severing the same, a drawer fitting within the casing, a receptacle on said drawer, adapted to contain fluid means for carrying the severed films through the receptacle, and a downwardly-curved stationary apron secured to an edge of the drawer to guide the films to the carrying means.

57. An inclosing casing having means for exposing film, a receptacle within the casing for holding developing fluid, means for drawing the film, severing the same, and carrying the severed portions through the receptacle, means for operating the drawing means, and a stop acting in conjunction with the operating means to indicate when a portion of the film has been severed and submerged in the fluid.

58. An inclosing casing having an exposing-chamber, means for drawing the film through said chamber and severing the same, a receptacle within the casing for holding developing fluid, means for carrying the severed films through the receptacle, said drawing means and carrying means being operatively connected, a spindle mounted within the casing, a cam fixed on the spindle adapted to hold the drawing means inoperative, independent of the carrying means, and means for operating the spindle.

59. An inclosing casing having an exposing-chamber, means for drawing film through said chamber, and severing the same, a receptacle within the casing for holding developing fluid, means for carrying the severed films through the receptacle, said drawing means and carrying means being operatively connected, an arm depending from the top of the casing, a spindle mounted in said arm, and a side of the casing, a cam on the spindle adapted to hold the drawing means inoperative, independent of the carrying means, and means for operating the spindle.

60. In a photographic and developing apparatus having a receptacle for the developer, a pair of perforated aprons movable into the receptacle and adapted to contact the opposite surfaces of the film.

810,389. END-CELL SWITCH. JOSEPH BIVEN, New York, N. Y., assignor to General Storage Battery Company, New York, N. Y., a Corporation of New York. Filed Oct. 14, 1904. Serial No. 228,605.

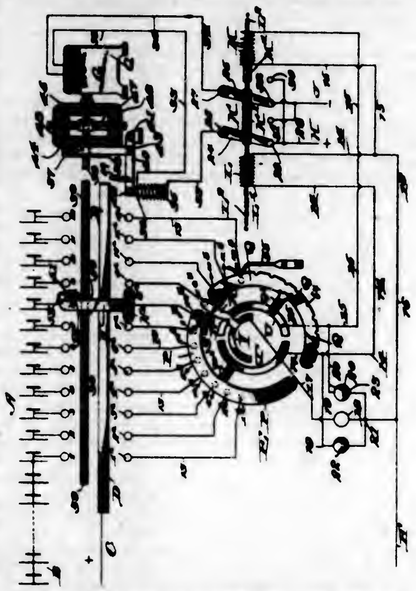

Claim.—1. An electrical switching apparatus, comprising devices to be controlled, a main contact-arm controlling the same and adapted to move in either direction, reversible actuating means for said arm, a reversing-switch, a controller connected to control said switch, and electric circuits and connections whereby movement of the controller to a given position causes movement of the main contact-arm in the desired direction to a predetermined position.

2. An electrical switching apparatus, comprising devices to be controlled and switched into and out of circuit, series of main and auxiliary contacts, a main contact-arm connected in circuit and arranged to make contact with said contacts, means for actuating said arm in either direction, and a controller adapted to be situated at a distance from the devices to be controlled and connected to control said actuating means, with circuits and connections so arranged that the direction of movement and position of the main contact-arm may be determined from a distance.

3. The combination with the end cells of a storage battery, of a main contact-arm for controlling the number of cells in circuit, means for actuating said arm in either direction, a controller adapted to be situated at a distance and connected to control the said actuating means, with circuits and connections so arranged that the main contact-arm is automatically moved and brought to rest by moving the controller into a given position.

4. An electrical switching apparatus, comprising devices to be controlled, provided with a series of main contacts, an auxiliary series of contacts corresponding thereto, a main contact-arm connected in circuit and adapted to be moved over said main and auxiliary contacts, a controller having a series of controller-contacts corresponding to the main and auxiliary contacts and connected to the auxiliary contacts, means for actuating said main contact-arm backward and forward, and operative means for controlling said actuating means from the controller, whereby movement of the controller to a given position causes the movement of the main contact-arm in the desired direction to a predetermined position.

5. The combination with the end cells of a storage battery, of a switch for controlling the number of cells in circuit, means for actuating said switch automatically from a distance, and means for indicating to the operator by the position of the controller the direction and extent of movement of the switch.

6. The combination with the end cells of a storage battery, of a switch for controlling the number of cells in circuit, reversible driving means for actuating said switch automatically from a distance, and means for permitting said actuating means to operate in either direction after the said switch has reached its predetermined position and come to rest.

7. The combination with the end cells of a storage battery, of a switch for controlling the number of cells in circuit, a hand-controller, and circuits an apparatus controlled thereby for automatically moving said switch to any position in its entire range of travel by moving the hand-controller to a corresponding position, and means for preventing said switch from stopping before reaching its desired position.

8. The combination with the end cells of a storage battery, of a switch for the same, means for actuating said switch having rotating members, electrical means for interfering with the rotation of one of said members and thereby actuating the switch, and means for automatically releasing the said member when the switch reaches its desired predetermined position.

9. The combination with the end cells of a storage battery, of a switch for the same, means for actuating said switch having rotating members, an electromagnet operatively arranged to interfere with the rotation of one of said members and thereby actuate the switch, and circuits and apparatus for automatically moving said switch to a given position.

10. In an end-cell switch, the combination with the contact, of a brush coöperating therewith both the body portion and contact edges being arranged diagonally to the line of travel, to distribute wear on the contact.

11. In an end-cell switch, the combination with the contact, of a brush coöperating therewith, comprising a plurality of metallic sheets or leaves, both the body portion and contact edges being arranged diagonally to the line of travel, whereby wear on the contact is distributed.

810,390. BACK-PRESSURE TRAP FOR SEWER-PIPES. PETER J. ROSE, St. Louis, Mo. Filed Aug. 16, 1904. Serial No. 220,705.

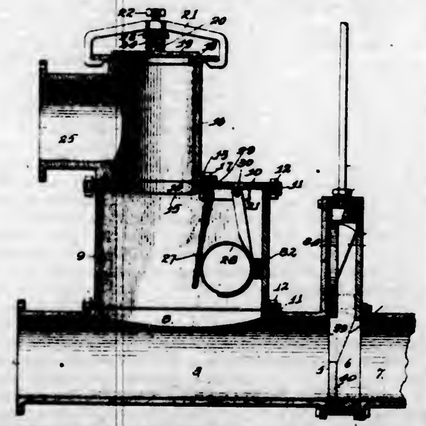

Claim.—A device of the class described comprising a rectangular casing, a pipe having a rectangular flange supporting said casing, a cover provided with an opening located upon said rectangular casing, a valve-seat located within said opening, a T-casing located upon said cover and in alinement with the valve-seat, a pair of angles suspended to the under side of said cover immediately to the rear of the valve-seat, a valve hingedly suspended from said angles, an elongated float, a pair of arms supporting said float and hingedly suspended to the angles, said float arranged to come in contact with the under side of the valve to automatically close said valve by the flow of water from the sewer, substantially as specified.

810,391. PAPER-FEEDING MACHINE. HARRY BRADSHAW, Kansas City, Mo., assignor of one-half to Warren D. House, Kansas City, Mo. Filed July 18, 1904. Serial No. 217,114.

Claim.—1. In a paper-feeder, the combination with a sheet-carrying device provided with two members for gripping between them and removing from the pile one or more sheets thereof, of means for removing all sheets but one from between said gripping members and permitting said removed sheets to fall back on the pile.

2. In a paper-feeder, the combination with a sheet-carrying device having two members provided with means for gripping between them and reversing the position of a part of each of one or more of the top sheets of a pile of paper, of means for withdrawing from between said two members and permitting to fall back on the pile all but one of said reversed sheets.

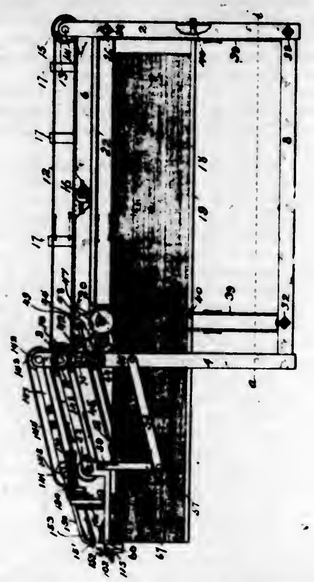

3. In a paper-feeder, the combination with a sheet-carrying device having two members provided with means for gripping between them and reversing the position of a part of each of one or more of the top sheets of a pile of paper, of means for withdrawing from between said two members and permitting to fall back on the pile all but one of said reversed sheets, and means for seizing and stripping from the pile said reversed sheet retained gripped by the two members.

4. In a paper-feeder, the combination with a sheet-carrying device comprising two sheet-gripping devices between which one or more sheets of paper are gripped, of a rubbing device, and means by which said rubbing device may apply a rubbing pressure to the sheets against one of the gripping devices.

5. In a paper-feeder, the combination with two sheet-gripping devices adapted to grip between them one or more sheets of a pile, of a rotary rubbing device, and means by which said rubbing device may exert a pressure upon the sheets against the surface of one gripping device.

6. In a paper-feeder, the combination with two sheet-gripping devices adapted to grip between them one or more sheets of paper, one device having a surface of a relatively greater frictional nature and the other a surface of a relatively less frictional nature, of a rubbing device adapted to be rubbed against the sheets upon the gripping device having the greater frictional nature.

7. In a paper-feeder, the combination with two sheet-gripping devices one having a surface of a relatively greater frictional nature and the other a surface of a relatively less frictional nature exposed to the sheets gripped between them, of a rotary rubbing device adapted to press upon the sheets against the gripping device having the greater frictional nature.

8. In a paper-feeder, the combination with two sheet-gripping devices, each having a frictional surface exposed to the sheets gripped between them, of means for rotating one of said two devices, and a third device for pressing the sheets against the other of said two devices, the third device having a surface possessing frictional qualities relatively less than either of the other two.

9. In a paper-feeder, the combination with a sheet-gripping device, of a resilient device adapted to bear thereupon, means for inserting one or more sheets between said devices, and a rubbing device for bearing upon the sheets against the gripping device.

10. In a paper-feeder, the combination with a gripping device having a frictional surface, a resilient device for pressing one or more sheets upon said frictional surface, and a rubbing device having a frictional surface for rubbing against said sheets against the frictional surface of the gripping device.

11. In a paper-feeder, the combination with a gripping device having a frictional surface, of a resilient gripping device having a surface of a relatively less frictional nature for pressing the sheets against the frictional surface of the other gripping device, and a frictional rubbing device for rubbing against said sheets against the gripping device having the greater frictional nature.

12. In a paper-feeder, the combination with a frictional gripping device, of a resilient device bearing thereupon, and a rotary rubbing device provided with means for bearing against the frictional gripping device.

13. In a paper-feeder, the combination with means for raising one or more sheets from a pile of paper, of two gripping devices for seizing said raised sheets, one of said gripping devices having a surface of a frictional nature and the other a surface of a relatively less frictional nature exposed to the sheets of paper, and a rubbing device for rubbing against said sheets and against the gripping device having the greater frictional nature.

14. In a paper-feeder, the combination with two gripping devices simultaneously movable with each other and movable toward and from each other, of a rotary rubbing device movable simultaneously with said gripping devices and movable toward and from and adapted to bear upon one of said gripping devices.

15. In a paper-feeder, the combination with a frictional rubbing device movable along the top of a pile of paper for raising therefrom parts of one or more sheets of the pile, a lifting device for supporting and lifting the sheets detached by the said rubbing device, two sheet-gripping devices for gripping between them the said lifted sheets, and a rubbing device for bearing against one of said gripping devices and upon the sheet or sheets held thereon by the other gripping device.

16. In a paper-feeder, the combination with means for partly raising from the pile one or more sheets of paper, of two gripping devices for seizing between them said raised portions of said sheets, and a rubbing device for bearing against one of said gripping devices and upon the sheets held thereon.

17. In a paper-feeder, the combination with means for partly raising from the pile one or more sheets of paper, of two gripping devices for seizing between them said raised portions of said sheet, one of said gripping devices being provided with a frictional surface exposed to the sheets, and a frictional rubbing device adapted to be pressed upon the sheets against the frictional surface of the gripping device.

18. In a paper-feeder, the combination with means for raising portions of one or more sheets from a pile of paper, of two gripping devices for seizing between them the raised sheets, one gripping device having a frictional surface, the other gripping device being resilient and holding the sheets upon the said frictional surface, and a rotary frictional device for rubbing against the sheets upon said frictional surface.

19. In a paper-feeder, the combination with means for raising portions of one or more sheets from a pile of paper, of a gripping device for seizing said raised sheets, means for moving said gripping device so as to reverse relative to the pile the gripped portions of the sheets, means for removing from the gripping device all the sheets except the top sheet of the pile, and means for taking the top sheet from said gripping device and stripping it from the pile of paper in the said reversed position.

20. In a paper-feeder, the combination with a sheet-carrying device provided with two sheet-gripping devices movable toward and from each other, of means for rotating said carrying device, a rubbing device carried by said carrier and adapted to bear upon one of the gripping devices, means for rotating said rubbing device, means for raising one or more sheets and depositing them between said gripping devices, and means for seizing the sheets carried by the gripping devices and stripping them from the pile.

21. In a paper-feeder, the combination with a friction-pad, of means for holding the top sheet or sheets against said pad, and a rotary device having a frictional surface movable toward and from and adapted to bear against said pad.

22. In a paper-feeder, the combination with a friction-pad, of resilient means for holding the top sheet or sheets against said pad, and a rotary device having a frictional surface movable toward and from and adapted to bear against said pad.

23. In a paper-feeder, the combination with a friction-pad, of a spring for holding the top sheet or sheets against said pad, and a rotary device having a frictional surface movable toward and from and adapted to bear against said pad.

24. In a paper-feeder, the combination with a friction-pad, of a rotary shaft provided with a crank-arm supporting said pad, means for rotating said shaft around its axis, means for revolving said shaft around an axis disposed at right angles to the axis of rotation, a spring carried by said crank-arm and adapted to press the top sheet or sheets of paper against said pad, a friction-disk rotatively mounted on said crank-arm, the pad and disk being movable relatively toward and from each other, and means for rotating said disk.

25. In a paper-feeder, the combination with means for raising one or more top sheets of paper from a pile, of a friction-pad, a frictional rotary device, means for rotating said rotary device, means for moving said rotary device and said pad relatively toward and from each other, and a device for pressing said raised sheets against said pad.

26. In a paper-feeder, the combination with means for raising one or more sheets from the pile, of a friction-pad, a spring for holding said raised sheets against said pad, a friction-disk, means for rotating said friction-disk, and means for moving relatively the said pad and disk toward and from each other.

27. In a paper-feeder, the combination with means for raising a part of one or more sheets from the pile, of two friction devices adapted to grip between them the raised sheet or sheets, means for rotating one of said friction devices, means for holding the raised sheets against the other of said friction devices, means for revolving said friction devices around each other, and means for revolving said friction devices around an axis disposed at an angle to the axis of revolution around each other.

28. In a paper-feeder, the combination with means for raising one or more of the top sheets of the pile, of two friction devices adapted to grip between them said sheet or sheets, means for rotating one of said friction devices, means moving relatively said devices toward and from each other, and means for so moving said friction devices as to reverse the position of the sheet or sheets held between them.

29. In a paper-feeder, the combination with means for raising one or more sheets from the pile, of two friction devices adapted to grip between them said sheets, means for rotating one of said devices, means for pressing said sheets against the other of said friction devices, means for relatively moving said friction devices toward and from each other, and means for so moving said friction devices as to reverse the position of the sheet or sheets held between them.

30. In a paper-feeder, the combination with means for raising one or more sheets from the pile, of two friction devices adapted to grip between them said sheets, means for rotating one of said devices, resilient means for pressing said sheets against the other of said friction devices, means for relatively moving said friction devices toward and from each other, means for so moving said friction devices as to reverse the position of the top sheet retained between them, and means for seizing said reversed sheet from said friction devices and stripping it from the pile.

31. In a paper-feeder, the combination with means for raising a part of one or more sheets from the pile, of means for gripping said raised portions of the sheets and carrying them toward a sheet-stripping mechanism, means for removing from said gripping means and throwing back on the pile all but the top one of said raised sheets, and a stripping mechanism for seizing and stripping from the pile said top sheet.

32. In a paper-feeder, the combination with means for raising a part of one or more sheets from a pile, of means for gripping said raised portions of the sheets and carrying them toward a stripping mechanism, means for removing from said gripping means all but the top sheet of said raised sheets and throwing said removed sheets back upon the pile, means for so moving the said gripping means as to reverse the position of the said top sheet, and a stripping mechanism for seizing and stripping from the pile said top sheet.

33. In a paper-feeder, the combination with means for raising a part of one or more sheets from the pile, of a frictional pad, means for pressing said raised sheets against said pad, a rubbing device, means for applying said rubbing device with a rubbing pressure against the sheets held pressed against said pad, means for so moving said pad and sheet-pressing means as to reverse the position of the sheets held thereby, and a sheet-stripping mechanism for seizing and stripping from the pile the sheet retained by the said pad and sheet-pressing means.

34. In a paper-feeder, the combination with means for raising a part of one or more sheets from a pile, of a frictional pad, adapted to receive thereon the raised parts of said sheets, a spring for holding said sheets against said pad, a frictional disk, means for rotating said friction-disk, means for relatively moving said disk and said pad toward and from each other, a sheet-stripping means, and means for moving the pad, spring and disk between the sheet-raising and sheet-stripping means.

35. In a paper-feeder, the combination with means for raising a part of one or more sheets from the pile, of a frictional pad adapted to receive thereon the raised sheets, a spring for holding the sheets against the pad, a rotary disk for rubbing against the sheets and against the pad, means for rotating said disk, means for relatively moving the pad and disk toward and from each other, a sheet-stripping mechanism, and means for so moving said pad, spring and disk as to reverse the position of the sheet retained thereby and carry it toward the sheet-stripping mechanism.

36. In a paper-feeder, the combination with a supporting-frame, of a table for carrying the pile of paper vertically movable on the frame, a swinging frame pivotally connected with the supporting-frame having two supporting-shoes and adapted to alternately rest upon the pile of paper carried by the table, a sheet separating and detaching mechanism supported by the swinging frame for withdrawing the sheets from the pile, and means controlled by the movement of the swinging frame for elevating the table.

37. In a paper-feeder, the combination with a supporting-frame, of a table for carrying the pile of paper and vertically movable upon the frame, a sheet-separating and a sheet-stripping mechanism supported by a swinging frame, the said swinging frame pivotally connected with the supporting-frame and having two supporting-shoes and adapted to alternately rest upon the pile of paper, means for supporting and elevating the table upon the supporting-frame, means for actuating said table-elevating means, and means controlled by the swinging of the swinging frame for controlling the table-elevating means.

38. In a paper-feeder, the combination with a supporting-frame, of a table vertically movable thereon, a sheet carrying and supporting mechanism carried by said frame, a swinging frame pivotally connected with the table and having two supporting-shoes adapted to alternately rest upon the pile of paper, a sheet-separating mechanism supported on the swinging frame, a sheet-stripping mechanism for seizing the separated sheets from the sheet-separating mechanism and delivering them to the sheet-registering mechanism, means for elevating the table, and means controlled by the movement of the swinging frame for controlling the table-elevating means.

39. In a paper-feeder, the combination with a table adapted to support a pile of paper, of a support, a swinging frame pivotally connected to said support and having two supporting-shoes and adapted to alternately rest upon the pile of paper, and a sheet separating and detaching mechanism mounted on and movable with said swinging frame.

40. In a paper-feeder, the combination with a table adapted to support a pile of paper, of a support, a swinging frame pivotally connected to said support and adapted to rest upon the pile of paper, two shoes pivotally mounted on said frame, means for swinging said shoes alternately so that they may alternately support the frame on the pile of paper, means for forcing out one or more of the top sheets from under one shoe and depositing the said sheet or sheets upon said shoe, means for gripping said deposited sheets and throwing back on the pile all but one, and means for seizing said retained sheet, and stripping it from the pile.

41. In a paper-feeder, the combination with a table adapted to support a pile of paper, of a support, a frame pivotally connected with said support, two shoes pivotally mounted on said frame and adapted to rest alternately upon the pile of paper for supporting thereon said frame, a rubbing device rotatively mounted on the frame and adapted to rub the top sheet or sheets out from under one of said shoes and drop them upon the said shoe, means for swinging the shoe supporting the sheets so as to lift the sheets from the pile, a stripping mechanism carried by the frame for seizing and stripping from the pile sheets raised by one of the shoes, and a sheet-separating mechanism comprising a friction-pad, a device for pressing the raised sheets upon the said pad, a rotary friction-disk for rubbing against the sheets carried on the pad, means for rotating said disk, means for relatively moving the disk and pad toward and from each other, and means for moving said pad, friction-disk and pressing device between the shoe supporting the sheets and the stripping mechanism.

42. In a paper-feeder, the combination with a vertical post, of means for rotating said post, a transverse shaft rotatively mounted in said post and provided with a crank-arm, means for rotating said shaft, a second shaft rotatively mounted in said crank-arm, means for rotating said second shaft, a friction-disk mounted on said second shaft, a friction-pad mounted on the crank-arm and movable toward and from the friction-disk, means for so moving said pad, a spring carried by said crank-arm and adapted to press against said pad, and means for raising one or more of the top sheets from a pile and depositing them between said pad and spring and friction-disk.

810,892. SHEET-REGISTERING MACHINE. HARRY BRADSHAW, Kansas City, Mo., assignor of one-half to Warren D. Hoard, Kansas City, Mo. Filed Oct. 26, 1904. Serial No. 230,120.

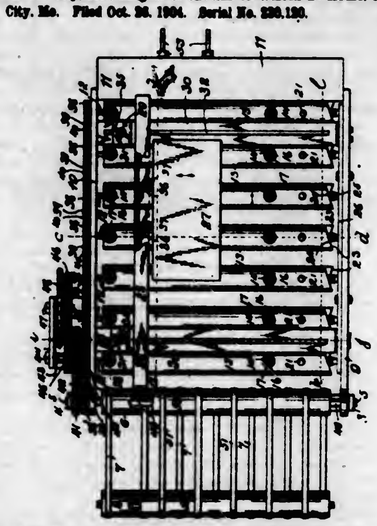

Claim.—1. A sheet supporting and registering device revoluble around an axis and movable simultaneously lengthwise thereof and disposed during a portion of each revolution out of contact with the sheets to be registered.

2. A sheet supporting and registering device revoluble around an axis and reciprocable simultaneously lengthwise thereof and disposed during lengthwise movement in one direction out of contact with the sheets to be registered.

3. A sheet supporting and registering device comprising two devices revoluble around a common axis and movable simultaneously in opposite directions lengthwise of the axis.

4. A sheet supporting and registering cylindrical roller rotatable around its axis and comprising two longitudinal members movable simultaneously in opposite directions lengthwise of the axis of the roller.

5. The combination with a sheet-supporting device, of means for simultaneously revolving the said device and moving it lengthwise of the axis of revolution, the sheet-supporting device being disposed during a portion of each revolution out of contact with the sheets to be registered.

6. The combination with a sheet-supporting device, of means for revolving said device and simultaneously reciprocating it lengthwise of the axis of revolution, the sheet-supporting device being disposed during lengthwise movement in one direction out of contact with the sheets.

7. The combination with a sheet-supporting device comprising two members, of means for revolving said members around a common axis and simultaneously moving them in opposite directions lengthwise of the axis.

8. The combination with two sheet-supporting members, of means for revolving said members around a common axis, and means for simultaneously reciprocating said members in opposite directions lengthwise of the axis.

9. The combination with a sheet-supporting cylindrical roller comprising two longitudinal diametrically opposite members, of means for rotating said roller, and means for simultaneously reciprocating in opposite directions lengthwise of the axis of the roller, said two members.

10. A sheet-supporting roller comprising a longitudinal support, two longitudinal members disposed on diametrically opposite sides of said support and slidable lengthwise thereon, and means by which lengthwise movement of one member in one direction imparts movement in the opposite direction to the other member.

11. A sheet-supporting roller comprising a rotatable shaft, two longitudinal members slidable lengthwise on and rotatable with said shaft, and means by which said members may be reciprocated simultaneously lengthwise in opposite directions.

12. A sheet-supporting roller comprising a rotatable shaft, two longitudinal members slidable lengthwise on said shaft and rotatable therewith, and a lever fulcrumed on the shaft and having its ends engaging respectively said members.

13. A sheet-supporting roller comprising a rotatable shaft, two members disposed diametrically opposite thereon and slidable lengthwise on and rotatable with the shaft, and a lever pivoted transversely on the shaft and having its ends pivotally connected with said members respectively.

14. A sheet-supporting roller comprising a rotatable shaft, two longitudinal members disposed diametrically opposite and slidable lengthwise on and rotatable with the shaft, each member being provided with a radial hole, and a lever pivoted transversely on the shaft and having its ends mounted respectively in the holes in said members.

15. A sheet-supporting roller comprising a rotatable shaft, two semicylindrical longitudinal members slidable lengthwise on and rotatable with the shaft and provided each with a round hole on its inner side, and a lever pivoted transversely upon said shaft and having spherical ends mounted respectively in said round holes in said members.

16. The combination with a sheet-supporting device, of means for revolving said device around an axis, the device being a portion of each revolution out of contact with the sheets, means for simultaneously moving said device lengthwise of the axis, and a side guard disposed transversely of said axis.

17. The combination with a sheet-supporting device, of means for revolving said device around an axis, means for reciprocating said device lengthwise of the axis, the device being disposed during lengthwise movement in one direction out of contact with the sheets, and a side guide disposed transversely of the axis.

18. The combination with a sheet-supporting device, of means for revolving said device around an axis, a side guide disposed transversely to the axis, means for moving said device toward the side guide when the device has been revolved to a position in which the sheet is supported thereby, and means for moving said device in the opposite direction.

19. The combination with two sheet-supporting devices revoluble around a common axis, of means for so revolving said devices, a side guide disposed transversely to the axis of revolution of said devices, and means for simultaneously moving said devices lengthwise of said axis and in opposite directions to each other.

20. The combination with two horizontal devices adapted to alternately support a sheet of paper, of means for revolving said devices around a common axis, means for moving each of said devices lengthwise of said axis in a certain direction when it is in position to support a sheet, and means for moving said devices lengthwise in the opposite direction.

21. The combination with two horizontal devices adapted to alternately support a sheet of paper, of means for revolving said devices around a common axis, a side guide disposed transversely of said axis, means for moving each of said devices lengthwise of the axis toward said guide when it is positioned to support the sheet, and means for retracting said devices lengthwise in the opposite direction.

22. The combination with a sheet-supporting device, of means for revolving said device around an axis, means for moving said device lengthwise of the axis, and a side guide disposed transversely to the axis and adjustable to and fro in a direction parallel with the axis.

23. The combination with two horizontal devices adapted to alternately support a sheet of paper, of means for revolving said devices around an axis, means for moving each of said devices lengthwise in a certain direction when it is in position for supporting a sheet, and means for moving each of said devices in the opposite direction lengthwise when it is in position not supporting a sheet.

24. The combination with two horizontal devices adapted to alternately support a sheet of paper, of means for revolving said devices around an axis, a side guide disposed transversely to said axis, means for moving each of said devices toward said side guide and lengthwise of said axis when the device is positioned so as to support a sheet, and means for moving each of said devices lengthwise away from the guide when the device is in position not adapted to support the sheet.

25. The combination with two devices adapted to alternately support a sheet, of means for revolving said devices around an axis, a side guide disposed transversely to the axis and adjustable in a direction parallel with the axis, and means for simultaneously moving said devices in opposite directions lengthwise of said axis.

26. The combination with two devices adapted to support alternately a sheet of paper, of means for revolving said devices around an axis, a side guide adjustable lengthwise of the axis, means for moving each of said devices toward the guide lengthwise of the axis when said device is revolved to a position adapted to support the sheet, and means for moving each of said devices away from the guide when it is in position not adapted to support a sheet.

27. The combination with a plurality of devices adapted to support thereon a sheet of paper, of means for rotating each of said devices around its axis, said devices being disposed parallel with each other, and means for imparting lengthwise movement to each of said devices.

28. The combination with a plurality of devices adapted to support thereon a sheet of paper, said devices being disposed parallel with each other, of means for rotating each of said devices around its axis, and means for reciprocating said devices lengthwise.

29. The combination with a plurality of rollers comprising each two members disposed parallel with each other and adapted to alternately support a sheet of paper, of means for rotating said rollers each around its axis, and means for reciprocating lengthwise in opposite directions the two members of each of said rollers.

30. The combination with a plurality of rollers comprising each two longitudinal members adapted to support alternately a sheet of paper, of means for rotating each of said rollers, means for reciprocating simultaneously lengthwise in opposite directions the two members of each roller, and a side guide disposed transversely to said rollers.

31. The combination with a plurality of devices adapted to support thereon a sheet of paper, of means for imparting rotation to each of said devices, means for reciprocating said devices lengthwise of their several axes, a side guide adjustable lengthwise of and disposed parallel with the axes of said devices.

32. The combination with a sheet-supporting roller comprising two longitudinal members movable lengthwise parallel with each other, a shaft on which said members are mounted, of means for rotating said shaft, and means for reciprocating said members simultaneously in opposite directions lengthwise of the shaft.

33. The combination with a sheet-supporting roller comprising two semicylindrical members disposed parallel with each other and having each a beveled end, a shaft on which said members are mounted, a lever pivoted to the shaft and having its ends engaging respectively said members, of means for rotating said shaft, and a device for engaging alternately the beveled ends of said members for forcing them lengthwise when the shaft is rotated.

34. The combination with a plurality of rollers comprising each two longitudinal members, a shaft on which the members are longitudinally slidable, a lever pivoted to the shaft and having its ends engaging said members respectively, of means for rotating said shafts, and means for engaging alternately the members of each roller and forcing them lengthwise on the shaft carrying them.

810,393. RAILROAD-TIE. ROBERT B. CAMPBELL, Joliet, Ill., assignor of one-half to himself and one-half to Alexander F. Banks, Evanston, Ill. Filed Oct. 12, 1905. Serial No. 282,622.

Claim.—1. In a railroad-tie, the combination with a tie-body formed of plastic material, of a substantially U-shaped support embedded in said body, said support arranged with its open ends toward the ends of the tie, and a cover-plate resting upon said support, substantially as specified.

2. In a railroad-tie, the combination of a tie-body formed of plastic material, an interior core, and a substantially U-shaped support surrounding said core, said support arranged with its open ends toward the ends of the tie, with a cover-plate attached to said support, substantially as specified.

3. In a railroad-tie, the combination with a tie-body formed of plastic material, of a substantially U-shaped support embedded in said body, said support arranged with its open ends toward the ends of the tie and provided with projections, in combination with a cover-plate attached to said support, substantially as specified.

4. In a railroad-tie, the combination with a tie-body formed of plastic material, of a substantially U-shaped support embedded in said body, and a cover-plate resting upon said support, said cover-plate having flanges at opposite edges, substantially as specified.

5. In a railroad-tie, the combination with a tie-body formed of plastic material, of a substantially U-shaped support embedded in said body, and provided at its upper ends with tongues, and a cover-plate adapted to be secured to said support by said tongues, substantially as specified.

810,394. PROCESS OF OXIDIZING FABRICS. REINHARD CLEFF, Rosenthal, near Barmen, Germany, assignor to Susquehanna Silk Mills, New York, N. Y., a Corporation of Pennsylvania. Filed Mar. 13, 1905. Serial No. 249,776.

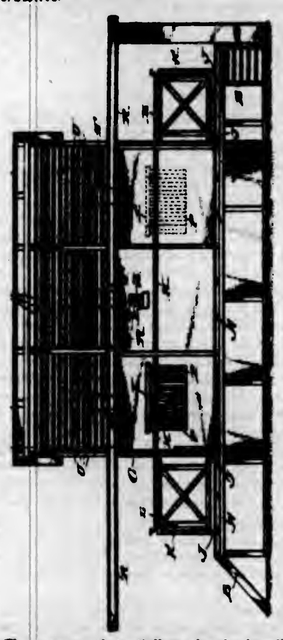

Claim.—The process substantially as herein described of oxidizing woven material, which has been treated with suitable chemicals giving an oxidizing reaction when heated, which consists in first saturating the said material and starting the oxidation in a suitable apparatus, then mechanically introducing the so-treated material, as it comes from the first apparatus, in a body all at once into a highly-heated and moist atmosphere in a closed chamber initially heated to a high degree, leaving said body of material in said chamber for a relatively short time while regulating the temperature to maintain the said initial high temperature of the chamber and substantially the same degree of moisture of the air therein from the beginning to the end of the operation, thereby obtaining substantially the same degree of oxidation throughout the reaction and finally mechanically removing the whole of said body of material at once from the chamber without substantially reducing the temperature of said chamber or altering the said degree of moisture of the air therein.

810,395. HANGING-STRAP FOR PASSENGER-VEHICLES. JOHN S. COLLINS, New York, N. Y., assignor, by direct and mesne assignments, to American Car Strap Advertising Company, New York, N. Y., a Corporation of South Dakota. Filed Mar. 6, 1905. Serial No. 248,553.

Claim.—1. A hanging-strap for vehicles comprising a support ing-ring provided with a bearing-cushion in its upper portion, an advertising-body suspended from the ring in free rotary adjustment and a handle depending from the advertising-body.

2. A hanging-strap for vehicles comprising a suitable primary support, a pyramidal body for the reception of advertising matter on all of its faces and a handle depending from the pyramidal body.

3. A hanging-strap for vehicles comprising a suitable primary support, an inverted pyramidal body for the reception of advertising matter on all of its faces depending from the primary support and a handle depending from the apex of the pyramid.

4. A hanging-strap for vehicles comprising a suitable primary support, a pyramidal body depending from the primary support, a handle depending from the pyramidal body and means for holding advertising-cards in removable adjustment on the several faces of the pyramidal body.

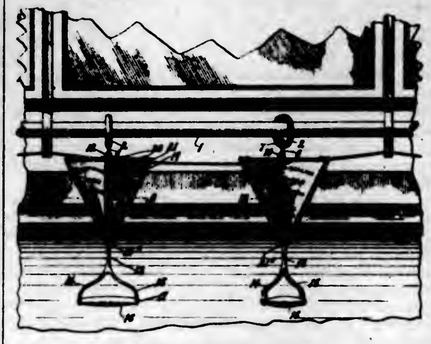

810,396. MOTOR. CHARLES W. CRANER and HARRY C. HAAK, Scranton, Pa. Filed Jan. 18, 1905. Serial No. 241,253.

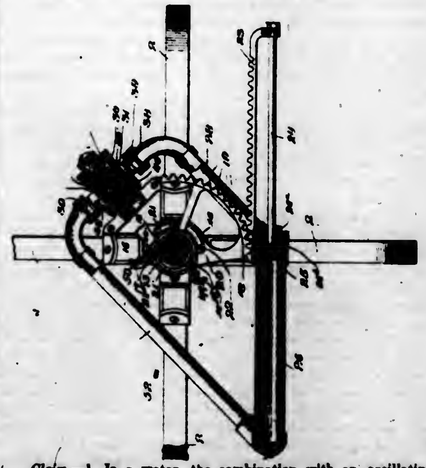

Claim.—1. In a motor, the combination with an oscillating frame, a suitable support therefor, and a shaft retaining the frame in position, of a suitable collar surrounding said shaft, a spring surrounding said collar, means retained by the said frame engaging said spring, means for oscillating said spring, and devices for controlling said oscillating means, substantially as described.

2. In a motor, the combination with an oscillating frame, supporting means therefor, and a shaft retaining the frame in position, of a spring surrounding said shaft, devices carried by said frame engaging said spring, means for oscillating said spring, and means carried by the frame controlling said oscillating means, substantially as described.

3. In a motor, the combination with an oscillating frame, of a spring, means on the frame engaging said spring, means for oscillating the spring, said means comprising a collar about which the spring is coiled, and devices carried by the frame controlling said oscillating means.

4. In a motor, the combination with an oscillating frame, of a suitable mounted collar, a collar spaced therefrom, a spring arranged between said collars, connections between said frame and spring, means for oscillating said collars, and means carried by the frame controlling the oscillating means, substantially as described.

5. In a motor, the combination with a suitable frame, of inner and outer connected collars, a spring carried by said collars, means for imparting movement from said spring to said frame, means for

oscillating said collars, and devices on said frame controlling said oscillating means, substantially as described.

6. In a motor, the combination with an oscillating frame, a suitable support therefor, and a vertical shaft retaining said frame in position upon its support, of a collar surrounding said shaft, a coil-spring surrounding said collar, means depending from said frame engaging the ends of said spring, means for oscillating said spring, and means carried by said frame controlling said oscillating means, substantially as described.

7. In a motor, the combination with an oscillating frame, supporting means therefor, and a shaft retaining said frame in position upon its support, of a spring coiled about said shaft, a collar partially inclosing said spring, means carried by said frame engaging the ends of said spring, means for oscillating said collar whereby said spring will be moved, and means carried by said frame controlling said oscillating means, substantially as described.

8. In a motor, the combination with an oscillating frame, a support therefor, and a shaft retaining said frame in position upon its support, of a collar surrounding said shaft, a collar spaced from the first-mentioned collar and formed integral therewith and partially inclosing the same, a coil-spring surrounding the first-mentioned collar and being partially inclosed by the second-mentioned collar, means carried by said frame engaging the said spring, means for oscillating said collars, and means carried by the frame for controlling the oscillating means, substantially as described.

9. In a motor, the combination with an oscillating frame, and a shaft supporting the same in position, of a collar surrounding said shaft, an outer collar spaced from and formed integral with said collar and partially inclosing the same, a coil-spring interposed between said collars and having its ends projecting beyond the outer collar and bent, lugs depending from said frame and engaging the bent ends of said spring, means for oscillating said collars, and means carried by said frame controlling said oscillating means, substantially as described.

10. In a motor, the combination with a suitable oscillating frame, a shaft supporting the same, a spring spaced from said frame and coiled about said shaft, connections between said frame and spring, means for oscillating said spring, and governing devices carried by said frame for controlling the oscillating means, substantially as described.

11. In a motor, the combination with an oscillating frame, a shaft carried thereby, of a collar surrounding said shaft, a second collar spaced outside the first collar and partially inclosing the same, a spring disposed between said collars and having its ends projecting beyond the outer collar, devices arranged on the frame engaging said projecting ends, means for oscillating said collars, and means on the frame controlling said oscillating means, substantially as described.

12. In a mechanism of the class described, the combination with a suitable oscillating frame, of a cylinder, a piston operating therein, a segment actuated thereby, a slot being formed in said segment, guiding means extending through said slot and engaging the segment for retaining the same against lateral play, means for limiting said segment in its movement, and means for communicating motion from said segment to said frame, substantially as described.

13. In a motor, the combination with a suitable oscillating frame, of a cylinder and piston operating therein, a segment operated by said piston formed with a segment-slot, guiding means extending through said slot and limiting said segment against lateral play, a second slot being formed in said segment, limiting means projecting through said last-mentioned slot, and means for communicating motion from said segment to said frame, substantially as described.

14. In a mechanism of the class described, the combination with a horizontal oscillating frame, adapted to move on a vertical axis, cylinder, piston, and means communicating motion from said piston to said frame, of a valve having its axis of movement at right angles to the axis of said frame controlling the supply of power medium to said cylinder, an arm carried by the stem of said valve, lugs projecting from said arm in different vertical planes, and lugs carried by said frame at different distances from the pivot-point thereof and moving in different circular lines, each in its movement crossing the vertical plane of one of the lugs upon the said valve-arm, substantially as described.

15. The combination with a frame, of a cylinder, a detachable plug inserted in the frame and forming one head to the cylinder, the other head being formed by the frame; a valve-seat and valve in the frame, ports in said valve and seat adapted to register and communicate with said cylinder, and outlet and inlet ports to said valve-seat.

16. The combination with a frame, of a cylinder, a screw-plug inserted in the frame and forming one head of the cylinder, the other head being formed by said frame; a piston in the cylinder, ports at each side of the piston communicating with a valve-seat in the frame, inlet and outlet ports to the valve-seat and a rotatable valve located in said seat and having ports adapted to register with the ports in said seat whereby communication may be established with the ports in the cylinder.

17. The combination of a support or frame carrying a tub adapted to be oscillated, of a cylinder having a piston, piston-rod, and ports therein, a frame for said cylinder, said cylinder secured in the frame, a screw-plug forming one head of the cylinder, the other head being formed by said frame, a valve-seat communicating with said cylinder-ports, a rotatable valve having ports located in said seat, projections on said valve and means on the tub for striking said valve projections and revolving said valve, whereby communication may be established between said valve and cylinder.

18. The combination of a support or frame carrying a tub adapted to be oscillated, a cylinder secured in a motor-frame, a detachable plug forming one head of the cylinder, the other head being formed by the frame, piston, piston-rod, and ports in said cylinder, a valve-seat communicating with said cylinder-ports, a rotatable valve located in said seat and provided with ports, a bearing-rod located in the center of the support, connections from the piston-rod to the tub, whereby said tub is oscillated, projections on said valve, and means on said tub for striking said projections and actuating the valve for the purpose set forth.

19. The combination with a frame, of a cylinder seated therein, detachable means securing said cylinder in the frame and forming one head of the cylinder, a piston and piston-rod in the cylinder, ports at each side of the piston, a valve-seat in the frame, passages connecting said valve-seat and cylinder at each side of the piston, a rotatable valve located in said seat and provided with ports, means for revolving the valve, and means for limiting the movement of the valve, whereby communication is established between the valve and the ports in the cylinder.

20. The combination of a support or frame carrying a tub adapted to be oscillated, a cylinder seated in a motor-frame and secured thereto, a detachable plug forming one head of the cylinder, a piston and piston-rod, ports in said cylinder and a valve-seat communicating with said ports, projections on said valve in the path of movement of a part on said tub, for rotating said valve, a pointer on the rotatable valve and stops on the fixed part of the motor against which said pointer contacts to limit the movement of the valve in its revolutions.

21. The combination with the frame, of a cylinder, a piston, a detachable plug inserted in the frame and forming one head of the cylinder, the other cylinder-head being formed by the frame; a valve-seat and valve in the frame, ports in said valve and seat adapted to communicate with the cylinder, devices on the valve for opening and closing communication on either side of said piston and means for operating said devices.

22. The combination with the frame, of a cylinder, a detachable plug secured in the frame, and forming one head thereof the other cylinder-head being formed by the frame, a valve-seat and valve in the frame, said valve consisting of the tapered portion provided with ports, a stem extended from said tapered portion, a sleeve having spurs rigidly connected to said stem, an immovable bearing-sleeve to the stem, a pointer on the first-mentioned sleeve, and lugs for limiting the movement of the valve.

23. The combination with the frame, of a cylinder, a screw-plug secured in the frame and forming one head of the cylinder, the other head being formed by the frame, a valve and valve-seat in the frame communicating with the cylinder, said valve consisting of the valve portion proper provided with ports, a stem, the spurred sleeve connected to said stem, a bearing-sleeve between the spurred sleeve and valve portion, and means for limiting the movement of the valve.

24. The combination with the frame, of a cylinder, said cylinder being detachably connected to the frame, one head containing a stuffing-box, the other head being formed by the frame, a valve and valve-seat in the frame communicating with the cylinder, a sleeve secured to the stem of the valve having spurs thereon and means for striking said spurs to rotate the valve, a pointer on said sleeve, a bearing-sleeve, and lugs for limiting the rotation of the valve.

25. In a mechanism of the class described, the combination of a frame having a horizontal oscillating movement, a vertical shaft, a segmental rack mounted on said shaft, a spring between the rack and the frame, to move said frame in reverse or opposite directions, a cylinder, piston, and means for controlling the piston, and a rack connected to the piston for actuating the segment.

26. In a mechanism of the class described, the combination with a pivoted frame, a cylinder, a piston within said cylinder a spring interposed between said frame and piston for imparting motion to the frame from the piston, means for controlling the pressure-supply to the cylinder, and means actuated by said frame for operating said controlling means.

27. The combination with an oscillating frame, a cylinder, and a reciprocating piston operating in said cylinder, of means for transforming the reciprocatory movement of said piston to an oscillating movement, a spring for conveying movement from said transforming means to said frame, and means actuated by the frame for governing the pressure supplied to said cylinder.

28. The combination with an oscillating frame, a relatively short cylinder, and a piston therefor, of a spring interposed between said piston and frame for conveying movement from the piston to the frame, whereby said frame is free to move to a greater extent than the extent of movement imparted by the piston.

29. In a mechanism of the class described, the combination with an oscillating frame, of a piston, means for supplying pressure thereto, means governing the pressure-supply of the piston, a spring for imparting movement from the piston to the frame, whereby the frame, by acting against the pressure of the spring, is free to move to a greater extent than the movement imparted directly by the piston, and means carried by said frame for actuating said pressure-controlling means, at each stroke of the frame, prior to the completion of the stroke thereof.

810,397. **ROTARY CUTTER AND TOPPER.** FRANK DENNISON, Markesan, Wis. Filed Dec. 21, 1904. Serial No. 237,085.

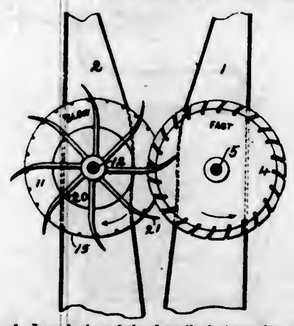

Claim.—1. In a device of the described class, the combination of a set of partially-overlapping rotary disks driven at different speeds; driving connections for each of said disks arranged to impart a different speed to one of the disks from that of the other, and a set of radially-projecting gathering-fingers rotating on the same axis with the more slowly moving disk and projecting over the inner edge of the more rapidly moving disk.

2. In a device of the described class, the combination of a set of rotary disks; a supporting-shaft for each of said disks; a set of gathering-fingers connected with one of said shafts; and means for driving said shafts at different rates of speed, the disk on one shaft having its inner edge interposed between the disk and gathering-fingers on the other shaft.

3. In a device of the described class, the combination of a set of rotary disks; a supporting-shaft for each of said disks; a set of gathering-fingers connected with one of said shafts; and means for driving said shafts at different rates of speed, the disk on one shaft having its inner edge interposed between the disk and gathering-fingers on the other shaft, and each of said disks having its margin beveled in the direction of the other.

4. In a device of the described class, the combination of a set of rotary disks; a supporting-shaft for each of said disks; a set of gathering-fingers connected with one of said shafts; and means for driving said shafts at different rates of speed, the disk on one shaft having its inner edge interposed between the disk and gathering-fingers on the other shaft, and each of said disks having its margin beveled in the direction of the other and slotted to form a series of teeth having an angular rake opposite that of disk rotation.

5. In a device of the described class, the combination of a set of driving-shafts; means for driving one of the shafts at a greater speed than the other; a disk mounted on the slower shaft; and a set of gathering-fingers mounted on said slower shaft above said disk; a disk mounted on the faster shaft and partially interposed between the disk on the slower shaft and said gathering-fingers; said disks having their margins beveled, each in the direction of the other and arranged to travel in approximate contact.

6. In a device of the described class, the combination of a set of driving-shafts; means for driving one of the shafts at a greater rate of speed than the other; a disk mounted on the slower shaft; and a set of gathering-fingers mounted on said slower shaft above said disk; a disk mounted on the faster shaft and partially interposed between the disk on the slower shaft and said gathering-fingers; said disks having their margins beveled each in the direction of the other, and arranged to travel in approximate contact; and disks being provided with marginal cutting-teeth.

810,398. **NON-REFILLABLE BOTTLE.** JOHN M. DUNKLE, Rolla, Pa. Filed May 3, 1905. Serial No. 258,469.

Claim.—A bottle or like receptacle having its neck contracted upon its inner side to provide a valve-seat, and having an inner annular extension above the said seat contracted at its lower end, and having a series of openings around its upper portion, and a compressible valve of larger diameter than the contracted end of said annular extension and forced therethrough for coöperation with the valve-seat and prevented from withdrawal by expansion after clearing the said contracted annular extension.

810,399. **HORSESHOE.** AARON L. DURR, Richland Center, Pa. Filed Mar. 26, 1905. Serial No. 252,000.

Claim.—1. In a horseshoe, a plate bearing against the rear face of the toe-calk and carrying supplemental calks, and having upturned ends bearing against the outer face of the shoe, and means for detachably clamping said plate to the shoe.

2. In a horseshoe, a plate bearing against the rear face of the toe-calk and carrying supplemental calks, and having upturned ends bearing against the outer face of the shoe, a clamp member bearing upon said plate and with extended ends bearing upon the upper face of the shoe, and means for clamping said member to said plate.

3. In a horseshoe, a plate bearing against the rear face of the toe-calk and carrying supplemental calks, and having upturned ends bearing against the outer face of the shoe, a clamp member bearing upon said plate and with extended ends bearing upon the upper face of the shoe, and a bolt connecting said plate and clamp member.

810,400. **CAR-COUPLING.** LEWIS P. ELLIOTT, Jackson Center, Ohio. Filed Aug. 14, 1905. Serial No. 274,120.

Claim.—1. In a car-coupler, a vertically-sliding pin, a latch pivoted above and arranged to hold the pin to its seat, and a cable passing through an arm of the latch and secured to the pin and arranged to disengage the latch and raise the pin.

2. A car-coupler comprising a link, a hollow draw-head having a slot formed in the walls thereof, a pin vertically slidable adjacent the end of the draw-head, a block movable longitudinally within the

draw-head to a position beneath the pin when the latter is raised and provided at one end with a plurality of spaced link-receiving grooves and at the opposite end with a depending operating-knob engaging the slot in the draw-head, means at the top of the car to raise the pin and so arranged that the contact of the link moves the block and permits the pin to drop and the latch to engage the pin.

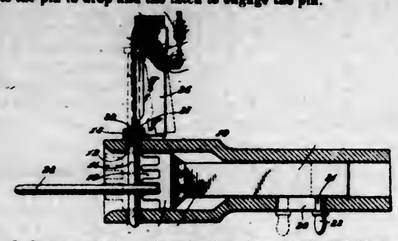

3. In a car-coupler, a draw-head, a pin vertically slidable in the draw-head, a latch pivoted above the draw-head and arranged to contact with the upper end of the pin to hold the latter to its seat and a cable so connected with the latch and pin that a pull on the cable first disengages the latch and then raises the pin.

4. In a car-coupler, a draw-head, a pin vertically slidable in the draw-head, an upright rigidly upstanding from the draw-head, a latch pivotally mounted upon the upright and arranged to contact with the upper end of the pin and hold the latter to its seat and having an arm offset therefrom, a cable passing through the arm and connected to the link.

5. A car-coupler comprising a link, a hollow draw-head, a pin vertically slidable in the draw-head, an upright rigidly upstanding from the draw-head, a latch pivotally mounted upon the upright and arranged to contact with the upper end of and hold the pin to its seat, a cable so connected with the latch and pin that a pull upon the cable first disengages the latch and then raises the pin, a block slidably mounted in the draw-head, means for sliding the block to support the pin when raised and so arranged that the contact of the link moves the block and permits the pin to drop and the latch to engage the pin.

6. A car-coupler comprising a link, a hollow draw-head, a pin vertically slidable in the draw-head, an upright rigidly upstanding from the draw-head, a latch pivoted adjacent the top of the upright and arranged to contact with the upper end of and hold the pin to its seat, said latch having an arm offset from its upper end, a cable passing through the arm and connected to the pin, means disposed at each side and the top of the car for pulling the cable to disengage the latch and raise the pin, a block slidably mounted in the draw-head, and means for sliding the block to support the pin when raised and so arranged that the contact of the link moves the block and permits the pin to drop and the latch to engage the pin.

810,401. STEREOSCOPE. PROSPER D. FERIS, Chicago, Ill. Filed Aug. 17, 1905. Serial No. 274,604.

Claim.—1. In a device of the class described, the combination of a two-part case, one member forming the front end bottom, with lenses located in said front, a member forming the rear and top into which cards may be removably inserted, a slide fitted to move in the bottom portion of said first-named member, said slide being jointedly attached to said secondary member.

2. In a device of the class described, the combination of a two-part case, one member forming the front and bottom, said bottom consisting of two parallel members with an intervening space for the reception of a slide, a slide fitted between said members, and a member forming the rear end top, which member is jointedly connected to said slide.

3. A device of the class described in which is combined a two-part case, one member of which forms the front end bottom while the other is jointedly connected therewith to form the rear end top, a hollow partition formed at right angles to the front and extending rearwardly therefrom midway between the ends and an adjustable slide fitted thereto.

810,402. NAIL-CLIPPER. ADOLPH H. FRIESS, New York, N. Y. Filed Jan. 20, 1905. Serial No. 242,219.

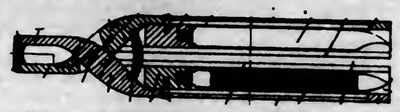

Claim.—1. A device of the class described comprising two handle members having shanks at one end which are pivoted together in the manner of a pair of shears, said shanks being provided with projecting jaws having inwardly-directed cutting edges, said handle members being also provided with longitudinal spaces which open outwardly and with slides which are mounted therein and provided with different tools, substantially as shown and described.

2. A device of the class described, comprising two handle members having curved shanks at one end pivoted together in the manner of a pair of shears, said shanks being provided with projecting jaws having inwardly-directed cutting edges, said handle members being also provided with longitudinal chambers which open outwardly and tool-slides mounted therein, said handle members being also provided with longitudinal slots, and devices passing through said slots and connected with said slides, substantially as shown and described.

810,403. RESERVOIR FOR GASOLENE AND OTHER VAPOR BURNERS. WESTON M. FULTON and WILLIAM H. RICHARDS, Knoxville, Tenn., assignors to The Fulton Company, Knoxville, Tenn., a Corporation of Maine. Filed Feb. 20, 1905. Serial No. 246,561.

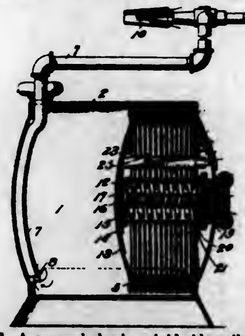

Claim.—1. A reservoir having rigid side walls and a rigid end wall, a collapsible and expansible vessel closing the opposite end of said reservoir and movable within the latter, a rigid supporting-plate fast to the end of the reservoir, a threaded rod, one end having a bearing in said plate and provided with a nut traveling along said rod, and a member fast to the collapsible vessel and engaging said nut, whereby the rotation of said rod causes the said vessel to collapse or expand.

2. A reservoir having rigid side walls and a rigid end wall, a collapsible and expansible vessel closing the opposite end of said reservoir and movable within the latter a screw-threaded rod and supporting means for the outer end of the same, a nut on said rod engaging a member on said collapsible vessel, and a shoulder of end plate on said rod to limit the outward traverse of said vessel.

3. A reservoir having rigid side walls and a rigid end wall, a collapsible and expansible vessel closing the opposite end of said reservoir and movable within the latter, a screw-threaded rod, and supporting means for the outer end of the same, a nut on said rod, and a member connecting the nut with said vessel, and a spring intermediate said nut and vessel for placing the liquid in the reservoir under pressure.

4. A reservoir having rigid side walls and a rigid end wall, a collapsible and expansible vessel closing the opposite end of said reservoir movable within the latter and having a rigid end wall, a screw-threaded rod and supporting means for the outer end of the same, a nut on said rod, and a member connecting the nut with the end wall of said vessel, a spring intermediate said nut and wall, and a spirally-slotted tube fast to the latter and engaging a registering device.

5. A reservoir having a collapsible and expansible closure for displacing fluid from the same, a revolubly screw-threaded operating-rod provided with a traveling nut, a fluid-compression spring one end of which rests against said closure and the other end against said nut, a slotted member fast to said closure and engaging said nut to restrain the same from rotation, and to limit the extent of compression of said spring upon said fluid.

810,404. RETARDING DEVICE FOR PLUNGER-ELEVATORS. FLOYD C. FURLOW, Montclair, N. J., assignor to Otis Elevator Company, East Orange, N. J., a Corporation of New Jersey. Filed Oct. 31, 1904. Serial No. 230,767.

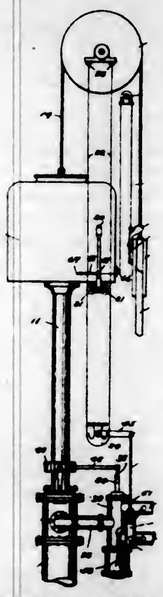

Claim.—1. In a hydraulic elevator, the combination with a plunger and a car, of a retarding device for such plunger, and means controlled from the car for applying and releasing such retarding device.

2. In a hydraulic elevator, the combination with a car and a plunger, of a retarding device for such plunger, and means within the control of the operator on the car for applying and releasing such retarding device.

3. In a hydraulic elevator, the combination with a plunger and a car, of a retarding device for the plunger, and means controlled from the car for starting and stopping said car and for applying and releasing said retarding device.

4. In a hydraulic elevator, the combination with a plunger and a valve, of a retarding device for the plunger, said retarding device being actuated by the movement of the valve.

5. In a hydraulic elevator, the combination of a plunger, a car attached to the plunger, a valve, a retarding device for the plunger actuated by the valve, and means for controlling said valve from the car.

6. In a hydraulic elevator, the combination of a plunger, a reversing-valve for controlling the movement of the said plunger, a retarding device for the plunger, means controlled from the car for actuating said reversing-valve, and connections from the said valve to the retarding device for actuating the same.

7. In a hydraulic elevator system, the combination of a plunger, a car attached to the plunger, a counterweight attached to the car, a retarding device for the plunger, a retarding device on the counterweight, and a single means for actuating said retarding devices from the car.

8. In a hydraulic elevator the combination of a plunger and a car, a retarding device for the plunger, and means situated upon the car for controlling the starting, stopping and reversing the movement of the car and actuating the retarding device at the same time.

9. The combination with a car, of a counterweight and a plunger connected respectively to the top and bottom of the car, a gripping device for the plunger, means for controlling the movements of the car and plunger, and means for operating said gripping device and controlling means from the car.

10. The combination with a car, of a counterweight, a plunger for said car, means for controlling the movement of the car and plunger, a brake for said plunger, and a single means for operating said controlling means, and a lever for actuating said operating means.

11. The combination with a car, of a counterweight, a plunger connected to the car, means for controlling the movement of said car and plunger, a brake for said counterweight, and means for operating said brake and controlling means from the car.

12. In an elevator, the combination with a car and means for moving same, of a counterweight, a retarding device for the counterweight, and means for positively actuating said retarding device.

13. In an elevator, the combination with a car and means for moving same, of a counterweight, a retarding device for the counterweight, and means controlled from the car for applying and releasing such retarding device.

14. In an elevator, the combination with a car, of a counterweight therefor, a retarding device for such counterweight, and means within the control of the operator on the car for applying and releasing such retarding device.

15. In an elevator, the combination with a car and its counterweight, of a retarding device for the counterweight, and means controlled from the car for starting and stopping said car and for applying and releasing said retarding device.

16. In a hydraulic elevator, the combination with a car and a plunger, of a counterweight, valve mechanism for controlling the movement of said car and plunger, a brake for the counterweight, connections for operating said valve mechanism and said brake, and a single means for actuating said connections from the car.

17. In a hydraulic elevator, the combination with a car and a plunger, of a counterweight, a brake for said counterweight, and means actuated from the car for controlling the starting, stopping and reversing of the movement of the car and plunger and actuating said brake substantially at the same time.

18. In an elevator, the combination with a car and a counterweight connected thereto, of guides for said counterweight, brake-shoes, a toggle connected to the brake-shoes, a resilient means for normally holding said brake-shoes away from the guides, and means actuated from the car for operating said toggle against the action of said resilient means to apply said brake-shoes to stop the car and counterweight.

19. In an elevator, the combination with a car and its counterweight, of a brake for the counterweight, brake-applying means, a spring for normally holding said brake and brake-applying means in releasing position, a flexible connection between the brake-applying means and the car, a device on the car for exerting a pull on said flexible connection to effect the application of the brake on the counterweight, and a spring connected to said device to counteract the spring on the counterweight.

20. In a hydraulic elevator, the combination with a plunger and a car, of a gripping device for said plunger, and means for releasing and controlling the application of said gripping device from the car.

21. In a hydraulic elevator, the combination with a plunger and a car, of a brake for said plunger, means for controlling the movement of the car, and means connected to the car for operating said brake to release or apply the same.

22. In a hydraulic elevator, the combination with a plunger and a car, of a brake for said plunger, and a cam actuated from the car for operating said brake.

23. In a hydraulic elevator, the combination with a plunger and a car, of a brake for said plunger, lugs extending from said brake, a cam for coacting with said lugs to apply the brake, and means operated from the car for moving said cam.

24. In a hydraulic elevator, the combination with a plunger and a car, of a cylinder for said plunger, means for controlling the flow of fluid to said cylinder, and means actuated from the car for operating said fluid-controlling means and for applying said brake.

25. In a hydraulic elevator, the combination with a plunger and a car, of a cylinder for said plunger, fluid-controlling means for said plunger, a brake for the plunger and mounted on the cylinder, and means actuated from the car for operating said fluid-controlling means and applying and releasing said brake.

26. In a hydraulic elevator, the combination with a plunger and a car, of a retarding device for such plunger, means for applying said retarding device, and manually-operable means for positively actuating said retarding-device-applying means.

27. In a hydraulic elevator, the combination with a plunger and a car, of means for controlling the movement of the same, a brake for

the plunger, and manual means for applying and releasing said brake.

28. In a hydraulic elevator, the combination with a plunger and a car, of a cylinder for the plunger, a valve for controlling the movements of the plunger in the cylinder, a brake for the plunger, and means connected to said valve for applying and releasing said brake.

29. In a hydraulic elevator, the combination with a plunger and a car, of a cylinder for said plunger, a reversing-valve for controlling the movements of said plunger and car, a pilot-valve for controlling said main valve, a brake for the plunger, means connected to said reversing-valve for applying and releasing said brake-applying means, and means actuated from the car for operating said pilot-valve.

30. In a hydraulic elevator, the combination with a plunger and a car, of pivoted braking-jaws for said plunger, a resilient means for applying said braking-jaws to the plunger, a cam arranged to coact with said jaws to release the same, and means for actuating said cam.

31. In a hydraulic elevator, the combination with a plunger and a car attached thereto, of means for controlling the movements of the car and plunger, pivoted braking-jaws for the plunger, means for applying and releasing said jaws, means for operating said controlling means and brake-applying means, and a single device for actuating said operating means.

32. In a hydraulic elevator, the combination with a car and a plunger, of a counterweight, a brake for the counterweight, a brake for the plunger, means for operating said brakes, and a single device for actuating said operating means.

33. In a hydraulic elevator, the combination with a car, of a plunger attached thereto, a counterweight, a brake for the counterweight, an additional brake for the plunger, individual applying means for said brakes, means for operating both of said applying means, and a single means on the car for actuating said operating means.

34. In a hydraulic elevator, the combination with a car and plunger, of a counterweight connected to the car, guides for said counterweight, a brake on the counterweight arranged to coact with said guides, a resilient means for normally holding said brake in releasing position, means actuated from the car for operating said brake to apply the same, and a resilient means on the car connected to said brake-operating means for counteracting the resilient means on the counterweight to hold the brake-operating means in normal position.

35. In a hydraulic elevator, the combination with a car, of a plunger attached thereto, a counterweight connected to the car, guides for the counterweight, brake-shoes on the counterweight to be applied to said guides, a toggle for operating said brake-shoes, a spring connecting the counterweight and toggle-joint for holding the brake-shoes in releasing position, means actuated from the car for operating said toggle to apply said brake-shoes, and a spring to counteract the spring on the counterweight to hold the toggle-operating means in normal position.

36. In a hydraulic elevator, the combination with a car and its plunger, of a counterweight, means for controlling the movements of the car and plunger, a retarding device for the counterweight, a retarding device for the plunger, means for operating said controlling means and actuating means, and a single means for actuating said operating means.

37. In a hydraulic elevator, the combination with a car, of a plunger attached thereto, a counterweight connected to the car, a cylinder for the plunger, a reversing-valve for controlling said plunger, a brake for the counterweight, an additional brake for the plunger, means for operating said reversing-valve and brakes, and mechanism on the car for actuating said operating means.

38. In a hydraulic elevator, the combination with a car and a plunger attached thereto, of a counterweight connected to the car, a cylinder for the plunger, a main valve for controlling said plunger, a pilot-valve for controlling said main valve, brakes for the counterweight and plunger, individual means for applying the same, and means controlled from the car to effect the starting or stopping of the car and the release or application of said brakes.

810,405. BRAKE-SHOE. JOSEPH D. GALLAGHER, Clearidge, N. J. Filed Nov. 6, 1902. Serial No. 129,171.

Claim.—1. A brake-shoe divided into two independent parts having adjacent surfaces extending through the shoe longitudinally between the back and face, and means for attaching the two parts together, substantially as described.

2. A brake-shoe divided into two independent parts having adjacent surfaces extending through the shoe longitudinally parallel with the face of the shoe, and means for attaching the two parts together, substantially as described.

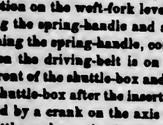

3. A brake-shoe divided into two independent parts having adjacent surfaces extending through the shoe longitudinally parallel with the face of the shoe, the lower part having its back and face parallel with each other, and means for attaching the two parts together, substantially as described.

4. In a brake-shoe of the class described, the combination of a holding back portion provided with a dovetail on the front portion thereof, a wearing-block provided with a dovetail groove on the rear portion to engage with the holding back portion and a dovetail slide on the opposite side with which a partly-worn wearing-block may be engaged, substantially as described.

810,406. WEFT-REPLENISHING MECHANISM FOR LOOMS. JAMES M. GEST, Burnley, England. Filed Sept. 4, 1903. Serial No. 171,987.

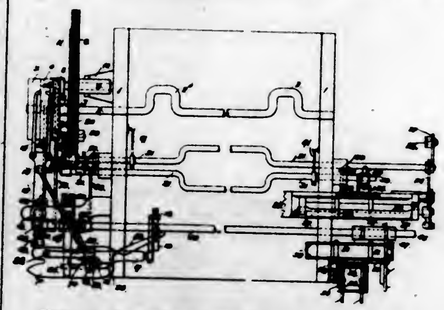

Claim.—1. In combination, an arrangement of three pulleys on the crank-shaft, one a fast driving-pulley, the second a loose pulley and the third a loose driving-pulley combined with a pinion, a combined spur-wheel and hollow cam geared to the pinion of the loose driving-pulley, connections from the weft-fork which on the failure of weft, move the spring-handle, and connections from the spring-handle to the strap-fork for shifting the driving-belt onto the loose driving-pulley, a projection on the weft-fork lever forming an additional notch for latching the spring-handle and a projection on the weft-fork lever for latching the spring-handle, connections operated by the hollow cam when the driving-belt is on the loose driving-pulley for opening the front of the shuttle-box and ejecting the spent shuttle and closing the shuttle-box after the insertion of a fresh shuttle, connections operated by a crank on the axis of the hollow cam for inserting a fresh shuttle, and a projecting bowl on the cam spur-wheel for moving the spring-handle and setting on the loom, all substantially as herein set forth.

2. The improved motion for opening the front of the shuttle-box and ejecting the spent shuttle, consisting of the loose driving-pulley, its pinion, the large spur-wheel and the hollow cam combined therewith, the rocking shafts and their arms, the lever for opening the front plate of the shuttle-box, the boat lever for ejecting the shuttle through the open front and springs for closing the shuttle-box and returning the parts to their normal positions after a fresh shuttle has been inserted, all substantially as herein set forth.

3. The improved motion for inserting a fresh shuttle after the front of the shuttle-box has been opened and the spent shuttle ejected, consisting of a loose driving-pulley, its pinion, the large spur-wheel and the hollow cam combined, a shuttle carrier or pusher, a crank on the axis of the combined large spur-wheel and hollow cam, a spring-lever and rock-shaft, operatively connecting the carrier with the crank, the shuttle-carrier having fingers which take the bottom shuttle from the magazine and insert it into the shuttle-box the bottom of which is grooved to receive the fingers and allow the shuttle to rest on the box-bottom, all substantially as herein set forth.

4. The combination with the magazine 36 and the improved motion for inserting a fresh shuttle after the front of the shuttle-box has been opened and the spent shuttle ejected, consisting of a loose driving-pulley, its pinion, the large spur-wheel and the hollow cam combined, a shuttle carrier or pusher 50 fingers 51 thereon, a crank on the axis of the combined large spur-wheel and hollow cam, a spring-lever and rock-shaft, operatively connecting the crank with the carrier or pusher spring-rods 55 mounted to slide in the frame 54, follow up the carrier or pusher and temporarily support the shuttles in the magazine 52 while the fingers 51 are inserting a fresh shuttle into the open shuttle-box, all substantially as herein set forth.

810,407. ABDOMINAL SUPPORTER. NUMA GROUX, St. Louis, Mo. Filed Nov. 30, 1904. Serial No. 234,013.

Claim.—1. A supporter comprising a band having narrow end portions, one of which is provided with a longitudinal slit to receive the other end portion when the supporter is positioned, and holding-straps secured to the front portion of the supporter and constituting keepers to receive the terminals of the end portions.

2. A supporter comprising a band having narrow end portions, one of which is longitudinally slitted to receive the other end portion when the supporter is positioned, holding-straps secured to the front of the supporter and constituting keepers to receive the terminals of the end portions, and buckles secured to the lower edges of the end portions and adapted to be engaged by the holding-straps.

810,408. MILK PAIL AND STRAINER. ADOLPH T. GUNDERSON, Dunbar, Iowa. Filed Nov. 8, 1905. Serial No. 286,426.

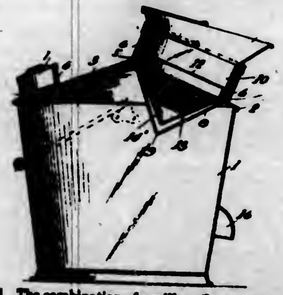

Claim.—1. The combination of a milk-pail, a safety-tube having its lower end contracted to form a small opening, a straining-tube supported by the safety-tube, a funnel-shaped receiving member at the outer end of the straining-tube, a straining-screen within the straining-tube, and a straining member secured to the inner end of said straining-tube.

2. The combination of a milk-pail having an opening therein, a safety-tube located within said opening and having its inner end contracted, a straining member supported by the safety-tube and converging to a point and a pocket located at said point and adapted to catch the solid particles intercepted by the straining members.

810,409. RATCHET-BRACE. GEORGE H. B. HEARD, Worcester, Mass. Filed July 17, 1905. Serial No. 269,994.

Claim.—1. In combination with the lower sweep-arm of a ratchet-brace, a head having a recess at its front end secured thereto, a shaft in the head having jaws on its lower end and a ratchet on its upper end extending in said recess, the rear end of said head having a central depression therein with a pair of horizontal grooves leading into said depression and on opposite sides of the latter, said rear end of the head further having vertical slots therein of considerably greater depth than said grooves, and spring-pressed plungers in the head having pins on their outer ends to engage in said slots and grooves.

2. In combination with the sweep-arms, and handle of a ratchet-brace, a head having a ratchet and jaws, a pair of spring-pressed plungers in said head, a pin carried by each plunger on the rear end thereof, said head at its rear being cut away on its under side to enable said pins to project in said cut-away part, said head being formed on its rear end with a central depression and with a pair of horizontal slots extending into said depression and being further formed with a pair of vertical slots of considerably greater depth than said horizontal slots.

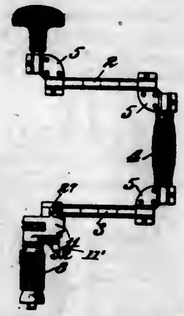

3. In combination with the lower sweep-arm of a ratchet-brace, a head secured thereto and carrying a ratchet and jaws, a pair of spring-pressed plungers in said head radially disposed with respect to said ratchet and having a depression formed in the rear end of the head located between the same at their outer ends, said head at its rear end further having two pairs of cut-out portions of unequal depth, each of one pair leading into said depression, and pins carried by the plungers to engage in said cut-out portions.

4. In combination with the lower sweep-arm of a ratchet-brace, a head secured thereto and carrying a ratchet and jaws, a pair of spring-pressed plungers in the head, said head at its rear end being formed with two horizontal grooves and with a depression into which the inner end of each slot leads, said head also having a pair of vertical slots of greater depth than said horizontal grooves and a cut-out portion on its bottom into which each of said vertical slots leads, said plungers each having an outwardly-extending pin to be received in said slots and grooves, and at their outer ends project in said depression and cut-out portion.

5. In combination with the lower arm of a ratchet-brace, a head secured thereto, a shaft in the head, a ratchet on the shaft, a pair of plungers arranged in said head and disposed toward said ratchet on lines approximating the radial lines thereof, said plungers at their outer ends being spaced apart with a depression formed in the head between said plunger ends, said head further having slots leading from said plungers ends, and pins on the plungers to be received in said slots and to extend in said depression.

810,410. SHOW-CASE CORNER. JAMES A. HENDERSON, St. Louis, Mo. Filed Oct. 10, 1905. Serial No. 282,191.

Claim.—1. A show-case corner of the class described, comprising a right-angular member having a semicircular recess extending a part way of its length, a plurality of bosses formed integral with said member and located at intervals apart within the recess, a strip of soft material secured within said recess for supporting the edge of the glass of the show-case, and strips for retaining the glass in position substantially as specified.

2. A show-case corner of the class described, comprising a sin-

gle member for supporting the top and bottom rails of the case, a recess formed throughout the length of said member between the bottom and top rails of the case, bosses provided with threaded bores formed in said recess and integral with the member, a quarter-round strip located within the recess and secured to the member by inserting screws through said strip and into the bosses, a pair of stripe fastened to the quarter-round strip for supporting the lights of glass forming the sides and end of the case in position, substantially as specified.

810,411. DOOR CHECK AND CLOSER. WILLIAM K. HENRY, New Britain, Conn., assignor to P. & F. Corbin, New Britain, Conn., a Corporation of Connecticut. Filed May 6, 1905. Serial No. 259,661.

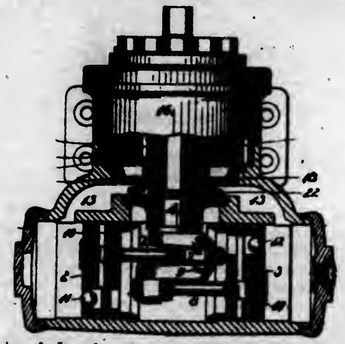

Claim.—1. In a door-check, a cylinder, a spindle having two cranks at its lower end, said cranks being arranged oppositely and in different planes, the lowermost crank being free-ended, the diameter of the crank-pin nearest the spindle being substantially greater than the diameter of the other crank-pin and crank, pistons, connecting-rods between said pistons and said crank-pins, the strap end of one of said connecting-rods being of sufficient diameter to freely pass over one of said crank-pins and crank-arms to engage the other crank-pin

2. In combination, a cylinder, two pistons therein, a spindle having two cranks, said cranks being arranged oppositely and in different planes, connecting-rods having strap ends, said rods adapted to said cranks and arranged between said cranks and said pistons, the strap-bearings of the crank-pins of said cranks corresponding respectively to said straps, one of said connecting-rod straps being of greater diameter than the other to slip over one of said crank-pins and cranks and properly engage the other crank, the closer mechanism including spring-chamber and spring and a liquid-tight partition between said cylinder and said spring-chamber.

3. In a door-check, a cylinder, two pistons, a spindle having two cranks and crank-pin, oppositely arranged and in different planes, the diameter of the upper crank-pin being greater than the diameter of the other pin and crank, and connecting-rods having strap ends between said crank-pins and said pistons, the strap end of one of said rods being sufficiently large to slip over one of said cranks and crank-pin and fit the other pin.

810,412. SHAFT AND CLUTCH MECHANISM. JOHN O. HOSEA, Chicago, Ill. Filed Oct. 23, 1903. Serial No. 178,146.

Claim.—1. In a shaft and clutch mechanism, of the class described, the combination of a shaft comprising a rigid clutch portion and flexible portions, and a clutch member connected to the flexible portions of such shaft and rotatable against the tension thereof in either direction into positive contact with the rigid shaft portion, substantially as described.

2. In a shaft and clutch mechanism of the class described, the combination of a rigid shaft portion rotatably mounted, a clutch member movable into and out of positive engagement therewith, and a plurality of flexible rods extending longitudinally of and each connected at one end to such rigid shaft portion and at the other end to such movable clutch member, substantially as described.

3. In a shaft and clutch mechanism of the class described, the combination of a shaft comprising an inner core portion and rotatably mounted, a clutch member movably mounted with relation to such inner core portion, and flexible rods extending longitudinally of the inner core portion connected at one end therewith and at the other end with the movable clutch member and forming a flexible portion of such shaft, substantially as described.

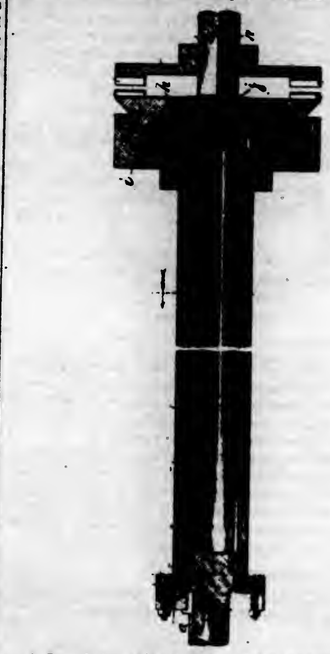

4. In a shaft and clutch mechanism of the class described, the combination of a shaft comprising rigid outer tubular and inner core portions and rotatably mounted a clutch member movably mounted with relation to the rigid portion of such shaft, and flexible elements mounted between the outer tubular and inner core portions yieldingly connecting such rigid shaft portion with the movable clutch member and forming a flexible portion of the shaft, substantially as described.

5. In a shaft and clutch mechanism of the class described, the combination of a shaft provided with a rigid shaft portion rotatably mounted, a clutch member movable into and out of positive contact therewith, flexible elements yieldingly connected to such rigid shaft portion and connected to and supporting the movable clutch member, and means for connecting such movable clutch member with a driving-shaft, substantially as described.

6. In a shaft and clutch mechanism of the class described, the combination of a shaft provided with a rigid shaft portion rotatably mounted, a clutch member mounted thereon, a clutch member movable into and out of positive contact with such rigid shaft portion and its clutch member, flexible rods connected at one end with the rigid shaft portion and at the other end extending beyond the end of the rigid shaft portion and connected with such movable clutch member, and means for connecting such movable clutch member with a mechanism to be operated in connection therewith, substantially as described.

7. In a shaft and clutch mechanism of the class described, the combination of a shaft provided with a rigid portion rotatably mounted, a clutch member mounted thereon in fixed relation thereto, a clutch member movable into and out of positive contact with such rigid shaft portion and its clutch member, flexible rods connected at one end with the rigid shaft portion and at the other end with and supporting such movable clutch member, means for connecting such movable clutch member with a driving-shaft, and means mounted at the opposite end of such shaft upon which the flexible rods are mounted for operatively connecting such shaft to a mechanism to be driven thereby, substantially as described.

8. In a shaft and clutch mechanism of the class described, the combination of a shaft provided with a rigid portion rotatably mounted, a clutch member mounted upon and in fixed relation to the rigid portion of such shaft, a clutch member movable into and out of positive contact with such rigid shaft portion and its clutch member, flexible rods connected at one end with the rigid portion of such shaft and at the other end extending beyond the end of the rigid shaft portion and connected with and supporting such movable clutch member and forming the flexible portion of the flexible shaft, and means for connecting such movable clutch member with a mechanism to be operated in connection therewith, substantially as described.

9. In a shaft and clutch mechanism of the class described, the combination of a shaft provided with a rigid portion and rotatably mounted, a clutch member rigidly connected thereto and provided with an inclined friction-surface, a clutch member movably mounted with relation to such first-mentioned clutch member and having an inclined friction-surface adjacent thereto movable into and out of positive contact therewith, flexible elements yieldingly connecting such rigid shaft portion with and supporting such movable clutch member, and means for connecting such movable clutch member with a shaft to be operated in connection therewith, substantially as described.

10. In a shaft and clutch mechanism of the class described, the combination of a shaft provided with a rigid portion and rotatably mounted, a clutch member rigidly connected thereto and provided with an inclined friction-surface, a second clutch member movable into and out of positive contact therewith, a plurality of flexible rods connected at one end with the rigid shaft portion and at the other end with and supporting the movable clutch member and forming the flexible portion of such shaft, a driving-shaft, a clutch member slidingly mounted thereon movable into and out of engagement with the movable clutch member, and means for connecting the rigid portion of the flexible shaft with a mechanism to be operated in connection therewith, substantially as described.

11. In a shaft and clutch mechanism of the class described, the combination of a shaft provided with a rigid portion and having an annular core, a clutch member connected to such rigid shaft portion, a clutch member movably mounted with relation to the rigid shaft portion and core, flexible rods connected at one end to the rigid shaft portion extending along the outer surface of the core and connected at their opposite ends to such movable clutch member, and means for connecting such movable clutch member with a driving-shaft and disconnecting it therefrom, substantially as described.

12. In a shaft and clutch mechanism of the class described, the combination of a shaft provided with a rigid portion rotatably mounted and comprising an outer tubular portion and an inner core portion, a clutch member mounted upon such outer tubular portion, a clutch member movably mounted with relation to such shaft portion and its clutch member, a plurality of flexible rods attached at one end to the rigid shaft portion and at the other end to the movable clutch member and extending between the inner core and outer tubular portion of such shaft, and means for connecting such movable clutch member with a driving-shaft, substantially as described.

13. In a shaft and clutch mechanism of the class described, the combination of a shaft comprising a rigid portion and flexible rods attached to such rigid portion, and a rotatable member attached to such flexible rods and rotatable with relation to the rigid shaft portion in opposite directions against the tension of the rods into engagement with the rigid shaft portion, substantially as described.

14. In a shaft and clutch mechanism of the class described, the combination of a rigid shaft portion, a plurality of normally straight flexible elastic rods each having one end secured to such rigid shaft portion in fixed relation thereto, and a movable member secured in fixed relation to the opposite ends of such flexible rods and rotatable in opposite directions with relation to the rigid shaft portion.

15. In a shaft and clutch mechanism of the class described, the combination of a rigid shaft portion, a plurality of normally straight flexible elastic rods arranged in parallel relation to each other each having one end secured to such rigid shaft portion, and a movable member secured at the opposite ends of such flexible rods and rotatable in opposite directions with relation to the rigid shaft portion.

810,413. MANURE-SPREADER. FRANK W. HOVEY, Independence, Iowa. Filed Jan. 3, 1905. Serial No. 239,317.

Claim.—The described drive mechanism for a manure-spreader, embracing, in combination with the feed-apron and its carrying-chain and sprockets, a worm-gear attached to said shaft, a worm engaging the same, a horizontal shaft for the worm, with a slidable and adjustable spur-pinion mounted thereon, an inclined shaft with differential spur-pinions mounted thereon, a bevel-pinion on said shaft, a bevel-gear engaging said bevel-pinion, a gear engaging said bevel-gear and carried by one of the traction-wheels, a casting adjacent to said gears

forming a bearing for one end of the horizontal shaft, a bearing mounted on the bevel-gear stud to take one end of the inclined shaft, and a casting having horizontal and inclined bearings for the corresponding shafts at one end, all substantially as described.

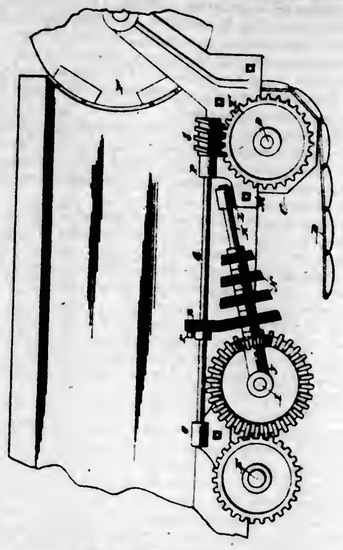

810,414. BOX-COVERING MACHINE. HARRY A. INMAN, Amsterdam, N. Y. Filed Mar. 30, 1904. Serial No. 201,713.

Claim.—1. The combination of a box-form, exterior and interior compressing-plates, means for slidably supporting the plates in line with the box-form, means for moving the plates toward and from the box-form, turning-in wings and means for yieldingly supporting said wings in the line of movement of the compressing-plates, for the purposes set forth.

2. The combination of a box-form, exterior and interior compressing-plates, means for slidably supporting the plates in line with the box-form, means for moving the plates toward and from the box-form, pivoted turning-in wings and means to close them inwardly during their movement toward the box-form, for the purposes set forth.

3. The combination of a box-form, rigid interior compressing-plates and elastic exterior compressing-plates, means for slidably supporting the compressing-plates in line with the box-form, means for moving said plates toward and from the box-form, and turning-in wings in the line of movement of said compressing-plates, for the purposes set forth.

4. The combination of a box-form, interior and exterior compressing-plates, means for slidably supporting the plates in line with the box-form, means for moving the plates to and from the box-form, and turning-in wings in the line of movement of said compressing-plates provided with springs, for the purposes set forth.

5. The combination of a shaft, a box-form on the shaft, interior and exterior compressing-plates also mounted upon said shaft and rotating therewith, means for slidably supporting the compressing-plates in line with the box-form, means for moving said plates toward and from the box-form, and turning-in wings in the line of movement of the compressing-plates, for the purposes set forth.

6. The combination of a shaft, a box-form mounted thereon, a

block adapted to longitudinal movement upon the shaft and rotary movement thereon, exterior and interior compressing-plates supported on said block, means to move the block toward and from the box-form, and turning-in wings in the line of movement of the compressing-plates, for the purposes set forth.

7. The combination of a box-form, adjustable interior and elastic exterior compressing-plates, means for moving said plates, means for slidably supporting said plates in line with the box-form, movable turning-in wings and means to move them into engagement with the projecting edges of the covering-paper and to carry them inwardly, for the purposes set forth.

8. The combination of a box-form, interior and exterior compressing-plates, means for moving said plates, means for slidably supporting said plates in line with the box-form, and pivoted turning-in wings arranged to close and move within the interior compressing-plates, for the purposes set forth.

9. The combination of a box-form, pivoted turning-in wings, springs arranged to project the wings outwardly and rearwardly away from the box-form, movable exterior and interior compressing-plates arranged to make contact with and close the turning-in wings, and means to slide said compressing-plates toward and from the box-form, for the purposes set forth.

10. The combination of a box-form, movable interior and exterior compressing-plates, the interior plates having their corners reduced, pivoted turning-in wings in the line of movement of the compressing-plates and means to slide the compressing-plates toward and from the box-form, for the purposes set forth.

11. The combination of a box-form, interior compressing-plates the corners whereof are reduced, exterior elastic and adjustable compressing-plates, said compressing-plates being all arranged approximately in line with the edge of the box or cover, and turning-in wings constructed and arranged to turn in the projecting edges of the covering-paper before the compressing-plates act upon them, and means to move the compressing-plates toward and from the box-form and to operate the turning-in wings, for the purposes set forth.

12. The combination of a box-form, turning-in wings constructed and arranged to engage the projecting edges of the covering-paper and turn them inwardly, interior and exterior compressing-plates, means to move them toward and from the box-form, means for pressing the interior compressing-plates outwardly as they approach the limit of their forward movement and devices on the exterior compressing-plates to resist the outward pressure of the interior compressing-plates, for the purposes set forth.

13. The combination of a box-form, turning-in wings constructed and arranged to engage the projecting edges of the covering-paper and turn them inwardly, interior compressing-plates and elastic exterior compressing-plates, means to slide said compressing-plates toward and from the box-form and means to press outwardly the interior compressing-plates as they approach the limit of their forward movement, for the purposes set forth.

810,415. METAL LOCKER. RICHARD W. JEFFERIS, Camden, N. J., assignor to Merritt & Company, a Corporation of Pennsylvania. Filed Apr. 20, 1904. Serial No. 204,422.

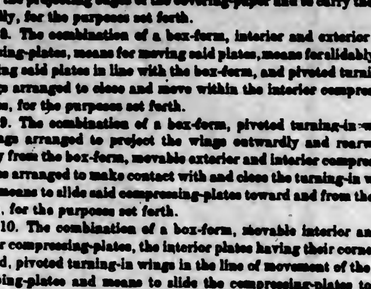

Claim.—1. In a metal locker, the combination with the side panels consisting of metal frames, and a base-frame formed of angle-irons, of supporting-pieces carried by the lower irons of the side panels and depending therefrom and having lateral supports upon which the lower edges of the vertical flanges of the base-frame rest when the side panels and base-frame are assembled.

2. In a series of metal lockers, the combination of side panels consisting of metal frames, base-supporting pieces of inverted-T shape carried by the lower irons of the side-panel frames, and base-frames composed of angle-irons supported by said supporting-pieces on each side.

3. In a metal locker, the combination with the side panels consisting of metal frames, and a base-frame formed of angle-irons, of supporting-pieces carried by the lower irons of the side panels and depending therefrom and having lateral supports upon which the lower edges of the vertical flanges of the base-frame rest when the side panels and base-frame are assembled, and fastening devices to secure said vertical flanges of the base-frame to said supports.

4. In a metal locker, the combination of side panels consisting of metal frames, the vertical iron at one side being extended to form a foot, a front and rear base-supporting piece carried by the lower irons of the side-panel frames, a foot-piece carried by one of said base-supporting pieces, and a base-frame composed of angle-irons supported on each side by said front and rear base-supporting pieces.

5. In a metal locker, the combination of side panels having metal frames, a base-supporting piece d carried by the horizontal flange of the lower iron of each side panel and provided with a lateral support d^3 and an extension d^2, and a base-frame formed of angle-iron carried by said lateral support d^3 and secured to the lateral extension d^2.

6. In a metal locker, the combination of side panels having metal frames, a base-supporting piece d carried by the horizontal flange of the lower iron of each side panel and provided on each side with a lateral support d^3 and having an extension d^2, and base-frames formed of angle-iron carried by said lateral supports d^3 on each side and secured together to the lateral extension d^2.

7. In a metal locker, the combination of side panels having metal frames, a base-supporting piece carried by the horizontal flange of the lower iron of each side panel and provided with a lateral support and a longitudinal extension below said lateral support, a foot-piece secured to said longitudinal extension, and a base-frame formed of angle-iron carried by said lateral supports.

8. In a metal locker, the combination of side panels having metal frames, and a base-frame composed of angle-irons, suspended at its sides from the lower irons of the side-panel frames, and having at its front an angle-iron g secured to the front angle-iron and adapted to form the lower door-sill of the locker.

9. In a metal locker, the combination of side panels composed of metal frames, one of said frames constituting the partition between two adjacent lockers, said frames having their top horizontal flanges provided with longitudinal grooves, and top sheets having their side edges bent and clipped into engagement with said grooves to form the tops of the lockers, the groove in the top of the partition-panel engaging one bent edge of two adjacent top sheets.

10. In a metal locker, the combination of side panels having metal frames, molding-castings k secured to the tops of the front irons of said frames, and an angle-iron m carried by said molding-castings and extending longitudinally the length of a row of side panels with its upper flange projecting horizontally forward.

11. In a metal locker, the combination of side panels having metal frames, the top frames being provided with longitudinal grooves, an angle-iron extending longitudinally the length of a row of side panels with its upper flange projecting horizontally forward, and top sheets having their side edges bent and adapted to engage said longitudinal grooves, and their front edges bent over the forwardly-projecting edge of the longitudinal front angle-iron.

12. In a metal locker, the combination of side panels having metal frames, the top frames being provided with longitudinal grooves, an angle-iron extending longitudinally the length of a row of side panels with its upper flange projecting horizontally forward, top sheets having their side edges bent and adapted to engage said longitudinal grooves and their front edges bent over the forwardly-projecting edge of the longitudinal front angle-iron, and plates p extending over the front joints of adjacent top plates.

13. In a metal locker, the combination with the side panels consisting of metal frames carrying a sheet of reinforced metal, of the transverse shelf-supporting strips n' n' carried by the metal frames, a shelf having its side edges bent and adapted to engage said strips, and provided with flaps n^3 adapted to be bent under said strips to secure the shelf thereto.

810,416. TYPE-WRITER CABINET. WILLIAM W. JOHNSTON and WILLIAM T. WARD, Brighton, Mo. Filed Apr. 28, 1905. Serial No. 257,502.

Claim.—1. A desk having a compartment and a recess provided at the upper end thereof, a leaf pivoted to swing to a position within the compartment, said leaf being adapted to move to a horizontal position and rest within the recess, and a door for the compartment having a movable section designed to normally close the recess.

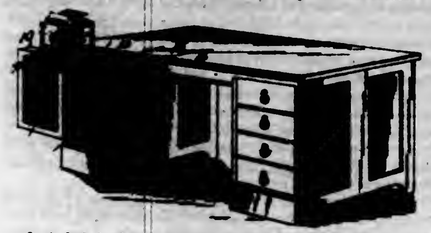

2. A desk having a compartment and a recess provided at the upper end thereof, a leaf pivoted within the compartment to swing in a vertical plane, said leaf being of a form in cross-section to fit within the recess, and a door for the compartment having a movable section designed to fit and normally close the recess.

810,417. MIXER AND KNEADER. DOTTIE KARR, Powder Springs, Ga. Filed Aug. 7, 1905. Serial No. 273,694.

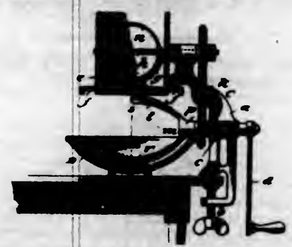

Claim.—1. A device for the purpose set forth, comprising a frame, lower and upper shafts journaled in the frame; said shafts being connected by gearing and one of the same being provided with means whereby it may be turned, a mixer and kneader carried by the lower shaft, a casing fixed to the frame in position to receive the upper shaft and containing a sieve, an agitator fixed to the upper shaft and arranged in the casing above the sieve, and horizontal imperforate doors guided in opposite walls of the casing, below the sieve, and slidable toward and from each other and also toward and from the vertical center of the casing.

2. In a device for the purpose set forth, the combination of a frame, a horizontal shaft journaled therein, and a mixer and kneader comprising an arm fixed to the shaft and curved outwardly in the direction of its length and movable around a horizontal center, and an arm approximately half so long as the first-mentioned arm, fixed to the shaft diametrically opposite the first-mentioned arm and curved outwardly in the direction of its length and movable around the said horizontal center.

810,418. DEVELOPING-CABINET FOR PHOTOGRAPHIC PURPOSES. BRADFORD C. KEEFER, Denver, Colo. Filed Apr. 17, 1905. Serial No. 256,009.

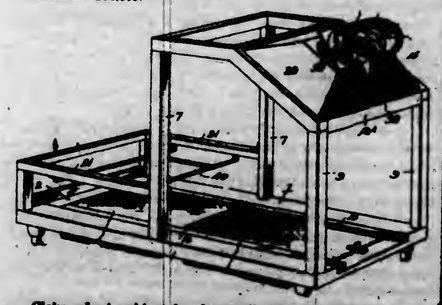

Claim.—1. A cabinet for the purpose described, comprising a frame, composed of horizontal side strips having slideways on their inner edges, and provided centrally and at one end with mortises, said strips being connected centrally and at the ends by cross-strips; upright posts having tenons which enter the mortises of said horizontal strips; a frame upon the top of said posts, the front portion of which inclines; a cap upon the inclined portion of the frame, having sight-openings and a shutter for normally closing said openings; a frame hinged near the lower ends of the rear posts, which extends to the ends of and rests upon the horizontal strips; sliding lids in said slideways; trays in said frame beneath said lids; and a light-proof cover for said frame, having sleeves at the sides thereof and a window of colored glass.

2. A cabinet for the purpose specified, comprising a horizontal platform, having rectangular, tray-supporting openings; and trays in said openings; sliding covers above said trays; upright posts at the center and at one end of said platform; a frame upon the top of said posts, the forward portion of which is at an incline; strips secured near the bottom of said center posts and extending to the rear end of the platform, and uprights for supporting the rear ends thereof; a light-proof cover for the frame thus formed, which conforms to the outline thereof, and thereby forms two chambers of unequal height; a colored-glass window in one end of the taller chamber; hand-receiving sleeves upon the sides of said cover, and a cap upon the inclined portion of the said top frame, having sight-openings, and a spring-controlled shutter for normally closing said openings.

3. A cabinet for the purpose described, comprising two light-proof chambers of unequal height, the larger of which is provided with hand-receiving openings in its sides, a sight-opening in its top and a colored-glass window in its end adjoining the smaller chamber, and a tray in the bottom of each chamber, and a sliding cover over each tray.

4. A cabinet for the purpose described, comprising two light-proof chambers of unequal height, the smaller of which is hinged to the larger chamber, a tray in the bottom of each chamber, and a sliding cover over each tray, and having the larger chamber of the two provided with a colored-glass window in its end adjoining the smaller chamber, and positioned above the smaller chamber and also provided with hand-openings in its sides and with a sight-opening in its top.

810,419. ATTACHMENT FOR VEHICLE-WHEELS. GEORGE W. KIRKPATRICK, Rochester, N. Y. Filed Feb. 3, 1904. Serial No. 191,906.

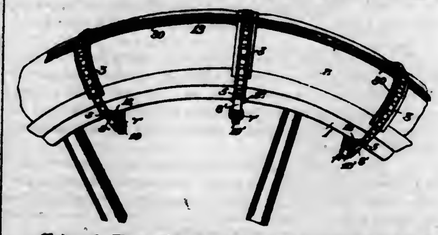

Claim.—1. The combination with a vehicle-wheel of a flexible band extending over the face of the tire, a device separate from the band and engaging the ends thereof and means for moving it relatively to the rim to tighten the band.

2. The combination with a vehicle-wheel, of a band extending over the tire, a yoke having the arms extending over the rim and detachably engaging the band and means for moving the yoke relatively to the wheel-rim.

3. The combination with a vehicle-wheel of a band extending over the tire, a yoke having spring-arms attached to the ends of the band adapted to engage opposite sides of the rim and means for moving the yoke relatively to the rim.

4. The combination with a vehicle-wheel, of a band extending over the tire, a yoke having arms detachably engaging the ends of the band and a bolt passing through the yoke and engaging the rim.

5. The combination with a vehicle-wheel embodying a rim or felly and a tire, of a band extending over the tire and a yoke having spring-arms adapted to engage opposite sides of the rim or felly, hooks on said arms adapted to receive the ends of said band and a bolt engaging the rim for moving the yoke relatively thereto.

6. The combination with a wheel, embodying a rim or felly and a tire thereon, of a band surrounding the tire, a yoke having spring-arms adapted to receive the ends of the band, projections on the arms cooperating with the band to move the arms relatively toward each other and means for moving the yoke to clamp the band to the tire.

7. The combination with a wheel embodying a rim having a tire thereon and a plurality of chain-bands extending over the tire, of means for securing them in position and chains extending between the bands and arranged over the tread portion of the tire.

810,420. ATTACHMENT FOR VEHICLE-WHEELS. GEORGE W. KREPATSKI, Rochester, N. Y. Filed Aug. 6, 1904. Serial No. 219,861.

Claim.—1. An attachment for vehicle-wheels embodying a member forming a saddle adapted to be located within the wheel-rim, means for securing the saddle thereto and a band extending over the tread portion of the wheel, means for detachably connecting one end of the band to the saddle and a securing member engaging the opposite end of the band and adjustable on the saddle to tighten the band.

2. An attachment for vehicle-wheels embodying a member forming a saddle adapted to rest upon the inner surface of the wheel-rim, and means for securing the saddle thereon, a flexible band extending over the tread portion of the wheel and members detachably engaging the ends of the band and adjustable on the saddle to tighten the band.

3. An attachment for vehicle-wheels embodying a member forming a saddle adapted to be located within the wheel-rim, having laterally-extending ears and means for securing the saddle to the rim, a band extending over the tread portion of the wheel, a fastening member attached to one of the ears on the saddle and connected to one end of the band, a bolt extending through the other ear and detachably connected to the other end of the band and a nut on the bolt for adjusting it.

4. An attachment for vehicle-wheels embodying a member forming a saddle adapted to be located within the wheel-rim, a band composed of chain-links extending over the tread portion of the wheel and attached at one end to the saddle, a bolt adjustable through the latter and provided with a hook adapted to detachably engage the free end of the band.

5. The combination with a vehicle-wheel having a rim or felly and a tire thereon, a saddle adapted to rest upon the rim and comprising sections adjustable relatively into engagement with the sides of the rim or felly, of a band extending over the tire and means adjustable on the saddle for tightening the band.

6. The combination with a vehicle-wheel having a rim or felly and a tire thereon, a saddle adapted to rest upon the rim and comprising sections adapted to rest upon the inner surface of the rim and extend over the sides thereof, means for adjusting the sections relatively, of a band extending over the tire and means adjustable on the saddle for tightening the band.

7. The combination with a vehicle-wheel having a rim or felly and a tire thereon, a saddle adapted to rest upon the rim and comprising sections adapted to rest upon the inner surface of the rim and extend over the sides thereof, and perforated ears extending outwardly on the sections, of means for adjusting the sections relatively, a band extending over the tire, securing devices connected to the ends of the band and extending through the ears and means for adjusting the devices to tighten the band.

8. An attachment for vehicle-wheels comprising a band adapted to engage over a tire composed of a plurality of pivoted links, bearing-plates arranged between the latter and the tire, wear-plates on the outer faces of the links, means for attaching said plates to the links and means for securing the band to the tire.

9. An attachment for vehicle-wheels comprising a band adapted to extend over a tire composed of a plurality of flat open links, bearing-plates arranged between the latter and the tire having upturned or rounded ends at the edges of the links, wear-plates on the outer faces of the links and fastening devices securing said plates to the separate links and means for securing the band to the tire.

10. An attachment for vehicle-wheels comprising a band adapted to extend over a tire composed of a plurality of pivoted links, bearing-plates arranged between the latter and the tire, wear-plates on the outer faces of the links, a rivet passing through the wear-plate having a shoulder engaging the bearing-plate and provided with heads securing both of said plates to the separate links and means for securing the band to the tire.

11. An attachment for vehicle-wheels comprising a band adapted to extend over a tire composed of a plurality of flat open links, bearing-plates arranged between the latter and the tire having upturned or rounded ends embracing the edges of the links, wear-plates on the outer faces of the links having ribs extending transversely thereof and means for connecting the band to the tire.

12. An attachment for vehicle-wheels comprising a band adapted to extend over a tire composed of a plurality of flat open links, bearing-plates arranged between the latter and the tire having their inner faces concaved to fit the surface of the tire, wear-plates on the outer faces of the links provided with projections extending between the sides of the links, devices securing said plates to their respective links and means for securing the band to the tire.

13. An attachment for vehicle-wheels embodying a band or cincture composed of a plurality of jointed sections extending transversely of the tire of the wheel, a lining composed of a plurality of sections, one of said sections being attached to the inner side of each of the sections of the band and means for securing the latter to the tire.

810,421. HAT-DISPLAY RACK. CHARLES KOEHLER, Toledo, Ohio. Filed Apr. 24, 1905. Serial No. 257,116.

Claim.—1. A hat-display rack, comprising a substantially U-shaped member having resilient arms and its lower connecting portion formed with an inwardly-projecting tongue, and a clamping member adjustably secured to said tongue for engaging a supporting element.

2. A hat-display rack, comprising a substantially U-shaped member formed of resilient material and having its arm-terminals bent outwardly upon themselves and formed centrally at their lower connecting portion with a reëntrant tongue, and an adjustable support-clamping member secured to said tongue.

3. A hat-display rack, comprising a substantially U-shaped member having resilient arms disposed in slightly-converging relation and each terminating in an outwardly and rearwardly bent portion and formed centrally of its arm-connecting portion with a reëntrant tongue, and a support-clamping member secured to said tongue.

4. A hat-display rack, comprising a substantially U-shaped member having resilient arms disposed in slightly-converging relation each terminating in an outwardly-extending portion and formed centrally of its arm-connecting portion with a reëntrant tongue, said tongue having its free end forked, and a support-clamping member adjustably secured within the fork of said tongue.

5. A hat-display rack, comprising a substantially U-shaped member having its arms terminating in outwardly-bent portions and formed centrally thereof with a reëntrant tongue, support-clamping means secured to said tongue, and tips and bands of rubber or the like secured to the points of said member having contact with a hat.

6. A hat-display rack, comprising the two correspondingly-shaped resilient arms A, A, secured together in reverse positions to form a substantially U-shaped member having a reëntrant portion, and a support-clamping member adjustably secured to said reëntrant portion.

7. A hat-display rack, comprising a stand, a clamp for engaging said stand, a resilient arm pivotally secured to each side of said clamp thence extending rearwardly in parallelism a short distance, thence changing and extending outwardly and forwardly in opposite directions and terminating in abutments adapted to press against the inner walls of a hat.

8. A hat-display rack, comprising a substantially U-shaped member having its arms terminating in abutments adapted to press against the inner walls of a hat and formed centrally of the connecting portions with a reëntrant tongue, a support-clamping member secured to said tongue, rubber tips on the terminal abutments of said arms, and rubber bands on the lower portions of said arms having their outer surface formed with projections.

810,422. ENGINE-VALVE. GEORGE LANE, Poughkeepsie, N. Y. Filed Sept. 21, 1904. Serial No. 225,362.

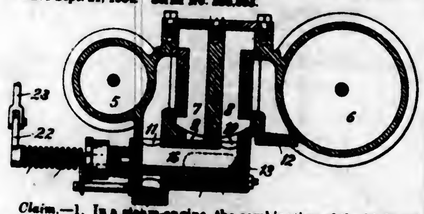

Claim.—1. In a steam-engine, the combination of the high and the low pressure cylinders and slide-valves therefor, a single rotary valve cooperating therewith, automatic means for moving said valve to one position, and manual means for moving said valve to a second position.

2. In combination with the high and low pressure cylinders of a steam-engine and their valve-chests, a casing having a port communicating with the high-pressure exhaust, ports communicating with the respective valve-chests, an exhaust-port to the atmosphere; a valve in said casing having a longitudinal passage communicating when in one position with the high-pressure exhaust and the low-pressure valve-chest, and passages which when the valve is in another position respectively communicate between the high and low pressure valve-chests and between the high-pressure exhaust and the atmosphere.

3. In a steam-engine, the combination of the high and low pressure cylinders, a single rotary balanced valve interposed between the cylinders and having requisite ports and passages to connect the cylinders in either direct or compound relation with the high-pressure steam, manual means for shifting the valve, and automatic means acting to return the valve to its normal position.

4. In a steam-engine, the combination of the high and the low pressure cylinders and slide-valves therefor, a single rotary valve cooperating therewith and having requisite ports and passages to connect the cylinders in either direct or compound relation with the high-pressure steam, a lever for moving the valve to one position and a spring for automatically moving the valve to a second position.

5. In a steam-engine, the combination of the high and the low pressure cylinders, slide-valves therefor, a single rotary valve cooperating with the slide-valve for changing the engine from compound to direct acting, together with means for manually actuating the rotary valve to make such change and automatically restoring said valve to its original position.

6. In combination with the high and low pressure cylinders of a steam-engine and their valve-chests, a casing attached thereto having a cylindrical interior and ports communicating respectively with the high-pressure exhaust, the valve-chests, and the atmosphere; a rotary valve in said casing having passages therein, one of said passages adapted to communicate between the high-pressure exhaust and the low-pressure valve-chest, another of said passages with the high and low pressure valve-chests and the source of steam, and the third between the high-pressure exhaust and the atmosphere.

7. In combination with the high and low pressure cylinders of a steam-engine and their valve-chests, a casing attached thereto and having a cylindrical interior with ports respectively communicating with the high-pressure exhaust, high and low pressure valve-chest and the atmosphere; a rotary valve in said casing provided with passages adapted to communicate between the high-pressure exhaust and the low-pressure cylinder, or between the source of steam and the high and low pressure valve-chests, and between the high-pressure exhaust and the atmosphere, together with means for throwing the first or second and third of said passages in said valve, into position to cause the engine to act as a compound or direct-acting engine as desired.

810,423. STEAM-TRAP. THOMAS MARSDEN, Magog, Canada. Filed Aug. 22, 1905. Serial No. 275,244.

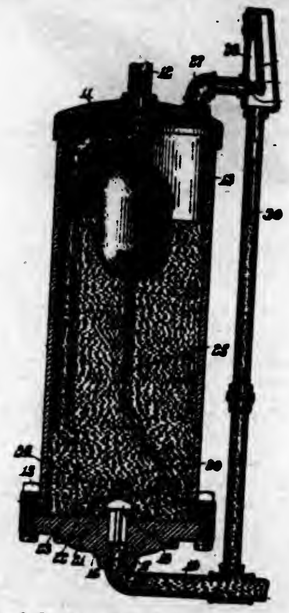

Claim.—1. In a steam-trap, the combination of a float-chamber, a float therein, an inlet, an outlet, a valve therefor operated by said float, an auxiliary outlet at the top of said float-chamber, and means for closing said auxiliary outlet under steam heat.

2. In a steam-trap, the combination of a float-chamber, a float therein, an inlet, an outlet, a valve therefor operated by said float, an auxiliary outlet at the top of said float-chamber, and a thermostat connected with said outlet and adapted to close the same under steam heat.

3. In a steam-trap, the combination of a float-chamber, a float therein, an inlet, an outlet, a valve therefor operated by said float, a discharge-pipe from said outlet, an auxiliary outlet at the top of said float-chamber and communicating with said discharge-pipe, and a thermostatic device interposed between said auxiliary outlet and said discharge-pipe and adapted to close the same.

810,424. CALKING-TOOL. THOMAS S. MASON, Camden, N. J., assignor to New York Shipbuilding Company, Camden, N. J., a Corporation of New Jersey. Filed Apr. 20, 1905. Serial No. 256,008.

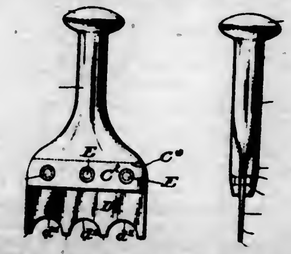

Claim.—1. A calking-tool having a blade adapted to enter the seam to be calked and formed with a series of blunt projections D^4, separated by recesses d^4.

2. A calking-tool having a shank or handle C, provided with an expanded head C^3, and an elongated and slotted tool-holding portion C^2, in combination with a blade D, inserted and secured in the slotted portion C^2, and formed with a series of blunt projections D^4.

810,425. SHOE-DISPLAY FIXTURE. FRANK MINOR, Dalevia, N. Y. Filed Apr. 3, 1905. Serial No. 253,676.

Claim.—1. A shoe-display fixture comprising a shoe-supporting platform, a removable covering therefor, means for holding the removable covering on the platform, and a device projecting from the platform and through the removable covering for retaining a shoe on the platform.

2. A shoe-display fixture, comprising a shoe-supporting platform, a removable facing therefor conforming to the shape of the platform, a flanged band around the platform and overlapping the edges of the facing, and means for holding a shoe on the platform.

3. In a shoe-display fixture, the combination with a shoe-supporting platform, a pin on said platform to engage the shoe-heel and hold the shoe on the stand, an ornamental facing of the same shape as the platform, located thereon and having an opening to receive the pin, and a flanged band around the platform securing the edges of the facing.

810,426. GRINDING-MACHINE. RALPH L. MORGAN and JAMES H. HERALD, Worcester, Mass., assignors to The Heald Machine Company, Worcester, Mass., a Corporation of Massachusetts. Filed May 14, 1904. Serial No. 208,007.

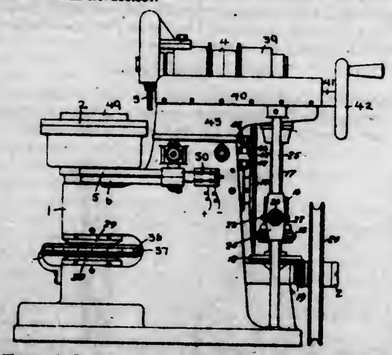

Claim.—1. In a grinding-machine, the combination with a supporting-frame, of a revolving spindle journaled in said frame, a grinding-wheel carried by said spindle, means for traversing said wheel in a line coincident with its axis of rotation, a rotating spindle journaled in said frame, a work-holding bed supported on the end of said rotating spindle, and means for adjusting the plane of the axis of said grinding-wheel spindle relatively to the plane of the axis of said work-supporting spindle.

2. In a grinding-machine, the combination with a revolving grinding-wheel, of a spindle journaled in bearings at right angles to the axis of said grinding-wheel, means for rotating said spindle, a screw-threaded sleeve inclosing said spindle, a rotating hub engaging said sleeve and held from longitudinal movement, whereby said spindle is moved in a line coincident with its axis.

3. In a grinding-machine, the combination with a revolving grinding-wheel, of a spindle journaled at an angle to the axis of said grinding-wheel, a work-holding bed mounted on the upper end of said spindle, a gear attached to the lower end of said spindle, a pinion having teeth longer than the teeth of said gear, and intermediate mechanism between the driving power and said pinion.

810,427. WASHING-MACHINE. ALLAN L. OWENS, Atchison, Kans. Filed Oct. 27, 1903. Serial No. 178,709.

Claim.—1. In a washing-machine, the combination with a receptacle, lid and pounder provided with a rod working trough an aperture in the lid, a pounder-actuating mechanism comprising a substantially horizontal movable fulcrum-bar upon the lid and a lever-handle pivotally connected to said rod and fulcrum-bar respectively.

2. In a washing-machine, the combination with a receptacle, lid and pounder provided with a rod working through an aperture in the lid, a pounder-actuating mechanism comprising a substantially horizontal movable fulcrum-bar upon the lid and lever-handle pivotally and adjustably connected to said rod and fulcrum-bar respectively.

3. In a washing-machine, the combination with a receptacle, lid and pounder provided with a rod working through an aperture in the lid, a pounder-actuating mechanism, said receptacle, lid, rod and actuating mechanism being so relatively arranged and connected that the open lid is supported in a horizontal position.

4. In a washing-machine, the combination with a receptacle, lid and pounder provided with a rod working through an aperture in the lid, of a substantially horizontal movable fulcrum-bar, uprights pivoted to said bar and lid respectively, a lever-handle pivoted to the bar and rod, an elongation upon the bar and a stop-piece upon the receptacle, said elongation and stop-piece constituting engaging members for supporting through cooperation of the members correlated therewith the open lid in a horizontal position.

5. In a washing-machine, the combination with a receptacle, lid and pounder provided with a rod working through an aperture in the lid, of a pounder-actuating mechanism comprising a substantially horizontal movable fulcrum-bar, uprights independently pivoted to the lid and to the bar respectively, and a lever-handle pivotally united to the bar and to the rod respectively.

810,428. TUNNEL-SHIELD. CHARLES L. PARSELLE, Orange, N. J., and HOWARD C. WILLIAMS, Washington, D. C. Filed Jan. 3, 1905. Serial No. 239,280.

Claim.—1. The combination with a roof-shield of a plurality of supports therefor, together with means for independently advancing the supports as the excavation proceeds.

2. The combination with a roof-shield of a plurality of supports therefor, each of which sustains the entire weight of the shield and may be independently advanced as the excavation proceeds.

3. The combination with a roof-shield of a plurality of supports therefor, together with means for independently moving the said supports into and out of operative position and means for advancing the supports as the excavation proceeds.

4. The combination with a roof-shield of a plurality of supports therefor, together with means for independently raising and lowering the said supports into and out of operative position and means for advancing the supports as the excavation proceeds.

5. The combination with a roof-shield of a plurality of supports therefor, the said supports being independently advancable and provided with cooperating means whereby each during its advance is guided by the others.

6. The combination with a roof-shield of a plurality of supports therefor, each of which sustains the weight of the shield across its width and may be independently advanced as the excavation proceeds.

7. The combination with a roof-shield comprising a plurality of separately-movable sections of a plurality of supports therefor, each of which sustains the weight of the movable sections and may be independently advanced as the excavation proceeds.

8. The combination with a roof-shield of a plurality of supports therefor, each of which sustains the weight of the shield across its width and may be independently raised and lowered into and out of operative position.

9. The combination with a roof-shield comprising a plurality of separately-movable sections of a plurality of supports therefor, each of which sustains the weight of the movable sections and may be independently raised and lowered into and out of operative position.

10. The combination with a roof-shield of a plurality of supports therefor, each of which sustains the weight of the shield across its width and may be independently moved into and out of operative position and advanced as the excavation proceeds.

11. The combination with a roof-shield comprising a plurality of separately-movable sections of a plurality of supports therefor, each of which sustains the weight of the movable sections and may be independently moved into and out of operative position and advanced as the excavation proceeds.

12. The combination with a roof-shield of a plurality of supports therefor, each of which sustains the weight of the shield across its width and may be independently raised and lowered into and out of operative position and advanced as the excavation proceeds.

13. The combination with a roof-shield comprising a plurality of separately-movable sections of a plurality of supports therefor, each of which sustains the weight of the movable sections and may be independently raised and lowered into and out of operative position and advanced as the excavation proceeds.

14. The combination with a roof-shield of a plurality of supports therefor, each of which sustains the weight of the shield across its width, together with means for independently raising and lowering the said supports into and out of operative position.

15. The combination with a roof-shield comprising a plurality of separately-movable sections of a plurality of supports therefor, each of which sustains the weight of the movable sections, together with means for independently raising and lowering the said supports into and out of operative position.

16. The combination with a roof-shield of a plurality of supports therefor, each of which sustains the weight of the shield across its width, together with means for independently moving the said supports into and out of operative position.

17. The combination with a roof-shield comprising a plurality of separately-movable sections of a plurality of supports therefor, each of which sustains the weight of the movable sections, together with means for independently moving the said supports into and out of operative position.

810,429. CHANDELIER. WILLIAM J. PETTIGREW, New York, N. Y. Filed Aug. 23, 1905. Serial No. 275,214.

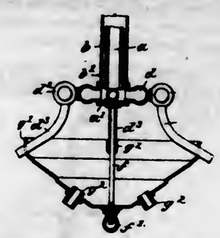

Claim.—1. A chandelier provided with a stem, a rod depending therefrom, a cap engaging the rod, means for locking the cap to the rod, and arms foldably connected to the stem and adapted to be supported on the cap, substantially as specified.

2. A chandelier provided with a stem, a screw-rod depending therefrom, a perforated cap surrounding the rod, a nut on the rod that engages the cap, and arms foldably connected to the stem and adapted to be supported by the cap, substantially as specified.

3. A chandelier provided with a stem, a cap, means for removably securing the cap to the stem, arms foldably connected to the stem and adapted to be supported by the cap, and a shade adapted to be supported by the arms, substantially as specified.

810,430. BUNG-HOLE BUSHING. FRANK PFLUGER and EMIL CHRISTENSEN, Portland, Oreg. Filed Feb. 11, 1904. Serial No. 193,166.

Claim.—1. The combination with a stave having a counterbored bung-hole, of a bushing of ductile metal reduced in external diameter at its inner end and having flanges at both ends, the flange at the inner end conforming to the counterbore of the bung-hole, and a wrapping of packing material about the reduced portion of the bushing and confined between the shoulder formed by said reduced portion and the inner flange.

2. The combination with a stave having a counterbored bung-hole, of a bushing of ductile metal provided with an external shoulder approximately midway between its ends and having flanges at both ends, and a wrapping of packing material about the bushing between the external shoulder and the inner flange.

3. A bung-hole bushing having a flange at each end, one of the flanges being bendable, and the body of the bushing being reduced to form an exterior shoulder opposing the bendable flange, and packing surrounding said reduced portion between the said shoulder and opposing flange.

4. A bung-hole bushing having a bendable flange at one end and having its body portion reduced adjacent to said flange to form a depressed exterior packing-seat bounded by an exterior shoulder opposing the flange.

5. A bung-hole bushing having a tapered body initially flared at its inner end and reduced in external diameter adjacent to the inner end with the formation of an external shoulder intermediate of the outer and inner ends of the bushing.

810,431. COMBINED EXPANDER AND FLANGER FOR BUNG-HOLE BUSHINGS. FRANK PFLUGER and EMIL CHRISTENSEN, Portland, Oreg. Filed Feb. 20, 1904. Renewed Sept. 20, 1905. Serial No. 279,219.

Claim.—1. In a device of the character specified, a stock, means carried by the stock for applying pressure to one end of a bushing, and flanging means also carried by the stock and including an axle having rollers for engagement with the other end of the bushing, said axle being held normally in a position transverse to the stock and capable of being adjusted to a position of approximate alinement with the stock.

2. In a device of the class described, a stock, a pressure device carried by the stock and movable thereon, means for adjusting said pressure device longitudinally of the stock, and a flanger including

an axle carried by the stock and provided with rollers for engagement with the inner end of a bushing, said axle being disposed transversely of the stock during the operation of the device and capable of being adjusted into approximate alinement with the stock to permit of the device being inserted through a bushing.

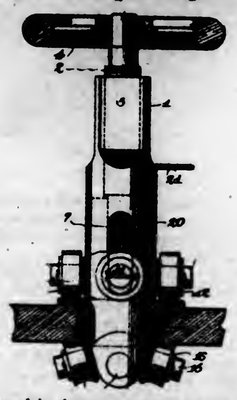

3. In a device of the character specified, a longitudinally-slotted stock, a pressure device disposed transversely of said stock in said slot, means for adjusting said pressure device longitudinally of the stock, and a flanger also carried by said stock in the slot thereof and held normally in a position transverse to the stock, said flanger being adjustable into approximate alinement with the stock.

4. In a device of the class described, a stock, a feed-screw threaded in said stock, a pressure device mounted to move longitudinally upon the stock and engaged with the feed-screw for movement therewith, and a flanger carried by the stock independently of the feed-screw for engagement with the inner end of a bushing.

5. In a device of the class described, the combination with a rotatable longitudinally-slotted stock having a bore intersecting the outer end of the slot, and provided with a threaded portion of a presser member adjustable longitudinally within the slot and projected at opposite sides thereof externally of the stock for engagement with one end of the bushing, a screw-threaded adjusting device fitted in the bore of the stock and engaging the screw-threaded portion thereof for controlling the presser device, and a flanger member carried by the stock with the presser member located between the flanger and the screw-threaded adjusting means.

6. In a device of the class described, the combination of a rotatable longitudinally-slotted stock having one edge of the slot enlarged, a flanger pivoted within the slot and capable of being tilted into substantial alinement with the stock, an adjusting device slidable in the enlarged edge of the slot with one end connected to the flanger and its opposite end provided with an outwardly-directed handle, a presser member slidable within the slot with its opposite ends projecting externally of the stock, and means carried by the stock for adjusting the presser member therein to draw said member and the flanger into engagement with the opposite end of a bushing.

7. In a device of the class described, the combination of a rotatable stock which is bifurcated at one end and provided at its opposite end with a longitudinal bore intersecting the back of the bifurcation and having a threaded portion, one edge of the bifurcation being enlarged to form a channel, an axle pivoted within and adjacent the open end of the bifurcation and provided with terminal flanger-rollers, another axle slidable within the bifurcation and projected externally at opposite sides of the stock, rollers carried by the projected ends of said axle, a longitudinally-slotted controlling device slidable in the channel of the stock with its slot receiving the adjacent projected end of the slidable axle, one end of the controlling device being connected to the pivoted axle and its opposite end being formed into an outwardly-directed handle, and an adjusting-screw fitted in the screw-threaded bore of the stock in operative relation with the slidable axle.

810,482. COUNTERBORING-TOOL FOR CASKS. FRANK PHILBRICK and HARRY CHRISTENSEN, Portland, Oreg. Filed June 16, 1904. Serial No. 212,605.

Claim.—1. A tool of the class described comprising a stock, a rotatable and endwise-movable spindle carried by the stock, a counterboring-tool carried by the spindle, and means to rotate and move the spindle endwise for a predetermined distance in a direction to actuate the counterboring-tool, said means capable of being slid in the opposite direction to quickly withdraw the counterboring-tool from the work at the limit of the endwise-operating movement of the spindle.

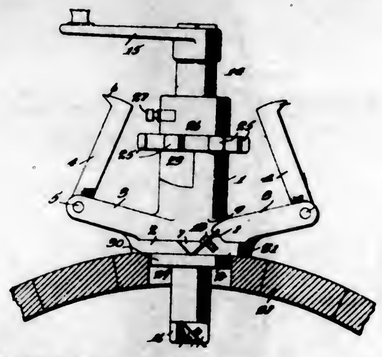

2. A tool of the class described comprising a stock, a rotatable and endwise-movable spindle carried by the stock, a counterboring-tool carried by the spindle, and means to rotate and move the spindle endwise for a predetermined distance in a direction to actuate the counterboring-tool, said spindle being free to gravitate in the opposite direction to quickly withdraw the counterboring-tool from the work at the limit of the endwise-operating movement of the spindle.

3. A tool of the class described comprising a spindle carrying a cutting element, means to rotate the spindle, and means coöperating with the spindle to force the same endwise by a certain amount of rotation and on further rotation to disengage and permit free movement of the spindle in the opposite direction.

4. A tool of the class described comprising a stock having a longitudinal bore and provided with means to lock the stock against rotation, a cam upon the stock, a rotatable and endwise-movable spindle mounted in the stock and projected at opposite ends thereof, a counterboring-blade carried by one end of the stock, a cam slidable and rotatable upon the spindle in frictional engagement with the cam on the stock, and a stop carried by the spindle to limit endwise movement of the movable cam, each cam having an abrupt shoulder for alinement with the shoulder of the other cam to permit of the spindle being quickly moved in an endwise direction to withdraw the counterboring-blade from the work.

5. A tool of the class described comprising a stock having a longitudinal bore, a fixed spiral cam upon the stock terminating at its outer end in a receding shoulder, a rotatable and endwise-movable spindle mounted in the bore of the stock and projected at opposite ends thereof, a counterboring-blade carried by one end of the spindle, a cam slidable upon the spindle in frictional engagement with the cam of the stock and provided with a spiral surface terminating at its outer end in a receding shoulder, a stop carried by the spindle to limit endwise movement of the movable cam, and means for rotating the spindle, the slidable cam capable of tripping from the fixed cam when their receding shoulders are brought into alinement.

6. A tool of the class described comprising a stock having a longitudinal bore, a fixed cam upon the stock provided with a spiral surface terminating at its upper end in a pendent shoulder, a rotatable and endwise-movable spindle mounted in the bore of the stock and projected at opposite ends thereof, a counterboring-blade carried by one end of the spindle, a cam slidable upon the spindle and provided with a spiral under face in frictional engagement with the spiral face of the fixed cam and terminating at its lower end in an upright shoulder, a stop carried by the spindle to limit upward movement of the movable cam, and means for rotating the spindle, the movable cam capable of automatically tripping from the fixed cam by gravitation when the shoulders of the two cams are brought into alinement.

7. A tool of the class described comprising a stock having a longitudinal bore, a cam upon the stock, a rotatable and endwise-movable spindle mounted in the bore of the stock and projected at opposite ends thereof, a counterboring-blade carried by one end of the spindle, a cam slidable upon the spindle and in frictional engagement with the cam of the stock, a stop adjustable longitudinally upon the spindle to limit endwise movement of the slidable cam, and means to rotate the spindle, the slidable cam capable of rotation independently of the spindle to move the same in an endwise direction by engagement of the slidable cam with the fixed cam and the stop on the spindle.

8. A tool of the class described comprising a stock having a longitudinal bore and provided with an outer spiral edge forming a cam, a rotatable and endwise-movable spindle mounted in the bore of the stock and projected at opposite ends thereof, a counterboring-blade carried by one end of the spindle, an endwise-movable sleeve mounted upon the spindle and provided with a spiral edge in frictional relation with the spiral edge of the stock and also provided with a handle for rotating the sleeve, a stop-collar adjustable longitudinally upon the spindle in the path of the slidable movement of the sleeve, and means to rotate the spindle, the sleeve being rotatable independently of the spindle to feed the latter endwise during its rotatable movement.

9. A tool of the class described comprising a tubular stock having a spiral outer edge, means carried by the stock for engagement with a cask to prevent rotation of the stock and capable of being moved out of engagement with the cask to permit rotation of the stock, a planer-blade carried by the stock, a rotatable and endwise-movable spindle projected at opposite ends of the stock, a counterboring-blade carried by one end of the spindle, an endwise-movable sleeve mounted upon the spindle and having a spiral edge in coöperative relation with the spiral edge of the stock, a stop-collar adjustable longitudinally upon the spindle to limit endwise movement of the sleeve and capable of holding the latter in locked engagement with the spiral of the stock to interlock the latter and the spindle for simultaneous rotation, and means connected to the spindle for rotating the same, the sleeve also capable of rotation independently of the spindle to feed the latter in an endwise direction.

10. A tool of the class described comprising a stock having a cask-engaging anchoring device capable of being engaged with the cask to prevent rotation of the stock and also capable of being disengaged from the cask to permit rotation of the stock, a planer-blade carried by the stock, a rotatable and endwise-shiftable spindle carried by the stock, a counterboring-blade carried by the spindle, means to rotate and feed the spindle in an endwise direction upon the stock, and means to interlock the spindle and the stock for simultaneous rotation.

11. A tool of the class described comprising a stock having a planer-blade, anchor-links pivoted to the stock and having spurs to enter a cask and anchor the stock against rotation, a rotatable and endwise-movable spindle carried by the stock, a counterboring-blade carried by the spindle, means to rotate and to feed the spindle in an endwise direction independently of the stock, and means to interlock the stock and the spindle for simultaneous rotation.

12. A tool of the class described comprising a tubular stock having a terminal annular flange provided with an opening, a concentric tubular guide-boss at the flanged end of the stock, a planer-blade fitted in the opening of the flange, substantially radial arms projected from the stock, anchor-links pivoted to the arms and provided with lateral terminal spurs, the other end of the stock having a spiral edge, a rotatable and endwise-movable spindle projected in opposite directions through the stock and provided at one end with a crank-arm, a counterboring-blade carried by the crank-arm, and endwise-movable sleeve mounted upon the spindle and provided with a spiral edge in coöperative relation with the spiral of the stock, a stop-collar adjustable longitudinally upon the spindle in the path of the sleeve and capable of holding the latter interlocked with the stock for simultaneous rotation of the latter and the spindle, and a crank to rotate the spindle, the sleeve also capable of rotation independently of the spindle to feed the latter in an endwise direction.

13. A tool of the class described comprising a stock which is capable of rotation and provided with a planer-blade, a counterboring-blade capable of adjustment to a position out of contact with the work during operation of the planer-blade, and means to bring the counterboring-blade into engagement with the work and to swing the same around the stock as a center after the completion of the operation of the planer-blade.

14. A tool of the class described including a planer-blade for the exterior of a cask, a counterboring-blade for the interior of a cask, and means to successively operate the blades.

15. A tool of the class described comprising a stock which is capable of rotation and provided with a planer-blade for operation upon the exterior of a cask, and an endwise-movable spindle mounted to rotate independently upon the stock and provided with a crank-arm carrying a counterboring-blade for operation upon the interior of a cask.

810,488. TONGUE-SWITCH. BARNEY B. PERRY, Brooklyn, N. Y., assignor to The Lorain Steel Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed June 20, 1905. Serial No. 266,304.

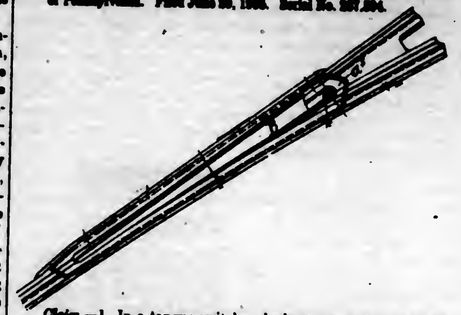

Claim.—1. In a tongue-switch, a body structure having a depressed floor portion forming the bed for the body portion of the tongue, and an integral overhanging portion extending forward of the tongue pin or pivot and covering the heel portion of the tongue.

2. In a tongue-switch, a body structure having a depressed tongue-bearing floor, and a raised portion overhanging the heel portion of the tongue to a point in advance of the tongue pin or pivot, said depressed and overhanging portions being integrally connected, and partially separated by an opening.

3. In a tongue-switch, the combination with a base portion, of a face-plate secured to the said base portion, said face-plate being underneath the tongue for a portion of its length, and over the tongue for the balance of its length.

4. In a tongue-switch, the combination with a base portion, of a face-plate secured thereto and forming the bed for the tongue, said face-plate having at its heel portion an integrally-connected portion which overhangs the seat for the heel portion of the tongue.

5. In a tongue-switch, the combination with a body structure having an integral portion overhanging the seat for the heel portion of the tongue, of a tongue having a heel portion shaped to enter said seat, and a pin for the tongue arranged to permit the removal of the tongue.

6. The combination of a body structure having an integral overhanging portion at the heel, a switch-tongue extending underneath said overhanging portion and having a pin or pivot, and means whereby the tongue may be removed without disturbing said overhanging portion.

7. The combination of a body structure having an overhanging portion at the heel, of a tongue having a depressed heel portion arranged to seat underneath said overhanging portion, a pin or pintle for the tongue, and means whereby the pin or pintle may be removed through the said overhanging portion.

8. In a tongue-switch of the character described, the combination with a body structure having an overhanging portion at the heel integral with the tongue-bed, of a tongue extending underneath said overhanging portion, and a pin or pivot for the tongue arranged to permit the tongue to be removed without disturbing said overhanging portion.

9. In a tongue-switch, a body structure having an integral overhanging portion at the heel extending forward of the tongue-pin and having an aperture therethrough to permit the insertion and withdrawal of the said pin.

10. In a switch of the character described, the combination with a body structure having an integral overhanging portion at its heel extending forward of the tongue-pin and having an aperture therethrough to permit the insertion and withdrawal of the said pin, of a pin having means for the engagement therewith of lifting or withdrawing means.

11. The combination in a switch structure, of a body having a cavity for the reception of a tongue-pivot, a face-plate having a portion extending over the cavity and grooved for the flanges of the wheels, the said overhanging portion being integral with the facing-plate.

810,484. PHOTOMECHANICAL PRINTING. HENRY L. REED, New York, N. Y., assignor to Albert Henry Walker, trustee, New York, N. Y. Filed July 21, 1905. Serial No. 270,615.

Claim.—1. The combination of a cylinder, adapted to turn in one direction on its axis, and having an elastic cushion affixed to its

periphery, and having a flexible plate affixed on that cushion; and a metal roller, adapted to turn in the other direction on its axis, at the same surface speed as the flexible plate, and with its periphery rolling upon the surface of that plate; and a table adjacent to the cylinder, and adapted to support the rear part of that plate, at the beginning of the turning of the cylinder, and to gradually surrender that plate to the cylinder, as the cylinder turns; and a weight, attached to the rear border of the flexible plate, and subjecting to tension the forward movement thereof; and a pair of levers and weights, adapted to exert pressure on the journal-boxes of the metal roller, as it rolls; all substantially as described.

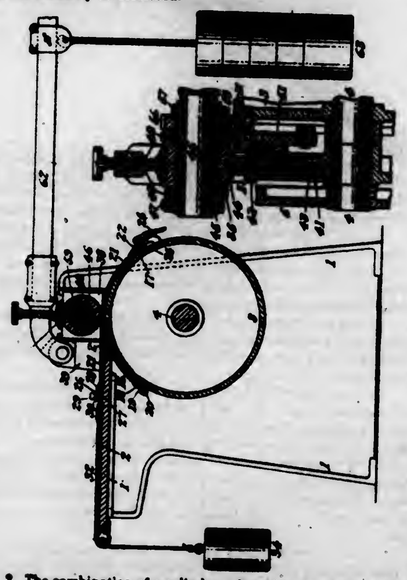

2. The combination of a cylinder, adapted to turn in one direction on its axis, and having an elastic cushion affixed to its periphery, and having a flexible plate affixed on that cushion; and a metal roller, adapted to turn in the other direction on its axis, at the same surface speed as the flexible plate, and with its periphery rolling upon the surface of that plate; and a table adjacent to the cylinder, and adapted to support the rear part of that plate at the beginning of the turning of the cylinder, and to gradually surrender that plate to the cylinder, as the cylinder turns; and a weight, attached to the rear border of the flexible plate, and subjecting to tension the forward movement thereof; all substantially as described.

3. The combination of a cylinder, adapted to turn in one direction on its axis, and having an elastic cushion affixed to its periphery, and having a flexible plate affixed on that cushion; and a metal roller, adapted to turn in the other direction on its axis, at the same surface speed as the flexible plate, and with its periphery rolling upon the surface of that plate; and a table adjacent to the cylinder, and adapted to support the rear part of that plate, at the beginning of the turning of the cylinder, and to gradually surrender that plate to the cylinder, as the cylinder turns; and a pair of levers and weights, adapted to exert pressure on the journal-boxes of the metal roller, as it rolls; all substantially as described.

4. The combination of a cylinder, adapted to turn in one direction on its axis, and having an elastic cushion affixed to its periphery, and having a flexible plate affixed on that cushion; and a metal roller adapted to turn in the other direction on its axis, at the same surface speed as the flexible plate, and with its periphery rolling upon the surface of that plate; and a weight, attached to the rear border of the flexible plate, and subjecting to tension the forward movement thereof; and a pair of levers and weights, adapted to exert pressure on the journal-boxes of the metal roller, as it rolls; all substantially as described.

5. The combination of a cylinder, adapted to turn in one direction on its axis, and having an elastic cushion affixed to its periphery, and having a flexible plate affixed on that cushion; and a metal roller, adapted to turn in the other direction on its axis, at the same surface speed as the flexible plate, and with its periphery rolling upon the surface of that plate; and a table adjacent to the cylinder, and adapted to support the rear part of that plate, at the beginning of the turning of the cylinder, and to gradually surrender that plate to the cylinder, as the cylinder turns; all substantially as described.

6. The combination of a cylinder, adapted to turn in one direction on its axis, and having an elastic cushion affixed to its periphery, and having a flexible plate affixed on that cushion, and a metal roller, adapted to turn in the other direction on its axis, at the same surface speed as the flexible plate, and with its periphery rolling upon the surface of that plate; and a table adjacent to the cylinder, and adapted to support the rear part of that plate, at the beginning of the turning of the cylinder, and to gradually surrender that plate to the cylinder, as the cylinder turns; and a weight attached to the rear border of the flexible plate, and subjecting to tension the forward movement thereof; all substantially as described.

7. The combination of a cylinder, adapted to turn in one direction on its axis, and having a flexible plate affixed on its periphery; and a metal roller, adapted to turn in the other direction on its axis, at the same surface speed as the flexible plate; and with its periphery rolling upon the surface of that plate; and a table adjacent to the cylinder, and adapted to support the rear part of that plate, at the beginning of the turning of the cylinder, and to gradually surrender that plate to the cylinder, as the cylinder turns; and a weight attached to the rear border of the flexible plate, and subjecting to tension the forward movement thereof; and a pair of weights and levers, adapted to exert pressure on the journal-boxes of the metal roller, as it rolls; all substantially as described.

8. The combination of a cylinder, adapted to turn in one direction on its axis, and having a flexible plate affixed on its periphery; and a metal roller, adapted to turn in the other direction on its axis, at the same surface speed as the flexible plate; and with its periphery rolling upon the surface of that plate; and a table adjacent to the cylinder, and adapted to support the rear part of that plate, at the beginning of the turning of the cylinder, and to gradually surrender that plate to the cylinder, as the cylinder turns; and a weight attached to the rear border of the flexible plate, and subjecting to tension the forward movement thereof; all substantially as described.

9. The combination of a cylinder, adapted to turn in one direction on its axis, and having a flexible plate affixed on its periphery; and a metal roller, adapted to turn in the other direction on its axis; at the same surface speed as the flexible plate, and with its periphery rolling upon the surface of that plate; and a table adjacent to the cylinder, and adapted to support the rear part of that plate, at the beginning of the turning of the cylinder, and to gradually surrender that plate to the cylinder, as the cylinder turns; and a pair of weights and levers, adapted to exert pressure on the journal-boxes of th metal roller, as it rolls; all substantially as described.

10. The combination of a cylinder, adapted to turn in one direction on its axis, and having a flexible plate affixed on its periphery; and a metal roller, adapted to turn in the other direction on its axis, at the same surface speed as the flexible plate; and with its periphery rolling upon the surface of that plate; and a weight attached to the rear border of the flexible plate, and subjecting to tension the forward movement thereof; and a pair of weights and levers, adapted to exert pressure on the journal-boxes of the metal roller, as it rolls; all substantially as described.

11. The combination of a cylinder, adapted to turn in one direction on its axis, and having a flexible plate affixed on its periphery; and a metal roller, adapted to turn in the other direction on its axis, at the same surface speed as the flexible plate; and with its periphery rolling upon the surface of that plate; and a table adjacent to the cylinder, and adapted to support the rear part of that plate, at the beginning of the turning of the cylinder, and to gradually surrender that plate to the cylinder, as the cylinder turns; all substantially as described.

12. The combination of a cylinder, adapted to turn in one direction on its axis, and having a flexible plate affixed on its periphery; and a metal roller, adapted to turn in the other direction on its axis, at the same surface speed as the flexible plate; and with its periphery rolling upon the surface of that plate; and a weight attached to the rear border of the flexible plate, and subjecting to tension the forward movement thereof; all substantially as described.

13. The combination of a carrier, having a curved carrying-surface adapted to move through an arc of a circle, and having a flexible printing-plate affixed on that surface; and a metal roller, adapted to revolve at the same surface speed as the movement of the printing-plate on the carrier, and with its periphery rolling upon the surface of that plate; and a weight attached to the rear border of the flexible plate, and subjecting to tension the forward movement thereof; all substantially as described.

14. The combination of a carrier, having a curved carrying-surface adapted to move through an arc of a circle, and having a flexible printing-plate affixed on that surface; and a metal roller, adapted to revolve at the same surface speed as the movement of the printing-plate on the carrier, and with its periphery rolling upon the surface of that plate; and a tension device attached to one border of the flexible plate, and subjecting it to tension, during the movement thereof; all substantially as described.

15. The combination of a carrier, having a curved carrying-surface adapted to move through an arc of a circle, and having a flexible inked printing-plate affixed on that surface; and a metal roller adapted to revolve at the same surface speed as the movement of the printing-plate on the carrier, and with its periphery rolling upon the inked surface of that plate, and having its circumference identical in measurement with the length of the inked surface of the printing-plate, so that one revolution of the roller upon the plate, will take ink from the entire surface of the plate, and so that the ink that taken will precisely encircle the roller; all substantially as described.

16. The combination of a carrier, having a curved carrying-surface adapted to move through the arc of a circle, and having a flexible inked intaglio gelatin printing-plate affixed on its surface; and a metal roller, adapted to revolve at the same surface speed as the movement of the printing-plate on the carrier, and with its periphery rolling upon the inked surface of that plate; and means for pressing the roller with great force upon the inked intaglio gelatin printing-plate, in order to transfer sufficient ink from the depressions in the plate to the periphery of the roller; all substantially as described.

810,435. **ROTARY EXPLOSIVE-ENGINE.** FRANK REYNOLDS, Syracuse, N. Y. Filed Nov. 2, 1903. Serial No. 179,461.

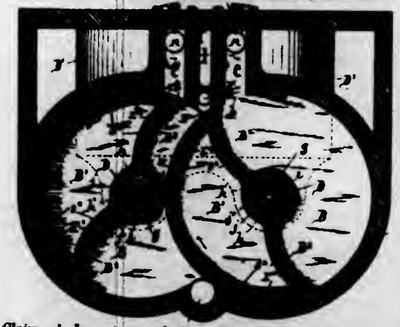

Claim.—1. In a rotary explosive-engine, the combination of a case comprising two intersecting cylindrical compartments and formed with two separate explosion-compartments each provided with a port affording communication with its respective cylindrical compartment, suitable igniters in the explosion-compartments, parallel rotary shafts extending axially through the said cylindrical compartments and geared to rotate in opposite directions, sectoral pistons in the latter compartments and secured to the respective shafts and opening and closing said ports alternately, compression-chambers communicating directly with the respective explosion-compartments, a carburetor communicating with each of said chambers alternately, means supplying the carburetor with air and gasolene, reciprocating pistons in the chambers and operated by the aforesaid shafts, and compressing the mixture in said chambers and forcing the compressed mixture into the explosion-compartments, check-valves in said chambers and explosion-compartments and opened by the suction and compression respectively of the mixture, means automatically closing said valves, and exhaust-ports in the said case, substantially as described.

2. In a rotary explosive-engine, the combination of a case comprising two intersecting cylindrical compartments and explosion-compartments each communicating with the upper portions of its respective cylindrical compartment, parallel shafts extending axially through the latter compartments and geared to rotate in opposite directions, sectoral pistons in the cylindrical compartments and secured to said shafts, suitably-controlled igniters in the explosion-compartments, a pair of upright chambers communicating at their upper portions directly with the respective explosion-compartments, a carburetor communicating with the upper portions of each of the chambers alternately, reciprocating pistons in said chambers operated by the aforesaid shafts and drawing the explosive mixture from the carburetor alternately into said chambers and compressing the mixture therein and subsequently forcing the compressed mixture from the chambers into the corresponding explosion-compartments, automatic check-valves between the latter compartments and compression-chambers and between the said chambers and carburetor, and exhaust-ports in the said case, substantially as described.

3. In a rotary explosive-engine, the combination of a case comprising two intersecting cylindrical compartments and explosion-compartments each communicating with its respective cylindrical compartment, parallel shafts extending axially through the latter compartments and geared to rotate in opposite directions, sectoral pistons in said cylindrical compartments and secured to said shafts, suitably-controlled electric sparking devices in said explosion-compartments, a pair of vertically-disposed cylindrical chambers communicating at their upper portions with the respective explosion-compartments, a carburetor communicating with the tops of said chambers, reciprocating pistons in said chambers, and operated by said shafts and alternately drawing the explosive mixture from the carburetor into the chambers and compressing the same therein and forcing the compressed mixture into the corresponding explosion-compartments, horizontally-movable check-valves in said compression-chambers opened by the suction-strokes of the latter pistons, and like valves in the explosion-compartments opened by the compression-strokes of the pistons, springs closing said valves, and means for exhausting the exploded mixture from the aforesaid cylindrical compartments substantially as described.

4. In a rotary explosive-engine, the combination of a case comprising two intersecting cylindrical compartments and explosion-compartments each communicating with its respective cylindrical compartment, parallel shafts extending axially through the latter compartments and geared to rotate in opposite directions, sectoral pistons in said cylindrical compartments and secured to said shafts, igniters in the explosion-compartments, means for alternately supplying the latter compartments with explosive mixture under compression, and suitable check-valves and exhaust-ports arranged substantially as and for the purpose set forth.

5. In a rotary explosive-engine, the combination of a case comprising two intersecting cylindrical compartments and explosion-compartments each communicating with its respective cylindrical compartment, parallel rotary shafts extending through said cylindrical compartments and geared to rotate in opposite directions, sectoral pistons secured to the respective shafts, igniters in the explosion-compartments, a pair of cylindrical chambers communicating at their upper ends with the respective explosion-compartments, a carburetor communicating with said chambers, a gasolene-chamber communicating with the carburetor, an air-inlet port and a mixture-discharge port in the carburetor, means for simultaneously opening and closing said ports, means controlling the feed of the gasolene to the carburetor, suitably-operated reciprocating pistons in the aforesaid cylindrical chambers, and drawing the explosive mixture from the carburetor alternately into said chambers and compressing the same therein and forcing the compressed mixture into said explosion-compartments, cranks and rods imparting movement from the aforesaid shafts to the latter pistons, check-valves in said explosion-compartments and compression-chambers, and exhaust-ports in said case substantially as described and shown.

6. In a rotary explosive-engine, the combination of a case comprising two intersecting cylindrical compartments and explosion-compartments each communicating with its respective cylindrical compartments, igniters in the explosion-compartment, parallel shafts extending axially through the cylindrical compartments and geared to rotate in opposite directions, sectoral pistons in said latter compartments and secured to said shafts, exhaust-ports in said case, a pair of cylindrical compression-chambers, pipes conducting the compressed mixture from the chambers to the respective explosion-compartments, check-valves opening and closing said pipes, a carbureter, an inlet-port and a mixture-outlet port in the carbureter, a gasolene-chamber communicating with the carbureter, a supply-pipe connected to the gasolene-chamber, means for simultaneously opening and closing the aforesaid ports in the carbureter, a pipe connected to the carbureter, branch pipes leading from the latter pipe to the tops of the respective compression-chambers, reciprocating pistons in the latter chambers and actuated by the aforesaid shafts, said pistons alternately drawing the explosive mixture from the carburetor into the respective chambers and compressing the mixture therein and forcing the compressed mixture into the said explosion-compartments, and check-valves in said latter compression-chambers opening and closing the aforesaid branch pipes, substantially as described.

7. In the herein-described rotary explosive-engine the combination of a case comprising two intersecting cylindrical compartments, parallel shafts extending axially through said compartments and geared to rotate in opposite directions, said shafts each being provided with a longitudinal bore and at one end with a transverse port, chambers surrounding the respective shafts at said ends and communicating with said bores, a pipe affording communication between the chambers, hollow sectoral pistons in said compartments and formed with hubs by which they are secured to said shafts, transverse ports in the shaft extending from the aforesaid bores, and the said hubs formed with radial passages communicating with said ports and affording communication between the bores of said shafts and interiors of the pistons, as and for the purposes set forth.

8. In the herein-described rotary explosive-engine, the combination with a case formed with two cylindrical compartments, suitably-journaled sectoral pistons in said compartments, grooves formed in the end faces of said pistons, packing in said grooves, and corrugated spring-metal strips disposed back of the packing and pressing the same outward for the purpose set forth.

9. In the herein-described rotary explosive-engine, the combination of a case comprising two intersecting cylindrical compartments main explosion-compartments each communicating with its respective cylindrical compartment and a supplemental explosion-compartment communicating alternately with said cylindrical compartments, oppositely-rotating sectoral pistons journaled in the latter compartments, exhaust-ports in the case, igniters in said explosion-compartments, a main carbureter supplying the main explosion-compartments with mixture, another carbureter supplying the supplemental explosion-compartment with mixture, and a compressed-air tank or chamber communicating with the latter carbureter substantially as and for the purpose set forth.

810,436. **PASTE-JAR BRUSH.** AUGUST N. RITZ, Milwaukee, Wis. Filed Nov. 14, 1904. Serial No. 233,670.

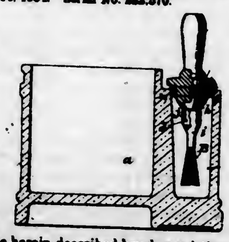

Claim.—The herein-described brush consisting of a handle having a conical central portion formed with an inclined groove and terminating at its lower end in a pintle, a compressible gasket fitting said groove, a tabular holder having the upper portion thereof engaged by said pintle to which it is fastened, and bristles secured in the lower portion of the holder.

810,437. **CAR-WHEEL.** GEORGE D. SPRINGER and FRANK LISTER, South Knoxville, Tenn. Filed June 16, 1905. Serial No. 265,623.

Claim.—1. In a device of the class described, a wheel having a hub, said hub having its interior bearing-surface chilled or hardened, and a bushing or sleeve having its exterior surface chilled or hardened and contacting with the chilled or hardened interior surface of the hub, the hub and bushing or sleeve being relatively rotatable.

2. In a device of the class described, a wheel having a hub provided with a cylindrical opening therethrough, the interior bearing-surface of said opening being chilled or hardened, and a cylindrical bushing fitted within the said wheel and having its exterior bearing-surface chilled or hardened, said hub and bushing being relatively rotatable.

3. In a device of the class described, a wheel having a hub provided with a cylindrical opening therethrough, the interior surface of said hub being chilled or hardened, a bushing fitted within the hub and having its exterior surface chilled or hardened, an axle and means for securing the bushing to the axle to provide chilled or hardened rotating bearing-surfaces between the wheel-hub and bushing.

4. The combination of a wheel having a hub provided with a cylindrical opening therethrough, the interior surface of said hub being chilled or hardened, a cylindrical bushing, having its exterior surface chilled or hardened, and seated within said hub, an axle and a pin for securing the bushing non-rotatably to the axle to afford chilled rotating bearing-surfaces between the interior surface of the hub and exterior surface of the bushing.

5. The combination of a wheel having a hub provided with an opening therethrough, the interior surface of said hub being chilled or hardened, an inturned portion at one end of the hub, a bushing having its exterior surface chilled or hardened and seated within the opening in the hub, an axle, means for securing the bushing to the axle, and a cap secured to the wheel and extending over the end of the bushing and axle.

810,438. **TRUCK-WHEEL.** FREDERICK W. STICKLE, Waterbury, Conn., assignor of one-half to Edward W. Beach, Waterbury, Conn. Filed Apr. 18, 1904. Renewed Aug. 24, 1905. Serial No. 275,686.

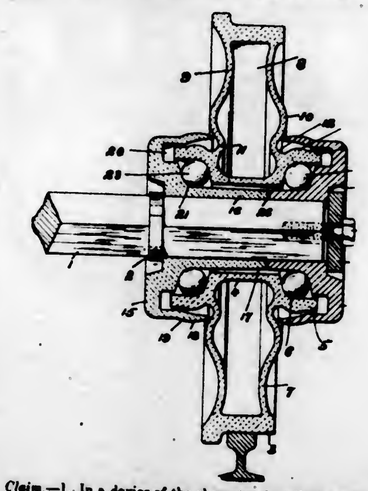

Claim.—1. In a device of the character described comprising a wheel having a web provided with outwardly-curved portions near the base thereof, a hub formed integral therewith, and bearing-collars formed integral with each end of the hub adjacent to the outwardly-curved portions of the web, non-rotatable cones mounted within the hub provided with recesses adapted to receive the ends of the bearing-collars and integral curved flanges formed on said cones adapted to overlie the bearing-collars and extending inwardly to the web to lie beneath the outwardly-curved portions thereof, and a plurality of antifriction-balls mounted between the collars and the cones, substantially as described.

2. In combination with a wheel having a hub formed integral therewith, bearing-collars provided with curved portions formed upon said hub, and a web connecting the hub with the rim provided with outwardly-curved portions overlying the bearing-collars, non-rotatable cones provided with extensions lying within the hub and having recesses formed therein to receive the ends of the bearing-collars, integral curved flanges formed thereon extending over said bearing-collars and lying adjacent to the base of the outwardly-curved portions of the web, and antifriction-balls carried between the cones and the bearing-collars, substantially as described.

3. In a device of the character set forth, a wheel comprising an integral hub web and rim, integral bearing-collars formed at each end of the hub having exterior enlarged rounded portions adjacent to the web, said web having outwardly-curved portions overlying said bearing-collars, cone members having portions extending within the hub, integral curved flanges formed upon said cone members projecting over the curved portions of the bearing-collars and lying adjacent to the web at the base of the outwardly-curved portions thereof, and antifriction-balls mounted between the cones and the bearing-collars, substantially as described.

810,439. **MINE-HARNESS.** JOSEPH P. STRATTON and ROBERT S. STRATTON, Sullivan, Ind. Filed Nov. 30, 1904. Serial No. 234,974.

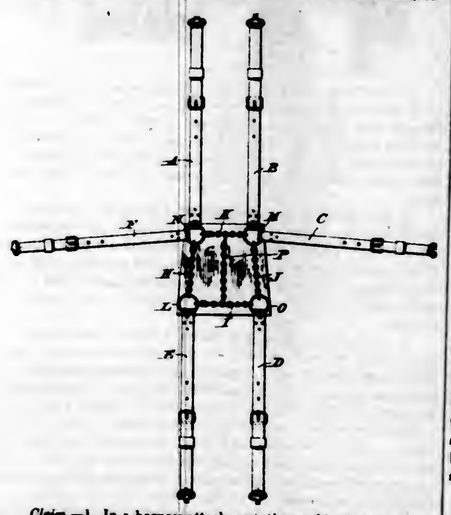

Claim.—1. In a harness attachment, the combination of a flexible substantially rectangular pad, a ring at each corner of the pad, chains connecting said rings and fastened to the pad, and straps fastened to the rings and adapted to be connected with the whiffletree or traces to hold the pad in position.

2. In a harness attachment, the combination of a flexible substantially rectangular pad, a ring secured to each corner thereof, longitudinal and transverse chains superimposed on said pad and connecting said rings, a longitudinal chain connecting the centers of said transverse chains, with straps fastened to said rings and connected with the whiffletree or traces whereby the latter are supported and the pad held in position.

810,440. **SASH LOCK AND FASTENER.** FRANCIS M. STRAUSS, Boulder, Colo., assignor of one-half to Henry W. Sheets, Boulder, Colo. Filed Aug. 11, 1905. Serial No. 273,743.

Claim.—1. A window-fastener comprising in combination with a rack member adapted to be secured to the window frame or casing, of a pair of semicircular peripherally-racked sections pivotally secured to the window-sash, said sections being adapted to be independently moved into engagement with the rack and interlock therewith, and when swung together forming a circular disk, said sections having semicircular cut-away portions forming a central aperture when the sections are swung together, substantially as shown and described.

2. A window-fastener comprising in combination with a rack member adapted to be secured to the window frame or casing, of a pair of semicircular peripherally-racked sections pivotally secured to the window-sash, said sections being adapted to be independently moved into engagement with the rack and interlock therewith, and when swung together forming a circular disk, said sections having semicircular cut-away portions forming a central aperture when the sections are swung together, said semicircular sections each having a handle substantially as shown and described.

3. A sash-fastener comprising in combination with a rack securable to the window-frame, of a lock member comprising a pair of semicircular rack-sections pivotally secured to the window-frame, each section adapted to be independently thrown into engagement with the rack and a resilient washer secured between said lock member and the window-sash to hold the sections in their adjusted position, substantially as shown and described.

4. A window-fastener comprising a rack member adapted to be secured to the window frame or casing, a lock member comprising a pair of semicircular peripherally-racked members pivotally secured to the window-sash, said members adapted to be independently moved into engagement with the rack and interlock therewith, said members when swung together forming a circular disk, said members having semicircular cut-away portions forming a central aperture when the sections are swung together, and a resilient washer secured between said lock member and the sash to hold the sections in their adjusted positions, substantially as shown and described.

5. A window-fastener comprising a rack member adapted to be secured to the window frame or casing, a lock member comprising a pair of semicircular peripherally-racked members pivotally secured to the window-sash, said members adapted to be independently moved into engagement with the rack and interlock therewith, said members when swung together forming a circular disk, said members having semicircular cut-away portions forming a central aperture when the sections are swung together, and handle members for said sections, and a resilient washer secured between said lock member and the sash to hold the sections in their adjusted positions, substantially as shown and described.

810,441. **FEED-WATER HEATER.** OMAN L. STUMP, Marion, Ohio, assignor of one-third to John Reidenbaugh and one-third to Edwin D. Packard, Marion, Ohio. Filed Aug. 19, 1904. Serial No. 221,348.

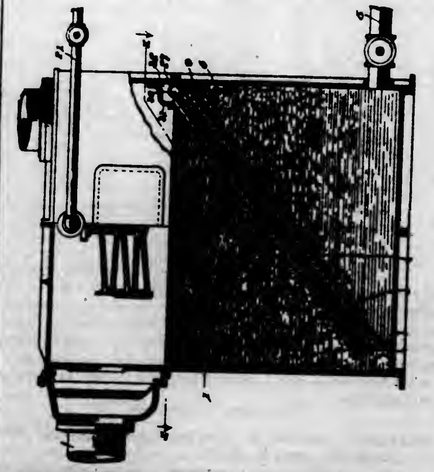

Claim.—1. A feed-water heater having a steam space or chamber above and a filtering-chamber below, and a filtering-bed extending in an inclined position across said filtering-chamber to make it self-cleaning, the water inlet and outlet being respectively on the upper and under sides of said filtering-bed, substantially as described.

2. A feed-water heater having a steam space or chamber above and a filtering-chamber below, and a filtering-bed extending across

the said filtering-chamber in an inclined position from about the water-line to the bottom of the chamber to make it self-cleaning, the water inlet and outlet being respectively on the upper and under sides of said bed, substantially as described.

2. A feed-water heater having a steam-chamber above and a filtering-chamber below, an inclined filtering-bed extending across the filtering-chamber between the water inlet and outlet, its inclination making it self-cleaning, and a sediment-chamber located at the foot of the filtering-bed and provided with a sediment outlet or blow-off, substantially as described

4. A feed-water heater having a steam-chamber above and a filtering-chamber below, and a filtering-bed extending in an inclined position across said filtering-chamber between the feed-water inlet and outlet, the inclination of the bed making the same self-cleaning by the discharge of the deposit from its upper surface by gravity, the heater being provided with a wash-water conduit located at the upper end of said filtering-bed, connected with a source of supply of water under pressure, and adapted to direct the same over the filtering-bed to wash therefrom any deposit not discharged therefrom in the normal operation of the structure, substantially as described.

5. A feed-water heater having a steam-chamber above and a filtering-chamber below, and a filtering-bed extending in an inclined position across said filtering-chamber between the feed-water inlet and outlet, the inclination of the bed making the same self-cleaning by the discharge of the deposit from its upper surface by gravity, the heater being provided with a wash-water conduit located at the upper end of said filtering-bed, connected with a source of supply of water under pressure, and adapted to direct the same over the filtering-bed to wash therefrom any deposit not discharged therefrom in the normal operation of the structure, said heater being also provided with a sediment-chamber located at the foot of the filtering-bed and having a sediment outlet or blow-off, substantially as described.

810,442. PROCESS OF TREATMENT OF VINASSES. CHARLES SUSSE, Paris, France. Original application filed Dec. 30, 1902, Serial No. 137,127. Divided and this application filed Jan. 6, 1904. Renewed Nov. 7, 1905. Serial No. 286,286.

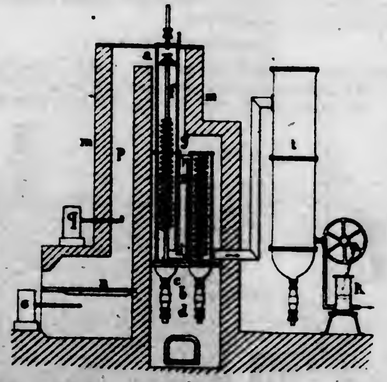

Claim.—The herein-described process of extracting from vinasses the glycerin contained therein in the form of a mixture of glycerin and water to be concentrated and for producing a residue containing all the ammonia which exudate in first rendering the vinasses acid and then causing it to flow in a vacuum along a surface heated to a maximum temperature of 205° centigrade and causing the steam produced to have a gyratory movement to free it of particles carried with it.

810,443. GAS-VALVE. JOHN SOMERSET, Johnstown, Pa. Filed June 30, 1905. Serial No. 267,772.

Claim.—1. The combination with a fixed water-cooled casing, of a plurality of passages having vertically-extended walls terminating above the lower portion of the casing, a water-sealed valve arranged within the casing and movable independently thereof, and a vertically-movable and revolvable carrying-spindle for said valve.

2. In a device of the class specified, a plate provided with a marginal flange, and a plurality of annular flanges within the marginal flange to form a water-containing vessel, a vertically-movable and revolubly-adjustable valve arranged above the plate, and having its lower edge sealed in the water, and a stationary water-sealed casing covering said valve.

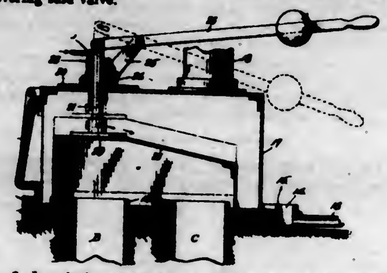

3. In a device of the class specified, a plate having a marginal flange and provided with a plurality of flanges within the marginal flange to form a water-containing vessel, a valve, the lower edge of which is sealed in the water, a vertically-movable and revolvable spindle supporting the valve, an operating member connected to said spindle, and a stationary water-sealed casing surrounding said valve.

4. In a device of the class specified, a stationary water-sealed casing inclosing a plurality of ports or passages, an open-bottom valve arranged within said casing and movable independently thereof for controlling communication between the passages, a spindle connected to said valve, a lever connected to the spindle, and a revolvable support on which said lever is mounted to permit turning of the valve.

5. In a device of the class described, a flanged base arranged to form a water seal and provided with a plurality of annular flanges forming the terminals of air or gas passages, a casing extending over all of such passages and provided with a bearing, a longitudinally-movable and revolvable spindle mounted in said bearing, a valve carried by the spindle and controlling communication between the passages, a collar surrounding the bearing, bearing-balls between the collar and bearing, a bracket projecting from the collar, a weighted operating-lever mounted on the bracket, and means for connecting the lever to the spindle.

6. In a device of the class described, the combination with a base-plate having a marginal flange to form a water-containing vessel and provided at one side with an overflow-compartment from which waste water is discharged, said plate being further provided with a plurality of annular flanges arranged at the terminals of gas or air passages, a casing inclosing all of said passages, a bearing in said casing, said bearing being in vertical alinement with one of the passages, a longitudinally-movable and revolvable spindle mounted in said bearing, a valve carried by the spindle and controlling communication between the passages, said spindle being hollow and provided at the top with a water-supply connection, and at the bottom with ports for the discharge of the water, a collar surrounding the bearing, and supported by bearing-balls, a bracket projecting from the collar, and a pivotally-mounted weighted lever fulcrumed to the bracket and connected to the upper portion of the spindle.

810,444. ELECTRIC DRILL. CHARLES W. THIEL, Milwaukee, Wis., assignor of one-third to Alexis D. Sussen and one-third to John T. Sussen, Milwaukee, Wis. Filed June 1, 1903. Serial No. 159,695.

Claim.—1. In an electric drill the combination with a suitable case or frame, of a motor-armature and a rotary drill-holder mounted coaxially therein, differential internal gears, fixed one to the drill-holder and the other to said case or frame, and a crank fixed to the armature-shaft and provided with a pinion which meshes with both of said internal gears, said drill-holder being rotatable and the case stationary relatively to each other and the armature-shaft, substantially as described.

2. In an electric drill the combination with a suitable case of a motor-armature and a rotary drill-holder mounted coaxially therein, differential internal gears fixed one to the drill-holder and the other to the case or frame, said drill-holder being rotatable and the case stationary relatively to each other and the armature-shaft, and a crank fixed to the armature-shaft and provided on one side thereof with a pinion which meshes with both internal gears and on the other side with a counterweight, whereby motion is transmitted from the armature-shaft to the drill-holder through said pinion and differential gears, substantially as described.

3. In an electric drill the combination of a case or frame composed of coaxial sections comprising a motor field-piece, a fixed internal gear and end bearing-pieces, a drill-holder provided with an internal gear having a different number of teeth from the fixed gear, and a motor-armature provided with an eccentrically-mounted pinion meshing with both internal gears, said drill-holder being rotatable and the case stationary relatively to each other and the armature-shaft, whereby motion is transmitted to the drill-holder from the motor through said pinion and differential gears, substantially as described.

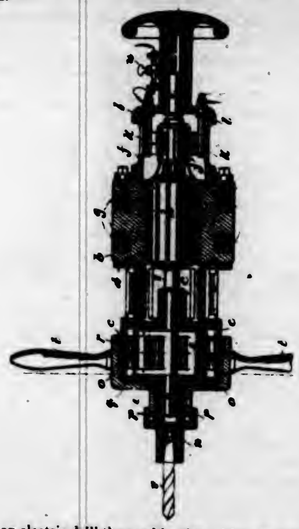

4. In an electric drill the combination with a case or frame provided with coaxial bearings, with a fixed internal gear and with a motor-field, of a motor-armature mounted in said bearings and provided with an eccentrically-mounted pinion meshing with said internal gear, and a rotary drill-holder having a central bearing on the armature-shaft, an end-thrust bearing on the case or frame and an internal gear meshing with said pinion, one of said gears having a different number of teeth from the other, and said drill-holder being rotatable and the case stationary relatively to each other and the armature-shaft, whereby motion is transmitted to the drill-holder from the motor-armature through said pinion and differential gears, substantially as described.

5. In an electric drill the combination of a case or frame composed of coaxial sections comprising a motor-field, a fixed internal gear and end pieces, of a motor-armature having bearings in said case or frame, and provided with an eccentrically-mounted pinion meshing with said gear, and a drill-holder having an end-thrust ball-bearing between it and said case or frame and an internal gear meshing with said pinion, one of said gears having a different number of teeth from the other, and said drill-holder being rotatable and the case stationary relatively to each other and the armature-shaft, whereby motion is transmitted to the drill-holder from the motor-armature through said pinion and differential gears, substantially as described.

810,445. HOISTING APPARATUS. CHARLES W. THIELEN, Brooklyn, N. Y., assignor to Edgewood Manufacturing Company, New York, N. Y. Filed Sept. 20, 1902. Serial No. 124,303.

Claim.—1. In combination, a hoisting or hauling rope containing two sections having different capacities for engagement, two members adapted for engagement with said hoisting or hauling rope parts, respectively, a slack-pulling rope and means whereby said slack-pulling rope is operatively connected with one of said members.

2. In combination, a hoisting or hauling rope containing two sections having different capacities for engagement, a slack-pulling rope and mechanism whereby said slack-pulling rope is operatively connected with one of said hoisting or hauling rope sections and disconnected from the other thereof.

3. In combination, a hoisting or hauling rope and a slack-pulling rope one of which contains two sections having different capacities for engagement and mechanism whereby said ropes are connected together during the passage of one of said sections and disconnected during the passage of the other thereof.

4. In a hoisting or conveying apparatus, a trackway, a load-carriage traveling thereon, two ropes, one of which is connected with said carriage and one of which contains two sections having different capacities for engagement, an actuating-drum for each rope, and mechanism whereby said ropes are operatively connected during the passage of one of said sections and disconnected during the passage of the other thereof.

5. In a hauling apparatus, in combination, a trackway, a carriage thereon, an outhaul-rope for said carriage, a hoisting or hauling rope composed of two sections having different capacities for engagement, a slack-pulling rope and mechanism supported by said carriage whereby said slack-pulling rope is operatively connected with said hoisting or hauling rope as one section thereof is passing and is operatively disconnected therefrom as the other section thereof is passing.

6. In a hauling apparatus, in combination, an elevated sheave-block, a hoisting or hauling rope mechanism on said block adapted to form a gripping engagement with one part of said hoisting or hauling rope and an ungripping engagement with another part thereof, an inhaul-drum connected with said rope and pay-out means acting upon said rope through said gripping connection.

7. In combination, a rope 16, its drum 3, a sheave driven by said rope, a sheave movable independently thereof and a rope and means whereby it is transferred from one of said sheaves to the other in the course of its movement.

8. In combination, an elevated sheave-block, a rope-drum, a hoisting or hauling rope having a part of one capacity for engagement of sufficient length to extend from said block substantially to the ground and having another part of different capacity for engagement connecting said first part with said drum and pay-out mechanism operatively engaging said first part only.

9. In a hoisting apparatus, in combination, two ropes, an actuator for each rope, one of said ropes containing two sections having different capacities for engaging and mechanism whereby said ropes are operatively connected during the passage of one of said sections and disconnected during the passage of the other.

10. In a hoisting apparatus, in combination, two ropes extending to a distant point, one of which contains two sections having different capacities for engagement and mechanism located at said distant point whereby said ropes are operatively connected during the passage of one of said sections and disconnected during the passage of the other thereof.

810,446. WIRED-GLASS-MAKING MACHINE. ROBERT A. B. WALSH, St. Louis, Mo., assignor to Mississippi Glass Company, St. Louis, Mo., a Corporation of Missouri. Filed July 23, 1905. Serial No. 270,776.

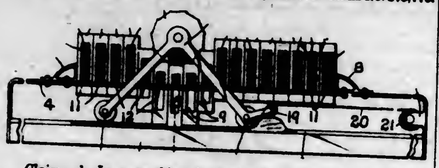

Claim.—1. In a machine for making wired glass, the combination with a base, of vertically-reciprocatory wire-positioning elements above the base, a roller movable over the wire-positioning elements and having offsetted portions for depressing them to position the wire; substantially as described.

2. In a machine for making wired glass, the combination with a base, of vertically-reciprocatory wire-positioning elements above the base, a roller movable over the wire-positioning elements and having offsetted portions for depressing them to position the wire, and means for rolling a sheet of glass; substantially as described.

3. In a machine for making wired glass, the combination with a base, of means for spreading the glass on the base, means for feeding wire on top of the glass, vertically-reciprocatory wire-impressing elements 6 above the base, and a roller movable over said wire-impressing elements for actuating them; substantially as described.

4. In a machine for making wired glass, the combination with a base, means for spreading the glass on the base, means for feeding wire on top of the glass, wire-impressing elements 6 resiliently supported above the base, and a roller 18 having projections for engaging the top edges of the elements 6 to actuate them; substantially as described.

810,447. MACHINE FOR MAKING WIRED PLATE-GLASS. ROBERT A. B. WALSH, St. Louis, Mo., assignor to Mississippi Glass Company, St. Louis, Mo., a Corporation of Missouri. Filed July 23, 1905. Serial No. 270,778.

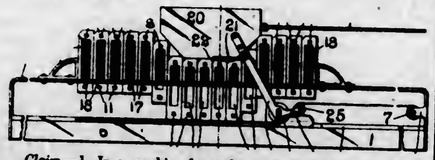

Claim.—1. In a machine for making wired glass, the combination with a base, of reciprocatory wire-positioning elements carried by said base and arranged in transverse series above the same, of plate-forming elements reciprocatingly mounted between alternate wire-positioning elements, said plate-forming elements being capable of actuation only after the wire-positioning elements have been actuated, and means for actuating both sets of elements; substantially as described.

2. In a machine for making wired glass, the combination with a base, of reciprocatory wire-positioning elements above the base, a reciprocatory means for finishing the sheet of glass by pressing the upper surface thereof, and a weight movable over said wire-positioning elements and said finishing means to actuate first the wire-positioning elements and then the finishing means; substantially as described.

3. In a machine for making wired glass, the combination with a bed or base, of a roller for forming a sheet or plate on the base, vertically-reciprocatory wire-positioning elements for forcing the wire in position with respect to the glass, reciprocatory elements for engaging the glass to smooth out any inequalities formed by the wire-positioning elements, and a weight movable over the reciprocatory wire-positioning elements and the elements for engaging the glass to smooth out any inequalities, the last-named elements being actuated after the actuation of the reciprocatory wire-positioning elements; substantially as described.

4. In a machine for making wired glass, the combination with a base, of means for forming a sheet of glass on said base, means for feeding a wire mesh on the upper surface of the glass, punchers for embedding the wire mesh below the upper surface of the glass, reciprocatory smoothing elements between which said punchers are positioned, and means for actuating the punchers and the smoothing elements; substantially as described.

5. In a machine for forming wired plate-glass, the combination with a base, of means for spreading the glass upon the base, wire-impressing punchers above the base, vertically-movable smoothing elements between which said punchers are positioned, and a sliding element 20 for actuating the punchers and the smoothing elements; substantially as described.

810,448. ELEVATOR OR JACK. GUSTAVE WESSELMANN and EDWARD H. OVERHOLT, Streator, Ill., assignors to The Wesselmann Manufacturing Company, Streator, Ill., a Corporation of Illinois. Filed Sept. 23, 1903. Serial No. 174,269.

Claim.—1. A device of the class described comprising a deck, oppositely-disposed sills supporting the same, a carriage positioned on the deck and normally flush with the top thereof, upwardly-extending ways on said sills at each end of the carriage, sheaves thereon, guides on the carriage positively engaging the ways, a longitudinally-slidable winch-shaft journaled on the sills and extending parallel with the carriage, a drum at each end thereof, chains connecting the ends of the carriage and said drums and leading over said sheaves on the ways, power-operated means adapted to rotate the winch-shaft and means operated by longitudinal movement of said winch-shaft acting to permit said carriage to descend by gravity.

2. In a device of the class described a carriage, a longitudinally-slidable winch-shaft journaled parallel therewith, a rotative gear at one end thereof, a positively-driven snail-gear engaging the same, a drum on each end of said winch-shaft, a clutch adapted to engage said gear at one end of said shaft, a friction-brake on said shaft positioned to engage when said clutch is released and means for shifting said shaft longitudinally.

3. The combination with a deck or platform, of a longitudinally-slidable winch-shaft journaled thereon, a power-shaft at an angle with the winch-shaft, an intermeshing gear and snail-gear on said shafts respectively, a drum on said winch-shaft, a clutch affording connection between said drum and gear, a friction-brake on said winch-shaft positioned to engage when the clutch is released, and a lever engaged on the winch-shaft and acting to shift the shaft longitudinally.

4. A hoisting device comprising a supporting-frame, a longitudinally-slidable winch-shaft journaled thereon, a gear-wheel thereon, a driving-shaft at an angle with the winch-shaft, a snail-gear on the driving-shaft intermeshing with said gear and acting to elevate and support the load.

5. In a hoisting device a frame, a longitudinally-slidable winch-shaft journaled thereon, a gear revoluble on the winch-shaft, a clutch adapted to engage the gear and operated by longitudinal movement of the winch-shaft, a power-shaft arranged at an angle with the winch-shaft, a spiral or snail gear thereon in positive engagement with said gear on the winch-shaft, sheaves located above the winch-shaft, flexible connections extending from said winch-shaft over said sheaves, a friction-brake on the winch-shaft positioned to engage when the clutch is out of engagement whereby a weight suspended on said sheaves may be elevated and supported on said winch-shaft and gears and means acting to shift said shaft longitudinally disconnecting said clutch and supporting the weight on said friction-brakes.

6. A hoisting device embracing a driving-shaft, a snail-gear thereon, a rotatable and longitudinally-slidable winch-shaft, a revoluble gear thereon intermeshing with said snail-gear, a drum rigidly secured on said winch-shaft, a clutch comprising complemental ends on said drum and the gear-hub, a friction-brake positioned to be out of engagement when the clutch is connected and in engagement when the clutch is out of engagement, sheaves positioned above the winch-shaft, chains connected with the drum and extending over the sheaves, an upwardly and rearwardly movable carriage connected with said chains and adapted to be hoisted thereby, means acting to shift said winch-shaft longitudinally, a coupling on the main driving-shaft and automatically-operated means for disconnecting said coupling at a predetermined point in the elevation of the carriage.

7. In a device of the class described a rotative, longitudinally-slidable winch-shaft, a drum on each end thereof, bolts extending through said drums and into the shaft and nuts engaged on said bolts between said drum and the shaft, and a hoisting-chain engaged on one of said bolts on each drum, a clutch operated by longitudinal movement of the shaft and adapted to connect, and to disconnect the driving means therefrom and a friction-brake comprising interfitting parts adapted for engagement when the clutch is out of engagement.

8. In a machine of the class described, a frame, a longitudinally-slidable winch-shaft journaled thereon, a lever fulcrumed on the frame and positively engaging the winch-shaft, a drum on each end of the winch-shaft, bolts extending through said drums and into the shaft, a nut on each bolt between the drum and shaft, a hoisting-chain connected with each drum by means of one of said bolts, driving means for said shaft, a clutch formed by interfitting parts of the driving means and one of said drums, a friction-brake comprising a part carried on the other drum and a part rigid on said frame whereby shifting said shaft in one direction actuates the winch and in the other direction engages the friction-brake.

9. In a machine of the class described a winch-shaft, one or more drums thereon, a revoluble gear adjacent one of said drums, said drum and the gear-hub together affording a clutch, a driving-shaft, a snail-gear on said driving-shaft positioned to mesh with the gear on the winch-shaft and means affording longitudinal movement of the winch-shaft acting to disconnect said clutch.

10. In a machine of the class described a winch-shaft, one or more drums thereon, a revoluble gear adjacent one of said drums, said drum and the gear-hub together affording a clutch, a driving-shaft, a snail-gear on said driving-shaft positioned to mesh with the gear on the winch-shaft and means affording longitudinal movement of the winch-shaft acting to disconnect said clutch, and a friction-brake comprising a cup-shaped friction-disk adapted to receive a conical friction-disk, one of said disks being secured upon the frame and the other rigidly secured to said shaft and positioned to engage when the shaft is shifted to disconnect the clutch.

11. In a hoisting-machine the combination with a winch-shaft and a drum thereon, of a gear on said winch-shaft, a driving-shaft, a snail-gear on the driving-shaft acting to engage said gear and adapted to operate the winch, said snail-gear acting to support the load at any desired point during the hoisting operation.

12. In a hoisting device a revoluble longitudinally-slidable winch-shaft, driving means thereon, a clutch controlling said driving means, a friction-brake comprising male and female friction members one of which is rigidly secured on the frame and the other of which is secured on said shaft and a lever pivoted on the frame and positively engaging said shaft and acting to shift the same longitudinally.

13. In a device of the class described the combination with a platform, of an A-frame positioned at each end thereof, a carriage positioned between the A-frames the ends thereof engaging one leg of each A-frame, and acting to direct the carriage rearwardly and upwardly, a winch-shaft, a sheave at the top of each A-frame, a chain connecting said winch and carriage over said sheave, a main driving-shaft, a coupling in said main driving-shaft, a lever positioned adjacent one of the A-frames and acting to shift the coupling at a predetermined point in the movement of the carriage and coacting friction members on said winch-shaft and frame adapted to control the lowering of the carriage.

14. In a wagon-dump, the combination with standards and an elevating-frame located therebetween, means for raising and lowering the elevating-frame, connected mechanism acting automatically and independent of said elevating-frame for interrupting the upward movement of said elevating-frame.

15. In a hoisting device the combination with standards and an elevating-frame located therebetween, means for raising and lowering the elevating-frame, a trip mechanism and means acting independent of the elevating-frame to engage said trip mechanism and automatically interrupt the upward movement of said elevating-frame.

16. In a hoisting device the combination with standards, of an elevating-frame located therebetween, an adjustable trip mechanism carried on said standards, and means acting independently of said elevating-frame to engage said trip mechanism and automatically interrupt the upward movement of said frame.

17. In a hoisting device the combination with standards provided with sheaves in the tops thereof, of a carriage thereon, a winch-shaft, a plurality of drums thereon, means for driving said winch-shaft, cables connected with said carriage and passing over said sheaves into engagement with said drums, an adjustable trip mechanism on said standards, connected with the driving means and means carried on one of said cables acting to automatically operate said trip-mechanism and interrupt the upward movement of the carriage.

18. In a hoisting device the combination with standards of a carriage adapted to travel thereon, means for operating said carriage, an adjustable trip mechanism carried on said standards and connected with the operating means, and adjustable means acting independently of the carriage to automatically interrupt the upward travel of said carriage.

19. In a hoisting device the combination with standards, of a carriage adapted to travel thereon, a hoisting-cable for said carriage, means for operating said cable, a trip mechanism on one of said standards comprising a sheave journaled on said standard, a chain trained over said sheave and connected at one end with the operating means, a plate engaged on the other end and pivoted on said standard and an adjustable bracket on said cable adapted to engage said plate and throw the operating means out of operative engagement.

20. In a hoisting device the combination with standards, of an elevating-platform, a winch-shaft, drums thereon, cables connecting said platform with said drums, driving means for said winch-shaft, a sheave journaled on said standards, a chain connected at one end with said driving means and trained over said sheave, an adjustable trigger-plate on the other end of said chain and a bracket adjustably engaged on one of said cables adapted to engage said trigger-plate and disconnect the driving means.

810,449. MANURE-SPREADER FEED MECHANISM. CHARLES W. WEST, Cedar Rapids, Iowa. Filed Jan. 3, 1905. Serial No. 239,315.

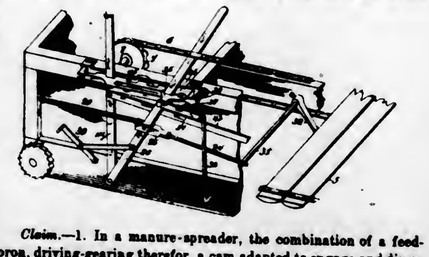

Claim.—1. In a manure-spreader, the combination of a feed-apron, driving-gearing therefor, a cam adapted to engage and disengage said gearing a shift-rod connecting with said cam, a lever connecting directly with said rod, a spring attached to the forward end of said rod and tending to pull it in a disengaging direction with respect to said gearing, a guide for the lever, a latch pivoted on said guide, and adapted to hold the lever in retracted position, a shaft with a crank linked to said latch and an arm depending in the path of the apron as it moves forwardly on the under side, whereby the feed-gearing is automatically disengaged as the apron reaches the extreme unloading position.

2. In a manure-spreader, the combination of a feed-apron, driving-gearing therefor, a hand-lever at one side of the machine a guide therefor, a latch mounted on the guide-casting to engage the lever when retracted mechanism for disengaging the feed-gearing, a rod connecting the same with the hand-lever, a tension-spring connecting with the front end of said rod, mechanism for disengaging the latch as the apron reaches the unloading limit of its movement, a shaft rotated by the movement of the apron through the medium of a sprocket-wheel, a ratchet on said shaft, a pawl to engage the same, and a link connecting said pawl with said hand-lever, substantially as and for the purpose set forth.

3. In a manure-spreader and combined with its feed-apron, a feed-drive therefor embracing a traction-wheel, a spur-gear connecting therewith, a spur and bevel gear engaging the same, a bevel-pinion engaging said bevel-gear, an inclined shaft for said pinion, a series of differential gears mounted on said shaft at right angles thereto, a shaft in line with the faces of said differential gears on one side, a pivoted bearing for one end thereof and a sliding bearing for the other end, a guide for said sliding bearing, a spur-pinion mounted to slide on the pivoted shaft, a lever and a connection for the same with said spur-pinion, a cam for raising and depressing the tilting shaft, a hand-lever connecting therewith, a worm at one end of said

shaft and a worm-gear engaging the same, an apron-driving sprocket and a shaft therefor taking said worm.

810,450. APPARATUS FOR TREATING AIR. FREDERICK WHITE, Boston, Mass., assignor to Regenerated Cold Air Company, Portland, Me., a Corporation of Maine. Filed Sept. 4, 1903. Renewed Nov. 11, 1905. Serial No. 268,708.

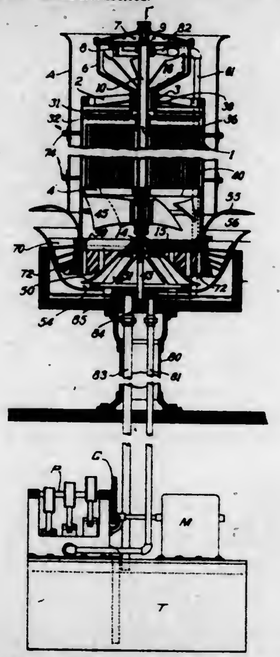

Claim.—1. The combination of a vented motor-wheel casing having interior antiswirling plates; a motor-wheel within said casing and fast on a shaft, the casing having a liquid-escape at its lowr end; means for directing a fluid-jet against said motor-wheel to rotate the same and said shaft; a liquid-distributer loose on said shaft but in frictional connection therewith, and thereby driven at a speed less than that of the motor-wheel, said distributer having a cup-like portion into which the liquid-discharge of the motor-casing discharges, and also having a plurality of radial, lengthwise-chambered distributing-arms provided with liquid-escapes on their under sides; a series of concentric cylinders mounted endwise at the liquid-escape side of said distributing-arms; means for keeping said cylinders in fixed position relatively to each other; an air-fan fixed on said shaft, the cylinders being between said distributing-arms and said fan; an open-ended main casing exterior to said cylinders; means for supporting said motor-casing in fixed relation to an end of said main casing; means for securing said cylinders in fixed relation to said main casing; the distributer, cylinders, and air-fan being within the main casing; an air-deflecting flange extending outwardly from the main casing; an air-deflector extending outwardly from the main casing and mounted at a distance from said flange, thereby forming a lateral air-escape from the main casing; a liquid-receiving pan below the main casing, said flange and deflector; a fluid-supply conduit to said jet; a fluid-escape conduit from said pan; a trap for said fluid-escape conduit; and a series of baffle-plates mounted in the air-escape and severally inclined crosswise to the blades of the air-fan.

2. The combination of a vented motor-wheel casing having interior antiswirling plates; a motor-wheel within said casing and fast on a shaft, the casing having a liquid-escape at its lower end; means for directing a fluid-jet against said motor-wheel to rotate the same and said shaft; a liquid-distributer loose on said shaft but in frictional connection therewith, and thereby driven at a speed less than that of the motor-wheel, said distributer having a cup-like portion into which the liquid-discharge of the motor-casing discharges, and also having a plurality of radial lengthwise-chambered distributing-arms provided with liquid-escapes on their under sides; a series of concentric cylinders mounted endwise at the liquid-escape side of said distributing-arms; means for keeping said cylinders in fixed position relatively to each other; an air-fan fixed on said shaft, the cylinders being between said distributing-arms and said fan; an open-ended main casing exterior to said cylinders; means for supporting said motor-casing in fixed relation to an end of said main casing; means for securing said cylinders in fixed relation to said main casing; the distributer, cylinders, and air-fan being within the main casing; an air-deflecting flange extending outwardly from the main casing; an air-deflector extending outwardly from the main casing and mounted a distance from said flange, thereby forming a lateral air-escape from the main casing; a liquid-receiving pan below the main casing, said flange and deflector; a fluid-supply conduit to said jet; a fluid-escape conduit from said pan; a trap for said fluid-escape conduit; and a series of baffle-plates mounted in the air-escape and severally inclined crosswise to the blades of the air-fan; and a tubular pedestal on which the pan is mounted and within which said two conduits are contained.

3. The combination of a vented motor-wheel casing having interior antiswirling plates; a motor-wheel within said casing and fast on a shaft, the casing having a liquid-escape at its lower end; means for directing a fluid-jet against said motor-wheel to rotate the same and said shaft; a liquid-distributer loose on said shaft but in frictional connection therewith, and thereby driven at a speed less than that of the motor-wheel, said distributer having a cup-like portion into which the liquid-discharge of the motor-casing discharges, and also having a plurality of radial, lengthwise-chambered distributing-arms provided with liquid-escapes on their under sides; a series of concentric cylinders mounted endwise at the liquid-escape side of said distributing-arms; means for keeping said cylinders in fixed position relatively to each other; an air-fan fixed on said shaft, the cylinders being between said distributing-arms and said fan; an open-ended main casing exterior to said cylinders; means for supporting said motor-casing in fixed relation to an end of said main casing; means for securing said cylinders in fixed relation to said main casing; the distributer, cylinders and air-fan being within the main casing; an air-deflecting flange extending outwardly from the main casing; an air-deflector extending outwardly from the main casing and mounted a distance from said flange, thereby forming a lateral air-escape from the main casing; a liquid-receiving pan below the main casing, said flange and deflector; a fluid-supply conduit to said jet; a fluid-escape conduit from said pan; a trap for said fluid-escape conduit; and a series of baffle-plates mounted in the air-escape and severally inclined crosswise to the blades of the air-fan; an open-ended, outer casing extending from said flange beyond the farther end of the main casing, and means for holding the outer casing in fixed relation to the main casing.

4. The combination of a vented motor-wheel casing having interior antiswirling plates; a motor-wheel within said casing and fast on a shaft, the casing having a liquid-escape at its lower end; means for directing a fluid-jet against said motor-wheel to rotate the same and said shaft; a liquid-distributer loose on said shaft but in frictional connection therewith, and thereby driven at a speed less than that of the motor-wheel, said distributer having a cup-like portion into which the liquid-discharge of the motor-casing discharges, and also having a plurality of radial, lengthwise-chambered distributing-arms provided with liquid-escapes on their under sides; a series of concentric cylinders mounted endwise at the liquid-escape side of said distributing-arms; means for keeping said cylinders in fixed position relatively to each other; an air-fan fixed on said shaft, the cylinders being between said distributing-arms and said fan; an open-ended main casing exterior to said cylinders; means for supporting said motor-casing in fixed relation to an end of said main casing; means for securing said cylinders in fixed relation to said main casing; the distributer, cylinders, and air-fan being within the main casing; an air-deflecting flange extending outwardly from the main casing; an air-deflector extending outwardly from the main casing and mounted a distance from said flange, thereby forming a lateral air-escape from the main casing; a liquid-receiving pan below the main casing, said flange and deflector; a fluid-supply conduit to said jet; a fluid-escape conduit from said pan; a trap for said fluid-escape conduit; and a series of baffle-plates mounted in the air-escape and severally inclined crosswise to the blades of the air-fan; a sound-deadener on that portion of the main casing which is opposed to the outer ends of the air-fan.

5. The combination of a vented motor-wheel casing having interior antiswirling plates; a motor-wheel within said casing and fast on a shaft, the casing having a liquid-escape at its lower end; means for directing a fluid-jet against said motor-wheel to rotate the same and said shaft; a fluid-distributer loose on said shaft but in frictional connection therewith, and thereby driven at a speed less than that of the motor-wheel, said distributer having a cup-like portion into which the liquid-discharge of the motor-casing discharges, and also having a plurality of radial, lengthwise-chambered distributing-arms provided with liquid-escapes on their under sides; a series of concentric cylinders mounted endwise at the liquid-escape side of said distributing-arms; means for keeping said cylinders in fixed position relatively to each other; an air-fan fixed on said shaft, the cylinders being between said distributing-arms and said fan; an open-ended main casing exterior to said cylinders; means for supporting said motor-casing in fixed relation to an end of said main casing; means for securing said cylinders in fixed relation to said main casing; the distributer, cylinders, and air-fan being within the main casing; an air-deflecting flange extending outwardly from the main casing; an air-deflector extending outwardly from the main casing and mounted a distance from said flange, thereby forming a lateral air-escape from the main casing; a liquid-receiving pan below the main casing, said flange and deflector; a fluid-supply conduit to said jet; a fluid-escape conduit from said pan; a trap for said fluid-escape conduit; and a series of baffle-plates mounted in the air-escape and severally inclined crosswise to the blades of the air-fan, the fluid-escape of the motor-casing extending into the cup-like portion of the distributer but out of contact therewith.

6. The combination of a vented motor-wheel, casing having interior antiswirling plates; a motor-wheel within said casing and fast on a shaft, the casing having a liquid-escape at its lower end; means for directing a fluid-jet against said motor-wheel to rotate the same and said shaft; a liquid-distributer loose on said shaft but in frictional connection therewith, and thereby driven at a speed less than that of the motor-wheel, said distributer having a cup-like portion into which the liquid-discharge of the motor-casing discharges, and also having a plurality of radial, lengthwise-chambered distributing-arms provided with liquid-escapes on their under sides; a series of concentric cylinders mounted endwise at the liquid-escape side of said distributing-arms; means for keeping said cylinders in fixed position relatively to each other; an air-fan fixed on said shaft, the cylinders being between said distributing-arms and said fan; an open-ended main casing exterior to said cylinders; means for supporting said motor-casing in fixed relation to an end of said main casing; means for securing said cylinders in fixed relation to said main casing; the distributer, cylinders, and air-fan being within the main casing; an air-deflecting flange extending outwardly from the main casing; an air-deflector extending outwardly from the main casing and mounted a distance from said flange, thereby forming a lateral air-escape from the main casing; a liquid-receiving pan below the main casing, said flange and deflector; a fluid-supply conduit to said jet; a fluid-escape conduit from said pan; a trap for said fluid-escape conduit; and a series of baffle-plates mounted in the air-escape and severally inclined crosswise to the blades of the air-fan; the main casing having a fluid-escape hole through its wall into the space between the opposed walls of the main casing and flange.

7. The combination of a vented motor-wheel casing having interior antiswirling plates; a motor-wheel within said casing and fast on a shaft, the casing having a liquid-escape at its lower end; means for directing a fluid-jet against said motor-wheel to rotate the same and said shaft; a liquid-distributer loose on said shaft but in frictional connection therewith, and thereby driven at a speed less than that of the motor-wheel, said distributer having a cup-like portion into which the liquid-discharge of the motor-casing discharges, and also having a plurality of radial, lengthwise-chambered distributing-arms provided with liquid-escapes on their under sides; a series of concentric cylinders mounted endwise on the liquid-escape side of said distributing-arms; means for keeping said cylinders in fixed position relatively to each other; an air-fan fixed on said shaft, the cylinders being between said distributing-arms and said fan; an open-ended main casing exterior to said cylinders; means for supporting said motor-casing in fixed relation to an end of said main casing; means for securing said cylinders in fixed relation to said main casing; the distributer, cylinders, and air-fan being within the main casing; an air-deflecting flange extending outwardly from the main casing; an air-deflector extending outwardly from the main casing and mounted a distance from said flange, thereby forming a lateral air-escape from the main casing; a liquid-receiving pan below the main casing, said flange and deflector; a fluid-supply conduit to said jet; a fluid-escape conduit from said pan; a trap for said fluid-escape conduit; and a series of baffle-plates mounted in the air-escape and severally inclined crosswise to the blades of the air-fan, the motor-wheel being near the upper end of the main casing; and the fan being a suction-fan whereby air is drawn into the upper end of the main casing and sucked downwardly over the films of fluid gravitating down the walls of the upright cylinders.

8. The combination of a fluid-supply tank; a motor; a pump driven thereby; a pan; a fluid-escape conduit from the pan into the tank; an air-treating apparatus mounted above said pan, and comprising a vented motor-wheel casing; a motor-wheel within said casing; a shaft on which the motor-wheel is fast; a fluid-distributer loose on said shaft but driven by frictional connection therewith and below the motor-wheel casing, the latter discharging into the distributer and the motor-wheel casing being provided with interior antiswirling plates; a series of open-ended, vertical sheet-metal cylinders fixed at distances apart; a main casing; an air-suction fan fast on said shaft and below the lower ends of said cylinders; a tubular standard on the upper end of which said pan is mounted; and a conduit from said pump to the motor-wheel casing and discharging pumped fluid against the wheel to rotate it, both conduits being within the tubular standard.

9. In air-cooling apparatus, a main casing; an open motor-wheel-casing-supporting frame on its upper end; a motor-casing on said frame; a motor-wheel within said casing; a shaft on which the motor-wheel is fixed; a fluid-distributer loose on said shaft but in frictional connection therewith; a collar fixed on said shaft, the distributer resting on said collar; an air-fan fast on said shaft; a series of vertically-mounted concentric cylinders of varying diameters between the fan and distributer; the motor-casing discharging into the distributer and the distributer having a plurality of radial, lengthwise-chambered arms closed at their outer ends, and formed with liquid-escapes on their under sides; the main casing extending below the fan and above the distributer; a pan below the main casing; a fluid-escape conduit from the pan; and a conduit entering the motor-casing and discharging against the motor-wheel therein.

10. In air-treating apparatus, the combination of a motor-wheel casing having an interior antiswirling plate and a fluid-discharge on its under side; a motor-wheel within said casing; a shaft on which the motor-wheel is fast; a fluid-distributer on said shaft, the motor-wheel casing discharging into the distributer; means for supporting the distributer on said shaft, the distributer being driven by frictional connection with the shaft and having a radial, lengthwise-chambered distributing-arm formed with a fluid-escape; a series of plates separated one from the other, and over and between which the fluid from the distributer flows; an air-fan fast on said shaft; the plates being between the distributer and the fan; a pan below the fan; an air-escape passage above the pan; and means in the air-escape passage to prevent outward spattering of fluid while permitting the escape of air through said passage.

11. In air-treating apparatus, the combination of a shaft; a motor-wheel fixed thereon; an air-fan fixed thereon; a fluid-receiving distributer loose thereon but in frictional connection therewith and thereby rotatable at a speed less than that of the motor and fan; a series of separated non-absorbent plates between the distributer and fan, and over and between which the distributer distributes; an open-ended main casing exterior to the distributer, the plates and the fan; means for rotating the motor; and means of supplying fluid to the distributer.

12. In air-treating apparatus, the combination of a shaft; a motor-wheel fast on it; an air-fan fast on it; a fluid-distributer mounted on it in frictional connection therewith and having lengthwise-chambered, radial arms, closed at their outer ends, and the arms each having a plurality of fluid-escapes between their outer and inner ends; and a series of plates spaced apart and mounted between the radial arms and air-fan; means for rotating the motor-wheel; and means for supplying the distributer with fluid.

13. The combination of a rotatable shaft; an air-fan fast thereon, and driven thereby; a liquid-distributer loose on the shaft, and means for supplying liquid to said distributer.

14. The combination of a rotatable shaft; an air-fan fast on the shaft, and thereby driven; a fluid-distributer loose on the shaft and comprising a central liquid-receiving cap and a plurality of lengthwise-chambered radial distributing-tubes; means for supplying fluid to the distributer; and a series of concentric cylinders mounted endwise below the distributer and receiving on their surfaces the fluid from the distributer.

15. The combination of a vented water-wheel casing having an outlet; a water-wheel shaft; a water-wheel fast on the shaft; a conduit for the wheel-driving current and entering the casing in operative proximity to the water-wheel; a liquid-distributer loose on said shaft, the water-wheel casing discharging into said distributer; and a series of concentric, endwise-mounted cylinders below said dis-

tributer, the distributer discharging thereon; and an air-fan fast on the shaft.

16. The combination of the motor-wheel casing having interior, antiswirling plates; a motor-wheel within said casing; an air-fan; means for exposing fluid from said casing to a current of air; a frictionally-driven fluid-distributer for distributing fluid from said casing on said exposing means; a shaft on which the motor-wheel and fan are fixed; the casing discharging the motor-driving fluid to the distributing means which distribute it over the exposing means; and the fan causing air to travel over the fluid on the exposing means.

17. The combination of a vented water-wheel casing having an outlet; a water-wheel shaft; a water-wheel fast on the shaft; a conduit for the wheel-driving current and entering the casing in operative proximity to the water-wheel; a liquid-distributer loose on said shaft, the water-wheel casing discharging into said distributer; and a series of concentric, endwise-mounted cylinders below said distributer, the distributer discharging thereon; and an air-fan fast on the shaft, the fan expelling air from the apparatus and having laterally-inclined vanes; a series of baffle-plates opposite the outer ends of the vanes and set crosswise to the vanes.

18. The combination of a motor-wheel and its casing with a rotatable shaft and a water-distributer on the shaft, the distributer traveling at a speed less than that of the shaft.

19. The combination of the outer casing with a troughed support therefor having fluid-discharge outlets; a shaft; an air-fan fast on the shaft; plates within the casing on which fluid is exposed; means for supplying fluid to the plates; and means for rotating the shaft.

20. The combination of a shaft; means for rotating it; an air-fan fast on the shaft; a casing within which the shaft and fan are contained; means within the casing for exposing fluid to air caused by the fan to travel downwardly through the casing; a fluid-distributer frictionally driven from said shaft; a pan below the casing, leaving an air-escape space between the lower end of the casing and the upper edge of the pan for the outward escape of air from the casing; a cone-like support within the pan and above the upper portion of which the casing is supported, the walls of the support inclining downwardly and outwardly; an air-deflector extending upwardly from within and outwardly of the pan; an upwardly and outwardly extending flange at the lower end of the casing, the air-escape passage being between said deflector and flange; and means in said passage to permit the exit of air through and to prevent fluid from spattering outwardly therethrough.

21. The combination of the outer casing; the troughed support therefor; an air-suction fan within the casing and near the troughed support; the air-deflecting flanges one above the other at a distance apart; a series of baffle-plates arranged edgewise in said space between said flanges; and a series of downwardly-extending fluid-escape tubes opening out of said trough.

810,451. APPARATUS FOR TREATING AIR. FREDERICK WHITE, South Boston, Mass., assignor to Regenerated Cold Air Company, Kittery, Me., a Corporation of Maine. Filed Aug. 8, 1904. Renewed Nov. 11, 1905. Serial No. 286,791.

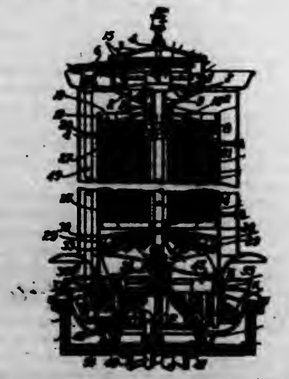

Claim.—1. The combination of a motor-wheel casing; a motor-wheel fast on its shaft; an air-fan fast on said shaft; between said wheel and fan, a series of concentric, open-ended cylinders spaced apart; a rotatable liquid-distributer which rotates slower than the fan, is opposed to the cylinder ends, and supported by a stationary part of the machine, the casing being vented.

2. The combination of a motor-wheel casing; a motor-wheel fast on its shaft; an air-fan fast on said shaft; between said wheel and fan, a series of concentric, open-ended cylinders spaced apart; a rotatable liquid-distributer which rotates slower than the fan, is opposed to the cylinder ends, and supported by a stationary part of the machine; a pair of annular air-deflectors spaced apart; and an annulus of separated baffle-plates in said space.

3. The combination of a motor-wheel casing; a motor-wheel fast on its shaft; an air-fan fast on said shaft; between said wheel and fan, a series of concentric, open-ended cylinders spaced apart; a rotatable liquid-distributer which rotates slower than the fan, is opposed to the cylinder ends and supported by a stationary part of the machine; a pair of annular air-deflectors spaced apart; an annulus of separated baffle-plates in said space; and an annulus of separated baffle-plates between the cylinders and air-fan.

4. The combination of a motor-wheel casing; a motor-wheel fast on its shaft; an air-fan fast on said shaft; between said wheel and fan, a series of concentric, open-ended cylinders spaced apart; a rotatable liquid-distributer which rotates slower than the fan, is opposed to the cylinder ends and supported by a stationary part of the machine; a pair of annular air-deflectors spaced apart; an annulus of separated baffle-plates in said space; a shell inclosing said cylinders; a troughed annular frame into which the shell discharges; and a series of discharge-tubes depending from the trough and extending below the baffle-plates which are inclined crosswise to the inclination of the vanes of the air-fan.

5. The combination with a motor-wheel casing; a motor-wheel; its shaft; an air-fan fast on the shaft; a series of concentric open-ended cylinders; annular air-deflectors spaced apart; a supply-pipe and an escape-pipe, all substantially such as described, of means for preventing the escape of water through the space between the air-deflectors; and means for distributing water over said cylinders in a series of separated streams.

6. In apparatus substantially such as described, the combination of a motor-wheel casing; a regulable liquid-jet nozzle therefor; an air-fan fast on a shaft on which the motor-wheel is fast; and a liquid-distributer which has arms provided with regulable vanes against which liquid from said wheel strikes, and also has troughed arms with liquid-escape ports.

7. In apparatus substantially such as described, the combination of a pan; an upwardly and outwardly extending air-deflector therein having such shape as to form a dead-air space at the lower corner of the pan.

810,452. NON-REFILLABLE BOTTLE. CHARLES L. B. WOLF, New York, N. Y. Filed Feb. 1, 1905. Serial No. 243,686.

Claim.—1. The combination with the neck of a receptacle having a vertical annulus forming a valve-seat, of a cylindrical plug located in said neck and provided with baffle-passages, and a valve comprising a circular disk adapted to rest on said seat and having legs engaging and slidable against said annulus, substantially as described.

2. The combination with the neck of a receptacle having a vertical annulus forming a valve-seat, of a cylindrical plug located in said neck and provided with baffle-passages, a valve comprising a circular disk adapted to rest on said seat and having legs engaging and slidable against said annulus and provided with laterally-projecting feet engaging and slidable against the interior surface of the plug, substantially as described.

3. The combination with the neck of a receptacle having a ver-

tical annulus forming a valve-seat, of a cylindrical plug located in said neck and provided with baffle-passages, a valve comprising a circular disk adapted to rest on said seat and having laterally-extending projections and downwardly-extending legs engaging and slidable against said annulus and provided with laterally-extending feet, said feet and projections engaging and slidable against the interior surface of the plug, substantially as described.

4. The combination with the neck of a receptacle having a vertical annulus forming a valve-seat, of a cylindrical plug located in said neck and provided with baffle-passages, a valve comprising a circular disk adapted to rest on said seat and having legs engaging and slidable against said annulus and a gravity-sphere above said valve, substantially as described.

5. The combination with the neck of a receptacle having a vertical annulus forming a valve-seat, of a cylindrical plug located in said neck and provided with baffle-passages, a valve comprising a circular disk adapted to rest on said seat and having legs engaging and slidable against said annulus, and provided with laterally-projecting feet engaging and slidable against the interior surface of the plug, and a gravity-sphere above said valve, substantially as described.

6. The combination with the neck of a receptacle having a vertical annulus forming a valve-seat, of a cylindrical plug located in said neck and provided with baffle-passages, a valve comprising a circular disk adapted to rest on said seat and having laterally-extending projections and downwardly-extending legs engaging and slidable against said annulus and provided with laterally-extending feet, said feet and projections engaging and slidable against the interior surface of the plug, and a gravity-sphere above said valve, substantially as described.

7. The combination with the neck of a receptacle having a vertical annulus forming a valve-seat, of a cylindrical plug located in said neck and provided with baffle-passages and a circular series of converging lugs, and a valve comprising a circular disk adapted to rest on said seat and having legs engaging and slidable against said annulus, substantially as described.

8. The combination with the neck of a receptacle having a vertical annulus forming a valve-seat, of a cylindrical plug located in said neck and provided with baffle-passages and a circular series of converging lugs, a valve comprising a circular disk adapted to rest on said seat and having legs engaging and slidable against said annulus, and provided with laterally-projecting feet engaging and slidable against the interior surface of the plug, substantially as described.

9. The combination with the neck of a receptacle having a vertical annulus forming a valve-seat, of a cylindrical plug located in said neck and provided with baffle-passages and a circular series of converging lugs, a valve comprising a circular disk adapted to rest on said seat and having laterally-extending projections and downwardly-extending legs engaging and slidable against said annulus and provided with laterally-extending feet, said feet and projections engaging and slidable against the interior surface of the plug, substantially as described.

10. The combination with the neck of a receptacle having a vertical annulus forming a valve-seat, of a cylindrical plug located in said neck and provided with baffle-passages and a circular series of converging lugs, a valve comprising a circular disk adapted to rest on said seat and having legs engaging and slidable against said annulus, and a gravity-sphere above said valve, substantially as described.

11. The combination with the neck of a receptacle having a vertical annulus forming a valve-seat, of a cylindrical plug located in said neck and provided with baffle-passages and a circular series of converging lugs, a valve comprising a circular disk adapted to rest on said seat and having legs engaging and slidable against said annulus, and provided with laterally-projecting feet engaging and slidable against the interior surface of the plug and a gravity-sphere above said valve, substantially as described.

12. The combination with the neck of a receptacle having a vertical annulus forming a valve-seat, of a cylindrical plug located in said neck and provided with baffle-passages and a circular series of converging lugs, a valve comprising a circular disk adapted to rest on said seat and having laterally-extending projections and downwardly-extending legs engaging and slidable against said annulus and provided with laterally-extending feet, said feet and projections engaging and slidable against the interior surface of the plug, and a gravity-sphere above said valve, substantially as described.

13. The combination with the neck of a receptacle having a vertical annulus forming a valve-seat, of a cylindrical plug located in said neck and provided with baffle-passages and a circular series of converging lugs, a valve comprising a circular disk adapted to rest on said seat and having an upwardly-projecting rounded protuberance and downwardly-extending legs engaging and slidable against said annulus, and a gravity-sphere above said valve, substantially as described.

14. The combination with the neck of a receptacle having a vertical annulus forming a valve-seat, of a cylindrical plug located in said neck and provided with baffle-passages and a circular series of converging lugs, a valve comprising a circular disk adapted to rest on said seat and having an upwardly-projecting rounded protuberance and downwardly-extending legs engaging and slidable against said annulus and provided with laterally-projecting feet engaging and slidable against the interior surface of the plug and a gravity-sphere above said valve, substantially as described.

15. The combination with the neck of a receptacle having a vertical annulus forming a valve-seat, of a cylindrical plug located in said neck and provided with baffle-passages and a circular series of converging lugs, a valve comprising a circular disk adapted to rest on said seat and having an upwardly-projecting rounded protuberance, laterally-extending projections and downwardly-extending legs engaging and slidable against said annulus and provided with laterally-extending feet, said feet and projections slidable against the interior surface of the plug and a gravity-sphere above said valve, substantially as described.

16. The combination with the neck of a receptacle having a vertical annulus forming a valve-seat, of a cylindrical plug located in said neck and provided with baffle-passages, means for locking the plug within the neck and a valve comprising a circular disk adapted to rest on said seat and having legs engaging and slidable against said annulus, substantially as described.

17. The combination with the neck of a receptacle having a vertical annulus forming a valve-seat, of a cylindrical plug located in said neck and provided with baffle-passages, means for locking the plug within the neck, a valve comprising a circular disk adapted to rest on said seat and having legs engaging and slidable against said annulus and provided with laterally-projecting feet engaging and slidable against the interior surface of the plug, substantially as described.

18. The combination with the neck of a receptacle having a vertical annulus forming a valve-seat, of a cylindrical plug located in said neck and provided with baffle-passages, means for locking the plug within the neck, a valve comprising a circular disk adapted to rest on said seat and having laterally-extending projections and downwardly-extending legs engaging and slidable against said annulus and provided with laterally-extending feet, said feet and projections engaging and slidable against the interior surface of the plug, substantially as described.

19. The combination with the neck of a receptacle having a vertical annulus forming a valve-seat, of a cylindrical plug located in said neck and provided with baffle-passages and a circular series of converging lugs, means for locking the plug within the neck, a valve comprising a circular disk adapted to rest on said seat and having legs engaging and slidable against said annulus, and a gravity-sphere above said valve, substantially as described.

20. The combination with the neck of a receptacle having a vertical annulus forming a valve-seat, of a cylindrical plug located in said neck and provided with baffle-passages and a circular series of converging lugs, means for locking the plug within the neck, a valve comprising a circular disk adapted to rest on said seat and having legs engaging and slidable against said annulus and provided with laterally-projecting feet engaging and slidable against the interior surface of the plug and a gravity-sphere above said valve, substantially as described.

21. The combination with the neck of a receptacle having a vertical annulus forming a valve-seat, of a cylindrical plug located in said neck and provided with baffle-passages and a circular series of converging lugs, means for locking the plug within the neck, a valve comprising a circular disk adapted to rest on said seat and having laterally-extending projections and downwardly-extending legs engaging and slidable against said annulus and provided with laterally-extending feet, said feet and projections engaging and slidable against the interior surface of the plug, and a gravity-sphere above said valve, substantially as described.

22. The combination with a receptacle-neck containing a seating, of a valve movably guided relative to said seating, a plug within the neck and embodying a circular series of converging lugs, and a partition contributing to form a baffling-passage and having a stop located centrally with regard to the inner ends of the lugs, a gravity-

sphere between said lugs and valve, whereby when the neck is in a vertical position, the sphere will coact with the lugs at one side and with the valve, to lock the latter in a closed position upon the seating, and upon the tilting of the neck, the sphere will assume a clearance position at the inner ends of the lugs and limited by the stop to permit the uncoating of the valve and discharge of the liquid.

23. The combination with a receptacle-neck containing a seating and having an inner guiding-surface contiguous to said seating, of a valve having vertical means guided on the seating, said valve also having upper and lower lateral projections coacting with said inner surface to guide the valve, and an upper portion within the neck and containing baffling-passages.

810,453. LAND-ROLLER. JOHN H. WOLF, Cottagegrove, Wis. Filed Mar. 28, 1905. Serial No. 252,555.

Claim.—1. In an implement of the class described, the combination of a frame, supporting members pivoted at the front ends thereof to the frame, rollers carried by the rear ends of the supporting-bars aforesaid, bars arranged across the frame, springs between said bars and the supporting members of the rollers, and levers pivoted at their front ends to the frame and having adjustable connection with the bars aforesaid.

2. In an implement of the class described, the combination of a frame, supporting members pivoted at the front ends thereof to the frame, rollers carried by the rear ends of the supporting-bars aforesaid, bars arranged across the frame, springs between said bars and the supporting members of the rollers, levers pivoted at their front ends to the frame and having adjustable connection at their rear ends with the frame, and connecting means between the levers and the bars aforesaid.

3. In a implement of the class described, the combination of a frame, a pintle-bar mounted in the frame, supporting members pivoted at their front ends to the pintle-bar, rollers at the rear ends of the supporting members, adjusting-levers pivoted to the pintle-bars and arranged at opposite sides of the frame, connecting means between said adjusting-levers and the supporting members of the rollers, and means for adjusting the adjusting-levers.

4. In an implement of the class described, the combination of a frame, a pintle-bar mounted in the front portion of the frame, supporting members pivoted at their front ends to the pintle-bar and comprising spaced bars, blocks connecting the bars of each supporting member at a point between the ends thereof, rollers journaled between the spaced bars of each supporting member at the rear portions of the latter, adjusting-levers pivoted at their front ends to the pintle-bars and having adjustable connection at their rear ends with the frame, transverse bars extended across the frame and adjustably connected at the ends of the adjusting-levers aforesaid, and springs interposed between the transverse bars and the blocks of the supporting members of the rollers.

810,454. PROCESS OF MAKING STANNIC CHLORID. CHARLES B. ACKER, Niagara Falls, N. Y., assignor to Acker Process Company, a Corporation of New Jersey. Filed June 8, 1903. Renewed June 14, 1905. Serial No. 265,527.

Claim.—1. The method of making stannic chlorid, which consists in bringing metallic tin into contact with a solvent containing chlorin, thereby producing a solution containing stannous chlorid, and subjecting said solution to the action of a gaseous mixture containing free chlorin and a diluent, the diluent being in sufficient proportion to prevent undue rise of temperature, substantially as described.

2. The method of making stannic chlorid which consists in bringing metallic tin into contact with a solvent containing chlorin, thereby producing a solution containing stannous chlorid, and subjecting said solution to the action of a gaseous mixture containing free chlorin, hydrochloric acid and a diluent, the diluent being in sufficient proportion to prevent undue rise of temperature, substantially as described.

3. The method of making stannic chlorid which consists in bringing metallic tin into contact with a solvent containing chlorin, thereby producing a solution containing stannous chlorid, and subjecting said solution to the action of a gaseous mixture containing free chlorin, hydrochloric acid, and atmospheric air, the air being in sufficient proportion to prevent undue rise of temperature, substantially as described.

4. The method of making solutions containing stannic chlorid which consists in bringing metallic tin into contact with a solvent containing chlorin, thereby producing a solution of stannous chlorid, subjecting said solution to the action of free chlorin to convert it into stannic chlorid, bringing said stannic chlorid into contact with further quantities of tin, and again converting it into stannic chlorid, and repeating the operation until the desired concentration is reached, substantially as described.

5. The method of making highly-concentrated solutions containing stannic chlorid which consists in bringing metallic tin into contact with a solvent containing chlorin, thereby producing a solution of stannous chlorid, subjecting said solution to the action of free chlorin to convert it into stannic chlorid, bringing said stannic chlorid into contact with further quantities of tin, and again converting it into stannic chlorid, and repeating the operation until the concentration exceeds 1.800 specific gravity, substantially as described.

6. The method of making solutions containing stannic chlorid which consists in bringing metallic tin into contact with a solvent containing chlorin, thereby producing a solution of stannous chlorid, subjecting said solution to the action of a gaseous mixture containing free chlorin and hydrochloric acid to convert it into stannic chlorid, bringing said stannic chlorid into contact with further quantities of tin, and again converting it into stannic chlorid, and repeating the operation until the desired concentration is reached, substantially as described.

7. The method of making solutions containing stannic chlorid which consists in bringing metallic tin into contact with a solvent containing chlorin, thereby producing a solution of stannous chlorid, subjecting said solution to the action of a gaseous mixture containing free chlorin hydrochloric acid and oxygen to convert it into stannic chlorid, bringing said stannic chlorid into contact with further quantities of tin, and again converting it into stannic chlorid, and repeating the operation until the desired concentration is reached, substantially as described.

8. The method of making solutions containing stannic chlorid which consists in bringing metallic tin into contact with a solvent containing chlorin, thereby producing a solution of stannous chlorid, subjecting said solution to the action of a gaseous mixture containing free chlorin, hydrochloric acid and atmospheric air to convert it into stannic chlorid, bringing said stannic chlorid into contact with further quantities of tin, and again converting it into stannic chlorid, and repeating the operation until the desired concentration is reached, substantially as described.

9. The herein-described method of making stannic chlorid, which consists in subjecting a solution containing stannous chlorid to the action of a gaseous mixture containing free chlorin and a diluent, the diluent being in sufficient proportion to prevent undue rise of temperature, substantially as described.

10. The herein-described method of making stannic chlorid, which consists in subjecting a solution containing stannous chlorid to the action of a gaseous mixture containing free chlorin, hydrochloric acid and a diluent, the diluent being in sufficient proportion to prevent undue rise of temperature, substantially as described.

11. The herein-described method of making stannic chlorid, which consists in subjecting a solution containing stannous chlorid to the action of a gaseous mixture containing free chlorin, hydrochloric acid and atmospheric air, substantially as described.

12. The method of making stannic chlorid, which consists in subjecting a solution containing stannous chlorid to the action of a fluid containing free chlorin, thereby producing a solution containing stannic chlorid, bringing said stannic-chlorid solution into contact with metallic tin to form stannous chlorid, and subjecting said stannous-chlorid solution to the action of a fluid containing free chlorin, substantially as described.

13. The method of making stannic chlorid, which consists in subjecting a solution containing stannous chlorid to the action of a fluid containing free chlorin, thereby producing a solution containing stannic chlorid, bringing said stannic-chlorid solution into contact with metallic tin to form stannous chlorid, subjecting said stannous-chlorid solution to the action of a fluid containing free chlorin, and repeating the operation until the desired concentration is reached, substantially as described.

14. The method of making stannic chlorid, which consists in subjecting a solution containing stannous chlorid to the action of a fluid containing free chlorin, thereby producing a solution containing stannic chlorid, bringing said stannic-chlorid solution into contact with metallic tin to form stannous chlorid, subjecting said stannous-chlorid solution to the action of a fluid containing free chlorin, and repeating the operation until the concentration exceeds 1.8 specific gravity, substantially as described.

15. The method of making stannic chlorid, which consists in subjecting a solution containing stannic chlorid to the action of metallic tin, thereby forming stannous chlorid, and subjecting said stannous-chlorid solution to the action of a fluid containing free chlorin to produce a solution containing an increased amount of stannic chlorid, substantially as described.

16. The herein-described method of producing solutions containing stannic chlorid, which consists in subjecting a solution capable of dissolving tin as chlorid to the successive action of metallic tin and a fluid containing free chlorin, substantially as described.

17. The herein-described method of producing solutions containing chlorid of tin, which consists in subjecting a solution containing a compound of chlorin to the alternate action of metallic tin and a fluid containing free chlorin, substantially as described.

810,455. PROCESS OF MAKING STANNOUS CHLORID. CHARLES B. ACKER, Niagara Falls, N. Y., assignor to Acker Process Company, a Corporation of New Jersey. Filed June 8, 1903. Renewed June 14, 1905. Serial No. 265,526.

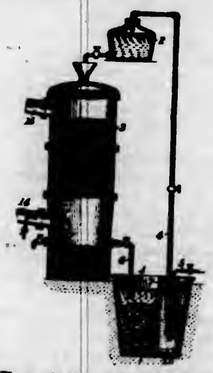

Claim.—1. The method of making stannous chlorid which consists in bringing metallic tin into contact with a solvent containing chlorin, thereby producing a solution containing stannous chlorid, subjecting said solution to the action of a gaseous mixture containing free chlorin, hydrochloric acid, and atmospheric air, substantially as described.

2. The method of making stannous chlorid which consists in bringing metallic tin into contact with a solvent containing chlorin, thereby producing a solution containing stannous chlorid, subjecting said solution to the action of free chlorin to form stannic chlorid, bringing said solution of stannic chlorid into contact with metallic tin to again form stannous chlorid, repeating the operation until the concentration of the stannic-chlorid solution exceeds 1.800, reducing said solution to stannous chlorid by contact with tin, and permitting said stannous-chlorid solution to crystallize, substantially as described.

4. The method of making stannous chlorid which consists in bringing metallic tin into contact with a solvent containing chlorin at a temperature above normal, thereby producing a solution containing stannous chlorid, subjecting said solution to the action of a fluid containing free chlorin to form stannic chlorid, bringing said solution of stannic chlorid into contact with metallic tin to again form stannous chlorid, repeating the operation until the concentration of the stannic-chlorid solution exceeds 1.800, reducing said solution to stannous chlorid by contact with tin, and permitting said stannous-chlorid solution to cool, whereby crystals of stannous chlorid are obtained, substantially as described.

5. The method of making stannous chlorid which consists in bringing metallic tin into contact with a solvent containing chlorin, thereby producing a solution containing stannous chlorid, subjecting said solution to the action of a gaseous mixture containing free chlorin and hydrochloric acid to form stannic chlorid, and bringing said solution of stannic chlorid into contact with metallic tin to again form stannous chlorid, substantially as described.

6. The method of making stannous chlorid which consists in bringing metallic tin into contact with a solvent containing chlorin, thereby producing a solution containing stannous chlorid, subjecting said solution to the action of a gaseous mixture containing free chlorin, hydrochloric acid, and atmospheric air to form stannic chlorid, and bringing said solution of stannic chlorid into contact with metallic tin to again form stannous chlorid, substantially as described.

7. The herein-described method of producing solutions containing stannous chlorid, which consists in subjecting solutions containing tin to the successive action of a fluid containing free chlorin and metallic tin, substantially as described.

8. The method of making stannous chlorid, which consists in subjecting solutions containing stannous chlorid to the action of a fluid containing free chlorin to form stannic chlorid, and bringing said stannic chlorid into contact with metallic tin, thereby producing a solution containing an increased amount of stannous chlorid, substantially as described.

810,456. PROCESS OF MAKING CHLORIN COMPOUNDS OF TIN. CHARLES B. ACKER, Niagara Falls, N. Y., assignor to Acker Process Company, a Corporation of New Jersey. Filed Dec. 30, 1903. Renewed June 14, 1905. Serial No. 265,529.

Claim.—1. The herein-described method of making chlorin compounds of tin, which consists in subjecting a solvent for tin to the alternate action of metallic tin and chlorin, and cooling the solution, whereby the tendency to produce metastannic compounds is avoided, substantially as described.

2. The herein-described method of making chlorin compounds of tin, which consists in subjecting a solvent for tin to the alternate and repeated action of metallic tin and chlorin, and cooling the solution, whereby the tendency to produce metastannic compounds is avoided, substantially as described.

3. The herein-described method of making chlorin compounds of tin, which consists in subjecting a solvent for tin to the alternate action of metallic tin and a gaseous mixture containing chlorin, and cooling the solution, whereby the tendency to produce metastannic compounds is avoided, substantially as described.

4. The herein-described method of making chlorin compounds of tin, which consists in subjecting a solvent for tin to the alternate and repeated action of metallic tin and a gaseous mixture containing chlorin, and cooling the solution, whereby the tendency to produce metastannic compounds is avoided, substantially as described.

5. The herein-described method of making chlorin compounds of tin, which consists in subjecting a solvent for tin to the alternate action of metallic tin and a gaseous body containing chlorin, and cooling the solution by a medium out of contact therewith, whereby the tendency to produce metastannic compounds is avoided, substantially as described.

6. The herein-described method of making chlorin compounds of tin, which consists in subjecting a solvent for tin to the alternate and repeated action of metallic tin and a gaseous body containing chlorin, and cooling the solution by a medium out of contact therewith, whereby the tendency to produce metastannic compounds is avoided, substantially as described.

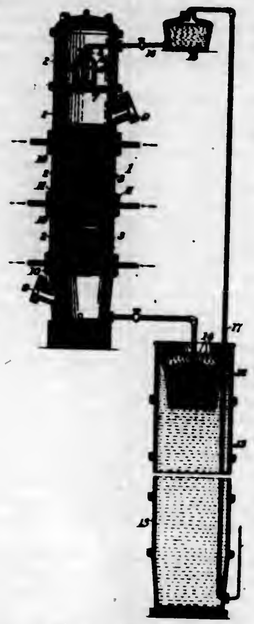

810,457. LAMP-BURNER. MARTIN O. ARNDERSON, Ivanhoe, Minn. Filed May 31, 1905. Serial No. 263,104.

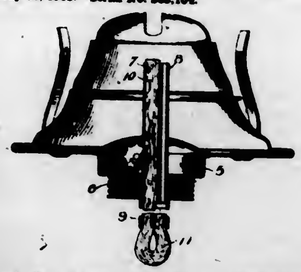

Claim.—1. In a burner for lamps, the combination with a threaded portion arranged for engagement in the threaded collar of a lamp-body and having wick and air tubes extending therethrough, of a metallic tube secured at one end to the lower face of the threaded portion and depending therefrom and into which the wick and air tubes open, and a wick engaged in the wick-tube and extending through the depending tube, the lower portion of the wick being turned upwardly upon itself and inserted in the lower end of the depending tube.

2. In a burner for lamps, the combination with a central portion arranged for engagement of its lower end in the opening of a lamp-body and having wick and air tubes extending vertically therethrough, of a flattened tube secured at its upper end to the lower face of the central portion and depending therefrom and into which the wick and air tubes open, a wick disposed in the wick-tube and extending through the depending tube, the lower end of the wick being turned upwardly and tucked into the lower end of the depending tube, said wick being of a slightly lesser width than said tube and the wick-tube, and a wire inserted in the depending tube at one edge of the wick, the metal of said depending tube being crimped over the wire, said tube beyond the wire snugly fitting the wick.

810,458. RAILROAD-SPIKE. ROWLAND ANDERSON, Chihuahua, Mexico. Filed May 13, 1905. Serial No. 260,183.

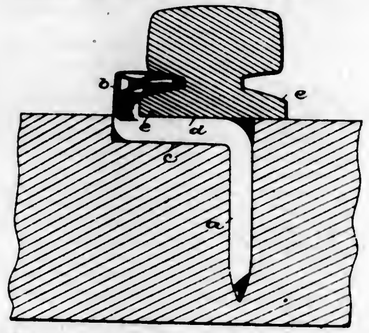

Claim.—1. A railroad-spike having a stem or shank adapted to enter a cross-tie beneath the rail thereon, and a lateral extension of said stem forming a shoulder above which the rail is adapted to engage.

2. A railroad-spike having a stem or shank adapted to enter a cross-tie beneath the rail, a head adapted to engage over the edge of the flange of the rail, and a lateral extension of said stem connecting the same to the head and forming a shoulder above which the rail engages.

3. A railroad-spike having a head portion adapted to engage the flange of a rail, and a shank portion adapted to enter a cross-tie beneath the rail, said head and shank portions being connected by a shank extension or shoulder portion lateral to both said head and shank portions and above which shank extension the rail is adapted to engage.

4. A railroad-spike having a head portion adapted to engage the flange of a rail, and a shank portion adapted to enter a cross-tie beneath the rail, said head and shoulder portions being connected by a shank extension or shoulder portion approximately at right angles to both said head and shank portions and above which shank extension the rail is adapted to engage.

5. The combination with a flanged rail and a tie for supporting the same, of a railroad-spike having a head portion engaging above the rail-flange, a stem or shank portion penetrating downward into the tie beneath the rail, and a shank extension of said stem connecting the same to the head and passing transversely beneath the bottom surface of the rail, thereby forming a shoulder upon which the rail bears.

6. The combination with a flanged rail and a tie for supporting the same, of a railroad-spike having a head portion engaging above the rail-flange, a stem or shank portion penetrating downward into the tie approximately beneath the center of the rail, and a shank extension of said stem connecting the same to the head and passing transversely beneath the bottom surface of the rail, thereby forming a shoulder upon which the rail bears.

810,459. MANURE-SPREADER. JOHN M. BERINGER, Pomeroy, Wash. Filed Apr. 19, 1905. Serial No. 256,436.

Claim.—1. In a machine of the class described, a wheel-supported frame including uprights, braces, and side members, a spreader-head having teeth straddling the uprights of the frame, and bars loosely jointed with the side members of the frame and with the spreader-head and connecting the latter with the frame.

2. In a machine of the class described, a wheel-supported frame including an axle, uprights and side members, in combination with a spreader-head having teeth straddling the side members and the uprights and supported against the axle, and means movably connecting the spreader-head with the frame.

3. A wheel-supported axle having uprights and side frame members supported by said uprights, a spreader-head having teeth some of which straddle the side members and the uprights, and connecting-bars loosely connected with the spreader-head and with the side members of the frame.

4. A wheel-supported axle having uprights and side frame members supported by said uprights, a vertically-movable spreader-head having teeth engaging the front side of the axle and provided with a top cross-bar, and connecting-bars loosely connected with said top cross-bar and with the side members of the frame.

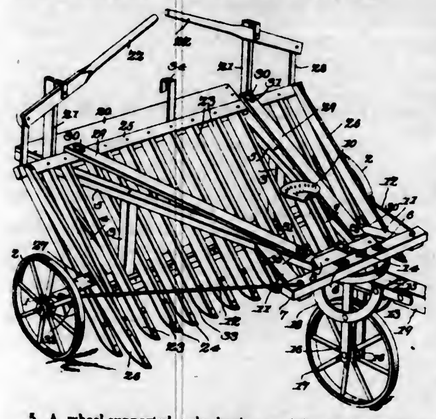

5. A wheel-supported axle having uprights and side frame members supported by said uprights, a vertically-movable spreader-head having teeth engaging the front side of the axle, connecting-bars loosely connecting the top of the spreader-head with the side bars of the frame near the front end of the latter, and a supporting-truck for the front end of the frame.

6. A wheel-supported frame, a spreader-head vertically movable in said frame, means for spacing the top of the spreader-head from the front end of the frame, a platform upon the frame, levers supported adjacent to said platform, links connecting the outer ends of said levers with the spreader-head, and a hook connected with the latter for engagement with the inner ends of the levers.

7. A wheel-supported frame, a spreader-head vertically movable in said frame, and means for spacing the top of the spreader-head from, and flexibly and slidably connecting it with the front end of the frame.

8. A wheel-supported frame, a spreader-head vertically movable with relation to said frame, spacing members connecting the top of the spreader-head flexibly and slidably with the frame near the front end of the latter, and means for independently manipulating the ends of the spreader-head.

9. A wheel-supported frame including an axle, uprights and side members supported upon said uprights, a vertically-movable spreader including teeth straddling the side members and the uprights, a wear-plate upon the front side of the axle, and shoes upon the points of the teeth of the spreader-head; said shoes having upward extensions engaging the wear-plate upon the axle.

810,460. MACHINE FOR MAKING AIR-HOLE GLASSWARE. FRANK H. BLACKBURN, Pontoria, Ohio, assignor to The National Electric Lamp Company, Cleveland, Ohio, a Corporation of New Jersey. Filed Feb. 24, 1905. Serial No. 247,161.

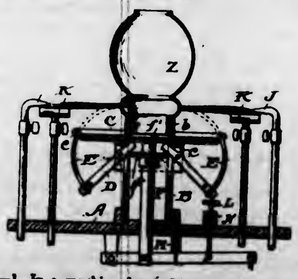

Claim.—1. In a machine for making air-hole glassware, the combination of means for holding the material, means for heating it in spots, and mechanism for engaging the material at such spots and then receding therefrom to draw out projections from the material.

2. In a machine for making air-hole glassware, the combination of means for holding the material, means for heating the same, in a plurality of places, members for simultaneously engaging the material at such plurality of places, and means for moving said members away from the body of the material.

3. In a machine for making air-hole glassware, the combination of a central support, a plurality of rods placed about the axis of the support and adapted to engage the globe at several points, means for heating the globe, means for simultaneously moving said rods toward the globe to strike it at the heated spots without puncturing the glass and for then retracting the rods with the glass clinging thereto.

4. In a machine for making air-hole glassware, the combination of means for holding a globe, means for directing a series of flames radially against it to heat separated spots thereon, a series of rods, and mechanism for causing them to move against the heated spots on the globe and then retreat.

5. In a machine for making air-hole glassware, the combination of a central support adapted to hold a glob, a series of rods arranged about the support and guided to move against the globe, means for so moving the rods and for causing them to move away from the globe, and means for heating the globe and the ends of the rods before they engage the globe.

6. In a machine for making air-hole glassware, the combination of a support for the globe, a series of gas-burners and air-jets arranged radially about the globe, a series of rods and mechanism for simultaneously moving them to engage the globe at the heated spots and for then moving them away from the globe to draw out horns from it.

7. In a machine for making air-hole glassware, the combination of a support for the globe, a series of heating members therefor, a series of rods, mechanism for simultaneously moving them to engage the globe at the heated spots and for then moving them away from the globe to draw out horns, and means for clearing the ends of the rods from glass tending to adhere thereto.

8. In a machine for making air-hole glassware, the combination of a support for the globe, means for directing a series of flames against the globe, a series of arc-shaped members located radially of the glassware, and means for swinging said members upward in vertical planes about the centers of their arcs to engage the glassware.

9. In a machine for making air-hole glassware, the combination of means for holding a globe, means for directing a series of flames radially against it, a series of rods, mechanism for causing them to move against the heated spots on the globe and then retreat, and means for causing said rods to pause during their forward movement with their forward ends in the flames whereby said ends become heated.

10. In a machine for making air-hole glassware, the combination of a tubular support for the globe, means for directing a series of flames against the globe, a series of levers pivotally carried by said support, a common operating-rod within said support and operatively connected with the inner ends of said levers, and rods operated by said levers and adapted to move against the globe and then away from it.

11. In a machine for making air-hole glassware, the combination of a support for the glassware, means for directing a series of flames against the glassware, a series of arc-shaped rods located about the glassware, means for swinging said rods about the centers of their arcs to engage the glassware, and a disk carried by the supports and having a series of openings guiding said rods.

810,461. MACHINE FOR GLAZING AIR-HOLE GLASSWARE. FRANK H. BLACKBURN, Pontoria, Ohio, assignor to The National Electric Lamp Company, Cleveland, Ohio, a Corporation of New Jersey. Filed Feb. 24, 1905. Serial No. 247,162.

Claim.—1 The combination of a rotatable support, globe-holders carried thereby, a heating-burner adapted to direct the flame against one of the globes, a glazing-burner adapted to direct a flame which comes substantially to a point against another of said globes, and means for adjusting such latter globe with reference to the flame whereby the flame will be caused to pass centrally through a hole in the globe.

2. The combination of a rotatable support, globe-holders carried thereby, a burner adapted to direct a glazing-flame which comes substantially to a point into an opening in a globe, means for frictionally driving the globe-holder in such position, and means for simultaneously raising or lowering such globe-holder to center the hole with reference to the flame.

3. The combination of a central standard, a support rotatably mounted thereon, a gas-burner, means for conducting gas and air thereto which extend upward through said standard, globe-holders carried by said support, whereby successive globes are brought into coöperation with the flame from said burner, each globe-holder being individually rotatable on its own axis.

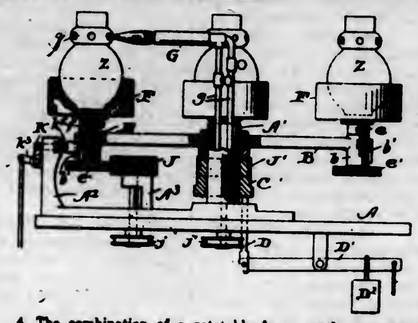

4. The combination of a rotatable frame, sockets mounted therein, means for rotating said sockets on their individual axes in certain positions, globe-holders having stems frictionally engaging said sockets, a heating-burner adapted to coöperate with one of the globes, and a glazing-burner adapted to coöperate with another.

5. The combination of a rotatable frame, globe-holders each consisting of a recessed block with a stem, sockets carried by said frame adapted to receive said stem, pinions on said sockets, and means for engaging said pinions in a certain position to frictionally rotate the corresponding globe-holder, and a burner coöperating with the globe carried by such holder.

6. The combination of a rotatable frame, globe-holders each consisting of a recessed block with a stem, sockets carried by said frame adapted to receive said stem, pinions on said sockets, means for engaging said pinions in a certain position to frictionally rotate the globe-holders, a heating-burner and a glazing-burner coöperating with globes carried by said holders, and means for raising or lowering said frame to adjust the position of the globe being glazed.

7. The combination of a tubular standard, a frame rotatably journaled on the standard, means for raising or lowering the frame, gas and air pipes passing upward through the standard, a burner fed thereby and located above the rotatable frame and pointing outwardly, and individual globe-holders rotatably mounted on the frame.

8. The combination of a tubular standard, a collar slidable thereon, a rotatable frame journaled on the standard and resting on said collar, means for raising or lowering the collar, gas and air pipes passing upward through the standard, a burner fed thereby and located above the rotatable frame and pointing outwardly, individual globe-holders rotatably mounted on the frame, and means for frictionally rotating said globe-holders when in position to coöperate with said flame.

810,462. APPARATUS FOR MAKING AIR-HOLE GLASSWARE.

FRANK H. BLACKBURN, Fostoria, Ohio, assignor to The National Electric Lamp Company, Cleveland, Ohio, a Corporation of New Jersey.
Filed Feb. 24, 1905. Serial No. 247,163.

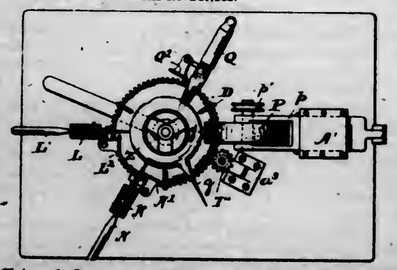

Claim.—1. In an apparatus for making air-hole glassware, the combination of a heater for the glassware, means for rotating the glassware, and means controlled according to such rotation for governing the heater.

2. In an apparatus for making air-hole glassware, the combination of means for rotating the glassware, a plurality of heaters adapted to act on the glassware, and means operating automatically with the rotation of the glassware to shut off said heaters successively.

3. In an apparatus for making air-hole glassware, the combination of a support for the glassware, a burner, means for rotating one with reference to the other, and automatically-operated means for shutting off the flame at predetermined positions of the glassware.

4. In an apparatus for making air-hole glassware, the combination of a plurality of burners placed radially about the glassware, means for rotating said glassware, shields for said burners, and means for moving them into and away from the flames from said burners.

5. In an apparatus for making air-hole glassware, the combination of a support for the glassware, heaters placed radially thereabout, shields for interrupting the flames from said heaters, means for rotating said support, and means controlled thereby for automatically operating said shields.

6. In an apparatus for making air-hole glassware, the combination of a burner, means for rotating the glassware, a shield for said burner, and mechanism for moving said shield into and out of the flame from said burner, said mechanism being controlled automatically according to the rotation of said support.

7. In an apparatus for making air-hole glassware, the combination of mechanism for rotating the glassware by successive steps, agencies to adapt it to coöperate with the glassware and placed radially about the same, and mechanism timed with respect to the rotation of the glassware for controlling said agencies.

8. In an apparatus for making air-hole glassware, the combination of a plurality of agencies located around the material to be acted upon and adapted to successively coöperate with said material, means for rotating the material, rotatable mechanism for governing said agencies, and means for rotating the same at a different speed from the material, whereby the material may be acted upon at a greater number of positions than that presented by one rotation thereof.

9. In an apparatus for making air-hole glassware, the combination of agencies to adapt it to coöperate with the glassware and placed radially about the same, means for rotating the glassware by successive steps, and mechanism governed by said means for controlling said agencies, said mechanism making a complete rotation at the same time that the glassware makes something more than a complete rotation, whereby the several agencies may act simultaneously around the glassware but will be prevented from acting on the finished holes.

10. In an apparatus for making air-hole glassware, the combination of mechanism for rotating the glassware by steps which amount each to an integral fraction of a complete rotation, a plurality of agencies placed around the glassware and adapted to coöperate with it at points whose distance apart correspond to a step or an integral multiple thereof, whereby as the glassware is rotated the spot which was acted upon by one agency comes into coöperation with another agency, and means governed according to said rotation for controlling said agencies.

11. In an apparatus for making air-hole glassware, the combination of a support for the glassware, mechanism for rotating said support by steps which amount to an integral fraction of a complete rotation, a plurality of agencies placed around the glassware and adapted to coöperate with it, and means governed according to said rotation for controlling said agencies, said means making a complete rotation while said support is making some steps more than a complete rotation, whereby on the second rotation of the glassware the agencies may not interfere with the completed portions thereof.

12. In an apparatus for making air-hole glassware, the combination of a support, means for rotating the same intermittently, a preliminary heater, an intense heater and a glazing-heater placed radially about the glassware on said support, whereby the same spot may be subjected successively to the three heaters, there being a position intermediate of the second heater and the glazer to allow the formation of a hole at the heated spot.

13. In an apparatus for making air-hole glassware, the combination of a heating-burner and a glazing-burner, means for rotating the glassware by successive steps to locate a given spot thereof in front of the heating-burner and later in front of the glazing-burner, an intermediate step leaving such spot in position to have a hole made through it.

14. In an apparatus for making air-hole glassware, the combination of a heating-burner and a glazing-burner, means for rotating the glassware by successive steps to position a given spot thereof in front of the heating-burner and later in front of the glazing-burner, an intermediate step leaving such spot in position to have a horn formed on it and broken off and the rough edge ground down, and means located for grinding such rough edge.

15. In an apparatus for making air-hole glassware, the combination of heaters and a grinder placed radially, and means for rotating the glassware on its axis to bring given spots successively to the action of the heaters and the grinder.

16. In an apparatus for making air-hole glassware, the combination of a support for the glassware, a heater and a grindstone placed radially about the same, means for rotating said support to bring a given spot on the glassware successively to said heater, then to a position where a horn may be formed on it, and then to said grindstone.

17. In an apparatus for making air-hole glassware, the combination of a ratchet mechanism for rotating the glassware step by step, a series of heaters placed about the glassware, cams for controlling said heaters, and means for operating said cams according to the rotation of the glassware.

18. In an apparatus for making air-hole glassware, the combination of means for intermittently rotating the glassware, a plurality of flame-producers placed radially about the glassware, individual shields adapted to interrupt such flames, cams for operating said shields mounted on a common support, and mechanism for rotating said cams at a definite rate in proportion to the rotation of the glassware.

19. In an apparatus for making air-hole glassware, the combination of means for rotating the glassware by steps which are each an integral fraction of a complete rotation, means for heating spots on said glassware, mechanism for controlling such means, said mechanism including cams connected with the glassware-rotating mechanism.

20. In an apparatus for making air-hole glassware, the combination of means for rotating the glassware by steps which are each an integral fraction of a complete rotation, means for heating spots on said glassware, mechanism for controlling such means including cams connected with the rotating mechanism and timed so that the rotating mechanism makes at least two complete rotations minus one step when the cams make one complete rotation.

21. In an apparatus for making air-hole glassware, the combination of a support for the glassware, heaters coöperating therewith and placed radially about the glassware separated by angles of sixty degrees or a multiple thereof, means for rotating said support by steps of sixty degrees, cams for controlling said heaters, and mechanism for giving said cams one complete rotation when the support is given one and five-sixths rotations.

22. In an apparatus for making air-hole glassware, a support for the glassware, ratchet mechanism for rotating the same by steps, there being as many steps in a complete rotation as there are holes to be made in the glassware, burners for projecting flames against the glassware, means for controlling such flames, cams for operating said means, said cams being geared with said ratchet mechanism to make a complete rotation when the support is making at least one rotation and a fraction of a second rotation whose denominator is the number of holes to be in the finished product, and whose numerator is one less than the number of holes.

23. In an apparatus for making air-hole glassware, a rotatable chuck, means for opening and closing the same, means for rotating said chuck on its axis by intermittent movements to bring the glassware successively into coöperation with different characters of heaters, combined with radially-placed heaters of different characters.

24. In an apparatus for making air-hole glassware, the combination of a support, means under the control of the operator for rotating the same intermittently, a heater, means automatically controlled by said rotation for governing said heater, a grinder, and means under the control of the operator for causing the same to engage the glassware.

25. In an apparatus for making air-hole glassware, the combination of a heating-burner, a glazing-burner, means for rotating the glassware on its axis by successive steps to locate a given spot thereof in front of the heating-burner, and later in front of the glazing-burner, there being means for causing said spot to stop temporarily in an unobstructed position between such burners where a hole may be made through it.

26. In an apparatus for making air-hole glassware the combination of a heating-burner, a glazing-burner, means for rotating the glassware on its axis by successive steps to locate a given spot thereof in front of the heating-burner, and later in front of the glazing-burner, there being means for causing said spot to stop temporarily in two positions intermediate of the burners, the first position allowing the formation of a horn on the glassware, and a grindstone at the second position.

810,463. PROCESS OF MAKING AIR-HOLE GLASSWARE.

FRANK H. BLACKBURN, Fostoria, Ohio, assignor to The National Electric Lamp Company, Cleveland, Ohio, a Corporation of New Jersey.
Filed Feb. 24, 1905. Serial No. 247,164.

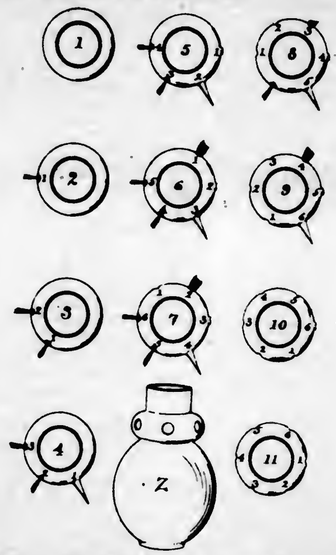

Claim.—1. The process of making air-hole glassware consisting in heating a spot thereon, drawing out a horn from the outside of the ware at such a heated spot, removing said horn, grinding the rough edges, and glazing the hole.

2. The process of making air-hole glassware consisting of subjecting spots on the glassware successively to a preliminary heating, then an intense heating, then drawing out a horn on the outside of the ware at the heated spot, then breaking off said horn, then grinding the rough edges, and then glazing the hole.

3. The process of making air-hole glassware consisting of successively subjecting equidistant spots thereon to the action of a heating-flame, drawing out from the outside of the ware a horn or projection from the heated spots successively while the preceding spot is being heated, then removing the horn and grinding the rough edges and glazing the hole, said operations being performed one at one spot while another is going on at another spot.

4. The process of making air-hole glassware consisting in heating spots thereon, moving such spots away from the surrounding surface of the glassware to make horns, removing such horns, grinding the rough edges, and glazing the holes.

5. The process of making air-hole glassware consisting of successively subjecting equidistant spots thereon to the action of a heating-flame, forming a horn or projection from the heated spots successively while the preceding spot is being heated, then removing the horn and grinding the rough edges, said operations being performed one at one spot while another is going on at another spot.

6. The process of making air-hole glassware consisting in heating a spot thereon, forming a projection at such heated spot, removing such projection and grinding the rough edge thereat.

7. The process of making air-hole glassware consisting in subjecting spots on the glassware successively to a preliminary heating, then an intense heating, then forming a horn on the ware at the heated spot, then breaking off said horn, and then grinding the rough edges.

810,464. MACHINE FOR MAKING AIR-HOLE GLASSWARE.

FRANK H. BLACKBURN, Fostoria, Ohio, assignor to The National Electric Lamp Company, Cleveland, Ohio, a Corporation of New Jersey.
Filed Mar. 2, 1905. Serial No. 248,621.

Claim.—1. In a machine for making air-hole glassware, the

combination of means for holding the glassware, means for heating the same in a plurality of separated spots, and means for forcing such heated spots away from the adjacent surface of the glassware to make a horn which may be easily broken off to leave a hole.

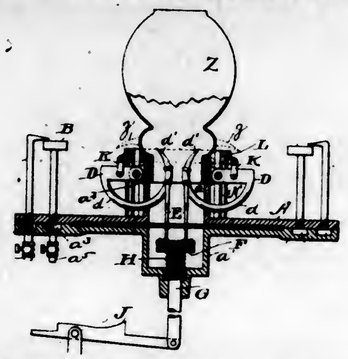

2. In a machine for making air-hole glassware, the combination of means for holding the glassware, means for heating the same in a plurality of spots, mechanisms for engaging such heated spots on their inner sides and adapted to move outwardly to shove the spots outward in the form of horns, and means for simultaneously operating such mechanisms.

3. In a machine for making air-hole glassware, the combination of a series of movable members shaped to extend into the glassware, and common operating mechanism for moving said members outwardly to engage the glassware and press out horns thereon.

4. In a machine for making air-hole glassware, the combination of a standard adapted to hold the glassware, a series of rocking members projecting upwardly within the standard, means for heating the glassware, and means for rocking said members to cause their ends to engage the glassware and force out horns thereon.

5. In a machine for making air-hole glassware, the combination of a tubular standard adapted to receive at its upper end the glassware to be treated, a series of rocking members pivoted on the outer side of said standard and having arcual arms extended into the interior of the standard and adapted to point upwardly, mechanism for heating spots on the glassware which are in the path of said arms, and mechanism for rocking said arms to engage and force outwardly said spots.

6. In a machine for making air-hole glassware, in combination, a support for the glassware, a series of heaters arranged about the same and adapted to project flames against it, a series of rocking members having arcual arms, said members being pivotally carried about the support and normally having their arms projecting upwardly within it, and mechanism for rocking said members on their pivots to cause the points of their arms to engage the heated spots on the glassware and force the same outwardly to make horns thereon.

7. In a machine for making air-hole glassware, the combination of a series of movable members, mechanism for moving said members to engage the glassware and press horns thereon, and mechanism for engaging said horns to break them off.

8. In a machine for making air-hole glassware, the combination of a series of rocking members, means for heating the glassware, means for rocking said members to cause their ends to engage the inner surface of the glassware and force out horns thereon, and correlatively-timed means for breaking off the horns.

9. In a machine for making air-hole glassware, the combination of a support for the glassware, a series of heaters arranged about the same and adapted to project flames against it, a series of pivoted rocking members having arcual arms, mechanism for rocking said members on their pivots to cause the points of their arms to engage the inner side of the heated spots on the glassware and force the same outwardly to make horns thereon, and mechanism operated on the return movement of said members to engage and break off said horns.

810,465. APPARATUS FOR MAKING AIR-HOLE GLASSWARE.

FRANK H. BLACKBURN, Fostoria, Ohio, assignor to The National Electric Lamp Company, Cleveland, Ohio, a Corporation of New Jersey. Filed Mar. 2, 1905. Serial No. 248,622.

Claim.—1. In an apparatus for making air-hole glassware, the combination of a support for the glassware, a series of flame-producers placed thereabout and immovable with reference to the support, and means for causing compressed air to pass into the interior of the glassware.

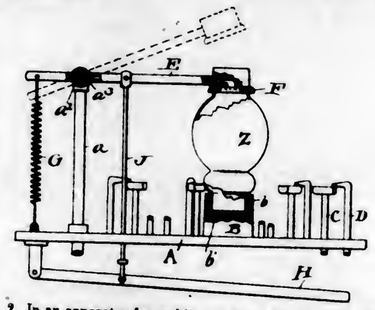

2. In an apparatus for making air-hole glassware, in combination, means for stationarily supporting the glassware, a series of flame-producers placed thereabout, a hood means for conveying compressed air thereto, and means for moving the hood into engagement with the glassware.

3. In an apparatus for making air-hole glassware, a support adapted to make an approximately air-tight connection with the glassware at its base, a series of flame-producers each adapted to project a point of flame against the glassware above such support, means adapted to tightly engage the upper end of the globe, said means having a passage-way for compressed air, and mechanism for operating said means.

4. In an apparatus for making air-hole glassware, the combination of means for engaging in approximately air-tight manner the ends of the ware, a compressed-air conduct leading through one of said means, and a series of flame-producers placed about the ware and adapted to project flames against the glassware in directions slightly out of the radial, whereby the air forcing outward and puncturing the heated glass will not blow out the flames.

5. In a machine for making air-hole glassware, a support for the glassware lined with asbestos to make a non-conducting and approximately air-tight connection with the glassware, means for heating the glassware simultaneously in a plurality of places above such support, and means for forming projections at the heated points of the glassware.

6. In an apparatus for making air-hole glassware, the combination of a support for the glassware, means for maintaining compressed air within the glassware, and means for heating a plurality of spots around the glassware, which spots are adapted to be forced outward by the compressed air.

7. In a machine for making air-hole glassware, the combination of means for engaging in a substantially air-tight manner the lower end of the glassware, a pivoted arm carrying a hood adapted to engage the upper end of the glassware, means for conducting compressed air to said hood, a spring tending to raise said arm, and means for lowering the arm to bring the hood into engagement with the glassware.

8. In an apparatus for making air-hole glassware, the combination of a support for the glassware, a series of flame-producers placed thereabout and adapted to project points of flame against the glassware above its lower edge to soften spots thereon, and means for conducting compressed air into the interior of the glassware.

810,466. PROCESS OF MAKING INCANDESCENT LAMPS.

FRANK H. BLACKBURN, Fostoria, Ohio, assignor to The National Electric Lamp Company, Cleveland, Ohio, a Corporation of New Jersey. Filed Mar. 2, 1905. Serial No. 248,623.

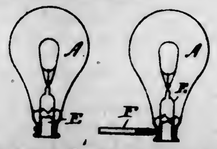

Claim.—1. The process of making incandescent lamps consisting in forming an opening into the globe substantially at the surface thereof, heating the neck of the globe to seal off the end thereof, then applying to such opening a tube separate from the globe and forcing pressure through the tube to blow off the end of the globe.

2. The process of making incandescent lamps consisting of taking a globe having an open neck, forming an opening into it without substantial projection thereat, sealing off by heat the neck of the globe, then applying to the opening a tube unsealed thereto, and by air-pressure through the tube blowing off the end of the globe to free it.

3. The process of making tipless incandescent lamps consisting in taking a globe having a neck, forming a small opening in it near the point where the neck joins the globe proper, sealing off by heat the neck of the globe just below such opening, then blowing air into the globe through such opening by means of a tube unsealed thereto the air blowing off the end of the neck.

4. The process of making tipless incandescent lamps consisting in taking a globe having a neck, forming a small opening into it near the point where the neck joins the globe proper, sealing off by heat the neck of the globe just below such opening, then blowing air into the globe through such opening by means of a tube unsealed thereto, the air blowing off the end of the neck, then placing the filament and its support in the globe, fusing the support to the globe below such opening, and then fusing a tube to the opening.

5. The process of making incandescent lamps consisting in forming a small hole in the neck, fusing off the surplus neck and sealing together the edges of that part which is not removed, blowing a puff of air into said hole through a tube which is independent of the bulb, sealing in the mount, and sealing an exhausting-tube to the neck over the aforesaid hole.

810,467. PLOW ATTACHMENT.

SAMUEL H. CLARK, Ringgold, Tex. Filed Feb. 7, 1905. Serial No. 244,605.

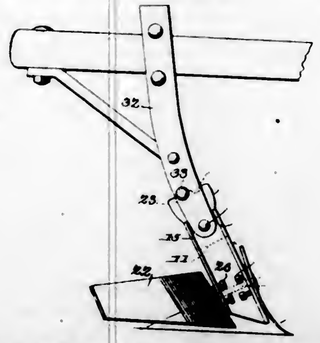

Claim.—1. A plow-foot having lateral flanges at the front and rear sides and with transversely-disposed threaded apertures through the flanges, a furrow-opener movably connected to the forward side of said foot member and a coverer member connected movably to the rear side of said foot member, set-screws operating in the threaded apertures of the forward flanges and bearing against said furrow-opener, set-screws operating through the threaded apertures of said rear flanges and bearing against said coverer member.

2. A plow-foot having a longitudinal aperture extending from front to rear and with lateral flanges at the front and rear provided with transverse threaded apertures therethrough, a furrow-opener and a coverer member disposed respectively at opposite sides of said foot member, a clamp-bolt connecting said furrow-opener and coverer member and extending through said longitudinal aperture, set-screws operating in one set of said threaded apertures for bearing against said furrow-opener, and set-screws operating through the other set of said threaded apertures and bearing against said coverer member.

3. A plow-standard, a foot member having lateral flanges at the front and rear with transversely-disposed threaded apertures therethrough, means for connecting said foot member to swing upon said standard, means for coupling said foot member adjustably to said standard, a furrow-opener and a coverer member movably connected respectively to the opposite faces of said foot member, and set-screws operating through said threaded apertures for bearing respectively upon said furrow-opener and coverer member.

4. A plow-standard, a foot member having lateral flanges at the front and rear and with transversely-disposed threaded apertures therethrough and pivoted to swing from said standard, said foot member having spaced transverse recesses at its upper end, a stop-bolt carried by said standard for alternate engagement with said recesses whereby the foot member is connected adjustably to said standard, a furrow-opener and a coverer member movably connected respectively to the opposite faces of said foot member, and set-screws operating through said threaded apertures for bearing, respectively upon said furrow-opener and coverer member.

5. A plow-standard, a foot member pivoted to swing from said standard and provided with spaced transverse recesses, a stop-bolt carried by said standard for alternate engagement with said recesses, a furrow-opener and a coverer member connected to the opposite faces of said foot member.

810,468. MARKING-MACHINE.

GEORGE W. COFFMAN, St. Louis, Mo. Filed Apr. 15, 1904. Serial No. 203,369.

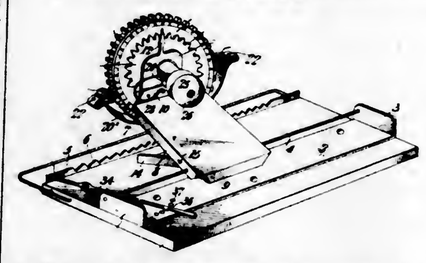

Claim.—1. In a marking-machine, a vibratory carriage supporting printing mechanism, a carriage-locking dog, and a spring operating to lift the carriage and actuate the dog.

2. In a marking-machine, a vibratory carriage supporting printing mechanism, a locking-dog combined therewith, and a spring operating to lift the carriage and to actuate the dog.

3. In a marking-machine, a vibratory carriage supporting printing mechanism, a carriage-locking dog pivotally combined therewith, and a spring having outward-diverging terminals to engage respectively with the carriage and with the dog.

4. In a marking-machine, a vibratory carriage supporting printing mechanism, a bar carried thereby, a carriage-locking dog hinged upon the bar, and a coiled spring mounted upon the bar and having its terminals bearing respectively against the under side of the carriage and the upper side of the locking-dog.

5. In a marking-machine, a track-bed, a carriage supported over the track-bed for longitudinal and vibratory movements, a flange carried by the rear end of the carriage, a locking-dog combined with the carriage, and a spring operating to actuate the locking-dog and to lift the carriage thereby to bring the flange into engagement with the track-bed to lock the carriage against movement.

6. In a marking-machine, a carriage provided with downturned flanges at its sides and one end, a bar passing through the side flanges, a locking-dog hinged upon the bar, and a spring having coils engaging the bar and its terminals in engagement with the under side of the carriage and the upper side of the dog, and operating normally to hold the dog and terminal flange in engagement with the base portion of the machine.

7. In a marking-machine, a vibratory carriage, a plate disposed at an angle thereto and provided with a slot and with a pointer, a type-wheel having its shank mounted in the slot, a type-centering and type-wheel-locking disk carried by the type-wheel, and a stud carried by the plate to engage with the disk to lock it against rotation.

8. In a marking-machine, the combination with a base of a vibratory carriage for supporting a type-wheel, a feed-rack combined with the base, a lever fulcrumed upon the base and having one end in engagement with the feed-rack to effect shifting thereof thus to vary the point of imprint of the type, and means for locking the lever at any desired adjustment.

9. In a marking-machine, a base a vibratory carriage combined therewith and supporting a type-wheel, a feed-rack combined for longitudinal movement with the base, and a lever fulcrumed upon the base and having one terminal in engagement with the feed-rack, and its other terminal furnished with an offset to interlock with suit-

able orifices in the base to hold the feed-rack at any desired adjustment.

10. In a marking-machine, the combination with a vibratory carriage, of a plate provided near its upper portion with a slot, and near its lower portion with a trough provided with an orifice, a type-wheel carried by the plate and adapted to have its type projected through the orifice in the trough, a shield having an orifice registering with that of the trough, said shield being provided with flexible extensions, and yieldable inking-pads carried by the extensions.

11. In a marking-machine, the combination with a vibratory carriage, of a plate combined therewith and provided with a slot, a type-wheel having its shank projected through the slot and provided with an operating-knob, a spring carried by the plate and engaging the knob-shank and exerting upward pressure thereon, a type-centering and type-wheel-locking disk rigid with the type-wheel, and a stud carried by the plate to coact with the teeth of the disk to hold the type-wheel against rotation when its shank is moved to the lower end of the slot.

12. The combination with a base, of a track-bed, a track carried thereby, a vibratory carriage supported upon the track and provided with a stop coacting with the track-bed to limit the upward movement of the carriage, a spring-pressed dog combined with the carriage and coacting with the base to lock the former against lateral movement, a plate provided with a vertical slot, a printing element having a shank projected through the slot, a perforated shield disposed below the printing element and carrying inking mechanism, a stud carried by the plate, a toothed disk combined with the printing element and designed to engage the stud to lock the printing element against rotation during the printing operation, means for returning the printing element to its normal position after the printing operation, and means for returning the carriage to its normal position.

810,469. WINDOW-FIXTURE. CHARLES A. CRIBBS and HARRY R. McCOY, Vandergrift, Pa. Filed Apr. 13, 1905. Serial No. 255,307.

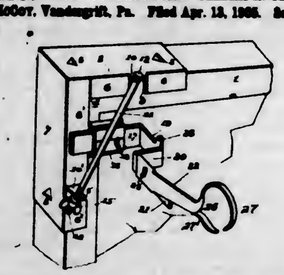

Claim.—1. A window-fixture, comprising an angular clamp adapted to embrace the corner of a frame, means for securing said clamp to said frame, embodying an angularly-disposed rod, a keeper carried by said clamp, a bracket adjustably mounted in said keeper and a curtain-supporting rod adjustably mounted on said bracket.

2. In a window-fixture, an angular clamp adapted to embrace the corner of a window or like frame, and having brads to impinge with the said frame, means engaging the angularly-extending portions of said clamp for binding the same on the frame, a keeper carried by said clamp, a bracket adjustably mounted in said keeper, and a curtain-supporting arm adjustably mounted on said bracket.

810,470. FOUNTAIN-BRUSH. ELIJAH C. DAVEY, Chicago, Ill. Filed Apr. 16, 1903. Serial No. 152,312.

Claim.—1. In a fountain-brush, a reservoir having an air-inlet and an outlet for its contents, the latter being arranged adjacent to the bristles, an outwardly-unseating valve controlling said outlet, an inwardly-unseating valve closing the air-inlet, and an air-pump arranged to supply air to said air-inlet.

2. In a fountain-brush, a hollow handle, a reservoir arranged therein having an air-inlet and an outlet for its contents, the latter being arranged adjacent to the bristles, an outwardly-unseating valve controlling said outlet, an inwardly-unseating valve closing the air-inlet, an air-chamber in said handle adjacent to the air-inlet of the reservoir, and a piston movable in said air-chamber and operable from the exterior of the handle.

3. In a fountain-brush, a hollow handle, a reservoir arranged therein having an air-inlet and an outlet for its contents, the latter being arranged adjacent to the bristles, an outwardly-unseating valve controlling said outlet, an inwardly-unseating valve closing the air-inlet, an air-chamber adjacent to the air-inlet of the reservoir, a piston movable in said chamber, and a thumb-piece movable upon the exterior of the handle for operating said piston.

4. In a fountain-brush, a hollow handle, a reservoir arranged therein having an air-inlet and an outlet for its contents, the latter being arranged adjacent to the bristles, an outwardly-unseating valve controlling said outlet, an inwardly-unseating valve closing the air-inlets, springs holding said valves normally seated, an air-chamber arranged in the handle adjacent to the air-inlet of the reservoir, a piston movable in said chamber, a rod for said piston, a laterally-extending pin carried by said rod projecting through and movable in a slot in the wall of the handle, a thumb-piece carried by the projecting end of the pin, and a spring for returning the piston to its normal position after it has been operated.

5. A fountain-brush comprising a hollow handle having a reservoir therein provided with an air-inlet and outlet, an air-chamber adjacent to the air-inlet, a piston movable in said chamber, and means for operating said piston, substantially as specified.

810,471. LOOM. HERBERT W. DAVIS, Fall River, Mass. Filed Dec. 23, 1904. Serial No. 238,065.

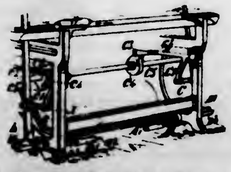

Claim.—1. In a loom, a picker-stick having movement to throw a shuttle across the loom and mechanism for operating the picker-stick to throw the shuttle; means whereby such picker-stick is maintained normally in position intermediate its inward and outward limits of movement, such picker-stick being unopposed and being free to move for a distance in either direction from such normal position; and means acting after the beginning of the inward movement of such picker-stick to restrain the same, such means tending to return the picker-stick to its normal inactive position.

2. In a loom, a picker-stick; driving mechanism operating the picker-stick to throw a shuttle; and means whereby a force opposing that of the driving mechanism is offered to the picker-stick after the driving mechanism has begun to operate the picker-stick; restrains the inward movement of the picker-stick; and causes the picker-stick to move part way to its outward position, where it receives the impact of an incasing shuttle to move the picker-stick to its outward position.

3. In a loom, a picker-stick; driving mechanism operating the picker-stick to throw a shuttle; and means whereby a force, increasing in strength, opposes the movement of the picker-stick after the driving mechanism has ceased to act upon the picker-stick, and, with decreasing strength causes the picker-stick to return to a position between the extreme limits of its travel, to receive the impact of an incasing shuttle, the picker-stick being free to be moved by the shuttle into its extreme outward position, to be acted on by the driving mechanism.

4. In a loom, a picker-stick; driving mechanism operating the picker-stick to throw a shuttle; and means whereby a force, with increasing strength, opposes the movement of the picker-stick after the driving mechanism has ceased to act upon the picker-stick, and causes, with decreasing strength, the picker-stick to return to a position between the limits of its travel; said driving mechanism and said restraining means being so adjusted in relation to the picker-stick that neither of them opposes the operation of the other, and yet each permits the picker-stick to occupy freely a position between the extreme limits of its travel, and, upon receiving the impact of the incasing shuttle, to be moved to its extreme outward position, to be acted upon by the driving mechanism.

5. In a loom, a picker-stick; driving mechanism operating the picker-stick to throw a shuttle; and a spring operatively connected with the picker-stick, and opposing the movement of the picker-stick after the driving mechanism has ceased to act upon the picker-stick, and causing the picker-stick to return to a position between the extreme limits of its travel, to receive the impact of an incasing shuttle, which in turn, moves the picker-stick freely to its extreme outer position, to be acted upon by the driving mechanism.

6. In a loom, a picker-stick; driving mechanism operating the picker-stick to throw a shuttle; and a spring operatively connected with the picker-stick and opposing, by compression, the movement of the picker-stick, after the driving mechanism has ceased to act upon the picker-stick, and causing, by expansion, the picker-stick to return to a position between the extreme limits of its travel, to receive the impact of an incasing shuttle, the picker-stick being free to be moved by the shuttle into its extreme outward position, to be acted upon by the driving mechanism.

7. In a loom, a picker-stick; driving mechanism operating said picker-stick, during a portion of the pick; a spring, a draw-bar, an adjusting-nut threaded therein, all combined with a shell or guide fixed to the loom, and operatively connected to the picker-stick, to oppose by compression of the spring, the movement of the picker-stick after the driving mechanism has ceased to act upon the picker-stick, and to cause by expansion, the picker-stick to return to a position between the extreme limits of its travel to receive the impact of an incasing shuttle, the picker-stick being free to be moved by the shuttle into its extreme outward position, to be acted upon by the driving mechanism.

8. As an article of manufacture, a shell, or guide; a spring mounted therein; a draw-bar, axially arranged within the spring; a slot in said shell, parallel with the axis of the draw-bar; a threaded adjusting-nut engaging said draw-bar, and having a depending lug to engage said slot, whereby the nut may be locked to the bar.

810,472. BOX-CAR. FREDERICK A. DELANO, Chicago, Ill. Filed Mar. 26, 1903. Serial No. 149,627.

Claim.—1. In a box-car of the class described, the combination of a supporting-framework, side frames, end frames and a roof portion, a main central door in each side portion, and supplementary dumping-doors arranged on the inside and outside of each side frame between each end thereof and the main-door apertures depending metallic projections on the lower side of the outer dumping-doors, a rock-shaft on the car having projections engaging the depending metallic portions to lock the door, and means for holding the rock-shaft in locking position, substantially as described.

2. In a car of the class described, the combination of a supporting-framework, side frames and end frames extending upwardly therefrom and provided with a roof portion, main door at each side of the car at or near the central portion thereof, and swinging doors arranged in pairs on the inside and outside of each side frame extending downward to the floor-level when in closed position and adapted to be swung upwardly on the inside and outside depending metallic projections on the lower side of the outer dumping-doors, a rock-shaft on the car having projections engaging the depending metallic portions to lock the door, and means for holding the rock-shaft in locking position, respectively, substantially as described.

3. In a box-car of the class described, the combination of a supporting-framework, a rigid floor, rigid end boards, a roof, side frames having rigid portions extending from each roof to the floor, a main central door in each of such side frames extending substantially from the roof to the floor, supplementary vertical dumping-doors arranged in each side of the car between each end thereof and the main door swinging outward for automatically discharging a portion of the load and facilitating the discharge of the remainder thereof, depending metallic projections on the lower side of the outer dumping-doors, a rock-shaft on the car having projections engaging the depending metallic portions, to lock the door, and means for holding the rock-shaft in locking position and inner doors mounted adjacent to such dumping-doors swinging inward and resting against the rigid portion of the side frames when in closed position, substantially as described.

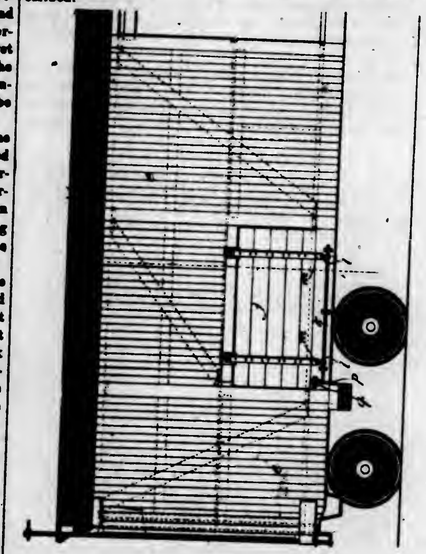

810,473. ADAPTER FOR INCANDESCENT-LAMP SOCKETS. SAMUEL B. DOANE, Cleveland, Ohio, assignor to The National Electric Lamp Company, Cleveland, Ohio, a Corporation of New Jersey. Filed Mar. 27, 1905. Serial No. 252,159.

Claim.—1. An adapter for incandescent lamps comprising a sleeve formed to engage a lamp-base and contact members carried thereby to engage the contacts of the socket, one of said members being rotatable independently of the other and accessible from within the sleeve and formed to allow the application of means within the sleeve for rotating such member when the sleeve is in the socket.

2. An adapter for incandescent-lamp sockets provided with a bushing adapted to fit over a post, and a sleeve adapted to receive the lamp-base, said sleeve and bushing being independently movable.

3. An adapter for incandescent-lamp sockets comprising a

sleeve adapted to receive the lamp, a diaphragm within the end of the sleeve, an internally-threaded bushing supported by the diaphragm, the bushing and the sleeve being relatively movable, said bushing being formed on its outer face to allow the application of means for rotating the bushing.

4. An adapter for incandescent-lamp sockets comprising a sleeve adapted to receive the lamp and adapted to abut against a terminal ring within a lamp-socket, a diaphragm within the end of the sleeve and fixedly attached thereto, a bushing loosely supported by the diaphragm and adapted to be secured to a terminal post within the socket.

5. An adapter for incandescent-lamp sockets comprising a sleeve adapted to receive the lamp, a diaphragm within the end of the sleeve, an internally-threaded bushing supported by the diaphragm and rotatable and adapted to engage an externally-threaded terminal post within the socket, said bushing having a screw-driver slot across its upper surface.

6. In an adapter for incandescent-lamp sockets, an annular contact portion provided with a roughened surface adapted to bite into the metal of the terminal opposed thereto, and an independently-rotatable center member constituting the other terminal of the adapter.

810,474. MACHINE FOR PERFORATING GLASS. SAMUEL B. DOANE, Cleveland, Ohio, assignor to The National Electric Lamp Company, Cleveland, Ohio, a Corporation of New Jersey. Filed May 22, 1905. Serial No. 261,528.

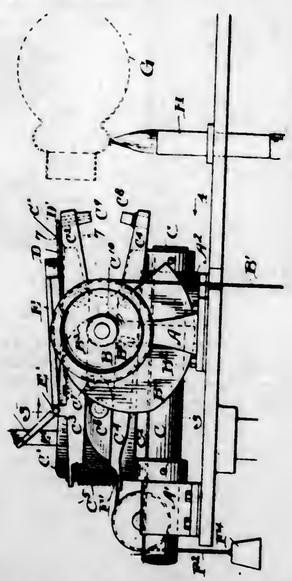

Claim.—1. A process of perforating glass consisting in locally heating the same to a point of plasticity, attenuating and chilling a zone of the plastic glass, and striking a portion of the glass adjacent to said zone.

2. A process of perforating glass consisting in rendering it plastic, forming an attenuated annular zone and chilling the glass adjacent thereto and delivering a blow within the chilled attenuated zone.

3. A glass-perforating apparatus comprising means adapted to attenuate and chill the plastic glass, and means adapted to deliver a blow adjacent to the attenuated and chilled portion.

4. A machine for perforating glassware provided with perforating-jaws adapted to be advanced to operative position, means for causing each of said jaws to be advanced and means for automatically bringing the perforating-jaws together when so advanced.

5. A machine for perforating glass comprising two perforating members, one of which is equipped with a cutting edge, the other of which is provided with a face against which the cutting edge is adapted to bear, and a striking member adapted to deliver a blow to the glass.

6. A glass-perforating apparatus comprising two coöperative members, one of which is provided with an annular cutting edge, the other of which is provided with an annular surface against which the cutting edge is adapted to bear, a striking member within the annular bearing-surface and adapted to deliver a blow to the glass.

7. Mechanism for perforating glass, comprising means for holding the glass within a heating-flame, means for advancing a pair of perforating-jaws, and means for automatically bringing said jaws together as soon as they come within operative radius of the heated glass.

8. Mechanism for perforating glass comprising feeding means adapted to advance the glass to a heating-flame, means for automatically stopping said advancing movement, perforating-jaws adapted to be advanced toward the glass, and means for automatically bringing the jaws together when their advancing movement ceases.

9. Mechanism for perforating glass comprising jaws pivoted to a plate mounted on a reciprocative carriage, one of said jaws being provided with a cutting-annulus having an interior taper, the other of said jaws being provided with an annular bearing-surface for said cutting edge, and a striking member positioned within said annular bearing, and means for delivering a blow to said striking member.

10. A glass-perforating apparatus comprising jaws bearing perforating-annuli, means for causing said annuli to approach each other, and means for automatically delivering a blow to the glass inclosed by said annuli when they are brought together.

11. Glass-perforating mechanism comprising a frame-plate carrying a pair of pivoted perforating-jaws held apart at their perforating ends by spring means secured to their opposite ends, a double cam interposed between said jaws in such manner to bring the perforating ends of the jaws together when it is rotated, means for advancing the frame carrying the jaws, said advancing means being adapted to rotate the said cam.

12. A machine for perforating glass provided with two coöperating annuli adapted to outline a disk in the plastic glass, and means for automatically delivering a blow to the glass when said disk is outlined.

13. Means for perforating glass comprising a burner adapted to locally soften the glass, means adapted to advance the glass to said burner, means for automatically stopping said advance, means for advancing the perforating-jaws toward the glass and bringing them together, and means for automatically delivering a blow to the glass when said jaws are closed.

14. In a glass-perforating apparatus, a pair of perforating-jaws, means for holding the glass while being perforated, said latter means comprising a threaded shaft rotatable within a partially-threaded rotatable nut, and differential gears whereby the speed of the nut relatively to the shaft may be varied so as to be either greater or less than that of the shaft.

15. A machine for perforating glass comprising a carriage bearing perforating elements, means for retaining the carriage in a retracted position, means for retaining the perforating elements apart while the carriage is in such retracted position, means for advancing the carriage, and means for automatically bringing said perforating elements together on the termination of the advancing movement.

16. A machine for perforating glass comprising means adapted to form a thin chilled line in the glass when plastic, and means for automatically delivering a blow adjacent to said line upon the formation thereof.

17. A machine for perforating glass comprising unitary means adapted to excise a portion from the body of the glass and maintain all of said excised portion out of contact with the body of the glass.

18. A machine for perforating glass comprising means for exciding a portion therefrom when in a plastic state and automatic means for removing all of the excised portion clear of the body of the glass.

19. A process of perforating glass consisting in locally heating the same to a point of plasticity, attenuating and chilling a zone of the plastic glass and delivering a blow within the chilled attenuated zone of sufficient force to effect excision and drive the excised portion clear of the body of the glass.

810,475. BARRETTE-FASTENER. GEORGE W. DOVER, Cranston, R. I. Filed Aug. 25, 1905. Serial No. 275,763.

Claim.—1. In a fastener of the class described, the combination with the body and bearing-lugs, of a bar provided with a twisted flat integral lug upon one extremity, a socket upon the other end of the bar and disposed at right angles to said lug, a pivot-pin traversing the bearing-lugs and terminal lug, and a post upon the body adapted to engage the socket, as and for the purpose set forth.

2. In a fastener of the class described, the combination with the body and bearing-lugs, of a spring-bar having a broad intermediate resilient portion, and provided with a flat integral twisted lug upon one extremity, a socket upon the other extremity, a pivot-pin traversing the bearing-lugs and terminal lug, and a post upon the body adapted to engage the socket, as and for the purpose set forth.

3. In a fastener, of the class described, the combination with the body and bearing-lugs, of a bar consisting of a strip of wire bent upon itself, the folded end comprising a flat lug, a cap upon the free ends of said wire, the two strands of the wire being separated to form a socket adjacent the cap, a pivot-pin traversing the bearing-lugs and terminal lug, and a post upon the body adapted to engage the socket, as and for the purpose set forth.

4. In a fastener of the class described, a body with bearing-lugs near one end and a post near the other end, and a bar bent upon itself with one end twisted in a plane at right angles to the body of the bar and formed into a flattened terminal lug, the other end of said bar formed with a socket between the strands thereof and intermediate said ends having its strands expanded to form an enlarged opening therebetween.

5. In a fastener of the class described, a curved body with bearing-lugs near one end and a post near the other end, and a bar bent upon itself with one end twisted in a plane at right angles to the body of the bar and formed into a flattened terminal lug, the other end of said bar formed with a socket between the strands thereof and intermediate said ends having its strands expanded to form an enlarged opening therebetween, said bar being curved longitudinally to conform to the curvature of the body.

810,476. CORK-EXTRACTOR. HERBERT H. DUNN, Dayton, Ohio. Filed May 1, 1905. Serial No. 258,188.

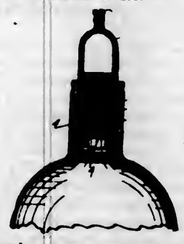

Claim.—1. A cork-extractor consisting of a metallic member incased throughout its length with packing material, the middle portion of said packing material being impervious to moisture, substantially as set forth.

2. As a new article of manufacture, a combined cork-extractor and cork-retainer, consisting of a pliable metallic member adapted to span the lower end of the cord and to extend up the opposite sides of said cork, said member being inclosed in a casing, the portions of the casing lying at the sides of the cork and below the cork being impervious to moisture, and the extreme ends of said member being extended above the mouth of the bottle and carried down on opposite sides of the neck of the bottle, and means for securing said ends against the sides of the neck of the bottle, substantially as set forth.

810,477. ROAD GRADER AND DITCHER. CHARLES D. EDWARDS, Albert Lea, Minn. Filed June 24, 1905. Serial No. 266,005.

Claim.—1. In a grading-machine, the combination with a frame and a moldboard applied thereto, of a fixed axle projecting from one side of said frame, a floating axle pivotally connected to said frame and projecting at the other side thereof, wheels on said axle, and connection between said floating axle and said frame, whereby the weight of that side of the frame may be thrown onto the wheel of said floating axle, at will, substantially as described.

2. The combination with a triangular frame and a moldboard applied to the oblique side thereof, of a fixed axle projecting from one side of said frame, a floating axle hinged to said frame and projecting at the other side thereof, and flanged ground-wheels on said axles, substantially as described.

3. The combination with a triangular frame and a moldboard applied to the oblique side thereof, of a shoe applied at one corner portion of said frame, means for raising and lowering the frame of said shoe, a fixed axle projecting at the other side of said frame, a floating axle hinged to said frame and projecting at the landside thereof, wheels mounted on said axles, and a connection between said frame and floating axle for throwing the weight of that side of the frame onto the wheel of said floating axle, substantially as described.

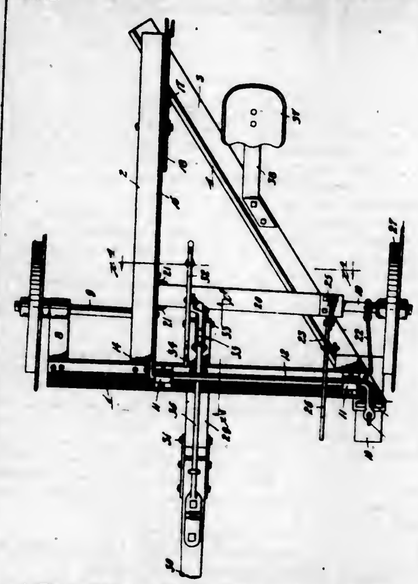

4. The combination with a triangular frame and a moldboard applied to the oblique side thereof, of a pole hinged to the forward portion of said frame, and means for raising and lowering the rear portion of said frame, to vary the position of said moldboard with respect to a horizontal plane, substantially as described.

5. The combination with a triangular frame and a moldboard applied to the oblique side thereof, of a pole pivoted to the forward portion of said frame, a shoe and a wheel supporting the forward portion of said frame, and a connection between said frame and said pole, for raising and lowering the rear portion of said frame and moldboard, with a rocking action on said shoe and wheel, substantially as described.

6. A grading-machine having a wheel arranged to resist side thrusts and mounted to move freely upward and downward with respect to its moldboard or scraper and without lifting the said moldboard or scraper from the ground, substantially as described.

7. In a grading-machine, the combination with a frame having a moldboard or scraper, of an axle extending across said moldboard, hinged at one end to said frame, and a wheel on the other end of said axle provided with projecting plates arranged to resist side thrusts, substantially as described.

810,478. LANDSIDE-WHEEL. CHARLES D. EDWARDS, Albert Lea, Minn. Filed June 24, 1905. Serial No. 266,006.

Claim.—A wheel having a hub 1, arms 2, rim 3 and an annular flange 4, said parts being cast integrally, and said flange 4 having the radial seats 5, of detachable thrust-resisting blades 6 lying in a common plane and a plurality of sharp-edged thrust-resisting blades fitting in said seats 5 and detachably held therein by nutted bolts 7, substantially as described.

810,479. RAILWAY. FRANK HUGLER, New Philadelphia, and ALBERT G. GUERNSEY, Uhrichsville, Ohio. Filed Oct. 24, 1905. Serial No. 284,304.

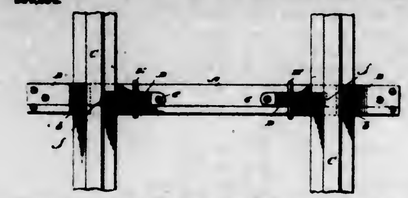

Claim.—1. In a railway, the combination of a tie, rail-braces fixed with respect to the tie, rails arranged on the tie and against said braces, locking-arms pivoted to the tie at the opposite sides of the rails, with reference to the braces, and arranged to engage the rails, and rings surrounding the tie and the locking-arms and slidable on and off the latter.

2. In a railway, the combination of a tie, rail-braces fixed with respect to the tie and provided with teats or projections, rails arranged on the tie and against the braces and having transverse openings receiving the teats or projections of the latter, locking-arms pivoted to the tie at the opposite sides of the rails, with reference to the braces, and having beveled ends arranged to engage the rails, and rings surrounding the tie and the locking-arms and slidable on and off the latter.

3. In a railway, the combination of a tie, a rail-brace carried by and fixed with respect to the tie, a rail arranged against the said brace, a locking-arm pivoted to the tie at the opposite side of the rail, with reference to the brace, and arranged to be swung into and out of engagement with the rail, and slidable means carried by the rail and engaging the arm for securing the latter in its working position.

4. A railway-tie having a rail-brace fixed with respect thereto and also having a rail-locking arm pivoted thereon, and a slidable ring surrounding the said arm and movable in the direction of the length thereof.

810,480. NON-REFILLABLE BOTTLE. JOHN M. GARDNER, St. Louis, Mo. Filed Nov. 26, 1904. Serial No. 234,103.

Claim.—1. A non-refillable bottle comprising a bottle-body provided with a neck, a valve in said neck, means to hold said valve in its seat except when the bottle is substantially inverted, a case closed at its upper end and secured to said neck and provided with openings in its side near its upper end, a cage in said case between said openings and said valve and provided with non-aligned openings.

2. An attachment for bottles comprising a case closed at its upper end and provided with lateral openings near its upper end and a cage in said case below said openings comprising diaphragms provided with non-aligned openings.

3. An attachment for bottles comprising a case closed at its upper end and provided with lateral openings near its upper end, a cap arranged to fit on the closed end of said case and close said openings, and a cage in said case below said openings provided with substantially parallel diaphragms corresponding in area to the area of the cross-section of said case and provided with non-aligned openings.

810,481. NON-REFILLABLE BOTTLE. WILLIAM H. GARNETT, Little Rock, Ark. Filed Aug. 31, 1905. Serial No. 276,269.

Claim.—1. A device of the character described comprising a casing provided with two chambers connected by a neck or contracted passage-way, the inlet for said casing being formed in one of said chambers, one of said chambers being provided with an overhanging bottom wall adjacent said neck, the outlet for said casing being formed in said bottom wall, a valve for the inlet, and means for holding said valve normally to its seat.

2. A device of the character described comprising a casing provided with two circular chambers of different diameters, connected by a neck or contracted passage-way, the smaller chamber being provided with an overhanging bottom wall, the inlet for said casing being formed in the larger chamber, the outlet therefor being formed in the bottom wall of the small chamber adjacent said neck, a valve for said inlet, and means for holding said valve normally to its seat.

3. A device of the character described comprising a casing formed of two chambers connected by an integral neck, the inlet for said casing being formed in one of said chambers in line with said neck, the other casing being provided with an overhanging bottom wall surrounding said neck and in which the outlet for said casing is formed, a valve for said inlet, and means for holding said valve normally to its seat.

4. The combination with a bottle the neck of which is provided with an annular shoulder, of a casing formed of two chambers of different diameters united by a neck or contracted portion, the larger chamber resting upon said shoulder, the inlet for said casing being formed in the larger chamber and the outlet being formed in the smaller chamber, a valve for said inlet, and means for holding said valve normally to its seat.

5. The combination with a bottle the neck of which is provided with a plurality of holes or openings, of a casing located in said neck and formed of upper and lower communicating chambers, said casing being provided with an inlet and an outlet, rods or pins inserted through said openings and engaging the top wall of said lower chamber, a valve for said inlet, and means for holding said valve normally to its seat.

6. The combination with a bottle the neck of which is provided with an annular shoulder and an annular groove or offset the outer wall of which is provided with a plurality of holes or openings, of a casing resting upon said shoulder and formed of upper and lower communicating chambers, said casing being provided with an inlet and an outlet, rods or pins passed through said holes or openings and engaging the top wall of said lower chamber, a cement filling for said groove or offset, a valve for said inlet, and means for holding said valve normally to its seat.

7. The combination with a bottle the neck of which is provided with an annular shoulder, of a collar arranged adjacent said shoulder, a casing resting upon said shoulder and collar and formed of upper and lower communicating chambers, said casing being provided with an inlet and an outlet, means for locking said casing in position, a valve for said inlet provided with a depending stem, an arm or member depending from said collar, and a spring connecting said arm or member and said valve-stem.

810,482. LIFTING-JACK. GEORGE H. GILMAN, St. Paul, Minn. Filed July 14, 1905. Serial No. 269,726.

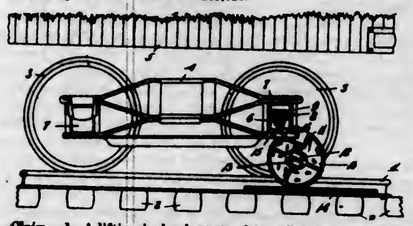

Claim.—1. A lifting-jack adapted to be applied between a journal-box of a car and the road-bed and constructed to frictionally engage with both thereof and arranged to lift the journal-box under a movement of the car, with a leverage action, and without slippage of any of the parts with respect to each other, substantially as described.

2. A lifting-jack of the character described, in the form of an eccentric wheel or disk adapted to be applied between the journal-box of a car and the road-bed, and arranged to roll and lift said journal-box, under a movement of the car, substantially as described.

3. A lifting-jack in the form of an eccentric disk or wheel having in line with its minor axis, a projecting push-lug, as, and for the purposes specified.

810,483. VOUCHER FOR SHIPPING VESSELS. FREDERICK A. GILBERT, Cleveland, Ohio. Filed Dec. 19, 1904. Serial No. 237,490.

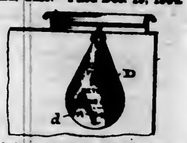

Claim.—A containing vessel provided with an opening, in combination with a closing device for said opening and a voucher detachably engaged with said closing device and of a size smaller in cross-section than said opening, whereby said voucher is confined within the vessel when the vessel is closed, and is removed therefrom with said closing device when the vessel is opened.

810,484. ICE-CREEPER. JOHN M. GRAY, Port Carbon, Pa. Filed Jan. 24, 1905. Serial No. 242,662.

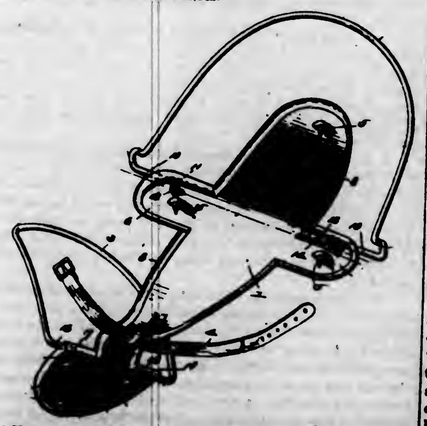

Claim.—1. An ice-creeper comprising a sole-plate, and resilient loops disposed at the toe and heel portions thereof, and having their terminals permanently secured to the plate.

2. An ice-creeper comprising a sole-plate and resilient loops disposed at the toe and heel portions thereof, and having their terminals permanently secured to the plate, one of the terminals of each of the loops being adjustable relatively to the plate.

3. An ice-creeper comprising a sole-plate provided with a toe and heel portion, and with notched slots, and resilient loops each having one of its terminals rigidly secured to the plate, and its other terminal mounted for movement within one of the slots.

4. An ice-creeper comprising a sole-plate, and attaching-loops disposed at the toe and heel portions thereof, the toe-loop being provided with lateral shoulders or offsets to engage the sole of the shoe, and the terminals of the loops being permanently secured to the plate.

5. An ice-creeper comprising a sole-plate provided with lateral wings, and a heel-plate, calks carried by the plate, wings, and heel-plate, and resilient loops disposed at the toe and the heel portions of the plate, each having one of its terminals rigidly combined with the plate, and the other terminal adjustably connected therewith.

810,485. METHOD OF AND APPARATUS FOR STACKING STRAW. JOHN A. GUNN, Des Moines, and JOSEPH J. MCBRIDE, Leports, Iowa; said McBride assignor to said Gunn. Filed Nov. 20, 1904. Serial No. 234,262.

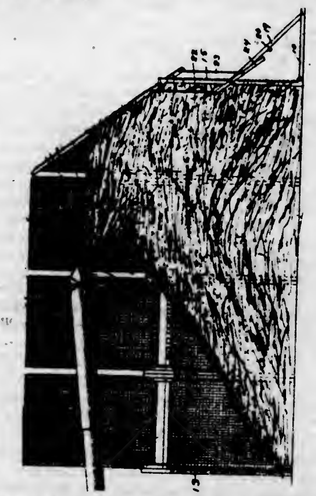

Claim.—1. The method of stacking straw which consists in first erecting a screen-barrier around the place upon which the stack is to be formed with the upper end portion of the barrier inclined toward the center of the place upon which the stack is to be formed, then depositing a quantity of straw within the barrier spaced apart from the barrier and finally discharging a blast of air ladened with straw downwardly and toward the barrier, said barrier retaining the straw and permitting the air to pass through and laying the straws adjacent to the barrier with their outer ends lower than their inner ends.

2. The method of stacking straw which consists in first erecting a screen-barrier then depositing a quantity of straw spaced apart from the barrier, then discharging a blast of air ladened with straw downwardly and toward the barrier and then directing the air-blast ladened with straw to different parts of the stack being formed to cause the straw to lie upon the stack with the outer ends of the straws lower than their inner ends.

3. The method of stacking straw which consists in first erecting a screen-barrier around the place upon which the stack is to be erected, said barrier having its upper portion inclined inwardly toward the center of the place upon which the stack is to be formed, then discharging a blast of air ladened with straw into the barrier in a direction tending to lay the straws within the barrier with their outer ends slightly lower than their inner ends, then directing the air-blast and straw to different parts of the stack to build up the stack with a greater quantity of straw upon its center than upon its edges.

4. The method of stacking straw which consists in discharging a blast of air ladened with straw in a nearly horizontal direction

against a screen-barrier which will permit parts of the straw to project through it and then removing the screen-barrier to permit the outer ends of the straws adjacent to the barrier to settle.

5. The method of stacking straw which consists in first erecting a screen-barrier with its upper end inclined inwardly, then discharging a blast of air ladened with straw against the barrier in a direction to lay the outer ends of the straws in a plane slightly lower than the inner ends and discharging the straw against the barrier in a manner to project portions of the straw through the barrier, and then removing the barrier, to form a stack with inclined sides and to permit the outer ends of the straws that were adjacent to the barrier to settle more than the inner ends, and to incline the straws on the exterior of the stack downwardly and outwardly for the purpose of shedding rain.

6. The method of stacking straw which consists in first erecting a screen-barrier and then discharging a blast of air ladened with straw toward the barrier, said barrier tending to retain the straw and permit the air to pass through it.

7. The method of stacking straw, which consists in first erecting a barrier, then discharging a blast of air ladened with straw toward the barrier, said barrier retaining the straw and permitting the blast of air to pass through and then removing the barrier.

8. The method of stacking straw which consists in first erecting a barrier, then arranging a chute adjacent to the barrier, then forcing a blast of air ladened with straw through the chute toward the barrier, said barrier retaining the straw and permitting the blast of air to pass through it and finally removing the barrier.

9. A stack-former comprising a screen-barrier member, means for supporting it in an upright position, a second screen-barrier member hinged to the top of the first capable of folding adjacent to the first and also of projecting upwardly above the first, and means for supporting it in its upwardly-projecting position.

10. A stack-former comprising a number of independent self-supported collapsible sections.

11. A stack-former comprising a number of screen-covered sections, each stack-forming section comprising an upright screen-covered frame and a screen-covered frame hinged to the upper end thereof capable of folding parallel with the upright frame and means for supporting it in an upwardly-inclined position.

12. A stack-forming section comprising a base portion and an upright portion hinged to the base portion and a top portion hinged to the upright portion and screens for covering the upright and top portions.

13. A stack-forming section comprising an upright screen-covered section member, an outwardly-projecting base member hinged to the bottom of the upright member and a top section member hinged to the upright section member and capable of folding from the position adjacent to the upright member inwardly and upwardly.

14. A stack-forming section comprising a base, an upright section member hinged to one end of the base and capable of lying parallel with the base, means for supporting the upright member in an upright position upon the base and a screen-covered top section member, hinged to the top of the upright section member, capable of folding parallel with the upright section member and means for swinging the top section member inwardly away from the base and upwardly.

15. A stack-forming section comprising a base, an upright section member hinged to one end of the base and capable of lying parallel with the base, means for supporting the upright member in an upright position upon the base and a screen-covered top section member, hinged to the top of the upright section member and means for swinging the top section member inwardly away from the base and upwardly, and means for locking the top section member in its upwardly-extended position.

16. A straw-stack-former section comprising a base-frame, a screen-covered section member hinged to one end of the base-frame, arms provided with elbow-joints pivoted to the sides of the base member and the upright member, a top, screen-covered, section member hinged to the upper end of the upright section member, a lever pivoted to one side of the upright section member, rods connecting the lever and one side of the top section member for raising and lowering the top section member, means attached to the other side of the top section member and to the upright section member for locking said other side in its upright position.

17. A straw-stack-former section, comprising a base-frame, a screen-covered section member hinged to one end of the base-frame, arms provided with elbow-joints pivoted to the sides of the base member and the upright member, a top, screen-covered, section member hinged to the upper end of the upright section member, a lever pivoted to one side of the upright section member, rods connecting the lever and one side of the top section member for raising and lowering the top section member, means attached to the other side of the top section member and to the upright section member for locking said other side in its upright position, a rod attached to said lever, and means for adjustably securing it to the adjacent portion of the upright section member.

18. A straw-stack-former section comprising a base-frame, a screen-covered section member hinged to one end of the base-frame, arms provided with elbow-joints pivoted to the sides of the base member, a top screen-covered section member hinged to the upper end of the upright section member, a lever pivoted to the sides of the base member and the upright member, a top, screen-covered, section member hinged to the upper end of the upright section member, a lever pivoted to one side of the upright section member, rods connecting the lever and one side of the top section member for raising and lowering the top section member, means attached to the other side of the top section member and to the upright section member for locking said other side in its upright position, a rod attached to said lever, means for adjustably securing it to the adjacent portion of the upright section member and means for locking together the base and top section member when in their folded positions.

19. In a stack-former, a collapsible screen-barrier.

810,486. VAPOR-GENERATOR. AMOS HARRISON, Chicago, Ill., assignor of one-fourth to Robert H. Walsh, Chicago, Ill. Filed Aug. 1, 1904. Serial No. 219,607.

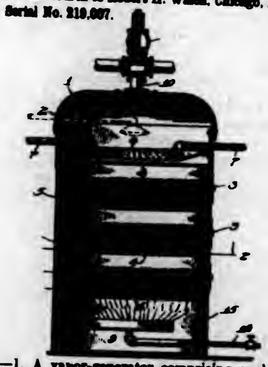

Claim.—1. A vapor-generator comprising a chamber, an incombustible porous body arranged within said chamber, and means for maintaining combustion within said chamber to heat said porous body, in combination with means for showering a liquid upon said heated body, and means for drawing off the steam and gases of combustion.

2. A vapor-generator comprising a chamber, an incombustible porous body arranged within the chamber, and means for continuously introducing material for supporting combustion into said chamber, whereby said porous body is heated to a suitable temperature, in combination with means for showering a liquid upon said porous body, and means for drawing off the commingled steam and gases of combustion.

3. A vapor-generator comprising an inclosing shell provided with a transverse vaporizing-partition dividing the shell into a vapor-dome above and a combustion-chamber below the same, a burner below the partition arranged to heat the same to a vaporizing temperature and means for permitting the products of combustion to pass to the vapor-dome, in combination with means for delivering a fluid to the vaporizing-partition and means for drawing off the resultant gases.

4. A vapor-generator comprising an inclosing shell provided with a transverse vaporizing-partition dividing the shell into a vapor-dome above and a combustion-chamber below the same, said combustion-chamber being open to atmospheric pressure, a burner arranged below the partition to heat the same to a vaporizing temperature, and means for permitting the products of combustion to pass to the vapor-dome, in combination with means for delivering a fluid to the vaporizing-partition and means for drawing off the resultant gases.

5. A vapor-generator comprising an inclosing shell provided with a transverse vaporizing-partition dividing the shell into a vapor-dome above and a combustion-chamber below the same, a burner below the partition arranged to heat the same to a vaporizing temperature and means for permitting the products of combustion to pass to the vapor-dome, in combination with means for delivering a fluid to the vaporizing-partition, a pipe for drawing off the commingled vapor and products of combustion, and a baffle-plate arranged before the entrance to said pipe.

6. A device of the kind described, comprising the combination of a suitable shell one or more porous vaporizing-bodies extending horizontally across said shell each consisting of a plurality of blocks of incombustible material, means for supporting the same, means for maintaining combustion within a portion of said shell to heat said blocks to a vaporizing temperature and means for thoroughly distributing a liquid upon the upper surface of the heated blocks, thereby producing a vapor within the shell composed of steam and the products of combustion.

7. A device of the kind described, comprising the combination of a shell provided with a covering of heat-insulating material one or more porous layers of incombustible material extending horizontally across said shell, a burner adapted to maintain combustion within said shell for heating said porous layers, means for distributing a liquid upon the upper surface of said heated porous layers thereby producing within the shell a heating medium composed of vapor mixed with the products of combustion.

8. A device of the kind described, comprising the combination of a shell provided with a covering of heat-insulating material, one or more layers of incombustible material extending horizontally across said shell, a burner adapted to maintain combustion within said shell for heating said layers, means for supplying said burner with a suitable combustible material, means for showering a liquid upon the upper surface of said heated layers thereby producing within the shell a heating medium composed of vapor mixed with the products of combustion.

9. A device of the kind described, comprising the combination of a suitable shell, one or more layers extending horizontally across said shell, each consisting of a plurality of blocks of incombustible material, means for supporting the same, means for maintaining combustion within said shell to heat said blocks, a foraminated trough arranged within said shell above said blocks adapted to shower a liquid discharged therein upon the upper surface of said heated blocks, thereby producing a vapor within the shell composed of steam and the products of combustion.

10. A device of the kind described, comprising the combination of a shell provided with a covering of heat-insulating material, one or more layers extending horizontally across said shell each layer consisting of a plurality of blocks of incombustible material, means for supporting the same, a burner adapted to maintain combustion within said shell for heating said blocks and means for supplying said burner with a suitable combustible material, a foraminated trough adapted to shower a liquid discharged therein upon the upper surface of said heated blocks, thereby producing a vapor within the shell composed of steam and the products of said combustion.

11. A device of the kind described, comprising the combination of a suitable shell provided with a covering of heat-insulating material, a discharge-pipe connected to said shell a baffle-plate arranged before the opening to said discharge-pipe, one or more layers of incombustible vaporizing material extending horizontally across said shell, a burner adapted to maintain combustion within said shell for heating said layers, and means for showering a liquid upon said heated layers, thereby producing a vapor within the shell composed of steam and the products of combustion.

12. A device of the kind described, comprising the combination of a suitable shell provided with a covering of heat-insulating material, a discharge-pipe connected to said shell, a baffle-plate arranged before the opening to said discharge-pipe, one or more layers extending horizontally across said shell each layer consisting of a plurality of blocks of incombustible vaporizing material, means for supporting the same, one or more burners adapted to maintain combustion within said shell for heating said blocks, means for supplying said burner with a suitable combustible material, a foraminated trough adapted to shower a liquid discharged therein upon the upper surface of said heated blocks, thereby producing a vapor within the shell composed of steam and the products of said combustion.

810,487. WHEEL FOR TRACTION-ENGINES. IRVIN O. HOSALUS, Crab Orchard, Nebr. Filed June 12, 1905. Serial No. 264,973.

Claim.—1. An attachment for wheels, comprising a bracket-plate adapted to be applied to the rim thereof, a series of spurs extending through said plate, and an operating-lever connected to each of said spurs and pivotally mounted upon said bracket.

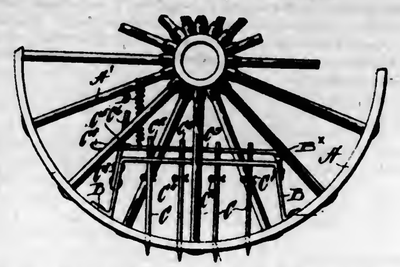

2. An attachment for wheels, comprising a bracket-plate adapted to be applied to the rim thereof, a series of spurs extending through said plate, an operating-lever connected to each of said spurs and pivotally mounted upon said bracket, and a ratchet-bar carried at the opposite end of the bracket from the pivot of said lever.

3. An attachment for wheels, comprising a bracket-plate adapted to be applied to the rim thereof, a series of spurs extending through said plate, an operating-lever connected to each of said spurs and pivotally mounted upon said bracket, a ratchet-bar carried at the opposite end of the bracket from the pivot of said lever, and a retracting-spring extending from said lever to a relatively fixed portion of the wheel.

4. An attachment for wheels, comprising an apertured supporting-bracket, a series of spurs extending therethrough and through the wheel, eyes at the inner ends of said spurs, an operating-lever extending through said eyes, a pivotal lug carried by the bracket at one end of said operating-lever, a ratchet-tooth carried by said lever, and a coöperating ratchet-plate at the opposite end of said bracket.

5. An attachment for wheels, comprising an apertured supporting-bracket, a series of spurs extending therethrough and through the wheel, eyes at the inner ends of said spurs, an operating-lever extending through said eyes, a pivotal lug carried by the bracket at one end of said operating-lever, a ratchet-tooth carried by said lever, a coöperating ratchet-plate at the opposite end of said bracket, a stop projection carried by said spurs to engage the under face of said bracket, and a retracting-spring extending from said lever to a spoke of the wheel.

810,488. SHOVEL-GUARD. GEORGE W. JARVIS, Townsend, Mont. Filed Aug. 3, 1905. Serial No. 272,406.

Claim.—1. A shoe-guard for shovels comprising a tube split longitudinally to form a pair of inwardly-extending spring clamping-jaws having smooth continuous gripping-faces for engagement with the bit of the shovel.

2. A shoe-guard for shovels comprising a cylindrical tube of uniform width split longitudinally to form a pair of parallel spring-jaws having smooth continuous gripping-faces for engagement with the bit of the shovel.

3. A shoe-guard for shovels comprising a reversible tube having curved exterior walls provided with a longitudinal slot defining a pair of inwardly-extending spring clamping-jaws the gripping-faces of which are smooth and continuous and adapted to engage the bit of the shovel, said gripping-faces being of equal length and disposed flush with the curved exterior walls of the tube.

810,489. GAGE FOR USE OF CARPENTERS AND JOINERS IN FITTING DOORS. JOHN A. JOHNSON, Chicago, Ill. Filed Apr. 5, 1905. Serial No. 253,933.

Claim.—1. A tool of the kind described, consisting of the several parts comprising the combination of a pair of stops, G, adapted to be attached to the stile of the door, and means for securing said stops to said door; each of said stops having a projecting shoulder-stop, I, and a shoulder-stop, K, said stops being adapted to fit the edge, B, and the face of a door-jamb, A; with a gage, P, having a

main part, Q, adapted at R to support a marker, F; and a marker, S, secured in the part, R, of the main body, Q, by screws, T; said main body, Q, being adapted to support a gage-bar, V, and a gage-bar, V, pivotally supported in said main part, Q, and means for adjustably securing said bar to said body; said bar, V, having curved points, V', near the ends of said bar; substantially as described and for the purposes specified.

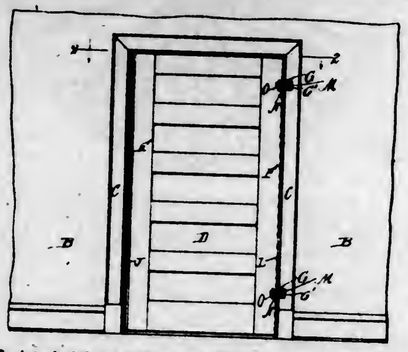

2. A tool of the kind described, consisting of the several parts described and forming the combination of a pair of stops, G, having shoulder-stops, I and K, and means for attaching said stops to the stile of a door; with a gage, P, having a main body, Q, adapted to support a marker, S, and gage-bar, V, and means for securing said marker and gage-bar to said body; a marker, S, adapted to be adjustably secured in said main body, and a gage-bar, V, adjustably secured to said main body; substantially as described and for the purposes specified.

3. A tool of the kind described, consisting of the several parts comprising the combination of a gage having a main body, Q, adapted to hold a marker, S, and a marker, S, adapted to be held in said main body, and means for adjustably securing said marker in said body; said main body, Q, being adapted to support a gage-bar, V; a gage-bar, V, supported in said main body, said bar having a curved bearing-point, V', near each end, the distance between said points being equal to the length of the marker, S; and means for adjusting said bar in said body in a position parallel with said marker, or at an angle thereto; with a pair of stops, G, having shoulder-stops, I and K, and means for attaching said stops to the stile of the door; substantially as described and for the purposes specified.

4. A tool of the kind described, consisting of the several parts comprising the combination of a gage having a main body, Q, adapted to hold a marker, S, and a gage-bar, V; and a marker, S, supported by said main body, and means for securing said marker to said main body; a gage-bar, V, supported in said main body, and means for adjustably securing the said bar to said body; with a pair of stops, G, having shoulder-stops, I and K, and means for attaching said stops to a door; substantially as described and for the purposes specified.

810,490. SAND-REEL. JACOB C. KNUPP and JAMES G. GREBER, Warren, Pa. Filed Sept. 13, 1905. Serial No. 278,093.

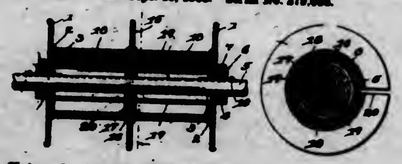

Claim.—1. A sand-reel including two heads each provided on its inner side with a pair of concentric annular flanges, said heads being provided with hubs having key-seats and set-screws disposed in registry with the key-seats; in combination with staves having their ends seated between the flanges of the heads, means for drawing the latter tightly in the direction of each other, a shaft extending through the hubs of the heads and having a longitudinal groove in alinement with the key-seats in the hubs, and keys or splines engaging said groove and key-seats and secured by the set-screws.

2. A sand-reel including a pair of heads, means for drawing said heads in the direction of each other, staves interposed between the heads and constituting the reel-body or drum, and an intermediate or auxiliary disk having a radial slot.

810,491. TELEPHONE TOLL APPARATUS. GEORGE A. LOUD, Hartford, Conn., assignor to The Gray Telephone Pay Station Company, Hartford, Conn., a Corporation of Connecticut. Filed Jan. 9, 1904. Serial No. 188,944.

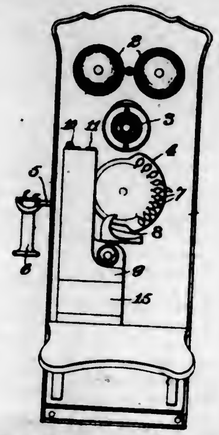

Claim.—1. The combination with a set of telephone instruments including a receiver and a receiver-hook lever, of a toll-collecting device comprising a coin-channel, a coin-stop pivotally supported at its lower end forming a coin-pocket, independent plungers arranged at each side of said coin-pocket adapted to be connected through a coin deposited on the coin-stop to ring the bells at the called station, and operative connections between said coin-stop and said receiver-hook lever for rocking said coin-stop, substantially as described.

2. In a toll-collecting device for use with automatic telephones the combination with the telephone instrument including the switch-hook lever, of a casing having a coin-slot and a coin-channel communicating therewith, independent plungers arranged in axial alinement and located at the bottom of said coin-channel, a coin-stop closing the lower end of said coin-channel and located between and in operative relation to the opposing ends of the said plungers whereby a coin deposited on the said coin-stop will form a connection between the said plungers, and operative connections between said coin-stop and said switch-hook lever, substantially as described.

3. In a toll-collecting device for use with automatic telephone systems, the combination with the instrument including a switch-hook lever, of a casing having a coin-slot, and a channel registering with said coin-slot, independent plungers in axial alinement with their opposing ends located at each side of the channel, a pivotally-mounted coin-stop forming a bottom for the channel and arranged in operative relation to the plunger ends whereby a coin dropping through the channel is positioned on the coin-stop between the plunger ends, and means operated by the switch-hook lever for moving said coin-stop, substantially as described.

4. A toll-collecting device for use with automatic telephone systems comprising a casing having a coin-slot and coin-channel, independent plungers in axial alinement with their opposing ends located at each side of the coin-slot, and a pivotally-mounted coin-stop adapted in one position to close the bottom of said coin-channel and position a coin between the opposing ends of said plungers and in its other position to open the bottom of said coin-channel and discharge the coin, and actuating mechanism connected with said switch-hook lever for said coin-stop, substantially as described.

5. The combination with a set of telephone instruments including a receiver and receiver-hook lever, and the normally open contacts of the call-circuit, of a coin-channel operatively arranged with reference to said instruments, a pivotally-supported coin-stop forming a coin-pocket at the bottom of said channel, a plunger having one end in operative relation with said contacts and its other end arranged at one side of said coin-stop, a second plunger in axial alinement with said first plunger and having one end arranged on the opposite side of said coin-stop, its outer end being provided with a button, the parts being so arranged that a coin supported on said coin-stop forms a connection between said plungers whereby a pressure on the said button will move both of said plungers lengthwise to close said contacts, and operative connections between said coin-stop and said switch-hook lever to rock said coin-stop to discharge the coin from the channel.

6. The combination with an automatic telephone instrument including the receiver, the receiver-hook lever, and the normally open contacts for the call-circuit, of a toll-collecting device comprising a coin-channel, a coin-stop forming a bottom for the channel, the plungers in axial alinement with their opposing ends arranged at either side of said coin-stop, the opposite end of one of said plungers being in operative relation to said contacts, operative connections between said coin-stop and the receiver-hook lever, and a spring to move said mechanism when the receiver-hook lever is raised, substantially as described.

7. In a toll-collecting device for use with automatic telephones the combination with the telephone instrument including a switch-hook lever, of a casing having a coin-slot and a coin-channel communicating therewith and having a delivery-orifice, a coin-stop adapted to close said delivery-orifice and form a bottom for said slot, plungers having their opposing ends arranged in operative position at each side of said coin-stop whereby said plungers are connected for lateral movement, and means for moving said coin-stop to open said delivery-orifice and eject a coin.

810,492. VEHICLE. RANDOLPH H. MARTZ, Frederick, Md. Filed Aug. 19, 1905. Serial No. 274,896.

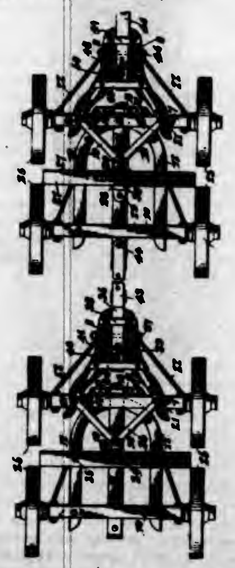

Claim.—1. In a vehicle of the class described, a truck comprising front and rear axles, a frame secured to one of the axles, a connection for the other axle pivoted to the frame between the axles, and means for limiting the swinging movement of the pivotally-connected axle, said means being adjustable to vary the limits of movement of said axle.

2. In a vehicle of the class described, a truck comprising front and rear axles, a frame secured to one of the axles, a connection for the other axle pivoted to the frame between the axles, and means detachably mounted on the swinging axle and movable into engagement with a portion of the frame to limit the swinging movement of the said pivotal axle.

3. In a vehicle of the class described, a truck comprising front and rear axles, a frame secured to one of the axles and having a portion transversely overlapping the other, a connection for said other axle pivoted to the frame between the axles, and a pin detachably and adjustably mounted in the swinging axle and engaging the overlapping portion of the frame to limit the swinging movement of said axle.

4. In a vehicle of the class described, a truck comprising front and rear axles, a bar rigidly affixed to one of the axles and transversely overlapping the other, a connection rigidly affixed to said other axle and pivoted to the bar, and pins carried by the swinging axle and located on opposite sides of the bar, said pins being adjustable toward and away from each other to vary the limits of the swing ing movement of the axle.

5. In a vehicle of the class described, a truck comprising a rear axle, a frame fixed to said rear axle and consisting of a central bar, and a truck-bound having side members secured to the rear axle on opposite sides of the bar, said bar extending in advance of the front end of the truck-bound, a front axle, rearwardly-extending braces connected to the front axle and pivoted to the bar in rear of its front end, said front axle swinging upon the bound and bar, and pins detachably carried by the front axle and located on opposite sides of the front end of the bar.

6. In a vehicle of the class described, a truck comprising axles, connections rigidly carried by the respective axles and pivoted to each other between the axles, the connection of one of the axles transversely overlapping the other axle and being longitudinally slidable upon the same, and means for limiting such sliding movement.

7. In a vehicle of the class described, the combination with an axle, of a bolster mounted on the axle, another axle, a frame carried by the other axle and having a portion disposed transversely of and slidable longitudinally with respect to the bolster, means pivotally connecting the axle and bolster to the frame, and means carried by the bolster for limiting the relative movement of the bolster and the portion of the frame associated therewith.

8. In a vehicle of the class described, the combination with an axle, of a bolster mounted on the axle in spaced relation thereto, another axle, connecting means carried by the other axle and having a portion sliding between the first-mentioned axle and bolster longitudinally of the same, and means connecting said axle and bolster for limiting such sliding movement.

9. In a vehicle of the class described, the combination with a front axle, of a bolster extending longitudinally thereof, fore hounds interposed between the axle and axle-bolster and separating the same a rear axle, a frame secured to the rear axle and including a bar that is slidable between the axle and bolster carried thereby, means connecting the front axle and bolster to the frame, and detachable devices connecting the front axle and bolster to limit the movement of the portion of the frame that is between them.

10. In a vehicle of the class described, the combination with a front axle, of a bolster rigidly secured thereto and spaced therefrom, a rear axle, a frame rigidly secured to the rear axle and comprising a truck-hound and bar, the front portions of which are slidable between the front axle and bolster, shoes carried by the truck-bound, wear-plates carried by the axle and bolster, and pins passing through the wear-plates and located on opposite sides of the frame-bar to limit the movement thereof.

11. In a vehicle of the class described, the combination with a truck, of a member pivoted to the truck, said truck member and being provided, one with a socket, the other with a locking device that is movable into the socket to hold the member against its pivotal movement.

12. In a vehicle of the class described, the combination with a truck, of a pole member pivoted to the truck and having an up-and-down swinging movement with respect to the truck, said truck and pole member being provided, one with a socket, the other with a movable locking device that is arranged to engage in the socket to hold the member against its pivotal movement.

13. In a vehicle of the class described, the combination with a truck having a socket, of a pole member pivoted to the truck and having an up-and-down swinging movement with respect thereto, and a locking device slidably mounted on the pole member and movable into the socket to hold the pole member against its swinging movement.

14. In a vehicle of the class described, the combination with a truck having forwardly-projecting spaced hounds, cross-bars connecting the hounds and forming a socket between them, a pole member pivoted to and between the hounds in advance of the socket, and a locking device slidably mounted on the rear end of the pole member and movable into and out of the socket.

15. An eight-wheeled wagon comprising separate four-wheeled trucks, each truck consisting of a front axle, a bolster, forwardly-extending hounds interposed between the axle and bolster, a rear truck, a frame rigidly secured to the rear truck and slidably mounted between the front axle and bolster, pivotal connections between the front axle and bolster and the frame, means connecting the front axle and

bolster to limit the swinging movement of the same, said means engaging the frame, and a truck-bolster mounted on the frame, a reach-pole pivoted between the bounds of the rear truck and connected to the front truck, means for limiting the swinging movement between the rear pole and rear truck, a tongue pivoted between the bounds of the front truck, and means for limiting the swinging movement of said tongue.

16. In a vehicle of the class described, a truck comprising front and rear axles, a frame connecting the axles, a truck-bolster pivotally mounted on the frame, and a rotary bearing for said bolster interposed between the same and the frame, said bearing comprising revolubly associated plates, one of which is provided with a curved recess, the other having a flange that turns in said recess.

810,493. RAIL-JOINT CHAIR. DANIEL HINSPELDER, Cincinnati, and WILLIAM L. HINSPELDER, Norwood, Ohio. Filed Oct. 26, 1905. Serial No. 284,374.

Claim.—1. In rail-end-alining means, a base-plate having rims on opposite edges to receive between them the base of two adjoining rail ends and wedges adapted to act against the under side of this plate to hold it against the under side of the rail ends.

2. In rail-end-alining means, the combination of a base-plate extending under both adjoining rail ends, and having inclined, wedge-engaging surfaces on its under side, wedges fitted to act against these surfaces, supports for these wedges and bolts to adjust them laterally on these supports with reference to the base-plate above.

3. In a rail-joint, the combination of rail-end-connecting means which are extended downwardly to form a closed housing, and rail-end-alining means contained in this housing.

4. In a rail-joint, the combination of rail-end-connecting means which are extended downwardly to form a closed housing, rail-end-alining means contained therein, bolts to adjust these means and a box on one side of this housing to permit access to these bolts.

5. In a rail-joint, the combination of rail-end-connecting means which are extended downwardly to form a closed housing, wedges in this housing, a base-plate between them and the rail ends above and means to act upon these wedges in a manner to hold the base-plate against both rail ends.

6. In rail-end-alining means, the combination of a base-plate below both rail ends, wedges adapted to act against the same from below, they being perforated to receive bolts for such purpose and supports for these wedges to hold them in opposition to their action against the base-plate above.

7. In a rail-joint, the combination of a housing, rail-alining means contained therein and tie-engaging attaching-flanges at opposite ends of this housing.

8. In a rail-joint, the combination of rail-end-connecting fish-plates which at their lower edges are extended outwardly and downwardly over the rail-base and inwardly again at some distance below the rail-base so as to form a housing thereat, bolts to connect these fish-plates to the rail ends, additional bolts to connect their extended parts below the rail-base which form the housing, a rail-end-alining base-plate with wedges under it contained in the housing mentioned and bolts to manipulate these wedges in a manner to cause them to hold the base-plate against the under side of the adjoining rail ends.

810,494. BLOCK-MOLD. JOHN C. MILLER, Jackson, Mich. Filed July 22, 1905. Serial No. 270,557.

Claim.—1. A mold comprising a back plate and ends, a turning bar pivotally supported at the lower front corner of the mold and having spaced fingers extending therefrom, a removable pallet supported on the bar against the fingers, and forming the front side of the mold, and a face-plate secured to the bar and swinging between the ends and forming the bottom of the mold.

2. A mold comprising a back plate and ends, arms projecting forwardly from the ends and adjustable thereon, and having inwardly-projecting lugs, and a tilting front side and bottom pivoted between the arms and arranged to swing between the ends and down and out upon the lugs.

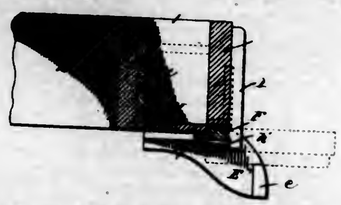

3. A multiple mold having a fixed back side and ends, division-plates projecting from the back between the ends, arms extending at the ends, and having inwardly-projecting lugs, a turning bar pivoted between the arms at the lower front corner of the mold and having projecting arms arranged to strike the lugs, a removable pallet supported upon the said projecting arms and forming the side of the mold, and a plurality of spaced face-plates secured to the bar and forming the bottom of the mold.

810,495. GAS-ENGINE. WILLIAM G. MILLER, West Medway, Mass. Filed Mar. 20, 1905. Serial No. 251,267.

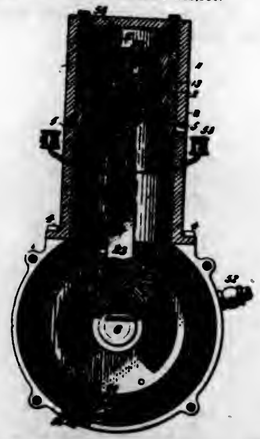

Claim.—1. An engine comprising a casing, a piston reciprocally movable therein and dividing the casing into two compartments, one of said compartments forming the explosion-chamber, an inlet-valve to the other compartment, said piston adapted to draw the working agent into the said other compartment during one portion of its stroke, said casing having piston-controlled exhaust-ports for the explosion-chamber, means carried by the piston for passing the working agent into the explosion-chamber from the other chamber, and means carried by the piston for closing the exhaust-ports in advance of the admission of said working agent, substantially as shown and described.

2. An engine comprising a casing, a piston reciprocally movable therein and dividing the casing into two compartments, one of said compartments forming the explosion-chamber, an inlet-valve to the other compartment, said piston adapted to draw the working agent into the said other compartment during one portion of its stroke, said casing having piston-controlled exhaust-ports for the explosion-chamber, means carried by the piston for passing working agent into the explosion-chamber from the other chamber, means carried by the piston for closing the exhaust-port in advance of the admission of said working agent, and means mounted within the casing for automatically operating said first-mentioned piston-carried means.

3. An engine comprising a casing, a piston reciprocally movable therein, and dividing the casing into two compartments, one of said compartments forming the explosion-chamber, an inlet-valve to the other compartment, said piston adapted to draw the working agent into the said other compartment during one portion of its stroke, said casing having piston-controlled exhaust-ports for the explosion-chamber, means carried by the piston for passing working agent into the explosion-chamber from the other chamber, means carried by the piston for closing the exhaust-ports in advance of the admission of said working agent, and means mounted within the casing for automatically operating said piston-carried means.

4. An engine comprising a casing, a piston reciprocally movable therein and dividing the casing into two compartments, one of said compartments forming the explosion-chamber, an inlet-valve to the other compartment, said piston adapted to draw the working agent into said other compartment during one portion of its stroke, said casing having piston-controlled exhaust-ports for the explosion-chamber, means carried by the piston for passing working agent into the explosion-chamber from the other chamber, means carried by the piston for closing the exhaust-ports in advance of the admission of said working agent, and means mounted within the casing for automatically operating both of said piston-carried means.

5. In an engine of the character stated, a working cylinder and a crank-casing in communication with each other, a piston operatable in the working cylinder, a crank-shaft rotatably mounted in the crank-casing, a piston-rod connecting said crank-shaft with said piston, an intake-valve for said crank-casing, said piston arranged to draw working agent into said crank-casing when moving in one direction and to compress the working agent in the crank-casing when moving in the opposite direction, an inlet-valve in the piston-head for passing the working agent from the crank-casing into the explosion-chamber of the cylinder, said cylinder having exhaust-ports adapted to normally be closed by said piston and opened when the piston is at the limit of its stroke in one direction, and valve-controlling means carried by the piston, all being arranged substantially as shown and described.

6. In an engine of the character stated, a working cylinder and a crank-casing in communication with each other, a piston operatable in the working cylinder, a crank-shaft rotatably mounted in the crank-casing, a piston-rod connecting said crank-shaft with said piston, an intake-valve for said crank-casing, said piston arranged to draw working agent into said crank-casing when moving in one direction and to compress the agent in the crank-casing when moving in the opposite direction, an inlet-valve in the piston-head for passing the working agent from the crank-casing into the explosion-chamber of the cylinder, said cylinder having exhaust-ports adapted to be closed by said piston and opened when the piston is at the limit of its stroke in one direction, an exhaust-valve carried by the piston, means for automatically opening said inlet piston-valve, and means for automatically moving said exhaust-controlling valve to close the said exhaust-ports in advance of the opening of the inlet-valve.

7. In an engine of the character stated, a working cylinder and a crank-casing in communication with each other, a piston operatable in the working cylinder, a crank-shaft rotatably mounted in the crank-casing, a piston-rod connecting said crank-shaft with said piston, an intake-valve for said crank-casing, said piston arranged to draw working agent into said crank-casing when moving in one direction and to compress the working agent in the crank-casing when moving in its opposite direction, an inlet-valve in the piston-head for passing the working agent from the crank-casing into the explosion-chamber of the cylinder, said cylinder having exhaust-ports to be normally closed by said piston and opened when the piston is at the limit of its stroke in one direction, an exhaust-valve carried by the piston, means for automatically opening said inlet piston-valve, means for automatically moving said exhaust-controlling valve to close the exhaust-ports in advance of the opening of inlet-valve, and means for returning said inlet-valve to its seat.

8. In an engine of the character stated, a working cylinder and a crank-casing in communication with each other, a piston operatable in the working cylinder, a crank-shaft rotatably mounted in the crank-casing, a piston-rod connecting said crank-shaft with said piston, an intake-valve for said crank-casing, said piston arranged to draw working agent into said crank-casing when moving in one direction and to compress the agent in the crank-casing when moving in the opposite direction, an inlet-valve in the piston-head for passing the working agent from the crank-casing into the explosion-chamber of the cylinder, said cylinder having exhaust-ports adapted to be normally closed by said piston and opened when the piston is at the limit of its stroke in one direction, an exhaust-valve carried by the piston, means for automatically opening said inlet piston-valve, and means for automatically moving said exhaust-controlling valve to close the said exhaust-ports in advance of the opening of the inlet-valve, and means for returning said exhaust-controlling valve to its seat.

9. In an engine of the character stated, a working cylinder and a crank-casing in communication with each other, a piston operatable in the working cylinder, a crank-shaft rotatably mounted in the crank-casing, a piston-rod connecting said crank-shaft with said piston, an intake-valve for said crank-casing, said piston arranged to draw working agent into said crank-casing when moving in one direction and to compress the agent in the crank-casing when moving in the opposite direction, an inlet-valve in the piston-head for passing the working agent from the crank-casing into the explosion-chamber of the cylinder, said cylinder having exhaust-ports adapted to be closed by said piston and opened when the piston is at the limit of its stroke in one direction, an exhaust-valve carried by the piston, means for automatically opening said inlet piston-valve, means for automatically moving said exhaust-controlling valve to close the exhaust-ports in advance of the opening of the inlet-valve, and means for locking said exhaust-valve to its seat at times.

10. In an engine of the character stated, a working cylinder and a crank-casing in communication with each other, a piston operatable in the working cylinder, a crank-shaft rotatably mounted in the crank-casing, a piston-rod connecting said crank-shaft with said piston, an intake-valve for said crank-casing, said piston arranged to draw working agent into said crank-casing when moving in one direction and to compress the agent in the crank-casing when moving in the opposite direction, an inlet-valve in the piston-head for passing the working agent from the crank-casing into the explosion-chamber of the cylinder, said cylinder having exhaust-ports adapted to be closed by said piston and opened when the piston is at the limit of its stroke in one direction, an exhaust-valve carried by the piston, means for automatically opening said inlet piston-valve, and means for automatically moving said exhaust-controlling valve to close the said exhaust-ports in advance of the opening of the intake-valve, means for locking said exhaust-valve to its seat at times, and means for automatically releasing said locking means at times.

11. An engine comprising a working cylinder, a piston reciprocally mounted therein, said piston adapted to draw working agent into one end of said cylinder during one portion of its stroke and to compress said working agent on the return portion of its stroke, an inlet-valve in the piston-head adapted to open at predetermined times to admit said compressed working agent into the explosion-chamber of the cylinder, said cylinder having piston-controlled exhaust-ports substantially as shown and described.

12. An engine comprising a working cylinder, a piston reciprocally mounted therein, said piston adapted to draw working agent into one end of said cylinder during one portion of its stroke and to compress said working agent on the return of its stroke, an inlet-valve in the piston-head adapted to open at predetermined times to admit said compressed working agent into the explosion-chamber of the cylinder, said cylinder having piston-controlled exhaust-ports, and supplemental means carried by the piston for closing said exhaust-ports after the exploded mixture has escaped therethrough and before the opening of the piston inlet-valve.

13. In an engine of the class described, a working cylinder and a piston operatable therein, and an automatically-operated means carried by the piston for drawing oil into the cylinder to lubricate the moving parts, and an oil-containing vessel in communication with said cylinder substantially as shown and described.

14. In an engine of the class described, a working cylinder and a crank-casing, a piston reciprocally mounted in the working cylinder, a crank-shaft mounted in the crank-casing, a piston-rod connecting the crank-shaft to the piston, said piston having its head apertured and provided with a valve-seat, an inlet-valve carried by said piston with its stem passing through the piston-head, a valve-operating rod for said inlet-valve connected to its stem and held in bearings on the piston-rod, cam devices within the crank-casing for engaging said rod at times to open the valve, said cylinder having piston-controlled exhaust-ports, substantially as shown and described.

15. In an engine of the class described, a working cylinder and a crank-casing, a piston reciprocally mounted in the working cylinder, a crank-shaft mounted in the crank-casing, a piston-rod connecting the crank-shaft to the piston, said piston having its head apertured and provided with a valve-seat, an inlet-valve carried by said piston with its stem passing through the piston-head, a valve-operating rod for said inlet-valve connected to its stem and held in bearings on the piston-rod, cam devices within the crank-casing for engaging said rod at times to open the valve, said cylinder having piston-controlled exhaust-ports, and a supplemental valve carried by the piston for closing said exhaust-ports at times.

16. In an engine of the class described, a working cylinder and a crank-casing, a piston reciprocally mounted in the working cylin-

der, a crank-shaft mounted in the crank-casing, a piston-rod connecting the crank-shaft to the piston, said piston having its head apertured and provided with a valve-seat, an inlet-valve carried by said piston with its stem passing through the piston-head, a valve-operating rod for said inlet-valve connected to its stem and held in bearings on the piston-rod, cam devices within the crank-casing for engaging said rod at times to open the valve, said cylinder having piston-controlled exhaust-ports, and a supplemental valve carried by the piston for closing said exhaust-ports at times, and cam-controlled devices within the cylinder and crank-casing for positively operating said supplemental valve.

17. In an engine of the class described, a working cylinder and a crank-casing, a piston reciprocally mounted in the working cylinder, a crank-shaft mounted in the crank-casing, a piston-rod connecting the crank-shaft to the piston, said piston having its head apertured and provided with a valve-seat, an inlet-valve carried by said piston with its stem passing through the piston-head, a valve-operating rod for said inlet-valve connected to its stem and held in bearings on the piston-rod, cam devices within the crank-casing for engaging said rod at times to open the valve, said cylinder having piston-controlled exhaust-ports, a supplemental valve carried by the piston for closing said exhaust-ports at times, and cam-controlled devices within the cylinder and crank-casing for positively operating said supplemental valve in advance of the opening of the piston inlet-valve.

18. In an engine of the class described, a working cylinder and a crank-casing, a piston reciprocally mounted in the working cylinder, a crank-shaft mounted in the crank-casing, a piston-rod connecting the crank-shaft to the piston, said piston having its head apertured and provided with a valve-seat, an inlet-valve carried by said piston with its stem passing through the piston-head, a valve-operating rod for said inlet-valve connected to its stem and held in bearings on the rod, cam devices within the crank-casing for engaging said rod at times to open the valve, said cylinder having piston-controlled exhaust-ports, a supplemental valve carried by the piston for closing said exhaust-ports at times, cam-controlled devices within the cylinder and crank-casing for positively operating said supplemental valve in advance of the opening of the piston inlet-valve, means for locking said supplemental valve to its normal position and supplemental cam devices within the crank-casing for releasing said locking means at times.

19. In an engine of the character stated, a working cylinder, a crank-casing connected to one end thereof, a hollow piston, closed at one end, reciprocally mounted within the working cylinder, said working cylinder having exhaust-ports adapted to be closed at times by said piston, a crank-shaft mounted in said crank-casing, a piston-rod connecting said crank-shaft to said piston, said piston having its closed end formed of reduced diameter to provide an annular seat, said piston having its closed end provided with apertures and a valve-seat, an inlet-valve having a hollow stem projected through said piston-head and adapted to normally seat on said valve-seat in the piston-head, a tubular rod mounted in bearings on the piston-rod and having one end in engagement with said tubular stem of the piston-head valve, said tubular rod having a cam-engaging foot at its free end, a supplemental valve having an annular ring adapted to seat in said annular seat of the piston and having a stem passing through the hollow stem of the first-mentioned piston-valve, a second rod held within said first-mentioned rod and having one end connected to said stem of the supplemental valve and having its free end provided with a cam-engaging heel, cams mounted within said crank-casing for coöperating with the heels of said rods, a gear mounted on said crank-shaft, a pinion connected with said cams and said gear whereby the motion of the crank-shaft is imparted to the cams, said cams being so arranged as to operate said supplemental valve in advance of said first-mentioned piston-valve to close the exhaust-ports of the working cylinder in advance of the admission of a new charge of working agent into the explosion-chamber, and oil-containing vessels communicating with the interior of said working cylinder at a point in alinement with the juncture between the large and reduced portions of the piston so that when the supplemental valve is operated the same will draw in a supply of oil from the oil-containers to lubricate the moving parts within the working cylinder and crank-casing, all being arranged substantially as shown and for the purposes described.

20. In an engine of the character stated, a working cylinder, a crank-casing connected to one end thereof, a hollow piston open at one end reciprocally mounted within the working cylinder, said working cylinder having exhaust-ports adapted to be closed at times by said piston, a crank-shaft mounted in said crank-casing, a piston-rod connecting said crank-shaft to said piston, said piston having its closed end formed of reduced diameter to provide an annular seat, said piston having its closed end provided with apertures and a valve-seat, an inlet-valve having a hollow stem projected through said piston-head and adapted to normally seat on said valve-seat in the piston-head, a tubular rod mounted in bearings on the piston-rod and having one end in engagement with the tubular stem of the piston-head valve, said tubular rod having a cam-engaging foot at its free end, a supplemental valve having an annular ring adapted to seat in said annular seat of the piston and having a stem passing through the hollow stem of the first-mentioned piston-valve, a second rod within said tubular rod, having one end connected to said stem of the supplemental valve and having its free end provided with a cam-engaging heel, cams mounted within said crank-casing for coöperating with the heels of said rods, a gear mounted in said crank-shaft, a pinion connected with said cams and said gear whereby the motion of the crank-shaft is imparted to the cams, said cams being so arranged as to operate said supplemental valve in advance of said first-mentioned piston-valve to close the exhaust-ports of the working cylinder in advance of the admission of a new charge of working agent into the explosion-chamber oil-containing vessels communicating with the interior of said working cylinder at a point in alinement with the juncture between the large and reduced portions of the piston so that when the supplemental valve is operated the same will draw in a supply of oil from the oil-containers to lubricate the moving parts within the working cylinder and crank-casing, a latch for coöperating with the first-mentioned tubular rod to hold the first-mentioned piston-valve to its seat, and a supplemental cam member for tripping said latch at times to release said latch from operative connection with the first-mentioned tubular rod, all being arranged substantially as shown and described.

21. An engine comprising a casing including a crank and a piston-chamber, a piston reciprocally movable in the piston-chamber, a crank-shaft mounted in bearings in the casing, a piston-rod connecting the piston with the crank-shaft, inlet-valves carried by the piston for passing the working agent into the explosion-chamber of the casing, a supplemental valve carried by the piston for closing the explosion-chamber exhaust-ports, means mounted within the casing for operating both piston-valves automatically, means for locking the exhaust-port-closing valve at times, and means for drawing oil into the casing to lubricate the moving parts.

810,496. STEAM-HEATER FOR WARMING AND MOISTENING FOODS. CHARLES J. MONFORT, St. Paul, Minn.; Alice Monfort Dunn administratrix of said Charles J. Monfort, deceased. Filed Jan. 9, 1904. Serial No. 188,261.

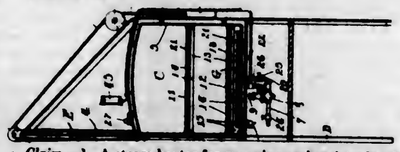

Claim.—1. A steam-heater for warming and moistening foods, consisting, in combination, of a jacketed inclosure provided with perforated inner walls, a sprayer in said inclosure, a pipe connecting with said sprayer and the jacket of said inclosure, a pressure-regulating valve connected with said pipe, and a frame for supporting said parts.

2. A steam-heater for warming and moistening foods, consisting, in combination, of an inclosure formed by a steam-jacket, a sprayer in said inclosure, a steam-pipe connecting with said jacket and sprayer, a pressure-regulating valve connected with said pipe, and a frame for supporting said parts.

3. A steam-heater for warming and moistening foods, consisting, in combination, of a jacketed inclosure provided with perforations in its inner walls for admitting steam into said inclosure, a sprayer in said inclosure, a pipe connected with said jacket and sprayer, a pressure-regulating valve connected with said pipe, a door in said inclosure, and a frame for supporting said parts.

4. A steam-heater for warming and moistening foods, consisting, in combination, of a jacketed inclosure, trays in said inclosure provided with openings therethrough, a sprayer below said trays, a pipe connected with said jacket and sprayer, a pressure-regulating valve connected with said pipe, and a door in said inclosure

5. A steam-heater for warming and moistening foods, consisting, in combination, of a jacketed inclosure provided with perforated inner walls for admitting steam into said inclosure, trays in said inclosure provided with openings therethrough, a sprayer below said trays, a pipe connected with said jacket and sprayer, a pressure-regulating valve connected with said pipe, a door in said inclosure, and a frame for supporting said parts.

6. A steam-heater for warming and moistening foods, consisting, in combination, of a jacketed inclosure provided with perforated inner walls for admitting steam into said inclosure, a sprayer in said inclosure, a pipe connected with said jacket and sprayer, a pressure-regulating valve connected with said pipe, trays in said inclosure provided with openings, and distributing-cloths resting upon said trays.

7. A steam-heater for warming and moistening foods, consisting, in combination, of a jacketed inclosure provided with perforated inner walls for admitting steam into said inclosure, a sprayer in said inclosure, a steam-pipe connected with said jacket and sprayer, trays in said inclosure provided with openings, and cloths resting upon said trays.

8. A steam-heater for warming and moistening foods, consisting, in combination, of a jacketed inclosure provided with a perforated inner wall for admitting steam into said inclosure, a steam-pipe connected with said jacket, a pressure-regulating valve connected with said pipe, a tray in said inclosure provided with openings, a distributing-cloth resting upon said tray, and a door in said inclosure.

9. A steam-heater for warming and moistening foods, consisting, in combination, of a jacketed inclosure provided with perforated inner walls for admitting steam into said inclosure and with a vent through its floor, a sprayer in said inclosure, a steam-pipe connected with said jacket and sprayer, and a pressure-regulating valve connected with said pipe.

810,497. MUSIC-LEAF TURNER. FRANKLIN O. HOOKE, Los Angeles, Cal. Filed Nov. 21, 1904. Serial No. 233,709.

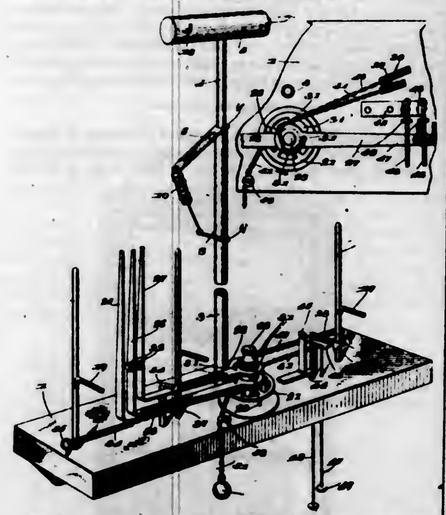

Claim.—1. A music-leaf turner comprising a base, a post rising therefrom, a series of leaf-turning members mounted to swing concentrically upon the post and progressing in length, a title-page holder mounted concentric with the leaf-turning members and having a concentric winding-reel, a guide carried by the base, a flexible element connected to the reel with its free end passing across the guide into an accessible position, the flexible element being wound upon the reel in a direction to swing the title-page holder from the left to the right when the flexible element is pulled across the guide, means tending to yieldably maintain the leaf-turning members at the left of the device, means for detachably holding all of the leaf-turning members at the right of the device, means for individually releasing the leaf-turning members, and means carried by the title-page holder for engagement with the leaf-turning members to swing the same from the left to the right.

2. A leaf-turner comprising a base, a post carried thereby, a swinging leaf-turning member having an opening loosely receiving the post and provided with a plurality of projections disposed in a concentric series around the opening, a spring connected to the base and having a flexible connection with one of the projections and exerting a tendency to yieldably maintain the leaf-turning member at the left of the device, said flexible connection being adapted to wrap around the series of projections when the leaf-turning member is swung to the right, means to removably hold the leaf-turning member at the right of the device, and means to release the leaf-turning member.

3. A music-leaf turner comprising a base, a post rising therefrom, a pair of superposed leaf-turning members mounted to swing about the post, the upper leaf-turning member having a reel rising therefrom around the post, the lower leaf-turning member having a pendent reel, springs connected to the base and connected respectively to the reels of the upper and lower leaf-turning members and exerting tendencies to maintain the leaf-turning members yieldably at the left of the device, means to detachably hold the upper leaf-turning member at the right of the device, means to release the upper leaf-turning member, and a flexible controlling element wound upon the reel of the lower leaf-turning member to swing the latter from the left to the right, said lower leaf-turning member having means for engagement with the upper leaf-turning member to swing the latter therewith from the left to the right into engagement with the holding means therefor.

4. A leaf-turner comprising a base, individual superposed leaf-turning members mounted to rotate concentrically upon the base and progressing in length from the uppermost to the lowermost member, a title-page holder mounted to rotate concentrically with the leaf-turning members below the lowermost member, the title-page holder having pendent projections disposed in a concentric series around the pivotal axis of the holder, each of the leaf-turning members being provided with upstanding projections disposed in a concentric series about its pivotal axis, springs connected to the right hand side of the base and flexibly connected to certain of the upstanding projections of the leaf-turning members with a tendency to yieldably maintain the latter at the left of the device and capable of winding about the projections when the leaf-turning members are turned from the left to the right, catches carried by the base and disposed to individually engage the leaf-turning members when swung to the right of the device, means for individually releasing the catches, a spring connected to the title-page holder and to the left-hand portion of the base, a guide carried by the base, and a flexible controlling element wound upon the pendent projections of the title-page holder and passing across the guide with its free end accessible for manipulation thereof to swing the title-page holder from the left to the right, said title-page holder having an upstanding projection for engagement with the leaf-turning members to swing the same from the left to the right.

810,498. HAY-CARRIER. PHILIP A. MYERS, Ashland, Ohio, assignor to F. B. Myers and Brother, Ashland, Ohio, a Copartnership. Filed Sept. 9, 1905. Serial No. 277,965.

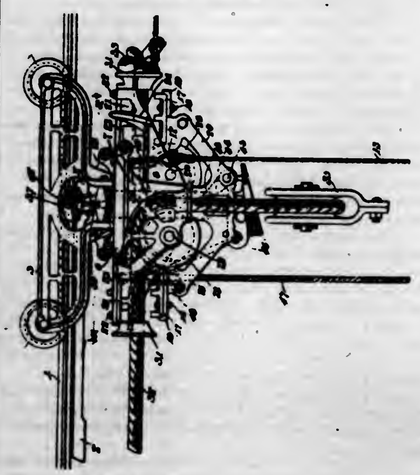

Claim.—1. In a hay-carrier, the combination, with a track-carriage, and a carrier proper having a swiveled connection therewith, of means for locking the carrier proper and carriage against swiveling motion, said locking means acting to positively prevent rotation of the carrier proper in one direction and yielding to permit rotation in the opposite direction, substantially as described.

2. In a hay-carrier, the combination, with a track-carriage, and a carriage proper having a swiveled connection therewith, of means for locking the carrier proper and carriage against swiveling motion, said locking means comprising an automatically-acting bolt on one of said members and diametrically opposite recesses on the other member, said locking devices acting to positively prevent rotation of the carrier proper in one direction and yielding to permit rotation in the opposite direction, substantially as described.

3. In a hay-carrier, the combination, with a track-carriage, and a carrier proper having a swiveled connection therewith, of means for locking the carrier proper against swiveling movement relatively to the carriage, said means comprising an automatically-acting bolt carried by one of said members and engaging the other of said members, the engaged member being provided with diametrically opposite recesses, each having a positive stop-shoulder on one side and an inclined surface on the other side adapted to press back the bolt, substantially as described.

4. In a hay-carrier, the combination, with a track, a track-carriage, a carrier proper having a swiveling connection therewith, and a combined hoisting and traction rope supported by said carrier proper, of a spring-actuated locking-bolt mounted to slide vertically in one of said members and acting to engage the other member to lock it against swiveling, and an independent operating-rope connected to and depending from said bolt to permit its manual operation to disengage the same, substantially as described.

5. In a hay-carrier, the combination, with a track-carriage, and a carrier proper, the two connected by a swiveling connection comprising an annular flange on one of said members and a grooved flange to receive the same on the other member, said annular flange being provided at diametrically opposite points with locking-recesses, of a spring-actuated locking-bolt mounted on the other member and adapted to engage either one of said recesses, each of said recesses being provided on one side with a positive stop-shoulder and on the other side with an incline adapted to press back the bolt, substantially as described.

6. In a hay-carrier, the combination, with a track-carriage, and a carrier proper having a swiveling connection therewith, said carrier proper having rope connections which are laterally offset, of means for locking the carrier proper and carriage against swiveling motion, substantially as described.

7. In a hay-carrier, the combination, with a track-carriage, and a carrier proper having a swiveling connection therewith, said carrier proper having rope connections which are laterally offset, of means for locking the carrier proper and carriage against swiveling motion, said locking means acting to positively prevent rotation of the carrier proper in one direction and yielding to permit rotation in the opposite direction, substantially as described.

8. In a hay-carrier, the combination, with a track-carriage, and a carrier proper having rope connections which are laterally offset, of means for locking the carrier proper and carriage against swiveling motion, said locking means serving to positively prevent rotation of the carrier proper in the direction in which traction on the rope tends to rotate the same, substantially as described.

9. In a hay-carrier, the combination, with a track-carriage, and a carriage proper having a swiveling connection therewith, said carrier proper having rope connections which are laterally offset, of means for locking the carrier proper and carriage against swiveling motion, and means for manually disengaging said locking means, substantially as described.

10. In a hay-carrier, the combination, with a track-carriage, and a carrier proper having a swiveling connection therewith, said carrier proper having rope connections which are laterally offset, of means for locking the carrier proper and carriage against swiveling motion, said locking means comprising an automatically-actuated engaging bolt on one of said members and diametrically opposite engaging recesses on the other member, each recess provided with a positive stop-shoulder on one side and an incline on the opposite side adapted to press back the bolt, substantially as described.

11. In a hay-carrier, a frame provided with rope-supporting pulleys mounted on opposite sides thereof and located on opposite sides of a plane transverse to the body of the carrier, substantially as described.

12. In a hay-carrier, a frame provided with rope-supporting pulleys mounted on opposite sides thereof and located on opposite sides of a plane transverse to the body of the carrier, said carrier being provided with two sets of rope-gripping jaws alined with the respective pulleys, substantially as described.

13. In a hay-carrier, a frame comprising a fixed part and a movable part, and locking and tripping mechanism for holding in raised position and releasing said movable part, rope guiding and supporting pulleys mounted on opposite sides of said movable part and arranged on opposite sides of a plane transverse thereto, and two sets of rope-gripping jaws alined with the respective pulleys, one jaw of each set being fixed and carried by the fixed part of the frame, the other jaw being movable and actuated by the movable part of the frame, substantially as described.

14. In a hay-carrier, a frame comprising a fixed part and a movable part, and locking and tripping mechanism for holding in raised position and releasing the movable part, rope guiding and supporting pulleys mounted on the movable part on opposite sides thereof and also on opposite sides of a plane transverse thereto, and two sets of rope-gripping jaws alined with the respective pulleys, each set comprising a fixed jaw carried by the fixed part and a movable jaw carried by and moving with the movable part, substantially as described.

15. In a hay-carrier, the combination with a track-carriage, of a carrier proper having a swiveling connection therewith, and means for locking the parts against swiveling movement, said carrier proper comprising two rope guiding and supporting pulleys provided with alined gripping-jaws, located on opposite sides of said carrier proper and extending from the central portion thereof in opposite directions, substantially as described.

16. In a hay-carrier, the combination, with a track-carriage, of a carriage proper having a swiveling connection therewith, and means for locking said parts against swiveling movement, said carrier proper having a frame comprising a fixed and a movable part, rope guiding and supporting pulleys mounted on opposite sides of said movable part and lying on opposite sides of a plane transverse thereto, rope-gripping jaws alined with the respective pulleys and operated by the movement of the movable part of the carrier-frame, and means for lifting, holding in raised position and tripping said movable part of the carrier-frame, substantially as described.

810,499. **REFRIGERATOR.** CHARLEY MCDONNER, Manitowoc, Wis., assignor of one-third to Joseph J. Rosner and one-third to Charles Ahlgrim, Manitowoc, Wis. Filed Mar. 31, 1905. Serial No. 253,979.

Claim.—In a refrigerator, an ice box or chest composed of inner and outer shells constructed of sheet metal and spaced apart to provide an air-tight intervening cold-air space, a valved inlet for supplying the cold-air space with air under pressure, absorbent non-heat-conducting linings located within the said cold-air space and arranged on the said shells, and bars interposed between the shells and retaining the said linings in place and provided with openings to permit a circulation due to changes in temperature and also to enable the entire cold-air space to be charged with air under pressure.

810,500. **WAGON-BOLSTER.** GILBERT HOFFSTETTER, Clinton, Iowa. Filed June 26, 1905. Serial No. 267,422.

Claim.—In a device of the class described, a bolster having a recess in the lower face, a bearing member closely engaging said recess and provided with a central aperture a king-bolt, rotative in said aperture and with an enlarged head bearing upon said bearing member, an upper plate extending beneath said bolster and having an aperture for the passage of the king-bolt and with a collar around said aperture, and a lower plate supported upon the axle structure and provided with an aperture for receiving said collar.

810,501. **ELECTRIC FIRE-ALARM AND THERMO-INDICATOR.** ALFRED H. MCNEIL, Clapton, London, England, assignor to The Pearson Fire Alarm Limited, London, England. Filed May 1, 1905. Serial No. 258,373.

Claim.—1. In an electric fire-alarm in which an electric circuit is completed at a predetermined temperature by the deflection of a thermal strip, a box or chamber having an opening in one of its sides, an insulated contact-spring fixed inside the box and normally closing the said opening, an adjustable contact also mounted within the box in close proximity to the spring-contact, a thermal strip fixed at its ends outside the box, and a plunger attached to the thermal strip and arranged to project into the opening in the side of the box and to operate the contact-spring, substantially as described.

2. In an electric fire-alarm in which an electric circuit is completed at a predetermined temperature by the deflection of a thermal strip, a box or chamber provided with stuffing boxes or glands at its ends and an opening in one side, an insulating slab or support fixed inside the box, contacts mounted on the insulating-support, one of said contacts being adapted to close the opening in the side of the box, means for adjusting the other contact, electric leads or conductors connected to the contacts and passing through the stuffing-boxes, a thermal strip fixed at its ends outside the box, and a plunger on the strip adapted to enter the box through the opening in the side thereof and when the strip is deflected to the required degree to close the contacts and operate the alarm.

810,502. **CHECK-VALVE.** JOHN H. NOLAN and MOSES L. SANBORN, Boston, Mass., assignors to Boston Pneumatic Power Company, Boston, Mass., a Corporation of Maine. Filed July 18, 1904. Serial No. 216,933.

Claim.—A check-valve having a stem-plug provided with a duct extending therethrough having an inward-inclined upper edge forming a seat, a vertically-movable pin extending through the duct provided with a tapered head normally resting upon the plug-seat, a lug attached to the lower end of the pin, an annular rim on the stem-plug forming a tubular cavity, a flexible cap stretched over the upper portion of the stem-plug having its lower edge inserted within the cavity, said cap composed of two lips having parallel sides and whose outer ends are normally closed flat and permit gases to pass in only one direction, substantially as shown and described.

810,503. **DIAMOND-DRILL.** JOHN H. O'DONNELL, Waterbury, Conn., assignor to The Waterbury Wire Die Company, Waterbury, Conn., a Corporation of Connecticut. Filed Aug. 6, 1903. Serial No. 168,562.

Claim.—1. In a machine for drilling diamonds, the combination with a rotating spindle and a slide, for holding a drill and the diamond, of a spring for moving said slide in the direction of said spindle, for causing a yielding contact between said drill and diamond, and means in contact with said slide for moving the same away from said spindle.

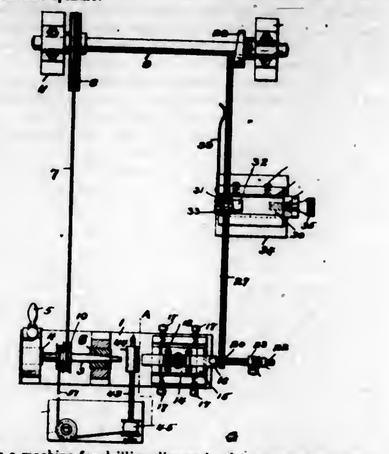

2. In a machine for drilling diamonds, the combination with a rotating spindle and a slide, for holding a drill and the diamond, of a spring for moving said slide in the direction of said spindle, for causing a yielding contact between said drill and diamond, and positively-actuated means for moving said slide away from said spindle.

3. In a machine for drilling diamonds, the combination with a rotating spindle and a slide, for holding a drill and the diamond, of a spring for moving said slide in the direction of said spindle, for causing a yielding contact between said drill and diamond, a pivotally-mounted member engaging said slide, and means for actuating said pivotally-mounted member, whereby said slide will be moved against the tension of said spring.

4. In a machine for drilling diamonds, the combination with a rotating spindle and a slide, for holding a drill and the diamond, of a bow-spring for moving said slide in the direction of said spindle, for causing a yielding contact between said drill and diamond, a pivotally-mounted rod having frictional contact with said slide, and means for swinging said rod upon said pivot-mounting.

5. In a machine for drilling diamonds, the combination with a rotating spindle and a slide, for holding a drill and the diamond, of a spring for moving said slide in the direction of said spindle, for effecting a yielding contact between said drill and diamond, a pivotally-mounted rod contracting with said slide, and a cam for actuating said rod upon its pivot-mounting.

6. In a machine for drilling diamonds, the combination with a rotating spindle and a slide, for holding a drill and the diamond, of a spring for moving said slide in the direction of said spindle, for effecting a yielding contact between said drill and diamond, a pivotally-mounted rod engaging said slide at one end, a cam for actuating said rod upon its pivot-mounting, and means for yieldingly holding said rod in engagement with said cam.

7. In a machine for drilling diamonds, the combination with the spindle; of a slide; a spring for moving said slide in the direction of said spindle; a pivotally-mounted rod engaging said slide at one end; and means for shifting the position of said pivot-mounting.

8. In a machine for drilling diamonds, the combination with a spindle; of a slide 10; a spring 26 for moving the said slide in the direction of said spindle; means for shiftably securing said spring to said slide whereby the tension thereof may be varied; a rod 27 pivotally mounted between its ends and engaging a part upon said slide; a rotary cam; and a spring 39 for normally holding said rod against said cam.

9. In a machine for drilling diamonds, the combination with the spindle; of a slide; a bow-spring, one end of which is fixed and the other engaging said slide, for moving said slide in the direction of said spindle; means for connecting said spring to said slide under varying tensions and positively-actuated means for moving said slide in the opposite direction.

10. In a machine for drilling diamonds, the combination with the spindle; of a slide; a bow-spring, one end of which is fixed and the other engaging said slide, for moving said slide in the direction of said spindle; and means for shifting the position of the fixed end of said spring.

11. In a machine for drilling diamonds, the combination with the drill; of a slide having a plurality of shoulders upon one side thereof; and a spring for actuating said slide in one direction, said spring being arranged with one end fixed and the other to engage any of said shoulders.

12. In a machine for drilling diamonds, the combination with the drill; of a slide 16 having the notches 21 in one side thereof; of the flat spring 26; and the adjustable spring-blocks 23.

13. In a machine for drilling diamonds, the combination with a spindle; of a head member; a slide-rest; means for adjustably securing said slide-rest; a slide mounted within said slide-rest; a spring mechanism for moving said slide in the direction of said spindle; and means for connecting said spring to said slide under varying tensions.

14. In a machine for drilling diamonds, the combination with a spindle; of a head member having a recess therein; a slide-rest within said recess; means for adjusting said slide-rest within said recess; means for securing the same in any of its adjusted positions; a slide mounted within said slide-rest; spring mechanism for moving said slide in the direction of said spindle; and means for varying the tension of said spring.

15. In a machine for drilling diamonds, the combination with a head member; of a rotary spindle mounted therein carrying a drill or needle, a slide-rest adjustably secured to said head member; a slide movably mounted within said slide-rest; spring mechanism for moving said slide toward said spindle; means for varying the tension of said spring upon said slide; and positively-actuated means for moving the slide in the opposite direction.

16. In a machine for drilling diamonds, the combination of a rotating spindle, a slide having a projecting part thereon, the said spindle and slide adapted to hold a drill and the diamond, a spring for moving said slide in the direction of said spindle to effect a yielding contact between said drill and diamond, and a rod member and means for moving it in the path of said projecting part for moving the slide away from the spindle.

17. In a machine for drilling diamonds, the combination of a rotating spindle, a slide having a projecting part thereon, the said spindle and slide adapted to hold a drill and the diamond, a rod member and means for moving it in the path of said projecting part, and a spring for moving said slide in the direction of said spindle for effecting a yielding contact between the drill and the diamond, and holding said projecting part in contact with said rod member.

18. In a machine for drilling diamonds, the combination with the rotary spindle carrying a drill or needle; of means for sharpening said drill or needle, said means comprising a lap-roll; and means for rotating the same at an angle to said spindle, said means being actuated from said spindle.

19. In a machine for drilling diamonds, the combination with the rotary spindle carrying a drill or needle; of means for sharpening said drill or needle; said means comprising an auxiliary spindle having a lap-roll thereon, supported at one end manually and the other in a fixed part; and a belt connecting a pulley upon said spindle with a pulley upon said auxiliary spindle.

20. In a machine for drilling diamonds, the combination with the rotary spindle 3 having a cone 10 thereon and carrying a drill or needle therein; of means for sharpening said drill or needle, said means comprising an auxiliary spindle 43 having a lap-roll 44 and pulley 45 thereon; a plate 42 forming a support for one end of said spindle; a rod 46 having the idler-pulleys 47 and 48 thereon; and the belt 51 connecting said cone 10 with said pulley 45.

810,504. DIAMOND-DRILL AND BURNISHING-LATHE. JOHN E. O'BRIEN, Waterbury, Conn., assignor to The Waterbury Wire Die Company, Waterbury, Conn., a Corporation of Connecticut. Filed Aug. 6, 1903. Serial No. 168,563.

Claim.—1. In a machine of the character described, the combination with a head member; of a spindle rotatable therein; a slide movable toward and away from said spindle; means for shifting the position of said slide laterally; and a spring for actuating said slide in the direction of said spindle.

2. In a machine of the character described, the combination with the head member; of a spindle rotatable therein; a bracket; means for securing the same to said head, whereby it may be shifted laterally or radially, said means comprising a stud passing through a part upon said head and a part upon said bracket, and a screw passing through said head part and said stud.

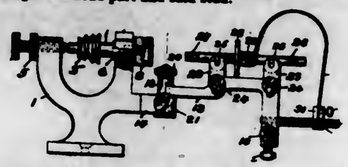

3. In a machine of the character described, the combination with the head member; of a spindle rotatable therein; a slide; rolls for forming a bearing for said slide; and means for adjusting the position of said rolls, whereby the relative position of said slide in relation to said spindle may be varied.

4. In a machine of the character described, the combination with a head member having a lug projecting therefrom; a bracket; means for adjustably and pivotally securing said bracket to said lug; a slide movably mounted upon said bracket; and a spring for actuating said slide in the direction of said head member.

5. In a machine of the character described, the combination with the head member; of a spindle rotatable therein; a slide, circular in cross-section, having an adjustable shoulder thereon; adjustable rolls forming a bearing for said slide; and spring mechanism for actuating said slide in one direction.

6. In a machine of the character described, the combination with the head member 1 having the lug 14 thereon; of the spindle 2 rotatable therein; a bracket 13; means for adjustably securing said bracket to said head member; a slide 26; blocks 23 adjustable within said bracket; and rolls 25 rotatably mounted in said blocks and forming a bearing for said slide.

810,505. GARMENT-SUPPORTER. BERTHA ORTELL, Newark, N. J. Filed Nov. 10, 1903. Serial No. 180,544.

Claim.—1. As a new article of manufacture, a garment-supporter comprising devices each adapted to receive the stud of a corset-steel, a strap secured to one of said devices and a strap secured to the other of said devices, the last-aforesaid strap passing adjustably through the first-aforesaid device.

2. As a new article of manufacture, a garment-supporter, comprising diverging straps, a device to which one of said straps is connected, a device to which the other strap is connected with the last-aforesaid strap passing adjustably through the first-aforesaid device, an extension integral with one of said straps, and means connected therewith for engaging the skirts or other garments to hold the same down and thereby secure the waist-line in position.

3. As a new article of manufacture, a garment-supporter, comprising plates each having a slot therein adapted to receive the stud of a corset-steel, a strap secured to one of said plates, and a strap secured to the other of said plates, the last-aforesaid strap passing adjustably through the first-aforesaid plate.

4. As a new article of manufacture, a garment-supporter, comprising plates each having a slot therein adapted to receive the stud of a corset-steel, a strap secured to one of said plates, a strap secured to the other of said plates with the last-aforesaid strap passing adjustably through the first-aforesaid plate, an extension integral with one of said straps, and means connected therewith for engaging the skirts or other garments to hold the same down and thereby secure the waist-line in position.

5. As a new article of manufacture, a garment-supporter, comprising two plates each having a slot adapted to receive the stud of a corset-steel, and an elongated slot at right angles to the aforesaid slot, a strap secured in the elongated slot of one plate and an adjustable strap passing through the last-aforesaid elongated slot, through the elongated slot in the other plate and secured therein and extending beyond the said slot.

6. As a new article of manufacture, a garment-supporter, comprising plates each having a slot therein adapted to receive the stud of a corset-steel, a strap secured in one of said plates, a strap secured in the other of said plates, the last-aforesaid strap passing adjustably through the first-aforesaid plate, other straps connected to the strap secured in the other of said plates at or about the point in which it is secured, a shield secured to said other straps, and straps connected to said shield and adapted to pass around the waist of the wearer.

7. As a new article of manufacture, a garment-supporter, comprising two plates each having a slot adapted to receive the stud of a corset-steel, and an elongated slot at right angles to the aforesaid slot, a strap secured in the elongated slot in one plate and an adjustable strap passing through the last-aforesaid elongated slot, through the elongated slot in the other plate and secured therein and extending beyond said slot, other straps secured to the last-aforesaid strap just above where the same passes through the slot in the last-aforesaid plate, means for holding down the skirts or other garments to secure the waist-line in position, a shield secured to said other straps, and straps connected to said shield and adapted to pass around the waist of the wearer.

810,506. HEAD FOR JACK-SPOOLS, WARP-BEAMS, OR THE LIKE. SUMNER T. PACKARD, Brockton, Mass. Filed Dec. 8, 1904. Serial No. 235,963.

Claim.—1. A removable end for a jack-spool or the like constructed of a laminated, fibrous, grainless material and having means near the periphery thereof for binding together the individual laminæ.

2. A removable end for a jack-spool or the like consisting of a disk composed of a laminated, fibrous, grainless material and having a plurality of rivets adjacent the periphery thereof.

3. A removable end for a jack-spool or the like consisting of a plurality of united flax-fiber disks provided with a central opening and peripheral strengthening means.

810,507. WATER-MOTOR. RICHARD K. PARKINSON, Ruing, New Zealand. Filed Sept. 3, 1904. Serial No. 223,288.

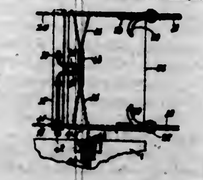

Claim.—1. For the purpose indicated, horizontal shafts sprocket-wheels fixed upon the ends of the said shafts, pontoons upon which the said shafts are rovolably mounted, the sprocket-wheels on the shafts being in correspondence with each other, two pairs of parallel endless chains taking into grooves of the sprocket-wheels, slide-brackets fixed upon the chains, vanes extending across each pair of chains, loops upon the vanes threaded upon the slide-brackets, check-chains connecting the vanes to the sprocket-chains, battens extending across each pair of chains and secured thereto, a loop pivoted upon each batten, a pin upon each vane to engage the said loop, and a lever for operating each loop, substantially as set forth and illustrated.

2. In apparatus for the purpose indicated, sprocket-wheels rovolably mounted in bearings and having grooves around their circumferential peripheries, a pair of endless chains taking into the said grooves, slide-brackets having one end fixed to one link of a chain and the other end fixed to another link, vanes extending across the chains, loops secured to the vanes threaded upon the said slide-brackets, check-chains connecting the vanes to the sprocket-chains, and a spring attached at each end to the check-chains for the purpose of drawing the chains together when the vanes are not in operative position, substantially as set forth.

3. In apparatus for the purpose indicated, a pair of parallel endless chains, battens disposed transversely, and secured at each end to the chains, a loop pivoted in bearings upon the battens, vanes pivoted to the chains, and a pin upon each of the vanes, levers for operating the loops, a pontoon a bearing upon the pontoon, a bolt sliding in the bearing, and a lever for projecting the bolt substantially as set forth.

810,508. MACHINE FOR CHANGING MONEY. DANIEL PETERSON, Lamont, Okla. Filed July 14, 1905. Serial No. 269,680.

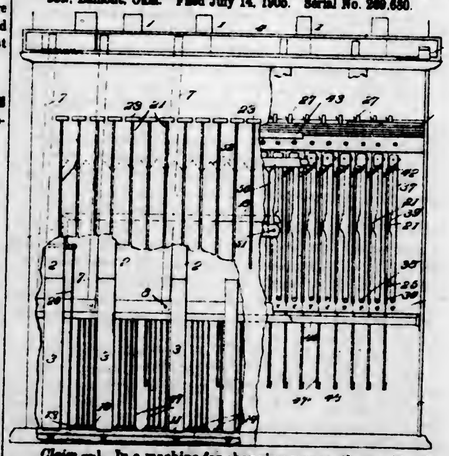

Claim.—1. In a machine for changing money, the combination of a series of coin-tubes, coin-delivery mechanism comprising a series of ejectors and a corresponding series of actuators therefor, coin-entrances, selecting and setting mechanisms adapted to be actuated by the coin deposited in a coin-entrance to effect a release of the operating-levers and to throw the required coin-ejector mechanism into operative position, a series of operating-levers operatively connected with the ejecting mechanism to effect delivery of the required amount of change, and a guard to prevent operation of more than one lever at each actuation of the machine.

2. In a machine for changing money, the combination of a series of coin-tubes, means for effecting a delivery of coins from said tubes and comprising a series of ejectors and corresponding actuators, a selecting mechanism for throwing certain of the ejector-actuators out of operation and adapted to be controlled by a deposited coin and a setting mechanism for effecting a release of certain ejector-actuators, and key-operated levers adapted to be released by said setting mechanism.

3. In combination, a series of coin-tubes, cooperating coin-ejectors, actuators therefor, operating means for the actuators, and a selecting mechanism comprising a plurality of members adapted to be independently operated through the instrumentality of a deposited coin, whereby certain actuators are thrown out of operation.

4. In combination, a plurality of coin-tubes, coöperating coin-ejectors, ejector-actuators, operating means for the latter, a selecting mechanism comprising a series of independent operable elements, a series of coin-entrances, and a slide common to all of the coin-entrances and adapted to receive operating elements of said selecting mechanism, whereby any one of the elements of a selecting mechanism may be actuated by a determinate coin deposited in the machine so as to throw certain of the ejector-actuators out of operation.

5. In combination, a series of coin-tubes, coöperating ejectors, actuating means for said ejectors, a setting mechanism adapted to be operated by means of a deposited coin, a series of locking-levers normally preventing operation of the actuating means, and a corresponding series of coöperating levers adapted to be actuated by the said mechanism for throwing the coin-ejector-actuating means into operative position.

6. In combination, a series of coin-tubes, coin-ejectors therefor, actuating means for said ejectors, a series of setting-slides, means for moving a setting-slide through the intervention of a coin deposited in the machine, a series of key-operated levers, means for normally preventing operation of said levers, other levers connected in groups with the respective setting-slides and adapted to effect a release of certain of the key-operated levers, and connecting means between the coin-ejector-actuating means and said levers operated by means of the setting-slides.

7. In combination, a series of coin-tubes, coin-ejectors therefor, actuating means for said ejectors, a series of setting-slides, means for moving a setting-slide through the intervention of a coin deposited in the machine, a series of key-operated levers, means for normally preventing operation of said levers, other levers connected in groups with the respective setting-slides and adapted to effect a release of certain of the key-operated levers, and connecting means between the coin-ejector-actuating means and said levers operated by means of the setting-slides, and means for preventing return of a key-operated lever after being initially moved until it has completed its stroke in the operation of the machine.

8. In combination, coin-delivery mechanism, actuating means therefor, selecting means for throwing certain of the ejector-actuating means out of operation, a setting mechanism to effect a release of certain parts of the ejector-actuating means, for certain of the key-operated levers, and connecting means between the key-operated levers and the ejector-actuating means.

9. In combination, coin-delivery mechanism, actuating means therefor comprising a plurality of elements, a selecting mechanism adapted to throw certain parts of the actuating means out of operation, a series of key-operated levers, locking means therefor, a setting mechanism for throwing the locking means of certain key-operated levers out of action, and means for establishing communication between a certain group of key-operated levers and a corresponding part of the delivery-actuating means.

10. In combination, a series of coin-tubes, coöperating ejectors, a series of ejector-actuators, a selecting mechanism for throwing certain ejector-actuators out of operation, a series of rock-shafts each having operative connection with certain ejector-actuators to effect delivery of a given amount of change, a setting mechanism, a series of key-operated levers, locking means therefor adapted to be actuated by the setting mechanism to effect a release of certain key-operated levers, and connecting means between the key-operated levers and the rock-shafts thrown into operative position by the setting mechanism simultaneously with the release of the key-operated levers corresponding to the value of the coin placed in the machine.

11. In combination, a series of coin-tubes, ejectors, ejector-actuators, a selecting mechanism for throwing certain of the actuators out of operation, a series of rock-shafts having operative connection with certain ejector-actuators, a setting mechanism comprising a series of slides, a series of key-operated levers, locking-levers for the key-operated levers, releasing-levers adapted to effect disengagement of the locking-levers from the key-operated levers and themselves to make engagement therewith and adapted to be operated by the said setting-slides, and connecting means between the said rock-shafts and the releasing-levers for transmitting motion from a key-operated lever to a rock-shaft and the series of ejector-actuators connected therewith.

12. In combination, coin-tubes, coin-ejectors, actuators therefor, selecting mechanism for throwing certain of the actuators out of operation, rock-shafts having certain actuators connected therewith, a selecting mechanism comprising a series of slides, key-operated levers, locking-levers therefor, releasing-levers adapted to be actuated in groups by the said setting-slides, a series of elbow-levers operatively connected with the respective rock-shafts and supporting the respective releasing-levers, and locking means for the key-operated levers to prevent their return after being initially operated until moved to the limit of their stroke.

810,509. **CLUTCH-OPERATING MECHANISM.** CLIFFORD L. REED, Portland, Oreg. Filed May 26, 1905. Serial No. 262,474.

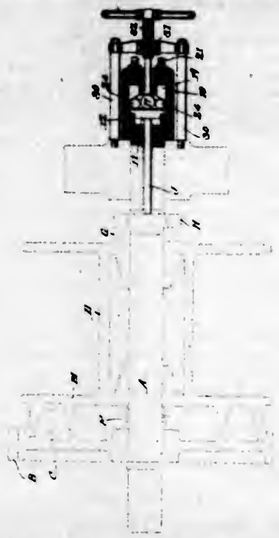

Claim.—1. In a clutch-operating mechanism, a longitudinally-movable member, a thrust-pin, inclined members opposed to the longitudinally-movable members, wedging members movable between the inclined members and the longitudinally-movable member, and means for transmitting movement from the thrust-pin to said wedging members.

2. A longitudinally-movable clutch-operating member, a pair of relatively stationary cams having inclined faces opposed to said member, wedging members movable toward and from each other in the space between the cams and said member, and means for spreading said wedging members.

3. A longitudinally-movable clutch-operating member, in combination with a pair of relatively stationary cams having inclined faces opposed to the member, a pair of rollers movable between said member, and the cams, and means for spreading the rollers.

4. A longitudinally-movable clutch-operating member, in combination with a pair of relatively stationary cams, having inclined faces opposed to said member, a pair of rollers movable between the member and the cams to effect the longitudinal movement of said member, a thrust-pin, and means actuated thereby for spreading said rollers.

5. A longitudinally-movable clutch-operating member, in combination with a plurality of relatively stationary cams, rollers movable between the cams and the operating member to effect longitudinal movement of the latter, a spreading roller movable between and arranged to separate the first rollers, and a thrust member for operating the spreading roller.

6. A longitudinally-movable clutch-operating member, in combination with a plurality of relatively stationary cams having inclined faces opposed to said member, wedging-rollers movable between the cams and said member, a spreading roller arranged to separate the wedging-rollers, and a thrust-pin for operating the spreading roller.

7. A longitudinally-movable clutch-operating member, a plurality of relatively stationary cams having inclined faces opposed to said member, a plurality of wedging-rollers movable between the cams and said member, a spreading roller between the wedging-rollers and of greater diameter than said wedging-rollers, a thrust-pin for engaging the spreading roller, and means for imparting longitudinal movement to the thrust-pin.

8. In a device of the class specified, a revoluble shaft, a casing secured thereto, a clutch-operating pin extending through the shaft, a cross-bar at the end of the pin and arranged within the casing, a pair of cams having inclined faces opposed to the face of the cross-bar, wedging-rollers between the cams and cross-bar, a spreading roller for engaging the wedging-rollers and of greater diameter than said wedging-rollers, a thrust-pin guided in the casing, and a screw for operating said thrust-pin.

9. In a device of the class specified, the combination with a revoluble shaft, of a casing secured thereto, a clutch-operating pin extending through the shaft, a cross-bar at the end of the pin and disposed within the casing, springs tending to move the cross-bar and pin to unclutching position, a pair of cams arranged in the casing and having inclined faces opposed to the faces of the cross-bar, means for adjusting said cams, a pair of wedging-rollers movable between the cams and bar, a spreading roller arranged to engage the wedging-rollers, a non-circular thrust-pin engaging the spreading roller, and a screw for imparting longitudinal movement to the thrust-pin.

10. In a device of the class specified, the combination with a revoluble shaft, of a casing secured thereto, a clutch-operating pin extending through the shaft, a cross-bar at the end of the pin and disposed within the casing, springs disposed within the casing and engaging the cross-bar, the springs tending to move the cross-bar to clutch-disengaging position, removable filling-plates carried by the casing at points adjacent to the springs to permit renewal of the latter, cams carried by the casing and having inclined faces opposed to the face of the cross-bar, means for adjusting said cams, a pair of wedging-rollers disposed between the cams, and cross-bar, a spreading roller between the wedging-rollers, and of greater diameter than the latter, a non-circular thrust-pin guided by the casing, a pin-actuating screw, a stationary nut for said screw, and an operating means secured to the end of the screw.

11. A movable clutch-operating pin, a cross-bar for transmitting movement thereto, a pair of rollers movable on said bar and serving through the latter to impart endwise movement to the pin, and means for spreading said rollers.

12. A movable clutch-operating pin, a cross-bar for transmitting movement thereto, a pair of rollers engaging the bar, means for spreading the rollers, and means for directing the rollers against the bar during such spreading movement.

810,510. **BELT CONVEYER.** THOMAS ROBINS, Jr., New York, N. Y., assignor to Robins Conveying Belt Company, New York, N. Y., a Corporation of New Jersey. Filed Oct. 10, 1903. Serial No. 176,514.

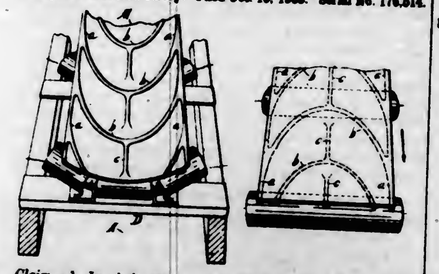

Claim.—1. In a belt conveyer, the combination with troughing-idlers, end pulleys and driving means, and a snub-pulley, of a conveyer-belt provided on its carrying-surface with a system of spaced ribs or elevations so arranged as to run smoothly over the snub-pulley, and prevent contact of said pulley with any portion of the belt except the ribs or elevations.

2. In a belt conveyer, the combination with troughing-idlers, return-idlers, end pulleys and driving means, and a snub-pulley, of a conveyer-belt provided on its carrying-surface with a system of spaced ribs or elevations so arranged as to run smoothly over the return-idlers and snub-pulley, and to prevent contact of the return-idlers and snub-pulley with any portion of the belt between said ribs or elevations.

3. In a belt conveyer, the combination with a series of troughing-idlers arranged to support a belt traveling upward at an angle to the horizontal, of a conveyer-belt traveling on said idlers and provided on its carrying-surface with spaced ribs or elevations diverging forwardly from the middle of the belt.

4. In a belt conveyer, the combination with a series of troughing-idlers arranged to support a belt traveling upward in an inclined plane, of a conveyer-belt provided on its carrying-surface with a system of spaced ribs or elevations arranged to run smoothly over return-idlers, and comprising longitudinal and transverse elements embodied in ribs or elevations diverging forwardly from the middle of the belt toward the margins thereof.

5. A belt for conveyers and analogous structures, provided on its carrying-surface with a system of ribs or elevations, comprising longitudinal elements arranged to present a substantially continuous structure and transverse elements of the same height as the longitudinal elements and spaced apart.

6. A belt for conveyers and analogous structures, provided upon its carrying-surface with marginal and transverse elevations of the same height.

7. A belt for conveyers and analogous structures, provided on its carrying-surface with longitudinally-disposed elevations at the margins and in the middle of the belt, and spaced transverse elevations.

8. A belt for conveyers and analogous structures having upon its carrying-surface a system of ribs or elevations comprising longitudinal and transverse elements embodied in ribs converging from the margins of the belt to the middle thereof.

9. A belt for conveyers and analogous structures having on its carrying-surface a system of ribs or elevations comprising longitudinal and transverse elements embodied in ribs, each presenting a single curve substantially tangent at its extremities to the margins of the belt and transverse to the belt at the middle.

10. A belt for conveyers and analogous structures having on its carrying-surface a system of ribs or elevations comprising longitudinal and transverse elements embodied in marginal ribs and in ribs each presenting a single curve tangent at its ends to said marginal ribs and transverse to the belt in the middle.

11. A belt for conveyers and analogous structures having on its carrying-surface a system of ribs or elevations comprising longitudinal and transverse elements, embodied in longitudinal ribs at the margins and in the middle of the belt and in ribs each presenting a single curve tangent at its extremities to the margins of the belt and transverse to the belt in the middle.

12. A belt for conveyers and analogous structures having on its carrying-surface a system of ribs or elevations comprising marginal ribs, curved ribs tangent at their extremities to the marginal ribs and transverse to the belt in the middle, and short longitudinal ribs in the middle of the belt extending from the convexities of said curved ribs.

810,511. **GRAIN-SHOCK AND HAY LOADER.** MICHAEL J. ROONEY and JAMES J. FORD, Fort Dodge, and FRANK M. CONROY, ABRAHAM BURSON, and FRED W. FITCH, Fonda, Iowa. Filed Mar. 31, 1904. Serial No. 199,207.

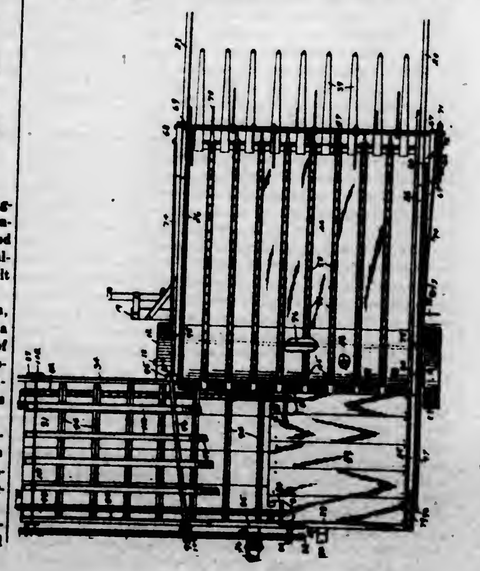

Claim.—1. In a device of the class described, a series of runners, the outer ends of which are designed to slide over the ground-surface as the machine is advanced, a driven shaft extending across the machine and above said runners, gathering-arms on said shaft, and means for swinging said shaft forwardly and rearwardly to increase or diminish the distance between the gathering-arms and the runners.

2. In a device of the class described, a series of runners, the outer ends of which are designed to slide over the ground-surface as the machine is advanced, a driven shaft extended across the machine and above said runners, gathering-arms on said shaft, and means for swinging said shaft forwardly and rearwardly to increase or diminish the distance between the gathering-arms and the runners, for the purposes stated.

3. In a device of the class described, a series of runners, the outer ends of which are designed to slide over the ground-surface as the machine is advanced, means for adjusting said runners and maintaining them in position, a driven shaft extending across the machine and above said runners, gathering-arms on said shaft, and means for swinging said shaft forwardly and rearwardly to increase or diminish the distance between the gathering-arms and the runners, for the purposes stated.

4. In a device of the class described, a series of runners, gathering-arms rotatably mounted above said runners, curved with concave sides rearward with respect to the direction of rotation and designed when rotated to throw the top of a bundle of straw rearwardly and downwardly relative to the runners, and means for rotating said gathering-arms as the device is advanced over the ground-surface, and means for moving the gathering-arms forwardly or rearwardly, for the purposes stated.

5. In a device of the class described, the combination of a series of runners extending longitudinally of the device, a conveyer mounted partially above said runners and extending longitudinally of the device, gathering-arms mounted above the runners curved with concave sides rearward with respect to the direction of rotation and means for operatively connecting the conveyer with the main driving-shaft, and shields mounted near the rear of said conveyer, designed to raise the material elevated by the conveyer upwardly and out of engagement with it and allow said substance to fall rearwardly, and means for adjusting the gathering-arms toward or away from the runners.

6. In a device of the class described, the combination of a series of runners extending longitudinally of the device, a conveyer mounted partially above said runners and extending longitudinally of the device, gathering-arms mounted above the runners curved with concave sides rearward with respect to the direction of rotation and means for adjusting the gathering-arms forwardly or rearwardly, means for operatively connecting the conveyer with the main driving-shaft, the shields mounted near the rear of said conveyer, designed to raise the material elevated by the conveyer upwardly and out of engagement with it and allow said substance to fall rearwardly, an inclined platform mounted behind and partially beneath said shields, an elevating-conveyer having its lower end mounted beneath the lower end of said inclined platform designed to carry substance which has been dropped onto the inclined platform upwardly and to the side of the machine.

7. In a device of the class described, the combination of a series of runners extending longitudinally of the device, a driven conveyer mounted partially above and extending outwardly from said runners, an inclined platform at the rear of said conveyer, a second conveyer inclined upwardly and substantially at right angles to the first conveyer and mounted behind it, a series of springingly-mounted bars extending above said second conveyer designed to hold the material which is being elevated on it and a driven shaft extending across the machine and above said runners, gathering-arms on said shaft curved with concave sides rearward with respect to the direction of rotation and means for swinging the gathering-arms forwardly or rearwardly and for maintaining them in position, and a draft device on each side of the machine and immediately in front of each of the traction-wheels of the device.

8. In a device of the class described, the combination of a series of runners extending longitudinally of the device, a driven conveyer mounted partially above and extending outwardly from said runners, an inclined platform at the rear of said conveyer, a second conveyer inclined upwardly and substantially at right angles to the first conveyer and mounted behind it, a series of springingly-mounted bars extending above said second conveyer designed to hold the material which is being elevated on it, and a driven shaft extending across the machine, and above said runners, gathering-arms on said shaft curved with concave sides rearward with respect to the direction of rotation and means for swinging the gathering-arms forwardly or rearwardly and for maintaining them in position, and a draft device on each side of the machine and immediately in front of each of the traction-wheels of the device, and a bar on each side of the device to which the draft-animals are hitched.

9. In a device of the class described, traction-wheels having a driving-shaft mounted between said traction-wheels, a frame mounted on said shaft, said frame having rounded forward ends designed to engage and slide over the ground-surface as the machine is advanced, a caster designed to support the rear of said frame, runners mounted at the forward end of said frame, gathering-arms curved with concave sides rearward, with respect to the direction of rotation and mounted above said runners, means for adjusting the gathering-arms forwardly or rearwardly, means for operatively connecting the driving-shaft with the gathering-arms and a conveyer extending longitudinally of said frame and partially above said runners.

10. In a device of the class described, traction-wheels having a driving-shaft mounted between said traction-wheels, a frame mounted on said shaft, said frame having rounded forward ends designed to engage and slide over the ground-surface as the machine is advanced, a caster designed to support the rear of said frame, runners mounted at the forward end of said frame, gathering-arms curved with concave sides rearward with respect to the direction of rotation and mounted above said runners, means for moving the gathering-arms forwardly or rearwardly, means for operatively connecting the driving-shaft with the gathering-arms, and a conveyer extending longitudinally of said frame and partially above said runners, and an inclined platform at the rear of said conveyer, and an elevating-conveyer substantially at right angles to the first-mentioned conveyer having its lower end beneath the lower end of said inclined platform and substantially at right angles to the first-mentioned conveyer.

11. In a device of the class described, a frame mounted on traction-wheels, a series of runners at the front end of said frame, a series of inclined boards above and extending rearwardly from said runners, a series of conveyer-chains mounted between said boards, having prongs projecting outwardly therefrom, said boards and said conveyer-chains designed to form an elevating-conveyer, a driven shaft extending across the frame and above said runners, gathering-arms on said shaft curved with concave sides rearward with respect to the direction of rotation and means for moving the driven shaft forwardly or rearwardly, for the purposes stated.

12. In a device of the class described, a frame mounted on traction-wheels, a series of runners at the front end of said frame, a series of inclined boards above and extending rearwardly from said runners, a series of conveyer-chains mounted between said boards having prongs projecting outwardly therefrom, said boards and said conveyer-chains designed to form an elevating-conveyer, a driven shaft extending across the frame and above said runners, and gathering-arms on said shaft curved with concave sides rearward, with respect to the direction of rotation and means for swinging the driven shaft forwardly or rearwardly, an inclined platform at the rear of said conveyer, a second elevating-conveyer having its lower end beneath the lower end of said inclined platform, and means connected with the main driving-shaft for operating said second conveyer.

810,512. WAGON-BOX AND HAY-RACK LIFTER. MICHAEL J. SAGGAU, St. Mathias, Minn. Filed Sept. 28, 1904. Serial No. 226,504.

Claim.—1. In a lifting device, an upright post, a lever fulcrumed on the top of said post and revolubly mounted thereon, an arm revolubly mounted on said post, a drum suitably journaled, and a cable connecting said lever and drum, said arm and lever being connected for simultaneous swinging, substantially as shown and described.

2. In a lifting device, an upright post, a cap-piece revolubly mounted on the upper end of said post, an arm revolubly mounted on said post, a brace connecting said cap-piece and the free end of said arm, a lever fulcrumed on said cap-piece, a drum suitably journaled, and a cable connecting said lever and drum, substantially as shown and described.

3. In a wagon-box and hay-rack lifter, lever-arms suitably journaled, a lifting-beam secured to said arms and having its ends extended on each side of same, lifting devices mounted on said extended ends, and means to adjust said lifting devices on said ends, substantially as shown and described.

4. In a wagon-box and hay-rack lifter, an upright post, a triangular lever-frame suitably pivoted and revolubly mounted on said post, an arm revolubly mounted on said post and arranged for simultaneous revolution with said lever-frame, and means secured to said arms for swinging said lever-frame, substantially as shown and described.

5. In a wagon-box and hay-rack lifter, an upright post, a beam revolubly mounted on said post, a triangular lever-frame fulcrumed on said beam, an arm revolubly mounted on said post, a brace-bar connecting said arm and beam, a drum journaled on said arm, and a rope connecting said lever-frame and drum, substantially as shown and described.

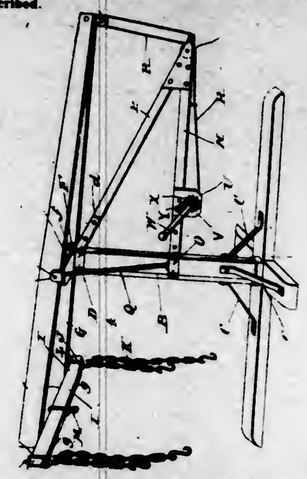

6. In a wagon-box and hay-rack lifter, an upright post, a beam revolubly mounted on said post, lever-arms fulcrumed on said beam, a lifting-beam secured to the ends of said lever-arms and having its ends extended beyond the ends of said lever-arms, and holes in said extended ends, lifting devices adjustably mounted on said lifting-beam, pins to be inserted in the holes in said beam to hold said lifting devices in their adjusted positions, an arm revolubly mounted on said post, a brace-rod connecting said revoluble beam and arm, a drum journaled on said arm, and a rope connecting said drum and the lever-arms, substantially as shown and described.

810,513. MINER'S DRILL. HENRY TODD, Marshfield, Ohio. Filed Mar. 23, 1905. Serial No. 251,080.

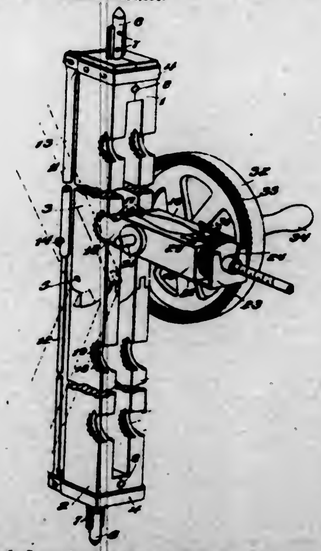

Claim.—1. In a miner's drill, the combination of a supporting-frame or upright composed of pivoted sections adapted for approximately vertical alinement or angular adjustment, points for the sections, and a brace connecting the sections and adjustable to hold the same vertically alined or arranged at an angle to each other.

2. In a miner's drill, the combination of a supporting-frame or upright composed of sections pivotally connected at one end, a brace comprising sections having a sliding connection at one end, each section having a pivotal connection at its opposite end with one section of the upright, and means for holding the sections of the brace at a predetermined adjustment.

3. In a miner's drill, a frame or upright embodying sections pivotally connected to one another, and a brace pivotally connected at one end with the upper extremity of one section of the supporting-frame and at its opposite end with the lower extremity of said frame, said brace consisting of telescoping sections.

4. In a miner's drill, the combination of a supporting-frame or upright provided longitudinally thereof with a plurality of notched portions, the notched portions being formed with a plurality of teeth in the length thereof, and a drilling mechanism including a drill-supporting frame having a member adapted to be seated in a selected notched portion of the upright or frame and formed with an engaging tooth adapted to engage a tooth in the length of such notched portion to hold the drill-supporting frame at a predetermined adjustment.

810,514. FLUID-PRESSURE BRAKE. WALTER V. TURNER, Wilkinsburg, and JOHN S. CURTIN, Pittsburg, Pa., assignors to The Westinghouse Air Brake Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed Apr. 27, 1904. Serial No. 205,116.

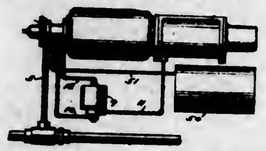

Claim.—1. In a fluid-pressure brake, the combination with a train-pipe, auxiliary reservoir and brake-cylinder, of a regulating-chamber, a valve device for controlling the supply of fluid to said regulating-chamber, and means operated by the pressure in said chamber for supplying fluid directly to the brake-cylinder.

2. In a fluid-pressure brake, the combination with a train-pipe, auxiliary reservoir and brake-cylinder, of a regulating-chamber, a valve device operating in response to variations in train-pipe pressure for controlling the supply of fluid to said regulating-chamber, and means operated by the pressure in said chamber for regulating the brake-cylinder pressure.

3. In a fluid-pressure brake, the combination with a train-pipe, auxiliary reservoir and brake-cylinder, of a regulating-chamber, a valve device operated by a reduction in train-pipe pressure for supplying fluid from the auxiliary reservoir to the brake-cylinder and for controlling the supply to said regulating-chamber, and means operated by the pressure in said chamber for regulating the brake-cylinder pressure.

4. In a fluid-pressure brake, the combination with a train-pipe, auxiliary reservoir and brake-cylinder, of a regulating-chamber, a valve device operated by a reduction in train-pipe pressure for supplying fluid from the auxiliary reservoir to the brake-cylinder and for controlling the supply to said regulating-chamber, and a valve device governed by the pressure of said regulating-chamber for also supplying fluid to the brake-cylinder.

5. In a fluid-pressure brake, the combination with a train-pipe, auxiliary reservoir and brake-cylinder, of a regulating-chamber, a valve device operating in response to variations in train-pipe pressure for supplying fluid from the auxiliary reservoir to the brake-cylinder and from the train-pipe to the regulating-chamber, and means operated by the pressure in said chamber for regulating the brake-cylinder pressure.

6. In a fluid-pressure brake, the combination with a train-pipe, auxiliary reservoir and brake-cylinder, of a regulating-chamber, a valve device operating in response to variations in train-pipe pressure for supplying fluid from the auxiliary reservoir to the brake-cylinder and from the train-pipe to the regulating-chamber, and means operated by the pressure in said chamber for also supplying fluid from the train-pipe to the brake-cylinder.

7. In a fluid-pressure brake, the combination with a train-pipe, auxiliary reservoir and brake-cylinder, of a regulating-chamber of predetermined capacity independent of the brake-cylinder, a valve

device operating in response to variations in train-pipe pressure for controlling the supply of fluid to said regulating-chamber, and means operated by the pressure in said chamber for supplying fluid to the brake-cylinder.

8. In a fluid-pressure brake, the combination with a train-pipe, auxiliary reservoir and brake-cylinder, of a regulating-chamber of predetermined capacity independent of the brake-cylinder, a valve device operating in response to variations in train-pipe pressure for controlling the supply of fluid from the auxiliary reservoir to the brake-cylinder and from the train-pipe to the regulating-chamber, and a valve device governed by the pressure of said chamber for supplying fluid to the brake-cylinder.

9. In a fluid-pressure brake, the combination with a train-pipe, auxiliary reservoir and brake-cylinder, of a regulating-chamber, and a triple-valve device comprising a piston subject to the opposing pressures of the train-pipe and auxiliary reservoir, a main slide-valve having ports for establishing communication from the train-pipe to the regulating-chamber, and a graduating-valve for controlling the ports in the main slide-valve.

10. In a fluid-pressure brake, the combination with a brake-valve having an equalizing-reservoir and a sliding piston for operating a train-pipe-discharge valve, of means for preserving a tight joint around said piston when the discharge-valve is closed and means governed by the pressure of the equalizing-reservoir for supplying fluid to the train-pipe.

11. In a fluid-pressure brake, the combination with a brake-valve having an equalizing-reservoir and a sliding piston for operating a train-pipe-discharge valve, a seat adapted to be engaged by said piston when the discharge-valve is closed, and means operated by the opposing pressures of the equalizing-reservoir and train-pipe for controlling the supply of fluid to the train-pipe.

12. In a fluid-pressure brake, the combination with a brake-valve having an equalizing-reservoir, a sliding piston operated by the opposing pressures of the equalizing-reservoir and train-pipe, a slide-valve operated by said piston for controlling a train-pipe-discharge port, a seat adapted to be engaged by said piston, and means governed by the pressure in the equalizing-reservoir for supplying fluid to the train-pipe.

810,515. COMBINED STRAINER AND CUT-OFF. ARNOLD W. WEBER, Bellevue, Iowa, assignor of one-half to Anthony Brandt, Bellevue, Iowa. Filed June 27, 1905. Serial No. 267,277.

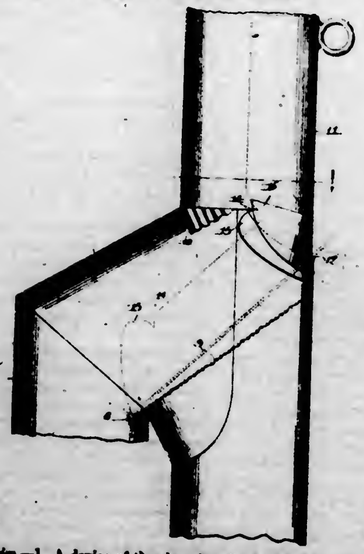

Claim.—1. A device of the class described comprising a pipe-section for attachment to a down-spout and having its side walls slotted, a waste-pipe communicating with said pipe-section, a screen extending across the pipe-section, a guide-plate carried by said section and disposed above the screen, and a tiltable cut-off valve having one end thereof extending through the slot in the pipe-section and provided with laterally-projecting ears adapted to engage said guide-plate, said valve being movable in the direction of its length to direct the flow of liquid into the waste-pipe.

2. A device of the class described comprising a pipe-section for attachment to a down-spout, a waste-pipe communicating with said pipe-section, and a tiltable valve movable transversely of the pipe-section for regulating the flow of liquid into the waste-pipe.

810,516. FRICTION-CLUTCH. JOSEPH F. WILSON, Invercargill, New Zealand. Filed Jan. 9, 1905. Serial No. 240,374.

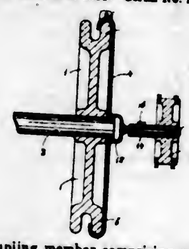

Claim.—A coupling member comprising a disk made in two parts the outer edge of which disk is bent to overlap and be secured to the periphery of another object supported on the axle, one of said parts being formed with a hollow boss fitting over the end of the axle and with a spindle extending outwardly from the boss to support the sleeve of another member, the two parts of the disk being united at one point by a hinge-joint, and at the opposite point by a bolt passing through ears formed on the periphery of the disk on each side of the line of separation, substantially as described.

810,517. WEIGHING DEVICE FOR VEHICLES. EMIL T. ZEIDLER, Riga, Germany. Filed Apr. 21, 1905. Serial No. 256,747.

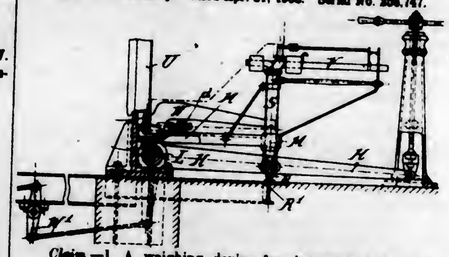

Claim.—1. A weighing device for determining the single-wheel pressures of railway-vehicles comprising in combination the balance proper, a weighing-lever for transferring the wheel-load to the balance, an edge body secured to said lever, a frame M for carrying the said lever, a shaft parallelly arranged to the rails and supporting said frame, and means for rotating the shaft, substantially as described and for the purpose set forth.

2. A weighing device for simultaneously determining the pressure of a plurality of railway-vehicle wheels, comprising in combination a corresponding number of balances proper, weighing-levers W for transferring the wheel-loads to the balances, edge bodies secured to said levers, frames carrying said levers, shafts supporting said frames and means for rotating the shafts, substantially as described and for the purpose set forth.

3. A weighing device for determining the single-wheel pressures of railway-vehicles comprising in combination the balance proper, a weighing-lever for transferring the wheel-load to the balance, an edge body secured to said lever, containing the load and the turning edges, a regulating device for adjusting the edge body respectively the weighing-lever, a frame upon which said regulating device is mounted, a shaft parallelly arranged to the rails and supporting said frame, and means for rotating the shaft, substantially as described and for the purpose set forth.

4. A regulating device for adjusting the edge body in respect to the weighing-lever, consisting of a fork-shaped part *k* having two wedge-shaped peaks, movable stop-bearings for carrying the turning edges of the edge body, guides *l* for leading said stop-bearings, and an adjusting-screw mounted in a projection *m* of the frame M, substantially as described and for the purpose set forth.

810,518. ANIMAL-TRAP. FRED BALLENTINE, Moscow, Okla. Filed Sept. 5, 1905. Serial No. 277,689.

Claim.—1. A trap embodying a compartment, a door leading to the compartment, spring means normally tending to hold the door closed, a trigger-bar coacting with the door to hold the same open, a releasing-platform movably mounted in the compartment, and connecting means between said platform and the trigger-bar whereby the trigger-bar may be actuated to permit closing of the door when the platform is moved.

2. A trap comprising a plurality of compartments, a door for each compartment, spring means normally tending to close the door, a trigger-bar for holding the door open, a platform pivotally mounted in each compartment, and a connection between said platform and the trigger-bar, whereby said trigger-bar may be actuated to permit closing of the door.

3. A trap comprising a plurality of compartments, a door for each compartment, an extension projecting from each door at the upper portion thereof, a trigger-bar movably attached to a side of each compartment and adapted to engage the extension of the door adjacent to hold the same open, a spring-arm coacting with the door to close the same, a platform in each compartment pivotally mounted at one end, and a connection between the opposite end of the platform and the trigger-bar whereby movement of the platform will disengage the trigger-bar from the extension of the door to permit closing of the latter.

810,519. WIRE MATTRESS. WALTER BILLS, South Melbourne, Victoria, Australia. Filed July 17, 1905. Serial No. 270,011.

Claim.—1. A wire mattress having a number of comparatively stout wires threaded longitudinally through the fabric one end of each wire being bent back and driven into the side of the bottom bar of the frame while the other end is formed into a hook and attached to a spiral spring, said spring extending through a hole in the top bar of the rigid frame and formed with a bent end adapted to be driven into the side of said bar substantially as set forth.

2. In a wire mattress, the combination of a frame comprising two side bars, a cross-bar rigidly mounted on each end of said side bars, a plurality of wires connected to the end bars, a cross-bar mounted intermediate of the end bars, a woven fabric connected to one end bar and to the intermediate bar, and means to adjust the fabric without adjusting the wires.

810,520. ANTIKICKING ATTACHMENT. FRANK J. BRADY, Chesnut, Pa. Filed Aug. 14, 1905. Serial No. 274,082.

Claim.—1. An antikicking attachment for cows comprising a plate adapted to rest against the front of the leg, side members pivotally connected to said plate, a cross member adapted to bear against the rear of the leg, adjustable connections between said side members and the cross member, one of said connections being detachable, substantially as described.

2. An antikicking attachment for cows comprising a bent plate, curved rods having inwardly-bent ends pivotally connected to lugs on the front of said plate, a bolt having an eye engaging one of said rods, a bolt having a hook engaging the other, a plate having holes through which both said bolts pass, and nuts on said bolts for clamping the plate, substantially as described.

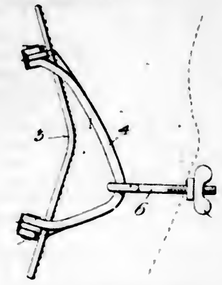

810,521. BALE-TYING MACHINE. CARTER M. CAGLE, Beckville, Tex. Filed Feb. 23, 1905. Serial No. 246,904.

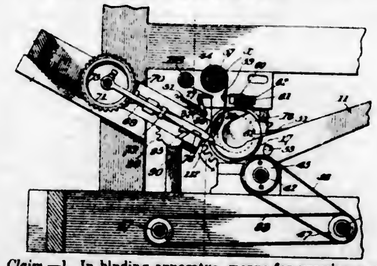

Claim.—1. In binding apparatus, means for pressing one end of a binding-wire against the article to be bound, means for turning the article to wind the wire therearound, and means for intertwisting the ends of the wire.

2. In binding apparatus, means for simultaneously turning the article and carrying a binding-wire therearound, so that the wire encircles the article, and means for intertwisting the ends of the wire.

3. In binding apparatus, a revoluble support for the reception of the article to be bound, means movable with the support for engaging one end of a wire, means for simultaneously turning the support carrying the wire-engaging means, thereby to wind the wire around the article, and means for intertwisting the ends of the wire.

4. In binding apparatus, a revoluble support for the article to be bound, a wire-clamp carried by the support, and means for clipping the wire after being wound about the article, and for twisting the meeting ends of said wire.

5. In wrapping and binding apparatus, means for simultaneously winding a wrapper and a binding-wire around the article to be bound, and means for twisting the ends of the wire.

6. In binding and wrapping apparatus, means for turning the article to be bound, means for engaging a wrapper and means for engaging the tie-wire and carrying the same around with the article, and means for intertwisting the ends of the tie-wire.

7. In wrapping and binding apparatus, an article-supporting means, means for clamping the end of a wrapper and the end of a tie-wire against the article, means for revolving the support to effect the winding of the wrapper and tie-wire around the article, and means for uniting the ends of the tie-wire.

8. In apparatus of the class described, an article-support, means for clamping one end of a wrapper-strip against the article, means for revolving the article to inclose the article in the wrapper, and means for severing the wrapper-strip into wrapper lengths.

9. In apparatus of the class described, an article-support, means for clamping one end of a wrapper-strip against the article, means for turning the support to envelop the article in the strip, and means for severing the strip into wrapper length in advance of the completion of the enveloping operation.

10. In apparatus of the class described, a revoluble article-support, means for clamping one end of a wrapper-strip against the article and for holding the end of the tie-wire against the wrapper-strip, means for turning the support to encircle the article by the wrapper and tie-wire, means for severing the wrapper-strip into a wrapper-length in advance of the completion of the turning movement, means for subsequently severing the tie-wire, and means for intertwisting the ends of the tie-wire.

11. In apparatus of the class described, a pair of revoluble heads recessed for the reception of the ends of a cotton-bale core, a clamp-bar carried by the heads, a wire-clamp supported by the bar, springs tending to force the clamp-bar inward to engage the periphery of the bale, means for feeding the end of the wrapper-strip against the inner face of the clamp-bar, means for introducing the end of a wire to the wire-clamp, means for turning the heads to effect the encircling of the bale by the wrapper-strip and tie-wire, means for severing the wrapper-strip into a wrapper length in advance of the completion of the turning movement, means for subsequently severing the wire into a binding length, and means for intertwisting the ends of said wire.

12. The combination with a pair of revoluble heads having recesses for the reception of the ends of a bale-core, of a clamp-bar extending between the heads, a wire-clamp carried by the bar, means for introducing the end of a wire into the clamp, means for feeding the end of a wrapper-strip in front of the bar, springs tending to force the bar into contact with the periphery of the bale, normally-locked actuating means for the carrier, means operable by the bale for unlocking the operating means, means for cutting the wrapper-strip and means for cutting the wire, and means for intertwisting the ends of the wire.

13. In apparatus of the class described, a wire-clamping member, means for introducing the end of the wire thereinto, means for turning the article and the clamping member, twisting and severing jaws through which the wire runs during the wrapping operation, said clamp serving to direct the end of the wire between said jaws after the wrapping operation, means carried by the jaws for severing the wire into lengths, and means for turning said jaws to twist the ends of the wire.

14. In apparatus of the class described a needle formed of a pair of spring-arms, one of which is provided with an eye for the passage of the wire, the second arm being arranged to engage with the wire at a point beyond the eye and to hold the wire projected from the needle.

15. In apparatus of the class described, a needle comprising a pair of arms, one of which is yieldable with respect to the other, one of said arms having an eye for the passage of the wire, and the other being arranged to engage and clamp the wire at a point beyond the eye.

16. In apparatus of the class described, a pair of clamping-jaws having wire-severing means, a movable frame carrying the jaws, means normally maintaining the jaws in open position for the reception of the wire, a revoluble wire-carrier arranged to pass the wire around the article to be bound, to hold the wire in front of the jaws, means for advancing the frame and jaws, and gears movable into mesh on forward movement of said frame and adapted to revolve said clamping-jaws and twist the wire.

17. The combination with a pair of revoluble heads having recesses for the reception of a cotton-bale core, of a driving-shaft normally uncoupled from the heads, means for placing the wire around the bale, and means operable on the passage of the bale into said recessed heads for clutching the head to the shaft.

18. The combination with a pair of heads recessed for the reception of a cotton-bale core, of a driving-shaft normally uncoupled from the heads, means for passing a tie around the bale as it is revolved by the heads, means for uniting the ends of the tie, a runway for introducing a bale into the heads, and means operable by the passage of the bale along the runway for connecting the shaft to the heads.

19. The combination with a pair of heads recessed for the reception of the ends of a cotton-bale-core, of a driving mechanism normally disconnected from the heads, means for automatically connecting the heads to the driving means on the bale-core entering said heads, means for passing a tie around the bale as it is revolved with the heads, means for automatically stopping the heads at the completion of each revolution, means for uniting the ends of the tie-wire at the completion of the first revolution of the head, and means for automatically starting a second revolution of the heads after the completion of the tie-forming operation.

20. In a bale wrapping and tying mechanism, a pair of revoluble heads recessed for the reception of the ends of a bale-core, automatic means for enveloping the bale in the wrapper and for passing a tie-wire around the wrapper and bale, said bale being held within the recess during a portion of the travel of the heads by means of the wrapper and wrapper-holding devices, means for severing the wrapper-strip, in advance of the completion of the enveloping operation, and means for effecting the automatic discharge of the completed article from the machine.

21. In a machine of the class described, the combination with a pair of revoluble heads recessed for the reception of the ends of a bale-core, of a driving-shaft, a pair of clutching members mounted thereon, a clutch-operating lever, a runway, means on the runway disposed in the path of the entering bale, and connected to the clutch-operating arm, and means for automatically disconnecting the clutch at the completion of each revolution of the heads.

22. In bale-tying mechanism, a pair of twisting-jaws, gearing connections therefor, a slidable frame carrying the jaws, a cam for engaging and moving the frame to inoperative position, and means for advancing the frame to operative position.

810,522. VOLTMETER-SWITCH. GEORGE H. EASTMAN, Chicago, Ill., assignor to Mineralloe Company, Chicago, Ill., a Corporation of Illinois. Filed Apr. 26, 1905. Serial No. 257,883.

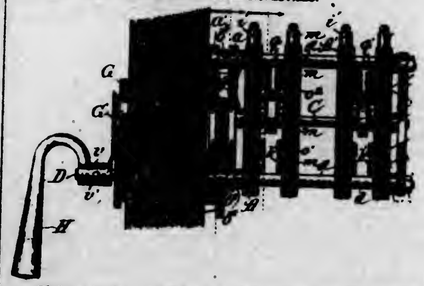

Claim.—1. In a multiple voltmeter-switch, the combination of blocks provided on corresponding faces with series of contacts, with a binding-post, for connection with a voltmeter, on each said block connected with the contacts thereon, blocks alternating with and spaced apart from said first-named blocks and provided on corresponding faces with series of circuit-terminal contacts connected with binding-posts, and a rotary shaft carrying brushes in the spaces between successive blocks, for the purpose set forth.

2. In a multiple voltmeter-switch, the combination of blocks provided on corresponding faces with series of contacts, with a binding-post, for connection with a voltmeter, on each said block connected with the contacts thereon, blocks alternating with and spaced apart from said first-named blocks and provided on corresponding faces with series of circuit-terminal contacts connected with binding-posts, a rotary shaft carrying brushes in the spaces between successive blocks, a dial having an index-finger, and means for turning said finger and shaft, for the purpose set forth.

3. In a multiple voltmeter-switch having circular series of circuit-terminal and voltmeter-terminal contacts, respectively, on the opposing faces of blocks, the combination with said blocks of a rotary brush-carrying shaft to engage the contacts between said opposing faces, an operating-shaft and means for speeding the movement of the brush-shaft relative to that of the operating-shaft by turning the latter, comprising a gear connection between said shaft producing a greater extent of movement of the brushes by a relatively lesser extent of turning the operating-shaft, for the purpose set forth.

4. In a multiple voltmeter-switch having circular series of circuit-terminal and voltmeter-terminal contacts respectively on the opposing faces of successive blocks, the combination with said blocks of a rotary shaft carrying brushes to engage the contacts between said opposing faces, a dial, an operating-shaft, an index-finger actuated by the operating-shaft, and means for speeding the movement of the brush-shaft relative to that of the operating-shaft by turning the latter, comprising a gear connection between said shafts producing a greater extent of movement of the brushes by a relatively lesser extent of turning the operating-shaft, for the purpose set forth.

5. In a multiple voltmeter-switch, the combination of series of circuit-terminal and voltmeter-terminal contacts, a movable brush device for connecting opposite said contacts, and means for connecting at will a dead-circuit-terminal contact with a live one, for the purpose set forth.

6. In a multiple voltmeter-switch, the combination of blocks provided on corresponding faces with series of contacts, with a binding-post, for connection with a voltmeter, on each said block connected with the contacts thereon, blocks alternating with and spaced apart from said first-named blocks and provided on corresponding faces with series of circuit-terminal contacts connected with binding-posts and with means for connecting different said contacts on their respective supporting-blocks, and a rotary shaft carrying brushes in the spaces between successive blocks, for the purpose set forth.

7. In a multiple voltmeter-switch, the combination of blocks provided on corresponding faces with series of contacts, with a binding-post, for connection with a voltmeter, on each said block connected with the contacts thereon, blocks alternating with and spaced apart from said first-named blocks and provided on corresponding faces with series of circuit-terminal contacts connected with binding-posts and with metal rings through the medium of which to connect together contacts on each face, and a rotary shaft carrying brushes in the spaces between successive blocks, for the purpose set forth.

8. A multiple voltmeter-switch, comprising, in combination with a frame, blocks provided on corresponding faces with circular series of contacts, with a binding-post, for connection with a voltmeter, on each said block connected with the contacts thereon, blocks alternating with and spaced apart from said first-named blocks and provided on corresponding faces with series of circuit-terminal contacts connected with binding-posts, plates between which said blocks are confined, a rotary shaft carrying brushes in the spaces between successive blocks and a pinion, a rotary operating-shaft carrying a gear-wheel meshing with said pinion and passing through an opening in the panel, a threaded sleeve extending from a forward plate about the operating-shaft through said panel-opening, a headed sleeve engaging said threaded sleeve at the front side of the panel to clamp the switch thereon, a dial at the front side of said panel, and an index-finger provided with a handle and supported on said operating-shaft, for the purpose set forth.

810,523. NUT-LOCK. HARRISON H. EDGERLE, Cherryvale, Kans. Filed June 5, 1905. Serial No. 263,857.

Claim.—In a nut-lock, the combination of a bolt having a recess therein, a nut having a threaded opening which coöperates with the bolt and also having a recess in a side thereof, said recess having communication with the threaded opening and having a keyhole leading therein from the top of the nut, an elbow-shaped locking member pivoted at one end within the recess, the free end thereof being adapted to engage the recess in the bolt to prevent the nut from working loose, a spring comprising two arms arranged at an angle to each other, one arm resting against a side of the recess and fitting within a slot at one end thereof, while the other arm bears against the locking member to hold same normally in engagement with the recess in the bolt, a plate to fit over the opening formed in the side of the nut by the recess, and a removable key for withdrawing the locking member.

810,524. DUMPING-CAR. RICHARD W. ERICSON and JOHN V. ERICSON, Chicago, Ill. Filed July 31, 1905. Serial No. 272,602.

Claim.—1. A dumping-car having doors in the bottom, a winding-shaft and means to turn the same, a cable connecting the shaft and the middle of the doors, to permit them to swing either way, and releasable means to support the doors at opposite edges thereof.

2. A dumping-car having doors in the bottom, hoisting devices having flexible connections to about the middle of the doors, constructed to raise and lower the same and to allow them to swing either way, and means to release either of the opposite edges of the door.

3. A dumping-car having a row of doors in the bottom on each side of the middle, a winding-shaft extending across each row, chains connecting the shaft and the middle of the doors, and means to release either the outer or the inner edge of the doors, to effect either center or side dump.

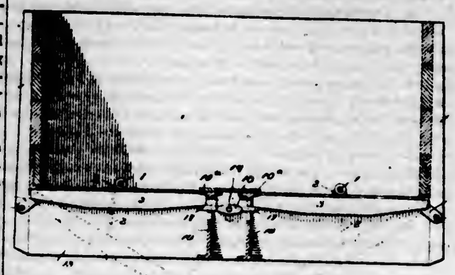

4. A dumping-car having a row of doors in the bottom on each side of a middle sill, a winding-shaft extending lengthwise across each row of doors and having connections with the doors at about the middle thereof, so that they will swing either way, and means to hold either edge of the doors and to release the opposite edge.

5. The combination with a row of swinging doors in the bottom of a dumping-car, of a rock-shaft extending along the side of the car and having projecting rigidly therefrom a series of supporting-arms having notched ends engageable under the doors when closed, and disengageable therefrom to allow the doors to open.

6. The combination in a dumping-car, of a row of swinging doors in the bottom on each side of the middle, devices supported on the frame of the car under the middle of the floor thereof and between said doors and constructed to engage the adjacent edges of said doors and hold them closed, and means to simultaneously release said devices on both sides, to allow the doors to open.

7. The combination in a dumping-car, of a middle sill, a row of swinging doors in the bottom of the car on each side of the sill, latch devices carried on the sill and engageable with the inner edges of the doors to hold them closed, and a shaft extending along the sill between said devices and having cam-arms bearing against said devices to hold the same engaged, said shaft being provided with means to turn the same to release said devices.

8. A dumping-car having doors in the bottom which swing down to open, said doors having each a middle support, and releasable supports at both edges, either of which may be released, to dump toward the middle or the sides of the car.

9. A car having an end floor-section which may be raised or lowered to form either a hopper or flat bottom, and a cross-piece which extends between the sides of the car and which may be shifted under the floor-section to support the same in raised position.

10. A car having an end floor-section which may be raised or lowered to form either a hopper or flat bottom, a cross-piece extending between the sides of the car at the upper edge thereof and shiftable along the same to support the floor-section, and a board hinged to the cross-piece and arranged to hang down beside the end of the car when the cross-piece is shifted to said end, and to extend across the sides of the car when the cross-piece is shifted under the floor-section.

810,525. COMBINED CAR AXLE AND WHEEL STRUCTURE. LEWIS P. FERRIS, Chicago, Ill. Filed Apr. 3, 1905. Serial No. 253,603.

Claim.—1. A combined car wheel and axle, the axle of which has a cored-out portion filled with a non-liquid metal differing in rate and amplitude of vibration from the body of the axle, substantially as described.

2. A combined car wheel and axle, the axle of which has a cored-out portion filled with a hard metal differing in rate and amplitude of vibration from the body of the axle, substantially as described.

3. A combined car wheel and axle, the axle of which has a cored-out portion extending from end to end and containing a hard metal, the rate and amplitude of vibration of which differs from that of the body of the axle, substantially as described.

4. A car-axle having a cored-out portion filled with a non-liquid metal differing in rate and amplitude of vibration from the body of the axle and wheels mounted thereon composed of metals also differing in rate and amplitude of vibration, substantially as described.

5. A car-axle having a cored-out portion filled with a hard metal differing in rate and amplitude of vibration from the body of the axle and wheels mounted thereon composed of metals also differing in rate and amplitude of vibration, substantially as described.

6. A car wheel and axle structure comprising in combination a car-axle cored out from end to end and filled with a hard metal differing in rate and amplitude of vibration from the body of the axle and wheels mounted thereon composed of a plurality of plates, the rate and amplitude of vibration of some or all of which differs, substantially as described.

7. A combined car axle and wheel structure, comprising in combination an axle, the core of which is composed of copper and differs in rate and amplitude of vibrations from the material of which the body of said axle is composed, a wheel secured upon said axle and composed of a plurality of plates, one of which is also of copper, and differs in rate and amplitude of vibrations from the other plates, and means electrically connecting said copper plate with the core of the axle, substantially as described.

8. A combined car axle and wheel structure, the axle of which comprises in combination a cored-out portion filled with a material, the rate and amplitude of the vibrations of which differ from the body of the material, said axle being surrounded with a third material, the rate and amplitude of vibrations of which differ from said body portion, substantially as described.

810,526. WHEEL FOR VEHICLES. THOMAS GARE, New Brighton, England. Filed Jan. 15, 1904. Serial No. 189,173.

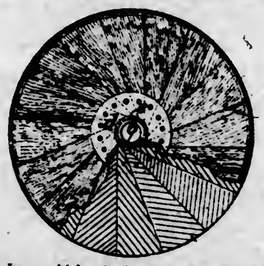

Claim.—1. In a vehicle-wheel, segmental sections with their sides fitting against each other tangent to the bore of the wheel, substantially as and for the purpose set forth.

2. In a vehicle-wheel, segmental sections fitted together tangentially to the bore of the wheel and vulcanized rubber inserted between the said sections, all combined substantially as and for the purpose set forth.

3. In a vehicle-wheel, segmental sections with their sides fitting against each other tangent to the bore of the wheel, a boss in the latter having flanges and rivets through the said flanges and segmental sections securing the same together, all combined substantially as and for the purpose set forth.

4. In a vehicle-wheel, segmental sections fitted together around the bore of the wheel and shaped to provide a zigzag circumference forming recesses, wedge-like pieces fitted into the latter and vulcanized rubber inserted between the said zigzag or undulated circumference and the said wedge-shaped pieces, all substantially as and for the purpose set forth.

5. In a vehicle-wheel, segmental sections fitted together around the bore of the wheel and shaped to provide a zigzag circumference forming recesses, wedge-like pieces fitted into the latter, rubber inserted between the said sections and wedge-like pieces, a boss in the bore of the wheel having flanges, rings at each side of the wheel and rivets passing through the said segmental sections and wedge-shaped pieces, flanges and rings respectively, all substantially as and for the purpose set forth.

810,527. ELECTRICAL SWITCH. JOSEPH P. GOSSER, New York, N. Y., assignor, by mesne assignments, to Empire Electric Stage Lighting Company, a Corporation of New York. Filed Oct. 7, 1904. Serial No. 227,889.

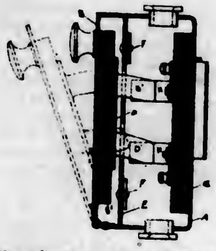

Claim.—1. In an electric switch, a pair of separated contacts inclosed in a protecting-case, and a partition having narrow openings, in combination with a hinged cover carrying movable contacts arranged to be thrust through such openings adapted for joint operation substantially as herein specified.

2. The double knife-switch described having two pairs of separated contacts inclosed in a protecting-case, and a partition having narrow openings, in combination with a cover carrying movable contacts arranged to be thrust through such openings adapted for joint operation, substantially as herein specified.

3. In an electric switch, a pair of separated contacts inclosed in a protecting-case, and a partition having narrow openings, in combination with a cover carrying movable contacts arranged to be thrust through such openings and with removable fastenings F allowing the easy removal of such partition at will, all adapted for joint operation substantially as herein specified.

810,528. APPARATUS FOR HEATING TIRES. GEORGE W. GRAVES, Detroit, Mich., assignor to Daniel D. Frisbee, Detroit, Mich. Filed Dec. 19, 1904. Serial No. 237,474.

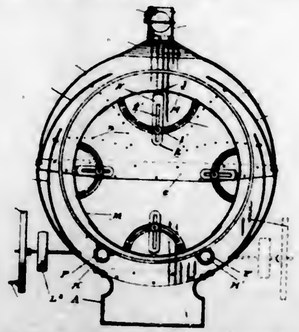

Claim.—1. In an apparatus of the character described, the combination with a casing formed by two detachable semicylindrical sections and having a combustion-chamber at its lower end, of tire-supports above and on opposite sides of said combustion-chamber, and means for imparting rotary motion to the tire upon said supports.

2. In an apparatus of the character described, the combination with a casing formed by two detachable semicylindrical sections and having a combustion-chamber at its lower end, of a pair of roller-supports arranged respectively upon opposite sides of said combustion-chamber and upon which the lower segment of the tire is adapted to rest, and means for imparting rotary motion to said rolls to revolve the tire.

3. In an apparatus of the character described, the combination with a circular casing having a combustion-chamber below the same and connected therewith, of roller-supports for the tire arranged upon opposite sides of said combustion-chamber and an expansible and contractible annular shield above said supports.

4. In an apparatus of the character described, the combination with a circular casing having a combustion-chamber below the same and connected thereto, of roller-supporting bearings on opposite sides of said combustion-chamber, rollers on said bearings, an annular expansible and contractible shield above said supports, and a series of segmental shields within said casing hinged at their lower ends thereto and having their upper ends adjustable toward or from the casing.

5. In an apparatus of the character described, the combination with a casing and supports therein, of a shield comprising a pair of segmental plates, a radially-adjustable bracket to which said plates are hinged, segments on said plates, and a common clamping-screw for securing said bracket and segments to hold said plates in different positions of adjustment.

6. In an apparatus of the character described, the combination with a casing having a combustion-chamber at its lower end, of roller-supports for the tire on opposite sides of said combustion-chamber and rotatably-adjustable shields for protecting said roller-supports.

7. In an apparatus of the character described, the combination with a substantially circular casing having a combustion-chamber therein, and an annular shield comprising overlapping segmental sections adjustable relatively to one another.

8. In an apparatus of the character described, the combination with a casing and supports therein, of an annular shield comprising segmental plates arranged in pairs, the contiguous edges of adjacent pairs overlapping, radially-adjustable brackets to which each pair of the plates is hinged, segments on said plates and means for securing said brackets and segments to hold said plates in different positions of adjustment.

9. In an apparatus of the character described, the combination with a casing having a combustion-chamber at its lower end, of roller-supports for the tire on opposite sides of said combustion-chamber, and shields separating said roller-supports from the combustion-chamber.

810,529. COMPRESSIBLE PACKING FOR WOOD-BLOCK ROAD-PAVING. CHARLES W. GREGORY, Jr., Bristol, England. Filed Mar. 21, 1905. Serial No. 251,353.

Claim.—In combination, a casing, a series of corrugated layers within the casing, the upper layer being of greater length than the remaining layers and being bent at its ends to inclose the remaining layers and lap the lower layer, strips interposed between the casing and the corrugated layers and between the corrugated layers, the upper strip being of greater length than the remaining strip and having its ends lap the lower strip and a textile cover for the casing, the cover, casing, layers and strips being treated with tar.

810,530. SAW. JOHN GUEBEL, Indianapolis, Ind. Filed July 15, 1905. Serial No. 269,573.

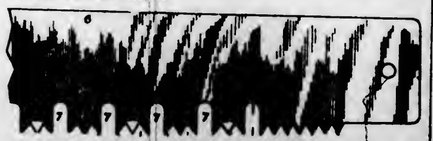

Claim.—1. In a saw, combined rake and cutting teeth which are not swaged having one straight edge approximately at right angles to the longitudinal dimensions of the saw-blade, and a second side inclined to the first, said combined rake and cutting teeth being grouped in pairs with their inclined sides toward each other, the inclined edges of said teeth of each pair being sharpened on the same side of the saw-blade but said teeth of adjacent pairs being sharpened on opposite sides of the blade, and triangular cutting-teeth swaged in alternate opposite directions, introduced singly between each pair of said combined rake and cutting teeth.

2. A saw having teeth in groups separated by deep gullets, said groups, except at the extreme end of the saw-blade, consisting of three teeth, the outer teeth of said groups having straight square outer edges approximately at right angles to the longitudinal dimensions of the blade, and inner inclined edges the latter edges of both teeth sharpened on one and the same side of the blade to form cutting edges at the opposite side of the blade, the said teeth of adjacent groups being filed from opposite sides of the blade to produce a double row of cutting-points at the ends of the teeth separated by the thickness of the blade, and a middle triangular cutting-tooth in each group sharpened on opposite sides of the blade from that of the other two teeth of the group, said cutting-teeth being swaged toward the cutting edges of said teeth.

3. In a saw, a pair of combined rake and cutting teeth, each having one straight square edge approximately at right angles to the longitudinal dimensions of the saw-blade and having a second edge inclined to the first edge, said inclined edges of the two teeth of a group being sharpened on the same side of the blade to form cutting edges on the opposite side of the blade, said teeth of adjacent groups being sharpened from opposite sides of the blade, said teeth not being swaged and together forming two cutting rows separated at the ends of the teeth, by the thickness of the saw-blade, and a single triangular swaged cutting-tooth between each pair of the first-described teeth forming a group of three teeth, the last-named teeth of each group being swaged in alternate opposite directions to form cutting-points in two additional lines.

810,531. PROCESS OF HARDENING STEEL. ROBERT A. HADFIELD, Sheffield, England. Filed Feb. 18, 1903. Serial No. 143,997.

Claim.—1. The method of hardening steel which consists in raising the temperature of the steel to about 975° centigrade; permitting it to cool slowly; reheating the cooled steel to a temperature of about 500° centigrade; and permitting the steel to cool slowly after such reheating.

2. The method of hardening steel and imparting thereto high resistance to compression, which consists in raising the temperature of the steel to above 850° centigrade and not over 1,150° centigrade; permitting it to cool slowly; reheating the cooled steel to a temperature of or over 680° centigrade, and permitting the steel to cool slowly immediately after such reheating.

3. The method of hardening steel and imparting thereto high resistance to compression, which consists in raising the temperature of the steel to between 975° centigrade and 1,000° centigrade; permitting the steel to cool slowly; reheating the cooled steel to a temperature of or over 500° centigrade, and slowly cooling the steel after such reheating.

4. The method of hardening steel, which consists in raising the temperature of the steel to above 850° centigrade and not over 1,150° centigrade; permitting it to cool slowly to about the temperature of the external air; reheating the cooled steel to a temperature not higher than 720° centigrade, and finally slowly cooling the steel after reheating.

5. The method of hardening steel, which consists in raising the temperature of the steel to not less than 850° centigrade and not more than 1,150° centigrade; permitting the steel to cool; reheating the cooled steel to a temperature not higher than 720° centigrade, and immediately thereafter permitting the steel to cool slowly from the reheating temperature.

6. The method of hardening steel which consists in raising the temperature of the steel above 975° centigrade, and below 1,150° centigrade, permitting it to cool slowly; reheating the cooled steel to a temperature of or over 500° centigrade, and finally slowly cooling the steel after such reheating.

7. The method of hardening steel and imparting thereto high resistance to compression, which consists in raising the temperature of the steel to about 975° centigrade, permitting the steel to cool slowly, reheating the cooled steel to a temperature of or over 680° centigrade and below 720° centigrade, and slowly cooling the steel from such last-named temperature.

8. The method of hardening steel, which consists in raising the temperature of the steel from about 850° centigrade upward, and not higher than 1,150° centigrade; cooling the steel to not more than 400° centigrade; reheating the partially-cooled steel to about 500° centigrade and upward, and finally permitting the reheated steel to cool.

9. The method of hardening steel which consists in raising the temperature of the steel to from about 850° centigrade upward to but not higher than 1,150° centigrade, according to the amount of carbon in the steel; cooling the steel slowly to not more than 400° centigrade, reheating the cooled steel to a temperature of about 500° centigrade and upward according to the hardness or toughness required; and immediately and slowly cooling the reheated steel from the reheating temperature.

810,532. COMBINED OIL PUMP AND MEASURE. WILLIAM B. HARRIS, Sunbury, Pa. Filed Oct. 10, 1903. Serial No. 177,077.

Claim.—1. In an apparatus for the purpose described, the combination of a measuring-pump having its cylinder or barrel extended upwardly to form a measuring-chamber, a rack connected to the rod or stem of the pump-plunger, a shaft journaled in opposite walls of the measuring-chamber and having at one end a suitable crank or handle, a pinion loosely mounted on said shaft and constantly engaging the rack on the piston-rod, means for clutching the pinion to the shaft, and a delivery-spout leading from the measuring-chamber.

2. In an apparatus for the purpose described, the combination of a measuring-pump having its barrel extended upward to form a measuring-chamber and provided with a valved inlet at its lower end, a rack at the upper end of the rod of the piston or plunger of the pump, a shaft mounted to rotate and move longitudinally in bearings in opposite walls of the measuring-chamber, a pinion loose on said shaft and constantly meshing with said rack, a clutch-disk fast on the shaft and adapted to be moved to and from engagement with said pinion as the shaft is moved longitudinally, and a delivery-spout leading from the measuring-chambes.

3. In an apparatus for the purpose described, the combination of a measuring-pump having its barrel extended upward to form a measuring-chamber and provided with a valved inlet at its lower end, a rack at the upper end of the rod of the piston or plunger of the pump, a shaft mounted to rotate and move longitudinally in bearings in opposite walls of the measuring-chamber, a pinion loose on said shaft and constantly meshing with said rack, a clutch-disk fast on the shaft and adapted to be moved to and from engagement with said pinion as the shaft is moved longitudinally, a delivery-spout leading from the measuring-chamber, and a gage connected at its ends with the upper portion of the pump-barrel and with said delivery-spout, the parts being so proportioned that the quantity of liquid delivered at each revolution of the handle will correspond to the amount indicated by one of the graduations on the gage.

810,533. VALVE MECHANISM FOR STERILIZERS. J EVERETT HALL, Erie, Pa. Filed Feb. 3, 1903. Serial No. 141,689.

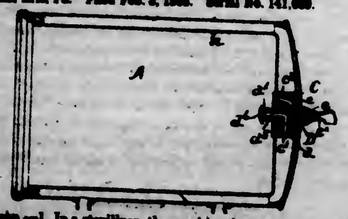

Claim.—1. In a sterilizer, the combination of an outer and inner chamber, having closed heads at one end, one of said chambers being nested within the other with the heads adjacent to each other, forming an intermediate chamber, and valve devices arranged in said heads for controlling the admission and exhaust of sterilizing fluid to and from the inner chamber.

2. In a sterilizer, the combination of an outer and inner chamber, having closed heads at one end, one of said chambers being nested within the other with the heads adjacent to each other, forming an intermediate chamber and valve devices arranged in the heads for connecting the chambers and for controlling the exhaust of the sterilizing fluid from the inner chamber.

3. In a sterilizer, the combination of an outer and inner chamber, having closed heads at one end, one of said chambers being nested within the other with the heads adjacent to each other, forming an intermediate chamber, and valve devices arranged in the heads for connecting the chambers and for controlling the exhaust from both chambers.

4. In a sterilizer, the combination with the chamber; of a valve mechanism controlling admission and exhaust from said chamber; an ejector connected with the exhaust; and a single device arranged to actuate the valve mechanism to admit the sterilized medium, exhaust it, and connect the ejector.

5. In a sterilizer, the combination with the chamber; of a single valve mechanism controlling the admission and exhaust of sterilizing medium to and from said chamber; and an ejector controlled by said valve mechanism.

6. In a sterilizer, the combination with the chamber, of a plug-valve controlling the exhaust from said chamber; and an ejector arranged on the plug.

7. In a sterilizer, the combination with the chamber; of a plug-valve controlling the admission and exhaust from said chamber; and an ejector on said plug.

8. In a sterilizer, the combination with the chambers A and B; the valve-body C, said valve-body having the valve-opening c; the way c' connecting the valve-opening with the chamber B; and the way c^4 connecting the valve-opening with the chamber A; and the plug D having the ways d^5, d^7, leading to the chamber A and adapted to be brought into register with the way c'; the annular way d^6 arranged to be brought into register with the way c^3; the way c^3 leading to the exhaust c'; the ejector-nozzle e in the exhaust-passage; and the way c^4 adapted to be brought into register with the way c'.

9. In a sterilizer, the combination with the chambers A and B; the valve-body C arranged between the shells of the chambers A and B, said valve-body having the valve-opening c; the way c' connecting the valve-opening with the chamber B; and the way c^4 connecting the valve-opening with the chamber A; and the plug D having the ways d^5 d^7, leading to the chamber A and adapted to be brought into register with the way c'; the annular way d^6 arranged to be brought into register with the way c^3; the way c^3 leading to the exhaust c'; the ejector-nozzle e in the exhaust-passage; and the way c^4 adapted to be brought into register with the way c'.

810,534. FLY-SCREEN. WILLIAM B. HART, Greatbend, Kans. Filed May 22, 1905. Serial No. 261,574.

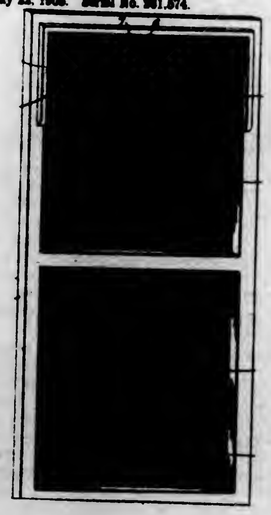

Claim.—1. The combination with a frame, of two screens secured thereto and spaced apart, one of said screens shorter than the other and leaving an unobstructed inlet to the space between said screens at the lower end of the shorter screen, diagonal bars secured to the frame between said screens, a supporting device disposed between said bars and secured at its ends thereto, and a tube secured to said supporting device and passing through one of said screens.

2. The combination with a screen having an opening therein, of guide-bars converging at the opening, a wire coiled between its ends and secured to the guide-bars, and a tube of wire-netting secured to the coil of the wire and projecting through the opening in the screen.

810,535. EXPLOSION-ENGINE. HEINRICH HEINRICH, Spotswood, N. J., assignor of one-half to David D. A. Outcalt, Spotswood, N. J. Filed Apr. 20, 1904. Serial No. 204,130.

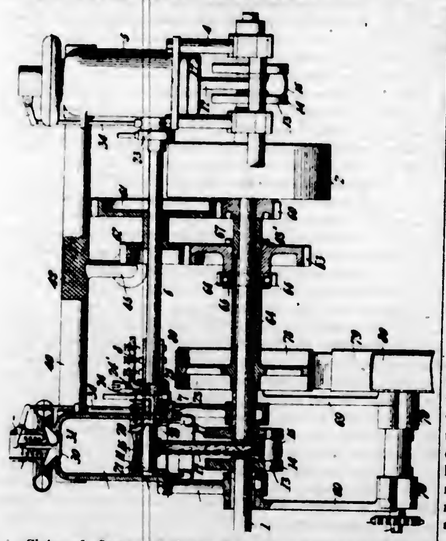

Claim.—1. In an explosion-engine, a piston having a peripheral groove forming a water-receptacle, a ported cylinder, a revoluble member having a water-passage in communication with the port, and means for rotating said member.

2. In an explosion-engine, a movable piston having a peripheral groove, a cylinder having a port with which the groove may aline, a revoluble shaft having a water-passage in alinement with the groove, a water-supply means encircling the shaft, and means for rotating said shaft.

3. In an explosion-engine, a cylinder having a port for the passage of water, a grooved piston, a revoluble shaft having a water-passage in alinement with the port, a boxing in which said shaft hangs, and water connections for the boxing, said passage having a laterally or radially extending portion in communication with the interior of the boxing.

4. In combination, a cylinder having a port, a piston having a groove which may aline with the port, a revoluble shaft having a passage-way in part extended on a radial line, an annular groove into which the outer end of the passage opens, a boxing encircling the shaft, and water connections for the boxing.

810,536. TURNING SWITCH WITH LIGHTED HANDLE FOR ELECTRIC LINES. HANS HOLMS, Frankfort-on-the-Main, Germany. Filed Apr. 10, 1905. Serial No. 254,982.

Claim.—An electric switch comprising main contacts connected with the line, a pivotally-mounted switch member for closing circuit through said contacts, said member having relatively long and short contact ends, a lamp for said switch member connected therethrough with one side of the line, and an auxiliary contact connected with the other side, said auxiliary contact being out of the path of said short end and in the path of the long end of said switch member.

810,537. GARMENT-FASTENER. HERBERT A. HOPKINS, West Roxbury, Mass. Filed May 8, 1905. Serial No. 259,440.

Claim.—A two-part garment-fastener comprising a plate adapted to be attached to a garment, said plate having a shank and an elongated head both integral therewith; and a socket member adapted to be fastened to a garment, said socket member having a raised concavo-convex portion adapted to contain said head and provided with an elongated slot for the passage therethrough of said head, said raised portion having an elongated chamber 18 arranged with its longer diameter at right angles to that of said slot, and extending outwardly from the interior of said concavo-convex portion, said chamber adapted to receive said elongated head after said head has been passed through said slot and into the interior of said concavo-convex portion, whereby said parts are securely locked together.

810,538. SPATULA AND CORK-EXTRACTOR. EDWIN B. JELKS, Quitman, Ga. Filed Apr. 11, 1905. Serial No. 255,051.

Claim.—1. The combined spatula and cork-extractor herein described comprising the blade adapted at one end to form a spatula and having its other end forming a cork-extractor, and having its intermediate portion roughened or milled at its edges, the handle-sections lapping upon the opposite sides of the intermediate portion of the blade, the latter projecting laterally beyond the edges of the handle-sections to be grasped by the hand, and devices connecting the handle-sections and the handle-sections and the blade being movable relatively in a longitudinal direction whereby the cork-extractor may be incased between the handle-sections or projected therefrom, substantially as set forth.

2. The combination of the handle-sections, the blade having the spatula at one end, the cork-extractor at the opposite end, an intermediate portion roughened at its edges and slotted longitudinally in said intermediate portion, the handle-sections lapping on opposite sides of the intermediate portion of the blade and made narrower than the said intermediate portion whereby the roughened edges may project beyond the handle-sections, and screws connecting the handle-sections, and extending through the slots in the blade whereby the handle-sections and the blade are movable relatively in a longitudinal direction, substantially as described.

3. The combination with two oppositely-disposed handle-sections of, the blade movable longitudinally between the same and made of a width exceeding that of the handle-sections whereby the longitudinal side edges of the blade will project laterally beyond the handle to form handholds for use in adjusting the blade longitudinally relative to the handle-sections, substantially as, and for the purpose set forth.

810,539. SCALE. ARTHUR JOHNSON, Hamilton, Canada, assignor to Moses Jobbern, Hamilton, Canada. Filed May 3, 1905. Serial No. 258,621.

Claim.—1. In a scale, the combination with a vertically-movable stem, of a scale-pan operatively connected to said stem, a double-faced stationary chart, a housing for said chart having one side open and the other side provided with a vertical slit, and horizontal indicating-arms connected to the stem and disposed on opposite sides of the chart for observation through the slit and the open side of the housing.

2. In a scale, a fulcrumed lever, a lug on the lever, a pendulum pivotally connected to the lug and in vertical line with said fulcrum, a secondary lug on the lever at right angles with the first lug and in proximity to the pendulum, and adjusting means connected to the secondary lug and pendulum.

3. In a scale, the combination with a base and a vertically-movable stem, of an indicator operated by said stem, parallel levers pivoted to the stem one above the other and also pivoted to the base, and a scale-pan supported independently of the stem by said parallel levers, whereby the parallel levers operate the indicator.

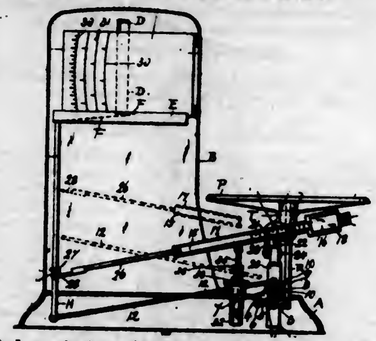

4. In a scale, the combination with a support or base, of a stem, an indicator operated by said stem, parallel levers pivoted to the base whose pivots are located in vertical alinement with each other, a scale-pan pivoted to one of the levers, a rod connected to the scale-pan, and a link pivoted to the rod in vertical alinement with the point of pivoting the scale-pan to the lever and pivoted to the base in vertical alinement with the point of pivoting the lever to said base.

5. In a scale, the combination with a support or base, of a lever fulcrumed to said base, a scale-pan supported by the lever, a pendulum pivotally connected to the said lever in vertical alinement with the aforesaid fulcrum-point of the lever, and means for adjusting the pendulum laterally to bring the scale to a proper balance.

810,540. LEAF-FLEXING MACHINE. HARRY S. JOURS and WILLIAM G. JOURS, Chicago, Ill. Filed Nov. 26, 1904. Serial No. 234,304.

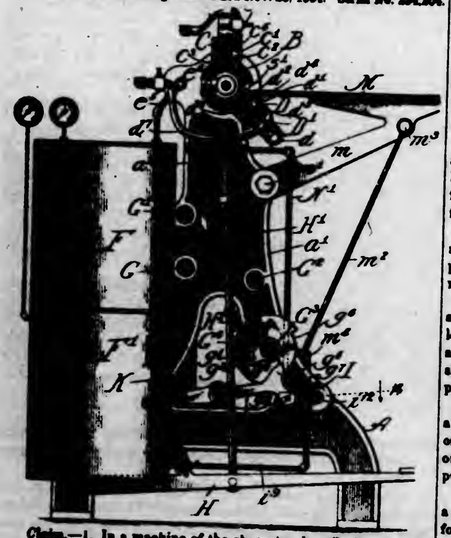

Claim.—1. In a machine of the character described, means for confining a leaf and flexing it throughout a limited zone, said means varying the place of flexure through very closely adjacent lines and causing a portion of the leaf to shift while the flexing is performed.

2. In a machine of the character set forth, means for confining a leaf and flexing it throughout a limited zone, said means including relatively moving leaf-confining members between which the portion of the leaf under treatment may be shifted and operating to vary the place of flexure through very closely adjacent lines and causing a

3. In a leaf-flexing machine, means for flexing the leaf upon itself and shifting the place of flexure through lines inappreciably removed from each other including leaf-gripping means, for the purpose set forth.

4. In a leaf-flexing machine, means for flexing the leaf upon itself in two directions along very closely related lines, throughout a limited zone including leaf-gripping means, for the purpose set forth.

5. In a leaf-flexing machine, the combination of curved leaf confining and holding devices, and means for producing relative movement of said devices and causing them to apply a shifting flexure to the leaf in one direction and then in the reverse direction over the same area, throughout a given zone, for the purpose set forth.

6. In a leaf-flexing machine, the combination of relatively movable leaf confining and holding devices, operating to bend the leaf upon itself about a very small radius and shift the place of bending, for the purpose set forth.

7. In a leaf-flexing machine, the combination of a rocking member equipped with gripping means, and a leaf confining and holding member in juxtaposition therewith, said members serving to fold a leaf between them and shift the line of flexure throughout a limited zone, for the purpose set forth.

8. In a leaf-flexing machine, the combination of a rocking member equipped with gripping means, and a leaf confining and holding member in juxtaposition therewith equipped with a suction device, said members serving to fold a leaf between them and shift the line of flexure throughout a limited zone, for the purpose set forth.

9. In a leaf-flexing machine, the combination of a rocking member equipped with means for holding the margin of a leaf, and a juxtaposed member coacting with said rocking member equipped with a suction device having orifices opening near its front portion adjacent to said rocking member, whereby a leaf may be drawn between said members, the suction applied to the leaf adjacent to the section to be flexed, and the leaf folded upon itself in the return movement of the rocking member, for the purpose set forth.

10. In a machine of the character described, the combination of a rocking member equipped with jaws having the gripping-space between them accessible in the normal position of rest, and a pair of coacting leaf confining and holding members adjacent to said first-named member and arranged on opposite sides of said space, said rocking member having a range of movement enabling it to carry the leaf between the rocking member and each of said second-named members, for the purpose set forth.

11. In a leaf-flexing machine, the combination of a frame, a table, a jaw-equipped rocking cylinder normally occupying a position with its gripping-plane adjacent to the rear edge of said table, and a pair of leaf confining and holding members arranged above and below the plane of said table, for the purpose set forth.

12. In a machine of the character set forth, the combination with a rocking member equipped with means for holding a margin of a leaf, a pair of juxtaposed concaves, and suction devices having orifices opening near the front edges of the concaves, for the purpose set forth.

13. In a machine of the character set forth, the combination of a rock-cylinder equipped with jaws, means for actuating the jaws, a pair of concaves, suction devices connected with said concaves, and means for controlling the suction, for the purpose set forth.

14. In a machine of the character described, the combination of a rock-cylinder equipped with pneumatically-actuated jaws, and a leaf confining and holding member adjacent to said rock-cylinder, and operating in conjunction with the cylinder to flex a leaf and shift the place of flexure uniformly throughout a given zone, for the purpose set forth.

15. In a machine of the character set forth, the combination of a jaw-equipped rock-cylinder having normally open jaws, and a pair of leaf confining and holding members adjacent to said cylinder and on opposite sides of the normal gripping-plane of the jaws, for the purpose set forth.

16. In a machine of the character set forth, the combination of a jaw-equipped rock-cylinder having normally open jaws, means for closing the jaws, and a pair of concaves adjacent to the cylinder on opposite sides of the normal gripping-plane of the jaws equipped with suction devices having orifices at the front portions of said second-named members, for the purpose set forth.

17. In a machine of the character set forth, the combination of a rock-cylinder equipped with grippers and pneumatic actuating means for the grippers, a leaf confining and holding member equipped with a suction device, a pump, and pressure and vacuum chambers connected with said pump and respectively joined to said pneumatic actuating means and said suction devices, for the purpose set forth.

a rock-cylinder equipped with jaws, a piston movable longitudinally of the rock-cylinder and serving in the actuation of the jaws, and a leaf confining and holding member serving in conjunction with the rock-cylinder to bend a leaf upon itself and vary the line of flexure, for the purpose set forth.

19. In a machine of the character set forth, the combination of a cylinder equipped with gripping-jaws, a jaw-actuating piston movable longitudinally in said cylinder, and a leaf confining and holding member adjacent to the cylinder and acting in conjunction with the cylinder to fold a leaf upon itself and vary the line of flexure said last-named member and the cylinder being relatively movable, for the purpose set forth.

20. In a machine of the character set forth, the combination of a rock-cylinder provided with gripping-jaws and equipped internally with cylinders, a jaw-actuating piston, pipes communicating through the journals of said rock-cylinder with said internal cylinders, a valve controlling said pipes, means for actuating said valve in one direction, and a leaf confining and holding member coacting with said rock-cylinder, for the purpose set forth.

21. In a machine of the character set forth, the combination of a rock-cylinder equipped with grippers, means for actuating the grippers, means for actuating the rock-cylinder, a leaf confining and holding member adjacent to the rock-cylinder, and mechanism for controlling the movements of said cylinder comprising means for setting the cylinder in motion, and automatically-actuated means for stopping the cylinder, for the purpose set forth.

22. In a machine of the character set forth, the combination of a rock-cylinder equipped with grippers, means for actuating the grippers, means for actuating the rock-cylinder, a leaf confining and holding member adjacent to the rock-cylinder, and mechanism for controlling the movements of the cylinder and the actuation of its grippers, comprising means for governing the closing of the grippers of the cylinder and setting the machine in motion, and automatic means for governing the stopping of the cylinder and opening the grippers, for the purpose set forth.

23. In a machine of the character set forth, the combination of a rock-cylinder equipped with grippers, pneumatic means for closing said grippers, a leaf confining and holding member adjacent to said cylinder, and controlling mechanism comprising a normally inactive shaft connected with said cylinder, a continuously-rotating member, a clutch for connecting the normally inactive shaft, a suitably-actuated cam, means for actuating said cam to operate said clutch, and means for automatically continuing the movement of said cam, whereby the cam serves to release said clutch after the machine has completed its cycle of operations, for the purpose set forth.

24. In a machine of the character set forth, the combination with a rock-cylinder provided with gripping-jaws and pneumatic means for actuating the same, a leaf confining and holding member adjacent to said cylinder, a valve controlling the admission to said cylinder, a normally inactive shaft connected with said cylinder, a clutch through the medium of which said shaft may be actuated, and mechanism whereby said cam serves, in its initial movement, to actuate said valve, and thereafter to throw said clutch into operation, and finally to release said clutch after the machine has completed its cycle of operations, for the purpose set forth.

25. In a machine of the character set forth, the combination of a rock-cylinder equipped with gripping-jaws, pneumatic means for actuating said jaws, a valve controlling the admission to said pneumatic means, concaves adjacent to said cylinder equipped with suction devices, a valve controlling said suction devices, means for actuating said cylinder, and mechanism manually actuated in the operation of starting the machine and automatically actuated in the operation of stopping the machine, whereby, in a cycle of operations of the machine, said jaws are closed after a leaf is introduced, said cylinder set in motion, the suction applied alternately to said suction devices, the cylinder stopped, and the jaws released, for the purpose set forth.

26. In a machine of the character set forth, the combination with a rock-cylinder, of a pair of concaves coacting therewith and equipped with suction devices, a valve controlling said suction devices, and valve-actuating means operated from said cylinder, for the purpose set forth.

27. In a machine of the character set forth, the combination of a rock-cylinder having a jaw equipped with trunnions and a relatively movable jaw, actuating means for the cylinder connected with one of said trunnions, actuating means for said second-named jaw, and a leaf confining and holding member adjacent to said cylinder, for the purpose set forth.

28. In a machine of the character set forth, the combination of a rock-cylinder having a jaw equipped with trunnions and a jaw pivotally supported on said first-named jaw, a piston movable longitudinally in said cylinder and equipped with jaw-actuating means, means connected with one trunnion of the cylinder for actuating the cylinder, and a leaf confining and holding member adjacent to said cylinder, for the purpose set forth.

29. In a machine of the character set forth, the combination of a rock-cylinder and a concave adjacent thereto equipped with a suction device, said suction device being provided with means for limiting the extent whereat the suction is applied, whereby leaves of different width may be treated, for the purpose set forth.

30. In a machine of the character set forth, the combination of a rock-cylinder provided with pneumatically-actuated jaws, concaves adjacent thereto equipped with suction devices, and actuating and controlling means, comprising a normally inactive shaft, a clutch for the same, a shaft geared to said first-named shaft, a cam mounted thereon and capable of limited movement with relation thereto, a cam-lever, manual means for initially moving said cam, and valves controlling the pneumatic pressure and the suction, for the purpose set forth.

31. In a leaf-flexing machine, the combination with leaf confining and holding members, of a normally inactive shaft from which one of said members is actuated, a clutch therefor, a second shaft geared to the first-named shaft, a cam having lost-motion connection with said second-named shaft, a cam-lever, a valve operated thereby, and a trip on said second-named shaft controlling said clutch, for the purpose set forth.

32. The combination of a rock-cylinder having pneumatically-actuated gripping-jaws, pipes leading to said cylinder, a valve controlling said pipes, a foot-lever controlling said valve, and a leaf confining and holding member adjacent to said cylinder, for the purpose set forth.

33. The combination of a rock-cylinder having pneumatically-actuated gripping-jaws, a valve controlling the admission thereto, concaves equipped with suction devices, a valve controlling the suction devices, a normally inactive shaft joined to said rock-cylinder, a second shaft geared to said first-named shaft, a clutch for the first-named shaft controlled by the second-named shaft, a cam having lost-motion connection with the second-named shaft, a cam-lever coacting with said cam and controlling said first-named valve, means for moving said cam to operate said first-named valve and said clutch, and actuating means for the second-named valve, for the purpose set forth.

34. In a leaf-flexing machine, the combination with a frame member having air-passages opening at a flat surface, a spring-held rotary valve having a flat surface engaging said first-named surface, an oscillating member equipped with leaf-gripping jaws, and pneumatic jaw-actuating means connected with the air-passages of said frame member, for the purpose set forth.

35. The combination of a rock-cylinder equipped with gripping-jaws, means for turning said rock-cylinder, a concave equipped with a suction device, a valve controlling the suction, and gear connection between said rock-cylinder and suction-controlling valve, for the purpose set forth.

36. The combination of a rock-cylinder equipped with grippers, a coacting leaf-confining member equipped with a device for holding a leaf at a point near the area to be treated, and mechanism serving to close said grippers, turn the cylinder, apply holding force to the leaf through said second-named member, reverse the cylinder, and open the grippers, for the purpose set forth.

37. The combination of a rock-cylinder equipped with grippers, a pair of coacting leaf confining and holding members, and mechanism serving to close the grippers, impart to said cylinder a plurality of reciprocations in each direction from its normal position of rest, and then open the grippers, for the purpose set forth.

810,541. TELEMETER. ALPHONSE JOOSS, Forest, near Brussels, and ADHÉMAR MINCKWITZ, Brussels, Belgium. Filed Mar. 6, 1905. Serial No. 248,566.

Claim.—1. A telemeter comprising a plurality of telescoping tubes, a sight-tube mounted on the outer tube at right angles thereto, a like sight-tube mounted on the end of the innermost telescoping tube and at an angle to the first sight-tube and means to measure the distance between the two tubes, substantially as described.

2. In a telemeter, a plurality of telescoping tubes, a supporting member on and adjustable along the outer tube, a sight-tube fixed on

sight-tube and a measure for the distances between the two tubes graduated to read distances of the objects sighted.

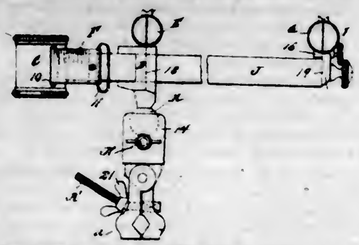

3. In a telemeter, a plurality of telescoping tubes, a supporting member on and adjustable along the outer tube and having a measuring edge, a sight-tube fixed on the member at right angles to the telescopic tubes and in alinement with the measuring edge, a plate having a measuring edge fixed on the end of the innermost telescopic tube, a sight-tube in alinement with the edge on said plate, means on the plate to angularly adjust the second sight-tube, and means to measure the distance between the measuring edges.

4. In a telemeter, a plurality of rectangular telescoping tubes, a supporting member on and adjustable along the outer tube, and having a measuring edge thereon, a tape-case, and tape on one end of the outer tube, a sight-tube mounted on the member in vertical alinement with said edge at right angles to the telescoping tubes, a ball-and-socket joint on the member and a clamp on the ball-and-socket joint, a plate having a forked extension fixed on the end of the innermost telescoping tube and having a measuring edge, a sight-tube mounted on the plate in vertical alinement with the measuring edge and means in the forked extension to angularly adjust the second sight-tube, substantially as and for the purpose set forth.

810,542. **EXHAUST-MUFFLER.** WILLIAM R. KAHLENBERG, Two Rivers, Wis. Filed Sept. 9, 1905. Serial No. 277,775.

Claim.—1. A muffler consisting of a closed drum provided with heads at either end thereof, exhaust inlet or outlet openings in the heads, an inner jacket of less diameter than the drum in communication with the exhaust and inlet openings, peripheral openings in the jacket adjacent to its ends, and a valve fitted in said jacket between the peripheral openings.

2. A muffler consisting of a drum having an inner jacket of less diameter than said drum, inlet and outlet exhaust-openings therefor, two series of openings at either end of the jacket, a valve fitted therein between the series of openings, a stem for said valve, a lever mounted on the stem, a boss secured to the drum concentric with the valve-stem, and a friction-band mounted on said boss and connected to the handle.

3. A muffler consisting of a drum having an inner jacket of less diameter than the drum, inlet and outlet exhaust-openings therefor, two series of openings at either end of the jacket communicating with the space between the latter and said drum, a valve fitted in said jacket intermediate of the two series of openings, a stem for said valve, a boss secured to the outside of the aforesaid drum through which the valve-stem projects, a lever secured to the valve-stem adjacent to the boss and provided with a lug, a split ring fitted over said boss having ears engaging the said lug, and a hand-wheel in threaded engagement with one of the ears, whereby the tension of the aforesaid split ring is adjusted upon the boss and the lever secured thereto.

810,543. **CLAMP.** HERMAN A. KNOKE, Chicago, Ill. Filed Jan. 25, 1905. Serial No. 243,693.

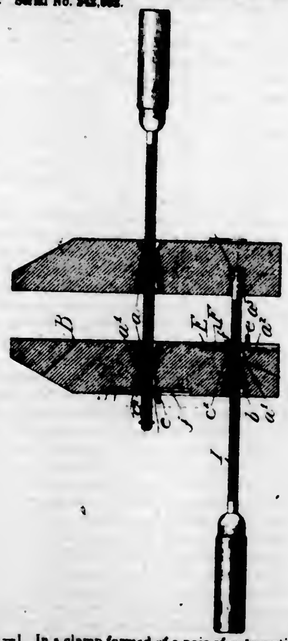

Claim.—1. In a clamp formed of a pair of coöperating jaws provided with operating-screws, a screw-bearing comprising a nut formed of separable sections rotatably supported on a jaw, and means for separating said sections to free the screw and for bringing them together to adapt the screw to engage operatively therewith, for the purpose set forth.

2. In a clamp formed of a pair of coöperating jaws provided with operating-screws, a screw-bearing comprising a nut formed of longitudinally-separable sections rotatably supported on a jaw, and means for separating said sections to free the screw and for bringing them together to adapt the screw to engage operatively therewith, for the purpose set forth.

3. In a clamp formed of a pair of coöperating jaws provided with operating-screws, a screw-bearing comprising a nut formed of two separable sections rotatably supported on a jaw, and means for separating said sections to free the screw and for bringing them together to adapt the screw to engage operatively therewith, for the purpose set forth.

4. In a clamp formed of a pair of coöperating jaws provided with operating-screws, a screw-bearing comprising a nut formed of two separable sections rotatably supported on a jaw, a tongue on one of said sections and a groove in the other section to coöperate with said tongue, and means for separating said sections to free the screw and for bringing them together to adapt the screw to engage operatively therewith, for the purpose set forth.

5. In a clamp formed of a pair of coöperating jaws provided with operating-screws, a screw-bearing secured to one of said jaws, comprising a nut formed of separable sections rotatably housed in the jaw transversely thereto, and an aperture in the other jaw to register with said screw-opening, and means for separating said sections to free the screw and for bringing them together to adapt the screw to engage operatively therewith, for the purpose set forth.

6. In a clamp, the combination of a pair of coöperating jaws provided with operating-screws, a screw-bearing comprising a nut formed of separable sections provided with transverse grooves, and a cam-frame confined at its arms in said grooves and operative to spread said sections apart and bring them together, for the purpose set forth.

7. In a clamp formed of a pair of coöperating jaws provided with operating-screws, a screw-bearing comprising a nut rotatably housed in a jaw and formed of separable sections endwise abutting to form the threaded opening, and cam mechanism engaging said nut to spread the sections apart and force them together.

8. In a clamp, the combination of a pair of coöperating jaws, screw-bearings secured to one of said jaws, each comprising a nut rotatably supported on said jaw and composed of two sections forming the threaded opening between them, cams engaging said sections for longitudinally separating them and bringing them together, and operating-screws for the jaws working in said screw-bearings.

9. In a clamp, the combination of a jaw, screw-bearings journaled in said jaw transversely thereto near its center and near its rear end, respectively, each comprising a nut formed of two longitudinally-separable sections, cams for separating said sections, a companion jaw coöperating with said first-named jaw, provided near its center with a transverse aperture and near its rear end with a socket, screws for operating said jaws, one screw passing through said aperture and screw-bearing opposite thereto and the other screw passing through the other said screw-bearing and releasably confined in said socket, for the purpose set forth.

10. A clamp comprising, in combination, a pair of jaws, one of said jaws having screw-openings respectively near its center and rear end, with openings forming nut-housings extending across said screw-openings respectively near the back and face of the jaw, nuts rotatably confined in said housings each nut being formed of separable sections, cams supported on said jaw to operatively engage said nuts for separating and bringing together said sections, the other jaw having screw-openings to register with those in the first-named jaw, and screws working in opposite directions in said jaw-openings through said nuts, for the purpose set forth.

11. A clamp comprising, in combination, a pair of jaws, one of said jaws having screw-openings respectively near its center and rear end, with openings forming nut-housings extending across said screw-openings and containing bushings, nuts rotatably confined in said bushings, each nut being divided through its threaded opening into separable sections, cams supported on said jaw to operatively engage said nuts for separating and bringing together said sections, the other jaw having screw-openings to register with those in the first-named jaw, and screws working in opposite directions in said jaw-openings through said nuts, for the purpose set forth.

12. A clamp comprising, in combination, a pair of jaws, one of said jaws having screw-openings respectively near its center and rear end, with openings forming nut-housings extending across said screw-openings, nuts confined in said nut-openings, each nut being divided through its threaded opening into two separable sections, said sections being provided with cam-receiving grooves, a cam for each nut, comprising a cam-frame adjustably confined on said jaw with its arms engaging the sections of a nut at said grooves therein, the other jaw having screw-openings to register with those in the first-named jaw, and screws working in opposite directions in said jaw-openings through said nuts, for the purpose set forth.

13. A clamp comprising, in combination, a pair of jaws, one of said jaws having screw-openings respectively near its center and rear end, with openings forming nut-housings extending across said screw-openings, nuts confined in said nut-housings, each nut being divided through its threaded opening into two separable sections, said sections being provided with cam-receiving grooves, a cam for each nut comprising a cam-frame adjustably confined on said jaw with its arms engaging the sections of a nut at said grooves therein, the other jaw having a screw-opening between its ends and a socket near its rear end, a screw working in one direction through said central openings in both jaws and through the nut in one said opening, a headed screw working through the other nut in the jaw provided therewith and entering the socket in the opposite jaw, and means for releasably confining said headed screw in said socket, for the purpose set forth.

810,544. **CABINET.** ERIK L. KRAG, Chicago, Ill., assignor to Krag Imperial Cabinet Company, a Corporation of Illinois. Filed Jan. 31, 1903. Renewed June 21, 1905. Serial No. 266,343.

Claim.—1. In a cabinet, in combination, a base; rods extending upwardly therefrom; a plurality of shelves; and a series of partitions adapted to be strung upon said rods and to be interposed between said shelves.

2. In a cabinet, in combination, a base; rods extending upwardly therefrom; a bottom plate having openings coinciding with said rods; a series of shelves also having openings coinciding with said rods; and partitions adapted to be strung upon said rods and to be interposed between said shelves.

3. In a cabinet, in combination, a base; rods extending upwardly therefrom; a bottom plate having openings coinciding with said rods; a series of shelves also having openings coinciding with said rods; partitions adapted to be strung upon said rods and to be interposed between said shelves; and means for holding said shelves and partitions upon said rods.

4. In a cabinet in combination, a base having a back bar, a front bar and end bars; rods extending through said back bar and said front bar; end walls and a back wall for said cabinet; a bottom plate having openings coinciding with said rods; a series of shelves also having openings coinciding with the rods; partitions having integral sleeves adapted to receive said rods, said partitions being placed between adjacent shelves to space said shelves upon said rods; and means on the rods for clamping the shelves, partitions and base together.

5. In a cabinet, in combination, a base; rods extending upwardly therefrom; end walls and a back wall; a plurality of shelves on said rods, said shelves being provided with flanges at their ends and rear edges, which flanges are secured to said end walls and back wall; and partitions interposed between adjacent shelves, said partitions having sleeves adapted to receive said rods.

6. In a cabinet, in combination, a base comprising a back bar and a front bar; rods extending through said back bar and said front bar; end walls and a back wall; a bottom plate having openings coinciding with said rods; a plurality of shelves also having openings coinciding with the rods, said shelves being provided with flanges at their ends and rear edges, which flanges are secured to said end walls and back wall; partitions interposed between adjacent shelves, said partitions having integral sleeves adapted to receive said rods; and means on the rods for clamping the shelves, partitions and base together.

810,545. **METALLIC CABINET.** ERIK L. KRAG, Chicago, Ill., assignor to Krag Imperial Cabinet Company, a Corporation of Illinois. Filed Jan. 31, 1903. Renewed June 21, 1905. Serial No. 266,344.

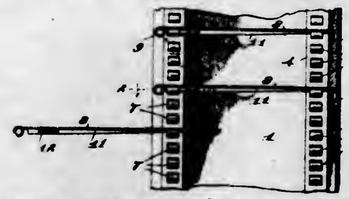

Claim.—1. A cabinet having side walls, each of said walls being provided with two strips carrying a vertical series of ears cut from the substance of said strips and bent inward therefrom, in combination with a shelf adapted to rest upon said integral ears; and a spring secured to said shelf and adapted to engage one of said ears to prevent accidental forward displacement of said shelf.

2. In a cabinet, in combination, two sides walls, each provided with a vertical series of ears; a shelf adapted to rest upon said ears, said shelf having side flanges adapted to lie in the rear of said ears; and a spring on one of said side flanges, the free end of which spring is adapted to engage one of said ears to prevent accidental forward displacement of said shelf.

3. In a cabinet, in combination, two side walls, each provided with two strips carrying a vertical series of ears cut from the substance of said strips and bent inward therefrom; a shelf adapted to

rest upon said integral ears, said shelf having side flanges adapted to lie in the rear of said ears; and a spring on one of said side flanges, the free end of which spring is adapted to engage one of said ears to prevent accidental forward displacement of said shelf.

810,546. FIFTH-WHEEL. JOSEPH KRENZER, Superior, Wis., assignor of one-half to Thomas J. Solon, Superior, Wis. Filed July 3, 1905. Serial No. 268,164.

Claim.—1. In a fifth-wheel, a pair of superposed rings, each forming a complete annulus, and each having an integral cross-bar for connection with the running-gear, the lower ring being approximately V-shaped in cross-section, and the horizontal contacting faces of the two rings being coextensive in width, the upper ring having a marginal flange encircling the tapered outer edge of the lower ring, and serving to maintain the rings in proper relative positions.

2. In a fifth-wheel construction, an upper grooved ring having an integral cross-bar arranged for connection to a portion of the running-gear, and a lower ring also having an integral cross-bar, the lower ring being approximately V-shaped in cross-section and being split or divided to permit its introduction within the groove of the upper ring.

3. As a new article of manufacture, a fifth-wheel formed of a bar of metal split and opened out to form an unwelded ring having a friction-surface of uniform character throughout.

4. As a new article of manufacture, a fifth-wheel formed of a bar of metal, split and opened out to form an unwelded ring, the end portions of the bar being split to form arms that are arranged in continuous alinement and form an integral part of said ring.

810,547. SELF-LOADING CART. ROBERT C. MEEKINS, Glens Falls, N. Y. Filed June 6, 1904. Serial No. 211,494.

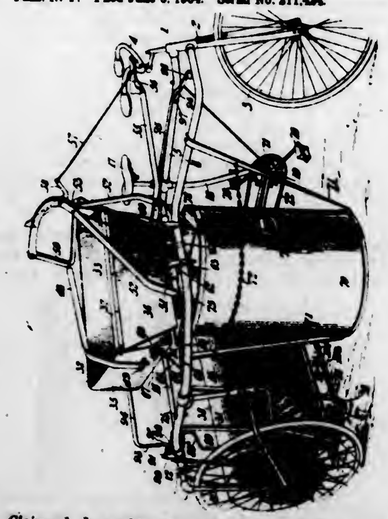

Claim.—1. In combination, a wheeled frame having a rider's seat, a dirt-receptacle supported by the frame at a point to one side of the seat, a dirt-gathering means in a plane to the rear of the seat, a dirt-receiver for conveying the dirt from the gathering means to the receptacle and adjustable to a dumping position above the receptacle, and within reach of said seat.

2. In combination, a rider-propelled wheeled frame, a dirt-receptacle supported by the frame at a point to one side of the rider's seat, a dirt-gathering means, a dirt-receiver movable between the gathering means and the receptacle, and a receiver hoisting and lowering means adjacent to and operable from the rider's seat.

3. In combination, a rider-propelled wheeled frame, a dirt-gathering element supported by the frame, a rider's seat and a dirt-receptacle arranged side by side in front of the dirt-gathering element, a dirt-receiver movable between the dirt-gathering element and the receptacle, and a receiver elevating and lowering means adjacent to and operable from the rider's seat.

4. In a device of the class described, a wheel-supported frame, a cage supported by said frame, a receiver vertically movable in and supported by said cage, and tiltable at the upper limit of its movement and means for raising and lowering said receiver.

5. In a device of the class described, a wheel-supported frame, a cage connected with said frame and including hangers having stirrups at their lower ends and side bars connecting the free ends of said stirrups with the frame, and a receiver normally supported upon said stirrups.

6. A wheel-supported frame, a cage connected with said frame and including a pair of hangers having stirrups and supporting-bars connecting the free end of said stirrups with the frame, a receiver normally supported upon said stirrup and having wear-strips adapted to engage said stirrups and hangers, and means for vertically moving said receiver with its wear strips or shoes in contact with the hangers.

7. A wheel-supported frame, a cross-bar connecting the side members of said frame, hangers depending from said cross-bar and having offset shoulders and rearwardly-extending stirrups, side bars connecting the free ends of said stirrups with the frame, a cross-bar connecting the lower ends of the side bars, and a receiver normally supported upon the stirrups and having an open rear side and a rearwardly-projecting lip normally resting upon the cross-bar connecting the lower ends of the side bars.

8. A wheel-supported frame, a cross-bar connecting the side members of said frame, hangers depending from said cross-bar and having offset shoulders and rearwardly-extending stirrups having upturned rear ends, side bars depending from the side members of the frame and connected by a cross-bar extending beneath the upturned rear ends of the stirrups, a receiver consisting of a box having rounded bottom edges engaging the rounded ends of the stirrups and provided with a rearwardly-extending lip supported upon the cross-bar connecting the supporting side members, and means for manipulating said receiver.

9. A supported cage including hangers having offset lower ends and rearwardly-extending stirrups having upturned ends, side bars supporting the rear ends of said stirrups and connected at their lower ends by a cross-bar, a receiver supported by the stirrups and having a rearwardly-extending lip and a conveyer-pan connected pivotally with the side bars and normally supported upon the lip of the receiver.

10. A supported cage, a receiver vertically movable in said cage and having an open rear side and a bottom provided with a rearwardly-extending lip, a lid hinged at the upper corners of said receiver, and means for elevating the receiver and for tilting the latter as it approaches the upper limit of its movement.

11. A wheel-supported frame, a cage depending from and supported by said frame, a receiver vertically movable in said cage, and tiltable at the upper limit of its movement and means for guiding said receiver into and out of contact with hangers constituting part of the cage, in contact with which the receiver is guided upwardly and downwardly.

12. A wheel-supported frame, a receiver-supporting cage depending from said frame, a receiver vertically movable in said cage, a yoke pivotally connected with said receiver, an operating-lever connected with said yoke, and a locking device connected with said lever to retain the receiver in a lowered, supported position to prevent it from jolting.

13. A wheel-supported frame, a receiver-supporting cage connected with and depending from said frame, a receiver vertically movable in said cage, a yoke connected pivotally with the receiver, an operating-lever connected pivotally with the yoke, a bell-crank lever terminating at one end in a hook adapted to engage a fixed portion of the frame to thereby lock the operating-lever, the yoke and the receiver when the latter is in a lowered position, a hand-lever connected with the operating-lever, a grip pivotally connected with said hand-lever, and a rod connecting said grip with the free end of the bell-crank lever having the locking member.

14. A wheel-supported frame, a suitably-supported, vertically-movable receiver having an open rear side and a lid hinged at the upper corners thereof, means for elevating said receiver, and movable means for engaging and tilting said receiver as it approaches the upper limit of its movement to cause the lid to swing open.

15. A wheel-supported frame, a suitably-supported, vertically-movable receiver having a hinged lid and provided with laterally-extending pins, means for elevating said receiver, and spring-supported, pivotally-mounted hook members disposed in the path of said pins to engage the latter, thereby causing the receiver to be tilted as it approaches the upward limit of its movement.

16. A wheel-supported frame, a vertically-movable receiver, means for supporting and guiding the latter, operating means for said receiver including a yoke pivotally connected therewith, an operating-lever fulcrumed upon the frame and connected pivotally with said yoke, and a hand-lever connected with the operating-lever, a locking device connected with the operating-lever for retaining the receiver in a lowered position, means connected with the hand-lever for releasing said locking device when the receiver is to be started in an upward direction, and means for tilting the receiver as it reaches the upper limit of its movement.

17. A wheel-supported frame, a vertically-movable receiver, means for supporting said receiver, including hangers depending from a cross-bar of the frame and having forwardly-extending brackets, spring-actuated hook members connected with the frame cross-bar and pins extending laterally from the receiver in the path of said hook members to be engaged thereby during the upward movement of the receiver which is thereby tilted as it approaches the upper limit of its movement.

18. A wheel-supported frame, including a side member having a transversely-disposed portion, box members supported thereon, a rock-shaft mounted upon said box members, clips connecting the rock-shaft and box members with the frame member, converging arms connected with said rock-shaft and having bent ends, said rock-shaft and arms constituting an operating-lever, a vertically-movable receiver, a yoke connected pivotally with the latter and having an arm connected pivotally with the bent arm of the operating-lever, and spring means to assist the operating-lever in overcoming the weight of the receiver.

19. A wheel-supported frame, a rock-shaft pivotally connected therewith and having converging arms constituting an operating-lever, a pivotally-mounted receiver supported by said lever, a hand-lever connected with the operating-lever, spring means for assisting the latter in overcoming the weight of the receiver, and means for causing the latter, when elevated, to be tilted as it approaches the upper limit of its movement.

20. A wheel-supported frame, an operating-lever connected pivotally with the same, a pivotally-supported receiver connected pivotally with the operating-lever, means connected with the latter for raising and lowering the receiver, means for tilting the latter as it approaches the upper limit of its movement, and means connected with the operating-lever, for locking the receiver at the lower limit of its movement.

21. A wheel-supported frame, an operating-lever connected pivotally therewith, a receiver connected with and carried pivotally by said operating-lever, means connected with the latter for raising and lowering the receiver and for tilting the same as it approaches the upper limit of its movement, suitably-supported hoppers to receive the material discharged from the receiver, and a receptacle supported removably below said hoppers to receive the material discharged from the latter.

22. A wheel-supported frame, an operating-lever, a vertically-movable receiver supported pivotally by said lever, means for tilting said receiver as it approaches the upper limit of its movement, means, supported by the frame, for receiving the material discharged from the receiver, and intermediate hoppers constituting guides to convey material from the receiver into the receptacle.

23. A wheel-supported frame, a receptacle supported detachably thereon, a cross-bar forming a part of said wheel-supported frame, and a hopper-carrying frame hingedly connected with said cross-bar and provided with hoppers adapted to discharge into the receptacle.

24. A wheel-supported frame, a receptacle supported thereby, a rock-shaft connected with a side member of the frame and provided with arms constituting an operating-lever, a clip serving to connect said rock-shaft with the frame member and having a rearwardly-extending plate, a hopper-carrying frame connected hingedly with the wheel-supported frame and adapted to be supported upon the rearwardly-extending clip-plate, and a vertically-movable receiver adapted, when elevated, to discharge over said hoppers into the receptacle.

25. A wheel-supported frame, a receiver-supporting cage connected with said frame, a vertically-movable receiver having an open rear side, a pivotally-mounted conveyor-pan disposed in proximity to the open rear side of the receiver, a gathering member cooperating with said conveyor-pan to discharge material into the receiver, a casing for said gathering member, and a flexible strip connected with the receiver and abutting upon said casing when the receiver is at the lower limit of its movement.

26. A frame, guiding and transporting wheels for said frame, a seat, a crank-shaft having pedals adapted to be operated by a person occupying the seat, means for transmitting motion from said crank-shaft to one of the transporting-wheels, a rotary gathering member, links mounted pivotally upon the shaft of the transporting-wheel and having bearings for the shaft of the rotary gathering member, means for transmitting motion from the driven transporting-wheel to said shaft, and means for throwing said motion-transmitting means into operation and simultaneously lowering the arms carrying the gathering member, and vice versa.

27. A machine of the class described including a rotary gathering member, a vertically-movable receiver, and a pan for conveying material into the receiver, said pan being hingedly connected with a receiver-supporting cage, means for simultaneously raising or lowering the rotary gathering member and the conveyer-pan, and means for, at the same time, throwing out of or into operation means for transmitting motion from a transporting-wheel of the machine to the rotary gathering member.

28. In an organized machine of the class described, a vertically movable and tiltable receiver having an open rear side and a rearwardly-extending lip, a conveyer-pan normally resting upon said lip, a rotary gathering element coöperating with the conveyer-pan to discharge material into the receiver, means for effecting the vertical adjustment, simultaneously, of the rotary gathering member and the conveyer-pan, means for positively limiting the downward movement of the free edge of the latter, means for transmitting motion to the rotary gathering member from a transporting-wheel of the machine, and means including vertical, resilient rods for throwing into and out of gear said motion-transmitting means.

810,548. VEGETABLE-WASHER. LOUIS MEYER, Dayton, Ky. Filed Feb. 20, 1905. Serial No. 246,514.

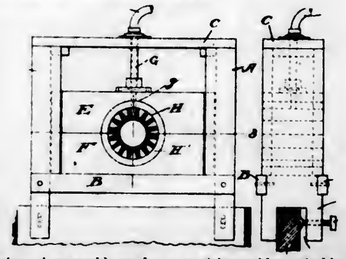

Claim.—A vegetable-washer comprising guides, suitably braced in parallel position to each other, means for clamping said guides to a suitable support, brush-holders sliding in said guides, substantially circular brushes secured to said brush-holders, adapted to form a circle when the brush-holders are brought together, a water-pipe leading to one of said brushes, and means for supplying water to said pipe, substantially as described.

810,549. WASHING-MACHINE. ARATHE G. MOSCHEL, Dallas, Tex., assignor of one-fourth to Sam Freshman and one-fourth to E. J. Reiss, Dallas, Tex. Filed June 10, 1905. Serial No. 264,701.

Claim.—1. In a washing-machine the combination of a tub, means for supporting same in a raised position, upright members extending above the tub on opposite sides thereof, a cross-bar slidably mounted above the tub and directed in its movements by said upright members, a plunger attached to the cross-bar, a pair of treadles located beneath the tub, rods connecting the cross-bar and the treadles, and springs to hold the treadles normally in a raised position.

2. In a washing-machine the combination of a tub, means for supporting same in a raised position, upright members extending above the tub on opposite sides thereof, a cross-bar slidably mounted above the tub within grooves in the said upright members, a plunger attached to the cross-bar, a pair of treadles located beneath the tub and operating in slots in the upright members, and rods connecting the ends of the cross-bar and the treadles and located within the upright members.

3. In a washing-machine the combination of a tub, means for supporting same in a raised position, upright members extending above the tub on opposite sides thereof, a cross-bar slidably mounted above the tub within grooves in the said upright members, a plunger

sejached to the cross-bar, a pair of treadles beneath the tub which operate in unison and pass through slots in the upright members, rods connecting the ends of the cross-bar and the treadles and located within the upright members, and springs to hold the treadles normally in a raised position.

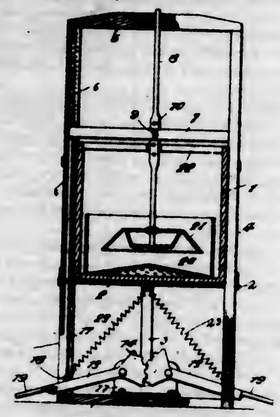

810,550. COUNTING MECHANISM. HENRY C. MCCALLUM, Montreal, Canada. Filed Feb. 9, 1905. Serial No. 244,961.

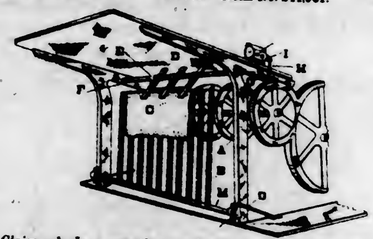

Claim.—1. In a counting mechanism, a series of spaced feed-arms mounted on a common axle, a series of spaced contact-arms also mounted on a common axle, said contact-arms positioned to occupy the spaces between said feed-arms, a registering means attached to the contact-arm axle and independently-operated means for feeding articles against the contact-arms.

2. In a counting mechanism, a series of contact-arms mounted on a common axle, registering mechanism mounted adjacent thereto, means for actuating the registering mechanism by the oscillation of said axle in combination with a series of feeding-arms positioned to occupy the spaces between said contact-arms and operated independently of said counting mechanism.

3. In a printing-machine, a series of spaced feed-arms mounted on a common axle, means for supplying articles to be counted to said feed-arms, in combination with a registering mechanism actuated by the oscillation of an axle carrying contact-arms spaced between the feed-arms.

4. In a mechanism for printing and counting articles, a series of spaced feed-arms, means for applying articles to be counted to said feed-arms, in combination with a counting mechanism actuated by the oscillations of an axle carrying contact-arms arranged to be free from interference with the feeding-arms and adapted for operation only by contact with articles carried thereon, substantially as described.

810,551. PILE-TUBE. JOHN MCGRANAHAN, Rexboro, Pa. Filed June 29, 1905. Serial No. 267,946.

Claim.—1. A pile-tube comprising a body and a point consisting of cone-sections hinged to said body, in combination with the internal means for locking said sections together.

2. A pile-tube comprising a body and a point having separable sections hinged to said body, said sections having projections thereon, in combination with means for engaging said projections to lock said sections together.

3. A pile-tube comprising a body and a point having separable sections hinged to said body, said sections having projections within them, in combination with a shoe for engaging said projections to lock said sections together, and means for exerting a hammer-blow in setting and removing said shoe.

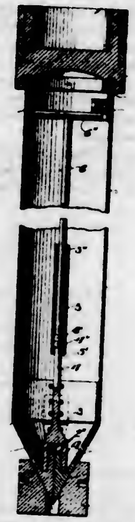

4. A pile-tube comprising a body having a point composed of hinged sections with projections thereon, a shoe with a stem thereon for engaging said projections, a handle having a stem thereon, and coupling mechanism connecting said stems in movable relation to each other.

810,552. THILL-COUPLING. JOHN A. MCLAUGHLIN, San Rafael, Cal. Filed Aug. 9, 1905. Serial No. 273,264.

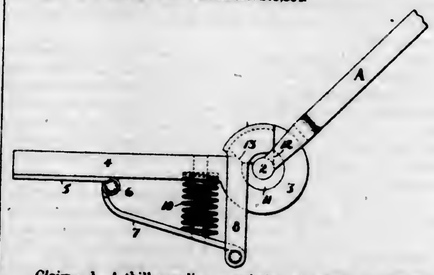

Claim.—1. A thill-coupling, consisting of a shaft-iron having a transverse cylindrical bar, a socket and journal for the bar, said socket consisting of a fixed segment carrying one member of the box, a swinging link carrying the other member of the box and closable with relation to the segment, a plate having one end hinged and the opposite end pivotally connected to the link, and a spring operating the plate intermediate of end connections.

2. In a thill-coupling the combination of coacting members between which the thill-iron is received one of said members opening and closing relative to the other, and having an extended arm portion, a plate hinged at one end and extending to the arm of said movable member and hingedly connected therewith, and a spring acting upon said plate intermediate of its said ends whereby said movable member is held in a closed position.

3. In a thill-coupling, bars secured to the vehicle-axle and having segmental wear-pieces fitted to the front ends to receive the thill-irons, arms swiveled below the bars and carrying the opposing members of the wear-pieces, plates hinged at one end to a fixed point and extending to the arms and hingedly connected therewith, and a spring engaging the plate at an intermediate point and operating in a vertical plane to hold the said opposing member of the arms in a closed position relative to the companion member acting to hold said wear-pieces in position to clasp the thill-irons.

4. In a thill-coupling, bars secured to the vehicle and segmental wear-pieces carried by the front ends of the bars, arms carrying opposing wear-pieces, said arms extending downwardly, hinged plates to which the arms are pivoted and springs fixed between the plates and the bars.

5. In a thill-coupling, bars fixed to the vehicle-axle with segmental wear-pieces at the front ends, arms carrying opposing wear-pieces and extending down below the bars, plates to which the arms are pivoted, said plates being hinged to the bars, and springs interposed between the bars and plates.

810,553. WOVEN PILE-FABRIC ROPE. AUGUST R. NEUF and CARL G. BOLDENWECK, Chicago, Ill. Filed July 18, 1904. Serial No. 217,016.

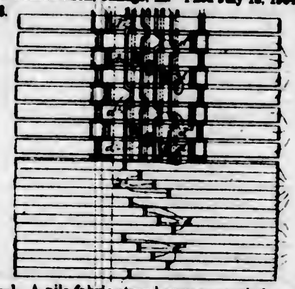

Claim.—1. A pile-fabric strand or rope consisting of a middle ply and two outer plies, the middle ply consisting of weft-strands and two separated sets of warp-strands interwoven therewith, and the outer plies consisting of weft-strands and a set of warp-threads interwoven with the weft-strands of the middle ply between the warp-threads of the latter, and with said weft-strands of the outer ply.

2. A pile-fabric strand or rope consisting of a middle ply and two outer plies, the middle ply consisting of weft-strands and warp-strands interwoven therewith, and the outer plies consisting of weft-strands and warp-threads interwoven with the weft-strands of the middle ply, and with said weft-strands of the outer ply, each of said weft-strands of the outer plies being engaged at a point between its ends by a single loop only of one of the warp-threads.

3. A pile-fabric strand or rope consisting of a middle ply and two outer plies, the middle ply consisting of weft-strands and warp-threads interwoven therewith, and the outer plies consisting of weft-strands and warp-threads interwoven with the weft-strands of the middle ply, and with said weft-strands of the outer plies, each of said weft-strands of the outer plies being engaged by a single loop only of one of the warp-strands and the loops of said warp-threads which engage said weft-strands of the outer plies being arranged obliquely in uniformly-spaced groups.

810,554. POLISHING-MACHINE. JOHN NELSON, Peru, Ill., assignor of one-third to Walter H. Mann and one-third to Rudolph F. Struever, Peru, Ill. Filed Apr. 17, 1905. Serial No. 256,236.

Claim.—1. In a metal-polishing machine, the combination of a frame, a buffing-cylinder journaled thereon, a sheet-supporting cylinder and a feed-roll located beneath and coacting therewith, and means for moving said sheet-supporting cylinder and feed-roll away from the buffing-cylinder, for the purpose set forth.

2. In a machine of the character set forth, the combination of a frame, a polishing-cylinder supported thereon, a slide connected with said frame, a sheet-supporting cylinder connected with said slide, and a coacting feed-roll adjustably connected with said slide, for the purpose set forth.

3. In a machine of the character set forth, the combination of a frame, a polishing-cylinder journaled thereon, slides connected with said frame, adjusting means for said slides, a sheet-supporting cylinder journaled in said slides beneath the polishing-cylinder, frame members pivotally and adjustably connected with said slides, and a feed-roll journaled in said frame members, for the purpose set forth.

4. In a machine of the character set forth, the combination of a frame, a buffing-cylinder, guides on said frame, slides of adjustable length connected with said guides, eccentrics supporting said slides, a sheet-supporting cylinder journaled in said slides, members pivotally connected with said slides, adjusting-screws connecting said members with said slides, and a feed-roll journaled in the pivoted adjustable members, for the purpose set forth.

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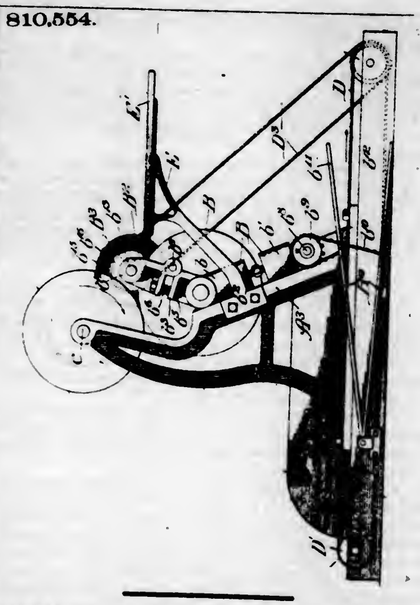

810,555. TRIPPING APPARATUS. WILLIAM J. NEWMAN, Chicago, Ill. Filed Apr. 10, 1905. Serial No. 254,782.

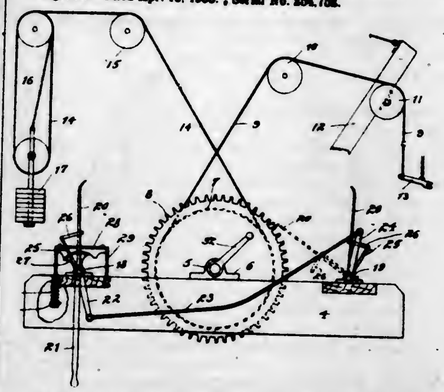

Claim.—1. In a tripping apparatus of the character set forth, the combination of a drum, a trip-line adapted to be wound on said drum, means for revolving said drum to take up slack in said trip-line, and means for positively and unyieldingly stopping said drum to cause the trip-line to actuate the tripping device.

2. In a tripping apparatus of the character set forth, the combination of a drum, a trip-line adapted to be wound around said drum in one direction, a take-up line adapted to be wound around the drum in the direction opposite to said trip-line, means for giving a tension to said take-up line, and means for positively and unyieldingly locking said drum to prevent its revolving in either direction.

3. In a tripping apparatus, the combination of a drum, a trip-line adapted to be wound around said drum in one direction, a take-up line adapted to be wound around said drum in the opposite direction, said take-up line being wound through suitable blocks, a weight connected with one of said blocks to give said take-up line sufficient tension to take up the slack in the trip-line, a toothed wheel mounted with said drum and pawls adapted to be thrown into engagement with said toothed wheel.

4. The combination of a drum, a trip-line, a tension-line, means for producing tension in the latter line, a toothed wheel mounted with said drum, pawls on either side of said toothed wheel, and

means for throwing said pawls simultaneously into and out of engage-

bears against the adjacent groove-wall when the

means for throwing said pawls simultaneously into and out of engagement with said wheel.

5. The combination with a drum for a trip-line, of a toothed wheel mounted with said drum and adapted to rotate therewith, pawls adapted to engage with said toothed wheel, shafts on which said pawls are mounted, means for turning one of said shafts, and means connecting between said shafts whereby they will be turned simultaneously.

6. The combination of a trip-line drum, a shaft on which said drum is mounted, a ratchet-wheel on said shaft, pawl-shafts mounted adjacent to said drum-shaft, means for turning one of said pawl-shafts, means for causing the other shaft to be turned simultaneously with the first-named shaft, pawls loosely mounted on said shafts and actuating-levers on said shafts adapted to throw said pawls into and out of engagement with the ratchet-wheel.

7. The combination of a ratchet-wheel, a shaft adjacent to said ratchet-wheel, a pawl loosely mounted on said shaft and adapted to engage with said ratchet-wheel, an actuating-lever on said shaft for throwing said pawl into and out of engagement, the arrangement being such that the actuating-lever will have a certain amount of play before throwing the pawl, and means for turning the shaft on which said pawl and actuating-lever are secured.

8. The combination of a ratchet-wheel, a shaft adjacent to said ratchet-wheel, a pawl on said shaft adapted to engage with said ratchet-wheel, means for manually turning said shaft and a brake for holding said shaft in adjusted position.

9. The combination of a trip-line drum, a shaft on which said drum is mounted, a crank for turning said shaft, a toothed wheel on said shaft, pawl-shafts mounted adjacent to said drum-shaft and substantially parallel therewith, pawls loosely mounted on said shafts, actuating-levers secured to said shafts for throwing said pawls, arms extending from said shafts in opposite directions, a rod connecting between the ends of said arms, a handle for turning one of said shafts, and an adjustable brake on one of said shafts.

810,556. DERRICK. WILLIAM J. NEWMAN, Chicago, Ill. Filed June 5, 1905. Serial No. 263,725.

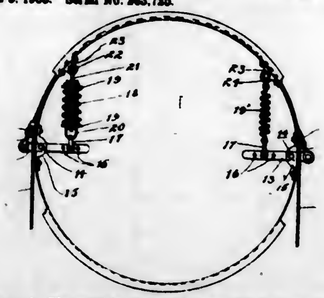

Claim.—1. The combination with a derrick bull-wheel, of a lever pivoted to said wheel, an operating-cable connected to one end of said lever, and a spring connected to the opposite end of said lever and to said wheel.

2. The combination with a bull-wheel for a derrick, of a lever pivoted to said wheel with one end extending out therefrom, an operating-cable connected with said outer end, a compression-spring connected with the inner end of said lever and with said wheel, the arrangement being such that the tension of the spring is opposed to the pull on said cable.

3. In a derrick, the combination of a bull-wheel or the like, a bearing adjacent to the periphery of said wheel, a lever pivoted to said bearing and extending out from said wheel, an operating-cable connected to the outer end of said lever and engaging with the outer periphery of said wheel, rods or the like adjustably connected with the inner end of said lever, a second rod connected to a bearing on the inner periphery of said wheel, and a compression-spring adapted to coact with said rods to oppose the pull on said cable.

810,557. SLIDING HINGED GRAIN-DOOR. KNUTE OSSE, St. Paul, Minn. Filed Sept. 23, 1905. Serial No. 279,706.

Claim.—1. The combination with a car formed with a door-frame and a slidably-hinged door of less width than the door-opening, a pair of right-angled plates secured in right-angled grooves in the inner corners of the door-frame whereby one wall of each plate bears against the adjacent groove-wall when the plates are outturned, and catches carried by said door in position to be turned over said plates into said grooves when the plates are outturned.

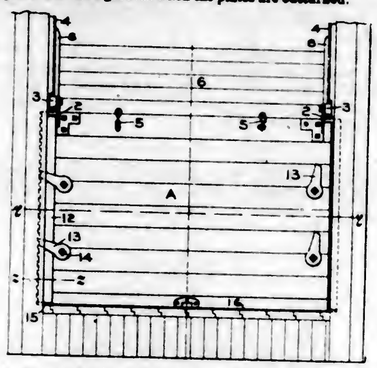

2. The combination with a car formed with a door-frame, and a slidably-supported hinged door of less width than the door-opening, a threshold having openings in its ends, right-angled plates having slidable hinge-support in grooves in the inner faces of the sides of the door-frame in position to drop into openings in the ends of said threshold, and to rest upon said threshold when outturned, and catches pivotally supported upon the outer face of the door in position to be turned over said plates into said grooves when said plates are outturned.

3. The combination with the car formed with a door-frame, a hinged door of less width than the door-opening, the threshold having openings in its ends, a pair of right-angled plates having slidable hinge-support in grooves in the inner faces of the sides of the door-frame in position to drop into said openings in the threshold when turned against the door-frame, flanges carried by the lower ends of said plates to rest upon said threshold when said plates are outturned, and catches pivotally supported upon the outer face of said door in position to be turned over the outturned plates in said grooves.

810,558. CAR-SEAT. ALLEN H. OSTRANDER, Paterson, N. J., assignor to American Car & Foundry Company, St. Louis, Mo., a Corporation of New Jersey. Filed July 26, 1905. Serial No. 271,342.

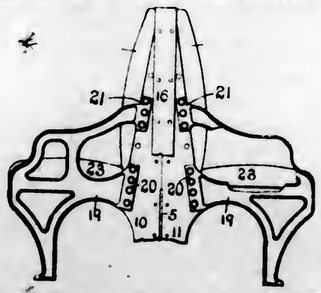

Claim.—1. In a car-seat, the combination with the cross-bearers of the underframing and the sides of a car, of a gusset secured to the side of the car and extending down alongside of the cross-bearer, fastening devices extending through said gusset and cross-bearer, a standard fastened to one end of the gusset, a seat-cushion support connected to said standard, a back-cushion support connected to said standard and to said seat-cushion support, and a connection between said seat-cushion support and the side of the car; substantially as described.

2. The combination with the underframing of a car and the car side, of braces connected to the car side and extending below the floor, connecting devices extending through the underframing and the braces below the floor of the car, a standard connected to one of the braces distant from the side of the car, a connection between the upper portion of the standard and the car side, a seat-cushion support secured to the standard, and a connection between the seat-cushion support and the side of the car; substantially as described.

3. In a car, the combination with channel cross-bearers and plate-girder sides, of a gusset riveted to the plate-girder sides and extending down beside one of the cross-bearers, connecting devices extending through said cross-bearer and gusset below the floor of the car, a standard carried by said gusset and distant from the side, means for supporting a seat-cushion and connected to said standard, and connections between the standard and seat-cushion support and the plate-girder side; substantially as described.

4. In a railway-car, the combination with channel cross-bearers extending from side sill to side sill, posts carried by the side sill and cross-bearers, a gusset riveted to the posts and extending down alongside of one of the cross-bearers, fastening devices extending through said gusset and cross-bearer below the floor of the car, a standard connected to the gusset, and means connected to the standard and car side for supporting a seat portion and back portion of the car-seat; substantially as described.

5. In a railway-car, the combination with a cross-bearer and upstanding posts, a gusset connected to one of the upstanding posts and an adjacent cross-bearer, a standard comprising a plurality of parts 10 and 11 provided with parallel flanges, means for securing one edge of the gusset between said flanges, and connections between said standard and the car side; substantially as described.

6. In a railway-car, the combination with cross-bearers and vertical posts, gussets secured to the sides of the car and extending below the floor of the car, connecting devices extending through said gussets and adjacent cross-bearers below the floor of the car, a standard secured to one edge of one of the gussets and having upwardly-converging flanges, oppositely-disposed seat-cushion supports connected to said standard, connections between the converging flanges of the standard and the side of the car, and connections between the seat-cushion supports and the side of the car; substantially as described.

810,559. DUST-COLLECTOR. JOHN V. O. PALM, Milwaukee, Wis., assignor to The American Compressed Air Supplying Company, Milwaukee, Wis., a Corporation of Wisconsin. Filed May 17, 1905. Serial No. 260,790.

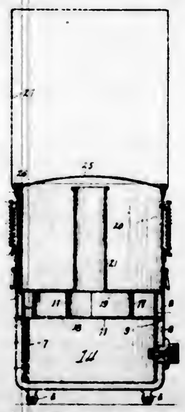

Claim.—1. In a dust-collector, an expansion-chamber in which dust-laden air under pressure may partially expand, a baffle-drum into which the air passes from the expansion-chamber, a spirally-arranged baffle-plate in the baffle-drum forming a spirally-curved passage-way of gradually-increasing size, and a strainer into which the passage-way discharges.

2. In a dust-collector, an expansion-chamber in which dust-laden air under pressure may partially expand, a baffle-drum receiving the air from the expansion-chamber, a removable bucket having a spout attached to the bottom thereof receiving the air from the baffle-drum, and a strainer connected with the bucket and adapted to deposit dust in the bucket.

3. In a dust-collector, a casing, a baffle-drum fitting therein and forming an expansion-chamber in the casing in which dust-laden air under pressure may partially expand, said baffle-drum being adapted to receive the air from the expansion-chamber, a spirally-arranged baffle-plate in the baffle-drum forming a spirally-curved passage-way increasing in size for the passage of air therethrough, a bucket fitting against the baffle-drum and closing the passage-way of the drum, a spout extending from the bottom of the bucket, adapted to receive the air from the passage-way, and a strainer connected with the bucket.

4. In a dust-collector, a casing, a shouldered lining in the casing constituting an expansion-chamber in which dust-laden air may partially expand and with the casing forming a sound-deadening jacket around the expansion-chamber, a baffle-drum seated on the shoulder of the lining receiving the air from the expansion-chamber, and a strainer into which the baffle-drum discharges.

5. In a dust-collector, a casing, a shouldered lining therefor forming an expansion-chamber in which dust-laden air under pressure may partially expand surrounded by a sound-deadening jacket, a gasket on the shoulder of the lining, a baffle-drum seated on the gasket and receiving the air from the expansion-chamber, a sound-deadening jacket for the baffle-drum, and a strainer into which the baffle-drum discharges.

6. In a dust-collector, a casing, a shouldered lining therein forming a jacketed expansion-chamber in which dust-laden air under pressure may partially expand, a baffle-drum seated on the shoulder of the lining and receiving the air from the expansion-chamber, a spirally-arranged baffle-plate in the baffle-drum forming a spirally-curved passage-way gradually increasing in size for the passage of the air, a gasket fitting on the baffle-drum and closing the passage-way except at the enlarged middle portion thereof where the gasket is provided with an opening through which the air may pass, a bucket fitting in the casing and seated on the gasket, an upwardly-extending spout passing through the bottom of the bucket and registering with the opening of the gasket, and a strainer connected with the bucket.

7. In a dust-collector, a casing having a shoulder, a baffle-drum seated on the shoulder and forming an expansion-chamber with the casing in which dust-laden air under pressure may partially expand, said baffle-drum having an opening therethrough to receive air from the expansion-chamber, a spirally-arranged baffle-plate in the baffle-drum forming a spirally-curved passage-way gradually increasing in size leading from the opening through the bottom of the baffle-drum to the middle portion thereof, a gasket seated on the baffle-drum and closing the passage-way thereof except at the middle portion where the gasket is provided with an opening through which the air may pass, a bucket fitting in the casing and seated on the gasket, a spout passing through the bottom of the bucket and registering with the opening of the gasket, a strainer on the bucket, and means for holding the bucket against the casing.

8. In a dust-collector, a casing having a shoulder, a baffle-drum seated on the shoulder and forming an expansion-chamber with the casing in which dust-laden air under pressure may partially expand, said baffle-drum having an opening therethrough to receive air from the expansion-chamber, a spirally-arranged baffle-plate in the baffle-drum forming a spirally-curved passage-way gradually increasing in size leading from the opening through the bottom of the baffle-drum to the middle portion thereof, a gasket on the baffle-drum and closing the passage-way thereof except at the middle portion where the gasket is provided with an opening through which the air may pass, a bucket fitting in the casing and seated on the gasket, a spout passing through the bottom of the bucket and registering with the opening of the gasket, a strainer on the bucket, and springs connecting the bucket with the casing to tightly clamp the gasket between the bucket and the baffle-drum.

9. In a dust-collector, a casing, a shouldered lining therein forming an expansion-chamber surrounded by a sound-deadening jacket, a filling of sound-deadening material in the space between the lining and the casing, a coupling passing through the wall of the expansion-chamber and adapted to discharge dust-laden air under pressure into said expansion-chamber, a gasket on the shoulder of the lining, a baffle-drum seated on the gasket and having an opening through its bottom to receive air from the expansion-chamber, a sound-deadening jacket surrounding the baffle-drum, sound-deadening material in said sound-deadening jacket, a spirally-arranged baffle-plate in the baffle-drum forming a spirally-curved passage-way gradually increasing in size for the passage of air therethrough from the opening in the bottom of the baffle-drum to the center thereof, a gasket fitting on the baffle-drum and baffle-plate and closing the passage-way except at its middle portion where it is provided with an opening through which the air may pass, a bucket fitting in the casing and seated on the last-named gasket, a spout passing through the bottom of the bucket and registering with the opening of the gasket to receive the air from the passage-way, springs connecting the bucket with the casing, a handle on the bucket, and a bead on the mouth of the bucket with which the mouth of a strainer-bag may be connected.

10. In a dust-collector, a bucket adapted to have a strainer-bag

connected to its mouth, and a spout leading from an opening in the bottom of the bucket to admit dust-laden air thereto, said spout serving to prevent the incoming air from disturbing the dust previously collected in the bucket and also preventing the dust falling out of the bucket through the opening in the bottom thereof when the bucket is being moved from place to place.

11. In a dust-collector, a baffle-drum, a baffle-plate therein forming a passage-way gradually increasing in size, a removable cover for the baffle-drum closing the passage-way, means for supplying the passage-way with dust-laden air under pressure which may expand in the enlarging passage-way, a strainer having communication with the passage-way at its largest part, and a sound-deadening jacket surrounding the baffle-drum.

810,560. ELECTRIC RAILWAY-SIGNAL. HELEN W. PARKES and STELLA L. VINCENT, Cleveland, Ohio. Filed Oct. 17, 1904. Serial No. 228,808.

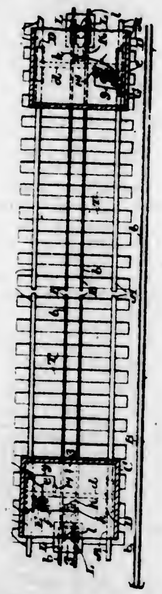

Claim.—1. The combination, with a railway-track comprising two parallel rails, and vehicles mounted and movable on the said track, of a trolley-track arranged between and parallel with and extending longitudinally of the railway-track and composed of conductor-forming rail-sections, with adjacent rail-sections of the trolley-track electrically insulated from each other and from the rails of the railway-track; a trolley-wheel borne by each vehicle and engaging the trolley-track; means whereby an alarm is automatically operated on each of two vehicles when the trolley-wheels of both vehicles make contact with one and the same rail-section of the trolley-track, and a suitably-supported rotary brush adjacent each trolley-wheel and arranged opposite and in close proximity to the periphery of the said wheel.

2. In combination, with a railway-track comprising two parallel rails; vehicles mounted and movable on the said track; a trolley-track consisting of two rails arranged between and parallel with and extending longitudinally of the rails of the railway-track, with each rail of the trolley-track composed of conductor-forming rail-sections arranged end to end and electrically insulated from each other and from the rail-sections of the other rail of the trolley-track and alternating with the last-mentioned rail-sections, and each of the aforesaid vehicles being provided with the following: two conductor-forming trolleys engaging the different rails respectively of the trolley-track, a conductor-forming trolley-frame bearing and extending between and electrically connected with the said wheels; brushes supported from the said frame and arranged in close proximity to the peripheries of the wheels; a hood supported from the trolley-frame and extending over the brushes and trolley-wheels; an electric source; an electric alarm; an electric connection between one of the terminals of the alarm and one of the terminals of the electric source, and the other terminal of the electric source and the other terminal of the alarm being electrically connected the one with the trolley-frame and the other with a rail of the railway-track.

3. In combination, with a railway-track comprising two parallel rails; vehicles mounted and movable on the said track; a trolley-track consisting of two rails arranged between and parallel with and extending longitudinally of the rails of the railway-track, with each rail of the trolley-track composed of conductor-forming rail-sections arranged end to end and electrically insulated from the rails of the railway-track, with adjacent rail-sections of each rail of the trolley-track electrically insulated from each other and from the rail-sections of the other rail of the trolley-track and alternating with the last-mentioned rail-sections, and each of the aforesaid vehicles being provided with the following: two conductor-forming trolleys engaging the different rails respectively of the trolley-track, a conductor-forming trolley-frame bearing and extending between and electrically connected with the said wheels; brushes supported from the said frame above the wheels and arranged in close proximity to the peripheries of the wheels; a hood supported from the trolley-frame and extending over the brushes and trolley-wheels; an electric source; an electric alarm; an electric connection between one of the terminals of the alarm and one of the terminals of the electric source, and the other terminal of the electric source and the other terminal of the alarm being electrically connected the one with the trolley-frame and the other with a rail of the railway-track.

810,561. REINFORCING DEVICE FOR CONCRETE CONSTRUCTION. GEORGE L. PEABODY, Pittsburg, Pa. Filed Oct. 21, 1904. Serial No. 229,361.

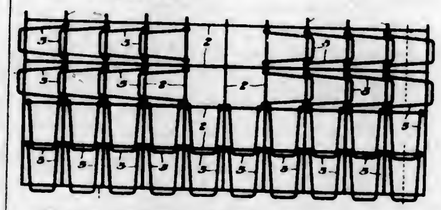

Claim.—1. A reinforcing device for concrete, &c., consisting of a flat web-like base having main and cross strands, and holding-arms connected therewith by winding their extremities around the strands of the base, substantially as set forth.

2. A reinforcing device for concrete, &c., consisting of a flat web-like base having main and cross strands, and looped holding-arms attached thereto and adapted to be set at varying angles, substantially as set forth.

3. A reinforcing device for concrete, &c., consisting of a flat web-like base having main and cross strands, and holding-arms attached thereto arranged to be bent in oppositely-disposed upwardly and outwardly slanting directions, substantially as set forth.

4. A reinforcing device for concrete, &c., consisting of a flat web-like base having main and cross strands, and looped holding-arms attached to the main and cross strands and adapted to be bent in relatively cross planes and at varying angles to the base, substantially as set forth.

5. A reinforcing device for concrete, &c., consisting of a flat web-like base having main and cross strands, and holding-arms having their extremities secured to the main and cross strands and adapted to be bent in relatively cross planes and at various angles to the base, substantially as set forth.

810,562. GAS-REGULATOR. BENJAMIN H. PEYLEY, Seattle, Wash. Filed Feb. 23, 1905. Serial No. 246,818.

Claim.—1. In a device of the character described, the combination with a two-part casing, a valve controlling a port in the casing, a stem and a float, of means provided on the stem for limiting the closing movement of the valve, and means for effecting the adjustment of the casing parts for varying the relative position of the said valve to the port which it controls whereby the amount of valve-port opening may be regulated.

2. In a device of the character described, the combination with the casing provided with inlet and outlet gas-openings, a valve-seat and an annular chamber for containing a liquid seal and a removable cover for said casing, of an inverted-cup-shaped member having its depending wall projecting into said chamber, an elongated tapering valve connected to said member, said valve being of less area at its largest part than the area of said valve-seat, whereby a capacity will be afforded around the valve at all positions of the same, and means to adjust the position of the said valve from the exterior of the casing without detaching said cover therefrom.

3. In a device of the character described, the combination with the casing provided with gas inlet and outlet openings, and partitions extending across the casing above and below the said outlet-opening and severally provided with axially-disposed apertures, of a valve of less cross-sectional area throughout than the aperture of said lower partition said valve passing through said lower partition and having a stem extending up through the aperture and carrying a float thereabove, and means provided on said stem below the level of the upper partition for limiting the upward movement of said valve.

4. In a device of the character described, the combination with the casing provided with inlet and outlet openings and having a valve-port therebetween, a tapering valve of less diameter than the said port and positioned therein, said valve being provided with a plurality of flat inwardly-sloping faces whereby the area of the port-opening is increased through descending movement of the valve, a stem for said valve, and a float carried upon said stem.

5. In a device of the character described, a two-part casing, means for adjustably connecting them together, a valve located within the casing and means whereby the adjustment of the parts of the casing will effect the adjustment of said valve.

6. In a device of the character described, the combination with a casing part provided with gas inlet and outlet openings and having a valve-port therebetween, another casing part having an annular seal-chamber therein and adjustably connected to the first-named part, a cylindrical valve of less diameter than the said valve-port and extending therethrough said valve being formed so that the port area thereabout is increased correspondingly with its downward movement and diminished during its ascending movement but at no time closing the said port, a stem projecting up through the second-named casing part, a float secured to said stem having a depending circular wall projecting interiorly of said annular chamber, means provided intermediate the float and valve for limiting the upward movement thereof, and a removable weight for the said stem exteriorly of the casing.

810,563. GAS-PURIFYING APPARATUS. PIERRE PLANTINGA, Cleveland, Ohio. Filed June 28, 1905. Serial No. 267,249.

Claim.—1. In a device for extracting tar from gaseous mixtures, a series of plates interposed in the path of the gas, said series consisting of alternately-arranged perforated plates constructed to divide the gas into a multiplicity of streams, and baffle-plates having openings and constructed to receive the impact of the gaseous masses constituting such streams, each dividing-plate being arranged to offer less resistance to the passage of gas therethrough than does the next succeeding dividing-plate.

2. In a device for extracting tar from gaseous mixtures, a series of plates interposed in the path of the gas, said series consisting of alternately-arranged perforated plates constructed to divide the gas into a multiplicity of streams, and baffle-plates having openings and constructed to receive the impact of the gaseous masses constituting such streams, the area of the perforations of each dividing-plate being markedly greater than the area of the perforations of the next succeeding dividing-plate.

810,564. FIREPROOF WINDOW. SILAS H. POMEROY, New York, N. Y., assignor of one-half to Frank Voigtmann, Chicago, Ill. Filed May 8, 1905. Serial No. 259,269.

Claim.—1. A window or analogous sash provided with a glazing-retaining strip having a series of sight-openings formed therethrough and adapted to overlie the edge of the glazing to confine the latter.

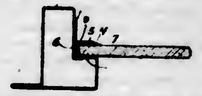

2. A window or analogous sash provided with a substantially continuous glazing-retaining strip extending around the interior of the sash-frame, having sight-openings formed therethrough at intervals apart.

3. A window or analogous sash provided with an adjustable glazing-retaining strip having a series of sight-openings formed therethrough, and means for locking said retaining-strip to the sash-frame.

4. In combination, a window or analogous sash-frame of hollow sheet-metal construction and provided with an internal shoulder forming a seat to receive the margins of the glazing, a glazing, a retaining-strip angular in cross-section and arranged with one of its angles interposed between the edge of the glazing and the opposed inner surface of the sash-frame, and a series of nibs formed integrally with the sash-frame and bent to overlie the retaining-strip, said retaining-strip being provided with a series of sight-openings at intervals throughout its length.

810,565. GAS-ENGINE. EDWIN F. PORTER and WALTER R. WHITING, Boston, Mass., assignors to American Rotary Engine Company, Boston, Mass., a Corporation of Maine. Filed Nov. 24, 1900. Renewed Mar. 16, 1905. Serial No. 250,406.

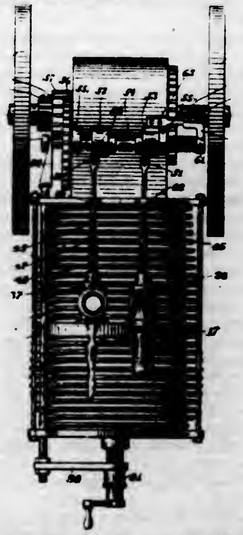

Claim.—1. An engine comprising a piston and cylinder, a pair of crank-shafts mounted parallel with each other, a pair of connecting-rods extending from said piston to said shafts, a gear mounted on each shaft and intermeshing one with the other, and a fly-wheel keyed to one end of each crank-shaft and located on opposite sides of the engine.

2. An engine comprising a piston and cylinder, a pair of crank-shafts mounted parallel with each other, a pair of connecting-rods extending from said piston to said shafts, a gear mounted on each shaft and intermeshing one with the other, a weight carried by each shaft, and a fly-wheel keyed to one end of each crank-shaft and located on opposite sides of the engine.

3. An engine comprising a piston and cylinder, a pair of crank-shafts mounted parallel with each other, a pair of connecting-rods extending from said piston to said shafts, fly-wheels mounted on each shaft and means for automatically preventing reverse rotation of said fly-wheels.

4. An engine comprising a piston and cylinder, a pair of crank-shafts mounted parallel with each other, a pair of connecting-rods extending from said piston to said shafts, fly-wheels mounted on each shaft, and means normally in engagement with the periphery of each fly-wheel adapted to automatically prevent reverse rotation thereof.

5. A gas-engine comprising a piston and cylinder having means whereby all the explosive mixture is drawn into the cylinder by the piston, an abutment located in said cylinder, a threaded pin arranged to vary the position of said abutment whereby the operative volume is correspondingly varied, a threaded collar working on said threaded pin, and means operated by said collar for automatically varying the amount of explosive mixture compressed within said cylinder.

6. A gas-engine comprising a piston and cylinder having means whereby all the explosive mixture is drawn into the cylinder by the piston, an abutment located within said cylinder a pin serving as a guide for said abutment, means for adjusting said pin, whereby the position of said abutment is varied, and means automatically operated by said pin for varying the amount of explosive mixture compressed within said cylinder.

7. A gas-engine comprising a piston and cylinder having means whereby all the explosive mixture is drawn into the cylinder by the piston, a cushioned abutment located within said cylinder and means for simultaneously varying the relative position of said abutment and varying the amount of explosive mixture compressed within said cylinder.

8. A gas-engine comprising a piston and cylinder having means whereby all the explosive mixture is drawn into the cylinder by the piston, an abutment located in said cylinder, a threaded pin arranged to vary the position of said abutment whereby the operative volume is correspondingly varied, valve mechanism for admitting explosive mixture to said cylinder, means for operating the same, a threaded collar working on said threaded pin and means operated by said collar for varying the relation between said valve mechanism and its operating means.

9. A gas-engine having a piston and cylinder, means for varying the operative volume in said cylinder, and mechanism automatically controlled by said means, whereby said piston is permitted to draw the explosive mixture into the cylinder and automatically expel a predetermined portion thereof, said mechanism also permitting the entrance of the expelled mixture to the cylinder at the next cycle of operation of the engine.

10. A gas-engine comprising a piston and cylinder, means for varying the operative volume within said cylinder, an inlet-valve, means for operating the same, means automatically controlled by said volume-varying means for controlling said valve, operating means whereby the piston is permitted to draw the explosive mixture into the cylinder and expel a predetermined portion thereof past said inlet-valve and means for receiving said expelled explosive.

11. A gas-engine comprising a cylinder and piston, an abutment located in said cylinder, a threaded rod for varying the position of said abutment, a collar working on said rod, and mechanism automatically controlled by the movement of said collar, whereby a part of the explosive mixture is permitted to escape from said cylinder.

12. A gas-engine comprising a cylinder and piston, an abutment located in said cylinder, a threaded rod for varying the position of said abutment, a collar working on said rod, an inlet-valve, mechanism for operating the same having means for controlling the movement of said valve whereby a part of the explosive mixture is expelled from said cylinder, and connections between said collar and said valve mechanism, whereby the valve-controlling means is automatically operated.

13. A gas-engine comprising a piston and cylinder, an adjustable abutment located in the latter, an inlet-pipe having a check-valve, an inlet-valve intermediate of said check-valve and said cylinder, valve-operating mechanism for said check-valve arranged to permit the piston to draw the explosive mixture into the cylinder and to expel a part thereof into said inlet-pipe past said inlet-valve, and a gas-bag intermediate of said inlet and check valves adapted to receive the expelled gas whereby the latter is introduced into the cylinder for the next succeeding explosion.

14. A gas-engine having a piston and cylinder, an abutment located in the latter, a threaded rod for adjusting the same, an inlet-valve, differential valve-operating mechanism, a threaded collar working on said rod, and connections between said collar and said valve-operating mechanism.

810,566. RACK FOR CRACKER-CANS. EVAN L. REES, Oregon, Ill. Filed Aug. 2, 1905. Serial No. 272,909.

Claim.—1. In a knockdown rack for cracker-cans, end uprights, longitudinal bars detachably secured to said uprights in pairs and connecting the uprights together, said bars forming supports for cracker-cans, cross-bars connecting said longitudinal bars together, and means for detachably holding can-covers, said means slidably mounted on said cross-bars.

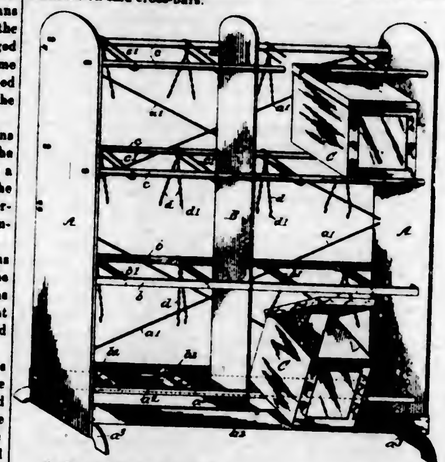

2. In a knockdown rack for cracker-cans, end uprights, longitudinal bars detachably secured to said uprights in pairs and connecting theuprights together, said bars forming supports for cracker-cans, cross-bars connecting said longitudinal bars and arranged to lie over the center of the cans and having a slideway therein, flexible means for holding the can-covers, said means slidably arranged on said cross-bars and adapted to be detachably connected with the can-covers.

3. In a knockdown rack for cracker-cans or the like, end uprights, parallel longitudinal bars detachably secured to the uprights and forming supports for cracker-cans, cross-bars connecting the longitudinal bars together and forming supports for said cans, chains slidably arranged on said cross-bars, said chains having means secured to their ends for detachably holding cans arranged on said longitudinal and cross bars.

4. In a knockdown rack for cracker-cans, end uprights, longitudinal can-supporting bars detachably secured to said uprights, and can-supporting cross-bars connecting said longitudinal bars together, having a slideway therein and arranged to lie over the center of the cans, and means arranged in said slideway for holding the can-covers.

5. In a knockdown rack for cracker-cans, end uprights, parallel can-supporting longitudinal bars detachably secured to said uprights, cross-bars connecting said longitudinal bars together, a middle detachable upright connected with the longitudinal bars, diagonal braces detachably secured to the rear portion of the uprights and so arranged as to limit the rearward movement of the cans.

6. In a knockdown rack for cracker-cans, end uprights, can-supporting longitudinal bars detachably secured to said uprights, means for drawing together the uprights and bars to form a rigid structure, cross-bars detachably connected with the longitudinal bars, and can-holding devices detachably and slidably connected with said cross-bars and adapted to be detachably connected with the covers of the cans.

810,567. SPITTOON. FRANK REHBERGER, St. Louis, Mo., assignor of one-third to Edwin J. Rotzschmidt and one-third to August J. Hoop, St. Louis, Mo. Filed Sept. 26, 1905. Serial No. 280,619.

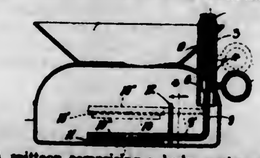

Claim.—A spittoon comprising a body portion and a flaring mouth, and having a bottom discharge-opening a tube disposed between the wall of said mouth and body portion, a movable head in said tube, an upwardly-projecting stem secured to the head and confined in said tube, a spring encircling the stem and bearing with one end against the head, a finger-loop having a stem operating through the wall of the tube and connected to the head, a rod depending from the head and projecting into the spittoon, and a valve-plug coupled to the rod, and cooperating with the discharge-opening substantially as set forth.

810,568. FEEDING AND BAND-CUTTING MECHANISM. FREDERICK S. REES, Canton, Ohio, assignor to Rich Self Feeder Company, St. Louis, Mo., a Corporation of Missouri. Filed June 20, 1904. Serial No. 213,208.

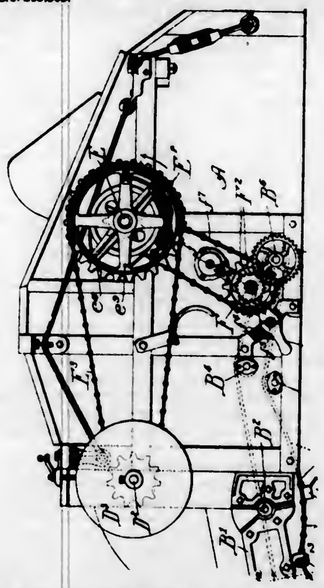

Claim.—1. The combination with a rotary band-cutter, an endless sheaf-conveyer, and a feed device located above the path of the grain and provided with a driving-shaft, of power-transmission means connecting the band-cutter, feed device and sheaf-conveyer, comprising a friction-clutch connected with said shaft and operated by increase of torsional force upon said shaft, due to an overload of grain, for retarding the conveyer, to permit the restoration of normal conditions, for the purpose set forth.

2. The combination with a rotary band-cutter, an endless sheaf-conveyer, and a feed device located above the path of the grain, of power-transmission means connecting the band-cutter, feed device and sheaf-conveyer, comprising a wheel rotatable with relation to the shaft of said feed device and geared to said band-cutter, a member connected with said shaft through the medium of which the shaft is rotated, spring connection between said wheel and member, a friction-wheel, a friction-strap thereon connected with said first-named wheel and with said shaft-actuating member, and means for communicating motion from said friction-wheel to said conveyer, for the purpose set forth.

3. The combination with a feed device having a crank-shaft, of a suitably-actuated wheel revoluble with relation to said crank-shaft, a friction-wheel adjacent thereto, a member fixed to said crank-shaft, a spring yieldingly maintaining said first-named wheel and said member in a given relation, an endless sheaf-conveyer, and means for transmitting power from said friction-wheel to said conveyer, for the purpose set forth.

4. The combination of an endless sheaf-conveyer, a crank-shaft equipped with oscillating feeding devices located above the rear portion of said conveyer, a wheel revoluble on said crank-shaft, an actuating member fixed to said crank-shaft, spring connection between said wheel and said member, a friction-wheel adjacent to said member, a friction-strap passing about said friction-wheel and connected to said first-named wheel and to said member, means for actuating said first-named wheel, and means for transmitting power from said friction-wheel to said conveyer, for the purpose set forth.

5. The combination of an endless conveyer, a crank-shaft equipped with oscillating feed devices located above the rear end of said conveyer, a rotary band-cutter in advance of said crank-shaft and equipped with a speed-governor, a wheel journaled on said crank-shaft and geared to said speed-governor, yielding connection between said wheel and said crank-shaft, and a friction-clutch serving normally to transmit power from the crank-shaft to the endless conveyer and which is automatically released to retard the conveyer when said feed devices encounter an overload abnormally increasing the torsional resistance at the crank-shaft, for the purpose set forth.

6. In mechanism of the character set forth, the combination with a feed device having a driving-shaft, and a sheaf-conveyer, of means for transmitting power from the feed device to the sheaf-conveyer, comprising a suitably-actuated wheel revoluble with relation to the driving-shaft of the feed device, an actuating member for said driving-shaft yielding connection between said wheel and said member, a friction-wheel journaled on said driving-shaft, a friction-strap having its ends connected with said wheel and said member, respectively, a sprocket-wheel connected with said friction-wheel, and a sprocket-chain through which power is transmitted from said sprocket-wheel to actuate the sheaf-conveyer, for the purpose set forth.

7. In mechanism of the character set forth, the combination with an endless sheaf-conveyer, and a crank-shaft equipped with a plurality of feed devices operating above the rear portion of said conveyer, of a sprocket-wheel revoluble with relation to said crank-shaft, a member fixed to said crank-shaft and located at the inner side of the hub thereof, a friction-wheel located at the inner side of said member, spring connection between said sprocket-wheel and said member, a friction-strap upon said friction-wheel and having its ends connected respectively with said sprocket-wheel and said member, and a wheel fixed to revolve with said friction-wheel and serving to transmit power to the conveyer, for the purpose set forth.

8. The combination of an endless sheaf-conveyer having a driving-shaft equipped with a spur-gear, a stub-shaft equipped with a spur-gear meshing therewith and with a sprocket-wheel for actuating said second-named spur-gear, a crank-shaft equipped with a plurality of feed devices and having journaled thereon a sprocket-wheel geared to said first-named sprocket-wheel and a friction-wheel serving to actuate said second-named sprocket-wheel, an actuating member for said crank-shaft fixed to the crank-shaft, a sprocket-wheel on the crank-shaft adjacent to said member, spring connection between said third-named sprocket-wheel and said member, and a sprocket-chain through the medium of which said third-named sprocket-wheel is actuated, for the purpose set forth.

9. In feeding and band-cutting mechanism, the combination with a rotary band-cutter equipped with a plurality of suitably-spaced knives, of a guard comprising a suitable cross-bar and shoes depending therefrom between the knives, each shoe comprising a member provided with oblique flanges and an expanding member confined between said flanges and adjustable with relation thereto, for the purpose set forth.

810,569. CANOPY-FRAME FOR CASKETS. CHARLES H. RICHARDS, Chicago, Ill. Filed May 22, 1905. Serial No. 261,627.

Claim.—1. A canopy-frame for caskets comprising a front bar and two hinge-jointed side arms, said side arms being extensible in length.

2. A canopy-frame for caskets comprising hinge-jointed side arms, means for securing one end of each of said arms to a casket-cover, brackets pivotally connected with the outer ends of said side arms, and a front bar secured to said brackets.

3. A canopy-frame for caskets comprising side arms and a front

bar, each of said side arms comprising two hinge-jointed sections, and each section comprising two members, one of said members being concave or grooved on one of its sides, and the other member lying in said groove and adjustably secured to and longitudinally movable along said other member.

4. A canopy-frame for caskets comprising two side arms, brackets pivotally connected with said side arms, and a front bar connected with said brackets, each of said brackets being adapted to engage said front bar at opposite sides of said bar.

810,570. MACHINE FOR MOLDING GLASS. CHARLES W. RAGEN, Philadelphia, Pa., assignor to Hero Fruit Jar Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed July 22, 1905. Serial No. 270,873.

Claim.—1. In a glass-molding machine, the combination with a rotary table of a mold carried by the table, said mold having a center movable below its pressing position.

2. In a glass-molding machine, the combination, with a rotary table, of a mold carried by the table, said mold having a center movable below its pressing position, and means in one portion of the revolution of the table whereby said center moves below its pressing position.

3. In a glass-molding machine, the combination with a rotary table, of a mold carried by the table, said mold having a center movable below the pressing position, means in one portion of the revolution of the table whereby said center moves below its pressing position and means in the revolution of the table to return said center to its pressing position.

4. In a glass-molding machine, the combination with a rotary table and a fixed plate beneath the same, of a mold carried by the table, said mold having a center movable below its pressing position, there being a portion of said plate in line of movement of said center in the rotation of the table, cut away whereby the center moves below its pressing position.

5. In a glass-molding machine, the combination with a rotary table, and a fixed plate beneath the same, of a mold carried by the table, said mold having a center movable below its pressing position, there being a portion of said plate, in line of movement of said center, in the rotation of the table, cut away whereby the center moves below its pressing position, the ends of said cut-away portion inclining to the level of the surface of the plate.

6. In a glass-molding machine, the combination with a rotary table, of a mold carried by the table, said mold having a center movable below its pressing position, and means, in one portion of the revolution of the table, whereby said center-piece moves below its pressing position, and means to limit the movement of the center.

7. In a glass-molding machine, the combination with a rotary table, of a mold carried by the table, said mold having a center movable below its pressing position, means, in one portion of the revolution of the table, whereby said center-piece moves below its pressing position, means in the revolution of the table to return said center to its pressing position, and means to limit the movement of the center in either direction.

810,571. FIREARM. ARTHUR J. SAVAGE, Utica, N. Y., assignor to J. Stevens Arms & Tool Company, Chicopee Falls, Mass. Filed June 30, 1905. Serial No. 267,994.

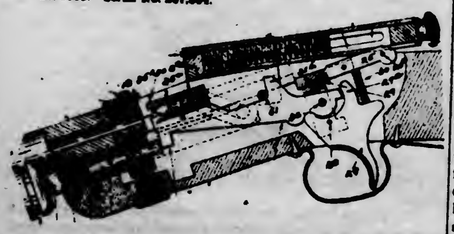

Claim.—1. The combination in a firearm of a frame, a breech-bolt slidingly mounted with reference to the frame, and a firing-pin engaging the breech-bolt and slidably connected with the frame and serving as a support and guide for the breech-bolt, substantially as set forth.

2. The combination in a firearm of a frame, a breech-bolt, means to operate the breech-bolt, a firing-pin mounted in part in the breech-bolt and in part on the frame pivotally and slidably connected to the latter and serving as a guide or the breech-bolt in opening and closing, substantially as set forth.

3. A frame for firearms, consisting of a general cylindrical body with an applied magazine-supporting stud or projection at the front, and an applied mechanism-carrying stud or projection at the rear, substantially as set forth.

4. A frame for firearms, consisting of the body having the collar part 1ª at the forward end, the U-shaped form at the rear end and longitudinally slotted in a vertical plane between the forward and rear ends, and having the magazine-supporting stud 3 attached to the collar at the forward end, and the mechanism-supporting stud 29 attached to the U-shaped rear end, substantially as set forth.

5. The combination in and with the operating parts of a firearm of the breech-bolt mounted in part upon the firing-pin and adapted to swing around a pivot into locking and unlocking position with reference to the frame, of a seat adapted to engage the firing-pin and permit the swinging movement of the breech-bolt and firing-pin without becoming disengaged, substantially as set forth.

6. The combination in a firearm of the frame slotted longitudinally, a breech-bolt received in the slot of the frame and longitudinally recessed, a tubular firing-pin received within the longitudinal recess of the breech-bolt, a firing-spring within the firing-pin, a fixed pin secured in the rear of the frame and passing through slotted openings in the sides of the firing-pin and affording a support for the firing-pin, mechanism for operating the bolt, substantially as set forth.

7. The combination in a firearm of the frame, the breech-bolt arranged to have a rising-and-falling movement at the rear end of the barrel, mechanism for operating the breech-bolt, a firing-pin arranged in the breech-bolt and a safety-catch arranged in the frame at the rear end of the barrel and adapted to engage the breech-bolt to secure the same, a firing-pin arranged to operate said catch to unlock position and means for independently and manually operating said catch, substantially as set forth.

8. The combination in a firearm of a frame having longitudinal ways and recoil-shoulders, a relatively short breech-bolt having shoulders adapted to be moved in and out of engagement with the recoil-shoulders by a lateral movement and for longitudinal movement on said ways, a firing-pin slidably mounted in the breech-bolt at its forward end and mounted for a rocking and sliding movement in the frame at its rear end, and means for operating the breech-bolt and the firing-pin, substantially as set forth.

9. A frame for firearms consisting of a general cylindrical body with an applied stock and mechanism-supporting stud or projection at the front and an applied mechanism-supporting stud at the rear, substantially as set forth.

10. The combination in a firearm of a frame having longitudinal ways and recoil-shoulders, a breech-bolt having shoulders to engage the recoil-shoulders and adapted to slide on said ways, a firing-pin engaging with the breech-bolt at its forward end and longitudinally slotted at its rear end, a pin supported in the rear end of the frame and passing through the slot of the firing-pin and serving as a support and pivot for the bolt, and means for operating the bolt and operating the firing-pin, substantially as set forth.

810,572. PROCESS OF TREATING ORES. JOSEPH SAVELSBERG, Papenburg, Germany. Filed May 15, 1905. Serial No. 260,566.

Claim.—1. The process of treating oxid ores, which consists in mixing the ore with sulfur-containing substance, and a fuel and blowing the mixture in a suitable furnace, substantially as described.

2. The process of treating oxid ores, which consists in mixing the ores with sulfur-containing substances, carbon and a flux and placing the mixture on a bed of glowing material, and blowing the charge, substantially as described.

3. The process of treating oxid ores, which consists in mixing the ore with sulfur-containing substances, pulverized carbon and a flux, charging the same into a suitable furnace onto a bed of glowing carbon and ore and blowing the charge to cause the sulfur to combine with the metal of the oxide to form sulfids and sinter the mass, substantially as described.

4. The process of treating oxid ores containing nickel, cobalt and copper, which consists in mixing the ore with sulfur, carbon and a flux, charging the same into a suitable furnace and blowing the mixture, substantially as described.

810,573. COLLAPSIBLE BED AND SIMILAR FURNITURE. FREDERICK C. SCHOFIELD, Washington, D. C. Filed Apr. 20, 1905. Serial No. 256,061.

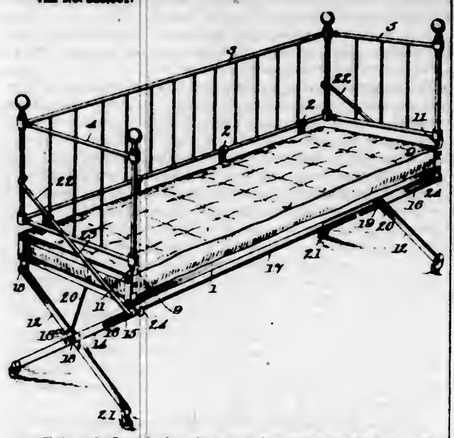

Claim.—1. In a bed, sofa, or similar article of furniture, the combination with a body portion, of collapsible legs therefor, foldable means comprising operatively-connected longitudinal and end members, means for holding said end members locked in their opened positions, and stay-rods connecting said collapsible legs and foldable means.

2. In a bed, sofa or similar article of furniture, the combination with a body portion, of collapsible legs therefor, foldable means comprising operatively-connected longitudinal and end members, means for holding said end members locked in their opened positions, and jointed elbow stay-rods connecting said collapsible legs and foldable means.

3. In a bed, sofa or similar article of furniture, the combination with a body portion, of collapsible legs therefor, foldable means comprising operatively-connected longitudinal and end members, pintles formed on the end posts of said end members, apertured members adapted to receive said pintles and hold said end members in their opened position, and stay-rods connecting said collapsible legs and foldable means.

4. In a bed, sofa, or similar article of furniture, the combination with a body portion, of collapsible legs therefor, a foldable longitudinal member, foldable end members connected thereto, means for holding said end members locked in their opened positions, and stay-rods connecting said collapsible legs and longitudinal member.

5. In a bed, sofa or similar article of furniture, the combination with a body portion, of collapsible legs therefor, a foldable longitudinal member, foldable end members connected thereto, means for holding said end members locked in their opened positions, and stay-rods connecting said collapsible legs and longitudinal member and terminating in hooked extensions at their lower ends.

6. In a bed, sofa or similar article of furniture, the combination with a body portion, legs pivoted to the rear ends of said body portion and extending forwardly thereof, rearwardly-extending legs pivoted to said first legs, a sliding connection between the forward ends of said body portion and the upper ends of said rearwardly-disposed legs, a foldable longitudinal member, foldable end members connected thereto, means for holding said end members locked in their opened positions, and stay-rods pivotally connected to said longitudinal member and said rearwardly-disposed legs.

7. In a bed, sofa or similar article of furniture, the combination with a body portion, legs pivoted to the rear ends of said body portion and extending forwardly thereof, rearwardly-extending legs pivoted to said first legs, a pin-and-slot connection between the forward ends of said body portion and the upper ends of said rearwardly-disposed legs, a foldable longitudinal member, foldable end members connected thereto, means for holding said end members locked in their opened positions, and stay-rods pivotally connected to said longitudinal member and said rearwardly-disposed legs.

8. In a bed, sofa or similar article of furniture, the combination with a body portion, legs pivoted to the rear ends of said body portion and extending forwardly thereof, rearwardly-extending legs pivoted to said first legs, means for changing the pivotal connecting-axis of said legs, a sliding connection between the forward ends of said body portion and the upper ends of said rearwardly-disposed legs, a foldable longitudinal member, foldable end members connected thereto, means for holding said end members locked in their opened positions, and stay-rods pivotally connected to said longitudinal member and said rearwardly-disposed legs.

9. In a bed, sofa or similar article of furniture, the combination with a body portion, legs pivoted to the rear ends of said body portion and extending forwardly thereof, rearwardly-extending legs pivoted to said first legs, means for changing the pivotal connecting-axis of said legs comprising a plurality of apertures extending longitudinal of said legs, a sliding connection between the forward ends of said body portion and the upper ends of said rearwardly-disposed legs, a foldable longitudinal member, foldable end members connected thereto, means for holding said end members locked in their opened positions, and stay-rods pivotally connected to said longitudinal member and said rearwardly-disposed legs.

810,574. COLLAPSIBLE BOX. WILLIAM H. SEWELL, Winchester, Ky. Filed Feb. 24, 1903. Serial No. 96,743.

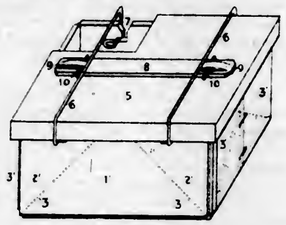

Claim.—1. A collapsible box, comprising a collapsible body, the edges of which are provided with bayonet-slots, in combination with a lid, and slides carried by said lid, the ends of said slides being hooked and projecting within the inner edges of the sides of the lid, whereby said ends are adapted to engage the bayonet-slots of the body for holding the lid thereon, and also to embrace the body, when collapsed and placed in the lid, for holding the body within the lid.

2. A collapsible box, comprising a body, the sides of which are formed of compound sections, the intermediate sections of said sides being adapted to fold inwardly, while the end sections are adapted to fold outwardly and upon the intermediate sections, thereby effecting a collapsing or folding of the box, the free edges of the sides being provided with bayonet-slots, ends carried by the bottom of the body, end flaps carried by the sides and embracing the ends of the bottom, and means for fastening said end flaps together, in combination with a lid, and slides carried by said lid, the ends of said slides being hooked and projecting within the inner edges of the sides of the lid, whereby said ends are adapted to engage the bayonet-slots of the body for holding the lid thereon, and also to embrace the body, when collapsed and placed in the lid, for holding the body within the lid.

810,575. COMBINED LISTER-PLOW AND PLANTER. ANDREW SHRADER, Frankfort, Kans., assignor of one-half to Linden Kirlin, Kansas City, Mo. Filed Oct. 9, 1903. Serial No. 176,365.

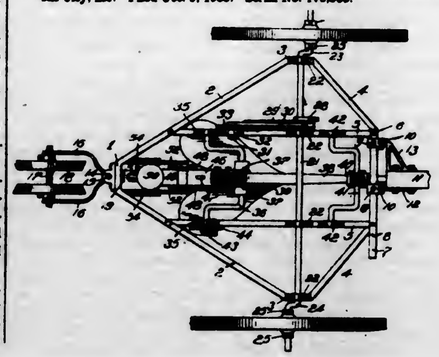

Claim.—1. In a machine of the character described, a suitable frame, a lister-plow suspended therefrom, means to raise and lower the plow, a transverse axle journaled in the frame and provided at its ends with rigid cranks extending at an angle to each other, wheels journaled on said cranks at approximately equal distances from and at opposite sides of the plow, a caster supporting the rear end of the frame and disposed in line with the plow, and means to rotate said axle and thereby simultaneously raise one and lower the other of its wheels without affecting the level of the plow.

2. In a machine of the character described, a suitable frame, a lister-plow suspended therefrom, means to raise and lower the plow, a planting mechanism suitably supported in longitudinal alinement with and rearward of the plow, a transverse axle journaled in the frame and provided at its ends with rigid cranks extending at an angle to each other, wheels journaled on said cranks at approximately equal distances from and at opposite sides of the plow, a caster supporting the rear end of the frame and disposed in line with the plow, and means to rotate said axle and thereby simultaneously raise one and lower the other of its wheels without affecting the level of the plow.

3. In a machine of the character described, a suitable frame, a transverse axle journaled therein and provided with cranks extending at an angle to each other, wheels journaled on said cranks and adjustable thereon laterally of the frame, a tongue hinged to the front portion of the frame, and a caster supporting the rear end of the frame.

4. In a machine of the character described, a suitable frame, a transverse axle journaled therein and provided with cranks extending at an angle to each other, wheels journaled on said cranks and adjustable thereon laterally of the frame, collars mounted on said cranks at opposite sides of each wheel, and adjustable laterally of the frame, to vary the distance between the wheels, a tongue hinged to the front portion of the frame, and a caster supporting the rear end of the frame.

810,576. COIN-CONTROLLED VENDING-MACHINE. ELIJAH F. SPAULDING, Troy, N. Y., assignor to Rudolph F. Bannerich, Brooklyn, N. Y. Filed May 19, 1905. Serial No. 261,143.

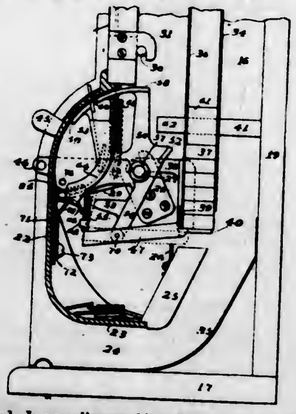

Claim.—1. In a vending-machine, the general cabinet or casing containing holders for the stacks of articles to be sold and having at its lower front vertical portion the front section 22 provided with an inwardly-extending lower member 23 above the discharge-passage for the goods sold, said front section forming within it a chamber to contain the operative mechanism and receive the coins, the latter being received upon said member 23, combined with means pivotally mounting said front section so that at the proper time the lower end thereof may be turned outwardly toward the front for enabling said member 23 to discharge the coins, and means for normally locking said front section 22 in rigid position; substantially as set forth.

2. In a vending-machine, the general cabinet or casing containing holders for the stacks of articles to be sold and having the pivotally-mounted lower front section forming within it a chamber to contain the operative mechanism and receive the coins, means intermediate the upper and lower ends of said front section for pivotally mounting the same, means for preventing the lower end of said section from being pushed inwardly, means for normally preventing the upper end of said section from being pushed inwardly and means for releasing the upper end of said section so that it may be pushed inwardly for tilting said section on its bearings and thereby effecting the discharge of the coins; substantially as set forth.

3. In a vending-machine, the general cabinet or casing containing holders for the stacks of articles to be sold and having the pivotally-mounted lower front section forming within it a chamber to contain the operative mechanism and receive the coins, said section having an inwardly-extending lower member, combined with a transverse bar to be normally engaged by said member, and a removable front section adapted to be locked within the casing and to engage the upper edge of said section for locking the latter stationary, said section at its upper edge and said removable front section having interengaging surfaces for preventing the movement of either of said sections, said pivotally-mounted section being capable of being tilted inwardly to discharge the coins when the said removable front section is withdrawn from the casing; substantially as set forth.

4. In a vending-machine, the general cabinet or casing containing the holders for the stacks of articles to be sold and the pivotally-mounted lower front section for said cabinet and forming within it a chamber to contain the operative mechanism and receive the coins, a transverse bar normally engaged by the lower end of said front section, the removable front 20 which normally engages the upper edge of said front section and locks the same, and means for locking said front, said front having hooks 31 to engage studs 30 provided in the casing; substantially as set forth.

5. In a vending-machine, the general cabinet or casing containing operative mechanism for receiving and testing the coins and dislodging the articles to be sold, the holders for the stacks of said articles, hooks carried by said holders for engaging supports therefor when said holders are in their normal position and studs located at a higher elevation in said casing for receiving said hooks when it is desired to partly remove said holders and replenish them with goods, said cabinet or casing having a removable front; substantially as set forth.

6. In a vending-machine, a holder for the articles to be sold, a pivotally-mounted frame affording a coin-chute and having an exposed handle whereby said frame may be manually turned on its pivot, and an ejector pivotally secured to and carried by said frame at a point below said chute, said ejector having means adjacent to the lower end of said chute for receiving the coin and holding the same and being so balanced that the coin, if of proper weight, will tilt said ejector into its operative position with relation to the lower end of said holder, whereby on the movement of said pivoted chute-frame said ejector will be moved to dislodge the article sold; substantially as set forth

7. In a vending-machine, a holder for the articles to be sold, a pivotally-mounted frame affording a coin-chute and having an exposed handle whereby said frame may be manually turned on its pivot, and an ejector pivotally secured to and carried by said frame at a point below said chute, said ejector having means adjacent to the lower end of said chute for receiving the coin and holding the same and being so balanced that the coin, if of proper weight, will tilt said ejector into its operative position with relation to the lower end of said holder, whereby on the movement of said pivoted chute-frame said ejector will be moved to dislodge the article sold, combined with means to dislodge the coin from said ejector during the movement of the same with said frame; substantially as set forth.

8. In a vending-machine, a holder for the articles to be sold, a pivotally-mounted frame affording a coin-chute and having an exposed handle whereby said frame may be manually turned on its pivot, and an ejector pivotally secured to and carried by said frame at a point below said chute, said ejector having means adjacent to the lower end of said chute for receiving the coin and holding the same and being so balanced that the coin, if of proper weight, will tilt said ejector into its operative position with relation to the lower end of said holder, whereby on the movement of said pivoted chute-frame said ejector will be moved to dislodge the article sold, said means for receiving and holding the coin comprising a plate having members at its opposite edges between which the coin passes and which, if the coin is of proper dimensions, will hold the same; substantially as set forth.

9. In a vending-machine, a holder for the articles to be sold, a pivotally-mounted frame affording a coin-chute and having an exposed handle whereby said frame may be manually turned on its pivot, and an ejector pivotally secured to and carried by said frame at a point below said chute, said ejector having means adjacent to the lower end of said chute for receiving the coin and holding the same and being so balanced that the coin, if of proper weight, will tilt said ejector into its operative position with relation to the lower end of said holder, whereby on the movement of said pivoted chute-frame said ejector will be moved to dislodge the article sold, said means for receiving and holding the coin comprising a plate having an oblique hook at one edge and a finger at the other edge between which hook and finger the coin will pass and which will hold the same if the coin is of proper thickness and diameter; substantially as set forth.

10. In a vending-machine, a holder for the articles to be sold, a movable frame affording the coin-chute which extends downwardly and outwardly toward the front wall of the machine, a transverse inwardly and downwardly extending plate below said chute and upon which the coins fall from said chute and which tilts said coins backwardly therefrom, and an ejector pivotally secured to and carried by said frame at a point below said chute and below the inner edge of said plate, said ejector having means adjacent to the inner edge of said plate for receiving a coin therefrom and holding the same and being so balanced that the coin if of proper weight will tilt said ejector with relation to the lower end of said holder, whereby on the inward movement of said ejector due to the movement of said frame the ejector will dislodge the article sold; substantially as set forth.

11. In a vending-machine, a holder for the articles to be sold, a pivotally-mounted frame carrying a chute to receive the coins from the coin-slot, means for operating said frame, and an ejector pivotally mounted on said frame and having at one end means for receiving and holding a coin and being so balanced that the coin, if of proper weight, will tilt said ejector into its operative position, said frame having means at the lower end of said chute for directing the coin to said receiving and holding means; substantially as set forth.

12. In a vending-machine, a holder for the articles to be sold, a pivotally-mounted frame carrying a chute to receive the coins from the coin-slot, means for operating said frame and a coin-controlled ejector carried by said frame for dislodging the articles sold, said frame having a stop 52, combined with a follower 61 mounted upon the stack of articles in said holder and having an arm 62 which, upon the depression of said frame at the time said holder should be replenished, will pass into engagement with said stop for locking said frame in an inoperative position; substantially as set forth.

13. In a vending-machine, a holder for the articles to be sold, a pivotally-mounted frame carrying a chute to receive the coins from the coin-slot, means for operating said frame, and a coin-controlled ejector for dislodging the articles as sold, said frame having a plate 58 which closes said coin-slot when said frame is operated, combined with means for locking said frame in its operated position with said plate closing said slot when said holder should be replenished; substantially as set forth.

14. In a vending-machine, a holder for the articles to be sold, a pivotally-mounted frame carrying a chute to receive the coins from the coin-slot, means for operating said frame, and an ejector pivotally mounted on said frame and having at one end means for receiving and holding a coin and being so balanced that the coin, if of proper weight, will tilt said ejector into its operative position, said frame having means at the lower end of said chute for directing the coin to said receiving and holding means, and said machine being provided with a support for the inner end of said ejector when the latter is not in its operative position; substantially as set forth.

15. In a vending-machine, a holder for the articles to be sold, a pivotally-mounted frame carrying a chute to receive the coins from the coin-slot, means for operating said frame, and an ejector pivotally mounted on said frame and having at one end means for receiving and holding a coin and being so balanced that the coin, if of proper weight, will tilt said ejector into its operative position, said frame having means at the lower end of said chute for directing the coin to said receiving and holding means, and said machine being provided with a support for the inner end of said ejector when the latter is not in its operative position, combined with means for locking said pivotally-mounted frame in its operated position when so desired; substantially as set forth.

16. In a vending-machine, a holder for the articles to be sold and a pivotally-mounted frame 50 comprising the chute 51, plate 66 at the lower end of said chute to receive the coins, a downwardly-extending arm 54, a forwardly-extending finger 53 and an operating-lever 45, combined with a pivotally-mounted ejector carried by said arm 54 and having adjacent to said plate 66 coin-receiving means, said finger 53 being adapted to dislodge the coin from said coin-receiving means when said lever is operated; substantially as set forth.

17. In a vending-machine, the front casing having the coin-slot and window, a holder for the articles to be sold, and a pivotally-mounted frame carrying a chute to receive the coins from said slot and having an operating-lever projected through said casing, said frame also having plates 58, 59 between which a slot is provided to receive the coins and direct them into said chute, said plate 59 being normally at said window and said plate 58 normally closing the coin-slot when said lever is operated, combined with an ejector carried by said frame and provided with means for receiving the coin fed through said chute, means for dislodging the coin from said receiving means and means for locking said frame in its operated position with said plate 58 closing the coin-slot when said holder should be replenished; substantially as set forth.

810,577. PAGING-MACHINE. GEORGE STAHL, Dayton, Ohio, assignor of one-fourth to William P. Coffman and one-fourth to John I. Coffman, Dayton, Ohio. Filed Dec. 12, 1904. Serial No. 236,454.

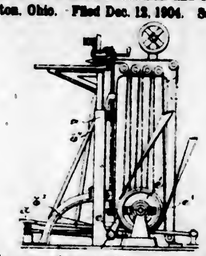

Claim.—1. In a paging-machine, the combination with the printing mechanism, an arm for operating the same, a continuously-rotating part, a normally stationary cam, means for connecting said rotary part to said cam, and an adjustable cam-arm connected with the actuating-arm of the printing mechanism, substantially as and for the purpose set forth.

2. The combination of the printing mechanism with the actuating-arm, of an oscillating shaft, a spring on said shaft, a cam-arm also on said shaft, a cam contacting with said cam-arm, a rotating part, and a friction device between said rotating part and cam, substantially as specified.

3. In a paging-machine, the combination with printing mechanism, of a cam, driving mechanism, a shaft to be oscillated, a cam-arm connected to said shaft and contacting said cam, means for intermittently connecting said driving mechanism and said cam to give an initial movement to said cam, and means to complete the revolution of said cam by the pressure of said cam-arm on said cam, substantially as specified.

4. The combination of the printing device with a rotating pulley having a cone-shaped recess, a cone-shaped friction-clutch adapted to engage the same spring-pressed away from said pulley, a bell-crank connection to operate said friction-clutch, a foot-lever to operate said bell-crank connection, a cam connected to said clutch, a cam-arm adapted to engage the same, said cam-arm being mounted on a spring-actuated oscillating shaft, and a connection from said oscillating shaft to the printer, substantially as specified

5. In a paging-machine, the combination with a printing device of a support, a horizontal shaft supported in bearings therein, a cam carried by said shaft, a driving member on said shaft, a clutch between said driving member and said shaft, means for normally holding said clutch in its inoperative position, a lever engaging the movable part of said clutch to operate same, a shaft forming the main operating device of the machine to be operated, a cam-arm on said shaft contacting the cam on said horizontal shaft, and a spring to yieldingly hold said cam-arm in contact with said cam, substantially as specified.

810,578. KNITTING-MACHINE. BERNARD T. STERNE, Utica, N. Y. Filed Feb. 1, 1905. Serial No. 243,709.

Claim.—1. A knitting mechanism, whose needles knit alternately between raised needles, an auxiliary yarn-engaging mechanism suspended within the needles of the machine and operating between raised needles of the fabric-producing mechanism, comprising a dial, yarn-engaging devices on the dial and moving cam-engaging devices having movable cams mounted thereon, cam-operating detents projecting from the cams, a slide engaging the same for controlling the position of the said cams and means for raising the needles of the machine alternately.

2. In a circular independent-needle knitting-machine, means for projecting alternate needles up out of action, means for knitting with the alternate set of needles, means for causing these sets of needles to interchange their respective order of operations, and means

for drawing loops of fleecing-thread between the shanks of all the needles raised up out of action.

means for laying a loose thread on the outside of one of said sets of needles and on the inside of the other set.

affixed to the corset, a padded back-rest attached to the seat, the cor-

said ductile or compressible material, whereby relative rotation of

for drawing loops of fleecing-thread between the shanks of all the needles raised up out of action.

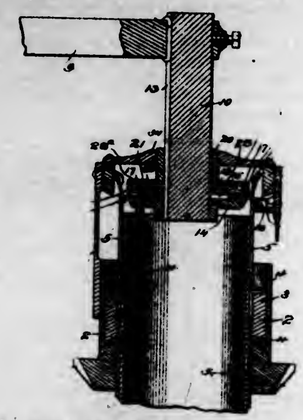

3. In a circular independent-needle knitting-machine, the combination with a cylinder, and a stationary dial arranged within the same, of fabric-knitting needles carried by said cylinder, means for projecting alternate needles up out of action, means for knitting with the alternate set of needles, means for causing said sets of needles to interchange their respective order of operation, and means carried by said dial for drawing loops of fleecing-thread between the shanks of the needles raised up out of action.

4. In a circular independent-needle knitting-machine, the combination of a cylinder, needles carried thereby, cams for projecting alternate needles up out of action, and for knitting with the alternate set of needles, said cams being formed for causing said sets of needles to interchange their respective order of operation, means for driving said needle-actuating cams, means for drawing loops of fleecing-thread between the shanks of the needles raised up out of action, and means driven by the cam-driving means for actuating said loop-drawing means.

5. In a circular independent-needle knitting-machine, the combination of driving means, means actuated thereby for projecting alternate needles up out of action, means for knitting with the alternate set of needles, means for causing said sets of needles to interchange their respective order of operation, a fixedly-supported shaft depending into the space surrounded by the needles, hooks supported by said shaft, means for actuating said hooks for drawing loops of fleecing-threads between the shanks of the needles raised up out of action, and means for communicating movement from the said driving means to said hook-actuating means.

6. In a circular independent-needle knitting-machine, the combination with a needle-cylinder, and needles operating vertically therein, of means for projecting alternate needles up out of action, means for knitting with the alternate set of needles, means for causing the sets of needles to interchange their respective order of operation, hooks for drawing loops of fleecing-thread between the shanks of the needles raised up out of action, and means for operating said hooks in alternation with respect to the active needles.

7. In a circular independent-needle knitting-machine, the combination with a needle-cylinder, and fabric-knitting needles carried thereby, of a dial arranged within the space inclosed by said needles, hooks carried by said dial and adapted at times to be projected beyond said needles for drawing loops of fleecing-thread between the shanks of the needles, and cams for alternately actuating alternate hooks.

8. In a knitting-machine, the combination with a cylinder, needles carried thereby, and a plurality of feeders for said needles, of means for projecting alternate needles up out of action, means for knitting with the alternate set of needles at every feeder, means for causing the sets of needles to interchange, and means for drawing loops of fleecing-threads between the shanks of the needles raised out of position.

9. In a circular independent-needle knitting-machine, the combination with a cylinder, and fabric-knitting needles carried thereby, of means for projecting alternate needles up out of action, means for knitting with the alternate set of needles, means for causing said sets of needles to interchange their respective order of operation, and means for laying a loose thread on the outside of one of said sets of needles and on the inside of the other set.

10. In a circular independent-needle knitting-machine, the combination with a cylinder, and fabric-knitting needles carried thereby, of means for projecting alternate needles up out of action, means for knitting with the alternate set of needles, means for causing said sets of needles to interchange their respective order of operation, and means moving about said cylinder for laying a loose thread on the outside of the inoperative needles and on the inside of the operating-needles.

810,579. **MOLD FOR MAKING CONCRETE FENCE-POSTS.** CARL B. STOKOE, Grand Haven, Mich. Filed Mar. 21, 1905. Serial No. 251,341.

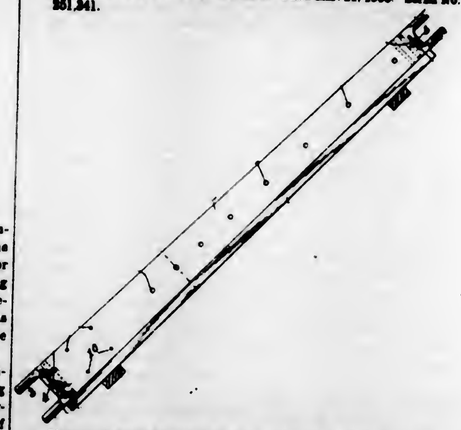

Claim.—A mold for concrete fence-posts, comprising sides having a series of openings to receive fasteners, and a series of openings to receive stops, said sides also having recesses in their ends, bolts in the end recesses, and adjustable stops in the second-named series of openings.

810,580. **SUPPORTING APPARATUS FOR PATHOLOGICAL CONDITIONS REQUIRING A SITTING POSITION.** DOUGLAS G. STORMS, Hamilton, Canada. Filed July 20, 1905. Serial No. 271,231.

Claim.—1. A supporting apparatus for the purpose specified, consisting of a laced corset preferably of leather or like material, a pad secured under each armhole, a seat secured to the corset, a back-rest attached to the seat, a block attached to each shoulder, a ring secured to each block, adjustable straps attaching the said corset-rings to an adjustable cross-bar of a frame, for supporting a patient in a sitting position for the drainage of pus after an abdominal operation, &c.

2. A supporting apparatus for pathological conditions requiring a patient to be placed in a sitting position after an operation, consisting of a leather jacket or corset formed in two vertical halves, each half having eyelet-holes for lacings, a tongue attached to each half to extend under the lacings, a pad under each armhole, a block on each shoulder, and a ring attached to each block, straps attached to each side of the jacket or corset, a soft lining attached to the inside of the corset, a seat formed with the bottom and two sides, the said sides having a series of buckles attached thereto to engage with the straps

affixed to the corset, a padded back-rest attached to the seat, the corset and seat held in an upright position by adjustable straps attached to the corset and to an adjustable cross-bar of a frame secured by any mechanical means to a bedstead all constructed substantially as and for the purpose specified.

810,581. **SIGHTING ATTACHMENT FOR GUNS.** ROBERT P. STOUT and FREDERICK G. HUGHES, South Bethlehem, Pa., assignors to Bethlehem Steel Company, South Bethlehem, Pa., a Corporation of Pennsylvania. Filed Aug. 30, 1905. Serial No. 276,268.

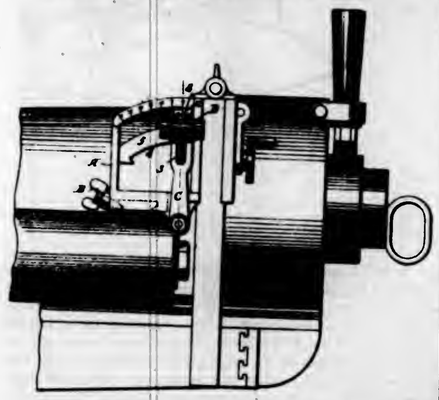

Claim.—1. A sighting device for guns consisting of a frame having a graduated arc, a pivoted arm one end of which travels over the arc, a level carried by the arm, means for moving the arm over the arc comprising a worm carried by the arm, a worm-rack engaged by the worm and carried by the frame, and a spring-brake engaging the worm, substantially as set forth.

2. A sighting device for guns, consisting of a frame having a graduated arc, a pivoted arm one end of which travels over said arc, a level carried by said arm, a rack secured to said frame and located between the pivot of said arm and said arc, and a worm-wheel carried by said arm and engaging with said rack, substantially as set forth.

3. A sighting device for guns, comprising a frame having a graduated arc, a pivoted arm one end of which travels over said arc, a rack secured to said frame and located between the pivot of said arm and said arc, a worm-wheel carried by said arm and engaging with said rack, and a level secured to said arm between said worm-wheel and the end of said arm which travels over said arc, substantially as set forth.

4. A sighting device for guns, comprising a frame having a graduated arc, a pivoted arm one end of which travels over said arc, a level carried by said arm, a rack secured to said frame, a worm-wheel carried by said arm and adapted to engage with said rack, a brake-shoe mounted in said arm and movable longitudinally thereof to engage with said worm, and means for forcing said shoe against said worm, substantially as set forth.

5. A sighting device for guns, comprising a frame having a graduated arc, a pivoted arm one end of which travels over said arc, a rack secured to said frame and located between the pivot of said arm and said arc, a worm-wheel carried by said arm, said worm-wheel being adapted to engage with said rack and located between the pivot of said arm and said rack, and a level secured to said arm between said worm and the end of said arm which travels over said arc, said worm being mounted upon the back of said arm and projecting through a hole therein so that it may be engaged from the front, substantially as set forth.

810,582. **SHRAPNEL.** ROBERT P. STOUT, South Bethlehem, Pa., assignor to The Bethlehem Steel Company, South Bethlehem, Pa., a Corporation of Pennsylvania. Filed Sept. 29, 1905. Serial No. 280,666.

Claim.—1. In a shrapnel, the combination with a shell having chambers for the bursting charge and for the charge of balls, of a charge of hard-metal balls within said shell, a portion of ductile or compressible material within said shell and in contact with said charge of hard-metal balls, and means for clamping the balls upon said ductile or compressible material, whereby relative rotation of the balls and shell is prevented.

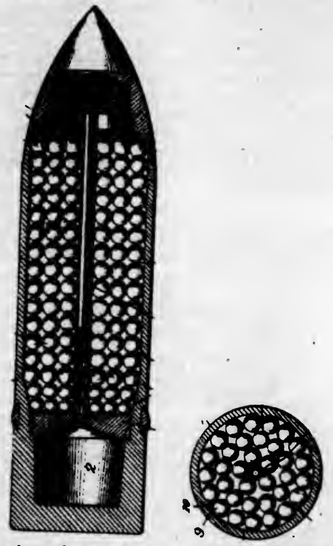

2. In a shrapnel, the combination with a shell having chambers for the bursting charge and for the charge of balls, of a charge of hard-metal balls within said shell, a layer of ductile or compressible balls within the shell and in contact with the charge of hard-metal balls, and means for clamping the hard balls upon said ductile or compressible balls, whereby relative rotation of the balls and shell is prevented.

3. In a shrapnel, the combination with a shell having chambers for the bursting charge and for the charge of balls, of longitudinal ribs upon the interior of said latter chamber, a charge of hard-metal balls within said chamber, a portion of lead balls within said chamber, and means for clamping said lead and hard balls tightly within the chamber and in engagement with said ribs, for the purpose set forth.

4. In a shrapnel, the combination with a shell having chambers for the bursting charge and for the charge of balls, of a charge of hard-metal balls within said shell, a layer of ductile or compressible balls between one end of the charge of hard balls and the chamber of the shell within which said charge is arranged, and means for clamping the hard balls upon said ductile or compressible balls, substantially as and for the purpose described.

810,583. **TROUSERS-PRESS.** MOSES H. STRAUS, Indianapolis Ind. Filed Apr. 10, 1905. Serial No. 254,636.

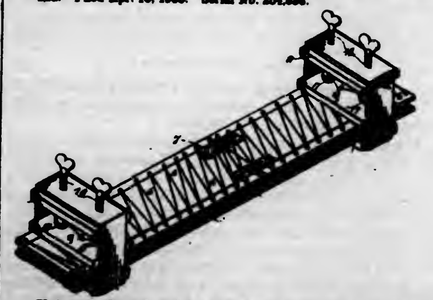

Claim.—1. In a knockdown trousers-press, the combination with upper and lower press-boards each of which are divided into hingedly-connected longer and shorter folding sections, of a removable moisture-absorbing covering stretched over each of said press-boards, and a detachable clamping means comprising removable

clamping-yokes whereby the upper and lower press-boards are held in clamped position, screw-plates carried thereby and press-board clamping-screws passing through said screw-plates.

2. In a knockdown trousers-press, the combination with upper and lower press-boards each of which are divided into hingedly-connected longer and shorter folding sections, of a removable moisture-absorbing covering, means for stretching said moisture-absorbing covering over said press-boards, detachable clamping-yokes surrounding said upper and lower press-boards to hold the latter in their relative positions, and a clamping means comprising a lower pressure-plate, an upper pressure-plate, a thumb-screw plate, thumb-screws and friction-producing buttons of a yielding material pivoted on the ends of said thumb-screws.

810,584. LOCK. WILLIAM S. SUTTON, Rockford, Ill., assignor to American Company, Rockford, Ill., a Corporation of Illinois. Filed Dec. 9, 1903. Serial No. 134,554.

Claim.—1. A lock composed entirely of two integral parts, comprising a casing having a spring section separate from the main body portion and a pivot opening, and a catch stamped out of sheet metal and provided with a pivot lug and with a catch lug or bead adapted to engage the sides of the spring portion of the casing, substantially as and for the purpose described.

2. A two-part spring lock comprising a catch element made of sheet metal stamped with a pivot lug and a catch lug, and a casing and spring combined, stamped out of sheet metal and having a pivot opening and a separate spring section therein, substantially as described.

810,585. TWO-COMPARTMENT ENVELOP. LYMAN R. SWEET, Boston, Mass. Filed June 17, 1905. Serial No. 265,789.

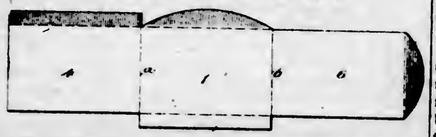

Claim.—A two-compartment envelop formed from a blank of three sections of equal length, the middle section having an adhesive lap on one side edge and a sealing-lap on its opposite side edge, one end section having a side edge adhesive lap, the other end section having an end sealing-lap, the end section having the side edge adhesive lap folded upon the middle section, the side edge adhesive lap of the middle section and the side edge adhesive lap of the end section folded upon said end section, the other end section folded upon the adhesive edge laps of the middle and of the first-folded end section whereby the back of the envelop is secured to the front and to the inner folded section forming thereby a compartment opening at the side sealing-lap, and a compartment opening at the end sealing-lap.

810,586. AUTOMATIC CARRIER AND SELF-DUMPING DEVICE. MARTIN J. STENSTAD and CARL G. RUDE, Sacred Heart, Minn. Filed Mar. 27, 1905. Serial No. 252,110.

Claim.—1. In a device of the class described, a track, a stop on the track, a carrier capable of longitudinal movement of the track, a pivotally-mounted carrier-box forming a portion of the carrier, a mechanism for locking the carrier-box in an upright position, and means designed to be engaged by the stop for releasing the mechanism which holds the carrier-box in an upright position and for returning the box to its point of starting away from the stop.

2. In a device of the class described, an inclined track, a carrier capable of longitudinal movement of the track, a carrier-box forming a part of the carrier, a stop on the track, a mechanism for securing the carrier-box in an upright position relative to the carrier, means designed to engage the stop on the track for releasing the mechanism for holding the carrier in an upright position and allowing it to dump and to force the carrier back to its point of starting.

3. In a device of the class described, an inclined track, a carrier capable of longitudinal movement of the track, a carrier-box forming a part of the carrier, an adjustable stop on the track, a mechanism for securing the carrier-box in an upright position relative to the carrier, and means designed to engage the stop on the track for releasing the mechanism for holding the carrier in an upright position and allowing it to dump and to force the carrier back to its point of starting.

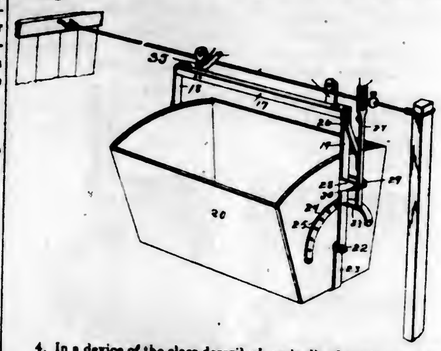

4. In a device of the class described, an inclined track, a carrier capable of longitudinal movement of the track, a carrier-box forming a part of the carrier, a stop on the track, a mechanism for securing the carrier-box in an upright position relative to the carrier, and spring-actuated means designed to engage the stop on the track for releasing the mechanism for holding the carrier in an upright position and allowing it to dump and to force the carrier back to its point of starting.

5. In a device of the class described, an inclined track, a carrier capable of longitudinal movement of the track, a carrier-box forming a part of the carrier, an adjustable stop on the track, a mechanism for securing the carrier-box in an upright position relative to the carrier, and spring-actuated means designed to engage the stop on the track for releasing the mechanism for holding the carrier in an upright position and allowing it to dump and to force the carrier back to its point of starting.

6. In a device of the class described, a track, a stop on the track, a carrier capable of longitudinal movement of the track, a pivotally-mounted carrier-box forming a portion of the carrier, a mechanism for locking the carrier-box in an upright position, means designed to be engaged by the stop for holding the carrier-box in an upright position and for returning the box to its point of starting away from the stop, and means for retaining the carrier at its inner limit of movement.

7. In a device of the class described, an inclined track, a stop near one end of the track, pulleys mounted on the track, a carrier-support connecting the pulleys, hanger-bars connected with the carrier-support, a carrier-box pivoted between the hanger and nearer its bottom portion than its top portion, a substantially semicircular plate having a series of openings therein, a pin designed to pass through an opening in one of the hangers and into one of the openings in the semicircular plate, a spring-actuated lever for maintaining the pin at its inner limit of movement, said lever designed to be engaged by the stop for taking advantage of the momentum of the carrier sliding from its inner limit to its outer limit of movement and return the same to its inner limit of movement.

8. In a device of the class described, a track, a stop on the track, a carrier capable of longitudinal movement of the track, a pivotally-mounted carrier-box forming a portion of the carrier, a mechanism for locking the carrier-box in an upright position, means for holding the box in an upright position, a pivotally-mounted forked lever connected with the said means, the forked portion thereof extending on each side of the track, and a spring for normally holding the lever away from the support to which it is pivoted, for the purposes stated.

810,587. ROPE-CUTTER. BARNETT D. TELLINGHAST and HARRY B. PENNEFATHER, McDonald, Pa. Filed Mar. 13, 1905. Serial No. 249,778.

Claim.—1. A rope-cutter having a casing or bowl provided with a chamber, an unattached gravity-actuated knife in the chamber, and means for maintaining the knife in an inoperative position.

2. A rope-cutter having a casing or bowl provided with a chamber, a plurality of unattached gravity-actuated knives in the chamber located on opposite sides of the rope to be cut, and means for maintaining each knife in an inoperative position.

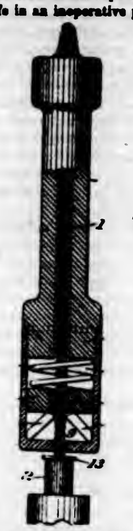

3. A rope-cutter having a casing or bowl provided with a chamber, a plurality of unattached gravity-actuated knives in the chamber located on opposite sides of the rope to be cut, means for maintaining the knives in inoperative positions, and a spring-pressed plunger.

4. A rope-cutter having a casing or bowl provided with a chamber, a plurality of gravity-actuated knives in the chamber, a trip mechanism for maintaining the knives in inoperative position and for releasing the knives to permit them to fall into operative positions.

5. A rope-cutter having a casing or bowl, a connecting-stem attached thereto, said bowl and stem slotted for the purpose of applying the rope-cutter to a rope, said bowl provided with a chamber, a plurality of gravity-actuated knives in the chamber, means for maintaining the knives in inoperative positions and for releasing the knives to permit them to fall into operative positions.

6. A rope-cutter having a casing or bowl provided with a chamber, a connecting-stem attached to the bowl, a plurality of gravity-actuated knives in the chamber, a trip mechanism for maintaining the knives in inoperative positions and for releasing the knives to permit them to fall into operative positions, and a spring-pressed plunger above the knives.

7. A rope-cutter having a casing or bowl provided with a plurality of chambers, a connecting-stem attached to the bowl, a plurality of gravity-actuated knives in one chamber, a spring-pressed plunger above the knives located in another chamber, a trip mechanism for maintaining the knives in inoperative positions and for releasing the knives to permit them to fall into operative positions.

8. The combination with the rope to be cut, of a rope-cutter comprising a casing or bowl provided with a chamber, an unattached knife located in the chamber arranged in contact with the rope.

9. The combination with a rope to be cut, of a rope-cutter comprising a casing or bowl provided with a chamber, a plurality of unattached knives located in the chamber and arranged in contact with the rope on opposite sides thereof.

810,588. CAR-COUPLING. CHARLES H. TOMLINSON, Denver, Colo., assignor to The Tomlinson Coupler Company, Denver, Colo. Filed Feb. 10, 1905. Serial No. 245,043.

Claim.—1. The combination with a draw-head, of a pivoted coupling device located therein, a cam journaled in the draw-head and engaging the coupling device, an unlocking-lever accessible from the outside of the draw-head and connected to operate the cam for uncoupling purposes, and a pawl pivotally connected with the lever, the draw-head being provided with a recess having a stop adapted to engage the pawl of the opposite draw-head, whereby when the lever is thrown to the unlocked position, the pawl engages the stop and holds the locking lever and cam in the said position until the draw-heads are separated, substantially as described.

2. In a car-coupler, the combination with a draw-head, of a spring-actuated coupling device pivoted in the draw-head, an unlocking-cam engaging the coupling devices and a lever connected with the cam and provided with a jointed member adapted to protrude from the forward extremity of the draw-head for the purpose set forth.

3. In a car-coupler, the combination of two draw-heads having draw-bars pivotally connected with their respective cars, of spring-actuated pivoted coupling devices located within the draw-heads and adapted to protrude sufficiently to interlock when the draw-heads are in engagement, an unlocking-cam located in each draw-head and adapted to act on both coupling devices, a lever connected with the unlocking-cam of each draw-head and having a jointed member normally occupying a forward recess in its own draw-head, each draw-head, however, being provided with a forward recess which the said jointed member of the opposite draw-head enters, when the lever is thrown to the unlocking position, each draw-head having a stop located within the said recess, which stop is adapted to engage the jointed member and hold the parts in the unlocked position until the draw-heads are separated, substantially as described.

4. The combination with a draw-head and a coupling device located therein, of means for throwing the coupling device to the uncoupled position, said means including a lever fulcrumed on the draw-head and provided with a forwardly-projecting jointed member adapted to protrude from the forward extremity of the draw-head for the purpose set forth.

5. The combination with a draw-head and a coupling device located therein, of a pawl connected with the coupling device, protruding from the draw-head and adapted to engage the opposite draw-head to hold the coupling device of its own draw-head in the unlocked position until the two draw-heads are separated.

810,589. COMPOUND ENGINE. JEAN VENATOR, Cassel, Germany. Filed May 15, 1903. Serial No. 157,316.

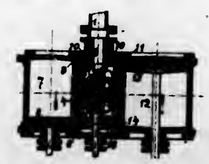

Claim.—1. In a compound engine and in combination, two cylinders, a piston working in each cylinder, ports located in the opposite ends of each cylinder, a valve-chamber, a valve shiftable longitudinally therein, said valve having closed ends a steam-space between the ends of the valve and the ends of the valve-chamber for the passage of steam from one cylinder to the other, said valve having steam-passages extending longitudinally thereof, one of which opens out directly through one of the closed ends of the valve to communicate with the live-steam supply, and the other passage communicating with an exit for the used steam, said valve further having ports leading from the first passage to register with the ports of the first cylinder, and additional ports in communication with the second steam-passage to register with the ports of the second cylinder, substantially as described.

2. In a compound engine and in combination, two cylinders, a piston working in each cylinder, ports located at opposite ends of each cylinder, a valve-chamber, a valve shiftable therein controlling the ports, said valve having two steam-passages extending longitudinally of the same arranged side by side, one of which is in direct communication through one of its ends with the live steam, said valve further having ports leading from the latter passage designed to register with the ports of one of said cylinders, and additional ports for opening communication between the second passage in the valve and the other cylinder, and a third cylinder having a piston working therein and ports, adapted to communicate with the second passage in said valve.

810,590. VALVE. WILLIAM R. WHITEHEAD, Trenton, N. J. Filed Mar. 9, 1904. Serial No. 197,304.

Claim.—1. In combination, a rotatable head carrying a plurality of needle-valves, a support for the head, and a part provided with a plurality of orifices into which the valves extend, the said part being rotatably movable for adjustment in a longitudinal direction with respect to the valves.

2. In combination, a rotatable head carrying a plurality of needle-valves, a support for the head, and a part provided with a plurality of orifices into which the valves extend, the said part having a screw-threaded connection with the head-support for longitudinal adjustment with respect to the valves.

3. In combination, a rotatable head carrying a plurality of needle-valves, a base-cap on which the head is mounted, and a chambered cap provided with a plurality of openings into which the valves extend, the said chambered cap having a screw-threaded connection with the base-cap and inclosing the valve-carrying head, for the purpose set forth.

4. In combination, a rotatable head part carrying a plurality of needle-valves, a support for the head part, and a cap part provided with a plurality of orifices into which the valves extend, one of said parts being rotatably mounted for the purpose of longitudinally adjusting said head part and cap part in relation to each other.

810,591. APPARATUS FOR CASTING PROJECTILES FOR SMALL-ARMS. FREDERICK WISE, Esher, England. Filed Oct. 23, 1903. Serial No. 178,304.

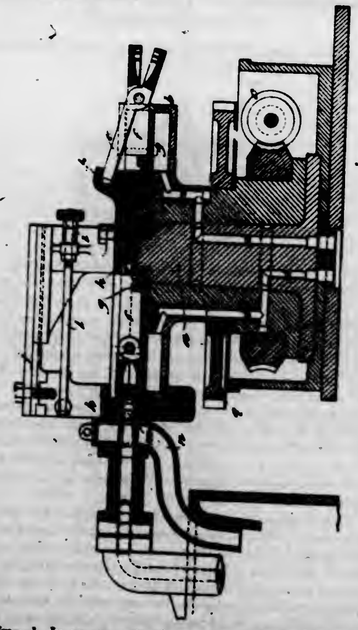

Claim.—1. In an apparatus for casting projectiles, the combination with a mold-wheel of molds sliding radially therein, means for moving the molds in and out in relation to the mold-wheel, means for forcing a jet of molten metal into the molds when they are in their retracted position, and means for thereafter moving the molds outward to deliver the cast projectile.

2. In an apparatus for casting projectiles for small-arms, the combination with a mold-wheel, of a series of molds carried by the mold-wheel adapted to move radially of the mold-wheel, each mold being composed of two parts hinged together, means for moving the molds radially of the wheel, and means for opening the molds when they are in their outward position, and closing them as they approach their casting position.

3. In an apparatus for casting projectiles for small-arms, the combination with a mold-wheel, of a plurality of molds mounted radially of the mold-wheel, a cam for moving the molds radially of the mold-wheel, and means for supplying to the molds molten metal under pressure when the molds are in their retracted position.

4. A mold-wheel, a series of scissor-shaped molds mounted in and arranged radially of the mold-wheel and adapted to move radially thereof, with means for moving the molds into the mold-wheel to receive a cast, and outwardly to discharge a bullet, substantially as described.

5. In an apparatus for casting projectiles, the combination with a mold-wheel, of a series of scissor-shaped molds mounted in the wheel, means for moving the molds radially of the wheel and means to cause the molds to open when moved outwardly and to close when moved inwardly.

6. In an apparatus for casting projectiles, the combination with a mold-wheel, of a series of scissor-shaped molds mounted in the wheel means for moving them radially thereof and means for automatically opening and closing the molds.

810,592. FOLDING GATE FOR CAR-PLATFORMS. HUBERT WITTE, St. Louis, Mo., assignor to St. Louis Car Company, St. Louis, Mo., a Corporation. Filed Oct. 19, 1905. Serial No. 283,400.

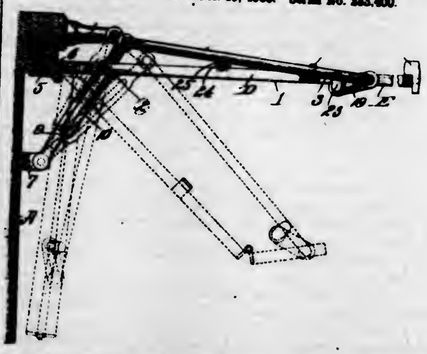

Claim.—1. In a folding gate of the character described, the combination of a rear swingingly-supported gate-section, a forward gate-section hinged to said rear section, a handle-rod loosely connected to said forward gate-section, and a swinging member in which said handle-rod is loosely supported, substantially as set forth.

2. In a folding gate of the character described, the combination of a rear swingingly-supported gate-section, a forward gate-section hinged to said rear section, a handle-rod loosely connected to said forward gate-section, a link loosely fitted to said handle-rod, and means for supporting said link, substantially as set forth.

3. In a folding gate of the character described, the combination of a rear swingingly-supported gate-section, a forward gate-section hinged to said rear section, a handle-rod loosely connected to said forward gate-section, a link loosely fitted to said handle-rod, means for supporting said link independent of either of said gate-sections, and a supporting-bar carried by said rear gate-section on which said link rests, substantially as set forth.

4. In a folding gate of the character described, the combination of a rear swingingly-supported gate-section, a forward gate-section hinged to said rear section, a handle-rod loosely connected to said forward gate-section, a link provided with a slot in which a member of said rear gate-section operates, and means for supporting said link; said link having loose connection with said handle-rod, substantially as set forth.

5. In a folding gate of the character described, the combination of a rear swingingly-supported gate-section, a forward gate-section hinged to said rear section, a handle-rod loosely connected to said forward gate-section, and a latch fixed to said handle-rod and arranged to engage said forward gate-section, substantially as set forth.

6. In a folding gate of the character described, the combination of a rear swingingly-supported gate-section, a forward gate-section hinged to said rear section, a handle-rod loosely connected to said forward gate-section, and a latch fixed to said handle-rod and arranged to engage said rear gate-section, substantially as set forth.

7. In a folding gate of the character described, the combination of a rear swingingly-supported gate-section, a forward gate-section hinged to said rear section, a handle-rod loosely connected to said forward section a latch-arm fixed to said handle-rod, and a latch-bolt carried by said latch-arm and arranged to engage either of said gate-sections, substantially as set forth.

8. In a folding gate of the character described, the combination of a rear swingingly-supported gate-section, a forward gate-section hinged to said rear section, a handle-rod loosely connected to said forward gate-section, oscillatory rod loosely fitted to said handle-rod, and means for supporting said oscillatory rod, substantially as set forth.

810,593. COMBINED ROTARY WEB PRINTING AND FOLDING MACHINE. HENRY A. W. WOOD, New York, N. Y., assignor to Campbell Printing Press & Manufacturing Company, New York, N. Y., a Corporation of New York. Filed Mar. 20, 1897. Renewed Apr. 14, 1905. Serial No. 256,062.

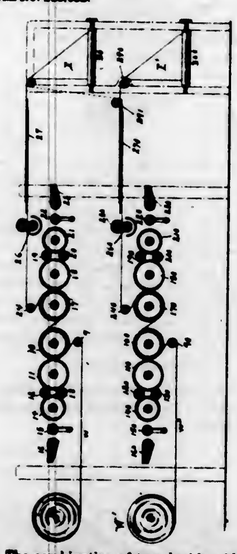

Claim.—1. The combination of two double-width, rotary web-printing machines, web-turners capacitated to bring one half the product of each press over the other half, and two longitudinal formers arranged one over the other with their backs to the printing-machines.

2. The combination of two double-width, rotary web-printing machines arranged one over the other, web-turners arranged to bring the product thereof into a single-width path, and two longitudinal formers arranged one over the other in said single-width path with their backs to the printing-machines.

3. The combination of two double-width, rotary web-printing machines, arranged one over the other, web-turners arranged to bring the products thereof into a single-width path, two longitudinal formers arranged one over the other in said single-width path, and transverse cutting and folding mechanism arranged to the side of each of said longitudinal formers and at right angles to the cylinders of the printing-machines.

4. The combination of two double-width, rotary web-printing machines, web-turners arranged to bring the products thereof into a single-width path, two longitudinal formers arranged one over the other in said single-width path, and guides whereby the products of each press may be led independently to said formers or associated, or the product of both presses led over one of said formers.

5. The combination of two double-width rotary web-printing machines, web-turners arranged to bring the product thereof into a single-width path, two longitudinal formers arranged one over the other in said single-width path, transverse cutting and folding mechanism arranged to the side of each of said longitudinal formers, and at right angles to the cylinders of the printing-machines, one of said transverse cutting and folding mechanisms having combined therewith a collecting mechanism.

6. The combination of two double-width rotary web-printing machines, web-turners arranged to bring the product thereof into a single-width path, two longitudinal formers arranged one over the other in said single-width path, transverse cutting and folding mechanism arranged to the side of each of said longitudinal formers and at right angles to the cylinders of the printing-machines, one of said transverse cutting and folding mechanisms having combined therewith a collecting mechanism, and web-guides arranged so that the products of the two presses may be led separately to the two longitudinal formers, or together to the longitudinal former which has combined therewith the collecting mechanism.

7. The combination of two double-width rotary web-presses arranged one directly over the other, so that the two web-rolls are placed at the same end of the machine, slitters arranged on the center line of the machine, turners arranged to bring the products of the presses into a single-width pathway at one side of the center line of the press, two longitudinal folders or formers arranged one over the other in this single-width pathway, and transverse cutting and folding mechanism arranged on the other side of the center line of the press from the longitudinal folders or formers.

810,594. HEEL-ALINING MEANS FOR LASTS. ELLERY C. WRIGHT, Campello, Mass. Filed Jan. 12, 1905. Serial No. 240,675.

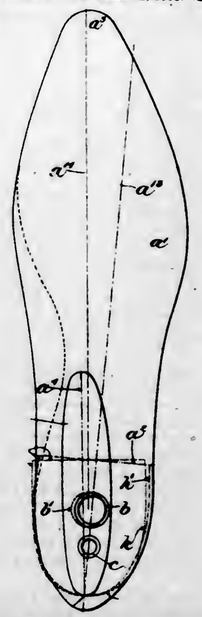

Claim.—1. A crooked last, whose heel contains two independent thimbles extending from the cone part way to the bottom of the last and having their axes extending perpendicular to the bottom in the plane of the center line extending midway between the opposite sides of the heel and at right angles to the normal breast-line of said heel.

2. The combination, with the usual jack-spindle socket of a crooked last, wherein the center line as herein described does not co-

incide with the normal trend of the last, of an alining-hole located in the wood of the last at the rear of said socket in the same axial plane with the axis of said socket extending at right angles to the normal breast-line of the heel.

3. A last of the kind herein described, wherein the center line diverges from the normal trend of the last, containing two independent thimbles located in the heel with their axes in the plane extending vertically of the bottom of the last midway between the opposite sides of the heel at the wider portions of the bottom edges thereof.

810,595. **AUTOMATIC FIRE-WINDOW.** GOTTLIEB YUNKER and GEORGE SCHWINN, Newark, N. J., assignors to The Newark Cornice and Skylight Works, a Corporation of New Jersey. Filed Oct. 9, 1905. Serial No. 281,927.

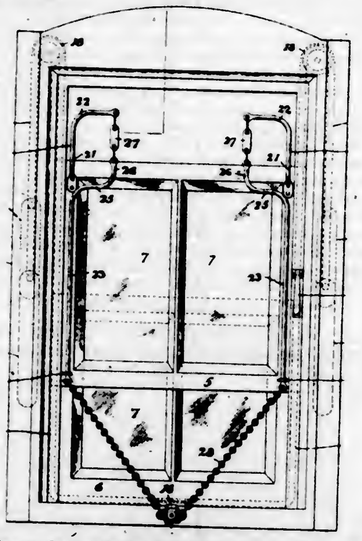

Claim.—1. In a window, the combination of a frame, an upper sash therein, a bracket projecting from said sash above its top, a fusible link depending from said bracket, means normally holding the sash closed and means extending from said link below the bottom of the sash and adapted to secure the same in open position.

2. In a window, the combination of a frame, an upper sash therein, a bracket projecting from said sash above its top, a fusible link depending from said bracket, means normally holding the sash closed, and means attached to said link for holding the sash in open position.

3. In a window, the combination of a frame, an upper sash therein, a bracket projecting from said sash above its top, a fusible link depending from said bracket, means normally holding the sash closed, a slideway upon the side of said sash, and means extending through said slideway from said link below the bottom of the sash and adapted to hold the sash in open position.

4. In a window, the combination of a frame, an upper sash therein, a bracket projecting from said sash above its top, a fusible link depending from said bracket, means normally holding the sash closed, a slideway upon the side of the sash, a rod slidably mounted in said slideway and connected at its upper ends to said link, and means connected to the lower end of said rod for fastening the sash in open position.

5. In a window, the combination of a frame, an upper sash therein, brackets projecting from said sash above its top, fusible links depending from said brackets, means normally holding the said sash closed, slideways upon the opposite sides of the sash, rods slidably mounted one in each slideway and connected at their upper ends to said links, and a chain connecting the lower ends of said rods.

6. In a window, the combination of a frame, an upper sash therein, brackets projecting from said sash above its top, fusible links depending from said brackets, means normally holding the sash closed, eyes upon the opposite sides of said sash near its lower end, rods slidably mounted in said eyes and connected at their upper ends to said links a chain connecting the lower ends of said rods, and means upon the window-frame for engaging said chain.

7. In a window, the combination of a frame, an upper sash therein, brackets projecting from said sash above its top, fusible links depending from said brackets, means normally holding the sash closed, eyes upon the opposite sides of said sash near its lower end, rods slidably mounted in said eyes and connected at their upper ends to said links a chain connecting the lower ends of said rods, and a pulley upon the lower end of the window-frame over which said chain may be hooked.

810,596. **SPRING-JACK WEDGE.** GUSTAVE A. SUNDEL, New York, N. Y., assignor to J. H. Bunnell and Company, a Corporation of New York. Filed Nov. 17, 1904. Serial No. 233,070.

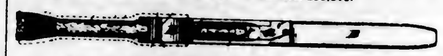

Claim.—1. In a spring-jack wedge or the like, the combination of metallic strips and an insulating-body separating them, with conducting-wires electrically connected to the said strips and sewed to said body.

2. In a spring-jack wedge or the like, the combination of metallic strips, and an insulating-body separating said strips and provided with two sets of perforations, with covered conducting-wires passing through one set of perforations in said body and electrically connected to said strips, and binding-threads passing through the second set of perforations and through the covers of the wires to secure the wires to the body.

810,597. **SHINGLING-HATCHET.** ROBERT B. ALLISON, Topeka, Kans. Filed Jan. 23, 1905. Serial No. 242,417.

Claim.—1. A hatchet-blade provided with a seat, in combination with a gage having its intermediate portion rotatably mounted in the seat, and its terminal portions formed into semicylindrical shoulders that project beyond both sides of the blade, the flat sides of the cylindrical shoulders being both disposed in alinement.

2. A hatchet-blade provided with a seat, in combination with a gage having its intermediate portion held combined with the seat by frictional engagement with the walls thereof, the terminal portions of the gage being cut away to form semicylindrical shoulders that project laterally beyond the sides of the blade, the flat sides of the cylindrical shoulders being both disposed in alinement.

810,598. **RAIL-JOINT.** WALLACE W. ANGLIN, Buffalo, Mo., assignor of one-half to John A. Lamun, Buffalo, Mo. Filed Oct. 19, 1905. Serial No. 283,485.

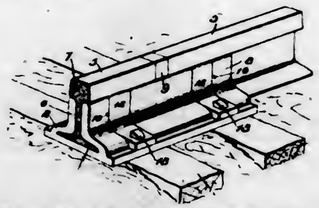

Claim.—1. In a rail-joint the combination with a base having integral flanges thereon, one of said flanges having slots therein; of rails interposed between the flanges and upon the base, the base-flanges of said rails being overlapped by the flanges on the base and said base-flanges having recesses registering with the slots, and holding-blocks secured within the slots and recesses.

2. In a rail-joint the combination with a base and means integral with the base for engaging opposite faces of rails, one of said means having slots therein; of rails disposed between the flanges and upon the base and having recesses therein registering with the slots, and means secured within the slots and recesses for holding the rails against longitudinal movement.

3. A rail-joint comprising a base, integral rail-engaging flanges on the base, one of said flanges having slots therein extending from top to bottom thereof, and locking-blocks adapted to be seated and secured within the slots and to engage recesses in rails between the flanges.

4. A rail-joint comprising a base, rail-engaging flanges integral with and extending from the base, one of said flanges having slots extending from top to bottom thereof, locking-blocks detachably mounted and fitting snugly within the slots and adapted to be seated within recesses in base-flanges of rails within the joint, and a partition connecting the flanges on the base, said partition having an extension adapted to rest between and conforming in contour to the heads of rails.

810,599. **WRENCH.** EUGENE K. ANDERSON, Green Bay, Wis. Filed Apr. 10, 1905. Serial No. 254,813.

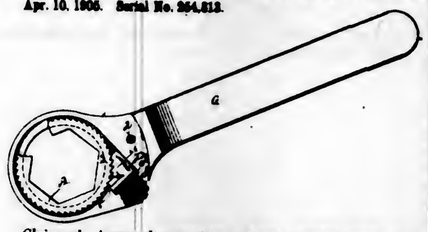

Claim.—1. A wrench comprising a head, a ratchet having loose fit in the head and provided with an angular aperture or socket, and an angular partly-concave block having play in a corresponding depression of said head at a tangent to the ratchet-space, the concavity of the block being provided with a plurality of teeth matching those of the ratchet from which said block has yield in a direction at a right angle to the outer faces of the proximate teeth of said ratchet.

2. A wrench comprising a head, a ratchet having loose fit in the head and provided with an angular aperture or socket, an angular partly-concave block having play in a corresponding depression of said head at a tangent to the ratchet-space, the concavity of the block being provided with a plurality of teeth matching those of the ratchet from which the block has yield in a direction at a right angle to the outer faces of proximate teeth of said ratchet, and a spring arranged under tension to resist yield of said block.

3. A wrench comprising a head, a ratchet loose in the head and having an angular aperture or socket, a pawl-block having play in a space within said head at a tangent to the ratchet-space, the back of the block being convex in opposition to the long side of said play-space; and a spring arranged under tension against the pawl-block in a direction approximating a right angle to the outer faces of the ratchet-teeth opposing said block.

810,600. **MAIL-CRANE.** JAMES L. ATHEY, Woodbine, Iowa. Filed Oct. 26, 1905. Serial No. 284,600.

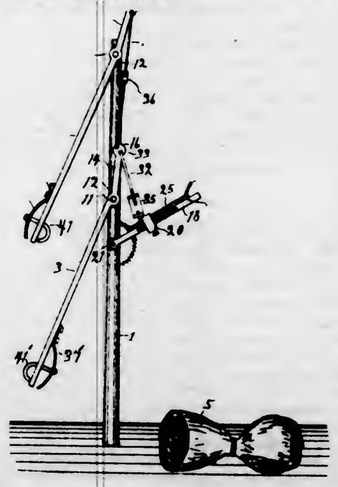

Claim.—1. A mail-crane, in combination; comprising a substantially vertically disposed staff; arms pivotally mounted upon said staff; each of said pivotally-mounted arms being extended longitudinally to form a lever thereon; a link connecting said levers; mechanism attached to said link; and means to control said mechanism.

2. A mail-crane, in combination; comprising a substantially vertically disposed staff; arms pivotally mounted upon said staff; each of said pivotally-mounted arms being extended lengthwise to form a lever thereon; a first link; a second link; said first link forming a pivotal connection between said levers; said second link attached to said first link; mechanism attached to said second link; and means to control said mechanism.

3. A mail-crane, in combination; comprising a substantially vertically disposed supporting-staff; a first sustaining-arm; a second sustaining-arm; a first lever; a second lever; a third lever; a first link; a second link; each of said first and second sustaining-arms being pivotally mounted upon said substantially vertically disposed supporting-staff; said first sustaining-arm being extended beyond its pivotal mounting in a direction substantially lengthwise with said sustaining-arm, to form said first lever; said second sustaining-arm being extended beyond its pivotal mounting in a direction substantially lengthwise to form said second lever; said first link being pivotally mounted upon and forming a connection between said first and second levers; said third lever being mounted upon said supporting-staff; said second link being pivotally mounted upon and forming a connection between said first link and said third lever; mechanism attached to said third lever and means to control said mechanism.

4. A mail-crane, in combination; a suitable supporting-staff; a ratchet-controlled weighted lever pivotally mounted upon said supporting-staff; an upper and a lower supporting-arm pivotally mounted upon said supporting-staff; mail-sack-engaging means attached to said upper and lower supporting-arms; and a link connection between said upper and lower supporting-arm; and said ratchet-controlled weighted lever, substantially as described.

810,601. **ROTARY ENGINE.** BENJAMIN F. AUGUSTINE, Buffalo, N. Y. Filed Aug. 28, 1905. Serial No. 276,149.

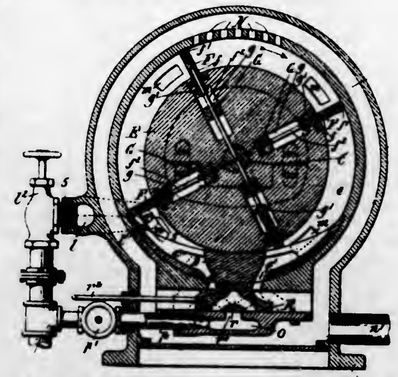

Claim.—1. The combination of a rotary core, a cylinder surrounding said core and contacting therewith to form an abutment, pistons carried by said core and traveling in contact with the inner surface of said cylinder, means for admitting the motive fluid into the cylinder at one side of said abutment and cutting it off to act expansively, a supplemental exhaust-port at the opposite side of the abutment, and a main exhaust-port between said admission means and said supplemental exhaust-port, said abutment having a by-pass passage whereby the fluid can pass by a piston in contact with said abutment and exert its pressure between the preceding piston and said abutment substantially until said preceding piston reaches said main exhaust-port and the succeeding piston passes off of said abutment, substantially as set forth.

2. The combination of a rotary core, a cylinder surrounding said core and contacting therewith to form an abutment, pistons carried by said core and traveling in contact with the inner surface of said cylinder, an admission-port in the end of the cylinder at one side of said abutment, a disk secured to the end of said core and having ports which cooperate with said admission-port to cut off the fluid to

incide with the normal trend of the last, of an aligning-hole located in the wood of the last at the rear of said socket in the same axial plane with the axis of said socket extending at right angles to the normal breast-line of the heel.

3. A last of the kind herein described, wherein the center line diverges from the normal trend of the last, containing two independent thimbles located in the heel with their axes in the plane extending vertically of the bottom of the last midway between the opposite sides of the heel at the wider portions of the bottom edges thereof.

810,595. **AUTOMATIC FIRE-WINDOW.** GOTTLIEB YUNKER and GEORGE SCHWINN, Newark, N. J., assignors to The Newark Cornice and Skylight Works, a Corporation of New Jersey. Filed Oct. 9, 1905. Serial No. 281,987.

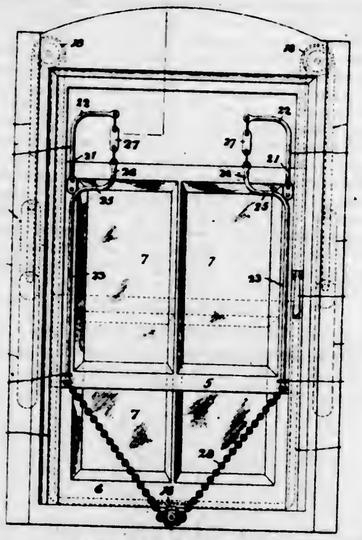

Claim.—1. In a window, the combination of a frame, an upper sash therein, a bracket projecting from said sash above its top, a fusible link depending from said bracket, means normally holding the sash closed and means extending from said link below the bottom of the sash and adapted to secure the same in open position.

2. In a window, the combination of a frame, an upper sash therein, a bracket projecting from said sash above its top, a fusible link depending from said bracket, means normally holding the sash closed, and means attached to said link for holding the sash in open position.

3. In a window, the combination of a frame, an upper sash therein, a bracket projecting from said sash above its top, a fusible link depending from said bracket, means normally holding the sash closed, a slideway upon the side of said sash, and means extending through said slideway from said link below the bottom of the sash and adapted to hold the sash in open position.

4. In a window, the combination of a frame, an upper sash therein, a bracket projecting from said sash above its top, a fusible link depending from said bracket, means normally holding the sash closed, a slideway upon the side of the sash, a rod slidably mounted in said slideway and connected at its upper ends to said link, and means connected to the lower end of said rod for fastening the sash in open position.

5. In a window, the combination of a frame, an upper sash therein, brackets projecting from said sash above its top, fusible links depending from said brackets, means normally holding the said sash closed, slideways upon the opposite sides of the sash, rods slidably mounted one in each slideway and connected at their upper ends to said links, and a chain connecting the lower ends of said rods.

6. In a window, the combination of a frame, an upper sash therein, brackets projecting from said sash above its top, fusible links depending from said brackets, means normally holding the sash closed, eyes upon the opposite sides of said sash near its lower end, rods slidably mounted in said eyes and connected at their upper ends to said links a chain connecting the lower ends of said rods, and means upon the window-frame for engaging said chain.

7. In a window, the combination of a frame, an upper sash therein, brackets projecting from said sash above its top, fusible links depending from said brackets, means normally holding the sash closed, eyes upon the opposite sides of said sash near its lower end, rods slidably mounted in said eyes and connected at their upper ends to said links a chain connecting the lower ends of said rods, and a pulley upon the lower end of the window-frame over which said chain may be hooked.

810,596. **SPRING-JACK WEDGE.** GUSTAVE A. SUHRBIER, New York, N. Y., assignor to J. H. Bunnell and Company, a Corporation of New York. Filed Nov. 17, 1904. Serial No. 233,070.

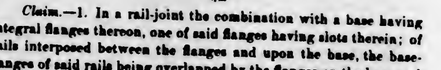

Claim.—1. In a spring-jack wedge or the like, the combination of metallic strips and an insulating-body separating them, with conducting-wires electrically connected to the said strips and sewed to said body.

2. In a spring-jack wedge or the like, the combination of metallic strips, and an insulating-body separating said strips and provided with two sets of perforations, with covered conducting-wires passing through one set of perforations in said body and electrically connected to said strips, and binding-threads passing through the second set of perforations and through the covers of the wires to secure the wires to the body.

810,597. **SHINGLING-HATCHET.** ROBERT B. ALLISON, Topeka, Kans. Filed Jan. 23, 1905. Serial No. 242,417.

Claim.—1. A hatchet-blade provided with a seat, in combination with a gage having its intermediate portion rotatably mounted in the seat, and its terminal portions formed into semicylindrical shoulders that project beyond both sides of the blade, the flat sides of the cylindrical shoulders being both disposed in alinement.

2. A hatchet-blade provided with a seat, in combination with a gage having its intermediate portion held combined with the seat by frictional engagement with the walls thereof, the terminal portions of the gage being cut away to form semicylindrical shoulders that project laterally beyond the sides of the blade, the flat sides of the cylindrical shoulders being both disposed in alinement.

810,598. **RAIL-JOINT.** WALLACE W. ANGLIN, Buffalo, Mo., assignor of one-half to John A. Lamun, Buffalo, Mo. Filed Oct. 19, 1905. Serial No. 283,485.

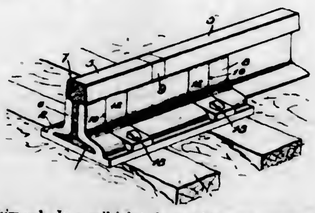

Claim.—1. In a rail-joint the combination with a base having integral flanges thereon, one of said flanges having slots therein; of rails interposed between the flanges and upon the base, the base-flanges of said rails being overlapped by the flanges on the base and said base-flanges having recesses registering with the slots, and holding-blocks secured within the slots and recesses.

2. In a rail-joint the combination with a base and means integral with the base for engaging opposite faces of rails, one of said means having slots therein; of rails disposed between the flanges and upon the base and having recesses therein registering with the slots, and means secured within the slots and recesses for holding the rails against longitudinal movement.

3. A rail-joint comprising a base, integral rail-engaging flanges on the base, one of said flanges having slots therein extending from

top to bottom thereof, and locking-blocks adapted to be seated and secured within the slots and to engage recesses in rails between the flanges.

4. A rail-joint comprising a base, rail-engaging flanges integral with and extending from the base, one of said flanges having slots extending from top to bottom thereof, locking-blocks detachably mounted and fitting snugly within the slots and adapted to be seated within recesses in base-flanges of rails within the joint, and a partition connecting the flanges on the base, said partition having an extension adapted to rest between and conforming in contour to the heads of rails.

810,599. **WRENCH.** EUGENE K. ANDERSON, Green Bay, Wis. Filed Apr. 10, 1905. Serial No. 254,813.

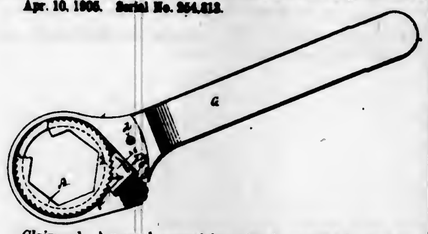

Claim.—1. A wrench comprising a head, a ratchet having loose fit in the head and provided with an angular aperture or socket, and an angular partly-concave block having play in a corresponding depression of said head at a tangent to the ratchet-space, the concavity of the block being provided with a plurality of teeth matching those of the ratchet from which said block has yield in a direction at a right angle to the outer faces of the proximate teeth of said ratchet.

2. A wrench comprising a head, a ratchet having loose fit in the head and provided with an angular aperture or socket, an angular partly-concave block having play in a corresponding depression of said head at a tangent to the ratchet-space, the concavity of the block being provided with a plurality of teeth matching those of the ratchet from which the block has yield in a direction at a right angle to the outer faces of proximate teeth of said ratchet, and a spring arranged under tension to resist yield of said block.

3. A wrench comprising a head, a ratchet loose in the head and having an angular aperture or socket, a pawl-block having play in a space within said head at a tangent to the ratchet-space, the back of the block being convex in opposition to the long side of said play-space; and a spring arranged under tension against the pawl-block in a direction approximating a right angle to the outer faces of the ratchet-teeth opposing said block.

810,600. **MAIL-CRANE.** JAMES L. ATHEY, Woodbine, Iowa. Filed Oct. 26, 1905. Serial No. 284,609.

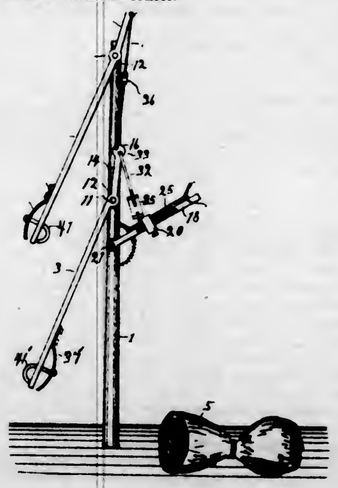

Claim.—1. A mail-crane, in combination; comprising a substantially vertically disposed staff; arms pivotally mounted upon said staff; each of said pivotally-mounted arms being extended longitudinally to form a lever thereon; a link connecting said levers; mechanism attached to said link; and means to control said mechanism.

2. A mail-crane, in combination; comprising a substantially vertically disposed staff; arms pivotally mounted upon said staff; each of said pivotally-mounted arms being extended lengthwise to form a lever thereon; a first link; a second link; said first link forming a pivotal connection between said levers; said second link attached to said first link; mechanism attached to said second link; and means to control said mechanism.

3. A mail-crane, in combination; comprising a substantially vertically disposed supporting-staff; a first sustaining-arm; a second sustaining-arm; a first lever; a second lever; a third lever; a first link; a second link; each of said first and second sustaining-arms being pivotally mounted upon said substantially vertically disposed supporting-staff; said first sustaining-arm being extended beyond its pivotal mounting in a direction substantially lengthwise with said sustaining-arm, to form said first lever; said second sustaining-arm being extended beyond its pivotal mounting in a direction substantially lengthwise to form said second lever; said first link being pivotally mounted upon and forming a connection between said first and second levers; said third lever being mounted upon said supporting-staff; said second link being pivotally mounted upon and forming a connection between said first link and said third lever; mechanism attached to said third lever and means to control said mechanism.

4. A mail-crane, in combination; a suitable supporting-staff; a ratchet-controlled weighted lever pivotally mounted upon said supporting-staff; an upper and a lower supporting-arm pivotally mounted upon said supporting-staff; mail-sack-engaging means attached to said upper and lower supporting-arms; and a link connection between said upper and lower supporting-arm; and said ratchet-controlled weighted lever, substantially as described.

810,601. **ROTARY ENGINE.** BENJAMIN F. AUGUSTINE, Buffalo, N. Y. Filed Aug. 28, 1905. Serial No. 276,149.

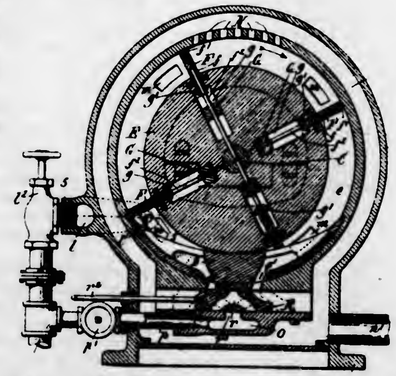

Claim.—1. The combination of a rotary core, a cylinder surrounding said core and contacting therewith to form an abutment, pistons carried by said core and traveling in contact with the inner surface of said cylinder, means for admitting the motive fluid into the cylinder at one side of said abutment and cutting it off to act expansively, a supplemental exhaust-port at the opposite side of the abutment, and a main exhaust-port between said admission means and said supplemental exhaust-port, said abutment having a by-pass passage whereby the fluid can pass by a piston in contact with said abutment and exert its pressure between the preceding piston and said abutment substantially until said preceding piston reaches said main exhaust-port and the succeeding piston passes off of said abutment, substantially as set forth.

2. The combination of a rotary core, a cylinder surrounding said core and contacting therewith to form an abutment, pistons carried by said core and traveling in contact with the inner surface of said cylinder, an admission-port in the end of the cylinder at one side of said abutment, a disk secured to the end of said core and having ports which cooperate with said admission-port to cut off the fluid to

set expansively, an exhaust-port, said abutment having a by-pass passage whereby the fluid from the admission-port can pass by a piston in contact with said abutment and exert its pressure between the preceding piston and said abutment substantially until said preceding piston reaches said exhaust-port and the succeeding piston passes off of said abutment, substantially as set forth.

3. The combination of a rotary core, a cylinder surrounding said core and contacting therewith to form an abutment, pistons carried by said core and traveling in contact with the inner surface of said cylinder, an admission-port in the end of the cylinder at one side of said abutment, a disk secured to the end of said core and having ports which coöperate with said admission-port to cut off the fluid to act expansively, an exhaust-port, said abutment having by-pass passages in its opposite sides whereby the fluid can pass by a piston in contact with said abutment, ports connecting with said by-pass passages, and a reversing-valve controlling said ports and adapted in one position to close the port at the side of the abutment adjacent to said admission-port and open the other port to serve as a supplemental exhaust-port, substantially as set forth.

4. The combination of a rotary core, a surrounding cylinder concentric with said core and having an eccentric portion which contacts with the core to form an abutment, pistons carried by said core and traveling in contact with said cylinder, admission-ports in the ends of the cylinder at one side of said abutment, a valve controlling the supply thereto, disks secured to the ends of the core and having ports which coöperate with said admission-ports to cut off the fluid to act expansively, said cylinder having a main exhaust-port and also ports at opposite sides of said abutment, a fluid-supply, and a reversing-valve controlling said fluid-supply and ports at opposite sides of the abutment and constructed to close the port at the side of the abutment next to the admission-ports and open the port at the opposite side of the abutment to serve as a supplemental exhaust-port, or to connect the last-mentioned port with said fluid-supply and open the port next to the admission-port for reversing the engine, substantially as set forth.

5. The combination of a rotary core, a cylinder surrounding said core and contacting therewith at one side to form an abutment, pistons carried by said core and traveling in contact with the inner surface of said cylinder, means for admitting motive fluid to the cylinder at one side of said abutment and cutting it off to act expansively, a valve controlling the supply of fluid to said means, and a reversing mechanism independent of said cut-off mechanism for admitting and exhausting motive fluid to and from the cylinder at opposite sides of said abutment, substantially as set forth.

6. The combination of a rotary core, a cylinder surrounding the core and contacting therewith at one side to form an abutment, pistons slidably mounted in radial guides in said core, means for holding said pistons out against the inner surface of the cylinder, counterweights connected to said pistons, stops to limit the outward movement of the pistons, shoes on said pistons which are pressed against the cylinder independently of the means for holding said pistons out, and means for admitting an exhausting fluid to and from the cylinder, substantially as set forth.

7. The combination of a rotary core, a cylinder surrounding said core and contacting therewith at one side to form an abutment, pistons carried by said core and traveling in contact with the inner surface of said cylinder, means for admitting motive fluid to the cylinder at one side of said abutment and cutting it off to act expansively, admission and exhaust ports at opposite sides of said abutment, and a reversing-valve controlling said ports to admit and exhaust motive fluid to and from the cylinder at opposite sides of said abutment, said reversing-valve being also constructed and arranged to close the admission and exhaust port at the side of the abutment adjacent to said cut-off means and open the admission and exhaust port at the opposite side of the abutment, substantially as set forth.

8. The combination of a rotary core, a cylinder surrounding the core and contacting therewith at one side to form an abutment, pistons slidably mounted in radial guides in said core, means for holding said pistons out against the inner surface of the cylinder, stops to limit the outward movement of said pistons, counterweights connected to said pistons and movable in guides in said core, and means for admitting and exhausting fluid to and from the cylinder, substantially as set forth.

9. The combination of a rotary core, a cylinder surrounding the core and contacting therewith at one side to form an abutment, diametrically opposite pistons arranged to slide in radial guides in said core, a counterweight arranged diametrically opposite to each piston to slide in a radial guide in the core, rods connecting each piston and the opposite counterweight and passing through the counterweight for the opposite piston, means for holding the pistons in contact with the cylinder, and means for admitting and exhausting fluid to and from the cylinder, substantially as set forth.

10. The combination of a rotary core, a cylinder surrounding the core and contacting therewith at one side to form an abutment, pistons carried by said core, cams secured to the heads of said cylinder for holding the pistons in contact with the inner surface of the cylinder, and plates secured to the ends of said core and located between said cams and the heads of the cylinder, packing-rings between the heads of the cylinder and said end plates, packing-rings between the ends of said core and the inner sides of said cams, and means for admitting and exhausting fluid to and from the cylinder, substantially as set forth.

810,602. BORING-TOOL. CHARLES BAAR, Grand Rapids, Mich. Filed Feb. 6, 1905. Serial No. 244,495.

Claim.—1. A boring-tool comprising a head having a socket in its axis and also having tangential slots at opposite sides of the socket and extending transversely through the head, a bit inserted in the socket, cutters in the slots, and a binding-screw extending transversely through the head and cutters.

2. A boring-tool comprising a head having an axial socket at one end, and a shank at the other end, and also having upwardly-diverging tangential slots at opposite sides of the socket and extending transversely through the head, a bit inserted in the socket, cutters inserted in the slots, and a binding-screw extending through the axis of the head and through openings in the cutters.

3. A boring-tool comprising a head having a socket in its axis and also having tangential slots at opposite sides of the socket and extending transversely through the head, a bit inserted in the socket, cutters having both end and side cutting edges and inserted in the slots, and a binding-screw extending transversely through the head and cutters.

4. A boring-tool comprising a cylindrical head having an axial socket at one end and a shank at the other end, and also having upwardly-diverging tangential slots at opposite sides of the socket, a bit in the socket, cutters in the slots and provided with internal openings, and a screw extending through the head and cutters.

5. A boring-tool comprising a head having transverse tangential slots extending therethrough, cutters inserted in said slots and a binding-screw extending through the head and cutters, whereby the cutters are clamped in the slots.

6. A boring-tool, comprising a head having transverse upwardly-diverging slots at opposite sides of its axis, cutters inserted in said slots, and a binding-screw extending transversely through the axis of the head and through the cutters.

7. A boring-tool comprising an integral head having transverse upwardly-diverging slots therethrough, cutters inserted in the slots and having both end and side cutting edges, and a clamping-bolt extending transversely through the axis of the head and through the cutters.

810,603. PNEUMATIC TOOL. WILLIAM B. BADGER, Quincy, Mass. Filed July 20, 1904. Serial No. 217,304.

Claim.—1. In a pneumatic impact-tool, a cylinder and piston, a valve-casing having a valve therein for controlling the movements of the piston, a head secured to said cylinder and held in fixed relation thereto and to said valve-casing, a handle or support upon which said head is rotatably mounted and means to rotate said cylinder.

2. In a pneumatic impact-tool, a cylinder and piston, a valve-casing having a valve therein for controlling the movements of the piston, a head secured to said cylinder and held in fixed relation thereto and to said valve-casing, a handle or support upon which said head is rotatably mounted and longitudinally movable with relation thereto and means to rotate said cylinder.

3. In a pneumatic impact-tool, a cylinder and piston, a valve-casing having a valve therein for controlling the movements of the

piston, a head secured to said cylinder and held in fixed relation thereto and to said valve-casing, a handle or support upon which said head is rotatably mounted, a passage in said handle which may be connected with a source of fluid-pressure supply, means to control the admission of fluid to said valve-casing, and means to rotate said cylinder.

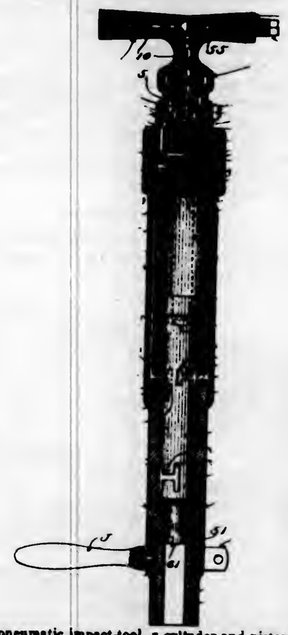

4. In a pneumatic impact-tool, a cylinder and piston, a valve-casing having a valve therein for controlling the movements of the piston, a head secured to said cylinder and held in fixed relation thereto and to said valve-casing, a handle or support upon which said head is rotatably mounted, said head having a passage for motive fluid which is alternately placed in communication with opposite ends of the cylinder, a passage in said handle which may be connected with a source of fluid-pressure supply and is adapted to be placed in communication with said passage in the head, and means to rotate said cylinder with relation to said handle and source of fluid-pressure supply.

5. A pneumatic impact-tool, having a cylinder provided with a head, a grasping-handle having a projecting stem longitudinally movably mounted in the head, said head having a passage communicating with the interior of the cylinder and a passage through said handle and stem which may be connected with a source of fluid-pressure supply and is adapted to communicate with the passage in the head, means whereby said cylinder may be rotated with relation to said grasping-handle, and means whereby the motive fluid may be supplied to the cylinder through said passages when the handle is in its forward position and the cylinder is rotated with relation to said grasping-handle and source of fluid-pressure supply.

6. A pneumatic impact-tool having a cylinder provided with a head adapted to receive the stem of a grasping-handle, and having a passage communicating with the interior of the cylinder, a grasping-handle having a stem longitudinally movably mounted in said head, a passage therein which may be connected with a source of fluid-pressure supply, said passage leading to an outlet in the stem which is adapted to communicate with the passage in the head, means whereby the cylinder may be rotated with relation to said grasping-handle, and means whereby the motive fluid will be supplied to the cylinder through said passages when the handle is in its forward position and the cylinder is rotated with relation to said grasping-handle and source of fluid-pressure supply.

7. A pneumatic impact-tool having a cylinder provided with a head adapted to receive the stem of a grasping-handle, and having a passage communicating with the interior of the cylinder, a grasping-handle provided with a stem, a passage in said handle and stem which may be connected with a source of fluid-pressure supply, said passage leading to an outlet in the stem, said stem being rotatably mounted and longitudinally movable in the head, means whereby the cylinder may be rotated with relation to the grasping-handle, means whereby the motive fluid may be supplied to the cylinder through said passages when the handle is in its forward position and the cylinder is rotated with relation to the grasping-handle and source of fluid-pressure supply, and means whereby said stem is retained in the head.

8. A pneumatic impact-tool having a cylinder provided with a head held in fixed relation thereto and having a passage communicating with the interior of the cylinder, a grasping-handle provided with a stem projecting forwardly at an angle thereto and rotatably mounted in the head, a passage in said handle and stem which may be connected with a source of fluid-pressure supply, said passage leading to an outlet in said stem, means to rotate said cylinder and head, and means whereby said outlet in the stem may be maintained in communication with said passage in the head when the latter is rotated with relation to said grasping-handle and stem.

9. A pneumatic impact-tool having a cylinder provided with a head held in fixed relation thereto and having a passage communicating with the interior of the cylinder, a handle having a stem rotatably mounted in the head and a passage therein for the motive fluid, said handle having a passage therein which may be connected with a source of fluid-pressure supply, said passage being connected with an outlet in said stem, means to rotate said cylinder and head, means whereby said outlet in the stem may be brought in communication with said passage in the head to furnish a supply of motive fluid thereto when the tool is in operation and when the cylinder and head are rotated with relation to the grasping-handle.

10. A pneumatic impact-tool having a cylinder provided with a head adapted to receive the stem of a grasping-handle, and having a passage communicating with the interior of the cylinder, a handle having a stem and a grasping portion projecting at an angle from said stem, a passage in the stem and grasping portion of the handle which may be connected with a source of fluid-pressure supply, said passage leading to an outlet in the stem, said stem being rotatably mounted and longitudinally movable in the head, means for retaining the stem in the head, means whereby the cylinder may be rotated with relation to the handle and means whereby the motive fluid may be supplied to the cylinder through said passages when said handle is in its forward position and the cylinder is so rotated with relation to said handle and source of fluid-pressure supply.

11. A pneumatic impact-tool having a cylinder provided with a head adapted to receive the stem of a grasping-handle, and having a passage communicating with the interior of the cylinder, a grasping-handle having a stem longitudinally and rotatably mounted in the head, said handle and stem having a passage which may be connected with a source of fluid-pressure supply and is adapted to communicate with the passage in the head, means whereby the cylinder may be rotated with relation to the grasping-handle, and means whereby the motive fluid may be supplied to the cylinder through said passages when the handle is in its forward position and the cylinder is so rotated with relation to said handle and source of fluid-pressure supply.

12. A pneumatic impact-tool having a cylinder provided with a head adapted to receive the stem of a grasping-handle, and having a passage communicating with the interior of the cylinder, a grasping-handle having a stem longitudinally and rotatably mounted in the head, means for retaining said stem in the head, said handle and stem having a passage which may be connected with a source of fluid-pressure supply and is adapted to communicate with the passage in the head, means whereby the cylinder may be rotated with relation to the grasping-handle, and means whereby the motive fluid may be supplied to the cylinder through said passages when the handle is in its forward position and the cylinder is so rotated with relation to said handle and source of fluid-pressure supply.

13. A pneumatic impact-tool having a cylinder provided with a head adapted to receive the stem of a grasping-handle, and having a passage communicating with the interior of the cylinder, a grasping-handle having a stem longitudinally and rotatably mounted in the head, means for retaining said stem in the head, said handle and stem having a passage which may be connected with a source of fluid-pressure supply and is adapted to communicate with the passage in the head, when the handle and stem are in a forward position, means whereby the cylinder may be rotated with relation to the grasping-handle, and means whereby the motive fluid may be supplied to the cylinder through said passages when the cylinder is so rotated with relation to said handle and source of fluid-pressure supply.

14. A piston impact-tool having a cylinder and a grasping-han-

die provided with a projecting stem mounted rotatably and longitudinally to said cylinder, a passage in the handle and stem which may be connected with a source of fluid-pressure supply, means to control the admission of motive fluid to the interior of the cylinder, a handle secured to the cylinder for rotating the latter, and means whereby the motive fluid may be supplied to the cylinder through said passage when said grasping-handle is in its forward position and the cylinder is rotated with relation to the grasping-handle and source of pressure-supply.

15. A pneumatic impact-tool having a cylinder provided with a head, a passage therein communicating with the interior of the cylinder, a grasping-handle provided with a stem longitudinally and rotatably mounted in the head, a passage in the handle and stem which may be connected with a source of fluid-pressure supply and is adapted to communicate with the passage in the head when the handle is in a forward position, a handle secured to the cylinder for rotating the latter, and means whereby the motive fluid may be supplied to the cylinder through said passages when said grasping-handle is in its forward position and the cylinder is rotated with relation to the grasping-handle and the source of fluid-pressure supply.

16. A pneumatic impact-tool having a cylinder provided with a head, a passage therein communicating with the interior of the cylinder, a grasping-handle provided with a stem longitudinally and rotatably mounted in the head, a passage in the handle and stem which may be connected with a source of fluid-pressure supply and is adapted to communicate with the passage in the head, said cylinder being provided with a forward head secured thereto and having a socket therein adapted to engage the shank of a working tool, a handle secured to the cylinder for rotating the latter and said working tool, and means whereby the motive fluid may be supplied to the cylinder through said passages when the said grasping-handle is in its forward position and the cylinder is rotated with relation to said grasping-handle and source of fluid-pressure supply.

17. A pneumatic impact-tool having a cylinder containing a piston, a valve for controlling the motive fluid within said tool, a valve-casing located within the rear of the piston-chamber, a head and a handle having a pressure-supply passage therethrough leading to the valve-casing, said head being rotatably mounted on said handle, means for holding said head in a fixed relation to the cylinder, and means for rotating said cylinder and head with relation to said handle.

18. An impact-tool having a cylinder provided with a head secured in fixed relation thereto, a handle or support on which said head is rotatably mounted, a passage in said handle which may be connected with a source of fluid-pressure supply, a passage in said head to which the motive fluid is supplied by said passage in the handle when the tool is in operation, and means to rotate said cylinder and head with relation to said handle.

19. An impact-tool having a cylinder provided with a head secured in a fixed relation thereto, a handle or support on which said head is rotatably mounted, a passage in said handle which may be connected with a source of fluid-pressure supply, a passage in said head to which the motive fluid is supplied by said passage in the handle when the tool is in operation, means to rotate said cylinder with relation to said handle and a forward head to the cylinder adapted to engage the shank of a working tool to rotate the latter.

20. An impact-tool having a cylinder provided with a head secured in fixed relation thereto, a handle or support on which said head is rotatably mounted, a passage in said handle which may be connected with a source of fluid-pressure supply, a passage in said head to which the motive fluid is supplied by said passage in the handle when the tool is in operation, means to rotate said cylinder and head with relation to said handle and means whereby the motive fluid will be supplied through said passage in the handle to said passage in the head when the latter is rotated with relation to said handle.

21. An impact-tool having a cylinder provided with a head secured in fixed relation thereto, a valve-block having a valve therein for controlling the movements of the piston, a handle or support on which said head is rotatably mounted, a passage in said handle which may be connected with a source of fluid-pressure supply, a passage in said head through which the motive fluid may be supplied from said passage in the handle to the valve-block and means to rotate said cylinder and head with relation to said handle.

22. An impact-tool having a cylinder provided with a head secured in fixed relation thereto, a valve-block having a valve therein for controlling the movements of the piston, a handle or support on which said head is rotatably mounted, a passage in said handle which may be connected with a source of fluid-pressure supply, a passage in said head through which the motive fluid may be supplied from said passage in the handle to the valve-block, means to rotate said cylinder and head, and means whereby the motive fluid may be supplied through said passage in the handle to said passage in the head when the latter is rotated with relation to said handle.

23. An impact-tool having a cylinder provided with a head secured in fixed relation thereto, a handle or support on which said head is rotatably and longitudinally mounted, a passage in said handle which may be connected with a source of fluid-pressure, a passage in said head to which the motive fluid is supplied from said passage in the handle, when the latter is in its forward position and the cylinder and head are rotated with relation to said handle.

24. A pneumatic impact-tool having a grasping-handle with an air-passage therethrough, a cylinder, a cylinder-head to receive said handle and formed with an air-passage adapted to communicate with an outlet from the passage in the handle, said handle having a stem which fits into the interior of the head and having an annular flange which fits outside of said head, thereby forming an annular grooved bearing for the rear end of the head.

810,604. PROTECTOR FOR WINDOWS. GEORGE BAIER, Buffalo, N. Y., assignor of one-half to George Baier, Jr., Buffalo, N. Y. Filed Apr. 10, 1905. Serial No. 254,841.

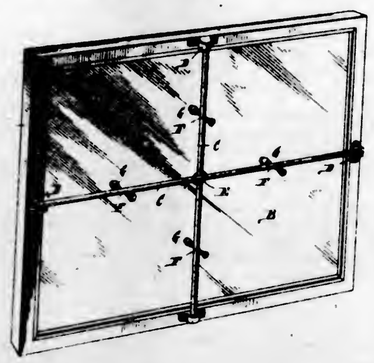

Claim.—1. In a window-protector, the combination of a support, and a pressure member bearing against the window and adjustable on said support.

2. In a window-protector, the combination of a support, and pressure members carried by said support and disposed at an angle thereto, said pressure members having yielding pressure ends bearing against the window.

3. In a window-protector, the combination of a support, and a pressure member carried by said support and disposed at a right angle to the latter to bear against the window.

4. In a window-protector, the combination of a support having a threaded aperture, a pressure member adjustable in said aperture and bearing against the window.

5. In a window-protector, the combination of a support, a pressure member carried by said support and comprising a threaded shank adjustable toward and from the window, and a pressure-piece at the end of said shank to bear against the window.

6. In a window-protector, the combination with a window and a window-frame, of a supporting-bar having its ends secured to said frame, and pressure members carried by said bar and adjustable thereon

7. In a window-protector, the combination with a window and a window-frame, of a supporting-bar having its ends secured to said frame and provided with threaded apertures, and pressure members adjustable in said apertures and adapted to bear against the window.

8. In a window-protector, the combination with a window and a window-frame, of a supporting-bar having its ends secured to said frame and provided with transverse threaded apertures, and pressure members comprising each a threaded shank passing through one of said apertures and a yielding pressure-piece at the end of said shank in contact with the window.

9. In a window-protector, the combination with a window and a window-frame, of a supporting-bar having its ends secured to said frame and provided with transverse threaded apertures, and pressure members comprising each a threaded shank passing through one of said apertures, a socket in which the inner end of said shank is revolubly held, and a yielding plug secured within said socket and extending therefrom to bear against the window.

10. In a window-protector, the combination with a window and a window-frame, of two supporting-bars crossing each other and secured at their ends to the window-frame, a connection for said bars at their point of crossing, and pressure-pieces carried by said bars and adjustable toward and from the window.

810,605. CONVEYER. CLARENCE K. BALDWIN and THOMAS ROBINS, Jr., New York, N. Y., assignors to The Robins Conveying Belt Co., a Corporation of New Jersey. Filed Mar. 18, 1903. Serial No. 148,360.

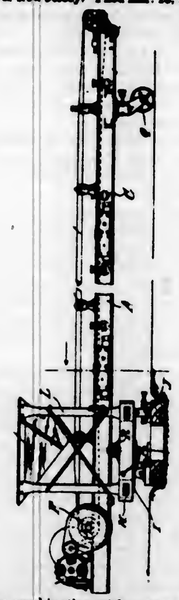

Claim.—1. The combination with a support, of a conveyer and conveyer-frame mounted to travel thereon, and having the delivery end of the conveyer both vertically and horizontally movable, and an engine or motor for operating the conveyer mounted upon the conveyer-frame, for substantially the purposes set forth.

2. The combination with a support, of a conveyer and conveyer-frame mounted to travel thereon, and having the delivery end of the conveyer movable in all directions in a horizontal plane, and an engine or motor for operating the conveyer mounted upon the conveyer-frame, for substantially the purposes set forth.

3. The combination with a turn-table, of a conveyer and conveyer-frame mounted for pivotal movement in relation to the turn-table, said conveyer and frame being capable of bodily travel also in a horizontal plane only over said table and transversely to the vertical axis thereof, for substantially the purposes set forth.

4. The combination with a turn-table, of a conveyer and conveyer-frame pivotally mounted relatively to the table, said conveyer and frame also being slidable transversely across the table, for substantially the purposes set forth.

5. The combination with a turn-table, of a hopper, a conveyer and conveyer-frame pivotally and slidably mounted relatively to the turn-table and hopper, for substantially the purposes set forth.

6. The combination with the turn-table, of a hopper, a conveyer and conveyer-frame pivotally and slidably mounted relatively to the turn-table and hopper, and an engine or motor for operating the conveyer mounted upon the conveyer-frame, for substantially the purposes set forth.

7. The combination with a continuously-traveling belt, of a hopper and a shaking feeder-chute, one end of which chute moves in substantially a horizontal plane, whereby the relative distance between the end of the chute and the traveling belt remains practically constant and injury to the belt is avoided, and means for reciprocating said chute, for substantially the purposes set forth.

8. The combination with a continuously-traveling belt, of a hopper and feeder-chute, said chute being suspended to swing at one end and provided with rollers at the other end, a horizontal track for said rollers, and means for imparting a reciprocating motion to the said chute to feed the material to the belt, for substantially the purposes set forth.

9. The combination with a continuously-traveling belt, of a hopper and a shaking feeder-chute, one end of which is mounted to swing, and the other end of which is movable in substantially a horizontal plane, and means for preventing the chute from swinging sidewise, whereby injury to the belt is prevented, and means for imparting a reciprocating motion to the chute, for substantially the purposes set forth.

10. The combination with a continuously-traveling belt, of a hopper and a feeder-chute, one end of which is mounted to swing, and the other end of which is mounted to move in substantially a horizontal plane, means for reciprocating said chute, and means for adjusting the angle of the chute, and means for varying the throw, for substantially the purposes set forth.

11. In a conveyer, the combination with a vertically-adjustable main frame, of a jointed section pivotally connected thereto, a conveyer carried by both said frames, and an engine or motor for operating the conveyer mounted upon said pivotally-connected section of the frame, for substantially the purposes set forth.

12. The combination with a shaking feeder-chute, of a swinging hanger therefor, and a substantially smooth track upon which the delivering end of the chute is supported and upon which the chute may be given a reciprocatory movement, for substantially the purposes set forth.

13. The combination with a shaking feeder-chute, of a swinging hanger near the receiving end of the chute, and a substantially smooth track upon which the delivering end of the chute is supported and upon which it is susceptible of reciprocatory movement, for substantially the purposes set forth.

14. The combination with a shaking feeder-chute, having its delivering end supported for reciprocatory movement in a horizontal plane, of a swinging support for the receiving end of the chute, and means for reciprocating the chute, for substantially the purposes set forth.

15. The combination with a shaking feeder-chute, of a conveyer to which said chute is adapted to deliver material, a swinging hanger for said chute, and supporting devices for the delivering end of said chute which permit the chute to be given a reciprocatory movement in a plane substantially parallel to the conveyer, for substantially the purposes set forth.

16. The combination with a conveyer, of a shaking feeder-chute, a swinging support for the receiving end of the chute, a track substantially parallel with said conveyer upon which the delivering end of said chute is supported, and means for reciprocating the delivering end of said chute for substantially the purposes set forth.

17. The combination with a shaking feeder-chute, of swinging suspension devices for the receiving end of said chute, a substantially smooth track upon which the delivering end of said chute is supported, and means for reciprocating the delivering end of said chute along said track, said means being susceptible of adjustment to vary the throw of the chute, for substantially the purposes set forth.

18. The combination with a shaking feeder-chute set on an incline, of swinging suspension devices for the receiving end of said chute which are adjustable in length, and a substantially smooth track upon which the delivering end of said chute is supported and upon which it may be given a reciprocatory movement, for substantially the purposes set forth.

19. The combination with an inclined feeder-chute, of means for imparting oscillatory movement to its upper end, and means for imparting reciprocatory movement to its lower end.

810,606. MUSIC-ROLL AND ADJUSTABLE DRIVING-SUPPORT THEREFOR. HENRY P. BALL, Schenectady, N. Y., assignor of one-half to Samuel Insull, Chicago, Ill. Filed Oct. 26, 1903. Serial No. 178,503.

Claim.—1. A music-roll comprising a tubular body portion, flange portions secured to said body portion, and a music-strip portion wound upon said body portion, said body portion and music-strip portion having the same coefficient of expansion and contraction, in combination with a spindle having a hinged joint and forming a part of a mechanical musical instrument, and over which said body and music-strip portions may be placed and by which they may be driven.

2. A music-roll comprising a body portion, flange portions, and

a music-strip portion, in combination with a spindle hinged at one end to and forming a part of a mechanical musical instrument, together with means for securing said music-roll in position upon said spindle.

3. A music-roll comprising a body portion, flange portions and a music-strip portion, in combination with a spindle forming a part of a mechanical musical instrument, said spindle hinged at one end and coacting at the other end with driving means.

4. A music-roll comprising a tubular body portion, flange portions and a strip portion, in combination with a spindle forming a part of a mechanical musical instrument and adapted to enter said tubular portion, said spindle hinged at one end in a resilient bearing, and coacting at the opposite end with the roll-driving head of a mechanical musical instrument.

5. A music-roll comprising a body portion and a strip portion, in combination with a spindle forming a part of a mechanical musical instrument, and mounted at one end in a ball-and-socket joint carried by a resilient bearing, and provided at its other end with means for connecting said spindle with the usual roll-driving head of a mechanical musical instrument.

6. A music-roll comprising a tubular body portion, flange portions, and a music-strip portion, in combination with a spindle, a bearing for one end of the spindle permanently connected to a mechanical musical instrument and adapted to permit the opposite end of the spindle to be moved in a circular direction around the point of attachment of the bearing, together with means for driving said spindle.

7. In a mechanical musical instrument, a roll-spindle secured at one end of said instrument by a universal joint, and detachably connected at its other end with the usual roll-driving head of the instrument.

8. In a mechanical musical instrument, a spindle secured at one end to said instrument through a ball-and-socket joint mounted in a resilient sleeve, and at the other end through a device coacting with the usual roll-driving head of said instrument.

9. In a mechanical musical instrument, a spindle secured at one end to said instrument through a ball-and-socket joint mounted in a resilient sleeve, and at the other end through a device coacting with the usual roll-driving head of said instrument, together with a separable music-roll on said spindle having its body portion tubular, with flanges at the ends and carrying a perforated music-strip.

10. In a mechanical musical instrument, a spindle having two diameters, and connected at one end to said instrument through a universal joint, and detachably connected at its other end to said instrument through a flange-joint.

11. In combination in a mechanical musical instrument, a driving-spindle having two diameters and connected at one end to said instrument through a universal joint, means for driving said spindle, a music-roll adapted to coact with said spindle, and means on the spindle whereby the music-roll will be rotated when the spindle is rotated.

12. In combination in a mechanical musical instrument, a spindle attached at one end to said instrument through a universal joint, a longitudinally-movable bearing for said joint, a removable music-roll mounted on said spindle, means for securing said music-roll on said spindle, and means for driving said spindle.

13. In combination in a mechanical musical instrument, a driving-spindle connected at one end to said instrument through a universal joint, a longitudinally-movable bearing for said joint, said spindle of greater diameter at one end than at the other, a detachable music-roll on said spindle, a ring secured to the interior of the music-roll, a spring device mounted upon the spindle for effecting engagement between the spindle and the music-roll, and means for driving the music-roll.

14. In a mechanical musical instrument, a supporting-spindle for the music-roll universally mounted at one end in a longitudinally-movable bearing, a driver for the spindle, and means for connecting the spindle to the driver.

15. In a mechanical musical instrument, a spindle having a ball-and-socket joint at one end, a driver therefor coacting with the opposite end of the spindle, and detachable means for detaching the spindle from the driver.

16. In a mechanical musical instrument, a spindle hinged at one end to the instrument, a driving means for the spindle, and detachable means for connecting said spindle to the driving means.

17. In a mechanical musical instrument, a spindle hinged to a longitudinally-movable bearing supported in the instrument, a driving means for the spindle, and detachable means for connecting said spindle with the driving means.

18. In combination in a mechanical musical instrument, a music-roll having a tubular body, a structurally-independent spindle hinged to the instrument, a driver for the spindle, and means for detaching the spindle from the driver.

19. In combination in a mechanical musical instrument, a music-roll comprising a body portion, flange portions, and a strip portion, a hinged spindle, a driver for the same, and detachable means for connecting said spindle with the driver.

20. In combination in a mechanical musical instrument a music-roll having a tubular body, a structurally-independent spindle, and means introduced between the two which will act to automatically center the music-roll longitudinally on the spindle and irrespective of the length of the music-roll.

21. In combination in a mechanical musical instrument, a perforated strip, a tubular body on which said strip is wound, a stop device inside of the tubular body, and a spindle carrying a device for engaging said stop device.

22. In a mechanical musical instrument, a music-roll having a hollow body and a clutch member at its center, in combination with a structurally-independent spindle passing through the body, and a resilient catch engaging the spindle with the body.

23. In a mechanical musical instrument, a music-roll having a hollow body of hygroscopic material and a clutch member at its center, in combination with a structurally-independent spindle passing through the body, and a clutch member on the spindle engaging with the first-named clutch member.

24. In a mechanical musical instrument, a music-roll having a hollow paper body and a clutch member at its center, and a structurally-independent spindle passing through the body engaging with the clutch member, and means for driving the music-roll by the spindle.

25. In a mechanical musical instrument, a music-roll having a hollow body, a flange at each end thereon, and a clutch member at its center, in combination with a structurally-independent spindle passing through the body, and a clutch member thereon locating the body longitudinally on the spindle in one position.

26. In a mechanical musical instrument a music-roll having a hollow body, a structurally-independent spindle, and a clutching device situated between the two members and adapted, irrespective of the length of the music-roll, to secure said two members together at their centers, leaving the ends thereof free.

27. In a mechanical musical instrument a music-roll having a hollow body formed of hygroscopic material, a structurally-independent supporting spindle, a clutching device situated between the two members, said clutching device comprising a ring situated on the interior and at the center of the hollow body, and a spring device mounted on the surface and at the center of the spindle and adapted to center the music-roll on the spindle and irrespective of the length of the music-roll.

28. In a mechanical musical instrument the combination of a music-roll, an independent supporting-spindle, a clutching device situated between the center of the music-roll and the center of the spindle and adapted to hold the music-roll in a central position on the spindle and irrespective of its length.

29. In a mechanical musical instrument, a roll-spindle having a clutch device for detachably securing the roll in one position thereon, and means for transmitting motion from the spindle to the roll.

30. In a mechanical musical instrument, the combination of a music-roll comprising a hollow supporting-body, flanges at the end of said body, a slotted plate in one of said flanges, a separate supporting-spindle provided with keys at one end, which coact with the slots in the slotted plate, and means situated partially on the interior of the body at its center and partially on the exterior of the spindle at its center and adapted to coact to define the position of the body upon the spindle.

810,607. HEATER. ARCHIE W. BANKS, Rockford, Ill., assignor of one-fifth to Martin A. Banks, Rockford, Ill. Filed Feb. 29, 1904. Serial No. 196,946.

Claim.—1. In a heater, an outer casing, a fire-pot located within the casing leaving an air-conduit around the fire-pot, a deflecting-plate located over the upper edge of the fire-pot leaving air-passages between the plate and fire-pot, two vertical partitions at the sides of the fire-pot stopping short of the bottom of the fire-pot, and a vertical air passage-way at the back of the heater communicating with the conduit between the partitions.

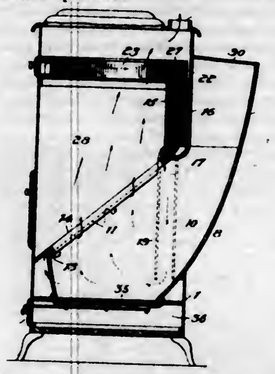

2. In a heater, an outer casing, a fire-pot located within the casing leaving an air-conduit around the fire-pot, a deflecting-plate located over the upper edge of the fire-pot leaving air-passages between the plate and fire-pot, two vertical partitions at the sides of the fire-pot stopping short of the bottom of the fire-pot, a vertical air passage-way at the back of the heater communicating with the conduit between the partitions, and a top formed with an annular passage-way having a communication with the vertical passage-way and with the outer air.

3. In a heater, an outer casing, a fire-pot located within the casing leaving an air-conduit around the fire-pot, a deflecting-plate located over the upper edge of the fire-pot leaving air-passages between the plate and fire-pot, two vertical partitions at the sides of the fire-pot stopping short of the bottom of the fire-pot, a vertical air passage-way at the back of the heater communicating with the conduit between the partitions, and a top formed with an annular passage-way having a communication with the vertical passage-way and with the outer air, the fire-pot having a fuel-magazine at its rear and separated from the combustion-chamber by the vertical air passage-way.

810,608. WEB-PERFECTING PRINTING-PRESS. ENGLAND J. BARNES, Morgan Park, Ill. Filed Apr. 24, 1903. Renewed Apr. 24, 1905. Serial No. 257,695.

Claim.—1. In a web-perfecting printing-press, the combination with an impression-cylinder, of a type-cylinder and a numbering device, each capable of a planetary adjustment around the circumference of said impression-cylinder, said type-cylinder being movable longitudinally of its shaft.

2. In a web-perfecting printing-press, the combination with an impression-cylinder, of a type-cylinder and a numbering device, each capable of a planetary adjustment independently of each other, around the circumference of said impression-cylinder, said type-cylinder being movable longitudinally of its shaft.

3. In a web-perfecting printing-press, the combination with an impression-cylinder, of a type-cylinder and a revolving numbering device, each capable of a planetary adjustment independently of each other around the circumference of said impression-cylinder, said type-cylinder being movable longitudinally of its shaft.

4. In a web-perfecting printing-press the combination with an impression-cylinder, of a type-cylinder capable of a planetary adjustment around the circumference of said impression-cylinder and having a limited radial adjustment to and from the same, said type-cylinder being movable longitudinally of its shaft.

5. In a web-perfecting printing-press the combination with an impression-cylinder, of a type-cylinder, and a revolving numbering device, each capable of a planetary adjustment independent of each other and having a limited radial adjustment to and from said cylinder, said type-cylinder being movable longitudinally of its shaft.

6. In a web-perfecting printing-press, the combination, with an impression-cylinder, and means for guiding the web of paper through the press, of revolving punches having a planetary adjustment around said impression-cylinder, and operating on said paper independently of said cylinder.

7. In a web-perfecting printing-press the combination with an impression-cylinder, and means for guiding the web of paper through the press, of revolving punches and a type-cylinder, both of which are adjustable independently of each other.

8. In a web-perfecting printing-press the combination with an impression-cylinder, of a frame adjustable concentric to said cylinder, and means for guiding the web of paper therethrough and revolving punches said guiding means and punches being carried by said frame.

9. In a web-perfecting printing-press the combination with an impression-cylinder, of a frame adjustable concentric to said cylinder, and means for guiding the web of paper therethrough, and longitudinally-adjustable revolving punches said guiding means and punches being carried by said frame.

10. In a web-perfecting printing-press the combination with an impression-cylinder, of a frame adjustable concentric to said cylinder, and means for guiding the web of paper therethrough and revolving punches said guiding means and punches being carried by said frame and deriving motion from the shaft of said impression-cylinder.

11. In a web-perfecting press the combination with an impression-cylinder, of a frame adjustable concentric to said cylinder, means for guiding the web of paper therethrough, revolving punches and means for slitting said paper longitudinally all of which are carried by said frame.

12. In a web-perfecting press the combination with an impression-cylinder, of a frame adjustable concentric to said cylinder, means for guiding the web of paper therethrough, revolving punches and revolving cutters for slitting said paper longitudinally, all of which are carried by said frame.

13. In a web-perfecting printing-press the combination with an impression-cylinder, of a frame adjustable concentric to said cylinder, means for guiding the web of paper therethrough, revolving punches, a pair of revolving cutters for slitting said paper longitudinally the axis of one of which is movable to and from the axis of the other, all of which are carried by said frame.

14. In a web-perfecting printing-press the combination with an impression-cylinder, of a frame adjustable concentric to said cylinder, means for guiding the web of paper therethrough, revolving punches, two revolving shafts, a revolving cutter on one of said shafts, an arm projecting from the other shaft and a revolving cutter journaled in the free end thereof, and adjustable to and from the other cutter, all of which are carried by said frame.

15. In a web-perfecting printing-press, the combination with an impression-cylinder, of a frame adjustable concentric to said cylinder, means for guiding the web of paper therethrough, two revolving shafts one of which is stationary and the other flexible a revolving cutter on said stationary shaft, an arm projecting from said flexible shaft, and a revolving cutter journaled in the free end thereof, and adjustable to and from the other cutter, all of which are carried by said frame.

16. In a web-perfecting printing-press the combination with an impression-cylinder, of a frame adjustable concentric to said cylinder comprising two side frames suitably connected together beyond the circumference of the cylinder and journaled concentric to the cylinder adjacent to the ends thereof, and one of said frames

having a segmental gear extending therefrom, a pinion engaging said segmental gear, and devices carried by said frame cooperating with said cylinder.

17. In a web-perfecting printing-press, the combination with an impression-cylinder, of several independent frames each adjustable concentric to said cylinder, a printing-cylinder carried by one of said frames, a numbering device carried by another of said frames, and punching device carried by yet another of said frames.

18. In a web-perfecting printing-press, the combination with an impression-cylinder, of several independent frames each adjustable concentric to said cylinder, a printing-cylinder carried by one of said frames, a multiple numbering device carried by another of said frames and a punching device carried by yet another of said frames.

19. In a web-perfecting printing-press, the combination with an impression-cylinder, of several independent frames each adjustable concentric to said cylinder, a printing-cylinder carried by one of said frames, a revolving numbering device carried by another of said frames, and revolving punching device carried by yet another of said frames.

20. In a web-perfecting printing-press, the combination with an impression-cylinder, of a printing-cylinder, numbering mechanism and punching devices, adjustable in curved paths struck from the center of the impression-cylinder to and from each other.

21. In a web-perfecting printing-press, the combination with an impression-cylinder and the supporting-frame therefor having bearings for the shaft of said cylinder, the outer cylindrical ends of which are extended, of a frame adjustable concentric to said cylinder on the extensions of said bearings, devices carried by said frame cooperating with said cylinder, and means for adjusting said frame.

22. In a web-perfecting printing-press, the combination with an impression-cylinder and the supporting-frame therefor having bearings for the shaft of said cylinder, the outer cylindrical ends of which are extended, of several frames independently adjustable concentric to said cylinder on the extensions of said bearings devices carried by said frames coöperating with said cylinder, and means for adjusting said frame.

23. In a web-perfecting printing-press, the combination with an impression-cylinder and the supporting-frame therefor having bearings for the shaft of said cylinder, the outer cylindrical ends of which are extended, of a frame adjustable concentric to said bearings, and having a segmental gear projecting therefrom, pinion engaging said segmental gear, devices carried by said frame coöperating with said cylinder, and means for adjusting said frame.

24. In a web-perfecting printing-press, the combination with an impression-cylinder and the supporting-frame therefor having bearings for the shaft of said cylinder, the outer cylindrical ends of which are extended, of several frames independently adjustable concentric to said cylinder on the extensions of said bearings and having a segmental gear projecting therefrom, pinion engaging said segmental gear, devices carried by said frames coöperating with said cylinder, and means for adjusting said frame.

25. In a web-perfecting printing-press, the combination with the impression-cylinder, of a frame adjustable concentric to said cylinder, a revolving printing device, shaft therefor having spring-depressed removable bearings in said frame, and eccentric-pins for adjusting said bearings to and from said impression-cylinder.

26. In a web-perfecting printing-press, the combination with the impression-cylinder, of frames adjustable concentric to said cylinder, revolving printing devices, shafts therefor respectively having spring-depressed removable bearings in said frames, eccentric-pins for adjusting said bearings to and from said impression-cylinder and means for connecting pins in the several frames, whereby they operate simultaneously.

27. In a web-perfecting printing-press, the combination with the impression-cylinder, of a frame adjustable concentric to said cylinder, an ink-fountain carried thereby comprising a suitable receptacle a roller forming part of its bottom by means of which alone ink is mechanically taken from said fountain, a revolving printing device, shaft therefor, deriving motion from said impression-cylinder, an inking-roller in constant engagement with said printing device, and means for transferring said ink from said fountain to said ink-roller, all of which are carried by said frame.

28. In a web-perfecting printing-press, the combination with the impression-cylinder, of a frame adjustable concentric to said cylinder, an ink-fountain carried thereby comprising a suitable receptacle a roller forming part of its bottom by means of which alone, ink is mechanically taken from said fountain, a revolving printing device, a shaft therefor, deriving motion from said impression-cylinder, an inking-roller in constant engagement with said printing device, an oscillatory ink-roller for transferring to said constantly-engaging ink-roller, all of which are carried by said frame.

29. In a web-perfecting printing-press, the combination with the impression-cylinder, of a frame adjustable concentric to said cylinder, an ink-fountain carried thereby comprising a suitable receptacle a roller forming part of its bottom by means of which alone, ink is mechanically taken from said fountain, a revolving printing device, a shaft therefor, deriving motion from said impression-cylinder, an inking-roller in constant engagement with said printing device, a cam-actuated oscillatory ink-roller for transferring to said constantly-engaging ink-roller, all of which are carried by said frame.

30. In a web-perfecting printing-press, the combination with the impression-cylinder, of a frame adjustable concentric to said cylinder, an ink-fountain carried thereby comprising a suitable receptacle a roller forming part of its bottom by means of which alone, ink is mechanically taken from said fountain, a revolving printing device, cam-actuated oscillatory arms, and roller journaled in the free ends thereof whereby said ink is transferred from said fountain to said constantly-engaging ink-roller.

31. In a web-perfecting printing-press, the combination with the impression-cylinder, of a frame adjustable concentric to said cylinder, an ink-fountain, carried thereby comprising a suitable receptacle a roller forming part of its bottom by means of which alone ink is mechanically taken from said fountain, a ratchet on the extended end of one of the journals thereof, a revolving printing device, shaft therefor, deriving motion from said impression-cylinder, an inking-roller in constant engagement with said printing device, cam-actuated oscillatory arms a pawl pivoted to one of said arms and engaging and imparting an intermittent movement to said ratchet, and roller journaled in the free ends of said arms whereby said ink is transferred to said constantly-engaging ink-roller.

32. In a web-perfecting printing-press, the combination with the impression-cylinder, of a frame adjustable concentric to said cylinder, an ink-fountain carried thereby comprising a suitable receptacle a roller forming part of its bottom by means of which alone ink is mechanically taken from said fountain and a longitudinal side wall therefor the lower edge of which bears down upon said roller, a revolving printing device, shaft therefor, deriving motion from said impression-cylinder, an inking-roller in constant engagement with said printing device, and means for transferring said ink-roller, all of which are carried by said frame.

33. In a web-perfecting printing-press the combination with the impression-cylinder, of a frame adjustable concentric to said cylinder, and means carried thereby and coöperating with said impression-cylinder comprising a revolving printing device, a shaft therefor deriving motion from said impression-cylinder, an inking-roller engaging said printing device, a longitudinally-vibrating distributing ink-roller engaging said first-mentioned inking-roller, a cam on the shaft of said distributing-roller, a stationary arm engaging the same, an ink-fountain, and a cam-actuated oscillating ink-roller for transmitting the ink from the ink-fountain to said vibratory roller.

34. In a web-perfecting printing-press, the combination with an impression-cylinder, of a frame adjustable concentrically around said cylinder, a revolving printing device, inking-roller in constant engagement therewith, a vibratory distributing-roller engaging said inking-roller, a cam on the shaft of said distributing-roller, a stationary arm engaging the same, an ink-fountain comprising a suitable receptacle, a roller forming part of its bottom by means of which alone ink is mechanically taken from said fountain, cam-actuated oscillatory arms and a roller journaled in the free ends of the same whereby ink is transferred from said fountain-roller to said distributing-roller.

35. In a web-perfecting printing-press, the combination with an impression-cylinder, of a frame adjustable concentrically around said cylinder, a revolving printing device, spring-depressed removable bearings therefor in said frame, an inking-roller in constant engagement therewith, a vibratory distributing-roller engaging said inking-roller, a cam on the shaft of said distributing-roller, a stationary arm engaging the same, an ink-fountain comprising a suitable receptacle, a roller forming part of its bottom by means of which alone ink is mechanically taken from said fountain, cam-actuated oscillatory arms and a roller journaled in the free ends of the same whereby ink is transferred from said fountain-roller to said distributing-roller.

810,609. **ELECTROFLUID PRESSURE MECHANISM FOR OPERATING RAILROAD APPLIANCES.** WALTER J. BELL, Los Angeles, Cal., assignor of one-half to Leon F. Moss, Los Angeles, Cal. Filed Dec. 1, 1902. Serial No. 132,365.

Claim.—In combination with means for supplying fluid under constant pressure and with a railroad appliance operated by compressed fluid, of a compressed-fluid-supply pipe, a fluid-return pipe, a valve at the supply-pipe, a valve at the return-pipe, a connection between said valves to effect their simultaneous movement, an armature operatively connected with said valve connection, a solenoid-magnet slidably receiving said armature and electrically connected with the trolley-wire and an insulated section thereof, and a second solenoid-magnet slidably receiving said armature and having ground connection and connection with a divergent branch of said trolley-wire.

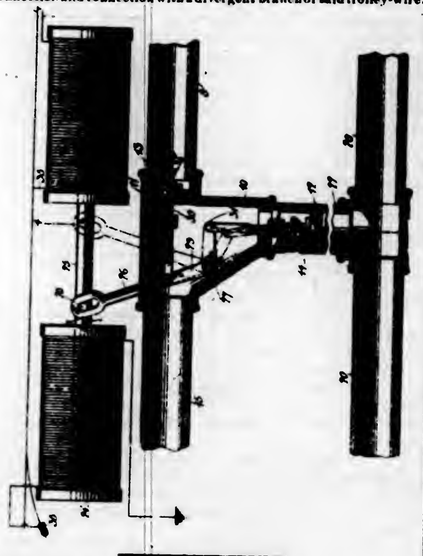

810,610. **SAW-DRESSING MACHINE.** ENERIE L. BISHOP, Waukesee, Wis. Filed Jan. 4, 1905. Serial No. 239,677.

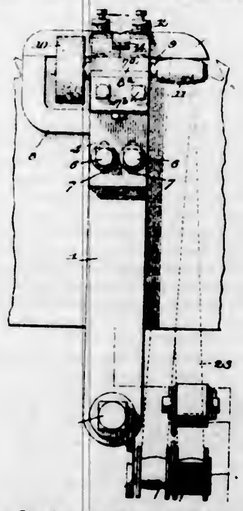

Claim.—1. In a device of the class described, two side members mutually connected by a transverse pivot, shafts supported for rotation near the upper ends of said side members, grinding-disks upon said shafts, means for driving the latter, and means for connecting the upper ends of the side members.

2. In a device for side-dressing saws, a pair of side members connected by a transverse pivot, vertically-adjustable brackets near the upper ends of said side members, laterally-adjustable boxes supported upon said brackets, shafts journaled in the boxes, grinding-disks upon the shafts, driving-pulleys upon said shafts, idlers supported near the lower end of one of the side members, and a driving-belt.

3. A device for side-dressing saws, including a pair of pivotally-connected side members each supporting a driven grinding-disk, and a member connected with said device and adapted to rest upon the points of the saw-teeth to be operated upon to prevent upward displacement of the saw during operation.

4. A device of the class described including pivotally-connected side members adapted to engage the sides of a saw-blade, driven shafts supported adjustably by said side members, grinding-disks supported by said driven shafts, a saw-tooth-engaging device connected with one of the side members, to prevent upward displacement of the saw during operation, and latch means for connecting together the free ends of said side members.

5. A device for side-dressing the teeth of band-saws including a pair of grinding-disks supported to engage the sides of the saw-teeth, and a member engaging the points of the teeth to prevent upward displacement of the saw during operation.

810,611. **DENTAL OBTUNDER.** WESLEY F. BLASINGAME, Moultrie, Ga. Filed Oct. 12, 1905. Serial No. 282,468.

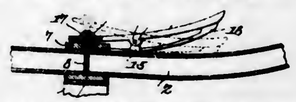

Claim.—An attachment of the class described comprising a sectional water-conducting tube, a valve-casing connecting the sections of the tube and provided with a collar including gripping means, a valve working in the casing and between the opposed ends of the tube-sections, and a spring-pressed lever pivotally connected with one section of the tube and with the valve.

810,612. **VEHICLE-BRAKE.** JOSEPH L. BREWTON, Mill, La. Filed July 28, 1905. Serial No. 271,626.

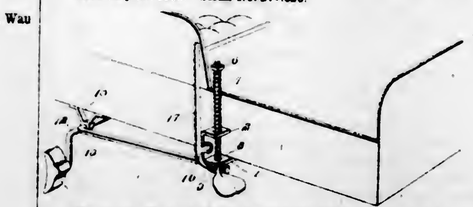

Claim.—1. The combination with a vehicle-body having a brake movably connected thereto; of a movable step, means actuated thereby for applying the brake when the step is depressed, and means for automatically locking the step when depressed.

2. The combination with a vehicle-body having a brake movably connected thereto; of a resiliently-supported step, means actuated thereby for operating the brake, and means for automatically locking the step when depressed.

3. The combination with a vehicle-body and a brake movably connected thereto; of a spring-supported step connected to the body, means actuated by the step for operating the brake, and a lock for holding the step against movement.

4. The combination with a vehicle-body and a brake movably connected thereto; of a spring-supported step, means operated thereby for actuating the brake, and a locking device for holding the brake applied when the spring is under tension.

5. The combination with a vehicle-body and a brake movably connected thereto; of a guide secured to the vehicle-body, a spring-supported stem mounted within the guide, a step upon the stem, means actuated by the stem for operating the brake, and a locking device for engaging the stem.

6. The combination with a vehicle-body and a brake movably connected thereto; of a toothed spring-supported stem, a guide therefor connected to the vehicle-body, a step upon the stem, means actuated by the stem for operating the brake, and a lever normally engaging the toothed portion of the stem.

810,613. RETURN-BALL. THOMAS F. BURKE and THOMAS L. VALLEY, Hownstin, Pa. Filed June 1, 1905. Serial No. 263,275.

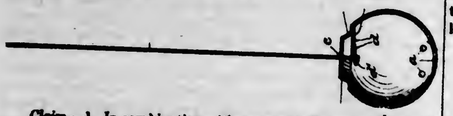

Claim.—1. In combination with a return-ball, a tongue of flexible material secured thereto, said tongue being buckled intermediate of its ends and a string secured to said tongue, the tongue when flexed producing a noise, substantially as shown and described.

2. In combination with a return-ball, a tongue of spring metal secured to said ball and having its central portion kinked, and a string secured to the free end of said tongue, substantially as shown and described.

3. A return-ball comprising a cup, a rigid cap secured to said cup, a tongue of flexible material secured to the inside of said cap, said tongue being buckled intermediate of its ends and a string passed through said hold and secured to the tongue of flexible material, said tongue when flexed producing a noise, substantially as shown and described.

4. A return-ball comprising a cup, a rigid cap secured to said cup, a tongue of spring metal secured to said cap and having its central portion kinked, and a string secured to the free end of said tongue, substantially as shown and described.

5. A return-ball comprising a cup, a rigid cap secured to said cup and having a hole therein, a tongue of spring metal secured to said cap inside of the ball and having its central portion kinked, and an elastic string secured to the free end of the tongue and extended through the hole in the cap, substantially as shown and described.

810,614. AX HOLSTER AND GUARD. JOHN G. BUSCH, Potter Valley, Cal. Filed July 27, 1905. Serial No. 271,456.

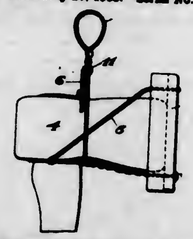

Claim.—1. An ax-guard consisting of a channeled piece adapted to fit the edge of the ax, a wire frame connecting with said guard having a socket through which the handle of the ax may pass, and means connected therewith for the suspension of the ax and holder.

2. An ax-holder having a rigid channeled guard into which the edge of the ax is adapted to fit, a wire frame riveted to the guard and having its members separated to form a socket for the ax-handle, braces extending from the socket portion upon each side and connected with the guard, and a holster or suspending device secured to the wire framework.

3. An ax-holder having a rigid channeled guard into which the edge of the ax is adapted to fit, a wire frame riveted to the lower part of the guard and having its members separated to receive the ax-handle, a second wire frame fixed to the upper end of the guard and connected with the first portion, a hanger or carrier from which the ax and holder are suspended, and a locking-pin and swiveled carrier therefor adapted to secure the ax to the guard and holder.

810,615. FIRE-ESCAPE. JAMES F. BUTLER, Scranton, Pa. Filed May 19, 1904. Serial No. 208,682.

Claim.—1. A friction device for a fire-escape, comprising a wedge and spring members embracing said wedge and adapted to move thereon.

2. The combination with a frame, and a blanket or net, of friction devices connecting the blanket or net to the frame and operating to prevent rebound of the blanket or net.

3. A fire-escape comprising a blanket or net, a support, a wedge, and spring members embracing said wedge and adapted to move thereon, said wedge and spring members disposed between the blanket and support.

4. The combination with a frame and a blanket or net, of a series of two-part friction devices for connecting the blanket or net to the frame, one part of each friction device being wedge-shaped in longitudinal section and embraced by the other part.

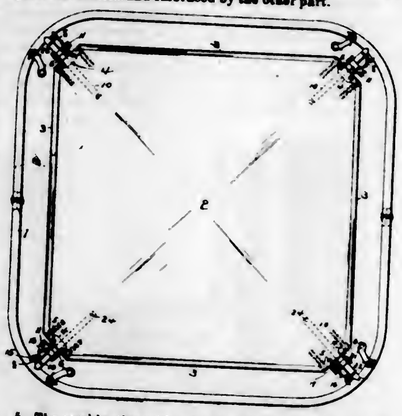

5. The combination with a frame and a blanket or net, of a series of connecting devices, each comprising a wedge-shaped bar and a yoke, the latter embracing said wedge and adapted to move thereon.

6. The combination with a frame and a blanket or net, of a series of connecting devices, each comprising a wedge-shaped bar having means at one end for its attachment to the frame and a stop at its opposite end, and a yoke embracing the wedge and adapted to move thereon.

7. The combination with a frame and a blanket or net, of a series of devices connecting said parts, each connecting device comprising a wedge-shaped bar and a spring-yoke to engage the sides of the bar and a U-shape reinforcing-spring engaging the yoke near its free ends.

8. A connecting device for fire-escapes, comprising a spring clamp or yoke, a rigid frame located between the members of said yoke, a reinforcing-spring engaging the members of said yoke, and a wedge-shaped bar adapted to be engaged by the yoke.

9. A connecting device for fire-escapes, comprising a spring clamp or yoke having two L-shaped members, a rigid frame located between the members of said yoke, a reinforcing-spring engaging the members of said spring-yoke, means for securing said parts together, a wedge-shaped bar adapted to be engaged by the members of the spring-yoke, and means for connecting the wedge and yoke to the blanket and frame.

10. A connecting device for fire-escapes comprising a spring clamp or yoke having its two members made with laterally-projecting portions, a rigid frame located between the members of said spring-yoke and provided with a handle or grip, and a wedge-shaped bar adapted to rest between the laterally-projecting portions of the members of said yoke.

11. The combination with a frame, a blanket or net, and a series of plates secured to said blanket or net, each plate being provided with loops, of a spring-yoke having means for engaging the loops on the plate, a wedge-shaped bar engaging said spring-yielding yoke and means for connecting the the wedge-shaped bar to the frame.

810,616. FOLDING TABLE. HERMANN BUTTER, Düsseldorf, Germany. Filed Apr. 9, 1904. Serial No. 202,204.

Claim.—A folding table provided with a plate, legs hinged thereto, transverse connecting-ties, ribs secured to the plate, notched rails slidable upon the ribs and adapted to engage the legs, slotted

lugs on the rails, pins on the ribs that engage said lugs, and means for locking the rails to the legs, substantially as specified.

810,617. NASAL SHIELD. THOMAS GARDNER, Salina, Kans. Filed Jan. 3, 1905. Serial No. 239,246.

Claim.—1. A nasal shield composed of two thimble-shaped members having flanges extending substantially at right angles to the walls of the thimbles, and absorbent pads surrounding the thimbles, of the same or approximately the same depth as the latter, the flanges being provided with fastening devices which engage the absorbent pads and hold them in place on the thimbles, the latter being provided with mesh diaphragms for the purpose set forth.

2. A nasal shield composed of two thimble-shaped members having flanges at their outer extremities extending substantially at right angles to the walls of the thimbles and provided with laterally-projecting, inwardly-extending fastening devices, absorbent pads surrounding the thimbles, of the same depth as the latter and held in place by the fastening devices, the inner extremities of the thimbles being provided with mesh diaphragms for the purpose set forth.

810,618. INSULATOR-CLAMP. WALTER G. CLARK, Seattle, Wash. Filed Apr. 13, 1904. Serial No. 202,971.

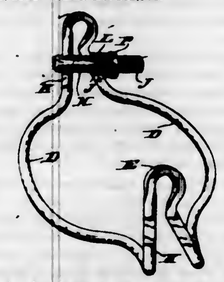

Claim.—1. An insulator-clamp, comprising a body portion adapted to be secured to the insulator, said body being provided with open wire-holding loops formed in one continuous piece with the body and extending at an angle to the plane of said body, the loops being adapted to hold the wire down upon the top of the insulator when the clamp is in position thereon, for substantially the purposes set forth.

2. An insulator-clamp, comprising a body portion adapted to be secured to the insulator, said body being provided with open wire-holding loops formed in one continuous piece with the body and extending at an angle to the plane of said body, the loops being adapted to hold the wire down upon the top of the insulator when the clamp is in position thereon, and means for tightening the parts of the body portion of the clamp upon the insulator, for substantially the purposes set forth.

3. An insulator-clamp, comprising a body portion adapted to be secured to the insulator, open wire-holding loops extending at an angle to the plane of the body portion of the clamp and adapted to hold the wire down upon the top of the insulator when the clamp is in position thereon, said loops having neck portions formed of the sides of the loops and means for drawing the necks of said wire-holding loops together to tighten the body portion of the clamp upon the insulator, for substantially the purposes set forth.

4. An insulator-clamp, comprising a body portion adapted to be secured to the insulator, open wire-holding loops extending at an angle to the plane of the body portion of the clamp and adapted to hold the wire down upon the top of the insulator when the clamp is in position thereon, and slotted screws arranged over the wire-holding loops, followers movable in the screw-slots, and nuts rotatable on the followers and forming one piece therewith, for substantially the purposes set forth.

5. The combination with an insulator, of a clamp comprising a body portion encircling the insulator, and wire-holding loops projecting therefrom and extending above the top of the insulator and adapted to hold the wire down thereon whereby the strain on the wire is prevented from being thrown upon the clamp, for substantially the purposes set forth.

6. The combination with an insulator, of a clamp comprising a body portion encircling the insulator, wire-holding loops projecting therefrom and extending above the top of the insulator and adapted to hold the wire down thereon, whereby the strain on the wire is prevented from being thrown upon the clamp, and means for tightening the body portion of the clamp upon the insulator, for substantially the purposes set forth.

810,619. STEAM-BOILER SUPERHEATER. FRANCIS J. COLE, New York, N. Y., assignor to American Locomotive Company, New York, N. Y., a Corporation of New York. Filed Sept. 5, 1905. Serial No. 276,955.

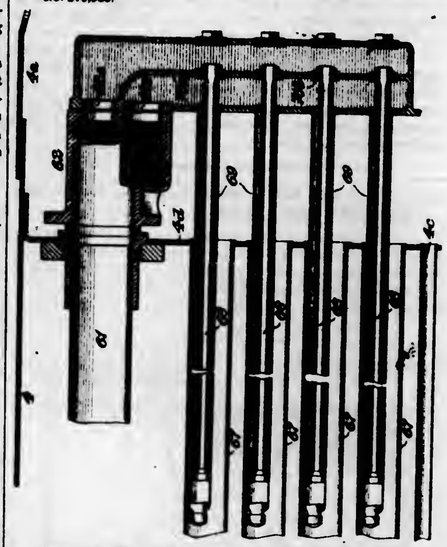

Claim.—1. The combination, with a tubular steam-boiler, of superheating-tubes, outer superheater-pipes projecting thereinto and having their rear ends closed, inner circulating-pipes open at both ends and located within the outer superheater-pipes, an insertible and removable header, partitioned vertically into two chambers, communicating, respectively, with the outer superheater-pipes and the inner circulating-pipes of a vertical row, a steam-supply connection opening into the header-chamber of the outer pipes, and a steam-delivery connection leading out of the header-chamber of the inner pipes.

2. The combination with a tubular steam-boiler, of superheating-tubes, outer superheater-pipes projecting thereinto and having their rear ends closed, inner circulating-pipes open at both ends and located within the outer superheater-pipes, a plurality of insertible and removable headers, each partitioned vertically into two chambers, communicating, respectively, with the outer superheater-pipes and the inner circulating-pipes of a vertical row, a T-head partitioned into a supply-compartment which is open to the main-supply steam-pipe and a delivery-compartment which is open to a delivery steam-pipe, ports in the supply-compartment communicating with the header-chambers of the outer pipes, and ports in the delivery-compartment communicating with the header-chambers of the inner pipes.

3. The combination, with a tubular steam-boiler, of superheating-tubes, outer superheater-pipes projecting thereinto and having their rear ends closed, inner circulating-pipes open at both ends and located within the outer superheater-pipes, an insertible and removable header, partitioned vertically into two chambers, communicating, respectively, with the outer superheater-pipes and the inner circulating-pipes of a vertical row, a non-conducting medium interposed between the inner and the outer pipes, a steam-supply connection opening into the header-chamber of the outer pipes, and a steam-delivery connection leading out of the header-chamber of the inner pipes.

4. The combination, with a tubular steam-boiler, of superheating-tubes, outer superheater-pipes projecting thereinto and having their rear ends closed, inner circulating-pipes open at both ends and located within the outer superheater-pipes, an insertible and removable header partitioned vertically into two chambers, communicating, respectively, with the outer superheater-pipes and the inner circulating-pipes of a vertical row, casings of non-conducting material, as asbestos paper, surrounding the circulating-pipes, a steam-supply connection opening into the header-chamber of the outer pipes, and a steam-delivery connection leading out of the header-chamber of the inner pipes.

5. The combination, with a tubular steam-boiler, of superheating-tubes, outer superheater-pipes projecting thereinto and having their rear ends closed, inner circulating-pipes open at both ends and located within the outer superheater-pipes, an insertible and removable header partitioned vertically into two chambers, communicating, respectively, with the outer superheater-pipes and the inner circulating-pipes of a vertical row, casings of non-conducting material, as asbestos paper, surrounding the circulating-pipes, jacket-pipes inclosing and forming dead-air spaces around said casings, a steam-supply connection opening into the header-chamber of the outer pipes, and a steam-delivery connection leading out of the header-chamber of the inner pipes.

810,620. DISK PLOW. WILLIAM S. COOK, San Jose, Cal. Filed Feb. 26, 1904. Serial No. 196,209.

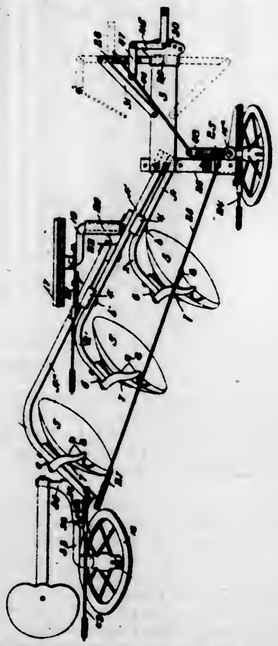

Claim.—1. The combination in a disk plow, of beam-sections having a substantially straight front portion, said front portions arranged one parallel with the other and overlapping each other, a draft-bar in the line of travel of the machine, attachments by which the straight portion of the front section is supported therefrom at an angle divergent from the line of travel, said sections having curved rear ends extending at an opposite angle from the front portion, means for supporting revoluble disks from said curved rear ends of the beams and locking-blocks interposed between and interlocking with the overlapping beam-sections and bolts whereby the parallel straight portions of a plurality of beams are rigidly united.

2. The combination in a disk plow of a sectional beam composed of a plurality of straight L-shaped overlapping sections, having parallel straight front portions arranged at an angle with the line of draft, and having bent rear portions, correspondingly-shaped locking-blocks fitting the contiguous concavities of the beam-sections and bolts whereby said blocks and a straight front portion of a plurality of sections are rigidly locked together, a draft-bar to which said beams are united so that the front portions extend diagonally away from the line of travel, and their rear ends diagonally in the opposite direction, standards fixed to said rear ends and journals by which the disks forming the plows are revolubly connected with the standards.

3. A plow comprising a diagonally-disposed sectional plow-beam, with means for rigidly uniting said sections, each section having the rear end bent inwardly toward and diagonally across the line of draft, revoluble plowing-disks supported from the inturned ends of the sections, a forward vertically-adjustable furrow-wheel, an intermediate adjustable land-wheel located upon the opposite side of the plow and a rear angularly-disposed supporting-wheel, an inclined axle upon which said wheel is turnable, said axle being bent and having a vertical and a horizontal portion, a sleeve within which said vertical portion is turnable, and a block having a downwardly-projecting arm adapted to engage the arm of the axle to maintain the wheel in its line of travel, said block having its lower end inclined diagonally to the horizontal portion of the axle.

4. A gang-plow consisting of a beam supported diagonally to the line of travel of the machine and having a revoluble disk plow connected therewith, land and furrow wheels by which the front of the plow is supported, a rear wheel having a bent and inclined axle, said axle having a vertical swivel-post, a box in which the post is freely turnable, a locking block and arm adapted to engage the bent axle to maintain the wheel substantially in line of travel, said block and arm being movable to disengage from the axle to allow the wheel to swivel when the machine is turned to the right, and said block having the lower end inclined diagonally with the horizontal portion of the axle.

5. A gang-plow comprising a beam and a plurality of plows carried thereby, land and furrow wheels, a vertical turning post upon which the front furrow-wheel is carried, a crank-arm connecting therewith, a lever centrally fulcrumed to the end of said crank, a rod connecting one end of said lever with a hand-lever and a second rod connecting the opposite end of the lever with a bell-crank lever to which the draft-team is attached.

6. The combination with a gang-plow, the draft-bar, bearing-wheels and turnable furrow-wheel, of a bell-crank lever having its angle pivoted at the front of the draft-bar, a connection with one arm for the attachment of the team, a rod connecting the other arm with a centrally-fulcrumed lever, a crank-arm fixed to the turning post of the furrow-wheel, upon which arm the said lever is fulcrumed, and a rod connecting the opposite end of the lever with the driver's lever whereby the furrow-wheel may be turned either by turning the team or by the hand-lever.

7. In a gang-plow, a bent beam, having a straight front portion arranged at an angle with the draft and having a rear portion extending diagonally with the front portion, a draft-bar with which said beam is connected so that the beam stands diagonally across the line of travel, a revoluble disk plow journaled to the rear diagonal portion of the beam, furrow, land and trailing wheels upon which the beam is adjustably carried, and means connecting with the furrow-wheel and the draft attachments by which the direction of travel may be varied either manually or by the turning of the team.

8. In a gang-plow with beams and disks journaled thereto as shown, a vertical swivel-post by which the furrow-wheel is carried, an arm fixed to the post, a second arm centrally pivoted to the end of the first-named arm, a turnable bell-crank lever to one arm of which the team is connected, connection between the other arm of the bell-crank lever and one end of the second pivoted arm aforesaid, and a connection between the other arm of said pivoted arm and a manually-operated lever.

9. In a disk plow, a plow-beam diagonally supported with relation to the line of travel, vertically-adjustable furrow and land-side wheels, a freely-swiveling trail-wheel, a vertical turning post having a horizontal axle portion for the trail-wheel, and a stop-block movable to lock or to release the trail-wheel, and having its lower end inclined diagonally to the horizontal portion of the axle.

810,621. AUTOMATIC OILER. JOHN COOPER, Bellevue, Pa., assignor to The Ingersoll-Sergeant Drill Company, New York, N. Y., a Corporation of West Virginia. Filed Aug. 26, 1905. Serial No. 275,889.

Claim.—1. An automatic oiler for an air-feed pipe comprising a reservoir having its chamber provided with contracted bores for the attachment of adjacent ends of air-feed-pipe sections, a tube leading through the chamber having its ends located in said contracted bores and ducts for opening communication from the chamber to the air-feed-pipe sections at the opposite ends of the said tube.

2. An automatic oiler for an air-feed pipe comprising a reservoir having its chamber provided with contracted bores for the attachment of the adjacent ends of air-feed-pipe sections, a tube leading through the chamber having its ends located in said contracted bores and ducts in the exterior walls of the ends of the tube for opening communication from the chamber to the air-feed-pipe sections for permitting the escape of oil at one end of the tube and the admission of air at the other end of the tube.

3. An automatic oiler for an air-feed pipe comprising a reservoir having its chamber provided with contracted bores for the attachment of the adjacent ends of the air-feed-pipe sections, a tube leading through the chamber having its ends fitted to the said bores, there being ducts for opening communication between the chamber and the air-feed-pipe sections at the opposite ends of the tube for permitting the escape of oil in small quantities at one end of the tube and the admission of air in small quantities at the other end of the tube and an air-tight filling-cap for the said chamber.

4. An automatic oiler for an air-feed pipe comprising a reservoir having its chamber provided with contracted bores for the attachment of the adjacent ends of the air-feed-pipe sections, a tube leading through the chamber having its ends fitted to the bores and ducts at the opposite ends of the tube for permitting the escape of oil from the chamber at the one or the other end of the tube according to the direction of flow of air through the air-feed pipe and the admission of air from the pipe to the chamber at the opposite end of the tube from the end where the oil is permitted to escape.

810,622. AGRICULTURAL IMPLEMENT. JESSE U. CORNELISON, Buda, Tex. Filed Sept. 8, 1905. Serial No. 277,586.

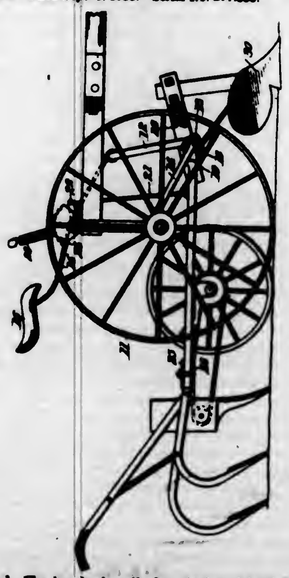

Claim.—1. The herein-described agricultural implement comprising a frame formed of U-shaped frame-bars, carrying-wheels mounted upon one of said frame-bars, side bars connected to the other frame-bar, a cross-bar secured to the free ends of said side bars, and converging bars mounted between the forward ends of said side bars, said converging bars being reversible and coöperating with said cross-bar to interchangeably secure various agricultural implements between said side bars.

2. The herein-described agricultural implement comprising a frame provided with side bars supported at their forward ends, a cross-bar secured to the free ends of said side bars, and converging bars mounted between the forward ends of said side bars, said converging bars being reversible, and coöperating with said cross-bar to interchangeably secure various agricultural implements between said side bars.

3. The herein-described agricultural implement comprising a frame provided with side bars supported at their forward ends, a cross-bar secured to the free ends of said side bars, converging bars pivotally mounted between the forward ends of said side bars, whereby the same may be reversed, and means for holding said converging bars from pivotal movement, said converging bars coöperating with said cross-bar to interchangeably secure various agricultural implements between said side bars.

4. The herein-described agricultural implement comprising a frame provided with side bars supported at their forward ends by an approximately universal joint, a cross-bar secured to the free ends of said side bars, and converging bars mounted between the forward ends of said side bars, said converging bars being reversible, and coöperating with said cross-bar to interchangeably secure various agricultural implements between said side bars.

5. The herein-described agricultural implement comprising a frame provided with side bars supported at their forward ends by an approximately universal joint, means for adjusting said side bars vertically, a cross-bar uniting the free ends of said side bars, and converging bars mounted between the forward ends of said side bars, said converging bars being reversible, and coöperating with said cross-bar to interchangeably secure various agricultural implements between said bars.

810,623. BLACKBOARD. THOMAS H. COSTELLO, Chicago, Ill. Filed Aug. 18, 1905. Serial No. 274,067.

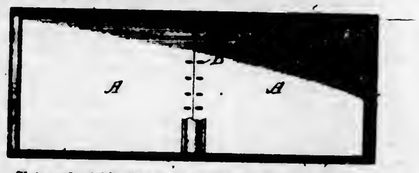

Claim.—1. A blackboard comprising a flexible metallic foundation, and a flexible pigmented abrasive layer on the foundation.

2. In a blackboard a flexible metallic foundation having elongated openings for attaching the same, and a flexible pigmented abrasive layer on the foundation.

3. In a blackboard a foundation of flexible steel, and a flexible pigmented abrasive layer on the foundation.

4. In a blackboard a foundation of leveled flexible steel, and a flexible pigmented abrasive layer on the foundation.

810,624. PRESSURE-CONTROLLING DEVICE FOR THE AIR-SPRINGS OF PRINTING-PRESSES. CHARLES F. COTTRELL, Westerly, R. I., assignor to C. B. Cottrell & Sons Company, New York, N. Y., a Corporation of New Jersey. Filed Apr. 4, 1905. Serial No. 253,787.

Claim.—1. In a reciprocating-bed printing-press, the combination with an air-spring cylinder and piston, of a cylinder-head movable within said cylinder lengthwise thereof, the movement of the cylinder-head being timed with respect to the movement of the press-bed.

2. In a reciprocating-bed printing-press, the combination with an air-spring cylinder and piston, of a cylinder-head movable within said cylinder lengthwise thereof while the piston is in the cylinder, the movement of the cylinder-head being timed with respect to the movement of the press-bed.

3. In a reciprocating-bed printing-press, the combination with an air-spring cylinder and a piston fitted thereto the one stationary and the other carried by the press-bed, of a cylinder-head fitted to said cylinder and movable lengthwise thereof while the piston is in the cylinder, the movement of the cylinder-head being timed with respect to the movement of the press-bed.

4. In a reciprocating-bed printing-press, the combination with a stationary air-spring cylinder and a piston fitted thereto and carried by the bed, of a cylinder-head fitted to said cylinder and movable

therein lengthwise thereof, the movement of the cylinder-head being timed with respect to the movement of the press-bed.

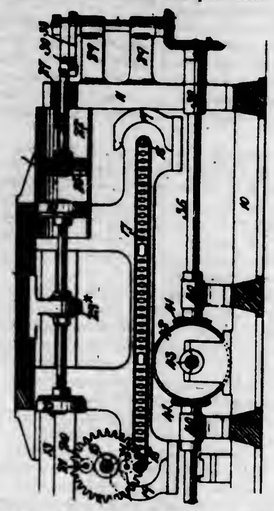

5. In a reciprocating-bed printing-press, the combination with an air-spring cylinder and piston, of a cylinder-head fitted to said cylinder, and automatically-operating mechanism for moving said cylinder-head within the cylinder relatively to the piston.

6. In a reciprocating-bed printing-press, the combination with an air-spring cylinder and piston, of a cylinder-head fitted to the said cylinder and movable therein lengthwise thereof and cam-actuated mechanism for controlling the movement of said cylinder-head away from the piston while the latter is moving within the cylinder.

7. In a reciprocating-bed printing-press, the combination with an air-spring cylinder and a piston fitted thereto the one stationary and the other carried by the press-bed, of a cylinder-head fitted to said cylinder and movable therein lengthwise thereof, and automatic means for controlling and changing the position of said head while the piston is in the cylinder.

8. In a reciprocating-bed printing-press, the combination with a stationary air-spring cylinder and an air-spring piston carried by the bed, of a cylinder-head fitted to said cylinder and movable therein lengthwise thereof, and means timed with respect to the movement of the press-bed for controlling and changing the position of said head relatively to said piston.

9. The combination with a printing-press bed and mechanism for giving said bed a reciprocating movement retarded at a certain stage of its progress, of an air-spring cylinder and piston, a cylinder-head movable in said cylinder lengthwise thereof and mechanism timed to the travel of the bed for controlling the movement of said cylinder-head within the cylinder during the retarded portion of said movement of the bed.

10. The combination with a printing-press bed and mechanism for giving said bed a reciprocating movement, of a stationary air-spring cylinder, a piston carried by the bed, a cylinder-head fitted to said cylinder and movable therein lengthwise thereof and mechanism timed to the travel of the bed for controlling the movement of the said cylinder-head away from the piston while the latter is moving within the cylinder.

11. The combination with a printing-press bed and mechanism for giving the bed a reciprocating movement, of a stationary air-spring cylinder, a piston carried by the press-bed, a cylinder-head fitted to the said cylinder and movable therein lengthwise thereof and mechanism for controlling the movement of the cylinder-head whereby the cylinder-head is held stationary during the first part of the advance movement of the piston within the cylinder and then permitted to move in the same direction as the piston.

12. The combination with a printing-press bed and mechanism for giving said bed a reciprocating movement, of a stationary air-spring cylinder, a piston carried by the press-bed, a cylinder-head fitted to the said cylinder and movable therein lengthwise thereof and mechanism for controlling the movement of the said cylinder-head whereby the cylinder-head is held stationary during the first part of the advance movement of the piston within the cylinder, then permitted to move in the same direction as the piston and then held stationary while the piston starts on its reverse movement.

13. The combination with a printing-press bed and mechanism for giving said bed a reciprocating movement, of a stationary air-spring cylinder, a piston carried by the press-bed, a cylinder-head fitted to the said cylinder and movable therein lengthwise thereof and mechanism for controlling the movement of said cylinder-head whereby the cylinder-head is held stationary during the first part of the advance movement of the piston within the cylinder, then permitted to move in the same direction as the piston, then held stationary while the piston starts on its reverse movement and finally moved to its normal position within the cylinder.

810,625. SEPARATOR. JAMES D. CRANE, Aledo, Tex. Filed July 7, 1905. Serial No. 268,692.

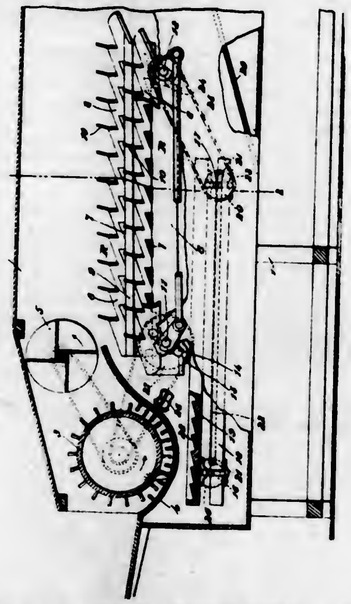

Claim.—1. In a separator, a straw-rack including a plurality of independent rake-sections; each of said rake-sections including a longitudinal supporting bar or beam, wedge-shaped slats supported transversely upon said beam, and zigzag bars supported upon said cross-slats.

2. In a device of the class described, a rake-section including a longitudinal supporting-bar, cross-slats upon said bar having inclined upper sides, zigzag bars supported upon said cross-slats, and reinforcing-bars connected with the under sides of the cross-slats and with the intervening portions of the zigzag bars.

3. In a device of the class described, a rake-section including a longitudinal supporting-bar, wedge-shaped cross-slats upon said bar, zigzag bars upon said cross-slats, and upwardly and rearwardly inclined prongs connected with said bars.

4. In a separator, a straw-rack including a plurality of independent sections, a pair of crank-shafts, having cranks supporting said independent sections for gyratory movement in vertical planes, a plurality of grain-pans disposed adjacent to each other and extending beneath the straw-rack, a pair of shafts having cranks supporting said grain-pans for gyratory movement in vertical planes and in opposite directions, driving means applied to one of the crank-shafts supporting the straw-rack sections, and means for transmitting motion between the shafts supporting the straw-rack sections and the shafts supporting the grain-pans.

810,626. FENCE STRUCTURE. MARTHA R. DAVIS, Worthington, Minn. Filed Apr. 26, 1905. Serial No. 257,291.

Claim.—1. In a fence structure, a post provided with wire-receiving grooves upon the face thereof, a retaining-plate hinged or pivoted at its lower end to the post to swing toward and from said face and adapted to when swung against the face to clamp the wires in the grooves, and means for engaging the upper end of the plate and retaining it in clamping position.

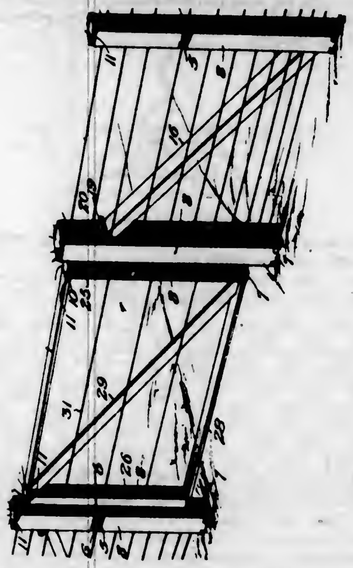

2. In a fence structure, a post provided in the face thereof with transverse wire-receiving grooves and slots intersecting said grooves, a retaining-plate hinged at one end to the post and provided with spaced retaining elements to engage the wires and hold them seated in the grooves, said retaining elements being adapted to enter said slots, and means upon the post to engage the free end of the plate and hold it in operative position.

3. In a fence structure, a post provided upon the face thereof with grooves, a retaining-plate hinged at its lower end to the post and adapted to fold against the same to hold the wires seated in said grooves, said plate being provided at its upper end with a projection, and a keeper hinged to the top of the post and adapted to engage said projection to hold the plate in retaining position.

4. In a fence structure, a post provided with slots therein, a retaining element adapted to bear against the post and provided with retaining-pins adapted to engage the fence-wires and to enter said slots, and means movably mounting said element upon the post whereby the same may be moved out of engagement with the post to release the wires.

810,627. TRUING DEVICE FOR FLOUR-MILL ROLLS. CHARLES DAWSON, Tacoma, Wash. Filed Apr. 26, 1905. Serial No. 257,294.

Claim.—1. In a truing device for cylindrical rolls, the combination of an abrasive body formed to engage a roll, a handle-bar, a pivoted connection between said handle-bar and said abrasive body.

2. In a truing device for cylindrical rolls, the combination of an abrasive body adapted to engage a roll, a bar having a handle at one end and engaging the machine at the other end to form a fulcrum, and a pivoted connection between said bar and said abrasive body.

3. In a truing device for cylindrical rolls, the combination of an abrasive body adapted to engage a roll, a bar having a handle at one end, a roller mounted on the other end of said bar to form a movable fulcrum by engaging the machine, and pivoted connections between said bar and said abrasive body.

4. In a truing device for cylindrical rolls, the combination of an abrasive body adapted to engage a pair of rolls at the same time, a bar having a handle at one end, a roller mounted on the other end of said bar and adapted to engage the machine to form a fulcrum whereby pressure may be communicated to said abrasive body, and a pivoted connection between said bar and said abrasive body whereby the pressure thereon is equally applied to both the rolls.

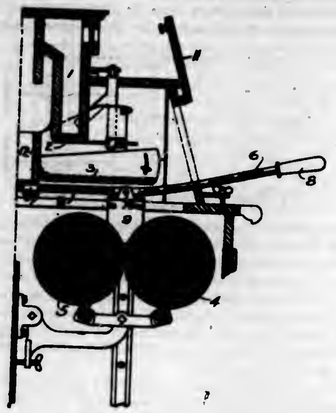

810,628. SHIELD ATTACHMENT FOR CULTIVATORS. HARRY H. DENNIS, Lunda, Ohio. Filed Aug. 28, 1905. Serial No. 276,142.

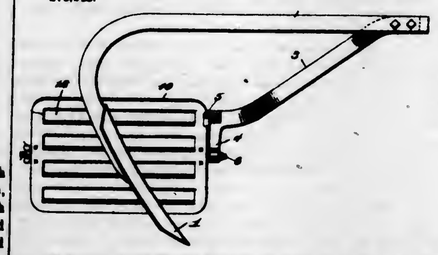

Claim.—1. A shield attachment for cultivators comprising a rotatable slotted plate, a support therefor, means for holding the plate against rotation, and an inclined flange extending from one edge of the slot.

2. A shield attachment for cultivators comprising a supporting member, a rotatable longitudinally-slotted plate connected to said member, a flange extending longitudinally upon one side of the plate and from one edge of the slot at an acute angle to the plate, and means for locking the plate against rotation.

3. A shield attachment for cultivators comprising a supporting-arm, a shield-plate rotatably connected to the arm, means for locking the plate to the arm to prevent rotation, said plate having a plurality of longitudinally-extending slots, and longitudinally-extending flanges projecting from the edges of the slots at acute angles to the plate.

4. A shield attachment for cultivators comprising a supporting-arm, a rod extending therefrom, a longitudinally-slotted plate rotatably mounted upon the rod, plate-engaging means on the arm, means for locking the plate in engagement with said means, and flanges extending from the plate and adjacent the slots at acute angles to the plate.

5. A shield attachment for cultivators comprising an arm having a rack thereon, a rod extending from the arm, a plate rotatably mounted upon the rod and adapted to engage the rack, said plate having a plurality of longitudinally-extending slots therein, means for locking the plate in engagement with the rack, and flanges upon the plate and adjacent the slots, said flanges being disposed at acute angles to the plate.

810,629. MARKING APPARATUS. WILLIAM J. DIX, Milford, Mass. Filed July 10, 1905. Serial No. 269,602.

Claim.—1. A marking apparatus comprising a series of tanks for containing marking material of different colors, a rotary marker provided with an absorbent periphery mounted in each of said tanks

to present a portion of its periphery above the surface of said material, means for rotarily adjusting each of said markers to bring a fresh portion of its periphery above the surface of the marking material, means for retaining each marker in its adjusted position.

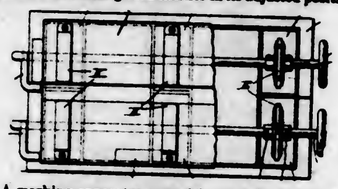

2. A marking apparatus comprising a series of tanks for containing marking material of different colors, a rotary marker provided with an absorbent periphery mounted in each of said tanks to present a portion of its periphery above the surface of said material, means for rotarily adjusting each of said markers to bring a fresh portion of its periphery above the surface of the marking material, a cover for said apparatus presenting openings for the projection therethrough of the periphery of each of said markers and removable from the tanks and markers.

3. A marking apparatus comprising a series of tanks for containing marking material of different colors, a rotary marker provided with an absorbent periphery mounted in each of said tanks to present a portion of its periphery above the surface of said material, means for rotarily adjusting each of said markers to bring a fresh portion of its periphery above the surface of the marking material, a cover for said apparatus presenting openings for the projection therethrough of the periphery of each of said markers, auxiliary covers for each of said openings.

4. A marking apparatus comprising a series of tanks for containing marking material of different colors, a rotary marker provided with an absorbent periphery mounted in each of said tanks to present a portion of its periphery above the surface of said material, means for rotarily adjusting each of said markers to bring a fresh portion of its periphery above the surface of the marking material, a cover for said apparatus presenting openings for the projection therethrough of the periphery of each of said markers, auxiliary covers for each of said openings pivoted to said main cover.

5. A marking apparatus comprising a series of tanks for containing marking material of different colors, a rotary marker provided with a plurality of absorbent faces mounted in each of said tanks to present one of its faces above the surface of said material, means for rotarily adjusting said markers.

6. A marking apparatus comprising a series of tanks for containing marking material of different colors, a rotary marker provided with a plurality of absorbent faces mounted in each of said tanks to present one of its faces above the surface of said material, means for rotarily adjusting said markers, means for locking each of said markers in adjusted position.

7. A marking apparatus comprising a series of tanks for containing marking material of different colors, a rotary marker provided with a plurality of absorbent faces mounted in each of said tanks, to present one of its faces above the surface of said material, a cover for said apparatus presenting openings for the projection therethrough of the exposed face of said markers.

8. A marking apparatus comprising a series of tanks for containing marking material of different colors, a rotary marker provided with a plurality of absorbent faces mounted in each of said tanks, to present one of its faces above the surface of said material, a cover for said apparatus presenting openings for the projection therethrough of the exposed face of said markers, means for rotarily adjusting said markers and locking the same in adjusted position.

9. In a marking apparatus, a rotary marker, comprising a wheel-frame, presenting a polygonal periphery, a shaft therefor, stripe of absorbent material, means for clamping said stripe on said frame to project beyond the periphery thereof, and present a series of absorbent faces.

10. In a marking apparatus, a series of tanks, for containing marking material of different colors, a second series of tanks above and behind said first series, a frame for supporting said tanks, a series of rotary markers, one mounted in each tank, and each provided with an absorbent periphery, means for rotarily adjusting each of said markers, means for retaining each marker in its adjusted position.

810,680. ERASER-MAKING DEVICE. GEORGE C. DUSSERT, New York, N. Y. Filed Sept. 14, 1904. Serial No. 224,269.

Claim.—A device of the class described, consisting of an oblong box substantially triangular in cross-section and completely closed, said device comprising a frame composed of transverse bottom members to which the bottom proper is secured, transverse brace-frames connected with said bottom members, and side and end boards rigidly connected and also rigidly connected with said frames, the top portion of the box being provided with an extension parallel with one side thereof and at an angle to the other side, substantially as shown and described.

810,681. GAME. SYLVANUS F. BUSH, Matteson, Ill. Filed Apr. 17, 1905. Serial No. 256,047.

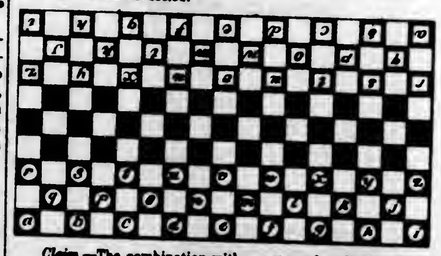

Claim.—The combination with a rectangular checkered gameboard having nine rows of seventeen spaces each, the spaces of each row being of two colors arranged alternately; of two sets of gamepieces each adapted to be placed entirely upon three of the nine rows of spaces and upon spaces of the same color, the pieces of each set being designated by the letters of the alphabet and no two of said pieces of each set being designated by the same letter.

810,682. BOILER ATTACHMENT. JOHN P. FARRITY and JOSEPH H. M. BLACKFORD, Duquesne, Pa. Filed June 17, 1904. Serial No. 213,083.

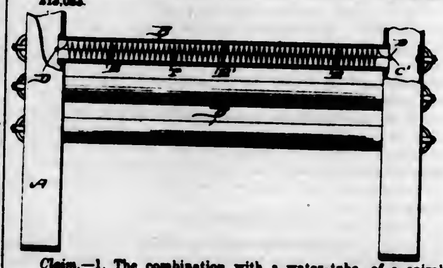

Claim.—1. The combination with a water-tube, of a spiral spring arranged within the tube, and perforated disks carried by the said spring.

2. The combination with a tube, of a spiral spring arranged in and extending substantially the length of the tube, and perforated disks carried by and arranged within the spirals of the spring.

3. A boiler attachment comprising a spiral spring adapted to be arranged in the water-tube of a boiler, a wire arranged centrally and longitudinally within the spring, means for connecting said wire at the ends of the tube, and perforated disks connected to the spring, said wire passing through the centers of the disks.

4. The combination with a water-tube, of the spirally-coiled wire arranged therein, means for securing the ends of the wire at the ends of the tube, and the perforated disk connected to the wire intermediate its ends, for the purpose described.

810,683. RAIL-TIE. SAMUEL B. FERGUSON and CHARLES CALHOUN, Rome, Miss. Filed Sept. 2, 1905. Serial No. 276,903.

Claim.—1. The combination with a channeled metallic tie having rail-engaging tongues integral therewith; of rail-supporting blocks within the tie, means thereon for engaging the rails, and adjustable means connecting the blocks.

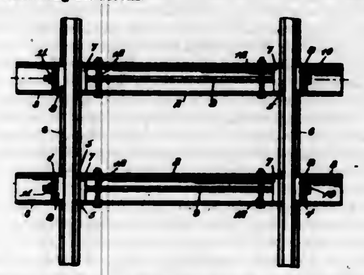

2. The combination with a channeled metallic tie having means thereon for engaging the inner flanges of rails; of rail-supporting blocks within the tie, means thereon for engaging the outer flanges of rails, and an adjusting device connecting the blocks and within the tie.

3. The combination with a channeled metallic tie having integral rail-engaging means; of rail-supporting blocks within the tie, ears thereon adapted to coöperate with the rail-engaging means on the tie for clamping the rails in position, and an adjustable device connecting the blocks.

4. The combination with a channeled metallic tie having integral rail-engaging tongues upon the sides thereof and braces connecting the sides; of rail-supporting blocks adjustably mounted within the tie, rail-engaging ears upon said blocks adapted to coöperate with the tongues to clamp the rails in position, and means connecting the blocks to hold them against displacement.

810,684. CHANGE-SPEED GEARING FOR ENGINE-LATHES. HERBERT L. FLATHER, Nashua, N. H. Filed May 19, 1905. Serial No. 261,180.

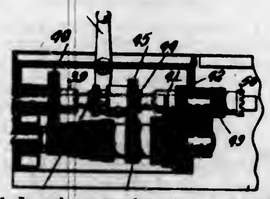

Claim.—1. In a change-speed gearing, the combination of a driven shaft, a swinging gear-box having an opening in the periphery thereof, a train of gearing inclosed in the gear-box and turned by the driven shaft, and means for clamping the gear-box in a plurality of different operative positions to act as a sweep with the last gear of the train in engagement with gears of different sizes.

2. In a change-speed gearing, the combination of a driven shaft, a sweep pivoted concentrically with respect to the driven shaft, a train of gears carried by the sweep, means for fastening the sweep in a plurality of different operative positions to set the last gear of the train into engagement with gears of different sizes, said train including a compound gear and a transversely-shiftable compound gear.

3. In a change-speed gearing, the combination of a driven shaft, a gear-box hung to swing upon a center concentric with said shaft, said gear-box comprising a casting and cover-plate therefor, a stud holding the cover-plate in place, said stud being mounted so that it may be adjusted to different positions, a gear fastened on the driven shaft, and a train of gears mounted in the gear-box and turned from said gear on the driven shaft, one of said gears of said train being journaled on the stud which fastens the parts of the gear-box together.

4. In a change-speed gearing, the combination of a driven shaft, a gear on the driven shaft, a sweep pivoted to swing on a center concentric with the driven shaft, a train of gears mounted on the sweep, and means for fastening the sweep in a plurality of different operative positions to set the last gear of the train into engagement with gears of different sizes, said train including a double gear having sections of two different diameters, and a transversely-shiftable gear also having sections of two different diameters.

5. In a change-speed gearing, the combination of a driven shaft, a gear on the driven shaft, a sweep mounted to swing on a center concentric with the driven shaft, a train of gears mounted on the sweep including a compound gear having parts of different diameters, either part of which may be driven from the previous double gear of the train, a wide-faced gear meshing with and driven from the transversely-shiftable gear on the sweep, and means for adjusting the sweep in different positions, whereby use will be permitted of wide-faced gears of different diameters.

6. In a change-speed gearing, the combination of a driven shaft, a swinging gear-box having an opening in the periphery thereof, a train of gearing inclosed in said gear-box and turned by the driven shaft, means for clamping the gear-box in different positions to act as a sweep by swinging the last gear of the train into engagement with gears of different sizes, and a second speed-changing train driven from the gears in the sweep and comprising a set of gears arranged step-like, and a swinging gear which can be set into mesh with the desired one of the gears arranged step-like.

7. In a change-speed gearing, the combination of a driven shaft, a shaft to be driven therefrom, three gears fastened on the driven shaft, two gears loosely mounted on the shaft to be driven, and meshing with the end gears on the driven shaft, and a clutch-piece turning with and longitudinally movable on the shaft to be driven, said clutch-piece having provision for making connection with the end gears when thrown to the limits of its movement, and having a gear for meshing with the middle gear on the driven shaft when the clutch-piece occupies an intermediate position.

8. In a change-speed gearing, the combination of a gear-box, three shafts mounted therein, a transversely-movable shiftable lever pivoted concentrically with the driving-shaft, a series of gears arranged step-like on the intermediate shaft, a gear carried by the lever and adapted to engage any one of the series of gears arranged step-like on the intermediate shaft and a change-speed connection with the shaft to be driven comprising loose clutch-sections driven from two of the gears arranged step-like on the intermediate shaft and a shifting-clutch engaging the loose-running clutch-pieces and having a gear for engaging a third one of the gears arranged step-like.

9. In a change-speed gearing, the combination of two shafts, one a driven shaft and the other a shaft to be driven therefrom, three gears fastened on one shaft, two gears loosely mounted on the other shaft meshing with the end gears on the first shaft, and a clutch-piece turning with and longitudinally movable on the second shaft, said clutch-piece having clutch-teeth for making connection with the end gears when thrown to the limits of its movement, and having a gear meshing with the middle gear on the first shaft when the clutch-piece occupies an intermediate position.

10. In a change-speed gearing, the combination of a driven shaft, a gear on the driven shaft, a gear-box pivoted to swing on a center concentric with the driven shaft, a train of gears inclosed in the gear-box and including a transversely-shiftable compound gear, either section of which may be driven, means for clamping the gear-box in different adjusted positions to act as a sweep, a gear-box secured to the front of the lathe-bed, three shafts mounted in the gear-box, a wide-faced gear on one of said shafts meshing with the final gear of the train carried by the swinging gear-box, a set of gears arranged step-like on the intermediate shaft, a shifting-lever, a transversely-movable intermediate thereon which can be set into engagement with any one of the gears arranged step-like, and change-speed gearing between the intermediate shaft and final gear, comprising end gears loosely mounted on the third shaft and driven from the intermediate shaft, and a movable clutch-piece mounted on the third shaft and having provision for making connection with the loose gears when at the limits of motion in opposite directions, and having a gear meshing with one of the gears on the intermediate shaft when the clutch-piece occupies an intermediate position.

810,685. BUTTON OR CHECK. CHARLES J. FRANK, Baltimore, Md. Filed July 21, 1905. Serial No. 270,727.

Claim.—1. A non-transferable door-check consisting of a button composed of two caps, each provided with a flange, one of said flanges being adapted to fit within the other, a tape or cord connected to the button at one end and at the other end provided with a barb, one of said caps being provided with an opening in its flange into which the barb may be inserted, whereby the two ends of the tape will be securely fastened to the button.

2. A non-transferable door-check consisting of a button composed of two caps secured together, a tape or cord connected to the

button at one end and at the other end provided with a barb, one of

button at one end and at the other end provided with a barb, one of said caps being provided with an opening into which the barb may be inserted, whereby the two ends of the tape may be securely fastened to the button, a flange formed on the side of the opening and extending inward to prevent the withdrawal of the barb.

3. A non-transferable door-check consisting of a button composed of two disks, each provided with a flange, one of said flanges being adapted to fit within the other and one of the disks being provided with an opening, a tape or cord one end of which is secured to the button by being clamped between the flanges of the disks and carrying at its other end a barb adapted to be inserted in the opening in the disks.

810,636. AUTOMOBILE. LEONARD B. GAYLOR, Newton Center, Mass. Filed Mar. 21, 1905. Serial No. 251,238.

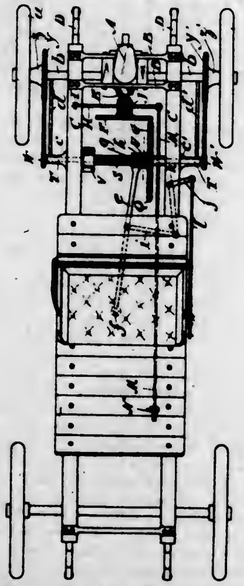

Claim.—1. In an automobile the combination of a motor mounted upon a spring-supported frame over a fixed rear axle, a counter-shaft forward of the motor, sprocket-wheels on the counter-shaft, sprocket-chains proceeding from said sprocket-wheels direct to each driven wheel independently and means for transmitting the power of the motor to the counter-shaft at variable speeds.

2. In an automobile the combination of a motor mounted upon a spring-supported frame over a fixed rear axle, a counter-shaft forward of the motor, sprocket-wheels upon the counter-shaft, driven wheels mounted loosely upon a fixed axle, sprocket-wheels on the hub of each driven wheel and sprocket-chains connecting the sprockets upon the counter-shaft with the sprockets upon the hubs of the wheels.

3. In an automobile the combination of a motor mounted upon a spring-supported frame over a fixed rear axle, a sliding friction-disk on the shaft of the motor, a counter-shaft forward of the motor having a driving-wheel thereon presented edgewise to the friction-disk and power-conveying devices such as chains for transmitting motion from the counter-shaft to each of the rear wheels.

4. In an automobile the combination of a motor mounted upon a spring-supported frame over a rear axle, a counter-shaft forward of the motor having fixed bearings, driven wheels mounted upon a rear axle, power-conveying devices, such as chains, connecting the counter-shaft direct with the driven wheels and means for transmitting the power of the motor to the counter-shaft at variable speeds.

5. In an automobile the combination of a motor, a sliding friction-disk on the shaft of the motor, a counter-shaft forward of the motor having a driving-wheel thereon presented edgewise to the friction-disk and means for moving the friction-disk and driving-wheel toward and from each other.

6. In an automobile the combination of a motor, a sliding friction-disk on the shaft of the motor, a counter-shaft forward of the motor having a driving-wheel thereon presented edgewise to the friction-disk, means for moving the friction-disk and driving-wheel toward and from each other and means to shift the driving-wheel across the face of the friction-disk.

7. In an automobile the combination of a motor mounted upon a spring-supported frame, a counter-shaft forward of the motor having fixed bearings, a sliding friction-disk on the shaft of the motor, driven wheels mounted upon a rear axle, power-conveying devices, such as chains, connecting the counter-shaft direct with the driven wheels and means for transmitting the power of the motor to the counter-shaft at variable speeds.

8. In an automobile the combination of a motor, a sliding friction-disk on the shaft of the motor, a counter-shaft forward of the motor having fixed bearings, a driving-wheel on the counter-shaft adapted to transverse movement relative to the friction-disk and means for transmitting the motion of the counter-shaft to the driven wheels.

9. In an automobile the combination of a motor, a sliding friction-disk on the shaft of the motor, a counter-shaft forward of the motor having fixed bearings, a driving-wheel on the counter-shaft adapted to transverse movement relative to the friction-disk and means for transmitting the motion of the counter-shaft to the driven wheels independently.

810,637. APPARATUS FOR CONTINUOUSLY DISTILLING BENZIN AND THE LIKE. AUGUST H. L. GERHARDT, Bottenhausen, near Cassel, Germany. Filed Sept. 15, 1903. Serial No. 173,264.

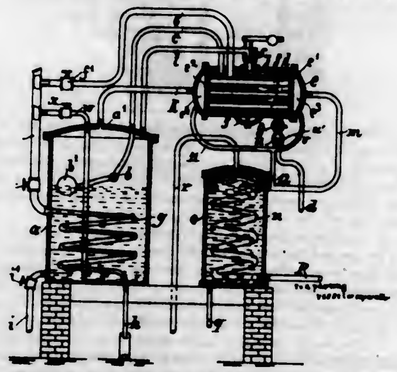

Claim.—1. In an apparatus of the character described, the combination with a still, of means for heating said still, a heater comprising two sections or compartments, a tube leading from a supply to one of the compartments, a safety-valve on the heater, a tube connecting the outlet of said safety-valve with said still, means for introducing steam in jets into said heater for cleaning same, a blow-off cock on the bottom part of said heater, a supply-tube for conducting the preliminarily-heated liquid from said heater into said still, a float-controlled supply-valve on the end of said supply-tube within said still, a tube connecting the top part of said still with the second compartment of said heater, a condenser, a tube connecting the second chamber of said heater with said condenser, and means for leading off the condensed pure liquid from said condenser.

2. In an apparatus of the character described, the combination

with a still, of a steam-coil within said still, means for conducting steam to said steam-coil, a draining-tube outside said still and connected with said steam-coil, means for admitting steam direct to said still, an internal supply-tube within said still, a float-controlled supply-valve on the free end of said internal supply-tube, a heater, a check-valve attached to the bottom part of said heater, a tube connecting said check-valve with the source of liquid to be distilled, a safety-valve on the top part of said heater and adapted for allowing any vapor developed from the preliminarily-heated liquid to escape, a tube for conducting the vapor escaping from said safety-valve to the top part of said still, means for introducing steam in jets into said heater for cleaning same, a blow-off cock on the bottom part of said heater for discharging the dirt mingled with steam, an external supply-tube for conducting the preliminarily-heated liquid from said heater into said internal supply-tube within said still, a tube connecting the top part of said still with the chamber of said heater adapted to receive the heated medium, a condenser, a tube connecting said chamber of said heater with said condenser, and means for leading off the condensed pure liquid from said condenser.

3. In an apparatus of the character described, the combination with a still, of a steam-coil within said still, a steam-supply tube connected with the one end of said steam-coil, a stop-valve inserted in said steam-supply tube, a draining-tube outside said still and connected with the other end of said steam-coil, an internal steam-tube within said still and reaching down to a point above the bottom, a branch tube connecting said internal steam-tube with said steam-supply tube, a stop-valve inserted in said branch tube, a discharging device on the bottom of said still, an internal liquid-supply tube within said still, a float-controlled supply-valve on the free end of said internal liquid-supply tube, a heater comprising collecting-chambers and connecting-tubes for the reception of the heated medium, and a separate space for the medium to be heated, a tube leading from the source of supply to the latter space, a check-valve located in such tube, a safety-valve on the top part of said heater and adapted for allowing any vapor developed from the preliminarily-heated liquid to escape, a tube connecting the outlet of said safety-valve with the top part of said still, a perforated steam-injecting tube within the space of said heater surrounding its heating-tubes, a branch tube connecting said perforated steam-injecting tube with said steam-supply tube and provided with a stop-valve, a blow-off cock on the bottom part of said heater, an external liquid-supply tube leading from the heater to the said internal tube in the still, a tube connecting the top part of said still with the heater, a condenser comprising a coil, a tube connecting the collecting-chamber of said heater with the one end of the coil of said condenser, a series of draining-tubes connecting the distributing-chamber and the collecting-chamber of said heater with said tube leading to the coil of said condenser, means for conducting a cooling fluid to said condenser and for leading off the warmed fluid, and a tube connecting the other end of the coil of said condenser with the place for further treating the condensed pure liquid.

4. In a distilling apparatus, the combination with a still, condenser, and main steam-conducting pipe and of a heater having two chambers therein, a conduit leading from the source of supply to the still in open communication with one of the chambers of the heater, a second conduit leading from the still to the condenser in communication with the other chamber of the heater, a discharge-cock located in the first conduit between the heater and source of supply, and a valve-controlled branch steam-pipe leading from the main steam-pipe to the first-named chamber of said heater, substantially as described.

5. The combination in a distilling apparatus with a still, condenser, and source of supply, of a heater including two compartments, one of said compartments, comprising a collecting-chamber, a distributing-chamber, and tubes providing open communication in between the two, and the second compartment being forged between said collecting and distributing chambers and about said tubes, a conduit leading from the still to the condenser in open communication with the first compartment, a conduit leading from the source of supply to the still in communication with said second compartment, and an auxiliary externally-arranged conduit connecting the collecting-chambers of the first-mentioned compartment of the heater and in communication with the conduit leading from the still to the condenser, substantially as described.

810,638. CLOTH-PRESSING MACHINE. DAVID GRIMES, Worcester, Mass. Filed Aug. 12, 1903. Serial No. 169,288.

Claim.—1. In a rotary cloth-press, in combination, a cylinder, a presser, two aprons running between the same and means whereby one of said aprons is wound up with the cloth.

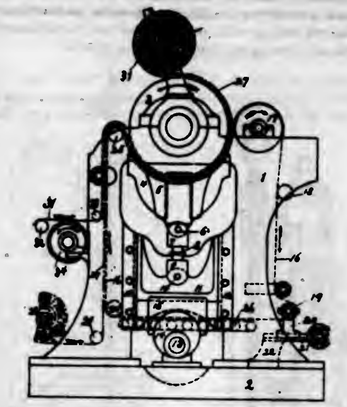

2. In a rotary cloth-press, in combination, a cylinder, a presser, two aprons running between the same; one of said aprons being endless and the other non-endless and means whereby the non-endless apron is wound up.

3. In a rotary cloth-press, in combination, a cylinder, a presser, means whereby the cloth is conducted between the cylinder and presser, a non-endless apron and means whereby the same is wound up with the cloth.

4. In a rotary cloth-press, in combination, a cylinder, a presser, a dry apron running in contact with the presser and a moist apron running in contact with the cloth between the dry apron and the cloth.

5. In a rotary cloth-press, in combination, a cylinder, a presser, a dry apron running in contact with the presser and a moist apron running with the cloth between the dry apron and the cylinder and means whereby the cloth and said moist apron are wound up together.

6. In a rotary cloth-press, in combination, a cylinder, a presser, a dry apron running between the cloth and presser, a moist apron and means whereby the moist apron is wound up with the cloth.

7. In a rotary cloth-press, in combination, a cylinder, a presser, a non-endless apron, means whereby the cloth and non-endless apron are conducted between the cylinder and presser and means whereby said non-endless apron is wound up with the cloth after leaving said presser.

8. In a rotary cloth-press, in combination, a heated cylinder, a presser, a non-endless apron, means whereby the cloth and non-endless apron are conducted between the cylinder and presser, means whereby they are held in contact with the cylinder after passing beyond the presser and means whereby they are thereafter wound up together.

9. In a rotary cloth-press, in combination, a cylinder, a presser, means whereby the cloth is conducted between the same, a non-endless apron, and means whereby the cloth and non-endless apron are after leaving said presser held in contact with a heated surface and wound up together.

810,639. ROCK-DRILL. ARTHUR H. GIBSON, Easton, Pa., assignor to The Ingersoll-Sergeant Drill Company, New York, N. Y., a Corporation of West Virginia. Filed June 2, 1905. Serial No. 263,433.

Claim.—1. The combination with a rock-drill cylinder having a rear extension, of a piston having a hollow tail-rod extended into and entirely inclosed by said rear extension, a sleeve surrounding the tail-rod forming an annular chamber within the rear extension, a rifle-bar telescoping within the tail-rod and a port leading from the annular chamber to the air-space within the sleeve and tail-rod.

2. The combination with a rock-drill cylinder having a rear extension, of a piston having a hollow tail-rod extended into and entirely inclosed by said rear extension, a sleeve surrounding the tail-rod forming an annular chamber within the rear extension, a rifle-bar telescoping within the tail-rod, a port leading from the annular chamber to the air-space within the sleeve and tail-rod and an aperture leading from the annular chamber to the exterior.

3. The combination with a rock-drill cylinder having a rear ex-

tension, of a piston having a hollow tail-rod extended into and entirely inclosed by said rear extension, a hollow sleeve surrounding the tail-rod, a washer surrounding the tail-rod for preventing as much as possible the leakage of air past the same from the piston-chamber and a rifle-bar telescoping within the hollow tail-rod.

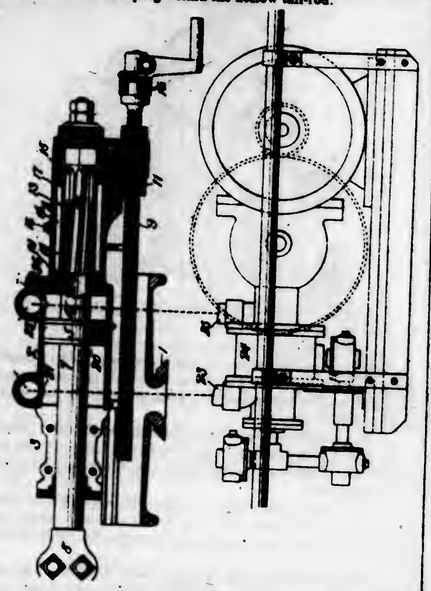

810,640. BRUSH HOLDER AND SCRAPER. CHARLES T. GREENER, Faulkton, S. D. Filed May 11, 1905. Serial No. 259,933.

Claim.—1. A device of the class described comprising spring members for attachment of the device to a pail or receptacle, the members being twisted upon themselves and joined together intermediate their ends, to form upper members for the reception of a brush-handle, a brush-wiper carried by the members, and a putty-receptacle carried by the members.

2. A device of the class described, comprising spring members whereby the device may be attached to a pail or receptacle, the spring members including clamping members and members also for the reception of a paint-brush, a brush-wiper, a putty-receptacle, the brush-wiper and the walls of the receptacle being formed of a single piece of material, and means for clamping the aforesaid members tightly upon the side wall of the pail or bucket.

3. A device of the class described comprising spring members for attachment to a pail, and having means for clamping a brush-handle therebetween, a brush-wiper, a putty-receptacle, and means for clamping the aforesaid members tightly into engagement with the inner and outer walls of the pail.

810,641. SHAFT AND POLE COUPLING FOR WAGONS. ROBERT GRUNER, Louisville, Ky. Filed Aug. 14, 1905. Serial No. 274,033.

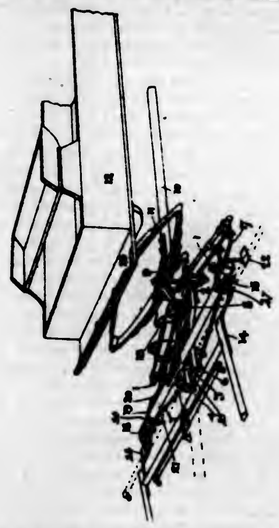

Claim.—1. In draft-gear for wagons, the combination of the front axle, fore hounds curved upward, a transverse draft-bar secured above the front ends of said fore hounds, pillars between said fore hounds and said draft-bar, a truss-rod connecting said fore hounds with the outer ends of said draft-bar, braces connecting the outer ends of said draft-bar with the front axle, a brace connecting said draft-bar with said fore hounds, a spring-stay secured at its rear end to the perch of the wagon and at its forward end to the front part of the fifth-wheel, and a supporting-hook secured to the forward end of said spring-stay and extending under and bearing on the under surface of the lower portion of the fifth-wheel, substantially as specified.

2. In a draft-gear for wagons, the combination of a front axle, fore hounds secured to said front axle and to the fifth-wheel, a transverse draft-bar, means for securing said draft-bar to said fore hounds in elevated relation thereto, means for supporting the outer ends of said draft-bar relative to said fore hounds, means for rigidly connecting the outer ends of said draft-bar with said front axle, and means for bracing the forward part of the fifth-wheel, said fore hounds and said draft-bar from the perch and preventing torsional strain on the axle, substantially as specified.

810,642. CHANGEABLE-SPEED GEAR FOR FEEDER-APRONS. WILLIAM T. S. GOODEN, Battlecreek, Mich., assignor to Nichols and Shepard Company, Battlecreek, Mich. Filed Mar. 28, 1903. Serial No. 151,694.

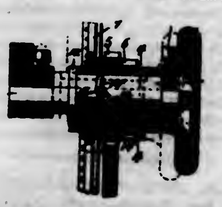

Claim.—1. The combination with a driving-shaft and a driven shaft, of means for varying the relative speed of said driven shaft,

consisting of a gear-wheel on one shaft, a plurality of different-sized pinions on the other shaft adapted to mesh with said gear-wheel and a pinion-shifting device which actuates the pinions lengthwise and also laterally with respect to their shaft.

2. The combination with a driving-shaft, and a driven shaft, of mechanism for varying the relative speed of said shafts consisting of a gear-wheel on one of said shafts, connected pinions adapted to mesh therewith, and means for moving the pinions across the periphery of the gear-wheel and toward or away from the axis of the gear-wheel without varying the position of either shaft.

3. The combination with parallel driving and driven shafts, of mechanism for varying the relative speed of said shafts consisting of a gear-wheel on one of said shafts, connected pinions adapted to mesh therewith, and means for moving the pinions across the periphery of the gear-wheel and toward or away from the axis of the gear-wheel without varying the position of either shaft.

4. The combination with a driving-shaft, and a driven shaft, of mechanism for varying the relative speed of said shafts consisting of a gear-wheel on one of said shafts, connected pinions adapted to mesh therewith, an eccentric on which the pinions are journaled, and means for turning said eccentric and also moving the same endwise to carry the pinions across the periphery of the gear-wheel and also toward or away from the axis of the gear-wheel.

5. The combination with a driving-shaft, and a driven shaft, of mechanism for varying the relative speed of said shafts consisting of a gear-wheel on one of said shafts, connected pinions adapted to mesh therewith, an eccentric sleeve on which the pinions are journaled, a shaft on which the eccentric sleeve turns, means for turning the eccentric sleeve on its shaft, and means for causing said sleeve to move lengthwise of its shaft.

6. The combination with a driving-shaft, and a driven shaft, of mechanism for varying the relative speed of said shafts consisting of a gear-wheel on one of said shafts, connected pinions adapted to mesh therewith, one at a time, an eccentric sleeve on which the pinions are journaled, a shaft on which the eccentric sleeve turns, a pin on the shaft working in a spiral slot in the eccentric sleeve, and means for turning said sleeve.

7. The combination with a driving-shaft, and a driven shaft, of mechanism for varying the relative speed of said shafts consisting of a gear-wheel on one of said shafts, connected pinions adapted to mesh therewith, one at a time, an eccentric sleeve on which the pinions are journaled, a shaft on which the eccentric sleeve turns, a pin on the shaft working in a spiral slot in the sleeve, means for turning said sleeve, and means for holding said sleeve fixed when adjusted.

810,643. COOLING MEANS FOR EXPLOSIVE-ENGINE CYLINDERS. SIMEON HAM, Indianapolis, Ind., assignor of one-half to August H. Timmerman, Indianapolis, Ind. Filed May 8, 1905. Serial No. 259,966.

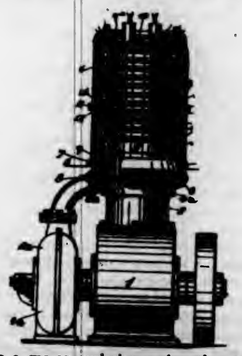

Claim.—In a gas or explosive engine, the combination with the cylinder thereof and a series of integral-turned air-cooling ribs surrounding said cylinder, of a jacket or casing surrounding said cooling-ribs of said cylinder and having its top and bottom ends open, said jacket having an outwardly-flaring base-lip, an inwardly and downwardly curved deflecting-lip situated at the top of said jacket or casing whereby the column of outgoing air is deflected against the end cover of the cylinder, an annular air-jet tube, having a continuous annular slit or air-outlet jet-opening, situated beneath the bottom open end of said casing in relative position thereto so that the air under pressure escaping from said annular slit is directly applied to cool the cylinder, a pressure-blower connected directly to the crank-shaft of said engine and suitable means for connecting said blower to said annular jet-tube.

810,644. SIGHT FOR ORDNANCE. EDGAR A. S. HANHAM, South Bethlehem, Pa., assignor to Bethlehem Steel Company, South Bethlehem, Pa., a Corporation of Pennsylvania. Filed Nov. 20, 1903. Serial

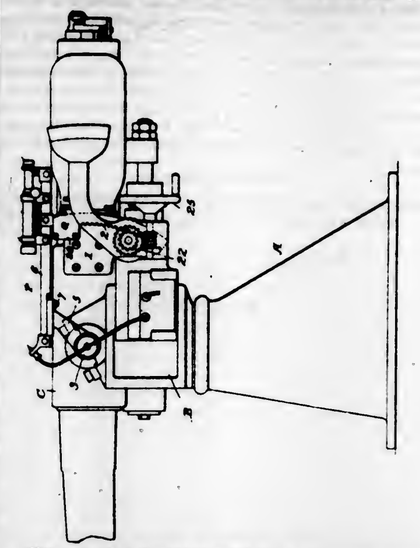

Claim.—1. The combination with the top carriage and gun of a gun-mount, of a cradle swinging on the top carriage, elevating-gear supported by the top carriage and an elevating-rack connected with the cradle, a frame composed of two connected sections, one section carrying a telescope and provided with a rack, and the other section pivoted to the gun, and elevating-gear independent of the gun-elevating gear, carried by the cradle and constructed to raise and lower the said frame, substantially as set forth.

2. The combination with the swinging cradle of a gun, of a rack-plate 1 connected to the cradle, and having a curved rack 2 thereon, a swinging frame carrying a telescope and provided with a rack 15, lying alongside of the rack 2, a casing formed in part by the said plate and in part by a cap-plate 30, elevating-gear engaging the rack 15 and inclosed by said plates; and an external operating-handle for said gear, substantially as set forth.

810,645. SUPPORT FOR VOTING-MACHINES. ELIZA A. HARRINGTON, Lyndhurst, N. J., executrix of Charles F. Harrington, deceased, assignor to The Diel Voting Machine Company, Lyndhurst, N. J., a Corporation of New Jersey. Filed Feb. 1, 1905. Serial No. 243,777.

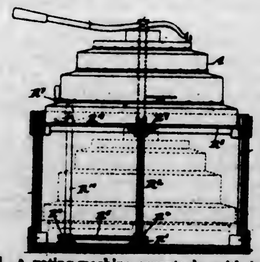

Claim.—1. A voting-machine receptacle, with interior guide-rails, a base-plate having means cooperating with said guide-rails, means for raising and lowering said base-plate comprising a central

screw-shaft, extending axially of said receptacle and engaging a

3. In spacing mechanism, the combination of a stationary rack-

screw-shaft, extending axially of said receptacle and engaging a threaded boss on said base-plate, a shaft parallel with said screw-shaft, means for rotating the same, means for imparting rotary motion to the screw-shaft therefrom, and the axially-disposed tubular operating-shaft of the voting-machine inclosing the screw-shaft for guiding the voting-machine in its movements and serving to center the same with relation to said screw-shaft, all substantially as and for the purpose specified.

2. A receptacle and support for a voting-machine, comprising a case, a centrally-located screw-shaft therein, guide-rails on the interior of said case, a base-plate carrying said machine and matching said guide-rails, a screw-threaded boss on said plate receiving said screw-shaft, a driving-shaft and means for operating it, a sprocket-wheel on each of said shafts, a sprocket-chain for said sprocket-wheels, and swinging brackets hinged to said case, adapted to engage said base-plate and support the latter and the machine thereon and blocks within said receptacle upon the bottom thereof to support the base-plate and voting-machine free of the sprocket-wheels and chain.

810,646. OBSERVATION-TROLLEY-CAR RAILWAY. LOUIS J. HARRIS, New York, N. Y. Filed July 14, 1905. Serial No. 269,719.

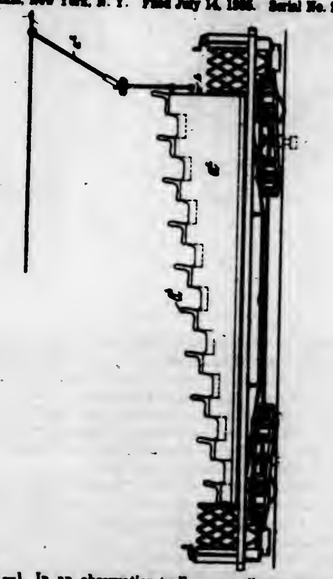

Claim.—1. In an observation-trolley-car railway, a track, a pair of trucks movable along the track, a platform carried by the trucks, a car-body rotatably supported by the platform intermediate the said trucks, an electric conductor and a traveling contact to engage therewith.

2. In an observation-trolley-car railway, a track, a pair of trucks movable along the track, a platform supported by the trucks, a car-body rotatably supported by the platform intermediate the said trucks, means to rotate the car-body, an electric conductor and a traveling contact to engage therewith.

3. In an observation-trolley-car railway, a track, a pair of trucks movable along the track, a platform supported by the trucks, means to impart movement to the said trucks, a car-body having a series of stepped seats rotatably supported by the platform intermediate of said trucks, an electric conductor, and a traveling contact to engage therewith.

4. In an observation-trolley-car railway, a track, a pair of trucks movable along the track, a platform supported by the trucks, a car-body having a series of stepped seats and rotatably supported by the platform intermediate the said trucks, means to rotate the car-body, an electric conductor and a traveling contact to engage therewith.

810,647. REFILLED-BOTTLE DETECTOR AND IDENTITY-DESTROYER. EDWIN S. HAYNES, Boston, Mass. Filed July 17, 1905. Serial No. 269,932.

Claim.—1. The combination with a bottle, of a sealing-plug secured within the neck of the bottle and having a weakened portion below the top of the neck, substantially as described.

2. The combination with a bottle, of a sealing-plug having a tubular portion secured within the neck of the bottle, an expanded upper end of substantially the diameter of the neck of the bottle, and a weakened portion located below the top of the neck, substantially as described.

3. The combination with a bottle, of a tubular sealing-plug having a weakened portion, and a stopper secured within the plug and extending above the weakened portion, substantially as described.

810,648. SPACING MECHANISM. WILLIAM L. HAYNES, Ambridge, Pa. Filed Oct. 26, 1904. Serial No. 229,127.

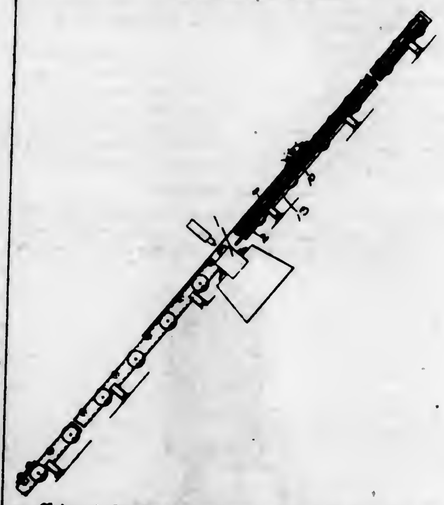

Claim.—1. In spacing mechanism, the combination of a stationary spacing-bar, a bar parallel to said spacing-bar, a spacing-stop member movable along said spacing-bar, and changeable stop-pieces adapted to be inserted between said bars and held with their ends projecting into position to be engaged by said stop member, said spacing-bar and stop-pieces being provided with equidistant co-operating depressions and projections, and said stop-pieces having a stop-face on each end arranged differently with reference to their projections.

2. In spacing mechanism, the combination of a stationary spacing-bar, a spacing-stop member movable along said bar, changeable stop-pieces adapted to be held by said bar in position to be engaged by said stop member, said bar and stop-pieces being provided with equidistant co-operating depressions and projections, and said stop-pieces having a stop-face on each end arranged differently with reference to their projections, and having both end faces cleared away back of said stop-faces.

3. In spacing mechanism, the combination of a stationary rack-bar, a bar parallel to said rack-bar, a spacing-stop member movable along said rack-bar, and changeable stop-pieces provided with teeth and adapted to be inserted between said bars and held by said rack with their ends projecting into position to be engaged by said stop member, said stop-pieces having a stop-face on each end arranged differently with reference to their teeth.

4. In spacing mechanism, the combination of a stationary rack-bar, a spacing-stop member movable along said bar, and changeable stop-pieces provided with teeth and arranged to be engaged by said rack and held in position to be engaged by said stop member, said stop-pieces having a stop-face on each end and having both ends cleared away behind said stop-faces.

5. In spacing mechanism, the combination of a stationary rack-bar, a bar parallel to said rack-bar, a spacing-stop member movable along said rack-bar, and changeable stop-pieces provided with teeth for engaging the rack and adapted to be inserted between said bars and held with their ends projecting into position to be engaged by said stop member, said stop-pieces having stop-faces on their ends, and one of said bars being provided with a ledge or flange against which the end of the stop-pieces abut.

6. In spacing mechanism, the combination of a stationary rack-bar, a spacing-stop member movable along said bar, changeable stop-pieces provided with teeth for engaging the rack and adapted to be held by the latter in position to be engaged by the stop member, said stop-pieces being provided with a stop-face at each end and having their ends cleared away back of said stop-faces, and means for holding said stop-pieces against said rack-bar.

7. In spacing mechanism, the combination of a stationary spacing-bar, a spacing-stop member movable along said bar, changeable stop-pieces adapted to be held by said bar in position to be engaged by said stop member, a bar parallel to the spacing-bar and arranged to hold the spacing-pieces against the spacing-bar, said spacing-bar and holding-bar being provided with teeth on their facing sides, and said stop-pieces being provided on their side faces with corresponding teeth.

8. In spacing mechanism, the combination of a stationary spacing-bar, a bar parallel to said spacing-bar, said spacing-bar being provided with teeth on its side which faces the other bar, a spacing-stop member movable along said bars, and changeable stop-pieces adapted to be inserted between said bars and provided on their side faces with teeth to engage the teeth on said spacing-bar.

9. In spacing mechanism, the combination of two parallel bars both provided with teeth on their facing sides, a spacing-stop member movable along said bars, and changeable stop-pieces provided with teeth on two of their sides and adapted to be inserted between said bars and held in position thereby to be engaged by said spacing member.

10. In spacing mechanism, the combination of a stationary spacing-bar, a spacing-stop member movable along said bar, changeable stop-pieces adapted to be held by said bar in position to be engaged by said stop member, a hinged clamping-bar parallel to the spacing-bar, and means for pressing the same against said spacing-pieces.

11. In spacing mechanism, the combination of a stationary spacing-bar, a spacing-stop member movable along said bar, changeable stop-pieces adapted to be held by said bar in position to be engaged by said stop member, a clamping-bar parallel to the spacing-bar and movable toward and from the same, and fluid-pressure means for moving the same.

12. In spacing mechanism, the combination of a stationary spacing-bar, a spacing-stop member movable along said bar, changeable stop-pieces adapted to be held by said bar in position to be engaged by said stop member, a clamping-bar parallel to the spacing-bar, a stationary abutment at the side of said clamping-bar, and an expansible fluid-pressure chamber between said clamping-bar and stationary abutment.

13. In spacing mechanism, the combination of a stationary spacing-bar, a spacing-stop member movable along said bar, changeable stop-pieces adapted to be held by said bar in position to be engaged by said stop member, a clamping-bar parallel to the spacing-bar and movable toward and from the same, a spring and fluid-pressure means, the one for moving said clamping-bar toward the spacing-bar, and the other for moving the same away from said spacing-bar.

14. In spacing mechanism, the combination of a stationary spacing-bar, a spacing-stop member movable along said bar, a clamping-bar parallel to the spacing-bar, said clamping and spacing bars being provided on their facing sides with teeth, changeable stop-pieces provided with teeth on opposite side faces for engaging the teeth in the clamping and spacing bars, and means for moving said clamping-bar to clamp said spacing-pieces against the spacing-bar.

15. In spacing mechanism, the combination of a stationary rack-bar, and a series of changeable stop-pieces having teeth on two of their sides for engaging said rack-bar and having stop-faces on opposite sides thereof, whereby said stop-pieces are reversible.

16. In spacing mechanism, the combination of a stationary rack-bar, and a series of changeable stop-pieces adapted to be held by said rack-bar, said stop-pieces having teeth on opposite side faces and with stop-faces on opposite edge faces and having a portion of each side face cleared away back of the two stop-faces.

17. In spacing mechanism, the combination of a stationary rack-bar, and a series of changeable stop-pieces adapted to be held by said rack-bar, said stop-pieces being provided with teeth on two opposite side faces and with stop-faces on the two opposite edge faces at both ends, whereby said stop-pieces are reversible end for end and side for side.

18. In spacing mechanism, the combination of a stationary rack-bar, and a series of changeable stop-pieces adapted to be held by said rack-bar, said stop-pieces being provided with teeth on the two opposite side faces and with stop-faces on the two opposite edge faces at both ends and having both side faces at both ends cleared away back of said stop-faces.

19. In spacing apparatus, a stationary bearing having vertical serrations therein, a movable bearing having vertical serrations therein, a stop having vertical serrations engaged by the serrations of said bearings, and means for clamping said parts together.

20. In spacing apparatus, a reversible stop having contact-surfaces on opposite ends thereof unequally distant from the plane parallel thereto and passing centrally through the body of said stop, a stationary bearing and a movable bearing for clamping said stop.

21. In spacing apparatus, a stop having parallel serrations on opposite sides thereof and opposite ends having contact-surfaces unequally distant from the axial plane of said stop.

22. In spacing apparatus, a series of adjustable stops, a bar for holding said stops, and mechanism for clamping several points of said bar by a single operation.

23. In spacing apparatus, a series of adjustable stops, a stationary bearing having serrations thereon, a movable bearing having serrations thereon, a plurality of stops having serrations engaged by the serrations of said bearings, and mechanism for clamping and unclamping said parts at several points by a single operation.

24. In spacing apparatus, a series of adjustable stops and mechanism for fastening or unfastening all of said stops by a single operation.

810,649. WHEEL. CHARLES HEART, Alexandria, Ind., assignor to Heart Metal Wheel and Gear Company, Alexandria, Ind., a Corporation of Indiana. Filed May 26, 1905. Serial No. 262,114.

Claim.—1. A wheel including a hub having a body comprising two parts, two shell parts embracing the body parts and provided with projections forced into ends of the body parts, a spoke-seat arranged between the opposing ends of the shell parts, a plurality of spokes seated against the spoke-seat, a felly attached to the spokes, and means forcibly holding the spokes between the opposing ends of the shell.

2. A wheel including a hub having a body comprising two parts provided each with an inclosing shell having a circular hub-seat attached thereto and telescoping one with another, a plurality of spokes engaging one of the hub-seats, a felly attached to the spokes, and means engaging the shells of the two parts of the hub-body and forcing the same against opposite sides of the plurality of spokes.

3. A wheel including a hub comprising two companion parts, each part composed of a body part, a shell embracing the body part and secured thereto, and a flanged casing embracing the shell, one shell having a circular spoke-seat attached thereto and to the body part; a plurality of spokes engaging the spoke-seat, means engaging the casings and forcing the shells therewith against opposite sides of the plurality of spokes, and a felly attached to the plurality of spokes.

4. A wheel including a hub comprising two companion parts, each part composed of a body part, a shell embracing the body part

and having flanges at opposite ends thereof turned over portions of the ends of the body part, the shell being secured to the body part, each shell having a circular flanged spoke-seat attached thereto and to the body part by means of a flange of the shell and the flange of the spoke-seat, a plurality of spokes engaging the spoke-seat, a felly attached to the plurality of spokes, and means engaging the shells and thereby forcing the two companion parts of the hub against opposite sides of the plurality of spokes.

5. A wheel including a hub comprising two companion parts, each part composed of a body part of which one part has a projection at an end thereof, a shell embracing the body part and having flanges at ends thereof turned over portions of the ends of the body part, the shell being secured to the body part, each shell having a circular flanged spoke-seat attached thereto and to the body part by means of the flanges thereof, one of the spoke-seats extending over the projection of the body part and into the other spoke-seat, a plurality of spokes engaging one of the spoke-seats, a felly attached to the plurality of spokes, and a flanged casing attached to the shell; and means engaging the casings of the two companion parts and forcibly holding the plurality of spokes between the two companion parts of the hub.

6. A wheel including a hub comprising two companion parts, each part composed of a conical wooden body part, a conical metallic shell embracing the body part and having a flange at the larger end thereof turned over a portion of the larger end of the body part and also having a flange at the smaller end thereof provided with projections forced into the smaller end of the body part, the shell having a circular spoke-seat having a flange extending between the larger end of the body part and the turned-over flange of the shell, the spoke-seat of one part extending about the spoke-seat of the other part and movable thereon, a plurality of spokes engaging the outer one of said spoke-seats, a felly attached to the plurality of spokes, casings attached to the companion parts, means securing the casings and the companion parts against the plurality of spokes, and an axle-box in the body parts of the hub.

810,650. IRON-HEATER. MARTHA G. HENDLEY, Mayfield, Ky. Filed July 3, 1905. Serial No. 268,573.

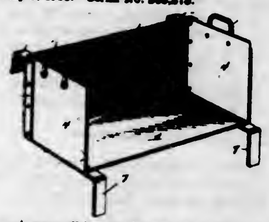

Claim.—A reversible attachment for stoves comprising a body formed of sheet metal and consisting of integral main walls disposed at right angles to each other and both adapted to be utilized either as a shelf or a heating-wall, end walls integral with one of the main walls and flanges integral with the ends of the other one of the main walls and overlapping and permanently connected to the end walls, flat metal strips permanently connected to the main walls adjacent their ends and terminating at one end in legs and at the other end in hooks, either the legs or hooks being adapted to project through a grate and into fuel to support the heating attachment in contact with the grate, and handles extending from the end walls.

810,651. ELECTRIC GENERATOR FOR BICYCLES. FRANK X. HEDBAUER, West Orange, N. J. Filed June 14, 1902. Serial No. 111,897.

Claim.—1. The combination with the bicycle-frame and running-wheel, the former having a pivotal arm and holding-spring, of a dynamo-electric machine arranged on said pivotal arm and adapted to engage the running-wheel of the bicycle and be operated thereby and adapted to engage said holding-spring and be held thereby out of operative relation to said running-wheel, the dynamo being provided with a box-like protuberance serving the double purpose as a receptacle for contacting conducting devices of the dynamo and as an arm or protuberance to engage the holding-spring, substantially as set forth.

2. The combination with the headlight and conducting-wires, of a dynamo-electric machine comprising a magnet, non-magnetic side plates, an armature rotating between said side plates, between the prongs of the magnet, the said side plate furnishing bearings for a pivotal arm and a box-like protuberance, a contact-spring in said protuberance engaging the armature-shaft and conductors of said magnet and spring with said headlight, substantially as set forth.

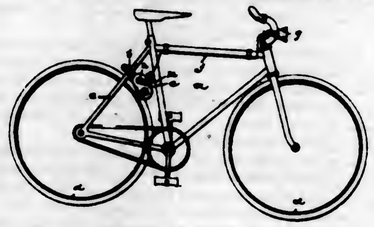

810,652. SIEVE. WILLIAM H. HOTT and WILLIAM J. GAVEN, Bridgeport, Conn., assignors to The Burt Company, Hackensack, N. J., a Corporation of New Jersey. Filed Jan. 6, 1905. Serial No. 239,936.

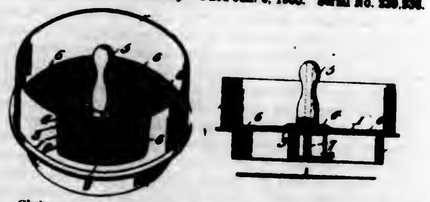

Claim.—1. In a sieve, the combination of a clearing device, means for confining the deposit of material to the desired surface, means for centering the sieve over said surface, and means for protecting a portion of said surface from the deposit of material thereon.

2. In a sieve, the combination of a clearing device, means for confining the deposit of material to the desired surface, means for centering the sieve over said surface, and means resting on said surface and protecting a portion thereof from the deposit of material thereon.

3. In a sieve, the combination of the wire mesh, a clearing device, means for confining the deposit of material to the desired surface, means for centering the sieve over said surface, and a cylinder secured to the center of the under side of the wire mesh to protect a portion of said surface from the deposit of material thereon.

4. In a sieve, the combination of the wire mesh, a clearing device, means for centering the sieve over the surface on which material is to be deposited, and a cylinder secured to the center of the under side of the wire mesh to protect a portion of said surface from the deposit of material thereon.

5. In a sieve, the combination of the wire mesh, a clearing device, a cylinder secured to the center of the under side of the wire mesh to protect a portion of the surface on which the material is to be deposited, and means arranged within said cylinder for centering the sieve over said surface.

6. In a sieve, the combination of the wire mesh, a clearing device, a cylinder secured to the center of the under side of the wire mesh to protect a portion of the surface on which the material is to be deposited, and a guide in the center of the cylinder for centering the sieve over the desired surface.

7. In a sieve, a foraminous material constituting the sieve proper, and means carried thereby and confining to an annular space the material deposited by said sieve.

810,653. GAS-BURNER. SAMUEL W. HYATT, Mount Vernon, Ohio. Filed Jan. 14, 1905. Serial No. 241,004.

Claim.—A gas-burner comprising a nozzle provided with a port, a valve having a stem of less cross diameter throughout than the port and adapted to project therethrough and having its tip cut away to provide a gas-escape, means for adjusting the parts with relation

to each other, and means for holding the parts in their adjusted positions.

810,654. INGOT-CASTING MACHINE. JOHN ILLINGWORTH, Newark, N. J. Filed June 17, 1905. Serial No. 265,749.

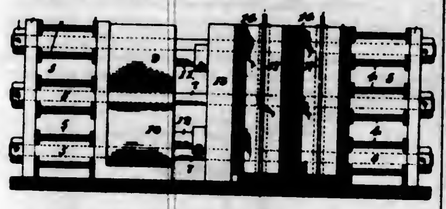

Claim.—1. In an ingot-casting machine, side walls or frames comprising I-beams arranged horizontally one upon another, tie rods or bolts binding the said side walls together, a hydraulic cylinder and a piston, and a mold arranged between the piston and one of the side walls, said mold being in sections disposed perpendicular to the direction of movement of the said piston and having pieces separably inserted between the sections and adapted to be wholly withdrawn from between the molds preliminary to a compression of the partially-cooled ingot.

2. In an ingot-casting machine, the combination of opposite side walls, each comprising a series of I-beams arranged horizontally upon one another, tie rods or bolts holding said side walls together, a series of molds arranged transversely of the machine between two adjacent tie-rods, and a hydraulic cylinder and piston also between said tie-rods in series with said molds, the said molds each being in sections disposed perpendicular to the direction of movement of the said piston and each having pieces also disposed in lines perpendicular to said movement of said piston, said pieces being separable from the sections of the mold and adapted to be wholly withdrawn endwise from between said sections preliminary to the compressing action of the hydraulic piston.

3. In an ingot-casting machine, the combination with a bed-plate, opposite side walls each comprising a vertical series of horizontally-disposed I-beams, transverse tie rods or bolts holding the said side walls together, a transverse series of molds arranged between two adjacent tie-rods, a loose base-plate beneath said molds, a pressure-piece against the side of said molds farthest from the side wall, and a hydraulic cylinder and piston between said pressure-piece and the other side wall, the said molds being each in sections having therebetween removable pieces disposed transversely to the direction of movement of the piston and adapted to be withdrawn from between said sections preliminary to the compressing operation of the hydraulic piston.

4. In an ingot-casting machine, a mold comprising a body portion divided longitudinally into sections and having the meeting edges of said sections grooved, tongued metallic filler-pieces adapted to be inserted between said edges and lie in said grooves and means for compressing said molds.

5. In an ingot-casting machine, a series of molds each comprising a tubular body portion divided longitudinally into sections, the opposing edges of said sections being grooved and filler-pieces each adapted to lie between two meeting edges of the mold-sections and having opposite tongues to enter the grooves of said edges, and means for compressing said molds.

6. In an ingot-casting machine, a frame having opposite side walls, a series of molds arranged between said side walls, each mold being divided longitudinally into sections, filler-pieces adapted to be inserted between the edges of said sections and wholly withdrawn from therebetween preliminary to the compressing operation and means for compressing said molds.

7. In an ingot-casting machine, the combination of molds, each comprising longitudinal sections adapted to meet at their edges, and having said edges grooved, filler-pieces each comprising a body portion adapted to lie between the meeting edges of the mold-sections, and projecting upwardly beyond the upper ends of said sections and thereat provided with a handle whereby the filler-piece may be withdrawn longitudinally and wholly from between said sections and having at its opposite sides below said handle ribs or tongues to enter the grooves of said edges.

8. The improved ingot-forming machine herein described, having therein a mold in sections, the contiguous walls of which are grooved and have filler-pieces inserted between said contiguous walls and provided with ribs to enter said grooves, substantially as set forth.

9. The improved ingot-forming machine herein described, comprising two vertical series of beams and means for holding said beams together in series and means for tying one series to the other series, the said series being one at a distance from the other, spaces being provided between said series to receive a collection of sectional molds and a plurality of hydraulic rams, the said rams bearing against one wall of the series of beams and oppositely against certain of the sectional molds, pieces inserted, perpendicular to the direction of movement of the hydraulic rams, between the sections of the molds and adapted to be removed from between said molds, substantially as set forth.

810,655. CASEIN-PICKER. A. B. IRELAND, Greene, N. Y. Filed July 20, 1904. Serial No. 218,571.

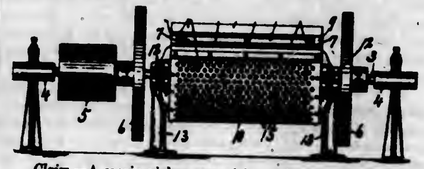

Claim.—A casein-picker comprising a sheet-metal shell having an inlet in one side and having an angle-plate arranged at each edge of said inlet, said shell being provided with a series of holes extending throughout the entire surface of the shell, portions of the stock around each hole being left integral with the shell and pressed inwardly beyond the inner surface of the shell to form pickers, supports for said shell, a shaft journaled in said supports, radial arms carried by said shaft and flat bars connected to the outer ends of said radial arms and forming a dasher.

810,656. COIN COLLECTING AND CARRYING DEVICE. MORRIS KOHN, New York, N. Y. Filed Jan. 3, 1905. Serial No. 239,327.

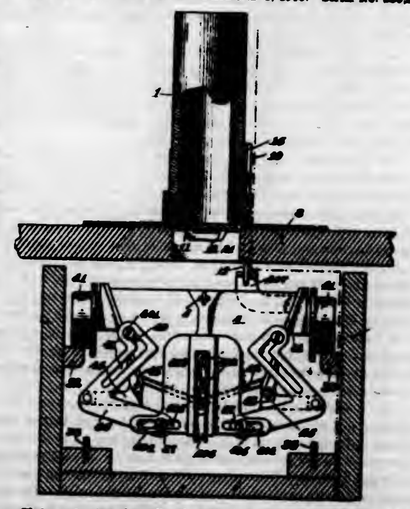

Claim.—1. A coin-collecting device comprising a coin-chute, coin-retaining means at the foot of said chute, a dump-car traveling beneath said chute, a coin-receptacle in the line of travel of said car, means on said car for first unlocking and then tripping said coin-retaining means, and means for dumping coins carried by said car into said receptacle.

2. A coin-collecting device, comprising a coin-chute, coin-retaining means at the foot of said chute, a car having normally locked dumping means traveling beneath said chute, a coin-receptacle in the line of travel of said car, means on said car for tripping said coin-retaining means, and means for first unlocking and then tripping said dumping means.

2. A coin collecting and distributing device comprising a coin-holder, toggle-acting levers connected to operate the holder, a car below said coin-holder having two bottom doors, a member on said car cooperating with one of the members of the toggle on the said coin-holder, each bottom door of said car being pivoted at its side and made to cover half the bottom of the car, a side extension to each bottom door, toggle-acting means connected to operate the doors by means of said side extension, and a cam below said car made to cooperate with the toggle-acting means on the car.

4. A coin-collecting device comprising a coin-holder, toggle-acting levers connected to operate the holder, a car below said coin-holder, and a member on said car cooperating with one of the members of the said toggle, whereby the coin-holder is tripped as the car passes under the coin-holder.

5. A coin collecting and distributing device comprising a car having two bottom doors, each bottom door pivoted at its side and made to cover half the bottom of the car, a side extension to each bottom door, toggle-acting means connected to control the doors by means of said side extension, and a cam below said car made to cooperate with the toggle-acting means, whereby the doors are tripped as the car passes over the cam.

6. A coin-collecting device comprising a coin-holder, toggle-acting levers connected to operate the holder, means for locking said holder in its normal position, a car below said coin-holder, and a member on said car cooperating with one of the members of the said toggle, whereby the coin-holder is unlocked and tripped as the car passes under the coin-holder.

7. A coin collecting and distributing device comprising a car having two bottom doors, each bottom door pivoted at its side and made to cover half the bottom of the car, a side extension to each bottom door, toggle-acting means connected to control the doors by means of said side extension, means for locking said doors in their normal position, and a cam below said car made to cooperate with the toggle-acting means, whereby the doors are unlocked and tripped as the car passes over the cam.

8. A coin-collecting device comprising a coin-holder, adapted to swing on a pivot, a bent lever provided with a slot and pivotally attached to the rearward extension of the holder, a pin above said holder engaging said slot, a car below said coin-holder, and a cam on said car cooperating with the bottom of the bent lever, thereby operating the coin-holder.

9. A coin-collecting device comprising a coin-holder, adapted to swing on a pivot, a bent lever provided with an angular slot and pivotally attached to the rearward extension of the holder, a pin above said holder engaging said angular slot, a car below said coin-holder, and a cam on said car cooperating with the bottom of the bent lever, thereby operating the coin-holder.

10. A coin collecting and distributing device comprising a car, a pointed bottom to said car consisting of two bottom plates, each bottom plate pivoted at its side and made to cover half the bottom of the car, a side extension to each bottom plate, bent levers each provided with an angular slot and pivotally attached to the ends of said side extensions, pins on said car above said bottom plates engaging the angular slots in the bent levers, a front plate provided with one vertical and two horizontal slots, means on said car engaging the vertical slot for holding said front plate, whereby a certain vertical movement is permitted, a pin on each of the said bent levers engaging the horizontal slots of the said front plate, a wheel in said vertical slot, and a cam below said car made to cooperate with the said wheel on the said front plate to force the said front plate up, thereby operating the bottom plates.

11. A coin collecting and distributing device comprising a car, a bottom to said car composed of two bottom plates, each bottom plate pivoted at its side and made to cover half the bottom of the car, a sidewardly extension to each bottom plate, bent levers each provided with a slot and pivotally attached to the ends of said side extensions, pins on said car above said bottom plates engaging the slots in the bent levers, a front plate provided with one vertical and two horizontal slots, means on said car engaging the vertical slot for holding said front plate, whereby a certain vertical movement is permitted, a pin on each of the said bent levers engaging the horizontal slots of the said front plate, a wheel in said vertical slot, and a cam below said car made to cooperate with the said wheel on the said front plate to force the said front plate up, thereby operating the bottom plates.

810,657. WRENCH. FRANK KNOX, Gatewood, S. D. Filed Sept. 23, 1905. Serial No. 279,324.

Claim.—A wrench consisting of a fixed shank having a stationary jaw at one end and a gaby at its other end said grip having a recess therein parallel with the fixed shank, a jaw slidably mounted upon the fixed shank, a movable shank extending from the slidable jaw and projecting longitudinally of the fixed shank and having teeth upon its inner face, a dog extending through the fixed shank and normally engaging the teeth on the movable shank, a shoulder upon the dog, a bow-spring within the recess and retained by the shoulder, said spring holding the dog normally in engagement with the teeth, said dog extending into close proximity to the grip and a thumb-piece upon the movable shank, said dog and thumb-piece extending in opposite directions from their shanks and adapted to be simultaneously engaged by members of a hand holding the grip.

810,658. COMBINED REVELOP AND LETTER-PAPER. ABNER B. HASCOM, Brentwood, Mass. Filed Oct. 2, 1905. Serial No. 280,867.

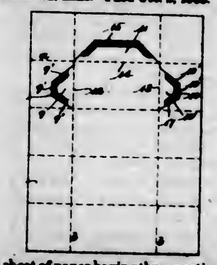

Claim.—1. A sheet of paper having three portions cut out to form three openings, each of said portions thus cut out remaining attached at one side thereof to said sheet, two of said portions having their attached sides parallel to each other and constituting end flaps, the third portion having its attached side substantially at right angles to the attached sides of said end flaps, extending from one to the other and constituting a sealing-flap, said flaps adapted to be folded over and secured to said sheet when certain portions of said sheet are folded over upon each other.

2. A sheet of paper having three portions cut out to form three openings, each of said portions thus cut out remaining attached at one side thereof to said sheet, two of said portions having their attached sides parallel to each other and constituting end flaps, the third portion having its attached side substantially at right angles to the attached sides of said end flaps, extending from one to the other and constituting a sealing-flap, whereby said sheet is adapted to be first folded transversely thereacross in alinement with the attached side of said sealing-flap; second, the two sides of said sheet folded longitudinally thereof toward eachother in alinement with the attached sides of said end flaps; third, said folded sheet again folded transversely thereof parallel to the attached side of said sealing-flap, fourth, said folded sheet again folded transversely thereof parallel to the attached side of said sealing-flap and finally said flaps turned over and secured to the folded portion of said sheet.

810,659. WIRE-STRETCHER. BERNARD MARENT, Hays, Kans. Filed Mar. 9, 1905. Serial No. 249,393.

Claim.—A wire-stretcher comprising a lever having a handle; an integral curved post-engaging extension at one end and having integral ratchet-teeth thereon for successively automatically engaging the tightened portion of a wire during the stretching operation, and means for adjustably securing the loose portion of a wire to the lever between the extension and the handle.

810,660. GUN-MOUNT. JOHN F. METZ and EDGARD A. S. HASKAR, Bethlehem, Pa., assignors to Bethlehem Steel Company, South Bethlehem, Pa., a Corporation of Pennsylvania. Filed Jan. 7, 1903. Serial No. 138,175.

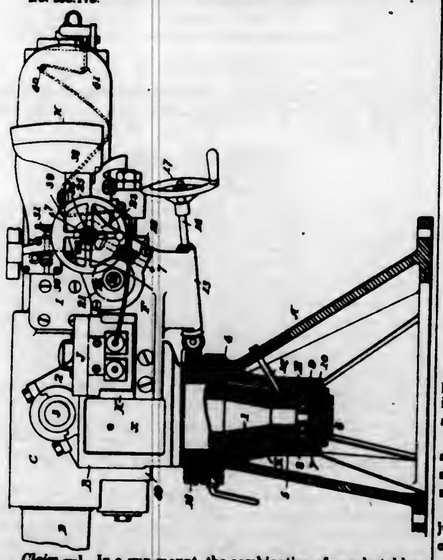

Claim.—1. In a gun-mount, the combination of a pedestal having a depending sleeve, cylindrical bushings therein, an elevating-plug adapted to screw into the lower end of said sleeve, and a yoke-piece having a pivot adapted to said bushings and supported by said plug, substantially as set forth.

2. In a gun-mount, the combination of a pedestal having an internal depending sleeve, cylindrical bushings therein, an elevating-plug screwing into the lower end of said sleeve, a yoke-piece having a pivot adapted to said bushings and supported by said plug, and ball-bearings between said plug and pivot, substantially as set forth.

3. The combination with the yoke-piece, of a bracket F having an arm with bearings for a traverse-shaft, and an arm recessed to form part of a gear-case, substantially as set forth.

4. The combination with the yoke-piece, of a bracket F, and a cap-plate, the bracket and cap-plate being recessed to form a gear-casing and shaft-bearings for the elevating devices, said devices comprising a shaft extending transversely of said bracket and plate and engaging with a shaft located between said bracket and plate and extending parallel thereto, substantially as set forth.

5. The combination in a top carriage, of a yoke-piece, a bracket secured thereto, a cap-plate, and means for securing it to the bracket, the bracket and cap-plate recessed to receive the elevating-gear and to constitute bearings for the shafts thereof, substantially as set forth.

6. The combination of the yoke-piece, cradle, a plate carrying an elevating-rack connected to the cradle, and a detachable bracket carrying inclosed elevating-gearing connected to the yoke, substantially as set forth.

7. The combination with the yoke-piece, of a rack-plate I, having a rack 29 and recess y, and a cap-plate 30 recessed and covering the recess y to form a gear-chamber for the sight-elevating gear, substantially as set forth.

810,661. GUN-MOUNT. JOHN F. METZ and EDGARD A. S. HASKAR, South Bethlehem, Pa., assignors to Bethlehem Steel Company, South Bethlehem, Pa., a Corporation of Pennsylvania. Filed Sept. 16, 1903. Serial No. 173,405.

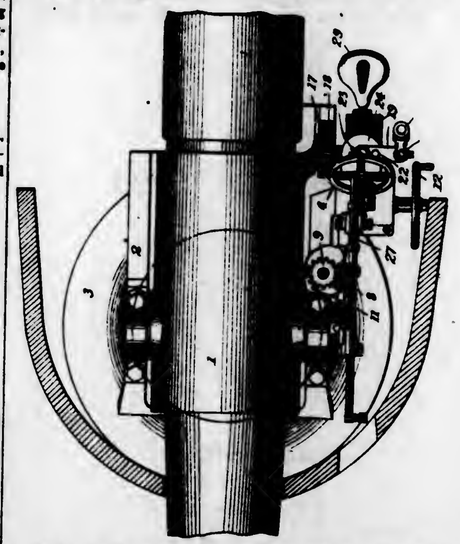

Claim.—1. The combination with a gun and its carriage, of a post laterally adjustable with respect to the carriage, means for locking said post in different positions, and a shoulder-brace vertically adjustable upon said post.

2. The combination with a gun and its carriage, of a swinging support, a post mounted upon said support, means for locking said support in different positions, and a shoulder-brace adjustably mounted on said post.

3. The combination with a gun and its carriage, of a seat adjustably mounted on the carriage, and a shoulder-brace also mounted on said carriage and adjustable relatively to said seat.

4. The combination with a gun and its carriage, of elevating and depressing mechanism mounted on the carriage, and a shoulder-brace having both lateral and vertical adjustment relative to said mechanism.

5. The combination with a gun and its carriage, of sighting devices mounted on said gun, and a seat and shoulder-brace, said seat and shoulder-brace being each mounted on the carriage and adjustable relatively to said sighting devices.

810,662. BALANCING MECHANISM FOR GUNS. JOHN F. METZ, South Bethlehem, and HERMAN G. JAMESON and FRANK A. SULLIVAN, Bethlehem, Pa., assignors to Bethlehem Steel Company, South Bethlehem, Pa., a Corporation of Pennsylvania. Filed Sept. 16, 1903. Serial No. 173,181.

Claim.—1. The combination with a gun and a cradle in which said gun is free to slide longitudinally, of means for adjusting the gun to any desired normal position relative to the cradle.

2. The combination with a gun and a cradle in which said gun

is free to slide longitudinally, of a recoil-cylinder connected with the cradle, a rod movable in said cylinder and projecting therefrom, and

mounted therein and formed of interlocking metallic strips constituting side and end bars, a pulley rotatably mounted

Claim.—The combination with a butter-working table having

supplying oil to the upper end of said cylinder, and to the lower end

in free to slide longitudinally, of a recoil-cylinder connected with the cradle, a rod movable in said cylinder and projecting therefrom, and an adjustable connection between said rod and the gun.

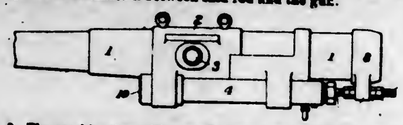

3. The combination with a cradle and a gun movable longitudinally therein, of a recoil-cylinder connected with the cradle, a piston in said cylinder, a piston-rod projecting from the cylinder and provided with a threaded portion, a bracket on the gun through which said threaded rod passes, and adjusting-nuts on said rod on both sides of said bracket, whereby the gun may be adjusted relatively to said rod.

810,663. SHEET-METAL FIREPROOF WINDOW. WILLIAM H. MILLER, Galveston, Tex. Filed Apr. 17, 1905. Serial No. 255,906.

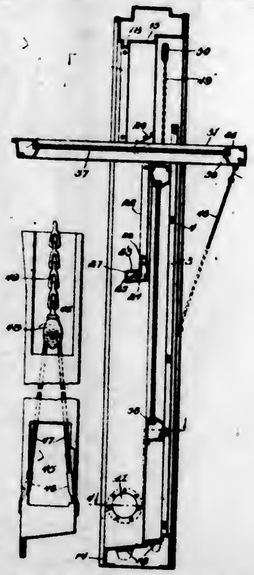

Claim.—1. The combination with a metallic window-frame comprising interlocking inner and outer strips, of slots within the sides of the frame, boxes in said frame registering with and closing the slots, a swinging sash within the frame, and bearing-pins adjustably connected thereto and detachably mounted within the slots and boxes.

2. The combination with a window-frame formed of interlocking metallic strips and normally closed apertures in the sides of the casing, said sides having guide-shoulders; of a detachable guide-strip parallel with the shoulder, a metallic sash slidably mounted between the strip and shoulder, a counterbalance, a flexible device extending from the counterbalance through the frame and into the sash, a pulley within the sash and connected to said device, a non-fusible cord mounted upon the pulley and fusible connections between the ends of the cord and the sash, said connections extending through the walls of the sash.

3. The combination with a window-frame comprising interlocking metallic strips and longitudinally-extending shoulders formed by the sides of the frame upon the inner surfaces thereof, of an intermediate metallic cross-bar connecting the sides of the frame, a stop-bead integral therewith, stop-strips upon the sides of the frame alining with said bead, a bead upon the top of the frame and depending therefrom, stop-strips upon the side of the frame alining with said bead, a sash pivoted within the frame between the stop-strips and adapted to contact therewith when opened or closed, and bearing-pins adjustably connected to the sash and engaging the frame.

4. The combination with a window-frame, of a sash movably mounted therein and formed of interlocking metallic strips constituting side and end bars, a pulley within each of the side bars, a counterbalance within the frame, flexible devices connecting the counterbalance and pulleys, non-fusible cords mounted upon the pulleys and within the sash, fusible tips connecting the ends of the cords to the sash, said tips extending through the walls of the sash, each tip being of greater thickness than the opening through the pulley.

5. The combination with a window-frame, of a sash movably mounted within the frame, a counterbalance therefor, a fusible connection between the counterbalance and sash, and means for retarding the movement of the sash subsequent to its release from the counterbalance.

6. A window-sash comprising outer and inner interlocking metallic strips forming hollow sides and end bars, said side bars having elongated apertures therein, fusible tips extending through the front and rear walls of the bars, a pulley within each side bar, a non-fusible cord mounted upon the pulley and secured at its ends to the tips, said tips being of greater thickness than the diameter of the passage through the pulley to constitute stops.

7. The combination with a window-frame; of a sash movably mounted within the frame, a counterbalance therefor, and a fusible connection between the counterbalance and sash, said connection being disposed upon one outside face of the sash.

8. The combination with a window-frame; of a sash movably mounted within the frame, a counterbalance therefor, and fusible connections between the counterbalance and sash, said connections being disposed upon opposite outer faces of the sash.

9. The combination with a metallic window-frame; of a swinging metallic sash mounted within the window-frame, a sliding sash within the frame, independent means for holding both of the sashes in opened position, and fusible connections between said means and their respective sashes, said connections being disposed outside of the sashes.

810,664. ATTACHMENT DEVICE FOR ELECTRIC CONDUCTORS. DAVID B. MILLS, East Orange, N. J. Filed Apr. 13, 1905. Serial No. 255,206.

Claim.—1. An attachment device for electrical conductors comprising a ferrule with an opening in its wall, a terminal with an opening coincident with the opening in the wall of the ferrule, and a hollow riveting means uniting them adapted to permit the passage of an electrical conductor through the opening in the two parts.

2. An attachment device for electrical conductors comprising a ferrule with an opening in its wall, a terminal with an opening coincident with the opening in the wall of the ferrule, a hollow separate rivet uniting them, adapted to permit the passage of an electrical conductor through the opening in the two parts.

3. An attachment device for electrical conductors comprising a ferrule with an opening in its wall, a terminal portion secured to said ferrule, a hollow rivet passing through the terminal portion and ferrule adapted to unite them, in combination with an electrical conductor passing through the opening in the hollow rivet and soldered in place.

4. An attachment device for electrical conductors comprising a ferrule, of a size adapted to snugly fit the insulation part surrounding an electrical conductor, the ferrule having an opening in its wall, an attachment terminal also with an opening, a hollow riveting means passing through said openings, adapted to permit the passage of a conductor whereby the conductor may be electrically secured upon the outer part of the device.

5. An attachment device for electrical conductors comprising a metal ferrule, of a size adapted to snugly fit the insulation surrounding an electrical conductor, and provided with an opening in its end, a terminal piece with a like opening and a hollow riveting means passing through said two openings, the conductor within the insulation being adapted to be passed through the opening thus formed and secured to the exterior of the device.

6. An attachment device comprising a cylindrical metal ferrule with an opening at one end, and a terminal piece with a bent end, said bent end secured to the end of the ferrule by a hollow rivet passing through the terminal piece and ferrule, an electrical conductor passing through the hollow rivet and soldered in the opening thus formed.

810,665. MOLD FOR BUTTER. JOSEPH MLADA, Manitowoc, Wis. Filed Oct. 10, 1905. Serial No. 282,122.

Claim.—The combination with a butter-working table having an aperture therein, supports for the table and a cross-strip connecting the supports; of side and end walls depending from the edges of the aperture and constituting the walls of a mold, said mold being subdivided into compartments, a follower slidably mounted within each compartment, a slide, standards extending from the slide and secured to the followers, a guide upon the cross-strip and engaging the slide, a pedal pivoted to the cross-strip and one end of the treadle engaging a standard to simultaneously actuate the slide and standards, a bracket extending laterally from the slide and overlapping the cross-strip, and an adjusting-screw mounted within the bracket and normally contacting with the cross-strip.

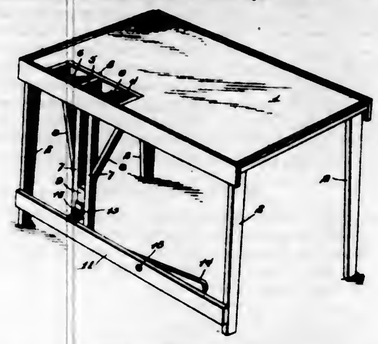

810,666. GOVERNOR FOR PUMPING-ENGINES. CHARLES P. MCMULLEN, Brooklyn, N. Y., assignor of one-half to William E. Hye, Wareham, Mass. Filed Oct. 4, 1905. Serial No. 281,281.

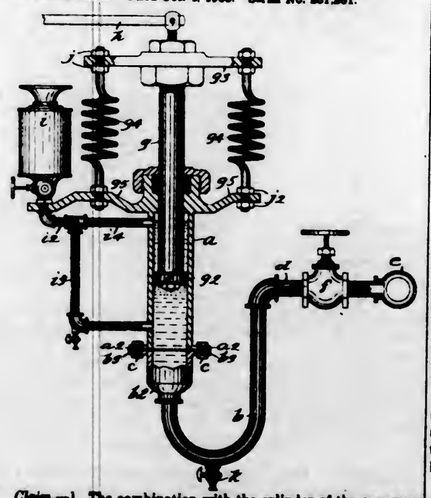

Claim.—1. The combination with the cylinder of the governor of a pumping-engine of a trap connected with one end of said cylinder and with the main water-pipe of the pump, and means for supplying oil to the said end of said cylinder and said trap, substantially as shown and described.

2. The combination with the cylinder of the governor of a pumping-engine of a trap connected with one end of said cylinder and with the main water-pipe of the pump, and means for supplying oil to the said end of said cylinder and said trap, and also to the opposite end of said cylinder, substantially as shown and described.

3. In an apparatus of the class described, a cylinder, a trap connected with one end thereof, a piston movable in said cylinder, and means for supplying oil to both ends of said cylinder, substantially as shown and described.

4. In an apparatus of the class described, a vertically-arranged cylinder, a trap connected with the lower end thereof, and means for supplying oil to the upper end of said cylinder, and to the lower end portion thereof which is connected with said trap, substantially as shown and described.

5. In a governor for pumping-engines, a cylinder, a trap connected with one end thereof and also in operative connection with the water-pipe of the pump, and means for supplying oil to said trap, substantially as shown and described.

6. In a governor for pumping-engines, a cylinder, a trap connected with one end thereof and also in operative connection with the water-pipe of the pump, and means for supplying oil to said trap, and also to the opposite end of said cylinder, substantially as shown and described.

810,667. ELASTIC-FLUID TURBINE. PAUL C. OSSANYAN, Newark, N. J., assignor of one-fourth to The Adams Bagnall Electric Company, Cleveland, Ohio, and one-fourth to George A. Thomson, Somerville, N. J. Filed July 10, 1905. Serial No. 269,094.

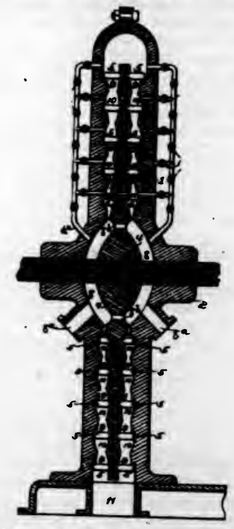

Claim.—1. In an elastic-fluid turbine, a combination of a rotary element and a series of annular chambers, each chamber being constructed to transform pressure into kinetic energy and discharge it against a single row of buckets upon the rotary element.

2. In an elastic-fluid turbine, the combination of a rotary element, several rows of buckets on said rotating element, and annular chambers formed between the stationary and rotary members on opposite sides of each series of buckets, said chambers being constructed to transform pressure into kinetic energy and compel the buckets to absorb the kinetic energy developed by said chambers.

3. In a turbine, the combination of a rotary element having several rows of buckets, a stationary element, and said elements so constructed as to form annular chambers between them constructed to transform pressure into kinetic energy between each series of buckets.

4. A radial-flow turbine, the combination of a rotary element, several rows of buckets on said rotating element and annular chambers formed between the stationary and rotary members on opposite sides of each series of buckets, said chambers being constructed to transform pressure into kinetic energy and compel the buckets to absorb the kinetic energy developed by said chambers.

5. In a radial-flow turbine, the combination of a rotating element, several series of buckets thereon and a stationary element forming a series of concentric annular chambers for transforming pressure into kinetic energy between said series of buckets, said chambers increasing in area from the axis to the periphery of the rotating element.

6. In an elastic-fluid turbine, the combination of a series of annular chambers designed to transform pressure into kinetic energy, each chamber discharging against a single row of buckets and each chamber having a by-pass for adjusting the pressure therein.

7. In a radial-flow turbine the combination of a series of annu-

lar chambers designed to transform pressure into kinetic energy, each chamber discharging against a single row of buckets, and each chamber having a by-pass for adjusting the pressure therein.

8. In an elastic-fluid turbine the combination of annular chambers formed between the stationary and rotary members for transforming pressure into kinetic energy, discharging into receiving-chambers of approximately the same pressure and buckets to absorb the kinetic energy.

9. In an elastic-fluid turbine the combination of an alternate series of annular chambers formed between the stationary and rotary members constructed to transform pressure into kinetic energy, and receiving-chambers and buckets to absorb the kinetic energy.

10. In a radial-flow turbine the combination of an alternate series of annular chambers formed between the stationary and rotary members constructed to transform pressure into kinetic energy, and receiving-chambers and buckets to absorb the kinetic energy.

11. The combination of an elastic-fluid turbine in which the rotating and stationary elements form chambers constructed to transform pressure into kinetic energy, and receiving-chambers and buckets to absorb the kinetic energy.

12. The combination of a radial-flow turbine in which the rotating and stationary elements form chambers constructed to transform pressure into kinetic energy, and receiving-chambers and buckets to absorb the kinetic energy.

13. In an elastic-fluid turbine the combination of a rotary member with several series of buckets mounted thereon, constructed so that each series of buckets rotates in a chamber formed between the stationary and rotary members and receiving direct impact of the elastic fluid from annular chambers formed between the stationary and rotary members constructed to transform pressure into kinetic energy.

14. In a radial-flow turbine the combination of a rotary member with several series of buckets mounted thereon, constructed so that each series of buckets rotates in a chamber formed between the stationary and rotary members and receiving direct impact of the elastic fluid from chambers formed between the stationary and rotary members constructed to transform pressure into kinetic energy.

15. In an elastic-fluid turbine the combination of a rotary member with several series of buckets constructed so that each series of buckets rotates in a chamber formed between the stationary and rotary members and receiving direct impact of the elastic fluid from an annular chamber formed between the stationary and rotary members constructed to transform pressure into kinetic energy.

16. In a radial-flow turbine the combination of a rotary member with several series of buckets constructed so that each series of buckets rotates in a chamber formed between the stationary and rotary members and receiving direct impact of the elastic fluid from an annular chamber formed between the stationary and rotary members constructed to transform pressure into kinetic energy.

17. In an elastic-fluid turbine, the combination of a rotary element, having buckets and a port or hole for equalizing the pressure on both sides, and a series of annular chambers constructed to adiabatically expand the elastic fluid.

18. In a turbine, the combination of a rotating element having a port or hole for equalizing the pressure on both sides, and a series of buckets on said rotating element, and annular chambers on opposite sides of the buckets constructed to adiabatically expand the elastic fluid and compel the buckets to absorb the kinetic energy developed by said chambers.

19. In a turbine, the combination of a rotating element, having a port or hole for equalizing the pressure on both sides, a stationary element, and said elements so constructed as to form annular chambers to adiabatically expand the elastic fluid.

20. In a radial-flow turbine, the combination of a stationary element, a rotary element having buckets and a port or hole for equalizing the pressure on both sides, and both elements constructed to form between them annular chambers to adiabatically expand the elastic fluid.

21. In a radial-flow turbine, the combination of a casing, and a shaft therein, of a rotary element having a port or hole for equalizing the pressure on both sides, in the casing secured on the shaft, several series of buckets on both sides of the rotary element, and said rotary element and casing so constructed as to form annular chambers at each series of buckets to adiabatically expand the elastic fluid.

22. In a radial-flow turbine, the combination of a rotating element having buckets and a port or hole for equalizing the pressure on both sides, and stationary elements forming a series of annular chambers for the adiabatic expansion of steam, said chambers increasing in area from the axis to the periphery of the rotating element.

23. In a turbine, the combination of buckets and two independent sets of annular chambers for transforming pressure into kinetic energy, formed between the stationary and rotary members, annular receiving-chambers and means for equalizing pressure between any annular receiving-chamber on one side and the corresponding annular receiving-chamber of the other side.

24. In a radial-flow turbine the combination of a rotary member balanced against pressure by means of a port or hole in said rotary member, each side of said stationary and rotating member forming a series of annular chambers constructed to adiabatically expand the elastic fluid.

25. In a radial-flow turbine, the combination of a balanced rotary member, having a port or hole in said rotary member, vanes or buckets on each side of said rotary member, and a stationary member on each side of said rotary member constructed to form a series of annular chambers for the adiabatic expansion of the elastic fluid.

26. In a radial-flow turbine, the combination of a rotating member having buckets and a port or hole for equalizing the pressure on both sides, and a stationary element forming a series of annular chambers constructed to adiabatically expand the elastic fluid, each chamber having a by-pass by which the pressure therein may be adjusted.

810,668. THREAD-GUIDE MECHANISM FOR SPINNING OR TWISTING MACHINES. OSCAR L. OWEN and JOHN F. SHELLING, Whitinsville, Mass., assignors to The Whitin Machine Works, Whitinsville, Mass., a Corporation of Massachusetts. Filed Dec. 10, 1904. Serial No. 236,206.

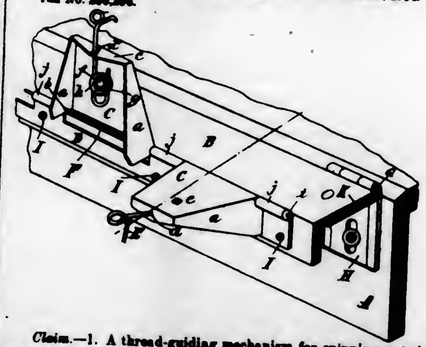

Claim.—1. A thread-guiding mechanism for spinning or twisting machines comprising a back rail and thread-guide holders hinged thereto and formed of sheet metal with downturned side flanges, a hinge-wire piercing said flanges, and a downturned back flange covering said hinge-wire and closing the space between the holder and said back rail, substantially as described.

2. In a thread-guiding mechanism for spinning or twisting machines, a sheet-metal holder composed of a flat top with downwardly-turned side flanges forming stops and having apertures in the rearward upper corners thereof, in combination with a hinge-wire passing through said aperture, and a back flange on said holder forming a protective covering for said hinge-wire between the side flanges, substantially as described.

810,669. TENSION DEVICE FOR LOOM-SHUTTLES. PATRIK L. PETERSEN, North Grosvenor Dale, Conn., assignor to Draper Company, Hopedale, Mass., a Corporation of Massachusetts. Filed June 7, 1905. Serial No. 264,041.

Claim.—1. In a loom-shuttle provided with a threading device, a tension member extended rearwardly from and beyond said device and projecting under the path of the thread to a point past and below the tip of the bobbin.

2. In a loom-shuttle having a bobbin-receiving opening and a threading device at one end thereof, a tension member extended rearwardly from and beyond said device and projecting under the path of the thread to a point past the tip of the bobbin, the thread and laterally widened to extend from one to the other side of the bobbin-receiving opening.

3. In a loom-shuttle provided with a threading device, a flexible tension member of textile material extended rearwardly from and beyond said device and laterally widened, and projecting below the path of the thread to a point past the tip of the bobbin.

4. In a loom-shuttle provided with a threading device, a non-metallic, tongue-like tension member extended rearwardly from and beyond said device and projecting under the path of the thread from the bobbin to the threading device.

5. In a loom-shuttle having a bobbin-receiving opening and a threading device at one end thereof, a flexible tension member located in said opening below the path of the thread between the bobbin and the threading device and having a transversely-concave upper face.

6. In a loom-shuttle having a bobbin-receiving opening and a threading device at one end thereof, a tension member of textile material attached to and extended rearwardly from the threading device into said opening and widened to engage the side walls thereof, said tension member projecting under the path of and to act upon the thread between the bobbin and the threading device.

7. In a loom-shuttle having a bobbin-receiving opening and a threading device at one end thereof containing a thread-passage, opposite overhanging shoulders on the side walls of the opening, and a flexible tension member extended rearwardly from and beyond the inner end of the thread-passage under the path of the thread between the bobbin and said passage and having its side edges extended beneath the overhanging shoulders.

8. In a loom-shuttle having a bobbin-receiving opening and an automatically-self-threading device at one end thereof, a flexible tension member extended rearwardly from and beyond said device and projecting under the path of the thread to a point past the tip of the bobbin, to exert tension upon and prevent ballooning and kinking of the thread and yielding to permit the ejection of the bobbin from the shuttle.

9. In a loom-shuttle having an automatically-self-threading device provided with a thread-passage, a tongue-like tension member of textile material extended rearwardly from the inner end of said passage below the path of the thread, the rear end of said member being longitudinally and rearwardly inclined and transversely concaved beneath the tip of the bobbin.

10. In a loom-shuttle having a bobbin-receiving opening and an automatically-self-threading device at one end thereof, a flexible tension member attached to the inner end of said device and extended rearwardly therefrom into said opening under the path of the thread and the tip of the bobbin and widened to prevent the thread from catching between the sides of the opening and the edges of the tension member.

11. In a loom-shuttle having a bobbin-receiving opening provided at one end with overhanging shoulders on its side walls, and a threading device at the shouldered end of the opening, a flexible tension member fixedly secured at its outer end and rearwardly extended from and beyond the threading device under the path of the thread leading from the tip of the bobbin, the free inner end of the tension member being widened and extending beneath the overhanging shoulders.

12. In a loom-shuttle provided with a threading device, a flexible, tongue-like tension member fixedly secured at one end adjacent the threading device, and extended rearwardly therefrom the opposite free end of said member being concaved and projecting under the tip of the bobbin and below the path of the thread passing therefrom to the threading device.

810,670. COOLER FOR COMPRESSORS. WILLIAM PRELLWITZ, Boston, Pa., assignor to The Ingersoll-Sergeant Drill Company, New York, N. Y., a Corporation of West Virginia. Filed Apr. 14, 1903. Serial No. 152,562.

Claim.—1. A cooler for compressors comprising a stack of cooling-tubes, a casing therefor having an upper fluid-inlet head, a lower fluid-discharge head, and a connecting body portion extended into the interior of the fluid-discharge head about the portion of the stack of tubes extended therein and removably secured to the discharge-head whereby the air is confined to the stack of tubes within the discharge-chamber and the cooling-tubes may be removed from the discharge-head by a comparatively short upward movement of the body portion.

2. A cooler for compressors comprising a stack of tubes, a casing therefor having an upper fluid-inlet head, a lower fluid-discharge head, a connecting body portion extended downwardly into the interior of the lower fluid-discharge head about the portion of the stack of tubes extended therein and removably secured to the discharge-head and a tubular guide projecting upwardly into the interior of the fluid-discharge head within which guide the lower end of the stack of tubes is fitted to slide.

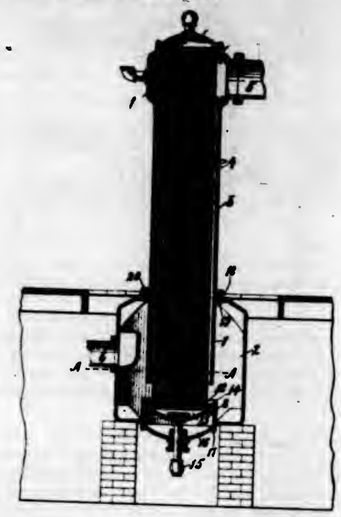

810,671. SEPARABLE HEAD-COUPLING. WILLIAM PRELLWITZ, Boston, Pa., assignor to The Ingersoll-Sergeant Drill Company, New York, N. Y., a Corporation of West Virginia. Filed Mar. 8, 1905. Serial No. 249,135.

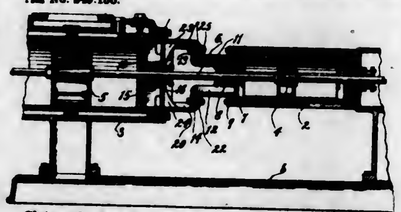

Claim.—1. A separable head-coupling for alined cylinders comprising two cylinder-heads having shanks removably secured together, one of the heads when released being arranged to permit its shank to telescope within the shank of the other head.

2. A separable head-coupling for alined cylinders comprising two cylinder-heads each having a shank provided with segmental lateral flanges, the flanges of both shanks being removably secured together and arranged to permit the assembling of the heads and the telescoping of one shank within the other when the flanges are released.

3. A separable head-coupling for alined cylinders comprising two cylinder-heads, one head having a shank provided with inwardly-projected segmental lateral flanges and the other head having a shank provided with outwardly-projected segmental lateral flanges, the flanges of both shanks being removably secured together and arranged to permit the assembling of the heads and the telescoping of one shank within the other when the flanges are released.

810,672. DISCHARGE-VALVE FOR FLUID-COMPRESSORS. WILLIAM PRELLWITZ, Boston, Pa., assignor to The Ingersoll-Sergeant Drill Company, New York, N. Y., a Corporation of West Virginia. Filed Apr. 1, 1903. Serial No. 151,947.

Claim.—1. A valve-seat, a valve, its spring for yieldingly holding the valve closed, a removable valve-guide engaged with the seat and means for yieldingly holding the valve guide and seat in position.

2. A laminated valve, its seat, a support for the seat, a centrally-arranged removable guide for the valve, means for yieldingly

holding the valve closed and means for yieldingly holding the valve guide and seat in position.

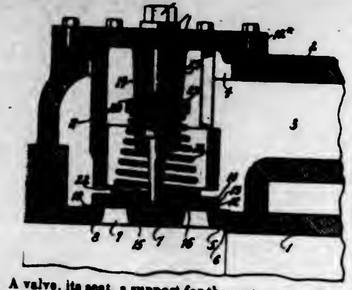

3. A valve, its seat, a support for the seat, a centrally-arranged removable valve-guide locked to the seat against lateral movement, means for yieldingly holding the valve closed and means for yieldingly holding the valve-seat and valve-guide in position.

4. A valve, its seat, a support for the seat, a centrally-arranged removable valve-guide comprising a plate countersunk into the valve-seat and guide-fingers uprising therefrom, a spring for yieldingly holding the valve closed and means for yieldingly holding the valve guide and seat in position.

810,673. VEHICLE-STEERING MECHANISM. FRANK B. RAE, Chicago, Ill., assignor to The American Electromobile Company, East Orange, N. J., a Corporation of New Jersey. Filed June 4, 1898. Renewed July 26, 1905. Serial No. 271,260.

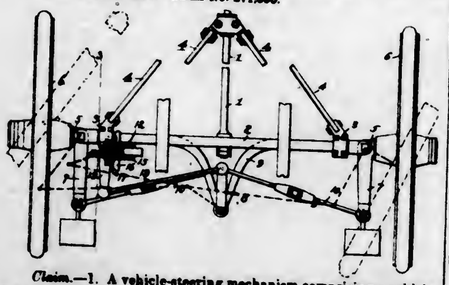

Claim.—1. A vehicle-steering mechanism comprising a vehicle-frame reach-rod, an axle mounted at its center upon said rod and having its ends free to move vertically but not horizontally, brace-rods connecting the ends of the axle with said reach-rod, a pair of wheel-shafts pivotally attached to the axle near the ends thereof, a pair of wheels mounted upon said wheel-shafts, wheel-levers integrally connected with said wheel-shafts, a differentiating lever having pivotal connection with said axle, connections between the outer ends of said wheel-levers and of said differentiating lever, a hand-lever mounted for movement in a vertical plane, an auxiliary lever mounted upon a vertical pivot, connections between said hand-lever and said auxiliary lever, and a floating rod connecting said auxiliary lever and said differentiating lever.

2. A vehicle-steering mechanism comprising a vehicle-frame reach-rod, an axle mounted at its center upon said rod and having its ends free to move vertically but not horizontally, brace-rods connecting the ends of the axle with said reach-rod, a pair of wheel-shafts pivotally attached to the axle near the ends thereof, a pair of wheels mounted upon said wheel-shafts, wheel-levers integrally connected with said wheel-shafts, a differentiating lever having pivotal connection with said axle, connections between the outer ends of said wheel-levers and of said differentiating lever, a hand-lever mounted for movement in a vertical plane, an auxiliary lever mounted upon a vertical pivot, gears forming connections between said hand-lever and said auxiliary lever, and a floating rod having ball-and-socket connection with said auxiliary lever and said differentiating lever.

810,674. VEHICLE-MOTOR-SUSPENSION MECHANISM. FRANK B. RAE, Detroit, Mich., assignor to The American Electromobile Company, East Orange, N. J., a Corporation of New Jersey. Filed Sept. 7, 1905. Serial No. 277,470.

Claim.—1. A vehicle-motor-suspension mechanism comprising a driving-axle, a plurality of vehicle-supporting journal-boxes thereon, a tube connecting two adjacent boxes and inclosing said axle, and a motor having its axle end rotatably mounted upon said tube and its free end yieldingly supported from some other portion of the vehicle, substantially as described

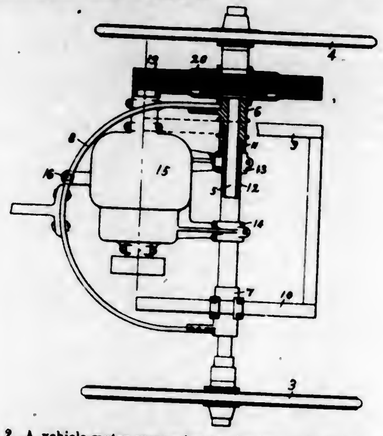

2. A vehicle-motor-suspension mechanism comprising a driving-axle, a plurality of vehicle-supporting journal-boxes thereon, a tube connecting two adjacent boxes and inclosing said axle, and a motor having its axle rotatably mounted upon said tube and having its free end engaged between yielding supports upon both sides thereof and connected with some other portion of the vehicle, whereby strain upon the motor in moving either forward or backward is reduced to a minimum.

3. A vehicle-motor-suspension mechanism comprising a driving-axle, a plurality of vehicle-supporting journal-boxes, a vehicle-frame supported on said boxes, a connection between two adjacent boxes, and a motor having its axle end rotatably supported upon said connection and its free or outer end yieldingly supported from said frame, substantially as described.

810,675. DILATOR. GUSTAV F. RICHTER, New York, N. Y. Filed Apr. 24, 1905. Serial No. 257,090.

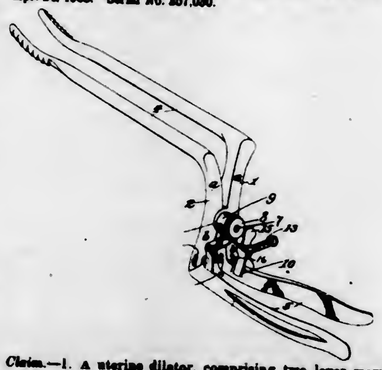

Claim.—1. A uterine dilator, comprising two lever members each provided with a blade and a handle respectively disposed at an angle thereto and substantially parallel with each other, in combination with a fulcrum-joint between said members having its pivotal axis substantially parallel with said handles and comprised of a tubular extension on one lever member and a pin on the other received thereby.

2. A dilator comprising two opposed lever members each provided with a blade and a handle, a fulcrum-joint between said lever members and an extension on one of them, in combination with a spring on said extension having its free ends bearing against said handles.

3. A uterine dilator, comprising two opposed lever members each provided with a blade and a handle respectively disposed at an angle thereto and substantially parallel with each other, a fulcrum-joint between said lever members having its axis substantially parallel with said blades and handles and comprising a tubular extension on one lever member and a pin on the other received thereby, in combination with a spring embracing said tubular extension adapted to exert an opening tendency upon the handle ends of said lever members.

4. A uterine dilator, comprising two lever members each provided with a blade and a handle respectively disposed at an angle thereto and substantially parallel with each other, a fulcrum-joint between said members having its axis substantially parallel with said blades and handles and comprising a tubular extension on one of said members and a pin on the other received thereby, in combination with means for retaining said pin therein and a spring confined on said extension by said means and arranged to exert an opening tendency upon the handle ends of said lever members.

5. A dilator, comprising two opposed lever members each provided with a blade and a handle, a tubular extension provided on one member and a pin on the other received by said extension to afford a fulcrum-joint for said members, in combination with a bow-spring embracing said extension, and seats provided in the region of the juncture of said handles and lever members for retaining the free ends of said spring.

6. A dilator, comprising two opposed lever members each provided with a blade and a handle substantially parallel to each other, a tubular extension provided on one member and a pin on the other received thereby, in combination with a bow-spring embracing said extension and contracted below the same to prevent the accidental removal of said spring therefrom.

7. A dilator comprising two lever members each provided with a blade and a handle, a screw for forcing relative movement thereof, means for securing one end of said screw to one member and a spring acting upon said members and retaining said means in operative position.

8. In a dilator, two lever members each formed with a blade and a handle, a screw for forcing relative movement thereof located in slots therein, a cross-aperture intersecting one of said slots and a pin in said aperture having holding engagement with said screw, in combination with an extended fulcrum-joint between said members, a spring confined thereon and serving to confine said pin in its aperture.

9. In a dilator, two lever members, a tubular barrel forming a part of one member and a pin forming a part of the other and received in said barrel, a blade and a handle respectively provided for each member and disposed substantially parallel with the pivotal axis formed by said pin and barrel.

10. In a dilator, two lever members comprised respectively of a blade-section, barrel and handle section, and a blade-section, pin and handle section, said pin and barrel constituting a fulcrum-joint for said members and blades and handles respectively for said members disposed substantially parallel with the pivotal axis of said joint.

11. In a surgical instrument, a pair of lever members respectively having handles extending at an angle thereto and a transverse fulcrum-joint for said members provided with an axial extension, in combination with a spring confined on said extension with its free ends bearing respectively against said handles.

810,676. POISON-BOTTLE STOPPER. LOUIS H. RITTER, Estherville, Iowa. Filed Apr. 4, 1905. Serial No. 253,794.

Claim.—1. A stopper for poison-bottles having a guard placed diametrically across the stopper and projecting beyond the opposite sides of the stopper, and spurs struck downwardly from the guard and engaging opposite sides of the stopper.

2. The combination with a stopper of a guard having a flat body portion and longitudinally split adjacent each end, one of said split members at each end being pointed at its extreme end and adapted to extend outwardly beyond the stopper and in the plane of the body portion of the guard, and the other member being bent downwardly and inwardly forming a spur adapted to engage the sides of the cork, the said spurs being offset with respect to each other

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810,677. LEDGER. FRANK J. ROSENBERG and CHARLES B. ROSENBERG, Los Angeles, Cal. Filed Aug. 23, 1904. Serial No. 221,839.

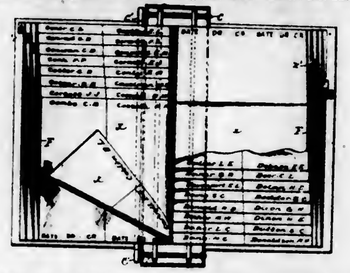

Claim.—1. A ledger consisting of suitable clamping means and transverse wires *a* for the leaves, a plurality of sets of leaves provided with tabs *b* and stepped and indexed on both sides, spacer-sheets for the several sets of leaves, and wedge-shape pads F at both ends of said spacer-sheets, substantially as described.

2. A ledger consisting of a plurality of sets of leaves stepped and indexed on both sides, and provided with tabs *b*, on one edge, spacer-sheets, and wedge-shape pads F alongside of said spacer-sheets, and a suitable binder for the leaves, whereby the stepping is accurately effected, substantially as described.

810,678. GARMENT-CLASP. SELVYN RUBIN, New York, N. Y. Filed May 2, 1905. Serial No. 258,519.

Claim.—1. In a garment-clasp, the combination with a base-plate, having an upwardly-extending projection on its upper surface, of a clamping-plate pivoted to the base-plate and having a part punched out to form a spring-tongue, and a recess above said spring-tongue, a pivoted locking-lever adapted to fold into the said recess in the clamping-plate, the free end of the spring being adapted to slide on the said projection, substantially as set forth.

2. In a garment-clasp, the combination with a base-plate having flat pivot projections at its sides and extending over the upper surface of the base-plate, of a clamping-plate having side flanges provided with substantially triangular openings widest at their front ends, into which said flat pivots on the base-plate project and a locking-plate for the clamping-plate, substantially as set forth.

3. In a clasp, the combination with a base-plate having flanges and a lip made integral with one of said flanges and extending over the upper surface of said base-plate, a rubber covering on said lip, a clamping-plate pivoted to the base-plate and provided with downwardly-extending flanges at its free end, which flanges, when the clamping-plate is closed, surround the rubber covering of said lip, substantially as set forth.

810,679. STEERING DEVICE FOR VEHICLES. GEORGE K. RUDDY, Wilmington, Del. Filed Mar. 7, 1905. Serial No. 248,839.

Claim.—1. In a vehicle, the combination with the body portion thereof, of a pair of oppositely-disposed spindles each being pivotally connected to the body portion forwardly of a line passing through the axes of the spindles, supporting-wheels on the spindles, said spindles being adapted to be adjusted on their pivots to vary the angularity of the wheels to steer the vehicle, and means for automatically returning said spindles into alinement after the steering operation.

2. In a vehicle, the combination with the body portion thereof, of a pair of oppositely-disposed spindles each being pivotally connected to the body portion forwardly of a line passing through the axes of the spindles, supporting-wheels on the spindles, connections between said spindles whereby they may be adjusted in unison to vary the angularity of the wheels to steer the vehicle, and means for automatically returning said spindles into alinement after the steering operation.

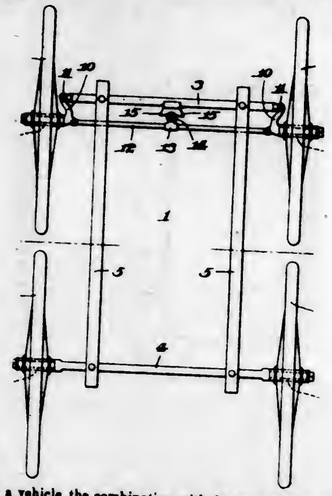

3. In a vehicle, the combination with the body portion thereof, of a pair of oppositely-disposed spindles each being pivotally connected to the body portion forwardly of a line passing through the axes of the spindles, supporting-wheels on the spindles, a rod pivotally connected at its ends to the spindles whereby they may be adjusted in unison to vary the angularity of the wheels to steer the vehicle, and means for yieldingly maintaining said spindles in alinement.

4. In a vehicle, the combination with the body portion thereof, of a pair of oppositely-disposed spindles each being pivotally connected to the body portion forwardly of a line passing through the axes of the spindles, supporting-wheels on the spindles, a spring-rod pivotally connected at its ends to the spindles whereby they may be adjusted in unison to vary the angularity of the wheels to steer the vehicle a pair of oppositely-disposed cams, and means on the rod for engaging the cams whereby said cams will cause the rod to automatically return the spindles into alinement after the steering operation.

810,680. LOOM REVERSING MECHANISM. IEPPA H. RYON, Worcester, Mass., assignor to Crompton & Knowles Loom Works, a Corporation of Massachusetts. Filed Apr. 24, 1905. Serial No. 257,057.

Claim.—1. In a loom take-up reversing mechanism, a sliding key for reversing through a system of gears the pattern-cylinder shaft, and said gears and said cylinder-shaft, and the driving-shaft of the take-up mechanism, and connections intermediate said sliding key and said driving-shaft.

2. In a loom take-up reversing mechanism, a sliding key for reversing through a system of gears the pattern-cylinder shaft, and said gears and pattern-cylinder shaft, and the driving-shaft of the take-up mechanism, and connections intermediate said sliding key and said driving-shaft, said connections comprising a pivoted lever, and connections intermediate said lever and a sleeve on a shaft, and said sleeve revolving with and movable on said shaft and having two bevel-gears thereon, either one adapted to be moved into engagement with a third bevel-gear, and said third bevel-gear in engagement with the bevel-gear fast on the driving-shaft of the take-up mechanism, and said bevel-gear.

3. In a loom take-up reversing mechanism, a sliding key for reversing through a system of gears the pattern-cylinder shaft, and said gears and pattern-cylinder shaft, and the driving-shaft of the take-up mechanism, and connection intermediate said sliding key and said driving-shaft, said connections comprising a pivoted lever, and a locking-lever, and connections intermediate said pivoted lever and a sleeve on a shaft, and said sleeve revolving with and movable on said shaft, and having two bevel-gears thereon, either one adapted to be moved into engagement with a third bevel-gear, and said third bevel-gear in engagement with the bevel-gear fast on the driving-shaft of the take-up mechanism, and said bevel-gear and driving-shaft.

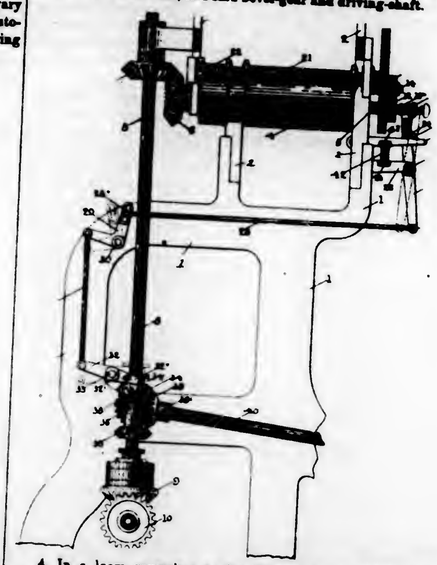

4. In a loom reversing mechanism for the pattern-cylinder shaft, a shaft for a take-up, gears for driving said take-up shaft, either in a forward or backward direction, and connections between said gears and said reversing mechanism.

5. In a loom reversing mechanism for the pattern-cylinder shaft, the combination with a sliding key for reversing, through a system of gears, the pattern-cylinder shaft, of a pivoted lever, engaging said key in its inner and outer position and acting to support said key, and hold it in its proper position.

6. In a loom reversing mechanism for the pattern-cylinder shaft, the combination with a sliding key for reversing, through a system of gears, the pattern-cylinder shaft, of a pivoted lever engaging said key in its inner and outer position, and acting to support said key, and hold it in its proper position, and a second lever for locking or holding said pivoted lever.

810,681. SHUTTLE-OPERATING MECHANISM. IEPPA H. RYON, Worcester, Mass., assignor to Crompton & Knowles Loom Works, a Corporation of Massachusetts. Filed Apr. 24, 1905. Serial No. 257,068.

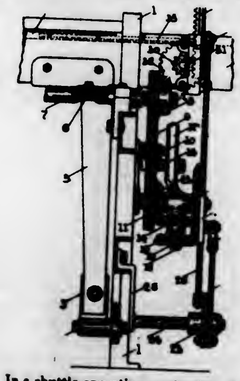

Claim.—1. In a shuttle-operating mechanism of a narrow-ware loom, a shuttle-rack, a gear having a crank-pin thereon, means to rotate said gear to cause it to dwell at the end of each half-rotation thereof, and rigid connections intermediate said crank-pin and said shuttle-rack, said connections comprising a connector to a central pivoted lever, and said lever, and a connector therefrom to a vertically-moving rack, and said rack, and gears intermediate said rack and the shuttle-rack, substantially as described.

2. In a shuttle-operating mechanism of a narrow-ware loom, a shuttle-rack, a gear having a crank-pin thereon, means to rotate said gear to cause it to dwell at the end of each half-rotation thereof, and rigid connections intermediate said crank-pin and said shuttle-rack, substantially as described.

3. In a loom of the class described, a crank-gear, an oscillating arm having thereon a hub, and two bevel-gears connected with said hub, one of said gears meshing with said crank-gear, and the other meshing with and driven by a gear, and said gear, and means to cause said hub to oscillate, substantially as described.

4. In a loom of the class described, a shuttle-rack, rigid connections to a crank-gear, and said crank-gear, an oscillating arm having thereon a hub, and two bevel-gears connected therewith, one of said gears meshing with said crank-gear, and the other meshing with and driven by a gear, and said gear, and means to cause said hub to oscillate, substantially as described.

5. In a shuttle-operating mechanism, the combination with a gear, a crank, an eccentric pivotal support for said crank, and connections intermediate said crank and gear, of connections intermediate said crank and the swivel-shuttle rack for operating the swivel-shuttles, substantially as described.

810,682. SAND OR CLAY SCREEN. LEMUEL P. SHAFER and CHARLES DEVIN, Canton, Ohio. Filed Apr. 3, 1905. Serial No. 253,611.

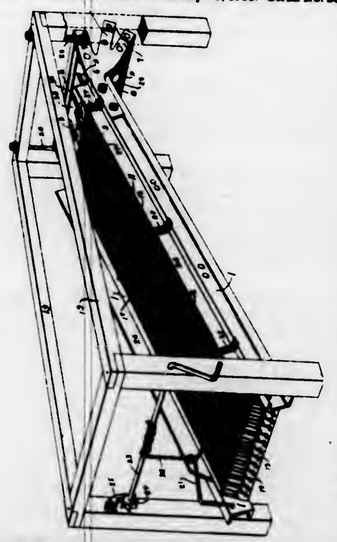

Claim.—1. In a screen of the class described, the combination of a suitable frame, consisting of side members and tie-bars, heads carried by the frame said heads provided with tension-bars and the tension-bars located in different horizontal planes, wire-holding bars secured to said tension-bars and independently adjustable, a series of screen-wires secured to the independently-adjustable holding-bars at one of their ends and their opposite ends secured in fixed position and means for holding the screen-wires in spaced relation to each other, substantially as and for the purpose specified.

2. In a screen of the class described, the combination of a suitable frame, the side members of said frame consisting of channel-bars, means for holding the side members in proper spaced relation, a tension-head provided with tension-bars, said tension-bars located in different horizontal planes, a series of screen-wires held in fixed relation with reference to the frame at one of its ends, said screen-wires secured to independent adjustable wire-holding bars at their opposite ends, said adjustable wire-holding bars located in series and in different planes, and a bridge-bar located intermediate the ends of the screen-wires, and means for adjusting the bridge-bar to and from the screen-wires, substantially as and for the purpose specified.

810,683. LATCH FOR WAGON END-GATES. CHARLES W STARK, Mountain Lake, Minn. Filed Apr. 17, 1905. Serial No. 255,990.

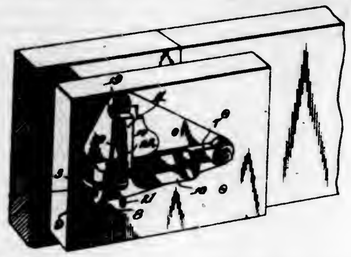

Claim.—1. In a lock the combination with a base-plate; of an arm pivoted at one end thereto, a handle upon the arm, a bolt extending from one end of the arm at an angle thereto and adapted to engage a keeper, a guide-strip extending over the arm and adapted to limit its movement in both directions, and means engaging the arm for locking the bolt against movement.

2. In an end-gate, the combination with hinged members, a keeper extending from one of said members, an apertured strip secured to the other member and adapted to receive the keeper; of a latch secured to said strip and comprising a base-plate, an arm pivoted thereto, a bolt extending at an angle from the arm and adapted to engage the keeper, a guide secured to the base and extending over the arm, and means engaging the arm for locking the bolt against withdrawal from its keeper.

3. A latch comprising a base-plate, an arm pivoted thereto, a bolt extending from the arm at an angle thereto and adapted to engage a keeper, a guide for the bolt, a spring-pressed locking-plate pivoted to the base and normally overlapping the arm, and a spring-arm secured to the base and normally engaging the pivoted arm.

4. In a latch, the combination with a depressible locking-plate; of a swinging arm adapted to slide upon the plate, means for automatically moving the plate into the path of the arm and to lock the same after sliding thereon, and a bolt extending from the arm.

5. In a latch, the combination with a recessed support; of a spring-pressed locking device within the recess, a swinging arm mounted upon the support and adapted to slide upon and to be automatically engaged by the locking device, and a bolt extending from the arm.

6. In a latch, the combination with a spring-controlled bolt-locking device; of a swinging arm adapted to slide over said device, and to be automatically held thereby, and a bolt extending from the arm.

7. In a latch, the combination with a base having a swinging arm connected thereto and a bolt extending from the arm; of a spring-pressed locking device pivoted to the base and normally in the path of the arm, and a spring-arm secured to the base and normally engaging the arm.

8. In a latch, the combination with a base-plate having an aperture therein, of a swinging arm pivoted to the base and having a handle and a bolt thereon, a guide secured to the base-plate and extending over the arm, and a spring-pressed locking device mounted within and normally projected from the aperture and into the path of the arm.

810,684. DUMPING-WAGON. GREEN R. STARNES, Charlotte, N. C. Filed Feb. 10, 1905. Serial No. 245,134.

Claim.—1. In a device of the class described, end members removably supported upon the axle-bolsters of a vehicle running-gear and connected by a central conical section, spaced tie-rods extending between said end members, a shaft mounted for rotation in said end members and extending beneath said conical portion, spaced strap members pivotally connected to said tie-rods and provided with chains leading from opposite sides around said shaft, side members connected to said strap members for closing against said conical portion, and means for rotating said shaft and locking the same in any required position.

2. In a device of the class described, end members removably supported upon the axle-bolsters of a vehicle running-gear and con-

nected by a central conical section, a driver's seat carried by the forward end member, spaced tie-rods extending between said end members, side members mounted to swing from said tie-rods for closing against said conical portion, a shaft mounted for rotation in said end members and extending beneath said conical portion, and provided with a bevel-gear, chains for coupling said shaft and side members, a shaft mounted for rotation upon said forward end member and having a hand-wheel upon one end and a bevel-pinion upon the other end for engaging said bevel-gear, a ratchet-wheel upon said vertical shaft, and a pawl engaging said ratchet-wheel and provided with a terminal foot-piece.

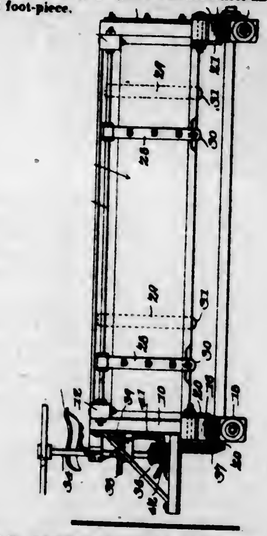

810,685. POWER GAS APPARATUS. GODFREY M. S. TAIT, Montclair, N. J., assignor to Combustion Utilities Company, New York, N. Y., a Corporation of New York. Filed Oct. 21, 1905. Serial No. 283,839.

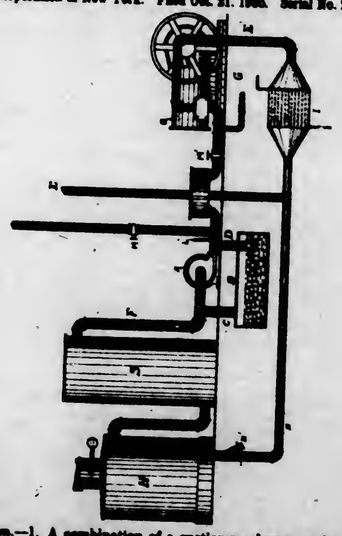

Claim.—1. A combination of a suction-producer; an internal-explosion engine; a connecting-conduit; interposed in said conduit a fan-blower having a liquid-seal by-pass, whereby gas may be delivered under a constant predetermined pressure to the engine, substantially as described.

2. A combination with a suction-producer; a scrubber; a gas-purifier; and gas-engine; a connecting-conduit, of a fan-blower interposed between the gas-producer and the engine having a water seal by-pass whereby gas is withdrawn from the producer and is supplied to the engine under predetermined pressure.

3. Power gas apparatus which comprises a gas-producer; an internal-explosion engine; a connecting-conduit; a mechanical draft appliance interposed in said conduit and a water-seal by-pass around said mechanical draft appliance whereby producer-gas is delivered to the engine under constant predetermined pressure.

810,686. AUTOMATIC OILER. ALBERT H. TAYLOR, Easton, Pa., assignor to The Ingersoll-Sergeant Drill Company, New York, N. Y., a Corporation of West Virginia. Filed July 14, 1905. Serial No. 269,626.

Claim.—1. An automatic oiler for the air-feed pipe of a pneumatic motor comprising an oil-reservoir and a valve controlled by pressure within the pipe for opening and closing communication from the reservoir to the feed-pipe.

2. An automatic oiler for the air-feed pipe of a pneumatic motor comprising an oil-reservoir, a valve controlled by pressure from within the pipe for opening and closing communication from the reservoir to the feed-pipe and means for adjusting the opening movement of the said valve.

3. An automatic oiler for the air-feed pipe of a pneumatic motor comprising an oil-reservoir adjustably mounted on the pipe in a rotary direction and means controlled by pressure from within the pipe for opening and closing communication from the reservoir to the pipe.

4. An automatic oiler for the air-feed pipe of a pneumatic motor comprising an oil-reservoir adjustably mounted on the pipe in a rotary direction, an annular chamber surrounding the pipe, ports in the pipe communicating with the said chamber and a valve controlled by pressure within the pipe for opening and closing communication from the interior of the reservoir to the said annular chamber.

5. An automatic oiler for the air-feed pipe of a pneumatic motor comprising a reservoir, a tubular valve-bushing therein having holes therethrough at different distances from the feed-pipe and a valve fitted to slide in the valve-bushing toward and away from the feed-pipe, the movement of the said valve being controlled by pressure within the feed-pipe for opening and closing communication from the interior of the reservoir to the interior of the feed-pipe.

6. An automatic oiler for the air-feed pipe of a pneumatic motor comprising an oil-reservoir, a valve and a spring for holding the valve closed, the said valve being adapted to be opened by pressure from within the feed-pipe for opening communication from the interior of the oil-reservoir to the interior of the feed-pipe.

810,687. SYSTEM OF AUTOMATIC SIGNALING FOR ELECTRIC RAILWAYS. FRANCIS TOWNSEND, New York, N. Y., assignor to General Railway Signal Company, a Corporation of New York. Filed Nov. 10, 1905. Serial No. 286,741.

Claim.—1. The combination with a signaling system of the type described provided with cross-bonds for the return conductors or rails, of means whereby the power-current will be equalized in the return-conductors to the source of power-current.

2. The combination with a signaling system of the type described, of automatic means whereby the power-current will be equalized in the return-conductors to the source of power-current.

3. The combination with a signaling system of the type described, of means for automatically varying the resistance of the return-paths for the power-current in inverse proportion and in accordance with the power-current in said paths.

4. The combination with a signaling system of the type described, of means for automatically altering the relative resistance of the return-paths for the power-current, and in proportion to the power-current in said paths.

5. The combination with a signaling system of the type described provided with cross-bonds for the return conductors or rails, of means whereby the power-current will be equalized between the traffic-rails as return-conductors.

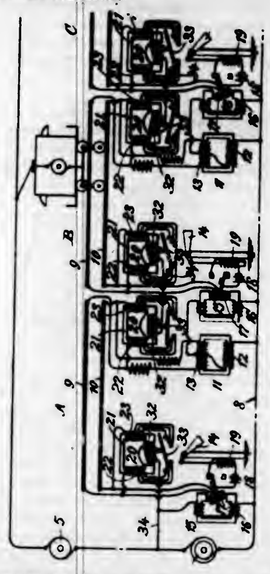

6. The combination with a signaling system of the type described, of means for automatically equalizing the power-current between the traffic-rails as return-conductors.

7. The combination with a signaling system of the type described, of reactance bonds, and means for altering the relative resistance of the paths for the power-current through said bonds.

8. The combination with a signaling system of the type described, of reactance bonds, and means for automatically altering the relative resistance of the paths for the power-current through said bonds.

9. The combination with a signaling system of the type described, of reactance bonds including in their structure means for automatically altering the relative resistance of the paths for the power-current through said bonds.

10. The combination with a signaling system of the type described, of reactance bonds having a fixed member with a coil in each path for the return power-current and a movable member adapted to vary the relative resistance of such paths.

11. The combination with a signaling system of the type described, of reactance bonds having a fixed member in the path of the power-current, and a movable member adapted to vary the length of the coil of the member in the path of the power-current.

12. The combination with a signaling system of the type described, of means energized by the power for varying the relative resistance of the return-paths for the power-current and in accordance with the power-current flowing in said paths.

13. The combination with a signaling system of the type described, of a reactance-bond-equalizing device comprising a core having coils thereon in the path of the power-current and wound in opposite directions so as not to magnetize the core, an armature energized by the power-current, and means controlled by the armature whereby the relative resistance of the paths for the power-current through said bond may be varied, and without affecting the reactance of the bond to an alternating current.

14. The combination with a signaling system of the type described, of an inductance bond comprising a core having coils thereon in the path of the power-current, and wound in opposite directions, so as not to magnetize said core, an armature energized by the power-current, and means controlled by the armature whereby the magnetomotive forces of the power-currents in said bond may be varied, and without affecting the reactance of the bond to an alternating current.

15. The combination with a signaling system of the type described, of means energized by the power-current for varying the relative power-current magnetomotive forces, in accordance with the inequality of the power-currents flowing in the traffic-rails.

16. An automatic system of block-signaling, embodying means whereby the return propulsion-currents are automatically equalized between the traffic-rails.

17. An automatic system of block-signaling, embodying means for automatically segregating the alternating signaling-current between the respective blocks of the trackway and for equalizing the power-current between the rails of the railway as return-conductors.

18. An automatic system of block-signaling, embodying means whereby the magnetomotive forces of the power-currents in the inductance bonds are automatically equalized.

19. A signaling system of the type described, comprising traffic-rails of variable relative resistance, inductance bonds wound with wire, adapted to transmit the power-current, and automatic means of magnetomotive-force control, combined with said reactance bonds.

20. A system of block-signaling of the type described, comprising traffic-rails of variable relative resistance, inductance bonds connected to said rails, and a power-current of zero-resultant magnetomotive force, transmitted through said bonds.

21. In a system of automatic signaling of the type described, traffic-rails of varying relative resistance, inductance bonds adapted to transmit the power-current, automatic means energized by the power-current, adapted to reduce the resultant magnetomotive force of the power-current in the body to zero.

22. In a system of automatic signaling for railways, traffic-rails carrying varying power-currents and means of automatic magneto-force control as to the power-current actuated by the difference in the currents carried by said rails.

23. In a system of automatic signaling, the combination of traffic-rails carrying the power-current, a block-segregating means, transmitting said power-current, and comprising a fixed member, and a movable member actuated by the difference in the currents carried by the traffic-rails, and means of magnetomotive-force control of the power-current combined with said segregating means.

24. In a system of automatic signaling, a block-segregating device comprising an iron core, an automatic means for maintaining zero-unidirectional magnetization in said core and a magneto-force-regulating device combined with it, actuated by the power-current.

25. In a system of automatic signaling, the combination with the traffic-rails of reactance bonds, and means whereby the magnetizing effect of the power-current, separately transmitted over said rails as a return and through the bond, will be equalized within the bond and thereby produce no magnetization of the bond, thus presenting return-paths for the power-current to the source of energy.

810,688. CHURN. EDWARD W. TURNER, Swansboro, Va., assignor of one-half to George M. Rogers, Richmond, Va. Filed July 28, 1905. Serial No. 271,672.

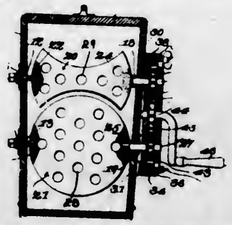

Claim.—In a churn, a receptacle having spaced bearings through one of its side walls, a base-plate attached to said receptacle and with outwardly-extending flanges at the ends and having bearings opposite the bearings in said receptacle and also with an intermediate bearing, a supporting-plate seated at the ends upon the flanges of said base-plate and provided with bearings in alinement with the bearings in said base-plate, dasher members having sockets in one end and disposed within said receptacle, shafts journaled in the bearings in said receptacle and in the bearings in said plates and engaging the sockets in said dasher members a shaft journaled in the intermediate bearings in said plates and provided with an operating-crank intermeshing gear-wheels upon said shafts and means for detachably coupling said supporting-plate to said base-plate.

810,689. INFANT'S DIAPER. WILLIAM R. WAY, Columbia, S. C. Filed June 29, 1905. Serial No. 267,499.

Claim.—1. An infant's diaper comprising a combined excrement and urine receiver, and a urine-deflector communicating therewith.

2. An infant's diaper comprising a combined excrement and urine receiver having a neck, a urine-deflector having a neck, and a conduit having the ends thereof extending into the said necks.

3. An infant's diaper comprising a combined excrement and urine receiver, a urine-deflector communicating therewith, and a shield connected to said receiver.

4. An infant's diaper comprising a combined excrement and urine receiver having a neck, a urine-deflector having a neck, a conduit having the ends thereof extending into the said necks, and a shield connected with said receiver.

5. An infant's diaper comprising a combined excrement and urine receiver, a urine-deflector communicating therewith, attaching-straps connected with the deflector, and attaching-straps connected with the receiver.

6. An infant's diaper comprising a combined excrement and urine receiver, and a urine-deflector communicating therewith and provided with a pocket.

7. An infant's diaper comprising a combined excrement and urine receiver having a neck, a urine-deflector having a neck, and a conduit having the ends thereof extending into the said necks and provided with a valve at one end.

8. An infant's diaper comprising a combined excrement and urine receiver having a top portion provided with a neck adapted to be inverted to permit of the discharge of the contents of said receiver, and a urine-deflector communicating therewith.

9. An infant's diaper comprising a combined excrement and urine receiver, having a top portion provided with a neck adapted to be inverted to permit of the discharge of the contents of said receiver, a urine-deflector, and a conduit for establishing communication between said receiver and deflector.

10. An infant's diaper comprising a combined excrement and urine receiver, having a top portion provided with a neck adapted to be inverted to permit of the discharge of the contents of said receiver, a urine-deflector, a conduit for establishing communication between said receiver and deflector, and a valve in said conduit.

810,690. BIRD-KITE. PROSPER WEISS, Highland Falls, N. Y. Filed Apr. 11, 1905. Serial No. 255,086.

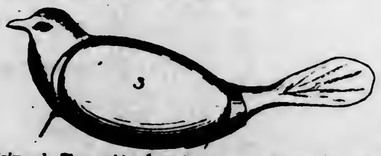

Claim.—1. The combination with an inflatable body; of a covering inclosing the same and comprising a hollow casing simulating a winged creature, said casing having an opening adapted to receive the inflatable body, a closure for said opening adapted to conceal and protect the inflatable body, and a manipulating-cord permanently connected to the casing.

2. A covering for inflatable bodies comprising a hollow casing simulating a winged creature, said casing having an opening adjacent one end adapted to receive an inflatable body, a closure for said opening, and a manipulating-cord secured to said casing.

3. A covering for inflatable bodies comprising a hollow casing simulating a living creature and having an opening adapted to receive an inflatable body, flexible wings extending from the casing, a closure for the opening, and a manipulating-cord secured to and extending from the casing.

810,691. DERRICK. JESSE S. ALLEN, Jr., Philadelphia, Pa. Filed Mar. 24, 1905. Serial No. 251,841.

Claim.—1. The combination of a base-frame, an A-frame and struts supporting said A-frame, a step, a relatively short mast supported in the plane of the A-frame, a foot-block carrying the mast and mounted in the step, a pivot by which the upper end of the mast is secured to the A-frame, a bull-wheel carried by the mast, braces extending from the bull-wheel to the mast, and a boom pivoted to the foot-block and mounted between the braces, substantially as described.

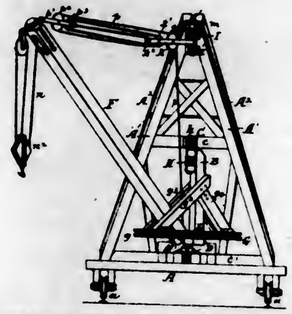

2. The combination in a derrick, of a base-frame, an A-frame carried thereby, a step, a short mast, a foot-block having its pivot mounted in the step and secured to the mast, a boom pivoted to the foot-block, a bull-wheel secured to the foot-block for turning the mast, a socket secured to the upper end of the mast, a pin in the socket and projecting above the mast, a bearing secured to the A-frame into which the pin projects, the pin being in line with the pivot of the foot-block and the mast being out of line, substantially as described.

3. The combination in a derrick, of a base-frame, an A-frame carried thereby, strut-legs extending from the upper portion of the A-frame to the rear of the main frame, a socket at the upper end of the A-frame, a pin mounted in the socket and projecting above the end of the A-frame, gooseneck carried by each strut-leg and having an opening for the passage of the pin, a cross-bar on the A-frame, a short mast mounted between the cross-bar and the base of the frame, a step-bearing for the lower portion of the mast, a pivot for the upper portion of the mast, and a boom, substantially as described.

4. The combination in a derrick, of a base-frame, an A-frame, strut-legs extending from the upper portion of the A-frame to the rear of the base-frame, a step-bearing mounted between the legs of the A-frame, a foot-block having a pivot mounted in the step-bearing, the step-bearing and the foot-block having an open center for the passage of the hoisting-ropes, a boom carried by the foot-block, the step-bearing having an internal upwardly-projecting flange forming an annular cavity for the reception of the pivot and for the accumulation of a lubricant so that the step-bearing will be lubricated at all times, substantially as described.

5. The combination in a derrick, of a mast pivoted at the upper end to the frame and having a foot-block at its lower end, a hollow pivot projecting from the under side of the foot-block, a step-bearing having an open center and having an annular internal flange forming an annular cavity into which the pivot of the foot-block extends, said pivot having a shoulder near its upper end, and a cap secured to the foot-block and extending over the shoulder of the pivot, forming a dust-guard for the bearing, substantially as described.

6. The combination in a derrick, of a pivot, a mast, a boom hung from the mast, a step-bearing for the lower end of the mast, a socket secured to the upper end of the mast, a pin mounted in the socket, U-shaped bolts extending through the socket and through the mast, and a bearing on the frame for the reception of the pivot-pin, substantially as described.

7. The combination in a derrick, of a frame, a mast, a boom pivoted to the mast, a step-bearing for the lower end of the mast, a socket at the upper end of the mast, said socket having a vertical opening, a pivot-pin mounted in the opening, U-shaped bolts securing the socket to the mast, said socket having projections surrounding each bolt and entering the mast, and a bearing secured to the frame of the derrick by U-shaped bolts, said bearing arranged to receive the projecting pivot of the mast, substantially as described.

8. The combination in a derrick, of a mast, an A-frame, strut-legs, a socket secured to the A-frame, U-shaped bolts securing the socket to the said frame, a pin projecting above the A-frame, gooseknecks carried by the strut-legs through which the said pin passes, the pin also acting as a support for the sheave-strap at the upper end of the A-frame, substantially as described.

9. The combination in a derrick, of a main frame, wheels supporting the said frame, one set of wheels being the driving-wheels, hoisting mechanism carried by the frame and geared to the said driving-wheels, an A-frame at the forward end of the derrick, strut-legs leading from the upper portion of the A-frame to the rear of the main frame, a transverse beam on the A-frame, a short mast pivoted to the said beam, a foot-block secured to the lower end of the mast having a pivot, a step-bearing for the pivot, said step-bearing and foot-block having an open center, sheaves carried by the foot-block and by the step-bearing, a boom pivoted to the foot-block, an upwardly-extending internal flange in the step-bearing projecting up into the opening in the pivot and forming an annular cavity for retaining a lubricant, a plate forming a dust-guard secured to the foot-block, a socket at the upper end of the mast and secured thereto by U-shaped bolts, a pivot-pin mounted in the socket and projecting above the mast, a bearing in the cross-bar of the main frame for the reception of the pivot, the upper and lower pivots of the mast being in line, a bull-wheel carried by the mast, and braces extending from the mast to the rim of the bull-wheel, the said boom extending between the braces, substantially as described.

810,692. DOOR-SECURER. KNUD ANDERSON, Tacoma, Wash., and LARS PEDERSON, Manitowoc, Wis., assignors of one-third to Hans Meyer, Manitowoc, Wis. Filed June 23, 1905. Serial No. 266,634.

Claim.—1. A device of the character described, comprising a plate or bar effective for engagement with the door-jamb and having two series of adjusting-holes, and a sleeve or cuff slidable upon said bar or plate and effective for engagement with the door, and equipped with a shiftable spring-detent for coaction with said holes.

2. A device of the character described, comprising a lug-equipped plate or bar member having two series of adjusting-holes alternating each other, and a lug-equipped sleeve member arranged for insertion thereon and having a spring-detent for engagement with either of said series of holes.

3. A device of the character described, comprising a lug-equipped plate or bar having adjusting-holes therein alternating one with the other, and a lug-equipped sleeve or cuff member having in its forward edges extended notches or recesses, and equipped with a spring detent or dog sprung through a hole in said sleeve member and effective to be laterally shifted in said notches from one to the other of said series of adjusting-holes.

810,693. CORN-HARVESTER. DANIEL H. ANTHONY, Akron, Iowa, assignor of one-half to Emery H. Mellen, Akron, Iowa. Filed Jan. 10, 1905. Serial No. 240,423.

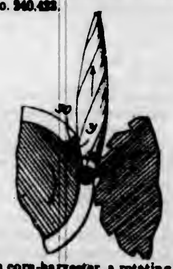

Claim.—1. In a corn-harvester, a rotating snapping-roll having rigid spiral ribs with faces inclined inward in the direction in which the roll revolves.

2. In a corn-harvester, a rotating snapping-roll having rigid spiral ribs, each with a shoulder *x* and faces each inclined inward in the direction in which the roll revolves and toward said shoulder *x*.

3. In a corn-harvester, a rotating snapping-roll having rigid spiral ribs with shoulders *x* the faces of said ribs inclined inward toward said shoulders *x* in the direction in which the roll revolves.

4. The combination in a corn-harvester, of gatherers a pair of rotating rolls inclined backward and upward and having on their surfaces rigid spiral wedge-like ribs, the faces of the ribs on the adjacent sides of the rolls inclined in reverse directions.

5. The combination in a corn-harvester, of gatherers, ribbed snapping-rolls, one of decreasing diameter toward the end, and bearings adjustable to permit the rolls to be set with their axes diverging, with the adjacent working parts at either end parallel.

6. The combination in a corn-harvester, of a pair of ribbed snapping-rolls one of increasing diameter toward the center, and movable bearings whereby the rolls are relatively adjustable to permit them to be set with their adjacent working parts parallel at either end.

7. The combination with the roll supported in fixed bearings, of a second roll, a movable bearing for the latter roll, a spring tending to carry the latter roll toward the first, and a fly-wheel geared with the movably-supported roll, to exert a lateral thrust upon the latter.

8. The combination with a gatherer of a rotary stalk-lifter, a support upon which the lifter rotates freely under the friction of the stalks.

9. The combination with a gatherer, of a rotary conical lifter and a support upon which the lifter rotates freely under the friction of the stalks.

10. The combination with a gatherer of a rotary lifter contracted toward the outer part and mounted to turn freely under friction of the stalks on a shaft extending upward and outward from the gatherer.

11. The combination with a gatherer having gathering-chains of a rotary lifter supported to rotate freely under friction of the stalks.

12. The combination with the rolls of a corn-harvester, of means for producing an air-blast and for directing it against the stalks of corn adjacent to the point where it is engaged by the rolls.

13. The combination with the rolls of a corn-harvester of means for producing an air-blast and for directing the same at different points against the stalks of corn and toward the rolls.

14. The combination with a corn-harvester having a stripping device, of means for producing an air-blast and for directing it against the stalks of corn adjacent to the point where it is engaged by the stripping device.

15. The combination with the rolls of a corn-harvester of a shaft approximately parallel to the rolls and carrying an eccentric push-bar, and means for rotating said shaft.

16. The combination with the roll K, its shaft and movable supporting-bracket, and the fly-wheel and shaft, of intermeshing gears on the fly-wheel shaft and roll-shaft.

810,694. AUTOMATIC WEIGHING-MACHINE. EDGAR C. ARNETT, Washington, Kans. Filed July 19, 1905. Serial No. 270,206.

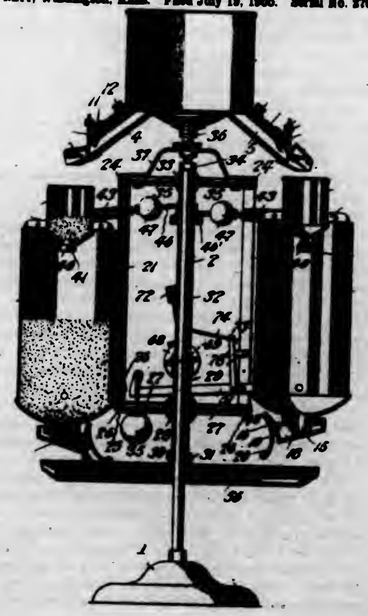

Claim.—1. In a weighing apparatus, the combination with a feed device, of weighing mechanism embodying a load-receiver provided with an entrance-chamber, a valve controlling the flow of material therefrom to the receiver, means for closing said valve when the receiver has made a partial traverse, a valve controlling the discharge of material from the receiver, and means for opening the discharge-valve when the controlling-valve is closed, cutting off the feed when the receiver starts on its final traverse and maintaining the discharge-valve open and opening the controlling-valve in the return movement of the receiver.

2. In a weighing apparatus, the combination with a feed device, of weighing mechanism embodying a load-receiver provided with an entrance-chamber, a valve for governing the feed of material to the said entrance-chamber, a valve controlling the feed of material from the entrance-chamber to the receiver, a valve controlling the discharge of the material from the receiver, and automatic mechanism for controlling said valves to feed material to the receiver until the same is partially filled and cut off the flow from the entrance-chamber to said receiver, to open the discharge-valve on the final traverse of the receiver, and to close the discharge-valve when the receiver reaches the limit of its return movement.

3. In a weighing apparatus, the combination of a frame, upper and lower swinging scale-supports, a receiver pivoted to said supports and having a shifting connection with the upper support permitting it to have a preliminary downward movement independent thereof, a supplementary receiver opening into and movable with the first-named receiver, a valve controlling the discharge of material from said supplementary receiver, said valve being controlled by the upper support and brought to closing position during the preliminary downward movement of the main receiver and feeder for supplying material to the supplementary receiver, a valve controlling said feeder, a valve controlling the discharge of the material from the main receiver, and means for opening the discharge-valve upon the final traverse of the main receiver and simultaneously closing the feed-valve and closing the discharge-valve and opening the feed-valve at the limit of the return movement of the receiver.

4. In a weighing apparatus, the combination with a valve-controlled feeder, of a weighing-receiver provided with an entrance-chamber adapted to discharge thereinto and to receive the material from the feeder, a valve controlling the discharge of material from the receiver, a valve controlling the discharge of the material from the entrance-chamber to the receiver, pivoted weight-controlled supports for the receiver, one of said supports controlling the valve of the chamber, and means for opening the discharge-valve when the receiver reaches the limit of its weighing movement and closing the feed-valve and reversely operating said valves when the receiver returns to its normal position.

5. In a weighing apparatus, weighing mechanism embodying a receiver having two communicating chambers, a feeder adapted to discharge in one chamber for delivery to the other chamber, means for cutting off the flow of the material from the latter-named chamber when a certain proportion of the load is delivered therein, means for cutting off the feed of the material to the other chamber when the balance of the load is received therein, and means for discharging the load.

6. In a weighing apparatus, weighing mechanism embodying a main receiver and a supplementary receiver adapted to discharge thereinto, a feeder adapted to discharge into the supplementary receiver, means for cutting off the feed from the supplementary receiver to the main receiver when the latter has received a certain proportion of the load, means for cutting off the feed from the feeder to the supplementary receiver when the latter receives the balance of the load, and means for discharging the material from said receiver.

7. In a weighing apparatus, weighing mechanism embodying main and supplementary receivers, a feeder adapted to feed material to the supplementary receiver for delivery to the main receiver, means for cutting off the feed of the material from the supplementary receiver to the main receiver when the latter has received a certain proportion of the load, means for cutting off the feed of the material to the supplementary receiver when the latter has received the balance of the load, a discharge device, and means for controlling said discharge device to permit of the discharge of the material from both receivers.

8. In a weighing apparatus, a feed device, weighing mechanism embodying main and supplementary receivers, said supplementary receiver being adapted to receive the material from the feeder and discharge the same into the main receiver, a valve automatically operated when the main receiver has received a portion of the load to prevent the further delivery of the material from the supplementary receiver thereto, a valve for stopping the feed of the material to the supplementary receiver when the latter has received the balance of the load, a discharge-valve upon the main receiver, and means for alternately opening and closing the feeder and discharge-valve at the limits of the movements of the receivers.

9. In a weighing apparatus, a feeder, weighing mechanism embodying a main and a supplementary receiver, said supplementary receiver adapted to receive the material from the feeder and discharge the same into the main receiver, the weighing mechanism being adapted to permit said receivers to have a preliminary and a final traverse in its weighing movement, means for cutting off the feed of the material from the supplementary receiver to the main receiver when the receivers reach the limit of their preliminary traverse, means for cutting off the feed of the material from the feeder to the supplementary receiver when the receivers reach the limit of their final traverse, and means for automatically controlling the feeder and opening and closing the main receiver, when the receivers reach the limit of their weighing and return movements.

10. In a weighing apparatus, the combination of a feeding device, a plurality of weighing mechanisms, each embodying a main and a supplementary receiver, the supplementary receiver being adapted to receive the material from the feeder and discharge into the main receiver, a valve for closing the supplementary receiver when the main receiver has received a certain proportion of the load, a valve for cutting off the feed of the material to the supplementary receiver when the latter has received the balance of the load, a valve for controlling the discharge of the material from the main receiver, and means for alternately operating the valve to control the feed of the material to and governing the actions of the weighing mechanisms.

11. In a weighing apparatus, weighing mechanisms, each embodying a main and a supplementary receiver, said supplementary receiver being adapted to receive the material from the feeder and discharge the same into the main receiver, the weighing mechanism being adapted to permit each main and supplementary receiver to have a preliminary and final traverse in its weighing movement, means for cutting off the flow of the material from the supplementary receiver to the main receiver when the latter has received a portion of the load, means for cutting off the flow of the material from the feeder to the supplementary receiver when the latter has received the balance of the load, means for discharging the material from the main receiver when said receivers reach the limit of their final traverse, and automatic means for controlling the aforesaid means to permit alternate operations of the weighing mechanisms, said automatic means being provided with compensating mechanism to permit the discharge means of each weighing mechanism to remain open until the receivers reach the limit of their return movement.

12. In an automatic weighing apparatus, the combination with a feeder, of weighing mechanism embodying a frame, main and supplementary receivers, said supplementary receiver being adapted to receive the material from the feeder and discharge the same into the main receiver, pivoted supports for the receivers, a shifting connection between the receivers and one of the supports to permit the receivers to have a preliminary downward movement independent of said support, a valve carried by said support and brought by such movement of the receivers into position to close the supplementary receiver, a valve controlling the feeder, a valve controlling the discharge of the material from the main receiver, and means for alternately operating said valves.

13. In an automatic weighing mechanism, a feeder provided with valve-controlled discharges, weighing mechanisms each comprising a main and a supplementary receiver and adapted to be alternately supplied from said discharges, the supplementary receiver being adapted to receive the material from the feeder and discharge the same into the main receiver, pivoted supports for said sets of receivers, valves for cutting off the flow from the supplementary to the main receivers when the latter have received a portion of the load, discharge-valves controlling the discharge of the material from the main receivers, and means for automatically controlling the feeder and discharge-valves, said means including compensating mechanism for maintaining the discharge-valves open upon the return movement of the receivers until an opening of the valves controlling the flow of material from the supplementary receiver is effected to permit said material to feed into the main receiver and discharge.

14. In a weighing apparatus, the combination of a hopper provided with valved feed-chutes, a supporting-frame, weight-controlled receivers pivotally mounted upon the frame, each receiver comprising a main receptacle provided with a discharge-outlet and a supplementary receptacle adapted to receive the material from the receptacle and discharge the same into the main receptacle, each receiver having a preliminary and a final traverse in its weighing movement, a valve operating to open and close the supplementary receptacle as the receiver moves above and below the limit of said preliminary movement, a discharge-valve for each main receptacle, operating means for alternately opening and closing the respective sets of valves, and shifting mechanism for actuating said operating means, said shifting mechanism being alternately operated by the receivers and adapted to permit the discharge-valve of each receiver to remain open until the controlling-valve of the supplementary receptacle is opened and the material in said receptacle is discharged.

15. In a weighing apparatus, the combination of a hopper provided with valved feed-chutes, a supporting-frame, weight-controlled receivers pivotally mounted upon the frame, each receiver comprising a main receptacle provided with a discharge-outlet and a supplementary receptacle adapted to receive the material from the receptacle and discharge the same into the main receptacle, each receiver having a preliminary and a final traverse in its weighing movement, a valve operating to open and close the supplementary receptacle as the receiver moves above and below the limit of said preliminary movement, a discharge-valve for each main receptacle, operating means for alternately opening and closing the respective sets of valves, a shifting device for alternately opening and closing the respective sets of valves, and trips actuated by the receivers to alternately operate said shifting device, said trips and shifting device being cooperatively constructed to permit the discharge-valve of each receiver to remain open until the controlling-valve of the supplementary receptacle is opened and the material in said receptacle is discharged.

810,695. **TENSION MECHANISM FOR WIRE-FENCE MACHINES.** AXEL F. BACKLIN and IDOFF RELUND, Worcester, Mass., assignors to The American Steel & Wire Company of New Jersey, Worcester, Mass., a Corporation of New Jersey. Filed Aug. 21, 1905. Serial No. 275,006.

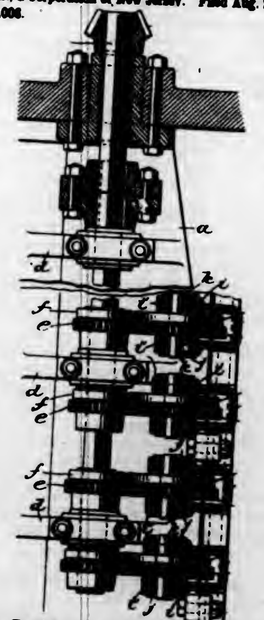

Claim.—1. Tension mechanism for wire-fence machines, comprising a shaft, feed-rolls thereon, a series of pivoted levers each having a feed-roll thereon coöperating with a corresponding feed-roll on the shaft, gears connecting the respective lever-supported feed-rolls with the shaft, and means for adjusting the pivoted levers relatively to said shaft to vary the tension on said rolls.

2. Tension mechanism for wire-fence machines, comprising a shaft, feed-rolls thereon, a series of pivoted levers each having a feed-roll thereon coöperating with a corresponding feed-roll on the shaft, gears connecting the respective pairs of rolls, and means for adjusting the pivoted levers relatively to the shaft to vary the tension on said rolls.

3. Tension mechanism for wire-fence machines, comprising a shaft, feed-rolls thereon, a series of pivoted levers each having a feed-roll thereon coöperating with a corresponding feed-roll on the shaft, gears connecting the respective lever-supported feed-rolls with the shaft, and a yieldable adjustable connection between each lever and the machine-frame to vary the tension on said rolls.

4. Tension mechanism for wire-fence machines, comprising a shaft, feed-rolls thereon, a series of pivoted levers each having a feed-roll thereon coöperating with a corresponding feed-roll on the shaft, a yieldable adjustable connection between each lever and the machine-frame to vary the tension on said rolls, and a cam device coöperating with each lever and the machine-frame to move said lever independently of said connection.

5. Tension mechanism for wire-fence machines, comprising a shaft, feed-rolls thereon, a series of pivoted levers each having a feed-roll thereon coöperating with a corresponding feed-roll on the shaft, a yieldable adjustable connection between each lever and the machine-frame to vary the tension on said rolls, and means independent of said connection for moving each of said levers to separate the corresponding rolls.

6. Tension mechanism for wire-fence machines, comprising a shaft, feed-rolls thereon, a series of pivoted levers each having a feed-roll thereon coöperating with a corresponding feed-roll on the shaft, gears connecting the respective lever-supported feed-rolls with the shaft, a bolt connected to each lever and passing through the machine-frame, and an adjustable spring connecting each bolt with the machine-frame, whereby the tension of said rolls may be varied.

7. Tension mechanism for wire-fence machines, comprising a shaft, feed-rolls thereon, a series of pivoted levers each having a feed-roll thereon coöperating with a corresponding feed-roll on the shaft, a bolt connected to each lever and passing through the machine-frame, an adjustable spring connecting each bolt with the machine-frame to vary the tension of said rolls, and a cam-lever pivoted to each lever and coöperating with the machine-frame to move said lever in opposition to the spring-and-bolt connection.

8. Tension mechanism for wire-fence machines, comprising a series of driving feed-rolls, a coöperating series of driven feed-rolls, and pivoted adjustable bearings for varying the distance between the axes of the respective series of rolls, whereby said rolls may be replaced by other rolls of different diameters.

9. Tension mechanism for wire-fence machines, comprising a series of driving feed-rolls, a coöperating series of driven feed-rolls, and pivoted levers supporting the latter series of rolls, whereby the distance between the axes of the respective series of rolls may be varied to permit rolls of different diameters to be substituted.

810,696. **DRIVING MECHANISM FOR COILER-SPINDLES OF WIRE-FENCE MACHINES.** AXEL F. BACKLIN and IDOFF RELUND, Worcester, Mass., assignors to The American Steel & Wire Company of New Jersey, Worcester, Mass., a Corporation of New Jersey. Filed Aug. 21, 1905. Serial No. 275,007.

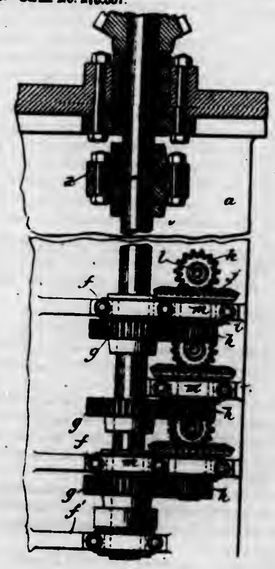

Claim.—Coiler-spindle-driving mechanism for wire-fence machines, comprising a vertical driving-shaft receiving an intermittent rotatory motion from the main shaft of the machine, a series of coiler-spindles, a series of spur-gears on said driving-shaft corresponding in number to the coiler-spindles, stub-shafts mounted upon the machine-frame adjacent to the respective coiler-spindles, a pinion and a bevel-gear on the respective ends of the stub-shafts, and a bevel-pinion on each of the coiler-spindles, the bevel-pinion on the respective coiler-spindles meshing with the corresponding bevel-gear on the stub-shafts, and the pinion on the respective stub-shafts meshing with the corresponding spur-gear on the driving-shaft.

810,697. CAP. LOUIS BALSAM, New York, N. Y. Filed May 17, 1905. Serial No. 260,726.

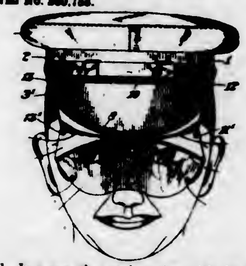

Claim.—1. In a cap, the combination with the vizor, of an eye-protector of transparent material and a bellows connection between the front edge of said vizor and the front edge of said protector, whereby the protector is adapted to be pulled down from the rear, substantially as described.

2. In a cap, the combination with the vizor, of an eye-protector of transparent material, a bellows connection between the front edge of said vizor and the front edge of said protector, whereby the protector is adapted to be pulled down from the rear, and means for limiting the downward movement of the protector, substantially as described.

3. In a cap, the combination with the vizor, of an eye-protector of transparent material and a bellows connection between the vizor and protector consisting of a folded strip of flexible material one edge secured along the front edge of the vizor and the other edge secured along the front edge of the protector, whereby the protector is adapted to be pulled down from the rear, substantially as described.

4. In a cap, the combination with the vizor, of an eye-protector of transparent material, a bellows connection between the vizor and protector consisting of a folded strip of flexible material one edge secured along the front edge of the vizor and the other edge secured along the front edge of the protector, whereby the protector is adapted to be pulled down from the rear, substantially as described and for securing it in raised position, substantially as described.

5. In a cap, the combination with the vizor, having a hole at each end, of an eye-protector, a bellows connection between the vizor and protector and a cord running round the front of the cap, passing through the holes in the vizor and its ends secured to the ends of the protector, whereby the downward movement of the protector is limited and it may be secured in raised position, substantially as described.

810,698. RAILWAY-TIE. JAMES BARRY, Seattle, Wash., assignor of one-fourth to Louis D. Bodum, Seattle, Wash., and one-eighth to Edward J. Brennan, St. Paul, Minn. Filed July 28, 1905. Serial No. 272,121.

Claim.—1. A railway-tie comprising an I-beam, having a rail-receiving countersink, and flanges for engaging the rail-flanges.

2. A railway-tie comprising an I-beam having a rail-receiving countersink forming a seat for the flange of the rail, and locking means for engaging the rail.

3. A railway-tie comprising an I-beam, having rail-receiving depressions forming seats, flanges partly overhanging the depressions, plates engaging the rail and held by said flanges, and locking means engaging the rails.

4. A railway-tie comprising a metallic I-beam, having rail-receiving depressions forming seats for the flanges of the rails, flanges overhanging the depressions, wedge-plates between said overhanging flanges, arranged to impinge against the rail-web, and locking means engaging the rail.

5. A railway-tie comprising an I-beam, having rail-receiving depressions, said depressions forming seats for the rail-flanges, an elongated shoulder projecting away from the plane of the beam and engaging the rail, said shoulder located on the outside of the rail, and made integral with the I-beam, and means on the inside of the tie coöperating with the shoulder on the outside of the tie for locking the rail in position, and plates interposed between the rail and flange for securing the rail to its seat.

6. A railway-tie comprising an I-beam having rail-receiving depressions forming seats for the flanges of a rail, flanges partly overhanging the depressions and arranged to clamp the rail, one of said flanges being extended and bent upward to form a fish-plate for rail-joints, and means for securing the same to the rails.

7. A railway-tie comprising a metallic I-beam having rail-receiving depressions, forming seats for the flanges of a rail, a shoulder extending away from the plane of the tie arranged on the outer side of the rails, and engaging the rails, flanges on the inside of the rail coöperating with the outside flanges, wedges between the flanges and seat, and an integral plate on the outside of the rail arranged to be bent upward and secured to the abutting rails.

810,699. END PIECE FOR METALLIC BEDSTEADS. WILLIAM F. BIRNSTEIN, Philadelphia, Pa. Filed Dec. 5, 1904. Serial No. 235,673.

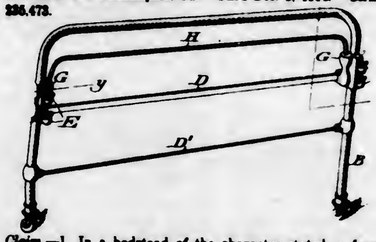

Claim.—1. In a bedstead of the character stated, a frame, a sleeve on the leg thereof, a vertically-extending boss on said sleeve, bed-bottom-supporting means and brace-receiving means on said sleeve at right angles to each other, a cross-bar and a brace, said bar being intermediate of the top rail of said frame and said brace and the latter having an end secured to said sleeve, said cross-bar having on an end, a depending limb which enters said boss and rises therefrom.

2. As an improved article of manufacture, an end piece for a metallic bed, the same comprising in a single element a sleeve having upon one side a hook, a horizontal recess to receive an end of a brace and a bore to receive the leg, and a vertically-extending boss with an opening to receive a depending limb of a cross-bar.

3. In a bedstead, a foot-piece, a brace, a bow-shaped cross-bar between said piece and brace and an end piece comprising in a single element a sleeve, a hook on a side thereof, a vertically-extending boss, a bore in said sleeve to receive the leg of the foot-piece, a horizontal recess to receive an end of said brace and an opening in said boss to receive a depending limb of said cross-bar.

810,700. MOLDING-MACHINE. HERMAN BRUNER, Alpena, Mich. Filed Apr. 19, 1905. Serial No. 256,297.

Claim.—1. In a molding-machine, the combination of a frame having ways thereon, a bridge adjustably mounted on said ways, a mold bottom plate supported by said bridge, said bottom plate being perforated, a core mounted to move through the perforations in the bottom plate, mold-walls movably mounted with respect to the bottom plate, means for moving the core, and means connected with said core-moving means for moving the mold-walls and locking them.

2. In a molding-machine, the combination of a frame having inwardly-extending ways longitudinally mounted thereon, a plurality of bridges adjustably mounted on said ways, sills mounted on said bridges, a bottom plate supported by said sills, side plates pivotally mounted on the sills, said bottom and side plates constituting a mold, a frame movably mounted on the frame of the machine, a core mounted on said frame and adapted to pass through the bottom plate longitudinally, and cross-bars adjustably mounted on said movable frame and located outside the mold, said bars being provided with means for engaging and locking the mold-walls.

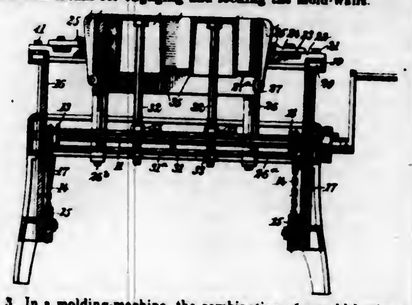

3. In a molding-machine, the combination of a mold having a wall provided with a projection constituting a partition for the mold pivoted at the lower end thereof, said wall being provided with a projection having a face gradually diverging upwardly from its lower end, a bar mounted adjacent to said wall and provided with a roller for engaging said surface, means for reciprocating the bar and a movable core having a projection constituting a partition for the mold.

4. The combination of a mold consisting of a bottom plate, side walls and end walls, said side and end walls being pivoted to the bottom plate and provided with inclined surfaces on their exteriors, said surfaces diverging upwardly from the walls, a reciprocable frame mounted upon the outside of the mold and provided with rollers engaging said inclined surfaces and comprising two pairs of bars adjustably secured together, and means for reciprocating said frame.

5. The combination of a mold consisting of a bottom plate, side walls and end walls, said side and end walls being pivoted to the bottom plate and provided with inclined surfaces on their exteriors, said surfaces diverging upwardly from the walls, a reciprocable frame mounted upon the outside of the mold and provided with rollers engaging said inclined surfaces, means for reciprocating said frame, said frame being provided with a downwardly-extended projection, a pulley mounted on said projection, a shaft provided with a pulley, and a flexible member secured to the pulley on the shaft passing under the first-named pulley and secured at the other end in a stationary position.

6. In a molding-machine, the combination of a mold having movable walls, a movable frame having means for locking said walls in closed position, said frame being provided with a depending projection, a pulley rotatably mounted on said projection, a shaft, a pulley on said shaft, a flexible member having one end secured in stationary position passing under the pulley on the projection and secured to the pulley on the shaft, a ratchet-wheel on the shaft, and a pawl for engaging the ratchet-wheel.

7. In a molding-machine, the combination of a mold having movable walls, a movable frame for moving and locking said walls, and means for moving said frame; said means comprising a downwardly-extending projection on the frame, a pulley on said projection, a flexible connection having one end secured in a stationary position and passing under said pulley, a shaft upon which said connection is adapted to be wound, and means on the shaft for rotating it and taking up the flexible connection.

8. In a molding-machine, the combination of a mold having movable walls, a stationary perforated bottom board, a core adapted to pass through the perforation in the bottom board, a standard on which the core is mounted, said standard being provided with screw-threads, a movable table for supporting the standard, said table having a series of perforations through any one of which the standard is adapted to project, and nuts for securing said screw-threaded portion of the standard to the table in adjusted positions.

9. In a molding-machine, the combination of a mold having movable walls and a perforated bottom board, a core adapted to pass through the perforation in the bottom board, a standard on which the core is mounted, a table for supporting the standard, means for adjustably securing the standard to the table, and means for simultaneously moving the core through the perforation in the bottom board and locking the mold-walls in closed position.

810,701. FLANGE FOR PIANO-ACTIONS. FREDERICK C. BILLINGS, Rockford, Ill. Filed Apr. 14, 1905. Serial No. 255,550.

Claim.—1. In a flange of the class described, a single piece of resilient sheet metal, bent double and having a bearing formed at the point where said piece is bent, the ends of said piece being provided with open-ended slots, and the end of one of the arms formed by the bend being turned at right angles to the body portion; substantially as specified.

2. The combination with the center rail of a piano-action in which is formed a horizontally-arranged slot, of a flange constructed of a single piece of material, a bearing formed at the upper end of said flange, there being a slot at the lower end of the flange for the reception of the retaining-screw that enters the rail, and a lip integral with the lower end of the flange which enters the groove in the rail; substantially as specified.

810,702. GUN-SIGHT. GILBERT L. BLACK, Minoa, N. Y. Filed Mar. 24, 1904. Serial No. 199,674.

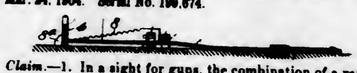

Claim.—1. In a sight for guns, the combination of a raised bar extending across the gun-barrel and having a slot extending through the same lengthwise of the barrel, a spring-bar adapted to fit said slot and containing a recess, a spring-catch engaged within the recess of said bar, and a sight carried by the free end of the said spring-bar.

2. As an improvement in sighting means for guns the combination of a longitudinal spring-bar the forward end secured to a gun and the rear end having a slot, a plate secured to the rear end of said bar and having an upper open sight and a lower central recess, a wedge having a slot and longitudinally movable in the bar-slot and the central recess of the plate, a plate slidable on said spring-bar and having a bar engaging the slot in said wedge beneath said spring-bar, whereby when said plate is moved back and forth the wedge will partake of its movement and raise and lower the sight-plate, substantially as described.

3. As an improvement in sighting means for guns, the combination of a longitudinal spring-bar the forward end secured to a gun and the rear end having a slot, a plate secured to the rear end of said bar and having an upper open sight and a lower central recess, a wedge having a slot and longitudinally movable in the bar-slot and the central recess of the plate, and a plate slidable on said spring-bar and engaging the slot in said wedge, whereby when said plate is moved back and forth the wedge will partake of its movement and raise and lower the sight-plate, substantially as described.

810,703. GUN-SIGHT. GILBERT L. BLACK, Minoa, N. Y. Filed Jan. 22, 1904. Serial No. 190,115.

Claim.—A rear sight for guns comprising a hollow guide member adapted to be secured to the side of the gun and having an elongated vertical slot provided with a circular enlargement, at its upper end, a bar mounted to slide vertically within the guide member and having a threaded hole in its lower end, an arm extending laterally from its upper end over the gun and a sighting member carried by said arm and means for holding said bar at different elevations consisting of a screw having a button on one end adapted to bear against the outer face of the guide member, an enlarged threaded end adapted to be inserted through the circular enlargement of the elongated slot in the guide member and into engagement with the threaded hole in

said bar and bear against the inner face of the guide member and a reduced neck adapted to fit in the vertical slot in the guide member, substantially as described.

810,705. BLOCK-SIGNAL SYSTEM FOR ELECTRIC RAILWAYS. ABRAM L. BOWER, Boyertown, Pa. Filed Jan. 10, 1903. Serial No. 138,698.

4. In a block-signal system, the combination with a section of [illegible] at its other end with the opposite [illegible]

said bar and bear against the inner face of the guide member and a reduced neck adapted to fit in the vertical slot in the guide member, substantially as described.

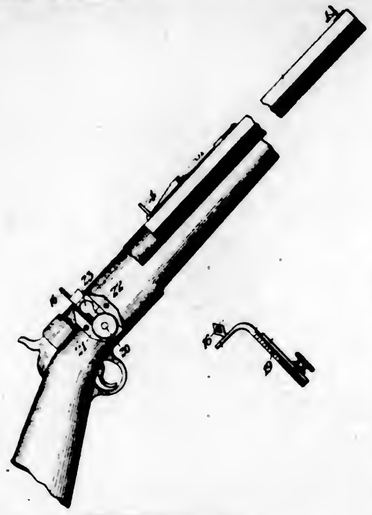

810,704. CLOTHES-PIN. ANDREW G. BORNEMAN, Athenia, N. J. Filed Mar. 13, 1905. Serial No. 249,710.

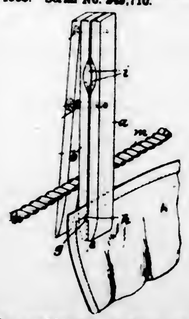

Claim.—1. The combination of three separate members and means for connecting them together in face-to-face relation to each other for movement to and from each other, said means limiting the movement of the outer two of said members away from each other, substantially as described.

2. The combination of three separate members, means for connecting them together at one end, and means for maintaining said members in face-to-face relation to each other located between the ends of said members, said last-named means limiting the movement of the outer two of said members away from each other, substantially as described.

3. The combination of three separate members, a headed device connecting said members together at one end and mounted in one and penetrating the other two of said members, and means for maintaining said members in face-to-face relation to each other located between the ends of said members, said means limiting the movement of the outer two of said members away from each other, substantially as described.

4. The combination of three separate members, means for securing them together at one end, and a headed screw located between the ends of said members and screwed into one and penetrating the other two of said members, substantially as described.

5. The combination of three separate members, means for securing them together at one end, a headed screw located between the ends of said members and screwed into one and penetrating the other two of said members and a spring interposed between two of said members, substantially as described.

810,705. BLOCK-SIGNAL SYSTEM FOR ELECTRIC RAILWAYS. ABRAM L. BOWER, Boyertown, Pa. Filed Jan. 10, 1903. Serial No. 138,696.

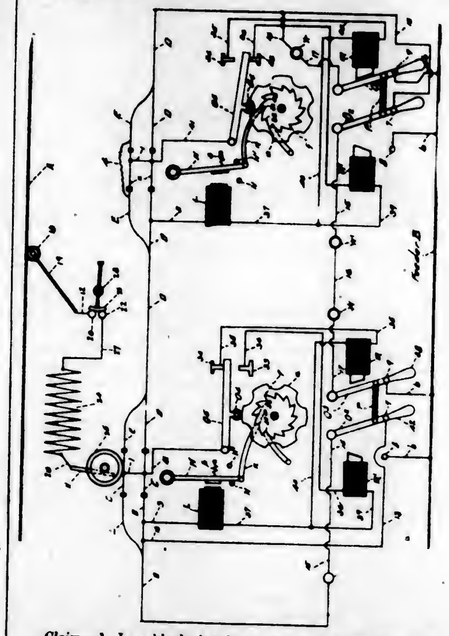

Claim.—1. In a block-signal system for electric railways, the combination with the track divided into blocks or sections, of insulated rail-sections between adjacent blocks, a feed-wire extending along the railway, a circuit-changing switch at the end of each block, main signal-wires extending from one of said switches to the other, said switches arranged to connect the main signal-wires terminating therein alternately to the feed-wire and to the common return of the power-circuit, magnets to operate said switch, and electrical means coöperating with a car to energize said magnets alternately as successive cars arrive upon the insulated track-section at the end of block, substantially as described.

2. In a block-signal system for electric railways, the combination with the track divided into blocks or sections, of insulated rail-sections between adjacent blocks, a feed-wire extending along the railway, a circuit-changing switch at the end of each block, main signal-wires extending from one of said switches to the other, said switches arranged to connect the main signal-wires terminating therein alternately to the feed-wire and to the common return of the power-circuit, magnets to operate said switch, a circuit divided into two branches, one of said magnets connected in each of said branches, a magnet connected in circuit common to both branches, means operated by said third magnet to energize said switch-operating magnets alternately as successive cars arrive upon the insulated track-section adjacent thereto, substantially as described.

3. In a block-signal system for electric railways, the combination with the track divided into blocks or sections, of insulated rail-sections between adjacent blocks, a feed-wire extending along the railway, a circuit-changing switch at the end of each block, main signal-wires extending from one of said switches to the other, said switches arranged to connect the main signal-wires terminating therein alternately to the feed-wire and to the common return of the power-circuit, magnets to operate said switch, a circuit divided into two branches, one of said magnets connected in each of said branches, a magnet connected to circuit common to both of said branches and in circuit with the insulated rails, a movable contact device, means coöperating with the last-named magnet to bring said contact device into electrical connection with said branches alternately, electrical connection between said contact device and the adjacent insulated track-section, a trolley-wire and means to complete the circuit from the said trolley-wire to the said insulated track-section when a car arrives thereon, substantially as described.

4. In a block-signal system, the combination with a section of track, of traffic-controlling devices in connection with a line-wire terminating in a switch, which coöperates alternately with a branch of the feed-wire and the return-conductor; two magnets in relation to the switch; a divided circuit, one of said magnets being included in each branch of the circuit; a switch-arm arranged to be included alternately in the branches of said divided circuit, a ratchet-wheel; a pawl for said ratchet-wheel actuated by an armature, a third magnet included in both branch circuits for operating the armature, a break-wheel provided with a notched periphery, said break-wheel arranged for operation by said ratchet-wheel, the second switch-arm resting upon the notched or indented periphery of the break-wheel, operative devices for energizing and deënergizing the circuit, together with the rails forming the return-conductors, and an insulated rail-section connected to the switch controlling the branch circuits, substantially as described.

5. In a block-signal system, a series of blocks, insulated rails between the blocks, divided circuits terminating in the rails, each circuit having an insulated rail for one terminal, a magnet included in and controlled by both branch circuits, said magnet operating a commutating device controlling each circuit, the commutating device serving to connect the branch circuits alternately with the main circuit, an additional magnet in each branch of the divided circuit, switch-arms in relation to these magnets, line-wires terminating in a switch at each end, said switch being adapted to coöperate alternately with branches of a current-supply wire and the return-conductor, together with traffic-controlling devices adjacent to the turnouts, and devices for energizing and deënergizing the divided circuits, substantially as described.

6. In a block-signal system for electric railways, the combination with a series of blocks, signal-lamps connected with line-wires terminating in switches at the turnouts, a feed-wire having a branch at each turnout, an earth-conductor having a branch at each turnout, the switches coöperating with the branches of the feed-wire and the return-circuit alternately, a main local circuit with two branch circuits at each turnout, a magnet included in and controlled by both branch circuits, said magnet operating an armature, pawl, ratchet-wheel, and a commutating device serving to connect the branch circuits alternately with the main local circuit, a magnet in each branch circuit and in operative relation to the switches and adapted to move them alternately forward and backward, a trolley-conductor, and means coöperating with a car to complete a circuit from said trolley-conductor through one of said local branch circuits at a time, when the car arrives at a given section of track, substantially as described

810,706. STOVEPIPE. CHARLES A. BOYER and DANIEL C. PECK, Marengo, Ill. Filed Oct. 15, 1904. Serial No. 228,592.

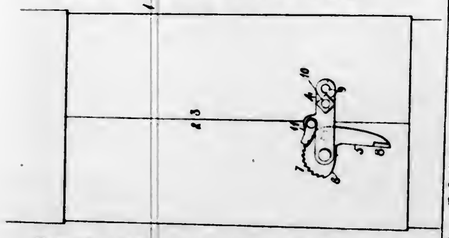

Claim.—1. A pipe-section having two lengthwise overlapping edges, a peripherally-toothed element having a connection with said section near one edge thereof, a strap or bar having an eccentric connection at one end with said toothed element and at its other end connected to the opposite edge of the pipe-section, and a dog adapted to engage said peripherally-toothed element to lock the same against movement in one direction.

2. A pipe-section having two lengthwise overlapping edges, a peripherally-toothed element having a pivotal connection with the said section near one edge thereof, a bar eccentrically connected at one end to said toothed element and at its other end to the opposite edge of the pipe-section, and a dog carried by said bar adapted to engage the teeth on the said toothed element.

3. A pipe-section having two lengthwise overlapping edges, a peripherally-toothed element having a pivotal connection with the said section near one edge thereof, a bar eccentrically connected at one end to said toothed element and having an adjustable connection at its other end with the opposite edge of the pipe-section, and a dog carried by said bar adapted to engage the teeth on the toothed element.

4. A pipe-section having two lengthwise overlapping edges, a peripherally-toothed cam-lever pivotally connected to said section at one edge thereof, a bar eccentrically connected at one end to said cam-lever and having a detachable connection at its other end to the opposite edge of the pipe-section, and a dog carried by said bar adapted to engage the teeth on the cam-lever.

810,707. GRABOT-MACHINE. JAMES D. BRASHER and DANIEL O. SULLIVAN, Vicksburg, Miss., assignors, by mesne assignments, of one-half to Bernard Siani, Rolling Fork, Miss. Filed July 7, 1904. Serial No. 215,673.

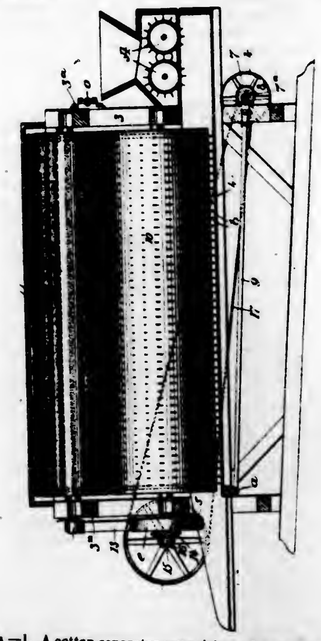

Claim.—1. A cotton-separator comprising a drum having teeth, a drum having brush-tufts, said teeth and tufts being in contact, a shaker located below the toothed drum, and means for simultaneously rotating the drums.

2. A cotton-separator comprising a toothed drum, a brush-drum, a shaker below the toothed drum, means for rotating the drums in opposite directions, with the teeth and brushes thereof in engagement with each other, and means for simultaneously agitating the shaker.

3. A cotton-separator comprising a toothed drum, a brush-drum located above said toothed drum and parallel therewith, a shaker located below the toothed drum, means for rotating the drums, and means for agitating the shaker.

4. A cotton-separator comprising a drum having inclined teeth, a brush-drum engaging with said teeth, means for rotating the toothed drum in the direction of the inclination of the teeth, means for rotating the brush-drum in the opposite direction at a greater circumferential speed, a shaker below the toothed drum, and means for agitating the shaker.

5. A cotton-separator comprising a drum having inclined teeth, a drum having brush-tufts, said drums being located in proximity to each other, a curved shaker located immediately below said toothed drum, means for rotating said toothed drum in the direction of inclination of its teeth, means for rotating said brush-drum in the opposite direction at a greater circumferential speed, and means for simultaneously agitating said shaker.

6. A cotton-separator comprising a drum having inclined teeth, a drum having brush-tufts, means for rotating said first-named drum

in the direction of inclination of its teeth for the purpose of collecting fibrous material, means for rotating said drum having brush-tufts in the opposite direction, with the brush-tufts in engagement with the teeth and for removing the fibrous material from the teeth, an inclined screen below the first-named drum, and means for agitating said screen to cause solid material thereon to be fed in the direction of the inclination of the screen.

7. In a separator, the combination with a frame, and a shaker on the lower portion of the frame, of a toothed drum rotatable on the frame over the shaker, a brush-drum rotatable on the frame above the toothed drum, means for rotating the drums in opposite directions, and means for shaking the shaker.

8. In a separator, the combination with a frame, a transversely-curved shaker on the frame, and an eccentric device adapted to agitate the shaker, of a drum rotatable longitudinally on the frame above the shaker, inclined teeth on the shell of said drum, a drum rotatable on the frame above the toothed drum and having brush-tufts thereon that pass between the teeth of the lower drum, pulleys on the drum-shafts, a crossed belt connecting said pulleys, and gearing adapted to rotate the lower-drum shaft.

810,708. **BRUSH.** SAMUEL H. BRISTOW, Monticello, Iowa. Filed Aug. 24, 1905. Serial No. 275,504.

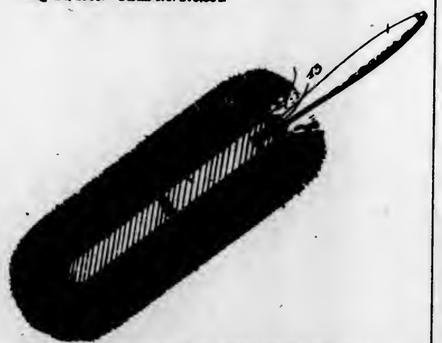

Claim.—The herein-described brush comprising the head, tapered at one end, having the screw-socket at the opposite end and provided at its center with the transverse screw-socket, the brush having the skin covering of the size and shape to receive the head and provided with openings at one end and at one side to register with the screw-sockets of the head, and further provided at the end opening with an elastic contracting-ring to draw said end on the corresponding end of the head, and the handle having the screw-threaded end to engage either of the sockets in the head, and the shoulder to bear against the cover.

810,709. **SAFETY-RAZOR.** SAMUEL G. BROSIUS, Washington, D. C. Filed Dec. 13, 1905. Serial No. 291,694.

Claim.—1. In a safety-razor, a handle having a shield mounted thereon, a razor-blade having two cutting edges, and a member for holding the razor-blade movable longitudinally of the handle to lift and swing the blade free of the shield, the said shield being provided with a guard protecting the idle cutting edge of the said razor-blade, substantially as described.

2. In a safety-razor, a handle, a shield secured thereto and provided with razor-blade stops in combination with a razor-blade resting on the said shield and pressing against the said stops, the said razor-blade being thickened at the corners of its cutting edge, substantially as described.

3. In a safety-razor, a handle, a shield secured thereto and provided with razor-blade stops in combination with a razor-blade, having two cutting edges, resting on the said shield the said razor-blade being thickened at the corners of its cutting edges, substantially as described.

4. In a safety-razor, a handle, a shield secured thereto and provided with razor-blade stops, in combination with a razor-blade provided with two cutting edges having their corners thickened, the said blade being adapted to present either cutting edge for use, substantially as described.

5. In a safety-razor, a handle having a shield mounted thereon, a razor-blade having two cutting edges, and a member for holding the razor-blade movable longitudinally of the handle, the said shield being provided with a guard protecting the idle cutting edge of the said razor-blade, substantially as described.

810,710. **DREDGE.** ANDREW J. BURCHAM, Kelso, Wash. Filed Oct. 30, 1905. Serial No. 285,121.

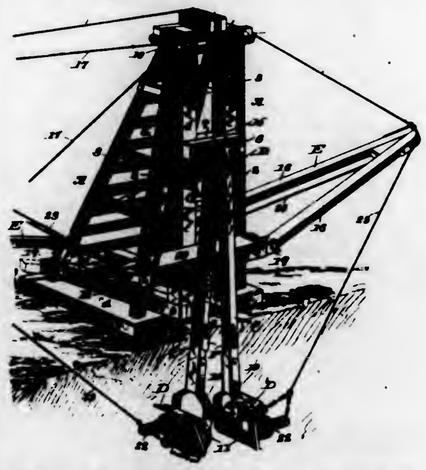

Claim.—1. The improved dredging and scraping machine comprising a frame having a vertical guide, a block adapted to slide vertically on said guide, beams pivoted to said block, and diggers pivoted to the lower ends of the same, the beams being adapted to swing laterally, booms pivoted to the sides of the frame, and means for locking the swinging beams therewith when the diggers are elevated, and means for raising and lowering the booms with the diggers and also the beams and for raising the diggers to the position required for discharging their load, substantially as described.

2. The improved dredger comprising a frame having vertical guides, a block adapted to slide vertically between them, beams pivoted to the block, and diggers pivoted to the lower ends of the same and provided with arms arranged at an angle to their digging and scraping edges, a hoisting and lowering rope connected with the digger-beams and the aforesaid block, booms pivoted to the sides of the frame, and means for raising and lowering them, ropes or chains connected with the diggers and connected with the outer ends of the booms, whereby the diggers may be hauled laterally outward and upward, and means for locking the digger-beams with the boom for supporting the diggers while their load is being discharged, substantially as described.

3. The combination, with a suitable frame having vertical guides and a block adapted to slide on the guides, of beams pivoted to such block, and diggers pivoted in the lower ends of the beams, a hoisting and lowering rope passing over the top of the frame and having a loop extending through slots in the digger-beams at a point some distance below their pivots, and means for hauling the diggers proper laterally, substantially as described.

4. In a dredger of the class indicated, the combination, with a suitable frame, of pivoted beams made vertically adjustable, diggers connected with their lower ends, and means for hoisting the digger-beams and diggers, and also hauling the latter outwardly from each other, substantially as described.

5. In a dredger of the class indicated, the combination, with a suitable frame and a member adapted to slide vertically thereon, of a beam pivoted to such member, and a digger attached to the lower end of the beam, and means for raising the said member, the beam, and the digger, and for hauling the digger laterally, substantially as described.

6. In a dredger of the class indicated, the combination, with a frame and a lateral boom, of a pivoted and vertically-adjustable beam and a digger attached thereto, a dog pivoted to each of the digger-beams and adapted to slide over and engage a boom, and means for raising the digger-beams and digger and for hauling the digger laterally, and for adjusting the boom higher or lower, substantially as described.

7. In a dredger of the class indicated, the combination, with the pivoted swinging beam, of a digger proper comprising a curved plate having perforations in its middle portion, and side bars extending outwardly therefrom, substantially as described.

810,711. **WARP-TWISTING-IN MACHINE.** AMOS CALLEBOW and ADRIAN D. ABRIANCE, Brooklyn, N. Y., and ANTON DUPPLER, Jersey City, N. J., assignors to Warp Twisting-In Machine Company, New York, N. Y., a Corporation of New York. Filed Dec. 24, 1904. Serial No. 238,199.

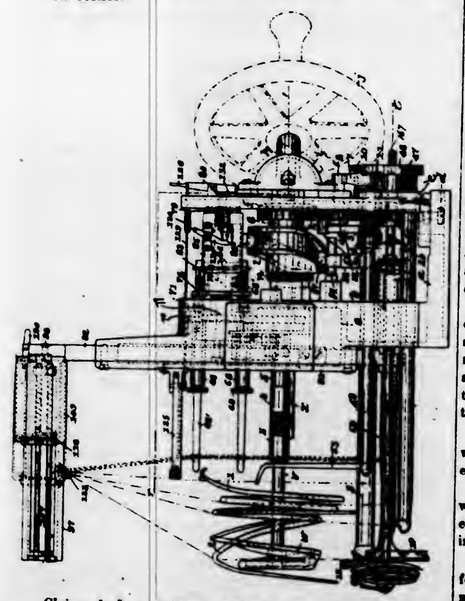

Claim.—1. In a twisting mechanism, the combination of a frame, a rotary twisting member journaled in said frame, a normally fixed twisting member coactive with said rotary member, a shaft mounted in said frame and carrying the latter member, and means for adjusting said shaft longitudinally, substantially as described.

2. In a twisting mechanism, the combination of a frame, a rotary twisting member journaled in said frame, a normally fixed twisting member coactive with said rotary member, a spring-pressed shaft mounted in said frame and carrying the latter member, a spring normally acting on said shaft to move said latter member away from the other member, and means for adjusting said shaft longitudinally against the tension of its spring, substantially as described.

3. In a twisting mechanism, the combination of coactive twisting members one of which is adapted to wipe against the other to effect the twisting and the other of which is movable to and from the other, and adjustable means for holding the member which is movable to and from the other in a given position relatively to the other member, substantially as described.

4. In a twisting member for a twisting mechanism, a bracket and a pad removably mounted in said bracket, substantially as described.

5. In a twisting member for a twisting mechanism comprising members one of which is adapted to wipe against the other, a bracket and a pad detachably interlocked, the one of them having a projection engageable with the other to limit their relative movement past each other under the thrust of the other member of the twisting mechanism, substantially as described.

6. In a twisting mechanism, a twisting member comprising two plates, one of which carries the other and the other of which forms the twisting-pad, one of said plates having headed studs and the other having openings receiving said studs, substantially as described.

7. In a twisting mechanism, the combination of two members one of which is movable against the other to effect the twisting, one of said members comprising a support and a pad yieldable in said support to permit the various portions thereof to assume relatively different distances from the plane of operation of the other member of the twisting mechanism, substantially as described.

8. In a twisting mechanism, a twisting member comprising two plates detachably secured together and one of which carries the other and the other of which forms the twisting-pad, and cushioning means interposed between said plates, substantially as described.

9. The combination of the frame, a uniting mechanism, means for holding the threads while being operated upon, means for effecting the delivery of the threads to the uniting mechanism, and a fixed thread-concentrator located close to the uniting mechanism, substantially as described.

10. In a machine for twisting together and thus uniting threads or other filaments, the combination of the frame, a twisting mechanism, means for holding the threads while being operated upon, means for effecting the advance of the threads to the twisting mechanism, and a fixed thread-concentrator located close to the twisting mechanism and having a thread-engaging portion disposed obliquely to the line of advance of the threads, substantially as described.

11. In a machine for twisting together and thus uniting threads or other filaments, the combination of the frame, a twisting mechanism, means for holding the threads while being operated upon, means for effecting the advance of the threads to the twisting mechanism, a thread-detent located close to the twisting mechanism, and a thread-cutting means located in operative proximity to said detent, substantially as described.

12. In a machine for twisting together and thus uniting threads or other filaments, the combination of the frame, a twisting mechanism, means for holding the threads while being operated upon, means for effecting the advance of the threads to the twisting mechanism, a fixed V-shaped thread-concentrator located close to the twisting mechanism, and a thread-cutting means located in operative proximity to the concentrator, substantially as described.

13. In a mechanism for advancing the threads to be joined toward the twisting mechanism of a twisting-in machine, a fork having elastic tips forming the terminals thereof, substantially as described.

14. In a mechanism for advancing the threads to be joined toward the twisting mechanism of a twisting-in machine, a fork having elastic tips forming the terminals thereof and having thread-receiving bends formed therein, substantially as described.

15. The combination of a frame, a uniting mechanism, a means for advancing the threads successively to the uniting mechanism, a means for holding the threads comprising a thread-clamping mechanism normally movable in substantially the same direction as that of said threads toward the uniting mechanism, a thread-detent, and means for detaching the portion of the threads held by said holding means at a point between said detent and the uniting mechanism, substantially as described.

16. The combination of a frame, a uniting mechanism, and a means for holding the threads of the two warps comprising separate clamping means, one for each warp, movable independently in the direction of movement of the threads toward the uniting mechanism, substantially as described.

17. In a machine for twisting together and thus uniting threads or other filaments, the combination of the frame, a twisting mechanism, means for holding the threads while being operated upon, and a means, located in proximity to the twisting mechanism, for displacing out of the way of said twisting mechanism each united thread and keeping it separated temporarily from other threads, substantially as described.

18. In a machine for twisting together and thus uniting threads or other filaments, the combination of the frame, a twisting mechanism, means for holding the threads while being operated upon, and

a revoluble spiral located in proximity to the twisting mechanism, and adapted to displace out of the way of said twisting mechanism the united threads, substantially as described.

19. The combination, with a frame, a thread-uniting means, means for holding the threads, means for effecting a relative movement between said thread-uniting and thread-holding means whereby to bring the threads to be united under the influence of said uniting means, a driving element, and power-transmitting means connecting said driving element and the uniting and advancing means, of means for effecting a break in the operative continuity of said power-transmitting means, said means being itself controlled by the advancing threads, substantially as described.

20. The combination, with a frame, a thread-uniting means, means for holding the threads, means for effecting a relative movement between said thread-uniting and thread-holding means whereby to bring the threads to be united under the influence of said uniting means, a driving element, and disconnective power-transmitting means connecting said driving element and the uniting and advancing means, of means for controlling the operative continuity of said power-transmitting means, said means being itself controlled by the advancing threads, substantially as described.

21. The combination, with a frame, a thread-uniting means, means for holding the threads, means for effecting a relative movement between said thread-uniting and thread-holding means whereby to bring the threads to be united under the influence of said uniting means, a driving element, and power-transmitting means connected to said driving element and the uniting and advancing means, of means for effecting a break in the operative continuity of said power-transmitting means comprising devices normally arranged to break the operative continuity of said power-transmitting means and other devices actuated by intact threads for moving said first-named devices out of position to break the continuity of said power-transmitting means, substantially as described.

22. The combination of a frame comprising a horizontal guideway, a mechanism for successively uniting the threads of warps, a carriage supporting said mechanism and movable on said guideway, and means for advancing said carriage on the guideway comprising a rotary device having frictional contact with said guideway, substantially as described.

23. The combination of a frame comprising a horizontal guideway, a mechanism for successively uniting the threads of warps, a carriage supporting said mechanism and movable on said guideway, means for advancing said carriage on the guideway comprising a rotary device bearing against said guideway, and means for clamping said device against the guideway, substantially as described.

24. The combination of a frame comprising a horizontal guideway, a mechanism for successively uniting the threads of warps, a carriage supporting said mechanism and movable on said guideway, a lever projecting across said guideway on the side thereof opposite to said device, and a cam for pressing said lever against the guideway, substantially as described.

25. In a mechanism for separating threads or other filaments, the combination, with a frame and with thread-sustaining means, the threads being adapted to be disposed in two sets of which the threads of the one intersect those of the other at predetermined intervals, of a revoluble hook-bar spacing, and adapted to alternately hold back the one and then the other of, said series of threads and thus successively free the intersecting threads, and a rod coöperating with said hook-bar to maintain the cross in the threads and having one end free and projecting in substantially the same direction as said hook-bar, substantially as described.

810,712. **ARTIFICIAL DENTURE.** JOHN M. CARD, Olean, N. Y. Filed July 10, 1905. Serial No. 269,100.

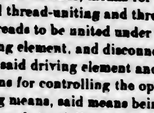

Claim.—1. A process of making dental plates which consists in forming a model and fastening it to the articulator, then conforming a metal base to the model, articulating the teeth on the ridge of the metal base, and finally applying a gum-colored labial coating in semiliquid form upon the labial surface.

2. A process of making dental plates which consists in forming a model and fastening it to the articulator, then conforming a metal base to the model and perforating the ridge of said base, next setting the teeth in a plastic holding-piece upon the perforated ridge of the metal base, and finally applying a labial coating of gum-colored rubber in semiliquid form upon the labial side of the model.

3. A process of making dental plates which consists in forming a model and fastening it to the articulator, then conforming a metal base with a perforated rim to the model, next setting up the teeth in a plastic holding-piece upon the perforated portion of the metal base, applying a rubber finishing-strip about the supports for the teeth at the lingual side thereof, and finally applying a labial coating of gum-colored rubber in a semiliquid form over the labial surface of the model and in and about the teeth at the labial sides thereof.

4. A process of making dental plates which consists in forming a model and fastening it to the articulator, then shaping a metal plate to the model, next coating the model with a thin rubber solution, then applying a rubber sheet over both the labial and lingual surfaces of the model, next applying a metal base upon the rubber sheet, articulating the teeth upon the ridge of the metal plate, then applying a continuous strip of dental rubber about the ridge of the plate at the lingual side of the teeth, and finally applying a gum-colored labial rubber coating in semiliquid form on the labial surface of the model and in and about the teeth at the labial sides thereof.

5. A dental plate consisting of a metal base having retaining-holes in the ridge thereof, artificial teeth articulated upon and anchored to the perforated ridge of the base, a continuous rubber finishing-strip extending about the ridge of the plate at the lingual sides of the teeth and over the fastenings thereof, and a gum-colored labial coating extending in and about the teeth at the labial sides thereof.

810,713. **ARTIFICIAL DENTURE.** JOHN M. CARD, Olean, N. Y. Filed July 28, 1905. Serial No. 271,613.

Claim.—1. A process of making dental plates which consists in forming a model and fastening it to the articulator, then applying a dental-rubber sheet to the lingual surface of the model with the margins thereof extended upon the alveolar ridge, then setting the teeth in a holding-boss of waxable rubber, and then applying said waxable holding-boss upon the marginal edge of the dental-rubber sheet at the alveolar ridge.

2. A process of making dental plates which consists in forming a model and fastening it to the articulator, then applying a dental-rubber sheet to the lingual surface of the model with the margins thereof extended upon the alveolar ridge, then setting the teeth in a boss of waxable rubber, applying said waxable holding-boss over the alveolar ridge and labial surface and upon the marginal edge of the dental-rubber sheet, then removing the model from the articulator and finally vulcanizing and polishing the plate.

3. A process of making dental plates which consists in forming a model and fastening it to the articulator, then coating that portion of the model over which the plate and its connections are to extend with a rubber solution, applying a dental-rubber sheet upon the coating made by said solution, said sheet being arranged to extend over the lingual surface and upon the alveolar ridge, then setting the teeth in a boss of waxable rubber and applying the latter to the alveolar ridge and labial surface and upon the marginal edge of the dental-rubber sheet, finishing the exposed edges of the waxable rubber with dental rubber, and finally removing the model and vulcanizing and polishing the plate.

4. A process of making dental plates which consists in forming a model and fastening it to the articulator, applying a dental-rubber sheet to the lingual surface of the model, then arranging a labial strip of waxable rubber about the labial surface of the model in overlapping relation to the margin of the dental-rubber sheet on the alveolar ridge, next setting the teeth in a boss of waxable rubber and applying the latter over the joint between the lingual sheet and the dental strip, and finally removing the model and vulcanizing and polishing the plate.

810,714. **ART OF SIGNALING.** WILLIAM CHURCHILL, Corning, N. Y., assignor to Corning Glass Works, Corning, N. Y. Filed Oct. 17, 1905. Serial No. 283,134.

Claim.—1. As an improvement in the art of signaling, the combination of a lamp, a colored signal-glass adapted to receive a beam of light from the flame of said lamp, and an auxiliary lamp located in proximity to the said signal-glass, said auxiliary lamp being adapted to constantly exhibit a fixed color which by contrast shall intensify the color of the light visible through said signal-glass, substantially as set forth.

2. As an improvement in the art of signaling, the combination of a lamp, signal-glasses of varied colors adapted to be moved across or in front of and to receive a beam of light from the flame of said lamp, and an auxiliary lamp located in proximity to the said variedly-colored and movable signal-glasses, said auxiliary lamp being adapted to constantly exhibit a fixed color which by contrast shall intensify the color or hue of the signal-glass at the time resting in front of the flame of the lamp first mentioned, substantially as set forth.

3. As an improvement in the art of signaling, the combination of a lamp, signal-glasses of varied colors adapted to be moved across or in front of and to receive a beam of light from the flame of said lamp, and a lamp located in proximity to the said variedly-colored and movable signal-glasses, said lamp being adapted to constantly exhibit a fixed color which by contrast shall intensify the color or hue of the signal-glass at the time resting in front of the flame of the lamp first mentioned, substantially as set forth.

4. As an improvement in the art of signaling, a pole or support, a semaphore-lamp carried thereby, signal-glasses of varied colors pivotally mounted on said pole or support and adapted to be moved across or in front of and to receive a beam of light from the flame of said lamp, and a second lamp located in proximity to said variedly-colored and movable signal-glasses, said second lamp being adapted to constantly exhibit a fixed color which by contrast shall intensify the color or hue of the signal-glass at the time resting in front of the flame of the lamp first mentioned, substantially as set forth.

5. As an improvement in the art of signaling, the combination of a support, a lamp carried thereby, a spectacle pivotally mounted on said support having inserted therein signal-glasses of varied colors adapted to be moved across or in front of and to receive a beam of light from the flame of said lamp, and a second lamp located in proximity to the said variedly-colored and movable signal-glasses, said second lamp being adapted to constantly exhibit a fixed color which by contrast shall intensify the color or hue of the signal-glass at the time resting in front of the flame of the lamp first mentioned, substantially as set forth.

6. As an improvement in the art of signaling, a lamp with a clear lens, and an appertaining semaphore-arm and a spectacle, the latter containing variedly-colored roundels, combined with a second lamp with a clear lens, and an appertaining semaphore-arm and a spectacle, the latter containing roundels of the same color in each opening, thus producing a fixed color contrasting with the said variedly-colored roundels inserted in front of the first-mentioned lamp, substantially as set forth.

7. As an improvement in the art of signaling, a lamp and an appertaining semaphore-arm and a spectacle, the latter containing variedly-colored roundels, combined with a second lamp and an appertaining semaphore-arm and a spectacle, the latter having unfilled openings, a colored lens contrasting with the said variedly-colored roundels being inserted in said second lamp, substantially as set forth.

810,715. **METHOD OF INTENSIFYING THE COLORS OF SIGNAL-LIGHTS.** WILLIAM CHURCHILL, Corning, N. Y., assignor to Corning Glass Works, Corning, N. Y. Filed Oct. 17, 1905. Serial No. 283,135.

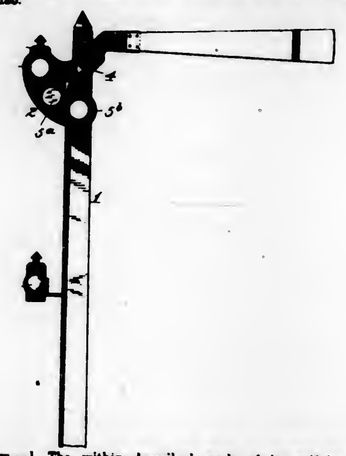

Claim.—1. The within-described mode of intensifying the colors and thereby increasing the efficiency of signal-lights for railroad, marine and other services, the same consisting in exposing in proximity to a signal-light of a given color a second light of constant color which shall by contrast produce the described effect, substantially as set forth.

2. The within-described mode of increasing the efficiency of signal-lights, the same consisting in exposing, at a predetermined distance from a signal-lamp displaying different colors for different indications, a second light exhibiting a color which shall, by contrast, intensify and render more vivid the several colors displayed, substantially as set forth.

810,716. **ATTACHMENT FOR POTATO-DIGGERS.** GEORGE E. CHUTE, Princeton, Minn. Filed Sept. 27, 1905. Serial No. 280,302.

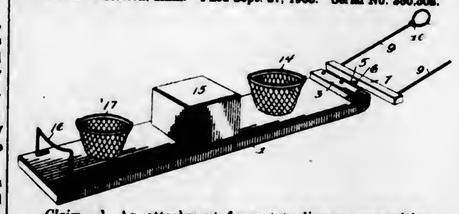

Claim.—1. An attachment for potato-diggers, comprising a plank adapted to drag on the ground and having a cross-piece secured to the upper face thereof at the forward end of the plank, an evener-bar hitched centrally between its ends to said cross-piece, a pair of hitching-rods attached to said evener-bar, one near each end, and hitching-rings connected to the other ends of said hitching-rods.

2. An attachment for potato-diggers, comprising a sled-like member in the form of a plank adapted to drag on the ground, a guard-fender supported thereby adjacent the rear end of the plank, an evener-bar pivoted centrally of its length to the forward end of the plank, a pair of hitching-rods having their one end pivotally attached to the evener-bar, and means carried by the other end of said rods for attaching them to a vehicle.

810,717. **TRUSS FOR CEMENT POSTS.** LEE CLARK, Garrison, Iowa. Filed Sept. 11, 1905. Serial No. 277,993.

Claim.—1. A truss comprising a plurality of longitudinally-extending wires twisted jointly upon each other at their opposite ends, and a spreader laterally disposed intermediate of the ends of said wires to retain them in separated position.

2. A truss comprising a plurality of longitudinally-extending wires twisted jointly upon each other at their opposite ends, a ra-

diating-spreader disposed intermediate of the ends of said wires to retain them in separated position and an extended supporting portion at each end of the longitudinal wires beyond the twisted portion thereof.

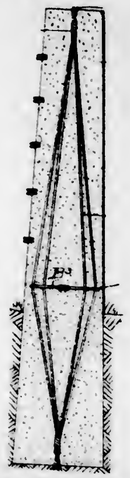

3. A truss comprising a plurality of longitudinally-extending wires twisted together at their opposite ends, a spreader disposed intermediate of the ends of said wires to retain them in separated position, an extended supporting portion at each end of the longitudinal wires beyond the twisted portion thereof and disposed at an angle to the body of the truss.

4. In a truss for plastic fence-posts, a plurality of longitudinally-extending wires connected together at their opposite ends, a spreader for said wires comprising a plurality of strands twisted together at their central portion and provided at their free ends with means for engaging the longitudinal wires.

810,718. **CRIB ATTACHMENT FOR BEDS.** WILLIAM R. CLARK, Chillicothe, Ohio. Filed Aug. 24, 1905. Serial No. 275,560.

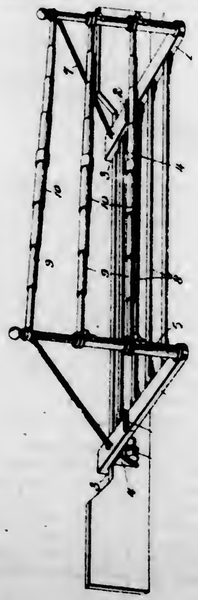

Claim.—1. A crib attachment for beds consisting of arms provided with clamps adapted to grip the frame of the bed, collapsible uprights located upon said arms, collapsible rails connecting said uprights and flexible strips connecting said arms together.

2. A crib attachment for beds consisting of arms provided with clamps adapted to grip the frame of the bed, collapsible uprights pivoted upon said arms, collapsible rails connecting said uprights and flexible strips connecting said arms together.

3. A crib attachment for beds consisting of arms composed of sections hinged together and provided with clamps adapted to grip the frame of the bed, collapsible uprights located upon said arms, collapsible rails connecting said uprights and flexible strips connecting said arms together.

4. A crib attachment for beds consisting of arms provided with clamps adapted to grip the frame of the bedstead, collapsible uprights located upon said arms, collapsible rails comprised of telescoping sections connecting said uprights, the end sections of said rails adapted to telescope into the middle sections thereof, and flexible strips connecting said arms together.

810,719. **OPEN FIREPLACE.** HOWARD C. CLEAVER, London, England. Filed Nov. 5, 1904. Serial No. 231,467.

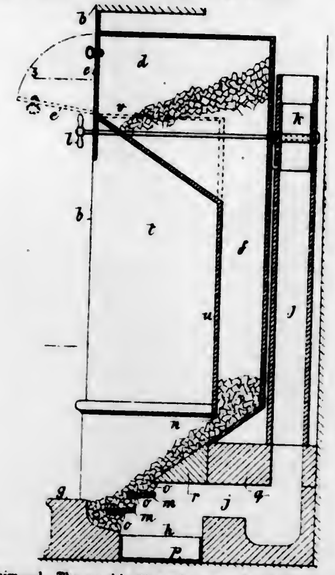

Claim.—1. The combination of a forwardly-inclined apertured fire-grate exposed as to its upper surface; walls bounding said grate laterally; a kerb or fence at the lower extremity of the grate for limiting the descent of fuel thereover; and a flue adapted to withdraw the products of combustion from the space beneath the grate, substantially as specified.

2. The combination of a forwardly-inclined apertured fire-grate exposed as to its upper surface; walls bounding said grate laterally; a chute adapted to continuously deliver fuel by gravity to the upper extremity of the grate; a kerb or fence at the lower extremity of the grate for limiting the descent of fuel thereover; and a flue adapted to withdraw the products of combustion from the space beneath the grate, substantially as specified.

3. The combination of a forwardly-inclined apertured fire-grate exposed as to its upper surface; walls bounding said grate laterally; a chute adapted to continuously deliver fuel by gravity to the upper extremity of the grate; a kerb or fence at the lower extremity of the grate for limiting the descent of fuel thereover; a flue adapted to withdraw the products of combustion from the space beneath the grate; and a damper in said flue for regulating the draft, substantially as specified.

4. In an open fireplace, the combination of a forwardly-inclined apertured fire-grate exposed as to its upper surface and located at the lower part of the recess of a fireplace; a chute adapted to continuously deliver fuel by gravity to the upper extremity of the grate; a kerb or fence at the lower extremity of the grate for limiting the descent of fuel thereover; a flue adapted to withdraw the products of combustion from the space beneath the grate; a damper in said flue for regulating the draft; and a ventilating-door in the top wall of the recess of the fireplace, adapted to afford access therefrom to the flue, substantially as specified.

5. An open fireplace adapted to be located in an opening of a chimney comprising a body having a recessed front, the top wall of which is provided with openings having closures therefor, a fuel-supply chute at the rear of its recessed front, a downwardly and outwardly inclined grate in the lower part of the recess of the fireplace and onto the upper rear portion of which the chute discharges, a kerb for limiting the descent of the fuel over the grate, and a flue leading from beneath and behind the grate to a chimney, substantially as described.

6. An open fireplace adapted to be located in an opening of a chimney, comprising a body having a recessed front, the top wall of which is provided with openings, closures for said openings, a hopper in the upper part of the body, a chute leading from the hopper and extending downward at the rear of the back of the said recessed front, a downwardly and outwardly inclined grate in the lower part of the recessed front of the fireplace and upon which the chute discharges, a kerb for limiting the descent of the fuel over the grate, and a flue leading from beneath and behind the grate and extending upwardly in rear of the chute, substantially as described.

7. An open fireplace, adapted to be inserted in an opening in a chimney, comprising a body having a recessed front, the top wall of said recess being provided with openings, doors for said openings, a hopper in the upper part of the body, the bottom of the hopper being of less width than the top of the recess of the body, a chute extending from the hopper downward in rear of the back wall of the recess of the body, a grate formed of transverse bars spaced apart and arranged in step form and upon which the chute discharges, and a flue leading from beneath the grate and extending upwardly in rear of the chute.

810,720. **POCKET TOBACCO-BOX.** ISAAC E. COHEN, Bluefield, W. Va. Filed Feb. 27, 1905. Serial No. 247,594.

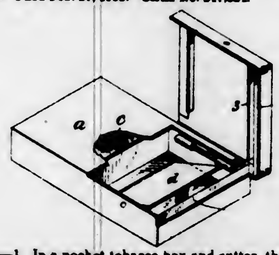

Claim.—1. In a pocket tobacco box and cutter, the body of the box having its forward end beveled to form a knife, a lid comprising a portion of the cover of the box and having its forward end beveled to form a knife to coöperate with the beveled edge of the body, whereby a shearing cut is made when the lid is closed, a spring at the rear end of the box, and a spring and false bottom in the forward end of the box adapted to throw the contents of the box up between the coöperating knives.

2. In a pocket tobacco box and cutter, a lid comprising a part of the cover of the box, and provided at its forward end with two coöperating knives, said knives being formed by the beveled forward edges of the cover and end of the box, a spring in the rear end of the box, and a spring and false bottom in the forward end of the box adapted to throw the contents of the box up between the coöperating knives.

3. In a pocket tobacco box and cutter, a lid comprising a part of the cover of the box, and provided at its forward end with two coöperating knives formed by the forward beveled edges of the cover and end of the box, combined with a spring at the rear end of the box, and another spring, vertically acting, together with a false bottom hinged midway of the box, the springs and false bottom acting to throw the contents of the box into contact with the coöperating knives.

810,721. **LIFT-PLATE.** HENRY C. COLE, Chicago, Ill., assignor to Cole Manufacturing Company, Chicago, Ill., a Corporation of Iowa. Filed May 11, 1905. Serial No. 260,615.

Claim.—1. The combination in a range substantially as herein described of the lift-plate provided at its outer edge with a socket arranged above the surface of the lift-plate and adapted to receive the inner end of a lifter, the bracket at the side of the range and having a vertically-elongated opening and provided at the side thereof with a series of scrolls providing hooks forming seats for the lifter, and the lifter passing through the said vertically-elongated opening in the bracket and fitting at its inner end in the socket of the lift-plate, and arranged to seat in the hooks of the bracket whereby the said lifter and the lift-plate may be held at any suitable angle, substantially as set forth.

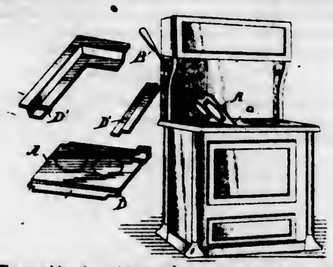

2. The combination with the lift-plate and the lifter adapted for interlocking engagement, of a bracket having a vertically-elongated opening through which the lifter is passed, and a hook or hooks for engagement by said lifter, substantially as set forth.

3. A range provided at one side of its top with an upright bracket having a hook or hooks for engagement by a lifter, a lift-plate forming a part of the top of said range and a lifter in the form of a rigid bar connected with said plate and adapted to seat in the hook or hooks in the bracket in securing the lift-plate when raised, substantially as set forth.

4. The combination of a lift-plate, a lifter and an upright bracket adjacent to the lift-plate and having an elongated opening or slot through which the lifter is passed, and a seat or seats in communication therewith for engagement by said lifter, substantially as set forth.

810,722. **VEHICLE ATTACHMENT.** HENRY F. COOK, Sag Harbor, N. Y. Filed June 13, 1905. Serial No. 265,080.

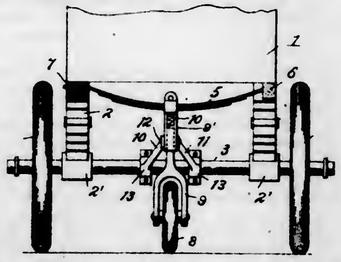

Claim.—1. In a device of the character described, the combination of a vehicle-body, supporting-wheels therefor and auxiliary wheels normally sustaining no portion of the weight of the vehicle-body but capable of sustaining it when one or more of the supporting-wheels leave the normal plane of the surrounding surface of the road-bed.

2. In a device of the character described, the combination of a vehicle-body, supporting-wheels therefor, springs connected to said vehicle-body and auxiliary wheels normally inoperative but adapted to sustain the load of said vehicle-body when one or more of the supporting-wheels are depressed by reason of leaving the normal plane of support.

3. In a device of the character described, the combination of a vehicle-body, suspension-springs, axles carrying supporting-wheels, springs connected to the vehicle-body and auxiliary wheels connected to said springs and to said axles said auxiliary wheels normally sustaining no portion of the weight of said vehicle but adapted to support the weight of the load of said vehicle-body when one or more of the supporting-wheels are depressed below the normal plane of support.

4. In a device of the character described, the combination of a vehicle-body, suspension-springs supporting said body, axles having supporting-wheels thereon, a wagon-spring connected to the body portion of the vehicle, a tubular guide connected to said spring having slidably arranged thereon a support carrying an auxiliary wheel, a compression-spring interposed between said wagon-spring and said support said auxiliary wheel being capable of sustaining the load of the vehicle when one or more of the supporting-wheels leave the normal plane of support.

5. In a device of the character described, the combination of a vehicle-body, supporting-wheels therefor, and an auxiliary wheel so arranged as to normally not take any of the load but adapted to increase in action under the influence of an abnormal strain on said vehicle-body, substantially as and for the purpose described.

810,723. APPARATUS FOR FLATTENING GLASS. JAMES CRAIG and ROBERT B. ROWAN, Parnassus, Pa. Filed Dec. 28, 1904. Serial No. 238,606.

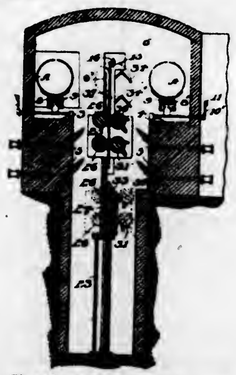

Claim.—1. Glass-flattening apparatus comprising an oven, glass-holding means therein from which sheet-glass is adapted to be freely suspended, and means movable vertically within the oven for subjecting the freely-suspended glass to opposing pressures.

2. Glass-flattening apparatus comprising an oven, glass-holding means therein from which sheet-glass is adapted to be freely suspended, and glass-rolling mechanism movable vertically over the freely-suspended glass.

3. Glass-flattening apparatus comprising an oven, glass-holding means therein from which sheet-glass is adapted to be freely suspended, and opposing rolls movable vertically within the oven for operating on opposite surfaces of the freely-suspended glass.

4. Glass-flattening apparatus comprising an oven having a laterally-contracted lower portion, glass-holding means operative above the said contracted portion for sustaining the glass freely suspended therein, and heating means at opposite sides of said contracted portion.

5. Glass-flattening apparatus comprising an oven having a laterally-contracted lower portion, glass-holding means operative above said contracted portion for sustaining the glass freely suspended therein, heating means at opposite sides of the contracted portion, and vertically-movable glass-flattening means operative within said contracted portion.

6. Glass-flattening apparatus comprising an oven having a narrowed or contracted lower portion, a ledge within the oven above and at one side of the contracted portion, a glass-cylinder support above said ledge, and laterally-movable glass-suspending means adapted to engage the cylinder and move it laterally and sustain it above the contracted lower portion of the oven as it uncurls or straightens therein.

7. Glass-flattening apparatus comprising an oven, a glass-cylinder support at each side of the oven, the oven being unobstructed downwardly between the supports, and glass-suspending means adapted to sustain the glass when straightened within said downwardly-unobstructed portion of the oven.

8. Glass-flattening apparatus comprising an oven, glass-suspending means, opposing fixed and movable rolls within the oven for engaging opposite surfaces of the glass, and means for moving the rolls vertically over the suspended glass.

9. Glass-flattening apparatus comprising an oven, glass-suspending means, driven rolls within the oven for engaging one surface of the glass, rolls within the oven and movable toward and from the glass for engaging the opposite surface thereof, and means for causing all of the rolls to traverse the glass.

10. Glass-flattening apparatus comprising an oven, glass-suspending means, opposing rolls movable vertically over the surfaces of the glass, means for moving the rolls apart when in lowered position, and means operative when the rolls are raised for moving them into opposing relation.

11. Glass-flattening apparatus comprising an oven, glass-suspending means, opposing fixed and movable rolls within the oven for rolling the opposite surfaces of the glass, the movable rolls being held in engagement with the glass by force of gravity and means for moving the rolls vertically over the suspended glass.

12. Glass-flattening apparatus comprising an oven, glass-suspending means, a movable roll-support within the oven, rolls fixed in said support for engaging one surface of the glass, and rolls movably mounted in the support and constructed and arranged to engage the opposite surface of the glass by force of gravity.

13. Glass-flattening apparatus comprising an oven, glass-suspending means, opposing rolls within the oven adapted to traverse the opposite surfaces of the glass, and means for varying the space between the opposing rolls.

14. Glass-flattening apparatus comprising an oven, a chamber at one side of the oven and separated therefrom by a vertical wall having a vertically-elongated opening, and glass-suspending means movable horizontally within the oven and chamber and through said communicating opening for sustaining the glass in either of said compartments.

810,724. WIRE-STRETCHER. CHARLES E. CROSBY, Gassaway, W. Va. Filed Aug. 14, 1905. Serial No. 274,144.

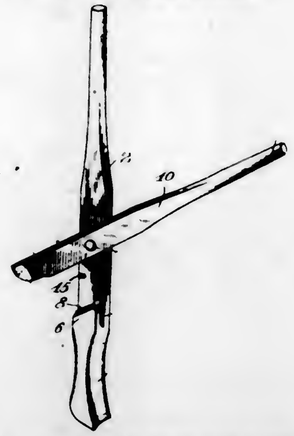

Claim.—1. A wire-stretcher comprising a lever having a handle at one end and an enlargement at its other end, said enlargement being formed with a toe at its outer end and a spaced angularly-disposed jaw at its inner end, a hand-lever pivoted upon said lever and having at one end a handle and at its opposite end an angularly-disposed jaw to coact with the first-mentioned jaw and a projecting tongue to enter the space between the first-mentioned jaw and the first-mentioned lever, substantially as described.

2. A wire-stretcher comprising a lever having a spaced angularly-disposed jaw adjacent to one end and a wire-receiving recess adjacent to said jaw, and a hand-lever pivoted upon said lever and formed with an inclined jaw to coact with the first-mentioned jaw and a projecting tongue to enter the space between the first-mentioned jaw and the first-mentioned lever, said hand-lever being adapted to swing across said wire-receiving recess to sever a wire placed therein, substantially as described.

810,725. BELL-RINGER. RICHARD M. CROSBY, Tacoma, Wash. Filed Aug. 2, 1905. Serial No. 272,293.

Claim.—1. In an apparatus of the class described, the combination of a fixed piston, a piston-cylinder slidably mounted thereon having a closed upper end forming a piston-chamber provided with an exhaust-passage leading therefrom one of such members having an inlet-passage leading to such piston-chamber, and means for opening and closing such inlet and exhaust passages.

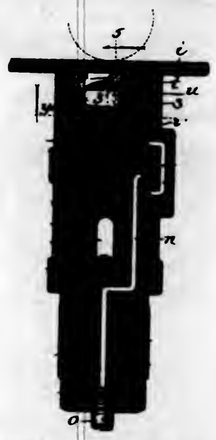

2. In an apparatus of the class described, the combination of a piston, a piston-cylinder slidably mounted thereon having a closed upper end forming a piston-chamber provided with an exhaust-passage leading therefrom one of such members having an inlet-passage leading to such piston-chamber, and the other having an inlet-passage communicating with a source of fluid-supply such inlet-passages being adapted to be connected and disconnected by the movement of the cylinder with relation to the piston.

3. In an apparatus of the class described, the combination of a piston, a piston-cylinder slidably mounted thereon having a closed upper end forming a piston-chamber provided with an exhaust-passage leading therefrom one of such members having an inlet-passage leading to such piston-chamber and adapted to communicate with a source of fluid-supply, and a sleeve-valve mounted in the piston-cylinder and movable into and out of engagement with such exhaust and inlet passages.

4. In an apparatus of the class described, the combination of a piston provided with a fluid-inlet passage, a piston-cylinder slidably mounted thereon having a closed upper end forming a piston-chamber provided with an exhaust-passage leading therefrom and having an inlet-passage communicating with such piston-chamber and adapted to be moved with the cylinder into and out of connection with the inlet-passage in the piston, and means for opening and closing the exhaust-passage.

5. In an apparatus of the class described, the combination of a piston provided with a fluid-inlet passage, a piston-cylinder slidably mounted thereon forming a piston-chamber provided with an exhaust-passage leading therefrom and having an inlet-passage communicating with such piston-chamber and adapted to be moved with the cylinder into and out of connection with the inlet-passage in the piston, and a sleeve-valve slidably mounted in engagement with the inner wall of such cylinder and movable into and out of closed engagement with the exhaust and inlet passages in such cylinder.

6. In an apparatus of the class described, the combination of a piston, a piston-cylinder slidably mounted thereon provided with an upper portion closing the upper end and extending beyond the main body portion of such cylinder adapted to engage the bell-crank of a bell to be operated thereby such cylinder forming a piston-chamber having an exhaust-passage leading therefrom and one of such members having an inlet-passage leading into such piston-chamber, and means for opening and closing such inlet and exhaust passages.

7. In an apparatus of the class described, the combination of a piston, a piston-cylinder slidably mounted thereon forming a piston-chamber provided with an exhaust-passage leading therefrom one of such members having an inlet-passage communicating with such piston-chamber, and means for partially closing the admission-passage before the exhaust-passage is open during the stroke in one direction and movable into position to partially close the exhaust-passage during the return movement before the admission-passage is open.

8. In an apparatus of the class described, the combination of a fixed piston, a piston-cylinder slidably mounted thereon having a closed upper end forming a piston-chamber provided with an exhaust-passage, such piston and cylinder being provided with inlet-passages communicating with a source of fluid under pressure, and means for opening and closing such exhaust and inlet passages.

9. In an apparatus of the class described, the combination of a piston provided with an admission-passage communicating with a suitable source of fluid under pressure, a piston-cylinder provided with a closed upper end and an open lower end mounted upon such piston and having an exhaust-passage and an admission-passage adapted to communicate with such admission-passage in the piston when the cylinder is in one position and movable out of communication with such admission-passage when the cylinder is in a second position, and a sleeve-valve slidably mounted in such cylinder for covering and uncovering such exhaust and admission passages.

10. In an apparatus of the class described, the combination of a piston provided with a fluid-inlet passage and having an annular recess and an annular shoulder above and below such recess, a piston-cylinder in sliding engagement with such piston having a closed upper end and side walls forming a piston-chamber and provided with a passage in its side walls leading to such chamber and adapted to communicate with such inlet-passage in the piston, and a sleeve-valve mounted in the recess between the piston and cylinder-walls movable with the cylinder into and out of engagement with the shoulders upon the piston for opening and closing the fluid-passage.

11. In an apparatus of the class described, the combination of a fixed piston having a fluid-inlet passage and provided with an annular recess having annular shoulder portions forming the upper and lower ends of such recess, a cylinder closed at its upper end slidably mounted upon such piston forming a piston-chamber having a passage communicating with the space formed by such recess and provided with a passage having its lower end movable into and out of communication with the inlet-passage of the piston and its upper end opening into the recessed portion of the piston, and a sleeve-valve mounted in slidable engagement with the inner wall of such piston-cylinder and movable into and out of engagement with the upper end of such fluid-passage in the cylinder.

12. In an apparatus of the class described, the combination of a fixed piston having a fluid-inlet passage and provided with an annular recess having annular shoulder portions at the upper and lower ends of such recess, a cylinder closed at its upper end slidably mounted upon such piston forming a piston-chamber having a passage communicating with the space formed by such recess and provided with an exhaust-passage leading from the recess and an inlet-passage having its lower end movable into and out of communication with the inlet-passage of the piston and its upper end opening into the recessed portion of the piston, and a valve slidably mounted in the recess formed between the piston and the walls of the piston-cylinder and movable with the piston-cylinder into and out of engagement with the shouldered portions of the piston for opening and closing the inlet and exhaust passages in the cylinder.

13. In an apparatus of the class described, the combination of a piston and piston-cylinder mounted in sliding engagement with each other and provided with fluid inlet and exhaust passages, and means for partially closing the admission-passage before the exhaust-passage is open during the upward movement of the cylinder and movable into position to partially close the exhaust-passage before the admission-passage is open during the downward movement of the cylinder.

14. In an apparatus of the class described, the combination of a piston and piston-cylinder mounted in sliding engagement with each other and provided with fluid inlet and exhaust passages, and a piston-ring slidably mounted in engagement with the inner surface of the piston-cylinder movable into position to partially close the admission-passage before the exhaust-passage is open during the upward movement of the cylinder and movable into position to partially close the exhaust-passage before the admission-passage is open during the downward movement of the cylinder.

810,726. CURTAIN-HANGER. REBECCA J. CUMMINS, Greenville, Ohio. Filed Sept. 11, 1905. Serial No. 278,009.

Claim.—1. A window-curtain fixture comprising a bar, means to detachably secure the same to a window, end pieces pivotally connected to the bar, and curtain-supporting arms pivotally connected to the end pieces, for the purpose set forth.

2. The herein-described window-curtain fixture, comprising the bar 1, the bracket a to detachably secure said bar to and space the

came from a window, the end pieces pivotally connected to the bar, and the curtain-supporting arms pivotally connected to the end pieces.

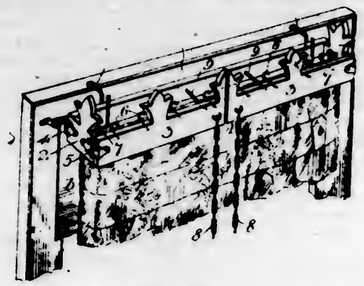

810,727. BOTTLE. JOHN M. CUTLER, Ukiah, Cal., assignor of one-half to John L. McNab, Ukiah, Cal. Filed Aug. 29, 1905. Serial No. 276,394.

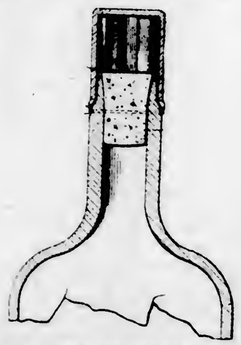

Claim.—1. A bottle-neck provided with a thin breakable portion, and a breakable cap embracing the neck and the thin breakable portion thereof.

2. A bottle having its neck provided with an annular series of extensions, an annular thin breakable portion around the bases of the extensions, and a breakable cap embracing the extensions and the bottle-neck.

3. A bottle having its neck provided with an annular series of longitudinal extensions and a thin annular breakable portion around the bases of the extensions, an external annular shoulder upon the bottle-neck below the top thereof, said neck being provided with an annular series of longitudinal recesses intersecting the shoulder and the thin portion of the neck between the extensions, a stopper fitted within the bottle-neck, flexible elements extending across the top of the stopper downwardly through the recesses and around the bottle-neck beneath the shoulder thereof, and a breakable cap embracing the extensions and engaging the annular shoulder.

4. A bottle having its neck provided with a thin annular breakable portion and an external annular shoulder below the breakable portion, said breakable portion and shoulder being intersected by longitudinal recesses, a stopper fitted within the bottle-neck, flexible elements extending across the top of the stopper downwardly through the recesses and around the neck beneath the shoulder thereof, and a breakable cap embracing the breakable portion of the neck and engaging the annular shoulder.

810,728. FURNACE FIRE-DOOR PROTECTOR. BERNARD J. DALY, Waterbury, Conn., assignor to M. J. Daly and Sons, Incorporated, Waterbury, Conn., a Corporation of Connecticut. Filed Sept. 6, 1905. Serial No. 277,141.

Claim.—1. A furnace fire-door protector comprising lower headers, a plurality of pipes rising therefrom and extending inward and an upper central header with which said pipes connect.

2. A furnace fire-door protector comprising lower headers, a connection leading to said headers from the boiler, an upper central header, pipes rising from the lower headers and connecting with the upper header and a connection leading from the upper header to the boiler

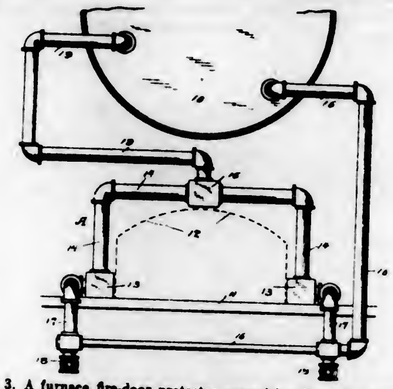

3. A furnace fire-door protector comprising lower headers, a supply-pipe leading from the boiler, branch pipes leading from the supply-pipe to the headers, blow-off valves at the lower ends of the branch pipes, an upper central header, pipes rising from the lower headers and connecting with the upper header and a return-pipe leading from the upper header to the boiler.

810,729. SKIRT-SUPPORTER. HERBERT C. DRANE, Salt Lake City, Utah. Filed Aug. 10, 1905. Serial No. 273,861.

Claim.—1. A holder substantially as herein described, comprising two thin plates having at their ends the upper and lower jaws, one of the upper jaws of each plate having the inturned lip overlapping the opposite jaw of the other plate and elongated laterally and adapted to engage a shirt-waist and the lower jaws having their lips outturned and provided with inwardly-projecting teeth adapted to secure a skirt and to form fulcra whereby the pressing of the lips of the lower jaws toward each other will spread or open the upper jaws, the cross-plates connecting the jaws at the opposite ends of the holder, said cross-plates being secured together at their middles and spread or flared toward their ends, and the slides on said cross-plates and adapted for adjustment to close or release the end jaws, substantially as set forth.

2. A holder comprising a pair of plates and having at its ends upper jaws to engage a shirt-waist and lower jaws to secure a skirt, cross-plates between the opposite pairs of jaws, and slides operating on said cross-plates, substantially as set forth.

3. A holder provided at each of its opposite ends with a pair of opposing upper jaws and a pair of opposing lower jaws adapted to secure a shirt-waist and a skirt, substantially as described.

4. A holder provided at each of its opposite ends with upper jaws to secure a shirt-waist and with lower jaws to secure a skirt and provided between said jaws with means whereby they may be held inclosed position, substantially as described.

5. A holder provided with upper and lower jaws, the lower jaws being flared or spread apart at their lower edges and provided above said flared edges with inwardly-projecting teeth adapted to secure a skirt and to serve as a fulcrum in compressing the flared ends of the jaws for spreading the upper jaws, substantially as described.

6. A holder consisting of two plates similar in form and outline and provided at their ends with upper jaw-sections and lower jaw-sections and with cross-plates connecting their end portions, and means for securing these cross-plates together at their middles, and slides operating on the cross-plates between their middles and their end portions, substantially as described.

810,730. DINNER-BUCKET. HARRY J. DEBAR, Newport, Pa., assignor of one-half to Richard J. Overton, Freedom, Pa. Filed May 23, 1905. Serial No. 261,867.

Claim.—1. A dinner-bucket of the character described, comprising a main bucket member having air-inlets in the lower end, a burner detachably mounted therein, a food-holding pan shaped to project down into the main bucket and to be supported on the upper end thereof, a cover for fitting over the said food-holding pan and a supplemental pan or holder, of less length and width than the other holder, adapted to fit within the said other holder and having means for suspending it from the ends of the main bucket member over the heater when the said other holder is removed from the main bucket portion, the said cover having means for sustaining the said supplemental pan or holder on its under side, as set forth.

2. In a dinner-bucket, comprising a main bucket member, whose bottom is adapted to support a heater, a can or holder detachably supported within the upper end of the main bucket member and a cover for the said can or holder, a shallow pan of less width and length than the can or holder, a means on the cover for detachably supporting the shallow pan within said cover, said pan or holder having means for suspending it from the ends of the main bucket member when removed from said cover, said means being foldable over the said pan when not in use, substantially as shown and described.

3. In a dinner-bucket of the character described, in combination with a deep main bucket member, having its bottom constructed to detachably support a heater, a can or holder formed to be detachably supported on the upper end of the main bucket member to produce an air-tight closure, a second can or holder detachably suspendable within the other holder, a cover for fitting over said holders, a shallow pan adapted to fit in and form a cover for the second-mentioned holder or can and having means whereby it can be detachably suspended within the main bucket member over the heat whereby to form a frying-pan, as set forth.

4. The hereinbefore-described dinner-bucket, which consists of a deep bottom member, a heater removably mounted on the bottom thereof, a flared can or holder adapted to fit down into the bottom member and detachably rest in the upper edge thereof to form a closure member therefor, a second flared can or holder adapted to detachably fit into the other can and form a closure member therefor, a cover that fits over the two cans, and a shallow pan adapted to detachably fit into the top of the second can and form a closure member therefor, said shallow pan having means for detachably suspending it from the upper edge of the deep bottom member directly over the heater when the two aforesaid cans are removed therefrom, and means on the cover for detachably suspending the shallow pan therein, all being arranged substantially as shown and described.

5. In a dinner-bucket of the character described, in combination with the main or deep member and the heater located on the bottom thereof; a shallow pan of less width and length than the deep pan, means connected to the shallow pan for detachably suspending it from the upper edge of the deep member within said deep member directly over the heater and the cover for the deep pan, said cover having means for removably holding the shallow pan on its under side, for the purposes described.

810,731. HAULAGE SYSTEM. EVANDER ROSS, Rankin, N. C. Filed June 10, 1905. Serial No. 264,663.

Claim.—1. In a system of the class described the combination with a main track and a switch-track, of rails pivoted to the rails of the switch-track for movement to lie at times at one side of the main track and at times above the rails thereof, and guide-rails disposed upon the rails of the main track and adapted for vertical movement at one end to bring said ends into and out of operative relation to the pivoted rails for the passage of a car from the main track to the pivoted rails and the switch-track.

2. In a system of the class described the combination with a main track and a switch-track, of pivoted rails communicating at one end with those of the switch-track and movable to lie with their other ends at times above the rails of the main track and at times out of such position, vertically-movable guide-rails arranged to lie at times wholly upon the rails of the main track and at times at one end only thereupon and with their other ends in alinement with the pivoted rails and means for moving the guide-rails.

3. In a system of the class described the combination with a main track and a switch-track, of a car disposed upon the main track, a cable extending longitudinally of the main track, means for moving the cable, a grip carried by the car and engaged with the cable, a spring arranged to hold the grip in operative position, means for holding the spring with the grip in operative position, said means being movable out of operative position and a finger located adjacent to the switch and adapted for engagement of the spring-holding means to move the latter into inoperative position.

4. The combination with a car, of a cable-grip therefor comprising a depending block, a spring-arm pivoted between its ends to the car, a block carried by one end of the arm and arranged for cooperation with the first-named block to clamp the cable therebetween, an angle-lever pivoted to the car and arranged to receive the other end of the spring thereagainst to hold the spring with its block in clamping relation to the first-named block, said angle-lever being movable upon its pivot to bring its arm out of engagement with the spring.

810,732. FEED-WATER HEATER. GUSTAF A. ERICKSON, ROBERT ERICKSON, and HILDUR ERICKSON, Fort Dodge, Iowa. Filed July 20, 1905. Serial No. 270,515.

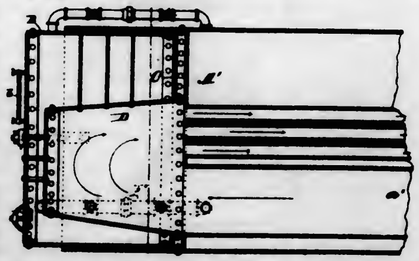

Claim.—In combination with a steam-boiler the exterior shell of which extends rearwardly beyond the back end wall of the boiler.

a fire-chamber and return-flue that terminates at such end wall, of a feed-water heater having a water-surrounded fire-chamber such chamber being adapted to encompass the fire-chamber and the return-flues of the boiler, and means for clamping the feed-water heater against the end wall of the boiler; such clamping means comprising bolts attached to the boiler and a cross-bar with which the bolts engage, substantially as shown.

810,733. **VENTILATOR FOR SEWER AND OTHER PIPES.** GEORGE W. EVANS, Tuxedo Park, Md. Filed May 29, 1905. Serial No. 262,719.

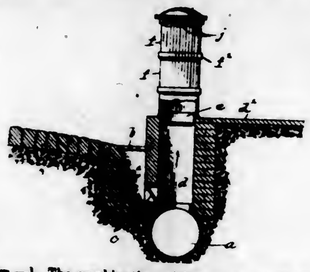

Claim.—1. The combination with a sewer, drain or other pipe containing noxious gases, of an inlet provided with a flap; a vent-passage from said sewer, drain or pipe; and a vent and purifier comprising a plural number of sections or chambers resting one upon the other—each section having an internal shelf and a vent-passage, the said vent-passages in the several sections being alternately on opposite sides of the purifier.

2. The combination with a sewer, drain or other pipe containing noxious gases, of a vent and purifier comprising a plural number of sections or chambers resting one upon the other—each section having an internal shelf and a vent-passage, the said vent-passages in the several sections being alternately on opposite sides of the purifier.

3. The combination of a plural number of sections or chambers each section or chamber having a flange to make a union with the next section or chamber on which it is superimposed; an internal shelf in each section or chamber having at one side a vent-passage; the upper section or chamber provided in its side walls with vent-openings, and a cap closing the top of said upper section or chamber.

4. The combination with a sewer, drain or other pipe containing noxious gases, of a vent-passage from said sewer, drain or pipe; a base-frame having three flanges one of which enters the said vent-passage; and a vent-purifier comprising a plural number of sections resting one upon the other and the lowermost one resting on one of said base-flanges and receiving within its end the other flange; and an internal shelf in each section and a vent-passage at one side thereof.

810,734. **THEATRICAL APPLIANCE.** BERNARD J. FAGAN, New York, N. Y. Filed Aug. 9, 1905. Serial No. 273,411.

Claim.—1. In a theatrical appliance, a delusion device consisting of a movable shell made of rigid material and having a constricted portion near the center thereof, the internal dimensions of such constricted portion being such that the device is adapted to slip over the shoulders and rest on the hips of the operator and the device being of such dimensions as to completely conceal the operator when in a kneeling position and to expose the legs of the operator when standing, substantially as described.

2. In a theatrical appliance, a delusion device consisting of a movable shell made of rigid material comprising two members of frusto-conical form, with their small ends together, thereby forming a constricted portion, the internal dimensions of such constricted portion being such that the device is adapted to slip over the shoulders and rest on the hips of the operator and having a top with a dome-shaped center to receive the head of the operator, the parts being so proportioned as to entirely conceal the operator when kneeling down and expose the legs of the operator when standing, and an illuminating device thereon, substantially as described.

810,735. **WINDOW ATTACHMENT.** CHARLES H. FAULKNER, Somerville, Mass., assignor to Champion Metal Weather Strip and Parting Bead Company, Boston, Mass., a Corporation of Massachusetts. Filed July 17, 1905. Serial No. 270,157.

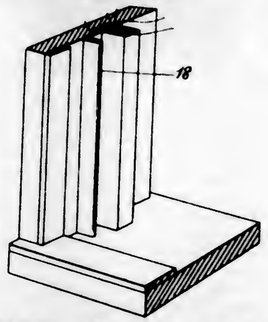

Claim.—A window-casing attachment composed of a sheet-metal strip bent to form a central or base portion adapted to bear on the face of the casing and having holes for attaching devices, and a three-sided casing at one edge of said base adapted to inclose the exposed portions of a parting-bead, one side of said casing being extended across the plane of the base to enter the casing with the parting-bead, and a folded portion or rib at the opposite side of the base, adapted to enter a groove in the edge of a sash.

810,736. **CLOSURE DEVICE FOR GLASS JARS AND OTHER VESSELS.** WILLIAM B. PENN, Sheepshead Bay, N. Y. Filed Dec. 23, 1904. Serial No. 238,662.

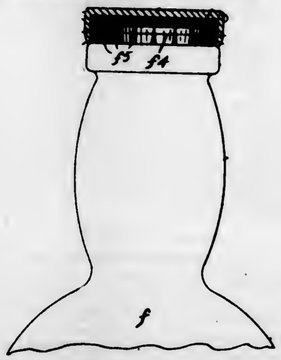

Claim.—1. A bottle or similar vessel having a top neck portion which is provided on the outer surface thereof with teeth or projections and inwardly and downwardly inclined, and a closure device comprising an inner cap having a depending flange or rim and composed of compressible material saturated with preservative material, and an outer cap having a corresponding depending flange or rim and in which the inner cap is placed, the flange or rim of the inner cap and the flange or rim of the outer cap being provided on or in their adjacent faces with projecting teeth the adjacent walls of which are curved or segmental in form in horizontal section, substantially as shown and described.

2. A bottle or other vessel provided with a neck having an annular enlargement near the top thereof, the outer walls of the top portion of said neck being inwardly and downwardly inclined, and a closure device comprising an inner and an outer cap each of which is provided with a depending flange or rim, the inner cap being composed of flexible material saturated with preservative material, and the flanges or rims of both of said caps being provided in or on their adjacent walls with projecting teeth the corresponding walls of which are curved or segmental in form in horizontal section, substantially as shown and described.

3. A bottle or other vessel provided with a neck having an annular enlargement near the top thereof, the outer walls of the top portion of said neck being inwardly and downwardly inclined, and a closure device comprising an inner and an outer cap each of which is provided with a depending flange or rim, the inner cap being composed of flexible material saturated with preservative material, and the flanges or rims of both of said caps being provided in or on their adjacent walls with projecting teeth the corresponding walls of which are curved or segmental in form in horizontal section, the bottom of the flange or rim of the outer cap being also inwardly contracted, substantially as shown and described.

4. A bottle or other vessel provided with a neck having an annular enlargement near the top thereof, the outer walls of the top portion of said neck being inwardly and downwardly inclined, and a closure device comprising an inner and an outer cap each of which is provided with a depending flange or rim, the inner cap being composed of flexible material saturated with preservative material, and the flanges or rims of both of said caps being provided in or on their adjacent walls with projecting teeth the corresponding walls of which are curved or segmental in form in horizontal section, the bottom of the flange or rim of the outer cap being also inwardly contracted, and the top portion of the neck which is inclosed by the closure device being provided with projecting teeth, substantially as shown and described

810,737. **METALLIC CAN.** WILLIAM B. PENN, Sheepshead Bay, N. Y. Filed Dec. 27, 1904. Serial No. 238,373.

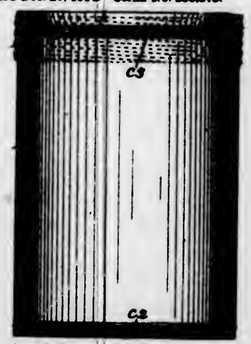

Claim.—1. A metallic can one end of which is open, the closed end and body of the can being provided with a lining of fibrous material saturated with a preservative material, and a cap or cover for the open end of said can, said cap or cover being provided with a countersunk central portion whereby an inwardly-directed annular wall is formed around said countersunk portion, said cap or cover being also provided with a lining of fibrous material having an upwardly-directed annular rim portion which covers said wall and which bears on the top portion of the lining of the body of the can when the cap is in position, and said cap being also provided with a flange or rim which is threaded to correspond with a similar thread on the open end of the can, substantially as shown and described.

2. A metallic can one end of which is open, the closed end of the can and the body portion of the can being provided with linings of fibrous material saturated with a preservative material and the adjacent or contacting parts of which are beveled, and a cap or cover for the open end of the can, the central portion of which is countersunk so as to form an annular wall, said cap or cover being also provided with a lining of fibrous material saturated with a preservative material and provided with an annular flange or rim which covers said wall, the lining of the body of the can and the lining of the cap or cover where they meet being also beveled, and means for securing the cap or cover in position, substantially as shown and described.

810,738. **PIPE-WRENCH.** STEPHEN A. FESLER, Cupertino, Cal. Filed Sept. 1, 1905. Serial No. 276,763.

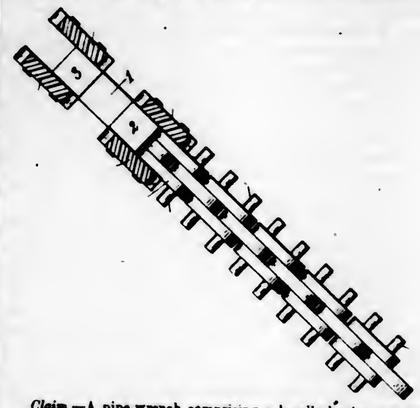

Claim.—A pipe-wrench comprising a handle having a forked end, gripping-plates pivoted to the respective members of the fork, each plate having a concaved serrated gripping-surface adapted to grip the pipe, and, beyond said gripping-surface or remote from the pivot thereof, a portion adapted to rest upon the surface of the pipe when the gripping-surface of the opposite plate grips the plate, substantially as described.

810,739. **CORN-FODDER ELEVATOR AND LOADER.** FRANK A. R. FIEBACH, HENRY C. FIEBACH, and OTTO L. FIEBACH, London, Wis. Filed June 23, 1905. Serial No. 266,479.

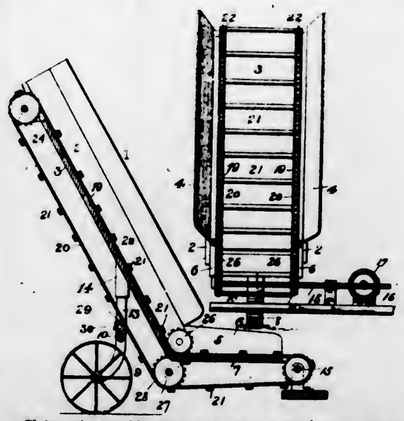

Claim.—A portable elevator of the character described comprising an inclined upwardly-projecting frame 1, a horizontally-disposed frame 5 pivotally connected to the lower end of said inclined frame, said horizontal frame being adapted to be secured to the frame of a corn-binder, a supporting-frame 9, 13, 14 secured to the lower side of said inclined frame, a caster-wheel pivotally mounted in said supporting-frame, a drive-shaft journaled in the binder-frame adjacent to the end of the horizontal elevator-frame, sprocket-wheels fixed on said shaft, a shaft journaled in the upper end of said inclined frame, sprocket-wheels fixed on said shaft, an endless conveyer arranged on said elevator-frames and driven by the sprocket-wheels on said drive-shaft, and means to guide said conveyer over said frames, substantially as described.

810,740. MAKING HARD-RUBBER BALLS. HARVEY B. FRENCH, Mineral City, Ohio. Filed Apr. 26, 1905. Serial No. 257,396.

Claim.—1. The process of making a hard-rubber ball consisting in masticating two parts india-rubber and hot-milling therewith two parts coal-flour, one part sulfur-flour and three parts talc-powder, then molding and vulcanizing under high pressure a core-ball of this composition and then molding on the core-ball as a center and vulcanizing under low pressure a large ball of the same composition, less the talc.

2. The process of making a hard-rubber ball consisting in mixing india-rubber with coal-flour, sulfur-flour and talc-powder, and molding and vulcanizing under high pressure a core-ball of this composition, then molding on the core-ball as a center and vulcanizing under low pressure a larger ball of the same composition, less the talc.

3. The process of making a hard-rubber ball consisting in mixing india-rubber with coal-flour, sulfur-flour and talc-powder and molding and vulcanizing under high pressure a core-ball of this composition, and then molding on the core-ball as a center a larger ball of india-rubber composition.

4. The process of making a hard-rubber ball consisting in molding and vulcanizing under high pressure a core-ball of india-rubber composition, and then molding on the core-ball as a center and vulcanizing under low pressure a larger ball of a composition made by mixing india-rubber with coal-flour, and sulfur-flour.

5. The process of making a hard-rubber ball consisting in molding and vulcanizing under high pressure, a core-ball of india-rubber composition, and then molding on the core-ball as a center and vulcanizing under low pressure a larger ball of similar composition.

810,741. SMOKE-CONSUMER. WALTER T. FLING and JOHN B. FLINGS, Holt, Mo. Filed May 18, 1905. Serial No. 261,010.

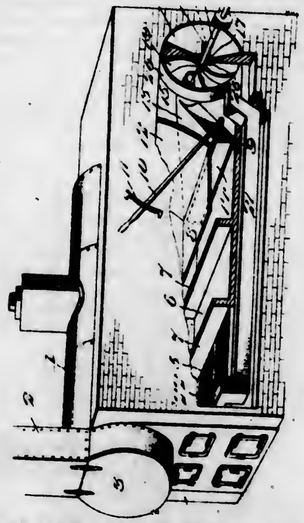

Claim.—In a device of the class described, a furnace provided with a combustion-chamber, a fan-casing, a duct connecting the latter and chamber for communication, one wall of the furnace being provided with a recess terminating in an opening leading through said wall to the casing, a smoke-collecting ball arranged in the furnace and having communication with the casing, a fan in the latter operable for drawing smoke from the member to the casing and forcing it through the duct to the combustion-chamber, a fan-operating shaft extended through the opening in the furnace-wall, and a cut-off valve for regulating the size of said opening.

810,742. BOX FOR HOLDING COINS. ROBERT H. FORSYTH, Washington, D. C. Filed July 28, 1905. Serial No. 271,069.

Claim.—1. In combination with a box or receptacle adapted to hold a plurality of stacks of coins, a lid therefor, a fastening device for the lid adapted to extend in the space between the coin stacks, and means cooperating with the sides of the coin stacks for preventing the fastening device from turning.

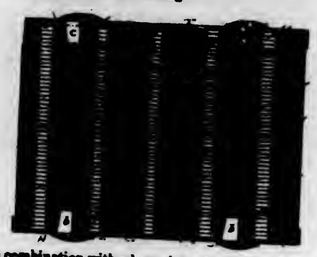

2. In combination with a box adapted to hold stacks or columns of coins, a lid therefor, a fastening device for securing the lid in place, said fastening device adapted to extend in the space between the stacks of coin. and a head on said fastening device adapted to fit in said space.

3. In combination with a box adapted to hold stacks of coins, a removable lid therefor, a fastening-bolt extending in the space between the stacks of coins, and a head on the bolt formed with a shank fitting in the space between the coin stacks.

4. In combination with a box adapted to hold a plurality of stacks of coins and having in its ends, openings in line with the space tween the coin stacks, a fastening-bolt extending in said space, and heads on the ends of the bolt formed with shanks extending through the openings in the ends of the box and fitting in the space between the coin stacks.

5. In combination with a box adapted to hold a plurality of stacks of coins, a removable lid therefor, the said lid and bottom of the box being formed each with an opening in line with the space between the coin stacks, a bolt adapted to extend in said space, a head on one end of the same formed with a squared shank extending through the opening in the bottom of the box, fitting in the space between the coin stacks and bearing against the outer side of the bottom, a removable head on the opposite end of the bolt, formed with a squared shank extending through the opening in the lid and fitting in the space between the coin stacks, and a nut applied to the end of the bolt and serving to hold the parts together.

J. In combination with a coin-box adapted to hold a plurality of stacks of coins, a removable lid therefor, a fastening-bolt adapted to extend in the space between the coin stacks, and a removable sealing-head for the bolt formed with an undercut cavity to receive a sealing medium, and having an opening through its bottom to receive the end of the bolt, said parts coöperating with the lid and serving to retain the same in place.

7. In combination with a coin-box adapted to hold a plurality of stacks of coins, a removable lid therefor, a fastening-bolt extending in the space between the coin stacks and having its end threaded, a removable head adapted to be slipped over the threaded end of the bolt and formed with an angular shank fitting the space between the coin stacks, said head having a cavity to receive a sealing medium, and a fastening-nut screwed on the threaded end of the bolt within the cavity in the head.

8. In combination with a coin-box adapted to hold a plurality of stacks of coins, a removable lid therefor, a fastening-bolt extending in the space between the coin stacks, having one end threaded and having fixed to its opposite end a head formed with an angular shank fitting in the angular space between the coin stacks at one end, a removable head adapted to be slipped over the threaded end of the bolt and formed with an angular shank fitting the space between the coin stacks, said head having a cavity to receive a sealing medium, and a fastening-nut screwed on the threaded end of the bolt and situated in the cavity in the head.

9. In combination with a box adapted to hold a plurality of stacks of coins, and formed in its top and bottom with openings in line with the space between the coin stacks, a division-plate fitting within the box and dividing the coin stacks and formed with openings in line with the space between the coin stacks.

810,748. PRINTING APPARATUS. GEORGE H. GIBSON, San Francisco, Cal. Filed Apr. 3, 1905. Serial No. 253,462.

Claim.—1. In a press for the described purpose, the combination with the frame thereof, of a plate-carrier mounted to reck or oscillate within the same, of means carried thereby for clamping an engraved plate to the said carrier, an impression-roller held within the frame above the plate-carrier, of inking means arranged at the forward end of the press, of wiping-rollers and cleaning device located below the inking means, of devices for actuating the inking means on the forward stroke of the plate-carrier to ink the surface of the plate carried thereby and for operating the wiping-rollers and cleaning device to remove the surplus ink therefrom and polish the surface of the plate, of means for returning the plate-carrier to its normal position after the polishing of the surface of the inked plate, a card-feeder for supplying cards to be printed, means carried by the plate-carrier for actuating the card-feeder and the impression-roller on the return forward stroke thereof, and devices for operating said means to coact respectively with the card-feed mechanism and the impression-roller.

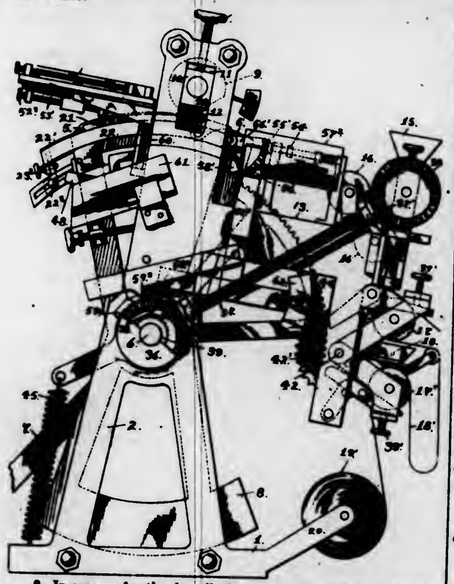

2. In a press for the described purpose, the combination with the main frame thereof, of an oscillatory plate-carrier mounted to swing therein, of clamping means carried thereby for holding an engraved plate thereto, of devices for inking, wiping and polishing the surface of the held plate on the forward stroke of the oscillatory plate-carrier, and means carried by the said carrier for actuating the inking, wiping and polishing devices on the forward movement of the said plate-carrier.

3. In a press for the described purpose, the combination with the main frame, of an impression-roller mounted therein, a rack-gear secured to the impression-roller, of an oscillatory plate-carrier working within the main frame, means carried thereby for the clamping of an engraved plate thereto, a vertically-movable rack-plate carried by the plate-carrier, and devices for moving the same in and out of mesh with the gear of the impression-roller.

4. In a press for the described purpose, the combination with the main frame of an oscillatory plate-carrier arranged to swing within the said frame, an impression-roller mounted in the main frame above the plate-carrier, of card-feeding mechanism, a vertically-movable slide-plate carried by the plate-carrier for actuating the card-feeding mechanism, and devices for raising and lowering said slide-plate to place the same into and out of engagement with the said card-feeding mechanism.

5. In a press for the described purpose, the combination with the main frame thereof, of the oscillatory plate-carrier, of means for clamping an engraved plate thereto, of the ink-supplying rolls for inking the surface of the held plate, devices carried by the plate-carrier for actuating said rolls to ink the surface of the held plate on the forward stroke of the plate-carrier, and means for adjusting the pressure of said inking-rolls.

6. The combination with the oscillatory plate-carrier, of means for clamping an engraved plate thereto, of inking-rolls for applying ink to the surface of the held plate on the forward stroke of the plate-carrier, and an adjustable slide carried by the plate-carrier for actuating the said ink-applying rolls on the forward stroke of the plate-carrier.

7. In a press for the described purpose, the combination with the oscillatory plate-carrier, of the wiping-rolls for removing the surplus ink applied to the surface of an engraved plate held to the plate-carrier and polishing the surface of said plate, of devices carried by the plate-carrier for forcing the wiping-rolls toward the held plate on the forward stroke of the plate-carrier, a web of paper working over the wiping-rolls and advanced by the frictional engagement of the said rolls therewith, and means for imparting rotation to the inking-rolls.

8. In a press for the described purpose, the combination with an oscillatory plate-carrier, of means for clamping an engraved plate thereto, a web of paper for removing the surplus ink applied to the surface of the held plate, of devices for forcing the paper onto the surface of the inked plate during the forward stroke of the carrier-plate, and means for advancing the web of paper over the surface of the plate.

9. In a press for the described purpose, the combination with an oscillatory plate-carrier, of means for clamping an engraved plate thereto, a web of paper for removing the surplus ink applied to the surface of the held plate and polishing the surface thereof, of rolls for forcing the web of paper against the surface of the plate, mechanism for rotating the rolls for advancing the web by frictional contact, and means for moistening the surface of the held plate with a suitable cleaning compound.

10. In a press for the described purpose, the combination with an oscillatory plate-carrier, of the wiping-rolls, a web of paper, working over the face thereof, of devices for throwing the rolls toward the surface of the inked plate to place the paper thereon during the movement of the carrier-plate, of mechanism for actuating the rolls to impart travel to the web of paper.

11. In a press for the described purpose, the combination with the main frame, of the impression-roller mounted therein, of an oscillatory plate-carrier working within the main frame, card-feed mechanism for delivering cards to be printed, devices carried by the plate-carrier for actuating the card-feed mechanism and imparting rotation to the impression-roller, a swinging receiver for the printed cards, and means for operating said swinging receiver to deliver the printed cards onto a suitable holder.

810,744. POCKET FINGER-NAIL CLEANER. WILLIAM F. GILBERT, Derby, Conn., assignor of one-half to The H. C. Cook Co., Ansonia, Conn., a Corporation. Filed Mar. 25, 1905. Serial No. 251,963.

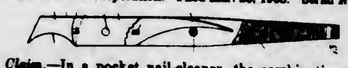

Claim.—In a pocket nail-cleaner, the combination with two frame-plates one of which is struck up to form a locking-rib, of a flat plate-like blade pivotally mounted between the outer ends of the said plates and having one of its ends formed with a beak-like scraper having its outer edge beveled and its inner edge cut away to form a semicircular notch, and the said blade being formed at points on opposite sides of its center with notches which receive the said rib, whereby the blade is held with either end turned outward.

810,745. METHOD OF PASTEURIZING BEER. HUGO GRONWALD, Berlin, Germany. Filed Aug. 30, 1905. Serial No. 276,436.

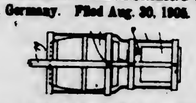

Claim.—1. An improved method of pasteurizing beer in the barrel in which it is to be transported, which consists in dividing the quantity of beer required to fill the barrel between the barrel and a receiver below the same and communicating with it through pipe connections, after having freed said vessels from air by means of carbonic acid, so that the receiver is filled completely and an empty space equal to its contents is left in the barrel in order that the carbonic acid disengaged from the beer in the barrel and receiver during the pasteurizing may collect in the barrel and after cooling be returned to the beer without loss by shaking or other known means, whereupon the pasteurizing apparatus is placed on the floor with the barrel at the bottom so that the receiver can empty itself into the barrel and the excess of carbonic acid mount into the receiver.

2. The method of pasteurizing beer consisting in filling a barrel with beer and a receiver with carbonic acid, connecting said barrel

and receiver by means of a single coupling, then transferring the carbonic acid and a portion of the beer from the receiver into the barrel, then pasteurizing the beer and then retransferring the carbonic acid and beer respectively to the barrel and the receiver.

810,746. CHECK-VALVE FOR WATER-GAGES. BENJAMIN HADLEY and BRYAN MOYLAN, Elmira, N. Y. Filed June 17, 1905. Serial No. 265,704.

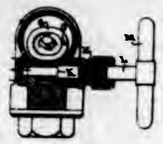

Claim.—1. The combination, with a water-gage, of a check-valve hinged at one side of its seat, and an adjustable hinge-pin therefor having a screw-threaded stem and a shoulder adapted to engage one side of the valve-knuckle, said stem having the screw-thread thereon cut in a direction whereby, when setting the shoulder against the knuckle, the stem will turn in the same direction as the valve turns when moving to open position.

2. The combination, with a water-gage, of a check-valve supported on an arm hinged at one side of the valve-seat, and a hinge-pin therefor having a shoulder at one side of the arm-knuckle and a screw-threaded stem operated by a handle outside the valve-casing.

810,747. COIN-CONTROLLED VENDING-MACHINE. FRED B. HALL, Brookline, and ALEXANDER MACLEOD, Brighton, Mass., assignors to United States Vending Corporation, Boston, Mass., a Corporation of Maine. Filed Oct. 6, 1904. Serial No. 227,488.

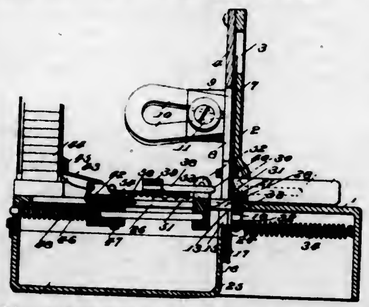

Claim.—1. In a coin-controlled machine, in combination, a forwardly-movable coin-support comprising opposite horizontally-disposed pivoted members notched at their inner ends, and between which ends a coin is designed to rest in a vertical position, said members being constructed and arranged to swing forward at their free ends together with a coin supported thereby, said free ends being gradually moved apart, a fixed support for said members, an actuating member for engaging a coin supported by the latter, and an ejector member against a part whereof a coin is designed to be held by said actuating member as it is freed from the hinged members at or near the limit of the forward movement of the latter.

2. In a coin-controlled machine, in combination, a forwardly-movable coin-support comprising opposite horizontally-disposed laterally-movable pivoted members between the free ends of which a coin is designed to rest in a vertical position, said members being constructed and arranged to swing forward at their free ends with a coin supported thereby, said free ends being gradually moved apart, a fixed support for said members, an actuating member having a flat wall for engaging a coin supported by said members, and an ejecting member having a rod in line with the center of coin and against which the latter is designed to be forced as it is about to be freed from said laterally-movable members at or near the limit of the forward movement of the latter.

3. In a coin-controlled machine, in combination, a coin-support comprising opposite horizontally-disposed laterally-movable pivoted members between the free ends of which a coin vertically disposed is designed to rest, said members being constructed and arranged to swing forward at their free ends with a coin supported thereby, said free ends being gradually moved apart, a fixed support for said members, an actuating member comprising a frame having a wall formed with an opening, and an ejecting member having a rod coincident with said opening and against which a coin is designed to be forced by said wall as a coin is about to be freed from said laterally-movable members at or near the limit of the forward movement of the latter.

4. In a coin-controlled machine, in combination, a coin-support comprising oppositely-disposed laterally-movable members having inner opposite V ends wherein a coin is designed to rest, a fixed support for said members, an actuating member comprising a frame having a depending ear formed with an opening, said ear being normally forward of the coin-support, and movable between the members thereof, and an ejecting member having a rod coincident with said opening and against which the coin is designed to be forced by said ear as it is about to be freed from its support upon the actuating member being pushed inwardly.

5. In a coin-controlled machine, in combination, a fixed plate having an opening formed with parallel edges, an actuating member comprising a frame movable in said opening, a coin-support fixed to the under side of said plate at the forward end of said opening, a portion of said frame being designed to intersect the coin-support, an ejecting member having a block also movable in said opening, a rod carried by said block extended forwardly on a plane above the coin-support and in line with that portion of said frame movable in a plane intersecting the coin-support for forcing the coin from the latter against said rod.

6. In a coin-controlled machine, in combination with an actuating member, a coin-support comprising oppositely-disposed horizontally-movable levers fulcrumed at their outer ends and having inner V-shaped ends, a fixed support therefor, said levers being capable of being swung forward on their vertical pivots when said actuating member is forced inwardly, and springs for returning said levers to their normal positions.

7. In a coin-controlled machine, in combination with an actuating member, a coin-support comprising opposite horizontally-disposed levers having inner opposite V-shaped ends, and a pin mounted in one of the levers intersecting the space between such ends for increasing or diminishing the same, said levers being constructed and arranged to swing forward with a coin supported thereby, the V-shaped ends of said levers being gradually moved apart.

8. In a coin-controlled machine, in combination, a coin-support, an actuating member movable on a plane above said support and having a bore or opening, and a cord-cutting rod in line with said opening notched at its forward end for cutting a cord from which a coin is suspended said rod entering said bore or opening.

9. In a coin-controlled machine, in combination, a coin-support, an actuating member movable on a plane above said support, a plunger for said actuating member having a central bore, and a cord-cutting rod in line with said bore having its forward end notched for severing a cord forced thereby into said bore.

10. In a coin-controlled machine, in combination, a coin-support, an actuating member movable on a plane above said support and having a bore or opening, a cord-cutting rod in line with said opening notched at its forward end, and a stationary plate having a central notch in line with the notch of said rod.

11. In a coin-controlled machine, in combination, an actuating member carrying a spring-held two-way pawl, an ejecting member, a stationary rack with which said pawl is designed to engage, and a shield normally covering such rack to prevent the pawl engaging therewith.

12. In a coin-controlled machine, in combination, an actuating member carrying a spring-held two-way pawl, an ejecting member, a stationary rack with which said pawl is designed to engage, a shield normally covering said rack to prevent the pawl engaging therewith, and means for automatically shifting such shield so as to permit the pawl to engage with the rack when the ejecting member is moved by the actuating member.

13. The combination with the actuating member carrying a spring-held two-way pawl, and a stationary rack with which such pawl is designed to engage, of the ejecting member, the shield carried thereby normally covering such rack, a spring for holding such shield over the rack, and means for forcing the shield away from the rack when the ejecting member is moved by the actuating member.

14. The combination with the actuating member carrying a spring-held two-way pawl, and a stationary rack with which such pawl is designed to engage, of the ejecting member, the shield carried thereby normally covering such rack, a spring for holding such shield over the rack, said shield having a beveled wall, and a stationary pin with which said wall is designed to engage for forcing the shield away from the rack when the ejecting member is moved by the actuating member.

15. In a coin-controlled machine, in combination, with an actuating member, a coin-support comprising oppositely-disposed levers having inner spaced-apart notched ends, and a pin inserted transversely through the notched end of one of the levers, intersecting the inner end of the notch, and itself having a notch coincident with that of the lever.

16. In a coin-controlled machine having a horizontally-disposed plate a depending wall in advance of the cash-drawer, a coin-support beneath said plate, actuating and ejecting mechanism movable on the plate and having a plunger designed to move above said support when pushed inwardly, and a coin passage-way through which said plunger extends, and a return-opening to one side of the plunger, whereby a coin deposited in the passage-way when the plunger is pushed inwardly will be deflected through the return-opening.

17. In a coin-controlled machine, in combination, a coin-support, an actuating member comprising an open-top frame having forward and rearward walls formed with coincident openings, a coin or washer when on said support being located between said walls in line with said openings, an ejecting member having a rod normally projecting into the opening of the rearward wall, such ejecting member being operated by the engagement of a coin with said rod, the said rearward wall of said frame serving to remove washers from such rod upon the release of pressure on the actuating member.

810,748. CONCRETE BUILDING-BLOCK. WINFIELD A. HALLER, New Orleans La., and JAMES W. BILLINGSLEY, Tivoli, N. Y., assignors to Edwin H. Sanderson, Brooklyn, N. Y., Henry Hobart Porter, Lawrence, N. Y., Francis Blossom, Brooklyn, N. Y., and Richmond Talbot, Tuxedo, N. Y. Filed Feb. 21, 1905. Serial No. 246,703.

Claim.—1. The building-block having a body provided with an alining groove extending around the same and provided with a plurality of supporting-shelves projecting from one face of said block, said shelves having an upturned outer edge and being reinforced by a metallic reinforce embedded in said block, each of said shelves being provided with ribs to form a plurality of supporting-grooves in its upper face.

2. The building-block formed of reinforced concrete comprising a body formed with an alining groove and with supporting-shelves having pockets formed integral with said block and extending outward from one face of the same.

3. The building-block formed of reinforced concrete comprising a body provided with supporting-shelves having pockets formed integral with said body and extending outward from the face of the same.

4. The building-block comprising a body, provided with supporting-shelves having pockets formed integral with said body and extending outward from the face of the same.

810,749. HACKSAWING-MACHINE. JOSEPH HAMPTON, Sr., King's Hill, Wednesbury, England. Filed Nov. 10, 1904. Serial No. 232,230.

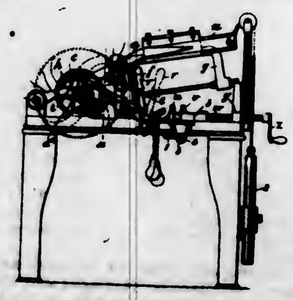

Claim.—1. In a hacksaw-machine, the combination with the machine-table, a driving-shaft, a saw-frame-carrying lever provided with a slot through which the driving-shaft extends, said slot permitting the lever to work over the said shaft, and an upright carried by the table and provided with an independent axis for said lever, said axis being situated at the rear of the driving-shaft.

2. In a hacksaw-machine, the combination with the table of the machine, of an operating-shaft, a saw-frame-carrying lever, a saw-frame thereon operated from a crank-plate on said shaft, a belt or driving pulley on the said shaft, a starting and stopping lever pivoted at one side of the table of the machine and in front of the belt-pulley, a bell-crank lever having the boss thereof mounted on said shaft between the belt-pulley and the frame of the machine and a connecting-rod between the starting and stopping lever and one arm of said bell-crank lever, said boss having a projection adapted to engage in a notch in the frame when the machine is at rest.

3. In a hacksaw-machine, an operating-shaft, a bell-crank lever carried thereby, a hacksaw-frame-carrying lever, a stop mechanism, and a stop-lever having one of its arms projecting in the path of the hacksaw-frame-carrying lever and the other of its arms terminating under one of the arms of the bell-crank lever and actuating in connection with said hacksaw-frame-carrying lever and said bell-crank lever said stop mechanism.

4. In a hacksaw-machine, an operating-shaft, a bell-crank lever carried thereon, a hacksaw-frame-carrying lever, a stop mechanism, and a stop-lever having one of its arms projecting in the path of the hacksaw-frame-carrying lever and the other of its arms provided with an adjustable seat situated under one of the arms of the bell-crank lever, said stop-lever in connection with said hacksaw-frame-carrying lever and said bell-crank lever actuating said stop mechanism.

810,750. MILKING DEVICE. LEWIS G. HARPER, Westchester, Pa. Filed May 27, 1905. Serial No. 262,677.

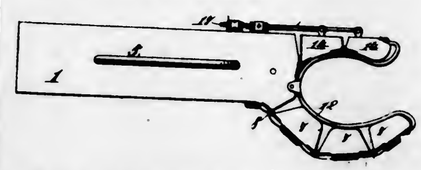

Claim.—1. A milking device having a series of contractible and relaxing fingers composed of jointed sections.

2. A milking device having a plurality of contractible and relaxing fingers, and means for operating said fingers inclosed within the latter.

3. A milking device having a plurality of contractible and relaxing fingers, and a finger having a fixed adjustable position and coöperating therewith.

4. A milking device having a plurality of fingers simulating the fingers of the human hand and composed of jointed sections, the finger representing the thumb being held in opposing or resisting position to the remaining fingers, which have a contracting and relaxing movement imparted thereto.

5. A milking device having a plurality of fingers made up of jointed sections, spring devices coöperating with said sections to relax the same and restore them to normal position, and means connected to the fingers for contracting them against resistance of the spring devices.

6. A milking device having a plurality of fingers made up of jointed sections provided with spring means for restoring them to normal position when relaxed, a resistance means coöperating with the first-named fingers, and means for contracting the latter fingers.

7. A milking device having a plurality of fingers provided with means for restoring them to normal position, tapes connected to the fingers for contracting the same, means for drawing the tapes to contract the fingers, and a resistance-finger coöperating with the contractible fingers and having a fixed adjusted position.

8. In a milking device, a plurality of contractible and expansible fingers, a resistance-finger coöperating therewith and arranged in opposition thereto, contracting-tapes attached to the fingers, and a crank-shaft having a series of cranks to which the tapes are secured.

9. A milking device having a plurality of contractible and expansible fingers, and a single resistance-finger having adjusting means connected thereto.

810,731. ELECTRIC-CIRCUIT BREAKER. FRANK O. HARTMAN, Mansfield, Ohio. Filed Apr. 6, 1903. Serial No. 151,304.

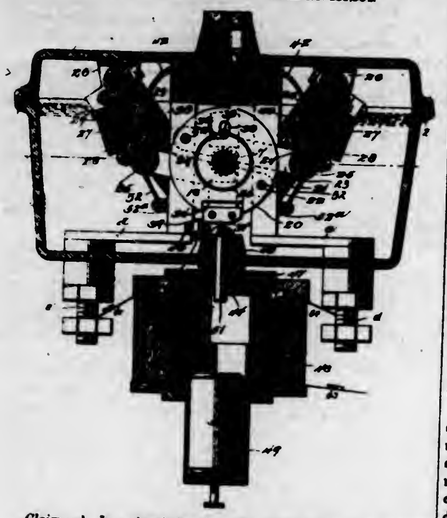

Claim.—1. In a circuit-breaker, the combination with an operating-shaft, of a plurality of switches movable simultaneously into normal position by the operating-shaft, a loose and a fast disk carried by the shaft, one of the disks connected with the switches, the other of said disks adapted to operate the first-named disk, a single locking device for retaining the switches in normal position, and an electroresponsive device for effecting the simultaneous release of the switches.

2. In a circuit-breaker, the combination with a plurality of switches, of an inner disk, a handle-rod to which the disk is secured, the switches movable simultaneously into normal position by means of the inner disk and handle-rod, and an outer disk connected by means of swinging arms to the movable portions of the switches, an operating-handle, a single locking device for holding said switches in normal position, an electroresponsive device operating the instant the movable contacts are brought into engagement with the terminal blocks, while an overload condition exists in the circuit, and effecting under such circumstances the simultaneous release of said switches independent of any restraining influence on the operating-handle.

3. An automatic circuit-breaker comprising a case adapted to hold an insulating fluid, a plurality of electric switches contained within the case, the switches consisting of movable and stationary contacts, an operating-shaft, a disk secured to the shaft, an annulus loosely mounted on the disk, links connecting the annulus with each of the movable contacts, means for retaining the movable contacts in normal position and an electroresponsive device effecting the release of the movable contacts upon the occurrence of an overload in the circuit.

4. An automatic circuit-breaker comprising a casing, a plurality of switches within the casing, a single operating-shaft controlling the movement of the switches in one direction, means for releasably retaining the switches in normal position and an electroresponsive device for releasing the switches, the electroresponsive device comprising a yoke, a solenoid supported thereby and provided with an aperture, a tube located in the aperture in the solenoid, a collar-pin receivable in an aperture formed in the casing adjacent the switch-retaining means, a core operating in the tube, the core adapted to engage the collar-pin to move the latter into engagement with the switch-retaining means to release the switches.

5. An automatic circuit-breaker comprising a plurality of stationary terminal blocks, swinging laminated contacts adapted to removably engage the terminal blocks, an inner disk, an annular disk rotatably mounted on the inner disk, means connecting the contacts and the annular disk, means for simultaneously drawing the contacts into engagement with the terminal blocks, means for locking the contacts in such position, and an electroresponsive device for effecting the simultaneous release of the contacts, and their operation independently of the inner disk.

6. An automatic circuit-breaker comprising suitably supported and insulated terminal blocks, movable contacts, swinging arms to which the contacts are secured, lugs in which the arms are journaled, tension means constantly engaging the arms to yieldingly retain the contacts away from the blocks, a means freely rotatable in either direction to which the arms are connected, a manually-operated rotatable means, locking means for retaining the two rotatable means together when the contacts are in engagement with the blocks and electroresponsive means adapted to engage the locking means to effect the release of the freely-rotating means irrespective of the operation of the manually-operated means.

7. An automatic circuit-breaker composed of a case consisting of upper and lower portions adapted to hold an insulating fluid, terminal blocks, insulating material, to which the terminal blocks are secured, the insulating material fastened to the upper portion of the case, laminated movable contacts for engaging said terminal blocks, suitably-supported swinging arms to which the movable contacts are attached, flat springs mounted between the swinging arms and adapted to exert pressure against the same to throw the contacts away from the terminal blocks when the switches are unlocked, means for drawing said movable contacts simultaneously into normal position, means for locking said contacts in such position, and an electroresponsive device operating directly on the locking device and effecting the simultaneous release of the movable contacts upon the occurrence of an overload condition in the circuit.

8. In a circuit-breaker, the combination of a plurality of switches adapted to be connected in series on one side of an electrical circuit, means of operating said switches, a single locking device for holding said switches in normal position, an operating-handle having an inner and outer disk fitted thereon and connected to arms carrying contacts through the medium of suitable links, an electroresponsive device operating under overload conditions to effect the release of said switches independently of any restraining influence in the operating-handle.

9. An electric switch composed of a case consisting of an upper and a lower portion, and adapted to hold an insulating fluid, insulating material fastened to the upper part of the case, terminal blocks secured to the insulating material, laminated movable contacts for engaging said terminal blocks, swinging arms by which the movable contacts are carried, flat springs mounted between the swinging arms and adapted to exert pressure against the same to throw the contacts away from the terminal blocks when the switches are unlocked, an operating-handle, means for drawing said movable contacts simultaneously into engagement with said contact-blocks, means for locking or restraining the movable contacts in such position, means for unlocking or effecting the simultaneous release of said movable contacts and permitting their unrestrained movement by turning the controlling-handle in the direction opposite to that taken in closing the switches.

10. An automatic circuit-breaker comprising a suitably-supported rotatable shaft, tension means for normally retaining the shaft at and returning it to one limit of its rotary movement, a disk secured to the shaft, an annular disk rotatably supported on the first disk, suitably-supported swinging arms, links connecting the annular disk and the arms, contact-carrying members secured to and insulated from the arms, contacts carried by the members, terminal blocks adapted to be engaged by the contacts, means for normally forcing the contacts away from the blocks, releasable locking means for retaining the contacts in engagement with the blocks, and an electroresponsive device for actuating the locking device to effect the release of the contacts.

11. In an automatic electric circuit-breaker, a case adapted to inclose the mechanism thereof and retain an insulating liquid, an operating-bar, a handle secured to the projecting end of the bar, an inner disk secured to the operating-bar, an outer disk fitted to rotate on the inner disk, a catch fitted to the sides of the disks, the disks provided with pinways adapted to register with each other, a pin receivable in the pinways and adapted to releasably secure the disks together, means for locking the outer disk against rotation, and means for engaging the locking means and releasing the outer disk.

12. In an automatic electric circuit-breaker, a case, an operating-rod journaled in bearings in the case, one end of the rod projecting outside of the case, a handle secured to the rod, a disk secured to the operating-rod, an outer disk fitted to rotate on the first-named disk, links connected to the outer disk, a catch fitted to said disks, swinging arms, springs adapted to exert a pressure against the swinging arms to break the circuit when the catch is released manually or automatically.

13. A circuit-breaker comprising an operating-shaft, disks mounted thereon, suitably-supported swinging arms, links connecting one of the disks and the swinging arms, carrying members secured to the arms, contacts carried by the members, terminal blocks engaged by the contacts, means tending to force the contacts away from the blocks, a catch carried by one of the disks, a stop against which the catch abuts to retain the contacts in engagement with the blocks, a releasing-pin located adjacent the stop and an electroresponsive device adapted to impinge against the releasing-pin, to cause the latter to release the catch from the stop.

14. In a circuit-breaker, the combination with an operating-shaft, and a plurality of separated terminals, of a plurality of bridge-contacts movable simultaneously into and out of normal position, to connect or disconnect the terminals, a disk secured to the operating-shaft, a second disk loosely mounted on the fast disk, means connecting the loose disk and the movable bridge-contacts, means for releasably locking the two disks together when rotated in one direction only, means tending to move the switches and loose disk in the opposite direction, and an electroresponsive device for releasing the locking means to permit the simultaneous movement of the contacts independent of the operating-shaft, the loose disk rotating freely upon the fast disk when rotated in such opposite direction.

15. A circuit-breaker comprising a casing, an operating-shaft journaled in the casing, one end of the shaft projecting outside the casing, a handle secured to the protruding end of the shaft, a spring secured to the shaft and adapted to return the latter to one limit of its rotary movement, a disk secured to the shaft, an annulus rotatably mounted on the disk, suitably-supported swinging bars, contacts carried by the bars, links connecting the annulus and bars, terminal blocks with which the contacts are adapted to engage to close the circuit and means for automatically breaking the circuit.

16. An automatic circuit-breaker comprising stationary isolated terminals, movable bridge-contacts, a rotatable disk, an annulus loosely mounted on the disk, and located intermediate the bridge-contacts, means secured to the bridge-contacts and to approximately opposite points on the annulus, means for locking the annulus and disk when rotation is given the disk in one direction, and electroresponsive mechanism for releasing the locking means to permit a movement of the annulus irrespective of the disk.

17. A circuit-breaker comprising a suitable casing, stationary terminal blocks located therein, and insulated therefrom, connectors secured to the terminal blocks, binding-posts in contact with the connectors, swinging contacts adapted to engage the terminal blocks, a rotary annulus, means pivotally connecting the swinging contacts and annulus, a disk upon which the annulus is mounted and rotates, a catch located between the annulus and disk, means connected with the disk for causing the operation of the catch, gravity-operated means for locking the annulus when the contacts are in engagement with the terminal blocks and electroresponsive means connected with the binding-posts to release the gravity-operating locking means.

18. A circuit-breaker comprising a plurality of terminal blocks, contacts movable toward and from the blocks, a suitably-supported rotary shaft, a disk fast on the shaft, an outer disk loosely supported on the fast disk, means connecting the contacts and outer disk, a locking means receivable between the disks and adapted to frictionally engage the disks when the shaft is rotated in one direction to cause the rotation of the outer disk, a stop engaged by the locking means to normally prevent the reverse rotation of the disks and means for releasing the engagement of the locking means and the stop.

19. A circuit-breaker comprising terminal blocks, suitably-supported swinging contacts adapted to engage the blocks, a rotatable rod, a disk mounted thereon, an annulus rotatably supported on the disk, means connecting the annulus and swinging contacts, locking means located between the disk and annulus, whereby the rotation of the disk in one direction will carry the annulus with it, means for automatically locking the annulus when the contacts are in engagement with the terminals and an electroresponsive means engaging the locking means and releasing the contacts.

20. In a circuit-breaker, the combination with stationary terminals, and contacts movable toward and from the terminals, of a rotary shaft, a recessed member mounted thereon and rotating therewith, an annular member loosely supported upon the rotary member, a locking means carried by the annular member, means connecting the annular member and the movable contacts, a tension means connected with the shaft to retain the latter at one limit of its rotary movement, the locking means adapted to frictionally engage and connect the members when the shaft is rotated against the strength of the tension means, the locking means partly received in the recessed member when the contacts engage the terminals, means for retaining the locking means in the recessed member, and electroresponsive means adapted to release the locking means.

21. A circuit-breaker comprising a plurality of stationary isolated and insulated terminals, an electroresponsive device in circuit with the terminals, movable contacts adapted to engage and connect the terminals, a suitably-supported rotatable disk, an annulus mounted on the disk and having a movement independent thereof, means for locking the disk and annulus together when the disk is rotated in one direction, the annulus connected with and controlling the movement of the contacts, means for locking the annulus in normal position, and means actuated by the electroresponsive device for automatically releasing the annulus.

22. In a circuit-breaker, the combination with stationary terminals, an electroresponsive device in circuit therewith and movable contacts adapted to connect the terminals and complete the circuit, of a rotating annulus with which the contacts are connected, a second rotatable member on which the annulus is supported, the annulus and rotatable member provided with adjacent grooves, a catch-pin received in the grooves and locking the rotatable member and annulus when the rotatable member is rotated in one direction, locking means for retaining the annulus in normal position, and means actuated by the electroresponsive device to release the locking means and permit the annulus to rotate freely on the rotatable member.

23. The combination in a circuit-breaker with a series of independent stationary terminals, an electroresponsive device in circuit therewith and movable contacts adapted to engage the terminals and close the circuit, of a rotatable means with which the contacts are connected, a sliding member carried by the rotatable means, a movable catch against which the sliding member is adapted to abut, and means actuated by the electroresponsive device adapted to engage and actuate the sliding member to release the rotatable means.

24. In a circuit-breaker, the combination with a plurality of terminals, an electroresponsive device in circuit therewith and movable contacts adapted to engage the terminals and complete the circuit, of a rotatable means with which the contacts are connected, a sliding member carried by the rotatable means and normally extending therebeyond, an abutment with which the sliding member engages to retain the rotatable means in set position, a disk upon which the rotatable means is supported, the disk and rotatable means provided with registering recesses, a pin carried by the sliding member and received in the recesses to lock the disk and rotatable means together and means actuated by the electroresponive device for simultaneously releasing the disk and rotatable means and the rotatable means and abutment.

25. The combination in a circuit-breaker, with a plurality of terminals, and contacts movable toward and from the terminals, of a rotatable disk, an annulus supported upon and rotating independently of the disk, means connecting the annulus and contacts, means for locking the disk and annulus together, a sliding member carried by the annulus, a foot on the sliding member, the toe of the foot being beveled, a pin over which the foot rides, and behind which it lies to retain the annulus in set position and means for releasing the sliding member.

26. The combination with a series of terminals, and movable contacts, of a rotatable disk having an inclined groove formed in the periphery thereof, an annulus received upon and rotating independently of the disk, the annulus provided with a recess in communication with the groove, means connecting the annulus and contacts, a sliding member carried by the annulus, a foot on the member, a pin carried by the member and received in the groove and recess to lock the disk and annulus together, means engaged by the foot to retain the annulus in set position and means for engaging the foot to simultaneously release the annulus from engagement with the disk and with the foot-retaining means.

27. The combination in a circuit-breaker, with stationary terminals and movable contacts, of a rotatable shaft, a disk secured thereupon, an annulus supported upon and rotating independently of the disk, means connecting the annulus and contacts, the annulus provided with a recess formed in the bore thereof, the disk provided with a peripheral inclined groove in communication with the recess, a sliding member embracing the disk and annulus, the sliding member being cut away to receive the shaft, a pin carried by the sliding member and receivable in the recess and groove, means engaged by the sliding member for retaining the annulus in set position, and means engaging the sliding member for releasing it from the retaining means and permitting it to rotate freely on the disk.

28. The combination with a plurality of terminals and movable contacts engaging the terminals, of a suitably-supported rotatable member connected with the contacts and having a slot formed therein, a sliding member carried by the rotatable member, a foot on the sliding member receivable in the slot in the rotatable member and normally partially protruding therefrom, means engaged by the foot

for retaining the rotatable member in set position and means for releasing the sliding member.

29. The combination with a plurality of terminals and contacts movable toward and from the terminals, of a rotatable means connected with the contacts, a sliding member, resilient means connecting the sliding member with the rotatable means, the sliding member normally extending beyond the rotatable means, means for engaging the sliding member to retain the rotatable means in set position and means for releasing the sliding member.

30. The combination with a plurality of terminals and movable contacts adapted to engage the terminals, of a rotatable means connected with the contacts, a sliding member carried by the rotatable means, a spring-pressed pin over which the sliding member rides and by which it is held and means for releasing the sliding member.

31. The combination in a circuit-breaker, with a plurality of terminals, of insulated blocks, to which the terminals are secured, a casing, means securing the insulated blocks to the casing, suitably-supported swinging bars, arms secured to and insulated from the swinging bars, contacts carried by the arms and engaging the terminals, a rotatably-supported member, links pivotally connecting the swinging bars and the rotatable member, means for manually rotating the member in one direction, means for automatically retaining the member at one limit of its movement and means operating to release the rotatable member to permit its free rotation in the opposite direction.

32. The combination in a circuit-breaker, with a plurality of terminals, of a suitably-supported recessed swinging arm, an insulated sleeve received in the recess, a carrying-arm received in the insulated sleeve, means for securing the sleeve to the swinging arm, contacts secured to the carrying-arm, means for drawing the contacts into engagement with the terminals, means for retaining the contacts in such position and means for releasing the contacts.

33. In a circuit-breaker, the combination with stationary terminals, and contacts movable toward and from the terminals, a suitably-journaled shaft, a handle thereon, means carried by the shaft and connected with the contacts for actuating the latter, means automatically tending to force the contacts away from the terminals, and resilient means independent of the automatic means, the resilient means secured to the shaft for returning it to one limit of its movement independently of the movement of the contacts.

34. In a circuit-breaker, the combination with terminals and contacts adapted to removably engage the terminals, of a shaft, a disk secured thereon, a rotatable member connected with the disk, means connecting the rotatable member and the contacts, means for locking the disk and rotatable member together when the shaft is turned in one direction, means for retaining the rotatable member at one limit of its movement, means for automatically releasing the rotatable member and means for limiting the rotary movement of the shaft.

35. The combination in a circuit-breaker with terminals and contacts movable toward and from the terminals, of a suitably-journaled shaft, means mounted on the shaft and connected with the contacts for actuating the latter, means tending to rotate the shaft in one direction, a pin projecting transversely of the shaft, and a projection on one of the journals of the shaft against which the pin impinges to limit the rotary movement of the shaft.

36. An automatic circuit-breaker comprising suitably-supported and insulated terminal blocks, suitably-supported contacts movable toward and from the blocks, yielding means constantly tending to force and retain the contacts away from the blocks, a means freely-rotatable in either direction with which freely-rotatable means the contacts are connected, a second rotatable means on which the freely-rotatable means is supported, locking means for retaining the two rotatable means together for bringing the contacts into engagement with the terminals and for holding the contacts in such position and electroresponsive means adapted to engage the locking means and release the rotating means from each other irrespective of the operation of the supporting rotary means.

810,752. SPOUT FOR COLLECTING CRUDE TURPENTINE. JAMES I. HATFIELD, Douglas, Ga., assignor of one-half to Joshua H. Dent, Douglas, Ga. Filed Nov. 10, 1905. Serial No. 286,766.

Claim.—As an improved article of manufacture, a seamless sheet-metal spout for gathering turpentine, comprising a body portion having a curved upper edge from which extends a concave portion, the curved edge and concaved portion being adapted to lie against the surface of a tree, a part which projects from the lower part of the concave portion, and raised sides which converge from the upper edge downward, and perforations through the upper portion of the plate, substantially as shown.

810,753. SPIKE-PROTECTOR FOR SHOE-SPIKES. WALLACE O. HATFIELD, Syracuse, N. Y., assignor of one-third to Tobias C. Griffin. Filed Apr. 13, 1905. Serial No. 255,175.

Claim.—1. In combination with the heel and toe spikes of a shoe, heel and toe pads having recesses receiving said spikes, an elastic strap connecting said pads, said pads being recessed to receive said strap and means for positively securing the ends of said strap in said pads.

2. In a protector for spike-shoes having heel and toe spikes, the combination of separate heel and toe pads applied to the spikes and frictionally held thereby, an elastic strap connecting said pads in a plane above their lower surfaces, said pads being formed with longitudinal kerfs to receive the ends of said strap, and a securing element positively uniting the ends of said strap to said pads and extending through the kerfed sections of said pad and said strap held therebetween.

3. A protector for spiked shoes embodying elastic heel and toe pads interfitting over the heel and toe spikes of said shoes and held thereupon by frictional resistance, and an elastic strap connecting said pads and increasing said frictional resistance with said heel and toe pads by its tension.

4. A protector for spiked shoes embodying elastic heel and toe pads interfitting over the heel and toe spikes of said shoes, said pads being suitably recessed to receive said spikes and being held upon said spikes solely by frictional resistance, and an elastic connecting-strap positively secured to each of said pads and increasing said frictional resistance of said pads with said spikes by its tension.

810,754. HUB. JOHN C. HAWKINS, Loudonville, Ohio. Filed May 19, 1905. Serial No. 261,233.

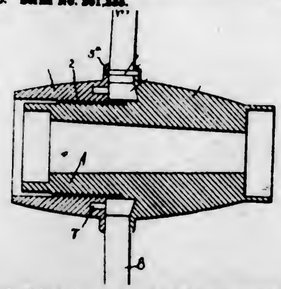

Claim.—1. A hub comprising an internally-threaded member, a second member of substantially the same diameter provided with an externally-threaded cylindrical portion adapted to enter and engage said internally-threaded member, tapering spacers, dowel-pins carried by said spacers, said pins entering recesses formed in the internally-threaded member, said spacers being adapted to form sockets for the spokes and means for securing said members into an engaging position.

2. A hub comprising an internally-threaded member having an annular flange, an externally-threaded member also provided with an annular flange, tapering spacers having dowel-pins projecting therefrom, said pins entering recesses formed in the internally-threaded member, said spacers forming sockets for the spokes and bolts which pass through the annular flanges of both the externally-threaded and the internally-threaded members to bind said members into position.

810,755. HORSESHOE-CALK. NELS WEBB, Harmony, Minn. Filed June 15, 1905. Serial No. 265,204.

Claim.—1. The combination, with a horseshoe provided on its heel with a threaded extension, of a calk having a socket to receive said extension, and a lock-nut for said extension, substantially as described.

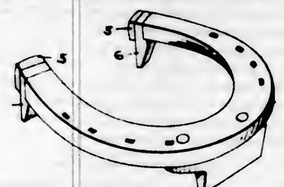

2. The combination, with a horseshoe having its heel terminating in a squared shank, of a calk having a wedge-shaped wearing-surface and a socket to receive said shank, said calk having a recess on one side forming a shoulder and a bearing-surface for the heel of the shoe, and means for securing said calk on said shank.

810,756. HYDRAULIC SUPPORT FOR DEFLECTING NOZZLES. GROSVEN J. HENRY, Jr., San Francisco, Cal., assignor of one-half to The Pelton Water Wheel Company, San Francisco, Cal., a Corporation of California. Filed Oct. 15, 1904. Serial No. 228,560.

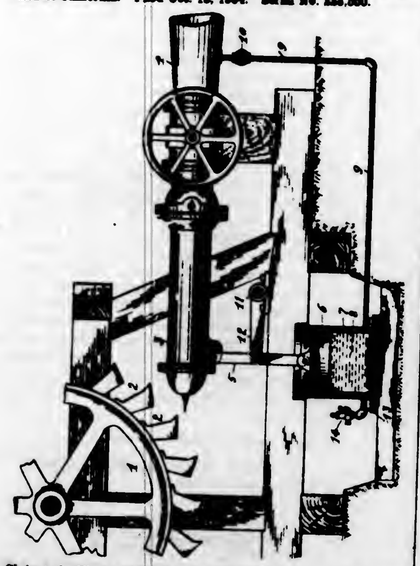

Claim.—1. The combination with a deflectable nozzle for water-wheels, of hydraulic means for supporting the said nozzle when at rest, and mechanism for controlling the position of the nozzle

2. The combination with a deflectable nozzle for water-wheels, of a cylinder, a piston working therein, a liquid-support within the cylinder for the piston, of connection between the piston and the nozzle, a rock-shaft, and means for imparting the movement of the rock-shaft to the nozzle in order to adjust the position thereof.

3. The combination with a deflectable nozzle, of a main or line pipe to which the same is pivoted, a pressure-cylinder, of connection between the said cylinder and the main or line pipe, a piston working within the cylinder, connection between the piston and the nozzle, and means for imparting movement to the said nozzle so as to place the stream discharged therefrom in whole or in part onto the buckets of a water-wheel.

4. The combination with a deflectable nozzle, of a main or line pipe to which the same is pivoted, a pressure-cylinder, of means for admitting fluid under pressure thereto, a piston working within the said cylinder, connection between the piston and the nozzle, and means for moving the nozzle so as to direct the stream discharged therefrom in whole or in part onto the buckets of a water-wheel.

5. The combination with a deflectable nozzle, of a main or line pipe to which the same is pivoted, a pressure-cylinder, of connection between said cylinder and the main or line pipe for admitting fluid thereto under pressure, a piston working within the cylinder, a valved outlet for the said cylinder, connection between the piston and the nozzle, and means for adjusting the position of the nozzle so as to direct the stream discharged therefrom in whole or in part onto the buckets of a water-wheel.

6. The combination with a water-wheel, of a main-line supply-pipe, a deflectable device located at the outer end of the supply-pipe for changing the position of the jet issuing therefrom, of hydraulic means for balancing said device, and mechanism for controlling the position of the deflectable device.

7. The combination with a water-wheel, of a main-line supply-pipe, a deflectable device located at the end of the supply-pipe for changing the position of the jet issuing therefrom, and fluid-actuated means for balancing said deflectable device.

8. The combination with a water-wheel, of a main-line supply-pipe, a deflectable nozzle pivoted to the outer end of the supply-pipe, said nozzle being rigid throughout its length, mechanism for varying the position of said nozzle to direct the jet issuing therefrom onto or off the buckets of the water-wheel, and fluid-actuated means for balancing the said nozzle.

810,757. RAIL-JOINT. JOSEPH B. HENSLEY, Beeville, Tex. Filed Feb. 25, 1905. Serial No. 247,268.

Claim.—In a rail-joint, a pair of rails assembled in endwise relation, a splicing member having a longitudinal channel to receive the meeting ends of the rails; said channel being of an inner cross-sectional contour conforming to that of the rails, and presenting a base-plate and a pair of side plates formed integral therewith, one of said side plates being of a thickness equaling the width of the adjacent overhanging portion of the rail-head and the other side plate of a relatively increased thickness throughout its entire surface area and having at its upper edge an upwardly-projecting and longitudinally-extending portion or flange designed to bear upon the adjacent side face of the rail-head, the side and base plates being designed to contact throughout their entire inner surface area with the corresponding faces of the rails.

810,758. BUTTON-HOLDER. AUSTIN M. HILL, Rockville Center, N. Y. Filed Feb. 1, 1905. Serial No. 243,695.

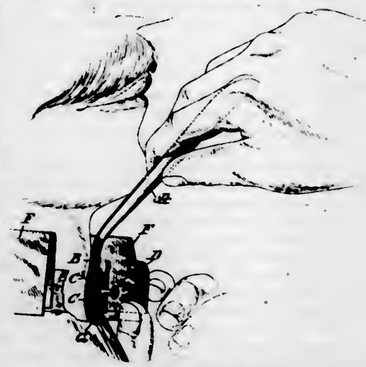

Claim.—1. As a new article of manufacture a holder for collar-buttons, consisting of a handle, a reduced shank, an approximately flat disk-shaped head on the shank and having in its front face a shallow circular recess with a central depression for receiving the base or back of a collar-button, and a reaming-lug on the peripheral edge of the disk opposite the handle, the handle standing at an angle to the shank, being inclined in direction of the recessed face of the head, whereby provision is made for inserting the shank and head between the throat of the wearer and the shirt-band so as to engage

the back or base of the collar-button with the recess of the head to hold the same and thereby facilitate the buttoning of the collar to the collar-button, as set forth.

2. As a new article of manufacture a holder for collar-buttons, comprising an approximately flat disk-shaped head having a shallow circular recess in its front face with a central depression for receiving the base or back of a collar-button and provided with a reaming-lug projecting from its peripheral edge, and a handle inclined in direction of the recessed face of the head, as set forth.

810,759. VALVE FOR COMPOUND AIR-COMPRESSORS. BENJAMIN HILL, Norwalk, Conn. Filed Jan. 24, 1905. Serial No. 242,496.

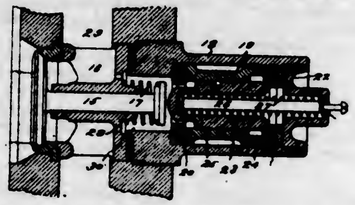

Claim.—1. A valve for the intake-passage of an air-compressor having a valve-disk adapted to open and close the passage, a plunger movable toward and from the disk, said plunger having a surface at its inner end that is exposed to the air-pressure in the intake-passage when the plunger is at its inner limit, and a larger surface back from its inner end that is exposed to the air-pressure in the intake-passage when the plunger is moved from its inner limit, whereby the pressure against the smaller surface will tend to move the plunger away from the disk and pressure against the larger surface will tend to hold the plunger away from the disk, and a spring arranged to force the plunger against the air-pressure when the pressure drops below normal and cause the plunger to interfere with the ordinary action of the disk, substantially as specified.

2. A valve for an air-compressor having an inwardly-opening valve-disk, a spring tending to draw the disk to its seat, a plunger movable toward and from the disk, said plunger having surfaces with areas of different extent arranged to be subject to the air-pressure on the intake side of the disk, the smaller surface only being subject to the air-pressure when the plunger is at its inner limit and both the smaller and larger surfaces being subject to the air-pressure when the plunger is back from its inner limit, and a spring arranged to force the plunger against the air-pressure when the pressure drops below normal and cause the plunger to interfere with the ordinary action of the disk, substantially as specified.

3. A valve for an air-compressor having a valve-disk, a plunger movable toward and from the disk and having surfaces with areas of different extent arranged to be subject to the air-pressure on the intake side of the disk, a seat at the inner limit of movement of the plunger against which the inner end of the plunger seats and leaves only the smaller surfaces exposed to the air-pressure when the plunger is at its inner limit, a seat at the outer limit of movement of the plunger against which the outer end of the plunger seats so that the air-pressure will be exerted against the smaller and the larger surfaces of the plunger when the plunger is at its outer limit, and a spring arranged to force the plunger against the air-pressure when the pressure drops below normal and cause the plunger to interfere with the ordinary action of the disk, substantially as specified.

4. A valve for an air-compressor having a valve-disk, a plunger movable toward and from the disk, said plunger having a seating edge at its inner end that is less in diameter than the diameter of the body of the plunger, and a seating-flange at its outer end that is greater in diameter than the diameter of the body of the plunger, a seat against which the inner edge seats when the plunger is at its inner limit, a seat against which the outer flange seats when the plunger is at its outer limit, and a spring arranged to thrust the plunger against the air-pressure when the pressure drops below normal and cause the plunger to interfere with the ordinary action of the disk, substantially as specified.

5. A valve for an air-compressor having a valve-disk, a spring tending to draw the disk to its seat, a case, a sleeve in the case, a seat at each end of the sleeve, a plunger movable in the sleeve toward and from the seats and subject to the air-pressure on the intake side of the disk, said plunger having a seating edge at its inner end and a larger seating-flange at its outer end, and a spring tending to thrust the plunger against the air-pressure toward the disk and cause an interference with the ordinary action of the disk, substantially as specified.

6. A valve for an air-compressor having a valve-disk, a spring tending to draw the disk to its seat, a case, a sleeve in the case, a packing at each end of the sleeve, a nut holding the sleeve and packings in position, a plunger movable in the sleeve toward and from the packings, said plunger being subject to the air-pressure on the intake side of the disk and having a reduced seating edge at its inner end adapted to seat against the inner packing and an enlarged seating-flange at its outer end adapted to seat against the outer packing, and a spring tending to thrust the plunger against the air-pressure toward the disk, substantially as specified.

810,760. JAR-CLOSURE. EDGAR C. HILL, Columbus, Ohio. Filed Sept. 28, 1905. Serial No. 280,603.

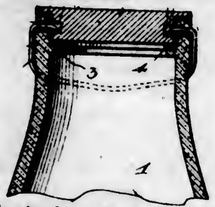

Claim.—1. In a jar-closure, the combination with the neck of a jar having formed therein oppositely-disposed apertures and an inwardly-projecting annular shoulder, of a cap adapted to fit into said neck and into engagement with the shoulder therein, said cap having oppositely-disposed recesses formed in its sides to aline with the apertures in said neck, an elastic washer arranged between said cap and shoulder, a bail-shaped locking device having right-angularly-bent locking-fingers formed on its ends to engage the alined apertures and recesses in said neck and cap, to clamp said cap into tight engagement with said washer and shoulder, substantially as described.

2. In a jar-closure, the combination with the neck of a jar having formed therein oppositely-disposed apertures and an inwardly-projecting annular shoulder, of a flanged cap having formed therein oppositely-disposed recesses, said cap being adapted to fit within said neck and to engage said shoulder, a bail-shaped locking device having right-angularly-bent locking-fingers formed on its ends to engage the alined slots and recesses in said cap and neck, laterally-bent cam projections formed on the ends of said fingers whereby when said bail is turned downwardly said laterally-bent ends will engage the lower walls of the recesses in said cap and force the latter downwardly into engagement with the washer and shoulder of the jar, substantially as described.

810,761. GUN-SIGHT. LUCIAN HILLABRANDT, Johnstown, N. Y. Filed Dec. 6, 1904. Serial No. 235,622.

Claim.—1. A gun-sight, comprising a ring-shaped member, having a threaded projection, a nut on the said projection and provided with a plurality of openings, and a sight held within the ring-shaped member.

2. In a gun-sight, the combination with the breech-bolt, of a ring-shaped member provided with a projection, an adjustable member on the projection and engaging the breech-bolt, a sight within the ring-shaped member, and a spring exerting downward tension on the said ring-shaped member.

3. The combination with a gun having a vertical opening, of a sight comprising a ring-shaped member having a threaded projection extending into the opening of the gun, a nut on the threaded projection of the ring-shaped member, means for locking the nut in position, and a sight held within the ring-shaped member.

4. In a gun-sight, the combination with the breech-bolt of a gun, of a sight provided with a projection, means on the projection and engaging the breech-bolt for adjusting the said sight, and means for locking the adjusting means in position.

5. In a gun-sight, the combination with the breech-bolt of a gun provided with an opening, of a sight provided with a threaded projection entering the opening of the breech-bolt, a nut on the threaded projection and engaging the breech-bolt, and a spring secured to the breech-bolt and to the sight.

6. In a gun-sight, the combination with the breech-bolt of a gun having an opening therein and provided with a lug, of a ring-like sight having a threaded projection entering the opening of the breech-bolt, a nut on the threaded projection and provided with a plurality of openings for receiving the lug of the breech-bolt, and a spring secured to the sight and to the breech-bolt.

7. In a gun-sight, the combination with the breech-bolt of a gun provided with an opening, and a lug adjacent to said opening, of a sight in the form of a ring-like body and having a threaded projection entering the opening of the breech-bolt, an auxiliary sight removably held in the body, a nut on the threaded projection and provided with a plurality of openings, and a spring having one end secured to the breech-bolt and its other end to the main sight.

8. A gun-sight, comprising a main sight in the form of a ring-like body and having an annular rib on its inner face, and an auxiliary disk sight having an opening therein, said disk sight being made thin and adapted to be sprung into place in the main sight.

810,762. FENDER FOR CARS AND OTHER VEHICLES. GEORGE HITWOOD, Laconia, N. H. Filed June 24, 1905. Serial No. 266,830.

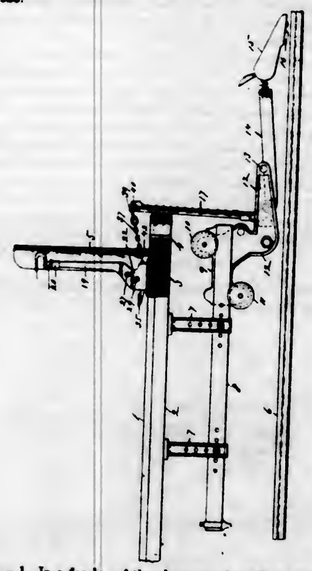

Claim.—1. In a fender of the character described, pulleys supported on the platform of the car; a chain extending over said pulleys to the bumper-guard and connected thereto; a pedal within reach of the foot of the motorman; means intermediate of the pedal and chain whereby the chain is held at any desired point by releasing the pedal; and a lifting-rod connected with the chain and within reach of the motorman, whereby the chain may be lifted, released, held at any point or dropped entirely, for the purpose set forth.

2. In a fender of the character described, a standard supported on the platform of the car; a lifting-rod slidingly supported in the standard and provided with a handle adapted to rest on the upper end of said standard; a pair of grooved pulleys disposed one above the other in the standard, one of said pulleys being provided with sprockets on the inner faces of its flanges; a chain extending from the lifting-rod over the pulleys and into engagement with said sprockets and with its opposite end secured to the bumper-guard, and means for retaining the sprocketed pulley at any point and releasing the same, for the purpose set forth.

3. In a fender of the character described, a standard supported on the platform of the car; a lifting-rod slidingly supported in the standard and provided with a handle adapted to rest on the upper end of said standard; a pair of grooved pulleys disposed one above the other in the standard, the lower pulley being provided with sprockets on its inner faces; a ratchet-wheel rigid with the lower pulley; a notched pedal held normally with its notch in engagement with the ratchet; and a chain extending from the lifting-rod over the pulleys and into engagement with the sprockets, and thence to the bumper-guard to which it is connected, for the purpose set forth.

4. In a fender of the character described, a standard supported on the platform of the car; a lifting-rod slidingly supported in the standard and provided with a handle adapted to rest on the upper end of said standard; a pair of grooved pulleys disposed one above the other in the standard, the lower pulley being provided with sprockets on its inner faces; a ratchet-wheel rigid with the lower pulley; a notched pedal held normally with its notch in engagement with the ratchet; and a chain extending from the lifting-rod over the pulleys and into engagement with the sprockets, and thence to the bumper-guard to which it is connected, the lower pulley being set farther from the dashboard than the upper pulley, and the side of the standard next the dashboard being recessed near the lower pulley, for the purpose set forth.

5. In a fender of the character described, a standard supported on the platform of the car; a lifting-rod slidingly supported in the standard and provided with a handle adapted to rest on the upper end of said standard, a pair of grooved pulleys disposed one above the other in the standard, one of said pulleys being provided with sprockets on the inner faces of its flanges; a chain extending from the lifting-rod over the pulleys and into engagement with said sprockets and with its opposite end secured to the bumper-guard; and means for retaining the sprocketed pulley at any point and releasing the same, said standard being vertically channeled on the side facing the dashboard, and the lifting-rod and chain being adapted to slide in the channel, for the purpose set forth.

810,763. FENDER FOR CARS AND OTHER VEHICLES. GEORGE HITWOOD, Laconia, N. H. Filed June 24, 1905. Serial No. 266,831.

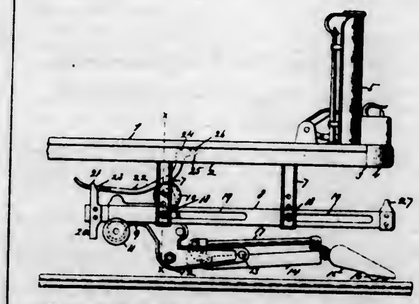

Claim.—1. In a fender of the character described, substantially horizontal supporting-rails sustained by and under the car-body and adapted to slide horizontally with relation to the car-body; and a fender sustained by the supporting-rails and adapted to slide horizontally under the car with relation to said rails, whereby the available rearward movement of the fender under and with relation to the car-body comprises the sum of the possible movement of the fender with relation to the supporting-rails and the possible movement of the supporting-rails with relation to the car-body.

2. In a fender of the character described, substantially horizontal supporting-rails sustained by and under the car-body and adapted to slide horizontally with relation to the car-body; a fender sustained by the supporting-rails and adapted to slide horizontally under the car with relation to said rails, whereby the available rearward movement of the fender under and with relation to the car-body comprises the sum of the possible movement of the fender with relation to the supporting-rails and the possible movement of the supporting-rails with relation to the car-body; and mechanism for detachably locking the supporting-rails at the extreme forward ends of their possible movement, for the purpose set forth.

3. In a fender of the character described, hangers secured to and extending from the under side of the car-body; substantially horizontal supporting-rails provided with longitudinal slots 19; means intermediate of the hangers and supporting-rails and extending into said slots, whereby said supporting-rails are slidingly connected with and sustained by the hangers; and a fender sustained by the supporting-rails and adapted to slide horizontally under the car with relation to said rails, whereby the available rearward movement of the fender under and with relation to the car-body comprises the sum of the possible movement of the fender with relation to the sup-

porting-rails and the possible movement of the supporting-rails with relation to the car-body.

4. In a fender of the character described, hangers secured to and extending from the under side of the car-body; substantially horizontal supporting-rails provided with longitudinal slots 19; means intermediate of the hangers and supporting-rails and extending into said slots whereby said supporting-rails are slidingly connected with and sustained by the hangers; mechanism for detachably locking the supporting-rails at the extreme forward ends of their possible movement; and a fender sustained by the supporting-rails and adapted to slide horizontally under the car with relation to said rails, whereby the available rearward movement of the fender under and with relation to the car-body comprises the sum of the possible movement of the fender with relation to the supporting-rails and the possible movement of the supporting-rails with relation to the car-body.

5. In a fender of the character described, hangers secured to and extending from the under side of the car-body; the substantially horizontal supporting-rails 8 provided with longitudinal slots 19 whereby said rails are slidingly connected with and sustained by the hangers; a folding fender supported slidingly by said rails by means of suitable rolls or wheels moving on the rails; projections extending up from the rear portions of the supporting-rails; and swinging arms provided with holes near their outer ends, pivotally supported by the car-body and adapted to extend down over and in the path of the upper wheels or rolls, and to engage with the projections by means of said holes, substantially as and for the purpose set forth.

810,764. PIPE-CUTTER. EDWARD H. HOLLINGSHEAD and CHARLES P. JENNINGS, Bradford, Pa. Filed Apr. 24, 1905. Serial No. 257,206.

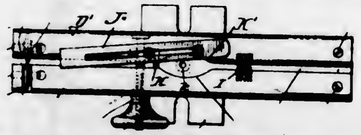

Claim.—1. A pipe-cutter comprising a pair of non-rotatable cutter-arms pivoted to a suitable fixed support, cutters mounted on said cutter-arms and means for causing said cutters to approach one to the other, substantially as described.

2. A pipe-cutter comprising two parallel non-rotatable cutter-arms pivoted to a suitable fixed support, rotary cutters mounted on said cutter-arms and means for causing said cutters to approach one to the other, substantially as described.

3. A pipe-cutter comprising a base-plate, cutter-arms secured to said base-plate and parallel thereto, means for securing said base-plate to a fixed support, cutters mounted on said cutter-arms and means for causing said cutters to approach one to the other, substantially as described.

4. A pipe-cutter comprising a stationary base-plate, non-rotatable cutter-arms pivoted to said base-plate, cutters mounted in said cutter-arms and means for causing said cutters to approach one to the other, substantially as described.

5. A pipe-cutter comprising a base-plate having a longitudinal slot in one end thereof, cutter-arms mounted on said base-plate and parallel thereto, cutters carried by said cutter-arms and means for causing said cutters to approach one to the other, substantially as described.

6. A pipe-cutter comprising a base-plate having a segmental slot in one end thereof, cutter-arms mounted on said base-plate, cutters carried by said cutter-arms and means for causing said cutters to approach one to the other, substantially as described.

7. A pipe-cutter comprising a fixed base-plate having a slot therein, cutter-arms pivoted to said base-plate, cutters carried by said cutter-arms and means for causing said cutters to approach one to the other, substantially as described.

8. A pipe-cutter comprising a base-plate having a longitudinal slot in one end thereof, said slot extending diagonally to the perpendicular of said base-plate, cutter-arms, and means for causing said cutters to approach one to the other.

9. A pipe-cutter comprising a base-plate, a pair of cutter-arms located in the same horizontal plane and mounted on said base-plate, cutters carried by said cutter-arms, said cutters having their axes located in a plane different from that of said cutter-arms, and means for causing said cutters to approach one to the other, substantially as described.

10. A pipe-cutter comprising a base-plate, cutter-arms mounted thereon, cutters carried by said cutter-arms, said cutters having their axes located in a plane diagonal to the plane of said cutter-arms, and means for causing said cutters to approach one to the other, substantially as described.

11. A pipe-cutter comprising a base-plate having a slot therein, cutter-arms mounted on said base-plate and parallel thereto, said cutter-arms being separated by a space, said space being in alinement with said slot, cutters carried by said cutter-arms and means for causing said cutters to approach one to the other, substantially as described.

12. In a pipe-cutter, the combination with the base-plate of cutter-arms parallel thereto, each of said arms being pivoted at one end to said base-plate, cutters mounted in the opposite ends of said cutter-arms and means intermediate the ends thereof for causing said cutters to approach one to the other, substantially as described.

13. A pipe-cutter comprising a base-plate, cutter-arms pivoted to said base-plate, cutters carried thereby, a bolt extending through said cutter-arms and adapted to draw the same together, and a hand-operated nut on the outer end of said bolt.

14. In a pipe-cutter, the combination with the cutter-arms and the cutters carried thereby, of a bolt rigidly held in one of said arms and passing loosely through the other and a nut on the outer end of said bolt, substantially as described.

15. In a pipe-cutter, the combination with the base-plate, the cutter-arms and the cutters, of a bolt passing through said cutter-arms and adapted to draw the same together and a spring adapted to force said arms apart, substantially as described.

16. In a pipe-cutter, the combination with the base-plate, the cutter-arms and the cutters, of a bolt passing through said arms, a spring located between said arms and a stop limiting the movement thereof, substantially as described.

17. In a pipe-cutter, the combination with the base-plate, the cutter-arms and the cutters, of means for drawing said arms together and a gage carried by one of said arms, substantially as described.

810,765. POTATO-DIGGER. JACOB JOHNSEN and EDWARD A. PRESCH, Hamburg, N. Y. Filed Dec. 21, 1904. Serial No. 237,789.

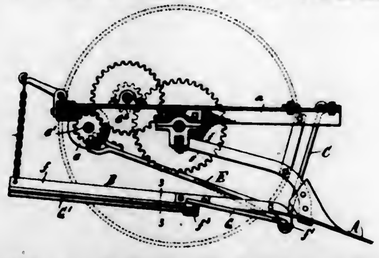

Claim.—1. A shaking separator for potato-diggers provided with longitudinal spaced separating-tines arranged in two sets, one in advance of the other, the tines of the front set being arranged nearer together than those of the rear set and having their rear ends elevated above the front ends of the rear tines, substantially as set forth.

2. A shaking separator for potato-diggers comprising a single rigid frame, and longitudinal spaced separating-tines supported by said frame and arranged in two sets, one in advance of the other, the tines of the front set being arranged nearer together than those of the rear set and having their ends elevated above the front ends of the rear tines, substantially as set forth.

3. In a potato-digger, a shaking separator comprising longitudinal spaced separating-tines arranged in two sets, one in advance of the other, the tines of the rear set being spaced farther apart than those of the front set and extending forwardly beneath the rear ends of the front tines, a single rigid frame supporting both sets of separating-tines, and means for shaking said frame, substantially as set forth.

4. The combination of a separator for potato-diggers having longitudinal spaced separating-tines arranged in two sets, one in advance of the other, the tines of the rear set being fixed to said separator, means for vibrating said separator, and means for rocking said front set of tines in addition to their movement with the separator, substantially as set forth.

5. In a potato-digger, the combination of a rigid frame having

a front cross-bar and a cross-bar intermediate of its ends, a set of longitudinal spaced separating-tines secured to and extending rearwardly from each cross-bar, the tines of the front set being spaced nearer together than those of the rear set and having their front ends elevated above the front ends of the rear tines, and means for shaking said separator in a forward and rearward direction, substantially as set forth.

6. The combination of a separator for potato-diggers having longitudinal spaced separating-tines arranged in two sets, one in advance of the other, the tines of said rear set being fixed to said separator and spaced farther apart than the tines of the front set, means for vibrating said separator, and means for rocking said front set of tines in addition to their movement with the separator, substantially as set forth.

7. The combination of a separator-frame, longitudinal spaced separating-tines carried thereby and arranged in two sets, one in advance of the other, the tines of the rear set being fixed to the separator-frame and the tines of the front set being mounted thereon to oscillate vertically, means for vibrating said separator, and means for oscillating said front set of tines, substantially as set forth.

8. The combination of a separator-frame having a fixed bar and a rocking cross-bar adjacent to its front end, longitudinal separating-tines secured to said fixed cross-bar, longitudinal separating-tines secured to said rocking cross-bar, means for vibrating said separator-frame, and means for rocking said front cross-bar, substantially as set forth.

9. The combination of a separator-frame having a fixed cross-bar and a front cross-bar journaled to rock on said frame, longitudinal separating-tines secured to said fixed and rocking cross-bars, swinging supporting-links for said separator-frame fixed to said front cross-bar, and means for vibrating said separator, whereby said front cross-bar is rocked on said frame, substantially as set forth.

810,766. DRIVING MECHANISM. HUGO JOHN, Erfurt, Germany. Filed Jan. 6, 1905. Serial No. 239,999.

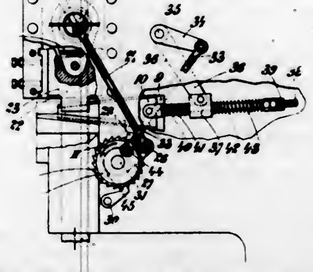

Claim.—1. An intermittent driving mechanism for machine-tools, comprising a pair of eccentrics arranged at an angle of one hundred and eighty degrees with respect to each other, slide members for transmitting the movement of the eccentrics to the tool, and a pair of wedges operating at an angle with respect to the direction of the movement of the tool and interposed between the said members and the tool-holder, one of said wedges acting alternately as a lock and the other of said wedges acting alternately as a driving means for the tool.

2. An intermittent driving mechanism for machine-tools, comprising a pair of eccentrics arranged at an angle of one hundred and eighty degrees with respect to each other, slide members for transmitting the movement of the eccentrics to the tool, a pair of wedges operating at an angle with respect to the direction of the movement of the tool and interposed between the said members and the tool-holder, one of said wedges acting alternately as a lock and the other of said wedges acting alternately as a driving means for the tool, and means for operating the wedges.

3. A driving mechanism for machine-tools, comprising a pair of eccentrics arranged at an angle of one hundred and eighty degrees with respect to each other, blocks inclosing said eccentrics, slide members for guiding said blocks and adapted to transmit the movement of the eccentrics to a tool-holder, and a pair of wedges interposed between the members and the tool-holder, moving in a direction at an angle with respect to the direction of the movement of the tool-holder, one of said wedges acting alternately as a lock and the other of said wedges alternately acting as a driving means during the movement of the tool-holder.

4. A driving mechanism for machine-tools, comprising a pair of eccentrics arranged at an angle of one hundred and eighty degrees with respect to each other, blocks inclosing said eccentrics, slide members for guiding said blocks and adapted to transmit the movement of the eccentrics to a tool-holder, a pair of wedges interposed between the members and the tool-holder, moving in a direction at an angle with respect to the direction of the movement of the tool-holder, one of said wedges alternately acting as a lock and the other of said wedges alternately acting as a driving means during the movement of the tool-holder, and means for operating the wedges.

5. An intermittent driving mechanism for machine-tools comprising a pair of wedges moving in a direction at an angle with respect to the direction of movement of a tool-holder, one of said wedges alternately acting as a lock and the other as a driving means for the holder.

6. An intermittent driving mechanism for machine-tools, comprising a pair of wedges moving in a direction at an angle with respect to the direction of movement of a tool-holder, one of said wedges alternately acting as a lock and the other as driving means for the holder, and means for operating said wedges.

7. An intermittent driving mechanism for machine-tools, comprising means for operating a tool-holder, of a pair of wedges operating between said means and tool-holder and moving in a direction at an angle with respect to the direction of the movement of the tool-holder, one of said wedges alternately acting as a lock and the other of said wedges alternately acting as a drive for the tool-holder during the operation thereof.

8. An intermittent driving mechanism for machine-tools, comprising means for operating a tool-holder, of a pair of wedges operating between said means and tool-holder and moving in a direction at an angle with respect to the direction of the movement of the tool-holder, one of said wedges alternately acting as a lock and the other of said wedges alternately acting as a drive for the tool-holder during the operation thereof, and means for operating the said wedges.

9. An intermittent driving mechanism for machine-tools, comprising a pair of eccentrics, driving-blocks inclosing said eccentrics and operated thereby, and slide members for guiding the said blocks.

10. An intermittent driving mechanism for machine-tools comprising a pair of eccentrics arranged at an angle of one hundred and eighty degrees with respect to each other, slide members for transmitting the movement of the eccentrics to the tool, a pair of wedges operating at an angle with respect to the direction of the movement of the tool and interposed between the said members and a tool-holder, one of said wedges alternately acting as a lock and the other of said wedges alternately acting as a driving means for the tool, and compression-springs for moving the wedges.

11. An intermittent driving mechanism for machine-tools, comprising a pair of eccentrics arranged at an angle of one hundred and eighty degrees with respect to each other, slide members for transmitting the movement of the eccentrics to the tool, a pair of wedges operating at an angle with respect to the direction of the movement of the tool and interposed between the said members and the tool-holder, one of said wedges alternately acting as a lock and the other of said wedges alternately acting as a driving means for the tool, compression-springs for moving the wedges, and operating means for the said springs.

12. An intermittent driving mechanism for machine-tools, comprising a pair of wedges moving in a direction at an angle with respect to the direction of movement of a tool-holder, one of said wedges alternately acting as a lock and the other as a driving means for the holder, springs for moving the wedges, and operating means for the springs.

13. An intermittent driving mechanism for machine-tools, comprising a pair of wedges moving at an angle with respect to the direction of the movement of the tool and acting as a lock and drive for the tool.

14. An intermittent driving mechanism for machine-tools, comprising a pair of wedges moving in a direction at an angle with respect to the direction of movement of the tool and one of said wedges alternately acting as a lock and the other of said wedges alternately acting as a drive for the tool.

15. An intermittent driving mechanism for machine-tools, comprising a pair of wedges operating at an angle with respect to the direction of the movement of the tool and each of said wedges alternately acting as a lock and drive for the tool during the intermittent operation thereof.

16. An intermittent driving mechanism for machine-tools, com-

prising a pair of wedges moving at an angle with respect to the direction of the movement of the tool and acting as a lock and drive for the tool-holder and adapted to automatically withdraw the tool-holder after it has been moved forward, and a tool-holder associating with the said wedges.

17. An intermittent driving mechanism for machine-tools, comprising a pair of wedges moving in a direction at an angle with respect to the direction of movement of the tool and one of said wedges alternately acting as a lock and the other of said wedges alternately acting as a drive for the tool-holder and adapted to automatically withdraw the tool-holder after it has been moved forward, and a tool-holder associating with the said wedges.

18. An intermittent driving mechanism for machine-tools, comprising a pair of wedges operating at an angle with respect to the direction of the movement of the tool and each of said wedges alternately acting as a lock and drive for the tool-holder during the intermittent operation thereof and adapted to automatically withdraw the tool-holder after it has been moved forward, and a tool-holder associating with the said wedges.

810,767. MEAT-CUTTER. ALFRED W. JOHNSON, New Brunswick, N. J. Filed Mar. 3, 1905. Serial No. 248,249.

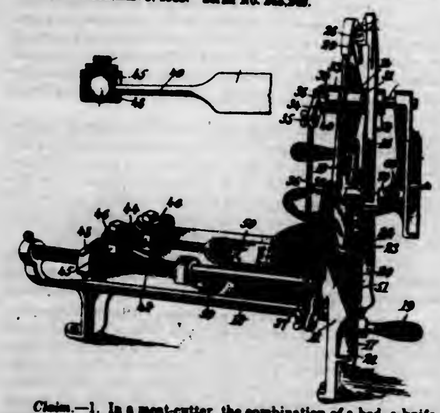

Claim.—1. In a meat-cutter, the combination of a bed, a knife-frame pivotally mounted thereon, and guiding devices for said frame, comprising lugs integrally mounted on the inside of the frame, each lug being provided with a groove, and a shoe having a projection entering said groove and adjustably mounted upon each of said lugs.

2. In a meat-cutter, the combination of a bed, a swinging knife-frame, a blade mounted on said knife-frame, said blade having a cutting edge offset toward the bed, means for preventing the blade from coming into contact with the end of the bed, a shaft by which said frame is pivoted on the machine, a guiding device for the frame above the shaft, and a plurality of guiding devices for the frame below the shaft.

3. In a meat-cutter, the combination of a bed, a knife-frame pivotally mounted thereon, a compressible washer between the knife-frame and the stationary part of the bed, guiding devices for the frame mounted on opposite sides of the shaft, said guiding devices comprising a plurality of lugs integrally mounted on the inside of the knife-frame, each lug being provided with a groove, a shoe having a projection entering said groove and adjustably mounted upon each one of said lugs, a roller mounted on each of said shoes, and tracks rigidly mounted with respect to the bed for said rollers.

4. In a meat-cutter the combination of a bed, a swinging knife-frame, a blade mounted on said knife-frame, and means for preventing the cutting edge of the blade from coming into contact with the end of the bed, said means comprising a rib on the bed below the end thereof and adapted to engage with the blade at a point beyond its cutting edge.

5. In a meat-cutter, the combination of a frame, a bed, a swinging knife-frame, a blade mounted on said knife-frame, and means for preventing the cutting edge of the blade from coming into contact with the end of the bed, said means comprising a rib integrally mounted on the frame and projecting beyond the end thereof, said rib being segmental in shape and drawn upon the arc of a circle struck from the pivotal point at which the knife-frame is suspended as a center and below the lowest point of the meat-trough.

6. A cutting-machine having a frame, a bed, a movable cutter and a rib integral with the frame mounted below the end of the bed in position to engage the cutter and keep its edge from the end of the bed, said rib extending beyond the end of the bed.

7. In a meat-cutter, the combination of a bed, a frame upon which said bed is mounted, a shaft mounted on said frame, a knife-frame mounted upon said shaft provided with a blade, means for forcing said knife toward said first-mentioned frame, a compressible washer between the knife-frame and the main frame, a pair of tracks located on the main frame, rollers mounted on the knife-frame and engaging said tracks, and a rib mounted on the main frame and projecting beyond the edge of the bed for engaging with the knife and preventing it from coming into contact with the edge of the bed.

8. In a meat-cutter, the combination of a bed having an extension at the front end thereof, a shaft mounted on said extension at the front end thereof, a knife-frame pivotally mounted by means of said shaft, said shaft having a thread upon it on the inside of said extension, a nut engaging with said thread, a feed-screw, an arm for transmitting motion to the feed-screw, and means for preventing the nut from becoming loosened on the shaft; said means comprising a series of notches on the edge of the nut, and projections connected with said arm and engaging said notches.

9. In a meat-cutter, the combination of a bed having an extension at the front end thereof, a shaft mounted on said extension, a knife-frame pivotally mounted by means of said shaft, said shaft having a thread upon it on the inside of said extension, a nut engaging with said thread, a feed-screw, and means for transmitting motion from said shaft to the feed-screw, said shaft also being provided with a flat side, said means comprising a set-screw engaging said flat side, a series of notches on the edge of the nut, and projections engaging said notches.

10. In a meat-cutter, the combination of a bed, a frame upon which said bed is mounted, a shaft mounted on said frame, a knife-frame pivotally mounted by means of said shaft and provided with a blade, means for forcing said knife toward said first-mentioned frame, a compressible washer between the knife-frame and the main frame, a pair of tracks located on the main frame, rollers mounted on the knife-frame and engaging said tracks, a rib mounted on the main frame and projecting beyond the edge of the bed for engaging with the knife and preventing it from coming into contact with the bed, and a guide for a sharpening implement mounted on the knife-frame, said guide being adjustable to and from the knife-frame.

11. In a meat-cutter, the combination of a bed, a swinging knife-frame, a blade mounted on the knife-frame, said blade having a cutting edge offset toward the bed, a shaft on which said frame is pivoted, guiding devices for the frame mounted on opposite sides of the shaft, and a guide for a sharpening implement mounted on the knife-frame and adjustable toward and from the knife-frame.

12. In a meat-cutter, the combination of a bed, a knife-frame, a blade mounted on said knife-frame, said blade having a cutting edge offset toward the bed, means for preventing the edge of the blade from coming into contact with the end of the bed, and a guide for a sharpening implement adjustably mounted on the knife-frame, said guide comprising two ribs placed at an angle to each other for guiding the sharpening implement, and a stud at the meeting-point of said ribs.

13. In a meat-cutter, the combination of a knife-frame, a blade mounted on said knife-frame, and a guide for a sharpening implement adjustably mounted on the said frame, said guide comprising two ribs placed at an angle to each other for guiding the sharpening implement.

14. In a meat-cutter, the combination of a knife-frame, a blade mounted thereon, and a guide for a sharpening implement carried by the knife-frame and adjustable thereon.

15. In a meat-cutter, the combination of a bed, a frame upon which said bed is mounted, a shaft mounted on said frame, a knife-frame pivotally mounted by means of said shaft and provided with a blade, means for forcing said knife toward said first-mentioned frame, a compressible washer between the knife-frame and the main frame, a pair of tracks located on the main frame, rollers mounted on the knife-frame and engaging said tracks, a rib mounted on the main frame and projecting beyond the edge of the bed for engaging with the end of the knife and preventing its cutting part from coming into contact with the bed, a feed-screw, means for transmitting motion from said shaft to said feed-screw, a cross-head connected with said feed-screw and adapted to travel therealong, and two adjustable claws mounted on said cross-head, one of said claws being longer than the other.

16. In a meat-cutter, the combination of a bed having an extension, a shaft mounted on said extension, a cutter-frame pivotally mounted by means of said shaft, a feed-screw, means for transmitting motion from the shaft to the feed-screw, a nut engaging with said feed-screw, a cross-head upon which said nut is mounted, said cross-head being provided with two cups, a nut adapted to be secured to each cup, said cups being provided with spherical interior surfaces, a ball in each of said cups engaging with said spherical surfaces, and a claw rigidly connected with each of said balls, one of said claws being longer than the other.

17. In a cutting device the combination of a V-shaped bed, rotatable toothed wheels mounted in said bed near the front edge thereof and projecting beyond the inner surface of the bed, means for pressing material against said wheels, and a cutting-blade mounted to move past the edge of said bed; said pressing means comprising a plate pivotally mounted with respect to the bed and having a freely-turning grooved roller mounted on the lower side thereof.

18. In a meat-cutter, the combination of a bed, a knife-frame mounted to swing across the edge of the bed, said bed being provided with a stud, a clamping device comprising a plate, and a freely-rotatable grooved roller mounted below said plate, said clamping device being provided with a series of holes by which it is adapted to be pivotally mounted in any desired position upon said stud.

19. In a meat-cutter, the combination of a bed, a stud thereon, and a clamping device comprising a plate and a freely-rotatable roller mounted below said plate, said clamping device being provided with means for pivotally mounting it in any desired position upon the stud.

20. In a cutting device, the combination of a bed, and means for pressing material against the surface thereof, said means comprising a plate pivotally mounted with respect to the bed and having a freely-rotatable roller mounted on the active side thereof.

21. In a cutting-machine, the combination of a knife-frame, a bed, and a clamp comprising a concave plate pivoted to the bed and having a roller, said clamp having a depression for the roller and a projection extending from said depression toward a point below the axis of the roller.

22. In a cutting-machine, the combination of a movable knife-frame, a V-shaped bed having a beveled end, and a cross-head adapted to slide over said end.

23. A cutting-machine having a knife-frame, a flat flexible blade and means for bending said blade and securing it to the frame; said means comprising a raised ledge and an edge parallel to the ledge on the frame.

24. A cutting-machine, comprising a knife-frame having an offset blade, and a flat surface located in a different plane from the blade for guiding a sharpening-stone.

810,768. FERTILIZER-DISTRIBUTER. CHARLES K. JOHNSON, Florence, S. C. Filed Aug. 1, 1905. Serial No. 272,145.

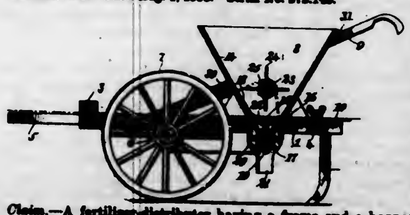

Claim.—A fertilizer-distributer having a frame and a hopper supported thereupon, a feed-plate having openings of different lengths transversely disposed with respect to the direction of advance of the implement, the said plate affording means for closing the lower portion of said hopper, the forward portion of said feed-plate being bent upwardly and lying against the inner face of the wall of said hopper, a feed-roller disposed beneath said feed-opening, means for driving said feed-roller with the advance of said frame, and means for adjusting said feed-plate.

810,769. INHALER. HOWE C. JONES, Westfield, Canada. Filed Nov. 16, 1904. Serial No. 233,204.

Claim.—1. The combination of a mask, and a rim-cushion for the same comprising an elastic rubber annulus which embraces the rim of the mask, and a soft pliable bearing-pad or portion of sponge-rubber permanently attached to said annulus, substantially as set forth.

2. The combination of two separate masks each provided with

inhaling and exhaling valves, and an air and gas mixing valve common to both of said masks and comprising a gas-regulating valve, an air-inlet valve, and an air-regulating valve, substantially as set forth.

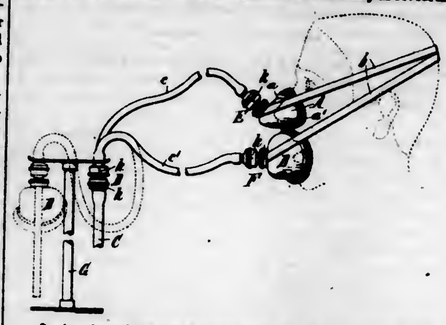

3. An air and gas mixing valve, comprising a casing having a connection for a mask at one end and a gas-supply connection at the opposite end, a valve-controlled air-inlet opening, a gas-nozzle projecting beyond said air-inlet opening in the direction of flow of the gas, and parallel rotatable air and gas regulating valves, substantially as set forth.

4. An air and gas mixing valve, comprising a casing having a connection for a mask at one end and a gas-supply connection at the opposite end, and a valve-chamber having an air-inlet, a gas-nozzle projecting into said valve-chamber beyond said air-inlet, a valve in said chamber surrounding said nozzle and controlling said air-inlet, and a rotatable regulating-valve located outside of said valve-chamber and controlling said air-inlet, substantially as set forth.

5. An air and gas mixing valve, comprising a casing having a valve-chamber provided with an air-inlet, a valve which controls said air-inlet and prevents the escape of gas therethrough, a removable cap at one end of said casing having connections for a plurality of tubes, and a removable cap at the opposite end of said casing having a tube connection, said caps being interchangeable, substantially as set forth.

6. An air and gas mixing valve comprising a casing having tube connections at opposite ends, and an air-inlet valve-chamber provided with an air-inlet, a valve in said chamber controlling said air-inlet, said casing comprising two parts, each having a perforated disk, and means connecting said disks and permitting one casing part to be turned relative to the other to regulate the passage of gas through said perforated disks, substantially as set forth.

7. A tubular valve-casing provided with a perforated cross-head and an enlargement having an annular wall provided with openings, a rotatable disk for regulating the passage of gas through said perforated head, an automatic valve controlling the openings in said annular wall, and a rotatable disk for regulating the size of the openings in said annular wall, substantially as set forth.

8. A combined inhaling and exhaling valve comprising a casing having a contracted waist, an inhaling-valve movable in said casing at one side of the contracted waist to control the passage of gas through the casing, and an annular exhaling-valve surrounding said contracted waist and movable to control exhaling orifices in the casing, substantially as set forth.

9. A combined inhaling and exhaling valve comprising a casing, a valve therein controlling the inhaling-passages through the casing, an exhaling-valve carried thereby and controlling the exit from said casing, and rotatable regulating-valves which are turned to vary the area of the inhaling and exhaling passages, said several valves being arranged parallel with each other, substantially as set forth.

10. The combination of inhaling and exhaling valves, a casing for the same comprising parts separable between said valves, and a receptacle for a volatile anesthetic constructed for attachment to the part of the casing carrying the exhaling-valve, when said other part of the casing is detached, substantially as set forth.

11. The combination of inhaling and exhaling valves, a casing for the same comprising parts separable between said valves, and an open-ended receptacle for a volatile liquid which is constructed to be placed between said parts of the casing when separated and connect them, substantially as set forth.

12. The combination of inhaling and exhaling valves, a casing for the same, comprising parts separable between said valves, an open-ended receptacle for a volatile anesthetic constructed for at-

tachment to the part of said casing carrying the exhaling-valve, when said other part of the casing is detached, and a part constructed to connect said receptacle and said other part of the casing and having valve-controlled air-holes, substantially as set forth.

810,770. MACHINE FOR DRESSING AND FINISHING SURFACES OF FLOORS. JAMES J. KELLY, Albany, N. Y. Filed July 19, 1904. Serial No. 217,206.

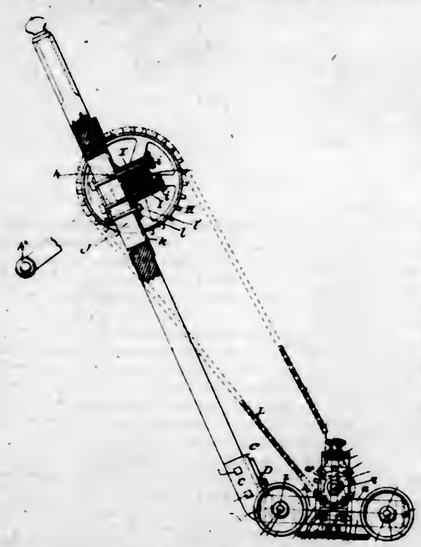

Claim.—1. In a machine of the class described, the combination with a main frame composed of two parts hinged together, and formed with grooves, means for locking the two parts together, wheels having axles supported in the grooves, a handle, a supplemental frame carried by the main frame, a revolving floor-dresser, gearing for revolving the floor-dresser, power means on the handle for operating the gearing, and means on the handle for adjusting the power means.

2. In a machine of the class described, the combination with a separable main frame, a detachable supplemental frame carried by the main frame, means for locking the supplemental frame to the main frame, a revolving floor-dresser mounted in the supplemental frame, means for revolving the floor-dresser, supporting-wheels mounted on the main frame, and a handle for guiding the machine.

3. In a machine of the class described, the combination with a main frame made in sections which are hinged together, a supplemental frame supported by the main frame, locking devices for locking the supplemental frame to the main frame, a vertically-movable and rotatable shaft mounted in the supplemental frame, a floor-dressing device carried by the vertical shaft, a spring normally depressing the dressing device, a gear meshing with the gear on the vertical shaft, a handle, and means on the handle for imparting motion to the gear to revolve the dressing device.

4. In a floor-dressing machine, the combination with a frame, a dressing device supported on the frame, gears for operating the dressing device, a handle connected to the frame, means mounted on the handle, for operating the gears, an adjustable support for said means, and a cam for locking the support after it is adjusted.

810,771. DUST-COLLECTOR. EDWARD KING, Jr., Toledo, Ohio. Filed Jan. 27, 1905. Serial No. 242,992.

Claim.—1. In a dust-collector, an open reel or drum having its periphery formed with equidistant bars or slats, an open-meshed fabric covered circumferentially of the reel or drum and having a fold loosely disposed between each pair of bars or slats, a separate radially-movable member loosely engaging the inner extremity of each of said folds, a spring associated with each of said members for normally retaining the engaged fold taut, and a cam member fixed to the axis of the reel or drum for coacting with and imparting an outward radial movement to each of said fold-engaging members at a fixed point in its travel to cause the tension on the fold to be loosened and suddenly renewed for the purpose described.

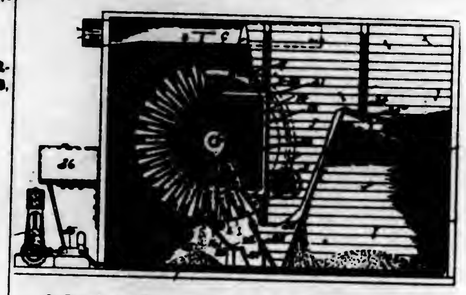

2. In a dust-collector, an open reel or drum having its periphery formed with equidistant bars or slats, a series of radially-movable rods concentrically secured within the reel or drum in position to radially alternate with the bars or slats, two arms projecting at right angles from each of said rods and in the same plane, an open-meshed fabric secured circumferentially of the reel or drum and having a fold disposed between each pair of rods and loosely looped under the radially-alining rod, means coacting with said arms for normally retaining the folds taut, and a cam member fixed axially within the reel or drum for coacting with and imparting an outward radial movement to each arm at a fixed point in its travel and adapted to permit a sudden return of said arm to its normal position, whereby the associated fold is loosened and suddenly jerked to free itself of accumulated matter.

3. In a dust-collector, an open reel or drum having its periphery formed with equidistant bars or slats, an open-meshed fabric secured circumferentially of the reel or drum and having a fold loosely disposed between each pair of bars or slats, a plurality of radially-movable rods loosely engaging the folds of fabric, arms rigidly projecting from said rods at right angles to their body portions and in a radial plane therewith, tension means associated with the arms of each rod for normally holding the engaged fold of fabric taut, and a cam member disposed axially within the reel or drum having an abrupt peripheral depression and coacting with the ends of said arms for causing an outward radial movement of each at a fixed point in its line of travel, whereby the associated fabric fold is loosened and drawn taut for the purpose described.

4. In a dust-collector, a reel or drum comprising end disks and equidistant bars or slats forming the periphery thereof, a pair of axially-arranged concentric flanges secured to the inner faces of the disks and having openings disposed in radial alinement, an open-meshed fabric secured circumferentially of the reel or drum and having a fold loosely disposed between each pair of bars or slats, a separate rod engaging each fold of the fabric and having its extremities bent to project through the alining openings in said flanges, a spring on each bent end of said rods for causing the fabric folds to be normally held taut, and fixed axial cams for engaging the bent ends of the rods and causing each to be radially moved at a fixed point in its revolution to loosen and jerk the engaged fabric fold for the purpose described.

5. In combination, a closed chamber, a rearwardly-slanting partition arising from the bottom of said chamber and having its top terminating below the top of the chamber and formed with a rearwardly-projecting flange, a rotatable dust-collecting mechanism mounted within said chamber in advance of said partition, and a conduit communicating with the upper part of said chamber in position to direct its air-discharge against the rear wall of the chamber by which it is directed down and forward against the partition and around the flange thereon before it is permitted to enter the dust-collector mechanism.

6. In combination, a chamber, a rearwardly-slanting partition arising from the bottom of the chamber and having its top terminating below the top of the chamber and formed with a rearwardly-projecting flange, a rotatable dust-collecting mechanism mounted within said chamber in advance of said partition, a conduit communicating with the upper part of said chamber in position to direct its air-discharge first against the rear wall of the chamber by which it is directed forward against the partition and around the flange thereon before entering the dust-collector mechanism, and means for spraying said partition for the purpose of gravitating a considerable portion of the dust carried by the air-discharge.

810,772. DRUGGIST'S PRESCRIPTION-FILE. ROBERT B. KING, Beaufort, N. C. Filed Aug. 2, 1905. Serial No. 272,488.

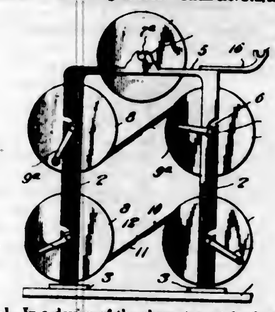

Claim.—1. In a device of the character set forth, the combination of a pair of drums revolubly mounted, a belt or apron carried by one of said drums and adapted to be wound therefrom upon the other drum, and a tape secured to said belt or apron so as to provide a pocket for the reception of a prescription.

2. In a device of the character set forth, the combination of a pair of drums revolubly mounted, a belt or apron carried by one of said drums and adapted to be wound therefrom upon the other drum, and a tape positioned longitudinally upon said belt or apron and secured thereto by means of stitches spaced apart to provide a pocket for the reception of a prescription.

3. In a device of the character set forth, the combination of a pair of drums mounted revolubly and movably, and a belt or apron carried by one of said drums and adapted to be wound therefrom upon the other drum, and a tape secured to said belt or apron by means of stitches spaced apart to provide pockets for the reception of prescriptions.

810,773. APPARATUS FOR BINDING IN THE TOES OF FOOTWEAR. GUSTAF KNOS, Malmo, Sweden. Filed May 9, 1905. Serial No. 259,236.

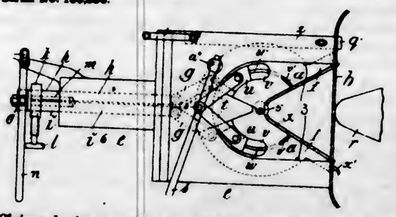

Claim.—1. An apparatus for binding in the toe-piece of boots and other footwear, comprising a nipper-box *e*, nipper-jaws *f*, to one of which is secured a binding-in cord *b*; mechanism for holding the cord *b* at another point with a regulatable frictional resistance in such a way that on the movement of the nipper-box *e* toward the last *r*, for the purpose of lasting the toe-piece, the cord *b* lays itself with a suitable tension in the working edge of the nipper-jaws *f*, the said jaws having a groove *x* for the reception of said cord; and pushers *u* for driving nails *a* or similar fasteners through the binding-cord *b* and the upper-leather *c* into the lip of the welt *d*, the said nipper-jaws having arcuate grooves *v* in which the said pushers *u* are guided, substantially as described and set forth.

2. In an apparatus for binding in the toe-piece of boots and shoes and other footwear, the combination of a push-rod which is divided longitudinally into two parts *h* and *i*; nipper-jaws *f*; links *g* connecting one end of each of the parts *h i* with one of the nipper-jaws *f* respectively and a set-ring *k* and set-screw *l*, for clamping the other ends of the parts *h i* together in different positions of relative longitudinal adjustment, whereby the nipper-jaws are adjustable for right and left and crooked lasts, substantially as and for the purpose set forth.

3. In apparatus for binding in the toe-piece of boots and shoes and other footwear, the combination of a push-rod which is divided longitudinally into two parts *h* and *i*; nipper-jaws *f*; links *g* connecting one end of each of the parts *h i* with one of the nipper-jaws *f* respectively; each of the parts *h i* having a semicylindrical recess in the other end thereof; a bolt *m* disposed in said recesses; a set-ring *k* and set-screw *l*, for clamping the parts *h i* and the bolt *m* together in different positions of longitudinal adjustment of the parts *h i*, whereby the nipper-jaws *f* are adjustable for right and left and crooked lasts; and operating means connected to the said bolt *m*.

4. In an apparatus for binding in the toe-piece of boots and other footwear, the combination of nipper-jaws *f* to the outer end of one of which is attached a binding-in cord *b*, a clamp *q* for holding the cord *b* at another point, a cam *p* engaging the clamp *q*, and a manually-operated handle 11 for operating the cam *p*, whereby the cord *b* is held with a regulatable frictional resistance.

5. In apparatus for binding in the toe-piece of boots and other footwear, the combination of a nipper-box *e*; nipper-jaws *f* to the outer end of one of which at one side of the nipper-box is secured a binding-in cord *b*; a clamp *q* at the opposite side of the nipper-box for holding the cord *b* at another point, the said jaws having a groove *x* for the reception of the said cord; and a manually-operated cam *p* for operating the said clamp, whereby the cord *b* is held with a regulatable frictional resistance and laid with a suitable tension in the groove *x* when the nipper-box *e* is moved toward the last *r*.

6. An apparatus for binding in the toe-piece of boots and other footwear, consisting of the combination of a nipper-box *e*; nipper-jaws *f*; a clamp for holding a binding-in cord *b*, the said jaws having a groove *x* for the reception of said cord; a manually-operated cam for operating the said clamp, whereby the said cord *b* is held with a regulatable frictional resistance and laid with a suitable tension in the groove *x* when the nipper-box *e* is moved toward the last *r*; and pushers *u* for driving nails or equivalent fasteners through the binding-cord *b* and the upper-leather into the lip of the welt.

7. An apparatus for binding in the toe-piece of boots and other footwear, consisting of the combination of a nipper-box *e*; nipper-jaws *f*; a clamp for holding a binding-in cord *b*, the said jaws having a groove *x* for the reception of said cord; a manually-operated cam for operating the said clamp, whereby the said cord *b* is held with a regulatable frictional resistance and laid with a suitable tension in the groove *x* when the nipper-box *e* is moved toward the last *r*; pushers *u* for driving nails or equivalent fasteners through the binding-cord *b* and the upper-leather into the lip of the welt, the said nipper-jaws having arcuate grooves *v* in which the said pushers are guided; an operating-lever for said pushers; and links connecting said lever with said pushers respectively.

8. An apparatus for binding in the toe-piece of boots and other footwear, consisting of the combination of nipper-jaws *f*; mechanism for holding a binding-in cord *b* with a regulatable frictional resistances, pushers *u* for driving nails or equivalent fasteners through the binding-cord *b* and the upper-leather into the lip of the welt, the said nipper-jaws having arcuate grooves *v* in which said pushers are guided; an operating-lever for said pushers; and links *t* having a common pivot on said lever and connected respectively to said pushers.

9. An apparatus for binding in the toe-piece of boots and other footwear, consisting of the combination of nipper-jaws; mechanism for holding a binding-in cord with a regulatable frictional resistance, pushers for driving nails or equivalent fasteners through the said binding-in cord and the upper-leather into the lip of the welt; and means for adjusting the said nipper-jaws relatively to each other for right and left and crooked lasts.

10. An apparatus for binding in the toe-piece of boots and other footwear, consisting of the combination of a nipper-box *e*; nipper-jaws *f*; a clamp *q* for holding a binding-in cord *b*, the said jaws having a groove *x* for the reception of said cord; a manually-operated cam *p* for operating the said clamp; and pushers *u* for driving nails *a* through the binding-cord *b* and the upper-leather *c* into the lip *d*, each of the nipper-jaws *f* having a groove *v'* for guiding the said nails.

11. An apparatus for binding in the toe-piece of boots and other footwear, consisting of the combination of a nipper-box *e*; nipper-jaws *f*; a clamp *q* for holding a binding-in cord *b*, the said jaws having a groove *x* for the reception of said cord; a manually-operated cam *p* for operating the said clamp; pushers *u* for driving nails *a* through the binding-cord *b* and the upper-leather *c* into the lip *d*, the said nipper-jaws having arcuate grooves *v* in which the said pushers are guided and also having grooves *v'* for guiding the said nails; an operating-lever for said pushers; and links connecting said lever with said pushers respectively.

12. An apparatus for binding in the toe-piece of boots and other footwear, comprising a nipper-box *e*; nipper-jaws *f*, to one of which is secured a binding-in cord *b*; mechanism for holding the cord *b* at another point with a regulatable frictional resistance in such a way that on the movement of the nipper-box *e* toward the last *r*, for the purpose of lasting the toe-piece, the cord *b* lays itself with a suitable

tension on the working edge of the nipper-jaws *f*, the said jaws having a groove *r* for the reception of said cord; and pushers *v* for driving nails *a* through the binding-cord *b* and the upper-leather *c* into the welt *d*, the said nipper-jaws having arcuate grooves *v* in which the said pushers are guided and having also other arcuate grooves *v'* for receiving and guiding the said nails, substantially as described and set forth.

13. In an apparatus for binding in the toe-piece of footwear, the combination of nipper-jaws pivoted together; devices for operating the said nipper-jaws; means by which the nipper-jaws may be adjusted relatively to each other on their common pivot, for altering their relative closing positions; a clamp for holding a binding-in cord; manual devices for operating said clamp, whereby the said cord is held with a regulatable frictional resistance, each of the said nipper-jaws having a groove in its working edge for receiving the said cord; pushers guided upon said nipper-jaws for driving nails through the said binding-cord and the upper-leather into the welt; and driving mechanism for said pushers, the said nipper-jaws having grooves also for receiving and guiding the said nails.

810,774. THRESHING-MACHINE. ERIK KYLLOHEN, Enterprise, N. D. Filed May 31, 1905. Serial No. 263,022.

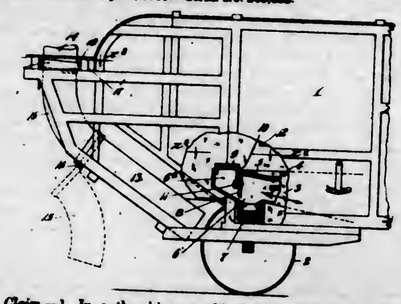

Claim.—1. In a threshing-machine, the combination with a sieve-equipped shoe, having a live-air passage, and provided with a discharge-hopper formed at its rear with a dead-air chamber, and a vertically-adjustable sieve overlying said dead-air chamber and independently adjustable with respect to said shoe-sieve, substantially as described.

2. In a threshing-machine, the combination with a sieve-shoe 3 provided with sieves 4 and 5, with a discharge-hopper 6, and with a partition 8, said partition affording a dead-air chamber 6' and terminating above the bottom of said discharge-hopper, of a vertically-adjustable sieve 9 overlying said dead-air chamber 6, and independently adjustable with respect to said sieves 4 and 5, substantially as described.

810,775. HOOK AND EYE. CHARLES LABOUTH, Chicago, Ill. Filed Mar. 10, 1905. Serial No. 249,249.

Claim.—A hook and eye comprising an eye having side portions separated at one end and connected at the other end by a cross-piece provided at its center with a slight kink or bend extending outwardly at a right angle to the plane of the eye, a hook having parallel portions forming a neck and extending around and back by the sides of the neck, thereby providing springy hook portions which are slightly out of line with the neck at their ends, said neck being adapted to engage the under or concave side of said kink or bend when the eye and hook are interlocked, and the said hook portions at such time being adapted to rest upon the said cross-piece at each side of the said kink or bend, whereby the hook has three distinct points of engagement with the eye, namely one at the center of the under side of the cross-piece and one at each side thereof on the upper side of the same, and whereby the said springy hook portions bear down upon the cross-piece and hold the same firmly upon the said neck, substantially as set forth.

810,776. TRIVET. HARRY M. LAY, Chicago, Ill. Filed May 1, 1905. Serial No. 258,219.

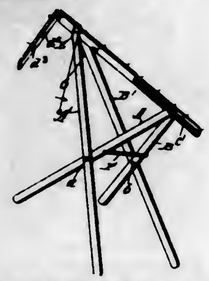

Claim.—1. In a trestle, the combination with two pairs of legs, a pivot connecting the top of one of said pairs, a top bar adapted to slidably engage said pivot and to removably engage the top of the other pair of legs at various points in the length of the beam.

2. In a trestle, the combination with two pairs of legs, a pivot connecting the top of one of said pairs, a top bar adapted to slidably engage said pivot and to removably engage the top of the other pair of legs at various points in the length of the beam, and means for causing said pair of legs to tightly grip said top bar.

3. In a trestle, the combination with two pairs of legs, a pivot connecting the top of one of said pairs, a top bar adapted to slidably engage said pivot and to removably engage the top of the other pair of legs, and means for causing said pair of legs to tightly grip said top bar, said means comprising a series of notches in said top bar and a spreader pivotally attached to one of said legs and adapted to engage the corresponding leg of the other pair.

4. In a trestle, the combination with two pairs of legs, a pivot connecting the top of one of said pairs, a top bar provided with a slot at one end and within which said pivot is adapted to move, said top bar being also provided with a series of inwardly-extending notches adapted to receive the tops of the other pair of legs, and a spreader for maintaining said legs apart and to cause the tops of same to firmly grip said top bar.

5. In a trestle, the combination with two pairs of legs, a pivot connecting the top of one of said pairs, a top bar provided with a slot at one end and within which said pivot is adapted to move, said slot being provided with series of notches for engaging said pivot, said top bar being also provided with a series of inwardly-extending notches adapted to receive the tops of the other pair of legs, and a spreader for maintaining said legs apart and to cause the tops of same to firmly grip said top bar.

6. In a trestle, the combination with two pairs of legs, a pivot connecting the tops of one of said pairs, a sectionally-hinged top bar adapted to slidably engage said pivot and to removably engage the top of the other pair of legs at various points in the length of the beam.

7. In a trestle, the combination with two pairs of legs, a pivot connecting the top of one of said pairs, a sectionally-hinged top bar provided with a slot at one end and within which said pivot is adapted to move, said top bar being also provided with a series of inwardly-extending notches adapted to receive the tops of the other pair of legs, and a spreader for maintaining said legs apart and to cause the tops of same to firmly grip said top bar.

8. In a trestle, the combination with two pairs of legs, a pivot connecting the tops of one of said pairs, a sectional top bar, the sections being hinged horizontally and the bar being adapted to slidably engage said pivot and to removably engage the tops of the other pair of legs at various points in the length of the beam.

9. In a trestle, the combination with two pairs of legs, a pivot connecting the top of one of said pairs, a sectional bar, the sections being hinged horizontally and provided with a slot at one end, within which said pivot is adapted to move, said top bar being also provided with a series of inwardly-extending notches adapted to receive the tops of the other pair of legs, and a spreader for maintaining said legs apart and to cause the tops of same to firmly grip said top bar.

10. In a trestle, the combination with two pairs of legs, connected together, of a pivot connecting the tops of one of said pairs, a sectional bar adapted to engage said pivot at a plurality of points and removably engage the top of the other pair of legs, at a plurality of points, a hinge connecting the sections of said bar and a movable reinforcing-piece covering said hinge.

11. In a trestle, the combination with supports, of a top bar provided with a slot at one end, a series of notches within said slotted portion, the top of said bar above said slotted portion being chamfered, and a series of inwardly-extending notches on the lower portion of the other end of said bar said supports being adapted to engage said notches and chamfered portion.

12. In a trestle, the combination with supports, of a top bar comprising two parts hinged together horizontally and provided with a slot at one end, a series of notches within said slotted portion, the top of said bar above said slotted portion being chamfered, and a series of inwardly-extending notches on the lower portion of the other end of said bar said supports being adapted to engage said notches and chamfered portion.

13. In a trestle, the combination with supports, of a top bar comprising two parts hinged together horizontally, said hinged portion being normally covered by a movable reinforcing-piece, and provided with a slot at one end, a series of notches within said slotted portion, the top of said bar above said slotted portion being chamfered, and a series of inwardly-extending notches on the lower portion of the other end of said bar said supports being adapted to engage said notches and chamfered portions.

14. A folding trestle, comprising a slotted top piece, legs provided with two supporting-points, said slotted top piece being provided with a plurality of shoulders adapted to engage said supporting-points so that each of said supporting-points may be adjusted to different positions along the length of said top piece.

15. A folding trestle, comprising a top piece, a support arranged to engage said top piece at two points, said points of support being adjustable along the length of said top piece, and said support being provided with one permanent connection with said top piece.

810,777. SHAFT-COUPLING. ARTHUR J. L. LEHRBACK and NAT B. HART, Walla Walla, Wash. Filed Mar. 22, 1905. Serial No. 251,533.

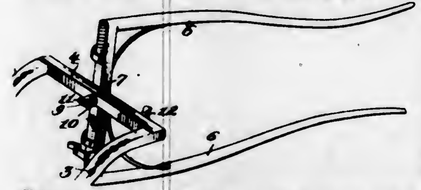

Claim.—1. In combination with a pair of thill members connected by a cross-bar, a pair of shafts connectd by a cross-bar, said cross-bars being pivotally united to permit free rotation of the shafts, and means for locking the shafts in their normal position.

2. In combination with a pair of thill members connected by a cross-bar, a pair of shafts connected by a cross-bar, said cross-bars being pivotally united to permit free rotation of the shafts, a clip for limiting the movement of the shafts in one direction, and a spring-clip mounted on one of said cross-bars and adapted to engage the other for locking the shafts in their normal position.

3. In combination with a pair of shafts pivotally connected to a wagon member to rotate freely thereon, means for limiting the movement of said shafts in one direction, and means for locking the shafts in their normal position.

4. In combination with a pair of thill members connected by a cross-bar, a pair of shafts connected by a cross-bar, a king-bolt passed through said cross-bars and forming a pivot upon which said shafts may freely rotate, a bracket-arm secured between said cross-bars by said king-bolt, and a swingle tree mounted on the cross-bar of said shafts and being pivotally secured thereon by a bolt passing through said bracket-arm.

810,778. SPRAGGING DEVICE FOR COAL AND PIT CARS. JOHN LEVAR, Lemont Furnace, Pa. Filed Oct. 5, 1905. Serial No. 281,513.

Claim.—1. The combination with a car, of arms pivotally mounted in said car adjacent to the wheels thereof, actuating-levers pivotally connected to said arms, a toothed wheel engaging said levers, a toothed angle-bar mounted in said car and adapted to actuate said toothed wheel, a lever, pivotally connected to the end of said car and adapted when oscillated to reciprocate said angle-bar, substantially as described.

2. In a spragging device, the combination with a car, of arms pivoted adjacent to the wheels of said car, actuating-levers pivotally connected to said arms, a toothed wheel engaging said levers, a lever pivotally connected to the end of said car, means actuated by oscillating said lever to rotate said toothed wheel and thereby move said actuating-levers, substantially as described.

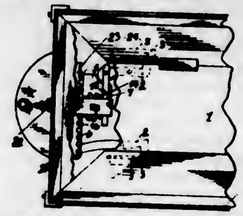

3. In a spragging device, the combination with a car, of two separate arms each pivotally mounted adjacent to the wheels of said car, each arm being provided with a tooth extending through an opening in the side of the car and adapted to be moved into engagement with said wheels, a lever pivotally connected to the end of said car and extending upwardly at right angles to the bottom of the car, means whereby said arms will be moved in unison by oscillating said lever, substantially as described.

810,779. WHEELED PLOW. ALEXUS C. LINDGREN, Moline, Ill., assignor to Moline Plow Company, a Corporation of Illinois. Filed July 25, 1905. Serial No. 271,909.

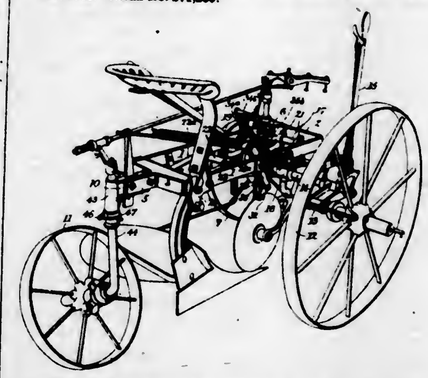

Claim.—1. In a plow, the combination of the frame, a plow-beam supported thereby and movable vertically with relation thereto, a beam-depressing foot-lever mounted on the frame, operative connections between the foot-lever and the beam for depressing the beam, and a locking device carried by the beam and adapted when the beam is elevated to engage the frame and hold the beam raised, said locking device adapted to be unlatched by means independent of the foot-lever, and being extended in proximity to said foot-lever; whereby the driver may with one foot both release and lower the beam.

2. In a plow, the combination with the frame, of a plow-beam supported thereby and movable vertically with relation thereto, a beam-depressing lever mounted on the frame and operatively connected with the beam for depressing the same, said lever being extended within reach of the driver, and a locking-latch mounted on the beam and adapted, when the beam is elevated, to interlock with the frame and hold the beam raised, said locking-latch being extended within reach of the driver and in proximity to the depressing-lever, and adapted to be unlatched by means independent of the depressing-lever; whereby the driver is enabled to conveniently release the beam and effect its depression.

3. In a plow, the combination with the frame, of a plow-beam supported thereby and movable vertically with relation thereto, a beam-depressing foot-lever mounted on the frame, operative connections between the lever and the beam for depressing the latter, a foot-rest on the lever, a locking-latch connected with the beam and formed to interlock with the frame when the beam is elevated and

hold the same raised, said locking-latch being independent in its action of the beam-depressing lever and a foot-rest on said latch extending in proximity to the foot-rest of the depressing-lever.

4. In a plow, the combination with the frame, of a plow-beam supported thereby and movable vertically, a foot-lever mounted on the frame, operative connections between the foot-lever and the beam for depressing the latter, a foot-rest on the lever, a locking-latch connected with the beam and formed, when the beam is elevated, to interlock with the frame and hold the beam raised, and a foot-rest on the locking-latch disposed adjacent to the other foot-rest and a short distance below the same; whereby the driver may with one foot resting on the foot-rest of the depressing-lever first release the latch with the heel and then depress the beam.

5. In a plow, the combination with the frame, of a vertically-movable plow-beam supported thereby, a foot-lever mounted on the frame and extending upwardly when the beam is raised, operative connections between the lever and the beam, adapted, when the lever is forced forward, to depress the beam, and a latch-rod jointed to the beam and arranged, when the beam is elevated, to extend upward alongside the foot-lever and to interlock with the frame, and adapted to be unlatched by means independent of the foot-lever.

6. In a plow, the combination with the frame, of the vertically-movable plow-beam supported thereby, a transverse rock-shaft mounted on the frame, a crank-arm on one end of the shaft a link, connecting the crank-arm with the beam, a foot-lever connected with the crank-arm and formed with a foot-rest, a second foot-lever on the opposite end of the rock-shaft, a latch-rod pivoted to the beam and formed when the beam is elevated to interlock with the frame and hold the beam raised, and a foot-rest on the latch-rod in position to extend in proximity to the foot-rest of the depressing-lever when the beam is locked in elevated position.

7. In a wheeled plow, the combination with the frame, of a vertically-movable plow-beam sustained thereby, means for elevating the beam, a locking device for holding the beam in elevated position, and mechanism for depressing the beam when released, the said locking device and the said depressing mechanism being wholly independent of each other, and both adapted to be actuated by one foot.

8. In a plow, the combination with the frame, of a vertical shell or bearing connected thereto, a horizontal oscillating disk mounted in the same and formed with an opening eccentrically disposed, a vertical furrow-wheel stem extending through the opening in the disk and into the shell, means for oscillating the disk to effect the adjustment of the stem, and means for fastening the disk fixedly to said shell in its different adjusted position.

9. In a plow, the combination with the frame, of a vertical hollow conical shell fixed thereto, a horizontal adjustable disk mounted for oscillation in the larger end of the shell, and formed with an opening eccentrically disposed, a furrow-wheel stem extending through the opening in the disk and through the end of the shell, means for oscillating the disk to effect the adjustment of the stem, and means for holding the disk in its adjusted position.

10. In a plow, the combination with the frame, of a support for the rear furrow-wheel stem, said support comprising a vertical hollow conical shell fixed to the frame with its smaller end uppermost, a horizontal adjusting-disk provided with an eccentrically-disposed opening mounted loosely in the base of the shell, a vertical furrow-wheel stem extending through the opening in the disk and into the shell, a handle on the disk, and a binding-screw carried by the shell and adapted to engage the disk.

810,780. POWER-TRANSMITTER. WLADIMIR LORENZ and VICTOR LORENZ, Budapest, Austria-Hungary. Filed Dec. 24, 1901. Renewed May 27, 1905. Serial No. 262,663.

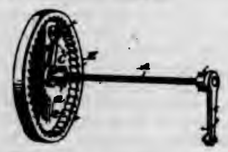

Claim.—1. The combination, with a driving mechanism having a rotating part capable of storing kinetic energy, of automatic mechanism for intermittently applying a load to said driving mechanism during a part of each rotation which part is an inverse function of the said load.

2. In a device of the class described, an oscillating part designed to be operated from a prime mover, a driven wheel, a moving part operated by said oscillating part, means for connecting said moving part with the driven wheel on movement in one direction and for disconnecting it on movement in the opposite direction, and a plurality of spring-rods connecting the oscillating member with said moving part, substantially as described.

3. In a device of the class described, an oscillating arm designed to be operated from a prime mover, a driven wheel, a moving part located in proximity to said driven wheel, means for causing said moving part to be put into engagement with said wheel on movement in one direction, and to be disengaged therefrom on movement in the opposite direction, and a torsion-spring connecting said oscillating arm and moving part, substantially as described.

4. The combination, with a vibratory driving element having a fixed stroke, of a vibratory driven element, a yielding connection between said driving and driven element, and means for converting the vibratory motion of the driven element into a unidirectional movement.

5. The combination, with a vibratory driving element, and a driven element, of a yielding connection between the driving and driven elements capable of storing substantially the entire energy of the driving element for one stroke of the latter.

6. The combination, with a vibratory driving element having a fixed stroke, of a driven element, and a yielding connection between said driving and driven elements capable of storing substantially the entire energy of the driving element for one stroke of the latter.

810,781. GAME APPARATUS. RALPH D. MARTIN, Tampa, Fla. Filed Mar. 8, 1905. Serial No. 249,989.

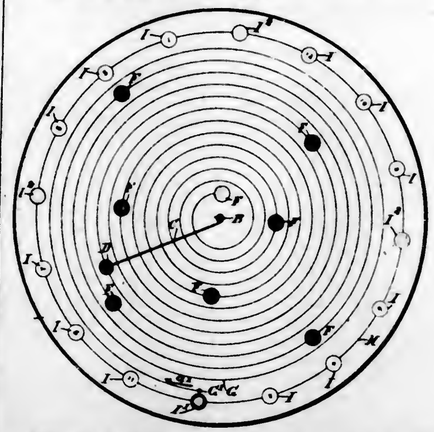

Claim.—1. A game apparatus comprising a board having stations arranged in a spiral line on the surface of the board, a pivot on the said board, central to the said spiral line, a cord secured at one end on the said pivot and adapted to wind and unwind on and from said pivot, and a disk on the outer end of the said cord, adapted to be propelled by the player over the board's surface.

2. A game apparatus comprising a board having stations arranged in a spiral line on the surface of the board, a pivot on the said board, central to the said spiral line, a cord secured at one end on the said pivot and adapted to wind on the said pivot in a downward direction and to unwind from the pivot in an upward direction, and a disk on the outer end of the said cord, adapted to be propelled by the player over the board's surface.

3. A game apparatus comprising a board having stations arranged in a spiral line on the surface of the board, a pivot on the said board, central to the said spiral line, a cord secured at one end on the said pivot and adapted to wind and unwind on and from the said pivot, and a disk on the outer end of the said cord, adapted to be propelled by the player over the board's surface, the said disk following the said spiral line.

4. A game apparatus comprising a board provided on its surface with stations arranged in a spiral, a pivot secured on the board and rising from the surface centrally to the said spiral, the circumference of the pivot corresponding to the distance between adjacent convolutions of the said spiral, a cord secured at one end to the upper portion of the said pivot, and a disk on the outer end of the said cord, adapted to be propelled over the board's surface, to cause the cord to wind up or unwind on or from the said pivot.

5. A game apparatus comprising a board provided on its surface with stations arranged in a spiral, a pivot secured on the board and rising from the surface centrally to the said spiral, the circumference of the pivot corresponding to the distance between adjacent convolutions of the said spiral, a cord secured at one end to the upper portion of the said pivot, and a disk on the outer end of the said cord, adapted to be propelled over the board's surface, to cause the cord to wind up on or unwind from the said pivot, the said disk following the spiral to reach the stations, the latter being spaced unequal distances apart.

810,782. CHUCK. WILLIAM MASON, New Haven, Conn., assignor to Winchester Repeating Arms Co., New Haven, Conn., a Corporation. Filed Apr. 1, 1905. Serial No. 253,321.

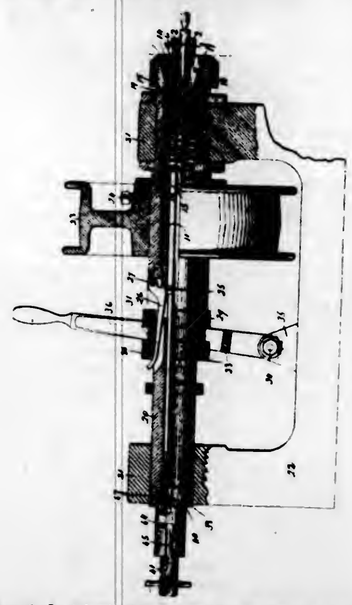

Claim.—1. In a chuck, the combination with two movable centers, of a spindle, main jaws carried thereby, and supplemental jaws mounted in the main jaws and constructed and arranged to be independently moved by direct manual engagement into frictional contact with the work after the same has been centered by the said centers with respect to the axis of the spindle and prior to the operation of the main jaws for clamping the work.

2. In a chuck, the combination with two movable centers, of a spindle, main jaws carried thereby, and longitudinally-movable wedge-shaped supplemental jaws mounted in the said main jaws and constructed and arranged to be independently moved by direct manual engagement into frictional contact with the work after the same has been centered by the said centers with respect to the axis of the spindle and prior to the operation of the main jaws for clamping the work.

3. In a chuck, the combination with two movable centers, of a tubular spindle having one of the said centers located outside of but near its outer end, and the other of the said centers located within and near its inner end, main jaws carried by the said spindle at its outer end, and supplemental jaws mounted in the main jaws and constructed and arranged to be independently moved by direct manual engagement into frictional contact with the work after the same has been centered by the said centers with respect to the axis of the spindle and prior to the operation of the main jaws for clamping the work.

4. In a chuck, the combination with a spindle, of two movable centers respectively located substantially at the ends thereof, main jaws, and supplemental jaws mounted therein and constructed and arranged to be independently moved by direct manual engagement into frictional contact with the work after the same has been centered with respect to the axis of the spindle by the said centers and prior to the operation of the main jaws for clamping the work.

5. In a chuck, the combination with a spindle, of a sleeve located therein, main jaws carried by the sleeve, a sliding sleeve located in the spindle for forcing the main jaws toward each other, a removable center for insertion into the inner end of the spindle, a movable center located adjacent to the jaws and movable into and out of a line coincident with a line passing through the center of the spindle, and supplemental jaws mounted in the main jaws and constructed and arranged to be independently moved by direct manual engagement into frictional contact with the work after the same has been centered with respect to the axis of the spindle by the centers and prior to the operation of the main jaws for clamping the work.

6. In a chuck, the combination with a spindle, of a sleeve split to form spring main jaws, a sliding sleeve for forcing the main jaws toward each other, the spindle containing the sleeves, a removable plug carrying a yielding center for insertion into the inner end of the spindle, a movable center located adjacent to the jaws, and supplemental jaws mounted in the main jaws and constructed and arranged to be independently moved by direct manual engagement into frictional contact with the work after the same has been centered with respect to the axis of the spindle and prior to the operation of the main jaws for clamping the work.

7. In a chuck, the combination with a spindle, of a sleeve split to form spring main jaws a sliding sleeve for operating the said jaws, the spindle containing the sleeves, a removable plug carrying a center for insertion into the inner end of the spindle, means carried by the plug for gripping the work, a movable center located near the main jaws, and supplemental jaws mounted in the main jaws and constructed and arranged to be independently moved into frictional contact with the work after the same has been centered with respect to the axis of the spindle and prior to the operation of the main jaws for clamping the work.

810,783. FRICTION-CLUTCH. JONATHAN D. MAXWELL, Detroit, Mich. Filed July 26, 1904. Serial No. 217,925.

Claim.—1. In a clutch, the combination with a driving and a driven shaft arranged in axial alinement with their ends abutting, a facing-disk having an axial sleeve secured to the end of one shaft and forming a socket to receive the end of the opposite shaft, a series of discous plates mounted on said sleeve at one side of said disk, a longitudinally-movable facing-disk at the other side of said plates, a feather secured to the sleeve and engaging notches in the plates and movable disk, a yoke secured to the shaft opposite that to which the sleeve is secured and having outwardly-extending arms provided with lateral ends extending longitudinally over said plates and disks, a second series of discous plates mounted on the sleeve between the first plates and disks and free to turn thereon and provided with notches in their peripheries to engage the ends of the yoke, flat springs secured to one face of each of the plates of the second series outside the peripheries of the first series and each engaging the adjacent plate of the series at its ends to force said plates apart, and means for moving the plates of one series into frictional contact with those of the other against the action of said springs.

2. In a clutch, the combination with a driving and a driven shaft, arranged in axial alinement with their ends abutting, a sleeve keyed to one end of the driven shaft and forming a socket to receive the end of the driving-shaft, a facing-disk integral with said sleeve, a series of discous plates on the sleeve at one side of the disk, a movable facing-disk on the sleeve at the other side of said plates, feathers secured to the sleeve and engaging notches in the plates and movable disk, a second series of discous plates of a greater diameter than the first series interposed between the same and having notches in their peripheries, a yoke secured to the driving-shaft and having outwardly-extending arms provided with ends extending longitudi-

nally of the shaft to engage the notches in said plates, a strip secured to the end of each arm to hold the plates from being disengaged therefrom, flat springs secured to each of the plates of the second series near their peripheries outside of the peripheries of the plates of the first series and each bearing against the adjacent plate in the second series, an internally-screw-threaded collar screwed upon the end of the sleeve and provided with outwardly-extending ears, levers pivoted intermediate their ends between said ears with their ends in engagement with the movable facing-disk, and a clutch member movable longitudinally on the driven shaft to engage the opposite ends of said levers and force the same outward.

810,784. STOPPER FOR ICE-BAGS, HELMETS, AND THE LIKE. CHRISTIAN W. MEISSNER, Jersey City Heights, N. J., assignor to Whitall Tatum Company, New York, N. Y., a Corporation of New Jersey. Filed Sept. 30, 1905. Serial No. 280,826.

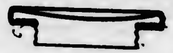

Claim.—1. A closure for the mouth of ice-bags or the like having an elastic cap adapted to give a hold to the operater and combined with a packing or washer.

2. A closure for ice-bags or the like comprising a threaded body portion with a flange or overhanging top part, and an elastic cap placed on the top and lapped about the flange and combined with a packing or washer at the under side thereof.

3. A closure for ice-bags and the like having a flanged top portion, a packing-ring seated against the under side of the flange, and an elastic cap stretched over the top and flange to engage and hold the packing-ring in place.

4. A closure for ice-bags and the like having a packing at the under or contact face thereof and an elastic packing-holder under the packing and lapped about the edge onto the upper part of the closure.

5. A closure for ice-bags and the like provided with a packing or washer and an elastic holder or cap for the packing.

810,785. LOCK. ALBERT H. MEYERS, Johnstown, Pa. Filed Feb. 6, 1905. Serial No. 244,417.

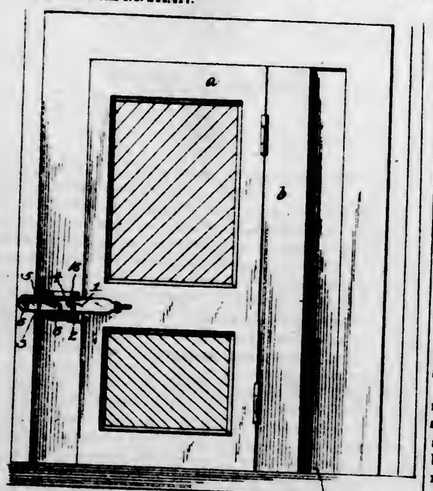

Claim.—1. A lock comprising a casing having a socket secured to the back portion thereof, spring-pressed tumblers in said casing, each having a beveled notch, a bail having long and short arms, the long arm being mounted in said socket, a spring in said socket engaging said long arm, said short arm provided with notches, and a beveled end to be engaged by said tumblers, and a hasp provided with a slot and a perforation to be engaged by said bail.

2. A lock comprising a casing having a socket secured to the back portion thereof, spring-pressed tumblers in said casing, said tumblers each provided with a beveled notch, a spring in the bottom of the socket, a bail having a long arm pivotally mounted in said socket and provided with a head to bear against said spring, a short arm on said bail, said short arm provided with notches to be engaged by said tumblers, and a hasp provided with slots and perforations to be engaged by said bail, substantially as described.

810,786. GLASS-ROLLING APPARATUS. ANTON MEYER, St. Louis, Mo. Filed May 15, 1905. Serial No. 260,304.

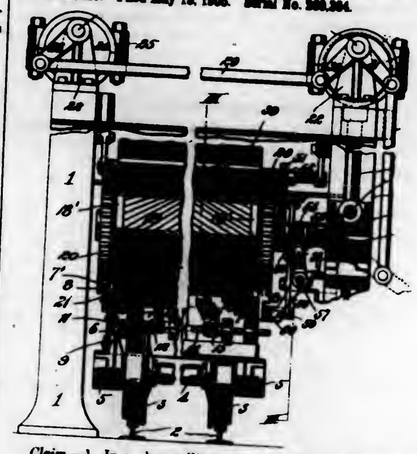

Claim.—1. In a glass-rolling apparatus, the combination of a carriage provided with a table, a series of rolls arranged to be geared to said carriage, vertically-movable journal-boxes in which said rolls are journaled, lift-rods connected to said journal-boxes, eccentrics fitted to said lift-rods, and means for operating said eccentrics to move said lift-rods; said operating means consisting of a crank-arm fixed to one of said eccentrics, a bell-crank fixed to the other eccentric, a connecting-rod uniting said crank-arm and bell-crank, a throw-rod connected to said bell-crank, and a lever for actuating said throw-rod, substantially as set forth.

2. In a glass-rolling apparatus, the combination of a carriage, a roll surmounting said carriage, means for delivering wire fabric to said carriage past said roll, a slotted bar located adjacent to said roll, a knife associated with said slotted bar, and means for actuating said knife to sever the wire fabric passing through said slotted bar, substantially as set forth.

3. In a glass-rolling apparatus, the combination of a carriage, a roll surmounting said carriage, means for delivering wire fabric to said carriage past said roll, a slotted bar located adjacent to said roll, a knife associated with said slotted bar, and means actuated through the medium of said carriage for operating said knife to sever the wire fabric passing through said slotted bar, substantially as set forth.

4. In a glass-rolling apparatus, the combination of a carriage, a roll surmounting said carriage, means for delivering wire fabric to said carriage past said roll, a slotted bar located adjacent to said roll, a knife associated with said slotted bar, a lever connected to said knife, and a trip-block carried by said carriage and adapted to engage said lever, substantially as set forth.

5. In a glass-rolling apparatus, the combination of a carriage, a roll surmounting said carriage, means for delivering wire fabric to said carriage past said roll, a slotted bar located adjacent to said roll, a knife associated with said slotted bar, a lever connected to said knife, and a trip-block adjustably secured to said carriage and arranged to engage said lever, substantially as set forth.

6. In a glass-rolling apparatus, the combination of a carriage, a roll surmounting said carriage, guiding and feed rollers located in proximity to said roll for feeding wire fabric onto said carriage, a clutch member loosely associated with said roll, and geared to one of said rollers, a clutch on the shaft of said roll opposing said clutch member, and means actuated through the medium of said carriage for freeing said clutch from said clutch member, substantially as set forth.

7. In a glass-rolling apparatus, the combination of a carriage, a roll surmounting said carriage, guiding and feed rollers located in proximity to said roll for feeding wire fabric onto said carriage, a clutch member loosely associated with said roll and geared to one of said rollers, a clutch on the shaft of said roll opposing said clutch member, a lever fitted to said clutch, and means carried by said carriage for actuating said lever to shift said clutch, substantially as set forth.

8. In a glass-rolling apparatus, the combination of a carriage, a roll surmounting said carriage, guiding and feed rollers located in proximity to said roll for feeding wire onto said carriage, a clutch member loosely associated with said roll, and geared to one of said rollers, a clutch on the shaft of said roll opposing said clutch member, a shift-lever fitted to said clutch and a trip-block carried by said carriage and arranged to trip said lever, substantially as set forth.

9. In a glass-rolling apparatus, the combination of a carriage, a roll surmounting said carriage, guiding and feed rollers located in proximity to said roll for feeding wire fabric onto said carriage, a clutch member loosely associated with said roll and geared to one of said rollers, a clutch on the shaft of said roll opposing said clutch member, a lever fitted to said clutch and a trip-block adjustably secured to said carriage and arranged to trip said lever, substantially as set forth.

10. In a glass-rolling apparatus, the combination of a carriage provided with a table, and a roll surmounting said carriage; said roll being convoluted and having a polygonal perimeter, substantially as set forth.

11. In a glass-rolling apparatus, the combination of a carriage provided with a table, and a roll surmounting said carriage; said roll being provided with convolutions disposed obliquely relative to the axis of the roll, substantially as set forth.

12. In a glass-rolling apparatus, the combination of a carriage provided with a table, a roll surmounting said carriage; said roll having its periphery provided with convolutions extending in compound curves, substantially as set forth.

13. In a glass-rolling apparatus, the combination of a carriage provided with a table; a roll surmounting said carriage; said roll having its periphery provided with convolutions extending in compound curves and said convolutions being flattened to provide the roll with a polygonal periphery, substantially as set forth.

810,787. DEVICE FOR BENDING FORE-AND-AFT SAILS. JAMES H. MITCHELL, Westerly, R. I. Filed May 17, 1905. Serial No. 260,860.

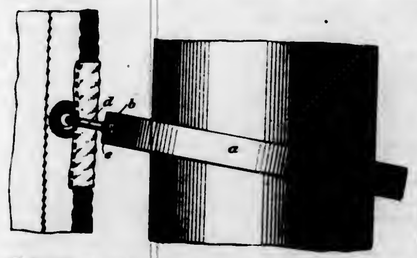

Claim.—1. The combination with a mast-hoop, of a shackle-plate secured thereto, said plate having openings therein, an essentially U-shaped shackle having at one end a T-shaped head and at the other end an L-shaped head, said heads being adapted to fit in the openings in the shackle-plate, and a removable dog for holding the L-shaped end of the shackle engaged with the inner side of the shackle-plate.

2. The combination with a mast-hoop, of a shackle-plate secured thereto, said plate having openings therein, an essentially U-shaped shackle having at one end a T-shaped head and at the other end an L-shaped head, said heads being adapted to fit in the openings in the shackle-plate, and a removable dog for holding the L-shaped end of the shackle engaged with the inner side of the shackle-plate, said dog having a portion at its free end adapted to enter the opening in the shackle-plate receiving the L-shaped end of the shackle.

3. The combination with a mast-hoop having two cavities therein, of a shackle-plate secured to the mast-hoop and having openings registering respectively with the cavities in the hoop, an essentially U-shaped shackle having at one end an enlargement adapted to be received in one opening in the hoop, and having at the other end a laterally-turned portion adapted to be received in the second opening in the hoop, and means for removably holding said second end in active position.

4. The combination with a mast-hoop having two cavities therein, of a shackle-plate secured to the mast-hoop and having openings registering respectively with the cavities in the hoop, an essentially U-shaped shackle having at one end an enlargement adapted to be received in one opening in the hoop, and having at the other end a laterally-turned portion adapted to be received in the second opening in the hoop, and means for removably holding said second end in active position, said means comprising a dog mounted on the shackle-plate and having a portion adapted to enter the opening in the shackle-plate which receives the second-named end of the shackle.

5. The combination with a mast-hoop having two cavities therein, of a shackle-plate fastened to the hoop and having orifices respectively matching the cavities, the shackle-plate having portions overhanging the cavities in the hoop, an essentially U-shaped shackle having enlarged ends capable of passing the orifices in the shackle-plate and adapted to bear against the inner side of the said overhanging portion of said plate, and a dog adapted removably to hold the shackle in place.

810,788. SCREEN. JOHN B. MOSELEY, Danville, Va. Filed June 16, 1905. Serial No. 265,881.

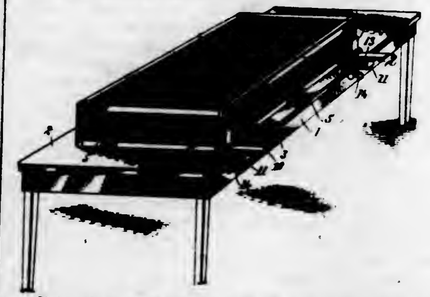

Claim.—1. A screen adapted to be set upon a table and having hinges with leaves adapted to lie upon the surface of said table, and clamps formed on said leaves and adapted to attach to the edge of the table.

2. A screen adapted to rest upon the top of a table and having hinges attached thereto, said hinges having leaves adapted to lie upon the table-top, brackets attached to said leaves forming throats adapted to receive the edge of the table-top, and clamp-screws carried by said brackets and adapted to clamp the edge of the table-top.

810,789. FISHING DEVICE. WALTER L. MOSS, Blains, Ga. Filed Aug. 19, 1905. Serial No. 274,865.

Claim.—1. A fish-hook carrying a rudder-vane extending edgewise in the same general direction as the barbed bight portion of the hook to hold the same pointed in a desired direction in a stream.

2. A fishing device comprising a support carrying a hook and having a vane projecting therefrom in the same general direction as the barbed bight portion of the hook and forming a rudder.

3. A fishing device comprising a support having a weighted lower end, a snag-hook carried thereby, a bait-hook disposed above said snag-hook, and a vane disposed above the bait-hook and acting as a rudder.

4. A fishing device comprising a shank carrying a weight, a bait-hook above the weight, and a snag-hook projecting below the weight, and an impelling-plate supported by the shank in rear of said snag-hook.

5. A fishing device comprising a shank provided at its upper end with a rudder-vane, and carrying at its lower end a weight, a bait-hook upon the shank above the weight, a snag-hook projecting below the weight, and an impelling-plate supported below the weight and in rear of the snag-hook.

810,790. **BALLOTING-BOX.** WILLIAM W. MCCOLLUM, Briarfield, Ala. Filed Oct. 24, 1905. Serial No. 284,191.

Claim.—1. In a device of the class described, a box provided with a discharge-opening, a movable cover for the box having an inlet-opening, a hood arranged on the cover over said opening, a valve pivoted in the box and adapted to normally lie in a rearwardly-inclined position and to close the discharge-opening, and means for moving the valve to open the discharge-opening and permit automatic discharge of the contents of the box.

2. In a device of the class described, a box having a discharge-opening, a movable cover for the box provided with an inlet-opening, a hood arranged over the inlet-opening, a valve pivoted in the box to swing in a vertical plane and provided with a finger-piece projecting to the outside of the box, and a spring disposed beneath the forward portion of the valve and adapted to maintain the same normally in a rearwardly-inclined position with its front edge disposed above the discharge-opening.

3. In a device of the class described, a balloting-box having a cover and provided with an inlet and a discharge opening, a hood arranged over the inlet-opening, a valve pivoted in the box and adapted to receive balloting members introduced into the latter, said valve having a finger-piece projecting outside of the box, a spring acting on the valve to maintain the same normally in rearwardly-inclined position with its edge at one side of its pivotal axis disposed in a plane above the discharge-opening, and a receptacle designed to receive the balloting members when discharged from the box.

810,791. **DRUGGIST'S LABEL-HOLDER.** NEWTON W. MCCOURT and THEODORE N. BARNDALL, 2nd, Bradford, Pa. Filed Dec. 27, 1904. Serial No. 238,480.

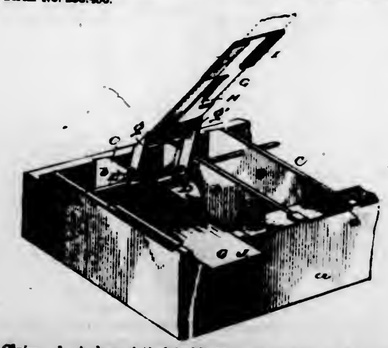

Claim.—1. A druggist's label-holder, comprising a drawer divided into several compartments adapted to receive rolls of labels in the form of a continuous strip, and upwardly-swinging combined guide, cutter and tension device within each of said compartments.

2. A druggist's label-holder, comprising a compartment adapted to receive a roll of labels in the form of a continuous strip, and an upwardly-swinging combined guide, cutter and tension device.

3. A druggist's label-holder, comprising a compartment adapted to receive a roll of labels in the form of a continuous strip, and an upwardly-swinging combined guide, cutter and tension device adapted to support the labels with the gummed side downward, and but a small portion thereof in engagement with the guide.

4. A druggist's label-holder, comprising a compartment adapted to receive a roll of labels in the form of a continuous strip, said compartment provided with an upwardly-swinging combined guide and cutter adapted to support the label on the under side thereof and a tension device carried by said guide and engaging the under side of said strip of labels.

5. A druggist's label-holder, comprising a compartment adapted to receive a roll of labels in the form of a continuous strip, said compartment provided with an upwardly-swinging combined guide, cutter and tension device adapted to support the labels on the under side thereof with the gummed side downward, and out of engagement with the guide and exposing the said gummed surface.

6. A druggist's label-holder, comprising a compartment adapted to receive a roll of labels in the form of a continuous strip, said compartment provided with an upwardly-swinging combined guide, cutter and tension device formed of a single piece of metal and adapted to support the labels on the under side with the gummed side downward.

7. A druggist's label-holder, comprising a compartment adapted to receive a roll of labels in the form of a continuous strip, said compartment provided with an upwardly-swinging combined guide and cutter, downwardly and inwardly turned flanges adjacent the outer end of said guide and adapted to hold the labels on the under side of the same with the gummed side downward, and an arm formed as a part of said combined guide and cutter and adapted to engage the lower gummed side of the label and hold the same frictionally against the under side of the combined guide and cutter.

8. A druggist's label-holder, comprising a compartment adapted to receive a roll of labels in the form of a continuous strip, of a transverse bar adjacent the rear of said compartment, and a combined guide and cutter pivotally mounted on said bar and extending out beyond the front edge of said compartment.

9. A druggist's label-holder, comprising a compartment adapted to receive a roll of labels in the form of a continuous strip, said compartment having a transverse bar adjacent its upper rear end, and a combined guide and cutter pivotally mounted on said bar and extending out beyond the front edge of said compartment and adapted to frictionally support the label and hold it to the under side thereof with the gummed side downward.

10. A druggist's label-holder, comprising a compartment adapted to receive a roll of labels in the form of a continuous strip, said compartment having a transverse bar adjacent its upper rear edge and a combined guide and cutter pivotally mounted on said bar and extending outwardly beyond the front edge of the said compartment, and downwardly and inwardly turned flanges adjacent the front end of the guide and resting upon the front end of the compartment, and serving as a guide for the lower gummed face of the labels.

11. A druggist's holder, comprising a compartment adapted to receive a roll of labels in the form of a continuous strip of a combined guide and cutter adapted to support the strip with the gummed side downward, and a downwardly and inwardly turned flange adapted to support the labels and engage but a small portion of the gummed surface of the label.

12. A druggist's label-holder, comprising a compartment adapted to receive a roll of labels in the form of a continuous strip, a combined guide and cutter pivotally mounted within the compartment and having downwardly and inwardly turned flanges adjacent the front end of the guide, and said flanges resting upon the front edge of the compartment and serving as a guide for the lower gummed face of the labels.

13. A druggist's label-holder, comprising a compartment adapted to receive a roll of labels in the form of a continuous strip, a combined guide and cutter pivotally mounted within the compartment and having downwardly and inwardly turned flanges adjacent the front end of the guide and said flanges resting upon the front edge of the compartment and serving as a guide for the lower gummed face of the labels, and a tension-arm formed integral with the guide and cutter and engaging the lower gummed face of the labels.

14. A druggist's label-holder, comprising a receptacle divided into several compartments adapted to receive rolls of labels in the form of continuous strips, said receptacle having a transverse bar intersecting the rear portion of each compartment, and forming a guide over which the strip passes, and a combined guide and cutter pivoted on said bar within each of the said compartments, and extending forward and resting upon the front edge of the said receptacle

15. A druggist's label-holder, in the form of a drawer divided into several compartments adapted to receive rolls of labels in the form of continuous strips, a bar extending longitudinally of said drawer and intersecting the said compartments adjacent their rear ends, and a combined guide and cutter pivotally mounted within each of said compartments on said bar, and extending beyond the front edge of said drawer and serving as a guide and cutter for said labels.

16. A druggist's label-holder in the form of a drawer divided into several compartments, adapted to receive rolls of labels in the form of continuous strips, a bar extending longitudinally of said drawer and intersecting the said compartments adjacent their rear ends, a combined guide and cutter pivotally mounted on said bar within each of said compartments and having downwardly and inwardly turned flanges adjacent the front end of the guides, and said flanges resting upon the front edge of said drawer and serving as a guide for the lower gummed face of the labels, and tension-arms formed integral with said guide and cutters and engaging the lower gummed faces of the labels within the compartments.

17. A druggist's label-holder in the form of a drawer divided into several compartments adapted to receive rolls of labels in the form of continuous strips, a bar extending longitudinally of the drawer and intersecting the said compartments adjacent their rear ends, the front walls of said compartments having recessed portions therein, a combined guide and cutter pivotally mounted on said bar within each of said compartments, and having downwardly and inwardly turned flanges adjacent the front end of the guides, and said flanges resting upon the bottom of said recesses in the front edge of said drawer and serving as a guide for the lower gummed face of the labels and tension-arms formed integral with said guide and cutter and engaging the lower gummed faces of the labels within the compartments.

810,792. **CARBURETER.** JAMES MCINTOSH, Lansing, Mich. Filed Oct. 15 1904. Serial No. 228,563.

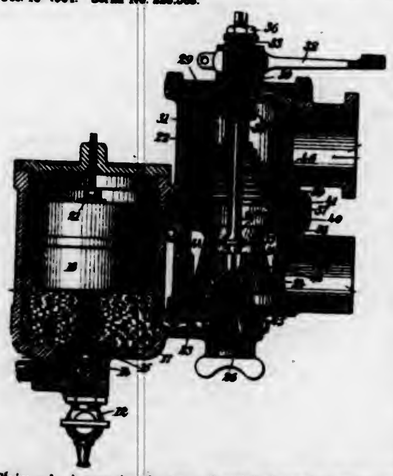

Claim.—1. A vaporizer having a liquid-fuel-supply nozzle with a valve-seat intermediate its ends, a throat surrounding said nozzle and adapted to have an air-current pass through it, said throat contracting toward the discharge end of the vaporizer, a valve coacting with the seat in and commanding the discharge-nozzle, and a fluted or ribbed stem extending from the valve through the discharge portion of the seat, for the purpose specified.

2. A vaporizer having a valve to throttle the mixture passing from the vaporizer, a liquid-fuel-supply nozzle, a spraying-valve coacting therewith, and a connection between the two valves to turn the latter upon turning the former.

3. A vaporizer having a liquid-fuel-supply nozzle, a throat surrounding said nozzle and adapted to have an air-current pass through it, said throat contracting toward the discharge end of the vaporizer, a valve commanding the discharge-nozzle, a fluted or ribbed stem extending from the valve for the purpose specified, and said stem having a deflector collar or enlargement above its said ribs and within the throat.

4. A vaporizer comprising a casing having inlet and outlet orifices respectively for the air and mixture, a liquid-fuel-supply nozzle leading into the casing intermediate said inlet and outlet orifices, and an automatic mixing-valve comprising a throat surrounding the nozzle, a yieldingly-seated valve proper above the throat, and an annular baffle above said valve proper.

5. A vaporizer comprising a casing having inlet and outlet orifices respectively for the air and mixture, a liquid-fuel-supply nozzle leading into the casing intermediate said inlet and outlet orifices, an automatic mixing-valve comprising a throat surrounding the nozzle, a yieldingly-seated valve proper above the throat, and a wall rising from the valve proper, the casing having walls forming an air-chamber surrounding the said wall of the valve, and the said wall of the valve being orificed to communicate with said air-chamber for the purpose specified.

6. A vaporizer comprising a casing having inlet and outlet orifices respectively for the air and mixture, a liquid-supply nozzle leading into the casing intermediate said inlet and outlet orifices, an automatic mixing-valve comprising a throat surrounding the nozzle, a yieldingly-seated valve proper above the throat, and a wall rising from the valve proper, the casing having walls forming an air-chamber surrounding the said wall of the valve, and the said wall of the valve being orificed to communicate with said chamber for the purpose specified, and an annular interior baffle extending around the said wall of the valve above the orifice therein.

7. A vaporizer comprising a casing having inlet and outlet orifices respectively for the air and mixture and also having a valve-seat and walls forming an air-chamber above the seat, a supply-nozzle extending into the vaporizer intermediate said inlet and outlet orifices, an automatic mixing-valve located in the casing and comprising a throat surrounding the nozzle, a valve proper above the throat and bearing on the said seat, and a wall rising from the valve proper and lying opposite the air-chamber in the casing, said wall of the valve being orificed opposite the air-belt for the purpose specified.

8. A vaporizer comprising a casing having inlet and outlet orifices respectively for the air and mixture and also having a valve-seat and walls forming an air-chamber above the seat, a supply-nozzle extending into the vaporizer intermediate said inlet and outlet orifices, an automatic mixing-valve located in the casing and comprising a throat surrounding the nozzle, a valve proper above the throat and bearing on the said seat, and a wall rising from the valve proper and lying opposite the air-chamber in the casing, said wall of the valve being orificed opposite the air-chamber for the purpose specified, and an annular interior baffle carried by said wall of the valve above the orifice therein.

9. A vaporizer having a liquid-fuel-supply nozzle, a throat surrounding said nozzle and adapted to have an air-current pass through it, said throat contracting toward the discharge end of the vaporizer, and the liquid-fuel nozzle having a valve-seat therein intermediate its ends, a valve coacting with said seat, a stem connected to the valve and having a fluted or ribbed portion directly adjacent thereto, said fluted or ribbed portion extending through the discharge portion of the nozzle, and a deflector carried by the stem opposite the said nozzle and within the throat.

10. A vaporizer comprising a casing having inlet and outlet orifices, a seat located intermediate the orifices, walls forming an air-chamber adjacent to the seat, a liquid-supply nozzle leading into the casing, an automatic mixing-valve comprising a normally opened throat, a valve proper coacting with the seat of the casing, and an upwardly-extending wall lying opposite said air-chamber and formed with an orifice therein.

11. A vaporizer comprising a casing having inlet and outlet orifices, a seat located intermediate the orifices, walls forming an air-chamber adjacent to the seat, a liquid-supply nozzle leading into the casing, an automatic mixing-valve comprising a normally opened throat, a valve proper coacting with the seat of the casing, an upwardly-extending wall lying opposite said air-chamber and formed with an orifice therein, and an inwardly-extending annular baffle carried by said wall of the mixing-valve above the orifice therein.

12. A vaporizer comprising a casing having inlet and outlet orifices respectively for the air and mixture, a liquid-supply nozzle leading into the casing intermediate said inlet and outlet orifices, an

automatic mixing-valve controlling an auxiliary air-supply, a valve to throttle the mixture passing from the vaporizer, a tubular stem for operating the valve, a valve commanding the liquid-supply nozzle, a spring engaging the automatic mixing-valve, a tube threaded in the tubular stem of the throttle-valve, and a stem attached to the supply-nozzle valve and threaded in the tube.

13. A vaporizer having a casing with inlet and outlet orifices respectively for the air and mixture, said casing having a seat between said orifices and walls forming an air-chamber above the seat, a liquid-supply nozzle leading to the casing intermediate the inlet and outlet orifices, an automatic mixing-valve comprising a throat adjacent to the supply-nozzle, a valve proper at the upper end of the throat, the valve proper coacting with the end of the seat of the casing, a wall extending upward from the valve proper and lying opposite said air-chamber of the casing, the wall having a perforation therein communicating with the air-chamber, and means for yieldingly seating the automatic mixing-valve.

14. A vaporizer, comprising a casing having inlet and outlet orifices respectively for the air and mixture, a liquid-fuel supply entering the casing intermediate said inlet and outlet, the casing having a valve-seat between the fuel supply and mixture outlet, an air-chamber between the valve-seat and mixture-outlet, and a yieldingly-seated mixing-valve adapted to be opened by the fluid current through the casing, said valve acting with said seat and having an orificed wall extending over the air-chamber.

15. A vaporizer, comprising a casing having inlet and outlet orifices respectively for the air and mixture, a liquid-fuel supply entering the casing intermediate said inlet and outlet, the casing having a valve-seat between the fuel supply and mixture outlet, an annular air-chamber between the valve-seat and mixture-outlet, and a yieldingly-seated mixing-valve adapted to be opened by the fluid current through the casing, said valve acting with said seat and having an orificed wall extending over the air-chamber.

16. A vaporizer, comprising a casing having inlet and outlet orifices respectively for the air and mixture, a liquid-fuel supply entering the casing intermediate said inlet and outlet, the casing having a valve-seat between the fuel supply and mixture outlet, an air-chamber between the valve-seat and mixture-outlet, a yieldingly-seated mixing-valve adapted to be opened by the fluid current through the casing, said valve acting with said seat and having an orificed wall extending over the air-chamber, and an inwardly-extending baffle carried by the wall between the orifice thereof and the mixture-outlet.

810,793. VEGETATION-DESTROYER. WILLIAM R. MCKEEN, Jr., and ARTHUR H. PETTERS, Omaha, Nebr. Filed May 25, 1905. Serial No. 262,289.

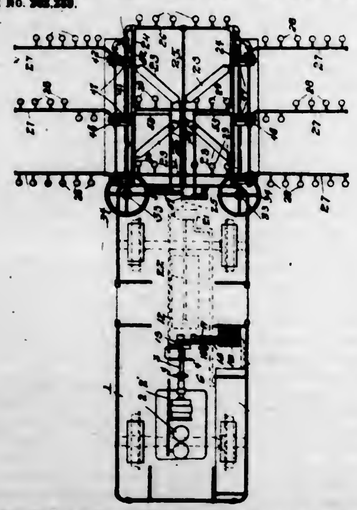

Claim.—1. In apparatus of the class described, in combination, a vehicle, a laterally-projecting burner-carrying arm mounted thereon, and means upon said vehicle for swinging said arm about a substantially vertical axis toward a position parallel to said vehicle.

2. In apparatus of the class described, in combination, a vehicle a burner-carrying arm laterally projecting from said vehicle and pivotally mounted thereon, means upon said vehicle adapted to supply fuel to said burner-carrying arm, and means upon said vehicle adapted to swing said burner-carrying arm about a substantially vertical axis into a position in which the same is substantially parallel to said vehicle.

3. In apparatus of the class described, in combination, a car, an internal-combustion engine mounted on said car, means adapted to drive such car from said internal-combustion engine, a source of hydrocarbon-supply for said internal-combustion engine mounted upon said car, connections between said source of supply and said engine, weed-burning arms mounted upon said car, connections between said source of supply and said weed-burning arms adapted to supply hydrocarbon thereto, and means upon said car adapted to swing said arms in a plane extending parallel to said car.

4. In apparatus of the class described, in combination, a vehicle, a laterally-projecting weed-burning arm mounted upon said vehicle, means upon said vehicle adapted to swing said arm about a substantially vertical axis, and means upon said car adapted to swing said arm about a substantially horizontal axis.

5. In apparatus of the class described, in combination, a car, a laterally-projecting weed-burning arm mounted upon said car, means upon said car adapted to swing said arm about a substantially vertical axis and independent means thereon adapted to swing said arm about a substantially horizontal axis.

6. In apparatus of the class described, in combination, a car, a laterally-projecting weed-burning arm mounted upon said car, means upon said car adapted to swing said arm about a substantially vertical axis, means thereon adapted to swing said arm about a substantially horizontal axis, and means adapted to lock said last-mentioned means in predetermined positions.

7. In apparatus of the class described, in combination, a car adapted to travel upon a track, weed-burning means mounted upon said car parallel to said track, and adapted to coact with the ground comprised between the rails thereof, a relatively movable weed-burning arm upon each side of said car and means upon said car adapted to swing said arms in a plane parallel thereto.

8. In apparatus of the class described, in combination, a car, a shaft upon said car, a burner-carrying arm adapted to swing about said shaft, a gear upon said burner-carrying arm, a gear upon said shaft meshing with said first-mentioned gear and adapted to swing said arm in a plane extending parallel to said car, means upon said car adapted to rotate said shaft and means upon said car adapted to swing said arm about said shaft.

9. In apparatus of the class described in combination, a car, a shaft upon said car, a burner-carrying arm adapted to swing about said shaft, a gear upon said burner-carrying arm, a gear upon said shaft meshing with said first-mentioned gear and adapted to swing said arm in a plane extending parallel to said car, means upon said car adapted to rotate said shaft, means upon said car adapted to swing said arm about said shaft, a source of fuel-supply upon said car and connections adapted to transmit fuel from said source of supply to said arm irrespective of the position thereof.

10. In apparatus of the class described, in combination, a car, a series of burner-carrying arms mounted thereon and adapted to swing in planes transverse of said car, a plate extending longitudinally of said car and projecting beneath said burner-carrying arms, and means upon said car adapted to swing said plate and said burner-carrying arms, and lock the same in predetermined positions.

11. In apparatus of the class described, in combination, a car, an internal-combustion engine mounted upon said car, means adapted to drive said car from said internal-combustion engine, a source of hydrocarbon-supply for said internal-combustion engine mounted upon said car, connecting means between said source of supply and said engine, a weed-burning arm mounted upon said car, connecting means between said source of supply and said weed-burning arm adapted to supply hydrocarbon thereto, an air-compressor upon said car driven from said engine a tank upon said car connected with said air-compressor and adapted to store air compressed thereby, and carbureting means for said hydrocarbon mounted upon said car and connected with said tank and with said source of supply.

810,794. KNITTING-MACHINE. JAMES MCNAMEE, Philmont, N. Y. Filed July 24, 1903. Serial No. 170,978.

Claim.—1. A machine of the class described having a revolubly-mounted alining-wheel provided with peripheral notches, corresponding in depth with the combined diameters of the number of the needles to be alined, and a stationary cam coacting with the alining-wheel to direct the required number of needles into such notches thereof as said notches successively pass said cam.

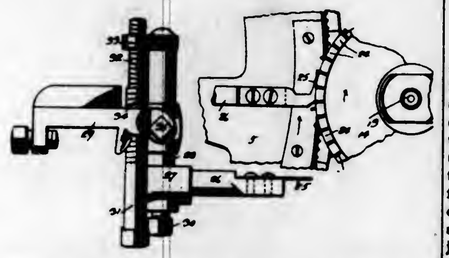

2. A machine of the class described having a revolubly-mounted alining-wheel provided with needle-alining notches, a stationary cam coacting with the alining-wheel to direct the required number of needles into such notches thereof as said notches successively pass said cam, and means to adjust said cam.

3. A machine of the class described having a revolubly-mounted alining-wheel provided with appropriately-spaced peripheral notches corresponding in depth with the combined diameters of the needles to be alined, a stationary cam coacting with the alining-wheel to direct the required number of needles into such notches thereof as said notches successively pass said cam, and a push-down shoe to carry the loops on the alined needles below the tops of such needles until the latter reach the cloth-wheel.

4. An attachment for knitting-machines comprising an alining-wheel having radial notches formed therein to successively engage each alternate needle in the machine, and teeth to engage and spring inwardly each intermediate needle, a cam-plate having a straight edge with which is engaged said sprung needle and whereby the latter is forced into the notch of the alining-wheel with the needle naturally entering the same, a curved edge being formed on said cam-plate to coincide with and engage the ends of the teeth of said alining-wheel thereby closing the notch containing the two needles and firmly holding the latter in said notch, means to engage the thread-loop of the latter needle with the sprung needle, means to thus hold the loops on said needles after the same are disengaged from said alining-wheel, means to force the threads down on said needles, means to close the beard of one needle, and means to disengage the thread-loop from the same, substantially as described.

5. In a machine of the class described, the combination of a revolubly-mounted alining-wheel having radial peripheral notches, a stationary cam-plate having a front cam-face converging to the alining-wheel to direct the required number of needles into such notches thereof, and a curved face presented to the periphery of the alining-wheel to retain the needles in such notches during a partial rotation of the alining-wheel.

6. A machine of the class described having a revolubly-mounted alining-wheel having peripheral alining-notches, a stationary cam coacting with the alining-wheel to direct the required number of needles into the notches thereof, as such needles successively pass said cam, and a relatively fixed push-down shoe to carry the loops on the alined needles below the tops of such needles until the latter reach the cloth-wheel.

7. An attachment for knitting-machines comprising a pivoted yieldingly-mounted alining-wheel, having formed therein radially-disposed notches to engage each alternate needle and teeth to engage and spring inwardly each intermediate needle, an adjustably-mounted cam-plate to force said sprung needles into the notches of the alining-wheel with the needle that has naturally entered the same, a pivoted adjustably-mounted push-down wheel to engage the thread-loop of the latter needle with the sprung needle, a push-down shoe to hold said thread-loops on said needles after the latter are disengaged from said alining-wheel, a pivoted, adjustably-mounted cloth-wheel to force said loops down on the needles below the points of the beards, a pivoted, adjustable and yieldingly-mounted cut presser-wheel adapted to close the beard of one of said needles, a pivoted adjustably-mounted landing-wheel having an annular series of obliquely-disposed teeth or blades adapted to engage said needles and raise the thread-loops thereon and a pivoted adjustably-mounted cast-off wheel adapted to engage said needles and raise the thread-loops above the same thereby casting off the loop from the closed-beard needle, substantially as described.

810,795. WIRE-STRETCHER. CHARLES R. MCPHERSON, Mesaga, N. D. Filed May 31, 1905. Serial No. 262,163.

Claim.—A wire-stretcher comprising a frame including spaced side members and intermediate end blocks having perforations therein, a shaft journaled in the frame and extending at one end beyond a side member, a drum mounted upon the shaft and provided at one end with ratchet-teeth, a rope engaged with the drum, a lug secured upon the inner face of one of the side members and having a socket therein, a pawl pivoted to the last-named side member adjacent to the lug, said pawl having oppositely-extending fingers, one of said fingers lying normally in engagement with the ratchet-teeth of the drum, a downwardly-exteading projection formed upon the other of said fingers, a helical spring disposed upon the projection, said projection and spring being disposed in the socket of the lug to hold the first-named finger normally in engagement with the ratchet-teeth, and a double crank-arm engaged with the projecting portion of the shaft.

810,796. PUNCHING-MACHINE. JOHN NELSON, Ottawa, Kans. Filed Oct. 5, 1905. Serial No. 281,501.

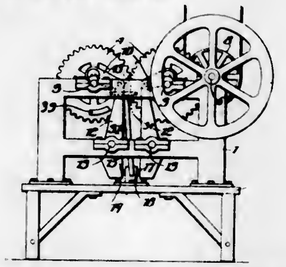

Claim.—1. In a tube-punching machine of the character described, the combination with a supporting-frame, of a pair of punching-levers pivotally mounted therein, punches removably secured in the lower ends of said levers, crank-shafts revolubly mounted in said frame, links to connect the upper ends of said levers with the cranks on said shafts, means whereby said shafts are driven to operate said levers, a die-holder, a die removably connected thereto, and means to automatically eject or discharge the punched tubes from said die, substantially as described.

2. In a machine for punching tubular metal, the combination with a supporting-frame, of a pair of punching-levers pivotally mounted therein, punches removably secured in the lower end of said levers, crank-shafts journaled in said frame, links to connect the upper ends of said levers with the cranks on said shafts, intermeshing gear-wheels fixedly mounted on said crank-shafts, a main drive-shaft, a pinion to engage one of said gear-wheels, a die-holder, a die removably connected to said holder, and an automatically-operated discharge mechanism adapted to remove the punched tubes and the punched-out metal from said die, substantially as described.

3. In a machine for punching tubular metal, the combination with a supporting-frame, of a pair of punching-levers pivotally mounted therein, punches removably secured in the lower end of said levers, crank-shafts journaled in said frame, links to connect the upper ends of said levers with the cranks on said shafts, intermeshing gear-wheels fixedly mounted on said crank-shafts, a main drive-shaft, a pinion to engage one of said gear-wheels, a die-holder, a hollow die removably connected to said holder, a discharge-lever pivotally mounted in said frame, an ejector-plate slidably mounted on said die, a discharge-head connected to said plate and to the lower end of said lever, and means to automatically operate said lever after each operation of the punching mechanism, substantially as described.

4. In a machine for punching tubular metal, the combination with a supporting-frame, of a pair of punching-levers pivotally mounted therein, punches removably secured in the lower end of said levers, crank-shafts journaled in said frame, links to connect the upper ends of said levers with the cranks on said shafts, intermeshing gear-wheels fixedly mounted on said crank-shafts, a main drive-shaft, a pinion to engage one of said gear-wheels, a die-holder, a discharge-lever pivotally mounted in said frame, a tube-ejector plate

slidably mounted on said die, a discharge-head, guide-rods connecting said head and plate, a centrally-disposed cleaning-rod connected to and operated by said head to remove the punched metal from said hollow die, a pivotally-mounted discharge-lever loosely connected at its lower end to said head, and a cam-lug arranged on one of said gear-wheels to engage and operate said lever, substantially as described.

810,797. DRAFT-EQUALIZER. GEORGE T. NICHOLAS, Bethany, Mo. Filed July 18, 1904. Serial No. 216,869.

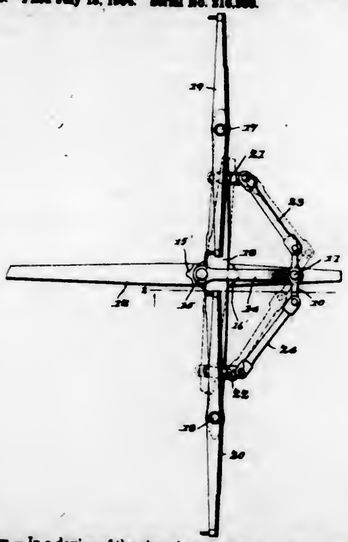

Claim.—In a device of the class described, the combination with a tongue having a wear-plate secured thereto, of a doubletree pivotally mounted on the tongue and provided with a bearing-clip having an extension projecting beneath said doubletree and bearing against the wear-plate, an equalizing-lever pivoted to the tongue and having arms of equal length extending laterally in opposite directions from said tongue and provided with alined terminal openings, said lever being pivoted to the tongue in the rear of the doubletree and having a fixed center of movement, a keeper the forward end of which engages the top of the doubletree, the opposite end thereof being interposed between the tongue and the equalizing-lever, a bolt mounted in the bearing-clip and engaging the forward end of the keeper, a bolt passing through the rear end of said keeper and equalizing-lever and serving to pivotally support the latter on the keeper, supporting-clips secured to the doubletree on each side of the tongue and spaced from said tongue a distance greater than the length of the equalizing-arms, and reversely-inclined links pivoted in the terminal openings of the equalizing-arms and also pivoted to the supporting-clips whereby when the doubletree is operated the links and lever will be alternately moved into longitudinal alinement and limit the movement of said doubletree.

810,798. EXTENSIBLE PITMAN-ROD. WILLIAM R. O'NEILL, Findlay, Ohio. Filed July 3, 1905. Serial No. 268,697.

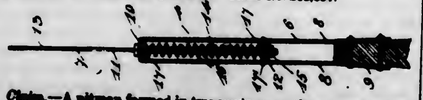

Claim.—A pitman formed in two parts or sections, one of which consists of an open frame 7, having at one end an integrally-formed, apertured part 12, a bail or yoke 8 to engage said open frame, and form the other part or section of said pitman, said yoke having at its inner end an integral apertured part 10 a bolt 14 arranged in said apertured parts to connect the sections of said pitman together, a spring arranged on said bolt between said parts, and apertured guide-plates 17 arranged on the bolt between the ends of the spring and said apertured parts, said plates having guide-recesses formed in their edges to receive the side bars of the frame and yoke forming the pitman, substantially as described.

810,799. MEASURING DEVICE. JOSEPH W. PAGE, Charlotte, N. C. Filed Mar. 3, 1905. Serial No. 248,318.

Claim.—1. A device of the class described comprising a vessel having a movable bottom and a guide-slot, a guideway carried by the vessel in line with said slot, a guide member attached to the bottom and movable through the guideway, said member serving as a closure for the guide-slot, and means for fixing the bottom in adjusted positions.

2. A device of the class described comprising a vessel having a movable bottom and a guide-slot, a graduated scale provided on the vessel adjacent the slot, a guideway carried by the vessel in line with the guide-slot, a guide member attached to the bottom and movable through the guideway, said member serving as a closure for the guide-slot, a pointer movable with the bottom and cooperating with the scale to determine the movements of the bottom, and means for fixing the bottom in adjusted positions.

810,800. HARROW. ANDREW C. PALMER, Washington, Ind. Filed Apr. 27, 1905. Serial No. 257,701.

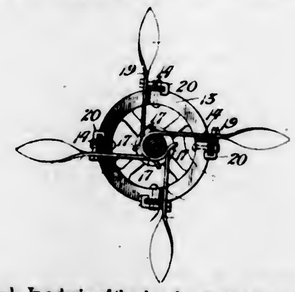

Claim.—1. In a device of the class described, a drum comprising a central shaft, end heads fixed thereon and webs attached to the heads, cutting members having portions for engagement with the central shaft, and means for attaching the cutting members to the webs.

2. In a device of the class described, a rotary drum comprising a central shaft, end heads, and a plurality of webs attached to said heads, blades having spring-engaging portions for engagement with the central drum-shaft, and means for attaching the blades to the webs.

3. In a device of the class described, a rotary drum comprising a central shaft, end heads fixed thereon, and a plurality of webs attached to the heads, cutting members having their inner ends engaged with the central shaft, and clip-bolts for attaching the members to the webs.

4. In a device of the class described, a rotary drum comprising a central shaft, end heads and a plurality of webs attached to said heads, blades provided with hooked end portions engaging the shaft, and clip-bolts for attaching the blades to the webs.

810,801. CIGAR-CLIPPER AND MATCH-SAFE. VICTOR H. PARADIS and JOHN B. PUTNOW, Rice Lake, Wis. Filed Feb. 15, 1905. Serial No. 245,797.

Claim.—1. In a device of the character described a casing, means for projecting a night match without the casing, means provided in the path of the said movement of the match for igniting the same, means for supporting the ignited match near its ends, a receptacle located under the said supporting means, and means adapted to positively project the match into the said receptacle when it is partially consumed.

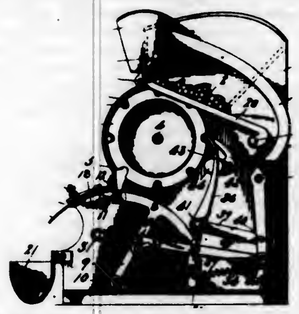

2. In a device of the character described, a casing adapted to contain matches, a receptacle adapted to receive burned matches, a carrier adapted to support a single match adjacent to its ends and to project it laterally without the casing, means provided in the path of said movement for igniting the match, a spring capable of holding the match upon the carrier adjacent the receptacle until partially consumed and then forcing it downward into the receptacle, a lever pivotally mounted within and extending without the casing and means whereby the operation of the lever actuates the carrier.

3. In a device of the character described, a case, a hopper within the case adapted to contain matches, a drum provided with longitudinally-disposed grooves mounted to rotate within the case and in communication with the hopper, a carrier mounted to oscillate adjacent to and in conjunction with the drum, means adapting the carrier to project a single match without the case, a spring secured to the case and disposed to bear and hold a match upon the carrier until removed, a serrated surface disposed in the path of the match-head and adapted to contact therewith, a receptacle disposed adjacent the carrier and to receive partially-consumed matches therefrom, a finger disposed to rotate the drum through part of a revolution, a pawl disposed to engage with and prevent retroaction movement of the drum, a spring secured to and adapted to oscillate the carrier to project a match, a link adapted to retract the carrier against the tension of the spring, means for disengaging the carrier from the link when at the extreme of its inward movement, a lever pivoted within and extending without the case, a cigar-clipper mounted upon the lever, a knife pivotally mounted within the clipper-body, means whereby the pressure of a cigar upon the clipper depresses the lever and actuates the knife and means whereby the depression of the lever operates the drum and carrier simultaneously and supplementary one to the other.

810,802. SAW GAGE AND JOINTER. LEMUEL W. PARKHURST, Tvana, Wash. Filed June 15, 1904. Serial No. 212,660.

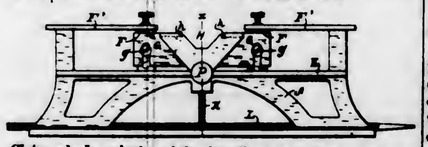

Claim.—1. In a device of the described class, the combination with a frame, of a gage member comprising a block having a channel in its under surface adapted to receive the saw-blade, and a transverse recess in its upper surface communicating with the channel; the walls of said recess being faced off at their upper corners at outwardly-divergent angles from the sides of said recess and notched in the plane of said channel; the base of said notch being formed to extend divergently outwardly from the sides of the recess, and convergingly upwardly toward the planes of said faced-off upper corner portions.

2. In a device of the described class, the combination with a frame, of a gage member comprising a block having a channel in its under surface adapted to receive the saw-blade, and a transverse recess on its upper surface communicating with the channel; the walls of said recess being faced off at their upper corners at outwardly-diverging angles from the sides of the recess and provided with notches in the plane of said channel, adapted to constitute a die for the point of the tooth, and formed to permit an outward bending of the point of the tooth when forced into said die; together with means for vertically adjusting said block, whereby the length of the bent portion of the point may be varied.

810,803. CUSHION DEVICE FOR GATES OF WATER-WHEEL CASINGS. CHARLES E. PARSONS, Glens Falls, N. Y. Filed Apr. 1, 1905. Serial No. 253,330.

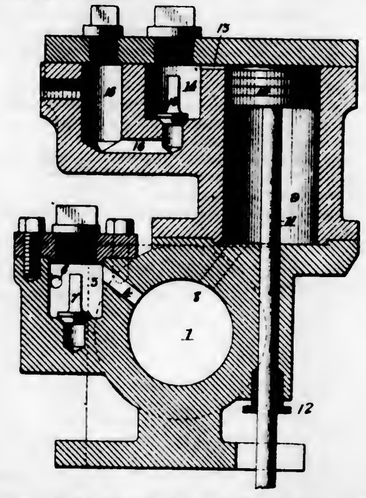

Claim.—1. An apparatus for gradually restraining a moving body, comprising a housing containing a non-compressible fluid under pressure, and an elastic-fluid cushion of high initial pressure operatively connected with said non-compressible cushion.

2. An apparatus for gradually restraining a moving body, comprising a housing, a piston in said housing adapted to be moved by the moving body, a non-compressible fluid under pressure behind said piston, and an elastic-fluid cushion of high initial pressure operatively connected with said non-compressible fluid.

3. An apparatus for gradually restraining a moving body, comprising a housing, a piston in said housing adapted to be moved by the moving body, a non-compressible fluid behind said piston, an elastic-fluid cushion operatively connected with said non-compressible fluid, and means for relieving the elastic cushion.

4. An apparatus for gradually restraining a moving body, comprising a housing having communicating cylinders, pistons in said cylinders, a non-compressible fluid behind one piston, an elastic cushion behind the other piston, and means connecting said first-mentioned piston with the moving body.

5. An apparatus for gradually restraining a moving body, comprising a housing having communicating cylinders, pistons in said cylinders, a non-compressible fluid behind one piston, an elastic cushion behind the other piston, means connecting said first-mentioned piston with the moving body, and means for relieving the elastic cushion.

6. An apparatus for gradually restraining a moving body, comprising a housing having communicating liquid and air cylinders, pistons therein under balanced pressure, and check-valves interposed between the source of pressure and said pistons.

7. An apparatus for gradually restraining a moving body, comprising a liquid-cylinder, an air-cylinder communicating therewith, pistons in the respective cylinders, a source of liquid and a source of air under pressure communicating with the respective cylinders and check-valves interposed between the pressure source and the respective cylinders.

8. An apparatus for gradually restraining a moving body, comprising a liquid-cylinder, an air-cylinder communicating therewith, pistons in the respective cylinders, a source of liquid and a source of air under pressure communicating with the respective cylinders check-valves interposed between the pressure source and the respective cylinders, and means for relieving the pressure in the liquid-cylinder.

9. An apparatus for gradually restraining a moving body, comprising a liquid-cylinder, an air-cylinder communicating therewith, pistons in the respective cylinders, a source of liquid and a source of air under pressure communicating with the respective cylinders, check-valves interposed between the pressure source and the respective cylinders, and means for relieving the pressure from the back of the air-piston.

10. An apparatus for gradually restraining a moving body, comprising a liquid-cylinder, an air-cylinder communicating therewith, pistons in the respective cylinders, a source of liquid and a source of air under pressure communicating with the respective cylinders, check-valves interposed between the pressure source and the respective cylinders, and means for withdrawing liquid from the liquid-cylinder.

11. A cushioning device comprising a housing containing communicating liquid and air cylinders, pistons therein, and check-valves controlling the exits from said cylinders, the check-valve for the air-cylinder having a liquid seal.

12. A cushioning device comprising a housing containing communicating liquid and air cylinders, pistons therein, check-valves controlling the exits from said cylinders, and a stem on the piston of the air-cylinder projecting from the housing and indicating the position of said piston.

810,804. SAFETY-ENVELOP. JOSEPH PELLERIN, Catalla, Alaska. Filed May 30, 1905. Serial No. 261,333.

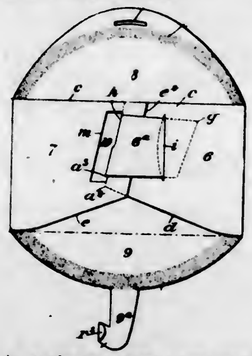

Claim.—1. An envelop comprising a front portion, end flaps foldable toward each other and lapping at their free ends, each end flap having a transverse slot therein near its free end, an extension-flap on the end of one of said end flaps and partly separated therefrom by a transverse slit, the extension-flap being inserted through the slot in the other end flap, then folded at the slit toward and upon the end flap of which it is a portion, the free end of the extension-flap having its free end gummed and moistened, then passed through the slot in the flap upon which it is folded, and cemented thereto by the gum, and side flaps foldable toward each other upon the end flaps and cemented thereon for closure of the envelop.

2. An envelop comprising a front portion, end flaps foldable toward each other and lapping at their free ends, each end flap having a transverse slot therein near its free end, an extension-flap on one of said end flaps and partly separated therefrom by a transverse slit, said extension-flap being passed through the slot in the other end flap, then folded at the slit toward and upon the flap of which it is a portion, the free end of the extension-flap being passed through the slot in the flap upon which it is folded and thereto cemented, a side flap having a transverse slot near its edge, which edge is gummed and cemented upon the end flaps when said side flap is folded thereon, a mating side flap having a tongue extended from its edge that will enter the slot in the other side flap when folded toward said slot, and a hook formed on the end of the tongue at one side edge thereof, said hook being adapted to interlock with the slitted edge of the extension-flap when the tongue is inserted in the slot and the flap from which it extends is folded down on the end flaps.

810,805. DRAFT-GEAR FOR RAILROAD-CARS. HARRY M. PYLKER, St. Louis, Mo. Filed Nov. 9, 1905. Serial No. 286,570.

Claim.—In draft-gear for a railroad-car, the combination with the car-body bolster, of a draw-bar having a suitable coupler, a cross-head on the inner end of the draw-bar opposite to the front side of the bolster, "buffing-springs" movable in and between housings therefor in the face of the cross-head, and in the front side of the bolster, a yoke jointed at its ends to the cross-head and slidable through the bolster transversely thereto, a block straddled by the said yoke opposite to the rear side of the bolster and adapted to be engaged by the said yoke, "draft-springs" movable in and between housings therefor in the face of the said block, and in the rear side of the bolster, flanges projecting from the bolster beneath the said block and cross-head respectively, and means for securing the bolster to the car-body, substantially as described.

810,806. MAIL-BOX. HARVEY L. PIER, Dubuque, Iowa. Filed May 27, 1905. Serial No. 262,616.

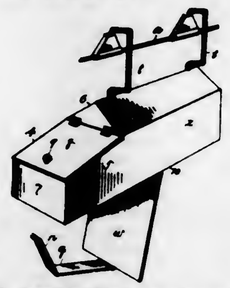

Claim.—1. A mail-box having a pendent signal device provided with a cover-securing arm adapted to engage the cover of the box when the signal is raised into concealed position, substantially as specified.

2. The combination with a mail-box having a staple, and a hinged cover adapted to engage said staple when closed, of a pendent signal device provided with a hasp-arm also adapted to engage said staple when the signal is raised into concealed position, substantially as specified.

3. A mail-box having an end extension open at the top, a door for said extension hinged to the end wall of the box, and a pendent signal device hinged to the bottom of the box and having a hasp-arm, and cover-securing means in connection with said hasp-arm, substantially as specified.

4. The combination with a mail-box having a gable top, an end extension open at the top and having a staple, an inclined door hinged to the face wall of said gable top, and adapted to engage said staple when closed, of a pendent signal device hinged to the bottom of the box and having a hinged hasp-arm adapted to engage said staple when the signal is raised into concealed position, substantially as specified.

810,807. GUY-ANCHOR. LESTER D. PITCHER, Daytona, Fla. Filed Sept. 5, 1905. Serial No. 277,944.

Claim.—An anchor of the character described comprising a tubular body having a closed tapered end and a spiral rib upon its outer side, said body being also formed with liquid inlet and discharge openings arranged, respectively, adjacent to its upper and lower ends, whereby a liquid may be introduced into the body and discharged adjacent to said point to soften the earth in which the latter is inserted substantially as described.

810,808. SPIKE. JAMES B. PITTMAN, Goldfield, Colo. Filed Feb. 1, 1905. Serial No. 243,070.

Claim.—A spike comprising a head and a stem, the stem directly adjacent to the head being cross-sectionally angular with its side faces converging in the direction of the rail-engaging portion of the head, said spike-stem below said angular portion being tapered downwardly and rounded and having a cross-sectionally rectangular portion at the lower end of the rounded portion and of greater diameter than the rounded portion, the stem below the rectangular portion being cross-sectionally triangular and having upwardly-directed barbs at its edges.

810,809. BOILER. EDWIN POSSETT, New York, N. Y. Filed Aug. 12, 1905. Serial No. 273,882.

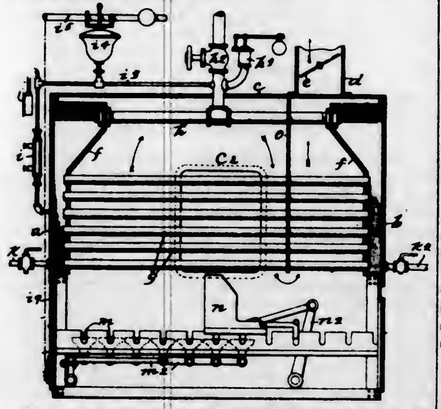

Claim.—1. A steam-generator, comprising a front and rear member, and a jacket connecting the same, a casing at each end of said generator, said casings being of greater dimension at their upper ends than at their lower ends, said enlarged portions forming steam-drums, an inlet for one of said casings, an outlet for the other of said casings, water-tubes connecting said casings with each other, a pipe connecting said drums within said jacket and an outlet for said pipe, substantially as shown and described.

2. A steam-generator, comprising the usual casing, a supplemental casing in each end of said first-named casing, said supplemental casings being enlarged at their upper ends, said enlarged portion forming steam-drums, water-tubes connecting the lower portions of said supplemental casings, a steam-pipe connecting the enlarged portions thereof, an inlet for one of said casings, an outlet for the other of said casings and a steam-outlet for said steam-pipe, substantially as shown and described.

810,810. APPARATUS FOR CUTTING AND SLUICING. SAMUEL H. RICHARDSON, Seattle, Wash. Filed July 22, 1904. Serial No. 217,736.

Claim.—1. In an apparatus of the nature indicated, a cutter provided with peripheral teeth and pockets between said teeth, in combination with means for directing a fluid into said pockets, whereby the cutter is operated.

2. In an apparatus of the nature indicated; a cutter provided with impact-surfaces, and a means for discharging a fluid against said impact-surfaces for operating the cutter.

3. In a combined cutting and sluicing apparatus, a cutter, means for directing a fluid to said cutter for operating the same, and means whereby the fluid after operating the cutter will be discharged therefrom to sluice the material excavated.

4. In a combined cutting and sluicing apparatus, a rotary cutter, means for conveying a fluid to a point adjacent the cutter, and means acted upon by the fluid thus conveyed for operating said cutter.

5. In a combined cutting and sluicing apparatus, a cutter, means for directing a fluid to a point adjacent the cutter for sluicing, and means acted upon by the water for operating said cutter.

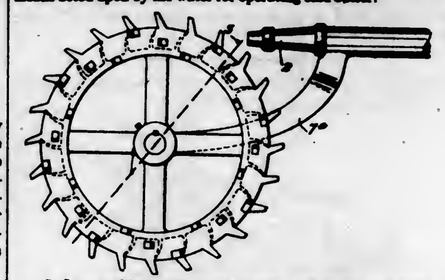

6. In a combined cutting and sluicing apparatus, a plurality of cutters, a fluid-supply means, and means acted upon by the water from said means for operating said cutters.

7. In an apparatus of the nature indicated, a plurality of cutters, one of said cutters being provided with impact-surfaces, and a nozzle arranged in juxtaposition to said impact-surfaces.

8. In an apparatus of the nature indicated, a plurality of spaced-apart cutters arranged side by side and provided with teeth, the teeth of certain of said cutters being disposed out of alinement with each other, and means for operating said cutters.

9. In an apparatus of the nature indicated, a cutter provided with impact-surfaces, a second cutter movable with the first-named cutter, and means for directing an operating means for the cutters against said impact-surfaces.

10. In an apparatus of the nature indicated, a hollow handle, a pair of arms secured thereto, a cutter mounted for rotation between said arms and being provided with pockets, and a nozzle secured to the inner end of said handle and being in alinement with said pockets.

11. In an apparatus of the nature indicated, a handle, a rotary cutter member supported from said handle, cutters disposed on opposite sides of the said cutter member, and means for operating all of said cutters simultaneously, the axis of rotation of said cutters being at substantially right angles to said handle.

12. In an apparatus of the nature indicated, a handle, a pair of arms secured thereto, a shaft journaled in said arms and projecting on opposite sides thereof, cutters mounted on said shaft, one of said cutters being disposed between said arms, and means whereby said cutters are operated simultaneously.

13. In an apparatus of the nature indicated, a hollow handle, a nozzle secured thereto at one end, and a rotary cutter disposed in advance of the nozzle and being supported from said handle.

14. In an apparatus of the nature indicated, a hollow handle, a nozzle secured thereto at one end, a rotary cutter disposed in advance of the nozzle, and a valve in said handle.

15. In an apparatus of the nature indicated, a hollow handle, a valve therein, a rotary cutter in advance of the handle and being supported thereby, and means whereby the cutter is operated by a fluid passing through the handle.

16. In an apparatus of the nature indicated, a hollow handle, a flexible tube in communication with one end thereof, a nozzle on the other end of said handle, a valve in said handle, and a cutter disposed in juxtaposition to the nozzle and being formed with impact-surfaces movable past said nozzle.

17. In an apparatus of the nature indicated, a hollow handle, a flexible tube in communication with one end thereof, a nozzle on the other end of said handle, a rotary cutter supported from said handle and lying in advance of said nozzle, said cutter being formed with impact-surfaces disposed in alinement with said nozzle.

18. In an apparatus of the nature indicated, a hollow handle, a flexible tube connected to one end thereof, a pair of arms secured to the other end thereof, a shaft journaled in said arms, a plurality of cutters fixed to said shaft, one of said cutters being formed with impact-surfaces, and means for directing fluid from said handle against said impact-surfaces so as to rotate the cutters.

19. In an apparatus of the nature indicated, a hollow handle, a valve therein, a flexible tube connected to one end of the handle, a nozzle secured to the other end of the handle, a pair of arms formed integral with the handle, a shaft journaled in the arms and projecting on opposite sides thereof, a cutter fixed on each end of the shaft, a cutter fixed on the shaft at a point between the arms, said last-named cutter being formed with impact-surfaces disposed in alinement with the nozzle.

20. In an apparatus of the nature indicated, a cutter having peripheral staggered teeth, alternately projecting on opposite sides thereof, and teeth on one of its sides, said last-named teeth also being staggered relatively to each other.

810,811. **COTTON-CHOPPER.** JAMES I. ROBERTS, Sparta, Ga. Filed Nov. 28, 1905. Serial No. 288,731.

Claim.—1. The improved cotton-chopper comprising a rigid horizontal frame having rearwardly-projecting handles, a front roller and a draft attachment comprising a frame pivoted to the main frame and having forwardly-extended converging draft-bars and connected therewith, pendent side bars attached to the rear portions of the main frame and having lateral bends, and a cutting-blade attached to the lower ends of such bars and comprising a horizontal portion and vertical side wings having outturned front ends, substantially as described.

2. In a cotton-chopper the combination with the main frame, pendent bars attached thereto, a cutting-blade connecting the lower ends of such bars and having vertical side wings, a front supporting and draft attachment comprising a yoke which is pivoted centrally to the front bar of said frame, a roller journaled in the pendent portions of such yoke and draft-bars proper rigidly connected with the yoke and converging at their front ends and extending upward at an angle of about forty-five degrees, substantially as described.

3. In a cotton-chopper the combination with a main frame and a front draft attachment comprising a roller and a pivoted frame in which it is journaled, of a cutting-blade arranged horizontally and pendent bars to which the same is attached, the said bars having a lateral bend intermediate of the blade and the frame and means for securing the bars detachably to both the frame and blade whereby they are adapted for convenient detachment and reversal of their bent portions whereby they are adapted for use with blades of varying widths, substantially as described.

4. The improved cultivating implement comprising an oblong rectangular frame provided with rearwardly-projecting handles, a rear cutting attachment comprising a horizontal blade having vertical side wings and rigid bars connecting such blade with the frame, and a front draft and supporting attachment comprising a roller, a yoke in which the roller is journaled, the same being pivoted to the front portion of the main frame and draft-bars rigidly connected with such yoke and extending forward and upward and converging as shown and described.

810,812. **WELDED SHELL.** THOMAS F. ROWLAND, New York, N. Y. Filed Oct. 21, 1903. Serial No. 177,981.

Claim.—1. In welded shells, a shell formed with a recess and with a projecting rib around the same and a projecting attaching-lug formed with an attaching-hole welded into said recess, the peripheral portions of said lug being within said recess and below the level of said rib and the continuity of said shell being uninterrupted adjacent said lug.

2. In welded shells, a shell formed with a recess, a projecting and attaching lug welded to said shell, the peripheral portions of said lug lying within said recess.

3. In welded shells, a shell formed with a recess and a rigid projecting attaching-lug welded to said shell within said recess.

4. In welded shells, a shell formed with a recess and with a projecting rib around the same and a rigid projecting attaching-lug formed with an attaching-hole welded into said recess, the peripheral portions of said lug being of reduced thickness and being located below the level of said rib and the continuity of said shell being adjacent said lug.

5. In welded shells, a shell formed with a recess, a projecting rib surrounding said recess, said projecting rib extending outward from the surface of the shell, a projecting attaching-lug welded to said shell the welded portion of the lug being within the recess and surrounded by the projecting rib.

6. In welded shells, a shell formed with an irregular contour, such irregularity making a recess in the surface of the shell and a circular rib or projection surrounding the recess and extending outward from a plane of the shell, a rigid attaching-lug welded to said shell within the recess and surrounded by said rib.

810,813. **OSCILLATING CYLINDRICAL PULP-STRAINER.** HERBERT SARGUINETTI, London, England. Filed May 13, 1905. Serial No. 260,126.

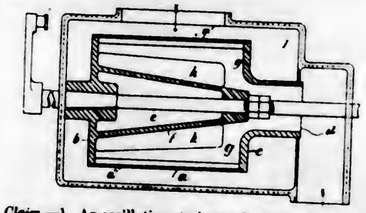

Claim.—1. An oscillating strainer-cylinder for paper and cellulose manufacture, provided with partitions, dividing the interior space of the cylinder into compartments, which partitions participate in the oscillating motion of the cylinder, the said partitions being provided with openings so arranged as to establish communication between the various compartments of the cylinder and so as thereby to increase the efficiency of the apparatus by reason of the compensation of pressure afforded in the interior of the cylinder, substantially as described and shown by the drawings.

2. A pulp-strainer comprising an oscillatory cylinder having the wall thereof perforated, a substantially conical-shaped nave extending through the cylinder, suitably connected therewith and facilitating the discharge of the stuff from the cylinder during the operation thereof, and a driven shaft extending through the nave and suitably connected therewith.

3. A pulp-strainer comprising an oscillatory cylinder having the wall thereof perforated, a double-coned-shaped nave extending through the cylinder and facilitating the discharge of the stuff therefrom during the operation of the cylinder, a central stay-partition interposed between the nave and the wall of the cylinder, said partition being perforated, and a driven shaft connected with the nave for oscillating the cylinder.

4. A pulp-strainer comprising a casing provided at one end with a pocket, a rotatable slide arranged in said pocket and constituting a discharge-valve, counterbalanced means for rotatably supporting said slide, an oscillatory strainer-cylinder arranged within said casing, and perforated partitions within said strainer-cylinder.

5. A pulp-strainer comprising an oscillatory cylinder having the wall thereof perforated, a closure-plate provided with an outlet and arranged at one end of the cylinder, a closure-plate at the other end of the cylinder, a conical-shaped nave within the cylinder, and a driven shaft extending through said outlet at one end of the cylinder, through the said nave and the plate at the other end of the cylinder and adapted when operated to impart oscillations to the cylinder.

6. A pulp-strainer comprising a casing provided with a pocket having an outlet, a rotatable slide arranged in said pocket and adapted to act as a closure means between the casing and the pocket, an oscillatory cylinder arranged within said casing, and perforated partitions within said strainer-cylinder.

7. A pulp-strainer comprising a casing provided with a pocket having an outlet, a rotatable slide arranged in said pocket and adapted to act as a closure means between the casing and the pocket, an oscillatory cylinder arranged within said casing, perforated partitions within said strainer-cylinder, and a counterbalance means for closing the outlet of said pocket.

810,814. **BICYCLE ATTACHMENT.** ADOLPHUS P. SAFFELL, Bunnevista, Fla. Filed Apr. 4, 1905. Serial No. 253,515.

Claim.—1. A supplemental seat for bicycles including two members having their lower end portions turned in one direction and hinged together and having their opposite ends turned in the opposite direction and adapted to receive a saddle, and means for holding said members with their hinged end portions in clamping relation.

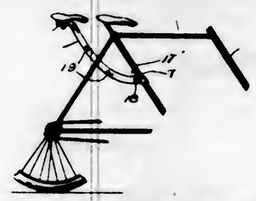

2. A supplemental seat for bicycles comprising two members having each one end turned laterally and hinged to the corresponding end of the other member, the opposite end of each member being bent laterally in the opposite direction, a saddle removably secured to the last-named laterally-bent portions, and clamping-bolts passed through the members and adapted to hold their hinged end portions in clamping relation.

810,815. **RAILWAY-CAR TRUCK.** FRANCIS P. SHAFFER, Cumberland, Md., assignor of one-third to Patrick W. Cavanaugh, Cumberland, Md. Filed Jan. 16, 1905. Serial No. 241,493.

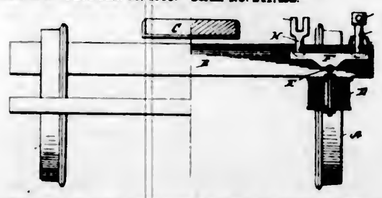

Claim.—1. In a railway-car truck, the combination with the bolster, of a lever fulcrumed at each end of said bolster, sockets in the ends of said levers, and rods having their lower ends engaging the sockets in the levers.

2. In a railway-car truck, the combination with the bolster having a transverse stud or pin at each end thereof, of a lever pivoted on said stud and having sockets on each end, and rods passing through the top of the bolster and having their lower ends engaging the sockets on the levers.

3. An equalizing device for railway-car trucks, comprising a pair of vertically-movable rods adapted to be arranged at each end of a bolster, and means adapted to be suspended within and at each end of the bolster for receiving the movement of the rods.

4. In a railway-car truck, the combination with a bolster, of a pair of vertically-movable rods arranged in the ends of the bolster, a lever supporting the lower end of each pair of rods, said lever receiving the movement of the rod, and means arranged in the bolster for supporting the lever.

5. In a railway-car truck, the combination with a hollow bolster, of a pair of vertically-movable rods arranged in each end thereof and extending through the top wall of the bolster, and means suspended within the bolster at each end thereof for receiving the movement of the rods.

6. An equalizing device for railway-car trucks, comprising a pair of vertically-movable rods adapted to be arranged at each end of a bolster, and a lever adapted to be suspended within and at each end of the bolster for receiving the movement of the rods.

7. An equalizing device for railway-car trucks, comprising a pair of vertically-movable rods adapted to be arranged at each end of a bolster, a lever adapted to be suspended within and at each end of the bolster for receiving the movement of the rods, and transversely-extending pins arranged in each end of the bolster and adapted to suspend the lever.

8. An equalizing device for railway-car trucks, comprising a pair of vertically-movable rods adapted to be arranged at each end of a bolster, a triangular-shaped vibratory lever arranged at each end of the bolster and each having a pair of sockets adapted to receive the ends of a pair of rods so that the lever will receive the movement of the rods, and a transversely-extending pin arranged in each end of the bolster and adapted to act as supports for the levers.

810,816. **VEGETABLE-DISINTEGRATOR.** NEWTON J. SHEPHERD, Summerville, Pa. Filed Jan. 13, 1905. Serial No. 240,893.

Claim.—In a device for disintegrating vegetables, the combination with a vessel mounted on legs and having a removable foraminated bottom, of an implement adapted to be introduced into said vessel to press the vegetables through said foraminated bottom, the said implement comprising a vessel having a foraminated bottom and a handle.

810,817. **ATTACHMENT FOR CULINARY VESSELS.** WILLIAM SOWERBY, Indiana, Pa. Filed Mar. 23, 1905. Serial No. 251,575.

Claim.—1. An attachment for culinary vessels having handles comprising a spring-clamp formed of wire and adapted to engage the handle of the vessel, a plate carried by said clamp, said plate being sheared to form brackets, a strap carried by said plate, a lid hinged to said strap, a rod mounted in said brackets and connected to said lid, the one end of said rod being bent upwardly to form a handle, substantially as described.

2. In an attachment of the character described, the combination with a culinary vessel having a handle and a lid, of a spring-clamp adapted to embrace said handle, a strap carried by said clamp to which said lid is hinged, a reciprocating rod mounted upon said clamp and connected to said lid.

3. An attachment for culinary vessels comprising a clamp composed of spring-wire having a U-shaped arm adapted to engage the underneath surface of a handle and having arms parallel to said U-shaped arm and connected thereto by a coil, a plate carried by said last-named arms, a strap carried by said plate, a lid hinged to said strap and a reciprocating rod, slidably mounted on brackets carried by said plate, and pivotally connected to the said lid.

810,818. **MACHINE FOR BENDING METAL BARS.** THOMAS STEVENSON, Dunedin, New Zealand. Filed May 20, 1903. Serial No. 158,055.

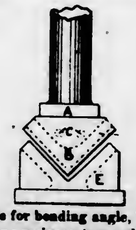

Claim.—A machine for bending angle, T and channel irons at right angles, comprising a reciprocatory male die having an angular working face and a stationary female die having an angular working face, said male die provided with a plurality of channels intermediate its ends for the reception of a flange or flanges of the iron, and further provided intermediate the channels thereof with a web-engaging member projecting beyond the face of the portion of the die inter-

posed between the channels and the web-engaging member, said channels being of greater height than the height of the flange of the iron to be bent to form spaces for the reception of the surplus metal formed at the angle of the bend during the operation of bending.

810,819. METAL CLIP FOR UNITING METAL BEAMS. HERBERT A. STRAWBRIDGE, Chicago, Ill. Filed Nov. 3, 1905. Serial No. 285,789.

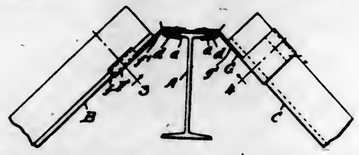

Claim.—1. The combination with meeting beams or members A, B C extending at angles to each other and in different planes, of a composite sheet-metal clip for securing said beams together and comprising a main clip member D having foldable flanges *d d* for securing the same to one of said beams, and supplemental clip members F G pivotally secured to said main clip member and having foldable flanges *f f* and *g g* for securing the same to the beams or bars, and provided also with bendable shank portions *f' g'* to enable said supplemental clips F G to extend in different planes and different angles as required, substantially as specified.

2. The combination with meeting beams or members extending at an angle to each other and in different planes, of a composite clip for securing said beams together, comprising a main member D having folding flanges *d d* and a supplemental member F pivotally connected to said main member and having folding flanges *f f* substantially as specified.

3. The combination with meeting beams or members extending at an angle to each other and in different planes, of a composite clip for securing said beams together, comprising a main member D having folding flanges *d d* and a supplemental member F pivotally connected to said main member and having folding flanges *f f*, said supplemental clip member F having a bendable shank portion *f'* to adapt the same to extend in a different plane as well as at an angle to the main clip D, substantially as specified.

4. The composite clip for securing metal beams or bars together, comprising a main member having folding flanges and a supplemental member pivotally connected to said main member and having folding flanges, substantially as specified.

5. The composite clip for securing metal beams or bars together, comprising a main member having folding flanges and a supplemental member pivotally connected to said main member and having folding flanges, said supplemental member having a bendable shank portion, substantially as specified.

6. The composite clip for securing metal beams or bars together, comprising a main member having folding flanges and two supplemental members pivotally connected to said main member and provided each with folding flanges, substantially as specified.

810,820. SURGICAL TABLE. JAMES L. SUDDARTH, Washington, D. C. Filed Mar. 7, 1903. Serial No. 146,691.

Claim.—1. In surgical appliances, a table comprising leaves provided with retaining devices, a brace engaging said retaining devices to support the leaves to form a table, means forming part of said brace to support one end or edge of the table, and supporting means for the other end of the table.

2. In surgical appliances, a table comprising leaves, a brace adapted to engage the leaves and support them in operative position to form a table and provided with a fastening to secure one end of the table to a suitable support, and means for supporting the other end of the table.

3. In surgical appliances, a table comprising leaves each in the form of a box or case-section, a brace passing through portions of the leaves and connecting them in rigid relation to form a table and provided with a projecting device, to secure one end of the table to a support, and means for supporting the other end of the table.

4. A surgical table, comprising two hinged sections to be opened to form a table, keepers secured to the sections, bars carried by the keepers to hold the sections open and having hooked ends to engage an article with one of the sides of the sections to secure the table in operative position and support one end thereof, and means for supporting the opposite end of the table.

5. A surgical table, comprising two hinged sections arranged to be opened to form a table, keepers secured to the sections, bars slidingly arranged in the keepers to hold the sections open and having their outer ends formed to engage and clamp an article against one of the sides of the sections to hold the table in operative position and support one end thereof, means to hold the bars in adjusted position, and means for supporting the outer end of the table.

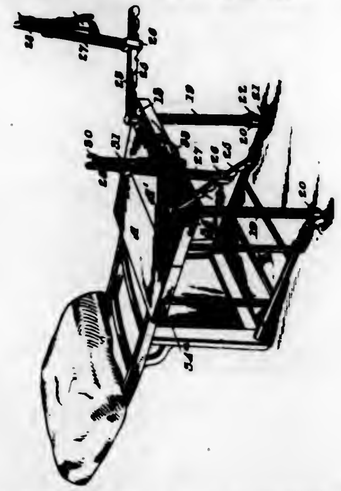

6. A surgical table comprising two box-sections hinged together, keepers secured in the ends of the sections, bars adjustably passed through the keepers, and having their ends turned down and projecting beyond the end of the table, means to support the table at its outer end, vertically-adjustable and laterally-movable limb-standards rising from the table and provided with hooks at their upper ends, and limb-securing means hung to the hooks.

7. In a surgical table, two box-sections hinged together, keepers secured in the ends of the sections, bars passed through the keepers and projecting outwardly with their ends bent downward, clamping-screws through the turned-down ends of the bars, and legs at the opposite end of the sections from that through which the bars project.

8. A surgical table, comprising hinged sections to be opened to form a table, a brace connecting said sections to hold the sections open and provided with means to engage an article to secure the table in operative position and to support one end thereof, means for supporting the opposite end of the table, brackets secured to one of the sections and formed with upwardly-opening sockets and pendent studs, legs having their upper ends fitted upon the studs, and limb-supporting devices fitted into the sockets.

9. A surgical table, comprising hinged sections to be opened to form a table, means embodying a brace to hold the sections open, said brace having a fastening to engage an article to secure the table in operative position and to support one end thereof, means for adjustably supporting the opposite end thereof, horizontally-swinging members mounted upon the table, and limb-supporting standards adjustably mounted upon the members.

10. A surgical table, comprising two hinged sections to be opened to form a table, means adapted to hold the sections open and engage an article to secure the table in operative position and to support one end thereof, brackets secured to one of the sections and consisting of upper plates having formed thereon rigid depending studs having sockets in their upper ends, stop-plates formed with vertical end pieces and through which pass the studs, means passing through the end pieces to secure the stud-plates in applied position, face-plates, means carried by the face-plates to engage the upper plates to secure the studs in applied position, means carried by the studs for supporting the outer end of the table, and limb-supporting means carried by the sockets.

11. A surgical table, comprising hinged sections to be opened to form a table, means embodying a brace to hold the sections open, said brace having a fastening to engage an article to secure the table in operative position and to support one end thereof, means for adjustably supporting the opposite end thereof, horizontally-swinging arms mounted upon a table, vertically-adjustable limb-supporting standards mounted upon the arms, and slings or straps detachably suspended at their upper ends on said standards.

12. A portable surgical table, comprising two box-sections hinged together, keepers in the ends of the sections, rods adapted to engage through the keepers, and having turned-down ends, brackets secured in the outer corners of one of the sections and formed with a rigid depending cylindrical stud having a socket in its upper end, tubular extensible legs having their upper ends fitted to the said studs, laterally-swinging members having depending studs to pivotally engage in the said sockets, vertically-extensible limb-supporting standards having their bases loosely and slidably mounted on the said members, and straps secured to the tops of the extensible limb-supporting standards.

810,821. AUTOMATIC DRAFT-OPENER. JOHN H. THOMPSON, Fitchburg, Mass. Filed Dec. 5, 1904. Serial No. 235,880.

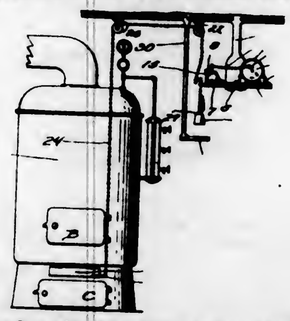

Claim.—In combination a furnace having a draft-opening, a door therefor, a weight, a connection between the door and weight, whereby the drop of the weight will open the door, a suitably-supported shelf, a bracket secured to one end of the shelf, a bell-lever pivoted to the upper portion of the bracket, a lug on one end of the bell-lever, bearings carried by the bracket beneath the bell-lever, a shaft mounted therein, a lever carried by the shaft, an end of the lever being engaged by the lug of the bell-lever, a stop on the bracket for limiting the movement of the lever in one direction, an arm carried by the shaft and adapted to engage the connection and suspend the weight, a time-controlled apparatus on the shelf, a flexible tripping connection between the end of the bell-lever and the apparatus, and means for holding the time-controlled apparatus against displacement.

810,822. LURE FOR USE WITH TROLLER-HOOKS. GEORGE W. TINKHAM, Hubbard, Minn. Filed Apr. 27, 1905. Serial No. 257,760.

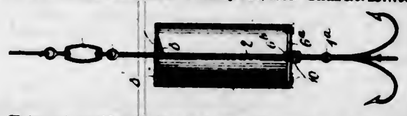

Claim.—An artificial bait or lure comprising an elongated shank or stem, a revolubly-mounted cylinder arranged on said stem, and blades formed in one end of said cylinder whereby the latter will be turned on said stem, substantially as described.

810,823. FILING-CABINET. FRED W. TOBEY, Grand Rapids, Mich. Filed May 12, 1905. Serial No. 260,194.

Claim.—1. In a filing-cabinet, a sliding drawer composed of an upper section and a lower section; and means for holding the same in slidable contact with each other whereby the upper section of the drawer may be drawn forward sliding upon the lower section.

2. In a filing-cabinet, the combination, with the main frame, of a sliding drawer composed of an upper and a lower section in slidable engagement with each other, and a follower forming the back of the upper portion of the drawer and adjustable to and from the front.

3. In a filing-cabinet, the combination with the main frame, of a sliding drawer composed of sides, a sectional front, a tilting back and a bottom, means for adjusting the back to and from the front, and means for permitting the upper portion of the back and one of the sections of the front to move away from each other while the lower portion and the other section of the front retain their relative positions, whereby the contained files may be freely examined while held bound by their lower edges.

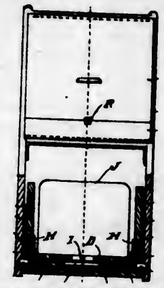

4. In a filing-cabinet, the combination with the main frame, of a sliding drawer composed of an upper and a lower section in slidable engagement with each other, a follower forming the back of the upper section of the drawer and adjustable to and from the front, and means for preventing the upper section from moving forwardly upon the lower section.

5. In a filing-cabinet, the combination with the main frame, of a sliding drawer composed of an upper and a lower section in slidable engagement with each other, a follower forming the back of the upper section of the drawer and adjustable to and from the front, means for preventing the upper section from moving forwardly upon the lower section, and means carried by one section and engaging in the other of the sections to prevent the tilting of the sections upon one another.

6. In a filing-cabinet, the combination with the main frame, of an extension-slide arranged therein, a sliding drawer composed of an upper and a lower section mounted upon said frame, rollers carried by the extension-slide, adapted to support the slide and actuated by the sliding drawer, and means for holding the sections of the drawer in slidable contact with each other, whereby the upper section of the drawer may be drawn forward in a sliding manner upon the lower section.

7. In a filing-cabinet, the combination with the main frame, of a sliding drawer composed of an upper and a lower section in slidable engagement with each other, a follower forming the back of the upper portion of the drawer and adjustable to and from the front, and means for detachably connecting the said sections together, said means when in operative position preventing the sliding of one section upon the other and when in inoperative position permitting one of the sections moving forwardly upon the other of the sections.

8. In a filing-cabinet, the combination with a main frame, of an extension-slide arranged therein, a sliding drawer composed of an upper and a lower section, supporting-rollers carried by the extension-slide and adapted to be actuated by the sliding drawer, means for holding the sections of the drawer in slidable contact with each other so that the upper section can be slid forward upon the lower section, and means for locking the two sections together to form a unit and to prevent one section moving in advance of the other section.

9. In a filing-cabinet, the combination with a main frame, of an extension-slide arranged therein, a slide-drawer composed of an upper and a lower section, supporting-rollers carried by the extension-slide and adapted to be actuated by the slide-drawer, means for holding the sections of the drawer in slidable contact with each other so that the upper section can be slid forward upon the lower section, means for locking the two sections together to form a unit and to prevent one section moving in advance of the other section, and means carried by one section and engaging in the other of the sections to prevent the tilting of the sections upon one another when withdrawing them from the cabinet.

10. In a filing-cabinet, the combination with a main frame, of an extension member arranged therein, a sliding drawer composed of an upper and a lower section, means carried by one of the sections and engaging in the other of the sections for holding the sections in slidable contact and for limiting the sliding movement of the upper section upon the lower section, and means for locking the two sections together to form a unit and to prevent one section moving in advance of the other section.

11. In a filing-cabinet, the combination with a main frame, of an extension member arranged therein, a sliding drawer composed of an upper and a lower section, means carried by one of the sections and engaging in the other of the sections for holding the sections in slidable contact and for limiting the sliding movement of the upper section upon the lower section, means for locking the two sections together to form a unit and to prevent one section moving in advance of the other section, and means carried by one section and engaging in the other section to prevent the tilting of the sections from one another when withdrawing the sections from the cabinet.

810,824. SHELF. FRED W. TOBEY, Grand Rapids, Mich. Filed Aug. 10, 1905. Serial No. 273,613.

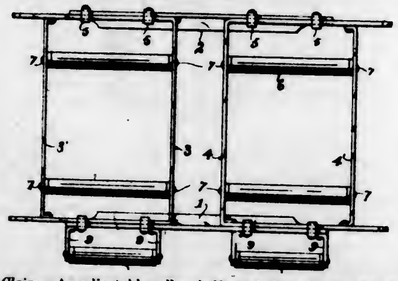

Claim.—An adjustable roller-shelf consisting of front and rear bars, roller-carrying frames, rollers carried thereby, and means for slidable connection between bars and frames, whereby the frames may be adjusted to and from each other and the length of the shelf may be correspondingly affected.

810,825. BRAKE. MILES TURNER, WILLIAM KERNAGHAN, and CHARLES M. SWINEHART, Steamboat Springs, Colo. Filed June 1, 1905. Serial No. 263,213.

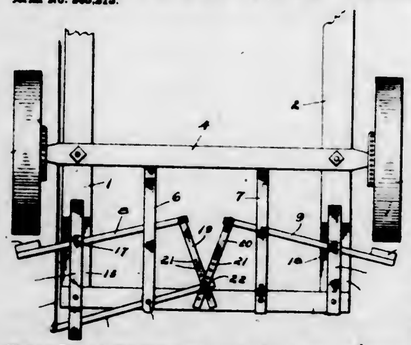

Claim.—The combination with a wheeled frame, comprising sills, a transverse beam at the rear end of the sills, and braces connected to the axle and transverse beam, said sills having their under faces cut away at their rear ends, of guide-plates secured to the under sides of the sills and to the transverse beam and bridging the cut-away portions, brake-beams pivoted between the sills and the guide-plates and provided with shoes disposed to engage the wheels at times, links pivoted to the brake-beams, a lever pivoted to the transverse beam and to the links, and means for shifting the lever.

810,826. LOG-HOOK. JAMES D. VAUGHAN, Swoll, La. Filed Jan. 7, 1905. Serial No. 240,118.

Claim.—1. A fastening device having a body provided with means for connecting it with a support located on the rear side thereof, and a hook and an operating-arm on the front side, said hook and arm being above said means when the hook is locked in operative position.

2. A fastening device having a body provided with means located on the rear side thereof for connecting it with a support, and an operating-arm and hook located on the front side of said body, the hook being located below the arm, whereby upon the rotation of the device about said means as a center from a position for engaging a load to a position for supporting a load, the path of movement of the hook will not cross the plane of the support.

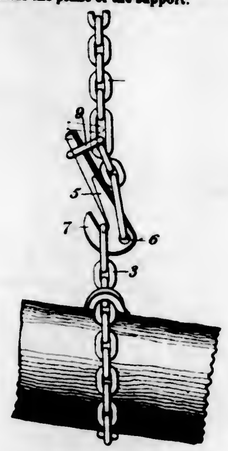

810,827. CRANE STRUCTURE FOR CARS. CONSTANTINE B. VOTHOW and GEORGE B. TAYLOR, Philadelphia, Pa. Filed Apr. 4, 1905. Serial No. 253,909.

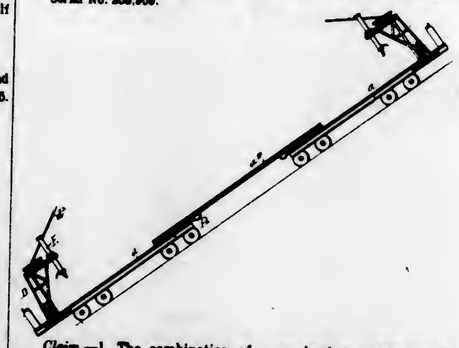

Claim.—1. The combination of a car having a supporting-framework including side members formed of longitudinally-extending beams, with a crane structure adjustable longitudinally of said car upon said beams and having wheels operative upon and held from vertical movement by the flanges of the beams, substantially as described.

2. The combination of a car having a framework including side members formed of structural sections, a structure having wheels operative upon said sections so as to move longitudinally of the car, and a hoisting device carried by said structure, substantially as described.

3. The combination of a car having a structure longitudinally adjustable thereon, a track on said structure extending transversely of the car, and a hoisting device movable on said track, substantially as described.

4. The combination of a car having longitudinally-extending tracks, a structure having side frames connected together and movable on said tracks, a track extending between said side frames, a carriage movable on said latter track, and a hoisting device supported by said carriage, substantially as described.

5. The combination of a car, longitudinally-extending structural sections at each side of the same, a framework at each end of the car movable upon the said structural sections, said frameworks having portions held from vertical movement by the flanges of said sections, and a crane carried by each framework.

6. A car having at each end a body including two longitudinally-extending beams, a structure having side members provided with rollers operative upon the flanges of said beams, and a hoisting device carried by each of said structures, substantially as described.

7. A car having a pair of longitudinally-extending beams, a framework operative upon said beams, said framework including elongated pieces carrying wheels operative upon the flanges of the beams, side members extending upwardly from said pieces, means for connecting the side members, a guide or guides also extending between the side members, and a hoisting device movable transversely upon said guides, substantially as described.

8. The combination of a car having at each end a frame movable longitudinally of the car, each of said frames having portions overhanging the car, with hoisting mechanism carried upon the overhanging portion of each frame and bodily movable transversely of the car, substantially as described.

9. The combination of a car having two truck-supported end sections and an intermediate section connecting said two end sections, crane structures respectively carried on the end sections so as to be movable longitudinally of the car and hoisting devices on said structures placed to deposit upon or remove elongated objects from the intermediate section, substantially as described.

810,828. SWITCH-OPERATING MECHANISM. GEORGE WARD Homestead, Pa., assignor of one-eighth to Thomas J. Tierney and one-eighth to Frank R. Agnew, Pittsburg, Pa. Filed Aug. 31, 1905. Serial No. 276,517.

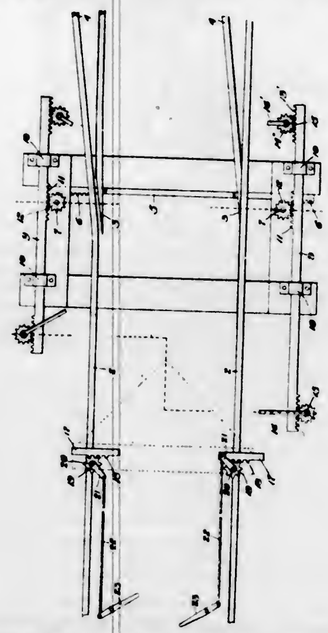

Claim.—1. In switch-operating mechanism, the combination with movable switch-points, of a connecting-bar provided with a side rack, a vertical shaft provided with a pinion engaging said rack, a second vertical shaft provided with a laterally-projecting arm, gearing connecting said shaft with the first-named shaft, and contacting mechanism mounted on a movable element arranged to cooperate with said means, substantially as set forth.

2. In switch-operating mechanism, the combination with movable switch-points, of a connecting-bar provided with a side rack, a vertical shaft provided with a pinion engaging said rack, a second vertical shaft provided with a laterally-projecting arm, gearing connecting said shaft with the first-named shaft, and adjustable contacting mechanism mounted on a movable element arranged to cooperate with said means, substantially as set forth.

3. In switch-operating mechanism, the combination with adjustable switch-points, of a connecting-bar provided with a rack-terminal, a pinion engaging said rack, a pinion adapted to transmit movement to said first pinion, a rack-bar engaging said second pinion provided with a rack extremity, a pinion engaging said rack extremity, and an operating-shaft and lever therefor, substantially as set forth.

4. In switch-operating mechanism, the combination with adjustable switch-points, of a connecting-bar provided with a rack-terminal, a pinion engaging said rack, a pinion adapted to transmit movement to said first pinion, a rack-bar engaging said second pinion provided with rack extremity, a pinion engaging said rack extremity, with an operating-shaft and lever therefor, and a movable track-supported adjustable abutment arranged to engage said lever to transmit motion to said mechanism, substantially as set forth.

5. The combination with switch-operating mechanism provided with a vertical actuating-shaft having a pinion engaging shifting gearing and a laterally-projecting arm; of an adjustable abutment mounted upon the locomotive, with means for setting said abutment into or out of operative relation with said arm, substantially as set forth.

810,829. DISPLAY-STAND. PHILO M. WARD, Johnson City, Tenn. Filed Feb. 13, 1905. Serial No. 245,433.

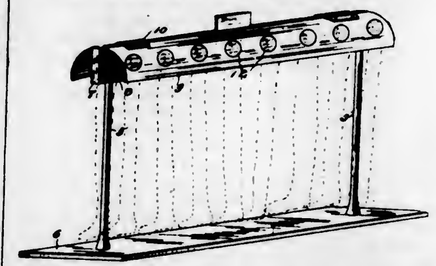

Claim.—A display-stand comprising a base; standards rising therefrom; a cross-bar connecting said standards at the top; pins extending outwardly from the side of the cross-bar on both sides thereof, the points of the pins being upwardly presented; and a leaf hinged to each of the upper edges of the cross-bar and normally resting on the points of the pins.

810,830. PAN-AND-ROLLER MILL FOR CRUSHING AND GRINDING. JOHANNES C. WRIGHT, Battlesbridge, England, assignor to The Renfrew Crusher Company Limited, London, England. Filed May 12, 1905. Serial No. 260,979.

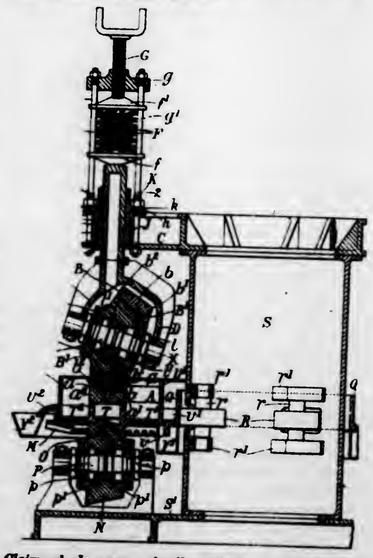

Claim.—1. In a pan-and-roller mill, the combination with a pan provided with a horizontal grinding-face upstanding from the bot-

tom of the pan and having its inner and outer faces vertical, of a grinding-roll of truncated conical form disposed with its smaller end toward the interior of the pan, the axis of the roll being set skewwise in the pan and at such an inclination as to enable parallelism to be maintained between the grinding-faces of the pan and roll at their line of bite, the relative widths of said faces being adapted to prevent the formation of a groove or step on either of them, and the marginal portions of the inner and outer ends of the roll being respectively concave and convex so as to be normal to the grinding-face; a dead-axle whereon the roll is mounted to rotate; a yoke-frame straddling the roll and carrying the ends of said axle; a vertical ram integral with said yoke-frame and having its axis alined to intersect the line of bite of the pan and roll at the center of said line; and a bearing in the frame of the mill adapted to permit of said ram moving vertically without turning, substantially as described.

2. In a pan-and-roller mill the combination with each grinding-roll of a yoke-frame wherein the roll is mounted to turn on its own axis, a vertical ram integral with said frame and having its axis alined to intersect the line of bite of the pan and roll at the center thereof, a bush in which the ram is splined so as to be free to slide without turning, a bearing in the frame of the mill wherein said bush is fitted to rotate, and means for angularly adjusting said bush in its bearings so as to enable the roller to be set skewwise in the pan, substantially as specified.

3. In a pan-and-roller mill the combination with each grinding-roll of a yoke-frame wherein the roll is mounted to turn on its own axis, a vertical ram integral with said frame and having its axis alined to intersect the line of bite of the pan and roll at the center thereof, a bush in which the ram is splined so as to be free to slide without turning, a bearing in the frame of the mill wherein said bush is mounted to rotate, means for angularly adjusting the bush or sleeve in said bearing so as to enable the roller to be set skewwise in the pan, and means for applying adjustable spring-pressure to the ram so as to reinforce the weight of the roll, substantially as specified.

4. In a pan-and-roller mill the combination with an annular pan having a vertical inner wall bounding its central aperture and a conoidal bearing-surface on its under side, of supporting-rollers for the pan of truncated conical form mounted to rotate on bearings carried by the foundation of the mill, and adapted to contact with the conoidal bearing-surface of the pan, an upright hollow cylindrical pillar carried by the foundation of the mill concentric with the pan and extending through its central aperture so as to occupy approximately the entire area thereof, openings in the wall of said pillar, and antifriction-rollers mounted to turn on vertical axes so as to project through said openings to contact with the vertical inner wall of the pan, substantially as specified.

5. In a pan-and-roller mill the combination of an annular pan, an upright cylindrical pillar carried by the foundation of the mill concentric with the pan and extending through its central aperture so as to occupy approximately the entire area thereof, a cantaliver arm projecting from the upper part of said pillar over the pan, a grinding-roll adapted to coact with a race in the pan, a yoke-frame wherein said roll is mounted to turn on its own axis, a vertical ram integral with said frame, a bush wherein said ram is splined so as to be free to slide without turning, a bearing in said cantaliver arm wherein said bush is fitted to rotate, and means for angularly adjusting said bush in its bearing so as to enable the grinding-roll to be set skewwise in the pan, substantially as specified.

810,831. DUST-COLLECTOR FOR CARS. GEORGE F. WEIR, Hibbard, Ind. Filed June 26, 1905. Serial No. 267,417.

Claim.—1. A dust-collector for cars, comprising a chute arranged laterally and outside of the car-wheel truck, and effective to receive the dust thrown up by the action of said wheels, a lateral dust-conducting pipe arranged upon the car, and a diagonal branch-pipe connection between said lateral pipe and said chute.

2. A dust-collector for cars, comprising a chute arranged laterally and outside of the car-wheel truck, and effective to receive the dust thrown up by the action of said wheels, said chute having a tapered delivery rear or inner end member, a lateral dust-conducting pipe-section arranged upon the car, and a diagonal branch pipe effecting connection between said lateral dust-conducting pipe-section and said member.

3. A train dust-collector, comprising a chute arranged upon the lead car, laterally and outside of the wheel-truck, and effective to receive and collect the dust thrown up by the action of the wheels, said car having a lateral pipe-section connected to said collectors and following car equipped with like dust-collectors and lateral pipe-sections having branch-pipe connections with the latter dust-collectors, the lateral pipe-sections of the lead car being interchangeably used with either of said latter pipe-sections of the following car.

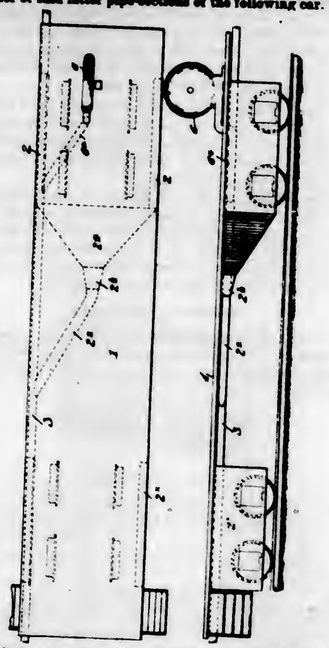

4. A dust-collector for cars, comprising a number of chutes arranged laterally and outside of the truck-wheels and opening downward to receive the dust resulting from the action of the truck-wheels, a lateral dust-conducting pipe-section upon the car, an upward and rearward tapered nozzle member fixed to and common with both of said chutes, and a diagonal pipe connection between said tapered member and said lateral dust-conducting pipe.

5. A dust-collector for cars, comprising a chute arranged upon the lead car, laterally and outside of the forward truck-wheels and effective to receive the dust resulting from the action of the car truck-wheels, a lateral dust-conducting pipe arranged upon the car, said chutes having connected or fixed to their delivery end an upward and laterally or rearward tapered nozzle member common to both of said chutes, and similar opposite end chutes arranged upon a following car each two of these latter chutes also having a common nozzle member, opposite lateral dust-conducting pipe-sections, and branch-pipe connections between said nozzle members and said lateral dust-conducting pipe-sections arranged to extend in oppositely-diagonal directions from the respective nozzle members of said chutes.

810,832. APPARATUS FOR CASTING PROJECTILES FOR SMALL-ARMS. FREDERICK WEBER, Esher, England. Original application filed Oct. 22, 1903, Serial No. 178,295. Divided and this application filed Mar. 24, 1905. Serial No. 251,577.

Claim.—1. In an apparatus for casting projectiles which are provided with a hardened portion, the combination with a series of movable molds each adapted to form a projectile, means for injecting molten metal into the molds, means to move the molds into casting position, and means to feed the hardened portion of a projectile to each mold before it reaches its casting position.

2. In an apparatus for casting projectiles which are provided with a hardened portion, the combination with a rotating wheel provided with a series of molds in its periphery, means for injecting molten metal into the molds, means to move the molds successively into casting position, and means to feed the hardened portion of a projectile to each mold before it reaches its casting position.

3. In an apparatus for casting projectiles which are provided with a hardened portion, the combination with a series of molds each provided with a plunger which forms a part of the mold, means for injecting molten metal into the molds, means to move the molds successively into casting position, means to feed the hardened portion of a projectile to each mold before it reaches its casting position, and means to move the plungers to eject the cast projectiles.

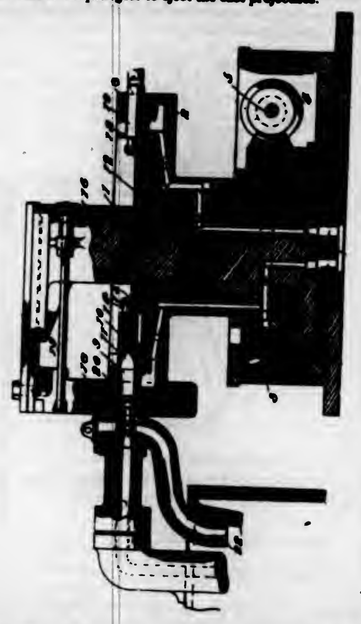

4. In an apparatus for casting projectiles which are provided with a hardened portion, the combination with a rotating wheel provided with a series of molds in its periphery, each mold being provided with a plunger which forms a part of the mold, means for injecting molten metal into the molds, means to move the molds successively into casting position, means to feed the hardened portion of a projectile to each mold before it reaches its casting position, and means to move the plungers to eject the cast projectiles.

5. In an apparatus for casting projectiles which are provided with a hardened portion, the combination with a series of movable molds each adapted to form a projectile, of means to inject molten metal into the molds, means to move the molds successively into casting position, a magazine adapted to contain the hardened portions of the projectiles, the magazine being so located that the molds are brought successively thereunder during their movement to the casting position and an opening in the top of each mold whereby as the molds are brought under the magazine a hardened portion will be delivered into each mold.

6. In an apparatus for casting projectiles which are provided with a hardened portion, the combination with a rotating wheel provided with a series of molds in its periphery, means for injecting molten metal into the molds, means to move the molds successively into casting position, a magazine adapted to contain the hardened portions of the projectiles, the magazine being so located that the molds are brought successively thereunder during their movement to the casting position and an opening in the top of each mold whereby as the molds are brought under the magazine a hardened portion will be delivered into each mold.

810,833. REVERSIBLE CAR-SEAT. HUBERT WITTE, St. Louis, Mo., assignor to St. Louis Car Company, St. Louis, Mo., a Corporation. Filed July 7, 1905. Serial No. 268,649.

Claim.—1. In a car-seat, the combination of seat ends, back-supporting arms swingingly supported by said seat ends, a rock-shaft, links fixed to said rock-shaft, dog-carrying bars pivoted to said links, said bars being provided with dogs arranged to be engaged by said supporting-arms and to be moved out of engagement with said arms, and means for rotating said rock-shaft, substantially as set forth.

2. In a car-seat, the combination of seat ends, back-supporting arms swingingly supported by said seat ends, a rock-shaft, dogs swingingly supported by said rock-shaft, and arranged to be engaged by said back-supporting arms, a hand-lever fixed to said rock-shaft, and a rocking handle carried by said hand-lever and arranged for engagement with one of said seat ends, substantially as set forth.

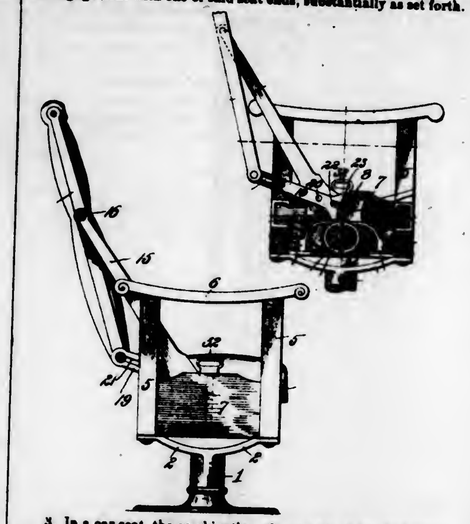

3. In a car-seat, the combination of seat ends, back-supporting arms swingingly supported by said seat ends, a rock-shaft, dogs swingingly supported by said rock-shaft, and arranged to be engaged by said back-supporting arms, a hand-lever fixed to said rock-shaft, and a rocking handle carried by said hand-lever and arranged for engagement with one of said seat ends; said handle being provided with tongues and said seat end being provided with a pocket to receive said tongues, substantially as set forth.

810,834. COVER FOR JARS, GLASSES, &c. ARTHUR W. ZIEGLER, Berlin, Wis. Filed Dec. 12, 1904. Serial No. 236,541.

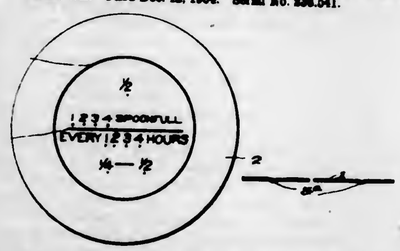

Claim.—1. A cover-plate for jars, glasses, &c., of soft material having its peripheral portion adapted to be molded over the top of the receptacle and to keep its shape when so molded, said plate having means to center the same on the top of a receptacle.

2. A cover-plate for jars, glasses, &c., of soft material having its peripheral portion adapted to be molded over the top of the receptacle and to keep its shape when so molded, said plate having a circular embossed line inscribed thereon equidistant from its center, whereby it may be centered on the top of the receptacle.

810,835. APPARATUS FOR HEATING PROPAGATING-BEDS. HENRY ASHTON, Felton, Del. Filed Jan. 31, 1905. Serial No. 243,514.

Claim.—1. An apparatus of the class described, comprising a furnace or heater adapted to be located beneath the surface of the ground and provided at the top with a fuel-inlet, an air-inlet located at one end of the furnace or heater, and a heat-conduit extending from the other end of the furnace or heater, said heat-conduit being arranged to extend beneath a hot-bed.

2. An apparatus of the class described, comprising a furnace or heater adapted to be located beneath the surface of the ground, a

heat-conduit extending longitudinally from one end of the furnace or heater and arranged to extend beneath a hot-bed and provided at its outer portion with an outlet, and an upwardly-extending air-inlet located at the other end of the furnace or heater.

3. An apparatus of the class described, comprising a furnace or heater provided at the top with a fuel-inlet and adapted to be located beneath the surface of the ground, a heat-conduit extending longitudinally from one end of the furnace or heater and arranged to extend beneath a hot-bed and provided at its outer portion with an outlet, and an upwardly-extending air-inlet located at the other end of the heater or furnace and being of a diameter less than the heat-conduit.

4. An apparatus of the class described, comprising a substantially horizontal furnace or heater provided at the top with a fuel-inlet and adapted to be located beneath the surface of the ground, a heat-conduit extending longitudinally from one end of the furnace or heater, an upwardly-projecting air-inlet extending from the other end of the furnace or heater, and an escape-pipe connected with and extending upward from the outer end of the heat-conduit.

5. An apparatus of the class described, comprising a furnace or heater provided at the top with a fuel-inlet and adapted to be located beneath the surface of the ground and provided with an air-inlet, a heat-conduit extending from one end of the furnace or heater and arranged to extend beneath a hot-bed, said heat-conduit being arranged at an inclination and extended upwardly and outwardly, whereby the distance between it and a hot-bed decreases as the distance from the furnace increases, and an outlet located at the outer end of the heat-conduit.

6. An apparatus of the class described, comprising a furnace or heater, a heat-conduit adapted to be located beneath a hot-bed and extending upward and outward at an inclination so as to approach the hot-bed as it recedes from the furnace or heater and provided with an imperforate inner portion and having openings at its outer portion, an air-inlet connected with the furnace or heater, and an escape-pipe extending from the outer end of the heat-conduit.

7. An apparatus of the class described, comprising a furnace or heater adapted to be located beneath the surface of the ground and provided at the top with a vertical fuel-inlet having an exterior cover, an air-inlet pipe connected with the outer end of the furnace or heater and extending to a point above the ground and provided with means for controlling the draft, a longitudinal heat-conduit connected with the other end of the furnace or heater and arranged to extend beneath a hot-bed, and an outlet at the outer portion of the heat-conduit.

810,886. ELECTRIC-LIGHT FIXTURE. JOHN F. BARRETT and HAT C. COLLINS, Chicago, Ill. Filed June 3, 1905. Serial No. 263,670.

Claim.—The combination with a lamp, of a socket, a drum, a frame for holding said drum adapted to be removably secured to said socket, an electrical cable adapted to be wound upon said drum and means for permitting said cable to unwind and an electrical connection between said lamp and socket.

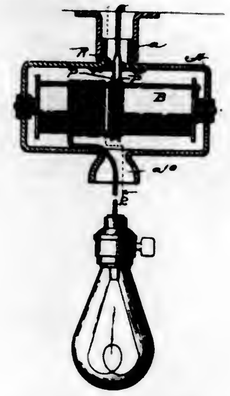

810,887. WIRE-WORKING TOOL. THOMAS J. BAUGH, Hopkinsville, Ky. Filed Mar. 3, 1905. Serial No. 248,201.

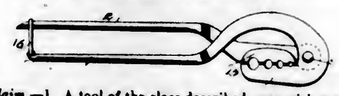

Claim.—1. A tool of the class described, comprising a member having its forward portion returned upon itself and a second member pivoted to the first-named member, said second member having a portion thereof coöperating with the returned portion of the first-named member to produce a pair of laterally-disposed rearwardly-opening clamping-jaws.

2. A tool of the class described, comprising a pair of crossed pivoted members having coöperating rearwardly-opening clamping-jaws disposed at one side of the tool, one of said jaws being produced by returning the forward portion of one of the members upon itself, said returned portion being of increased thickness comparative with the remainder of the member, and the other member having its clamping portion provided with a lateral extension of a thickness corresponding to the increased thickness of the first-named jaw.

3. In a tool of the class described, a pair of crossed pivoted members, one of said members having a rearwardly-extending portion constituting a clamping-jaw and provided with a laterally-opening circular socket, the other of said members being provided with a circular head pivotally seated in said socket and with a clamping portion adapted to aline and coöperate with the clamping portion of the first-named member.

810,888. BOILER COMPOUND. PETER B. BIRD, New York, N. Y. Filed July 3, 1905. Serial No. 268,187.

Claim.—1. The herein-described compound for preventing incrustation in boilers, comprising vegetable acid, alkaline salt, carbohydrate as herein specified, mercury, and oil in about the proportions described.

2. The process of forming a paste boiler compound, consisting in boiling together proportions of vegetable astringent and alkali, dissolving therein by boiling, a proportion of carbohydrate as herein specified, and adding thereto, when at a suitable temperature, a solution of mercury in animal oil, whereby a paste of permanent character is formed.

3. The process of forming a boiler compound, consisting in making a solution of one or more substances, such as alkali, vegetable acid, and carbohydrate as herein specified, and adding thereto to form a permanent paste, a solution of mercury and oil, substantially as described.

810,889. AUTOMATIC ELEVATOR-GATE. PHILIP F. BLIM, Chicago, Ill. Filed June 5, 1905. Serial No. 263,766.

Claim.—1. In an elevator of the described class, the combination of a two-way cam carried by the platform; a cam-actuated bearing located at each of the several landings of the elevator-shaft; a revoluble drum; a flexible connection connected at one end with said cam-actuated bearing and having its other end secured at a fixed point to said drum and adapted to be wound upon and unwound from said drum; a revoluble pulley connected to and adapted to revolve with said drum; one or more vertically-moving gates slidably supported in suitable guideways at each of the several landings of the elevator-shaft and flexible connections communicating between said pulley and said gates.

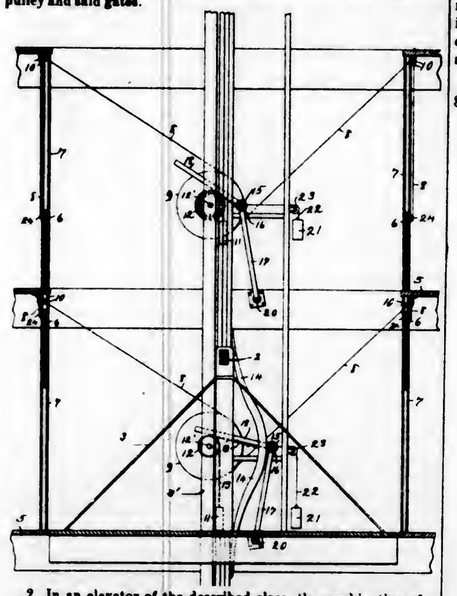

2. In an elevator of the described class, the combination of a two-way cam carried by the platform; a cam-actuated bearing located at each of the several landings of the elevator-shaft; a revoluble drum; a strap connected at one end with said cam-actuated bearing and having its other end secured at a fixed point to said drum and adapted to be wound upon and unwound from said drum; a revoluble pulley connected to and adapted to revolve with said drum; one or more vertically-moving gates slidably supported in suitable guideways at each of the several landings of the elevator; flexible connections communicating between said pulley and said gates; weights and straps connected with said drum, beneath said first-named straps at each of the respective landings of the elevator-shaft, said weights being adapted to counterbalance a portion of the weight of the gates connected therewith at each of the respective landings, substantially as set forth.

3. In an elevator of the described class, the combination of a two-way cam carried by the platform; a cam-actuated roller; a roller-supporting shaft; a shaft-supporting vibratory arm located at each of the respective landings of the elevator-shaft; a drum; a pulley and a supporting-shaft revolubly supported in suitable bearings at each of the respective landings of the elevator; a strap connected at one end with said drum and at its other end with the shaft of said roller-bearing; one or more gates slidably supported in suitable bearings at each of the respective landings; a flexible connection communicating between said pulley and said gates; a counterweight, a strap for suspending said counterweight, connected at one end to said weight, and at the other end, to said drum beneath said first-named strap, substantially as set forth.

4. In an elevator of the described class, the combination of a two-way cam carried by the platform; a cam-actuated roller; a roller-supporting shaft; a shaft-supporting vibratory arm located at each of the respective landings of the elevator-shaft; a drum; a pulley and a supporting-shaft revolubly supported in suitable bearings at each of the respective landings of the elevator; a strap connected at one end with said drum and at its other end with the shaft of said roller-bearing; one or more gates slidably supported in suitable bearings at each of the respective landings; a flexible connection communicating between said pulley and said gates; a counterweight also suitably suspended by flexible bearings from said drum and adapted to partially counterbalance the weight of said gates, and an additional counterweight suspended by a flexible connection from the shaft of said roller-bearing upon the opposite end from that of the bearing, said flexible connection being centrally supported upon a pulley, whereby as said roller-bearing is actuated by said cam said weight will coöperate therewith to laterally move the same, substantially as set forth.

5. In an elevator of the class described, the means for temporarily connecting the gate-actuating rope with the gate, consisting in the combination with the rope and gate, of a wooden block and one or more block-retaining screws, substantially as and for the purpose specified.

810,840. CAR-BOLSTER. ARGYLE CAMPBELL, Chicago, Ill., assignor to The Enterprise Railway Equipment Company, Chicago, Ill., a Corporation of Illinois. Filed Sept. 18, 1905. Serial No. 279,033.

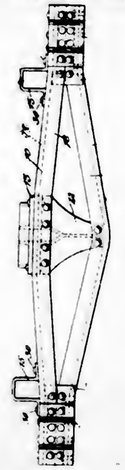

Claim.—1. In a bolster, the combination of an upper member extending from end to end of the bolster, downwardly-turned flanges at the ends of the said member, a lower member extending from end to end of the bolster, upwardly-turned flanges at the ends of said member, one of said members being broader than the other, and neither cross member or its flanges substantially overlapping parts of the other member, a suitable brace or support at the center of the bolster between said upper and lower members, and a set of plates inserted inside the end flanges of the larger member and outside of the end flanges of the narrower member at the ends of the bolster and separate means for securing said plates to the flanges of the upper and lower members.

2. In a bolster, the combination of an upper member extending from end to end of the bolster, downwardly-turned flanges at the ends of the said member, a lower member extending from end to end of the bolster, upwardly-turned flanges at the ends of said member, one of said members being broader than the other, and neither cross member or its flanges substantially overlapping parts of the other member, a suitable brace or support at the center of the bolster between said upper and lower members, and a set of plates inserted inside the end flanges of the broader member and outside the end flanges of a narrower member at the ends of the bolster, separate means for securing said plates to the flanges of the upper and lower members, and reinforcing means between the flanges secured to both the upper and lower members.

3. In a bolster, the combination of an upper member extending from end to end of the bolster, downwardly-turned flanges at the ends of the said member, a lower member extending from end to end of the bolster, upwardly-turned flanges at the ends of said member, one of said members being broader than the other neither member or its flanges overlapping parts of the other member, a suitable brace or support at the center of the bolster between said upper and lower members, a set of plates inserted inside the end flanges of the larger member and outside of the end flanges of the narrower member said plates being of such a thickness that they and the narrower members

together occupy a horizontal space substantially equal to the width of the broader member, vertical reinforcing members adjacent to the sides of the ends of the bolster thus far described and independent separate mechanisms for securing the flanges of each cross member to the adjacent plate and reinforcing member.

810,841. MAGNETIC SEPARATOR. HENRY F. CAMPBELL, Melrose, Mass., assignor to National Magnetic Mineral Separating Company, Boston, Mass., a Corporation of Maine. Filed July 20, 1903. Serial No. 117,894.

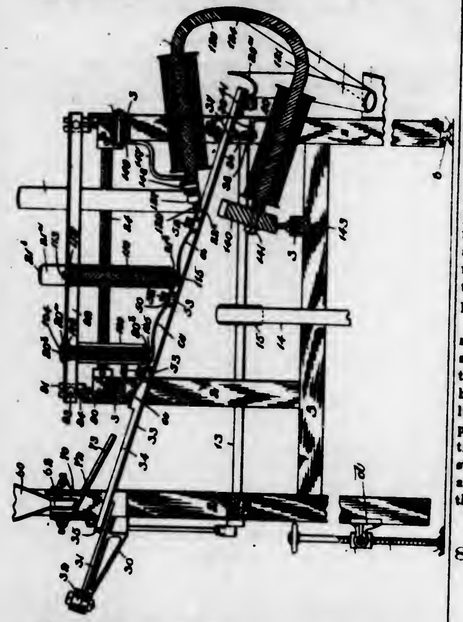

Claim.—1. The combination in a magnetic separator, of a magnet; a tray, presenting an unobstructed surface at a due distance below the magnet, for supporting and conveying the material spread in a film of substantially uniform thickness under and past the magnet, and through an uninterrupted field of such magnet, a cover for said tray for preventing the passage of magnetic particles to the sides of the magnet, and means for imparting a transverse shaking movement to the said support.

2. In a magnetic ore-separator, a magnetic separating device arranged to remove magnetic particles from a mass of ore, a tray or conveyer arranged to conduct the ore to the field of said device, magnets furnished with spools so wound that the current may be changed from series to parallel, means for making such change, and means for carrying aside the particles removed.

3. The combination in a magnetic separator, of a magnet; means, presenting an unobstructed surface at a due distance below the magnet, for supporting and conveying the material under and past the magnet, and through an uninterrupted field of such magnet, and to pass it, spread in a film of substantially uniform thickness on the surface beneath the magnet, a vibrating shaker for delivering the material to the said conveying means, said shaker having a boss, a hopper arranged over said shaker and having a pipe the delivering end of which terminates over and close to the top of said boss, and means for causing the particles of ore to be mechanically agitated under the magnet in a direction other than that of the travel of the ore.

810,842. ARTIFICIAL DENTURE. JOHN M. CARR, Olean, N. Y. Filed May 19, 1905. Serial No. 261,221.

Claim.—1. A process of making dental plates consisting in forming a model and fastening the same to an articulator, then coating the model with liquid silex, next conforming the body portion of the plate to the model while on the articulator, then articulating the teeth on the body portion of the plate and applying a gum-colored rubber strip upon the labial surface while the plate is still on the articulator.

2. A process of forming dental plates consisting in forming a model and coating the same with liquid silex, then applying a solution of rubber and chloroform, next conforming the plate-body to the model, articulating the teeth on the plate-body, and finally applying a gum-colored strip upon the labial surface, all of said several steps being completed while the model is on the articulator.

3. A process of making dental plates which consists in forming a model and fastening it to the articulator, then conforming the plate-body to the model, next articulating the teeth on the plate-body, then applying a gum-colored labial strip on the labial side of the model, while still on the articulator, then removing the model with the completed plate from the articulator, and finally vulcanizing and polishing the plate.

4. A process of making dental plates which consists in forming a model and fastening the same on the articulator, then conforming plastic vulcanizable rubber sheet to the model to form the main base, next setting up the individual teeth in a plastic holding-boss, then applying a sheet of dental rubber upon the lingual surface of the main base while the model is still on the articulator, then removing the model and plate from the articulator, and finally vulcanizing and polishing the plate.

5. A process of making dental plates which consists in forming a model and fastening the same to the articulator, conforming a sheet of plastic vulcanizable or waxable rubber to the model to form the main base of the plate, then setting up each tooth in a plastic holding-boss on the main base, applying a sheet of dental rubber as a lingual lining upon the main base, working interstitial pieces of pink rubber into the interstices between the teeth at the labial side thereof, then applying a strip of pink rubber over the entire labial surface of the main base while the model and plate are still on the articulator, then removing the model with its completed plate from the articulator, and finally vulcanizing and polishing the plate.

810,843. HORSESHOE-CALK. WILLIAM B. COLE and FRANK H. THORNLEY, Rhinebeck, N. Y. Filed Apr. 10, 1905. Serial No. 254,825.

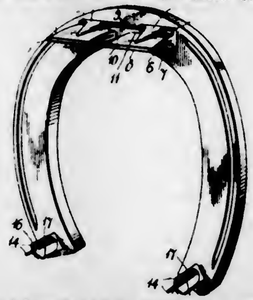

Claim.—1. A horseshoe having detachable toe-calks, in combination with a coupling device having recesses in its ends to engage the opposing ends of the toe-calks and prevent the latter from turning, substantially as described.

2. A toe-calk comprising a body having substantially parallel sides, outwardly-extending base-flanges, strengthening-webs in the angles between the sides and base-flanges, a recess between the sides, and a blade in said recess, substantially as described.

3. A horseshoe having toe-calks provided with base-flanges, in combination with a coupling device bearing on the base-flanges of the calks and having recesses in its ends to receive the opposing end portions of the calks, said coupling device preventing the calks from turning, substantially as described.

810,844. LUBRICATOR. LUNDY O. CRAWFORD, Pendleton, Ind., assignor of one-half to John F. Wagner, Anderson, Ind. Filed Dec. 13, 1904. Serial No. 236,603.

Claim.—1. In a lubricator, the combination with an engine-cylinder provided with a water-jacket, of a casing provided with inlet and outlet openings, a reservoir disposed within said casing and having an annular member to space the reservoir away from the bottom of the casing, a feed-tube connected with the annular member to secure the reservoir in applied position and convey the lubricant to the engine-cylinder, and a pipe having one end mounted within said inlet-opening and the other end connected to the water-jacket, whereby the heated water will pass into the casing to retain the lubricant in proper condition.

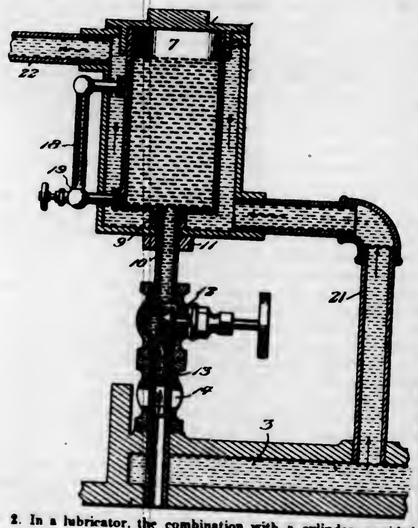

2. In a lubricator, the combination with a cylinder provided with a water-jacket, of a casing provided with inlet and outlet openings, a reservoir positioned within said casing and having an annular member to space the reservoir away from the bottom of the casing, a closure adapted to be removably secured to the reservoir to close the casing and reservoir, a gage secured to the reservoir, a feed-tube connected with the annular member to retain the reservoir in applied position and convey the lubricant to the cylinder, and a pipe having one end mounted within the inlet-opening of the casing and its other end secured to the water-jacket so as to convey the heated water to the casing to retain the lubricant in proper condition.

810,845. SHEAR-TABLE. JOHN C. CROMWELL, Cleveland, Ohio, assignor to The Garrett-Cromwell Engineering Company, a Corporation of Ohio. Filed Apr. 18, 1903. Serial No. 153,275.

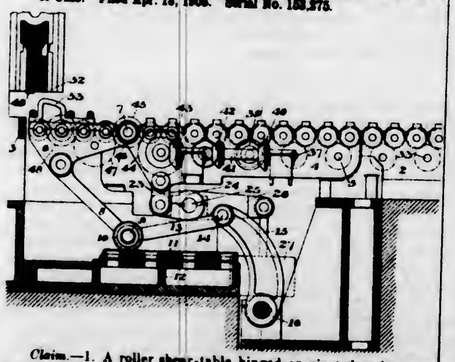

Claim.—1. A roller shear-table hinged or pivoted at its outer end to tilt as a whole under the action of the shear-blade, its inner end portion being formed by a separately-tiltable section; substantially as described.

2. A roller shear-table hinged or pivoted at its outer end to tilt as a whole under the action of the shear-blade, and having its inner end portion formed by a separately-tiltable portion, means for raising and lowering the separately-tiltable portion, and means for swinging the table as a whole upwardly to its normal position after it has been tilted by the shear-blade; substantially as described.

3. A roller shear-table pivoted or hinged to tilt as a whole and having at its inner end portion a separately-tiltable portion pivoted thereto, and actuating connections for swinging the separately-tiltable portion to discharge scrap; substantially as described.

4. A tilting shear-table having a tilting section pivoted thereto and extending to the shear, a shear-blade arranged to depress the table during shearing automatic mechanism for returning the table to its normal position, and mechanism for swinging the tilting section to discharge the scrap; substantially as described.

5. A tilting shear-table having at least a portion thereof pivoted to the table proper and arranged to swing downwardly, a shear-blade arranged to depress the table during shearing automatic mechanism for exerting a lifting pressure on the swinging portion, and mechanism for positively swinging this portion to discharge the scrap; substantially as described.

6. A tilting shear-table having a swinging table-section pivoted thereto, a shearing-blade arranged to depress the table during shearing automatic counterbalance mechanism arranged to return the parts to their normal position, and mechanism for positively swinging the tilting section to discharge the scrap; substantially as described.

7. A tilting shear-table having a swinging section pivoted thereto, a shearing-blade arranged to depress the table during shearing positively-driven feed mechanism on the table and swinging section, automatic counterbalance mechanism for returning the parts to their normal position, and mechanism for swinging the tilting sections to discharge the scrap; substantially as described.

8. A tilting shear-table having an extension pivoted thereto, a shearing-blade arranged to depress the table during shearing counterbalance mechanism for the table and the tilting section, and power-driven feed mechanism on both the table and swinging section; substantially as described.

9. The combination with a tilting shear-table having yokes or brackets at its front end, of a shear-blade plunger having projections at each side to engage the yokes or brackets; substantially as described.

810,846. FILTER. JOHN T. CUNNINGHAM, Allegheny, Pa. Filed Apr. 26, 1905. Serial No. 257,504.

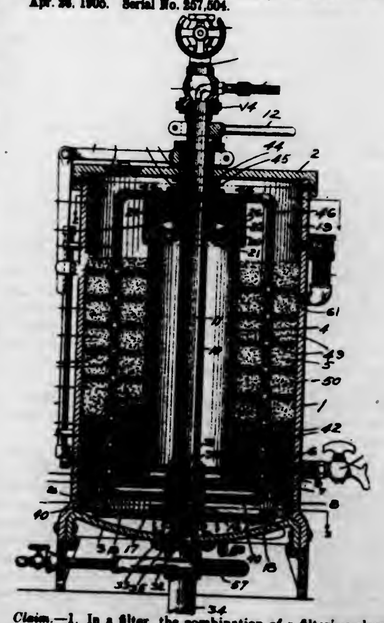

Claim.—1. In a filter, the combination of a filtering-chamber, valve mechanism therefor comprising an outer tube or cylinder provided with a plurality of openings, one being the filtering-water in-

let, another being the washing-water inlet, an interior tubular valve having a supply-inlet thereto and having openings coöperating with those of the outer tube or cylinder, and arranged to connect the supply-inlet to the filtering-inlet and also to the washing-inlet, a filtered-fluid valve operatively connected to said inner tube, said outer and inner tubes being capable of relative rotary movement and the openings therein being so arranged that when the filtering inlet and outlet are open the washing-inlet is closed, and vice versa, and a valve-controlled washing-outlet from said filtering-chamber.

2. In a filter, the combination of a filtering-chamber, valve mechanism therefor comprising an outer tube or cylinder provided with a plurality of openings, one being the filtering-water inlet, another being the washing-water inlet, and a third being the washing-water outlet, an interior tubular valve having a water-supply connection thereto and having openings coöperating with those of the exterior tube, and arranged to connect the supply-inlet to the filtering inlet and also to the washing-inlet, and a filtered-fluid valve operatively connected to said interior tube, said outer and inner tubes being arranged for relative rotary movement and the openings therein and valve thereon being so arranged that when the filtering inlet and outlet are open the washing inlet and outlet are closed, and vice versa.

3. In a filter, the combination of a pure-water reservoir and a filtering-chamber arranged concentrically, a central tube provided with openings communicating with the filtering side of the filtering-chamber and with other openings communicating with the washing side of said filtering-chamber, openings establishing communication between the filtered-liquid reservoir and the filtering-chamber, and an inner tube having connection with the water-supply and provided with openings coöperating with those in the outer tube and arranged to connect the water-supply to the filtering-opening and also to the washing-opening, said inner tube also carrying a valve controlling the communication from the filtering-chamber to the filtered-liquid reservoir, said tubes being capable of relative rotary movement and the arrangement being such that when the filtering inlets and outlets are open the washing-inlet is closed, and vice versa.

4. In a filter, the combination of a filtered-liquid reservoir and a filtering-chamber arranged concentrically, a central tube provided with openings communicating with the filtering side of the filtering-chamber, other openings communicating with the washing side of the filtering-chamber, and other openings leading to a washing-outlet, openings establishing communication between the filtered-liquid reservoir and the filtering-chamber, and an interior tube having connection with the water-supply and provided with openings coöperating with the three series of openings in the outer tube and carrying the valve controlling the communication between the filtering-chamber and the filtered-liquid reservoir, said inner and outer tubes being capable of relative movement and the arrangement being such that when the filtering inlets and outlet are open the washing inlet and outlet are closed, and vice versa.

5. In a filter, the combination of an exterior casing, a perforated bottom located above the lower end of said casing, a reservoir located centrally in said casing and provided with openings in its top, filtering material on said perforated bottom in the annular space surrounding the central reservoir, a pipe projecting centrally through said chamber and provided near its lower end with openings communicating with the inlet-chamber, and with other openings communicating with the outlet-pipe, a pipe arranged inside of said central pipe and rotatable with reference thereto, said central pipe being provided at its lower end with openings adapted to register with the washing-outlet of the outer pipe and with other openings adapted to register with the openings communicating with an inlet-chamber, and having a diaphragm between said two sets of openings, a valve carried by said inner pipe and controlling the openings in the upper end of the central reservoir, and a water-supply connection to said inner pipe.

6. In a filter, the combination of a filtering-chamber, granular filtering material therein, perforated washing-pipes extending into said granular material, a supply-inlet to said chamber, a filtered-fluid outlet therefrom, a washing-outlet therefrom, an inlet from the supply to the washing-pipes, valves controlling said inlets, outlets and washing-pipes, said valves being so arranged that when the supply-inlet and filtered-fluid outlet are open the inlet to the washing-pipes and the washing-outlet are closed, and vice versa, and connected operating-means for said several valves whereby they are operated in unison.

7. In a filter, the combination of a filtering-chamber, granular filtering material therein, perforated washing-pipes extending into said granular material, means for moving said pipes in said material, a supply-inlet to said chamber, a filtered-fluid outlet therefrom, a washing-outlet therefrom, an inlet from the supply to the washing-pipes, valves controlling said inlets, outlets and washing-pipes, said valves being so arranged that when the supply-inlet and filtered-fluid outlet are open the inlet to the washing-pipes and the washing-outlet are closed, and vice versa, and connected operating-means for said several valves whereby they are operated in unison.

8. In a filter, the combination of a filtering-chamber circular in cross-section, granular filtering material therein, perforated washing-pipes extending down into said granular material and rotatably mounted concentrically in said chamber, means for rotating said pipes, a supply-inlet to said chamber, a filtered-fluid outlet therefrom, a washing-outlet therefrom, an inlet from the supply to the washing-pipes, valves controlling said inlets, outlets and washing-pipes, said valves being so arranged that when the supply-inlet and filtered-fluid outlet are open the inlet to the washing-pipes and the washing-outlet are closed, and vice versa, and connected operating means for said several valves whereby they are operated in unison.

9. In a filter, the combination of a filtering-chamber, granular filtering material therein, a water-inlet pipe through the head of said chamber, pipes connected to said inlet-pipe and extending radially and thence downwardly into the granular material and being perforated, means for rotating said pipes around the inlet-pipe, and valve mechanism for the inlet-pipe arranged to direct the water either into the filtering-chamber or into the perforated pipes.

10. In a filter, the combination of a filtering-chamber, a water-supply connection thereto, granular filtering material in said chamber, perforated washing-pipes extending downwardly into said material, means for moving said pipes through said material, stationary perforated washing-pipes extending upwardly in the granular material, and valve mechanism for the water-supply connection arranged to direct the water either into the filtering-chamber or into the washing-pipes.

11. In a filter, the combination of a filtering-chamber, granular filtering material therein, a water-inlet pipe, perforated washing-pipes connected to said inlet-pipes and extending upwardly in the lower portion of said granular material, movable perforated pipes also connected to said inlet-pipe and extending radially and thence downwardly into the granular material, means for rotating said last-named pipes, and valve mechanism for the inlet-pipe arranged to direct the water either into the filtering-chamber or into the perforated pipes.

12. In a filter, the combination of a filtering-chamber and a filtered-water reservoir arranged concentrically, a central tube therefor, an inner tube in said central tube, a supply connection to said inner tube, said tubes being provided with openings adapted to register and being relatively rotary so as to change the course of water from the supply-inlet through the filter, and a steam or hot-water connection to said inner tube.

13. In a filter, the combination of a filtering-chamber, an inlet-chamber underneath said filtering-chamber, an outlet from the upper end of said chamber, a central inlet-pipe projecting into said inlet-chamber, and pipes connected to said inlet-pipe and projecting radially in said inlet-chamber and provided with bent ends whereby the water in said inlet-chamber will be given a continuous swirling movement.

14. In a filter, the combination of an exterior casing, a perforated bottom located above the lower end of said casing, a reservoir located centrally in said casing and provided with openings in its top, filtering material on said perforated bottom in the annular space surrounding the central reservoir, a pipe projecting centrally through said chamber and provided near its lower end with openings communicating with the inlet-chamber, and with other openings communicating with an outlet-pipe, and near its upper end with openings having connected thereto pipes projecting down into the filtering material, a pipe arranged inside of said central pipe and rotatable with reference thereto, said central pipe being provided at its lower end with openings adapted to register with the washing-outlet of the outer pipe and with other openings adapted to register with the openings communicating with the inlet-chamber and having a plug or diaphragm between said two sets of openings, said inner tube at its upper end having openings adapted to register with the openings in the outer tube to which the washing-pipes are connected, a valve carried by said inner pipe and controlling the openings in the upper end of the central reservoir, and a water-supply connected to said inner pipe.

810,847. ORE-CONCENTRATOR. EMIL DEBERTH, Fort Wayne, Ind. Filed Feb. 4, 1905. Serial No. 244,234.

Claim.—1. An ore-concentrator comprising a stationary tank adapted to hold a body of water; and a concentrating-pan having upturned sides at its upper portion and convergent edges at its discharge end, and having also riffles upon its concentrating-surface which converge toward its discharge end, the said pan being arranged in the tank with its concentrating-surface beneath the level of water contained therein, and being adapted to be reciprocated in line with the plane of its concentrating-surface.

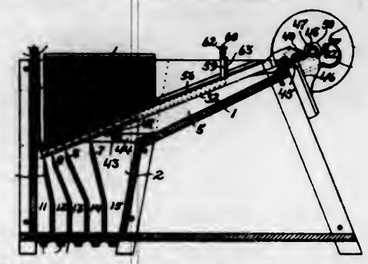

2. An ore-concentrator comprising a stationary tank adapted to hold a body of water; and a concentrating-pan having upturned sides and with convergent edges at its discharge end, and having also a series of riffles which converge toward its discharge end, and a central longitudinal channel, the said pan being arranged in the tank with its concentrating-surface beneath the level of water contained therein and being adapted to be reciprocated in line with the plane of its concentrating-surface.

3. An ore-concentrator comprising a stationary tank adapted to hold a body of water; a concentrating-pan having convergent edges at its discharge end, arranged in the tank with its concentrating-surface beneath the level of water contained therein, and being adapted to be reciprocated in line with the plane of its concentrating-surface; and a series of divergent diverting-blades suspended over the pan and being adapted to direct overlying ore matter toward its edges.

4. An ore-concentrator comprising a stationary tank adapted to hold a body of water; a concentrating-pan the edges of which converge near the discharge end thereof, arranged in the tank with its concentrating-surface beneath the level of water contained therein and being adapted to be reciprocated in line with the plane of its concentrating-surface; a series of riffles on the pan which converge toward its discharge end; a series of receptacles transversely disposed in the lower part of the tank beneath the convergent edges of the pan; and stationary diverting-blades to direct overlying ore matter toward the edges of the pan.

5. An ore-concentrator comprising a stationary tank adapted to hold a body of water; a concentrating-pan, the edges of which converge at its discharge end, arranged in said tank with its concentrating-surface beneath the level of water contained therein, and being adapted to be reciprocated in line with the plane of its concentrating-surface; stationary diverting-blades above said pan, adapted to divert overlying ore matter toward the sides of said pan; receptacles in said tank beneath said pan, adapted to receive ore matter respectively from said convergent edges and discharge end of said pan; and mechanism to actuate said pan.

6. An ore-concentrator comprising a stationary tank having two compartments and adapted to hold a body of water; a number of receptacles in each of said compartments, the receptacles of one compartment communicating with the corresponding receptacles of the other compartment; a reciprocating concentrating-pan arranged in one of said compartments beneath the level of water contained therein, and with its discharge end extending over the receptacles of the corresponding compartment; and a series of diverting-blades in stationary relation with the tank and being adapted to direct overlying ore matter from said pan into said receptacles.

7. An ore-concentrator comprising a tank; a reciprocating concentrating-pan submerged in the tank and having a slight depression throughout its length; and a series of stationary diverting-blades arranged above the pan and which diverge toward the sides thereof.

8. An ore-concentrator comprising a tank; a reciprocating concentrating-pan submerged in the tank and having riffles which converge toward its discharge end; and a series of stationary diverting-blades arranged above the pan and which diverge toward the sides thereof.

9. An ore-concentrator comprising a tank having a series of receptacles in the lower part thereof; a reciprocating concentrating-pan arranged in said tank and having a pointed discharge end; and a series of divergent diverting-blades arranged over the pan and adapted to direct overlying ore matter from said pan into the foremost of said receptacles.

10. An ore-concentrator comprising a tank having a series of receptacles in the lower part thereof; a reciprocating concentrating-pan arranged in said tank with its discharge end over said receptacles; a series of divergent diverting-blades arranged above the pan and adapted to direct overlying ore matter from said pan into the foremost of said receptacles; and periodically-actuated outlet-valves located respectively in said receptacles.

11. An ore-concentrator comprising a tank; a reciprocating concentrating-pan in said tank; a series of diverting-blades arranged over the pan and adapted to direct overlying ore matter toward the sides thereof; and a diffusion-box extending within the tank and located over the diverting-blades for supplying the tank with water.

12. An ore-concentrator comprising a tank adapted to hold a body of water and having a series of receptacles in the lower part thereof; discharge-spouts leading respectively from said receptacles; a reciprocating concentrating-pan arranged in said tank with its discharge end over said receptacles, and having a series of riffles which converge toward its discharge end; a series of diverting-blades arranged over said pan, which diverge toward the sides thereof and are adapted to direct overlying ore matter therefrom into the foremost of said receptacles; and a diffusion-box extending within the tank and located over said diverting-blades for supplying said tank with water.

13. An ore-concentrator comprising a tank adapted to hold a body of water and having a series of receptacles in the lower part thereof; discharge-spouts, having valves in connection therewith, leading from said receptacles respectively; a reciprocating concentrating-pan arranged in said tank with its discharge end over said receptacles, and having riffles which converge toward its discharge end; and a series of diverting-blades adapted to direct overlying ore matter from said pan into the foremost of said receptacles.

14. In an ore-concentrator, a tank having a series of receptacles in its lower part, each of said receptacles having a discharge-spout; a concentrating-pan in said tank, adapted to discharge ore matter into said receptacles; a series of valves for the respective spouts or said receptacles; a corresponding series of levers in actuating relation with said valves; cams to actuate said levers; and an adjustable support for said levers to shift them into or out of engaging position relative to said cams.

15. An ore-concentrator comprising a tank having a series of receptacles in the lower part thereof; a reciprocating concentrating-pan arranged in the tank with its discharge end over said receptacles, and having a series of riffles which converge toward its discharge end; a series of divergent diverting-blades arranged above the pan and adapted to direct overlying ore matter from the pan into the foremost of said receptacles; and periodically-actuated outlet-valves located respectively in said receptacles.

16. An ore-concentrator comprising a tank adapted to hold a body of water and having a series of receptacles in the lower part thereof; discharge-spouts leading respectively from said receptacles; a corresponding series of automatically-actuated valves for said spouts; a reciprocating concentrating-pan arranged in the tank with its discharge end over said receptacles, and having a series of riffles which converge toward its discharge end; and a series of diverting-blades arranged over the pan, which diverge toward the sides thereof and are adapted to direct overlying ore matter therefrom into the foremost of said receptacles.

810,848. SURGICAL TABLE. EMMA B. DILL and SOLOMON F. DU BOIS, Chillicothe, Ohio. Filed Sept. 2, 1904. Serial No. 223,186.

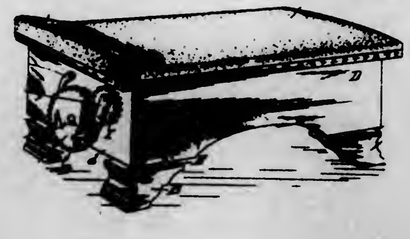

Claim.—1. An operating-table, comprising a base having vertically-arranged slots in its ends, a table-frame telescoping the base, a shaft mounted in the ends of said frame and passing through said slots, cables connected to the shaft and to the base above the slots, and guides carried by the table-frame and extending down within the base, and around the shaft.

2. An operating-table, comprising a base having vertically-arranged slots in its ends, a table-frame telescoping the base, a shaft rotatably mounted in the table-frame and passing through the slots in the base, means carried by the outside of said frame for rotating the shaft, cables connecting the shaft and the base above the slots, and U-shaped guides carried by the frame and passing down within the base and around the shaft.

3. An operating-table, comprising a base, formed of a box-like form mounted upon feet, said feet extending beyond the same, to form supporting-ledges, vertically-arranged slots in the ends of the base and extending from the lower edge thereof adjacent the top, a table-frame composed of a box-like form telescoping the base and adapted to rest upon the ledges formed by the feet, a table carried by the upper end of said frame, a shaft rotatably mounted in the ends of said frame and passing through the slots in the base, a gear carried by the shaft on the outside of said frame, a pawl for holding said gear, means for rotating said gear, cables connecting said shaft and the base above the slots, and downwardly-extending U-shaped guides carried by the under side of the table and fitting within the base.

4. An operating-table, comprising a base having vertically-arranged slots in its ends, a table-frame telescoping the base, a shaft mounted in the ends of said frame and passing through said slots, cables connected to the shaft and to the base above the slots, and guides carried by the tables within the base

5. An operating-table comprising a base, a table-frame telescoping the base, a shaft mounted in the frame, cables carried by the shaft and secured to the base above the shaft, and guides carried by the table-frame and extending within the base and extending around the shaft.

6. An operating-table, comprising a base, formed of a box-like form mounted upon feet, said feet extending beyond the same to form supporting-ledges, vertically-arranged slots in the ends of the base and extending from the lower edge thereof adjacent the top, a table-frame composed of a box-like form telescoping the base and adapted to rest upon the ledges formed by the feet, a table carried by the upper end of said frame, a shaft having one end rotatably mounted inside of one end of said frame and the opposite end passing through the opposite end of the frame and within the slots in the base, a gear carried by the shaft on the outside of said frame, a pawl for holding said gear against rotation, a second smaller gear rotatably mounted on the side of the table-frame and meshing with the first gear, a crank for driving said second gear, cables connected to the shaft and having their upper ends connected to the base above the slots, and downwardly-extending U-shaped guides carried by the under side of the table and fitting within the base.

810,849. NAILLESS HORSESHOE. FRITZ BOSSE, Solothurn, Switzerland. Filed Sept. 30, 1905. Serial No. 280,939.

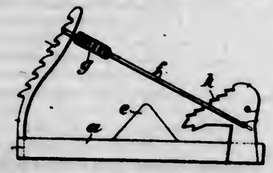

Claim.—1. In a rivetless and nailless horseshoe, the combination with the shoe of a ratched toe-clip, two toothed spring heel-clips and a fastening wire strap adapted to be hooked by its front portion in the ratched toe-clip and having in its sides spirally-wound parts intended to give rise to a spring action, so as to firmly and adjustably secure the shoe to the hoof, substantially as described.

2. In a rivetless and nailless horseshoe, the combination with the shoe of a ratched toe-clip entering a dovetailed tapered notch of the shoe, two toothed spring heel-clips secured to the latter by means of a similar dovetail connection and a fastening wire strap adapted to be hooked by its front portion in the ratched toe-clip and having in its sides spirally-wound parts intended to give rise to a spring action, so as to firmly and adjustably secure the shoe to the hoof, substantially as described.

3. In a rivetless and nailless horseshoe, the combination with the shoe of a ratched toe-clip entering a dovetailed tapered notch of the shoe, two toothed spring heel-clips secured to the latter by means of a similar dovetail connection and a fastening wire strap adapted to be hooked by its front portion in the ratched toe-clip and having in its sides spirally-wound parts intended to give rise to a spring action, so as to firmly and adjustably secure the shoe to the hoof, the said wire strap having its ends engaged with the aforesaid two heel-clips, substantially as described.

810,850. SCREW-WRENCH. VICTOR HERMAN, Muggia, near Trieste, Austria-Hungary. Filed Dec. 16, 1904. Serial No. 236,570.

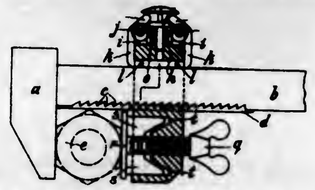

Claim.—1. In a screw-wrench of the character described, a stem carrying the fixed jaw and provided with teeth, a rib formed on the stem in the middle of said teeth, a movable jaw furnished with teeth and a groove which are adapted to engage with the teeth and rib on the stem, levers pivoted to the rear end of said movable jaw, spring-actuated means for forcing these levers into engagement with said stem, a groove formed in the movable jaw, a clamping-plate, and a rib on this plate fitted slidably in said groove.

2. In a screw-wrench of the character described, a stem carrying the fixed jaw and provided with teeth, a rib formed on the stem in the middle of said teeth, a movable jaw furnished with teeth and a groove which are adapted to engage with the teeth and rib on the stem, levers pivoted to the rear and of said movable jaw and having hook-shaped ends, spring-actuated means for forcing said hooked-shaped ends of the levers between said stem and movable jaw, a groove formed in the latter, a clamping-plate, and a rib on this plate fitted slidably in said groove.

3. In a screw-wrench of the character described, a stem carrying the fixed jaw and provided with teeth, a rib formed on the stem in the middle of said teeth, a movable jaw furnished with teeth and a groove which are adapted to engage with the teeth and rib on the stem, levers pivoted to the rear end of said movable jaw and having hook-shaped ends, a button engaging these levers, a spring acting upon the said button for forcing said hook-shaped ends of the levers between said stem and movable jaw, a groove formed in the latter, a clamping-plate, and a rib on this plate fitted slidably in said groove.

810,851. APPARATUS FOR REMOVING SUPERFLUOUS METALLIC COATING FROM SHEET METAL. OLIN S. FELLOWS and ARCHIBALD R. HOPKINS, Middletown, N. Y. Filed Apr. 28, 1905. Serial No. 257,903.

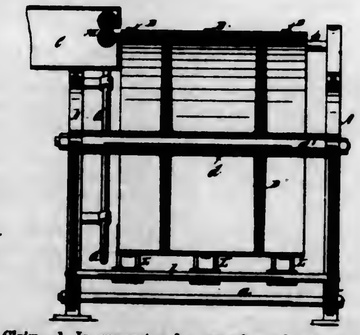

Claim.—1. In apparatus for removing superfluous metallic coating from sheet metal, the combination of curved plate-feeding mechanism and means concentric thereto for melting and removing the excess of metallic coating from the plate.

2. In apparatus for removing superfluous metallic coating from sheet metal, the combination of convex plate-feeding mechanism and means concentric thereto for melting and removing the excess of metallic coating from the plate.

3. In apparatus for removing superfluous metallic coating from sheet metal, the combination of curved plate-feeding mechanism, flexible means for holding a sheet-metal plate thereto and means concentric to said curved feed mechanism for melting and removing the excess of metallic coating from the plate.

4. In apparatus for removing superfluous metallic coating from sheet metal, the combination of means for bending a plate thereof and means for melting and removing the excess of metallic coating from said plate while so bent.

5. In apparatus for removing superfluous metallic coating from sheet metal, the combination of means for bending a plate of coated sheet metal and means for heating the edge of said plate and removing the list therefrom while the plate is so bent, for the purpose described.

6. In apparatus for removing superfluous metallic coating from sheet metal, the combination of means for bending a plate of coated sheet metal, means for heating said bent metal plate to melt the excess of metallic coating thereon, and means for removing the liquated excess of metallic coating from the plate while the latter is so bent, for the purpose described.

7. In apparatus for removing superfluous metallic coating from sheet metal, the combination of curved plate-feeding mechanism, means concentric thereto for heating an edge of the plate to melt the list or excess of metallic coating thereon, and means, also concentric to the feed mechanism, for removing the liquated excess of metallic coating from the heated edge of the plate for the purpose set forth.

8. In apparatus for removing superfluous metallic coating from sheet metal, the combination of curved plate-feeding mechanism, flexible means for holding a sheet-metal plate thereon, means concentric to said feed mechanism for heating the edge of the plate to melt the list or excess of metallic coating thereon, and means, also concentric to the feed mechanism, for removing the liquated excess of metallic coating from the heated edge of the plate for the purpose set forth.

9. In apparatus for removing superfluous metallic coating from sheet metal, a curved plate-holder of uniform radius, means concentric to said curved plate-holder adapted to heat an edge of a plate held on said holder and remove the list therefrom, and means for moving said holder to subject the edge of the plate to the action of the list heating and removing means, for the purpose described.

10. In apparatus for removing superfluous metallic coating from sheet metal, a rotatable drum, means for holding a coated sheet-metal plate upon and against the periphery of said drum, and means concentric to said drum for melting and removing list or excess of metallic coating from the edge of the plate so held on said rotatable drum, for the purpose described.

11. In apparatus for removing superfluous metallic coating from sheet metal, a rotatable drum, flexible means for holding a coated sheet-metal plate upon and against the periphery of said drum, and means concentric to said drum for melting and removing list or excess of metallic coating from the edge of a plate so held on said rotatable drum, for the purpose described.

12. In apparatus for removing superfluous metallic coating from sheet metal, a rotatable drum and an endless belt traveling with said drum and arranged to hold a coated sheet-metal plate against the periphery of said drum, and means concentric to said drum for melting and removing list or excess of metallic coating from the edge of a plate so held on said rotatable drum, for the purpose described.

13. In apparatus for removing superfluous metallic coating from sheet metal, a rotatable drum, a plurality of endless belts traveling with said drum and arranged to hold a coated sheet-metal plate against the periphery of said drum, and means concentric to said drum for melting and removing list or excess of metallic coating from the edge of a plate so held on said rotatable drum, for the purpose described.

14. In apparatus for removing superfluous metallic coating from sheet metal, a rotatable drum, an endless belt traveling with said drum and arranged to hold a coated sheet-metal plate against the periphery thereof, means for automatically maintaining the tension of said belt, and means concentric to said drum for melting and removing list or excess of metallic coating from the edge of a plate so held on said rotatable drum, for the purpose described.

15. In apparatus for removing superfluous metallic coating from sheet metal, a rotatable drum, a plurality of endless belts traveling with said drum and arranged to hold a coated sheet-metal plate against the periphery thereof, means for automatically maintaining the tension of said belts, and means concentric to said drum for melting and removing list or excess of metallic coating from the edge of a plate so held on said rotatable drum, for the purpose described.

16. In apparatus for removing superfluous metallic coating from sheet metal, a curved holder of uniform radius, means for automatically receiving and holding a coated metallic plate upon said curved holder, means concentric to said holder adapted to heat the edge of said metallic plate and remove the list therefrom, and means for moving said holder with relation to the means for melting and removing the list, for the purpose set forth.

17. In apparatus for removing superfluous metallic coating from sheet metal, a rotatable drum, means for automatically receiving and holding a coated sheet-metal plate upon and against the periphery of said drum, and means concentric to said drum for melting and removing list or excess of metallic coating from the edge of a plate so held on said rotatable drum, for the purpose described.

18. In apparatus for removing superfluous metallic coating from sheet metal, a movable curved plate-holder of uniform radius, a series of gas-jets arranged concentric to the path of the holder for the purpose of heating the edge of a plate held thereon, and means, also concentric to the curved plate-holder, arranged to remove the liquated excess of metallic coating from the edge of the plate for the purpose described.

19. In apparatus for removing superfluous metallic coating from sheet metal, a movable curved plate-holder of uniform radius, two series of gas-jets concentric to the path of the holder, one opposed to the other, and arranged to heat opposite sides of the edge of a plate held on said holder, and means also concentric to the curved plate-holder arranged to remove the liquated excess of metallic coating from the edge of the plate for the purpose described.

20. In apparatus for removing superfluous metallic coating from sheet metal, a rotatable drum, means for holding a coated sheet-metal plate against the periphery of said drum, a series of gas-jets arranged concentric to one edge of said drum, for the purpose of heating the edge of a plate held thereon, and means, also concentric to the edge of said drum, arranged to remove the liquated excess of metallic coating from the edge of the plate for the purpose described.

21. In apparatus for removing superfluous metallic coating from sheet metal, a rotatable drum, means for holding a coated sheet-metal plate against the periphery of said drum, two series of gas-jets arranged concentric to one edge of the said drum and opposed to each other for the purpose of heating opposite sides of the edge of a plate held on said drum, and means, also concentric to the edge of the said drum, arranged to remove the liquated excess of metallic coating from the edge of the plate for the purpose described.

22. In apparatus for removing superfluous metallic coating from sheet metal, a curved plate-holder of uniform radius, means for holding a coated metallic plate thereon, concentric means for heating one of the edges of said plate to melt the list thereon, and rotatable concavo-convex brushes arranged with their opposite sides concentric with the curved plate-holder and in the path of the edge of the plate held thereon, for the purpose described.

23. In apparatus for removing superfluous metallic coating from sheet metal, a rotatable drum, means for holding a coated sheet-metal plate against the periphery of said drum, concentric means for heating one of the edges of said plate to melt the list thereon, and rotatable concavo-convex brushes arranged with their opposed sides concentric with the periphery of the drum and in the path of the edge of the plate held thereon, for the purpose described.

810,852. GAS-BURNING TANK-HEATER. CHESTER C. FIFIELD, Grand Junction, Iowa. Filed June 19, 1905. Serial No. 266,354.

Claim.—1. In a tank-heater the combination of a chamber comprising two concentrically-arranged walls, spaced from each other, forming an air-chamber, the inner wall being suspended from the outer wall and open at its bottom, the outer wall being provided with air-inlet-openings near its top, a combustion-chamber secured to and extending from said walls and in communication with said air-chamber, a fuel-supply pipe and a burner swiveled thereto, said burner adapted to swing either into said combustion-chamber or into said first-named chamber.

2. In a tank-heater the combination of a chamber comprising two concentrically-arranged walls, spaced from each other, forming an air-chamber, the inner wall being suspended from the outer wall and open at its bottom and the two walls being provided with alining openings near their bottoms and the outer wall provided with an inlet near its top, a combustion-chamber extended through said alining openings and secured therein to communicate with the double-walled chamber.

3. A tank-heater comprising a double-walled air-chamber, closed at its top and open at its bottom, the outer wall closed at its bottom and provided with openings near its top, the inner wall open at its bottom covered at its top and fitted to the inside and top portion of the outer wall, a combustion-chamber fixed in coinciding openings in the lower ends of the top walls, a pipe for conveying oil fixed to the outer wall, a hydrocarbon-burner swiveled to the lower end of said pipe, a flue connected with the top of the combustion-chamber, an oil-tank fixed to the top of the pipe for conveying oil and a valve in the pipe, arranged and combined to operate in the manner set forth for the purposes stated.

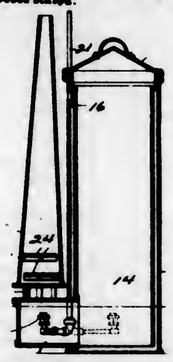

810,853. CROQUET APPARATUS. GEORGE W. GRENVOLD, Manchester, Mass., assignor to The Standard Game and Toy Company, Taunton, Mass. Filed Jan. 10, 1905. Serial No. 240,675.

Claim.—1. A croquet apparatus embodying a plurality of wickets, swinging balks combined therewith and bearing letters or symbols, and a post bearing a letter or symbol forming in conjunction with those on the balks, a word.

2. A croquet apparatus embodying a plurality of wickets, swinging balks detachably combined therewith and bearing letters or symbols, and a post bearing a letter or symbol forming in conjunction with those on the balks, a word.

3. A croquet apparatus embodying a plurality of wickets, swinging balks combined therewith and bearing letters or symbols, and a polygonal post bearing a letter or symbol forming in conjunction with those on the balks, a word.

4. A croquet apparatus embodying a wicket and a balk having a support provided with means to connect it with the wicket for universal swinging movements.

5. In a croquet apparatus, a wicket, a support provided with means to connect it with the wicket for universal swinging movements and carrying at its upper end a flag and at its lower end a balk.

810,854. SHIP'S DAVIT. JOHN W. GROFF, Albion, Mich. Filed Apr. 24, 1905. Serial No. 257,062.

Claim.—1. In a hoisting device for boats, in combination with a pivoted crane fashioned to have supporting-lines for a boat suspended from the free end and with a projection intermediate the end portions for engagement over the gunwale of the boat, a clamp member pivoted to the crane-support and adapted to coöperate with said projection in securing the boat in place, means for swinging the crane on its pivot, and means for lifting and lowering a boat, substantially as described.

2. In a lifting device for boats, in combination with a pivoted crane-arm carrying sheaves over which lifting-lines run and having a projection on its body portion adapted to engage over one gunwale of a boat, a clamping member pivotally connected with said crane-arm adapted to coöperate with said projection in holding the boat in a position of rest by engagement over the other gunwale of the boat, a screw actuator engaging through a swiveled knot on said crane-arm whereby said crane-arm may be displaced from its position of rest, means whereby said screw may be actuated at a distance from said crane, and means for hoisting and lowering a boat suspended from the lifting-lines, substantially as described.

3. In a lifting device for boats, in combination with a pivoted arm, a clamp on said pivoted arm, a clamp pivoted to the fixed part upon which the arm is pivoted, means for swinging said arm on its pivot, and means for lifting and lowering a boat connected with said arm, but actuated independently thereof, substantially as described.

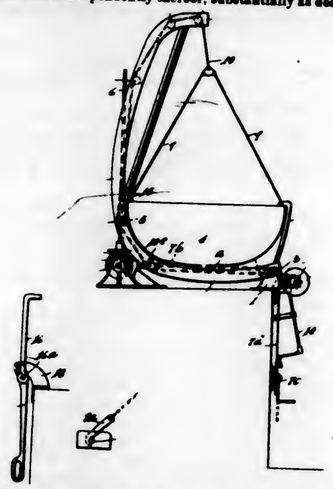

4. A davit for boats, having in combination a curved arm pivotally secured to a support and normally in a position of stable equilibrium with reference to the side of a ship, a pivoted clamping member adapted to coöperate with a portion of the arm in holding a boat in place therein, means for hoisting and lowering a boat suspended from said davit, and means arranged to be actuated independently of said hoisting means whereby said arm may be swung on its pivot, substantially as described.

810,855. MANHOLE FOR CONDUITS AND THE LIKE. WINFIELD A. HALLER, New Orleans, La., and JAMES W. BILLINGSLEY, Tivoli, N. Y., assignors to Edwin H. Sanderson, Brooklyn, N. Y.; Henry Hobart Porter, Lawrence, N. Y.; Francis Blossom, Brooklyn, N. Y., and Richmond Talbot, Tuxedo, N. Y. Filed Feb. 21, 1905. Serial No. 246,701.

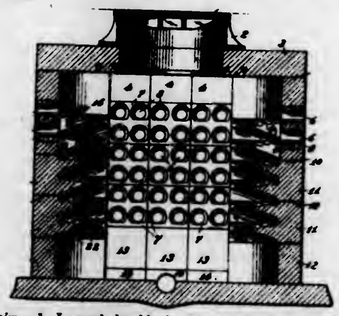

Claim.—1. In manholes, blocks alined vertically and formed with coöperating alining grooves to form manhole-walls said blocks comprising inlet-blocks and shelf-blocks formed with integral inwardly-projecting shelves provided with pockets, said shelves coöperating with said inlets to form substantially continuous supporting-shelves around the walls of the manhole between the inlets thereof and on the same level as the corresponding inlets.

2. In manholes, blocks comprising inlet-blocks and shelf-blocks united to form manhole-walls, said shelf-blocks being formed with integral inwardly-projecting shelves provided with pockets, said shelves coöperating with said inlets to form substantially continuous supporting protecting-pockets around the walls of the manhole between said inlets.

3. In manholes, blocks comprising inlet-blocks and shelf-blocks to form a manhold, said shelf-blocks being provided with a plurality of internally-projecting shelves forming continuous pockets around the walls of said manhole between inlets and on substantially the same level as the corresponding inlets, each of said shelves being provided with a plurality of said pockets.

4. In manholes, walls provided with inlets at different levels and with inwardly-projecting shelves on substantially the same levels as said inlets, the shelves on each level being provided with as many protecting-pockets as there are cables passing through the inlets on said level to provide a substantially continuous protecting-pocket for each cable between inlets.

810,856. COIN-CONTROLLED APPARATUS. ARTHUR T. HALLOCK, Canandaigua, N. Y., assignor, by mesne assignments, to Chas. B. Knox, Johnstown, N. Y. Filed Feb. 18, 1905. Serial No. 246,379.

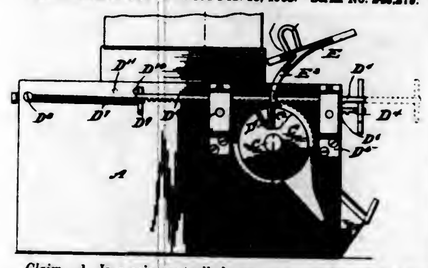

Claim.—1. In a coin-controlled apparatus, a driving-shaft provided with a coin-wheel having means to support a coin between its sides, a gear loosely mounted upon the shaft of said coin-wheel parallel to one side thereof, a lateral extension from said gear, a finger carried by said extension and exposed between the sides of said wheel in the path of the coin held thereby, and operating means for driving said gear.

2. In a coin-controlled apparatus, a driving-shaft provided with a coin-wheel having means to support a coin between its sides, a gear loosely mounted upon the shaft of said coin-wheel adjacent thereto, a laterally-disposed guide-plate carried by the gear and covering said wheel, a depending finger at one end of said plate, and means for oscillating said gear.

3. In a coin-controlled apparatus, a driving-shaft provided with a coin-wheel having means to support a coin between its sides, a gear loosely mounted upon the shaft of said coin-wheel, a finger carried by said gear and disposed between the sides of the wheel in the path of the coin held thereby, a guard-plate carried by the gear and extending over said wheel at the rear of said finger, and a reciprocating rack-bar for driving said gear.

4. In a coin-controlled apparatus, a coin-wheel, a gear provided with a finger coöperating with said wheel, a rack-bar meshing with said gear and means constructed and arranged to permit different lengths of travel of said bar.

5. In a coin-controlled apparatus, a driving-shaft, a delivery device driven by said shaft provided with coin-supporting means on its opposite inner walls, a coin-wheel upon said shaft, a gear freely rotatable upon said shaft and provided with a finger coöperating with said coin-wheel, a guard extending segmentally from one side of said finger, a rack-bar mounted to reciprocate in mesh with said gear, means for limiting the travel of said rack-bar, and means for restoring said bar to its initial position.

6. In a coin-controlled apparatus, a driving-shaft, a delivery device driven by said shaft provided with coin-supporting means on its opposite inner walls, a coin-wheel upon said shaft, a gear freely rotatable upon said shaft and provided with a finger coöperating with said coin-wheel, a guard extending segmentally from one side of said finger, a rack-bar mounted to reciprocate in mesh with said gear, means for limiting the travel of said rack-bar, means for restoring said bar to its initial position, and a coin-chute adapted to deliver into said wheel at the forward side of said finger.

7. In a coin-controlled apparatus, a driving-shaft, a delivery device controlled thereby, a plurality of coin-wheels secured to said shaft each adapted to receive a coin of different denomination, and means rotatively mounted on said shaft for independently rotating each of said wheels by engagement with the coin carried thereby.

8. In a coin-controlled apparatus, a driving-shaft, a delivery device controlled thereby, a plurality of coin-wheels carried by said shaft each adapted to receive a coin of different denomination, a gear rotatable upon the shaft of said coin-wheels and provided with a finger extending between the walls thereof, and independent rack-bars for driving said gears.

810,857. SHOW-CASE. ARTHUR T. HALLOCK, Canandaigua, N. Y. Filed Apr. 22, 1905. Serial No. 256,968.

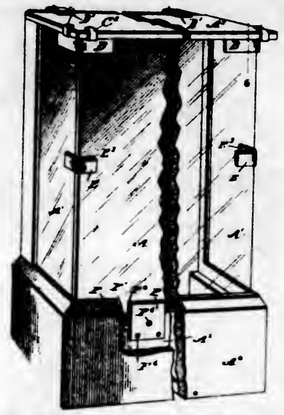

Claim.—1. The combination with a glass plate having a recessed edge, of a face-plate provided with a laterally-extending lug upon its inner face of greater depth than the thickness of the glass plate and extending through the recess therein, and a clamping-plate mounted upon the inner face of the lug and bearing upon the glass plate.

2. The combination of glass plates slotted at their intersection, of an angle-clamp comprising a face-plate, a lug extending inward at both sides of the angle thereof, a clamping-plate mounted upon said lug, means for adjusting said clamping-plate toward the face-plate, and an elastic packing upon the adjacent faces of said plates.

3. A clamp comprising a face-plate, a lug extending from one face thereof, a clamping-plate mounted upon said lug, means for adjusting said clamping-plate toward the face-plate, an elastic packing upon the adjacent faces of said plates, and a holder mounted upon the upper face of said lug and provided with hooked arms disposed at an angle to each other.

4. A plate-clamp comprising a face-plate, a lug extending from one side thereof and having an inclined face, a clamping-plate mounted upon said inclined face, and an adjusting-screw extending through said clamping-plate into said lug.

5. In a show-case, glass plates recessed at their abutting edges, an angular face-plate provided with lateral lugs disposed in said recesses and extending about the angle of the plate, and clamping-plates mounted upon said lugs to engage the inner faces of the glass plates.

6. In a show-case, abutting glass plates, a top clamp provided with means to engage said plates and an angular seat upon its upper surface, a holder having an angular portion to fit in said seat and provided with hooked arms disposed at an angle to each other to engage the top plate and means extending through said angular portion and into said seat to secure the holder thereto.

7. In a show-case comprising abutting glass plates, a clamp for frictionally engaging the lower edge of a vertical plate, a top clamp engaging the upper edges of said plates, a holder for a top plate mounted upon said top clamp, and an angle-clamp disposed intermediate of the top and bottom edges of said plates.

8. In a show-case, glass plates having ground recesses at their abutting edges, a clamp provided with a face-plate engaging the glass plates upon one side, a projection extending inwardly from said face-plate extending through said recesses, and clamping-plates mounted upon said projection to lie at an angle to the face-plate and engage the opposite face of the glass plates.

810,858. DISK DRILL. HENRY C. HAM, Liberty, Ind., assignor to Rude Brothers, Liberty, Ind., a Firm. Filed Aug. 5, 1905. Serial No. 272,879.

Claim.—1. In a disk drill, a suitable frame and an inner and an

outer wing upon each side thereof, an intermediate means pivotally connecting the outer wings with the frame, said outer and inner wings being of different lengths, disks connecting with the wings, an operating means and an intermediate means connecting therewith and with the wings whereby said wings may be simultaneously operated, substantially as and for the purpose set forth.

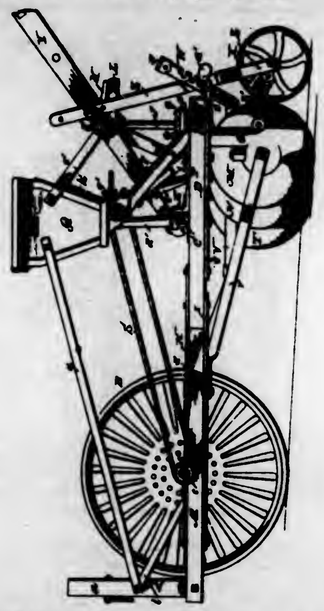

2. In a disk drill, outer and inner wings and disks connecting therewith, said outer wings pivotally connecting with the frame of the machine and pivotally connecting with the inner wings, and means for operating said wings, comprising an upright operating-rod and means for operating it, a link connected to the rod and pitman-rods pivotally connecting with the ends of the link and with the outer wings, and connections pivotally engaging the link and pivotally engaging the inner wings, substantially as and for the purpose described.

3. In a disk drill, a segmental or curved bar secured to the frame of the machine and having a guide-flange thereon, a plurality of pivoted wings of varying lengths, guide-brackets adjustable upon the wings and engaging the guide-flange upon the curved bar, and suitable means for operating the wings, substantially as and for the purpose specified.

4. In a disk drill, pivoted outer and inner wings and disks connecting therewith and means for simultaneously operating said wings, a segmental or curved bar having guide-track, and brackets adjustably supported upon the wings and having guide-flanges to engage the track, the outer and inner wings being of different lengths with relation to each other, substantially as and for the purpose set forth.

5. In a disk drill, pivoted outer wings and pivoted inner wings, said wings carrying suitable disk and operating means connecting the wings with each other whereby said wings may be simultaneously operated, and a vertically-movable frame or hanger disposed between the inner wings and means for raising or lowering said frame or hanger, disks connecting with the frame or hanger and disposed at an angle to each other whereby the forward peripheries or edges of the disks will come together and a space left between the rear peripheries or edges to allow the dropping of the grain, substantially as and for the purpose described.

6. In a disk drill, pivoted outer wings and pivoted inner wings, the outer wings being of greater length than the inner wings, guide-brackets adjustably connected to the wings, a curved flanged track with which the brackets engage, a vertically-adjustable hanger or frame and truck-wheels connecting therewith, and disks suitably connected to the wings, substantially as and for the purpose specified.

7. In a disk drill, a plurality of pivoted wings and disks connecting therewith, mechanism for operating the wings, and means connecting the wings together and to said operating mechanism whereby the wings will have a simultaneous movement, a guide-track upon the frame of the machine, means upon the wings to engage said track, a vertically-movable frame or hanger disposed between the inner wings, disks connecting with the frame or hanger and arranged at an angle with each other, means for raising or lowering the frame or hanger and holding it in its adjusted position, and a vertically-adjustable frame and truck-wheels connected thereto, substantially as and for the purpose set forth.

810,859. FAMILY COOK AND FRYING PAN. PETER A. HANEGRAAF, Roseville, Ill. Filed Nov. 30, 1904. Serial No. 234,975.

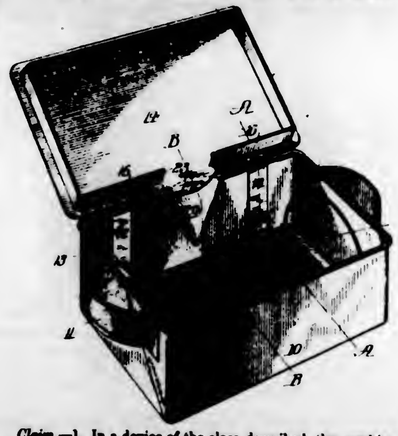

Claim.—1. In a device of the class described, the combination with the pan, of the cover therefor, hinged thereto, and adapted to be turned back to support a dripping-tray, means for holding the dripping-tray in position on the turned-back cover, and means for permitting the drippings to flow back from the cover into the pan.

2. In a device of the class described, the combination with the pan, of the cover therefor hinged thereto, means for holding the cover open and in an inclined position relative to the pan and in position to receive a dripping-tray, means for holding the dripping-tray thereon, and means for permitting the drippings to flow from the cover over the edge of and into the pan.

3. In a device of the class described, the combination with a pan, of the cover therefor hinged thereto and provided with the interior flange, and means for holding the cover open and in an inclined position, said flange being provided with an opening adapted to allow the drippings to flow from the cover over the edge of and into the pan.

4. In a device of the class described, the combination with the pan, of the cover therefor hinged thereto and provided with an interior flange, means for holding the cover open and in an inclined position relative to the pan, an extension on the cover adjacent an opening provided in the flange, and an offset in the side of the pan to permit of the cover turning; all substantially as and for the purpose described.

810,860. WHEEL-FELLY. CHARLES HEART, Alexandria, Ind., assignor to Heart Metal Wheel and Gear Company, Alexandria, Ind., a Corporation of Indiana. Original application filed May 26, 1905, Serial No. 262,114. Divided and this application filed Sept. 8, 1905. Serial No. 277,487.

Claim.—1. A wheel including a hollow metal felly having a joint provided with a joint-piece formed of metal that is doubled over upon itself at the exterior of the felly and extending between the joint ends of the felly and against the inner sides thereof.

2. A wheel including a hollow metal felly having internal flanges at the periphery thereof, a reinforcing-band extending between the flanges of the tire and also against the inner surfaces of the flanges, and a tire engaging the reinforcing-band and also the flanges of the felly.

3. A wheel including a hollow metal felly having spoke-seats pressed in the inner face thereof and flanges extending from the spoke-seats into the interior of the felly, a filling in the felly having spoke-sockets therein, spokes engaging the spoke-seats and extending through the flanges thereof into the sockets of the filling, and a hub attached to the spokes.

4. A wheel including a hollow metal felly having internal flanges at the periphery thereof, a reinforcing-band extending between the flanges of the tire and also against the inner surfaces of the flanges, a filling in the felly having spoke-sockets therein and having its periphery in contact with the inner side of the reinforcing-band, spokes extending into the sockets of the filling, and a hub attached to the spokes.

810,861. PORTABLE FIREPROOF VAULT. WILLIAM H. HEDGES, Kansas City, Kans. Filed Feb. 2, 1904. Serial No. 191,780.

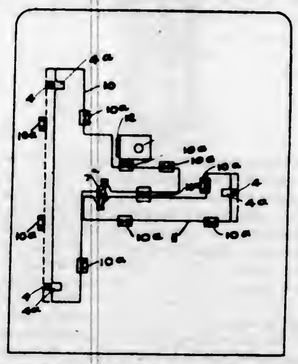

Claim.—1. A portable fire and water proof vault for safes, composed essentially of main portion, A, and a door portion, B, connected by suitable hinges, C, said vault being of such size larger than the safe to be inclosed therein as to leave vacant space between the inclosed safe and the walls of the vault for packing with suitable fireproofing material; said vault having between its main portion, A, and its door portion, B, a stepped flange-joint of the usual form, in which joint the adjustable covering-plate, 15, forms the inner or highest step, the outer or lowest step, 14, forming one wall, and the covering-band, 16, forming the other wall of a channel or groove adapted to receive and retain in place the asbestos packing, 14ª, all substantially as, and for the purposes shown and described.

2. In a portable fire and water proof vault for safes, composed essentially of a main portion, A, and a door portion, B, connected by suitable hinges, C, the door portion, B, forming one entire side of the structure, and having double walls as a feature of fireproof protection, locking mechanism located between said walls and comprising the outside operating-handle 7, the interior locking-bolts 10 and 11, and the double-warded key 7ª, connected by the conical spindle 8, all situated and coacting in the manner and for the purposes substantially as shown and described.

3. In a portable fire and water proof vault for safes, composed essentially of a main portion, A, and a door portion, B, connected by suitable hinges, C, the fastening-bolt passing through the door portion, B, and having a square projecting end, 1; a collar, or flange, 2; a conical head, 3; a square intermediate portion, 4, engages the notches, 4ª, of the locking-bolts 10 and 11, and a screw-threaded inner end portion engages the nut, 19, secured in the main portion, A, of the vault, all substantially as and for the purposes shown and described.

4. In a portable fire and water proof vault for safes, composed essentially of a main portion, A, and a door portion, B, connected by suitable hinges, C, a locking mechanism situated between the outer and inner walls of the door portion, B, by means of which the fastening-bolts are secured against being unscrewed, said locking mechanism comprising essentially the outside operating-handle, 7, the inside double-warded key, 7ª, the connecting conical spindle, 8, and the locking-bolts 10 and 11, having the square notches, 4ª which mesh with the square portion, 4, of the fastening-bolts, substantially in the manner, and for the purposes shown and described.

5. In a portable fire and water proof vault for safes, composed essentially of a main portion, A, and a door portion, B, connected by suitable hinges, the adjustable flange-casting or covering-plate, 15, preferably composed of three sections, the straight section, 22, and the two angle-sections, 23, 23, said pieces being pierced with oblong openings for the free passage through them of the fastening-bolts, all substantially in the manner and for the purposes shown and described.

6. In a portable fire and water proof vault for safes, composed essentially of a main portion, A, and a door portion B, connected by suitable hinges, C, the covering-band, 16, attached to the main portion, A, and projecting a suitable distance beyond the base of the outer or lower step of the flanged casting-joint between the two portions, A and B, to form with the side or riser of said step, a recess or cavity for receiving and retaining in place the asbestos packing, all substantially as and for the purposes shown and described.

810,862. SAFETY COUPLING-SECTION FOR AIR-BRAKE PIPES. WILLIAM J. HOFSTATTER, Toledo, Ohio. Filed Aug. 19, 1904. Serial No. 221,370.

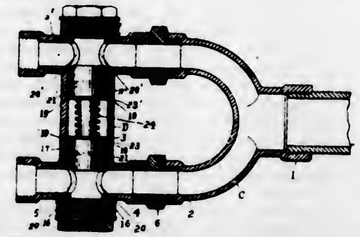

Claim.—1. In a section for fluid-pressure pipes, the combination with two conduits arranged side by side, and having common connections, connecting the conduits with each other at each end, and adapted to connect the conjoined conduits as a two-way section in a main pipe-line, of a pair of pressure-actuated two-way closure-valves, one adjacent to each connection, each of said valves having opposite equal pressure areas, one for each conduit and normally open thereto, said valves being adapted to be conjointly actuated to shut off either of the conduits from the other of them and from the main line by a preponderance of pressure in the other and in the line, and means to return each valve to its normal position when the pressure is equalized in the conduits.

2. The combination with a main air-pipe of a train air-brake system, of a two-way coupling-section for disconnected parts thereof, comprising a pair of conduits arranged side by side and having a common coupling connection at each end adapted to couple the section into and make each conduit of the section thus formed continuous with the main air-pipe, and a part thereof, and a pair of two-way closure-valves common to the two conduits, adapted to close the connections of either conduit with the main pipe and with the other conduit, said valves being normally open and adapted to be held normally open by equal air-pressure in the conduits and to be operated by unequal pressures therein, to close the connections of the conduit having the least pressure, and means to return each valve to its normal position when the pressure in the conduits is equalized.

3. A two-way closure-valve comprising a cylinder closed at each end and having a central portion of its bore of increased diameter forming inner shoulders, and opposite side ports in each end portion, pipe connections extending oppositely from the ports, a piston in each end portion of the cylinder adapted to close its ports, the pistons being of equal end area, a stem connecting the inner ends of the pistons, and having a length equal to the distance between the inner shoulders of the cylinder, and the combined length of the pistons and the stem being less than the distance from the centers of the ports of one end portion to the centers of the ports of the other end portion of the cylinder, a pair of disk-collars movably mounted on the stem, and having diameters adapting them to engage the shoulders, and a helical spring mounted on the stem between the disks, the spring being adapted to normally hold the disks in engagement with the shoulders

and the inner ends of the pistons, and to yield to permit movement of the pistons to close the ports of either end portion according as the pressure in the pipe connections of one end portion of the cylinder exceeds the pressure in the pipe connections of the other end portion, substantially as set forth.

4. In a coupling-section for air-brake pipes a pair of pipes arranged side by side, each pipe of the pair having a pair of flexible hose-sections each provided with a coupler complementary to the other and adapted to connect and disconnect the hose-sections; return-bends connecting the pipes at each end with each other and adapted to connect the conjoined pipes as a two-way section of a main-line air-brake pipe, a pressure two-way closure-valve common to both pipes between the hose-sections and each return-bend, said valve being normally open as to each pipe, and adapted to be conjointly actuated by a difference in air-pressure of the two pipes to shut off either of the two pipes having the lesser pressure from the main line and its companion pipe, and means to return each valve to its normal position when the pressure in the pipes is equalized.

5. In a coupling-section for air-brake pipes a pair of pipes arranged side by side, each pipe of the pair having a pair of flexible hose-sections each provided with a coupler complementary to the other and adapted to connect and disconnect the hose-sections; return-bends connecting the pipes at each end with each other and adapted to connect the conjoined pipes as a two-way section of a main-line air-brake pipe, a pressure two-way closure-valve common to both pipes between the hose-sections and the return-bend, said valves being normally open as to each pipe, and adapted to be conjointly actuated by a difference in air-pressure of the two pipes to shut off either of the two pipes having the lesser pressure from the main line and its companion pipe springs adapted to return the valves to normal open position when the pressure in the pipes is equalized, a closure-valve for each complementary coupler-section adapted to be automatically and mechanically opened and locked in open position by the manual operation of coupling the couplers, and to be automatically and mechanically closed by the uncoupling of the coupler-sections, and a leakage-port in each coupler-valve, substantially as set forth.

6. The combination with a fluid-pressure system of a two-way closure-valve comprising a main cylinder, end cylinders of reduced diameters and equal bores secured in end portions of the main cylinder, heads closing the outer ends of the end cylinders, a piston in each end cylinder, a common stem for the pistons rigidly connecting their inner ends, a pair of disk-collars movably mounted on the stem, a helical spring mounted on the stem between the collars and normally compressing the collars oppositely against the inner ends of the pistons and the end cylinders, opposite side ports in the end cylinders between the heads and the outer ends of the pistons, adapted to be closed by the pistons, and branch pipes extending oppositely from the ports of each cylinder adapted to connect the valve into line with two lines of pipe, the piston of the valve being adapted to be operated to close either line by a preponderance of pressure in the other.

7. The combination with a main fluid-pressure pipe, of a pair of branch pipes having a common connection with the main pipe, a cylinder transverse and cross-connecting the branch pipes and having opposite ports registering with each branch pipe, a piston-valve movable in the cylinder, having opposite end portions with equal end areas, and adapted to move in either direction and close the ports of the branch pipe in the direction of the movement, a spring adapted to hold the valve normally in, and return it to, position uncovering all the ports, when the pressure in the branch pipes is equal, and to yield in the direction of movement of the valve when actuated by a preponderance of pressure in either branch to close the ports of the other.

810,863. COUPLING-SECTION FOR TRAIN AIR-PIPES. WILLIAM J. HOUGHTZER, Toledo, Ohio. Filed June 17, 1905. Serial No. 265,697.

Claim.—1. In a train air-brake pipe the combination substantially as set forth of a two-way passage extending a one-way passage, a valve-casing having lateral transverse branches coupled respectively in line with the two-way passage, and a valve-chamber transverse both passages, said two-way passage having as component parts thereof, a hose-pipe for each passage, provided with a coupler, a two-way closure-valve in the valve-chamber, having opposed equal pressure areas, and adapted to close both passages, excepting a leak in one passage, by the movement of the valve in either of opposite directions, a spring adapted to yieldingly hold the valve in position normally opening both passages under equal pressures in the passages, and adapted to yield to permit movement of the valve in the direction of either passage having the pressure therein reduced below the pressure in the other passage by escape of air from its hose-pipe.

2. In a train air-brake pipe the combination substantially as set forth of a two-way passage extending a one-way passage, a valve-casing having lateral transverse branches coupled respectively in line with the two-way passage, and a valve-chamber transverse both passages, said two-way passages having as component parts thereof, a hose-pipe for each passage, provided with a coupler, a two-way closure-valve in the valve-chamber, having opposed equal end pressure areas, and adapted to close both passages, excepting a leak in one passage, by the movement of the valve in either of opposite directions, a spring adapted to yieldingly hold the valve in position normally opening both passages under equal pressures in the passages, and adapted to yield to permit movement of the valve in the direction of either passage having the pressure therein reduced below the pressure in the other passage by escape of air from its hose-pipe, means to automatically maintain a closure of the valve so long as air escapes to the atmosphere through the hose by maintaining a preponderance of pressure on one end of the valve, and means to equalize the pressure on the valve ends and permit its return to normal open position whenever air ceases to escape from the hose.

3. In a coupling-section for car-sections of a train air-brake pipe, the combination substantially as set forth of a Y coupled to one end of a car-section, two equal lengths of pipe extending the Y branches, two unequal lengths of hose-pipe extending respectively in line with the extensions of the Y branches, a valve-casing having transverse lateral branches coupled into line respectively with and between the hose-pipes and the extensions, and a valve-chamber transverse the lines of the branches, couplers for the free ends of the hose-pipes, adapted to be coupled to a complementary duplicate coupling-section similarly extending an adjacent car-section, a two-way closure-valve in the valve-casing having opposed equal pressure areas and adapted to close both passages formed by the Y branches, their extensions, the valve-casing, and the hose-pipes, excepting a leak in one passage, by the movement of the valve in either of opposite directions, a spring adapted to yieldingly hold the valve in position normally opening both passages under equal pressures in the passages, and yielding to permit movement of the valve in the direction of either passage having the pressure therein reduced below the pressure in the other passage, by escape of air from its hose-pipe.

4. In a coupling-section for car-sections of a train air-brake pipe, the combination substantially as set forth of a Y coupled to one end of a car-section, two equal lengths of pipe extending the Y branches, two unequal lengths of hose-pipe extending respectively in line with the extensions of the Y branches, a valve-casing having transverse lateral branches coupled into line respectively with and between the hose-pipes and the extensions, and a valve-chamber transverse the lines of the branches, couplers for the free ends of the hose-pipes, adapted to be coupled to a complementary duplicate coupling-section similarly extending an adjacent car-section, a two-way closure-valve in the valve-casing having opposed equal end pressure areas and adapted to close both passages formed by the Y branches, their extensions, the valve-casing, and the hose-pipes, excepting a leak in one passage, by the movement of the valve in either of opposite directions, a spring adapted to yieldingly hold the valve in position normally opening both passages under equal pressures in the passages, and adapted to yield to permit movement of the valve in the direction of either passage having the pressure therein reduced below the pressure in the other passage by escape of air from its hose-pipe, means to automatically maintain a closure of the valve so long as air escapes to the atmosphere through the hose by maintaining a preponderance of pressure on one end of the valve, and means to equalize the pressure on the valve ends and permit the valve to return to normal open position whenever air ceases to escape from the hose.

5. In a coupling-section for car-sections of a train air-brake pipe, the combination substantially as set forth, of a Y coupled to one end of the car-section, two equal lengths of pipes extending the Y branches, a valve-casing having transverse lateral branch pipes coupled into line respectively with the pipe extensions of the Y branches, and a valve-chamber transverse the lateral branches, a two-way angle-cock having transverse branch pipes coupled into line respectively with the transverse branches of the valve-casing, hose-pipes of unequal length extending the branches of the angle-cock and provided with couplers at their outer ends, the whole constituting a two-way passage extending the one-way passage of a car-section of the main air-pipe, a two-way closure-valve in the valve-casing having opposite equal end pressure areas and adapted to close both passages, excepting a leak in one, by movement of the valve in either of opposite directions, a spring adapted to yieldingly hold the valve in position normally opening both passages under equal pressures in the passages, and yielding to permit movement of the valve in the direction of either passage having the pressure therein reduced below the pressure in the other passage, by escape of air from its hose-pipe.

6. In a coupling-section for car-sections of a train air-brake pipe, the combination substantially as set forth, of a Y coupled to one end of the car-section, two equal lengths of pipes extending the Y branches, a valve-casing having transverse lateral branch pipes coupled into line respectively with the pipe extensions of the Y branches, and a valve-chamber transverse the lateral branches, a two-way angle-cock having transverse lateral branch pipes coupled into line respectively with the transverse branches of the valve-casing, hose-pipes of unequal length extending the branches of the angle-cock and provided with couplers at their outer ends, the whole constituting a two-way passage extending the one-way passage of a car-section of the main air-pipe, a two-way closure-valve in the valve-casing having opposite equal end pressure areas and adapted to close both passages excepting a leak in one, by movement of the valve in either of opposite directions, a spring adapted to yieldingly hold the valve in position normally opening both passages under equal pressures in the passages, and yielding to permit movement of the valve in the direction of either passage having the pressure therein reduced below the pressure in the other passage, by escape of air from its hose-pipe, means to automatically maintain a closure of the valve so long as air escapes to the atmosphere through the hose by maintaining a preponderance of pressure on one end of the valve, and means to equalize the pressure on the valve ends and permit its return to normal open position whenever air ceases to escape from the hose.

7. In a pressure-conduit the combination with a two-way passage extending and connecting a one-way passage, of a valve-casing having lateral transverse branches forming portions of each passage, and having a valve-chamber extending transverse the two passages, a reciprocating valve in the chamber, having equal end pressure areas, and adapted to close both passages by a movement of the valve in either direction of its reciprocation, a spring adapted to yieldingly hold the valve in position normally opening both passages under equal pressures in the passages, and adapted to yield to permit movement of the valve to close both passages under unequal pressures in the passages, means to automatically maintain the closure while the pressures in the passages on opposite sides of the valve are unequal, and to return the valve to its normal position opening both passages when an equilibrium of pressure is restored in the passages on opposite sides of the valve, and means to restore such equilibrium.

8. In a brake apparatus, the combination substantially as set forth of two adjacent car-sections of a train car-brake pipes each having coupled thereto a two-way coupling-section comprising a Y, pipes equally extending the branches of the Y, hose-pipes provided with complementary couplers unequally extending the pipes of the Y branches and a valve mechanism, interposed between and connecting the hose-pipes and the pipes extending the branches of the Y, constructed and operating as set forth.

9. The combination substantially as set forth of two or more consecutive car-sections of the main car-pipe of a train-brake system, each provided at each end with a two-way coupling-section comprising a Y, pipes equally extending the branches of the Y, a valve mechanism constructed and operating as set forth controlling the pipe extensions of the Y, and hose-pipes of unequal length, provided with complementary couplers uniting the adjacent valve mechanisms.

10. The combination in a two-way coupling-section for car-sections of a train air-pipe, of two lines of pipe having a common one-way connection at one end and separate hose-terminals provided with couplers at the other end and intervening valve mechanism as set forth adapted to control both lines of pipes, said valve mechanism being provided with means to close one pipe and lock the valve in position opening the other pipe, whereby the section is made adaptable to connect with and operate as a one-way coupling-section, substantially as set forth.

810,864. APPARATUS FOR CHILLING CINDER OR SLAG. FRANK K. HOOVER and ARTHUR J. MASON, Chicago, Ill. Filed Aug. 31, 1903. Serial No. 171,406.

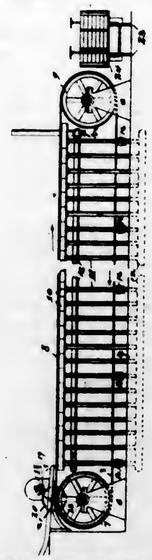

Claim.—1. In an apparatus for chilling blast-furnace slag, the combination with an impervious endless belt on which the slag is adapted to be poured and carried away, of means located beneath the upper carrying-section of the belt adapted to support a running body of cooling-water contacting under hydrostatic pressure with the under surface of said upper belt-section, substantially as described.

2. In an apparatus for chilling blast-furnace slag, the combination with an impervious endless belt on which the slag is adapted to be poured and carried away, of a series of pans located directly beneath the upper carrying-section of the belt, and means for continuously flooding said pans with a stream of cooling-water on which said carrying-section of the belt floats, substantially as described.

3. In an apparatus for chilling blast-furnace slag, the combination with an impervious endless belt on which the slag is adapted to be poured and carried away, of a trough consisting of a series of shallow pans located directly beneath the upper carrying-section of the belt, a water-inlet pipe having branches tapping the bottoms of said pans, and water-overflow pipes freely communicating with the opposite side margins of said pans, substantially as described.

4. In an apparatus for chilling blast-furnace slag, the combination with an impervious thin endless metal conveyer-belt on which

the slag is adapted to be poured, of a trough consisting of a series of shallow pans coextensive with the width of the belt and lying directly beneath the upper carrying-section thereof, a water-inlet pipe disposed beneath said series of pans and having branches tapping the respective bottoms thereof, and water-overflow pipes freely communicating with the opposite side margins of the pans and supporting the latter, substantially as described.

5. In an apparatus for chilling blast-furnace slag, the combination with an impervious thin endless metal conveyer-belt having its receiving end located beneath a furnace-runner to receive the slag, of a trough consisting of a continuous series of shallow pans coextensive with the width of the belt and lying directly beneath the upper carrying-section thereof, a water-inlet pipe disposed beneath and longitudinally of said series of pans and having branches tapping the respective bottoms thereof, and water-overflow pipes freely communicating with the opposite side margins of the pans at a heigh which effects a flooding of the pans and the floating of the belt on the water passed therethrough, substantially as described.

6. In an apparatus for chilling blast-furnace slag, the combination with an impervious endless conveyer-belt and means for supporting and driving the same, of means for pouring melted slag in a thin sheet onto the receiving end of said belt, means for receiving the discharge from the opposite end of said belt, and means located beneath the upper carrying-section of the belt adapted to spread a running body of cooling-water into supporting contact with substantially the entire under surface of said upper belt-section, substantially as described.

7. In an apparatus for chilling blast-furnace slag, the combination with an impervious endless thin conveyer-belt and a pair of large pulleys or drums supporting and driving the same at its opposite ends, of means for pouring liquid slag onto the upper surface of said belt, a trough consisting of a series of shallow pans located directly beneath the upper section of said belt, means for flooding said pans by a continuously-flowing stream of cooling-water which contacts and floats said upper section of the belt, overflow-pipes communicating with the side margins of said pans, and means for suitably supporting the lower or return section of the belt, substantially as described.

8. In an apparatus for chilling blast-furnace slag, the combination with the slag-runner and the cooling-water apparatus of a smelting-furnace, of means for cooling and conveying away the slag comprising an impervious traveling metal conveyer adapted to receive and transport the slag, a water-receptacle arranged in juxtaposition to the conveyer and through which the cooling-water may be circulated in contact with the conveyer, and means for conveying the water from the cooling-water apparatus of the furnace to said receptacle, as and for the purpose set forth.

810,865. METHOD OF CHILLING CINDER OR SLAG. FRANK K. HOOVER and ARTHUR J. MASON, Chicago, Ill. Filed Aug. 31, 1903. Serial No. 171,469.

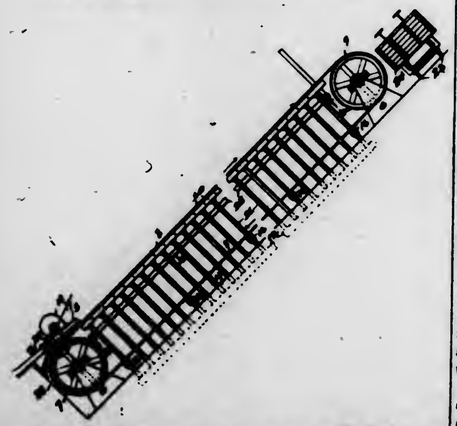

Claim.—1. The herein-described method of chilling and solidifying blast-furnace cinder or slag which consists in pouring it in the form of a thin sheet upon a thin heat-conducting surface, floating said heat-conducting surface upon a stream of constantly-flowing cooling-water maintained out of contact with said cinder or slag, and imparting to said heat-conducting surface containing said cinder or slag a traveling movement on said stream of cooling-water for a period of time sufficient to enable said cinder or slag to chill and solidify thereon, substantially as described.

2. The herein-described method of chilling blast-furnace slag which consists in pouring it in a thin sheet upon a thin heat-conducting surface and applying to the other side of said heat-conducting surface in intimate contact therewith a rapidly and continuously flowing stream of cooling-water, and maintaining said cooling-water out of direct contact with said slag, substantially as described.

3. The herein-described method of chilling blast-furnace slag which consists in pouring it in a thin sheet upon a thin heat-conducting surface and simultaneously applying to the other side of said heat-conducting surface in intimate contact therewith a rapidly and continuously flowing stream of cooling-water, and maintaining said cooling-water out of direct contact with said slag, substantially as described.

810,866. COMPASS-INDICATING APPARATUS. BENJAMIN V. HOW, Weston, Mass., assignor to Arbeam Nautical Instrument Co., Boston, Mass., a Corporation of Massachusetts. Filed Sept. 19, 1905. Serial No. 279,169.

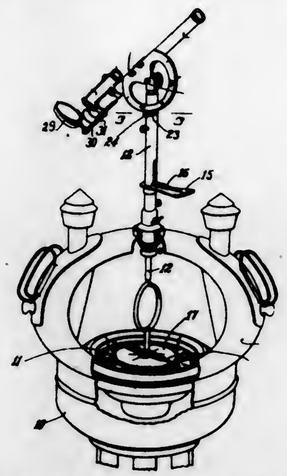

Claim.—1. In compass-indicating apparatus, a rotatable vertical shaft supported on the binnacle-top and carrying, terminally, a sighting device and a radial indicator, in combination with a circular triangulation-plate perforated centrally, graduated marginally in degrees and maintained frictionally and adjustably on the compass-dial beneath said indicator, and with a reduced downward extension of said shaft serving in such perforation, as an axis of rotation for said plate, substantially as set forth.

2. In compass-indicating apparatus, a rotatable vertical shaft supported on the binnacle and carrying, terminally, a sighting device and a radial indicator, normally maintained in the same vertical plane, in combination with an azimuth-tube fixed on and parallel with the sighting device, such tube having terminally a perforated eyepiece and a removable end cap carrying a colored lens, substantially as and for the purpose set forth.

3. In compass-indicating apparatus, a rotatable sectional shaft supported vertically on the binnacle, a sighting device and radial indicator connected terminally to said shaft, and a supplementary azimuth-tube fixed on said device in the same vertical plane, in combination with a concave mirror adjustably mounted on a swinging arm and adapted to converge the sun's rays at a defined point on said tube, substantially as and for the purpose set forth.

4. In compass-indicating apparatus, a rotatable sectional shaft supported vertically on the binnacle, a sighting device and radial indicator connected terminally to said shaft, and a supplementary azimuth-tube fixed on the sighting device and parallel with the axis thereof, in combination with a concave mirror mounted in bearings in a yoke carried on a swinging arm pivoted to the sighting device and furnished with a suitable step, and with a spirit-level arranged

transversely of the sighting device, to denote when the ship is on an even keel, substantially as set forth.

810,867. RAILWAY SWITCH AND SIGNAL MECHANISM. CHARLES M. HURST, Rawlins, Wyo. Filed May 27, 1905. Serial No. 262,564.

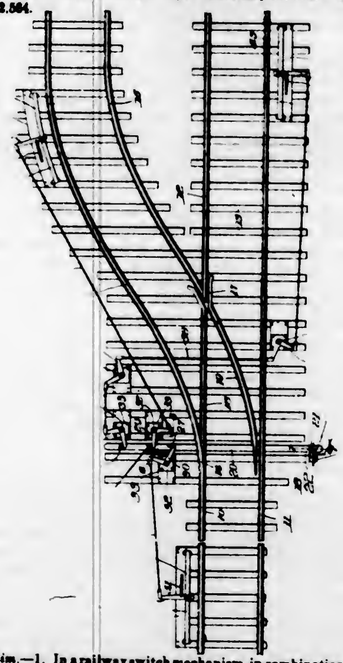

Claim.—1. In a railway switch mechanism, in combination, a slotted bridle-bar; bell-crank levers, each having a crank-pin entering one of the slots; spring-supported trips for engagement by a passing train and located respectively adjacent the switch and main tracks; rods connecting each trip mechanism with one of the bell-crank levers; the bell-crank levers controlled by the switch and main-track trips, respectively, being so mounted as to open and close the switch respectively when actuated in opposition to their retracting-springs.

2. In combination, a main railway-track; a switch-track connected therewith; a bridle-rod for actuating the switch; trip mechanism located adjacent the main track and adjacent the switch-track for engagement by a moving train; connection between such trip mechanism and the bridle-rod, and arranged reversely, whereby the action of the trip adjacent the main track will close the switch and the action of the trip adjacent the switch-track will open the switch.

3. In combination, a reciprocative bridle-rod for railway-switches; spring-retracted mechanism adapted to be actuated by a passing train and acting on the bridle-rod to move it in one direction only and independent train-actuated means for positively moving the bridle-rod in the opposite direction.

4. In combination, a pair of spring-retracted mechanisms adapted to be actuated by a passing train and each acting on the bridle-rod to move it in one direction only, the direction of action of the two mechanisms being reverse.

5. In combination, a pair of vertically-swinging spring-raised interlocking bell-crank levers; an oscillating lever; links connecting the opposite ends of the oscillating lever with each bell-crank lever; a bridle-rod having a longitudinal slot; a bell-crank carrying a pin running in the slot; and a link connecting the other arm of the last-named bell-crank with the oscillating link.

6. In combination, a bridle-bar having longitudinal slots; a pair of bell-crank levers, each having a pin engaging one of such slots; spring-returned trip mechanisms adapted to be actuated by a passing train; a link connecting each bell-crank lever with one of the trip mechanisms, such bell-crank levers being so mounted that they act in opposite directions under the influence of their respective trip mechanisms.

810,868. SWITCH AND SIGNAL TRACK TRIP. CHARLES M. HURST, Rawlins, Wyo. Filed July 8, 1905. Serial No. 268,866.

Claim.—1. In a device of the character described, in combination, a pair of levers pivoted to fixed supports and having their free ends in engagement, a shaft having a pair of crank-arms the wrist-pin of one thereof pivotally uniting the two levers, and a rod or cable leading from one of the crank-arms of said shaft.

2. In a device of the character described, in combination, a pair of levers pivoted to fixed supports and having their free ends in engagement, a crank-shaft, the wrist-pin of which pivotally unites the levers, and a rod or cable leading from a crank-arm of the shaft.

810,869. POWER-TRANSMITTING MECHANISM. JOHN B. KING, Plymouth, England. Filed Apr. 10, 1905. Serial No. 254,883.

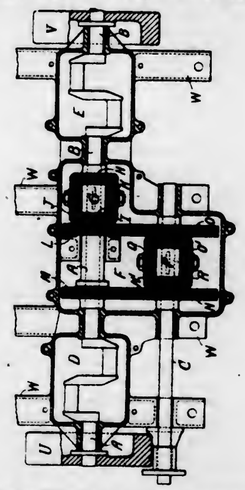

Claim.—1. In combination, a pair of engine-shafts, differential gearing connecting said shafts, a drive-shaft, and differential gearing therefor operatively connected with one of said engine-shafts and with differential gearing therefor.

2. In combination, a pair of engine-shafts, differential gearing operatively connecting said shafts, a drive-shaft, and differential gearing therefor directly connected with one of said engine-shafts, and indirectly connected with the other.

3. In combination, a pair of alined engine-shafts, differential gearing operatively connecting said shafts, a drive-shaft, and differential gearing therefor directly connected with one of said engine-shafts and also with the differential gearing therefor.

810,870. HIGH-PRESSURE GAS-BURNER. WILLIAM KIRKWOOD, Chicago, Ill. Filed Mar. 13, 1905. Serial No. 249,894.

Claim.—1. A burner for high-pressure gas, comprising an axially-bored burner-tube, a sleeve surrounding said tube and having one or more lateral apertures substantially opposite the tip of the latter, said sleeve being provided with means for directing a part of the gas through said apertures, and an outer sleeve surrounding the end of said first-named sleeve and providing in conjunction with the latter a burner for an annular pilot-flame for the main jet, substantially as described.

2. A burner for high-pressure gas, comprising an axially-bored burner-tube, a sleeve surrounding said tube, said sleeve having one or more lateral apertures substantially opposite the tip of the burner-tube and also one or more lateral air-entraining apertures in rear thereof and being so formed as to direct a portion of the gas through said first-named apertures, and an outer sleeve surrounding the end of said first-named sleeve and providing in conjunction with the latter a burner for an annular pilot-flame for the main jet, substantially as described.

3. A burner for high-pressure gas, comprising an axially-bored burner-tube having a contracted tip, a sleeve surrounding said tube and having a contracted end surrounding said tip, said sleeve having one or more lateral apertures substantially opposite the tip of the burner-tube and also one or more lateral air-entraining apertures in rear thereof, and an outer sleeve secured to said last-named sleeve and having a contracted end portion surrounding the contracted end portion of the latter to provide in conjunction therewith an annular pilot-flame for the main jet, substantially as described.

4. A burner for high-pressure gas, comprising an axially-bored burner-tube having a contracted tip, a needle-valve in said burner-tube, a sleeve surrounding said tube and having a contracted end surrounding said tip, said sleeve having one or more lateral apertures substantially opposite the tip of the burner-tube and also one or more lateral air-entraining apertures in rear thereof, an outer sleeve secured to said last-named sleeve, and having a contracted end portion surrounding the contracted end portion of the latter to provide in conjunction therewith an annular pilot-flame for the main jet, and a sleeve controlling said air-entraining apertures, said tube and sleeves being longitudinally adjustable relatively to each other, substantially as described.

810,871. SINGLE-TRIGGER MECHANISM FOR DOUBLE-BARREL GUNS. CHARLES F. LEFEVER and DANIEL M. LEFEVER, Syracuse, N. Y. Filed Feb. 14, 1906. Serial No. 301,277.

Claim.—1. In a single-trigger mechanism for double-barrel guns, the combination with the hammers, mainsprings and sears, of a trigger, a weighted pawl pivoted on the trigger to engage and trip the sear, a spring on the trigger operating to force the pawl into position to engage the sears, and a detent engaging and holding the pawl in its cocked position against the action of said spring, and means brought into action by the breaking of the gun to force the pawl into position to be engaged by the detent.

2. In combination with the hammers, mainsprings and sears, of a double-barrel breech-loading gun, of a trigger, a movable element actuated by the trigger and means to force said element into position to engage and trip one of the sears when the trigger is pulled, said element being disengaged from the sear by its own inertia and the recoil of the gun, a cocking-lever operatively connected to move said element to its inoperative position when the gun is "broken," and a detent to hold said element in its inoperative position while the gun is closed.

3. The combination with the hammers, mainsprings and sears of a breech-loading double-barrel gun, of a trigger, a weighted pawl actuated by the trigger to trip one of the sears, the inertia of the pawl and the recoil of the gun coacting to disengage the pawl and sear from each other when the gun is fired, and a detent for holding the pawl in its inoperative position.

4. The combination with the hammers, mainsprings and sears of a breech-loading double-barrel gun, of a trigger, a pawl on the trigger to trip the sear when the trigger is pulled, said pawl being weighted to move automatically from the sear-engaging position, a spring to hold the pawl in said engaging position, the inertia of the pawl and the recoil of the gun coacting to separate the engaging faces of the pawl and sear when the gun is fired, and a spring-detent for holding the pawl in its inoperative position.

5. The combination with the hammers, mainsprings and sears of a breech-loading double-barrel gun, of a trigger, a shoulder movable manually to establish connection between the trigger and either sear separately from the other whereby either barrel may be fired successively and separate from the other barrel, a pawl actuated by the trigger and means to move said pawl into position to engage and trip the sear for said other barrel, and a cocking-lever connected to force the pawl to its inoperative position at each break of the gun.

6. The combination with the hammers, mainsprings and sears of a double-barrel breech-loading gun, of a trigger, manually-adjustable means to connect the trigger with either sear separate from the other whereby either barrel may be fired first and separate from the other after each break of the gun, and mechanism brought into action by the trigger whereby said other sear may be tripped to fire said other barrel, said mechanism including a sear-engaging pawl, a spring for forcing it to its operative position and a detent for holding it in its inoperative position, the pawl being thrown to its inoperative position by its own inertia and the recoil of the gun.

7. The combination with the hammers, mainsprings and sears of a double-barrel breech-loading gun, of a trigger, a pawl actuated by the trigger to trip the sears, said pawl being movable into and out of operative position irrespective of the trigger, and a cocking-lever operatively connected to cock the hammers and to simultaneously move the pawl to its inoperative position when the gun is broken.

8. In combination with the hammers, mainsprings and sears of a double-barrel gun, a trigger, a trigger-plate, a pawl pivoted to the trigger and actuated to trip the sears, a spring on the trigger operating to hold the pawl in position to trip the sears as the trigger is operated, the recoil of the gun and inertia of the pawl operating to force the pawl from said position against the action of the spring.

9. In combination with the hammers, mainsprings and sears of a double-barrel gun, a trigger, a trigger-plate, a pawl pivoted to the trigger and actuated to trip the sears, a spring on the trigger operating to hold the pawl in position to trip the sears as the trigger is operated, the recoil of the gun and inertia of the pawl operating to force the pawl from said position against the action of the spring, and a spring-detent on the trigger-plate to engage and hold the pawl away from the sears.

810,872. WAGON. WILLIAM LEPPERT, Tippecanoe City, Ohio, assignor to Charles Anderson, Jr., Dayton, Ohio. Filed June 7, 1905. Serial No. 264,192.

Claim.—1. A supplemental top for vehicles adapted to be arranged above, and to be pivoted to, the main top of a vehicle, said supplemental top also adapted to be extended beyond the main top and to rest upon said main top.

2. A supplemental top for vehicles adapted to be pivoted to the top of the vehicle and to be extended beyond the main top of said vehicle and means to adjust said top to fit vehicle-tops of different heights.

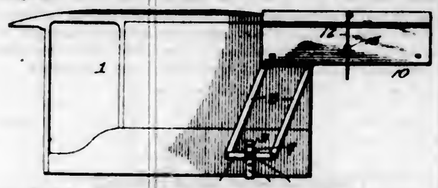

3. A supplemental top for vehicles adapted to be arranged above, and to rest upon, the main top of a vehicle, said supplemental top having supporting-rods attached thereto, a bracket to which the other ends of said rods are pivoted, said bracket adapted to be secured to said main top.

4. A supplemental top for vehicles, having supporting-rods attached thereto, an adjustable bracket to which the other ends of said rods are pivoted, said bracket adapted to be secured to the body of the vehicle.

5. A supplemental top for vehicles adapted to be pivoted to the top of a vehicle and to be extended beyond the main top of said vehicle, said supplemental top having awnings attached to its lateral edges.

6. A supplemental top for vehicles adapted to be pivoted to the top of a vehicle and to be extended beyond the main top of said vehicle, said supplemental top having awnings attached to its lateral edges and means to support said awnings.

7. The combination with a fixed top of a vehicle, of a swinging supplemental top arranged above said fixed top and adapted to be extended beyond the rear end of the fixed top, said fixed top forming a stop means for the supplemental top.

8. The combination with the body and top of a vehicle, brackets secured to said body, and plates secured to said brackets, of a swinging supplemental top connected to said plates by pivoted rods, said supplemental top adapted to be extended beyond the rear end of the fixed top, said fixed top forming a stop means for the supplemental top.

9. The combination with a pivoted awning, of a rod pivoted above said awning, said rod having a series of teeth extending toward its pivoted end, and a bracket secured to the outer edge of the awning and provided with a cross-pin adapted to be engaged by the teeth on said rod to hold said awning in a raised position.

10. The combination with a pivoted awning, of a rod pivoted above said awning, said rod having a series of teeth extending toward its pivoted end, and a bracket secured to the outer edge of the awning and provided with a cross-pin adapted to be engaged by the teeth on said rod and hold said awning in a raised position, said bracket also provided with a second cross-pin arranged above said first-mentioned pin for the purpose specified.

11. A supplemental top for vehicles adapted to be pivoted to the top of a vehicle and to be extended beyond the main top of said vehicle, said supplemental top having awnings attached to its lateral edges, rods pivoted to the supplemental top above said awnings, each of said rods having a series of teeth extending toward its pivoted end, and a bracket secured to the outer edge of each of said awnings, said bracket provided with a cross-pin adapted to be engaged by the teeth of one of said rods to hold said awnings in a raised position.

810,873. DOOR FOR LIFTS. WILLIAM R. S. MACKAY, South Yarra, Victoria, Australia. Filed Apr. 15, 1905. Serial No. 255,851.

Claim.—1. In combination, a door-framing, a slidable door having a V-shaped path or runway arranged longitudinally thereof with its apex adjacent an edge of the door, means for locking the door to the framing, levers longitudinally arranged in said runway and extending to the apex thereof to act on said means to release the door, the outer ends of said levers being bent, and a cage movable past said door and having a projection to move in said runway for opening and closing the door and arranged to engage a lever in the runway for releasing the door, substantially as described.

2. In combination, a door-framing, a slidable door, a pivoted latch for locking the door to the framing, said door provided with a longitudinal V-shaped groove or runway having its apex adjacent the edge of the door and said latch, the opposite ends of the runway being open, levers longitudinally arranged in the runway and extending approximately from the open ends of the runway to the apex thereof, respectively, each lever free at its inner end to engage and lift said latch and fulcrumed to swing transversely of the runway and arranged adjacent an open end of the runway to be engaged by a projection entering said end to be swung thereby to release the latch, and a cage having a projection to move longitudinally through the runway and open and close the door, substantially as described.

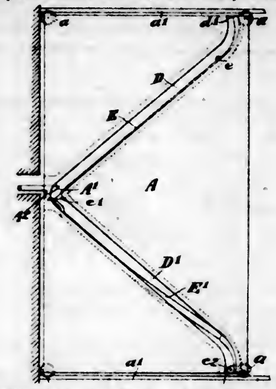

3. In combination, a door-framing, a slidable door having a V-shaped groove arranged longitudinally of the door and dovetailed in cross-section, said groove having vertically-disposed open opposite ends adjacent the top and bottom of the door and having its apex arranged adjacent an edge of the door, a swinging latch arranged adjacent said apex for locking the door, a pair of swinging levers arranged longitudinally in said groove and extending approximately from the open ends thereof, respectively, to the apex to engage and swing said latch, and a cage having a tapered projection to enter said groove and close and open the door and to swing said levers, substantially as described.

4. In combination, a door-framing, a slidable door having a V-shaped runway arranged longitudinally thereof with opposite open ends adjacent the top and bottom portions of the door, respectively, and having its apex arranged adjacent the vertical edge of the door, a swinging latch for locking said door and arranged adjacent said apex, a pair of bent swinging levers arranged longitudinally in said runway and extending approximately from open ends thereof, respectively, to the apex to engage and swing said latch, and a cage having a projection to move in said groove to open and close the door and to engage and swing said levers.

810,874. DITCHER AND ROAD-GRADER. JOHN D. MARTIN, Haynesville, Ky. Filed July 18, 1905. Serial No. 270,264.

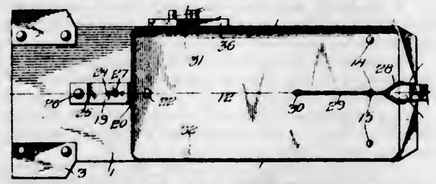

Claim.—1. A reversible device of the character described comprising a runner having upper and lower guide-plates at its rear end, grooves in the outer face of its forward end, a ditching-blade connected at its inner end with the inner end of the runner for swinging movement with respect to the latter, a resilient strip secured at one end in the aforesaid groove, a draft-attaching device secured to the opposite end of the said resilient strip, the attaching device having a series of perforations therein, a rod connecting said attaching device and the scraper-blade, brackets adjustably connecting the rear end of the runner and the scraper-blade and a seat constructed and arranged for engagement with the upper and lower edges of the runner and scraper-blade.

2. A reversible device of the character described, comprising a runner, a scraper-blade secured at its inner end to the inner end of the runner for swinging movement with respect to the latter, the rear end of the scraper-blade diverging from the runner, brackets secured to the outer end of the scraper-blade and the runner, and a

810,870. HIGH-PRESSURE GAS-BURNER. WILLIAM KIRKWOOD, Chicago, Ill. Filed Mar. 12, 1906. Serial No. 305,894.

Claim.—1. A burner for high-pressure gas, comprising an axially-bored burner-tube, a sleeve surrounding said tube and having one or more lateral apertures substantially opposite the tip of the latter, said sleeve being provided with means for directing a part of the gas through said apertures, and an outer sleeve surrounding the end of said first-named sleeve and providing in conjunction with the latter a burner for an annular pilot-flame for the main jet, substantially as described.

2. A burner for high-pressure gas, comprising an axially-bored burner-tube, a sleeve surrounding said tube, said sleeve having one or more lateral apertures substantially opposite the tip of the burner-tube and also one or more lateral air-entraining apertures in rear thereof and being so formed as to direct a portion of the gas through said first-named apertures, and an outer sleeve surrounding the end of said first-named sleeve and providing in conjunction with the latter a burner for an annular pilot-flame for the main jet, substantially as described.

3. A burner for high-pressure gas, comprising an axially-bored burner-tube having a contracted tip, a sleeve surrounding said tube and having a contracted end surrounding said tip, said sleeve having one or more lateral apertures substantially opposite the tip of the burner-tube and also one or more lateral air-entraining apertures in rear thereof, and an outer sleeve secured to said last-named sleeve and having a contracted end portion surrounding the contracted end portion of the latter to provide in conjunction therewith an annular pilot-flame for the main jet, substantially as described.

4. A burner for high-pressure gas, comprising an axially-bored burner-tube having a contracted tip, a needle-valve in said burner-tube, a sleeve surrounding said tube and having a contracted end surrounding said tip, said sleeve having one or more lateral apertures substantially opposite the tip of the burner-tube and also one or more lateral air-entraining apertures in rear thereof, an outer sleeve secured to said last-named sleeve, and having a contracted end portion surrounding the contracted end portion of the latter to provide in conjunction therewith an annular pilot-flame for the main jet, and a sleeve controlling said air-entraining apertures, said tube and sleeves being longitudinally adjustable relatively to each other, substantially as described.

810,871. SINGLE-TRIGGER MECHANISM FOR DOUBLE-BARREL GUNS. CHARLES F. LEFEVER and DANIEL M. LEFEVER, Syracuse, N. Y. Filed Feb. 14, 1903. Serial No. 143,367.

Claim.—1. In a single-trigger mechanism for double-barrel guns, the combination with the hammers, mainsprings and sears, of a trigger, a weighted pawl pivoted on the trigger to engage and trip the sear, a spring on the trigger operating to force the pawl into position to engage the sears, and a detent engaging and holding the pawl in its cocked position against the action of said spring, and means brought into action by the breaking of the gun to force the pawl into position to be engaged by the detent.

2. In combination with the hammers, mainsprings and sears, of a double-barrel breech-loading gun, of a trigger, a movable element actuated by the trigger and means to force said element into position to engage and trip one of the sears when the trigger is pulled, said element being disengaged from the sear by its own inertia and the recoil of the gun, a cocking-lever operatively connected to move said element to its inoperative position when the gun is "broken," and a detent to hold said element in its inoperative position while the gun is closed.

3. The combination with the hammers, mainsprings and sears of a breech-loading double-barrel gun, of a trigger, a weighted pawl actuated by the trigger to trip one of the sears, the inertia of the pawl and the recoil of the gun coacting to disengage the pawl and sear from each other when the gun is fired, and a detent for holding the pawl in its inoperative position.

4. The combination with the hammers, mainsprings and sears of a breech-loading double-barrel gun, of a trigger, a pawl on the trigger to trip the sear when the trigger is pulled, said pawl being weighted to move automatically from the sear-engaging position, a spring to hold the pawl in said engaging position, the inertia of the pawl and the recoil of the gun coacting to separate the engaging faces of the pawl and sear when the gun is fired, and a spring-detent for holding the pawl in its inoperative position.

5. The combination with the hammers, mainsprings and sears of a breech-loading double-barrel gun, of a trigger, a shoulder movable manually to establish connection between the trigger and either sear separately from the other whereby either barrel may be fired successively and separate from the other barrel, a pawl actuated by the trigger and means to move said pawl into position to engage and trip the sear for said other barrel, and a cocking-lever connected to force the pawl to its inoperative position at each break of the gun.

6. The combination with the hammers, mainsprings and sears of a double-barrel breech-loading gun, of a trigger, manually-adjustable means to connect the trigger with either sear separate from the other whereby either barrel may be fired first and separate from the other after each break of the gun, and mechanism brought into action by the trigger whereby said other sear may be tripped to fire said other barrel, said mechanism including a sear-engaging pawl, a spring for forcing it to its operative position and a detent for holding it in its inoperative position, the pawl being thrown to its inoperative position by its own inertia and the recoil of the gun.

7. The combination with the hammers, mainsprings and sears of a double-barrel breech-loading gun, of a trigger, a pawl actuated by the trigger to trip the sears, said pawl being movable into and out of operative position irrespective of the trigger, and a cocking-lever operatively connected to cock the hammers and to simultaneously move the pawl to its inoperative position when the gun is broken.

8. In combination with the hammers, mainsprings and sears of a double-barrel gun, a trigger, a trigger-plate, a pawl pivoted to the trigger and actuated to trip the sears, a spring on the trigger operating to hold the pawl in position to trip the sears as the trigger is operated, the recoil of the gun and inertia of the pawl operating to force the pawl from said position against the action of the spring.

9. In combination with the hammers, mainsprings and sears of a double-barrel gun, a trigger, a trigger-plate, a pawl pivoted to the trigger and actuated to trip the sears, a spring on the trigger operating to hold the pawl in position to trip the sears as the trigger is operated, the recoil of the gun and inertia of the pawl operating to force the pawl from said position against the action of the spring, and a spring-detent on the trigger-plate to engage and hold the pawl away from the sears.

810,872. WAGON. WILLIAM LEFFERT, Tippecanoe City, Ohio, assignor to Charles Anderson, Jr., Dayton, Ohio. Filed June 7, 1905. Serial No. 264,198.

Claim.—1. A supplemental top for vehicles adapted to be arranged above, and to be pivoted to, the main top of a vehicle, said supplemental top also adapted to be extended beyond the main top and to rest upon said main top.

2. A supplemental top for vehicles adapted to be pivoted to the top of the vehicle and to be extended beyond the main top of said vehicle and means to adjust said top to fit vehicle-tops of different heights.

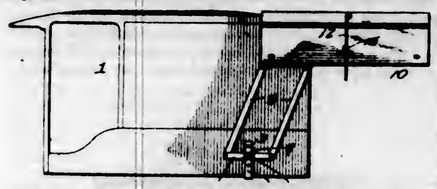

3. A supplemental top for vehicles adapted to be arranged above, and to rest upon, the main top of a vehicle, said supplemental top having supporting-rods attached thereto, a bracket to which the other ends of said rods are pivoted, said bracket adapted to be secured to said main top.

4. A supplemental top for vehicles, having supporting-rods attached thereto, an adjustable bracket to which the other ends of said rods are pivoted, said bracket adapted to be secured to the body of the vehicle.

5. A supplemental top for vehicles adapted to be pivoted to the top of a vehicle and to be extended beyond the main top of said vehicle, said supplemental top having awnings attached to its lateral edges.

6. A supplemental top for vehicles adapted to be pivoted to the top of a vehicle and to be extended beyond the main top of said vehicle, said supplemental top having awnings attached to its lateral edges and means to support said awnings.

7. The combination with a fixed top of a vehicle, of a swinging supplemental top arranged above said fixed top and adapted to be extended beyond the rear end of the fixed top, said fixed top forming a stop means for the supplemental top.

8. The combination with the body and top of a vehicle, brackets secured to said body, and plates secured to said brackets, of a swinging supplemental top connected to said plates by pivoted rods, said supplemental top adapted to be extended beyond the rear end of the fixed top, said fixed top forming a stop means for the supplemental top.

9. The combination with a pivoted awning, of a rod pivoted above said awning, said rod having a series of teeth extending toward its pivoted end, and a bracket secured to the outer edge of the awning and provided with a cross-pin adapted to be engaged by the teeth on said rod to hold said awning in a raised position.

10. The combination with a pivoted awning, of a rod pivoted above said awning, said rod having a series of teeth extending toward its pivoted end, and a bracket secured to the outer edge of the awning and provided with a cross-pin adapted to be engaged by the teeth on said rod and hold said awning in a raised position, said bracket also provided with a second cross-pin arranged above said first-mentioned pin for the purpose specified.

11. A supplemental top for vehicles adapted to be pivoted to the top of a vehicle and to be extended beyond the main top of said vehicle, said supplemental top having awnings attached to its lateral edges, rods pivoted to the supplemental top above said awnings, each of said rods having a series of teeth extending toward its pivoted end, and a bracket secured to the outer edge of each of said awnings, said bracket provided with a cross-pin adapted to be engaged by the teeth of one of said rods to hold said awnings in a raised position.

810,873. DOOR FOR LIFTS. WILLIAM H. S. MACKAY, South Yarra, Victoria, Australia. Filed Apr. 15, 1905. Serial No. 255,851.

Claim.—1. In combination, a door-framing, a slidable door having a V-shaped path or runway arranged longitudinally thereof with its apex adjacent an edge of the door, means for locking the door to the framing, levers longitudinally arranged in said runway and extending to the apex thereof to act on said means to release the door, the outer ends of said levers being bent, and a cage movable past said door and having a projection to move in said runway for opening and closing the door and arranged to engage a lever in the runway for releasing the door, substantially as described.

2. In combination, a door-framing, a slidable door, a pivoted latch for locking the door to the framing, said door provided with a longitudinal V-shaped groove or runway having its apex adjacent the edge of the door and said latch, the opposite ends of the runway being open, levers longitudinally arranged in the runway and extending approximately from the open ends of the runway to the apex thereof, respectively, each lever free at its inner end to engage and lift said latch and fulcrumed to swing transversely of the runway and arranged adjacent an open end of the runway to be engaged by a projection entering said end to be swung thereby to release the latch, and a cage having a projection to move longitudinally through the runway and open and close the door, substantially as described.

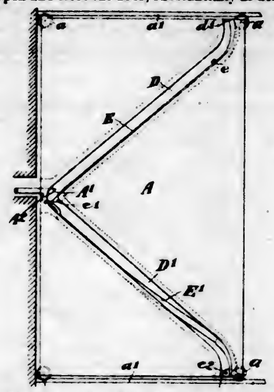

3. In combination, a door-framing, a slidable door having a V-shaped groove arranged longitudinally of the door and dovetailed in cross-section, said groove having vertically-disposed open opposite ends adjacent the top and bottom of the door and having its apex arranged adjacent an edge of the door, a swinging latch arranged adjacent said apex for locking the door, a pair of swinging levers arranged longitudinally in said groove and extending approximately from the open ends thereof, respectively, to the apex to engage and swing said latch, and a cage having a tapered projection to enter said groove and close and open the door and to swing said levers, substantially as described.

4. In combination, a door-framing, a slidable door having a V-shaped runway arranged longitudinally thereof with opposite open ends adjacent the top and bottom portions of the door, respectively, and having its apex arranged adjacent the vertical edge of the door, a swinging latch for locking said door and arranged adjacent said apex, a pair of bent swinging levers arranged longitudinally in said runway and extending approximately from open ends thereof, respectively, to the apex to engage and swing said latch, and a cage having a projection to move in said groove to open and close the door and to engage and swing said levers.

810,874. DITCHER AND ROAD-GRADER. JOHN D. MARTIN, Haynesville, Ky. Filed July 18, 1905. Serial No. 270,264.

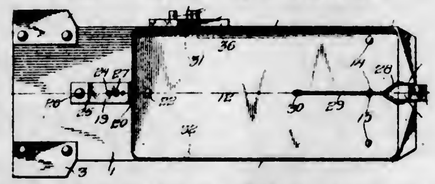

Claim.—1. A reversible device of the character described comprising a runner having upper and lower guide-plates at its rear end, grooves in the outer face of its forward end, a ditching-blade connected at its inner end with the inner end of the runner for swinging movement with respect to the latter, a resilient strip secured at one end in the aforesaid groove, a draft-attaching device secured to the opposite end of the said resilient strip, the attaching device having a series of perforations therein, a rod connecting said attaching device and the scraper-blade, brackets adjustably connecting the rear end of the runner and the scraper-blade and a seat constructed and arranged for engagement with the upper and lower edges of the runner and scraper-blade.

2. A reversible device of the character described, comprising a runner, a scraper-blade secured at its inner end to the inner end of the runner for swinging movement with respect to the latter, the rear end of the scraper-blade diverging from the runner, brackets secured to the outer end of the scraper-blade and the runner, and a

seat constructed to engage the upper or lower edges of the runner and the scraper-blade.

810,875. STEAM-SHOVEL SUPPORT. LUDOLPH P. MARTIN, Milwaukee, Wis., assignor to Allis-Chalmers Company, Milwaukee, Wis., a Corporation of New Jersey. Filed Oct. 26, 1905. Serial No. 284,427.

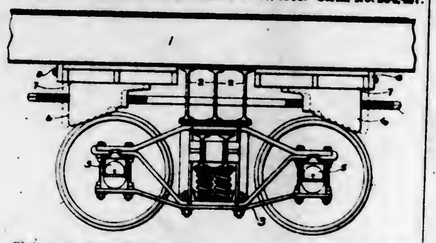

Claim.—1. A holding device comprising a base, a rollable member and means operable between the member and base to maintain a spaced relation therebetween.

2. A holding device comprising a base, a wheel, and means to engage the wheel and maintain the base in position.

3. A base, members movably supporting the base, and means operable between the member and base to maintain the distance therebetween.

4. A tiltable base, rollable members having axles, and means on the base to take the tilting strain off the axles.

5. A base, rollable members having treads, and means operable on the treads to maintain the base in position.

6. A base, a pair of wheels and a pair of blocks to engage the wheels and base.

7. A base, a pair of wheels, a pair of blocks guided by the base, and means to move the blocks.

8. A base, two wheels, two blocks, and means to simultaneously move the blocks onto the wheels to maintain the base in position.

9. A longitudinally-movable rotatable member, a wedge-block engaged thereby and a pair of elements spaced by the block, one of which elements is a wheel.

10. A pair of wedge-blocks, a longitudinally-movable rod, a base having guides for the blocks and wheels engaged by the blocks.

11. A base, a frame medially supporting the base, and means positively preventing tilting of the base on the frame.

810,876. RAILROAD-TIE. EDWARD MURRAY, Chicago, Ill. Filed July 6, 1903. Serial No. 163,354.

Claim.—1. A concrete railroad-tie provided with tamping-spaces in its end portions, substantially as described.

2. A concrete railroad-tie comprising suitably-connected concrete blocks or rail-supporting portions, each provided with two vertical holes or tamping-spaces, substantially as described.

3. A concrete railroad-tie having rail-seats upon its ends and provided with tamping-spaces upon opposite sides of each said rail-seat, substantially as described.

4. A concrete railroad-tie comprising concrete blocks and means for securing the rails thereon, in combination with parallel tie-rods that connect said blocks, substantially as described.

5. A concrete railroad-tie comprising concrete blocks provided with means for securing the rails thereto and each provided with side grooves or recesses, in combination with parallel tie-rods having their ends detachably secured in said side grooves, substantially as described.

6. A railroad-tie comprising blocks composed of concrete and metallic reinforcing parts embedded therein, in combination with transverse anchor bars or rods in said blocks and parallel tie-rods having their ends secured upon said anchor-rods, substantially as described.

7. A railroad-tie comprising two concrete blocks, each containing a transverse anchor-rod located in the plane of the rail-gage line, in combination with parallel tie-rods secured upon the ends of said anchor-rods, and determining the track-gage, substantially as described.

8. A railroad-tie comprising suitably-reinforced concrete blocks, each containing side grooves and each provided with a transverse anchor-rod, in combination with parallel tie-rods having their ends secured upon the ends of said anchor-rods within the side grooves of said blocks, substantially as described.

9. A railroad-tie comprising suitably-reinforced concrete blocks, each containing side grooves and each provided with a transverse anchor-rod, in combination with parallel tie-bars, having their ends secured upon the ends of said anchor-rods, within the side grooves of said blocks, said parallel bars having anchor-rod holes corresponding to the standard track-gage, substantially as described.

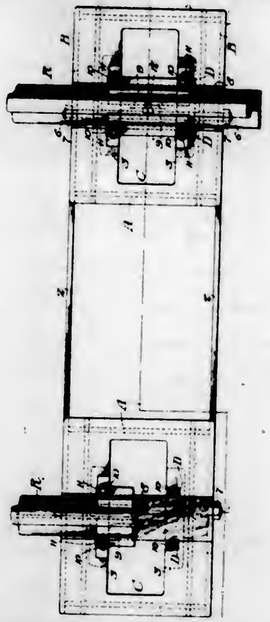

10. A concrete railroad-tie comprising suitably-reinforced concrete blocks provided with side grooves or recesses, in combination with parallel tie-rods having their ends secured in said grooves, substantially as described.

11. A railroad-tie comprising suitably-reinforced concrete blocks, each provided with a transverse horizontal anchor-rod having its end extending through the sides of the block, in combination with tie-rods having holes in their ends to fit upon the projecting ends of said anchor-rods, and means for securing said tie-rods thereon, substantially as described.

12. A concrete railroad-tie having tamping-spaces in its end portions and provided with horizontal anchor-plates embedded in said end portions in combination with bolts extending upwardly from said plates and a rail-securing plate upon each pair of said bolts.

13. A railroad-tie provided with vertical recesses upon each side of the rail-seat, in combination with bolts extending upwardly through said recesses, and of less diameter than said recesses, nuts upon the upper ends of said bolts, and a rail-clamping plate extending between the bolts at one side of the rail-seat and held by the nuts thereon, substantially as described.

14. An anticreeping device comprising parallel bolts and means for anchoring the lower ends thereof upon a railroad-tie, in combination with a plate to engage a rail-base and connecting the upper ends of said bolts, substantially as described.

15. An anticreeping device comprising parallel bolts and means for anchoring the lower ends thereof upon a railroad-tie, in combination with a normally curved spring-plate to engage a rail-base and connecting the upper ends of said bolts, substantially as described.

16. An anticreeping device of the class described, comprising parallel bolts and means for anchoring the lower ends thereof upon a railroad-tie, in combination with a plate connecting the upper ends of said bolts and provided with a vertical rail-web-engaging lug, having a bolt-hole, substantially as described.

17. A railroad-tie comprising suitably-connected concrete blocks provided with tamping-spaces and containing, embedded, horizontal anchor-plates, in combination with bolts, having their ends extending through said anchor-plates, nuts upon said bolts above the tops of said blocks, and horizontal plates connecting the pairs of bolts upon opposite sides of the rail-seat portions of said blocks, substantially as described.

18. A railroad-tie comprising suitably-connected concrete blocks provided with tamping-spaces and containing, embedded, horizontal anchor-plates, in combination with bolts, having their ends extending through said anchor-plates, nuts upon said bolts above the tops of said blocks and horizontal plates connecting the pairs of bolts upon opposite sides of the rail-seat portions of each of said blocks, one of said plates being normally curved and the other having a vertical lug to be attached to the web of a rail, substantially as described.

19. A concrete railroad-tie having horizontal anchor-plates embedded in its end portions and provided with vertical recesses opening above and below said plates, there being also tamping-spaces in said tie communicating with said recesses, rail-fastening bolts arranged in said recesses and engaged with said plates, said plates being provided with bolt-receiving notches and depending bolt holding lugs, substantially as described.

20. A bolt-anchoring device, for concrete railroad-ties, comprising a notched plate having its corners bent downwardly at the openings of its notches, as and for the purpose specified.

21. A railroad-tie comprising suitably-connected concrete blocks each provided with a resilient rail-seat, two tamping-holes, bolt-recesses and embedded metallic anchor and reinforcing parts, substantially as described.

810,877. INJECTOR CONNECTION FOR LOCOMOTIVE-BOILERS. JAMES MCKNOWN, Pittsburg, Pa., assignor of one-half to Joseph Israel, Pittsburg, Pa. Filed Nov. 25, 1904. Serial No. 234,208.

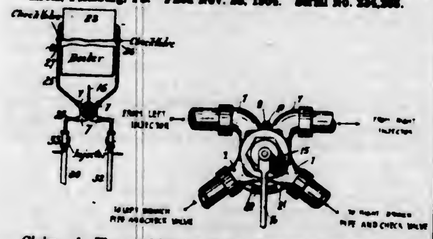

Claim.—1. The combination with a locomotive-boiler, two injectors carried on the boiler and connected therewith, two branch pipes arranged one on each side of the boiler and leading from the water-supply to the boiler, a four-way valve connected to both said branch pipes, and to both said injectors, said four-way valve being constructed and adapted to simultaneously connect the injectors each with the branch pipe on the same side of the boiler, or to connect the injector on either side with the branch pipe on the opposite side or to cut off communication between both injectors and both branch pipes.

2. The combination with a boiler, two injectors carried on the boiler, two branch pipes arranged one on each side of the boiler and means arranged intermediate of the branch pipes and the injectors whereby both injectors may be simultaneously placed in communication with the boiler through the branch pipes or either one of the injectors may be placed in communication with the branch pipe on the opposite side.

810,878. SELECTIVE CALL FOR TELEPHONES AND TELEGRAPHS. WILLIAM PALMER, Jr., Rincon, N. Mex. Filed July 12, 1902. Serial No. 116,475.

Claim.—1. A selective telephone and telegraph call, comprising a subscriber's instrument having a local battery and two local circuits, a step-by-step escapement, and a bell-switch, two electromagnets arranged one in each local circuit, one for working the step-by-step escapement and the other for adjusting the bell-switch to ringing position, a vibrating shunting-relay for sending the local-battery current through either electromagnet by a reversal of the main-line current, and a switch under the control of the subscriber for enabling him to exclusively introduce his telephone into circuit for private communication substantially as described.

2. In a selective telephone and telegraph call, the combination of an escapement-electromagnet and its armature, a pallet located on the same shaft and moving with the armature, an escapement-wheel having a deep notch varying in position on the wheel for different instruments, a lever with a tooth on one end adapted to enter the deep notch of the wheel, an armature at the other end and a switch-arm support between the two, a second electromagnet acting on said latter armature, an arm held up by said support and a contact switch-spring for the bell-circuit, a shunting disk or commutator on the escapement-wheel shaft, a short circuit controlled by said commutator to cut out the telephone, said arm being adapted to make contact with the bell-switch when the said second electromagnet is energized and to be then adjusted to a position to break the short circuit around the telephone and cut in the telephone by the act of the subscriber as described.

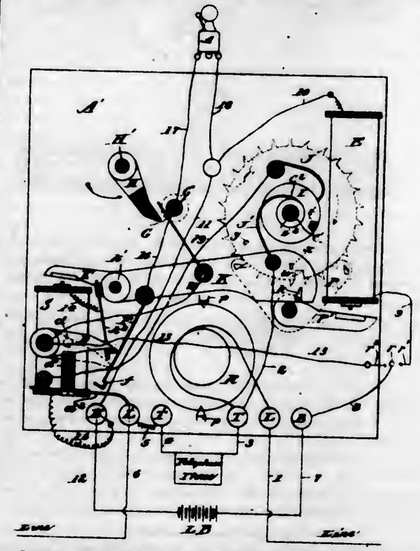

3. In a selective telephone and telegraph call, the combination of an escapement-electromagnet and its armature, a pallet located on the same shaft and moving with the armature, an escapement-wheel having a deep notch varying in position on the wheel for different instruments, a lever with a tooth on one end adapted to enter the deep notch of the wheel, an armature at the other end and a switch-arm support between the two, a second electromagnet acting on said latter armature, an arm held up by said support and a contact switch-spring for the bell-circuit, a shunting disk or commutator on the escapement-wheel shaft, a short circuit controlled by said commutator to cut out the telephone, said arm being adapted to make contact with the bell-switch when the said second electromagnet is energized and to be then adjusted to a position to break the short circuit around the telephone and cut in the telephone by the act of the subscriber, and a stop mechanism between the lever and escapement-wheel consisting of two engaging lugs one on the escapement-wheel and one on the lever acting together to prevent further movement of the escapement, substantially as described.

810,879. WATER-ESCAPE. BENJAMIN E. PERRY, Todds Point township, Shelby county, Ill., assignor of one-half to Charles Beverely Davis, Todds Point township, Shelby county, Ill. Filed Aug. 24, 1905. Serial No. 275,080.

Claim.—1. The herein-described water-escape consisting of the top cylinder B with the grated top A, the base-cylinder H, and the inside cylinder I with the screens D and F and the opening E all substantially as set forth and for the purposes herein specified.

2. In a water-escape, the combination, with a base-cylinder attached to the tile-drain or outlet, of a top cylinder having a suitable means of support and a removable grating, and being of sufficien length and diameter to extend above high-water mark, and to telescope about half the exposed part of the base-cylinder affording an annular passage for the escape of the water as shown and described.

3. In a water-escape, the combination, with a base-cylinder attached to the tile, drain or outlet, and a top cylinder having suitable means of support and a removable grating, and being of sufficient length and diameter to extend above the high-water mark, and to

telescope about half the exposed part of the base-cylinder, affording an annular passage for the escape of the water, of an inside cylinder provided with the screens at either end, and with the flanged top resting on the top of the said base-cylinder all substantially as set forth.

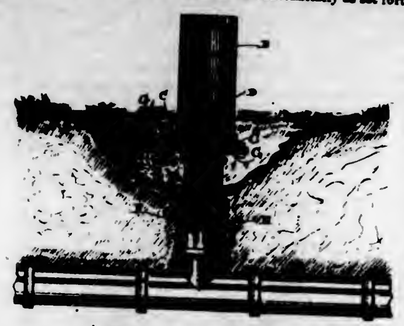

810,880. **WATER-BRAKE FOR POLES.** EVAN E. P. PUGSLEY, Indianapolis, and JAMES O. JACKSON, Swayzee, Ind.; said Jackson assignor to Samuel Bowsher. Filed Jan. 5, 1905. Serial No. 239,823.

Claim.—1. A pole composed of non-conducting material for carrying electric wires, the body, a water-brake formed integrally with the pole-body and adapted to extend circumferentially around the latter.

2. A pole composed of non-conducting material for carrying electric wires, the body, a water-brake formed integrally with the pole-body and having its lower surface cut on a plane that recedes upward and inward from the outer edge toward the pole-body.

810,881. **MOTOR-VEHICLE.** LEROY S. PFOUTS, Canton, Ohio. Filed Apr. 1, 1905. Serial No. 253,276.

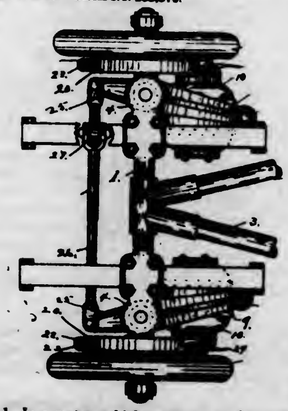

Claim.—1. In a motor-vehicle, an axle provided with hollow bearing-shanks and wires located therethrough, sleeves loosely mounted upon the shanks and provided with motor-supporting stubs and stub-axles, motors secured to the stubs, arms journaled concentrically with the sleeves upon the shanks, means for communicating rotary motion from the motors to the traveling wheels, and the motors, traveling wheels and means for communicating rotary motion to said traveling wheels having common pivotal points, substantially as and for the purpose specified.

2. In a motor-vehicle, an axle provided with hollow bearing-shanks, motors carried by the shanks, gear and traveling wheels carried by the shanks, all of said parts carried by the shank and gear-casings provided with a common center, substantially as and for the purpose specified.

3. In a motor-vehicle, an axle provided with hollow bearing-shanks, motors carried by the shanks, gear and traveling wheels carried by the shanks, and all of said parts carried by the shanks provided with a common center, and the connecting-wires located through the hollow shanks, substantially as and for the purpose specified.

4. In a motor-vehicle an axle provided with vertical bearing-shanks, motors and gear and traveling wheels carried upon opposite sides of the vertical shanks, and all of said parts carried by the shanks, substantially as and for the purpose specified.

5. In a motor-vehicle, the combination of an axle provided with hollow bearing-shanks, sleeves loosely mounted upon the bearing-shanks, and provided with motor-attaching stubs, and stub-axles, arms journaled concentrically with the sleeves upon the axle-shanks, motors supported by the stubs upon the sleeves and arms, substantially as and for the purpose specified.

6. In a motor-vehicle, the combination of an axle provided with hollow bearing-shanks, sleeves loosely mounted upon the bearing-shanks and provided with motor-stubs and stub-axles, arms journaled concentrically with the sleeves upon the axles and adapted to support the rear ends of the motors, and means for cushioning the motors, substantially as and for the purpose specified.

7. In a motor-vehicle, the combination of an axle provided with bearing-shanks, sleeves loosely mounted upon the bearing-shanks, and provided with motor-attaching stubs, and stub-axles, arms journaled concentrically with the sleeves upon the axle-shanks, motors supported by the stubs upon the sleeves and arms, and means for cushioning the motors, and means for steering, substantially as and for the purpose specified.

8. In a motor-vehicle, an axle provided with vertical bearing, sleeves loosely mounted upon the vertical bearings, and provided with means for carrying the traveling wheels, and motors and arms adapted to carry the rear ends of the motors, gear and gear-casings, all arranged substantially as and for the purpose specified.

9. In a motor-vehicle, an axle, motors, gear and traveling wheels all of said parts having a common and vertical pivoted bearing upon the axle, and the conducting-wires passed through the common vertical point, substantially as and for the purpose specified.

10. In a motor-vehicle, the combination of an axle provided with bearing-shanks, sleeves loosely mounted upon the bearing-shanks and provided with motor-stubs and stub-axles, gear-casings fixedly connected to the motor-casing and around or to the stub-axles, a motor-pinion and a gear-wheel meshing with the motor-pinion, substantially as and for the purpose specified.

810,883. **MATTRESS-SEWING MACHINE.** CHARLES N. PHELPS, Lagrange, Ill. Filed Aug. 31, 1901. Renewed June 15, 1905. Serial No. 265,432.

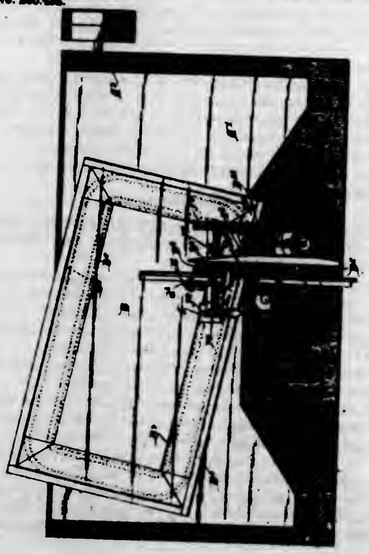

Claim.—1. A mattress-sewing machine comprising two reciprocating needle-holders operating alternately to receive the needle, to thrust one end thereof through the mattress and release the needle, means for supporting the mattress with its side and edge faces oblique to the path of movement of the needle, whereby said needle is passed through the mattress in a plane oblique to the said side and edge faces thereof, and means for imparting relative oscillatory movement to the needle-holders and the mattress-supporting means, constructed to change the inclination of the path of the needle in said oblique plane relatively to the side and edge faces of the mattress.

2. A mattress-sewing machine comprising two reciprocating needle-holders operating alternately to receive the needle, to thrust one end thereof through the mattress and release the needle, means for supporting the mattress with its side and edge faces oblique to the path of movement of the needle whereby said needle is passed through the mattress in a plane oblique to the side and edge faces thereof, and means for oscillating the supporting means and constructed to change the inclination of the path of the needle in said oblique plane relatively to the side and edge faces of the mattress.

3. A mattress-sewing machine comprising a mattress-support having a surface upon which the mattress is sustained, two reciprocating needle-holders at one side of said support and operating alternately to receive the needle, thrust one end thereof through the mattress and release the needle, said holders being arranged to direct the needle in a path oblique to the mattress-sustaining surface of the support and means for imparting relative oscillatory movement to the support and needle-holders to change the inclination of the path of the needle in said oblique plane relatively to the adjacent edge of the mattress-support.

4. A mattress-sewing machine comprising two reciprocating needle-holders operating alternately to receive the needle, thrust one end thereof through the mattress and release the needle, means for supporting the mattress with the side and edge faces thereof oblique to the path of the needle, whereby the needle is passed through the mattress in a plane oblique to said side and edge faces of the mattress, means whereby one of said holders thrusts the needle with its advance end through the mattress, means whereby the second holder receives the advance end of the needle as it is released from the first holder and draws the needle partly through the mattress, mechanism for imparting relative, oscillatory movement to the mattress-supporting means and needle-holders while one end of the needle is embedded in the mattress and thereby change the inclination of the needle in said oblique plane to the edge face of the mattress, means acting on the second holder to thereafter return the needle through the mattress in a path diverging from its former path, means whereby said needle is thereafter received by the first holder and completely withdrawn from the mattress, and means for producing a further relative oscillation of the mattress-supporting means and needle-holders at the time the needle is completely withdrawn from the mattress, whereby, when the needle is again returned through the mattress, it is returned on a path diverging from its path of last withdrawal.

5. A mattress-sewing machine comprising two reciprocating needle-holders operating alternately to receive the needle, thrust one end thereof through the mattress and release the needle, means for supporting the mattress with the side and edge face thereof oblique to the path of the needle whereby the needle is passed through the mattress in a plane oblique to said side and edge faces of the mattress, and means whereby one of said holders thrusts the needle with its advance end through the mattress, means whereby the second holder receives the advance end of the needle as it is released from the first holder and draws the needle partly through the mattress, mechanism for imparting relative, oscillatory movement to the mattress-supporting means and needle-holders while one end of the needle is embedded in the mattress and thereby change the inclination of the needle in said oblique plane to the edge face of the mattress, means acting on the second holder to thereafter return the needle through the mattress on a path diverging from its former path, means whereby said needle is thereafter received by the first holder and completely withdrawn from the mattress, and means for producing a further oscillation of the mattress-supporting means and needle-holders at the time the needle is completely withdrawn from the mattress, whereby, when the needle is again returned through the mattress, it is returned on a path diverging from its path of withdrawal, and a take-up device located at one side of the mattress for drawing the slack portion of the thread through the mattress.

6. A mattress-sewing machine, comprising two reciprocatory needle-holders operating alternately to receive the needle, thrust one end thereof through the mattress and release the needle, means for supporting the mattress with its side and edge faces oblique to the path of the needle, whereby the needle is passed through the mattress in a plane oblique to said side and edge faces, means whereby one of said holders thrusts said needle with its advance end through the mattress, means whereby the second holder receives the advance end of the needle as it is released from the first holder and draws the needle partly through the mattress, means for imparting relative, oscillatory movement to the mattress-support and needle-holders while one end of the needle is embedded in the mattress, the oscillating part swinging on an axis approximately in line with the point at which the needle is so embedded in said mattress, means acting on the second holder to thereafter return the needle through the mattress on a path diverging from its former path, means whereby the needle is thereafter received by the first holder and completely withdrawn from the mattress, and means for producing further relative oscillation of the mattress-supporting means and needle-holders, whereby, when the needle is again returned through the mattress it is returned on a path diverging from its last path of withdrawal.

7. A mattress-sewing machine comprising two reciprocatory needle-holders, a mattress-support, the sustaining-surface of which is oblique to the path of the needle, said holders acting alternately to receive the needle thrust one end thereof through the mattress and release the needle, means whereby one of said holders thrusts the needle with its advance end through the mattress, means whereby the second holder receives the advance end of the needle as it is released from the first holder and draws the needle partly through the mattress, mechanism for imparting oscillatory movement to the said mattress-support while one end of the needle is embedded in the mattress and thereby change the inclination of the needle to the edge of the mattress, means acting on the second holder to thereafter return the needle through the mattress on a path diverging from its former path, means whereby said needle is thereafter received by the first holder and completely withdrawn from the mattress, and means for producing a further oscillation of the mattress-support when the needle is withdrawn therefrom, whereby, when the needle is again returned through the mattress, it is returned on a path diverging from its last path of withdrawal.

8. A mattress-sewing machine comprising two reciprocatory needle-holders, a mattress-support the sustaining-surface of which is oblique to the path of the needle, said holders acting alternately to receive the needle, thrust one end thereof through the mattress and release the needle, means whereby one of said holders thrusts the needle with its advance end through the mattress, means whereby the second holder receives the advance end of the needle as it is released from the first holder and draws the needle partly through the mattress, mechanism for imparting oscillatory movement to the said mattress-support, while one end of the needle is embedded in the mattress and thereby changing the inclination of the needle in said oblique plane to the edge face of the mattress, means acting on the second holder to thereafter return the needle through the mattress on a path diverging from its former path, means whereby said needle is thereafter received by the first holder and completely withdrawn from the mattress, means for producing a further oscillation of the mattress-support when the needle is withdrawn therefrom, whereby, when the needle is again returned through the mattress, it is returned on a path diverging from its last path of withdrawal and means cooperating with said support oscillatory mechanism for imparting to the work-support a step-by-step advance movement as it is oscillated.

9. A mattress-side-stitching machine comprising a work-support and a needle, automatic mechanism for inserting the needle through the edge section, the filling and partly through the top section of the mattress on a path transversely oblique to the said edge and top sections of the mattress, means for returning the needle through the mattress and withdrawing it from the side section to complete the stitch, means whereby the angle of the needle and mattress is relatively changed both at the time the needle is embedded in the top section of the mattress at the middle of each stitch and when the needle is withdrawn from the edge section thereof at the end of each stitch and means for imparting a relative step-by-step movement to the mattress and needle whereby are formed blind zigzag stitches, the parts of which are diverged in the general direction of the line of stitches.

10. A mattress-sewing machine comprising a needle-actuating mechanism, a flat work-support upon the top of which the work is supported, and means for imparting oscillatory motion to the support in the plane thereof to give appropriate inclination to the stitches and to advance the work relatively to the needle-actuating mechanism.

11. A mattress-sewing machine comprising a needle-actuating mechanism, a flat work-support upon the top of which the work is supported, and means for imparting to said work-support a combined oscillatory and step-by-step bodily movement in the plane thereof.

12. A machine for the purpose specified comprising a needle-actuating mechanism, a work-support, two pivot-pins located at one side of the support and adjacent to each other and upon which the support alternately swings, said support being movable relatively to the pins, in the direction of travel of the support, and means for imparting oscillatory movement to said support on said pins.

13. A machine for the purpose specified comprising a needle-actuating mechanism, a flat work-support upon the top of which the work is supported, mechanism for advancing said work step by step to present successive parts of the work to the needle, and means operating with said support-actuating mechanism adapted to turn or rotate said support to present all sides or edges of the work thereon to the needle.

14. A mattress-sewing machine comprising a needle-actuating mechanism, a flat work-support upon the top of which the mattress is supported, mechanism for giving oscillatory movement to said support to incline the edge of the mattress to the needle-actuating mechanism, and means operating with said oscillatory mechanism for advancing said support step by step to present successive parts of the work to the needle, said means being designed to turn or rotate said support to present all sides or edges of the work thereon to the needle.

15. A machine for the purpose specified comprising a needle-actuating mechanism, a work-support, two pivot-pins, means for separately locking said pins to the support, one of said pins being released while the other is locked, and means for oscillating said support on each pin when it is locked thereto, said pins being alternately locked to the support as the support swings alternately on said pins.

16. A mattress-sewing machine comprising a needle-actuating mechanism, a flat work-support upon which the mattress is supported, and means for swinging or oscillating said support to impart thereto a progressive step-by-step movement and to incline the mattress to the needle-actuating mechanism comprising two pivot-pins located on one side of the support and adjacent to each other, and upon which the support alternately swings, said pins being separated in a direction transverse to the direction of travel of the support and means for swinging said support.

17. A machine for the purpose specified comprising a needle-actuating mechanism, a work-support, and means for swinging or oscillating said support to impart thereto a progressive step-by-step movement and to incline the support to the needle-actuating mechanism, comprising two pivot-pins, said support being provided with inner and outer parallel grooves into which the ends of said pins extend, and means for alternately swinging said support on said pins.

18. A machine for the purpose specified comprising a needle-actuating mechanism, a work-support, and means for swinging or oscillating said support to impart thereto a progressive step-by-step movement and to incline the support to the needle-actuating mechanism comprising two pivot-pins, said support being provided with inner and outer parallel grooves into which said pins extend, and the support having oscillatory movement alternately on said pins, and means for oscillating said support comprising a lever pivoted between its ends and engaging at one end one of said grooves.

19. A machine for the purpose specified, comprising needle-actuating mechanism, a work-support, said support being provided with two parallel grooves, one located inside the other, two pivot-pins which are separated in a direction transverse to the path of travel of said support, and the ends of which enter said grooves, means for swinging said support alternately on said pins and means for preventing rearward slipping of said support during its swinging movement, whereby in each swing of its movement the support is advanced one step.

20. A machine for the purpose set forth, comprising needle-actuating mechanism, a work-support, said support being provided with two continuous parallel grooves, one located inside the other, two pivot-pins located on a stationary part of the machine and the ends of which enter said grooves, means for swinging said support alternately on said pins, and means for preventing slipping of said support during its swinging movement.

21. A machine for the purpose specified comprising a needle-actuating mechanism, a horizontal work-table provided on its under side with two, inner and outer, parallel grooves, having inwardly-facing lateral shoulders, vertically-movable pivot-pins extending at their upper ends into said grooves, said pins being provided with heads adapted to engage the inwardly-facing shoulders of the grooves, means for alternately depressing each of said pins to clamp its head on the shoulders of its associated groove, while elevating the head of the other pin from the shoulders of its groove, and means for swinging or oscillating said table on said pins.

22. A machine for the purpose specified comprising a needle-actuating mechanism, a work-support and means for swinging or oscillating said support to impart thereto a progressive step-by-step movement, and to give the appropriate inclination to the stitches, comprising two pivot-pins, said table being provided with inner and outer parallel grooves, having inwardly-facing lateral shoulders, heads on said pins in said grooves, means for alternately raising and lowering said pins, an oscillatory lever for giving alternate vertical movement to said pins to clamp the heads thereof against the shoulders in the grooves, yielding connections between said oscillatory lever and the pins and means for swinging or oscillating said table.

23. A machine for the purpose specified comprising a machine-frame having a horizontal platform, a horizontal work-table supported on said platform through the medium of bearing-rollers, a stationary block on the machine-frame on which one side of the table rests, said table being provided on its under side with inner and outer parallel grooves having inwardly-facing lateral shoulders, two laterally-separated upright pivot-pins sliding in said block and extending into said grooves, heads on said pins in said grooves, means for vertically moving said pins, means for swinging said table alternately on said pins, and a needle-actuating mechanism.

24. A mattress-stitching machine comprising a flat work-table upon the top of which the mattress is supported, a needle-holder guide located at one side of and above the level of said table, said guide being inclined downwardly and outwardly, two needle-holders movable in unison in guides, one at each side of its longitudinal center, said needle-holders being each adapted to receive and hold the needle and to thrust the same through the work, means for oscillating said table in its plane to reversely incline the table to the guide-plate, and means cooperating with the oscillating means for advancing the table step by step.

25. A machine for the purpose specified comprising a horizontal work-table, a needle-holder guide-plate located at one side and above the level of said table, two needle-holders movable in said guide-plate, one on each end of its longitudinal center and each movable toward and from the center thereof, two oscillatory levers pivotally connected with said plate and with said needle-holders, endwise reciprocatory bars pivoted at their outer ends to said levers and provided at their adjacent or inner ends with grooved heads, and a rotative disk provided with an eccentric-pin adapted to alternately pass through the grooves of said heads.

26. A machine for the purpose specified comprising a horizontal work-table, a needle-holder guide-plate located at one side of and above the level of said table, said plate being inclined downwardly and outwardly and provided centrally with a downwardly-opening recess into which the work projects, two needle-holders moving in unison in said plate, one on each side of said recess, each of said holders being adapted to receive and hold the needle and to thrust the same through the work, means for separately locking said needle in said holders, tripping devices for releasing the locking means of one holder at or before the needle is received by the other holder, and means for imparting oscillatory motion to the table in unison with the movement of said needle-holders.

27. A machine for the purpose specified, comprising a double-pointed needle, mechanism for passing the needle through the work alternately from one side thereof to the other, a horizontal work-table, means for imparting oscillatory motion to said table and advancing the table step by step and means for vertically shifting the work on said table at the beginning of each stitch.

28. A machine for the purpose specified comprising a double-pointed needle, mechanism for passing the needle through the work alternately from one side thereof to the other, a horizontal work-table, means for imparting oscillatory motion to said table and advancing the table step by step, and a lifting-bar movable in unison with the needle-actuating mechanism for lifting the work at the beginning of each stitch.

29. The combination with a sewing-machine and its needle, of the class wherein one end of the thread is made fast to the work and the other or slack end is drawn by the needle through the work as the stitches are formed, of a take-up device comprising two coacting rollers between which the thread is drawn from the work.

30. The combination with a sewing-machine and its work, of the class wherein one end of the thread is made fast to the work and the other or slack end is drawn through the work as each stitch is formed, of a take-up device comprising two rollers between which the thread is drawn from the work, and means for drawing the slack portion of the thread from the needle and inserting the same between said rollers.

31. The combination with a sewing-machine and its needle, of the class wherein one end of the thread is made fast to the work and the other or slack end is drawn through the work as the stitches are formed, of a take-up device comprising two rollers between which the thread is drawn from the work, the working faces of said rollers being covered by a yielding, friction-producing material.

32. A machine for the purpose specified comprising a double-pointed needle, mechanism for passing the needle through the work alternately and in reverse directions, and a take-up mechanism comprising two rollers by which the slack portion of the thread is withdrawn from the work, and a drawing-bar adapted to pass between the needle and the slack portion of the thread to effect the introduction of the thread between said rollers.

33. A machine for the purpose specified comprising a double-pointed needle, mechanism for passing the needle through the work alternately and in reverse directions, and a take-up mechanism comprising two rollers by which the slack portion of the thread is withdrawn from the work, and a drawing-bar adapted to pass between the needle and the slack portion of the thread to effect the introduction of said thread between said rollers, said rollers being tapered at their receiving ends.

34. A machine for the purpose specified comprising a work-table, a double-pointed needle, mechanism located at the side of and above the level of the table for passing the needle through the work alternately in reverse directions, mechanism for producing relative oscillatory movement of said support and needle-actuating mechanism, and a yielding presser-foot located near the needle-actuating mechanism adapted to press the work toward the table at the beginning of each stitch.

35. A machine for the purpose specified comprising a double-pointed needle, mechanism for passing the needle through the work alternately in reverse directions, a horizontal work-table, means for producing oscillatory movement in said table and advancing the table step by step, a lifting-bar movable in unison with the needle-actuating mechanism for lifting the work at the beginning of each stitch, and a presser-foot located near said lifting-bar and adapted to press the work toward the table when the lifting-bar is in its retracted position.

810,883. REVERSING-VALVE FOR HOISTING-ENGINES.

JAMES L. PILLING, Port Huron, Mich., assignor to Pilling Air Engine Company, Detroit, Mich., a Corporation. Filed Feb. 19, 1903. Serial No. 144,080.

Claim.—1. In a controlling-valve for a hoisting-engine, in combination with a plurality of motors, a passage connected with each for the conduct of fluid thereto and for its withdrawal therefrom, a valve-casing connected with said passage, and a valve rotatable therein, said valve having in its face a plurality of passages, two arranged to register with complementary orifices in said casing, and one adapted to permit the exhaust from said motors to pass therethrough and be discharged at one end of said valve, substantially as described.

2. In a controlling-valve for a plurality of engines, a valve-seat provided with an orifice for the admission of motive fluid and with orifices for the exit-passage of said motive fluid, a valve rotating in said seat and forming with the walls thereof a passage adapted to register with either of the exit-orifices, that portion of the periphery of said valve adjacent to the containing-walls being adapted to close the inlet-orifice when there is no registration with said exit-orifices, a groove in said valve in position to register with an opening through the bushing when the motive-fluid inlet is closed, and a passage to the open air, substantially as described.

3. In a reversing-valve for a plurality of engines, the combination, with a plurality of motors, of a valve-casing, fluid-conducting passages 5 and 7 connecting the same, a conical-valve member rotatable within said casing, said member having on its surface depressions adapted to register with said passages 5 and 7, and other depressions 20 and 60 adapted to register with inlet-orifices in said casing, substantially as described.

4. In a reversing-valve for a plurality of engines, a casing provided with a plurality of orifices, a plurality of motors, a plurality of fluid-conducting means connecting said orifices and said motors, a valve member rotatable within said casing, said member having in its surface a plurality of passages adapted to register with a portion of said orifices, and other passages adapted to register with other orifices said valve member provided with a passage opening at one end thereof and at the other end adapted to communicate with the exhaust-passage from the engine.

810,884. PNEUMATIC HOIST.

JAMES L. PILLING, Bucyrus, Ohio, assignor to Pilling Air Engine Company, Detroit, Mich., a Corporation. Filed Dec. 27, 1904. Serial No. 238,536.

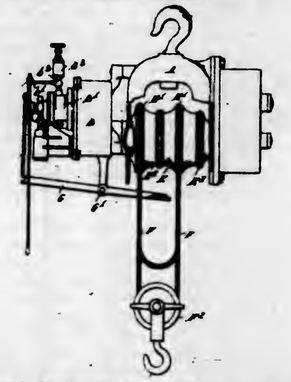

Claim.—1. In a hoisting mechanism, the combination of a rotatable horizontal shaft, a plurality of sprockets thereon, a loop-chain having its two strands passing over two sprockets, a motor to rotate the shaft, a throttle-valve to control said motor, and means adapted to be actuated manually or by contact with another portion of the mechanism whereby said valve may be actuated, substantially as described.

2. In a hoist, in combination with a drum, an actuating-motor, means provided with individual lubricating apparatus whereby the action of said motor may be controlled, and means arranged to simultaneously actuate said controlling means and its connected apparatus, substantially as described.

3. In a hoisting mechanism, the combination of a drum, a chain carrying a pulley engaging thereover, a motor arranged to actuate said drum, a throttle-valve controlling the action of said motor, an arm adapted to actuate the throttle-valve, a lever pivoted to a fixed portion of the mechanism, having an end extending adjacent to said chain, the other end of said arm being connected to the arm controlling the throttle-valve, said pulley being adapted to contact the adjacent end of said lever, substantially as described.

4. In a hoist, the combination of a shaft, a pair of large sprockets on said shaft, a loop-chain having its two strands passing over two sprockets on said shaft, a sheave having its wheel in one loop of said chain and a pair of sprockets of lesser diameter upon said shaft, for the purpose described.

810,885. MASSAGE-APPLICATOR.

EDWARD S. SADOWSKI, Chicago, Ill. Filed Jan. 9, 1904. Serial No. 187,673.

Claim.—1. A roller for the purpose specified comprising a cylindric roll having a resilient surface embracing projections arranged peripherally thereon, a resilient band adapted to compress the peripheral walls thereof and an open-ended tube projecting inwardly from one end of said roller.

2. A roller of the class described comprising a resilient surface

provided with spirally-arranged projections thereon, a resilient band around said roller adapted to compress the same, an inwardly-directed projection in one end of said roller and a tube thereon closed at its outer end and opening inwardly of the roller.

3. A resilient roller for the purpose specified having an interior cavity adapted to contain material at approximately a uniform temperature during use, means for applying pressure to said material, a coiled spring in said roller adapted to prevent the side walls thereof from sagging, a handle, bearings therefor seated in the ends of the roller and a plurality of sharp edged projections arranged longitudinally of the roller adapted to indent the surface treated.

4. A resilient roller of the class described comprising a casing adapted to contain material to affect the temperature of the surface treated, and affording approximately uniform temperature during treatment, a tube projecting through one end wall of the roller and having a closed outer and an open inner end opening into the casing and peripherally and spirally arranged wedge-shaped projections on said roller in longitudinal alinement and acting to depress the portions of the surface treated with which they come in contact.

5. A device of the class described comprising a resilient hollow roller, a bearing embedded in each end thereof, a resilient handle engaged in said bearings, a tube having threaded engagement at one end in one of said bearings and the other end thereof projecting a short distance into the roller and wedge-shaped projections on the outer surface of said roller adapted to depress the surface treated at the points of contact.

6. As an article of manufacture, a roller comprising a resilient receptacle adapted to contain a material adapted to affect the temperature of the roller when in operation, a spiral spring in close contact with the inner circumference of the roller adapted to hold the walls in shape, a filling-aperture in the end of said roller, a screw-plug therein, a tube projecting inwardly from said plug and a sheath of fabric or the like adapted to engage on said roller and acting to apply moisture at a given temperature of the surface treated.

7. As an article of manufacture, a cylindric roller comprising a receptacle adapted to contain a material adapted to affect the temperature of the roller when in operation, a plurality of sharp-edged wedge-shaped projections arranged longitudinally of the roller and spirally thereof, an axially-directed tube projecting into the roller from one end thereof and means for compressing said material.

8. A resilient roller of the class described comprising an inner resisting material, a sheath of resilient material such as rubber inclosing the same, projections on the exterior surface of said sheath and an outer covering of fabric separated from the sheath by said projections and adapted to apply moisture to the surface treated.

9. An article of manufacture comprising a cylindric casing, a bearing in each end thereof, a handle journaled in said bearings, an inwardly-opening tube extending inwardly from one of said bearings, a resilient covering for said casing, a plurality of wedged-shaped projections on said covering acting to indent the surface treated and a fabric engaged on said covering and normally held out of contact therewith by said projections.

10. A device of the class described comprising a resilient cylindric casing having flexible end walls, an inwardly-directed axially-disposed projection on said end walls, a bearing in each of the same, a resilient handle adapted to engage in said bearings and force the end walls inwardly an integral inwardly-directed tubular extension on one of said bearings and means on the surface of said casing acting to indent the surface treated.

11. The combination with a cylmeric water-bottle, of an exterior resilient covering, spirally and longitudinally arranged projections thereon, an interior resisting medium, and an exterior removable sleeve of absorbent material.

12. A roller of the class described comprising a cylindric water-bag, a spiral spring within and distending the same, means admitting of filling said bag with water or the like at a preferred temperature, a band of resilient material engaging around said water-bag, peripheral projections on the bag and a sheath of fabric or the like adapted to engage on said roll outside the projections and to apply moisture and medicament to the surface at a desired temperature.

810,886. PRINTING AND DELIVERY MECHANISM. WALTER SCOTT, Plainfield, N. J. Filed Mar. 26, 1901. Serial No. 53,576.

Claim.—1. The combination with means for supplying a web or sheets, of a longitudinal folder having its V-shaped former provided with grooves extending longitudinally thereof at each side of its central longitudinal line, the grooves at one side of said line being at distances therefrom different from the distances therefrom of the grooves at the other side of said line, and a notched paste-blade for applying paste transversely of the web or sheets at points that pass over said grooves with the paste next the former, substantially as described.

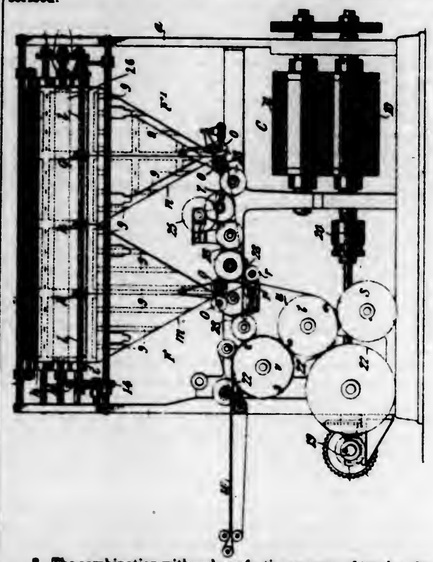

2. The combination with web-perfecting presses, of two longitudinal folders each having its V-shaped former provided with grooves extending longitudinally thereof at each side of its central longitudinal line, the grooves at one side of said line being at distances therefrom different from the distances therefrom of the grooves at the other side of said line, and means for applying paste along transverse lines of the web or sheets at points which pass over said grooves with the paste next the former, substantially as described.

3. The combination with means for supplying and associating webs or sheets, of means for applying paste along transverse lines of the web or sheets before the association thereof, said paste being applied at intervals along said lines and the paste on one web or sheet coming against the other web or sheet in the intervals between the paste on that other web or sheet, and said associating means having cut-away portions or recesses over which the paste passes, substantially as described.

4. The combination with means for supplying a web or sheets, of two longitudinal folders each having grooves extending longitudinally of its V-shaped former, means for applying paste along transverse lines of said web or sheets at intervals thereof which pass over said grooves with the paste next the formers, a paster applying paste to the webs or sheets after they leave said formers and before they are associated again, and means for associating the associated webs or sheets as they move from said formers and after they receive paste from said paster, substantially as described.

5. The combination of means for supplying a plurality of webs printed upon both sides, means for printing an additional color upon one of said webs, means for applying paste at intervals along transverse lines of one of said webs, a longitudinal folder having its V-shaped former provided with longitudinally-extending grooves in that face or part coming in contact with the webs, said paste passing along said grooves without touching the former, whereby the webs are united by the paste along transverse lines thereof, and mechanism for severing the webs transversely, substantially as described.

6. The combination of a plurality of web-perfecting presses, means for printing an additional color upon one of or a part of one of said webs, means for associating said webs, means for applying paste to one of said webs to unite them as they are associated, a longitudinal folder having its V-shaped former provided with grooves extending longitudinally in that face or part thereof which comes in contact with the paper, and means for applying paste at intervals along transverse lines of the web coming in contact with said former, said paste passing along said grooves without touching the former, substantially as described.

7. The combination of a plurality of web-perfecting presses arranged one above another, a plurality of longitudinal folders arranged side by side on an upper level at the end of the framework of the machine, a printing mechanism arranged under one of said folders, and cutting and delivery mechanism arranged under another of said folders, substantially as described.

8. The combination with a plurality of web-perfecting presses, of two longitudinal folders each having its V-shaped former provided with longitudinally-extending grooves in that part thereof coming in contact with the paper, means for associating and pasting said webs together before they reach said formers, means for applying paste at intervals along transverse lines of the web coming in contact with said formers, said paste passing over said grooves without touching the formers, whereby longitudinal sections of the multiple-ply web formed by said association and pasting are united to form greater-ply webs, and means for associating and pasting together the last-named webs, substantially as described.

9. The combination of means for supplying webs, means for applying paste at intervals along transverse lines of one web, a longitudinal folder having its V-shaped former provided with longitudinally-extending grooves in that part thereof which contacts with the paper, said paste passing over said grooves without touching the former, cutting-cylinders, means whereby one of said cylinders carries cuts around with it to associate them with succeeding cuts, and means for applying paste to the cuts so carried around while they are on the last-named cylinder, substantially as described.

10. The combination of means for supplying webs, means for applying paste at intervals along transverse lines of one of said webs, a longitudinal folder having its V-shaped former provided with longitudinally-extending grooves in that part thereof which comes in contact with the paper, said paste passing over said grooves without touching the former, cutting-cylinders, means whereby one of said cutting-cylinders carries cuts around with itself to associate them with succeeding cuts, and a revolving paste-blade coacting with the last-named cylinder longitudinally thereof to apply paste to the cuts thereon, substantially as described.

11. The combination with a plurality of web-perfecting presses, of a plurality of longitudinal folders each having its V-shaped former provided with grooves extending longitudinally of that part thereof coming in contact with the paper, means for associating and pasting together said webs before they reach said formers, means for applying paste at intervals along transverse lines of the webs coming in contact with said formers, said paste passing over said grooves without touching the formers, whereby longitudinal sections of the multiple-ply web formed by said association and pasting are united to form greater-ply webs, means for associating and pasting together the last-named webs, cutting-cylinders for severing the last-formed web transversely, means whereby one of said cutting-cylinders carries around with itself cuts to associate them with succeeding cuts, and means for applying paste to the cuts so carried about on said cylinder, substantially as described.

12. The combination with a plurality of web-perfecting presses, of means for associating and pasting together said webs, a plurality of longitudinal folders each having its V-shaped former provided with grooves extending longitudinally thereof in that face or part thereof coming in contact with the paper, means for applying paste at intervals along transverse lines of the web coming in contact with the formers, said paste passing over said grooves without touching the formers, whereby longitudinal sections of the associated and pasted webs are united to form greater-ply webs, means for associating and pasting together the last-named webs, cutting-cylinders for severing the last-formed web transversely, means whereby one of said cylinders carries around with itself cuts to be associated with succeeding cuts, and a revolving paste-blade applying paste to the cuts on said cylinder, substantially as described.

13. The combination with a web-perfecting press, of two longitudinal folders arranged side by side on an upper level in the same framework, a printing mechanism arranged under one of said folders, and cutting and folding mechanism arranged under the other of said folders, substantially as described.

14. The combination with a plurality of perfecting-presses each adapted to print wide webs, of printing mechanism adapted to add color to one side of a section of one of said webs after it has been perfected, means for superimposing said webs, V-shaped associaters for the halves of said webs, and means for associating said associated halves with said color outward.

15. The combination with a plurality of perfecting-presses each adapted to print a wide web, of printing mechanism adapted to add color to a section of one of said webs after it has been perfected, means for applying dotted lines of paste transversely of said webs, means for associating said webs, means for associating halves of said associated webs, and means for cutting, folding, and delivering.

16. The combination with a plurality of perfecting-presses each adapted to print a wide web, printing mechanism adapted to add color to one side of a section of one of said webs after it has been perfected, and means for applying dotted lines of paste transversely of said webs, of means for associating said webs, means for associating the sections of each longitudinal half of said webs, and means for associating the associated sections.

810,887. WINDOW-FRAME. HENRY C. SMITH, Boston, Mass., assignor to Smith-Warren Company, Boston, Mass., a Corporation of Massachusetts. Filed Feb. 24, 1903. Serial No. 144,687.

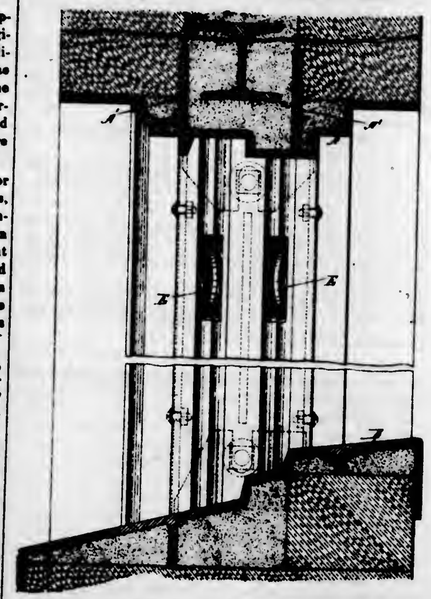

Claim.—1. A window-frame, the head, sill and jamb portions of which are made of cast metal, lugs having slots formed integrally by the castings with and projecting from said head and sill portions, and means whereby said jamb portions may be united with said head and sill portions through the medium of said lugs, substantially as described.

2. The combination with a window-frame the jamb portions of which are made of cast metal, of a grooved face-plate adapted to cover the jamb portions of the frame and simultaneously to provide runways for the sash or sashes.

3. The combination with a window-frame, the jamb portions of which are made of cast-iron, of an adjustable face or auxiliary plate or plates of sheet metal for the said jamb portions of the frame, and means for obtaining an adjustment of said face or auxiliary plate or plates.

4. The combination with a window-frame of a face or auxiliary plate or plates made of sheet metal for the jamb portions of the frame, and means for securing said face or auxiliary plate or plates whereby the same may be held fixed at relatively different points of lateral adjustment.

5. A window-frame, the jamb portions of which are made of cast metal provided with outwardly-extending flanges, and a grooved sheet-metal face or auxiliary plate or plates secured to said flanges for covering said jamb portions of the frame and also providing runways for the sash or sashes.

6. A window-frame, the jamb portions of which are made of cast metal provided with flanges and having slots extending in from the edges thereof, a face or auxiliary plate or plates of sheet metal secured thereto, and means for adjustably securing said face or auxiliary plate or plates to said jamb portions of the frame along said flanges, substantially as and for the purposes set forth.

7. A window-frame, the jamb portions of which are made of cast metal and which are provided with a face or auxiliary plate or plates, said face or auxiliary plate or plates, and a rib extending from said jamb-casting for strengthening the same.

8. A window-frame having jamb portions of cast metal with an opening or openings therein permitting of the insertion of sash-weights, and a face or auxiliary plate or plates covering said opening or openings and providing for the retention of the sash or sashes.

9. A window-frame having jamb portions of cast metal, the same comprising outside and inside moldings, the vertically-extending flanges c^3, c^4, and ribs c^7, c^8, and a face or auxiliary plate or plates of sheet metal secured to said jamb portions of the frame along said flanges, substantially as and for the purposes set forth.

10. A window-frame having jamb portions of cast metal with slots formed therein by the casting, and a sash-cord pulley the casing of which is adapted to fit into said slots and be supported substantially as described.

11. A window-frame having jamb portions of cast metal, a slot formed therein having beveled edges for receiving the casing in which is contained the sash-cord pulley, said casing and pulley, the casing having beveled edges to conjoin with the edges of said slot and be supported substantially as described.

12. In a window-frame, a metal casting adapted to form the jamb portions of adjacent windows.

13. A window-frame structure comprising a series of castings joined together and forming a unitary and continuous frame structure for the head and sill portions of a plurality of adjacent windows.

14. A window-frame structure comprising a series of castings joined together and forming a unitary and continous frame structure for the head, jamb and sill portions of a plurality of adjacent windows, substantially as described.

15. A window-frame, the head portion of which is formed of cast metal, and stiffening-ribs A' cast integrally with said head substantially as and for the purposes set forth.

810,888. **VEHICLE-TIRE.** CHARLES STEIN, Akron, Ohio. Filed Sept. 29, 1904. Serial No. 228,462.

Claim.—1. A combined shoe and rim, for pneumatic tires, embodying a shoe formed with meeting margins forming a seat or support for the inner periphery of the pneumatic tube, means for securing said shoe to the rim passing through the shoe at or near the meeting margins in combination with an embedded non-stretchable material, located in one of the margins.

2. A combined shoe and rim for pneumatic tires, embodying a shoe formed with meeting margins forming a seat or support for the inner periphery of the pneumatic tube, means for securing said shoe to the rim passing through the shoe at or near the meeting margins, in combination with an embedded non-stretchable material located in one or both of the margins, for the purpose set forth.

3. In a vehicle-tire, the combination with an outer shoe or covering having contiguous annular edges at the base thereof, and a flap carried by one of said edges and overlapping the other of said edges, of a flanged rim in which the base of said shoe rests, a resilient tube contained within the shoe, a bolt passing through said shoe and the felly of the wheel and an annular, non-stretchable member embedded in the edge of said shoe.

4. The combination with a wheel-felly, of a rim having an integral, annular, upturned flange along one of its edges, an annular plate secured to the felly opposite said flange and extending above said rim, a shoe having contiguous annular edges or margins at the base thereof which lie between said flange and said plate, an annular, non-elastic member embedded in one of said edges, a flap or web carried by one of said edges and overlapping the other of said edges and a retaining-bolt passing through the base of the shoe, the rim and the wheel-felly.

810,889. **PROCESS OF ELECTROLYTICALLY PREPARING METALS OR ALLOYS FOR LITHOGRAPHIC PURPOSES.** OTTO G. SCHNAUSS, Darmstadt, Germany. Original application filed Apr. 19, 1903. Serial No. 153,403. Divided and this application filed May 12, 1903. Serial No. 156,969.

Claim.—1. The process for producing a water-retaining layer on metal plates or alloys for lithographic and printing purposes which consists in submitting suitably-prepared plates, furnished with lithographic designs, in a suitable electrolyte to the action of a continuous current, whereby an insoluble layer will be formed by the ions of the substances in the electrolyte which will combine with the metal of the plate and thus protect the plates against lithographic oil or grease and retain the water, substantially as described.

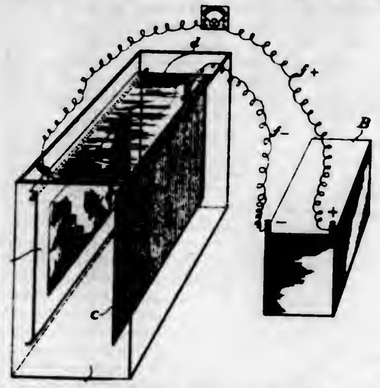

2. The process of producing a water-retaining layer on metal plates or alloys by first submitting the plates, which have been suitably prepared and provided with a lithographic design, to the action of a continuous current, which passing from a suitable cathode to the plate to be treated causes the ions of the substances employed in the electrolytes to form a layer which consists of oxids or hydroxids of the metals applied and subsequently submitting the plate to a chemical treatment with suitable acids or chemicals by which said layer or layers will be transformed into insoluble salts of the metal or plates applied which will retain water and repulse lithographic oil or grease.

810,890. **REVERSING MECHANISM FOR ROTARY MOTORS.** ALBERT H. TAYLOR, Boston, Pa., assignor to The Ingersoll-Sergeant Drill Company, New York, N. Y., a Corporation of West Virginia. Filed July 14, 1903. Serial No. 166,007.

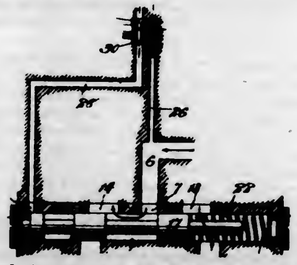

Claim.—1. A motor, means for supplying motive fluid thereto, a reversing-valve, a spring for holding the valve at the limit of its movement in one direction and a manually-operated auxiliary valve for controlling the movements of the reversing-valve.

2. A motor, means for supplying motive fluid thereto, a reversing-valve, a spring for yieldingly holding the valve at the limit of its movement in one direction, means for supplying the motive fluid to the reversing-valve for moving it in the opposite direction and a manually-operated auxiliary valve for controlling the supply of motive fluid to the reversing-valve.

3. The combination with the cylinder and cylinder-heads of a rotary motor and means for supplying motive fluid thereto, of a reversing-valve located in one head and a manually-operated auxiliary valve located in the other head arranged to control the movements of the reversing-valve.

4. A motor, means for supplying motive fluid thereto, a reversing-valve, passages leading from the motive-fluid supply and the opposite sides of the motor piston-chamber to the face of the valve, a port in the valve for alternately opening communication from the fluid-supply passage to the one or the other of the motor piston-supply passages, exhaust-ports opening to the face of the said valve and ports in the valve for alternately opening communication from the one or the other of the motor piston-supply passages to the one or the other of the said exhaust-passages, a spring for moving the reversing-valve in one direction and means for controlling the supply of motive fluid for moving the valve in the opposite direction.

5. A motor, means for supplying motive fluid thereto, a reversing-valve, a spring for yieldingly holding the valve at the limit of its movement in one direction, a manually-operated valve, passages leading from the reversing-valve chamber and the motive-fluid-inlet passage to the face of the said auxiliary valve and ports in the said valve for alternately opening the passage from the motive-fluid supply to the reversing-valve passage and the reversing-valve passage to the atmosphere.

6. The combination with the cylinder and cylinder-heads of a rotary motor and means for supplying motive fluid thereto, of a reversing-valve located in a horizontal direction in one cylinder-head, a spring for holding the valve at the limit of its movement in one direction and a manually-operated auxiliary valve located in the other cylinder-head for controlling the movements of the reversing-valve.

7. The combination with the cylinder and cylinder-heads of a rotary motor and means for supplying motive fluid thereto, of a reversing-valve located in a horizontal direction in one cylinder-head, means for permitting the removal of the valve from the cylinder-head, a spring for holding the valve at the limit of its movement in one direction and a manually-operated auxiliary valve located in the other cylinder-head for controlling the movements of the reversing-valve.

810,891. **CHAIN-MACHINE FOR THE MANUFACTURE OF CORRUGATED CARDBOARD.** CAMILLE THIÉBAUT, Vitry-sur-Seine, France. Original application filed Apr. 1, 1903. Serial No. 150,680. Divided and this application filed Aug. 31, 1904. Serial No. 223,900.

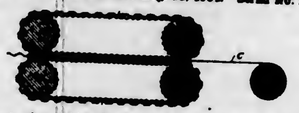

Claim.—1. A machine for the manufacture of corrugated cardboard, having the driving-shaft provided with grooves throughout their entire length, chains passing over said driving-shafts having on their under side grooves corresponding to the grooves of the shafts, and means for passing a sheet of cardboard between the chains of the machine.

2. In a chain-machine for the manufacture of corrugated cardboard, grooves on the entire length of the driving-shaft, engaging corresponding grooves of the under sides of the chains for the purpose of moving the latter.

3. In a machine for the manufacture of corrugated cardboard or paper, the combination of a plurality of endless belts having corrugated outer faces and grooved inner faces and arranged one above the other with their adjacent runs in contact, and a plurality of rollers for supporting and driving the belts, and provided with grooves coacting with the grooves of the belts.

4. In a machine for the manufacture of corrugated card board or paper, the combination of a plurality of endless belts having undulatory corrugations on their outer faces and grooves on their inner faces and arranged one above the other with their adjacent runs coacting.

810,892. **MILK-AERATOR.** BERT H. THOMAS, Millers Station, Pa., assignor of one-half to W. K. Andrews, Millers Station, Pa. Filed June 6, 1905. Serial No. 264,628.

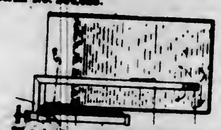

Claim.—1. In a device of the class described, the combination of a pair of tubes formed integral with each other, a collar adapted to rotate on said tubes, said collar being provided with means for attaching the device to a milk-can, one of said tubes having a lateral projection connected with a vertically-disposed tube, and means for forcing air through said tubes, substantially as described.

2. In a device of the class described, the combination of a pair of tubes formed integral with each other, one of said tubes having a lateral projection connecting with a vertically-disposed tube, said vertically-disposed tube being provided with a groove or way adapted to adjustably receive a convenient form of thermometer, said vertical tube being also provided at its lower end with apertures, substantially as described.

810,893. **GRAIN-DOOR.** ROBERT R. THOMSON, Pooley, Minn., assignor of one-half to Jasper M. Pogue, Pooley, Minn. Filed Mar. 31, 1905. Serial No. 253,017.

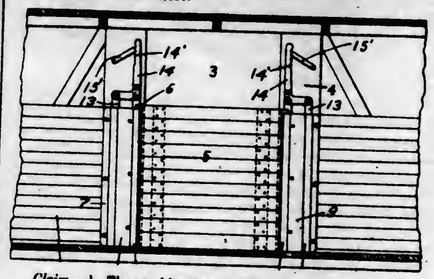

Claim.—1. The combination, with a freight-car, of casings provided upon each side of the door-opening and having transverse slots at intervals arranged one above another, of guides mounted on said casing, links pivotally connected with said guides through said slots, a bar connecting said links, means for moving said bar lengthwise to move said guides toward or from each other, and a door vertically movable between said guides.

2. The combination, with a freight-car, of casings provided on each side of the door-opening, guides mounted on said casings, links pivotally connected at one end with said guides and having a sliding connection with said casings, a vertically-movable bar connecting the free ends of said links, means for raising and lowering said bar to move said guides toward or from each other, and a door vertically movable between said guides.

3. The combination, with a freight-car, of casings provided on each side of the door-opening and having transverse slots 10, guides provided on said casings, links 12 having pivot-pins 11 extending through said slots and secured to said guides, a bar 13 connecting said links, means for raising or lowering said bars to move said guides toward or from each other, and a door provided between said guides.

4. The combination, with a freight-car, of casings provided on each side of the door-opening, guides provided on said casings, vertically-movable bars, means connecting said bars and said guides for imparting a horizontal movement to said guides when said bars are raised or lowered, bell-crank levers 14 pivoted on said casings and connected with said bars, and a door vertically movable between said guides.

5. The combination, with a freight-car, of casings provided on each side of the door-opening, guides carried by said casings and substantially V-shaped in cross-section, links slidably mounted in said casings and secured at one end to said guides, vertically-movable bars pivotally connected with the opposite ends of said links, means for raising and lowering said bars to move said guides toward or from each other, and a door having beveled ends provided between said guides.

6. The combination, with a freight-car, of casings provided upon each side of the door-opening, guides mounted on said casings, links 12 pivotally secured to said guides through transverse slots 10 in said casings, vertically-sliding bars 13 connecting said links, bell-crank levers 14 pivoted on said casings and having one arm pivotally connected with said bars 13, the other arms of said bell-crank levers extending vertically upon each side of the door-opening when the guides are in their locked position, and a door arranged to slide vertically between said guides, substantially as described.

810,894. **FLOUR-SIFTER.** WILLIAM M. VEST, Harrodsburg, Ky. Filed Jan. 23, 1904. Serial No. 191,214.

Claim.—1. A sifter, comprising a body having bearings, a handle having an opening, an agitator, and a shaft journaled in the said bearings and provided with means for connecting it to the agitator, and having a portion extending through the handle and of less diame-

ter than the opening of the same, said portion being bent or corrugated for engaging the walls of the opening, substantially as described.

2. A sifter provided with an agitator composed of a plurality of wires spaced apart at their intermediate portions, and having their end portions twisted together and extended to form opposite journals, and means for operating the agitator, substantially as described.

3. A sifter, comprising a body, a sleve, an agitator mounted on the body, and having a projecting loop, a handle mounted on the exterior of the body, and having a longitudinal bore, and a shaft provided with corrugated or bent portions passing through the bore of the handle and frictionally engaging the latter, said shaft being also provided with an arm engaging the loop of the agitator, substantially as described.

4. A sifter provided with an agitator composed of a plurality of wires spaced apart at their intermediate portions, and having their end portions twisted together to form projecting journals, the twisted wires of one of the journals being extended and doubled to form an approximately vertical loop, and operating mechanism provided with means for engaging the loop, substantially as described.

810,895. **ATTACHMENT FOR TYPE-WRITING MACHINES.** ERNEST F. ELEBERG, Chicago, Ill. Filed May 13, 1904. Serial No. 208,497.

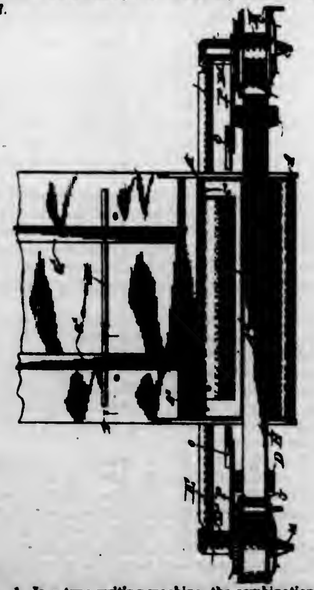

Claim.—1. In a type-writing machine, the combination with a paper-feed carriage, of a rod or bar carried by said carriage and having its ends projecting or extending beyond the ends of said carriage, ribbon-reels mounted to rotate upon the extending ends of said rod or bar, and means for rotatively actuating said reels.

2. In a type-writing machine, the combination with a paper-feed carriage, of a rod or bar carried by said carriage and having its ends projecting or extending beyond the ends of said carriage, ribbon-reels mounted to rotate upon the extending ends of said rod or bar, and automatic means for rotatively actuating said reels.

3. In a type-writing machine, the combination with a paper-feed carriage, of a rod or bar carried by said carriage, but incapable of movement relative thereto, said rod or bar having its ends projecting beyond the ends of said carriage, a ribbon-reel mounted to rotate upon each projecting end of said rod or bar, and means for periodically moving said ribbon-reels rotatively.

4. The combination with the paper-carriage of a type-writing machine, of a rod or bar mounted thereon to move therewith and having its ends projecting beyond the ends of said carriage, a ribbon-reel carried by each end of said rod, a ratchet-disk connected to each reel, and stationary arms carrying pawls arranged to engage said ratchet-disks to rotatively actuate said reels.

5. The combination with the paper-carriage of a type-writing machine, of a rod or arm mounted thereon to move therewith and having its ends extending beyond the ends of said carriage, a ribbon-reel supported upon each projecting end of said rod, a ratchet-disk connected to each reel, a stationary arm associated with each reel, and a movable pawl carried by each arm and coöperating with the ratchet-disk of its associated reel.

6. The combination with the paper-feed carriage of a type-writing machine, of a rod mounted upon said carriage to move therewith, a ribbon-reel carried by said rod, a ratchet-disk connected to said reel, a stationary arm, a pawl mounted upon said arm, said pawl having an elongated slot therein, whereby it is movable into and out of engaging relation with respect to said ratchet-disk.

7. The combination with the paper-feed carriage and platen of a type-writing machine, of a rod or bar mounted on said carriage to move therewith, and having its ends projecting beyond the ends of said carriage, a ribbon-reel mounted upon each projecting end of said rod or bar, pins carried by the hub of each reel and arranged to engage the ribbons, and ratchet mechanism independent of the feed movements of the platen for imparting rotary movement to said reel.

8. The combination with the paper-carriage and feed-platen of a type-writing machine, of a rod or bar carried by said carriage and having its ends projecting beyond the ends of said carriage, a ribbon-reel carried by said bar at each end thereof and each provided with means for engaging the ends of the ribbons, detachable ratchet mechanism independent of the feed movements of the platen for imparting rotation to either of said reels at will, and means for applying a tension to resist the rotative movement of such reels.

9. The combination with the paper-feed carriage of a type-writing machine, a rod or bar carried thereby and having its ends projecting beyond the ends of said carriage, a ribbon-reel mounted on each end of said rod or bar, a ratchet connected to each reel, the ratchets having their teeth presented in opposite directions, and detachable pawls respectively coöperating with said ratchet-disks, whereby the ribbons may be automatically reeled from either of said reels and coiled upon the other.

10. The combination with the paper-feed carriage and platen of a type-writing machine, of ribbon-reels mounted on said carriage to move therewith, and means independent of the feed movements of the platen for automatically actuating said reels to unwind the ribbon from one reel and to wind the same upon the other reel.

11. In an attachment for type-writing machines employing a paper-feed carriage, the combination with a reel carrying a continuous record-strip to be fed to said carriage and means for supporting said reel, of ribbon-supporting devices mounted on said carriage and arranged to support a ribbon in position for the continuous record-strip to pass between the same and the carriage-platen, means for actuating said ribbon-supporting devices to shift the ribbon, and a severing blade or cutter, mounted upon the carriage adjacent the ribbon and transverse to the line of feed of the continuous record-strip.

12. The combination with the paper-feed carriage of a type-writing machine, including a roller-platen, of ribbon-reels mounted on said carriage to move therewith, guide-rollers arranged in pairs at the opposite ends of said platen-roller and in a plane substantially tangential to the surface of the roller, the ribbons passing from one reel between the members of said pairs of guide-rollers to the other of said reels, and means for automatically rotating either of said reels.

13. In an attachment for type-writing machines employing a paper-feed carriage, the combination with a rod or bar mounted on the carriage and having its ends extending beyond the ends of the carriage of ribbon-reels mounted to rotate upon the extending ends of said rod or bar, means for rotatively actuating said reels to shift the ribbon and a record-sheet-deflector plate mounted on said rod or bar and arranged to deflect the record-sheet away from the carriage after passing the ribbon.

14. In an attachment for type-writing machines employing a paper-feed carriage, the combination with a rod or bar mounted on the carriage and having its ends extending beyond the ends of the carriage, of ribbon-reels mounted to rotate upon the extending ends of said rod or bar and a severing-blade also mounted upon said rod or bar in position to sever the record-strip after it has passed the ribbon.

15. In an attachment for type-writing machines employing a paper feed carriage, the combination with a rod or bar mounted upon the carriage and having its ends extending beyond the ends of the carriage, of ribbon-reels mounted to rotate upon the extending ends of the rod or bar, means for rotatively actuating the ribbon-reels to shift the ribbon and a severing-blade adjustably mounted upon said rod or bar and arranged in position to sever the record-strip after it has passed the ribbon.

16. In a type-writing machine the combination with a reciprocal carriage, and ribbon-reels supported upon and movable with said carriage, of a stationary bar rigidly mounted upon the machine-frame and carrying means for intermittently actuating said reels at the end of each reciprocation of the carriage.

17. In a type-writing machine, the combination with a reciprocal carriage, and horizontally-disposed ribbon-reels supported upon said carriage at opposite ends thereof and movable therewith, of a stationary bar rigidly mounted upon the frame of the machine and extending in the line of movement of the carriage, the ends thereof carrying means for intermittently actuating said reels at the end of each reciprocation of the carriage.

18. In a type-writing machine, the combination with a reciprocal carriage, a cylindrical platen journaled therein, and ribbon-reels supported by and movable with said carriage, of stationary means for independently actuating said reels, a stationary frame, and reels for record-paper journaled therein and located such a distance from said platen as to permit without injury of the lateral movement of the record-paper held by said platen.

19. In a type-writing machine, a stationary frame a carriage mounted to reciprocate thereon, ribbon-reels supported by and movable with said carriage, and means supported upon the stationary frame for rotatively actuating the ribbon-reels at the end of each reciprocatory movement of the carriage.

20. In a type-writing machine, the combination with a stationary frame, of a carriage mounted for reciprocatory movement thereon, ribbon-reels supported by and movable with said carriage and disposed on opposite sides respectively of said carriage, and detachable devices mounted upon the stationary frame for rotatively actuating said reels.

21. In a type-writing machine, the combination with a carriage mounted to reciprocate, a platen mounted thereon to move therewith, and ribbon-reels also supported by and movable with said carriage, a stationary frame for supporting record-paper to be supplied between the platen and ribbon, said stationary frame being located a sufficient distance from the reciprocatory carriage as to permit the reciprocations of said carriage without injury to the record-paper.

810,896. **FREE-RUNNING WHEEL.** MATT MARIKULA and AUGUST RANTALA, Fort Bragg, Cal. Filed June 26, 1905. Serial No. 267,104.

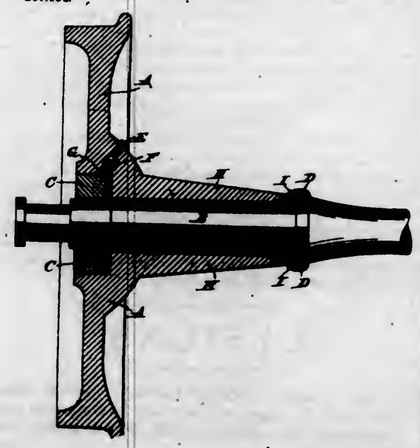

Claim.—1. The improvement in wheels free to turn on their axles, consisting of a flanged friction-face at the end of a lengthened hub; of a reciprocal friction-face against which the flanged face bears, the reciprocal friction-face being on a shoulder on the axle; of an internal friction-face on the hub which bears against the friction-face of a retaining-ring having on it a journal-bearing for part of the hub of a free-turning wheel; and of a two-part auxiliary journal for the hub of a free-turning wheel, one of the parts of said auxiliary journal being the back of a retaining-ring lying within the hub of a free-turning wheel and being secured to the axle, and the other part of the auxiliary journal being that part of the axle which lies between the retaining-ring and the shoulder on the axle provided with the reciprocal friction-face, in combination with a wheel pressed on the other end of the axle in the usual manner as herein specified.

2. The combination with a car-axle provided with bearings at its ends, of a two-part auxiliary journal for the hub formed of the back of the retaining-ring and of that part of the axle which lies between the retaining-ring C and the shoulder D, said retaining-ring being securely fastened to the axle and acting with the shoulder D in holding the flanged friction-face on the hub in contact with the reciprocal face on the shoulder D, and the internal friction-face of the hub in contact with the friction-face on the retaining-ring C, thereby keeping the free-turning wheel in its position on the axle, substantially as herein described.

REISSUES.

12,438. **PIPE-WRENCH.** EBENEZER FISHER, Philadelphia, Pa., assignor, by direct and mesne assignments, to Fisher Wrench Company, Egg Harbor, N. J., a Corporation of New Jersey. Filed June 28, 1905. Serial No. 267,460. Original No. 773,933, dated Nov. 1, 1904.

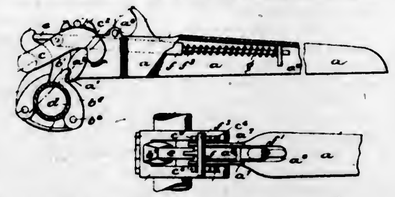

Claim.—1. A gripping device comprising a gripping-loop, a main supporting member adapted to fulcrum on one end of said loop, a link connection between the outer end of said loop and said supporting member wholly without the confines of said loop, and means whereby said link connection is normally pressed in the direction of said loop, substantially as and for the purpose set forth.

2. A gripping device comprising a gripping-loop, a main supporting member adapted to fulcrum on one end of said loop, and a link member carrying the other end of said loop and having a fulcrum bearing on said supporting member adapted to change the center upon which said link member swings during the gripping operation, substantially as and for the purpose set forth.

3. A gripping device comprising a gripping-loop, a main supporting member adapted to fulcrum on one end of said loop, and a link member carrying the other end of said loop, and having a fulcrum-hook bearing on a fulcrum on said main support whereby the fulcrum-point of said link is adapted to move from the point of said hook to within the same during the application of the leverage, substantially as and for the purpose set forth.

4. In a gripping device, the combination of a main supporting member, and a gripping-loop connected to said member and on which the latter is also fulcrumed, the engaging surfaces at the fulcrum-point having diverging faces, whereby the initial leverage applies pressure to compress the loop and the pressure of the continued leverage is diverted to apply a wrenching action to said loop, substantially as and for the purpose set forth.

5. In a gripping device, the combination of a main supporting-lever, and a gripping-loop connected to said supporting-lever and on which said lever is also fulcrumed, the fulcrum-engaging surface on said lever having diverging faces, whereby the initial leverage applies pressure to compress the loop and the pressure of the continued leverage is diverted in part to apply a wrenching action without increasing the loop compression beyond a predetermined limit, substantially as and for the purpose set forth.

6. A gripping device comprising a gripping-loop, a main supporting member adapted to fulcrum on one end thereof, a link carried by said supporting member and adapted to bear on said loop, and pressure means in engagement with said loop, substantially as and for the purpose set forth.

7. A gripping device comprising a gripping-loop, a main supporting member adapted to fulcrum on one end thereof, a link carried by said supporting member and adapted to bear on said loop adjacent its other end, and pressure means in engagement with the said latter end of the loop, substantially as and for the purpose set forth.

8. A gripping device comprising a gripping-loop, a main supporting member adapted to fulcrum on one end of said loop, a link carried by said supporting member adapted to bear on the other end of said loop, and yielding means for holding said last-mentioned end in engagement with said link, substantially as and for the purpose set forth.

9. A gripping device comprising a segmental gripping-loop, a main supporting member adapted to fulcrum on one end thereof, a link carried by said supporting member and adapted to bear on the other end segment of the loop intermediate the ends of said segment, and pressure means for engagement with the outer end of said segment, substantially as and for the purpose set forth.

10. A gripping device comprising a segmental gripping-loop, a main supporting member adapted to fulcrum on one end thereof, a link carried by said supporting member and adapted to bear on the other end segment of the loop, and locking means for the outer end of said segment adapted to have movement therewith, substantially as and for the purpose set forth.

11. In a gripping device, a main supporting member, a gripping-loop on which said supporting member fulcrums, a link carried by said supporting member and bearing on the outer terminal segment of said loop at a point intermediate the ends of said segment, and a spring-actuated sliding member on said supporting member, carrying a pivoted dog engaging the outer end of said terminal segment.

12. A gripping device comprising a main supporting member, a link carried thereby, a gripping-loop having terminal segments adapted to hook upon the said supporting member and within said link, respectively, the segment engaging said link having a hooked extension, and a spring-actuated sliding member carried by said supporting member and adapted to engage the hook of said extension, substantially as and for the purpose set forth.

13. A gripping device comprising a segmental gripping-loop, a main supporting member adapted to fulcrum on one terminal segment thereof, a link carried by said supporting member and adapted to bear on the other terminal segment of the loop intermediate the ends of said segment, and pressure means in engagement with said link and the outer end of said last-mentioned terminal segment and adapted to maintain pressure on said link independent of the pressure exerted on said segment, substantially as and for the purpose set forth.

14. A gripping device comprising a gripping-loop, a main supporting member having a shifting fulcrum on one end of said loop, a bent link having a shifting fulcrum on said main support and a bearing-point on the other end of said loop, said fulcrums and bearing-point being moved toward alinement with each other during the application of wrenching power.

15. A gripping device comprising a gripping-loop, a main supporting member having a shifting fulcrum on one end of said loop, a bent link having a shifting fulcrum on said supporting member and pressing at a point on the other end of said loop in a direction to close the loop, said fulcrums and point having a tendency to approach alinement upon the application of wrenching force, whereby the crushing force on the pipe is diminished.

16. A gripping device comprising a gripping-loop, a main supporting member having a shiftable supporting engagement with one end of said loop, and a hooked or bent link having shiftable engagement with said main supporting member and bearing on and supporting the other end of the loop, the arrangement and proportion of the parts being such that a straight line drawn through the points of engagement between the link and the main supporting member and between the latter and the loop will pass between the axis of the loop or pipe and the point where the link bears on said loop.

17. A gripping device comprising a gripping-loop, a main supporting member fulcrumed on one end of said loop, and a link fulcrumed on said main supporting member and bearing on the other end of said loop, the parts being so proportioned and arranged that a straight line extending through the fulcrum-points of said member and link will pass between the axis of the loop or pipe and the bearing-point of said link on the loop.

18. A gripping device comprising a gripping-loop, a lever fulcrumed on one end of said loop, a pair of lugs on said lever, a link bearing on and supporting the other end of said loop and having hooks engaging said lugs on the lever.

19. A gripping device comprising a gripping-loop, a main supporting member in the form of a lever having a shifting fulcrum on one end of said loop, and a link having a shifting fulcrum on said main support said link bearing on and supporting the other end of said loop.

20. A gripping device comprising a gripping-loop, a main supporting member engaging and supporting one end of said loop, and a hooked or bent link engaging a lug or lugs on the main supporting member and bearing on the other end of the loop.

12,439. **MEASURING APPLIANCE AND COMPRESSOR FOR LIQUIDS.** HENRY C. LEITCH, Marion, Wis., assignor, by mesne assignments, to Syphonic Measure Tank Company, Sheboygan, Wis., a Corporation of Wisconsin. Filed Mar. 20, 1905. Serial No. 251,174. Original No. 781,836, dated Jan. 31, 1905.

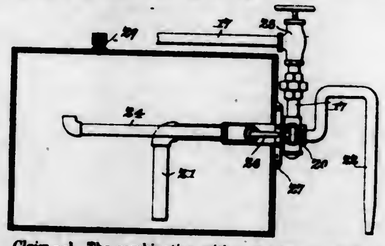

Claim.—1. The combination with a measuring vessel, of a siphon-discharge including two inlet-legs, one of which is adjustable with respect to the other.

2. The combination with a measuring vessel, of a siphon-discharge, including a fixed intake-leg, the mouth of which is arranged close to the bottom of a vessel, and a separate tube having one end pivotally connected to the siphon, and the other end adjustable to admit air to the siphon at different levels, the tube serving also as an additional intake-leg for said siphon.

3. In a measuring apparatus, the combination with a receptacle, of an intake-tube extending into the same and discharging near the bottom thereof, a discharge-tube communicating with said intake-tube and having its discharge end approximately below the plane of the liquid to be discharged, valve mechanism controlling said intake and discharge, and a siphon breaking and measuring tube pivoted to said intake-tube in a position for having its free end swung through the arc of a circle extending from the top to the bottom of said receptacle.

4. In a measuring apparatus, the combination with a receptacle, of an intake-tube extending therein and discharging near the bottom thereof, a branch tube extending from said intake-tube, a siphon-breaking tube communicating with and pivotally connected to said branch tube, said siphon-tube being adapted to swing upon its pivot through an arc of a circle extending from the top to the bottom of said receptacle, a discharge-tube communicating with the intake-tube and extending to a point below the plane of the liquid to be discharged and a valve mechanism controlling said intake and discharge.

5. In a measuring apparatus, the combination with a receptacle, of an intake-tube extending into the same, a pipe-fitting pivotally connected therewith, a rotatably-mounted shaft fixed to the free end of said pipe-fitting and extending through said receptacle, a siphon-breaking tube communicating with said pipe-fitting and designed to be swung vertically when said pipe-fitting is rotated, a discharge-tube communicating with said intake-tube and extending to a point below the plane of the liquid to be discharged and a valve mechanism controlling said intake and discharge.

DESIGNS.

37,790. **BROOCH OR SIMILAR ARTICLE.** JOSEPH H. CROSBY, Jacksonville, Fla., assignor to Gronniaf and Crosby Company, a Corporation of Florida. Filed Dec. 12, 1905. Serial No. 291,491. Term of patent 7 years.

37,790.

Claim.—The ornamental design for a brooch or similar article as shown.

37,791. **HANDLE FOR SPOONS.** GEORGE P. IVES, Bridgeport, Conn., assignor to The R. H. H. Smith Silver Company, Bridgeport, Conn. Filed Dec. 6, 1905. Serial No. 290,630. Term of patent 7 years.

Claim.—The ornamental design for a handle for spoons, forks or similar articles as shown.

37,792. **COVER-DISH.** ROBERT LEWIS JOHNSON, Stoke-upon-Trent, England. Filed Dec. 26, 1905. Serial No. 292,417. Term of patent 3½ years.

Claim.—The ornamental design for a cover-dish, as shown.

37,793. **COVER-DISH.** ROBERT LEWIS JOHNSON, Stoke-upon-Trent, England. Filed Dec. 26, 1905. Serial No. 292,418. Term of patent 3½ years.

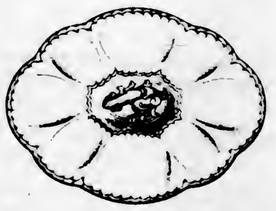

Claim.—The ornamental design for a cover-dish, as shown.

37,794. **PLATE.** CHARLES H. EIDELER, Limoges, France. Filed Dec. 16, 1905. Serial No. 292,379. Term of patent 3½ years.

Claim.—The ornamental design for a plate, as shown.

37,795. **CRUMB-TRAY.** MARGARET M. J. ROONEY, New York, N. Y. Filed Apr. 27, 1905. Serial No. 257,781. Term of patent 14 years.

37,796. **GAME-BOARD.** FREDERICK J. WOLF, Bucyrus, Ohio. Filed

87,795. CRUMB-TRAY. MARGARET M. J. ROONEY, New York, N. Y. Filed Apr. 27, 1905. Serial No. 257,781. Term of patent 14 years.

Claim.—The ornamental design for a crumb-tray, as shown.

87,796. GAME-BOARD. FREDERICK J. WOLF, Bucyrus, Ohio. Filed Jan. 3, 1905. Serial No. 238,943. Term of patent 7 years.

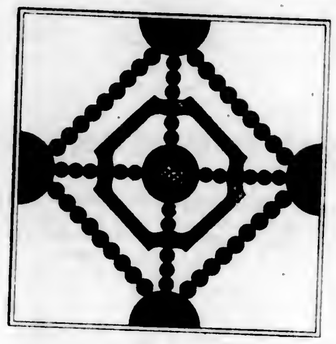

Claim.—The ornamental design for a game-board as shown.

TRADE-MARKS.

PUBLISHED JANUARY 23, 1906.

The following trade-marks have been adjudged entitled to registration under the act of February 20, 1905, and are published in compliance with section 6 of said act. Said section provides:

"Any person who believes he would be damaged by the registration of a mark may oppose the same by filing notice of opposition, stating the grounds therefor, in the Patent Office within thirty days after the publication of the mark sought to be registered, which said notice of opposition shall be verified by the person filing the same before one of the officers mentioned in section two of this act. If no notice of opposition is filed within said time the Commissioner shall issue a certificate of registration therefor, as hereinafter provided for."

Marks which are stated to have been "Used ten years" are registrable under the last proviso of section 5 of said act, which is as follows:

"And provided further, That nothing herein shall prevent the registration of any mark used by the applicant or his predecessors, or by those from whom title to the mark is derived, in commerce with foreign nations or among the several States, or with Indian tribes, which was in actual and exclusive use as a trade-mark of the applicant or his predecessors from whom he derived title for ten years next preceding the passage of this act."

Section 14 of said act provides for the following fee:

"On filing notice of opposition to the registration of a trade-mark, ten dollars."

SER. No. 283. WHISKY. SHORTELL & TIERNEY, Boston, Mass. Filed Apr. 3, 1905.

A monogram composed of the letters and character "S & T" inclosed in an ornamental circle and surrounded by scrollwork and ornamental panels, in connection with which are the words "KEENE'S ROCK MALT," arranged above said monogram.

SER. No. 376. AXES, HATCHETS, AND ADZES. THE COLLINS COMPANY, Collinsville, Conn. Filed Apr. 4, 1905.

The word "LEGITIMUS."

SER. No. 645. CORSET BONES OR STAYS. JULIUS JAEGGERS, New York, N. Y. Filed Apr. 6, 1905.

SER. No. 645.

WALOHN

The word "WALOHN."

SER. No. 677. BUTTER. THE FOX RIVER BUTTER COMPANY, Aurora, Ill. Filed Apr. 7, 1905.

A circle inclosing the words "FOX RIVER BUTTER CO.," and the words "CLOVER HILL BUTTER" arranged on a scroll extending in an arc with its ends joining the circle and the words "AURORA, ILL." below the scroll.

SER. No. 970. COUGH CURE. THE KICKAPOO INDIAN MEDICINE CO., Clintonville, Conn. Filed Apr. 10, 1905.

SER. No. 970.

Kickapoo

The word "KICKAPOO."

SER. No. 994. WHITE-STONE PINS, WHITE-STONE EARRINGS, AND WHITE-STONE STUDS. DONLEY & Co., Providence, R. I. Filed Apr. 10, 1905.

The representation of a bird in the act of flying and carrying in his bill a pennant on which are the letters "D & Co."

SER. No. 1,014. LEATHER BOOTS, SHOES, AND SLIPPERS. RINDGE, KALMBACH, LOGIE & Co., LT'D, Grand Rapids, Mich. Filed Apr. 10, 1905.

The letters, character, and abbreviation "R. K. L. & Co." on a red ground having the form of an irregular polygon having five sides, together with two right angles and three obtuse angles.

SER. No. 1,960. SOAP. THE SUMMIT CITY SOAP WORKS, Fort Wayne, Ind. Filed Apr. 17, 1905.

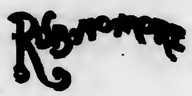

The arbitrary word-symbol "RUB-NO-MORE."

SER. No. 1,961. WASHING-POWDER. THE SUMMIT CITY SOAP WORKS, Fort Wayne, Ind. Filed Apr. 17, 1905.

The word-symbol "RUB-NO-MORE" arranged above a picture of an elephant dressed as a washerwoman with a hood upon its head, seated on a stool, holding a baby elephant over a tub, and spouting water over it with its trunk.

SER. No. 2,333. WHISKY. PHILIP FREILER, Elgin, Ill. Filed Apr. 20, 1905. Used ten years.

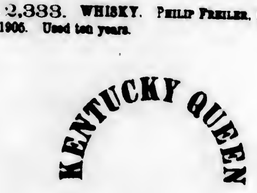

The words "KENTUCKY QUEEN."

SER. No. 2,847. WHEAT-FLOUR. PITTSBURGH MILLING Co., Allegheny, Pa. Filed Apr. 24, 1905. Used ten years.

CAMBRIA

The word "CAMBRIA."

SER. No. 2,900. COFFEE-GRINDERS. NATIONAL SPECIALTY MANUFACTURING COMPANY, Philadelphia, Pa. Filed Apr. 24, 1905.

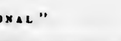

The word "NATIONAL."

SER. No. 3,494. ALE. S. BOLTON'S SONS, Troy, N. Y. Filed Apr. 28 1905. Used ten years.

HOME BREWED

The words "HOME BREWER."

SER. No. 3,867. SOAP. DUNWOODY BROS. SOAP COMPANY Denver, Colo. Filed May 1, 1905.

The words "WATER WHITE" followed by the word "SOAP," so as to read "WATER WHITE SOAP," the "W" being sufficiently large to form the initial letter of both words "WATER" and "WHITE," associated with the script-written firm-name "DUNWOODY BROS.," said name ending in a paraph.

SER. No. 4,009. COFFEE. NEW ORLEANS COFFEE Co., LTD., New Orleans, La. Filed May 2, 1905.

SER. No. 4,009.

The word "CHIEF" and the bust of an Indian chief with full plume headdress.

SER. No. 4,234. UNDERSHIRTS AND DRAWERS FOR MEN AND WOMEN. HEILMANN, LOVE & GUTMAN, New York, N. Y. Filed May 2, 1905.

The representation of a dumb-bell.

SER. No. 4,648. POWDERED STOVE-POLISH. X-RAY STOVE POLISH Co., New York, N. Y. Filed May 8, 1905.

The representation of a stove with dancing devils on top and the words "X-RAY STOVE POLISH" on the side.

SER. No. 4,828. INSOLES. ELECTRIC APPLIANCE Co., Burlington, Kans. Filed May 9, 1905. Used ten years.

The pictorial representation of a foot upon an insole having overlapping disks thereon and the representation of a ring at the heel end of the insole.

SER. No. 4,928. SHEETINGS AND DRILLINGS. GREENDEL MILLS, Greenwood, S. C. Filed May 10, 1905.

The representation of two fighting Chinamen with shields and clubs inclosed within an ornamental border.

SER. No. 5,002. MICROBE-KILLER. IDA RADAM, New York, N. Y. Filed May 10, 1905.

The representation of a shield bearing the words "WM. RADAM'S MICROBE KILLER," and depicted upon the shield is a skeleton and a man wielding a club as if striking the skeleton. A broken scythe rests at the feet of the skeleton. The words "MICROBE KILLER" appear upon the club. Above the shield is a ring.

SER. No. 5,109. GERMICIDES AND REMEDIES FOR GERM AND SKIN DISEASES. THE RHUMA-SULPHUR Co., St. Louis, Mo. Filed May 11, 1905.

The pictorial representation of the devil standing erect with arms extended and with flames around his feet and legs, in connection with the words "LITTELL'S LIQUID SULPHUR."

SER. No. 5,218. GARDEN, FLOWER, AND FIELD SEEDS. THE LIVINGSTON SEED Co., Columbus, Ohio. Filed May 11, 1905.

The representation of a seal having a circular center, superimposed upon which is a diamond-shaped figure having thereon panels containing the words "LIVINGSTON'S TRUE BLUE SEEDS" and "THE LIVINGSTON SEED Co. COLUMBUS OHIO."

SER. No. 5,373. WHISKY. THE VACCARO CIGAR & LIQUOR Co., Memphis, Tenn. Filed May 12, 1905.

The words "HICKORY VALLEY," associated with a monogram composed of the letters "V Co."

SER. No. 5,628. MOLASSES. H. W. TARLTON Co., New York, N. Y. Filed May 15, 1905. Used ten years.

SER. No. 5,628.

The representation of an ornamental circle surrounded by the words, characters, and abbreviations "E & P SALAZAR & Co. PONCE, P. R." in a circle.

SER. No. 5,635. HATS. GAGE BROTHERS & COMPANY, Chicago, Ill. Filed May 15, 1905.

The representation of a shield having thereupon a monogram comprising the letters, character, and abbreviation "G B & Co." surrounded by a fanciful scroll design, and a scroll beneath the same having thereupon the words "OUR MARK."

SER. No. 5,664. MOLASSES. BOSTON MOLASSES CO., Boston, Mass. Filed May 15, 1905.

The representation of a crown in red surrounded by the words and abbreviations "JOSE VENDRELL Y CA PONCE, P. R." in a circle.

SER. No. 6,322. BITUMINOUS AND ANTHRACITE COAL. ECONOMY FUEL CO., Montgomery, W. Va., and Cincinnati, Ohio. Filed May 22, 1905.

"LINGO"

The word "LINGO" inclosed in quotation-marks.

SER. No. 6,323. BITUMINOUS AND ANTHRACITE COAL. ECONOMY FUEL CO., Montgomery, W. Va., and Cincinnati, Ohio. Filed May 22, 1905.

"ECONOMY"

The word "ECONOMY" inclosed in quotation-marks.

SER. No. 6,540. CAR-COUPLINGS, CAR-BUFFERS, DRAFT-GEARS, AND PARTS THEREOF. GOULD COUPLER CO., New York, N. Y. Filed May 24, 1905. Used ten years.

GOULD

The word "GOULD."

SER. No. 6,703. MUCILAGE, PASTE, AND ADHESIVE CEMENTS. THE CARTER'S INK COMPANY, Boston, Mass. Filed May 26, 1905. Used ten years.

CARTER'S

The word "CARTER'S."

SER. No. 6,704. MEDICINAL AND TOILET OIL FOR SKIN DISEASES. THE ILLINOIS LABORATORIES, Chicago, Ill. Filed May 26, 1905.

NATURO

The word "NATURO."

SER. No. 6,933. LINIMENT. THE DR. PETER FAHRNEY & SONS CO., Chicago, Ill. Filed May 29, 1905. Used ten years.

Forni's
Heil-Del

The words "FORNI'S HEIL-DEL."

SER. No. 6,934. PREPARATION FOR THE TREATMENT OF DISEASES OF THE STOMACH AND BOWELS. THE DR. PETER FAHRNEY & SONS CO., Chicago, Ill. Filed May 29, 1905. Used ten years.

SER. No. 6,934.

FORNI'S
MAGEN-
STÄRKER

The words "FORNI'S MAGEN-STÄRKER."

SER. No. 7,056. CANNED FRUITS AND VEGETABLES. GIBBS PRESERVING COMPANY OF BALTIMORE CITY, Baltimore, Md. Filed May 29, 1905. Used ten years.

The representation of a bull's head.

SER. No. 7,186. WHISKY. MUELLER, WATHEN & KOSSUT, Lebanon, Ky. Filed June 1, 1905. Used ten years.

The words "FOREST HOME."

SER. No. 7,251. ANTISEPTICS. LLOYD BROTHERS, Cincinnati, Ohio. Filed June 2, 1905.

ECHAFOLTA

The word "ECHAFOLTA."

SER. No. 7,252. ESCHAROTICS. LLOYD BROTHERS, Cincinnati, Ohio. Filed June 2, 1905. Used ten years.

ESCATOL

The word "ESCATOL."

SER. No. 7,253. PHARMACEUTICAL PREPARATION MANUFACTURED FROM TOBACCO AND USED AS AN ANODYNE. LLOYD BROTHERS, Cincinnati, Ohio. Filed June 2, 1905. Used ten years.

SER. No. 7,253.

DYNAMYNE

The word "DYNAMYNE."

SER. No. 7,255. PHARMACEUTICAL PREPARATION TO BE USED AS A REMEDY FOR DISEASES OF THE MUCOUS MEMBRANES. LLOYD BROTHERS, Cincinnati, Ohio. Filed June 2, 1905. Used ten years.

LLOYD'S
HYDRASTIS

The words "LLOYD'S HYDRASTIS."

SER. No. 7,257. ANTISEPTICS OR GERMICIDES. LLOYD BROTHERS, Cincinnati, Ohio. Filed June 2, 1905. Used ten years.

METHYNOL

The word "METHYNOL."

SER. No. 7,302. POWDER FOR USE IN MAKING ICE-CREAM AND ICES. WILLIAM A. COLLINS, Cambridge, Mass. Filed June 3, 1905.

VELVOUETTE

The word "VELVOUETTE," associated with the representation of a woman in the act of eating ice-cream.

SER. No. 7,362. GROUND SPICES. THE CITIZENS' WHOLESALE SUPPLY CO., Columbus, Ohio. Filed June 3, 1905.

The words "GOLDEN RULE" and the representation of a shield bearing stars, a scroll, and a monogram of the letters "C W S Co."

SER. No. 7,429. HORSE-NAILS. THE CAPEWELL HORSE NAIL COMPANY, Hartford, Conn. Filed June 5, 1905. Used ten years.

The monogram "C H N Co." formed of a horseshoe and nails.

SER. No. 7,431. SHORT THICK CANDLES. CLARKE'S-PYRAMID AND FAIRY LIGHT COMPANY, LIMITED, London, England. Filed June 5, 1905. Used ten years.

FAIRY

The word "FAIRY."

SER. No. 7,432. SHORT THICK CANDLES. CLARKE'S-PYRAMID AND FAIRY LIGHT COMPANY, LIMITED, London, England. Filed June 5, 1905.

Pyramid Fairy

The words "FAIRY" and "PYRAMID."

SER. No. 7,433. SHORT THICK CANDLES. CLARKE'S-PYRAMID AND FAIRY LIGHT COMPANY, LIMITED, London, England. Filed June 5, 1905. Used ten years.

PYRAMID

The word "PYRAMID."

SER. No. 7,450. STOCK-FOOD. MARION W. SAVAGE, Minneapolis, Minn. Filed June 5, 1905. Used ten years.

The words and numeral "INTERNATIONAL STOCK FOOD. 3 FEEDS FOR ONE CENT," a monogram of the letters "M W S" with the pictorial representation of the head of a horse, a pig, a sheep, a steer, a farm scene, and stock-train.

SER. No. 7,647. RESPIRATORS. HARVEY S. COVER, South Bend, Ind. Filed June 8, 1905.

The likeness of applicant wearing a respirator. It further consists of the signature of the applicant beneath his likeness.

SER. No. 7,697. WHISKY. HENRY R. MYERS, Covington, Ky. Filed June 8, 1905. Used ten years.

FULTON

The word "FULTON."

SER. No. 7,765. RYE WHISKY. GILLIAMS, JONES & Co., Philadelphia, Pa. Filed June 9, 1905.

The letters "G J," character "&," and abbreviation "Co" arranged as a monogram, associated with the word "INSLEE" inclosed by an ornamental oblong panel centrally disposed and of the words "RYE WHISKEY" and "GILLIAMS, JONES & Co." and the whole included within a field surrounded by an ornamental border consisting of inverted cones.

SER. No. 7,886. LUBRICATING OILS AND GREASE. FRANK B. HOWES, Buffalo, N. Y. Filed June 10, 1905. Used ten years.

DUPLEX

The word "DUPLEX."

SER. No. 7,941. CUT GLASS AND ENGRAVED GLASS. T. G. HAWKES & COMPANY, Corning, N. Y. Filed June 12, 1905.

SER. No. 7,941.

GRAVIC

The word "GRAVIC."

SER. No. 8,017. NERVE-ELIXIR. ELISABETH DOST, Buffalo, N. Y. Filed June 13, 1905. Used ten years.

The representation of a chemist's mortar arranged above a monogram formed from the initials "E D" and associated with a buckled band or streamer arranged above the mortar, a wreath arranged below the monogram, and beans and stars arranged between the band or streamer and the mortar and monogram.

SER. No. 8,038. GAS AND GASOLENE ENGINES. THE OTTO GAS ENGINE WORKS, Philadelphia, Pa. Filed June 13, 1905.

A shield with a scroll which runs diagonally across its face, starting in the lower left-hand corner, and on which is inscribed the name "OTTO."

SER. No. 8,085. DYESTUFF. CASSELLA COLOR COMPANY, New York, N. Y. Filed June 14, 1905. Used ten years.

Oxy Diamine Black

The words "OXY DIAMINE BLACK."

SER. No. 8,329. OUTING-SHIRTS FOR MEN AND WOMEN. GUTTERMAN BROS., St. Paul, Minn. Filed June 16, 1905.

Town & Country

The representation of a horseshoe with the word "SUMMIT" in scroll diagonally across face of same, associated with the words "TOWN AND COUNTRY."

SER. No. 8,559. WHISKY. M. RYAN, Nashville, Tenn. Filed June 19, 1905. Used ten years.

SER. No. 8,559.

PEERLESS

The word "PEERLESS" above a shield design bearing the monogram "M R" upon a smaller shield, which is supported by two elks standing upon their hind feet. Below and at either side is a ribbon design.

SER. No. 8,874. WHISKY. DAVID GREEN, Kansas City, Mo. Filed June 24, 1905. Used ten years.

FAIRBROOK

The word "FAIRBROOK," below which is a country scene showing a brook spanned by a wooden bridge, a farmhouse, and trees. Inclosing this is a scroll outline design, on either side of which is a small landscape.

SER. No. 9,019. INSTEP-SUPPORTER OR ARCH-PROP. THE GEORGE G. LONDON MANUFACTURING COMPANY, Lynn, Mass. Filed June 26, 1905.

PLANTAR SPRING

The words "PLANTAR SPRING" grouped about a center scroll and all underlined by a heavy flourish, which flourish is an elaboration of the final "e" in the word "SPRING."

SER. No. 9,046. REMEDY FOR ANÆMIA AND CHLOROSIS AND ALSO A DIGESTANT OF STARCH. HORACE OLIVER HURLEY, Louisville, Ky. Filed June 26, 1905.

DIAST-IRON

The hyphenated word "DIAST-IRON."

SER. No. 9,061. COFFEE-BERRY, EITHER WHOLE OR GROUND. MILLIKEN, TOMLINSON Co., Portland, Me. Filed June 26, 1905.

Golden Rod

The words "GOLDEN ROD."

SER. No. 9,286. COFFEE. A. SCHILLING & COMPANY, San Francisco, Cal. Filed June 27, 1905.

The monogram "S B."

SER. No. 9,291. BAKING-POWDER, BICARBONATE OF SODA, AND CREAM OF TARTAR. A. SCHILLING & COMPANY, San Francisco, Cal. Filed June 27, 1905. Used ten years.

Schilling's Best

The words "SCHILLING'S BEST."

SER. No. 9,293. SPICES. A. SCHILLING & COMPANY, San Francisco, Cal. Filed June 27, 1905.

A monogram composed of the letters "S B."

SER. No. 9,483. BLEACHED, UNBLEACHED, PRINTED, AND DYED TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa. Filed June 30, 1905.

SABELETTE

The word "SABELETTE."

SER. No. 9,802. BITUMINOUS COAL. WAR EAGLE FUEL COMPANY, War Eagle, W. Va. Filed July 3, 1905.

A representation of the Indian chief War Eagle standing upon a block of coal and grasping a hatchet in one hand.

SER. No. 9,806. BLEACHED, UNBLEACHED, PRINTED, AND DYED TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa. Filed July 6, 1905. Used ten years.

A rectangular border embracing a cross-hatch background upon which is a longitudinal panel having curved projections near its center, associated with the words "DE LAINE FINISH."

SER. No. 9,847. ANTIPYRETICS. ANNO PHENIN CHEMICAL COMPANY, St. Louis, Mo. Filed July 6, 1905.

The words "ANNO PHENIN."

SER. No. 9,907. PROPRIETARY COMPOUNDS USED FOR HEADACHE, NEURALGIA, AND SIMILAR COMPLAINTS. EMILE LAUTENBACH, Baltimore, Md. Filed July 7, 1905.

The word "BROMONIA," associated with the pictorial representation of three pyramids having thereon the letters "M," "O," and "P," one letter on each pyramid in the order named.

SER. No. 9,989. LOTION USED IN THE TREATMENT OF HERNIA. JOSEPH FARRENY, Los Angeles, Cal. Filed July 10, 1905.

The portrait of applicant.

SER. No. 10,083. COTTON PIECE GOODS. GILBERT MANUFACTURING COMPANY, New York, N. Y. Filed July 11, 1905.

Silkglow

The word "SILKGLOW."

SER. No. 10,244. COTTON SHEETINGS AND DRILLS. KENSO IWAHARA, New York, N. Y. Filed July 13, 1905.

The representation of a Chinese student with four Chinese characters "JO-GEN-KIU-DAI."

SER. No. 10,359. DENTAL CHAIRS. RITTER DENTAL MFG. CO., Rochester, N. Y. Filed July 15, 1905.

Imperial

The word "IMPERIAL."

SER. No. 10,360. DENTAL CHAIRS. RITTER DENTAL MFG. CO., Rochester, N. Y. Filed July 15, 1905.

College

The word "COLLEGE."

SER. No. 10,361. DENTAL CHAIRS. RITTER DENTAL MFG. CO., Rochester, N. Y. Filed July 15, 1905.

SER. No. 10,361.

Favorite

The word "FAVORITE."

SER. No. 10,448. WATCHES, WATCHCASES, AND WATCH-MOVEMENTS. D. GRUEN & SONS, Cincinnati, Ohio. Filed July 17, 1905. Used ten years.

Precision

The word "PRECISION."

SER. No. 10,551. BLEACHED, UNBLEACHED, PRINTED, AND DYED TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa. Filed July 19, 1905. Used ten years.

The representation of a lighthouse surrounded by water on which appears the representation of a steamboat, associated with the words, abbreviations, and character "EDDYSTONE WM. SIMPSON & SONS. PRINTED BY THE EDDYSTONE MANUFACTURING CO. PHILADELPHIA."

SER. No. 10,795. GREASE-CUPS. THE LUNKENHEIMER COMPANY, Cincinnati, Ohio. Filed July 26, 1905.

IDEAL

The word "IDEAL."

SER. No. 10,909. HAIR-RESTORERS FOR RESTORING COLOR AND VIGOR TO GRAY, FADED, AND BLEACHED HAIR. BENJAMIN T. GOLDMAN, St. Paul, Minn. Filed July 27, 1905.

SER. No. 10,909.

A conventional representation of a woman's head having long hair flowing loosely, gray on one side and dark on the other.

SER. No. 11,087. LOOSE-LEAF BINDERS. SIEBER & TRUSSELL MFG. CO., St. Louis, Mo. Filed July 31, 1905.

The word "UNIMATIC" upon a scroll supported on a band bearing the name "SIEBER & TRUSSELL MFG. CO." and a complementary scroll upon the opposite side of the band bearing the words "LOOSE LEAF BOOK," the term "ST. LOUIS, U. S. A." appearing between the band and the last-named scroll.

SER. No. 11,095. PISTOLS. COLT'S PATENT FIRE ARMS MANUFACTURING COMPANY, Hartford, Conn. Filed Aug. 1, 1905.

POLICE POSITIVE.

The words "POLICE POSITIVE."

SER. No. 11,118. REMEDIES FOR PULMONARY DISEASES. FISCHER CHEMICAL IMPORTING CO., New York, N. Y. Filed Aug. 2, 1905.

GEOSOT

The word "GEOSOT."

SER. No. 11,144. COTTON DUCK. HOGANSVILLE MANUFACTURING COMPANY, Hogansville, Ga. Filed Aug. 3, 1905.

YELLOW JACKET

The words "YELLOW JACKET."

SER. No. 11,287. CORNMEAL. GULFPORT GROCERY COMPANY, Gulfport, Miss. Filed Aug. 3, 1905.

POLKADOT

The word "POLKADOT."

SER. No. 11,257. BROWN LIQUID CONTAINING THE ACTIVE PRINCIPLES OF EUPATORIUM, PURPUREUM, AND VIBURNUM OPULUS IN SOLUTION WITH AROMATICS. M. M. FOY, St. Louis, Mo. Filed Aug. 4, 1905.

VASCULIN

The word "VASCULIN."

SER. No. 11,437. ANTIFRICTION METALS. MERCHANT & EVANS CO., Camden, N. J. Filed Aug. 8, 1905. Used ten years.

IRIDIUM ANTI-FRICTION METAL

The words "IRIDIUM ANTI-FRICTION METAL."

SER. No. 11,440. APRICOT BRANDY. NUTENS & CIE., Bordeaux, France. Filed Aug. 8, 1905.

A monogram of the letter, character, and abbreviation "N & Co." on an ornamental scroll panel, the words "MAISON FONDÉE EN 1802 FINE CHAMPAGNE APRICOT BRANDY," and the facsimile signature "NUTENS & CIE."

SER. No. 11,449. DRESS-LININGS. MONTE W. BURD, Louisville, Ky. Filed Aug. 9, 1905.

The word "VICTORIA," associated with a portrait of the late Queen Victoria, the portrait being within an oval frame and the whole appearing upon a solid background.

SER. No. 11,495. ANTISEPTIC REFRIGERANTS FOR WOUNDS. G. H. TICHENOR, New Orleans, La. Filed Aug. 10, 1905.

The representation of a battle scene wherein several individuals are shown advancing in conflict, of whom one is in the act of firing,

another carries a battle-flag, another is in the act of falling, another lies prostrate on the ground, and two others are advancing.

SER. No. 11,716. COTTON SHEETINGS AND DRILLS. KENZO IWAHARA, New York, N. Y. Filed Aug. 15, 1905.

The representation of two flower-vases with peonies.

SER. No. 11,808. ACETYLENE-LAMPS AND GENERATORS THEREFOR FOR MOTOR-VEHICLES. ALBERT H. FUNKE, New York, N. Y. Filed Aug. 19, 1905.

AUTOLYTE

The word "AUTOLYTE."

SER. No. 11,809. ACETYLENE-LAMPS AND GENERATORS THEREFOR FOR MOTOR-VEHICLES. ALBERT H. FUNKE, New York, N. Y. Filed Aug. 19, 1905.

CRESCENT

The word "CRESCENT."

SER. No. 11,856. MEDICINAL PREPARATION FOR THE CURE OF RHEUMATISM. LOUIS ADLER, Reading, Pa. Filed Aug. 21, 1905.

Crolo

The word "CROLO."

SER. No. 11,963. BLEACHED, UNBLEACHED, PRINTED, AND DYED TEXTILE FABRICS. THE ROOTSTOCK MANUFACTURING COMPANY, Riddystone and Philadelphia, Pa. Filed Aug. 24, 1905.

SER. No. 11,963.

The representation of a factory on the bank of a body or stream of water with a wooded hill or hills in the background, associated with the words, abbreviation, and character "WM. SIMPSON & SONS PHILADELPHIA." the whole being inclosed within an ornamental border.

SER. No. 12,052. SODA-WATER SYRUP AND A DRINK MADE FROM SUCH SYRUP. THE WILEY MANUFACTURING CO., Atlanta, Ga. Filed Aug. 28, 1905.

KOLA-ADE

The hyphenated word "KOLA-ADE."

SER. No. 12,061. BANJO-HEADS AND DRUMHEADS. DUPLEX MANUFACTURING COMPANY, St. Louis, Mo. Filed Aug. 28, 1905. Used ten years.

The pictorial representation of a kangaroo carrying its young, associated with the facsimile signature of Jos. Reitz and the word "KANGAROO."

SER. No. 12,089. INSTRUMENT FOR MECHANICALLY MEASURING THE CAPACITY OF THE LUNGS IN CUBIC INCHES. CLINTON H. BIRD, New Haven, Conn. Filed Aug. 30, 1905.

PLEUROMETER

The word "PLEUROMETER."

SER. No. 12,095. STOCKINGS. COLUMBIA HOSIERY CO., New York, N. Y. Filed Aug. 30, 1905. Used ten years.

Ser. No. 12,095.

WINONA MILLS

The words "WINONA MILLS."

Ser. No. 12,108. TENNIS-SHOES. HOOD RUBBER CO., Boston, Mass. Filed Aug. 26, 1905.

GREYHOUND

The word "GREYHOUND" and the illustration of a greyhound.

Ser. No. 12,110. GRAIN-BINDING, CORN, AND RICE HARVESTERS, MOWERS AND REAPERS, AS WELL AS EXTRA AND REPAIR PARTS AND PIECES FOR SUCH APPARATUS. INTERNATIONAL HARVESTER CO. OF AMERICA, Chicago, Ill. Filed Aug. 31, 1905.

Deering

A facsimile of the autograph of the surname of James Deering, one of the vice-presidents of the said International Harvester Company of America.

Ser. No. 12,111. GRAIN-BINDING HARVESTERS, CORN-HARVESTERS, RICE-HARVESTERS, MOWERS AND REAPERS, AND REPAIR PARTS AND PIECES FOR SUCH APPARATUS. INTERNATIONAL HARVESTER CO. OF AMERICA, Chicago, Ill. Filed Aug. 31, 1905.

McCormick

A facsimile of the autograph of the surname of Cyrus H. McCormick, president of the said International Harvester Co. of America.

Ser. No. 12,391. CANNED SARDINES. WILLIAM UNDERWOOD COMPANY, Boston, Mass. Filed Sept. 8, 1905.

The pictorial representation of a pair of connected moose antlers carrying a ribbon-like scroll whose ends are wrapped around the upper prongs of the antlers, associated with the word "MOOSEABEC."

Ser. No. 12,549. SCISSORS. CARL F. BOKER, New York, N. Y. Filed Sept. 14, 1905. Used ten years.

The representation of a razor.

Ser. No. 12,552. FLAVORING EXTRACTS. JOSEPH BURNETT CO., Boston, Mass. Filed Sept. 14, 1905. Used ten years.

BURNETTS

The word "BURNETT'S."

Ser. No. 12,573. CRANBERRIES. JOSEPH J. WHITE, New Lisbon, N. J. Filed Sept. 14, 1905.

STAR

The word "STAR," the representation of a star, and a circular-shaped background for said representation.

Ser. No. 12,595. CORNMEAL, BOTH BOLTED AND GRANULATED. THE DIAMOND ELEVATOR & MILLING COMPANY, Minneapolis, Minn. Filed Sept. 14, 1905. Used ten years.

CUT

The word "CUT" appearing on a diamond-shaped figure printed in red.

Ser. No. 12,634. TONIC BEVERAGES AND EXTRACTS FOR MAKING THE SAME. WHARTON CHEMICAL CO., Nashville, Tenn. Filed Sept. 15, 1905.

DIGESTOL

The fanciful word "DIGESTOL," in which the loop of the initial letter "D" inclosse the other letters of the word.

Ser. No. 12,660. WHISKEY. STRAUS BROTHERS COMPANY, Chicago, Ill. Filed Sept. 15, 1905.

ROANHORSE

The word "ROANHORSE."

Ser. No. 12,742. BOILER-TUBE CLEANERS OR SCRAPERS. A. W. CHESTERTON & CO., Boston, Mass. Filed Sept. 18, 1905. Used ten years.

INCALLS

The word "INCALLS."

Ser. No. 12,781. SOAP. THE SUBMIT CITY SOAP WORKS, Fort Wayne, Ind. Filed Sept. 19, 1905.

The representation of an elephant washing a baby elephant, associated with the hyphenated words "RUB-NO-MORE" and "CARBO-NAPTHO," all being inclosed in an ornamental rectangular border, in each side of which appear the words "RUB-NO-MORE SOAP."

Ser. No. 12,919. BOOTS AND SHOES MADE OF LEATHER. M. A. PACKARD COMPANY, Brockton, Mass. Filed Sept. 22, 1905. Used ten years.

PACKARD

The word "PACKARD."

Ser. No. 12,939. COFFEE. ARBUCKLE BROS., New York, N. Y., Pittsburg, Pa., and Chicago, Ill. Filed Sept. 23, 1905. Used ten years.

ARBUCKLES

The word "ARBUCKLES."

Ser. No. 13,019. ROASTED COFFEE. FORT SMITH COMMISSION COMPANY, Fort Smith, Ark. Filed Sept. 25, 1905.

OLD FORT

The words "OLD FORT."

Ser. No. 13,274. COFFEE. ARBUCKLE BROS., New York, N. Y., Pittsburg, Pa., and Chicago, Ill. Filed Oct. 4, 1905.

DRINKSOME

The word "DRINKSOME."

Ser. No. 13,468. HEADACHE REMEDY. LEWIS PHARMACAL CO., Baltimore, Md. Filed Oct. 10, 1905.

PHIZ

The word "PHIZ."

Ser. No. 13,528. SALVE FOR TREATMENT OF BOILS AND CARBUNCLES. THE CARBOIL SALVE CO., Fayetteville, Tenn. Filed Oct. 12, 1905.

CARBOIL

The word "CARBOIL."

Ser. No. 13,600. WHEAT-FLOUR. THE COLES COMPANY, Middletown, Conn. Filed Oct. 14, 1905.

FORTUNE

The word "FORTUNE."

Ser. No. 13,812. SCARFS. WILLIAM TREVOR, New York, N. Y. Filed Oct. 21, 1905.

MOTOR

The word "MOTOR."

Ser. No. 13,976. MAGAZINE PERIODICAL. ADVANCE PUBLISHING CO., Chicago, Ill. Filed Oct. 27, 1905.

THE ADVANCE

The words "THE ADVANCE."

SER. No. 14,141. WHEAT-FLOUR. THE BURRUS MILL & ELEVATOR COMPANY. Fort Worth, Tex. Filed Oct. 31, 1905.

LIGHT CRUST

The words "LIGHT CRUST."

SER. No. 14,242. COUGH-DROPS. DAVIES, ROSE & CO., LTD, Boston, Mass. Filed Nov. 3, 1905.

PINE-ELMS

The words "PINE-ELMS."

SER. No. 14,363. MEDICINE FOR THE TREATMENT OF MALARIA, CHILLS, SWAMP FEVER, BILIOUS FEVER, FEVER AND AGUE, INTERMITTING AND REMITTING FEVER, LA GRIPPE, INFLUENZA, AND SUN PAIN. PAUL BROS. MEDICINE CO., Alton, Ill. Filed Nov. 6, 1905.

The representation of half of a globe bearing the words "MA-LA'SI-A TABLETS" and the portraits of Arthur W. Paul and Edward C. Paul on opposite sides of the globe.

SER. No. 15,055. POWDERED PREPARATION FOR CLEANING PRECIOUS METALS. JESS B. HALDEMAN, St. Louis, Mo. Filed Nov. 28, 1905.

SILVER CLEANER.

A representation of the lower segment of a watch's face showing the seconds-hand at the mark indicating sixty seconds or one minute. Over this are the words "ONE MINUTE" and beneath the words "SILVER CLEANER."

SER. No. 14,414. CASTOR-OIL. NATIONAL LEAD COMPANY, Jersey City, N. J., and New York, N. Y. Filed Nov. 8, 1905. Used ten years.

RED SEAL
CASTOR OIL Co.
ST. LOUIS

A disk of a red color having a serrated edge and the words and abbreviations "RED SEAL CASTOR OIL CO. ST. LOUIS."

SER. No. 15,059. LUBRICATING-GREASE. BERWALD & LEVIN, New York, N. Y. Filed Nov. 29, 1905.

A panel printed in red, upon which is printed in black the capital letters "B." and "L." with the word "AND" in small black letters arranged between them. Placed after each capital letter is a period. The panel is of the shape of two irregular hexagons that are joined at one end.

SER. No. 15,132. FERTILIZERS. THE INDEPENDENT PACKERS FERTILIZER CO., Columbus, Ohio. Filed Dec. 1, 1905.

An elliptical figure having a round panel at each end, the panel at the left end containing the pictorial representation of the head of a hog and the panel at the right-hand end containing the pictorial representation of the head of a sheep. In the upper central portion of the figure the pictorial representation of the head of a steer is shown in the round panel partially surrounded by a wreath. A fancy border surrounds the figure, which has a black background, on which the words "THE INDEPENDENT PACKERS FERTILIZER CO. COLUMBUS, OHIO," appear in white letters.

SER. No. 15,188. BORAX SOAP. PACIFIC COAST BORAX COMPANY, San Francisco, Cal. Filed Dec. 2, 1905.

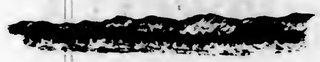

The representation of a wagon drawn by a number of mules.

SER. No. 15,187. CORNMEAL. THREEFOOT BROS. & CO., Meridian, Miss. Filed Dec. 4, 1905.

The words "RED ROSE," associated with the representation of a rose.

SER. No. 15,345. WAX FOR FACTORY USE IN FINISHING THE BOTTOMS OF BOOTS AND SHOES DURING THEIR MANUFACTURE. JUSTIN R. CHANDLER, Brockton, Mass. Filed Dec. 11, 1905.

(Cock of the walk.)

The representation of a rooster crowing, and the words "COCK OF THE WALK," inclosed in parentheses, below the picture.

SER. No. 15,373. TOILET SOAP. D. R. BRADLEY & SON, New York, N. Y. Filed Dec. 13, 1905.

WOODLAND

The word "WOODLAND."

SER. No. 15,353. MEDICINAL SOAP. BARCLAY & BARCLAY, New York, N. Y. Filed Dec. 12, 1905.

The signature of John Reuter, M. D., arranged within a rectangular border within which are the words "NENHUM SERÁ GENUINO SEM A RUBRICA DE NEW YORK," and in another rectangular border are the words "A SINGULAR FRAGRANCIA DO SABONETE DE REUTER E O SEU MARAVILHOSO PODER DE LIMPAR E AFORMOSEAR A PELLE, AMACIAR E ACLARAR AS MAOS, SÃO AS CAUSAS DA SUA REPUTAÇÃO E CONSUMO UNIVERSAES," and the words "SABONETE DE REUTER, NEW YORK, PREÇO 25 CENTAVOS" appearing in a third rectangular border. In the fourth rectangular border are the words "O MELHOR SABONETE PARA A CUTIS. O MELHOR SABONETE PARA O TOILETTE E PARA O BANHO. O MELHOR SABONETE PARA BARBEAR E PARA LIMPAR A CABECA. O MELHOR SABONETE PARA O USO DAS CRIANCAS. DELICIOSAMENTE PERFUMADO E REFRESCADOR." At the outer side of the third rectangular border are circular lines in which the words "NEW YORK" appear.

SER. No. 15,354. MEDICINAL SOAP. BARCLAY & BARCLAY, New York, N. Y. Filed Dec. 12, 1905.

The signature of John Reuter, M. D., arranged within a rectangular border within which are the words "NO SE CONSIDERA GENUINO SI NO LLEVA LA FIRMA DE — NEW YORK." In another rectangular border are the words "LA FRAGANCIA EXQUISITA DEL JABON DE REUTER, Y SU EFECTO MARAVILLOSO PARA LIMPIAR Y EMBELLECER EL CUTIS, Y SUAVIZAR Y BLANQUEAR LAS MANOS, LE HAN DADO UNA REPUTACIÓN UNIVERSAL, HACIENDO AL MISMO TIEMPO QUE SE VENDA EN EL MUNDO ENTERO," and the words "JABON DE REUTER, NEW YORK, PRECIO 25 CENTAVOS" appearing in a third rectangular border, while in the fourth rectangular border are the words "EL MEJOR JABON PARA LA TEZ EL MEJOR JABON PARA EL TOCADOR Y BAÑO. EL MEJOR JABON PARA AFEITARSE Y LIMPIAR LA CABEZA. DELICIOSAMENTE PERFUMADO Y REFRESCANTE." At the outer side of the third rectangular border are circular lines in which the words "NEW YORK" appear.

SER. No. 15,384. MEN'S BOOTS. G. M. WATTLES & SON, Buffalo, N. Y. Filed Dec. 13, 1905.

Ser. No. 15,384.

RED HEN EGGS

The words "RED HEN EGGS," associated with the representation of three hens arranged in a row and a panel bearing the words, letters, and character "RED HEN EGGS G. M. WATTLES & SON."

Ser. No. 15,410. WRITING-PAPER. LOUIS A. LEHMAIER, New York, N. Y. Filed Dec. 14, 1905. Used ten years.

FULTON
LINEN LEDGER

The words "FULTON LINEN LEDGER."

Ser. No. 15,437. PAINTS. TOCH BROTHERS, New York, N. Y. Filed Dec. 15, 1905.

BOAT KOAT

The words "BOAT KOAT."

Ser. No. 15,478. PREPARATIONS FOR CLEANING ENAMELED WARE AND PORCELAIN WARE. WILLIAM COURTNEY MCKENNEY, New Brighton, Pa. Filed Dec. 18, 1905.

Ser. No. 15,478.

PORCELA

The word "PORCELA."

Ser. No. 15,523. BUTTER. THE J. P. BABBIN PRODUCE CO., Winfield, Kans. Filed July 18, 1905.

BERNICE

The word "BERNICE."

Ser. No. 15,646. ELECTRIC-CONDUIT FITTINGS FOR THE BRANCHING OF ELECTRIC WIRES. CROUSE-HINDS COMPANY, Syracuse, N. Y. Filed Dec. 26, 1905.

The representation of a diamond.

Ser. No. 15,647. ELECTRIC-CONDUIT FITTINGS FOR THE BRANCHING OF ELECTRIC WIRES. CROUSE-HINDS COMPANY, Syracuse, N. Y. Filed Dec. 26, 1905.

CONDULET

The word "CONDULET."

PRINTED AND LITHOGRAPHED BY
SACKETT & WILHELMS
LITHOGRAPHING & PRINTING CO.
NEW YORK

TRADE-MARKS

REGISTERED JANUARY 23, 1906.

49,010. WHISKY. S. ALTMAYER, Macon, Ga.
The words "OLD SHARPE WILLIAMS." Used ten years.
Filed May 17, 1905. Serial No. 5,917. PUBLISHED NOVEMBER 28, 1905.

49,011. WHISKY. BLUTHENTHAL & HEILBRONNER, Memphis, Tenn.
The words "PEABODY CLUB" and a monogram composed of the letters and character "B & H" inclosed in a circle.
Filed June 8, 1905. Serial No. 7,672. PUBLISHED NOVEMBER 28, 1905.

49,012. WHISKY. BROWN-FORMAN CO., Louisville, Ky.
The words "OLD FORMAN." Used ten years.
Filed April 1, 1905. Serial No. 116. PUBLISHED NOVEMBER 28, 1905.

49,013. WHISKY. PHILIP FREILER, Elgin, Ill.
The bust-picture of a woman in fanciful costume inclosed in an ornamental circle, associated with the words "BELLE OF NAVARRE."
Filed April 20, 1905. Serial No. 2,337. PUBLISHED NOVEMBER 28, 1905.

49,014. ASPHALT MASTIC. GABRIEL & SCHALL, New York, N. Y.
The word "BRUNSWICK." Used ten years.
Filed April 21, 1905. Serial No. 2,617. PUBLISHED NOVEMBER 28, 1905.

49,015. PORTLAND CEMENT. GERMAN-AMERICAN PORTLAND CEMENT WORKS, Lasalle, Ill.
The word "OWL."
Filed April 20, 1905. Serial No. 2,384. PUBLISHED NOVEMBER 28, 1905.

49,016. WHISKY. MITCHELL, FLETCHER & COMPANY, INCORPORATED, Philadelphia, Pa.
The word "TRAMRICK."
Filed September 25, 1905. Serial No. 12,969. PUBLISHED NOVEMBER 28, 1905.

49,017. WHISKY. M. SHAUGHNESSY DISTILLING COMPANY, St. Louis, Mo.
The words "COAL PORT." Used ten years.
Filed May 19, 1905. Serial No. 6,075. PUBLISHED NOVEMBER 28, 1905.

49,018. GIN. NATIONAL DISTILLING CO., Milwaukee, Wis.
The word "RUBY" and a circle inclosing the capital letter "N" and a spray design, all inclosed in a circular border.
Filed May 25, 1905. Serial No. 6,608. PUBLISHED OCTOBER 17, 1905.

49,019. WHISKY. ALFRED E. NORRIS, Philadelphia, Pa.
The word "TROOPER" and the representation of a trooper mounted on horseback inclosed within a fanciful border, associated with the words, letter, character, and abbreviation "OLD BLENDED RYE WHISKEY ALFRED E. NORRIS & CO. PHILADELPHIA."
Filed May 15, 1905. Serial No. 5,702. PUBLISHED NOVEMBER 28, 1905.

49,020. WHISKY. ROSSKAM, GERSTLEY & CO., Philadelphia, Pa.
The words "OLD SARATOGA." Used ten years.
Filed April 14, 1905. Serial No. 1,484. PUBLISHED NOVEMBER 28, 1905.

49,021. WHISKIES, BOTH RYE AND BOURBON. B. J. SEMMES & CO., Memphis, Tenn.
The words "OLD YANNISSEE WHISKEY," which are arranged above the Coptic word "UZUQ," signifying "Memph." Below said words are the words, letters, character, and abbreviation "DISTILLED ONLY BY B. J. SEMMES & CO.," the whole being arranged on the representation of the head of a barrel. Used ten years.
Filed May 24, 1905. Serial No. 6,448. PUBLISHED NOVEMBER 28, 1905.

49,022. WHISKY. DAVID WISE, Chicago, Ill.
The words "OLD TOM BENTON," associated with the word "WHISKEY" and inclosed in an ornamental circular border. Used ten years.
Filed April 28, 1905. Serial No. 3,371. PUBLISHED NOVEMBER 28, 1905.

49,023. WHISKY. DAVID WISE, Chicago, Ill.
The hyphenated word "AK-SAR-BEN," associated with the firm-name and words "DAVID WISE & CO'S CHICAGO OLD RYE," the whole being inclosed in an ornamental circular border. Used ten years.
Filed April 28, 1905. Serial No. 3,373. PUBLISHED NOVEMBER 28, 1905.

49,024. WHISKY. WRIGHT & TAYLOR, Louisville, Ky.
The words "OLD LOGAN."
Filed April 28, 1905. Serial No. 3,343. PUBLISHED JUNE 20, 1905.

49,025. CAKE-SOAP. A. KLIPSTEIN & COMPANY, New York, N. Y.
The words "SAVON DU CARMEL," associated with sprigs of olive and characters and words in the Hebrew and Arabic languages. Used ten years.
Filed May 24, 1905. Serial No. 6,462. PUBLISHED NOVEMBER 28, 1905.

49,026. STUFFING FOR LEATHER. WILLIAM L. ALEXANDER, Emlenton, Pa.
The representation of a steer's head and the word "STERO" supported above the same by a rope extending between the tips of the horns of the steer's head.
Filed June 16, 1905. Serial No. 8,366. PUBLISHED NOVEMBER 28, 1905.

49,027. ALARM-CLOCKS. ALBERT C. BECKEN, Chicago, Ill.
The word "TORNADO."
Filed October 18, 1905. Serial No. 13,718. PUBLISHED NOVEMBER 28, 1905.

49,028. CLEANING AND RENOVATING COMPOUNDS. COLUMBIA REFINING CO., New York, N. Y.
The word "AMBERZO."
Filed May 11, 1905. Serial No. 5,015. PUBLISHED NOVEMBER 28, 1905.

49,029. PORTLAND CEMENT. DEXTER PORTLAND CEMENT COMPANY, Nazareth, Pa.
The word "DEXTER."
Filed June 6, 1905. Serial No. 7,551. PUBLISHED NOVEMBER 28, 1905.

49,030. POWDERS FOR CLEANING SOLID AND PLATED WARES AND METALS. CHARLES A. EVERETT, Detroit, Mich.
The hyphenated word "ZY-MO" inclosed in a geometrical figure composed of arcs of circles united by parallel lines.
Filed June 16, 1905. Serial No. 8,364. PUBLISHED NOVEMBER 28, 1905.

49,031. PIGMENTS FOR PAINTS. KREBS PIGMENT & CHEMICAL CO., Wilmington, Del.
The word "PONOLITH."
Filed June 10, 1905. Serial No. 7,809. PUBLISHED NOVEMBER 28, 1905.

49,032. WHISKY. CHRIST SANDHEGER, Cincinnati, Ohio.
The words "STONE LICK," associated with the representation of a river scene showing a waterfall and distillery.
Filed April 26, 1905. Serial No. 3,108. PUBLISHED JULY 4, 1905.

49,033. MUCILAGES. THE CARTER'S INK COMPANY, Boston, Mass., and New York, N. Y.
The representation of a box, on the side of which appear the words "THE GREAT STICKIST." On this box is seated a man whose coat has stuck to the box behind him, and on the tail of his coat rests an overturned bottle with a brush beside it. A small boy with upraised hands and an expression of surprise and delight on his face stands behind the man, while a negro in the foreground is pulling the man's arms, evidently with all his strength, as he has one foot braced against the box, and his hat has fallen to the ground beside him. Above this representation appear the words "GREAT STICKIST" inclosed in quotation-marks.
Filed May 26, 1905. Serial No. 6,696. PUBLISHED NOVEMBER 28, 1905.

49,034. INCANDESCENT ELECTRIC LAMPS. THE COLUMBIA INCANDESCENT LAMP CO., St. Louis, Mo.
The word "COLUMBIA." Used ten years.
Filed June 23, 1905. Serial No. 8,861. PUBLISHED NOVEMBER 28, 1905.

49,035. PREPARATION FOR CLEANING AND POLISHING METALS AND GLASS. THE ELECTRO-SILICON CO., New York, N. Y.
The arbitrarily-coined title "ELECTRO-SILICON," arranged in a curved line within two concentric circles and above a smaller circle inclosing the words "OR MAGIC BRILLIANT," and the figure of a woman apparently in the act of polishing a silver pitcher resting upon a table and upon which is shown a reflection of her face.
Filed May 12, 1905. Serial No. 5,369. PUBLISHED NOVEMBER 28, 1905.

49,036. CUT-GLASS WARE. THE O. F. EGGINTON CO., Corning, N. Y.
The representation of a star and crescent in connection with the word "EGGINTON." The star is arranged between the horns of the crescent, and the word "EGGINTON" appears on the latter below the star.
Filed May 29, 1905. Serial No. 7,040. PUBLISHED NOVEMBER 28, 1905.

49,037. WHISKY. THE STAR DISTILLERY COMPANY, Cincinnati, Ohio.
The words "SILVER SPOON."
Filed September 22, 1905. Serial No. 12,907. PUBLISHED NOVEMBER 28, 1905.

49,038. FLUID SOAPS. ARNOLD WOOD, New York, N. Y.
The word "PRESTOCLEAN."
Filed May 20, 1905. Serial No. 6,155. PUBLISHED NOVEMBER 28, 1905.

49,039. PIANOS. HUGO WORCH, Washington, D. C.
The word "CLEMENTI" and a portrait of Muzio Clementi, deceased, inclosed in a wreath.
Filed May 10, 1905. Serial No. 4,937. PUBLISHED NOVEMBER 28, 1905.

49,040. GLOVES. ABRAHAM & STRAUS, New York, N. Y.
The word "YVONNE."
Filed April 18, 1905. Serial No. 2,188. PUBLISHED NOVEMBER 28, 1905.

49,041. PIGMENT COLORS AND COLORED PAINTS. JOHN T. LEWIS & BROS. CO., Philadelphia, Pa.
The word "ARAMINGO."
Filed September 20, 1905. Serial No. 12,829. PUBLISHED NOVEMBER 28, 1905.

49,042. VARNISHES AND JAPANS. MAYER & LOEWENSTEIN, New York, N. Y.
The words "FLINT FILLER."
Filed June 9, 1905. Serial No. 7,724. PUBLISHED NOVEMBER 28, 1905.

49,043. SUSPENDERS. MORRIS BROS., New York, N. Y.
The word "CHAMPION."
Filed August 7, 1905. Serial No. 11,398. PUBLISHED NOVEMBER 28, 1905.

49,044. COTTON DUCK. MOUNT VERNON-WOODBERRY COTTON DUCK COMPANY, Baltimore, Md.
The word "GREENWOODS." Used ten years.
Filed September 11, 1905. Serial No. 12,450. PUBLISHED NOVEMBER 28, 1905.

49,045. OVERALLS AND WORKMEN'S SHIRTS, COATS OR JACKETS, AND PANTS. HARRY S. PETERS, Dover, N. J.
The word "BROTHERHOOD." Used ten years.
Filed June 29, 1905. Serial No. 9,391. PUBLISHED NOVEMBER 28, 1905.

49,046. HATS FOR WOMEN. JOSEPH L. ROSENBERG, New York, N. Y.
The representation of a horseshoe with the words "GOOD LUCK" appearing thereon and the word "THE" in the space confined by said horseshoe.
Filed June 22, 1905. Serial No. 9,300. PUBLISHED NOVEMBER 28, 1905.

49,047. WHISKY. H. SWARTZ & CO., Boston, Mass.
The representation of a golden dome surmounting a pediment on a black background, the words "GOLDEN DOME" being printed in gilt letters upon a red rectangular panel as a background and the whole surrounded by scrollwork in gilt, the said scrollwork being arranged in an irregular figure upon either side of the dome and in a generally rectangular figure beneath the panel.
Filed May 15, 1905. Serial No. 5,678. PUBLISHED NOVEMBER 28, 1905.

49,048. WHISKY. THE STAR DISTILLERY COMPANY, Cincinnati, Ohio.
The word "CLARION."
Filed May 22, 1905. Serial No. 6,287. PUBLISHED OCTOBER 3, 1905.

49,049. WHISKY. DAVID WISE, Chicago, Ill.
The word "CLEARFIELD," associated with the words, firm-name, and address "OLD MONONGAHELA RYE, DAVID WISE & CO., DISTILLERS, CHICAGO" on a rectangular background of contrasting color inclosed by a rectangular outline. Used ten years.
Filed April 28, 1905. Serial No. 3,372. PUBLISHED NOVEMBER 28, 1905.

49,050. OUTER SHIRTS AND DRESS-SHIRTS. CLUETT PEABODY & CO., Troy, N. Y.
The word "MONARCH."
Filed June 28, 1905. Serial No. 9,327. PUBLISHED NOVEMBER 28, 1905.

49,051. THREADS, CHENILLE, AND ARRASENE. HENRY E. FRANKENBERG COMPANY, New York, N. Y.
The word "UTOPIA." Used ten years.
Filed August 21, 1905. Serial No. 11,846. PUBLISHED NOVEMBER 28, 1905.

49,052. SILKS. HENRY E. FRANKENBERG COMPANY, New York, N. Y.
The representation of a winged cupid seated astride a lion and in the act of playing on a lyre. Used ten years.
Filed August 21, 1905. Serial No. 11,851. PUBLISHED NOVEMBER 28, 1905.

49,053. SILK FLOSS OR EMBROIDERY-SILK. INCORPORATED NEW LONDON WASH SILK CO., New London, Conn.
The word "QUINEBAUG."
Filed May 17, 1905. Serial No. 5,886. PUBLISHED NOVEMBER 28, 1905.

49,054. MEN'S AND BOYS' COATS AND OVERCOATS. MAYER, SCHEUER, OFFNER & CO., Cincinnati, Ohio.
The word "STERLING" surrounded by a rectangular serrated border. Used ten years.
Filed July 10, 1905. Serial No. 9,988. PUBLISHED NOVEMBER 28, 1905.

49,055. GELATIN. M. MICHAELIS & SONS New York, N. Y.
The words "GOLDEN FLAKE."
Filed April 29, 1905. Serial No. 3,549 PUBLISHED JULY 18, 1905.

49,056. SHEETINGS AND DRILLINGS. G. L MONTGOMERY, New York, N. Y.
The representation of two Chinese mandarins in native costume, with five Chinese characters appearing above the representation of the two mandarins, which characters, when translated, read "DOUBLE CELESTIAL MANDARIN."
Filed April 24, 1905. Serial No. 2,828. PUBLISHED NOVEMBER 28, 1905.

49,057. ROASTED AND GROUND COFFEE. NEW ORLEANS COFFEE CO., LTD., New Orleans, La.
The words "FRENCH MARKET" upon a panel having a scroll at each end and the representation of a market-building and people and vehicles about the same, the whole representing a French market-scene. Used ten years.
Filed June 15, 1905. Serial No. 8,263. PUBLISHED NOVEMBER 28, 1905.

49,058. DRIED, SMOKED, PICKLED, SALTED, AND CANNED FISH. WILLIAM T. SHUTE, Gloucester, Mass.
The words "GOLD WEDGE."
Filed May 3, 1905. Serial No. 4,076. PUBLISHED NOVEMBER 28, 1905.

49,059. DRIED, PICKLED, SMOKED, SALTED, AND CANNED FISH. WILLIAM T. SHUTE, Gloucester, Mass.
The words "DIAMOND WEDGE."
Filed May 11, 1905. Serial No. 5,063. PUBLISHED NOVEMBER 28 1905.

49,060. DRIED, CANNED, PICKLED, SMOKED, AND SALTED FISH. WILLIAM T. SHUTE, Gloucester, Mass.
The hyphenated word "TID-BITS." Used ten years.
Filed May 11, 1905. Serial No. 5,064. PUBLISHED NOVEMBER 28, 1905.

49,061. CHEWING AND SMOKING TOBACCO. THE BLOCH BROTHERS TOBACCO COMPANY, Wheeling, W. Va.
The representation of a leather mail-pouch and the words "MAIL POUCH."
Filed April 24, 1905. Serial No. 2,852. PUBLISHED NOVEMBER 28, 1905.

49,062. COFFEE. THE G. B. FARRINGTON CO., New York, N. Y.
The word "TOWER" and the representation of a battlemented castle-tower erected upon a natural-rock foundation and showing other towers and turrets in the distance on each side.
Filed June 26, 1905. Serial No. 9,094. PUBLISHED NOVEMBER 28, 1905.

49,063. CROCHET QUILTS. UNION MANUFACTURING COMPANY, Peterboro, N. H.
A monogram composed of the letters "C M."
Filed May 12, 1905. Serial No. 5,287. PUBLISHED NOVEMBER 28, 1905.

49,064. MERCERIZED COTTON FABRICS. CLARENCE WHITMAN & CO., New York, N. Y.
The word "SOIESETTE."
Filed May 6, 1905. Serial No. 4,581. PUBLISHED NOVEMBER 28, 1905.

49,065. COTTON PIECE GOODS. CLARENCE WHITMAN & CO., New York, N. Y.
The representation of two entwined winged serpents having griffon-like heads, with a shuttle interposed between the bodies thereof.
Filed May 6, 1905. Serial No. 4,582. PUBLISHED NOVEMBER 28, 1905.

49,066. SUGAR. BOSTON MOLASSES CO., Boston, Mass.
The word "OSOSWEET."
Filed July 27, 1905. Serial No. 10,911. PUBLISHED NOVEMBER 28, 1905.

49,067. MUSTARD AND SPICES. BROWNELL & FIELD COMPANY, Providence, R. I.
The word "AUTOCRAT."
Filed July 17, 1905. Serial No. 10,427. PUBLISHED NOVEMBER 28, 1905.

49,068. COFFEE. CRESCENT MANUFACTURING CO., Seattle; Wash.
The numerals "99" arranged side by side.
Filed April 27, 1905. Serial No. 3,291. PUBLISHED NOVEMBER 28, 1905.

49,069. GAS OR GASOLENE ENGINES. DETROIT AUTO-MARINE CO., Detroit, Mich.
The compound word "AUTO-MARINE."
Filed April 17, 1905. Serial No. 2,021. PUBLISHED AUGUST 29, 1905.

49,070. SPICES. E. B. MILLAR & CO., Chicago, Ill.
The word "PENANG." Used ten years.
Filed May 20, 1905. Serial No. 6,175. PUBLISHED NOVEMBER 28, 1905.

49,071. CONCRETE WASHTRAYS. ECONOMY MANUFACTURING CO., New Haven, Conn.
The words "CRESCENT CONCRETE TRAY."
Filed September 27, 1905. Serial No. 13,051. PUBLISHED NOVEMBER 28, 1905.

49,072. PROPRIETARY REMEDY FOR DISEASES PECULIAR TO WOMEN. FRENCH DRUG COMPANY, New York, N. Y.
The words and abbreviation "DR. MARTEL'S FRENCH FEMALE PILLS." Used ten years.
Filed June 29, 1905. Serial No. 9,541. PUBLISHED NOVEMBER 28, 1905.

49,073. BOILER-COMPOUNDS. GEO. W. LORD CO., Philadelphia, Pa.
The words "LORD'S BOILER COMPOUNDS."
Filed May 26, 1905. Serial No. 6,735. PUBLISHED NOVEMBER 28, 1905.

49,074. CLOTHS FOR LADIES', MEN'S, AND CHILDREN'S WEAR. GRIFFON COMPANY, New York, N. Y., and Philadelphia, Pa.
The representation of a griffon and the word "GRIFFON."
Filed April 10, 1905. Serial No. 1,039. PUBLISHED NOVEMBER 28, 1905.

49,075. WASHBOARDS. BENJAMIN SUMNER JENKINS, Conklingville, N. Y.
The words "THE SARATOGA SOAP BOX."
Filed October 6, 1905. Serial No. 13,393. PUBLISHED NOVEMBER 28, 1905.

49,076. OLIVE-OIL. MARCHESINI BROS., New York, N. Y.
The representation of a field with foliage and a fence shown in the distance. In the foreground appears the representation of a draped female figure and adjacent thereto the representation of a basket of fruit, beside which is a cupid. At one side of the device appears a tree and above the same the title phrase "OLIO D'OLIVA SOPRAFFINO," the whole inclosed by a plain rectangular border. To the side of said rectangular field appears a circular panel inclosing the representation of three legs united at their upper portions and a cherub arranged at the junction of said united upper portions.
Filed August 7, 1905. Serial No. 11,381. PUBLISHED NOVEMBER 28, 1905.

49,077. COTTON PIECE GOODS. MASSACHUSETTS COTTON MILLS, Lowell, Mass.
The word "OLYMPIA." Used ten years.
Filed May 11, 1905. Serial No. 5,243. PUBLISHED NOVEMBER 28, 1905.

49,078. MOLASSES. MCCANN & CO., New Orleans, La.
The words "CANE FRUIT" surrounded by a wreath of sugar-cane.
Filed May 22, 1905. Serial No. 6,218. PUBLISHED NOVEMBER 28, 1905.

49,079. BURIAL-CASKETS AND CASKET ATTACHMENTS. NATIONAL CASKET CO., Allegheny, Pa.
The word "NACASCO."
Filed October 21, 1905. Serial No. 13,835. PUBLISHED NOVEMBER 28, 1905.

49,080. TEA. SHERMAN BROTHERS AND COMPANY, Chicago, Ill.
The word "SEETA," appearing twice in quotation-marks and associated with the words "CEYLON TEA," and busts of an oriental female, repeated three times, and having a background of palms and mosques. Border-lines also appear.
Filed April 20, 1905. Serial No. 2,330. PUBLISHED NOVEMBER 28, 1905.

49,081. CONDENSED MILK. ST. CHARLES CONDENSING CO., St. Charles, Ill.
The words "SILVER COW" and the representation of a cow, with the word "CONDENSED" arranged in the arc of a circle across the body of the cow and the word "MILK" below the same. Used ten years.
Filed May 27, 1905. Serial No. 6,780. PUBLISHED NOVEMBER 28, 1905.

49,082. COFFEE. THE G. B. FARRINGTON COMPANY, New York, N. Y.
The word "CASTLE" and the representation of a round battlemented tower erected upon a natural-rock foundation, showing other towers or turrets in the distance on each side.

Filed May 8, 1905. Serial No. 4,702. PUBLISHED NOVEMBER 28, 1905.

49,083. CEMENT. THE S. S. WHITE DENTAL MFG. CO., Philadelphia, Pa.; Chicago, Ill.; New York, Brooklyn, and Rochester, N. Y.; Boston, Mass.; Atlanta, Ga.; New Orleans, La.; Toronto, Canada; Buenos Ayres, Argentina; Berlin, Germany, and St. Petersburg, Russia.
The word "ZINCOID."
Filed September 21, 1905. Serial No. 12,859. PUBLISHED NOVEMBER 28, 1905.

49,084. LATHES. THE S. S. WHITE DENTAL MFG. CO., Philadelphia, Pa.; Chicago, Ill.; New York, Brooklyn, and Rochester, N. Y.; Boston, Mass.; Atlanta, Ga.; New Orleans, La.; Toronto, Canada; Buenos Ayres, Argentina; Berlin, Germany, and St. Petersburg, Russia.
The word "UNIQUE."
Filed September 21, 1905. Serial No. 12,870. PUBLISHED NOVEMBER 28, 1905.

49,085. POWDER FOR DRYING THE HAIR. WALDEYER & BETTS, New York, N. Y.
The letters and character "W. & B." inclosed in quotation-marks.
Filed May 6, 1905. Serial No. 4,570. PUBLISHED NOVEMBER 28, 1905.

49,086. COD-LIVER OIL. WATERBURY CHEMICAL COMPANY, Des Moines, Iowa.
The words and abbreviations "WATERBURY CHEMICAL CO., DES MOINES, IA." in the facsimile handwriting of Frank Waterbury, the president of the applicant corporation.
Filed April 17, 1905. Serial No. 2,073. PUBLISHED NOVEMBER 28, 1905.

49,087. CANNED FISH, CLAMS, AND OYSTERS. R. C. WILLIAMS & Co., New York, N. Y.
The words "ROYAL SCARLET," associated with the representation of a seal placed at the intersection of two crossed ribbons and having thereon a shield bearing a winged dial.
Filed July 1, 1905. Serial No. 9,562. PUBLISHED NOVEMBER 28, 1905.

49,088. BAKING-POWDER. SAMUEL W. WILLIAMS, Harriman, Tenn.
The words "BLUE SEAL," associated with the representation of a seal bearing said words and having a tape projecting therefrom and inclosed by an angular border, the whole being printed in blue.
Filed September 21, 1905. Serial No. 12,890. PUBLISHED NOVEMBER 28, 1905.

49,089. RAILWAY-TRACK BOLTS. AMERICAN IRON & STEEL M'F'G CO., Lebanon and Reading, Pa.
The words "HARVEY GRIP." Used ten years.
Filed May 23, 1905. Serial No. 6,365. PUBLISHED NOVEMBER 28, 1905.

49,090. WIRE NAILS. CHARLES F. BAKER & CO., Boston, Mass.
The representation of two interlocked nails. Used ten years.
Filed May 24, 1905. Serial No. 6,455. PUBLISHED NOVEMBER 28, 1905.

49,091. LEATHER BOOTS. BRADLEY & METCALF COMPANY, Milwaukee, Wis.
The words "COUSIN JACK."
Filed April 10, 1905. Serial No. 1,034. PUBLISHED OCTOBER 31, 1905.

49,092. HORSE-CLIPPERS. CHICAGO FLEXIBLE SHAFT COMPANY, Chicago, Ill.
The numerals, letters, and word "20TH CENTURY."
Filed June 5, 1905. Serial No. 7,477. PUBLISHED NOVEMBER 28, 1905.

49,093. CHAINS. DIAMOND CHAIN AND MANUFACTURING COMPANY, Indianapolis, Ind.
The word "DIAMOND."
Filed June 24, 1905. Serial No. 8,974. PUBLISHED NOVEMBER 28 1905.

49,094. GLOVES. FOWNES BROTHERS & Co., London, England.
The word "FOWNES." Used ten years.
Filed June 17, 1905. Serial No. 8,443. PUBLISHED NOVEMBER 28, 1905.

49,095. CHOCOLATE CONFECTIONERY. E. GREENFIELD'S SON & Co., New York, N. Y.
The word "GREENFIELD'S." Used ten years.
Filed August 12, 1905. Serial No. 11,563. PUBLISHED NOVEMBER 28, 1905.

49,096. VETERINARY REMEDY. OSMOND O. HATTERVIG, Viborg, S. D.
The word "DEHORNDINE" and the representation of a calf and two men and a cow and two men, one of the men appearing leading the calf and another man standing adjacent to said first man and holding a cup in one hand and a bucket in the other, another man appearing as tying the cow to a post, and another man standing near the cow and holding a cup in one hand and a bucket in the other.
Filed June 21, 1905. Serial No. 8,682. PUBLISHED NOVEMBER 28, 1905.

49,097. CANDIES. HAWLEY & HOOPS, New York, N. Y.
The words "EMPIRE STATE." Used ten years.
Filed April 5, 1905. Serial No. 473. PUBLISHED NOVEMBER 28, 1905.

49,098. MEDICINE. A. H. KELLER, Sioux Falls, S. D.
The word "ALVINO."
Filed June 16, 1905. Serial No. 8,324. PUBLISHED NOVEMBER 28, 1905.

49,099. WAGONS. MOLINE WAGON COMPY., Moline, Ill.
The word "MOLINE." Used ten years.
Filed October 11, 1905. Serial No. 13,481. PUBLISHED NOVEMBER 28, 1905.

49,100. ELECTRICAL APPLIANCES. THE HART MANUFACTURING COMPANY, Hartford, Conn.
The representation of a diamond-shaped figure inclosing the letter "H."
Filed May 23, 1905. Serial No. 6,356. PUBLISHED NOVEMBER 28, 1905.

49,101. DYES AND DYESTUFFS. THE JOHNSON-RICHARDSON CO., LIMITED, Montreal, Canada.
The hyphenated word "DY-O-LA."
Filed May 8, 1905. Serial No. 4,671. PUBLISHED NOVEMBER 28, 1905.

49,102. CANDY. THE MURBACH COMPANY, Baltimore, Md.
The words "SMART SET SWEETS," associated with the letters "S. S. S."
Filed October 26, 1905. Serial No. 13,952. PUBLISHED NOVEMBER 28, 1905.

49,103. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.
The word "SQUEEZERS." Used ten years.
Filed May 2, 1905. Serial No. 3,953. PUBLISHED NOVEMBER 28, 1905.

49,104. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.
The word "HUSTLER." Used ten years.
Filed May 2, 1905. Serial No. 3,955. PUBLISHED NOVEMBER 28, 1905.

49,105. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.
The word "MONTANA." Used ten years.
Filed May 2, 1905. Serial No. 3,960. PUBLISHED NOVEMBER 28, 1905.

49,106. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.
The word "MASCOTTE." Used ten years.
Filed May 5, 1905. Serial No. 4,312. PUBLISHED NOVEMBER 28, 1905.

49,107. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.
The word "BEE" inclosed in quotation-marks. Used ten years.
Filed May 5, 1905. Serial No. 4,314. PUBLISHED NOVEMBER 28, 1905.

49,108. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.
The word "CROWN." Used ten years.
Filed May 5, 1905. Serial No. 4,322. PUBLISHED NOVEMBER 28, 1905.

49,109. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.
The word "CORAL."
Filed May 11, 1905. Serial No. 5,005. PUBLISHED NOVEMBER 28, 1905.

49,110. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.
The word "CROW."
Filed May 11, 1905. Serial No. 5,006. PUBLISHED NOVEMBER 28, 1905.

49,111. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.
The words and interrogation-point "ARE YOU A BUFFALO?"
Filed June 27, 1905. Serial No. 9,242. PUBLISHED NOVEMBER 28, 1905.

49,112. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio.
The words "FLORAL SERIES."
Filed April 15, 1905. Serial No. 1,808. PUBLISHED NOVEMBER 28, 1905.

49,113. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio.
The words "FASHION SERIES."
Filed April 15, 1905. Serial No. 1,810. PUBLISHED NOVEMBER 28, 1905.

49,114. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio.
The word "CAPITOL."
Filed May 4, 1905. Serial No. 4,247. PUBLISHED NOVEMBER 28, 1905.

49,115. CHOCOLATES. VAN EMDEN COCOA CO., San Francisco, Cal.
The word "KNAPSACK."
Filed October 23, 1905. Serial No. 13,869. PUBLISHED NOVEMBER 28, 1905.

49,116. COUGH-DROPS. AARON D. WORK, Jamestown, N.Y.
The letters "E AND M," with the connective word "AND" between the letters printed in red.
Filed July 17, 1905. Serial No. 10,449. PUBLISHED NOVEMBER 28, 1905.

49,117. RIVET AND SCREW BOLTS. AMERICAN IRON & STEEL M'F'G CO., Lebanon and Reading, Pa.
The letter "S."
Filed May 23, 1905. Serial No. 6,363. PUBLISHED NOVEMBER 28, 1905.

49,118. ALTERATIVE MEDICINE. BILLINGS CLAPP COMPANY, Boston, Mass.
The words "IODIDE OF LIME." Used ten years.
Filed May 24, 1905. Serial No. 6,506. PUBLISHED NOVEMBER 28, 1905.

49,119. TOILET POWDER. BYRON C. GOULD INC., New York, N. Y.
The hyphenated word "BY-LO" written in script.
Filed June 27 1905. Serial No. 9,138. PUBLISHED NOVEMBER 28, 1905.

49,120. MACHINES FOR MAKING CONCRETE BUILDING-BLOCKS. CEMENT MACHINERY CO., Jackson, Mich.
The pictorial representation of a concrete-building-block machine, a finished concrete block thereon, and the phrase "SIMPLICITY THE HIGHEST ART OF INVENTION," associated with a picture of the machine, and all inclosed within an ornamental border.
Filed June 28, 1905. Serial No. 9,333. PUBLISHED NOVEMBER 28, 1905.

49,121. MACHINES FOR MAKING CONCRETE BUILDING-BLOCKS. CEMENT MACHINERY CO., Jackson, Mich.
The words "NOR DIN," with an interposed figure of a workman, and a machine for making concrete building-blocks showing behind the man, and building-blocks at either side of and adjacent to his feet, all inclosed in a diamond-shaped figure having a border of contrasting color.
Filed June 28, 1905. Serial No. 9,335. PUBLISHED NOVEMBER 28 1905.

49,122. LEAD-PENCILS. EAGLE PENCIL COMPANY, New York, N. Y.
The word "DRAUGHTING." Used ten years.
Filed September 1, 1905. Serial No. 12,885. PUBLISHED NOVEMBER 28, 1905.

49,123. WEEKLY NEWSPAPER. CURTIS GUILD & Co., Boston, Mass.
The words "THE COMMERCIAL BULLETIN."
Filed June 29, 1905. Serial No. 9,400. PUBLISHED NOVEMBER 28, 1905.

49,124. LEATHER SHOES. J. P. HARTRAY SHOE CO., Chicago, Ill.
The word "KINDERGARTEN."
Filed May 22 1905. Serial No. 6,341. PUBLISHED NOVEMBER 28, 1905.

49,125. LEATHER BOOTS AND SHOES. JOHN W. RUSS COMPANY, Haverhill, Mass.
The figure of a man in the dress of an ancient Roman seated within a structure, at the top portion of which is a horizontal bar bearing the word "DICTATOR" and resting at each end upon a plain column. The figure of the man is represented with the left hand resting upon the hilt of a sword, and a shield stands at his right hand. Back of the features above described is a square panel of contrasting color so arranged as to form a diamond-shaped background.
Filed June 7, 1905. Serial No. 7,570. PUBLISHED NOVEMBER 28, 1905.

49,126. METAL BEDSTEADS. MARION IRON & BRASS BED CO., Marion, Ind.
The word "SANITAIRE."
Filed April 28, 1905. Serial No. 3,518. PUBLISHED NOVEMBER 28, 1905.

49,127. LEATHER BOOTS, SHOES, AND SLIPPERS, AND LEATHER THEREFOR. PACKARD & FIELD, Brockton, Mass.
The word "BURROJAPS."
Filed May 27, 1905. Serial No. 6,808. PUBLISHED NOVEMBER 28, 1905.

49,128. HARNESS, SADDLES, COLLARS, AND BRIDLES. PADUCAH SADDLERY COMPANY, INCORPORATED, Paducah, Ky.
A full-length picture of an Indian in war attire near the center of an oval-shaped figure having a border of scrollwork and inclosing a series of intersecting diamond-shaped figures.
Filed July 28, 1905. Serial No. 10,971. PUBLISHED NOVEMBER 28, 1905.

49,129. REMEDY FOR BLOOD AND NERVE DISEASES. PERCY REGINALD PALETHORPE, Louisville, Ky.
The word "CANDOIDS" inclosed in quotation-marks.
Filed May 3, 1905. Serial No. 4,222. PUBLISHED NOVEMBER 28, 1905.

49,130. ART-LITHOGRAPHS. RAPHAEL TUCK AND SONS CO. LTD., New York, N. Y.
The representation of an easel supporting a panel on which is placed a monogram of the letters and sign "R T & S," a palette being arranged below the panel and brushes extending through the thumb-opening of the palette, the words "ARTISTIC SERIES" being placed on the palette. Used ten years.
Filed May 10, 1905. Serial No. 4,930. PUBLISHED NOVEMBER 28, 1905.

49,131. LATHER-BRUSHES. RUBBER & CELLULOID HARNESS TRIMMING CO., Newark, N. J.
The words "BLUE RIBBON."
Filed May 15, 1905. Serial No. 5,755. PUBLISHED NOVEMBER 28, 1905.

49,132. PAPER-CLIPS. THE CUSHMAN & DENISON MANUFACTURING COMPANY, New York, N. Y.
The word "PINCH."
Filed September 22, 1905. Serial No. 12,906. PUBLISHED NOVEMBER 28, 1905.

49,133. WOODEN BOXES. THE NEW ENGLAND BOX CO. Greenfield, Mass.
The words "YANKEE NESTS."
Filed October 12, 1905. Serial No. 13,517. PUBLISHED NOVEMBER 28, 1905.

49,134. DENTAL VARNISH. THE S. S. WHITE DENTAL MFG. CO., Philadelphia, Pa.; Chicago, Ill.; New York, Brooklyn, and Rocheater, N. Y.; Boston, Mass.; Atlanta, Ga.; New Orleans, La.; Toronto, Canada; Buenos Ayres, Argentina; Berlin, Germany, and St. Petersburg, Russia.
The word "IMPERIAL."
Filed September 21, 1905. Serial No. 12,858. PUBLISHED NOVEMBER 28, 1905.

49,135. LINIMENT. LOUISA TOBIAS, executrix of Dr. S. I. Tobias, deceased,, New York, N. Y.

A facsimile of the signature of S. I. Tobias, associated with the following: "PRICE REDUCED TO 25 CENTS. ENTERED ACCORDING TO ACT OF CONGRESS, IN THE YEAR 1859, BY S. I. TOBIAS IN THE CLERK'S OFFICE OF THE DISTRICT COURT OF THE UNITED STATES FOR THE SOUTHERN DISTRICT OF NEW YORK," and arranged in a fanciful rectangular border are the words, abbreviation, numerals and characters "VENETIAN LINIMENT, PREPARED BY DR. TOBIAS, 40 MURRAY STREET, NEW YORK, WARRANTED TO CURE CHOLERA, COLIC, DYSENTERY, RHEUMATISM, SWELLINGS, TOOTHACHE, PAINS IN THE LIMBS, HEADACHE, BURNS, SPRAINS, CUTS, COUGHS, MOSQUITO-BITES, &C., &C." Outside the border are the words "USE THE GREAT COUGH REMEDY, DR. TOBIAS' PULMONIC LIFE SYRUP."

Filed May 24, 1905. Serial No. 6,534. PUBLISHED OCTOBER 10, 1905.

49,136. RUBBER FOR DENTAL PURPOSES. TRAUN RUBBER CO., New York, N. Y.

The representation of a man in the act of throwing stones, the lower limbs of said man terminating in snakes.

Filed June 27, 1905. Serial No. 9,280. PUBLISHED NOVEMBER 28, 1905.

49,137. REMEDY FOR CERTAIN NAMED DISEASES. WILLIAM R. WARNER & CO., Philadelphia, Pa.

The words "ELIXIR SALICYLIC COMP." Used ten years.

Filed May 6, 1905. Serial No. 4,561. PUBLISHED NOVEMBER 28, 1905.

49,138. HARNESS AND SADDLERY LEATHER. W. W. MOONEY & SONS, INCORPORATED, Columbus, Ind.

The word "MOONEY." Used ten years.

Filed May 20, 1905. Serial No 6,170. PUBLISHED NOVEMBER 28, 1905.

49,139. WIRE ROPES. A. LESCHEN & SONS ROPE CO., St. Louis, Mo.

The word "HERCULES" inclosed in quotation-marks.

Filed May 17, 1905. Serial No. 5,884 PUBLISHED NOVEMBER 28, 1905.

49,140. MANUFACTURED COLORS FOR PRINTING AND DYEING. AMERICAN DYEWOOD COMPANY, Philadelphia, Pa.

The word "TETRAZODE."

Filed May 12. 1905. Serial No. 5,327. PUBLISHED NOVEMBER 28, 1905.

49,141. STEAM AND WATER PACKING. AMERICAN STEAM PACKING COMPANY, Boston, Mass.

The representation of the head of an American Indian in full head-dress surrounded by a circular border and associated with the words "THE ORIGINAL AMERICAN."

Filed July 3, 1905. Serial No. 9,748. PUBLISHED NOVEMBER 28, 1905.

49,142. HARROWS AND CULTIVATORS. ATLANTA AGRICULTURAL WORKS, Atlanta, Ga.

The words "LITTLE JOE."

Filed June 29, 1905. Serial No. 9,395. PUBLISHED NOVEMBER 28, 1905.

49,143. SMALL ROUND CANDIES OF VARIOUS FLAVORS. D. AUERBACH & SONS, New York, N. Y.

The words "LEMONADE DROPS" in shaded block letters.

Filed June 30, 1905. Serial No. 9,510. PUBLISHED NOVEMBER 28, 1905.

49,144. ANVILS. CARL F. BOKER, New York, N. Y.

The word "TRENTON" arranged within a diamond-shaped figure. Used ten years.

Filed May 15, 1905. Serial No. 5,681. PUBLISHED NOVEMBER 28, 1905.

49,145. CATARRH CURE. FRANK J. CHENEY, Toledo, Ohio.

The words "HALL'S CATARRH CURE." Used ten years.

Filed June 26, 1905. Serial No. 9,049. PUBLISHED NOVEMBER 28, 1905.

49,146. PILLS. FRANK J. CHENEY, Toledo, Ohio.

The words "HALL'S FAMILY PILLS." Used ten years.

Filed June 26, 1905. Serial No. 9,050. PUBLISHED NOVEMBER 28, 1905.

49,147. ANTISEPTIC, PROPHYLACTIC DISINFECTANTS, AND PARASITICIDES. COLYTICINE CHEMICAL CO., St. Louis, Mo.

The word "COLYTICINE."

Filed April 28, 1905. Serial No. 3,514. PUBLISHED AUGUST 22, 1905.

49,148. COTTON PIECE GOODS. MARTIN I. COOLEY, New York, N. Y.

The word "PLANTATION."

Filed July 3, 1905. Serial No. 9,749. PUBLISHED NOVEMBER 28, 1905.

49,149. VERMIFUGE. B. A. FAHNESTOCK CO., Pittsburg, Pa.

A portrait of B. A. Fahnestock, deceased, surrounded by a wreath, below which is an oval die, in which are the letters and word "B. A. FAHNESTOCK'S." At one side of the said oval is the representation of a niche containing a standing female figure representing a mother administering medicine to her sick child. On the other side in a similar niche is a standing figure of Esculapius holding in his arms a child in full health. At each of the upper corners to the right and left of the portrait, is an oval rosette, the intervening space being filled with ornamental scrollwork. At the bottom is a panel containing the word "VERMIFUGE" and ornamental scrollwork.

Filed May 12, 1905. Serial No. 5,868. PUBLISHED NOVEMBER 28, 1905.

49,150. STEAM AND HOT-WATER HEATERS AND RADIATORS. GURNEY HEATER MANUFACTURING COMPANY Boston, Mass.

The word "GURNEY." Used ten years.

Filed May 31, 1905 Serial No. 7,084. PUBLISHED NOVEMBER 28, 1905.

49,151. LEATHER BOOTS AND SHOES. GUTHMANN, CARPENTER & TELLING Chicago, Ill.

The facsimile signature of John Telling, deceased. Used ten years.

Filed May 8, 1905. Serial No. 4,645. PUBLISHED NOVEMBER 28, 1905.

49,152. WITHDRAWN.

49,153. LEATHER BOOTS AND SHOES. HINE & LYNCH, Poughkeepsie, N. Y.

The word "GERMANIA."

Filed May 11, 1905. Serial No. 5,128. PUBLISHED OCTOBER 3, 1905.

49,154. MALT TONIC. INDEPENDENT BREWING ASS'N, Chicago, Ill.

The representation of a female in conventional nurse's garb and carrying a small waiter, on which are a bottle and a glass. On the apron of the figure are printed the words "I BRING YOU HEALTH."

Filed April 13, 1905. Serial No. 1,346. PUBLISHED NOVEMBER 28, 1905.

49,155. HATCHETS, AXES, AND ADZES. JAMES C. LINDSAY HARDWARE CO., Pittsburg, Pa.

The words "TRUE BLUE."

Filed April 13, 1905. Serial No. 1,411. PUBLISHED NOVEMBER 28, 1905.

49,156. PROPRIETARY MEDICINE. DR. KILMER & CO., Binghamton, N. Y.

The words "SWAMP-ROOT." Used ten years.

Filed July 31, 1905. Serial No. 11,024. PUBLISHED NOVEMBER 28, 1905.

49,157. CHOCOLATE. KNICKERBOCKER CHOCOLATE COMPANY, New York, N. Y.

The representation of two ovals with their long axes in a common line, in one of which ovals is the numeral "16" and in the other of which are the word "TO" and the numeral "1."

Filed October 19, 1905. Serial No. 13,758. PUBLISHED NOVEMBER 28, 1905.

49,158. GINGER ALE. LUYTIES BROTHERS, New York, N. Y.

The words "GOLDEN ARROW" separated by the representation of an arrow placed horizontally.

Filed July 13, 1905. Serial No. 10,239. PUBLISHED NOVEMBER 28, 1905.

49,159. RUBBER HEELS AND SOLES. MASSACHUSETTS CHEMICAL COMPANY, Boston, Mass.

The words "CAT'S PAW."

Filed May 19, 1905. Serial No. 6,073. PUBLISHED NOVEMBER 28, 1905.

49,160. SOLUBLE THIOSINAMINE COMPOUND FOR MEDICINAL USE. E. MERCK, Darmstadt, Germany.

The word "FIBROLYSIN."

Filed May 12, 1905. Serial No. 5,364. PUBLISHED NOVEMBER 28, 1905.

49,161. BOOTS, SHOES, AND SLIPPERS, AND SOLES THEREFOR. MORSE & ROGERS, New York, N. Y.

The word "MERCURY."

Filed June 27, 1905. Serial No. 9,157. PUBLISHED NOVEMBER 28, 1905.

49,162. CASKETS, COFFINS, AND FIXTURES THEREFOR. NATIONAL CASKET CO., New York, N. Y.

A circular band overlying a portion of the spurs of a five-pointed star, in the center of which appears a triangle inclosing the letter "N." Upon the band appear the words, abbreviation, and figures "NATIONAL CASKET CO. 1890." Behind the band and star are shown portions of two flags, above which and upon the band an eagle rests with outstretched wings. In the background, at the left, an angel draped and soaring is shown bearing outstretched in the right hand a palm-leaf with streamers. In the background, at the right, appears the representation of a portion of the National Capitol, whereof the base is shrouded in clouds.

Filed July 28, 1905. Serial No. 10,974. PUBLISHED NOVEMBER 28, 1905.

49,163. STEEL. PARK STEEL COMPANY, Pittsburg, Pa.

The words "BLACK IMP," associated with the representation of an imp seated upon a trident and inclosed within a circle.

Filed May 13, 1905. Serial No. 5,475. PUBLISHED NOVEMBER 28, 1905.

49,164. STEEL. PARK STEEL COMPANY, Pittsburg, Pa.

The word "ACME."

Filed May 13, 1905. Serial No. 5,478. PUBLISHED NOVEMBER 28, 1905.

49,165. HAY-BALING PRESSES. SANDWICH MANUFACTURING CO., Sandwich, Ill.

The words "THE NEW WAY PRESS."

Filed June 2, 1905. Serial No. 7,217. PUBLISHED NOVEMBER 28, 1905.

49,166. RAZORS. GEORGE R. SPRINGER, Kansas City, Mo.

The words "THE MARK."

Filed April 25, 1905. Serial No. 2,997. PUBLISHED NOVEMBER 28, 1905.

49,167. AXES, HATCHETS, AND ADZES. SUPPLEE HARDWARE CO., Philadelphia, Pa.

The words "OLD HICKORY" and the representation of a bust-portrait of Andrew Jackson, a former President of the United States, a medallion inclosing the same, and a scroll-shaped figure and the words "INFLEXIBLE, INVINCIBLE, LIKE MAN LIKE AXE."

Filed October 21, 1905. Serial No. 13,832. PUBLISHED NOVEMBER 28, 1905.

49,168. STEEL SHOVELS, SCOOPS, AND SPADES. THE AVERY STAMPING COMPANY, Cleveland, Ohio.

The hyphenated word "KNOCKS-ALL" inclosed in quotation-marks.

Filed June 22, 1905. Serial No. 8,784. PUBLISHED NOVEMBER 28, 1905.

49,169. CANDY. THE BRADLEY SMITH & CO., New Haven, Conn.

The words "SATIN PUFFS." Used ten years.

Filed June 27, 1905. Serial No. 9,216. PUBLISHED NOVEMBER 28, 1905.

49,170. LARD AND LARD COMPOUND. THE CUDAHY PACKING COMPANY, Chicago, Ill., and South Omaha, Nebr.

The words "WHITE RIBBON."

Filed May 23, 1905. Serial No. 6,375. PUBLISHED NOVEMBER 28, 1905.

49,171. NATURAL MINERAL WATER. THE MANITOU MINERAL SPRINGS COMPANY, Manitou, Colo.

A representation of the upper part of the body of an Indian rising above the clouds, with the setting sun in the background, the Indian holding a glass in one hand and a pipe in the other. Used ten years.

Filed April 28, 1905. Serial No. 3,421. PUBLISHED NOVEMBER 28, 1905.

49,172. INSULATING-TAPE. THE STANDARD PAINT COMPANY, New York, N. Y.

The representation of a peacock with his tail spread out within a circle, in which also appear the letters "S P C." This is surrounded by a black ring on which appears at the top the word "PEACOCK."

Filed October 18, 1905. Serial No. 13,715. PUBLISHED NOVEMBER 28, 1905.

49,173. NIPPERS, PINCERS, AND CUTTING-PLIERS. UTICA DROP FORGE & TOOL COMPANY, Utica, N. Y.

A representation of three oblong links surrounding the letters "U" "TI" and "CA."

Filed May 15, 1905. Serial No. 5,631. PUBLISHED NOVEMBER 28, 1905.

49,174. BOND-PAPER. W. E. WROE & COMPANY, Chicago, Ill.

The word "CONSTRUCTION," below which is a shovel crossing a pickax.

Filed April 24, 1905. Serial No. 2,832. PUBLISHED NOVEMBER 28, 1905.

49,175. CARTRIDGES. WINCHESTER REPEATING ARMS CO. New Haven, Conn.

The letters "S. L."

Filed October 2, 1905. Serial No. 13,181. PUBLISHED NOVEMBER 28, 1905.

49,176. HARNESS AND SADDLERY LEATHER. W. W. MOONEY & SONS, INCORPORATED, Columbus, Ind.

The facsimile signature "W. W. MOONEY & SONS" as written by William A. Mooney.

Filed May 20, 1905. Serial No. 6,167. PUBLISHED NOVEMBER 28, 1905.

49,177. HARNESS AND SADDLERY LEATHER. W. W. MOONEY & SONS, INCORPORATED, Columbus, Ind.

The words "PURE OAK." Used ten years.

Filed May 20, 1905. Serial No. 6,169. PUBLISHED NOVEMBER 28, 1905.

49,178. REMEDY FOR CERTAIN NAMED DISEASES. X-ZALIA CORPORATION, Boston, Mass.

The hyphenated word "X-ZALIA," associated with the representation of a plant known as the "cat-tail flag."

Filed July 11, 1905. Serial No. 10,062. PUBLISHED NOVEMBER 28, 1905.

LABELS

REGISTERED JANUARY 23, 1906

12,614.—*Title:* "RATTLE-SNAKE OIL LINIMENT." (For a Liniment.) MASONS MEDICAL CO., Boston, Mass. Filed December 2, 1905.

12,615.—*Title:* "CAPILERBA." (For Hair-Restorer.) CONRAD J. HUGEL, Chicago, Ill. Filed November 25, 1905.

12,616.—*Title:* "HYDRARG-NUCLEOID." (For Medicine.) DINET & DELFOSSE PHARMACAL CO., Chicago, Ill. Filed December 26, 1905.

12,617.—*Title:* "HYDRARG-IODO-NUCLEOID." (For Medicine.) DINET & DELFOSSE PHARMACAL CO., Chicago, Ill. Filed December 26, 1905.

12,618.—*Title:* "BODY BUILDERS." (For Medicine.) BODY BUILDERS MEDICINE COMPANY, Binghamton, N. Y. Filed June 7, 1905.

12,619.—*Title:* "EL SAZONADO." (For Cigars.) A. C. HENSCHEL & Co., Chicago, Ill. Filed December 20, 1905.

12,620.—*Title:* "AMBROSIA SWEET CHOCOLATE." (For Chocolate.) AMBROSIA CHOCOLATE COMPANY, Milwaukee, Wis. Filed December 26, 1905.

12,621.—*Title:* "AMBROSIA ANGEL'S FOOD SWEET VANILLA CHOCOLATE." (For Chocolate.) AMBROSIA CHOCOLATE COMPANY, Milwaukee, Wis. Filed December 26, 1905.

12,622.—*Title:* "AMBROSIA PURE COCOA." (For Cocoa.) AMBROSIA CHOCOLATE COMPANY, Milwaukee, Wis. Filed December 26, 1905.

12,623.—*Title:* "KAR-A-VAN." (For Coffee.) THE GASSER COFFEE CO., Toledo, Ohio. Filed December 22, 1905.

12,624.—*Title:* "KAR-A-VAN." (For Coffee.) THE GASSER COFFEE CO., Toledo, Ohio. Filed December 22, 1905.

12,625.—*Title:* "OLD BEN FRANKLIN." (For Coffee.) HARVEY H. PALMER, New York, N. Y. Filed December 20, 1905.

12,626.—*Title:* "BLUE WING RYE WHISKEY." (For Rye Whisky.) C. H. WITTENBERG DIST'G CO., St. Louis, Mo. Filed December 26, 1905.

12,627.—*Title:* "FROST KING WHISKEY." (For Whisky.) KAMP DISTILLING CO., St. Louis, Mo. Filed December 28 1905.

12,628.—*Title:* "SEROCO WHISKEY." (For Whisky.) WILLIAM V. WEXBERG, Chicago, Ill. Filed December 26, 1905.

12,629.—*Title:* "MCTAGUE'S SHELL FISH CHILI SAUCE." (For Chili-Sauce.) TRIUMPH CATSUP & PICKLE CO., East St. Louis, Ill. Filed December 20, 1905.

12,630.—*Title:* "OUTING BRAND CALIFORNIA PEACHES." (For California Peaches.) CASTLE BROTHERS, INCORPORATED, San Francisco, Cal. Filed December 27, 1905.

12,631.—*Title:* "ALMOND COLD CREAM LA FAVORITA." (For Cold-Cream.) JACOBUS PHARMACAL CO., Chicago, Ill. Filed December 26, 1905.

12,632.—*Title:* "TUBS." (For Pulverized Scouring-Soap.) M. H. FAIRCHILD & BRO., Chicago, Ill. Filed December 21, 1905.

PRINTS

REGISTERED JANUARY 23, 1906

1,562.—*Title:* "AYER'S CHERRY DENTIFRICE." (For Cherry Dentifrice.) AYER MEDICAL COMPANY, New York, N. Y. Filed November 16, 1905.

1,563.—*Title:* "MRS. HORD'S COLONIAL PICKLE." (For Pickle.) ANNIE GRAY HORD, near Nashville, Tenn. Filed December 13, 1905.

1,564.—*Title:* "THE SIGN OF THE GOOD GLOVE." (For Gloves and Mittens.) THE JOSEPH N. EISENDRATH COMPANY, Chicago, Ill. Filed December 28, 1905.

1,565.—*Title:* "MILL WORK." (For Wood Millwork Articles.) JOHN L. WALROLE, Portland, Oreg. Filed December 4, 1905.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

W. A. GAINES AND COMPANY v. C. A. KNECHT AND SON.

Decided December 18, 1905.

1. TRADE-MARKS—LACK OF IDENTITY—"RAVEN VALLEY" AND "OLD CROW."

Registration of a mark consisting of the words "Raven Valley" and the representation of three ravens is not to be refused because of the prior use by another of the words "Old Crow" and the picture of a crow. The marks are not so nearly alike as to deceive purchasers.

2 SAME—OPPOSITION—SUFFICIENCY OF ANSWER.

Where opposition is made to the registration of a trade-mark and the applicant is called upon to make answer within a certain time and he does within that time file a paper entitled a demurrer, setting forth reasons which the Office regards as sufficient for dismissing the opposition, *Held* that he has complied with the Office requirement for an answer.

3. SAME—SAME—PLEADINGS—TECHNICAL FORMS NOT INSISTED UPON.

Technical and refined objections to the form of pleadings in trade-mark oppositions will not be sustained. It is sufficient if the parties present to the Office the material which will enable it to properly dispose of the case on its merits, and it is not necessary to insist upon technical forms.

4. SAME—CONSTITUTIONALITY OF ACT OF 1905—MATTER FOR COURTS.

The question whether the Trade-Mark Act of February 20, 1905, is unconstitutional will not be entertained or determined by the Patent Office, but will be left for determination by the courts. The Office will perform the duties imposed by the act, leaving to the courts the question as to the validity of the registrations made thereunder.

APPEAL from Examiner of Interferences.

TRADE-MARK FOR WHISKY.

Mr. James L. Hopkins and *Mr. John S. Barker* for W. A. Gaines and Company.

Mr. Arthur E. Wallace for C. A. Knecht and Son.

ALLEN, *Commissioner:*

This is an appeal by W. A. Gaines and Company from the decision of the Examiner of Trade-Marks dismissing their opposition to the registration of the trade-mark claimed by C. A. Knecht and Son.

The opposition was based upon the allegation that W. A. Gaines and Company are the owners of a trade-mark so nearly resembling the applicants' mark that the latter would deceive the public and mislead purchasers. On June 28 the applicants were called upon to file an answer to the notice of opposition on or before July 28, 1905. On July 24 the applicants filed a paper entitled a demurrer, alleging that the notice of opposition sets forth no sufficient reasons for refusing their application for registration. The Examiner of Interferences sustained this contention and entered judgment dismissing the opposition. W. A. Gaines and Company thereupon filed this appeal.

In support of the appeal it is urged, first, that judgment should have been entered in favor of W. A. Gaines and Company because of the applicants' failure to answer and that in the absence of an answer the demurrer should have been stricken from the files; second, that the Trade-Mark Act under which the applicants C. A. Knecht and Son seek registration is unconstitutional and void; third, that the Examiner was wrong in sustaining the demurrer on the ground that the marks claimed by the respective parties are not substantially the same.

In regard to the first question, it is to be noted that the applicants did file a paper in answer to the opposition within the time fixed by this Office and in that paper set forth reasons why the opposition should be dismissed. The Examiner's letter calling for an answer was merely a requirement that the applicants show reasons, if any existed, why the opposition should not be sustained and registration refused. The applicants were entitled to rely upon any matters of defense, whether of law or of fact. They did rely upon the defense that the notice on its face set forth no sufficient grounds for refusing registration, and the Examiner found this defense to be well founded. The first objection made by the appellants to that answer is entirely technical and without substantial merit. There is no necessity for such refinement of pleading as is implied in that objection. It is sufficient if the parties present to this Office the material which will enable it to make proper disposition of the case upon its merits, and it is unnecessary to insist upon technical forms of procedure.

In regard to the second question, it is not believed that this Office would be justified in refusing to register a trade-mark as directed by the act of Congress dated February 20, 1905, even if it were to conclude that marks registered under that act were of no legal effect and void. After this Office has concluded that the applicant is the owner of the trade-mark disclosed in his application and that it is not one of those marks the registration of which is prohibited it becomes the ministerial duty of the Office to register the mark under the act of February 20, 1905. Such registration does not create a property right in the applicant nor take away the property right of another, but is a mere record of the applicant's claim of title. The real right of the applicant is subject to investigation and determination in suits brought in the courts subsequently, either by or against him. The question whether that registration constitutes *prima facie* evidence of ownership may call for a determination as to the constitutionality of the law providing for registration. It is believed that this

Office should leave the determination of this question to the courts in the regular way.

The Supreme Court of the District of Columbia in the case of *Schumacher* v. *Marble* (3 Mackey, 32) said:

> We do not think it lies in the mouth of a Government official to call in question the constitutionality of a law directing him to perform a purely ministerial duty. If the question was raised between other parties, as for instance, in a suit for infringement in the use of a label, and the constitutional rights of the parties were involved in it, that is to say whether one man was prohibited from using it because another man had registered it as a label, the argument might be pertinent, but we do not think it is a question which can be raised here.

It is clear that the decision of the Examiner of Interferences must be sustained, unless he was wrong in holding that the marks of the two parties to this proceeding are not so clearly alike as to deceive purchasers. The marks are used on the same class of goods, and therefore the question of conflict is upon the similarity of the marks themselves.

It appears that the applicants C. A. Knecht and Son used as their trade-mark the words "Raven Valley," together with the representation of three birds, said to be ravens, perched upon the branches of a tree.

The ground of opposition stated in the notice is as follows:

> W. A. Gaines & Company is the sole and exclusive owner of the trade-mark for whisky consisting of the words "Old Crow."

It is also said in the notice of opposition that—

> * * * the whisky is sold by W. A. Gaines & Company both in glass and in bulk, and when sold in bulk, the whisky is frequently bottled by the customers of W. A. Gaines & Company, under labels bearing the brand "Old Crow" accompanied by the picture of a crow, and the following are specimens of such customers' labels which have been in common use among the trade for upward of thirty-five years last past.

No such similarity between the words "Old Crow" and the applicants' mark appears as would seem likely to mislead the public or deceive purchasers. The fact that the raven belongs to the same family as the crow is not a sufficient reason for concluding purchasers would be deceived and mistake one mark for the other. On the contrary, the words "Old Crow" are so distinctive that it is not believed that there would be any confusion even where the representation of a crow is used with the words, as shown in the specimens filed with the notice of opposition. There is no such similarity in the words or in the pictures as to warrant this Office in refusing to register the applicants' mark.

The decision of the Examiner of Interferences dismissing the opposition is affirmed.

AUTENRIETH AND KANE *v.* SORENSEN.

Decided December 22, 1905.

INTERFERENCE—REOPENING A SECOND TIME—REFUSED.

Where the testimony in an interference refers to a certain exhibit which is not introduced in evidence, although its whereabouts is known, and the interference is reopened for the purpose of taking an additional deposition to properly connect such exhibit with the original testimony, the interference will not be reopened a second time because of the insufficiency of such deposition.

APPEAL on motion.

SNAP-SWITCH.

Mr. Vernon E. Hodges for Autenrieth and Kane.

Messrs. Townsend & Decker and *Mr. J. R. Edson* for Sorensen.

ALLEN, *Commissioner:*

This is an appeal by Autenrieth and Kane from a decision of the Examiner of Interferences denying a motion to reopen the case for taking further testimony.

It appears from the verified statements of counsel for appellants that on the day preceding the time set for taking testimony after a conference with his clients a telegram was sent to his office at Washington directing that certain models "probably in Patent Office" should be sent immediately to New York and that in reply thereto counsel's clerk telegraphed that the models had been returned May 13, 1904. On the succeeding day testimony was taken, in which testimony one of the joint inventors stated that he had made one device and that he believed such device was on file in the Patent Office. At this point counsel stated on the record that the device to which the witness had just referred was used by him at the hearing of an appeal to the Commissioner some time previously in opposing a motion to dissolve and to the best of his knowledge was at that time in the Patent Office or in his office in Washington.

The testimony was completed without the introduction into evidence of the device or devices referred to by the witnesses. The case came on for final hearing before the Examiner of Interferences, at which time it was discovered that the device referred to by the witnesses and which was relied upon as a reduction to practice had not been properly introduced in evidence. The Examiner of Interferences thereupon reopened the case for the purpose of taking the attorney's deposition in order that he might identify the exhibit which had been on file in the Patent Office as the one referred to in the depositions already taken. Such deposition was thereafter duly taken and filed.

The Examiner of Interferences then rendered his decision on the question of priority. In such decision it was held that the deposition of the attorney was not original evidence and that it was insufficient to establish that the exhibit to which his testimony referred was the identical one referred to by the other witnesses in their testimony, and it was held that the onus of proof had not been discharged, and for this reason priority was awarded to the opposing party, Sorensen, on his record date.

A motion to reopen the case for taking further testimony for the purpose of connecting the exhibits in question with the original testimony was denied by the Examiner of Interferences, and this appeal was taken.

The steps in the proceedings have been set forth somewhat at length for the purpose of clearly showing that appellants are not entitled to the relief which they seek. In the first place the necessity of placing in evidence the device which is said to be the only device ever made was recognized before any testimony was taken. Notwithstanding this, the testimony was taken and filed without any effort to produce the exhibit other than the request sent to the attorney's office in Washington asking that certain models be sent to New York. The reply which was received was known to be incorrect, and yet no effort was made to determine where the devices referred to were. It is not a sufficient excuse to say that although the necessity for securing the model or exhibit was recognized before testimony was taken the time for taking testimony had been set and that appellant was therefore compelled to take testimony without such exhibit. Appellants allege that the exhibit in question was used in the Office at the hearing on a motion to dissolve as early as March 22, 1904, more than two months before the taking of their testimony. Appellants therefore not only knew of the existence of the

exhibit long before the time set for taking testimony, but they knew substantially where it was both before the taking of their testimony and also during the six days of the time allowed them remaining after their testimony was actually taken. It is therefore clear that there was ample time in which to procure the exhibit and that there was nothing to prevent appellants from procuring it except their lack of diligence.

Although appellants were negligent in taking their testimony, the Examiner of Interferences reopened the case and permitted the taking of an additional deposition for the purpose of correcting the failure to introduce and identify the exhibit; but the Examiner of Interferences held that the additional deposition did not properly connect the exhibit referred to therein with the testimony of the prior witnesses. Counsel for appellants states that at the time the case was reopened one of the joint inventors, Autenrieth, who referred in his testimony to the exhibit in question, was in the city of Washington and that it was proposed to take the deposition of counsel or of Autenrieth, as the Examiner of Interferences deemed best, to which the Examiner replied that the deposition of one would be as acceptable as the other; but it cannot be determined precisely what conversation occurred, nor is it deemed necessary to do so. It seems obvious that the Examiner of Interferences could not attempt to state which of two parties had the proper knowledge to establish a certain point. It was for the party or his counsel to determine what witness or witnesses would be able to establish the facts which it was desired to prove.

If the proper facts were not within the knowledge of counsel for appellants, he should have made this clear to the Examiner of Interferences and requested that the deposition of his client, rather than of himself, should be taken.

It is a well-settled rule that cases will not be reopened merely because a party has through mistake or ignorance failed to present his best evidence, and that rule is applicable in this case. The opposing party may have relied upon what he considered the failure of appellants to overcome his *prima facie* case, and if the proceedings were now reopened it might be necessary for him to take testimony which otherwise would have been unnecessary. There must be an end somewhere to interference proceedings, and it is believed that appellants have had ample opportunity to prove their case, and if they have not done so they have no just cause for complaint.

The decision of the Examiner of Interferences is affirmed.

GORDON *v.* WENTWORTH.

Decided December 26, 1905.

INTERFERENCE—BROAD ISSUE—INTERFERENCE IN FACT.

Where the claims of interfering parties are in identical language and each party has a construction responding in function to the broad terms thereof, there is an interference in fact, although the constructions are specifically different.

APPEAL on motion.

HEEL-SEAT BEADER AND FINISHER.

Messrs. Phillips, Van Everen & Fish for Gordon.

Messrs. Wood & Wood for Wentworth.

ALLEN, *Commissioner:*

This is an appeal by Wentworth from a decision of the Primary Examiner refusing to dissolve the interference on the ground that there is no interference in fact.

The claims of the issue are claims made by each party in identical language. It is contended by appellant that the words of the several counts, "two series of rotating beaters" and "means for actuating said beaters," do not mean the same thing when applied to the constructions of the respective parties; but upon an examination of this question it is found that both parties have "two series of rotating beaters" which perform the same function in each case—that is, the function of pressing the lower edge of the upper closely against the surface of the insole. Furthermore, each party has means for "actuating said beaters." It is true that the rotating beaters and the means for actuating the same are different in the two cases, but both are comprehended within the broad terms used in the issue. As stated in prior decisions, where the claims of the interfering parties are in identical language there is an interference in fact, although there may be specific differences in the two constructions, such specific differences not being specified in the claims. This case does not come within those exceptional cases mentioned in the decisions where the same terms are properly applied to constructions which are essentially different in function and operation.

The decision of the Primary Examiner is affirmed.

EX PARTE THE KINGAN PACKING ASSOCIATION.

Decided December 29, 1905.

1. TRADE-MARKS—PARTICULAR DESCRIPTION OF GOODS—STATUTORY REQUIREMENT.

The statute requires that the applicant specify the particular goods upon which his mark has been used and not merely the class of goods. The term "meats" gives the class, but not the particular goods, and is not sufficiently definite.

2. SAME—DIVISION—GOODS OF THE SAME DESCRIPTIVE PROPERTIES.

Only one trade-mark right should be covered by a single registration, and where the statement of the goods to which the mark has been applied is so broad as to include goods which are not of substantially the same descriptive properties registration will be refused.

ON APPEAL.

TRADE-MARK FOR MEATS AND LARD.

Messrs. Bradford & Hood for the appellant.

ALLEN, *Commissioner:*

This is an appeal from the decision of the Examiner of Trade-Marks refusing to register a trade-mark said to have been used upon "meats and lard."

The grounds of refusal are, first, that the appellant has not complied with the statutory requirement that he shall include in his application "the particular description of goods * * * to which the trade-mark is appropriated," and, second, that the general and indefinite terms used are broad enough to include goods so different in descriptive properties that the use of a single mark upon them would constitute different trade-mark rights.

Section 1 of the act of 1905 says that the application shall specify—

> the class of merchandise and the particular description of goods comprised in such class to which the trade-mark is appropriated.

In the present case the class of goods is said to be "foods and relishes," and the particular description of goods within the class is "meats and lard." While the term "lard" is sufficiently specific, it is clear that the term "meats" is not. It is a statement of a class of goods and not a statement of the particular goods, as required by the

statute. It is not of consequence that the term "meats" comes within the broader class of "foods and relishes," nor that it comes within the class, mentioned in the brief, "animal products used for human food." The test is not whether there is some broader term which may be used to indicate a class which is still broader in scope and includes the class mentioned, but is whether the terms used are sufficiently definite to inform the public just what use of the mark has been made. The appellant has not said that he has used the mark upon all kinds of articles which come within the class of meats, and the statute contemplates that he shall state clearly the specific use which he has made of his mark, so that the public may determine the scope of his right.

The present application is too indefinite to make it possible to determine just what right the appellant has acquired by actual use. As pointed out by the Examiner, however, if he is seeking to claim the right to use the mark upon any and all articles coming within the meaning of the broad term "meats" he is seeking to secure by one registration more than one trade-mark right. This is not permissible.

The appellant should specify the particular goods upon which the mark has been used and should limit the application to such as are of substantially the same descriptive properties.

The decision of the Examiner of Trade-Marks is affirmed.

EX PARTE WIXFORD.

Decided January 8, 1906.

ACCESS TO PENDING APPLICATION.

Where a patent is granted containing the statement that it is a continuation *in part* of a prior application, access to such prior application will not be granted to strangers without a proper showing of interest and without giving the applicant an opportunity to oppose such action, particularly where such prior application is still pending, and it appears that its subject-matter is not identical with that of the patent.

ON PETITION.

PROCESS OF PURIFYING WATER.

Messrs. Carr & Carr for the applicant.

Messrs. Bakewell & Byrnes for the petitioner.

ALLEN, *Commissioner:*

This is a petition for access to a pending case which is referred to in the record of Patent No. 807,008, granted to J. F. Wixford December 12, 1905.

The patent states that it is a continuation in part of the pending application, to which it refers by serial number.

The record of the patent contains the following statement:

In a recent oral interview, it appeared that the Acting Examiner who made the official action in the present case was not familiar with the proceedings in the earlier application, in which practically all of the references now cited were fully considered and withdrawn.

It is contended that the claims of the patent were allowed for reasons which appear only in the pending application, as shown by the language above quoted, and that access to this pending application is desired to determine what these reasons were.

Petitioner has made no showing of interest, and he must therefore be treated as one of the general public.

It was stated in a prior decision *ex parte Dorman*, 115 (O. G., 804) that where a patent is granted on an application which is a continuation of a prior application and the prior application is subsequently abandoned the abandoned application is, in fact, a part of the proceedings which led to the grant of the patent, and to it the rule of secrecy no longer applies.

But the case here presented is not the same. The prior application is not abandoned. Furthermore, the application on which the patent was granted was not on its face a continuation of the prior application, since it purported to be only a continuation "in part," and it requires but a superficial examination to determine that the subject-matter claimed in the two cases is not identical. The application may cover an invention which is divisible from the subject-matter claimed in the patent, and the applicant should be permitted to preserve that part in secrecy, even if inspection of the part relating to the subject-matter of the patent is permitted. For this Office to undertake to determine what parts of the proceedings in the application relate to the subject-matter of the patent without a hearing to the patentee might result in the disclosure of matter which should be preserved in secrecy.

Where, as here, it appears that the application may include matter which the patentee is entitled to conceal, access to the application should not be granted until the patentee has been given notice of the request for access and an opportunity to show why the request should not be granted.

The petition is denied.

DECISIONS OF THE U. S. COURTS.

Court of Appeals of the District of Columbia.

IN RE THURSTON.

Decided December 5, 1905.

1. PATENTABILITY—DOUBLE USE—SUBSTITUTION OF EQUIVALENTS.

Where in a rock-crusher a mantle removably secured upon a conical core is concededly unpatentable, *Held* that the provision of old pin-and-slot fastening devices for retaining the mantle tightly upon the conical core is mere double use and, in view of certain references, an obvious substitution of equivalents.

2. SAME—SAME—SAME—POTTS *v.* CREAGER.

In denying patentability to a change in prior devices, *Held* that the change was not made by transferring an old device to use in an entirely different and unrelated art and that therefore the case of *Potts* v. *Creager* (155 U. S., 597) does not apply.

3. SAME—POPULARITY—LARGE SALES.

Where the assertion was made that the new machine had met with instant favor and large sales, but there was nothing in the record to bear out the assertion, *Held* that no effect could be given thereto.

Mr. T. F. Sheridan, *Mr. C. F. Fitts*, and *Mr. G. F. De Wein* for the appellant.

Mr. John M. Coit for the Commissioner of Patents.

SHEPARD, *J.:*

The appellant has appealed from a decision of the Commissioner of Patents rejecting all of the claims of his application. These read as follows:

1. In a rock and ore breaker, the combination of a crusher-shaft, a core portion removably secured thereto, and a mantle portion removably secured to the core portion, substantially as described.

2. In a rock and ore breaker, the combination of a crusher-shaft, a core portion removably secured to the crusher-shaft and having an outer tapered periphery, and a mantle of chilled iron made in the shape of a truncated cone removably secured to the core portion, substantially as described.

3. In a rock and ore breaker, the combination of a crusher-shaft, a sleeve-shaped core grooved on its inner bore, key mechanism in the grooves of said core for removably holding the core in position, and a chilled cast-iron mantle made in the shape of a truncated cone removably secured to the core, substantially as described.

4. In a rock and ore breaker, the combination of a crusher-shaft provided with longitudinal grooves, a core portion formed in the shape of a truncated cone and having a longitudinally-grooved bore, key mechanism for removably securing the core portion to the crusher-shaft, a mantle portion formed of chilled metal, one of such portions having a vertical groove with inclined walls at its lower portion and the other a lug to engage such grooves, and its inclined walls to removably hold the mantle in position, substantially as described.

5. In a rock and ore breaker, the combination of a crusher-shaft, a core made in the shape of a truncated cone having a central bore to fit the crusher-shaft and locking-grooves on its outer surface, the lower walls of which are inclined in opposite directions, and a crusher-mantle formed of chilled metal and made in the shape of a truncated cone provided with a lug or projection to engage the locking-groove of the core portion so as to be removably held in position, substantially as described.

In his brief the appellant admits that claims 1, 2, and 3 were properly rejected, and confines his appeal to claims 4 and 5.

The decisions of the tribunals of the Patent Office fully and fairly discuss each of the claims originally contended for, in the light of the various references showing the state of the prior art, and further discussion by us would serve no useful purpose. We fully concur in the following extract from the Commissioner's decision:

Claims 4 and 5 involve, in addition to the questions disposed of in connection with claim 1, the patentability of the structure set forth in claim 1 when provided with the specific pin-and-slot fastening devices of the Capen patent for retaining the mantle tightly upon the conical surface of the core. The application of the Capen fastening means to the mantle and core of the applicant's machine is, so far as I am able to perceive, mere double use, and, in view of Hadfield and McCulley, 566,464, is also an obvious substitution of substantial equivalents.

In antagonizing this view, the appellant contends that he has made a change which amounts to something more than a substitution of the Capen device; a change which, though slight, has been followed by new and most useful results. These results are not apparent. Moreover, the change is not made as in *Potts* v. *Creager* (155 U. S., 597), upon which the appellant relies, by transferring an old device to use in an entirely different and unrelated art; nor is there anything in the record to bear out the assertion that the new crushing-machine "has met with instant favor and large sales." Such a fact, if proved, has often been held to determine patentability in case of doubt thereof, otherwise existing. We are advised of no case going any farther than that. (See *Durham* v. *Seymour*, 6 App. D. C., 78, 92, and cases cited.)

The decision of the Commissioner of Patents will be affirmed, and the proceedings herein certified to him. It is so ordered.

Court of Appeals of the District of Columbia.

IN RE SCHRAUBSTADTER.

Decided December 5, 1905.

1. PATENTABILITY—RULES AS TO DOUBTS.

Where there is a serious doubt as to patentability, that doubt should be resolved in favor of the one seeking a patent, for if his claim be denied he has nothing with which he can go into court and attempt to enforce a lawful monopoly; but in reversing the concurrent decisions of the Patent Office there should be conviction beyond a reasonable doubt that in the absence of anything but what is shown by the record a patent granted on the application would be held a valid one.

2. DESIGN—FONT OF TYPE—ILLUSTRATION.

Where criticism was made that the type were not shown, but only the kind of printed matter produced, *Held* that the answer thereto is that the conventional drawing accepted by the Patent Office for years has been furnished and that the absence of description is authorized by the Patent Office rules.

3. SAME—PATENTABILITY—INVENTION.

Where small differences existed in the applicant's design over the references, which differences would appear greater to an expert than to the average observer, *Held*, nevertheless, that the design was not patentable, because the differences did not rise to the dignity of invention.

4. SAME—SAME—SAME.

Where peculiarities in the applicant's design were such as to prevent that design from being regarded in the trade as a substitute for the design shown by the references, *Held* that the applicant's design was nevertheless not patentable, because such peculiarities did not rise to the dignity of invention.

5. SAME—SAME—EFFECT ON AVERAGE OBSERVER—ARTISTS AND EXPERTS.

Held that the conclusion of the Court in *Gorham Co.* v. *White* (14 Wall., 511) was that the novelty of a design was to be determined and infringement decided by the comparative appearance of the designs in the eyes of average observers and was not to be determined by such appearance to the eyes of experts.

6. SAME—SAME—SAME—SAME.

Where contention was made that it is impracticable for the Patent Office to pass on esthetic values and that the proper estimation of the applicant's design required cultivated taste, *Held* that the statutes as construed by the courts intend that the patentability of designs shall be determined by their appeal to the eye of the ordinary man.

7. SAME—SAME—FONT OF TYPE.

Where the applicant's design was for a font of type in which the letters had a waved outline, *Held* that aside from the waved outline the letters seemed to be of a very ordinary style and that to add a waved outline, which was old, to common forms of letters did not involve invention.

Mr. James A. Carr and *Mr. H. H. Simms* for the appellant.

Mr. John M. Coit for the Commissioner of Patents.

DUELL, *J:*

The Commissioner of Patents refused to grant the appellant a design patent for his alleged improvements for a font of type, and from such decision this appeal was taken. The record discloses that his claim was fully considered by the various tribunals of the Patent Office, and that his counsel most carefully and ably presented the arguments in favor of the patentable novelty of the design. Not only were the usual hearings had, but it appears that a rehearing was asked and granted. It appears that in the decision of the Commissioner on the rehearing certain alleged prior patents, not before referred to, were cited by the Commissioner, some of which do not belong to the prior art. These we have disregarded in the consideration of the appeal.

Some criticism is made in appellee's brief that appellant has not shown or described the type themselves, but has only shown the kind of printed matter produced by the type. The answer to this is that appellant has furnished the conventional drawing accepted for years by the Patent Office, save that he has shown modifications of lower-case letters "f" and "t." This the Examiners-in-Chief held he had the right to do, and the correctness of the ruling was not questioned by the Commissioner. Furthermore the absence of any description of the design is authorized by the Patent Office rules relating to designs.

As we view it the real question before us is whether the claimed design, in view of the prior art, discloses patentable invention. In all cases where that question is presented to this court, or to the Federal courts in infringement suits, it is unwise to generalize for the facts in such case must govern the conclusion reached and often it is difficult to differentiate between patentable and non-patentable invention. Where there is a serious doubt left in

the mind of this court we believe that that doubt should be resolved in favor of the one seeking a patent, for if his claim be denied he has nothing with which he can go into court and attempt to enforce a lawful monopoly. We should however in reversing the concurrent decisions of the Patent Office be convinced beyond a reasonable doubt, that, in the absence of anything but what is shown by the record in the case before us, we would hold a patent granted on the application to be a valid one.

In the case at bar there is not left, after a careful examination of the record and of the briefs of counsel, any serious doubt as to the non-patentability of the alleged design in view of the disclosure of the prior art. To arrive at this conclusion it is unnecessary, in our opinion to consider any of the prior patents save the design patents for fonts of type granted to Ihlenburg, November 12, 1895, No. 24,896, and to MacDonall, July 11, 1899, No. 31,215. We may and do freely admit the assertion of appellant's counsel that there are differences between the designs, but these differences, to the average observer, are small. To an expert they are undoubtedly greater and it is probably true, as set forth in the affidavit of Mr. Nelson, that the type sought to be protected by the appellant have individual peculiarities which would prevent them from being regarded by the printing trade as a substitute for the type of the patented designs. But such slight differences and peculiarities do not rise to the dignity of invention and do not warrant a grant of a patent to this appellant. Viewing the relations between these designs—the patented and the unpatented—we would do violence to the law as laid down by the Supreme Court were we to reverse the Commissioner of Patents. In *Gorham Co.* v. *White* (14 Wall., 511) the true test of identity of designs was laid down and has been followed by that Court to the present time. Said the Court:

> Plainly, it must be the sameness of appearance, and mere difference of lines in the drawing or sketch, a greater or smaller number of lines, or slight variances in configuration, if insufficient to change the effect upon the eye, will not destroy the substantial identity. * * * So a pattern for a carpet, or a print may be made up of wreaths of flowers arranged in a particular manner. Another carpet may have similar wreaths, arranged in a like manner, so that none but very acute observers could detect a difference. Yet in the wreaths upon one there may be fewer flowers, and the wreaths may be placed at wider distances from each other. Surely in such a case the designs are alike.

The conclusion of the Court was that the novelty of a design was to be determined, and infringement decided, by the comparative appearance of the designs in the eyes of average observers, and was not to be determined by such appearance to the eyes of experts. The Court said:

> We hold, therefore, that if in the eye of the ordinary observer, giving such attention as a purchaser usually gives, two designs are substantially the same, if the resemblance is such as to deceive such an observer, inducing him to purchase one supposing it to be the other, the first one patented is infringed by the other.

But in determining the question of the patentability of the later design it is not necessary to find that it infringes the earlier one in order to come to the conclusion that the later one lacks patentability, for invention is required in the production of a patentable design. (*Smith* v. *Whitman Saddle Co.*, 148 U. S., 674.) In *Northrop* v. *Adams* (12 O. G., 430) Mr. Justice Brown, then District Judge for the Eastern District of Michigan, in stating that the law applicable to design patents does not materially differ from the law relating to mechanical patents, said:

> To entitle a party to the benefit of the act, in either case, there must be originality, and the exercise of the inventive faculty.

Where, in cases like the one now before us, we arrive at the same conclusion as have the various tribunals of the Patent Office it serves no good purpose to elaborate the same reasons and restate the same facts. It is sufficient to set forth that we agree with them in their conclusion that the alleged invention is not deemed worthy of protection by patent. This is doubly so when we arrive at the same conclusion for reasons substantially the same as those advanced by them. Suffice it to say that we agree with the Commissioner that "aside from the waved outline, the applicant's letters seem to be of a very ordinary style." To add this old waved outline to common forms of letters does not, we believe, amount to invention. Given the prior Ihlenburg and MacDonall patented designs it did not require the exercise of the inventive faculty to produce appellant's design.

On the consideration of this appeal we have not lost sight of appellant's contention that it is impracticable for the Patent Office tribunals to pass judgment on esthetic values. We need not take issue with him upon the statement that "the proper esthetic estimation of a new type design, therefore, requires *taste*, the sense of the beautiful not in its merely natural state but highly cultivated and developed in delicacy and correctness under the guidance of reason." The answer to this is that Congress in enacting the patent statutes, relating as well to designs as to mechanisms, was not establishing a school of fine arts and did not provide for juries of artists, or artistic experts, to pass upon the questions of originality and invention. It was a condition and not a theory that confronted Congress, and the courts in construing design patents, both in reference to invention and infringement, have not adopted the high standard which appellant insists to be the proper one in determining whether the design produces a new and pleasing impression on the esthetic sense. The eye to which the design is to appeal is that of the ordinary man and not the eye of the artist. We may deplore the fact that Congress has not seen fit to provide a system for the grant of design patents which leaves the question of patentability to juries of artists, and that the courts in construing such patents and passing upon the questions of originality and infringement have not held that the appearance of the various designs was to be tested by the artistic eye, still we doubt the practicability of such a system. However this may be we must, while the Design Act reads as it does, and is construed as it has been by the court of last resort, follow such construction, and when we do we find no sufficient reason shown to warrant a reversal of the decision of the Commissioner of Patents, and his decision therefore should be, and is affirmed. The clerk of the court will certify this opinion and the proceedings of the court in this cause to the Commissioner of Patents according to law. Affirmed.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

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Patents	636	No. 810,897 to No. 811,532, inclusive.
Designs	7	No. 37,797 to No. 37,803, inclusive.
Trade-Marks	191	No. 49,179 to No. 49,369, inclusive.
Labels	19	No. 12,633 to No. 12,651, inclusive.
Prints	5	No. 1,566 to No. 1,570, inclusive.
Reissues	5	No. 12,440 to No. 12,444, inclusive.
Total issue	863	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	3	2	Nevada	1	.....
Alaska, District of	.....	.....	New Hampshire	.....	4
Arizona Territory	1	.....	New Jersey	27	13
Arkansas	1	.....	New Mexico Ter'y.	1	.....
California	14	2	New York	89	43
Colorado	6	.....	North Carolina	4	.....
Connecticut	10	8	North Dakota	2	.....
Delaware	1	.....	Ohio	41	20
District of Columbia	6	1	Oklahoma Territ'y.	2	.....
Florida	2	1	Oregon	4	5
Georgia	6	3	Pennsylvania	75	25
Hawaii Territory	.....	.....	Porto Rico	.....	.....
Idaho	.....	.....	Rhode Island	6	2
Illinois	63	22	South Carolina	.....	.....
Indian Territory	.....	.....	South Dakota	1	.....
Indiana	15	6	Tennessee	5	1
Iowa	11	2	Texas	8	1
Kansas	6	1	Utah	3	1
Kentucky	5	1	Vermont	1	1
Louisiana	6	.....	Virginia	3	1
Maine	4	4	Washington	6	.....
Maryland	8	8	West Virginia	2	.....
Massachusetts	41	10	Wisconsin	15	4
Michigan	34	2	Wyoming	1	.....
Minnesota	17	5	U. S. Revenue Cutter Service	.....	.....
Mississippi	1	.....			
Missouri	17	7	Total to citizens of the United States	534	215
Montana	3	.....			
Nebraska	5	.....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina	.....	.....	Netherlands	.....	.....
Austria-Hungary	1	.....	Newfoundland	.....	.....
Belgium	.....	.....	New South Wales	1	.....
Brazil	.....	.....	New Zealand	1	.....
British West Indies	.....	.....	Norway	1	.....
Canada	8	.....	Persia	.....	.....
Cape Colony	.....	.....	Queensland	.....	.....
Chile	1	.....	Roumania	.....	.....
China	.....	.....	Russia	.....	.....
Costa Rica	.....	.....	San Salvador	.....	.....
Cuba	.....	.....	Scotland	4	.....
Denmark	1	.....	South Africa	.....	.....
Ecuador	.....	.....	Spain	.....	.....
England	12	.....	Sweden	.....	.....
France	8	.....	Switzerland	1	.....
Germany	16	.....	Transvaal, South Africa	.....	.....
Haiti	.....	.....	Victoria	.....	.....
India	1	.....	Western Australia	.....	.....
Ireland	.....	.....			
Italy	1	.....	Total to citizens of foreign countries	59	.....
Japan	2	.....			
Mexico	.....	.....			

Disclaimer.

792,307.—*Anson Gardner Betts*, TROY, N.Y. PROCESS OF ELECTRO-DEPOSITING ANTIMONY. Patent dated June 13, 1905. Disclaimer filed January 24, 1906, by the patentee.

Enters his disclaimer—

"To claim 1, which reads as follows, to wit:

"1. The process of electrodepositing antimony which consists in electrolyzing a solution containing antimony trifluorid with a suitable cathode."

Drawings.

RULE 38.

38. When there are drawings the description will refer to the different views by figures and to the different parts by letters or numerals (preferably the latter).

RULE 52—EXTRACT.

(6) The different views should be consecutively numbered. Letters and figures of reference must be carefully formed. They should, if possible, measure at least one-eighth of an inch in height, so that they may bear reduction to one twenty-fourth of an inch; and they may be much larger when there is sufficient room. They must be so placed in the close and complex parts of drawings as not to interfere with a thorough comprehension of the same, and therefore should rarely cross or mingle with the lines. When necessarily grouped around a certain part, they should be placed at a little distance, where there is available space, and connected by short broken lines with the parts to which they refer. They must never appear upon shaded surfaces, and when it is difficult to avoid this, a blank space must be left in the shading where the letter occurs, so that it shall appear perfectly distinct and separate from the work. If the same part of an invention appear in more than one view of the drawing it must always be represented by the same character, and the same character must never be used to designate different parts.

It is suggested that numerals or letters be used without exponents.

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business January 23, 1906.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
	Under one month.			
308	XV. Bread, Pastry, and Confections, Making, Coating, Laminated Sheets and Fabrics, Fuel, Glass, Hydraulic Lime and Cement, Paper-Making, Paving, and Plastics.	Jan. 16	Nov. 20	347
154	XI. Boot and Shoe Making, Boots, Shoes, and Leggings, Button, Eyelet, and Rivet Setting, Leather Manufacturing, Nailing and Stapling, Check-Controlled Apparatus, Whips and Whip Apparatus.	Jan. 15	Aug. 24	346
322	XXXVI. Curtains, Shades, and Screens, Drafting, Driers, Measuring Instruments, and Wind-Wheels.	Jan. 10	Dec. 19	240
378	XXXVIII. Artesian and Oil Wells, Bottles and Jars, Care of Live Stock, Fishing and Trapping, Stationery, Stone-Working.	Jan. 10	Nov. 18	357
332	X. Carriages and Wagons	Jan. 10	Sept. 21	775
148	XXXII. Carbonating Beverages, Dispensing Beverages, Dispensing-Cans, Metallic Shipping and Storing Vessels, Packaging Liquids, Paper Receptacles, Refrigeration, Wooden Receptacles.	Jan. 10	Sept. 13	615
178	III. Annealing and Tempering, Coating with Metal, Electrochemistry, Metal-Founding, Metallurgy, Shaping Fluid Metal.	Jan. 9	Dec. 16	246
344	XXXV. Baggage, Buckles, Buttons, and Clasps, Card, Picture, and Sign Exhibiting, Deposit and Collection Receptacles, Package and Article Carriers, Packing and Storing Vessels, Photography.	Jan. 9	Nov. 2	558
303	XVII. Linotyping, Printing, Matrix-Making, Nut and Bolt Locks.	Jan. 9	Oct. 23	354
221	I. Tillage, etc., Fences, and Railway Draft Appliances.	Jan. 8	Dec. 12	206
144	XXIV. Apparel, Apparel Apparatus, Sewing-Machines, Surgery, Toilet.	Jan. 6	Oct. 3	498
379	XXIII. Acoustics, Coin-Handling, Horology, Recorders, Registers, Optics, Signals, Time Controlling Mechanism.	Jan. 6	Sept. 7	627
133	XXII. Air-Guns, Ammunition and Explosive Devices, Boats and Buoys, Catapults and Targets, Firearms, Marine Propulsion, Ordnance, Ships.	Jan. 5	Oct. 9	258
106	XXVI. Electricity, Generation, Electric Heaters, Electric Railways, Motive Power.	Jan. 5	July 10	705
107	XXXVII. Electricity, Conductors, Lighting, Special Apparatus.	Jan. 5	May 1	707
128	II. Bee Culture, Dairy, Label-Affixers, Paper Files and Binders, Presses, Store-Service, Tobacco, etc.	Jan. 4	Oct. 23	245
188	XXX. Fluid-Pressure Regulators, Lamps and Gas-Fittings, Type-Writing Machines.	Jan. 4	May 11	610
304	XXXIV. Railways, Railway-Brakes, Rolling-Stock.	Jan. 2	Dec. 7	364
172	XXXI. Alcohol, Charcoal and Coke, Distillation, Gas, Heating and Illuminating, Hides, Skins, and Leather, Liquid Coating Compositions, Oils, Fats, and Glue, Water Purification.	Jan. 2	Dec. 2	248
316	VI. Bleaching and Dyeing, Chemicals, Explosives, Fertilizers, Medicines, Preserving, Sugar and Salt.	Jan. 2	Nov. 1	339
397	XVIII. Steam-Engineering, etc	Dec. 29	Oct. 16	342
127	VIII. Beds, Chairs, Furniture, Kitchen and Table Articles, Store Furniture.	Dec. 28	Sept. 16	539

Applications Under Examination—Continued.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
307	XIV. Cutting and Punching Sheets and Bars, Farriery, Metal-Bending, Metal-Ornamenting, Metal Personal Wear, Making, Sheet-Metal Ware, Making, Tools, Wire-Working.	Dec. 28	Sept. 14	271
112	XXI. Textiles, Carding, Knitting, Spinning, Weaving, etc.	Dec. 26	July 6	582
	Between one and two months.			
164	XXXIII. Canes, Canopies, Cutlery, Domestic Cooking Vessels, Electricity, Medical and Surgical, Electric Signaling, Fireproof Buildings, Harness, Masonry, Tents, and Umbrellas.	Dec. 22	July 31	755
122	XIX. Stoves and Furnaces and Steam-Boiler Furnaces.	Dec. 21	July 19	668
232	IV. Bridges, Conveyers, Cranes and Derricks, Excavating, Hoisting, Hydraulic Engineering, Loading and Unloading, and Towers.	Dec. 19	Dec. 23	270
109	XVI. Telegraphy and Telephony	Dec. 18	Dec. 2	256
147	XXIX. Coopering, Roofs, Wheelwright-Machines, Wooden Buildings, Wood-Sawing, Wood-Turning, Woodworking-Tools.	Dec. 16	Sept. 28	363
167	V. Fine Arts, Bookbinding, Harvesters, Jewelry, and Music.	Dec. 14	Dec. 4	333
312	VII. Velocipedes, Clutches, Fire-Escapes, Games and Toys, Ladders, Mechanical Motors, and Paper Manufactures.	Dec. 13	Nov. 1	483
324	XII. Elevators, Journal-Boxes, Lubricators, Machine Elements, Pulleys and Shafting.	Dec. 12	Oct. 17	428
179	XX. Artificial Limbs, Builders' Hardware, Dentistry, Locks and Latches, Safes, Undertaking.	Dec. 12	July 3	372
382	XXVIII. Air and Gas Engines, Air and Gas Pumps, Pneumatics.	Dec. 12	June 3	879
142	IX. Baths and Closets, Fire-Extinguishers, Hydraulic Motors, Pumps, Sewerage, and Water Distribution.	Dec. 7	June 4	1040
375	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, Washing Apparatus.	Dec. 5	Aug. 3	639
330	XIII. Arms, Projectiles, and Explosive Charges, Making, Metal-Working, Needle and Pin Making.	Nov. 20	Sept. 5	537
	Between two and three months.			
315	XXV. Butchering, Mills, Threshing, and Vegetable Cutters and Crushers.	Nov. 6	Aug. 10	514

Total number of applications awaiting action 17,916

159	TRADE-MARKS, DESIGNS, LABELS AND PRINTS.			
	Between one and two months.			
	Trade-Marks	Dec. 6	Nov. 29	3488
	Under one month.			
	Designs	Jan. 6	Dec. 22	64
	Labels and Prints	Jan. 18	Jan. 19	12

Trade-Marks.

The publication of trade-marks under the act of February 20, 1905, in the OFFICIAL GAZETTE, commenced May 2, 1905, and will appear in each weekly number of the GAZETTE thereafter.

Extra copies of the trade-mark portion of the GAZETTE, which will be sold separately, may be obtained single or in quantities for five cents each. Coupons will be taken in payment therefor.

PATENTS

GRANTED JANUARY 30, 1906.

810,897. APPARATUS FOR PRODUCING COMPOUNDS OF TIN. CHARLES H. ACKER, Niagara Falls, N. Y., assignor to Acker Process Company, a Corporation of New Jersey. Filed June 8, 1903. Renewed June 23, 1905. Serial No. 266,897.

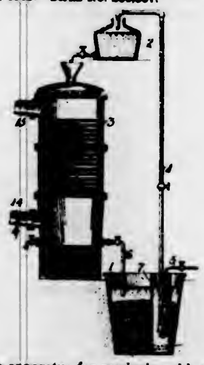

Claim.—1. An apparatus for producing chlorin compounds of tin, comprising a dissolving vessel for effecting the solution of tin in a solvent containing chlorin, a reaction-tower, means for circulating the solution through said dissolving vessel and reaction-tower, means for producing a gaseous mixture containing chlorin and a diluent in sufficient proportion to prevent undue rise of temperature, and means for delivering said mixture to said reaction-tower, substantially as described.

2. An apparatus for producing chlorin compounds of tin, comprising a dissolving vessel for effecting the solution of tin in a solvent containing chlorin, a reaction-tower, means for circulating the solution through said dissolving vessel and reaction-tower, means for producing a gaseous mixture containing chlorin and hydrochloric acid, and means for delivering said mixture to said reaction-tower, substantially as described.

3. An apparatus for producing chlorin compounds of tin, comprising a dissolving vessel for effecting the solution of tin in a solvent containing chlorin, a reaction-tower, means for circulating the solution through said dissolving vessel and reaction-tower, means for producing a gaseous mixture containing chlorin, means for introducing steam into said mixture, and means for delivering said mixture to said reaction-tower, substantially as described.

4. An apparatus for producing chlorin compounds of tin, comprising a dissolving vessel for effecting the solution of tin in a solvent containing chlorin, a reaction-tower, means for circulating the solution through said dissolving vessel and reaction-tower, an electrolytic cell for the production of chlorin, means for diluting the chlorin produced by said cell, and means for delivering the diluted chlorin to said reaction-tower, substantially as described.

810,898. MACHINE FOR DISINTEGRATING, CLEANING, AND ASSORTING FIBROUS MATERIALS. WILLIAM S. ARCHER, Providence, R. I. Filed Oct. 5, 1904. Serial No. 227,577.

Claim.—1. In a machine of the class described, the combination with the feeding and delivery mechanism, of a plurality of bars intermediate the feeding and delivery mechanism and suction means acting in a horizontal direction on the fiber from its introduction into the machine, for conveying the material fed over the bars, and separated receptacles beneath said bars and in connection with which said bars are differently spaced.

2. In a machine of the class described, the combination with the feeding and delivery mechanism, of a plurality of toothed bars intermediate the feeding and delivery mechanism, and suction means acting in a horizontal direction on the fiber from its introduction into the machine for conveying the material fed over the bars, and separated receptacles beneath said bars and in connection with which said bars are differently spaced.

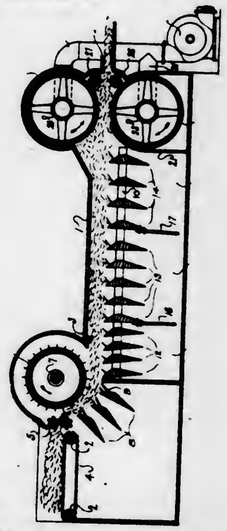

3. In a machine of the class described, the combination with the feeding and delivery mechanism, of a plurality of toothed-bar series intermediate said mechanism, the bars of each series as their distances from the picker-roller increases being inclined at a different vertical angle from the bars of the other series, and separated receptacles beneath said bars and in connection with which said bars are differently spaced.

4. In a machine of the class described, the combination with the feeding and delivery mechanism, of toothed-bar series intermediate said mechanisms, one series being vertical and the other two series being inclined in relation to the vertical series, and separated receptacles beneath said bars and in connection with which said bars are differently spaced.

5. In a machine of the class described, the combination with the feeding and delivery mechanism, of a plurality of toothed-bar series intermediate said mechanism, the bars of each series being interspaced differently from the bars in the other series, and separated receptacles beneath said bars and in connection with which said bars are differently spaced.

6. In a machine of the class described, the combination with the feeding and delivery mechanism, of a series of inclined toothed bars near the feeding mechanism, a second series of toothed bars next the first bar series vertically positioned and wider spaced, and a third series of toothed bars oppositely inclined to the inclination of the first series and spaced wider than the second series and mounted next the second bar series, said series being arranged at different distances from the picker-roller, and separated receptacles beneath said bars and in connection with which said bars are differently spaced.

7. In a machine of the class described, the combination with the feeding and delivery mechanism, of a plurality of toothed-bar series intermediate said mechanism, said series being disposed at different distances from the picker-roller, the bars of each series being inclined at a different vertical angle from the bars of the other series, and suction means for forcing the material fed across the bars, and separated receptacles beneath said bars and in connection with which said bars are differently spaced.

8. In a machine of the class described, the combination with the feeding and delivery mechanism, of a plurality of toothed-bar series intermediate said mechanisms, and disposed at gradually-increasing distances from the picker-roller the bars of each series being inter-spaced differently from the bars in the other series, and suction means for forcing the materials fed across the bars and separated receptacles beneath said bars and in connection with which said bars are differently spaced.

9. In a machine of the class described, the combination with the feeding and delivery mechanism, of an oblong casing intermediate said mechanisms, a plurality of toothed bars mounted transversely in the casing, and strips depending from the bars to form adjacent receptacles.

10. In a machine of the class described, the combination with the feeding and delivery mechanism, of a plurality of toothed bars intermediate the feeding and delivery mechanism, a meshed surface adjacent the toothed bars, and suction means acting in a horizontal direction on the fiber from its introduction into the machine for forcing the material fed against the meshed surface and separated receptacles beneath said bars and in connection with which said bars are differently spaced.

11. In a machine of the class described, the combination with a horizontal series of toothed bars of a meshed surface adjacent the toothed bars and suction means acting in a horizontal direction on the fiber from its introduction into the machine for conveying the materials over the bars and forcing said materials against the meshed surface and separated receptacles beneath said bars and in connection with which said bars are differently spaced.

12. In a machine of the class described, the combination with a series of toothed bars of a revoluble cage adjacent the toothed bars, a perforated hollow shaft upon which the cage is mounted, a blower, and a pipe connecting the blower and shaft.

13. In a machine of the class described, the combination with a series of toothed bars and separated receptacles beneath said bars and in connection with which said bars are differently spaced of a revoluble cylindrical cage adjacent the bars, suction means acting in a horizontal direction on the fiber from its introduction into the machine for forcing the materials over the bars and against the cage, and a roll adjacent the cage adapted to strip the material from the cage periphery.

14. In a machine of the class described, the combination with a series of toothed bars and separated receptacles beneath said bars and in connection with which said bars are differently spaced of revoluble cylindrical cages adjacent the bars, suction means acting in a horizontal direction on the fiber from its introduction into the machine for conveying materials over the bars and intermediate the cages, and a roll adjacent each cage for delivering the materials.

810,899. CHESS-RECORDER. LALA RAJA BABU, Patiala, Patiala State, India. Filed July 14, 1905. Serial No. 269,804.

Claim.—1. In an apparatus for recording the moves at a game of chess, the combination of a game-board having a keyhole in the center of each square, a key on the base of each piece adapted to fit into any of said keyholes, type corresponding with the name of the piece moved, actuated by the partial rotation of the key on the piece so moved, a lug or ward on the key, a series of six horizontal bars placed under each of the eight cross-lines of squares actuated by said lug or ward when the key is rotated, a bell-crank lever connected to the uppermost bars, a type-head connected on the other end of said lever, a recording-platen on which the type-head is adapted to print a sign representing the name of one piece, a type-bar actuated in like manner from the second bars in all the series, said type-bar carrying a sign to represent the name of another piece, and similarly with the remaining bars of all the series, said lug or ward on the key being so placed that when such key is inserted in a keyhole and rotated it actuates the bar in the series connected to the type-bar intended to print the name of the piece to which such key is attached.

2. In an apparatus for recording the moves of a game of chess, the combination of a game-board having a keyhole in the center of each square, a key on the base of each piece adapted to fit into any of said keyholes, type actuated by said key, said type indicating the file of the square to which the piece carrying the key is moved, a lug or ward on said key, eight horizontal longitudinal bars, one placed under each of the eight longitudinal lines of squares, one of said bars being adapted to be actuated by said lug or ward of said key, a bell-crank lever connected to the bar under the extreme line of squares on the right side, a type-head carrying the sign representing the file of the king's castle connected to the other end of said bell-crank lever, a type-head carrying the sign representing the file of the king's knight actuated by the next bar, and so on, the position of all such lugs or wards on the keys being similar so that when a key is rotated it actuates the bar in the file of squares in which it is placed to cause the sign of that file to be printed.

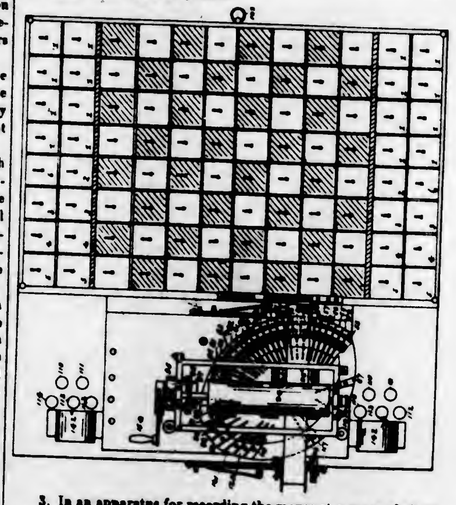

3. In an apparatus for recording the moves at a game of chess, the combination of a game-board having a keyhole in the center of each square, a key on the base of each piece adapted to fit into any of said keyholes, type recording the number of the row of squares to which a piece is moved actuated by the key of said piece, a lug or ward on the key, eight horizontal cross-bars, one placed under each of the eight cross-rows of squares, one of which bars being actuated by the partial rotation of the key, a bell-crank lever connected to the bar under the back row of the white side of the board, said lever carrying type to print the sign "1" to represent the number of each square in that row, the next bar being in like manner arranged to actuate the type printing the sign "2" and similarly the other bars, the last being connected to actuate the type-bar printing the sign "8," the position of all such lugs or wards on the keys being similar so that when a key is inserted in a keyhole and rotated it actuates the bar in the cross-row in which it is placed and through it causes the sign of that row to be printed.

4. In an apparatus for recording the moves at a game of chess, the combination of a game-board having a keyhole in the center of each square, a key on the base of each piece adapted to fit into any of said keyholes and be capable of partial rotation, type actuated by the rotation of said key, two lugs or wards on said key, a series of six horizontal bars placed under each of the eight cross-lines of squares, one of which bars being actuated by the first of said lugs, the position of said lug varying according to the name of the piece, a bell-crank lever connected to the uppermost bars in all the series, a type-bar adapted to print a sign representing the name of one piece mounted on said bell-crank lever, a recording-platen for said type-bar, a type-bar connected to and actuated by, in like manner, the second bars in all the series, said type-bar carrying a sign to represent the name of another piece, and similar with the remaining bars of all the series, type indicating the file of the square to which the piece is moved, said type being actuated by the upper portion of said second lug, the position of said second lug being the same for any piece, eight horizontal longitudinal bars, one placed under each of the eight longitudinal lines of squares, one of which bars being actuated by the partial rotation of said key, a bell-crank lever connected to the bar under the extreme line of squares on the right side, a type-head attached to the other end of said bell-crank, said type-head printing the sign representing the file of the king's castle, the actuation of the next bar printing the sign of the king's knight and so on, type actuated by the lower portion of said second lug on said key, the position of which being the same for any piece, said type recording the number of the row of squares to which a piece is moved, eight horizontal cross-bars, one placed under each of the eight rows of squares, one of said bars being actuated by the partial rotation of said key, a bell-crank lever connected to the bar under the back row of the white side, type connected to said lever to print the sign "1" to represent the number of each square in that row, the next bar being in like manner arranged to actuate the type carrying the sign "2" and similarly the other bars, the last bar being connected to actuate the type-bar carrying the sign "8," all three type-bars actuated by the rotation of a piece making their record together.

5. In an apparatus for recording the moves at a game of chess, sixteen additional squares at each end of the board having keyholes therein for the reception of the taken pieces, a type-bar carrying the sign "×" to represent the taking of a piece, means for actuating said type-bar, and means for printing the name of the piece taken consisting of horizontal bars placed below said keyholes, type-bars carrying the signs representing the pieces, queen, bishop, knight, castle, pawn and pawn converted into a queen, said type-bars being connected to the horizontal bars, special squares for each class of piece and the record being made by the insertion of the key on the base of a piece and the partial rotation of the same.

6. In combination in an apparatus of the class described, a game-board and pieces therefor, keys on the base of said pieces adapted to fit keyholes on the squares of said board and operate means for printing the name of the piece and the square to which it is moved by the partial rotation of the piece, a platen and means for operating the same consisting of clockwork mechanism controlled by an escapement-wheel, dogs engaging said escapement-wheel, said dogs being operated by the movement of the pieces, and means for operating the dog mechanism independently of the pieces, substantially as described.

7. In combination in an apparatus of the class described, a game-board and pieces therefor, keys on the base of said pieces adapted to fit keyholes in the squares of said board and operate means for printing the name of the piece and the square to which it is moved by the partial rotation of the piece, a clockwork mechanism rotating a platen, means for controlling the movement of said platen consisting of an escapement-wheel controlled by dogs, and means for printing a line below the record of every other move consisting of a spindle rotated by said clockwork mechanism, a disk on said spindle, pins mounted on said disk, the number of pins of said disk being exactly half that of the teeth of said escapement-wheel, a pivoted lever having a curved end capable of engagement with said pins which by the rotation of said spindle are caused to strike said curved end of the lever and cause its other end to actuate a crank-lever carrying a type-head to print a straight line.

8. An apparatus for recording the moves at a game of chess comprising a game-board having a keyhole in the center of each square, keys on the base of the pieces adapted to fit said keyholes and operate means for printing the name of the piece and the square to which it is moved by the partial rotation of the piece, a platen and means for operating the same consisting of clockwork mechanism controlled by an escapement-wheel, dogs engaging said escapement-wheel, said dogs being operated by the movement of the pieces, means for operating the dog mechanism independently of the movement of the pieces, sixteen additional squares at each end of the board, means for recording the taking of the pieces, means for printing a line below the record of every other move, additional means independent of the escapement mechanism for printing the signs to represent "check," "castles," "resigns," "draw" and "mate" respectively, and means for alternately starting and stopping two clocks to record the time taken by each player, substantially as described.

810,900. FLEXIBLE TOY-HANGER. HENRY F. BARTLETT, Hamilton, Canada. Filed Dec. 2, 1904. Serial No. 235,196.

Claim.—A flexible toy-hanger formed of one piece of spring-steel wire, the upper part bent in circular form with a hook at the extremity, the central part vertical, the bottom part bent first horizontally at right angles to the central part, thence upward, thence downward, thence horizontally, thence upwardly, thence downwardly, thence horizontally, and terminating in a twist around the bottom of the vertical portion, and a yoke having a loop in the center to hang on the top extremity of the hanger provided with a hook at each end, all arranged and constructed substantially as and for the purpose specified.

810,901. COVERED BOX. JULIUS BERGOFF, Buffalo, N. Y., assignor to Empire Jewelry Case Company, Buffalo, N. Y., a Corporation of New York. Filed June 14, 1905. Serial No. 265,205.

Claim.—1. A box of the character described, comprising a cup forming the body of the box, a covering applied to said cup, a block consisting of a cup-like member inserted in said body-cup and projecting above the same to form a neck, and a covering applied to the top and sides of the block and confined between the body and the block, substantially as set forth.

2. A box of the character described, comprising a cup forming the body of the box, a covering applied to said cup and folded over the upper edge and against the inner side thereof, a block consisting of a cup-like member inserted in the body and projecting above the same to form a neck, and a covering applied to the top and sides of the block and bearing at its sides against the folded upper portion of said body-covering, substantially as set forth.

3. A box of the character described, comprising a cup forming the body of the box, a covering applied to said cup and folded over the upper edge and against the inner side thereof, a block consisting of a cup-like member inserted in the body and projecting above the same to form a neck, and a covering applied to the top and sides of the block and folded inwardly over the lower edge thereof, the side of the block-covering and the folded upper portion of the body-covering being clamped between the body and the block and the folded lower portion of the block-covering being confined between the lower edge of the block and the bottom of the body, substantially as set forth.

4. A box of the character described, comprising a cup forming the body of the box, a covering applied to said cup, a block consisting of an inverted cup inserted in the body and provided in its top with an opening, and a covering extending over the top and sides of the block and confined between the block and the body, substantially as set forth.

5. A box of the character described, comprising a cup forming the body of the box, a covering applied to said cup, a block consisting of an inverted cup inserted in the body and provided in its top with one or more integral lips or clasps, and a covering applied to the top and sides of the block and provided with slits through which said lips pass, substantially as set forth.

810,902. MEANS FOR SUPPORTING UPHOLSTERY-SPRINGS. GEORGE B. BIGELOW, Worcester, Mass., assignor to The Morgan Spring Company, Worcester, Mass., a Corporation of Massachusetts. Filed Aug. 23, 1905. Serial No. 275,457.

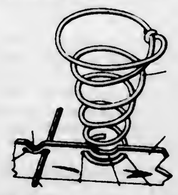

Claim.—1. In a construction of the class described, the combination of a sheet-metal supporting-strip and an upholstery-spring, said supporting-strip having a slot with tapering pinching-sections at its ends for receiving the attaching-coil of the spring and located near the edge of the supporting-strip so that the material above the slot may be bent in to fasten the parts together.

2. In a construction of the class described, the combination of a supporting-strip and an upholstery-spring, the supporting-strip be-

ing provided with a slot for receiving the attaching-coil of the upholstery-spring, which slot has tapering pinching-sections at its end with a depression between them and said slot being located near the edge of the strip so that the material above the same may be bent down into the depression to fasten the parts together.

3. In a construction of the class described, the combination of a frame, sheet-metal supporting-strips extending across the frame, a tie-wire extending transversely through the supporting-strips, and a plurality of upholstery-springs, the supporting-strips being provided with slots for receiving the attaching-coils of the upholstery-springs, each of said slots having narrow recesses at its ends separated by a central depression and said slots being located near the edges of the strips, whereby the material above the same may be bent down to lock the parts together.

810,903. GRINDING-MACHINE. CHARLES H. BLOOMSBURGH, Bellevue, Ky., assignor to Victor Safe & Lock Co., Cincinnati, Ohio, a Corporation of Ohio. Filed Dec. 14, 1904. Serial No. 236,708.

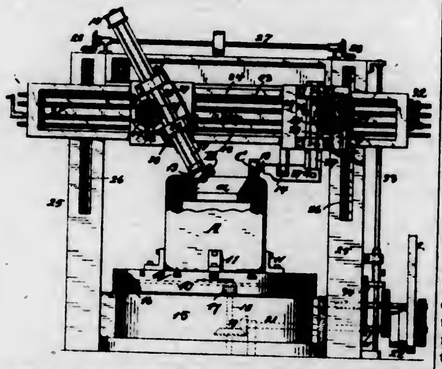

Claim.—In a grinding-machine, the combination of a work-supporting table, means to rotate it, a rotary grinding-wheel, a spindle on which it is mounted, a pulley on the spindle to rotate it a spindle-carrier, a rotary head on which it is supported to have a sliding adjustment lengthwise, a slide on which this rotary head is mounted for rotary adjustment, a rail on which this slide is supported for transverse adjustment and a frame on which this rail is supported for vertical adjustment.

810,904. APPARATUS FOR GRINDING OR CRUSHING FOUNDRY-SAND, &c. PHILIBERT BOUVILLAIN, Paris, France. Filed June 1, 1904. Serial No. 210,743.

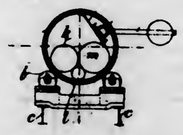

Claim.—In an apparatus for grinding or crushing foundry-sand and other similar granular materials, the combination with a hollow rotatable cylinder, of three series of internal rollers of different diameters touching each other and the interior wall of the roller, a scraper in contact with the upper generatrix of the said wall of the roller, and a counterbalance-lever adjustably mounted upon the axis of said scraper, substantially as shown and described.

810,905. POWER-HAMMER. AUSTIN BRAGG, Waterville, Me. Filed Feb. 20, 1904. Serial No. 194,573.

Claim.—1. In a power-hammer, the combination with a ram or hammer of an elliptic spring-helve having both of its members connected at one end to said ram or hammer and the other ends of said members pivotally supported and means connected to the two members of said spring-helve intermediate the ends thereof for actuating it, substantially as set forth.

2. In a power-hammer, the combination with a ram or hammer and a movable support, of an elliptic spring-helve having its two members connected at one end to said ram or hammer and at the other end pivotally connected to the movable support, and means connected to the members of the spring-helve intermediate the ends thereof for operating same.

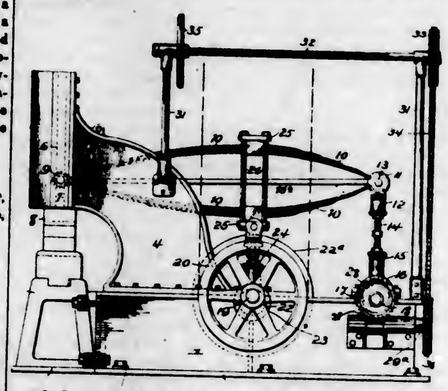

3. In a power-hammer the combination with a ram or hammer and a lengthwise-adjustable support, of an elliptic spring-helve having both of its members connected at one end to said ram or hammer and at the other end pivotally connected to the adjustable support and means connected to the helve intermediate its ends for operating same.

4. In a power-hammer the combination with a ram or hammer and a swinging fulcrum, the latter being constructed whereby it may be lengthened or shortened, of an elliptic spring-helve having both of its members connected at one end to the ram or hammer and at the other end pivotally connected to the free end of the fulcrum, and means engaging the two members of the helve intermediate the ends thereof for operating same.

5. In a power-hammer, the combination with a ram or hammer, of a movable fulcrum, an elliptic spring-helve connecting said ram and fulcrum, bars on opposite sides of said spring-helve, clamping-bolts connecting said bars and adapted to adjust the tension and flexibility of the spring-helve, and operating means connected with said helve between its ends.

6. In a power-hammer, the combination with a frame, of an elongated ram or hammer guide in said frame, a ram or hammer in said guide having an opening therein, a fulcrum-rod, an elliptic spring-helve having eyes in the ends of its two members, one of said eyes pivotally mounted in the opening in the ram and the other pivotally mounted on the fulcrum-rod, an eccentric, and a pitman connecting said eccentric with the helve between the ends of the latter.

7. In a power-hammer, the combination with a frame, of a head having ram-guides therein and pivoted at its lower end to said frame, a shaft carried by the head, pinions on said shaft, racks on the frame in mesh with said pinions, a hand-wheel to turn the shaft, and a lock-nut to secure the parts at any adjustment.

8. In a power-hammer the combination with a ram or hammer, of an elliptic spring connected at one end to the ram or hammer and at its other end to a fulcrum, a bar connecting the two ends of the spring-helve and means intermediate the ends of the helve for operating same.

9. In a power-hammer the combination with a ram or hammer, of an elliptic spring-helve connected at one end to said hammer and at its other end to a fulcrum, means connecting the semi-elliptic sections of the spring for regulating their tension and means connected to the helve intermediate its ends for operating same.

810,906. RAILWAY-SWITCH. CHARLES B. BUSHONG, West Lebanon, Ind., assignor to The Brinker Safety Switch Attachment Company, West Lebanon, Ind., a Corporation of Indiana. Filed Sept. 30, 1905. Serial No. 280,782.

Claim.—1. In a device of the class described, a movable switch, means for shifting the same, a member for locking the switch in shifted position, said member including a relatively movable section, means for coupling said section to the locking member, a track device connected with the section, and automatically-operable means for uncoupling the member and section at determined intervals.

2. In a device of the class described, a movable switch, means for shifting the same, a locking member for maintaining the switch in shifted position, said member including a relatively movable section, a track-lever operatively connected with said section, a pivoted member for coupling the locking member and section, and means for operating the coupling member to couple and uncouple said parts at determined intervals.

3. In a device of the class described, a movable switch, means for shifting the same, a longitudinally-movable locking-rod for maintaining the switch in shifted position, said rod including a relatively movable section, a pivoted locking member for coupling the rod and section, a track device connected with the section, and means for operating the pivoted locking member to uncouple the section and rod at determined intervals.

4. In a device of the class described, a movable switch, means for shifting the same, a longitudinally-movable locking-rod for maintaining the switch in shifted position, said rod including a relatively movable section, a pivoted locking member designed for coupling the rod and section, a track device connected with the section and operable for actuating the rod, and means for operating the pivoted locking member to uncouple the rod and section at determined intervals.

5. In a device of the class described, a movable switch, means for shifting the same, a longitudinally-movable locking-rod for maintaining the switch in shifted position, said rod including a relatively movable section, a pivoted locking member designed for coupling the rod and section, a track device connected with the section and operable for actuating the rod, a depressible detector-bar, and an actuating-lever connected with the bar and having connection with the pivoted locking member and section, said actuating member being adapted when the bar is depressed to operate the pivoted locking member for uncoupling the section and for moving the latter rearwardly to depress the track device.

810,907. APPARATUS FOR PRINTING PHOTOGRAPHS. BUTHANIEL I. BROWN, Princess Anne, Md. Filed Mar. 16, 1905. Serial No. 249,943.

Claim.—1. In an apparatus for printing photographs, an interiorly-lighted cabinet having openings in the walls thereof for the emission of light, and means to support in a stationary condition photograph-frames, adjustable in position with respect to the said openings, combined with shutters for the said openings, a clock-movement to operate the said shutters, and mechanism whereby the operation of the said clock-movement is regulated to effect the duration of the time of exposure of the said openings, substantially as specified.

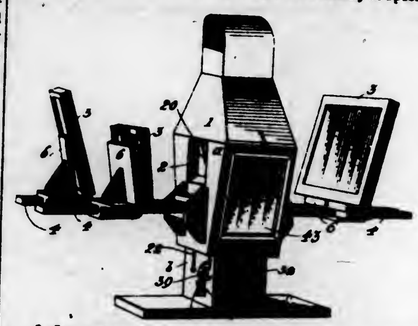

2. In an apparatus for printing photographs, a cabinet containing a lamp, having openings in its walls for the emission of light from the lamp, shutters which are held yieldingly in a condition whereby the said openings in the walls of the cabinets are covered, a clock-movement adapted when the shutters are opened by hand, to cover the same, and mechanism whereby the time of exposure, is regulated, and means for supporting photograph-frames exteriorly of the cabinet, and adjustable with reference to the openings in the cabinet, substantially as specified.

3. In an apparatus for printing photographs, comprising an interiorly-illuminated cabinet with openings in the walls thereof, the combination of a shaft, an arm extending from the shaft, a shutter on the said arm arranged to pass from a position over the said opening to one whereby the said opening is uncovered, a spring mechanism to yieldingly hold the said shutter in a closed position, a clock-movement which is normally inoperative to effect any movement of the shutter, and mechanism whereby the shutter is manually opened, and automatically closed by the clock-movement independently of the hand, substantially as specified.

810,908. PETROLEUM-BURNER. GOLIAH CARL, Wamego, and ALBERT SOHNS, Clay Center, Kans. Filed June 8, 1905. Serial No.

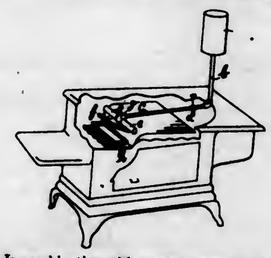

Claim.—In combination with a stove, a petroleum-burner comprising in its entirety a single length of pipe horizontally disposed in said stove in the space between the top and the top of the oven thereof, said pipe extending from a point slightly beyond the end of the oven adjacent the grate to a point adjacent the rear end of the stove, a single vertical length of pipe connected to the rear end of said horizontal pipe, a tank on the upper end of said vertical pipe, a valve in said horizontal pipe adjacent said vertical pipe, said valve having the handle thereof extending without the stove-top, a burner consisting of a perforated tubular element connected at an intermediate portion thereof to the front end of said horizontal pipe, said burner being spaced from and overlying the grate, and a drip-pan of the same contour as said burner supported solely by said grate.

810,909. CARRIAGE FOR DISPLAY-RACKS. WILLIAM CATLIN and MILTON MCMILLAN, Kansas City, Mo. Filed Feb. 28, 1905. Serial No. 247,794.

Claim.—1. In a device of the class described, in combination with a suitable rack, a carriage comprising the inner member 4 which is secured to the rack, said member having the horizontal

bases 6 and the vertical guards 7, the flanges 8 8° having lips 9 9° and flanges 10 10° having lips 11 11° on the outer end of said member 4, and the outer member 5 adapted to telescope with member 4, substantially as set forth.

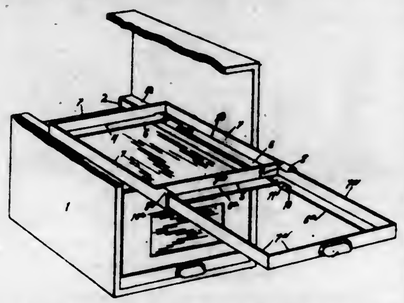

2. In a device of the class described, in combination with a suitable rack, a carriage comprising an inner member slidably mounted in the rack and having flanges 8 8° and 10 10° provided with lips 9 9° and 11 11°, an outer carriage member engaged by said lips and flanges and adapted to telescope with said inner member, and means for limiting the travel of said inner member, all substantially as set forth.

810,910. WELL-SINKING APPARATUS. MATTHEW T. CHAPMAN, Aurora, Ill. Filed Nov. 14, 1901. Serial No. 82,908.

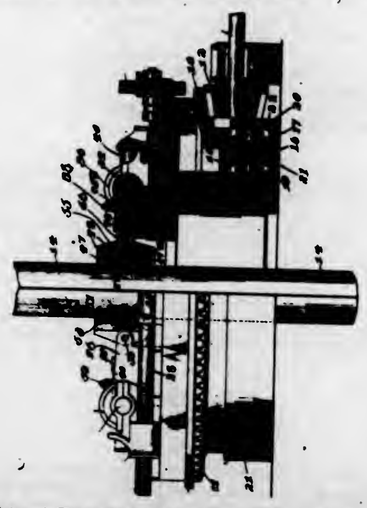

Claim.—1. The combination of a rotary support, a series of traveling rollers upon which said support is mounted, said rollers having their peripheries parallel with their axes and being arranged in pairs the rollers of each pair having their axes in alinement, inner and outer rings between which said rollers travel, a gripping-jaw carried by said carriage, and gripping mechanism supported on said rotary support, substantially as described.

2. The combination of a rotary support, traveling antifriction-rollers on which said rotary support is mounted, said rollers being arranged in pairs, a common axle for each pair of rollers, inner and outer rings in which the ends of said axles are carried, and gripping mechanism on said rotary support, substantially as described.

3. The combination of a rotary support, antifriction-rollers on which said support is carried, said rollers having their peripheries parallel with their axes and being arranged to travel in concentric paths, inner and outer traveling rings between which said rollers are mounted, means for holding the rollers in position as they travel, and gripping mechanism upon the rotary support, substantially as described.

4. The combination of a rotary support, a carriage mounted on said support, a support pivotally carried by said carriage, a gripping device, a support by which said gripping device is carried, the latter support being pivotally connected with said pivoted support, and coöperating gripping mechanism.

5. The combination of a rotary support, a carriage mounted on said support, a support pivotally carried by said carriage and arranged to swing in a vertical plane, a gripping device, a support by which said gripping device is carried, the latter support being pivotally connected with said pivoted support, and coöperating gripping mechanism.

6. The combination of a rotary support, a carriage mounted on said support, a support pivotally mounted on said carriage and arranged to swing in a vertical plane, a plurality of gripping devices, supporting means for said gripping devices pivotally carried by said pivoted support, and coöperating gripping devices.

7. The combination of a rotary support, a carriage mounted thereon, a support carried by said carriage, a pivoted support carried by said first-mentioned support, a plurality of gripping devices carried by said pivoted support, in different horizontal planes, and coöperating gripping mechanism, substantially as described.

8. The combination of a rotary support, a carriage mounted thereon, a support carried by said carriage, a pivoted support carried by said first-mentioned support, a plurality of gripping devices carried by the pivoted support, in different horizontal planes, said gripping devices having sharp angles adapted to engage the article to be rotated, and coöperating gripping mechanism, substantially as described.

9. The combination of a rotary support, a carriage mounted thereon, a support carried by said carriage, a plurality of sets of gripping devices pivotally carried by the latter support, said sets of gripping devices being in different vertical planes, and the gripping devices of each set being in different horizontal planes, and coöperating gripping mechanism.

10. The combination of a rotary support, a carriage mounted thereon, a support carried by said carriage, a plurality of gripping devices carried by said support in different horizontal planes, separate pivots for said gripping devices, and coöperating gripping mechanism, substantially as described.

11. The combination of a rotary support, a carriage mounted thereon, a support carried by said carriage, a plurality of sets of gripping devices carried by said support, said sets of gripping devices being in different vertical planes and the gripping devices of each set being in different horizontal planes, separate pivots for said gripping devices, and coöperating gripping mechanism, substantially as described.

12. A gripping device adapted to grip a round article for rotating the same without interfering with longitudinal movement thereof, consisting of a suitable support, and a plurality of sets of gripping devices pivotally mounted thereon, said sets of gripping devices being arranged in different vertical planes, the gripping devices of each set being in different horizontal planes, substantially as described.

13. A gripping device, adapted to grip a round article for rotating it without interfering with longitudinal movement thereof, consisting of a suitable support, and a plurality of sets of gripping devices carried thereby, said sets of gripping devices being arranged in different vertical planes, the gripping devices of each set being in different horizontal planes, each gripping device consisting of a rotary disk mounted on a separate pivot, substantially as described.

14. A gripping device, adapted to grip a round article for rotating it without interfering with longitudinal movement thereof, consisting of a suitable support, and a plurality of sets of gripping devices carried thereby, said sets of gripping devices being arranged in different vertical planes, the gripping devices of each set being in different horizontal planes, each gripping device consisting of a rotary disk mounted on a separate pivot, said disks being arranged so that one of the edges thereof will engage the article to be gripped, substantially as described.

15. A gripping device, adapted to grip a round article for rotating it without interfering with longitudinal movement thereof, consisting of a suitable pivoted support, and a plurality of sets of gripping devices carried thereby, said sets of gripping devices being arranged in different vertical planes, the gripping devices of each set being in different horizontal planes, each gripping device consisting of a rotary disk mounted on a separate pivot, substantially as described.

16. A gripping-jaw, adapted to bear against and engage a round article for coöperating with other mechanism to rotate it without interfering with longitudinal movement thereof, consisting of a suitable support, and gripping-rollers mounted therein in different vertical planes, the axes of said rollers being arranged to lie at an angle to each other, the edges of said rollers being arranged to engage the article to be gripped, substantially as described.

17. A gripping-jaw, adapted to bear against and engage a round article for coöperating with other mechanism to rotate it without interfering with longitudinal movement thereof, consisting of a suitable support, and a plurality of sets of gripping devices carried thereby, said sets of gripping devices being arranged in different vertical planes, the gripping devices of each set being in different horizontal planes, each gripping device consisting of a rotary disk, said disks being so arranged that one of the edges thereof will engage the article to be gripped, the pivots of said disks being arranged at an angle to each other, substantially as described.

18. The combination of a rotary support, a series of traveling rollers upon which said support is mounted, said rollers arranged in pairs and having their peripheries parallel with their axes, inner and outer rings between which said rollers travel, and gripping mechanism upon said rotary support, substantially as described.

810,911. DRIP DEVICE FOR STEAM SYSTEMS. WILLIAM J. CLARK, Chicago, Ill. Filed May 31, 1904. Serial No. 210,266.

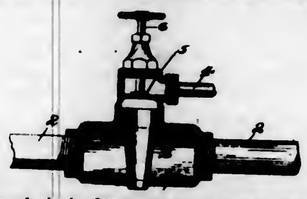

Claim.—1. A pipe-fitting of integral structure, comprising a section of pipe forming a chamber provided with means for connecting the same in a pipe-line, and a drip-pipe extending transversely through the chamber, the outlet end of the drip-pipe terminating at a point substantially in line with the wall of the chamber.

2. A pipe-fitting comprising a section of pipe with means for connecting the same in a pipe-line, provided with a drip-nozzle formed integral with the fitting and extending transversely through the chamber, the outlet end of the drip-pipe terminating at a point substantially in line with the wall of the chamber, and a valve controlling the drip-nozzle.

3. A pipe-fitting comprising a section of pipe constructed with means for connecting the same in a pipe-line provided with a drip-nozzle formed integral with the fitting and extending transversely therethrough, in combination with a controlling-valve for the drip-nozzle arranged at a point therein within the chamber, the outlet end of the drip-pipe terminating at a point substantially in line with the wall of the chamber.

4. A pipe-fitting comprising a section of pipe constructed with means for connecting the same in a pipe-line, provided with an integral chamber, and a drip-nozzle formed integral with the fitting extending therethrough, the outlet end of the drip-nozzle terminating at a point substantially in line with the wall of the chamber, in combination with a valve for the drip-nozzle arranged at a point therein within the chamber, and means outside the chamber for controlling the valve.

5. In a heating system, the combination with a conduit for the heating medium, of a drip-nozzle projecting transversely through the conduit and exposed on all sides to the direct action of the heating medium as the same passes through the conduit, the outlet end of the drip-nozzle terminating at a point substantially in line with the wall of the chamber.

6. A steam system comprising a steam-pipe, and a drip-pipe connected thereto, the outer wall of the drip-pipe being in the direct path of the passing steam in said first-mentioned pipe and surrounded by the latter, the outlet end of the drip-pipe terminating substantially at the wall of the steam-pipe.

810,912. AUTOMATIC NON-INTERFERING REPEATER FOR FIRE-ALARM CIRCUITS. FREDERIC W. COLE, Newton, Mass. Filed Jan. 31, 1903. Serial No. 141,894.

Claim.—1. In a non-interference repeater for fire-alarm circuits, the combination of a series of street-circuits each embracing a magnet and a moving device which controls means for repeating the signal, and a lock for each moving device, the lock being controlled by that moving device which is first in the retracted position after a plurality of the moving devices have been simultaneously operated and have ceased to move in unison, to lock out and render inoperative all of the other moving devices, whereby the signal of the circuit in control will be continued to be sent without mutilation.

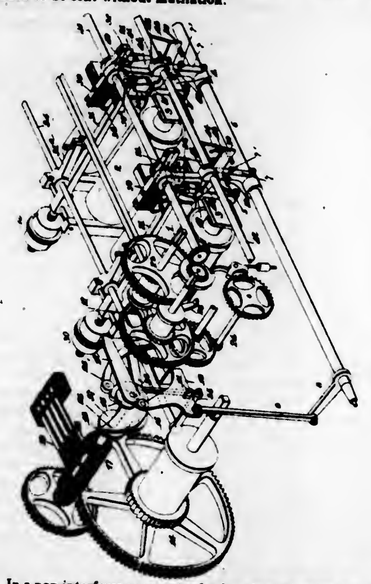

2. In a non-interference repeater for fire-alarm circuits, the combination of a series of street-circuits each embracing a magnet and a moving device which controls means for repeating the signal, a lock for each moving device, and means for mechanically controlling the lock, by that moving device which is first in the retracted position after a plurality of the moving devices have been simultaneously operated and have ceased to move in unison, to lock out and render inoperative all of the other moving devices, whereby the signal of the circuit in control will be continued to be sent without mutilation.

3. In a non-interference repeater for fire-alarm circuits, the combination of a series of street-circuits each embracing a magnet and a moving device which controls means for repeating the signal, means for repeating the signal over the street-circuits, a lock for each moving device, and means for mechanically controlling the lock, by that moving device which is first in the retracted position after a plurality of the moving devices have been simultaneously operated and have ceased to move in unison, to lock out and render inoperative all of the other moving devices, whereby the signal of the circuit in control will be continued to be sent without mutilation.

4. In a non-interference repeater for fire-alarm circuits, the combination of a plurality of circuits, each including a street-magnet, and a repeating mechanism which comprises moving contact devices and a timing device, of moving devices actuated by the street-magnets, each of said moving devices being capable of movement from a normal to an abnormal position and vice versa and by such movement actuating the repeating mechanism, and the timing device, means for repeating over the street-circuits, a locking-out device for each moving device, means for bringing the locking-out devices into action by the movement of a moving device from the normal to the abnormal position, after a plurality of such moving devices have been simultaneously operated and have ceased to operate in unison, which moving devices will control all of the other locking-out devices and lock out all of such moving devices as are in the normal position and prevent the movement of these moving devices so long as the timing-train is operating.

5. In a non-interference repeater for fire-alarm circuits, the combination of a series of street-circuits each embracing a magnet and a moving device which controls means for repeating the signal, a lock for each moving device, means for cutting out the street-circuit of a moving device which has been locked out at the inception of a signal,

the lock being controlled by that moving device which is in a certain position after a plurality of the moving devices have been simultaneously operated and have ceased to move in unison, to lock out and render inoperative all of the other moving devices whereby the signal

vice at each impulse to the repeating mechanism, and means for restoring the locking devices controlled by the timing device.

14. In a non-interference repeater for fire-alarm circuits, the

circuits, a repeating-train, a timing-train and a resetting-train, means for locking the moving devices, means actuated by the resetting-train for engaging with the means for locking the moving devices,

for grounding one spring of the pair when the protective device operates, substantially as described.

the lock being controlled by that moving device which is in a certain position after a plurality of the moving devices have been simultaneously operated and have ceased to move in unison, to lock out and render inoperative all of the other moving devices whereby the signal of the circuit in control will be continued to be repeated without mutilation over the street-circuits which were locked out at the inception of a signal.

6. In a non-interference repeater for fire-alarm circuits, the combination of a series of street-circuits each embracing a magnet and a moving device which controls means for repeating the signal, a lock for each moving device, means for cutting out the street-circuit of a moving device which has been locked out at the inception of a signal, the lock being controlled by that moving device which is in the retracted position after a plurality of moving devices have been simultaneously operated and have ceased to move in unison, to lock out and render inoperative all of the other moving devices whereby the signal of the circuit in control will be continued to be repeated without mutilation over the street-circuits which were locked out at the inception of a signal.

7. In a non-interference repeater for fire-alarm circuits, the combination of a series of street-circuits each embracing a magnet and a moving device which controls means for repeating the signal, means for repeating the signal over the street-circuits, and a lock for each moving device, the lock being controlled by that moving device which first operates after a plurality of the moving devices have been simultaneously operated and have ceased to move in unison, to lock out and render inoperative all of the other moving devices except the one which thus gets control, whereby the signal of the circuit in control will be continued to be sent without mutilation.

8. In a non-interference repeater for fire-alarm circuits, the combination of a series of street-circuits each embracing a magnet and a moving device which controls means for repeating the signal, a lock for each moving device, and means for mechanically controlling the lock by that moving device which first operates after a plurality of the moving devices have been simultaneously operated and have ceased to move in unison, to lock out and render inoperative all of the other moving devices except the one which thus gets control, whereby the signal of the circuit in control will be continued to be sent without mutilation.

9. In a non-interference repeater for fire-alarm circuits, the combination of a series of street-circuits each embracing a magnet and a moving device which controls means for repeating the signal, and a mechanical lock for each moving device, the lock being controlled by that moving device which first operates after a plurality of the moving devices have been simultaneously operated and have ceased to move in unison, to lock out and render inoperative all of the other moving devices except the one which thus gets control, whereby the signal of the circuit in control will be continued to be sent without mutilation.

10. In a non-interference repeater for fire-alarm circuits, the combination of a series of street-circuits each embracing a magnet and a moving device which controls means for repeating the signal over the street-circuits, locking devices therefor, the said moving devices being normally unlocked and means actuated by each impulse received for locking out all of the moving devices in the normal position when a moving device is in the abnormal position.

11. In a non-interference repeater for fire-alarm circuits, the combination of a series of street-circuits each embracing a magnet and a moving device which controls means for repeating the signal, mechanically-controlled locking devices therefor, the said moving devices being normally unlocked and means actuated by each impulse received for locking out all of the moving devices in the normal position when a moving device is in the abnormal position.

12. In a non-interference repeater for fire-alarm circuits, the combination of a series of street-circuits each embracing a magnet and a moving device which controls means for repeating the signal over the street-circuits, mechanically-controlled locking devices therefor, the said moving devices being normally unlocked and means actuated by each impulse received for locking out all of the moving devices in the normal position when a moving device is in abnormal position.

13. In a non-interference repeater for fire-alarm circuits, the combination with a timing device and repeating mechanism, of a series of street-circuits, each embracing a magnet, a moving device for each magnet controlling the repeating mechanism, means for repeating the signal over the street-circuits, means for locking out all circuits not receiving a signal, such circuits staying locked out until the end of a repeated signal, and independent locking-out devices one for each moving device, their freedom to act to lock out a moving device depending upon the position of the corresponding moving device at each impulse to the repeating mechanism, and means for restoring the locking devices controlled by the timing device.

14. In a non-interference repeater for fire-alarm circuits, the combination with a timing device, and repeating mechanism, of a series of street-circuits, each embracing a magnet, a moving device for each magnet controlling the repeating mechanism, means for repeating over the street-circuits, means for cutting out and locking out all circuits not receiving a signal, such circuits staying locked out and cut out until the end of a repeated signal, and independent locking-out devices one for each moving device, their freedom to act to lock out a moving device depending upon the position of the corresponding moving device at each impulse to the repeating mechanism, and means for restoring the locking-out and cutting-out devices controlled by a timing device.

15. In a non-interference repeater for fire-alarm circuits, the combination of a series of street-circuits each embracing a magnet and a moving device, which controls means for repeating the signal, means for repeating the signal over the street-circuits, a locking-lever for each moving device, and means for controlling the locking-lever, such means being actuated by the first moving device to get into retracted position after a plurality of moving devices have been simultaneously actuated and cease to move in unison.

16. In a non-interference repeater for fire-alarm circuits, the combination of a series of street-circuits each embracing a magnet and a moving device, which controls means for repeating the signal, a locking-lever for each moving device, and mechanical means for controlling the locking-lever, such means being actuated by the first moving device to get into retracted position after a plurality of moving devices have been simultaneously actuated and cease to move in unison.

17. In a non-interference repeater for fire-alarm circuits, the combination of a series of street-circuits each embracing a magnet and a moving device which controls means for repeating the signal, means for repeating the signal over the street-circuits, a locking-lever for each moving device, and mechanical means for controlling the locking-lever, such means being actuated by the first moving device to get into retracted position after a plurality of moving devices have been simultaneously actuated and cease to move in unison.

18. In a non-interference repeater for fire-alarm circuits, the combination of a series of street-circuits, each embracing a magnet and a moving device which controls means for repeating the signal, means for repeating the signal over the street-circuits, each moving device having a normal and an abnormal position, a lock, means for locking the moving devices in the normal position, and means for controlling the locking means, such controlling means being controlled by a moving member which gets into the abnormal position, after a plurality of devices have moved in unison and ceased to so move.

19. In a non-interference repeater for fire-alarm circuits, the combination of a series of street-circuits, each embracing a magnet and a moving device which controls means for repeating the signal, each moving device having a normal and an abnormal position, a mechanical lock, means for locking the moving devices in the normal position, and means for controlling the locking means, such controlling means being controlled by a moving member which gets into the abnormal position after a plurality of devices have moved in unison, and ceased to so move.

20. In a non-interference repeater for fire-alarm circuits, the combination of a series of street-circuits, each embracing a magnet and a moving device which controls means for repeating the signal, means for repeating the signal over the street-circuits, each moving device having a normal and an abnormal position, a mechanical lock, means for locking the moving devices in the normal position, and means for controlling the locking means, such controlling means being controlled by a moving member which gets into the abnormal position, after a plurality of devices have moved in unison, and ceased to so move.

21. In a non-interference repeater for fire-alarm circuits, the combination of a series of street-circuits each embracing a magnet and a moving device which controls means for repeating the signal, a cut-out in each street-circuit, and a lock-out device for each moving device, means for actuating the cut-out and the locking devices for each street-circuit in normal condition at the inception of a signal, and means for actuating the lock-out devices of all but one of the other street-circuits which were in abnormal condition when a plurality of circuits received a signal simultaneously but whose moving devices cease to move in unison.

22. In a non-interference repeater for fire-alarm circuits, the combination of a series of street-circuits each embracing a magnet and a moving device, means for repeating the signal over the street-

circuits, a repeating-train, a timing-train and a resetting-train, means for locking the moving devices, means actuated by the resetting-train for engaging with the means for locking the moving devices, and means actuated by the moving devices for moving the means actuated by the resetting-train, for locking out the moving devices, such means being actuated by a moving device which is first in abnormal position after a plurality of signals have been simultaneously received, and the moving devices cease to move in unison.

23. In a non-interference repeater for fire-alarm circuits, the combination of a series of street-circuits each embracing a magnet and a moving device, a repeating-train, a timing-train and a resetting-train, mechanical means for locking the moving devices, means actuated by the resetting-train for engaging with the means for locking the moving devices, and means actuated by the moving devices for moving the means actuated by the resetting-train, for locking out the moving devices, such means being actuated by a moving device which is first in abnormal position after a plurality of signals have been simultaneously received, and the moving devices cease to move in unison.

24. In a non-interference repeater for fire-alarm circuits, the combination of a series of street-circuits each embracing a magnet and a moving device, means for repeating the signal over the street-circuits, a repeating-train, a timing-train and a resetting-train, mechanical means for locking the moving devices, means actuated by the resetting-train for engaging with the means for locking the moving devices, and means actuated by the moving devices for moving the means actuated by the resetting-train, for locking out the moving devices, such means being actuated by a moving device which is first in abnormal position after a plurality of signals have been simultaneously received, and the moving devices cease to move in unison.

25. In a non-interference repeater for fire-alarm circuits, the combination with a street-magnet, a moving device actuated thereby, means for resetting the moving device, means for locking out the moving devices and means for controlling the lock-out means, of a lever having means for engaging with the resetting means, and having a recess for engaging with the lock-out controlling means, to prevent action of the latter upon the lock-out means by the position of the moving devices.

810,918. GUN-CLEANING DEVICE. John D. Coleman, Glenwood, Ill. Filed Mar. 6, 1905. Serial No. 248,574.

Claim.—1. In a device of the character described, a stem comprising a section B, and a section A, said section B, having at one end a swab-holder and provided at its opposite end with a bore encompassed by a rim, said section A, being provided at one end with means for connecting it with a cleaning-rod and having its opposite end provided with an annular groove and inserted in the said bore in section B, the said rim of the latter section being shrunk to fit the said annular groove on section A, said sections being non-separable and independently rotatable.

2. In a device of the character described, a stem comprising a section B, having its outer end adapted to hold a swab, and provided at its opposite or inner end with a longitudinal bore encompassed by a rim; and a section A, having its outer end adapted to be connected with a cleaning-rod, and having its opposite or inner end inserted in said bore in section B, and provided near its inner end with an annular shoulder engaged by the said rim on section B, and having an annular groove located between said shoulder and its inner end, an annular portion of said rim being shrunk to form an inwardly-extending annular rib rotatably fitting said annular groove in section A.

810,914. PROTECTIVE APPARATUS. Frank B. Cook, Chicago, Ill. Filed Dec. 4, 1903. Serial No. 183,733.

Claim.—1. In protective apparatus, the combination with a ground-plate, of a pair of superposed springs mounted flatwise thereon but insulated therefrom and from each other, one spring of the pair being rigidly supported by a suitable support, a protective device adapted to be held in a state of stress by the said springs and conductively connected from one spring to the other, a third spring outside of the said pair and mounted flatwise on the ground-plate, but insulated therefrom and from the pair of springs, at its mounting, the said third spring making contact with the outer spring of the pair at its free end, the said third spring and inner spring of the pair being switchboard and line terminals, respectively and means for grounding one spring of the pair when the protective device operates, substantially as described.

2. In protective apparatus, the combination with a ground-plate, of a pair of superposed springs mounted flatwise thereon but insulated therefrom and from each other, one spring of the pair being held stationary by a suitable support, one of the said springs being formed into a thimble at its free end, the other said spring being provided with a lip at its free end, a heat-coil adapted to be firmly held in the said thimble, a conducting member on the heat-coil, adapted to engage the said lip, the heat-coil being held in a state of stress by the said springs, a third spring outside of the said pair and mounted flatwise on the ground-plate, but insulated therefrom and from the pair of springs, at its mounting, the said third spring making contact with the outer spring of the pair at its free end, the said third spring and inner spring of the pair being switchboard and line terminals, respectively and means for grounding one spring of the pair when the heat-coil operates, substantially as described.

3. In protective apparatus, the combination with a ground-plate, of bolts extending therethrough and insulated therefrom and from each other, a pair of superposed springs mounted flatwise on the said plate by the said bolts, and insulated from the said plate, and from each other, one spring of the pair being rigidly supported by a suitable support, a protective device adapted to be held in a state of stress by the said springs and conductively connected from one spring to the other, a third spring outside of the said pair and mounted flatwise on the ground-plate by the said bolts, the said third spring being insulated from the ground-plate and from the pair of springs, at its mounting, and making contact with the outer spring of the pair at its free end, the third spring and the inner spring of the pair being switchboard and line terminals, respectively, and means for grounding one spring of the pair when the protective device operates, substantially as described.

4. In protective apparatus, the combination with a ground-plate, of a pair of superposed springs mounted flatwise thereon and insulated therefrom and from each other, one spring of the pair being rigidly supported by a suitable support, a protective device adapted to be held in a state of stress by the said springs and conductively connected from one spring to the other, a third spring outside of the said pair and mounted flatwise on the ground-plate, but insulated therefrom and from the pair of springs, at its mounting, the said third spring making contact with the outer spring of the pair at its free end, the said third spring and inner spring of the pair being switchboard and line terminals, respectively, the outer spring of the pair being dead at its mounting, and means for grounding the movable spring of the pair by the operation of the protective device, substantially as described.

5. In protective apparatus, the combination with a ground-plate, of bolts extending therethrough and insulated therefrom and from each other, a pair of superposed springs mounted flatwise on the said plate by the said bolts, and insulated from the said plate and from each other, the outer spring of the pair being insulated from the said bolts, the inner spring of the pair being conductively secured to one of the said bolts and insulated from the other, one of the said springs being rigidly supported by a suitable support, a protective device adapted to be connected between the pair of springs at their free ends, the said device being held in a state of stress by the tension in the said springs, a third spring outside of the said pair and mounted flatwise on the ground-plate by the said bolts, the said third spring being insulated from the ground-plate, from the pair of springs and from the said bolts, at its mounting, and adapted to make contact with the outer spring of the pair at its free end, the third spring and the inner spring of the pair being switchboard and line terminals, respectively, and means operated by the giving away of the protect-

ive device, whereby the inner spring of the pair is ground, substan-

ive device, whereby the inner spring of the pair is ground, substantially as described.

6. In protective apparatus, the combination with a ground-plate, of a pair of superposed springs mounted flatwise thereon and insulated therefrom and from each other, one of the said springs being rigidly supported, the other said spring being free to move, a protective device held in a state of stress between the said springs and conductively connected from one spring of the pair to the other, a third spring outside of the said pair and mounted flatwise on the ground-plate, the said third spring being insulated from the ground-plate and from the pair of springs at its fixed end, and making contact with the outer spring of the pair at its free end, a fourth spring interposed between the pair of springs and forming a part of the movable spring of the said pair, the fourth spring being adapted to be electrically connected with the rigid spring of the pair when the protective device operates, and a projection from the movable spring of the pair, adapted to make connection with the ground-plate when the protective device operates, and thereby ground all of the springs of the combination, substantially as described.

7. In protective apparatus, the combination with a ground-plate, of a pair of superposed springs mounted flatwise thereon and insulated therefrom and from each other, one of the said springs being rigidly supported, the other said spring being free to move, a protective device held in a state of stress between the said springs and conductively connected from one spring of the pair to the other, a third spring outside of the said pair and mounted flatwise on the ground-plate, but insulated from the ground-plate and from the pair of springs at its fixed end, the said third spring making contact with the outer spring of the pair at its free end, a fourth spring interposed between the pair of springs and forming a part of the movable spring of the pair, a fifth spring interposed between the ground-plate and the inner spring of the pair, mounted flatwise on the ground-plate and insulated from the latter and from the other springs of the set, the said fourth spring being adapted to be electrically connected with the rigid spring of the pair when the protective device operates, and a projection on the movable spring of the pair adapted to make electrical connection with the ground-plate when the protective device operates, and thereby ground all of the springs of the combination, substantially as described.

8. In protective apparatus, the combination with a ground-plate, of a pair of superposed springs mounted flatwise thereon but insulated therefrom and from each other, one spring of the pair being held stationary, the other spring being free to move, and one of the said springs being formed into a thimble at its free end, the other said spring being provided with a lip thereon at its free end, a heat-coil adapted to be inserted in, and firmly held by, the said thimble, the said heat-coil being provided with a hollow core and a pin secured therein by fusible material, and a conducting member secured to the said pin and adapted to engage the said lip, an abnormally large current traversing the winding of the heat-coil for a sufficient length of time, causing the fusible material thereof to soften and thus allow the said pin and conducting member secured thereto, to turn, thereby releasing the said conducting member from the said lip and grounding the movable spring of the pair, substantially as described.

9. In protective apparatus, the combination with a ground-plate, of a pair of superposed springs mounted flatwise thereon but insulated therefrom and from each other, one spring of the said pair being held stationary, the other spring being free to move, and one of the said springs being formed into a thimble at its free end, the other said spring being provided with a lip thereon at its free end, a heat-coil adapted to be inserted in, and firmly held by, the said thimble, the said heat-coil being provided with a hollow core and a pin secured therein by fusible material, a conducting member secured to the said pin and adapted to engage the said lip, an abnormally large current traversing the winding of the heat-coil for a sufficient length of time, causing the fusible material thereof to soften and thus allow the said pin and conducting member secured thereto, to turn, thereby releasing the said conducting member from the said lip and grounding the movable spring of the pair, and means adapted to engage the said conducting member and thereby turn the heat-coil within the said thimble, when the protective apparatus is reset, the said lip again engaging the said conducting member as originally, substantially as described.

10. In protective apparatus, the combination with a ground-plate, of a ground-strip secured to one edge thereof, a spring mounted flatwise on the ground-plate and insulated therefrom, a second spring between the first-mentioned spring and the ground-plate, mounted flatwise on the ground-plate and insulated therefrom and from the first-mentioned spring, a pair of superposed springs outside of the first-mentioned spring and mounted flatwise on the ground-plate but insulated therefrom and from each other, the inner spring of the said pair being conductively secured to the first-mentioned spring, one spring of the pair being held stationary, the other spring of the pair being movable, a fifth spring outside of the said pair of springs, mounted flatwise on the ground-plate and insulated from the ground-plate and from the other said springs, at its fixed end, and making contact with the outer spring of the pair at its free end, a lightning-arrester inserted between the free end of the first-mentioned spring and the ground-strip, and a protective device held in a state of stress between the said pair of springs, the giving away of the protective device, due to an abnormally large current therein, causing the movable spring of the pair to ground itself and the second-mentioned spring, substantially as described.

11. In protective apparatus, the combination with a ground-plate, of a ground-strip secured to one edge thereof, a spring mounted flatwise on the ground-plate and insulated therefrom, a second spring interposed between the first-mentioned spring and the ground-plate, mounted flatwise on the ground-plate and insulated therefrom and from the first-mentioned spring, a pair of superposed springs outside of the first-mentioned spring and mounted flatwise on the ground-plate but insulated therefrom and from each other, the inner spring of the said pair being conductively secured to the first-mentioned spring, one spring of the pair being provided with a projection thereon adapted to make contact with the other spring of the pair, and another projection thereon adapted to make contact with the second-mentioned spring, which is adapted to make contact with the ground-plate, one spring of the pair being held stationary, the other spring of the pair being movable, a fifth spring outside of the said pair of springs, mounted flatwise on the ground-plate and insulated therefrom and from the other said springs, at its fixed end, and making contact with the outer spring of the pair at its free end, the said fifth spring being split at its free end to form two points of contact, a lightning-arrester inserted between the free end of the first-mentioned spring and the ground-strip, and a protective device held in a state of stress between the said pair of springs, the giving away of the protective device, due to an abnormally large current therein, causing the movable spring of the pair to throw a ground on all of the springs of the combination, substantially as described.

12. In protective apparatus, the combination with a ground-plate, of a ground-strip secured to one edge thereof and suitably arranged to accommodate lightning-arresters, a spring mounted flatwise on the ground-plate and insulated therefrom, a pair of superposed springs outside of the first-mentioned spring and mounted flatwise on the ground-plate but insulated therefrom and from each other, the inner spring of the pair being conductively secured to the first-mentioned spring, one spring of the pair being held stationary, the other spring of the pair being movable, a projection on one spring of the pair adapted to make connection between the two springs of the pair, a projection on one spring of the pair adapted to make electrical connection with the ground-plate, a fourth spring outside of the said pair of springs, mounted flatwise on the ground-plate and insulated therefrom and from the other springs at its fixed end, and making contact with the outer spring of the pair at its free end, the said fourth spring being split at its free end to form two points of contact, a lightning-arrester inserted between the free end of the first-mentioned spring and the ground-strip, and a protective device held in a state of stress between the said pair of springs, the giving away of the protective device, due to an abnormally large current therein, causing the movable spring of the pair to ground all of the springs of the combination, substantially as described.

13. In protective apparatus, the combination with a ground-plate, of double-ended bolts extending therethrough and insulated therefrom and from each other, ground-strips secured to one edge of the ground-plate and held against each other, a pair of superposed springs on each side of the ground-plate and mounted flatwise on the ground-plate by the said bolts, the said springs being insulated from the ground-plate and from each other, one spring of each pair being held stationary, the other spring of each pair being movable, a protective device for each pair of springs and held in a state of stress thereby, a third spring for each pair, mounted flatwise on the ground-plate between the latter and the respective pairs of springs, by the said bolts, the said third springs being conductively secured to the respective inner springs of the pairs, lightning-arresters inserted between the respective third springs and the ground-strips, a fourth spring for each pair, mounted flatwise on the ground-plate by the said bolts, outside of the respective pairs of springs, the said fourth springs making contact with the respective outer springs of the pairs at their free ends, and being insulated from the said pairs at their fixed ends, and a terminal spring for each side of the ground-plate and mounted thereon by the said bolts, but insulated from the ground-plate and from each other, one of the said terminal springs and the opposite said third spring being conductively secured to one said bolt, the other said terminal spring and its opposite said fourth spring being conductively secured to the other said bolt, this "changing over" of the springs being done to put the connection-terminals for both said third springs on one side of the ground-plate, and the connection-terminals for both said fourth springs on the other side of the ground-plate, the giving away of the protective devices, due to abnormally large currents therein, causing the movable springs of the respective pairs to ground themselves and their respective third springs, substantially as described.

14. In apparatus of the class specified, the combination of a thimble, an excess-current-operable device contained within the thimble, means for engaging a portion of the said device and tending to turn same within the thimble, and means for turning the said device within the thimble, to an operative position, after operation.

15. In apparatus of the class specified, the combination of a device operable upon an excess of current and comprising a conducting member normally secured in place by heat-susceptible material, a thimble in the nature of a spring adapted to grasp the said device and firmly hold same therein, means for engaging the said conducting member and tending to turn the said device within the thimble, the said conducting member releasing its engaging means when the heat-susceptible material is softened, and means for turning the said device within the thimble to reset the apparatus.

16. In apparatus of the class specified, the combination of a spring member formed into a thimble at one end thereof, a thermal protector contained within the thimble and firmly held against rotation by the latter, a conducting member electrically connected with the protector and held in an operative position by heat-susceptible material, a second spring member adapted to engage the said conducting member and tending to turn the said device within the thimble, the said second spring member being released by the said conducting member when the protector operates, and thereby controlling a circuit, and means adapted to engage the said conducting member and thereby turn the protector within the thimble, to an operative position, when the apparatus is reset, substantially as described.

17. In protective apparatus for electric circuits, the combination with a ground-plate, of a ground-strip secured thereto, a series of lightning-arresters held against the ground-strip, a series of spring-supports adapted to hold the respective lightning-arresters in place, a second series of springs conductively connected with the respective springs of the first series, a third series of springs forming pairs with the respective springs of the second series, a series of thermal protectors held in a state of stress between the respective pairs of springs, a fourth series of springs adapted to normally engage the respective springs of one series forming the pairs, and means for grounding one spring of any pair upon the operation of its protector.

18. In apparatus of the class specified, an electric protective device, a thimble adapted to grasp the said device and normally hold same in a fixed position, means adapted to engage the device and tending to operate same, the operation of the device causing a circuit to be controlled, and means adapted to move the said device within the thimble to operative position after operation.

19. In apparatus of the class specified, a device operable upon an excess of current in the circuit, means for holding same in an operative position, means for turning a portion of the device under abnormal conditions, to control a circuit, and means for turning the device as a whole to an operative position after operation.

20. In apparatus of the class specified, a device operable upon an excess of current in the circuit, means for holding same in an operative position, means for operating the device under abnormal conditions, and means for turning the device as a whole to an operative position after operation.

21. In apparatus of the class specified, a device operable upon an excess of current in the circuit, means for holding same in an operative position, means for turning the central portion thereof under abnormal conditions, to control a circuit, and means for turning the device as a whole to an operative position after operation.

810,915. AUTOMATIC CUT-OUT MECHANISM FOR ELECTRICALLY-OPERATED BULKHEAD-DOORS. WILLIAM B. COWLES, Cleveland, Ohio, assignor to The "Long Arm" System Company, Cleveland, Ohio, a Corporation of Ohio. Filed July 11, 1904. Serial No. 216,143.

Claim.—1. In a system of the character described, the combination with a door or hatch, of an electric motor, and gearing driven by said motor for operating the door or hatch, pivoted arms with a stop therefor, a spring under compression mounted between said arms, a lug or roller connected to a member of said gearing, and forcing one or the other of said arms against said spring when the load on said gearing exceeds a predetermined limit, and means controlled by the yielding of said arm against said spring for cutting off the current from said motor, substantially as described.

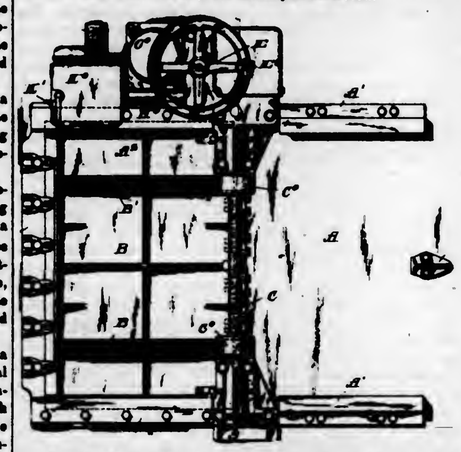

2. In a system of the character described, the combination with a door or hatch, of an electric motor, and gearing driven by said motor for operating the door or hatch, pivoted arms with a stop therefor, a spring under compression mounted between said arms, a lug or roller connected to a member of said gearing, and forcing one or the other of said arms against said spring when the load on said gearing exceeds a predetermined limit, and a cut-out switch controlled by the yielding of said arm against said spring for cutting off the current from said motor, substantially as described.

3. In a system of the character described, the combination with a door or hatch, a rack or racks secured thereto, and a shaft with a pinion or pinions meshing in said rack or racks, of an electric motor, and gearing driven by said motor for turning said shaft, arms pivotally mounted on said shaft and a stop for said arms, a spring under compression mounted between said arms, a lug or roller connected to a member of said gearing and forcing one or the other of said arms against the action of said spring when the load on said gearing exceeds a predetermined limit, and a cut-out switch controlled by the yielding of said arm against said spring, for cutting off the current from said motor, substantially as described.

4. In a system of the character described, the combination with a door or hatch, a rack or racks secured thereto, and a shaft with a pinion or pinions meshing in said rack or racks, of an electric motor, and gearing driven by said motor for turning said shaft, arms pivotally mounted on said shaft and a stop for said arms, a spring under compression mounted between said arms, a lug or roller connected to a member of said gearing and forcing one or the other of said arms against the action of said spring when the load on said gearing exceeds a predetermined limit, and means controlled by the yielding of said arm against said spring, for cutting off the current from said motor, substantially as described.

5. In a system of the character described, the combination with a door or hatch, of an electric motor, and gearing driven by said motor for operating the door or hatch, pivoted arms with a stop therefor, a spring under compression mounted between said arms, means for adjusting the compression of said spring, a lug or roller connected to a member of said gearing, and forcing one or the other of said arms against said spring when the load on said gearing exceeds a predetermined limit, and means controlled by the yielding of said arm against said spring for cutting off the current from said motor, substantially as described.

6. In a system of the character described, the combination with a door or hatch, of an electric motor, and gearing driven by said motor for operating the door or hatch, pivoted arms with a stop therefor, a spring under compression mounted between said arms, means for adjusting the compression of said spring, a lug or roller con-

nected to a member of said gearing, and forcing one or the other of said arms against said spring when the load on said gearing exceeds a predetermined limit, and a cut-out switch controlled by the yielding of said arm against said spring for cutting off the current from said motor, substantially as described.

7. In a system of the character described, the combination with a door or hatch, a rack or racks secured thereto, and a shaft with a pinion or pinions meshing in said rack or racks, of an electric motor, and gearing driven by said motor for turning said shaft, arms pivotally mounted on said shaft and a stop for said arms, a spring under compression mounted between said arms, means for adjusting the compression of said spring, a lug or roller connected to a member of said gearing and forcing one or the other of said arms against the action of said spring when the load on said gearing exceeds a predetermined limit, and a cut-out switch controlled by the yielding of said arm against said spring, for cutting off the current from said motor, substantially as described.

8. In a system of the character described, the combination with a door or hatch, a rack or racks secured thereto, and a shaft with a pinion or pinions meshing in said rack or racks, of an electric motor, and gearing driven by said motor for turning said shaft, arms pivotally mounted on said shaft and a stop for said arms, a spring under compression mounted between said arms, means for adjusting the compression of said spring, a lug or roller connected to a member of said gearing and forcing one or the other of said arms against the action of said spring when the load on said gearing exceeds a predetermined limit, and means controlled by the yielding of said arm against said spring, for cutting off the current from said motor, substantially as described.

9. In a system of the character described, the combination with a door, of an electric motor, and gearing driven by said motor for operating the door, pivoted arms with a stop therefor, a coil-spring under compression mounted between said arms, a telescopic joint for adjusting the compression of said spring, a lug or roller connected to said gearing, and forcing one or the other of said arms against said spring when the load on said gearing exceeds a predetermined limit, and a cut-out switch controlled by the yielding of said arm against said spring for cutting off the current from said motor, substantially as described.

10. In a system of the character described, the combination with a door, of an electric motor, and gearing driven by said motor for operating the door, pivoted arms with a stop therefor, a coil-spring under compression mounted between said arms, a telescopic joint for adjusting the compression of said spring, a lug or roller connected to said gearing, and forcing one or the other of said arms against said spring when the load on said gearing exceeds a predetermined limit, and means controlled by the yielding of said arm against said spring for cutting off the current from said motor, substantially as described.

11. In a system of the character described, the combination with a door or hatch, of an electric motor, and a worm-wheel driven by said motor for operating the door or hatch, pivoted arms with a stop therefor, a spring under compression mounted between said arms, a lug or roller connected to said worm-wheel and forcing one or the other of said arms against said spring when the load on said gearing exceeds a predetermined limit in either direction, and means controlled by the yielding of said arm against said spring for cutting off the current from said motor, substantially as described.

12. In a system of the character described, the combination with a door or hatch, of an electric motor, and a worm-wheel driven by said motor for operating the door or hatch, pivoted arms with a stop therefor, a spring under compression mounted between said arms, a lug or roller connected to said worm-wheel and forcing one or the other of said arms against said spring when the load on said gearing exceeds a predetermined limit, and a cut-out switch controlled by the yielding of said arm against said spring for cutting off the current from said motor, substantially as described.

13. In a system of the character described, the combination with a door or hatch, a rack or racks secured thereto, and a shaft with a pinion or pinions meshing in said rack or racks, of an electric motor, and a worm-wheel mounted on said shaft and driven by said motor for turning said shaft, arms pivotally mounted on said shaft and a stop for said arms, a spring under compression mounted between said arms, a lug or roller connected to said worm-wheel and forcing one or the other of said arms against the action of said spring when the load on said gearing exceeds a predetermined limit, and a cut-out switch controlled by the yielding of said arm against said spring, for cutting off the current from said motor, substantially as described.

14. In a system of the character described, the combination with a door or hatch, a rack or racks secured thereto, and a shaft with a pinion or pinions meshing in said rack or racks, of an electric motor, and a worm-wheel mounted on said shaft and driven by said motor for turning said shaft, arms pivotally mounted on said shaft and a stop for said arms, a spring under compression mounted between said arms, a lug or roller connected to said worm-wheel and forcing one or the other of said arms against the action of said spring when the load on said gearing exceeds a predetermined limit, and means controlled by the yielding of said arm against said spring, for cutting off the current from said motor, substantially as described.

15. In a system of the character described, the combination with a door or hatch, of an electric motor, and a worm-wheel driven by said motor for operating the door or hatch, pivoted arms with a stop therefor, a spring under compression mounted between said arms, means for adjusting the compression of said spring, a lug or roller connected to said worm-wheel, and forcing one or the other of said arms against said spring when the load on said gearing exceeds a predetermined limit, in either direction, and means controlled by the yielding of said arm against said spring for cutting off the current from said motor, substantially as described.

16. In a system of the character described, the combination with a door or hatch, of an electric motor, and a worm-wheel driven by said motor for operating the door or hatch, pivoted arms with a stop therefor, a spring under compression mounted between said arms, means for adjusting the compression of said spring, a lug or roller connected to said worm-wheel and forcing one or the other of said arms against said spring when the load on said gearing exceeds a predetermined limit, and a cut-out switch controlled by the yielding of said arm against said spring for cutting off the current from said motor, substantially as described.

17. In a system of the character described, the combination with a door or hatch, a rack or racks secured thereto, and a shaft with a pinion or pinions meshing in said track or racks, of an electric motor, and a worm-wheel mounted on said shaft and driven by said motor for turning said shaft, arms pivotally mounted on said shaft and a stop for said arms, a spring under compression mounted between said arms, a lug or roller connected to said worm-wheel and forcing one or the other of said arms against the action of said spring when the load on said gearing exceeds a predetermined limit, means for adjusting the compression of said spring, and a cut-out switch controlled by the yielding of said arm against said spring, for cutting off the current from said motor, substantially as described.

18. In a system of the character described, the combination with a door, of an electric motor, and gearing driven by said motor for operating the door, pivoted arms with a stop therefor, a coil-spring under compression mounted between said arms, a telescopic joint for adjusting the compression of said spring, a lug or roller connected to said gearing, and forcing one or the other of said arms against said spring when the load on said gearing exceeds a predetermined limit, and means controlled by the yielding of said arm against said spring for cutting off the current from said motor, substantially as described.

19. In a system of the character described, the combination with a door, of an electric motor, and gearing driven by said motor for operating the door, pivoted arms with a stop therefor, a coil-spring under compression mounted between said arms, a telescopic joint for adjusting the compression of said spring, a lug or roller connected to said gearing, and forcing one or the other of said arms against said spring when the load on said gearing exceeds a predetermined limit, and a cam-sleeve controlled by the yielding of said arm against said spring, and a cut-out switch operated by said cam-sleeve, for cutting off the current from said motor, substantially as described.

20. In a system of the character described, the combination with a door or hatch, of an electric motor, and a worm-wheel driven by said motor for operating the door or hatch, pivoted arms with a stop therefor, a spring under compression mounted between said arms, a lug or roller connected to said worm-wheel and forcing one or the other of said arms against said spring when the load on said gearing exceeds a predetermined limit in either direction, a cam-sleeve, cam-lugs connected to said worm-wheel and engaging said cam-sleeve, and means controlled by the motion of said cam-sleeve due to the yielding of said arm against said spring, for cutting off the current from said motor, substantially as described.

21. In a system of the character described, the combination with a door or hatch, of an electric motor, and a worm-wheel driven by said motor for operating the door or hatch, pivoted arms with a stop therefor, a spring under compression mounted between said arms, a lug or roller connected to said worm-wheel and forcing one or the other of said arms against said spring when the load on said gearing exceeds a predetermined limit, a cam-sleeve, cam-lugs connected to said worm-wheel and engaging said cam-sleeve, and a cut-out switch controlled by the motion of said cam-sleeve due to the yielding of said arm against said spring for cutting off the current from said motor, substantially as described.

22. In a system of the character described, the combination with a door or hatch, a rack or racks secured thereto, and a shaft with a pinion or pinions meshing in said rack or racks, of an electric motor, and a worm-wheel mounted on said shaft and driven by said motor for turning said shaft, arms pivotally mounted on said shaft and a stop for said arms, a spring under compression mounted between said arms, a lug or roller connected to said worm-wheel and forcing one or the other of said arms against the action of said spring when the load on said gearing exceeds a predetermined limit, a cam-sleeve movable longitudinally on said shaft, cam-lugs connected to said worm-wheel and said cam-sleeve, and a cut-out switch controlled by the motion of said cam-sleeve due to the yielding of said arm against said spring for cutting off the current from said motor, substantially as described.

23. In a system of the character described, the combination with a door or hatch, a rack or racks secured thereto, and a shaft with a pinion or pinions meshing in said rack or racks, of an electric motor, and a worm-wheel mounted on said shaft and driven by said motor for turning said shaft, arms pivotally mounted on said shaft and a stop for said arms, a spring under compression mounted between said arms, a lug or roller connected to said worm-wheel and forcing one or the other of said arms against the action of said spring when the load on said gearing exceeds a predetermined limit, a cam-sleeve movable longitudinally on said shaft, cam-lugs connected to said worm-wheel and engaging said cam-sleeve, and means controlled by the motion of said cam-sleeve due to the yielding of said arm against said spring, for cutting off the current from said motor, substantially as described.

24. In a system of the character described, the combination with a door or hatch, of an electric motor, and a worm-wheel driven by said motor for operating the door or hatch, pivoted arms with a stop therefor, a coil-spring under compression mounted between said arms, a telescopic joint for supporting said spring and for adjusting the compression thereof, a lug or roller connected to said worm-wheel, and forcing one or the other of said arms against said spring when the load on said gearing exceeds a predetermined limit, in either direction, and means controlled by the yielding of said arm against said spring for cutting off the current from said motor, substantially as described.

25. In a system of the character described, the combination with a door or hatch, of an electric motor, and a worm-wheel driven by said motor for operating the door or hatch, pivoted arms with a stop therefor, telescopic members pivoted to said arms, respectively, a coil-spring under compression mounted between said arms over said telescopic members, a screw for adjusting the compression of said spring, a lug or roller connected to said worm-wheel and forcing one or the other of said arms against said spring when the load on said gearing exceeds a predetermined limit, and a cut-out switch controlled by the yielding of said arm against said spring for cutting off the current from said motor, substantially as described.

26. In a system of the character described, the combination with a door or hatch, a rack or racks secured thereto, and a shaft with a pinion or pinions meshing in said rack or racks, of an electric motor, and a worm-wheel mounted on said shaft and driven by said motor for turning said shaft, arms pivotally mounted on said shaft and a stop for said arms, telescopic members pivoted to said arms, respectively, a coil-spring under compression mounted between said arms and inclosing said telescopic members, a lug or roller connected to said worm-wheel and forcing one or the other of said arms against the action of said spring when the load on said gearing exceeds a predetermined limit, a screw connecting said telescopic members for adjusting the compression of said spring, and a cut-out switch controlled by the yielding of said arm against said spring, for cutting off the current from said motor, substantially as described.

27. In a system of the character described, the combination with a door, of an electric motor, and gearing driven by said motor for operating the door, pivoted arms with a stop therefor, telescopic members connecting said arms, a coil-spring under compression mounted between said arms, and inclosing said telescopic members, a lug or roller connected to said gearing, and forcing one or the other of said arms against said spring when the load on said gearing exceeds a predetermined limit, and means controlled by the yielding of said arm against said spring for cutting off the current from said motor, substantially as described.

28. In a system of the character described, the combination with a door or hatch, of an electric motor, and gearing driven by said motor for operating the door or hatch, pivoted arms with a stop therefor, a spring under compression mounted between said arms, a lug or roller connected to said gearing, and forcing one or the other of said arms against said spring when the load on said gearing exceeds a predetermined limit, means controlled by the yielding of said arm against said spring for cutting off the current from said motor, and means for operating said gearing by hand from either side of the bulkhead, when desired, substantially as described.

29. In a system of the character described, the combination with a door or hatch, of an electric motor, and gearing driven by said motor for operating the door or hatch, pivoted arms with a stop therefor, a spring under compression mounted between said arms, means for adjusting the compression of said spring, a lug or roller connected to said gearing, and forcing one or the other of said arms against said spring when the load on said gearing exceeds a predetermined limit, a cut-out switch controlled by the yielding of said arm against said spring for cutting off the current from said motor, and means for operating said gearing by hand from either side of the bulkhead, when desired, substantially as described.

30. In a system of the character described, the combination with a door or hatch, a rack or racks secured thereto, and a shaft with pinions meshing in said racks, of an electric motor, and gearing driven by said motor for turning said shaft, arms pivotally mounted on said shaft and a stop therefor, a spring under compression mounted between said arms, a lug or roller connected to a member of said gearing and forcing one or the other of said arms against the action of said spring when the load on said gearing exceeds a predetermined limit, a cut-out switch controlled by the yielding of said arm against said spring, for cutting off the current from said motor, and means for operating said gearing by hand from either side of the bulkhead, when desired, substantially as described.

31. In a system of the character described, the combination with a door or hatch, a rack or racks secured thereto, and a shaft with pinions meshing in said racks, of an electric motor, and gearing driven by said motor for turning said shaft, arms pivotally mounted on said shaft and a stop therefor, a spring under compression mounted between said arms, a lug or roller connected to a member of said gearing and forcing one or the other of said arms against the action of said spring when the load on said gearing exceeds a predetermined limit, means controlled by the yielding of said arm against said spring, for cutting off the current from said motor, and means for operating said gearing by hand from either side of the bulkhead, substantially as described.

32. In a system of the character described, the combination with a door, of an electric motor, and gearing driven by said motor for operating the door, pivoted arms with a stop therefor, a coil-spring under compression mounted between said arms, a telescopic joint for adjusting the compression of said spring, a lug or roller connected to said gearing, and forcing one or the other of said arms against said spring when the load on said gearing exceeds a predetermined limit, a cam-sleeve controlled by the yielding of said arm against said spring, a pivoted arm rocked by said cam-sleeve and a cut-out switch operated by said arm, for cutting off the current from said motor, substantially as described.

33. In a system of the character described, the combination with a door or hatch, of an electric motor, and a worm-wheel driven by said motor for operating the door or hatch, pivoted arms with a stop therefor, a spring under compression mounted between said arms, a lug or roller connected to said worm-wheel and forcing one or the other of said arms against said spring when the load on said gearing exceeds a predetermined limit in either direction, a cam-sleeve, cam-lugs connected to said worm-wheel and engaging said cam-sleeve, a pivoted arm rocked by said cam-sleeve and a cut-out switch operated by said arm, for cutting off the current from said motor, substantially as described.

34. In a system of the character described, the combination with a door or hatch, of an electric motor, and a worm-wheel driven by said motor for operating the door or hatch, pivoted arms with a stop therefor, a spring under compression mounted between said arms, a lug or roller connected to said worm-wheel and forcing one or the other of said arms against said spring when the load on said gearing exceeds a predetermined limit, a cam-sleeve, cam-lugs connected to said worm-wheel and engaging said cam-sleeve, a pivoted arm rocked by said cam-sleeve and a cut-out switch operated by said

arm, for cutting off the current from said motor, substantially as described.

36. In a system of the character described, the combination with a door or hatch, a rack or racks secured thereto, and a shaft with a pinion or pinions meshing in said rack or racks, of an electric motor, and a worm-wheel mounted on said shaft and driven by said motor for turning said shaft, arms pivotally mounted on said shaft and a stop for said arms, a spring under compression mounted between said arms, a lug or roller connected to said worm-wheel and forcing one or the other of said arms against the action of said spring when the load on said gearing exceeds a predetermined limit, a cam-sleeve movable longitudinally on said shaft, cam-lugs connected to said worm-wheel and said cam-sleeve, a pivoted arm rocked by said cam-sleeve and a cut-out switch operated by said arm, for cutting off the current from said motor, substantially as described.

36. In a system of the character described, the combination with a door or hatch, a rack or racks secured thereto, and a shaft with a pinion or pinions meshing in said rack or racks, of an electric motor, and a worm-wheel mounted on said shaft and driven by said motor for turning said shaft, arms pivotally mounted on said shaft and a stop for said arms, a spring under compression mounted between said arms, a lug or roller connected to said worm-wheel and forcing one or the other of said arms against the action of said spring when the load on said gearing exceeds a predetermined limit, a cam-sleeve movable longitudinally on said shaft, cam-lugs connected to said worm-wheel and engaging said cam-sleeve, a pivoted arm rocked by said cam-sleeve and a cut-out switch operated by said arm, for cutting off the current from said motor, substantially as described.

37. In a system of the character described, the combination with a door or hatch, of an electric motor, and a worm-wheel driven by said motor for operating the door or hatch, pivoted arms with a stop therefor, a coil-spring under compression mounted between said arms, a telescopic joint for supporting said spring and for adjusting the compression thereof, a lug or roller connected to said worm-wheel, and forcing one or the other of said arms against said spring when the load on said gearing exceeds a predetermined limit, in either direction, a pivoted arm rocked by said cam-sleeve and a cut-out switch operated by said arm, for cutting off the current from said motor, substantially as described.

810,916. RAILWAY-TRAIN-STOPPING DEVICE. SHERMAN L. CRAWFORD, Hoquiam, Wash. Filed May 6, 1905. Serial No. 259,471.

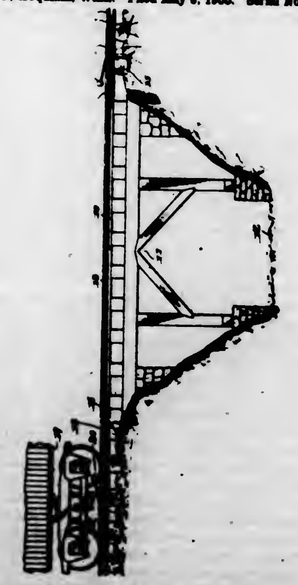

Claim.—1. A brake-operating device comprising a brake-trip pivoted upon the track, a frangible body associated with the track, a line connected at one end to the brake-trip and at the other to the frangible body and arranged to hold the trip out of the path of the brake mechanism means whereby the frangible body is fractured and the trip released when the track is dislocated and means to raise the trip when released.

2. A brake-operating device comprising a brake-trip and weighted operating-lever pivoted upon the track, a frangible body associated with the track and arranged to be fractured by a dislocation thereof, and a line connected at one end to the frangible body and at the other to the trip and arranged to hold the trip out of the path of the brake mechanism while the frangible body is intact and to permit the trip to rise when the frangible body is broken.

810,917. CONVEYER-SCOOP. WILLIAM CROSSLEY, West Haven, Conn. Filed Jan. 13, 1906. Serial No. 240,749.

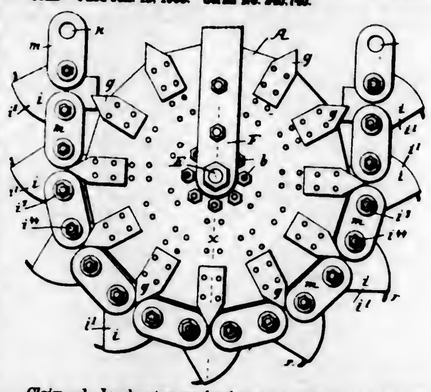

Claim.—1. In elevator mechanism a conveyer-scoop comprising in combination a pair of ends or heads and a body part or shell composed of longitudinal staves connecting and secured to the heads substantially in the manner and for the purpose specified.

2. In a dredging-machine or digger a conveyer-scoop comprising in combination a pair of ends or heads each provided with a pair of flanges around its periphery, forming an intervening groove at right angles to the plane of the head, and a series of longitudinal staves or sections forming the body part or shell of the scoop having their ends secured in the grooves of the heads and connecting the heads, substantially in the manner and for the purpose specified.

3. In elevator mechanism, the combination of a pair of ends or heads, each provided with pairs of flanges and intervening grooves, and a body part or shell having its ends received in the grooves of the heads and secured thereto by pins driven through the flanges and shell, substantially as and for the purposes specified.

4. In a dredging-machine or elevator mechanism the herein-described conveyer-scoop comprising in combination the pair of ends or heads i' each provided with the pairs of flanges i⁶ around its periphery, and the series of staves or longitudinal sections r having their ends received in the grooves between the flanges and secured thereto by pins driven through the flanges and the ends of the staves, substantially in the manner and for the purpose specified.

810,918. DOOR-BOLT. EDGAR W. CUNNINGHAM, Roselle, N. J. Filed May 6, 1905. Serial No. 259,694.

Claim.—1. A door-bolt comprising a casing, a reciprocable bolt therein, a spring in the casing and adapted to force said bolt in one direction, a link pivoted to said bolt and lying within the casing, an operating-lever pivoted on said casing, and having one of its ends extending into the bolt-cavity, said inward-extending end being pivoted to the free end of the link, a finger-piece on the opposite end of said lever, and stops adapted to be engaged by said finger-piece at the extremes of its movements, one of said stops being so located that when it is engaged by the finger-piece the spring will be compressed and the pivotal point between the link and the lever will be on one side of a line running through the pivot of the lever and the connection between the link and the bolt, whereby the pressure of the spring will hold the finger-piece against the stop and the movement of the bolt will be prevented.

2. A door-bolt comprising a casing, a reciprocable bolt therein, a spring surrounding said bolt and normally holding it retracted, a link pivoted to said bolt and lying within the casing, an operating-lever pivoted on said casing, and having one of its ends extending into the bolt-cavity, said inward-extending end being pivoted to the free end of the link, a finger-piece on the opposite end of said lever, and stops adapted to be engaged by said finger-piece at the extremes of its movements, one of said stops being so located that when it is engaged by the finger-piece the spring will be compressed and the bolt will be projected beyond the casing and the pivotal point between the link and the lever will be on one side of a line running through the pivot of the lever and the connection between the link and the bolt, whereby the pressure of the spring will hold the finger-piece against the stop and the movement of the bolt will be prevented.

810,919. AUTOMATIC LOCKING DEVICE FOR LOOSE-LEAF BINDERS. GEORGE T. DALTON, Sr., Washington, D. C., assignor to Joseph B. Dalton, Washington, D. C. Filed Mar. 16, 1905. Serial No. 250,495.

Claim.—1. A locking device for sectional backs for books comprising, in combination with the hinged plates of the back, one of said plates provided with a slot with an enlarged portion a link pivotally connected to one of said plates, a projection upon said link adapted to travel in a slot in the other of said plates, and means for holding said pin in an enlarged portion of said slot, as set forth.

2. In combination with the hinged plates of the back of a book, one of said plates having an elongated slot terminating in an enlarged portion, a link pivoted to the other plate and provided with a longitudinal flange, a pin carried by said link and guided in said slot, and means for holding said pin in the enlarged portion of said slot, as set forth.

3. In combination with the hinged plates of the back of a book, one of said plates having an elongated slot terminating in an enlarged portion, a link pivoted to the other plate and provided with a longitudinal flange, a pin carried by said link and guided in said slot, and a spring secured adjacent to said slot and adapted to hold said pin in said enlarged portion of the slot, as set forth.

4. In combination with the hinged plates of the back of a book, one of said plates being provided with an inclined slot having an enlarged portion at one end, a link pivoted to the other plate and provided with a longitudinal flange, a pin carried by said link and mounted in said slot and designed to bear frictionally against the marginal edge of the slot to assist in throwing the plates in opposite directions, and a spring secured adjacent to said slot and designed to hold said pin in the enlarged portion of the slot, as set forth.

810,920. PIANO-ACTION. JOHN W. DARLEY, Jr., Baltimore, Md., assignor of one-half to Michael Heilmann, Philip Hamburger, and Leon Hamburger, Baltimore, Md. Filed Nov. 27, 1901. Serial No. 83,912.

Claim.—1. In a piano-action, the combination with a series of frames supporting the several parts of the piano-action, and having feet with rounded heels, and shoulders at the base of said heels, and toes on the said feet; of a base-board having holes to receive the rounded portion of the said heels, and depressions to receive the toes, and means for securing said frames in an upright position, substantially as described.

2. In a piano-action, the combination with a series of frames supporting the several parts of the piano-action, and having feet with rounded heels, and shoulders at the base of said heels, and toes on the said feet; of a base-board having holes to receive the rounded portion of the said heels, and depressions to receive the toes, the relation of the said heels and toes and holes and depressions being such that when the frames are in an upright position the frames will rest upon the shoulders at the base of the heels with the toes slightly above their corresponding depressions, allowing the frames to be tilted forwardly, and means for securing the frames in an upright position, substantially as described.

3. In a piano-action, the combination with the supporting-frames, of a rail D secured to said frames directly above the rear ends of the keys, a key-rail D^4 adjustably secured to said rail D, and projecting below the latter, padding along the lower edge of said key-rail adapted to act as an abutment for the ends of the keys, and screws countersunk in the rail D and entering the rail D^4, substantially as described.

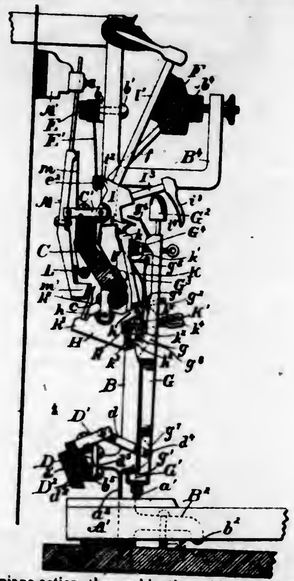

4. In a piano-action, the combination with a jack-lever, and a link having a pin rigidly secured therein; of an abstract guided by said jack-lever and link and having an elongated slot to receive said pin, and bushing in said slot, whereby said abstract may have slight lateral play without twisting movement, substantially as described.

5. In a piano-action, the combination with a jack-lever, and a link having a pin rigidly secured therein; of an abstract guided by said jack-lever and link and having a pin rigidly secured in said abstract and passing through a hole containing a bushing in said jack-lever, said abstract having an elongated slot to receive the pin in said link and bushing in said slot whereby said abstract may have slight lateral play without twisting movement, substantially as described.

6. In a piano-action, the combination with the supporting-frames, and the keyboard; of a rail secured to said supporting-frames above the rear end of the keys and provided with vertically-disposed slots, a key-rail, a strip of padding along the lower edge of the key-rail, and screws passing through said slots into said key-rail for adjustably securing the same in position above the rear ends of the keys.

7. In a piano-action, the combination with the frames supporting the piano-actions, and the keyboard; of a rail or bar supported by said frames near their lower ends, a pivot-block secured upon the top of said rail, an abstract having its lower end in proximity to said block, a link connecting said block and abstract, a key-rail, padding upon the under side of said key-rail, and screws passing through vertically-disposed slots in said rail and entering said key-rail to adjustably secure the same above the rear ends of the keys.

810,921. TIRE FOR VEHICLE-WHEELS. ARSENEUS DAVIS, New York, N. Y. Filed July 29, 1905. Serial No. 270,471.

Claim.—1. A solid tire for vehicle-wheels, composed of a flexible material, adapted to be seated on the periphery of a wheel-felly, and a retaining strip or core having a plurality of undercut recesses formed in each of its two side edges, embedded in the flexible material so as to be wholly within or above the base or seating portion of the flexible tire and adapted to receive the threaded portions of screws passed through the felly of the wheel.

2. A solid tire for vehicle-wheels, composed of a flexible material and a retaining-strip consisting of compacted layers of fabric and

a vulcanizable material having a plurality of undercut recesses in each of its two edges, embedded in the base of the flexible material wholly within or above the seating-surface thereof and welded thereto by vulcanizing process, said retaining-strip being adapted to receive the threaded portions of holding-screws.

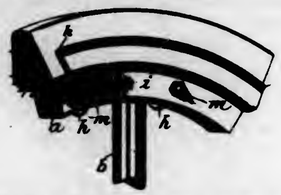

3. In combination, the felly of a wheel, a flexible tire adapted to seat on the periphery of the felly and having the lower parts of its sides formed to extend beyond the sides of the felly; a retaining strip or core with a plurality of undercut recesses at its sides embedded in the seating side of and welded by vulcanization to the flexible tire; side flanges adapted to grip the side extensions of the flexible tire; means for clamping the side flanges to the felly; and screws passed radially through the felly into the retaining strip or core of the flexible tire.

4. A solid flexible tire having embedded wholly within its lower or seating side a non-compressible retaining-strip formed with a plurality of undercut recesses in each of its side edges; a felly on which the flexible tire by its flat base is seated; and side flanges secured to the felly and shaped to clamp the sides of the flexible tire, the distance between the clamping-faces of the flanges and the outer points of the two or more undercut recesses on the two sides of the retaining-strip being less than the distances between said clamping-faces and the inner parts of said recesses.

810,922. COAL-SCREEN. ELSA R. DICKEY, Dugger, Ind. Filed Oct. 31, 1904. Serial No. 230,513.

Claim.—1. A coal-screen comprising a frame provided with sifting mechanism, and legs pivotally connected to the sides of the frame and of unequal length to give an inclination to the screen, and having longitudinal edge portions bent to provide flanges to engage with the lower edges of the screen-frame sides to limit the folding of said legs when turned up against the sides of the frame, the ends of the flanges adjacent their pivotal ends forming stop-shoulders to engage with the lower edge portions of the side pieces of the frame to limit the movement of the legs when unfolded, substantially as set forth.

2. A coal-screen comprising side pieces and transverse connecting-bars, a transverse rod 7 at one end of the frame, longitudinal bars 8 transversely spaced and having slots at one end to receive the rod 7 and having their opposite ends deflected downwardly and secured to an end bar of the frame opposite to the rod 7, a compound crank-shaft, and other longitudinal bars 9 arranged between the bars 8 and having inclined slots at one end to receive the rod 7 and having their opposite ends mounted upon the crank portions of said crank-shaft, the upper edges of the bars 8 and 9 being toothed.

810,923. DOOR. JOHN D. DOEHLMAN, Chicago, Ill. Filed July 17, 1905. Serial No. 270,071.

Claim.—In a door of the kind described, the combination consisting of a main body formed of the stiles A, rails B, the center rail B having bevel edge J and a lip K, panels D, and inclined pieces B; a pair of bushings T fixed in one of said stiles; a window-sash G supporting a window-glass H; said sash being adapted to be moved vertically in said main body; means for supporting said sash in a closed or open position in said main body; a frame P pivotally supported on the upper outside part of said main body and adapted to be swung open horizontally; a pair of spring-catches fixed to said frame and adapted to enter said bushings and to thereby lock said frame to said main body; a wire screen Q fixed on said frame; and a metallic guard covering said screen and affixed to said frame, substantially as described and for the purposes specified.

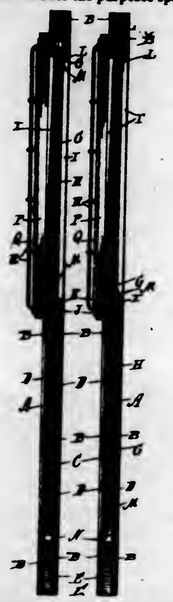

810,924. ANCHOR. HERBERT O. DUNN, Baltimore, Md. Filed Nov. 7, 1904. Serial No. 231,674.

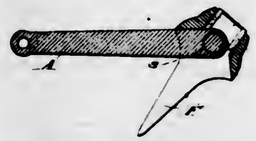

Claim.—In an anchor the combination of a shank provided with trunnions with a crown provided with central opening to receive said shank and dovetailed recesses on each side to receive said trunnions the metal of said crown surrounding said recesses extending beyond the same before the anchor is assembled, and filling-pieces fitting said recesses to secure said trunnions, the filling-pieces held in place by swaging down said metal substantially as set forth.

810,925. BAG-FRAME. BRUNO VON BIDDER, Newark, N. J., assignor to Aug. Goerts & Co., Newark, N. J., a Firm. Filed July 14, 1904. Serial No. 216,469.

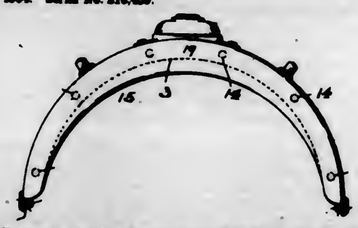

Claim.—1. In a bag-frame, the combination, with the hinged or pivoted main frame-sections, of a separate front cover-section conforming to and arranged upon the outer face of one of said main frame-sections, said cover-section serving as a rivet-head-concealing means, substantially as and for the purposes set forth.

2. In a bag-frame, the combination, with a pair of hinged or pivoted main frame-sections, of an independent front cover-section

arranged upon the outer face of one of said frame-sections to conceal the rivet-heads by means of which the frame-section is attached to the mouth of a bag, and means for securing said front cover-section upon said main frame-section, substantially as and for the purposes set forth.

3. In a bag-frame, the combination, with a pair of hinged or pivoted main frame-sections, of an independent front cover-section arranged upon the outer face of one of said frame-sections to conceal the rivet-heads by means of which the frame-section is attached to the mouth of the bag, and centering devices connected with the said front cover-section and the bag-frame section upon which the said front cover-section is arranged to prevent lateral movement of said front cover-section upon the frame-section, substantially as and for the purposes set forth.

4. In a bag-frame, the combination, with a pair of hinged or pivoted bag-frame sections, of an independent front cover-section arranged upon one of said frame-sections to conceal the rivet-heads by means of which the frame-section is attached to the mouth of a bag, and centering devices connected with the said front cover-section and the bag-frame section upon which the said front cover-section is arranged to prevent lateral movement of said front cover-section upon the frame-section, consisting, of downwardly-extending lugs on said front cover-section in engagement with portions of the said frame-section, substantially as and for the purposes set forth.

5. A bag-frame comprising a pair of main frame-sections, each frame-section being provided with pintle-receiving lugs, an independent front cover-section upon the outer face of one of said frame-sections, pintle-receiving lugs connected with said front cover-section, and connecting-pintles in the receiving-lugs of said front cover-section and said frame-sections, substantially as and for the purposes set forth.

6. A bag-frame comprising a pair of main frame-sections, each frame-section being provided with pintle-receiving lugs, an independent front cover-section upon the outer face of one of said frame-sections, pintle-receiving lugs connected with said front cover-section, connecting-pintles in the receiving-lugs of said front cover-section and said frame-sections, and centering devices connected with the said front cover-section and the bag-frame section upon which said front cover-section is arranged to prevent lateral displacement of the said front cover-section upon said frame-section, substantially as and for the purposes set forth.

7. A bag-frame comprising a pair of frame-sections, each frame-section being provided with pintle-receiving lugs, an independent front cover-section upon one of said frame-sections, pintle-receiving lugs connected with said front cover-section, connecting-pintles in the receiving-lugs of said front cover-section and said frame-sections, and centering devices connected with the said front cover-section and the bag-frame section upon which said front cover-section is arranged to prevent lateral displacement of the said front cover-section upon said frame-section, consisting, of downwardly-extending lugs on said front cover-section in engagement with portions of the said frame-section, substantially as and for the purposes set forth.

8. A bag-frame comprising a pair of hinged or pivoted main frame-sections, and a rivet-head-concealing cover-section arranged upon and separably and detachably connected with the outer face of one of said frame-sections, substantially as and for the purposes set forth.

9. A bag-frame comprising a pair of hinged or pivoted main frame-sections, a holding-catch rigidly fixed upon one of said frame-sections, a rivet-head-concealing cover-section arranged upon and separably and detachably connected with the outer face of the other frame-section, and a bag-frame fastener fixed upon said front cover-section capable of receiving the holding-catch for locking the frame-sections in their closed relation, substantially as and for the purposes set forth.

10. A bag-frame comprising a pair of main frame-sections, each frame-section being provided with pintle-receiving lugs, an independent front cover-section conforming to and arranged upon the outer face of one of said frame-sections, pintle-receiving lugs connected with said front cover-section, and pintles in the receiving-lugs of said front cover-section and said frame-sections, each pintle comprising a pair of shanks having bent end portions, substantially as and for the purposes set forth.

11. A bag-frame comprising a pair of main frame-sections, each frame-section being provided with pintle-receiving lugs, an independent front cover-section conforming to and arranged upon the outer face of one of said frame-sections, pintle-receiving lugs connected with said front cover-section, and pintles in the receiving-lugs of said front cover-section and said frame-sections, each pintle comprising a pair of shanks having bent end portions, all combined with centering devices connected with the said front cover-section and the bag-frame section upon which the said cover-section is arranged to prevent lateral displacement of said front cover-section upon said frame-section, substantially as and for the purposes set forth.

12. A bag-frame comprising a pair of frame-sections, each frame-section being provided with pintle-receiving lugs, an independent front cover-section upon one of said frame-sections, pintle-receiving lugs connected with said front cover-section, and pintles in the receiving-lugs of said front cover-section and said frame-sections, each pintle comprising a pair of shanks having bent end portions, all combined with centering devices connected with the said front cover-section and the bag-frame section upon which the said cover-section is arranged to prevent lateral displacement of said front cover-section upon said frame-section, consisting, of downwardly-extending lugs on said front cover-section in engagement with portions of the said frame-section, substantially as and for the purposes set forth.

13. A bag-frame comprising a pair of hinged or pivoted frame-sections, one of said frame-sections having receiving depressions in its marginal edge, a rivet-head-concealing cover-section upon said frame-section, and lugs upon said cover-section registering with the receiving depressions of said frame-section, substantially as and for the purposes set forth.

810,926. HANDLE OR STRAP ATTACHMENT FOR BAG-FRAMES. BRUNO VON BIDDER, Newark, N. J., assignor to Aug. Goerts & Co., a Corporation of New Jersey. Filed Oct. 5, 1905. Serial No. 281,411.

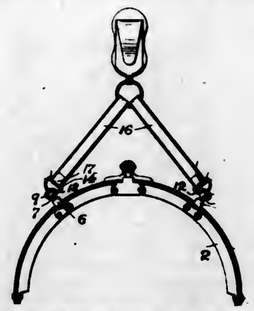

Claim.—1. An attachment or fixture for bag handles or straps, comprising a fastening loop or eye for securing the attachment or fixture to a post, and a reënforcing or stiffening means connected with said fastening loop or eye to prevent spreading of said loop or eye, substantially as and for the purposes set forth.

2. An attachment or fixture for bag handles or straps, comprising, a fastening loop or eye for securing the attachment or fixture to a post, and a reënforcing or stiffening means integrally connected with said fastening loop or eye to prevent spreading, said reënforcing or stiffening means being provided with an angularly-arranged and downwardly-extending bar for attachment thereto of the end of a strap member, substantially as and for the purposes set forth.

3. An attachment or fixture for bag handles or straps, comprising, a pair of integrally-connected loops or eyes, one of said loops or eyes being adapted for attachment to a post, and a straight and angularly-arranged and downwardly-extending bar connected with the other loop or eye for attachment thereto of the end of a strap member, substantially as and for the purposes set forth.

4. An attachment or fixture for bag handles or straps, comprising a pair of integrally-connected loops or eyes, pivots or journal portions on one of said loops or eyes for pivotal attachment of the fixture to a post, and the other loop or eye being adapted for attachment thereto of the end of a strap member, substantially as and for the purposes set forth.

5. An attachment or fixture for bag handles or straps, comprising a pair of integrally-connected loops or eyes, pivots or journal portions on one of said loops or eyes for pivotal attachment of the fixture to a post, and a straight and angularly-arranged and downwardly-extending bar connected with the other loop or eye for attachment thereto of the end of a strap member, substantially as and for the purposes set forth.

6. An attachment or fixture for bag handles or straps, comprising an arc-shaped member, means extending from said member for

attachment to a post, a pair of upwardly-projecting arms extending from said arc-shaped member, and a bar between the said arms for attachment to said bar of the end of a strap member, substantially as and for the purposes set forth.

7. An attachment or fixture for bag handles or straps, comprising an arc-shaped member, means extending from said member for attachment to a post, a pair of upwardly-projecting arms extending from said arc-shaped member, one of said arms being longer than the other arm, and a straight bar between the said arms for attachment to said bar of the end of a strap member, substantially as and for the purposes set forth.

8. An attachment or fixture for bag handles or straps, comprising an arc-shaped member, oppositely-arranged and inwardly-extending pivots or journals connected with said arc-shaped member, for pivotal attachment of said fixture to a post, a pair of upwardly-projecting arms extending from said arc-shaped member, and a bar between the said arms for attachment to said bar of the end of a trap member, substantially as and for the purposes set forth.

9. An attachment or fixture for bag handles or straps, comprising an arc-shaped member, oppositely-arranged and inwardly-extending pivots or journals connected with said arc-shaped member, for pivotal attachment of said fixture to a post, a pair of upwardly-projecting arms extending from said arc-shaped member, one of said arms being longer than the other arm, and a straight bar between the said arms for attachment to said bar of the end of a strap member, substantially as and for the purposes set forth.

810,927. SLIDING-DOOR LATCH AND LOCK. GEORGE C. REINERT, Mount Morris, Ill. Filed May 15, 1905. Serial No. 260,367.

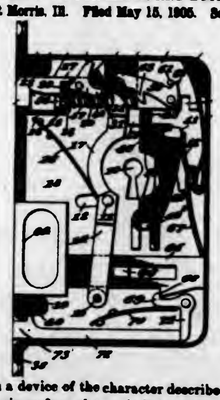

Claim.—1. In a device of the character described, the combination of a casing having a face-plate, a bolt housed in the casing with an extremity adapted to play through the face-plate and to stand, when the bolt is retracted, flush with said face-plate, a spring connected with said bolt and arranged to retract it within the casing and means for moving said bolt against the tension of the spring to throw its extremity out from the face-plate.

2. In a device of the character described, the combination of a casing having a face-plate, a bolt housed in the casing with an extremity adapted to play through the face-plate and to stand, when the bolt is retracted, flush with said face-plate, a spring connected with the bolt and arranged to retract it within the casing, means for moving the bolt against the tension of the spring to throw its extremity out from the face-plate and a latch-plate having means for engagement with said extremity of the bolt when thrown out of the casing to hold the bolt in latching position.

3. In a device of the character described, the combination of a casing having a face-plate, a bolt housed in the casing with an extremity adapted to play through the face-plate, means for moving the bolt to throw its extremity out from the face-plate and a latch-plate having means for engagement with said extremity of the bolt when thrown out of the casing to hold said bolt in latching position.

4. In a device of the character described, the combination of a casing having a face-plate, a bolt housed in the casing with an extremity adapted to play through the face-plate, means for moving the bolt to throw its extremity out from the face-plate, a latch-plate and spring-actuated means carried thereby for engagement with the extremity of the bolt when thrown out of the casing to hold the same in latching position.

5. In a device of the character described, the combination of a casing having a face-plate, a bolt housed in the casing with an extremity adapted to play through the face-plate, means for moving the bolt to throw its extremity out from the face-plate and a latch-plate having adjustable means for engagement with said extremity of the bolt when thrown out of the casing.

6. In a device of the character described, the combination of a casing having a face-plate, a bolt housed in the casing with an extremity adapted to play through the face-plate, means for moving the bolt to throw its extremity out from the face-plate, a latch-plate having an opening of greater size than and adapted to be traversed by said extremity of the bolt when thrown out of the casing and a plate adjustably held on said latch-plate and having means for engagement with said extremity of the bolt to hold the same in latching position.

7. In a device of the character described, the combination of a casing having a face-plate, a bolt housed in the casing with an extremity adapted to play through the face-plate, means for moving the bolt to throw its extremity out from the face-plate, a latch-plate and a part carried thereon and movable in and out of engagement with said bolt and adapted, when engaged therewith, to hold the bolt in latching position.

8. In a device of the character described, the combination of a casing having a face-plate, a bolt housed in the casing with an extremity adapted to play through the face-plate, means for moving the bolt to throw its extremity out from the face-plate, a latch-plate, a part carried thereon and movable in and out of engagement with said bolt and adapted, when engaged therewith, to hold the bolt in latching position and mechanism for moving said part to disengage it from the bolt to permit the same to be retracted within the casing.

9. In a device of the character described, the combination of a casing having a face-plate, a bolt housed in the casing with an extremity adapted to play through the face-plate, a spring connected with the bolt to retract the same, means for moving the bolt against the tension of said spring to throw its extremity out from the face-plate, a latch-plate, a part carried thereon and movable in and out of engagement with said bolt and adapted, when engaged therewith to hold the bolt in latching position against the tension of said spring and mechanism for moving said part to disengage it from the bolt to permit the same to be retracted within the casing.

10. In a device of the character described, the combination of a casing, a bolt adapted to be housed therein when in retracted position, a spring connected with the bolt for retracting the same, means outside the casing and adapted for engagement with the bolt for holding it in latching position against the tension of said spring when the bolt is thrown out of the casing and mechanism adapted for successive actuation to first throw said bolt into latching position and to afterward operate said holding means to release the bolt therefrom.

11. In a device of the character described, the combination of a casing, a bolt adapted to be housed therein when in retracted position, a spring connected with the bolt for retracting the same, means outside the casing and adapted for engagement with the bolt for holding it in latching position against the tension of said spring when the bolt is thrown, means for throwing the bolt against the tension of said spring and mechanism for releasing the bolt from said holding means to permit the bolt to be retracted.

12. In a device of the character described, the combination of a casing, a bolt adapted to be housed therein when in retracted position, a spring connected with the bolt for retracting the same, means outside the casing and adapted for engagement with the bolt for holding it when thrown in latching position against the tension of said spring, means for releasing the bolt from said holding means to permit retraction of the bolt out of latching position and mechanism adapted for successive actuation first to throw the bolt against the tension of the spring and in engagement with said holding means and afterward to operate the releasing means to permit the bolt to be retracted within the casing.

13. In a device of the character described, the combination of a casing having a face-plate, a bolt housed in the casing with an extremity adapted to play through the face-plate, means for moving the bolt to throw its extremity out from the face-plate, a striking-plate, means carried thereby for engagement with said extremity of the bolt when thrown out of the casing to hold the bolt in latching position and means for releasing the bolt from said holding means to permit retraction of the bolt out of latching position.

14. In a device of the character described, the combination of a casing having a face-plate, a bolt housed in the casing with an extremity adapted to play through the face-plate, means for moving the bolt to throw its extremity out from the face-plate, a striking-plate, means carried thereon for engagement with said extremity of the bolt to hold the bolt in latching position when thrown, means for releasing the bolt from said holding means to permit retraction of the bolt out of latching position and a locking device engageable with said releasing means to hold the same from operation.

15. In a device of the character described, the combination of a casing having a face-plate, a bolt housed in the casing with a hooked extremity adapted to play through the face-plate, means for moving the bolt to throw its hooked extremity out from the face-plate, a striking-plate and a spring-pressed auxiliary bolt connected therewith for engagement with the hooked end of said bolt for holding the same when thrown in latching position.

16. In a device of the character described, the combination of a casing having a face-plate, a bolt housed in the casing with a hooked extremity adapted to play through the face-plate, means for moving the bolt to throw its hooked extremity out from the face-plate, a striking-plate, a spring-pressed auxiliary bolt connected therewith for engagement with the hooked end of said bolt for holding the same when thrown in latching position and means carried by the casing and adapted to be thrown therefrom for operative engagement with the auxiliary bolt to release the same from engagement with said bolt to permit the same to be retracted within the casing.

17. In a device of the character described, the combination of a casing having a face-plate, a main bolt housed in the casing with a hooked extremity adapted to play through the face-plate, means for moving said main bolt to throw its hooked extremity out from the face-plate, a striking-plate, a spring-pressed auxiliary bolt connected with said striking-plate for engagement with the hooked end of the main bolt for holding the same when thrown in latching position and a member movable in the casing with an arm adapted, when said member is moved, to be extended through the face-plate into engagement with said auxiliary bolt to move the same to disengage it from the hooked end of the main bolt to permit the same to be retracted within the casing.

18. In a device of the character described, the combination of a casing having a face-plate, a main bolt housed in the casing with a hooked extremity adapted to play through the face-plate, a striking-plate, a spring-pressed auxiliary bolt connected therewith for engagement with the hooked end of the main bolt for holding the same when thrown in latching position, a member movable in the casing with an arm adapted, when the member is moved, to be extended through the face-plate into engagement with said auxiliary bolt to move the same to disengage it from the hooked end of the main bolt and mechanism adapted for successive actuation first to move the main bolt into latching position and afterward to move said member to throw the arm thereof into operative engagement with said auxiliary bolt for the release of the main bolt therefrom.

19. In a device of the character described, the combination of a casing having a face-plate, a main bolt housed therein with an extremity adapted to be thrown out from the face-plate when the bolt is moved into latching position, a dog carried by said bolt, a lever pivoted in the casing and engageable with the dog to move the bolt into latching position, an escutcheon having a movable part and a connection between said movable part on the escutcheon and said lever within the casing for moving the lever in unison with said movable part.

20. In a device of the character described, the combination of a casing, a bolt housed therein with an extremity adapted to be thrown out of the casing into latching position, a dog carried by said bolt, a lever pivoted in the casing and engageable with the dog to move the bolt into latching position, an escutcheon, an actuating-slide movably mounted on the escutcheon and provided with a socket and a projection on said lever and engaged with said socket of the actuating-slide for moving the lever in unison with said slide.

21. In a device of the character described, the combination of a casing, a bolt housed therein with an extremity adapted to be thrown out of the casing into latching position, a striking-plate an auxiliary bolt carried thereby for engagement with the extremity of the main bolt when thrown into latching position, a member guided for movement on the main bolt and within the casing and having an arm adapted, when said member is moved upon the main bolt, to be extended out from the casing in engagement with the auxiliary bolt to actuate the same for releasing the main bolt, dogs pivoted respectively upon the main bolt and upon the member movable thereon and actuating mechanism comprising a lever engageable on successive operation first with the dog of the main bolt to move the same into latching position and second with the dog of said member for moving the same to engage its arm with the auxiliary bolt for releasing the main bolt.

810,928. SAFETY-HOOK. GUSTAV FALK and WILLIAM H. PARKER, Cordell, Ill. Filed Aug. 14, 1905. Serial No. 274,242.

Claim.—1. In combination, a hook having a longitudinal slot therein, a pivoted mousing therefor, a member for supporting said hook, a pin passing transversely through the slot of the hook and connecting said supporting member therewith, said pin having an operable connection with the mousing, and a spring coacting with the mousing to normally hold the same in such a position that the mouth of the hook is closed.

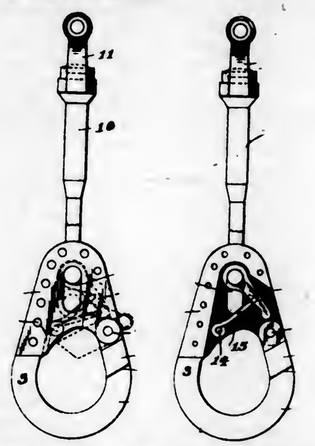

2. In combination, a hook having a longitudinal slot, a rod for supporting said hook, a pin passing transversely through the slot of the hook and thereby connecting the rod therewith, a mousing pivoted between its ends to the hook, a link connected at one end with the mousing and at its opposite end with the pin aforesaid, and a spring attached to the hook and bearing against the link aforesaid to normally hold the mousing in a position closing the mouth of the hook.

3. A safety-hook comprising a shank, spaced plates carried by the shank, a mousing pivoted between the spaced plates and normally closing the mouth of the hook, a pin slidable on the body of the hook, a link connecting said pin with the mousing, and a rod connected with the pin aforesaid.

4. A safety-hook comprising a shank formed with a suitable bill, plates secured to opposite sides of the shank and in spaced relation, a mousing pivoted between its ends between said plates, a spring arranged between the plates, a link connected with an end of the mousing and with the spring, said mousing being held normally closed by the spring, the body of the hook having a slot therein, a pin passing through said slot and connected with the link aforesaid, and a rod connected with the pin for actuation thereof, as specified.

810,929. STORAGE BATTERY. WILLIAM PENNELL and WILLIAM P. PERRY, Leytonstone, England. Filed Mar. 17, 1904. Serial No. 198,846.

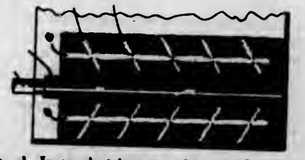

Claim.—1. In an electric accumulator, a honeycombed mass, an active material on the exposed surfaces of the mass, and unobstructed passage-ways formed therein besides the interstices of the mass for the egress of gas.

2. In electric accumulators, a honeycombed mass, an active material on the exposed surfaces of the mass, and communicating unobstructed passage-ways formed therein besides the interstices of the mass for the egress of gas.

3. In electric accumulators, a honeycombed mass, an active material on the exposed surfaces of the mass, and unobstructed passage-ways formed therein besides the interstices of the mass, certain of said passage-ways being inclined for the egress of gas.

810,930. STORAGE BATTERY. WILLIAM PERRELL and WILLIAM P. PERRY, Leytonstone, England. Filed Mar. 6, 1905. Serial No. 248,778.

Claim.—1. An electrode comprised of a non-conducting mass insoluble in electrolyte pierced in more than one direction with intercommunicating passages, the walls of the passages being lined with active material.

2. An improved electrode for electric accumulators consisting of a non-conducting honeycombed support on the exposed surfaces of which active material is spread in such a manner as not to fill the interstices completely.

3. An improved electrode for electric accumulators built up of a number of separate pieces of non-conductive substances, in the form of a honeycombed support on the exposed surfaces of which active material is spread so as not to fill the interstices completely.

4. An improved electrode for electric accumulators consisting of a non-conducting support pierced by intercommunicating passages on the walls of which active material is spread so as not to fill the interstices completely.

5. An improved electrode for electric accumulators consisting of a hard rough non-conducting support pierced in different directions by intercommunicating passages, on the exposed surfaces of which active material is spread so as not to fill the interstices completely.

910,931. ALARM FOR INCUBATORS. WILLARD S. FREEMAN, St. Cloud, Minn. Filed May 6, 1905. Serial No. 259,294.

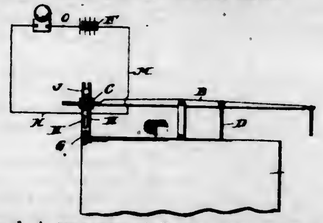

Claim.—1. A temperature-indicating alarm comprising the combination of an incubator, a thermostat contained therein, a damper-operating lever fulcrumed on said incubator, a balance-weight on one arm of said lever, a rod connecting said lever with the thermostat, a circuit-closing device secured to said incubator consisting of two slotted uprights positioned on opposite sides of said balance-weight, angular contact-plates secured in said slots above and below said weight and adjustable on said uprights, the extended portions of said plates being tapered, an alarm-signal, and a normally open circuit connecting said uprights and alarm, said weight being adapted to move between the contact-plates and close the circuit to said alarm by contacting with them, substantially as shown and described.

2. A temperature-indicating alarm comprising in combination with an incubator, a thermostat contained therein, a damper-operating lever fulcrumed on said incubator, a balance-weight on one arm of said lever, and a rod connecting said lever with the thermostat, a circuit-closing device secured to said incubator consisting of two slotted uprights positioned on opposite sides of said balance-weight, L-shaped contact-plates secured to the uprights through the slots therein above and below said weight by means of set-screws, the extended portion of said plates being tapered, an alarm-signal, and a normally open circuit connecting said uprights and alarm, said weight being adapted to move between the contact-plates and close the circuit to said alarm by contacting therewith, substantially as shown and described.

810,932. CARRIAGE-TOP. CHARLES H. GILL, Kalamazoo, Mich., assignor, by mesne assignments, of one-half to Charles H. Rickard, Kalamazoo, Mich. Filed Mar. 25, 1905. Serial No. 251,973.

Claim.—1. The combination of a bow carriage-top; a pair of inwardly-projecting headed studs on the front bow thereof; a pair of inwardly-projecting studs having buttons thereon on said front bow; a curtain; a rod or support formed of telescoping members, to which the upper edge of said curtain is secured; and curved springs having notches in their outer ends adapted to engage said headed studs, and holes therein adapted to receive said button-studs, pivotally secured to said rod members, for the purpose specified.

2. The combination of a bow carriage-top; a pair of inwardly-projecting headed studs on the front bow thereof; a pair of inwardly-projecting studs having buttons thereon on said front bow; a curtain; a rod or support to which the upper edge of said curtain is secured; and curved springs having notches in their outer ends adapted to engage said headed studs, and holes therein adapted to receive said button-studs, secured to said rod, for the purpose specified.

3. The combination of a bow carriage-top; inwardly-projecting studs on the front bow thereof; a curtain; a rod or support formed of telescoping members, to which the upper edge of said curtain is secured; and springs adapted to engage said studs pivotally secured to said rod members, for the purpose specified.

4. The combination of a bow carriage-top; inwardly-projecting studs on the front bow thereof; a curtain; a rod or support to which the upper edge of said curtain is secured; and springs adapted to engage said studs, secured to said rod; for the purpose specified.

5. The combination of a carriage-top; projecting studs on the frame thereof; a curtain; a rod or support formed of adjustably-connected members, to which said curtain is secured; and springs adapted to engage said studs pivotally secured to said members, for the purpose specified.

6. The combination of a carriage-top; projecting studs on the frame thereof; a curtain; a rod or support to which said curtain is secured; and springs adapted to engage said studs secured to said rod, for the purpose specified.

7. The combination of a bow carriage-top; a pair of inwardly-projecting headed studs on the front bow thereof; a pair of inwardly-projecting studs having buttons thereon, on said front bow; a curtain; and a rod or support formed of adjustably-connected members, to which the said curtain is secured, adapted to engage said studs under spring tension, for the purpose specified.

8. The combination of a bow carriage-top; a pair of inwardly-projecting headed studs on the front bow thereof; a pair of inwardly-projecting studs having buttons thereon, on said front bow; a curtain; and a rod or support to which the said curtain is secured, adapted to engage said studs under spring tension, for the purpose specified.

9. The combination of a carriage-top; inwardly-projecting studs on the frame thereof; a curtain; and a rod or support to which the said curtain is secured, adapted to engage said studs under spring tension, for the purpose specified.

10. The combination of a carriage-top; inwardly-projecting studs on the frame thereof; a curtain; and a rod or support formed of adjustably-connected members, to which the said curtain is secured, adapted to engage said stud under spring tension, for the purpose specified.

810,933. FABRIC CONTAINING HAIRCLOTH. GUSTAV GOLDMAN, Baltimore, Md. Filed Dec. 4, 1903. Serial No. 183,823.

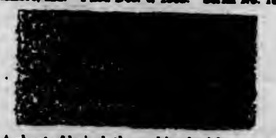

Claim.—A sheet of haircloth combined with a mass of matted or felted fibers some of which project through the meshes of the cloth, and a waterproof binder uniting the haircloth and fibers together.

810,934. PROCESS OF MAKING FABRIC CONTAINING HAIRCLOTH. GUSTAV GOLDMAN, Baltimore, Md. Filed Dec. 4, 1903. Serial No. 183,823.

Claim.—1. The process of making a fibrous material with a layer of haircloth incorporated therein, which consists in placing a sheet of haircloth in contact with a layer of fibers so that some of the fibers project through the meshes of the haircloth, then felting the fibers in the presence of a suitable binder, and then passing through a fixing solution.

2. The process of making a fibrous material with a layer of haircloth incorporated therein, which consists in placing a sheet of haircloth in contact with a layer of fibers so that some of the fibers project through the meshes of the haircloth, then felting the fibers in the presence of a soap, and then passing through a fixing solution.

3. The process of making a fibrous material with a layer of haircloth incorporated therein, which consists in placing a sheet of haircloth in contact with a layer of fibers so that some of the fibers project through the meshes of the haircloth, then felting the fibers in the presence of a soda soap, and then passing through a fixing solution.

4. The process of making a fibrous material with a layer of haircloth incorporated therein, which consists in interposing a layer of haircloth in a fibrous mass so that the fibers project through the meshes of the cloth from both sides thereof, then felting the fibers in the presence of a suitable binder, and then passing them through a fixing solution.

5. The process of making a fibrous material with a layer of haircloth incorporated therein, which consists in interposing a layer of haircloth in a fibrous mass so that the fibers project through the meshes of the cloth from both sides thereof, then felting the fibers in the presence of a soap, and then passing them through a fixing solution.

6. The process of making a fibrous material with a layer of haircloth incorporated therein, which consists in interposing a layer of haircloth in a fibrous mass so that the fibers project through the meshes of the cloth from both sides thereof, then felting the fibers in the presence of a soda soap, and then passing them through a fixing solution.

7. The process of making a fibrous material with a layer of haircloth incorporated therein, which consists in placing a sheet of haircloth in contact with a layer of fibers so that some of the fibers project through the meshes of the cloth, then rubbing the whole in the presence of a suitable binder, then passing them through a fixing solution for the binder, and then again rubbing the whole in a flat shape in the presence of heat and pressure.

8. The process of making fibrous material with a layer of haircloth incorporated therein, which consists in placing a sheet of haircloth in contact with a layer of fibers so that some of the fibers project through the meshes of the cloth, then rubbing the whole in the presence of a soap, then passing through a fixing solution for the soap, and then again rubbing the whole in a flat shape in the presence of heat and pressure.

9. The process of making fibrous material with a layer of haircloth incorporated therein, which consists in placing a sheet of haircloth in contact with a layer of fibers so that some of the fibers project through the meshes of the cloth, then rubbing the whole in the presence of a soap, then passing through an alum solution, and then again rubbing the whole in a flat shape in the presence of heat and pressure.

810,935. METHOD OF MAKING GARMENT-PADS. GUSTAV GOLDMAN, Baltimore, Md. Filed Oct. 26, 1904. Serial No. 229,973.

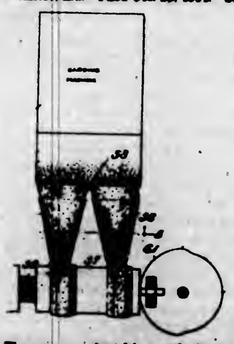

Claim.—1. The process of making pads from fibrous material which consists in laying down a sheet or strip of fibers in a light fluffy condition with a suitable binding material between the fibers, imparting the desired cross-sectional form to said sheet or strip, then subjecting said sheet or strip to treatment causing the binder to actively unite the fibers, and then cutting the pad therefrom.

2. The process of making pads from fibrous material which consists in forming the fibers into a sheet or strip of the desired cross-sectional form with a binding material between them, then subjecting the same to treatment to render the binder actively effective for uniting the fibers, and then cutting the pad from said sheet or strip.

3. The process of making pads from fibrous material which consists in forming the fibers into a sheet or strip of the desired cross-sectional shape, with a suitable binding material between the fibers, subjecting said sheet or strip to treatment to render the binder actively effective for uniting the fibers, again subjecting the sheet to a forming action before the binder has become set, and then cutting the pads from said sheet or strip.

4. The process of making pads from fibrous material, which consists in shaping the fibers into a sheet or strip of the desired cross-sectional form with a suitable binder between the fibers, subjecting the sheet or strip thus formed to heat and pressure whereby the binder is rendered actively effective for uniting the fibers, and then cutting the pads from said sheet or strip.

5. The process of making pads from fibrous material which consists in shaping the fibers into a sheet or strip of the desired cross-sectional form with a suitable binder between the fibers, treating said sheet or strip so as to render the binder actively effective for uniting the fibers, then finishing or smoothing the surface of said sheet or strip, and then cutting the pads therefrom.

6. The process of making pads from fibrous material which consists in introducing a suitable binder between the fibers, then shaping the fibers into a sheet or strip of the desired cross-sectional form, then subjecting the same to treatment for rendering the binder actively effective for uniting the fibers, and then cutting the pads from said sheet or strip.

7. The process of making garment-pads from fibrous material which consists in introducing binding material between the fibers, then laying the fibers down in the form of a sheet or strip, then imparting the desired cross-sectional form to said sheet or strip, then subjecting the same to treatment for rendering the binder actively effective for uniting the fibers, and then cutting the pads from said sheet or strip.

8. The process of making pads which consists in introducing a binding material between the fibers, then laying the fibers down in a sheet or strip, then imparting the desired cross-sectional form to the said sheet or strip, then subjecting the same to treatment to render the binder active for effectively uniting the fibers, then again subjecting the sheet or strip to further treatment for imparting the desired cross-sectional form thereto, and then cutting the pads from said sheet or strip.

9. The process of making pads which consists in laying the fibers down in a sheet or strip of the desired cross-sectional form and with a suitable binder between the fibers, subjecting said sheet or strip to treatment to render the binder active for uniting the fibers, forming transverse channels in said sheet or strip whose walls are inclined on lines corresponding to the taper of a portion of the finished pad, then forming the pads from said channeled sheet or strip.

10. The process of making pads of fibrous material which consists in shaping the fibers into a sheet or strip of the desired cross-sectional form with a suitable binder between the fibers, subjecting said sheet or strip to the action of heat and pressure whereby the binder is rendered actively effective for uniting the fibers, then finishing or smoothing the surfaces of said sheet or strip, then allowing the binder to set, then forming transverse channels with sloping walls on the surface of said sheet or strip, then cutting the pads from said channeled sheet or strip, and then finishing the surface of the pads.

11. The process of making pads from fibrous material which consists in laying down the fibers in a sheet or strip with a suitable binder between them, then forcing the fibers into the desired cross-sectional form for the sheet or strip, then subjecting said formed sheet or strip to heat and pressure whereby the binder is rendered actively effective for uniting the fibers, then subjecting the strip to further forming action before the binding material sets, then forming transverse channels with sloping walls in said sheet or strip, then cutting the pads from said channeled sheet or strip, then finishing or smoothing the surface of the pads.

12. The process of making pads from fibrous material which consists in laying down a sheet or strip of the fibers in a light fluffy condition with a suitable binder between them in the form of then

imparting the desired cross-sectional form to said sheet or strip, then subjecting the same to treatment for rendering the binder actively effective for uniting the fibers, then subjecting the surfaces of the sheet or strip to treatment for softening the binder on the surfaces, then subjecting the said sheet or strip to pressure whereby projecting fibers are forced into the softened binder on the surfaces thereby smoothing the surfaces of the strip, and then cutting the pads from said sheet or strip.

13. The process of making garment-pads from fibrous material which consists in laying the fibers down in a sheet or strip with a suitable binding material between them, imparting the desired cross-sectional form to said sheet or strip, then subjecting the same to heat and pressure for rendering the binder effective in uniting the fibers, then finishing or smoothing the surface of said sheet or strip before the binder is completely set, then allowing the binder to set, and then cutting the pads from said sheet or strip.

14. The process of making pads from fibrous material which consists in laying the fibers down in a sheet or strip with a suitable binder between them, imparting the desired cross-sectional form to said sheet or strip, subjecting the same to heat and pressure whereby the binder is rendered active for uniting the fibers, then smoothing and finishing the surface of the sheet before the binder has become fully set, then permitting the binder to set, then forming transverse channels with sloping walls in said sheet or strip, then cutting the pads from said channeled sheet or strip.

15. The process of making pads from fibrous material which consists in laying the fibers down in the form of a sheet or strip with a suitable binding material between them, imparting the desired form to said sheet or strip, subjecting it to heat and pressure for rendering the binder active for uniting the fibers, then finishing or smoothing the surface of said sheet or strip before the binder has become entirely set, then permitting the binder to set, then forming transverse channels with sloping walls in said sheet or strip, then cutting the pads from said channeled strip, and then smoothing the surfaces of the cut pads.

16. The process of forming pads from fibrous material which consists in laying the fibers down in a sheet or strip with a finely-divided resinate between them, imparting the desired cross-sectional form to said sheet or strip, then subjecting it to heat and pressure whereby the resinate is rendered active for uniting the fibers, then smoothing the surface of said sheet or strip, then forming transverse channels with sloping walls therein, and then cutting the pads from said channeled strip.

17. The process of forming pads from fibrous material which consists in laying the fibers down in a sheet or strip with a finely-divided aluminium resinate between them, then subjecting said strips to heat and pressure whereby the aluminium resinate is rendered active for binding the fibers together, then forming transverse channels with sloping walls in said sheet or strip, and then cutting the pads from said channeled strip.

18. The process of forming pads from fibrous material which consists in forming the fibers into a sheet or strip with an inert binder between the fibers, converting the binder into an active binding agent, then forming transverse channels in said sheet or strip, and then cutting the pads from said channeled sheet or strip.

19. The process of forming pads from fibrous material which consists in forming the fibers into a sheet or strip of uneven cross-section and uniting them by a suitable binder and then cutting the pads from said sheet or strip.

20. The process of making pads from fibrous material which consists in forming the fibers into a sheet or strip of uneven cross-section, and then cutting the pads from said sheet or strip.

21. The process of making pads from fibrous material which consists in forming the fibers into a sheet or strip of uneven cross-section, then forming transverse channels in said sheet or strip, and then cutting the pads from said channeled sheet or strip.

22. The process of making pads from fibrous material which consists in forming the fibers into a sheet or strip of uneven cross section, then finishing the surface of said sheet or strip, and then cutting the pads therefrom.

23. The process of making pads from fibrous material which consists in forming the fibers into a sheet or strip of uneven cross-section, then forming transverse channels in said sheet or strip, then cutting the pads from the channeled sheet or strip, and then finishing the surface of the pads.

24. The process of making pads from fibrous material which consists in forming the fibers into a sheet or strip of uneven cross-section, then finishing the surface of said sheet or strip, then forming transverse channels therein, and then cutting the pads from said channeled sheet or strip.

25. The process of making pads from fibrous material which consists in forming the fibers into a sheet or strip of uneven cross-section, then finishing the surface of said sheet or strip, then forming transverse channels therein, then cutting the pads from said channeled sheet or strip, and then finishing the surface of the pads.

26. The process of making pads from fibrous material which consists in laying the fibers down in a light fluffy condition in the shape of a sheet or strip, then forming said sheet or strip so that it has an uneven cross-section, then making transverse channels in the sheet or strip, and then cutting the pads therefrom.

27. The process of making pads from fibrous material which consists in laying the fibers down in a light fluffy condition in the shape of a sheet or strip, then imparting an uneven cross-sectional form to the sheet or strip, then subjecting said sheet or strip to the action of heat and moisture, then again subjecting it to a forming action to further impress the uneven cross-sectional form thereon, and then cutting the pads therefrom.

28. The process of making pads from fibrous material which consists in laying the fibers down in a light fluffy condition in the shape of a sheet or strip, then imparting an uneven cross-sectional form to the sheet or strip, then subjecting said sheet or strip to the action of heat and moisture, then again subjecting it to a forming action to further impress the uneven cross-sectional form thereon, then forming transverse channels in said sheet or strip, and then cutting the pads from said channeled sheet or strip.

29. The process of making pads from fibrous material which consists in laying the fibers down in a light fluffy condition in the shape of a sheet or strip, imparting an uneven cross-sectional form to the sheet or strip, subjecting the sheet or strip to the action of heat and moisture, and then cutting the pads therefrom.

810,936. FLUSHING APPARATUS FOR OUTDOOR WATER-CLOSETS. WILLIAM U. GRIFFITHS, Philadelphia, Pa. Filed Oct. 3, 1904. Serial No. 226,880.

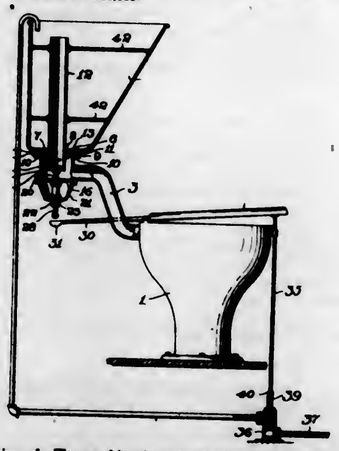

Claim.—1. The combination of a flush tank provided with an opening or port, a closet hopper, a pipe connecting the said tank and the said hopper, the said pipe having an enlargement at its upper end adjacent to the said tank, the said enlargement extending transversely of the upper end portion of the said pipe, a flexible diaphragm extending across the lower end of the said enlargement, a hollow cylinder located in the said tank, the lower end of which projects through the said port or opening into the said enlargement, the upper and lower ends respectively of the said hollow cylinder being provided with an opening, and the lower end of the said cylinder being supported upon the said diaphragm, a valve secured upon the said hollow cylinder adapted to close the said port, a closet seat having an arm which extends rearwardly underneath the lower end of the said hollow cylinder, an operating device located intermediate the said diaphragm and the rear end of said arm, whereby the said diaphragm may be lifted up by the lowering of the closet seat to occasion the closing of the said port or opening.

2. The combination of a flush tank provided with an opening or port, a closet hopper, a pipe connecting the said tank and the said hopper, a flexible diaphragm associated with said pipe, a hollow cylinder located in the said tank, the lower end of which projects through the said port or opening into the said pipe, the upper and lower ends respectively of the said hollow cylinder being provided with an opening, and the said cylinder being supported upon the said diaphragm, a valve secured upon the said hollow cylinder underneath the bottom of the said tank and being adapted to close the said port, a closet seat having an arm which extends rearwardly underneath the lower end of the said hollow cylinder, an operating device located intermediate the said diaphragm and the rear end of the said arm whereby the said diaphragm may be lifted up by the lowering of the closet seat to occasion the closing of the said port or opening.

3. The combination of a flush tank provided with an opening, a closet hopper, a pipe connecting the said tank and the said hopper, a hollow cylinder located in the said tank, the lower end of which projects through the said opening and into the said pipe, the diameter of the said cylinder being substantially less than the diameter of the said opening, the said cylinder being adapted to permit water to pass therethrough from the said tank, a valve secured upon the said cylinder underneath the bottom of the said tank and being adapted to close the said opening, a flexible diaphragm associated with the said pipe, which diaphragm is located underneath the lower end of the said hollow cylinder, a closet seat, an operating device located underneath the lower end of said diaphragm, and means interposed between the said closet seat and the said operating device, whereby upon lowering the said closet seat the said device is operated to occasion movement of the said diaphragm, the movement of the latter occasioning movement of the said cylinder and valve to close the said opening.

810,937. FEEDER FOR CLOVER-HULLERS. HUGO GUDERIAN, Good Thunder, Minn. Filed Dec. 30, 1904. Serial No. 238,907.

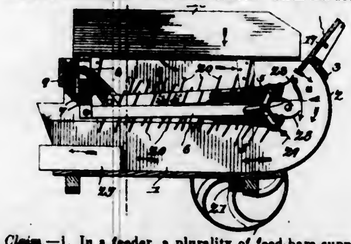

Claim.—1. In a feeder, a plurality of feed-bars supported for reciprocation and oscillation, feed members upon the upper sides of said bars for feeding material in one direction over the ends of the bars, feed members upon the under sides of said bars for feeding material in the opposite direction, and means, including a curved member, forming a closure at the front end of the casing and constituting guiding and supporting means for the material operated upon.

2. In a feeder, a casing having a curved end piece, a shaft concentric with said end piece and having a plurality of cranks, feed-bars supported pivotally upon said cranks, links pivotally supporting the opposite ends of the feed-bars, feed members connected with the upper sides of the feed-bars for feeding material in the direction of the curved end piece, and means connected with the under sides of the feed-bar for feeding material in the opposite direction.

3. In a feeder, a casing open at one end and having a curved end piece at the opposite end, a shaft approximately concentric with said curved end piece and having a plurality of cranks, feed-bars connected pivotally with said cranks, supporting means for the opposite ends of said feed-bars, feed members upon the upper sides of the feed-bars for feeding material in the direction of the curved end piece, feed members upon the under sides of the feed-bars for feeding material in the opposite direction, and a gage-board supported adjustably with relation to the crank-supported ends of the feed-bars.

4. In a device of the class described, a casing, feed members movably supported in said casing for the reception and support of the material to be fed and for conveying said material in one direction over the ends of said feed members, a pair of longitudinally-slotted arms connected adjustably with and extending above the casing, and a gage-board supported pivotally between said arms and adjustable thereby with relation to the ends of the feed members over which the material is fed.

5. In a feeder, a casing, a plurality of feed members supported for reciprocation and oscillation and constituting supporting means for the material to be operated upon, means connected with said feed members for feeding material in one direction over the ends of said feed members, a gate or gage board supported by the casing and adjustable with relation to the ends of the feed members over which material is fed, and means connected with the under sides of the feed members for engaging the material fed over the ends of the latter and for moving said material over the bottom of the casing in the direction of the discharge end of the latter.

6. In a feeder, a casing open at one end and having a curved end piece at the opposite end, a shaft approximately concentric with said curved end piece and having a plurality of cranks, feed-bars connected pivotally with said cranks, hangers constituting supporting means for the opposite ends of said feed-bars, and curved hook members upon said feed-bars extending upwardly and downwardly in the direction of the curved end piece of the casing.

810,938. SAFETY DEVICE. WILHELM HANKE, Gowarsewo, near Schwersens, Germany. Filed Feb. 9, 1905. Serial No. 244,830.

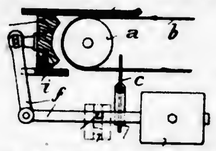

Claim.—1. In a machine having a fast and a loose pulley, a driving-belt, and means for placing said belt in and out of gear, the combination of a brake adapted to bear against the fast pulley, a guide for guiding said brake, said guide having an extension situated in proximity to the belt and adapted to form a belt-protector, a lever, means connecting said lever with said brake, means exerting a force on said lever and tending to apply the brake to the fast pulley, means for normally holding said lever in its position corresponding to the off position of the brake, and means for locking said brake in its applied position, substantially as and for the purpose set forth.

2. In a machine having a fast and loose pulley, a driving-belt, a belt-fork for placing said belt in and out of gear, a slidable rod carrying said fork, a handle on said rod, the combination of a brake-block *e* adapted to bear against the fast pulley, a guide *i* for guiding said brake-block, said guide having an extension situated in proximity to the belt and adapted to form a belt-protector, an angle-lever *f* having a projecting tooth *f'*, means connecting said lever with the central portion of the back of said brake-block, a weight *g* on said angle-lever and tending to apply the brake-block to the fast pulley, a stop *k* mounted on the rod carrying the belt-fork and adapted to normally support the angle-lever and to hold it in its position corresponding to the off position of the block and to move out of engagement with said lever when the belt is thrown out of gear, and a toothed rack *h* with which the tooth on the lever *f* is adapted to engage when the brake-block is in its applied position, substantially as and for the purpose set forth.

810,939. COUCH. JOHN L. HEPPNER, Peoria, Ill. Filed Nov. 17, 1904. Serial No. 233,115.

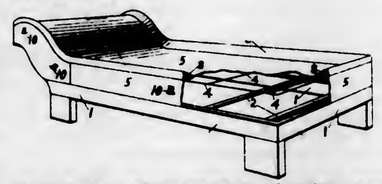

Claim.—1. In a couch, the combination of a yielding support, a removable cushion thereon, and a raised edge on said yielding support adapted to hold the said cushion in place.

2. In a couch, the combination with a suitable base and springs thereon, of a flat surface formed on the springs, a raised portion around the edge of the said flat surface, and a mattress supported upon the said flat surface and conforming to the said raised edge.

3. The combination of a suitable frame, a loose mattress or cushion supported on the said frame, a raised edge around the supporting-surface of the said frame, a depression in the said mattress or cushion in which the said raised edge is socketed, and means for detachably securing the said mattress or cushion on the frame.

4. In a couch, the combination with a suitable base and springs

thereon, of a flat surface formed on the springs, a raised portion around the edge of the said flat surface, a mattress supported upon the said flat surface and conforming to the said raised edge, and fasteners for detachably securing the said mattress on the said frame.

5. The combination of a couch-frame, a raised padded portion around the edge of the upper surface of the said couch-frame, and a removable mattress supported thereon and conforming to the said raised padded portion.

6. The combination of a suitable frame, a loose mattress or cushion supported on the said frame, a raised edge around the supporting-surface of the said frame, and a depression in the mattress or cushion in which the said raised edge is socketed.

7. The combination of a couch-frame with raised padded portions on the top thereof, a removable mattress supported on the said couch-frame, depressions in the said removable mattress at the places where it contacts with the aforesaid raised padded portions of the couch-frame, and fasteners for securing the said mattress in position on the said couch-frame.

8. The combination of a couch-frame, a detachable mattress supported thereon, raised padded portions on the top of the couch-frame, corresponding depressions in the aforesaid mattress, into which the said raised portions of the couch-frame fit, and fasteners on the couch-frame and the mattress to secure the said mattress to the couch-frame.

9. The combination of a couch-frame, a detachable mattress supported thereon, a cut-out portion around the lower edge of the mattress, a triangular or V shaped padding fastened around the edge of the top of the couch-frame, straps on the said detachable mattress and buckles on the said couch-frame, substantially as and for the purposes specified.

10. The combination with a couch-base of springs supported thereon, a covering for the said springs, a raised padded portion on the top of the spring-covering, a cut-out portion on the mattress supported upon the said spring-covering, the said cut-out portion of the mattress to fit onto the said raised padded portion on the spring-covering, and means to fasten the said mattress to the covering of the springs.

11. The combination with a couch-base of springs supported thereon, a yielding frame fastened to the top of the springs, a flexible covering drawn and fastened over the said frame and inclosing the springs, a triangular or V shaped padding around the edge of the upper surface of the said covering, a mattress supported upon the said covering, the said mattress having a cut-out portion around the edge of the lower surface to fit the triangular or V shaped padding on the aforesaid covering, straps on the said mattress and buckles on the said covering and a drapery hanging over the said straps and buckles, substantially as specified.

12. The combination of a couch-frame, a raised padded edge around the upper surface of the said couch-frame, a loose mattress supported on the said upper surface, and conforming to the said raised padded edge and fasteners for securing the said mattress in position on the couch-frame.

13. In a couch, the combination with a suitable base of a spring-surface upon which a removable or detachable mattress or cushion is supported, a raised edge, about the said spring-surface, upon which the said removable mattress or cushion rests when in position, and to which that portion of the mattress or cushion in contact therewith conforms.

14. In a couch, the combination of a frame, a yieldingly-supported surface thereon elevated above said frame, a removable cushion on said yielding surface, a raised edge on said yielding surface adapted to hold the cushion in place thereon, and a band fastened to and depending from the said raised edge and adapted to cover the space between the yielding surface and the supporting-frame.

810,940. SOLE-MOLDING MACHINE. JOHN J. HEYD, Lynn, Mass., assignor of one-half to Maurice V. Brennahan, Lynn, Mass. Filed Nov. 26, 1903. Serial No. 182,943.

Claim.—1. In a sole-molding machine, complemental molds and mechanism movable bodily with relation to the molds and supported independently of said molds for automatically grasping a sole, feeding it to a position between the molds, holding it between the molds during the molding operation, and withdrawing it therefrom after it is molded.

2. In a sole-molding machine, molding mechanism, devices for grasping a sole, and automatic mechanism for actuating said devices relatively to said molding mechanism in consequence of which they feed a sole to the molding mechanism, hold it during the molding operation, and withdraw it from the molding mechanism.

3. In a sole-molding machine, molding mechanism, a reciprocatory sole-grasping device, means for reciprocating said device to cause it to place a sole in the molding mechanism and to withdraw it therefrom, and means for causing said device to grasp and release the sole.

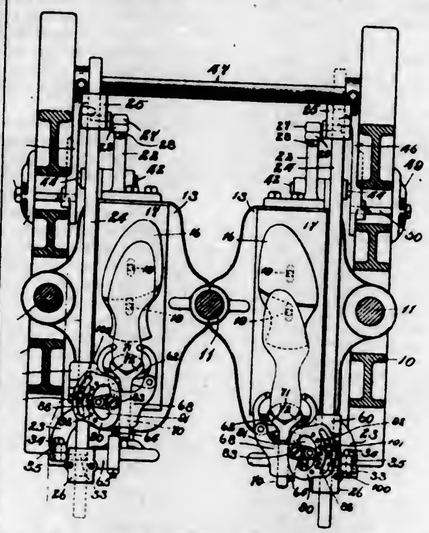

4. In a sole-molding machine, molding mechanism including molds movable toward and from each other, a sole-engaging device, means for causing said device to grasp and hold a sole, and means for moving said device transversely with relation to both of said molds, to feed the sole between the molds and there hold it without said device lying between the molds.

5. In a sole-molding machine, molding mechanism including complemental molds movable toward and from each other, a sole-engaging device, means for causing said device to grasp the heel end of a sole, and automatic mechanism for moving said device relatively to said molds to feed the sole between the molds to hold it there during the molding operation and to withdraw it therefrom after it is molded.

6. In a sole-molding machine, molding mechanism, a reciprocatory carrier movable toward and from the molding mechanism, a guide therefor, coacting fingers mounted on said carrier and adapted to engage the edges of a sole, means for opening and closing said fingers when said carrier is remote from the molding mechanism, and means for actuating said carrier.

7. In a sole-molding machine, molding mechanism, fingers adapted to engage the side edges of a sole at the heel end thereof, a carrier movable in lines substantially parallel to the longitudinal lines of the molds, and means for actuating said carrier and said fingers whereby said fingers carry a sole between the molds and hold it until the molds compress the sole.

8. In a sole-molding machine, molding mechanism having coacting molds movable toward and from each other, coacting fingers adapted to grasp a sole between them, means for moving said fingers relatively to said molds in lines longitudinal of the sole grasped thereby to feed the sole longitudinally between the molds, and means for causing said fingers to release said sole only when said fingers are remote from said molds.

9. In a machine for molding soles, molding mechanism comprising molds which lack a portion of the heel end whereby the heel of a sole placed between them will project beyond the heel ends of the molds, and automatic means independent of the molds and movable toward and from them for grasping the heel end of a sole and inserting it between the molds, whereby said means may continue to grasp the sole while it is initially engaged by the said molds, and thus prevent the dislocation of the sole.

10. In a sole-molding machine, molding mechanism including complemental molds movable toward and from each other, fingers adapted to engage the side edges of a sole at or near its heel, and mechanism for actuating said fingers to place a sole between the molds.

11. In a sole-molding machine, molding mechanism including complemental molds movable toward and from each other, a carrier, means for moving said carrier relatively to said molds in lines transverse to the lines of movement thereof, and sole-grasping means mounted on said carrier, and adapted to hold the sole against dislocation without said means lying between said molds.

12. In a sole-molding machine, molding mechanism including complemental molds movable toward and from each other, a pair of coacting fingers adapted to engage a sole between them, mechanism for moving said fingers to place a sole engaged thereby between the molds, and mechanism for automatically opening and closing said fingers, said last-mentioned mechanism causing said fingers to remain closed on the sole during the molding operation.

13. In a sole-molding machine, a pair of molds of which one is movable, a movable support for the movable mold, and automatic sole-feeding mechanism mounted on said movable support and comprising a sole-grasping device, and means for bodily moving said device relatively to the movable mold in lines transverse to the lines of movement of the mold-support whereby said device places a sole between the molds and then withdraws it therefrom, without said device lying between said molds.

14. In a sole-molding machine, a pair of molds, a movable support for one of said molds, adapted to move from a position of clearance to a position of pressure and vice versa, a sole-grasping device movable transversely of the path of movement of said support, and automatic mechanism for moving said device from a sole-receiving position to a position in which the sole carried thereby is located between the molds, without said device entering the space between the molds, said mechanism being timed whereby the sole is placed between the molds, when said support is in a position of clearance.

15. In a sole-molding machine, molding mechanism, coacting fingers for grasping a sole, a carrier for said fingers movable relatively to the molding mechanism, means for causing said fingers to close, means for actuating said carrier to cause the fingers to feed and hold the sole between the molds, and means for opening the fingers after they have withdrawn the sole from the molds.

16. In a sole-molding machine, a sole-feeding mechanism comprising a device for supporting the heel end of the sole, means for engaging the side edges of said sole, and provisions for moving said device and said means in a direction longitudinally of the sole.

17. In a sole-molding machine, coacting molds, means for feeding a sole between said molds comprising fingers for gripping the sole between them, and means for moving said fingers relatively to the said molds to feed the sole between them, and a gage adjustable with relation to said fingers to determine the points where the sole is gripped by the fingers.

18. In a sole-molding machine, molding mechanism, sole-feeding mechanism comprising a reciprocatory carrier adapted to move toward and from the molds, a pair of connected fingers mounted on said carrier, a spring for closing said fingers, and means for opening said fingers only when the fingers are remote from said molds.

19. A sole-feeding attachment for a molding-machine comprising supports, a reciprocatory carrier thereon, mechanism for reciprocating the carrier, a gage on said carrier, coacting fingers adapted to grasp the heel end of a sole and to coact with the gage in feeding the sole from a point remote from both molds to a position between the molds, and means for causing the opening of said fingers only when they are remote from the molds.

20. A sole-feeding attachment for a molding-machine comprising movable supports, a carrier adapted to reciprocate thereon and having rack-teeth, a toothed segment meshing with said rack-teeth and having an arm, a path-cam attached to the frame of the machine and engaged by said arm, and a sole-engaging device on said carrier.

21. The combination, with a molding-machine having complemental molds, of a sole-feeding mechanism comprising devices for engaging and feeding a sole a predetermined distance relatively to both of said molds and a gage movable with relation to said devices in lines longitudinal of the lines of movement of the said devices, to position the sole relatively to said devices.

22. The combination, with a molding-machine having complemental molds, of a sole-feeding mechanism comprising a carrier movable relatively to both of the molds, means for so moving said carrier, means on said carrier for engaging and feeding a sole between the molds, and an adjustable gage on said carrier movable relatively to said engaging means for determining the extent of movement of the sole between the molds.

23. The combination, with a molding-machine having complemental molds, of a sole-feeding mechanism comprising a reciprocatory carrier movable with relation to said molds and having coacting fingers for engaging the sole and feeding it between the molds, and a gage on said carrier for engaging the heel end of the sole and determining the extent of movement of the sole.

24. A sole-feeding mechanism for molding-machines comprising coacting fingers for engaging the side edges of the sole, a carrier for said fingers movable longitudinally of the sole, a gage on said carrier for engaging the heel end of the sole, and means whereby said gage may be adjusted longitudinally of the lines of movement of the carrier.

25. An attachment for molding-machines comprising devices for engaging and feeding a sole between the molds, means for moving said devices relatively to the molds, and a gage movable relatively to said molds and with said devices, said gage having a portion to project under the heel end of the sole, and two angularly disposed faces to engage the sole at the heel end.

26. The combination, with a molding-machine having complemental molds, of a sole-feeding mechanism comprising devices for engaging a sole and feeding it relatively to the molds, and a gage having a portion to project under the heel end of the sole, and a portion to engage the edge of the sole at the heel end, means for moving said devices and said gage longitudinally of the sole to feed the same between the molds, and means whereby said gage may be adjusted relatively to said devices.

27. The combination with a molding-machine having complemental molds, of a sole-feeding mechanism comprising sole-engaging devices, means for moving said devices relatively to the molds to feed a sole between the molds, an adjustable gage for positioning the sole relatively to said sole-engaging devices, and an indicator for showing the position of the gage.

28. The combination, with a molding-machine having complemental molds, of a sole-feeding mechanism comprising sole engaging and feeding devices for engaging a sole and feeding it relatively to the molds, an adjustable gage for the sole for positioning the sole relatively to said device, an index connected to the gage, and a scale in operative relation to the index.

29. A sole-feeding mechanism for molding-machines comprising sole-engaging devices, an adjustable gage for the sole, an index connected to the gage, and a scale in operative relation to the index, said scale having gradations with a plurality of symbols indicating the several sizes of shoes of different character.

30. In a molding-machine, the combination with complemental molds of sole-feeding devices movable bodily relatively to the molds to feed a sole therebetween, a movable gage movable with the sole-feeding devices, a handle for adjusting said gage with relation to said devices, and means on the handle for securing said handle and thereby said gage in any one of a plurality of positions.

31. A sole-feeding mechanism for molding-machines comprising a movable gage, an index connected to said gage, an adjustable scale having graduated provisions for the attachment of the index, and means for securing the scale-plate after adjustment.

32. A molding-machine comprising molds and mold-supports, sole-feeding devices movable relatively to the molds, a gage, and means for moving said devices and said gage, said gage being adjustable relatively to the said devices in accordance with the size of the sole to be molded, to position the sole relatively to said devices.

33. A sole-molding machine comprising molding mechanism, sole-feeding devices, a gage, means for adjusting said gage relatively to said devices for soles of different kinds, provisions for adjusting said gage relatively to said first-mentioned means for different sizes of soles of the same kind, and means for actuating said devices and said gage relatively to said molding mechanism.

34. A sole-molding machine comprising molding mechanism, automatic sole-feeding devices independent of and movable relatively to said molding mechanism, and having a uniform range of movement, and a sole-gage movable with said devices but adjustable relatively thereto.

35. A sole-molding machine comprising complemental molds, and automatic sole-feeding mechanism movable with relation to the molds and having provisions whereby soles of different lengths may be laid by said sole-feeding mechanism between the said molds with the ball-line of each sole registering with the ball-line of the molds.

36. A series of pairs of complemental molds of different lengths, one mold of each pair having a device by which it may be secured to its support, the devices on all of the said molds so provided being at the same distance from the heel ends.

37. A series of pairs of complemental molds, of different lengths, one mold of each pair having a pin-receiving aperture, and the said apertures in all the molds being at the same distance from the heel ends.

810,941. TRACTION APPARATUS. ELISHA HUNT and HENRY G. DE BUKEMS, New York, N. Y., assignors, by direct and mesne assignments, to Elevator Securities Company, a Corporation of New Jersey. Filed May 7, 1903. Serial No. 156,945.

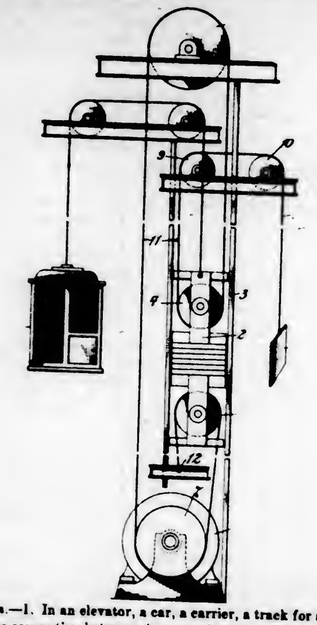

Claim.—1. In an elevator, a car, a carrier, a track for said carrier a cable connection between the car and carrier and two movable pulleys on said carrier; in combination with a fixed pulley near each extremity of the carrier-track, a reversible motor arranged to impel one of said pulleys, and a driving-cable anchored at one end and carrying a weight at the other end, said cable passing from its anchorage around one movable pulley, thence in the same direction around one of the fixed pulleys, thence in the same direction around the second fixed pulley and thence in the same direction around the second movable pulley to the weight, substantially as described.

2. In an elevator, a car, a carrier, a track for said carrier a cable connection between the car and carrier and movable pulleys with parallel axes on the top and bottom of said carrier respectively in combination with a fixed pulley having its axis parallel to those of said movable pulleys directly beneath the lowest point of travel of said carrier, a reversible motor for driving the same, two fixed pulleys directly above the highest point of travel of said carrier, one of which has its axis parallel to those of said movable pulleys and a driving-cable anchored below said carrier-track at one end and bearing a weight at its other end, said cable passing from its anchorage around one movable pulley, thence in the same direction around one of the fixed pulleys, thence in the same direction around the second fixed pulley, thence in the same direction around the second movable pulley and thence around the third fixed pulley to the weight, substantially as described.

810,942. HAMMOCK. HERMAN L. HOELFELD, Philadelphia, Pa. Filed Sept. 26, 1905. Serial No. 280,063.

Claim.—1. In a hammock, a hammock-body, two groups or sections of strings, the inner contiguous strings of each section merging into each other and adapted to support said hammock-body at its central portion and arranged to permit of a yielding of the same at this portion to equally distribute the weight carried by the hammock-body over both sections of said strings.

2. In a hammock, a hammock-body having hammock-cloth, two groups or sections of strings, the inner contiguous strings of each section merging into each other by engaging the central portion of said hammock-cloth, said inner strings arranged to equally distribute the weight carried by said hammock-body over both sections of said strings.

3. In a hammock, a hammock-body having tabs, loops secured to said hammock-body, two groups or sections of strings, each consisting of a series of strings, the outer one of said series of strings being adapted to engage said loops and the inner contiguous strings of said section adapted to engage a tab centrally arranged with respect to said hammock-body, and the intermediate string of the strings of each section thereof arranged to assist in the support of said hammock-body beyond the central longitudinal portion thereof.

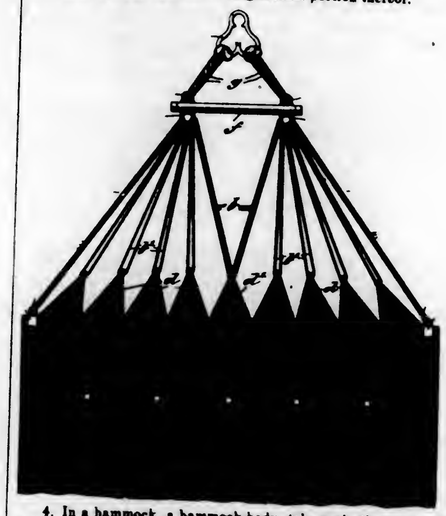

4. In a hammock, a hammock-body, tabs projecting an equal distance apart from said body, two groups or sections of strings adapted to engage said tabs, the inner contiguous strings of each section of said strings being arranged to engage one of said tabs centrally arranged with respect to said hammock-body.

5. In a hammock, a hammock-body, tabs projecting an equal distance apart from said body, loops secured to said body having eyes, two groups or sections of strings adapted to engage said tabs and eyes, the inner and outer reinforced strings of each of said groups being adapted to support each end of said hammock-body by engaging said eyes, and the inner contiguous strings being adapted to support said hammock-body at its central portion by engaging one of said tabs.

810,943. MUSIC-LEAF TURNER. FRANK J. HOLOUBEK, Oakland, Iowa. Filed June 1, 1905. Serial No. 263,264.

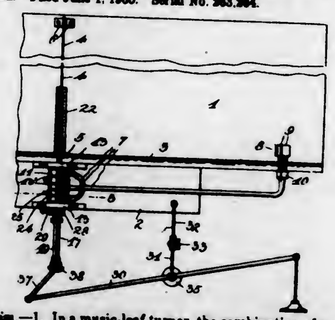

Claim.—1. In a music-leaf turner, the combination of a series of pivoted leaf-turning arms, each having a spring to turn it in one direction, a spring-actuated sliding rod to lock the said arms in initial position and successively release them, and pivotally-mounted controllers forming stops to prevent movement of the rod, said controllers and arms having coacting means to cause each arm during its pivotal movement by its spring, to impart such motion to one of the controllers as will cause the latter to clear the rod and permit the said rod to be moved to another controller.

2. In a music-leaf turner, the combination of a series of pivoted leaf-turning arms, each having a spring to turn it in one direction and a tappet-pin, a spring-actuated sliding rod to lock said arms in initial position and successively release them, and pivotally-mounted controllers forming stops to prevent movement of the rod and having curved slots in which the tappet-pins of the arms operate, for the purpose set forth.

3. In a music-leaf turner, the combination with a series of leaf-turning arms having hubs or rings formed with openings or notches, springs inclosed in said hubs or rings and adapted to swing said arms in one direction, a sliding rod adapted to enter the openings in said hubs or rings to hold the latter against the action of said springs, controlling-disks to permit step-by-step sliding movement of the rod located intermediate said hubs or rings and formed with curved grooves or slots, pins upon said arms to coact with said grooves or slots, springs upon said disks to retard their movement and means for operating said sliding rod.

4. In a music-leaf turner, the combination of a series of pivoted leaf-turning arms, each having a spring to turn it in one direction, a spring-actuated sliding rod to lock the said arms in initial position and successively release them, and movable controllers forming stops to prevent movement of the rod, said controllers and arms having coacting devices to cause each arm during its pivotal movement by its spring, to impart such motion to one of the controllers as will cause the latter to clear the rod and permit the said rod to be moved to another controller.

810,944. ELASTIC TIRE. JOHN E. HOPKINSON, West Drayton, England. Filed Aug. 15, 1905. Serial No. 274,348.

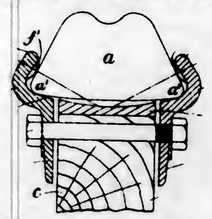

Claim.—1. In a tire, the combination with a concave rim and a rubber tire extending across said rim, of cheek-plates adapted to compress the rubber laterally, of reëntering flanges upon the cheek-plates and of serrations upon the inner faces of the flanges arranged to thrust the tire into the concave rim.

2. In a tire, the combination with a concaved rim and a rubber tire having a flatter base than the rim, of cheek-plates having reëntering flanges and of serrations upon the interior faces of the flanges which bite into the sides of the rubber tire.

3. In a tire, the combination with a felly, a concaved ring mounted on the felly, and a rubber tire having a base of less curvature than the rim, of cheek-plates secured upon the sides of the felly, undercut recesses upon the inner sides of said cheek-plates, reëntering flanges at the peripheries of said cheek-plates and serrations upon the inner sides of the flanges, adapted to press into the rubber tire.

4. In a tire of the class described, cheek-plates having reëntering flanges fitted with serrations adapted to force the tire into its rim.

810,945. FRAME FOR PUMPING POWERS. WILLIAM HURD, Warren, Ind., and WILLIAM WRIGHT, Franklin, Pa. Filed Oct. 15, 1904. Serial No. 228,063.

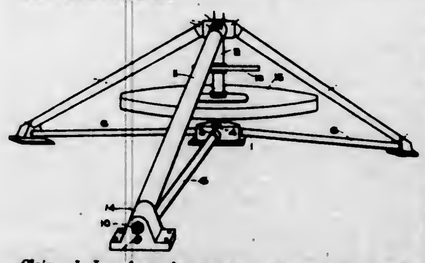

Claim.—1. In a frame for pumping powers, a lower bearing, adapted to the reception of the lower end of a vertical shaft, an upper bearing, adapted to the reception of the upper end of a vertical shaft, there being radially-disposed bosses on each of said bearings, arranged in vertically-alined pairs, a tubular brace for each of said bosses, and receiving the same at one end, an anchor-block adapted to the attachment of the other end of each vertically-alined pair of braces, a tie-rod passing through each of said braces and secured at one end in one of the bosses aforesaid and at the other end in its respective anchor-block.

2. In a frame for pumping powers, an upper bearing and a lower bearing, and the anchor-blocks, in combination with the tie-rods and tubular braces, arranged in vertically-alined pairs and connecting said bearings and said anchor-blocks.

810,946. PANEL FOR METAL LOCKERS. RICHARD W. JEFFERIS, Camden, N. J., assignor to Merritt & Company, a Corporation of Pennsylvania. Filed Apr. 20, 1904. Serial No. 204,483.

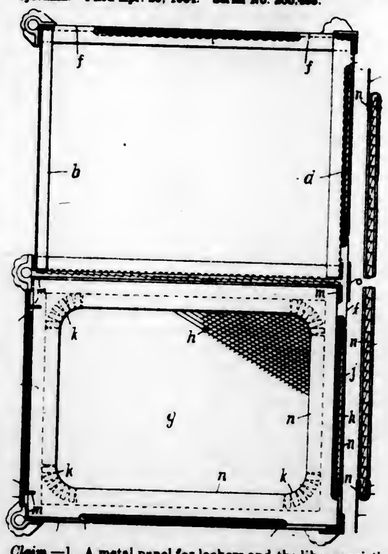

Claim.—1. A metal panel for lockers and the like, consisting of an outer metal frame composed of angle-irons and a wall carried by said frame and formed partly of closed sheet metal and partly of reticulated metal, the closed portion of said wall consisting of a continuous sheet of metal secured at its outer edges to the angle-irons and having an opening bounded by a continuous portion of sheet metal of substantial width, the edges of the sheet metal about said opening being bent back upon the body of the sheet, and the reticulated portion consisting of a sheet of reticulated metal arranged over said opening with its edges resting on the backwardly-bent edges of the closed sheet metal, said bent edges being again bent forward over the edges of the reticulated metal and inclosing them.

2. A metal panel for lockers and the like, consisting of an outer metal frame composed of angle-irons and a wall carried by said frame and formed partly of closed sheet metal and partly of reticulated metal, the closed portion of said wall consisting of a continuous sheet of metal secured at its outer edges to the angle-irons and having an opening bounded by a continuous portion of sheet metal of substantial width, the edges of the sheet metal about said opening being bent back upon the body of the sheet, and the reticulated portion consisting of a sheet of reticulated metal arranged over said opening with its edges resting on the backwardly-bent edges of the closed sheet metal, said bent edges being again bent forward over the edges of the reticulated metal and inclosing them and the extremities of said bent edges being bent in as at *j* to form a rounded edge.

810,947. LOCKING DEVICE FOR METAL LOCKERS. RICHARD W. JEFFERIS, Camden, N. J., assignor to Merritt & Company, a Corporation of Pennsylvania. Filed Apr. 20, 1904. Serial No. 204,484.

Claim.—1. In locking devices for metal lockers and the like, the combination of a vertically-sliding catch-bar carried by the door-frame and provided with a projection n extending laterally in a plane

transverse to the catch-bar, a lock carried by the door-frame and having its bolt arranged to be projected forward across the path of the lateral projection of the catch-bar, said projection being movable transversely across the path of the bolt when it is retracted.

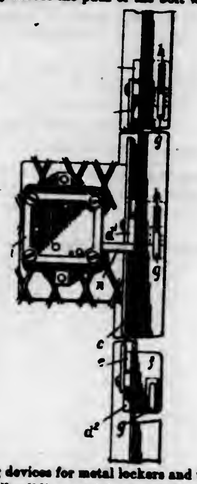

2. In locking devices for metal lockers and the like, the combination of a vertically-sliding catch-bar carried by the door-frame and provided with a projection extending laterally in a plane transverse to the catch-bar, a lock carried by the door-frame and having its bolt arranged to be projected forward across the path of the lateral projection of the catch-bar, said projection being movable transversely across the path of the bolt when it is retracted, and auxiliary fastenings located at the top and bottom of the door-frame and controlled by said sliding catch-bar.

3. In locking devices for metal lockers and the like, the combination of a vertically-sliding catch-bar carried by the door-frame and located at the back, an actuating-plate connected with said sliding catch-bar and provided with an eye *j*, and an eye *k* carried by the door-frame and projecting through a slot in the actuating-plate adjacent to the eye *j* thereof said eye *j* being movable vertically past the eye *k* and occupying a position immediately adjacent to it when the sliding catch-bar is in locking position.

4. In locking devices for metal lockers and the like, the combination of a sliding catch-bar carried by the door-frame and located at the back, an actuating-plate connected with said sliding catch-bar and provided with an eye *j*, an eye *k* carried by the door-frame and projecting through a slot in the actuating-plate adjacent to the eye *j* thereof, a key-actuated lock carried by said door-frame, and a projection carried by the sliding catch-bar and movable across the face of the bolt of said lock when the same is retracted but adapted to be arrested thereby when the bolt is projected.

810,948. GARMENT-CLASP. OTTO KERSTEN, Bloomsburg, Pa., assignor of one-fourth to J. T. Treay, one-fourth to H. W. Dietterich, and one-fourth to Frank Ikeler, all of Bloomsburg, Pa. Filed July 24, 1905. Serial No. 271,069.

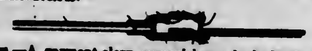

Claim.—A garment-clasp comprising a body having opposite resilient cheek-pieces, one of which is provided therein with a lever-opening, and the other of which piece is provided in its inner side with a depression constituting a keeper-socket and having a flat binding-shoulder near one end of the cheek-piece, and a straight inclined wall sloping to the base of the shoulder, and a swinging lock-lever pivoted on the cheek-piece opposite the socket and having an inner engaging arm whose point swings over the inclined wall of the socket in opposition to the flat shoulder, said lever also having an outer operating-arm provided with a fastening-tongue having a snapping engagement with an edge of the lever-opening.

810,949. TRANSPOSER FOR MUSICAL INSTRUMENTS. THEODORE W. KIESAU, New York, N. Y., assignor of one-half to George Lucas, Brooklyn, N. Y. Filed Mar. 22, 1905. Serial No. 251,423.

Claim.—1. A cable embracing two sets of electrical conductors with an equal number in each set and means for connecting one end of all of the conductors of one set to one end of all of the conductors of the other set in all of their adjusted positions, said means holding all of said ends of each set in the same relative positions, but permitting one set of ends to shift their connections as an entirety with the other set of ends to any desired extent.

2. A cable embracing two sets of electrical conductors and two common return-conductors therefor, there being an equal number of conductors in each set circularly arranged around the two common return-conductors; in combination with means for detachably connecting and disconnecting one end of all of the circularly-arranged conductors to and from the corresponding ends of the other circularly-arranged conductors, and similar means for detachably connecting and disconnecting the two return-conductors, the two sets of conductors being at equal radial distances from their corresponding return-conductors and at equal distances apart, whereby variable rotatable circuit connections may be effected between said sets of conductors to any desired extent.

810,950. PRESS FOR PRINTING UPON METAL. GEORGE KREHLING, Chicago, Ill. Filed Mar. 20, 1905. Serial No. 250,694.

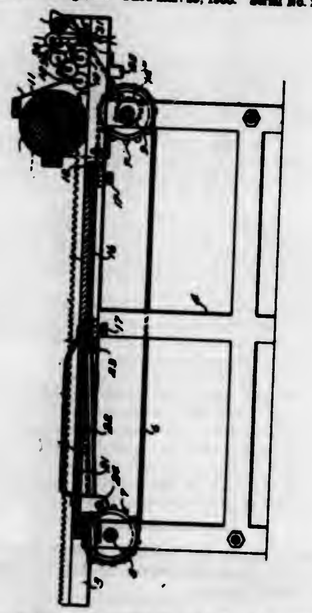

Claim.—1. In a device of the class described, the combination of a bed, means for securing a printing-plate upon said bed, a carriage mounted above said bed and movable along the same, a cylinder journaled in said carriage and adapted to roll along the upper surface of said plate when said carriage is moved along the same, inking mechanism for applying ink to said plate, a platen-plate adapted to hold a sheet of material with its upper surface in substantially the same plane with the upper surface of said printing-plate, said cylinder being adapted for receiving an impression from said printing-plate and transferring said impression to said sheet when said cylinder moves along the bed, and mechanism for shifting said platen-plate so as to carry said sheet out of the path of said cylinder during its return movement.

2. In a device of the class described, the combination of a frame, a bed on said frame for supporting sheet of metal, a carriage movable forward and back along said frame above said bed, a transfer-cylinder having a layer of soft resilient material on its periphery and

journaled in said carriage in position to have rolling contact with said sheet when said carriage is moved along said bed, inclined guides supporting said bed, and said carriage being adapted to engage said bed and shift the same along said guides to lower said sheet out of the return-path of said cylinder after said cylinder has passed across said sheet.

3. In a device of the class described, the combination of a frame, a bed on said frame for supporting a sheet of metal, a carriage movable forward and back along said frame above said bed, a transfer-cylinder having a layer of soft resilient material on its periphery and journaled in said carriage in position to have rolling contact with said sheet when said carriage is moved along said bed, inclined guides supporting said bed, said carriage being adapted to engage said bed and shift the same along said guides to lower said sheet out of the return-path of said cylinder after said cylinder has passed across said sheet, and a stop for limiting the position of said bed toward the upper end of said guide.

4. In a device of the class described, the combination of a frame, a bed on said frame for supporting a sheet of metal, a carriage movable forward and back along said frame above said bed, a transfer-cylinder having a layer of soft resilient material on its periphery and journaled in said carriage in position to have rolling contact with said sheet when said carriage is moved along said bed, inclined guides supporting said bed, said carriage being adapted to engage said bed and shift the same along said guides to lower said sheet out of the return-path of said cylinder after said cylinder has passed across said sheet, and an adjustable stop for limiting the movement of said bed toward the upper end of said guides and thereby controlling the adjustment of said sheet toward said transfer-cylinder.

5. In a device of the class described, the combination of a frame, a printing-plate supported in a horizontal position in said frame, a bed adapted to support a sheet of metal in the same plane with said printing-plate, a carriage movable forward and back along said frame above said bed, a transfer-cylinder journaled in said carriage and adapted to have rolling contact with said plate and sheet when said carriage is moved along in one direction and mechanism for shifting said bed so as to move the same out of the path of said cylinder prior to the return movement of said cylinder.

810,951. VALVE. MAURICE D. LARKIN, Dayton, Ohio. Filed Oct. 15, 1903. Serial No. 177,139.

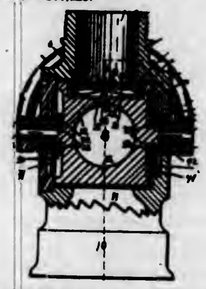

Claim.—1. In a valve, the combination of a valve-body, having an opening therethrough, a valve member movably mounted in said valve-body, so that said opening may be opened or closed thereby, an operating projection on said member passing through a wall of said valve-body, said wall of said valve-body being formed of a plurality of integral layers with an intervening cavity, and means mounted upon the outer of said layers and adapted to press the inner of said layers against a portion of said member surrounding its operating projection, substantially as specified.

2. In a valve, the combination of a valve-body, having an opening therethrough, a valve member movably mounted in said valve-body so that said opening may be opened or closed thereby, an operating projection on said member passing through a wall of said valve-body, said wall of said valve-body being formed of a plurality of integral layers with an intervening cavity, and means mounted upon the outer of said layers and adapted to press the inner of said layers against a portion of said member surrounding said operating projection, substantially as specified.

3. In a valve the combination of a valve-body, having an opening therethrough, a valve member movably mounted in said valve-body so that said opening may be opened or closed thereby, an operating projection on said member passing through a wall of said valve-body, said wall of said valve-body being formed of a plurality of integral layers with an intervening cavity, and a screw threaded into the outer of said layers and adapted to press the inner of said layers against a portion of said member surrounding said operating projection, substantially as specified.

4. In a valve the combination of a valve-body, having an opening therethrough, a valve member removably mounted in said valve-body so that said opening may be opened or closed thereby, an operating projection on said member passing through a wall of said valve-body, said wall of said valve-body being removably secured to said valve-body and formed of a plurality of integral layers with an intervening cavity, and means mounted upon the outer of said layers and adapted to press the inner of said layers against a portion of said member surrounding its operating projection, substantially as specified.

5. In a valve, the combination of a valve-body, having an opening therethrough, a valve member movably mounted in said valve-body so that said opening may be opened or closed thereby, an operating projection on said member passing through a wall of said valve-body, said wall of said valve-body being removably secured to said valve-body and formed of a plurality of integral layers with an intervening cavity, and a screw threaded into the outer of said layers and adapted to press the inner of said layers against a portion of said member surrounding said operating projection, substantially as specified.

6. In a valve, the combination of a valve-body, having an opening therethrough, a valve member movably mounted in said valve-body so that said opening may be opened or closed thereby, an operating projection on said member passing through a wall of said valve-body, said wall of said valve-body being removably secured to said valve-body and formed of a plurality of integral layers with an intervening cavity, and a hollow screw surrounding said operating projection and threaded through the outer of said layers for pressing the inner of said layers against a portion of said member surrounding said operating projection, substantially as specified.

7. In a valve, the combination of a valve-body, having an opening therethrough, a valve member movably mounted in said valve-body, so that said opening may be opened or closed thereby, an operating projection on each of the opposite ends of said member and passing through opposite walls of said valve-body, said walls of said valve-body each being formed of a plurality of integral layers with an intervening cavity, and means mounted upon the outer of said layers of each of said walls and adapted to press portions of said member surrounding said operating projection between said inner layers, substantially as specified.

8. In a valve, the combination of a valve-body, having an opening therethrough, a valve member movably mounted in said valve-body, so that said opening may be opened or closed thereby, an operating projection on each of the opposite ends of said member and passing through opposite walls of said valve-body, said walls of said valve-body being each formed of a plurality of integral layers with an intervening cavity, and a screw threaded into the outer of said layers of each of said opposite walls and adapted to press the inner of said layers of each of said walls against a portion of said member surrounding each of said operating projections, substantially as specified.

9. In a valve, the combination of a valve-body, having an opening therethrough, a valve member movably mounted in said valve-body so that said opening may be opened or closed thereby, a plurality of operating projections on said member passing through a corresponding plurality of walls of said valve-body, each of said walls of said valve-body being formed of a plurality of integral layers with an intervening cavity, and a hollow screw surrounding each of said operating projections and threaded through the outer layer of each of said walls for pressing the inner of said layers against portions of said member surrounding said operating projections, substantially as specified.

10. In a valve, the combination of a valve-body, having an opening therethrough, a valve member movably mounted in said valve-body so that said opening may be opened or closed thereby, a plurality of operating projections on said member and passing through a corresponding plurality of walls of said valve-body, one of said walls of said valve-body being removably secured to said valve-body and each of said walls being formed of a plurality of integral layers with an intervening cavity, and means mounted upon the outer layer of each of said walls and adapted to press the inner layer of each of said walls against portions of said member surrounding said operating projections, substantially as specified.

11. In a valve, the combination of a valve-body, having an open-

ing therethrough, a valve member movably mounted in said valve-body so that said opening may be opened or closed thereby, a plurality of operating projections on said member passing through a corresponding plurality of walls of said valve-body, one of said walls of said valve-body being removably secured to said valve-body and each of said plurality of walls being formed of a plurality of integral layers with an intervening cavity, and a screw threaded into the outer layer of each of said walls and adapted to press the inner layer of each of said walls against portions of said member surrounding said operating projections, substantially as specified.

12. In a valve, the combination of a valve-body, having an opening therethrough, a valve member movably mounted in said valve-body so that said opening may be opened or closed thereby, a plurality of operating projections on said member passing through a corresponding plurality of walls of said valve-body, one of said walls of said valve-body being removably secured to said valve-body and each of said plurality of walls being formed of a plurality of integral layers with an intervening cavity, and a hollow screw surrounding each of said operating projections and threaded through the outer layer of each of said walls for pressing the inner layer of each of said walls against portions of said member surrounding each of said operating projections, substantially as specified.

13. In a valve, the combination of a valve-body having inlet and outlet openings and a cavity intermediate said openings; a valve member revolubly mounted in said cavity and having a stem; a cylindrical recess in one side of said valve member; a cylindrical member 17 slidably mounted on a guide in said recess of said valve member; a spring exerting outward pressure upon said member 17; and means independent of said stem and passing through said member 17 and being accessible through either of said openings for varying the tension of said spring; and an opening 13 through said valve member at angle to the said axis of said valve member, substantially as specified.

14. In a valve, the combination with a valve-body, having openings therethrough communicating with a cavity, a member 12 in said cavity and having trunnions 14 provided with bearings in the walls of said valve-body, an opening 13 through said member 12, a cylindrical cavity 16 in one side of member 12 and remote from the opposite ends of said member 12, a cylindrical member 17 slidably mounted upon guides 20 in said cavity 16, a relatively narrow rib 18 upon the outer surface and near the periphery of member 17, said rib 18 being adapted to engage a portion of the inner wall of said cavity in said valve-body and to close the outlet of one of the openings through said valve-body at times, said cavity 16 and member 17 with its rib 18 being slightly larger in diameter than said first-mentioned openings, and manually-adjustable means passing through said member 17 and accessible through either one of the openings through said valve-body, whereby said member 17 is pressed outwardly, substantially as specified.

15. In a valve, the combination of a valve-body having ways therethrough upon opposite sides of a cavity therein; a member 12 movably mounted across said way and filling said cavity and having a recess in one side thereof; a guide in said recess; a member 17 movably mounted in said recess and slidable upon said guide; said recess and member 17 being relatively smaller than the length of said valve-body, and said member 17 being adapted to close one of said ways through said valve-body; and means exposed upon the outer surface of said member 17 and accessible through the way closed by said member 17, whereby the relative positions of said members 12 and 17 may be adjusted to compensate for variations in manufacture and for wear, substantially as specified.

16. In a valve, the combination of a valve-body having ways therethrough upon opposite sides of a cavity therein; a member 12 movably mounted across said way and filling said cavity and having a recess in one side thereof; a guide in said recess; a member 17 movably mounted in said recess and slidably mounted upon said guide; said recess and member 17 being relatively smaller than the length of said valve-body, and said member 17 being adapted to close one of said ways through said valve-body; and a screw threaded through said member 17 and having its head end exposed upon but below the outer surface of said member 17, said head end of said screw being accessible through the way closed by said member 17, whereby the relative positions of said members 12 and 17 may be adjusted by said screw to compensate for variations in manufacture and for wear, substantially as specified.

17. In a valve, the combination of a valve-body having ways therethrough upon opposite sides of a cavity therein; a member 12 movably mounted across said ways and filling said cavity and having a circular recess in one side thereof; a guide in said recess; a circular member 17 movably mounted in said recess and slidable upon said guide; a spring member 22 confined in said recess by said member 17; said recess and member 17 being relatively smaller in diameter than the length of said valve-body, and said member 17 being adapted to close one of said ways through said valve-body; and a screw threaded through said member 17 and bearing at its inner end upon said spring member 22 and having its head end exposed upon but below the outer surface of said member 17, said head end of said screw being accessible through the way closed by said member 17, whereby the relative positions of said members 12 and 17 may be adjusted manually by said screw to compensate for variations in manufacture and automatically by said spring member 22 to compensate for wear; substantially as specified.

810,952. PIN HOLDING AND DELIVERY DEVICE. DE LOS A. LAWTON and LOUIS L. WITHEY, Rome, N. Y. Filed June 16, 1905. Serial No. 265,627.

Claim.—1. In a pin holding and delivering device, the combination of a toothed wheel, a plunger, means for transmitting motion from the plunger to the toothed wheel, and a pin-strip actuated step by step by said toothed wheel.

2. In a pin holding and delivering device, the combination with a pin-supporting strip in which the pins are arranged at regular intervals, a ratchet-wheel rotatable and provided with teeth successively engaging said pins to feed the strip one pin-space at a time, a finger-operated plunger and means for transmitting motion from said plunger to the ratchet-wheel.

3. A pin-strip feeding device comprising a rotary toothed wheel and a reciprocatory plunger adapted to be operated by the pressure of the finger and operatively connected to rotate said wheel.

4. In a device of the class described, a vertically-movable plunger adapted to be operated by the finger, in combination with a ratchet-wheel encircling the plunger and means for transmitting motion from the plunger to the ratchet-wheel.

5. In a device of the class described, the combination of a vertically-movable finger-actuated plunger, a toothed wheel having its axis coincident with the center of the plunger, a bell-crank actuated by the plunger and a pawl mounted on the bell-crank and engaging said wheel to rotate the latter one tooth at each operation of the plunger.

6. In a device of the class described, an inclosing case having a finger-opening and a pin-supporting strip movable across said opening to bring the heads of the pins in registration therewith, a toothed wheel rotatable step by step and operatively connected to feed said strip one pin-space at a time, and finger-operated means operatively connected to rotate said wheel one tooth-space at a time.

7. In a device of the class described, a finger-operated plunger having a finger-groove open at one side, a pin-strip and means brought into action by the depression of said plunger whereby the strip is fed one pin-space and one pin is brought into registration with the open side of the finger-groove as the plunger is depressed.

8. In a device of the class described, a pin-holding strip and feeding means therefor comprising a toothed wheel a plunger adapted to be operated by the finger and means brought into action by the depression of said plunger for rotating said wheel one tooth-space.

9. In a device of the class described, the combination of an inclosing case consisting of a base and a top portion telescoping with the base, a tubular post rising from the base, a plunger movable in said post, a rotary toothed wheel encircling said post, means for transmitting motion from the plunger to the wheel, and a pin-supporting strip actuated step by step at each movement of said wheel.

10. In a device of the class described, an inclosing case and pin-supporting strip having its pins spaced equidistant apart, said case having a finger-opening, a rotary wheel engaging and feeding the strip, a plunger movable through said wheel, and means for transmitting motion from the plunger to the wheel, whereby said wheel is caused to move the strip one pin-space to bring a pin into registration with the opening at each depression of the plunger.

810,953. DUMPING COAL-WAGON. WILLIAM LEONHARDT, Baltimore, Md., assignor to Leonhardt Wagon Manufacturing Company, Baltimore, Md., a Firm. Filed June 24, 1905. Serial No. 266,761.

Claim.—In combination with the body of a wagon having a delivery-opening, a spout which consists of a flanged plate situated under the body of the wagon and susceptible of an endwise movement, and of lateral deflection, a pair of plates hinged to the wagon-body with their free ends within the space formed by the separated flanges of the first plate, a stop to limit the endwise movement of the flanged plate, and fastenings whereby the said flanged plate may be held in a straight or a laterally-deflected position, substantially as specified.

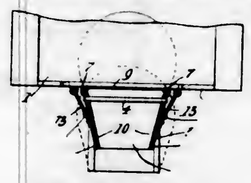

810,954. TOOTHPICK-HOLDER. WILHELM LOEWEN, Gintz, Germany, assignor to Alois Joseph Hettwer, Landeck, Germany. Filed Nov. 23, 1903. Serial No. 183,394.

Claim.—1. The combination with a divided receptacle for holding toothpicks, of a fixed frame in which the receptacle is mounted to slide, of a fixed vertical partition on the frame passing through the receptacle and provided with a groove along its upper edge above which the receptacle is raised to deposit a toothpick in the groove, and afterward lowered below the same to enable the toothpick to be removed, and a finger pivoted on the receptacle and arranged to eject as the receptacle is raised any used toothpick which may have been laid in the groove.

2. The combination with a receptacle and a vertical partition provided with a groove in its upper end, the receptacle and the partition being movable relatively to one another to cause the grooved upper end of the partition to pass through the upper wall of the receptacle, of means for ejecting any toothpick located in the groove from the groove when the grooved end is again caused to enter the receptacle.

810,955. MEANS FOR REGULATING TURBINES. ANDREAS LUND, Christiania, Norway. Filed Mar. 9, 1904. Serial No. 197,210.

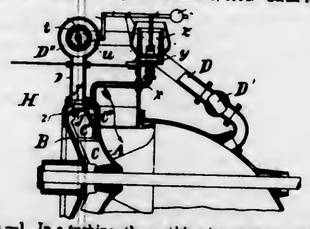

Claim.—1. In a turbine, the combination with an axially-movable turbine-wheel, of a water-cushion to regulate the axial position of the wheel, means to vary the hydraulic pressure of said cushion on the wheel and means set in operation by the axial movement of the wheel to vary its speed, substantially as described.

2. In a turbine, the combination with an axially-movable turbine-wheel, of a water-cushion to regulate the axial movement of the wheel, means operated by the rotary movement of the wheel to vary the pressure and volume of the cushion, and means set in operation by the axial movement of the wheel to vary its speed, substantially as described.

3. In a turbine, the combination with an axially-movable turbine-wheel, of a water-cushion behind the wheel to regulate the axial movement of the wheel, a valve to control the hydraulic pressure of said cushion on the wheel and means set in operation by the axial movement of the wheel to vary its speed, substantially as described.

4. In a turbine, the combination with the casing having a draft-tube and the turbine-wheel, of a chamber formed back of the wheel, means to maintain a constant and separate circulation of water from between the wheel and casing through the chamber and into the draft-tube, and means to control the volume of water passing through the chamber and thereby controlling the pressure within the chamber, substantially as described.

5. In a turbine, the combination with an axially-movable turbine-wheel, of a chamber back of the wheel and containing a water-cushion, vanes back of the wheel in said chamber to act as a pump, a pipe connection between the chamber and the water-exit from the wheel, a valve in said pipe and means to operate the valve from the turbine-wheel, substantially as described.

6. In a turbine, the combination with an axially-movable turbine-wheel, of a chamber back of the wheel and containing a water-cushion, vanes in the chamber rotatable with the wheel to act as a centrifugal pump, a valve-controlled pipe connecting the chamber with the draft-tube, and mechanism between the turbine-wheel and the valve to automatically operate the latter, substantially as described.

7. In a turbine, the combination with an axially-movable turbine-wheel, of a water-cushion to counteract the axial thrust of the wheel, means to vary the hydraulic pressure of said cushion to axially move the wheel, and a brake actuated by the wheel, substantially as described.

8. In a turbine, the combination with an axially-movable turbine-wheel, of a water-cushion to counteract the axial thrust of the wheel, a stationary brake element and a cooperating brake element carried by the wheel, and means to automatically vary the hydraulic pressure of the water-cushion to axially move the turbine-wheel and operate the brake, substantially as described.

9. In a turbine, the combination with an axially-movable turbine-wheel, of a chamber back of the wheel and containing a water-cushion, vanes in the chamber secured to the wheel, a stationary brake-ring and a brake-ring secured to the wheel, and means to automatically vary the hydraulic pressure of the water in said chamber to axially move the wheel, substantially as described.

10. In a turbine, the combination with an axially-movable turbine-wheel, a penstock and a draft-tube; of a chamber back of the wheel, a pipe connecting the chamber to the draft-tube, a valve in said pipe, means to cause a difference in hydraulic pressures between the central and peripheral portion of said chamber and mechanism actuated by the peripheral hydraulic pressure to control said valve, substantially as described.

11. In a turbine, the combination with an axially-movable turbine-wheel and its casing, a penstock and a draft-tube, of a chamber back of the wheel connected to the draft-tube, a set of pump-blades on the back of the wheel in said chamber and a second set of pump-blades on the wheel to act on the water passing between the wheel and casing into the chamber, substantially as described.

12. In a turbine, the combination with an axially-movable turbine-wheel and its casing, a penstock and draft-tube, of a chamber back of the wheel connected to the draft-tube, blades in the back of the wheel in said chamber, a pipe connecting the chamber and draft-tube, a fixed brake member and a movable brake member coöperating therewith and operated by the axial movement of the wheel, substantially as described.

13. In a turbine, the combination with an axially-movable turbine-wheel and its casing, a penstock and a draft-tube, of a chamber back of the wheel, a pipe connecting the chamber and draft-tube, a valve in said pipe, a set of pump-blades on the wheel and in said chamber, a set of pump-blades to act on the water passing into the chamber from between the wheel and its casing and means to operate said valve actuated by the water pumped by the second set of blades, substantially as described.

14. In a turbine, the combination with an axially-movable turbine-wheel and its casing, a penstock and draft-tube, of a chamber back of the wheel, a pipe connecting the chamber and draft-tube, a valve in said pipe, a fixed brake member in the chamber and a coöperating brake member on the wheel, a set of pump-blades back of the wheel in the chamber, a set of pump-blades positioned to act on the water passing between the wheel and casing into the cham-

bar, a receptacle to receive water pumped by the second set of blades and mechanism operated by the varying water-level in said receiver to actuate the valve, substantially as described.

15. In a turbine, the combination with an axially-movable turbine-wheel, a penstock and a draft-tube; of a chamber back of the wheel, a pipe connecting the chamber to the draft-tube, two valves in said pipe, means to cause a difference of hydraulic pressure between the central and peripheral portions of said chamber, means to control one of the valves by the speed of the wheel and means to control the other by the hydraulic pressure in the peripheral part of the chamber.

810,956. SHOW-CASE. ROBERT G. LUTES, Portland, Oreg., assignor to The Lutes Manufacturing Co., Portland, Oreg., a Corporation. Filed Aug. 3, 1905. Serial No. 272,457.

Claim.—1. In a show-case, the combination with the glass wall-plate, of saddle-rails affixed to the top edges thereof, said rails consisting of a crown and integral flanges or lips arranged to embrace the upper edges of the glass wall-plates, and having integral vertical stud-pins on its crown, and the end sections of said saddle-rails being further made with integral corner portions *i* arranged to hold the front wall-plate by its upper corners; and a glass top plate provided with vertical cavities on its under side arranged to receive said stud-pins, and by so doing interlocking the top plate with the walls.

2. In a show-case the combination with the back or door frame, and front and end glass wall-plates of saddle-rails affixed to the top edges of said wall-plates, and consisting of a crown and integral flanges or lips arranged to embrace the upper edges of the glass wall-plates, and having integral vertical stud-pins on its crown; said rails being secured at their back ends to the back frame, and the end sections of said saddle-rails being further made with integral corner portions *i* arranged to hold the front wall-plate by its upper corners, and a glass top plate provided with vertical cavities on its under side arranged to receive said stud-pins, and by so doing interlocking the top plate with the walls.

3. A show-case, comprising a back or door frame having corner-posts, front and end glass wall-plates, saddle-rails affixed to the top edges of said wall-plates, and consisting of a crown and integral flanges or lips arranged to embrace the upper edges of the glass wall-plates, and having integral vertical stud-pins on its crown; said rails being secured at their back ends to the posts of the back frame, and the end sections of said saddle-rails being further made with integral corner portions *i* arranged to hold the front wall-plate by its upper corners; and a glass top plate provided with vertical cavities on its under side arranged to receive said stud-pins, and by so doing interlocking the top plate with the walls.

4. A show-case comprising a back or door frame, front and end glass wall-plates, the front corners of which overlap one the other, strips of woven material interposed between said overlapping corners, rails affixed on the top edges of said glass wall-plates and having vertical stud-pins, the rail-sections on the end walls being secured at their back ends to the back frame, and said end rail-sections being made with corner portions arranged to hold the front wall-plate by its upper corners, and a glass top plate provided on its under side with vertical cavities arranged to receive said stud-pins, and by so doing interlocking the top plate with the wall-plate.

810,957. TIP FOR ROCKING-CHAIRS. THOMAS LYNCH, Jefferson, Iowa. Filed May 6, 1905. Serial No. 259,201.

Claim.—1. In a device of the class described, the combination with a rocker, of a holder having a clamp or clip arranged on the upper face of the rear end of the rocker and provided with an attachment-plate secured to the lower face of the rear end of the said rocker and arranged at an angle to the clip to form a crutch into which the rear end of the rocker fits, and a cushioning-tip or buffer held by the clamp or clip.

2. A device of the class described, comprising a holder provided with a clamp or clip and having an attachment portion arranged at an angle to the clamp or clip and forming a socket or crotch to receive the tip of a rocker, the clamp or clip being arranged to lie against the upper face of the rocker, means for securing the attachment portion to the lower face of the rocker, and a cushioning-tip or buffer arranged within the clip or clamp.

3. A device of the class described, comprising a holder constructed of a single piece of metal and composed of an attachment-plate adapted to be secured to the lower face of a rocker, and an inclined clip or clamp located at the outer end of the attachment-plate and forming a crotch to receive the end of the rocker, and a cushioning-tip or buffer secured within the clamp or clip and projecting beyond the ends and sides of the rocker.

810,958. END-CELL SWITCH. LAMAR LYNDON, New York, N. Y., assignor to General Storage Battery Company, New York, N. Y., a Corporation of New York. Filed Oct. 17, 1904. Serial No. 228,671.

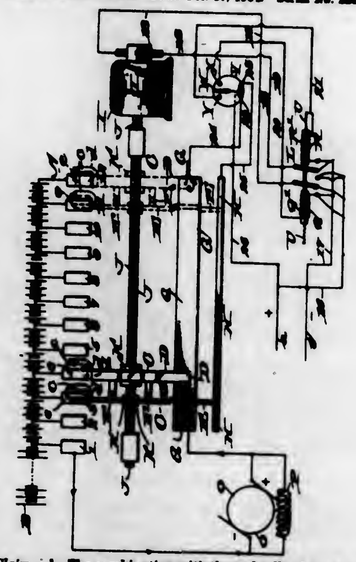

Claim.—1. The combination with the end cells of a storage battery, of reversible charging means having a switch-brush, circuits and connections for automatically controlling the charging means in accordance with the electric condition of the end cells, whereby the brush is moved in either direction, and means for automatically determining the position of the brush in accordance with the electric condition of the end cells.

2. The combination with the end cells of a storage battery, of reversible charging means having a switch-brush, circuits and connections for automatically controlling the charging means in accordance with the potential due to the electric condition of the end cells, whereby the brush is moved in either direction, and means for automatically determining the position of the brush in accordance with the electric condition of the end cells.

3. The combination with the end cells of a storage battery, of reversible charging means having a switch-brush, circuits and connections for automatically controlling the charging means solely in accordance with the electric condition of the end cells, whereby the brush is moved in either direction, and means for automatically determining the position of the brush in accordance with the electric condition of the end cells.

4. The combination with the end cells of a storage battery, and contacts connected thereto, of reversible charging means having a switch-brush, circuits and connections for automatically controlling the charging means in accordance with the potential existing between two of said contacts, whereby the brush is moved in either direction, and means for automatically determining the position of the brush in accordance with the electric condition of the end cells.

5. The combination with the end cells of a storage battery, of a reversibly-movable charging-switch having a switch-brush, means automatically controlled in accordance with the electric condition of the end cells for actuating said brush, and means for automatically determining the position of the brush in accordance with the electric condition of the end cells.

6. The combination with the end cells of a storage battery, of reversible automatic charging means having a switch-brush, circuits and connections whereby the position of the charging means is automatically changed to charge different cells as required, and means for automatically determining the position of the brush in accordance with variations in the electric condition of the end cells.

7. The combination with the end cells of a storage battery, of reversible automatic charging means having a switch-brush, circuits and connections so constructed and arranged that the charging means is moved to automatically recharge any or all of the cells as they become discharged beyond a predetermined amount, and means for automatically determining the position of the brush in accordance with the electric condition of the end cells.

8. The combination with the end cells of a storage battery, of a source of supply for charging the same, a reversible switch having a switch-brush controlling the charging of said end cells, means for actuating said switch, means controlled by the voltage of one or more of the end cells for automatically controlling the switch-actuating means, and means for automatically determining the position of the switch-brush in accordance with the electric condition of the end cells.

9. The combination of the end cells of a storage battery continuously connected to the work-circuit, charging means, and circuits and connections for automatically controlling the charging means in accordance with the electric condition of the end cells.

10. The combination with the end cells of a storage battery, of automatic charging means, controlling-circuits and connections so arranged and constructed that said automatic charging means is shifted from any set of end cells to any other set and back again as required, whereby any or all of the end cells are automatically recharged as they become discharged beyond a predetermined amount.

11. The combination with the end cells of a storage battery, of a source of supply for charging the same, a switch controlling the charging of said end cells, means for actuating said switch, and means controlled by the voltage of particular individual end cells undergoing charging for automatically controlling the switch-actuating means.

12. The combination with the end cells of a storage battery, of a source of charging-current, cell-contacts and bus-bars, a duplex brush having contact-arms insulated from each other and adapted to connect different cell-contacts to the bus-bars respectively, means for actuating the duplex brush along the contacts in either direction, and an electrical device controlled by the voltage between the bars due to the cells for controlling the operation of the brush-actuating means.

13. The combination with the end cells of a storage battery, of a series of contacts between which the end cells are connected, a main and auxiliary bus-bars, a main contact-arm adapted to connect successive contacts to a main bus-bar, an auxiliary brush connected to move with the main brush at a definite distance therefrom and arranged to connect successive contacts with an auxiliary bus-bar, an electrical device connected between the main and auxiliary bus-bars, and means for actuating the main and auxiliary brushes in either direction, said means being controlled by the electrical device connected between the bus-bars, said device operating in accordance with variations in voltage between said bars.

14. The combination with the end cells of a storage battery, of automatic charging means, controlling-circuits and connections therefor so constructed and arranged that the position of the said charging means is automatically changed to charge different cells as required, and means for preventing the short-circuiting of the cells as the automatic charging means is moved.

15. The combination with the end cells of a storage battery, of a source of charging-current, cell-contacts and bus-bars, a duplex brush having contact-arms insulated from each other and adapted to connect different cell-contacts to the bus-bars respectively, means for actuating the duplex brush along the contacts in either direction; an electrical device controlled by the voltage between the bars due to the cells for controlling the operation of the brush-actuating means, and electrical means connected to the arms of said duplex brush for preventing short-circuiting of the end cells as the brush moves.

16. The combination with the end cells of a storage battery, of an automatic charging-switch, controlling-circuits and connections therefor so constructed and arranged that the switch is moved to automatically charge the cells as required by the system, and means for preventing the stoppage of said switch in its movement before it reaches the proper position for charging.

17. The combination with the end cells of a storage battery, of a charging-switch, means automatically controlled by the electric condition of the cells for actuating said switch, and means for preventing the stoppage of the movement of the switch before the desired position is reached.

18. In an end-cell switch, the combination of at least two sets of auxiliary contacts, a switch-arm, means for actuating said arm, and circuits and connections so arranged that the switch-arm is actuated as long as said sets of auxiliary contacts are electrically connected, and continues to move to the desired position after said sets of contacts are disconnected.

19. The combination of the end cells of a storage battery permanently connected in series, automatic charging means, circuits and connections therefor so arranged and constructed that a variable number of said cells are inserted in the charging-circuit, and automatic means for controlling the position of said charging means in accordance with the electric condition of the end cells.

20. The combination with the end cells of a storage battery permanently connected in series, of automatic charging means, circuits and connections therefor so arranged that the charging means is moved to recharge the cells, and automatic means for determining the position of said charging means in accordance with the degree of charge in the individual cell which is last placed in circuit.

21. The combination with the end cells of a storage battery, of a charging-switch having a brush, automatic means for actuating said charging means, and circuits and connections so arranged and constructed that the movement of the brush is proportional to the change in the state of charge of the cells and in a direction to include all cells falling below a predetermined charge.

810,959. OIL SYSTEM. HOWARD C. MARMON, Indianapolis, Ind., assignor to Nordyke & Marmon Company, Indianapolis, Ind., a Corporation of Indiana. Filed Feb. 13, 1905. Serial No. 245,421.

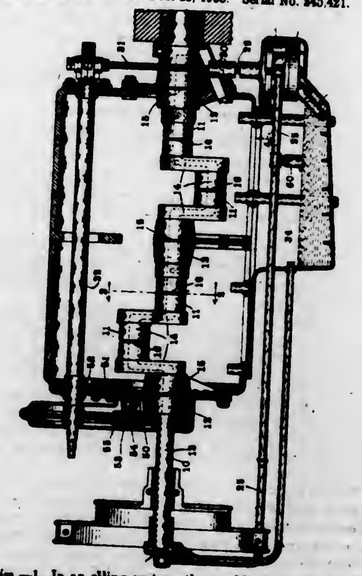

Claim.—1. In an oiling system, the combination, with a bored rotating member; of a feeder for introducing oil thereinto compris-

ing, a main hollow casing provided with, an annulus arranged to slip over the end of the rotating member, a drip-chamber within the annulus, an inlet-chamber within the casing, a spiral groove formed in the interior of the annulus and leading in the direction of rotation of the shaft inward toward the drip-chamber, a tube within the annulus communicating with the inlet-chamber and extending into the bore of the rotating member, there being a spiral groove on the periphery of the inlet-tube and leading toward the inner end thereof in the direction of rotation of the rotating member; and an overflow-pipe leading from said first-mentioned chamber.

2. In an oiling apparatus, the combination, with a bored rotating member, of a feeder for introducing oil therein comprising; a main hollow casing provided with, an annulus arranged to slip over the end of the rotating member, a chamber within the annulus, an inlet-chamber within the casing, and a tube communicating with said inlet-chamber and extending into the bore of the rotating member; and an overflow-pipe leading from the first-mentioned chamber.

3. In an oiling apparatus, the combination, with a bored rotating member; of a feeder for introdneing oil thereinto comprising a main hollow casing provided with, an annulus arranged to slip over the end of the rotating member, a drip-chamber within the annulus, an inlet-chamber, a tube communicating with said inlet-chamber and extending into the bore of the rotating member, there being a spiral groove formed in the interior of the annulus and leading in the direction of rotation of the shaft inward toward the drip-chamber; and an overflow-pipe leading from said drip-chamber.

4. In an oiling apparatus, the combination, with a bored rotating member; of a feeder for introducing oil thereinto comprising a main hollow casing provided with an annulus arranged to slip over the end of the rotating member, a drip-chamber within the annulus, an inlet-chamber, a tube communicating with said inlet-chamber and extending into the bore of the rotating member, there beinga spiral groove running between the annulus and shaft inward toward the drip-chamber in the direction of rotation of the shaft; and an overflow-pipe leading from said drip-chamber.

5. In an oiling apparatus, the combination, with a bored rotating member, of a feeder for introducing oil thereinto comprising, a main hollow casing provided with an annulus arranged to slip over the end of the rotating member, a tube arranged concentrically within said annulus and extending into the bore of the rotating member, and an inlet leading into said tube.

6. In an oiling apparatus, the combination of a tubular rotating member and a tubular feeder telescoping therewith, said two parts having, between their coacting surfaces, a spiral groove leading in a direction to prevent leakage.

7. In an oiling apparatus, the combination of a tubular rotating member, and a compound tubular feeder, the inner tube of said feeder telescoping within the tubular member and the outer tube telescoping over the tubular member, and an eduction-passage leading from the inner end of the outer tubular portion of the feeder.

810,960. PROCESS FOR CLEANING GRAINS. HARVEY C. MILLER, Philadelphia, Pa. Filed June 18, 1904. Serial No. 213,114.

Claim.—1. The hereinbefore-described method of purifying and cleaning musty or dirty grains, which consists in first thoroughly drying the grains, then subjecting the grain in that condition to an abrading action.

2. The hereinbefore-described method of purifying and cleaning musty or dirty grains, which consists in first thoroughly drying and cooling the grains, then subjecting the grains in that condition to an abrading action.

3. The hereinbefore-described method of purifying and cleaning musty or dirty grains, which consists in first thoroughly drying the grains, then subjecting the grain in that condition to an abrading action, and during said action carrying off the abraded material by a current of air.

4. The hereinbefore-described method of purifying and cleaning musty or dirty grains, which consists in first thoroughly drying and cooling the grains, then subjecting the grains in that condition to an abrading action, and during said action carrying off the abraded material by a current of air.

5. The hereinbefore-described method of purifying and cleaning musty or dirty grains, which consists in first thoroughly drying the grains, then subjecting the grain in that condition to an abrading action, and during said action carrying off the abraded material by a current of air, moving in a direction opposite to that of the movement of the grain.

6. The hereinbefore-described method of purifying and cleaning musty or dirty grains, which consists in first thoroughly drying and cooling the grains, then subjecting the grains in that condition to an abrading action, and during said action carrying off the abraded material by a current of air moving in a direction opposite to that of the movement of the grain.

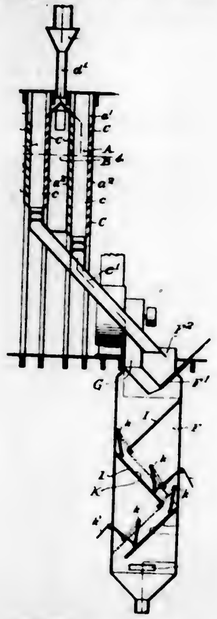

810,961. PITMAN CONNECTION. WILLIAM V. MILLER, Nyack, N. Y., assignor to Metropolitan Sewing Machine Company, Nyack, N. Y., a Corporation of New York. Filed Apr. 4, 1904. Serial No. 201,367.

Claim.—1. In combination, a driving member, a driven member and a frame supporting the two on axes at right angles to each other, a pitman connecting the two members, and a pivotal connection between the pitman and the driven member including a long journal-pin extending at a right angle to said member and pivotally connected to the pitman and having a swivel connection with the driven member.

2. In combination, a supporting-frame; a driving member journaled in said frame; a driven member also journaled in said frame; a pitman connecting the two members and pivotally joined to the driven member; the journal of the driven member being sleeved in and extending entirely through said frame, and the pivotal connection between the said member and said pitman being disposed in rear and centrally of the journal of said member, whereby the drive of the pitman will not disturb the balance of the said member nor cause it to bind at its journal.

3. In combination, a supporting-frame; a driving member journaled in said frame; a driven member also journaled in said frame; a pitman connecting the two members, the connection between the pitman and the driven member consisting of an extended tubular bearing on the latter, an elongated pin journaled in said bearing and having an angular head, and a pivotal connection between said head and said pitman.

810,962. METAL WINDOW-SCREEN. ALLEN H. MIX, Burlington, Vt., assignor to Porter Screen Manufacturing Company, Burlington, Vt. Filed Nov. 14, 1905. Serial No. 287,373.

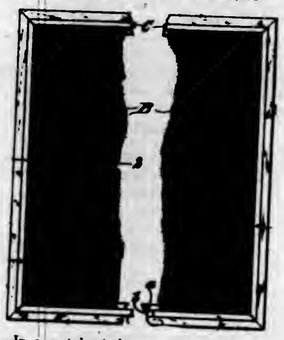

Claim.—In a metal window-screen, a hollow box-like sheet-metal frame-bar with parallel sides and top and bottom, the top formed by inturned limbs *a* extending toward each other in the same plane from opposite sides of the bar, with a longitudinal opening *b* between their opposed edges, in combination with a sheet-metal filling-strip, of substantially channel-bar or ⌊ cross-section to fit and fill said opening, and wire-cloth gripped between one side of the filling-strip and the opposed biting edge of the adjoining limb *a* of the bar, as and for the purposes hereinbefore set forth.

810,963. ELECTRIC IGNITER. HOMER N. MOTSINGER, Pendleton, Ind., assignor to Motsinger Device Manufacturing Company, Pendleton, Ind., a Corporation of Indiana. Filed May 31, 1904. Serial No. 210,455.

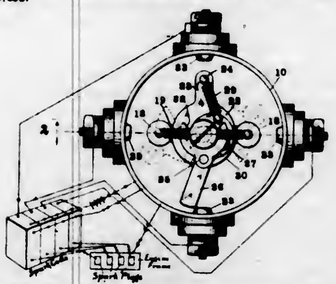

Claim.—1. In an electric igniter, the combination of, a casing carrying one or more terminals projecting beyond the path of movement of a contact-arm, a shaft journaled in said casing, a plate rotatably mounted on the shaft, the said contact-arm pivoted upon said plate eccentrically with relation to the shaft and extending substantially radially to cooperate with the casing-terminals, yielding means for holding said arm in normal position, speed-controlled means carried by said shaft, and connections between said speed-controlled means and said plate whereby the plate will be angularly shifted by movement of the speed-controlled means.

2. In an electric igniter, the combination of, a pair of members one rotatable with relation to the other, a pair of contact-terminals one carried by each of said members and one of said terminals being pivoted eccentrically to the axis of rotation and extending substantially radially, and the other of said terminals projecting into the path of movement of the radially-projecting terminal between its end and its pivotal point, and means for yieldingly holding said pivoted terminal in normal position with relation to its carrier.

3. In an electric igniter, the combination of, a casing carrying one or more terminals, a shaft journaled therein, a normally radially extending contact-arm pivotally mounted upon said shaft eccentrically thereto and adapted to cooperate with the casing-terminals, and means for yieldingly holding said contact-arm in normal position.

4. In an electric igniter, the combination of, a casing carrying one or more terminals, a shaft journaled in said casing, a plate rotatably mounted on the shaft, a contact-arm pivoted upon said plate eccentrically with relation to the shaft and extending substantially radially to engage the terminal, yielding means for holding said arm in normal position, speed-controlled means carried by the shaft, connections between said speed-controlled means and said plate whereby the plate will be angularly shifted by movement of the speed-controlled means, and means for shifting the casing angularly upon the shaft.

5. In an electric igniter, the combination of, a pair of members one rotatable with relation to the other and the said other normally fixed, a pair of contact-terminals one carried by each of said members and one of said terminals being pivoted eccentrically with relation to the axis of rotation and projecting substantially radially, and the other extended into the path of movement of the pivoted member between its end and its pivotal point, means for yieldingly holding said pivoted terminals in normal position with relation to its carrier, and means for angularly adjusting the normally fixed member with relation to the rotating member.

6. In an electric igniter, the combination of, a pair of members one rotatable with relation to the other, a pair of contact-terminals one carried by each of said members and one of said terminals being pivoted eccentrically with relation to the axis of rotation, and extending substantially radially, and the other extended into the path of movement of the pivoted member between its end and its pivotal point, means for yieldingly holding said pivoted terminal in normal position with relation to its carrier, and speed-controlled means operated by the rotatable member for shifting one of the contact-terminals angularly.

7. In an electric igniter, the combination of, a pair of members one rotatable with relation to the other and the other normally fixed, a pair of contact-terminals one carried by each of said members and one of said terminals being pivoted eccentrically with relation to the axis of rotation and extending substantially radially, and the other extended into the path of movement of the pivoted member between its end and its pivotal point, means for yieldingly holding said pivoted terminal in normal position with relation to its carrier, speed-controlled means operated by the rotatable member for angularly shifting the terminal carried by said rotatable member, and means for angularly adjusting the normally fixed member and its terminal.

8. In an electric igniter, the combination of, a casing carrying one or more terminals, a shaft journaled therein, a plate rotatably mounted on the shaft, a substantially radial contact-arm pivoted upon said plate eccentrically with relation to the shaft and radially extending therefrom, yielding means for holding said arm in normal position and capable of permitting movement of the arm in either direction, and a pair of governor-arms eccentrically pivoted upon the shaft and each having an inclined slot engaging a portion of said plate whereby said governor members will operate to shift the plate angularly upon the shaft.

9. In an electric igniter, the combination of, a pair of members one rotatable with relation to the other, a pair of contact-terminals one carried by each of said members and one of said terminals being pivoted eccentrically with relation to the axis of rotation and extending subtantially radially, and the other of said members projected into the path of movement of the pivoted member between its end and its pivotal point, means for yieldingly holding said pivoted terminal in normal position with relation to its carrier, and a second pair of contact-terminals carried by each of said members, said second pair being insulated from the first pair.

10. In an electric igniter, the combination of, a pair of members one rotatable with relation to the other and the said other normally fixed, a pair of contact-terminals one carried by each of said members and one of said terminals being pivoted eccentrically with relation to the axis of rotation and extending substantially radially, and the other of said members projected into the path of movement of the pivoted member between its end and its pivotal point, means for yieldingly holding said pivoted terminals in normal position with relation to its carrier, speed-controlled means operated by the rotatable member for shifting one of the contact-terminals angularly, and a second pair of contact-terminals carried by said members and insulated from the first pair of contact-terminals.

11. In an electric igniter, the combination of, a pair of members one rotatable with relation to the other, a pair of contact-terminals one carried by each of said members and one of said terminals being pivoted eccentrically with relation to the axis of rotation and extend-

ing substantially radially, and the other of said members projected into the path of movement of the pivoted member between its end and its pivotal point, means for yieldingly holding said pivoted terminal in normal position with relation to its carrier, speed-controlled means operated by the rotatable member for shifting one of the contact-terminals angularly, and a second pair of contact-terminals carried by said members and insulated from the first pair of contact-terminals.

12. In an electric igniter, the combination of, a pair of members one rotatable with relation to the other and the other normally fixed, a pair of contact-terminals one carried by each of said members and one of said terminals being pivoted eccentrically with relation to the axis of rotation and extending substantially radially, and the other of said members projected into the path of movement of the pivoted member between its end and its pivotal point, means for yieldingly holding said pivoted terminal in normal position with relation to its carrier, speed-controlled means operated by the rotatable member, means for angularly adjusting the normally fixed member and its terminal, and a second pair of contact-terminals carried by said members and insulated from the first pair of contact-terminals.

13. In an electric igniter, the combination of, a casing carrying two sets of one or more terminals, a shaft journaled therein, a plate rotatably mounted on the shaft, a radially-extending contact-arm pivoted upon said plate eccentrically with relation to the shaft and adapted to cooperate with one set of casing-terminals, yielding means for holding said arm in normal position and permitting movement of the arm in either direction, a pair of governor-arms eccentrically pivoted upon the shaft and each having an inclined slot engaging a portion of said plate whereby said governor members will operate to shift the plate angularly upon the shaft, and a second contact-arm carried by the shaft in position to cooperate with the other set of casing-terminals and insulated from the pivoted contact-arm.

810,964. SLEEVE-IRONING BOARD. JESSIE F. MCARTHUR, Detroit, Mich. Filed Nov. 15, 1904. Serial No. 232,849.

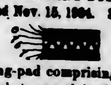

Claim.—An ironing-pad comprising a core formed of a corrugated sheet of asbestos between plain sheets of the same material, a covered padding over said core, and a removable cover fitting over the pad so formed.

810,965. SCREEN. WILLIAM W. MCCALLIP, Columbus, Ohio. Filed Oct. 5, 1904. Serial No. 227,220.

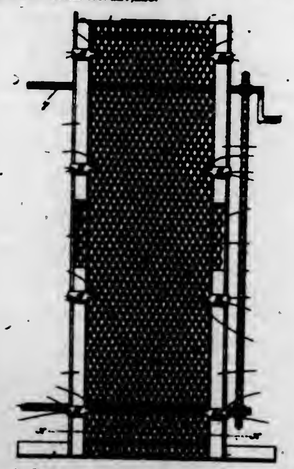

Claim.—1. In a screen, the combination of parallelly-adjustable side supports, and a screening fabric the strands composing which are permanently inclined to the edges thereof on said supports whereby said fabric is adjustable longitudinally and laterally without altering the angular relation of the edges thereof to each other.

2. In a screen, the combination of a rectangular frame having its opposite sides parallelly adjustable with respect to each other, and a screening fabric the strands composing which are permanently inclined to the edges thereof on said frame whereby said fabric is adjustable longitudinally and laterally without altering the angular relation of the edges thereof to each other.

3. In a screen, the combination of parallel side supports, means for adjusting them toward and from each other, a screening fabric adjustable longitudinally and laterally on the supports without altering the angular relation to each other of the sides of the fabric and movable clamping devices for holding the edges of the fabric on the supports.

4. In a screen, the combination of parallel side supports, means for adjusting them toward and from each other, a screen adjustable longitudinally and laterally on the supports, movable clamping devices for holding the edges of the screen on the supports, and hooks for engaging the screen.

810,966. ROLLER FOR FIREPROOF BLINDS OR CURTAINS. EDWARD H. MCCLOUD, Columbus, Ohio. Filed Nov. 10, 1904. Renewed Nov. 16, 1905. Serial No. 287,673.

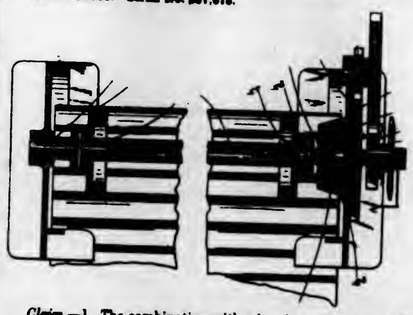

Claim.—1. The combination with a bearing or bracket, a shaft thereon, a gear loose on said shaft, a spring connecting the bearing and said gear, and means for turning the shaft and the gear at different rates of speed.

2. The combination with a bearing or bracket, a shaft thereon, a gear loose on said shaft, a spring connecting the bearing and said gear, a pinion fixed on said shaft and a gear and pinion intermediate the first-mentioned gear and pinion.

3. In combination, a curtain-roller, and curtain thereon, a shaft for said roller, a bearing or bracket for said shaft, a gear loose on said shaft, a spring connecting the bearing and said gear, and means for turning the shaft and the gear at different rates of speed.

4. In combination, a bearing or bracket, a curtain and roller therefor having its shaft supported in said bearing, a gear loose on said shaft, a spring connecting the bearing and said gear, a pinion fixed on said shaft, and a gear and pinion intermediate the first-mentioned gear and pinion.

810,967. ROLLER FOR FIREPROOF BLINDS OR CURTAINS. EDWARD H. MCCLOUD, Columbus, Ohio. Filed Nov. 11, 1904. Renewed Nov. 16, 1905. Serial No. 287,679.

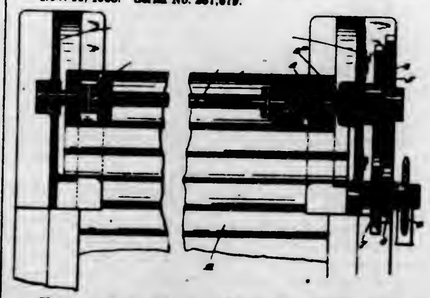

Claim.—1. In combination with a bracket or bearing, a loose sleeve turning in said bearing, a winding-shaft turning in said sleeve, a spring connecting the winding-shaft and sleeve at one side of said bracket or bearing, and gears fast on the sleeve and shaft on the opposite side of said bracket or bearing, and means for imparting a differential motion to the sleeve and shaft.

2. In combination with a bracket or bearing, a loose sleeve turning in said bearing, a winding-shaft turning in said sleeve, a spring connecting the winding-shaft and sleeve at one side of said bracket or bearing, and gears fast on the sleeve and shaft on the opposite side of said bracket or bearing, and pinions to engage said gears adapted to impart motion to said shaft and sleeve at different rates of speed.

3. In combination with a bracket or bearing, a loose sleeve turning in said bearing, a winding-shaft turning in said sleeve, a spring connecting the winding-shaft and sleeve at one side of said bracket or bearing, a gear fast on said sleeve, a larger gear fast on said shaft, and pinions to engage said gears and turn them at different rates of speed.

4. In combination with a bracket or bearing, a loose sleeve turning in said bearing, a winding-shaft turning in said sleeve, a spring connecting the winding-shaft and sleeve and gears fast on the sleeve and shaft, and pinions to engage said gears adapted to impart motion to said shaft and sleeve at different rates of speed.

810,968. INSPIRATOR AND MIXER FOR GAS-BURNERS. JOHN W. MCKNIGHT, Hanover, Pa., assignor to Hanover Gas Regenerating Co., a Corporation of Pennsylvania. Filed Aug. 4, 1904. Serial No. 219,540.

Claim.—1. The inspirator and mixer for gas-burners comprising a frame having parts thereof adjustable toward and from each other by which the size of the frame is varied, and a fan supported in the frame, substantially as described.

2. The inspirator and mixer for gas-burners comprising a spring-metal frame divided to render it capable of expansion and contraction with relation to size, provided with needle-point bearings, and a fan having a post formed with needle-point ends fitting in said bearings, substantially as described.

3. The inspirator and mixer for gas-burners comprising a frame expansible and contractible with relation to size, provided with needle-point bearings, and a fan having a post formed with needle-point ends fitting in said bearings, substantially as described.

4. The inspirator and mixer for gas-burners comprising an elastically-expansible frame adapted to be inserted and removed from a portion of the burner and to be held therein by expansion of the frame, a post carrying fan-blades, and bearings for the ends of the post supported by opposite members of the frame, substantially as described.

5. The inspirator and mixer for gas-burners consisting of a frame capable of insertion and removal from the combustion-chamber of a burner and consisting of an upright portion to bear against the wall of the chamber, and having horizontally-extending oppositely-disposed members provided with needle-point bearings on their inner faces, and a post carrying fan-blades and having its opposite ends tapered and fitting in said needle-point bearings, substantially as described.

810,969. MANHOLE COVER AND FRAME. MICHAEL H. O'DONNELL, Detroit, Mich. Filed Apr. 19, 1905. Serial No. 256,403.

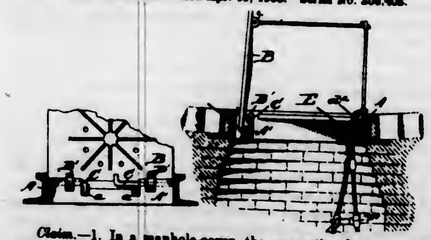

Claim.—1. In a manhole-cover, the supporting-frame, a cross member having an inclined face, the cover hinged to said cross member, the construction being such that when the cover is forced open it will bear against the supporting-wall and cross member, substantially as described.

2. In a manhole cover and frame, the supporting-frame, provided with a cross member to which the cover is hinged, the construction of said frame and cross member being such that when the cover is forced upward it will stand at an angle when raised, whereby it will automatically return to its seat, substantially as described.

3. In a manhole cover and frame, the supporting-frame having a cross member to which the cover is hinged, the cover formed with hinge-lugs designed to enter suitable recesses in the cross member, hinge-pins adapted to enter apertures provided in the lugs of the cover and the cross member, said pins provided with means for locking them against displacement, substantially as described.

4. In a manhole cover and frame, the supporting-frame provided with a cross member to which the cover is hinged, the construction of said frame and cross member being such that when the cover is forced upward it will be restrained at an angle from which it will automatically return to its seat if otherwise unsupported, in combination with the guard-frame arranged to hold the cover up and guard the opening, substantially as described.

5. In a manhole cover and frame, the supporting-frame provided with a cross member to which the cover is hinged, the construction of said frame and cross member being such that when the cover is forced upward it will be restrained at an angle from which it will automatically return to its seat if otherwise unsupported, in combination with a guard-frame consisting of a rectangular upper section hinged to the cover, and two depending lugs supporting the rectangular frame from the corners when the cover is raised, substantially as described.

6. In a manhole-cover and frame the combination of the frame, the cover hinged to the frame and means consisting of a stop above the hinge on one side and a stop below the hinge on the other side to take the strain of the cover from the hinge, when the cover is forced open by the explosion of gas or other causes, substantially as described.

810,970. CARRIER-COVER FOR PNEUMATIC STORE-SERVICE. JOHN S. PALMER, Chicago, Ill. Filed May 1, 1905. Serial No. 258,160.

Claim.—1. In combination, a carrier-shell, an end ring fitted thereto and having an inner rabbet, and a lid hinged to the ring and fitting in said rabbet when closed.

2. In combination, a carrier-shell, and a lid hinged thereto and rotatable to expose either face when closed.

3. In combination, a carrier-shell, a spring-hinge fixed thereto, a lid rotatably mounted on the hinge, and a catch to hold the lid closed.

4. In combination, a carrier-shell, a flexible metal strip fixed within the end thereof and forming a hinge and having an outwardly-extending arm, a lid rotatably mounted on the arm, and a catch to hold the lid closed.

5. In combination, a carrier-shell, an end ring thereon having a notch, a lid hinged to the end ring, and a sliding button on the lid accessible from both sides thereof and having a finger adapted to engage the notch.

6. In combination, a carrier-shell, a lid thereon, which may be turned to expose either side when closed, and a catch carried by the lid and engageable with the shell, the catch being accessible from either side of the lid.

810,971. MACHINE FOR STRIPPING BLANKS FOR PAPER BOXES. LYNDON C. PALMER, Buffalo, N. Y. Filed Nov. 17, 1904. Serial No. 233,143.

Claim.—1. In a machine for stripping cardboard blanks or the like, the combination with a suitable frame, of a feeding device for feeding the blanks forward, and a stripping device in the path of the blank for reducing the thickness of the marginal portion of the latter so that the reduced marginal portion is of even thickness throughout.

2. In a machine for stripping a cardboard blank or the like, the combination with a frame, of feed-rolls revolubly mounted in the frame, and a stripping device in the path of the blank for reducing the thickness of the marginal portion thereof as it passes through the machine so that the reduced marginal portion is of even thickness throughout.

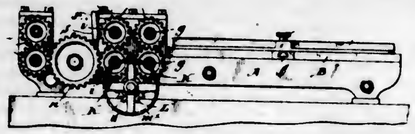

3. In a machine for stripping cardboard blanks or the like, the combination with a suitable frame, of feed-rolls revolubly mounted in the frame, and a stripping-knife located in the path of the blank as it leaves the feed-rolls, said knife having its cutting edge arranged substantially parallel with the face of the marginal portion of the blank to reduce the thickness thereof.

4. In a machine for stripping a cardboard blank or the like, the combination with a suitable frame, of feed-rolls and delivery-rolls revolubly mounted in the frame, and a stripping device lying in the path of the blank between the feed-rolls and the delivery-rolls, and adapted to reduce the thickness of the marginal portion of the blank.

5. In a machine for stripping the marginal portion of a scored cardboard blank, the combination with a frame, of a stripping-knife carried on the frame, and means for flexing the marginal portion of the blank and feeding the blank to said stripping-knife.

6. In a machine for stripping the marginal portion of a cardboard blank scored near one edge, the combination with a frame, of feed and flexing rolls revolubly mounted in the frame to flex said marginal portion and separate the layers of the same from the score-line toward the edge of the blank, and means for stripping the marginal portion of the blank as it leaves the feed and flexing rolls.

7. In a machine for stripping the marginal portion of a cardboard blank scored near one edge, the combination with a frame, of a pair of rolls between which said blank is passed, one of said rolls being longer than the other and having a flexing-rim at its outer end adapted to flex that portion of the blank extending beyond the end of the other roll to separate the layers of the blank from the score-line toward the edge of the same, and a stripping-knife in the path of the blank as it leaves said rolls.

8. In a machine for stripping the marginal portion of a cardboard blank scored near one edge, the combination with a frame, of a pair of rolls arranged one above the other between which said blank is passed, the upper of said rolls being longer than the lower roll and having a circumferential groove and a flexing-rim at its outer end, said rim serving to flex that portion of the blank extending beyond the end of the lower roll to separate the layers of the blank from the score-line toward the edge of the same, and a stripping-knife in the path of the blank as it leaves the said rolls.

9. In a machine for stripping the marginal portion of a cardboard blank scored near one edge, the combination with a frame, of a pair of rolls arranged one above the other between which said blank is passed, the upper of said rolls being longer than the lower roll and having a circumferential groove and a flexing-rim at its outer end, said rim serving to flex that portion of the blank extending beyond the end of the lower roll to separate the layers of the blank from the score-line toward the edge of the same, a platform in rear of said rolls provided with a depression in line with the flexing ends of said rolls, and a stripping-knife having its cutting-blade extending into said depression.

10. In a machine for stripping the marginal portion of a cardboard blank scored near one edge, the combination with a frame, of a pair of feed and flexing rolls revolubly mounted in said frame, the upper roll thereof having an end flexing-rim and a circumferential groove forming a gage edge and the lower roll thereof extending slightly beyond said gage edge, a second pair of revolubly-mounted similar rolls having the gage edge of the upper roll in line with the gage edge of the upper roll of the first-mentioned pair of rolls and the adjacent end of the lower roll extending beyond the corresponding end of the lower roll of the first-mentioned pair of rolls, and a stripping-knife in rear of said rolls in line with the flexing ends of the latter.

810,972. SYSTEM FOR SPRINKLING LAWNS, GARDENS, GREENHOUSES, PARKS, &c. FRANK H. PARADISE, Denver, Colo. Filed Dec. 14, 1904. Serial No. 236,779.

Claim.—1. In a lawn and garden sprinkling apparatus, the combination of a supply-pipe with actuating-cable, and sprinkler-valves; said actuating-cable being within the supply-pipe and sprinkler-valves; a cable-operating device, and sprinklers, substantially as set forth.

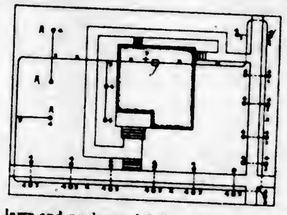

2. In a lawn and garden sprinkling apparatus, the combination of a supply-pipe with actuating-cable having attached thereto valve-lever-engaging projections; and sprinkler-valves with actuating-cable-engaging levers; said actuating-cable being within, and when in operation, moving through said supply-pipe and sprinkler-valves; a cable-operating device, and sprinklers, substantially as set forth.

810,973. DISINFECTING DEVICE FOR SINK-DRAINS. ALEXANDER PATTERSEN and ANNIE B. PATTERSEN, Buffalo, N. Y. Filed Jan. 3, 1905. Serial No. 239,453.

Claim.—1. In a disinfecting device for sink-drains, the combination with a strainer-plate, of a support affixed to said strainer-plate, a receptacle for disinfectant adjustably held on said support, and a hood adapted to cover the strainer-plate and inclose said receptacle.

2. In a disinfecting device for sink-drains, the combination with the strainer-plate, of a support affixed to said strainer-plate, receptacle for disinfectant adjustably held on said support, and a bell-shaped hood adapted to cover the strainer-plate and having its edge notched and provided with inwardly-swinging gates.

3. In a disinfecting device for sink-drains, the combination with the strainer-plate, of a support detachably connected to said strainer-plate, a receptacle for disinfectant adjustably held on said support, a bell-shaped hood adapted to cover the strainer-plate and having a series of openings at its lower end, and inwardly-opening gates pivotally affixed to said hood to normally close said openings.

4. In a disinfecting device for sink-drains, the combination with the strainer-plate, of a screw-threaded stem affixed to said strainer-plate, a nut adjustable on said stem, a receptacle for disinfectant fitting loosely on said stem and receiving support from said nut, a bell-shaped hood fitting loosely on said stem and being supported on said receptacle, and a nut at the upper end of said stem for securely holding the parts together.

5. In a disinfecting device for sink-drains, the combination with the strainer-plate, of a screw-threaded stem having its lower end reduced and bent, and passed through one of the openings of said strainer-plate to bear against the under side of the same, a nut on said stem bearing against the upper side of the strainer-plate, and a hood adapted to cover the strainer-plate.

6. In a disinfecting device for sink-drains, the combination with the strainer-plate, of a screw-threaded stem having its lower end reduced and bent, said reduced and bent end being passed through one of the openings of said strainer-plate to bear against the under side of the same, and a hood supported on said stem and adapted to cover the strainer-plate.

7. In a disinfecting device for sink-outlets, the combination with the strainer-plate, of a screw-threaded stem having its lower end reduced and bent at a right angle, said bent end being passed through one of the openings of said strainer-plate to bear against the under side of the same, a nut on said stem bearing against the upper side of the strainer-plate, a receptacle adjustable on said stem, and a hood inclosing said receptacle and adapted to cover the strainer-plate.

8. In a disinfecting device for sink-drains, the combination with the strainer-plate, of a screw-threaded stem having its lower end reduced and bent at a right angle, said bent end being passed through a perforation in said strainer-plate to bear against the under side of the same, a nut on said stem bearing against the upper side of the strainer-plate, a nut adjustable on said stem, a receptacle for disinfectant fitting said stem loosely and receiving support from the last-mentioned nut, a hood adapted to receive support from said receptacle and having an opening through which said stem projects, and a nut threaded onto the projecting end of said stem.

9. In a disinfecting device for sink-drains, the combination with the strainer-plate, of a screw-threaded stem having its lower end reduced and bent at a right angle, said bent end being passed through a perforation in said strainer-plate to bear against the under side of the same, a nut on said stem bearing against the upper end of the strainer-plate, a second nut adjustable on said stem, a perforated receptacle for disinfectant fitting said stem loosely and receiving support from the last-mentioned nut, a hood adapted to cover the strainer and to receive support from the disinfectant-receptacle, said hood having its lower edge notched, inwardly-opening gates normally fitting said notches and having flanges at opposite sides that bear against the hood to limit outward movement of the same, and means for clamping the disinfectant-receptacle and the hood together.

810,974. DRYING-KILN. ELMER E. PERKINS, Melrose, Mass. Filed Dec. 3, 1904. Serial No. 235,900.

Claim.—1. In a drying-kiln, a closed housing having an upright partition dividing it into a drying-chamber and an adjacent compartment of relatively large cross-sectional area communicating therewith at its upper end, a double bottom for the chamber, directly connected with the lower end of said compartment and having inlets into the chamber increasing in area as they are farther from the compartment, curved guides adjacent the inlets to direct the air as it enters the chamber, a condenser in the compartment, and heating means adjacent the inlets into the chamber, the alternate heating and cooling on opposite sides of the partition causing a continuous and free air-current through the chamber, the variations in the areas of the inlets and the curved guides distributing the incoming air uniformly throughout the chamber, and preventing the formation of eddies and dead-spaces.

2. In a drying-kiln, a closed housing having an upright partition dividing it into a drying-chamber and an adjacent compartment of relatively large cross-sectional area communicating therewith at its upper end, a double bottom for the chamber, directly connected with the lower end of said compartment and having inlets into the chamber increasing in area as they are farther from the compartment, curved guides adjacent the inlets and extending both above and below the plane in which the inlets are located, to direct the air as it enters the chamber, a condenser in the compartment, and heating means adjacent the inlets into the chamber, the alternate heating and cooling on opposite sides of the partition causing a continuous and free air-current through the chamber, the variations in the areas of the inlets and the curved guides distributing the incoming air uniformly throughout the chamber, and preventing the formation of eddies and dead-spaces.

3. In a drying-kiln, a closed housing having a transversely-curved roof and an upright partition dividing the housing into a drying-chamber and an adjacent condensing-compartment communicating therewith at its upper end, a double bottom for the chamber, having a direct and curved connection with the lower end of said compartment and having inlets into the chamber increasing in area as they are farther away from the compartment, curved guides adjacent the inlets to direct the air as it enters the chamber, and heating means adjacent said inlets, the alternate heating and cooling on opposite sides of the partition causing a continuous and free air-current through the chamber, the variations in the areas of the inlets and the curved guides distributing the incoming air uniformly throughout the chamber, and acting, with the curved roof and the curved connection between the compartment and the double bottom of the chamber, to prevent the formation of eddies and dead-spaces.

810,975. CENTRIFUGAL PUMP. JOACHIM H. C. PETERSEN, Hamburg, Germany. Filed Nov. 11, 1904. Serial No. 232,371.

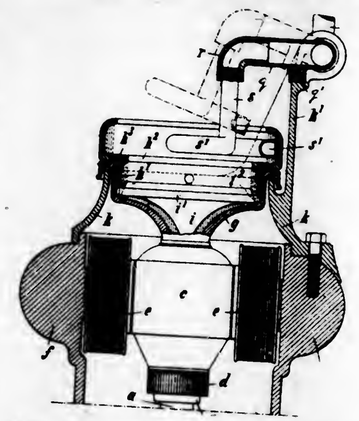

Claim.—1. In combination with a centrifugal pump, and its suction-head, a discharge-pipe, and a skimming device communicating with the discharge-pipe adapted to be swung into and out of the suction-head.

2. In combination with a centrifugal pump and its suction-head, a supporting element, a discharge-pipe supported by said element and a skimming device communicating with the discharge-pipe and adapted to revolve around the supporting element.

3. In combination with a centrifugal pump and its suction-head, a standard, a discharge-pipe, a conduit pivotally supported in the standard communicating with the discharge-pipe, and a spiral conduit carried by and communicating with the aforesaid conduit adapted to take into the suction-head.

4. In combination with a centrifugal pump and its suction-head, a standard, a discharge-pipe, a conduit pivotally supported in the standard communicating with the discharge-pipe, and a communicating conduit eccentric to the vertical axis of the mouth of the aforesaid conduit.

5. In combination with a centrifugal pump and its suction-head, a standard, a discharge-pipe, a conduit pivotally supported in the standard communicating with the discharge-pipe, and a conduit communicating with the aforesaid conduit-opening at the periphery of the suction-head.

6. In combination with a centrifugal pump and its suction-head, a standard, a discharge-pipe mounted therein, a hollow plug rotatably mounted in the standard communicating with the discharge-pipe, a nozzle carried by the plug, and a spiral conduit carried by the nozzle having its mouth terminating at the periphery of the suction-head.

7. In combination with a centrifugal pump and its suction-head, a standard, a discharge-pipe mounted therein, a hollow plug rotatably mounted in the standard and communicating with the discharge-pipe, a nozzle carried by and communicating with the plug, means to limit the rotation of the plug, a conduit communicating with the nozzle having a spiral portion opening into the suction-head near its inner periphery.

8. In combination with a centrifugal pump and its suction-head, a standard, a discharge-pipe mounted therein, a hollow plug rotatably mounted in a socket formed in the standard and communicating with the discharge-pipe, means to adjust the plug in the socket, a nozzle entering the plug at right angles to the mouth of the discharge-pipe, a conduit entering the nozzle at right angles to the longitudinal axis of the nozzle and having a spiral portion bent in a plane at right angles to its axis, said spiral portion opening at the periphery of the suction-head, and means to hold the spiral portion in a longitudinal plane.

810,976. MOLD FOR BUILDING-BLOCKS. WILLIAM PORTER, St. Paul, Minn. Filed June 13, 1904. Serial No. 212,966.

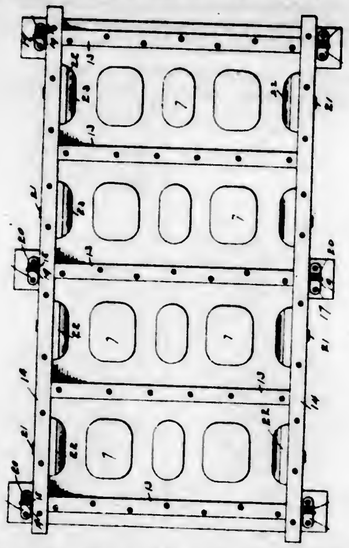

Claim.—1. The combination, with a suitable frame, of removable floors having a series of core-holes arranged thereon, cores fitting within said holes, means for supporting said cores, side walls mounted on said platform, and partition or cross walls hinged at their lower edges to said frame and adapted to be swung down to a horizontal position, for convenience in emptying the molds, and a rigid cross-wall arranged intermediate to said hinged cross-walls, substantially as described.

2. In a mold for building-blocks, a frame having a series of cross-bars in rows at intervals thereon, a fixed partition-wall provided on the middle bar, and a series of partition-walls hinged upon each side of said fixed wall.

3. In a mold for building-blocks, the combination, with a frame provided with a series of cross-bars arranged with a space between them thereon, side and partition walls, and removable floors provided on said bars between said partition-walls and having a series of core-holes, and cores temporarily supported within said core-holes, substantially as described.

4. In a mold for building-blocks, the combination, with a frame, of side and partition walls thereon, a removable floor having a series of core-holes and cross-bars resting upon said frame and forming a space between it and said removable floor, and retaining-straps provided on said side walls opposite the ends of said movable floor.

5. A mold for building-blocks comprising a frame having a series of cross-bars arranged at intervals with spaces between them, a series of partition-walls arranged lengthwise on said cross-bars, the middle wall of the series being fixed and the others being hinged at their lower edges to their respective bars, removable floors having a series of core-holes arranged upon said bars between the pairs of partition-walls, cores fitting within said holes, means for temporarily supporting said cores in said holes, and side walls connecting the ends of said partition-walls, substantially as described.

6. In a mold for building-blocks, the combination, with a frame provided with side and partition walls forming a series of molds, each mold having an open bottom, removable floors fitting within said molds and each having a series of core-holes oval in form, extending lengthwise thereof above the open bottoms of said molds, cores tapered from the bottom toward the top arranged to be inserted in to said holes from beneath, and means for temporarily supporting said cores in said holes.

7. A mold for building-blocks comprising a frame having a series of cross-bars arranged at intervals with spaces between them, partition-walls arranged lengthwise upon said bars, removable floors resting upon said bars over the spaces between them and having a series of core-holes, cores adapted to be inserted into said holes from beneath through said spaces, means for temporarily supporting said cores in said holes, and side walls connecting the ends of said partition-walls, substantially as described.

8. The combination, with a frame provided with standards 4 on each side and cross-bars 4' connecting said standards there being a space provided between said cross-bars, side and partition walls supported upon said bars, the middle partition-wall being rigidly secured to its bar, and the partition-walls intermediate to said middle one and the ends of said mold being hinged on their bars, removable floors arranged between said partition-walls and having core-holes therein, and means for supporting cores in said holes, substantially as described.

810,977. WINDING-REEL. GEORGES POURE, Boulogne-sur-Mer, France. Filed Oct. 13, 1903. Serial No. 127,155.

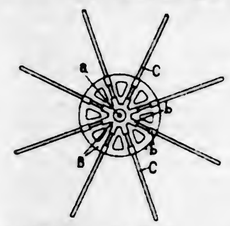

Claim.—A metallic reel consisting of an axle, a disk of sheet metal on each end thereof, each of said disks having hollow stamped ribs projecting alternately on both sides thereof forming radial passages, metallic rods having their ends placed in the passages and held therein by squeezing the ribs on both sides of the disk against the rods so as to slightly bend and flatten said rods, substantially as described.

810,978. FEED-GOVERNOR FOR MILLS, &c. CHARLES H. RICHARDS and ALBERT J. RICHARDS, Elgin, Ill. Filed Jan. 2, 1904. Serial No. 187,407.

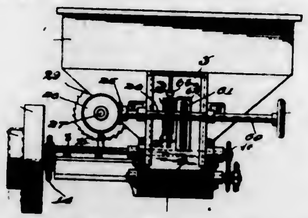

Claim.—1. In a feed-governor for mills, &c., the combination of a valve, a rack-bar, a yielding connection between said rack-bar and valve, a pinion engaging said rack-bar, an adjustable stop for limiting the movement of said pinion with relation to the rack-bar, and means for rotating said pinion in either direction according to the speed of the mill.

2. In a feed-governor for mills, &c., the combination of a valve, two rack-bars on said valve, one of which is movable longitudinally with relation to the other, frictional means for connecting said movable bar to the valve, two pinions engaging said rack-bars respectively, each for moving said valve, a hand-operating means connected with one of said pinions and an automatic governor connected with the other of said pinions for causing it to rotate in either direction.

3. In a feed-governor for mills, &c., the combination of a valve, a centrifugal governor comprising a pulley, a shaft on which said pulley is mounted, a second shaft passing through said first shaft and being movable longitudinally therein and rotatable therewith, two governor-weights revoluble with said first shaft, two bell-crank levers connected with said governor-weights respectively, a cross-bar secured to said internal shaft and projecting from said first shaft on both sides thereof, and engaging said bell-cranks, and means whereby said valve is moved in either direction by the rotation of said internal shaft, and according to the direction of longitudinal movement of said internal shaft.

4. In a feed-governor for mills, &c., the combination of a hopper having a horizontal feed-opening, a feed-valve in the side thereof, a horizontal rotatable feed-accelerator journaled in said hopper and comprising two paddles and a body portion, the outer face of said paddles being formed at a tangent to said body portion, and means for rotating said feed-accelerator with said tangent faces toward the feed-opening.

5. In a feed-governor for mills, &c., the combination of a valve, means for moving said valve in either direction, comprising a shaft, two ratchet-wheels on the said shaft, having two series of ratchet-teeth each extending entirely around its wheel and being turned in opposite directions, pawls for engaging said ratchet-teeth respectively, and means for actuating said pawls, and governing mechanism for throwing said pawls alternately into action according to the speed of the mill.

6. The combination of a hopper having a longitudinal feed-opening in the side thereof, a rotatable feed-accelerator journaled in said hopper and having its axle parallel with said feed-opening, and comprising a body portion and a paddle, said paddle extending longitudinally of said feed-opening and having a flat side arranged at a tangent to the axle of rotation of the feed-accelerator, and means for rotating said feed-accelerator with its flat tangent side toward said feed-opening.

810,979. MARKING-MACHINE. FRANCIS H. RICHARDS, Hartford, Conn., assignor to American Cigar Company, New York, N. Y., a Corporation of New Jersey. Filed Apr. 23, 1903. Serial No. 154,619.

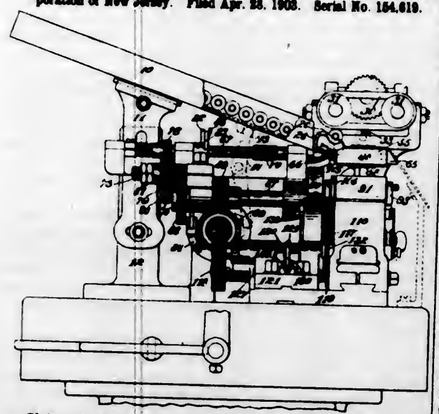

Claim.—1. In a marking-machine, the combination of a normally stationary marking-surface, means for rolling articles against the marking-surface, and means for shifting the marking-surface for supplying marking material thereto, substantially as described.

2. In a marking-machine, the combination of a marking-surface, means for rolling articles against the marking-surface while the latter is stationary, and means for applying marking material to the marking-surface, substantially as described.

3. In a marking-machine, the combination of a plurality of marking-surfaces, means for bringing said marking-surfaces successively into and holding them stationary in marking position, means for rolling articles against said marking-surfaces when in marking position, and means for applying marking material to the marking-surface when not in marking position, substantially as described.

4. In a marking-machine, the combination of a plurality of marking-surfaces, means for moving said marking-surfaces successively into and holding them stationary in marking position, means for rolling articles against said marking-surfaces when in marking position, and means for preparing the marking-surfaces for marking when not in marking position, substantially as described.

5. In a marking-machine, the combination of a marking-head having a plurality of marking-surfaces, means for intermittently rotating said head to bring the marking-surfaces successively into marking position, means for rolling articles against said marking-surfaces when in marking position, and means for preparing the marking-surfaces for marking when not in marking position, substantially as described.

6. In a marking-machine, the combination of a marking-surface, a moving surface opposed to the marking-surface for rolling articles against the marking-surface, means for shifting the marking-surface for supplying marking material thereto, and means for supplying a succession of articles in position to be rolled against the marking-surface by said moving surface, substantially as described.

7. In a marking-machine, the combination of a normally stationary marking-surface, means for rolling articles against the stationary marking-surface, means for shifting the marking-surface for supplying marking material thereto, and means for supplying to said rolling means a succession of articles to be marked, substantially as described.

8. In a marking-machine, the combination of a normally stationary marking-surface, means for rolling articles against the stationary marking-surface, means for applying marking material to the marking-surface, an oscillating feed-trough for feeding articles to said rolling means, and means for supplying articles to the feed-trough, substantially as described.

9. In a marking-machine, the combination of a marking-surface, a moving surface opposed to the marking-surface for rolling articles against the marking-surface, a feed-chute 10, and an oscillating trough 20 for receiving the articles from the chute and moving them into position to be engaged by the moving surface, substantially as described.

10. In a marking-machine, the combination of a marking-surface, a plurality of endless cushion-belts for rolling articles against the marking-surface, and means for supplying a succession of articles to be marked in position to be engaged by said belts, substantially as described.

11. In a marking-machine, the combination of a marking-surface, a plurality of endless cushion-belts for rolling articles against the marking-surface, and means for adjusting the belts toward and from the marking-surface, substantially as described.

12. In a marking-machine, the combination of a support, means for rolling articles against the support, a marking-surface adjacent to the support and opposed to the rolling means in position to engage the articles as they are rolled against the support, and means for shifting the marking-surface independently of the support for supplying marking material thereto, substantially as described.

13. In a marking-machine, the combination of a support, means for rolling articles against the support, and a marking-surface supported adjacent to the support and opposed to the rolling means to engage the articles beyond the line of engagement of the rolling means and of the support therewith, substantially as described.

14. In a marking-machine, the combination of a supporting member, means for rolling articles against said supporting member, a member having a marking-surface in position to engage the articles as they are rolled against the supporting member, and means for moving one of said members longitudinally of the direction of movement of the articles thereagainst, while the article is being rolled thereagainst, substantially as described.

15. In a marking-machine, the combination of a support, means for rolling articles against the support, a marking-surface in position to engage the articles as they are rolled against the support, and means for moving the support longitudinally of the direction of movement of the articles thereagainst while an article is being rolled thereagainst, substantially as described.

16. In a marking-machine, the combination of a support, means for rolling articles against the support, a marking-surface in position to engage the articles as they are rolled against the support, and means for moving the support longitudinally of and in the direction of movement of the articles thereagainst while an article is being rolled thereagainst, substantially as described.

17. In a marking-machine, the combination of a yielding support, means comprising a member moving past the support for rolling articles against the support, and a marking-surface supported adjacent to the support and opposed to said member in position to engage the articles as they are rolled against the support, substantially as described.

18. In a marking-machine, the combination of a support having an article-engaging surface formed of felt or the like, means comprising a member moving past the support for rolling articles against the support, and a marking-surface supported adjacent to the support and opposed to said member in position to engage the articles as they are rolled against the support, substantially as described.

19. In a marking-machine, the combination of a yielding support, means comprising a yielding article-engaging member moving past the support for rolling articles against the support, and a marking-surface supported adjacent to the support in position to engage the articles as they are rolled against the support, substantially as described.

20. In a marking-machine, the combination of a marking-head having a plurality of marking-surfaces adapted to be rotated to bring the marking-surfaces successively into marking position, means for

rolling articles against the marking-surfaces when in marking position, a constantly-rotating member, friction driving means between said member and the marking-head, and stop mechanism for permitting intermittent rotation of the marking-head, substantially as described.

21. In a marking-machine, the combination of a normally stationary marking-surface, means for rolling articles against the stationary marking-surface, means for shifting the marking-surface into position to have marking material applied thereto, and a revolving rotatable roll for applying marking material to the marking-surface, substantially as described.

22. In a marking-machine, the combination of a marking-surface, means for rolling articles against the marking-surface, means for shifting the marking-surface into position to have marking material applied thereto, and a yieldingly-mounted revolving rotatable roll for applying marking material to the marking-surface, substantially as described.

23. The combination with a marking-head, of a support for one end of the marking-head, an endwise-movable member for supporting the other end of the marking-head, means for rotating said member, and means for holding said member normally in supporting position, substantially as described.

24. A marking-head formed of a body portion 55 having a pair of retaining-flanges 56, a holder 57, and a bottom strip 60, substantially as described.

810,980. LOGGING-WAGON. JAMES L. RIDDLE, Logana, Ky. Filed June 19, 1905. Serial No. 265,977.

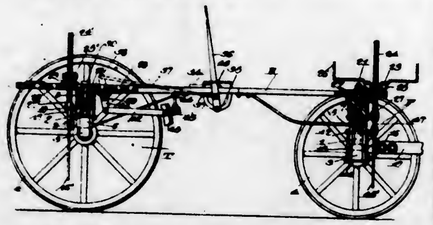

Claim.—1. A reach member, a front truck, a king-bolt extending through and connecting said reach and front truck, a rear truck adjustably connected with the reach, a lifting-screw extending through the front end of the reach in advance of the front truck, and a lifting-screw adjustable in one of a plurality of perforations in the reach in rear of the rear truck.

2. In a logging-wagon, a pair of trucks, a reach supported upon said trucks, a bearing-plate upon the front end of the reach said bearing-plate and reach being provided with registering apertures, a king-bolt extending through the bearing-plate and reach and connecting the latter with the front truck, a lifting-screw extending through the bearing-plate and reach in front of the front truck, and a nut engaging the screw adjacent to the bearing-plate.

3. A truck including an axle and a bolster connected therewith said bolster having shoulders at the ends thereof, plates and bolts connecting said axle and bolster said plates having forward extensions terminating in ears having alining perforations, tongue-hounds including spaced plates and interposed segmental spacing-blocks, and bolts pivotally connecting the hound-plates with the perforated ears of the plates connecting the axle and bolster.

810,981. SOUND-BOX FOR TALKING-MACHINES. BENTLEY L. RENSHART, Camden, N. J., assignor to Victor Talking Machine Company, a Corporation of New Jersey. Filed July 26, 1900. Serial No. 25,043.

Claim.—1. In a sound-box for talking-machines, a stylus-bar and means for positioning said stylus-bar upon said sound-box so as to allow oscillation thereof, said means being made operative solely by the downward pressure upon the record, caused by the weight of the sound-box and parts thereby carried.

2. In a sound-box for talking-machines, a stylus-bar, and pivot-bearings having parts located respectively upon the stylus-bar and sound-box casing and being held in operative contact solely by the downward pressure upon the record caused by the weight of the sound-box and parts carried thereby.

3. In a sound-box for talking-machines, a stylus-bar and a pivot-bearing therefor, comprising parts located respectively upon the stylus-bar and sound-box casing and having a grooved bearing and coacting pivot, said pivot being held operatively against said bearing solely by the downward pressure upon the record caused by the weight of the sound-box and parts carried thereby.

4. In a sound-box for talking-machines, a stylus-bar, pivot-bearings therefor, comprising grooved parts opening in opposite directions and studs coöperating with said parts and held operatively within said grooves solely by the downward pressure upon the record caused by the weight of the sound-box and parts carried thereby.

5. In a sound-box for talking-machines, a stylus-bar, a fulcrum therefor comprising grooved parts opening in opposite directions and trunnions coöperating therewith and held operatively within said grooves by the downward pressure upon the sound-record caused by the weight of the sound-box and parts carried thereby.

6. In a sound-box for talking-machines, a stylus-bar, a fulcrum therefor comprising parts having V-shaped grooves opening in opposite directions and trunnions coöperating therewith and held operatively within said grooves by the downward pressure upon the record caused by the weight of the sound-box and parts carried thereby.

7. In a sound-box for talking-machines, a stylus-bar, having trunnions, a fulcrum therefor comprising grooved screws adapted to receive said trunnions and to bear upon the same upon opposite sides of the axis thereof, said trunnions being retained in the grooves by the downward pressure upon the record caused by the weight of the sound-box and parts carried thereby.

8. In a sound-box for talking-machines, a stylus-bar, trunnions carried thereby, grooved screws carried by the sound-box casing, said grooves having V-shaped sides adapted to contact with said trunnions, to hold the stylus-bar in position by the downward pressure upon the sound-record caused by the weight of the sound-box and parts carried thereby and means for locating said trunnions longitudinally.

9. In a sound-box for talking-machines, a stylus-bar, trunnions carried thereby, screws carried by the sound-box casing having V-shaped grooves therein to receive said trunnions, said screws being arranged upon opposite sides of the normal axis of said trunnions so that the stylus-bar is held in position by the downward pressure upon the sound-record, caused by the weight of the sound-box and parts carried thereby.

10. In a sound-box for talking-machines, a stylus-bar, a fulcrum therefor, and yielding material interposed between said fulcrum and its bearing.

11. In a sound-box for talking-machines, a stylus-bar, a fulcrum therefor and a cushioned bearing for said fulcrum.

12. In a sound-box for talking-machines, a stylus-bar, a fulcrum therefor, a bearing for said fulcrum and a cushion of yielding material interposed between said fulcrum and said bearing.

13. In a sound-box for talking-machines, a stylus-bar, trunnions carried thereby, bearings carried by the sound-box casing and having recesses therein to receive said trunnions, and sleeves of yielding material covering said trunnions.

14. In a sound-box for talking-machines, a stylus-bar, trunnions carried thereby, bearings carried by the sound-box casing and having V-shaped grooves therein to receive said trunnions, and sleeves of yielding material covering said trunnions, said trunnions being held in said grooves by the downward pressure upon the record caused by the weight of the sound-box and attached parts.

15. In a sound-box for talking-machines, a stylus-bar and bearings therefor, the parts of said bearings being normally out of operative engagement and held in operative engagement by the contact of the stylus with the record.

810,982. LEGGING. MOSES ROSENWASSER, New York, N. Y. Filed June 26, 1905. Serial No. 267,020.

Claim.—A legging formed to fit about the limb and ankle of the wearer, having an opening extending from the top portion downwardly and ending at a point substantially above the ankle portion, fastening devices for said opening, and a strap depending from said closed ankle portion and extending beneath the foot of the wearer.

810,982.

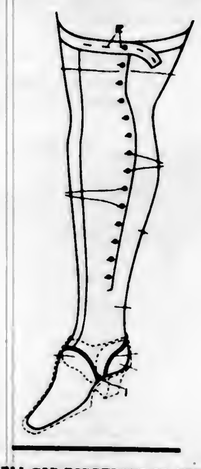

810,983. SHELL FOR TORPEDOES OR SIMILAR PURPOSES. THOMAS F. ROWLAND, New York, N. Y. Filed Oct. 21, 1903. Serial No. 177,923.

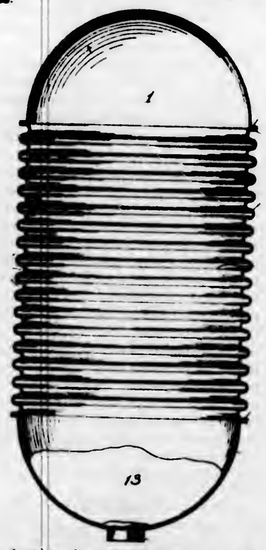

Claim.—1. A submarine torpedo having an explosive charge and a containing-shell comprising a cylindrical body formed with annular flanges at either end and hemispherical heads formed with annular flanges welded to the flanges on said body and said shell having corrugations extending around the same, said corrugations comprising semicircular ridges and depressions whereby said shell is strengthened to resist external collapsing pressure.

2. A submarine torpedo having an explosive charge and a containing-shell comprising a body and outwardly-curved heads secured to said body, said body having corrugations extending around the same whereby said shell is strengthened to resist collapsing pressure from adjacent explosions.

810,984. TOOL FOR OPERATING UPON JAR-COVERS. WILLARD C. SMITH, Coldwater, Mich., assignor of one-half to Frank G. Noyes, Coldwater, Mich. Filed Mar. 13, 1905. Serial No. 249,881.

Claim.—A tool for operating upon jar-covers, comprising a single length of spring-wire bent to form the semicircular body 1, and having the terminals thereof extended to form the handles 2 arranged in divergent relation, the portions of the body 1 and the handles 2 adjacent the point of jointure being flattened as indicated at 3, each handle 2 being provided with the jar-cover-rim-engaging member 5 at a point between its ends, said rim-engaging members being located substantially the same distance from the outer extremities of the handles and movable toward and from each other by movement of said handles 2.

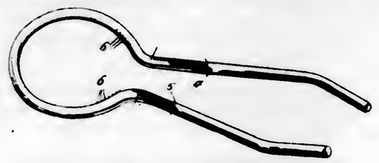

810,985. TILTING HAY-FORK. HENRY O. SPARKS, Shelbina, Mo. Filed May 12, 1905. Serial No. 260,167.

Claim.—1. In a tilting hay-fork, a fork having a cross-bar provided with offset terminals forming ears, tines carried by the cross-bar between the ears, and fork-elevating means connected to the ears.

2. In a tilting fork, a fork having a cross-bar, forwardly-projecting tines carried by the cross-bar, the terminals of said cross-bar being offset and forming forwardly-extending ears that are located on opposite sides of the tines, and fork-elevating means including a bail pivoted to the ends of the ears and located over the tines.

3. In a tilting folk, the combination with a handle-shank, of a fork including a cross-bar, a rearwardly-extending stem pivoted to the handle-shank, forwardly-extending tines carried by the cross-bar, forwardly and upwardly extending ears connected to the ends of the cross-bar, and fork-elevating means including a bail having depending terminals pivoted to the ears, said bail extending over the tines.

4. In a tilting fork, the combination with a handle-shank, of a fork pivoted to the shank, a bail pivoted to the fork, a latch for holding the fork against pivotal movement on the handle-shank, and a spring connecting the bail and shank.

5. In a tilting fork, the combination with a fork, of a handle comprising detachable sections, said fork being pivotally connected to one end of one section, a latch mounted on said section for holding the fork against pivotal movement, an actuating device for the latch

extending longitudinally along said section and secured thereto, and another actuating device connected to the other section and detachably connected to the first-mentioned actuating device.

6. In a tilting fork, the combination with a handle comprising detachably-connected sections, of a fork pivotally connected to the free end of one of the sections, a latch pivoted upon said section and engaging the fork to hold it against its pivotal movement, a cord connected to the latch at one end and having its other end attached to the section adjacent to the joint between the sections, said cord having an eye, and another cord secured to the rear end of the adjacent section and having a terminal hook that detachably engages said eye.

810,986. GRATE-BAR. HENRY B. SPERRY, Akron, Ohio, assignor of one-third to John F. Townsend and one-third to Henry Robinson, Akron, Ohio. Filed Nov. 7, 1904. Serial No. 231,780.

Claim.—1. As a new article of manufacture, a grate-bar formed from a composition of cement and silica or quartz pebbles previously expanded by heat, a series of vertically-formed ribs on the sides of said bar of such configuration that when two bars are placed side by side the ribs on adjacent bars will approximately contact, a pair of strengthening-bars inclosed in the body of said grate-bar, one of which is approximately horizontal and the other formed in a downward curve, the ends of said bars being united together and a plurality of cross-wires connecting the two bars together whereby the two bars with the cross-wires will form a unitary strengthening device for the grate-bar.

2. As a new article of manufacture, a grate-bar formed from a composition of cement and silica or quartz pebbles, a series of vertically-formed ribs on the sides of said bar of such configuration that when two bars are placed side by side the ribs of adjacent bars will approximately contact, a pair of strengthening-bars inclosed in the body of said grate-bar, one of which is approximately horizontal and the other formed in a downward curve, the ends of said bars being united together and a plurality of cross-wires connecting the two bars together whereby the two bars with the cross-wires will form a unitary strengthening device for the grate-bar.

810,987. COMBINATION-TOOL. JOHN R. SPICER, Lovelady, Tex. Filed Sept. 1, 1905. Serial No. 276,746.

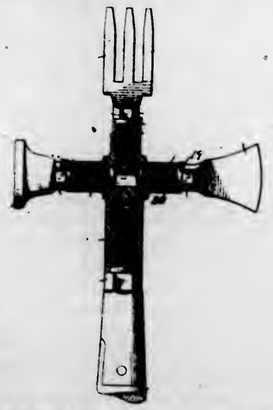

Claim.—A tool including a cruciform head having its arms hollow and internally threaded with their outer ends open and notched, a handle having a threaded shank for engagement with one of the arms of the head and provided with a polygonal wrench-head between the shank and the handle, a set of tools having threaded shanks for engagement with the other arms of the head, each tool having a polygonal wrench-head between the shank and the bit of the tool and provided with a threaded recess between the wrench-head and the threaded portion of the shank, and set-screws carried by the threaded recesses of the shank for engagement with the notches of the tool-head to prevent rotation of the tools.

810,988. MOLDING-MACHINE. HARRY C. STEBLE, WILLIAM STIMSON, and FRED J. TROUT, Jacksonville, Fla. Filed Mar. 22, 1905. Serial No. 251,206.

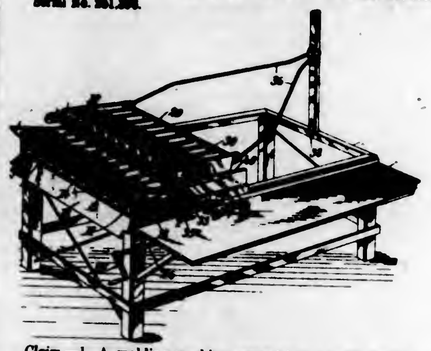

Claim.—1. A molding-machine comprising a mold having a wall, and means for reciprocating the rest of the mold past said wall, said means comprising a frame connected with the main part of the mold and having a screw-threaded projection, and a rotatable rod having screw-threads for engaging said projection.

2. A molding-machine, comprising a mold having an adjustably-mounted wall, means for holding the wall in fixed position, and means for reciprocating the rest of the mold past said wall; said means comprising a frame connected with the main part of the mold and having a screw-threaded projection, and a rotatable rod having screw-threads for engaging said projection.

3. A molding-machine, comprising a series of adjustably-mounted mold-walls in alinement, means for holding each of said walls in adjusted positions, a series of division-plates, located between said walls and each alternate plate being provided with a slot for the reception of an insert, and means for moving said division-plates.

4. A molding-machine comprising a series of division-plates each alternate one having a slot for the reception of an insert, mold-walls surrounding said division-plates, and means for withdrawing said division-plates simultaneously from said mold-walls.

5. A molding-machine, comprising a series of adjustable mold-walls, a series of division-plates located between each two adjacent mold-walls, a front plate pivoted near the bottom of one edge of said division-plates, means for holding said front plate in vertical position against the ends of the division-plates, and means for moving the division-plates.

6. A molding-machine, comprising a bottom plate, a series of division-plates located thereabove and at an angle thereto and in parallel position with respect to each other, a series of back plates located between the rear ends of said division-plates, and a front plate extending across the front ends of the division-plates and pivotally mounted at its lower side, said front plate being provided with projections, and catches connected with the machine and adapted to engage said projections to hold the front plate against the ends of the division-plates.

7. A molding-machine comprising a mold having an adjustably-mounted wall in sections, each having a projection provided with a slot, means for holding the wall in fixed position comprising a series of screws passing through said slots, means for reciprocating the rest of the mold past said wall, a hopper movably mounted above said mold-wall, means for reciprocating the hopper, and means for adjusting the length of the hopper.

8. A molding-machine, comprising a movable mold having an adjustable wall, means for holding said wall in fixed position, a hopper mounted above said mold, said hopper having ways for guiding it in a straight line with respect to the mold, and means for moving the hopper comprising a lever pivotally connected with the machine and a frame connecting the lever and hopper.

9. A molding-machine, comprising a series of mold-walls in alinement, and a series of division-plates located between said walls, each alternate plate being provided with a slot for the reception of an insert.

10. A molding-machine, comprising a series of mold-walls in alinement, a series of division-plates located between said walls, each alternate plate being provided with a slot for the reception of an insert, and means for moving said division-plates longitudinally.

11. A molding-machine, comprising a series of division-plates, certain of said plates having slots for the reception of inserts, mold-walls located adjacent to said division-plates, and means for withdrawing the plates from the walls.

810,989. DEVICE FOR TRANSPORTING GREEN MALT. CARL STEINERT, Munich, Germany. Filed May 26, 1904. Serial No. 209,693.

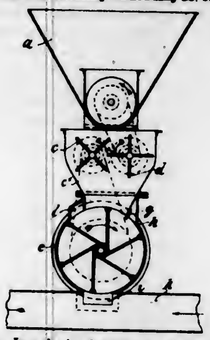

Claim.—1. In a device for transporting green malt, the combination, with a pneumatic-tube system, of a hopper to receive the malt, a screw conveyer leading therefrom, intermeshing disintegrating-arms at the discharge from the conveyer, and a feed-drum provided with buckets arranged between the disintegrator and pneumatic tube.

2. In a device for transporting green malt, the combination, with a pneumatic-tube system, of a feed-hopper, a screw conveyer leading therefrom, intermeshing disintegrating-arms at the discharge from the conveyer, a feed-drum provided with buckets arranged between the disintegrator and pneumatic tube, and a casing tightly fitting around the drum, there being air-vents from the casing.

3. In a device for transporting green malt, the combination, with a pneumatic-tube system, of a feed-hopper, a screw conveyer leading therefrom, intermeshing disintegrating-arms at the discharge from the conveyer, a feed-drum provided with buckets arranged between the disintegrator and pneumatic tube, a casing tightly fitting around the drum, there being air-vents from the casing, and a yielding scraper arranged to contact with the bucket edges.

810,990. APPARATUS FOR ENGRAVING. JOSIAH P. STEVENS, Atlanta, Ga. Filed July 28, 1903. Serial No. 167,219.

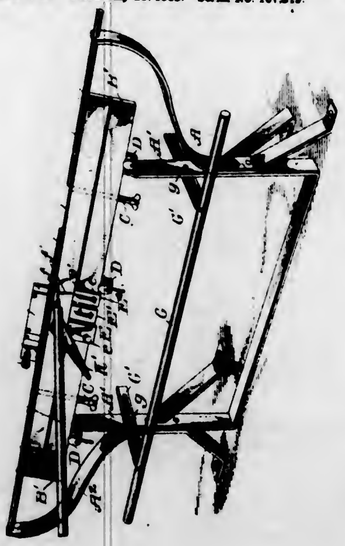

Claim.—1. In an apparatus for engraving, the combination with a frame, a type-holder mounted on said frame, a shading device traveling along said type-holder and provided with a guide-arm projecting in front of the type, a tracer-rod and a tracer-tool carried thereby, an elbow-bar adjustably connected to said frame to facilitate the guidance of the tracer-rod, and a hand-rest mounted near the type-holder to facilitate the operation of the shading device, substantially as described.

2. In an apparatus for engraving, the combination with a frame, a type-holder mounted on said frame, a shading device mounted on said type-holder and provided with a guide-arm projecting in front of the type, means for imparting a step-by-step motion to said shading device, a tracer-rod and a tracer-tool carried thereby, an elbow-bar adjustably connected to said frame to facilitate the guidance of the tracer-rod, and a hand-rest mounted near the type-holder to facilitate the operation of the shading device, substantially as described.

3. In an apparatus for engraving, the combination with a frame, a type-holder mounted on said frame and comprising two boards, with means for clamping the edge of the one against the edge of the other, a shading device traveling along said type-holder and provided with a guide-arm projecting in front of the type, a tracer-rod and a tracer-tool carried thereby, an elbow-bar adjustably connected to said frame to facilitate the guidance of the tracer-rod, and a hand-rest mounted near the type-holder to facilitate the operation of the shading device, substantially as described.

4. In an apparatus for engraving, the combination with a frame, a type-holder mounted on said frame and comprising two boards, with means for clamping the edge of the one against the edge of the other, a shading device traveling along said type-holder and provided with a guide-arm projecting in front of the type, means for imparting a step-by-step motion to said shading device, a tracer-rod and a tracer-tool carried thereby, an elbow-bar adjustably connected to said frame to facilitate the guidance of the tracer-rod, and a hand-rest mounted near the type-holder to facilitate the operation of the shading device, substantially as described.

5. In an apparatus for engraving, the combination with a frame, a type-holder mounted on said frame, and a shading device traveling along said type-holder and provided with a guide-arm projecting in front of the type, of an elbow-bar adjustably connected to said frame, and a wrist-bar mounted above and in front of the type-holder, substantially as described.

6. In an apparatus for engraving, the combination with a frame, a type-holder mounted on said frame, a shading device mounted on said type-holder and provided with a guide-arm projecting in front of the type, and means for imparting a step-by-step motion to said shading device, an elbow-bar adjustably connected to said frame, and a wrist-bar mounted above and in front of the type-holder, substantially as described.

7. In an apparatus for engraving, the combination with a frame, a type-holder mounted on said frame and comprising two boards, and means for clamping the edge of the one against the edge of the other, of a shading device traveling along said type-holder and provided with a guide-arm projecting in front of the type, an elbow-bar adjustably connected to said frame, and a wrist-bar mounted above and in front of the type-holder, substantially as described.

8. In an apparatus for engraving, the combination with a frame, a type-holder mounted on said frame and comprising two boards, with means for clamping the edge of the one against the edge of the other, a shading device traveling along said type-holder, and provided with a guide-arm projecting in front of the type, and means for imparting a step-by-step motion to said shading device, of an elbow-bar adjustably connected to said frame, and a wrist-bar mounted above and in front of the type-holder, substantially as described.

810,991. MANTLE-SUPPORT. TOWNSEND SYSTEM, Gloucester City, N. J., assignor to Welsbach Light Company, Gloucester City, N. J., a Corporation of New Jersey. Filed Sept. 23, 1904. Serial No. 226,508.

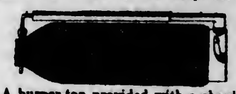

Claim.—1. A burner-top provided with a shoulder, a mantle-supporting wire rising from the shoulder, and a refractory tube seated on the shoulder and sheathing the wire and of larger internal diameter than the external diameter of the wire so as to afford an air-space, substantially as described.

2. A burner-top provided with an upwardly-extending tubular socket, a refractory tube seated on the top rim of the tubular socket, and a mantle-supporting wire rising from the interior of the socket and penetrating the tube whereby the shank of the wire is protected and reinforced throughout its length, substantially as described.

3. A burner top or cap provided with means for holding a mantle-supporting wire, a mantle-supporting wire and a refractory tube sheathing the wire and which is of larger internal diameter than the external diameter of the wire so as to afford an air-passage, substantially as described.

810,992. ELASTIC-FLUID TURBINE. OLE O. STORLE, Burlington, Wis. Filed Aug. 15, 1904. Serial No. 220,696.

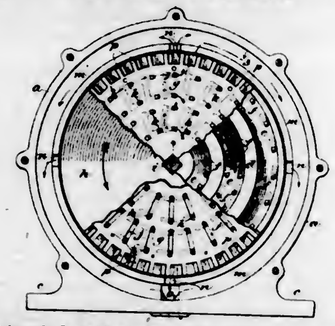

Claim.—1. In an elastic-fluid turbine the combination of a casing provided with nozzles arranged in a number of separate series and a runner having passages each adapted and arranged to receive the fluid from one series of nozzles and to discharge it back into another series in a direction to react upon the runner and coöperate with the direct impact of the fluid entering said passages in driving the runner forward, substantially as described.

2. In an elastic-fluid turbine the combination of a nozzle disk or body having chambers and oblique nozzle-passages communicating with said chambers, and a runner having passages opening through the same face thereof and arranged to register at their ends with said nozzle-passages, each runner-passage being arranged to receive motive fluid from one of said chambers and to discharge it in a reverse direction into the other and serving as a vane or abutment to receive the direct impact of the fluid as it enters and the reaction of said fluid as it escapes from the runner, substantially as described.

3. In an elastic-fluid turbine the combination of a nozzle disk or body having a series of chambers and oblique nozzle-passages communicating with said chambers, the number of said passages increasing from the supply toward the exhaust connection of the turbine, and a runner having corresponding series of passages opening obliquely at the ends through the same face in position to register with the nozzle-passages, each runner-passage being arranged to register at the ends with nozzle-passages communicating with different chambers, substantially as described.

4. In an elastic-fluid turbine the combination of a casing provided with nozzle-chambers and nozzle-passages communicating with said chambers and arranged in circular series, and a runner having corresponding series of passages opening at both ends through the same face thereof and arranged to register with said nozzle-passages, each runner-passage being arranged to receive motive fluid from one nozzle-chamber and to discharge it into another, and the number of passages increasing in successive series, substantially as described.

5. In an elastic-fluid turbine the combination of a casing having fluid-supply and exhaust connections, a series of nozzle-chambers and passages communicating therewith and increasing in number and total area from the supply toward the exhaust connection, and a runner having corresponding series of passages each adapted and arranged to receive motive fluid from one series of nozzle-passages and to discharge it in a reverse direction into another series which communicate with and supply the motive fluid to the next series, substantially as described.

6. In an elastic-fluid turbine the combination of a casing, nozzle-disks having channels in their outer faces next to the inner walls of the casing and nozzle-passages extending from said channels to the inner faces of said disks, a runner composed of two parts separated by a partition transversely to the axis of the turbine and each having passages opening at both ends through its outer face in position to register with passages communicating with the channels in said disks, each runner-passage registering at its opposite ends with passages which communicate with different channels, substantially as described.

7. In an elastic-fluid turbine the combination of a casing composed of sections joined together in a plane transverse to the axis of the turbine, nozzle-disks fitted in said casing and having channels in their outer faces next to the inner walls of the casing and passages extending from said channels obliquely inward to the inner faces of the disks, a runner composed of twd parts separated by a partition transversely to the axis of the turbine and fitted to turn between said disks, each part of the runner having radial passages opening obliquely through their outer faces in position to register with the passages in the nozzle-disks, and each runner-passage registering at its ends with passages which communicate with different channels in the adjacent nozzle-disk, substantially as described.

8. In an elastic-fluid turbine the combination of a casing having fluid supply and exhaust connections and provided with nozzle-passages arranged in circular series, and a runner having corresponding series of passages each adapted to receive motive fluid from one series of nozzle-passages and to discharge it in a reverse direction into another series, said runner also having a circular series of vanes or abutments arranged to receive motive fluid from the last series of nozzle-passages, substantially as described.

9. In an elastic-fluid turbine the combination of a casing having two fluid-supply connections at opposite ends, and an exhaust-passage communicating with the outer part of the runner-chamber, said casing being provided at both ends with nozzle chambers and passages communicating therewith and arranged in circular series, the inner channels or chambers communicating with the fluid-supply connections, and a runner having passages arranged in circular series on both sides thereof and each opening at both ends through the same face and being adapted and arranged to receive motive fluid from one nozzle channel or chamber and to discharge it into another, substantially as described.

10. In an elastic-fluid turbine the combination of a casing provided in the ends with nozzle chambers and passages arranged in circular series and a runner composed of two plates secured together with a partition-plate between them and each formed in its inner face with radial channels which are connected at the ends with its outer face by transverse passages, said passages being arranged in circular series to register at the ends with the nozzle-passages, substantially as described.

810,993. CUTTING MECHANISM. FREDERICK H. STRAEURG, Rumford Falls, Me., assignor to Continental Paper Bag Company, a Corporation of Maine. Filed May 4, 1905. Serial No. 258,830.

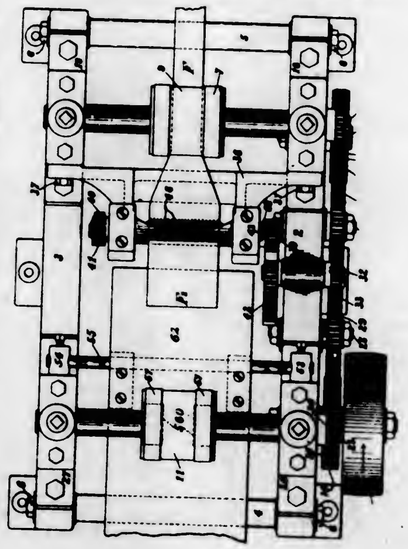

Claim.—1. The combination of a float having a plurality of laterally-contiguous grooves lengthwise in the face thereof, an intermittently-rotatable knife contiguous to the float, said knife having a plurality of teeth for engagement with the grooves respectively, in the float, all combined and working together substantially as described.

2. The combination of a float having a plurality of laterally-contiguous grooves lengthwise in the face thereof, an intermittently-rotatable knife contiguous to the float, said knife having a plurality of teeth for engagement with the grooves respectively in the float, means to feed a web between the float and knife, means to intermittently rotate the knife at a linear speed greater than the feed of the web all combined and operating together substantially as described.

3. The combination of a float having a plurality of laterally-contiguous grooves lengthwise in each side thereof, said grooves being sufficient in number to extend substantially the width of each side of said float, a rotatable knife above the float, said knife having a plurality of teeth for engagement with each of the grooves respectively in the upper face of the float, a rotatable knife below the float, said knife having a plurality of teeth for engagement with each of the grooves respectively in the under face of the float, means to feed a web around the float and between the float and the knives and means to rotate the knives intermittently and at a linear speed greater than the feed of the web.

4. The combination of a float having a plurality of laterally-contiguous grooves lengthwise in each face thereof, said grooves being sufficient in number to extend substantially the width of each face of the float, said grooves in the upper face of the float being longitudinally substantially opposite the grooves in the lower face of the float and spaced laterally intermediate thereof respectively and none of said grooves perforating said float; a rotatable knife above the float, said knife having teeth for engagement with each groove respectively in the upper face of the float and a rotatable knife below the float, said knife having teeth for engagement with each groove respectively in the lower face of the float, all combined and operating together substantially as described.

5. The combination of a float having a plurality of grooves lengthwise in each face thereof, said grooves in the upper face of the float being longitudinally substantially opposite the grooves in the lower face of the float and spaced laterally intermediate thereof respectively; a rotatable knife above the float, said knife having a plurality of teeth for engagement with the grooves respectively in the upper face of the float, and a rotatable knife below the float, said knife having a plurality of teeth for engagement with the grooves respectively in the lower face of the float; and means to intermittently rotate the knives, all combined and operating together substantially as described.

6. The combination of a float having a plurality of laterally-contiguous grooves lengthwise in the face thereof, a rotatable knife above the float, said knife having a plurality of teeth for engagement with the grooves respectively, in the float, means to feed a web over the float and under the rotatable knife, means to normally hold the knife out of engagement with the float, means to intermittently rotate the knife at a linear speed in excess of the feed of the web, all combined and operating together substantially as described.

7. The combination of a float having a plurality of laterally-contiguous grooves lengthwise in the face thereof, a rotatable knife above the float, said knife having a plurality of teeth for engagement with the grooves respectively in the float, means to normally hold the knife out of engagement with the float and means to intermittently rotate the knife, all combined and operating together substantially as described.

8. The combination of a float having a plurality of grooves lengthwise in each face thereof, said grooves in the upper face of the float being longitudinally substantially opposite the grooves in the lower face of the float and spaced laterally intermediate thereof respectively and none of said grooves perforating said float; a rotatable knife above the float and a rotatable knife below the float, each knife having teeth for engagement with the grooves respectively in the float, all combined and operating together, substantially as described.

810,994. CONNECTING-ROD FOR ENGINES. JOHN STUART, Wellesley, Mass. Filed Sept. 23, 1905. Serial No. 279,790.

Claim.—1. A connecting-rod for engines provided with a chamber extending longitudinally thereof and with an outlet-passage leading out of one end thereof into a bearing formed upon said connecting-rod, together with a supply-passage extending through one of the side walls of said chamber, a valve located in said supply-passage, a screw-plug in one wall of said chamber in the opposite side thereof from that in which said valve is located, said plug being in alinement with said valve, there being a shank on said plug projecting into said chamber, and a spring in said chamber one end bearing against said valve the other end encircling said shank and bearing against said plug.

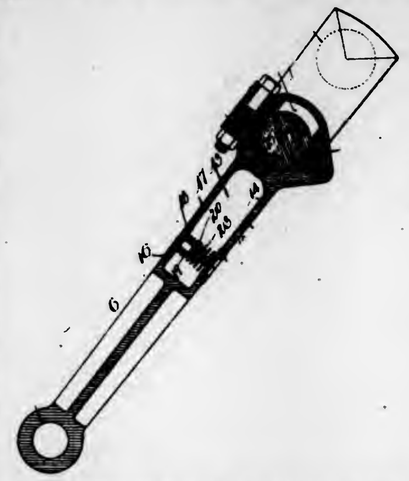

2. A connecting-rod for engines provided with a chamber extending longitudinally thereof and with an outlet-passage leading out of one end thereof into a bearing formed upon said connecting-rod, together with a supply-passage extending through one of the walls of said chamber, a valve located in said supply-passage, a screw-plug in one wall of said chamber in the opposite side thereof from that in which said valve is located, said plug being in alinement with said valve, there being a shank on said plug projecting into said chamber, and a spring in said chamber one end bearing against said valve the other end encircling said shank and bearing against said plug.

3. A connecting-rod for engines having a bearing formed in each of its opposite ends, a portion of said rod adjacent to one of said bearings rectangular in cross-section and provided with a chamber extending longitudinally thereof, one end of said chamber connected to said bearing by an outlet-passage, a check-valve in said outlet-passage, the other end of said chamber provided with a supply-passage extending through one of the walls of said chamber, a valve located in said supply-passage, a screw-plug in one wall of said chamber on the opposite side thereof from that in which said valve is located, said screw-plug being in alinement with said valve, there being a shank on said plug projecting into said chamber, and a spring in said chamber, one end of said spring bearing against said valve, the other end encircling said shank and bearing against said plug.

4. A connecting-rod for engines provided with a chamber extending longitudinally thereof and with an outlet-passage leading out of one end thereof into a bearing formed upon said connecting-rod, together with a supply-passage extending through one of the walls of said chamber, means to close said supply-passage, a cap fast to said connecting-rod in which a portion of said bearing is formed, and a pocket adapted to contain lubricating material located in said cap and opening inwardly therefrom into said bearing.

810,995. CAR-DOOR CLEAT AND SEALING DEVICE. STEPHEN C. SULLIVAN, Chicago, Ill. Filed Dec. 19, 1904. Serial No. 237,496.

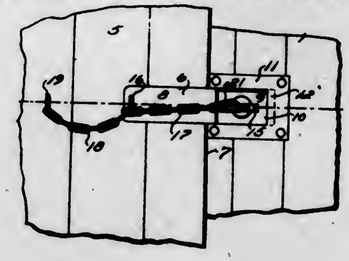

Claim.—1. The combination of a frame, a door slidably mounted on one face of said frame, a member set in flush with said face and having therein a socket, a cleat having a part fitting within said socket, said cleat being adapted when in engagement with said socket, to extend across the edge of the door in its closed position and prevent the opening thereof, a pin secured to said part, having threaded engagement with said member and adapted to secure said part within said socket, and means for sealing said pin to prevent its removal from said socket, substantially as described.

2. The combination of a frame, a door slidably mounted on one face of said frame, a member set in flush with said face and having therein a socket, a cleat having a part fitting within said socket, said cleat being adapted when in engagement with said socket, to extend across the edge of the door in its closed position and prevent the opening thereof, a pin having threaded engagement with said member and adapted to bear on said part for securing the same within said socket, a chain having swiveled connection with said pin and being secured to said door, and said pin having a head having therein an eye for receiving a wire seal for connecting the pin to a link of the chain and preventing the unscrewing of the pin, substantially as described.

810,996. FLUE-SCRAPER FOR EVAPORATORS, BOILERS, AND THE LIKE. TŌRABURO SUZUKI, Sumamura, Japan. Filed June 12, 1905. Serial No. 264,826.

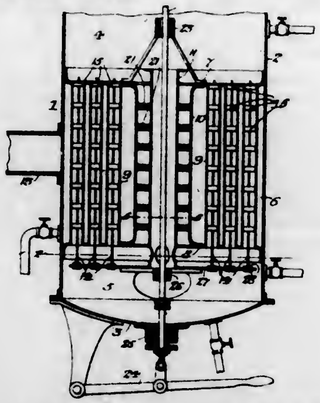

Claim.—1. A scraper for evaporators, boilers and the like provided with a plurality of flues, a rod for each of the flues extending throughout the length thereof, a plurality of scrapers for each rod spaced apart in a manner to scrape the flue throughout its length by a limited reciprocation, and a main actuating-rod extending through the wall of the evaporator and connected with each of said rods whereby the same may be reciprocated in unison.

2. A scraper for evaporators, boilers and the like provided with a plurality of flues, a rod for each of the flues, a plurality of scrapers for each rod, each scraper comprising an annular ring provided with sharp margins, a hub keyed to the rod and spokes connecting the hub and ring, and a main actuating-rod extending through the wall of the evaporator and connected with each of said rods whereby the same may be reciprocated in unison.

3. A scraper for evaporators, boilers and the like provided with a plurality of flues, a rod for each of the flues extending throughout the length thereof, a plurality of scrapers for each rod spaced apart in a manner to scrape the flues throughout their length by a limited reciprocation, each scraper comprising an annular ring provided with sharp margins, a hub keyed to the rod, spokes connecting the hub and ring, and a main actuating-rod extending through the wall of the evaporator and connected with each of the rods whereby the same may be reciprocated in unison.

4. A scraper for evaporators, boilers, and the like provided with a plurality of curved flues, a flexible rod for each of the flues extending throughout the length thereof, a plurality of scrapers for each rod spaced apart in a manner to scrape the flue throughout its length by a limited reciprocation, a main actuating-rod extending through the wall of the evaporator and jointedly connected with each of said rods whereby the same may be reciprocated in unison.

5. A scraper for evaporators, boilers and the like provided with a plurality of curved flues, a flexible rod for each of the flues, a plurality of scrapers for each rod each scraper comprising an annular ring provided with sharp margins, a hub keyed to the rod, spokes connecting the hub and ring, and a main actuating-rod extending through the wall of the evaporator and jointedly connected with each of said rods whereby the same may be reciprocated in unison.

6. A scraper for evaporators, boilers and the like provided with a plurality of curved flues, a flexible rod for each of the flues extending throughout the length thereof, a plurality of scrapers for each rod spaced apart in a manner to scrape the flue throughout its length by a limited reciprocation, each scraper comprising an annular ring provided with sharp margins, a hub keyed to the rod, spokes connecting the hub and ring, and a main actuating-rod extending through the wall of the evaporator and jointedly connected with each of the rods whereby the same may be reciprocated in unison.

7. A scraper for evaporators, boilers and the like comprising a rod and a plurality of scrapers equally spaced apart along and being in close contact with the flue whereby movement of said rod equal to the spacing between any two scrapers serves to bring the scrapers in contact with the flue throughout its length.

8. A scraper for evaporators, boilers and the like comprising a rod, and a plurality of scrapers having oppositely-disposed cutting edges, said scrapers being equally spaced apart along and being in close contact with the flue whereby movement of said rod in opposite directions a distance equal to the spacing of any two scrapers serves to bring said scrapers in contact with the flue throughout its length.

810,997. SELF-PROPELLED VEHICLE-TRUCK. HORACE H. TAYLOR, San Jose, Cal. Filed Feb. 6, 1905. Serial No. 244,449.

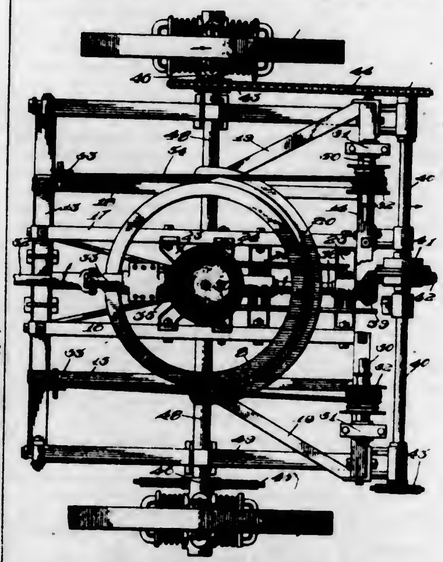

Claim.—1. In a truck for self-propelled vehicles, the combination with a circle, a truck-frame secured to one member of said circle, wheels carried by said truck-frame, and means for turning said truck on said circle, of gearing carried by said truck-frame concentric with said circle, means for driving said gearing, a divided shaft journaled in said frame, differential gearing connecting the members of said shaft, an intermediate shaft journaled in said frame and geared respectively with the gearing on said circle and with said divided shaft, substantially as described.

2. In a truck for self-propelled vehicles, the combination with a circle, a truck-frame secured to one member of said circle, wheels carried by said trick-frame and means for turning said truck on said circle, of gearing carried by said truck-frame concentric with said circle, means for driving said gearing, a divided shaft journaled on said frame, differential gearing connecting the members of said shaft, a gear on said shaft, an intermediate shaft journaled on said frame, gears on said intermediate shaft meshing respectively with said first-named gearing and with the last-named gear on said divided shaft, and connections between said shaft and said wheels.

3. In a front truck for self-propelled vehicles, the combination with a circle, a truck-frame secured to one member of said circle, wheels carried by said truck-frame and means for turning said truck on said circle, of gearing carried by said truck-frame concentric with said circle, means for driving said gearing, a divided shaft journaled in said frame, differential gearing connecting the members of said shaft, an intermediate shaft journaled on said frame, gears on said intermediate shaft and meshing, respectively, with the first-named gearing and with gearing on said differential gearing, and connections between said shaft and said wheels.

4. In a front truck for self-propelled vehicles, the combination with a vehicle-body, a truck-frame, a circle composed of two members one secured to said vehicle-body and the other to said truck-frame, and means for turning said truck on said circle, of a sleeve rotatably carried on said truck-frame concentric with said circle, bevel-gears on said sleeve at each end thereof, a shaft journaled in said truck-frame and adapted to be connected with a prime mover carried by said vehicle and provided with a gear meshing with one gear on said sleeve, a divided shaft carried by said truck-frame and provided with differential gearing, an intermediate shaft journaled in said truck-frame and provided with bevel-gears at each end adapted to mesh, respectively, with the other bevel-gear on said sleeve and with the differential gearing on said shaft, an axle carried by said truck-frame, wheels on said axle, and connections between said shaft and said wheels.

5. In a front truck for self-propelled vehicles, the combination with a vehicle-body, a truck-frame, a circle composed of two members secured, respectively, to said vehicle-body and said truck-frame, gearing carried by said truck-frame concentric with said circle, means for driving said gearing, wheels carried by said truck-frame, and gearing connections between said first-named gearing and said wheels, of a grooved segment secured to said truck-frame concentric with said circle, a shaft journaled on said truck-frame, drums journaled on said shaft, and a rope engaging said segment and adapted to be wound and unwound upon said drums, respectively, when the same are rotated.

6. In the front truck for self-propelling vehicles, the combination with a vehicle-body, a truck-frame, wheels carried by said truck-frame, a circle composed of two members secured respectively to said vehicle-body and said truck-frame, a pin mounted in said vehicle-body concentric with said circle, a bevel-gear revolubly mounted on said pin and provided with a hub, and means for driving said gear, of a gear secured to said hub, a divided shaft carried by said truck-frame, differential gearing connecting the members of said divided shaft, an intermediate shaft, gearing on said intermediate shaft connecting the same with the gear on said hub and with said divided hub, and connections between said divided shaft and said wheels, substantially as described.

810,998. CUTTING-MACHINE FOR VEGETABLES, &c. ALBION W. THOMAS, Rome, N. Y., assignor to Leon V. Jones, Rome, N. Y. Filed Sept. 26, 1904. Serial No. 225,949.

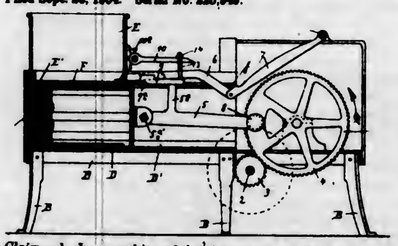

Claim.—1. In a machine of the character described, the combination with fixed knives, a plunger adapted to feed thereto, and mechanism for operating the plunger, of a blade mounted to reciprocate in a plane parallel with the plunger and separate therefrom, means to advance the blade ahead of the plunger to cut off the feed of material to the plunger, means for connecting the blade and the plunger during the back stroke and means for suspending the operation of said connecting means whereby the blade may remain in position to cut off feed to the plunger, substantially as shown.

3. In a device of the character described, the combination of a plunger-box with a feed-opening thereto and a plunger operating therein, knives at the end of said plunger-box, a sliding knife traversing the feed-opening to the plunger-box, mechanism for operating the plunger, independent means actuated by said mechanism to thrust the blade forward, and means normally connecting the blade to the plunger during the back stroke together with means for disconnecting the blade from the several means which operate it to and fro, substantially as shown.

4. In a device of the character described, the combination of a frame, a box, a hopper, a plunger, and a knife operating between the box and the hopper to intercept material being fed to the said box, common means for reciprocating said blade and plunger through separate members actuated thereby, such members, and means for suspending the retracting operation of the member connected with the blade.

5. In a device of the character described, the combination of a plunger-box, knives arranged transversely of the plunger-box, a plunger, a feed-hopper, a sliding blade, mechanism to reciprocate the plunger, means operatively connected with said mechanism to withdraw the blade, and means operative at will to prevent the back stroke of the blade with the plunger, substantially as shown.

6. In a device of the character described, comprising a plunger-box, a plunger reciprocating therein, means for reciprocating the plunger, a feed-hopper and a blade slidable in a plane parallel with the plunger, link members connected to the said blade so placed as to be actuated by the plunger-operating mechanism to thrust the blade forward across the feed-opening, a latch operative by gravity to connect the blade with the plunger on the back stroke of the latter, and means for engaging the said latch to prevent the back stroke of the blade with the plunger.

7. In a device of the character described having a plunger, a plunger-box, a feed-hopper and a blade, means operative to reciprocate the plunger, means operative to give the blade a forward stroke by contact of the said means with the plunger-actuating parts, means automatically operative to connect the blade to the plunger on the back stroke, and means for suspending the operating of said latter means.

810,999. HYDRAULIC LUBRICATOR. RICHARD THOMPSON, New York, N. Y., and JOHN A. SHARMAN, East Orange, N. J. Filed Apr. 6, 1903. Serial No. 151,228.

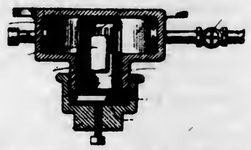

Claim.—1. In a lubricator, a closed vessel having a connection for bringing in a current of water, a connection for leading away the same, and a lateral aperture with a neck A^5 in the upper portion, in combination with a removable perforated casing adapted to be supported in such aperture and to be inserted and removed through the same, a removable cap and means carried by the cap adapted to bear strongly against the casing and to tightly seal the aperture in the vessel.

2. In a lubricator, a closed vessel A having a lateral connection I for bringing in a current of water, a top connection J for leading away the same and an aperture in the upper portion of the front with a projecting neck A^4 screw-threaded on its exterior, in combination with a removable perforated casing G extending from such aperture across the interior and a removable cap B screw-threaded for strongly attaching to said neck and having provisions for making a tight joint, the cap serving as a means for holding and closing such casing and liberating it when required, and also means for tightly closing the vessel, all substantially as herein specified.

3. In a lubricator a closed vessel A having a lateral connection I for bringing in a current of water, a top connection J for leading away the same and an aperture in the upper portion of the front, in combination with a removable perforated casing G extending from

such aperture across the interior, and with a gasket B of yielding material covering said aperture, a stout metal disk D over the same carrying a cap B and screw C arranged to exert pressure on the metal disk and subject the soft material to simple compression without abrasion between such disk and the edges of the aperture, all substantially as herein specified.

811,000. GASKET. VREELAND TOMPKINS, Jersey City, N. J. Filed Mar. 29, 1905. Serial No. 252,603.

Claim.—An article of the class described comprising a corrugated gasket having a flexible projection formed therewith adapted to extend beyond the heads of the joint to be sealed by said gasket to afford means for holding the gasket stationary during the formation of the joint.

811,001. CLEANING DEVICE. ADDISON P. TRIEM, Buffalo, N. Y. Filed Dec. 15, 1904. Serial No. 237,027.

Claim.—1. The combination with the wall of a housing having guide-slots therein, of a cross-head lying across the window of said wall, a cleaning device secured to said cross-head and lying in contact with the window, and handles at the ends of said cross-head and extending through said slots within reach of the operator within the housing.

2. In a device of the character described, the combination with the wall having guide-slots therein, of a cross-head normally held elevated and having handles extending through said slots to permit the device to be operated from within the housing, a cleaning device carried by said cross-head, and means for closing said slots when the device is in its normal position.

3. In a device of the character described, the combination with the wall having guide-slots therein, of a cross-head normally held elevated and having handles extending through said slots to permit the device to be operated from within the housing, a cleaning device carried by said cross-head, and flexible strips attached to said cross-head and to the wall beneath the guide-slots.

4. The combination with the wall of a housing having guide-slots therein, of a cross-head having cleaning devices comprising a cleaning-strip, and handles extending from the cross-head through said guide-slots to render the device operative from within the housing.

5. In a device of the character described, the combination of a window-frame having guide-slots therein, a cross-head extending across the front of the window, handles secured to said cross-head and having a flattened portion extending into the housing through said guide-slots, and a cleaning-strip projecting from the inner portion of the cross-head and lying in contact with the window.

6. In a device of the character described, the combination of a window-frame having guide-slots therein, a cross-head extending across the front of the window, a cleaning device on said cross-head, handles secured to said cross-head and having a flattened portion extending into the housing through said guide-slots, and a cross-head carried on the handles within the housing and having a cleaning-strip in contact with the window.

7. In a device of the character described, the combination of a window-frame having guide-slots therein, a cross-head extending across the front of the window, handles secured to said cross-head and having a flattened portion extending into the housing through said guide-slots, a flexible strip projecting from the inner portion of the cross-head and lying in contact with the window, and a cross-head adjustable on the handles within the housing and provided with a cleaning-strip adapted to clean the inner side of the window.

8. In a device of the character described, the combination of a window-frame having guide-slots therein, a cross-head extending across the front of the window, handles secured to said cross-head and having a flattened portion extending into the housing through said guide-slots, a metallic strip projecting from the upper portion of the cross-head and normally out of contact with the window, and a cross-head adjustable on the handles within the housing and provided with a flexible strip adapted to clean the inner side of the window.

9. In a device of the character described, the combination of a window-frame having guide-slots therein, a cross-head lying across the front of the window and having a transverse opening at each end, each opening being enlarged and rectangular at the inner end thereof, a cleaning-strip attached to said cross-head, handles rectangular in cross-section and having reduced threaded ends, said reduced ends and the adjacent rectangular portion of each handle fitting said opening, and nuts secured to the projecting ends of said handles with the extremities of the reduced ends projecting from the cross-head.

811,002. APPARATUS FOR PRODUCING EFFLORESCENCE. KANEO TSUJI, Takaoka, Japan. Filed Jan. 11, 1905. Serial No. 240,663.

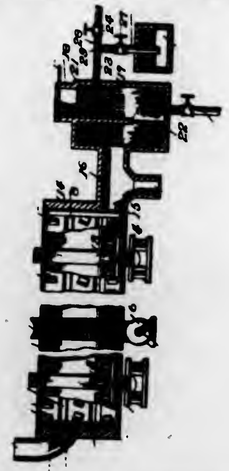

Claim.—1. In a machine for adding moisture to materials, the combination with a rotating drum, of means for feeding material to be moistened into one end of the drum, means for causing the material to be picked up and dropped in the drum, means for causing the material to progress through the drum, and means for introducing moisture in the form of a vapor into the delivery end of the drum.

2. In a machine for adding moisture to materials, the combination with a rotating drum, of means for feeding material to be moistened into one end of the drum, means for causing the material to be picked up and dropped in the drum, means for causing the material to progress through the drum, means for introducing moisture in the form of a vapor into the delivery end of the drum and means for regulating the amount of moisture introduced.

3. In a machine for adding moisture to materials, the combination with a rotating drum, of means for feeding material to be moistened into one end of the drum, means for causing the material to be picked up and dropped in the drum, means for causing the material to progress through the drum, means for introducing moisture into the drum, and means for withdrawing the air from the drum.

4. In a machine for adding moisture to materials, the combination with a rotating drum, of means for feeding material to be moistened into one end of the drum, means for causing the material to be picked up and dropped in the drum, means for causing the material to progress through the drum, means for introducing moisture into the drum, means for withdrawing the air from the drum and separating the dust from the air.

5. In a machine for adding moisture to materials, the combination with a rotating drum, of means for feeding material to be moistened into one end of the drum, means for causing the material to be picked up and dropped in the drum, means for causing the material to progress through the drum, means for introducing moisture into the drum and means for withdrawing the air from the drum and separating the dust from the air.

6. A rotating cylinder provided on its interior with a series of plates arranged at an angle to the axis of rotation of the cylinder, said plates forming by their faces an interrupted screw whereby when the cylinder is rotated, the plates will act to feed material through the cylinder and a series of longitudinal shelves adapted to pick up and drop the material in the cylinder as it rotates.

7. In a machine for adding moisture to materials, the combination with an agitating device into which the material to be moistened is fed and means for supplying moisture-laden air to the agitating device, of a casing connected to the agitating device and provided with an exhausting means whereby the air will be withdrawn from the agitating device, of a filtering device located between the exhausting device and the agitating device through which the air is drawn and by which it is deprived of dust carried in suspension.

8. In a machine for adding moisture to materials, the combination with an agitating device, of means for supplying moisture-laden air to one end of the device and means for withdrawing the air from the other end of the device, of a filter through which the air passes, said filter consisting of a plurality of frames wedge-shaped in cross-section and covered with filtering material, said frames being arranged in the form of a cylinder as and for the purpose described.

9. In a machine for adding moisture to materials, the combination with an agitating device, of means for supplying moisture-laden air to the agitating device, said supplying device consisting of a casing, an opening in the casing through which air may pass a steam-jet entering the casing to supply moisture to the air and a water-supply connected to the steam-jet, whereby water may be mixed with the steam before the same enters the casing.

10. In a machine for adding moisture to materials, the combination with an agitating device, of means for supplying moisture-laden air to the agitating device, said supplying device consisting of a casing, an opening in the casing through which air may pass and a steam-jet entering the casing to supply moisture to the air, and means for adding water to the steam before it enters the casing.

11. In a machine for adding moisture to materials, the combination with an agitating device, of means for supplying moisture-laden air to the agitating device, said supplying device consisting of a casing, an opening in the casing through which air may pass, a steam-jet entering the casing to supply moisture to the air and a partition extending part way across the casing against which the steam impinges.

12. In a machine for adding moisture to materials, the combination with an agitating device, of means for supplying moisture-laden air to the agitating device, said supplying device consisting of a casing, an opening in the casing through which the air may pass, a steam-jet entering the casing to supply moisture to the air, a partition extending part way across the casing against which the steam impinges and a reticulated fabric extending from the end of the partition to the side of the casing.

811,003. TIE-PLATE FOR FURNACES. CHARLES B. TUDOR, Cincinnati, Ohio, assignor to The Tudor Boiler Manufacturing Company, Cincinnati, Ohio, a Corporation. Filed Nov. 13, 1905. Serial No. 287,163.

Claim.—A furnace tie-plate formed integral from a metal blank, having an arch-brace struck up in the central portion thereof, terminating at the sides and ends in plane marginal faces, substantially as described.

811,004. MACHINE FOR CUTTING WOODEN DISHES. JAMES B. TUTTLE, Watertown, and JAMES MACLEAN, Boston, Mass., assignors to Levi L. Rowe, Boston, Mass. Filed Aug. 21, 1903. Serial No. 170,276.

Claim.—1. In a dish-cutting machine, a rotary cutter, a trimming-knife, and means whereby each is operated, a carrier and means whereby it is given an intermittent progressive feed toward the cutter-head, and means whereby between each feed movement it is given a reciprocating movement rearward to register with said trimming-knife, and forward after the operation of said trimming-knife, as set forth.

2. In a dish-cutting machine, in combination with a block-feed and a trimming-knife adapted to shave off the front of the block, means for cutting a dish from said block comprising a rotary cutter-head, a support therefor having a cam-surface whereby said block-feed is moved from a place in register with said rotary cutter to a place in register with said trimming-knife, and a cam-surface, and means operated thereby whereby said trimming-knife is caused to operate, as described.

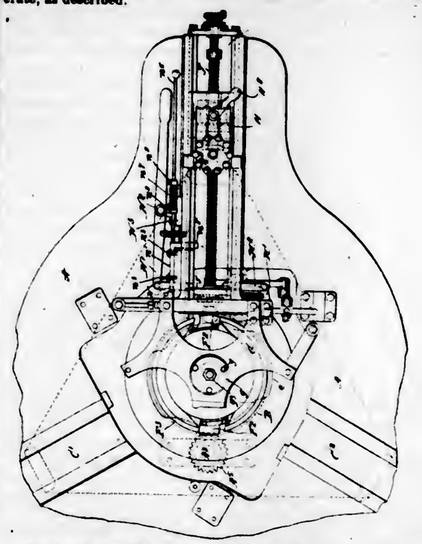

3. In a dish-cutting machine, in combination, a rotary cutter-head, a support therefor located beneath said cutter-head, and means located above said cutter-head for centering it, and means for supporting said cutter-head support comprising a stationary table having bearings thereon adapted to engage with a prepared surface on said cutter-head support, said table also carrying a suitable gear whereby power may be applied thereto to rotate said cutter-head, as set forth.

4. In a dish-cutting machine, a cutter-support comprising two opposing surfaces, a cylindrical cutter-head connecting said surfaces, a bow-shaped knife also connecting said surfaces and provided with a bracing-strap mounted on said cutter-head, the front end of said bracing-strap engaging the rear edge of said knife, as described.

5. In a dish-cutting machine, a rotary cutter and a feed mechanism comprising a carrier having a nut forming a part thereof, a screw the thread of which is adapted to lie within said nut, said screw being supported to move endwise with said carrier, and means mounted upon said cutting-head, whereby an endwise movement is given to said screw to move said carrier toward and from a position where the block carried by it will be engaged by the cutter, as set forth.

6. In a dish-cutting machine, a rotary head carrying one or more knives, a reciprocating carrier, means for reciprocating said carrier comprising a cam rigidly mounted on said cutter-head, and located to engage said carrier, as shown.

7. In a dish-cutting machine, a rotary cutter-head carrying one or more knives, a reciprocating carrier, means whereby said carrier is fed comprising a feed-screw having means for turning it, said feed-screw being supported at each end, and means located on said cutter-head and adapted to engage the adjacent end of said feed-screw to reciprocate said carrier, as described.

8. In a dish-cutting machine, a rotary cutter-head carrying one or more knives, a carrier, means whereby said carrier is fed comprising a feed-screw having means for turning it, one element of which is located on said feed-screw, and the other element of which is located on said cutter-head, and means whereby said carrier is withdrawn after the action of the cutting-tool, said withdrawing means being located on the cutter-head, as set forth.

9. In a dish-cutting machine, in combination, a rotary cutter-head, a carrier adapted to be fed toward said cutter-head, its feeding mechanism comprising a screw suitably supported at each end and adapted to slide in its supports, means located on said cutter-head and adapted to engage the edge of the front support of said screw, whereby said screw may be pushed away from the axis of the cutter-

head, and means for returning said screw to its forward position, as set forth.

10. In a dish-cutting machine, a rotary cutter, a carrier, a feed-screw connected with said carrier, a supporting-block adapted to support the front end of said feed-screw, means for reciprocating said carrier and said feed-screw toward and from said cutter-head, and means for locking said carrier when in its forward position, comprising a locking-bar adapted to engage the rear end of said supporting-block, and means for operating it, as and for the purposes set forth.

11. In a dish-cutting machine, a block-carrier, a trimming mechanism whereby the face of said block is shaved, a cutting mechanism whereby a dish is thereafter cut therefrom, means whereby said carrier is brought alternately into position so that the block carried by it will be alternately trimmed and have a dish cut from it, and means whereby said carrier is locked in its forward position comprising a sliding piece connected to said carrier, a lever carrying a sliding arm, and means whereby said lever is moved to carry said arm away from contact with said sliding piece, comprising a cam-surface connected with said cutting mechanism and adapted to engage said sliding arm-lever as described.

12. In a dish-cutting machine, in combination with a dish-cutting knife and a trimming-knife, and means whereby each is operated, a carrier and means whereby it is fed forward progressively, and means whereby it is also given a reciprocating movement forward and back, a slide-pin normally lying across the path of said carrier, and adapted to be engaged thereby, and a latch located to be engaged and normally retained in a rearward position by said slide, and means whereby said latch when out of engagement with said slide will be moved forward into the path of said carrier, as set forth.

13. In a dish-cutting machine, in combination with a dish-cutting knife and a trimming-knife, and means whereby each is operated, a block-carrier and means whereby it is fed progressively forward and is also reciprocated forward and back, means located in the path of the carrier adapted to be engaged thereby, whereby the means for accomplishing the progressive feed of said carrier will be thrown and maintained out of operation, as set forth.

14. A cutter-head support and means whereby it is supported and rotated comprising a table provided with a central opening and an annular recess, an inverted-U-shaped bearing, one leg of which is adapted to set into said recess and the other into said table-opening, and friction-rollers located between said inverted-U-shaped bearing and the upper surface of the edge of said table surrounding said opening, said inverted-U-shaped piece also carrying an annular gear, as described.

15. A revolving cutter-head provided with one or more cutters, a cam mounted on said cutter-head, and located below the same, in combination with a carrier adapted to be reciprocated toward and from said cutter-head, and means to engage said cam, whereby the said carrier may be intermittently reciprocated, as described.

16. In a dish-cutting machine, a cutter-head having a suitable support carrying one or more ears, a carrier mounted upon a feed-screw, the front end of said feed-screw being provided with an armed wheel, the arms of which are located to engage with the ears on said cutter-head support, as described.

17. In a dish-cutting machine, a cutter-head provided with one or more cutters, and one or more straps, each strap extending rearward from the rear of each cutter to within a short distance of the next cutting edge, as shown.

18. In a dish-cutting machine, a stationary table provided with a central opening having an annular supporting edge, a rotary cutter-head having a bearing-surface running on said supporting edge, means for causing the rotation of said cutter-head, means for feeding the block thereto in a line at right angles to the axis of the cutter-head.

19. In a dish-cutting machine, a stationary table provided with a central opening having an annular supporting edge, and a cutter-head having a bearing-surface running on said supporting edge, said cutter-head carrying means such as a gear whereby it may be rotated, the radius of said rotating means being less than the radius of said bearing-surface, whereby greater stability is given to the cutter-head while in operation, in combination with means for feeding a block to said cutter-head in a plane at right angles to said cutter-head and above the plane of said gear, as set forth.

20. In a dish-cutting machine, a table having an annular way thereon, an annular member fitted in said way and having an annular bearing-surface for engagement therewith, a camway on said annular member, a cutting-head carried by said annular member, and a trimming-knife in connection with said cam to be operated thereby across the face of said head.

21. In a dish-cutting machine, a table having an annular way thereon, an annular member fitted in said way and having an annular bearing-surface for engagement therewith, an annular driving-gear on said annular member, a camway on said annular member, a cutting-head carried by said annular member, and a trimming-knife in connection with said cam to be operated thereby across the face of said head.

22. In a dish-cutting machine, a stationary table provided with a central aperture, a cutter-head located within said aperture and having a bearing-surface engaging one edge thereof, a block-feeding mechanism and a block-trimming mechanism, both mounted on said table, and separate means, as described, located on said cutter-head, whereby said block-feeding mechanism and said block-trimming mechanism may each be operated, as set forth.

811,005. **GARMENT-FASTENER.** WILLIAM H. UNER, Duluth, Minn. Filed June 20, 1904. Serial No. 213,260.

Claim.—1. In a garment-fastener, the combination of a hook member and an eye member, one of which embodies six legs terminating at their lower ends in attaching-eyes, the upper ends of the rearward legs terminating in rearwardly-directed hooks, the inner ends of the two forward legs terminating in a forwardly and upwardly directed hook at a lower plane than the said rearwardly-directed hooks, the other of which members embodies two shank portions terminating at one end in attaching loops or eyes and curved or bent intermediate of their ends to form parallel hooks and terminating at their opposite ends in a single loop underlying an intermediate portion of said shanks parallel with the mutual plane of the portion of said shanks extending from the said eyes to said hooks substantially as described.

2. In a garment-fastener, a hook member and an eye member adapted to be attached to a predetermined portion of the garment and comprising a member formed of a single wire bent to form four attaching loops or eyes in the same plane, with each other, six legs extending from said loops, the rearward leg on each side being near its junction with the intermediate leg on the same side to form a rearwardly-directed hook contacting at its junction with said intermediate leg with the point of junction of the opposite intermediate leg and opposite rearward leg, the forward said legs being bent near their junction to form a forwardly and upwardly directed tongue at a lower plane than said hooks, and a second member provided with attaching loops or eyes, hooks adapted to engage the hooks of the first said member and an eye adapted to engage the tongue of the first said member, said hooks of the said second member being adapted to be pinched together into disengaging position so as to wedge apart and pass between the hooks of the first said member, substantially as described.

3. In a garment-fastener the combination of a hook member and an eye member, adapted to engage each other, one of said members being provided with two hooks and a tongue and garment-attaching portions, and the other of said members being provided with two hook portions adapted in operative position to engage the hooks of the first said member and an eye portion adapted in operative position to engage the tongue of the first said member, and garment-attaching portions, the hook portions of the second said member being laterally compressible and when so compressed being adapted to be disengaged from the other member by movement in the same direction as that which effected the first engagement of said members with each other, substantially as described.

4. In a garment-fastener, the combination of a hook member and an eye member, one of said members having attaching portions for securing the member to the apparel or article for which it is used, said one of said members having two hooks formed thereon contiguous to each other, said one of said members also being provided with a tongue, the other of said members being bent intermediate of its ends to form parallel hooks adapted in normal operative position to engage the hooks on the first said member and being laterally compressible and adapted in compressed releasing position to pass between the hooks of the first said member and out of engagement therewith, the second said member being bent at or near its center to form an eye adapted in operative position to engage the tongue of the first said member, and the second said member being provided with attaching portions for securing said second member to the apparel or article for the use of which it is intended.

811,006. **CONVERTER.** GEORGE T. WALKER, Washington, D. C. Filed Jan. 16, 1905. Serial No. 240,620.

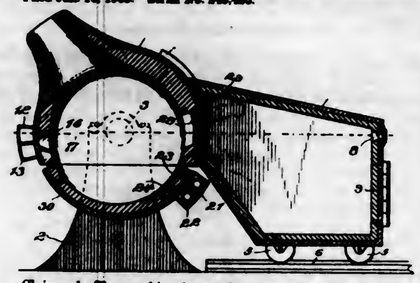

Claim.—1. The combination with a converter, of a slag-receptacle associated therewith, said slag-receptacle being arranged in close contact with said converter in such manner as to exclude the air from said receptacle as far as possible, means in said converter for agitating the metal, and means for removing the slag and impurities from the metal in the converter into the slag-receptacle, substantially as described.

2. The combination with a converter of a slag-receptacle associated therewith, means for facilitating a close contact between said converter and said slag-receptacle in order to exclude the air from said slag-receptacle as far as possible, and means in said converter for removing the slag and impurities from the converter into said slag-receptacle, substantially as described.

3. The combination with a converter of a slag-receptacle associated therewith, said slag-receptacle being constructed to form a close contact with said converter to exclude the air therefrom as far as possible, a double set of twyers in said converter for leading air into the metal to agitate and purify the same, and means for driving the impurities from the metal into the slag-receptacle, substantially as described.

4. The combination with a converter, of a slag-receptacle associated therewith, said converter being provided with an opening leading into said slag-receptacle, a double series of twyers in said converter constructed to lead air or gases into the metal to agitate and purify the same, and a double series of twyers in said converter constructed and arranged to drive the impurities from the surface of the metal into the said slag-receptacle, substantially as described.

5. A converter having twyers arranged for agitating the metal, said converter being provided with an opening therein, and twyers independent of the agitating-twyers for driving the impurities from the metal through the said opening in the converter, substantially as described.

6. The combination with a converter, of a double series of twyers arranged one above the other, and so located as to lead air to the converter below the surface of the metal, to agitate the metal and to drive the slag and impurities to the top thereof, a double series of twyers arranged one above the other and so located as to lead air into the converter against the surface of the metal to drive the slag and impurities therefrom, substantially as described.

7. A converter substantially rectangular in horizontal section, twyers arranged to lead air into the converter below the surface of the metal to agitate the same, and twyers arranged to lead air into the converter against the surface of the metal to drive the slag and impurities therefrom, said converter being provided with an opening through which the slag and impurities are driven, substantially as described.

8. The combination with a converter, of a slag-receptacle associated therewith, said slag-receptacle being constructed to form a close contact with said converter in order to exclude the air from said slag-receptacle as far as possible, said converter being provided with an opening leading into said slag-receptacle, and means in said slag-receptacle for allowing a view of the interior of the converter through the said opening therein, substantially as described.

811,007. **SELF-FEEDING ATTACHMENT FOR THRESHING-MACHINES.** JAMES O. WALKER, Hood, Oreg. Filed June 20, 1902. Renewed Aug. 12, 1905. Serial No. 274,612.

Claim.—The combination with a downwardly and forwardly traveling conveyer, of triangular-shaped brackets arranged adjacent the lower forward end of the conveyer and comprising downwardly-inclined beams, a spiked drum rotatably journaled at the upper ends of the brackets, a second spiked drum journaled on the inclined beams intermediate their ends, the said drums being transverse to the conveyer and in a plane approximately parallel to that of the conveyer, a third spiked drum journaled in the brackets below the plane of the conveyer and in a perpendicular plane intermediate the two first-mentioned drums, and means for driving the conveyer and drums.

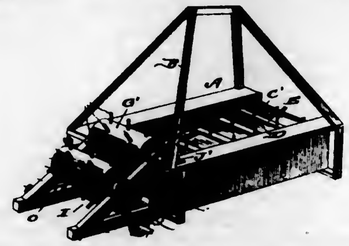

811,008. **PHOTO-HOLDER.** JODIE WALLICK, Sumpter, Oreg. Filed May 23, 1905. Serial No. 261,007.

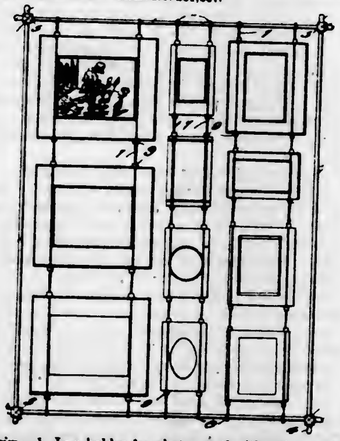

Claim.—1. In a holder for photos or the like, the combination of a frame composed of sides, a plurality of stripe connecting said sides, and members arranged for movement longitudinally of said stripe and coöperating to support photos thereon.

2. In a holder for photos or the like, the combination of a frame, a plurality of stripe connecting sides of the frame and adjustable toward and from each other, and members arranged for movement longitudinally of said stripe and coöperating to support photos thereon.

3. In a holder for photos or the like, the combination of a supporting-frame embodying a plurality of sides, double supporting-stripe connecting sides of said frame and adjustable toward and from each other, said supporting-stripe having end portions thereof looped about sides of the frame for connection therewith and admitting of adjustment of the double stripe toward and from each other, and buttons arranged for movement longitudinally of the double stripe and coöperating therewith to support a photo thereon.

4. In a holder for photos or the like, the combination of a frame comprising sides, a top and bottom, the sides having openings through which end portions of the top and bottom parts pass, knobs fastened to the top and bottom parts at the ends and securing the same to the sides, double photo-supporting wires having loops at the ends thereof receiving the top and bottom parts of the frame for connection therewith, said loops permitting of adjustment of the double wires toward and from each other, and buttons slidable longitudinally of the double wires to coöperate therewith in holding photos thereon.

811,009. RESAWING BAND-MILL. JOHN WALTON, Milwaukee, Wis. Filed Sept. 22, 1904. Serial No. 226,429.

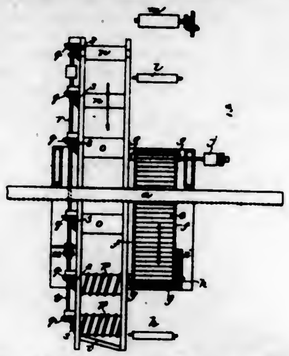

Claim.—1. In a resawing band-mill the combination with the band-wheels and the saw having its working span between said wheels horizontally disposed, a vertically-adjustable feeding-conveyer arranged and movable transversely to the saw and a returning-conveyer arranged alongside of the feeding-conveyer with its receiving end approximately at the level of the delivery end of the feeding-conveyer and its delivery end above the receiving end of said feeding-conveyer and adapted to elevate and return the material to be resawed over the working span of the saw, substantially as described.

2. In a resawing band-mill the combination with the saw and its carrying-wheels, of means for feeding the material to the lower span of the saw, means arranged alongside of the feeding means for returning the material to be resawed between said wheels and between and out of contact with the spans of the saw, substantially as described.

3. In a resawing band-mill the combination with the band-wheels and the saw mounted thereon with its spans horizontally disposed, of means adapted to feed the material to be sawed to the lower span of the saw and means arranged alongside of said feeding means and adapted to return the material to be resawed over and out of contact with the lower span of the saw and between the band-wheels, substantially as described.

4. In a resawing band-mill the combination with a horizontally-disposed band-saw, its carrying-wheels and a feeding-conveyer arranged and movable transversely to the saw, of means for returning the material to be resawed over the working span of the saw between the band-wheels and for delivering it sidewise to the receiving end of said conveyer, substantially as described.

5. In a resawing band-mill the combination with the band-wheels and the band-saw having its spans between said wheels arranged horizontally, of a vertically-adjustable feeding-conveyer arranged below and transversely to the lower span of the saw, and a series of rollers arranged alongside of said conveyer and adapted to return the material to be resawed over the lower span of the saw to the receiving end of said conveyer, the upper sides of the rollers adjacent to the saw projecting above the plane of its lower span, substantially as described.

6. In a resawing band-mill the combination with a horizontally-disposed band-saw and its supporting and driving wheels, of a series of rollers for returning the material to be resawed over the working span of the saw to the feeding-point, the rollers at the rear end of the series having their upper sides approximately on a level with the working span of the saw, the rollers on each side of the saw projecting above said level and the rollers at the front end of the series having screws or spirals adapted to move the returning material sidewise into position to be fed to the saw, substantially as described.

7. In a resawing band-mill the combination with the saw and its carrying-wheels arranged to support the working span of the saw in a horizontal position, of a feeding-conveyer arranged transversely to the saw, a series of rollers arranged alongside of said conveyer to return the material to be resawed over the working span of the saw to the starting-point, the rollers at the front end of the series having screws or spirals adapted to move the material sidewise to the receiving end of said conveyer, and a slanting step in front of the screw-rollers, substantially as described.

8. In a resawing band-mill the combination with the saw and its carrying-wheels arranged to support the working span of the saw horizontally, of means for feeding material to the saw, a series of rollers for returning the material to be resawed to the starting-point, the front rollers of the series having screws or spirals for moving the returning material sidewise to the feeding means, means for turning said rollers and means for connecting and disconnecting the screw-rollers with the driving means at will, substantially as described

811,010. PHONOGRAPH SPEED-INDEX. PETER WEBER, East Orange, N. J., assignor to New Jersey Patent Company, Orange, N. J., a Corporation of New Jersey. Filed June 20, 1904. Serial No. 214,896.

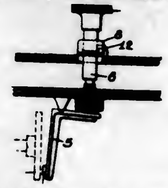

Claim.—1. The combination with the governor-disk, governing-lever and adjusting-screw of a spring-operated phonograph, of an index carried by the adjusting-screw and coöperating with a stationary scale, and means for preventing the adjusting-screw from being turned more than a complete revolution, substantially as set forth.

2. In a phonograph or the like, and in combination with the speed-adjusting screw, of a finger adjustably carried by the screw, and a stop in the path of said finger.

811,011. NUT-LOCK. JOHN C. WEEMS, Dillards, Ala. Filed Apr. 20, 1905. Serial No. 256,573.

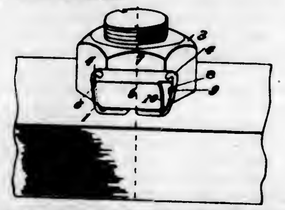

Claim.—1. In a nut-lock, the combination of a bolt, a nut having a flattened side, a washer formed by bending a piece of spring metal around said bolt and having means to prevent its turning thereon, the ends of said piece of metal being bent back upon themselves and upward, and a locking-plate having depressions in its ends to engage said upwardly-extending ends and adapted to fit against a flattened side of the nut to prevent it from turning.

2. In a nut-lock, the combination of a bolt, a nut having a flattened side, a washer formed by bending a piece of spring metal around said bolt and having means to prevent its turning thereon, the ends of said piece of metal being bent back upon themselves and upward, and having inwardly-projecting lugs or hooks on their ends, and a locking-plate fitting under said inwardly-projecting lugs and having depressions in its ends to engage said upwardly-extending arms of the spring metal, and adapted to fit against a flattened side of the nut to prevent it from turning.

3. In a nut-lock, the combination of a bolt, a nut having a flattened side, a washer formed by bending a piece of spring metal around said bolt and having means to prevent its turning thereon, the ends of said piece of metal being bent back upon themselves and upward, and having inwardly-projecting lugs or hooks on their ends, and a locking-plate fitting under said inwardly-projecting lugs and having depressions in its ends to engage said upwardly-extending ends of the spring metal and adapted to fit against a flattened side of the nut to prevent it from turning, and a pin located in a transverse groove in the end of the locking-plate and under the engaging arms of spring metal to enable them to be easily forced apart to release the locking-plate.

4. In a nut-lock, the combination of a bolt, a nut having a flattened side, a washer formed by bending a piece of spring metal around said bolt and having means to prevent its turning thereon, the ends of said piece of metal being bent back upon themselves and upward, and having inwardly-projecting lugs or hooks on their ends.

and a locking-plate fitting under said inwardly-projecting lugs and having depressions in its ends to engage said upwardly-extending ends of the spring metal and adapted to fit against a flattened side of the nut to prevent it from turning and also having a shoulder on one of its sides, and a pin located in a transverse groove in the end of the locking-plate and under the engaging arms of spring metal to enable them to be easily forced apart to release the locking-plate, the before-mentioned shoulder being adapted to be used as a rest for a tool or lever used to force said pin outward.

5. In a nut-lock, the combination of a bolt, a nut having a flattened side, a washer formed by bending a piece of spring metal around said bolt and having means to prevent its turning thereon, the ends of said piece of metal being bent back upon themselves and upward and having inwardly-projecting lugs or hooks on their ends, and a locking-plate to fit against a flattened side of the nut and having depressions in its ends to engage said upwardly-projecting arms of spring metal and also being formed with inclined ends which serve as a wedge to enable it to be easily forced into position under the inwardly-projecting lugs.

6. In a nut-lock, the combination of a bolt, a nut having a flattened side, a washer formed by bending a piece of spring metal around said bolt and having means to prevent its turning thereon, the ends of said piece of metal being bent back upon themselves and upward and having inwardly-projecting lugs or hooks on their ends, and a locking-plate to fit against a flattened side of the nut and having depressions in its ends to engage said upwardly-projecting arms of spring metal and also being formed with inclined sides which act like a wedge to insure a close engagement with the nut.

7. In a nut-lock, the combination of a member for locking the nut having companion spaced spring-arms, and a lock-plate fitted against a side of the nut and held in place by spring engagement of said arms.

8. In a nut-lock, a washer comprising a wire having its middle portions bent to encircle the bolt and its end portions extended to form spring-arms, and a lock fitted against an edge of the nut and held between the said spring-arms.

811,012. LAY-MOTION FOR LOOMS. ALBERT B. WEISENBORN, Appleton, Wis. Filed June 3, 1905. Serial No. 263,574.

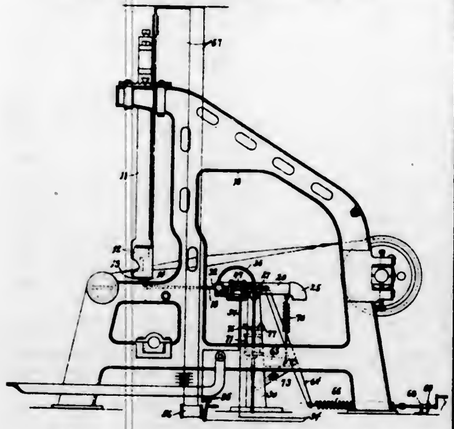

Claim.—1. A lay-motion for looms, comprising a fluid-pressure lay-moving device, and electrical controlling means therefor with its circuit-closer located within free access of the weaver.

2. A lay-motion for looms, comprising a fluid-pressure lay-moving device, and electrical controlling means therefor with its circuit-closer located on the lay-cap of the loom.

3. A lay-motion for looms, comprising a fluid-pressure lay-moving device, and electrical controlling means therefor with its circuit-closer formed by a series of push-buttons on the lay-cap of the loom at different distances from the middle thereof.

4. A lay-motion for looms, comprising a fluid-pressure lay moving and retaining device, and electrical controlling means therefor with its circuit-closer formed of a push-button at each end of the lay-cap of the loom.

5. A lay-motion for looms, comprising a fluid-pressure lay-moving device, and electrical controlling means therefor with its circuit-closer operated by the pressure of the weaver's hand in the usual manipulation of the lay-cap for producing the hand operation of the lay.

6. A lay-motion for looms, comprising a fluid-pressure lay-moving device, fluid-pressure-controlling valves therefor, an electrical valve-operating means, and an electrical controlling-circuit for said valve-operating means having its circuit-closer located on the lay in convenient access to the weaver.

7. A lay-motion for looms, comprising a fluid-pressure lay-moving device, an electrical controlling means therefor having its circuit-closer located in convenient access to the weaver, and a spring lay-moving device opposing the action of the fluid-pressure lay-moving device and adapted to move the lay in the opposite direction to the movement of the lay produced by said fluid-pressure lay-moving device.

8. A lay-motion for looms, comprising a fluid-pressure lay-moving device adapted to produce the rearward movement of the lay, an electrical controlling means therefor having its circuit-closer located in convenient access to the weaver, and a spring lay-moving device adapted to produce the forward movement of the lay.

9. A lay-motion for looms, comprising a fluid-pressure lay-moving device, valves controlling the admission and exhaust of pressure fluid thereof, a lever for actuating said valves, a magnet adapted to cause the movement of the lever, and an electrical controlling-circuit for said magnet having its circuit-closer located in convenient access to the weaver.

10. A lay-motion for looms, comprising a fluid-pressure lay-moving device, pressure-fluid supply and exhaust valves therefor, said valves having exposed valve-stems, a lever pivotally mounted between said valve-stems and adapted when swung in one direction to open the supply-valve and permit the exhaust-valve to close and when swung in the other direction to open the exhaust-valve and permit the supply-valve to close, a magnet for producing the swinging movements of the lever, and an electrical controlling-circuit for said magnet having its circuit-closer located in convenient access to the weaver.

11. A lay-motion for looms, comprising a pressure-fluid lay-moving device formed by a suitably-mounted cylinder with a piston having connection with the lay, said cylinder having a passage-way in connection therewith, a spring-pressed slidably-mounted valve-stem carrying a pressure-fluid-supply valve for the passage-way, a spring-pressed slidably-mounted valve-stem carrying an exhaust-valve for the passage-way, said valve-stems having exposed ends, a lever pivotally mounted between the exposed ends of the valve-stems and adapted when swung in one direction to engage one valve-stem and open the supply-valve thereby and when swung in another direction to engage the other valve-stem and open the exhaust-valve thereby, a magnet for producing the swinging movements of the lever, and an electrical controlling-circuit for the magnet having its circuit-closer located in convenient access to the weaver.

12. A lay-motion for looms, comprising a fluid-pressure lay-moving device, a pressure-fluid supply and exhaust valve mechanism therefor having exposed valve-stems, a valve-lever pivotally mounted between the exposed valve-stems and adapted to engage one or the other thereof as it is moved in one direction or the other, a magnet-frame, a magnet mounted thereon, an armature-lever pivoted to the magnet-frame and having connection with the valve-lever, whereby the attraction of the armature-lever will cause the valve-lever to move in one direction, a bar adjustably mounted on the magnet-frame and passing through the armature-lever, a stop on the bar for limiting the movement of the armature-lever away from the magnet, and a coil-spring surrounding the bar and bearing on the armature-lever to force said armature-lever away from the magnet when the magnet is deënergized and thereby produce a movement of the valve-lever in the other direction, and an electrical controlling-circuit for the magnet having its circuit-closer in convenient access to the weaver.

13. A lay-motion for looms, comprising a pressure-fluid lay-moving device, consisting of a fluid-pressure cylinder having a pivotal support, a piston operating in the cylinder and having a pivotal connection with the lay, and a controlling system for the supply and exhaust of pressure fluid of the cylinder having its operating means located in convenient access to the weaver.

14. A lay-motion for looms, comprising a standard, a bearing having a pivotal support on the standard, a fluid-pressure cylinder having a trunnion pivotally mounted in the bearing, a piston operating in the cylinder, a bolt to which the piston is pivotally connected, said bolt having a pivotal connection with the lay, and an electrically-

controlled pressure-fluid valve mechanism for the cylinder having its circuit-closer in convenient access to the weaver.

15. A lay-motion for looms, comprising a standard, a fluid-pressure cylinder pivotally mounted thereon, a piston operating in the cylinder and having connection with the lay, an electrically-controlled valve mechanism on the cylinder having its circuit-closer located within convenient access to the weaver, and a spring connecting the cylinder with the standard to counterbalance the weight of the valve mechanism.

16. A lay-motion for looms, comprising a suitable pivotally-mounted fluid-pressure cylinder, a piston operating therein, a stud to which the piston-rod is connected, a bolt pivotally mounted on the stud, and a cleat connected to the lay and having a swivel connection with the bolt.

17. A lay-motion for looms, comprising a suitable pivotally-mounted fluid-pressure cylinder, a piston operating therein, a stud to which the piston-rod is connected, a bolt pivotally mounted on the stud, a cleat connected to the lay and having a swivel connection with the bolt, a connecting-rod pivotally mounted on the stud, and a spring-operated lay-moving mechanism connected to the connecting-rod.

18. A lay-motion for looms, comprising a standard, a fluid-pressure cylinder pivotally mounted thereon, a piston operating in the cylinder and having a piston-rod with a forked end, a stud connected to the forked end of the piston-rod, a bolt pivotally mounted on the stud between the fork members of the end of the piston-rod, a cleat on the lay having a swivel connection with the bolt, a connecting-rod pivoted to the stud, a rock-lever pivotally mounted on the standard and connected to the connecting-rod, and an adjustable spring connected to the rock-lever.

19. A lay-motion for looms, comprising a standard, a fluid-pressure cylinder pivotally mounted thereon, a piston operating in the cylinder and having a pivotal connection with the lay, a connecting-rod also having a pivotal connection with the lay, a rock-lever pivotally mounted on the standard and connected to the connecting-rod, and a dash-pot having its stem in the path of movement of the rock-lever.

20. A lay-motion for looms, comprising a standard, a fluid-pressure cylinder pivotally mounted thereon, a piston operating in the cylinder and having a pivotal connection with the lay, a connecting-rod also having a pivotal connection with the lay, a rock-lever pivotally mounted on the standard and connected to the connecting-rod, a dash-pot having its stem in the path of movement of the rock-lever, and an adjustable stop adapted to be engaged by the stem of the dash-pot to limit the movement of the lay.

21. A lay-motion for loom, comprising a standard, a fluid-pressure cylinder pivotally mounted thereon, a piston operating in the cylinder and having a pivotal connection with the lay, a connecting-rod also having a pivotal connection with the lay, a rock-lever pivotally mounted on the standard and connected to the connecting-rod, a dash-pot having its stem passing entirely therethrough with its lower end in the path of movement of a part of the rock-lever, an adjustable stop adapted to be engaged by the other end of the dash-pot stem to limit the movement of the lay, and a petcock and check-valve connected to the dash-pot.

22. A lay-motion for looms, comprising a fluid-pressure lay-moving device, an electrical controlling means therefor having its circuit-closer formed by a sheet-metal shell secured to the lay-cap of the loom, spring-strips connected thereto, buttons mounted on the spring-strips and projecting through openings in the sheet-metal shell, a strip of insulating material mounted on the sheet-metal shell, and a series of spring-contacts carried thereby.

23. A lay-motion for looms, comprising a fluid-pressure lay-moving device, an electrical controlling means therefor consisting of a valve-operating magnet, an electrical circuit therefor containing a relay-switch, and a second electrical circuit including the magnet of the relay-switch and having its circuit-closer located within convenient access to the weaver.

811,013. DOOR-LOCK. THEODOR WEISSER, Heidelberg, Germany. Filed Mar. 20, 1905. Serial No. 250,668.

Claim.—An improved lock adapted to be used as a right or left hand and as a rim or cupboard or mortise lock, having a tumbler *b* carrying a star or the like formed with three heads *a*, *b*, *c*, each serving as a latch or bolt for a particular purpose, said star being rotatably attached to the tumbler by a screw *g* and adapted to be fixed by a screw H on said tumbler so that either the head *a*, serving as a lifting-latch, or either of the other tapered heads *b*, *c*, serving as right and left hand sliding bolts respectively, may be made to project through the side of the case, all for the purposes and substantially as described and illustrated.

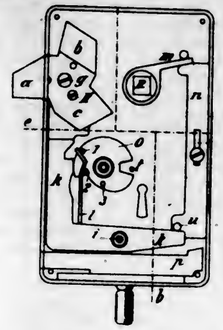

811,014. HOPPLE. FRANK D. WELLER, Toledo, Ohio. Filed Mar. 24, 1905. Serial No. 251,731.

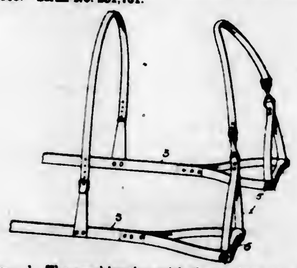

Claim.—1. The combination with the leg-loop of a hopple, of a rotatable element mounted therein to have contact with the leg.

2. The combination with the leg-loop of a hopple, of a rotatable element mounted therein and having a peripherally-concaved surface for contact with the leg.

3. The combination with the leg-loop of a hopple, of a spindle mounted transversely of the outer end of the loop and firmly spacing the sides thereof apart, and a rotatable element mounted on said spindle between the sides of the loop.

4. In a hopple, the leg-loops each provided at the outer ends thereof with a rotatable element adapted to have contact with the legs and to retain the sides of the loops out of frictional engagement therewith.

5. A hopple, comprising leg-loops and supporting-straps therefor, said leg-loops each consisting of side straps or members, a spindle mounted in the outer ends of said straps or members and spacing them firmly apart, and a rotatable element mounted on the spindle between the straps or members.

811,015. VEHICLE-RECORDER. JOHN T. WHALEN, Brooklyn, N. Y. Filed May 27, 1905. Serial No. 262,696.

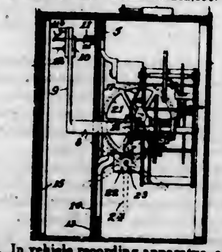

Claim.—1. In vehicle-recording apparatus, a time-train having a prime mover and a shaft rotated thereby, a stationary record-disk having divisions of time indicated thereon in convolute form, a marker, means actuated by said shaft to rotate said marker, means imparting radial movement to said marker in its rotation, and mechanical means controlled by the movement of the vehicle for intermittently moving said marker toward said disk.

2. In vehicle recording apparatus, a time-train having a prime mover and a shaft rotated thereby, a stationary record-disk having divisions of time indicated thereon in convolute form, a slidable extension for said shaft, a radial arm carried by said extension and a marker extending from said arm, together with means imparting convolute movement to said marker in its rotation.

3. In vehicle recording apparatus, a time-train having a prime mover and a shaft rotated thereby, a stationary record-disk having divisions of time indicated thereon in convolute form, a slidable extension for said shaft, a radial arm carried by said extension and a marker extending from said arm, together with means imparting convolute movement to said marker in its rotation, and means controlled by the movement of the vehicle for intermittently moving said marker toward said disk.

4. In vehicle recording apparatus, a time-train having a prime mover and a shaft rotated thereby, a sleeve rotatable with and slidable upon said shaft, an arm extending radially from said sleeve, a slide upon said arm, carrying on opposite sides a pointer and a wheel, a disk having a convolute groove or way to receive said wheel, a disk having divisions of time marked thereon in convolute form, means controlled by the movement of the vehicle to intermittently impel said pointer against said disk, means retracting said pointer, and means retaining the wheel within its groove or way during the impulses of the pointer.

5. In vehicle recording apparatus, a record-disk having divisions of time indicated thereon in convolute form, a marker adapted to rotate convolutely in proximity to said disk, a time-train to actuate said marker, a cam to move said marker intermittently against said disk, to register indications thereon, and means communicating motion from a wheel of the vehicle to said marker.

6. In vehicle recording apparatus, a record-disk having divisions of time indicated thereon in convolute form, a marker adapted to rotate convolutely in proximity to said disk, a time-train to actuate said marker, a cam to move said marker intermittently against said disk, to register indications thereon, means retracting said marker, and means communicating motion from a wheel of the vehicle to said cam.

7. In vehicle recording apparatus, a record-disk, a duplex marker adapted to rotate in proximity to said disk, separate cams adapted to move said marker intermittently against said disk in manner to register different indications thereon, and means communicating motion from a wheel of the vehicle to said cams, causing them respectively to actuate the marker at the completion of set less and greater distances traveled.

8. In vehicle recording apparatus, a record-disk having divisions of time indicated thereon in convolute form, a marker adapted to rotate convolutely in proximity to said disk, a time-train to actuate said marker, a cam to move said marker intermittently against said disk, to register indications thereon, a cam-shaft, an audible signal device, means upon said cam-shaft to intermittently actuate said signal, and means communicating motion from a wheel of the vehicle to said cam-shaft.

9. In vehicle recording apparatus, a record-disk having divisions of time indicated thereon in convolute form, a marker adapted to rotate convolutely in proximity to said disk, a time-train to actuate said marker, a cam-shaft, means communicating motion from a wheel of the vehicle to said cam-shaft, a cam loose upon said cam-shaft to move said marker intermittently against said disk, means upon said cam-shaft to rotate the cam therewith, and tensional means for moving the cam at the end of the marker movement in advance of the rotation of the cam-shaft.

811,016. BOILER-TUBE. JOHN WHYTE and ARTHUR M. CROSSLEY, Glasgow, Scotland. Filed July 12, 1905. Serial No. 269,314.

Claim.—A boiler-tube provided throughout its length with a continuously and axially straight passage said tube having offset sections whose axes are parallel with the axis of said tube, substantially as described.

811,017. PROCESS OF MAKING MANTLES. OSCAR WIEDENFELD, Jersey City, N. J. Filed Mar. 6, 1905. Serial No. 248,688.

Claim.—1. The herein-described process of producing textile fabric for incandescent mantles, which consists in forming the same from raw threads containing impurities detrimental to the production of perfect impregnation, but beneficial to the formation of the fabric, then removing the impurities by subjecting the fabric to a suitable reagent, and removing the reagent together with the impurities, and then impregnating with incandescing material.

2. The herein-described process of producing textile fabric for incandescent mantles, which consists in forming the same from raw threads containing impurities detrimental to the production of perfect impregnation, but beneficial to the formation of the fabric, then removing the impurities by subjecting the fabric to a suitable bleaching reagent, and removing the bleaching reagent together with the impurities, and then impregnating with incandescing material.

3. The herein-described process of producing textile fabric for incandescent mantles, which consists in forming the same from threads containing impurities detrimental to the production of perfect impregnation, but beneficial to the formation of the fabric, then removing the impurities by subjecting the fabric to a suitable reagent, and removing the reagent together with the impurities, and then impregnating with incandescing material.

811,018. HOLDER FOR INCANDESCING MANTLES. OSCAR WIEDENFELD, Jersey City, N. J. Filed Mar. 7, 1905. Serial No. 249,143.

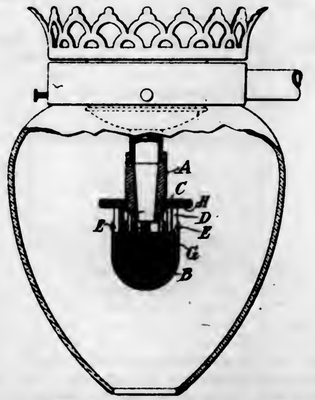

Claim.—1. In combination a ring and a mantle attached thereto with its edge spaced apart from the ring to permit the escape of products of combustion.

2. A holder for mantles adapted for attachment to a mantle and adapted to screw on the end of a gas-tip, whereby the mantle is held rigidly on the tip and is adjustable in height.

3. In combination, a mantle-holder for depending mantles and having a plurality of depending fingers, and a mantle depending from said holder and having its upper edge held against the lower ends of said depending fingers whereby it is supported and held from collapsing inward by said fingers.

4. A holder for depending mantles having a ring adapted to be fastened on the gas-tip, and a plurality of depending fingers the ends of which are adapted to engage and support the mantle.

5. In combination, a holder having a plurality of points of suspension spaced apart from each other, and a mantle attached to the holder by a cord passing around and holding the edge of the mantle against said points.

6. In combination a ring and a mantle suspended with its upper edge a distance below said ring, spaces being left between said ring and the edge of the mantle for the escape of products of combustion.

7. A holder for depending mantles having a plurality of depending fingers D, the lower ends of which are provided with groove G for holding the edge of the mantle, and which are spaced apart

from each other, and having a ring H at the upper end adapted to deflect the gases downward, said holder having a provision for fastening it on a gas-tip.

811,019. GATE. JOHN J. WILLAHAN, Canton, Ohio. Filed June 27, 1905. Serial No. 267,269.

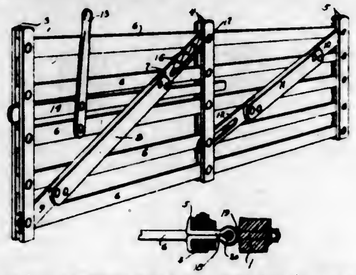

Claim.—The combination of a gate consisting of a frame composed of horizontal bars and vertical members, the vertical members located at the ends of the horizontal bars and intermediate their ends respectively, said parts pivotally connected together, a notched bar located between the intermediate vertical members and adapted to move longitudinally, means for holding the notched bar against longitudinal movement, a pivoted bar provided with a slot at its free end, said notched bar and slotted bar pivoted at their top and bottom ends respectively, a sliding catch-bolt and an operating-handle pivotally attached to said catch-bolt, substantially as and for the purpose specified.

811,020. SAD-IRON HANDLE. CARL WINTER, Chicago, Ill., assignor to Carl Gaebel, Chicago, Ill. Filed May 23, 1904. Serial No. 209,176.

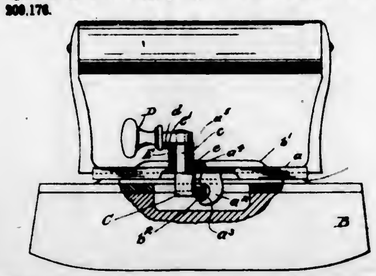

Claim.—1. The combination with a sad-iron handle, of a pair of locking-jaws arranged at some distance apart and adapted to engage with the locking-bar of a sad-iron, a vertically-pivoted locking-cam, also adapted to engage with said bar on the opposite side from said jaws and at a point about midway between said jaws, means for holding said cam in locking position and a handle for releasing said cam.

2. The combination with a sad-iron handle, of depending locking-jaws having beveled engaging surfaces for engaging with a locking-bar of a sad-iron, a vertically-pivoted cam member having a beveled edge for convenience in placing the handle in engaging position a spring for urging said cam into locking position and a handle for releasing said cam.

3. The combination with a sad-iron provided with a locking-bar, of a handle, two depending lugs on said handle provided with inclined surfaces adapted to engage with said locking-bar, a vertically-pivoted cam member adapted to engage with the opposite side of said locking-bar at a point about midway between said lugs, a spring for holding said cam in locking position, and a handle for turning said cam, the arrangement being such that the cam will coact with the beveled surfaces of the lugs to draw the handle into close engagement with the sad-iron and rigidly hold the same and will also take up any lost motion due to wear or different-sized locking-bars.

811,021. FIREMAN'S PROTECTIVE DRESS. CHARLES W. WOOD, New Orleans, La. Filed Apr. 17, 1905. Serial No. 256,056.

Claim.—In a fireman's protective dress, the combination of waterproof clothing, a helmet, a cap over said helmet, a water-pipe connected to said cap, an air-pipe connected to said helmet, and a union joint, said air-pipe being contained within said water-pipe except at or near the point where it enters said helmet, substantially as described.

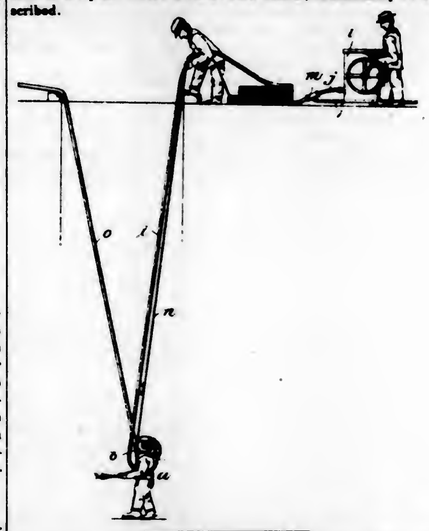

811,022. CONCRETE FENCE-POST. HERBERT S. YOUNG, Bayrout, N. D. Filed June 1, 1905. Serial No. 263,216.

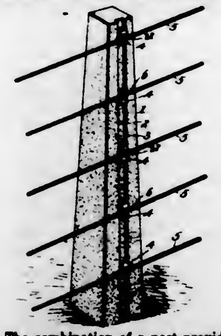

Claim.—1. The combination of a post provided with a recess having opposite walls, a clamping-plate fitted between the walls and adapted to force a wire into the recess to form an abrupt bend for preventing the wire from slipping, and fastening means for adjustably securing the clamping-plate to the post.

2. The combination of a post having a recess and provided with a groove extending across the walls of the recess and forming a wire-receiving seat, and fastening means having a clamping-plate fitting in the recess and forcing the wire into the recess and the groove, whereby an abrupt bend is formed in the wire to prevent the latter from slipping, said clamping-plate being retained from movement by the recess.

3. The combination of a post provided with a longitudinal recess and having transverse grooves extending across the recess and terminating short of the opposite side faces of the post, clamping-plates fitted between the opposite walls of the recess and adapted to force wires into the same to form abrupt bends, and fastening means piercing the post and the clamping-plates and adjustably securing the latter to the former.

811,023. SLATTED CRATE. HENRY H. BACHUS, Detroit, Mich. Filed Apr. 7, 1903. Serial No. 151,514.

Claim.—1. In a slatted box or package, the combination of a horizontally-slatted fabric comprising the walls of the package, the upper slats of the wall being relatively thin and light and the lower slats of the wall being reinforced for their entire length by an additional slat, or slats, forming a double-slatted wall at or adjacent the bottom.

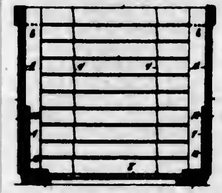

2. In a box, or package, the combination of a slatted fabric forming the walls of the package the slats of the fabric being bound together by metal strands, the slats at the lower edge of the wall being doubled for their entire length to add lateral strength thereto, the metal strands embracing the double slats to bind them firmly together.

3. In a box, or package, the combination of the slatted fabric forming the walls of the package, posts at the corners of said package supporting said slats, a reinforcing-slat added to the inner face of the lower horizontal slat of the wall and extending longitudinally thereof, said posts having recesses in their face to receive said reinforcing-slat.

4. In a box, or package, the combination of a fabric forming the walls of the package, said fabric comprising horizontal slats bound together by metal strands posts uniting the walls at the corners, the slats forming the upper portion of the wall being thin and the slats at the lower portion of the wall being reinforced by additional horizontal slats extending between the posts parallel with and secured to the main slat.

811,024. LUBRICATOR. EDGAR W. BAIRD and JOHN P. DURKIN, Philadelphia, Pa., assignors to Standard Automatic Lubricator Company, Camden, N. J., a Corporation of New Jersey. Filed Dec. 23, 1904. Serial No. 238,066.

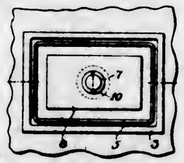

Claim.—1. A lubricator having a valve comprising a coil that is closed to prevent feeding while at rest and opened by vibration to permit feeding.

2. A lubricator comprising an oil-receptacle having an outlet, a coiled spring connected with said outlet and normally cutting off the flow thereto from said receptacle, and a weight supported by said spring.

3. A lubricator comprising an oil-receptacle having an outlet, a spring having normally closed coils adapted for preventing flow from said receptacle to said outlet, and means for effecting capillary feeding within said spring.

4. A lubricator comprising a receptacle having an opening, a cylindrical spring having normally closed coils connected to said opening, wicking within said spring and a bearing to which said wicking feeds.

5. The combination of a receptacle having an opening, with a valve comprising a coil that normally closes said opening and is operated by vibration.

811,025. THRESHING-MACHINE. BETSY C. BAKER, Minneapolis, Minn. Filed May 11, 1903. Serial No. 156,889.

Claim.—1. In a threshing-machine, a beater comprising a revoluble casing provided with a series of bars extending lengthwise thereof and having inwardly-curved plates extending lengthwise of the beater between said bars, said bars being formed with openings therethrough, and a series of beater-fingers projecting through said bars and a crank-shaft within the casing of said beater whereon said beater-fingers are revolubly mounted.

2. In a threshing-machine, the combination of a threshing-cylinder, its concave, means located in the forward and upper portion of the machine for moving the straw upwardly and rearwardly from the concave, a straw rack or carrier extending along the lower part of the machine, means for delivering an air-blast to the straw as it falls from the rear end of the upper straw-moving mechanism to the front end of the lower straw-moving mechanism, means for collecting the grain beneath the lower straw-moving mechanism, grain-cleaning mechanism located above the rear end of the lower straw-moving mechanism and means for conveying the grain from beneath the lower straw-moving mechanism to the elevated grain-cleaning mechanism.

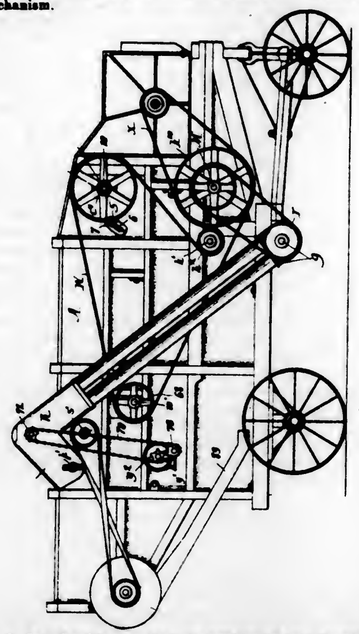

3. In a threshing-machine, the combination of a threshing-cylinder, its concave, means for moving the straw rearwardly along the upper portion of the machine from said concave, a straw rack or carrier extending along the lower and rear part of the machine, means for delivering an air-blast to the straw as it falls to the front end of the lower straw rack or carrier, a shield extending downwardly from the upper part of the machine opposite the air-blast passage, grain-cleaning mechanism located at the rear of said shield and above the rear end of the lower straw rack or carrier, means for collecting the grain beneath said straw rack or carrier and means for conveying the grain from beneath said lower straw rack or carrier to said elevated cleaning mechanism at the rear of the machine.

4. A threshing-machine comprising a threshing-cylinder and its concave, a grain-receiving pan or conveyer beneath said concave, an auger-casing into which said pan or conveyer discharges, a short straw rack or carrier arranged in the upper part of the machine, an inclined grain-receiving pan or conveyer located beneath said straw rack or carrier and arranged to discharge onto the pan or conveyer beneath the concave, a lower straw rack or carrier arranged along the lower part of the rear of the machine, a grain-conveyer extending beneath said lower straw rack or carrier and arranged to discharge into said auger-casing and means for delivering an air-blast to the straw as it passes from the upper to the lower straw rack or carrier.

5. A threshing-machine comprising a threshing-cylinder, its concave, a beater and its grate at the rear of said cylinder, a short straw rack or carrier arranged adjacent the beater-grate and in position to receive the straw as it passes therefrom, a grain-receiving pan or plate beneath said straw rack or carrier, a fan-casing and fan arranged below said straw rack or carrier and a second straw rack or carrier extending along the rear portion of the machine adjacent its bottom and a conveyer extending beneath said lower straw rack or carrier.

6. A threshing-machine comprising in combination a threshing-cylinder, its concave, means located in the forward and upper portion of the machine for moving the straw rearwardly and upwardly from the concave, a straw rack or carrier extending along the lower part of the machine, means for delivering an air-blast to the straw as it falls from the rear end of the upper straw-moving mechanism to the front end of the lower straw-moving mechanism, a grain-auger casing located in the rear part of the machine above the lower straw rack or carrier, means for elevating the grain, &c., first separated from the straw from below the lower straw rack or carrier to the upper grain-auger casing, a drum or casing arranged to receive the grain from the upper end of said elevating means and extending transversely of the upper part of the machine and provided with an opening through which the grain will be discharged, a shoe located below and at the rear of said drum or casing and provided with one or more sieves, an air-blast pipe arranged at the front of said shoe and serving to deliver a blast of air through the grain as it falls from said drum or casing, a receptacle below said air-blast pipe for the cleaned grain, and a second receptacle adjacent the lower end of the shoe-bottom to receive the material from the shoe.

7. A threshing-machine comprising in combination a threshing-cylinder, its concave, means located in the forward and upper portion of the machine for moving the straw rearwardly and upwardly from the concave, a straw rack or carrier extending along the lower part of the machine, means for delivering an air-blast to the straw as it falls from the rear end of the upper straw-moving mechanism to the front end of the lower straw-moving mechanism, a grain-auger casing wherein the grain, &c., first separated from the straw, is received, an elevator connected with said auger-casing, a drum or casing arranged to receive the grain from the upper end of said elevator and extending transversely of the upper part of the machine above the lower straw-moving mechanism, said drum or casing being provided with an opening through which the grain will be discharged, means for delivering a blast of air through the grain as it falls from said drum or casing, a shoe arranged below and at the rear of said drum or casing and provided with a sieve in its upper portion, and with a receptacle at its rear end to catch the material passing from said sieve, and mechanism whereby the material from said receptacle is returned to the drum or casing to be again subjected to the air-blast.

8. A threshing-machine comprising the combination with the grain-auger casing wherein the grain, &c., first separated from the straw, is received, of an elevator connected with said auger-casing, a drum or casing arranged to receive the grain from the upper end of said elevator, and extending transversely of the upper part of the machine at its rear, and provided with an opening through which the grain will be discharged, means for delivering a blast of air through the grain as it falls from said drum or casing, means for receiving and conveying away the cleaned grain, a shoe extending rearwardly from beneath said drum or casing, and provided at its upper portion with a sieve and at its rear end with a receptacle for the material passing from said sieve, and a cleaner or agitator connected with said receptacle and comprising an expanded casing having revoluble blades therein, and a spout leading from said expanded casing and serving to conduct the material back to the conveyer of the machine.

9. A threshing-machine comprising the combination with the grain-auger casing wherein the grain, &c., first separated from the straw is received, of an elevator connected with said auger-casing, a drum or casing arranged to receive the grain from the upper end of said elevator and extending transversely of the upper part of the machine and provided with an opening through which the grain will be discharged, a shoe arranged at the rear of said drum or casing and provided at its upper portion with a sieve and at its rear with a rack or grating and with a receptacle for the material passing off said sieve, said shoe being provided with a downwardly and forwardly inclined bottom, a receptacle to catch the material passing down said bottom, an air-blast pipe arranged below and in front of the discharge-opening of said drum or casing and a receptacle in front of said shoe to receive the clean grain falling from said casing.

10. A threshing-machine comprising a threshing-cylinder, its concave, means for moving the straw rearwardly from said concave for a short distance along the upper part of the machine, a straw rack or carrier located along the lower part of the machine and extending to the rear thereof, an air-blast pipe located at the front of said lower straw-carrier, suitable means for collecting the grain separated from the straw during its passage in the upper, rear part of the machine above said lowermost straw-carrier, conveyer mechanism for raising the grain to said drum or casing, means for delivering an air-blast to the grain as it falls from said drum or casing and a receptacle for catching the grain as it falls from said drum or casing.

11. A threshing-machine comprising a combination of a threshing-cylinder and concave, means located at the rear of the concave and in the upper, front portion of the machine for conducting the straw from the concave, a deflecting plate or shield located about centrally of the machine and extending across the same from the top toward the bottom, a blast-fan located in front of said shield and arranged to force a blast of air through the straw as it falls from the upper straw-moving mechanism, a straw-carrier located in the bottom and rear portion of the machine below said plate or shield for conveying the straw rearwardly from the machine, a grain-auger casing wherein the grain first separated from the straw is received, an elevator leading upwardly and rearwardly from said grain-auger casing, a drum or casing arranged in the upper, rear portion of the machine behind said plate or shield to receive the grain from the upper end of said elevator and extending transversely of the machine and provided with an opening through which the grain will be discharged, a shoe arranged at the rear of and beneath said drum or casing, means for delivering a blast of air through the grain as it falls from said grain-auger casing and separate receptacles for receiving the clean grain and material from said shoe.

12. A threshing-machine comprising the combination with the grain-auger casing, of elevators leading upwardly from the ends of said auger-casing, a drum or casing arranged in the upper part of the machine to receive the grain from said elevators and extending transversely of the machine, the lower part of said drum or casing being provided with an opening of variable width through which the grain will be discharged, reversely-arranged augers for distributing the elevated grain along said drum or casing, means for delivering a blast of air through the grain as it falls from said drum or casing and means for receiving and conveying away the cleaned grain.

811,026. **TIRE-HEATER.** JAMES H. BANCROFT, Toledo, Ohio, assignor of one-half to Charles M. Milroy, Toledo, Ohio. Filed Apr. 6, 1905. Serial No. 254,108.

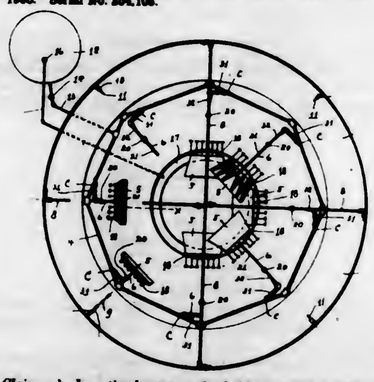

Claim.—1. In a tire-heater, a tire-bridge provided with a supporting wind-shield, a fuel-supply manifold, branch outlets swivel-jointed and spring-pressed radially inward from the manifold, each outlet having a burner-head and means to raise each head toward the shield.

2. In a tire-heater, a vat-like inclosure having a tire-bridge and a circular trough-like starting-pan, a fuel-supply manifold having branch outlets provided with burner-heads and jointed to permit dipping of the heads toward the starting-pan.

811,027. **TRIMMING-TOOL.** GEORGE D. BARLOW, St. Louis, Mo., assignor to The American Brake Company, St. Louis, Mo., a Corporation of Missouri. Filed June 5, 1905. Serial No. 263,853.

Claim.—1. A tool comprising a cutter-head having a longitudinal bore, a spindle-end-trimming cutter carried by the head and projecting into the bore, a bushing carried by and within the bore, said bushing being approximately cylindrical and having a shoulder, a cutter projecting through the head and alining with the shoulder, a cutter having one edge within the bore and the other cutting edge extending slightly beyond the end of the head, and a face-trimming cutter carried by the outer portion of said head; substantially as described.

2. A tool comprising a cutter-head having a longitudinal bore,

a spindle-end-trimming cutter carried by the head and projecting into the bore, a bushing carried by and within the bore, said bushing being approximately cylindrical and having a shoulder, a cutter projecting through the head and alining with the shoulder, a cutter having one edge within the bore and the other cutting edge extending slightly beyond the end of the head, a face-trimming cutter carried by the outer portion of said head, and an edge-trimming cutter carried by the said head; substantially as described.

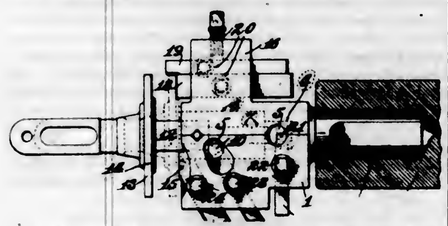

3. In a tool of the class described, the combination with a head having a bore therein, a bushing in the bore having a longitudinal opening alining therewith and of relatively smaller diameter, the opening near the free end of the bushing being larger than the remaining portion, a cutter 21 carried by said head and projecting into the bore, a cutter 9 having its cutting edge adjacent to the wall of the opening in the bushing, and a cutter 15 having one cutting edge adjacent to the wall of the larger portion of the opening in the bushing-block and another cutting edge at the end of the head; substantially as described.

811,028. **LOG-TURNER.** FRED W. BETTNER, Traverse City, Mich. Filed Aug. 26, 1905. Serial No. 276,013.

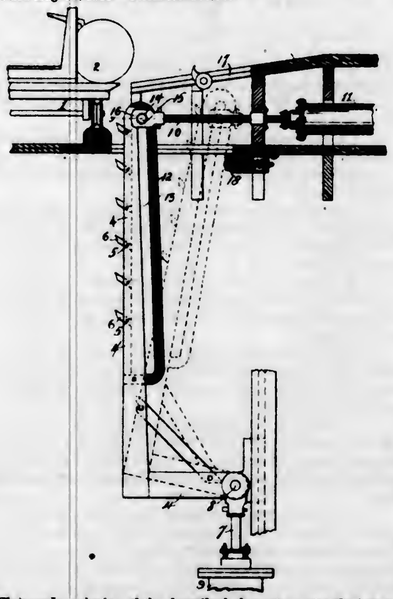

Claim.—In a device of the described character, a toothed member, a piston-rod pivotally connected with and adapted to impart longitudinal movement to said toothed member, and another piston-rod pivotally and slidably connected with and adapted to impart transverse movement to said toothed member.

811,029. **TELEPHONE FOR SHIPS, MINES, &c.** ARTHUR F. BOARDMAN, Somerville, Mass., assignor to Electric Gas Lighting Company, Boston, Mass., a Corporation of Maine. Filed Apr. 10, 1905. Serial No. 254,648.

Claim.—1. In a telephone, the combination with the case A, its door B and plate E of a telephone-receiver C, telephone-transmitter X, a mouthpiece D for the transmitter, one or more push-button calls, and a contact maker and breaker F composed of the proper attaching and holding devices and the rod f, spring f', spring-contacts f^4, f^4, insulator f^3, holding-nut f^5 and contact-ring f^6; substantially as described and shown.

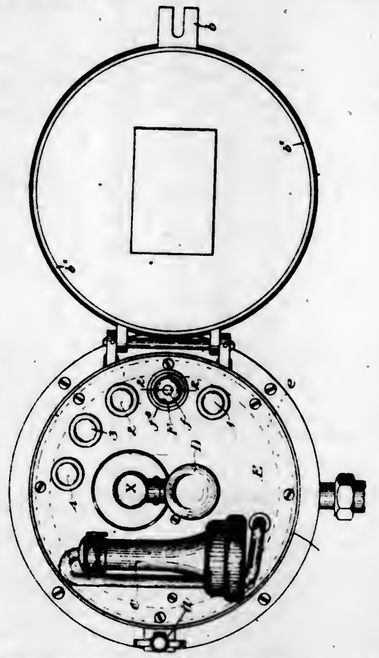

2. In a telephone, the combination with the case A, door B of a plate E, a waterproof gasket e supporting said plate, a telephone-receiver C, telephone-transmitter X, a mouthpiece D for the transmitter, one or more push-button calls, and a contact maker and breaker F composed of the proper attaching and holding devices and the rod f, spring f', spring-contacts f^4, f^4, insulator f^3, holding-nut f^5 and contact-ring f^6; substantially as described and shown.

811,030. **MACHINE FOR BLACKING SHOES.** FREDERICK H. BREWSTER, Auburn, N. Y. Filed Nov. 3, 1904. Serial No. 231,258.

Claim.—1. In a machine for cleaning and blacking shoes, the combination with a foot-rest, of an endless chain or belt traveling around the foot-rest, means to actuate the chain or belt, brushes rotatingly mounted on said chain or belt one in advance of the other, means including a second chain for rotating the brushes, separate driving means for the second chain, and additional means actuated by the first-named chain for applying blacking to one of the brushes.

2. In a machine for cleaning and blacking shoes, the combination with a foot-rest, of an endless chain or belt traveling around the foot-rest, means to actuate the chain or belt, a blacking-brush rotatingly mounted on the chain, means to rotate the brush while the chain is in motion, and additional means to apply blacking to said brush during its rotation.

3. In a machine for blacking shoes, the combination with a foot-rest, of an endless chain or belt traveling around the foot-rest, driving means for the chain or belt, a blacking-brush rotatingly mounted on the chain, a cam on the chain, means actuated by said cam to apply blacking to the brush while in motion, a cleaning-brush rotatingly mounted on the chain or belt, and means connected to rotate both brushes during the movement of the chain or belt.

4. In a machine for cleaning, blacking and polishing shoes, the combination with a foot-rest, of an endless belt traveling around the foot-rest and driving means therefor, a series of brushes rotatingly mounted on the belt one in advance of the other, means operatively

connected to rotate said brushes during the movement of the belt, additional means to apply moisture to one of the brushes, and further means for applying blacking to the moistened brush during its rotation.

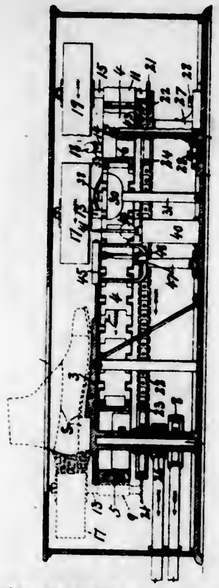

5. In a machine for blacking shoes, the combination with a foot-rest, of an endless carrier traveling around the foot-rest and driving means for said carrier, a blacking-dauber yieldingly mounted on the carrier, a receptacle containing blacking, means to cause the dauber to dip into the receptacle during the movement of the carrier, a polishing-brush rotatingly mounted on the carrier and separate means to rotate the brush.

6. In a machine for blacking shoes, the combination with an endless chain and driving means therefor, of a series of brushes rotatingly mounted on the chain, means including a second chain for rotating said brushes during the movement of the first-named chain, separate driving means for the second chain, a spraying device for applying moisture to one of the brushes, means on the first-named chain for actuating the spraying device, and a blacking-holder actuated by the last-named means for applying blacking to the moistened brush.

7. In a shoe-blacking machine, the combination with an endless chain having a series of vertical bearings, of rotary brushes journaled in said bearings, driving means for the chain, additional means for rotating the brushes, a spraying device for applying moisture to one of the brushes, a separate device for applying blacking to the moistened brush, and a cam on the belt for actuating said devices.

8. In a shoe-blacking machine, the combination with a foot-rest, an endless belt traveling around the foot-rest, and driving means for the belt, of brushes rotatingly mounted on the belt, separate means for rotating the brushes, a blacking-holder movable toward and from one of the brushes and means including a cam on the belt in proximity to the last-named brush for moving the blacking-holder toward said brush.

9. In a shoe-blacking machine, an endless belt and separate supporting-drums therefor, in combination with means to rotate one of the drums whereby motion is transmitted to the belt, additional drums each revolving about the axis of one of the first-named drums, a second belt on the additional drums, brushes rotatingly mounted on the first-named belt, and means actuated by the second belt for rotating said brushes.

10. In a shoe-blacking machine, two separate endless chain belts and separate driving mechanisms therefor, a brush rotatingly mounted on one of the belts, and means to transmit motion from the other belt to the brush for rotating said brush.

11. In a shoe-blacking machine, the combination with a foot-rest, of an endless carrier traveling around the foot-rest, driving means for the carrier, brushes mounted on the carrier one in advance of the other, a receptacle containing blacking, a blacking-applying pad mounted on the carrier and having an independent movement into and out of the receptacle, and a fixed cam having operative connection with said pad to cause it to dip into the receptacle once during each cycle of movement of the carrier.

12. In a shoe-blacking machine, the combination with a foot-rest, of an endless belt and driving means therefor, a cleaning-brush, a blacking-brush and a polishing-brush all rotatingly mounted on the belt one in advance of the other, a second belt operatively connected with the brushes to rotate said brushes, separate driving means for the second belt, a device located in front of the foot-rest for applying blacking to the periphery of the blacking-brush, and means on the first-named belt operatively connecting with said device to bring it into action after the cleaning-brush has passed and before the polishing-brush reaches said devices.

811,081. **MACHINE FOR MAKING VENEER-STAVE BARRELS.** GEORGE H. BROWN, Norfolk, Va. Filed Oct. 31, 1904. Serial No. 230,511.

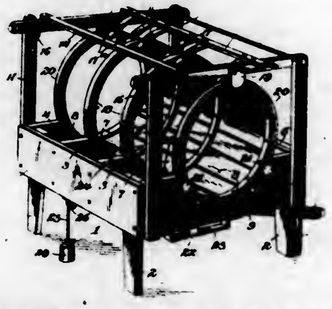

Claim.—1. A barrel-machine embodying a fixed concave form provided with clenching-surfaces and adapted to receive hoops and staves, and means for rotating the same within the form independently thereof.

2. A barrel-machine embodying fixed concave hoop-receiving forms provided with clenching-surfaces, and means for supporting the hoops thereon in the same relation to each other as they occupy in a finished barrel.

3. A barrel-machine embodying fixed concave hoop-receiving forms provided with clenching-surfaces, and means for supporting the hoops thereon in the same relation to each other as they occupy in a finished barrel.

4. A barrel-machine embodying a fixed concave form provided with clenching-surfaces and adapted to receive hoops and staves, said form being arranged to permit the hoops and staves to be rotated independently of it.

5. A barrel-machine embodying fixed concave hoop-receiving surfaces, and a movable member provided with means projecting beyond the said surfaces and the hoops for engaging a stave to partially rotate an unfinished barrel.

6. A barrel-machine embodying fixed concave hoop-receiving surfaces, a slide provided with means projecting between the hoop-receiving surfaces for directly engaging the staves to partially rotate an unfinished barrel, and operating mechanism connected with the slide.

7. A barrel-machine embodying fixed concave hoop-receiving surfaces, a slide provided with a plurality of pins projecting beyond the hoop-receiving surfaces and the hoops to engage a stave for partially rotating an unfinished barrel, and means for operating the slide.

8. A barrel-machine embodying fixed concave hoop-receiving surfaces, a movable member provided with means for directly engaging a stave to partially rotate an unfinished barrel, a lever connected with the said member for moving the same in one direction, and automatically-operable means for moving the said member in the opposite direction to return the same to its initial position.

9. A barrel-machine embodying fixed concave hoop-receiving forms, a slide provided with means for directly engaging a stave for partially rotating an unfinished barrel, a foot-lever for moving the slide in one direction, and a weight for moving it in the opposite direction.

10. A barrel-machine embodying fixed concave hoop-receiving surfaces, and superimposed hoop-supports arranged to engage the upper portion of the hoops for retaining them in the same relation to each other as they occupy in a finished barrel.

11. A barrel-machine embodying fixed concave hoop-receiving surfaces, and superimposed hoop-supports arranged to receive the upper portions of the hoops for retaining them on the said surfaces in the same position as they occupy in a finished barrel, the said hoop-supports being resilient to enable them to be flexed by the staves.

12. A barrel-machine having fixed hoop-receiving surfaces and provided with spaced hoop-supporting fingers for holding the hoops in the same relation to each other as they occupy in a finished barrel.

13. A barrel-machine embodying fixed concave hoop-receiving surfaces, and spaced fingers located above the said surfaces for holding the hoops in the same relation to each other as they occupy in a completed barrel, said fingers being inclined to receive hoops of different diameters.

14. A barrel-machine embodying fixed concave hoop-receiving clenching-surfaces, and a superimposed hinged support provided with means for holding the hoops on the said surfaces in the same relation to each other as they occupy in a finished barrel.

15. A barrel-machine embodying a stand provided with lower fixed concave hoop-receiving surfaces, a hinged frame located above the said surfaces and provided with means for supporting the hoops on the surfaces in the same relation to each other as they occupy in a completed barrel, and end stops projecting from the stand and from the frame and arranged to engage the ends of an unfinished barrel.

16. A barrel-machine, comprising a stand having fixed concave barrel-receiving surfaces and provided with standards arranged in pairs, a frame hinged to one pair of the standards, brackets mounted on the other pair of standards and supporting the frame, and means carried by the frame for supporting the hoops on the surfaces in the same relation to each other as they occupy in a finished barrel.

17. A barrel-machine embodying a frame having fixed concave hoop-receiving surfaces, and a superimposed hoop-engaging roller arranged to receive the upper portion of the hoop for holding the same in position.

18. A barrel-machine embodying a frame having fixed concave hoop-receiving surfaces, means for supporting the hoops on the surfaces in the same relation to each other as they occupy in a finished barrel, and a grooved roller arranged to receive the upper portion of a hoop for holding the same against upward movement.

811,082. **MOLD.** GUSTAV A. BYOR, Edgar, Nebr. Filed May 11, 1905. Serial No. 260,948.

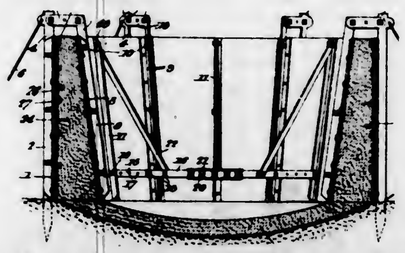

Claim.—1. In a mold of the character described, the combination of inner and outer concentric mold members, posts engaging the members and rising above the tops thereof with their upper ends provided with lapped arms, and fastenings connecting the arms.

2. In a mold of the character described, the combination of inner and outer concentric mold members, the inner member being made up of sections, a centering device within the inner mold member above the bottom thereof, substantially radial braces extending between the centering device and the respective inner mold-sections, and hangers inclined downwardly and inwardly from the inner mold member to the braces and supporting the centering device.

3. In a mold of the character described, the combination of inner and outer concentric mold members, the inner mold member being formed of sections having terminal upright flanges with the flanges of each section connected to the flanges of the adjacent sections, posts secured between each pair of flanges and rising above the top of the mold, and connections between the posts and the outer mold member.

4. In a mold of the character described, the combination of inner and outer concentric mold members, each mold member being made up of flanged sections having the flanges of each section connected to the flanges of the adjacent sections, posts driven into the ground in engagement with the outer face of the outer mold member with their upper ends rising above the top of the mold and provided with arms extending inwardly across the mold members, inner posts secured between the connected flanges of the inner mold member and rising above the top of the mold, each inner post having an arm lapping the arm of the adjacent outer post and secured thereto, a centering device located within the inner mold member and provided with a series of radial seats, radial braces extending inwardly from the inner mold-sections and engaging the respective seats of the centering device, and inclined braces extending downwardly from the inner mold member and connected to the first-mentioned braces.

811,033. **PISTOL AND REVOLVER SIGHT.** EMILIO M. CANTO, Santiago, Chile. Filed May 4, 1905. Serial No. 258,917.

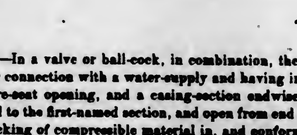

Claim.—1. A pistol or revolver provided with a stationary strip forming a sight and extending the full length of the barrel thereof and interrupted intermediate of its length.

2. A pistol or revolver having stationarily mounted upon the upper portion of the barrel thereof a strip forming a sight the same being triangular in cross-section and interrupted intermediate of its length.

811,034. **TANK-VALVE.** DENNIS D. CASEY, Springfield, Mass. Filed July 18, 1904. Serial No. 217,089.

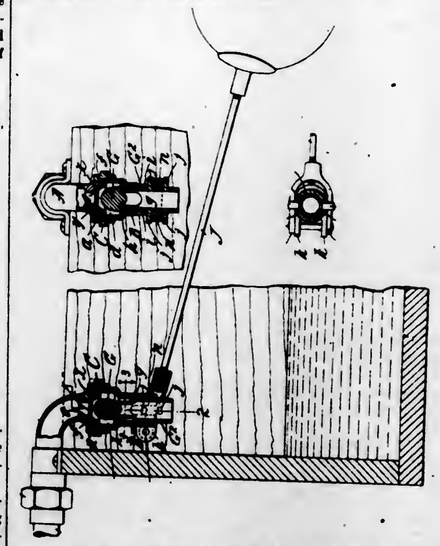

Claim.—In a valve or ball-cock, in combination, the casing A adapted for connection with a water-supply and having in its end a flaring valve-seat opening, and a casing-section endwise adjoined and coupled to the first-named section, and open from end to end, an annular packing of compressible material in, and conformed to the shape of said flaring valve-seat opening having a marginal flange confined between the adjoined end portions of the coupled casing-sections, the primary casing-section being constructed with the annular rib e to serve as a guard for the inner marginal portion of said compressible packing, a tube guided in said secondary section having its upper or rear end portion formed solid and rounded and adapted to fit in said valve-seat opening, having one or more ports,

forwardly of such solid valve-constituting portion, through its tubular wall, and having projections extending through openings in the secondary section, and means engaging said projections for endwise moving the valve-tube.

811,085. ADJUSTABLE WASHER. JOHN H. CHRISTIE, Dobbs Ferry, N. Y. Filed Apr. 26, 1905. Serial No. 257,210.

Claim.—1. An adjustable washer comprising two hollow portions of like bore having outer annular faces at approximately right angles with their bores and of substantial width and having coöperating threads having flat surfaces, and a screw-lock passing through the wall of the outer portion and engageable with the flat face of the thread of the inner portion when said portions are in any of a plurality of relative positions.

2. An adjustable washer comprising two hollow portions of like bore having outer annular faces at approximately right angles with their bores and of substantial width and having coöperating threads, wrench-engaging means on each of said portions, and a locking device for retaining said portions in any of a plurality of adjusted positions.

3. An adjustable washer comprising two hollow portions of like bore having coöperating threads, a locking device for retaining them in any of a plurality of adjusted positions, and a micrometer-scale on their exterior surfaces.

4. An adjustable washer comprising two hollow portions of like bore having coöperating threads, the outer portion having its end face approximately perpendicular to its bore and of substantial width, the inner portion having a collar or exteriorly-extending flange portion, and a locking device for retaining said portion in any of a plurality of adjusted positions.

5. An adjustable washer comprising two hollow portions of like bore having coöperating threads, the outer portion having its end face approximately perpendicular to its bore and of substantial width, the inner portion having a collar or exteriorly-extending flange portion, the exterior diameter of which is approximately equal to that of said outer portion, and a locking device for retaining said portions in any of a plurality of adjusted positions.

6. An adjustable washer comprising two hollow portions of like bore having coöperating threads, the inner portion having a collar or exteriorly-extending flange portion, the exterior diameter of which is approximately equal to that of said inner portion, a micrometer-scale on the adjacent edges of said portions, and a locking device for retaining said portions in any of a plurality of adjusted positions.

7. An adjustable washer comprising two hollow portions of like bore having coöperating threads, the outer portion having its end face approximately perpendicular to its bore and of substantial width, the inner portion having a collar or exteriorly-extending flange portion, wrench-engaging means on said collar, and a locking device for retaining said portions in any of a plurality of adjusted positions.

8. An adjustable washer comprising two hollow portions having outer annular faces at approximately right angles with their bores and of substantial width and having coöperating threads, the outer portion having an interiorly-extending flange, the bore of which is equal to that of the inner portion and the inner portion having an exteriorly-extending flange, and a locking device for retaining said portions in any of a plurality of adjusted positions.

811,086. DECOY. WALTER W. CRAM, Sheldon, Iowa. Filed May 11, 1905. Serial No. 260,573.

Claim.—1. A decoy embodying an anchor and means for securing the anchor within the decoy.

2. A decoy provided with an opening, an anchor and means for securing the anchor within the opening.

3. A decoy provided with a cavity opening externally, an anchor proportioned to form a closure for the cavity, a cord secured to the anchor and means for winding the cord within the decoy.

4. A decoy provided with an aperture within the under side, an anchor proportioned to form a closure for the aperture and to conform substantially to the surface of the decoy, a cord securing the anchor to the decoy and means for adjustably controlling the length of cord between the decoy and the anchor.

5. In a decoy, a winding-reel, an anchor-cord wound upon the reel, a tension elastically engaging the reel and arranged to hold the reel at a predetermined rotary adjustment.

6. In a decoy, a winding-reel, an anchor, a cord wound upon the reel and secured to the anchor, a tension elastically engaging the reel and arranged to retain a predetermined length of cord wound upon the reel.

7. A decoy provided with a recess and having a flexibly-connected anchor-weight corresponding in size and shape with said recess so that said anchor-weight may be frictionally contained therein.

8. A decoy provided with a cavity, an anchor-receiving recess and a connecting-passage, a tapered anchor-weight, a flexible connection attached to said anchor-weight and passed through said recess and said passage, and means within said cavity for taking in or paying out said flexible connection.

9. A decoy provided with a cavity, an anchor-receiving recess and a connecting-passage, a tapered anchor-weight, a flexible connection attached to said anchor-weight and passed through said recess and said passage, a spring-actuated winding-drum within said cavity for said flexible connection, a brake-spring for holding said drum against movement and a push-rod for releasing said brake-spring.

10. An anchor-winding device for decoys comprising an outer casing, a push-rod extending therethrough, a spring-actuated winding-drum upon said push-rod, a projection upon one end of said drum, a resilient disk within said casing recessed to form a spring-tongue adapted to be actuated by said push-rod, said tongue being formed with an aperture to receive one of said projections and a coil-spring disposed between said spring-tongue and said casing.

811,087. DANGER-SIGNAL. WILLIAM C. CREVELING, St. Louis, Mo. Filed Dec. 8, 1904. Serial No. 235,975.

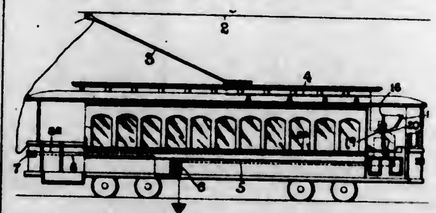

Claim.—1. The combination with a car provided with a lamp-circuit, of a storage battery in the car, a storage-battery circuit, a signal, a signal-circuit, a switch for throwing the storage-battery circuit into the lamp-circuit and for including the signal-circuit in the storage-battery circuit, and a separate cut-out for breaking the storage-battery circuit when the switch is in position to include the storage-battery circuit in the lamp-circuit; substantially as described.

2. The combination with a car having a source of electrical energy adapted to be energized through the trolley, of a storage battery, a storage-battery circuit, means for including the storage-battery circuit in the source of electrical energy, a signal-circuit, and means for including the signal in either the source of electrical energy or the storage-battery circuit when the storage-battery circuit is not included in the source of electrical energy; substantially as described.

3. The combination with a car provided with a source of electrical energy, of a storage battery in the car, a storage-battery circuit, a signal-circuit, a switch for throwing the storage-battery circuit into the source of electrical energy, and for including or cutting out the signal-circuit in or from the source of electrical energy, and a separate cut-out for breaking the storage-battery circuit when the switch is in position to include the storage-battery circuit in the source of electrical energy; substantially as described.

4. A danger-signal including an energizing-circuit, a signal-circuit, a storage-battery circuit, a single switch for throwing the energizing-circuit alternately into the signal-circuit and the storage-battery circuit, and a cut-out in one of the circuits; substantially as described.

5. A danger-signal including an energizing-circuit, a storage-battery circuit, a signal-circuit, and a switch mechanism for alternately throwing the energizing-circuit in either of the other circuits, said switch mechanism including a lever having an insulated bifurcated end, and a swinging member engaging the bifurcated end of said lever; substantially as described.

6. The combination with a car, of a danger-signal on the car, a signal-circuit, an energizing-circuit, a stationary contact in the path of the signal-circuit, and a swinging contact in the path of the energizing-circuit, said swinging contact being adapted to contact with the stationary contact only when the car is not in motion; substantially as described.

7. A danger-signal including an energizing-circuit, a signal-circuit, a storage-battery circuit, and a single switch for throwing the energizing-circuit alternately into the signal-circuit and the storage-battery circuit, said switch comprising a lever 12 having an insulated bifurcated end, and a pivoted bar having one end in engagement with the bifurcated end of the lever and the other end free to engage a switch-point; substantially as described.

8. The combination with a car having a source of electrical energy and a lamp-circuit in connection therewith, of a storage battery, a storage-battery circuit, a signal-circuit, a switch movable to include the storage-battery circuit in the source of electrical energy, said switch being also movable to a position to include the signal-circuit in the storage-battery circuit and to simultaneously cut out the storage-battery circuit from the source of electrical energy, and a signal in the signal-circuit comprising a casing having a translucent panel, a bell in the casing and included in the circuit, and lamps in the circuit with the bell; substantially as described.

811,088. AUTOMATIC ANIMAL-FEEDER. VAN WYCK A. CROSSIER, San Francisco, Cal. Filed Nov. 26, 1904. Serial No. 234,566.

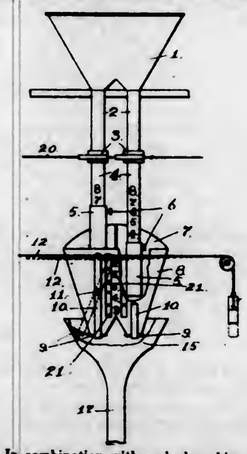

Claim.—1. In combination with a clock, a bin, a plurality of pipes descending therefrom, valves for opening or closing said pipes, sleeve gages securable over such pipes, a partitioned hopper having openings containing material for seeing the contents, movable slides for opening or closing the base of said hopper and means for the movement of said slides; substantially as described.

2. In combination with a clock, a plurality of pipes, a bin opening therefrom, slide-valves for opening or closing said pipes, sleeve gages securable over such pipes, a plurality of hoppers containing material for seeing the contents thereof, movable slides for opening or closing the bases of said hoppers and means for automatically opening such slides, substantially as described.

3. In combination with a clock a receptacle for grain having openings in its base, pipes descending from such openings, valves for opening or closing such pipes, cylinders movable longitudinally on said pipes, a plurality of hoppers having equidistant openings containing material for seeing the contents thereof, slides covering the open bases of said hoppers, levers and connections thereto for opening said slides, substantially as described.

4. In combination with a clock, a bin having openings in its base, pipes in connection with said bin, valves to open or close said pipes, adjustable sleeves partly covering said pipes, a partitioned hopper having equidistant openings containing material for seeing its contents, levers of unequal length connected to slide to open, or close the base of said hopper and means for the movement of said levers substantially as described.

5. In combination with a clock a bin having openings at its base, pipes leading therefrom, cylinders telescoping on such pipes and securable thereto, a partitioned hopper penetrable by said cylinders, a plurality of levers fulcrumed to said hoppers, slides sustained by said levers and movable laterally, and cords and weights arranged to be released by the clock for the operation of such levers and slides, substantially as described.

6. In combination with a clock, a receptacle for holding grain, said receptacle having orifices for discharging the grain into hoppers beneath the same, means for regulating the amount of grain so discharged, hoppers having translucent openings in their sides for ascertaining the amount of grain therein and said hoppers also having orifices at their bases, slides covering said orifices, and levers and connections for automatically moving said slides for discharging the grain and for closing the same substantially as described.

7. In combination with a clock, a bin and pipes leading therefrom, valves for opening and closing said pipes, cylinders telescoping on such pipes and adjustable thereon, a plurality of hoppers penetrable by said cylinders, slides for opening and closing the open bases of said hoppers, means for operating said slides, and a hopper having a chute leading to a manger, substantially as described.

8. In an automatic animal-feeder the combination of a receptacle for grain having openings at its base, pipes leading from such receptacle, valves for opening and closing such pipes, adjustable sleeves upon such pipes, a plurality of hoppers beneath said sleeves, slides for opening and closing the open bases of said hoppers, levers and connections for the movement of said slides, substantially as described.

9. In an automatic animal-feeder, the combination of a main receptacle opening into pipes leading therefrom, valves in said pipes and means for moving the same, adjustable sleeves upon said pipes, a plurality of hoppers having openings in each penetrable by one of such sleeves, means for automatically opening and for closing the bases of said hoppers, and a receptacle leading from such bases, substantially as described.

811,089. STORM-FRONT FOR VEHICLE-TOPS. CHARLES C. DAUGHERTY, Columbus, Ohio. Filed Dec. 13, 1905. Serial No. 291,968.

Claim.—1. A storm-front for vehicle-tops comprising a middle or front portion and side portions, the upper edge of the middle portion being inelastic at its middle and ends but provided near its ends with elastics and with hooks for engagement with the upper corners of the top.

2. A storm-front for vehicle-tops, comprising a middle or front portion, and side portions, the upper edge of the middle portion being in elastic at its middle and ends but provided near its ends with

elastics and with hooks to engage the upper corners of the vehicle-top and a clip near the middle of the upper edge of the front to engage the valance.

3. A storm-front for vehicle-tops comprising a middle or front portion, and side portions, the upper edge of the middle portion being inelastic at its middle and ends but provided near its ends with elastics and with hooks to engage the upper corners of the vehicle-top, and a light secured in the area below the middle portion of the upper edge of the front.

4. A storm-front for vehicle-tops comprising a middle or front portion, and side portions, the upper edge of the middle portion being inelastic at its middle and ends but provided near its ends with elastics and with hooks to engage the upper corners of the vehicle-top, and a flexible light secured in the area below the middle portion of the upper edge of the front.

5. In combination with the ends of the upper edge of a storm-front, a single-piece hook having a shank at its upper side, an inwardly-bent extension below the hook and a finger-piece on the inwardly-bent extension.

811,040. **SINTERING COMMINUTED ORE OR FLUE-DUST.** GEORGE L. DAVISON, Chicago, Ill., assignor to American Sintering Company, Chicago, Ill., a Corporation of Illinois. Filed Nov. 4, 1905. Serial No. 285,941.

Claim.—1. The process of sintering comminuted ore or flue-dust which consists in mixing the ore or flue-dust with a small percentage of comminuted fluor, then passing the mixture gradually through a furnace and heating it until the mixture fuses sufficiently to cohere, and agglomerating the mixture into lumps by agitation while thus in partially-fused condition.

2. The process of sintering comminuted ore or flue-dust which consists in mixing the ore or flue-dust in substantially dry condition with a small percentage of dry or substantially dry comminuted fluor, then passing the mixture gradually through a rotary furnace and heating it to a temperature which causes the mixture to partially fuse and causing the mixture to agglomerate into lumps by tumbling it repeatedly while thus in partially-fused condition.

3. The process of continuously sintering comminuted ore or flue-dust which consists in preparing a mixture of the ore or flue-dust with approximately one per cent. of comminuted fluor, then passing such mixture gradually and continuously in controlled quantities through a furnace and gradually heating it while passing through the furnace to a temperature at which the mixture fuses sufficiently to cohere and effecting an agglomeration of the mixture into lumps by repeated tumbling of the material while in partially-fused condition.

811,041. **CLUTCH.** JOHN R. DONSON, Ypsilanti, Mich., assignor to Michigan Machinery Mnfg. Company, Ypsilanti, Mich., a Corporation of Michigan. Filed June 27, 1904. Serial No. 214,206.

Claim.—1. A clutch comprising a shaft, a pair of separated bearings in which said shaft is journaled and in fixed relation to each other, coöperating clutch members sleeved on said shaft between said bearings, one of said bearings being revoluble and the other longitudinally slidable upon said shaft, a spring between said slidable member and its adjacent bearing, a peripheral cam on said slidable member, and a rock-arm having means rigidly secured thereto for engaging with said cam to cause the longitudinal movement of said slidable member against the tension of said spring and out of engagement with the coöperating clutch member.

2. A clutch comprising a shaft, a pair of separated bearings in which said shaft is journaled, said bearings being in fixed relation to each other, a driven wheel sleeved upon said shaft adjacent to one bearing, a sleeve feathered to said shaft between said driven wheel and the other bearing, coöperating clutch-faces on said sleeve, a driven wheel, a spring between said sleeve and its adjacent bearing for yieldingly pressing the former into engagement with said driven wheel, a peripheral cam on said sleeve, and a gravity rock-arm having means rigidly secured thereto for engaging with said cam to cause the latter to disengage said sleeve from said driven wheel.

3. In a clutch, the combination with the driven wheel of a shaft on which said wheel is journaled, a sleeve feathered to said shaft and together with said driven wheel forming coöperating clutch members, a tension device for moving said sleeve toward said driven wheel, a peripheral cam on said sleeve, and a gravity rock-arm having means rigidly secured thereto for engagement with said peripheral cam to disengage said clutch members.

4. In a clutch, the combination with a revoluble clutch member and a coöperating slidable clutch member, of a peripheral cam on said slidable member, a rock-arm, an antifriction-roll, a bearing for said roll rigidly connected to said rock-arm, whereby the same will rock therewith and engage said cam.

5. In a clutch, the combination with a revoluble clutch member of a coöperating slidable clutch member, a peripheral cam on said slidable member, the rock-arm P, the antifriction-roll M, adjustably secured thereto the journal O having the eccentric shank *f* and clamping means for said shank in different positions of adjustment.

6. The combination of the driving-shaft of the gear-wheel loose thereon and having a toothed hub forming one member of a clutch, of the toothed sleeve feathered to the shaft forming the other member of the clutch, and the ring S′ between the ends of the feathers and the hub of the wheel, and the notches T′ in said ring engaging the end of the feathers or keys, as and for the purpose described.

7. A clutch for presses or the like comprising a frame, a shaft extending outwardly therefrom, a pair of separated bearings in which said shaft is journaled, an upwardly-extended bracket on the frame for the outer bearing, a driven wheel sleeved upon said shaft adjacent the inner bearing, a sleeve feathered to said shaft between said driven wheel and the outer bearing, coöperating clutch-faces on said sleeve and driven wheel, a peripheral cam on said sleeve, and a gravity rock-arm pivoted to the upper end of the said bracket, one end thereof being free and having means rigidly secured thereto for engaging said cam to cause the latter to disengage said sleeve from said driven wheel.

8. A clutch of the character described comprising a driven wheel and a sleeve, a shaft for said wheel and sleeve, coöperating clutch-faces on said sleeve and driven wheel, a peripheral cam on said sleeve and a gravity rock-arm pivoted adjacent one end only to a relatively fixed member, the opposite end of said arm being free to move by gravity and having means connected thereto and movable therewith for engaging said cam to cause the latter to disengage said sleeve from said driven wheel.

811,042. **HAND-CAR FRAME.** JAMES DONOVAN, Three Rivers, Mich., assignor, by mesne assignments, to Sheffield Car Company, Three Rivers, Mich., a Corporation of Michigan. Filed Apr. 10, 1905. Serial No. 254,901.

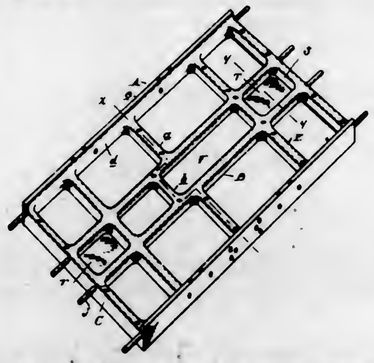

Claim.—1. In a light car, a frame comprising longitudinal sills and ties, struck from a single sheet of metal.

2. In a light car, a frame comprising side sills, two separated intermediate sills, and connecting-ties, struck from a single sheet of metal.

3. In a light car, a frame comprising inverted channel-sills and ties, struck from a single piece of metal.

4. In a light car, a frame comprising sheet-metal intermediate sills, laterally-extending integral ties and side sills, the ties connecting to the side sills below the top thereof.

5. In a light car, a frame formed of a single sheet of metal and comprising longitudinal intermediate sills, ties and side sills, the ties connecting to the side sills below the top.

6. In a light car, a frame, longitudinal inverted channel-sills, longitudinal stiffening members secured in the channel, and ties connecting the sills.

7. In a light car, a sheet-metal frame comprising inverted channel sills and ties, and tubular stiffening members extending through the channels of the sills.

8. In a light car, a frame comprising inverted channel sills and ties, struck from a single piece of sheet metal, and stiffening tubular members secured in the channels of the sills.

9. In a light car, a frame comprising sills and ties in inverted channel form, struck from a single sheet of metal, stiffening-bars extending through the channels of the sills, and through the sides of the end ties.

10. In a light car, such as a hand-car, an integral sheet-metal floor-frame having vertical flanges.

11. In a light car, such as a hand-car, a metallic frame comprising integral channel sills and ties.

12. In a light car, such as a hand-car, a metallic frame comprising sills and ties of inverted channels, the side sills projecting above the plane of the top of the frame.

13. In a light car, a frame comprising sills and ties, struck from a single sheet of metal, and sections such as S between the sills and ties having the bottom plate T.

811,043. **HAT-FASTENING DEVICE.** ELOUID DUPLESSIS, Sorel, Canada, assignor of one-third to George Michel Badeau and one-third to Joseph Amédée Therien, Sorel, Canada. Filed Feb. 20, 1905. Serial No. 246,551.

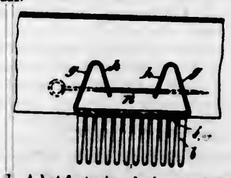

Claim.—1. A hat-fastening device consisting of a resilient carrier adapted to be fastened to the hat and constructed to present a bowed portion, and a pivoted rigid comb-plate carried by such carrier and constructed to present a straight fold or channel inclosing and fitting revolubly and snugly upon the bowed portion of the carrier for the purpose of enabling the comb-plate to be retained by the carrier in different angular positions relatively to such carrier.

2. A hat-fastening device comprising a resilient carrier consisting of a length of wire bent to present a bowed portion and attachment portions, and a rigid comb-plate formed with a straight fold inclosing and fitting revolubly upon the bowed portion of the wire for the purpose of enabling the comb-plate to be retained in different angular positions relative to such carrier.

3. A hat-fastening device consisting of a resilient wire having its main length bowed and the ends thereof bent toward one another and then back toward the bowed portion and formed with depressions near their ends, a rigid comb-plate consisting of a curved comb with the back thereof folded upon itself to present a straight groove inclosing the bowed portion of the carrier, and means whereby said carrier is fastened to a hat.

4. A hat-fastening device consisting of a resilient wire having its main length bowed and the ends thereof bent toward one another and then back toward the bowed portion and formed with depressions near their ends, a rigid comb-plate consisting of a curved comb with the back thereof folded upon itself to present a straight groove inclosing the bowed portion of the carrier, and extended and tapered to provide a thumb-piece, and a hat-pin having its point bent for fastening the device to a hat.

811,044. **PAINT AND VARNISH REMOVER.** CARLETON ELLIS, Montclair, Essex, assignor to Chemical Chemical Company, New York, N. Y., a Corporation of West Virginia. Filed Dec. 10, 1903. Serial No. 184,603.

Claim.—1. As a new article of manufacture, a substantially neutral paint and varnish remover comprising a wax; a solvent for the wax; and a gelatinizer containing about forty per cent. acetone, some methyl alcohol and the balance higher ketones.

2. A paint and varnish remover comprising benzole, methyl acetone and wax.

3. A paint and varnish remover comprising methyl acetone, other paint and varnish solvents, and a wax.

4. A paint and varnish remover, comprising methyl acetone; other paint and varnish solvents; a wax; and a wax solvent.

811,045. **SAFETY-POCKET.** ARCHIBALD M. PITSKER, Atkinson, Ill. Filed Sept. 20, 1905. Serial No. 279,278.

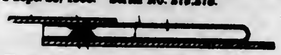

Claim.—The combination with a pocket, of oppositely-disposed spring-strips secured to the mouth of the pocket for holding it closed, and a rubber tube secured to the face of one of said strips.

811,046. **SAFETY-CATCH FOR ELEVATORS.** ANDREW FLESHER, Taylorville, Ill. Filed Sept. 21, 1905. Serial No. 279,476.

Claim.—1. The combination with a mine-shaft having a wood curbing and vertical guides on two opposite sides thereof, of a cage having channeled shoes on two opposite sides, to fit said guides, and safety-catches on the remaining two opposite sides of the cage and extending substantially the width thereof, and adapted to directly engage the shaft-curbing.

2. The combination with a shaft having a curbing and having vertical guides arranged on two opposite sides thereof, of a cage having channeled shoes on two opposite sides adapted to slidably embrace said guides, and safety-catches on the remaining two opposite sides of cage, said catches including oscillatory members extending substantially the width of the cage, and provided with points adapted to embed themselves in the curbing of the shaft, said members being spring-actuated, and means connecting the members with the hauling-cable of the cage, whereby the members are held out of contact with the curbing when the hauling-cable is under tension.

3. The combination with a shaft having a curbing and vertical guides on two opposite sides thereof, of a cage having means slidably engaging said guides, journaled wings extending across substantially the full width of two opposite sides of the cage and provided with points adapted to be embedded in the curbing, means connecting the wings with the hauling-cable, whereby said wings are held out of contact with the curbing and close to the cage, when the hauling-cable is under tension, and springs engaging the wings to automatically project them outwardly when the tension on the hauling-cable is released.

4. The combination with a shaft having vertical guides and a curbing composed of penetrable material, of a cage having means to slidably fit said guides, shafts extending substantially the width of two opposite sides of the cage, said sides being those which are disposed at right angles to the sides which engage the guides, wings journaled on the shafts and provided with penetrating-points adapted to be embedded in the curbing, said wings having crank-arms extending from one end, chains connecting said crank-arms with the hauling-cable whereby the wings are folded close to the cage when the hauling-rope is under tension, and springs coiled on the shafts, each having one end bearing on the cage and the other end bearing under the wing to automatically project the wing into contact with the curbing when the tension is removed from the hauling-cable.

811,047. **FOLDING TRANSPORTATION POULTRY-COOP.** LEWIS D. FOWLER, Oklahoma, Okla., assignor of one-half to Isaac A. Knox, Oklahoma, Okla. Filed Apr. 10, 1905. Serial No. 254,713.

Claim.—1. In a folding transportation poultry-coop, the combination with a floor-base, having inwardly-folding sides and swinging ends hinged thereto, a top moving upward and downward with the ends, and hinged thereto, of a latch consisting of a spring-arm secured to the end of the coop and a shoulder near the end of said

spring-arm adapted to abut against the inner face of the side wall to hold it in the raised position, substantially as described.

2. In a folding transportation poultry-coop, the combination with a rectangular base, a rectangular top, and inwardly-folding sides hinged to the base, of swinging ends hinged to the base and to the top, flanges on the side edges of the end members and spring-latches having shoulders disposed adjacent said flanges, the side walls of the coop being clamped between said flanges and shoulders in the raised position, substantially as described.

811,048. SHELL. ALBERT H. PFIMMER, New York, N. Y. Filed Nov. 8, 1904. Serial No. 231,963.

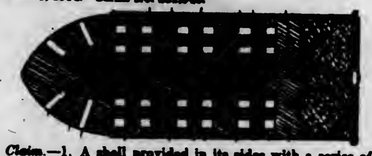

Claim.—1. A shell provided in its sides with a series of openings and having a passage in communication with each of said openings for setting off the charges therein, and a shell fitted in each of said openings and in turn provided in its sides with openings to receive an explosive and projectiles, substantially as set forth.

2. A main shell comprising a cylindrical body having a conoidal-shaped end and having openings around the sides of the pointed end disposed at different relative angles and having radial openings in the sides of its body, an explosive and a projectile in each of the openings in the point, and a shell and explosive in each of the side openings, each of the shells being provided with a plurality of openings in each of which is placed an explosive and a projectile, the main shell having a passage in communication with all of the openings and having a slow-burning powder or fuse placed therein.

3. In combination, a casing adapted to receive an explosive, a shell within said casing and having openings in its sides to receive a plurality of projectiles, and means for limiting the movement of the shell with reference to the casing when the explosive is fired, substantially as set forth.

4. In combination, a casing having an extended base and adapted to receive an explosive, a shell arranged within the casing and provided in its sides with a plurality of openings to receive an explosive and projectiles, and means for limiting the movement of the shell within the casing when the explosive is set off.

5. In combination, a casing having a base at one end and an inner flange at the opposite end, an explosive supplied to the casing, and a shell having a series of openings in its side to receive an explosive and a projectile, said shell having an outer rim to engage with the inner rim of the casing and limit the outward movement of the shell, substantially as set forth.

811,049. CATTLE-GUARD. JOHN L. FRIEDMAN and JOHN GRABAR, Lawton, Okla. Filed Aug. 17, 1905. Serial No. 274,571.

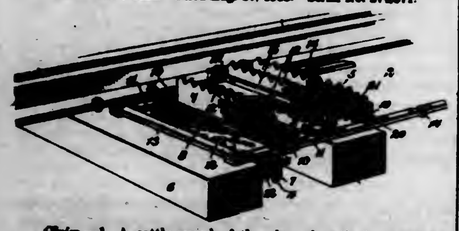

Claim.—1. A cattle-guard of the class described, comprising large rotary members spaced apart and arranged between the cross-ties of a track, and small superimposed rotary members located between the large rotary members and arranged above the cross-ties, the tops of the said small rotary members being arranged in substantially the same plane as the tops of the large rotary members.

3. A cattle-guard of the class described, comprising large rotary members operating in the spaces between the cross-ties, and small superimposed rotary members arranged in pairs in spaces between the large rotary members for operation above the cross-ties.

4. A cattle-guard of the class described, comprising a frame secured to the cross-ties of a railroad-track and provided with bearings, large rotary guard members located in the bearings and arranged between the cross-ties, bearing-brackets extending upward from the frame and located above the cross-ties, and small rotary members supported by the bearing-brackets and located between the large rotary members.

5. A cattle-guard of the class described, comprising a frame having side bars provided with bearings, large rotary members operating between the cross-ties of a railroad-track and mounted in the bearings of the frame, substantially inverted-U-shaped bearing-brackets mounted on the frame between the said bearings and provided at their tops with bearings arranged in pairs, and small rotary guard members arranged in pairs between the large guard members and journaled in the bearings of the brackets.

6. A cattle-guard of the class described, having rotary guard members, each composed of a polygonal shaft having flat faces, and radially-arranged blades extending from the shaft and having their inner edges bent at right angles to form flanges which are secured to the said faces of the shaft.

7. A cattle-guard of the class described composed of a series of rotary members, some of which are mounted on the ties and others of which are located between the ties.

8. A cattle-guard of the class described composed of a series of rotary members, some of which are mounted on the ties and others of which are located between the ties, all of said members having their tops in the same horizontal plane.

811,050. INCANDESCENT GAS-LAMP. LOUIS C. FULLER, Kansas City, Mo. Filed June 9, 1905. Serial No. 264,518.

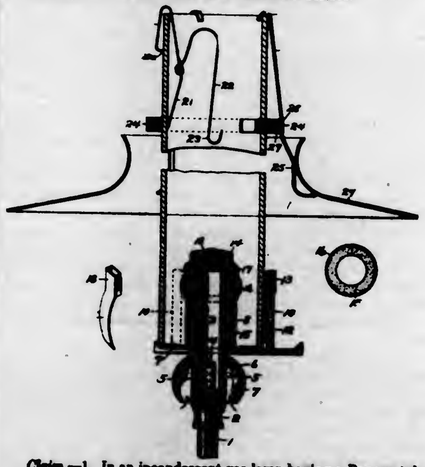

Claim.—1. In an incandescent gas-lamp having a Bunsen tube, an outer tube sleeved thereon and a chimney-holder secured to said outer tube, the combination of a heat-insulating bushing mounted upon said outer tube, and a tip-holder mounted upon said bushing; whereby the heat communicated by the flame to the tip-holder will be insulated from the chimney-holder.

2. In a mantle gas-lamp, a mantle-holder formed of a single piece of wire and comprising a looped hook adapted to engage the upper edge of a chimney, a downwardly-extending leg adapted to bear against the inner side of a chimney, and a depending hook adapted to support a mantle; substantially as described.

811,051. FILLING ATTACHMENT FOR SIGHT-FEED OILERS. FRANK B. GARDNER, Worcester, Mass. Filed Nov. 2, 1901. Renewed June 26, 1905. Serial No. 267,449.

Claim.—1. In a construction of the class described, the combination of a sight-feed oiler, an oil-supply pump, and connections from the oil-supply pump for refilling the sight-feed oiler or for furnishing a supply of oil directly to the outlet of the sight-feed oiler.

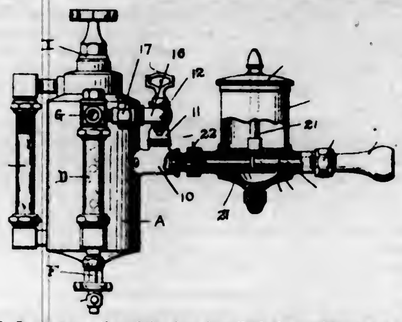

2. In a construction of the class described, the combination of a sight-feed oiler, a supply-pump, and valve-controlled passages for connecting the oil-supply pump to refill the sight-feed oiler or to furnish a direct supply of oil to the part to be lubricated, as desired.

3. In a construction of the class described, the combination of a sight-feed oiler, a pressure-pipe therefor, an oil-supply pump, and valve-controlled passages for connecting the oil-supply pump to refill the sight-feed oiler or to furnish a direct supply of oil to the part to be lubricated, as desired, said parts being combined so that when the pump is operated to refill the sight-feed oiler, the water from the sight-feed oiler will be forced back into the pressure-pipe.

4. In a construction of the class described, the combination of an oiler comprising a body portion, a pressure-pipe leading thereto, a sight-feed passage leading therefrom, and an attachment comprising an oil-reservoir consisting of a base-piece with a pump-cylinder therein, a glass body portion secured on the base-piece, a hand-operated pump-piston mounted in the pump-cylinder, and two valve-controlled passages leading from said pump's cylinder, one passage being connected to refill the body portion of the oiler, and the other passage being connected to furnish a direct supply of oil when it is not desired to have the same pass through the sight-feed passage of the oiler.

811,052. TELEPHONE-CALL. PETER T. GEYERMAN, Brewster, Minn. Filed Nov. 14, 1905. Serial No. 287,082.

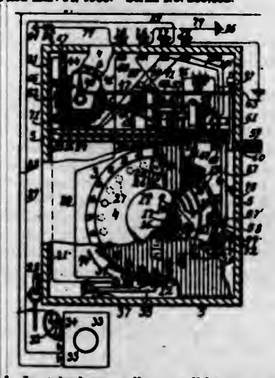

Claim.—1. In telephone-calls, a call-box; a ratchet-wheel mounted on a shaft journaled in the box, and a stop-pin projecting from the wheel; a plate located parallel with one face of the wheel and having a circle of holes through it corresponding in number to the number of teeth on the wheel; a knob having a pointer and fixed to a hollow shaft which is mounted to rotate and to slide longitudinally on the aforesaid shaft; a crank-arm having a grooved hub and fixed to the hollow shaft and carrying a pin which is fitted to pass through any one of the said holes in the plate into the path of the pin on the wheel; a normally closed selecting-circuit connecting a number of these call-boxes; a selecting device in each circuit; means for revolving the said wheel and means whereby the wheel breaks the said circuit at the passage of each tooth in revolving.

2. In telephone-calls, a call-box; a ratchet-wheel therein carrying a stop-pin; means for revolving the wheel and means actuated by the wheel to operate selecting mechanism; a plate located adjacent to one face of the said wheel and having a series of holes through it; a knob and pointer, and a dial for the pointer outside of the box, and a stopping-pin connected with the knob and fitted to engage any one of the holes in the said plate.

3. In telephone-calls, a call-box; a ratchet-wheel therein carrying a stop-pin; a stopping-pin mounted on an arm having a grooved hub and connected with an operating-knob, and a shifter comprising a rock-shaft, an arm therefrom engaging the said grooved hub; another arm thereof and a wire adapted to engage the receiver-support of a telephone.

4. In telephone-calls, a call-box; a ratchet-wheel and drum and means for revolving the same in the box; the drum having in it a stop-notch the rear wall of which is inclined wedge-like to the circle of revolution; a lever having a hook on one arm to engage the said notch; a pair of contact-springs adjacent to the other arm of the lever, and an open-call circuit connected with the springs, the opening of the circuit being between the springs; a push-pin passing through the side of the box, and a bar hung between the push-pin and lever.

5. In telephone-calls, a call-box; a ratchet-wheel and drum in the box; the drum having a stop-notch in it, the rear wall of which is inclined to the circle of revolution; a lever having at one end a hook to engage the said notch; the normally open springs of a calling-circuit one of which springs is located in the path of the other end of the said lever; means for pushing the lever enough to bring the hook up to the incline but not enough to close the springs, and means for revolving the drum whereby the lever is actuated to close the said springs.

6. In telephone-calls, a shaft journaled in a box and carrying a ratchet-wheel and a wheel with a single notch in it; a spring around the shaft and connected at one end therewith and at the other end with the ratchet-wheel; a pawl for the single-notched wheel; a crank fixed to the shaft; a latch substantially as described pivoted in the box to engage the crank and a pin in a fixture of the ratchet-wheel to engage the latch.

7. In telephone-calls, a normally closed selecting-circuit including a contact-spring; a rotary shaft; step-by-step selecting mechanism operating the said shaft; a wheel upon the shaft carrying a stop-pin; a lever carrying a stopping-pin and pivoted to a fixture; and a push-pin connected with the said lever and adapted to engage the said spring to break its contact substantially as described.

811,053. APPARATUS FOR AERATING, PURIFYING, AND COOLING MILK. DEXTER M. GIFFORD and JAMES HALL, Brooklyn, N. Y. Filed Feb. 1, 1905. Serial No. 243,693.

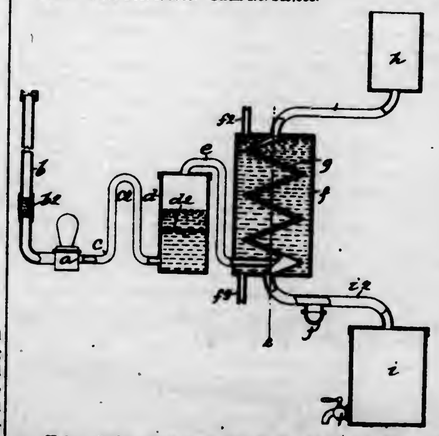

Claim.—1. In an apparatus for treating milk in the manner described, a closed cooler-tank provided with an inclosed zigzag passage which extends therethrough, a water-tank arranged adjacent to the cooler-tank and the top portion of which is in communication with one end of said passage, an air-pump in communication with

the bottom of the water-tank and an air-supply tube in communication with said pump, substantially as shown and described.

2. In an apparatus for treating milk in the manner described, a closed cooler-tank provided with an inclosed zigzag passage which extends therethrough, a water-tank arranged adjacent to the cooler-tank and the top portion of which is in communication with one end of said passage, an air-pump in communication with the bottom of the water-tank and an air-supply tube in communication with said pump, said air-supply tube being also provided with means for purifying air, substantially as shown and described.

811,054. **EXTENSIBLE CHAIN.** EMANUEL C. GIPP, Chicago, Ill. Filed Apr. 24, 1905. Serial No. 257,183.

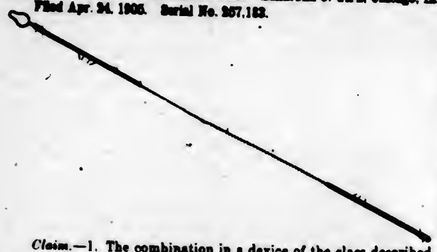

Claim.—1. The combination in a device of the class described, of a spirally-coiled spring-wire, means within the coil thereof for limiting its extension, end tubes, one of which is rigidly attached to one and the other to the opposite end of said coil, and a series of non-telescoping disconnected tubes slidably mounted upon said coil between said end tubes, whereby when any two of said tubes are grasped and pulled apart, the members of each separated group may be caused to abut successively against each other and in turn against the end tube, thus transferring the pull to the ends of the coil and insuring uniformity of stretch throughout the length of the latter.

2. The combination with a spiral coil of spring-wire, of overlapping limiting-wires inclosed therein, said wires being provided with end hooks whereby one wire may be attached to one and the other to the opposite end of said coil, means for locking said hooks in position, and means for slidably connecting the overlapping portions of said wires whereby they may slide upon each other within predetermined limits.

3. The combination with a spiral coil of spring-wire, of overlapping limiting-wires inclosed therein, said wires being provided with end hooks whereby one wire may be attached to one and the other to the opposite end of said coil, caps for securing said hooks in position, means for permanently securing said caps to said coil, and means for slidably connecting said wires to limit the movement thereof in opposite directions.

4. The combination with a spiral coil of spring-wire, of overlapping limiting-wires provided with end hooks whereby one wire may be attached to one and the other to the opposite end of said coil, caps for securing said hooks in position, means for permanently securing said caps to said coil, means for slidably connecting the overlapping portions of said wires to limit their opposite movement, and a series of disconnected tubes surrounding said coil between said caps.

5. The combination with a spiral coil of spring-wire, of overlapping limiting-wires inclosed therein, said wires being provided with end hooks whereby one wire may be attached to one and the other to the opposite end of said coil, means for slidably connecting the overlapping portions of said wires to limit their endwise movement, end loops having their bodies projected within the ends of said coil, offsets upon said bodies and tubes surrounding said ends, said tubes being crimped upon said coil and offsets for locking said end loops in position.

811,055. **RAILROAD-RAIL.** CONRAD F. GRAFF, St. Louis, Mo. Filed May 3, 1905. Serial No. 259,204.

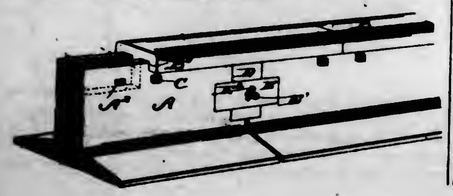

Claim.—1. A rail comprising overlapping tread and base sections, the base-sections being cut out at the ends and recessed on the sides, a block fitting said cut-out portions and recessed on the sides, plates fitting said recesses, each plate overlapping the block, and means for locking the plates in position.

2. A rail comprising a tread having a depending web, a base longitudinally grooved to receive the web, said base being recessed on each side adjacent the ends, a block adapted to fit between two base-sections, and recessed on the sides, said block being bifurcated to straddle the web, and tie-plates fitting in the recesses of the bases and block.

3. A rail of the kind described comprising a tread portion having a depending web and depending side flanges, a base cut away at each end and grooved to receive the web, said base and tread having alining perforations, a bolt adapted to pass through said perforations, a block adapted to fit in the cut-out portions of adjoining bases, said block and bases having alining recesses, a tie-plate adapted to fit said recesses and having an integral pin adapted to pass through the block, an opposing tie-plate perforated for the passage of the pin, and means for locking the pin in place.

811,056. **COOKING-STOVE ATTACHMENT.** GEORGE F. GREEN, Bonita, Tex., assignor of one-half to Ernest S. Jones, Kerens, Tex. Filed Mar. 6, 1905. Serial No. 248,610.

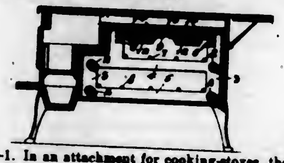

Claim.—1. In an attachment for cooking-stoves, the combination with a series of supporting-frames secured together adapted to be inserted into an oven and having supporting notches or recesses in their upper sides, of open wire shelves or racks supported by said frames, a fender-plate adapted to engage the supporting notches or recesses in the upper ends of said frames whereby said plate is adjustably supported above said racks, and water-pans connected to the under side of said plate, substantially as described.

2. In an attachment for cooking-stoves, the combination with a series of supporting-frames secured together adapted to be inserted into an oven and having supporting notches or recesses in their upper sides, of open wire shelves or racks supported by said frames, a fender-plate adapted to engage the supporting notches or recesses in the upper ends of said frames whereby said plate is adjustably supported above said racks, water-pans connected to the under side of said plate, said pans being cut away at their upper side edges to form discharge-openings through which the water in said pans evaporates, and means whereby said pans may be filled, substantially as described.

3. In an attachment of the character described, the combination with a series of open supporting-frames, spaced apart and held together by means of shouldered bolts and clamping-nuts and having supporting notches or recesses in their upper sides, of upper and lower pan-racks each formed of a single piece of wire bent to form an open shelf having right-angularly-bent ends to engage the outer supporting-frames, a suitably-braced sheet-metal fender-plate adapted to engage one pair of the said supporting-notches formed in the upper ends of each of said supporting-frames, whereby said plate may be supported at different levels above said pan-shelves, and water-pans connected to the under side of said fender-plate, substantially as described.

811,057. **ELECTRIC SIGN.** CARL HALLER, Chicago, Ill. Filed Apr. 29, 1905. Serial No. 257,961.

Claim.—1. An electric sign comprising lamp-sockets, a plate whereto they are attached, said plate being apertured at intervals and said sockets substantially filling said apertures; and a sign-letter open back and front and secured to the front of said plate and laterally inclosing said sockets, said letter consisting of a strip of sheet metal continuous from top to bottom and running peripherally of the letter-outline.

2. An electric sign comprising a plate; a letter-outline shell consisting of a continuous strip of metal running along and forming the outline of the letter, the strip being secured at the rear edge to the front of said plate, and said letter-outline being open back and front; and lamp-sockets secured to said plate within the boundary of the letter-outline substantially as described.

3. An electric sign comprising a foundation-plate, electric-lamp bulbs secured thereto in front thereof, and a letter-outline shell open back and front and secured to said foundation-plate for laterally inclosing said lamp-bulbs, said bulbs being thereby adapted to illuminate the inner surfaces of said shells and such portion of the back plate as is inclosed within the same, and the letter-outline shell consisting of a strip of metal continuous from top to bottom and running peripherally around the letter-outline.

4. In combination, sockets for electric-lamp bulbs; a plate whereto said sockets are affixed, said plate being apertured at the point of attachment of the sockets and being otherwise imperforate and the sockets being approximately coextensive with the apertures in said plate and the major portion of the socket lying behind said plate; and a sign-letter open back and front and secured to the front of said plate, said sign-letter consisting of a strip of sheet metal continuous from top to bottom and running peripherally around the letter-outline, the said sockets being located within said letter-outline.

5. In an electric sign the combination of a foundation-plate, letter-outline shells consisting of strips of sheet metal bent to letter-outline, the rear edge of each strip being bent to form a flange for attachment to said foundation-plate and the front edge of the strip being beaded over for stiffness; and lamp-sockets secured to said foundation-plate within the letter-shells, the major portion of said sockets lying behind said plate.

6. In an electric sign the combination of a foundation-plate, letter-outline shells consisting of strips of sheet metal bent to letter-outline, the rear edge of each strip being bent to form a flange for attachment to said foundation-plate, and the front edge of the strip being beaded over for stiffness; lamp-sockets secured to said foundation-plate within the letter-shells, the major portion of said sockets lying behind said plate; and a back plate fastened a slight distance behind said foundation-plate for housing said lamp-sockets.

811,058. **ELECTRIC SIGN.** CARL HALLER, Chicago, Ill. Filed Apr. 29, 1905. Serial No. 257,962.

Claim.—1. In an electric sign, the combination of a sheet-metal shell forming the outline of a letter, and a diaphragm extending from wall to wall of the shell, said shell having a ridge formed therein between the front and back edges thereof for supporting said diaphragm substantially as described.

2. In an electric sign, the combination of a sheet-metal shell forming the outline of the letter and having an inwardly-projecting ridge formed between the front and back edges thereof; an apertured diaphragm adapted to rest against said ridge; and lamp-sockets secured within said shell back of said diaphragm.

3. In an electric sign, the combination of a sheet-metal shell forming the outline of the letter and having an inwardly-projecting ridge formed between the front and back edges thereof, the walls of the letter-shell being formed of a continuous sheet of metal bent to proper form; an apertured diaphragm adapted to rest against said ridge; and lamp-sockets secured within said shell back of said diaphragm.

4. In an electric sign, a one-piece sheet-metal letter-outline shell having a ridge formed therein and stiffened in front by a beading formed therein; in combination with lamp-sockets, and a diaphragm adapted to fit within the shell against the said ridge and substantially cover said sockets.

5. In electric sign, the combination of a sheet-metal shell forming the outline of the letter, and having an inwardly-projecting ridge formed between the front and back edges thereof, the walls of the letter-shell being formed of a continuous sheet of metal bent to proper form and having a stiffening-beading formed integral therewith at the front edge thereof; an apertured diaphragm adapted to rest against said ridge; and lamp-sockets secured within said shell back of said diaphragm, substantially as described.

6. In an electric sign, the combination of a sheet metal forming the outline of the letter and having an inwardly-projecting ridge formed between the front and back edges thereof; an apertured diaphragm adapted to rest against said ridge; lamp-sockets secured within said shell back of said diaphragm; and a back plate secured to the rear edges of the shell for housing said sockets.

7. In an electric sign, the combination of a sheet-metal shell forming the outline of the letter, and having an inwardly-projecting ridge formed between the front and back edges thereof; a diaphragm adapted to rest against said ridge; a back plate; and lamp-sockets mounted on said back plate, the walls of the shell having marginal flanges formed integral therewith at the rear edge thereof for the attachment of said back plate, and said diaphragm having apertures for the penetration of the lamps or sockets.

811,059. **ELECTRIC SIGN.** CARL HALLER, Chicago, Ill. Filed Apr. 29, 1905. Serial No. 257,963.

Claim.—1. In an electric sign, the combination with lamp-sockets, of a sheet-metal shell forming the outline of a letter and having a ridge formed between its front and rear edges; and a diaphragm adapted to fit within said shell and lie against the said ridge therein and carry said lamp-sockets.

2. In an electric sign the combination with a diaphragm and lamp-sockets mounted thereon, of a letter-shell formed of sheet metal of a single continuous piece from the front to the rear edges; and a ridge impressed from the metal of the shell for supporting said diaphragm.

3. In an electric sign, the combination with a diaphragm and lamp-sockets mounted thereon, of an open-front letter-shell formed of a strip of sheet metal bent into the form of a letter-outline and having a ridge formed therein between the front and rear edges for supporting said diaphragm.

4. In an electric sign, the combination with a diaphragm and lamp-sockets mounted thereon, of an open-front letter-shell formed of a strip of sheet metal bent into the form of a letter-outline and having a ridge formed therein between the front and rear edges for supporting said diaphragm, said sheet being of a single continuous piece from the front to the rear edge thereof.

5. In an electric sign, the combination with a diaphragm and lamp-sockets mounted thereon of an open-front letter-shell formed of a strip of sheet metal bent into the form of a letter-outline and having a ridge formed therein between the front and rear edges for supporting said diaphragm, said shell having a beading at the front for stiffening it.

6. In an electric sign, the combination with lamp-sockets, of a sheet-metal shell forming the outline of a letter and having a ridge formed between its front and rear edges; and a diaphragm adapted to fit within said shell and lie against the said ridge therein and carry said lamp-sockets; said sockets lying chiefly on the rear side of the diaphragm for the purpose described.

7. In an electric sign, the combination with a diaphragm and lamp-sockets mounted thereon of an open-front letter-shell formed of a strip of sheet metal bent into the form of a letter-outline and having a ridge formed therein between the front and rear edges for supporting said diaphragm, and a back plate secured to the rear edge of the letter-shell whereby a chamber is formed behind the diaphragm for containing said sockets and their wiring connections.

8. In an electric sign, the combination with a diaphragm and lamp-sockets mounted thereon and lying chiefly on the rear side thereof, of an open-front letter-shell consisting of sheet metal formed of a

continuous piece from front to rear and having a ridge impressed therein between the front and rear edges of the shell for retaining the diaphragm, said shell having narrow marginal flanges formed at the rear edges thereof; and a back plate secured to said flanges substantially as described.

811,060. TRACTION-ENGINE TENDER. HERMAN HAMANN, Beavercreek, Minn. Filed Aug. 24, 1905. Serial No. 275,060.

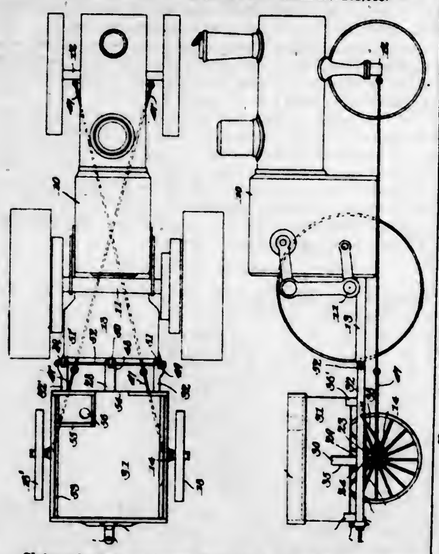

Claim.—1. In a traction-engine tender, a wheeled axle, a saddle carried above and upon the axle, a semicylindrical tank mounted and carried intermediate its ends upon and in the saddle, curved supports spaced upon each side of the saddle and conforming to the convexity of the tank and frame-pieces carried upon the axle and supporting the curved supports.

3. In a traction-engine tender, a wheeled axle, a draw-bar, a saddle carried above and upon the axle and disposed in a plane parallel therewith, a semicylindrical tank mounted and carried intermediate its ends upon and in the saddle, frame-pieces extending transversely of the axle and upon each side of and parallel with the draw-bar and curved supports under each end of and conforming to the convexity of the tank and carried upon the frame-pieces and draw-bar.

3. In a traction-engine tender, a wheeled axle, a draw-bar extending transversely of the axle, frame-pieces spaced upon opposite sides of parallel to and connected with the draw-bar, rollers journaled upon the axle and supporting the frame-pieces, a saddle carried above the axle and upon the draw-bar and frame-pieces, a semicylindrical tank mounted and carried intermediate its ends upon and in the saddle and curved supports under each end of and conforming to the convexity of the tank and carried upon the draw-bar and frame-pieces.

4. In a traction-engine tender, a wheeled axle, a draw-bar pivoted upon the axle midway of its ends, a keeper attached to the draw-bar and pivoted to the under side of the axle, rollers journaled upon the axle adjacent the wheels, frame-pieces disposed parallel with and secured to the draw-bar and carried upon the rollers, a saddle disposed over and in a plane parallel with the axle and upon the draw-bar and frame-pieces, and curved supports under each end of and conforming to the convexity of the tank and carried upon the draw-bar and frame-pieces.

811,061. ALARM. GEORGE A. HILL, Chicago, Ill. Filed Oct. 26, 1904. Serial No. 230,022.

Claim.—1. In an alarm device, the combination of a frame having oppositely-arranged perforated lugs and provided at one end with a detent and at its opposite end with a contact, a pivot-screw passed through the lugs and provided with a projecting threaded end portion, a spring coiled on the pivot-screw between the lugs with an end portion engaged with the frame and with an arm provided with a holder for receiving a cap, said arm having an extended portion for engagement by a door or window when opened and being adapted for engagement by the detent to hold the spring under tension, and being also adapted, when released from said detent, for pivotal movement to strike the cap upon said contact.

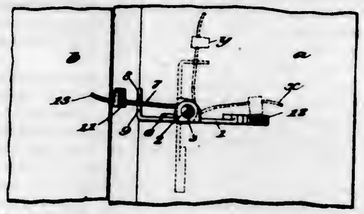

2. In an alarm device, the combination of a frame having oppositely-arranged lugs and provided at one end with a detent and at its opposite end with a contact, a pivot part passed through the lugs, a spring coiled on the pivot part between the lugs with an end portion engaged with the frame and an arm provided with a holder to receive a cap, said arm having an extended portion for engagement by a window-sash when moved and being adapted for engagement by the detent to hold the spring under tension and being also adapted, when released from the detent, for pivotal movement to strike the cap upon the contact and an auxiliary pivot-screw passed through the frame for engagement with a window-casing and whereon said frame is adapted to be swung in or out of position for operation.

811,062. RAILWAY-CAR TRUCK. JAMES M. HOPKINS, Chicago, Ill. Filed June 5, 1905. Serial No. 263,706.

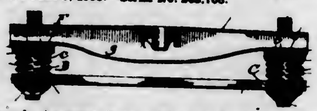

Claim.—1. A car-truck comprising side frames having openings therein, spring-planks with springs thereon, spring-caps interlocked with said side frames and an integral bolster projecting through the openings of the side frames and having its ends flanged or offset to engage said spring-caps.

2. A car-truck comprising side frames having openings therein, spring-planks with springs thereon, spring-caps interlocked with said side frames and an integral bolster projecting through the openings of the side frames and having its ends provided with downwardly-projecting flanges engaging said spring-caps.

3. A car-truck comprising metal side frames having openings therein, the portions of said side frames surrounding said openings being formed integral, spring-planks with springs thereon, spring-caps interlocked with said side frames and an integral bolster projecting through the openings of the side frames and having its ends provided with downwardly-projecting flanges engaging said spring-caps.

811,063. ANNUNCIATOR. WALTER R. HOBBINS, Cleveland, Ohio, assignor to The Williams Telephone & Supply Company, Cleveland, Ohio, a Corporation of West Virginia. Filed Dec. 5, 1904. Serial No. 235,617.

Claim.—1. In an annunciator, the combination of a pivoted shutter, a vibratory retaining and releasing device for said shutter comprising a pair of forks adapted in one position of said device to permit the passage therebetween of the adjacent portion of the shutter and in another position to engage such portion of the shutter, and means for vibrating said device, substantially as specified.

2. In an annunciator, the combination of a pivoted shutter, a vibratory releasing and retaining device for said shutter comprising a pair of forks adapted in one position of said device to permit the passage therebetween of the adjacent portion of the shutter and in another position to engage such portion of the shutter, each of said forks being inclined from the outer extremity thereof toward the body of the device and such inclined surface being beveled, and means for vibrating said device, substantially as specified.

3. In an annunciator, the combination of a pivoted shutter having a rounded portion provided with a beveled edge, a vibratory retaining and releasing device for said shutter comprising a pair of forks positioned and adapted in one position of the device to permit the passage therebetween of the rounded portion of said shutter and in another position to engage such portion of the shutter, each of said forks being inclined from the outer extremity thereof toward the body of the device and such inclined surface being beveled, and means for vibrating such device, substantially as specified.

4. In combination with the hammer-stem of a polarized ringer, an indicator for use therewith comprising a base-plate, a shutter pivoted adjacent to said base-plate with a tendency to move away therefrom, a retaining and releasing device for said shutter, said device being pivoted and having at one end means engaging said stem and at the other end a pair of forks arranged to permit the passage of the shutter therebetween when the stem is vibrating and to retain said shutter when said stem is not vibrating, substantially as specified.

5. The combination of a bell, a hammer, a stem for said hammer, an indicating device for said bell, said device comprising a base-plate having a lower plane portion adapted to be secured to a suitable support and an upper plane portion offset from said lower plane portion, a pivoted shutter adapted to be folded up into vertical position with its outer surface substantially in the plane of the upper portion of said base-plate and having a tendency to fall away therefrom, a member pivoted to the upper portion of said base-plate and having a portion connected with the hammer-stem and a portion adapted to engage the outer surface of said shutter when the stem is at rest and to disengage said surface when the stem is in an intermediate position, substantially as specified.

811,064. AIR-BRAKE. EDWIN T. HUGHES, Gladstone, Colo., assignor of one-fourth to Vincent J. O'Brien, one-fourth to Willis E. Kinney, and one-fourth to James M. Ragan, Silverton, Colo. Filed Oct. 9, 1905. Serial No. 281,912.

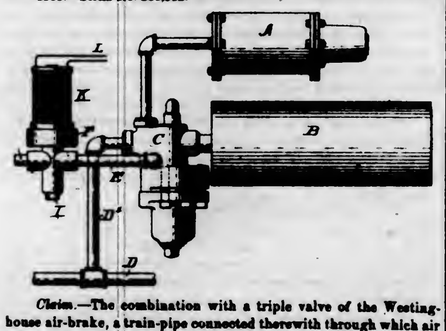

Claim.—The combination with a triple valve of the Westinghouse air-brake, a train-pipe connected therewith through which air is supplied to the triple valve and in which the pressure is at times reduced and which is the sole means for establishing and cutting off communication between the auxiliary reservoir and the brake-cylinder; an exhaust-passage leading from the said triple valve; a valve-casing applied thereto, a valve for opening and closing said exhaust-passage without in any way affecting the passage between the auxiliary reservoir and brake-cylinder, and electromagnetic devices for operating said exhaust-valve.

811,065. COPYING APPARATUS. FERDINAND JAGERS, New York, N. Y. Filed Nov. 4, 1905. Serial No. 285,882.

Claim.—1. In a copying apparatus, a mirror, a slate at the back thereof, and a surrounding frame, combined with a U-shaped tracer adapted to straddle the frame and to simultaneously engage the mirror and slate, substantially as specified.

2. In a copying apparatus, a mirror, a slate at the back thereof, and a surrounding frame, combined with a U-shaped tracer composed of a front arm having a tracing-point, a rear arm having a pencil-holder, and an integral connecting coiled spring, substantially as specified.

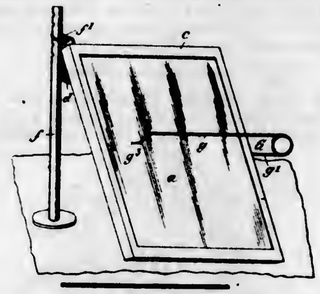

811,066. STEAM-BOILER. MYER JANOWITZ, Sioux City, Iowa, assignor to Rose Janowitz, Sioux City, Iowa. Filed May 25, 1905. Serial No. 263,233.

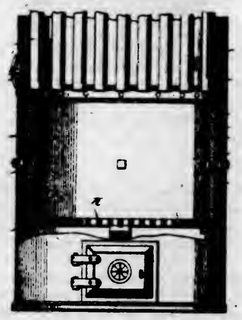

Claim.—In an upright-flue boiler, the combination with an outer shell extended below the lower flue-sheet and around the fire-box, of a fire-pot within said shell and spaced at all points therefrom, comprising a cast-iron lining and a backing of non-heat-conducting material.

811,067. CORN-HUSKER. MARTIN M. JOHNSON and EDWARD G. JOHNSON, Malta, Ill. Filed Apr. 28, 1905. Serial No. 257,891.

Claim.—1. A corn-husker, comprising a flexible band, means for securing the band around the hand and wrist, and a plate consisting of a substantially oblong body portion having its front end extended laterally at one side and provided in rear of such extension with a laterally-projecting tongue, the front half of the plate being also curved longitudinally to fit the hand, and the rear half of the plate being substantially straight in longitudinal section to form a solid wrist-protecting portion, and being extended from a point below to a point above the wrist-joint to prevent the wrist from bending thereat.

2. In a corn-husker, the combination of a plate provided with perforations, a hook provided at one side of its shank with an integral projecting lug adapted to fit in a perforation of the plate, said shank being also provided with a threaded perforation, and a screw extending through a perforation of the plate and engaging the perforation of the shank.

3. In a corn-husker, the combination of a plate having a plurality of perforations, a hook provided with a lug arranged to engage the perforation, said hook being also provided with a threaded opening, a screw extending through the plate from the inner face thereof and engaging the threaded perforation of the hook, and a flexible lining covering the inner face of the plate and provided with a slit adapted to afford access to the screw.

811,068. COUPLING APPARATUS FOR CARS. GEORGE B. KELLY, Dorrancetown, Pa., assignor of one-half to Joel M. Arnold, Wilkesbarre, Pa. Filed July 19, 1904. Serial No. 217,213.

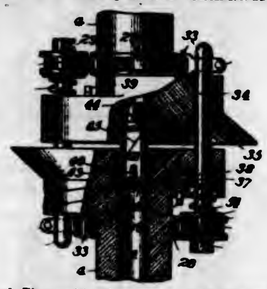

Claim.—1. The combination with a car, of braking means mounted thereon, a second car, and a hose-coupling between said cars adapted to be connected and disconnected, and including means whereby the braking means is operated upon the parting of said cars when said coupling has not been disconnected, said brake-controlling means of the coupling being inoperative upon said parting if said coupler has been disconnected, substantially as described.

2. The combination with a car, of brakes thereon, a second car, a hose-coupling between said cars and means whereby the draft upon said coupling operates to apply said brakes, substantially as described.

3. The combination with a car, of braking means mounted thereon, a second car, a draft-coupling between said cars, and a hose-coupling between said cars, including means whereby said brakes are applied upon a draft between said cars when said draft-coupler is disconnected and said hose-coupling has not been disconnected, said braking means remaining inoperative if the hose-coupler has been disconnected, substantially as described.

4. The combination with a car, of braking means mounted thereon, a second car, a draft-coupling between said cars, a hose-coupling between said cars, means whereby said brakes are applied upon a draft between said cars when said draft-coupler is disconnected and when said hose-coupling has not been disconnected, said braking means remaining inoperative if said hose-coupler has been disconnected, and common means for disconnecting said couplings, substantially as described.

5. The combination with a car, of a longitudinally-movable coupler-section thereon, and means for adjusting the longitudinal position of said coupler-section, substantially as described.

6. The combination with a car, of an adjustable bracket supported thereon, and a coupler-section spring-supported at a plurality of longitudinally-displaced points by said bracket, substantially as described.

7. The combination with a car, of an adjustable bracket supported thereby, and a coupler-section pivoted to said bracket and spring-supported at a plurality of longitudinally-displaced points, substantially as described.

8. In a hose-coupler having two sections, the combination with a pin secured to each section, means in each section for latching the pin of the other section, and common means for releasing both of said pins from said latching means, substantially as described.

9. In a hose-coupler section, the combination with a pin, of a latch for securing a pin from the opposing section of the coupler, means for moving said latch, and means operatively related to said means for turning said pin, substantially as described.

10. In a hose-coupler the combination with a pin projecting from one section, of a latch in the other section adapted to secure said pin against pull, and means operated by the draft upon the coupler for releasing said pin, substantially as described.

11. In a hose-coupler, the combination with a pin projecting from one section, of means in the other section for securing said pin, camming means whereby draft upon said pin operates to turn and thereby release said pin, and a spring tending to force said pin in the opposite direction, substantially as described.

12. The combination with a car, of a train-pipe thereon for controlling the brakes, a valve controlling said train-pipe, a coupler-section comprising a projecting pin at one side of the passage through said coupler-section and means whereby said pin controls said valve, substantially as described.

13. The combination with a car provided with fluid-pressure brake devices, of a coupler-section connected with the car and having formed therein a passage extending from a pressure-duct of the brake mechanism through one face of said coupler-section, a valve arranged within and adapted to normally close said passage and provided with a projecting pin or stud, and means for automatically applying pressure to the pin of the corresponding valve of a similar coupler-section when said sections are accidentally disengaged substantially as and for the purpose described.

14. The combination with a car provided with fluid-pressure brake devices, of a coupler-section mounted on the car and provided with ducts communicating with the pressure-ducts of the brake devices, valves arranged within said ducts of the coupler-section and adapted to be automatically opened when said section is engaged by a similar section, said coupler-section having a passage adapted to connect one of the pressure-ducts therein with the atmosphere, and a valve controlling said passage and adapted to be operated from the exterior of the coupler, substantially as and for the purpose described.

15. The combination with two cars each provided with fluid-pressure brake devices, of a coupling between said cars comprising a section mounted on each car and provided with ducts adapted to form part of the brake devices, means for automatically connecting the ducts of one section of the coupler with the corresponding ducts in the other coupler-section as said sections are engaged, each of said coupler-sections having a passage adapted to connect one of said pressure-ducts with the atmosphere, a valve controlling each of said passages, and means for automatically actuating said valve when the coupler-sections are unintentionally disengaged, substantially as and for the purpose described.

16. The combination with a car provided with fluid-pressure brake devices, of a coupler-section having therein ducts forming part of the brake devices, and provided with a passage adapted to connect one of said ducts with the atmosphere, a valve controlling said passage, and means on the coupler-section for engaging a similar section on another car, said means being adapted to automatically actuate said valve when unintentionally disengaged from said second coupler-section, substantially as and for the purpose described.

17. The combination with a car, of a brake train-pipe thereon, a valve controlling said train-pipe, a coupler-section comprising a projecting pin, means whereby the draft upon said coupler-section operates to release said pin and means whereby the draft upon said pin operates to actuate said valve, substantially as described.

18. The combination with a car, of brakes thereon, a second car, a hose-coupler between said cars comprising sections adapted to be connected together and means whereby draft on said coupler operates to disconnect said sections and apply said brakes, substantially as described.

19. In a hose-coupler, the combination with means for accomplishing the connection and disconnection of said coupler, of a drip-valve operatively related to each section of said coupler, springs acting to hold said valves closed, and means for positively opening said valves when the coupler-sections are disconnected, substantially as described.

20. In a hose-coupler having two sections, the combination with a drip-valve on one section, of a drip-valve on the other section, said valves being so constructed and located in said sections that when said sections are in connected position said valves mutually operate to close each other, substantially as described.

21. In a hose-coupler section, the combination with a central portion having a duct, of a pin upon one side of said portion, a pin-engaging latch upon the other side of said portion, means for moving said latch into unlatched position, means for moving said pin into unlatched position, said means being operatively connected together, substantially as described.

22. In a hose-coupler section, the combination with a pin, of a latch for securing a pin from the opposing section of the coupler, means for moving said latch, and means operatively related to said means for moving said pin, substantially as described.

23. In a hose-coupler section, the combination with a central body portion having a duct, of a spring-latch mounted to turn upon said body portion, a pin, and gearing connecting said pin and latch, substantially as described.

24. In a hose-coupler section, the combination with a central body portion having a duct, of a funnel upon one side of said body portion, a spring-latch behind said funnel, a gear connected to said latch and rotatably mounted upon said body portion, a pin on the opposite side of said body portion from said funnel, and a gear engaging with said pin and the aforesaid gear, substantially as described.

25. The combination with a car, of a coupler-section, springs suspended therefrom at a pivotal point and also spring-supported at a plurality of points longitudinally displaced from said pivot, substantially as described.

26. The combination with two cars having fluid-operated brakes, of a separable coupling for connecting the brake mechanism of one car with that of the other, and including means whereby the brakes on both cars will be operated upon the parting of said cars when said coupling has not been disconnected, such brake-controlling means of the coupling being inoperative if the coupler has been disconnected.

811,069. TURPENTINE-GUTTER. JOHN W. KENNEDY, Cecil, Ga. Filed June 5, 1905. Serial No. 263,236.

Claim.—A device of the character described consisting of a pair of gutters, a right-angularly-disposed flange formed on one edge of said gutters, said flange being adapted to be forced into the tree, tacks or similar fastening devices adapted to be driven through said troughs under the flange and into the tree, and a guide-wire connected at one end to one of the troughs and its opposite end to a suitable receptacle whereby the sap will be conducted from said gutters to said receptacle, substantially as described.

811,070. RULE ATTACHMENT. JOHN KRALUND, New York, N. Y. Filed June 5, 1905. Serial No. 263,688.

Claim.—1. A body-plate with lips arranged angularly in combination with a slide having lips at a similar angle and a spring urging the slide into the angle adapted to serve with a folding rule as herein specified.

2. A body-plate with lips arranged angularly, and a rivet set therein with a raised head in combination with a slide having lips at a similar angle and a post with a raised head and a thumb-piece, each part having a slot mid-spaced between said lips and an actuating-spring all adapted to serve as herein specified.

3. A body-plate with lips arranged angularly in combination with a slide having lips at a similar angle, means for guiding the slide and a spring coiled around the rivet on the body and acting with its equal ends each against the inner face of one of the lips on the slide, adapted to serve as herein specified.

811,071. CIGAR-BRANDING MACHINE. BERNARD LEHRMAN, Philadelphia, Pa. Filed May 8, 1905. Serial No. 259,668.

Claim.—1. In a cigar-branding machine, the combination of a movable branding-die and a resiliently-supported vertically-movable cigar-holding element beneath the die for cooperating therewith.

2. In a cigar-branding machine, the combination of a movable branding-die, a vertically-movable cigar-holding element beneath the die, and resilient means for controlling the movement of said element operating to press the cigar upwardly against the die.

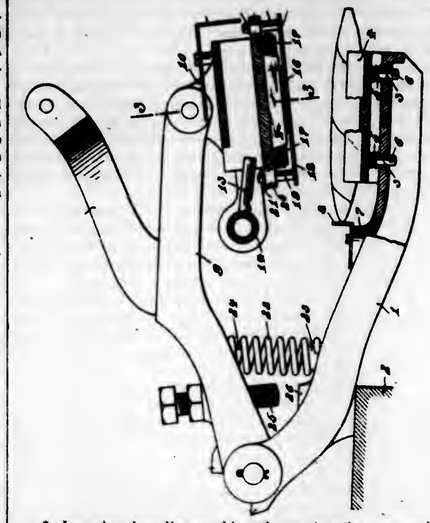

3. In a cigar-branding machine, the combination of movable branding-dies, a plurality of independently-movable cigar-holding elements beneath the dies, resilient means for controlling said movement operating to maintain pressure between the cigars and the dies.

4. In a cigar-branding machine, the combination of a movable branding element, a plurality of independently-movable cigar-holding elements beneath the branding element, and spring means for controlling said independent movement.

5. In a cigar-branding machine, the combination of a branding-die, a cigar-holding element beneath the die for cooperating therewith and a member operating intermediate the cigar-holding element and the branding-die for disengaging the cigar from said die.

811,072. FIREPROOF METAL WINDOW. ROBERT C. LEE, Chattanooga, Tenn., assignor to John E. Annis, Chattanooga, Tenn. Filed Sept. 18, 1905. Serial No. 278,068.

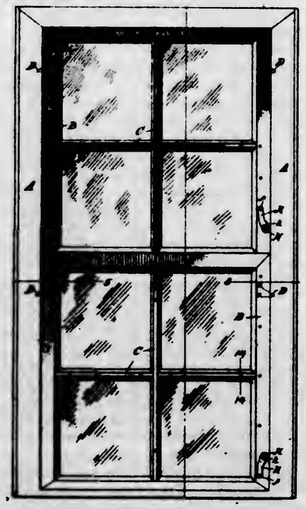

Claim.—1. In combination with a frame member and a sash member, of a guide carried by one of the members and working in a groove in the other member, means for supporting the guide so that it will be capable of free normal movement toward the grooved member, means whereby this movement is restricted, whereby when the sash member is open it shall have a free sliding action in the frame member, and means whereby the guide may be positively forced against the grooved member when the sash is closed.

2. In combination with a window-frame and a sash working therein, of a guide-strip carried by the sash and engaging a groove in the frame, means for supporting this guide-strip in such manner that it will have a free normal movement when the sash is open, whereby the sash may be freely restricted in the frame, means for limiting said movement of the guide-strip, and means whereby the guide-strip may be forced against the frame to lock the sash against movement in the frame.

3. A rib for a window-sash consisting of an outer hollow section provided with longitudinal flanges along its inner sides, an inner hollow section slotted along its outer side for the reception of said flanges and connecting screw-bolts passing through the inner section and between the flanges and into the outer section.

4. A rib for a window-sash consisting of an outer hollow section inclosing a nut-carrying strip and provided with longitudinal flanges, an inner hollow section engaging over said flanges, and screw-bolts passing through the inner section and between the flanges and screwed into said nuts, for the purpose set forth.

5. The combination of a hollow sheet-metal window-frame divided vertically into two weight-compartments by a stiffening-web whose edges are rigidly attached to the opposite walls of the frame, an opening being formed in the lower part of each of the inner walls of the upright members of the frame, and a slidable cover for said opening, said cover being confined between the inner wall of the upright member and the inner edge of the stiffening-web.

6. In combination with a window-frame, a slidable sash working in grooves therein, one of the edge walls of the sash being movable to and from the frame, pivotal links supporting said movable wall so that it shall have a free movement to and from the frame, means for restricting this movement, whereby the sash may slide freely in the frame without becoming disengaged therefrom, and means for releasing the movable wall so that it may be drawn back into the sash-frame to permit the sash to be removed from the window-frame.

7. In combination with a window-frame, of a sash adapted to slide therein and carrying a movable edge wall, means for supporting this edge wall so that it shall have a free normal play to and from the frame while the sash is open, means for projecting this movable wall toward the frame to lock the sash against movement in the frame, and means whereby the movable wall is limited in its movement and may be released for withdrawal back into the sash, said means consisting of a pin attached to the movable wall and projecting through a slot in the adjacent wall of the sash, and a movable locking-arm carried by the sash and having a slotted end in engagement with said pin, for the purposes set forth.

8. In combination with a window-frame, a sash working and guided therein, and means for tightening the sash against rattling and a device for actuating said means by the act of closing the sash.

9. In combination with a window-frame provided with grooves a sash provided with flanges working in said grooves, said flanges being movable to and from the frame, and means operated by the closing of the sash to project the flanges tightly against the frame to lock the sash against rattling and ingress of air.

10. In combination with a vertical window-frame, a sash vertically guided therein and carrying in one of its rails a gravitating strip carrying flanges adapted when projected beyond the edge of the sash to engage the window-frame, and a depending part adapted by the closing down of the sash to project said flanges and tighten the sash against rattling.

11. In combination with a frame member, a sash member sliding therein, a guide carried by one of the members and working in a groove in the other member, and a device for projecting the guide member upon the casing of the sash member.

12. In combination, a window-frame, a sash slidable therein a guide carried by the sash and adapted to engage the window-frame this guide being movable to and from the window-frame, and a device connected to the guide and projecting beyond the end of the sash whereby when the sash is closed the guide member will be forced tightly against the window-frame.

13. In combination, a window-frame, a sash, a guide-carrying strip inclosed in the sash-bar and movably supported therein, a device whereby the guide-carrying strip may be locked in its projected position, or permitted to recede into the sash-bar, and means for automatically tightening the guide against the window-frame when the sash is closed.

14. In combination with a window-frame, a sash working in grooves therein, one of the edge walls of the sash being movable to and from the window-frame, means for actuating the movable edge-wall for the purpose set forth, a bracket attached to a stationary part of the sash and projecting through an opening in said movable wall, weight-chains connected to the sash, one of the chains being connected to the projecting end of said bracket.

811,078. **ROOF-CARLINE.** ARTHUR LITSCHUTZ, St. Louis, Mo., assignor of one-half to Herbert W. Wolff, St. Louis, Mo. Filed Apr. 20, 1905. Serial No. 256,573.

Claim.—1. A metal roof-carline having a body formed of two folds of sheet metal connected at their lower edges, continuous flanges extending laterally from the upper edge of said body, and pressed-metal stops in said flanges extending above the upper face thereof and forming purlin-seats.

2. A metal roof-carline having a body, two continuous flanges extending laterally from the upper edge of said body and shaped to conform to the outline of the roof of the car, and stops integral and continuous with said flanges but extending above the same and forming purlin-seats.

3. A metal roof-carline having a body formed of two folds of sheet metal connected at their lower edges, flanges extending laterally from the upper edge of said body and forming purlin-seats, and brackets pressed from the metal of said body and flanges for supporting said purlin-seats.

4. A metal roof-carline the sides of which lie in intersecting planes and are provided with horizontally-extending flanges, said flanges being provided with upwardly-projecting stops forming purlin-seats, pressed brackets for said seats, and stops adapted to abut against the side plates.

811,074. **DISINFECTING COMPOUND.** MATTHEW J. MANIX, Kansas City, Mo. Filed Apr. 21, 1905. Serial No. 256,816.

Claim.—1. A disinfecting compound comprising potassium chlorate, sulfur, strontium nitrate, shellac, potassium nitrate and sawdust.

2. A disinfecting compound comprising potassium chlorate two ounces, sulfur two ounces, strontium nitrate six ounces, shellac one ounce, potassium nitrate one ounce, sawdust fifteen ounces, kneaded into a paste and permitted to dry in pasteboard tubes.

811,075. **STOP-MOTION FOR FULLING-MACHINES.** ARTHUR D. MANSELL, Newport, Me., assignor to The Leavitt Automatic Stop Motion Company, a Corporation of Maine. Filed May 20, 1905. Serial No. 261,727.

Claim.—1. In a stop-motion for fulling-machines, a pivotally-mounted guide-rock, two bars positioned between said guide-rock and the drawing-rolls, one movable away from the other, and means operable by said rock to stop the machine.

2. In a stop-motion for fulling-machines, a pivotally-mounted guide-rock, two bars positioned in front of the drawing-rolls, one movable away from the other, a rod having one end attached to the guide-rock and the other end provided with a loop through which the end of said movable bar passes and in the bottom of which it rests and means operable by said rock, rod and movable bar to stop the machine.

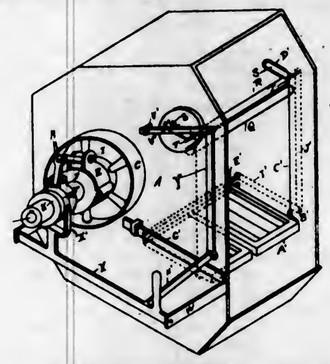

811,076. **FRONT AXLE FOR AUTOMOBILES.** FREDERICK C. MILLER, Cincinnati, Ohio. Filed Apr. 13, 1905. Serial No. 255,576.

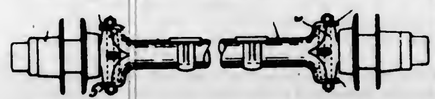

Claim.—1. A front axle for automobiles, consisting of a tube, the ends of which have been slitted and swaged apart to form jaws.

2. A front axle for automobiles, consisting of a tube, the ends of which have been slitted and swaged apart to form jaws, the slitted edges of the tube forming arched side walls to the jaws.

811,077. **HOIST.** EDWARD Y. MOORE, Cleveland, Ohio. Filed Nov. 2, 1905. Serial No. 285,577.

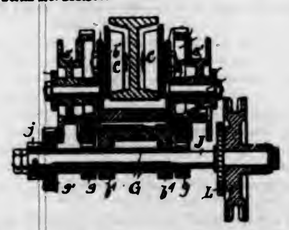

Claim.—1. In a hoist, the combination of a frame having a pair of side members, supporting-wheels on the inner sides of said members, elevating-wheels carried on the outer sides of said members, a cross-shaft extending through the frame below said supporting-wheels, and gears on said cross-shaft connected with gears on the elevating-wheels.

2. The combination with a beam having flanges extending in opposite directions, of a hoist located beneath and on opposite sides of said beam, said hoist having supporting-wheels adapted to ride on the upper sides of said flanges, journals for the elevating-wheels opposite the respective sides of the supporting-beam, and elevating-wheels on such journals.

3. The combination of a beam having a flange along its lower edge, a hoist having supporting-wheels adapted to ride on said flange, said hoist having elevating-wheels journaled on its sides opposite the supporting-wheels and a driving-shaft extending crosswise beneath the beam and operatively connected with the elevating-wheels.

4. In a hoist, in combination, a frame having side walls and a connecting part, supporting-wheels carried on the inner faces of side walls, elevating-wheels carried on the outer faces of the side walls, and a driving-shaft extending crosswise of the frame and operatively connected with the elevating-wheels.

5. In a hoist, the combination of a frame having a pair of side members, supporting-wheels carried on the inner faces of said side members, studs projecting outwardly from the side members, elevating wheels supported on said studs, and means for rotating said elevating-wheels.

6. In a hoist, in combination, a U-shaped frame having sides and an under connecting part, supporting-wheels carried on the inner faces of the sides, studs projecting outwardly from the sides, bosses on the outer sides supporting said studs, elevating-wheels journaled on said studs, and recessed on their inner faces to clear the bosses, and means for rotating said elevating-wheels.

7. In a hoist, the combination of a frame carrying bosses on its outer sides, studs projecting outwardly from said bosses, wheels on said studs and recessed on their inner faces to clear the bosses, gear-teeth formed on the periphery of said wheels outside of said recesses, driving mechanism geared with said wheels by means of said gear-teeth, and the flexible elevating member mounted on said wheels.

8. In a hoist, the combination of a frame, bosses on the outer sides thereof, studs projecting from said bosses, elevating-wheels on said studs, said wheels being formed with gear-teeth and an annular external groove for the reception of a flexible elevating member, a shaft journaled in said frame, and pinions on said shaft meshing with said gear-teeth.

9. In a hoist, the combination of a frame having a pair of side members, supporting-wheels carried on the inner faces of said side members, studs projecting outwardly from the side members, wheels supported on said studs and having gear-teeth and formed to receive the flexible supporting member, and means engaging said gear-teeth for rotating them.

10. In a hoist, the combination of a frame having a pair of side members, supporting-wheels carried on the inner faces of said side members, studs projecting outwardly from the side members, wheels supported on said studs and having gear-teeth and formed to receive the flexible supporting member, a shaft journaled in the frame, and a pair of pinions on said shaft meshing with said gears.

11. In a hoist, the combination of a frame made in two halves, each half comprising a side member and an under member, and bolts connecting the two halves to make a U-shaped structure, supporting-wheels carried on the inner faces of the side members, studs projecting from the outer faces of the side members, geared elevating-wheels journaled on said studs, a cross-shaft journaled in said frame beneath the side members and carrying a pair of pinions meshing with the gear, and means for rotating such cross-shaft.

12. In a hoist, the combination of a frame, supporting-wheels carrying the same, elevating-wheels mounted on opposite sides of the frame, a cross-shaft journaled in said frame and carrying a pair of pinions meshing with gear-teeth on the elevating-wheels, said shaft being hollow, another shaft occupying said hollow shaft and carrying a pinion, an idle gear meshing with such pinion, a pinion rigid with said idle gear, and a gear on said hollow shaft meshing with such idle pinion.

13. In a hoist, the combination of a frame made in two halves, each half comprising a side member and an under member, bolts connecting the two halves to make a U-shaped structure, studs projecting from the outer faces of the side members, elevating-wheels journaled on said studs and having gear-teeth, a cross-shaft journaled in downwardly-extending lugs of said frame beneath the side members, a pair of pinions on said shaft meshing with said gear-teeth, said shaft being hollow, another shaft occupying said hollow shaft, and gearing connecting said shafts.

14. In a hoist, in combination, a frame having sides and a cross connecting part, supporting-wheels carried on the inner faces of the sides, studs projecting outwardly from the sides, bosses on the outer sides supporting said studs, elevating-wheels journaled on said studs, and means for rotating said elevating-wheels.

15. The combination with a beam having flanges extending in opposite directions, of a hoist located beneath and on opposite sides of said beam, said hoist having supporting-wheels adapted to ride on the upper sides of said flanges, said hoist having a pair of opposed elevating-wheels opposite the respective sides of the supporting-beam, whereby the head-room is diminished.

811,078. **FLUID-FUEL BURNER.** FREDERICK L. MCGAHAN and EDWARD C. PLAGER, St. Louis, Mo.; said Plager assignor to said McGahan. Filed Feb. 11, 1905. Serial No. 245,301.

Claim.—1. In a fluid-fuel burner, a mixing-chamber, a steam-ope-

duit opening into said chamber for discharging a jet of steam therein, a fluid-fuel conduit opening into said chamber and projecting beyond said steam-jet, and an air-conduit passing through said steam and fuel conduits and opening into said chamber between the mouth of said fluid-fuel conduit and the mouth of said mixing-chamber.

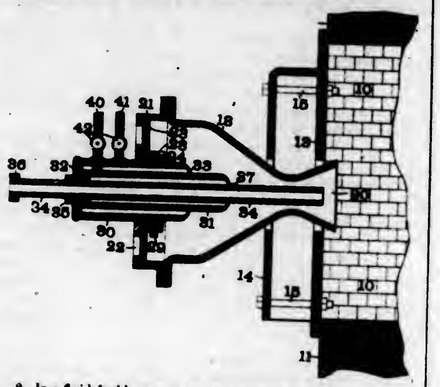

2. In a fluid-fuel burner, a mixing-chamber having a contracted throat and flaring outlet, a cap carried by said mixing-chamber, air, steam and fuel conduits carried by said cap and discharging in said mixing-chamber, said cap being provided with an air-inlet surrounding said steam and fuel conduits, and a valve controlling said inlet.

3. In a fluid-fuel burner, a mixing-chamber having a contracted throat and a flaring outlet, a hot-air chamber, a hot-air conduit connecting said hot-air chamber and mixing-chamber, an adjustable air-pipe extending beyond the discharge end of said hot-air conduit, a fuel-conduit discharging into said mixing-chamber between the discharge end of the hot-air conduit and the air-pipe, and a steam-conduit also discharging into said mixing-chamber.

4. In a fluid-fuel burner, a mixing-chamber, a hot-air chamber, a hot-air conduit connecting said hot-air chamber and mixing-chamber, a steam-pipe projecting into said mixing-chamber, a fluid-fuel conduit discharging into said mixing-chamber beyond said steam-pipe, and an air-pipe discharging beyond the discharge end of said fuel-conduit.

5. In a fluid-fuel burner, the combination with a mixing-chamber having a contracted throat and a flaring outlet, of a steam-conduit projecting into and terminating within said chamber, a fuel-conduit extending through said steam-conduit and terminating beyond the same and in said mixing-chamber, and an air-pipe extending through said fuel-conduit and terminating in said flaring outlet.

6. The combination with a plate forming part of the inclosing wall of the furnace, of a hot-air chamber carried by said plate, a mixing-chamber extending through said hot-air chamber, steam and fuel conduits terminating in said mixing-chamber, and an air-conduit connecting said hot-air chamber with said mixing-chamber.

7. The combination with a plate forming part of the inclosing wall of a furnace, of a hot-air chamber carried by said plate, a mixing-chamber provided with a contracted throat and a flaring outlet and extending through said hot-air-chamber, a cap carried by said mixing-chamber, a steam-conduit extending through said cap, a fuel-conduit extending through said steam-conduit, an air-pipe extending through said fuel-conduit and longitudinally adjustable, and an adjustable air-inlet in said cap.

8. The combination with a plate forming part of the inclosing wall of a furnace, of a hot-air chamber carried by said plate, a mixing-chamber provided with a contracted throat and a flaring outlet and extending through said hot-air chamber, a cap carried by said mixing-chamber, a steam-conduit extending through said cap, a fuel-conduit extending through said steam-conduit, an air-pipe extending through said fuel-conduit and longitudinally adjustable, an adjustable air-inlet in said cap, and a hot-air conduit connecting said hot-air chamber and said mixing-chamber.

811,079. STAMP-ACTUATING MECHANISM FOR ORE-CRUSHERS. WALTER S. MCKINNEY, Chicago, Ill. Filed May 28, 1906. Serial No. 318,222.

Claim.—1. In a stamp-actuating mechanism, the combination of a driving-gear, a cam-shaft, a cam upon said shaft, driving connections between the driving-gear and cam-shaft, and supports adjustably supporting said cam-shaft to move bodily in an arc concentric with the axis of the driving-gear.

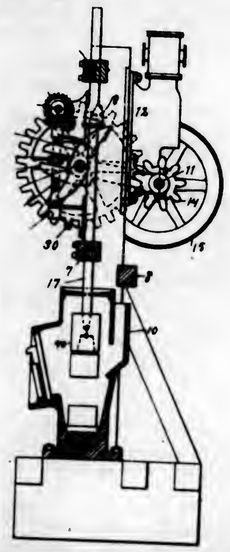

2. In a stamp-actuating mechanism, the combination of a driving-gear, a cam-shaft, a gear and cam upon said shaft, said latter gear arranged to mesh with the driving-gear, links supports adjustably supporting said cam-shaft to move bodily in an arc concentric with the axis of the driving-gear, and a stamp-stem carrying a tappet mounted adjacent to said cam-shaft.

3. In a stamp-actuating mechanism, the combination of a main shaft and driving-gear thereon, a cam-shaft arranged to extend parallel with the main shaft, a gear and cam on said cam-shaft, said latter gear arranged to intermesh with the gear of the main shaft, links pivotally supported concentrically with the main shaft and supporting at their swinging ends the cam-shaft, adjusting devices operatively connected with said links, and a stamp-stem provided with a tappet, arranged to reciprocate adjacent to said cam-shaft.

4. In a stamp-actuating mechanism, the combination of a main shaft and driving-gear thereon, a cam-shaft arranged to extend parallel with the main shaft, a gear and cam on said cam-shaft, said latter gear arranged to intermesh with the gear of the main shaft, links pivotally supported concentrically with the main shaft and supporting at their swinging ends the cam-shaft, vertically-disposed adjusting-screws operatively connected with the ends of the links, and a stamp-stem provided with a tappet, arranged to reciprocate vertically adjacent to said cam-shaft.

5. In a stamp-actuating mechanism, the combination of a main shaft and driving-gear thereon, a cam-shaft arranged to extend parallel with the main shaft, a gear and cam on said cam-shaft, said latter gear arranged to intermesh with the gear of the main shaft, links pivotally supported concentrically with the main shaft and supporting at their swinging ends the cam-shaft, vertically-disposed adjusting-screws operatively connected with the ends of the links, a gear upon each adjusting-screw, a cross-shaft arranged to extend transversely of said adjusting-screws, gears upon said cross-shaft operatively engaging the gears of the respective adjusting-screws, and means for locking said cross-shaft in adjusted position.

6. In a stamp-actuating mechanism, the combination of a suitable main frame comprising three upright standards and a bed-plate connected to and extending between two of said standards, a motor mounted upon said bed-plate, a main drive-shaft operatively connected with the motor, and journaled to extend across the central standard and the standard remote from the bed-plate, a driving-gear upon said main shaft, a pair of links mounted to oscillate upon said main shaft at points adjacent to the intermediate standard and the standard remote from the bed-plate respectively, a cam-shaft journaled in the outer ends of said links to extend parallel with the main shaft, vertical adjusting-screws supported upon said standards in

vertical register with the supporting-links and having screw-threaded engagement with the latter, a miter-gear upon each adjusting-screw, a cross-shaft provided with miter-gears engaging the respective gears of the adjusting-screws, a ratchet-and-pawl mechanism for locking said cross-shaft in adjusted position, a driven gear upon said cam-shaft intermeshing with the gear of the main shaft, a plurality of cams upon said cam-shaft, and a plurality of stamp-stems supported to reciprocate vertically adjacent to the cam-shaft.

811,080. MOLD FOR MAKING BUILDING-BLOCKS. HENRY NOAH, Baxter, Iowa. Filed June 13, 1905. Serial No. 265,421.

Claim.—1. In a separable front for a building-block mold, a front side having hinged ends and a hinged top.

2. In a separable front for a building-block mold, a front side having hinged ends and a hinged top and a hinged bottom.

3. In a separable front for a building-block mold, a front side having hinged ends, a hinged top, a hinged bottom and a metal plate detachably connected with the pieces hinged to the front side.

4. In a separable front for a building-block mold, a front side having hinged ends and a hinged top and a hinged bottom, a turn-button pivoted to the front face of the side to engage the edge of the hinged top, for the purposes stated.

5. In a separable front for a building-block mold, a front side having hinged ends and a hinged top and a hinged bottom and turn-buttons pivoted to the outside face of the front side.

6. In a separable front for a building-block mold, a front side having hinged ends and a hinged top and a hinged bottom and turn-buttons pivoted to the outside face of the front side and means for locking them.

7. In a separable front for a building-block mold, a front side having hinged ends and a hinged top and a hinged bottom and turn-buttons pivoted to the outside face of the front side, a lever pivoted to the front side and connected with the turn-buttons by links for locking them.

8. In a separable front for a building-block mold, a front side having hinged ends and a hinged top, a rear side and two ends provided with dowels to enter apertures in the bottom of the mold and means to lock all the parts together.

9. In a separable front for a building-block mold, a front side having hinged ends and a hinged top, a rear side and two ends provided with dowels to enter apertures in the bottom of the mold, eccentrics adjustably connected with the ends to engage the outside faces of the front and rear sides of the mold for clamping the sides to the ends.

10. In a mold for making building-blocks, a bottom, a front side having hinged pieces at its ends, a rear side, ends fitted between the hinged pieces and the rear side, links pivoted to the ends and eccentric clamps pivoted to the links to engage the outside faces of the parallel sides and means to support the outer ends of the links and clamps.

811,081. SUSPENDERS. FRANK B. NORRIS, Helena, Mont. Filed May 15, 1905. Serial No. 260,582.

Claim.—1. An improvement in suspenders, consisting of two main straps or webs, having free looped ends, each end provided with an adjusting-buckle and a cast-off, and a cross-strap provided with an adjusting-buckle, in combination with two suspender-cords, buttoning at the ends only, to buttons placed on the sides of the garment supported, each cord being engaged by the cast-offs at each end of the same web, only.

2. An improvement in suspenders, consisting of two main elastic webs, each web having free adjustable looped ends, each end provided with a cast-off, a cross-web in two segments, one attached to each web, a buckle adjustably connecting the two cross-segments, in combination with two cords, buttoning at the ends only, each cord being slidably engaged by both the cast-offs of one of the webs.

811,082. MECHANICAL PIANO-PLAYER. JAMES O'CONNOR, New York, N. Y. Filed Feb. 17, 1904. Serial No. 193,948.

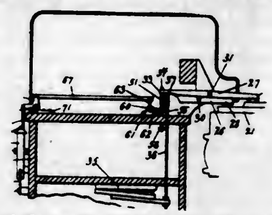

Claim.—1. In a mechanical piano-player, the combination with automatic devices for selectively operating the key-fingers, of means for moving the key-fingers a portion of their stroke in advance of the action of the automatic devices.

2. In a mechanical piano-player, the combination with automatic devices for selectively operating the key-fingers, of means for moving a predetermined section of the key-fingers a portion of their stroke in advance of the action of the automatic devices.

3. In a mechanical piano-player, the combination with automatic devices for selectively operating the key-fingers, of means for independently moving predetermined key-fingers a portion of their stroke in advance of the action of the automatic devices.

4. In a mechanical piano-player, the combination with a series of key-fingers, of a plurality of bars, each adapted to engage a predetermined number of the key-fingers to move them a portion of their stroke, and means for independently operating each bar.

5. In a mechanical piano-player, the combination with a series of key-fingers, of a plurality of bars, each adapted to engage a predetermined portion of the key-fingers to move them simultaneously a portion of their stroke, and means convenient to the hand of the performer for operating the bars independently.

6. In a mechanical piano-player, the combination of means for varying the amplitude of movement of the key-fingers to modify their effect on the piano-keys, and means for independently adjusting the zone of movement of the individual key-fingers.

7. In a mechanical piano-player, the combination, with a series of key-fingers, of a plurality of bars each mounted in operative relation to a predetermined set or section of the fingers, and a series of adjusting-screws for independently adjusting the zone of movement of the individual key-fingers.

8. In a mechanical piano-player, the combination with a series of key-fingers, of a plurality of bars each mounted in operative relation to a predetermined set or section of the key-fingers, a series of adjusting-screws for independently adjusting the zone of movement of the individual key-fingers, and means for independently operating each bar to vary the amplitude of movement of the keys of the respective sections.

811,088. ANNUNCIATOR. HALVOR M. OLSEN, Chicago, Ill., assignor to American Electric Telephone Company, Chicago, Ill., a Corporation of New Jersey. Filed May 16, 1901. Serial No. 60,798.

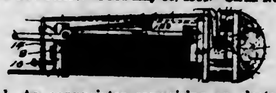

Claim.—1. An annunciator comprising an electromagnet, a frame secured to the forward end of said magnet, a target pivoted upon said frame, a convex cover secured to the forward end of the frame in front of the target, said cover being provided with an opening adapted to expose the face of the target, the curvature of the cover corresponding to the arc described by the forward end or face of the target, and an armature arranged to raise the forward end of the target.

2. An annunciator comprising an electromagnet, a convex cap

secured to the forward end of the magnet structure and provided with an opening, the pivoted target having a convex face adapted to swing in close proximity to the curved inner surface of said cap, and an armature for actuating said target.

3. In an annunciator, a supporting-plate having an aperture therein, a target having an arc-shaped face and a rearwardly-extending arm or arms projecting through said aperture, and pivoted on said support, an arc-shaped covering for said target having an aperture or window through which the target may be displayed, a magnet and armature in the rear of said supporting-plate, connections between the said armature and extended target-arms to operate the target.

4. In an annunciator, a supporting-plate having an aperture therein, an arc-shaped target having rearwardly-extending arms projecting through said aperture, and pivoted on said plate, a covering over the same similar in form to the target and having an opening therefor, a rivet or pin between the ends of the target-arms, a magnet in the rear of said supporting-plate, an armature therefor, an arm carried by said armature and adapted to act upon the rivet or pin and the target-arms to operate the same.

5. In an annunciator, two supporting-plates spaced apart, the front plate having an aperture therein, a target having a segmental face and rearwardly-extending arms, said arms being pivoted to said apertured plate at the center of the curve of the face and extending beyond the pivot and having a pin therethrough, a magnet secured to the rear face of the other supporting-plate, a longitudinal armature therefor, an arm affixed to said armature and extending down between the said plates, said arm having a foot portion adapted to bear upon said pin to operate the target upon the operation of the magnet and armature.

6. The combination of a convex cap provided with an opening, a pivoted target arranged back of said cap, the indicating end of said target being normally depressed, an electromagnet arranged back of said target, and an armature extending lengthwise above the magnet and provided with an arm adapted to engage the rear end of said target, the armature when attracted operating to raise the forward end of the target.

7. The combination of an electromagnet, two plates separated by four short members and rigidly connected with the forward end of the magnet, a convex cap secured to the outer of said plates and provided with an opening, a pivoted target arranged back of said cap, and an armature having a forwardly-extending arm adapted to engage said target.

8. An annunciator, comprising a magnetic core having a relatively flat pole-piece disposed in the plane of one end and having its other end extended, an armature provided with a rear vertical portion suitably mounted on the extended rear end of the core and having its horizontal portion overlying the pole-piece, a finger on the forward end of the armature, a spring tending normally to keep the armature raised, and a target hung on the forward end of the magnet structure and held in a normally lowered position, said target having a rearwardly-extending projection underlying the said finger, whereby said target is raised when the armature is attracted.

9. An annunciator comprising a magnetic core having a relatively flat pole-piece disposed in the plane of one end, an armature provided with a rear vertical portion suitably mounted at the other end of the magnet and having its horizontal portion overlying the pole-piece, the forward end of said armature being provided with a finger, a target hung from the forward end of the magnet structure, and a spring-switch tending normally to keep the armature raised, said target being normally down and having a rear projection underlying the said finger, whereby the target is raised when the armature is attracted.

10. An annunciator, comprising an electromagnet, pieces of insulation secured to the opposite ends of said magnet, pole-pieces also secured to the opposite ends of said magnet, an armature mounted upon the rear end of the magnet structure and having its horizontal portion overlying both pole-pieces, parallel terminal strips rigidly secured to said pieces of insulation at opposite sides of the magnet, a shutter carried by the forward end of the magnet structure and operated by said armature, and switch-contacts carried by said terminal strips beneath the armature and operated by the latter.

11. An annunciator comprising an electromagnet, pieces of insulation secured to opposite ends of said magnet, an armature suitably mounted upon the rear end of the magnet structure and having its horizontal portion overlying the magnet, a shutter engaged and operated by the forward end of the armature, terminal strips secured to said pieces of insulation at opposite sides of the magnet, and switch-contacts carried by the said terminal strips beneath the armature and opened and closed by the latter.

12. In a signaling device, the combination with a magnet having a coil, insulating-supports at each end of the coil, a core therefor, end pieces affixed to said core, an armature extending longitudinally of the coil and coöperating with the end pieces, electrical contacts carried by said insulating-supports, one of said contacts being of spring material to return the armature to normal position, means to close the said contacts in the initial movement of the armature, and the signal-indicating device operated by said armature in its forward movements.

13. In an annunciator, the combination with a magnet of a core and end pieces therefor, insulating-blocks between the end pieces and the coil, longitudinal strips secured to said insulating-pieces, stationary contact on one strip, a spring-contact on the other strip and adapted to coöperate with the stationary contact, an armature extending longitudinally of the coil pivoted at one end and adapted to be retracted by said spring-contact, and a signaling device operated by said armature.

811,084. **REGULATOR FOR GAS-LAMPS.** OLE M. J. OLSEN and WALTER GAYNS, Parramatta, New South Wales, Australia. Filed Sept. 6, 1904. Serial No. 223,206.

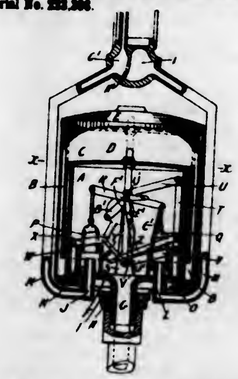

Claim.—1. In apparatus controlled by gas-pressure for lighting and extinguishing gas-burners, a fixed chamber in combination with a removable foundation-plate inclosed by the same and provided with a centrally-situated gas-passage, two gas-outlet tubes and valves or bells P and Q respectively governing the same substantially as set forth.

2. In apparatus controlled by gas-pressure for lighting and extinguishing gas-burners, a chamber, a foundation-plate inclosed thereby and two gas-outlet tubes in combination with mercury-chambers, movable bells adapted to both seal and unseal the said gas-conducting tubes, mechanism connecting the said bells together in order that the ascent of one bell may lower the other and externally-situated gas-pipes substantially as set forth.

3. In combination with an inclosed removable foundation-plate provided with a centrally-situated gas-passage, a union and two gas-outlet tubes, a standard, a pendulum carried thereby, a looped lever, a balance-lever, bells suspended from the said balance-lever, two side standards, levers carried by said side standards, a movable gas-bell, a central stem for the same and connecting-rods adapted to be operated by the said stem substantially as and for the purpose set forth.

4. The bell of a gas-regulator in combination with a fixed chamber covered thereby, a container concentric with said chamber and exteror to said bell, a removable foundation-plate inclosed by said chamber, and the operative mechanism governing the supply of gas to the burners and mounted on said plate, which consists of a central stem, upper and lower parallel bars carried thereby, a fixed side standard to which the opposite ends of said parallel bars are connected, an oppositely-situated side standard, a lever carried by the latter side standard and a connecting-rod of this lever which is attached to the central stem and to a lower parallel bar substantially as and for the purpose set forth.

5. In mechanism operated by a movable gas-bell for regulating the operation of gas-burners, the combination of a suspended pendulum, a looped lever, a stop on said lever adapted to coöperate with the said pendulum, an independent lever adapted to engage with the said looped lever, a pair of devices closing and opening the supply-pipes of two burners alternately, a balance-lever and attachments connecting the said devices together in order that the ascent of either device will coincide with the lowering of the other in opening and closing the said pipes substantially as set forth.

6. In a gas-regulator, the combination of a gas-bell with upper and lower parallel bars, the central stem of said bell, a balance-lever arranged exteriorly to said stem to allow of its upward and downward movements and devices suspended from the ends of the said balance-lever for closing and opening the supply-pipes of two burners alternately, an independent lever, a connection between the said independent lever and the said balance-lever, a looped lever engaged by said independent lever and a suspended pendulum mounted on the said stem and arranged for contact with a stop on said looped lever substantially as set forth.

811,085. **PROCESS OF RECOVERING VALUES FROM SULFID ORES.** EDWIN C. POHLE, Reno, Nev. Filed June 1, 1905. Serial No. 263,223.

Claim.—1. The process of recovering values from sulfid ores containing gold, and silver, which consists in mixing the ore with a chlorid, subjecting the mixture to heat in an oxidizing atmosphere, cooling the product, leaching the mass with water, to remove the contained bodies soluble therein, leaching the residue with a solution of a cyanid of an alkali metal, and, finally, precipitating the gold and silver from the solution.

2. The process of recovering values from sulfid ores containing gold and silver, which consists in mixing the ore with a chlorid subjecting the mixture to the flame of combustion with an excess of air, conducting off the gaseous products, condensing and collecting the metallic vapors, cooling the solid products, leaching the mass with a solution of a cyanid of an alkali metal, and precipitating the gold and silver from the solution, substantially as described.

3. The process of recovering values from sulfid ores containing gold, silver and base metals, which consists in mixing the ore with a chlorid, subjecting the mixture to the flame of combustion with an excess of air, conducting off the gaseous products, condensing and collecting the metallic vapors, cooling the solid products, leaching the mass with water to remove the contained bodies soluble therein, leaching the residue with a solution of a cyanid of an alkali metal and precipitating the gold and silver from the solution, substantially as described.

4. The process of recovering values from sulfid ores containing gold and silver which consists in mixing the ore with a chlorid, subjecting the mixture to the flame of combustion with an excess of air, conducting off the gaseous products, condensing and collecting the metallic vapors, cooling the solid products, leaching the mass with a solution of a cyanid of an alkali metal and precipitating the gold and silver from the solution substantially as described.

5. The process of recovering values from sulfid ores containing gold and silver which consists in mixing the ore with a chlorid, subjecting the mixture to heat in an oxidizing temperature, cooling the product, leaching the mass with water to remove the contained bodies soluble therein, leaching the residue with a solvent of gold and silver, and finally precipitating the gold and silver from the solution.

6. The process of recovering values from sulfid ores containing gold and silver, which consists in roasting the ore in contact with the flame of combustion with an excess of air, conducting off the products of combustion and resulting vapors by a forced draft, condensing the metallic vapors and filtering them from the permanent gases, substantially as described.

7. The process of recovering values from sulfid ores containing gold and silver, which consists in mixing the ore with a chlorid, subjecting the mixture to the flame of combustion with an excess of air, conducting off the products of combustion and resulting metallic vapors by a forced draft, condensing the metallic vapors and filtering them from the permanent gases, substantially as described.

811,086. **CANDY-MAKING MACHINE.** GUST PRATTS, Flint, Mich. Filed Mar. 14, 1905. Serial No. 250,056.

Claim.—1. In a candy-making machine, the combination with a base, of mixing mechanism mounted thereon, pulling mechanism also mounted on the base, and driving means for said mechanism also mounted on the base.

2. In a candy-making machine, the combination with a base, of mixing mechanism mounted thereon, pulling mechanism also mounted on the base and located over the mixing mechanism, and driving means for said mechanisms mounted beneath the base.

3. In a candy-making machine, the combination with supporting means including a base and standards, of mixing mechanism mounted on the base, pulling mechanism mounted on the standards, a driving device, and gearing mounted on the supporting means and detachably connecting the device and said mechanisms.

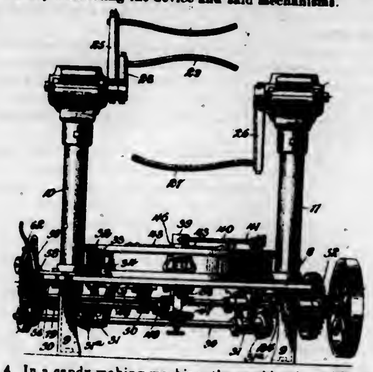

4. In a candy-making machine, the combination with supporting means including a base, legs and standards, of mixing mechanism mounted on the base, pulling mechanism mounted on the standards, a driving device mounted beneath the base, and separate sets of gearing detachably connecting the driving device and said mechanism.

5. In a candy-making machine, the combination with supporting means including a base having depending legs and upstanding standards, of mixing mechanism mounted on the base, pulling mechanism mounted on the standards, a drive-shaft having a gear, separate gearing connected to the mixing mechanism and the pulling mechanism and including idlers in mesh with the gear, and swinging supports journaled on the supporting means and carrying the idlers, said supports moving said idlers into and out of engagement with the gear on the shaft.

6. In a candy-making machine, the combination with a base, of mixing and pulling mechanisms mounted thereon, a driving-shaft having a gear, counter-shafts respectively connected to the mixing and pulling mechanisms and having gears disposed contiguous to the gear on the driving-shaft, swinging supports, idlers carried by said supports, said idlers meshing with the gear on the driving-shaft and the gears on the counter-shafts, and means for holding the supports in different relations.

7. In a candy-making machine, the combination with a base, of rotatable mixing mechanism centrally mounted thereon, gearing for the same extending centrally beneath the base and including bevel gear-wheels, rotatable pulling mechanism mounted on the base above the mixing mechanism, gearing for the same including bevel-gears located beneath opposite side portions of the base, a drive-shaft extending beneath the base, power mechanism connected to one end of the drive-shaft, counter-shafts respectively geared to the bevel-gears of the mixing mechanism and the bevel-gears of the pulling mechanism, a gear-wheel mounted on one end of the drive-shaft, gears secured to the adjacent ends of the counter-shafts, swinging supports journaled on said counter-shafts, idlers carried thereby and meshing with the counter-shaft gears, said idlers being movable into and out of the gear of the drive-shaft when the supports are swung, and means for securing the supports against movement.

8. In a candy-making machine, the combination with a base having an upright support, of separate pulling-arms of different lengths journaled on the support and having substantially horizontal and coincident journal-axes, outstanding candy engaging and supporting elements carried by the arms and having upright paths of movement, a drive-shaft journaled beneath the base, and connections between the drive-shaft and arms for rotating the arms simultaneously in opposite directions, said connections being associated with the support.

9. In a candy-making machine, the combination with a base having an upstanding support, of concentric substantially horizontal shafts journaled on the upper portion of the support, pulling-arms carried by the shafts and provided with outstanding candy-supporting elements having upright paths of movement, and means for operating the shafts, said means including a substantially horizontal driving-shaft journaled on the base and having gear connections with the concentric shafts.

10. In a candy-making machine, the combination with a base, of a tubular standard mounted thereon, concentric shafts journaled on the standard, pulling-arms of different lengths carried by the shafts and having candy-engaging means, an upright shaft journaled in the standard, and gearing connecting the shaft and the shafts carrying the arms.

11. In a candy-making machine, the combination with a base, of spaced upright tubular standards secured thereto, shafts journaled in the standards, coacting arms carried by the shafts, upright shafts journaled in the standards, gearing connecting the upright and arm carrying shafts, and means located beneath the base for rotating the upright shafts.

12. In a candy-making machine, the combination with spaced supports, of oppositely-rotatable shafts on one of the supports, pulling-arms carried by the shafts and being thus rotatable in opposite directions, said arms having candy-engaging portions, and another pulling-arm journaled on the other support and having its axis of rotation substantially parallel to the axes of rotation of the first-mentioned arms, said last-mentioned arm being provided with a candy-engaging portion having a path of movement intersecting the paths of movement of the candy-engaging portions of said first-mentioned rotatable arms.

13. In a candy-making machine, the combination with spaced standards, of concentric shafts journaled on one standard, pulling-arms of different lengths carried by the shafts, another shaft journaled on the other standard, a pulling-arm carried by the latter shaft and coacting with the arms of the first-mentioned shafts, means for rotating the concentric shafts in different directions and also for rotating the single shaft.

14. In a candy-making machine, the combination with a base, of spaced standards mounted thereon, journal-boxes carried by the upper ends of the standards, concentric shafts journaled in one of the boxes, an upright shaft located in the standard and geared to the concentric shafts for driving the same in opposite direction, a shaft journaled in the box of the other standard, an upright shaft journaled in said standard and geared to the shaft for rotating the same, pulling-arms carried by the shafts in the boxes and having intersecting paths of movement, and gearing located beneath the base for driving the upright shafts.

15. In a candy-making machine, the combination with spaced supports, of concentric shafts journaled on one of the supports, pulling-arms carried by the shafts and having different paths of movement, another pulling-arm journaled on the other support and having a path of movement that intersects the paths of movement of the first-mentioned arms, and means for rotating the shafts and last-mentioned arm.

811,087. REED-ORGAN. PERCY C. PRESTON, Denison, Tex. Filed Sept. 1, 1905. Serial No. 276,753.

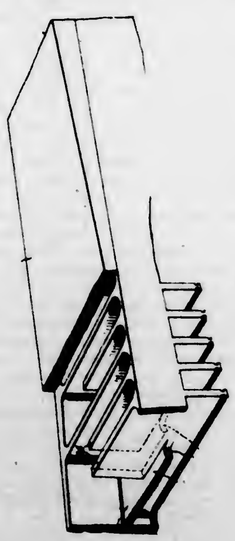

Claim.—1. In a reed-board, reed-cells, resonance-cells arranged above the reed-cells and separated therefrom by horizontally-disposed wind-guards or partitions that terminate short of the front ends of the cells, partitions dividing the resonance-cells into groups, the members of each group being in communication with each other.

2. In a reed-board, reed-cells and resonance-cells, a horizontally-disposed wind-guard or partition separating the reed-cells from the resonance-cells and terminating in advance of the front ends of said cells, the partitions which divide the resonance-cells having their rear ends cut away to place the cells in communication with each other, the lengths or depths of such partitions being determined by the positions of the cells in the register.

3. In a reed-organ, reed-cells and resonance-cells, a horizontally-disposed wind-guard or partition separating the reed-cells and resonance-cells from each other, and terminating short of the front ends of said cells, partitions dividing the resonance-cells into groups, and intermediate partitions dividing each group into separate cells, the rear ends of said intermediate partitions being cut away to place the cells of each group in communication with each other

811,088. ELECTRIC DRYING AND IRONING APPARATUS. GEORGE W. RICHARDSON, Wissahickon, Pa., assignor of one-half to Stephen T. Major, Norristown, Pa. Filed Mar. 28, 1905. Serial No. 252,592.

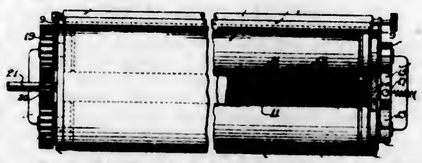

Claim.—1. In apparatus of the class described, drying and ironing mechanism comprising a plurality of rollers coacting to press and dry material passed therethrough, each of said rollers comprising a brass ironing-cylinder, a resistance-coil therein adjacent thereto, bearings for said rollers, a conductor connected to and revolving with each of said rollers, means for insulating each of said conductors from the respective cylinders and bearings, and a brush making contact with each of said conductors in combination with a casing having end walls disposed between said ironing-cylinders and brushes, substantially as specified.

2. In apparatus of the class described, a casing having a passage therethrough, and a plurality of rollers journaled in said casing and coacting to press material in said passage, the respective rollers comprising a brass ironing-cylinder and a resistance-coil located in and concentric to said cylinder, substantially as specified.

3. In apparatus of the class described, a casing having closed ends, ironing-rollers journaled in said ends, the body of said casing conforming to said rollers and forming passages thereto and therefrom, and a resistance-coil in each of said rollers, substantially as specified.

4 In apparatus of the class described a casing having closed ends, ironing-rollers journaled in said ends, and a guideway in said casing between pairs of said rollers, said casing having an inlet to and an outlet from said rollers and guideway, substantially as specified.

5. In apparatus of the class described, a casing having closed ends, ironing-rollers journaled in said ends, plates supported by said casing and forming a guideway between pairs of said rollers, and feeding mechanism for carrying material to said rollers, substantially as specified.

6. In apparatus of the class described, a casing having closed ends, ironing-rollers journaled in said ends, heat-insulating material in said casing about said rollers, mechanism for connecting and operating said rollers together, a guide leading to said rollers, and a feed-roller coacting with said guide, substantially as specified.

811,089. HOT-AIR HEATING SYSTEM. WILLIAM H. ROGERS, Cambridge, Mass. Filed Aug. 5, 1905. Serial No. 272,611.

Claim.—1. In a heating system, the combination of a fire-pot, a central retort therein extending upwardly from the floor of said fire-pot into which it opens at the top and provided with means for emitting gas from the interior thereof through the side walls, and means for supplying said retort with a combustible capable of generating gas.

2. In a heating system, the combination of a fire-pot, a central retort therein opening at the top into said fire-pot and provided with a plurality of perforations through the side walls thereof, and means for supplying said retort with combustibles.

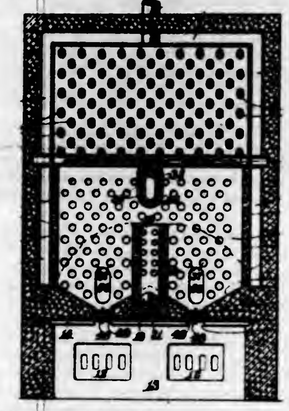

3. In a heating system, the combination with a fire-pot having a solid floor inclined toward openings therein, of a retort interposed between said openings extending upwardly from the floor of said fire-pot and provided with means for emitting gas from the interior thereof through the side walls, and means for introducing into said retort combustibles capable of generating gas.

4. In a heating system, the combination with a fire-pot having a solid floor inclined toward openings therein, of a retort interposed between said openings extending upwardly from the floor of said fire-pot and provided with means for emitting gas from the interior thereof through the side walls, and means for supplying combustibles through the bottom of said retort.

5. In a heating system, the combination of a fire-pot provided with means for supplying air to said fire-pot through its side walls and having a solid floor inclined toward openings through which the ashes may be ejected, a central retort for said fire-pot provided with perforations in its side walls for the emission of gas from the interior thereof, and means for supplying combustibles through the bottom of the retort.

811,090. SUSPENDER-HOOK. FREDERICK A. RITCHIE, St. John, Canada. Filed May 16, 1904. Serial No. 208,302.

Claim.—1. In a device of the character described, a suspender-end having at its lower terminal a slotted tab, in combination with a tubular sheet-metal clamp located on the end and having a hook bent upwardly from the material of said clamp.

2. In a garment-supporter, the combination with a suspender-end terminating in an eye, of a clasp embracing the end directly adjacent to the eye, and an upstanding garment-engaging hook carried by the clasp and extending longitudinally of the end.

3. In a garment-supporter, the combination with a suspender-end having a terminal eye, of a supporting device formed of sheet metal and comprising a loop element composed of oppositely-extending clasp-wings that embrace the end relatively above the eye, and an upstanding garment-engaging hook element carried by the loop element.

811,091. GRAIN-CAR DOOR. CORNELIUS L. ROGERS, Pekin, Ill. Filed Apr. 2, 1904. Serial No. 201,301.

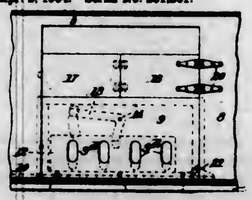

Claim.—The combination in a grain-car door, of a lower sliding door, and an upper door formed of sections hinged together, said upper door being hinged to the door-post by rising hinges and adapted to drop when closed upon the upper edge of the sliding door.

811,092. SAFETY-ENVELOP. HENRY P. ROBERTS, Boston, Mass., assignor to Charles F. Howe, Boston, Mass. Filed Aug. 29, 1904. Serial No. 223,512.

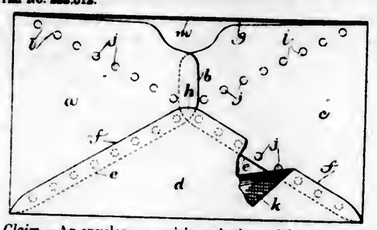

Claim.—An envelop comprising a body, end flaps, and a bottom flap, and a main sealing-flap, the end flaps being provided with a series of tongues lying wholly within the edges of the flaps and entirely covered by the bottom flap and main sealing-flap when said flaps are sealed onto the end flaps, the said tongues being united to the envelop by narrow necks materially less in section than the section of the tongues, and the tongues being so disposed that the alternating tongues project in opposite directions.

811,093. LOCK-NUT. WILLIAM L. ROBERTS, Norfield, Miss. Filed Aug. 7, 1905. Serial No. 273,092.

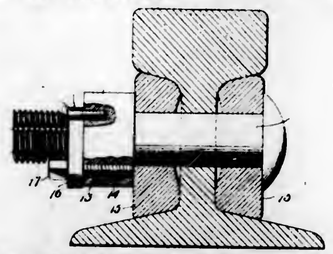

Claim.—1. In a nut-lock the combination with a bolt having a plurality of spaced channels disposed transversely of its threads, a nut engaging the threaded end of the bolt and provided with a threaded aperture extending entirely through the nut parallel to the bolt-receiving aperture therein, a set-screw engaging said threaded aperture and bearing against the face of the structure upon which the nut bears, and a detent swinging upon the outer end of said set-screw and engaging said bolt-channels one at a time by its free end, the detent being clamped in position upon the nut and the nut being clamped in position upon the structure upon which it bears by the action of the set-screw.

2. In a nut-lock the combination with a bolt having a plurality of spaced channels disposed transversely of its threads, a nut engaging the threaded end of the bolt and provided with a threaded aperture extending entirely through the nut parallel to the bolt-receiving aperture therein, a set-screw engaging said threaded aperture and bearing against the face of the structure upon which the nut bears, a detent swinging upon the outer end of said set-screw and engaging said bolt-channels one at a time by its free end, and a stop-pin adapted to be inserted in said nut rearwardly of said detent when the detent is in engagement with the bolt.

811,094. MATTRESS. WILLIAM ROBERTSON, Chicago, Ill. Filed Oct. 17, 1904. Serial No. 228,843.

Claim.—1. A mattress comprising a core consisting wholly or in part of electrically-conducting material, a layer of fabric such as felt inclosing said material, a covering fabric investing the same, and an electrical conductor embedded in said conducting material.

2. A mattress comprising a central mass of fine resilient long metal shavings, a thin layer of felt covering the same, an investing fabric such as ticking affording a cover, an electrical conductor in

contact with said shavings, and means projecting through the investing material adapted to convey electricity to the patient treated.

4. In a filling and packing machine, the combination with a plunger or rammer, of means for supplying filling material to the ar-

two-part mold, of a transverse bar rigidly held in position, and means for clamping said mold to said bar.

Claim.—1. A telephone-transmitter comprising a front plate composed of two sheet-metal parts pressed into the desired shapes

contact with said shavings, and means projecting through the investing material adapted to convey electricity to the patient treated.

3. A mattress comprising a central mass of incombustible conducting material, an inclosing fabric therefor, an electrical conductor extending through said fabric into said material, a conducting-sheet and a plurality of points thereon adapted to project into said material.

4. A mattress comprising a filling consisting wholly of non-combustible, electrically-conducting material, and means for passing an electric current through said material.

5. A mattress comprising a central core of non-combustible electrical conducting material, an absorbent covering therefor, a tick inclosing said material and covering, an electrical conductor embedded in said material and projecting through the tick, a conducting-sheet and a plurality of contact-points thereon adapted to project through the tick into said conducting material.

6. In a device of the class described the combination with a central core of metallic shavings, of a covering therefor, an electrical conductor embedded in said shavings and projecting through said coverings, a plurality of electrical conductors adapted to project through the covering into contact with said shavings and a flexible sheet having a plurality of points thereon and suspended above said core.

811,095. **MACHINE FOR STUFFING CUSHIONS.** ALBERT L. ROOP and FANNIE C. ROOP, Philadelphia, Pa. Filed Dec. 12, 1904. Serial No. 236,416.

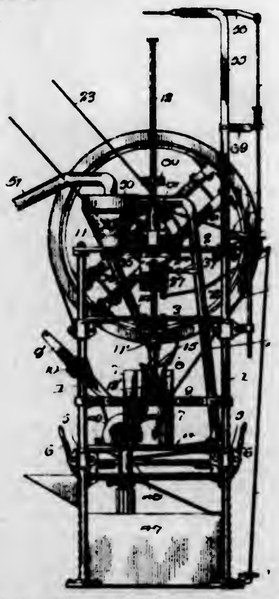

Claim.—1. In a filling and packing machine, the combination with means for inserting the material into the article to be filled, of means for stopping said machine when the material has reached a certain height in said article.

2. In a filling and packing machine, the combination with a plunger or rammer, means for supplying material to the article to be filled, and means for stopping the machine when the material has reached a certain height.

3. In a filling and packing machine, the combination with a reciprocating plunger or rammer, of means for supplying material to the article to be filled, and means engaging said plunger or rammer to stop the machine when the material has reached a certain height.

4. In a filling and packing machine, the combination with a plunger or rammer, of means for supplying filling material to the article to be filled, and means located in the path of said plunger or rammer for stopping the machine when the material has reached a certain height.

5. In a filling and packing machine, the combination with a plunger or rammer, of means for supplying material to the article to be filled, a belt-shifter, and means engaging said plunger for operating said belt-shifter to stop the machine when the material has reached a certain height.

6. In a filling and packing machine, the combination with a plunger or rammer, of means for supplying filling material, a lever, one end of which is located in the path of said plunger or rammer, a belt-shifter, and means connecting said lever with said belt-shifter for stopping the machine when the material has reached a certain height.

7. In a filling and packing machine, the combination with a plunger or rammer, of means for supplying material to the article to be filled, a spring-controlled belt-shifter, a catch connected with said belt-shifter, and means operated by said plunger for releasing said catch when the filling material has reached a certain height.

8. In a filling and packing machine, the combination with a plunger or rammer, and means for supplying material to the article to be filled, a spring-controlled belt-shifter, a catch operating upon said belt-shifter, a lever, one end of which is located in the path of said plunger, and connections between said catch and lever, whereby the machine is stopped when the material has reached a certain height.

9. In a filling and packing machine, the combination with means for filling the article to be filled, driving mechanism, a brake operating upon said driving mechanism, and means connected with said filling means and said brake for operating said brake when the filling material has reached a certain height.

10. In a filling and packing machine, the combination with a plunger or rammer, of driving mechanism, a machine-brake operating upon said driving mechanism, and means operated by said plunger and connected with said brake for applying the latter when the filling material has reached a certain height.

11. In a filling and packing machine, the combination with a plunger or rammer, of driving mechanism, means for shutting off the power of said driving mechanism, said means being operated by said plunger, a machine-brake for said driving mechanism, and connections between said means for shutting off the power and said brake for applying the latter to stop the machine.

12. In a filling and packing machine, the combination with a plunger or rammer, of driving means for shutting off the power when the filling material has reached a certain height, a machine-brake acting upon said driving mechanism, and connections between the means for shutting off the power and said brake for operating the latter to stop the machine.

13. In a filling and packing machine, the combination with a plunger or rammer, driving mechanism, a belt-shifter for said driving mechanism, means between said belt-shifter and said plunger for operating said belt-shifter when the material has reached a certain height, machine-brake acting upon said driving mechanism, and means carried by said belt-shifter for operating said brake.

14. In a filling and packing machine, the combination with a plunger or rammer, of driving mechanism therefor, a belt-shifter for said driving mechanism, actuated by said plunger, a brake acting upon said driving mechanism, a cam-plate carried by said belt-shifter, a spring, and connections between said cam-plate and said spring for operating the latter to stop the machine.

15. In a filling and packing machine, the combination with a plunger or rammer, driving mechanism therefor, a spring-controlled belt-shifter operating upon said driving mechanism and operatively connected with the said rammer, a machine-brake upon said driving mechanism, a cam-plate carried by said belt-shifter, and means between said cam-plate and said brake for operating the latter to stop the machine.

16. In a filling and packing machine, the combination with a plunger or rammer, of driving mechanism therefor, a spring-controlled belt-shifter for said driving mechanism, a latch for holding said belt-shifter in its normal position to operate the machine, a cam-plate carried by said belt-shifter, a machine-brake acting upon said driving mechanism, and connections between said brake and said cam-plate for operating said brake.

17. In a filling and packing machine, the combination with a device for engaging the article to be filled, of a transverse bar rigidly held in position, and means for clamping said device to said bar.

18. In a filling and packing machine, the combination with a two-part mold, of a transverse bar rigidly held in position, and means for clamping said mold to said bar.

19. In a filling and packing machine, the combination with a two-part mold, of a transverse bar rigidly held in position, a member pivoted to said bar, and means for producing pressure between the parts of said mold.

20. In a filling and packing machine, the combination with a two-part mold, of a transverse bar rigidly held in position, a clamping member pivoted to said bar, and a hand-screw carried by said member, and adapted to produce a pressure between the parts of said mold.

811,096. **NECK-MUFFLER.** JAMES C. SCOTT, Portsmouth, Ohio, assignor to Scott Muffler Co., Portsmouth, Ohio. Filed Feb. 1, 1905. Serial No. 243,714.

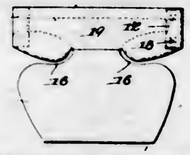

Claim.—A muffler comprising a central multi-ply neck-encircling portion, a single-ply chest-protecting flap separated therefrom through out a greater portion of its length by garment-receiving slits, facings carried by the terminals of the neck-encircling portion and having fastening devices combined therewith, and a single-ply narrow flap included between the plies of the neck-encircling portion and having its terminals engaged by the threads that combine the facings with the device.

811,097. **APPARATUS FOR TREATING MOLTEN METAL.** JOSEPH S. SEAMAN, Pittsburg, Pa. Filed May 23, 1904. Serial No. 209,311.

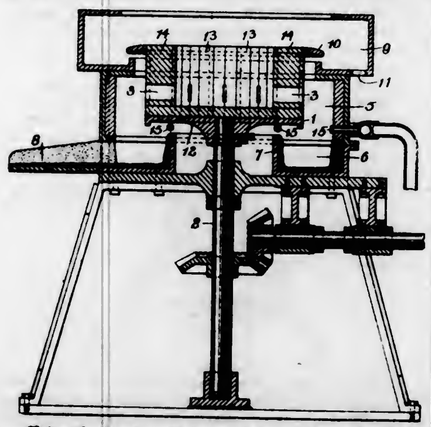

Claim.—1. An apparatus for treating metal having in combination an open-topped rotatable basin having radial ports or passages in its side wall, a receiving vessel inclosing the basin and provided with a spout and a catch-basin surrounding the upper portion of the separating-basin, substantially as set forth.

2. An apparatus for treating metal having in combination, a basin having removable wall-sections provided with ports or passages, means for rotating said basin, a receiving vessel surrounding the basin and provided with a spout, substantially as set forth.

3. An apparatus for treating molten metal having in combination a rotatable basin having radial ports or passages, a receiving-receptacle surrounding the basin and having an outlet and blast-pipes arranged to direct jets of air against the metal in the receptacle, substantially as set forth.

811,098. **TELEPHONE-TRANSMITTER.** MICHAEL SHIVER, Chicago, Ill., assignor to American Electric Telephone Company, Chicago, Ill., a Corporation. Filed Dec. 30, 1904. Serial No. 238,992.

Claim.—1. A telephone-transmitter comprising a front plate composed of two sheet-metal parts pressed into the desired shapes and rigidly secured together, one of said parts having an internally-threaded boss, a mouthpiece screwed into said boss, a diaphragm having its marginal portions resting against the other sheet-metal part, a bridge suitably secured to the sheet-metal part on which the diaphragm rests, a casing fitted upon the periphery of the sheet-metal part to which the bridge is secured, and a microphone device connecting said diaphragm to said bridge.

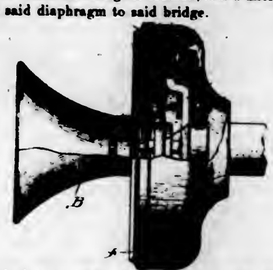

2. A telephone-transmitter comprising a front plate composed of two sheet-metal parts, one of said parts being pressed into such shape as to provide it with a hollow annular portion and a radially and inwardly projecting flange, and also with a peripheral bead or relatively narrow flange, and the other sheet-metal part being provided centrally with an internally-threaded boss and a peripheral flange pressed or reamed down upon the said bead or narrow flange of the other part; a mouthpiece screwed into said threaded boss, a diaphragm resting against the shoulder or seat provided by said inwardly-projecting flange, a bridge secured to said hollow annular portion, a microphone device connecting said diaphragm with the said bridge, and a casing fitted upon the said hollow annular portion of the front plate and bearing against the shoulder provided by the said pressed or reamed front portion of the front plate.

811,099. **DETACHABLE SAW-HANDLE.** JACOB L. SHEETS, Stella, Wash. Filed Dec. 27, 1904. Serial No. 238,450.

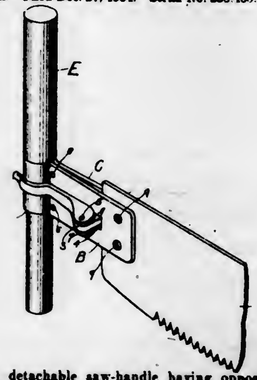

Claim.—A detachable saw-handle having oppositely-located saw-securing plates, integral at one end, free at the other, with studs on one plate adapted to pass through openings in a saw and in the opposite plate, and in particular, provided with a horizontally-operating cam-fastening lever D of suitable form and dimensions pivotally mounted on the outside of the plate B in a lug 3 which is fixedly secured to the inside of the plate C and adapted to freely pass through an opening in the plate B all substantially as described.

811,100. **SAFETY-STIRRUP.** FRANK T. SHIPTON, Kinsmanick, Ohio. Filed Aug. 5, 1905. Serial No. 272,898.

Claim.—1. A stirrup having the upper portion of its arms provided with oppositely-inclined seats and with slots alining with the seats, in combination with a loop having arms to engage the slots and inclined locking-toes to engage the seats, a pivoted detent to hold the arms within the slots, and means coacting with the detent to hold the parts in operative position.

2. A stirrup having its arms provided with oppositely-inclined seats and plates secured thereto and provided with slots alining with the seats, in combination with a loop having arms engaging the slots and provided with inclined locking-toes engaging the seats, a pivoted detent to hold the arms within the slots, and a spring combined with the detent for holding the parts in operative position.

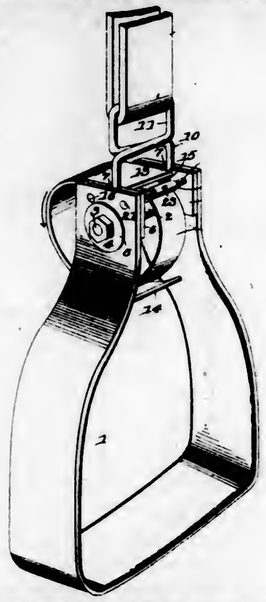

3. The combination with a stirrup having its arms provided with oppositely-inclined seats, of plates secured to the inner sides of the arms and having slots alining with the seats, a loop having resilient arms to engage the slots and oppositely-inclined locking-toes to engage the seats, a pivoted detent having a part normally to engage with the arms, and having a curved tripping-arm disposed between the members of the stirrup, and a curved spring having one end combined with the stirrup and the other end secured to the tripping-arm.

811,101. **ELECTRIC SURFACE AND ELEVATED TROLLEY-RAILWAY.** CHARLES D. SMITH, Fond du Lac, Wis. Filed Mar. 2, 1903. Serial No. 145,849.

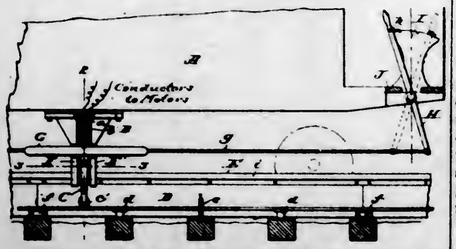

Claim.—1. The combination with a vehicle-body, of a frame depending therefrom, a vertical slot in said frame, a contact-arm adapted for vertical travel in said slot, an actuating-bar extending transversely through said frame, and inclined surfaces on said actuating-bar for engaging said contact-arm, whereby said arm may be raised.

2. The combination with a vehicle-body, of a frame depending therefrom, a vertical slot through said frame, a contact-arm adapted for vertical travel in said slot, a spring tending to push said arm downwardly, and an actuating-bar extending transversely through said frame, said bar being provided with inclined surfaces for engaging said contact-arm, whereby said arm may be raised against the pressure of said spring.

3. The combination with a vehicle-body, of a frame depending therefrom, a vertical slot through said frame, a contact-arm adapted for vertical travel in said slot, a reduced shank portion on said arm, a spring encircling said shank portion and tending to press said arm downwardly, an actuating-bar extending transversely through said frame, inclined surfaces on said actuating-bar, and a roller on said arm for engaging said inclined surfaces, transverse movement of said actuating-bar with respect to said arm causing said arm to be raised.

4. The combination with a vehicle-body, of a frame depending therefrom, a vertical slot extending through said frame, a contact-arm adapted for vertical travel in said slot, a compression-spring in said slot interposed between said arm and said frame and tending to press said arm downwardly, a horizontal slot extending transversely through said frame and said vertical slot, an actuating-bar disposed in said horizontal slot, a roller on said contact-arm, inclined surfaces on said actuating-bar for engaging said roller, and levers on said vehicle associated with said actuating-bar, actuation of said levers causing said roller to travel over an inclined surface to cause said contact-arm to be raised.

5. The combination with a vehicle-body, of a frame depending therefrom, a vertical slot in said frame, a contact-arm adapted for vertical travel in said slot, a conductor for engaging with said contact-arm, and a horizontal actuating-bar having inclined surfaces for engaging said contact-arm, horizontal motion of said actuating-bar causing said contact-arm to be raised from the said conductor.

6. The combination of a vehicle-body, a frame depending therefrom, a vertical slot through said frame, a contact-arm having vertical travel in said slot, a contact-wheel at the lower end of said arm, a conductor, a compression-spring in said slot disposed between said arm and said frame for compressing said contact-wheel into engagement with said conductor, an actuating-bar extending transversely through said frame, a roller on said arm, and an inclined surface on said actuating-bar for engaging said roller to raise said arm from the conductor upon horizontal movement of said actuating-bar.

811,102. **CHURN.** JOHN G. SMITH, Kaltonburg, Tenn. Filed Aug. 4, 1905. Serial No. 272,695.

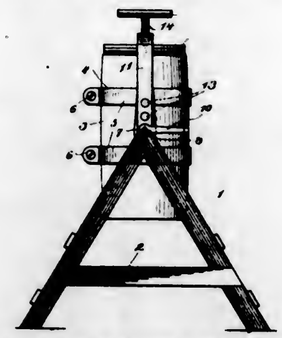

Claim.—In a device of the character described, the combination of two open bands and means for adjusting the same, side pieces connecting said bands together, journals carried by said side pieces, a cap or head engaging portion provided with perforations and arranged to be passed on the said journals on said side pieces, and a screw carried in said cap or head engaging portion arranged to engage the cap or head of the receptacle, substantially as described and for the purposes set forth.

811,103. **ROTARY ENGINE.** ALONZO B. STEVENS, Dallas Center, Iowa. Filed May 4, 1905. Serial No. 259,267.

Claim.—1. In a rotary steam-engine, a solid semicircular piston, having one square end and one outwardly curved, on a shaft in concentric position with a circular chamber having a second chamber communicating therewith and an abutment-valve in the second chamber to continuously engage the piston at each revolution as set forth.

2. In a rotary engine, a circular cylinder having a rectangular chamber communicating therewith, a driving-shaft in the center of the circular cylinder and a solid semicircular piston on the shaft to rotate within the circular chamber of the cylinder and one end of the piston square and the other end curved outwardly and an abutment-valve pivoted in the rectangular chamber to contact with the piston as the piston revolves in the circular chamber.

3. In a rotary engine, a circular cylinder having a rectangular chamber communicating therewith, a driving-shaft in the center of the circular cylinder and a semicircular piston, square at one end and curved outwardly at the other end, on the shaft to rotate within the circular chamber of the cylinder, an abutment-valve pivoted in the rectangular chamber to contact with the piston as the piston revolves in the circular chamber and a rotary valve connected with the rectangular chamber to admit steam into the rectangular chamber at each revolution of the shaft and piston.

4. In a rotary engine, a circular cylinder having a rectangular chamber communicating therewith, a driving-shaft in the center of the circular cylinder and a semicircular piston, having a square shoulder at one end outwardly curved at the other end, on the shaft to rotate within the circular chamber of the cylinder, an abutment-valve pivoted in the rectangular chamber to contact with the piston and the hub of the piston as the piston revolves in the circular chamber, a rotary valve connected with the rectangular chamber to admit steam into the rectangular chamber at each revolution of the shaft and piston and means to actuate the rotary valve during an interval in each revolution of the shaft.

5. In a rotary engine, a circular cylinder having a rectangular chamber communicating therewith, a driving-shaft in the center of the circular cylinder and a semicircular piston, square at one end outwardly curved at its other end, on the shaft to rotate within the circular chamber of the cylinder, an abutment-valve pivoted in the rectangular chamber to contact with the piston and the hub of the piston as the piston revolves in the circular chamber, a rotary valve connected with the rectangular chamber to admit steam into the rectangular chamber at each revolution of the shaft and piston, a crank on the end of the rotary valve, an eccentric on the end of the driving-shaft and an arm pivotally connected with said crank and said eccentric to actuate the rotary valve during an interval in each revolution of the shaft.

6. A circular cylinder having a rectangular extension, a central partition to produce two circular steam-chambers and two rectangular steam-chambers, a driving-shaft in concentric position with the two circular chambers, a semicircular piston in each circular chamber fixed to the shaft and one end of each piston square and the other end curved outwardly, an abutment-valve pivoted in each rectangular chamber to engage a piston and means to alternately admit steam into the rectangular chamber.

7. In a rotary engine, a circular cylinder having an angular extension, a driving-shaft in the center of the circular portion of the cylinder, a piston having a square shoulder and also an outwardly-curved shoulder fixed to the shaft and an abutment-valve pivoted in the angular part of the cylinder to engage the piston as set forth.

811,104. **WAGON-BODY.** DAVID STEVENS, Ogden, Utah. Filed Apr. 5, 1905. Serial No. 254,613.

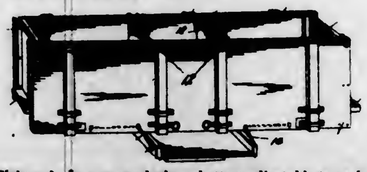

Claim.—1. In a wagon-body, a bottom adjustable to an incline at each end and provided with an opening adjacent the middle thereof, a laterally-extending, inclined chute beneath the opening and means for controlling the discharge of material from either end of the body through the opening and into the chute.

2. In a wagon-body, a bottom adjustable to an incline at each end and provided with an opening adjacent the middle thereof, a laterally-extending, inclined chute beneath the opening, means for adjusting the chute to extend upon either side and means for controlling the discharge of material from either end of the body through the opening and into the chute.

3. A wagon-body having three compartments arranged longitudinally, means provided in the middle compartment for opening the bottom thereof, means for raising the opposite ends of the bottoms of the end compartments and means to control the passage of material from the end compartments to the middle compartment and through the opening.

4. A wagon-body divided transversely by two hinged partitions into three compartments, means for raising the opposite ends of the bottoms of the end compartments, means for opening the bottom of the central compartment and means for controlling the flow of material from either end compartment into the central compartment by moving one hinged partition.

5. A wagon-body having an opening through the bottom adjacent the middle, a removable closure for said opening, two removable rods passing transversely across the body and through the sides, a partition pivotally mounted upon each of said rods and proportioned to contact with the bottom adjacent the sides of the opening and means for detachably securing the partitions in vertical positions to divide the body into three compartments.

6. A wagon-body having an opening through the bottom adjacent the middle, two removable rods passing transversely across the body and through the sides, a partition pivotally hinged upon each of said rods and proportioned to contact with the bottom adjacent the opening, means for holding the partition in a vertical position, means for raising the opposite ends of the bottom to form an incline from the opening to each end and means for swinging either of the partitions to control the flow of material from either end through the opening.

7. A wagon-body having an opening in the bottom and a closure for the opening forming a substantially plane surface with the bottom, partitions arranged and proportioned to be placed transversely across the body adjacent the opening and to form a central compartment, rods arranged to pass through the sides of the body and secure the partitions pivotally therein, means for raising the ends of the bottom forming an incline from adjacent the partitions and a chute disposed below the opening and extending laterally from the body.

811,105. **RAILWAY SIGNALING.** SAMUEL D. STRONG, Philadelphia, Pa. Filed Aug. 29, 1891. Serial No. 404,146.

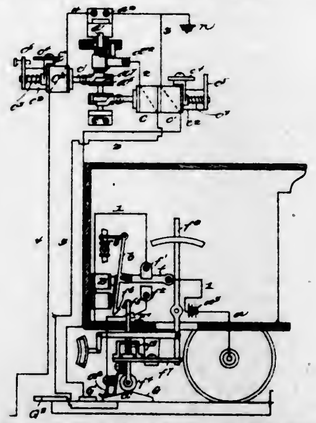

Claim.—1. A railway having a plurality of stations, a circuit making and breaking device at each station controlling a safety appliance, two separate sets of oppositely-located contact-plates at each station, a normally closed partial circuit extending from one of the contact-plates of one set through the circuit-breaker of a distant station in advance of the same and adapted when operated to break the said partial circuit, a partial circuit extending from another contact-

plate of the same set through the same distant circuit-breaker and adapted when energized to further break the first partial circuit, a partial circuit extending from the third contact-plate of the same set to a circuit-breaker behind the same so as to reëstablish the same if broken, a normally closed partial circuit extending from one of the contact-plates of the other set to a circuit-breaker of a distant station behind the same and adapted when operated to break said partial circuit, a partial circuit extending from another contact-plate of the same set to the same distant circuit-breaker and adapted when energized to further break the first-mentioned partial circuit, a partial circuit extending from the third contact-plate of the same set to a circuit-breaker in advance of the same and adapted to restore the same if broken, a generator with connections, and circuit-making devices on a train making contact with either of said sets of contact-plates according to the direction of movement of the train, and thereby complete the corresponding partial station-circuits, substantially as set forth.

2. In a railway having a plurality of stations, the combination of a step-by-step circuit-breaking device at each station, two magnets or solenoids for operating the same, two contact-plates at each station, a partial circuit connected with one of said contact-plates and extending through one of said magnets or solenoids and adapted to be broken by said circuit-breaker, a safety device under the control of said circuit, a second partial circuit connected with the other of said contact-plates and extending through the other magnet or solenoid, a generator with connections and contact-making devices on a train making contact with said contact-plates to complete said partial circuits, and a switch controlled by the safety device for supplying current to the second partial circuit only when the safety device is operated, substantially as set forth.

3. In a railway having a plurality of stations, the combination of a step-by-step circuit-breaking device at each station, two magnets or solenoids for operating the same, two contact-plates at each station, a partial circuit connected with one of said contact-plates and extending through one of said magnets or solenoids and adapted to be broken by said circuit-breaker, a magnet B on the train and adapted to be looped in said partial circuit, a latch *b*, the position of which is controlled by said magnet, a hooked arm F adapted to be moved upward at each station and engaging with the latch *b* when the magnet B is deënergized, a safety device controlled by the latch *b*, a second partial circuit connected with the other of the contact-plates and extending through the other magnet or solenoid at the circuit-breaker, a generator with connections and contact-making devices on a train making contact with said plates to complete said partial circuits, and a switch connected to the latch *b* for supplying current to the second partial circuit only when said latch is operated, substantially as set forth.

4. In a railway having a plurality of stations, the combination of a step-by-step circuit-breaking device at each station, two magnets or solenoids for operating the same, two contact-plates at each station, a partial circuit connected with one of said contact-plates and extending through one of said magnets or solenoids and adapted to be broken by said circuit-breaker, a magnet B on the train and adapted to be looped in said partial circuit, a latch *b*, the position of which is controlled by said magnet, a hooked arm F adapted to be moved upward at each station and engaging with the latch *b* when the magnet B is deënergized, connections between said latch and the throttle-valve of an engine, a second partial circuit connected with the other contact-plate and extending through the other magnet or solenoid at the circuit-breaker, a generator with connections and contact-making devices on a train making contact with said plates to complete said partial circuits, and a switch connected to the latch *b* for supplying current to the second partial circuit only when said latch is operated, substantially as set forth.

5. In a railway having a plurality of stations, the combination of a circuit making and breaking device at each station having two magnets or solenoids for effecting the breaks, and a single magnet or solenoid for effecting the reverse movements of said device, and three contact-plates at each station with each of which a partial circuit connects, one of said partial circuits controlling the safety device and extending through one of the breaking magnets or solenoids which when operated will break said partial circuit, the second partial circuit extending through the other breaking magnet or solenoid so that a second train entering the block will further break the first-mentioned circuit, and the third partial circuit extending through the resetting magnet or solenoid of a distant station, a generator with connections and circuit-making devices on a train engaging said contact-plates to complete the corresponding partial station-circuits, substantially as set forth.

6. In a railway having a plurality of stations, the combination with a circuit making and breaking device at each station having two magnets or solenoids for effecting the breaks, and a single magnet or solenoid for effecting the reverse movements of said device, three contact-plates at each station with each of which a partial circuit connects, one of said partial circuits controlling the safety device and extending through one of the breaking magnets or solenoids, which when operated will break said partial circuit, the second partial circuit extending through the other breaking magnet or solenoid, so that a second train entering a block will further break the first-mentioned circuit, and the third partial circuit extending through the resetting magnet or solenoid of a distant station, and a generator with connections, of two contact-making devices on a train, one of which engages the first contact-plate to break the said first partial circuit whereby the safety device is operated and the other of which engages the second contact-plate, and a switch operated in connection with the safety device for supplying current to the second contact-plate only when the first circuit is broken, substantially as described.

7. In a railway having a plurality of stations, the combination with a circuit-making device at each station having two magnets or solenoids for effecting the breaks, and a single magnet or solenoid effecting the reverse movements of said device, three contact-plates at each station with each of which a partial circuit connects, one of said partial circuits controlling the safety device and extending through one of the breaking magnets or solenoids, which when operated will break said partial circuit, the second partial circuit extending through the other breaking magnet or solenoid, so that a second train entering the block will further break the first-mentioned circuit, and the third partial circuit extending through the resetting magnet or solenoid at a distant station, and a generator with connections of two contact-making devices on a train, one of which engages with the first contact-plate to break said first partial circuit, and the other of which engages with the second contact-plate, of a magnet B to be looped in the first partial circuit, a latch *b*, the position of which is controlled by said magnet, a hooked rod F adapted to be moved upward at each station for engaging the latch *b* when the magnet B is deënergized, and a switch *f* for cutting the second partial circuit into circuit with the source of supply when said latch is moved downward for actuating the safety device, substantially as described.

8. In railway signaling, the combination of a step-by-step circuit-breaker and a semaphore at each station, means for setting said semaphore, an electromagnetic latch for tripping the same, a tripping-circuit extending from a distant station to the circuit-breaker and in circuit with the magnetic tripping device of the semaphore when the parts of the circuit-breaker are in normal condition, and contact devices operated by the circuit-breaker for grounding said tripping-circuit when the circuit-breaker is not in normal condition, substantially as and for the purpose set forth.

9. In railway signaling, the combination of a step-by-step circuit-breaker carrying two fingers K, K^3, which normally are in contact, a second finger K^4 with which the finger K^3 makes contact when the same is separated from the finger K, a semaphore at each station, means for setting the same, an electromagnetic tripping device for tripping said semaphore, a tripping-circuit extending in series with the fingers K^3, and K′, and with said tripping device, and a ground connected with said finger K^4 whereby when the circuit-breaker is in normal condition the tripping-circuit will extend through said tripping device, while if the said circuit-breaker is not in normal condition the said tripping-circuit will be grounded and will not affect the tripping device, substantially as set forth.

10. A railway having station electromagnetic devices, contact-plates and circuit connections, a semaphore, electromagnetic devices for setting the semaphore to one position, separate locking mechanism for holding said semaphore in said position, electromagnetic devices for releasing said locking devices for returning said semaphore to normal position, said electromagnetic locking and releasing devices being included in the circuits of the station-electromagnets, substantially as set forth.

11. In combination with station electromagnetic circuit connections for automatically stopping a railway train or engine, a semaphore, electromagnetic devices included in said circuit connections for setting the semaphore to a signaling position, locking devices for holding it in said position, and electromagnetic devices included in said circuit connections for releasing said locking devices and restoring the semaphore to normal position, substantially as set forth.

12. A station electromagnetic appurtenance comprising a magnet having a circuit-breaker, a second electromagnet having a circuit-breaker, the former or first-named magnet acting to open both circuit-breakers simultaneously, and the second-named magnet to correspondingly close the same, one of said breakers when opened automatically making a separate ground connection for said magnet, substantially as set forth.

811,106. **COTTON-CHOPPER.** WILLIAM H. SUTTON, Camden, Ark., assignor of one-half to John T. Swank, Camden, Ark. Filed June 17, 1905. Serial No. 265,795.

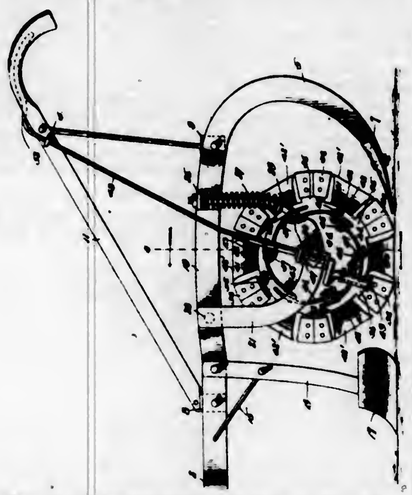

Claim.—1. A chopper-carrying drum having radial earth-engaging blades, and chopping elements movable between said blades.

2. A chopper-carrying drum having radial earth-engaging blades, and chopping elements movable between alternate pairs of blades.

3. A chopper-carrying drum having radial earth-engaging blades, and chopping elements movable between said blades in a plane parallel to the axis of the drum.

4. In a cotton-chopper, a member movable transversely of the row of plants and having a plurality of chopping elements connected therewith.

5. In a cotton-chopper, a drum supported for rotation, a member supported slidably by the drum, and a plurality of chopping elements connected with said member.

6. In a cotton-chopper, a drum supported for rotation and having radial earth-engaging blades, in combination with a member supported slidably by said drum to move transversely of the row of plants, and a plurality of chopping elements connected with said member.

7. In a cotton-chopper, a drum supported for rotation and having radial earth-engaging blades, a spring-actuated member supported slidably by the drum, a plurality of chopping elements connected with said member to operate between two of the earth-engaging blades, and means for forcing said member against the action of its actuating-spring.

8. A drum supported for rotation and having radial earth-engaging blades, a member supported slidably by said drum to move transversely of the row of plants, a plurality of chopping elements connected with said member, a spring engaging said member to move it in one direction, a lever pivoted upon the drum and having pivotal connection with the sliding member, and movably-supported operating means for said lever.

9. A frame, resiliently-supported hangers pivoted upon said frame, a shaft supported by the hangers, a drum mounted for rotation upon the shaft, chopper-carrying spring-actuated rods supported slidably in the drum, levers pivoted upon the latter and having pivotal engagement with the rods, a yoke pivoted upon the drum-carrying shaft, and a rock-shaft having a bearing in the yoke and having a terminal crank carrying a roller.

10. A frame having outwardly-offset portions, hangers pivotally connected therewith one of said hangers being provided with an offset portion whereby it is spaced from the body of the frame at the pivotal connecting-point, a drum supported in the hangers, chopper-carrying members supported by said drum for sliding movement parallel to the axis thereof, and operating means for said chopper-carrying members supported upon the side of the drum adjacent to the hanger having the offset pivotal member.

811,107. **GRIPPING MEANS FOR WIRE-DRAWING DEVICES.** HUGH L. THOMPSON, Waterbury, Conn. Filed May 24, 1905. Serial No. 262,070.

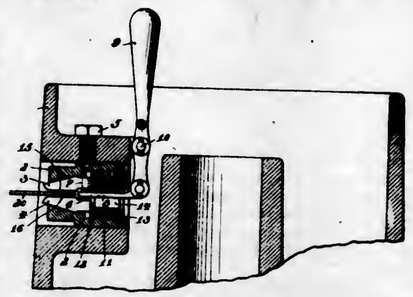

Claim.—1. In a wire-drawing machine, the combination of a block, and gripping mechanism therefor comprising journaled elements having wire-engaging faces in planes at right angles with the axes of their rotation and having axes of rotation substantially parallel with the axis of the block.

2. In a wire-drawing machine, the combination of a block, and gripping mechanism connected therewith comprising journaled elements movable to and away from each other in lines parallel with the axes of their rotation, and having axes of rotation substantially parallel with the axis of the block.

3. In a wire-drawing machine, the combination of a block, gripping-jaws secured thereto, a wire-engaging element journaled in each jaw, said elements having axes of rotation substantially parallel with the axis of the block.

4. In a wire-drawing machine, the combination of a block, a pair of coöperating gripping-jaws secured to said block, each provided with a journaled element having an engaging face slightly above the surrounding surface of the jaw, said journaled elements having axes of rotation substantially parallel to the axis of the block.

5. In a wire-drawing machine, the combination of a block, and gripping mechanism connected therewith comprising a pair of gripping-jaws, means for moving said jaws toward and away from each other, and coöperating oppositely-disposed rotatable wire-engaging elements seated in and having ball-bearing relation with said jaws, the said rotatable elements having axes substantially parallel with the axis of the block.

6. In a wire-drawing machine, the combination of a block, and gripping mechanism connected therewith comprising a pair of members sliding in convergent ways, coöperating oppositely-disposed rotatable elements for engaging the wire seated in said members, and manually-operative means for actuating said members, the said rotatable elements having axes of rotation substantially parallel with the axis of the block.

7. In a wire-drawing machine, the combination of a block having a recess in its peripheral surface, gripping mechanism disengageably secured in said recess comprising a casing having convergent ways, jaws sliding in said convergent ways provided with coöperating rotatable elements for engaging the wire, and manually-operative means for actuating said jaws, the rotatable elements having axes of rotation substantially parallel with the axis of the block.

811,108. **WRAPPER-SUPPORT FOR CIGAR-MACHINES.** OLOF TYBERG, New York, N. Y., assignor to International Cigar Machinery Company, New York, N. Y., a Corporation of New Jersey. Filed Sept. 13, 1904. Serial No. 224,269.

Claim.—1. The combination with a wrapper-support, of means for retaining a wrapper on the support, said means being arranged to operate on the tip and body of the wrapper, and means operating upon the under side of the tip to force it away from the support against the action of the retaining means, substantially as described.

2. The combination with a wrapper-support, of suction mechanism operating to retain the wrapper thereon, said mechanism being arranged to operate upon the body and tip of the wrapper, and

means operating upon the under side of the tip of the wrapper to force it away from the support against the action of the suction mechanism, substantially as described.

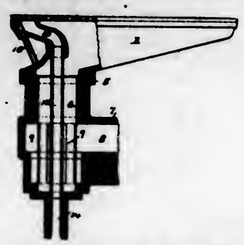

3. The combination with a wrapper-support, of suction mechanism operating to retain a wrapper thereon, said mechanism being arranged to operate upon the body and tip of the wrapper, and a blast mechanism operating to force the tip of the wrapper away from the support against the action of the suction mechanism, substantially as described.

4. The combination with a wrapper-support provided with perforations underlying the body and tip of the wrapper, of suction-producing means in communication with said perforations, and means operating against the under side of the tip of the wrapper to force it away from the support against the action of the suction, substantially as described.

5. The combination with a wrapper-support provided with perforations underlying the body and tip of the wrapper, of suction-producing means in communication with said perforations, and a blast mechanism operating against the under side of the tip of the wrapper to force it away from the support against the action of the suction, substantially as described.

6. The combination with a wrapper-support provided with a suction-chamber and a blast-chamber, of perforations in the support underlying the body and tip of the wrapper, said perforations being in communication with the suction-chamber, and perforations in the support underlying the tip of the wrapper, said perforations being in communication with the blast-chamber, substantially as described.

7. The combination with a wrapper-support provided with a suction-chamber underlying that part of the support which carries the body of the wrapper and a blast-chamber underlying that part of the support which carries the tip of the wrapper, of perforations in that part of the support underlying the body of the wrapper, the said perforations being in direct communication with the suction-chamber, perforations in that part of the support which carries the tip of the wrapper, said perforations being in direct communication with the blast-chamber, and a pipe connecting with the suction-chamber, said pipe leading to one of the perforations which are in communication with the blast-chamber, substantially as described.

8. The combination with a wrapper-support having a suction-chamber and perforations in communication therewith said perforations forming a suction-producing field, of a blast-chamber and perforations communicating therewith, said perforations forming a blast-producing field, and means whereby the suction is caused to act upon the wrapper within the blast-producing field, and simultaneously with the action of the blast substantially as described.

811,109. PNEUMATIC TIRE. FRIEDRICH VIETH, Höchst-in-the-Odenwald, Germany. Filed Apr 20, 1905. Serial No. 257,971.

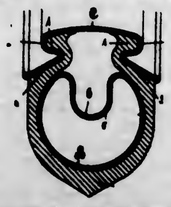

Claim.—1. A pneumatic tire consisting of a cover of a cross-section in the shape of a horseshoe and an india-rubber tube, of which an inner portion normally projects outwardly into its cavity, so that on inflating the tube this inner portion will project inwardly.

2. In a pneumatic tire, the combination with a wheel-rim having two opposite annular recesses, of a cover of a cross-section in the shape of a horseshoe, the inner edges of which are provided with two flanges for engaging in the annular recesses of said wheel-rim, and an india-rubber tube, of which an inner portion normally projects outwardly into its cavity, so that on inflating the tube this inner portion will project inwardly and fill up the space between said wheel-rim and the flanges of said cover.

3. In a pneumatic tire, the combination with a wheel-rim having two diverging conical portions and two opposite annular recesses behind them, of a cover of a cross-section in the shape of a horseshoe and having two shoulders and two flanges on its inner edges, the shoulders being adapted to rest on the conical portions of said wheel-rim and the flanges being adapted to engage in the annular recesses thereof, and an india-rubber tube of a circular cross-section, of which an inner portion normally projects outwardly into its cavity, so that on inflating the tube this inner portion will project inwardly and fill up the space between said wheel-rim and the flanges of said cover.

811,110. APPARATUS FOR PUMPING LIQUID. GEORGE L. WATERHOUSE, New York, N. Y. Filed June 13, 1905. Serial No. 264,994.

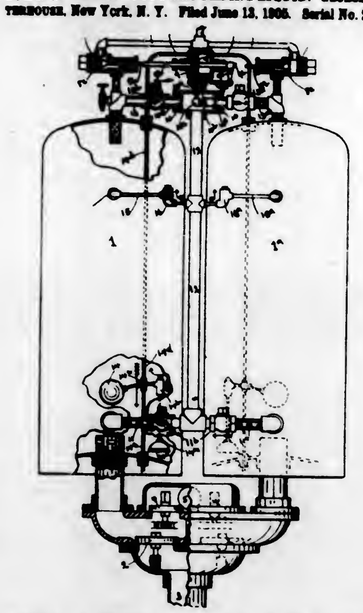

Claim.—1. An apparatus of the character described comprising a plurality of receptacles provided with liquid induction and eduction means, means for controlling the flow of steam to each receptacle to accord with the rise and fall of liquid therein, means for discharging heated fluid from the lower interior of one receptacle into the upper interior of another receptacle upon a charge of liquid therein before steam is admitted thereto, and means for causing condensation of steam in said receptacles after liquid has been discharged therefrom, substantially as described.

2. An apparatus of the character described comprising a plurality of receptacles provided with liquid induction and eduction means, means for controlling the flow of steam to each receptacle to accord with the rise and fall of liquid therein, means for discharging heated fluid from the lower interior of one receptacle into the upper interior of another receptacle upon a charge of liquid therein before steam is admitted thereto, and means for causing the flow of condensing fluid from one receptacle into the other after liquid has been discharged from the latter, substantially as described.

3. An apparatus of the character described comprising two receptacles provided with liquid induction and eduction means, means for controlling the flow of steam to each receptacle to accord with the rise and fall of liquid therein, means for discharging heated fluid from the lower interior of one receptacle into the upper interior of the other receptacle upon a charge of liquid therein before steam is admitted thereto, means for causing the flow of condensing fluid from one receptacle into the other after liquid has been discharged from the latter, and means for stopping the flow of condensing liquid to each receptacle after it has been charged with liquid to a substantially predetermined high level therein, substantially as described.

4. An apparatus of the character described comprising a plurality of receptacles provided with liquid induction and eduction means, means for alternately admitting steam to and shutting it off from each receptacle, means for discharging heated liquid from the lower interior of each receptacle to the upper interior of another receptacle before live steam is admitted thereto, means for condensing the steam in each receptacle, and means for preventing the rise of liquid in each receptacle above a substantially predetermined high level therein, substantially as described.

5. A pumping apparatus comprising a pair of receptacles provided with liquid induction and eduction means, means to alternately admit steam to each receptacle, means to alternately discharge heated surface liquid and steam from each receptacle to the other while live steam is shut off from the receptacle receiving such heated surface liquid, and means to alternately cause condensation of steam in said receptacles, substantially as described.

6. A pumping apparatus comprising a pair of receptacles provided with liquid induction and eduction means, valves to admit steam to said receptacles, means to open said valves alternately and leave both valves closed for a period of time, passages connecting the lower interior of each receptacle with the upper interior of the other receptacle, means to control the flow of fluid through said passages and to open the passage from one receptacle to another while steam is shut off from both receptacles, substantially as described.

7. A pumping apparatus comprising a pair of receptacles provided with liquid induction and eduction means, valves to admit steam to said receptacles, means to open said valves alternately and leave both valves closed for a period of time, passages connecting the lower interior of each receptacle with the upper interior of the other receptacle, means to control the flow of fluid through said passages comprising devices to open the passage from one receptacle to another while steam is shut off from both receptacles and to close the passage into one receptacle while live steam is entering the other receptacle, and means for condensing liquid in said receptacles; substantially as described.

8. A pumping apparatus comprising a pair of receptacles provided with liquid induction and eduction means, valves for admitting steam to said receptacles, means to alternately operate said valves and leave them both closed for a period of time, a passage connecting the lower interior of each receptacle with the upper interior of the other receptacle and provided with valves to prevent the return flow from one receptacle to the other, and a valve device to control the flow of fluid through said passage to each receptacle arranged to open the passage from one receptacle to the other while live steam is shut off from the last-named receptacle, the steam-valve-operating means serving to admit steam to the last-named receptacle after heated fluid from the other receptacle has entered the same, substantially as described.

9. A pumping apparatus comprising a pair of receptacles provided with liquid induction and eduction means, valves to admit steam to said receptacles, passages connecting the lower interior of each receptacle with the upper interior of the other receptacle, valves to prevent the return flow through said passages from one receptacle to the other, a valve device to control the flow of heated fluid through said passages from one receptacle to the other, mechanism for operating the steam-valves connected with said valve device for operating the latter, and means for causing said mechanism to operate to alternately control the flow of steam to said receptacles to accord with the rise and fall of liquid therein; substantially as described.

10. An apparatus of the character described comprising a plurality of receptacles provided with liquid induction and eduction means, means for controlling the flow of steam to each receptacle, means for discharging heated fluid from the interior of one receptacle into the interior of another receptacle upon a charge of liquid therein before steam is admitted thereto, and means for causing condensation of steam in said receptacles after liquid has been discharged therefrom, substantially as described.

811,111. SYRINGE. GEORGE C. WEDEWARTH, Baltimore, Md. Filed Feb. 23, 1904. Serial No. 194,201.

Claim.—1. In a device of the class described, an outer imperforate shell or barrel, an induction-tube removably secured within the shell, and a peripherally-notched disk carried by the tube for centering it with relation to the shell.

2. In a device of the class described, an imperforate outer shell or barrel having its forward end open, a removable closure for the rear end of the shell, an induction-tube passing centrally through the closure and extending to the forward end of the shell, a peripherally-notched disk carried by the tube to center it relatively to the shell, an eduction-tube connected with the closure, and independently-operable valves for controlling the passage of liquid through the tubes.

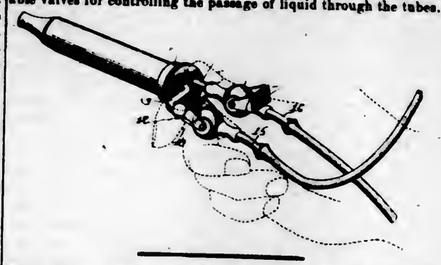

811,112. AUTOMOBILE-WHEEL. EARL A. WHEELER and WILLIAM HECKERT, Sharon, Pa.; W. W. Shilling executor of said Earl A. Wheeler, deceased. Filed Dec. 29, 1904. Serial No. 238,766.

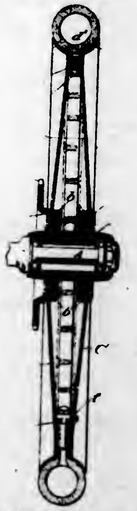

Claim.—1. A wheel having two separable half-rims which together constitute a complete grooved rim, an interposed ring to which said half-rims are secured, at least one of said half-rims being detachably connected to said ring, and a flexible tire fitted in said rim and attached to said ring by fastenings engaging the under portion of the tire.

2. A wheel comprising a hub, two confronting disks attached to said hub and having circumferential flanges or half-rims which together constitute a complete grooved rim for reception of a flexible tire, an interposed ring under said rim to which said disks are secured, at least one disk being detachably connected to its hub and to said ring, and means for fastening the tire to said ring comprising devices adapted for insertion through the ring and for attachment to the under side of the tire.

3. A wheel comprising two confronting sections separately secured together and having outwardly-flaring peripheral flanges or half-rims which when the sections are united constitute the complete grooved or concaved rim for reception of a cushion or flexible tire, and means for positively securing the tire in one half-rim before uniting the sections, the fastenings for the tire being concealed between the sections when united.

4. A wheel comprising two confronting sheet-metal sections having integral circumferential flanges or half-rims which together constitute a complete grooved rim for the reception of a flexible tire, and a ring under the tire between the sections to which the latter are

secured, one of said sections being affixed to said ring and the other detachably secured thereto and separable together with its half-rim to permit insertion or removal of the tire, and means for positively securing the tire to said ring before securing the removable section with its half-rim in place, said means comprising bolts or screws inserted through the ring and tapped in nuts embedded in the under medial portion of the tire.

5. A wheel whose body comprises two separable webs or disks having peripheral outwardly-flaring or concave flanges which when the sections are united constitute the complete grooved rim for reception of a flexible tire, a ring between the disks to which they are secured, and means for fastening the tire directly to said ring.

6. A wheel whose body comprises two separable webs or disks and an interposed ring to which they are secured, said disks having peripheral half-rims which together constitute a complete grooved rim, and a pneumatic tire seated in said rim and adapted to be inserted or removed by separating one disk with its half-rim from the other, said tire having a valved inflating-tube projecting from its under side through the rim into the space between the disks and having an opening through one of the disks for connection with a pump.

7. A wheel whose body comprises two separable webs or disks having integral peripheral half-rims which together constitute a complete grooved rim, and a pneumatic tire seated in said rim and adapted to be inserted or removed by separating one disk from the other, a ring under the tire to which said disks are separately secured, one of said disks being detachably secured thereto, and a valved inflating-tube projecting from the under side of said tire between the disks and having an opening through one of the disks for connection with a pump.

8. A wheel comprising a hub having annular flanges, opposite webs or sections secured to said flanges and having circumferential half-rims forming a grooved rim for reception of a flexible tire, and a ring under the tire between the sections and to which they are secured, at least one section being detachable, and means for positively fastening the tire to said ring before securing the detachable section in place.

811,113. COMBINED BOTTLE-CAP AND CORK-PULLER. ROBERT C. WILSON, Athens, Ga. Filed Mar. 9, 1905. Serial No. 249,287.

Claim.—1. In a bottle-stopper, the combination of a bottle-neck having an outwardly-extending horizontal flange at its upper end and also having a horizontal, endless rib on the perimeter of said flange, a sheet-metal cap having an annular horizontal portion disposed above the flange of the bottle, teeth extending downwardly and inwardly from the inner edge of said portion and a flange depending from the outer edge of said portion and provided with a horizontal, endless swell snugly receiving the rib on the bottle-flange, and a cork resting in the bottle-neck and the cap and engaged by the teeth of the latter.

2. In a combined bottle-stopper and cork-puller, the combination of a cap the top of which is slitted radially to form teeth through which a cork is forced, the points of the teeth bending downward and biting into the cork to prevent its removal independent of the cap; said cap having a cylindrical wall depending from its said top, said wall being formed with a horizontal circumferential endless swell adapted to engage a rib upon a bottle; and a fermeture comprising a disk which closes the top of said cap and overlies said cork to exclude dust and air.

811,114. PUMP-JACK. FRANCIS M. YOUNG, San Angelo, Tex. Filed Dec. 2, 1905. Serial No. 289,622.

Claim.—1. In a device of the class described, a vertically-supported stud, a beam mounted for horizontal rotation upon said stud near the ground or other base upon which the device operates, spaced vertical standards carried by said beam and provided with shaft-bearings, a shaft mounted for rotation in said bearings and spaced above said beam, a combined traction and carrier wheel connected to the outer end of said shaft and bearing upon said base, means for connecting a draft appliance to said shaft and extending forwardly therefrom, and a driver's seat connected to said beam and extending rearwardly therefrom, whereby the weight of the operator is utilized to prevent torsional strains being imparted to the beam.

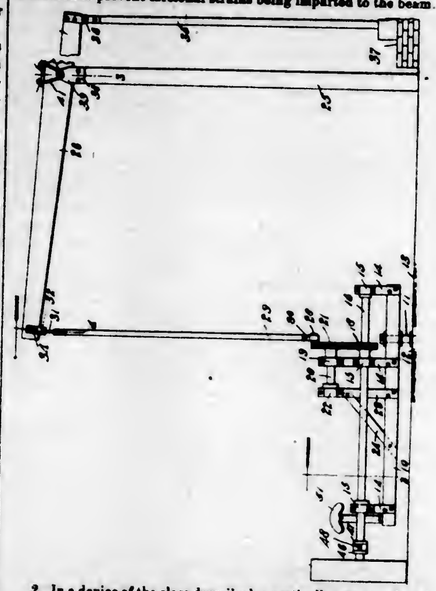

2. In a device of the class described, a vertically-supported stud, a beam mounted for horizontal rotation upon said stud near the ground or other base upon which the device operates, spaced vertical standards carried by said beam and provided with shaft-bearings, a shaft mounted for rotation in said bearings and spaced above said beam, a combined traction and carrier wheel connected to the outer end of said shaft and bearing upon said base, means for connecting a draft appliance to said shaft and extending forwardly therefrom, a driver's seat connected to said beam and extending rearwardly therefrom, a supporting-post spaced from said stud, a cap member carried by said post and having spaced ears, a pivot-pin disposed transversely through said ears, a walking-beam mounted for vertical movement upon said pin, a clamp-plate bearing upon said walking-beam above said pivot-pin, V-shaped clamp-bolts engaging said pivot-pin between said ears and walking-beam and passing through perforations in said clamp-plate, nuts engaging said bolts and bearing upon said clamp-plate, connecting means between one end of said walking-beam and said shaft whereby the rotation of the shaft is caused to reciprocate the walking-beam, and means for coupling a pump-rod to the other end of the walking-beam.

811,115. SLIDING DOOR FOR RAILWAY-CARS. FRED D. ACKERMAN, Hampton, Va. Filed July 28, 1905. Serial No. 271,696.

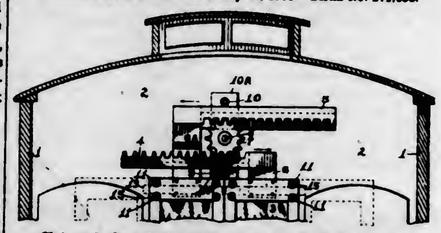

Claim.—1. In a device of the class described, the combination with double sliding doors, of plates fastened at the middle upper portion of said doors and having rack-bars of an L-shape cross-section and disposed at right angles to said plates, and rotary means for reciprocating said racks.

2. In a device of the class described, the combination with double sliding doors, of plates or webs secured to the doors of less width than the same and disposed at the center thereof, said plates or webs having rack-bars of L shape in cross-section and at right angles to the plates or webs, a gear-wheel between the racks adapted to reciprocate the same to open and close the doors together, rollers on one side of the doors, and independent H-shaped tracks for the rollers, one for each of the said doors.

3. In a device of the class described, the combination with double sliding doors, of a plate or web secured to the top of each door near its center, a rack-bar on each plate at right angles thereto extending above and beyond the said doors, a pinion between the racks for opening and closing one door by the other, one of the said rack-bars extending upon each side of the pinion, rollers on the plain surface of the racks for preventing vertical movement thereof, flanged rollers on each side of the doors, and tracks or guide-rails having an H shape in cross-section for supporting said rollers.

811,116. JACK FOR LIFTING AND TRANSPORTING MOTOR-CARS, &c. HENRY ADAMS, Tunbridge Wells, England. Filed Mar. 11, 1905. Serial No. 249,607.

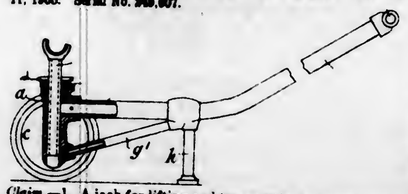

Claim.—1. A jack for lifting and transporting motor-cars, carriages and the like, comprising a column, a carrier-frame supporting said column and mounted upon wheels, an axle-rest rotatably carried by said column, and means enabling said column to be tilted and also restored to its normal vertical position, as set forth.

2. A jack for the purposes aforesaid, comprising a tubular column, a carrier-frame supporting said column, wheels on said frame, a rotatable socket in said column, an axle-rest carried in said socket, and a lever-handle enabling said column to be tilted and restored to its normal vertical position, as set forth.

3. A jack for the purposes aforesaid, comprising a tubular column, a carrier-frame supporting said column, wheels on said frame, a rotatable socket mounted upon ball-bearings in said column, an axle-rest carried in said socket, a height-adjustment device for said column, a lever-handle, and a strut supporting said jack in its normal position, as set forth.

4. A jack for the purposes aforesaid, comprising a tubular column, a carrier-frame supporting said column and mounted on wheels, a tubular pillar adapted to slide in said column, a rotatable socket in said pillar, an axle-rest carried in said socket, a height-adjustment device for said rest, a nut engaging a screw-thread on said pillar, means rotating said nut when operated, a lever-handle, and a strut, as set forth.

5. A jack for the purposes aforesaid, comprising a tubular column, a carrier-frame supporting said column and mounted on wheels, a tubular pillar, a rotatable socket in said pillar, an axle rest carried in said socket, a height-adjustment device for said rest, a nut engaging a screw-thread on said pillar, ball-bearings for said nut, a bevel-wheel fixed to said nut, a bevel-pinion mounted in bearings in said carrier-frame, a tubular lever-handle fixed to said frame, a flexible shaft carried in said tubular lever-handle and fixed at one end to said bevel-pinion and at the other end to a suitable rotative means, and a strut, as set forth.

811,117. VALVE FOR ENGINES. THOMAS M. ANDERSON, Nashville, Tenn. Filed July 13, 1905. Serial No. 269,433.

Claim.—1. In a rotary engine, the combination with a pair of cylinders provided with piston-carriers arranged on a common shaft, and each provided with a pair of inlet-ports and a pair of outlet-ports, of a single valve adapted when in one position to admit motor fluid to one of the inlet-ports of each cylinder, and to permit the motor fluid to escape from the corresponding outlet-port of each cylinder, and when in another position, to permit the motor fluid to enter the other inlet-ports of the cylinders and to escape from the corresponding outlet-ports.

2. In a rotary engine, the combination with a pair of axially-alined cylinders each provided with a pair of inlet-ports and a pair of outlet-ports, of a reciprocatory valve for each cylinder, a piston-carrier in each cylinder constructed and adapted to actuate in its rotation the corresponding reciprocatory valve, a rotatable valve arranged between said reciprocatory valves and to which the latter alternately admit the motive fluid, said rotatable valve being provided with a central aperture to which the steam is admitted and with passages leading from said central aperture and adapted to admit steam in one position of said valve to one of the said ports and the other inlet-port of each cylinder and in another position of said valve to admit steam into said last-mentioned inlet-port and exhaust steam from the other of said outlet-ports and said first-mentioned inlet-port.

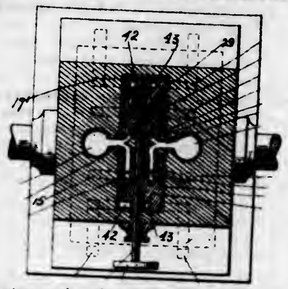

3. In a rotary engine, the combination with a pair of axially-alined cylinders, a steam-chest above said cylinders, a valve-casing provided with exhaust-ports and passages communicating with said steam-chest, a pair of reciprocatory valves adapted to alternately open and close said passages, a piston-carrier in each cylinder provided with cam-surfaces adapted to actuate said valves, a rotatable valve within said casing provided with a central aperture to which the steam is admitted and with passages leading from said aperture and so arranged that in one position of said valve steam is admitted into one inlet-port and exhausted from the other inlet-port and one outlet-port of each cylinder and in the other position of said valve steam is admitted into said last-mentioned inlet-port and exhausted from the other inlet-port and the other outlet-port of each cylinder and manually-operable means to operate said valve.

811,118. CIGARETTE-MACHINE. FREDERICK F. ANDERSON, New York, N. Y. Filed Apr. 7, 1905. Serial No. 254,805.

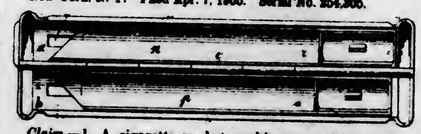

Claim.—1. A cigarette pocket-machine comprising a hinged outer shell composed of two curved slotted halves having each a turned-up longitudinal edge and a half hollow rim at each end extending angularly in such a manner that the extended parts snap in when the machine is closed, and a cutter formed on one of the half hollow rims near the turned-up edges all stamped out of one sheet of metal, an inner shell, and means for sliding in and out the inner shell.

2. A cigarette pocket-machine comprising a hinged outer shell composed of two curved slotted halves having each a turned-up longitudinal edge and a half hollow rim at each end extending angularly in such a manner that the extended parts snap in when the machine is closed, and a cutter formed on one of the half hollow rims near the turned-up edges all stamped out of one sheet of metal, an inner curved shell consisting of two curved halves for making flat cigarettes and means for sliding in and out the inner shell.

3. A cigarette pocket-machine comprising a hinged outer shell composed of two curved slotted halves having each a turned-up longitudinal edge and a half hollow rim at each end extending angularly in such a manner that the extended parts snap in when the machine is closed, and a cutter formed on one of the half hollow rims near the turned-up edges all stamped out of one sheet of metal, an inner curved shell consisting of two curved halves for making flat cigarettes, knobs extending through the slots of the outer shell and secured each to a half of the inner shell.

4. A cigarette pocket-machine comprising a hinged outer shell composed of two curved slotted halves having each a turned-up longitudinal edge and a half hollow rim at each end extending angu-

larly in such a manner that the extended parts snap in when the machine is closed, and a cutter formed on one of the half hollow rims near the turned-up edges all stamped out of one sheet of metal, an inner curved shell consisting of two curved halves for making flat cigarettes, knobs extending through the slots of the outer shell and secured each to a half of the inner shell, and two stoppers one secured to the inner portion of each knob.

5. In a cigarette pocket-machine an outer shell composed of two curved halves having each a longitudinal slot and a turned-up longitudinal edge, a half hollow rim at each end extending angularly in such a manner that the extended portions snap in when the machine is closed, a cutter formed on one of the hollow rims near the turned-up edges all stamped simultaneously out of one sheet of metal, and means within said inner shell for compressing the tobacco.

6. In a cigarette pocket-machine an outer shell composed of two curved halves, having each a longitudinal slot and a turned-up longitudinal edge, a half hollow rim at each end extending angularly in such a manner that the extended portions snap in when the machine is closed, a cutter formed on one of the hollow rims near theturned-up edges all stamped simultaneously out of one sheet of metal, and means within said outer shell for compressing the tobacco in flat shape.

7. In a cigarette pocket-machine an outer shell composed of two curved halves, having each a longitudinal slot and a turned-up longitudinal edge, a half hollow rim at each end extending angularly in such a manner that the extended portions snap in when the machine is closed, a cutter formed on one of the hollow rims near the turned-up edges all stamped simultaneously out of one sheet of metal, means within said outer shell for compressing the tobacco in flat shape, and a stopper attached to a half outer shell and extended over the front opening of the machine.

811,119. **MEANS FOR CLEANING FLOORS.** FREDERICK F. ANDERSON, New York, N. Y. Filed Feb. 19, 1904. Serial No. 194,341.

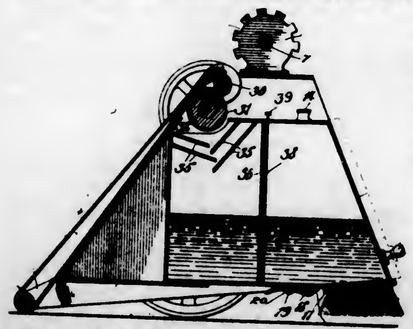

Claim.—1. In a device of the class described, a frame and brush attached beneath the same, a water-tank above said brush, a valve beneath the tank, a single propelling-handle rotatably mounted on said frame and a mechanical connection between said handle and said valve for opening and closing the valve by movement of the handle, substantially as described.

2. In a device of the class described, a frame, a brush pivoted beneath said frame, a water-tank above said brush supported by said frame, a valve beneath said tank, a propelling-handle for the frame rotatably mounted thereon, a spring for closing the valve, a pin on the handle and a flexible connection between said pin and said valve whereby turning the handle on its own axis will act to open and close said valve, substantially as described.

3. In a device of the class described, a frame, a brush carried beneath the frame, a tank supported by the frame above said brush, a valve beneath said tank and a propelling-handle; in combination with wheels supporting said frame, a roller near the bottom of the frame and extending to each side as far as the planes of said wheels, two corresponding rollers each of varying cross-section pivoted near the top of the frame over said tank, means connecting the supporting-wheels with one of said last-named rollers for driving the same and an endless band of absorbent material as wide as said lower roller supported by and running on all three rollers so as to spread out near the bottom of the frame, and be contracted within narrower limits near the top thereof, substantially as described.

4. In a device of the class described, a frame, a tank supported by said frame, a valve beneath the tank, a brush supported under one end of the frame near said valve a roller extending across and supported by said frame at its opposite end, a single pair of supporting-wheels for the frame between said brush and said roller, rollers supported by the frame above said tank, means connecting the supporting-wheels and one of said last-named rollers for driving the latter, an endless band of absorbent material passing over the first-named roller and over the last-named rollers, and a propelling-handle for the frame said supporting-wheels extending below the plane of the brush and lower roller so that the frame may be tipped on said supporting-wheels by means of said handle to bring said brush or said band in contact with the floor at will, substantially as described.

811,120. **COLLAR AND CUFF SHAPER.** WILLIAM M. BARNES, Philadelphia, Pa. Filed June 27, 1901. Serial No. 66,291.

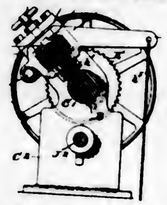

Claim.—1. In a collar and cuff shaping machine, in combination, a pair of rollers, one above the other, a shaft for the upper roller, a frame having a slotted portion, a bearing within the slotted portion of said frame, said bearing being adapted to oscillate therein, a spring supporting said bearing and a set-screw above said bearing, said bearing being adapted to support the end of the upper roller-shaft remote from said roller.

2. In a collar and cuff shaping machine, in combination a pair of rollers one above the other, a shaft for the upper roller, said shaft being supported at its end remote from the roller so as to be adapted to oscillate, and supported at its end adjacent the rolls in a bearing sliding in the framework of the machine, a pivoted frame surrounding said bearing adjacent the rolls, a spring normally holding said bearing and frame in raised position and the upper roller free from the lower roller, a lever projecting from said frame, a rod projecting from said lever whereby, on the movement of said rod, the frame is moved to bring the upper roller in contact with the lower roller.

811,121. **WEB-MANIPULATING MECHANISM.** HENRY F. BECHMAN, Battlecreek, Mich., assignor to The Duplex Printing Press Company, Battlecreek, Mich. Filed May 24, 1904. Serial No. 209,535.

Claim.—1. In combination, a stationary type-bed, an impression-cylinder and means for rolling the cylinder back and forth over the bed, means for feeding a narrow web twice into the press, and means for delivering such web twice from the press, and looping devices for intermittently shifting the part of the web in the press between the feeding and delivering mechanisms through the printing devices; with means for guiding a narrow-width web twice through the press between the feeding and delivering devices; with means for deflecting the web to one side, between the points where it first leaves the delivery and where it enters the feed devices a second time, substantially as described.

2. In combination, a stationary bed and reciprocating cylinder for printing upon a web, and means for reciprocating the cylinder; means for continuously feeding web to said printing means, means for delivering the web from said printing means, and web-looping mechanism for intermittently shifting the web between said feeding and delivery mechanisms; with a web-deflector adjacent to the feeding and delivering mechanisms by which the web after passing once through the machine is deflected to one side, and again directed to the feeding mechanism and through the machine in a plane parallel with its first travel therethrough, substantially as described.

3. In a printing-press the combination of a web-printing couple comprising a stationary bed and a reciprocating impression-cylinder, and means for reciprocating the cylinder, a single continuously-acting means for feeding web into the press, a single means for continuously delivering web from the press, and a set of looping devices adapted to intermittently shift the portions of web in the press between the feeding and delivering mechanism through the printing devices; with means for directing a narrow-width web twice through the printing-couple, and means for deflecting the web to one side after it first leaves the press delivery mechanism and directing it a second time into the feeding mechanism and through the press, substantially as described.

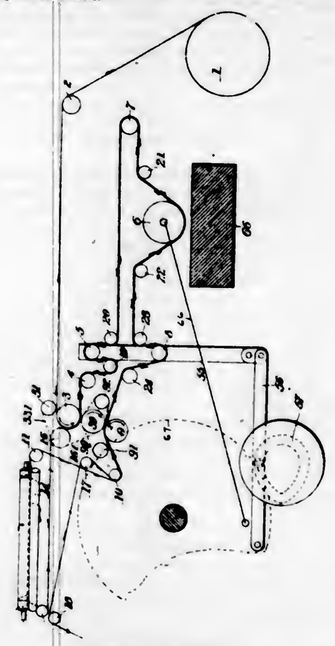

811,122. **SPARKING IGNITER FOR INTERNAL-COMBUSTION ENGINES.** ALFRED R. BELLAMY, Edgeley, Stockport, England. Filed Sept. 27, 1904. Serial No. 226,192.

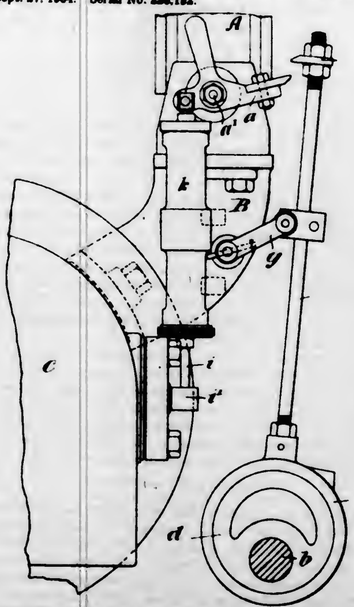

Claim.—In combination a magneto-electric generator, a trip-lever mounted on the axis of the armature of the generator, a plunger connected to one end of such trip-lever, sparking mechanism connected to the other end of the plunger and means for oscillating the trip-lever in one direction consisting of a tappet carried by an eccentric-rod vibrated by an eccentric mounted on the side shaft of the engine the eccentric-rod being connected to a link pivoted onto a bracket or fixed part of the frame of the engine and means for adjusting such link toward or from the eccentric-rod substantially as described.

811,123. **CAR-STARTER.** ROBERT E. BOOTH and JOHN WEBB, Charleroi, Pa. Filed Aug. 10, 1905. Serial No. 273,519.

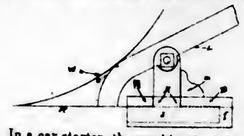

Claim.—1. In a car-starter, the combination of a pair of clamping-jaws having a lever mounted thereon, and provided with faces and inclined rear surfaces seated in the body-frame, substantially as described.

2. In a car-starter, the combination of a pair of clamping-jaws, having a lever mounted thereon and seated on inclined faces of the flanges of the body-frame, and the body-frame, substantially as described.

3. In a car-starter the combination of a lever, the said lever being mounted directly on a pair of clamping-jaws, a pair of clamping-jaws, the said jaws being provided with faces, and inclined rear surfaces adapted to be brought in engagement with the faces of the guiding-flanges of the body-frame, and the body-frame, the said body-frame being provided with inclined faces on the inner sides of the flanges substantially as described.

811,124. **MOLDING-BIT.** JOHN BOYD, Bessemer, Ala. Filed Mar 15, 1905. Serial No. 250,188.

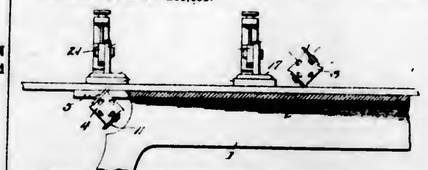

Claim.—In a double-surfacing molding-machine, the combination of a horizontal feed-table, of upper and lower cutter-heads arranged respectively above and below the plane of the table and in different vertical planes, said cutter-heads being spread a distance apart, molding-bits adjustably fitted to the upper head and provided with a succession of straight V-shaped teeth, molding-bits adjustably fitted to the lower head and provided with a succession of continuous curved V-shaped teeth, a vertically and horizontally adjustable holder arranged over the feed-table directly above the lower cutter, a similarly-adjustable holder also arranged over the feed-table on one side of the vertical plane of the upper cutter, both of said holders having flat brace-holding heads, and a wooden bracing-guide rigidly secured to each holding-head, each wooden bracing-guide consisting of a wooden section of board dressed by the upper rotary cutter alone.

811,125. **CONVEYER.** BERTRAM H. BUCKER, Columbus, Ohio, assignor to Joseph A. Jeffrey, Columbus, Ohio. Filed Mar. 16, 1904. Serial No. 198,453.

Claim.—1. In a conveyer, the combination with an endless carrier of a series of gravity-buckets trapezoidal in horizontal cross-section, each bucket having its sides arranged parallel to the adjacent sides of its adjoining buckets, substantially as set forth.

2. In a conveyer, the combination with an endless carrier, of a series of gravity-buckets trapezoidal in horizontal cross-section, each bucket having its sides arranged parallel to the adjacent sides of its adjoining buckets and normally separated therefrom, substantially as set forth.

3. In a conveyer, the combination with an endless carrier, of a series of gravity-buckets trapezoidal in horizontal cross-section, each bucket having its sides arranged parallel to the adjacent sides of its adjoining buckets and normally separated therefrom, and means

for causing the said adjacent sides of adjoining buckets to approach each other so as to close the passage-ways between them, substantially as set forth.

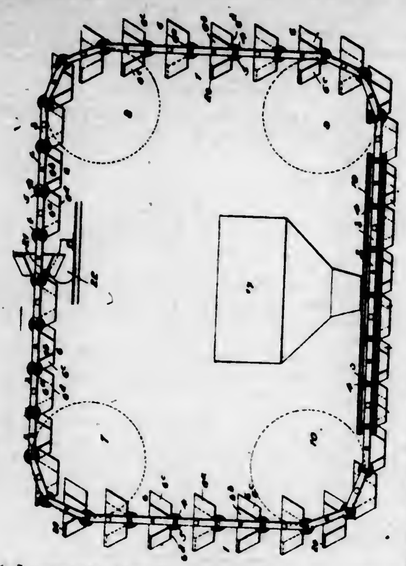

4. In a conveyer, the combination of a series of gravity-buckets, each bucket having a relatively narrow and a relatively wide end, the wider end of each bucket being arranged adjacent to the narrower ends of its adjoining buckets and normally out of alinement with said ends and the adjacent sides of adjoining buckets being parallel to each other and normally spaced apart, and means for moving the buckets longitudinally relative to each other to cause the buckets to approach each other and close the space between them, substantially as set forth.

5. In a conveyer, the combination of a series of longitudinally-tapering buckets, the wider end of each bucket being arranged adjacent to the narrower end of its adjoining buckets and the buckets being normally spaced apart, substantially as set forth.

6. In a conveyer, the combination of a series of longitudinally-tapering buckets, alternate buckets being oppositely arranged so that the wider end of each bucket is adjacent to the narrower ends of its adjoining buckets, the buckets being normally spaced apart, and means for causing the buckets to approach each other so as to close the passage-ways between them to prevent the spilling of material during the loading of the buckets, substantially as set forth.

7. In a conveyer, the combination of a series of longitudinally-tapering buckets, alternate buckets being oppositely arranged so that the wider end of each bucket is adjacent to the narrower ends of its adjoining buckets, the sides of the said buckets being parallel to each other and the adjacent ends of the adjoining buckets being normally out of alinement with each other so as to space the buckets apart, and means for causing the buckets to approach each other to close the passage-ways between them, substantially as set forth.

8. In a conveyer, the combination of a series of longitudinally-tapering buckets, alternate buckets being oppositely arranged so that the wider end of each bucket is adjacent to the narrower ends of its adjoining buckets, the adjacent sides of the adjoining buckets being parallel to each other and the adjacent ends of adjoining buckets being held normally out of alinement with each other so that the buckets will be spaced apart, and means for moving the buckets longitudinally relative to each other to close the passage-ways between them when they are being loaded, substantially as set forth.

9. In a conveyer, the combination of a series of longitudinally-tapering buckets, each bucket being arranged with its wider end adjacent to the narrower ends of its adjoining bucket, the pair of chains or carriers supporting the buckets at their opposite ends, and holding said buckets so that there is normally a space between them, and means for moving the chains laterally relative to each other so as to cause the buckets to approach each other and close the space between them, substantially as set forth.

10. In a conveyer, the combination with a pair of transporting chains or carriers, of a series of buckets mounted between said chains or carriers, each bucket being trapezoidal in horizontal cross-section and arranged with its wider end adjacent to the narrower ends of its adjoining buckets, the adjacent ends of the adjoining buckets being out of alinement with each other and the adjacent sides of the adjoining buckets being parallel with each other and normally spaced apart, and means for moving the said chains or carriers laterally relative to each other so as to move the buckets longitudinally of each other and close the passage-ways between them, substantially as set forth.

11. In a conveyer, the combination with a pair of transporting chains, of a series of buckets mounted between said chains and normally spaced apart, each bucket being trapezoidal in horizontal cross-section, the buckets being alternately fixed against longitudinal movement and free to move longitudinally apart, and means for moving the movable buckets longitudinally of the fixed ones to close the spaces between them, substantially as set forth.

12. In a conveyer, the combination with the endless carrier, of a series of gravity-buckets supported thereby the adjacent sides of adjoining buckets being normally spaced apart and means for causing the buckets to move longitudinally relative to their adjoining buckets to close the passage-ways between their adjacent sides to prevent spilling of material between the buckets during the loading thereof, substantially as set forth.

13. In a conveyer, the combination with a bucket-transporting device, of a series of buckets supported thereby, the adjacent sides of adjoining buckets being normally spaced apart, and means for causing each bucket at predetermined intervals to move longitudinally relatively to its adjoining buckets to close the passage-ways between the said buckets.

14. In a conveyer, the combination with a bucket-transporting device of a series of buckets supported thereby, the adjacent sides of adjoining buckets being normally spaced apart, means for actuating said bucket-transporting device, and means for closing the spaces between the buckets by causing the buckets to move longitudinally relatively to each other.

811,126. **CLASP FOR HATBANDS.** ELI A. BURT and HERBERT HARPER, New York, N. Y. Filed July 15, 1905. Serial No. 269,867.

Claim.—1. A clamp member for a hatband, comprising a metal plate folded upon itself, the two folds of the plate bent to form a hook and one end portion of the plate bent to overlap the folded portion thereof.

2. A clamp member comprising a metal plate folded upon itself, the two folds of the plate bent to form a hook and one end of the plate bent to overlap the folded portion thereof and a band passing around the folded hook portion and secured to the plate.

3. The combination of a band, a clamp member comprising a metal plate folded upon itself and clamping one end of the band between the folds, said folded portion bent to form a hook, and one end of the plate bent to overlap the folded portion thereof and clamp the band against the same.

4. The combination of a band, a clamp member comprising a plate folded upon itself and clamping one end of the band between the folds, the said folded portion bent to form a hook, the band passing around said hook and over and beyond the folded portion, and the end of the plate bent to overlap the folded portion and clamp the band thereagainst, said overlapping end of the plate having its free edge in proximity to the hook of the folded portion.

811,127. **TELEGRAPHY AND TELEGRAPH APPARATUS.** JOHN BURRY, New York, N. Y., assignor of one-half to James R. Munson, New York, N. Y. Filed Oct. 7, 1903. Serial No. 177,689.

Claim.—1. The combination of a series of members from which one is to be selected, a series of selectors determining the member to be selected, a magnet controlling said selectors according to the impulses received, and means for sending impulses to said magnet varying in combination with periods of rest according to the member to be selected, substantially as described.

2. The combination of a series of members from which one is to be selected, a plurality of selectors determining the member to be selected, magnets responding to impulses of different strength, each magnet controlling a series of said selectors according to the impulses received, and means for sending impulses to said magnets varying in strength and combination with periods of rest according to the member to be selected, substantially as described.

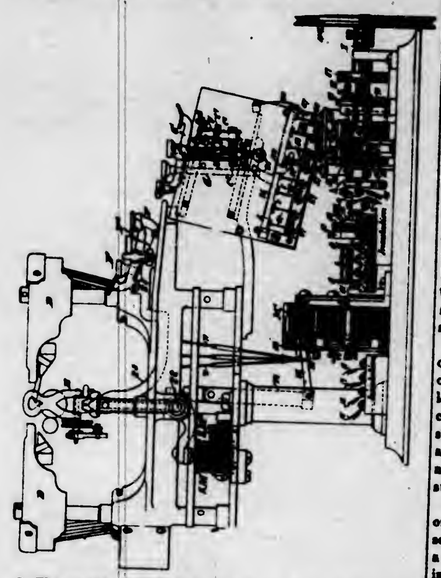

3. The combination of a series of members from which one is to be selected, a plurality of selectors determining the member to be selected, magnets responding to impulses of different polarities, each magnet controlling a series of said selectors according to the impulses received, and means for sending impulses to said magnets varying in polarity and combination with periods of rest according to the member to be selected, substantially as described.

4. The combination of a series of members from which one is to be selected, a plurality of selectors determining the member to be selected, magnets, each magnet controlling a series of said selectors according to the impulses received, and means for sending impulses to said magnets in combination with periods of rest according to the member to be selected, substantially as described.

5. The combination of a series of members from which one is to be selected, a plurality of selectors determining the member to be selected, magnets responding to impulses of different polarities and different strengths, each magnet controlling a series of selectors according to the impulses received, and means for sending impulses to said magnets varying in polarity, strength and combination with periods of rest according to the member to be selected, substantially as described.

6. A telegraph-receiver having a series of members from which one is to be selected, a series of selectors determining the member to be selected and a magnet controlling said selectors according to the impulses received, in combination with a transmitter for sending impulses to said magnet varying in combination with periods of rest according to the member to be selected, substantially as described.

7. A telegraph-receiver having a series of members from which one is to be selected, a series of selectors the position of which determines the member to be selected, and a magnet controlling the position of said selectors according to the impulses received, in combination with a transmitter for sending impulses to said magnet varying in combination with periods of rest according to the member to be selected, substantially as described.

8. A telegraph-receiver having a series of members from which one is to be selected, a plurality of selectors determining the member to be selected, magnets responding to impulses of different polarities, each magnet controlling a series of said selectors according to the impulses received, in combination with a transmitter for sending impulses to said magnets varying in polarity and combination with periods of rest according to the member to be selected, substantially as described.

9. A telegraph-receiver having a series of members from which one is to be selected, a plurality of selectors determining the member to be selected, magnets responding to impulses of different strengths, each magnet controlling a series of said selectors according to the impulses received, in combination with a transmitter for sending impulses to said magnets varying in strength and combination with periods of rest according to the member to be selected, substantially as described.

10. A telegraph-receiver having a series of members from which one is to be selected, a plurality of selectors determining the member to be selected, magnets responding to impulses of different polarities and different strengths each magnet controlling a series of said selectors according the impulses received, in combination with a transmitter for sending impulses to said magnets varying in polarity, strength and combination with periods of rest according to the member to be selected, substantially as described.

11. A telegraph-receiver having a series of members from which one is to be selected, a plurality of selectors determining the member to be selected, magnets, each magnet controlling a series of said selectors according to the impulses received, in combination with a transmitter for sending impulses to said magnets varying in combination with periods of rest according to the member to be selected, substantially as described.

12. A telegraph-receiver having a series of members from which one is to be selected, a movable selector-carrier having a plurality of selectors the position of which determines the member to be selected, and a magnet controlling the position of said selectors according to the impulses received and acting on said selectors successively as they are moved by the selector-carrier, in combination with a transmitter for sending impulses to said magnet varying in combination with periods of rest according to the member to be selected, substantially as described.

13. A telegraph-receiver having a series of members from which one is to be selected, a rotating selector-wheel carrying a plurality of selectors the position of which determines the member to be selected, a magnet controlling the position of said selectors according to the impulses received and acting on said selectors successively during the rotation of the selector-wheel, in combination with a transmitter for sending impulses to said magnet varying in combination with periods of rest according to the member to be selected, substantially as described.

14. A telegraph-receiver having a series of members from which one is to be selected, a movable selector-carrier having a plurality of selectors, the position of which determines the member to be selected, a plurality of magnets, each controlling the position of a series of said selectors according to the impulses received and acting on said selectors successively as they are moved by the selector-carrier, in combination with a transmitter for sending impulses to said magnets varying in combination with periods of rest according to the member to be selected, substantially as described.

15. A telegraph-receiver having a series of members from which one is to be selected, a movable selector-carrier having a plurality of selectors, the position of which determines the member to be selected, a plurality of magntes responding respectively to impulses of different polarities and streagths and each controlling the position of a series of said selectors according to the impulses received and acting on said selectors successively as they are moved by the selector-carrier, in combination with a transmitter for sending impulses to said magnets varying in polarity, strength and combination with periods of rest according to the member to be selected, substantially as described.

16. A telegraph-receiver having a series of members one of which is to be selected and actuated, a selector-carrier having a plurality of selectors, devices coacting with said selectors to select the members to be actuated, a magnet controlling the position of a series of said selectors according to the impulses received and acting on said selectors successively as they are moved by the selector-carrier, and mechanism for actuating the selected member after the selectors have returned to normal position, in combination with a transmitter for sending impulses to said magnet varying in combination with periods of rest according to the member to be actuated and controlling the operation of the actuating mechanism, substantially as described.

17. A telegraph-receiver having a series of members one of which is to be selected and actuated, a selector-carrier having a plurality of selectors, devices coacting with said selectors to select the

member to be actuated, a magnet controlling the position of a series of said selectors according to the impulses received and acting on said selectors successively as they are moved by the selector-carrier, in combination with a transmitter for sending impulses to said magnet varying in combination with periods of rest according to the member to be actuated, and mechanism for actuating the selected member operating during the selection of the next member to be actuated, substantially as described.

18. A telegraph-receiver having a series of members from which one is to be selected, a selector-wheel carrying a plurality of selectors the position of which determines the character to be printed, a magnet controlling a series of said selectors according to the impulses received, in combinatiod with a transmitter having a sunflower rotating in synchronism with said selector-wheel for sending impulses to said magnet varying in combination with periods of rest, substantially as described.

19. A telegraph-receiver having a series of members from which one is to be selected, a selector-wheel carrying a plurality of selectors the position of which determines the character to be printed, and magnets responding to currents of different polarities, each magnet controlling a series of said selectors according to the impulses received, in combination with a transmitter having a sunflower rotating in synchronism with said selector-wheel for sending impulses to said magnet varying in combination with periods of rest, substantially as described.

20. A telegraph-receiver having a series of members from which one is to be selected, a selector-wheel carrying a plurality of selectors the position of which determines the character to be printed, and a magnet controlling a series of said selectors according to the impulses received, in combination with a transmitter having two sunflowers rotating in synchronism with said selector-wheel for sending impulses from a single battery to said magnet varying in combination with periods of rest, substantially as described.

21. A printing-telegraph receiver having a selector-wheel carrying a plurality of selectors, devices coacting with said selectors to select the character to be printed, a magnet controlling a series of said selectors, and impression mechanism, in combination with a transmitter having a sunflower rotating in synchronism with said selector-wheel for sending to said magnet impulses varying in combination with periods of rest and controlling the impression mechanism, substantially as described.

22. A printing-telegraph receiver having a selector-wheel carrying a plurality of selectors, devices coacting with said selectors to select the character to be printed, magnets responding to currents of different polarities and each controlling a series of said selectors according to the impulses received, and impression mechanism, in combination with a transmitter having a sunflower rotating in synchronism with said selector-wheel for sending impulses to said magnets varying in polarity and in combination with periods of rest, substantially as described.

23. A printing-telegraph receiver having a selector-wheel carrying a plurality of selectors, devices coacting with said selectors to select the character to be printed, magnets responding to currents of different polarities and each controlling a series of said selectors according to the impulses received, and impression mechanism, in combination with a transmitter having a sunflower rotating in synchronism with said selector-wheel for sending impulses to said magnet varying in polarity and in combination with periods of rest, and impression mechanism operating to print the character selected during the selection of the next character to be printed, substantially as described.

24. A printing-telegraph receiver having a selector-wheel carrying a plurality of selectors, devices coacting with said selectors to select the character to be printed, magnets responding to currents of different polarities and strengths and each controlling a series of said selectors according to the impulses received, and impression mechanism, in combination with a transmitter having a sunflower rotating in synchronism with said selector-wheel for sending impulses to said magnets varying in polarity, strength and in combination with periods of rest, substantially as described.

25. A telegraph-receiver having a series of members from which one is to be selected, a series of selector-bars having portions varying in elevation and selecting the member according to the position of said portions, a series of selectors controlling the position of said selector-bars, and a magnet controlling said selectors according to the impulses received, in combination with a transmitter for sending impulses to said magnet varying in combination with periods of rest according to the member to be selected, substantially as described.

26. A telegraph-receiver having a series of members, from which one is to be selected, a series of sliding selector-bars having portions varying in elevation and selecting the member according to the position of said portions, a series of selectors controlling the position of said selector-bars, and a magnet controlling said selectors according to the impulses received, in combination with a transmitter for sending impulses to said magnet varying in combination with periods of rest according to the member to be selected, substantially as described.

27. A telegraph-receiver having a series of members, from which one is to be selected, a series of selector-bars having portions varying in elevation and selecting the member according to the position of said portions, a series of selectors controlling the position of said selector-bars, magnets responding to impulses of different polarities, each magnet controlling a series of said selectors according to the impulses received, in combination with a transmitter for sending impulses to said magnets varying in polarity and combination with periods of rest according to the member to be selected, substantially as described.

28. A telegraph-receiver having a series of members from which one is to be selected, a series of selector-bars having portions varying in elevation and selecting the member according to the position of said portions, a series of selectors controlling the position of said selector-bars, magnets responding to impulses of different strengths, each magnet controlling a series of said selectors according to the impulses received, in combination with a transmitter for sending impulses to said magnets varying in strength and combination with periods of rest according to the member to be selected, substantially as described.

29. A telegraph-receiver having a series of members from which one is to be selected, a series of selector-bars having portions varying in elevation and selecting the member according to the position of said portions, a series of selectors controlling the position of said selector-bars, magnets responding to impulses of different polarities and strengths, each magnet controlling a series of said selectors according to the impulses received, in combination with a transmitter for sending impulses to said magnets varying in polarity and strength and combination with periods of rest according to the member to be selected, substantially as described.

30. A telegraph-receiver having a series of members from which one is to be selected, a series of selector-bars having portions varying in elevation and selecting the member according to the position of said portions, a movable selector-carrier having a plurality of selectors determining the position of said selector-bars, and a magnet controlling the position of said selectors according to the impulses received and acting on said selectors successively as they are moved by the selector-carrier, in combination with a transmitter for sending impulses to said magnet varying in combination with periods of rest according to the member to be selected, substantially as described.

31. A telegraph-receiver having a series of members from which one is to be selected, a series of selector-bars having portions varying in elevation and selecting the member according to the position of said portions, a rotating selector-wheel having a plurality of selectors determining the position of said selector-bars, and a magnet controlling the position of said selectors according to the impulses received and acting on said selectors successively during the rotation of the selector-wheel, in combination with a transmitter for sending impulses to said magnet varying in combination with periods of rest according to the member to be selected, substantially as described.

32. A telegraph-receiver having a series of members from which one is to be selected, a series of selector-bars having portions varying in elevation and selecting the member according to the position of said portions, a movable selector-carrier having a plurality of selectors determining the position of said selector-bars, and a plurality of magnets each controlling the position of a series of said selectors according to the impulses received and acting on said selectors successively as they are moved by the selector-carrier, in combination with a transmitter for sending impulses to said magnets varying in combination with periods of rest according to the member to be selected, substantially as described.

33. A telegraph-receiver having a series of members from which one is to be selected, a series of selector-bars having portions varying in elevation and selecting the member according to the position of said portions, a movable selector-carrier having a plurality of selectors determining the position of said selector-bars, and a plurality of magnets responding respectively to impulses of different polarities and strength and each controlling the position of a series of said selectors according to the impulses received, and acting on the selectors successively as they are moved by the selector-carrier, in combination with a transmitter for sending impulses to said magnets varying in polarity, strength, and combination with periods of rest, according to the member to be selected, substantially as described.

34. A printing-telegraph receiver having a series of selector-bars provided with portions of different elevation and devices by which the position of said bars determines the character to be printed, impression mechanism, a selector-wheel carrying a plurality of selectors controlling said selector-bars, and a plurality of magnets each controlling a series of said selectors, according to the impulses received, in combination with a transmitter for sending impulses to said magnets varying in combination with periods of rest and controlling the impression mechanism, substantially as described.

35. A printing-telegraph receiver having a series of selector-bars provided with portions of different elevation and devices by which the position of said bars determines the character to be printed, impression mechanism, a selector-wheel carrying a plurality of selectors controlling said selector-bars, and a plurality of magnets each controlling a series of said selectors, according to the impulses received, in combination with a transmitter, having a sunflower rotating in synchronism with said selector-wheel for sending impulses to said magnets varying in combination with periods of rest and controlling the impression mechanism, substantially as described.

36. A printing-telegraph receiver having a series of selector-bars provided with portions of different elevation and devices by which the position of said bars determines the character to be printed, a selector-wheel carrying a plurality of selectors controlling said selector-bars, and a plurality of magnets each controlling a series of said selectors according to the impulses received, in combination with a transmitter for sending impulses to said magnets varying in combination with periods of rest, and impression mechanism operating to print the character selected during the selection of the next character to be printed, substantially as described.

37. A movable selector-carrier having a series of selectors in combination with a controller movable into and out of position to act on said selectors, and a magnet controlling the position of said controller to act on different selectors during the movement of the carrier, according to the impulses received by said magnet, substantially as described.

38. A movable selector-carrier having a plurality of series of selectors, in combination with controllers movable into and out of position to act on said selectors, and magnets controlling the position of said controllers to act on different selectors during the movement of said carrier, according to the impulses received by said magnets, substantially as described.

39. A selector-wheel having a series of selectors arranged at the same distance from the center of the wheel, in combination with a controller movable into and out of position to act on said selectors, and a magnet controlling the position of said controller to act on different selectors during the rotation of said wheel, according to the impulses received by said magnet, substantially as described.

40. A selector-wheel having a plurality of series of selectors, the selectors of each series arranged at the same distance from the center of the wheel, in combination with a controller for each series movable into and out of position to act on said selectors, and magnets controlling said controllers to act on different selectors during the rotation of the wheel according to the impulses received by said magnets, substantially as described.

41. A selector-wheel having a plurality of series of selectors, the selectors of each series arranged at the same distance from the center of the wheel, in combination with a controller for each series movable into and out of position to act on said selectors, magnets controlling said controllers to act on different selectors during the rotation of the wheel according to the impulses received by said magnets, and devices engaging the said selectors during the movement of the wheel to return them to normal position, substantially as described.

42. The combination with a series of keys, of contact-pieces actuated by said keys in different combinations and completing the circuit through the successive segments of a sunflower to send impulses to line in different combinations with periods of rest, a printing-receiver having a magnet controlled by said impulses and selecting devices controlled by the impulses transmitted to said magnet, substantially as described.

43. The combination with a series of keys, of contact-pieces actuated by said keys in different combinations and completing the circuit through the successive segments of sunflowers to send impulses of different polarities and strengths to line, and a printing-receiver having magnets responding to impulses of different polarities and strengths controlled by said impulses, and selecting devices controlled by the impulses transmitted to said magnets, substantially as described.

44. A telegraph-receiver having a series of members from which one is to be selected, a movable selector-carrier having a plurality of selectors, the position of which determines the member to be selected, and a magnet controlling the position of said selectors according to the impulses received and acting on said selectors successively as they are moved by the selector-carrier, in combination with a transmitter for sending impulses to said magnet according to the member to be selected, substantially as described.

45. A telegraph-receiver having a series of members from which one is to be selected, a movable selector-carrier having a plurality of selectors, the position of which determines the member to be selected, a plurality of magnets, each controlling the position of a series of said selectors according to the impulses received and acting on said selectors successively as they are moved by the selector-carrier, in combination with a transmitter for sending impulses to said magnets according to the member to be selected, substantially as described.

46. A telegraph-receiver having a series of members from which one is to be selected, a movable selector-carrier having a plurality of selectors, the position of which determine the members to be selected, a plurality of magnets responding respectively to impulses of different polarities and strengths and each controlling the position of a series of said selectors according to the impulses received and acting on said selectors successively as they are moved by the selector-carrier, in combination with a transmitter for sending impulses to said magnets varying in polarity and strength according to the member to be selected, substantially as described.

47. A telegraph-receiver having a series of members one of which is to be selected and actuated, a selector-carrier having a plurality of selectors, devices coacting with said selectors to select the members to be actuated, a magnet controlling the position of a series of said selectors according to the impulses received and acting on said selectors successively as they are moved by the selector-carrier, and mechanism for actuating the selected member after the selectors have returned to normal position, in combination with a transmitter for sending impulses to said magnet according to the member to be actuated and controlling the operation of the actuating mechanism, substantially as described.

48. A printing-telegraph receiver having a selector-wheel carrying a plurality of selectors, devices coacting with said selectors to select the character to be printed, a magnet controlling a series of said selectors, and impression mechanism, in combination with a transmitter having a sunflower rotating in synchronism with said selector-wheel for sending to said magnet impulses according to the character to be printed and controlling the impression mechanism, substantially as described.

49. A telegraph-receiver having a series of members from which one is to be selected, a series of selector-bars having portions varying in elevation and selecting the member according to the position of said portions, a movable selector-carrier having a plurality of selectors determining the position of said selector-bars, and a plurality of magnets each controlling the position of a series of said selectors according to the impulses received and acting on said selectors successively as they are moved by the selector-carrier, in combination with a transmitter for sending impulses to said magnets according to the member to be selected, substantially as described.

50. A printing-telegraph receiver having a series of selector-bars provided with portions of different elevations and devices by which the position of said bars determines the character to be printed, impression mechanism, a selector-wheel carrying a plurality of selectors controlling said selector-bars, and a plurality of magnets each controlling a series of said selectors according to the impulses received, in combination with a transmitter for sending impulses to said magnets according to the character to be printed and controlling the impression mechanism, substantially as described.

51. A telegraph-receiver having a series of members from which one is to be selected, a selector-carrier carrying a plurality of selectors the position of which determines the member to be selected, and a magnet controlling a series of said selectors according to the impulses received, in combination with a transmitter having a sunflower moving in synchronism with said selector-carrier for sending to said magnet combinations of impulses, each successive impulse of each combination being of greater duration than the preceding one, substantially as described.

52. The combination with a selector-carrier, and one or more magnets controlling the selectors, of a sunflower moving in synchronism with said selector-carrier for sending impulses to said magnet or magnets and having transmitting-segments of successively-increasing length, substantially as described.

53. The combination with a telegraph-transmitter having a sunflower with transmitting-segments of successively-increasing length, of a telegraph-receiver having a member moving in synchronism with said sunflower, and one or more magnets coacting with said

member and receiving impulses through said sunflower, substantially as described.

54. A telegraph-receiver having a series of members from which one is to be selected, a selector-carrier carrying a plurality of selectors the position of which determines the character to be printed, and a magnet controlling a series of said selectors according to the impulses received, in combination with a transmitter having two sunflowers moving in synchronism with said selector-carrier for sending impulses from a single battery to said magnet varying in polarity, substantially as described.

55. The combination with a telegraph-receiver and a keyboard transmitter, of a switch normally closing a short circuit around the transmitter and actuated on the actuation of any one of the keys to break the short circuit and establish a circuit between the receiver and the transmitter, and a cut-out breaking the circuit between the receiver and transmitter after the completion of the operation produced by the key, substantially as described.

56. The combination with a telegraph-receiver and a keyboard-transmitter, of a switch A and main-line contact c^{14} and shunt-contact c^{6} with both of which the switch normally makes contact, means for moving the switch to break contact c^{6} on the actuation of a key, and a trip engaging the switch to break contact c^{14} after the completion of the operation produced by the key if the key has not been released and from which trip the switch is disengaged on the release of the key, substantially as described.

57. In a keyboard telegraph-transmitter, the combination with a rotary member connected to the driver by a friction-clutch, and a stop normally holding said member stationary, of a magnet controlling said stop, and a switch shifted at each depression of a key to energize said magnet and withdraw said stop, substantially as described.

58. In a keyboard telegraph-transmitter, the combination with a rotary member connected to the driver by a friction-clutch, and a stop normally holding said member stationary against the driver, of a magnet controlling said stop, a switch shifted at each depression of a key to energize said magnet to withdraw the stop, and means for throwing said magnet out of circuit during the rotation of the rotary member, substantially as described.

59. The combination of a telegraph-receiver and a telegraph-transmitter having members rotating in unison, magnets controlling the connection of said members with their drivers and energized to secure the movement of the shafts when the transmitter is actuated, means for throwing said magnets out of circuit when the rotary members are moved out of normal position, and means for disconnecting the members from their drivers at a certain point after each actuation of the transmitter, substantially as described.

60. A telegraph-receiver having a rotating member, a clutch for connecting said member to the driver, a switch for disconnecting said member from the driver at the end of each rotation, and a magnet controlling the connection and energized to connect the rotating member to its driver for the next rotation, substantially as described.

61. A telegraph-receiver having a rotating member, a clutch for connecting said member to the driver, means for disconnecting said member from the driver at the end of each rotation, a magnet controlling the connection and energized to connect the rotary member to the driver for each rotation, and means for throwing said magnet out of circuit when the rotary member is moved out of normal position, substantially as described.

62. The combination with a printing-telegraph receiver actuated by combinations of electric impulses and having a case-shift actuated by impulses of certain strength, of a transmitter having a series of keys, and a shifting member by which the strength of an impulse of the combinations as sent by the normal operation of the transmitter is varied to actuate the case-shift, substantially as described.

63. The combination with a printing-telegraph receiver actuated by combinations of electric impulses and having a case-shift actuated by impulses of a certain polarity, of a transmitter having a series of keys, and a shifting member by which the polarity of an impulse of the combinations as sent by the normal operation of the transmitter is varied to actuate the case-shift, substantially as described.

64. The combination with a printing-telegraph receiver actuated by combinations of electric impulses of different polarities and strength and having a double case-shift actuated by an impulse of a certain strength and either polarity, of a transmitter having a series of keys and a shifting member by which the strength or the strength and polarity of an impulse of the combinations as sent by the normal operation of the transmitter may be varied to actuate the case-shift for either case, substantially as described.

65. The combination with a printing-telegraph receiver actuated by combinations of electric impulses and having a case-shift actuated by first impulses of a certain strength, of a transmitter having a series of keys and a shifting member by which the strength of the first impulses of a combination is varied to actuate the case-shift, substantially as described.

66. The combination with a printing-telegraph receiver actuated by combinations of electric impulses and having a case-shift actuated by first impulses of a certain polarity, of a transmitter having a series of keys, and a shifting member by which the polarity of the first impulse of a combination is varied to actuate the case-shift, substantially as described.

67. The combination with a printing-telegraph receiver actuated by combinations of electric impulses of different polarities and strengths and having a double case-shift actuated by first impulses of a certain strength and either polarity, of a transmitter having a series of keys and a shifting member by which the strength or the strength and polarity of the first impulse of a combination as sent by the normal operation of the transmitter may be varied to actuate the case-shift for either case, substantially as described.

68. The combination with a local circuit, of a line-magnet having an armature forming a contact in the local circuit, and a moving cut-out closing the circuit after the armature-contact is closed, substantially as described.

69. The combination with a telegraph-receiver having a rotating member and actuated by a series of electric impulses in a local circuit during the rotation of said member, of a line-magnet having an armature forming a contact in the local circuit, and a rotating cut-out closing the circuit in the normal position of the rotating member, and closing the circuit for the second and subsequent impulses during a rotation of the rotating member after the armature-contact is closed, substantially as described.

70. The combination with a telegraph-receiver having a rotating member and actuated by a series of electric impulses during the rotation of said member, of a transmitter having a member rotating in synchronism with the rotating member of the transmitter, and a rotating cut-out making a short close of the receiver-circuit, substantially as described.

71. The combination with a telegraph-transmitter having a sunflower, of a receiver actuated by electric impulses transmitted through the successive sections of the sunflower and having a member rotating in synchronism therewith and a cut-out making a short close of the receiver-circuit, substantially as described.

72. The combination with a telegraph-transmitter having a sunflower, of a receiver having a selector-wheel rotating in synchronism therewith, a series of selectors carried by said wheel and corresponding with the sunflower-sections, a controller acting on said selectors as they are carried past the controller by the selector-wheel, a magnet controlling said controller, and a cut-out rotating with the selector-wheel and making a short close of the magnet-circuit as the selectors to be acted on reach the controller, substantially as described.

73. The combination with a telegraph-receiver having a carriage, a rotating member, a member normally free to rotate independently of the rotating member and connected to the carriage by a cord or similar device, and a clutch, of a transmitter, and means controlled from said transmitter for actuating said clutch to connect said member for the return of the carriage, substantially as described.

74. The combination with a telegraph-receiver having a carriage, a rotating member, a member normally free to rotate independently of the rotating member and connected to the carriage by a cord or similar device, and a clutch, of a transmitter, and means controlled from said transmitter for actuating said clutch to connect said member for the return of the carriage, and means for releasing the clutch by the return of the carriage, substantially as described.

75. The combination with a carriage, a rotating member, a member normally free to rotate independently of the rotating member and connected to the carriage by a cord or similar device, and a clutch, of a sliding member actuating said clutch to connect said members for the return of the carriage, and a trip on said cord by which the sliding member is shifted for the release of the clutch when the carriage has been returned, substantially as described.

76. The combination with a selector-wheel having a plurality of series of selectors, as s', s^2, &c., mounted to move longitudinally of the selector-wheel, the selectors of each series arranged at the same distance from the center of the wheel, of a controller, as m', m^2, &c., for each series, and magnets controlling said controllers, substantially as described.

77. The combination with a selector-wheel having a plurality of series of selectors, as s', s^2, &c., mounted to move longitudinally of the selector-wheel, the selectors of each series arranged at the same distance from the center of the wheel, of a controller, as m', m^2, &c., for each series having a cam-face to engage the selectors, and magnets controlling said controllers, substantially as described.

78. The combination with a series of sliding selector-bars, and a selector-wheel having a series of selectors controlling the position of said selector-bars, of a return-bar 72 for said selector-bars actuated by the selector-wheel, substantially as described.

79. A telegraph-receiver having a rotating member, a clutch for connecting said member to the driver, a detent for said member, a magnet controlling said detent to release said member, and means for throwing said magnet out of circuit when the member is moved out of normal position and before the completion of its movement, substantially as described.

811,128. GRADUAL-REDUCTION MILL. JOHN M. CAMP, Cincinnati, Ohio. Filed Mar. 21, 1903. Serial No. 148,944.

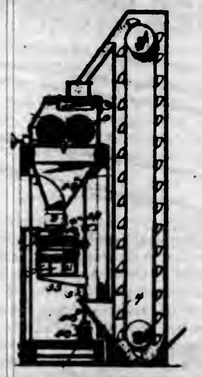

Claim.—1. In a gradual-reduction milling-machine, arranged in a single structure, the combination of a series of mills arranged in a horizontal line, a gyratory bolt structure disposed beneath the mills and comprising a series of independent bolts having a plurality of sieves, separate connections between each mill and a bolt, a plurality of troughs receiving the material from each bolt, and means for conveying a plurality of the products of the same bolt received by the troughs, from the troughs to separate mills of the series.

2. In a gradual-reduction milling-machine, arranged in a single structure, the combination of a series of mills arranged in a horizontal line, a gyratory bolt structure disposed beneath the mills and comprising a series of independent bolts having a plurality of sieves, separate connections between each mill and a bolt, a conveyor movable with the structure and embodying a plurality of troughs disposed to receive all the products from each bolt, and the products from the same bolt in different troughs, and means for conveying a plurality of the products of the same bolt received by the troughs, from the troughs to separate mills of the series.

811,129. CAR-DUMP. CLARENCE R. CLAESSEN, Wabash, Pa. Filed May 28, 1903. Serial No. 159,261.

Claim.—1. In a mechanism for guiding and tippling coal-cars, the combination of a main railway-track extending from the region of mining and loading the coal to points near the tipple, two branch tracks each adapted to communicate with the main track to receive therefrom and retain a train or "trip" of loaded cars, two tippling mechanisms each on the line of one of the said branch tracks, a stop mechanism on each track that leads to a tipple for stopping the train or "trip" of cars, a car-stop on each tipple to prevent longitudinal advance of the cars, a power mechanism for rotating each of the tipples, a manually-actuated mechanism for controlling each of the said car-stops on the track that leads to the tipple, and a manually-actuated mechanism for controlling the tipple-rotating power devices, both sets of manually-actuated mechanisms being located substantially as described, whereby they are instantly accessible to a single operator while in one position, as set forth.

2. In a mechanism for guiding and tippling coal-cars, the combination of a main track extending from the region of mining and loading the coal to points near the tipple, two branch tracks adapted to communicate with the main track, two laterally-rotary tipplers, one on the line of each branch car-track, a car-stop on each branch track adapted to be manually opened and to be automatically reset, a car-stop on each tipple adapted to be automatically opened by advancing cars and to be automatically reset, a lock for each tipple to prevent its rotating, power devices for rotating each tipple, and two sets of manually-actuated devices for releasing the car-stops on the branch tracks, for releasing the tipple-locks and for connecting the power devices to the tipples, each set of manually-actuated devices being arranged substantially as set forth, whereby they are accessible to a single operator, as described.

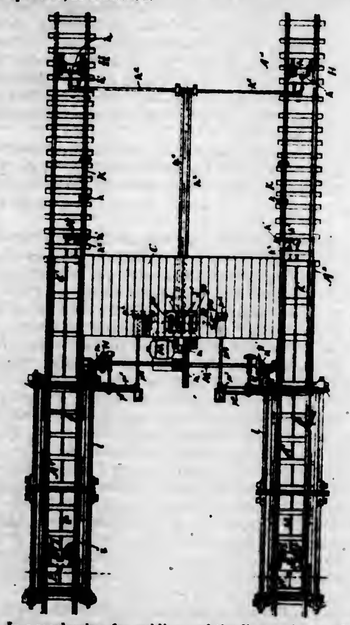

3. In a mechanism for guiding and tippling coal-cars, the combination of a main track extending from the region of mining and loading coal to points near the tippling mechanism, two branch tracks adapted to communicate with the main track, two laterally-rotating tipples, one in the line of each branch track, a car-stop on each branch track for arresting the train or "trip" of cars thereon, and adapted to be automatically reset after being opened, means on each tipple for stopping the longitudinal motion of the cars thereon, power devices for rotating each tipple, two sets of manually-actuated devices for controlling the car-stops on the stationary tracks and the tipple-rotating mechanism, both of said sets being situated relatively close together for the purposes described, a fixed hopper or receptacle below each tipple for receiving the coal therefrom, and a supplemental pit or chamber into which the coal can be passed at will from each of the said hoppers, substantially as set forth.

4. In a mechanism for guiding and tippling coal-cars, the combination of a main track extending from the region of mining and loading the coal to points near the tippling mechanism, two branch tracks adapted to communicate with the main track, two laterally-rotating tipplers, one in the line of each branch track, a car-stop on the stationary part of each branch track, a car-stop on and rotating with each rotary tippler, power mechanism for rotating the tipplers, two sets of manually-actuated devices for controlling the stationary car-stops, and the mechanism for rotating the tipplers arranged substantially as set forth, whereby they are accessible to a single operator, and means actuated by advancing cars for releasing the rotary car-stops on the tipplers, substantially as set forth.

5. In a mechanism for tippling cars, the combination of the initial track-section, the track-section which finally receives the cars after emptying, the laterally-rotary tippler mechanism between the said two car-sections, the stop for arresting the cars from longitudinal motion while on the tippler, the stop on the initial track-section adjacent to the tippler for arresting the cars from longitudinal motion, means for operating said last-described stop, and means actuated by the cars on the initial stationary section for releasing said stop on the tippler, substantially as set forth.

6. In a mechanism for tippling coal-cars, the combination with

the laterally-rotary tippler, and the initial track-section for delivering loaded cars thereto, of the car-stop on the laterally-rotary tippler, the lock for said stop, and the tripping mechanism adjacent to the initial stationary track and adapted to be actuated by the cars for releasing the stop on the tippler to permit the passage therefrom of the cars, substantially as described.

7. In a mechanism for tippling cars, the combination of the laterally-rotating tippler, the initial stationary track-section delivering cars thereto, the stop for arresting the cars arranged on said track-section adjacent to the said tippler, means for operating said stop, the stop for arresting the cars while on the tippler, and the two-part mechanism for releasing the stop, one of the parts thereof being mounted on the tippler, and the other being mounted independently of the tippler, and means actuated by the advancing cars for imparting movement to the last said part of the stop-releasing mechanism, substantially as described.

8. In a mechanism for tippling cars, the combination with a laterally-rotating tippler, of the lock-bar for holding the tippler in normal position, and adapted to yield to permit the tippler to move beyond and then return to its normal position, substantially as set forth.

9. In a mechanism for tippling cars, the combination with a laterally-rotating tippler, of the lock-bar adapted to engage with the tippler, and to swing toward and from its axis, and to yield relatively to the rotary movement of the tippler, substantially as set forth.

10. In a mechanism for tippling cars, the combination with a laterally-rotating tippler, and the longitudinally and laterally movable lock-bar to hold the tippler in normal position, of means for actuating the bar to release the tippler, and a tripping mechanism adapted to be actuated by the tippler for moving the lock-bar toward the tippler and into its active position, substantially as set forth.

11. In a mechanism for tippling cars, the combination of the laterally-rotating tippler, the power devices for imparting power to the tippler, the clutch for engaging and disengaging the power devices, the lock for positively holding the tippler against rotation, the lever or actuating device for opening the lock and engaging the clutch members, the said parts being arranged substantially as set forth, to have the lock first opened and the clutch subsequently engaged during one continuous movement in one direction of the actuating-lever, and means actuated by the said rotating tippler for simultaneously releasing said clutch and throwing said lock-bar into operative position substantially as set forth.

12. In a mechanism for guiding and tippling coal-cars, the combination of a main railway-track, a plurality of branch tracks each adapted to communicate with the main track, a plurality of tippling mechanisms each on a line of one of said branch tracks, a car-stop on each tipple to prevent the longitudinal advance of the cars thereon, a power mechanism for rotating each of the tipplers, and manually-actuated mechanisms for controlling the tipple-rotating power devices arranged to be instantly accessible to a single operator while in one position.

13. In a mechanism for guiding and tippling coal-cars, the combination of a main railway-track, a plurality of branch tracks each adapted to communicate with the main track, a plurality of tippling mechanisms each on a line of one of said branch tracks, a car-stop on each tipple to prevent the longitudinal advance of the cars thereon, a power mechanism for rotating each of the tipplers automatic means for actuating said car-stops on the tipples, and manually-actuated mechanisms for controlling the tipple-rotating power devices arranged to be instantly accessible to a single operator while in one position.

14. In a mechanism for tippling cars, the combination with a laterally-rotating tippler, of spring-controlled means for holding the tippler yieldingly in car-receiving position.

15. In a mechanism for tippling cars, the combination with the laterally-rotating tippler, of means for limiting the rotation of the tippler to one complete revolution, said means including a spring-controlled lock-bar for holding said tippler yieldingly in car-receiving position.

16. In a mechanism for tippling cars, the combination with the laterally-rotating tippler, of the lock-bar for holding the tippler in car-receiving position and the spring for holding the lock-bar yieldingly in normal position.

17. In a mechanism for tippling cars, the combination with the laterally-rotating tippler, of the lock-bar for holding the tippler in normal position, the spring for holding the lock-bar in normal position and for permitting it to yield longitudinally, and means for disengaging the lock-bar from the tippler.

18. In a mechanism for tippling cars, the combination with a laterally-rotating tippler, of the lock-bar adapted to engage with the tippler, and to hold it yieldingly in car-receiving position the train of manually-operated devices for disengaging the lock-bar from the tippler, and the train of automatically-operated devices actuated by said tippler and adapted to return the lock-bar to its normal position.

19. In a mechanism for tippling cars, the combination with a laterally-rotating tippler, of the train of power devices for actuating said tippler having in said train a clutch, the lock-bar adapted to engage with the tippler and to hold it yieldingly in car-receiving position, the operating-handle, the draft-transmitting devices connecting said handle with said lock-bar and with the movable element of said clutch and adapted to release the lock-bar and to cause the engagement of the clutch element when it is moved in one direction, and means actuated by the tippler for returning the said lock-bar to its normal position and for disengaging the clutch element.

811,130. RAIL-JOINT. SAMUEL T. COVERSTONE, Mount Pleasant, Mich. Filed May 29, 1905. Serial No. 262,845.

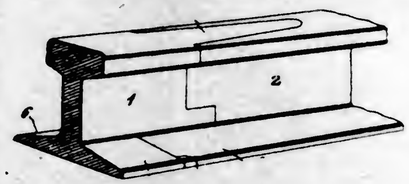

Claim.—1. A joint for the ends of railway-rail sections, one of said ends having formed in the tread thereof a V-shaped tapering longitudinally-disposed groove or channel at the inner end of which is formed a recess, a tapering triangularly-shaped tongue formed on the end of the adjacent rail-section to engage said groove or channel, a reduced projection formed on the end of said tongue to enter said recess, and a vertical and lateral interlocking connection between the lower portions of said ends, substantially as described.

2. A joint for the ends of railway-rail sections, one of said ends having formed in the tread thereof a V-shaped tapering longitudinally-disposed groove or channel at the inner end of which is formed a recess, said end being provided below said groove or channel with a horizontally-disposed notch or recess, an extended base-flange formed on said end below said notch, said base-flange having formed therein a vertically-disposed notch or recess, a tapering triangularly-shaped tongue formed on the end of the adjacent section to engage said groove or channel, a reduced projection formed on said tongue to engage the recess in the end of said groove, a lug formed on the end of said rail below said tongue, the base-flange of said end below said lug being recessed or cut away whereby the end of said rail-section is adapted to be interlocked with the notched and recessed end of the adjacent rail-section, against vertical or lateral movement, substantially as described.

811,131. PRESSURE AND MOVING JACK. PETER DEMPSEY, Michigamme, Mich. Filed Oct. 18, 1905. Serial No. 283,306.

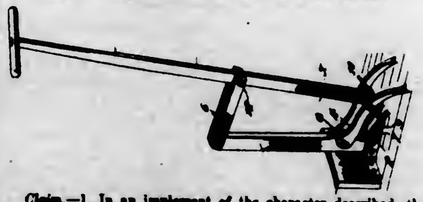

Claim.—1. In an implement of the character described, the combination of a pressure-head, a detent coöperating therewith, a power-augmenting lever having pivotal connection with said head, a feed-dog pivoted to said power-augmenting lever, and an operating-lever pivoted to said feed-dog and connected to the upper end of the power-augmenting lever.

2. In an implement of the character described, the combination of a pressure-head, a detent extended from the rear side thereof and constituting a shoe or runner for sustaining the pressure-head in upright position, a power-augmenting lever having pivotal connection with the pressure-head, a feed-dog coöperating with said power-augmenting lever, and an operating-lever pivoted to said feed-dog and connected with the power-augmenting lever.

3. In an implement of the character set forth, the combination of a pressure-head, a detent coöperating therewith, a power-augmenting lever having pivotal connection with said pressure-head, a feed-dog pivoted to said power-augmenting lever and comprising spaced members which are rearwardly diverged, an operating-lever pivoted between the members of said feed-dog, and means connecting said operating-lever with the power-augmenting lever.

4. In an implement of the character set forth, the combination of a pressure-head, a detent coöperating therewith, a power-augmenting lever having pivotal connection with said pressure-head, a feed-dog comprising companion members arranged upon opposite sides of the power-augmenting lever and rearwardly diverged, an operating-lever inserted between the members of said feed-dog, means pivotally connecting said operating-lever to the members of the feed-dog, and means connecting the operating-lever with the upper portion of the power-augmenting lever.

5. The herein-described jack for the purposes specified, the same consisting of a pressure-head made hollow upon its outer side, a detent extended from the rear side of said pressure-head and comprising spaced members, said detent forming a shoe or runner, a power-augmenting lever pivotally supported between the members of the detent, a feed-dog comprising companion members arranged upon opposite sides of the power-augmenting lever, an operating-lever pivotally supported between the members of said feed-dog, and a link connection between the operating-lever and the upper portion of the power-augmenting lever.

811,132. AUTOMATIC MAIL-BAG CATCHER FOR RAILWAYS. HARRY G. DIX and BERT C. W. DIX, Grand Rapids, Mich. Filed June 7, 1905. Serial No. 264,100.

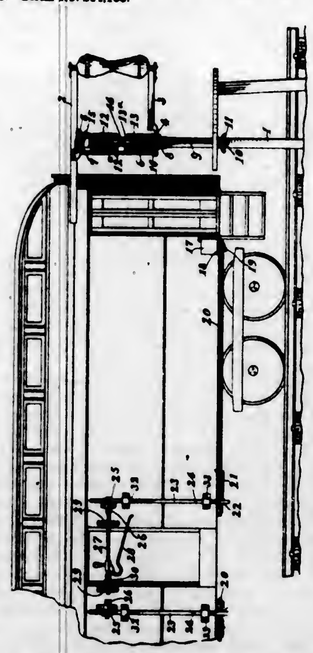

Claim.—1. The combination of a mast, rings rotative about the mast, arms supported by the respective rings, a rod connecting the rings, oppositely-acting springs engaging the rod, a bolt to hold the rings from turning, and means for releasing the bolt when a car approaches the device.

2. The combination of a mast, rings rotative about the mast, arms supported by the rings, a rod connecting the rings, a stop on the mast, springs oppositely and yieldingly engaging the stop and rod, a bolt to hold the rings from turning, and means for releasing the bolt when a car approaches the device.

3. The combination of a mast, collars fixed on the mast, rings rotative on the collars, arms supported by the rings, a rod connecting the rings, a stop on the mast, springs surrounding the mast and oppositely engaging the stop and rod, a bolt in the lower collar and engaging the lower ring to hold the same, and a lever to withdraw the bolt and adapted to be operated by a passing car.

4. The combination of a mast, collars fixed on the mast and spaced apart, rings rotative on the collars, arms pivoted to the rings, rods connecting the rings, a stop on the mast, springs surrounding the mast and fixed at their outer ends, and also having their adjacent ends projecting outward to oppositely engage the stop and one of the rods, and means for holding and releasing the rings.

5. The combination of a mast, collars on the mast and spaced apart, rings rotative on the collars, arms pivoted to the rings, rods connecting the rings, a stop on the mast, a washer and a pin fixed on the mast, a spring surrounding the mast and engaging the pin at one end and also engaging the stop and one of the rods at the other end, a second spring surrounding the mast and attached to the washer at one end and also engaging the said stop and rod at the other end and oppositely to the other spring, and means for holding and releasing the rings.

6. The combination of a mast, arms to support a mail-bag and rotative about the axis of the mast, a bolt to hold and release the arms, a pivoted lever to operate the bolt, a transverse and oppositely-inclined member on the lever, a second pivoted lever engaging the said member at one end, and means mounted on a car for engaging the other end of the last-named lever to release the bolt.

7. The combination of a mast, rings rotative about the axis of the mast, arms supported by the rings, a rod connecting the rings oppositely-acting springs engaging the rod, a bolt engaging and holding the lower ring, a lever engaging the bolt and pivoted on the horizontal axis, a transverse member on the said lever and having downwardly-inclined ends, and a second lever engaging said member at one end and pivoted near the middle on a vertical axis.

8. In combination with a railway-car, a rotative and longitudinally-movable shaft, a bag-catcher fixed on the shaft, a clutch engaging the shaft and means for automatically rotating the clutch.

9. In combination with a railway-car having a door in its side, a longitudinally-movable and rotative shaft opposite the door, a bag-catcher fixed on the shaft, a clutch engaging the shaft, a spring to hold the clutch engaged with the shaft, a spring to rotate the clutch, and means attached to the car for holding and releasing the spring.

10. In combination with a railway-car having a door in its side, a shaft opposite the door, a bag-catcher on the shaft, a clutch engaging the shaft, a rack and pinion to operate the clutch, a spring to move the rack, a pawl to hold the spring under tension and to release the same, and a pivoted plate to release the pawl when the plate is engaged by an obstruction.

11. In combination with a railway-car having a door in its side, a shaft opposite the door, a clutch engaging the shaft, a pinion on the clutch, a rack-bar having teeth engaging the pinion, a rotative shaft extending from the rack-bar to near the end of the car, a pinion on the shaft and engaging teeth in the rack-bar, a spring to rotate the shaft, a collar on the shaft, a pawl engaging the collar, and a plate pivoted near one side on a vertical axis and engaging the pawl near its other side.

12. In combination with a railway-car having a door in its side, a longitudinally-movable and reversible shaft opposite the door, a bag-catcher fixed on the shaft, a clutch at each side of the door to alternately engage the end of the shaft, and separate means for operating the respective clutches and extended to near the respective ends of the car.

13. In a bag-catching device of the class described, in combination with a car having a door in its side, a shaft opposite the door, bearings for the shaft and open at the upper side, pivoted arms engaging the upper side of the shaft, a bag-catcher fixed on the shaft, a clutch opposite each end of the shaft to alternately engage on end of the same, and means for separately operating the clutches.

14. The combination of a mast, arms rotative about the axis of the mast, a spring to rotate the arms, a bolt to hold the arms, a lever to release the bolt, a bag-catcher mounted on a railway-car, a spring to turn the catcher to operative position, a pawl to hold the spring under tension, a pivoted plate on the car to engage the lever and release the pawl and bolt.

15. The combination of a mast, rings rotative on the mast, a rod connecting the rings, a stop on the mast, springs oppositely engaging the stop and rod, a bolt to hold the rings, a lever to operate the bolt, a railway-car having a door in its side next the mast, a shaft opposite the door, a bag-catcher on the shaft, a clutch engaging the shaft, a rack and pinion to rotate the clutch, a spring to move the rack, a pawl to hold the spring under tension, and a pivoted plate to engage the pawl and the lever and release the spring and bolt.

811,133. CULTIVATOR. JAMES M. DONALDSON, Marengo, Iowa. Filed Apr. 20, 1905. Serial No. 256,669.

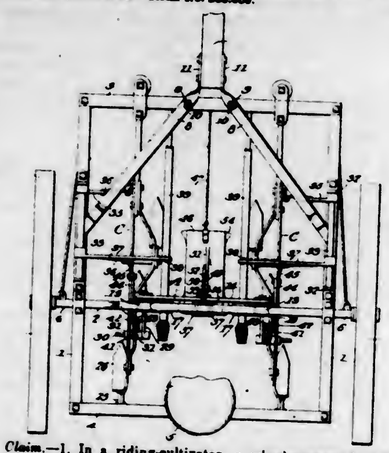

Claim.—1. In a riding-cultivator, a wheel-supported arched axle, a frame supported upon said axle and having a front cross-bar, a traveling frame engaging said cross-bar and including clevis-blocks having wheels engaging the cross-bar, a connecting-bar upon which said clevis-blocks are adjustably mounted, and securing means for said blocks; the latter being provided with vertical apertures in which the front ends of the cultivator-gangs are movably supported.

2. In a riding-cultivator, an arched wheel-supported axle, a frame supported upon said axle and having a cross-bar, a traveling frame including a pair of adjustably-connected clevis-blocks having vertical apertures and provided with rollers engaging the cross-bar of the main frame, a traveling arch-frame supported upon the axle-arch and having depending vertical members, cultivator-gangs having upwardly and forwardly extended front ends movable in the vertical apertures of the clevis-blocks of the traveling frame, and loop members adjustably connected with the cultivator-gangs and slidably engaging the vertical members of the traveling arch-frame.

3. In a riding-cultivator, the combination with suitable supporting means, of a plurality of laterally-movable frames, cultivator-gangs engaging said frames for bodily vertical adjustment, and means for effecting lateral adjustment of the frames and cultivator-gangs.

4. In a riding-cultivator, the combination with suitable supporting means, of a plurality of laterally-movable frames, cultivator-gangs engaging said frames for bodily vertical adjustment, means supported upon one of said frames for effecting such vertical adjustment, and means for effecting lateral adjustment of the frames and cultivator-gangs.

5. In a riding-cultivator, a main supporting-frame, rock-shafts supported for oscillation upon the side members of said frame, each of said rock-shafts being provided with a plurality of depending arms, a plurality of laterally-movable frames, cultivator-gangs engaging said frames for bodily vertical adjustment, links connecting the arms depending from the rock-shafts with the cultivator-gangs, and means for oscillating the rock-shafts.

6. In a riding-cultivator, a main supporting-frame, rock-shafts supported for oscillation upon the side members of said frame each of said rock-shafts being provided with a plurality of depending arms and with a lateral inwardly-extending arm, a plurality of laterally-movable frames, cultivator-gangs engaging said frames for bodily vertical adjustment, links connecting the arms depending from the rock-shafts with the cultivator-gangs, foot-levers connected with one of the laterally-movable frames, and links connecting said foot-levers with the lateral inwardly-extending arms of the rock-shafts.

7. In a riding-cultivator, a main supporting-frame, rock-shafts supported for oscillation upon the side members of said frame each of said rock-shafts being provided with a plurality of depending arms, a plurality of laterally-movable frames, cultivator-gangs engaging said frames for bodily vertical adjustment, links connecting the arms depending from the rock-shafts with the cultivator-gangs, means for effecting lateral adjustment of the cultivator-gangs with relation to the laterally-movable frames, and means for oscillating the rock-shafts.

8. In a riding-cultivator, an arched axle and a main frame supported thereon, a laterally-movable arch-frame supported upon the axle-arch, a laterally-movable traveler-frame supported upon the main frame and including a pair of clevis-blocks and a connecting-bar with which said clevis-blocks are adjustably connected, cultivator-gangs having upwardly-extending members in slidable engagement with perforations in said clevis-blocks, guide-loops adjustably connected with the cultivator-gangs and slidably engaging the vertical members of the laterally-movable arch-frame, rock-shafts supported for oscillation upon the side members of the main frame, arms depending from rock-shafts near the front and rear ends of the latter, links connecting said depending arms with the cultivator-gangs, and means for oscillating the rock-shafts.

811,134. SPROCKET-WHEEL. ALBERT G. DUPOUR, Columbus, Ohio, assignor to Joseph A. Jeffrey, Columbus, Ohio. Filed July 15, 1905. Serial No. 269,533.

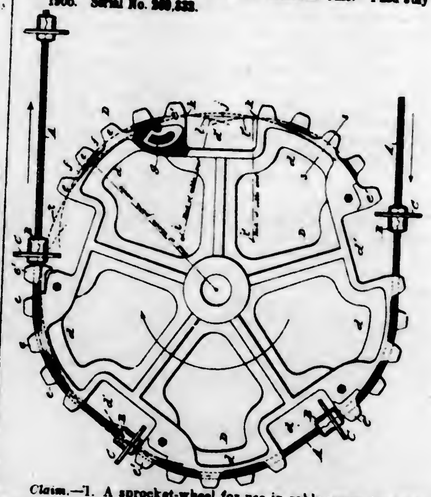

Claim.—1. A sprocket-wheel for use in cable-power-transmission apparatus provided with a series of sections in which are formed cable-seats and with gaps between the sections, the seat for the cable in each section having its longitudinal intermediate portion disposed outside of a circle concentric with the axis of revolution of the wheel and including the points of contact of the cable with the ends of the sections, substantially as set forth.

2. A sprocket-wheel for use in cable-power-transmission apparatus provided with a series of sections in which are formed cable-seats and with gaps between the sections, the cable-seat in each section being formed on the arc of a circle of less radius than the radius of a circle struck from the axis of revolution of the wheel and including any part of the said cable-seat, substantially as set forth.

3. A sprocket-wheel for use in cable-power-transmission apparatus provided with a series of sections in which are formed cable-seats and with gaps between the sections, the cable-seat in each section being on the arc of such a circle that a straight line crossing the gap from the contact-point *k* of that section to the contact-point *k* of the next section is tangential to such arc, substantially as set forth.

4. In combination with a flexible driving device having wheel-engaging attachments, a wheel whose periphery is divided into sections by gaps or recesses for the said wheel-engaging devices each of said sections between the recesses having a peripheral seat which lies outside of the circle that passes through the driving-points at the ends of the said sections, substantially as set forth.

811,135. CONCRETE-MOLD. FREDERIC M. SIMMONS, Brookline, Mass. Filed Sept. 8, 1905. Serial No. 277,491.

Claim.—1. A concrete-mold comprising a pair of side plates pivotally connected adjacent their upper edges to swing to and from each other, arms rigidly connected to said plates and extending upwardly therefrom, two oppositely-disposed locking-levers each pivotally connected at one end to one of said arms and to each other at an intermediate point, substantially as described.

2. A concrete-mold comprising a pair of side plates pivotally connected adjacent their upper edges to swing to and from each other, arms rigidly connected to said plates and extending upwardly therefrom, two oppositely-disposed locking-levers each pivotally connected at one end to one of said arms and to each other at a point approximately midway between said plates, substantially as described.

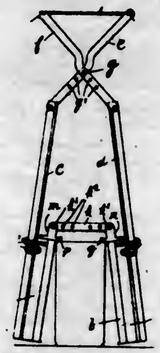

3. A concrete-mold comprising a pair of side plates, a link pivotally connected at each end to said plates to permit said plates to be swung to and from each other, rigid arms connected to said plates and extending upwardly therefrom, and two locking-levers, each pivotally connected at one end to one of said arms and pivotally connected to each other midway between said arms, substantially as described.

4. A concrete-mold comprising a pair of side plates pivotally connected at their upper edges to swing to and from each other, a pair of heads adapted to be held between said plates, projections on said plates adapted to engage the upper ends of said heads, and means for locking said plates against the side edges of said heads, substantially as described.

5. A concrete-mold comprising a pair of side plates pivotally connected adjacent their upper edges to swing to and from each other, arms rigidly connected to said plates and extending upwardly therefrom, two oppositely-disposed locking-levers each pivotally connected at one end to one of said arms and to each other at an intermediate point, and a stop for supporting said levers in a position in which the pivotal connection therebetween is held at the center line of the pivots of said levers, substantially as described.

6. A concrete-mold comprising a pair of side plates pivotally connected adjacent their upper edges to swing to and from each other, means for locking said plates in a predetermined position, and supporting-lugs connected to said plates at their upper edges and adjacent each end, and extending toward each other beyond the inner faces of said plates, substantially as described.

811,186. LIFTING-JACK. SAMUEL S. BYELAND, Philadelphia, Pa. Filed Aug. 23, 1904. Serial No. 221,847.

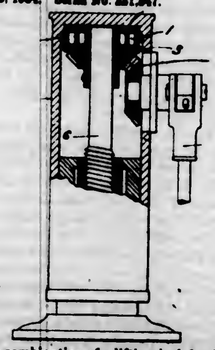

Claim.—The combination of a lifting-jack having a screw and a movable part, a cage provided with radial openings, and cylindrical rollers arranged end to end and disposed in groups in said radial openings, substantially as described.

811,187. ELECTRIC RIVETER. SAMUEL S. BYELAND, Philadelphia, Pa. Filed Sept. 13, 1904. Serial No. 224,343.

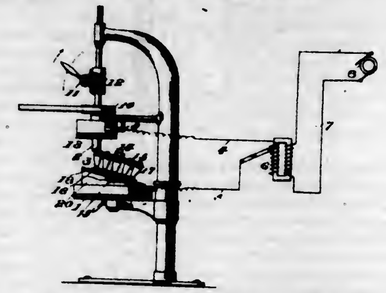

Claim.—1. An electric riveter provided with an electrode constituting a header, and means for rotating the electrode in substantially the same spot on the rivet whereby the heating effect is localized.

2. An electric riveter provided with an electrode constituting a header, means for rotating said electrode to localize the heating effect near the end of a rivet, and devices for causing the electrode to contact with the end of the rivet to head up the locally-heated part thereof, substantially as described.

3. An electric riveter provided with an electrode constituting a header, means for rotating said electrode to localize the heating effect at the end of a rivet, an electrode constituting a support for the rivet, and devices for causing said electrodes to approach so as to head up the hot end of the rivet, substantially as described.

4. In combination a fixed and an axially-movable revoluble part, means for shifting and rotating the revoluble part, a heating-circuit including said parts, and a jig consisting of notched disks and an inclined spindle upon which they are revoluble, substantially as described.

811,138. ATTACHMENT FOR RECLINING-CHAIRS. MARTIN FAAS, New York, N. Y. Filed Jan. 11, 1905. Serial No. 240,608.

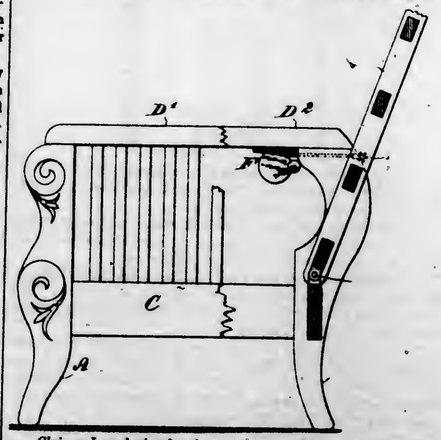

Claim.—In a device for the purpose specified, the combination with the case 1, provided with an attaching-plate and a removable front plate, of the socketed sheave 13 in said case, the flexible connector secured at one end to said sheave and extending out through an aperture in the case, the spring-arbor 7 mounted rotatably in the case and carrying said sheave, the spring 5 in the case and about said arbor, the J-shaped bolt 19, mounted slidably on the case and provided with a spring 21 and button 22, the operative end 19' of said bolt playing in an aperture in the case and adapted to engage the sockets in said sheave for locking the latter against rotation.

811,139. LOOM-SHUTTLE CHECK. HARRISON GARRETT, Northtown, Pa. Filed Dec. 7, 1904. Serial No. 235,921.

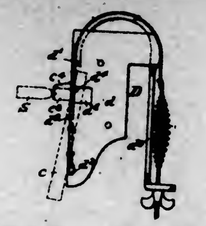

Claim.—A shuttle-check adapted to be applied to the lay of a loom, and comprising a support, a stud secured to said support, a semicircular rim projecting from said support, an angular extension contiguous to said rim, a strap secured with one end to said stud and laying over said rim, a spring attached with one end to the other end of said strap, just beyond the said rim, a threaded rod on the other end of said spring, said rod extending through the angular extension and a thumb-nut for adjusting the said spring, substantially as and for the purposes set forth

811,140. TELEPHONE OR OTHER BOOTH. EDITHE P. GARNET, Scranton, Pa. Filed Apr. 1, 1905. Serial No. 253,253.

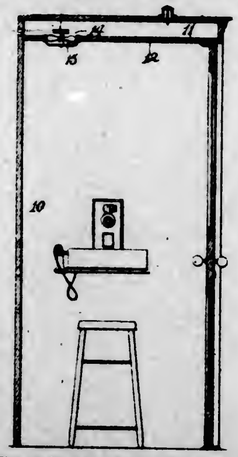

Claim.—1. The combination with a telephone or similar booth, of a means for exhausting air from the booth, and means for breaking sound-waves in the exhaust-opening.

2. The combination with a booth having a ventilating-opening therein, of an exhaust-fan located in the opening and adapted to exhaust air from the booth and break up sound-waves.

3. The combination with a booth having a ventilating-opening, of a device located in the opening to distribute sound-waves, and a valve arranged behind the sound-wave-breaking device and between the said device and the outer air.

4. The combination with a booth having a chamber in its walls with an opening leading into the said chamber from the booth and into the outer air from the said chamber, of a sound-wave-breaking device located in the opening between the chamber and the booth, and a valve in the outlet of the said chamber.

811,141. TENSION DEVICE. JOHN GOSS, New York, N. Y., assignor, by direct and mesne assignments, to The John Goss Corings Co., a Corporation of New York. Filed Sept. 26, 1904. Serial No. 225,552.

Claim.—1. A spool-carrying spindle, a rocking bearing for receiving the spindle-head and a tension device for supporting the free end of the spindle.

2. A spool-carrying spindle having a tapered head, a rocking bearing having a tapered bore for receiving the head, means for adjusting the position of the head with respect to the bearing and means for supporting the free end of the spindle.

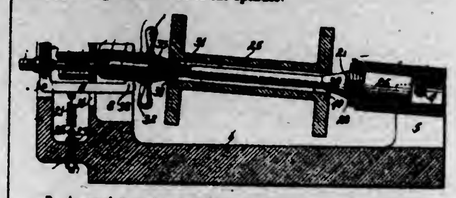

3. A spool-carrying spindle having a tapered head and a screw-threaded portion adjacent thereto, a rocking bearing having a tapered bore for receiving the head, an adjusting-collar engaging the screw-threaded portion and the bearing for adjusting the position of the head within the bore and means for supporting the free end of the spindle.

4. A spool-carrying spindle having a tapered head, a rocking bearing having a tapered bore for receiving the head and a tension device for supporting the free end of the spindle.

5. A spool-carrying spindle having a tapered head, a screw-threaded portion and a fixed tapered seat adjacent to each other.

6. A spool-carrying spindle having a tapered head, a screw-threaded portion and a tapered seat adjacent to each other and another screw-threaded portion spaced therefrom and a removable tapered seat arranged to engage said last-named screw-threaded portion.

7. A spool-carrying spindle, a bearing for its head and a tension device for supporting the free end of the spindle comprising a rocking lever one arm of which supports the spindle and a sliding pin interposed between the end of the spindle and the other arm of the lever.

8. A spool-carrying spindle, a rocking bearing for its head and a tension device for supporting the free end of the spindle comprising a rocking lever, an adjusting-screw carried by one arm of the lever, the other arm of the lever serving to support the spindle and a sliding pin interposed between the adjusting-screw and the end of the spindle.

9. A spool-carrying spindle, a rocking bearing for receiving the spindle-head and a tension device for supporting the other end of the spindle comprising a thrust-block on the free end of the spindle, a spring-actuated rocking lever one arm of which engages the bottom of the thrust-block and a spring-actuated sliding pin interposed between the other arm of the lever and the thrust-block.

10. The combination with a suitable base, of a spool-carrying spindle, a rocking bearing carried by the base for receiving the head of the spindle, an upright having a vertical recess therein, a thrust-block carried by the free end of the spindle located within said recess and a spring-actuated tension device engaging the thrust-block for supporting the free end of the spindle.

811,142. PAPER-BAG RACK. XAVIER C. HALBERT, Clarendon, La. Filed Apr. 27, 1905. Serial No. 257,776.

Claim.—1. A paper-bag rack or holder comprising a plurality of oppositely-disposed spaced bars, horizontal bars connecting respective spaced bars of the holder, clamps pivoted to said horizontal bars, and springs connecting oppositely-arranged clamps.

2. A paper-bag rack or holder comprising a plurality of oppositely-disposed spaced bars, horizontal bars connecting respective spaced bars of the holder, clamps pivoted to the horizontal bars of the holder and embodying spaced sides, and springs connecting the sides of oppositely-arranged clamps.

3. A paper-bag rack or holder comprising a plurality of oppositely-disposed spaced bars, horizontal bars connecting respective spaced bars of the holder, clamps pivoted to said horizontal bars, springs connecting oppositely-arranged clamps, and a plurality of vertical rods connecting the several horizontal bars at the sides of the holder and cooperating with the clamps as specified.

4. In a paper-bag rack or holder, the combination of a holder or rack embodying a plurality of spaced vertical bars, horizontal bars connecting the spaced bars at intervals in their length, clamps comprising sides provided at terminals with loops receiving the horizontal bars aforesaid and affording pivotal connection therewith, said sides being formed with loops between the ends thereof, springs connected with the loops, the sides of the clamps being curved outwardly from the sides of the rack or holder, vertical rods connecting the several horizontal bars at each side of the holder and cooperating with the clamps, and springs connected at ends thereof with the loops between the ends of the sides of oppositely-disposed clamps carried by the vertical bars of the holder.

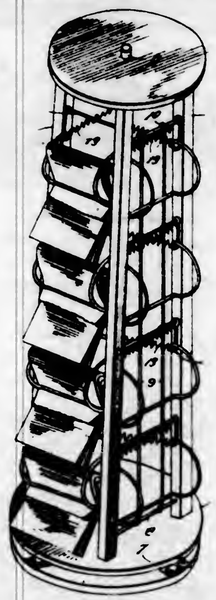

811,143. COMPRESSING STEEL IN CONICAL MOLDS. HENRI HARBERT, St. Etienne, France. Filed Oct. 7, 1902. Serial No. 126,294.

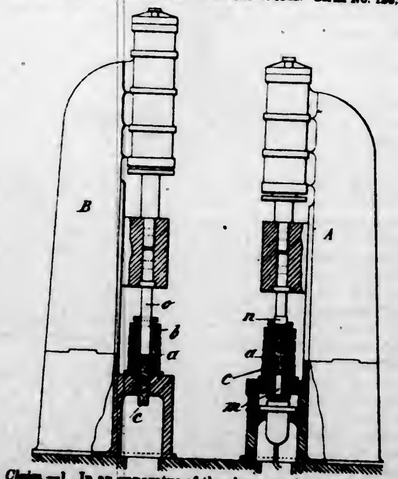

Claim.—1. In an apparatus of the character described, a vertical ingot-mold having a slightly conical cavity, means forming the continuation for the smaller end of said mold at the base and wherein an ingot is adapted to be solidified by compression when forced out through said mold and the means forming the continuation of the smaller end of said mold.

2. In an apparatus of the character described, a slightly frusto-conical ingot-mold, a hollow block arranged adjacent to and forming the continuation for the smaller end of said ingot-mold, and the hollow portion of said block having successive cylindrical frusto-conical and cylindrical portions.

3. In an apparatus of the character described, a vertical ingot-mold having a slightly conical cavity, the smaller diameter of which is at the base of the mold, a hollow block for centering and supporting the mold at its base having a highly conical portion located between two cylindrical portions, forming the continuation of the cavity of the mold to still further compress and to solidify the ingot when forced out of the cavity of the mold into and through said hollow block.

4. In an apparatus of the character described, a slightly frusto-conical ingot-mold, a hollow block arranged adjacent to and forming the continuation for the smaller end of said ingot-mold, the hollow portion of said block having successive cylindrical frusto-conical and cylindrical portions, to further compress the ingot forced through the successive portions of said block, in combination with means for circulating a cooling medium in said block during passage of the ingot therethrough.

5. In an apparatus of the character described, a slightly frusto-conical ingot-mold for solidifying an ingot by compression, a hollow block arranged adjacent to and forming the continuation for the smaller end of said ingot-mold, the hollow portion of said block having successive frusto-conical and cylindrical portions to further compress the ingot when forced into and through said block; in combination with means for circulating a cooling medium in said block during the passage of the ingot therethrough, and pushing of the ingot back through said block.

811,144. HOISTING AND CONVEYING APPARATUS. JUDSON HAYWARD, New York, N. Y. Filed Mar. 25, 1905. Serial No. 251,966.

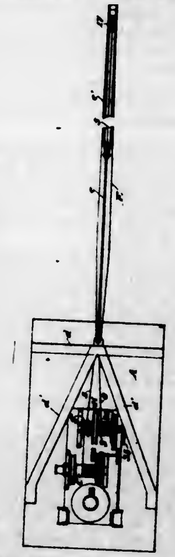

Claim.—1. The combination of a receptacle adapted to be opened and closed, a holding-line supporting said receptacle, a closing-line, a drum member to which said holding-line is secured, a second drum member around which the closing-line is wrapped and a third drum member to which one end of the closing-line is secured.

2. The combination of an engine, a load-receptacle adapted to open and close, a holding-line for said receptacle, a line connected to the engine for closing said receptacle, and means for maintaining the holding-line against movement while paying out on the closing-line to permit the opening of the receptacle, said means comprising two drum members around one of which is wrapped the holding-line and around the other of which is wrapped the closing-line, said closing-line extending back to the engine as aforesaid.

3. The combination of a receptacle adapted to open and close, a closing-line connected with the operating mechanism of the receptacle, a drum for actuating said closing-line, a second drum member interposed between the receptacle and the first-mentioned drum and around which the closing-line is wrapped, and a holding-line for said receptacle.

4. The combination of a receptacle adapted to open and close,

an engine, a two-part friction-drum between the engine and the receptacle, a holding-line supporting said receptacle and having an end portion secured to one part of the friction-drum, a closing-line connected to said receptacle, and passing about the other part of said friction-drum and having an end secured to the engine, and means for engaging and disengaging the two parts of said friction-drum.

5. The combination of a receptacle adapted to open and close, an engine, a friction-drum between the engine and receptacle, a holding-line connected to said receptacle and to the friction-drum, and a closing-line extending from the receptacle to the drum and thence to the engine.

6. The combination of an engine, a load-receptacle adapted to open and close, a line connected with the operating mechanism of the receptacle, a holding-line connected to the head of said receptacle, a two-part friction-drum to which both of said lines are connected, means for throwing the parts of said drum into and out of engagement, to actuate both of said lines simultaneously, and at different times, respectively, braking mechanism for holding one of said drum parts against movement, and a third drum to which one end of the first-mentioned line is connected.

7. The combination of an engine, a two-part friction-drum, a load-receptacle, a supporting-line extending from the receptacle to one part of the friction-drum, a closing-line extending from said receptacle to the other part of said drum and thence to the engine, means for throwing the two parts of the drum into and out of engagement to operate said ropes simultaneously and at different times, respectively, and supplemental mechanism for actuating one part of said drum independent of the other part and of the engine.

8. The combination of an engine, a two-part drum, a load-receptacle, a supporting-line connected to said receptacle and to one part of said drum, a closing-line extending from the receptacle to the other part of said drum and thence connecting said second part of the drum with the engine, means for connecting said drum parts to cause both to be driven simultaneously with the engine, and independent means for actuating one part of said drum independent of the other.

9. The combination of a frame, including a boom, an engine for said frame, a load-receptacle at one end of the boom, a supporting-line connected to said receptacle and passing over the boom, an actuator to which said supporting-line is secured, and a second line extending from said receptacle to the boom thence to the actuator and thence to the drum of the engine.

10. The combination of an engine, a sectional bucket, mechanism for operating said sections, an actuator located between the engine and said receptacle, a line extending from the operating mechanism of the bucket to said actuator and thence to the engine, and a second line connecting the frame of said bucket with the actuator.

11. The combination of a sectional bucket, and means for operating said bucket to permit the opening and closing of same comprising an engine, a drum member and a line extending from said engine to the drum member and thence to the operating mechanism of the bucket.

12. The combination of a receptacle, an engine, an actuator comprising a two-part drum, a line extending from said receptacle to one part of the drum and secured thereto, a second line extending from the receptacle to the other part of said drum and thence to the engine, means for engaging and disengaging the parts of the drum, and means connected to one section of the drum for rotating the same independent of the other, such means comprising a rack-and-pinion mechanism.

13. The combination of a receptacle, an engine, a two-part friction-drum, means for engaging and disengaging the parts of said drum, a line extending from said bucket to one part of said drum, a second line extending from said bucket to the other part of said drum and thence to the engine, and means for holding one part of said drum stationary while the other part is driven from the engine to operate its line.

811,145. MIXING APPARATUS. CHARLES S. HUGHES, New York, N. Y., assignor to The Mixing and Manufacturing Company, New York. Filed Feb. 20, 1905. Serial No. 246,089.

Claim.—1. In an apparatus of the kind described, the combination of a suitable mixing-vat, a mixer therein comprising a hollow shaft having a plurality of arms or blades, a tubular spindle supported at the top of the vat and extending into the shaft, a bearing in the bottom of the vat through which the shaft extends, a flanged collar on the shaft below the vat, a lever having a fork engaging the collar, and a cam engaging the lever to oscillate the same, as set forth.

2. In an apparatus of the kind described, in combination a mixing-vat; means for heating part or all of the same at will; a mixer in the vat, comprising a hollow shaft and a plurality of hollow arms or blades in communication therewith; means for delivering a fluid heating medium to the hollow shaft; means for rotating the mixer; and means for simultaneously reciprocating the same, as set forth.

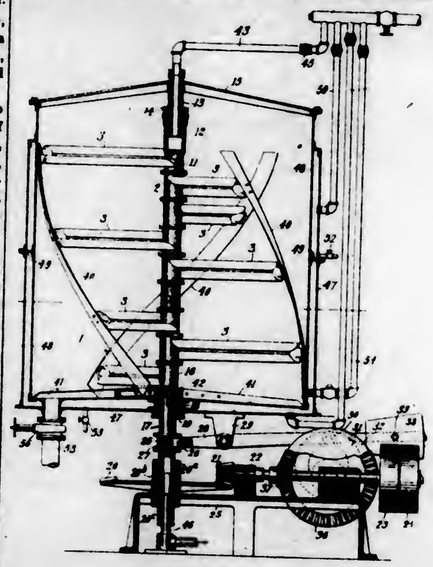

811,146. EMBROIDERING ATTACHMENT FOR SEWING-MACHINES. JOHN S. JACOBS, Dallas, Tex. Filed Mar. 31, 1905. Serial No. 253,126.

Claim.—1. An embroidery attachment comprising a length of wire bent to form the loop portion 7 adapted to receive the needle of a sewing-machine, said wire being extended from the loop portion 7 and formed into the spring 2, and thence extended from the spring 2 to form the approximately horizontal arm 3, the outer end portion of said arm being bent downwardly and thence outwardly to form the horizontal loop 4 constituting a presser-foot, the extremity of the arm 3 adjacent the loop 4 being bent upwardly from the loop alongside the arm 3 and terminating at a side of the arm, in contact therewith, some distance above the loop 4, and means for securing the attachment to a machine.

2. As a new article of manufacture, an embroidery attachment for sewing-machines consisting of a single length of wire 1 having an end portion formed into the loop portion 7 for the insertion of the needle extended laterally from said loop portion to form the extension 8 having the outer end thereof bent to form the spring 9 and extended back toward the loop portion to form the spring-engaging member 10 deflected between its ends to form the seat 11 and having its extremity projected laterally to form the finger-piece 15, the wire 1 being extended from the loop portion 7 and formed into the spring 2, and thence extended from the spring 2 to form the approximately horizontal arm 3 having its outer end bent downwardly and extended to form the horizontal loop 4 constituting a presser-foot, the extremity of the arm 3 adjacent the loop 4 being bent upwardly therefrom and terminated at a side of the arm 3.

811,147. GEARING. HENRY F. JAMES, Franklin, Pa. Filed Aug. 17, 1904. Serial No. 221,003.

Claim.—In a device of the class specified, a bed, a vertical stub-shaft mounted therein, a horizontal worm-wheel, provided with a bearing upon its lower face, mounted upon said stub-shaft, a worm mounted in said bed, in mesh with said wheel, said bed being adapted to contain oil for the immersion of said wheel and worm, a shield or cover for said bed, all substantially as shown and described.

811,148. GAME-TABLE. MARTIN M. JOHNSON, Greenville, Ohio. Filed Feb. 7, 1905. Serial No. 244,615.

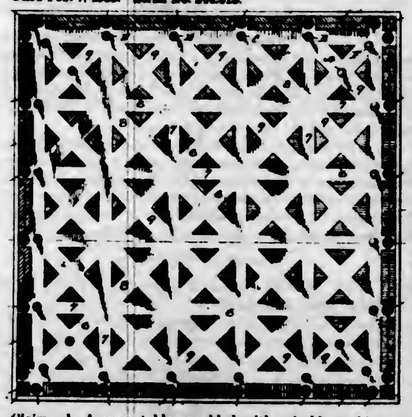

Claim.—1. A game-table provided with suitable cushions arranged along each of its sides, pocket-openings therethrough, pockets disposed within the pocket-openings and partitions forming passage-ways registering with the pocket-openings and properly proportioned for the passage therethrough of balls.

2. In a game-table upon which balls are to be impelled, suitable cushions arranged and differently colored along each of its sides and provided with a plurality of pocket-openings therethrough, a pocket disposed within each of said pocket-openings and buffers arranged upon the table to form passage-ways, said passage-ways being arranged to register with the pocket-openings and proportioned to permit the passage of a ball.

3. In a game-table upon which balls are to be impelled, suitable cushions arranged and differently colored along each of its sides and provided with a plurality of pocket-openings therethrough, a pocket disposed within each of said pocket-openings and resilient buffers geometrically arranged upon the surface of said table to form passage-ways and so disposed that the passage-ways register with the pocket-openings.

4. A game-table apparatus comprising a table, suitable cushions arranged and differently colored along each of its sides and provided with a plurality of pocket-openings therethrough, a ball-receiving pocket disposed within each of said pocket-openings, a plurality of triangular-shaped buffers arranged upon the surface of the table and to form a plurality of ball passage-ways parallel with each of the table sides and others extending obliquely thereto and a plurality of series of balls, each series colored to correspond with the color of one of the side cushions and equal in number to the pocket-openings in each cushion.

811,149. CONVEYER. WALLACE B. JOHNSON, Chicago, Ill., assignor to Fairbanks, Morse & Company, Chicago, Ill., a Corporation of Illinois. Filed Jan. 23, 1905. Serial No. 242,051.

Claim.—1. In an endless conveyer, the combination with the buckets, the endless carrier therefor, and the guiding devices for the upper horizontal flight of the carrier, of the take-off chute for receiving the material from the buckets as they turn from their vertical to their horizontal run, and the vertically-disposed yielding plate arranged adjacent to the line of travel of the inner sides of the buckets, and having its upper end extending over the adjacent end of the said take-off.

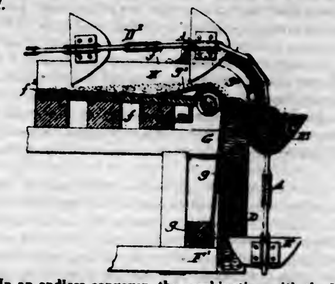

2. In an endless conveyer, the combination with the buckets, the endless carrier therefor, and the guiding device for the upper horizontal flight of the carrier, of the chute arranged adjacent to the guiding device at the point where the buckets turn from their vertical to their horizontal run and along which the material is advanced by the buckets, and the vertically-disposed yielding plate arranged adjacent to the line of travel of the buckets on their up-run, and having its upper end extending over the bottom plate of said chute.

3. In an endless conveyer, the combination with the buckets, the endless carrier therefor, the head-wheels for the carrier adapted to direct it from its up-run to the horizontal run, and the shaft upon which the said wheels are mounted, of the take-off chute having one end arranged adjacent to the said shaft, and the vertically-disposed yielding plate arranged adjacent to the line of travel of the inner sides of the buckets and having its upper end curved over the said shaft and overlapping the adjacent end of the said take-off.

4. In an endless conveyer, the combination with the series of buckets, the endless carrier therefor, the head-wheels for directing the carrier from its up-run to a substantially horizontal run, and the shaft for the said wheels, of the vertically-disposed plate arranged at an inclination to the line of travel of the inner sides of the buckets and having its upper end curved about the said shaft and free to yield relatively thereto, and the take-off device adapted to receive the material from the upper end of said plate.

5. In an endless conveyer, the combination with the series of buckets, the endless carrier therefor, the head-wheels for directing the carrier from its up-run to a substantially horizontal run, and the shaft for said head-wheels, of the plate arranged at an angle to the line of travel of the inner sides of the buckets, and having its lower end the more remote from said line and its upper end curved about the said head-shaft, the said plate being movable relative to the said head-shaft.

6. In an endless conveyer, the combination with the series of buckets, the endless carrier therefor, the head-wheels for directing the carrier from its up-run to a substantially horizontal run, and the shaft for said head-wheels, of the plate arranged at an angle to the line of travel of the inner sides of the buckets, and having its lower end the more remote from said line and its upper end curved about the said head-shaft, the said plate being mounted so that its upper end can yield relatively to said head-shaft.

7. In an endless conveyer, the combination with the series of buckets, the endless carrier therefor, the head-wheels for directing the carrier from its up-run to a substantially horizontal run, and the shaft for said head-wheels, of the plate arranged at an angle to the line of travel of the inner side of the buckets, and having its lower end the more remote from said line and rigidly secured in position, and its upper end curved about the said head-shaft and free to yield relatively thereto.

8. In an endless conveyer, the combination with the series of buckets, the endless carrier therefor, the head-wheels for directing the carrier from its up-run to a substantially horizontal run, and a shaft for said head-wheels, of the take-off chute having a bottom wall with one end arranged adjacent to the said head-shaft, and the side walls extending upwardly from said bottom wall, and being extended about the said head-shaft and downwardly on either side of the up-run of the said series of buckets, and the vertically-disposed yielding plate arranged between said downwardly-extending side walls and adjacent to the line of travel of the inner sides of the buckets, and having its upper end curved over the said shaft and overlapping the adjacent end of the bottom wall of the chute.

9. In an endless conveyor, the combination with the series of buckets, the endless carrier therefor, the head-wheels for directing the carrier from its up-run to a substantially horizontal run, and a shaft for said head-wheels, of the take-off chute having a bottom wall with one end arranged adjacent to the said head-shaft, and the side walls extending upwardly from said bottom wall, and being extended about the said head-shaft and downwardly on either side of the up-run of the said series of buckets and flared outwardly therefrom, and the vertically-disposed yielding plate arranged between said downwardly-extending side walls and adjacent to the line of travel of the inner sides of the buckets, and having its upper end curved over the said shaft and overlapping the adjacent end of the bottom wall of the chute.

10. In an elevator, the combination of an endless carrier arranged to travel around a path having different parts or sections, of which one is inclined to the next, a carrier supporting and guiding device adapted to deflect the carrier from one part of said path to the next, buckets secured to the said carrier, and a guard-wall or fender on the inner side of the carrier supported at points where the carrier is deflected as aforesaid and adapted to yield or move inward and outward in relation to the path of the buckets as the buckets travel past said guard or fender, substantially as set forth.

11. In an elevator, the combination of an endless carrier arranged to travel around a path having different parts or sections, of which one section is inclined to the next, a carrier supporting and guiding device adapted to deflect the carrier from one part of said path to the next, buckets secured to the said carrier, and a guard-wall or fender on the inner side of the carrier supported at points where the carrier is deflected as aforesaid, and formed in two parts or sections, one of which is arranged approximately parallel to one part or section of the carrier-path, and the other arranged approximately adjacent to the other section of the carrier-path, said guard-wall or fender being adapted to yield or move inward toward and outward from the axis around which the carrier is deflected, substantially as set forth.

12. In an elevator, the combination of a supporting-frame, the endless carrier arranged to travel through an approximately vertical path and then through an approximately horizontal path, head-wheels or guides for the carrier when it passes from one of said paths to the other, a receiving chute or trough adjacent to the approximately horizontal part of the carrier, supports for said chute connected thereto and extending around the axis of the head-wheels and then downward therefrom and rigidly secured to the supporting-frame, and a guard-wall or fender on the inner side of the path of the buckets and adapted to yield inward toward and outward from the axis of said head-wheels, and extending from points adjacent to the upper horizontal path of the buckets around the axis of the head-wheels and downward on lines adjacent to the approximately vertical part of the carrier, substantially as set forth.

13. In a conveyer, the combination of an endless carrier arranged to travel around a path having different parts or sections of which one is inclined to the next, supporting and guiding devices adapted to guide and direct the said carrier from one of its paths to the next, a series of conveyer elements secured to said carrier, and a guard-wall or fender on the inner side of said carrier adjacent to one of the points at which the said carrier is deflected from one of its paths to the next and adapted to move or yield inward and outward in relation to the path of the said conveyer elements as they travel past said guard-wall or fender.

14. In a conveyer, the combination of an endless carrier, arranged to travel around a path having different parts or sections, of which one is inclined to the next, supporting and guiding devices adapted to guide the said carrier from one of its paths to the next, a series of conveyer elements secured to said carrier, a chute or trough arranged adjacent to said carrier at one of the points at which the said carrier is deflected from one of its paths to the next and along which the said conveyer elements travel, and a guard-wall or fender arranged adjacent to the inner sides of said conveyer elements along the path from which they are deflected to pass over said chute or trough and having one end extending over the receiving end of said chute or trough, said guard-wall or fender being adapted to move inward and outward in relation to the path of the conveyer elements as they travel past said guard-wall or fender.

811,150. TRUSS-GIRDER. WARNE L. EMMET, Rogue, Ter. Filed Apr. 22, 1905. Serial No. 256,209.

Claim.—1. A device of the kind described comprising a metal cap, formed of a triangular plate having converging sides of greater length than the sides of the plate, the said sides being turned back at their divergent end portions to form sleeves.

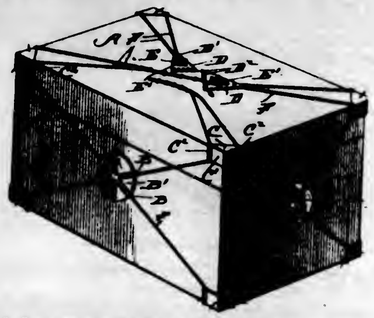

2. In a truss-corder the combination with corner-caps having sleeves thereon, a V-shaped plate, a pulley carried by the said plate, one side of said plate being notched, cords passing through the sleeves of the corner-caps and over the pulleys, one end of each of said cords being secured to the apex of the plate and the other end in detachable engagement with the notched side of the plate.

3. A device of the kind described comprising a plurality of plates having intersecting bores, corner-caps having a plurality of sleeves, V-shaped plates having pulleys, and a plurality of cords secured at one end of said plates, the said cords being adapted to pass through the sleeves of the corner-caps and the bores of the plates and to have their free ends detachably secured to the said V-shaped plates.

811,151. FILTER. GEORGE M. KEBLER, New York, N. Y. Filed May 17, 1905. Serial No. 260,833.

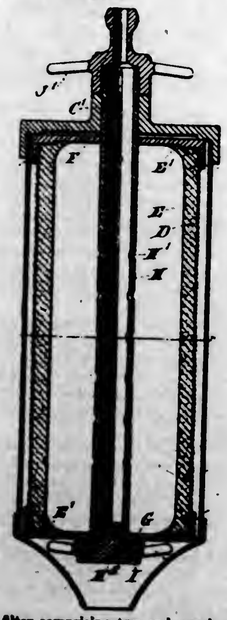

Claim.—1. A filter comprising two end members or heads, a perforated mantle extending from one head to the other, and a pulp lining on the inner surface of said mantle, the ends of the lining engaging the heads to form tight joints therewith, and the inner surface of the lining being exposed so that the inward expansion of the pulp lining is unrestricted.

2. A filter comprising two end members or heads, a perforated inlet-pipe connecting said head, a perforated mantle extending from one head to the other, a shell surrounding said mantle and having an outlet, and a pulp lining on the inner surface of said mantle, the ends of the lining engaging the heads to form tight joints therewith, and the inner surface of the lining being exposed so that the inward expansion of the pulp lining is unrestricted.

3. A filter comprising two end members or heads beveled on their inner surfaces, a perforated mantle extending from one head to the other end engaging said beveled surfaces, and a filtering-lining on the inner surface of said mantle.

4. A filter comprising two end members or heads, a perforated mantle extending from one head to the other, and a filter-lining on the inner surface of the mantle and extending into the perforations thereof, the ends of the lining engaging the heads to form tight joints therewith, and the inner surface of the lining being exposed so that the inward expansion of the pulp lining is unrestricted.

5. A filter comprising two end members or heads, a perforated pipe connecting them, a perforated mantle surrounding the pipe and extending from one head to the other, a filter-lining on the inner surface of the mantle, a cap engaging one of said heads, means for pressing said cap toward the heads, and a shell connected with said cap and surrounding the mantle.

811,152. BALL-BEARING CASTER. OLIVER C. KNIPE, Norristown, Pa., assignor to The Pressed Steel Manufacturing Company, a Corporation of New Jersey. Filed Feb. 13, 1903. Serial No. 143,147.

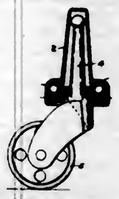

Claim.—1. As an article of manufacture, a ball-bearing support for a caster comprising a ball-cup, a soft-metal jacket attached thereto, a series of balls in the cup, a perforated cone engaging the same, the jacket being provided with an integral incurled flange to act as a cone-retainer, and means adapted to permit mounting the caster-support on an article of furniture.

2. As an article of manufacture, a ball-bearing support for a caster comprising a hollow socket to receive a roller-stem, a ball-cup carried by the lower end of the socket, an inclosed cone and a series of balls mounted to turn freely in the cup, and a soft-metal jacket provided with an inturned integral flange to permanently secure the cone within the cup.

3. A ball-bearing caster comprising a tubular socket having a ball-cup at its lower end, a perforated cone and series of balls permanently inclosed in the ball-cup, a soft-metal jacket having an integral flange to retain the cone, and a roller having a stem set in the cone and projecting into the socket.

811,153. TROLLEY-POLE. JOHN R. LAGERGREN, New York, N. Y. Filed May 25, 1905. Serial No. 262,179.

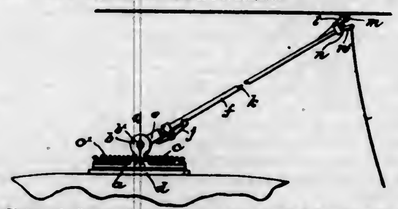

Claim.—1. In a trolley-pole, the combination of a base, a spring-pressed pole mounted thereon, an automatic friction lock or clutch mechanism whereby said pole is normally locked in relation to said base, a movable trolley-head, and means actuated by said trolley-head whereby pressure on said head will release said lock or clutch.

2. In a trolley-pole, the combination of a base, a spring-pressed pole mounted thereon, a friction-drum carried by said base, a friction-brake carried by said pole, means whereby said brake is normally set, a movable trolley-head and means actuated by said trolley-head whereby pressure on said head will release said brake.

3. In a trolley-pole, the combination of a base, a spring-pressed pole mounted thereon, a friction-drum carried by said base, a friction-band encircling said drum, provided with projected ears, a plate pivoted to said ears respectively, means whereby said plate may be actuated by said pole to close said band, a movable trolley-head, and means actuated by said trolley-head whereby pressure on said head will actuate said plate to release said band.

4. In a trolley-pole, the combination of a base, a spring-pressed pole mounted thereon, a friction-drum carried by said base, a friction-band encircling said drum provided with projected ears, a plate pivoted to said ears respectively, an arm on said plate projected into and engaging said pole, whereby upward movement of said arm by said pole will close said band, a movable trolley-head, and means actuated by said trolley-head whereby pressure on said trolley-head will actuate said plate to release said band.

5. In a trolley-pole, the combination of a base, a spring-pressed pole mounted thereon, an automatic friction lock or clutch mechanism whereby said pole is normally locked in relation to said base, a rod mounted on said pole, a spring whereby said rod is normally projected beyond said pole, a pivoted trolley-head engaging said rod, and means whereby pressure on said trolley-head will through the depression of said rod, release said lock or clutch mechanism.

6. In a trolley-pole, the combination of a base, a spring-pressed pole mounted thereon, an automatic friction lock or clutch mechanism whereby said pole is normally locked in relation to said base, a rod mounted on said pole, a spring whereby said rod is normally projected beyond said pole, a bell-crank lever, the opposite arms of which are respectively adapted to receive a trolley-wheel and to engage said rod, and means whereby pressure on said trolley-head will through the depression of said rod release said lock or clutch mechanism.

7. In a trolley-pole, the combination of a base, a spring-pressed pole mounted thereon, a friction-drum carried by said base, a friction-band encircling said drum provided with projected ears, a plate pivoted to said ears respectively, an arm on said plate projected into and engaging said pole whereby upward movement of said arm by said pole will close said band, and project said plate from said pole, a rod mounted on said pole, a spring whereby said rod is normally projected beyond said pole, a lever mounted on said pole, the opposite arms thereof respectively engaging said plate, and being beveled to be actuated by said rod, and a pivoted trolley-head engaging said rod whereby pressure on said trolley-head will through the depression of said rod actuate said lever to release said band.

8. In a trolley-pole, the combination of a base, a spring-pressed pole mounted thereon, a friction-drum carried by said base, a friction-band encircling said drum provided with projected ears, a plate pivoted to said ears respectively, an arm on said plate projected into and engaging said pole whereby upward movement of said arm by said pole will close said band, and project said plate from said pole, a rod mounted on said pole, a spring whereby said rod is normally projected beyond said pole, a lever mounted on said pole, the opposite arms thereof respectively engaging said plate and being beveled to be actuated by said rod, and a bell-crank lever mounted on said pole, the opposite arms of which are respectively adapted to receive a trolley-wheel and to engage said rod and have a rope secured thereto, whereby pressure on said trolley-head will through the depression of said rod actuate said lever to release said band.

811,154. DYNAMO-ELECTRIC MACHINE. PIERRE A. J. LAFFARGUE, Paris, France. Filed Feb. 8, 1904. Serial No. 192,691.

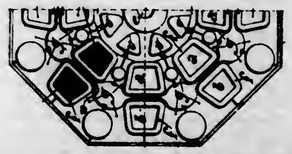

Claim.—1. In a dynamo-electric machine the combination of means for producing a magnetic field, a stationary armature and windings therefor so placed as to always lie in the magnetic field, a revoluble armature and windings therefor adapted to enter and leave the magnetic field during the movement of revolution, and means for supporting the fixed and revoluble parts.

2. In a dynamo-electric machine the combination of a plurality of poles and windings therefor adapted to form a magnetic field, a stationary armature having a corresponding number of poles and windings therefor, said poles so placed as to lie in the magnetic field, a revoluble armature having also a corresponding number of poles

and windings therefor, the said poles being adapted to enter and leave the magnetic field during the rotation of the armature, and means for supporting the fixed and revoluble parts.

3. In a dynamo-electric machine the combination of a plurality of poles and windings therefor adapted to form a magnetic field such that the poles stand in a circle and each pole is of opposite sign to the two adjacent poles, a stationary armature having a corresponding number of poles and windings therefor so placed as to lie in the magnetic field, a revoluble armature having also a corresponding number of poles and windings therefor, the said poles adapted to enter and leave the magnetic fields during the rotation of the armature, and means for supporting the fixed and revoluble parts.

4. In a dynamo-electric machine the combination of a pair of end pieces, a plurality of poles mounted to project inwardly in a circle from each end piece in such a way that the poles are opposite one to another with spaces between them, windings on the poles such that when the machine is working the opposite poles shall be of opposite sign, and each pole shall be of opposite sign to those adjacent to it on the same plate, a stationary armature comprising a plurality of cores and windings therefor, one adapted to lie in the field between each pair of field-poles, a revoluble armature having a corresponding number of poles and windings therefor, the said poles adapted to enter and leave the magnetic fields during the rotation of the armature, and means for supporting the fixed and revoluble parts.

5. In a dynamo-electric machine the combination of a pair of end pieces, a plurality of poles mounted to project inwardly in a circle from each end piece in such a way that the poles are opposite one to another with spaces between them, windings on the poles such that when the machine is working the opposite poles shall be of opposite sign, and each pole shall be of opposite sign to those adjacent to it on the same plate, a stationary armature comprising a plurality of cores and windings therefor, one adapted to lie in the field between each pair of field-poles, a revoluble armature having a corresponding number of poles and windings therefor, the said poles adapted to enter and leave the magnetic fields during the rotation of the armature, while the cores of the stationary and revoluble armatures are so shaped that a pair of cores may lie and fit as nearly as possible between the opposite field-poles, and means for supporting the fixed and revoluble parts.

6. In a dynamo-electric machine the combination of two sets of field-magnet poles arranged in circles standing opposite to one another in pairs, a stationary armature comprising a plurality of cores and windings therefor, one adapted to lie in the field between each pair of field poles, a revoluble armature having a corresponding number of poles and windings therefor, the said poles adapted to enter and leave the magnetic fields during the rotation of the armature, end pieces whereon the field-poles are mounted, plates arranged to circumferentially connect the end pieces, clamps upon said plates adapted to support the cores and coils of the fixed armature and to leave air-spaces between the latter, a wheel-body and clamps thereon adapted to support the cores and coils of the revoluble armature and to leave air-spaces between the latter, and means for admitting the circulation of air from the center of the machine outward.

7. In a dynamo-electric machine the combination of two sets of field-magnet poles arranged in circles standing opposite to one another in pairs, a stationary armature comprising a plurality of cores and windings therefor, one adapted to lie in the field between each pair of field-poles, a revoluble armature having a corresponding number of poles and windings therefor, the said poles adapted to enter and leave the magnetic fields during the rotation of the armature, the cores of the field-poles and of the armatures being laminated, those of the field-poles and of the stationary armature in a substantially radial direction and those of the revoluble armature in a substantially circumferential direction, and means for supporting the fixed and revoluble parts.

8. In a dynamo-electric machine the combination of a plurality of poles and windings therefor adapted to form a magnetic field, a stationary armature having a corresponding number of poles and windings therefor, said poles so placed as to lie in the magnetic field, a revoluble armature having also a corresponding number of poles and windings therefor, the said poles being adapted to enter and leave the magnetic field during the rotation of the armature, means for supporting the fixed and revoluble parts, and a commutator comprising two rings adapted to distribute current to the external circuit of the machine, and a partial ring in connection with each said ring, stationary brushes adapted to convey current from the armature-windings to said partial rings, and means for conveying motion for rotating the commutator from the revolving armature, whereby the commutator is rotated at such speed that the brush-contacts are changed at each change of polarity in the armature-windings, and means for supporting the fixed and revoluble parts of the machine.

811,155. WAGON-BODY. CHARLES LEAVITT, St. Johnsville, N. Y. Filed Aug. 4, 1905. Serial No. 272,704.

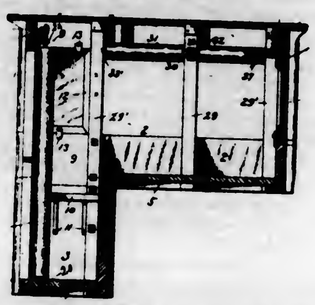

Claim.—1. In a wagon-body, the combination of a body consisting of a box 2, the rear portion of said body forming a downwardly-extending compartment 3, said body being formed with window-openings 12 and 14, a door-opening 6, and a top 6′; seats 10, secured to the inner faces of the walls; window-frames 12 and 14, removably secured to the side and front walls, and held in position by cleats 13, a cross horizontal track 16, secured to the inner face of a cross-brace 15^2, located at the upper end of the rear portion of said body; a door-bar 17, held in slidable suspension on said track; a loop 18, secured to the upper end of the said door-bar, and riding on said track; a roller 19, rotatably and vertically secured at the rear end of said body, the lower end of said roller working in a bearing 20, in the floor 4, of said compartment 3, its upper end terminating in a rod 21, passing through a perforation in a guide-brace 22, secured to the inner face of said cross-beam 15^2; a roll of canvas or other material 23, having one end secured to said door-bar 17, and its other to said roller 19; a coil of resilient wire 25, secured at one end to the inner face of said vertical wall; a cord 26, one end secured to the free end of said resilient wire, and its other end to said rod 21, and adapted to wind or unwind upon the said rod 21; a bolt 27, secured to said door-bar 17; a catch 28, secured to the inner face of a vertical wall 28^2, located at the extreme rear portion of my body, said catch adapted to receive and hold said bolt, substantially as shown and described and for the purposes set forth.

2. In a wagon-body, the combination of a body consisting of a box 2, the rear portion of said body forming a downwardly-extending compartment 3, said compartment having a door 6, in its rear end; two transversely opposite vertical walls 8 and 9, located at the rear portion of said body, provided with window-openings; windows 12, removably secured in said openings by cleats 13, holding said windows in place; braces 29, and beams 29′, extending vertically from the floor of said body; curtain-poles, consisting of two rollers 31, secured to said brace-beams; axle-rods 32, connecting said rollers together, the rear ends of said rods passing through staples 33^a, secured to said vertical beams 29′, their front ends journaled in bearings 35, and terminating in eyes 34; cords 36, secured at one of their ends in said eyes 34; coils of wire 38, terminating at their upper ends in integral arms 39, and at their lower ends in eyed arms 37, said eyed arms adapted to receive and hold the free ends of said cords 36; curtains 40, secured at one end to said rollers 31, their other ends secured to curtain-bars 41; forked hooks 42, secured to said curtain-bars, and buttons 43, secured to the outer faces of said box 2, said buttons adapted to receive and hold the lower ends of said forked hooks, substantially as shown and described and for the purposes set forth.

3. The combination of a body; a compartment extending downwardly from the rear end of said body; seats secured in said compartment; a roof covering two-thirds of the top front of said body, its rear end terminating in a vertical flange, and a roof secured to removable longitudinal beams, covering one-third of the top, rear end, of said body, the front end of said body terminating in a bight overlapping said vertical flange, substantially as shown and described and for the purposes set forth.

4. The combination of a wagon-body, having a rear downwardly-extending compartment; a door-opening formed in the rear wall of said body; a curtain secured in a roller, situated in one corner and the rear end of said body, actuated by a spring; a roll of canvas secured on said roller and adapted to be unrolled and close said door-opening; rollers, rotatably secured longitudinally, two on each side and near the roof of said body, said rollers actuated by springs; curtains having one end secured to said rollers, their outer ends to longitudinal bars, and adapted each to be hooked over a button, and thus close the sides of said body, substantially as shown and described and for the purposes set forth.

5. The combination of a wagon-body, having front and side window-openings; a window fitting in said front window-opening; fixed cleats, rigidly secured to the upper beam of said window-frame, holding said frame in said opening, substantially as shown and described and for the purposes set forth.

811,156. HEN'S NEST. FRANK LIEBER, Marquette, Mich., assignor of one-half to John J. Moriarty, Hudson, Mich. Filed May 24, 1904. Renewed Sept. 6, 1905. Serial No. 277,266.

Claim.—A hen's nest comprising a base-box, a supplemental inclined cloth floor suspended above the bottom of said box, a nest-box of shorter length than the base-box mounted upon one end of said base-box, a hinged lid covering the top portion of said base-box not covered by the nest-box, a circular dish-shaped nest arranged in said nest-box, and having an opening in its lower portion, a hinged plate covering said opening in the nest and having a decoy-egg thereon, and a weight connected with the hinged plate.

811,157. COMBINED ADDING AND TYPE-WRITING MACHINE. JASON C. LOTTERHAND, New York, N. Y. Filed July 20, 1903. Serial No. 167,857.

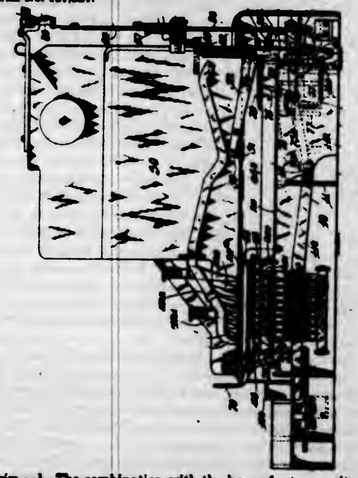

Claim.—1. The combination with the keys of a type-writer, of the key-stems of an adding-machine located beneath the type-writer and normally out of alinement with the type-writer keys and means for moving them into such alinement.

2. The combination with the keys of a type-writer, of the key-stems of an adding-machine located beneath the type-writer and normally out of alinement with the type-writer keys and means for moving them into such alinement, comprising a series of oscillators corresponding to the denominations of the numbers to be registered and added.

3. The combination with the keys of a type-writer, of the key-stems of an adding-machine located beneath the type-writer and normally out of alinement with the type-writer keys and means for moving into such alinement any row of the adding-machine key-stems corresponding to a desired denomination.

4. The combination with the keys of a type-writer, of the key-stems of an adding-machine located beneath the type-writer and normally out of alinement with the type-writer keys, means for moving into such alinement any row of the adding-key stems corresponding to a desired denomination, consisting of a reciprocating oscillator and means for moving it and limiting such movement.

5. The combination with the key-stems of an adding-machine, of a type-writing machine mounted over the adding-machine and comprising key-levers, key-stems, and key-heads, said type-writer keys having removable laterally-projecting rigid fingers in position to actuate the key-stems of the adding-machine.

6. The combination with the keys of a type-writer, of the key-stems of an adding-machine located beneath the type-writer and normally out of alinement with the type-writer keys and means for moving into such alinement any row of the adding-machine key-stems corresponding to the initial denomination of the highest number to be recorded and added.

7. In a machine of the class described, the combination of the type-writer carriage, a finger-carriage, a lever intermediate the two carriages and adapted to be moved by the former to move the latter, the operating-bar of the adding-machine, means for disengaging the lever from the type-writer carriage brought into operation by the depression of said operating-bar, and means for holding it out of engagement.

8. The combination with the key-stems of an adding-machine, of the keys of a type-writing machine mounted over said stems whereby when the keys of the type-writer are struck the proper adding-machine key-stems are depressed, means for locating the adding zone at a predetermined point in the movement of the type-writer platen comprising the type-writer carriage, an adjustable leader thereon, a series of denomination-oscillators, means for actuating such oscillators, and a connection between said actuating means and said carriage.

9. The combination with the key-stems of an adding-machine, of the keys of a type-writing machine mounted over said stems whereby when the keys of the type-writer are struck, the proper adding-machine key-stems are depressed, and means for locking the parts actuated against further movement after the members to be added have been recorded by striking the keys of the type-writer

10. The combination with the key-stems of an adding-machine, of the keys of a type-writing machine, mounted over said stems whereby when the keys of the type-writer are struck, the proper adding-machine key-stems are depressed, and means for locking the parts actuated against further movement after the numbers to be added have been recorded by striking the keys of the type-writer and releasing the same only upon the completion of the adding operation.

11. The combination with the keys of a type-writer, of the key-stems of an adding-machine located beneath the type-writer and normally out of alinement with the type-writer keys, means for moving into such alinement any row of the adding-machine key-stems corresponding to a desired denomination, consisting of a reciprocating oscillator and means for moving it and limiting such movement, and a permanent connection between all of the type-writer keys and the row of adding-machine key-stems corresponding to the initial denomination to be recorded.

12. The combination with the keys of a type-writer, of the key-stems of an adding-machine located beneath the type-writer and normally out of alinement with the type-writer keys, means for moving into such alinement any row of the adding-machine key-stems and a plurality of permanent connections between all of the type-writer keys and each row of adding-machine key-stems corresponding to different denominations.

13. The combination with the key-stems of an adding-machine arranged in a series of rows, of the type-writing machine comprising key-levers, key-stems and key-heads mounted over the adding-machine key-stems, a permanently-attached connection located between the type-writer keys and the series of rows of the adding-machine key-stems, and a removable laterally-projecting rigid finger on each key-stem of the type-writer in position to depress said connection when the key is depressed.

14. The combination with the key-stems of an adding-machine, of the keys of a type-writing machine, mounted over said stems, whereby when the keys of the type-writer are struck the proper adding-machine key-stems are depressed, and means for suspending the adding operation while the decimal-point is being recorded on the type-writing machine comprising a step-bar offset at a predetermined point to arrest the movement of the type-writer carriage at a corresponding point.

15. The combination with a type-writer comprising keys and a

carriage and an adding-machine provided with key-stems, normally out of alinement with the type-writer keys, of means for moving into such alinement the row of the adding-machine key-stems corresponding to the highest denomination to be recorded and means for thereafter actuating the adding mechanism step by step as the type-writer carriage is moved to record the numbers struck by the type-writer keys.

16. The combination with a type-writer comprising keys and a carriage, and an adder comprising key-stems and registering mechanism, of means for uniting the two mechanisms simultaneously to record on the carriage and to register in the adder, numbers struck by the type-writer keys, comprising removable fingers on the type-writer keys, means for bringing a selected row of the adder-key stems, normally out of alinement with the type-writer key-fingers, into alinement therewith, and means for thereafter causing the type-writer mechanism and the adding mechanism to act in unison.

17. The combination with a type-writer comprising keys and a carriage and an adding-machine provided with key-stems, normally out of alinement with the type-writer keys, of means for moving into such alinement the row of the adding-machine key-stems corresponding to the highest denomination to be recorded, means for thereafter actuating the adding mechanism step by step as the type-writer carriage is moved to record the numbers struck by the type-writer keys, and means for automatically locking both type-writer and adding mechanisms against further movement.

18. The combination with a type-writer comprising keys and a carriage and an adding-machine provided with key-stems, normally out of alinement with the type-writer keys, of means for moving into such alinement the row of the adding-machine key-stems corresponding to the highest denomination to be recorded, means for thereafter actuating the adding mechanism step by step as the type-writer carriage is moved to record the numbers struck by the type-writer keys, means for automatically locking both type-writer and adding mechanisms against further movement and means for releasing the same.

19. The combination with a type-writer comprising keys and a carriage and an adding-machine provided with key-stems, normally out of alinement with the type-writer keys, of means for moving into such alinement the row of the adding-machine key-stems corresponding to the highest denomination to be recorded, means for thereafter actuating the adding mechanism step by step as the type-writing carriage is moved to record the numbers struck by the type-writer keys, and means for automatically locking both type-writer and adding mechanisms against further movement and releasing the same only upon completion of the adding operation.

20. The combination with the keys of a type-writer, of the key-stems of an adding-machine located beneath the type-writer and normally out of alinement with the type-writer keys, and means for moving any row of said key-stems into said alinement consisting of an oscillating bar provided with a flexible connection with each of the key-stems in said row.

21. The combination with the keys of a type-writer, of the key-stems of an adding-machine located beneath the type-writer and normally out of alinement with the type-writer keys and means for moving each row of said key-stems into such alinement, consisting of a plurality of oscillating bars each provided with a flexible connection with each of the key-stems in its row.

22. The combination with the keys of a type-writer of the keys of an adding-machine located beneath the type-writer and normally out of alinement with the type-writer keys and means for moving them into such alinement, whereby when the keys of the type-writer are struck, the proper adding-machine key-stems are depressed, and a reciprocating bail transversely mounted across the rows of adding-key stems and forming a connection between the type-writer keys and said key-stems, whereby when the corresponding type-writer numeral-key is struck said bail is moved downward to depress the adding-machine key-stems in its path.

23. The combination with the keys of a type-writer, of the key-stems of an adding-machine located beneath the type-writer and normally out of alinement with the type-writer keys, and means for moving them into such alinement, and a plurality of reciprocating bails, each transversely mounted across the rows of adding-machine key-stems, and forming a connection between the type-writer keys and said key-stems, whereby when the corresponding type-writer numeral-key is struck, its bail is moved downward to depress the adding-machine key-stems in its path.

24. The combination with the keys of a type-writer, of the key-stems of an adding-machine located beneath the type-writer, and normally out of alinement with the type-writer keys, and means for moving them into such alinement, a reciprocating bail transversely mounted across the rows of adding-key stems and forming a connection between the type-writer keys and said key-stems, whereby when the corresponding type-writer numeral-key is struck said bail is moved downward to depress the adding-machine key-stems in its path, and means for returning said bail to its normal position.

25. The combination with the keys of a type-writer, of the key-stems of an adding-machine located beneath the type-writer and normally out of alinement with the type-writer keys, and means for moving them into such alinement, and a plurality of reciprocating bails, each transversely mounted across the rods of adding-machine key-stems, and forming a connection between the type-writer keys and said key-stems, whereby, when the corresponding type-writer numeral-key is struck, its bail is moved downward to depress the adding-machine key-stems in its path and means for returning each of said bails to its normal position.

26. The combination with the key-stems of an adding-machine, of the keys of a type-writing machine, mounted over said stems and provided with projecting fingers to actuate the same, each finger consisting of a removable piece rigidly attached to the key-lever and registering with the proper adding-stems.

27. The combination with the keys of a type-writer, of the key-stems of an adding-machine located beneath the type-writer and normally out of alinement with the type-writer keys, and means for moving them into such alinement, a bail placed between each row of adding-machine key-stems having identical numbers with the set of type-writer keys, each type-writer key being provided with a removable, projecting, rigid fender adapted to register with its bail to depress it.

28. The combination with the keys of a type-writer, of the key-stems of an adding-machine located beneath the type-writer and normally out of alinement with the type-writer keys, and means for moving them into such alinement consisting of a plurality of oscillating bars corresponding in position in front with the rows of adding-machine key-stems and in the rear with the teeth of the rack of the type-writer carriage.

29. The combination with the keys of a type-writer, of the key-stems of an adding-machine located beneath the type-writer and normally out of alinement with the type-writer keys, means for moving them into such alinement comprising a plurality of oscillating bars corresponding in position in front with the rows of adding-machine key-stems and in the rear with the teeth of the rack of the type-writer carriage, and means for moving any one of said oscillating bars.

30. The combination with the keys of a type-writer, the key-stems of an adding-machine normally out of alinement with the keys of the type-writer, and means for moving them into such alinement comprising a series of oscillating bars engaging with the adding-machine key-stems, of a plurality of denomination-levers each adapted to place in position a stop adapted in turn to limit the movement of the means by which the proper oscillating bar is actuated to move the row of corresponding adding-machine key-stems into alinement.

31. The combination with a type-writer comprising keys and a carriage, and an adding-machine comprising key-stems normally out of alinement with the type-writer keys, of means for locking the type-writer keys and carriage against further movement, comprising a universal frame adapted to be held against the type-writer key-levers and a movable catch brought to engage with the universal frame by the movement of the type-writer carriage through intermediate mechanism.

32. The combination with a type-writer comprising keys and a carriage, and an adding-machine, of means for locking the type-writer keys and carriage against further movement, comprising a universal frame adapted to be held against the type-writer key-levers; and a movable catch brought to engage with the universal frame by the movement of the type-writer carriage through intermediate mechanism, consisting of an intermediate lever adapted to be moved by the type-writer carriage, and a carriage connected to and moved by said lever and provided with a tongue which in turn actuates the the movable catch against the universal frame.

33. The combination with a type-writer comprising keys and a carriage, and an adding-machine comprising an operating-bar, of means for locking the type-writer keys and carriage against further movement comprising a universal frame to be held against the type-writer key-levers and a movable catch brought to engage with the universal frame by the movement of the type-writer carriage through intermediate mechanism comprising an intermediate lever and means for releasing the parts comprising a lever actuated by the operating-bar of the adding-machine to disengage the intermediate lever from the type-writer carriage.

34. In combination with a type-writer comprising keys, key-levers and a carriage, means for locking the key-levers against further movement comprising a universal frame and a movable catch brought to bear against the said frame through the movement of the carriage of the type-writer to a predetermined point, to actuate the frame against the key-levers.

35. The combination with a type-writer comprising keys, key-levers and a carriage and an adding-machine, comprising key-stems and an operating-bar, of means for locking the key-levers against further movement comprising a universal frame adapted to be brought into contact with all of said key-levers by a movable catch brought to bear against the said frame through the movement of the type-writer carriage, and means for releasing the said parts brought into action by the motion of the operating-bar in the adding-machine.

36. The combination with a type-writer comprising keys, key-levers and a carriage and an adder located beneath the type-writer and comprising an operating-bar, and the key-stems of which are normally out of alinement with the type-writer keys, and which adder is provided with means for moving any row of said key-stems into such alinement, of means for locking the type-writer keys against further movement by the same means which throw the key-stems of the adder into alinement with the type-writer keys.

37. The combination with a type-writer comprising keys, key-levers and a carriage, and an adder located beneath the type-writer and comprising an operating-bar, and the key-stems of which are normally out of alinement with the type-writer keys, and which adder is provided with means for moving any row of said key-stems into such alinement, of means for locking the type-writer key-levers against further movement, comprising a universal frame adapted to be brought into contact with all of said key-levers by a movable catch brought to bear against the said frame through the movement of the same means which throw the key-stems of the adder into alinement with the type-writer keys.

38. The combination with a type-writer comprising keys, key-levers and a carriage, and an adder located beneath the type-writer and comprising an operating-bar, and the key-stems of which are normally out of alinement with the type-writer keys, and which adder is provided with means for moving any row of said key-stems into such alinement, of means for locking the type-writer key-levers against further movement, comprising a universal frame adapted to be brought into contact with all of said key-levers by a movable catch brought to bear against the said frame through the movement of the same means which throw the key-stems of the adder into alinement with the type-writer keys, and means for releasing the said parts brought into action by the motion of the operating-bar of the adding-machine.

39. In combination with a type-writer comprising keys and key-levers, and an adder comprising key-stems normally out of alinement with the type-writer keys, means, comprising oscillators, for moving them into such alinement, a carriage carrying a finger, a universal frame actuated by each type-writer key-lever adapted to oscillate said key-lever, and means for moving said carriage into a position in which the finger is oscillated to reciprocate a selected oscillator.

40. In combination with a type-writer comprising keys and key-levers, and an adder comprising key-stems normally out of alinement with the type-writer keys, means, comprising oscillators, for moving them into such alinement, a carriage carrying a finger adapted to be oscillated by the motion of every type-writer key-lever through intermediate mechanism, and means for adjusting said carriage into a position in which the finger is brought opposite the proper oscillator to reciprocate it.

41. In combination with a type-writer comprising keys and key-levers, and an adder comprising key-stems normally out of alinement with the type-writer keys, and means, comprising oscillators, for moving them into such alinement, a carriage carrying a finger adapted to be oscillated by the motion of every type-writer key-lever through intermediate mechanism, and means for adjusting said carriage into a position in which the finger is brought opposite the proper oscillator to reciprocate it, comprising a stop actuated by a denomination-lever at the front of the type-writer.

42. In a machine of the class described, comprising a carriage and a series of adding-key-stem oscillators, the combination therewith, of means for actuating said oscillators comprising a moving finger, and means for bringing said finger opposite any selected oscillator comprising a stop, and one of a series of denomination-levers for moving said stop to position.

43. In a machine of the class described, comprising a carriage and a series of adding-key-stem oscillators, the combination therewith, of means for actuating said oscillators comprising a moving finger, provided with a tip adapted to contact with said oscillators, and means for bringing said finger opposite any selected oscillator comprising a stop, and one of a series of denomination-levers for moving said stop to position.

44. In a machine of the class described, comprising a carriage and a series of adding-key-stem oscillators, the combination therewith, of means for actuating said oscillators comprising a moving finger, provided with a tip adapted to yield laterally to a limited extent to bring its longitudinal movement into unison with other moving parts of the machine, and means for bringing said finger opposite any selected oscillator comprising a stop, and one of a series of denomination-levers for moving said stop to position.

45. In mechanism of the class described, comprising a type-writer, its carriage, keys and key-levers, and an adder having key-stems normally out of alinement with the type-writer keys, means for locating an adding zone on the paper of the type-writer carriage comprising a leader adjustably secured to said carriage and adapted to contact with and operate the mechanism whereby the adding-machine key-stems are thrown into alinement with the keys of the type-writer.

46. In mechanism of the class described, comprising a type-writer, its carriage, keys and key-levers, and an adder having key-stems normally out of alinement with the type-writer keys, means for locating the adding zone on the paper of the type-writer carriage, comprising a leader adjustably secured to said carriage, a finger adapted to move any one of a plurality of oscillators into position to bring a row of adding-key stems into alinement with the type-writer keys, a carriage on which said finger is mounted and a connection between the type-writer-carriage leader and the finger-carriage whereby the latter is moved in unison with the former commencing at a point fixed by the position of the leader on the type-writer carriage.

47. In a machine, of the class described, the combination of a series of pivoted key-stem oscillators, means for actuating said oscillators comprising a finger, and a carriage carrying said finger, and means for checking and governing the movement of the finger-carriage laterally of the machine comprising a fluid-cylinder and a piston adapted to reciprocate in said cylinder and connected to said finger-carriage.

48. In a machine of the class described comprising a finger-carriage, the combination of said finger-carriage, a connection adapted to communicate the step-motion of the type-writer carriage, thereto, comprising a lever adapted to engage therewith and with the type-writer carriage, the operating-bar of the calculating-machine, and means for disengaging the connection of the finger-carriage with the type-writer carriage brought into operation by the depression of the operating-bar of the adding-machine.

49. In a machine of the class described, the combination of a type-writer carriage, a finger-carriage, a connection adapted to engage with both carriages and communicate the step-by-step movement of the one to the other, and means for disengaging the connection with the type-writer carriage comprising the operating-bar of the adding-machine, the depression of which brings said disengaging means into operation.

811,158. **EGG-CARRIER.** JOSHUA O. MADDUX, Bakersfield, Cal., assignor of one-half to Francis G. Munzer, Bakersfield, Cal. Filed Mar. 11, 1905. Serial No. 249,663.

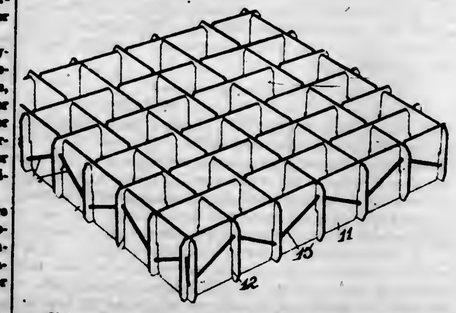

Claim.—An egg-carrier comprising interlocking partitions having inwardly-extending slots arranged alternately on opposite edges, and having projecting ends, and a binding-cord passing through the projecting ends in a zigzag direction, engaging each end at a point on the side of the center opposed to the slot.

811,159. BASE-BALL-GAME APPARATUS. JAMES P. MAGENIS, Boston, Mass. Filed Oct. 5, 1905. Serial No. 281,443.

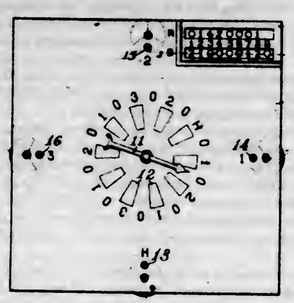

Claim.—1. An amusement device consisting of a card having thereon a chance-indicator and having apertures therethrough and at each aperture a party-colored object for presenting different colors through the aperture in accordance with the manifestations of the indicator.

2. An amusement device consisting of a card having at its center a pointer and a row of characters to be indicated thereby and having apertures about its periphery and at each aperture a party-colored card for presenting different colors through the aperture in accordance with the characters indicated by the pointer.

3. An amusement device consisting of a card having at its center a pointer and a row of characters to be indicated thereby and having apertures about its periphery and at each aperture a party-colored card for presenting different colors through the aperture in accordance with the characters indicated by the pointer and having a score-pocket for receiving the tally-sheet.

4. An amusement device consisting of a card having at its center a pivoted pointer and a circle of characters to be indicated thereby, said characters representing acts in the game of base-ball, and having apertures representing the bases in each game, and a party-colored disk rotatably mounted at each aperture to show one of its colors at a time therethrough.

5. An amusement device representing a game of base-ball, consisting of a card having thereon a chance-indicator representing acts in said game, and having recorders at the base locations movable in response to the indication of said indicator and having a pocket for a tally-sheet in whose front wall are apertures through which to mark the score on the tally-sheet.

6. A base-ball-game apparatus consisting of a square card having apertures at its sides representing the locations of the bases and having a circle of characters at its center representing different events in a game of base-ball, a pivoted pointer at the center of said circle, tricolored disks pivoted to the under side of the card, one at each of said apertures, whereby one color thereof at a time may be made to appear through the aperture, and a piece of cardboard secured by its inner edges to said card at one corner thereof and having parallel openings therein and bearing the score indications and spaced from the card sufficiently to permit a tally-sheet to be inserted between it and the card so that the score may be marked thereon through said openings.

811,160. RAILWAY-SWITCH. CHARLES A. MANN, Albany, N. Y. Filed May 16, 1905. Serial No. 260,665.

Claim.—1. The combination with a switch-operating lever and rods pivoted thereto at one of their ends and having their opposite ends free and upwardly disposed, of a box having gradually-inclined grooves therein in conformation with the slant of the free ends of said rods constituting slideways therefor, substantially as described.

2. The combination with a switch-operating disk, an arm eccentrically pivoted thereto connecting same with a switch, lever-rods eccentrically pivoted at one end to diametrically opposite sides of said disk, the opposite ends of said rods being upwardly bent and bearing thereon at their extremities contact-blocks of lesser width than the rods, of a box having gradually-inclined grooves in conformation to the bend in the end of the lever-rods and being slightly enlarged adjacent to the throw thereof adapted to retain the rods therein and constitute bearings therefor, substantially as described.

811,160.

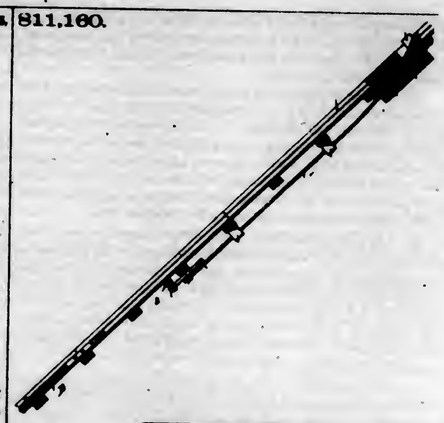

811,161. INCANDESCENT-LAMP SOCKET. NORMAN MARSHALL, Newton, Mass. Filed Mar. 31, 1904. Serial No. 200,574.

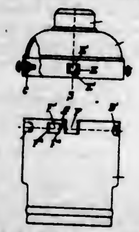

Claim.—1. A casing for incandescent-lamp sockets, consisting of telescoping shell and cap of sheet metal, one or more radially-extending integral cylindrical lugs on one part internally screw-threaded to receive body-holding screws, and a slot or slots in the other part coöperating with said lug or lugs to hold the parts of the casing together.

2. A casing for incandescent-lamp sockets, consisting of telescoping shell and cap of sheet metal, one or more radially-extending integral cylindrical lugs on one part internally screw-threaded to receive body-holding screws, one or more coöperating slots in the other part in combination with a locking device consisting of a projection formed on one part and springing into a corresponding hole or slot in the other part.

811,162. APPARATUS FOR DISCHARGING CONDENSED STEAM. DUMME MOHET, Chemnitz, Germany. Filed May 25, 1904. Serial No. 209,761.

Claim.—1. In an apparatus for discharging condensed steam and returning same to the boiler the combination of a vessel adapted to rock and provided with a balance-weight, said vessel having a hollow axle communicating with a supply-pipe and a discharge-pipe for the condensed steam, of a fixed casing containing a supply-port and an exhaust-port for steam communicating with said vessel, of a pivoted lever with said vessel connected to said lever and means for balancing the load on the rocking axle, comprising a pivoted lever 12 provided with a weight 13 and a roller 14, said lever 12 adapted to bear on an arm 3 of said axle by said roller, substantially as and for the purpose set forth.

2. An apparatus of the class described comprising a hollow rocking axle, a receiving vessel carried by and communicating with said axle, a balance for said vessel having a variable momentum, a supply and discharge for condensed steam delivering to one end of said axle, a valved steam supply and discharge connected with the opposite end of said axle, and means connecting said valves with said axle for operating said valves approximately at the completion of movement of the axle, substantially as described.

3. An apparatus of the class described comprising a hollow rocking axle, a receiving vessel carried by and communicating with said axle, a balance for said vessel having an increasing and decreasing momentum, a supply and discharge for condensed steam delivering to one end of said axle, a valved steam supply and discharge connected with the opposite end of said axle, and means connecting said valve with said axle for operating said valves approximately at the completion of movement of the axle, substantially as described.

4. An apparatus of the class described comprising a hollow rocking axle, a receiving vessel carried by and communicating with said axle, a counterbalance for said vessel, a supply and discharge for condensed steam delivering to one end of said axle, a valved steam supply and discharge connected with the opposite end of said axle, and means connecting said valve with said axle for operating said valves approximately at the completion of movement of the axle, and antifriction balancing mechanism for said axle, vessel and its counterbalance.

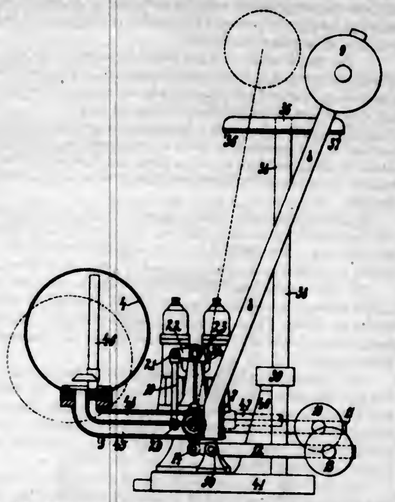

5. An apparatus of the class described comprising a hollow rocking axle, a receiving vessel carried by and communicating with said axle, a balance for said vessel having an increasing and decreasing momentum, a supply and discharge for condensed steam delivering to one end of said axle, a valved steam supply and discharge connected with the opposite end of said axle, and means operatively connecting said valve with said axle for operating said valves approximately at the completion of movement of the axle, and balancing mechanism for said axle, vessel and its counterbalance.

6. An apparatus of the class described comprising a rocking member, a receiver supported by and communicating therewith, a condensed-steam supply and discharge and a valved steam supply and discharge communicating with said member, means operatively connecting said valves and member serving to operate said valves approximately at the completion of movement of said member, and a counterbalance for said receiver having an increasing and decreasing momentum, substantially as described.

7. An apparatus of the class described comprising a rocking member, a receiver supported by and communicating therewith, a condensed-steam supply and discharge and a valved steam supply and discharge communicating with said member, means for operatively connecting said valves and member serving to operate said valves approximately at the completion of movement of said member, and antifriction balancing mechanism for said axle, vessel and its counterbalance.

8. An apparatus of the class described comprising a rocking member, a receiver supported by and communicating therewith, a condensed-steam supply and discharge and a valved steam supply and discharge communicating with said member, means operatively connecting said valves and member serving to operate said valves approximately at the completion of movement of said member, a counterbalance for said receiver having an increasing and decreasing momentum, and balancing mechanism for said axle, vessel and its counterbalance.

9. An apparatus of the class described comprising a rocking axle provided with non-communicating condensed-steam and steam passages, a receiver mounted on said axle and having separate condensed-steam and steam ducts communicating with said passages, the steam-duct extending into the receiver, a valve-box communicating with said steam-passage and provided with steam inlet and outlet valves, springs normally seating said valves, a rocking lever operatively connected with said axle and serving to alternately unseat said valves, a counterbalance for said vessel having an increasing and decreasing momentum, stops limiting movement of said counterbalance, an axle-counterbalance, and a third counterbalance acting upon said axle, said receiver, and the counterbalances thereof.

10. An apparatus of the class described comprising a rocking axle provided with non-communicating condensed-steam and steam passages, a receiver mounted on said axle and having condensed-steam and steam ducts communicating with said passages, a valve-box communicating with said steam-passage and provided with steam inlet and outlet valves, springs normally seating said valves, a rocking lever operatively connected with said axle and serving to alternately unseat said valves, a counterbalance for said vessel having an increasing and decreasing momentum, stops limiting movement of said counterbalance, and an axle-counterbalance.

11. An apparatus of the class described comprising a rocking axle provided with non-communicating condensed-steam and steam passages, a receiver mounted on said axle and having condensed-steam and steam ducts communicating with said passages, a valve-box communicating with said steam-passage and provided with steam inlet and outlet valves, springs normally seating said valves, a rocking lever operatively connected with said axle and serving to alternately unseat said valves, an axle-counterbalance, and a counterbalance acting upon said axle, said receiver, and the counterbalances thereof.

12. An apparatus of the class described comprising a rocking axle provided with non-communicating condensed-steam and steam passages, a receiver mounted on said axle and having condensed-steam and steam ducts communicating with said passages, a valve-box communicating with said steam-passage and provided with steam inlet and outlet valves, springs normally seating said valves, a rocking lever operatively connected with said axle and serving to alternately unseat said valves, said lever having a limited play thereby serving to unseat the valves at the completion of movement of said axle, an axle-counterbalance, and a third counterbalance acting upon said axle, said receiver, and the counterbalances thereof.

811,163. EXPANSION CRAMP DEVICE. FRÉDÉRIC DE MORSIER, Geneva, Switzerland. Filed Mar. 8, 1905. Serial No. 249,107.

Claim.—An expansion device comprising at least a pair of legs of sheet metal extending in the same general direction joined at their butt-ends and bent toward each other so as to be closer together at their free ends than at their butt, a nut in the butt-end, so fitting therein as to be embraced by the legs to prevent its rotation and a screw passing through the nut.

811,164. GEARING FOR BUNDLING-PRESSES. JOHN MURRAY, Edinburgh, Scotland. Filed Sept. 1, 1905. Serial No. 276,675.

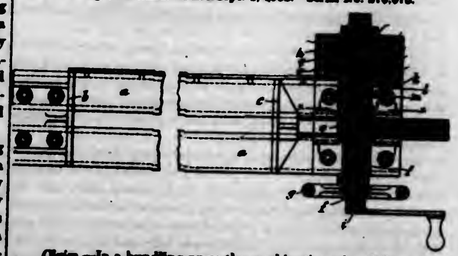

Claim.—In a bundling-press the combination of a sliding abutment, a rack fast thereto, a tubular shaft, a pinion fast thereon engaging with the rack, means for directly driving the tubular shaft and pinion, a shaft within the tubular shaft, means for separately driving the same, a train of gearing between the two shafts and means for fixing one of the gears of the train of gearing so that the tubular shaft and pinion are driven by the rotation of the shaft within

when required substantially as described and for the purpose set forth.

811,165. SHOCK-LOADER. SORREN M. NELSON and NIELS NELSEN, Marietta, Minn. Filed Apr. 27, 1905. Serial No. 257,570.

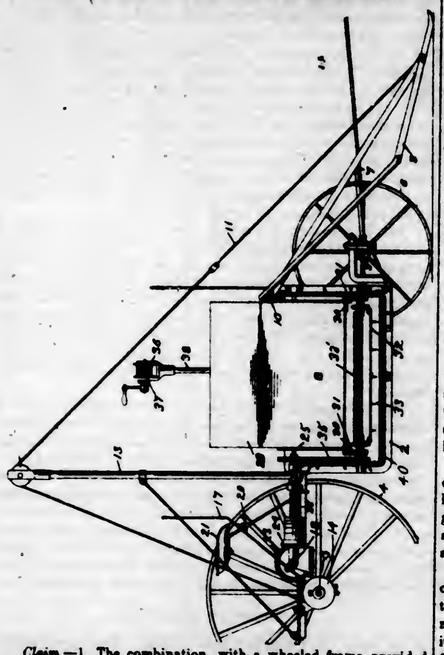

Claim.—1. The combination, with a wheeled frame provided with a hopper, of a fork pivotally supported on said frame and having teeth or tines adapted to rest and slide upon the ground and pick up the shocks of grain or corn thereon, and mechanism within control of the operator for lifting said pivoted fork to discharge the shock gathered up thereby into said hopper.

2. The combination, with a wheeled frame provided with a hopper or receptacle, of a fork pivoted on said frame near said hopper and having teeth or tines adapted to rest and slide upon the ground and pick up the bundles or shocks of grain or corn thereon, mechanism within control of the operator for lifting said fork to discharge the shock into said hopper, and a carrier arranged to gather up the bundles in said hopper and deliver them at the side of the machine, substantially as described.

3. The combination, with a wheeled frame provided with a hopper, of a pivoted fork adapted to rest and slide upon the ground, an inclined plate arranged in said hopper and whereon the bundles of grain are discharged from said fork, mechanism for tilting said fork, and a carrier arranged to receive the bundles from said plate.

4. The combination, with a wheeled frame having a shock-receptacle, of a fork pivoted on said frame and having teeth to rest and slide upon the ground, a hinged plate arranged in said hopper, means for imparting a jarring or jolting movement to said plate, and a transversely-operating carrier arranged to receive the bundles from said plate, substantially as described.

5. The combination, with a wheeled frame having a hopper near its forward end, of a fork pivotally supported on the forward wall of said hopper and having teeth that rest and slide upon the ground, mechanism for raising said fork to allow the shocks gathered up thereby to be discharged into said hopper, an inclined plate provided in said hopper and whereon the bundles fall from said fork, means for imparting a jarring or jolting action to said plate, and a carrier pivotally supported at its lower end in said hopper and arranged to receive the bundles from said plate and deliver them at the side of the machine.

6. The combination, with a wheeled frame provided near its forward end with a transversely-arranged hopper, of a fork pivoted on the forward wall of said hopper and having teeth that rest and slide upon the ground, a drum loosely mounted on the rear axle, a standard mounted on said frame and having a pulley, a cable attached to said drum and passing over said pulley to said fork, and a clutch mechanism within control of the operator for temporarily locking said drum on said axle, and a carrier operating in the bottom of said hopper and arranged to receive the bundles of grain or corn and deliver them at the side of the machine.

7. The combination, with a wheeled frame and a hopper, of a tilting fork arranged in front of said hopper and having teeth adapted to pick up shocks of grain or corn, and mechanism for raising said fork to discharge the gathered shock into said hopper.

8. The combination, with a frame and hopper, of a tilting fork arranged to pick up shocks of grain or corn from the ground, mechanism for tilting said fork to raise a shock and discharge it into said hopper, and a carrier or elevator operating in connection with said hopper.

9. The combination, with a wheeled frame provided with a shock-receptacle, of a fork having teeth adapted to pick up shocks of grain or corn, a vibrating plate provided in said receptacle, and a carrier or elevator operating in connection with said receptacle.

10. The combination, with a wheeled frame provided with a hopper having a removable floor or plate, of a pivoted fork arranged to pick up shocks of grain or corn, means for tilting said fork to discharge its load into said hopper, and a carrier or elevator operating in said hopper.

11. The combination, with a wheeled frame having a drop portion near its forward end and a hopper carried thereby, the bottom of said hopper being below the rear of said frame, a fork hinged near the forward wall of said hopper and having teeth adapted to pick up shocks of grain or corn, a side-delivery elevator operating in said hopper, and means for tilting said fork.

12. The combination, with a frame, of a side-delivery carrier or elevator mounted thereon, a fork pivoted in front of said elevator and having teeth adapted to slide upon the ground and pick up shocks of grain or corn, a vibrating bundle-support provided near said elevator and mechanism for raising said fork to discharge its load upon said support, substantially as described.

13. The combination, with a frame, of a side-delivery elevator or carrier thereon, a fork hinged in front of said elevator and having teeth adapted to pick up shocks of grain or corn, an upright standard mounted on said frame in the rear of said elevator and provided at its upper end with an antifriction-wheel, a cable attached to said fork and passing over said wheel, and mechanism for winding up said cable to raise said fork.

14. The combination, with a wheeled frame and hopper, of a side-delivery carrier or elevator operating therein, a fork hinged near the forward wall of said hopper, mechanism for driving said carrier continuously from the wheel-axle, and mechanism for intermittently raising said fork to discharge its contents.

15. The combination, with a wheeled frame and a shock-receptacle, of a vibrating bundle-support provided in said receptacle, a carrier or elevator operating near said support, and means for delivering shocks of grain or corn to said support, substantially as described.

811,166. HAMMOCK-SUPPORT. GERHART J. NUESSEN, Ardale, Kans. Filed Apr. 3, 1905. Serial No. 253,402.

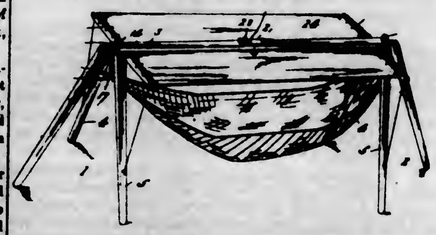

Claim.—1. A hammock-support comprising two tripods, the legs of each being connected at their upper ends by a triple hinge having the pintle of two of the leaves provided with a knuckle having a longitudinal recess therethrough adapted to register with similar recesses in the knuckles of the third leaf, a vertical projection extending upward from the said hinge, a jointed beam supported by the tripod and secured to the said projection and means to retain the beam in its extended position, an eye carried by said pintle and awning-supporting rods supported by said eye.

2. A hammock-support comprising two tripods the legs of each being connected at their upper ends by a triple hinge having the pintle of two of the leaves provided with a knuckle having a longitudinal recess therethrough adapted to register with similar recesses in the knuckles of the third leaf, a ring carried by the said pintle between the two hinged leaves and the knuckle provided thereon, a depending rod secured thereto and means to limit the outward movement of the legs of the tripod secured to the lower portion of said rod.

3. A hammock-support comprising two tripods, the legs of each being hinged together, a rod depending from said hinge provided with means to which the ends of the hammock may be secured and means attached to said depending rod to limit the outward movement of the legs of the tripod.

811,167. PROTECTOR FOR BACKS AND CHESTS. MILAN L. PADDOCK, Lyons, N. Y. Filed Aug. 25, 1905. Serial No. 275,748.

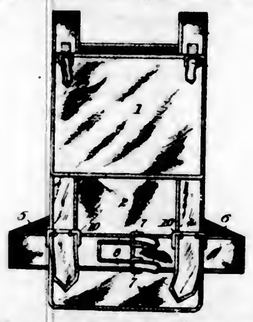

Claim.—The herein-described lung-protector comprising a back pad, waist-line straps attached thereto and having tongue-and-buckle connection with each other in front, shoulder-straps attached to said pad and adapted to pass over the shoulders and down to the waist-straps, buckle connections between said shoulder-straps and the members of the waist-strap, a chest-pad, and independent strap-and-buckle attachments between said chest-pad and the shoulder-straps, all buckles being at the front of the wearer, as and for the purpose set forth.

811,168. DEVICE FOR COUNTERBALANCING TONGUES. JOHN B. PARDEE, Rydal, Kans. Filed May 22, 1905. Serial No. 261,647.

Claim.—1. In a device for counterbalancing tongues the combination of a bar secured to the tongue and extending to the rear of the point where the tongue is pivoted, and a weight adjustably mounted upon the bar so as to counterbalance the weight of the tongue.

2. In a device for counterbalancing tongues, the combination of a bar secured to the tongue and extending to the rear of the point where the tongue is pivoted, a weight slidably mounted upon the bar, a lever fulcrumed upon the bar and adapted to operate the weight, and means for locking the weight in position.

3. In a device for counterbalancing tongues, the combination of a bar secured to the tongue and extending to the rear of the point where the tongue is pivoted, a weight slidably mounted upon the bar, a lever fulcrumed upon the bar and connected with the weight so that same can be adjusted by moving the lever, and a ratchet which engages a pawl on the lever to hold same in a fixed position.

811,169. EDUCATIONAL APPARATUS. FRANCES B. PARRISH, New York, N. Y.; Emma M. Parrish Holmes administratrix of said Frances B. Parrish, deceased. Filed Sept. 6, 1905. Serial No. 277,168.

Claim.—1. An educational apparatus comprising a tablet or support, a series of characters or symbols adapted to be removably placed thereon, and a guide and exercise sheet adapted to be placed over the tablet and detachably secured thereon by the characters.

2. An educational apparatus comprising a tablet or support, a series of characters or symbols provided with pins by which they are adapted to be removably secured to the tablet, and a guide-sheet adapted to be placed over the tablet and detachably secured thereon by the characters.

3. An educational apparatus comprising a support, a series of characters or symbols, a pivot-pin connected to each of said characters and by which said character may be detachably and rotatably secured to the support, and an exercise-sheet adapted to be placed over the tablet and detachably secured thereon by the characters.

4. An educational apparatus comprising a main receptacle provided with a plurality of small compartments, a series of instruction characters or symbols adapted to be arranged in said compartments, a pin-like pivot connected to each of said characters, and a soft tablet adapted to fit within said main receptacle and to form a support for the characters, and a cover for said receptacle

5. An educational apparatus comprising a main receptacle provided with a plurality of small compartments, a series of instruction characters or symbols adapted to be arranged in said compartments, a pin-like pivot connected to each of said characters, and a soft tablet adapted to fit within said main receptacle and to form a support for the characters, and a protecting exercise-sheet adapted to cover said tablet and to be detachably secured thereto by the characters, and a cover for said receptacle.

811,170. PASTEURIZER OR COOLER. DARIUS W. PAYNE, Minneapolis, Minn. Filed Feb. 21, 1905. Serial No. 246,867.

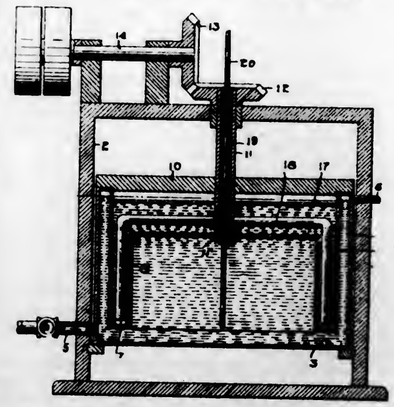

Claim.—1. A tank having an inner and outer wall with a space between them, and inlet and exhaust pipes communicating with said space, the bottom of the inner wall having a raised central portion that is spaced from the sides of said inner wall, the space inclosed by said inner wall forming a cream-receptacle, a pipe centrally mounted on said raised portion, a revolving sleeve inclosing said pipe and provided with stirring arms operating between the said raised portion and the said inner wall.

2. A tank having an inner and outer wall with a space between them, and inlet and exhaust pipes communicating with said space, the bottom of the inner wall having a series of raised portions that are spaced from one another and from the sides of said inner wall, the space inclosed by said inner wall around said raised portions forming a cream-receptacle and having cream inlet and discharge pipes, and a series of stirring-arms operating between said raised portions and in the space between said raised portions and the sides of said inner wall.

3. A tank having an inner and outer wall with a space between them, and water and steam inlet and exhaust pipes communicating

with said space, the bottom of the inner wall having a series of raised portions there being one in the center with the others at regular intervals around it, the space inclosed by said inner wall forming a cream-receptacle and having cream inlet and discharge pipes, stirring-arms depending within the space around said central raised portion, a gear mechanism for driving the same, a series of other stirring-arms depending within the space around said other raised portions and operatively connected with the driving mechanism for said first-named stirring-arms whereby all of them will be operated simultaneously, substantially as described.

4. An apparatus for pasteurizing cream comprising a tank having an inner and outer wall with a space between them, and an exhaust-pipe communicating with said space, the bottom of said inner wall having a raised central portion that is spaced from the sides of said inner wall, the space inclosed by said inner wall forming a cream-receptacle, a pipe rigidly connected concentrically to the said raised central portion, a sleeve surrounding the said pipe provided with a bevel-gear on its upper end and at its lower end having stirring-arms depending within the space between the said raised portion and the sides of the said inner wall, and a driving-shaft arranged above the said tank and provided with a bevel-gear meshing with the bevel-gear on the said sleeve.

5. An apparatus for pasteurizing cream comprising a tank having an inner and outer wall with a space between them, and an exhaust-pipe communicating with said space, the bottom of said inner wall having a raised central portion that is spaced from the sides of said inner wall, the space inclosed by said inner wall forming a cream-receptacle, a revolving sleeve vertically arranged above said raised portion centrally with respect thereto, a series of angled stirring-arms or agitators carried by said sleeve and extending across the top of said raised portion and depending within the space between said raised portion and the sides of said inner wall.

6. A tank having an inner and outer wall with a space between them, and inlet and exhaust pipes communicating with said space, the bottom of the inner wall having a series of raised portions that are spaced from one another and from the sides of said inner wall, the space inclosed by said inner wall around said raised portions forming a cream-receptacle and having cream inlet and discharge pipes, a series of pipes connected centrally to the said raised portions, and a series of revolving sleeves surrounding the said pipes and provided with stirring-arms operating in the spaces between the said raised portions and the said inner walls.

7. A tank having an inner and outer wall with a space between them, and inlet and exhaust pipes communicating with said space, the bottom of the inner wall having a raised central portion that is spaced from the sides of said inner wall, the space inclosed by said inner wall forming a cream-receptacle, a pipe secured to the top of said central portion and forming a tight joint therewith, and stirring-arms revolving around said pipe in the space between said raised central portion and said inner wall, substantially as described.

8. A tank having an inner and outer wall with a space between them and inlet and exhaust pipes communicating with said space, the bottom of the inner wall having a raised stationary central portion that is spaced from the sides of said inner wall, the space inclosed by said inner wall forming a cream-receptacle, a vent-pipe leading into the space inclosed by said raised central portion and stirring-arms operating in the space between said raised portion and the sides of said inner wall.

9. A tank having an inner and outer wall with a space between them, and inlet and exhaust pipes communicating with said space, the bottom of said inner wall having a raised portion that is spaced from the sides of said inner wall, the space inclosed by said inner wall forming a cream-receptacle, a steam-pipe communicating with the space inclosed by said raised portion, and stirring-arms operating in the space between said raised portion and the sides of said inner wall.

10. A tank having an inner and outer wall with a space between them, and inlet and exhaust pipes communicating with said space, the bottom of said inner wall having a series of raised portions that are spaced from the sides of said inner wall, the space inclosed by said inner wall forming a cream-receptacle, pipes communicating with the space inclosed by said raised portions, and stirring-arms operating in the space between said raised portions and the sides of said inner wall, substantially as described.

11. An apparatus for pasteurizing cream comprising a tank having an inner and outer wall with a space between them, and an exhaust-pipe communicating with said space, the bottom of said inner wall having a raised central portion spaced from the sides of said inner wall, the space inclosed by said inner wall forming a cream-receptacle, a pipe secured centrally to said raised portion, stirring-arms arranged to revolve around said pipe, and a steam-pipe fitting within said first-named pipe and leading into the space inclosed by said raised portion, substantially as described.

811,171. **MARINE BOAT.** SAMUEL PRESBERTON and JOHN F. DRAPMAN, Sault Ste. Marie, Mich. Filed July 14, 1905. Serial No. 270,213.

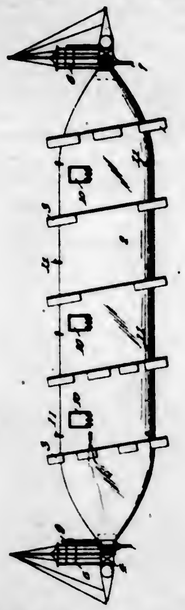

Claim.—1. A boat of the character described comprising a longitudinal shaft, two concentric hulls, one of which is fast on said shaft and the other of which rotates outside of the fixed hull, the outer hull being provided with a propeller, a pilot-house at each end of the said shaft outside of the said hulls, and a hollow rudder-post secured in the end of the shaft and provided with an opening to admit of water being pumped therethrough for the purpose set forth.

2. A boat of the character described comprising a longitudinal shaft, an inner hull fixed on said shaft, and an outer concentric hull designed to rotate on the shaft and provided with a propeller, hollow tubular bearings 7 secured to the shaft at each end thereof outside of said outer hull, pilot-houses supported at the end of said shaft, and a rudder having a tubular post mounted in the tubular bearings 7 and arranged to admit of water being pumped through the post for the purpose set forth.

811,172. **PAPER-MOVEMENT INDICATOR FOR TYPE-WRITERS.** CHARLES C. POOLE, Evanston, Ill., assignor to Oliver Typewriter Company, Chicago, Ill., a Corporation of Illinois. Filed Feb. 20, 1905. Serial No. 246,691.

Claim.—1. The combination with a rotative platen, of two pointers which have angular adjustment relatively to each other, means for locking said pointers to rotate with the platen, and automatic means for restoring the pointers to predetermined positions when released from the platen.

2. The combination with a carriage-frame and a rotative platen, of a pointer on said frame and two pointers which have angular adjustment relatively to each other, means for locking said pointers to rotate with the platen, and automatic means for restoring said pointers to predetermined positions when released from the platen.

3. The combination with the rotative platen, of two pointers which are angularly adjustable relatively to each other, means for locking said pointers to rotate with the platen, and gravity-acting means for restoring the pointers to predetermined positions when released from the platen.

4. The combination with the rotative platen and its shaft, of a part rotative on said platen, two pointers, one of which is fixed to said part and the other of which is angularly adjustable relatively to the first pointer, means for locking said part to rotate with the shaft, and automatic means for restoring said part to a predetermined position when released from the shaft.

5. The combination with the rotative platen and its shaft, of a part rotative on said platen, two pointers, one of which is fixed to said part and the other of which is angularly adjustable relatively to the first pointer, means for locking said part to rotate with the shaft, and gravity-acting means for restoring said part to a predetermined position when released from the shaft.

6. The combination with a rotative platen and its shaft, of a disk having rotative engagement with the shaft, two pointers, one of which is fixed to the disk and the other of which is angularly adjustable on the disk, a clutch device for locking said disk to rotate with the platen, and gravity-acting means for restoring the disk to its starting position when released from the shaft.

7. The combination with a rotative platen and its shaft, of a disk rotative on the shaft, two pointers, one fixed to the disk and the other angularly adjustable relatively to the disk, and means for locking said disk to the shaft comprising a sleeve having endwise-movable but non-rotative engagement with the shaft, and coacting clutch elements carried by said sleeve and the disk.

8. The combination with a rotative platen and its shaft, of a disk rotative on the shaft, two pointers, one fixed to the disk and the other angularly adjustable relatively to the disk, means for locking said disk to the shaft comprising a sleeve having endwise-movable but non-rotative engagement with the shaft, and coacting clutch elements carried by said sleeve and the disk, and automatic means for restoring the disk to its starting position when released from the shaft

9. The combination with a rotative platen and its shaft, of a disk rotative on the shaft, two pointers, one fixed to the disk and the other angularly adjustable relatively to the disk, a clutch for locking said disk to the shaft, and means for yieldingly holding said clutch in its clutching position and also for yieldingly holding it in its releasing position.

811,173. **PAPER-MOVEMENT INDICATOR FOR TYPE-WRITERS.** CHARLES C. POOLE, Evanston, Ill., assignor to Oliver Typewriter Company, Chicago, Ill., a Corporation of Illinois. Filed Feb. 23, 1905. Serial No. 247,007.

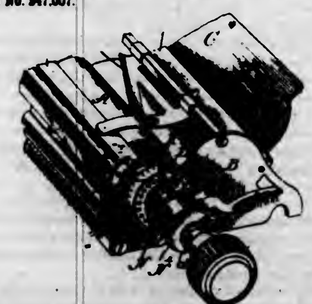

Claim.—1 The combination with a rotative platen, of two pointers which turn with and have angular adjustment relatively to the platen and have also angular adjustment relatively to each other, and means for positively locking said pointers to rotate with the platen.

2. The combination with a carriage-frame and a rotative platen, of a pointer on the frame, and two pointers which turn with and have angular adjustment relatively to the platen, and have also angular adjustment relatively to each other, and means for positively locking said pointers to turn with the platen.

3. The combination with a rotative platen and its shaft, of two pointers rotative on the shaft and adapted for angular adjustment with respect to each other and a positively-operating clutch device for locking said pointers to the shaft to rotate therewith.

4. The combination with a rotative platen and its shaft, of a part rotative on said shaft, two pointers, one fixed to said part, and the other angularly adjustable thereon, and a positively-operating clutch device for locking said part to the shaft.

5. The combination with a rotative platen and its shaft, of a part rotative on said shaft, two pointers, one fixed to said part and the other angularly adjustable thereon, and a positively-operating spring-pressed clutch for locking said part to the shaft.

6. The combination with a rotative platen and its shaft, of a disk rotative on said shaft, two pointers, one of which is fixed to the disk and the other of which has angular adjustment on the disk, an endwise-sliding sleeve on said shaft having interlocking but non-rotative connection with said disk, and a clutch member on said sleeve adapted to engage a complemental clutch member on the shaft.

7. The combination with a rotative platen and its shaft, of a disk rotative on said shaft, two pointers, one of which is fixed to the disk and the other of which has angular adjustment on the disk, an endwise-sliding sleeve on said shaft having interlocking but non-rotative connection with said disk, and a clutch member on said sleeve adapted to engage a complemental clutch member on the shaft, said sleeve being provided with a flange affording a finger-hold by which the sleeve may be operated.

8. The combination with a rotative platen and its shaft, of a disk rotative on said shaft and provided with circumferential scale marks or graduations, a pointer carried by and having angular adjustment on said disk and a positively-operating clutch device for locking said disk to the shaft.

9. The combination with a rotative platen and its shaft, of a disk rotatively mounted on said shaft and provided with a hub, a part rotative on said hub and carrying a pointer, said pointer being otative with respect to the disk, means for locking said pointer to the disk, and a positively-operated clutch device for locking the disk to said shaft.

10. The combination with a rotative platen and its shaft, of a disk rotatively mounted on said shaft and provided with a hub, a part rotative on said hub and carrying a pointer, said pointer being rotative with respect to the disk, means for locking said pointer to the disk, and a clutch device for locking the disk to said shaft, embracing an endwise-sliding sleeve on the shaft having endwise-movable but non-rotative connection with said hub, said sleeve being provided with one of the members of a clutch adapted to engage a complemental clutch member on the shaft.

11. The combination with a rotative platen and its shaft, of a disk rotative on said shaft and provided with a hub, two pointers one fixed to said disk and the other having angular adjustment relatively thereto, and a clutch for locking said disk to the shaft comprising a sleeve having bearing on the shaft and surrounding and having endwise-movable but non-rotative connection with the hub of said disk, said sleeve being provided at one end with clutch-teeth adapted to engage clutch-teeth carried by a part rotating with the shaft, and a spring interposed between said hub and a shoulder in said sleeve for holding said clutch-teeth in engagement.

811,174. **BEVELING-MACHINE.** LOWELL H. RICE, Chicago, Ill., assignor to Metal Sectional Furniture Company, a Corporation of Maine. Filed Feb. 16, 1903. Serial No. 143,836.

Claim.—1. A feed-table for a beveling-machine consisting of a table supported by a block superposed upon another block and which blocks are adjustably fitted to each other by respective convex and concave surfaces, and means for actuating said blocks.

2. In a machine for beveling millboards and the like, the combination with, a feed-table, a back guide, a clamp and means for actuating said clamp, of means for cutting one or more millboards comprising a horizontal straight-edge, and a knife set at an angle with said straight-edge, and coacting with the same and movable in a perpendicular plane, and means for lowering and raising said knife.

3. In a machine for beveling millboards and the like, the combination with a horizontal straight-edge or ledger-blade, and a corresponding knife set on an angle to said ledger-blade, and movable in a perpendicular plane, and means for actuating said movable knife, of

a feed-table comprising a flat table supported by a block superposed upon another block and which blocks are adjustably fitted to each other by respective convex and concave surfaces, and means for actuating said adjustable blocks.

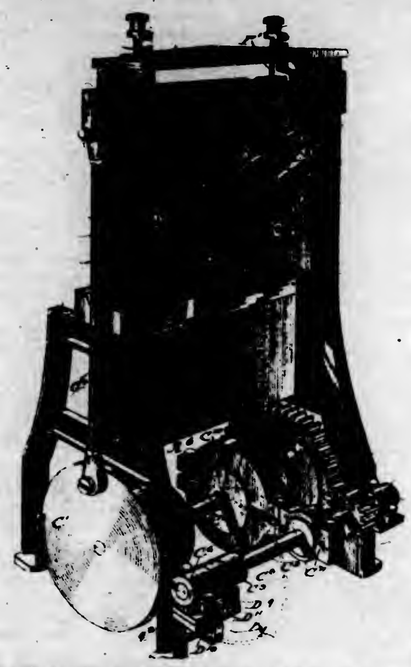

4. In a machine for beveling millboards and the like, the combination with cutting-knives, and means for operating the same of a feed-table supported by a block superposed upon another block, and which block in turn rests upon the frame of the machine; the said blocks being adjustably fitted to each other by a respective convex and concave surface, which forms the segment of a circle of which the edge of the feed-table lying nearest to the cutting-plane is the center, and means for securing said blocks together.

5. In a machine for beveling millboards and the like, the combination with cutting-blades, one stationary and the other movable in a perpendicular plane, a feed-table and means for actuating said blades, of an adjustable back guide, consisting of two parallel plates, one of which is secured to the frame of the said movable knife, and the other adjustably attached to the said secured plate and extending toward the cutting-plane from that side of the cutting-plane opposite to the feed-table, and means for actuating said adjustable guide.

6. In a machine for beveling millboards and the like, the combination with cutting-knives, an adjustable feed-table, and means for operating said knives and means for actuating said feed-table, of a back guide consisting of two plates lying opposite to said feed-table and on the opposite side of the cutting-plane of said knives, one of said plates being secured to the frame of one of the said knives and the other lying between said secured plate and the cutting-plane of said knives and being adjustably secured to said secured plate, and means for advancing said adjustable plate toward and retiring it from said cutting-plane.

7. In a beveling-machine, a feed-table consisting of a table secured at its rear end to a block fitted with a convex surface, the forward end of said table being free; a block secured to the frame of said machine and fitted with a concave surface, said convex and concave surfaces having adjustable engagement with each other.

8. In a beveling-machine, a feed-table consisting of a table having its forward end free from securement, and being secured at its rear end to a block superposed upon another block, which latter block is attached to the frame of said machine, and which blocks are fitted respectively with convex and concave surfaces at the point of contact with each other, and means for adjusting said blocks in their relation with each other, and with the frame of the said machine

811,175. LEVEL. JOHN T. REESE, Oil City, Pa. Filed Nov. 10 1904. Serial No. 232,282.

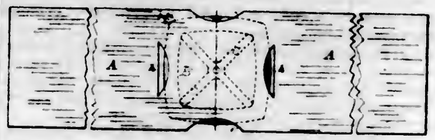

Claim.—The plumb and level herein described, consisting of the stock, provided with a cavity, containing the rectangular or square tube B, which contains a solid body of fluid, and the indicating-bubble, that can freely circulate therein, in combination with the brace C and set-screw *f*, all arranged as shown and specified.

811,176. PIANO MACHINE-HEAD FOR PUNCHING JACQUARD-CARDS. VERNON R. ROYLE, Paterson, N. J. Filed Jan. 13 1904. Serial No. 188,901.

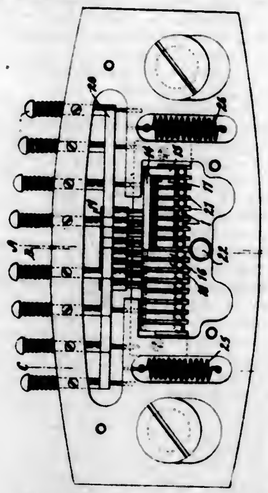

Claim.—1. The combination with the punches and slides for locking and releasing the punches, of tie-bars rigidly connecting a plurality of slides, operating-keys and links of different lengths for connecting the keys with the tie-bars.

2. The combination with the punches and slides arranged to lock and release the punches, of tie-bars connecting non-adjacent slides to move in unison, operating-keys and links of different lengths for connecting the operating-keys with the tie-bars for placing the slides under the control of the keys.

3. The combination with the punches and slides for locking and releasing the punches, certain of the slides being provided with recesses in their lower ends and resting normally in locking position while other slides rest normally out of locking position, of tie-bars each arranged to connect one of the slides which is normally out of locking position with a slide normally in locking position, operating-keys and links of varying lengths for connecting the operating-keys with the tie-bars to simultaneously move the slides in the same direction one into and another out of locking position.

4. The combination with the punches and the slides arranged to lock and release the punches, of tie-bars each connecting a plurality of slides, operating-keys and links of varying lengths for connecting the keys with the tie-bars whatever may be the position of the keys with respect to the tie-bars.

5. The combination with the body of the head, the punches, slides for locking and releasing the punches and a slide-supporting plate or bolster separate from the head and located therein and provided with guide-flanges for directing the movements of the slides, of tie-bars connecting the slides in groups and extending along recesses formed in intermediate slides and means for operating the tie-bars and hence the slides.

811,177. PINION-GUARD FOR CIRCULAR LOOMS. VERNON ROYLE, Paterson, N. J. Filed June 17, 1904. Serial No. 212,926.

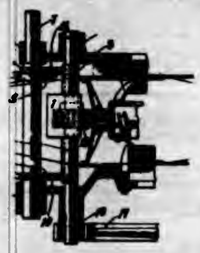

Claim.—1. The combination with a shuttle-driving pinion of a circular loom and its upright shaft, of an upright support spaced from the spindle and a pinion-guard mounted on the said upright support and comprising hollow sections adapted to swing toward and away from each other into and out of position in proximity to the said driving-pinion.

2. A pinion-guard comprising hollow sections provided with laterally-extending arms for hinging the sections to a support and means for locking the sections in closed adjustment under the influence of gravity.

3. A pinion-guard comprising hollow sections provided with laterally-extending arms for hinging them to a support and a notched arm for receiving the arms on the sections to hold the sections in closed adjustment.

4. The combination with an upright support, an upright shaft spaced from the upright support and a pinion on the shaft, of a pinion-guard comprising hollow body portions for housing the pinion and laterally-extending arms provided with rings for embracing the upright support and a collar adjustably secured to the upright support for holding the guard-sections against a downwardly-sliding movement of the upright support, the said collar being provided with a notched arm projecting therefrom for locking the guard-sections in closed adjustment under the influence of gravity.

811,178. LADY'S AUTOMOBILE-HAT. HORACE A. SAKS, New York, N. Y., assignor to Saks & Company, New York, N. Y., a Corporation of New York. Filed Sept. 12, 1905. Serial No. 278,093.

Claim.—1. An automobile-hat comprising a crown, a brim arranged to swing down at an angle thereto, and a shield attached to the crown and brim for closing the space between the crown and brim when the brim is lowered.

2. An automobile-hat comprising a crown, a brim arranged to swing down at an angle thereto, and a shield attached to the crown and brim for closing the space between the crown and brim when the brim is lowered, the said shield being arranged to fold between the crown and brim when the brim is raised.

3. An automobile-hat comprising a crown, a brim arranged to swing down at an angle thereto, and a shield attached to the crown and brim for closing the space between the crown and brim when the brim is lowered, and means for removably holding the brim in its raised position.

4. An automobile-hat comprising a crown, a brim arranged to swing down at an angle thereto, a shield attached to the crown and brim for closing the space between the crown and brim when the brim is lowered, said shield being arranged to fold between the crown and brim when the brim is raised, and means for removably holding the brim in its raised position.

5. An automobile-hat comprising a crown, a brim hinged to the front of the crown and a loose shield attached to the brim and crown.

811,179. CONFECTIONER'S WORK-TABLE. LORENZ SCHMIDT, Milwaukee, Wis. Filed Feb. 2, 1905. Serial No. 243,896.

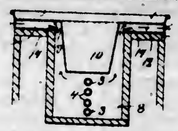

Claim.—A work-table provided with a working-slab and a heating-space therebelow, said slab being formed with an opening, in combination with a chocolate-pan provided with extensions formed with damper-controlled air-flues, said pan adapted to depend through said opening into said space, and means for heating the air in said space.

811,180. CONVEYER. ARCHIBALD W. F. STRUKEL, Columbus, Ohio, assignor to Joseph A. Jeffrey, Columbus, Ohio. Filed Jan. 6, 1903. Serial No. 138,043.

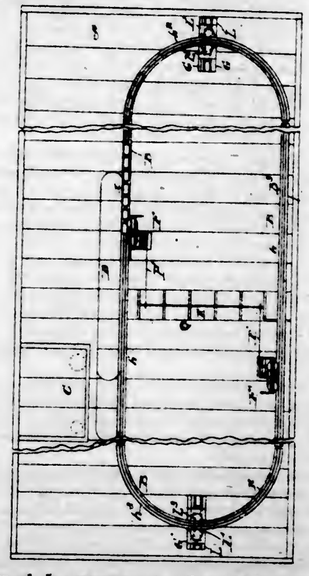

Claim.—1. In a conveyer system, the combination of an endless series of conveyer elements connected together and arranged to travel continuously in a horizontal plane, the guiding devices for changing the direction of travel of elements at either end of the system, and the two-part driving mechanism, each part comprising an endless series of elements arranged to travel continuously in horizontal planes and to engage with and travel parallel to the inner sides of said conveyer elements while advancing them, one part of said driving mechanism being arranged to engage with the conveyer on one side of its course, and the other part being arranged to engage with the conveyer on the opposite side of its course, substantially as set forth.

2. In a conveyer apparatus the combination of the endless series of conveyer elements, the guiding devices therefor arranged to provide two rectilinear sections of the path or circuit for the conveyer, and two curved sections, two sets of driving devices, one engaging with one of the rectilinear sections of the conveyer and the other engaging with the other rectilinear section, independently of the curved or turning sections thereof, substantially as set forth.

3. In a conveyor system the combination of the endless series of conveyor elements arranged to travel continuously in horizontal planes, the guiding devices therefor arranged to provide rectilinear sections at the sides of the path-circuit for the conveyor and two curved sections at the ends of the said circuit, and a driver for the conveyor having conveyor-engaging devices which travel continuously in horizontal planes and rectilinearly in parallelism with the rectilinear sections of the conveyor for a portion of their length, substantially as set forth.

4. In a conveyor apparatus the combination of the endless series of conveyor elements, the guiding devices therefor arranged to provide two curvilinear end sections of the path or circuit for the conveyor system, means for adjusting one of the curved sections of the guide toward and from the other curved section, and a driver for the conveyor arranged to engage with that section of the conveyer which is between the two curved end sections, substantially as set forth.

5. In a conveyor apparatus the combination of the endless series of conveyer elements, the guide therefor arranged to provide two curved end sections for the path or circuit of the conveyer, and a rectilinear section between them, a driving device for the conveyer which engages therewith at the said intermediate section, and means for adjusting bodily one or both of the curved end sections of the guide independently of the driving device, substantially as set forth.

6. In a conveyor of the character described the combination with an endless series of flexibly-connected cars or conveyer elements, of unflanged supporting-wheels upon which said cars or elements rest, said wheels being peripherally flared or tapered where they rest upon guide-rails, substantially as set forth.

7. In a conveyer of the class described, the combination with the cars or conveyer elements and the vertically-rotating supporting-wheels at the bottoms of the cars or conveyer elements, of the chain-links secured to said cars at one side thereof and above the horizontal planes of the axles of said supporting-wheels, each of said links carrying a series of draft-receiving elements the links flexibly connecting the adjacent ends of adjoining cars or conveyer elements together, and the driving-chain having laterally-projecting lugs adapted to engage with the links on said cars or conveyer elements, substantially as set forth.

8. In a conveyer of the class described the combination with an endless series of cars or conveyer elements and the rectilinearly-moving driver, of the means flexibly connecting each car or conveyer to the next, and a series of driving devices arranged longitudinally on each car or element and held permanently in a straight line, and rigidly relative to the said car or element, substantially as set forth.

9. In a conveyer of the class described the combination with the endless series of cars or conveyer elements flexibly connected together and the driving-chain having driving devices which move in straight lines while in action, of the series of driving devices carried by the car arranged longitudinally thereon and held thereon in a straight line, rigidly relative to said car or element, substantially as set forth.

10. The combination with the cars or conveyer elements and the driving mechanism having drivers which travel in substantially straight lines while in action, of the longitudinally-arranged series of pins or lugs j^3 secured to each car and held rigidly in line thereon, substantially as set forth.

11. In a conveyer of the class described the combination with the cars or conveyer elements flexibly connected together in endless series, of the driving devices moving in horizontal planes, relatively near the tops of the cars or conveyer elements, the vertically-rotating supporting-wheels at the bottoms of the cars or conveyer elements and the horizontally-rotating wheels arranged in horizontal planes relatively near the planes of power application, substantially as set forth.

12. In a guideway for the elements of a conveyer system, the combination of the rectilinear side sections, and the curvilinear end sections formed independently of said side sections and bodily adjustable relatively to said side sections, substantially as set forth.

13. In a conveyer system, the combination of the fixed sections of trackway arranged at either side of the path-circuit of the system, the curvilinear end sections and means for bodily adjusting said end sections relative to said fixed sections, substantially as set forth.

14. In a conveyer system, the combination of the fixed sections of trackway arranged at either side of the path-circuit of the system, the curvilinear end sections completing the path-circuit from one of said sides to the other, and means for adjusting the said end sections relative to the said fixed sections comprising the bed-plate L, the sliding plate L' mounted thereon and the sleeper L^2 pivotally mounted on said sliding plate, the said curved trunk-sections being pivotally secured to the said sleeper, substantially as set forth.

15. In a trackway for a conveyer system, the combination of the fixed sections forming the sides of the path-circuit of the conveyer, the curvilinear section arranged to connect the said fixed sections and means for adjusting the said curvilinear section bodily relative to said fixed sections, the curvilinear section being mounted upon said adjusting means so as to be free to swing bodily about a vertical axis, substantially as set forth.

811,181. GAS-COMPRESSOR. LOUIS STERNE, London, England. Filed Aug. 18, 1904. Serial No. 221,279.

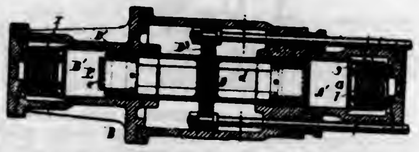

Claim.—1. A double-acting gas-compressor, composed of two tandem single-acting single-stage compressor-cylinders, each having a delivery-valve at its outer end, a gas-tight casing of larger diameter connecting the adjacent inner ends of the cylinders, a return-gas inlet to the casing, two connected hollow trunk-pistons working in the respective cylinders, each such piston carrying a suction-valve and apertured to afford communication between the casing and the valve, radial arms on the pistons, and piston-rods connected to the arms and passing through lateral stuffing-boxes at one end of the casing, whereby the cylinders, pistons and piston-rods are kept at a moderate uniform low temperature.

2. A double-acting gas-compressor, composed of a gas-tight casing provided with a return-gas inlet, compressor-cylinders closed at their outer ends only and there provided with delivery-valves and arranged in line with each other at opposite ends of said casing with their respective open ends turned toward the center of said casing, pistons provided with suction-valves and united to each other by an interposed connection in said casing, each of said pistons working in the corresponding compression-cylinder and each admitting the gas through its interior directly into such cylinder from said casing, and piston-rods connected inside said casing with said pistons and reciprocating endwise in stuffing-boxes on said casing, substantially as described.

3. A double-acting gas-compressor, composed of a gas-tight casing provided with a return-gas inlet, compressor-cylinders closed at their outer ends only and there provided with delivery-valves and arranged in line with each other at opposite ends of said casing with their respective open ends turned toward the center of said casing, hollow trunk-pistons provided with suction-valves and united to each other by an interposed integrally-formed open-sided hollow connection in said casing, each of said pistons working in the corresponding compression-cylinder and each admitting the gas through its interior directly into such cylinder from said casing, and the walls of said hollow connection being in line with the walls of said hollow trunk-pistons, and piston-rods connected inside said casing with said pistons and reciprocating endwise in stuffing-boxes on said casing, substantially as described.

811,182. TYPE-WRITING MACHINE. BURNHAM C. STOCKNEY, Elizabeth, N. J., assignor to Underwood Typewriter Company, New York, N. Y., a Corporation of New Jersey. Filed Dec. 16, 1903. Serial No. 185,261.

Claim.—1. In a type-writing machine, the combination with a type-bar of a movable inelastic metallic member forming a rest therefor.

2. In a type-writing machine, the combination with a type-bar of a movable lead rest therefor.

3. In a type-writing machine, the combination with a series of type-bars of a movable ring of lead forming a rest therefor.

4. In a type-writing machine, the combination with a series of type-bars of an inelastic metal rest therefor provided with a facing of fibrous material.

5. In a type-writing machine, the combination with a series of type-bars of a rest therefor consisting of inelastic metal faced with leather.

6. In a type-writing machine, the combination with a series of type-bars of a rest therefor consisting of inelastic metal faced with tough, pliant, inelastic material.

7. In a type-writing machine, the combination with a type-bar of a rest therefor consisting of a body of inelastic metal and a facing of tougher pliant inelastic material.

8. In a type-writing machine, the combination with a series of radially-disposed type-bars of a curved bar of inelastic material forming a rest for said type-bars and faced by a strip of tougher, pliant material.

9. In a type-writing machine, the combination with a type-bar of a movable inelastic metallic member forming a rest therefor and having a facing of tough, pliant material.

10. In a type-writing machine, the combination with a type-bar of a movable inelastic metallic member forming a rest therefor and having a facing of tough, inelastic, pliant material.

11. In a type-writing machine, the combination with a series of type-bars of a bar of inelastic metal faced with inelastic belt-lacing and forming a rest for said type-bars.

12. In a type-writing machine, the combination with a series of type-bars of a curved bar of lead having a facing of yielding fibrous material and forming a rest for said type-bars.

13. In a type-writing machine, the combination with a series of type-bars of a bar of lead faced with inelastic belt-lacing and forming a rest for said type-bars.

14. In a type-writing machine, the combination with a series of type-bars of a rest therefor comprising portions of lead and fibrous material.

15. In a type-writing machine, the combination with a type-bar of a rest therefor consisting of lead faced with tougher pliant material.

16. In a type-writing machine, the combination with a type-bar of a movable rest therefor consisting of lead faced with tough material.

17. In a type-writing machine, the combination with a series of type-bars of a curved movable lead bar faced with tough material and forming a rest for said type-bars.

18. In a type-writing machine, the combination with a series of type-bars of a movable lead bar faced with tough, pliant, fibrous material and forming a rest for said type-bars.

19. In a type-writing machine, the combination with a series of type-bars of a ring of lead having a facing of inelastic belt-lacing and forming a rest for said type-bars.

20. In a type-writing machine, the combination with a series of type-bars of a ring of lead faced with tough, wear-resisting material, and forming a rest for said type-bars.

21. In a type-writing machine, the combination with a series of type-bars of a movable ring of lead faced with tough, pliant, wear-resisting material and forming a rest for said type-bars.

22. In a type-writing machine, the combination with a series of type-bars of a rest therefor consisting of inelastic metal confined within a casing of inelastic pliant material.

23. In a type-writing machine, the combination with a series of type-bars of a rest therefor consisting of inelastic metal incased in inelastic leather.

24. In a type-writing machine, the combination with a series of radially-disposed type-bars of a curved bar of pliant, inelastic material, overwound with a strip of tougher pliant material, and forming a rest for said type-bars.

25. In a type-writing machine, the combination with a series of type-bars of a bar of inelastic metal overwound with inelastic belt-lacing and forming a rest for said type-bars.

26. In a type-writing machine, the combination with a series of type-bars of a curved bar of lead overwound with tough material and forming a rest for said type-bars.

27. In a type-writing machine, the combination with a series of type-bars of a curved bar of lead overwound with inelastic belt-lacing.

28. In a type-writing machine, a type-rest consisting of lead incased in inelastic flexible material.

29. In a type-writing machine, a movable curved rest for type-bars, consisting of lead incased in pliant tough material.

30. In a type-writing machine, a movable type-rest consisting of a ring of lead inclosed in a casing of tough pliant material.

31. In a type-writing machine, a type-rest consisting of a ring of lead overwound with inelastic belt-lacing.

32. In a type-writing machine, the combination with a series of type-bars of a rest therefor consisting of inelastic metal having a backing of stiff metal, the latter being fixed, and the inelastic metal being capable of a limited movement when struck by the type-bars.

33. In a type-writing machine, the combination with a type-rest consisting of inelastic metal and capable of limited movement under the impact of the type-bars, of a fixed rest for said movable rest.

34. In a type-writing machine, the combination of a series of type-bars, a curved pliant movable inelastic bar forming a rest therefor, and a fixed backing of stiffer metal.

35. In a type-writing machine, the combination of a series of type-bars, a movable lead rest therefor, and a fixed backing for the lead.

36. In a type-writing machine, the combination with a series of type-bars of a movable lead ring forming a rest therefor, and a fixed ring of stiffer metal inclosing said lead ring.

37. In a type-writing machine, the combination with a series of type-bars of a rest therefor consisting of inelastic pliant metal faced with tough, pliant material and having a backing of stiff metal.

38. In a type-writing machine, the combination of a series of type-bars, a curved pliant inelastic metal bar forming a rest therefor and provided with a facing of tough pliant material, and a fixed bar forming a backing for said pliant bar.

39. In a type-writing machine, the combination of a series of type-bars, a lead rest therefor faced with tougher pliant material, and a stiff backing for said rest.

40. In a type-writing machine, a type-bar rest consisting of flexible material housing a metal strip which is inelastic.

41. In a type-writer, in combination with the ends of the type-bars that carry the printing characters, a yielding non-resilient pad constructed of thin flexible metal yieldingly supported and arresting the type-bars without causing them to rebound.

42. A type-writer pad constructed of thin, flexible, but non-resilient, metal, yieldingly supported.

811,183. TYPE-WRITING MACHINE. BURNHAM C. STOCKNEY, Elizabeth, N. J., assignor to Underwood Typewriter Company, New York, N. Y., a Corporation of New Jersey. Original application filed Dec. 16, 1903. Serial No. 185,261. Divided and this application filed June 1, 1905. Serial No. 260,599.

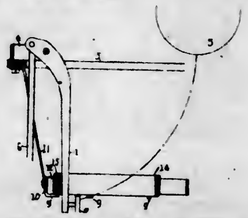

Claim.—1. In a type-writing machine, the combination with a series of type-bars of a rest therefor consisting of inelastic material confined within a casing of inelastic pliant material.

2. In a type-writing machine, a type-bar rest consisting of a casing and sand contained therein.

3. In a type-writing machine, a curved type-bar rest consisting of a casing of pliant material and a filling of granular material.

4. In a type-writing machine, the combination with a series of type-bars of a pliant member forming a rest for the type-bars, and a fixed member forming a backing for said pliant member, the latter being capable of a limited bodily movement under the impact of the type-bars.

5. In a type-writing machine, the combination with a series of type-bars of a rest therefor consisting of finely-divided material within a casing of pliant inelastic material, and a fixed curved bar forming a backing for said rest.

6. In a type-writer, a cushion constructed of a yielding sheath and a yielding and non-resilient filling, producing a pad that is absorbent of the energy of the blow struck by the type-bar, and non-resilient under said blow.

7. In a type-writer, a yielding inelastic cushion to support the type-bars in their normal position, consisting of a sheath, and a filling made of finely-divided material.

8. A type-bar cushion comprising a yielding

8. A type-bar cushion comprising a yielding striking-surface and an inherently non-resilient shock-absorbing medium beneath the striking-surface.

9. A type-bar cushion comprising a yielding striking-surface and an inherently non-resilient shock-absorbing medium beneath the striking-surface and movably supporting the same.

10. A type-bar cushion comprising a striking surface or facing of yielding material, said material being sufficiently yielding to prevent sudden arrest and consequent rebound or springing of the type-bars, and a non-resilient shock-absorbing backing for said facing, said backing being sufficiently non-resilient to absorb the energy of the returning type-bars, and being also movable so that both the facing and the backing may be displaced by the impacts of the type-bars; said cushion being sufficiently yielding and non-resilient to prevent injurious rebounding of the type-bars therefrom.

11. A type-bar cushion comprising a yielding facing of tough material, said facing being inelastic and pliant, and a yielding inelastic shock-absorbing backing; said cushion being sufficiently yielding, inelastic and shock-absorbing to prevent injurious rebounding of the type-bars.

12. A type-bar cushion comprising a facing of inelastic, pliant leather, and a yielding, inelastic shock-absorbing backing; said cushion being sufficiently yielding, inelastic and shock-absorbing to prevent injurious rebounding of the type-bars.

811,184. ENGINE. HENRY A. SWANTON, Roxbury, Mass. Filed Sept. 22, 1905. Serial No. 279,022.

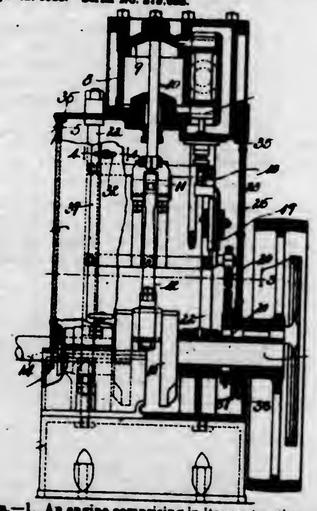

Claim.—1. An engine comprising in its construction a cylinder, and a bed, in combination with a detachable casing comprising two side sections and two end sections, adapted to be fastened to the frame of said engine, each of said sections consisting of two sheets of metal fastened together and having an air-space therebetween, said sections extending across the space between said cylinder and bed and inclosing the moving parts of said engine located between said cylinder and bed.

2. An engine comprising in its construction a cylinder, a piston and a piston-rod, a main crank-shaft, connections from said main crank-shaft to said piston-rod, a bed in which said shaft is journaled, a frame consisting of a plurality of rods rectangular in cross-section connecting said bed and cylinder together, and a detachable casing comprising two side sections and two end sections fastened to said rods, each of said sections consisting of two sheets of metal fastened together and having an air-space therebetween, said sections extending across the space between said cylinder and bed and inclosing said moving parts of said engine, and metal bands fast to said side sections upon opposite edges thereof and projecting outwardly therefrom across the spaces between the adjacent edges of said side and end sections.

3. An engine comprising in its construction a cylinder, a piston and a piston-rod, a main crank-shaft, connections from said main crank-shaft to said piston-rod, a bed in which said shaft is journaled, a frame consisting of a plurality of rods rectangular in cross-section connecting said bed and cylinder together, and a detachable casing comprising two side sections and two end sections fastened to said rods, each of said sections consisting of two sheets of metal fastened together and having an air-space therebetween, said sections extending across the space between said cylinder and bed and inclosing said moving parts of said engine, recesses provided in said cylinder and bed into which the top and bottom of said sections, respectively, project, and a rib extending inwardly from the upper edge of said base, the inner sheets of said sections projecting downwardly along their lower edges against the inner face of said rib.

4. An engine comprising in its construction a cylinder, a piston and a piston-rod, a main crank-shaft, connections from said main crank-shaft to said piston-rod, a bed in which said shaft is journaled, a frame consisting of a plurality of rods connecting said bed and cylinder together, and a detachable casing comprising two side sections and two end sections fastened to said rods, each of said sections consisting of two sheets of metal fastened together and having an air-space therebetween, said sections extending across the space between said cylinder and bed and inclosing said moving parts of said engine, and oil-guards fast to said rods and extending longitudinally thereof adjacent to the inner faces of the inner sheets of said sections.

811,185. CHECK-VALVE. FRANK B. THE RICK, Auburn, N. Y. Filed Nov. 10, 1902. Serial No. 130,730.

Claim.—1. A check-valve for air-compressors comprising a shell having an inlet and valve-seat in one end and an outlet in one side and formed with a central bore, and an annular seat at one end of the bore between the inlet and outlet, a bushing having an air-tight fit in said bore and formed with a central guide-opening of less diameter than the inlet and communicating with the outlet, a valve playing between the inlet and adjacent end of the bushing and provided with an annular groove facing the valve-seat at the inlet, said valve having a hollow tubular stem fitting with an air-tight fit in the central opening of the bushing and having lateral passages leading from its interior to the annular groove, the interior of the tubular stem also communicating with the outlet.

2. A check-valve for air-compressors comprising a shell having an inlet and an outlet and provided with a valve-bore of greater diameter than the inlet, a bushing fitting in the shell and having a central opening of less diameter than the valve-bore, an inlet-valve fitting air-tight in the valve-bore and having an annular groove facing the valve-seat, said valve playing between the inlet and adjacent end of the bushing and having a hollow stem fitting with an air-tight sliding fit in the central opening of said bushing and having its interior communicating with said annular groove and outlet.

3. A check-valve comprising a shell having an inlet and an outlet, a valve seated in the inlet and having a lateral passage opening to the inlet when the valve is open, said valve having a sliding air-tight fit in the shell between the seat and outlet and provided with a reduced hollow stem having one end communicating with said passage and its other end opening to the outlet, and a bushing fitted air-tight in the shell and having a guide-opening receiving the valve-stem and forming an air-tight joint therewith, and an annular shoulder in the shell between the valve-seat and outlet to limit the endwise movement of the bushing, said bushing coöperating with the valve to limit its movement.

811,186. CLEAT AND SOCKET. CHARLES M. WAITE and CHARLES F. FRALICK, New York, N. Y. Filed Apr. 14, 1905. Serial No. 255,607.

Claim.—1. In a device of the character described, the combination with a two-part cleat, of a socket carried by one side of said cleat, terminals arranged in said socket and a pair of weatherproof rings, one of which lies between one of said terminals and the wall of said socket, and the other of which encircles said socket.

2. In a device of the character described, a two-part cleat formed of weatherproof material, the members of said cleat being provided with opposed shallow depressions in their engaging faces for the reception of an electrical conductor, said members being further provided with alined openings, means for securing the cleat to a fixed support and simultaneously exerting a clamping pressure upon said electrical conductor, a socket integral with one of the members of the said cleat, terminals to which electrical conductors may be secured, means for insulating one of the terminals from the walls of the socket, and means secured to the outside of the socket adapted to protect the metallic parts of the socket and the lamp held therein.

3. In a cleat for supporting electrical conductors, a pair of cleat members, a weatherproof socket secured to one of the members, electric conductors leading into the socket, terminals to which the conductors are secured, means for insulating one of the terminals from the walls of the socket, and means secured to the outside of the socket adapted to protect the metallic parts of the socket and the lamp held therein.

811,187. HOOK. WILLIAM S. WARD, Plantsville, Conn., assignor to H. D. Smith & Company, Plantsville, Conn., a Corporation. Filed May 17, 1905. Serial No. 260,573.

Claim.—1. A hook having a flattened shank and an integral head of the same size and form in side view as the adjacent portion of the handle, bosses on the sides of the said head, a handle-rod mounted in the said bosses, and handle-woods secured upon the said handle-rod on the opposite sides of the said head.

2. A hook having a shank and a head integral with the said shank, a handle-rod mounted in the said head and projecting in both directions therefrom, handle-woods mounted on the said handle-rod on each side of the said head, and caps on the ends of the said handle-rod to hold the said woods in place, the sides of the said head and caps being undercut and the ends of the handle-woods beveled to set into the said undercut sides.

3. A hook having a flattened shank and a head of the same size and form in side view as the adjacent portion of the handle, bosses on the sides of the said head having threaded holes, a two-part handle-rod, each part having one end screw-threaded to fit into the said bosses, and having a cap at its other end, and handle-woods secured upon the two parts of the said handle-rod.

811,188. FLUID-LEVEL-CONTROLLING MEANS. JOHN B. WARING, East Orange, N. J., assignor to Waring Patents Company, New York, N. Y., a Corporation of New York. Filed Mar. 11, 1904. Serial No. 197,734.

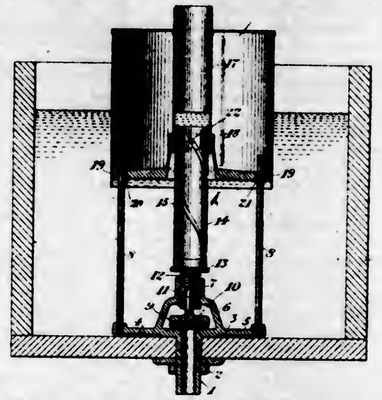

Claim.—1. Means for controlling the fluid-level of a reservoir comprising a float, a valve member, a stationary member having a helical engagement with the valve member and supporting the member to travel axially in a substantially vertical direction, when rotated, and a valve controlled by the valve member, the float having a direct connection with the valve member whereby the rise and fall of the float will operate the valve member in its support and control the valve.

2. Means for controlling the fluid-level in a reservoir comprising a float member, guiding means for restraining the rotation thereof, a rotatable valve member, the float member and valve member having a helical engagement, and a valve controlled by the valve member.

3. Means for controlling the fluid-level of a reservoir comprising a hollow inverted float member, guiding means for restraining the rotation thereof, a rotatable valve member arranged to enter within the hollow float member, the float member and valve member having a helical engagement, and a valve controlled by the valve member.

4. Means for controlling the fluid-level of a reservoir comprising a float member, guiding means for restraining the rotation thereof, a rotatable valve member, the float member and valve member having a helical engagement, a threaded part on the valve member and a threaded stationary socket therefor, and a valve controlled by the valve member.

5. Means for controlling the fluid-level of a reservoir comprising a hollow inverted float member, guiding means for restraining the rotation thereof, a rotatable valve member arranged to enter within the hollow float member, the float member and valve member having a helical engagement, a threaded part on the valve member and a threaded stationary socket therefor, and a valve controlled by the valve member.

6. Means for controlling the fluid-level of a reservoir comprising a float member, guiding means for restraining the rotation thereof, a rotatable valve member, the float member and valve member having helical engagement, whereby the rise and fall of the float member is converted into rotary movement of the valve member, a stationary socket for the valve member, the valve member and socket having a helical engagement of a pitch considerably less than that of the helical engagement of the float member and valve member, whereby the rotary movement of the valve member is converted into a rise and fall of the valve member of considerable less extent than the rise and fall of the float member, and a valve controlled by the valve member.

7. Means for controlling the fluid-level of a reservoir comprising a hollow inverted float member, guiding means for restraining

the rotation thereof, a rotatable valve member arranged to enter within the hollow float member and having helical engaging parts, the float member having means coacting with the helical engaging parts of the valve member to convert the rise and fall of the float member into rotary movement of the valve member, a stationary socket for the valve member, the valve member and socket having helical engaging parts of a pitch in the same direction as and considerably less than that of the helical parts engaged by the float member, whereby the rotary movement of the valve member is converted into a rise and fall of the valve member with augmentation of the rotative effect due to the rise and fall of the float member, and a valve controlled by the valve member.

8. The combination, with a fluid-reservoir, of a hollow inverted float having a cross-piece at its lower end, guiding means for restraining the rotation of the float, a rotatable valve member arranged to enter within the hollow float, the cross-piece of the float and the rotatable valve member having a helical engagement, and a valve controlled by the valve member.

9. The combination with a fluid-reservoir, of a hollow inverted float having a cross-piece at its lower end, guiding means for restraining the rotation of the float, a rotatable valve member having helical slots, the cross-piece of the float having projecting means engaging such helical slots, and a valve controlled by the valve member.

10. The combination with a fluid-reservoir, of a hollow inverted float having a cross-piece at its lower end, guiding means for restraining the rotation of the float, a rotatable valve member having helical slots, the cross-piece of the float having projecting means engaging such helical slots, a threaded part on the valve member and a threaded stationary socket therefor, and a valve controlled by the valve member, substantially as set forth.

11. The combination with a fluid-reservoir, of a hollow inverted float having a cross-piece at its lower end, guiding means for restraining the rotation of the float, a rotatable valve member having helical slots, the cross-piece of the float having projecting means engaging such helical slots, whereby the rise and fall of the float is converted into rotary movement of the valve member, a stationary socket for the valve member, the valve member and socket having helical engaging parts of a pitch in the same direction as but considerably less than that of the helical slots, whereby the rotary movement of the valve member is converted into a rise and fall of the valve member with augmentation of the rotative effect due to the rise and fall of the float, and a valve controlled by the valve member

12. The combination with a fluid-reservoir, of a float consisting of a hollow inverted cup with a centrally-piercing tube and a cross-piece connecting the cup and tube at their lower ends, guiding means for restraining the rotation of the float, a rotatable valve member arranged to telescope within the tube of the float and having helical slots, the cross-piece of the float having projecting means engaging such helical slots, a stationary threaded socket for the valve member and a threaded part on the valve member engaging such threaded socket, and a valve controlled by the valve member, substantially as set forth.

811,189. CONVEYING AND ELEVATING APPARATUS. ALFRED J. WIMPENNY, Columbus, Ohio, assignor to Joseph A. Jeffrey, Columbus, Ohio. Filed Nov. 30, 1897. Serial No. 660,576.

Claim.—1. The herein-described traveling conveyer mechanism, having the main upwardly-projecting frame, mounted upon track-wheels, the conveyer-frame connected to the main frame, extending across it, and to points inside of the portable frame, and having a horizontally-arranged loading-receptacle or conveyer-trough, the truss-frame which engages with and bears upon the main frame, and is connected to the inner end of the conveyer-frame, a conveyer mechanism operating in said trough, and means for delivering material from the conveyer, substantially as set forth.

2. The combination of a support mounted upon trucks, a conveyer mounted on the said support and extending laterally beyond one side thereof, the lower run of said conveyer comprising a trough, flights operating in the said trough, a stationary chute extending from the side of the movable support opposite to that beyond which the conveyer extends, another chute arranged to deliver material beyond one end of the movable support, and means for delivering the material carried by the conveyer to the said chutes, substantially as set forth.

3. In a conveyer, the combination of the supporting-frame having the upper, straight, side bars, the lower bowed side bars, transverse braces connecting the said upper bars, similar braces connecting the lower bars, and vertically-extending braces connecting the upper and lower bars, guide-rails carried by said frame and extending parallel with the upper and lower bars thereof, a trough-like receptacle, A^6, supported by and curved longitudinally to conform to the lower portion of said supporting-frame, endless chains passing around guiding and driving wheels adjacent to the ends of the supporting-frame, and provided at intermediate points of their length with rollers adapted to travel along the aforesaid guide-rails, and scraper-flights connected to said chains and shaped to conform to the cross-sectional form of the trough, A^5, through which they travel on the lower "run" of the conveyer, substantially as set forth.

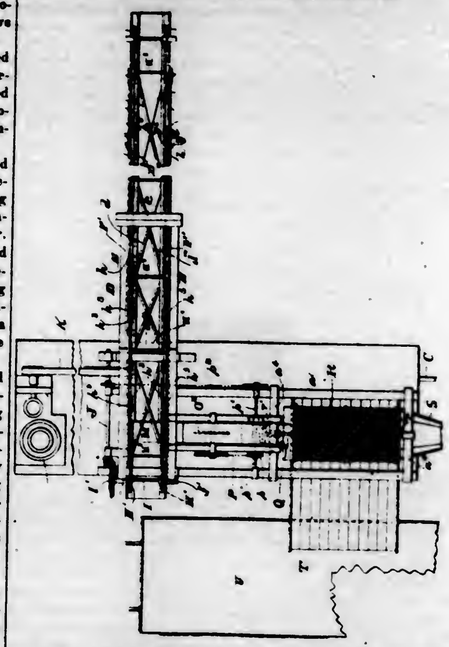

4. In a conveyer, the combination of two parallel chains each formed of wheel-supporting links, A^2, strap-links, A^1, and connecting links, A, formed by parallel bars pivotally connected at their ends to the aforesaid links, A^2, A^1, bars, H^3, extending transversely across the space between the said chains, the ends of each of said transverse bars being bent upon the body thereof and secured between the top and bottom bars of opposite strap-links, A^1, and flights, H^1, secured to said bars, H^3, a trough wherein said flights operate, and means for supporting said trough, substantially as set forth.

5. In an apparatus for the purpose specified, the combination of a truck, a conveyor extending laterally beyond one side thereof and having a horizontally-arranged trough or receptacle for receiving the load from shovels, two independent chutes for delivering material at different points, an elevator for taking the material from the conveyer, means for directing the material from the elevator to the said chutes, and an engine on the truck arranged to operate both the conveyer and the elevator, substantially as set forth.

6. In an apparatus for the purpose described, the combination of a truck, a conveyor having its frame extending laterally beyond one side of the truck and having its lower run arranged substantially horizontal, whereby the said run can be directly loaded, a truss-frame for supporting the said conveyer mounted upon the truck, wheels or rollers carried by and adapted to assist in supporting the conveyer-frame, means for delivering the material at different points, means for directing the material from the conveyer to the said delivering means, and an engine on the truck arranged to operate the conveyer, substantially as set forth.

7. In an apparatus for conveying material from a culm-pile, the combination of a movable support adapted to travel parallel to one face or edge of the pile, a conveyor extending out beyond one side of the truck and at substantially right angles thereto, having a substantially horizontal loading portion, ground wheels or rollers carried by the conveyer-frame near its outer end, and means for delivering the material carried by the conveyer, substantially as set forth.

8. The combination of a supporting-frame, the conveyer-frame projecting laterally therefrom, the conveyer thereon having a lower run and an upper run, the lower run having a trough the outer portion of which is approximately horizontal, and the inner end portion of which is inclined, said outer end portion constituting an elongated receptacle for the load, and means on the frame for actuating the conveyer, substantially as described.

9. The combination of the supporting-frame, having the guideways at its upper side and curved or bowed guideways at its bottom, endless chains mounted on wheels supported in said frame and extending along said guideways, a trough arranged between the lower curved guideways, and scrapers or flights connected with the chains and traveling in said trough, substantially as set forth.

10. The combination of the main frame, the conveyer-frame mounted on and projecting beyond the side of the main frame, the conveyer-chains on suitable sprockets, the scraper-flights secured to said chains, the conveyer-trough carried by said projecting frame, and having a substantially horizontal portion near its outer end for initially receiving the load, and also receiving the conveyer-flights on the chain, and having an inclined part near the inner end, substantially as set forth.

11. In a conveyer, the combination of a frame, formed of the parallel, straight, upper side bars, the lower longitudinally curved or bowed, side bars, and the connecting-bars joining said top and bottom side bars, a pair of endless chains extending along suitable guides on the inner faces of said top and bottom side bars, a trough or receptacle connecting the lower, curved side bars, and scraping-flights attached to the chains and adapted to travel through said trough, substantially as set forth.

12. The combination of a supporting-frame, a conveyer-frame projecting laterally therefrom, a conveyer therein having a lower run and an upper run, the lower run having a trough approximately horizontal near its outer end and inclined at its inner end, said outer portion constituting an elongated receptacle for the load, means on the frame for actuating the conveyer, and means for adjusting said outer end of the conveyer up and down, substantially as set forth.

13. In a conveyer apparatus the combination of a frame, an endless conveyer supported thereby and extending out to one side thereof, such outward-extending portion having a relatively long substantially horizontal loading portion, means for adjusting the outwardly-extending portion of the conveyer up and down and supports under the loading portion of the conveyer, substantially as set forth.

14. The combination of a main frame, an endless conveyer supported at one end by such frame and extending out beyond one side thereof, the said outward-extending portion of the conveyer having a relatively long and substantially horizontal loading portion, and the end that is connected to the main frame being inclined, and the outer end of the conveyer being free to be adjusted vertically, and a support supplemental to the main frame for the outer end of the conveyer, substantially as set forth.

15. The combination of a main frame, a conveyer supported therein and extending laterally to one side thereof, supports independent of the main frame arranged below the outer portion of the conveyer, and a cable extending from the main frame to the outer portion of the conveyer, and means for adjusting the cable, substantially as set forth.

16. In a conveyer, the combination of a pair of parallel chains comprising links A^5 which are formed of a bar or strap of metal shaped into an endless loop whereby are formed upper and lower bars, the cross-bars H^3 the ends of which are bent upon themselves to form heads that are arranged to fit closely between the said upper and lower bars of the opposite links, means for uniting the said links and cross-bars, and flights carried by the said cross-bars, substantially as set forth.

811,190. CONVEYER. ALFRED J. WIMPENNY, Columbus, Ohio, assignor to Joseph A. Jeffrey, Columbus, Ohio. Filed Dec. 2, 1897. Serial No. 660,889.

Claim.—1. In a conveyer, the combination with the chain, of the flights formed of sheet metal secured to the chain and extending both above and below the chain, guides secured to the outer edges of the flights, and substantially in the longitudinal plane of the chain, and a stationary guide with which the flight-guides engage, substantially as set forth.

2. In a conveyer, the combination of a chain, a series of flights secured thereto, guides carried by the flights and arranged in substantially the longitudinal plane of the chain, and a stationary supporting-guide with the upper surface of which said flight-guides engage arranged in a plane different from that in which the chain moves, the said guides being arranged to support the flights from sliding engagement with the trough, substantially as set forth.

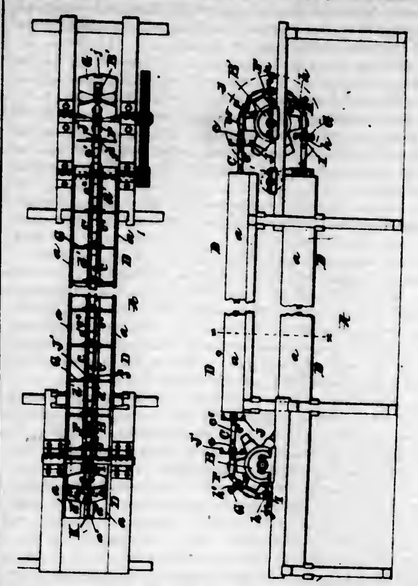

3. In a conveyer, the combination of a trough, an endless chain, a series of flights secured to the chain, the chain being above the working edge of the flights, and the chain and flights normally tending under the action of gravity to press toward the bottom of the trough, and a support and guiding bar with which the flights engage, said bar being arranged in substantially the vertical plane of the chain and projecting above the top of the trough-bottom, substantially as set forth.

4. The combination of a trough, the chain arranged to move adjacent to the trough, a series of flights rigidly connected to and carried by the chain, a series of guides secured to the working edges of the flights, and a stationary guide for supporting the flights above the bottom of the trough with the upper surface of which the flight-guides engage, the chain being so connected with the flights as to be situated above the stationary supporting-guide, substantially as set forth.

5. The combination of a trough, a stationary guide arranged in the bottom of the trough and projecting above the lower portion thereof, the chain arranged to move adjacent to the trough, and a series of flights carried by the chain, the working edges of the flights being constructed to engage with the stationary guide in the bottom of the trough, substantially as set forth.

6. In a conveyer, the combination of a trough having side walls and a bottom wall, an endless chain, flights rigidly secured to the chain and arranged to normally bear down toward the trough-bottom under the gravity of the chain, and a supplemental support for the flights and the chain situated between the ends of the flights substantially parallel with the trough and arranged to sustain the flights and chain out of wearing contact with the trough, substantially as set forth.

7. In a conveyer, the combination of an endless chain, flights secured to the chain, a trough through which the flights move having side walls and bottom walls sloping toward the center, and a supplemental flight-support arranged centrally of the trough and having an upwardly-extending convex bearing-face adapted to maintain in conjunction with the trough-bottom an unbroken surface for supporting the material and arranged to sustain the flights out of wearing contact with the trough-bottom, substantially as set forth.

8. In a conveyer, the combination of a trough having side and bottom walls formed of sheet metal, and a central guiding and weight-supporting bar supported independently of the walls of the trough and arranged between sections of the bottom of the trough, substantially as set forth.

9. In a conveyer, the combination with a trough, of an endless moving carrier member, and flights secured thereto and arranged transversely to the carrier member and having at their lower ends projecting annular bearing-shoulders, and the other member being provided therein with bearing-sockets receiving said shoulders, said

are engaged and disengaged through rotary or axial movement of the

3. In a mechanism for screening ores and other material, the

9. In a conveyer, the combination with a trough, of an endless moving carrier member, and flights secured thereto and arranged transversely to the carrier member and having at their lower edges shoe-like supports arranged to support the flights and carrier member and hold the lower edges of the flights out of scraping contact with the trough, substantially as set forth.

10. In a conveyer, the combination with the trough for supporting the material, of a stationary supporting-guide situated along the central longitudinal lines of the trough, a single chain in the center, longitudinally, of the trough and above the guide, and the flights secured to said single chain, each flight having an elongated guide at its center transversely, and arranged to rest upon the upper surface of the central supporting-trough guide, substantially as set forth.

11. In a conveyer, the combination with the trough having a stationary guide on its central longitudinal line, the movable flight, and the chain secured to said flight, of the guide secured centrally to the lower edge of the flight and having the elongated guide part f^3 adapted to engage with the trough-guide, substantially as set forth.

12. In a conveyer, the combination of a chain having alternate double-bar links c' and single-bar links c, of the flights, and the flight attachments H secured to the single-bar links, each formed separately from its link with a tubular socket h through which the link is passed, the bolt for fastening the socket to the bar, and each attachment fastened to its flight, substantially as set forth.

13. In a conveyer, the combination with the chain, of the flight which widens from its ends toward its center and having a recess cut out of its lower edge, and a guide-block secured to said lower edge and having an elongated guide with a passage registering with the recess on the edge of the flight, substantially as set forth.

14. In a conveyer, the combination of the flight or material transporting device, the separately-formed attachment joined to the flight for securing it to the chain, the link C adapted to be secured to the said attachment and formed with the pintle-aperture c^2, the link c' having the side bars c^4, c^5, with pintle-apertures near the ends, and the pintle F having the central cylindrical rocking bearing-surface within the pintle-aperture at c^2 in the link c and having the flattened or web-like parts fitting to the correspondingly-shaped pintle such as in the side bars c^4, c^5, and said pintle at the ends being upset or riveted, whereby the material transported by the conveyor is prevented from entering the pintle-seats and the pintle is compelled to rock in the central link-bar C, substantially as set forth.

15. In a conveyer, the combination of flights having apertures through their central portions, and a chain formed of articulated links, comprising flight-carrying links of a size and shape to fit the said apertures in the flights, and permit the flights to be passed longitudinally over the same from the ends of the links to the places of the attachment of the flights thereto, substantially as set forth.

16. In a conveyer, the combination of a chain formed of articulated links, comprising flight-carrying links c formed of bars of uniform size and shape from end to end, and flights arranged to be secured to such links c, and having apertures through their central portions of a size and shape to closely fit the said bars, substantially as set forth.

17. In a conveyer, the combination with the flights, each narrowing from the center toward the ends transversely, and formed of relatively thin metal, and having an aperture at the center, of a chain passing through the said central aperture, an attachment secured to each flight and secured to the chain, and supporting attachments for the flight secured to it at points between its ends, and in the vertical central longitudinal planes of the conveyer, substantially as set forth.

18. The combination with the flight and the chain passing centrally through the flight, of the attachment J secured to the rear side of the flight and adapted to support it against edge thrust, and the attachment H secured to the rear side of the flight and secured to the chain, substantially as set forth.

19. In a conveyer, the combination of a chain, a series of transversely-arranged flights secured thereto, a stationary supporting-guide arranged adjacent to and parallel with the path followed by the chain, and guides secured to the flights and arranged to engage with the said stationary supporting-guide, the guides carried by the flights being elongated in a direction parallel with the chain and having engagement with the stationary guide that tends to prevent twisting of the flights, substantially as set forth.

811,191. PULLEY-BLOCK. FRANK P. WHITEMAN, Youngstown, Ohio. Filed May 16, 1905. Serial No. 260,967.

Claim.—1. A pulley-block comprising a body member and a wheel member, one of said members having rigid therewith opposite projecting annular bearing-shoulders, and the other member being provided therein with bearing-sockets receiving said shoulders, said registering shoulders and recesses constituting the sole journal-support and bearing for the wheel member.

2. A pulley-block comprising a body member and a wheel member, one of said members having opposite projecting annular bearing-shoulders, and a hollow journal-stud, and the other of said members having opposite bearing-sockets receiving the said shoulders.

3. A pulley-block comprising a block-body consisting of separably-interlocked sections provided with rigid annular bearing-shoulders, and a sheave or wheel member mounted within the block-body and having bearing-sockets receiving said shoulders.

4. A pulley-block comprising a block-body having a wheel-opening and consisting of separate members having a central trunnion connection and interlocking elements slidably engaged and disengaged through rotary or axial movement of said sections, and a sheave mounted within the wheel-opening of the block-body.

5. A pulley-block comprising a block-body consisting of separate cheek-plates having a central trunnion connection and at the ends provided with slidably-interlocked elements moved into and out of engagement through rotary or axial movement of the cheek-plates, and the sheave having a bearing within the body independent of the trunnion action.

6. A pulley-block comprising a block-body consisting of opposite cheek-plates having a central trunnion connection and provided at the ends respectively with interlocking tongues and grooves, and a sheave having a bearing-mounting within the block-body, independent of the trunnion connection.

7. A pulley-block comprising a block-body consisting of opposite cheek-plates, one of which is provided at its ends with headed retaining-tongues, and the other of which is provided in corresponding positions with shouldered holding-grooves receiving and interlocking with said tongues, the interlocking tongues and grooves being arranged concentric with the wheel-axis, and the sheave or wheel member mounted within the block-body.

8. A pulley-block comprising a block member consisting of separate cheek-plates having a central trunnion connection and opposite matching end members, the end members of one of the cheek-plates being provided with headed retaining-tongues extending transversely and arranged on a curve concentric with the trunnion connection, and the other of said members being provided with correspondingly-shouldered holding-grooves receiving the said tongues, and the sheave or wheel member mounted within the block-body.

9. A pulley-block comprising a block-body provided at one end with a bridle attachment and consisting of separably-interlocked cheek-plates, and the sheave mounted within the block-body.

10. A pulley-block comprising separably-interlocked cheek-plates, one of which is provided with a bridle attachment having a separably-interlocked connection with the other cheek-plate, and the sheave mounted within the block-body.

11. A pulley-block comprising a sectional block-body consisting of separate cheek-plates having interlocked connections which are engaged and disengaged through rotary or axial movement of the plates, one of said cheek-plates being provided with a bridle attachment having an interlocked connection with the other cheek-plate, said latter interlocked connection being also engaged and disengaged through the said rotary or axial movement of the cheek-plates, and the sheave.

12. A pulley-block comprising a block-body having opposite cheek-plates provided with centrally-located inwardly-projecting annular bearing-shoulders, one of said plates being further provided at the center in its inner side with a retaining-socket, and the other of said plates being further provided with an offstanding journal-stud having one end thereof engaged in said socket, and a sheave or wheel member having a central bearing-opening receiving the journal-stud and also provided at opposite sides of its hub with circular bearing-sockets receiving said annular bearing-shoulders.

13. A pulley-block comprising a block-body having opposite cheek-plates provided at the center with inwardly-projecting annular bearing-shoulders and at the bases of the bearing-shoulders with offset clearance-shoulders, one of said cheek-plates being further provided with a retaining-socket and the other of said plates being provided with a journal-stud fitting in said socket, the sheave or wheel member having its hub arranged between such clearance-shoulders and provided with a central bearing-opening receiving the journal-stud and with opposite bearing-sockets receiving the annular bearing-shoulders, and a retaining and adjusting device engaging one end of the journal-stud and the adjacent cheek-plate.

811,192. SEPARATOR. FREEMAN R. WILLSON, Jr., Columbus, Ohio, assignor to Joseph A. Jeffrey, Columbus, Ohio. Filed Nov. 20, 1901. Serial No. 83,210.

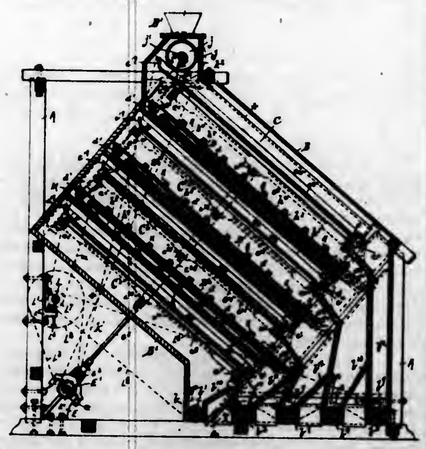

Claim.—1. In a screening mechanism for ore or similar materials, the combination of the series of inclined superposed screens, the longitudinally-reciprocating actuating devices pivotally connected to and arranged to support each screen of said series near its center, the ends of each screen being free to vibrate about the axis of the screen's pivotal connection with said reciprocating device independent of the vibration of the ends of any other screen of the series, and the series of vibrating sustaining devices, each pivotally connected to the central part of one of said screens and also connected to a relatively stationary support, substantially as set forth.

2. In a mechanism for screening ores or other material, the combination of the series of inclined superposed screens, the pair of longitudinally-reciprocating actuating devices arranged one at either side of said series of screens and pivotally connected to each screen of said series near its center, the ends of each screen being free to vibrate about the axis of its pivotal connection with said reciprocating device independent of the vibration of the ends of any other screen of the series, said reciprocating actuating device being arranged to bodily reciprocate said series of screens in planes at an angle to the planes of the flow of material along the screens and the series of vibrating sustaining devices each flexibly connected to one of said screens and also connected to a relatively stationary support, substantially as set forth.

3. In a mechanism for screening ores and other material, the combination of the series of inclined superposed screens, each free at its ends to permit vertical vibration thereof, a longitudinally-reciprocating bar connecting the screens of the said series and adapted to bodily reciprocate the said series of screens, a main frame, a series of vibrating links or rods pivotally connected to the main frame and each pivotally connected to one of the screens near its center, substantially as set forth.

4. In a mechanism for screening ores or like material, the combination of the main frame, the series of inclined screens, each free at its end for vertical vibration, the reciprocating mechanism connected flexibly to the central parts of the screens respectively and adapted to bodily reciprocate the said series of screens, and the sustaining bars or rods pivotally connected to the main frame and pivotally connected to the central part of the screens respectively and situated approximately parallel to the screens, substantially as set forth.

5. In a screening mechanism for ores and like material, the combination of a series of inclined superposed screens, the power-shaft arranged beneath said series of screens, the bars connected to each screen of the series near its longitudinal center, means interposed between said power-shaft and said bars for reciprocating the bars and the screens connected thereto, and means for sustaining said series of screens from downward movement about the axis of said power-shaft beyond a predetermined limit and arranged substantially as set forth to permit the free vibration of the screens bodily without resistance from said sustaining means.

6. In a mechanism for screening ores or like material, the combination of the main frame, the series of inclined superposed screens, each free at its ends for vertical vibration, the bars arranged at either side of said series of screens and pivotally connected to each screen of the series near its center, the power-shaft arranged beneath the lowermost screen of the series, power-transmitting devices interposed between said power-shaft and the lower ends of said bars for reciprocating the bars and the screens connected thereto, and the sustaining-links pivotally connected to the main frame, and each pivotally connected to one of the said screens near its center and arranged to permit the free vibration of the series of screens bodily while preventing its downward movement about the axis of said power-shaft beyond a predetermined limit.

7. In a mechanism for screening ores and similar material, the combination of a series of inclined superposed screens, each free at its ends to permit vertical vibration thereof, a reciprocating actuating mechanism connected to the central part of each screen of the series, and a series of endless conveyers, each conveyer being arranged under one of the said inclined screens and adapted to carry upward the material passing through it and deliver it to the upper end of the screen passing below the conveyer, substantially as set forth.

8. In a mechanism for screening ore and similar material, the combination of the main frame, the casing, the supplemental frame secured to the main frame and arranged therein at an inclination substantially as set forth, a series of reciprocating screens in the said supplemental frame and casing inclined substantially as set forth, an actuating mechanism connected with each screen of the said series at the central part thereof and situated outside the said casing, the sustaining devices for the screens pivotally connected to the said framework and also pivotally connected to the central parts of the screens respectively, and the series of endless conveyers in the said supplemental frame and housing, each arranged between a screen and an adjacent one and adapted to carry the material passing through the upper screen and deliver it to the upper end of the lower one, substantially as set forth.

811,193. MERCURY SALTS OF CHOLIC ACID AND PROCESS OF MAKING SAME. EMIL WORMS, Berlin, Germany, assignor to the Firm of J. D. Riedel Aktiengesellschaft, Berlin, Germany. Filed June 9, 1905. Serial No. 264,804. (Specimens.)

Claim.—1. The process for obtaining mercury salts of cholic acid, which consists in treating a suitably-dilute solution of a salt of cholic acid with a mercury salt of an organic acid to form a precipitate, and mechanically separating the latter, substantially as described.

2. The process for obtaining mercury salts of cholic acid, which consists in treating a suitably-dilute solution of a salt of cholic acid with a mercury salt of acetic acid to form a precipitate and mechanically separating the latter, substantially as described.

3. As a new product of manufacture, a mercury salt of cholic acid, having the shape of a light yellowish-white powder sparingly soluble in pure water, yielding an oxid of mercury on the addition of

an alkali and undergoing decomposition on the addition of alcohol, substantially as described.

811,194. SCALE PIVOT-BEARING. JAMES A. BARCLAY, Indianapolis, Ind. Filed Nov. 23, 1904. Serial No. 234,236.

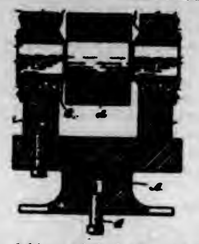

Claim.—1. A weighing-scale including a housing, a knife-edge pivot in the housing, a bearing movable freely in the housing and having a curved bearing-surface in engagement with the knife-edge of the pivot, rollers coöperating with the housing and the bearing, and a lever or beam secured to the knife-edge pivot.

2. A weighing-scale including a movable housing having an annular bearing mounted movably therein with rollers coöperating with the housing and the bearing, a V-shape pivot having the knife-edge thereof in contact with the annular bearing, and a lever or beam secured to the pivot adjacent to the annular bearing.

3. A weighing-scale including a supported housing having a circular bore of uniform diameter, an annular bearing movable in the bore of the housing and having a bore of uniform diameter, rollers between the exterior of the bearing and the wall of the housing and retained therein by said bearing, means attached to the housing retaining the bearing therein, a knife-edge pivot having the edge thereof in contact with the bore of said bearing with a lever or beam secured to the pivot adjacent to and guided by said bearing, said bearing having a conical annular end presented to said lever or beam.

4. In a weighing-scale, an improved annular bearing having an unobstructed interior of uniform diameter and having a groove in the exterior thereof, the bearing being longer at the inner side than at the outer side thereof, in combination with rollers in said groove supporting the bearing movably, a knife-edge pivot engaging the interior of said bearing, and a lever or beam secured to the pivot adjacent to the bearing with a projection thereof coöperating with the longer portion of said bearing.

5. In a weighing-scale, the combination with a lever or beam and with a knife-edge pivot thereon, of a housing having rollers coöperating therewith, a bearing coöperating with the rollers of the housing and having a curved bearing-surface in engagement with the knife-edge of the pivot.

6. In a weighing-scale, the combination with the levers and beams and the knife-edge pivots thereof, of housings supported by the scale structure, bearings movable in the housings in engagement with the knife-edges of the pivots and guiding the levers and beams, rollers in the housings supporting the bearings and retained therein by the bearings, and means for retaining the bearings in the housings.

811,195. REGISTER FOR POOL-TABLES. GEORGE C. BEIN, Beavercreek, Minn. Filed Aug. 17, 1904. Serial No. 221,264.

Claim.—1. In a pool-table register, the combination, with a dial and a pointer, of a spring-actuated member, a pool-table triangle having a flexible connection with said member, means for locking said member against the tension of its spring at the limit of its movement in one direction, and a mechanism arranged to be set by each movement of said member for actuating said pointer when said member is released by the movement of said locking means.

2. In a pool-table register, the combination, with a dial and a pointer arranged to move over the same, of a spring-actuated ratchet-wheel upon the hub of which said pointer is secured, means for moving said wheel step by step in one direction, a dog 15 arranged to engage the teeth of said wheel and normally lock it against backward movement, a plate 19 loosely mounted on the hub of said wheel, a lug 22 carried by said wheel and adapted to engage said plate and move it under said dog to disengage the same from said teeth, and a lug 20 also arranged to engage said plate and return it to its normal position, substantially as described.

3. In a pool-table register, the combination, with a dial and a pointer arranged to move over the same, of a spring-actuated ratchet-wheel on the hub of which said pointer is secured, means for revolving said wheel to put said spring under tension, a dog 15 normally engaging the teeth of said wheel to prevent its backward movement, a loosely-mounted plate 19, lugs 20 and 24 between which said plate is movable, and means arranged to engage said plate and move it under said dog to disengage it from said teeth, substantially as described.

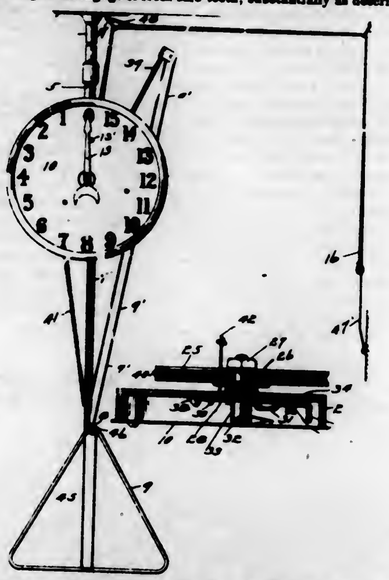

4. In a pool-table register, the combination, with a dial and a pointer arranged to move over the same, of a spring-actuated ratchet-wheel connected with said pointer, means for preventing backward movement of said wheel, a wheel 25 having a laterally-extending operating-arm 39, a pool-table triangle having a flexible connection with said rod, a spring connected with said wheel 25 and normally tending to hold said rod in its raised position, a latch 42 arranged to enter a notch provided in the wheel 25 and lock said rod in its depressed position, and mechanism set by the depression of said rod for actuating said ratchet-wheel when said latch is released, substantially as described.

5. In a pool-table register, the combination, with a dial and a pointer arranged to move over the same, of a ratchet-wheel connected with said pointer, a wheel 25 provided with a radial rod 39, a triangle having a flexible connection with said rod, a spring connected with said wheel 25 and normally tending to hold said rod in its raised position, means for temporarily locking said rod in its depressed position, and means arranged to be set by the rotation of the wheel 25 and the depression of the rod 39 for moving said ratchet-wheel step by step when said locking means is released, substantially as described.

6. In a pool-table register, the combination, with a dial and a pointer arranged to move over the same, of a spring-actuated ratchet-wheel connected with said pointer, a pool-table triangle, an oscillating rod having a flexible connection with said triangle, a spring arranged to be put under tension by the movement of said rod in one direction, means for locking said rod at the limit of its movement in one direction, and a mechanism arranged to be set by such movement of said rod for actuating said ratchet-wheel step by step when said rod is released by the movement of said locking means.

7. In a pool-table register, the combination, with a dial and a movable pointer therefor, of an oscillating rod, a pool-table triangle having a flexible connection with said rod, a spring arranged to hold said rod in its normal inoperative position, locking means arranged to hold said rod at the limit of its movement in one direction against the tension of said spring, and mechanism set by such movement of said rod for actuating said pointer when said rod is released by the movement of said locking means.

8. In a pool-table register, the combination, with a dial and a pointer therefor, of an operating-rod, a pool-table triangle having a flexible connection with said rod, a wheel 25 having a notch in its periphery, a spring connected with said wheel and put under tension by the depression of said rod, a locking-latch arranged to enter said notch when said rod is depressed, and mechanism set by the depression of said rod for moving said pointer step by step when said wheel and rod are released by the operation of said locking means.

9. In a pool-table register, the combination, with a dial and a pointer arranged to move over the same, of a spring-actuated ratchet-wheel connected with said pointer, an operating-rod 39, a pool-table triangle having a flexible connection with said rod, a spring arranged to hold said rod in its raised position, a bell-crank lever 31 having means to engage the teeth of said ratchet, a disk 28 having a lug 29 arranged to be set by the depression of said rod 39 to engage said bell-crank and actuate it and said ratchet-wheel when said rod is released.

10. In a pool-table register, the combination, with a dial and a pointer arranged to move over the same, of a spring-actuated ratchet-wheel connected with said pointer, a wheel 25 having a notch in its periphery, a spring connected with said wheel 25, a pool-table triangle operatively connected with said wheel 25, a locking-latch arranged to enter said notch, and mechanism set by the partial revolution of said wheel 25 for actuating said ratchet-wheel when said locking-latch is released, substantially as described.

11. In a pool-table register, the combination, with a dial and a pointer arranged to move over the same, of a spring-actuated ratchet connected with said pointer, a spring-actuated wheel 25, a pool-table triangle operatively connected with said wheel 25, means for locking said wheel 25 at the limit of its movement in one direction against the tension of its spring, and mechanism set by the movement of said wheel in one direction for actuating said ratchet-wheel and pointer when said wheel returns to its normal position upon the disengagement of said locking means, substantially as described.

12. In a pool-table register, the combination, with a dial and a pointer, of a spring-actuated oscillating rod, a pool-table triangle having a flexible connection with said rod, means for locking said rod against the tension of its spring at the limit of its movement in one direction, and mechanism for actuating said pointer when said rod is released.

811,196. CYLINDER FOR TREATING HEATED METAL. GEORGE H. BENJAMIN, New York, N. Y., assignor to The Cox Brass Manufacturing Company, a Corporation of Connecticut. Filed May 15, 1903. Serial No. 157,268.

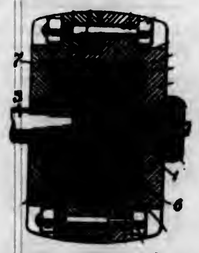

Claim.—1. A container for treating heated metal under pressure, comprising a cylinder, a winding of insulated wire thereon, and an inclosing jacket.

2. A container for treating heated metal under pressure, comprising a wire-wound cylinder, and a non-heat-conducting covering for the winding.

3. A container for treating heated metal under pressure, comprising a wire-wound cylinder, an inclosing jacket therefor, and a non-heat-conducting covering for the winding.

4. A container for treating heated metal under pressure, comprising a wire-wound cylinder, and a body of non-heat-conducting material interposed between the coils and the cylinder.

5. A container for treating heated metal under pressure, comprising a wire-wound cylinder, and a body of non-heat-conducting material interposed between the coils of the winding.

6. A container for treating heated metal under pressure, comprising a wire-wound cylinder, and a body of non-heat-conducting material dividing the winding into a series of equispaced coils.

7. A container for treating heated metal under pressure, comprising a wire-wound cylinder, and a body of non-heat-conducting material interposed between the turns of the winding.

8. A container for treating heated metal under pressure, comprising a cylinder, a series of spaced coils of insulated wire wound thereon, and an inclosing jacket.

9. A container for treating heated metal under pressure, comprising a wire-wound cylinder, and an inclosing jacket therefor formed of telescoping sections.

10. A container for treating heated metal under pressure, comprising a wire-wound cylinder, an inclosing jacket therefor formed of telescoping sections, and means for securing the sections together.

11. A container for treating heated metal under pressure, comprising a cylinder, a winding of asbestos-covered wire upon the cylinder, a sectional jacket inclosing the winding, and means for securing the sections of the jacket together.

12. A container for treating heated metal under pressure, comprising a cylinder, a winding of asbestos-covered wire upon the cylinder, the said wire being distributed as spaced coils, and an inclosing jacket.

811,197. COIN-TRAY. EDWARD J. BRANDT, Watertown, Wis., assignor to Brandt Cashier Company, Chicago, Ill., a Corporation of Illinois. Filed July 5, 1904. Serial No. 215,272.

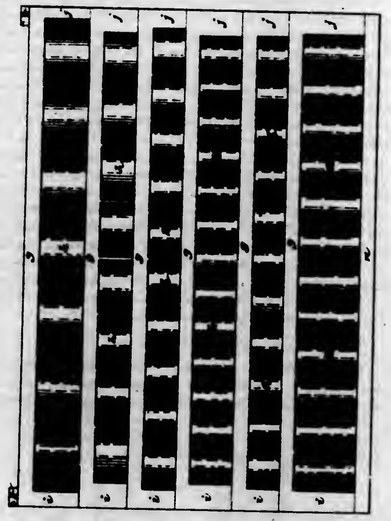

Claim.—1. A coin-tray comprising a series of sections disposed side by side longitudinally of the tray, each of said sections containing a plurality of coin-cells disposed side by side transversely of the section, and means for separably and interchangeably uniting said sections laterally, substantially as described.

2. A coin-tray comprising a series of longitudinal sections each containing a plurality of coin-cells disposed side by side transversely of the section, and tie-rods passed transversely through the ends of said sections and uniting them laterally, substantially as described.

3. A coin-tray comprising a series of longitudinal sections each having a side and end walls and a plurality of coin-cells disposed side by side transversely of the section, a strip or bar constituting a side wall on one side of the tray, and means for separably uniting said sections and side wall laterally, substantially as described.

4. A coin-tray comprising a series of longitudinal sections for coins of different denominations, each of said sections having a side and end walls and a plurality of coin-cells disposed side by side transversely of the section, a strip or bar constituting a side wall on one side of the tray, and tie-rods passed transversely through the ends of said sections and uniting them laterally, substantially as described.

811,198. FLUID-BRAKE MECHANISM. BERNHARD T. BUSCHMANN, Brooklyn, N. Y. Filed Apr. 12, 1905. Serial No. 255,203.

Claim.—1. In a fluid-brake mechanism, the combination with a sliding throttling member having an aperture therein in open communication with the cylinder on one side of the piston, of a cylindrical throttling-stem having formed therein a channel partly parallel to the axis of the stem and partly helical arranged to coöperate with the

aperture to control the flow of fluid from one side of the piston to the other, substantially as described.

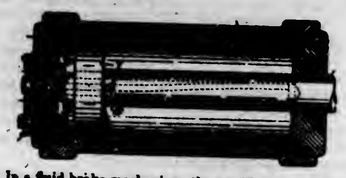

2. In a fluid-brake mechanism, the combination with a sliding throttling member having an aperture therein in open communication with the cylinder on one side of the piston, of a cylindrical throttling-stem having formed therein a channel partly parallel to the axis of the stem and partly helical arranged to coöperate with the aperture to control the flow of the fluid, and means connected with said stem and mounted on the outside of the brake mechanism for adjusting it with respect to the aperture, substantially as described.

3. In a fluid-brake mechanism, the combination with a cylinder, of a piston working therein a piston-rod secured to said piston said rod having a chamber formed therein and an aperture in the wall of the chamber in open communication with the cylinder on one side of the piston, and a cylindrical throttling-stem lying in said chamber and having formed therein a channel partly parallel to the axis of the stem and partly helical arranged to coöperate with the aperture to control the flow of fluid from one side of the piston to the other, substantially as described.

4. In a fluid-brake mechanism, the combination with a cylinder, of a piston working therein, a piston-rod secured to said piston said rod having a chamber formed therein and an aperture in the wall of the chamber in open communication with the cylinder on one side of the piston, a cylindrical throttling-stem lying in said chamber and having formed therein a channel partly parallel to the axis of the stem and partly helical arranged to coöperate with the aperture to control the flow of the fluid, and means connected with said stem and mounted on the outside of the brake mechanism for adjusting it with respect to the aperture, substantially as described.

811,199. HEATER. WILLIAM H. CALHOUN, Marshalltown, Iowa, and WILLIAM G. CALHOUN, Fargo, N. D., assignors of one-half to Edward H. Uhl, Chicago, Ill. Filed May 15, 1905. Serial No. 260,460.

Claim.—1. A heater, comprising a fire-pot, an inclosing wall forming a chamber receiving the gaseous products rising from the fuel, a central air-duct leading downwardly in said chamber into proximity to the fuel-bed, an open-bottomed drum surrounding said air-duct and provided with a series of openings near the induction end only of the air-duct and an exit-tube or smoke-pipe situated at one side of said drum and in free communication with said chamber at or near the upper part thereof.

2. A heater, comprising a fire-pot, an inclosing wall forming a chamber receiving the gaseous products rising from the fuel, a central air-dust leading downwardly in said chamber into proximity to the fuel-bed and having a tapered outlet, an open-bottomed drum surrounding said air-dust and provided with a series of openings near the induction end only of the air-dust and an exit-tube or smoke-pipe situated at one side of said drum and in free communication with said chamber at or near the upper part thereof.

811,200. ELECTRIC LIGHTER AND EXTINGUISHER FOR GAS-BURNERS. ORESTE CARBI and CESAR CARBI, Genoa, Italy. Filed Nov. 17, 1904. Serial No. 233,174.

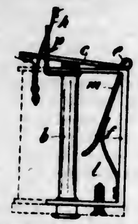

Claim.—1. In an apparatus of the class set forth, the combination with a gas-burner, and a tube extending from the lower end thereof and capable of being connected with the canalization, of a stationary electromagnet, arranged around said tube, a disk-like armature, hinged to the frame of the magnet, a downwardly-extending arm secured to the armature, a spring engaging with said arm for normally holding said armature in its raised position, an upwardly-extending arm of yielding material carried by said armature, a pawl arranged on the free end of said arm, a ratchet-wheel on the outer end of the plug of the burner-cock, capable of being engaged and rotated in one direction by said pawl when the same is moved downwardly, and means for preventing said ratchet-wheel from being rotated in opposite direction, substantially as set forth.

2. The combination with two sets of gas-burners, one having cocks of ordinary size, while the cocks of the other have passages of double width, tubular extensions on the lower end of each cock, of a stationary electromagnet arranged around each tube, a disk-like armature for each electromagnet, a central hole in the armature for allowing the same of being freely moved, a hinge connecting the armature to the magnet-frame, means for normally holding said armature in its raised position, an upwardly-extending arm carried by the armature, a pawl arranged on the free end of said arm, a ratchet-wheel on the outer ends of the plugs of the burner-cocks, capable of being engaged and rotated in one direction by said pawl when the same is moved downwardly, and means for preventing said ratchet-wheel from being rotated in opposite direction, substantially as set forth.

811,201. GLASS-CUTTING BOARD. EDWARD W. CHADWICK, Edgartown, Mass. Filed July 26, 1905. Serial No. 271,237.

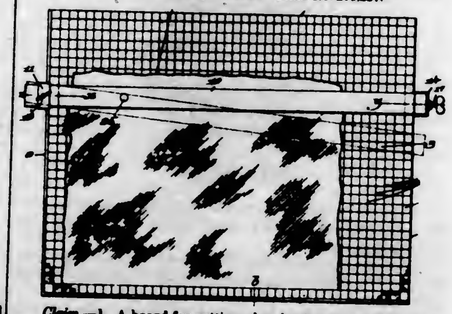

Claim.—1. A board for cutting glass having on one side a gage which projects above the surface of the board, a straight-edge of a length to extend across the board, one end of said straight-edge being adapted to rest on the gage, means carried by the straight-edge to space the other end thereof from the board, and means to clamp said straight-edge to the board in any adjusted position.

2. A board for cutting glass having on two adjacent sides a gage extending above the surface of the board, and against which the glass to be cut rests, a straight-edge resting at one end upon said gage, two clamping members on said straight-edge to clamp it to opposite edges of the board, one of the clamping members being constructed to space the adjacent end of the straight-edge above the board.

3. A board for cutting glass having a scale on the surface of the board adjacent one edge, a gage applied to the opposite edge of said board and extending above the surface of the same, the surface of

the gage having a scale applied thereto, a straight-edge resting at one end upon said gage, a clamping member secured to said end of the straight-edge, said clamping member having an adjustable foot to engage the adjacent edge of the board, and another clamping member secured to the opposite end of the gage and having a foot to engage the adjacent edge of the board, said latter clamping member having a shoulder to rest on the top of the board and thereby space from the board the end of the straight-edge to which it is secured.

4. A board for cutting glass having a scale on the surface of the board adjacent one edge, a gage applied to the opposite edge of said board and extending above the surface of the same, the surface of the gage having a scale applied thereto, a straight-edge resting at one end upon said gage, a clamping member secured to said end of the straight-edge, said clamping member having an adjustable foot to engage the adjacent edge of the board, and another clamping member adjustably secured to the opposite end of the gage and having a foot to engage the adjacent edge of the board, one of said feet having a rounding edge.

811,202. SHEARS OR SCISSORS GRINDING APPARATUS. EDWARD F. DAVIS, Lynn, Mass., assignor of one-fourth to Warren H. Calder, Lynn, Mass. Filed Sept. 26, 1904. Serial No. 226,896.

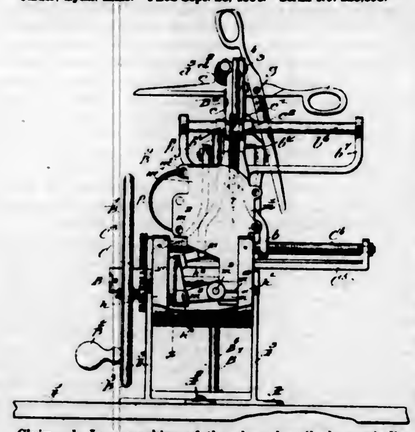

Claim.—1. In a machine of the class described, a grinding-wheel, a carriage having a shear-clamp mounted thereon, means for swinging the carriage toward and from the grinding-wheel, a screw-shaft engaging one end of said carriage, means for turning the screw-shaft in one direction, means for turning the screw-shaft in the opposite direction, and a swinging frame carrying said screw-shaft, whereby it may be swung into operative relation with either of said means.

2. In a machine of the class described, a carriage, shear-clamping means sustained thereby, a grinding-wheel, said carriage having a swinging movement to carry the shear-clamping means toward and from the grinding-wheel, devices for moving the clamp and carriage with relation to the grinding-wheel that the grinding-wheel may act from one to the other end of the shear-blade, and oppositely-acting means selectively engaging said devices to cause it to move the clamp and carriage in opposite directions.

3. In a machine of the character described, a grinding-stone, a carriage, a shear-clamp supported thereon, a screw for reciprocating said carriage and clamp to move the shear-blade across the edge of the grinding-stone and means for reciprocating said carriage, said means consisting of a main drive-shaft, a gear thereon, an intermediate gear or pinion mounted on the aforesaid screw and a reversing-gear mounted in the framing of the machine and means for engaging the intermediate gear with driving-gear or the reversing-gear.

4. In a machine of the character described, a grinding-stone, a carriage, an arm mounted on said carriage, a shear-clamp carried by said arm, a guide-rod, a screw and means for operating said screw to move the shear-blade across the face of the stone, said means consisting of a driving-gear, an intermediate pinion or gear mounted upon the screw, and a reversing-gear, said drive-gear and reversing-gear being continually in mesh, and means for selectively engaging the intermediate pinion with either the driving-gear or reversing-gear.

5. In a machine of the character described, a grinding-stone, a two-part carriage, an arm supported thereby, a clamp thereon, a screw for operating said two-part carriage, a swinging yoke carrying said screw, a set of gearing for imparting direct and reverse rotary motion to said screw, said set of gearing consisting of a driving-gear, a reversing-gear and an intermediate gear, said intermediate gear being mounted on the screw.

6. In a machine of the character described, a grinding-stone, a two-part carriage, an arm mounted thereon, a clamp supported thereby, a screw for operating the carriage, a set of gearing for imparting rotary motion in either direction to said screw, said set of gearing comprising a drive-gear, a reversing-gear, and an intermediate gear and spring-controlled means for throwing said intermediate gear into or out of mesh with either of the other gears.

7. In a machine of the character described, a grinding-stone, a two-part carriage, an arm mounted thereon, a clamp supported thereby, a screw for operating the carriage, a swinging yoke carrying said screw, a set of gearing for imparting rotary motion in either direction to said screw, said set of gearing comprising a drive-gear, a reversing-gear, and an intermediate gear, said intermediate gear being mounted on the said screw, said swinging yoke being mounted to turn about a center between the axis of rotation of the drive-gear and the axis of rotation of the reversing-gear, whereby in rocking the said yoke in one or the other directions, the intermediate gear will be brought into mesh with one or the other of the aforementioned gears.

8. In a machine of the character described, a grinding-stone, a guide-rod, a two-part carriage mounted to slide on said guide-rod and means for reciprocating said two-part carriage, the two parts of said carriage being pivoted together in a sliding relation to each other.

9. In a machine of the character described, a grinding-stone, a guide-rod, a two-part carriage mounted to slide on said guide-rod and means for reciprocating said two-part carriage, the two parts of said carriage being pivoted togther in a sliding relation to each other, and a spring connected to said pivoted parts to counterbalance the weight of the shears or other article being ground.

10. In a machine of the class described, a grinding-wheel, a two-part carriage, a shear-clamp mounted thereon, a guide-rod for one end of said carriage, a screw-shaft engaging the other end of said carriage and provided with a pinion, a swinging frame carrying said screw-shaft, an oppositely-moving toothed wheel with either of which said pinion may be engaged to rotate said screw in one or the other direction.

11. In a machine of the class described, a two-part carriage, means to guide the same, means to slide the same, an arm engaging said carriage and provided with a shear-clamp and an adjustable spring to more or less counterbalance the weight of the shears held in the clamp.

811,208. FEEDING DEVICE FOR SEEDERS OR DRILLS. SPENCER B. DAVIS, Minneapolis, Minn. Filed Dec. 1, 1905. Serial No. 289,782.

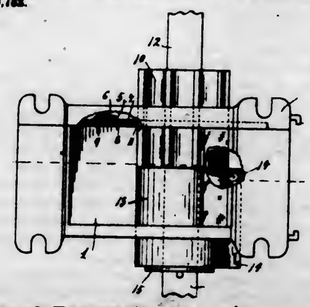

Claim.—1. The combination with a cup having a curved bottom extending to a discharge-opening, of a feed-ring working in one side of said cup and having in its inner face a plurality of concave pockets that extend to the face of said ring on curved lines and without angles or shoulders, a corrugated feed-hub mounted to slide through, but to rotate with said feed-ring, and a non-rotary hub having a cut-off gate or flange, coöperating with said feed-hub and feed-ring, substantially as described.

2. The combination with a cup having an approximately semi-cylindrical bottom extending to a discharge-opening, of a rotary feed-ring counterrunk in one side thereof with its periphery working

in a cast extending below the bottom of the cup, said feed-ring having in its inner face a plurality of radially-extended concave pockets formed on curved lines that join the face of said feed-ring without angles or shoulders, and the outer extremity of which pockets pass to the bottom of said cup, under a rotary motion of said feed-ring, substantially as described.

3. The combination with a cup having a curved bottom extending to a discharge-opening, of a feed-ring working in one side of said cup, said feed-ring having an approximately flat inner face formed with shallow depressed pockets, but smooth except for said pockets, a corrugated hub having a cut-off gate or flange cooperating with said feed-hub and feed-ring, the inner end of said gate or flange being adapted for close cooperation with the smooth inner-faced portion of said feed-ring, substantially as described.

811,204. **ROTARY ENGINE.** PHILIP J. DECKER, San Francisco, Cal. Filed Sept. 29, 1905. Serial No. 280,411.

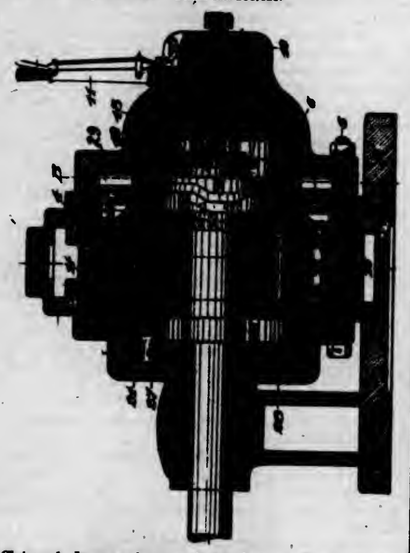

Claim.—1. In an engine, a casing, a shaft, a rotary piston concentric with and of lesser diameter than the casing, abutments on one of said parts dividing the space between the casing and piston into a plurality of compartments, said compartments being provided with double sets of inlet and exhaust ports, a shiftable member having double sets of ports registerable with said inlet and exhaust ports whereby the direction of operation of the engine may be reversed, radially-movable vanes carried by the other part, and means for moving said vanes into and out of the path of said abutments.

2. In a rotary engine, a casing, a shaft, a rotary piston, said piston and casing inclosing an annular space, abutments on the casing dividing said space into a plurality of compartments, said compartments being provided with double sets of inlet and exhaust ports, a shiftable member operating in the compartments and having double sets of ports registerable with said inlet and exhaust ports whereby the direction of operation of the engine may be reversed, radial reciprocal vanes carried by the piston, and means for moving said vanes into and out of the path of said abutments.

3. In a rotary engine, a casing, a shaft, a rotary piston, said piston and casing inclosing an annular space, abutments on the casing dividing said space into a plurality of compartments, radially-reciprocal vanes carried by the piston, means for moving said vanes into and out of the path of said abutments, and means for admitting an impelling medium to and exhausting it from said compartments to operate the shaft in either direction, said means comprising a shiftable member having double sets of ports cooperating with double sets of inlet and exhaust ports in the ends of the compartments.

4. In an engine, a casing, a shaft, a rotary piston concentric with and of lesser diameter than the casing, abutments on one of said parts dividing the space between the casing and piston into a plurality of compartments, radially-movable vanes carried by the other part, means for moving said vanes into and out of the path of said abutments, and means for admitting an impelling medium to and exhausting it from said compartments to operate the shaft in either direction, said means comprising a shiftable member having double sets of ports cooperating with double sets of inlet and exhaust ports in the ends of the compartments.

5. In a rotary engine, a casing, a shaft, a rotary piston carried thereby, said piston and casing inclosing an annular space divided in the direction of the length of the shaft into a plurality of compartments, said compartments having double sets of inlet and exhaust ports radially-movable vanes carried by the piston, said vanes of lesser number than the number of said compartments, a fixed cam for operating said vanes, and means for admitting and exhausting an impelling medium to and from said compartments, said means including an axially-shiftable member having double sets of ports registerable with the said inlet and outlets of the compartments.

6. In a rotary engine, a casing, a shaft, a rotary piston carried thereby, said piston and casing inclosing an annular space divided in the direction of the length of the shaft into a plurality of compartments said compartments having double sets of inlet and exhaust ports, radially-movable vanes carried by the piston, said vanes of lesser number than the number of said compartments, a fixed cam for operating said vanes, and means for admitting and exhausting an impelling medium to and from said compartments to operate the shaft in either direction, said means including a shiftable member concentric with the shaft and provided with double sets of ports registerable with the said inlet and exhaust ports of the compartments.

7. In an engine, a casing, a shaft, a rotary piston, said piston and casing inclosing an annular space, and abutments extending parallel with the shaft and disposed tangential to the piston and dividing said space, said abutments being disposed at equal distances around the circumference of the casing, and each compartment of said casing having an exhaust-port at each end proximate to an abutment and communicating with said annular space, a radially-movable vane carried by the piston, and means for operating said vane to carry it into and out of the path of said abutments.

8. In an engine, a casing, a shaft, a rotary piston, said piston and casing inclosing an annular space, an abutment extending parallel with the shaft and disposed tangential to the piston and dividing said space, said abutments being disposed at equal distances around the circumference of the casing, and each compartment of said casing having an exhaust-port at each end proximate to an abutment and communicating with said annular space, a radially-movable vane carried by the piston, and means for operating said vane to carry it into and out of the path of said abutments, said last-named means including a stationary cam, and a rocker-arm carried by the piston and connected with the vane and engaging said cam

9. In an engine, a casing, a shaft, a rotary piston, said piston and casing inclosing an annular space, an abutment on the casing extending parallel with the shaft and exposed tangential to the piston and dividing said space, a radially-movable vane carried by the piston, means for operating said vane to carry it into and out of the path of said abutments, said casing having exhaust-ports and inlet-ports on both sides of said abutments, and means including a shiftable member with double sets of ports registerable with the said inlet and exhaust ports, for covering one set of said inlet and exhaust ports and correspondingly uncovering the other set.

10. In an engine, the combination of a casing, a shaft, a rotary piston thereon, said piston and casing inclosing an annular space divided into a plurality of compartments, radial vanes on the piston, means for retracting said vanes within the piston and for projecting said vanes outwardly into said compartments, said compartments provided with double sets of inlet and exhaust ports, a ring concentric with the casing and having ports registerable with said inlet and exhaust ports, and means for shifting said ring to cover one set of said inlet and exhaust ports and uncover another set.

11. In an engine the combination of a casing, a shaft, a rotary piston thereon, said piston and casing inclosing an annular space divided into a plurality of compartments, vanes carried by the piston and operating in said compartments, said compartments having inlet-ports, valves controlling the admission of fluid through said ports, and means including a single shiftable cam on the shaft to operate said valves synchronously and to vary the time of operation of the valves.

12. In an engine the combination of a casing, a shaft, a piston thereon, said piston and casing inclosing a space divided in the direction of the length of the shaft into a plurality of compartments, vanes carried by the piston and operating in said compartments, said compartments having exhaust and inlet ports, valves in said inlet-ports, a cam on the shaft, and connections between the shiftable cam and valves to operate the latter synchronously and to vary the time of operation of the valves.

13. In an engine the combination of a casing, a shaft, a piston thereon, said piston and casing inclosing a space divided in the direction of the length of the shaft into a plurality of compartments, vanes carried by the piston and operating in said compartments, said compartments having exhaust and inlet ports, valves in said inlet-ports, a cam on the shaft, connections between the cam and valves to operate the latter synchronously, and means for shifting the position of the cam on the shaft to alter the time of operation of said valves.

14. In an engine the combination of a casing, a shaft, a piston thereon, said piston and casing inclosing a space divided in the direction of the length of the shaft into a plurality of compartments, vanes carried by the piston and operating in said compartments, said compartments having exhaust and inlet ports, valves in said inlet-ports, a cam on the shaft, connections between the cam and valves to operate the latter synchronously, said cam having a sliding movement lengthwise of the shaft and capable of a limited rotary movement independent thereof, means for effecting the reciprocation and oscillation of the cam, and means for locking it to the shaft.

811,205. **ADDING DEVICE.** EDWARD C. DILWORTH, Pittsburg, Pa. Filed Mar. 20, 1905. Serial No. 251,091.

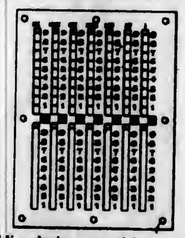

Claim.—1. An adding device, comprising a frame provided with a series of guides and having its face provided with a series of openings extending across the same and two series of slots, and bearing numbers adjacent to each of said slots, and a series of slides bearing numbers mounted in said guides opposite said openings and provided with means accessible through both series of slots for the engagement of moving means, the numbers on said slides and those adjacent both series of slots all running consecutively in the same direction.

2. An adding device comprising a frame having a series of guides therein, slides substantially half the length of said guides carrying numbers adapted to be moved from one end to the other of said guides, and a front plate having two sets of slots formed therein at its opposite ends and having openings intermediate of said slots and numbers running parallel with said slots, the numbers on the slides and those adjacent the two sets of slots running consecutively in the same direction.

811,206. **CAR PART.** ETHAN I. DODDS, Avalon, Pa., assignor to Pressed Steel Car Company, Pittsburg, Pa., a Corporation of New Jersey. Filed Feb. 23, 1904. Serial No. 194,041.

Claim.—1. A car part composed of a flanged metal piece slit in the web with longitudinal slits to afford a middle member and side members, said middle member and side members being bent away from each other in a direction transverse to the web, and the middle member being flanged; substantially as described.

2. A car part composed of a flanged metal piece slit in the web with longitudinal slits to afford a middle member and side members, said middle member and side members being bent away from each other in a direction transverse to the web, and the middle member being flanged with flanges deeper at the middle portion; substantially as described.

3. A car part composed of a flanged metal piece slit in the web with longitudinal slits to afford a middle member and side members, said middle member and side members being bent away from each other in a direction transverse to the web, and the side members being bent toward each other in the same plane; substantially as described.

811,207. **SOUNDING DEVICE.** SWINTON HALES, Washington, D. C. Filed May 13, 1903. Renewed July 15, 1905. Serial No. 269,606.

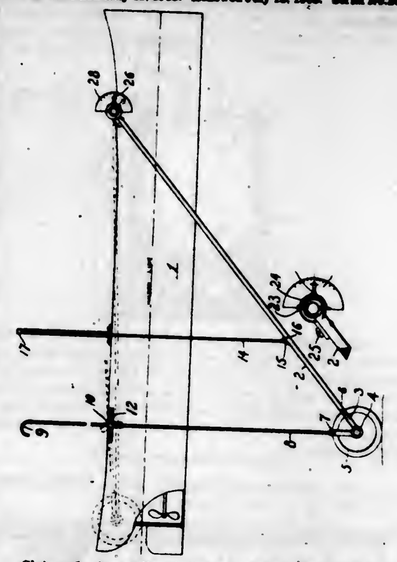

Claim.—1. A sounding device comprising a bar, a roller carried thereby, a graduated rod actuated by the movement of said roller, and a movable guide for said rod.

2. A sounding device comprising a bar, a roller carried thereby, a graduated rod actuated by the movement of said roller, a movable guide for said rod, and an indicator controlled by the movements of the other end of said bar.

3. A sounding device comprising a bar, a roller carried thereby, a pivot for one end of said bar, and a ball-and-socket connection between said pivot and bar.

4. A sounding device comprising a bar, a roller carried thereby, a pivot for one end of said bar, a ball-and-socket connection between said pivot and bar, a fixed dial, and a finger movable with said bar for cooperation with said dial.

5. A sounding device comprising a bar pivotally mounted at one end and carrying an index-finger, a dial cooperating with said finger, a roller carried by the other end of said bar, a graduated rod movable with said bar, and means for raising and lowering the same.

6. A sounding device comprising a bar pivotally mounted at one end and carrying an index-finger, a dial cooperating with said finger, a roller carried by the other end of said bar, a graduated rod movable with said bar, means for raising and lowering the same, and a swiveled guide for said rod.

7. A sounding device comprising a bar adapted to be pivotally mounted above the deck of a vessel, a contacting member carried thereby, a graduated rod rising from the free end of said bar and actuated by the movement of said member, and a swivel-guide for said rod.

811,208. **GAS-PRODUCER.** CARLETON ELLIS, New York, N. Y., assignor to Combustion Utilities Company, New York, N. Y., a Corporation of New York. Filed Mar. 15, 1905. Serial No. 250,178.

Claim.—1. In a dry-cooled gas-producer, the combination of a shell with closed lower end forming an ash-chamber, a screw conveyer for removing ash from the chamber, a baffle-wall spanning the shell above the chamber, and blast-tuyers piercing the sides of the shell and directed against the baffle-wall.

2. In a dry-cooled gas-producer, the combination of a shell with closed lower end forming an ash-chamber, a screw conveyer for removing ash from the chamber, an upwardly-tapering baffle-wall spanning the shell above the chamber, and blast-tuyers piercing the sides of the shell and directed against the baffle-wall.

3. In a dry-cooled gas-producer, the combination of a shell with closed lower end forming an ash-chamber, a partition across the chamber, subdividing it into compartments, a screw conveyer for removing the ash in each compartment, an upwardly-tapering baffle-

wall spanning the shell above the partition and supported thereby, and blast-tuyeres piercing the sides of the shell and directed against the baffle-wall.

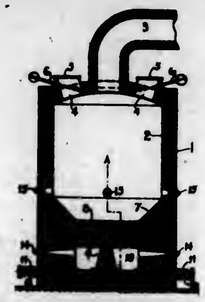

4. In a dry-cooled gas-producer, the combination of a shell with a closed lower end forming an ash-chamber, a partition across the chamber, subdividing it into compartments, a screw conveyer for removing the ash in each compartment, an upwardly-tapering baffle-wall spanning the shell above the partition and placed at an angle thereto, and blast-tuyeres piercing the sides of the shell and directed against the baffle-wall.

811,209. KNOCKDOWN SUPPORT. JOHN H. FARRELL, Chicago, Ill. Filed Mar. 26, 1904. Serial No. 200,155.

Claim.—In a support, the combination with a top having a recess in its under side, a central stud in said recess, and a lug projecting from said stud, of a tubular standard adapted to engage said stud and having a slot in its upper end to receive said lug, and an external rotatable ring on said standard having vertical and horizontal slots adapted to engage said stud.

811,210. CUFF-HOLDER. HENRY C. FRANK, New York, N. Y. Filed Apr. 14, 1905. Serial No. 255,698.

Claim.—1. A cuff-holder comprising a shank having a shirt-sleeve-engaging clasp and a cuff-engaging hook, the said cuff-engaging hook being provided with a rounded retaining-lug struck but not separated from the body of the hook.

2. A cuff-holder comprising a shank having a shirt-sleeve-engaging clasp and a cuff-engaging hook, the said cuff-engaging hook being hinged to the shank and comprising an upwardly-extended portion, a laterally-extended portion and a downwardly-extended portion and a lug struck from the body of the hook at the outer end of its laterally-extended portion, said lug being formed without severing any portion of the same from the body of the hook.

811,211. AMUSEMENT-RAILWAY. ASHE B. W. FRAZER, Washington, D. C. Filed Mar. 21, 1903. Renewed July 15, 1905. Serial No. 269,908.

Claim.—1. In an amusement-railway, the combination of a circular vertically-arranged pathway, comprising parallel portions separated by a slot, means for sustaining the pathway in vertical position, a clamp extending through the slot, and means connected to the clamp exterior to the pathway for causing the clamp to traverse the pathway; substantially as described.

2. In an amusement-railway, the combination of a circular vertically-arranged pathway, comprising parallel portions so arranged as to leave a slot between contiguous parallel portions, a clamp extending through each slot, and means connected with the clamps exterior to the pathway for causing the clamps to traverse the pathway in opposite directions; substantially as described.

3. In an amusement-railway, the combination of a circular vertically-arranged pathway, comprising parallel portions separated by a slot, means for sustaining the pathway in vertical position, a shoe adapted to traverse the exterior of the pathway, a clamp carried by the shoe and extending through the slot and means for causing the shoe to traverse the pathway; substantially as described.

4. In an amusement-railway, the combination of a circular vertically-arranged pathway, comprising parallel portions separated by a slot, means for sustaining the pathway in position comprising braces, one of which is hollow, a clamp extending through the slot, a cord or band connected with the clamp and extending through the hollow brace, and means acting on the cord or band to cause the clamp to traverse the periphery of the pathway; substantially as described.

5. In an amusement-railway, the combination of a circular vertically-arranged pathway, comprising parallel portions separated by a slot, means for sustaining the pathway in position, comprising

braces, one of which is hollow, a clamp extending through the slot, a cord or band connected with the clamp and extending through the hollow brace; substantially as described.

6. In an amusement-railway, the combination of a circular vertically-arranged pathway, comprising parallel portions separated by a slot, means for sustaining the pathway in vertical position, a shoe adapted to traverse the exterior of the pathway, a clamp carried by the shoe and extending through the slot, a cord or band secured to the shoe near one end, extending around the exterior of the circular pathway and provided with means for detachably engaging the shoe near its other end; substantially as described.

811,212. WATER HEAD-GATE. FRANK D. GIBBINES, Fort Collins, Colo. Filed Feb. 23, 1905. Serial No. 246,991.

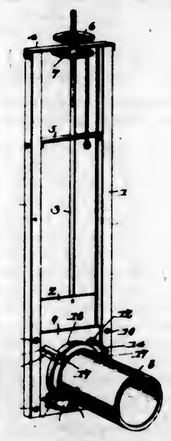

Claim.—1. In a water head-gate, a head-plate provided with integral lugs, wedges engaging the inner faces thereof, and means for securing the wedges in position.

2. In a water head-gate, a head-plate provided with integral reinforced lugs having flat inner faces, wedges engaging the said faces, and means for securing the wedges in position.

3. In a water head-gate, a head-plate provided with integral lugs, bolts projecting through the plate and disposed parallel with the inner sides of the lugs, wedges mounted upon the bolts, and clamping-nuts carried by the bolts and engaging the wedges.

4. In a water head-gate, a head-plate provided with integral lugs, bolts projecting through the head-plate and extending parallel with the inner faces of the lugs, wedges engaging the bolts having their inner faces beveled or curved, and nuts carried by the bolts and engaging the wedges.

811,213. LOW-WATER ALARM FOR STEAM-BOILERS. CHRISTOPHER G. GILBARD, Swansea, Mass. Filed Nov. 10, 1904. Serial No. 232,104.

Claim.—1. The combination with a steam-boiler and its burner, of a fusible-plug pipe, a main liquid-fuel-supply pipe having a valve or cut-off, means adapted to be actuated by the steam-pressure within the fusible-plug pipe for operating or closing the valve of the fuel-supply pipe, and an automatic locking device for said valve when the same is operated or thrown to a closed position.

2. The combination with a steam-boiler and its burner, of a fusible-plug pipe, an extension coupled thereto, a sliding sleeve mounted on the extension, a main liquid-fuel-supply pipe, a valve or cut-off therein, a rock-arm extending from the stem of the valve, an intermediate rock-shaft, a pair of rock-arms extending from the shaft, a rod connecting one of said rock-arms with the rock-arm of the valve, means for actuating the second rock-arm by the movement of the sleeve, and a latch arranged in the path of one of said rock-arms and adapted to engage the same when the valve in the fuel-supply pipe is closed and the sleeve actuated.

3. The combination with a steam-boiler and its burner, of a fusible-plug pipe, an extension coupled thereto, a sliding sleeve mounted on the extension, a main liquid-fuel-supply pipe, a valve or cut-off therein, a rock-arm extending from the stem of the valve, an intermediate rock-shaft, a pair of rock-arms extending from the shaft, a rod connecting one of said rock-arms with the rock-arm of the valve, means for actuating the second rock-arm by the movement of the sleeve, and a locking device adapted to engage and lock one of said rock-arms when the fuel-supply pipe is closed.

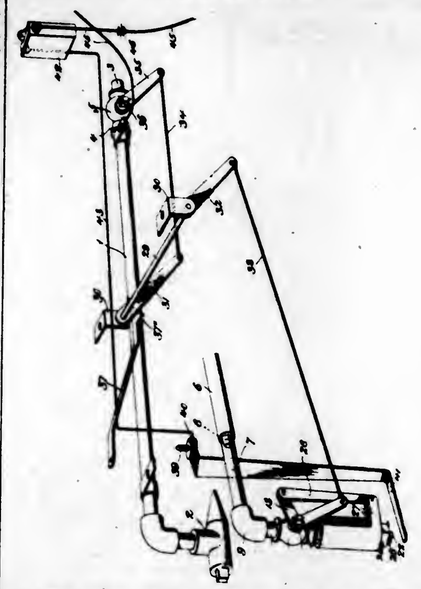

4. The combination with a steam-boiler and its burner; of a fusible-plug pipe, an extension connected to the same and terminating at its lower end in an enlarged head, a sleeve mounted to reciprocate upon the extension and depending below the head, a coiled spring interposed between the head and upper end of the sleeve and adapted to normally elevate the latter, a valve at the lower end of the sleeve, a spring for normally elevating the same from its seat, a fuel-supply pipe, a cut-off therein, and means actuated by the movement of the sleeve for operating said cut-off.

5. The combination with a steam-boiler and its burner, of a fusible-plug pipe connected to the boiler, a sliding element mounted for reciprocal movement upon and inclosing the fusible-plug pipe, a fuel-supply, a cut-off therein, and means operated by the reciprocal movement of said sliding element for operating the cut-off.

6. The combination with a steam-boiler and its burner, of a fusible-plug pipe, an extension-pipe coupled thereto and terminating at its lower end in a head, a sliding sleeve mounted on the extension above the head, a coiled spring inserted between the sleeve and the head, a bored cap in the lower end of the sleeve, a stem mounted in the bore and having at its upper end an angular head and below the same a valve for closing the bore, a spring for normally elevating the head, a bell-crank lever mounted on the extension-pipe, arms projecting from the sleeve, a connecting-rod between one branch of the bell-crank and said arms, a main fuel-supply pipe, a valve therein, an intermediate rock-shaft, rock-arms depending therefrom, a connection between one of said rock-arms and a rock-arm carried by the valve of the fuel-supply pipe, and a connection between the remaining rock-arm and the said bell-crank lever.

7. The combination with a steam-boiler and its burner, of a fusible-plug pipe terminating in a step or head, a sliding sleeve mounted on the fusible-plug pipe, a spring for normally pressing the sleeve in a direction contrary to that of the flow of steam when the plug in the fusible-plug pipe is fused, a fuel-supply pipe, a cut-off therein, and means actuated by the sleeve when operated against the tension of its spring for operating the cut-off of the fuel-supply pipe.

811,214. LOW-WATER ALARM FOR STEAM-BOILERS. CHRISTOPHER G. GILBARD, Swansea, Mass. Original application filed Nov. 10, 1904. Serial No. 232,104. Divided and this application filed Jan. 12, 1905. Serial No. 240,894.

Claim.—1. The combination with the fusible-plug pipe of a steam-boiler, of an electrical contact adapted to be actuated by the pressure of steam escaping from said fusible-plug pipe, a second contact arranged in the path of the first, a source of electrical energy, conductors leading to such contact, and an alarm located in the electrical circuit.

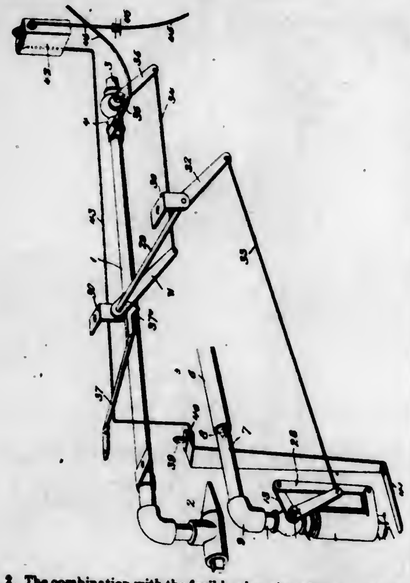

2. The combination with the fusible-plug pipe of a steam-boiler, of an electric contact adapted to be actuated by the pressure of steam escaping from said pipe, a second contact arranged in the path of the first, a source of electric energy, conductors leading to each contact, and an alarm located in the electric circuit, a cut-off arranged in the path of and connected to the fusible-plug pipe, and means actuated by the movable contact for operating said cut-off.

3. The combination with the fusible-plug pipe of a steam-boiler, of a pipe connected to the outer end thereof, a sliding sleeve mounted on said extension, a contact arranged in the path of the sleeve, conductors connected with said contact and with said sleeve, a source of electric energy, and an alarm arranged in the circuit.

4. The combination with the fusible-plug pipe of a steam-boiler, of an extension coupled thereto, a valve located in the extension, a sleeve mounted on the extension beyond the valve, a contact arranged in the path of the sleeve, electric conductors leading to the contact and to the sleeve, a spring for normally supporting the sleeve, means connected with the sleeve and with the valve whereby the latter is operated by the movement of the sleeve against the tension of the spring, a source of electric energy, and an alarm arranged in the circuit.

5. The combination with the fusible-plug pipe of a steam-boiler, of an alarm adapted to be actuated by the escape of steam therefrom, and a valve adapted to be actuated upon the escape of such steam and to close said plug-pipe.

6. The combination with the fusible-plug pipe of a steam-boiler, of an extension coupled thereto, a sliding sleeve mounted on the extension, a contact arranged in the path of the sleeve, an electric circuit connected to the sleeve and contact, and an alarm in said circuit.

7. The combination with the fusible-plug pipe of a steam-boiler, of an extension coupled to the same and terminating at its lower end in a head, a sleeve mounted to reciprocate on the extension and depending below the head, a coiled spring interposed between the end of the sleeve and the head, a plug or cap in the lower end of the sleeve and provided with an opening, a valve-stem arranged in the opening and adapted to close the same a spring for normally elevating the valve-stem, a contact arranged in the path of the valve-stem, a source of electric supply, an alarm, and conductors leading from the electric supply and alarm to the contact and to the sleeve.

8. The combination with the fusible-plug pipe of a steam-boiler, of an alarm, an electrical circuit, and means actuated by the escape of steam from the fusible-plug pipe for closing the electrical circuit and sounding an alarm.

9. The combination with the fusible-plug pipe of a steam-boiler, of an extension thereof, a valve located in the extension and adapted to be closed by the escape of steam from the fusible-plug pipe, an electric contact carried by the extension and adapted to be actuated by the escape of steam from the fusible-plug pipe, a contact-arm, an electric circuit to the latter, and an alarm arranged in the circuit.

10. The combination with the fusible-plug pipe of a steam-boiler, of an extension-pipe coupled thereto and terminating at its lower end in a head and provided above the same with a valve having a stem extending outward therefrom, a sliding sleeve mounted on the extension above the head, a coiled spring inserted between the sleeve and the head, a bored cap in the lower end of the sleeve, a stem 22 mounted in the bore and having at its upper end an angular head 23 and below the same a valve 47 for closing the bore, a spring for normally elevating the head 23, a contact-arm arranged in the path of the stem 23, an electric circuit connected to said contact-arm and the sleeve, an alarm arranged in the circuit.

811,215. **BAG-HANDLE.** MAURICE GOLDSMITH, New York, N. Y. Filed Jan. 10, 1905. Serial No. 240,699.

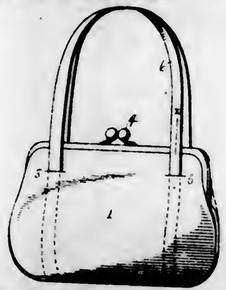

Claim.—A bag comprising a frame, an outer cover having openings therein near the ends thereof, and an inner lining, a handle formed of a band or loop passing through the openings and vertically around the bag between the cover and lining, and free to slide therein whereby the band or loop may be used either as a short, double handle or interlocked and used as a long single handle, substantially as described.

811,216. **EXTENSION-BED.** JOSEPH H. HARDEN, Nathan, Mich. Filed June 21, 1905. Serial No. 266,202.

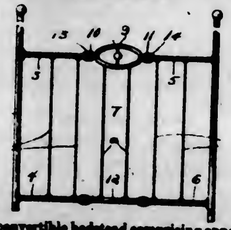

Claim.—A convertible bedstead comprising oppositely-disposed posts, upper and lower rods connected to each post, said rods having their extremities screw-threaded, a section having a horizontal bar at its lower end screw-threaded at its extremities, and a loop member at its upper end, provided with screw-threaded projections at its ends, the horizontal bar of the said section being adapted for alinement with the lower short rods of the respective posts and the said projections being arranged for alinement with the upper rods of the respective posts, collars arranged for screw-threaded engagement with the upper horizontal rods and the corresponding projections of the said loop of said section, and collars arranged for screw-threaded engagement with the lower horizontal rods of the respective posts and the horizontal rod of said section, whereby the latter may be disconnected from the head and foot of the bedstead.

811,217. **NON-REFILLABLE BOTTLE.** BENJAMIN F. HARRIS, Philadelphia, Pa. Filed June 12, 1905. Serial No. 265,041.

Claim.—1. In a non-refillable bottle, an inwardly-extending shoulder in the bottle in the neck thereof, the same having a chamber therein, a valve in said chamber and a horizontally-extending diaphragm at the top of said shoulder, said diaphragm having a port therein and a portion of the top of said shoulder being cut away forming a horizontally-extending channel below said port.

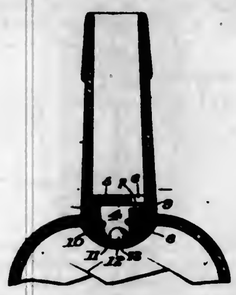

2. In a non-refillable bottle, an inwardly-extending shoulder in the bottle in the neck thereof, the same having a chamber, a valve in said chamber, a horizontally-extending diaphragm at the top of said shoulder, said diaphragm having a port therein, a portion of the top of said shoulder being cut away forming a horizontally-extending channel below said port, said diaphragm and shoulder being integral with each other and with the adjacent portion of the bottle.

3. In a non-refillable bottle, an inwardly-extending shoulder in the bottle at the base of the neck and top of the body, forming a valve-chamber, a valve therein, a diaphragm extending horizontally from the top of said shoulder and joining the latter, said diaphragm having a port therein adjacent to the neck, and a cut-away portion on the top of said shoulder below said port, forming a horizontal channel whose height is less than that of the diameter of said valve.

4. In a non-refillable bottle, an inwardly-extending shoulder in the bottle at the base of the neck and top of the bottle, forming a valve-chamber, a valve therein, a diaphragm at the top of said shoulder and joining the latter, said diaphragm having a port therein adjacent to the neck, and a cut-away portion on the top of said shoulder below said port, forming a horizontal channel whose height is less than that of the diameter of said valve, said diaphragm and shoulder being integral with the adjacent portions of the bottle.

5. In a non-refillable bottle, a diaphragm in the neck thereof, the same having a port in one side thereof, an inturned shoulder below said diaphragm, the latter being connected with the top of said shoulder, a horizontally-extending channel existing between a portion of the top of said shoulder and said port, said shoulder having within the same a chamber and a valve-seat at the base thereof and a valve on said seat.

6. In a non-refillable bottle, a diaphragm in the neck thereof, the same having a port in one side thereof, an inturned shoulder below said diaphragm, the latter being connected with the top of said shoulder, a horizontally-extending channel existing between a portion of the top of said shoulder and said port, said shoulder having within the same a chamber and a valve-seat at the base of said chamber and a valve on said seat, said diaphragm and shoulder being integral with the adjacent portions of the bottle.

811,218. **WINDMILL.** BENJAMIN R. HARRINGTON, Phœnix, Ariz. Filed Apr. 6, 1905. Serial No. 254,120.

Claim.—1. In a windmill, the combination of a rotary mast, and a collapsible sail constructed of flexible material and provided with a plurality of pockets, each pocket being open at the front and closed at the top, bottom, sides and back.

2. In a windmill, the combination of a rotary mast, and collapsible sails open at the front and closed at the top, bottom, sides and back and provided with partitions forming separate pockets.

3. In a windmill, the combination of a rotary mast, and collapsible sails open at the front and closed at the top, bottom, sides and back and provided with vertical partitions forming a horizontal series of separate pockets.

4. In a windmill, the combination of a rotary mast, a pair of sail-supporting arms having parallel outer portions and angularly-disposed inner portions diverging from the mast, and a sail supported by the said arms.

5. In a windmill, the combination of a rotary mast, opposite horizontal arms arranged in pairs and consisting of rods piercing and centrally secured to the rotary mast, said rods being centrally crossed and angularly bent at opposite sides of the mast to provide inner diverging portions and outer parallel portions, and sails supported by the arms.

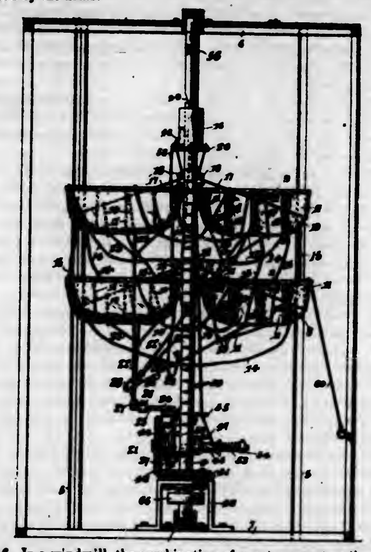

6. In a windmill, the combination of a rotary mast, collapsible sails, a slidable member mounted on the mast and located above the sails, flexible means extending upward, connecting the sails with the slidable member, a governor connected with and operated by the sails, and means operable by the governor for moving the slidable member to collapse the sails.

7. In a windmill, the combination of a rotary mast, collapsible sails, a slidable member mounted on the mast and located above the sails, flexible means extending upward, connecting the sails with the slidable member, a governor connected with and operated by the sails, means operable by the governor for moving the slidable member to collapse the sails, and automatic means for locking the slidable member to hold the sails collapsed.

8. In a windmill, the combination of a rotary mast, sails having collapsible pockets, a governor connected with and operated by the sails, and means operated by the governor for collapsing the pockets of the sails.

9. In a windmill, the combination of a rotary mast, sails having collapsible pockets, a governor connected with and operated by the sails, and means operated by the governor for collapsing the pockets of the sails, said means embodying a rotary drum and a flexible connection arranged to be mounted on the drum.

10. In a windmill, the combination of a rotary mast, sails having collapsible pockets, a governor connected with and operated by the sails, and means operated by the governor for collapsing the sails, said means involving a yieldably-mounted drum and a flexible connection arranged to be wound up by the drum.

11. In a windmill, the combination of a rotary mast, collapsible sails, a governor connected with and operated by the sails, and means operated by the governor for collapsing the sails, said means embodying a rotary drum, a flexible connection arranged to be wound up by the drum, and an actuating member frictionally engaging the drum.

12. In a windmill, the combination of a rotary mast, collapsible sails, a governor connected with and operated by the sails, and means operated by the governor for collapsing the sails, said means embodying a rotary drum, a flexible connection arranged to be wound up by the drum, an actuating member frictionally engaging one end of the drum, and a spring yieldably engaging the other end of the drum.

13. In a windmill, the combination of a rotary mast, collapsible sails, a governor connected with the sails, and embodying a fixed horizontal gear, a horizontal shaft carried by the rotary mast, a ver-

tool gear adapted to revolve around the fixed gear, and slidable means for operatively connecting the horizontal shaft with the gearing, and means actuated by the governor for collapsing the sails.

14. In a windmill, the combination of a rotary mast, collapsible sails, and a governor embodying a fixed horizontal gear, a horizontal shaft, a vertical gear adapted to revolve around the fixed gear and mounted on the horizontal shaft, slidable means for operatively connecting the horizontal shaft with the gearing, a weighted lever for actuating the slidable means, said weighted lever being connected with the sails and operated by the same, and means actuated by the governor for collapsing the sails.

15. In a windmill, the combination of a rotary mast, collapsible sails, a governor embodying a fixed horizontal gear, a vertical gear carried by the rotary mast, sail-collapsing mechanism, and a clutch for connecting the latter with the gearing.

16. In a windmill, the combination of a rotary mast, collapsible sails, a fixed horizontal gear, a horizontal shaft mounted on the rotary mast, a vertical gear meshing with the horizontal gear and adapted to revolve around the same, a sliding clutch element for interlocking the shaft with the vertical gear, a weighted lever connected with the sliding clutch element and with the sails and operated by the former, and mechanism actuated by the horizontal shaft for collapsing the sails.

17. In a windmill, the combination of a rotary mast, a horizontal shaft, gearing for actuating the same, said gearing embodying a fixed horizontal gear, a lever fulcrumed on the mast and having a weighted arm connected with the sails, means actuated by the lever for operatively connecting the horizontal shaft with the gearing, a drum actuated by the horizontal shaft, and flexible means adapted to be wound up on the drum and connected with the sails for collapsing the same.

18. The combination of a windmill having a sail for actuating it, said sail being movable, and governing mechanism for controlling the operation of the windmill, said governing mechanism being connected with and thrown into and out of operation by the sail.

19. The combination of a windmill having a sail for actuating it, and governing mechanism for controlling the operation of the windmill, said governing mechanism being connected with and operated solely by the sail.

20. The combination of a windmill having a movably-mounted sail, a governor connected with and operated solely by the sail, and independent means controlled by the governor for throwing the windmill out of operation.

21. The combination of a windmill having a movably-mounted sail, a governor connected with and operated solely by the sail, and independent means controlled by the governor and connected with the sail for arranging the latter in an operative position.

22. In a windmill, the combination of a rotary mast provided with supports, collapsible sails depending from the supports, governing mechanism for controlling the operation of the windmill, and means connected with the lower portions of the sails and with the governing mechanism for throwing the latter into and out of operation.

811,219. CRUCIBLE-FURNACE. ERNST HAUSMANN, Cologne, Germany. Filed Aug. 19, 1905. Serial No. 274,961.

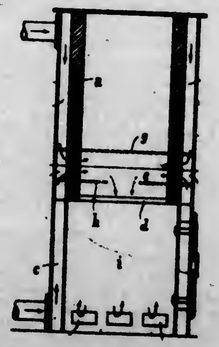

Claim.—A crucible-furnace having air-feed passages formed in the walls thereof, said passages having inlet-openings at the lower and upper ends thereof, a lateral passage situated at a point a short distance above the plane of the grate and connected to the feed-passages, means for retarding the air in said lateral passage and passages for conducting the air from the lateral passage to beneath the grate, substantially as described.

811,220. MULTIPLE-PISTON EXPLOSIVE-ENGINE. CHARLES T. HILBERMANN, Chicago, Ill., assignor of one-half to Everett W. Brooks, Chicago, Ill. Filed Feb. 10, 1905. Serial No. 245,695.

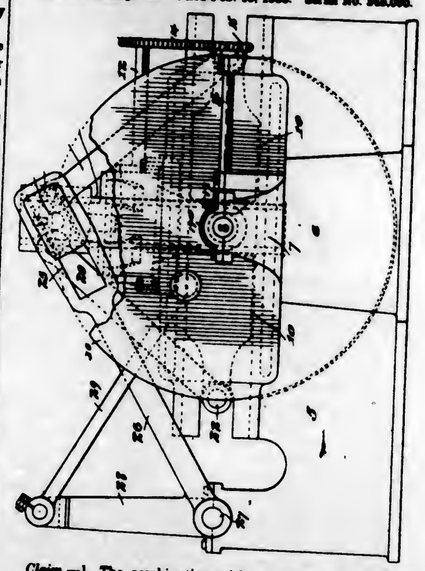

Claim.—1. The combination with an engine-cylinder having oppositely-moving twin pistons, of a driven shaft disposed laterally of the cylinder and at right angles thereto, a vertical guide mounted on one side of the cylinder, a cross-head reciprocable over said guide, pitmen connecting the outer ends of the pistons with said cross-head, and driving connections between the latter and said driven shaft, substantially as described.

2. The combination with an engine-cylinder having oppositely-moving twin pistons, of a driven shaft disposed laterally of the cylinder and at right angles thereto, a vertical guide mounted on one side of the cylinder, a cross-head reciprocable over said guide, pitmen connecting the outer ends of the pistons with said cross-head, a bell-crank lever pivotally mounted opposite one end of said cylinder and having one arm thereof connected to said cross-head, a fly-wheel on said driven shaft, and a pitman connecting said fly-wheel to the other arm of said bell-crank, substantially as described.

3. The combination with an engine-cylinder having oppositely-moving twin pistons, of a driven shaft disposed laterally of the cylinder and at right angles thereto, a pair of vertical guides mounted on either side of the cylinder, respectively, cross-heads reciprocable over said guides, pitmen connecting the outer ends of the pistons with said cross-heads, a rock-shaft mounted transversely of and opposite one end of said cylinder, arms fast at one end on said rock-shaft and at their other ends engaged by said cross-heads, an upwardly-extending arm fast at its lower end on said rock-shaft, a fly-wheel on said driven shaft, and a pitman connecting said fly-wheel with the upper end of said upright shaft, substantially as described.

811,221. AUTOMATICALLY-OPERATING FIRE-EXTINGUISHER. HENRY W. HILDEBRAND, Denver, Colo. Filed June 21, 1905. Serial No. 266,269.

Claim.—1. In a fire-extinguisher, a main receptacle containing a supply of solution, a stepped top portion to said main receptacle, a cap secured to said stepped top portion, a cylinder in said main receptacle, to near the bottom of said main receptacle and adapted to divide said main receptacle into two compartments, a connecting-space between said two compartments below the lower edge of said cylinder, and the bottom of said receptacle, a circumferential row of apertures in said stepped top portion of said receptacle, leading into the space in said receptacle separated from the main body by said cylinder, a small receptacle in said main receptacle containing a supply of acid, proportionate to the amount of solution in said main receptacle, an acid-outlet in said small receptacle, and an acid-distributer in the outlet of said small receptacle, as set forth.

2. In a fire-extinguisher, a main receptacle containing a supply of solution, a stepped top portion to said main receptacle, a cap secured to said stepped top portion, a cylinder in said main receptacle, to near the bottom of said main receptacle and adapted to divide said main receptacle into two compartments, a connecting-space between said two compartments below the lower edge of said cylinder, and the bottom of said receptacle, a circumferential row of apertures in said stepped top portion of said receptacle, leading into the space in said receptacle separated from the main body by said cylinder, a small receptacle in said main receptacle containing a supply of acid, proportionate to the amount of solution in said main receptacle, an acid-outlet in said small receptacle, and an acid-distributer in the outlet of said small receptacle, as set forth.

3. In a fire-extinguisher, a main receptacle, provided with a circumferential portion extending from its top portion to near its bottom portion, and adapted to divide its interior into two connecting-compartments, a supply of solution in said receptacle, a plurality of perforations in the top of said receptacle leading into the outer compartment, a cap secured to the top of said main receptacle, a cone depending from the bottom of said cap, a small receptacle secured to said cone, and depending into the central portion of said main receptacle, and containing a supply of acid, and an outlet-aperture in said small receptacle surrounding said cone, as set forth.

4. In a fire-extinguisher, a main receptacle, provided with a circumferential portion extending from its top portion to near its bottom portion, and adapted to divide its interior into two connecting-compartments, a supply of solution in said receptacle, a plurality of perforations in the top of said receptacle leading into the outer compartment, a cap secured to the top of said main receptacle, a cone depending from the bottom of said cap, a small receptacle secured to said cone, and depending into the central portion of said main receptacle, and containing a supply of acid, an outlet-aperture in said small receptacle surrounding said cone, an eye secured to the top of said can, a fusible hook secured to said eye and arranged and adapted to be hung and to depend said fire-extinguisher from or in proximity to a ceiling, and a chain or cord secured at one end to the bottom of said receptacle, and at its opposite end to or adjacent to a ceiling, as set forth.

5. In a fire-extinguisher, a main receptacle, having a stepped top portion, a cap secured to said top portion, a fusible hook connected to said cap, an eye or hook attached to or adjacent to a ceiling to which said fusible hook is adapted to be attached, whereby said receptacle is suspended from or adjacent to a ceiling, and a cord or chain secured at one end to the bottom of said receptacle, having its opposite end secured to or adjacent to a ceiling, and adjacent to said fusible hook, as set forth.

6. In a fire-extinguisher, a main receptacle, divided into two concentrically-arranged compartments, connected together at the bottom portion of the receptacle, and containing a supply of solution, a plurality of discharge-apertures in said receptacle, entering the outer concentric compartment, and arranged to be normally sealed, a small receptacle depending in the center of said main receptacle, an outlet in the top of said receptacle, a supply of acid in said small receptacle, a fusible hook connected to the top of said main receptacle, and adapted to suspend said main receptacle, in proximity to a ceiling, and a chain secured at one end to the bottom of said main receptacle and in proximity to a ceiling at its opposite end close to said fusible hook, and adapted to hold said main receptacle in an inverted position when said fusible hook melts, and mix said acid and solution together in said main receptacle, as set forth.

apertures in said stepped top portion of said receptacle, leading into the space in said receptacle separated from the main body by said cylinder, a small receptacle in said main receptacle containing a supply of acid, proportionate to the amount of solution in said main receptacle, and an acid-outlet in said small receptacle, as set forth.

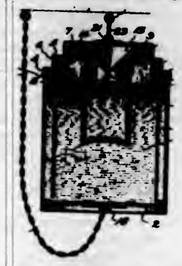

7. In a fire-extinguisher, the combination of a solution-holding receptacle or can divided into two concentric compartments, by a cylindrical partition, extending from its top to close to its bottom, and containing a connecting annular space below the edge of said cylindrical partition, a stepped top to said receptacle, containing a circumferential row of apertures entering the outer compartment of said receptacle, a cap secured to the top of said receptacle, a small acid-holding receptacle or bottle in said main receptacle depending from said cap and provided with a discharge-aperture positioned above said supply of solution in said main receptacle, a conical acid spreader or distributer extending loosely into said acid-discharge aperture, a fusible hook connected to the top of said main receptacle or can, an eye connected to said hook and adapted to be connected to a ceiling, and adapted to depend said main receptacle below a ceiling of a room in an upright position, a chain secured at one end to the bottom of said main receptacle, and to a ceiling, at its opposite end, in proximity to said fusible hook, and adapted to depend said main receptacle in an inverted position when said fusible hook melts, as set forth.

8. In a fire-extinguisher, the combination of a can having a stepped top portion, containing a mouth, a cap threaded to the mouth, and a cylindrical partition in said can adapted to divide it into two compartments, and a circumferential row of discharge-perforations extending through one of the steps of said top portion and provided with an automatically-removing seal, adapted to normally keep them sealed, when can is in position of disuse.

9. In a fire-extinguisher, the combination of the solution-holding can, having the stepped perforated top, the cap, the two compartments connected at the bottom of said can, with the small acid-holding bottle in said can having a discharge-outlet, the conical acid-distributer extending into the discharge-aperture of said acid-holding bottle, means, including a fusible hook secured to the top of said can, adapted for suspending said can from a ceiling, and means, including a cord or chain attached at one end to the bottom of said can, for holding said can from a ceiling in a depending position, as set forth.

10. In a fire-extinguisher, the combination of the can provided with a supply of solution, and containing two compartments connected together at the bottom of the can, the circumferential row of discharge-apertures in said can, and the washer-seal over said apertures, with the cap threaded to the top of said can, the conical distributer connected to the bottom of said cap, the depending arms secured to said conical distributer, the threaded cap-supported aperture surrounded with an annular space all around said conical distributer, the bottle provided with a supply of acid arranged to screw into said cap, the fusible hook connected to the top of said can, means for connecting said fusible hook to a ceiling, the chain connected at one end to the bottom of said can, and means for connecting the opposite end of said chain to a ceiling adjacent to said fusible hook, as set forth.

11. In a fire-extinguisher, the combination of the solution-holding can having a removable cap, and normally sealed discharge-apertures, with a conical acid-distributer depending apex downward from said cap, a plurality of arms secured to said conical distributer, a threaded cap supported by said arms, a discharge-aperture surrounding said conical acid-distributer and adapted to form a discharge-space of predetermined area around said conical distributer above the level of the solution in said can, discharge-spaces between said arms, and a bottle provided with a supply of acid threaded to said cap, a fusible hook connected to the top of said can, means for securing said fusible hook to a ceiling to depend said can therefrom in an upright position, a chain or cord secured at one end to the bottom of said can, and means for securing the opposite end of said chain or cord to a ceiling to stop and hold said can in an inverted position when said fusible hook melts, and it drops from the ceiling, as set forth.

12. In a fire-extinguisher, the combination of a series of fire-extinguishers, comprising a receptacle having two concentric compartments, connected at the bottom with each other, and holding a supply of solution and having a normally sealed plurality of apertures through said can into the outer compartment, and an acid-holding receptacle in said receptacle, adapted to discharge its acid contents into the solution of said receptacle when said receptacle is turned into an inverted position, a fusible hook to each fire-extinguishing receptacle, a chain secured at one end to each fire-extinguishing receptacle, a pulley in said ceiling, arranged to support the opposite end of said chain, a cord attached to the opposite end of each chain of each fire-extinguisher, and a spring-bolt secured to the ceiling and connected at one end to said cord and having the fusible hook of each fire-extinguisher receptacle in the system hooked over its operative bolt end, as set forth.

13. In a fire-extinguisher, the combination of an automatic-operating fire-extinguishing system adapted to be secured below or in the ceiling-joists of rooms, comprising a plurality of main receptacles, each containing two compartments connected at the bottom of said receptacle, and containing a supply of solution, a small receptacle in each main receptacle, containing a supply of acid, and having a discharge-outlet above the solution of said main receptacle, a spring-bolt secured in juxtaposition to a ceiling at each point a fire-extinguishing receptacle is to be placed, a fusible hook secured to the upper end of said fire-extinguishing receptacle adapted to be hooked over the locking end of said spring-bolt, a chain secured at one end to each fire-extinguishing receptacle in the series, a pulley secured in juxtaposition to a ceiling for supporting the opposite end portions of said chain, and a cord secured to the pulley end of said chain of each fire-extinguishing receptacle at one end and at its opposite end secured to the rear end of said spring-bolt, as set forth.

14. In a fire-extinguisher, the combination of a plurality of the fire-extinguishing receptacles, and their fusible hooks, and tilting chains, arranged in any desired system below or between the ceiling-joists of rooms, and means, including a spring-bolt, for operatively precipitating all of said receptacles in successive order when the fusible hook of any one receptacle is melted, as set forth.

15. In a fire-extinguishing system, a plurality of cans, each containing normally sealed discharge-apertures when in an upright position, and containing a supply of solution, a bottle in each of said cans, containing a supply of acid, said bottle containing a discharge-aperture positioned above said solution when said can is in an upright position, a fusible hook at the top of each of said cans, in said system, means for operatively positioning said fusible hooks and cans in close proximity to a ceiling, and means, including a spring-operated bolt, for operatively precipitating the cans of the system in successive order, when the fusible hook of any one of the cans in the system is melted, and means for limiting the precipitative movement of said cans, as set forth.

16. In a fire-extinguisher, the combination of a plurality of the fire-extinguishing cans housed between the ceiling-joists of a room, trap-doors in the bottom of said housing, a spring-bolt pivotally secured in said housing to tiltingly swivel, and arranged adjacent to said trap-doors, a hook connected to hold said doors closed and arranged to hook over the locking end of said spring-bolt, a fire-extinguishing can resting on said trap-doors, a cord secured at one end to the bottom of each of said cans in said housing, a pulley in said housing arranged to support the opposite end of said cord, a fixed hook depending from said housing, a fusible hook connected to the rear end of said spring-bolt of each can, and arranged to depend therefrom and hook under the fixed depending hook, and a chain extending from the rear end of said spring-bolt, and connected to the cord of the adjacent fire-extinguishing can, said chains of said spring-bolt and said cords of said cans being connected together in successive order throughout the system, so that when the fusible hook of any one housing melts its spring-hook will tilt and the trap-doors and can will drop and the jerk of the can on its cord will pull the spring-bolt free of the trap-door hook in the housing of the adjacent fire-extinguishing can, and the drop of this can will trip the spring-bolt and doors of the next can in the order of their arrangement around the circuit of the system to the can whose fusible hook melted, as set forth.

17. In a fire-extinguisher, the combination of the system of fire-extinguishing cans and their housing-boxes, provided with trap-doors arranged to support the fire-extinguishing cans, the trap-door hooks, the pivotally-tilting spring-bolts in said boxes adapted at their locking ends to look to the bolt ends of said spring-bolts, the fixed hooks in the bottom of said boxes, the fusible hooks connected to the rear ends of said spring locking-bolts, the drop-limiting cords attached to the bottoms of said fire-extinguishing cans, the pulleys in the top of said boxes for supporting said cords, and the chains secured to the rear ends of said spring locking-bolts, and connected to the spring tilting-bolts of the boxes of the adjacent fire-extinguishing cans in the order of their arrangement, around the system, as set forth.

811,222. MATTRESS OR COUCH FABRIC. JOHN HOEY, San Francisco, Cal. Filed Sept. 20, 1905. Serial No. 279,516.

Claim.—1. A mattress or couch fabric consisting of wires bent into zigzag form, rods passing through the bent portions of said loops, said wires having their terminals connected to certain of said rods, said springs at the ends of the rods having one end fixed and the other end adapted to engage said rods.

2. A mattress or couch fabric consisting of wires bent into zigzag form, having open loops formed at their angles, rods passing through said loops and uniting a series of zigzag wires to form the width of the mattress, spiral springs having one end fixed and the other adapted to engage the longitudinal rods of the mattress.

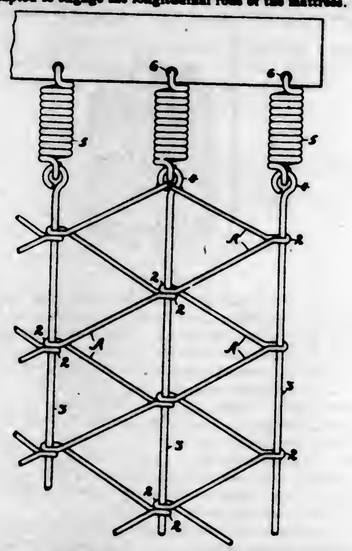

3. A mattress consisting of wires bent into zigzag form having loops at their retaining angles, rods passing through said loops, spiral springs with which the ends of the rods are connected, and connections between the terminal ends of each zigzag wire with the ends of the longitudinal rods.

4. A mattress fabric consisting of parallel longitudinally-disposed rods, springs with which the ends of the rods are connected, wires bent to extend diagonally between the rods with loops bent to interlock with said rods, said wires having their ends connected at the junction of the springs and rods.

811,223. REFRACTORY WALL FOR GLASS-TANKS. LEON J. HOUEN, Port Marion, Pa. Filed Aug. 7, 1905. Serial No. 273,162.

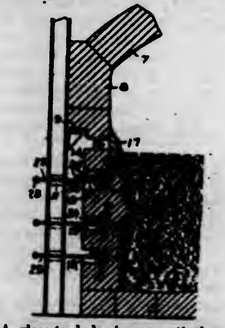

Claim.—1. A glass-tank having a vertical wall of refractory material, a portion of said wall being formed of blocks so shaped and laid that their outer end and a horizontal face for at least one-third the length of the blocks are exposed to the atmosphere.

2. A glass-tank having a vertical wall of refractory material, provided on its outer face with an air-recess which extends inwardly for at least one-third the thickness of the wall and is open to the atmosphere.

3. A glass-tank having a vertical wall formed of refractory material, a portion of said wall being formed of L-shaped blocks forming a recess on the outer face of the wall and exposing the outer end and horizontal face of the block to the atmosphere.

4. A glass-tank having a vertical wall formed of refractory material, a portion thereof being formed of blocks so shaped and laid as to provide a recess on their outer faces at the joints between the blocks, thereby exposing the outer ends and a portion of the horizontal faces of said blocks to the atmosphere.

5. A glass-tank having a vertical wall of refractory material provided on its outer face with an air-recess extending inwardly for at least one-third of the thickness of the wall, and being open to the atmosphere, and adapted to receive reinforcing-blocks.

6. A glass-tank having a vertical wall formed of refractory material, a portion thereof being formed of L-shaped blocks so laid as to form an air-recess on the outer face of the wall, and exposing the outer ends and a portion of the horizontal face of said block to the atmosphere, said recess being adapted to receive reinforcing-blocks.

7. A glass-tank having a wall provided with a recess therein, reinforcing-blocks in said recess, and means for holding said blocks in position.

8. A glass-tank having a recess formed in the outer face of its wall adjacent to the level of the molten glass, reinforcing-blocks in said recess, and means for holding said blocks in position.

9. A glass-tank having a vertical wall formed of refractory material, the upper portion of said wall being formed of blocks so shaped and laid as to provide a recess on the outer face of the wall located below the level of the glass, and exposing the outer ends and a portion of the horizontal faces of said blocks to the atmosphere.

10. A glass-tank having a vertical wall formed of refractory material provided on its outer face below the level of the glass in the tank with a recess open to the atmosphere and adapted to receive reinforcing-blocks.

11. A glass-tank having a wall formed of refractory material, and means for applying reinforcing-blocks to the outer face thereof below the level of the glass in the tank.

12. A glass-tank having a wall formed of refractory material provided on its outer face with a recess below the level of the glass in the tank, said recess being adapted to receive refractory reinforcing material.

811,224. WRENCH. MATTHEW M. HOWLAND, Providence, R. I. Filed Nov. 1, 1904. Serial No. 230,982.

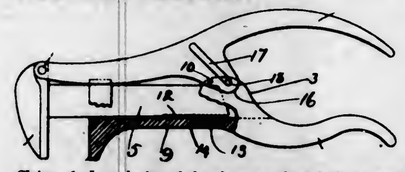

Claim.—1. In a device of the character described, a movable jaw, a fixed jaw, an operating-handle pivoted on one of said jaws, and means whereby said movable jaw is automatically locked against a further opening movement only when a strain is applied to the jaws.

2. In a wrench, a fixed jaw, a fixed handle, a longitudinally-movable jaw adjustably supported from said fixed jaw and handle, means whereby said jaws may be opened to their fullest extent by one movement of the operating-handle, and means for automatically locking the said jaws.

3. In a wrench, a fixed jaw, a fixed handle, a movable jaw adjustably supported from said fixed jaw, an operating-handle pivoted to one of said jaws, means whereby said jaws may be opened to their fullest extent by one movement of said handle, and means for automatically locking the same, the arrangement being such that said jaws may be closed without actuating the locking device.

4. In a wrench, a fixed jaw and handle, a movable jaw secured to a movable member, said member being adjustably held in said fixed jaw and handle, an adjusting-handle pivoted to one of said jaws, means whereby said jaws may be opened to their fullest extent by one movement of said handle and means for automatically locking said jaws only when a strain is applied to the same.

5. In a wrench, a jaw and handle fixed together, a longitudinally-movable bar supported from said fixed jaw and handle, a movable jaw secured to said movable bar, an adjusting-handle pivoted to the outer jaws, and means for automatically locking said jaws.

6. In a wrench, a fixed jaw and handle, a longitudinally-movable bar supported from said fixed jaw and handle, a movable jaw secured to said movable bar, an adjusting-handle pivoted to one of said jaws, and means on said movable bar arranged to automatically engage said fixed members to lock the jaws only when a strain is applied to said jaws.

7. In a device of the character described, a jaw and handle fixed together, longitudinally-movable members including one jaw supported from said fixed members, means in said movable members arranged to automatically engage means in said fixed members to lock the jaws, and an adjusting-handle for moving one of the jaws to open it to its fullest extent with but one movement of the said handle.

8. In a wrench, a fixed jaw, a fixed handle, an operating-handle, a longitudinally-movable jaw adjustably supported from said fixed jaw and handle, means whereby said jaws may be completely opened by one movement of said operating-handle and means for automatically locking the said jaws, said operating-handle acting independently of the locking means.

9. In a wrench, a fixed jaw and handle, a movable jaw secured to a movable member, said member being adjustably held in said fixed jaw and handle, an adjusting-handle, and means for automatically locking said jaws.

10. In a wrench, a jaw and handle fixed together, a movable jaw secured to a longitudinally-movable bar, said bar being held to slide in said fixed members, an adjusting-handle pivoted to one of said jaws, and means in said bar for automatically locking said jaws.

11. In a device of the character described, a jaw and handle fixed together, a movable jaw secured to a longitudinally-movable bar, said bar being held to slide in said fixed members, teeth on said bar to engage corresponding teeth in said fixed members to lock the said jaws from opening, and an adjusting-handle for setting the jaws.

12. In a device of the character described, a jaw and handle fixed together, a movable jaw secured to a longitudinally-movable bar, said bar being held to slide in said fixed members, teeth on said bar to engage corresponding teeth in said fixed members to lock the said jaws from opening, an adjustable handle for setting the jaws, and means in said handle by which the said movable jaw may be opened and closed by the movement of said handle.

13. In a wrench, a jaw and handle fixed together, a movable jaw secured to a longitudinally-movable bar, said bar being held to slide in said fixed members, an adjusting-handle pivoted to one of said jaws, means including a pin working in a slot by which the said movable jaw may be opened and closed by the movement of said handle, and means in said bar for automatically locking said jaws.

14. In a device of the character described, a jaw and handle fixed together, a movable jaw secured to the longitudinally-movable bar, said bar being held to slide in said fixed members, teeth on said bar arranged to automatically engage corresponding teeth in said fixed members to lock the said jaws from opening, an adjusting-handle pivoted to one of said jaws, and means including a pin working in a slot by which the said movable jaw may be opened and closed by the movement of said handle.

811,225. LEAF-TURNER. GUSTAV HUBERT, Baraboo, Wis. Filed Nov. 19, 1904. Serial No. 233,300.

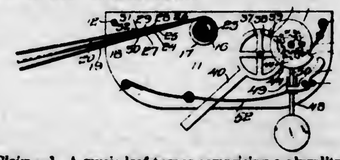

Claim.—1. A music-leaf turner comprising a plurality of movable turning-arms, individual means for moving the arms, a retaining device including upstanding projections for holding each of the arms against the action of its moving means, means for shifting the projections successively out of active position, and means for controlling the shifting means.

2. A music-leaf turner comprising a plurality of movable turning-arms, a retaining device including upstanding projections for holding each of the arms against the action of its moving means, a carrier upon which the projections are mounted and with which they are movable successively into inactive position, spring-actuated means for shifting the carrier and means for releasing the shifting means.

3. A music-leaf turner comprising a plurality of movable turning-arms, a rotatable carrier, upstanding retaining-pins upon the carrier and movable therewith successively into and out of engagement with their respective arms, means for shifting the carrier, an escapement mechanism for controlling the degree of movement of the shifting means, and means for operating the escapement mechanism.

4. A music-leaf turner comprising a plurality of movable turn-

ing-arms, individual means for moving the arms, a retaining device including upstanding pins for holding each of the arms against the action of its moving means, means for shifting the projections successively out of active position, means for controlling the shifting means, and means for moving the arms simultaneously into position for engagement by their retaining means.

5. A music-leaf turner comprising a plurality of movable turning-arms, a rotatable carrier, upstanding retaining-pins upon the carrier and movable therewith successively into and out of engagement with their respective arms, means for shifting the carrier, an escapement mechanism for controlling the degree of movement of the shifting means, means for operating the escapement mechanism, and means for moving the arms simultaneously into position for engagement by their retaining means.

6. A music-leaf turner comprising a plurality of movable turning-arms, a rotatable carrier including a lever, upstanding retaining-pins mounted upon the carrier and movable therewith successively into and out of engagement with their respective arms, the said retaining-pins being of different length, a wheel mounted adjacent the carrier for coöperation with the said pins, a pawl arranged for contact with said wheel, and a lever arranged for manipulating the pawl.

811,226. **LIGHTNING-ARRESTER.** WALTER C. JONES, Chicago, Ill., assignor to Gorton-Danisch Company, Keokuk, Iowa, a Corporation of Iowa. Filed Dec. 7, 1901. Serial No. 85,063.

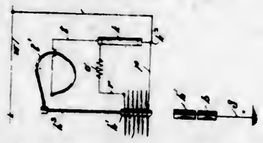

Claim.—1. In a lightning-arrester, the combination of two continuous paths for the current, non-inductive resistance arranged in one of said paths, and an arrester-coil and a resistance arranged in the other path, substantially as described.

2. In a lightning-arrester, the combination of two continuous paths for the current, non-inductive resistance arranged in one of said paths, and an arrester-coil and an inductive resistance arranged in the other path, substantially as described.

3. In a lightning-arrester, the combination with two continuous paths for the current, of non-inductive resistance arranged in one of said paths, and an arrester-coil and a resistance-coil arranged in the other path, said latter resistance being located between the arrester-coil and the ground, whereby the resistance-coil protects the arrester-coil from the effect of lightning discharges.

4. In a lightning-arrester, the combination with two continuous paths for the current, of a graphite rod constituting a non-inductive resistance located in one of said paths, an arrester-coil and an inductive resistance located in the other path, substantially as described.

5. In a lightning-arrester, the combination with two continuous paths for the current, of an arrester-coil and an inductive resistance located in one of said paths, a pair of clamping devices and a graphite resistance-rod clamped therein, said clamps and graphite rod constituting a part of the second parallel path, substantially as described.

6. In a lightning-arrester, the combination with arcing electrodes, of an arrester-coil, a non-inductive resistance in shunt of said arrester-coil, and a resistance in series with said coil.

811,227. **COMPOSITE INSULATING MATERIAL.** GEORGE KELLY, Hinsdale, Ill. Filed Aug. 16, 1905. Serial No. 274,473.

Claim.—1. The method of producing a self-sustaining insulating board, tile or slab for cold-storage or other insulating purposes, which consists in forming a body of thoroughly-commingled flax fiber, mineral wool and liquid, subsequently forming said body into a board, tile, slab, or other form, and drying the same.

2. The method of producing an insulating board, tile or slab for cold-storage or other insulating purposes, which consists in stirring a wet body of flax fiber and mineral wool until the same are thoroughly commingled, stopping the stirring action prior to the pulping of the same, forming the mixture into a board, tile, slab, or other form, and drying the same.

3. The method of producing an insulating board, tile, or slab for cold-storage or other insulating purposes, which consists in commingling in water substantially equal quantities of mineral wool and degummed short flax fiber, stopping the commingling action prior to the pulping of the fiber, then forming the mixture into a board, tile, slab, or other form, and drying the same.

4. A self-sustaining board, tile, slab, or other form for cold-storage or other insulation, composed of thoroughly-commingled mineral wool and flax fiber.

5. A self-sustaining board, tile, slab, or other form for cold-storage or other insulation composed of thoroughly-commingled mineral wool and degummed flax fiber.

6. A self-sustaining board, tile, slab, or other form for cold-storage or other insulation, composed of thoroughly-commingled mineral wool and flax fiber extending throughout the body of the said board, tile, slab, or other form, said fiber and wool being thoroughly commingled with water and dried.

811,228. **BLOWING-ENGINE VALVE.** JULIAN KENNEDY, Pittsburg, Pa. Filed June 20, 1903. Serial No. 162,204.

Claim.—A valve having a longitudinal curved face with spring-pressed packing-strips, the end strips extending at an angle other than a right angle to the longitudinal strips; substantially as described.

811,229. **WATER-PURIFYING APPARATUS.** CARL L. KENNICOTT, Chicago, Ill., assignor to Kennicott Water-Softener Company, Chicago, Ill., a Corporation of Illinois. Filed Feb. 26, 1905. Serial No. 247,308.

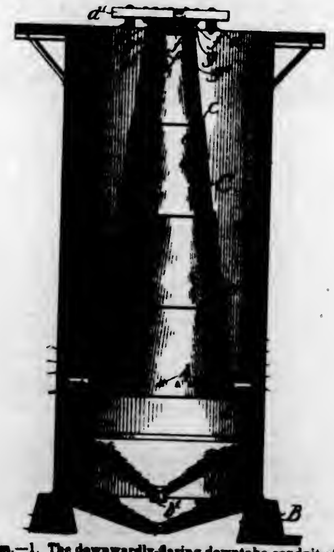

Claim.—1. The downwardly-flaring downtake-conduit of a water-purifying apparatus of the character described, composed of a series of sections loosely connected one with the other and telescopically collapsible for nesting them and extensible by raising the innermost section for suspending the conduit in its operative position, for the purpose set forth.

2. The downwardly-flaring downtake-conduit of a water-purifying apparatus of the character described, composed of a series of sections having interned and outturned end flanges overlapping each other from one section to the other and loosely connecting the sections together and rendering them telescopically collapsible for nesting and extensible by raising the innermost section for suspending the conduit in its operative position, for the purpose set forth.

3. In combination with the settling-tank of a water-purifying apparatus of the character described, a downtake-conduit flexibly suspended in said tank.

4. In combination with the settling-tank of a water-purifying apparatus of the character described, a support at the upper end of said tank, and a downtake-conduit pivotally suspended on said support to hang in the tank.

5. In combination with the settling-tank of a water-purifying apparatus of the character described, a support at the upper end of said tank, and a downtake-conduit pivotally suspended on said support to swing in two directions at right angles to each other and hang in the tank.

6. In combination with the settling-tank of a water-purifying apparatus of the character described, a support comprising beams laid crosswise on the upper end of said tank, carrying a plate provided with an annular flange having depending eyes, a ring pivotally connected with said eyes to swing in one direction and provided with depending eyes, and a downtake-conduit pivotally connected with the ring-eyes to swing in the direction at right angles to the direction of swinging of said ring.

7. In combination with the downtake-conduit of the settling-tank in a water-purifying apparatus of the character described, said conduit having openings in the lower portion of its wall, water-guiding arms extending from said openings.

8. In combination with the downtake-conduit of the settling-tank in a water-purifying apparatus of the character described, said conduit having angular openings in the lower portion of its wall, water-guiding arms of the cross-sectional shape of said openings and extending therefrom.

9. In combination with the downtake-conduit of the settling-tank in a water-purifying apparatus of the character described, said conduit having openings in the lower portion of its wall, water-guiding arms of inverted-trough shape extending from said openings and having series of openings along their edges and closed outer ends.

10. In combination with the downtake-conduit of the settling-tank in a water-purifying apparatus of the character described, said conduit having openings in the lower portion of its wall, water-guiding arms of inverted-trough shape extending radially from said openings and having serrated edges forming openings, and closed outer ends.

11. In combination with the downtake-conduit of the settling-tank in a water-purifying apparatus of the character described, said conduit having triangular openings in the lower portion of its wall, water-guiding arms of inverted-trough shape extending from said openings and having serrated edges forming openings, and closed outer ends, and sustaining means for said arms connecting them with said conduit.

12. In combination with the downtake-conduit of the settling-tank in a water-purifying apparatus of the character described, said conduit having triangular openings in the lower portion of its wall, bearings at said openings on the outer surface of said wall, water-guiding arms of inverted-trough shape supported at their inner ends in said bearings to extend radially from said openings and having serrated edges and closed outer ends, and links containing turnbuckles connecting said arms with said conduit.

811,230. **TRAVERSING MECHANISM.** SAMUEL L. G. KNOX, Milwaukee, Wis., assignor to The Bucyrus Company, South Milwaukee, Wis., a Corporation of Wisconsin. Filed Apr. 24, 1905. Serial No. 257,104.

Claim.—1. Apparatus for traversing or transporting excavators or other heavy machinery, comprising a movable track-section upon which the machine is mounted, means for lifting the machine from the track-section at intervals, and means for alternately advancing the track-section and the lifting means as they are relieved of the weight of the machine.

2. Apparatus for traversing or transporting excavators or other heavy machinery, comprising a movable track-section upon which the machine is mounted, means movably connected with the machine for lifting the same from the track-section at intervals, and means for advancing the track-section when the latter is relieved of the weight of the machine.

3. Apparatus for traversing or transporting excavators or other heavy machinery, comprising a movable track-section upon which the machine is mounted, means movably connected with the machine for lifting the same from the track-section at intervals, and power mechanism on the machine for advancing the movable track-section when the latter is relieved from the weight of the machine.

4. Apparatus for traversing or transporting excavators or other heavy machinery, comprising a movable track-section upon which the machine advances, an auxiliary supporting-section for lifting the machine from the main track, and means for successively advancing the respective sections as they are relieved of the weight of the machine.

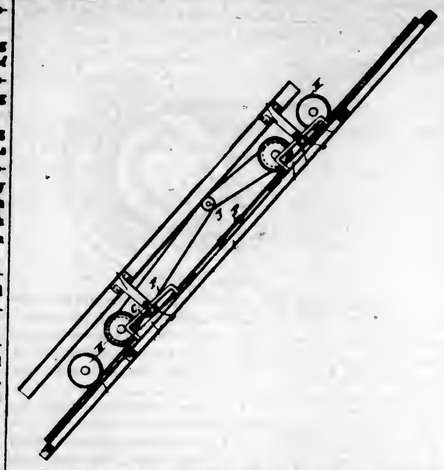

5. Apparatus for traversing or transporting excavators or other heavy machinery, comprising a movable track-section upon which the machine advances, an auxiliary supporting-section connected to the machine and having inclines for lifting the machine from the main track-section and means for successively advancing the respective sections as they are relieved of the weight of the machine.

6. Apparatus for traversing or transporting excavators or other heavy machinery, comprising a movable track-section upon which the machine advances, an auxiliary section having inclines thereon, brackets connecting the machine and the auxiliary section and coöperating with the inclines to lift the machine from the main track-section, and means for successively advancing the respective sections as they are relieved of the weight of the machine.

7. Apparatus for traversing or transporting excavators or other heavy machinery, comprising a movable track-section upon which the machine advances, an auxiliary section comprising skids having inclines and supporting-yokes thereon, brackets on the machine having rollers coöperating with the inclines and yokes to lift the machine and advance the skids respectively, and means operated by power mechanism on the machine for advancing the main track-section as the latter is relieved of the weight of the car.

8. Apparatus for traversing or transporting excavators or other heavy machinery, comprising a movable-track-section upon which the machine advances, an auxiliary section comprising skids having inclines and supporting-yokes thereon, brackets on the machine having rollers coöperating with the inclines and yokes to lift the machine and advance the skids respectively, a drum on the axle of the machine, a cable wound on the drum and connected at its ends to opposite points on the main track-section, and power mechanism on the machine for driving said axle.

9. In mechanism for traversing or transporting excavators or other heavy machinery, a movable track-section, and means connected therewith for varying the direction of the advance of said track-section.

10. In mechanism for traversing or transporting excavators or other heavy machinery, a movable track-section, and adjustable members in the rails of said track-section for varying the direction of advance of the respective rails from straight parallelism to any desired degree of curvature.

11. In mechanism for traversing or transporting excavators or other heavy machinery, a movable track-section, and turnbuckles interposed between the rails of said track-section for varying the direction of the latter.

811,231. **ALTERNATING-CURRENT MOTOR.** BENJAMIN G. LAMME, Pittsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed June 30, 1904. Serial No. 214,691.

Claim.—1. An electric motor having armature and field-magnet windings that are supplied with currents of different phases and hav-

ing field-magnet pole-pieces that are provided with slots parallel to the armature-axis, neutralizing-conductors located in said slots, and low-resistance plates that bridge the spaces between the tips of adjacent pole-pieces and are insulated therefrom.

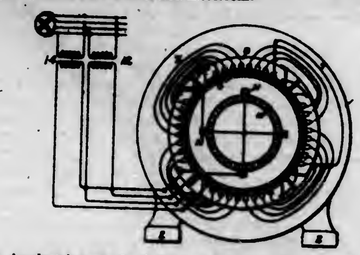

2. An electric motor having armature and field-magnet windings that are supplied with dephased currents and having field-magnet pole-pieces that are provided with slots parallel to the armature-axis, a neutralizing-winding located in said slots and connected in series with the armature-winding, and low-resistance plates located in the interpolar spaces.

3. The combination with a source of multiphase electrical energy, of a motor having a field-magnet winding supplied from said source with current of one phase and an armature-winding supplied from said source with current of a different phase, field-magnet pole-pieces provided with slots parallel to the armature-axis, a neutralising-winding located in said slots and connected in series with the armature-winding, and plates of low-resistance, conducting material located in the interpolar spaces.

4. An electric motor having armature and field-magnet windings that are supplied with dephased currents and having field-magnet pole-pieces that are provided with slots parallel to the armature-axis, conductors that are connected in series with the armature-winding and are located in said slots for neutralizing the self-induction of the adjacent armature-conductors, and low-resistance plates located in the interpolar spaces for neutralizing the self-induction of the armature-conductors between the pole-tips.

5. An electric motor having armature and field-magnet windings that are supplied with dephased currents and having field-magnet pole-pieces that are provided with slots parallel to the armature-axis, neutralizing-conductors that are located in said slots and are connected in series with the armature-winding and low-resistance plates that are located in the interpolar spaces for neutralizing the self-induction of the armature-conductors between the pole-tips, and insulating material between the plates and the pole-tips.

6. An electric motor having field-magnet pole-pieces provided with slots substantially parallel to the armature-axis, neutralizing-windings located in said slots and connected in series with the armature-winding and low-resistance plates located in the interpolar spaces for neutralizing the self-induction of the armature-conductors between the pole-tips, in combination with means for supplying current of one phase to the field-magnet winding and current of a different phase to the armature and neutralizing windings.

811,232. **VEHICLE-TIRE.** JULES LAND and AUGUST FRIEDEL, Chicago, Ill. Filed Nov. 14, 1904. Renewed June 26, 1905. Serial No. 267,651.

Claim.—1. A vehicle-tire, comprising a tube of resilient material a longitudinal partition subdividing the interior of said tube, and a plurality of longitudinal webs on each side of said partition and extending across the space between said partition and the opposite walls of said tube, the webs on one side of said partition lying in different planes from those on the other side, substantially as described.

2. A vehicle-tire comprising an endless tube of resilient material, an annular partition subdividing the interior of said tube and disposed transversely of the plane of the wheel, and a plurality of annular webs lying substantially parallel to the plane of the wheel and extending between said partition and the opposite walls of the tube, the webs on opposite sides of said partition lying in different planes and meeting the partition at different points, substantially as described.

3. A vehicle-tire, comprising a tube of resilient material, a longitudinal partition subdividing the interior of said tube, and a plurality of transverse webs on each side of said partition and extending across the space between said partitions and the opposite walls of said tube, the webs on one side of said partition lying in different planes from those on the other side, substantially as described.

4. A vehicle-tire comprising a tube of resilient material, a longitudinal partition subdividing the interior of said tube, and a plurality of supports extending between said partition and the opposite walls of said tube, the supports on the opposite sides of said partition being arranged to meet the partition at non-coincident points, substantially as described.

5. A vehicle-tire comprising a tube of resilient material, a longitudinal resilient partition extending across the interior of said tube, a longitudinal web extending transversely of said partition between the same and the walls of the tube on one side of the partition, and a plurality of supports extending transversely between said partition and the wall of the tube on the other side of said partition, said supports meeting the partition at points intermediate of said web and the longitudinal edges of the partitions, substantially as described.

6. A vehicle-tire, comprising a tube of resilient material, a longitudinal resilient partition extending across the interior of said tube, a plurality of longitudinal webs extending transversely of the partition between the same and the wall of the tube at one side of said partition, and supporting means on the other side of said partition extending between the same and the opposite wall of the tube, said supporting means meeting the partition intermediately of said webs and being of considerably less thickness than the space between the adjacent parts of said webs, substantially as described.

7. A vehicle-tire comprising an endless tube of resilient material, an annular partition subdividing the interior of said tube and disposed transversely of the plane of the wheel, a plurality of annular webs lying substantially parallel to the plane of the wheel and extending between said partition and the opposite walls of the tube, the webs on opposite sides of said partition lying in different planes and meeting the partition at different points, and a plurality of webs extending transversely across the spaces between said partition and annular webs, all of said webs being of resilient material, substantially as described.

8. A vehicle-tire comprising an endless tube of resilient material, an annular partition subdividing the interior of said tube and disposed transversely of the plane of the wheel, a plurality of annular webs lying substantially parallel to the plane of the wheel and extending between said partition and the opposite walls of the tube, the webs on opposite sides of said partition lying in different planes and meeting the partition at different points, and a plurality of webs extending transversely across the spaces between said partition and annular webs, said transverse webs being of considerably less thickness than the annular webs and all of said webs being of resilient material substantially as described.

811,233. **STAIR-MARKING TOOL.** MAXIME LEBLANC, Montreal, Canada. Filed June 6, 1905. Serial No. 263,691.

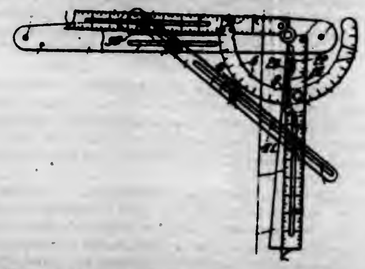

Claim.—1. In a stair-marking tool, a pair of pivotally-connected members, means for locking them in different angular relations to each other, longitudinally-slotted plates connected with each of said members, and an obliquely-extending arm connecting said pivoted members and said plates.

2. In a stair-marking tool, a pair of longitudinally-slotted pivotally-connected members, means for locking them in different angular relations to each other, longitudinally-slotted plates connected with each of said members, locking means therefor, and an obliquely-extending arm connecting said pivoted members and said plates.

3. In a stair-marking tool, a pair of pivotally-connected members, means for locking them in different angular relations to each other, longitudinally-slotted plates connected with each of said members, one of which is slidable longitudinally, and an obliquely-extending arm connecting said pivoted members and said plates.

4. In a stair-marking tool, a pair of pivotally-connected members, means for locking them in different angular relations to each other, longitudinally-slotted plates connected with each of said members, an obliquely-extending longitudinally-slotted telescoping arm connecting said pivoted members and said plates, and locking means slidable in the slots in said arm.

5. In a stair-marking tool, a pair of pivotally-connected members, means for locking them in different angular relations to each other, longitudinally-slotted plates connected with each of said members, one of said plates being wider at one end than at its opposite end, the other of said plates being slidable longitudinally, slotted, slidable connecting members, and locking means adapted to travel in the slots of said connecting members.

6. In a tool of the character described, a jointed marking member comprising a pair of pivotally-connected and longitudinally-slotted arms, plates wider than said arms connected therewith, one of said plates having a perforated extension projecting beyond the joint, and means adapted to secure said marking member and said plates in a plurality of positions.

7. In a tool of the character described, a jointed marking member comprising a pair of pivotally-connected and longitudinally-slotted arms, plates wider than said arms connected therewith, one of said plates having a perforated extension projecting beyond the joint, said plate being reversible and being wider at one end than at its opposite end, and means adapted to secure said marking member and said plates in a plurality of positions.

8. In a stair-marking tool, a pair of pivotally-connected members, a pivot therefor, means for locking said pivoted members at different angles to each other, a longitudinally-slotted plate pivotally mounted on one of said pivoted members, and means for locking said plate in position.

9. In a stair-marking tool, a pair of pivotally-connected members, a pivot therefor, means for locking said pivoted members at different angles to each other, a longitudinally-slotted and perforated plate pivotally mounted on one of said pivoted members, and means for locking said plate in position, the perforated portion of said plate extending beyond the said pivot.

10. In a stair-marking tool, a pair of pivotally-connected members, a pivot therefor, a pair of plates connected with and extending substantially parallel with said pivoted members, one of said plates being wider at one end than at its opposite end and extending beyond said pivot, and means for locking said movable parts in a plurality of positions.

11. In a stair-marking tool, a pair of pivotally-connected members, one of said members having a longitudinally-extending slot therein, the other of said members having a plurality of slots, an approximately parallel plate pivotally connected with one of said members, there being a longitudinal slot in said plate extending parallel with the other of said pivoted members, a pin projecting from said last-mentioned plate into a slot in its companion pivoted member, and means for locking said parts in a plurality of positions.

12. In a stair-marking tool, a pair of pivotally-connected members, a pivot therefor, a segment connected with one member, locking means on the other member adapted to engage said segment, and a rectangular filler-block pivotally mounted in proximity to said pivot.

13. In a stair-marking tool, a pair of pivotally-connected members, a pivot therefor, a segment connected with one member, locking means on the other member adapted to engage said segment, and a rectangular filler-block pivotally mounted in proximity to said pivot, there being a laterally-extending step on said filler-block.

14. In a stair-marking tool, a pair of pivotally-connected and longitudinally-slotted members, a pivot therefor, a longitudinally-slotted and perforated plate mounted upon one of said pivoted members, said plate extending beyond said pivot, a longitudinally-slotted plate mounted upon the other pivoted member, and locking means adapted to hold said pivoted members and said plates in different angular relations.

15. In a stair-marking tool, a pair of pivotally-connected and longitudinally-slotted members, a pivot therefor, a longitudinally-slotted and perforated plate mounted upon one of said pivoted members, said plate extending beyond said pivot, a longitudinally-slotted plate mounted upon the other pivoted member, locking means adapted to hold said pivoted members and said plates in different angular relations, and a laterally-extending pin projecting from said last-mentioned plate into a slot in its companion pivoted member.

811,284. **SPRINGWORK.** ROY C. MARSOW, Chicago, Ill. Filed Aug. 4, 1905. Serial No. 272,949.

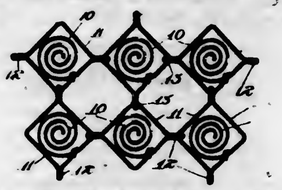

Claim.—1. In a device of the class described, a coil-spring having a rectangular top, an opposite pair of the angles of which are bent into hook form to engage the tops of adjacent springs at points between the hooks of the latter.

2. In a device of the class described, springs arranged in longitudinal and transverse banks or rows and having rectangular tops, one pair of the opposite angles of each top being provided with hooks and the other pair with eyes, and each hook engaging an eye of an adjacent spring, the points of connection between adjacent rows of springs being offset in alternation at opposite sides of a line median of each rows.

811,285. **ROTARY VALVE.** CHARLES W. MANSEL, Buffalo, N. Y., assignor, by mesne assignments, to Mansel Brothers Co., a Corporation of New York. Filed Jan. 21, 1903. Serial No. 139,883.

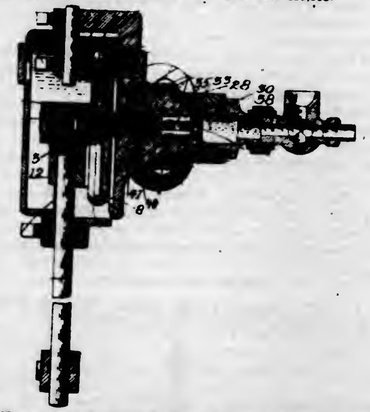

Claim.—1. A device of the class described, having a body provided with a reduced portion, a sleeve fitted to said reduced portion, a rotary valve-block in said sleeve having two curved grooves on one of its faces and an opening extending from one of said grooves through the block, a shaft journaled in the body and operatively connected to the valve-block; said shaft having an exhaust-opening connecting with the other groove in the block and means for intermittently rotating said shaft.

2. In a device of the class described, a tubular body provided with a lateral exhaust-opening, and a reduced portion, a shaft journaled in said body and having a peripheral groove registering with the exhaust-opening, a sleeve fitting upon the reduced portion of the body, a rotary valve-block inclosed in the sleeve and connected to the shaft to rotate in unison therewith, said rotary valve-block being provided on one of its faces with elongated grooves which curve concentrically with the circular periphery of the valve-block and one of said grooves having an additional straight part which extends radially inward and an opening which extends through the block from the other groove, substantially as set forth.

3. In a device of the class described, a tubular body provided with an exhaust-opening and a reduced portion, a shaft journaled in said body and having a peripheral groove registering with the exhaust-opening, a sleeve fitting upon the reduced portion of the body, a rotary valve-block inclosed in the sleeve and connected to the shaft to rotate in unison therewith, said rotary valve-block being provided on one of its faces with elongated curved grooves and an opening which extends through the block, substantially as set forth.

811,236. STEAM-BOILER. GEORGE MARSHALL, Fremont, Nebr. Filed Sept. 5, 1905. Serial No. 276,992.

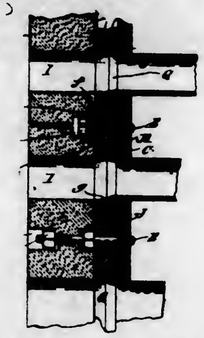

Claim.—1. The combination of a boiler-head, fire-tubes projecting through the head and beaded on their outer ends, a protecting-plate having holes registering with the tubes which is formed with flanges containing grooves to receive the beaded ends of the tubes.

2. The combination of a boiler-head, fire-tubes attached thereto, a protecting-plate made in sections having holes registering with the tubes and secured to the boiler-head, and metallic strips covering the joints between the sections in the front face of the plate.

3. The combination of a steam-boiler, a protecting-plate attached to one of the boiler-heads, a protecting-wall covering the outer face of the protecting-plate and having recesses in its inner and outer faces, headed bolts securing the protecting-plate to the boiler-head having their heads in the inner recesses of the protecting-plate, and headed bolts securing the protecting-wall to the protecting-plate, having nuts arranged in the recesses in the outer face of the protecting-wall.

4. The combination of a boiler-head, fire-tubes projecting through the boiler-head and beaded on their outer ends, a protecting-plate having holes registering with the tubes, flanges around these holes engaging the heads and filling-rings in front of the flanges.

811,237. BEAM-COMPASS. ARTHUR A. MERRITT, New York, N. Y. Filed Jan. 17, 1905. Serial No. 241,462.

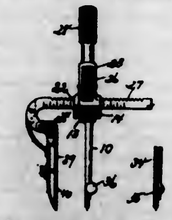

Claim.—1. In a beam-compass, a handled needle-leg having a transverse slot, a beam arranged therein and provided with a rack, a loosely-mounted spring-pressed worm carried by the handle and intermeshing with the rack, the opposite sides of the worm projecting beyond the handle in position to be engaged by the fingers, and a marking-leg carried by the beam.

2. In a beam-compass, a handled needle-leg having a transverse slot, a beam arranged therein and provided with a rack, a worm engaging the rack and having its opposite sides projecting beyond the handle in position to be engaged by the fingers, and a marking-leg carried by the beam.

3. In a beam-compass, a handled needle-leg having two transverse slots, each in a plane at an angle to the other, a beam extending through one slot and having a rack, a worm extending through the other slot and intermeshing with the rack, and a marking-leg carried by the beam.

4. In a beam-compass, a handled needle-leg having two transversely-extending slots each in a plane at an angle to the other, a beam extending through one slot and having a rack, a worm extending through the other slot and intermeshing with the rack, an auxiliary means carried by the leg for locking the beam in adjusted position, and a marking-leg carried by the beam.

5. In a device of the class specified, the combination with a transversely-slotted needle-leg, of a beam extending through the slot, a marking-leg carried by the beam, a rack on the beam, a worm engaging said rack, said worm being free to move toward and from the beam, and a spring-pressed friction-plate engaging the periphery of the worm, and tending to force the same in the direction of the beam.

6. In a device of the class specified, the combination with a needle-carrying leg having a transverse slot and provided with a handle, a beam adapted to the slot and provided with a rack, a loosely-mounted worm engaging the rack, a spring-pressed pin carried by the handle, a plate arranged at the end of the pin and bearing on the worm, and a marking-leg at the end of the beam.

7. In a device of the class specified, a needle-carrying leg having a transverse slot, a beam extending through the slot and provided with a longitudinal groove, a locking-disk having a lug engaging in the groove, means for preventing independent revoluble movement of the disk, and means for clamping said disk against the bottom of the beam.

8. The combination with a needle-carrying leg having a transverse slot, of a beam arranged in the slot and provided with a longitudinal groove, a marking-leg at the end of the beam, a disk carried by the leg, and having a lug engaging in said groove, means for preventing independent rotative movement of the disk, and a clamping-nut engaging said disk.

9. The combination with a needle-carrying leg having peripheral threads and provided with a keyway, of a beam supported by the leg and having a longitudinal groove in its lower face, a marking-leg at the end of the beam, a disk carried by the leg and having a lug entering the groove, there being a projecting lug on said disk fitting within the keyway, and a clamping-nut mounted on the threaded portion of the leg and engaging said disk.

10. The combination with a needle-carrying leg, of a beam supported thereby and provided on one face with graduations, a marking-leg carried by the beam, a rack on said beam, and a worm engaging the rack, the helical thread of the worm being also graduated.

811,238. SIGNAL. KARL MÖLLER, Charlottenburg, Germany, assignor to General Electric Company, a Corporation of New York. Filed June 12, 1905. Serial No. 264,779.

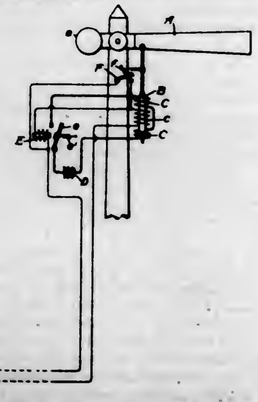

Claim.—1. In combination, a counterweighted signal, a solenoid adapted to shift said signal and having two windings, a local circuit comprising one of said windings and a local source of current, a distant control-circuit including the other winding, a relay connected to said control-circuit and controlling the local circuit, and a switch operated by the movement of the signal and arranged to controlling the local circuit.

2. In combination, a counterweighted signal, a solenoid adapted to shift said signal and having two windings, a local circuit comprising one of said windings and a local source of current, a distant control-circuit including the other winding, a relay connected to said control-circuit and controlling the local circuit, and a switch operated by the movement of the signal and arranged to de-energize said relay to open said local circuit.

3. In combination a counterweighted signal, a solenoid adapted to shift said signal and having two windings, a local circuit comprising one of said windings and a local source of current, a distant control-circuit including the other winding, a relay connected to said control-circuit and controlling the local circuit, and a switch operated by the movement of the signal and arranged to short-circuit said relay.

4. In combination, a counterweighted signal, a solenoid adapted to shift said signal and having two windings, a local circuit comprising one of said windings and a local source of current, a control-circuit including the other winding and a distant control-station, means controlled from said distant station for closing the local circuit, and means controlled by the movement of said signal for opening the local circuit.

811,239. MANUFACTURE OF NICKEL-COPPER ALLOYS. AMBROSE MONELL, New York, N. Y. Filed Apr. 20, 1905. Serial No. 256,677.

Claim.—1. The method of making an alloy of nickel and copper which consists in smelting ore containing sulfids of said metals, bessemerizing the resulting matte, calcining the bessemerized product to bring the metals into the form of oxids, then reducing the oxids and producing directly a malleable nickel-copper alloy without separating these metals from each other.

2. The method of making an alloy of nickel and copper which consists in smelting ore containing sulfids of said metals, bessemerizing the resulting matte, calcining the bessemerized product to bring the metals into the form of oxids, then reducing the oxids and producing directly a malleable nickel-copper alloy without separating these metals from each other, and then working the said alloy into commercial form.

811,240. DELIVERY-SPOUT. JOSEPH F. MCDERMOTT, Umatilla, Canada. Filed Apr. 24, 1905. Serial No. 257,161.

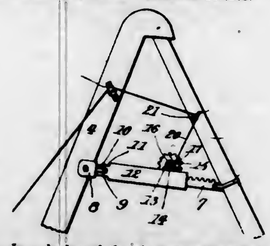

Claim.—In a device of the character described, an elevator, a bagging-spout, a bracket connected with one of said members, said bracket having a perforated extension, a housing having a perforated and bifurcated extension pivotally connected with the extension of said bracket, a rack slidable longitudinally in said housing, a pinion mounted on said housing in mesh with said rack, a ratchet rotatable with said pinion, a pawl normally in engagement with said ratchet, and means for releasing said pawl.

811,241. MACHINE FOR PRESSING CLOTHING. FREDERICK G. HORTON, Chicago, Ill., assignor to The Horton Electrical Manufacturing Company, a Corporation of New Jersey. Filed Sept. 19, 1904. Serial No. 224,941.

Claim.—1. The combination with the table and the iron, of a magnet and armature for depressing the iron, each magnet and armature being located in close proximity to each other and upon the same side of the table, and a rigid connection for transmitting power to the iron.

2. The combination with the table and the iron, of a magnet and armature for giving pressing power to the iron, each magnet and armature being located in close proximity to each other, and below the table, and a rigid connection for transmitting power to the iron.

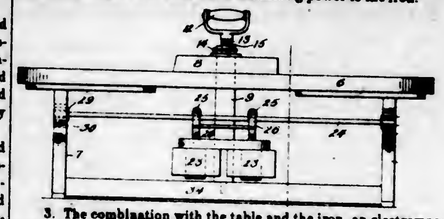

3. The combination with the table and the iron, an electromagnet and armature, one of which is movable relative to the other and connected to the iron by a rigid connection so that the iron is depressed whenever the magnet is energized.

4. The combination with the table and the iron, of an electromagnet and armature, one of which is movable relative to the other and both of which are located below the table, and a rigid connection between the iron and the moving one of said electric parts, whereby the iron is depressed by the direct action of the electromotive force.

5. The combination in a seam-pressing machine, of an iron, a table along which the iron is movable, electromotive power mechanism movable with the iron, and a rigid connection between said mechanism and the iron, the mechanism depressing the connection and thereby depressing the iron.

6. The seam-pressing machine wherein are combined an iron, a rigid frame joined to the iron, and an electromagnet exerting a direct pull upon the frame and thereby causing the desired pressure by the iron and the armature coacting with said magnet.

7. In a seam-pressing machine, the combination of an electrically-depressed iron and its electric operating means, the latter being arranged wholly at one side of the table so that the lines of force do not pass through the table or cloth and a connection between said electric operating means and the iron.

8. In a seam-pressing machine, the combination of an electrically-depressed iron, and electric means for depressing the same, the iron forming no part of said depressing means but being mechanically connected thereto.

9. The combination with the stationary table and iron movable lengthwise of the table, of electric power devices movable along the table with the iron and causing the pressure by the iron, and a connection between the iron and said power devices, the latter traveling with the iron and embodying a pivotal joint permitting some movement by the iron independent of the power devices.

10. The combination with the table and iron, of electric power devices movable along the table with the iron and causing the pressure by the iron, and a connection between the iron and said power devices and traveling with them, said connection embodying a pivotal joint provided with engaging lugs for insuring the movement of the connection with the iron when the latter is moved in one direction.

11. The combination with the table and iron, of electric power devices movable along the table with the iron and causing the pressure by the iron, and a connection between the iron and said power devices and traveling with them, said connection embodying a joint permitting vertical adjustment of the iron.

12. The combination with the table and the iron, of a depressible magnet movable with the iron along the table, an armature made long enough to serve the magnet in any position of the latter, and a frame connecting the magnet to the iron.

13. The combination with the table and the iron of a depressible magnet movable along the table, ways upon which the magnet moves and is supported, an armature capable of serving the magnet in all its different positions, and a rigid movable frame connecting the magnet to the iron.

811,242. LOOM-SHUTTLE. CHARLES B. NUTTING, Hopedale, Mass., assignor to Draper Company, Hopedale, Mass., a Corporation of Maine. Filed June 8, 1905. Serial No. 264,269.

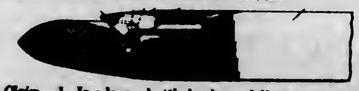

Claim.—1. In a loom-shuttle having a delivery-eye and adapted to contain a supply of filling, a longitudinal thread-passage, a rotatable thread-guide at the front end of said passage and around which the filling-thread passes to the delivery-eye, and means to prevent

portion located transverse to the arm and bearing a plural number of

3. The combination with a portable boiler, of an auxiliary

ble thread-guide at the front end of said passage and around which the filling-thread passes to the delivery-eye, and means to surround the lower end of the thread-guide and prevent passage of the filling-thread thereunder.

2. In a loom-shuttle having a delivery-eye and adapted to contain a supply of filling, a self-threading device provided with a longitudinal thread-passage, means to automatically direct the filling-thread from the passage to the delivery-eye, a depending pin on the threading device at the front end of the passage, and a guide-sleeve rotatably mounted on the pin and around which the filling-thread passes to the delivery-eye, the shuttle-body having a socket into which the lower end of the sleeve loosely enters, to prevent catching of the filling-thread.

3. In an automatically-self-threading loom-shuttle adapted to receive a supply of filling and having a side delivery-eye and a longitudinal thread-passage, means to direct the filling-thread to said passage and thence from the front end thereof to the delivery-eye, including a horn, a depending pin adjacent the horn and having a head at its lower end, and a sleeve rotatably mounted on the pin and around which the filling-thread passes as it is directed by the horn to the delivery-eye, the shuttle-body having a socket to loosely receive the lower end of the sleeve and house the same and the head of the pin, to prevent catching of the thread between the head and the sleeve.

811,243. COMBINED DERRICK AND CONCRETE-MIXER. James L. Parsons, Jr., Washington, D. C. Filed Apr. 12, 1905. Serial No. 255,215.

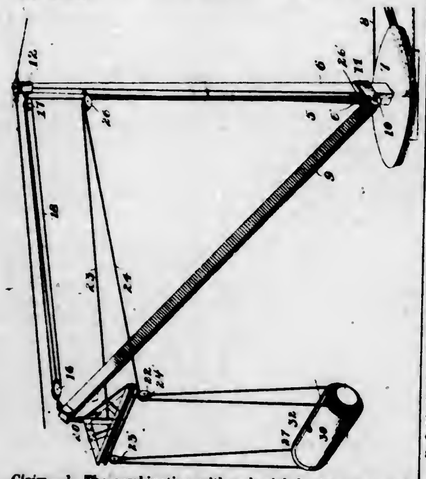

Claim.—1. The combination with a derrick having a movable boom, of a yoke secured directly to the outer end of said boom, sheaves carried upon the ends of said yoke and a load-carrying receptacle adapted to be simultaneously elevated and rotated by the load-lines of the derrick, said load-lines passing over the sheaves carried by the yoke.

2. The combination with a derrick having a movable boom, of a yoke secured directly to said boom adjacent the outer end thereof, sheaves carried by the outer ends of said yoke, load-lines passing over said sheaves and a receptacle having grooved wheels around which said load-lines pass.

3. The combination with a derrick comprising a mast capable of movement upon its axis and a boom carried by said mast and pivoted for vertical movement thereto, of a yoke secured directly to said boom adjacent the outer end thereof, load-lines, sheaves carried by the outer ends of the yoke over which said load-lines pass and a receptacle with which said load-lines engage, in such manner as to be simultaneously rotated and moved in a vertical plane by said load-lines.

811,244. INDICATOR FOR LATHES. Gustave B. Pfenning, Hartford, Conn. Filed Apr. 20, 1904. Serial No. 203,804.

Claim.—1. In an indicating device, an indicator-arm with means of attachment, an indicating-lever mounted on said arm and including a portion extending lengthwise of the arm and an offset portion located transverse to the arm and bearing a plural number of contact-faces, an indicating-pointer located on the arm in extension and connected with the main part of said lever, and means for resiliently holding the lever and pointer in normal position.

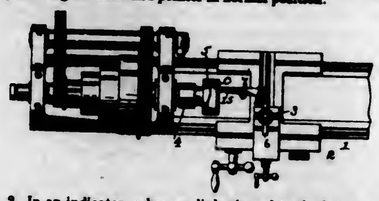

2. In an indicator, a base, a link pivoted to the base, a clamp for said pivot, an indicator-arm pivoted to said link by a pivot extending transverse to the pivot between the link and base, means for clamping the pivot between the arm and link, an indicating-lever mounted on said arm and having a main portion extending lengthwise of the arm and a bent portion extending transverse to the main portion said bent portion having a plural number of contact-faces, a pointer located on the arm in extension of and connected with the main part of the lever, and means for resiliently holding the arm and pointer in normal position.

3. In an indicating device, an indicator-arm with means of attachment, an indicating-lever extending lengthwise of the arm and pivoted thereon and having a short extension located at an angle to the main portion of the lever, said short extension having contact-points arranged laterally on opposite sides of the lengthwise center thereof, and an indicating-pointer to be operated by said lever.

4. In an indicating device, a narrow indicator-arm with means of attachment, an indicating-lever pivoted on the arm with a short extension located at an angle of less than ninety degrees to the main portion of the lever, said short extension forming a contact and the longer extension from the pivot connected with an indicating-pointer, the indicating-pointer pivoted on the arm with a short extension from the pivot connected with the indicating-lever and with a longer extension from the pivot forming an indicating-pointer, and means for resiliently holding the pointer and lever in normal position.

5. In an indicating device an indicator-arm with means for attachment, an indicating-lever mounted on the arm and having an extension provided with a plural number of contact-faces, a pair of spring-arms secured on the under side of the lever, an indicating-pointer having a short arm with a stud located between the resilient arms on the lever, the opposite end of the pointer forming an indicating device and means for resiliently holding the pointer and lever in normal position.

6. In an indicator, an indicator-arm provided with means for attachment to a tool-post, an indicating-lever pivotally connected to the arm, a pointer mounted on the arm, a connection between said pointer and lever including a pair of resilient members mounted on one of said parts, and a stud projecting from the opposite part and arranged between said resilient members.

7. In an indicator, an arm provided with means of attachment to a tool-post, an indicating-pointer pivotally mounted on the arm, an indicating-lever pivotally mounted on the arm and connected with the pointer, a spring with one end engaged with the arm, a disk having a recess for engagement of the opposite end of said spring, and means for holding the disk against accidental movement.

811,245. APPARATUS FOR MAINTAINING HOT-WATER OR STEAM PRESSURE IN PORTABLE BOILERS. Charles C. Rich, Mount Vernon, N. Y., assignor of one-third to John U. Bonshelle and one-third to Wm. H. Bonshelle, Montclair, N. J. Filed Apr. 8, 1905. Serial No. 254,538.

Claim.—1. The combination with a portable boiler, of an auxiliary heater having circulating connections with the boiler, and permanently secured thereto, a gas-burner for the auxiliary heater, and a gas-supply pipe connected thereto and including a slip connection that is automatically detached and a valve that is automatically closed when the boiler is moved.

2. The combination with a portable boiler, of an auxiliary heater having a permanent circulating connection with the boiler, a gas-burner for said heater, a nippled pipe-section having a swing-joint connection with the burner-pipe, a service-pipe, a valve-chamber arranged at the end of the service-pipe and adapted to receive the nipple, and a valve disposed in said chamber and movable to open position by contact with said nipple.

3. The combination with a portable boiler, of an auxiliary heater having a circulating connection with the boiler, a gas-burner for said heater, a swinging gas-pipe arranged to extend through an opening in the floor of the engine-house, and a service-pipe terminating in the open-ended valve-casing at a point adjacent to said opening.

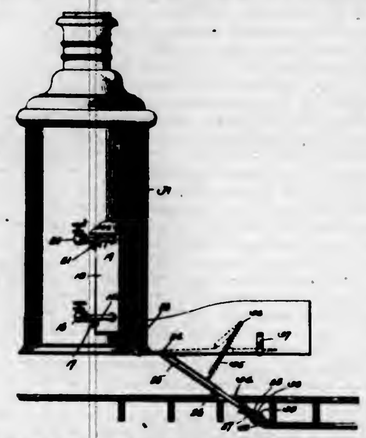

4. In an auxiliary heating apparatus for portable boilers, a service-pipe arranged under the floor of an engine-house, an open-ended valve-chamber carried by the pipe at a point adjacent to an opening in the floor, a swinging gas-pipe carried by the portable boiler and having one end insertible through the opening and into the valve-chamber, and means for automatically elevating said pipe when its end is pulled from the valve-chamber.

5. The combination with a portable boiler, of an auxiliary heater having a circulating connection therewith, a gas-burner for the heater, a gas-pipe leading to the burner, a second pipe having a swing-joint connection with the first pipe, a pipe-section telescopically mounted on said second pipe and having a terminal nipple arranged to pass through an opening in the floor of an engine-house, a stop-bracket carried by the portable boiler, a spring tending to raise the telescopic pipes into engagement with the bracket, a service-pipe arranged under the floor of the engine-house, a valve-chamber at the end of the service-pipe and provided with a flaring mouth for the reception of the nipple, a valve mounted in said chamber, a valve-stem carrying the valve, a spring tending to close the valve, and a perforated disk secured to the stem and adapted to be engaged by said nipple.

6. The combination with a portable boiler, of an auxiliary heater, valved circulating-pipes between the boiler and heater, an air-cock in one of said pipes, and a drainage-valve in the other pipe to permit the discharge of water from the auxiliary heater.

7. The combination with a portable boiler, of an auxiliary heater including a pair of approximately concentric conical coils, the windings of the lower portion of the inner coil being arranged closely together, and the windings of the upper portion thereof being disposed in spaced relation, a disk or plate for preventing direct passage of the products of combustion from the top of the inner coil, and circulating-pipes connecting both coils to the boiler.

8. The combination with a portable boiler, of an auxiliary heater including a casing, a pair of circulating-pipes leading thereinto, and branched to form a pair of approximately concentric coils, the outer of said coils having its windings arranged in contact with each other and forming a close wall around the spaced windings of the upper portion of the inner coil, and a disk or plate for closing the combustion-space at the top of the inner coils.

811,246. VAMP-MARKING MACHINE. John F. Reeves, Bethel, Me. Filed May 2, 1904. Serial No. 206,229.

Claim.—1. In a vamp-marking machine, a vamp-supporting bed, a vamp-gage, a marking-point positioned to mark the edge of the toe portion of a vamp engaged with said gage, means for adjusting said point longitudinally of the bed, and stops for limiting the movement of said means.

2. In a vamp-marking machine, a vamp-supporting bed, a vamp-gage, a plurality of marking-points positioned to mark the edges of the toe portion of a vamp engaged with said gage, and means for independently adjusting one of said points longitudinally of the bed.

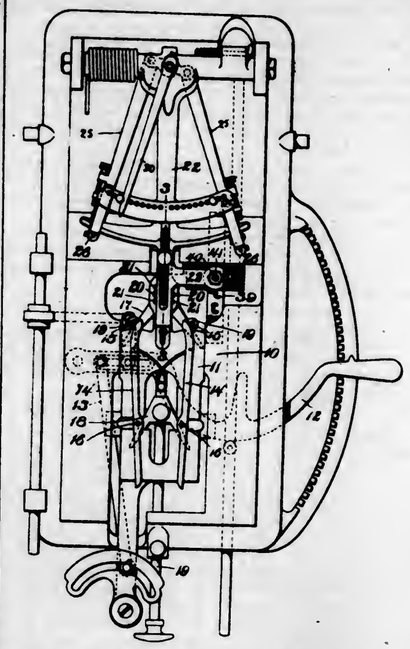

3. In a vamp-marking machine, a vamp-supporting bed, a pair of vamp-marking devices, and means to simultaneously and oppositely adjust said devices longitudinally of said bed.

4. In a vamp-marking machine, a vamp-supporting bed, a holder pivotally movable toward and from the same, angularly-adjustable arms on said holder provided with marking devices, and means to simultaneously and oppositely adjust said arms in a radial direction.

5. In a vamp-marking machine, a vamp-supporting bed, a holder movable toward and from the same, a gage for the inner edge of the vamp adjustable in width, and an auxiliary gage adjustable longitudinally of the bed independently of the first said gage.

6. In a vamp-marking machine, a vamp-supporting bed, a holder movable toward and from the same, a shiftable gage-carrier formed with longitudinally-distributed pin-holders, a gage for the inner edge of the vamp mounted on said carrier, and an auxiliary gage composed of a pair of pins adapted for mounting on the respective said pin-holders.

7. In a vamp-marking machine, a gage-carrier, a gage for the inner edge of the vamp mounted on said carrier, and a middle-line vamp-marker mounted on said carrier.

8. In a vamp-marking machine, a movable vamp-supporting gage-carrier, a gage therefor, a middle-line vamp-marking point movable with said carrier, yielding means for holding said point away from the vamp, and means for pressing the point against the vamp.

9. In a vamp-marking machine, a vamp-supporting bed, a gage-carrier adjusted longitudinally thereof, a gage mounted on said carrier, a spring-arm mounted on said carrier and having a normally elevated marking-point, means to fix said arm at different adjustments longitudinally of the gage-carrier, and a vamp-marking holder movable toward and away from said bed and adapted to depress said spring-arm.

10. In a vamp-marking machine, a vamp-supporting bed, a holder movable toward and from the same, a gage for the inner edge of the vamp, and two pairs of marking devices on said holder positioned to mark the side edges of the toe portion of a vamp held against said gage and relatively adjustable.

11. In a vamp-marking machine, a vamp-support, a gage, a

loosely mounted upon the shaft, arms projecting from the

11. In a vamp-marking machine, a vamp-support, a gage, a holder movable toward and away from the support, slides carried by the holder on opposite sides of the center thereof in line with the sides of a vamp held against the gage, marking-points carried by the slides, and means for adjusting the slides longitudinally of the support.

12. In a vamp-marking machine, a vamp-supporting bed, a holder movable toward and from the same, a gage for the inner edge of the vamp, two pairs of marking devices on said holder positioned to mark the side edges of the toe portion of a vamp held against said gage and relatively adjustable toward and from said bed to permit the operation of either pair singly, and means for effecting a relative longitudinal adjustment of said marking devices.

13. A gage for vamp-marking machines consisting of broad flat plates adapted to support the vamps and pins mounted on and projecting from said plates to constitute abutments for the edges of the vamps.

14. A gage for vamp-marking machines consisting of flat plates and pins mounted on and projecting from said plates to constitute abutments for the edges of the vamps, the plates having provisions for adjustment of the pins thereon.

811,247. **ELECTRICALLY-OPERATED TYPE-WRITER.** WILLIS J. ROUSSEL, New Orleans, La., assignor of one-eighth to Alphonse King, Chicago, Ill. Filed Mar. 20, 1903. Renewed July 20, 1904. Serial No. 213,674.

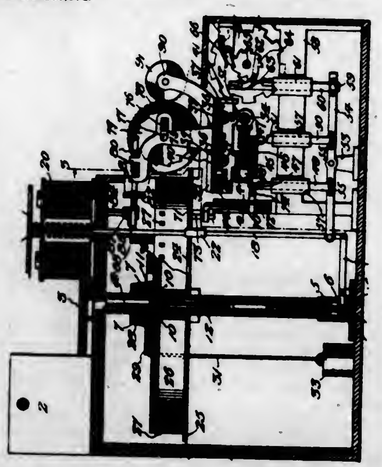

Claim.—1. In a type-writer of the character described, the combination with a motor; of a shaft operated by said motor, a type-wheel loosely mounted upon the shaft, means for locking the wheel to said shaft, teeth upon the wheel, a pawl normally engaging one of said teeth, a magnet, and an armature for said magnet, said armature being connected to and adapted to operate the pawl and locking means.

2. In a type-writer of the character described, the combination with a motor; of a shaft adapted to be operated thereby, a wheel loosely mounted upon the shaft, means for locking the wheel to the shaft, a flange upon the wheel, a weighted flexible strip connected to the flange, a magnet, and an armature for said magnet, said armature being connected to and adapted to operate the locking means, whereby the wheel is rotated and the flexible strip wound thereon.

3. In a type-writer of the character described, the combination with a motor; of a shaft adapted to be operated thereby, a type-wheel loosely mounted upon the shaft, a flange upon the wheel, a weighted flexible strip connected to said flange, means for locking the wheel upon the shaft, a series of ratchet-teeth encircling the wheel, a pawl normally engaging one of said teeth, a magnet, and an armature for said magnet, said armature being connected to and adapted to operate the pawl and locking means, whereby the wheel may be simultaneously released from the pawl and rotated with the shaft, thereby winding the flexible strip thereon.

4. In a type-writer of the character described, the combination with a motor; of a shaft adapted to be rotated thereby, a wheel loosely mounted upon the shaft, type projecting from the periphery thereof, a toothed flange encircling the wheel, means for locking the wheel to the shaft, a pawl normally engaging one of the teeth, a magnet, and a spring-pressed armature for said magnet, said armature being connected to and adapted to operate the pawl and locking means.

5. In a type-writer of the character described, the combination with a motor; of a shaft adapted to be operated thereby, a type-wheel loosely mounted upon the shaft, a conical extension upon said wheel and inclosing the shaft, said extension having a serrated inner face, a conical sleeve upon the shaft and adapted to rotate therewith, a magnet, and an armature connected to the sleeve and adapted to move the same into engagement with the extension of the wheel.

6. The combination with a motor; of a tubular shaft adapted to be rotated thereby, a type-wheel loosely mounted upon the shaft, a hollow conical extension upon the wheel having a serrated inner face, a spindle slidably mounted within the shaft, arms thereto projecting through slots in the shaft, a conical sleeve connected to said arms and having a serrated outer face, a magnet, and an armature connected to the spindle and adapted to throw the sleeve into engagement with the extension upon the wheel.

7. The combination with a motor; of a tubular shaft adapted to be operated thereby, a type-wheel loosely mounted upon the shaft, a hollow extension upon the wheel having a serrated inner surface, a sleeve mounted upon the shaft having a serrated outer surface, a sectional spindle slidably mounted within the shaft, arms thereto projecting through slots in the shaft and connected to the sleeve, a spring-cushion interposed between the sections of the spindle, a magnet, and an armature for said magnet, said armature being connected to and adapted to operate the spindle, whereby the sleeve is placed into engagement with the extension on the wheel.

8. The combination with a motor; of a tubular shaft adapted to be rotated thereby, a type-wheel loosely mounted upon the shaft, a hollow extension thereon having a serrated inner face, a sleeve slidably mounted upon the shaft and having a serrated outer face, a sectional spindle slidably mounted within the shaft, arms thereto projecting through slots in the shaft and secured to the sleeve, a spring-cushion interposed between the sections and the spindle, a lever connected to the spindle, a magnet, an armature thereto, and a rod connecting the armature and lever.

9. In a type-writer of the character described, the combination with a motor; of a tubular shaft adapted to be operated thereby, a type-wheel supported by and loosely mounted upon said shaft, a flange upon the wheel, a hollow extension on the wheel having a serrated inner face, a weighted flexible strip connected to the flange, a serrated sleeve slidably mounted upon the shaft, a sectional spindle slidably mounted within the shaft and connected to said sleeve, a spring-cushion interposed between the sections of the spindle, a lever connected to the spindle, a magnet, a spring-pressed armature thereto, and a rod connecting the armature and lever.

10. The combination with a motor; of a shaft adapted to be rotated thereby, a type-wheel loosely mounted upon the shaft, a toothed flange inclosing the wheel, a serrated extension upon the wheel, a serrated sleeve slidably mounted upon the shaft, a sectional spindle connected to said sleeve, a spring-cushion interposed between the sections, a lever connected to the spindle, a magnet, a spring-pressed armature, a rod connecting the armature and lever, a pawl upon the rod normally engaging one of the teeth of the flange, and a weighted flexible strip connected to and adapted to be wound by the rotation of the wheel.

11. The combination with a type-wheel, a motor, and electrically-operated means for connecting said wheel to the motor; of alternately-operating plungers connected to and operated by said means, a carriage, a spring-pressed bar slidably mounted upon the carriage, parallel series of ratchet-teeth depending from the bar and adapted to be engaged, and moved longitudinally by, the plungers, a revoluble rod, a cam thereon bearing upon the bar, an arm to said rod, and means upon the type-wheel for contacting with and operating said arm and rod, whereby the ratchet-teeth are shifted from position above the plungers.

12. The combination with a motor, a type-wheel, and electrically-operated means for placing said wheel in operative relation with the motor; of alternately-operating spring-pressed plungers, a carriage, a spring-pressed sliding bar upon the carriage, parallel series of depending ratchet-teeth upon said bar adapted to be alternately engaged, and moved longitudinally by, the plungers, a revoluble rod, a cam thereon normally bearing upon the bar of the ratchets, an arm to the rod, and means upon the type-wheel for engaging the arm and imparting lateral movement to the bar and ratchets.

13. The combination with a motor, a type-wheel, and electrically-operated means for placing said wheel in operative relation with the motor; of a longitudinally-movable carriage, a spring-pressed base-plate thereon, a cam-wheel, a plunger, means thereon for rotating said wheel and imparting a reciprocating motion to the base-plate, said plunger being connected to the electrically-operated means.

14. The combination with a motor, a type-wheel, and electrically-operated means for placing said wheel in operative relation with the motor; of a longitudinally-movable carriage, a spring-pressed base-plate slidably mounted upon the carriage, a revoluble cam-wheel, a ratchet-wheel connected thereto, a plunger, a pawl thereon adapted to engage the ratchet and impart a rotary motion to the cam-wheel, thereby reciprocating the base-plate, and means for operating said plunger.

15. In a type-writer of the character described, the combination with a motor, a type-wheel, a magnet, a spring-pressed armature, and means connected to said armature for placing the wheel in operative relation with the motor; of a longitudinally-movable carriage, a spring-pressed base-plate slidably mounted thereon and carrying a platen, a rotary cam-wheel, a ratchet-wheel connected thereto, a plunger connected to and adapted to be operated by the spring-pressed armature, and a pawl upon the plunger engaging the ratchet-wheel, and adapted to rotate the same, whereby a reciprocating motion is imparted to the base-plate.

16. The combination with a motor, a type-wheel, a magnet, a spring-pressed armature, and means connected to said armature for locking the type-wheel to the motor; of a longitudinally-movable carriage, a spring-pressed base-plate slidably mounted thereon and carrying a platen, a wheel, cam projections upon the periphery thereof, a ratchet-wheel connected thereto and revoluble therewith, a lever connected to the spring-pressed armature, a plunger operated by said lever, and a pawl thereon normally engaging the ratchet-wheel and adapted to rotate the cam-wheel and thereby impart a reciprocating motion to the base-plate and platen.

17. The combination with a motor, a type-wheel, a magnet, a spring-pressed armature, and means connected to and operated by the armature for locking the wheel to the motor; of a longitudinally-movable carriage, a platen journaled thereon, a ratchet-wheel connected to the platen, a spring-pressed plunger engaging the ratchet-wheel and a slidable strip adapted to contact with and operate the plunger, a cam for operating said strip, and means upon the type-wheel for rotating the cam.

18. In a type-writer of the character described, the combination with a casing; of a motor, a type-wheel, a magnet, a spring-pressed armature, means connected to and operated by the armature for locking the wheel to the motor, a longitudinally-movable carriage, a platen journaled thereon, a ratchet-wheel connected to the platen, a spring-pressed plunger engaging the ratchet-wheel, guides within the casing, an operating-strip slidably mounted thereon, a cam, a bar upon the strip, and means upon the wheel for rotating the cam.

19. In an electrically-operated type-writer, the combination of a motor, a type-wheel, a clutch for throwing the type-wheel into and out of engagement with the motor, means for holding the type-wheel stationary, and electrically-controlled means acting both to operate the clutch and the type-wheel-holding means.

20. In an electrically-operated type-writer, the combination of a motor, a type-wheel, clutch mechanism for throwing the type-wheel into and out of engagement with the motor, means for holding the type-wheel inactive, and electrically-controlled mechanism for first operating the clutch and then operating the type-wheel-holding means.

21. In an electrically-operated type-writer, a motor, a type-wheel, magnet-controlled means for throwing the type-wheel into and out of engagement with the motor, means for holding the type-wheel stationary, a longitudinally-movable and laterally-shiftable carriage, a tension device for moving the carriage in one direction, means for propelling the carriage step by step in the opposite direction, magnet-controlled means for throwing the type-wheel into and out of engagement with the motor, and operating the type-wheel-holding means, and means operated by the said magnet-controlled means for operating the step-by-step propelling mechanism and laterally shifting the carriage.

22. In an electrically-controlled type-writer, the combination of a motor, a type-wheel, means for throwing said type-wheel into and out of engagement with the motor, and a combined spindle controlling the means whereby the type-wheel is thrown into and out of engagement with the motor.

23. In an electrically-operated type-writer, the combination of a motor, a type-wheel, a clutch for throwing the type-wheel into and out of engagement with the motor, a spring-cushioned spindle for actuating the clutch, and electrically-controlled means for actuating said spindle.

24. In an electrically-operated type-writer, the combination of a motor, a type-wheel actuated thereby, a carriage provided with two sets of ratchet-teeth, means for moving the carriage in one direction, and plungers adapted to engage the teeth for moving the carriage in the opposite direction.

25. In an electrically-operated type-writer, the combination of a motor, type-wheel actuated thereby, a carriage, a tension device for moving the carriage in one direction, and plungers operating on the carriage for moving the carriage in opposition to the influence of the tension device.

26. In an electrically-operated type-writer, the combination of a motor, a type-wheel actuated thereby, a carriage provided with two series of teeth having inclined faces, a tension device for moving the carriage in one direction, and plungers operating against the inclined faces of the teeth for advancing the carriage in the opposite direction against the influence of the tension device.

27. In an electrically-operated type-writer, the combination of a motor, a type-wheel actuated thereby, a laterally-shiftable carriage, a tension device for moving the carriage in one direction, mechanism for propelling the carriage in the opposite direction, and means for shifting the carriage laterally to effect a disengagement between said carriage and the propelling mechanism.

28. In an electrically-operated type-writer, the combination of a motor, a type-wheel actuated thereby, a longitudinally-movable and laterally-shiftable carriage provided with two sets of teeth, a tension device for moving the carriage in one direction, plungers acting on the teeth to move the carriage in the opposite direction, and means for shifting the carriage laterally to effect a disengagement between the carriage and the mechanism employed to move the carriage against the influence of the tension device.

29. In an electrically-operated type-writer, the combination of a motor, a type-wheel actuated thereby, a longitudinally-movable and laterally-shiftable carriage, a tension device for moving the carriage in one direction, means for propelling the carriage step by step in the opposite direction, and a cam for effecting a disengagement between the carriage and the step-by-step propelling mechanism.

30. In an electrically-operated type-writer, the combination of a motor, a type-wheel actuated thereby, a longitudinally-movable and laterally-shiftable carriage, a rotary platen mounted on the carriage, ratchet mechanism for imparting rotary intermittent movement to the platen, and means whereby the type-wheel is adapted to actuate said ratchet mechanism.

31. In an electrically-operated type-writer, the combination of a motor, a type-wheel actuated thereby, a longitudinally-movable carriage, a rotary platen mounted thereon, ratchet mechanism for imparting intermittent rotary movement to the platen, a spring-retracted presser-bar, and means controlled by the type-wheel for operating said presser-bar and actuating the ratchet mechanism.

32. In an electrically-operated type-writer, the combination of a motor, a type-wheel actuated thereby, a carriage, a rotary platen mounted thereon, ratchet devices at opposite ends of the platen for imparting rotary intermittent movement thereto, a presser-bar common to both ratchet devices, and means controlled by the type-wheel for moving the presser-bar and actuating the ratchet devices.

33. In an electrically-operated type-writer, the combination of a motor, a type-wheel actuated thereby, a longitudinally-movable and laterally-shiftable carriage, a platen mounted thereon and movable toward and away from the face of the type-wheel, and mechanism embodying a cam for shifting the carriage laterally and moving the platen toward the type-wheel.

34. In an electrically-operated type-writer, the combination of a motor, a type-wheel actuated thereby, a longitudinally-movable and laterally-shiftable carriage, a platen mounted thereon, means for holding the platen away from the face of the type-wheel, and a cam for shifting the carriage and urging the platen toward the type-wheel.

35. In an electrically-operated type-writer, the combination of a motor, a type-wheel actuated thereby, a longitudinally-movable and laterally-shiftable carriage, a platen mounted thereon, a wheel having cam projections for urging the carriage toward the type-wheel, and ratchet mechanism for imparting intermittent rotary movement to said wheel.

811,248. **MAGNETIC SHIELD.** GEORGE H. SABINGTON, Rochester, N. Y., assignor to Durand, Loeb, Stagmaier Co., Rochester, N. Y. Filed Aug. 24, 1905. Serial No. 275,212.

Claim.—1. A magnetic needle, comprising an elongated substantially tubular body having a bearing, the walls of said body being magnetized, and a post-receiving opening alined with said bearing.

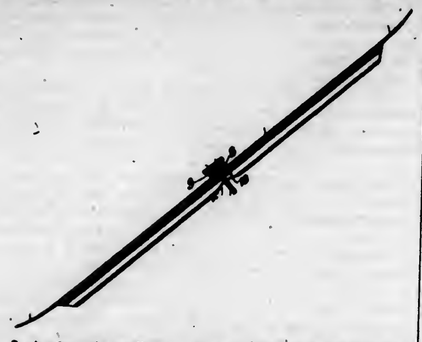

2. A magnetic needle, comprising an elongated, substantially tubular body, the walls of which are magnetized, and a jewel-mounting located in the upper side of the body between the ends thereof.

3. A magnetic needle, comprising a tubular body having pointed ends and having its walls magnetized, an opening in its lower side to permit the passage of a supporting-post, and a bearing-mounting in its upper wall directly above the opening.

4. A magnetic needle, comprising an elongated substantially tubular body, the walls of said body being magnetized, a bearing carried by the body between its ends, and a supporting-post engaging the bearing and constituting a pivot on which said bearing and the body turn.

5. A magnetic needle, comprising an elongated, tubular body oblong in cross-section and having an opening in its under side for the passage of a supporting-post, the walls of said tubular body being magnetized, and a jewel-mounting located in its upper wall in line with said opening.

6. A magnetic needle, comprising an elongated, tubular body elliptical in cross-section and having an opening in its under side for the passage of a supporting-post, the walls of said tubular body being magnetized, and a jewel-mounting located in its upper wall in line with said opening.

7. A magnetic needle, comprising an open-ended tubular body substantially elliptical in cross-section and having pointed ends, the walls of said tubular body being magnetized, an opening in its under side, and a jewel-mounting secured in its upper wall in line with the opening.

8. A magnetic needle, comprising a tubular, magnetized body having a pointed end, openings in its upper and lower sides, a jewel-holding collar fixed in the upper opening, and a jewel secured in said collar and having a bearing-receiving seat in its under side.

811,249. GOVERNING MECHANISM FOR ELASTIC-FLUID TURBINES. FREDERICK SAMUELSON, Rugby, England, assignor to General Electric Company, a Corporation of New York. Filed Mar. 23, 1905. Serial No. 251,509.

Claim.—1. In a governing mechanism for an elastic-fluid turbine, the combination of a number of discharge-passages having different capacities, individual valves for controlling the passage of fluid therethrough and a means for effecting different combinations of the valves to compensate for different loads on the turbines.

2. In a governing mechanism for elastic-fluid turbines, the combination of an admission-passage which is divided into sections having dissimilar capacities, individual and similarly-weighted valves for controlling the passage of fluid through said sections, and a means responsive to speed variations for effecting different combinations of the valves to compensate for different loads on the turbines.

3. In a governing mechanism for elastic-fluid turbines, the combination of an admission-passage which is divided into sections having dissimilar carrying capacities, individual valves for controlling the passage of fluid therethrough, a regulator which opens and closes the valves in a predetermined order as it moves from the initial to the final position to gradually increase the supply of motive fluid delivered to the wheel, and a device responsive to load changes for moving the regulator.

4. In a governing mechanism for an elastic-fluid turbine, the combination of a number of discharge-passages having different capacities, individual valves for controlling the passage of fluid therethrough a means for effecting different combinations of the valves and means for regulating the supply of fluid through a passage having the smallest capacity.

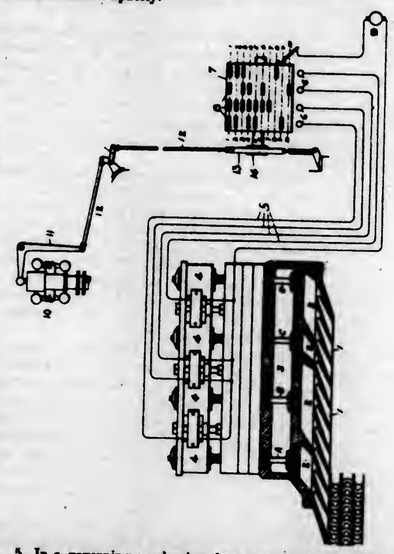

5. In a governing mechanism for an elastic-fluid turbine, the combination of a number of discharge-passages having different capacities individual valves for controlling the passage of fluid therethrough a means for effecting different combinations of the valves and a throttle-valve acting on the fluid supplied to a passage having the smallest capacity.

6. In a governing mechanism for an elastic-fluid turbine the combination of a number of discharge-passages having different capacities, individual valves for controlling the passage of fluid therethrough a regulator constructed and arranged so as to cause the opening and closing of the valves in predetermined groups, each group including a valve controlling a passage of the minimum capacity and a throttle for regulating the discharge of fluid through said passage.

7. In a governing mechanism for an elastic-fluid turbine, the combination of a number of discharge-passages having different capacities, separate valves controlling said passages, a regulator constructed and arranged to cause the opening and closing of said valves in predetermined groups, a throttle-valve acting upon the fluid supplied to a passage of minimum capacity and speed-responsive mechanism acting upon said regulator and throttle-valve.

8. In a governing mechanism for elastic-fluid turbines, the combination of an admission-passage which is divided into sections having dissimilar carrying capacities, individual valves for controlling the passage of fluid therethrough, a regulator constructed and arranged to first open the valve of the passage having the least capacity, then open the valve of the passage having the next greater capacity and close the first, and so on until each valve has been in service, and finally to group valves in a manner to further increase the supply of fluid to the turbine to the maximum, and a speed-regulating device for moving the regulator.

9. In a governing mechanism for an elastic-fluid turbine, the combination with groups of nozzles of different carrying capacities, of a separate valve for each group, and means for opening and closing said valves in such order that the successive quantities of elastic fluid delivered shall increase by regular increments measured by the capacity of the smallest nozzle.

10. In a governing mechanism for an elastic-fluid turbine, the combination with groups of nozzles of different carrying capacities, of a separate valve for each group, and means for opening and closing said valves in such order that the successive quantities of elastic fluid delivered shall increase by regular increments, measured by the reciprocal of the total number of nozzles, from zero up to the total nozzle capacity.

11. In a governing mechanism for an elastic-fluid turbine, the combination with groups of nozzles whose cross-sectional areas vary by multiples of a given constant, of a separate valve for each group, and means for opening and closing said valves singly and in combination in order to utilize one or more groups of nozzles to deliver quantities of elastic fluid successively increasing by multiples of the reciprocal of the total number of nozzles.

12. In a governing mechanism for an elastic-fluid turbine, the combination with groups of nozzles of different carrying capacities arranged side by side, of a separate valve for each group, and means for opening and closing said valves in such a predetermined order that the varying quantity of elastic fluid thereby delivered shall flow from nozzles that are adjacent.

13. In a governing mechanism for an elastic-fluid turbine, the combination with groups of nozzles of different carrying capacities, of a separate valve for each group, and means for opening said valves both singly and in combinations of two or more, whereby the quantities of elastic fluid delivered will increase in the arithmetical progression of a unit equal to the capacity of the smallest group.

14. In a governing mechanism for an elastic-fluid turbine, the combination with groups of nozzles of different carrying capacities of a separate valve for each group, means responsive to changes in the load on the turbine, and operative connections whereby said means causes the opening and closing of said valves in order that said nozzles shall deliver quantities of elastic fluid successively increasing or decreasing by multiples of the reciprocal of the total number of nozzles.

811,250. CUSHION-FORK FOR MOTOR-CYCLES AND OTHER VEHICLES. WILLIAM G. SCHAEFFER, Reading, Pa., assignor to William F. Rompple, Reading, Pa. Filed May 19, 1905. Serial No. 261,169.

Claim.—1. The combination with a fork-stem having a T-shaped fork-connecting end, of a fork having a U-shaped crown which is pivoted at its spread ends to one arm of said T-shaped end and the bend of which overlies the other arm thereof and has a spring connection to the latter.

2. The combination with a fork-stem having a T-shaped fork-connecting end, of a fork having a U-shaped crown which is pivoted at its spread ends to one arm of said T-shaped end by means of a horizontal pivot-bolt, and the bend of which overlies the other arm thereof and is yieldingly connected to the latter by means of a vertical bolt having reversely-acting springs thereon, means for adjusting the tension of said springs, and a casing, substantially as set forth.

811,251. ARCH. REINHOLD SCHNEIDER, Sharon, Pa. Filed Feb. 17, 1905. Serial No. 246,062.

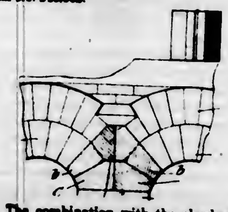

Claim.—1. The combination with the checker-work of a furnace, of a supporting-arch beneath the same, a second protecting-arch beneath the first arch, a separate set of blocks abutting against the base of each arch, and a column supporting said blocks, substantially as described.

2. In combination, a pair of superimposed arches, a plurality of blocks supporting the base of the lower arch and blocks supporting the base of the upper arch and breaking joints with the blocks which support the bases of the lower arch, substantially as described.

811,252. FUSE FOR PROJECTILES. HENRY C. SIMSON, West Kensington, England. Filed July 7, 1905. Serial No. 268,623.

Claim.—1. In a fuse, the combination of a hollow case provided with perforations through which the powder-gases can pass and a compressible cup inside the case exposed to the pressure of the gases and normally holding the parts in place.

2. The combination of a fuse-body having a conical hole in it, a conical plug fitting the hole, a compressible cup normally preventing the rearward movement of the conical plug, a perforated plug abutting against the cup, a firing-pellet and a connection between the pellet and the conical plug whereby the pellet is prevented from moving forward until the conical plug has moved rearward.

3. The combination of a fuse-body having a conical hole in it, a conical plug fitting the hole, a compressible cup normally preventing the rearward movement of the conical plug, a perforated plug abutting against the cup, a firing-pellet, a stem fixed to the pellet and having around it a circumferential groove, a partition fixed in the body and having through it a hole for the passage of the stem, a cup fixed to the end of the conical plug and balls in the groove and surrounded by this cup and abutting against the partition.

4. The combination of a fuse-body having a conical hole in it, a conical plug fitting the hole, a pressure-plate abutting against the plug, a compressible cup abutting against the pressure-plate and normally preventing the rearward movement of the conical plug, a perforated plug abutting against the cup, a firing-pellet, and a connection between the pellet and the conical plug whereby the pellet is prevented from moving forward until the conical plug has moved rearward.

5. The combination of a fuse-body having a conical hole in it, a conical plug fitting the hole, a pressure-plate abutting against the plug, a compressible cup abutting against the pressure-plate and normally preventing the rearward movement of the conical plug, a perforated plug abutting against the cup, a firing-pellet, a stem fixed to the pellet and having around it a circumferential groove, a partition fixed in the body and having through it a hole for the passage of the stem, a cup fixed to the end of the conical plug, and balls in the groove and surrounded by this cup and abutting against the partition.

811,253. SOCKET FOR INCANDESCENT ELECTRIC LAMPS. ALBERT P. SEYMOUR, Syracuse, N. Y., assignor to Pass & Seymour, Incorporated, Solvay, N. Y., a Corporation of New York. Filed Jan. 30, 1905. Serial No. 243,273.

Claim.—1. In an incandescent-lamp socket, the combination with the base composed of two porcelain blocks having cavities on their adjacent surfaces, forming a vertically-elongated sparking-chamber inclosed within the base, and having apertures for the connecting-screws, of lamp-terminals arranged on the lower surface of the lower block, elongated contact-springs arranged in the arcing chamber having upwardly-extending bends and downwardly-extending tips extending into apertures adjacent to the integral contact-pieces, wire terminals secured in recesses on the upper block and extending into recesses on the lower block, means for securing the wires to the wire terminals and for connecting the wire terminals to the respective springs, a rotating shaft journaled between the blocks, a porcelain cam arranged between the springs and loosely mounted on said shaft to be turned thereby, an inclosing case for the base composed of a cap and shell, insulating-linings for the cap and shell, and means to connect the cap to the shell, securely to inclose the base.

2. In an incandescent-lamp socket, the combination with a base composed of upper and lower porcelain blocks having corresponding cavities on their juxtaposed surfaces, forming an arcing chamber, and with apertures for the securing-screws, the upper block being formed with side recesses, shoulders in said recesses and wire grooves in its top and sides communicating with the recesses, and

both blocks formed on their outer surfaces with registering, longitudinal channels having enlarged screw-slots at their upper ends, of lamp-terminals secured on the lower surface of the lower block, wire terminals arranged on the shoulders in said side recesses, contact-springs supported on said shoulders and arranged in the arcing chamber with their lower ends extending into apertures adjacent to the respective contact-pieces, screws connecting and securing in position on said shoulders the respective wire terminals and contact-springs, a shaft journaled between the blocks, and a cam of insulating material arranged between the contact-springs and loosely mounted on the shaft to be turned thereby.

3. In an electric socket, the combination with a brass cap having in its margin inwardly upset portions provided with threaded bearings, of screws fitted to said bearings, a brass shell fitting within the cap-margin and provided with inwardly-grooved portions to fit over the bearings and with holes in the grooved portions freely to receive the screws, and of insulating portions arranged within the cap and shell and provided with holes adjacent to their upper margin to receive the screw-tips.

4. An inclosing shell for a device of the character described, having in combination a metallic cap having marginal portions inwardly upset and threaded, of screws fitted thereto, and a metallic shell fitting within the cap and having marginal holes to receive the screw ends.

5. In an incandescent-lamp socket, the combination with a base composed of two porcelain blocks, of lamp-terminals on the lower block, wire terminals on the upper block, secured in opposite recesses on the sides thereof and having their tips extending down into registering recesses on the lower block, means to secure the blocks together, a brass cap and a brass shell to inclose the base, screws to secure the cap to the shell, both blocks having on their side faces registering longitudinal channels to receive said screw-tips.

6. In an incandescent-lamp socket, the combination with a base composed of two porcelain blocks, of lamp-terminals on the lower block, wire terminals on the upper block, connections between the respective lamp-terminals and the respective wire terminals, means to secure the blocks together, a metallic cap and a metallic shell to inclose the base, and screws to secure the cap to the shell, both blocks having on their outer edges, registering, longitudinal channels having enlarged screw-slots at their upper ends to receive the tips of said screws.

811,254. WIRE-STRETCHER. ARTHUR A. SMITH, Eagle Grove, Iowa. Filed June 20, 1905. Serial No. 266,163.

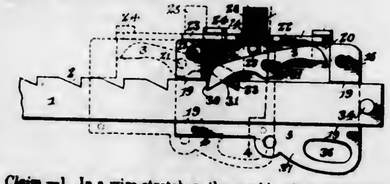

Claim.—1. In a wire-stretcher, the combination of a combined guide and ratchet-bar, a carrier slidable on the bar, a pawl or dog pivoted at an intermediate point to the carrier and arranged to engage the combined guide and ratchet-bar, and a yieldable device slidable on the carrier for engaging the pawl or dog at either side of the pivotal point.

2. In a wire-stretcher, the combination of a combined guide and ratchet-bar, a carrier slidable thereon, a pawl or dog pivoted to the carrier at an intermediate point and arranged to engage the said bar, a slide guided on the carrier, and yieldable means carried by the slide and arranged to engage the pawl or dog at either side of the pivotal point.

3. In a wire-stretcher, the combination of a combined guide and ratchet-bar, a carrier slidable on the bar, a pawl or dog pivoted at an intermediate point to the carrier and arranged to engage the said bar, and a yieldable device slidable on the carrier for engaging the pawl or dog at either side of the pivotal point, said yieldable device comprising a headed pin and a coiled spring disposed on the pin.

4. In a wire-stretcher, the combination of a combined guide and ratchet-bar, a carrier slidable on the bar, a pawl or dog pivoted at an intermediate point to the carrier and arranged to engage the said bar, a slide guided on the carrier and provided with a projection or stud having an opening extending inwardly from the inner face of the slide, a spring arranged within the said opening, and a pin also arranged in the opening of the stud and engaged by the spring, said pin being slidable on the pawl or dog and adapted to engage the same at either side of the pivot thereof.

5. In a wire-stretcher, the combination of a combined guide and ratchet-bar, a carrier slidable on the bar and provided with a casing having an opening, said casing being also provided with guides arranged over the opening, a slide fitted in the guides, and a yieldable device carried by the slide for engaging the pawl or dog.

6. In a wire-stretcher, the combination of a combined guide and ratchet-bar, a carrier mounted on the bar and provided with a casing receiving the bar and composed of two sides or pieces, said casing having an opening and provided with guides consisting of substantially L-shaped lugs extending inwardly and upwardly from the sides or pieces, a slide having reduced portions guided by the said lugs, and a yieldable device mounted on the slide for engaging the pawl or dog.

811,255. PISTON. GRANVILLE H. STALLMAN, Philadelphia, Pa. Filed Apr. 6, 1905. Serial No. 254,363.

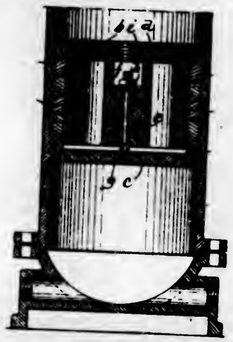

Claim.—In a piston, in combination, a main portion consisting of a head, sides, and a central web or hub, the latter of which is bored and drilled longitudinally, a plug for closing the upper end of the bored portion of said web or hub, a movable flanged head, a bolt secured to said head and passing through the drilled portion of said web, a head or nut on said bolt, and an elastic backing surrounding the main portion of said piston resting upon the flange of the movable head.

811,256. FUSIBLE LINK. ANDREW W. STOREY, Moston, near Manchester, England. Filed May 12, 1905. Serial No. 260,125.

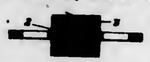

Claim.—A fusible link comprising two parts, one consisting of a cylinder 1 having a tapered interior, a sensitive solder lining for said cylinder having its exterior tapered and having a screw-threaded bore and the other part consisting of a screw-threaded plug fitting the threaded lining, said second part having a projecting portion closing the end of the cylinder so as to completely cover the sensitive solder.

811,257. BRIDGE AND PROCESS OF MAKING THE SAME. JOSEPH B. STRAUS, Chicago, Ill. Filed Dec. 16, 1904. Serial No. 236,606.

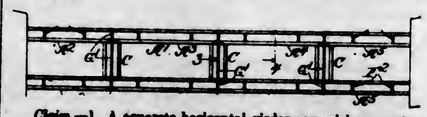

Claim.—1. A concrete horizontal girder comprising a series of shell-like sections placed end to end and communicating with each other, said sections having concrete walls and a solid concrete core extending from one section to the other and binding them together into a rigid self-supporting structure.

2. A concrete bridge comprising a series of separated concrete ribs formed in sections and connected together, and a series of concrete lateral diaphragms separately made and fastened in position between said ribs.

3. A concrete structure comprising a series of separated concrete ribs formed in sections and connected together, and a series of concrete lateral diaphragms separately made and fastened in position between said ribs, said concrete lateral diaphragms fastened to the ribs at the points where the sections of the ribs are united.

4. A building-section comprising separated supporting-pieces, a series of looped connecting-pieces attached thereto at intervals, a concrete facing supported upon said supporting and connecting pieces so as to form a hollow shell-like section, the ends of the supporting-pieces left free from cement.

5. The combination in a bridge of a series of sections made up of separated supporting-pieces and looped connections embedded in concrete so as to form shell-like sections and connected together in proper relation so as to form the outline of the structure, adapted when filled in to form a solid unitary construction.

6. The combination in a bridge of a series of ribs made up of sections each consisting of separated supporting-pieces and looped connections embedded in concrete so as to form shell-like sections and connected together in proper relation so as to form continuous ribs, and a series of cross-pieces or diaphragms connected to said ribs at intervals.

7. The combination in a bridge of a series of ribs made up of sections each consisting of separated supporting-pieces and looped connections embedded in concrete so as to form shell-like sections and connected together in proper relation so as to form continuous ribs, and a series of cross-pieces or diaphragms connected to said ribs at the points where the sections of the ribs are united.

8. The combination in a bridge of a series of ribs made up of sections each consisting of separated supporting-pieces and looped connections embedded in concrete so as to form shell-like sections and connected together in proper relation so as to form continuous ribs, a series of cross-pieces or diaphragms connected to said ribs at the points where the sections of the ribs are united, and a connecting-piece extending through the ribs and the intermediate connecting-piece or diaphragm.

9. A building-section comprising a frame, a concrete facing supported upon said frame so as to form a hollow shell-like section, and overlapping connecting devices at the ends thereof for connecting said section in position in the structure and a uniting-piece passing through said overlapping devices so as unite them.

10. A bridge comprising a series of shell-like concrete sections fastened together so as to form separated ribs and lateral braces, and a solid uniting-core in the sections forming the ribs and running from one to the other so as to form solid ribs.

11. A bridge comprising a series of separated longitudinal ribs, a series of transverse ribs to act as cross-bracing, the two sets of ribs formed of a series of shell-like sections having concrete walls and fastened together, the sections of the longitudinal and transverse ribs provided with concrete filling which forms an integral construction extending longitudinally and transversely so as to unite the sections and form a solid rib construction.

12. A building-section comprising a rigid frame consisting of longitudinal and transverse pieces embedded in concrete and forming a hollow shell-like section, and intermediate connecting-pieces extending through the hollow of the section and fastened to the transverse pieces in the opposed walls thereof, said section adapted to be filled in after being placed in position so as to form a solid structure.

13. A concrete bridge comprising a series of shell-like ribs, a series of floor-pieces spanning the space between the adjacent edges of said ribs, said ribs filled with concrete which extends over the floor-pieces so as to form a floor integral with the filling in the ribs.

14. A concrete bridge comprising a series of shell-like ribs and cross-pieces, a series of floor-pieces spanning the space between the adjacent edges of said ribs, said ribs and cross-pieces filled with concrete which extends over the floor-pieces so as to form a floor integral with the filling in the ribs and cross-pieces.

15. The process of forming structures which consists in forming a series of hollow sections having a rigid frame embedded in concrete walls, then assembling said sections to form a series of shell-like ribs and cross-pieces, then supporting a series of floor-pieces on the inner edges of said ribs, and then filling in the ribs and covering the floor-pieces with concrete so as to form a floor integral with the filling in the ribs.

16. A concrete bridge comprising a series of concrete ribs and cross-pieces, and a series of concrete floor-pieces separate from the ribs and spanning the space between the ribs, and means for holding said floor-pieces in position.

811,258. POWER-TRANSMITTING MECHANISM. HORACE H. TAYLOR, San Jose, Cal. Filed Jan. 11, 1905. Serial No. 240,642.

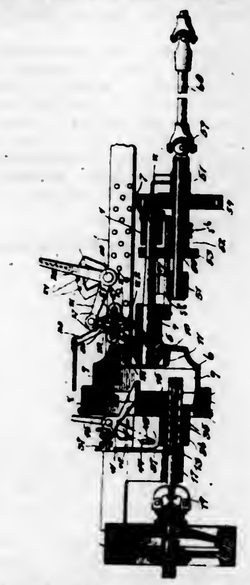

Claim.—1. In a power-transmitting mechanism, the combination with a driving-gear having external and internal driving-faces, of a drum having an internal face adapted to be engaged by the external driving-face of the gear, and also an external face adapted to be engaged by the internal driving-face of the gear.

2. In a power-transmitting mechanism, the combination with a driving-gear having an external and an internal driving-face, of a drum having a plurality of internal faces each adapted to be engaged by the external driving-face of the gear, and also an external face adapted to be engaged by the internal driving-face of the gear-means for shifting the drum in a direction transversely to its axis and means for shifting the driving-gear longitudinally of its axis.

3. In a power-transmitting mechanism, the combination with a driving-gear having a peripheral driving-face, of a drum having a plurality of internal faces, each of which is adapted to be engaged by the peripheral driving-face of the driving-gear, a shaft on which the drum is secured, a hinged frame carrying bearings in which the shaft is journaled and means for raising and lowering the free end of the hinged frame.

4. In a power-transmitting mechanism, the combination with a driving-gear having a peripheral driving-face, of a drum having a plurality of internal faces, each of which is adapted to be engaged by the peripheral driving-face of the driving-gear, a shaft on which the drum is secured, a hinged frame carrying bearings in which the shaft is journaled, means for raising and lowering the free end of the hinged frame and means for moving the driving-gear longitudinally of its axis.

5. In a power-transmitting mechanism the combination with a driving-gear having a peripheral driving-face, of a drum having an internal face for engagement with the driving-face of the gear, means for raising the drum to bring its internal face into contact with the driving-face of the gear, and independently-operated means for varying the contact between the gear and the drum.

6. In a power-transmitting mechanism, the combination with a driving-gear having a peripheral driving-face, of a drum having an internal face, for engagement with the driving-face of the gear, means for raising the drum to bring its internal surface into contact with the driving-face of the gear, comprising a lever-arm and a connecting-link, and means for varying the effective length of the link to vary the contact between the gear and the drum.

7. In a power-transmitting mechanism, the combination with a driving-gear having a peripheral driving-face, of a drum having an internal face, for engagement with the driving-face of the gear, means for raising the drum to bring its internal face into contact

with the driving-face of the gear comprising a rock-shaft provided with an operating-lever and with a lever-arm and connecting-link, means for locking the operating-lever and means for varying the effective length of the link to vary the contact between the gear and drum.

8. In a power-transmitting mechanism, the combination with a driving-gear having a peripheral driving-face, of a drum having an internal face for engagement with the driving-face of the gear, means for raising the drum to bring its internal face into contact with the driving-surface of the gear comprising a rock-shaft provided with an operating-lever and with a lever-arm and connecting-link, the latter consisting of a pair of flexible arms, means for locking the operating-lever and means for spreading the flexible arms of the link to vary the contact between the gear and drum.

811,259. CHAIR-SEAT. VINCENT A. TAYLOR, Bedford, Ohio. Filed Mar. 31, 1905. Serial No. 253,677.

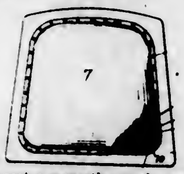

Claim.—1. In a seat, a supporting-section provided with peripheral projections through which securing means may pass, and spaces or openings between the projecting portions through which securing means for a covering portion may be passed, substantially as described.

2. In a seat, a supporting-section provided about its periphery with projections having holes therein adapted to receive securing means, and openings between said projections through which securing means for the superimposed parts may pass, substantially as described.

811,260. INSOLE. ARTHUR R. TERRELL, North Weymouth, Mass. Filed Dec. 24, 1902. Serial No. 49,576.

Claim.—1. An insole comprising a body portion having an integral upturned lip, a layer of flexible material having an upturned portion covering said lip, and fastenings extending through the lip close to the base thereof and through the covering layer, whereby the plurality of upturned integral portions secured together serve to reinforce or brace each other in upright position and are held in close contact below the point at which the needle of a welting or lasting machine penetrates the said upturned portions.

2. An insole comprising a leather body having an integral upturned lip, a fabric layer covering said body and extending over the edge of the lip, and means for holding the lip in proper upturned position, said means comprising a row of transverse fastenings extending through the lip close to the base thereof and through the fabric layer, whereby the plurality of upturned integral portions secured together serve to reinforce or brace each other in upright position and are held in close contact below the point at which the needle of a welting or lasting machine penetrates the said upturned portions.

811,261. RAIL-JOINT. JOHN W. TRACY, Nash county, N. C., assignor of one-half to John M. Fitzgerald, Rocky Mount, N. C. Filed May 8, 1905. Serial No. 259,269.

Claim.—1. In combination with the meeting ends of rails, joint means therefor including a wing at one side of the rails in spaced relation thereto, and spaced oppositely-movable wedges arranged between the wing and the rail ends for firmly holding the rails in position.

2. In combination with the meeting ends of rails, a joint therefor including a wing at a side of the rails in spaced relation thereto, oppositely-operating wedges between the wing and the rails, and means for imparting simultaneous longitudinal movement to said wedges.

3. In combination with the meeting ends of rails, a joint therefor including a wing at a side of the rails in spaced relation thereto, oppositely-operating wedges between the wing and the rails, and a member arranged transversely of the wedges for simultaneous actuation thereof.

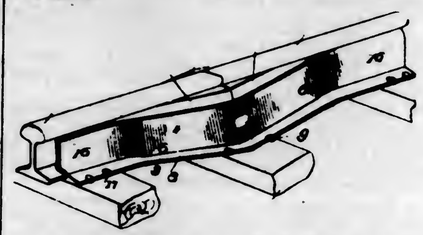

4. In combination with the meeting ends of rails, a joint therefor including a wing at a side of the rails in spaced relation thereto, oppositely-operating wedges between the wing and the rails, and a tapered key movable between the wedges for separating the same.

5. In combination with the meeting ends of rails, a joint therefor comprising a chair, spaced wings carried by the chair and arranged upon opposite sides of the rails at the ends, oppositely-operating wedges between a wing of the chair and the adjacent rail ends, and means between said wedges for imparting simultaneous longitudinal movement thereto.

6. In combination with the meeting ends of rails, a joint therefor comprising a chair, spaced wings carried by the chair and arranged upon opposite sides of the rails at the ends, the space between the wing of the chair and the adjacent rails being convergent from a point between the ends of the chair toward the opposite extremities of the chair, and oppositely-movable wedges arranged for movement in the space between the aforesaid wing and the rails.

7. In combination with the meeting ends of rails, a joint therefor comprising a chair, spaced wings carried by the chair and arranged upon opposite sides of the rails at the ends, the space between the wing of the chair and the adjacent rails being convergent from a point between the ends of the chair toward the opposite extremities of the chair, oppositely-movable wedges arranged for movement in the space between the aforesaid wing and the rails, and a key passing between the rail ends for spreading the wedges simultaneously.

8. In combination with the meeting ends of rails, a joint therefor comprising a chair, spaced wings carried by the chair and arranged upon opposite sides of the rails at the ends, the space between the wing of the chair and the adjacent rails being convergent from a point between the ends of the chair toward the opposite extremities of the chair, oppositely-movable wedges arranged for movement in the space between the aforesaid wing and the rails, and a key passing between the rail ends for spreading the wedges simultaneously, the rail ends having notched or cut-away portions through which the key passes.

9. In combination with the meeting ends of rails, a joint therefor comprising a chair, spaced wings carried by the chair and arranged upon opposite sides of the rails at the ends, the space between the wing of the chair and the adjacent rails being convergent from a point between the ends of the chair toward the opposite extremities of the chair, oppositely-movable wedges arranged for movement in the space between the aforesaid wing and the rails, a key passing between the rail ends for spreading the wedges simultaneously, the rail ends having notched or cut-away portions through which the key passes, and a nut threaded upon the key for preventing displacement thereof.

10. In combination with the meeting ends of rails, a joint-chair therefor embodying a base and spaced wings carried by the base, wedges operating between a wing and the rails, and angle extensions projecting from the wings at the ends of the chair.

11. In combination with the meeting ends of rails, a joint-chair therefor embodying a base and spaced wings carried by the base, wedges operating between a wing and the rails, angle extensions projecting from the wings at the ends of the chair, a key passing through the wings of the chair and movable between the wedges for actuating the latter, and means for preventing displacement of said key.

811,262. RAILROAD-TIE. JOHN B. WALLING, Salt Lake City, Utah. Filed June 10, 1905. Serial No. 264,616.

Claim.—1. A railroad-tie comprising a body portion, a plate

disposed upon the body portion, said plate having vertical openings therein, members engaged in the openings and lying in pairs at opposite sides of the body portion and at opposite ends thereof, said members extending downwardly below the plate and having rail-engaging lips at their upper ends adapted for engagement with a rail disposed between the members, said members having registering horizontal passages in their downwardly-extending portions and co-operating wedge members engaged in the passages said members being disposed for operation to move the first-named members downwardly.

2. A railroad-tie comprising a plate, a support for the plate, members engaged in the plate for vertical movement and having co-operating lips adapted for engagement with a rail, said members having registering passages therein below the plate, upper and lower wedge members engaged in the passages, the lower wedge members having downwardly-directed portions extending over the surfaces of the first-named members below their passages, the upper wedge members resting upon the lower and against the under face of the plate and being movable inwardly to move the first-named members downwardly and means for holding the upper wedge members at different points of their movement.

3. The combination with a railroad-tie, of a plate disposed thereupon and extending laterally beyond the sides thereof, said plate having vertical openings in the laterally-extending portions, members slidably disposed in the openings and lying in pairs at opposite sides of the tie, the members of each pair having rail-engaging lips directed toward each other, a rail disposed upon the plate between the members of each pair and with its base-flange beneath the lips, means for moving the members downwardly to hold the rail in position and a spike engaged in the plate and in the tie beneath the rail.

4. In a railroad-tie the combination with a body portion, of a plate disposed thereupon, a spike engaged in the plate and in the body portion, a rail disposed upon the plate above the spike, said plate having vertical openings therein at opposite sides of the rail, rail-engaging members slidably engaged in the openings for vertical movement said members having alining passages therein below the plate, upper and lower wedge members disposed in the alining passages, the lower member having downwardly-extending portions lying outwardly of the first-named members to hold the lower wedge member against longitudinal movement, the upper wedge member being operable to move the rail-engaging members downwardly to clamp the rail in position.

811,268. FEED MECHANISM FOR QUILL-TREATING MACHINES. EDWARD K. WARREN, Three oaks, Mich. Filed May 13, 1905. Serial No. 260,676.

Claim.—1. In a machine for feeding quills and the like, the combination with a quill-holder, and a pair of feed-disks adapted to engage and advance between them said quills successively, of means serving to engage the quills successively and force them in proper succession into the nip of the feed-disks, substantially as described.

2. In a machine for feeding quills and the like, the combination with a quill-holder, and a pair of feed-disks, of means carried by one of said disks adapted to engage the nearest quill at each rotation of the disks and force it into the nip of the latter, substantially as described.

3. In a machine for feeding quills and the like, the combination with a holder adapted to support a stack of superposed quills, and a pair of feed-disks operating in a plane transverse to the plane of the stack, of means carried by one of said disks adapted to engage the nearest quill at each rotation of the disks, and force it to a position between said disks, substantially as described.

4. In a machine for feeding quills and the like, the combination with a holder adapted to support a stack of superposed quills, and a pair of feed-disks operating in a horizontal plane at the lower end of the stack, of means carried by one of said disks adapted to engage the quills as each occupies the lowermost position of the stack and depress it to a position between said disks, substantially as described.

5. In a machine for feeding quills and the like, the combination with a holder adapted to support a stack of superposed quills, and a pair of feed-disks operating in a plane transverse to the plane of the stack, of a cam-plate carried by one of said disks adapted to engage said quills successively and force the latter between the disks, substantially as described.

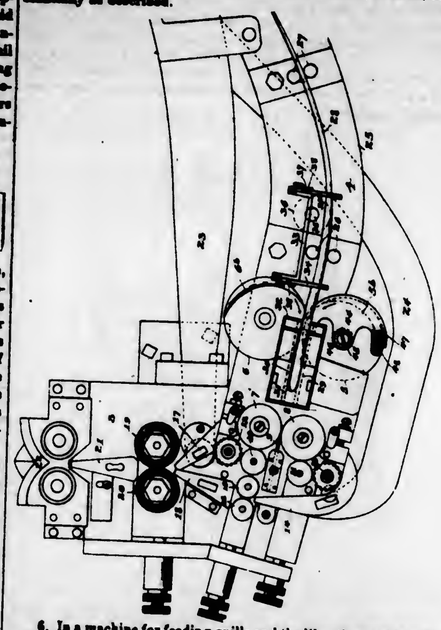

6. In a machine for feeding quills and the like, the combination with a holder adapted to support a stack of superposed quills, and a pair of feed-disks operating in a horizontal plane at the lower end of the stack, of a cam-plate carried by one of said disks adapted to engage each quill as it occupies the lowermost position of the stack and depress it to a position between said disks, substantially as described.

811,264. SIGN-HOLDER. HOWARD A. WATERHOUSE, Providence, R. I. Filed Mar. 1, 1904. Serial No. 196,971.

Claim.—1. The combination of a plurality of sign-holders, having the vertically-directed forearms E, each provided with a slot F for the reception of the removable and changeable sign-plate A, resting on base B of arms B E; and held in a perpendicular position by slots F, sign-plates A being secured by means of set-screws J, a collet C to said arms B, E, a spindle common to all of said sign-plates fitting in a recess in said collet, and means for securing said collet to said spindle to face said sign-plates to any point of the compass, all substantially as herein set forth.

2. The combination of arms B E, having a downwardly-extended neck or collet C provided with recess or aperture D, and the vertically-directed forearms E, each provided with a slot F; sign-plates A arranged to be removably supported upon arms B E in slots F, a spindle H adapted at its head to engage a recess or aperture D, in neck or collet C, to serve as supporting means for the whole, all substantially as herein set forth.

811,265. PROTECTION AGAINST REVERSAL OF ENERGY. LEONARD WILCOX, Pittsfield, Mass., assignor to Stanley Electric Manufacturing Company, Pittsfield, Mass., a Corporation of New Jersey. Filed May 2, 1904. Serial No. 206,269.

Claim.—1. In combination, a main alternating-current circuit, a local circuit in which the current varies in phase with variation of phase of the current in the main circuit, a commutator in said local circuit rotating synchronously with the cycles of the electromotive force of the main circuit, a device having relatively movable members and energized both by the commutated current in said local circuit and by a constant flux, and a switch in the main circuit controlled by said device.

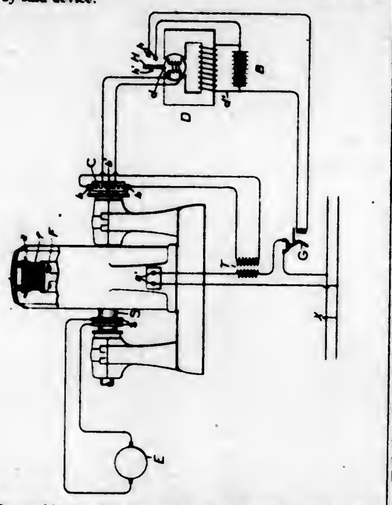

2. In combination, a main alternating-current circuit, a local circuit in which the current varies in phase with variation of phase of the current in the main circuit, a commutator in said local circuit rotating synchronously with the cycles of the electromotive force of the main circuit, a device having relatively movable members, one of said members being energized by the commutated current in said local circuit and the other member being energized by a constant flux, and a switch in the main circuit controlled by said device.

3. In combination, an alternating-current dynamo-electric machine, a local circuit in which the current varies in phase with variation of phase of the current in said machine, a commutator in said local circuit rotating with the rotating member of said machine, a device having relatively movable members and energized both by the commutated current in said local circuit and by a constant flux, and a switch in the circuit of said machine controlled by said device.

4. In combination, an alternating-current dynamo-electric machine, a local circuit in which the current varies in phase with variation of phase of the current in said machine, a commutator in said local circuit rotating with the rotating member of said machine, a device having relatively movable members, one of said members being energized by the commutated current in said local circuit and the other being energized by a constant flux, and a switch in the circuit of said machine controlled by said device.

5. In combination, a main alternating-current circuit, a local circuit in which the current varies in phase with variation of phase of the current in the main circuit, a source of direct current, a device energized both by current from said local circuit and current from said source, a commutator adapted and arranged to commutate one of said currents and rotating synchronously and in phase with the electromotive force of the main circuit, and a switch in the main circuit controlled by said device.

6. In combination, an alternating-current dynamo-electric machine, a local circuit in which the current varies in phase with variation of phase of the current in said machine, a source of direct current, a device energized both by current from said local circuit and by current from said source, a commutator adapted and arranged to commutate one of said currents and rotating with the rotating member of said machine, and a switch in the circuit of said machine controlled by said device.

7. In combination, a main alternating-current circuit, a device energized by a constant flux, means for producing in said device a second flux reversible in direction when the current in the main circuit reverses in phase relative to the electromotive force, and a switch in said main circuit controlled by said device.

8. In combination, a main alternating-current circuit, a device energized by a constant flux, means for producing in said device a second flux reversible in direction when the current in the main circuit reverses in phase relative to the electromotive force and independent in strength of variation in current strength in the main circuit over wide ranges, and a switch in the main circuit controlled by said device.

9. In combination, a main alternating-current circuit, a local circuit in which the current varies in phase with variation of phase of the current in the main circuit and is independent in strength of variation in the main current strength over wide ranges, a source of direct current, a device energized both by current from said local circuit and current from said source, a commutator adapted and arranged to commutate one of said currents and rotating synchronously with the cycles of the electromotive force of the main circuit, and a switch in the main circuit controlled by said device.

10. In combination, a main alternating-current circuit, a local circuit in which the current varies in phase with variation of phase of the current in the main circuit and is independent in strength of the strength of the main current over wide ranges, a commutator in said local circuit rotating synchronously with the cycles of the electromotive force of the main circuit, a device having relatively movable members, one of said members being energized by the commutated current in said local circuit and the other member being energized by a constant flux, and a switch in the main circuit controlled by said device.

11. In combination, an alternating-current circuit, a series transformer having its primary included in said circuit and adapted to be saturated by a fraction of the normal current in said circuit, a source of direct current, a device energized both by current from the secondary of said transformer and by current from said source, a commutator adapted and arranged to commutate one of said currents and rotating synchronously with variation of phase of the electromotive force in said circuit, and a switch in said circuit controlled by said device.

12. In combination, an alternating-current dynamo-electric machine, a series transformer having its primary in series with said machine and adapted to be saturated by a fraction of the full-load current of said machine, a commutator connected to the secondary of said transformer and rotating with the rotating member of said machine, a device having relatively movable members, one of said members having a winding connected to said commutator and the other member being energized by a constant flux, and a switch in the circuit of said machine controlled by said device.

13. A device for protection against reversal of energy in an alternating-current circuit, comprising a member energized by a constant flux and a second member movable relatively to the first member and energized by a commutated current varying in phase with variation of phase of the current in said circuit, and a switch in said circuit controlled by said device.

14. A device for protection against reversal of energy in an alternating-current circuit comprising two windings, one energized from a direct-current source and the other from an alternating-current source in which the current varies in phase with variation of phase of the current in said circuit, means for commutating one of said currents, and a switch in said circuit controlled by said device.

15. A reverse-current cut-out for alternating-current circuits comprising a rectifier, and a polarized relay actuated by the rectified current.

16. A reverse-current cut-out for alternating-current circuits comprising a rectifier driven synchronously with the cycles of the electromotive force in said circuit, and a polarized relay actuated by the rectified current.

17. In combination, an alternating-current circuit, a rectifier in said circuit, a polarized relay supplied with current from said rectifier, and a circuit-breaker controlled by said relay.

18. In combination with an alternating-current circuit, a series transformer having its primary included in said circuit and having a core adapted to be saturated by a fraction of the full-load current in said circuit, a rectifier in circuit with the secondary of said transformer, a polarized relay supplied with current from said rectifier, and a circuit-breaker controlled by said relay.

811,266. HAY-FORK. ANTON ANDERSON and WILFORD B. PALMER, Grantsville, Utah. Filed Aug. 24, 1904. Serial No. 221,960.

Claim.—A fork comprising a head, a handle connected to said head, tines engaged through the head, eyes carried by the head, a bail engaged in the said eyes on the head and having an eye formed in its free end for the attachment of a hoisting-cable, a link including arms at one of its ends, said arms having their ends pivotally connected to the opposite inner sides of said bail near the upper end of the latter, the other end of said link being curved laterally, a second link having apertured lugs formed on each of its ends, the curved end of the first-named link being pivoted between the lugs of one of the ends of the last-named link, the other end of said last-named link being pivoted to the said handle, a pin carried by said first-named link and extending from each side thereof to engage the lugs of the last-named link, and a drop-pine connection formed on the pivot of the two links.

811,267. GUN-SIGHT. HERBERT B. AMBUS, Buffalo, Wyo. Filed June 16, 1904. Serial No. 212,886.

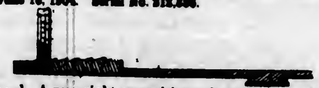

Claim.—1. A rear sight comprising a frame having a recess in one side, a sight-plate adjustable in said recess and having a sight-opening and vertically and laterally ranged graduations in the field thereof, a clamp-plate bearing against the sight-plate, and a screw to secure the sight-plate and clamp-plate in place, the said screw being clear of the sight-plate, to permit initial adjustment of the latter and being in engagement with the clamp-plate to hold the latter against movement with the sight-plate when the sight-plate is being adjusted.

2. In combination with a rear sight having a sight-opening and vertically and laterally ranged graduations in the field thereof, a front sight tapering in form forwardly to prevent its sides from coming in the range of vision when sight is taken from either side of the opening in the rear sight.

3. In combination with a rear sight having a sight-opening and vertically and laterally ranged graduations in the field thereof, a front sight tapering in form forwardly to prevent its sides from coming in the range of vision when sight is taken from either side of the opening in the rear sight, and having its rear end hollowed or recessed and formed with a flange defining the outline thereof.

811,268. FITTING-STAND FOR DRESSMAKERS, &c. JOHN J. BAIR, Lancaster, Pa. Filed Jan. 20, 1906. Serial No. 296,207.

Claim.—1. A fitting-stand comprising a main platform, a section which may be adjusted vertically in relation thereto, means for supporting said section firmly at all its sides, and means for effecting said adjustment, substantially as set forth.

2. A fitting-stand comprising a platform mounted upon suitable supports and formed with a central aperture, an adjustable section mounted within said central aperture upon supports located near the edge thereof and on all sides thereof, and means for raising and lowering said supports to adjust said section, substantially as set forth.

3. A fitting-stand comprising a main platform, an adjustable section and a vertical flange extending up from the surface of the main platform adjacent to said adjustable section, substantially as set forth.

4. A fitting-stand comprising a fixed platform, an adjustable section for supporting the person to be fitted, means for adjusting the same, and vertical flanges or rings extending up from the top of said main platform adjacent to said adjustable section, substantially as set forth.

5. A fitting-stand comprising a main fixed platform formed with a central aperture, an adjustable platform mounted in said aperture and having cam-faced bars on its under side, sliding cams mounted upon a track beneath said bars, and a screw-rod provided with a crank mounted to engage with said sliding bars for operating the same back and forth, substantially as set forth.

811,269. FOLDABLE RAILWAY-VELOCIPEDE. HENRY BARRY, Chicago, Ill. Filed Apr. 7, 1905. Serial No. 254,804.

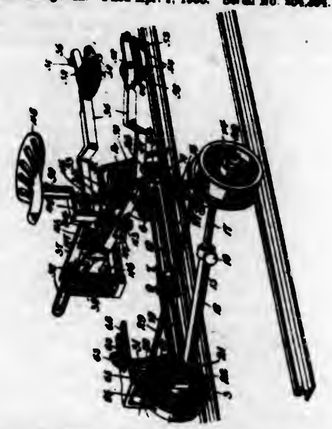

Claim.—1. In a device of the class described, the combination of a wheeled frame, propelling mechanism, and supporting means for the propelling mechanism, said supporting means being movable on the frame to permit the propelling mechanism to follow the contour of a rail.

2. In a device of the class described, the combination of a wheeled frame, propelling mechanism, and supporting means for the propelling mechanism, said supporting means being laterally movable on the frame to permit the propelling mechanism to follow the contour of a rail.

3. In a device of the class described, the combination of a wheeled frame, propelling mechanism, and supporting means for the propelling mechanism, said supporting means being pivotally mounted and arranged to swing horizontally to permit the propelling mechanism to follow the contour of a rail.

4. In a device of the class described, the combination of a wheeled frame, propelling mechanism, supporting means for the mechanism, said supporting means being movably mounted on the frame to permit the propelling mechanism to follow the contour of a rail, and means for guiding the propelling mechanism to retain the same in proper position with relation to the rail.

5. In a device of the class described, the combination of a wheeled frame, propelling mechanism, supporting means for the mechanism, said supporting means being movably mounted on the frame to permit the propelling mechanism to follow the contour of a rail, and a fork arranged to straddle the rail to retain the propelling mechanism in proper position with relation to the same.

6. In a device of the class described, the combination of a wheeled frame, propelling mechanism, supporting means for the propelling mechanism, said supporting means being movably mounted on the frame to permit the propelling mechanism to follow the contour of a rail, and means for locking the said supporting means rigid with the wheeled frame.

7. In a device of the class described, the combination of a wheeled frame, a pivoted frame mounted on the wheeled frame, propelling mechanism carried by the pivoted frame, and a fork connected with the pivoted frame and arranged to straddle a rail for guiding the propelling mechanism.

8. In a device of the class described, the combination of a wheeled frame, a pivotally-mounted frame or bracket arranged to swing horizontally, propelling mechanism carried by the pivoted frame or bracket, and a removable locking-pin engaging the pivotally-mounted frame and the wheeled frame and adapted to lock the former rigidly with the latter.

9. In a device of the class described, the combination of a combined oscillatory and reciprocatable push-bar fulcrumed at one

end and provided at the other end with track-engaging means, and actuating mechanism connected with the push-bar at an intermediate point.

10. In a device of the class described, the combination of a push-bar provided at one end with track-engaging means, means for slidably and pivotally mounting the other end of the push-bar, and actuating mechanism located at an intermediate point.

11. In a device of the class described, the combination of reversely-movable push-bars provided at one end with track-engaging means, means located at the other end of the push-bars for slidably and pivotally mounting the same, and a rotary element located at a point between the ends of the push-bars and eccentrically connected with the same.

12. In a device of the class described, the combination of reversely-movable push-bars provided at one end with track-engaging means, means located at the other end of the push-bars for slidably and pivotally mounting the same, and a crank-shaft having cranks connected with the push-bars between the ends thereof.

13. In a device of the class described, the combination of reversely-movable push-bars, means for slidably and pivotally mounting the same at a common point, and actuating mechanism for the push-bars.

14. In a device of the class described, the combination of reversely-movable push-bars slidably and pivotally mounted at the front, and a crank-shaft provided with cranks connected with the push-bars, said crank-shaft being also provided with pedal-cranks.

15. In a device of the class described, the combination of a push-bar, a pivoted shoe, a stop for limiting the movement of the shoe in one direction, and means for normally holding the shoe in engagement with the stop.

16. In a device of the class described, the combination of a push-bar, a shoe movably connected with the push-bar, and means for cushioning the shoe.

17. In a device of the class described, the combination of a push-bar, a shoe pivotally connected therewith, and a spring engaging the shoe and cushioning the same.

18. In a device of the class described, the combination of a push-bar, a shoe movably connected therewith, a slidable rod extending from the shoe, and a coiled spring disposed on the rod and cushioning the shoe.

19. In a device of the class described, the combination of a push-bar, a track-engaging shoe pivotally mounted on the push-bar, a stop for limiting the movement of the shoe, and yieldable means for holding the shoe at the limit of its movement forming a cushion.

20. In a device of the class described, the combination of a push-bar, a pivoted shoe, a stop located at one side of the pivot for limiting the movement of the shoe, and yieldable means located at the opposite side of the pivot for forming a cushion.

21. In a device of the class described, the combination of a shoe having a curved engaging face, and cushions arranged at intervals at the curved face, and means for operating the shoe.

22. In a device of the class described, the combination of a shoe having a curved engaging face, yieldable buttons or protuberances extending from the shoe, and means for operating the latter.

23. In a device of the class described, the combination of a shoe, and means for moving the same backward and forward and for raising and lowering the shoe, said means embodying crank mechanism and a push-bar.

24. In a device of the class described, the combination of reversely-movable shoes, and means for moving the shoes backward and forward and for raising and lowering the same, said means embodying push-bars and a crank-shaft connected with the push-bars.

25. In a device of the class described, the combination of standards, adjustable means for connecting the standards, wheels connected with the standards and arranged to run on one of the rails of a track, transverse connections extending from the standards, and a wheel arranged to run on the other rail and mounted on the said transverse connections.

26. In a device of the class described, the combination of standards, a lower bar connecting the standards and composed of adjustably-connected sections, wheels connected with the standards and arranged to run on one of th rails of a track, transverse connections extending from the standards, and a wheel arranged to run on the other rail and mounted on the transverse connections.

27. In a device of the class described, the combination of standards, a lower bar connecting the standards and having slotted overlapped portions adjustably secured together, wheels connected with the standards and arranged to run on one of the rails of a track, transverse connections extending from the standards, and a wheel carried by such connections.

28. In a device of the class described, the combination of standards, a bottom bar connecting the standards and composed of sections movable on each other to fold the device, wheels connected with the standards and arranged to run on one of the rails of a track, foldable transverse connections extending from the standards toward the other rail of the track, and a wheel carried by the foldable connections.

29. In a device of the class described, the combination of a foldable wheeled frame, and propelling mechanism having a foldable push-bar.

30. In a device of the class described, the combination of a wheeled frame, and propelling mechanism having a push-bar composed of foldable sections hinged together and provided with means for holding the sections in operative relation.

31. In a device of the class described, the combination of a frame having front and rear wheels, a seat, propelling mechanism located adjacent to the seat, and a brake-lever having angularly-related arms and arranged to engage the front wheel, one of the arms being connected with the frame, and the other being arranged to be engaged by the foot.

32. In a device of the class described, the combination of a frame having front and rear wheels, a seat, propelling mechanism located adjacent to the seat, and a brake-lever having angularly-related arms and provided at the angle formed by the arms with a shoe for engaging the front wheel.

33. In a device of the class described, the combination of a frame having front and rear wheels, a seat, propelling mechanism located adjacent to the seat, a brake-lever having angularly-related arms, one of the arms being arranged to be engaged by the foot, and the other arm being pivoted between its ends, and a spring engaging the pivoted arm.

34. In a device of the class described, the combination of a frame provided with standards having a slotted plate or extension, a wheel arranged between the standards, and a brake-lever also mounted between the standards and having an operating-arm projecting through the slotted plate or extension.

811,270. **WEB-LOOPING MECHANISM.** HENRY F. BECHMAN, Battlecreek, Mich., assignor to The Duplex Printing Press Company, Battlecreek, Mich. Filed Nov. 21, 1904. Serial No. 233,690.

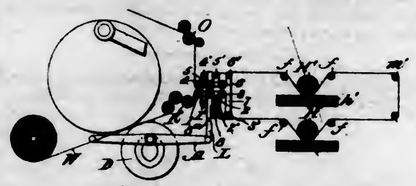

Claim.—1. In a web-looping mechanism, the combination of a plurality of pairs of oppositely-moving rollers each pair of rollers cooperating to form a loop in the web, the web being directed over and under opposite rollers in alternation and means for operating said rollers.

2. The combination with web-feeding mechanism of two adjacent sets of web-rollers movable in opposite directions, the web being directed over and under the oppositely-moving rollers in alternation to form loops in the web, substantially as described.

3. The combination of two adjacent series of web-rollers, the web being passed alternately over and under the successive rollers in each set; with means for simultaneously moving the sets of rollers in opposite directions to form loops in the web, substantially as described.

4. In a web-manipulating mechanism, the combination of oppositely-moving devices, adjacent looping-rollers respectively mounted on said devices, the web being directed over said rollers in alternation, the opposite looping-rollers coacting to form a loop in the web, substantially as described.

5. In a web-manipulating mechanism, the combination of oppositely-moving devices, a plurality of pairs of looping-rollers mounted on said devices, each pair of oppositely-moving rollers coacting to take up or give out a loop of web, and means for operating said devices.

6. In combination means for feeding and delivering a web, a web-looping mechanism intermediate the feed and delivery devices, comprising oppositely-moving rollers, coacting to alternately take up and give off a loop of web the web being directed over and under the opposite rollers in alternation, substantially as described.

7. In combination a movable support, a looping-roller thereon, an adjacent movable support, a looping-roller thereon, and means whereby one support moves the other in an opposite direction, said looping-rollers coacting to form a loop in the web, substantially as described.

8. In combination two looping-rollers mounted on a movable support, two other looping-rollers coacting with the first-mentioned looping-rollers to form loops in the web and mounted on a second movable support; with means for moving the said supports simultaneously but in opposite directions, for the purpose and substantially as described.

9. In combination web-feeding-in devices and web-delivery devices; with web-looping mechanism intermediate the feed and delivery devices, comprising two looping-rollers mounted on a movable support, and two other adjacent looping-rollers mounted on another adjacent movable support and cooperating with the first-mentioned rollers to form loops in the web, and means for simultaneously moving said supports in opposite directions, substantially as described.

10. In combination means for feeding and delivering a web, a web-looping mechanism intermediate the feed and delivery, comprising two sets of oppositely-moving rollers, one set taking up loops in the web while the other set gives out loops, the sets taking up and giving off loops in alternation, substantially as described.

11. In combination a movable support, web-looping rollers mounted thereon, an adjacent movable support, web-looping rollers mounted thereon, means for operating one support, and means whereby one support moves the other, but in an opposite direction, for the purpose and substantially as described.

12. In combination two sets of looping-rollers mounted on a common support, two sets of looping-rollers coacting with the first-mentioned sets of looping-rollers, and mounted on another common support; with means for moving the supports of the first and second sets of looping-rollers simultaneously but in opposite directions, for the purpose and substantially as described.

13. The herein-described web-looping mechanism comprising two sets of looping-rollers mounted on a common movable support, and two other sets of looping-rollers mounted on another common movable support, and means for simultaneously moving said supports in opposite directions, each set of looping-rollers on one support coöperating with the adjacent set of looping-rollers on the other support, for the purpose and substantially as described.

811,271. **WEB-LOOPING MECHANISM.** HENRY F. BECHMAN, Battlecreek, Mich., assignor to Duplex Printing Press Company, Battlecreek, Mich. Filed Jan. 3, 1905. Serial No. 239,493.

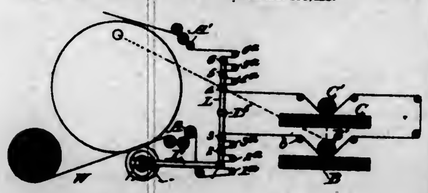

Claim.—1. In combination, web feeding and delivery devices, and two sets of movable web-looping devices and an oscillating support therefor, each set comprising a plurality of loopers moving oppositely to the other—said sets being mounted on opposite sides of the fulcrum of the support, and one set of looping devices acting to form loops in the web while the other set of devices is giving out loops.

2. In combination an oscillating support, two sets of web-looping devices mounted on said support respectively at opposite sides of its fulcrum, each set comprising a series of parallel rollers successively nearer the fulcrum of the support.

3. In combination with an oscillating support, sets of web-looping devices mounted on said support at opposite sides of its fulcrum, each set of devices comprising a plurality of parallel loopers adapted to simultaneously form loops in the web or to simultaneously give out such loops, adjacent sets of relatively fixed rollers opposite the sets of movable loopers, and means for oscillating said support.

4. In a web-printing machine, the combination of web feeding and delivering devices, and web-printing mechanism intermediate the feed and delivery comprising stationary beds and coacting cylinders; with a vertically-disposed oscillating support located between the feeding and delivery devices and the printing mechanism, a plurality of web-looping devices mounted on one end of said support between the feed and printing mechanisms, a plurality of web-looping devices mounted on the opposite end of said support between the printing and delivery mechanisms, and a plurality of stationary web-guides coöperating with said looping devices, substantially as described.

5. In a web-printing machine, the combination of web feeding and delivering devices, and web-printing mechanism intermediate the feed and delivery; with a pair of oscillating supports between the feeding and delivering devices and the printing mechanism, a plurality of web-looping devices mounted on one end of said supports between the feed and printing mechanisms; an adjacent set of stationary web-guides coacting with said loopers; a plurality of web-looping devices mounted on the opposite end of said supports between the printing and delivery mechanisms, and an adjacent set of stationary web-guides coacting with said loopers; each set of movable loopers being adapted to simultaneously form or give out loops in the web, and one set of movable looping devices operating oppositely to the other, all substantially as described.

811,272. **FOUNTAIN-BRUSH.** GILBERT L. BELCHER, Oakland, Cal. Filed Oct. 26, 1904. Serial No. 230,122.

Claim.—1. A fountain-brush comprising a tubular handle, a socket provided with bristles, and a follower reciprocable in the handle said handle being of compressible material capable of resuming its original tubular form on the release of pressure.

2. A fountain-brush having in combination a tubular handle, a socket connected to the handle and provided with bristles, and a spherical forcing device contained within the chamber of the handle, for supplying the contents of the latter to the bristles, said handle composed of flexible material whereby it is capable of resuming a normal tubular form behind the follower on the release of pressure.

3. A fountain-brush having in combination a hollow handle portion capable of automatically resuming a normal tubular form after compression, a socket having bristles communicating with the chamber of the handle, a spherical forcing device operable in the handle to supply the contents thereof to the bristles, and means for venting the portion of the handle back of the forcing device.

4. A fountain-brush comprising a flexible tubular part, a follower contained in said part and of greater external diameter than the normal interior diameter of the tubular part and a brush connected with the latter.

5. A fountain-brush comprising a handle portion of compressible elastic material, a follower of larger diameter than the normal bore of the handle and a brush secured to said handle and having a central opening communicating with the interior of the handle.

6. A fountain-brush comprising a handle of collapsible material capable of automatic expansion after compression and having a rigid screw-threaded part at one end for the attachment of a brush, a removable brush-socket fitting said screw-threaded part, a brush carried by said socket and having a passage-way communicating with the interior of the handle and a follower reciprocal in the handle and having a diameter greater than the normal interior diameter of the handle.

811,278. **HEATER.** WILLIAM H. BROWN, Indianapolis, Ind. Filed Feb. 13, 1905. Serial No. 245,628.

Claim.—1. The combination, in a heater, of the inclosing structure, a gas-burner in the lower part of said structure, a multiplicity of heat absorbing and transmitting members arranged in vertical planes above said burner whereby a series of unobstructed flues for the ascending current from the burning gas is provided, said structure being provided with an open space below said members into which the air will pass and an open space above said members leading into the room through which said air will be discharged after being heated, all substantially as shown and described.

2. The combination, in a heater, of the inclosing structure, a gas-burner arranged in the lower portion of said structure, a multiplicity of heat absorbing and transmitting members arranged in vertical planes above said burner, said inclosing structure being provided with air ingress and egress openings below and above said members, and a projecting ledge at the upper side of the egress-opening extending out from the structure whereby the air when heated is directed outwardly into the room, all substantially as shown and described.

3. The combination, in a heater, of the inclosing structure, a gas-burner arranged in the lower portion of said structure, heat absorbing and transmitting plates arranged vertically within the structure above the gas-burner, rods passing through said plates whereby they are supported, distance-washers arranged on said rods between said plates whereby they are held the predetermined distance apart, said inclosing structure being provided with suitable openings in its lower and upper portions for the admission and discharge of the air, and an ornamental plate in the front of said structure forming the closing-wall between said openings.

4. The combination, in a heater, of the inclosing structure, a gas-burner arranged in the lower portion of said structure, heat absorbing and transmitting plates arranged vertically within the structure above the gas-burner, rods passing through said plates whereby they are supported, and distance-washers arranged on said rods between said plates whereby they are held the predetermined distance apart, said inclosing structure being provided with suitable openings in its lower and upper portions for the admission and discharge of the air.

811,274. **SOLAR FURNACE.** ALBERT CASTEL, Los Angeles, Cal., assignor to Solar Furnace and Power Co., a Corporation of Arizona. Filed Jan. 6, 1904. Serial No. 187,909.

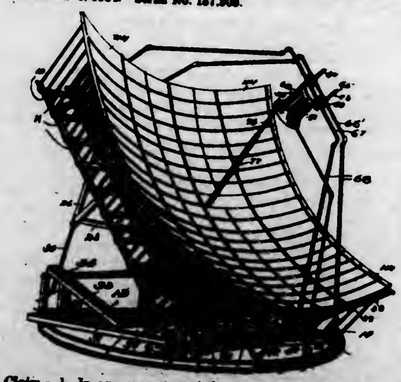

Claim.—1. In an apparatus of the class described, the combination with a main frame including longitudinal and transverse members, of a concaved supplemental frame including longitudinal and transverse arc-shaped members corresponding to and lying respectively above the longitudinal and transverse members of the main frame, bolts passed through both members of the supplemental frame and through the main frame and provided with clamping-nuts, and sleeves of varying lengths inclosing the bolts and resting with their ends against the supplemental and main frames respectively.

2. In an apparatus of the class described, the combination with a main frame including longitudinal and transverse members, of a concaved supplemental frame including longitudinal and transverse arc-shaped members, concaved mirror-sections disposed between said transverse and longitudinal arc-shaped members, supporting means engaged through said arc-shaped members and with the first-named frame, parallel supporting members connected with the first-named frame and held in spaced relation to the concaved side of the mirror, a boiler, and arms extending from the boiler between said supporting members and adjustably connected therewith for movement of the boiler toward and away from the mirror.

3. In an apparatus of the class described, the combination with a concaved reflector, of a boiler disposed to receive the rays from the reflector, the surface of said boiler exposed to said rays being convex and substantially parallel with the reflector and having radiating projections.

4. In an apparatus of the class described, the combination with a reflector, of a boiler disposed to receive the rays from the reflector, the surface of said boiler exposed to said rays having projections in the direction of the reflector.

5. In an apparatus of the class described, the combination with a reflector, of a boiler disposed to receive rays from the reflector, said boiler having a pipe-coil within the inclosure of which said rays are received against the boiler, said coil being in communication with the boiler.

6. In an apparatus of the class described, the combination with a reflector, of a boiler disposed to receive rays from the reflector, a pipe-coil connected with the boiler and within the inclosure of which the reflected rays are received and a check-valve between the pipe-coil and the boiler.

7. In an apparatus of the class described, the combination with a concaved reflector, of a boiler having a convex surface disposed to receive the reflected rays from the reflector and having projections radiating from its convex face, and a pipe-coil connected to the boiler and surrounding said projections.

8. In an apparatus of the class described, the combination with a reflector, of a boiler disposed to receive the rays from the reflector, the surface of said boiler exposed to said rays having projections in the direction of the reflector, and means projecting from the boiler in the direction of the reflector and encircling said projections, for confining the heated zone.

811,275. **DREDGING APPARATUS.** JAMES P. COLE, Chicago, Ill. Filed May 26, 1905. Serial No. 262,314.

Claim.—1. In dredging apparatus, the combination of a gangue tube, or duct, an air-jet and a water-jet, said jets discharging their respective fluids so they will commingle before the fluids are discharged into the gangue-duct.

2. In dredging apparatus, the combination of a gangue tube or duct, an air-jet and a water-jet, and comprising a mixing-chamber wherein the fluids from said jets are combined prior to the discharge into the gangue-duct.

3. In dredging apparatus, the combination of a gangue tube or duct, an air-jet and a water-jet, said air-jet discharging its fluid into the water stream so the fluids will be mechanically combined before discharge thereof into the gangue-duct.

4. In dredging apparatus, the combination of a gangue tube or duct, a head at the lower end of said tube or duct and provided with intakes, an air-jet in said head, and a water-jet in said head, said air-jet discharging into the water column so the fluids will be combined prior to being discharged under pressure into the gangue-duct.

5. In dredging apparatus, the combination of a gangue tube or duct, a duct for water, and an upwardly-extending nozzle through which water from said duct is forced, and an air-jet discharging into said nozzle.

6. In dredging apparatus, the combination of a gangue-tube, a lifting-jet, an air-jet, a head at the lower end of said gangue-tube, and a centrally-arranged downwardly-discharging pilot-jet at the lower end of said head.

7. In dredging apparatus, the combination of a gangue-tube, a head at the lower end of said gangue-tube, a centrally-arranged, downwardly-discharging pilot-jet at the lower end of said head, a water-jet discharging into the gangue-duct, and an air-jet discharging into said water-jet.

8. In dredging apparatus, the combination of a gangue-tube, a head at the lower end of said gangue-tube, a centrally-arranged downwardly-discharging pilot-jet at the lower end of said head, a water-jet discharging into the gangue-duct, and an air-jet discharging its fluid to commingle with the water passing through the water-jet so the fluids will commingle before discharge into the gangue-duct.

9. In dredging apparatus, the combination of a gangue tube or duct, a head at the lower end of the gangue-tube and having a chamber in its upper portion in communication with the gangue-tube, water and air jets for supplying fluids to force the gangues upwardly in the tube, and a pilot-jet at the lower end of said head, and a duct in said head disposed at the side of said gangue-duct and communicating with the pilot-jet.

10. In dredging apparatus, the combination of a gangue-tube, a head at the lower end of said tube, a chamber near the lower end of said head, a pipe or duct for supplying water under pressure to said chamber, one or more cutter-jets leading outwardly from said chamber and water and air jets for forcing the gangue upwardly in the tube.

11. In dredging apparatus, the combination of a gangue-tube, a head at the lower end of said tube, a chamber near the lower end of said head, a pipe or duct for supplying water under pressure to said chamber, one or more cutter-jets leading outwardly from said chamber, water and air jets for forcing the gangue upwardly in the tube, and a centrally-disposed downwardly-discharging pilot-jet at the lower end of the head.

12. In dredging apparatus, the combination of a gangue-tube, a head at the lower end of said tube, a chamber near the lower end of said head, a pipe or duct for supplying water under pressure to said chamber, one or more cutter-jets leading outwardly from said chamber, water and air jets for forcing the gangue upwardly in the tube, a downwardly-discharging pilot-jet, and a separate duct leading to the pilot-jet.

13. In dredging apparatus, the combination of a gangue-tube, a head at the lower end of said tube, intakes in said head, a gangue-duct in said head, a water-jet and an air-jet, both discharging their fluids so they will commingle prior to discharge into the gangue-duct, the discharge of the mixed fluid being centrally arranged in the duct.

14. In dredging apparatus, the combination of a gangue-tube, a water-jet and an air-jet for forcing the gangue upwardly a separate pilot-jet, and valves whereby the lifting-jets and the pilot-jet can be separately controlled.

15. In dredging apparatus, the combination of a gangue-tube, a water-jet and an air-jet for forcing the gangue upwardly, a cutter-jet, and means whereby the operation of said jets can be controlled so the lifting-jets and the cutter-jet can be independently or simultaneously operated.

16. In dredging apparatus, the combination of a gangue-tube, a water-jet and an air-jet, for forcing the gangue upwardly, a cutter-jet, a pilot-jet, and means whereby the operation of the pilot-jet, lifting-jets and cutter-jet, can be separately controlled.

811,276. **ARBOR.** JOHN COOPER, Diamond, La. Filed Nov. 27, 1903. Serial No. 183,877.

Claim.—A collapsible vine-support comprising posts each having a reduced upper end forming a shoulder and hooks projecting from their sides, strand-wires engaged with the hooks, rings disposed upon said shoulders, tie-wires connecting the rings of each pair of posts, pegs removably engaged with the ground adjacent the posts and having perforations through their upper ends, pins engaged with the perforations and projecting laterally beyond the sides of the pegs, guy-wires engaged with the rings at one end and having connection with the pegs below said pins, wires engaged with the tie-wires and similar wires engaged with the strand-wires, the guy, tie and strand wires being made up of links having ends provided with eyes for engagement with the corresponding eyes of the adjacent alining links, the eyes of the end links of the tie-wires being engaged with the aforesaid rings at the top of the posts.

811,277. **ELECTROMAGNET.** FRED B. CORRY, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed July 15, 1904. Serial No. 216,644.

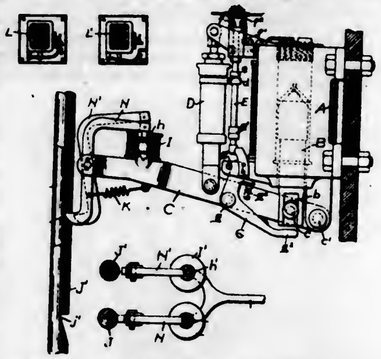

Claim.—1. In combination with a plurality of devices to be moved, an actuating-magnet, a lever controlled by said magnet, a plurality of dogs carried by said lever, and selective means for moving said dogs into engagement with said devices.

2. In combination with a plurality of devices to be moved, an actuating-magnet therefor, a lever controlled by said magnet, a plurality of selector-magnets carried by said lever, and means controlled by said magnets for connecting said lever selectively to said devices.

3. In combination with a plurality of devices to be moved, a magnet-winding, a lever arranged to be actuated thereby, a plurality of dogs carried by said lever and adapted to engage said devices, means for holding said dogs normally out of engagement with said devices, and selector-magnets adapted and arranged to move said dogs selectively into engagement with said devices.

4. In combination with a plurality of signals, notched operating-rods therefor, a single actuating-magnet for said rods, a plurality of dogs arranged to be moved by said magnet and adapted to engage the notches on said rods, means for holding said dogs normally out of engagement with said notches, and selector-magnets adapted and arranged to move said dogs selectively into engagement with said notches.

5. In combination with a plurality of devices to be raised, a single actuating-magnet therefor, selector-magnets controlling the connections between said devices and said actuating-magnet and each comprising a coarse section and a fine-wire section of a greater number of turns, means for connecting the coarse-wire section only in circuit for raising, and means for connecting the fine-wire section in circuit when the device or devices are raised.

6. In combination with a plurality of devices to be raised, a single actuating-magnet therefor, selector-magnets controlling the connections between said devices and said actuating-magnet, means for reducing the current-flow in said magnets when the device or devices are raised, and means for increasing the number of effective turns of the selector-magnets.

7. In combination with a plurality of devices to be raised, a single actuating-magnet therefor, selector-magnets controlling the connections between said devices and said actuating-magnet, means for connecting said magnets selectively in series with the actuating-magnet for raising a device or devices, and means for decreasing the current-flow in the magnet-circuit and increasing the effective turns

in the selector magnet or magnets when said device or devices are raised.

8. In combination with a plurality of devices to be raised, a single actuating-magnet therefor, selector-magnets controlling the connections between the several devices and the actuating-magnet, each of said selector-magnets comprising a coarse-wire section and a fine-wire section of greater number of turns, means for connecting the coarse-wire sections of said magnets selectively in series with said actuating-magnet for raising a device or devices, and means for inserting a resistance in the magnet-circuit and including said fine-wire sections in circuit when said device or devices are raised.

9. In a railway signal system, a plurality of semaphore-signals, a single actuating-magnet adapted to move said signals to safety, selector-magnets controlling the connections between the several signals and said actuating-magnet, relays arranged to connect said selector-magnets selectively in series with the actuating-magnet for moving a signal or signals to safety, and means for decreasing the current-flow in the magnet-circuit and increasing the effective number of turns in the selector magnet or magnets when said signal or signals are at safety.

811,278. ADJUSTABLE CLUTCH-CONTROLLED STANDARD. FREDERICK W. COY, Boston, Mass., assignor to Charles F. Brown, trustee, Reading, Mass. Filed July 25, 1904. Serial No. 217,602.

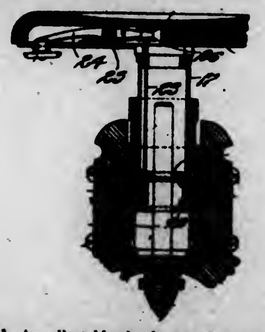

Claim.—1. An adjustable clutch-controlled standard comprising a supporting member, a tubular supported member inclosing the supporting member and movable relatively thereto, an annular swinging clutch carried by the tubular member and embracing and normally engaging the supporting member, and means for moving said clutch out of engagement with the supporting member.

2. An adjustable clutch-controlled standard comprising a cylindrical supporting member, a tubular supported member inclosing the supporting member and movable relatively thereto, an annular clutch carried by the tubular member, said clutch embracing the supporting member, a spring which normally holds the clutch in engagement with the supporting member, and means engaged with the clutch for forcing the latter out of engagement with the supporting member.

3. An adjustable clutch-controlled standard comprising a cylindrical supporting member, a tubular supported member movable relatively to the supporting member, an annular clutch seated on a shoulder affixed to the tubular member and carried by the latter, said clutch embracing the supporting member, a spring which normally holds the clutch in engagement with the supporting member, and means including a push-rod carried by the supported member and engaged with the clutch for forcing the latter out of engagement with the supporting member.

4. A piano-stool comprising a cylindrical supporting member having a suitable base, and a vertical guide, a tubular supported member having a seat affixed to its upper end, said member being movable in said guide, an annular clutch seated on a shoulder in the tubular member and embracing the supporting member, a spring which normally holds the clutch in engagement with the supporting member, a clutch-displacing rod movable in the tubular member and engaging the clutch, and an operating-lever pivotally connected with the seat and engaged with the rod.

811,279. PIANO ATTACHMENT. WALTER S. GREENLEAF and CLARENCE H. RAMSDELL, Elmira, N. Y. Filed Mar. 31, 1905. Serial No. 253,259.

Claim.—An attachment for pianos comprising a base-plate, pairs of upwardly-extending rods carried by the ends of the base-plate, a top plate having openings therein in which the rods are slidably engaged, brackets carried by the top plate and in which the rods are slidably engaged, set-screws engaged in the brackets and arranged for operation to impinge against the rods to hold the top plate at different points of its movement upon the rods, vertical rods slidably engaged in the top plate adjacent to one edge thereof, blocks having recesses in their upper ends in which the lower ends of the last-named rods are slidably engaged, set-screws engaged in the blocks and arranged for operation to impinge against the last-named rods to hold the blocks at different points of their movement with respect to said rods, said blocks having horizontal pedal-receiving passages formed therethrough and set-screws engaged in the blocks and arranged for operation to impinge against pedals engaged in the passages.

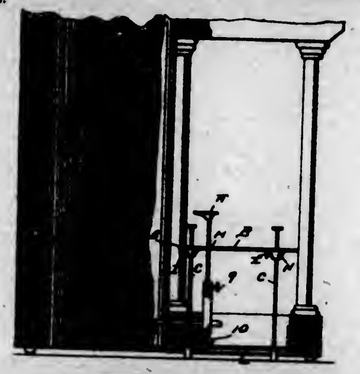

811,280. YIELDING LINK FOR SHEDDERS AND OTHER MACHINES. SPENCER B. DAVIS, Minneapolis, Minn., assignor to The Hoosier Drill Co., St. Louis Park, Minn., a Corporation of Minnesota. Filed Apr. 10, 1903. Serial No. 151,602.

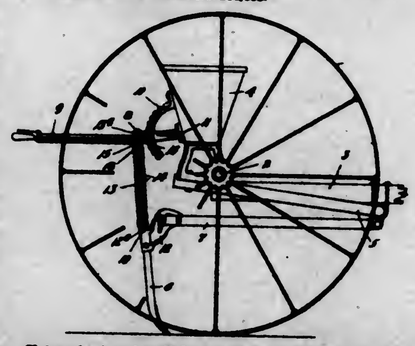

Claim.—1. A spring-link, comprising a single rod bent upon itself, to form an elongated loop, and having its ends bent at one extremity of the loop to form overlapping hooks, and a coiled spring surrounding said looped rod, and closely engaging the sides thereof, substantially as described.

2. A spring-link, comprising a single rod bent upon itself to form an elongated loop, and having its ends bent at one extremity of the loop to form overlapping hooks, a filling-block interposed between the sides of said looped rod, and a coiled spring surrounding said looped rod, and resting at one end against said filling-block, substantially as described.

3. The combination with a rod bent upon itself to form an elongated loop having parallel sides, the ends of said rod being bent at one extremity of the loop to form overlapping hooks, a filling-block working between the sides of said loop, near the hooked ends thereof, and a coiled spring surrounding said looped rod, and flattened to closely engage the sides thereof, substantially as described.

4. The combination with a rod 13 bent upon itself to form a loop with parallel sides, the ends of said rod being bent to form the overlapping hooks 13', and the coiled spring 14 surrounding said looped rod, resting against said block 15, at one end, and flattened to closely engage the sides of said looped rod, substantially as described.

5. The combination with a rod 13 bent upon itself to form a loop with parallel sides, the ends of said rod being bent to form overlapping hooks 13', the filling-block 15 fitting between the sides of said looped rod, and having lips 16 engaging the sides of said rod, and the coiled spring 14 surrounding said looped rod, resting against said block 15, at one end, and flattened to closely engage the sides of said looped rod, substantially as described.

6. The combination with the rod 13 bent upon itself to form an elongated loop having parallel sides, the ends of said rod being bent to form overlapping hooks 13', the flattened coiled spring 14 surrounding said looped rod 13, the filling-block 15 fitting between the sides of said looped rod and having several perforations 17, and the pin or bolt 18 affording a base of reaction for one end of said spring and engageable with any of said perforations, to vary the tension of said spring, substantially as described.

7. In a machine of the character described, the combination with a lever-operated vertically-movable presser-bar, and a drag-bar having a tooth or ground-engaging device, of a link connecting said presser-bar to a part on the rear end of said drag-bar, said link comprising a rod bent upon itself to form an elongated loop having overlapping hooks at one end of the loop, and a coiled spring surrounding and closely engaging the sides of said looped rod, substantially as described.

8. A link formed by a rod bent upon itself to form an elongated loop and having its ends bent to form overlapping hooks, and the members surrounding the intermediate portion of said looped rod to prevent separation of the hooked ends thereof, but itself removable from said rods, substantially as described.

9. In a machine of the character described, the combination with a lever-operative presser-bar and a drag-bar having a tooth or ground-engaging device, of a link formed by a rod bent upon itself to form an elongated loop embracing said presser-bar at its upper end and pivotally attached at its lower end to a part carried by the free end of said drag-bar, substantially as described.

811,281. MACHINE FOR ROUGHING WOOD SPOOLS, CORES, &c. HENRY J. DUNCAN, Alpena, Mich. Filed Jan. 31, 1905. Serial No. 243,457.

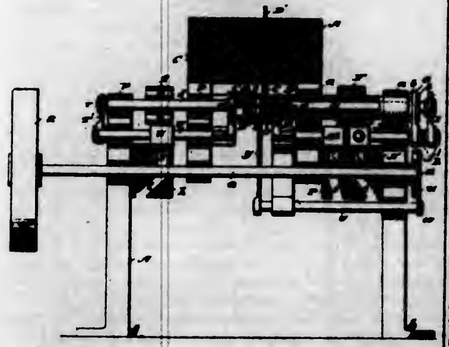

Claim.—1. In a machine for roughing wood blocks into circular form in cross-section and providing the same with longitudinal bores, the combination of a main frame, a drive-shaft journaled therein, a rectilinearly-movable and rotatable tubular shaft having a tubular saw at its inner end and equipped with means whereby it may be rotated, means intermediate the drive-shaft and said tubular shaft for reciprocating the latter, a rectilinearly-movable and non-rotatable shaft disposed in the tubular shaft and having a hollow inner end for holding a block against rotation, means intermediate the drive-shaft and the non-rotatable shaft for reciprocating the latter by the former, a rotatable and rectilinearly-movable bit opposed to and arranged to enter the hollow inner end of the non-rotatable shaft and equipped with means whereby it may be rotated, guides disposed at right angles to the tubular shaft and the bit; one of said guides being adapted to receive the tubular shaft, and the other guide being adapted to receive the bit, means intermediate the drive-shaft and the bit for reciprocating the latter by the former, a follower movable to and fro between the guides and at right angles to the tubular shaft and the bit, and means intermediate the drive-shaft and the follower for reciprocating the latter by the former.

2. In a machine for roughing wood blocks into circular form in cross-section and providing the same with longitudinal bores, the combination of a main frame, a drive-shaft journaled therein and bearing three cams, a rectilinearly-movable and rotatable tubular shaft having a tubular saw at its inner end and equipped with means whereby it may be rotated, a rectilinearly-movable and non-rotatable shaft disposed in the tubular shaft and having a hollow inner end for holding a block against rotation, reciprocatory bars guided in the frame and having arms at their outer ends connected to the tubular shaft and the non-rotatable shaft, respectively, a block fixed on one bar in position to engage one cam on the drive-shaft and movable loosely on the other bar, a block fixed on such other bar in position to engage a second cam on the drive-shaft and movable loosely on the first-mentioned bar, a rotatable and rectilinearly-movable bit opposed to and arranged to enter the hollow inner end of the non-rotatable shaft and equipped with means whereby it may be rotated, an endwise-movable bar arranged in the main frame and having an arm connected to the bit, a block on said bar engaging a third cam on the drive-shaft, guides disposed at right angles to the tubular shaft and the bit, a follower movable between said guides, and a connection intermediate the drive-shaft and the follower for actuating the latter.

811,282. FLOOR-SCRAPER. BERT HUGGINS, Odebolt, Iowa, assignor of one-half to Cesar E. Huggins, Odebolt, Iowa. Filed Dec. 20, 1904. Serial No. 237,663.

Claim.—1. In a floor-scraper, a vertical handle, a socket-provided plate connected to the same, lateral wings extending from the plate, an adjustable plate connected to the wings, said plate having an eye at its upper portion, a scraper between the plates, and a thumb-screw working through the eye of the adjustable plate and contacting with the socket of the device for the purpose of clamping the scraper.

2. In a floor-scraper, a vertical handle, a plate connected to the same, wings extending from the plate, an adjustable plate connected to the wings, a scraper between the plates, a horizontal plate to receive the rear of the scraper, a series of slots in the adjustable plate, and screws working in the slots, by means of which the horizontal plate may be adjusted.

3. In a floor-scraper, a vertical handle, a plate connected to the same, lateral wings extending from the plate, an adjustable plate connected to the wings, a scraper carried by the plates, a lateral handle adjustably connected to the outer portions of the wings, and a brace hinged to the vertical handle and having locking means for connecting it to the lateral handle, by means of which the two handles may be locked at various angles, or the handles may be released and folded against each other.

4. In a floor-scraper, a plate having lateral wings extending from the same, an adjustable plate carried by the wings, a scraper adapted to be held between the two plates, and an adjustable corrugated plate carried by the adjustable plate and adapted to receive the rear of the scraper.

811,283. SEAL-PRESS. LOUIS A. PEARL, Chicago, Ill., assignor to Chicago Car Seal & Manufacturing Company, Chicago, Ill., a Corporation of Illinois. Filed Jan. 28, 1902. Serial No. 91,162.

Claim.—1. In a seal-press, the combination of a stock, a chambered head upon the stock, a die-plunger movable in said head, a die-plunger-operating lever fulcrumed upon said head, a die-plunger-re-

tracting spring, a ratchet on the die-plunger, a dog operating normally to engage said ratchet, and a movable dog-releaser actuated, in the approach of the die-plunger to its position of final impressment, to disengage the dog from said ratchet, substantially as and for the purpose set forth.

3. In a seal-press, the combination of a stock, a chambered head upon the stock, a die-plunger movable in said head, a die-plunger-operating lever fulcrumed upon said head, a die-plunger-retracting spring, a ratchet on the die-plunger, a dog operating normally to engage said ratchet, and a movable dog-releaser actuated, in the approach of the die-plunger to its position of final impressment, to disengage the dog from said ratchet, the said lever being movable independently of the die-plunger when the same is held by engagement of the dog with the ratchet, substantially as and for the purpose set forth.

3. In a seal-press, the combination of a stock, a chambered head upon the stock, a die-plunger movable in said head, a die-plunger-operating lever fulcrumed upon said head, a die-plunger-retracting spring, a ratchet on the die-plunger, a dog operating normally to engage said ratchet, and a movable dog-releaser in the path of said spring actuated, in the approach of the die-plunger to its final position of impressment, to disengage the dog from said ratchet, and actuated by the spring in the final movement of the die-plunger toward its retracted position to release said dog, substantially as and for the purpose set forth.

4. In a seal-press, the combination of a stock, a chambered head upon the stock, a die-plunger movable in said head, a plunger-operating lever fulcrumed upon said head, a die-plunger-retracting spring, a ratchet on the die-plunger, a dog operating normally to engage said ratchet, and a movable dog-releaser in the path of said lever and actuated thereby in the approach of the die-plunger to its position of final impressment, to disengage the dog from said ratchet, substantially as and for the purpose set forth.

5. In a seal-press, the combination of a stock, a chambered head upon the stock, a die-plunger movable in said head, a die-plunger-operating lever fulcrumed upon said head, a die-plunger-retracting spring, a ratchet on the die-plunger, a dog operating normally to engage said ratchet, and a movable dog-releaser in the paths of said lever and said spring, actuated by said lever in the approach of the die-plunger to its position of final impressment, to disengage the dog from said ratchet, and actuated by said spring in the final movement of said die-plunger toward the extreme retracted position to release said dog; substantially as and for the purpose set forth.

6. A seal-press having a reciprocable die provided directly with a ratchet device for insuring complete movements of the die, in combination with a pawl engaging said ratchet device.

7. A seal-press having a reciprocable die provided with a ratchet device which moves reciprocatingly with the die, in combination with a spring-held pawl engaging said ratchet device, and a relatively fixed support for said pawl.

8. A seal-press having a reciprocable die provided with a plurality of ratchet-teeth arranged parallel with a side of the die and reciprocatingly carried with the die, said teeth permitting the pawl to slip over them in the closing operation of the press, a pawl engaging said teeth to prevent return of said die before the pressing operation is completed, and means whereby the pawl is released to permit the die to return to its normally open position, for the purpose set forth.

9. A seal-press comprising a lever equipped with a head provided at its base with a fixed die and above said die with a guide for a reciprocating die, a lever pivotally joined to the upper portion of said head and provided with a die-actuating cam, a spring tending to hold the dies normally separated, a reciprocable die moving in said guide, a series of ratchet-teeth moving reciprocatingly with the reciprocable die, a pawl located in a recess in said head adjacent to the ratchet-teeth, and a spring having a bearing in said head and serving to hold the pawl in engagement with the ratchet-teeth.

10. A seal-press comprising a lever equipped with a head provided at its base with a fixed die and provided above said die with a guide for a reciprocating die and in the rear of said guide with a pawl-receiving recess, a lever pivotally joined to the upper portion of said head and provided with a die-actuating cam, a spring tending to hold the dies normally separated, a reciprocable die moving in said guide, a series of ratchet-teeth moving reciprocatingly with the reciprocable die and located adjacent to said recess, a pawl confined in said recess and engaging said ratchet-teeth, and a spring having a bearing in said head and serving to hold the pawl in engagement with the ratchet-teeth.

11. In a ratchet seal-press, the combination with the body of the press, and with a reciprocating die movable within said body, and with a cam-carrying lever-handle and a retracting-spring for reciprocating said die, of improved means for insuring complete movements of said die, said means consisting of a ratchet device movable lengthwise with said die and a pawl having a relatively fixed support in said body of the press.

12. A seal-press comprising a lever carrying a head provided with a fixed die and with a guide for a reciprocable die, a lever pivoted to said head and provided with a die-actuating cam, a reciprocable die within said guide actuated by said cam, a spring tending to retract said reciprocable die, ratchet-teeth moving reciprocatingly with said reciprocable die, a pawl located in a recess in said head adjacent to said ratchet-teeth, and a spring having a bearing in said head and serving to hold said pawl in engagement with said ratchet-teeth.

13. A seal-press comprising a lever carrying a head provided with a fixed die and with a guide for a reciprocable die, a lever pivoted to said head and provided with a die-actuating cam, a reciprocable die within said guide actuated by said cam, a spring tending to retract said reciprocable die, and means for insuring complete movements of the reciprocable die, comprising a set of ratchet-teeth and a pawl engaging the same, one of which reciprocates with the die and the other of which is arranged at one side of said guide, said pawl being releasable when the dies are closed, for the purpose set forth.

811,284. **ELECTRIC RACE-TRACK.** THOMAS F. GAYNOR, New York, N. Y., assignor to Electric Amusement Company, a Corporation of New York. Filed Mar. 14, 1905. Serial No. 250,042.

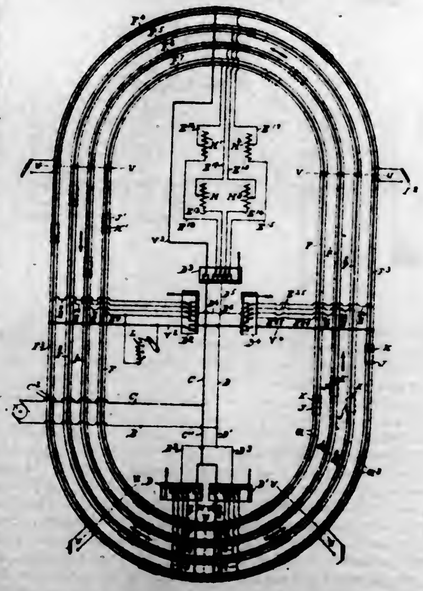

Claim.—1. In an electric race-track, the combination of a generator a feed-conductor, a contact-conductor, a return-conductor, a railway-track, a railway-trunk carrying a propelling-motor in circuit with the generator, a ridable figure mounted thereon—and a crank

mechanism through which power is directly transmittible from the motor to the figure and vice versa, substantially as described.

2. In an electric race-track, the combination of the railway-track, a railway-track carrying a propelling-motor—a ridable moving figure mounted thereon—and a power-transmitting mechanism connecting the motor with the figure and through which movement is directly transmittible from the motor to the figure and vice versa, substantially as described.

3. The ridable race-track device consisting of, a truck with its track-wheels, a propelling-motor, a ridable figure, a standard mounted upon the truck and supporting the figure, and a power-transmitting crank mechanism connecting the motor with the figure and all being combined substantially as described.

4. In a ridable race-track device, the combination of a ridable figure, a connecting-rod supporting the figure, a crank mechanism connected to the connecting-rod and to a power-transmitting mechanism, a connecting-rod-guiding standard, and a track supporting the standard and carrying all of the elements of the combination, substantially as described.

5. In a ridable race-track device, the combination of a ridable figure, a crank power mechanism, a guiding-standard, and a connecting-rod supporting the figure at one end and connected at its other end to a crank power mechanism and having a wrist-pin connection with the standard through which a vertical and rocking motion may be given to the figure by the crank mechanism, substantially as described.

6. In a ridable race-track device, the combination of a ridable figure, a supporting-standard having a bracket to which the figure is trunnioned, a pitman connecting-rod connected at one end to the figure and by its other end to a crank-power-transmitting mechanism, a truck-propelling motor connected with the crank mechanism and a truck carrying all of the said elements, substantially as described.

7. In a ridable race-track device, the combination of a wheeled truck, a propelling-motor, a crank mechanism connected to the motor, a connecting-rod connected to the crank mechanism, a moving ridable figure connected to the connecting-rod, a standard mounted upon the truck and supporting the figure through a trunnioned connection therewith and having a pedal extension upon which a rider while upon the figure may support his weight and accelerate the speed of the truck, as desired, substantially as described.

8. In an electric race-course, the combination of a generator, a feed-conductor, a return-conductor, a series of railway-tracks, a corresponding series of trucks thereon, each carrying a ridable figure and provided with a propelling-motor, a corresponding series of contact-conductors each of which is divided into insulated sections and a circuit-controller for each contact-conductor section and connecting it with the feed-conductor and located at an operating-point within visible distance of the course, substantially as described.

9. In an electric race-course, the combination of a generator, a feed-conductor, a return-conductor, a series of railway-tracks, a contact-conductor for each track and a combined individual and master circuit-controller connecting each and all of the contact-conductors with the feed-conductor and located within visible operating distance from the course and a truck for each track and carrying a propelling-motor, substantially as described.

10. In an electric race-course, the combination of a generator, a feed-conductor, a return-conductor, a series of railway-tracks, a truck upon each track and carrying a ridable device and a propelling-motor, a contact-conductor for each track and a combined individual and master circuit-controller connecting each and all of the contact conductors with the feed-conductor and located within visible operating distance from the course and by means of which the movements of the several trucks can be controlled while around upon the course, substantially as described.

11. In an electric race-track, the combination of a generator, a feed-conductor, a return-conductor, a truck carrying a ridable figure and provided with a propelling-motor, a controller having a rheostat mechanism, a double switch one member of which is adapted to open and close the return-conductor between the generator and the motor and the other member adapted to open and close the feed-conductor through the controller and alternately establish a circuit through the motor and the rheostat of the controller whenever the generator is thereby disconnected from the motor and the controller, substantially as described.

12. In an electric race-course, the combination of a generator, a feed-conductor, a return-conductor, a series of parallel railway-tracks, a contact-conductor for each track divided into insulated sections and the contiguous sections of the contact-conductors of two or more of the tracks being each provided with a corresponding variable-resistance device and a controller mechanism which are located at a fixed position with reference to the tracks, a truck carrying a ridable figure and provided with a propelling-motor in circuit with the generator for each truck, and the resistance devices adapted to regulate the amount of electricity supplied to their respective contact-conductors so that the trucks will be made to run around upon all of the tracks in the same amount of time and to thereby compensate for their differences of length, substantially as described.

811,285. **TYPE-SETTER'S MACHINE.** JOHN G. GOSSLER, Hyde-park, Mass. Filed Aug. 4, 1904. Serial No. 219,461.

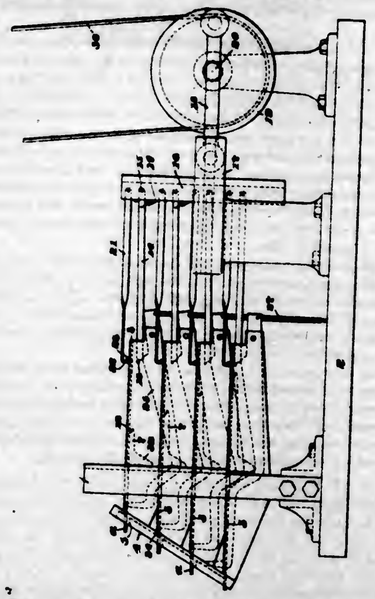

Claim.—1. In a type-setter's machine, the combination with type-supplying means and means for maintaining type at points in the same relative positions as the divisions of a printer's case, of means for moving type from said supplying means to said points.

2. In a type-setter's machine, the combination with type-supplying means and a face-plate, having indicated thereon the divisions of a printer's case, of means for presenting the appropriate type within said divisions.

3. In a type-setter's machine, the combination with type-supply-ing means of a face-plate provided with ledges dividing said plate according to the divisions of a printer's case, and means to deposit the appropriate type within said divisions and upon said ledges.

4. In a type-setter's machine, the combination with a plurality of type-magazines and means for maintaining the type at a plurality of presentation-points arranged at different levels in an inclined plane, of guides connecting said magazines and points, and means controlled by the presence of type in said guides for moving type from said magazines to said points.

5. In a type-setter's machine, the combination with a plurality of type-magazines, and means for maintaining the type at a plurality of presentation-points arranged at different levels in an inclined plane, of guides connecting said magazines and points and means controlled by the presence of type at said presentation-points for moving the type from said magazines to said points.

6. In a type-setter's machine, the combination with a plurality of type-magazines and means for maintaining the type at a plurality of presentation-points arranged at different levels in an inclined plane, of guides connecting said magazines and points and means controlled by the type for moving type from said magazines to said points.

7. In a type-setter's machine, the combination with a plurality of type-magazines and means for maintaining the type at a plurality of presentation-points arranged at different levels in an inclined plane, of guides extending from said magazines, type-actuators co-

operating with said guides, and means controlled by the type for operating said actuators.

8. In a type-setter's machine, the combination with a plurality of type-magazines and means for maintaining the type at a plurality of presentation-points, of guides extending from said magazines and connecting said magazines and points, type-actuators in said guides and means determined by the type-demand to cause the actuators to run idly.

9. In a type-setter's machine, the combination with a plurality of type-magazines and means for maintaining the type at a plurality of presentation-points, of guides extending from said magazines and connecting said magazines and points, type-actuators in said guides and means to throw said type-actuators into and out of operative position.

10. In a type-setter's machine, the combination with a plurality of type-magazines and means for maintaining the type at a plurality of presentation-points, of guides connecting said magazines and points and means for moving the type from said magazines to said points and means to prevent the return of the type along said guides.

11. In a type-setter's machine, the combination with a plurality of type-magazines and means for maintaining the type at a plurality of presentation-points, of guides connecting said magazines and points and means controlled by the presence of type in said guides for moving type from said magazines to said points, said type-controlled means being provided with means to prevent the return of the type along said guides.

12. In a type-setter's machine, the combination with a plurality of type-magazines and means for maintaining the type at a plurality of presentation-points, of guides extending from said magazine and connecting said magazines and points, type-actuators in said guides and spring-controlled means for moving said type-actuators into operating position.

13. In a type-setter's machine, the combination with a plurality of type-magazines and means for maintaining the type at a plurality of presentation-points, of guides extending from said magazines and connecting said magazines and points, type-pushers in said guides, means for actuating said pushers and means for automatically throwing said actuating means into and out of operative position.

14. In a type-setter's machine, the combination with a plurality of type-magazines and means for maintaining the type at a plurality of presentation-points, of guides extending from said magazines and connecting said magazines and points, type-pushers in said guides, means for actuating said pushers and means for automatically throwing said actuating means into and out of operative position, said automatic means being spring-operated into active position and operated by said pushers into inoperative position.

15. In a type-setter's machine, a source of type-supply, means to remove type therefrom, and type-controlled means to deflect said means from the path of the type.

16. In a type-setter's machine the combination with a plurality of approximately vertically-arranged type-magazines, of means for maintaining the type at a plurality of presentation-points at different levels in a plane inclined to said magazines, guides extending from said magazines and connecting said magazines and points and type-pushers in said guides to move the type from said magazine to said points.

17. In a type-setter's machine the combination with a plurality of approximately vertically-arranged type-magazines of means for maintaining the type at a plurality of presentation-points at different levels in a plane inclined to said magazines, guides extending from said magazines and connecting said magazines and points, and type-pushers in said guides, each pusher having a range of movement equal to the distance between said magazines and said presentation-points.

18. In a type-setter's machine the combination with a plurality of type-magazines, of means for maintaining the type at a plurality of presentation-points at different distances from said magazines, guides extending from said magazines and connecting said magazines and points, type-pushers in said guides, each pusher having a range of movement equal to the distance between said magazines and said presentation-points.

811,286. LOOSE-LEAF-LEDGER BINDER. JOHN CRAMM, Milwaukee, Wis. Filed Nov. 10, 1904. Serial No. 232,915.

Claim.—1. In a loose-leaf-ledger binder, having telescoping castings and posts, equalizers to govern the lateral movement of the former, a rod pivotally connected to said equalizers, and having ratchet-teeth, a threaded shaft, a sliding member for engagement with the latter and carrying a dog which engages with said ratchet-teeth, and means for tripping said dog.

2. In combination a loose-leaf-ledger binder having telescoping castings and posts, equalizers that govern the lateral movement of the former, a shaft, a rod, and having ratchet-teeth and means for actuating said equalizers through said rod, a sliding member coacting with said shaft and carrying a dog which engages with said ratchet-teeth and means for tripping the latter.

3. In a loose-leaf-ledger binder the combination with casings movable toward and from each other, of equalizers attached to the latter and a ratchet engagement between the casings coacting with said equalizers, the said ratchet engagement including a threaded shaft member, the said threaded shaft member adapted to give lateral movement to the casings.

4. In a loose-leaf-ledger binder, casings actuated laterally, equalizers, a bar pivotally attached to the latter, an arm for engagement with said bar, a ratchet engagement between said casings coacting with said arm, the said ratchet engagement including a threaded shaft, the latter adapted to actuate said casings.

5. In a loose-leaf ledger, the combination of casings movable toward and from each other, equalizers engaging said casings, an arm actuating said equalizers, a rod, and having ratchet-teeth, a movable member and carrying a dog which engages with said ratchet-teeth, a threaded shaft coacting with said movable member and means for releasing said dog from engagement with said rod whereby said casings may be moved independently of said threaded shaft.

811,287. REVERSIBLE PROPELLER. FRANK GRAY, Muskegon, Mich. Filed Nov 12, 1903. Serial No. 180,891.

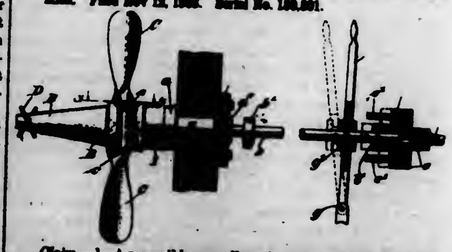

Claim.—1. A reversible propeller-wheel comprising adjustably-mounted blades, the blades being mounted on an axially-adjustable and rotary head, and a longitudinally-adjustable propeller-shaft supported for rotation and connected for reversing said blades together with a stationary member having an annular groove engaged by portions rigid with the said blades.

2. A reversible propeller-wheel comprising a stationary bearing, a propeller-shaft supported for rotation and endwise adjustment in said bearing, a head secured to said shaft, and propeller-blades adjustably mounted on said head and provided with portions engaging said bearing, together with a stationary member having an annular circumferential groove engaged by portions rigid with the said blades whereby the endwise adjustment of said shaft is accompanied by an adjustment of said blades.

3. A reversible propeller-wheel comprising a stationary bearing, a propeller-shaft supported for rotation and endwise adjustment in said bearing, a head mounted on said shaft, propeller-blades pivotally mounted on said head and provided with projections, said projections being adapted to play in arc-shaped openings in the head and to engage an annular groove in said bearing, and means for manually adjusting said shaft in an endwise direction and thereby adjusting said blades.

4. A reversible propeller-wheel comprising adjustably-mounted propeller-blades, a stationary bearing, and a rotary and longitudinally-adjustable propeller-wheel shaft supported in said bearings and connected for adjusting said blades, there being a pair of shoulders on said shaft, one shoulder being adapted to bear against the bearing when the propeller-wheel is running normally, and the other shoulder being adapted to engage the inner end of the said bearing when the propeller is reversed said bearing having a circumferential groove engaged by portions rigid with the said blades.

5. The combination of a relatively large reversible propeller-wheel, and a relatively small and non-reversible propeller-wheel, the two wheels being mounted one in front of the other.

6. The combination of a relatively large reversible propeller-wheel, and a relatively small non-reversible propeller-wheel, and power-transmitting connections for connecting both wheels with the same source of power.

7. The combination of a plurality of axially-alined propeller-wheels whereof one is provided with propeller-blades reversible independently of and without reversing the blades of another wheel.

8. The combination of a plurality of axially-alined propeller-wheels, whereof one is provided with adjustable propeller-blades, and another is provided with non-adjustable blades having a greater pitch than the adjustable blades.

9. The combination of a plurality of axially-alined propeller-wheels whereof one is provided with reversible propeller-blades and another is provided with non-adjustable propeller-blades.

10. The improved reversible propeller with reversible and non-reversible blades, substantially as shown and described.

11. The combination of a relatively large propeller-wheel and a relatively small propeller-wheel, the two being axially alined and mounted to rotate in unison in the same direction, the blades of the smaller wheel having a greater pitch than those of the larger wheel, and the blades of the larger wheel being reversible.

12. Means for driving a boat, comprising relatively large reversible propeller-blades, and relatively small non-reversible propeller-blades, substantially as and for the purposes set forth.

811,288. TAR-LINED LEADER AND PIPE. FRANK GRIESHEALER, Guttenberg, N. J. Filed Mar. 29, 1905. Serial No. 252,045.

Claim.—The process herein described of making tar-lined leaders and pipes, which consists in closing the pipe at one end, applying a layer of paper around the outer surface of the open end, charging a quantity of hot liquid tar into the interior of the pipe, at the covered end, rotating the pipe on its axis so as to distribute the tar uniformly over its inner surface, pouring out the excess of tar at the open end, and then permitting the leader or pipe to dry.

811,289. SEAT-CUSHION. HENRY S. HALE, Philadelphia, Pa., assignor to The Hale and Kilburn Manufacturing Company, a Corporation of Pennsylvania. Filed May 27, 1904. Serial No. 210,624.

Claim.—1. In a seat-cushion, the combination of a sheet-metal box-frame having a lower flange beaded at its inner edge and having its under part provided with an upwardly-extending groove parallel to the beaded edge forming a recess on the under part and an upwardly-extending rib upon the upper part of said flange, transverse supports for the springs extending over the beaded edge and resting upon the upwardly-extending rib of the box-frame, springs contained by said supports, upholstery extending over the springs and box-frame and having its edge extending over the groove on the under side of the box-frame, a clamping-strip for clamping the upholstery into the groove, and clamping-bolts for drawing the strip into the grooves upon the upholstery.

2. In a seat-cushion, the combination of a box-frame having a lower flange formed with an upwardly-extending groove, spring devices supported by the box-frame, upholstery extending over the spring devices and box-frame and having its edges extending over the under surface of the lower flange of the box-frame, clamping-strips for clamping the upholstery into the grooves, clamping-bolts for drawing said strips into the grooves upon the upholstery, and sustaining cross-slats for the spring structure having their ends extended over the lower flanges of the box-frame and held in place by the clamping-bolts.

3. In a seat-cushion, the combination of a sheet-metal box-frame having upper and lower flanges the lower of which is formed with upwardly-extending grooves on the bottom and upwardly-extending ribs on the top above the grooves, spring devices supported by the box-frame and resting upon the rib portions of the lower flange above the grooves, upholstery extending over the spring devices and box-frame and having its edges extending over the under surface of the lower flange of the box-frame, clamping-strips formed of channel-bars with the grooved portion extending downward away from the upholstery for clamping the upholstery in the grooves, and clamping-bolts for clamping the channel-bars upon the upholstery extending through the lower flange of the box-frame and having their heads shielded by the grooves of the channel-bars.

4. In a seat-cushion, the combination of a box-frame having a lower flange formed with an upwardly-extending groove on the bottom an upwardly-extending rib above the groove on the top and a beaded edge, spring devices supported by the box-frame upon the beaded edge and rib and secured to the lower flange, upholstery extending over the spring devices and box-frame and having its edges extending over the under surface of the lower flange of the box-frame, clamping-strips formed of channel-bars with the grooved portion extending downward away from the upholstery for clamping the upholstery into the grooves, and clamping-bolts for drawing said strips into the grooves of the flange of the box-frame and upon the upholstery said bolts having their heads shielded in the grooves of the channel-shaped clamping-strips.

5. In a seat-cushion, the sheet-metal box-frame having upper flanges B and lower flanges C the latter being provided with grooves J and beaded edges C', in combination with clamping-strips H of considerably less cross-section than the cross-section of the grooves, clamping-bolts extending through the clamping-strips and the lower flanges at positions corresponding to the grooves, cross-slats F resting upon the beaded edges of the lower flanges and clamped in position, springs supported upon the cross-slats, spring-plates sustained by the springs and secured at their ends to the box-frame, and upholstery extending over the springs and box-frame and having its edges clamped between the grooved portions of the lower flanges of the box-frame and the clamping-plates.

811,290. PULLEY. HOWARD T. HALLOWELL, Davisgrove, Pa., assignor to Standard Pressed Steel Company, a Corporation of Pennsylvania. Filed Oct. 12, 1903. Serial No. 176,979.

Claim.—1. A pulley comprising two sections, each section consisting of a rim, a web integral with said rim, a hub having portions embracing and secured to said web, and means independent of the web and coacting with said hub for securing the sections of the pulley together.

2. A pulley formed in sections, web-sections and rim formed integral, a hub having portions embracing and secured to the web-sections, yokes adapted to pass around the hub-sections, and means independent of the web securing the yokes together outside said hub-sections, whereby the sections of the pulley are secured together with respect to each other.

3. A pulley comprising two sections, each section consisting of a rim, a web integral with said rim, a hub secured to said web and having portions embracing the same, yokes passing around said hub-sections and bolts traversing the joint between the sections and independent of the hub at each side of the yokes for locking the same together.

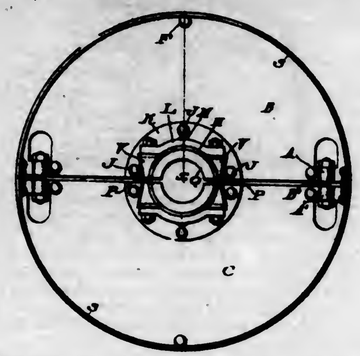

4. A pulley formed of two sections, each consisting of a rim, a web formed integral with said rim, and hub-sections embracing and secured to said web, means for locking said sections together at the hub and means independent of the web for keeping said sections in alinement at a point adjacent said rim.

5. A pulley formed of two sections, each consisting of a rim, a web formed integral with said rim, and hub-sections embracing and secured to said web, of means for uniting said sections together adjacent the rim, means between said uniting means and the rim for keeping the sections in alinement and means for locking the sections together, said last-mentioned means being independent of the web and secured to the hub-sections.

6. A pulley formed of two sections, each consisting of a rim, a web formed integral therewith, a hub having portions embracing and attached to said web, and lugs integral with said hub and through the medium of which the sections are secured together and interlocking means at the rim at the joint between said sections.

7. A pulley formed of sections, each section consisting of a rim, web portions formed integral therewith, a hub having portions embracing and secured to said web, and interlocking clips mounted on said rim for keeping the sections in alinement.

8. A pulley formed of sections, each section consisting of a rim, web-sections formed integral therewith, a washer situated between said web-sections, a hub having lugs secured to the web, a bushing having an extension fitted between the web-sections and means for securing said hub-lugs, web-sections and washer together.

9. A pulley formed in sections each section comprising a rim, a web-section integral therewith, a hub having a flange bearing against the web-section, lugs on the web-section and securing means for the sections of the pulley passing through said lugs.

10. A pulley formed in sections each section comprising a rim having rounded edges, a web-section integral therewith, a hub having a flange parallel with the web-section adjacent the hub, means embracing said hub and independent of the web-section and means for securing the parts together adjacent the hub.

11. A pulley comprising two sections, each section consisting of a rim, a web integral with said rim, a hub having flanges embracing and secured to said web and forming a stiffening and strengthening means therefor and bolt-lugs independent of the web and carried by said hub for clamping the sections of the pulley together.

811,291. WASHING-MACHINE. FRANK H. HALSTEAD, Wheaton, Ill. Filed Sept. 27, 1904. Serial No. 225,170.

Claim.—1. The combination with an outer tub, of a clothes-receptacle rotatable within the same, comprising a plurality of cylinders having openings, and arranged end to end and eccentrically with respect to the axis of rotation.

2. The combination with an outer tub, and a shaft extending across the same, of a rotatable clothes-receptacle within the tub, comprising a plurality of eccentric cylinders arranged end to end along the shaft, with one head forming an end for two cylinders.

3. The combination with an outer tub, and a shaft extending across within the same, of a series of eccentric cylinders arranged end to end along the shaft, and disposed oppositely with respect to their eccentricity, to balance each other.

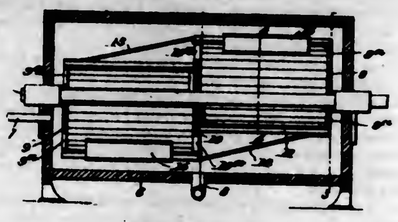

811,292. SEMAPHORE. CHARLES HARRIS, Rochester, N. Y. Filed July 20, 1904. Serial No. 217,269.

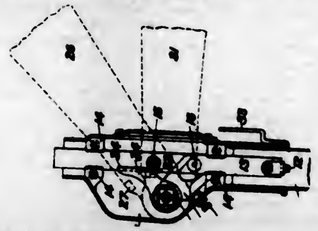

Claim.—1. A railway-semaphore consisting of a pair of movable semaphore-blades, and a single actuating means for setting and retaining said blades in a registering position and in a separated non-registering position.

2. A railway-semaphore consisting of a pair of movable semaphore-blades, and a single actuating means for setting and retaining said blades in one position in which both are visible, separated from each other, from one point of view, and in one or more other positions in which only one blade is visible from the same point of view.

3. A railway-semaphore consisting of a pair of semaphore-blades, means for setting one blade to a certain position, and means for setting the second blade, and with it the first blade, to another position.

4. A railway-semaphore, consisting of a pair of semaphore-blades normally supported in the danger position, means for setting one blade to the caution position, and means for setting the second blade, and with it the first blade, to the safety position.

5. A railway-semaphore, consisting of two semaphore-blades one on a shaft and the other on a sleeve surrounding the shaft, means for operating one blade by itself, and means for operating the first blade by the second blade.

6. A railway-semaphore, consisting of a pair of semaphore-blades, pivoted on the same axis, a striker on each blade, and an actuating-bar adapted to engage first one striker and then the other striker.

7. A railway-semaphore, consisting of a pair of semaphore-blades pivoted on the same axis, a striker on each blade, an actuating-bar adapted to engage first one striker and then the other striker, and means for moving one blade by the other from an intermediate to a final position.

8. A railway-semaphore consisting of a pair of movable semaphore-blades, and a single actuating means for setting and retaining said blades in two registering positions and in an intermediate, separated non-registering position.

811,293. TOOL FOR REMOVING SICKLE-BARS. SAMUEL M. HILL, Sunnyside, Wash. Filed Jan. 11, 1905. Serial No. 240,804.

Claim.—A tool for removing pitman-rods, consisting of a head recessed in its under side to fit over the pitman-head and formed with claws adapted to straddle the pitman-rod back of the head, a shank integral with said head, and a chain connected with the end of said shank.

811,294. FOLDING STOVE. PETER HELLER, Foley, Minn. Filed Apr. 10, 1905. Serial No. 255,241.

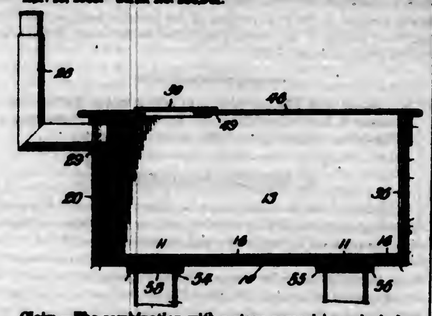

Claim.—The combination with a stove comprising a body having a smoke-opening in its side and a top having a depending flange at its side and end edges provided at one portion with a notch registering with the smoke-opening of the body, of a smoke-pipe fitted in the smoke-opening and notch and provided with a flange disposed between the body and the flange of the top.

811,295. ATTACHMENT FOR MUSICAL INSTRUMENTS. JOHN O. HOUSER, Pittsburg, Pa. Filed Mar. 20, 1905. Serial No. 250,719.

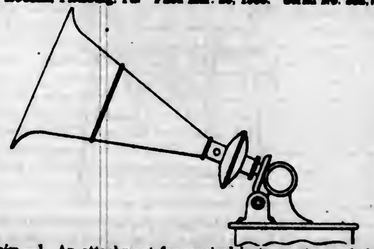

Claim.—1. An attachment for musical instruments consisting of two members, an outwardly-extending pipe carried by each member, the ends of said pipes being slotted, a regulator mounted in one of said pipes, a diaphragm interposed between said members, and means to secure said members together, substantially as described.

2. An attachment for musical instruments consisting of two members substantially in the form of segments of spheres, a diaphragm interposed between said members, a regulator carried by one of said members, and means to secure said members together, substantially as described.

3. The combination with a musical instrument, adapted to produce sounds, of an attachment consisting of two members substantially in the form of segments of spheres, a diaphragm mounted between said members, means to secure said members together, and means to regulate the sounds passing through said attachment, substantially as described.

4. In an attachment for musical instruments, the combination with an instrument capable of producing a sound, of two members, a diaphragm mounted between said members, means to secure said members together, means to regulate the sounds passing through said members, and means to secure said members to said musical instrument, substantially as described.

811,296. PNEUMATIC SPRING FOR VEHICLES. MATTHEW M. HOWLAND, Providence, R. I., assignor of one-half to William W. Dunnell, Providence, R. I. Filed May 11, 1905. Serial No. 259,969.

Claim.—1. An improvement in vehicles comprising a vehicle-body, running-gear therefor including springs, pneumatic cushions, yieldable means engaging said cushions and connecting said body with said running-gear to prevent longitudinal motion on the parts and yieldable means to prevent lateral motion on the parts.

2. An improvement in vehicles comprising a vehicle-body, running-gear therefor, pneumatic cushions and springs interposed between said running-gear and body, and yieldable means operatively connected to said cushions to prevent longitudinal and lateral motion of said body on said cushions.

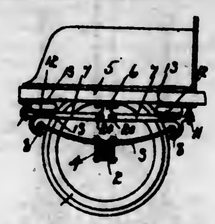

4. An improvement in vehicles comprising a vehicle-body, springs therefor, pivoted members supported by said body and interposed between said springs and said body, and pneumatic cushions interposed between said pivoted members and said body.

5. An improvement in vehicles comprising a vehicle-body, running-gear therefor, springs carried by said running-gear, pivoted members supported by said body and interposed between said springs and said body, and pneumatic cushions interposed between said pivoted members and said body.

6. An improvement in vehicles comprising a vehicle-body, running-gear therefor, pneumatic cushions and springs interposed between said running-gear and said body, and members pivoted at one end to said body and having their free ends connected to said springs, said members being operatively connected with said cushions, whereby lateral and longitudinal play of said body is prevented.

7. An improvement in vehicles comprising a vehicle-body, springs therefor, members pivoted at one end to said body and having their free ends connected to said springs, and pneumatic cushions interposed between said pivoted members and said vehicle-body.

8. An improvement in vehicles comprising a vehicle-body, springs therefor, pivoted members supported by said body and interposed between said springs and said body to prevent longitudinal play of the parts, pneumatic cushions interposed between said pivoted members and said vehicle-body, and means connected to said pivoted members to prevent lateral play on the parts.

9. An improvement in vehicles comprising a vehicle-body, springs therefor, depending brackets carried by said body, members pivotally mounted at one end in said brackets and having their free ends connected to said springs, and pneumatic cushions interposed between said vehicle-body and the free ends of said members.

10. An improvement in vehicles comprising a vehicle-body, running-gear therefor, pneumatic cushions and springs interposed between said running-gear and body, depending brackets carried by said body, members pivotally supported at one end in said brackets and having their free ends connected to said springs, said members being operatively connected with said cushions, and means connected to the free ends of said pivoted members to prevent lateral play of the parts.

11. In a vehicle, the combination with the vehicle-body, metal springs, means for supporting said springs from the running-gear of the vehicle, yielding members hinged at one end to said body and connected at their opposite ends with said springs, and pneumatic cushions interposed between said members and the vehicle-body.

12. In a vehicle, the combination with the vehicle-body, the vehicle running-gear, metal springs, means for supporting said springs from said running-gear, yielding members hinged to said vehicle-body and connected at their opposite ends with said springs, means for supporting the yielding ends of said members against lateral strains, and pneumatic cushions interposed between said members and vehicle-body.

811,297. MOLDING APPARATUS. CARL J. KIELSEMS, Bernholm, Denmark. Filed June 21, 1905. Serial No. 266,317.

Claim.—1. In a molding apparatus, the combination of a mold, a rotating core, a spiral rib upon the core, and means to roughen the surface formed by the rib, substantially as and for the purpose set forth.

2. In a molding apparatus, the combination of a mold, a rotating core, a spiral rib upon the core, and means upon the lower end of the rib to roughen the surface of the molded substance formed by the rib, substantially as and for the purpose set forth.

3. In a molding apparatus, the combination of a mold, a rotating core, a spiral rib upon the core, and a plow in the rib to roughen the surface of the molded material placed by the rib, substantially as and for the purpose set forth.

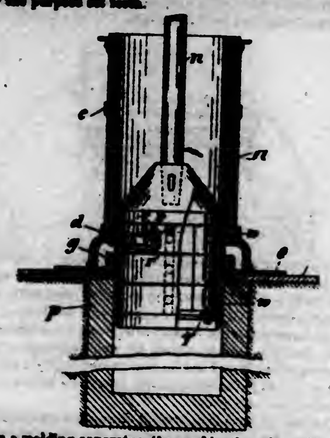

4. In a molding apparatus, the combination of a mold, a rotating core, and means upon the core to resist wear.

5. In a molding apparatus, the combination of a mold, a rotating core, a spiral rib on the core, and means just below the rib upon the core to resist wear.

6. In a molding apparatus, the combination of a mold, a rotating core, and removable means upon the core to resist wear.

7. In a molding apparatus, the combination of a mold, a rotating core, and a removable ring in the surface of the core to resist wear.

8. In a molding apparatus, the combination of a mold and a rotating core, said core having a supporting portion and a forming portion slightly greater in diameter than the supporting portion, substantially as and for the purpose set forth.

9. In a molding apparatus, the combination of a mold, and a cylindrical rotating core, said core having a forming portion near its forward end and a slightly-reduced supporting portion, substantially as and for the purpose set forth.

10. In a molding apparatus, the combination of a mold, and a cylindrical rotating core, said core having a ring in its surface of slightly greater diameter than the diameter of the core, substantially as and for the purpose set forth.

11. In a molding apparatus, the combination of a mold, a cylindrical rotating core, and a spiral rib upon the core, said core having a ring in its surface near the rib which ring has a slightly larger diameter than the diameter of the core, substantially as and for the purpose set forth.

811,298. BULLETIN-BOARD AND RACK. RICHARD W. KNOWLTON, Framingham, Mass. Filed Dec. 21, 1904. Serial No. 287,702.

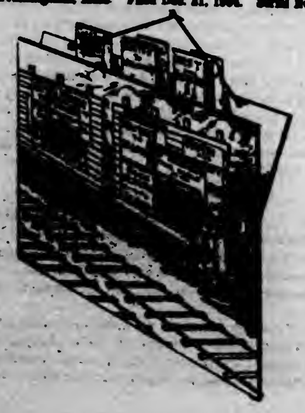

Claim.—A combined bulletin-board and rack, consisting of a bulletin member and a supporting member, the latter being so pivotally secured to the rear portion of the bulletin member that the center of gravity of the combination is below the pivot, and allows the members to form a rack.

811,299. SALVER OR TRAY. ROBERT B. KNOX, Meriden, Conn., assignor to International Silver Co., Meriden, Conn., a Corporation of New Jersey. Filed May 16, 1905. Serial No. 260,566.

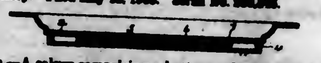

Claim.—A salver comprising a bottom, a border and a depending collar, a portion of the bottom cut away, a block larger in dimensions than the cut-away portion and extending beneath the under face of the bottom, said block formed with an upper face corresponding in thickness to the thickness of the bottom and in outline to the cut-away portion through which it extends, and a cup-shaped metal back located within said collar and inclosing said block, and means for securing the back to the bottom whereby said block is held in position, substantially as described.

811,300. MACHINE FOR MAKING ARTIFICIAL STONE. HARVEY S. KLINE, Indianapolis, Ind., assignor of one-half to Alva F. Van Ostram, Indianapolis, Ind. Filed Mar. 11, 1905. Serial No. 249,886.

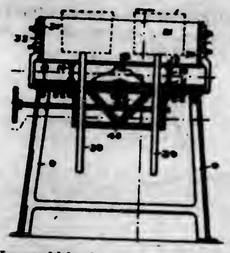

Claim.—1. In a mold for forming concrete and other articles, a pallet forming the bottom of the mold, said pallet being large enough to receive the largest-sized articles, said pallet having perforations for the passage of core-supporting bars, said openings being long enough to permit of the adjustment of the core-bars for all sizes of the product, slides mounted in said openings and movable therein, said slides being just enough shorter than the slot to permit of the passage of a rack-bar, sides and ends of the mold placed upon said pallet, and means for adjusting their distances from each other to vary the size of the mold.

2. In a mold for forming building-blocks, a pallet large enough to form the base of the mold for blocks of maximum dimensions, sides and ends for a mold placed upon said pallets, means for supporting said sides and ends, and means hinged under the pallet for varying the distances between said sides and ends, thereby varying the dimensions of the mold.

3. In a machine for molding concrete building-blocks, brick and the like, a pallet, mold sides and mold ends, located upon said pallet, and arms hinged below said pallet having standards to which said sides and ends are fastened, said arms extending from their hinges to the top of the pallet and extending thence inwardly of the pallet approximately parallel therewith and above the pallet and terminating in standards at right angles to said pallet.

4. In a machine for forming blocks, brick and other building material out of concrete and the like, a table, a pallet removably supported above the table, mold ends and sides located upon the pallet, bars secured to the table in a manner to permit of their longitudinal adjustment, bars hinged to said longitudinally-adjustable bars, said second bars extending from the hinges to the top of the pallet and bent inwardly of the pallet and terminating in standards approximately at right angles to the pallet and means for securing sides and ends of the mold to said standard.

5. In a machine for forming building-blocks, brick and the like out of concrete and other material, a table, bolts passing through said table and extending above same and adjustable in the lengths of said extended portions, a pallet resting upon and supported by said bolt extensions and removably secured thereto, longitudinally-sliding bars secured to said table, other bars hinged to said sliding bars, said other bars extending to the top of the pallet and then inwardly

of the pallet and terminating with standards approximately at right angles to the pallet; and mold sides and mold ends supported by said standards.

6. A mold for forming blocks, bricks and the like building material, said mold having sides and ends hinged under the mold-bottom, a bottom having openings changeable in position and a core, bars extending through the bottom, a core removably secured to said bars and means for moving the bars longitudinally so as to raise the core out of the mold after the molding operation.

7. In a molding-machine, a table having longitudinally-adjustable bolts extending therethrough, a pallet with under side sockets to receive the ends of said bolts, slideways under said table, longitudinally-adjustable bars in said slideways, means for holding a given adjustment of said bars, mold ends and mold sides located upon said pallet, arms hinged to the adjustable bars and extending to the top of the pallet and thence inwardly out of the pallet and terminating with standards, means for removably securing the mold ends and mold sides to their respective standards, vertical rack-bars extending through the table and through the pallet to support the mold-core, a shaft, and cog-wheels thereon engaging said rack-bars for the longitudinal adjustment of the latter by the rotation of said shaft.

8. In a mold for the purposes specified, a pallet having slots for the passage of core-supporting bars and slides to change the opening in said slot, said slide having no portions extending above the top face of the pallet and said slides being just enough shorter than their respective slots to permit of the passage of a rack-bar.

9. In a machine for the purposes specified, a table supported on legs, a plurality of bolts passing through said table, means for adjusting the extension of said bolts above the table, a pallet with under side sockets said pallet being located above the table with the ends of the bolts entering said sockets, said table having under side slideways, bars longitudinally adjustable in said slideway, set-screws to hold a given adjustment of said bar, mold ends and mold sides located upon and above said pallet, arms hinged to said adjustable bars, said arms extending to the top of the pallet and thence inwardly above the pallet and terminating with standards, which are fastened to the respective mold ends and mold sides, metal straps from said ends and sides passing around said standard, a frame secured to the under side of the table and adjustable transversely of the table, vertical rack-bars carried by said frame, said rack-bars passing through slots in the table and in the pallet, and forming a support for a core which is removably secured to the ends of said rack-bars, a shaft carried by said frame, said shaft having toothed wheels to engage with and operate said rack-bars.

811,301. CORE-EXTRACTING DEVICE. RUDOLPH D. KLEIN, Streator, Ill. Filed Sept. 21, 1905. Serial No. 279,033.

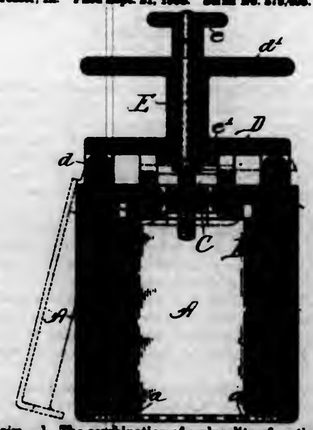

Claim.—1. The combination of a plurality of vertical jaws having interned flanges at their lower ends, a member supported on said jaws, a bolt working through said member, and arms connected with said jaws and actuated by said bolt, for the purpose set forth.

2. The combination of a plurality of vertical jaws equipped at their upper ends with rigid interned arms, a handle-equipped member supported on said jaws, and a bolt working therethrough and serving to actuate said arms, for the purpose set forth.

3. The combination of a plurality of vertical jaws equipped at their upper ends with rigid interned arms, a member pivotally supported upon the upper portions of said arms and equipped with a handle, a nut connected with the inner ends of said arms, and a bolt journaled in said handle-equipped member and working in said nut, for the purpose set forth.

4. The combination of a plurality of vertical jaws having interned toothed flanges at their lower ends, a member supported on said jaws, and a screw supported on said member and serving to actuate the jaws, for the purpose set forth.

811,302. BELT-GUIDE. KNUD H. KNUDSEN, Buxton, N. D. Filed July 6, 1905. Serial No. 268,661.

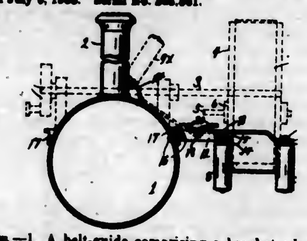

Claim.—1. A belt-guide comprising a bracket adapted to be fixed to an object near the belt, a revoluble guiding-roller on a stud secured in the fixed bracket, an arm pivoted to the bracket and having a revoluble guiding-roller normally disposed parallel to the first-mentioned roller, and locking means for holding said arm in lowered and in raised position substantially as and for the purpose set forth.

2. A belt-guide comprising a bracket securable to an object near the belt, a revoluble guiding-roller carried thereby, an arm pivoted to the bracket and having a revoluble guiding-roller normally disposed parallel to the first-mentioned roller, said rollers being adjustable to and from each other and to and from the object supporting the bracket.

811,303. HUB. LAURENCE S. LAGERBAR, New York, N. Y. Filed Nov. 17, 1904. Serial No. 233,166.

Claim.—1. A sheet-metal hub, comprising metal members suitably cut and bent into box-like form, the sides and bottom of said box-like sections being adapted to conform to the axle, the sides of the box-like sections being bent at right angles to the axle, a piece of metal being provided for each section to fit over one-half of the axle, said pieces of metal being attached to the curved portions of the bottoms of the box-like sections and projecting beyond the sides of the sections affording provision for securing said sections together.

2. A sheet-metal hub, comprising metal members suitably cut and bent into box-like form, the sides and bottom of said box-like sections being adapted to conform to the curvature of the axle, a piece of metal being provided for each section to fit over one-half of the axle, said pieces of metal being attached to the curved portions of the bottoms of the box-like sections and projecting beyond the sides of th esections affording provision for securing said sections together.

3. A sheet-metal hub, comprising metal members suitably cut and bent into box-like form, the sides and bottom of said box-like sections being adapted to conform to the curvature of the axle, a piece of metal being provided for each section to fit over one-half of the axle, said pieces of metal being attached to the curved portions of the bottoms of the box-like sections and projecting beyond the sides of the sections affording provision for securing said sections together, and clamps for securing said sections together, comprising sheet-metal strips having curved or indented portions adapted to fit over the said pieces of metal of the sections projecting beyond the sides of the sections, and bolts for securing the parts of the clamps together.

811,304. ALTERNATING-CURRENT MACHINE. MARIUS C. A. LATOUR, Paris, France, assignor to General Electric Company, a Corporation of New York. Filed June 26, 1894. Serial No. 514,998.

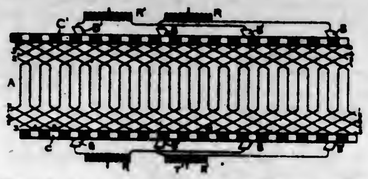

Claim.—1. In an alternating-current machine, a multipolar field-magnet, a wave-armature winding, a commutator composed of alternate live and dead segments, and a plurality of brushes of each polarity distributed around said commutator, the width of a brush being not greater than that of a segment.

2. In an alternating-current machine, a multipolar field-magnet, a wave-armature winding, a commutator composed of alternate live and dead segments, a plurality of brushes of each polarity distributed around said commutator, the width of a brush being not greater than that of a segment, and resistances coanecting brushes of like polarity.

3. In an alternating-current machine, a multipolar field-magnet, a wave-armature winding, a commutator composed of alternate live and dead segments, a plurality of brushes of each polarity distributed around said commutator, the width of a brush being not greater than that of a segment, resistances connecting brushes of like polarity, and means for varying the amount of said resistance.

4. In an alternating-current motor, a multipolar field-magnet, a wave-armature winding, a commutator composed of alternate live and dead segments, a plurality of brushes of each polarity distributed around said commutator, the width of a brush being not greater than that of a segment, resistances connecting brushes of like polarity, and means for cutting out said resistances when the motor comes up to speed.

5. In an alternating-current machine, a multipolar field-magnet, a wave-armature winding, a commutator therefor having alternate live and dead segments, a plurality of brushes of each polarity distributed around said commutator, said brushes being so arranged that one brush is on a live segment when another brush of the same polarity is on a dead segment.

6. In an alternating-current machine, a multipolar field-magnet, a wave-armature winding, a commutator therefor having alternate live and dead segments, a plurality of brushes of each polarity distributed around said commutator, the width of a brush being not greater than that of a segment and said brushes being so arranged that one brush is on a live segment when another brush of the same polarity is on a dead segment, and resistances conecting brushes of the same polarity.

7. In an alternating-current machine, two commutators connected to opposite ends of the armature-conductors, each commutator having alternate live and dead segments, brushes bearing on said commutators, and resistances connecting brushes of the same polarity on opposite commutators.

8. In an alternating-current machine, a multipolar field-magnet, a wave-armature winding, two commutators connected to opposite ends of the armature-conductors, each commutator having alternate live and dead segments, a plurality of brushes of each polarity distributed around each commutator, the width of a brush being not greater than that of a segment and the brushes being so arranged that when one brush is on a dead segment other brushes of the same polarity are on live segments, and resistances interconnecting the brushes of the same polarity.

811,305. HEAD FOR CARPENTERS' BRACES. ADOLPHE D. LEBLANC, Montreal, Canada. Filed July 31, 1903. Renewed Oct. 4, 1905. Serial No. 281,943.

Claim.—1. In combination, a brace having a vertical threaded upper extension, a collar rigidly attached thereto, a plate having an opening to receive said extension, a nut mounted upon the extremity of said extension beyond said plate, there being annular grooves between said plate, said collar, and said nut, the same constituting ball-raceways, and a cap attached to said plate.

2. In combination, a brace having an upper vertical threaded extension, a threaded collar mounted upon said threaded extension, a circular plate having a marginal upwardly-projecting flange, and having an opening of an enlarged diameter with respect to said extension, the same receiving said extension therethrough, a nut mounted upon the extremity of said extension, there being annular grooves in the faces between said nut, plate, and collar, balls carried therein, and a cap attached to said plate and having a recess therein adapted to receive said nut.

811,306. DRYING-MACHINE. JOHN H. LORIMER, Philadelphia, Pa. Filed May 20, 1905. Serial No. 261,264.

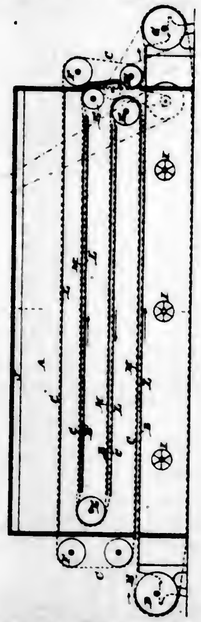

Claim.—1. In a drying-machine, a chamber, and means for circulating air-currents through said chamber, combined with two endless aprons of open-work for conveying materials between them to be treated through said chamber, guiding-wheels for said aprons at both ends of the chamber, and means arranged between the guiding-wheels for separating the two aprons whereby in their horizontal travel the upper apron shall not press heavily upon the material supported by the lower apron.

2. In a drying-machine, the combination of a chamber, means for creating a circulation of air in a vertical direction through the chamber, two endless aprons of open-work for conveying between them materials to be dried, guiding-wheels for causing the aprons to travel back and forth through the machine at different levels, and means for separating the two aprons during their travel between the guiding-wheels whereby no undue pressure is put upon the materials to be treated when they are being subjected to the action of the air-currents.

3. In a drying-machine, a chamber, and means for circulating air-currents through said chamber, combined with two endless aprons of open-work and sprocket-chains at their side edges for conveying materials between them to be treated through said chamber, guiding-wheels for said aprons at both ends of the chamber, and means consisting of lateral guides for the chains arranged between the guiding-wheels for separating the two aprons whereby in their horizontal travel the upper apron shall not press heavily upon the material supported by the lower apron.

4. In a drying-machine, a chamber through which currents of air or other gaseous medium is circulated combined with two endless aprons which separate at each end of the chamber to respectively receive and discharge the materials being treated, guiding devices at each end of the chamber for guiding the aprons, and means within the chamber intermediate of the guiding devices for separating the aprons while passing through the chamber.

5. In a drying-machine a chamber through which currents of air or other gaseous medium is circulated combined with two endless aprons which separate at each end of the chamber to respectively receive and discharge the materials being treated said aprons having a procket-chains upon their edges, guiding devices at each end of the chamber for guiding the aprons and their chains, and means within the chamber intermediate of the guiding devices consisting of laterally-extending guide-irons upon which the chains travel for separating the aprons while passing through the chamber.

811,307. DRYING AND CONDITIONING MACHINE. JOHN H LORIMER, Philadelphia, Pa. Filed May 20, 1905. Serial No. 261,265.

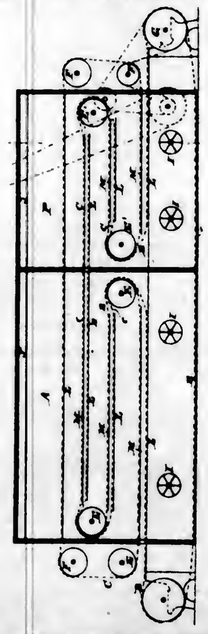

Claim.—1. In a machine for drying and conditioning materials, the combination of a drying-chamber and a conditioning-chamber arranged end to end, guide-wheels for guiding two endless aprons back and forth through each of said chambers, two endless aprons for holding the materials to be treated between them and guided about the guide-wheels, and means within the chambers for separating the two aprons slightly to remove pressure from the materials while passing between the guide-wheels.

2. In a machine for drying and conditioning materials, the combination of a drying-chamber and a conditioning-chamber arranged end to end, guide-wheels for guiding two endless aprons back and forth through each of said chambers, two endless aprons for holding the materials to be treated between them and guided about the guide-wheels, and means consisting of horizontal guides L M within the chamber for separating the two aprons slightly to remove pressure from the materials while passing between the guide-wheels.

3. In a machine for drying and conditioning materials, the combination of a drying-chamber and a conditioning-chamber arranged end to end, guide-wheels for guiding two endless aprons back and forth through each of said chambers, two endless aprons of open-work with sprocket-chains on their edges for holding the materials to be treated between them and guided about the guide-wheels, and means consisting of guides within the chambers for supporting the sprocket-chains and thereby separating the two aprons slightly to remove pressure from the materials while passing between the guide-wheels.

4. In a machine for drying and conditioning materials, the combination of a drying-chamber and a conditioning-chamber arranged end to end, guide-wheels for guiding two endless aprons back and forth through each of said chambers, two endless aprons for holding the materials to be treated between them and guided about the guide-wheels, means within the chambers for separating the two aprons slightly to remove pressure from the materials while passing between the guide-wheels, and means for circulating drying and conditioning media separately through the respective drying and conditioning chambers.

5. In a machine for drying and conditioning textile materials, the drying and conditioning chambers arranged end to end, guide-wheels for said chambers, two endless aprons guided by the guide-wheels so as to pass alternately back and forth in each chamber and through the two chambers successively, and separate means for each chamber for respectively circulating the drying and conditioning mediums.

811,308. WHIP-HOLDER. TOWIE LUDEWICK and HUMBERT LUDEWICK, Irving, Ill. Filed May 19, 1905. Serial No. 261,227.

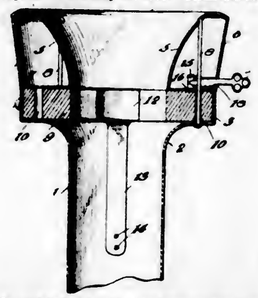

Claim.—In a whip-holder, the combination of a socket or hollow body adapted to receive a whip, springs secured to the socket interiorly thereof, whip-engaging dogs carried by said springs, a rotatable disk mounted upon the socket or body and provided with cam-surfaces to engage the engaging dogs in actuating the same, a handle for manipulating said rotatable disk, the disk having a plurality of arcuately-arranged teeth, a socket-head secured to the socket or hollow body of the holder, a locking-pawl pivotally mounted in said socket-head and adapted to engage the teeth of the disk, and a key insertible into the socket-head to disengage the locking-pawl from the disk, substantially as set forth.

811,309. HAT-TIP-RUBBING MACHINE. WALTER H. LUM, Chicago, Ill. Filed Aug. 31, 1903. Serial No. 171,260.

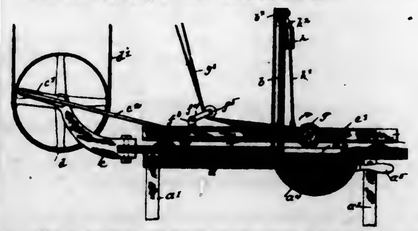

Claim.—1. In a machine of the class described, a table, a reciprocating and tilting carriage arranged above the table, a brush rotatably mounted on said carriage, means for rotating the brush and means for reciprocating and tilting the carriage.

2. In a machine of the class described, a table, a reciprocating carriage adapted to be raised at one end and to fall by gravity, means for modifying the action of gravity on the carriage, and means for reciprocating the carriage.

3. In a machine of the class described, a table having an opening therein, a slideway secured to said table, a carriage adapted to reciprocate in said slideway, a cylindrical brush rotatably mounted at the forward end of said carriage, means for reciprocating the carriage and means for rotating the brush.

4. In a machine of the class described, a table, a slideway secured to said table, a carriage adapted to reciprocate in said slide-

way, means for raising the carriage in its forward movement, a brush mounted at the forward end of said carriage and means for reciprocating the carriage.

5. In a machine of the class described, a table, a slideway secured to said table, a carriage adapted to reciprocate in said slideway, means in said slideway for raising the carriage in its forward movement and permitting it to drop in its rearward movement, a brush mounted at the forward end of said carriage and means for operating said carriage.

6. In a machine of the class described, a table having an opening therein and a drawer arranged under said opening, a slideway secured to said table and extending along each side of said opening, a carriage slidably mounted in said slideway, means for raising and lowering the carriage relative to said slideway, means for sliding the carriage, a cylindrical brush rotatably mounted in said carriage and means for rotating said brush.

811,810. MOLD. EDWARD L. MAAG, Clarksburg, Ohio. Filed May 27, 1905. Serial No. 262,651.

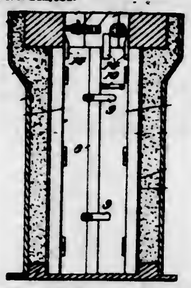

Claim.—1. In a pipe-mold, the combination of a mold composed of sections, a core therefor comprising a plurality of sections pivotally connected together, adjacent sections of the core having abutting portions disconnected to permit collapsing thereof, said disconnected portions of the sections overlapping, means for holding the sections in operative positions, and a strip carried by one of the sections disconnected as above described and adapted to overlap the adjacent abutting portion of the other disconnected section to preserve the cylindrical shape of the core.

2. In a pipe-mold, the combination of a mold composed of sections, a core therefor comprising a plurality of sections pivotally connected together, adjacent sections of the core having abutting portions disconnected to permit collapsing thereof, said disconnected portions of the sections overlapping, a strip carried by one of the sections disconnected as above described and adapted to overlap the adjacent abutting portion of the other disconnected section to preserve the cylindrical shape of the core, and joint-braces interposed between opposing sections of the core.

3. In a pipe-mold, the combination of a removable core, and a jacket or shell surrounding the core and adapted to be reduced in diameter on removing the same.

811,811. BLOTTING-RULER. GEORGE W. MACKENZIE, Ben Avon, Pa. Filed Feb. 9, 1905. Serial No. 244,922.

Claim.—1. A ruler provided at each end with pivotally-mounted spring-clips having inwardly-turned piercing-points, substantially as set forth.

2. A ruler provided at each end with clearance-recesses, and pivotally-mounted spring-clips having inwardly-turned piercing-points adapted to enter said recesses, substantially as set forth.

3. A ruler provided at each end with clearance-recesses, pivoted spring-clips having inwardly-turned points adapted to enter said recesses, and a strip of blotting-paper extending longitudinally of the ruler along its under side with its terminals bent up and secured between the ruler and said clips at each end, substantially as set forth.

4. A ruler provided at each end with clearance-recesses, and pivoted spring-clips having inwardly-turned piercing-points adapted to enter said recesses, said clips extending outwardly beyond the ends of the ruler, substantially as set forth.

5. A ruler provided at each end with clearance-recesses and having spring-clips pivotally secured to the ruler at their inner ends provided with inwardly-turned piercing-points formed by pressing the metal downwardly in V form whereby the points are adapted to pierce through the terminal edges of a blotting-strip and into the clearance-recesses, substantially as set forth.

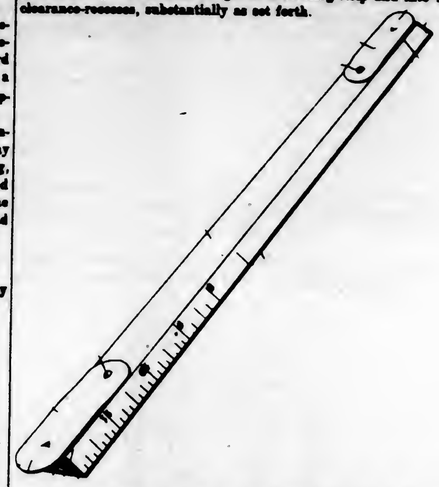

6. The combination with a ruler provided at each end with clearance-recesses and pivotally-mounted spring-clips having inwardly-turned piercing-points, of a strip of blotting-paper of uniform width bounded at each end by bias cuts terminating in narrowed extensions adapted to be bent upwardly around the ends and top of the ruler, and to be secured thereto, substantially as set forth.

811,812. DYNAMO-ELECTRIC MACHINERY. JOHN H. ST. HILL MAWDSLEY, Taunton, England. Filed Nov. 30, 1903. Serial No. 183,238.

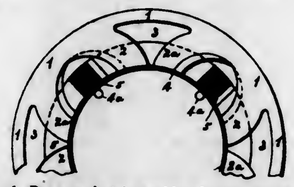

Claim.—1. Dynamo-electric machines having magnetizing-coils each surrounding a pole-piece placed with their sides in the neutral zones and close to their armatures and at or about the middle of the interpolar spaces of contiguous poles and spaced away from the pole-cores.

2. In a dynamo-electric machine a field-magnet having each alternate pole-piece only provided with a magnetizing-coil, the said coils each surrounding a pole-piece and placed with its sides in the neutral zones and close to the armature and at or about the middle of the interpolar spaces of contiguous poles and spaced away from the pole-cores.

3. In a dynamo-electric machine, a trapezoidal field-magnet coil, the plane of the face of the coil being at right angles to the plane of rotation of the armature.

4. In a dynamo-electric machine, field-magnet coils of quadrilateral form and so placed that two of the sides cut the neutral zone at a slight angle and are spaced away from the pole-cores.

5. In a dynamo-electric machine a pole-piece having a trapezoidal face and split in a plane parallel and radial to the armature-shaft.

811,818. POST. JAY D. HENRY, Holbrook, Nebr. Filed June 9, 1905. Serial No. 264,693.

Claim.—1. A post comprising a cement body portion having an offset at one side thereof and openings extending through the post above the offset to permit of securing a member upon said offset by means of wires passing through said openings and around the supported member.

2. A post comprising a cement body having an offset and metallic tubes embedded in said body above the offset to permit of securing a member upon the same.

3. A post comprising a cement body, hollow metallic members embedded transversely therein for the reception of securing-wires and braced by wires running longitudinally of the post and coiling around said hollow members.

4. A post comprising a cement body, hollow metallic members embedded transversely therein for the reception of securing means, bracing-wires running longitudinally of the post and coiling around said hollow members, and transverse wires arranged therebetween and coiling around said longitudinal wires.

5. A post comprising a cement body, wires running longitudinally therein, extending outside said body and forming a ring or closed loop at such exterior point for hitching or similar purposes.

6. A post comprising a cement body, wires running longitudinally therein and secured together by transverse binding-wires, said longitudinal wires extending outside said body and forming a ring or closed loop at such extension or point for hitching or similar purposes.

7. A post comprising a cement body, wire running longitudinally therein, extending outside said body and forming a ring or closed loop at such exterior point for hitching or similar purposes.

811,314. DRIVING MECHANISM FOR MOTOR-VEHICLES. CHARLES B. MUFF, Mülhausen, Germany, assignor of one-half to The Firm of Ateliers de Constructions Mécaniques Clément Ducommun Mülhausen, Alsace, Germany. Filed Oct. 5, 1905. Serial No. 281,469.

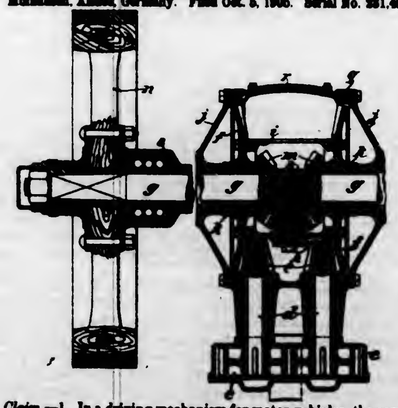

Claim.—1. In a driving mechanism for motor-vehicles, the combination with a divided driving-axle, and a differential gear thereon, of two bevel-wheels inclosing the differential gear between them and having their toothed peripheries opposed to one another, an intermediate sleeve rigidly connecting said bevel-wheels and carrying the planet-wheels of the differential gear, two bevel-pinions gearing respectively with said two bevel-wheels and intended to drive simultaneously both the latter, and means for imparting driving motion to both these bevel-pinions, substantially as, and for the purpose, hereinbefore described.

2. In a driving mechanism for motor-vehicles, the combination with a divided driving-axle, and a differential gear thereon, of two bevel-wheels inclosing the differential gear between them and having their toothed peripheries opposed to one another, an intermediate sleeve rigidly connecting said bevel-wheels and carrying the planet-wheels of the differential gear, two bevel-pinions gearing respectively with said two bevel-wheels and intended to drive simultaneously both the latter, two gear-wheels upon short spindles of said bevel-pinions, and a common driving-shaft for driving said gear-wheels and through them both the aforesaid bevel-wheels and differential gear, substantially as, and for the purpose, hereinbefore described.

3. In a driving mechanism for motor-vehicles, the combination with a divided driving-axle, and a differential gear thereon, of two bevel-wheels inclosing the differential gear between them and having their toothed peripheries opposed to one another, an intermediate sleeve rigidly connecting said bevel-wheels and carrying the planet-wheels of the differential gear, two bevel-pinions gearing respectively with said two bevel-wheels and intended to drive simultaneously both the latter, means for imparting driving motion to both these bevel-pinions and a protecting box or casing inclosing all said parts and also serving as a bearing for the same, substantially as, and for the purpose, hereinbefore described.

811,315. AMUSEMENT APPARATUS. FRANKLIN J. MCCANN, New York, N. Y., assignor of one-half to ANNI S. FR. BERQUIST and one-half to Frederick Tench, both of New York, N. Y. Filed Oct. 19, 1904. Serial No. 229,067.

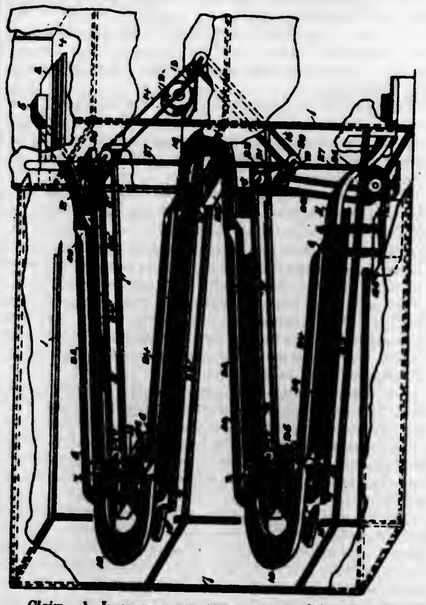

Claim.—1. In an amusement apparatus, a slide-route comprising a plurality of courses having adjacent ends at different levels whereby a sudden descent from course to course is obtained in passing along the route, substantially as described.

2. In an amusement apparatus, a slide-route comprising a plurality of courses having adjacent ends at different levels whereby a sudden descent from course to course is obtained in passing along the route, and a waterway adjacent one or more of the courses, substantially as described.

3. In an amusement apparatus, a slide-route comprising a plurality of courses having adjacent ends at different levels whereby a sudden descent from course to course is obtained in passing along the route, and a waterway adjacent one or more of the courses, the waterway being constructed to provide rapids or falls, substantially as described.

4. In an amusement apparatus, a slide-route comprising a plurality of courses having adjacent ends at different levels, one of said courses including a moving carrier-belt, substantially as described.

5. In an amusement apparatus, a slide-route comprising a plurality of courses having adjacent ends at different levels, one of said courses including a moving carrier-belt, and a waterway adjacent one or more of the courses, said waterway being constructed to provide falls, substantially as described.

6. In an amusement apparatus, a slide-route comprising a plurality of courses having adjacent ends at different levels, the first of said courses being sharply inclined to afford starting velocity, substantially as described.

7. In an amusement apparatus, a slide-route comprising a plurality of courses having adjacent ends at different levels, one of said courses including a carrier-belt and the next succeeding course including a slideway, substantially as described.

8. In an amusement apparatus, a slide-route comprising a plurality of courses having adjacent ends at different levels, one of said courses including a carrier-belt and the next succeeding course including a slideway, and a waterway adjacent one or more of the courses, said waterway being constructed to provide rapids or falls, substantially as described.

9. In an amusement apparatus, a slide-route comprising a plurality of courses having adjacent ends at different levels, one of said courses including a carrier-belt and the next succeeding course including a curved slideway, substantially as described.

10. In an amusement apparatus, a slide-route comprising a plurality of courses having adjacent ends at different levels, one of said courses including a carrier-belt and the next succeeding course including a curved slideway, and a waterway adjacent one or more of the courses, said waterway being constructed to provide rapids or falls, substantially as described.

11. In an amusement apparatus, a slide-route comprising a plurality of successive courses, one of said courses including a carrier-belt and the next succeeding course including a slideway, substantially as described.

12. In an amusement apparatus, a slide-route comprising a plurality of courses, the first of said courses being sharply inclined to afford starting velocity, the next succeeding course including a carrier-belt, and the next succeeding course including a slideway, substantially as described.

13. In an amusement apparatus, a slide-route comprising a plurality of courses, the first of said courses being sharply inclined to afford starting velocity, the next succeeding course including a carrier-belt, and the next succeeding course including a slideway, and a waterway adjacent one or more of the courses, said waterway being constructed to provide rapids or falls, substantially as described.

14. In an amusement apparatus, a slide-route comprising a plurality of courses, the first of said courses being sharply inclined to afford starting velocity, the next succeeding course including a carrier-belt, and the next succeeding course including a curved slideway, substantially as described.

15. In an amusement apparatus, a slide-route comprising a plurality of courses, the first of said courses being sharply inclined to afford starting velocity, the next succeeding course including a carrier-belt, and the next succeeding course including a curved slideway, and a waterway adjacent one or more of the courses, said waterway being constructed to provide rapids or falls, substantially as described.

16. In an amusement apparatus, a slide-route comprising a plurality of courses, the first of said courses being sharply inclined to afford starting velocity, the next succeeding course including a carrier-belt, and the next succeeding course including a slideway, the end of the first course being located above and overlapping the second, and the end of the second course being located above and overlapping the end of the third course, substantially as described.

17. In an amusement apparatus, a slide-route comprising a plurality of courses, the first of said courses being sharply inclined to afford starting velocity, the next succeeding course including a carrier-belt, and the next succeeding course a curved slideway, the end of the first course being located above and overlapping the second course, and the end of the second course being located above and overlapping the end of the third course, substantially as described.

18. In an amusement apparatus, a slide-route comprising a plurality of courses, the first of said courses being sharply inclined to afford starting velocity, the next succeeding course including a carrier-belt, and the next succeeding course a curved slideway, the end of the first course being located above and overlapping the second course, and the end of the second course being located above and overlapping the end of the third course, and a waterway adjacent one or more of the courses, said waterway being constructed to provide rapids or falls, substantially as described.

19. In an amusement apparatus, a slide-route comprising a plurality of courses, the first of said courses being sharply inclined to provide starting velocity, and alternating courses thereafter including carrier-belts and curved slideways, the route terminating in a sharply-inclined delivery-slideway, substantially as described.

20. In an amusement apparatus, a slide-route comprising a plurality of courses, the first of said courses being sharply inclined to provide starting velocity, and alternating courses thereafter including carrier-belts and curved slideways, the route terminating in a sharply-inclined delivery-slideway, and a waterway adjacent the route, substantially as described.

21. In an amusement apparatus, a slide-route comprising a plurality of courses, the first of said courses being sharply inclined to provide starting velocity, and alternating courses thereafter including carrier-belts and curved slideways, the route terminating in a sharply-inclined delivery-slideway, and a waterway adjacent the route, said waterway being constructed to provide falls or rapids at various points, substantially as described.

22. In an amusement apparatus, a slide-route comprising a sharply-inclined starting-slideway, a carrier-belt, the receiving end of which is below the delivery end of the starting-slideway, a curved slideway adjacent the delivery end of the belt, the receiving end of said slideway being below the delivery end of the belt, a second carrier-belt having its receiving end below the delivery end of the curved slideway, the route terminating in a sharply-inclined delivery-slideway, substantially as described.

23. In an amusement apparatus, a slide-route comprising a sharply-inclined starting-slideway, a carrier-belt, the receiving end of which is below the delivery end of the starting-slideway, a curved slideway adjacent the delivery end of the belt, the receiving end of said slideway being below the delivery end of the belt, a second carrier-belt having its receiving end below the delivery end of the curved slideway, the route terminating in a sharply-inclined delivery-slideway, and a waterway adjacent the route, substantially as described.

24. In an amusement apparatus, a slide-route comprising a sharply-inclined starting-slideway, a carrier-belt, the receiving end of which is below the delivery end of the starting-slideway, a curved slideway adjacent the delivery end of the belt, the receiving end of said slideway being below the delivery end of the belt, a second carrier-belt having its receiving end below the delivery end of the curved slideway, the route terminating in a sharply-inclined delivery-slideway, and a waterway adjacent the route, said waterway being constructed to provide falls or rapids at various points, substantially as described.

811,316. HOCKEY-BOOT. JAMES A. McPHERSON, Hamilton, Canada. Filed Mar. 28, 1904. Serial No. 200,497.

Claim.—1. The combination with a boot or shoe provided with an upper, of an ankle-support comprising a flexible material secured adjacent the rear seam of the boot, and consisting of flaps movable relative to the upper, one side of the upper provided with a slot, a fastening device located exteriorly of the upper and adjacent the slot, and a connection carried by the flap opposite the slotted upper, the connection adapted to pass through the slot in the upper and be engaged by the fastening device.

2. The combination with a boot or shoe provided with an upper slit longitudinally of its length and having fastening means located on either side the slit, of an ankle-support secured within the upper adjacent the rear seam thereof, the ankle-support provided with flaps movable relative to the upper, the ankle-support conforming approximately in shape to the shape of the upper, one of the flaps adapted to overlap the opposite flap, a strap carried by the first-named flap, that side of the upper opposite the strap-carrying flap being provided with a slot, a fastening device located adjacent the slot and exteriorly of the upper the strap adapted to pass through the slot and be engaged by the fastening device.

811,317. DRILL-PRESS. ALBERT H. NEWTON, Worcester, Mass. Filed Mar. 9, 1901. Serial No. 50,462.

Claim.—1. In the feeding mechanism of a drill-press, the combination with a pinion-shaft by which the drill-spindle is raised or lowered, a hub on the end of said pinion-shaft, means for rotating said shaft and comprising a clutching mechanism, a lever-handle pivotally connected at its center to said hub and diametrically to its axis and a cam-surface on said lever-handle, by which said clutching mechanism is engaged or disengaged by the rocking of said handle on its pivot.

2. The combination with the pinion-shaft of a drill-spindle-feeding mechanism, of a worm-gear turning loosely on said shaft and provided with a friction-flange, an expansible ring inclosed in said flange, a disk attached to said shaft and carrying said expansible ring, a radially-sliding ring-expanding pin, a sliding pin held concentrically in said shaft, a hub on the end of said shaft, a lever-handle pivoted at its central section to said hub and provided with a cam-surface engaging the end of said sliding pin, whereby said pin is moved in said shaft.

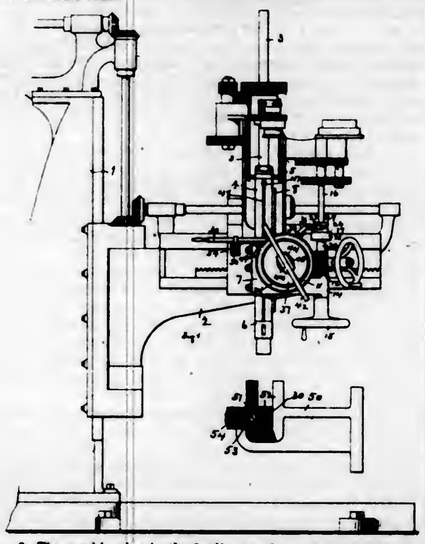

3. The combination in the feeding mechanism of a drill-press, of a pair of shafts with their axes in alinement, a clutching mechanism connecting the opposing ends of said shafts and comprising a series of rolls arranged to be wedged between the driving and driven members of said clutch, fingers inserted between said rolls, a sleeve concentric with the axis of the clutch and carrying said fingers, means for sliding said sleeve parallel with the axis of the clutch, means for rotating said sleeve during its sliding movement, substantially as described.

4. In the feeding mechanism of a drill-press, the combination of shafts 16 and 13, a roller-clutch connecting said shafts, a collar on one of said shafts provided with oblique grooves, a sleeve capable of sliding on said collar and engaging said oblique grooves, whereby a slight rotary movement is given to said sleeve during its sliding movement, fingers carried by said sleeve and extending between the rolls of said roller-clutch, substantially as described.

5. In the feeding mechanism of a drill-press, the combination of shafts 16 and 13, a clutching mechanism connecting said shafts and comprising driving and driven members and a series of wedging-rolls, of fingers extending between said rolls, a sliding sleeve concentric with one of said shafts and carrying said fingers, oblique grooves engaged by said sleeve, a pivoted shipping-lever engaging said sleeve and means controlled by the movement of the drill-spindle for rocking said lever, whereby said clutch is disengaged, substantially as described.

811,318. DOUBLE-PIPE RETURN-BEND. FRANCIS H. NILES, Chicago, Ill., assignor to Featherstone Foundry and Machine Company, Chicago, Ill., a Corporation. Filed Aug. 1, 1904. Serial No. 219,066.

Claim.—A double-pipe return-bend comprising the inner and outer pipe-sections, collars threaded to said outer pipes, an inner bend connecting said outer pipes fitted about the same at its inner portion and fitted about said inner pipes at its outer portion, an outer bend fitted about the ends of said inner pipes, packing-rings about said outer pipes, annular recesses in said collars for receiving said packing-rings, flanges on said inner bend extending within said recesses and holding said packing-rings in place against said outer pipes, annular recesses in said inner bend about the ends of said inner pipes, packing-rings in said recesses, cooperating flanges on said outer bend engaging said packing-rings and holding the same in place against said inner pipes, said outer and inner pipes having threaded portions engaged by said packing-rings, bolts connecting said bends and separate bolts connecting said inner bends and said collars, said bolts being arranged to draw said bends and collars together to compress the packing-rings, substantially as described.

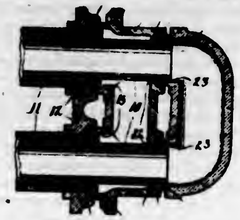

811,319. RAILWAY-SWITCH. WILLIAM P. O'BRIEN, Salem, Mass. Filed July 24, 1905. Serial No. 270,941.

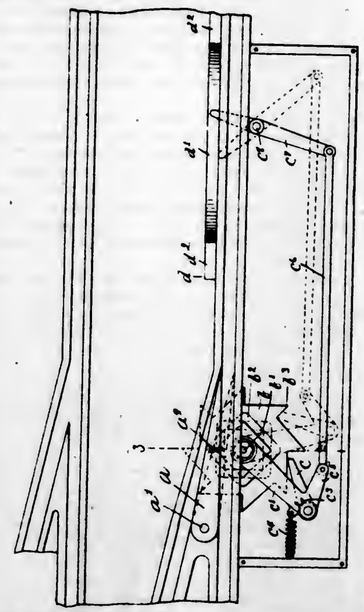

Claim.—1. The combination with a pivoted switch-arm, of a cam-grooved disk in engagement therewith, having ratchet-teeth, a pawl in engagement with the ratchet-teeth, a pawl-carrying arm, a pivoted actuating-lever to which said arm is connected and means under the control of the motorman for operating said lever, substantially as described.

2. The combination with a pivoted switch-arm, of a cam-grooved disk in engagement therewith, means for moving said disk intermittently, in the same direction, for moving the switch-arm back and forth, a pivoted actuating-lever having an exposed end, and means, mounted on the car, under the control of the motorman, for engaging the exposed end of said actuating-lever, substantially as described.

3. The combination with a pivoted switch-arm, of a cam-grooved disk in engagement therewith for moving said switch-arm back and forth, means for moving said disk intermittently, an actuating-lever for said means having an exposed end, a plate over which the exposed end of said lever extends, having a depression with inclined end walls, a spring-pressed plunger-rod on the car and means for operating it, substantially as described.

4. The combination with a pivoted switch-arm having a downwardly-extended pin, a cam-grooved disk located beneath said arm, the groove of which receives said pin, a pivoted actuating-lever for

said disk having an exposed end, and means mounted on the car, under the control of the motorman, for engaging the exposed end of said actuating-lever, substantially as described.

5. The combination with a pivoted switch-arm, of a device for moving it back and forth on its pivot, a pivoted actuating-lever connected with said device having an exposed end, a plate over which the exposed end of said lever extends, having a depression with inclined end walls, and means mounted on the car, under the control of the motorman, for engaging the exposed end of said lever, and a locking device for said means, substantially as described.

6. The combination with a pivoted switch-arm, of a device for moving it back and forth on its pivot, a pivoted actuating-lever connected with said device having an exposed end, a plate over which the exposed end of said lever extends, having an intermediate depression with inclined end walls and flat surfaces in continuation of said end walls, a plunger-rod on the car, under the control of the motorman, which is adapted to engage the said plate and to move said lever as it passes along on the plate, and a locking device for said plunger, substantially as described.

7. The combination with a pivoted switch-arm, of a device for moving it back and forth on its pivot, a pivoted actuating-lever connected with said device having an exposed end, a plate over which the exposed end of said lever extends, having an intermediate depression with inclined end walls, and flat surfaces in continuation of said end walls, a spring-pressed plunger mounted on the car adapted to engage the said plate and a locking-lever for said plunger, adapted to be operated by the motorman to release the plunger, substantially as described.

8. The combination with a pivoted switch-arm, of a device for moving it back and forth on its pivot, a pivoted actuating-lever connected with said device having an exposed end, a plate over which the exposed end of said lever extends having an intermediate depression with inclined end walls and flat surfaces in continuation of said end walls, a spring-pressed plunger mounted on the car adapted to engage the said plate, and a locking device into engagement with which said plunger is moved by the inclined wall of the plate, substantially as described.

9. The combination with a pivoted switch-arm having a downwardly-extended pin, a cam-grooved disk located beneath said arm, the groove of which receives said pin, and means for intermittingly moving said disk in the same direction, for moving said switch-arm back and forth, substantially as described.

811,820. GLASS-PRESS. WILLIAM I. PERHAM, Rochester, Pa., assignor to National Glass Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed Aug. 14, 1905. Serial No. 274,092.

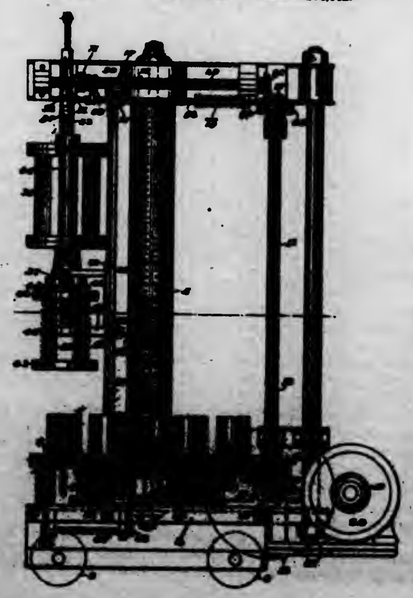

Claim.—1. In a glass-press, the combination of a power-shaft, a rotatable table adapted to carry molds, a plunger and devices for reciprocating the same, devices for rotating the table, and frictional mechanism arranged between said table-rotating mechanism and said power-shaft; substantially as specified.

2. In a glass-press, the combination of a power-shaft, a rotatable table adapted to carry molds, a plunger and devices for reciprocating the same, devices for rotating the table, devices for locking the table, and friction devices arranged between said table-rotating mechanism and said power-shaft, substantially as specified.

3. In a glass-press, the combination of a rotatory mold-table and devices for imparting a rotatory movement thereto, a reciprocating plunger, a fluid-pressure cylinder and piston for reciprocating the plunger, a valve for admitting fluid-pressure to the cylinder, devices for operating the valve, and a check-valve for checking the exhaust during a portion of the stroke of the piston; substantially as specified.

4. In a glass-press, the combination of a rotatory mold-table and devices for imparting a rotatory movement thereto, a reciprocating plunger, a fluid-pressure cylinder and piston for reciprocating the plunger, a valve for admitting fluid-pressure to the cylinder, devices for operating the valve, a check-valve for checking the exhaust during a portion of the stroke of the piston and devices for operating the check-valve; substantially as specified.

5. In a glass-press, the combination of a rotatory mold-table, devices for rotating the table, friction devices for communicating power to the table-rotating mechanism, a reciprocating plunger and devices for intermittently reciprocating the same, devices for locking the table, devices connected with the plunger for operating the lock, and devices for intermittently throwing the mechanism for reciprocating the plunger in and out of connection with power mechanism; substantially as specified.

6. In a glass-press, the combination of a rotatory mold-table, a reciprocating plunger, mechanism for operating the plunger, a positively-driven shaft for communicating power to start and stop the mechanism for operating the plunger, a hollow shaft surrounding the first shaft, a pinion fixed to the hollow shaft, a rack fixed to the table and meshing with the pinion, and a friction device for communicating power from the positively-moving shaft to the hollow shaft; substantially as specified.

7. In a glass-press, the combination of a rotatory mold-table and devices for rotating the same, power mechanism, a plunger and fluid-pressure devices for operating the plunger, a check-valve for checking a portion of the movement of the plunger, and devices for throwing the fluid-pressure-operating devices in and out of connection with the power mechanism; substantially as specified.

811,821. PUZZLE. EMIL C. PERLITZ, Boston, Mass., assignor to Clarence A. Hight, Brookline, Mass. Filed Nov. 13, 1904. Serial No. 232,317.

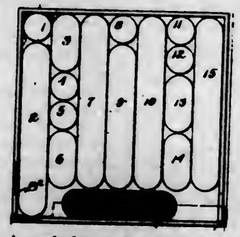

Claim.—1. A puzzle, having, in combination, a tray, a traveler adapted to move in a certain path therein, and a plurality of movable blocks of different forms in the tray acting as obstacles to the movement of the traveler in the tray and requiring rearrangement to permit its passage, substantially as described.

2. A puzzle, having, in combination, a tray, an elongated traveler adapted to move therein, and a plurality of movable blocks of equal width but unequal length, located in the tray and partly filling the same, the blocks acting as obstacles to the movement of the traveler in the tray, substantially as described.

3. A puzzle, having, in combination, a tray provided with a lateral opening, a traveler adapted to enter the opening and traverse the tray in a certain path, and a plurality of movable obstacles in the tray requiring rearrangement to permit the passage of the traveler and of a size too great to pass through the opening, substantially as described.

811,822. FOLDING CANOPY. JOHN A. POLHEMUS, East Rutherford, N. J. Filed May 18, 1905. Serial No. 260,794.

Claim.—1. A canopy for a marine vessel, comprising a fabric cover, an awning-frame for the cover, and fore and aft standards pivotally connected with the said awning-frame and with supports fixed on the deck of the vessel adjacent to the coaming, the standards being made in sections connected with each other by hinges arranged to allow the sections to swing into a folded horizontal position and away from the coaming.

2. A canopy for a marine vessel, comprising a fabric cover, an awning-frame for the cover, fore and aft standards pivotally connected with the said awning-frame and with supports fixed on the deck of the vessel adjacent to the coaming, the standards being made in sections connected with each other by hinges arranged to allow the sections to swing into a folded horizontal position and away from the coaming, and means for rigidly locking the said standard-sections in an extended position.

3. A canopy for a marine vessel, comprising a fabric cover, an awning-frame for the cover, a ridge-pole removably connected with the ends of the said awning-frame, and fore and aft standards pivotally connected with the said awning-frame and with supports fixed on the deck of the vessel adjacent to the coaming, the standards being made in sections connected with each other by hinges arranged to allow the sections to swing into a folded horizontal position and away from the coaming.

4. A canopy for a marine vessel, comprising a fabric cover, an awning-frame for the cover, a ridge-pole having forked ends removably engaging polygonal portions on the end bars of the awning-frame, and fore and aft standards pivotally connected with the said awning-frame and with supports fixed on the deck of the vessel adjacent to the coaming, the standards being made in sections connected with each other by hinges arranged to allow the sections to swing into a folded horizontal position and away from the coaming.

5. A canopy, comprising standards, bearings journaled in the upper ends of the standards, an awning-frame having its end members engaging the said bearings, a ridge-pole held on the end members of the said awning-frame, and a fabric cover stretched over the said ridge-pole and the said awning-frame.

6. A canopy, comprising fore and aft standards, bearings journaled in the upper ends of the said standards and having their axes in longitudinal alinement, an approximately rectangular awning-frame having its end members engaging the said bearings, a ridge-pole held on the end members of the said awning-frame, a fabric cover stretched over the said ridge-pole and the said awning-frame, and means for locking the bearings against turning in the said standards.

7. A canopy, comprising standards, bearings journaled in the said standards, an awning-frame having its end members engaging the said bearings, the end members having polygonal portions, and a ridge-pole having forked ends, each member of which is forked to and straddles the said polygonal portions.

8. A canopy, comprising standards, bearings journaled in the said standards, an awning-frame having its end members engaging the said bearings, the end members having polygonal portions, and a ridge-pole having forked ends, each member of which is forked to and straddles the said polygonal portions, the members of the forked ends extending on opposite sides of the bearings.

9. A canopy provided with a fabric cover, a ridge-pole, an awning-frame, and standards pivoted at their lower ends to a support and pivotally connected at their upper ends with the said awning-frame, each standard being in sections, hinges connecting the sections with each other, and means for locking the sections of a standard in an extended position.

10. A canopy for a marine vessel, comprising an awning-frame, a ridge-pole on the said frame, a fabric cover extending over the said frame and the said ridge-pole, bearings engaging the end members of the said awning-frame and having trunnions, standards pivotally connected at their lower ends to supports on the deck of the vessel outside of the coaming thereof, the said trunnions being journaled in the upper ends of the said standard, and means for locking the bearings against turning.

11. A canopy for a marine vessel, comprising an awning-frame, a ridge-pole on the said frame, a fabric cover extending over the said frame and the said ridge-pole, bearings engaging the end members of the said awning-frame and having trunnions, standards pivotally connected at their lower ends to supports on the deck of the vessel outside of the coaming thereof, the said trunnions being journaled in the upper ends of the said standards, the said standards being made in sections adapted to fold and to swing outwardly away from the coaming, and means for locking the bearings against turning.

12. A canopy having an approximately rectangular awning-frame provided with an auxiliary end member, the terminals of which are slidably connected with the longitudinal side bars of the said awning-frame, and a fabric cover secured at one end to the said auxiliary end member, to move with the same in the direction of the length of the awning-frame.

13. A canopy having an approximately rectangular awning-frame provided with an auxiliary end member, the terminals of which are slidably connected with the longitudinal side bars of the said awning-frame, and a fabric cover secured at one end to one end of the awning-frame and at its other end to the said auxiliary end member, to move with the same in the direction of the length of the awning-frame.

14. A canopy having an awning-frame provided with an auxiliary end member, slides mounted to slide on the side bars of the said awning-frame, the ends of the said auxiliary member being pivotally connected with the said slide, and a fabric cover secured at one end to one end of the awning-frame and attached at its other end to the said auxiliary member.

15. A canopy provided with standards, bearings pivoted in the said standards, a fabric cover and an awning-frame for the same, the awning-frame having its ends engaging the said bearings, and a ridge-pole straddling with its ends the ends of the said awning-frame.

16. A canopy provided with standards, bearings pivoted in the said standards, a fabric cover and an awning-frame for the same, the awning-frame having its ends engaging the said bearings, and a ridge-pole having forked ends straddling the ends of the awning-frame at opposite sides of the said bearings.

17. A canopy provided with a fabric cover and a frame for the same, the frame comprising a ridge-pole, an awning-frame and standards pivoted at their lower ends to a support and pivotally connected at their upper ends with the said awning-frame, each standard being in sections, hinges connecting the sections with each other, and adjustable abutments for the said standards.

18. A canopy for marine vessels, comprising an awning-frame, a fabric cover for the same, and means for supporting the frame and its cover at different levels and in transversely and longitudinally inclined positions the said means consisting of fore and aft standards hinged on the deck of the vessel and made in sections to fold independently one of the other, to allow either or both standards to fold at one time, and bearings journaled in the upper ends of the standards and having their axes in longitudinal alinement, the ends of the said awning-frame being held in the said bearings for the awning-frame and its cover to swing transversely into an inclined position.

19. A canopy for marine vessels, comprising fore and aft standards hinged at their lower ends to a fixed support, to swing in a longitudinal direction toward and from each other, each standard being made in sections hinged together to fold one upon the other, an awning-frame, a cover for the same, and bearings journaled in the free ends of the said standards and engaged by the end members of the said awning-frame for the latter to swing in a transverse direction.

20. A canopy for marine vessels, comprising an awning-frame, a cover for the same, and fore and aft standards hinged at their lower ends to fixed supports at the ends of the cockpit of the vessel, the said standards carrying the said awning-frame and each being made in sections hinged together to fold one upon the other and when folded, being outside of the cockpit of the vessel.

21. A canopy for marine vessels, comprising an awning-frame, a cover for the same, fore and aft standards hinged at their lower ends to fixed supports at the ends of the cockpit of the vessel, each standard being made in sections hinged together to fold one upon the other, and when folded, being outside of the cockpit of the vessel, and bearings journaled in the upper ends of the said standards and having their axes alined longitudinally, the said awning-frame having its end members engaging the said bearings.

22. A canopy comprising folding standards, an awning-frame made approximately rectangular and having a U-shaped auxiliary member, the terminals of which are slidably connected with the side bars of the said awning-frame, and a fabric cover for the said awn-

ing-frame secured at one end to one end of the awning-frame and attached at its other end to the said auxiliary member.

811,323. ELECTRIC METER. EDWIN H. FORMAN and EMILIUS CRAMER, Philadelphia, Pa. Filed June 17, 1904. Serial No. 212,892.

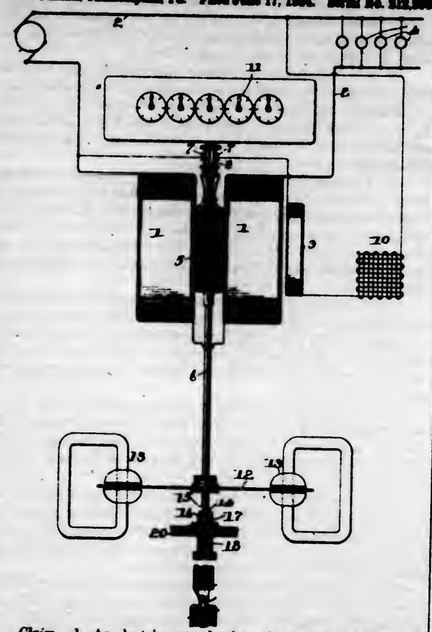

Claim.—1. An electric meter having a bearing of sapphire, the meter-spindle having an end also of sapphire engaging said bearing, substantially as described.

2. An electric meter having a bearing of crystalline stone, the meter-spindle having an end of sapphire engaging said bearing, substantially as described.

3. An electric meter having a bearing of stone, the meter-spindle having an end of sapphire engaging said bearing, substantially as described.

4. An electric meter having a bearing of sapphire, the meter-spindle having an end of crystalline stone engaging said bearing, substantially as described.

5. An electric meter having a bearing of sapphire, the meter-spindle having an end of stone engaging said bearing, substantially as described.

6. An electric meter having a bearing of corundum, the meter-spindle having an end also of corundum engaging said bearing, substantially as described.

7. An electric meter having a bearing of crystalline stone, the meter-spindle having an end of corundum engaging said bearing, substantially as described.

8. An electric meter having a bearing of stone, the meter-spindle having an end of corundum engaging said bearing, substantially as described.

9. An electric meter having a bearing of corundum, the meter-spindle having an end of crystalline stone engaging said bearing, substantially as described.

10. An electric meter having a bearing of corundum, the meter-spindle having an end of stone engaging said bearing, substantially as described.

11. An electric meter having a bearing of sapphire, the meter-spindle having an end of corundum engaging said bearing, substantially as described.

12. An electric meter having a bearing of crystalline stone, the meter-spindle having an end of crystalline stone engaging said bearing, substantially as described.

13. An electric meter having a bearing of crystalline stone, the meter-spindle having an end of stone engaging said bearing, substantially as described.

14. An electric meter having a bearing of stone, the meter-spindle having an end of crystalline stone engaging said bearing, substantially as described.

15. An electric meter having a bearing of corundum, the meter-spindle having an end of sapphire engaging the bearing, substantially as described.

16. An electric meter having a bearing of stone, the meter-spindle having an end of stone engaging said bearing, substantially as described.

17. An electric meter having a stone bearing, the meter-spindle having an end of similar stone engaging said bearing, substantially as described.

18. An electric meter having a crystalline-stone bearing, the meter-spindle having an end of similar crystalline stone engaging said bearing, substantially as described.

19. In a device of the character described, a stationary element and a movable element to contact therewith, both of said elements being jeweled at their contacting places.

811,324. CLOCK. WILSON B. PORTER, New Haven, Conn., assignor to New Haven Clock Co., New Haven, Conn., a Corporation. Filed Feb. 16, 1905. Serial No. 245,899.

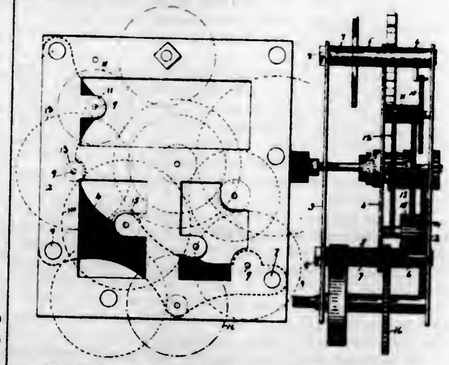

Claim.—In a clock, the combination with sheet-metal front and back movement-plates, of a sheet-steel supplemental plate located between the same, arbors extending between and journaled at their respective ends in the said front and rear movement-plates, short arbors journaled at their respective ends in the supplemental movement-plate and in one or the other of the front and back movement-plates, and wheels and pinions mounted upon the arbors last mentioned so as to turn thereupon independently thereof, the said wheels and pinions being made of a softer metal than the said short arbors.

811,325. HEATER. WILLIAM H. RAMALEY and WILLIAM B. LANSTON, Pittsburg, Pa. Filed Apr. 8, 1905. Serial No. 254,807.

Claim.—1. In a heater of the type described, the combination with a shell having an air-inlet, a plurality of flues carried by said shell, a burner-casing mounted within said shell, a heating-casing supported within said shell, angularly-disposed flues establishing communication between said casings, said heating-casing having a circular heating-compartment formed therein, a perforated partition horizontally mounted within said compartment, vertically-disposed flues passing through said compartment and said partition, and an exhaust-flue communicating with said heating-casing, substantially as described.

2. In a heater of the type described, the combination with a shell having an air-inlet, a plurality of flues carried by said shell and a burner-casing mounted within said shell, said burner-casing being of annular form, and burners extending into said burner-casing, of a heating-casing arranged in said shell above the burner-casing, said heating-casing being of annular form, a horizontal perforated partition arranged in said heating-casing, and said heating-casing being provided with a plurality of flues extending from the bottom thereof through said partition to the top thereof.

811,326. ADJUSTABLE COLLAR-SUPPORTER. FRED S. REYNOLDS, Cranston, R. I. Filed Oct. 16, 1905. Serial No. 283,894.

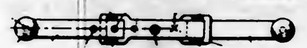

Claim.—1. In a device of the character described, the combination of two reversely-arranged superimposed interlocking resilient bar members in slidable frictional engagement with each other, means integral with said members for maintaining them in an adjusted position, and a button or cap detachably secured to each end of the device, for the purpose herein set forth.

2. The adjustable collar-supporter A herein described, the same consisting of two reversely-arranged flat superimposed thin sheet-metal resilient bar members a a', each having an end thereof arranged to receive and form a guide for the shank portion of the fellow bar, said bars being slidably or adjustably movable upon each other in an endwise direction, means integral with the bars for holding them in adjusted positions, and caps or buttons c removably secured to the outer ends of the collar-supporter.

811,327. TRANSMISSION MECHANISM FOR MOTOR-CYCLES. LOUIS C. G. RIVIERRE, Paris, France. Filed Oct. 31, 1904. Serial No. 230,843.

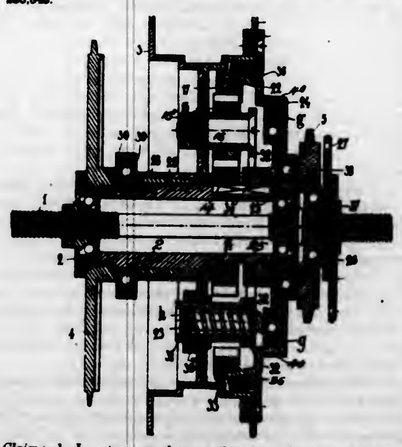

Claim.—1. In a two-speed transmission mechanism, in combination, a fixed axle, a hollow spindle rotatable thereon, sprockets carried by said spindle, a hub rotatable on said spindle, a pinion carried by said spindle, planetary pinions on said hub engaging said pinion, a member rotatable on said spindle and adapted to be frictionally locked to said hub, a gear on said member meshing with said planetary pinions, and means for braking said friction member.

2. In a transmission mechanism for motor-cycles, in combination, a fixed axle, a hollow spindle rotatable thereon, sprockets carried by said spindle, a hub rotatable on said spindle, a cone-ring attached to said hub, planetary pinions carried by said hub, a pinion on said spindle meshing with said planetary pinions, a cone member rotatable on said spindle and having an internally-toothed crown meshing with said pinions, means for shifting said cone member into and out of engagement with said cone-ring, and means for braking said cone member.

3. In a transmission mechanism for motor-cycles, in combination, a fixed axle, a tubular spindle rotatable thereon, sprockets carried by said spindle, a hub rotatable on said spindle and carrying a cone-ring, a pinion fixed to said spindle, planetary pinions on said hub engaging said pinion, a cone member rotatable on said spindle and axially shiftable thereon, a toothed ring carried by said cone member and engaging said pinions, springs carried by said hub for normally maintaining said cone member in engagement with said cone-ring, means for shifting said cone member against the action of said springs, and means for braking said cone member.

4. In a transmission mechanism for motor-cycles, in combination, a fixed axle, a hollow spindle rotatable thereon, sprockets carried by said spindle, a hub rotatable on said spindle, a cone-ring carried by said hub, planetary pinions journaled at one side of said hub, a pinion on said hub meshing with said first-named pinions, an internally-toothed cone member rotatable on said spindle and meshing with said pinions, means for braking said cone member, means for normally maintaining said cone member in engagement with said cone-ring, and means for axially shifting said cone member in either direction.

811,328. PRINTING-PLATE HOLDER. CHARLES F. ROCKSTROH, Brooklyn, N. Y., assignor to Rockstroh Manufacturing Company, Brooklyn, N. Y., a Corporation of New Jersey. Original application filed Oct. 23, 1903, Serial No. 178,825. Divided and this application filed Dec. 21, 1903. Serial No. 186,143.

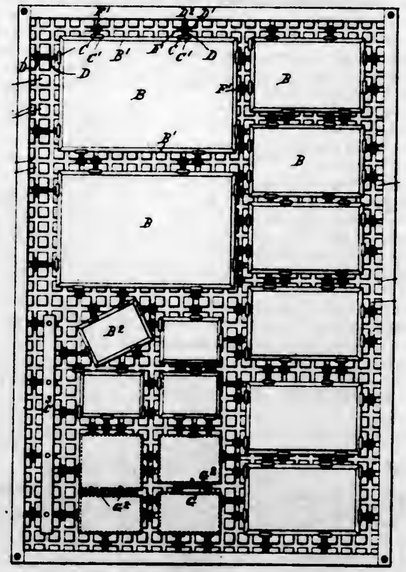

Claim.—1. The expansible spacer, G^3, for a printing-plate holder having slots therein, having one or more tongues fitted loosely in the slots in the holder and consisting of the sections, G^3, G^4, which are loosely connected together, and the wedge, G^5, fitted between them so as to give a lateral expansion of dimensions to the spacer, and all combined, as specified.

2. The expansible spacer, G^3, for a printing-plate holder having slots therein, consisting of the section, G^3, having its upper extremity, G^9, half dovetail in shape to fit in the clamp-groove, B^6, of the plate, B^5, and having a lateral projection, G^{16}, and a dowel-pin, G^{13}, in its lower extremity, G^{14}, which is doweled in the lower extremity, G^{15}, of the corresponding section, G^4, of the device, which is also shaped at its upper extremity G^2 dovetail in section to fit in a corresponding groove, B^4, of the plate, B^5, and the wedge, G^5, fitted between the two sections, and provided with the rib, G^6, the limiting-pin, G^8, and the hole, G^{17}, and the screw, G^{10}, fitted to the section, G^4, and loosely fitted through the section, G^3, and the tension-spring, G^{11}, between the section, G^3, and the screw-head, G^{12}, and all combined, as specified.

3. The expansible spacer, G^3, for a printing-plate holder having slots therein, consisting of the sections, G^3, G^4, and the wedge, G^5, as a means for changing its lateral dimensions while in position upon the holder, and all combined, as specified.

4. In a printing-plate holder having undercut V-shaped grooves therein, a spacer, comprising a plate adapted to set between printing-plates secured to the surface of the holder and having tongues each with a shank extending down into and a part broadened to conform generally to said undercut V-shaped grooves providing shoulders for attachment of the spacer to the plate-holder.

5. In a curved printing-plate holder having undercut V-shaped grooves therein, a spacer comprising a curved plate adapted to set between curved printing-plates secured to the curved surface of the holder, and having tongues each with a shank extending down into, and a part broadened to conform generally to said undercut V-shaped grooves providing shoulders for attachment of the spacer to the plate-holder.

6. An expansible sectional spacer, for a curved printing-plate holder, provided with the tongue, G′, as a means for its attachment to the holder and its upper portion being provided with the wedge, G^2, as a means for changing its thickness laterally, as specified.

7. The curved expansible spacer, G^3, for a curved printing-plate holder, consisting of the sections, G^3, G^4, having the tongue, G′, as a means for its attachment in the slots therein, and the wedge, G^5, for changing the lateral dimension of the spacer, and all combined, as specified.

8. In a printing-plate holder, an expansible spacer consisting of a pair of similar yieldingly-connected members constructed for engagement with the slots of the plate-holder and for opposite contact with plates to be held to the plate-holder, and a wedge fitted between parts of the spacer to give lateral expansion to the dimensions thereof.

9. The combination with a printing-plate holder having series of undercut slots, of an expansible spacer, consisting of a pair of similar yieldingly-connected members having parts adapted to pass into said slots and interlock therewith and parts adapted to lie above the surface of the printing-plate holder and to engage edge grooves of said printing-plates, the inner opposite faces of the latter parts being grooved and a wedge fitting between said latter parts and movable along said grooves to give lateral expansion to the dimensions thereof.

10. The combination with a printing-plate holder having series of undercut V-shaped slots, of an expansible spacer, consisting of a pair of similar yieldingly-connected members having tongues adapted to pass down into and broadened to conform generally to said slots and interlock therewith, and parts adapted to lie above the surface of the printing-plate holder and to engage edge grooves of said printing-plates, the inner opposite faces of the latter parts being grooved and a wedge fitting between said latter parts and movable along said grooves to give lateral expansion to the dimensions thereof.

811,829. **CAR-COUPLING.** JAMES ROONEY, New York, N. Y. Filed Sept. 26, 1905. Serial No. 280,463.

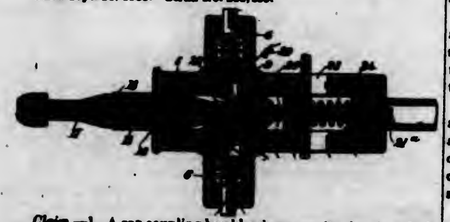

Claim.—1. A car-coupling head having opposite chambered offsets, spring-pressed locking-blocks movable in said offsets electric circuit-closing devices carried by the blocks, the lower wall of the head being provided with slots, pins extended from the locking-blocks through said slots, and an operating wheel or plate on the lower side of the head; the said wheel or plate having opposite slots, the walls of said slots being eccentric or cam-shaped for engaging with the pins.

2. A car-coupling comprising a hollow head having chambered offsets, the outer walls of said offsets being provided with slots, locking-blocks movable in the chambers of the offsets and having stem portions passing through said perforations, springs arranged between the end walls of the chambers and the blocks, the bottom wall of said head being slotted, pins passing from the blocks through said slots, an operating wheel or plate pivoted on the lower side of the head and having opposite slots provided with inner eccentric walls with which said pins engage, a tubular link for engaging with said blocks, and a spring-pressed tube for engaging with said link for connecting the same.

3. A hollow coupling-head, locking-blocks movable therein electric circuit-closing devices carried by the blocks, a tubular link for engaging in said blocks, the end of the link being counterbunk, and a spring-pressed tube in the head having its end corresponding to said counterbunk portion thus forming a ball-and-socket joint.

4. A hollow coupling-head having a chamber in its rear portion, the opposite side walls having slots leading from said chamber, laterally-movable locking-blocks in said head, a tubular link having a head portion for engaging with said blocks, a tube adapted to engage its end with said tubular link, branch pipes extended outward from said tube into said slots, an extension from the tube and a spring arranged in the chamber around the extension one end of said spring engaging with the end wall of the chamber, while the other end engages the said branch pipes.

811,880. **PRESSURE AND SUCTION DEVICE.** EUGEN ROTH, Schöneberg, near Berlin, Germany. Filed May 6, 1904. Serial No. 206,789.

Claim.—1. In combination, a cylinder, an air-chamber therein, an elastic diaphragm in said cylinder, a nest of rings contacting the diaphragm, and levers contacting said rings, substantially as described.

2. In an apparatus of the character specified, the combination of an air-chamber having a yielding flexible diaphragm, and a nested series of devices fitting to and movable with said diaphragm, adapted to prevent rupture thereof, substantially as described.

3. In an apparatus of the character described, an air-tight chamber having a yielding wall, and devices conformable to and movable with said wall, but preventing disruption thereof; with levers contacting said devices and a reciprocatory rod operated by the levers, substantially as described.

4. In an apparatus of the character described, an air-tight chamber having an elastic flexible wall, and a series of devices conforming to and movable with said wall, to prevent disruption thereof; with levers contacting said devices, a reciprocatory rod, and an operative connection between the rod and levers, substantially as described.

5. In an apparatus of the character specified, the combination of an air-chamber having a yielding flexible diaphragm, and a nested series of devices fitting to and movable with said diaphragm, adapted to prevent rupture thereof; with a reciprocatory rod, and a disk thereon actuated by said devices, substantialy as described.

6. In an apparatus of the character specified, the combination of an air-chamber having a flexible diaphragm, and devices fitting to and movable with said diaphragm, adapted to prevent rupture thereof; with radially-arranged levers contacting said devices, a reciprocatory rod, and a disk thereon contacting the free ends of said levers, substantially as described.

7. In combination, a cylinder, an air-chamber therein, a flexible diaphragm within said cylinder closing said chamber, a series of devices contacting said diaphragm, levers contacting said devices, a reciprocatory rod, and a disk on the inner end of said rod contacting said levers, all substantially as and for the purpose described.

8. In combination, a cylinder, an air-chamber at the bottom thereof, an elastic diaphragm within said cylinder closing said chamber, a nested series of rings contacting said diaphragm, a radial series of levers contacting said rings, a reciprocatory rod, and a disk on the inner end of said rod contacting said levers, all substantially as and for the purpose described.

811,881. **RULING-MACHINE.** FRANK E. RUDOLPH, Omaha, Nebr., assignor of one-half to The Carpenter Paper Company, Omaha, Nebr. Filed July 27, 1903. Serial No. 167,476.

Claim.—1. In a paper-ruling machine, means for holding a plural number of rolls of paper, a single pair of feed-rollers for drawing all the webs of paper from the rolls, ruling devices past which the webs of paper from each roll are drawn by the feed-rollers, means on the feed-rollers for perforating the webs in transverse lines, and means subsequently engaging the webs for dividing the same into sheets along the transverse lines of perforation.

2. In a paper-ruling machine the combination with feed-rollers, paper-roll supports, and ruling devices for simultaneously ruling a plural number of webs of paper, means for dividing the webs into sheets, and means for depositing all the sheets in a single pile, of means for marking one of the webs at predetermined intervals thereon, said means comprising a cam movable with one of the feed-rollers, a lever actuated thereby, a pawl carried by the lever, a ratchet moved intermittently by said pawl, marking devices arranged adjacent the paper web, and means carried by the ratchet for actuating the marking devices.

3. In a paper-ruling machine, means for holding a plural number of rolls of paper, ruling devices past which webs of paper from each of said rolls may be drawn, tension devices for retarding the unrolling of the webs from the rolls, a single pair of feed-rollers for drawing all of the webs from the rolls past the ruling devices, means carried by the feed-rollers for perforating the webs in transverse lines at regular intervals thereon, and means engaging the webs subsequent to their passage between the feed-rollers, said means being adapted to advance the webs at a greater speed than the feed-rollers, whereby the webs are broken into sheets along the lines of perforation thereof.

4. In a paper-ruling machine the combination with means for supporting a plural number of rolls of paper, and a plural number of ruling devices past which webs of paper from the rolls may be drawn, of a single pair of feed-rollers for drawing all of the webs from the rolls past the ruling devices, means on the feed-rollers for perforating the webs in transverse lines, and means for breaking the webs into sheets along the transverse lines of perforation, said means depositing all of the sheets in a single pile.

811,882. **BLOCK-SAWING MACHINE.** HERMAN RUFLI, Indianapolis, Ind., assignor of one-half to Alexander W. Van Hafften, Minneapolis, Minn. Filed Mar. 17, 1905. Serial No. 250,516.

Claim.—1. The combination with a feed-deck, and a plurality of laterally-spaced saws projecting through said deck, of a primary feed device and a secondary feed device, said primary feed device comprising a pair of sprocket-equipped shafts and cooperating sprocket-chains, one of said shafts carrying a spur-gear, and said secondary feed device comprising a frame, pivoted for movement into an inoperative position, a pair of sprocket-equipped shafts and sprocket-chains running over the sprockets of said shafts, the shaft at the free end of said frame having a spur-gear that normally meshes with the spur-gear of said aforenoted sprocket-shaft, substantially as described.

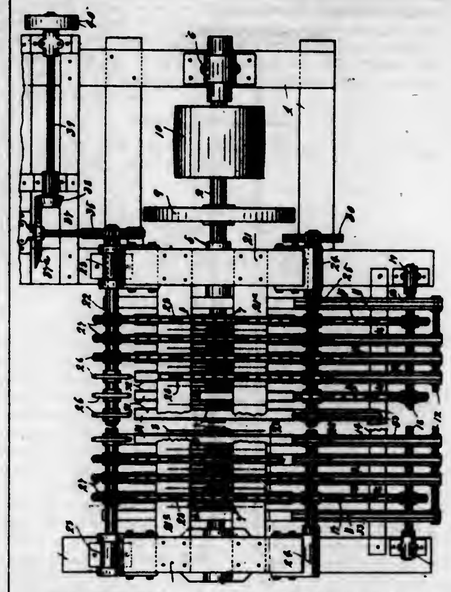

2. In a machine of the character described, the combination with a plurality of saws, on a common arbor, of a feed-deck, through which said saws project, said deck being pivoted for movement into a position clear of said saws, and an overlying feed device comprising a frame pivoted for movement into an inoperative position, and an endless feed-belt mounted on said pivoted frame, substantially as described.

3. In a machine of the character described, the combination with a plurality of saws on a common arbor, of a pivoted feed-deck made up of a plurality of bars passing between said saws, a primary feed-belt made up of a plurality of sprocket-chains, working between the bars of said deck and provided with push-lugs, and an overlying secondary feed-belt comprising a plurality of sprocket-chains having push-lugs, and which secondary feed-belt is pivotally mounted for movement to and from an operative position, substantially as described.

4. In a machine of the character described, the combination with a saw-arbor having a plurality of laterally-spaced saws, removable therefrom by movements longitudinally thereof, of a pivoted feed-deck having a plurality of bars extending between said saws, a pivoted frame overlying said feed-deck and said saws, sprocket-equipped shafts mounted on said pivoted frame, and sprocket-chains running over the sprockets of said shafts and provided with push-lugs working between said saws, substantially as described.

811,883. **PANTOGRAPH.** ALFRED SHAKER, Chicago, Ill. Filed June 2, 1905. Serial No. 263,457.

Claim.—1. In a pantograph, in combination, an anchor; a pencil-holder; a coil-spring having each of its ends connected respectively to one of each parts, one of the connections being adapted to prevent the rotation of the spring; and a tracing-point carried by the spring.

2. In a pantograph, in combination, an anchor; a pencil-holder; a coil-spring having each of its ends connected respectively to one of each parts, one of the connections being adapted to prevent the rotation of the spring; a clip for frictionally engaging the spring; and a tracing-point carried by the clip.

3. In a pantograph, in combination, an anchor; a pencil-holder; a longitudinally-elastic connecting member; a tracing-point carried by the elastic member; and hook-and-eye connections for the elastic member with the anchor and pencil-holder, such connections being disposed to impart the desired direction to the tracing-point.

4. In a pantograph, in combination, an anchor, a pencil-holder,

a coil-spring connecting such parts, the connection between the spring and one of the parts being by means of a hook and eye, and a tracing-point carried by the spring.

811,334. DESK-PAD. ISAAC SENDEL, East Orange, N. J. Filed Sept. 30, 1905. Serial No. 280,786.

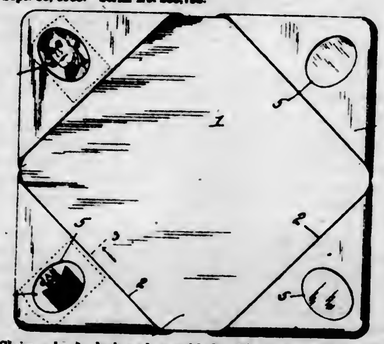

Claim.—1. A desk-pad provided with main corner-pockets adapted to receive the corners of a blotter, the top pieces of said corner-pockets being formed with supplemental pockets open at the inner edges of said main pockets, openings being formed through the tops of said main pockets into the supplemental pockets, whereby the contents of the supplemental pockets may be viewed through the openings in th tops of the main pockets.

2. A desk-pad provided with main corner-pockets formed with top pieces, and supplemental pockets formed in said top pieces.

3. A desk-pad provided with main corner-pockets formed with top pieces and supplemental pockets formed in said top pieces, the entrance to said supplemental pockets being at the inner edges of said top pieces, said top pieces being formed with openings through which the contents of the supplemental pockets may be viewed.

4. A desk-pad provided with main pockets at its corners, the top piece of one of said pockets being provided with a supplemental pocket, an opening being formed in said main pocket through which the contents of said supplemental pocket may be viewed.

811,335. ADJUSTABLE BRACKET. BENJAMIN H. STAUFFENBERG, Germantown, Pa. Filed Nov. 23, 1904. Serial No. 234,023.

Claim.—1. An adjustable bracket comprising two generally triangular parts each provided at or near its apex with a substantially flat lateral face and with an oblong opening perpendicular to its supporting edge, and a single clamping-bolt penetrating both openings, substantially as described.

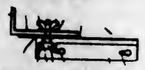

2. An adjustable bracket comprising an arm having a supporting-base and a substantially flat lateral contact-face and an oblong opening, a support having a bearing edge trending in the direction of the bracket and a substantially flat lateral contact face and an oblong opening, and a single bolt penetrating said opening and adapted to clamp and unclamp said contact-faces whereby the support is capable of rotary and linear adjustment in one plane, substantially as described.

3. An adjustable bracket comprising an arm having a perforated flange or base and an oblong opening, a flat contact-face on one side of said opening and ways on the other side of said opening, a support having a bearing edge trending in the direction of the bracket and an oblong opening and a substantially flat contact-face on each side of the last-mentioned opening, and a single clamping-bolt penetrating said openings and having its head arranged in said ways, substantially as described.

811,336. MACHINE FOR CUTTING GEAR-WHEELS. FRANCIS M. STANBAUGH, St. Louis, Mo., assignor to The American Brake Company, St. Louis, Mo., a Corporation of Missouri. Filed Mar. 7, 1906. Serial No. 305,845.

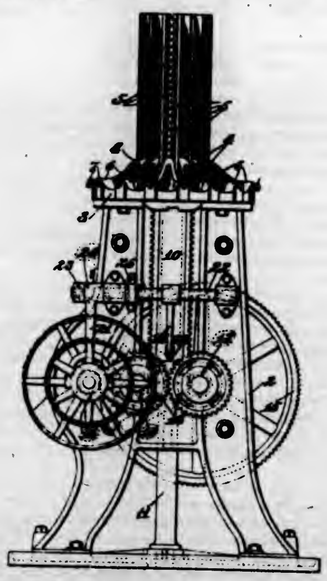

Claim.—1. In a machine of the class described, the combination with a base, of a cap-piece above the base provided with slots diverging from the center and having a central opening, a cutter-head alining with the opening, a plurality of teeth-cutting blades pivotally connected to said cutter-head and arranged in circular series thereon, said blades being guided in the slots in the cap-piece, and the pivots of said blades being above the cap-piece when the cutter-head is at the end of its upward stroke thereby enabling said blades to move out of a vertical plane, and means for actuating the cutter-head to move the blades into a vertical plane for cutting the teeth; substantially as described.

2. In a machine of the class described, the combination with a base, of a cap-piece above the base provided with slots diverging from the center and having a central opening, a cutter-head alining with the opening, a plurality of teeth-cutting blades pivotally connected thereto, said blades being guided in the slots in the cap-piece and the pivots of said blades being above the cap-piece when the cutter-head is at the end of its upward stroke thereby enabling said blades to move out of a vertical position, and means for actuating the cutter-head to move the blades into a vertical plane for cutting the teeth, and for imparting a vertical reciprocatory movement to said blades when acting upon the material to be cut; substantially as described.

3. In a machine of the class described, the combination with a base, of a cap-piece above the base provided with slots diverging from the center and having a central opening, a cutter-head alining with the opening, a plurality of teeth-cutting blades pivotally connected to said cutter-head and arranged in circular series thereon, said blades being guided in the slots in the cap-piece, and the pivots of said blades being above the cap-piece when the cutter-head is at the end of its upward stroke thereby enabling said blades to move out of a vertical plane, means for actuating the cutter-head to move the blades into a vertical plane for cutting the teeth, and a work-holding device concentric with the cutter-head; substantially as described.

4. In a machine of the class described, the combination with a frame having a central opening, a work-holder alining with the opening, a series of blades arranged around the opening, guiding means for said blades, and a reciprocatory actuating device concentric with the opening and having said blades pivotally connected thereto, the pivots of said blades being normally above said guiding means to enable said blades to lie in an approximately horizontal plane, said device being capable of moving the blades to a vertical plane and thence transversely across the material to be cut; substantially as described.

5. In a machine of the class described, a frame, a cap-piece mounted on said frame and provided with a central opening, a plurality of slots formed in said cap-piece and diverging from said central opening toward the periphery of the cap-piece, a reciprocating cutter-head alining with the central opening and having a plurality of teeth-cutting blades pivotally connected thereto, said blades being guided in the slots in the cap-piece and the pivots of said blades being above the cap-piece when the cutter-head is at the end of its upward stroke thereby enabling said blades to move out of a vertical position, and blocks bearing against said blades during the downward stroke of the cutter-head to hold said blades in a vertical position; substantially as described.

6. In a machine of the class described, a frame, a cap-piece mounted on said frame and provided with a central opening, a plurality of slots formed in said cap-piece and diverging from said central opening toward the periphery of the cap-piece, a reciprocating cutter-head alining with the central opening and having a plurality of teeth-cutting blades pivotally connected thereto, said blades being guided in the slots in the cap-piece and the pivots of said blades being above the cap-piece when the cutter-head is at the end of its upward stroke thereby enabling said blades to move out of a vertical position, and adjustable blocks bearing against said blades during the downward stroke of the cutter-head to hold said blades in a vertical position; substantially as described.

7. In a machine of the class described, a frame, a cap-piece mounted on said frame and provided with a central opening, a plurality of slots formed in said cap-piece and diverging from said central opening toward the periphery of the cap-piece, a reciprocating cutter-head alining with the central opening and having a plurality of teeth-cutting blades pivotally connected thereto, said blades being guided in the slots in the cap-piece and the pivots of said blades being above the cap-piece when the cutter-head is at the end of its upward stroke thereby enabling said blades to move out of a vertical position, and blocks adjustably mounted in the side walls of said slots and provided with rollers which bear against the outer edges of said blades during the downward stroke of the cutter-head to hold said blades in a vertical position; substantially as described.

8. In a machine of the class described, the combination with a work-holder, of a cutter-head surrounding said work-holder and having a head provided with peripherally-arranged slots forming upstanding projections, grooves in the upstanding projections, a series of blades arranged in circular series and having trunnions at their lower ends journaled in the grooves in said projections, removable blocks for closing the ends of the grooves, means for holding said blocks in position, and means for reciprocating the cutter-head; substantially as described.

9. In a machine of the class described, the combination with a work-holder comprising a post having a work-engaging end, a reciprocatory cutter-head surrounding said work-holder and having slots in one end, pivoted teeth-cutting blades carried in said slots, a cap-piece surrounding the blades and cutter-head and having guide-grooves, and blade-pressing adjustable blocks working in the guide-grooves in the cap-piece; substantially as described.

10. In a machine of the class described, the combination with a work-holding post, a cutter-head surrounding said post, cutting-blades pivotally carried by said cutter-head, a cap-piece having an opening of greater diameter than the diameter of the cutter-head, and slidably blade-pressing blocks carried by said cap-piece; substantially as described.

811,337. LAP-ROBE. LOUIS S. STRODOK, New York, N. Y. Filed Mar. 28, 1905. Serial No. 252,681.

Claim.—1. A lap-robe comprising a front piece, a lining, a cover, the robe being provided with a plurality of longitudinal openings parallel with each other, the cover on the outside of the robe extending from one of said openings to the other, and a plurality of flaps integrally connected with said cover and secured to the robe one over each opening, the robe having a passage between the openings constituting a muff, said passage being closed on lines extending from the top of one opening to the top of the next and from the bottom of one opening to the bottom of the next.

2. A lap-robe comprising a front piece, a lining and a cover, said robe being provided with a plurality of longitudinal openings and a plurality of flaps connected with said cover, one projecting over each opening, the robe having a passage between the openings constituting a muff, and the front piece constituting the rear wall of said passage.

3. A lap-robe having a piece of fabric secured to the front thereof along lines at the upper and lower edges of said piece of fabric, and provided with openings near the ends of said piece and with flaps integral with the piece of fabric and covering the openings.

811,338. CUTTING AND MEASURING MACHINE. ALFRED P. SWEENY, Helena, Mont. Filed Dec. 16, 1904. Serial No. 237,090.

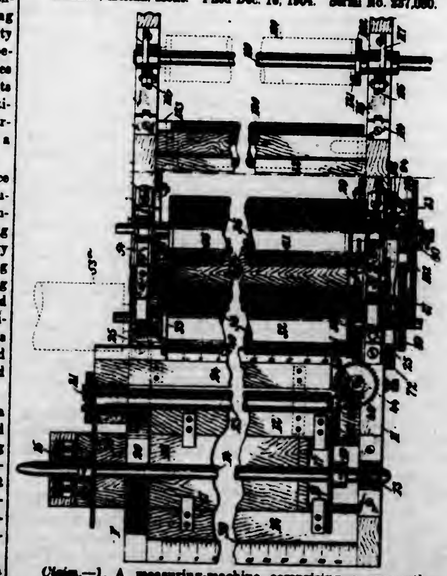

Claim.—1. A measuring-machine comprising a supporting-frame, a rotatable measuring member journaled upon the frame and weighted at one portion of its periphery for overcoming the inertia of said member, and means for locking the measuring member with its weighted portion at one side of the vertical through its journals.

2. A measuring-machine comprising a generally cylindrical measuring-roll having a flattened portion.

3. A measuring-machine comprising a supporting-roll, a rotatable roll having a flattened portion, and means for locking the last-named roll in position with the flattened portion adjacent to the supporting-roll.

4. A measuring-machine comprising a measuring-roll, a lock for the roll, and a rotatable controlling member having a projection for contact with the lock.

5. A measuring-machine comprising a measuring-roll and a lock for the roll comprising a movable latch and an independent movable auxiliary latch pivoted thereto.

6. A measuring-machine comprising a measuring-roll, a lock for the roll, a rotatable controlling member for operating upon the lock, means for turning the controlling member in one direction, and a spring resisting the turning movement.

7. A measuring-machine comprising a measuring-roll, a lock for the roll, and a rotatable controlling member having a projection for contact with the lock and a projection variable in position upon the controlling member, for controlling the operation of the controlling member.

8. A measuring-machine comprising a measuring-roll, a lock for the roll, a rotatable controlling member, means on the controlling member for releasing the lock and means for moving the controlling member when released from the lock.

9. The combination with a rotatable roll, of a locking-disk rotatable therewith, a latch coöperating with the locking-disk, a controlling-disk for releasing the latch, and means for rotating the controlling-disk.

10. The combination with a rotatable roll, of a locking-disk rotatable therewith, a latch coöperating with the locking-disk, a controlling-disk for releasing the latch, and gearing for rotating the controlling-disk.

11. The combination with a rotatable roll, of a locking-disk rotatable therewith, a latch coöperating with the locking-disk, a controlling-disk for releasing the latch, gearing for rotating the controlling-disk in one direction, and means for rotating the controlling-disk in the opposite direction.

12. The combination with a rotatable roll, of a locking-disk rotatable therewith, a latch coöperating with the locking-disk, a controlling-disk for releasing the latch, gearing for rotating the controlling-disk in one direction, and a spring for rotating the controlling-disk in the opposite direction.

13. The combination with a rotatable roll, of a locking-disk rotatable therewith, a latch coöperating with the locking-disk, a controlling-disk for releasing the latch, gearing for rotating the controlling-disk, and means for moving the gearing into and out of coaction, whereby to release the controlling-disk.

14. The combination with a rotatable roll, of a locking-disk rotatable therewith, a latch coöperating with the locking-disk, a controlling-disk for releasing the latch, gearing for rotating the controlling-disk, and means operable by the locking-disk for moving the gearing into and out of coaction, whereby to release the controlling-disk.

15. The combination with a rotatable roll, of a locking-disk rotatable therewith, a latch coöperating with the locking-disk, a bodily-movable controlling-disk, and connections between the locking and controlling disks for effecting this bodily movement.

16. The combination with a rotatable roll, of a locking-disk rotatable therewith, a latch coöperating with the locking-disk, a pivoted arm, a controlling-disk rotatable upon the arm, and a lever connected with the controlling-disk and movable by the locking-disk.

17. The combination with a rotatable roll, of a locking-disk rotatable therewith and having a cam-shaped periphery, a latch coöperating with the locking-disk, a pivoted arm, a controlling-disk rotatable upon the arm, and a lever connected with the controlling-disk and contacting with the periphery of the locking-disk.

18. The combination with a rotatable roll, of a locking-disk rotatable therewith, a latch coöperating with the locking-disk, a bodily-movable controlling-disk, connections between the locking and controlling disks for effecting this bodily movement, and means for fixing the controlling-disk against bodily movement.

19. A measuring-machine comprising a measuring-roll, a lock for the roll, a rotatable controlling member having a projection for contact with the lock and also having a series of openings, a pin which may be located in one or another of the openings, and a stop member with which the pin contacts.

20. A measuring-machine comprising a measuring-roll, a lock for the roll, a rotatable controlling member having a projection for contact with the lock and also having a series of openings, a pin which may be located in one or another of the openings, a stop member with which the pin contacts, and a spring serving to move the pin toward the stop member.

21. A measuring-machine comprising a measuring-roll, a lock for the roll, a rotatable controlling member having a projection for contact with the lock and also having a series of openings, a pin which may be located in one or another of the openings, a stop member with which the pin contacts, a spring serving to move the pin toward the stop member, and gearing for moving the pin in the opposite direction.

22. The combination with a supporting-frame, of a delivery-roll for the material, rolls for operating upon the material, a scale situated adjacent to the operating-rolls, and a second scale mounted upon the frame on the opposite side of the delivery-roll from the first-named scale.

23. The combination with a supporting-frame, of a delivery-roll and a receiving-roll mounted near opposite ends thereof, a pair of cutting-rolls situated adjacent to the delivery-roll, and a measuring-roll located between the cutting-rolls and the receiving-roll.

24. The combination with a supporting-frame, of bearings mounted near opposite ends thereof, a delivery-roll journaled in one set of bearings, a receiving-roll journaled in the other set, a driving member connected with the receiving-roll, means for removably locking said receiving-roll in its bearings, and cutting and measuring rolls situated between the delivery and receiving rolls.

811,839. **BEARING FOR SPINDLES OF GRINDING-MACHINES.** RICHARD R. TOOKE, Providence, R. I., assignor to Iroquois Machine Company, Bedford, N. Y., a Corporation of New York. Filed June 11, 1902. Serial No. 111,221.

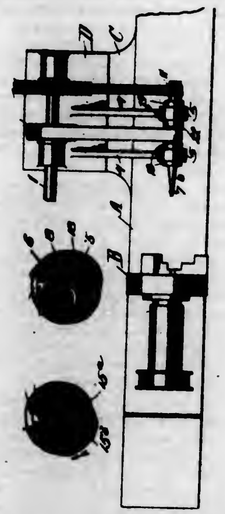

Claim.—1. In a device of the class described, a tool-spindle, bearings therefor, means for rotating said spindle, and means for rotating said bearings, said spindle and said bearings both being adapted to rotate upon the same axis of rotation.

2. In a device of the class described, a tool-spindle, a sleeve surrounding said spindle and provided with bearings therefor, and independent means for rotating said spindle and said sleeve upon the same axis of rotation.

3. In a device of the class described, a tool-spindle, a sleeve through which said spindle passes provided with bearings therefor, independent bearings for said sleeve, and means for rotating said sleeve and said bearings independently upon the same axis of rotation as that of said sleeve.

4. In a grinding-machine, in combination, a tool-spindle 6, a bearing-sleeve 8 therefor, additional bearings for said bearing-sleeve 8, and means for rotating said tool-spindle and said bearing-sleeve independently upon a common axis of rotation.

5. In a grinding-machine, in combination, a tool-spindle 6, a sleeve 8 through which said spindle passes and provided with a bearing-surface 10 coöperating with the cone-bearing 9 on one end of said spindle, a pulley 11 mounted to the other end of said spindle and having a bearing on said sleeve 8, independent bearings for said bearing-sleeve, a pulley carried with said bearing-sleeve, and means for driving said pulleys independently.

6. In combination, a tool-spindle 6, a sleeve 8 through which said spindle passes, said spindle being provided with bearing-surfaces coöperating with corresponding bearing-surfaces within said sleeve, a pulley 11 having a bearing upon the end of said sleeve, and means for connecting said pulley to said spindle so that said spindle will be driven thereby and with a provision for lost motion in such connection.

7. In combination, a tool-spindle 6, a sleeve 8 through which said spindle passes, said spindle being provided with bearing-surfaces coöperating with corresponding bearing-surfaces within said sleeve, a pulley 11 upon the outer end of said sleeve, a collar 12 connected to the outer end of said spindle, and the pins 13 projecting from said pulley 11 and fitting loosely in holes in said collar, whereby said spindle is driven from said pulley with a certain amount of lost motion therebetween.

8. In combination, a tool-spindle 6, a sleeve 8 through which said spindle passes, said spindle and sleeve being provided with corresponding bearing-surfaces 9 and 10 at one end thereof, the other end of said spindle being threaded and provided with a bearing 6ª adjustable thereon and coöperating with a suitable bearing-surface within said sleeve, a pulley 11 having a bearing upon the outer end of said sleeve, a collar 12 connected to the outer end of said spindle, connections between said collar and said pulley, and means for driving said pulley.

9. In combination, a tool-spindle 6, a sleeve 8 through which said spindle passes, said spindle and sleeve being provided with corresponding bearing-surfaces 9 and 10 at one end thereof, the other end of said spindle being threaded and provided with a bearing 6ª adjustable thereon and coöperating with a suitable bearing-surface within said sleeve, the pulley 11 having a bearing upon the outer end of said sleeve, the collar 12 connected to said pulley, the pin-and-groove connection between said collar and said bearing 6ª, and the locking and adjusting nut 12ª on the end of said spindle, substantially as and for the purposes set forth.

10. In a device of the class described, a tool-spindle, bearings within which said spindle is freely rotatable, and bearings within which said first-mentioned bearings are freely rotatable said spindle and said first-mentioned bearings being adapted to rotate upon a common axis of rotation.

11. In a device of the class described, a tool-spindle, bearings therefor, and common means for rotating said spindle and said bearings upon the same axis of rotation.

12. In a device of the class described, a tool-spindle, bearings therefor, and common means adapted to rotate said spindle and said bearings at different speeds upon a common axis of rotation.

13. In a device of the class described, a tool-spindle, a sleeve surrounding said spindle and provided with bearings therefor, said spindle being equidistant from the surrounding walls of said sleeve and means adapted to rotate said tool-spindle and said sleeve simultaneously at different rates of speed.

14. In combination, a spindle, concentrically-arranged bearings within which said spindle is mounted, concentrically-arranged bearings within which said first-mentioned bearings are mounted, and means adapted to rotate said spindle and said first-mentioned bearings simultaneously at different rates of speed.

15. In combination, a spindle, a sleeve within which said spindle is freely rotatable, concentrically-arranged bearings within which said sleeve is freely rotatable, and means adapted to rotate said sleeve and said spindle simultaneously in the same direction at different rates of speed.

16. In a grinding-machine, in combination, a tool-spindle, bearings within which said spindle is rotatable, and bearings within which said first-mentioned bearings are freely rotatable, said spindle and said first-mentioned bearings being adapted to be independently rotated and during each rotation to remain in the same relative position with respect to the article to be ground.

811,840. **ATTACHMENT FOR ELECTRIC CONTROLLERS.** FERDINAND VOLK, Pittsburg, Pa. Filed Sept. 12, 1905. Serial No. 278,128.

Claim.—1. In a device of the character described, the combination of a plate, staggered lugs carried on said plate, a controller-shaft, a cap carried on said shaft, an operating-lever mounted upon said cap, a movable plate carried by said shaft, a vertically-movable spring-pressed pawl carried by said plate and adapted to contact with said lugs, a second lever slidably mounted on the operating-lever and provided with a cam-opening, a pin connecting said plate and said second lever, a rotary handle carried by the operating-lever, a lug carried by said handle and operating in said cam-opening to move said plate when the handle is rotated, substantially as described.

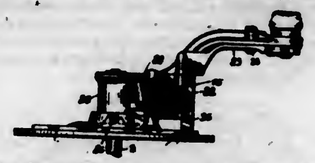

2. In a device of the character described, the combination of a plate, lugs carried on said plate and arranged in staggered relation to one another, and a controller-shaft with a movable plate mounted on the shaft and having a pawl adapted to engage said lugs, an operating-lever carried by the shaft, a second lever slidably mounted on the operating-lever and connected to said plate, a rotary handle mounted on said operating-lever, means actuated by said handle to move said plate.

3. In a device of the character described, the combination of a plate, staggered lugs carried by said plate, a controller-shaft, an operating-lever mounted on said shaft, a plate movably mounted on the shaft, a spring-impelled pawl carried by said plate and adapted as the plate is moved on the lever to successively engage said staggered lugs, a rotary handle mounted on the operating-lever, means carried by the handle to move said plate.

4. In a device of the character described, the combination with a controller-shaft, lugs arranged in staggered relation concentric to the shaft, a cap mounted on the shaft, an operating-lever mounted on said cap, a sliding plate mounted on the cap, a rotary handle mounted on the operating-lever, means carried by the handle for moving the plate in opposite directions accordingly as the handle is turned in one direction or the other.

5. In a device of the character described, the combination of a controller-shaft, a plurality of staggered lugs arranged concentrically to the shaft, a cap carried by said shaft, an operating-lever carried by said cap, a rotary handle carried by the operating-lever, engaging means movable concentrically to the shaft and adapted to successively engage said lugs, means actuated by said rotary handle for moving said engaging means in a direction radial to the shaft.

6. The combination of a controller-shaft, a plate, staggered lugs thereon, a cap carried by said shaft, an operating-lever mounted on said shaft, a rotary handle on the operating-lever, a pawl adapted to be moved concentrically on the shaft by the movement of the operating-lever and longitudinally of the operating-lever by the rotary movement of the handle.

7. The combination with a controller-shaft, and an operating-lever, of a cap carried by said shaft and adapted to support said lever, a rotary handle carried by the lever, and means operable by the rotation of the handle for permitting successive limiting movement of the operating-lever.

811,841. **MOVING-PICTURE APPARATUS.** ROBERT C. WAGNER, Toledo, Ohio. Filed Dec. 3, 1904. Serial No. 235,239.

Claim.—1. The combination in a mutoscope, of a rotary hub, a series of pictures mounted on said hub, means for rotating the hub, a stationary light arranged to illuminate the pictures carried by the hub, a party-colored cylinder surrounding said light, and means whereby said cylinder will be revolved simultaneously with the revolving of the hub.

2. In a mutoscope, the combination of a case, a spider mounted to revolve in said case, a plurality of hubs journaled in said spider, mutoscopic pictures mounted on said hubs, means for revolving the spider so as to bring the hubs successively to a predetermined point, and means for revolving each hub after it has reached said predetermined point.

3. In a mutoscope, the combination of a case, spiders revolubly mounted in said case, a plurality of hubs mounted in said spiders, means for revolving the spiders to bring the hubs successively to a predetermined position, and within the range of vision, means for stopping the revolution of the spiders when one of said hubs has reached each predetermined position, means for revolving the hub which has reached the aforesaid position, means for automatically releasing the spiders when the hub has made a complete revolution, means for automatically stopping the next-succeeding hub at the position occupied by the hub first thrown into action.

4. In a mutoscope, the combination of a rotary spider, a plurality of mutoscopic hubs mounted on said spider and carrying mutoscopic pictures, a manually-operated shaft, a clutch member carried by said shaft, a shaft operably connected to and adapted to turn said spider, a clutch member carried by the last-mentioned shaft, means carried by said shaft for turning one of the hubs, a solenoid having a core connected to the last-named clutch member, electrical circuits including said solenoid, means for completing said circuit and thereby energizing the solenoid whereby said clutch members will be brought into engagement with one another.

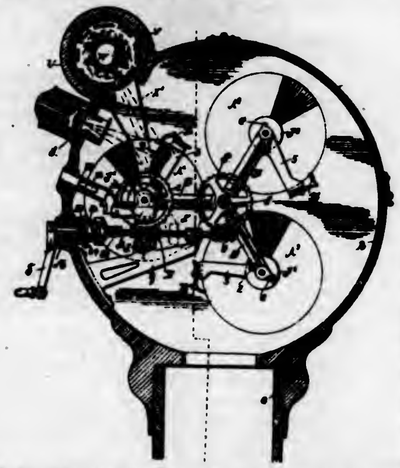

5. In a mutoscope, the combination of a plurality of mutoscopic hubs each furnished with a set of pictures, means for successively bringing the pictures on each hub into sight, and means for revolving each hub when brought into sight so as to successively expose the pictures thereon to view.

6. In a moving-picture apparatus, the combination of a plurality of sets of moving pictures, means for successively bringing each set of pictures into a position to be viewed, and means for operating each set of pictures so as to produce a moving-picture effect.

7. In a moving-picture apparatus, the combination of a plurality of sets of moving pictures, means for successively bringing each set into view, means for illuminating the pictures when brought into view, and means for changing the character of the illumination during the time the pictures are being viewed.

8. In a mutoscope, the combination with a hub of springs projecting from said hub, radially-slotted rings carried by said springs and adapted to receive the edges of picture-mountings.

811,342. OIL-CLOTH-PRINTING MACHINE. WILLIAM H. WALDRON, New Brunswick, N. J. Filed Apr. 10, 1905. Serial No. 254,662.

Claim.—1. An oil-cloth-printing machine having a block provided with a printing-face arranged parallel with the surface of the fabric to be printed, means for reciprocating the said block to move the printing-face into contact with the surface of the fabric to make the impression, and means for shifting the block over the fabric and parallel to the surface thereof during the time the block is in contact therewith.

2. An oil-cloth-printing machine having a block provided with a printing-face arranged parallel with the surface of the fabric to be printed, and means for shifting the printing-block parallel with the surface of the fabric during the time the printing-face is in contact therewith.

3. An oil-cloth-printing machine having a block provided with a printing-face arranged parallel with the surface of the fabric to be printed, and means for shifting the printing-block transversely of the fabric and parallel with the surface thereof during the time the printing-face is in contact therewith.

4. An oil-cloth-printing machine having a block provided with a printing-face arranged parallel with the surface of the fabric to be printed, and means for shifting the printing-block across and back over the fabric and parallel therewith during the time the printing-block is in contact with the fabric.

5. An oil-cloth-printing machine having a printing-block, a frame carrying the said printing-block, means for intermittently lowering and raising the said printing-block, guideways for the side arms of the said frame to slide in, the guideways being mounted to rock, and means for imparting a rocking motion to the said guideways in unison with the said means for intermittently lowering and raising the said block.

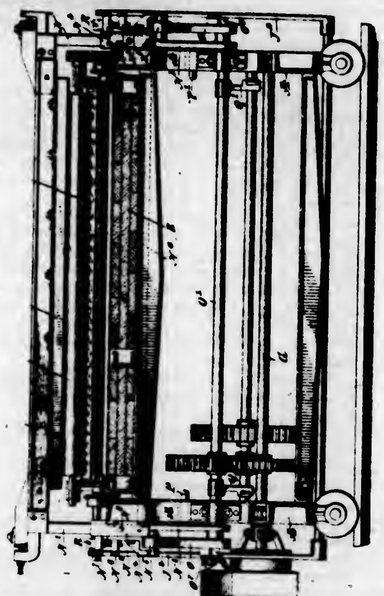

6. An oil-cloth-printing machine having a printing-block, a frame carrying the said printing-block, means for intermittently lowering and raising the said printing-block, guideways for the side arms of the said frame to slide in, the guideways being mounted to rock, pins mounted to slide and adapted to successively engage the side arms of the said frame, and cam-arms engaging the said pins successively.

7. An oil-cloth-printing machine having a printing-block, a frame carrying the said printing-block, means for intermittently lowering and raising the said printing-block, guideways for the side arms of the said frame to slide in, the guideways being mounted to rock, pins mounted to slide and adapted to successively engage the side arms of the said frame, and cam-arms engaging the said pins successively, the said cam-arms being secured on the operating-shaft of the said lowering and raising means.

8. In an oil-cloth-printing machine and in combination, a support for the fabric, a plurality of blocks arranged transversely of the support and spaced apart from each other, each of the blocks provided with a printing-face arranged parallel to the surface of the support, means for simultaneously moving the blocks into contact with the fabric upon the support, and means to simultaneously shift the blocks transversely of the support and parallel to the surface thereof while in contact with the fabric.

9. In an oil-cloth-printing machine and in combination, a support for the fabric, means for impressing a figure upon the fabric while on the support and comprising a block having a printing-face parallel with the surface of the support, and means for shifting said impressing means transversely of the fabric while in contact therewith.

10. In an oil-cloth-printing machine and in combination, a support for the fabric, means for impressing a figure upon the fabric while on the support and comprising a block provided with a printing-face parallel to the surface of the support, and means for shifting the impressing means as a whole transversely of the support and with the printing-face parallel to the surface thereof while in contact with the fabric.

811,348. HOSE-CLAMP. WARD C. WALKER, Baltimore, Md. Filed July 7, 1905. Serial No. 268,681. (Model.)

Claim.—1 A hose-clamp, formed of a single piece of sheet metal, consisting of a longitudinally-slotted band portion narrowed into a tongue-like extension at its outer end, said extension having a centrally-arranged series of perforations and a double series of teeth formed therein; and a cup-shaped head portion adapted to receive said tongue extension, having a perforation therein through which said band may be engaged, a strap or cross-piece at its forward end and forwardly-projecting tongue-like projections over which said band is arranged when adjusted upon a hose, and a downwardly and rearwardly projecting double pawl.

2. A hose-clamp, formed of a single piece of sheet metal, consisting of a longitudinally-slotted band portion narrowed into a tongue-like extension at its outer end, said extension having a centrally-arranged series of perforations and a double series of teeth formed therein; and a cup-shaped head portion adapted to receive said tongue extension, having a perforation therein through which said band may be engaged, a strap or cross-piece at its forward end over which said band is arranged when adjusted upon a hose, and a downwardly and rearwardly projecting double pawl.

3. A hose-clamp, formed of a single piece of sheet metal, consisting of a longitudinally-slotted band portion narrowed into a tongue-like extension at its outer end, said extension having a centrally-arranged series of perforations and a double series of teeth formed therein; and a cup-shaped head portion adapted to receive said tongue extension, having a perforation therein through which said band may be engaged, and a downwardly and rearwardly projecting double pawl.

4. A hose-clamp, formed of a single piece of sheet metal, consisting of a band portion having a centrally-arranged series of perforations and a double series of teeth formed therein; and a cup-shaped head portion adapted to receive said band, having a perforation therein through which said band may be engaged, a strap or cross-piece at its forward end and forwardly-projecting tongue-like projections, over which said band is arranged when adjusted upon a hose, and a downwardly and rearwardly projecting double pawl.

5. A hose-clamp, formed of a single piece of sheet metal, consisting of a band portion having a centrally-arranged series of perforations and a double series of teeth formed therein; and a cup-shaped head portion adapted to receive said band, having a perforation therein through which said band may be engaged, a strap or cross-piece at its forward end over which said band is arranged when adjusted upon a hose, and a downwardly and rearwardly projecting double pawl.

6. A hose-clamp, formed of a single piece of sheet metal, consisting of a band portion having a centrally-arranged series of perforations and a double series of teeth formed therein; and a cup-shaped head portion adapted to receive said band, having a perforation therein through which said band may be engaged, and a downwardly and rearwardly projecting double pawl.

7. A hose-clamp formed of a single piece of sheet metal, consisting of a band portion having teeth formed therein; and a head portion adapted to receive said band, having an opening therein through which said band may be engaged, a strap or cross-piece at its forward end, and forwardly-projecting tongue-like projections over which said band is arranged when adjusted upon a hose, and a downwardly and rearwardly projecting pawl.

8. A hose-clamp, formed of a single piece of sheet metal, consisting of a band portion having teeth formed therein; and a head portion adapted to receive said band, having an opening therein through which said band may be engaged, a strap or cross-piece at its forward end, over which said band is arranged when adjusted upon a hose, and a downwardly and rearwardly projecting pawl.

9. A hose-clamp, consisting of a band portion, having a centrally-arranged series of perforations and a double series of teeth formed therein; and a head portion adapted to receive said band, having an opening therein through which said band may be engaged, having a cross-piece at its forward end over which said band is arranged when adjusted upon a hose, and a downwardly and rearwardly projecting double pawl.

10. A hose-clamp, consisting of a band portion having a centrally-arranged series of perforations and a double series of teeth formed therein; and a head portion adapted to receive said band, having an opening therein through which said band may be engaged, and a downwardly and rearwardly projecting double pawl.

11. A hose-clamp, consisting of a band portion having teeth formed therein; and a head portion adapted to receive said band, having an opening therein through which said band may be engaged, having a cross-piece at its forward end over which said band is arranged when adjusted upon a hose, and a downwardly and rearwardly projecting pawl.

12. A hose-clamp, consisting of a band portion, having a centrally-arranged series of perforations and a double series of teeth therein; and a head portion adapted to receive said band, having an opening therein through which said band may be engaged, and a downwardly and rearwardly projecting double pawl.

811,344. LIFTING DEVICE. JOHN C. WARE, St. Louis, Mo. Filed Oct. 27, 1905. Serial No. 284,748.

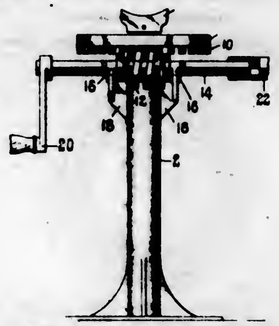

Claim.—A lifting device comprising a standard, a screw-shaft loosely mounted in said standard and provided at its upper end with a bearing-block adapted to engage a portion of a vehicle, a gear rotatably mounted on the upper end of said standard and having threads which engage the threads of the screw-shaft, the teeth on said gear comprising a plurality of pins, arms carried by said standard and provided with open bearings, a shaft mounted in said bearings and having a worm connected thereto which engages the teeth on said gear, and a device on said shaft by which it may be rotated for causing the screw-shaft to elevate the vehicle; substantially as described.

811,345. TIRE-PROTECTOR. HARRIS WAXMAN, New York, N. Y. Filed Nov. 3, 1904. Serial No. 231,280.

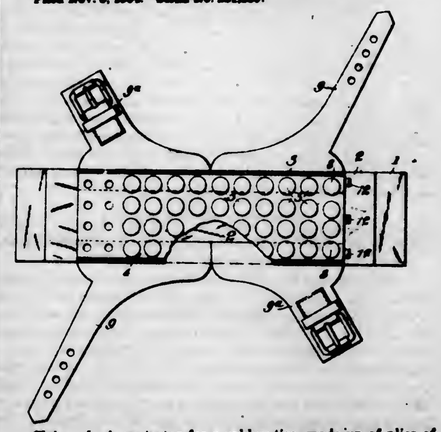

Claim.—1. A protector for a rubber tire, made up of plies of strong, flexible material and provided at its ends, which are united to form an endless band, with an overlapping metal plate and securing screws and nuts, said protector being provided also with metal rivets having exposed heads, and some of the plies of the material overlapping at the joint where the ends of the protector are joined together.

2. A protector for a rubber tire, composed of sections, said sections each being composed of an inner ply, an outer ply, and an intermediate ply, all of tough, flexible material, the inner and intermediate plies being connected by marginal rows of stitching and the in-

terconnecting and outer plies connected by headed rivets, the said rivets, straps with buckles on the respective edges of the section for securing it to the tire, and means for securing the sections together end to end when in place.

3. A protector for a rubber tire, composed of sections, one for each spoke in the wheel, and each section having two straps at each edge near its end, said straps projecting obliquely from the section and those on the same side diverging.

4. A protector for a rubber tire composed of sections provided with hook-and-eye fastenings for connecting the several sections together detachably, the terminal sections having the joint between them overlapped by a plate secured by screws and nuts, each of said sections being made up of plies of strong flexible material and some of said plies overlapping at the joint.

811,846. **REGULATING-SPRING.** JOSEPH P. WEBER, Pittsburg, Pa. Filed Sept. 21, 1903. Serial No. 174,661.

Claim.—1. A regulating-spring of the form of a logarithmic spiral.

2. A regulating-spring of logarithmic spiral form in which the space between the coils gradually decreases from the outer coil to the innermost coil.

811,847. **INDOOR-GOLF GAME APPARATUS.** MARSHALL WHITLATCH, Westfield, N. J. Filed Nov. 26, 1904. Serial No. 234,127.

Claim.—The combination in an indoor-golf game apparatus, of circular disks divided into sections to indicate the strokes; a smooth block with a spindle upon it, round which these disks are spun and an arrow painted on the block pointing toward the spindle; together with one or more golf-boards, each board containing one of the holes of a golf-course painted upon it; the blocking off of the golf-boards into squares with small holes or perforations made at all of the intersecting points of these squares into which is placed a peg to locate the position of the ball on the links, and means on the board to indicate the disk to be spun, all substantially as set forth.

811,848. **FISHING-TOOL FOR OIL-WELLS.** ADRAN W. WOLF, Ames, W. Va. Filed Sept. 25, 1905. Serial No. 280,045.

Claim.—1. A fishing-tool consisting of a head, a tubular member having an enlarged bore and a series of ratchet-teeth formed in its bottom, a gripping-head having a stem portion fitting into said tubular member, a cap carried by said head and fitting in said tubular member said gripping-head having ratchet-teeth adapted to be engaged by the first-named ratchet-teeth, the lower end of said gripping-head having a recess formed therein, the bottom of said head having ratchet-teeth formed thereon, means to retain said gripping-head in engagement with said tubular member, substantially as described.

2. A fishing-tool for drilling-tools consisting of a head having a contracted portion, a tubular member screwing on the contracted portion of the head, said tubular member having a central bore enlarged at its upper end, a grip-head adapted to engage said drilling-tools, said grip-head being adapted to fit in said tubular member and carrying a removable dog fitting in the enlarged bore of the tubular member, means to retain said gripping-head by suddenly projecting said tubular member upon said head, substantially as described.

811,848.

811,849. **STOVE OR FURNACE.** ARCH W. WOODWARD, Rockford, Ill. Filed Apr. 1, 1904. Serial No. 201,606.

Claim.—1. In a stove or furnace, in combination, a stove-body; a fire-chamber; a fuel-magazine; a coal-supporting plate in said magazine; and a reciprocatory slide supported upon the bottom wall of the fuel-magazine beneath said coal-supporting plate, said slide being provided with ridges on its under side.

2. In a stove or furnace, in combination, a fire-chamber; a fuel-magazine; a gate for partitioning off the fuel-magazine from the fire-chamber, said gate being adapted to close the opening between said chamber and magazine; a feed-slide toward which said gate closes; and means for reciprocating said feed-slide.

3. In a stove or furnace, in combination, a fire-chamber; a fuel-magazine; a curved gate for partitioning off the fuel-magazine from the fire-chamber, said gate being mounted to swing bodily in the arc of a circle; a feed-slide toward which said gate closes; and means for reciprocating said feed-slide.

4. In a stove or furnace, in combination, a fire-chamber; a fuel-magazine comprising a storage-chamber and a feeding-chamber; a gate for partitioning off the feeding-chamber from the storage-chamber; a coal-supporting plate in said storage-chamber; and a feed-slide supported beneath said coal-supporting plate.

5. In a stove or furnace, in combination, a fire-chamber; a fuel-magazine comprising a storage-chamber having an inclined bottom and a feeding-chamber; a gate for partitioning off the feeding-chamber from the storage-chamber; an inclined coal-supporting plate in said storage-chamber; and a feed-slide supported on the inclined bottom of said storage-chamber beneath said coal-supporting plate and extending into the feeding-chamber.

6. In a stove or furnace, in combination, a fire-chamber; a fuel-magazine; a movable member in said magazine for preventing clogging; a coal-supporting plate in said magazine; and a feed-slide supported beneath said coal-supporting plate.

7. In a stove or furnace, in combination, a fire-chamber; a fuel-magazine comprising a storage-chamber and a feeding-chamber; a gate for partitioning off the feeding-chamber from the storage-chamber; a scraper-plate in said storage-chamber for preventing clogging; a coal-supporting plate in said storage-chamber; and a feed-slide supported beneath said coal-supporting plate.

811,850. **ADJUSTABLE MEANS FOR RODS, BARS, OR CABLES.** CHARLES H. WISSEY and WILLIAM B. MARSHALL, Clearfield, Pa. Filed Sept. 8, 1905. Serial No. 277,893.

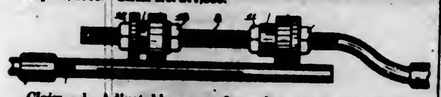

Claim.—1. Adjustable means for rods or bars consisting of a bar, lugs carried by said bar, cups mounted in said lugs, a screw-threaded rod extending through said cups, jam-nuts mounted upon said rod and adapted to lock said rod in engagement with said bar, substantially as described.

2. Adjustable means for rods and bars consisting of a bar, two lugs carried by said bar, a rod extending through both of said lugs, nuts adjustably mounted upon said rod on both sides of both lugs and adapted to lock said rod in engagement with said bar, substantially as described.

3. A device of the character described, consisting of a bar, lugs carried by said bar, cups mounted in said lugs, a rod extending through said cups, means for securing said rod in engagement with said cups, substantially as described.

4. In a device of the character described, the combination with rods of a bar adapted to be fixed to one of said rods, two lugs carried by said bar, a third rod extending through both of said lugs, and means to secure the end of said third rod in engagement with both of said lugs, substantially as described.

5. In a device of the character described, the combination with rods, of a bar adapted to be secured to one of said rods, a curved rod adapted to be secured to the other of said rods, lugs carried by said bar and adapted to receive the end of said curved rod, means for adjustably securing the ends of said rod in said lugs, substantially as described.

811,851. **KNIFE FOR AUGER-BITS.** ELSIE A. WYCKOFF, Stamford, Conn., administratrix of Frank T. Wyckoff, deceased, assignor to The Wyckoff Pipe and Creosoting Company, Stamford, Conn., a Corporation. Filed Apr. 28, 1905. Serial No. 257,999.

Claim.—1. An auger-bit comprising a removable cutter or bit proper, having circular or arcuate lateral edge portions a shell carrying the latter and having downward-extending arcuate lugs or flanges conforming to the aforesaid corresponding portions of the cutter or bit, a sleeve or washer having corresponding lugs contacting with the aforesaid lugs to provide for the reception between said shell and washer of said bit or cutter proper, a bolt passing through said washer and shell, and concentric with said circular edge portions and said flanges, and means to secure the several parts together.

2. An auger-bit comprising a removable cutter or bit proper, a shell carrying the latter and having axially-extending lugs or flanges, a sleeve or washer having corresponding flanges or lugs effective with the aforesaid flanges or lugs to provide for the reception between said sleeve and shell of said cutter or bit proper, a bolt passing through said washer and shell and having a notched inner end disk adapted to receive a dowel or pin of said bit-carrying shell, and means for securing said bolt in place against longitudinal displacement.

3. An auger-bit comprising a head or shell having downward-extended arcuate lugs and intermediately of the latter a central aperture and also a dowel or pin projecting from its inner surface, the removable bit proper having tangential lips and a central apertured portion resting upon said shell between said arcuate lugs, a sleeve or washer having upon its upper surface also arcuate lugs opposed to the aforesaid corresponding lugs to provide for the seating of said bit proper, a securing-bolt inserted through said shell or head, said cutter of bit proper and said sleeve or washer, and having an inner end notched disk adapted to receive said dowel or pin, and interlocking nuts screwed upon the projecting end of said securing-bolt.

4. A device of the character described, comprising a tubular carrying-head equipped with arcuate lugs or flanges, a sleeve having corresponding lugs or flanges contacting with the aforesaid lugs, a removable cutter or bit proper centrally seated between said lugs, said head having a central bolt-receiving aperture and equipped with a dowel, also dowel-receiving apertures, and a bolt passing through said sleeve and said cutter or bit and having applied to one end thereof means for securing it in place and provided at its opposite end with a disk having a notch receiving the projecting end of said dowel.

811,852. **SELF-GOVERNING CLUTCH.** ROBERT B. WYNN, Indianapolis, Ind., assignor to Hendricks Novelty Company, Indianapolis, Ind., a Corporation of Indiana. Filed June 22, 1905. Serial No. 266,643.

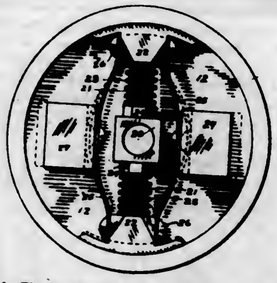

Claim.—1. The combination with a pulley and a shaft, of a self-governing clutch for transmitting power from one to the other consisting of oppositely-extending stems carried by the shaft, spring-actuated clutch-shoes slidably mounted on the stems and in engagement with the pulley, yielding means connecting said clutch-shoes, and weights secured to said yielding means so that the weights under high speed will reduce the pressure of the clutch-shoes against the pulley.

2. The combination with a driving-pulley and a driven shaft of oppositely-extending governor-stems secured to the shaft, brake-shoes slidably mounted on said stems, springs tending to push said brake-shoes into engagement with the pulley, a pair of bow-springs, one on each side of the shaft, that connect said brake-shoes, and a weight secured to the middle of each bow-spring revolving in a common plane.

3. The combination with a shaft of a pulley consisting of a rim, a hub loosely mounted on the shaft and nearer than the rim, a side plate secured to the rim and hub, a plate secured to the end of the shaft and closing the opening, and a self-governing clutch mounted on said shaft and within said pulley.

811,853. **HORSESHOE.** HILLARD H. YOUNG, Catskill, N. Y. Filed Feb. 23, 1905. Serial No. 246,223.

Claim.—The combination with a horseshoe provided with integral downwardly-extending dovetail projections having dovetail grooves open at both ends and of the same width throughout their

length and registering holes, the exterior side and end faces of said projections slanting inwardly and being straight, cleats of the shape of an equilateral triangle, each having a hole registering with the holes in the projection in which it is supported, the side and end faces of said cleats slanting inwardly and the end faces of the projections and cleats being flush, and pins passing through the holes in the projections and cleats, thereby securing said cleats removably in place, substantially as described.

811,854. LEVELER FOR FORMS OF TYPE. ANTHUR S. ALLEN, Brookline, Mass., assignor to United Printing Machinery Company, Boston, Mass., a Corporation of Maine. Filed Mar. 17, 1904. Serial No. 198,899.

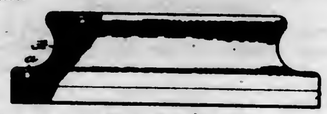

Claim.—A type-leveling block comprising a body portion having a deep broad groove on its opposite edges or sides by which to hand-manipulate the block, and having parallel upper and lower surfaces, and a detachable facing for each of said surfaces disposed in parallel planes, said facing being formed of non-metallic, non-ligneous material to receive the impact of a pounding-tool and transmit the same to the type without injury.

811,855. PICTURE-FRAME. EDGAR G. ANTHONY, New York, N. Y. Filed May 16, 1905. Serial No. 260,624.

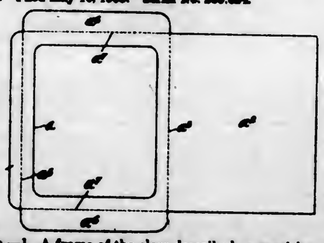

Claim.—1. A frame of the class described, comprising a frame member having a folding side member at one side thereof adapted to be folded over and to form the back of the frame, folding end members and a folding strip opposite the folding side member adapted to be folded over the corresponding edges of the side member, substantially as shown and described.

2. A frame of the class described, comprising a frame member having a folding side member at one side thereof adapted to be folded over and to form the back of the frame, folding end members and a folding strip opposite the side member adapted to be folded over the corresponding edges of the side member, and means for securing the said parts together at points around the frame member, substantially as shown and described.

3. A frame of the class described, composed of a blank stamped from sheet metal and comprising a frame member, a folding side member connected with one side thereof and adapted to be folded over the frame member and to form the back of the frame, a folding strip opposite the folding side member and folding end members at each end of the frame, substantially as shown and described.

811,856. SELF-LUBRICATING WHEEL. THOMAS G. AUSTRAW, Fairmont, W. Va. Filed June 23, 1905. Serial No. 266,495.

Claim.—1. A self-lubricating wheel comprising wheel-body having a lubricating-chamber closed at one end and an integral cap for closing the other end of said chamber, said cap having a permanently-open passage to permit of the insertion and removal of means for securing the wheel to a support without interfering with the cap.

2. In a self-lubricating wheel, a wheel-body comprising a hub having a plurality of outlet-openings, a sleeve surrounding said integral with the hub and forming a lubricant-chamber and a cap projecting away and integral with the hub and sleeve and having a lubricant-feed passage communicating with said chamber.

3. In a self-lubricating wheel, a wheel-body comprising a hub having a plurality of outlet-openings, a sleeve surrounding and integral with the hub and forming a lubricant-chamber and a cap projecting away and integral with the hub and sleeve and having portions thereof forming a passage for the insertion and removal of means for securing the wheel upon a support without interfering with the cap.

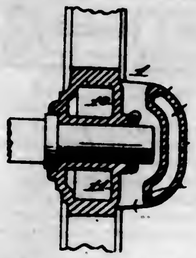

4. In a self-lubricating wheel provided with a lubricant-chamber, the combination with the bottom, top and one end wall of said chamber, of closure means for the other end of said chamber and for forming a passage to permit of the insertion and removal of means for securing the wheel upon a support, said closure means consisting of a cap formed of a pair of members integral with and projecting away from one end of said top and bottom walls of said chamber, an inner wall integral with said top and bottom walls of the chamber and with the said members and projecting therefrom, and an outer wall inclosing said inner wall and integral with said members and top and bottom walls of the chamber and projecting away therefrom.

5. In a self-lubricating wheel provided with a lubricant-chamber, the combination with the bottom, top and one end wall of said chamber, of closure means for the other end of said chamber and for forming a passage to permit of the insertion and removal of means for securing the wheel upon a support, said closure means consisting of a cap formed of a pair of members integral with and projecting away from one end of said top and bottom walls of said chamber, an inner wall integral with said top and bottom walls of the chamber and with the said members and projecting therefrom, and an outer wall inclosing said inner wall and integral with said members and top and bottom walls of the chamber and projecting away therefrom, said inner and outer walls of said cap forming a lubricant-passage communicating with the chamber and said outer wall provided with a closable inlet.

6. A self-lubricating wheel consisting of an integral structure provided with a lubricant-chamber and an outwardly-extending closure-cap therefor, said closure-cap having a lubricant-passage communicating with the chamber and further provided with a permanently-open passage to permit of the insertion and removal of a linchpin without interfering with the cap.

7. A self-lubricating wheel, consisting of an integral structure provided with a lubricant-chamber and a closure-cap therefor, said cap having a lubricant-passage communicating with the chamber and further provided with a passage independent of said lubricant-passage and said lubricant-chamber to permit of the insertion and removal of a linchpin without interfering with the cap.

8. A self-lubricating wheel, consisting of an integral structure provided with a lubricant-chamber and a closure-cap therefor, said closure-cap having a lubricant-passage in front of and communicating with said lubricant-chamber and said cap further provided with a passage interposed between said lubricant-passage and said lubricant-chamber, said interposed passage adapted to permit of the insertion and removal of a linchpin without interfering with the cap.

9. A self-lubricating wheel consisting of an integral structure provided with a closed lubricant-chamber and a permanently-open passage to permit of the insertion and removal of a linchpin, said passage independent of said chamber.

10. A self-lubricating wheel consisting of an integral wheel-body provided with a lubricant and a permanently-open passage to permit of the insertion and removal of a linchpin.

811,857. APPARATUS FOR MAKING OPEN-WORK WIRE RECEPTACLES. CORNELIUS VON ADAMY, Lippa, Austria-Hungary. Filed Nov. 14, 1904. Serial No. 232,602.

Claim.—1. An apparatus of the class described comprising a plurality of vertically-disposed bars provided with a plurality of projecting pins arranged to give the wound wire a spiral formation, a centrally-disposed shaft provided with screw-threads, sleeves rigidly secured to said shaft, links connecting said sleeves with each of said bars, loosely-mounted sleeves for said shaft, links connecting said sleeves with said first-mentioned links, a nut operating on the screw-threaded portion of the shaft and rotatively-connected with one of said movable sleeves for contracting or expanding the vertical bars in unison.

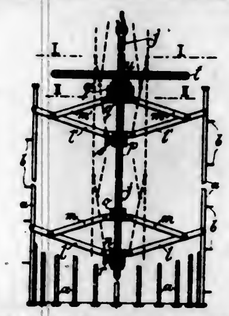

2. An apparatus of the class described comprising a plurality of vertically-disposed bars arranged in parallel relation and in the form of a cylinder and provided on their lower ends with enlarged base portions, said bars having on their outer faces a plurality of pins arranged to give the wound wire a spiral formation, a shaft provided with a threaded upper end and an annular shoulder on its lower end, a sleeve rigidly secured to the lower end of said shaft, links connecting said sleeve with two of said bars, a loosely-mounted sleeve located above said first-mentioned sleeve, links connecting said loosely-mounted sleeve and said first-mentioned links, an adjustable sleeve rigidly secured to the threaded portion of said shaft, actuating-links connecting said sleeve with said bars, a loosely-mounted sleeve located above said adjustable sleeve, links connecting said loosely-mounted sleeve with said actuating-links, and a nut rotatively secured to said loosely-mounted sleeve and engaging the threaded portions of said shaft, said nut being provided with a hand-wheel for contracting and expanding the bars in unison.

811,858. BRAIDING-MACHINE. FREDERICK A. RAHE, Paterson, N. J. Filed Apr. 26, 1905. Serial No. 257,475.

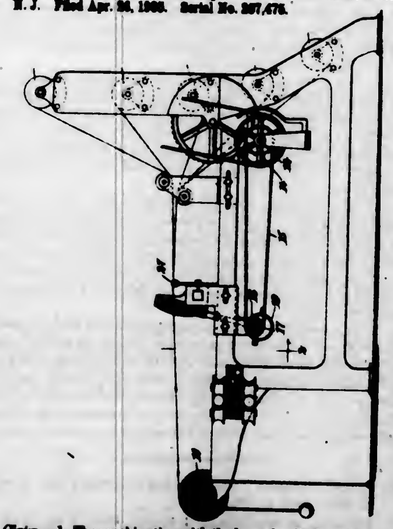

Claim.—1. The combination with the beam for discharging warp-threads having picks therein and a plurality of reels for receiving the warp-threads, of a plurality of knives extending between the threads of the warp, and means for reciprocating the knives.

2. The combination with the beam for discharging warp-threads having picks therein and a plurality of reels for receiving the warp-threads, of a plurality of knives extending between the threads of the warp, and means for reciprocating the knives in a direction substantially perpendicular to the tenor of the warp.

3. The combination with the beam for discharging warp-threads having picks therein and a plurality of reels for receiving the warp-threads, of a plurality of knives extending between the threads of the warp, means for reciprocating the knives, and means adjacent to the knives for supporting the warp.

4. The combination with the beam for discharging warp-threads, having picks therein and a plurality of wheels for receiving the warp-thread, of a plurality of sheaths extending between the thread of the warp, knives within the sheaths and extending therebeyond, and means for reciprocating the knives.

5. The combination with a means for winding or beaming warp-threads having picks therein, of a supporting-bar, a slide adjustably carried thereon, a sheath carried by the slide, a knife fitted in the sheath and having its edge projecting beyond the same, and means for driving the knife, said sheath and knife being adapted to fit between certain of the warp-threads to cut the picks therein.

811,859. MACHINE FOR FLESHING AND WORKING OUT HIDES AND SKINS. GEORGE W. BAKER, Wilmington, Del. Filed Feb. 10, 1905. Serial No. 245,168.

Claim.—1. In a hide-working machine, the combination with a horizontally-reciprocatory bed-roll and means for reciprocating the same having a clutch connection, of automatic cam-operated means for releasing the clutch to intermittently stop the bed-roll, and coacting pedal and weight operated means for causing the engagement of the clutch members to start the bed-roll in movement, substantially as specified.

2. In a hide-working machine, the combination with a reciprocatory bed-roll, a crank-shaft having an operating connection with said bed-roll, and a clutch connection, of automatic cam-operated means for releasing the clutch to intermittently stop the bed-roll, and coacting pedal and weight operated means for causing the engagement of the clutch members, substantially as specified.

3. In a hide-working machine, the combination with a reciprocatory bed-roll, a crank-shaft having an operating connection with said bed-roll, and a clutch-shaft having a driving connection with said crank-shaft and carrying a clutch, of cam-operated means for releasing the clutch members to intermittently stop the bed-roll, and coacting pedal and weight operated means for causing the engagement of the clutch members, substantially as specified.

4. In a hide-working machine, the combination with a reciprocatory bed-roll, a crank-shaft having an operating connection with said bed-roll and carrying a gear-wheel, a clutch-shaft having a gear-wheel in mesh with the gear-wheel of the crank-shaft and carrying a clutch, of cam-operated means for releasing the clutch members to intermittently stop the bed-roll, and coacting pedal and weight op-

ected means for causing the engagement of the clutch members, substantially as specified.

5. In a hide-working machine, the combination with a reciprocatory bed-roll, a crank-shaft having an operating connection with said bed-roll, and having a clutch connection, of a rock-shaft, cam-operated means in connection with said rock-shaft for releasing the clutch members to intermittently stop the bed-roll, and counting pedal and weight operated means in connection with said rock-shaft for causing the engagement of the clutch members, substantially as specified.

6. A hide-working machine having in combination a reciprocatory bed-roll, a crank-shaft having an operating connection with said bed-roll and having a gear-wheel provided with opposite cam projections, a clutch-shaft having a driving engagement with said crank-shaft and carrying a clutch, a rock-shaft having an arm adapted to engage said cam projections, and an arm engaging the loose member of said clutch to intermittently stop the bed-roll, and a weighted arm upon said rock-shaft and counting pedal-operated mechanism for causing the engagement of the clutch members to start the reciprocation of the bed-roll, substantially as specified.

7. A hide-working machine having in combination a reciprocatory bed-roll carrying a gear-wheel, feed-rolls with one of which the gear-wheel of the bed-roll has intermittent engagement, means for reciprocating said bed-roll having a clutch connection, cam-operated means for releasing the clutch members to intermittently stop the bed-roll, and pedal and weight operated means for causing the engagement of the clutch members, substantially as specified.

8. A hide-working machine, having in combination a reciprocatory bed-roll, an upright arm pivoted at its lower end and having a connection with said bed-roll at its upper end, a crank-shaft having an intermediate driving connection with said arm, and a clutch connection, cam-operated means for releasing the clutch members to intermittently stop the bed-roll, and pedal and weight operated means for causing the engagement of the clutch members, substantially as specified.

9. A hide-working machine having in combination a reciprocatory bed-roll, an upright arm pivoted at its lower end and having a connection with said bed-roll at its upper end, a crank-shaft having an intermediate driving connection with said arm, and having a gear-wheel provided with opposite cam projections, a clutch-shaft having a driving engagement with said crank-shaft and carrying a clutch, a rock-shaft having an arm adapted to engage said cam projections and an arm engaging the loose member of said clutch to intermittently stop the bed-roll, and a weighted arm upon said rock-shaft and counting pedal-operated mechanism for causing the engagement of the clutch members, substantially as specified.

10. A hide-working machine having in combination a reciprocatory bed-roll, an upright arm pivoted at its lower end and having a connection with said bed-roll at its upper end, a crank-shaft having an intermediate driving connection with said arm and having a gear-wheel provided with opposite cam projections, a clutch-shaft having a driving engagement with said crank-shaft and carrying a clutch, a rock-shaft having an arm adapted to engage said cam projections and an arm engaging the loose member of said clutch to intermittently stop the bed-roll, and a pedal-operated arm having engagement with the gear-wheel of the crank-shaft and a weighted arm upon said rock-shaft for causing the engagement of the clutch members, substantially as specified.

11. In a hide-working machine, the combination with a horizontally-reciprocating bed-roll, and means for intermittently operating the same, of the journal-bearing slides, the adjustable perforated screws and trunnioned nuts, the adjustable threaded stems passing through said nuts, and connected to said slides, the compression-springs, and the adjustable rear stop-screws, substantially as specified.

811,860. TEMPORARY BINDER. JOHN S. BARLOW, Grand Rapids, Mich. Filed July 20, 1905. Serial No. 271,812.

Claim.—1. In a temporary binder a bottom member, a binding-strip member adjustable to and from the bottom, means for sliding engagement between said two members permitting such adjustability, a binding-cord passing below said bottom member, and said binding-strip member provided with means for attaching one end of said binding-cord and for clamping the free end of said binding-cord thereto.

2. In a temporary binder, a bottom member, a binding-post rising therefrom, a binding-strip member provided with means for obtaining a sliding engagement between it and said binding-post, a binding-cord extending beneath said bottom member, and said binding-strip member provided with means at one end for attaching one end of the binding-cord thereto and provided at its other end with a binding-slot for clamping the free end of said cord thereto.

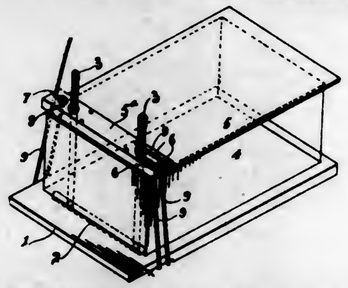

3. In a temporary binder a bottom, a binding-post rising therefrom, a binding-strip, means for sliding engagement between the binding-post and the binding-strip, a slot in one end of said binding-strip, through which slot one end of the binding-cord may be inserted, a binding-cord, and a slot in the other end of said binding-strip through which the binding-cord may pass.

4. In a temporary binder a bottom, a binding-post rising therefrom, a binding-strip, means for sliding engagement between the binding-post and the binding-strip, a binding-cord, means for attaching one end of the cord to the binding-strip near one end of the strip, and two slots in the binding-strip at the other end thereof through which the binding-cord may pass and repass, said slots being of a width less than the diameter of the cord.

5. In a temporary binder a bottom, a binding-post rising therefrom, a binding-strip, means for sliding engagement between the binding-strip and the binding-post, a binding-cord, means for attaching one end of the binding-cord to the binding-strip, means for detachably fastening the binding-cord to the binding-strip near one end thereof, and a rabbet from the under surface of the bottom board whereby the binding-cord can be passed beneath the bottom board without lifting the same from the table.

6. A temporary binder comprising a base, a binding-strip member vertically adjustable thereon, and a binding-cord attached at one end to said member and having its other end clamped to said member, said cord passing below said base.

7. In a temporary binder, a bottom member, a binding-strip member adjustable to and from said bottom member, means carried by one of said members and extending through the other of said members for forming the sliding engagement between the two members, and a binding-cord attached to one side of one of said members and having the other end thereof detachably clamped to the other side of said member.

8. In a temporary binder, a bottom member, a binding-strip member adjustable to and from said bottom member, means for sliding engagement between said two members permitting of the adjustability of said binding-strip member, and a binding-cord for a portion of its length extending parallel with one of said members and having one end attached and its free end clamped to the other of said members.

9. In a temporary binder, a bottom member, a binding-post rising therefrom, a binding-strip member, means for sliding engagement between the binding-post and the binding-strip, a binding-cord, means for attaching one end of the binding-cord to one of said members, and one of said members having an open-ended binding-slot, said slot being of less width than the diameter of the binding-cord, whereby said slot will bind and grip the free end of said cord.

811,861. VALVE. HARRY W. BEACH, Montrose, Pa. Filed Mar. 22, 1905. Serial No. 251,661.

Claim.—1. A valve having a tubular stem, a rod extending through the stem, and fastened therein adjacent to the valve, and means coacting with the end of the rod opposite the valve for sustaining the rod and its attachments.

2. A valve having a tubular stem, a rod extending through the stem and having one end in connection with the valve, and means coacting with the other end of the rod for sustaining the rod and its attachments.

3. A valve having a tubular stem with a head or enlargement at the end opposite the valve, a rod extending through the stem and having one end in connection with the valve, the other end of the rod having an enlargement adapted to engage the stem, and means for sustaining the rod and its attachments through the medium of the head of the valve-stem.

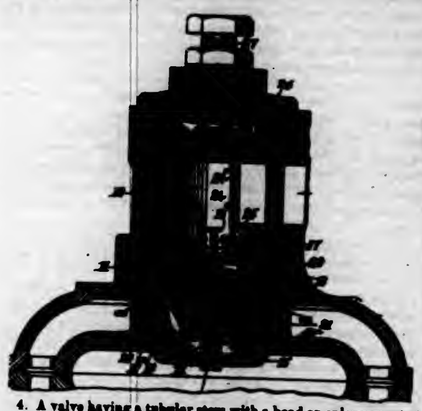

4. A valve having a tubular stem with a head or enlargement at the end opposite the valve, a rod extending through the tubular stem and having one end in connection with the valve, the rod having at the opposite end a head or enlargement adapted to engage the valve-stem, a spring pressing the head of the valve-stem upward, and a stop for limiting the upward movement of the head.

5. The combination with a valve-seat, of the valve coacting therewith, a tubular stem connected to the valve and having a head or enlargement at the end opposite the valve, a stem-guide, a spring bearing between the stem-guide and the head of the valve-stem, a rod extending through the tubular stem and having connection with the valve, and a stop lying opposite the enlargement on the head and adapted to be engaged by the head upon the fracture of the valve-stem.

6. The combination of a valve, a stem connected thereto, a rod also connected to the valve, means operative upon the fracture of the stem for connecting the rod and stem at the end of the stem removed from the valve, and a means for sustaining the last-named end of the stem.

7. The combination of a valve, a stem connected thereto, a rod also connected to the valve, means operative upon the fracture of the stem for connecting the rod and stem at the end opposite the valve, a spring pressing said end of the stem to sustain the stem and valve, and a stop for limiting the movement of the stem under the action of the spring.

8. The combination with a valve-seat, of a valve coacting therewith, a tubular stem connected to the valve, a rod extending through the tubular stem and connected to the valve, means operative upon the fracture of the stem for joining the rod and stem at the end removed from the valve, a split stem-guide loosely receiving the tubular stem, a spring acting between the stem-guide and stem, and a stop for limiting the movement of the stem under the action of the spring.

811,862. LINOTYPE-MACHINE. RICHARD M. RUSSELL, Brooklyn, N. Y., assignor to Mergenthaler Linotype Company, a Corporation of New York. Filed Oct. 15, 1905. Serial No. 282,984.

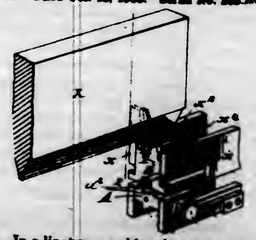

Claim.—1. In a linotype-machine the combination of a distributer and means adjustable at will to direct advancing matrices to the distributer, or through a path clear of the distributer.

2. In a linotype-machine of the class shown, the upper distributer, X, in combination with means for delivering matrices thereto, said means including a member adjustable at will to permit the passage of the matrices clear of said distributer for delivery to the lower distributer.

3. In combination the distributer-bar, the matrix-sustaining rails adapted to let the matrices fall clear of the said bar, the notched matrices and the movable matrix-support to carry the matrices into engagement with the bar when required.

4. In a linotype-machine and in combination, the distributer-bar, the shouldered rails, *s*, the matrices notched at the lower end, and a matrix-support adjustable at will to enter the notches or to act on the matrices outside of the notches as demanded.

5. In a linotype-machine, the combination of a distributer, means for delivering the matrices thereto, notched matrices, and the support, revolvable at will and constructed substantially as shown, to sustain the advancing matrices at a high level or permit their descent to a lower level according to the position in which it is placed.

811,863. SUPPORT FOR CENTRIFUGAL EXTRACTORS. GOTTLOB EHMER, Philadelphia, Pa., assignor to The Bernes and Erb Company, Philadelphia, Pa., a Corporation of West Virginia. Filed Mar. 26, 1904. Serial No. 199,994.

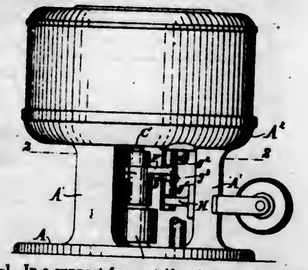

Claim.—1. In a support for centrifugal extractor, in combination, the basket-spindle, a spider comprising a plurality of projecting arms, and having a bearing on the spindle adapted to maintain substantially constant the angle of divergence of the spider and the spindle, a guiding device for each arm along which the outer end of the latter is adapted to move, and a yielding device above and a yielding device below each of said arms, whereby, in the angular movement of the spindle, the arm acts on one or the other of the corresponding yielding devices.

2. In a support for centrifugal extractor, in combination, the basket-spindle, a spider having an inner cylindrical bearing end to maintain substantially constant the angle of divergence of the spider from the spindle, said spider comprising a plurality of projecting arms, a guiding device for each arm which the outer end of the arm engages, and a pair of yielding devices, one above and one below each of said arms, whereby, in the angular movement of the spindle, the spider acts on the lower yielding device only of one pair and the upper yielding device only of another pair.

3. In a support for centrifugal extractor, in combination, the basket-spindle, a spider having a bearing on the spindle and comprising a plurality of projecting arms, a guiding device for each arm, a support for the lower end of each guiding device, the arm loosely surrounding the guiding device substantially midway between its ends, a yielding device above each arm, means to hold the same from vertical bodily movement, and a yielding device between each arm and the support.

4. In a support for centrifugal extractor, in combination, the basket-spindle, a spider having a bearing on the spindle and comprising a plurality of projecting arms, a bolt supporting the outer end of each arm, a support for the lower end of each bolt, a washer on the bolt above the support, a spring on the bolt above said washer, a second washer on said bolt above said spring, the outer end of the arm surrounding the bolt above said second washer, a third washer on the bolt above the arm, a second spring on the bolt above said third washer, a fourth washer on the bolt above said second spring, and a nut on the bolt above said fourth washer.

5. In a support for centrifugal extractor, in combination, a base, the basket-spindle, supported at its lower end on the base so as to be free to oscillate thereon, the spindle being confined from angular movement at no other point, a spider having a bearing on the basket-spindle adapted to maintain constant the angle of divergence of the

spider from the spindle, said spider comprising a plurality of projecting arms, a guiding device for the outer end of each arm secured to the base so as to be capable of oscillating thereon, and a pair of tension devices on each guiding device, one above and one below the corresponding arm, whereby, in the angular movement of the spindle, an arm acts on one or the other of its corresponding tension devices and the capacity for oscillation of the basket is limited only by the yielding capacity of the tension devices.

811,864. OZONE-GENERATOR. CHARLES F. BEEMAN, Chicago, Ill. Filed June 8, 1905. Serial No. 264,462.

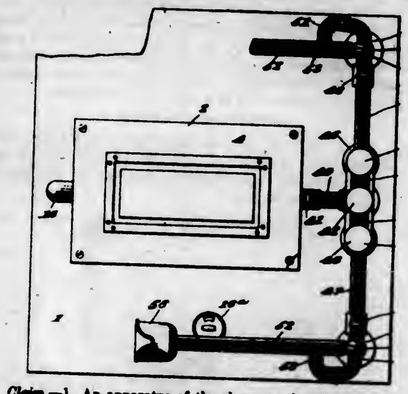

Claim.—1. An apparatus of the character described having a generating-chamber, two sets of circuit-terminal windings in said chamber, the terminal windings of one set alternating with those of the other and a source of electrical supply comprising conductors each of which has parallel connections with the circuit-terminal windings of one set within the generating-chamber.

2. An apparatus of the character described having a generating-chamber, two sets of circuit-terminal windings in said chamber, the terminal windings of one set alternating with those of the other, a source of electrical supply comprising conductors each of which has parallel connections with the circuit-terminal windings of one set and glass plates extended in the generating-chamber between the circuit-terminal windings of opposite polarity.

3. An apparatus of the character described having a generating-chamber, means for admitting and withdrawing air to and from the chamber, two flattened wire coils within said generating-chamber, a glass plate extended in the chamber between said wire coils and a source of electrical supply comprising conductors of opposite polarity and connected, respectively, with the respective flattened wire coils in said chamber.

4. An apparatus of the character described having a generating-chamber, means for admitting and withdrawing air to and from the chamber, two wire coils within the generating-chamber and spaced apart, means for supporting said wire coils, a glass plate extended in the chamber between said wire coils and a source of electrical supply comprising conductors of opposite polarity and connected, respectively, with the respective wire coils in the generating-chamber.

5. An apparatus of the character described having a generating-chamber, means for admitting and withdrawing air to and from the chamber, glass partitions extended in said chamber and spaced apart, whereby passages are produced between them for the flow of air admitted to and withdrawn from the chamber, circuit-terminal windings arranged in the passages and a source of electrical supply comprising conductors of opposite polarity connected, respectively, with the respective circuit-terminal windings in said passages of the generating-chamber.

6. An apparatus of the character described having a generating-chamber, means for admitting and withdrawing air to and from the chamber, glass partitions extended in said chamber and spaced apart, whereby passages are produced between them for the flow of air, a source of electrical supply comprising conductors of opposite polarity and two sets of circuit-terminal windings connected, respectively, in parallel with the respective conductors and alternately arranged in the passages between said partitions in the generating-chamber.

7. An apparatus of the character described having a generating-chamber, means for admitting and withdrawing air to and from the chamber, glass partitions extended in the chamber and spaced apart to produce between them passages adapted for the flow of air, a source of electrical supply comprising conductors of opposite polarity, plates of insulating material extended in the passages between the partitions of the generating-chamber and wire coils extended upon said plates of insulating material and connected, respectively, with the respective conductors of said source of supply.

8. An apparatus of the character described comprising a casing having a chamber the end walls of which have parallel grooves, glass plates extended lengthwise in said chamber with end edges engaged in said grooves, means for admitting and withdrawing air to and from said chamber, a source of electrical supply comprising conductors of opposite polarity and terminal windings arranged in the generating-chamber between said glass plates and connected, respectively, with the respective opposite conductors of said source of supply.

9. An apparatus of the character described comprising a casing having a chamber the end walls of which have parallel grooves, supply and discharge pipes connected with said end walls for the supply and discharge of air to and from said chamber, glass partitions the end edges of which are held in said grooves, said partitions being extended lengthwise in said chamber and being spaced apart to produce passages between them, and the end edges of said partitions being cut out to afford communications between said passages at the ends of the chamber, a source of electrical supply comprising conductors of opposite polarity and terminal windings arranged in the passages of the generating-chamber between said partitions and connected, respectively, with the respective opposite conductors of said source of supply.

10. An apparatus of the character described comprising a casing having a chamber, means for supplying and withdrawing air to and from the chamber, glass partitions extended in the chamber parallel with each other but spaced apart to produce passages for the flow of air, other glass plates arranged in the passages between said partitions, terminal windings carried on said last-named glass plates and a source of electrical supply comprising conductors of opposite polarity each of which has connection with alternate windings in the generating-chamber.

11. An apparatus of the character described comprising a casing having a chamber, means for supplying and discharging air to and from said chamber, glass partitions extended lengthwise of the chamber parallel with each other but spaced apart to produce passages for the flow of air, shorter glass plates in the passages between said partitions, strips extended transversely of the generating-chamber and having means of engagement with the upper and lower edges of said shorter glass plates for retaining them in position, terminal windings carried on the shorter glass plates and a source of electrical supply comprising conductors of opposite polarity each of which has connection with alternate windings in the generating-chamber.

12. An apparatus of the character described comprising a casing having a generating-chamber, a glass plate extended therein, a source of electrical supply comprising conductors of opposite polarity and terminal windings connected therewith and arranged in the generating-chamber at opposite sides of said glass plate, means for withdrawing air from the casing, and means for supplying air to the generating-chamber and comprising an air pipe or conduit and an air-forcing means connected therewith.

13. An apparatus of the character described comprising a casing having a generating-chamber, a glass plate extended therein, a source of electrical supply having conductors of opposite polarity and terminal windings connected therewith and arranged in the generating-chamber at opposite sides of said glass plate, means for supplying air to the generating-chamber and comprising an air pipe or conduit and an air-forcing device connected therewith, means for withdrawing air from the casing and means for controlling the operation of said air-forcing device.

14. An apparatus of the character described comprising a casing having a generating-chamber, a glass plate extended therein, a source of electrical supply having conductors of opposite polarity and terminal windings connected therewith and arranged in the generating-chamber at opposite sides of said glass plate, means for supplying air to the generating-chamber and means for withdrawing air from said chamber and comprising an air-conduit having a controlling-valve.

811,865. DEVICE FOR DETACHABLY SECURING RUBBER HEELS TO BOOTS AND SHOES. HIRAM P. BOLIN, Brockton, Mass., assignor of one-half to William G. Smith, Brockton, Mass. Filed Aug. 31, 1904. Serial No. 223,897.

Claim.—1. A heel-section for a boot or shoe having a plate composed of curved lateral cross-bars embedded therein and having its side edges bent inwardly to form guideways, combined with a companion plate carrying a plurality of upwardly-projecting prongs, secured to the bottom of the boot or shoe, same adapted to be slidably engaged by the first-mentioned plate, and each of said plates having yieldable extensions, the terminals of which are bent to interlock and prevent the movement of the last-mentioned plate in one direction.

2. A heel-section for a boot or shoe having a plate embedded therein with the side edges bent to present guideways, combined with a companion plate carrying a plurality of prongs, secured to the bottom of the boot or shoe, same adapted to be slidably engaged by the first-mentioned plate, and having laterally-extending projections or stops to limit the movement of the last-mentioned plate in one direction.

3. A heel-section for a boot or shoe having a plate embedded therein with its side edges bent to present guideways, combined with a companion plate carrying a plurality of prongs, secured to the bottom of the boot, same adapted to be slidably engaged by the first-mentioned plate, each of said plates having yieldable extensions, said members being bifurcated, two opposing branches of the bifurcation being yieldably interlocked, and the other two opposing branches being outwardly divergent to present an opening for the reception of an implement to separate the interlocked branches.

811,866. UPHOLSTERY APPARATUS. PETER BOLLER, Chicago, Ill. Filed July 8, 1905. Serial No. 268,709.

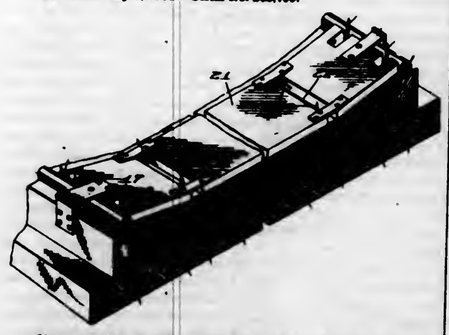

Claim.—1. In a device for manufacturing roll-edge upholstery, a form or mold having rails providing central and lateral channels, parallel rows of pins on the rails, and a divided follow-board each section of which is hinged to one of the outer rails so as to clear the rod located in the edge roll and provided with openings or passages adapted to receive the pins.

2. In an apparatus for manufacturing roll-edge upholstery, a form having rails providing central and parallel side channels, pins on the rails, and a divided follow-board each section of which is hinged to an outer rail beyond the pins thereon and provided with openings or passages in alinement with the rails when the parts are assembled.

3. In an apparatus for manufacturing roll-edge upholstery, a form having central and lateral parallel channels, inclined pins outside of the lateral channels and adapted to retain parallel rods along their outer faces.

4. In a device for manufacturing roll-edge upholstery, a form having parallel rails providing central and lateral channels, pins on the outer rails, and flexible stays or cross-braces adapted to extend between the rods on the outer rails outside of the pins thereof.

5. In an apparatus for manufacturing roll-edge upholstery, a form having pin-rails providing central and lateral channels, and flexible stays or cross-braces having seats at their ends adapted to receive rods located on the outer rails outside of the pins thereof.

6. In an apparatus for manufacturing roll-edge upholstery, a form having rails providing central and lateral channels, and stays or cross-braces adapted to brace rods located in the edge rails and to be removed therefrom by bending one of the coacting parts.

7. In a device for manufacturing roll-edge upholstery, a form having rails providing central and lateral channels, the outer rails having pins and being grooved for the passage of a needle through the upholstery attached to such rails by the pins.

811,867. CORD TENSION-ALARM. CHARLES BRANDSROVE, Monroe, Mich. Filed Mar. 20, 1905. Serial No. 250,717.

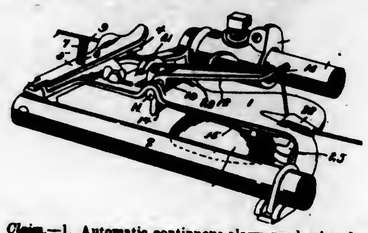

Claim.—1. Automatic continuous-alarm mechanism for grain-binders comprising a cord tension device, means for adjusting said cord tension device, a bell, a bell-hammer, a cord-take-up arm, a spring-catch for holding the hammer inactive, means for adjusting said spring-catch, means on the take-up arm for tripping said spring-catch, a rotary shaft, and a hammer-actuating device thereon.

2. Automatic continuous-alarm mechanism for grain-binders comprising a cord tension device, means for adjusting said cord tension device, a bell, a bell-hammer, a cord-take-up arm, a spring-catch for holding the hammer inactive, means for adjusting said spring-catch, means on the take-up arm for tripping said spring-catch, a trigger on the bell-hammer, actuating-springs for the alarm mechanism, and a rotary hammer-actuating device connected with an element of the grain-binder mechanism.

3. Automatic continuous cord alarm mechanism for grain-binders comprising a cord tension device, means for adjusting said cord tension device, a bell, a bell-hammer, means for holding the hammer normally inactive, means controlled by the breaking or running out of the cord for releasing the hammer, and means on a continuously-moving part of the binder mechanism for actuating the hammer when released, substantially as and for the purpose described.

4. Automatic continuous cord alarm mechanism for grain-binders, comprising a cord tension device, means for adjusting said cord tension device, a bell, a bell-hammer, a spring-catch, means for adjusting said spring-catch, a rotary hammer-actuating device on the packer-shaft of the binder, a trigger for normally holding the hammer out of the path of movement of its actuating device, and means controlled by the tension of the cord for operating the trigger when the cord breaks or runs out.

5. Automatic continuous-alarm mechanism for grain-binders, comprising a cord tension device, a spring-catch, actuating-springs, a bell, a bell-hammer, a hammer-trigger, a suitably-constructed frame for corn and grain binders, operating connections between an element of the binder and the hammer-trigger, a cord-take-up device provided with means for tripping the spring-catch and releasing the hammer-trigger.

6. Automatic continuous cord alarm mechanism for grain-binders comprising an alarm-frame, a cord tension device, means for adjusting said cord tension device, a bell, a bell-hammer, a packer-shaft, a hammer tappet device on said shaft, a cord-take-up arm provided with a tripping device, a spring-catch for holding the hammer inactive until the cord breaks or runs out.

811,868. DROP-HAMMER. EDWARD S. ELLEY, Coventry, England. Filed May 26, 1905. Serial No. 262,305.

Claim.—1. In a drop-hammer, in combination with a hammer-head, a continuously-driven shaft, a lifting-pulley fixed thereon, a block operatively associated with said pulley and provided with an arm having a slot, rollers at opposite ends of said slot, a sleeve slidably and loosely mounted on the shaft of said pulley and provided with oppositely-inclined cam-surfaces interposed between and engaging said rollers, means for operating said sleeve to cause its cam-surfaces to move the block into or out of engagement with said pulley, and a band connected at opposite ends to said hammer-head and block, respectively.

2. In a drop-hammer, in combination with a hammer-head, a lifting-pulley, a circular frame partly surrounding said pulley, a

block located between said pulley and frame, a lifting-band connected at opposite ends to said hammer-head and block, respectively, and means for moving said block into engagement with said pulley to cause the hammer-head to be lifted, or into engagement with said frame to hold the hammer-head at any desired elevation.

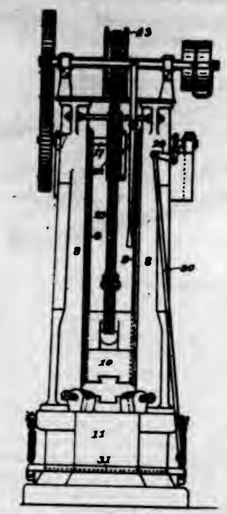

3. In a drop-hammer, in combination with a hammer-head, a lifting-pulley, a block operatively associated with said pulley, a band connected at opposite ends to said hammer-head and block, respectively, means for causing said block to frictionally engage said pulley, a roller on said block, and a fixed member having an inclined surface adapted to be engaged by said roller in the rotation of said pulley to cause the block to be forced out of engagement with said pulley, substantially as described.

811,869. RAIL-JOINT. CHARLES C. BROWN, West Greensburg, Pa. Filed Aug. 28, 1905. Serial No. 275,962.

Claim.—1. In a rail-joint, the combination with the confronting ends of two sections of rails, said rails having their heads cut away, the web portions of said rails having substantially V-shaped notches formed therein; a yoke adapted to fit down over the web portions of said rails, said yoke consisting of fish-bars; a head carried by said fish-bars; depending lugs carried by said head and adapted to fit within said notches; means to secure said yoke and rails together upon a suitable support or foundation; substantially as described.

2. In a rail-joint, the combination with the confronting ends of two sections of rails, the heads of said rails being cut away, the web portions of said rails having notches formed therein; a yoke adapted to fit over the web portions of said rails; depending lugs carried by said yoke and adapted to fit within said notches; and means to secure said yoke and said rails upon a suitable support; substantially as described.

3. In a rail-joint, the combination with the confronting ends of two sections of rails, the head of said rails being cut away, the web portions of said rails having V-shaped notches therein; a yoke adapted to fit down over the web portions of said rails; and means carried by said yoke to engage in said notches, as and for the purpose described.

811,870. DENTAL CAP. WILLIAM BEHSE, Weehawken, N. J. Filed June 6, 1905. Serial No. 263,964.

Claim.—A dental cap provided with a countersunk bottom, a depending flange having a notch, a cap removably embracing the flange and having a perforation adapted to be alined with the notch, and a tongue, substantially as specified.

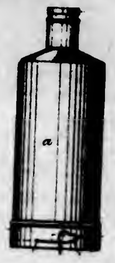

811,871. GATE. ISAAC R. BURKHOLDER, Dayton, Ohio, assignor of one-half to Charles M. Heist, Cincinnati, O. Filed Aug. 29, 1905. Serial No. 276,209.

Claim.—1. The combination with a gate, a pintle member located at the upper portion of the inner upright of the gate and an eyebolt extending from the lower portion of the same upright, of a swing-post provided with a pintle at its lower portion adapted to enter the said eyebolt of the gate, brackets secured to the upper portion of the swing-post, one bracket being provided with an upwardly-extending pintle and the other bracket with an aperture, a shaft passed through the said aperture in the said bracket, which shaft has an aperture in its lower end to receive the said pintle of the other bracket, a lug extending out from the shaft, apertured to receive the hinge-pintle of the gate, a sweep or crown-piece attached to the upper portion of the shaft and of segmental formation, provided at its outer or convexed portion with transverse fingers having their outer faces concaved, and operating-ropes for the gate attached to opposite ends of the convexed outer portion of the sweep and extending in opposite directions in engagement with said fingers, and guides for said operating-ropes.

2. A gate provided with a hinge-rod passing loosely through its forward and its rearward end uprights, the forward end of the said hinge-rod being threaded, and the rear end being downwardly bent to form a pintle, an adjusting-nut at the threaded end of the said hinge-rod, a shaft having an apertured lug for engaging the pintle, upper and lower bearings for the shaft, a crown-piece or sweep carried by the shaft, guide-fingers located upon the semicircular section of the sweep, operating-ropes for the gate attached to opposite ends of the sweep, an eye secured to the lower part of the rear end upright, and a pintle engaging the eye.

811,872. NUMBERING ARRANGEMENT FOR USE IN CONNECTION WITH PRINTING AND NUMBERING MACHINES. DAVID CARLAW, Sr., DAVID CARLAW, Jr., ALEXANDER L. CARLAW, and JAMES W. CARLAW, Glasgow, Scotland. Filed July 12, 1905. Serial No. 270,127.

Claim.—1. In numbering mechanism the combination with a surface for receiving impressions of numbering means said means being automatically moved back and forward laterally so as to bring the numbers into correct printing position.

2. In numbering mechanism the combination with a surface for receiving impressions of a numbering-disk having numbers thereon said disk being automatically moved back and forward laterally so as to bring the numbers into correct printing position.

3. In numbering mechanism the combination with a surface for receiving impressions of numbering-disks having numbers thereon said disks being automatically moved back and forward laterally so as to bring the numbers into correct printing position.

4. In numbering mechanism the combination with a surface for receiving impressions of a numbering-disk having ridges with numbers thereon said disk being automatically moved back and forward laterally so as to bring the numbers into correct printing position.

5. In numbering mechanism the combination with a surface for receiving impressions of a numbering-disk having two parallel circumferential ridges thereon each ridge having a set of numbers said disk being automatically moved back and forward laterally so as to bring the numbers into correct printing position.

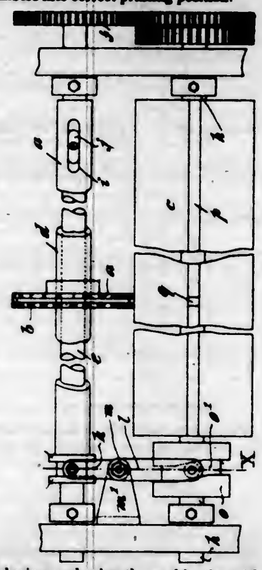

6. In numbering mechanism the combination with a surface for receiving impressions, of a numbering-disk, a sleeve, a shaft, and means for automatically moving the sleeve laterally on the shaft to move said disk back and forward in the direction of the length of said shaft.

7. In numbering mechanism the combination with a surface for receiving impressions, of a shaft, a sleeve on the shaft, a numbering-disk adjustably fitted on the sleeve, a lever for moving the sleeve laterally and means for operating the lever.

8. In numbering mechanism the combination with a surface for receiving impressions, of a shaft, a sleeve on the shaft, a numbering-disk adjustably fitted on the sleeve, a lever for moving the sleeve laterally, a cam for operating the lever and means for rotating the cam.

9. In numbering mechanism the combination with a surface for receiving impressions of a strip let into said surface, a raised part on the strip, numbering means, and means for shifting said numbering means laterally.

10. In numbering mechanism the combination with a cylindrical surface for receiving impressions of a strip let into said surface along a line which is parallel to the axis of the cylindrical surface a raised part on the strip, numbering means and means for shifting said numbering means laterally.

11. In numbering mechanism the combination with a surface for receiving impressions, of a shaft, a sleeve on the shaft, numbering-disks adjustably fitted on the sleeve, a lever for moving the sleeve laterally, a cam for operating the lever, means for sliding the cam and means for operating the said sliding means.

12. In numbering mechanism the combination with an impression-cylinder, of a shaft for said cylinder, a second parallel shaft, means for driving the second shaft from the first shaft, a sleeve on the second shaft, numbering-disks on the sleeve, a lever for moving the sleeve laterally on its shaft, a cam on the cylinder-shaft for operating said lever, means for moving said cam laterally on its shaft, a second cam for operating said moving means and mechanism for rotating the second cam.

13. In numbering mechanism the combination with an impression-cylinder, of a shaft for said cylinder, a second parallel shaft, means for driving the second shaft from the first shaft, a sleeve on the second shaft, numbering-disks on the sleeve, a lever for moving the sleeve laterally on its shaft, a cam with two grooves slidably fitted on the cylinder-shaft, a bar with pin engaging one of the grooves, a second cam adapted to engage a second pin on the said bar and worm-gearing for operating said second cam.

811,873. WARP STOP-MOTION. THOMAS A. B. CARVER, Glasgow, Scotland. Filed Feb. 1, 1905. Serial No. 243,788.

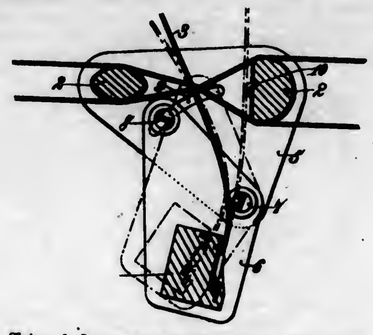

Claim.—1. In a warp stop-motion for looms, the combination of a pair of lease-rods by means of which the warp-threads are crossed, and a plurality of resilient wires arranged to be held under pressure by the respective crossing warp-threads and adjustable to vary such pressure.

2. In a warp stop-motion for looms, the combination of a pair of lease-rods by means of which the warp-threads are crossed, and a plurality of resilient wires arranged to be held under pressure by the respective warp-threads and adjustable to vary their deflection.

3. In a warp stop-motion for looms, the combination of a pair of lease-rods by means of which the warp-threads are crossed, a plurality of resilient wires arranged to be held under pressure by the respective warp-threads and adjustable to vary such pressure, and an electric conductor carried by one of the lease-rods and arranged for engagement by a wire when one of the threads holding said wire breaks.

4. In a warp stop-motion for looms, the combination of a pair of lease-rods by means of which the warp-threads are crossed, a plurality of resilient wires arranged to be held under pressure by the respective crossing warp-threads, and a movably-mounted base carrying said wires.

5. In a warp stop-motion for looms, the combination of lease-rods by means of which the warp-threads are crossed, a plurality of resilient wires arranged to be held under pressure by the respective crossing warp-threads, a base carrying the wires, swinging means to which said base is connected thereby to vary the pressure against said wires, and means for holding said swinging means in an adjusted position.

6. In a warp stop-motion for looms, the combination of means for holding warp-threads crossed, and yieldable means held under pressure by the respective crossing-threads and adjustable to secure a regulation of such pressure.

7. In a warp stop-motion for looms, the combination of a detector engaging with crossed warps with means for regulating the pressure of engagement between the detector and the warps.

8. In a warp stop-motion for looms, the combination of a detector engaging with crossed warps with means operated by the loom for varying the pressure of engagement between the detector and to warps conformably with the tension of the latter.

811,874. FRICTION-CLUTCH AND GOVERNOR. CARL CHRISTMANN, Crenshaw, Miss. Filed July 20, 1904. Serial No. 217,720.

Claim.—1. In a device of the class described, in combination, a shaft, a member rigid therewith governor-weights carried by said member, a friction-clutch controlled by said governor-weights, a pulley, shoes cooperating therewith, and a connection between said shoes and said clutch.

2. In a device of the class described, in combination, a shaft, a pulley carried rigidly thereby, a friction-wheel carried loosely and a hub carried rigidly by said shaft, governor-weights carried by said hub, and cooperating with said friction-wheel, to constitute a clutch, shoes mounted adjacent to said pulley, and links connecting the shoes with said wheel.

3. In a device of the class described, in combination, a shaft, a loose wheel carried thereby, a tight pulley carried thereby, governor-weights rotating with said shaft and having rubbing-faces which may engage said loose wheel, shoes cooperating with said tight pul-

ley, links connecting said shoes with said loose wheel, and affording means for transmitting the rotation of said shoes.

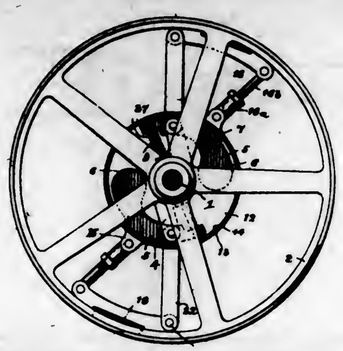

4. In a device of the class described, in combination, a shaft, a tight pulley carried thereby, a loose wheel carried thereby, a speed-controlled clutch member coöperating with said loose wheel, shoe-bars, shoes carried thereby rubbing the face of said tight pulley, links connecting the said shoe-bars with said loose wheel, and a hub loose upon said shaft and having projecting arms to which said shoe-bars attach.

5. In a device of the class described, in combination, a shaft, a tight pulley carried thereby, a loose wheel carried thereby, a loose hub carried by said shaft, adjacent to said loose wheel, stops for limiting the rotation of said hub with respect to said loose wheel, springs normally restraining said hub into an extreme position with respect to said loose wheel, shoe-bars attached to said hub and having shoes rubbing against said tight pulley, means for connecting said shoe-bars with said loose wheel, and speed-controlled mechanism for rotating said loose wheel.

6. In a device of the class described, in combination, a shaft, a tight pulley carried thereby, a loose wheel carried thereby, a loose hub carried by said shaft adjacent to said loose wheel, said loose wheel having projections constituting stops therefor, springs normally restraining said hub to engage said stops, said hub comprising oppositely-disposed sockets, arms attached in said sockets, shoe-bars attached to said arms and having shoes adapted to rub the face of said tight pulley, links connecting said shoe-bars with said loose wheel, and speed-controlled mechanism for rotating said loose wheel.

7. In a device of the class described, in combination, a shaft, a tight pulley carried thereby, a loose wheel carried thereby, a hub carried rigidly by said shaft, governor-arms pivotally carried by said hub and having rubbing-faces adapted to engage said loose wheel, a loose hub carried by said shaft, projecting arms attached thereto, shoe-bars attached to said arms and having shoes adapted to rub the face of said tight pulley, links connecting said shoe-bars with said loose wheel, and springs connecting said loose hub with said loose wheel.

811,875. WIRED PLATING AND DIPPING RACK. JAMES P. CLARK, Newark, N. J. Filed June 26, 1905. Serial No. 267,282.

Claim.—1. The improved plating-rack, comprising a center bar, a series of transverse bars secured to said center bar and a series of hooks supported by one of said transverse bars, and protected conducting-wires in electrical connection with said hooks and with a suspensory conducting-wire.

2. The combination with the longitudinally-grooved center bar and longitudinally-grooved horizontal bars attached thereto of conducting-wires arranged in the grooves of said bars and hooked wires in connection with the wires of the horizontal bars, substantially as set forth.

3. The improved rack, comprising a series of horizontal bars having longitudinal conducting-wires protected by insulation and thus prevented from coming into contact with the electrolytic fluid, of wire supports for the article to be plated, hooked onto said conducting-wires and in electrical contact therewith.

4. The improved plating-rack having a horizontal bar with a protected conducting-wire arranged longitudinally thereon, and a series of wire supports for the article to be plated, extending through said bar and at the side of said bar opposite the supporting extension of said wire hooked onto said conducting-wire the said wire-supports being in electrical contact with said conducting-wire, substantially as set forth.

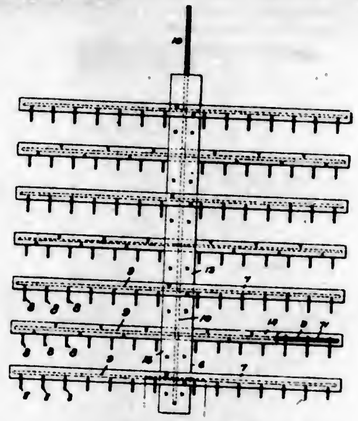

811,876. RESAWING-MACHINE. CHARLES H. CLEVELAND, Fond du Lac, Wis. Filed Mar. 28, 1904. Serial No. 200,426.

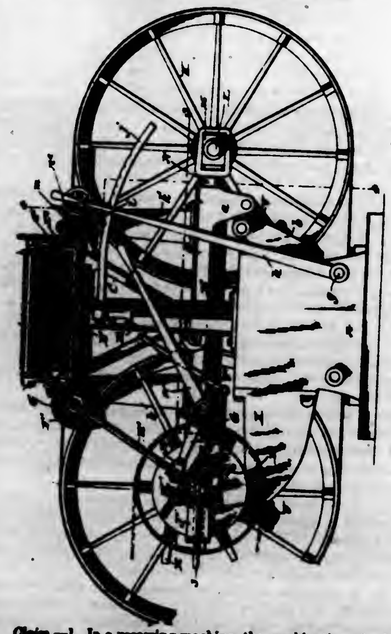

Claim.—1. In a resawing-machine, the combination of a base; a fixed substantially horizontal bed supported thereon; a saw-carrying frame; a series of bell-crank levers pivotally connected to said frame and the base; and means for positively actuating and adjusting said levers in unison, whereby the frame may be raised and lowered uniformly.

2. In a resawing-machine, the combination of a base; a fixed substantially horizontal bed supported thereon; a saw-carrying frame; a series of bell-crank levers pivotally connected to each end of the frame and to the base; connections intermediate the free ends of said levers; and means for positively swinging said levers simultaneously, substantially as described.

3. In a resawing-machine, the combination of a base; a fixed substantially horizontal bed supported thereon; a saw-carrying frame; a series of bell-crank levers pivotally connected to each end of the frame and to the base; swivel-blocks carried by the depending ends of said levers; rods connecting the opposite blocks in pairs; means for swinging said levers; and means for maintaining the levers in their adjusted positions.

4. In a resawing-machine, the combination of a base; a fixed substantially horizontal bed carried thereby; a saw-carrying frame; a series of bell-crank levers pivotally connected to the frame and to the base; cross-rods connecting the opposite depending ends of said levers; a shaft mounted in the base; a series of arms carried by said shaft; rods c', c^2 connecting two of said arms to the cross-rods; and a rod c connecting a third arm with the depending arm of one of the bell-crank levers, substantially as described.

5. In a resawing-machine, the combination of a base; a fixed substantially horizontal bed carried thereby; a saw-carrying frame comprising members E, E connected together by a cross member F; a power-shaft mounted at one end of said frame; a band-wheel thereon; sliding arms mounted in the other ends of said members E, E; means for normally protruding said arms; a second band-wheel carried by the arms; a band-saw passing about the wheels and over the bed; bell-crank levers interposed between said carrying-frame and the base; connections intermediate said levers to cause them to move in unison; and means for adjusting said levers and maintaining them in their adjusted positions.

6. In a resawing-machine, the combination of a base; a fixed substantially horizontal bed carried thereby; feed-rolls working in line with said bed; supports extending above the bed, upon each side thereof; a shaft mounted in each pair of supports; a pair of arms fulcrumed on the shaft; a feed-roll carried by the arms; means for driving the feed-rolls; a saw-carrying frame; means for raising and lowering said frame; and means for maintaining the frame in its adjusted position.

7. In a resawing-machine, the combination of a base; a fixed bed mounted thereon; a movable saw-carrying frame; levers positively connecting different portions of said frame with said base; and means for directly shifting the position of said levers, whereby the frame will be positively and directly actuated, substantially as described.

8. In a resawing-machine, the combination of a base; a fixed bed mounted thereon; a movable saw-carrying frame; a lever system positively connecting said frame and base at each end of said base and frame; and means for actuating said lever system, whereby the frame will be positively and evenly raised or lowered throughout its length.

811,877. LUMBER-FEEDING MACHINE. CHARLES H. CLEVELAND, Fond du Lac, Wis. Filed Mar. 6, 1905. Serial No. 248,695.

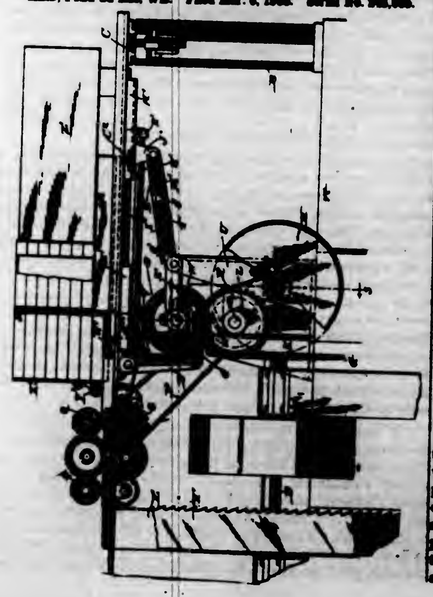

Claim.—1. In a machine for feeding lumber, the combination of continuously-operating feed-rolls; a continuously-operating power device; a feed device arranged at a point in advance of the feed-rolls; and means controlled by the stock for throwing the feed device into operative relation with the power device, and for positively withdrawing the connection between said feed and power devices.

2. In a machine for feeding lumber, the combination of continuously-operating feed-rolls; a continuously-operating power device; a periodically-operated feed device arranged at a point in advance of the feed-rolls; and means controlled by the stock for throwing the lumber-feeding device into operative relation with the power device, and for positively withdrawing the connection between said feed and power devices.

3. In a machine for feeding lumber, the combination of a pair of continuously-operating feed-rolls; a continuously-operating power device; a periodically-operated lumber-feeding device arranged at a point in advance of the feed-rolls; and means interposed between the feed-rolls and lumber-feeding device, and controlled by the movement of the stock, for throwing said lumber-feeding device into operative relation with the power device.

4. In a machine for feeding lumber, the combination of continuously-operating means for presenting the lumber to a saw; a continuously-operating power device; a periodically-actuated lumber-feeding device arranged at a point in advance of the lumber-presenting means; and means interposed between the means for feeding the lumber to the saw and said lumber-feeding device for throwing the lumber-feeding device into operative connection with the power device, said means being controlled by the passage of the stock, substantially as described.

5. In a machine for feeding lumber, the combination of a continuously-operating feeding device for presenting the lumber to a saw; a hopper for containing the stock to be fed; a reciprocating push-bar working in line with the bottom of the hopper; means for moving said push-bar; and a stop device standing in the path of movement of the stock from the hopper to the feed device, said stop device serving to throw the actuating mechanism for the push-bar into and out of operation, substantially as described.

6. In a machine for feeding lumber, the combination of a hopper; a push-bar working in line with the lower portion thereof; means for actuating said push-bar, a stop device standing in line with the stock as it is pushed from the hopper and serving to throw the operative mechanism of the push-bar into and out of action, and a pair of continuously-operating feed-rolls arranged at a point beyond the hopper and designed to receive the stock which is removed therefrom by the push-bar.

7. In a machine for feeding lumber, the combination of a hopper; a push-bar working in line therewith; a constantly-operating power device; means for actuating the push-bar; means standing in the path of travel of the stock for throwing the push-bar-operating means into and out of contact with the power device; and a pair of continuously-operating feed-rolls arranged at a point beyond the hopper and designed to receive the stock which is removed therefrom by the push-bar.

8. In a machine for feeding lumber, the combination of a table; feed-rolls operating in line therewith; a hopper; a push-bar working in line with the hopper; a constantly-rotating power-wheel; a second power-wheel; a connection intermediate said second power-wheel and the push-bar; and means operated by the movement of the stock to raise and lower said second power-wheel into and out of operative relation with the first power-wheel.

9. In a machine for feeding lumber, the combination of a constantly-acting feed device; a hopper; a push-bar working in line with the hopper; means for advancing said push-bar at a speed greater than that of the travel of the feed device; and means for throwing the push-bar out of operation.

10. In a machine for feeding lumber, the combination of a saw; a lumber-feeding device; a hopper; a push-bar working in line therewith; means for reciprocating said push-bar; a yielding connection between the push-bar and said means; and means for throwing the push-bar into and out of operation.

11. In a machine for feeding lumber, the combination of continuously-operating feed-rolls; a hopper; a push-bar working in line with the hopper; a continuously-rotating power-wheel; a second power-wheel normally in operative relation with the first wheel; connections intermediate said second wheel and the push-bar; and a stop device standing in the path of travel of the lumber from the hopper to the feed-rolls, said stop device serving to bring the push-bar to rest when it has reached its limit of rearward travel, substantially as described.

12. In a machine for feeding lumber, the combination of continuously-operating feed-rolls; a hopper; a push-bar working in line with the hopper; a continuously-rotating power-wheel; a second power-wheel carried in movable bearings; connections intermediate said second power-wheel and the push-bar; a stop device located between the hopper and the feed-rolls; means for normally projecting said stop device into the path of travel of the stock from the hopper to the feed-rolls; and a cam rotating with the second power-wheel and acting in conjunction with the stop device to elevate said second power-wheel, whereby the push-bar is brought to rest, substantially as described.

13. In a machine for feeding lumber, the combination of a hopper; a push-bar working in line therewith; a power-driven wheel; a second power-wheel movable into and out of contact with said first wheel; connections intermediate said second wheel and the push-bar; a bell-crank lever; a roller carried by the upper end of the bell-crank lever in line with the path of travel of the stock as it is forced out of the hopper; a slide pivotally connected to the lower end of the bell-crank lever, said slide having a beveled portion; a support for said slide; a cam rotatable with the second power-wheel; and means for throwing the free end of the bell-crank lever upwardly, whereby the slide will be normally withdrawn from beneath the cam, substantially as described.

14. In a machine for feeding lumber, the combination of a hopper; a push-bar working in line with the hopper; a constantly-rotating power-wheel; an upright or standard; a yoke or frame pivotally connected to said standard; a second power-wheel mounted in said yoke or frame; means for normally forcing said yoke or frame downwardly toward the first power-wheel; a cam rotatable with said second power-wheel; connections intermediate said wheel and the push-bar; a bell-crank lever; a roller carried by the free end of said bell-crank lever in line with the path of travel of the stock from the hopper; a slide secured to the lower end of the bell-crank lever and standing in the path of the cam; and means for normally projecting the upper end of the bell-crank lever into the path of travel of the stock.

15. In a machine for feeding lumber, the combination of a table having upstanding sides; a hopper arranged at one end thereof; a push-bar working in line with the lower end of said hopper; and an adjustable cross-bar secured in upstanding sides of the table in a plane above the push-bar.

16. In a machine for feeding lumber, the combination of a main table; a hopper mounted adjacent to one end thereof, said hopper comprising a fixed end, a fixed side, and an adjustable side; an auxiliary table mounted upon the main table and adjustable longitudinally thereon; a push-bar working in line with the lower portion of the hopper and passing beneath the auxiliary table when in its retracted position; and a cross-bar mounted in oppositely-disposed notches formed in the upstanding sides of the main table, said bar being located in front of the auxiliary table, substantially as described.

811,378. AIR-COMPRESSING ENGINE. HOMER R. CLIFFORD, Lafontaine, Ind. Filed Apr. 17, 1905. Serial No. 255,926.

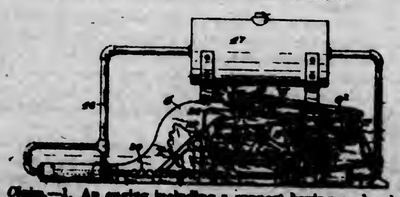

Claim.—1. An engine including a support having a chamber therein, a hollow cylindrical abutment secured fixedly at an end thereof to the support in communication with the chamber thereof and provided at the opposite end thereof with a valve-seat, a valve operative on the valve-seat and having an operating-rod extending through the chamber of the support, a hollow cylinder movable on the abutment, a rotative shaft having a crank, operative connections between the hollow cylinder and the crank of the shaft, and connections between the rotative shaft and the operating-rod of the valve.

2. An engine including a frame, a support having a chamber therein, a hollow cylindrical abutment secured fixedly at an end thereof to the support in communication with the chamber thereof and provided at the opposite end thereof with a valve-seat, a valve operative on the valve-seat and having an operating-rod extending through the chamber of the support, means for controlling the operating-rod, a hollow cylinder movable on the abutment, a reciprocating rod mounted on the frame and having gear-teeth thereon, a gear-segment pivoted to the frame and engaging the gear-teeth of the reciprocating rod, and operative connections between the hollow cylinder and the gear-segment.

3. An engine including a frame, a support having a chamber therein, a hollow cylindrical abutment secured fixedly at an end thereof to the support in communication with the chamber thereof and provided at the opposite end thereof with a valve-seat, a valve operative on the valve-seat and having an operating-rod extending through the chamber of the support, a hollow cylinder movable on the abutment and provided with an exhaust-port, a rotative shaft having a crank and mounted on the frame, operative connections between the hollow cylinder and the crank of the rotative shaft, means for controlling the operating-rod of the valve, a pinion secured to the rotative shaft, a gear-wheel mounted on the frame in engagement with the pinion, a reciprocating rod mounted on the frame and having gear-teeth thereon, a gear-segment pivoted to the frame and engaging the gear-teeth of the reciprocating rod, and a coupling-rod pivoted to the gear-wheel and also to the gear-segment.

4. An engine including a support having a chamber therein, a hollow cylindrical abutment secured fixedly at an end thereof to the support in communication with the chamber thereof and provided at the opposite end thereof with a valve-seat, a valve operating on the valve-seat and having an operating-rod extending through the chamber of the support, a hollow cylinder movable on the abutment and having an exhaust-port therein, a working beam, a pair of connecting-rods pivoted to the cylinder and also to the working beam, a crank-shaft, a pitman connected to the crank of the shaft and also to the working beam, a balance-wheel on the crank-shaft, a rocking arm attached to the valve-operating rod, and connections between the crank-shaft and the rocking arm.

5. An engine including stationary hollow abutments provided with valves having operating-rods extending through ends thereof, rocking arms secured to the operating-rods of the valves, hollow cylinders movable on the abutments and provided with exhaust-ports, pivoted working beams, connecting-rods pivoted to the cylinders and also to the working beams, guides for the cylinders, a main shaft having cranks, connecting-rods pivoted to the cranks and also to the working beams, a pair of rotative shafts provided with cams, gearing between the rotative shafts and the main shaft, swinging arms movable between and by the cams of the pair of rotative shafts, and connecting-rods pivoted to the swinging arms and also to the rocking arms.

6. An air-compressing engine including a frame, a plurality of pairs of parallel guides supported by the frame, a plurality of hollow cylinders movable in the pairs of guides and having each a closed end and an open end, a plurality of working beams pivoted on the frame, a plurality of connecting-rods pivoted to the cylinders in pairs and also to the working beams, a plurality of hollow abutments supported by the frame and extending therefrom into the movable cylinders and provided each with two parallel apertured valve-seats, main apertured valves movable between the seats and having operating-rods extending through the abutments, a main shaft having a plurality of cranks mounted on the frame, and connecting-rods pivoted to the cranks and also to the working beams.

7. An air-compressing engine including a frame, a plurality of cylinders mounted movably in the frame, a plurality of abutments serving as fluid-chambers supported at ends thereof by the frame and extending into the cylinders, main valves mounted in the ends of the abutments within the cylinders and having operating-rods extending through the abutments, rocking arms secured to the operating-rods, a plurality of working beams pivoted on the frame, a main crank-shaft journaled on the frame, coupling-rods pivoted in pairs to the cylinders and also to the working beams, coupling-rods pivoted to the cranks of the main shaft and also to the working beams, reciprocating rods mounted on the frame and having gear-teeth thereon, gear-segments pivoted to the frame and engaging the gear-teeth of the reciprocating rods, operating-gearing between the gear-segments and the main shaft, and operating mechanism between the main shaft and the rocking arms of the valve-rods.

8. In an engine, the combination of a frame, a pair of guides in the frame, a cylinder closed at one end thereof mounted movably between the guides and having an exhaust-port near the opposite end thereof, a chambered pillar attached to the frame, a hollow cylindrical abutment attached to the pillar and extending into the cylinder, a main valve movably mounted in the end of the abutment that is in the cylinder, a packing between the end of the abutment and the cylinder, a working beam mounted on the frame, a pair of parallel connecting-rods pivoted to the cylinder and extending at opposite sides of the pillar to the working beam and pivoted thereto, and means for operating the main valve.

811,379. FIREARM-CARTRIDGE. FRANK B. CLOTT, Menominee, Mich. Filed Apr. 20, 1905. Serial No. 256,010.

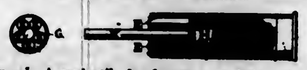

Claim.—1. A projectile for firearms consisting of several bullets incased in a metallic case and embedded in wax and having a central air-passage from front to rear, substantially as shown for the purpose specified.

2. The combination in a metallic cartridge of a projectile having several bullets inclosed in a metallic case and embedded in wax and a central air-passage from front to rear, with a metallic case charged with powder and provided with a cap as now commonly used, all substantially as set forth.

811,380. COAT AND HAT HOOK. HORATIO B. COLLINS, Detroit, Mich., assignor of one-half to J. H. Harrison, Detroit, Mich. Filed Aug. 19, 1905. Serial No. 274,849.

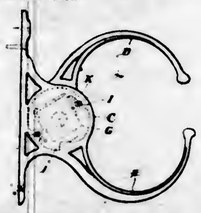

Claim.—1. In a device of the character described, the combination of a fixed hook member adapted to be secured to the wall and provided with an enlargement at the base of the hook forming a casing, of a pivotal arm carried by the hook member and provided with an apertured enlargement at its inner end forming the cover for said casing, means rotatively connecting said cover to the casing, a lock of the character described inclosed in the casing and rotatively carried by the pivotal arm and a projection in the wall of the casing adapted to coöperate with the lock.

2. In a device of the character described, the combination of a fixed hook member integrally formed with a circular enlargement forming a casing, a pivotal arm carried by the hook and integrally formed with an enlargement forming a cover for the casing of the hook, means rotatively connecting said cover to the casing, a lock complete in itself loosely inclosed within the casing and rotatively held therein by suitable connection with the cover whereby the operation of the key is adapted to operate the lock and oscillate the arm, and a locking projection on the inner wall of the casing coöperating with the lock.

811,381. CORD-FASTENER. EDGAR M. COMSTOCK, Ypsilanti, Mich. Filed Feb. 1, 1904. Serial No. 191,482.

Claim.—1. A device for securing the end of a cord comprising a resilient elliptical frame provided with a cross-bar, a portion of said elliptical frame being opposite thereto, a tongue extending from said cross-bar toward said opposite portion of the frame, and similarly resilient with respect thereto said tongue being provided at its free end with means for attaching a cord thereto, and a belaying-tongue secured to said frame, substantially as described.

2. A device for securing the end of a cord comprising a resilient elliptical frame having a cross-bar, a portion of the curved part of the frame being opposite the cross-bar, a resilient tongue projecting from one side of said cross-bar toward the curved portion of the frame opposite thereto, said resilient tongue being provided at its free end with means whereby a cord may be attached thereto, and a tongue projecting from the other side of said cross-bar and at an angle to the plane of the cross-bar and frame, adapted to clamp a cord interposed therebetween and said frame, substantially as described.

3. A device for securing the end of a cord, comprising a resilient elliptical frame having a cross-bar and spring-tongues projecting from each side of each cross-bar toward that portion of the elliptical frame opposite thereto, one of said tongues having at its free end means for attaching a cord thereto, and the other of said tongues being adapted to clamp and hold against the frame a portion of the cord interposed therebetween, substantially as described.

4. In a cord-fastener, the combination of a resilient elliptical frame and a tongue part connected and integral with a portion of said frame, the free end of said tongue part extending across said frame and toward the opposite portion thereof to that with which it is connected, and being resilient with respect to said frame, there being at the free end of said tongue part means whereby a cord may be attached thereto, substantially as described.

811,382. COMBINED SASH-BALANCE AND LOCK. JOHN H. CORCORAN, Kenosha, Wis. Filed Dec. 19, 1904. Serial No. 237,267.

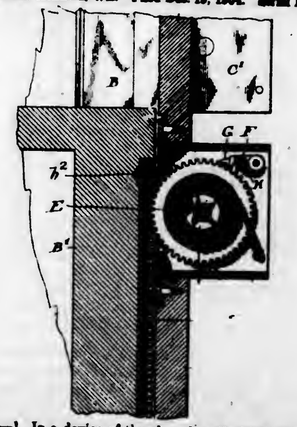

Claim.—1. In a device of the class described, the combination with a window and sash, of a rack-bar on one side of the sash, a pinion in engagement with said rack-bar, a pawl engaging the teeth of the pinion, a wedge engaging the pawl to disengage it from the pinion having a flange upon its outer end, a spring engaging said flange and adapted to normally hold the wedge out of engagement with the pawl, a push-button threaded on said wedge and a collar threaded upon said push-button and adapted to limit the outward movement thereof.

2. In a device of the class described, the combination with a window, sash, and a rack-bar mounted on one edge thereof, of a lock-casing, a pinion journaled therein and in mesh with said rack-bar, a spring upon said pinion tending to raise the sash, a pawl pivoted on the casing and capable of engagement with the pinion to prevent rotation thereof in one direction when hung in a substantially horizontal plane, and adapted to prevent reverse rotation of the pinion when hung in a substantially vertical plane, a wedge adapted to coact with the pawl when hung in either position to throw the same out of engagement with the pinion and two openings in the casing arranged to guide said wedge in either position with respect to the pawl.

811,383. HYGROMETER FOR REGULATING HUMIDIFYING AND HEATING SYSTEMS. STUART W. CRAMER, Charlotte, N. C. Filed Dec. 26, 1904. Serial No. 238,696.

Claim.—1. The combination with a source of electrical energy, of means for indicating temperature and means for indicating humidity, each of the means being adapted to close an electric circuit, separate electrical conductors connecting said source of electrical energy with each of said means, one of said conductors including an electromagnetic device, a plurality of electrical conductors connecting said means, each of said latter conductors uniting selected points on the indicating means.

2. The combination with a source of electrical energy, of a dry-bulb thermometer and a wet-bulb thermometer, each of said ther-

meters being adapted to close an electric circuit, separate electrical conductors connecting said source of electrical energy with each of said thermometers, one of the said conductors including an electromagnetic device, a plurality of electrical conductors connecting said thermometers, each of said latter conductors uniting a selected point on the dry-bulb thermometer with a selected point on the wet-bulb thermometer.

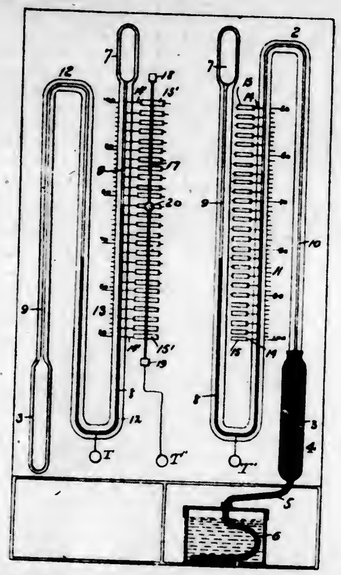

3. The combination with a source of electrical energy, of means for regulating and indicating temperature and means for regulating and indicating humidity, each of said means being adapted to close an electric circuit, separate electrical conductors connecting said source of electrical energy with each of said means, each of said conductors including an electromagnetic device, a plurality of electrical conductors connecting said means, each of said latter conductors uniting selected points on the means for indicating temperature and humidity, and an electrical conductor leading from said source of electrical energy and adapted to be placed in communication with any one of said latter conductors.

4. The combination with a source of electrical energy, of a dry-bulb thermometer and a wet-bulb thermometer, each of said thermometers being adapted to close an electric circuit, separate electrical conductors connecting said source of electrical energy with each of said thermometers, each of said conductors including an electromagnetic device, a plurality of electrical conductors connecting said thermometers, each of said latter conductors uniting selected points on the dry-bulb thermometer with selected points on the wet-bulb thermometer, and an electrical conductor leading from said source of electrical energy and adapted to be placed in communication with any one of said latter conductors.

5. The combination with a source of electrical energy, of a dry-bulb thermometer and a wet-bulb thermometer, each of said thermometers being adapted to close an electric circuit, separate electrical conductors connecting said source of electrical energy with each of said thermometers, each of said conductors including an electromagnetic device, a plurality of electrical conductors connecting said thermometers, each of said latter conductors uniting a selected point on the dry-bulb thermometer with a selected point on the wet-bulb thermometer, the thermometers being constructed and arranged so that the circuit-closing ends of the mercurial columns move in opposite directions under the influence of a change in temperature, and an electrical conductor leading from said source of electrical energy and adapted to be placed in communication with any one of said latter conductors.

811,384. RAILWAY-TRACK GAGE AND BRACE. JOHN H. CROWLEY, Duluth, Minn. Filed June 20, 1905. Serial No. 265,516.

Claim.—A railway-track gage comprising a T-bar having openings in its flanges, a clip having flange portions for engaging around the flanges of the bar, the said clips being angular and bearing only upon the base-flange of the rail, and wedges passing through the openings in the bar-flanges for forcing the clips into engagement with the rail-base.

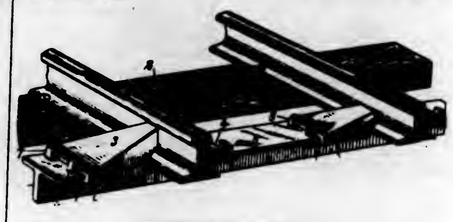

811,385. PLAN FOR NUMBERING STREETS IN IRREGULAR CITIES. FRANK H. CUSHEL, Cleveland, Ohio. Filed June 14, 1904. Serial No. 212,823.

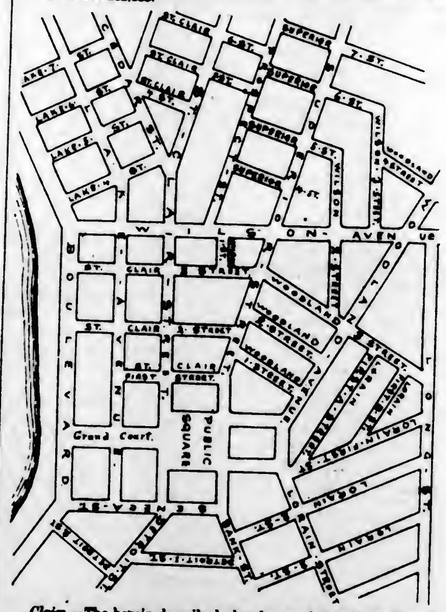

Claim.—The herein-described plan for naming and numbering streets in irregular cities, consisting in naming the main or trunk line streets, and giving to the branch or cross streets, the same name as the main-line streets, with the addition of numbers, substantially as described.

811,386. IMPLEMENT FOR DECORATING WOOD. ROSS A. CULVER, Bristol, Conn. Filed Sept. 26, 1904. Serial No. 226,231.

Claim.—1. The herein-described implement for decorating woodwork, consisting of a depth-gage the face of which acts as a step, and a series of short and stout pins projecting from the said face and arranged together to delineate the design to be impressed in the wood, the depth and size of the impressions being governed by the said step-face.

2. The herein-described implement for decorating woodwork, consisting of a depth-gage having a series of cylindrical holes and a stop-face, and a series of pins arranged together to delineate the design to be impressed in the wood, the said pins having a cylindrical portion fitted to the said cylindrical holes and a short and stout pointed portion at the front end of the said cylindrical portion, the said pins being arranged with the junction of the cylindrical and pointed portions in the plane of the said stop-face.

811,387. NON-REFILLABLE BOTTLE. WILLIAM H. DARR, Whitestone, N. Y. Filed May 29, 1905. Serial No. 262,601.

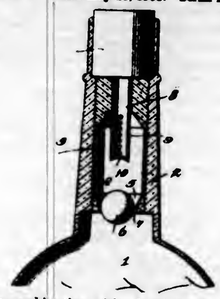

Claim.—The combination with a bottle having a neck, of a casing seated in the latter and provided with an internal chamber having an inlet-opening and a valve-seat surrounding said opening, a tubular shield entered through the normally upper end of the casing and projected into said chamber, the tube having its side walls perforated within the chamber and its inner end closed and concaved to receive the valve and the casing having its upper end walls convergently inclined for directing liquid toward the tube, and a valve movably disposed in the chamber and adapted to normally rest upon said seat.

811,388. WATER-HEATER. JOHN W. DENNEAD, Akron, Ohio, assignor to Ernest C. Prince and Charles C. Patterson, Barberton, Ohio. Filed Apr. 20, 1905. Serial No. 256,560.

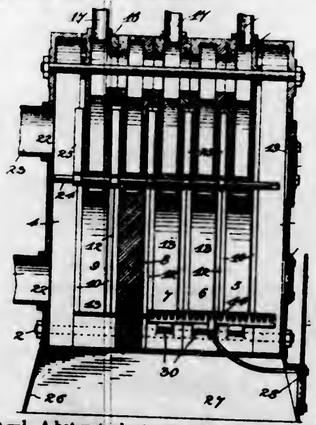

Claim.—1. A hot-water heater comprising a plurality of hollow separable sections having transverse flues formed between them, and revoluble means to clean said flues.

2. A hot-water heater comprising a plurality of hollow separable sections having transverse flues formed between them, and revoluble means to simultaneously clean said flues.

3. A hot-water heater consisting of a front section having arranged therein a feed-opening and a clean-out opening, a rear section having arranged therein a smoke-outlet passage, intermediate sections having smoke-passages arranged to form a fire-box, smoke-flues formed between said sections, a longitudinally-disposed shaft, mounted in said sections, brush-arms secured to said shaft in each of said smoke-flues, means whereby said shaft may be turned to actuate said brush-arms and clean said smoke-flues, manifolds arranged at the upper and lower ends of said sections, flow-pipes connected with said upper manifolds and return-pipes connected with the lower manifolds, substantially as described.

4. A hot-water heater comprising a plurality of hollow separable sections having transverse flues formed between them, and a revoluble shaft having its bearings in said separable sections, and arms on said shaft to operate in and clean the flues when said shaft is rotated.

811,389. BALL-PLAYER'S MITT. ARTHUR C. FERRY, Chicopee Falls, Mass. Filed June 21, 1905. Serial No. 265,291.

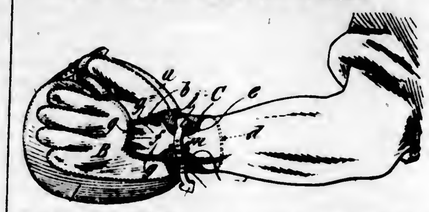

Claim.—1. A ball-player's mitt, comprising a pad, thumb and finger receiving means secured to the rear face of the pad and lying wholly within the marginal edge thereof, and a rearwardly-extending wrist-encircling band secured at one end to the pad within the marginal edge thereof and in rear of the thumb and finger receiving means.

2. A ball-player's mitt comprising a pad, thumb and finger receiving means secured to the rear face of the pad and lying wholly within the marginal edge thereof, a rearwardly-extending wrist-encircling band secured at one end to the pad within the marginal edge thereof and in rear of the thumb and finger receiving means, and detachable means for confining said band about the wrist.

3. A ball-player's mitt comprising a pad, thumb and finger receiving means secured to the rear face of the pad and lying wholly within the marginal edge thereof, and a rearwardly-extending wrist-encircling band secured at one end to the pad within the marginal edge thereof and also secured to the thumb and finger receiving means.

4. A ball-player's mitt comprising a pad, thumb and finger receiving means secured to the rear face of the pad and lying wholly within the marginal edge thereof, a rearwardly-extending wrist-encircling band secured at one end to the pad within the marginal edge thereof, and also secured to the thumb and finger receiving means, and detachable means for the confinement of said band about the wrist.

811,390. TOOL-HANDLE. SAMUEL B. FOREMAN, Paducah, Ky. Filed Apr. 26, 1905. Serial No. 257,227.

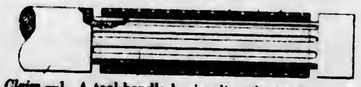

Claim.—1. A tool-handle having its grip portion circumferentially reduced and provided with channels, and an orificed grip encircling the reduced portion.

2. A tool-handle having its grip portion circumferentially reduced and provided with longitudinal channels extending throughout the length of the reduced portion, and an orificed grip encircling the said portion.

3. A tool-handle having its grip portion circumferentially reduced and scored or roughened and provided with longitudinal channels, and an orificed grip encircling the reduced portion.

4. A tool-handle having its grip portion circumferentially reduced and provided with longitudinal channels, and an orificed grip encircling the reduced portion and of less length than the same.

5. A tool-handle having its grip portion circumferentially reduced and longitudinally channeled, and a corrugated orificed grip encircling the reduced portion.

811,391. DRIVE-CHAIN. WILLIAM H. GATES, Worcester, Mass. Filed May 14, 1903. Serial No. 157,926.

Claim.—1. In a drive-chain, the combination with center links adapted to engage the teeth of a sprocket-wheel, of a pair of side links capable of longitudinal movement, a pivotal pin permanently attached to each side link on opposite ends, means for engaging and

disengaging the free ends of said pins in the side links by the separation and approach of links on the same side of the chain, and means for preventing said approach when the chain is in use.

2. In a drive-chain, the combination with center links adapted to engage a sprocket-wheel, of a pair of side links capable of longitudinal movement, a pivotal pin permanently attached to each side link on opposite ends, the free ends of said pins having necks adapted, after said pins have entered holes in said side links, to be drawn by the separation of the side links into slots communicating with said holes, and means for preventing the approach of the links on the same side of the chain and the consequent return of said pins into said holes when the chain is in use.

3. In a drive-chain, the combination with center links adapted to engage the teeth of a sprocket-wheel, of a pair of side links capable of longitudinal movement, a pivotal pin permanently attached to each side link on opposite ends, means for engaging and disengaging the free ends of said pins in said side link by the separation and approach of links on the same side of the chain and a locking-plate, whereby said links are held from such approach.

4. In a drive-chain, the combination with center links adapted to engage a sprocket-wheel, of a pair of side links capable of longitudinal movement, a pivotal pin permanently attached to each side link on opposite ends, the free ends of said pins having necks adapted, after the pins have entered holes in said side links, to be drawn by the separation of the side links into slots communicating with said holes, and a locking-plate whereby the links on the same side of the chain are held from longitudinal movement toward each other.

5. In a drive-chain, the combination with center links, of a pair of side links provided at both ends with holes and communicating slots, pivotal pins connecting the ends of said side links, said pins having flattened necks entering said holes and drawn into said slots by separation of the adjacent side links, and a locking plate having a forked end to inclose said neck, and an inwardly-turned prong engaging the wall of the opening in the side link, whereby the relative movement of pivotal pins and side links is prevented.

6. In a drive-chain, the combination with center links adapted to engage a sprocket-wheel, of a pair of side links capable of longitudinal movement, a pivotal pin permanently attached to each side link on opposite ends, the free ends of said pins having necks adapted, after said pins have entered holes in said side links, to be drawn into slots communicating with said holes, and locking-plates having forked ends to inclose said neck and inwardly-turned prongs to engage the walls of said holes in said side links, whereby the relative movement of said pivotal pins and said side links is prevented.

811,892. SAW-SET. PETER A. GIANERA, Gualala, Cal. Filed July 12, 1905. Serial No. 269,689.

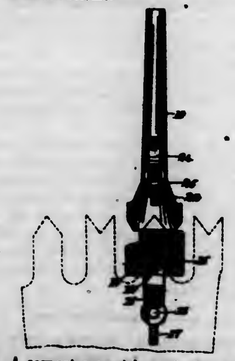

Claim.—1. A saw-set comprising a body, an anvil-plate provided with a vertical slot, a wedge acting between the body and the anvil-plate and provided with an inclined slot, a screw traversing the slot in the anvil-plate and the wedge, and a die connected with the body for cooperating with the anvil-plate.

2. A saw-set having a body, an anvil-plate having an inclined edge thereon, a die for cooperating with the anvil-plate, means for adjusting the anvil-plate longitudinally of the body, comprising a wedge acting between the body and the inclined edge of the anvil-plate, and means for movably securing the anvil-plate and the wedge to the body.

3. A saw-set comprising a body having an anvil connected therewith, a yoke encircling the body, a tubular arm projecting from the yoke, a die mounted on the tubular arm, and means for adjusting the die.

4. A saw-set comprising a body having an anvil connected therewith, a yoke encircling the body, a tubular arm projecting from the yoke, a die mounted on the tubular arm, and means for adjusting the die, said means comprising a screw threaded in the tubular arm and engaging the end of the arm.

5. A saw-set having a body, an anvil-plate thereon having inclined outer surface at its upper end, a die for cooperating with the inclined surface of the anvil-plate, means for adjusting the die to and from the inclined surface of the anvil-plate, and means for adjusting the anvil-plate longitudinally of the body.

811,893. DECORATING DEVICE. JOSEPH GRUBER, Newark, N. J. Filed Nov. 14, 1905. Serial No. 287,281.

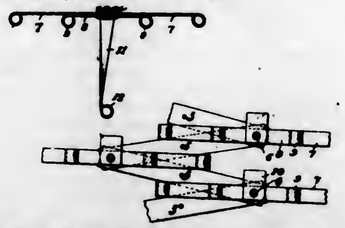

Claim.—1. The combination with a series of pivotally-connected longitudinal strips, of transverse strips secured to said longitudinal strips by the rivets which hold the longitudinal strips together, the transverse pieces being provided at their outer extremities with curls forming receptacles, substantially as set forth.

2. The combination with the pivotally-connected longitudinally-disposed strips, and transverse strips having flower-receptacles at their outer extremities, of forwardly-projecting arms detachably secured to the longitudinally-disposed strips.

3. The combination with the longitudinal strips having a folding relation one with the other, of transverse strips curled at their outer extremities, and forwardly-projecting flower-holding arms separably attached to the longitudinal strips, substantially as set forth.

4. The combination with the longitudinal strips pivotally secured together, of long and short transverse strips having receptacles for decorative articles at their opposite projecting extremities, substantially as set forth.

811,894. TYPE-CLEANING DEVICE FOR TYPE-WRITING MACHINES. SAMUEL B. HALSEY, Everett, Wash. Filed Mar. 24, 1905. Serial No. 251,236.

Claim.—1. A type-cleaning device for type-writing machines consisting of a brush, a shaft upon which said brush is secured, and means slidably engaging the shaft for alternately rotating said shaft said means also causing an axial movement of said shaft.

2. A type-cleaning device for type-writing machines, consisting of a casing, means projecting from said casing to engage and push away the ink-ribbon from the path of the type-heads, a brush within said casing, a shaft upon which said brush is rigidly mounted, and means engaging the shaft for imparting a reciprocal rotary movement of said shaft.

3. A type-cleaning device for type-writing machines consisting of a casing, means projecting from said casing, adapted to engage and push away the ink-ribbon from the path of the type-bar heads, a brush within said casing, a spirally-grooved shaft mounted in said casing and carrying said brush, a guide-bar extending forwardly from said casing and supporting the spirally-grooved shaft at its front end, a spirally-bored nut fitting said shaft and engaging the guide-bar, whereby a longitudinal reciprocating movement of the nut on said shaft will cause a reciprocal rotary movement of the brush.

4. A type-cleaning device for type-writing machines consisting of a casing, a spirally-grooved shaft mounted in said casing and extending through the front wall thereof, a brush rigidly mounted on said shaft within the casing, a guide-bar extending forwardly from the front wall of said casing adjacent to the spirally-grooved shaft, and having near its front end a bent portion supporting the front end of the shaft, a spirally-threaded nut mounted on the shaft and engaging the guide-bar, a spring held between the nut and the support of the front end of shaft, a hook at one end of the guide-bar adapted to engage the guide-rail of the type-writing machine, and means for reciprocating the nut on the shaft causing a reciprocal rotary movement of the brush.

5. A type-cleaning device for type-writing machines consisting of a casing having an elongated slot in its lower wall, a removable rear wall, a spirally-grooved shaft mounted in said casing and extending through the front wall thereof, a brush rigidly secured to said shaft near its rear end, a guide-bar extending forwardly from the front wall of said casing adjacent to the spirally-grooved shaft, said guide-bar being bent near its front end downwardly then upwardly and having a hooked front end, said downwardly-bent portion having an opening through which the forward end of the spirally-grooved shaft passes, a spirally-threaded nut mounted on said shaft and snugly fitting the same, and means for reciprocating the nut to first cause an axial movement of the shaft and then a rotary movement of the same.

6. A type-cleaning device for type-writing machines consisting of a brush, a shaft to which said brush is secured, said shaft having a spiral groove of rapid pitch, a frame in which said shaft is mounted to rotate and also reciprocate longitudinally, and a spirally-bored nut adapted to fit the shaft snugly, whereby longitudinal movement of the nut will cause the shaft to reciprocate longitudinally and to rotate.

7. A type-cleaning device for type-writing machines consisting of a casing, a brush within said casing, a shaft mounted in said casing and carrying said brush, an extensible guide-bar extending from said casing, and supporting the shaft at its end, a nut slidably fitting said shaft and engaging the guide-bar, said shaft and nut being provided with coacting instrumentalities whereby a longitudinal reciprocating movement of the nut on the shaft will cause a reciprocal rotary movement of the brush.

8. A type-cleaning device for type-writing machines, consisting of a casing, a spirally-grooved shaft mounted in said casing and extending through the front wall thereof, a brush rigidly mounted on said shaft within the casing, a guide-bar extending forwardly from the front wall of said casing adjacent to the spirally-grooved shaft and having at or near its front end a bent portion supporting the front end of the shaft, a spirally-threaded nut mounted on said shaft, a hook at one end of the guide-bar adapted to engage the guide-rail of the type-writing machine, and means for reciprocating the nut on the shaft to cause a reciprocal rotary movement of the brush.

9. A type-cleaning device for type-writing machines, consisting of a casing, a spirally-grooved shaft mounted in said casing and extending through the front wall thereof, a brush rigidly mounted on said shaft within the casing, a guide-bar extending forwardly from the front wall of said casing adjacent to the spirally-grooved shaft and having at or near its front end a bent portion supporting the front end of the shaft and permitting longitudinal play thereof, a spirally-threaded nut mounted on said shaft, and means for reciprocating the nut on the shaft causing reciprocating movement of the shaft and a reciprocal rotary movement of the shaft and brush.

811,895. FRAUD-PREVENTIVE MECHANISM FOR CIGAR-VENDING MACHINES. JOHN HENDRICH, JOHN SCHMIDT, and CARROLL L. BYINGTON, Kansas City, Mo. Original application filed Nov. 24, 1904, Serial No. 234,603. Divided and this application filed Apr. 3, 1905. Serial No. 253,434.

Claim.—1. In a coin-actuated mechanism for vending-machines, means for preventing the use of lead disks to actuate the machine comprising a plunger, coin-controlled locking means therefor, a dog pivotally mounted in the path of the plunger and adapted to impale said lead disk, a latch pivoted in the path of said lead disk below the plunger, a weighted dog automatically maintaining said latch as a rest for the lead disk, and means connecting the plunger and said latch whereby the retracting movement of the plunger pulls the latch from under the lead disk for the purpose stated.

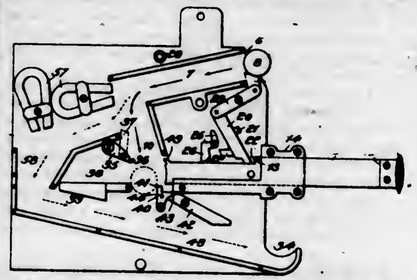

2. In a coin-controlled mechanism for vending-machines, mechanism for preventing the use of lead disks to actuate the machine comprising a plunger, coin-controlled locking mechanism therefor, a dog pivotally mounted in the path of the plunger and adapted to impale said lead disk, a latch pivoted in the path of said lead disk below the plunger as a rest for the lead disk, a weighted dog to automatically maintain said latch in its position as a rest, an arm pivotally mounted on the plunger and adapted to engage said latch whereby it is tripped from its supporting position by the retracting position of the plunger.

3. In a coin-controlled mechanism for vending-machines, a plunger, a coin-controlled locking device therefor a dog pivotally mounted in the path of the plunger and adapted to impale said lead disk, a latch pivoted in the path of the lead disk below the plunger as a rest for the lead disk, a weighted dog automatically maintaining said latch in its position as a rest, the said disk lead being impaled on the dog by the forward movement of the plunger and the said latch tripped by the retracting movement of the plunger, and means connecting the plunger and latch for effecting the tripping of the latter.

4. In a coin-controlled mechanism for vending-machines, a plunger, means automatically locking the plunger in its normal position, means controlled by the coin to automatically release said lock and to maintain such release, means automatically to trip said locking device from its released position by the inward movement of the plunger, a pivoted coin-support below the path of the plunger, means automatically maintaining said support, and means automatically releasing said support by the outward movement of the plunger for the purpose stated.

811,896. MECHANISM FOR FEEDING CIGARS IN VENDING-MACHINES. JOHN HENDRICH, JOHN SCHMIDT, and CARROLL L. BYINGTON, Kansas City, Mo. Filed Apr. 3, 1905. Serial No. 253,415.

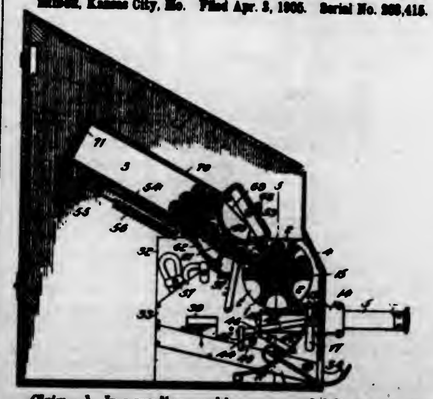

Claim.—1. In a vending-machine, a grooved delivery-cylinder, a supply-receptacle, a chute for the articles, a cylindrical feed device arranged above the chute and overhanging the grooved cylinder, means for causing said cylinder to rotate in one direction only, and means for causing the feed device to have movements in reverse directions upon the cigars above the cylinder.

2. In a vending-machine, a grooved delivery-cylinder, a supply-receptacle, a chute for the articles, a feed device arranged above the chute and overhanging the grooved cylinder and comprising a pair of heads or arcs each having a yielding feeding-surface, means for causing said cylinder to rotate in one direction only, and means for causing the feed device to have movements in reverse directions upon the cigars above the cylinder.

3. In a vending-machine, a revoluble delivery-cylinder having a plurality of longitudinal grooves, a supply-receptacle, for the articles, a concave chute for delivering the articles into said grooves, a shaft mounted above and in vertical line with the front of said cylinder, a pair of heads or arcs mounted on said shaft, forming feeding-surfaces and overhanging said chute, means actuated by said cylinder for causing said heads to have an upward rolling movement upon the cigars, and means for causing said heads to have a sudden and positive reverse or downward feed movement to place a cigar in a groove.

4. In a vending-machine, a revoluble delivery-cylinder having a plurality of longitudinal grooves, a supply-receptacle for the articles, a chute for delivering the articles into said grooves, a shaft mounted above the cylinder, a pair of heads or arcs mounted on said shaft and forming feeding-surfaces, means actuated by said cylinder for causing said heads to have an up-and-down rolling feed movement upon the cigars in their delivery to said cylinder, means whereby the down movement is positively controlled to place a cigar in a groove, and means for slidably adjusting said heads toward and from each other on said shaft.

5. In a vending-machine, a supply-receptacle for the articles, a revoluble delivery-cylinder having a plurality of longitudinal grooves, a feeder device mounted above the cylinder, and means for oscillating or rocking said feed device consisting of a ratchet-wheel carried by said cylinder, a ratchet-arm engaging the teeth of said wheel, an arm fixed to said rocking-feeder device engaging the ratchet-arm, and a spring connecting the feeder-arm for maintaining it in contact with said ratchet-arm and the latter in contact with said ratchet-wheel, whereby the rotation of the cylinder causes the oscillating or rocking movement of the feeder device to feed the articles into the grooves and to agitate the supply.

6. In a vending-machine and in combination with a revoluble cylinder having a plurality of longitudinal grooves, a supply-receptacle for the articles, a chute for delivering the articles to said grooves, an oscillating or rocking feed device mounted above the chute and the cylinder, and a plurality of fingers or wires mounted on the box and lying upon the articles for the purpose stated.

811,397. **VAPORIZER.** CHARLES HIBBARD and WARREN HIBBARD, Sandyhill, N. Y., assignors to Hibbard Gas Engine Co., Sandyhill, N. Y. Filed Nov. 15, 1904. Serial No. 232,837.

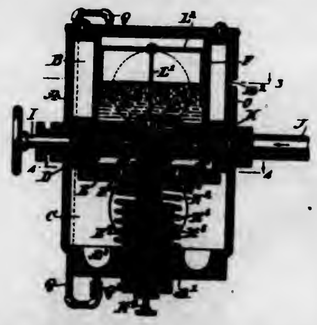

Claim.—1. A vaporizer for explosion-engines comprising a vessel for containing the liquid fuel and having an outlet, an air-chamber surrounding the said vessel and having a valve-port and a valve-seat, a mixing-chamber connected with the working chamber of the engine and into which open the said port of the air-chamber and the said outlet of the vessel, an air-valve controlling the said valve-port and adapted to be opened by the suction action of the engine, and a liquid-fuel valve for the said outlet of the vessel, opened by the said air-valve after the latter has moved off its seat, and closing previous to the air-valve moving to its seat.

2. A vaporizer for explosion-engines comprising a vessel for containing the liquid fuel and having an outlet, an air-chamber surrounding said vessel and having a valve-port and a valve-seat, a mixing-chamber connected with the working chamber of the engine and into which open the said port and the said outlet, an air-valve controlling the said valve-port and adapted to be opened by the suction action of the engine, a liquid-fuel valve for the said outlet, opened by the said air-valve after the latter has moved off its seat, and closing previous to the air-valve moving to its seat, a spring for holding the said air-valve to its seat, and a spring for holding the said liquid-fuel valve to its seat.

3. A vaporizer for explosion-engines comprising a vessel for containing the liquid fuel and having an outlet, an air-chamber surrounding the said vessel and having a valve-port and a valve-seat, a mixing-chamber connected with the working chamber of the engine and into which open the said port and the said outlet, an air-valve controlling the said valve-port and adapted to be opened by the suction action of the engine, a liquid-fuel valve for the said outlet, opened by the said air-valve after the latter has moved off its seat, and closing previous to the air-valve moving to its seat, a spring for holding the said air-valve to its seat, a spring for holding the said liquid-fuel valve to its seat, and means for adjusting the tension of the spring for the said liquid-fuel valve.

4. A vaporizer for explosion-engines comprising a vessel for containing the liquid fuel and having an outlet, an air-chamber having a valve-port and a valve-seat, a mixing-chamber connected with the working chamber of the engine and into which open the said port and the said outlet, an air-valve controlling the said valve-port and adapted to be opened by the suction action of the engine, a liquid-fuel valve for the said outlet, opened by the said air-valve after the latter has moved off its seat, and closing previous to the air-valve moving to its seat, and a connection leading from the said mixing-chamber to the said vessel, to force any non-vaporized liquid fuel that passes into the mixing-chamber back into the said vessel by pressure from the engine on the return stroke of the engine-piston.

5. A vaporizer for explosion-engines comprising a vessel for containing the liquid fuel and having an outlet, an air-chamber surrounding said vessel and having a valve-port and a valve-seat, a mixing-chamber connected with the working chamber of the engine and into which open the said port and the said outlet, an air-valve controlling the said valve-port and adapted to be opened by the suction action of the engine, a liquid-fuel valve for the said outlet, opened by the said air-valve after the latter has moved off its seat, and closing previous to the air-valve moving to its seat, a liquid-fuel supply for the said vessel, a supply-valve in the said supply, and a float in the said vessel, connected with the said supply-valve to maintain a uniform level of the liquid fuel in the said vessel.

6. A vaporizer for explosion-engines provided with a vessel for containing liquid fuel, an air-chamber surrounding the said vessel, a mixing-chamber into which open the said vessel and the said air-chamber, and valves controlling the connections between the said mixing-chamber and the said air-chamber and vessel.

7. A vaporizer for explosion-engines provided with a vessel for containing liquid fuel and having an outlet at its bottom, an air-chamber having a valve-seat around the said outlet, an air-valve having a ring-shaped leather valve adapted to be seated on the said seat, and a liquid-fuel valve having a disk leather valve adapted to be seated on the said outlet, the said disk leather valve being arranged within the opening of the said ring-shaped leather valve.

8. A vaporizer for explosion-engines provided with a vessel for containing liquid fuel and having an outlet at its bottom, an air-chamber having a valve-seat around the said outlet, an air-valve having a ring-shaped leather valve adapted to be seated on the said seat, and a liquid-fuel valve having a disk leather valve adapted to be seated on the said outlet, the said disk leather valve being arranged within the opening of the said ring-shaped leather valve, the said air-valve and the said liquid-fuel valve having spring-pressed metallic bodies for supporting the said leather valves.

9. A vaporizer for explosion-engines provided with a vessel for containing liquid fuel and having an outlet at its bottom, an air-chamber having a valve-seat around the said outlet, an air-valve having a ring-shaped leather valve adapted to be seated on the said seat, and a liquid-fuel valve having a disk leather valve adapted to be seated of the said outlet, the said disk leather valve being arranged within the opening of the said ring-shaped leather valve, the said air-valve and the said liquid-fuel valve having spring-pressed metallic bodies for supporting the said leather valves, the body of the said liquid-fuel valve being held to slide in the body of the said air-valve.

10. A vaporizer for explosion-engines provided with a vessel for containing liquid fuel and having an outlet at its bottom, an air-chamber having a valve-seat around the said outlet, an air-valve having a ring-shaped leather valve adapted to be seated on the said seat, and a liquid-fuel valve having a disk leather valve adapted to be seated on the said outlet, the said disk leather valve being arranged within the opening of the said ring-shaped leather valve, the said air-valve and the said liquid-fuel valve having spring-pressed metallic bodies for supporting the said leather valves, the body of the said liquid-fuel valve being held to slide in the body of the said air-valve, and the latter having means for carrying the liquid-fuel valve along when moving into an opening position.

11. A vaporizer for explosion-engines provided with a vessel for containing liquid fuel and having an outlet at its bottom, an air-chamber having a valve-seat around the said outlet, an air-valve having a ring-shaped leather valve adapted to be seated on the said seat, and a liquid-fuel valve having a disk leather valve adapted to be seated on the said outlet, the said disk leather valve being arranged within the opening of the said ring-shaped leather valve, the said air-valve and the said liquid-fuel valve having spring-pressed metallic bodies for supporting the said leather valves, the body of the said liquid-fuel valve being held to slide in the body of the said air-valve, and the latter having means for carrying the liquid-fuel valve along when moving into an opening position, the said means being arranged to open the liquid-fuel valve after the air-valve has moved off its seat and to allow the liquid-fuel valve to close ahead of the air-valve.

811,398. **HORSESHOE.** PHILIP J. HOFFMANN, Pittsburg, Pa. Filed Jan. 23, 1905. Serial No. 242,279.

Claim.—A horseshoe having wedge-shaped lugs at its heel end, the narrowest portion of said lugs being toward the surface of the shoe, said lugs being formed with transverse recesses and the shoe-body having longitudinally-disposed grooves formed therein at opposite sides of the lugs, in combination with calk-pieces formed each with a dovetailed groove to receive the lug on the horseshoe, and with ribs adapted to enter the grooves in the horseshoe, each lug being provided with a transverse opening registering with the recess in the lug and a pin passing through said opening and fitting in said recesses to hold the calk against longitudinal movement on the lug.

811,399. **GAS-BURNER.** WILLIAM C. HOMAN and FRANK T. WILLIAMS, Meriden, Conn., assignors to Edward Miller & Company, Meriden, Conn., a Corporation of Connecticut. Filed Jan. 5, 1905. Serial No. 239,696.

Claim.—1. An incandescent gas-burner comprising a base member 1, having an exteriorly-screw-threaded portion 9, an exteriorly-screw-threaded portion 5 of smaller diameter, and a needle-tip 3 with a gas-passage having an outlet adjacent to the base of the needle-tip, a spring surrounding the base of the needle-tip, and an interiorly-threaded adjusting member 4 having a valve-outlet adapted to coact with said needle-tip, said spring being inclosed by said member and an integral burner-tube having an interiorly-threaded portion seated on the screw-threaded portion 9 of the base and an air-inlet adjacent to the gas-outlet and an opening adjacent said adjusting member, said movable adjusting member substantially filling the space in said tube above said opening.

2. In an incandescent gas-burner, the combination of a base member 1 having a screw-threaded portion 9 and a screw-threaded portion 5 of smaller diameter, a movable regulator-cap 4 adjustable on the screw-threaded portion 5, a needle-valve coacting with an outlet in said cap, a spring for causing frictional engagement between said cap and its threaded seat, and an integral burner-tube, screw-threaded onto the seat 9, and having an opening 10 for access to the regulator-cap and air-openings above the same adjacent to the gas-outlet, said burner-tube inclosing said cap and spring, said movable cap substantially filling the interior diameter of the tube above the opening 10, and preventing the passage of air except through the proper air-inlet.

811,400. **PNEUMATIC BELL-RINGER.** JOHN HOWE, St. Joseph, Mo. Filed May 6, 1904. Serial No. 206,773.

Claim.—1. In mechanisms of the class described, the combination of a bell-crank for an alarm-bell, a cylinder provided with inlet and exhaust ports in the wall at one side thereof only, a reciprocating piston mounted therein and provided with inlet and exhaust passages arranged to be connected and disconnected alternately with the inlet and exhaust ports in the cylinder, means for keeping the reciprocating piston seated on the port side of the cylinder-wall, and means for connecting the reciprocating piston with the bell-crank, substantially as described.

2. In mechanisms of the class described, the combination of a bell-crank, a cylinder provided with inlet and exhaust ports in the wall thereof at one side only, a reciprocating piston mounted therein and provided with inlet and exhaust passages opening at one side thereof only and arranged to be connected and disconnected with the inlet and exhaust ports of the cylinder during the reciprocations of the piston, a recess in said piston, a spring in said recess, a wearing-block arranged therein and interposed between the spring and the wall of the cylinder so as to force and hold said piston seated on the port side of the cylinder, and means connecting said piston with the bell-crank so as to operate the same, substantially as described.

3. In mechanisms of the class described, the combination of a bell-crank, a single-acting cylinder provided with inlet and exhaust ports in the wall at one side thereof, a reciprocating piston mounted therein and provided with inlet and exhaust passages opening at one side thereof and arranged to be connected and disconnected alternately with the inlet and exhaust ports in said cylinder-wall, a radially-arranged recess in the opposite side of said piston, a helically-coiled spring in said recess, and a wearing-block interposed between said spring and the inner bore of said cylinder so as to keep the piston seated on the port side of the cylinder, and means connecting the piston with the bell-crank, substantially as described.

4. In mechanisms of the class described, the combination of a single-acting cylinder provided with inlet and exhaust ports in the wall thereof, a trunk-piston reciprocatingly mounted therein and provided with an open cup-shaped recess in its upper end, a bell and crank-pin, and a gravity connecting-rod having its lower end loosely mounted in such recess of the trunk-piston and movable vertically with relation to the piston and having an elongated slot at the other end loosely engaging the crank-pin of the bell-crank, substantially as described.

5. In mechanisms of the class described, the combination of a bell-crank and pin, a single-acting cylinder provided with inlet and exhaust ports in its wall and at one side thereof, a trunk-piston reciprocatingly mounted therein and provided with independent inlet and exhaust passages extending therethrough and adapted to be connected and disconnected alternately with the inlet and exhaust ports in said cylinder, spring mechanism for keeping said piston seated on the port side of the cylinder, an open cup-shaped recess in the upper end of said piston, an alarm-bell provided with a crank and crank-pin, and a gravity connecting rod or bar formed in two parts—a lower part provided with a rounded head on its lower end in engagement with the cup-shaped recess and an upper part provided with an elongated slot loosely engaging the crank-pin and detachably secured to the lower portion, substantially as described.

6. In mechanisms of the class described, the combination of a cylinder provided with inlet and exhaust ports in the wall thereof, a piston reciprocatingly mounted in such cylinder and provided with an open socket in its upper end, a bell-crank provided with a crank-pin, and a gravity connecting-rod having its lower end articulately mounted in such socket and movable vertically with relation to the piston and its upper end loosely connected with the crank-pin and movable vertically with relation thereto, whereby the connecting-rod is movable bodily in a vertical plane with relation to both the piston and crank-pin.

811,401. STEAM-BOILER FIRE-BOX. CHARLES W. HULLINGS, Philadelphia, Pa., assignor of one-half to James W. Thatcher, Philadelphia, Pa. Filed June 24, 1905. Serial No. 266,668.

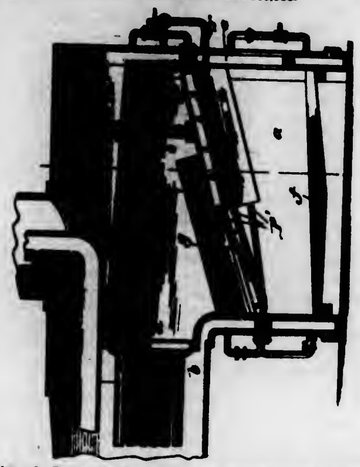

Claim.—1. In a boiler fire-box, the combination with a deflector extending backward from the front wall of the fire-box, of a forward-extending baffler-plate transversely and longitudinally parallel to said deflector, and extending from the back wall of the fire-box under the back portion of the deflector, whereby a transversely-equalized passage is formed betwen such deflector and baffler-plate, substantilly as specified.

2. In a boiler fire-box, the combination with a transversely-arched deflector extending backward from the front wall of the fire-box, of a forward-extending transversely-arched baffler-plate, extending from the back wall of the fire-box under the back portion of the deflector and parallel thereto, to form a combustion-passage, substantially as specified.

3. In a boiler fire-box, the combination with a deflector extending from the front wall of the fire-box, of a hollow baffler-plate parallel to said deflector, and upright circulating-pipes connecting and supporting the baffler-plate in position, substantially as specified.

4. In a boiler fire-box, the combination with a deflector extending from the front wall of the fire-box, of a baffler-plate extending from the rear wall of the fire-box beyond the end of said deflector and parallel thereto both in longitudinal and in transverse relation, whereby is provided, between said deflector and baffler-plate, a flame-passage of approximately equalized draft from side to side, substantially as specified.

811,402. WINDOW-SASH HOLDER. ELMER A. HYDE, Villisca, Iowa. Filed June 28, 1905. Serial No. 267,415.

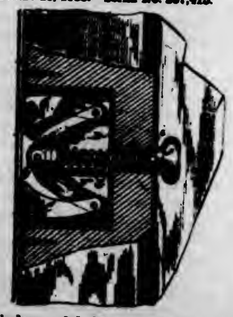

Claim.—A window-sash holder comprising a casing seated in a mortise in the sash and having a tubular extension, cams pivoted to the casing and having bifurcated ends, a pull-rod having its bearing in the tubular extension of the casing, a coiled spring encircling the rod to regulate it spring-actuated, a bifurcated head upon the inner end of the rod, and curved levers engaging the bifurcations in the cams and the bifurcation in the head and pivoted thereto, substantially as and for the purpose described.

811,403. MOTOR-VEHICLE. ALEXANDER IHSEN, Indianapolis, Ind. Filed June 27, 1905. Serial No. 267,194.

Claim.—1. A motor-vehicle, having a motor-carrying frame provided with a pivotal connection with the running-gear, an upright fork pivoted to said frame and carrying a drive-wheel having a driving connection with the motor, a transverse bearing-bar having a pivotal connection at its ends with the vehicle-body, said fork having a stem engaging an aperture of said transverse bearing-bar, means in engagement with the stem of the fork for adjusting the frame, and a spring for pressing the drive-wheel to the ground, substantially as specified.

2. A motor-vehicle having a motor-carrying frame provided with a pivotal connection with the running-gear, an upright fork pivoted to said frame and carrying a drive-wheel having a driving connection with the motor, a transverse bearing-bar having a pivotal connection at its ends with the vehicle-body, said fork having a stem engaging an aperture of said transverse bearing-bar, means in engagement with the stem of the fork for adjusting the frame, a spring for pressing the drive-wheel to the ground, and means independent of said frame for steering the vehicle, substantially as specified.

3. A motor-vehicle, having a motor-carrying frame provided with a pivotal connection with the running-gear, an upright fork pivoted to one end of said frame and carrying a drive-wheel having a driving connection with the motor, a transverse bearing-bar having a pivotal connection at its ends with the vehicle-body, said fork having a threaded stem engaging an aperture of the bearing-bar, a spring between said fork and bearing-bar upon the stem, and an adjusting-nut resting upon said bearing-bar and engaging the stem, substantially as specified.

4. A motor-vehicle having a motor-carrying frame provided with a pivotal connection with the running-gear, a drive-wheel journaled at the outer end of said frame, upright means connected to the axle of said wheel, for adjusting the same, said means having a pivotal supporting connection with the body of the vehicle, and a spring for pressing the drive-wheel to the ground, substantially as specified.

5. A motor-vehicle having a motor-carrying frame provided with a pivotal connection with the running-gear, a drive-wheel journaled at the outer end of said frame, upright means connected to the axle of said wheel for adjusting the same, said means including a transverse supporting-bar having a pivotal connection at its ends with the body of the vehicle, and a spring for pressing the drive-wheel to the ground, substantially as specified.

811,404. APPARATUS FOR ERECTING TUNNELS. HENRY JAFF, New York, N. Y., assignor to S. Pearson and Son, Inc., Long Island City, N. Y., a Corporation of New York. Filed Sept. 21, 1905. Serial No. 279,282.

Claim.—1. The combination of a tunnel with tracks for cars, a stage adapted to be traversed longitudinally above the tracks in the tunnel and a hoisting-cage carried by the stage and adapted to be lowered to the tracks and to be hoisted to the level of the stage-platform.

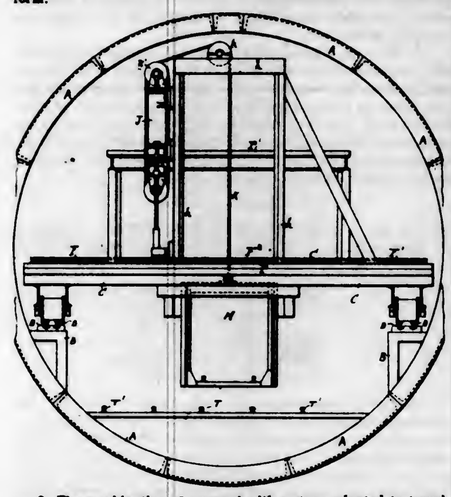

2. The combination of a tunnel with a stage adapted to travel longitudinally therein, tracks on the main platform of the stage and a hoisting-cage carried by the stage.

3. The combination of a tunnel with a stage adapted to travel longitudinally therein, said stage having a main platform and an upper platform and a cage with means to raise and lower the latter, both cage and hoisting means being carried by the stage.

4. The combination of a tunnel with a shield, a stage adapted to travel longitudinally in the tunnel, a hoisting-cage carried by the stage toward its rear, and tracks on the main platform of the stage branching from the cage to the front of the stage.

811,405. ELECTRIC MOTOR. PAUL JEGOUO, Vanves, France. Filed Oct. 18, 1904. Serial No. 228,961.

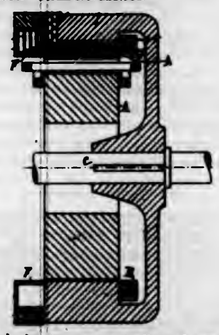

Claim.—1. A device for automatically and progressively starting monophase or polyphase motors with a rotating field, in which the current is induced in the armature by short-circuiting its coils, the combination with the armature of conducting-rings adapted when connected to short-circuit the armature, and a series of flexible bars or conductors supported adjacent to the rings and adapted when the motor is started to be pressed against one of the rings by centrifugal action to electrically connect them and thus short-circuit the armature, substantially as described.

2. A device for automatically and progressively starting monophase or polyphase motors with a rotating field, in which the current is induced in the armature by short-circuiting its coils, the combination with the armature of conducting-rings adapted when connected to short-circuit the armature, a series of flexible bars or conductors supported adjacent to the rings and adapted when the motor is started to be pressed against one of the rings by centrifugal action to electrically connect them and thus short-circuit the armature, and means for withdrawing the bars from making contact when the motor is stopped, substantially as described.

3. A device for automatically and progressively starting monophase or polyphase motors with a rotating field, in which the current is induced in the armature by short-circuiting its coils, the combination with the armature of conducting-rings adapted when connected to short-circuit the armature, a series of flexible bars or conductors supported adjacent to the rings and adapted when the motor is started to be pressed against one of the rings by centrifugal action to electrically connect them and thus short-circuit the armature, and a permanently-short-circuited armature-coil for starting the motor, substantially as described.

4. A device for automatically and progressively starting monophase or polyphase motors with a rotating field, in which the current is induced in the armature by short-circuiting its coils, the combination with the armature of conducting-rings adapted when connected to short-circuit the armature, a series of flexible bars or conductors supported adjacent to the rings and adapted when the motor is started to be pressed against one of the rings by centrifugal action to electrically connect them and thus short-circuit the armature, a permanently-short-circuited armature-coil for starting the motor, and springs of different strength arranged to act on the bars to withdraw them out of contact when the motor stops, and to effect progressive contact of the bars at starting, substantially as described.

811,406. AIR GOODS. HENRY F. KEIL, Brooklyn, N. Y. Filed May 15, 1905. Serial No. 260,555.

Claim.—1. An air mattress or cushion comprising imperforate air-proof flexible side pieces, and non-distensible stays having at each end heads formed of a plurality of parts constructed and arranged to be snapped together, the opposite inner members of each pair of heads being tied to the stays and engaging the inner surfaces of the said side pieces, and the outer imperforate members, upon the parts of the heads being snapped together, engaging the outer surfaces of the said side pieces without puncturing or cutting the same to form rigid air-proof joints, whereby outward movement of the side pieces is prevented and the impermeability of the same is preserved.

2. An air mattress or cushion comprising imperforate air-proof flexible side pieces and stays having at each end heads formed of a plurality of parts constructed and arranged to be snapped together, the opposite inner members of each pair of heads being tied to the stays and engaging the inner surfaces of the said side pieces, and the outer imperforate members, upon the parts of heads being snapped together, engaging the outer surfaces of the said side pieces without puncturing or cutting the same to form air-proof joints, whereby outward movement of the side pieces is prevented and the impermeability of the same is preserved.

3. An air mattress or cushion comprising imperforate air-proof flexible side pieces and non-distensible stays having at each end heads formed of a plurality of parts constructed and arranged to be snapped together, the opposite inner members of each pair of heads being tied to the stays and engaging the inner surfaces of the said side pieces, and the outer imperforate members, upon the parts of the heads being snapped together, engaging the outer surfaces of the said side pieces without puncturing or cutting the same to form rigid air-proof joints, the jointures being practically in a plane parallel to that of the faces of the side pieces and at right angles to the stays, whereby outward movement of the side pieces is prevented and the impermeability of the same is preserved.

4. An air mattress or cushion comprising imperforate air-proof flexible side pieces and stays having at each end heads formed of a plurality of parts constructed and arranged to be snapped together, the opposite inner members of each pair of heads being tied to the stays and engaging the inner surfaces of the said side pieces, and the outer imperforate members, upon the parts of the heads being snapped together, engaging the outer surfaces of the said side pieces without puncturing or cutting the same to form air-proof joints, the jointures being practically in a plane parallel to that of the faces of the side pieces and at right angles to the stays, whereby outward movement of the side pieces is prevented and the impermeability of the same is preserved.

811,407. FABRIC FOR AIR GOODS. HENRY F. KIEL, Dennisville, N. Y. Filed June 12, 1905. Serial No. 264,969.

Claim.—1. In air goods a series of loops of thread dropped at intervals to form a stay-end, said loops being held together between their ends by flexible threads or filaments.

2. In a fabric for air goods a series of loops of thread dropped at intervals to form a stay-end, said loops being held together between their ends by flexible threads or filaments, in combination with a coating of air-proof material applied to the said fabric.

3. In air goods a stay-end composed of two parts at right angles to each other, each of said parts consisting of a series of loops of thread dropped at intervals to form the stay-end, said loops being held together between their ends by flexible threads or filaments.

4. In a fabric for air goods a stay-end composed of two parts at right angles to each other, each of said parts consisting of a series of loops of thread dropped at intervals to form the stay-end, said loops being held together between their ends by flexible threads or filaments, in combination with a coating of air-proof material applied to the said fabric.

811,408. LAY-MOTION FOR LOOMS. SAMUEL D. KELLEY, Boston, Mass. Filed Oct. 16, 1903. Serial No. 127,456.

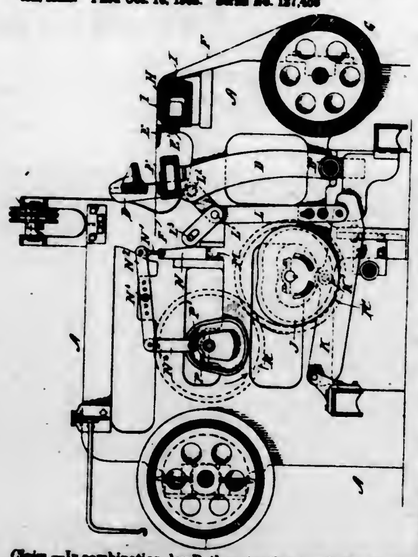

Claim.—In combination, lay D, the actuating-toggle-joint mechanism connected therewith and comprising a slotted arm attached to the frame of the loom by a pin L^3, mechanism cooperating therewith for varying the movement of the lay, and comprising block N; there being a groove M, in the loom-frame in which said block slides; link N'; rocking bar N^3 pivoted to frame; link N^4, connecting the bar with the actuating-cam; and cam P, by which said parts are actuated to regulate the lay-motion and to thereby automatically vary the force of its blows upon the filling as and for the purposes specified.

811,409. PROCESS OF MAKING PAPER RECEPTACLES. JAMES C. KENNEY, Philadelphia, Pa., assignor to American Paper Bottle Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Dec. 7, 1904. Serial No. 235,894.

Claim.—1. The process herein described of making a paper receptacle, said process consisting in forming a tapered tube of paper, of such a taper compared to the thickness of the same that a ring-section cut from the large end of the tube will fit snugly around the body at the large end thereof, cutting a ring-section from the large end of the tube, and passing the tapered tube through the ring and securing the ring to the periphery of the large end of the tube, substantially as described.

2. The process herein described of making paper receptacles, said process consisting in forming a tapered tube of paper or other suitable material, cutting the tube into sections, the alternate sections being cut to form the bodies of the receptacles, and the other sections being cut to form the reinforcing ring-sections, passing the large ends of the ring-sections over the smaller ends of said body-sections and securing the former to the opposite ends of the body-sections, substantially as described.

811,410. MEANS FOR CONVERTING MOTION. CHARLES J. KLEIN, New York, N. Y., assignor to Ralph A. Schoenberg, New York, N. Y. Filed Jan. 4, 1905. Serial No. 239,976.

Claim.—1. Improved means of the character described, comprising two members having different motion; one of such members comprising a body provided with a plurality of operative relatively angularly disposed facial portions grouped about a central axis of said body; and the other of said members being arranged to be directly operatively engaged with said facial portions in such arrangement that said facial portions are interposed directly between said latter member and said axis of said other member.

2. Improved means of the character described, comprising two members having different motion; one of said members comprising a body of varying transverse sectional areas and provided with a plurality of operative relatively angularly disposed facial portions grouped about a central axis of said body; and the other of said members being arranged to be operatively engaged with said facial portions in such arrangement that said facial portions are interposed directly between said latter member and said axis of said other member.

3. Improved means of the character described, comprising two members having different motion; one of said members comprising a body provided with a plurality of operative relatively angularly disposed smooth facial portions grouped about a central axis of said body; and the other of said members being arranged to be directly operatively engaged with said smooth facial portions in such arrangement that said facial portions are interposed directly between said latter member and said axis of said other member.

4. Improved means of the character described, comprising a rotary member, a tension member, and a reciprocating member; said tension member being connected with one of said other members, and comprising two tensionally relatively separable portions; and the other of said other members being provided with a plurality of diversely-inclined operative portions with which said tension member is engaged.

811,411. BOLT-MACHINE. JOSEPH K. KOONS, Montgomery, Pa. Filed Oct. 5, 1904. Serial No. 227,291.

Claim.—1. The combination substantially as herein described, of the framing, a carrier for the stock-rods, means for revolving the stock-rods, a feed-screw operating upon the carrier, a drive-shaft and coupling between the shaft and screw, devices for holding the stock-rods against endwise movement, means for operating the said holding devices, and devices operated by said means for releasing the coupling between the shaft and feed-screw.

2. The combination of the tool-head, cutter-heads provided with tools and with shafts journaled in the tool-head, the pinions on said shafts, the gear meshing with said pinions and means for turning said gear and for locking it in its different positions.

3. The combination with the tool-head, and the cutter-heads each having eccentrically-arranged cutters and provided with shafts journaled in the tool-head, of the pinions on the said shafts, the gear meshing with said pinions, the sleeve slidably keyed to the said gear and arranged to operate the same, and a pin carried by the sleeve and arranged to engage a relatively fixed part whereby to lock the gear in its different positions, substantially as set forth.

4. The combination in a machine substantially as described, of the cutting-off tools, a plate carrying the same and slotted in its opposite sides, standards having lugs entering said slots whereby the tool-plate may move along the standards and means for moving the tool-plate along the standards substantially as set forth.

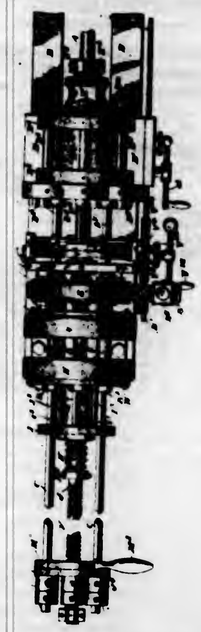

5. The combination in a machine substantially as described, of the feed-screw, a stock-carrier arranged to be fed by said screw, the main shaft, a coupling between the main shaft and the feed-screw, clamps for holding the stock-rods from longitudinal movement, means for forcing said clamps into engagement with the stock-rods and intermediate devices between the means for operating the clamps and the coupling between the feed-screw and main shaft, substantially as set forth.

6. The combination in a machine substantially as described, of the framing, the main shaft, the rotatable guide-tubes for the stock-rods, gripping-blocks in said tubes, nuts turning on the tubes and arranged to compress the blocks upon the stock-rods, means for turning said nuts into and out of position to compress the gripping-blocks, a carrier for the stock-rods, a feeder for said carrier and intermediate devices between the nuts and the feeder for the carrier whereby the feeder may be thrown out of operation when the nuts are adjusted to position to compress the gripping-blocks, substantially as set forth.

7. The combination in a machine substantially as described of a main shaft, a feed-screw, a carrier for the stock-rods arranged for operation by the feed-screw, guide-tubes arranged to receive the stock-rods, a frame supporting said tubes, means for turning the tubes, whereby to turn the stock-rods, the tools for operating on the stock-rods arranged on the opposite side of the tube-supporting frame from the carrier, means for holding the stock-rods from longitudinal movement arranged between the said frame and the tools for operating on the stock-rods, a coupling between the feed-screw and the main shaft, said coupling being arranged between the tube-supporting frame and the stock-carrier, and rods extending from said coupling through the tube-supporting frame and arranged for operation by the devices for holding the rods from longitudinal movement, substantially as set forth.

8. The combination with the cutting-off tools, and the plate carrying the same and provided in its opposite sides with slots, of standards having lugs entering said slots, whereby the tool-plate may move along the standards, tools movably supported on said tool-plate, a cam-plate to operate in said tools, means for turning the cam-plate, and means for moving the cam-plate and tool-plate along the standards, substantially as set forth.

9. The combination in a machine substantially as described, of the tool-carrying plate, the tools movable along said plate, the cam-plate arranged to operate said tools and provided with a worm-rack, a worm-shaft meshing with said rack, bars secured to the cam-plate and having slots receiving said worm-shaft, standards carrying the cam-plate and tool-plate, and means for moving said plates along the standards, substantially as set forth.

10. The combination with the tool-plate and the cam-plate, of the tool composed of an intermediate section having a longitudinal slot, sections on opposite sides of the intermediate section, and the stud passing through said section, and having a threaded stem screwing into one of the sections, said stud passing through the tool-plate into the cam-plate, substantially as set forth.

11. The combination with the main shaft, the carrier for the stock-rods, a feed-screw for operating said carrier, a coupling between the feed-screw and the main shaft, a series of rotatable guide-tubes for the stock-rods, gearing between the said tubes and the main shaft, gripping-blocks in the guide-tubes for holding the stock-rods from endwise movement, nuts threaded on the guide-tubes and adapted to compress the gripping-blocks, the pinions on the nuts a gear-wheel meshing with said pinions and moving bodily therewith along the guide-tubes in the direction of the coupling between the main shaft and feed-screw and means arranged for operation by said gear-wheel for releasing the coupling, substantially as set forth.

12. The combination with rotatable guide-tubes for the stock-rods and having a threaded portion, of gripping-blocks in said threaded portion for holding the stock-rods against endwise movement, nuts turning on said threaded portion and provided with means for compressing the blocks upon the stock-rods, said nuts having pinions, a gear-wheel meshing with said pinions, and turning normally freely with said pinions as the latter are revolved with the guide-tubes, and means for locking said gear from turning, whereby the nuts may be held by their pinions from turning and will be caused to travel along the revolving threading portion, substantially as set forth.

13. The combination with the rotatable guide-tubes having threaded portions, the gripping-blocks in said threaded portions, nuts turning on the threaded portions and provided with means operative to compress the blocks, and said nuts being provided with pinions, a gear-wheel meshing with said pinions, means whereby the gear-wheel may be held from turning, push-rods arranged to be acted on by said gear-wheel, a feed-screw, a main shaft, a coupling between said screw and shaft, and means connecting said coupling with the push-rods, whereby the latter may be operated by the gear-wheel to release the coupling, the gear-wheel being movable toward the coupling to operate the push-rods, substantially as set forth.

14. The combination of the main shaft, the guide-tubes for the stock-rods, provided with pinions, a gear on the main shaft, and meshing with said pinions, whereby to turn the guide-tubes, said tubes being provided with threaded portions, nuts on said threaded portions and provided with pinions, means operated by the travel of said nuts along the threaded portions for clamping the stock-rods against endwise movement, and means whereby the said nuts may be held from movement whereby they will be caused to travel along the threaded portions.

15. The combination in an apparatus substantially as described, with the feed-screw, and a carrier operated thereby and arranged to feed the stock-rods, of the main shaft, means for clamping the stock-rods against endwise movement, and means operated from the stock-clamping means for uncoupling the feed-screw from the main shaft when the stock-clamps are thrown into position to grip the stock-rods, the feed-screw being driven by the main shaft, substantially as set forth.

811,412. OUTSIDE DRY-EARTH CLOSET. JOHN R. KOONS, Huntingdon Mills, Pa. Filed Sept. 7, 1904. Serial No. 223,886.

Claim.—1. In a device of the character described, an excrement-chamber, a sifter, with its casing, provided above said sifter, with a platform, with one edge removed distantly from the opposite wall of said casing, a conveyer arranged below said sifter and adapted to receive the sifted material from said sifter, and an elevator adapted to actuate said conveyer and deliver into said excrement-chamber.

2. In a device of the character described, an excrement-chamber, a sifter having a pivoted bottom, with arm or bar extensions at one end, adapted to be supported upon the sifter-inclosure, means arranged below said sifter and adapted to convey the sifted material from said sifter, means adapted to elevate the conveyed material and deliver it into said excrement-chamber.

3. In a device of the character described, an excrement-chamber, a sifter and an inclosing casing therefor, said casing having se-

cured therein just above said sifter, a platform or board with one edge removed distantly from the opposite wall of said casing, and a scraper arranged upon said board or platform and having a handle extending through said casing, means for conveying away the sifted material and means for elevating said material and delivering it into said excrement-chamber.

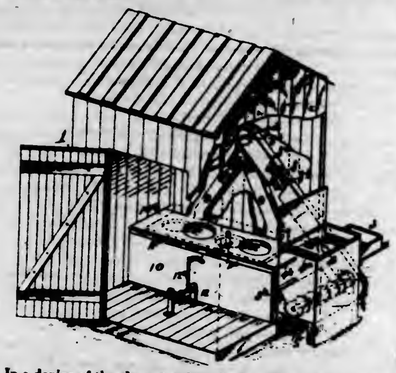

4. In a device of the character described, a sifter and its inclosing casing, said sifter having bar or arm extensions at one end adapted to rest upon a cross-bar of said casing, and a handle for actuating said sifter, extending through said casing.

5. In a device of the character described, an excrement-chamber, a sifter, an inclosing casing therefor, a conveyer arranged within said casing and below said sifter, an elevator effective to actuate said conveyer and deliver the material conducted away by said conveyer to a point above said excrement-chamber, and a bifurcated "trunk" with its branches delivering at different points into said excrement-chamber, said "trunk" or chute being equipped with a plate-valve adapted to direct the elevated material, from the upper end of said "trunk" into either of said branches.

811,413. HOSE-SUPPORTER. ALBERT B. KURTZ, Connellsville, Pa. Filed Aug. 1, 1905. Serial No. 272,370.

Claim.—1. A support of the class described consisting of a resilient flexible strip of material, a clasp carried by each end of said material, each clasp consisting of a plate, a yoke carried by said plate to which the end of said strip is secured, rearwardly-extending hooks carried by said plate and adapted to engage hose, a central clasp carried by said strip, said clasp consisting of a plate, rearwardly-extending lugs carried by said plate, and engaging said strip, depending hooks carried by said plate and adapted to engage in a nether garment, substantially as described.

2. A support of the class described consisting of a resilient flexible strip adapted to partially encircle a limb, clasps carried by each end of said strip, a plurality of hooks carried by each clasp and adapted to engage in a hose, a clasp located centrally of said strip, a plurality of hooks carried by said clasp and adapted to engage in a nether garment the hooks on the centrally-located clasp projecting in a direction at right angles to the direction in which the hooks on the end clasps project, substantially as described.

811,414. DRILL HOLDER AND GAGE. ANTHONY LA FRANCIS, Newark, N. J. Filed Jan. 3, 1905. Serial No. 239,472.

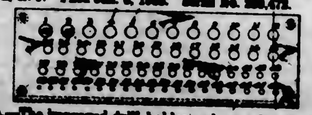

Claim.—The improved drill holder and gage herein described, comprising a top plate having a graduated series of gaging perforations and having marks indicating the size of said perforations, an intermediate plate having a corresponding series of perforations which are larger than those of the top plate, an imperforate bottom plate, and means for holding said plates in relative position.

811,415. REGULATION OF ELECTRIC MOTORS. JOHAN G. V. LAMB, London, England, assignor of one-half to Edward Hibbard Johnson, London, England. Filed June 29, 1904. Serial No. 214,513.

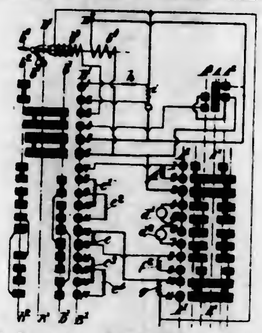

Claim.—1. In regenerative motor-controlling means, the combination with the main controller-cylinder and the field-change cylinder, of means whereby the said field-change cylinder will automatically change the motor from its compound or shunt condition to its series condition, whenever the regenerated current of said motor, while in its compound or regenerative condition, falls below a predetermined value for the purpose specified.

2. In regenerative motor-controlling means, the combination with the main controller-cylinder and the field-change cylinder, of means that tend to keep the field-change cylinder in the position for bringing about the series condition of the motor, means whereby the field-change cylinder is moved against the resistance of the first-mentioned means into the position for bringing about the compound or shunt condition of the motor, and means whereby the reduction in the regenerative current below a predetermined value permits the first-mentioned means to become dominant and to automatically return the field-change cylinder to its original position for the purpose specified.

3. In regenerative motor-controlling means, the combination with the main controller-cylinder and the field-change cylinder, of a magneto-electrical device, shunt and series windings thereon, means whereby the initial movement of the handle of the main controller cylinder causes the shunt-winding to be momentarily energized and the field-change cylinder moved into the compound organizing position with relation to the motor, and means whereby the regenerative current energizes the series winding and maintains said cylinder in its shifted position so long as said current does not fall below a predetermined value, substantially as and for the purposes described.

4. In regenerative motor-controlling means, the combination with the main controller-cylinder and the field-change cylinder, of a solenoid having shunt and series windings, circuits connecting said windings to fixed contacts at the main controller-cylinder, contacts on the handle of the main controller-cylinder coöperating with the fixed contacts for enabling the shunt-winding of the solenoid to become energized, contacts on the field-change cylinder coöperating with fixed contacts for enabling the series winding of the solenoid to become energized, and a spring tending to keep the field-change cylinder in its series organizing condition with relation to the motor substantially as and for the purpose specified.

811,416. REGISTER. ALBERT LAUBER, New York, N. Y. Filed Jan. 14, 1905. Serial No. 241,151.

Claim.—1. In a register of the kind described, the combination with a series of continuously-operating shafts carrying indicator-hands, of a continuously-operated indicator-disk, a series of intermittently-operating disks loosely mounted upon the said shafts carrying the indicator-hands, gears for operating the shafts and disks, a power-shaft having a pinion for imparting motion to the gears, the said power-shaft being operated by the fluid being measured.

2. In a register of the kind described, the combination with a series of continuously-operating indicator-hands, of shafts for supporting the hands, intermeshing gears carried by the shafts, a train of gears, and a power-shaft having a pinion for operating the shafts carrying the hands, said power-shaft being actuated by the fluid being measured, a continuously-moving disk carried by one of the shafts, a series of intermittently-operated disks loosely mounted upon the remaining shafts carrying the hands, said intermittently-operated disks being actuated through the medium of the continuously-moving disk.

3. In a device of the kind described, the combination with a series of continuously-operating shafts carrying indicator-hands, a continuously-operating disk carried by one of the shafts, disks loosely mounted upon the remaining shafts and operated through the medium of the said continuously-moving disk, intermeshing gears carried by the shafts, a power-shaft operated by the fluid being measured, a pinion carried by the power-shaft, a train of gears meshing with the pinion and one of the gears of the said continuously-moving shafts, and an indicator-hand carried by the power-shaft.

4. In a register of the kind described, the combination with a series of continuously-operating shafts, each carrying an indicator-hand, of gears for operating the shafts, said gears being actuated by the fluid being measured, a continuously-operating disk, and a series of intermittently-operated disks, said continuously-operating disks engaging one of the intermittently-operating disks, and means carried by the remaining intermittently-operated disks by which they are operated, substantially as specified.

5. In a device of the kind described, the combination with a series of continuously-operated shafts carrying indicator-hands, of a disk fixed upon one of the shafts, a disk loosely mounted upon each of the other shafts and having toothed wheels connected thereto, a tooth arranged upon the continuously-moving disk and adapted for engagement with the toothed wheel carried by the disk positioned adjacent thereto, a tooth arranged upon each of the loosely-mounted disks and adapted for engagement with the toothed wheel of its respective preceding disk, gears for operating the said shafts, and a power-shaft for operating the gears, said power-shaft being actuated by the fluid being measured, all substantially as specified.

6. In a device of the kind described, the combination with a frame having a series of continuously-operating shafts journaled therein, each shaft having an indicator-hand fixed upon its forward end and adapted to travel around a dial upon the face of the frame, a disk fixed upon one of the shafts and having a series of numerals upon its face, a disk loosely mounted upon each of the remaining shafts, the said loosely-mounted disks having toothed wheels which are adapted for engagement by a tooth carried by each preceding disk, spring-pawls carried by the frame and engaging the toothed wheels, gears for operating the shafts, a power-shaft for imparting motion to the gears, said power-shaft having an indicator-hand which is designed to travel around a dial arranged upon the frame, said shaft being actuated by the fluid being measured, all substantially as specified.

7. In a register of the kind described, the combination with a frame, of a series of shafts journaled therein, each shaft having an indicator-hand which is designed to travel around a dial upon the face-plate of the frame, a disk fixed upon one of the shafts and having numerals upon its face, a disk loosely mounted upon each of the remaining shafts, said disks also having numerals upon their faces, means carried by the fixed disk for operating the adjacent disk, and means carried by the latter disk for operating its adjacent preceding disk and also means carried by this latter disk for operating its adjacent preceding disk, intermeshing gears carried by the shafts, a power-shaft carrying a pinion, and a train of gears for imparting motion from the power-shaft to the gear of the shaft upon which the fixed disk is held, and an indicator-hand carried by the power-shaft, all substantially as specified.

811,417. APPARATUS FOR JUMPING AND VAULTING. ONOREO M. LEMAY, Westpoint, N. Y. Filed June 6, 1905. Serial No. 263,963.

Claim.—1. In an apparatus for jumping or vaulting in combination, a support for the bar movable vertically and laterally in both directions, and mechanism to return said support to its normal position.

2. In an apparatus for jumping or vaulting in combination, a post, a support mounted on said post to rotate in both directions, a shaft carried by said support, and a bar-supporter connected to said shaft to have a vertical movement in both directions.

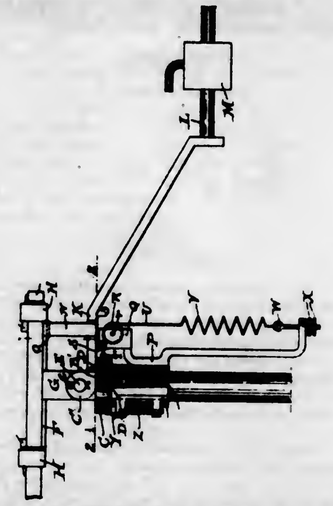

3. In an apparatus for jumping or vaulting in combination, a post, a support mounted on said post to rotate in both directions, a shaft carried by said support, a bar-supporter connected to said shaft to have a vertical movement in both directions, and mechanism to return the bar-supporter to its normal position when moved laterally or vertically therefrom in any direction.

4. An apparatus for jumping or vaulting in combination, a bar-supporter, a shaft upon which said bar-supporter is swiveled to move in both directions, and a counterweight acting on said bar-supporter.

5. In an apparatus for jumping or vaulting in combination, a bar-supporter, a support rotatable in both directions, connection between said bar-supporter and said rotatable support.

6. In an apparatus for jumping or vaulting in combination, a bar-supporter, a support rotatable in both directions, connection between said bar-supporter and said support, and means to return said support to its normal position when moved therefrom in either direction.

7. In an apparatus for jumping or vaulting in combination, a bar-supporter, a shaft, connection between said bar-supporter and said shaft whereby said bar-supporter is movably supported, a support, rotatably mounted, carrying said shaft.

8. In an apparatus for jumping or vaulting in combination, a bar-supporter, a shaft, connection between said bar-supporter and said shaft whereby said bar-supporter is movably supported, a support rotatably mounted carrying said shaft, and means to return said bar-supporter to its normal position when removed therefrom.

9. In an apparatus for jumping or vaulting in combination, a bar-supporter, a support mounted to rotate in both directions, connection between said bar-supporter and said support, a spring, a fixed connection for said spring, the free end of said spring being connected to said rotatable support.

10. In an apparatus for jumping or vaulting in combination, a bar-supporter, a support mounted to rotate in both directions, connection between said bar-supporter, and said support, a spring, a fixed connection for said spring, the free end of said spring being connected to said rotatable support, an interlocking device adapted to hold said rotatable support normally in and return it to its normal position.

11. In an apparatus for jumping or vaulting in combination, a bar-supporter, a support mounted to rotate in both directions, connection between said bar-supporter and said support, a post and vertically-adjustable connection between said rotatable support and the post.

12. In an apparatus for jumping or vaulting in combination, a bar-supporter, a shaft, connection between said bar-supporter and said shaft whereby said bar-supporter is movably supported, a sup-

port, carrying said shaft, mounted to rotate in both directions, a post and vertically-adjustable connection between said rotatable support and the post.

811,418. HOLDER FOR RIBBONS, &c. HIRAM MARSH, Indianapolis, Ind. Filed May 26, 1905. Serial No. 262,146.

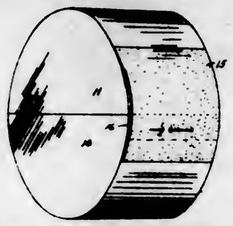

Claim.—1. A holder adapted to receive a roll of ribbon or other fabric, said holder being substantially the same form as the roll of ribbon or the like and provided with a body portion and lid portion hinged thereto through which the roll of ribbon or the like may be inserted into the holder and a slot below the hinge of the lid portion through which the ribbon may be withdrawn so that the ribbon may be passed over the lid portion, and means at the side of the holder opposite said slot to which the ribbon may be temporarily secured.

2. A holder for ribbon and the like that is cylindrical in form and consists of a body portion, a lid portion hinged thereto, a felt or other flexible fabric secured to the lid portion at the free side and hanging down a felt or cloth secured to the adjacent body portion to which said overhanging portion may be secured for holding the lid portion closed, and a slot in the body portion below the hinge through which the ribbon may be withdrawn.

811,419. PROCESS FOR PREPARING FIBER FROM CORNSTALKS AND ANALOGOUS PITHY PLANTS. ALBERT G. MANNS, Chicago, Ill., assignor, by direct and mesne assignments, to Food & Fiber Products Company, Chicago, Ill., a Corporation of Illinois. Filed Apr. 14, 1905. Serial No. 255,549.

Claim.—1. The process of preparing fiber from cornstalks, bagasse and analogous plants of the same genus, which consists in first practically freeing the fibrous mass from water-soluble constituents by subjecting the raw material to the action of a heated hydrous bath to effect dissolution of said constituents and then separating the solution from said mass, next subjecting the fibrous material to a digesting cook in a suitable reducing liquor drastic enough to effect moderately rapid disintegration of the intercellular tissues and incrustaceous matters but not drastic enough to effect at the same time the destruction of any large proportion of the pith-cells, continuing this digesting treatment under controlled conditions until the pith and filamentary cells are substantially set free from the connective tissues and finally separating and recovering said cells from the disintegrated mass.

2. A process of preparing fiber from cornstalks, bagasse and analogous pithy plants which consists in subjecting the raw material to a preliminary extracting and softening process with water, separating the extracting liquor and extracts contained in solution therein from the fibrous material, then cooking the fibrous material in a usual reducing liquor until the mass is disintegrated and the fibers freed from the intercellular structure and then separating the two kinds of fiber by washing and screening.

3. The process of preparing fiber from cornstalks, bagasse and analogous plants of the same genus which consists in first practically freeing the fibrous mass from water-soluble constituents by subjecting the raw material to the action of a heated bath of water or steam to effect dissolution of said constituents and then separating the solution from said mass, next subjecting the remaining fibrous material to a digesting cook under pressure in a suitable reducing liquor drastic enough to effect moderately rapid disintegration of the intercellular tissues and incrustaceous matters but sufficiently mild to prevent effecting at the same time the destruction of any large proportion of the pith-cells, continuing this digesting treatment under controlled conditions until the pith and filamentary cells are substantially set free from the connective tissues and finally separating and recovering said cells from the disintegrated mass.

4. The process of preparing fiber from cornstalks, bagasse and analogous plants of the same genus, which consists in first practically freeing the fibrous mass from water-soluble constituents by subjecting the raw material to the action of a heated hydrous bath and effecting dissolution of said constituents and then separating the solution from said mass, next subjecting the fibrous material to a digesting cook in a suitable reducing liquor drastic enough to effect moderately rapid disintegration of the intercellular tissues and incrustaceous matters but sufficiently mild to prevent at the same time the destruction of any large proportion of the pith-cells, continuing this digesting treatment under controlled conditions until the pith and filamentary cells are substantially set free from the connective tissues, then separating the fiber from the reducing solution and finally treating the fiber in a bleaching solution.

5. The process of preparing fiber from cornstalks, bagasse and analogous plants of the same genus, which consists in first practically freeing the fibrous mass from the water-soluble constituents by subjecting the raw material to the action of a heated hydrous bath and thus effecting dissolution in said constituents, then separating the solution from said mass, next subjecting the fibrous material to a digesting cook in a suitable reducing liquor drastic enough to effect moderately rapid disintegration of the intercellular tissues and incrustaceous matters but mild enough to prevent the destruction at the same time of any large proportion of the pith-cells, continuing this digesting treatment under controlled conditions until the pith and filamentary cells are substantially set free from the connective tissues, then separating the fiber from the reducing solution and finally beating the fiber.

811,420. STEAM-TRAP. ELON A. MARSH, Detroit, Mich., assignor to The Greenaway Company, Detroit, Mich., a Corporation. Filed Mar. 30, 1905. Serial No. 253,991.

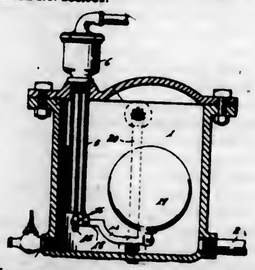

Claim.—1. In a steam-trap, a trap-chamber, a valve-chamber external to the trap-chamber and above the water-accumulating space therein, a main valve having a central passage, a piston-actuator for said valve, a cylinder surrounding said piston open at the top and having space for fluid therein under said piston and having discharge from said space through the said central passage in the main valve, a fluid-discharge pipe depending from the valve-chamber into the water-accumulating space of said trap, a pilot-valve for controlling the passage through the main valve and a float for actuating said pilot-valve, substantially as described.

2. In a steam-trap, a trap-chamber, a valve-chamber external to the trap-chamber and above the water-accumulating space therein, a main valve having a central passage, a piston-actuator for said valve, a cylinder surrounding said piston open at the top and having space for fluid therein under said piston and having discharge from said space through the said central passage in the main valve, a fluid-discharge pipe depending from the valve-chamber into the water-accumulating space of said trap, a pilot-valve for controlling the passage through the main valve and a float for actuating said pilot-valve, a pivot-and-slot connection between said float and pilot-valve, substantially as described.

811,421. PIN-RETAINER. WILLIAM C. MAYNARD, Miami, Fla. Filed Feb. 6, 1906. Serial No. 300,499.

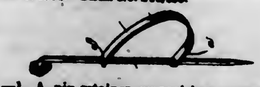

Claim.—1. A pin-retainer comprising a member having an opening that receives the pin loosely, so that said member is adapted to slide upon or grip the pin when placed at different angles, and means integral with said member for applying elastic tension thereto for holding the member normally in the gripping position, substantially as described.

2. A pin-retainer comprising a member having an opening adapted to receive the pin loosely and a spring integral with said member and serving to hold the member normally at an angle to the pin so as to grip it in the manner described.

3. A pin-retainer consisting of a curved spring having at one end an opening adapted to receive a pin loosely, and its opposite end also adapted to engage the pin and press against the same, so as to exert leverage upon the first-named end and thus hold it normally inclined to the pin, substantially as described.

4. A pin-retainer consisting of a spring having a hook form, one end being provided with an opening adapted to receive a pin loosely, and the opposite end adapted to engage the pin, whereby leverage is applied to the end provided with the opening so that the pin is gripped and held by friction, substantially as described.

5. A pin-retainer consisting of a spring which is in curved form, one end thereof having an opening adapted to receive a pin loosely, and the opposite end provided with a notch also adapted to receive the pin, the construction being such that when the notched end of the retainer is engaged with the pin the opposite end is held at an inclination to the pin and thereby caused to grip the same in the manner described.

6. A pin-retainer consisting of a spring having a hook form, the shorter arm or member of such hook having an opening adapted to receive a pin loosely and the opposite end being adapted for engagement with the pin, the construction and arrangement being as described, whereby when the upper end of the spring is applied to the pin, the shorter arm or member is thrown downward and held at an inclination to the pin, the tension and leverage of the spring being thus proportionate to the pressure applied by or to the upper portion of the spring, substantially as described.

7. As an improved article of manufacture, a pin-retainer consisting of a spring having hook form, one end being provided with an opening adapted to receive a pin loosely, and the opposite end provided with a notch for engaging a pin, substantially as described.

8. The improved pin-retainer, consisting of a plate-spring which is in curved form, one end being provided with an opening adapted to receive a pin and the opposite end also adapted to engage the pin, the angle of the part having the opening being such that it is held at an inclination to the pin when the other end is applied thereto, substantially as described.

811,422. FRICTION-CLUTCH. ALBERT C. MEREDITH, Grand Rapids, Mich., assignor to William Harrison, Grand Rapids, Mich. Filed Jan. 16, 1906. Serial No. 296,343.

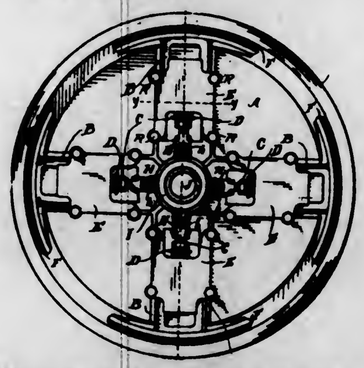

Claim.—1. In a friction-clutch, the combination with a case and a clutch-wheel, of a plurality of radially-movable clutch-arms, a corresponding series of removable caps forming guides for the arms and having outer angular extremities, springs held between the angular extremities of the caps and the inner extremities of the arms, radially-slidable sleeves movable in the inner extremities of the springs and through the inner ends of the arms and having auxiliary spring-controlling devices independent of the first-mentioned springs interposed between the caps and the arms, and also adjusting means for regulating the clutch-arms, and means engaging portions of the said sleeves for throwing the arms outwardly.

2. In a friction-clutch, the combination with a case and clutch-wheel, of a plurality of radially-movable clutch-arms, springs for retracting the said arms, levers for extending the arms into engagement with the clutch-wheel, means for retaining the arms in position, and slidable devices coöperating with the inner extremities of the arms and engaged by the levers, the inner slidable devices having springs engaging the same and independent of the springs for retracting the arms.

3. In combination with a clutch-wheel, of a plurality of slidable arms extending radially from a common center, means for throwing the said arms outwardly to cause engagement of the outer ends thereof with the clutch-wheel, a spring for each arm coöperating with the inner extremity of the latter to give a yielding pressure between the frictional surface of the arm and the clutch-wheel, a slidable element for each arm located at the inner end of the latter and coöperating with the pressure-controlling spring and having a device longitudinally adjustable therein to regulate the outward throw of the arm and contacting with the means for throwing the said arms outwardly, and a spring coöperating with the device adjustable longitudinally in the slidable element and independent of the spring for each arm for disengaging the arm from the clutch-wheel when outward pressure on said arm is removed.

4. The combination with a clutch-wheel and case, of a plurality of arms held by the case and radially movable with respect to a common center, caps secured to the case over the inner extremities of the arms to serve as guides for the latter and having outer angular extremities with inward projections, sleeves slidably mounted in the inner terminals of the arms and having adjusting means projecting therefrom and springs to give a yielding pressure thereto, retracting-springs for the arms interposed between the projections of the caps and the outer extremities of the sleeves and independent of the first-named springs, and movable elements engaging the adjusting means carried by the sleeves.

811,423. PRESS FOR MOLDING CEMENT OR PLASTIC BLOCKS. CHARLES A. MEYERS, Leipsic, Ohio. Filed Aug. 11, 1905. Serial No. 273,816.

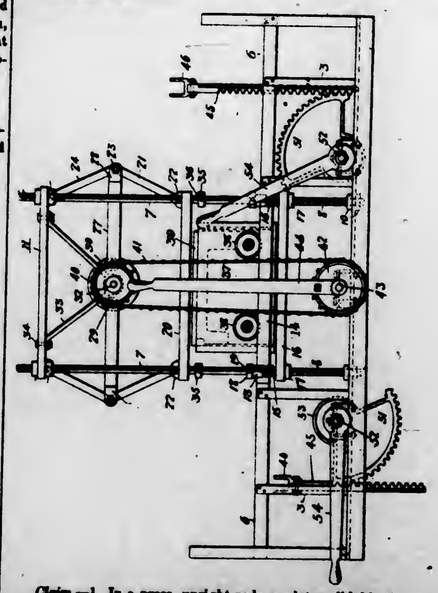

Claim.—1. In a press, upright rods, a platen slidable thereon, toggle-levers composed of links arranged in pairs at opposite ends of the platen and pivotally suspended from a support at the upper part of said rods and links pivotally connected to the platen and having their upper ends lying between the pairs of suspended links and jointed thereto, and pitmen connected to said links at their junction with each other for operating the same, substantially as described.

2. In a press, upright rods, a platen slidable thereon, toggle-levers pivotally connected at one end to the platen and at the other end to a support at the upper end of said rods, pitmen formed with a fork

as one end and spanning the meeting ends of the toggle-levers and pivotally connected thereto, and eccentrics intermediate of and to which the inner ends of said pitmen are connected for actuating the toggle-levers, substantially as described.

2. In a press, a mold-supporting track, rods rising above the track, a platen sliding on the rods above the track, toggle-levers located at opposite sides of the platen and connected with the platen and with a support, pitmen connected with the toggle-levers, and eccentrics intermediate of and with which the inner ends of the pitmen are connected for operating the pitmen, substantially as described.

4. In a press, upright rods, a platen, levers for operating the platen, a mold-supporting track beneath the platen, sleeves slidable on the rods and having the track connected thereto, springs beneath said sleeves and means supporting said springs, substantially as described.

5. In a press, a platen, and a yieldingly-supported mold-sustaining track beneath the platen, substantially as described.

6. In a press, upright rods, sleeves mounted on said rods, a mold-sustaining track supported from said sleeves, springs forming a cushion for said sleeves, and means limiting the movement of the sleeves, substantially as described.

7. In a press, upright rods, a toggle-lever-actuated platen slidable on the rods, a mold-supporting track below said platen, sleeves slidable on the rods and having said track connected thereto, springs forming a cushion for said sleeve, and a fixed platen below said track, substantially as described.

8. In a press, the base-frame supporting end tracks, upright rods, sleeves slidably mounted on said rods, a mold-supporting track connected to said sleeves and located between the end tracks, springs sustaining said sleeves and intermediate track, a platen slidably mounted on the rods above said track, and levers for moving said platen, substantially as described.

9. In a press, a support for a mold, a lifting-bar for lifting the molded block out of the mold, and a tilting device connected to said bar for turning over the block as it leaves the mold, substantially as described.

10. In a press, a support for a mold, a lifting-bar for lifting the molded block out of the mold, and a finger pivoted to the bar and adapted to engage with a part of the mold in turning over the block as it leaves the mold, substantially as described.

11. In a press, a support for a mold, a lifting-bar for raising the molded block, a finger pivoted to the bar and adapted to engage a part of the mold and provided with a shoulder to aid in turning over the block as it leaves the mold, substantially as described.

12. In a press, a support for the mold, a bottom board to the mold, an L-shaped plate or shelf within the mold, said plate and board having corresponding openings, a lifting-bar for raising the molded block, a finger provided with a shoulder and pivoted to the bar and arranged to enter the openings in said plate and bottom board in turning over the block as it leaves the mold, substantially as described.

13. In a press, a support for a mold, an L-shaped plate fitting in the mold and formed with an opening, a lifting-bar for raising the molded block, a finger pivoted to the bar and entering the opening in the plate and formed with a shoulder bearing against the plate, said finger turning with the plate and block as the block is turned over in leaving the mold, substantially as described.

14. In a press, a support for a mold, a rack-bar for raising the molded block, a finger pivoted to the bar and engaging a part of the molded block and adapted to tilt as the block is turned over in leaving the mold, and a toothed segment engaging the rack-bar to raise and lower the same, substantially as described.

15. A press comprising upright rods, a fixed platen adapted to be held at various positions on the rods, an upper platen slidably mounted on the rods, a plate or frame connecting together and bracing the rods at their upper ends, links pivotally suspended from said plate or frame between the rods, links pivotally connected to the platen and jointed to said suspended links, pitmen pivotally connected with said links where they are joined together, and a rotatable shaft provided with eccentrics to which the inner ends of said pitmen are connected on opposite sides of said shaft, substantially as described.

811,424. SUBSOILING-PLOW. JOHN F. HINCLAMEE, Vodaway, S. D. Filed July 12, 1905. Serial No. 269,494.

Claim.—A subsoiling-plow comprising a beam, a yoke vertically adjustable at the front end of the beam, a roller mounted in said yoke, and an arm pivotally connected to the yoke and also pivotally connected to the beam, an upwardly and rearwardly inclined trough suspended from the beam and having a lateral extension at the rear end, a cutting-blade on the front end of the trough, a yoke depending from the beam, and a shoe attached to said depending yoke.

811,425. COALING DEVICE FOR MOVING TRAINS. CHARLES M. MILLER, Tyrone, Pa. Filed July 3, 1905. Serial No. 268,661.

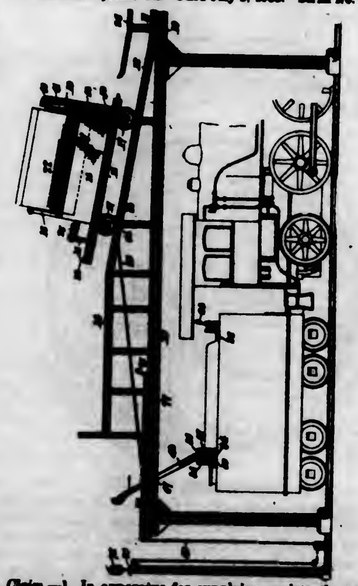

Claim.—1. In apparatus for supplying coal to the tenders of moving railway-trains, an elevated support arranged above the railway-track, and provided with inclined rails, a dumping-car mounted on the rails, means for locking the dumping-car from movement, and a train-carried member for releasing the car in advance of the arrival of the tender thereunder, permitting the car to descend the inclined rails by gravity, said member serving subsequently to engage and move the car, and serving further to trip the dumping mechanism and permit the dumping of the load carried by the car.

2. In apparatus of the class described, an elevated structure having an inclined track, a dumping-car arranged on said inclined track, a chock for holding the same from movement, a lever connected to said chock, and a train-carried member adapted to engage said lever in advance of the arrival of the tender under the car, permitting the car to descend the inclined track and acquire momentum in advance of the dumping operation.

3. In apparatus of the class described, an elevated support, a dumping-car arranged to travel thereon, a sectional bucket having locking-fingers arranged in close relation, a release-bar having lugs engaging said fingers, and an arm carried by the train and arranged to move said bar to release position.

4. In apparatus of the class described, the combination with an elevated support, of a car arranged to travel on the support, a sectional dumping-bucket carried by the car, locking-fingers carried by the bucket members, a release-bar having lugs for engaging said fingers, and a train-carried arm for moving the bar to release position and for moving the car at a speed equal to that of the train.

5. In apparatus of the class described, the combination with an elevated support, of a car arranged to travel on the support, a sectional dumping-bucket on the car, a trip mechanism for releasing the bucket, a slidable frame for operating said trip mechanism, a pair of fingers carried by the frame and having cam-shaped inner ends, and a train-carried arm arranged to engage and be guided by said fingers.

6. In apparatus of the class described, the combination with an elevated support, of a car arranged to travel thereon, a sectional bucket on the car, locking-fingers carried by the bucket members, a release-bar engaging said fingers, a slidable frame connected to the release-bar, a train-carried arm for engaging such frame and forcing the release-bar to disengaged position, and a pair of guiding-fingers pivoted to the frame and having cam-shaped free ends for guiding said arm to proper position.

7. In apparatus of the class described, the combination with an elevated frame, of a car arranged to travel on the frame, a sectional dumping-bucket on the car, a pivotally-mounted counterweighted chute on the car at a point below the bucket, and movable to open position under the weight of the contents of said bucket, and a train-carried means for releasing the bucket.

8. In apparatus of the class described, the combination with an elevated support, of a car, a sectional bucket carried by the car, a chute pivoted to the lower portion of the car at a point under the bucket, a counterweight for holding the chute in elevated position when empty, and a train-carried means for releasing the bucket and insuring movement of the car at a speed equal to that of the train.

9. In apparatus of the class described, the combination with an elevated support, of a dumping-car arranged to travel thereon, a pivotally-mounted arm carried by the train, a locking-pin for holding the arm in elevated position, and an operating-lever for releasing said pin and allowing the arm to drop to inoperative position.

10. In apparatus of the class described, the combination with an elevated structure, of a dumping-car mounted thereon, means for locking said car from movement, and a signal connected to said locking means.

11. In apparatus of the class described, the combination with an elevated support, of a dumping-car mounted thereon, a signal, and means for automatically moving said signal in accordance with the position of the car.

811,426. ADJUSTABLE CRANK-DISK. ISA G. MITCHELL, Hooker, Colo., assignor of one-twelfth to Arthur C. Hamilton, one-twelfth to Frank B. Sheridan, one-twelfth to Reuben S. Ball, one-twelfth to Lee Peterson, one-twelfth to Frank H. Jo Hastings, and one-twelfth to George H. Aicher, Hooker, Colo. Filed May 15, 1905. Serial No. 260,657.

Claim.—1. A cylindrical body having a recessed portion in combination with an eccentric-disk mounted in said recessed portion, said eccentric-disk being provided with an annular flange adapted to engage the recess of said annular body.

2. A circular body having a recessed portion provided with an offset, in combination with an eccentric-disk rotatably mounted in said recessed portion, said eccentric-disk being provided with an annular flange adapted to engage the offset in said annular body.

3. A cylindrical body having a recessed portion, in combination with an eccentric-disk rotatably mounted in said recessed portion, said eccentric-disk being provided with a peripheral groove and an annular rib, said rib being adapted to engage the recess of said cylindrical body, and means carried by said cylindrical body adapted to enter said groove.

811,427. LOCKING MECHANISM FOR ELEVATORS. JOHN S. MUCKLE, Philadelphia, Pa., assignor to Standard Elevator Interlock Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Oct. 28, 1904. Serial No. 230,267.

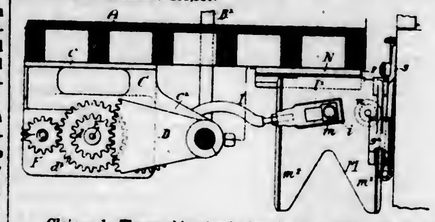

Claim.—1. The combination in door-locking mechanism for elevators, of a plunger mounted under the floor of a car, a shaft under the car and controlling the operating mechanism of the car, gearing mounted under the car and connecting the shaft with the plunger, and a door-lock and a plunger-lock on the elevator-well, substantially as described.

2. The combination in a door-locking mechanism for elevators, of a plunger mounted under the floor of the car, a frame also mounted under the floor of the car, a shaft controlling the operating mechanism of the car, elliptical gears carried by the frame connected to the plunger and geared to the operating-shaft, and door-locking mechanism on the elevator-well arranged to be acted upon by the plunger, substantially as described.

3. The combination of an elevator-car, a plunger, an operating-shaft for the controlling mechanism and a frame, all mounted under the floor of the car, gears carried by the frame, a rod connecting the said gearing to the plunger, a segment on the operating-shaft meshing with the said gearing, and door-locking mechanism on the elevator well arranged to be actuated by the plunger, substantially as described.

4. The combination of an elevator-car, a frame secured to the car under the floor thereof, elliptical gears on one side of the frame and plain gears on the opposite side of the frame, a shaft mounted on the frame, a plain gear and an elliptical gear carried thereby, an operating-shaft mounted in bearings under the floor of the car, means for operating the said shaft to start and stop the car, a segment on said shaft meshing with the plain gears, a plunger, a slide therefor, a rod connecting the plunger with one of the elliptical gears, and a door-locking device actuated by the plunger, substantially as described.

5. The combination of an elevator-car, a frame secured to the under side of the car, an operating-shaft for controlling the starting and stopping of the car, a bearing for said shaft carried by the frame, a segment on the shaft, a pinion carried by a stud on the frame, a gear-wheel mounted on the hub of the pinion, a shaft having its bearings in the said frame, a pinion carried by the shaft and meshing with the gear-wheel, an elliptical gear-wheel mounted on the opposite end of the shaft, a second stud on the frame, a second elliptical gear-wheel on said last-mentioned stud and meshing with the first elliptical gear-wheel, a pin on the second elliptical gear-wheel, a plunger, a rod connecting the plunger with the pin on the second elliptical gear-wheel, and a door-locking device actuated by the plunger, substantially as described.

6. The combination in means for releasing a landing-door when the elevator-car is at the landing and locking the operating mechanism when the door is opened, of an elevator-car, a frame secured to the under side of the car, gearing carried by said frame, an operating-shaft also under the bottom of the car, a segmental arm on the shaft meshing with the gearing on the frame, a plunger mounted on the under side of the car and connected to the gearing, an operating-lever connected to the operating-shaft, an elevator-landing door, a lock therefor arranged to be actuated by the plunger, and a lock on the wall of the elevator-well arranged to engage the plunger when

the said plunger is projected and the door is opened, whereby the operating mechanism of the car is locked, substantially as described.

811,428. CONFORMER-CORSET. CHARLES MUNTER, New York, N. Y. Filed Apr. 5, 1905. Serial No. 254,626.

Claim.—A conformer-corset, comprising a back formed of two sections, having their upper edges shaped to conform to the contour of the neck at the back and partly at the sides, the sections being formed with armholes, the front portions thereof forming integral and unbroken shoulder-straps adapted to the true formation of the shoulder-blades, adjacent portions of the breast, and the armpits of the wearer, the front edges of the straps being curved downwardly and outwardly, the curves being on convex lines, and their outer or rear edges being curved at top and bottom on concave lines and curved on convexed lines intermediate of the said curved portions forming projections which fold outwardly and prevent chafing under the armpits, a series of lacings connecting the sections of the back, each series being carried downward at the outer face of the said sections in opposite directions, and a sectional belt, to the rear ends of the sections of which the lacings are secured, substantially as herein shown and described.

811,429. CRUDE-OIL BURNER. STEPHEN B. MCKNIGHT, Iola, Kans., assignor to Samuel Davidson, Yates Center, Kans. Filed May 26, 1905. Serial No. 262,189.

Claim.—1. In a hydrocarbon-oil burner, a frame, an oil-supply tube supported on the frame, a return-pipe surrounding said tube and communicating with a mixing-chamber having an outlet into the frame, an air-supply pipe bent in substantially rectangular form having portions extended along the inner sides and ends of the frame, and an ejector on one end of said air-pipe leading into the mixing-chamber.

2. A hydrocarbon-oil burner comprising a frame, a grating arranged on the top thereof, an oil-supply tube supported in the grating, a return-pipe for oil surrounding the said tube and communicating with the mixing-chamber, having an outlet into the frame, an air-supply pipe having portions extended along the inner sides of the frame and along the ends thereof, and an adjustable ejector on one end of said air-pipe and leading into the mixing-chamber.

3. In a hydrocarbon-oil burner, a frame, two grates removably placed on the top thereof, cross-bars on said grates having depressions at the center, an oil-return pipe having its ends seated in said depressions, a casting with which the said return-pipe connects, an oil-tube extended from said casting through said return-pipe and terminating inward of its inner end, a port leading from said return-pipe through the casting into a mixing-chamber having a reduced outlet in the frame, an air-pipe having a portion arranged in the frame, and an ejector leading from one end of said air-pipe into the mixing-chamber.

4. In a hydrocarbon-burner, a pan having openings in its bottom, tubes surrounding said openings and extending upward in the pan, a frame detachably mounted on the pan, inverted-V-shaped deflectors attached to the frame and extending over said tubes, and a burner proper comprising a vaporizing-pipe supported on the frame, and an air-heating pipe arranged in the frame the said pipe being arranged in substantially rectangular form to pass along the sides and ends of the frame.

811,430. INKSTAND. ERNEST J. OSBORN, Oakland, Cal. Filed June 3, 1905. Serial No. 263,696.

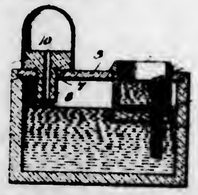

Claim.—1. In a device of the character set forth, a reservoir, a well having connection therewith, a compressor mounted on the reservoir, a feed-tube adjustably carried by the well and having its lower end projecting into the reservoir, and a protector situated within the well and adapted to support the tube in adjusted position.

2. In a device of the character set forth, a reservoir, a well having connection therewith, a compressor mounted on the reservoir, a feed-tube adjustably carried by the well and having its lower end projecting into the reservoir, said tube being provided with a passage restricted at its lower end and gradually increasing upwardly, and a protector situated within the well and adapted to retain the said tube in its adjusted position.

811,431. TIMB STOCK-FEEDER. WILLIAM H. PAINE, Louisville, Ky. Filed Apr. 3, 1905. Serial No. 253,630.

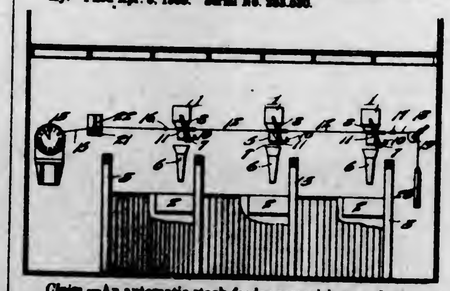

Claim.—An automatic stock-feeder comprising an alarm mechanism, a feed-box having a movable bottom, means to move said bottom from closing position with relation to the feed-box, a flexible connection between the alarm mechanism and the movable bottom, a controlling-roller about which said connection is wound, and a stop for limiting the movement of said roller.

811,432. MEANS FOR DISPLAYING PICTURES AND THE LIKE. ALBERT B. PRAGER, Everett, Wash. Filed Mar. 13, 1905. Serial No. 249,968.

Claim.—1. An incasement comprising a plurality of sections arranged one on the other and having their edges provided with spaced-apart ribs, and a cementitious binder extending over the adjacent ribs of said sections and into the spaces between the ribs of the respective sections.

2. An incasement comprising a plurality of transparent sections arranged one on the other, said sections being formed with spaced-apart ribs on their edges, the ribs of each section having their inner faces cut out, and a cementitious binder extending over the adjacent ribs of said sections and into the cut-out portions of the ribs of the respective sections.

3. An incasement comprising a plurality of transparent sections arranged one on the other, said sections having their edges provided with raised portions, and a cementitious binder extending over said raised portions for holding the sections together.

4. An incasement comprising a plurality of transparent sections arranged one on the other, said sections having ribs formed on their edge portions, the adjacent ribs of said sections being of less height than the other ribs, and a cementitious binder extending over the adjacent ribs of said sections and into the spaces between the ribs of the respective sections.

811,433. CALCINATION OF HYDRATED ALUMINA. ALFRED R. PECHINEY, Salindres, France, assignor to Compagnie des Produits Chimiques d'Alais et de la Camargue, Lyon, France. Filed Apr. 3, 1905. Serial No. 253,569.

Claim.—1. The improved process of calcinating hydrated alumina, according to which such hydrated alumina is calcined in the presence of a fluorid at a temperature of 1,200° centigrade, or thereabout, substantially as set forth for the purpose specified.

2. The improved process of calcining hydrated alumina, according to which such hydrated alumina is calcined in the presence of a fluorid volatile at the temperature to which the calcination is effected, substantially as set forth for the purpose specified.

3. The improved process of calcining hydrated alumina, according to which such hydrated alumina is calcined in the presence of fluorid of aluminium, substantially as set forth for the purpose specified.

4. The improved process of calcining hydrated alumina, according to which such hydrated alumina is calcined in the presence of a fluorid, the mixture containing approximately one part of fluorin to one hundred parts of anhydrous alumina, substantially as set forth for the purpose specified.

5. In the calcination of hydrated alumina, mixing a solution of fluorid of aluminium with the hydrate of alumina to be calcined, so that the mixture contains say one part of fluorin to one hundred parts of anhydrous alumina.

811,434. AUXILIARY CAR-COUPLING. GEORGE M. PENNEPACKER and CHARLES S. LAGOW, Philadelphia, Pa.; Clara W. Pennepacker administratrix of said George M. Pennepacker, deceased. Filed Mar. 28, 1905. Serial No. 252,449.

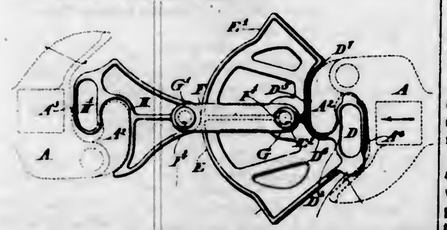

Claim.—1. An auxiliary coupling for cars having in combination a supporting-head adapted to engage with and rest on an automatic vertical-plane coupling-head, said supporting-head having a laterally-extending buffer-surface, in combination with a coupling-head adapted to couple automatically with the standard vertical-plane coupler, and means for securing the coupling-head to the supporting-head with freedom for both lateral and angular adjustment, said coupling-head being arranged in all positions to contact with the buffer-surface on the supporting-head.

2. An auxiliary coupling for cars having in combination a supporting-head adapted to engage with and rest upon an automatic vertical-plane coupling-head, in combination with a coupling-head adapted to couple automatically with the standard vertical-plane coupler, links pivotally connected to the supporting-head and to the coupler-head and a buffer secured or formed on the supporting-head and against which the buffing strains on the coupler-head are directly taken up in all positions of said head.

3. An auxiliary coupler having a supporting-head adapted to engage with a vertical-plane coupler, and formed with a tapered enlargement or enlargements on its jaw or intereagaged portion D, to secure a wedging engagement with a closed coupler.

4. An auxiliary coupler having a supporting-head adapted to engage with a vertical-plane coupler and formed with tapered enlargements D', D^2, on its jaw or intereagaged portion D, to secure a wedging engagement with a closed coupler.

5. An auxiliary coupler having a supporting-head adapted to engage with a vertical-plane coupler and formed or provided with a buffing and guide plate E, extending from it in a substantially horizontal plane, in combination with links F, F, pivoted to the supporting-head above and below plate E, and a coupling-head adapted to automatically engage with a standard coupler pivoted on the free ends of the links in front of plate E.

811,435. TELEGRAPH OR TELEPHONE POLE. JAMES M. PERDUE, Matthews, Ga. Filed July 11, 1905. Serial No. 269,344.

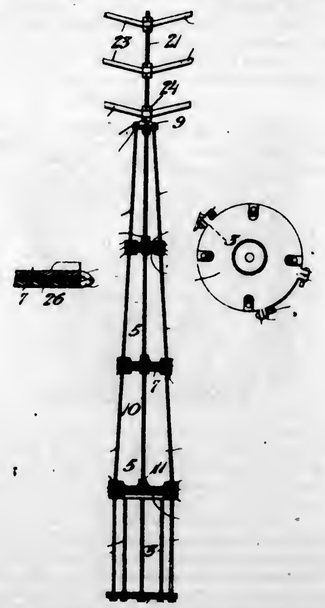

Claim.—1. A post comprising a series of sections, each formed of rods and heads, means for pivotally connecting the heads of the superposed sections, and means for uniting the heads against movement on their pivotal connections.

2. A post comprising a base-section, a crown-section, and a series of intermediate sections, each section comprising rods connected with heads, means for pivotally connecting the heads of the superposed sections, means for uniting the heads against movement on their pivotal connections, a supporting-stem carried by the head of the crown-section, and arms supported by said stem.

811,436. STAIR STRUCTURE. MAX PLOTKIN, New York, N. Y., assignor to Clara Bein, Brooklyn, N. Y. Filed Mar. 16, 1905. Serial No. 250,431.

Claim.—1. In a stair structure, a nosing forming a pocket and having a downwardly-extended flange at its upper edge.

2. In a stair structure, a nosing forming a pocket and having a downwardly extended and inclined flange at its upper edge.

3. In a stair structure, a tread and a riser having a reëntrant at its lower portion above the tread.

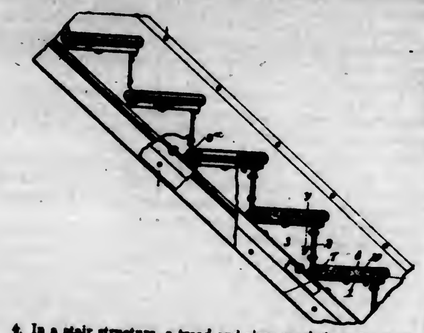

4. In a stair structure, a tread and riser consisting of a single sheet of metal, the riser having a reëntrant at its lower portion, and a nosing formed on its upper portion.

5. In a stair structure, a tread and riser, consisting of a single sheet of metal, the riser having a reëntrant at its lower portion, a nosing forming a pocket, and a downwardly-inclined flange at the upper edge of said nosing.

6. In a metal stair structure, a string-piece bent to form a ledge at its lower portion, treads and risers, angle-plates secured to the treads and risers and to said ledge, and means for securing concrete or the like on the treads.

811,437. RIFLE-CARRYING ATTACHMENT. WILLIAM H. READ, Lipton, Canada, assignor to Roland J. Hemmiet, Lipton, Canada. Filed June 2, 1905. Serial No. 263,445.

Claim.—1. A firearm-carrying attachment comprising a belt, a shoulder-strap attached at one end to the belt and its free end adapted to be suspended over the wearer's shoulder, said strap provided with a holder adapted to be attached to the firearm, and a muzzle-holding strap separate from the shoulder-strap, and carried by the belt.

2. A firearm-carrying attachment comprising a belt, a shoulder-strap attached thereto at one end only, and adapted to depend from one shoulder of the wearer, said shoulder-strap being extensible and provided with a holder adapted to be attached to the firearm to be carried, and a muzzle-holding strap connected with the belt and separate from and independent of the shoulder-strap.

3. A firearm-carrying attachment comprising a belt, a shoulder-strap permanently secured thereto at one end only, and comprising two parts adjustably secured together, one having means at its free end for attachment to the firearm to be carried, and a muzzle-holding strap attached to the belt and separate from the shoulder-strap.

4. A firearm-carrying attachment comprising a belt, a shoulder-strap, secured thereto, with one end adapted to hang over the wearer's shoulder and having means thereon for attachment to the firearm and a muzzle-holding strap permanently secured at one end to the belt and detachably connected with the belt at its other end.

5. A firearm-carrying attachment comprising a belt, a shoulder-strap attached at one end to the belt and the other end free and adapted to hang over the shoulder of the wearer, its free end having a holder constructed and adapted to encircle a portion of the firearm, whereby the latter is adapted to turn therein.

6. A firearm-carrying attachment comprising a belt, and a shoulder-strap connected therewith with one end free and adapted to be suspended over the shoulder of the wearer, said free end terminating in a holder, said holder being a widened-out portion of the shoulder-strap with its edges brought together, and adapted to be looped around a portion of the firearm to be carried.

811,438. RUNNING-SHOE. BYRON F. ROGERS, Philadelphia, Pa., assignor of one-half to Benson Johnson, Philadelphia, Pa. Filed Aug. 21, 1905. Serial No. 274,209.

Claim.—The herein-described runner's shoe consisting of a flexible upper and sole made of a single piece, and shaped to the foot when in running position, with the heel portion raised above the vamp or ball portion, and a stiff tap-sole secured to the ball portion of the shoe, said tap-sole being leveled or skived off at the front and rear, and provided with spikes or spurs, essentially as described.

811,439. SAW-TOOL. COLLINS RITTS, Shingleton, Col. Filed Apr. 3, 1905. Serial No. 253,332.

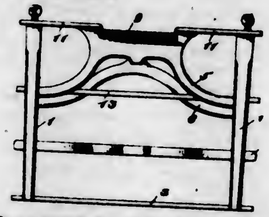

Claim.—In a saw-tool, the combination of a frame, line-plate 11, an intermediate drag-plate 9, standards 1 for supporting said plates, a guide-bar 13 connecting said standards, a bearing-spring 12 on the frame, a file-holder comprising a series of lugs 14, 15 extending laterally on the inside of the frame and set-screws 8 extending vertically through the top of the frame to hold a file in place upon the lugs, substantially as described.

811,440. BLOCK. WILLIAM F. ROGERS, Rockville, Tenn. Filed May 5, 1905. Serial No. 259,696.

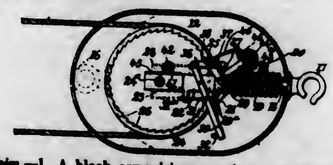

Claim.—1. A block comprising a casing, a rotatable sheave bodily movable in the casing, and means for locking the sheave against rotation after a definite bodily movement.

2. A block comprising a casing, a rotatable sheave bodily movable in the casing, means for resisting this movement of the sheave, and means for locking the sheave against rotation after a certain amount of resistance has been overcome.

3. A block comprising a casing, a rotatable sheave bodily movable in the casing, and means operable by the bodily movement for locking the sheave against rotation.

4. A block comprising a casing, a rotatable sheave bodily movable in the casing, means for locking the sheave against rotation after a definite bodily movement, and means for varying the range of effective movement.

5. A block comprising a casing, a frame movable therein, a sheave journaled in the frame and having locking projections, and locking mechanism mounted upon the frame and cooperating with the projections and with an element carried by the casing.

6. A block comprising a casing, a frame movable therein, a sheave journaled in the frame and having locking projections, locking mechanism mounted upon the frame and cooperating with the projections, and a contact member movable upon the casing and which may be engaged by the locking mechanism.

7. A block comprising a casing, a rotatable sheave bodily movable in the casing, means for locking the sheave against rotation after a definite bodily movement, and an audible signal operable by the locking mechanism.

8. A block comprising a casing, a rotatable sheave bodily movable in the casing, means for resisting this movement of the sheave, means for locking the sheave against rotation after a certain amount of resistance has been overcome, and an audible signal sounded when the sheave is locked.

9. A block comprising a casing, a rotatable sheave bodily movable in the casing, means for locking the sheave against rotation after a definite bodily movement, and an indicator operable by the bodily movement of the sheave.

10. A block comprising a casing, a rotatable sheave bodily movable in the casing, means for resisting this movement of the sheave, means for locking the sheave against rotation after a certain amount of resistance has been overcome, and means for indicating the resistance overcome.

11. A block comprising a casing, a frame movable therein, a sheave rotatable in the frame and having teeth, a latch which may engage the teeth, a dog for the latch, a lever fulcrumed upon the frame and cooperating with the dog, and a contact member carried by the casing and situated in the path of the lever.

12. A block comprising a casing, a frame movable therein, a sheave rotatable in the frame and having teeth, a latch which may engage the teeth, a dog for the latch, a lever fulcrumed upon the frame and cooperating with the dog, a setting-link connecting the lever and latch, and a contact member carried by the casing and situated in the path of the lever.

811,441. SEPARATOR-TOOTH. HENRY R. ROSEMOND, Richmond, Ind. Filed Mar. 13, 1903. Serial No. 147,617.

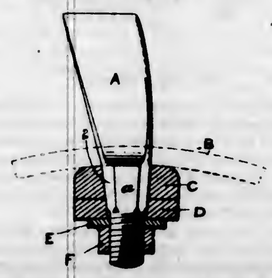

Claim.—A separator-tooth having a tapering shank hexagonal in cross-section, one of the longer diameters of the hexagon being directly from front to rear of the tooth, as hereinbefore set forth.

811,442. DENTAL AND SURGICAL LAMP. CLARENCE F. ROGERS, Conneaut, Ohio. Filed Feb. 24, 1905. Serial No. 247,128.

Claim.—A device of the character described comprising a lens-holder embodying two telescopic tubes in one of which is a lens and the other of which is provided with an outwardly-beveled flange at its end, a conical reflector open at both ends with its smaller end engaging around said flange, and a lamp-holder or sleeve projecting laterally from said reflector.

811,443. COLLAR-BUTTON. CLARENCE F. ROGERS, Conneaut, Ohio. Filed May 3, 1905. Serial No. 258,693.

Claim.—As a new article of manufacture a collar-button provided with a head, a spring-plate forming a closure for the rear face of said head and the latter being provided on its outer face with a slot and a spur pivoted to said head within the slot and provided on its butt-end with two faces set at an obtuse angle with relation to each other and designed to bear against the spring-closure for the rear face of the head, whereby said closure may hold said spur either flush with the plane of said slot or protruded therefrom according against which face of said spur the closure bears.

811,444. WATER-CLOSET. FRANK SCHUH, Albany, N. Y. Filed Apr. 10, 1905. Serial No. 254,809.

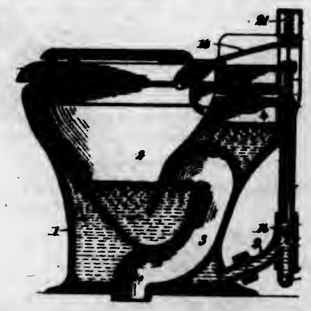

Claim.—1. A water-closet comprising an outer casing, a hopper arranged therein and spaced therefrom to form a water-receiving chamber, a water-supply pipe having communication with the lower portion of the chamber and having a valve-seat, a pipe leading from said supply-pipe to the upper portion of the hopper and having a valve-seat, said two valve-seats being adjustable toward and from each other, a valve for controlling the inlet of water and also for controlling the passing of water through the pipe leading to the upper portion of the hopper, and a spring for causing a movement of said valve in one direction.

2. A water-closet comprising an outer casing, a hopper arranged therein, a water-receiving chamber between the hopper and casing, a swinging seat, a lever extended rearward from the said seat, an inlet-pipe communicating with the lower end of said chamber, a pipe leading upward from the inlet-pipe and communicating with the upper portion of the hopper, a valve for controlling the inlet of water from the first-named pipe and also for controlling the passing of water through the last-named pipe, adjustable seats for the valve, a stem extended upward from the same through said last-named pipe, and also through the lever attached to the seat, and a spring for moving the valve downward.

3. A water-closet comprising an outer casing, a hopper arranged therein and a siphon leading from the hopper the said hopper and siphon being spaced from the outer casing to form a water-receiving chamber, a water-inlet pipe having a valve-seat, a branch leading from said inlet-pipe to the lower portion of said chamber, a pipe leading upward from said branch and having a valve-seat within the branch, the said valve-seats being adjustable in the branch, the said last-named pipe communicating with the upper portion of the hopper, a valve for engaging with the valve-seat, a swinging seat, a lever

extended rearward from the seat, a stem for the valve, extending through said lever, a boxing, and a spring arranged between said boxing and said lever.

811,445. SHINGLE-FASTENING DEVICE. MARTIN M. SCHULLER, Chicago, Ill. Filed Mar. 6, 1905. Serial No. 248,695.

Claim.—1. A shingle-fastening device comprising a strip of sheet metal secured to the roof underneath the free ends of each row of shingles and provided with projecting tongues bent over upon the free end portions of said shingles, and projections on the free ends of said tongues adapted to be driven into said shingles to secure said tongues.

2. A shingle-fastening device comprising a strip of sheet metal secured to the roof underneath the free ends of each row of shingles, and provided with projecting tongues bent over upon the free end portions of said shingles, and V-shaped projections on the side edges of said tongues at their free ends adapted to be driven into the free end portions of said shingles to secure the same.

811,446. VENEER-DRIER. WALTER M. SCHWARTZ, Philadelphia, Pa. Filed July 20, 1905. Serial No. 271,747.

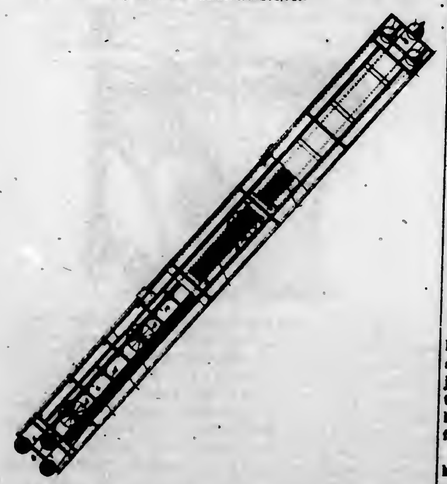

Claim.—1. A veneer-drying machine having, in combination, a drying-chamber casing, means for carrying the strips or sheets of veneer through said chamber and retaining them in a flattened condition during such travel, and means for causing passage of air across said flattened strips or sheets of veneer in a direction transverse to their direction of movement, substantially as specified.

2. A veneer-drying machine having, in combination, a drying-chamber casing, means for carrying the strips or sheets of veneer through said chamber and retaining them in a flattened condition during their travel, and means for causing flow of air across the drying-chamber, first in one direction and then in the opposite direction, substantially as specified.

3. A veneer-drying machine having, in combination, a drying-chamber casing, means for carrying the strips or sheets of veneer through said chamber and maintaining them in a flattened condition during their travel, and means for causing repeated reverse flows of air across the drying-chamber, substantially as specified.

4. A veneer-drying machine having, in combination, a drying-chamber casing, means for carrying the strips or sheets of veneer through said chamber and maintaining them in a flattened condition during such travel, the heating-chamber on one side of said casing, and means for drawing heated air from said chamber and forcing it across the drying-chamber in a direction transverse to the direction of movement of the veneer, substantially as specified.

5. A veneer-drying machine, having, in combination, a drying-chamber casing, endless aprons having conveyer-runs for carrying strips or sheets of veneer through said chamber, heating-chambers on opposite sides of the casing, and means for drawing air from said chambers and forcing it across the heating-chamber and across the conveyer-runs of the aprons therein, first in one direction and then in the opposite direction, substantially as specified.

6. A veneer-drying apparatus, having, in combination, a drying-chamber casing, endless aprons having conveyer-runs carrying strips or sheets of veneer through said chamber, means for causing circulation of air across the chamber from side to side and means for withdrawing air from the chamber at intervals in its length, substantially as specified.

7. A veneer-drying apparatus, having, in combination, a drying-chamber casing, endless aprons having conveyer-runs for carrying strips or sheets of veneer through said chamber, and slatted supports for said conveyer-runs, substantially as specified.

8. A veneer-drying apparatus, having, in combination, a drying-chamber casing, endless aprons having conveyer-runs for carrying strips or sheets of veneer through said chamber, slatted supports on one side of said conveyer-runs and transverse rollers on the other side of the same, substantially as specified.

9. A veneer-drying apparatus, having, in combination, a drying-chamber casing, endless aprons having conveyer-runs for carrying strips or sheets of veneer through said chamber, and slatted supports for said conveyer-runs alternating with upper and lower rollers between which said conveyer-runs pass at intervals, substantially as specified.

811,447. ROLLING-COLTER STANDARD AND FORK ATTACHMENT. PHILIP A. SHANKLIN, Sandoval, Ill., assignor to James B. Taylor, Sandoval, Ill. Filed Oct. 18, 1905. Serial No. 283,336.

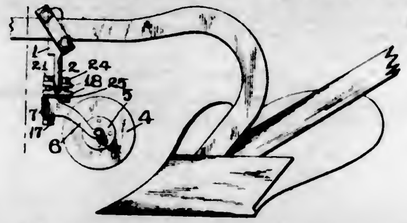

Claim.—1. The combination with a rolling-colter standard, having a horizontally-bent lower end, of a pair of blocks adjustably arranged upon the horizontal lower end, a bolt seated in and projecting downwardly from said blocks, conical bearings arranged on the projecting portion of said bolt, a fork pivotally mounted on said bolt between said bearings, and a rolling colter journaled in said fork; substantially as specified.

2. The combination with a rolling-colter standard, having a horizontally-bent lower end, of a pair of blocks adjustably arranged upon the horizontal lower end, a bolt seated in and projecting downwardly from said blocks, conical bearings arranged on the projecting portion of said bolt one of which bearings is removable, a fork pivotally mounted on said bolt between said bearings, and a rolling colter journaled in said fork; substantially as specified.

3. The combination with a rolling-colter standard, having a horizontally-bent lower end which horizontal end is circular in cross-section, of a pair of blocks mounted for adjustment on said horizontal end, locking-bolts passing through the ends of said blocks one of which bolts projects downwardly from the blocks, a fork pivotally mounted on the projecting portion of said bolt, and a rolling colter journaled in said fork; substantially as specified.

4. The combination with a rolling-colter standard, having a horizontally-bent lower end which is round in cross-section, of a pair of blocks adjustably arranged on said horizontal lower end, bolts passing through the ends of said blocks one of which bolts projects downwardly below the lower block, conical bearings on the projecting portion of said bolt, a fork pivotally arranged on said bolt between the conical bearings, and a rolling colter journaled in said fork; substantially as specified.

5. The combination with a rolling-colter standard, having a horizontally-bent lower end which is round in cross-section, of a pair of blocks adjustably arranged for adjustment on said horizontal lower end, bolts passing through the ends of the blocks one of which bolts extends downwardly below the lower block, a conical bearing formed integral with said extended bolt, a conical bearing removably mounted on the lower end of said bolt, a fork pivotally mounted on said bolt between the conical bearings, and a rolling colter journaled in said fork; substantially as specified.

811,448. CRATE-NAILING-UP FORM. JOHN SHELLENBERGER, Rome, Ga. Filed May 4, 1905. Serial No. 258,876.

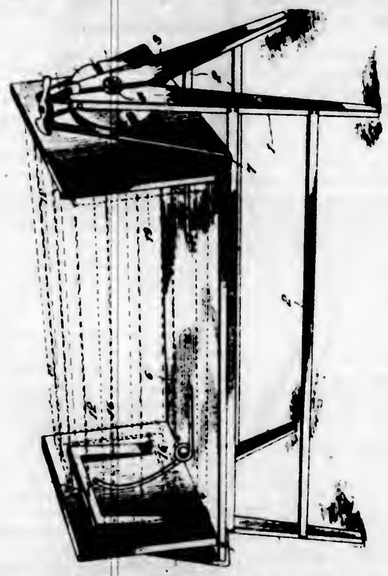

Claim.—1. A device for use in assembling and nailing up crates comprising a form-frame, crate-end heads carried thereby and provided with ledges to receive the crate ends, and means to removably hold the crate ends to said heads and on said ledges.

2. In combination, a support, a form-frame provided with movable crate-end-receiving heads, spring devices carried by said frame to engage and clamp the crate ends to said heads and tending to move said heads outwardly from operative positions before said heads are secured together, and movable means for pressing said heads inwardly to operative positions and whereby said heads can be released for outward movement from operative positions to permit removal of the crate.

3. In combination, a form-frame, crate-end-receiving heads hinged thereto to swing toward and from each other, spring devices to clamp the crate ends to the inner faces of said heads, and movable means for swinging said heads toward each other to clamp the crate-bottom and sides between the same, and whereby said heads can be released and swung outwardly to permit removal of the crate, substantially as described.

4. In combination, a form-frame, crate-end-receiving heads mounted thereon and movable toward and from each other to receive the crate ends, sides and bottom and to release and permit removal of the crate, outwardly-yielding spring devices carried by the frame independently of and arranged at the inner faces of said heads to clamp the crate ends against the same, and movable means for pressing said heads toward each other and for removably holding the same in operative position, and whereby said heads can be released to permit outward movement thereof for releasing the crate therefrom, substantially as described.

5. In combination, a form-frame having lateral ends, crate-end-receiving heads arranged adjacent to the inner faces of said ends, respectively, and movable toward and from the same, spring-arms secured to said frame and arranged at and pressing toward the inner faces of said heads, respectively, and adapted to engage the inner faces of the crate ends and clamp the same to the inner faces of said heads, respectively, and swinging levers carried by said frame ends to engage said heads and hold the same to operative position, and whereby said heads can be released to permit outward movement thereof to release and permit removal of the crate.

6. In combination, a support, a rotary form-frame comprising a longitudinal base having lateral ends provided with trunnions turning in said support, the support and frame having a latch and series of spaced notches, whereby said frame can be rotated a partial revolution and locked by the latch entering a notch for the purposes described, movable crate-end-receiving heads mounted on said base between said ends thereof, means to detachably clamp the crate ends to said heads, and means for moving the heads to and holding the same in operative position, substantially as described.

7. In combination, a folding support comprising pairs of pivotally-joined end legs, each pair of legs forming a journal box or bearing when the legs are spread in operative position, a rotary form-frame having trunnions removably located in said journal-boxes, crate-end-receiving heads carried by said frame, and means for controlling said heads.

8. In combination, a form-frame, movable crate-end-receiving heads mounted on and carried by said frame and at their inner faces provided with crate-end-receiving shoulders or abutments, and means controlling the movement of said heads.

9. In combination, a form-frame, spaced crate-end-receiving heads carried thereby and each at its inner face provided with a crate-end-receiving shoulder or abutment comprising a horizontal and vertical portion depending from the ends thereof to fit three sides of the crate ends.

10. In combination, a form-frame, spaced movable crate-end-receiving heads, means controlling the movement thereof, each head at its inner face having a crate-end-receiving ledge comprising a horizontal portion and depending downwardly and inwardly beveled portions, and spring devices to detachably clamp the crate ends to said heads and on said ledges.

11. A device for use in assembling and nailing up boxes and crates comprising a form-frame having ends, crate-end-receiving heads pivotally joined to said frame, spring-arms arranged to act on the inner sides of said heads and adapted to detachably hold the crate ends thereto, and levers to limit the movements of said heads toward said ends, substantially as described.

811,449. FRUIT-CRATE. JOHN SHELLENBERGER, Rome, Ga. Filed May 31, 1905. Serial No. 263,129.

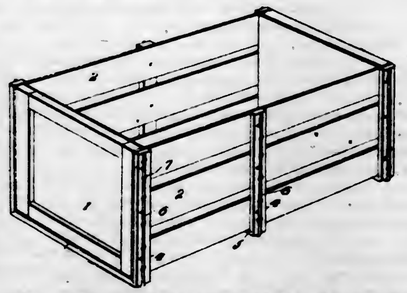

Claim.—1. A fruit-shipping crate comprising end heads, longitudinal-spaced bottom and side slats secured to said end heads, opposite end and intermediate parallel battens fitting the outer faces of and crossing and secured to said side and bottom slats and bent transversely to extend from the bottom slats upwardly across the side slats, and wires arranged longitudinally along the outer faces of said battens and secured thereto approximately throughout the lengths thereof, substantially as described.

2. In combination, in a ventilated fruit-shipping crate, end heads, a bottom and sides composed of spaced longitudinal slats secured to said end heads, battens secured to and extending across the slats and arranged at the outer faces thereof, each batten formed with transverse cuts across its inner side and extending the greater portion of the distance through the batten, each batten bent at said cuts to extend from the crate-bottom upwardly along the sides of the crate, the walls of each cut abutting against each other to form a miter-joint, and wires secured to the battens and extending longitudinally thereof and bridging said joints, substantially as described.

3. A shipping-crate comprising end heads, and a bottom and

sides lapping and secured to the edges of said end heads, said bottom and sides consisting of longitudinal slats, and several battens secured to the slats and arranged at the outer faces thereof, each batten extending transversely across the bottom and upwardly across the sides and having tapered cuts extending across the same forming miter-joints at the junctions between the sides and bottom and a wire secured longitudinally to the battens and bridging said joints, substantially as described.

4. As an article of manufacture, a flat sheet or series of slats adapted to be bent around and secured to crate ends to form the bottom and sides thereof and consisting of a series of separated or spaced longitudinal slats, and several battens extending across and secured to the outer faces of said slats, each batten at its inner face, between certain slats, having transverse flaring cuts extending the greater portion of the distance through the battens, and longitudinal wires secured along the outer faces of the battens approximately throughout the lengths thereof, substantially as described.

811,450. FEED-BAG. JAMES A. SKINNER, Denver, Colo. Filed Apr. 13, 1905. Serial No. 255,189.

Claim.—1. In a feed-bag, apertured guard-plates secured to the inner side portions of the bag, said plates being separated at the front, a connecting medium for the rear portions of the plates, and a cushion of yielding material carried by the said connecting medium.

2. In a feed-bag, apertured guard-plates secured to the inner side portions of the bag, which plates are separated at the front, and a connecting element having sliding relation to the guard-plates.

3. In a feed-bag, apertured guard-plates conforming to the contour of and secured to the inner side portions of the bag, which guard-plates are separated at the front of the bag, a connecting-plate at the rear of the bag, independent thereof and connected with and having end movement upon the rear portions of the guard-plates.

4. In a feed-bag, apertured guard-plates conforming to the contour of and secured to the inner side portions of the bag, which guard-plates are separated at the front of the bag, a connecting-plate at the rear of the bag, independent thereof and connected with and having end movement upon the rear portions of said guard-plates, and a cushion of a yielding material carried by the connecting-plate and extending beyond its forward edge.

5. In a feed-bag, apertured guard-plates horizontally located within the bag and secured to its inner side faces, the inner edges of the said guard-plates being concaved and their forward ends separated, their rear ends being provided with longitudinal slots, a connecting-plate the ends whereof extend over the slotted ends of the guard-plates, and pins secured to the connecting-plate, which pins are loosely passed through the slots in the guard-plates.

6. In a feed-bag, apertured guard-plates horizontally located within the bag and secured to its inner side faces, the inner edges of the said guard-plates being concaved and their forward ends separated, their rear ends being provided with longitudinal slots, a hinged connecting-plate, the ends whereof extend over the slotted ends of the guard-plates, pins secured to the connecting-plates and loosely passed through the slots in the guard-plates, and a cushion carried by the connecting-plate and extending beyond the forward edge of the same.

811,451. FENCE-POST. DELOS A. SMITH, Webberville, Mich. Filed Dec. 27, 1904. Serial No. 238,243.

Claim.—A fence-post hollow throughout its entire length and fully open at its ends, said post provided with an integrally-formed sleeve adjacent its upper end and with a horizontally-disposed supporting-flange at its lower end, a brace hollow throughout its entire length and fully open at its ends, one end of said brace being secured within said flange and bent intermediate its ends to dispose a portion thereof in vertical alinement with said post, a supporting-flange secured to the lower end of the brace, cement filling for the post and brace, cement bases secured above the lower ends of the post and brace and supported by said flanges, and a tie-wire uniting the post and brace.

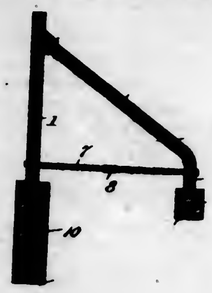

811,452. SLICING-MACHINE. EDWARD F. SMITH, Rochester, N. Y., assignor to Josiah Anstice, Rochester, N. Y. Filed July 27, 1904. Serial No. 218,621.

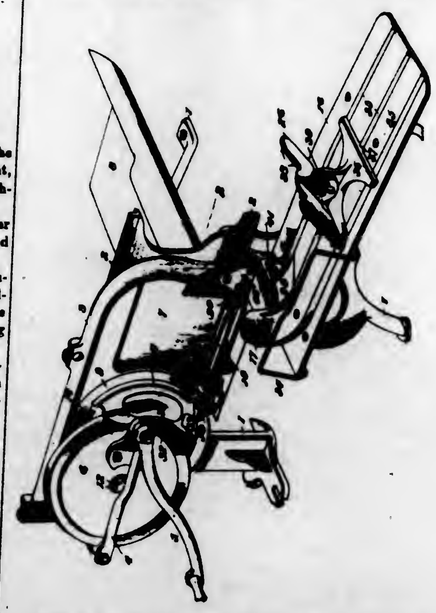

Claim.—1. In a bread-slicer, the combination of a holder for the loaf, a movable cutter, a receiver for the cut slices arranged at right angles to the cutter and extending substantially parallel therewith, and a stacker receiving the cut slices separately in an edgewise position and delivering them separately to the said receiver.

2. In a bread-slicer, the combination of a holder for the loaf, a vertically-arranged horizontally-movable cutter, a horizontally-arranged receiver, a horizontally-movable stacker normally adjacent the cutter and adapted to receive the slices in an edgewise position, and means for moving the stacker with the cutter during its slicing action, and means for moving the stacker from the cutter to the receiver after the slicing ceases.

3. In a bread-slicer, the combination of a holder for the loaf, a horizontally-movable rotatable cutter, a receiver for the cut slices having its receiving end at one side of the point at which cutting ceases and extending in a direction parallel the cutter, and means for moving the cut slices from the cutter and delivering them to the receiver.

4. In a bread-slicer, the combination of a holder for the loaf, a receiver for the cut slices extending parallel the cutter, a stacker connected with the cutter and means for imparting to the stacker two movements, first one at right angles to the cutter to remove the slice from the cutter, and then one parallel the cutter to stack the slice on the receiver.

5. In a bread-slicer, the combination of a holder for the loaf, a receiver, a reciprocating stacker receiving each slice separately in an edgewise position and delivering it to the receiver independently of the previously-cut slices, and means for operating the stacker.

6. In a bread-slicer, the combination of a holder for the loaf, a movable cutter, a receiver for the cut slices adapted to support them in an edgewise position, a stacker normally adjacent the cutter and movable outward therefrom to deliver the cut slices to and stack them on the receiver.

7. In a bread-slicer, the combination of a holder for the loaf, a movable cutter, a receiver for the cut slices adapted to support them in an edgewise position, a movable stacker normally adjacent the cutter and means for moving the stacker from the cutter to the receiver to deliver the cut slices to the receiver.

8. In a bread-slicer, the combination of a holder for the loaf, a movable cutter, a receiver for the cut slices adapted to support them in an edgewise position, a stacker having a portion adjacent the cutter and extending in a plane parallel therewith, the stacker movable from the cutter to the receiver, and means for so moving the stacker.

9. In a bread-slicer, the combination of a holder for the loaf, a movable cutter, a receiver for the cut slices adapted to support them in an edgewise position, a swinging stacker movable with the cutter and means for moving the stacker away from the cutter when the slice has been cut and to the receiver for carrying the slice to the latter.

10. In a bread-slicer, the combination of a holder for the loaf, a vertically-arranged cutter movable in a horizontal direction, a horizontally-arranged receiver for the cut slices, a stacker having a vertically-arranged portion adjacent the cutter which is movable in a horizontal plane from the cutter to the receiver, and means for moving the stacker in said plane.

11. In a bread-slicer, the combination of a holder for the loaf, a movable cutter, a swinging stacker movable with the cutter, a receiver for the cut slices and a cam member adapted to swing the stacker from the cutter to the receiver.

12. In a bread-slicer, the combination of a holder for the loaf, a movable cutter, a receiver for the cut slices, a stacker normally adjacent the cutter and flared outwardly therefrom, and means for moving the stacker from the cutter to the receiver.

13. In a bread-slicer, the combination of a holder for the loaf, a movable cutter, a receiver adapted to receive the cut slices, a stacker carried with the cutter and normally adjacent thereto, the stacker flared outward in respect to the cutter and having a roughened portion adapted to engage the cut slice, and means for moving the stacker from the cutter to the receiver.

14. In a bread-slicer, the combination of a holder for the loaf, a reciprocating cutter-carrier, a cutter carried thereby, a receiver adapted to receive the cut slices and support them in an edgewise position, and a movable stacker supported by the carrier, a member supported independent of the carrier adapted to engage a portion of the stacker and through the movement of the carrier move the stacker from the cutter to the receiver.

15. In a bread-slicer, the combination of a holder for the loaf, a movable cutter, a receiver adapted to receive the cut slices and support them in an edgewise position, a swinging stacker carried with the cutter and normally adjacent thereto, a member supported independent of the cutter, the stacker having a member adapted to engage the first-mentioned member when moved with the cutter for moving the stacker from the cutter to the receiver.

16. In a bread-slicer, the combination of a holder for the loaf, a cutter-carrier, means for moving the carrier, a cutter supported by the carrier, a receiver adapted to receive the cut slices, a pivoted stacker supported by the carrier and normally adjacent the cutter, an eccentrically-arranged arm connected with the stacker, and a member supported independent of the carrier and located in the path traveled by said arm, whereby the engagement of the arm with the member causes the stacker to swing from the cutter to the receiver.

17. In a slicer, the combination of a holder for the loaf, a movable cutter, a receiver located at the point at which cutting ceases, a stacker pivoted at a point in advance of the cutter and carried therewith, and means for swinging the stacker on its pivotal point to move it from the cutter to the receiver.

18. In a bread-slicer, the combination of a holder for the loaf, a movable cutter, a receiver for the cut slices, a swinging stacker carried with the cutter and having a portion adjacent the cutter, the pivotal spindle of the stacker having a laterally-extending arm, and a member having a cam-slot with which the said arm is adapted to engage by the movement of the cutter and stacker, whereby the stacker is moved from the cutter to the receiver.

19. In a bread-slicer, the combination of a holder for the loaf, a laterally-movable cutter, a receiver adapted to receive the cut slices, a swinging stacker carried with the laterally-movable cutter and having a vertical portion, a spring adapted to hold the vertical portion adjacent the cutter, and means adapted to move the stacker from the cutter to the receiver through the medium of the movement of the cutter.

20. In a bread-slicer, the combination of a holder for the loaf, a movable cutter, a receiver having longitudinal ribs adapted to receive the cut slices, the receiver having its rear portion declined, a shelf movable on the receiver, and means independent of the shelf for delivering the cut slices on the ribs of the receiver and against the said shelf.

21. In a bread-slicing machine, the combination of a holder for the loaf, a movable cutter, a receiver for the cut slices, a stacker having two movements, first one in a direction transverse the cutter to move the slices away from the cutter, and secondly one in a direction longitudinal the cutter to carry the slice to and move it upon the receiver, and means for moving the stacker.

811,453. CAB-RUNNER. JAMES W. SORENSEN, Grayling, Mich. Filed Feb. 6, 1905. Serial No. 244,670.

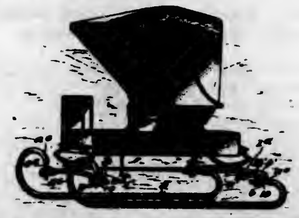

Claim.—1. A runner of the character described, having upwardly-curved front and rear ends, the front end having a downwardly-curved portion terminating in a vertically-pendent shank, rectangular in cross-section, the rear end terminating in an inwardly-extending horizontal shank, rectangular in cross-section and socket members for receiving the axle-spindles, said socket members having rectangular apertures to receive the vertical and horizontal shanks and set-screws for holding the same in their adjusted positions, substantially as shown and described.

2. A runner of the character described having its front end curved upwardly, backwardly and downwardly and terminating in a vertical shank having a plurality of adjusting-apertures and said runner having its rear end curved upwardly and terminating in an inwardly-extending horizontal shank, T-shaped bearing-boxes slidable on either shank ends, said bearing-boxes having set-screws for clamping them in their different adjustments and having portions to receive the axle-spindles, substantially as shown and described.

3. A runner of the character described having its front end bent into a circular shape and terminating into a vertical downwardly-projecting shank portion rectangular in cross-section and having its rear end bent up into a semicircle and terminating in an inwardly-projecting horizontal shank portion, rectangular in cross-section, and a pair of T-shaped socket members each consisting of a cylindrical bearing portion to receive an axle-spindle, a set-screw for co-operating with said bearing portion and each of said bearing members having squared apertures for receiving the shank portions of the runners, and a set-screw for co-operating with said squared apertures for holding the bearing members adjustably on the runners, substantially as shown and described.

811,454. POLISHING-MACHINE. JAMES A. STOWELL, Leominster, Mass. Filed Mar. 16, 1905. Serial No. 250,251.

Claim.—1. In a polishing-machine, the combination, with a pair of cylindrical polishing-wheels having their axes arranged in a horizontal plane, and means for revolving the said wheels; of an endless carrier having a straight portion arranged edgewise over the adjacent surfaces of the said wheels and sliding in a horizontal plane par-

allel with the axes of the said wheels, and means for supporting and driving the said carrier.

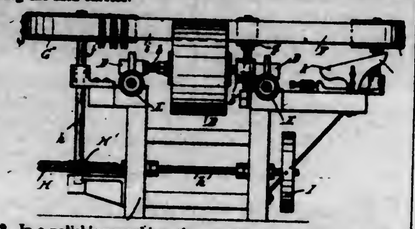

2. In a polishing-machine, the combination, with a pair of cylindrical polishing-wheels having their axes arranged in a horizontal plane, and means for revolving the said wheels; of an endless carrier having a straight portion arranged edgewise over the adjacent surfaces of the said wheels and sliding in a horizontal plane parallel with the axes of the said wheels, means for supporting and driving the said carrier, and a series of supporting-hooks secured crosswise of the said carrier and projecting below its bottom edge.

3. In a polishing-machine, the combination, with an endless carrier for supporting the articles to be polished, and a series of supporting-hooks secured to the said carrier; of means for supporting and driving the said carrier, and a knock-off plate for the articles having one end portion curved and arranged crosswise under the said carrier.

811,455. **NECKTIE-FASTENER.** ALFRED SWANSON, Albuquerque, N. Mex. Filed May 29, 1905. Serial No. 263,067.

Claim.—1. In combination with a plate for attachment to the inner side of a necktie, bent longitudinally, with its upper and lower portions at an angle with respect to each other, and further provided in the upper central portion with an inclined opening, a button having a flat stem provided at its outer end with a flat head for insertion through the opening in the plate and to lie under the overhanging upper portion thereof, said button having a cap at the inner end of its stem.

2. In combination with a plate for attachment to the inner side of a necktie, bent longitudinally, with its upper and lower portions at an angle with respect to each other, and further provided in the upper central portion with an inclined opening, a button having a flat stem provided at its outer end with a flat head for insertion through the opening in the plate to lie under the overhanging upper portion thereof, said button having a yoke-head at the inner end of its stem, and a cap in said yoke-head comprising an outer and an inner plate connected together at their ends and between which plates the yoke-head of the button-stem is placed, the outer plate having a transverse corrugation at its center for the reception of the yoke-head, and the inner plate having a slot to clear the stem and permit angular movement of the cap on the stem.

811,456. **SHINGLE-PRESS.** JOHN W. TRUMBOUR, Maple Falls, Wash. Filed Apr. 28, 1904. Serial No. 204,857.

Claim.—A machine for re-pressing shingles, consisting of framing having a bumper and having in advance thereof an open seat for the bundle of shingles and, on the opposite side of said seat from the bumper, a cylinder, a follower and a piston operating in the cylinder and connected with the follower, spring devices for retracting the follower, a pipe leading to the cylinder for conducting steam to and from the cylinder, said pipe having an exhaust branch, and a three-way valve controlling the power-pipe and exhaust branch all substantially as described, whereby steam may be readily admitted to and exhausted from the cylinder to effect a rapid advance of the follower and a quick return thereof by the retracting-springs whereby the bundle of shingles may be struck repeatedly by the follower to effect a re-pressing thereof, substantially as set forth.

811,457. **TURBINE STEAM-ENGINE.** TIMOTHY S. THOMAS, Washington, D. C., assignor of two-thirds to Thomas F. Holden and John Leetch, Washington, D. C. Filed Jan. 13, 1906. Serial No. 295,722.

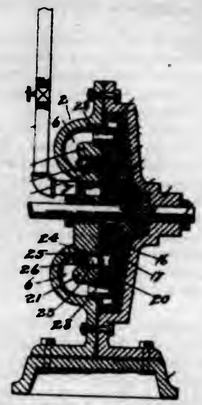

Claim.—1. A steam-turbine comprising a casing, a rotary element therein having an inner and an outer set of vanes, a partition between said sets of vanes, and oppositely-disposed expansion-chambers spanning said partition.

2. In a steam-turbine, a casing, a rotary element mounted to revolve therein, and provided with two sets of vanes, an expansion-chamber between the two sets of vanes, and an accelerator within said expansion-chamber.

3. In a steam-turbine, a casing, a rotary element therein, the latter provided with two sets of vanes, an expansion-chamber between said sets of vanes, nozzles in said expansion-chamber and an accelerator in said expansion-chamber.

4. A steam-turbine comprising a casing, a rotary element therein having two sets of vanes, a partition between said sets of vanes, a semicircular expansion-chamber spanning said partition, nozzles in said expansion-chamber, and an accelerator in said chamber.

5. A steam-turbine comprising a casing, a rotary element therein having two sets of vanes, a partition between said sets of vanes, oppositely-disposed curved expansion-chambers spanning said partition, and an accelerator in one of said expansion-chambers, substantially as described.

6. A steam-turbine comprising a casing, a rotary element therein having two sets of vanes, and two oppositely-disposed expansion-chambers connecting the two sets of vanes.

811,458. **AUTOMATIC IGNITER FOR MATCH-BOXES.** JOSEPH S. URBAN, Indianapolis, Ind., assignor of one-half to Andrew Edward Nibling, Indianapolis, Ind. Filed June 20, 1905. Serial No. 266,114.

Claim.—1. The combination with a match-box having an opening in its bottom, of a narrow bent-spring igniter attachment having a spring engagement with opposite narrow side walls of the box, one branch of said igniter attachment having a serrated end portion adapted to engage the opening in the bottom of the box, substantially as specified.

2. The combination with a match-box having a small opening in its bottom near one narrow side wall, of a narrow bent-spring igniter attachment having divergent branches having a spring engagement with opposite narrow side walls of the box, one branch of said attachment having a serrated end portion adapted to engage the opening in the bottom of the box, substantially as specified.

3. The combination with a match-box having an opening in its bottom, of a narrow bent-spring igniter attachment having its bend at the top of the box and provided with a branch engaging a narrow side wall of the box and having a serrated end portion adapted to engage the opening in the bottom of the box, substantially as specified.

4. The combination with a match-box having an opening in its bottom and an opening in a narrow side wall thereof, of a narrow bent-spring igniter attachment having its bend at the top of the box, one branch of said attachment having a press-lug engaging the opening in the side wall of the box, said branch having a serrated end portion adapted to engage the opening in the bottom of the box, substantially as specified.

5. The combination with a match-box having an opening in its bottom, of a narrow bent-spring igniter attachment having its bend at the top of the box, one branch of said attachment engaging a narrow side wall of the box and having a serrated end portion adapted to engage the opening in the bottom of the box, the other branch of said attachment being adapted to engage a lug of the cover to open and close the same and hold it in place, substantially as specified.

6. The combination with a match-box having a removable cover, of a spring igniter attachment having a long igniter branch provided with a serrated end portion, and a short spring branch engaging a lug of said cover, and adapted to open and close the same and to hold it in place, substantially as specified.

7. The combination with a match-box, having the body thereof provided with open journal-seats, and a separable cover having a lug provided with lateral journal extensions fitting in said seats, of an igniter attachment having a spring-arm engaging the lug of the cover, substantially as specified.

811,459. **CAR-COUPLING.** JOSEPH K. VAUGHT, Hinnebohton, Texas., assignor of one-half to William M. Vaught, Hinnebohton, Texas. Filed Sept. 12, 1905. Serial No. 278,091.

Claim.—1. In a car-coupling, a draw-head, a knuckle pivoted to said draw-head, a tongue on said knuckle and projecting into the draw-head, a vertically-movable pin mounted in said draw-head for engaging said tongue to hold the knuckle in a locked position, and friction-rolls mounted in said pin and projecting from opposite sides of the same to bear against the tongue and the draw-head when the knuckle is in a locked position.

2. In a car-coupling, a draw-head, a knuckle pivoted to said draw-head, a tongue on said knuckle and projecting into the draw-head, a vertically-movable pin mounted in said draw-head for engaging said tongue to hold the knuckle in a locked position, and friction-rolls bearing against each other mounted in said pin and projecting from opposite sides of the same to bear against the tongue and the draw-head when the knuckle is in a locked position.

3. In a car-coupling, a draw-head, a knuckle pivoted to said draw-head, a tongue on said knuckle and projecting into the draw-head, a vertically-movable pin mounted in said draw-head for engaging said tongue to hold the knuckle in a locked position and comprising a main body part contained within said draw-head and provided with shoulders at opposite ends of said body part to limit the movement of the pin, friction-rolls journaled in the main body part of the pin and projecting from opposite sides of the same to bear against the end of the tongue and the draw-head, and a tail on said tongue to engage with the shoulder on the lower end of the body part of the pin to hold said pin in a raised position when the knuckle is turned outwardly.

811,460. **PORTABLE CANOPY.** ALBERT VOSSMER, New Davis, Ia. Filed Apr. 22, 1905. Serial No. 256,436.

Claim.—1. A portable canopy comprising a supporting-frame, a canopy upon the supporting-frame, means to permit adjustment of the canopy horizontally in one direction across the frame, and other means to permit adjustment of the canopy horizontally in a direction at substantially right angles to the direction of the first adjustment.

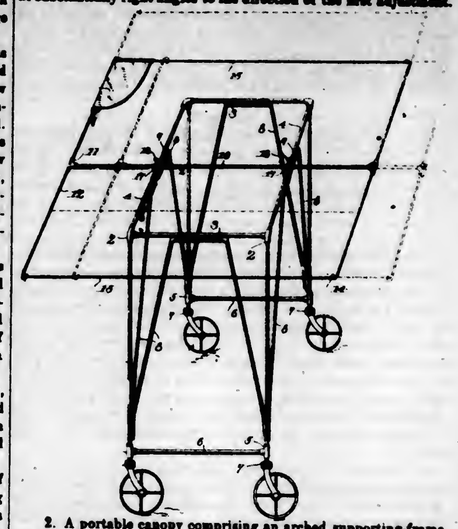

2. A portable canopy comprising an arched supporting-frame, and a canopy-frame including a longitudinal bar sustained across the top of the supporting-frame and adjustable endwise thereon, end bars carried by the longitudinal bar and shiftable endwise across the same, and a canopy carried by the end bars and shiftable therewith.

3. A portable canopy comprising an arched supporting-frame having a seat upon the top thereof, a substantially horizontal longitudinal bar supported in the seat and adjustable endwise thereof, means to adjustably fix the bar in the seat, seats upon the ends of the longitudinal bar, cross-bars adjustable endwise through the seats, means to adjustably fix the cross-bars in their seats, and a canopy carried by the cross-bars.

4. A portable canopy comprising an arched supporting-frame, a seat carried by the top of the frame, a longitudinal bar carried by and adjustable endwise through the seat, a set-screw carried by the seat for adjustably fixing the longitudinal bar in the seat, T-couplings carried by the ends of the longitudinal bar, cross-bars shiftable endwise through the couplings, set-screws carried by the couplings to adjustably fix the cross-bars therein, and a canopy carried by the cross-bars.

5. A portable canopy comprising a supporting-frame, a substantially horizontal canopy carried by the frame, and means to permit of the canopy being adjusted horizontally in directions at substantially right angles across the supporting-frame

6. A portable canopy comprising an arched supporting-frame, a longitudinal bar supported upon the top of the frame and projected at opposite sides thereof, cross-bars carried by the ends of the longitudinal bar and shiftable endwise thereacross, and a canopy carried by the cross-bars.

7. A portable canopy comprising an arched supporting-frame, upstanding eyebolts piercing the top of the frame, a longitudinal bar shiftable endwise through the eyebolts, set-screws piercing the eyebolts to adjustably fix the longitudinal bar therein, cross-bars carried by the ends of the longitudinal bar, and a canopy carried by the end bars.

8. A portable canopy including an arched supporting-frame made up of corner-posts, upper frame-bars connecting the posts, inverted substantially U-shaped braces extending between the respective front and rear pairs of posts and the front and rear top frame-bars, lower frame-bars extending between the front and rear posts, an endwise-adjustable substantially horizontal bar carried by the top frame-bars and projected in front and rear thereof, endwise-adjustable cross-bars carried by the ends of the longitudinal bar, and a canopy carried by the cross-bars.

811,461. **WRENCH.** BENJAMIN R. WAGY, Wichita, Kans. Filed May 26, 1905. Serial No. 262,454.

Claim.—1. A wrench comprising a stationary jaw, two parallel bars projecting therefrom, a movable jaw slidably mounted on said bars, one bar extending but a portion of the length of the other bar, the extended portion of the latter being toothed, a housing to which the shorter bar is secured, a bar pivotally secured at one end to the outer end of said longer bar and also having teeth, means for securing the free end of said pivoted bar to said housing, a rod extending from said movable jaw intermediate said long and short bars, and a pinion on the outer end of said rod working in said teeth, as set forth.

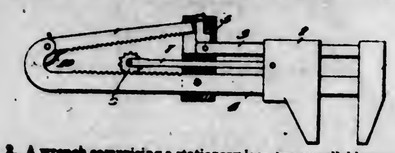

2. A wrench comprising a stationary jaw, two parallel bars projecting therefrom, a movable jaw slidably mounted on said bars, one bar extending but a portion of the length of the other bar, the extended portion of the latter being toothed, a housing secured on said long bar and to which said shorter bar is secured, a bar pivotally secured at one end to the outer end of said longer bar and having teeth on its inner face opposite those of the longer bar, a catch mounted in said housing for engaging and holding the free end of said pivoted bar, a spring acting on the latter, a rod secured to said movable jaw and extended loosely through said housing, and a pinion on the end of said rod engaging the teeth of the pivoted bar and said longer bar, as set forth.

3. The combination with the stationary jaw, and the long and short bars projecting therefrom, of the movable jaw slidably mounted on said bars, said longer bar having rack-teeth on its inner face and being curved or bent at its outer end, a housing to which said shorter bar is secured, a bar pivotally secured to the bent or curved end of said longer bar and having rack-teeth on its inner face, a spring acting on said bar, a spring-pressed catch mounted in said housing for engaging and holding the free end of said pivoted bar, a rod secured to said movable jaw, and a pinion on the outer end of said rod meshing with the teeth of said longer bar and the teeth of said pivoted bar, as set forth.

811,462. CONVEYER. HOYT M. WHITMORE, Stockton, Cal., assignor to William P. Steinbeck, Stockton, Cal. Filed Oct. 2, 1905. Serial No. 280,975.

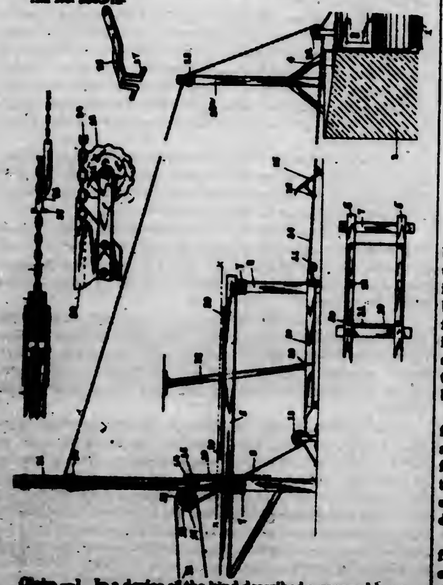

Claim.—1. In a device of the kind described a grooved beam, a chain-pulley at each end of said beam, a shafter pulley arranged in a higher plane than said last-named pulleys, a chain-pulley arranged on a boat or barge, an idler arranged on a higher plane than said last-named pulley, an endless chain working in said pulleys, and hooks adapted to be connected to a truck or similar device and to engage with said chain, as specified.

2. In a device of the kind described the combination of a grooved beam, a chain-pulley at each end thereof, the front one of said pulleys having corrugations on its face, two pulleys arranged on a higher plane than said last-named pulleys one on a slightly higher plane than the other, a chain-pulley arranged at a distance from said first-named pulleys, an idler arranged in a higher plane than said last-named pulley, an endless chain arranged on said pulleys and idler, means for applying motive power to said pulleys, a hook adapted to be fastened to a truck or other device and to engage with said chain, said hook being provided with two lugs adapted to coact with said corrugations, and means for stopping the chain when said lugs do not coact with said corrugations, as set forth fully herein.

3. A means for unloading boats comprising the combination of a boat or barge, an endless chain connecting said boat or barge to a point on shore, means for applying motive power to said endless chain, a truck, a hook attached to the leg of said truck and adapted to engage with said chain, and means for disengaging said hook from said chain automatically, as for the purpose set forth herein.

811,463. CONVEYER. ALFRED J. WHEELER, Columbus, Ohio, assignor to Joseph A. Jeffrey, Columbus, Ohio. Filed Apr. 6, 1896. Serial No. 576,667.

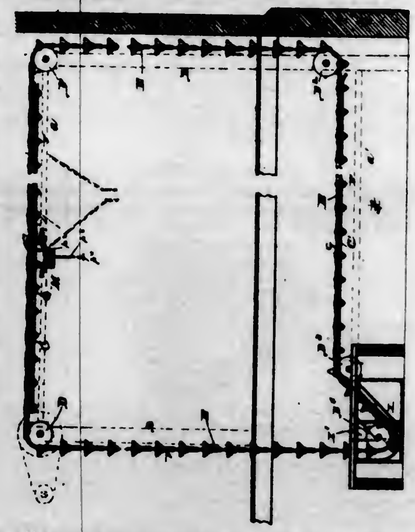

Claim.—1. In a conveyer, the combination of the chains, the buckets, each hinged to the chains upon a single axis passing through the bucket and which is fixed relatively to the chain, the buckets being free to rotate entirely around the said axes, a loading hopper or boot in the path of the buckets, and means independent of the chains for engaging with the buckets and tilting them to bring their scooping sides to an angle to the chain and hopper-bottom substantially as set forth, whereby the buckets as they pass through the boot scoop their loads successively and the chain exerts draft directly upon the buckets on lines passing directly through them, as described.

2. In a conveyer the combination of the chains, the buckets freely hinged to the chains, the projections H carried by the buckets and disposed entirely to one side of and at a considerable distance from the hinge connections between the buckets and the chains, and the means independent of the chains with which the said projections engage for tilting the buckets and maintaining them in tilted position during a portion of the run of the conveyer, substantially as set forth.

3. In a conveyer the combination of the chains, the buckets freely hinged thereto, and the laterally-extending projections H secured to the buckets near their bottoms, and means independent of the chains with which the said projections engage for tilting the buckets and maintaining them in the tilted position during a portion of the run of the conveyer, substantially as set forth.

4. In a conveyer the combination of the chains, the buckets, freely hinged to the chains, the projections carried by the buckets, and means arranged adjacent to the chains and moving in a direction approximately parallel to the parts of the chains to which they are adjacent, with which the said projections engage for tilting the buckets, substantially as set forth.

5. In a conveyer the combination of the chains, means for moving them, the buckets freely hinged to the chains, projections carried by the buckets, means adjacent to the chains and moving in a direction substantially parallel with the lines of movements of those portions of the chains to which they are adjacent, and with which means the said projections engage for tilting the buckets, and means with which the projections engage for maintaining the inclination of the buckets after they have been so tilted during a portion of the run of the conveyer, substantially as set forth.

6. In a conveyer, the combination of the chains, the buckets freely hinged and suspended thereon, the runway for the idle part of the conveyer having a track or support for the buckets, the runway for the loaded part of the conveyer having a track or support for the buckets, the boot or hopper intermediate of the said runways, a guide supplemental to said track for the buckets into the said hopper, and means independent of the chains for locking them on their hinges as they move through or into the said hopper, substantially as set forth.

7. In a conveyer, the combination of the chains, the buckets freely hinged and suspended thereon, the runway for the idle part of the conveyer having a support for the buckets, the runway for the loaded part of the conveyer having a support for the loaded buckets, a boot or hopper intermediate of the said runways, a guide supplemental to said support for the buckets to direct them through the said boot or hopper, a supplemental stationary guide, and means carried by the bucket engaging with said supplemental guide and holding the buckets rigid relatively to their hinges on the chain, substantially as set forth.

8. In a conveyer, the combination of the chains, the buckets freely hinged and suspended thereon, the supporting or traction wheels for the buckets, the track-section for the wheels of the unloaded part of the conveyer, the track-section for the wheels of the loaded part of the conveyer, a bucket-loading chamber intermediate of the said track-sections, a track-section for the bucket-wheels inclined to the aforesaid track-sections and extending through or into the loading-chamber, and means independent of the chains for locking the buckets upon their hinges while the bucket-wheels are on said inclined track-section, substantially as set forth.

811,464. THILL-COUPLING. FREDERICK A. WHEELER, Detroit, Mich. Filed Apr. 13, 1901. Renewed Dec. 16, 1905. Serial No. 292,155.

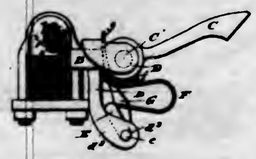

Claim.—1. In a thill-coupler, the combination with a clip, ears projecting therefrom, and a thill-iron, of a coupling member consisting of a shank portion located in and extending through the space between the said clip, ears, and a thill-iron, projecting portions extending from the upper end of said shank adapted to bear upon the upper side of the thill-iron, a member pivoted to the lower end of said shank portion, and a resilient member adapted to be compressed between said pivoted member and the thill-iron, substantially as set forth.

2. In a thill-coupler, the combination with a clip, its ears and a thill-iron, of a coupling member fashioned to move between the ears in the space between the thill-iron and clip, and having pintle-retaining projections, means for locking the coupler in position comprising a pivoted member, and a spring adapted to be compressed by said pivotal member between the same and the thill-iron, substantially as described.

3. In a thill-coupling, the combination with a clip having retaining-ears and a thill-iron, of a coupler comprising a frame having a portion fitted between the thill-iron and the clip and extending above the same, pintle-retaining fingers extending from the frame, and means for locking the frame against movement comprising a yielding member and a locking member pivoted to said portion of the coupler which is fitted between the clip and the thill-iron, said locking member arranged to be thrown backward beyond its pivotal center and against the tension of the yielding member, substantially as described.

4. In a thill-coupler, a coupling-frame comprising a shank member fashioned to fit in the space between the thill-iron and the clip, retaining-fingers projecting out from the shank, arms on the opposite end of the shank, a pivoted frame carried by the arms and a curved spring carried by the frame, adapted to be pressed against the under surface of the thill-iron in its adjusted position, substantially as described.

5. In a thill-coupler, a coupling-frame comprising a shank member, fashioned to fit in between the space between the thill-iron and the clip, retaining-fingers projecting outward from the upper end of the shank on opposite sides, outwardly-diverging arms at the lower end of the shank, a pivoted frame carried by the arms, a curved spring pivotally supported on the frame, and adapted to be pressed thereby against the thill-iron, and a lever on the frame for adjusting the parts, to their operative positions, substantially as described.

6. In a thill-coupler, the combination with a clip, its ears and a thill-iron, of a coupling member fashioned to move between the ears back of the thill-iron and provided with pintle-retaining projections, means for locking the coupler in position comprising a pivoted member and a yielding member, and means associated with the upper part of the coupling member for adjusting the same in its relation to the ears and pressing the yielding member against the thill-iron, substantially as described.

7. The combination with a thill-coupler, comprising the axle-clip, its ears and the thill-iron, of a coupler located in and extending through the space between the said parts, said coupler provided at its upper end with means adapted to bear on the upper side of the thill-iron and provided at its lower end with a pivoted member adapted to be thrown backwardly beyond its pivotal center to lock the coupler in place, substantially as described.

8. As an article of manufacture, a thill-coupling comprising, a shank portion adapted to be located in and extend through the space between the clip and the thill-iron, projections extending from one end of said shank portion, a member pivoted to the other end of said shank portion, and adapted to be swung backwardly between its pivot and said projections, and a resilient member eccentrically secured to said pivoted member, substantially as described.

9. In a thill-coupler, the combination with a clip, its ears and a thill-iron, of a coupling member fashioned to move between the ears back of the thill-iron, extensions secured to the upper portion of said coupling and overlying the ears of the clip, a pair of ears secured to the lower portion of said coupling member and underlying the ears of the clip, pintle-retaining members projecting outwardly from the outer ends of the extensions on the upper portion of the coupling member, and means for locking the coupling member against movement comprising a lever pivoted between the ears secured to the lower portion of the coupling member and a spring adapted to be compressed by said lever between the same and the thill-iron.

811,465. SHADE-SUPPORTING DEVICE. AUGUST WIESOLECK, West New Brighton, N. Y. Filed Aug. 28, 1905. Serial No. 276,429.

Claim.—A shade-supporting device comprising a notched bar having a laterally-offset integral perforated attaching-plate at one end, an angle-bracket comprising a metallic plate bent to form a right angle, said plate having a perforation in one end to receive the notched bar, a block slidably mounted upon the notched bar, a spring-pressed pawl mounted upon the block and adapted to engage the notched bar, and a supporting-arm formed integral with the block, said arm being of less thickness than the block.

811,466. FOOD COMPOUND AND METHOD OF PREPARING THE SAME. EDWARD T. WILLIAMS, Boston, Mass. Filed July 17, 1905. Serial No. 270,121.

Claim.—1. A food compound comprising animal tissue or matter, stearin, and a fat having a melting-point lower than the melting-point of stearin.

2. A food compound comprising comminuted animal tissue or matter, stearin, and a fat having a melting-point lower than the

melting-point of stearin; the stearin and other fat being thoroughly mixed with the comminuted animal tissue or matter.

2. A food compound comprising comminuted animal tissue or matter, stearin, and tallow; the said animal tissue, stearin and tallow being thoroughly mixed; in substance as set forth.

4. The method of preparing a food compound consisting in first, subjecting animal tissue to a temperature of 212° Fahrenheit to destroy the germs of putrefaction; and secondly, mixing the said animal tissue with a sterilized compound of stearin and a fat of a lower melting-point than stearin.

5. The method of preparing a food compound consisting in first, subjecting animal tissue to a temperature of 212° Fahrenheit to destroy the germs of putrefaction; comminuting the animal tissue; and finally mixing with the said comminuted tissue, sterilized stearin and tallow.

811,467. **BALL-CASTER.** JOHN WOLFE and GEORGE F. FISHER, Cincinnati, Ohio. Filed Nov. 3, 1904. Serial No. 231,906.

Claim.—A caster comprising a cup containing a ball and having spaced laterally-extending flanges, and a ball-retaining ring fitting on the cup and having spaced laterally-extending flanges arranged to fit in the spaces between the flanges on the cup.

811,468. **HYDRAULIC RIVETING-MACHINE.** WILLIAM H. WOOD, Media, Pa. Filed Nov. 26, 1904. Serial No. 234,372.

Claim.—1. A machine of the character described, comprising a driving-head, a number of pistons of different diameters practically formed in continuation one of the other, and having abutting hollow prolongations, a rod-bolt connected to one of said pistons and extending through the other of said pistons and connected to said driving-head, binding said pistons and the latter all solidly together, a cylinder member having chambers or cylinders receiving said pistons, and means for supplying hydrostatic pressure to said pistons.

2. A machine of the character described, comprising a driving-head, a number of pistons of different diameters and having abutting hollow prolongations and practically formed in continuation one of the other, a rod-bolt connecting with one of said pistons and passing through the other of said pistons and connected to said driving-head binding said pistons and the latter all solidly together, a cylinder member having chambers receiving said pistons, a push-back piston and its cylinder, the latter being secured upon the head end of said cylinder member and the former being connected to one of the aforesaid pistons.

3. A machine of the character described, comprising a driving-head, a number of pistons of different diameters, the larger having a rearward prolongation abutting a forward extension of the smaller, and a rod-bolt secured to said smaller piston and extending through the larger piston and its prolongation and secured to said driving-head, effecting a fixed connection between said pistons and said driving-head and between said pistons themselves, a casing having chambers receiving said pistons and said driving-head.

4. A machine of the character described, comprising a driving-head, a cylinder member consisting of a chambered head and a forward prolongation or extension of said head, having an upward-opening chamber, said prolongation having formed therewith, some distance beyond said head a bridge or housing, combining with said elongation to constitute a closed stopped chamber, a number of pistons of different diameters practically forming a continuation one of the other, one piston working in said chambered head and partially occupying said upward-opening chamber and the other of said pistons working in said closed chamber and also partially occupying said upward-opening chamber, and means connecting said pistons and driving-head all solidly together, and means for supplying hydraulic pressure to said pistons.

5. A machine of the character described, comprising a driving-head, a cylinder member consisting of a chambered head and a forward prolongation or extension of said head, having an upward-opening chamber, said prolongation having formed therewith, some distance beyond and forward of said head, a bridge or housing combining with said prolongation to constitute a closed stopped chamber, a number of pistons of different diameters practically forming a continuation one of the other, one piston arranged in said chambered head and partially in said upward-opening chamber, and the other of said pistons arranged in said closed chamber and also partially in said upward-opening chamber, a push-back piston and its cylinder the former being connected to one of the aforesaid pistons and the latter being secured upon said head, means for connecting the aforesaid piston and driving-head all solidly together, and means for supplying hydraulic pressure to said pistons.

811,469. **BUTTER-CUTTER.** ROBERT J. WOOLLEY, Portland, Oreg. Filed May 10, 1905. Serial No. 259,693.

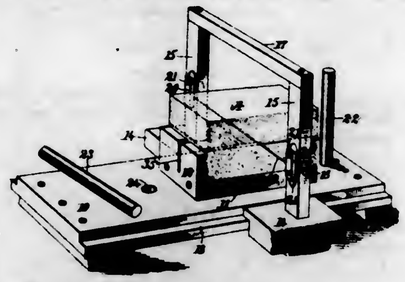

Claim.—1. The combination with a base, of a support mounted thereon, cutters movable horizontally and vertically above said support, and guides for one cutter constituting stops for the other.

2. The combination with a base, of a support mounted thereon, cutters movable horizontally and vertically above said support, and guides for the vertically-movable cutter constituting stops for that moving horizontally.

3. The combination with a base provided with opposite ways, of standards movable along the ways, a connection between the standards below the base, a cutter extending between the standards above the base, and uprights carried by the base at each side of the cutter, one of said uprights being removable from the base.

4. In a butter-cutter, a frame having parallel grooves, studs situated upon opposite sides of the grooves, wires extending between the studs, and cleats cooperating with the grooves and engaging the wires.

811,470. **SPARKING DEVICE FOR ENGINES.** JAMES B. WORTH and WILLIAM B. BYRD, Pamplin, Va. Filed May 15, 1905. Serial No. 260,656.

Claim.—1. The combination in a sparker, of a pair of electrodes, one of which is movable, a rock-shaft carrying the movable electrode, a yieldable arm connected to the rock-shaft, a second shaft, also having a yieldable arm, means for connecting the two shafts, and an operating-rod adjustable to engage one or other of said arms.

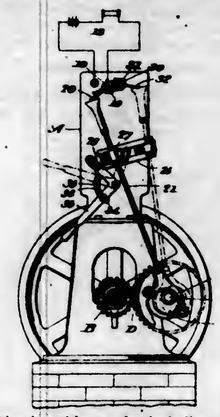

2. The combination with a sparker including a rock-shaft carrying one of the electrodes, a gear secured to the rock-shaft, a yieldable arm extending from the gear, a second gear intermeshing with the first and also having a yieldable arm, and an operating-rod adjustable to engage one or other of said arms.

3. The combination in a sparker, of a rock-shaft carrying one of the electrodes, a gear secured to the rock-shaft, a yieldable arm projecting from the gear, a second gear engaging the first and also having a yieldable arm, a rod operated from the engine, and a rod-guide adjustable to direct the rod into engagement with one or other of the arms.

4. In a sparker, a rock-shaft, a gear connected thereto, an arm extending from the gear, a second gear intermeshing with the first and provided with an extending arm, an endwise-movable rod operable from the engine, a guiding member for said rod, and means for adjusting the position of said guiding member to direct the rod into engagement with one or other of the arms.

5. The combination in a sparker, of a rock-shaft, an electrode carried thereby, a gear-wheel connected to the rock-shaft, an arm extending from the gear, a second gear intermeshing with the first and also having an extending arm, an endwise-movable rod operated from the engine, a guide, a slidable block mounted thereon, and a pivotally-mounted rod-guiding member connected to said block.

6. The combination in a sparker, of a rock-shaft, an electrode connected thereto, a gear secured to the rock-shaft, an arm extending from the gear, a second gear intermeshing with the first, and also provided with a projecting arm, an endwise-movable rod operated from the engine, a guide, a slidable block mounted therein, an adjusting-lever connected to said block, means for locking the adjusting-lever in position, and a pivotally-mounted rod-guiding member carried by said block.

811,471. **ANTHRACENE DYE AND PROCESS OF MAKING SAME.** OSCAR BALLY, Mannheim, and HUGO WOLFF, Ludwigshafen-on-the-Rhine, Germany, assignors to Badische Anilin & Soda Fabrik, Ludwigshafen-on-the-Rhine, Germany, a Corporation. Filed Oct. 10, 1905. Serial No. 282,185.

Claim.—1. The process for the production of anthracene coloring-matters by treating with caustic alkali a hereinbefore-defined benzanthrone compound obtainable by condensing together an alpha-amidoanthraquinone body and glycerin.

2. The process for the production of anthracene coloring-matter by treating with caustic alkali a hereinbefore-defined benzanthrone compound obtainable by condensing together alpha-amidoanthraquinone and glycerin.

3. As new articles of manufacture, the anthracene coloring-matters which can be obtained by treating with caustic alkali a benzanthrone obtainable from an alpha-amidoanthraquinone body, which coloring-matters dissolve in concentrated sulfuric acid yielding olive-green solutions, and which dissolve in alkaline hydrosulfite yielding blue to violet vats which dye vegetable fiber substantively giving bluish shades.

4. As a new article of manufacture the anthracene coloring-matter which can be obtained by treating with caustic alkali the benzanthrone obtainable from alpha-amidoanthraquinone, which coloring-matter dissolves in concentrated sulfuric acid yielding an olive-green solution, and which dissolves in alkaline hydrosulfite yielding a blue-violet vat which dyes vegetable fiber substantively yielding blue shades.

811,472. **TORPEDO-SETTING DEVICE.** HARRY A. BEALS, McCook, Nebr. Filed July 25, 1905. Serial No. 271,219.

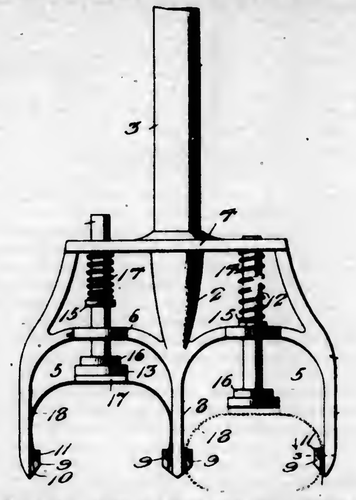

Claim.—In a device of the class described, a head including a holder having spaced side portions, bearing-lugs formed on said side portions and provided with lateral-opening slots designed to receive a torpedo-spring, said lugs having sockets arranged to communicate with the slots and for the reception of the spring when the torpedo is moved upward in the holder, a movable plunger carried by the head and adapted to bear upon a torpedo positioned in the holder, and means for compressing the plunger to bearing position.

811,473. **BOLTLESS JOINT CONNECTION.** JOHN E. BEAVER, Warwick, Ohio. Filed July 19, 1905. Serial No. 270,423.

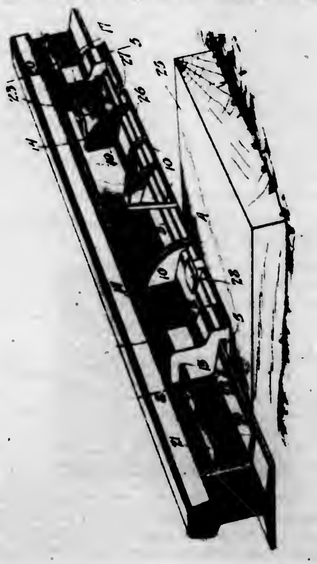

Claim.—1. The combination with the meeting ends of railroad-rails, of a chair therefor including web-plates, means carried by one of said plates, to engage the rails, wedges to be inserted between the other of said plates and the rail-webs, keys carried by said wedges and designed to engage the chair, and means to lock said keys to the chair.

2. The combination with meeting ends of railroad-rails, of a chair therefor including a base-plate to underlie the flanges of the rail, flange-plates overlying said flanges, and web-plates projecting vertically from the flange-plates, one of said web-plates being spaced from the rail-webs, vertically-arranged walls formed at the ends of the chair, wedges adapted for insertion within the space between the web-plate and rail-web, and keys carried by said wedges and longitudinally movable through openings formed in the walls.

3. The combination with the meeting ends of railroad-rails, of a chair therefor including web-plates, means carried by one of said plates to engage the rails, wedges adapted to be inserted between the other of said plates and the rail-webs, keys formed with a plurality of openings carried by said wedges, the chair being formed with openings to receive the keys, and cotter-pins to engage said openings in the keys to prevent removal of the wedges.

4. The combination with the meeting ends of railroad-rails, of a chair therefor including a base-plate, a flange-plate and a web-plate rising from the base-plate on each of the opposite sides of the rails, the flange-plate and web-plate on one side of the rails contacting with said rails, the flange-plate and web-plate on the opposite sides of the rails being spaced therefrom, wedges adapted to be inserted in the space between the said web-plate and rails, and a plate projecting from the wedge to seat in the space between the flange-plate and rails.

5. The combination with the meeting ends of railroad-rails, of a chair therefor including web-plates arranged parallel with the rail-webs, pins projecting laterally from one of the web-plates to engage openings formed in the rail-webs, wedges to be inserted between the other of said web-plates and the rail-web, keys carried by said wedges, and pins to lock said keys with relation to the chair.

6. A rail-chair comprising a base-plate, flange-plates extending inwardly and spaced from said base-plate, web-plates extending vertically from the flange-plates, and wedges designed to coöperate with one of said web-plates, said wedges being movably supported by the chair, and means for locking said wedges with relation to said chair.

7. A rail-chair comprising a base-plate, flange-plates extending inwardly and spaced from said base-plate, web-plates extending vertically from the flange-plates, and wedges designed to coöperate with one of said web-plates, said wedges being movably supported by the chair, and means for adjustably locking said wedges with relation to said chair.

8. A rail-chair comprising a base-plate, flange-plates extending inwardly and spaced from said base-plate, web-plates extending vertically from the flange-plates, and wedges designed to coöperate with one of said web-plates, the chair being formed with longitudinally-arranged slots to receive and guide the wedges, and means for locking the wedges with relation to said shaft.

9. A rail-chair comprising a base-plate, flange-plates extending inwardly and spaced from said base-plate, web-plates extending vertically from the flange-plates, and wedges designed to coöperate with one of said web-plates, keys secured to said wedges and movably engaging the chair, and means for locking said wedges with relation to said chair.

811,474. MOLD. WILLIAM H. RENNOX, San Francisco, Cal. Filed Oct. 10, 1904. Serial No. 227,945.

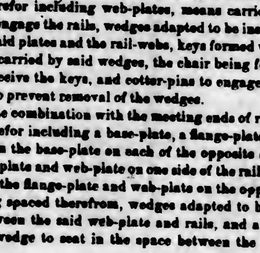

Claim.—A mold for molding hooks, comprising a plurality of detachable sections having mold-cavities and also having coengaging dowel-pins and openings in their opposing sides, said sections being further provided with registering transverse bolt-openings, bolts in said openings securing said sections together, a bottom plate to cover one side of the mold, said bottom plate and said sections having coengaging dowel-pins and openings to secure them together, and former-plates on the upper side of the bottom plate and of the required size and shape to fit in the lower sides of the mold-cavities.

811,475. COMBINED DRESSER, CHAIR, AND TRUNK. FRANK L. BRADLEY, Cincinnati, Ohio. Filed Mar. 21, 1903. Serial No. 251,247.

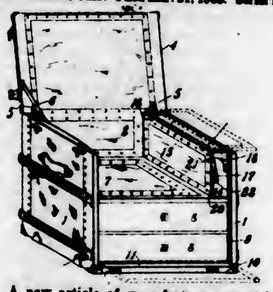

Claim.—1. A new article of manufacture comprising a combined dresser chair and trunk consisting of a casing having a hinged lid adapted to be held in elevated position to form a back-rest, a removable front having grooves adapted to slide upon corresponding tongues in the vertical walls of the casing whereby said front is held in engagement with the casing, and said tongues.

2. A new article of manufacture comprising a combined dresser chair and trunk consisting of a casing having a hinged lid adapted to be held in elevated position to form a back-rest, a partition within said casing, a dresser above said partition, adapted when closed to form an arm-rest, a door having a mirror upon one side adapted to close said dresser, and a brace pivoted to said door and provided with notches adapted to engage a pin to hold said door at varying angles for the purposes specified, and said pin.

3. A new article of manufacture comprising a combined dresser chair and trunk consisting of a casing having a hinged lid adapted to be held in elevated position, a removable front, a partition within said casing to form a seat therein, a dresser having compartments within said casing above said partition, a door hinged to said dresser and adapted to swing upwardly, a notched brace secured to said door adapted to engage a pin to hold said door in adjusted position as set forth, and said pin.

4. A new article of manufacture comprising a combined dresser chair and trunk consisting of a casing having a hinged lid adapted to be held in elevated position, a removable front, a partition within said casing to form a seat therein, a dresser within said casing above said partition and provided with a hinged door adapted to close said dresser and to swing outwardly and to rest upon the upper edge of said casing to form a table as set forth.

811,476. BOWLING-ALLEY. FREDRICK W. BRINKERTER, Decatur, Ill. Filed Nov. 17, 1904. Serial No. 233,188.

Claim.—1. In a bowling-alley, the combination of a set of pins, cords connected with the pins, weights connected with the cords, pivoted supports for supporting said weights in elevated position, detents engaging said supports, said detents being connected with the cords and adapted to be retracted thereby when the pins are struck by a ball to permit the supports and weights to drop and elevate the pins, and means for manually retracting any of the detents from the players' end of the alley.

2. In a bowling-alley, pins, operating-weights, cords connecting the pins with the weights, pivoted supports for the weights, latches holding said supports in supporting position, said latches being adapted to be retracted by said cords when the pins are struck by a ball, and means for restoring the weights and supports to their normal position and permit lowering and resetting of the pins.

3. In a bowling-alley, pins, operating-weights, pivoted supports for the weights, latches for holding the said supports in supporting position, connections between the pins, latches and weights, whereby when the pins are struck said latches will be retracted and permit the weights to fall and raise the pins, means for retracting the weights and pivoted supports, and means for manually operating the latches.

4. In a bowling-alley, the combination of a set of pins, weights

for elevating said pins, cords connecting the pins with the weights, a trap consisting of a series of sections adapted to support the weights in inoperative position, detents for supporting said trap-sections, said detents being operatively connected with said cords and retracted thereby when the connected pins are struck to retract the detents and permit the weights to drop, and means for lifting the weights and trap-sections in unison to restore the parts to their normal position.

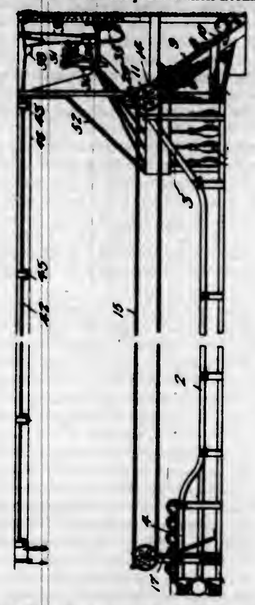

5. In a bowling-alley, the combination of a set of pins, a set of weights for raising said pins, a trap composed of sections supporting said weights, detents engaging the trap-sections to hold them and the weights elevated, and means for retracting said detents when the pins are struck to allow the trap-sections and weights to drop and to cause said weights to elevate the struck pins.

6. In a bowling-alley, the combination of a set of pins, a set of weights for elevating the pins, a trap comprising a series of platform-sections for supporting said weights in elevated or inoperative position, detents engaging the platform-sections to hold them in position to support the weights, and operating connections between the pins, weights and detents whereby the detents will be retracted when the pins are struck by a ball to release the trap-sections and permit the weights to drop and elevate the pins.

7. In a bowling-alley, the combination of a set of pins, a trap comprising a series of swinging sections, pin-elevating weights supported by said sections, detents engaging the sections and holding them elevated, cords connecting the pins with the weights and operatively engaging the detents to retract the same when the pins are struck by a ball, means for manually retracting the latches, and means for returning the weights and platform-sections to their normal position.

811,477. POWDER FOR DUSTING PATTERNS IN FOUNDRIES. RUDOLF BRÖSE, Berlin, Germany. Filed Sept. 29, 1904. Serial No. 226,592.

Claim.—The herein-described product consisting of a resinous substance incorporated with siliceous marl.

811,478. ENVELOP-MOISTENER. EDWARD S. BUCKLAND, Binghamton, N. Y., assignor of one-half to William J. Hastin, Binghamton, N. Y. Filed Nov. 1, 1904. Serial No. 230,570.

Claim.—1. The combination with a tray having absorbent material therein, of a hollow extension to the tray having an opening in its top; a holder upon the extension, a tubular outlet to the holder and projecting into the opening, a wick within the outlet and projecting through the extension into the tray, and a liquid-food upon the holder.

2. The combination with a tray having absorbent material therein, of a spring-supported cover above the tray and normally raised therefrom; of a receptacle, a tubular outlet therefrom projecting downward into the tray, and a wick within the outlet-tube extending into the tray.

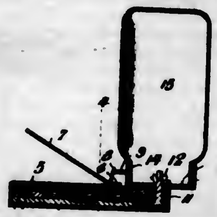

3. The combination with a tray having an absorbent therein, of a spring-supported cover upon the tray, a tubular extension to the tray having an opening in the top thereof; a holder connected with the extension, a tubular outlet for the holder projecting into the extension, a wick extending through the outlet and extension into the tray, and a receptacle detachably secured within and opening into the holder.

4. The combination with a tray having absorbent material therein, of a hollow extension to the tray having an opening in its top, a holder connected with the extension and having a tubular outlet loosely seated in said opening, a wick arranged in the outlet and extending into the tray, a receptacle detachably connected with and opening into the holder, a closure hinged upon the tray and having an arm, and a spring connecting the arm with the holder.

811,479. DENTAL COMPRESS. NATHAN L. BURKE, Benton Harbor, Mich. Filed June 14, 1905. Serial No. 265,182.

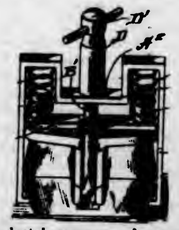

Claim.—1. In a dental compress, a frame and a cross-bar slidingly mounted therein, tension-springs extending between said cross-bar and one end of said frame, a threaded bolt extending through the frame from the cross-bar, a handle provided with a nut to draw said bar through the frame and place said springs under compression, lugs extending from the opposite ends of said cross-bar, and adapted to travel in slots or ways in the side walls of the frame.

2. In a dental compress, a frame and a cross-bar slidingly mounted therein, tension-springs extending between said cross-bar and one end of said frame, a threaded bolt extending through the frame from the cross-bar, a handle provided with a nut to draw said bar through the frame and place said springs under compression, lugs extending from the opposite ends of said cross-bar, adapted to travel in slots or ways in the side walls of the frame, a depending U-shaped portion at the top of the frame through which said bolt passes, and posts disposed within the springs at the opposite sides of said depending portion.

811,480. PORTABLE TABLE. JAMES D. CANFIELD, Stillwell, Ky. Filed Mar. 6, 1905. Serial No. 248,979.

Claim.—1. In a portable table, the combination with a plate adapted to be secured to the sides of a bedstead or to a vertical surface, of a support adjustably mounted in said plate, a hinged arm carried by the upper end of said support, a sectional table carried by said arm, and means for adjustably securing the outer section of the table to the outer end of the hinged arm, whereby the same may be secured at any angle.

2. In a portable table, the combination of a supporting-plate provided with a centrally-arranged tube, means for securing the same to the side of a bed or a vertical surface, a cylindrical support mounted in said tube, a hinged arm hingedly secured to the upper

end of said support, an inner section of a table stationarily secured to the inner section of the hinged support, an outer section of a table adjustably secured to the outer section of the arm, means for holding the outer section at any angle with relation to the arm, and means for bracing the hinged arm in horizontal position connected to the arm and the support.

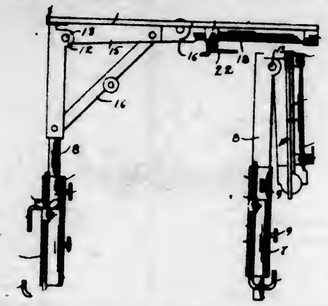

3. In a portable table, the combination of a supporting-plate provided with a centrally-arranged tube, means for securing the plate to the side of a bed or a vertical surface, a cylindrical support mounted in said tube, a hinged arm hingedly secured to the upper end of said support, an inner section of a table stationarily secured to the inner section of the hinged support, an outer section of a table adjustably secured to the outer section of the arm, means for holding the outer section at any angle with relation to the arm, and means for engaging the outer end of the arm for holding it in folded position.

4. In a portable table, the combination with a supporting-plate provided with a centrally-arranged tube, of a support adjustably mounted in said tube, a hinged sectional arm hingedly connected to the upper end of said support, and a sectional table carried by said hinged arm the outer section of the table being rotatably mounted upon the outer section of the arm for the purpose set forth.

5. In a portable table, the combination with a plate provided with a centrally-arranged tube, said plate being adapted to be secured to the sides of a bedstead or to a vertical surface, of a support adjustably mounted in said tube, a hinged sectional arm carried by the upper end of said support, and a sectional table carried by said arm the outer section of the table being rotatably mounted on the outer section of the arm, for the purpose set forth.

6. In a portable table, the combination with a supporting-plate provided with a centrally-arranged tube, of a support adjustably mounted in said tube, means carried by the support for limiting the downward movement thereof within the tube, means passing through the tube to engage the support to hold it at the proper adjustment, a hinged sectional arm carried by the upper end of said support, a sectional table carried by said arm, the outer section of said table being rotatably mounted upon said arm, and means for holding the rotatable section at its proper adjustment with relation to the arm.

7. In a portable table, the combination with a supporting means, of a standard adjustably supported by said supporting means and provided with a socket in its upper end, an arm hingedly connected to the upper end of said standard and provided in the socket upon the under side near the hinged portion, a table carried by said hinged arm, and a hinged brace connected to the standard and the arm and adapted when folded to be incased in the sockets of the standard and arm.

811,481. TYPE-WRITING MACHINE. GEORGE W. CAMPBELL, New York, N. Y. Filed Feb. 4, 1904. Serial No. 192,026.

Claim.—1. In a paper-feed device for type-writing machines, the combination with the platen, the platen-frame, the apron pivoted to said frame, the feed-roll carried by said apron, a pivot-bar mounted in said frame, the feed-roll brackets pivotally mounted on said bar and having upwardly-projecting fingers, the feed-roll carried by said brackets, the spring means connected to said brackets, of the release-bar mounted above said brackets and suitably bent to engage said aprons, and having projections thereon engaging the fingers on said brackets.

2. In a paper-feed device for type-writing machines, the combination with the platen and the platen-frame, of an apron surrounding the under side of said platen and having a suitable perforation therein and pivoted at one end to the said frame, the feed-roll mounted on said apron in position to rest normally on the upper face of the platen, a feed-roll bracket mounted independently of said apron, a feed-roll carried by said bracket in position to normally project through the said perforation in engagement with the under surface of the platen, and means for elevating the free end of said apron and for engaging the said bracket to move the feed-rolls away from the surface of the platen.

3. In a paper-feed device for type-writing machines, the combination with the platen and the platen-frame, of an apron pivoted near one end to the platen-frame at one side of the platen surrounding the under side of the platen and projecting upwardly and rearwardly at the other side of the platen, a feed-roll carried by the apron at the end adjacent its pivot and normally resting against the surface of the platen, and means independent of said apron for elevating the rear end thereof to turn the apron on its pivot to carry said feed-roll away from the surface of the platen.

4. In a paper-feed device for type-writing machines the combination with the platen and the platen-frame, of an apron surrounding the under side of the said platen pivoted near one end to the said frame and free at its opposite end, a feed-roll mounted on the end of the apron adjacent its pivot and resting normally against the surface of the platen, and means independent of said apron for elevating the free end thereof to turn the apron on its pivot to carry the feed-roll away from the surface of the platen.

5. In a paper-feed device for type-writing machines, the combination with the platen and the platen-frame, of an apron pivoted at one side of the platen surrounding the under side of the platen extending upwardly and to the rear of the platen and free at its rear end, a feed-roll mounted on the pivot end of the apron and resting normally against the surface of the platen, means independent of said apron for elevating the same to carry said feed-roll away from the surface of the platen, and a paper-feed roll normally in engagement with the platen and diametrically opposite to the feed-roll mounted on the apron.

6. In a paper-feed device for type-writing machines, the combination with the platen and the platen-frame, of an apron pivotally mounted near one end on said frame, and a paper-feed roll mounted on the end of said apron adjacent its pivot resting normally against the surface of the platen, and means independent of said apron for causing a pivotal movement of the apron to move said feed-roll away from the surface of the platen.

7. In a paper-feed device for type-writing machines, the combination with the platen and the platen-frame, of an apron pivotally mounted at one end and free at its other end, a feed-roll mounted on the pivot end of the apron and normally held against the surface of the platen by the weight of said apron, and means independent of said apron for elevating the apron to carry the feed-roll away from the surface of the platen.

8. In a paper-feed device for type-writing machines, the combination with the platen and the platen-frame, of an apron pivoted at one side of the platen surrounding the under side of the platen extending upwardly and rearwardly at the other side of the platen and free at its rear end, a feed-roll mounted on the pivot end of the apron and held normally against the surface of the platen by the weight of the said apron, and means independent of said apron for elevating the apron to carry the feed-roll away from the surface of the platen.

9. In a paper-feed device for type-writing machines, the combination with the platen and the platen-frame, of an apron having a feed-roll perforation pivoted at one side of the platen surrounding the under side of the platen extending upwardly and rearwardly at the other side of the platen and free at its rear end, a feed-roll mounted at the pivot end of the apron and held normally against the surface of the platen by the weight of the apron, a spring-pressed feed-roll projecting normally through the perforation in the apron and engaging the surface of the apron diametrically opposite to the feed-roll mounted on the apron, and means for elevating the apron and engaging the spring-pressed feed-roll to carry said rolls away from the surface of the platen.

10. In a writing-machine the combination with the platen and the platen-frame, of a guide-plate slidably mounted on said frame, a shank pivotally mounted on said guide-plate, a feed-roll mounted on said shank a spring in engagement with said shank and in slidable

engagement with said frame to hold the feed-roll in adjusted position and to hold the guide-plate against accidental displacement.

11. In a paper-feed device for type-writing machines, the combination with the platen and the platen-frame, of a guide-plate slidably mounted on said frame, a tubular housing mounted on said guide-plate, a feed-roll having a wedge-shaped shank pivotally mounted on said housing and movable into and out of engagement with the surface of the platen, and a spring mounted in said housing bearing against said shank and slidably engaging said frame to hold the guide-plate against automatic displacement of said frame and to hold the feed-roll in elevated position.

12. In a paper-feed device for type-writing machines, the combination with the platen and the platen-frame; of an apron pivotally mounted at one end and free at its other end, a feed-roll mounted on the pivot end of the apron and normally held against the surface of the platen by the weight of said apron, auxiliary means for holding said feed-roll against the surface of the platen, and means independent of said apron to elevate the apron to carry the feed-roll away from the surface of the platen.

811,482. FEEDING AND BLENDING MACHINE. CHARLES W. CARR, Jr., New Orleans, La. Filed June 1, 1905. Serial No. 263,302.

Claim.—1. An apparatus of the class described, comprising a plurality of hoppers, each having discharge-spouts, a receptacle into which said hoppers discharge, one or more of said hoppers including a conical bottom and a discharge-outlet, a pair of brace members having central bearings and secured within the hoppers, a hollow shaft held in the central bearings of said braces and projecting out through the top of the hopper, a gear-wheel on the projecting end of the hollow shaft, a plurality of agitating-arms adjustably secured to said hollow shaft between the braces, a collar detachably secured to said hollow shaft below the lower brace, diverging arms formed with said collar and projecting downwardly therefrom, a valve for closing the discharge-spout of the hopper, a valve-stem passing through said hollow rod and having its lower end threaded, said valve comprising a bell-shaped portion adapted to screw on the threaded end of said stem, a bottom disk on said stem and a nut on said stem for securing the bottom disk in position, said stem having its other end projecting beyond the outer end of the hollow shaft, and provided with a screw-thread, a turn-wheel having a threaded hub mounted on said stem beyond the outer end of the hollow shaft for adjusting the stem within the hollow shaft, and means for securing the valve-stem and the hollow shaft to rotate together.

2. In an apparatus of the class described, the combination with a receiving-box, a conveyer and mixing means therein, of a plurality of hoppers discharging into said box, each of said hoppers comprising a receptacle having a discharge-outlet, a valve within the receptacle for closing said discharge-outlet, a hollow rotatable shaft having arms mounted within the receptacle, means for operating said shaft and said conveyer, and means controlled from the outside of the receptacle and passing through said hollow shaft for operating said valve.

3. An apparatus of the class described comprising a plurality of hoppers each having discharge-spouts, a box into which said hoppers discharge, a screw conveyer in said box, mixing-spikes on the conveyer-shaft, means for driving said conveyer, said hoppers each having agitating devices within the same, each of said agitating devices comprising a hollow shaft, a plurality of arms adjustably mounted thereon, a worm-gear shaft having worm-gears for meshing with the worm-wheels of the agitating-shafts, means for coöperatively connecting said worm-gear shaft to said conveyer-shaft, a valve within each hopper for closing the discharge-spout thereof, means passing through the hollow shaft of each hopper and controlled from without the hopper for adjusting said valve.

4. An apparatus of the class described comprising a plurality of hoppers, each having discharge-spouts, a box into which said hoppers discharge, a screw conveyer in said box, mixing-spikes on the conveyer-shaft, means for driving said conveyer, said hoppers each having agitating devices within the same, each of said agitating devices comprising a hollow shaft, a plurality of arms adjustably mounted thereon, a worm-wheel on the end of said shaft without the hoppers, a worm-gear shaft having worm-gears for meshing with the worm-wheels of the agitating-shafts, means for coöperatively connecting said worm-gear shaft to said conveyer-shaft, a valve within each hopper for closing the discharge-spout thereof, means passing through the hollow shaft of each hopper and controlled from without the hopper for adjusting said valve, and means for connecting said last-named means and said hollow shaft to rotate together.

5. In an apparatus of the character described, the combination with a mixing-box, a conveyer therein, and means for driving said conveyer, of a plurality of hoppers having discharge-spouts discharging into said box, each of said hoppers comprising a body portion, a conical bottom having a discharge-aperture connected to the discharge-spout of the hopper, a sliding gate for the discharge-spout of the hopper, a pair of brace members having central bearings and secured within the hoppers, a cover for said hoppers, a hollow shaft held in the central bearings of said braces and projecting out through the top of the hopper, a gear-wheel on said projecting end of the hollow shaft, a plurality of agitating-arms adjustably secured to said hollow shaft between the braces, a collar detachably secured to said hollow shaft below the lower brace, diverging arms formed with said collar and projecting downwardly therefrom, a valve for closing the discharge-spout of the hopper, a valve-stem passing through said hollow rod and having its lower end threaded, said valve comprising a bell-shaped portion adapted to screw on the threaded end of said stem, a bottom disk on said stem and a nut on said stem for securing said bottom disk in position, said stem having its other end projecting beyond the outer end of the hollow shaft and provided with a screw-thread, a turn-wheel having a threaded hub mounted on said stem beyond the outer end of the hollow shaft for adjusting the stem within the hollow shaft, and means for securing the valve-stem and the hollow shaft to rotate together, substantially as shown and described.

6. In an apparatus of the character described, the combination with a mixing-box, a conveyer therein, and means for driving said conveyer, of a plurality of hoppers having discharge-spouts discharging into said box, each of said hoppers comprising a body portion, a conical bottom having a discharge-aperture connected to the discharge-spout of the hopper, a sliding gate for the discharge-spout of the hopper, a pair of brace members having central bearings and secured within the hoppers, a cover for said hopper, a hollow shaft held in the central bearings of said braces and projecting out through the top of the hopper, a gear-wheel on said projecting end of the hollow shaft, a plurality of agitating-arms adjustably secured to said hollow shaft between the braces, a collar detachably secured to said hollow shaft below the lower brace, diverging arms formed with said collar and projecting downwardly therefrom, a valve for closing the discharge-spout of the hoppers, a valve-stem passing through said hollow rod and having its lower end threaded, said valve comprising a bell-shaped portion adapted to screw on the threaded end of said stem, a bottom disk on said stem and a nut on said stem for securing said bottom disk in position, said stem having its other end projecting beyond the outer end of the hollow shaft and provided with a screw-thread, a turn-wheel having a threaded hub mounted on said stem beyond the outer end of the hollow shaft for adjusting the stem within the hollow shaft, and means for securing the valve-stem and the hollow shaft to rotate together, said last-named means comprising a pin or key secured to the valve-stem and projecting through a slot in the hollow shaft, and means for imparting motion to the gear secured to the hollow shaft to rotate the same substantially as shown and described.

811,483. HEAT-CONTROLLING APPARATUS. GEORGE CLEMENTS and JAMES M. HOOTLER, Chicago, Ill. Filed Apr. 22, 1904. Serial No. 204,638.

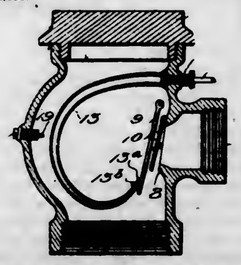

Claim.—1. A valve-casing, an arm within and pivoted to the casing adjacent to the valve-seat, said arm carrying intermediate its

ends a valve, a hollow member connected at one end to the valve-casing and at its other end loosely connected to the free end of the arm, said member adapted under variations of internal pressure to operate the arm, and thus the valve.

2. A valve-casing, an arm within and pivoted to the casing adjacent to the valve-seat, said arm carrying intermediate its ends a valve, a hollow member connected at one end to the valve-casing and at its other end loosely connected to the free end of the arm, said member adapted to expand under internal pressure to close the valve, and contract of its own inherent nature to open the valve when said pressure is removed.

811,484. **BROODER.** PAUL COATS, Lagrange, Ill. Filed May 6, 1905. Serial No. 259,175.

Claim.—1. A brooder comprising a base and a vertical adjustable hover-board, and an adjustable inclosing curtain.

2. A brooder comprising a base, a fleece-lined hover-board vertically adjustable with relation to the base, and an inclosing curtain vertically adjustable with relation to the hover-board.

3. A brooder comprising a base, a perforate guard-cylinder projecting from the base, a hover-board having a depending cylindrical flange to embrace said guard-cylinder, and an inclosing curtain vertically adjustable with relation to said hover-board.

4. A brooder comprising a base provided with a vertically-projecting perforate guard-cylinder, a hover-board slidably connected to said guard-cylinder, a vertically-arranged flange secured to the periphery of the hover-board, a curtain-ring frictionally and slidably engaging said flange, and a curtain depending from said ring.

5. A brooder comprising a base provided with a vertically-projecting perforate guard-cylinder, a fleece-lined hover-board slidably connected to said guard-cylinder, a vertically-arranged flange secured to the periphery of the hover-board, a curtain-ring vertically and slidably engaging said flange, and a curtain depending from said ring.

811,485. **MEANS FOR PURIFYING AND REGULATING WATER.** DAVID COCHRANE, Philadelphia, Pa. Filed May 16, 1905. Serial No. 260,896.

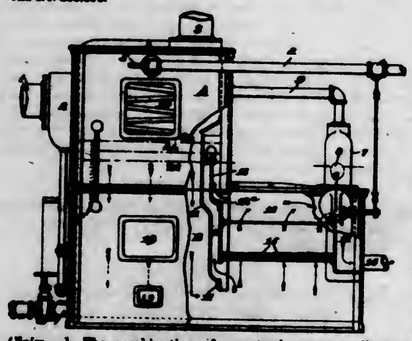

Claim.—1. The combination of a water-heater, a collecting-tank communicating therewith; a filter in said tank; an outflow-chamber, and a conduit within the tank, open at the bottom and extending from the lower portion of the tank to above the normal water-line; a partition in said conduit extending from near its top and forming a passage communicating with the outflow-chamber.

2. The combination of a water-heater, a collecting-tank communicating therewith; a filter in said tank forming an outflow-chamber; a conduit within said tank leading from above the normal water-line therein to the outflow-chamber, and an inclosing conduit open at the bottom and extending from the lower portion of the tank over the first-mentioned conduit communicating therewith and inclosing the same.

3. The combination of a water-heater, a collecting-tank communicating therewith; a filter in said tank, and an inclosed passage in the tank, leading from the lower part of the same to the outflow, and vented at the top.

4. The combination of a tank; a filter therein; an outflow-chamber beyond the filter, and an open passage vented at the top, connecting the lower portion of the tank with the outflow-chamber.

5. The combination of a tank; a filter therein, and an open passage within the tank vented at the top and connecting the lower portion of the tank with the outflow.

6. The combination of a tank; a filter therein, and an interior integral conduit vented at the top connecting the lower portion of the tank with the outflow.

7. The combination of a tank; a horizontal filter therein; an outflow-chamber beyond the filter, and a passage from the tank below the filter up to, and vented at the water-line, and communicating with the outflow-chamber.

8. The combination of a tank, a horizontal filter therein, and a passage in the tank between the lower part of the tank below the filter and the outflow, said passage extending to the normal water-line and vented thereat.

811,486. **TIPPLE.** CHARLES R. COMBOS, Rusley, Ala., assignor of one-half to William D. Caldwell, Rusley, Ala., and one-fourth to John W. Wilkes, Jefferson county, Ala. Filed Jan. 4, 1905. Serial No. 239,695.

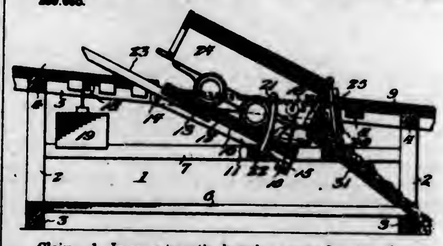

Claim.—1. In an automatic dumping means for cars, the combination of an inclined runway having two portions, a tilting tipple having openings and arranged between said portions and adapted to be tilted by the weight of a car running thereon, stationary stop devices below the tipple adapted to project through said openings and engage the car-wheels when the tipple descends, and means for restoring the tipple and dumped car to normal position and permit the same to run from the tipple to the dumping-point.

2. In a dumping apparatus for cars, the combination of an inclined runway having two portions, a tilting tipple arranged between said portions and adapted to descend under the weight of the car passing thereon from the upper portion of the runway, stationary wheel-engaging devices brought into action by the downward movement of the tipple to hold the car from downward movement thereon, automatic means for discharging the load upon the descent of the tipple, and means for automatically restoring the tipple and car to normal position after the load is dumped, the upward movement of the tipple disengaging the wheels from said wheel-engaging devices, thus permitting the car to pass from the tipple to the lower portion of the runway.

3. In an automatic car-dumping apparatus, a tilting tipple carrying a stop projected rearwardly therefrom when the tipple is dumped to prevent a car from passing onto the tipple when the latter is loaded.

4. In an automatic dumping apparatus for cars, a frame having track-rails, a tilting tipple, a stop adapted to project upward through the tipple when the latter descends to arrest the movement of a car thereon, and stops carried by the tipple and projectable above the rails to arrest a following car.

5. In an automatic dumping apparatus for cars, the combination of an inclined runway, a tilting tipple, stops limiting the upward movement of the tipple, and a counterweight connting with said stops to return the tipple to normal position.

811,487. **WATERPROOF EYEGLASS-CASE.** MEDIAH DAVISON, New York, N. Y. Filed Mar. 7, 1905. Serial No. 249,827.

Claim.—1. An eyeglass-case having a pair of jaws, said jaws having parallel opposite bodies adapted to be brought together, with side extensions extending downwardly and hinged together, one of said jaws having a groove extending longitudinally of its body and longitudinally of the side extensions thereof, the opposite jaw having a tongue extending longitudinally of the body thereof and longitudinally of the side extensions thereof, said tongue being received in said groove and forming a water-tight joint between said jaws.

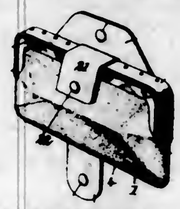

2. An eyeglass-case having a pair of jaws, said jaws having parallel opposite bodies adapted to be brought together, with side extensions extending downwardly and hinged together, one of said jaws having a groove extending longitudinally of its body and longitudinally of the side extensions thereof, the opposite jaw having a tongue extending longitudinally of the body thereof and longitudinally of the side extensions thereof, said tongue being received in said groove and forming a water-tight joint between said jaws, one of said jaws further having a lip projecting beyond the edge of the opposite jaw and cooperating with said tongue and groove to form a water-tight joint in said jaws.

3. An eyeglass-case having a body, the upper portion whereof is formed into a jaw, said jaw having a body with side extensions, a second jaw adapted to close upon said first jaw and having a body with side extensions hinged to said first side extensions, the adjacent faces of said jaws having, the one a groove and the other a tongue adapted to be received within said groove, and a flap disposed across said jaws and adapted to secure the same together.

811,488. **PRINTING-PRESS.** THOMAS B. DOOLEY, Malden, Mass., assignor to Joseph Middleby, Jr., Malden, Mass. Filed Apr. 10, 1905. Serial No. 255,974.

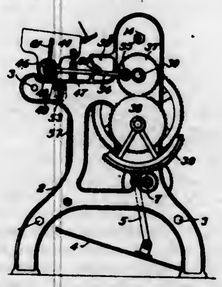

Claim.—1. In a printing-press, the combination of a platen-carrier, parallel guides therefor, extending at right angles to its working face, pivots coöperating with said guides and providing stops to limit the rearward movement of the carrier, and means for reciprocating said carrier on its guides and turning it in an arc of a circle having said pivots as a fixed central axis.

2. In a printing-press, the combination of a platen-carrier, parallel guides therefor, extending at right angles to its working face, pivots coöperating with said guides and providing stops to limit the rearward movement of the carrier, springs interposed between the pivots and the ends of the corresponding guides for cushioning the carrier, and means for reciprocating said carrier on its guides and turning it on said pivots as a central axis.

3. In a printing-press, the combination of a platen-carrier having slotted arms forming guides, relatively fixed pivotal devices arranged to slide in the slots of said arms respectively and providing stops to limit the rearward movement of the carrier, supplementary guides for said carrier arranged to operate in parallelism with said slots, and means for reciprocating said carrier on the latter guides and for turning it in an arc of a circle having said pivotal devices as a central axis.

4. In a printing-press, the combination of a platen-carrier and guides on which said carrier is adapted to slide at right angles to its working face, arms secured to said carrier and provided respectively with slots, blocks mounted to slide in said slots and journaled on fixed pivots respectively, said blocks forming stops to limit the rearward sliding movement of the carrier, and means for reciprocating said carrier on said guides and for turning it on said pivots as a central axis.

5. In a printing-press, the combination of a platen-carrier and guides on which said carrier is adapted to slide at right angles to its working face, arms secured to said carrier and provided respectively with slots, blocks mounted to slide in said slots and journaled on fixed pivots respectively, said blocks forming stops to limit the rearward sliding movement of the carrier, a spring interposed between each block and the forward end of the corresponding slot, and means for reciprocating the carrier and for turning it on said pivots as a central axis.

6. In a printing-press, the combination with a type-bed having forwardly-turned edges, of a platen-carrier movable toward and from the type-bed and having edges adapted to abut against the edges of the type-bed when in the impression position, a platen carried by said carrier and means for adjusting said platen.

7. In a printing-press, the combination with a type-bed having forwardly-turned edges, of a platen-carrier movable toward and from the type-bed and having edges adapted to abut against the edges of the type-bed when in the impression position, a platen carried by said carrier, a rod or shaft journaled in said carrier and provided at its ends with eccentrically-mounted pins, and means connected to said pins for reciprocating said carrier.

8. In a printing-press, the combination with a type-bed having forwardly-turned edges, of a platen-carrier movable toward and from the bed and having edges adapted to abut against the edges of the type-bed when in the impression position, a platen carried by said carrier, a rod or shaft journaled in said carrier and provided at its ends with eccentrically-mounted pins, means connected to said pins for reciprocating said carrier, and a throw-off lever connected to one of said pins.

9. In a printing-press, the combination of a platen-carrier, a rod journaled therein, means connected eccentrically to said rod for operating the carrier, an arm rigidly connected to said rod and having an operating-handle pivoted thereto, said handle being provided with a locking-finger, and a ring adjustably mounted on said carrier and provided with a notch adapted to receive said locking-finger.

10. In a printing-press, the combination of a platen-carrier, a rod journaled therein and provided at its ends with eccentrically-mounted pins, means connected to said pins for reciprocating said carrier, a ring adjustably mounted on said carrier and provided with a notch, and a lever connected to the said rod and provided with a locking-finger adapted to engage said notch.

11. In a printing-press, the combination of a platen-carrier and guides therefor, said guides permitting a sliding movement of the carrier toward and from the type-bed, pivots coöperating with said guides and providing stops to limit the rearward movement of the carrier, and means for reciprocating said carrier on its guides and turning it on said pivots as a central axis, said means comprising a pair of intermittent self-locking gears, means for driving one of them, and crank-rods connecting the driven gear with the platen-carrier.

12. In a printing-press, the combination with a platen-carrier and guides therefor, of pivots coöperating with said guides and providing for a turning movement of said carrier, springs 52 interposed between said pivots and one end of the guides, and means for operating the carrier.

13. In a printing-press, the combination of a platen-carrier mounted to slide toward and from the type-bed and to turn on pivots at a distance from said type-bed, means for operating said carrier, and springs 57 for supporting the latter, substantially as described.

14. In a printing-press, the combination with a platen-carrier mounted to slide toward and from the type-bed and to turn face upward at a distance from said type-bed, of means for operating said carrier comprising intermittent self-locking gears and crank-rods connecting the driven gear with the carrier.

811,489. **CARD-CASE.** WILLIAM C. DUNWELL, Chicago, Ill. Filed Oct. 2, 1905. Serial No. 281,013.

Claim.—1. In combination with a casing or cover, of a metallic card-frame consisting of a base-plate having a box-like device at its upper end, this device embodying side flanges and a transverse flange, a broad, flat, spring-actuated clamp-plate attached to the lower end of the base-plate, and extending in under said flanges and normally bearing up against the under side of the same, and means for attaching the card-frame to the case or cover.

2. In combination with a flexible case or cover provided with a pocket across its lower end and another pocket at its upper end, of a card-frame comprising a base-plate having a tongue b^4 at its upper end adapted to enter said pocket at the upper end of the case, the lower end of the base-plate being adapted to enter the other pocket carried by the case, and card-holding means carried by the base-plate.

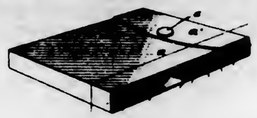

811,490. PNEUMATIC TIRE. JAMES M. ELDER, Indianapolis, Ind. Filed Mar. 24, 1905. Serial No. 251,366.

Claim.—1. The combination with a wheel-rim, of a pneumatic tire, side pieces adapted to extend around the sides of said tire and to conform thereto, said side pieces having flanges adapted to engage the sides of said wheel-rim and portions adapted to extend between said rim and tire, a bearing-strip arranged between said side pieces over the tread of the tire, means to secure said bearing-strip in place, means to secure said side pieces to the wheel-rim, and means to clamp said side pieces to each other between the tire and the rim.

2. The combination with a wheel-rim, of a metal tire thereon, a pneumatic tire, side pieces adapted to extend round the sides of said pneumatic tire and to conform thereto, said side pieces having flanges adapted to engage the sides of said wheel-rim and portions adapted to extend between said rim and tire, a bearing-strip arranged between said side pieces over the tread of the pneumatic tire, means to secure said bearing-strip in place, means to secure said side pieces to the wheel-rim, and means to clamp said side pieces to each other between the pneumatic tire and the metal tire.

811,491. FLOOR STRUCTURE. JEAN ERATH, Strassburg, Germany. Filed Feb. 9, 1903. Serial No. 142,639.

Claim.—1. A floor or ceiling composed of flanged members, rods supported on the flanges of said members and from each other, T-irons suspended from said rods, and flags supported from said T-irons.

2. A floor or ceiling comprising flanged members, cranked rods supported on the flanges of said members and from each other, T-irons suspended from said cranked rods, and flags supported by said T-irons, all substantially as and for the purpose specified.

811,492. COT FOR INVALIDS. MILTON Q. FAIR, Sr., Chicago, Ill. Filed Apr. 17, 1905. Serial No. 256,048.

Claim.—1. A cot of the kind described, composed of the several parts forming the combination consisting of a main body A having supports A'; a movable transverse frame D secured to said main body; a pair of brackets A^4 affixed to said main frame, having movable cross-bars; a pair of slotted arms A^7 affixed to said main frame; a shaft B^6 supported transversely in said main body; a pair of gear-wheels and a ratchet-wheel affixed on said shaft; a pawl pivotally attached to said main frame adapted to engage said ratchet-wheel; a pair of grooved wheels supported on said main body; a frame B formed of two parts hinged together; a pair of racks pivotally attached to the frame B and supported by said gears and grooved wheels; a pair of pivot-studs and thumb-screws, said studs being affixed in the frame B and adjustable in the arms A'; a pair of locking plates and pins adapted to lock the two parts of the frame B; a canvas secured to the frame B, having a central aperture; and a mattress having a removable part E'; substantially as described and for the purposes specified.

2. A cot of the kind described, constructed and composed of the several parts and mechanism, forming the combination consisting of a main body, A, having suitable supports; and a drop-frame, D; a pair of brackets, A^4, affixed to the head of said main body; a pair of vertical arms, A^7, affixed to the foot of said main body; a shaft, B^6, supported transversely in the head of said body; a pair of gear-wheels and a ratchet affixed on said shaft, and means for operating said gear-wheels, a frame, B, formed of two parts, B' and B^2, pivotally connected and adapted to be folded together; means for locking said parts in the open position and thereby making the two parts, B' and B^2, one rigid frame, B; a pair of racks, B^3, secured to the head of the part, B', said racks being adapted to be engaged, supported and operated by the gear-wheels, B^7; means for adjustably connecting the end of the part, B^2, to the vertical arms, A^7; a canvas attached to the frame, B, extending from end to end and side to side thereof and having a central aperture; a mattress, E, supported on the main body, A, said mattress having a removable part, E'; substantially as described, and for the purposes specified.

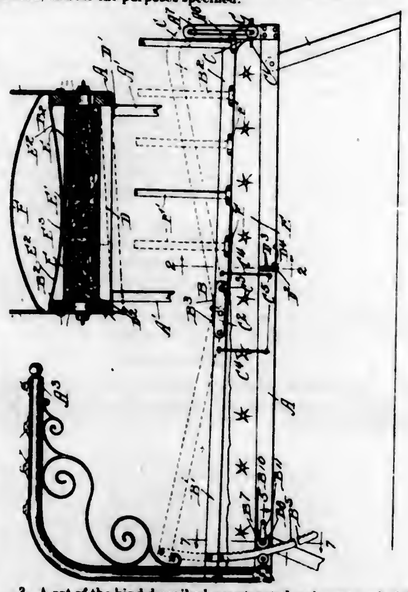

3. A cot of the kind described, constructed and composed of the several parts and mechanism forming the combination, consisting of a main body, A, and drop-frame, D; a frame B, formed of two parts, B' and B^2, pivotally connected; means for supporting said frame on said main body; suitable mechanism for raising and lowering said frame above said main body and for moving each of the parts, B' or B^2, independently of the other; a canvas, E^3, supported by said frame, B, said canvas having an aperture, E^2; a mattress, E, supported on said main body, said mattress having a removable part, E', and means for supporting said part in said mattress; substantially as described, and for the purposes specified.

4. In a cot of the kind described, the combination of a main body, A, having a drop-frame, D, and a mattress, E, said mattress having a removable part, E', supported by said main body and said frame, D, with a frame, B, formed of two parts hinged together near the center of the length of said frame, said frame being provided with a canvas, E^3, stretched from side to side and end to end of said frame and secured thereto, said canvas having a central aperture, E^2, corresponding in position to the removable part, E', of the mattress, E; mechanism for supporting said frame on said main body and for adjusting said frame above said mattress; substantially as described, and for the purposes specified.

811,493. CAR-TRUCK BOLSTER. THOMAS FOWLER, Beaumont, Tex. Filed Aug. 31, 1905. Serial No. 276,082.

Claim.—1. A bolster having its lower members provided with upward-extended end portions taken into bottom corner-recesses in the end members.

2. A bolster having lower and upper bar members and end members with their outer end walls provided in the upper edges thereof with recesses effective to receive and support therein the end portions of said upper bar members, said end members having in their lower corner edges recesses adapted to receive the end portions of said lower bar members.

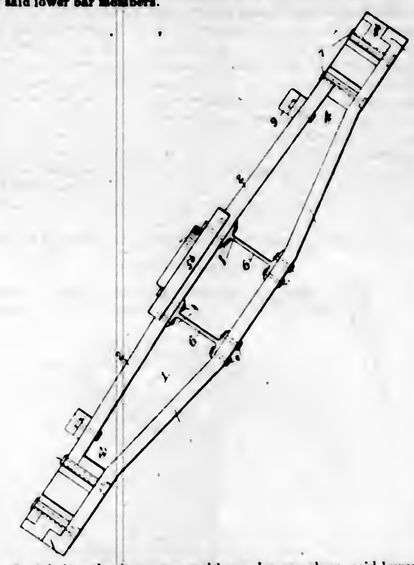

3. A bolster having upper and lower bar members, said lower bar members having upward-extended end lugs or projections, and end members having recesses in the upper edges of their outer end walls to receive the ends of said upper bar members, said end members also having recesses in their outer and lower corners effective to receive said upward-extended end lugs or projections.

4. A bolster, comprising upper and lower bar members, end members, a central cap or plate member having lateral downward-extended flanges and pendent ribs upon their under sides, between which ribs and flanges are received said upper bar members, and I-beam members arranged upon opposite sides of a line passing centrally through said upper and lower bar members, said end members having recesses in the upper edges of their outer end walls to receive and support the outer end portions of said upper bar members, and additional recesses in their lower outer corner edges to receive upward-extended projections of said lower bar members.

811,494. FASTENING DEVICE. FRANK A. FREEMAN, Philadelphia, Pa. Original application filed Apr. 1, 1904, Serial No. 201,063. Divided and this application filed Feb. 9, 1905. Serial No. 244,861.

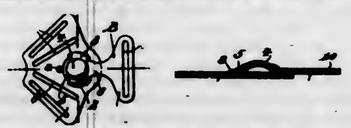

Claim.—1. In a fastening device, the combination of two interlocking members, one member having a flattened circular concavo-convex head, the other member provided with oppositely-disposed arc-shaped lips, the one symmetrical with the other, for engaging said head therebetween, and a projection on the flat surface of the lip member approximately between the receiving ends of the lips and outside the margin of the head when in final position, said projection so located as to lie within the concave portion of the head until the same has been brought into preliminary engagement with the lips.

2. In a fastening device, the combination of two interlocking members, one member having a flattened circular concavo-convex head; the other member provided with oppositely-disposed convergent arc-shaped lips, the one symmetrical with the other, for engaging said head therebetween, and a projection on the flat surface of the lip member approximately between the receiving ends of the lips and outside the margin of the head when in final position, said projection so located as to lie within the concave portion of the head until the same has been brought into preliminary engagement with the lips.

3. In a fastening device, the combination of two interlocking members, one member having a flattened circular concavo-convex head, the other member provided with oppositely-disposed arc-shaped lips, the one symmetrical with the other, for engaging said head therebetween, a resiliently-mounted projection on the flat surface of the lip member approximately between the receiving ends of the lips and outside the margin of the head when in final position, said projection so located as to lie within the concave portion of the head until the same has been brought into preliminary engagement with the lips.

811,495. CATAFALQUE. WLADYSLAW J. GABRYSEK, Greenbay, Wis. Filed July 18, 1905. Serial No. 270,282.

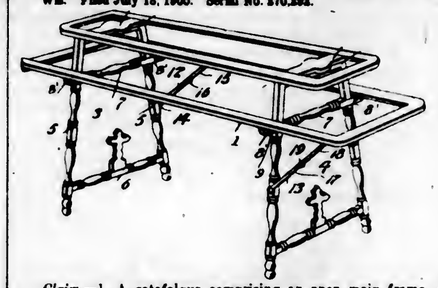

Claim.—1. A catafalque comprising an open main frame, a supporting-frame adapted to fold within the main frame, and stands pivotally connected to said main frame to hold the supporting-frame above the main frame when the device is set up, and to fold substantially parallel with said main frame to collapse the device and fold the supporting-frame within the main frame.

2. A catafalque comprising a main frame, a casket-supporting frame, and stands pivotally connected at their upper ends to the supporting-frame and below the same to the main frame and adapted to be swung parallel with the main frame to fold the supporting-frame down upon the same.

3. A catafalque comprising a pair of end stands, a main frame hinged to said stands below the upper ends thereof, a casket-supporting frame hinged to the upper ends of the stands, and hinged braces connecting the stands with the main frame, the construction being such that the stands are adapted when set up to hold the supporting-frame above the main frame and to be swung parallel with the main frame to fold the supporting-frame down upon the same.

4. A catafalque comprising end stands composed of connected pairs of legs, a main frame hinged to the stands outside of and below the upper ends of the legs, a casket-supporting frame hinged to the upper ends of the legs, and folding braces connecting the stands with the main frame.

5. A catafalque comprising a main frame, a pair of end stands, each composed of a pair of legs connected at their lower ends and at a point below their upper ends by rounds and at their upper ends by a cross-bar, the upper round being provided with extensions beyond the legs and to which the main frame is hingedly connected, a casket-supporting frame adapted to fold within the main frame and hinged to the cross-bars of the end stands, and braces adapted to fold with the stands and pivotally connecting the same with the main frame.

811,496. KING-BOLT COUPLING. WILLIAM W. GREEN, Newcreek, W. Va. Filed May 19, 1905. Serial No. 261,230.

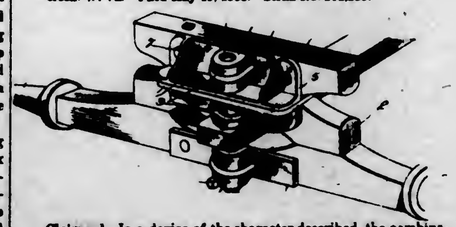

Claim.—1. In a device of the character described, the combination of a bolster-plate a portion of which extends beyond the side of

the bolster, a flange attached thereto and embracing a side of the bolster, a reinforcing-web between the flange and the projecting portion of the bolster-plate, and a socket attached to the bolster-plate for the reception of the king-bolt.

3. In a device of the character described the combination of a bolster-plate a portion of which extends beyond a side of the bolster, a flange attached to the said bolster-plate and embracing a side of the bolster, a reinforcing-web between the flange and the projecting portion of the bolster-plate, a socket attached to the flange and the projecting portion of the bolster-plate, and a reinforcing-clamp for said socket the arms of which pass through openings in the flange on each side of the socket and are secured to the bolster.

3. In a device of the character described, the combination of a bolster-plate a portion of which extends beyond a side of the bolster, a flange attached to the said bolster-plate and embracing a side of the bolster, and a socket attached to the flange and the projecting portion of the bolster-plate.

4. In a device of the character described, the combination of vertically-alined sockets in the bolster and head-block, a king-bolt passing through the sockets and removable from below, a removable plug fitting in the lower socket and adapted to serve as a support for the king-bolt, and means for holding the plug in position.

811,497. VALVE. GUSTAVE HARDCASTLE, Berkeley, Cal. Filed June 21, 1905. Serial No. 266,202.

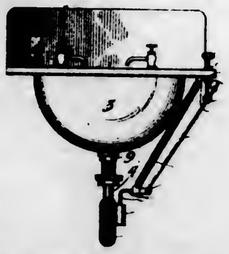

Claim.—1. The combination with a basin or other receptacle, of a sleeve formed with a valve-seat and secured in the basin-outlet, said sleeve being in open communication with the water-escape pipe, a valve for said seat, a valve-rod depending from said valve and projecting laterally beyond the water-escape pipe, a rod pivotally connected to the free end of said valve-rod, means for operating said rod to depress the valve-rod, and a spring for returning the valve-rod to normal position.

2. A valve mechanism for basins or the like comprising a sleeve, upper and lower lock-nuts for said sleeve, the upper lock-nut being formed with a valve-seat a valve for said seat, an outlet-pipe connected with the sleeve and provided with an elongated opening, a valve-rod depending from the valve and extending laterally through the opening in the outlet-pipe, and means arranged externally of said pipe for operating the valve-rod in both directions.

3. A valve mechanism for basins or the like comprising a sleeve to fit within the outlet-opening in the basin, upper and lower lock-nuts to secure said sleeve with relation to the basin, the upper lock-nut being formed with a valve-seat, a coupling member depending from the sleeve, an outlet-pipe removably connected with the coupling member and formed with an elongated opening, a housing secured to the outlet-pipe to conceal said opening, a valve to cooperate with said seat, a valve-rod depending from said valve, projected laterally through the opening in the outlet-pipe and upwardly through the top of the housing, a rod connected to the free end of the valve-rod, operating means connected to said rod, and a spring connected to said operating means and to the valve-rod.

4. The combination with a basin or the like, of a sleeve designed to fit within the outlet-opening of the basin, an upper lock-nut to engage said sleeve and overlie the surface of the basin, said nut being provided with an inwardly-projecting flange to form a valve-seat, a coupling member depending from said sleeve, a lock-nut having threaded engagement with said coupling member and adapted to bear against the lower surface of the basin, an outlet-pipe connected to the lower end of the coupling member and formed with an elongated opening, a housing secured to said outlet-pipe to conceal said opening, a valve for said seat, a valve-rod depending from the valve, projected laterally through the opening in the outlet-pipe and upwardly through the housing, a sleeve secured in the basin-board, a push-rod longitudinally movable within said sleeve, a rod connecting said push-rod and the valve-rod, and a spring connecting the valve-rod and the sleeve.

5. The combination with a basin or the like, of a sleeve designed to fit within the outlet-opening of the basin, an upper lock-nut to engage said sleeve and overlie the surface of the basin, said nut being provided with an inwardly-projecting flange to form a valve-seat, a coupling member depending from said sleeve, a lock-nut having threaded engagement with said coupling member and adapted to bear against the lower surface of the basin, an outlet-pipe connected to the lower end of the coupling member and formed with an elongated opening, a housing secured to said outlet-pipe to conceal said opening, a valve for said seat, a valve-rod depending from the valve, projected laterally through the opening in the outlet-pipe and upwardly through the housing, a sleeve secured in the basin-board, a push-rod longitudinally movable within said sleeve, a rod connecting said push-rod and the valve-rod, and a spring connecting the valve-rod and the sleeve, and means to lock the push-rod in lowered position.

811,498. CARRIER FOR PHOTOGRAPHIC PLATES. EDWARD L. HALL, New York, N. Y. Filed Apr. 17, 1905. Serial No. 255,958.

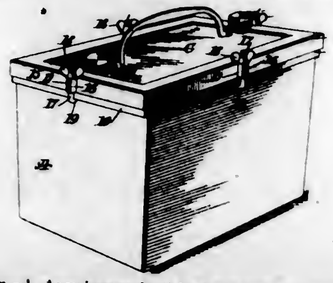

Claim.—1. As an improved article of manufacture, a carrier for photographic plates, consisting of a box-like receptacle, a skeleton tray provided with guides for a number of plates, the said tray being independent of the said receptacle but removably contained therein, a cover for the receptacle, provided with a capped inlet and a capped outlet, and devices engaging the cover and the receptacle, holding the two connected in a liquid-tight manner.

2. A carrier for photographic plates, consisting of a receptacle open at the top but otherwise closed, a skeleton tray located within the said receptacle, a cover fitted to the top of the receptacle in a water-tight manner, clamps carried by the cover and engaging with the receptacle, the said cover being provided with an inlet and an outlet aperture, and removable covers for the said apertures.

3. In a carrier for photographic plates, a receptacle open at the top but otherwise closed and provided at its upper portion with an exterior marginal flange having an undercut groove in its lower edge, a skeleton tray located within the receptacle, a cover for the said receptacle, provided with a downwardly-extending marginal flange adapted for engagement with the body-flange, tubular offsets from the said cover-flange, clamps carried by said offsets, each clamp comprising a threaded shank passed through a bore of an offset and provided with a nut at its threaded end, and a hook-head the bill whereof is adapted to enter the groove in the body-flange, the said cover being provided with an inlet and an outlet aperture, a threaded collar around each aperture and caps adapted to be screwed upon said collars.

811,499. SHUTTLE HOLDER AND DRIVER FOR SEWING-MACHINES. PATRICK J. HASLEY, Elizabeth, N. J. Filed Feb. 22, 1905. Serial No. 246,573.

Claim.—1. A sewing-machine shuttle-holder comprising a driver, spring-pressed shuttle-holding devices on the driver, a bobbin-case removably placed in the shuttle, a finger on the bobbin-case, and a stationary part having a notch to receive said finger.

2. A sewing-machine shuttle-holder comprising a shuttle-driver, holding devices having pivotal connection with said driver and adapted for engaging with opposite sides of the shuttle, outwardly-extending finger-pieces on said holding devices, and a spring arranged between the finger-pieces.

3. A sewing-machine shuttle-holder comprising a shuttle-driver, spring-pressed holding devices mounted to swing on said driver and adapted for engaging with opposite sides of the shuttle, a bobbin-case removably placed in the shuttle, a retaining-ring depending from a slide-plate of the sewing-machine, the said ring being provided with a notch, a finger on the bobbin-case for engaging in said notch, and a spring-pressed latch on the retaining-ring for engaging with the bobbin-case.

811,500. MAGAZINE FOR FENCE-LOOMS. DENNIS H. HAYES, Adrian, Mich. Filed Feb. 16, 1905. Serial No. 245,830.

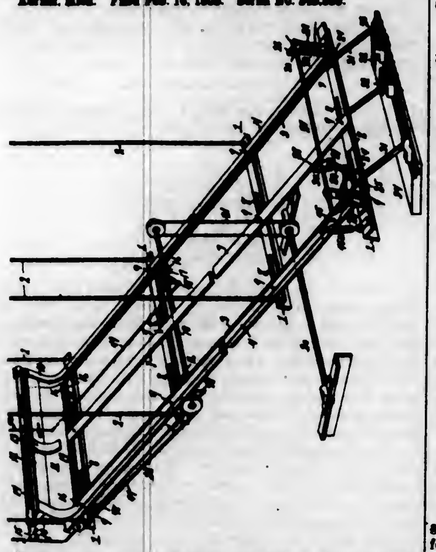

Claim.—1. A magazine-feed for wire-fabric machines, comprising a guide for receiving and directing the cross-wires, means for automatically placing the cross-wires in said guide, and means at the discharge end of the guide for feeding the cross-wires successively into the machine.

2. A magazine-feed for wire-fabric machines, comprising an inclined guide adapted to receive and direct the cross-wires, means for discharging the cross-wires into the upper end of said guide, reciprocatory feeding-gates at the lower end of said guide to discharge the cross-wires successively therefrom, and inclined tracks upon which said cross-wires are directed from the magazine to the fabric-machine.

3. A magazine-feed for wire-fabric machines, comprising a long inclined guide having ways for the ends of the cross-wires, means for directing the cross-wires into said ways, means for feeding the cross-wires down said ways, and means for discharging the cross-wires from said ways intermittently.

4. In a magazine-feed for wire-fabric machines, the combination of the inclined magazine having guides to direct the cross-wires, means for automatically discharging the wires into said guides, means for directing the wires from said guides into the machine, feeding devices for regulating the discharge of said wires from the guides, said feeding devices being actuated by a movable part of the machine to discharge the cross-wires intermittently.

5. In a magazine-feed for wire-fabric machines, the combination of a magazine consisting of a long inclined way adapted to receive the cross-wires and direct them to the fabric-machine, of feeding devices adapted to engage the opposite ends of the cross-wires to feed said wires down said way, and means at the discharge end of the magazine for feeding the wires intermittently into the machine.

6. In a cross-wire-feed magazine, the combination of a way adapted to contain and direct the cross-wires, means for engaging the opposite ends of said wires to feed them along said way, and means for discharging the wires from the magazine into the machine.

7. A magazine for wire-fabric machines, comprising a long, inclined guideway, one side of said way being adjustable to accommodate various lengths of wires, means for feeding the wires along said way, and means for feeding the wires intermittently from said way into said fabric-machine.

8. A magazine-feed for wire-fabric machines, comprising a long, inclined way adapted to receive and direct the cross-wires, means for feeding the wires along said way, means for discharging the wires from the way into the machine, the wire-feeding means being movable into engagement with and away from said wires.

9. A magazine-feed for wire-fabric machines, comprising a long, inclined guideway, down which the wires are adapted to pass to the fabric-machine, means for discharging the wires from the magazine into said machine, means for forcibly feeding the wires along the magazine, and means for releasing the wires from said feed device to allow them to feed by gravity.

811,501. COIN-CONTROLLED VENDING-MACHINE. JOHN HENDRICK and JOHN SCHMIDT, Kansas City, and CARROLL L. STEPHENS, St. Louis, Mo. Filed Nov. 23, 1904. Serial No. 234,023.

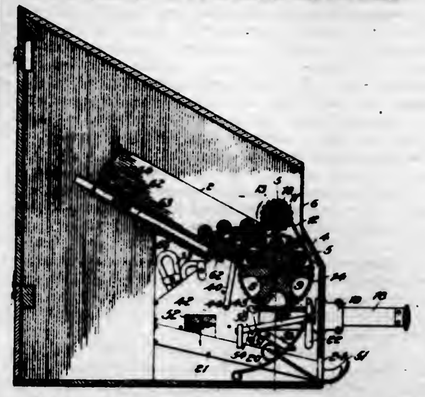

Claim.—1. In a coin-actuated vending-machine, a revoluble goods-delivery cylinder, a plunger, a coin-controlled locking means for said plunger and independent coin-controlled locking means for said cylinder, both locking means released successively by the entrance of the coin into the slot and in its passage to its exit from said slot.

2. In a coin-actuated vending-machine, a revoluble goods-delivery cylinder, a plunger having a shoulder, means carried by said plunger for actuating said cylinder, means for locking said plunger consisting of a device of connected members including an upward-standing coin-receiving key and a depending bolt adapted to engage said shoulder to lock the plunger in its withdrawn position, and a pivoted tappet or trip located above the plunger in rear of the bolt and adapted to engage the bolt member and to be engaged by the plunger-shoulder for operation in the way stated, and means for supporting the depending bolt-locking member out of engagement with the plunger.

3. In a coin-actuated vending-machine, a revoluble goods-delivery cylinder, a plunger having a shoulder, means carried by said plunger for actuating said cylinder, means for locking said plunger consisting of a device of connected members including a coin-receiving key at the entrance-slot and a depending bolt adapted to engage said shoulder to lock the plunger in its withdrawn position, a pivoted tappet or trip located above the plunger in rear of the bolt and adapted to engage the bolt member and to be engaged by the plunger-shoulder, means whereby the bolt is maintained in its retracted position, and means for automatically releasing said bolt from its retracted position by the inward movement of the plunger.

4. In a coin-actuated machine, a rotating delivery-cylinder, a plunger having a shoulder, means carried by said plunger for actuating said cylinder to deliver cigars, means for locking said plunger consisting of a device of connected members including a coin-receiving key and a depending bolt adapted to engage said shoulder on

said plunger to lock it in its withdrawn position, a lug supporting the bolt in its retracted position and a weighted arm located above the plunger in rear of the bolt and caused to engage and release said bolt from its retracted position by the inward movement of said plunger.

5. In a coin-actuated vending-machine, the combination with a revoluble delivery-cylinder, and a plunger, of coin-controlled locking means for said plunger, consisting of pivotally-connected members the upper or key member of which projects through a guide-opening at the entrance of the coin-slot to partially close it against the entrance of the coin, a depending bolt member arranged to engage the plunger, and an intermediate member mediately pivoted to cause by the weight of the depending bolt member pivotally mounted at one end of said intermediate member to maintain said upper key member partially closing the entrance of the coin-slot in its pivoted position at the other end of said intermediate member, means for supporting the depending bolt member out of engagement with the plunger, means for tripping the depending member from its support, and means pivotally mounted on the plunger adapted to engage and rotate said cylinder on the inward movement of the plunger.

6. In a coin-actuated vending-machine, the combination with a revoluble delivery-cylinder and a plunger having a shoulder, of coin-controlled locking means for said plunger consisting of a lever having a bolt freely depending from one end thereof and a coin-actuated key rising from the other end of said lever and terminating within and partially closing the entrance of the coin-slot, said bolt caused to automatically engage a shoulder of said plunger and to maintain the key in position to be depressed, a lug automatically engaged by said bolt to hold it in elevated position, and a weighted tappet-arm adapted to be struck by the inward movement of the plunger-shoulder to cause said tappet-arm to engage and release the bolt thereby causing it to fall to its normal position, and means actuated by said plunger to rotate said cylinder.

7. In a coin-actuated vending-machine, the combination of a rotating delivering-cylinder and a plunger having a shoulder, of coin-controlled locking means for said plunger consisting of a lever device of connected members including a coin-actuated key normally standing within and partially closing the entrance of the coin-slot, and a bolt member depending in position to automatically engage said plunger-shoulder, a lug to engage and hold the bolt up, and a tappet device arranged behind the bolt and depending in the path of the plunger-shoulder to release said bolt, and means actuated by said plunger to rotate said cylinder.

8. In a coin-actuated vending-machine, a goods-delivery cylinder, a plunger, a device for locking and for releasing said cylinder, a ratchet-wheel carried by the cylinder, a weighted arm pivotally mounted on said plunger and adapted to engage the teeth of the said ratchet-wheel, a stop on the plunger supporting said pivoted arm in its engagement with said ratchet-wheel to rotate said cylinder on the inward movement of the plunger, the outward movement of the plunger carrying said pivoted arm free of engagement with said ratchet-wheel.

9. In a coin-actuated vending-machine, delivery mechanism for the goods, a plunger, mechanism for locking and for releasing said plunger, mechanism for locking and for releasing said delivery mechanism and means whereby both said mechanisms are operated by the direct action of said plunger and the latter having at its coin-engaging end a strike or tooth for engaging a member of the delivery mechanism as described and for the purpose specified.

10. In a coin-controlled vending-machine, a plunger, mechanism for locking said plunger, mechanism actuated by said coin for releasing the plunger, goods-delivery mechanism, a device carried by said plunger, and a device operative in the path of said coin and in the path of said plunger whereby the delivery mechanism is actuated by the conjoint action of said coin and the plunger and both by the inward movement of said plunger.

11. In a coin-actuated vending-machine, a plunger, mechanism actuated by the coin to allow the inward movement of said plunger, and goods-delivery mechanism actuated by the conjoint movement of said coin and of said plunger, whereby the said coin is caused to have a lock-releasing function in two positions in its travel through the machine.

12. In a coin-actuated vending-machine, a plunger, means for locking it in its retracted position, a delivery-cylinder means for locking it, a lever carried by said plunger means carried by the latter for operating said cylinder, a dog in the path of the coin, the plunger-lock and the delivery-lock released by the same coin, at the entrance of the coin-passage and at the exit of said passage.

13. In a coin-actuated vending-machine and in combination, delivery mechanism for the goods, a plunger, and means for actuating the delivery mechanism consisting of means carried by said plunger and coöperating means in the path of said plunger, and coin-controlled locking mechanism for said plunger comprising pivotally-connected members one of which normally stands within a guide-opening at the entrance of the coin-slot and another member normally engaging the plunger, the coin acting through said connected members on entering the coin-slot to release the plunger and said coin on leaving the coin-slot actuating the release of the delivery mechanism.

14. In a coin-actuated vending-machine, and in combination, a goods-delivery cylinder, means carried by said plunger for actuating the cylinder, coin-controlled locking and releasing mechanism for said plunger comprising a vertically-slidable bolt, a lever to which said bolt is pivoted and a key pivoted to said lever and passing through the bottom of the coin-passage, and means automatically engaging said bolt for supporting it in its released position.

15. In a coin-actuated vending-machine, and in combination, delivery mechanism for the goods, a plunger, coöperating devices for locking the plunger and the delivery mechanism both devices actuated by gravity, and coöperating means for successively releasing the lock of each device, the release of the plunger being in advance of the release of the delivery mechanism.

811,502. **AX-HANDLE WEDGE.** LEO F. HERZOG, St. Louis, Mo. Filed Aug. 7, 1905. Serial No. 273,110.

Claim.—1. An ax-handle wedge, constructed with the body portion having a notch diagonally arranged in its top, there being grooves formed in the sides of the wedge that extend downwardly from the notch and said grooves gradually becoming shallower toward their lower ends, and locking-lugs integral with the sides of the wedge at the lower ends of the grooves which lugs are equal in width to the grooves and the top and bottom surfaces of which lugs are convex in cross-section, and said top surfaces being continuations of the bottom surfaces of the grooves; substantially as specified.

2. An ax-handle wedge, constructed with the body portion having a notch diagonally arranged in its top, there being grooves formed in the sides of the wedge that extend downwardly from the notch and said grooves gradually becoming shallower toward their lower ends, and locking-lugs integral with th sides of the wedge at the lower ends of the grooves which lugs are equal in width to the grooves and the top and bottom surfaces of which lugs are convex in cross-section, and said top surfaces being continuations of the bottom surfaces of the grooves in combination with a common staple fitted entirely within the grooves so that its lower ends are deflected outwardly by the top faces of the lugs; substantially as specified.

811,503. **FLUE-CLEANER FOR STOVES AND RANGES.** WILLIAM JAQUES, Royersford, Pa. Filed Feb. 16, 1905. Serial No. 245,870.

Claim.—1. The combination with two scrapers supported to reciprocate in the horizontal flue of a stove, toward and from an opening in the bottom plate of said flue, of means adapted for reciprocating the scrapers over said bottom plate and discharging clogging accumulation from the flue through the opening.

2. The combination with two scrapers supported to reciprocate in the horizontal flue of a stove, toward and from a transverse opening in the bottom plate of said flue near the longitudinal center of said bottom plate, of two rack-bars slidably supported in the flue above the scrapers and connected therewith, and means adapted for reciprocating said rack-bars so as to draw the scrapers over the opening.

3. The combination with two scrapers supported to reciprocate in the horizontal flue of a stove, toward and from a transverse opening therein, of a spur-gear supported to rotate in the flue above the scrapers, and having a pivot projected through the top plate of the flue, two rack-bars supported to reciprocate above the scrapers and respectively connected therewith, and a crank-handle adapted for engagement with the pivot of the gear for its rotation, thus reciprocating the rack-bars and drawing the scrapers toward and over the opening.

4. In a device of the character described, a bottom plate for the stove having an opening therein, the panel for closing said opening, and having rocking supports at its ends near the center of width, said supports oppositely engaging the edge portions of the opening, and the means for holding the panel closed.

5. In a device of the character described, the combination with the bottom plate of a stove, having a rectangular opening therein near its longitudinal center, and a pendent partition-strip hinged to swing in the horizontal bottom flue of the stove over said opening, of a panel having rocking support on opposite edges of the opening, whereby said panel may be rocked into an upright position therein, and a cam secured on a side of the panel, said cam being adapted for raising the partition-strip when the panel is rocked into a vertical or open position.

811,504. **BUFFING-MACHINE.** JOHN F. JENKINS, Lynn, Mass. Filed Apr. 26, 1905. Serial No. 257,313.

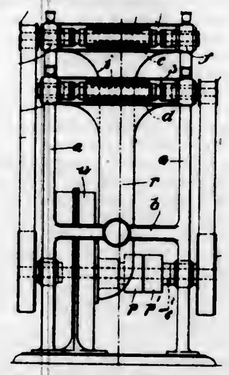

Claim.—1. A buffing-machine comprising a pair of side frames, and a pair of parallel rotatable abrasive buffing-rolls rigidly supported at thir opposite ends by said frames, said rolls being arranged in the same vertical zone, one of them being above and forward of the other, and both being a considerable distance above the base of the machine and adjacent each other.

2. A buffing-machine comprising a pair of vertical side frames, a pair of horizontal shafts journaled rigidly in bearings in said frames and extending across the space between them, one of said shafts being above and forward of the other, and cylindrical buffing-rolls rigidly supported by said shafts respectively between the frames, both rolls being arranged in the same vertical zone, and one of them being adapted for operating on the heel and the other on the sole of a shoe.

3. A buffing-machine comprising a pair of vertical side frames, a pair of horizontal shafts journaled in said frames and extending across the space between them, one of said shafts being above and forward of the other, independent driving means for the respective shafts, cylindrical buffing-rolls rigidly supported by said shafts respectively between the frames, both rolls being arranged in the same vertical zone, and each of them being adapted for operating on a separate part of the bottom of a shoe.

4. A buffing-machine comprising a pair of vertical sides frames, a pair of horizontal shafts journaled in said frames and extending across the space between them, one of said shafts being above and forward of the other, cylindrical abrasive buffing-rolls rigidly supported by said shafts respectively between the frames, both rolls being arranged in the same vertical zone, and one of them being adapted for operating on the heel and the other on the sole of a shoe, an air-duct having inlet-openings adjacent said rolls, and means for exhausting air from said duct.

811,505. **GARMENT-SUPPORTER.** ISABELLE J. JOHNSON, Columbia, Mont. Filed May 6, 1905. Serial No. 259,289.

Claim.—1. A body-brace and garment-supporter comprising two sections, each consisting of a shoulder-strap, front and rear suspension-straps depending from the shoulder-strap, an armpit-strap connecting the outer edges of the shoulder and suspension straps, a back-strap independent of said armpit-straps and connecting the rear suspension-straps of the two sections, a waistband connected to the lower ends of the suspension-straps, said band being provided with a rear bracing enlargement and having its free end arranged to overlap at the front and provided with fastening means, and tabs depending from the belt in the plane of said suspending-straps.

2. A body-brace and garment-supporter comprising two sections, each consisting of a shoulder-strap, front and rear suspension-straps depending from the shoulder-strap, an armpit-strap connecting the outer edges of the shoulder and suspension straps, a back-strap connecting the rear suspension-straps of the two sections, a waistband connected to the lower ends of the suspension-straps, back and abdominal pads secured respectively to the rear portion and one of the ends of the waistband, the ends of the waistband being arranged to overlap at the front, and means for connecting the said ends of the waistband on opposite sides of the vertical line of the abdominal pad.

3. A body-brace and garment-supporter comprising two sections, each consisting of a shoulder-strap, front and rear suspension-straps depending from the shoulder-strap, an armpit-strap connecting the outer edges of the shoulder and suspension straps, a back-strap connecting the rear suspension-straps of the two sections, a waistband connected to the lower ends of the suspension-straps, and having an upward bracing extension at the rear and its ends arranged to overlap at the front, back and abdominal pads secured to the waist-band respectively below said bracing enlargement and to one of the ends of the band, and means for connecting the ends of the band on opposite sides of the vertical line of the abdominal pad.

811,506. **SASH-LIFTING APPARATUS FOR GREENHOUSES.** WILLIAM C. JOHNSTON and PHILIP J. FOLEY, Chicago, Ill. Filed Sept. 9, 1904. Serial No. 223,933.

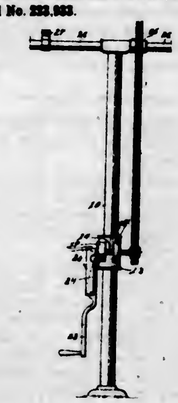

Claim.—An improved sash-lifting apparatus for greenhouses, &c., comprising a fixed post, a sleeve having integral shaft-bearers and one of the bearers provided with teeth on its outer end surface, a shaft in said bearers having a fixed sprocket-wheel at one end, a handle connected with the end of the shaft, a bar pivotally connected with the central part of the handle and its top adapted to engage said teeth on the end of the bearer, a handhold fixed to the end of the handle to project at right angles thereto, an eccentric pivoted to the handhold and provided with an extension to overlie the handhold, a coil-spring on the handhold, a rotatable shaft mounted on top of the post and in bearers fixed to rafters and provided with a sprocket-wheel, a chain on the two sprocket-wheels to connect the two shafts and a cable coiled on the upper shaft and connected with the ends of a bar having a right-angled extension at its top extended into fastenings fixed to sashes, arranged and combined as set forth for the purposes stated.

811,507. AUTOMATIC AIR-BRAKE APPARATUS FOR AUTOMOBILES. FREDERICK KALBOW, St. Louis, Mo., assignor of one-eighth to Geo. D. Kluegel, St. Louis, Mo. Filed Mar. 24, 1905. Serial No. 251,922.

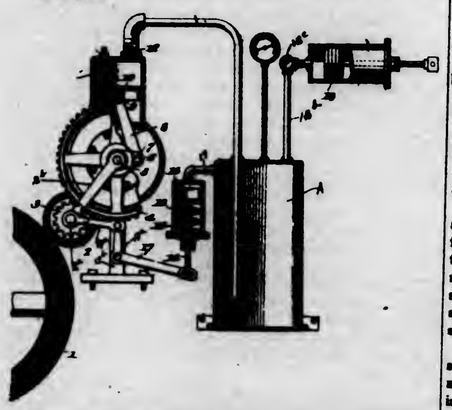

Claim.—1. The combination with the engine of an automobile of a friction-pulley riding on the fly-wheel of the engine, an air-pump operated by the rotation of the friction-pulley, a storage-tank, a brake-cylinder, tubular connections from the storage-tank to the air-pump and to the brake-cylinder, and means whereby the pressure within the storage-tank is utilized to automatically move the friction-pulley into and out of engagement with the fly-wheel of the engine; substantially as specified.

2. In an apparatus of the class described, a friction-pulley mounted so as to move into engagement with the fly-wheel of an engine, an air-brake pump, driving mechanism from the friction-pulley to the air-pump, a storage-tank, a brake-cylinder, tubular connections from the air-pump to the tank and from the tank to the brake-cylinder, a small cylinder connected to the storage-tank, a spring-actuating piston actuating therein, and suitable connections from the piston to the friction-pulley for moving the same into and from frictional engagement with the fly-wheel of the engine; substantially as specified.

811,508. NUMBERING MECHANISM FOR PRINTING-PRESSES. GEORGE H. KENDALL, New York, N. Y. Filed May 17, 1905. Serial No. 260,880.

Claim.—1. The combination of a chase provided with slots extending along opposite sides thereof, a numbering mechanism, a frame carrying said numbering mechanism, pins on the ends of said frame for engaging with said slots, and thumb-nuts on said pins for clamping said frame to said chase.

2. The combination of a chase provided with slots extending along opposite sides of the same, a frame, flanges on the ends of said frame and adapted to project beneath the slotted sides of said chase, pins on said flanges to project through said slots, thumb-nuts turned onto said pins for clamping said frame to said chase, and a numbering-head adjustable longitudinally in said frame.

3. The combination of a chase, a frame adjustable on said chase between two opposite sides of said chase, means for securing the ends of said frame to the sides of said chase, a plate movably mounted in said frame, a numbering-head longitudinally adjustable in said frame, a rotatable screw engaging with said numbering-head and having its head journaled in said plate, and means for turning said screw to clamp said numbering-head to said frame.

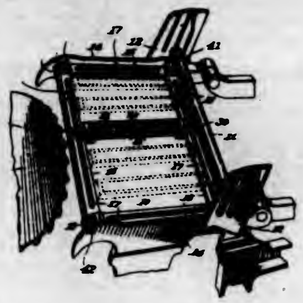

4. The combination of a chase, a frame adjustable on said chase between two opposite sides of said chase, means for securing the ends of the frame to the sides of the chase, a plate movably mounted in said frame, a numbering-head longitudinally adjustable in said frame, a rotatable screw engaging with said numbering-head and having its head journaled in said plate, a lever, a pin on said lever and passing into said screw and a set-screw in said rotatable screw and impinging on said pin.

5. The combination of a chase provided with slots extending along opposite sides of the same, a frame, flanges on the ends of said frame, pins on said flanges to project through said slots, thumb-nuts turned onto said pins for clamping said frame to said chase, a plate movably mounted in said frame, a numbering-head adjustable in said frame, a rotatable screw engaging with said numbering-head and having its head journaled in said plate, and means for turning said screw to clamp said numbering-head to said frame.

6. The combination of a chase, supports on the under side of said chase to elevate the same above the surface of the type-bed, a numbering mechanism, a frame carrying said numbering mechanism and adjustable in said chase with its ends projecting beneath opposite sides of the chase, and means for securing the ends of said frame to the sides of the chase.

7. The combination of a chase, supports on the under side of said chase to elevate the same above the surface of the type-bed, a frame adjustable in said chase and projecting at its ends beneath opposite sides of said chase, a numbering-head adjustably mounted in said frame, and means for securing the ends of said frame to the sides of said chase.

8. The combination of a chase having slots extending along opposite sides of the same, supports at the corners of the chase to elevate the chase above the surface of the type-bed, a frame, flanges on the ends of said frame to project beneath opposite sides of the chase between said supports, pins on said flanges to project through said slots, thumb-nuts turned onto said pins for clamping said frame to said chase, a numbering-head adjustable in said frame, and means for securing said numbering-head in its adjustments in said frame.

9. The combination of a numbering-machine provided with an operating-arm projecting above the printing-surface of said machine, an inking-roll movable back and forth over said machine, and guides for carrying said inking-roll clear of said arm.

10. The combination of a chase, a numbering-machine adjustable in said chase and provided with an operating-arm projecting above the printing-surface of said machine, an inking-roll movable back and forth over said machine, and guides having raised tracks for carrying said inking-roll clear of said operating-arm.

811,509. SIGNATURE-GATHERER. GEORGE H. KNOX and CHARLES L. SMITH, New York, N. Y. Filed May 2, 1905. Serial No. 258,259.

Claim.—1. A gathering-machine provided with a fixed sheet-support or delivery-board, a fixed front guide spaced from the board for enabling sheets to be cut therebetween in an overhanging position on the board, a fixed blast device directed against that edge of the lowermost sheet which is at the guide so as to separate or bend down the lowermost sheet, swinging grippers for withdrawing said lowermost sheet, a conveyer-belt for receiving the sheets from the grippers and sheet-guiding plates between which the grippers swing and which are fixed above the belt a suitable distance for sheets or signatures to be carried past thereunder.

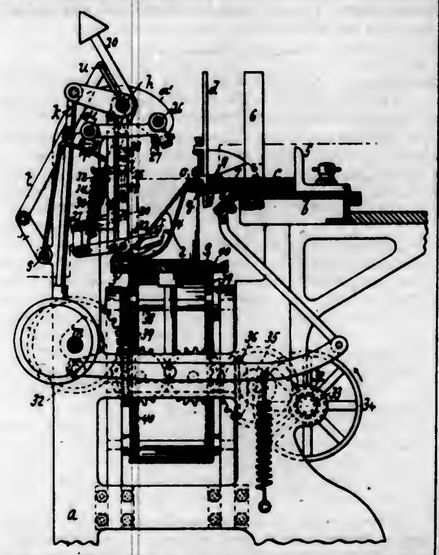

2. A gathering-machine comprising a conveyer, a set of grippers, a rock-shaft for the grippers provided with an arm, a link connected to the arm, a second rock-shaft extending along a side of the conveyer and having fixed bearings and an arm engaged by the link, and a set of pressers extended from the second rock-shaft toward a side of the conveyer so as to press down on the signatures therein.

3. A gathering-machine comprising a plain delivery-belt, a fixed guide or channel for the belt, and sheet-guiding plates fixed to the guide at suitable intervals to receive signatures therebetween and sufficiently far above the belt to allow signatures to be carried by the belt past underneath the plates.

4. A gathering-machine comprising a guide *d*, a blower-tube, a delivery-channel, a movable belt forming the bottom of the channel and sheet-guiding plates along the channel carried by the channel and the blower-tube, said guide-plates being extended across the channel to form fixed transverse partitions along the same.

5. A gathering-machine comprising sheet or signature withdrawing gripper-jaws, mechanism for actuating one of the jaws to come to open or closed position, a signal and signal-actuating lug and a lug-actuating lever linked to the last-named jaw independently of its opening and closing mechanism.

6. A gathering-machine comprising a gripper-jaw and an oscillating arm to which said jaw is fixed, a second jaw pivoted to the fixed jaw, a signal and signal-actuating lug sliding on the arm of the fixed jaw, a lug-actuating lever linked to one part of the pivoted jaw, and a jaw-opening and jaw-closing toggle connected to another part of the pivoted jaw.

7. A gathering-machine comprising a gripper and a signal with signal-actuating dog, arms for opening the gripper, a lever for setting the dog, and a link for connecting the lever to the gripper, said link and arms being connected at different points to the gripper and said lever having the arm connected to the dog of greater length than the other lever-arm.

8. A gathering-machine comprising a gripper composed of jaws, one of which is in the form of a lever with arms of unequal length, a carrying-arm for the gripper, a dog slidingly mounted on the carrying-arm, a lever having arms of unequal length and having its longer arm directly pivoted to the dog, and a link between the shorter arm of the lever and the longer arm of the lever forming one of the gripper-jaws.

9. A gripper having a signal-actuator, a signal actuated thereby, a pivot on which the signal is mounted, an arm extended from the pivot portion of the signal and an actuating-spring for the signal, said spring being attached to the free or outer end of said arm and extended past its inner end and secured so that as the arm swings the spring is carried to one side or another of the pivot.

10. In a gathering-machine, a gripper having a movable jaw, a swinging gripper-supporting arm, a signal-actuator slidingly mounted on the supporting-arm, a lever-and-link connection between the movable jaw and the signal-actuator, a pivoted signal-lever actuated thereby, an arm connected to and extending laterally from the pivot portion of the signal, and a spring connected to the arm for moving the lever as the arm is swung to one side of the lever pivot or fulcrum.

11. A gripper having a signal-actuator, a pivoted signal-lever actuated thereby and having an arm extended to one side of the pivot, a fixed stud at the opposite side of the pivot, and a spring connected to the arm and stud so that as the signal-actuator moves the free end of the arm past the pivot-point the spring will move the signal.

811,510. TOY. ROBERT H. KING, Beaufort, N. C. Filed Aug. 2, 1905. Serial No. 272,407.

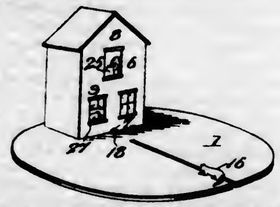

Claim.—1. A toy comprising a circular platform formed with a radially-arranged slot projecting in one direction from the center of the platform and with two parallel slots extending in the opposite direction from the center of the platform, said platform being formed with an opening intermediate the face of the slots, a building structure secured to the platform to overlie the parallel slots, a plurality of rollers independently mounted adjacent the first-mentioned slot, a rod projecting from one of said rollers and extending through the slot, a rod projecting from the other of said rollers and extending through the opening, independently-mounted rollers respectively supported adjacent each of the parallel slots, rods projecting from said rollers and extending through the adjacent slot, and figures supported on the ends of the rods.

2. A toy comprising a circular platform formed with a radially-arranged slot projecting in one direction from the center of the platform and with two parallel slots extending in the opposite direction from the center of the platform, said platform being formed with an opening intermediate the face of the slots, a building structure secured to the platform to overlie the parallel slots and partially conceal the opening, a plurality of rollers independently mounted adjacent the first-mentioned slot, a rod projecting from one of said rollers and extending through the slot, a rod projecting from the other of said rollers and extending through the opening, independently-mounted rollers respectively supported adjacent each of the parallel slots, rods projecting from said rollers and extending through the adjacent slot, and figures supported on the face of the rods.

811,511. LOCK. EMIL H. F. KROHN, Hamburg, Germany. Filed Oct. 26, 1903. Serial No. 179,159.

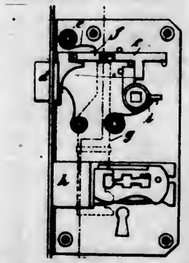

Claim.—1. In a lock of door-lock type, the combination with the ordinary lock-bolt *h*, spring-latch *d* and bar *c* for retracting said latch; of a detachable connection *f* between said bar *c* and spring-latch *d*; and a supplementary lock-bolt *g* adapted to be oper-

cted by a special key and controlling the connection of the spring-latch with the means for retracting the same, substantially as described.

2. A door-lock comprising a main locking mechanism, a spring-latch, disconnectible means for operating said latch-operating mechanism, and a supplementary locking mechanism, disposed between, and operating in conjunction with said lock and latch operating mechanisms, substantially as and for the purpose specified.

811,512. **FOOT-ARCH SUPPORTER.** FRANK B. LEE, Buffalo, N. Y., assignor to Lee Electric Insole Company, New York, N. Y., a Corporation of New York. Filed June 9, 1903. Serial No. 160,715.

Claim.—1. A foot-arch supporter adapted to fit the sole of the foot, being of greatest thickness and upwardly arched, substantially at its center to support the arch of the foot and being of substantially equal thickness and concaved at front and rear to receive the ball and the heel respectively, and terminating in a beveled edge around its front portion and with an edge semicircular in cross-section around its heel portion.

2. An aluminium foot-arch supporter to fit the sole of the foot, being of greatest thickness and arched at its center to sustain the arch of the foot, of substantially equal thickness and concaved at front and rear to receive the ball and heel respectively, and being formed with a flange outwardly and upwardly curved from the arched portion to sustain the inner edge of the foot and with a slight incurve opposite the flange, and having its greatest forward extension in front of the ball and terminating at its front in an inclined edge arranged at about the bases of the toes.

3. An aluminium foot-arch supporter to fit the sole of the foot, being of greatest thickness and arched at its center to sustain the arch of the foot, of substantially equal thickness and concaved at front and rear to receive the ball and heel respectively, and being formed with a flange outwardly and upwardly curved from the arched portion to sustain the inner edge of the foot and with a slight incurve opposite the flange, and having its greatest forward extension in front of the ball and terminating at its front in an inclined edge arranged at about the bases of the toes, the supporter being provided with a longitudinal row of ventilating-holes in its front portion, and a series of parallel sharpened cross-ribs on the under surface of its front.

811,513. **ELEVATOR.** HAROLD S. MACKAYE, Yonkers, N. Y., assignor, by mesne assignments, to Elevator Securities Company, a Corporation of New Jersey. Filed June 23, 1902. Serial No. 113,786.

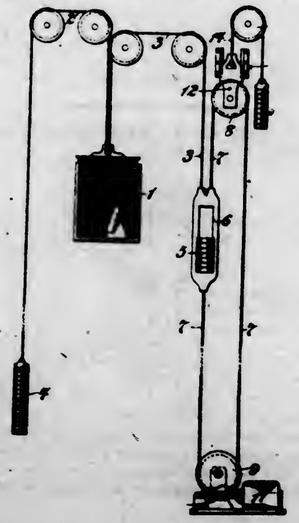

Claim.—In an elevator, a car, a carriage for operating the car, a driving-cable for said carriage attached at its ends above and below said carriage, a tension-sheave and a driving-sheave for said cable, a movable block in which said tension-sheave is pivoted, a weight and means operated by said weight for pressing said tension-sheave away from said driving-sheave.

811,514. **ADJUSTABLE BRACKET FOR EMPLOYMENT ON WINDOWS, LADDERS, AND PARAPETS.** CHARLES MILLS, Woolston, near Christchurch, New Zealand. Filed June 26, 1905. Serial No. 267,163.

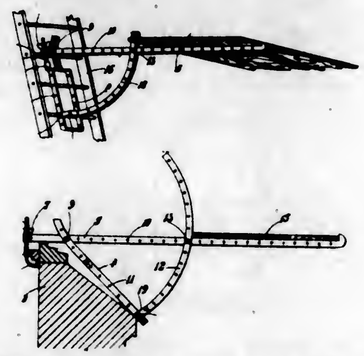

Claim.—For the purpose indicated, a platform-bar, means for clipping the platform-bar upon a window-sill, a bifurcated arm pivoted to the platform-bar and having its lower part opened out, a stay-bar passing upon each side of and pivoted to the platform-bar and bifurcated at its lower end to engage the opened-out part of the bifurcated arm and a bolt for connecting the stay-bar to the bifurcated arm, substantially as set forth.

811,515. **PRINTING-PRESS.** THOMAS B. DOOLEY, Malden, Mass. Original application filed Apr. 10, 1903. Serial No. 151,974. Divided and this application filed Sept. 16, 1903. Renewed Dec. 11, 1905. Serial No. 291,264.

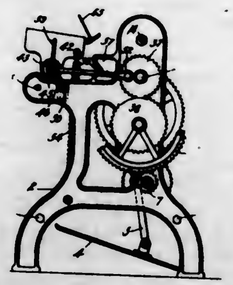

Claim.—1. In a printing-press, the combination with sprocket-wheels, sprocket-chains carried thereby, and means for driving the same, of inking-rollers carried by said sprocket-chains, and means for adjusting said rollers with relation to the path of said chain.

2. In a printing-press, the combination with sprocket-wheels and means for driving the same, of sprocket-chains containing a number of links each provided with an outwardly-extending arm, hubs adjustably mounted in said arms, and inking-rollers eccentrically journaled in said hubs, for the purpose set forth.

3. In a printing-press, the combination with inking-rollers and means for operating the same, of an ink-distributing table comprising a number of plates each providing an inking-surface and movable in a direction transverse to the path of the inking-rollers, means for reciprocating said plates, and a supplementary inking-table located in the path of said rollers and forming an extension of said ink-distributing table.

4. In a printing-press, the combination with inking-rollers and means for operating the same, of an ink-distributing table comprising a number of plates each providing an inking-surface and movable in a direction transverse to the path of the inking-rollers, and means for reciprocating said plates and for holding each plate stationary during the passage of said rollers over it.

5. In a printing-press, the combination with end uprights each provided with a socket 10, of plates 8 each provided with a hub fitted to one of said sockets and spacing said plate away from the corresponding upright, a type-bed and an inking-table carried respectively by the front and rear edges of said plates, said inking-table comprising a number of plates movable transversely with respect to each other, a shaft journaled in said hubs, and provided with means for reciprocating said plates, means for rotating said shaft, inking-rollers, and means for supporting and operating the same, substantially as described, a platen, and connections between said shaft and platen for operating the latter.

6. In a printing-press, an ink-distributing table comprising a frame provided with slots, plates guided to slide in said slots respectively, a rack-and-pinion connection between adjacent plates, and means for reciprocating said plates comprising a rotatable shaft provided with a cam-groove, and a traveler secured to one of said plates and entering said groove.

7. In a printing-press, the combination with uprights each provided with a socket 10 of plates 8 each provided with a hub fitted to one of said sockets, and a shaft journaled in said hubs.

8. In a printing-press, the combination with end uprights each provided with a socket 10, of plates 8 each provided with a hub fitted to one of said sockets and spacing said plate away from the corresponding upright, and a pair of sprocket-wheels journaled in each of the spaces thus provided, a sprocket-chain carried by each pair of sprocket-wheels, and inking-rollers carried by said sprocket-chains.

9. In a printing-press, the combination of a pair of uprights, a pair of plates located between said uprights and supported by the same respectively at points providing a continuous free space at the peripheries of said plates, a pair of sprocket-wheels journaled in each of said spaces, sprocket-chains carried by said sprocket-wheels, inking-rollers carried by said chains, and a type-bed and an inking-table carried by said plates and located in the path of said rollers.

10. In a printing-press, the combination of a frame, a type-bed carried on one side of said frame, an ink-distributing table carried on the opposite side of said frame, two pairs of sprocket-wheels and means for driving the same, a sprocket-chain carried by each pair of wheels, inking-rollers carried by said sprocket-chains, the ink-distributing table and type-bed being respectively located in the path of said rollers between the sprocket-wheels of each pair, and a supplementary inking-table located between the type-bed and the ink-distributing table, concentric with one of the axes of said gears.

811,516. **PIPE-BENDING MACHINE.** JAMES H. MULL, Philadelphia, Pa., assignor to Chicago Pneumatic Tool Company, Chicago, Ill., a Corporation of New Jersey. Filed Apr. 22, 1905. Serial No. 256,841.

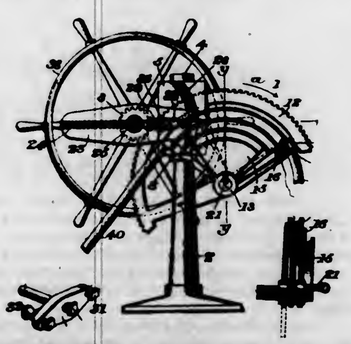

Claim.—1. In a bending-machine, a bending-die, a support therefor, an angularly-adjustable rotatable face-plate having ways thereon extending upon opposite sides of the axis of the face-plate, a sliding abutment mounted in said ways and means for actuating said die.

2. In a bending-machine, a bending-die, a support therefor, an angularly-adjustable rotatable plate having ways therein extending upon opposite sides of the axis of the face-plate, a sliding abutment mounted in said ways, a carrier for supporting said die and plate, and means for locking said plate with respect to said carrier.

3. In a bending-machine, a bending-die, a support therefor, an angularly-adjustable rotatable plate having ways therein extending upon opposite sides of the axis of the face-plate, a sliding abutment mounted in said ways, a carrier for supporting said die and plate, and means for locking said plate with respect to said carrier, in combination with means for actuating said die.

4. In a bending-machine, a bending-die, a support therefor, an adjustable plate having ways therein, a sliding abutment mounted in said ways, a carrier for supporting said die and plate, a curved groove in said carrier, and locking devices common to said groove, and plate.

5. In a bending-machine, a bending-die, a carrier, a support, therefor, an adjustable plate having a longitudinally-extending groove or ways therein, a sliding abutment supported in said groove, means for locking said abutment in position, a curved groove in said carrier, and locking devices common to said groove and plate.

6. In a bending-machine, a carrier, means for supporting said carrier, a shaft mounted in suitable bearings, a quadrant-gear mounted on said shaft, a bending-die mounted on said shaft, a rotatable plate supported by said carrier, means common to said carrier and plate for locking said plate in the desired position and a sliding abutment carried by said plate and movable to opposite sides of the axis of the plate.

7. In a bending-machine, a standard, a carrier mounted thereon, a shaft having bearings in said carrier, a plurality of independently-movable bending-dies carried by said shaft at the same time, and means for maintaining any of said dies in operative relation with said shaft at will.

8. In a bending-machine, a support, a shaft therein, a plurality of independently-movable bending-dies on said shaft at the same time and angularly movable to operative or inoperative positions, and means for maintaining any of said dies in operative position.

9. In a bending-machine, a support, a shaft therein, a plurality of independently-movable bending-dies of different diameters on said shaft at the same time, and means for maintaining operative connection of any of said dies with said shaft in substantially the same bending-plane.

10. In a bending-machine, a support, a shaft therein, a plurality of successively-inclosed bending-dies upon said shaft at the same time, and angularly movable with respect to it, and means for maintaining any of said dies in operative angular relation to said shaft at will.

11. In a bending-machine, a bending-die, a shaft on which said die is mounted, a quadrant-gear mounted on said shaft, a pinion meshing with said quadrant-gear, a hand-wheel whereby said pinion and gear may be rotated in unison, an angularly-adjustable face-plate and a sliding abutment mounted on said face-plate.

12. In a bending-machine, a bending-die, a shaft on which said die is mounted, a quadrant-gear mounted on said shaft, a pinion meshing with said quadrant-gear, a hand-wheel whereby said pinion and gear may be rotated in unison, an angularly-adjustable face-plate having ways therein, a sliding abutment mounted in said ways, means for locking said face-plate in position, and means for locking said abutment in position.

811,517. **WEEDER-TOOTH.** SAMUEL A. MCCUNE, New Waterford, Ohio. Original application filed Oct. 27, 1904, Serial No. 230,204. Divided and this application filed Sept. 22, 1905. Serial No. 279,670.

Claim.—1. In a weeder, the combination with a supporting-frame, of a longitudinally-curved trailing tooth attached to said frame at one end, and a resilient strip or guard extending longitudinally of said tooth from its support and having both ends engaging the tooth.

2. In a weeder, the combination with a supporting-frame including a transverse angle-bar, of a longitudinally-curved tooth secured to and depending from said bar, a resilient bar or guard arranged to extend longitudinally of and having both ends engaging said tooth, the said guard bearing at one end against both the horizontal and vertical flanges of the angle-bar of the supporting-frame, and means for holding said bar in position.

3. In a weeder, the combination with a supporting-frame including a transverse angle-bar, of a tooth comprising a longitudinally-curved section substantially round in cross-section throughout its length and having its upper end connected to said angle-bar, and a resilient guard engaging said curved section at both ends and bearing against the horizontal member of said angle-bar.

4. In a weeder, the combination with a supporting-frame including a transverse angle-bar, of a tooth comprising a longitudinally-curved section connected at its upper end to said angle-bar and having its lower end pointed and a separately-formed resilient guard extending longitudinally over and having both ends engaging said curved section, and means for securing the upper end of said guard to the said angle-bar of the supporting-frame.

5. In a weeder, the combination with a supporting-frame, of a weeder-tooth consisting of a longitudinally-curved body substantially round in cross-section, attached to said frame at its upper end, and a resilient strip or guard extending longitudinally of and having both ends engaging the body of the tooth.

6. The herein-described weeder-tooth including a longitudinally-curved body, substantially round in cross-section, and a guard, formed of a flat strip, arranged over a portion of said body, both ends of said guard being bent inwardly and engaging the curved body of the tooth.

811,518. **BRICK-MACHINE.** OLIVER HOLAH, Minneapolis, Minn. Filed July 27, 1905. Serial No. 271,469.

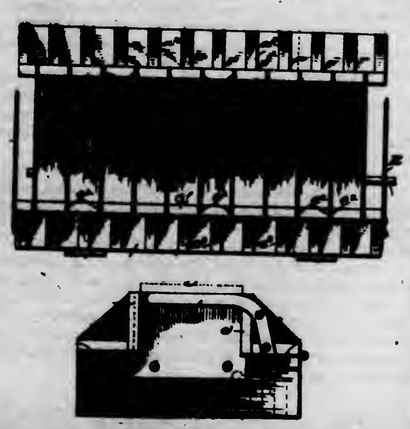

Claim.—1. In a brick-machine, the combination of a base, comprising pairs of longitudinal stringers spaced apart, cross-bars connecting the ends of the stringers, a horizontal plate resting upon the rear pair of stringers, and provided with a series of spaced grooves on its inner edge, a horizontal plate resting upon the outer stringer of the forward pair, a vertical plate secured to the inner edge of the horizontal plate, and provided with grooves on its inner face corresponding to the grooves on the rear horizontal plate, braces resting on the forward horizontal plate and connected with the vertical plate between the grooves, partition-plates having openings in their lower edges resting in the grooves of the vertical and rear horizontal plates and upon the inner stringer of the forward pair, a longitudinal bar secured to the inner face of the inner stringer of the front pair and provided with perforations, screw-threaded bolts provided with hooks for engaging the openings in the partition-plates, and extending to the perforations in the longitudinal bar, nuts engaging the bolts, a swinging frame hinged to the rear horizontal plate, and comprising a horizontal plate, a vertical plate secured to the free edge of the horizontal plate and provided with grooves to receive the free edges of the partition-plates, braces resting on the horizontal plate and connected to the vertical plate between the grooves, a plate secured to the lower face of the frame extending across the space between the vertical plates, and provided with openings to receive the partition-plates, and handles secured to either end of the frame at the level of the top of the partition-plates.

2. In a brick-machine, the combination of a base, comprising pairs of longitudinal stringers spaced apart, cross-bars connecting the ends of the stringers, a horizontal plate resting upon the rear pair of stringers and provided with a series of spaced grooves on its inner edge, a horizontal plate resting upon the outer stringer of the forward pair, a vertical plate secured to the inner edge of the horizontal plate and provided with grooves on its inner face corresponding to the grooves on the rear horizontal plate, braces secured to the outer face of the vertical plate between the grooves, partition-plates resting in the grooves of the vertical plate and the rear horizontal plates and upon the inner stringer of the forward pair, a longitudinal bar secured to the inner face of the inner stringer of the front pair, means for securing the partition-plates to the bar, a frame hinged to the rear horizontal plate, and comprising horizontal and vertical plates, a vertical plate having grooves on its inner face to receive the free edges of the partition-plates, a series of braces between the horizontal and vertical plates, a series of fingers secured to the frame and adapted to close the lower openings between the partition-plates, and handles secured to either end of the frame at a level with the top of the partition-plates.

3. In a brick-machine, the combination of a base, a series of partition-plates spaced apart and secured to the base, a vertical plate having grooves to receive the front edges of the partition-plates and resting upon the base, means for bracing the sections of the horizontal plate between the grooves, a swinging frame hinged to the base and comprising a series of fingers for closing the lower part of the opening between the partition-plates, and a vertical plate provided with grooves to receive the free edges of the partition-plates, means for bracing the sections of the vertical plates between the grooves, and handles secured to the vertical plate at a level with the tops of the partition-plates.

4. In a brick-machine, the combination of a base, a series of partition-plates secured to the base, means for closing the forward opening between the partition-plates, means for bracing said closing means, a swinging frame hinged to the base, and provided with a series of fingers for closing the lower part of the openings between the partition-plates, means on the frame for closing the rear openings between the partition-plates, and handles secured to the swinging frame at a level with the tops of the partition-plates.

5. In a brick-machine, the combination of a base, a series of partition-plates secured to the base, means on the base for closing the forward opening between the partition-plates, a swinging frame hinged to the base, means on the frame for closing the rear openings between the partition-plates, means on the frame for closing the lower opening between the partition-plates, and handles secured to the swinging frame at a level with the tops of the partition-plates.

6. In a brick-machine, the combination of a base, a series of partition-plates secured to the base, means on the base for closing the forward opening between the partition-plates, a swinging frame hinged to the base, means on the frame for closing the rear openings between the partition-plates, and means on the frame for closing the lower opening between the partition-plates.

7. In a brick-machine, the combination of a base, a swinging frame hinged thereto, and a series of molds, the sides and one end of the molds being secured to the base, and the bottom and the other end of the mold being secured to the swinging frame, and handles secured to the swinging frame at a level with the top of the mold.

8. In a brick-machine, the combination of a base, a swinging frame hinged thereto, a series of molds, the sides and one end of the molds being secured to the base, and the bottom and other end of the molds being secured to the swinging frame, handles secured to the swinging frame at a level with the top of the mold, and a plurality of cams engaging the bottoms of the molds to assist in starting the same.

9. In a brick-machine, the combination of the base, a swinging frame hinged thereto, a series of molds, the sides and one end of the mold being secured to the base, and the bottom and other ends of the molds being secured to the swinging frame, handles secured to the swinging frame at a level with the top of the mold, a plurality of cams engaging the bottoms of the molds to assist in starting the same, and means for moving the cams in unison.

811,519. **ELECTRIC SWITCH FOR STREET-RAILWAYS.** JAMES A. POSEY, Midlothian, Tex., assignor, by mesne assignments, to Posey Automatic Switching Company, a Corporation of Delaware. Filed Mar. 14, 1905. Serial No. 250,095.

Claim.—1. An electric switch for railways comprising a pivoted switch-tongue, a shifting-bar pivotally connected to said tongue, levers provided with suitable fulcrums and pivotally connected to said shifting-bar and disposed to move in the plane of said bar, mechanical means whereby a passing car may actuate either one of said levers, and electrical devices whereby a motorman upon a passing car can cause either lever to be actuated at will.

2. An electric switch for railways comprising a pivoted switch-tongue, a shifting-bar connected to said tongue and adapted to move said tongue to open or close the switch for either the main line or a branch line, levers capable of independent action pivotally connected to said shifting-bar, a hook normally disengaged from said levers, but set to actuate one of said levers and operable by the wheel of a passing car, and electrical devices by which a motorman on a passing car may set said hook to engage the other lever.

3. An electric switch for railways comprising a pivoted switch-tongue, a bar capable of reciprocal motion connected to said tongue levers capable of independent action pivotally connected to said bar, a spring-pressed bar carrying a pivoted hook, a spring normally controlling said hook to cause the same to engage one of said levers, an armature connected to said hook and a controlling-magnet whereby said hook may be caused to engage the other one of said levers, and a depressible lever operatively connected to said spring-pressed bar.

4. An electric switch for railways having a pivoted switch-tongue, a bar capable of reciprocal motion connected to said tongue a spring-pressed bar carrying a pivoted hook provided with a catch on each side, levers pivotally connected to said reciprocal-motion bar, means for causing said hook to engage either one of said levers, and a depressible lever operatively connected to said spring-pressed bar.

5. An electric switch for railways having a pivoted switch-tongue, a switch-tongue bar connected to said tongue and carrying a locking-yoke, levers pivotally connected to said switch-tongue bar, and an actuating-bar carrying a hook adapted to engage either one of said levers and carrying a roller engaging said locking-yoke whereby said switch-tongue bar is yieldingly held against accidental displacement.

6. An electric switch for railways having a pivoted switch-tongue, a sliding bar attached to said switch-tongue, a locking-yoke mounted rigidly on said bar and provided with recesses in the edge thereof, levers pivotally connected to said sliding bar, and a spring-pressed actuating-bar carrying a hook adapted to engage either one of said levers, and carrying a roller adjacent to said yoke, said roller normally engaging said yoke in one of said recesses to hold said switch-tongue against accidental displacement.

7. An electric switch for railways having mechanical devices adapted normally when actuated by the wheels of a passing car for closing a switch, a magnet provided with a suitable armature for setting said mechanical devices for opening said switch, a flanking trolley-wire electrically connected to said magnet, said magnet being electrically connected with a rail of the railway, a circuit carried by the car, one arm of said circuit being connected to said flanking trolley-wire, and the other arm of said circuit being electrically connected with the main trolley-wire, and a key for opening and closing said circuit, substantially as described.

8. An electric switch for railways having mechanical devices normally adapted when actuated by the wheels of a passing car for closing a switch, and electrical devices adapted to put said mechanical devices in condition for opening said switch consisting of a magnet provided with an armature operatively connected to said mechanical devices, a circuit carried by a car one arm of said circuit being electrically connected to said magnet, and the other arm of said circuit being electrically connected with a supply of electricity for the car, and a key for opening or closing said circuit, substantially as described.

9. An electric switch for railways having mechanical devices normally adapted when actuated by the wheels of a passing car for closing a switch, a magnet provided with an armature operatively connected to said mechanical devices adapted for opening said switch, a flanking trolley-wire, a trolley-fork carrying a trolley-wheel and being attached to the main trolley-pole of the car, a circuit carried by the car, one side of said circuit being connected to said trolley-fork and the other side of said circuit connected to the main trolley-pole, said flanking-trolley being electrically connected to said magnet, and a key for said circuit, substantially as described.

811,520. **STEAM-ENGINE.** EDWIN REYNOLDS, Milwaukee, Wis., assignor to Allis-Chalmers Company, Chicago, Ill., a Corporation of New Jersey. Filed Aug. 20, 1900. Renewed Jan. 9, 1905. Serial No. 240,236.

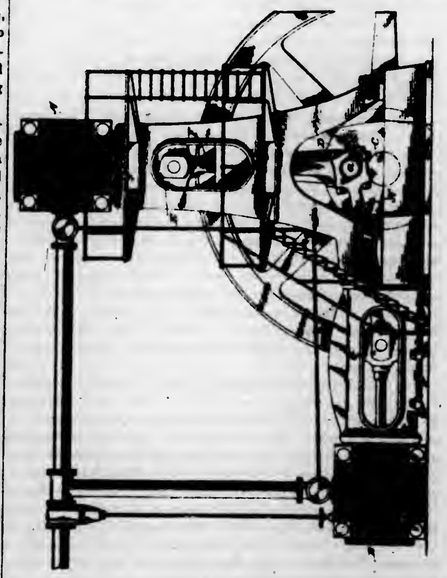

Claim.—1. In an engine of the class described, the combination of a frame, a rotatable crank-shaft mounted therein and provided with a single crank disk or arm having a single wrist-pin, high and low pressure cylinders the axes of which are arranged in horizontal and vertical planes respectively and substantially at an angle of ninety degrees each to the other, so that their longitudinal axes meet substantially at the crank-shaft, a reciprocating piston in each of

said cylinders provided with outwardly-extending piston-rods, and a connecting-rod for each of said piston-rods connected with the single wrist-pin independently and in parallel arrangement, substantially as described.

2. In an engine of the class described, the combination of a frame portion, a rotatable crank-shaft mounted therein and provided with a single crank disk or arm having a single wrist-pin, a horizontally-arranged high-pressure and a vertically-arranged low-pressure cylinder set substantially at an angle of ninety degrees each to the other so that their longitudinal axes meet substantially at the crank-shaft, a reciprocating piston in each of said cylinders provided with an outwardly-extending piston-rod, and a connecting-rod for each of said piston-rods connected with the single wrist-pin independently and in parallel arrangement, substantially as described.

3. In an engine, the combination of a frame; a shaft provided with crank disk or arm and crank-pin; a vertical low-pressure cylinder and piston; a horizontal high-pressure cylinder and piston; connections between the respective pistons and the common crank-pin, the low-pressure piston connection being nearest the crank arm or disk; and a counterweight carried by the shaft and serving to counterbalance both the vertically and the horizontally moving parts.

4. In an engine, the combination of a frame having a shaft provided with crank disk or arm and crank-pin; a high and a low pressure cylinder set at an angle of ninety degrees each to the other, the low-pressure cylinder being vertically placed; pistons carried by the respective cylinders; connections between said pistons and the common crank-pin, the low-pressure piston connection being nearest the crank arm or disk; and a counterweight common to both the vertically and the horizontally moving members, and set in relation thereto substantially as described, whereby when either piston is at its extreme throw from the shaft, the counterweight shall be at its extreme throw on the opposite side of said shaft.

5. In an engine, the combination substantially as herein set forth, of a frame; a shaft provided with two crank arms or disks each having a crank-pin; and two pairs of engines each comprising a vertical cylinder, piston, piston-rod, and pitman, and a horizontal cylinder, piston, piston-rod, and pitman, the vertically and horizontally moving pistons of one engine pair or unit being connected to the crank-pin of one crank arm or disk, and the vertically and horizontally moving pistons of the other engine pair or unit being connected to the crank-pin of the other crank arm or disk, and the power of the engine being applied at a point between the two units, substantially as and for the purposes set forth.

6. In an engine, the combination substantially as herein set forth, of a frame; a shaft provided with two crank arms or disks each having a crank-pin; two pairs of engines each comprising a vertical cylinder, piston, piston-rod, and pitman, and a horizontal cylinder, piston, piston-rod, and pitman, constituting one unit, the vertically and horizontally moving pistons of one engine pair or unit being connected to the crank-pin of one crank or disk, and the vertically and horizontally moving pistons of the other engine pair or unit being connected to the crank-pin of the other crank arm or disk; and counterbalances applied to said shaft one for each engine pair, each counterbalance arranged to make its extreme throw on one side of the shaft at the instant that the piston on the opposite side of the shaft reaches its extreme throw in a direction opposite said counterbalance, the power of the engine being applied at a point intermediate the two units.

7. In an engine, the combination of a plurality of units or engine couples, each comprising an upright and a horizontal cylinder with its piston, rod, &c.; and a crank-shaft having a crank-pin for each unit or engine couple, the two cylinders of each couple being set at substantially ninety degrees to each other, and the several cranks being set at such angular distances apart that the time interval between successive impulses imparted to the shaft shall be equal to the time of one revolution divided by twice the number of cooperating cylinders, the crank-shaft of each unit or engine couple being formed separate from that of other units or couples, whereby each crank-shaft or section of the common crank-shaft is permitted to deflect or spring under and in accordance with its own load.

8. In an engine, the combination of a plurality of engine couples, each comprising an upright and a horizontal cylinder with its piston, rod, &c., and a crank-shaft having a crank-pin for each unit or engine couple, the two cylinders of each couple being set at substantially ninety degrees to each other, and the several cranks being set at angular distances apart equal to thirty degrees or multiples thereof, and in general so set that the time interval between successive impulses imparted to the shaft shall equal the time of one revolution divided by twice the number of cylinders in this combination, the crank-shaft being divided into sections one for each engine couple or unit, whereby each is permitted to deflect or spring in accordance with its own load.

811,521. **STAY FOR HARNESS-BREECHING.** FRANK X. SCHUMAKER, Fort Scott, Kans. Filed Mar. 1, 1904. Serial No. 196,166.

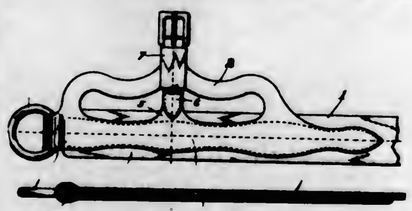

Claim.—1. In a breeching-stay for harness of the character described, a stay of the configuration shown, constructed of a single piece of leather, and comprising a body portion, inwardly-extending arms, a central support integral with the body portion and the arms; substantially as described.

2. In a breeching-stay for harness of the character described, the combination of a breeching, a stay stitched to the breeching, inwardly-extending arms integral with the stay, a central support integral with the central portion of the stay and with the inwardly-extending arms; substantially as described.

811,522. **TREATING MOLTEN METAL.** JOSEPH S. SHARAN, Pittsburg, Pa. Original application filed May 28, 1904. Serial No. 209,311. Divided and this application filed July 25, 1904. Serial No. 217,986.

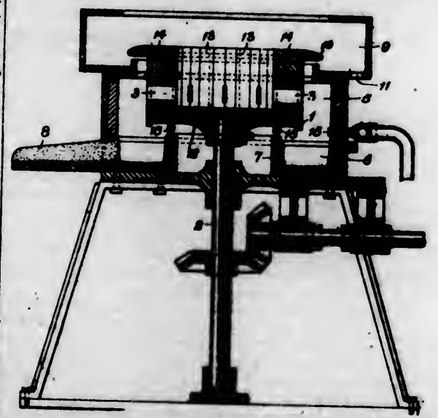

Claim.—1. As an improvement in the art of treating molten metal the method herein described, which consists in dividing the metal into small streams by causing the metal to pass through small orifices by centrifugal action and maintaining in the separator a sufficient body of metal to cover the discharge-orifices whereby the good metal is caused to be separated in passing through the orifices from the slag and other impurities and an escape of the gas is permitted, substantially as set forth.

2. As an improvement in the art of treating metal, the method herein described which consists in dividing the metal into small streams by forcing the metal by centrifugal action through small orifices, maintaining in the separator a sufficient body of metal to cover the discharge-orifices and while the metal is in a divided condition, subjecting it to the action of air under pressure, substantially as set forth.

811,523. **METHOD OF MAKING HAIRE-SPRING.** FRANCIS L. STEWART, Murrysville, Pa., assignor of one-half to Samuel R. Gill, Pittsburg, Pa. Filed Oct. 17, 1904. Serial No. 228,782.

Claim.—1. The method herein described which consists in sterilising maize before the close of the milky period of the kernel, continuing the growing of the plant to permit an increase of sugar content in the stalk, then extracting the juice, clarifying it and reducing it to sugar or syrup; substantially as described.

2. The method herein described which consists in separating the ears from growing field-maize while the ears are in the milk, continuing the growing of the plant to permit an increase of sugar content in the stalk, then extracting the juice, clarifying and reducing it to sugar or syrup; substantially as described.

3. The method herein described which consists in sterilising maize when the ear is in the milk, continuing the growing of the plant for more than two weeks until an increase of sugar content takes place in the stalk, then extracting the juice, clarifying it and reducing it to sugar or syrup; substantially as described.

4. The method herein described which consists in separating the ears from growing maize while the ears are still immature and are at the stage of growth, at which the ear is in the milk and the protruding silk is dead, continuing the growing of the plant until an increase of sugar content takes place in the stalk, then extracting the juice, and clarifying it and reducing it to sugar or syrup; substantially as described.

811,524. **TREATMENT OF MAIZE FOR THE MANUFACTURE OF CELLULOSE PRODUCTS.** FRANCIS L. STEWART, Murrysville, Pa., assignor of one-half to Samuel R. Gill, Pittsburg, Pa. Filed Mar. 31, 1905. Serial No. 253,126.

Claim.—1. The method herein described which consists in growing stalks of maize and preventing the formation of ripened ears thereon, continuing the growth of the stalks beyond the normal period of pollination, and thereby causing a largely-increased development of the cellular structure, then cutting the stalk and treating it for the production of cellulose products.

2. The method herein described which consists in sterilising the stalks of maize, continuing the growth after such sterilization and thereby causing a largely-increased development of the cellular structure, then cutting the stalk and treating it for the production of cellulose products.

3. The method herein described which consists in planting maize so that the stalks will be in close proximity, sterilizing the stalks, continuing the growth after such sterilization, and thereby causing a largely-increased development of the cellular structure, then cutting the stalk and treating it for the production of cellulose products.

811,525. **AIR-BRAKE.** WILLIAM L. STEARNAGE and WILLIAM H. COOK, Bellefontaine, Ohio. Filed June 23, 1905. Serial No. 266,653.

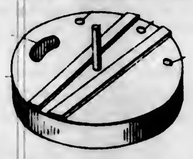

Claim.—In an air-brake valve, the port D, so situate with relation to the port that furnishes constant supply to the train-line, and to the valve, that it sounds warning whenever the valve lops the supply-port, as and for the purpose set forth.

811,526. **MECHANISM FOR FEEDING TUBULAR BILLETS.** RALPH C. SHEPPEL, Mineral City, Pa., assignor, by mesne assignments, to National Tube Company, a Corporation of New Jersey. Continuation of application Serial No. 80,296, filed Apr. 17, 1901. This application filed Jan. 2, 1902. Serial No. 87,625.

Claim.—1. In a feeding mechanism and in combination with a mandrel-bar and means for supporting and advancing said mandrel-bar, the improvement consisting in an end support for the billet movable relative to the mandrel and from its active position in respect to the billet.

2. In a feeding mechanism and in combination with a mandrel-bar and means for supporting and advancing said mandrel-bar, the improvement consisting in an end support for the billet movable relative to the mandrel and from its active position in respect to the billet, and means for securing the end support in and releasing it from an active position.

3. In a feeding mechanism and in combination with a mandrel-bar and means for supporting and advancing said mandrel-bar, the improvement consisting in an end support for the billet movable relative to the mandrel and from its active position in respect to the billet, and means for engaging and holding the end support in an inactive position.

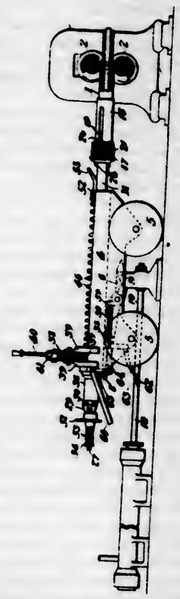

4. In a feeding mechanism and in combination with a mandrel-bar, means for supporting and advancing said mandrel-bar, the improvement consisting in an end support for the billet movable from its active position in respect to the billet, means for holding the support in and releasing it from its active position, and means for catching it in an inactive position when so released.

5. In a feeding mechanism and in combination with a traveling carriage, a spindle reciprocably and rotarily mounted on the carriage, means for rotating the spindle and resilient means for actuating the spindle longitudinally, the improvement which consists in an end support for the billets or tubes reciprocable relatively to the spindle, and means for securing the end support in and releasing it from an active position.

6. In a feeding mechanism and in combination with a traveling carriage, a spindle reciprocably and rotarily mounted on the carriage, means for rotating the spindle and resilient means for actuating the spindle longitudinally, the improvement which consists in an end support for the billets or tubes reciprocable relatively to the spindle, and means for engaging and holding the end support in an inactive position.

7. In a feeding mechanism and in combination with a traveling carriage, a spindle reciprocably and rotarily mounted on the carriage, means for rotating the spindle and resilient means for actuating the spindle longitudinally, the improvement which consists in an end support for the billets or tubes reciprocable relatively to the spindle, means for holding the support in and releasing it from its active position, and means for catching it in an inactive position when so released.

8. In a feeding mechanism and in combination with a traveling carriage, a spindle reciprocably and rotarily mounted on the carriage, means for rotating the spindle and resilient means for actuating the spindle longitudinally, the improvement which consists in a motion-damping device on the carriage for checking the motion of the spindle.

9. In combination with the reciprocable spindle, a feeding mechanism, a retractable support movable relatively to the spindle, and means for holding the support in position, said means combining a controlling connection extending longitudinally of the spindle,

rigid means at one end thereof for holding the support as aforesaid, means for locking the said controlling connection in the vicinity of its other end.

10. In combination with the reciprocable spindle of a feeding mechanism, a retractable support movable relatively to the spindle, and means for holding the support in position, said means having a controlling connection extending longitudinally of and coaxially with the spindle for the purposes set forth.

11. In a feeding mechanism of the type having a reciprocable spindle and a traveling carriage upon which the spindle reciprocates, the improvement consisting in a power-actuated movable body and a self-coupling connection between the carriage and the said movable body, substantially as set forth.

12. In a feeding mechanism of a type having a reciprocable spindle and a traveling carriage upon which said spindle reciprocates, an improvement consisting in a movable body, means for automatically coupling the carriage to the said body, and means acting on a part of the coupling means for uncoupling the carriage from said body, substantially as set forth.

13. In a feeding mechanism of the type having a reciprocable spindle and a traveling carriage, upon which the spindle reciprocates, an improvement consisting in a power-actuated movable body, and a link on one of said parts for automatically engaging the other, substantially as set forth.

14. In a feeding mechanism of the type having a reciprocable spindle, and a traveling carriage, consisting in a power-actuating movable body, a link on one of said parts for automatically engaging the other, and means for disengaging the link, substantially as set forth.

15. In a feeding mechanism and in combination with a traveling carrage, a spindle mounted on the carriage, and resilient means for actuating the spindle longitudinally, the improvement which consists in an end support for the billets or tubes reciprocable relatively to the spindle, means for securing the end support in and releasing it from an active position, and a power-actuated movable body and a self-coupling connection between the carriage and the said movable body, substantially for the purposes set forth.

16. In a feeding mechanism of the type having a traveling carriage and a spindle reciprocating upon said carriage, the improvement consisting in means for rotating the spindle and means for supporting the end of the billets or tubes, which means reciprocates relatively to said spindle.

811,527. **PAPER-MAKING MACHINE.** ALONZO ALDRICH, Beloit, Wis. Filed Aug. 10, 1904. Serial No. 220,333.

Claim.—1. A device for lifting and separating a pair of rolls disposed one above the other said device having a vertically-movable bar and means for lifting said bar from below, said bar having means for engaging and lifting the shaft of the upper roll and for receiving lateral support therefrom, and said bar having also means for engaging and lifting the shaft of the lower roll and for restraining it from moving laterally, substantially as described.

2. In a device of the class described, the combination with a pair of rolls, of a bar having seats adapted to receive the shafts of the rolls, said seats being disposed a greater distance apart than are the parts of the shafts which they are adapted to engage, a shaft located below and in the vertical plane of the axes of the rolls, means for turning the shaft last aforesaid, and means for transmitting the movement of said shaft to the said bar, substantially as described.

3. In a device of the class described, the combination with the shafts of a pair of rolls, of a bar having seats adapted to engage said shafts, a cam, means for turning said cam, and means through which the cam bears upon the bar, substantially as described.

4. In a device of the class described, the combination with a pair of rolls and their shafts, of a bar having seats adapted to engage said shafts, a cam adapted to move the bar upward, a shaft carrying said cam, a lever for turning the shaft, and a bearing in which the shaft is mounted, substantially as described.

5. In a device of the class described, the combination with a pair of rolls and their shafts, of a bar having seats adapted to engage said shafts, a cam adapted to move said bar upward, a shaft carrying the cam, and means for turning the shaft, the lower end of the bar and shaft having sliding engagement with each other whereby the bar is permitted to move endwise and restrained against lateral movement, substantially as described.

6. In a device of the class described, the combination with a pair of rolls and their shafts, of a bar having seats adapted to engage said shafts and having a longitudinal slot, a shaft occupying the longitudinal slot of the bar, a cam carried by the shaft last aforesaid, a socket also carried by said shaft, a lever having its ends fitted in said socket, and an antifriction-roller carried by the bar and engaging the cam, substantially as described.

7. The combination with a pair of rolls, disposed one above the other, and having extended shafts, a support for the upper shaft movable vertically but immovable horizontally and a removable support for the lower shaft, of a device for lifting and separating said rolls, said lifting device having means for engaging the upper shaft whereby the shaft is lifted and the lifting device sustained horizontally and said lifting device having means for engaging the lower shaft whereby it is lifted and sustained against lateral movement, permitting its support to be removed, substantially as described.

811,528. **SPINNING MECHANISM.** JOHN J. BUCKLEY, THOMAS P. MCGINN, and JOHN A. ROGAN, Plymouth, Mass., assignors of one-fourth to Thomas Roche, Boston, Mass. Filed Apr. 28, 1905. Serial No. 257,831.

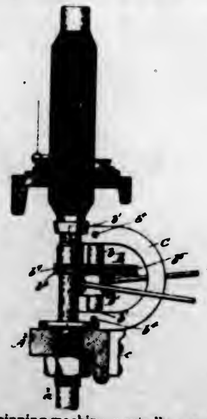

Claim.—1. In a spinning-machine, a spindle, a speed-multiplier means for supporting it independently of any spindle, a belt connecting said speed-multiplier with said spindle, and means located on said speed-multiplier whereby power may be applied to rotate said speed-multiplier.

2. In a spinning-frame, one or more spindles, a power-disk means for supporting said power-disk independently of any spindle, and means for rotating said power-disk, and belt connections for imparting motion from said power-disk to said spindle or spindles, as described.

3. In a spinning-frame, a pair of spindles, a power-disk, means for rotating it and means such as a belt for connecting said power-disk and said spindles, whereby a positive movement is imparted to said spindles from said power-disk, as set forth.

4. A speed-multiplier for a spinning-frame, comprising a yoke, and an axle mounted thereon carrying a grooved pulley, and a whirl of less diameter than said pulley whereby a speed received by said whirl from a source of power may be multiplied in its delivery and a spindle rotated by a belt upon said pulley.

5. In a spinning-frame, as a means of rotating the spindles in pairs, a shaft or axle mounted between two spindles, having a whirl and two driving-pulleys, a driving-belt for the whirl, a whirl upon each spindle and a driving-belt extending from its individual pulley upon the shaft or axle to a whirl, each of said belts being crossed to afford a greater frictional contact with the pulley and the whirl.

6. In a spinning-frame, as a means of rotating the spindles thereof in pairs, the combination of two spindles, an interposed shaft or axle, means for rotating it, pulleys thereon, one of which is connected by means of a crossed belt with one of the spindles and the other of which is connected by means of a crossed belt with the other of the spindles, as and for the purposes described.

7. In a spinning-frame, the combination of two spindles, an interposed shaft or axle, means for turning it, a pulley for each spindle mounted upon said shaft or axle, a crossed belt for each of said spindles and pulleys, the said pulleys being slightly inclined to a horizontal plane, whereby the sections of the belts crossing each other cross at different levels, as and for the purposes described.

8. In a spinning-frame, the combination of two spindles, an interposed shaft or axle located in close proximity to said spindles, means for turning said shaft, pulleys thereon and belts, each connecting one of said pulleys with one of said spindles, each belt being crossed between its pulley and its spindle, whereby it engages nearly the entire circumference of each, as set forth.

9. In a spinning-frame, a power-disk and means for supporting it comprising an axle, a socket adapted to support one end of said axle, and provided with bearings therefor, and means for adjusting the relation of said axle and said socket, as described.

10. In a spinning-frame, a power-disk and means for supporting it comprising an axle, a socket adapted to support one end of said axle, and provided with ball-bearings arranged as described and containing an oil-chamber surrounding said axle and communicating with the bearings thereof, as set forth.

11. In a spinning-frame, in combination, two spindles, a power-disk and a belt connection between each spindle and said power-disk, and means to rotate said power-disk, the axis of said power-disk being set at a slight angle to the axis of said spindles, as described.

12. In a spinning-frame, a spindle, a power-disk and a belt connection crossed between said spindle and said power-disk, and means to rotate said power-disk, the axis of said power-disk being set at a slight angle to the axis of the spindle, whereby the sections of the belt connecting said power-disk and spindle will not rub where they cross each other, as described.

811,529. **GAS-BURNER AND FIXTURE THEREFOR.** ROBERT M. BUCKNAM, Medford, Mass. Filed Apr. 13, 1905. Serial No. 255,421.

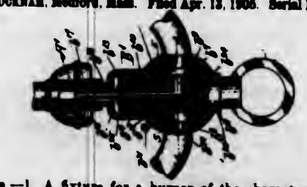

Claim.—1. A fixture for a burner of the character specified, the same having separate gas and air conducting pipes, a cock comprising an outer casing having means with which the burner may make connection and to the opposite sides of which casing the said pipes of the fixture are adapted to be connected, a vertical plug contained within the valve-chamber inside said casing, passages leading from said pipes through the wall of said casing, and passages within said plug opening into the mixing-chamber of the burner, which passages are adapted to register with the passages in the casing, when said plug is turned in one direction or position, or to break connection therewith when turned in another direction or position.

2. A fixture for a burner of the character specified, the same having separate gas and air conducting pipes, a cock having an outer casing with which said gas and air conducting pipes of the fixture are adapted to make connection, a plug contained within the valve-chamber of said casing inside the same, passages leading from said pipes through the wall of the casing, gas and air passages within said plug and extending through the same to open into the mixing-chamber of the burner and which gas and air passages in said plug are located to simultaneously register, respectively, with said gas and air passages in the casing, when said plug is in a certain position relatively to said casing, or to become disconnected therefrom and the gas and air entirely cut off upon turning said plug to a changed position, and which gas and air passages within said plug and casing are so related that upon slightly turning said plug within the casing, when said plug is in a certain position, the quantity of air admitted to the mixing-chamber of the burner will not be changed, but the quantity of gas admitted to said chamber will be changed.

3. A fixture for a burner of the character specified, the same having separate gas and air conducting pipes, a cock having an outer casing with which said gas and air conducting pipes of the fixture are adapted to make connection, a plug contained within the valve-chamber of said casing inside the same, passages leading from said pipes through the wall of the casing, gas and air passages within said plug and extending through the same to open into the mixing-chamber of the burner, and which gas and air passages are so related in relative size and location that upon slightly turning said plug, when the same is in a certain position, the quantity of air admitted through said plug and casing to the mixing-chamber of the burner will not be changed, but the quantity of gas admitted thereto will be changed.

4. A fixture for a burner of the character specified, the same having separate gas and air conducting pipes, a cock having an outer casing with which said gas and air conducting pipes of the fixture are adapted to make connection, a plug contained within the valve-chamber of said casing, passages communicating with said pipes and leading through said casing, gas and air passages within said plug and extending though the same to open into the mixing-chamber of the burner, which gas and air passages in said plug and casing are located to register simultaneously with one another, when said plug is in a ceratin position, whereby both gas and air may together simultaneously pass to the mixing-chamber of the burner, or said gas and air be together cut off on turning said plug to a changed position, and the size of which air-passage in the said plug is so related or graduated by the contraction thereof relatively to the size of the air-passage in said casing and said gas-passages that upon slightly turning said plug within the casing the quantity of air admitted to the mixing-chamber of the burner will not be changed, but the quantity of gas admitted to said chamber will be changed or lessened.

5. A fixture for a burner, the same having a cock comprising an outer casing and an inside vertical plug, means for retaining said plug within said casing, and a cap forming a portion of said cock for concealing said means of retention, and which cap is adapted also to receive the burner-tube.

6. In a fixture for a burner, a cock comprising an outer casing and an inside vertical plug, a threaded head on said casing, means for retaining said plug within said casing, a cap b^{12} forming a portion of said cock adapted to screw onto said threaded head of the casing, for concealing said means of retention, which cap is open to the end of said plug and which cap, also, is threaded in part to receive the burner-tube.

7. A fixture for a burner of the character specified, the same having separate gas and air conducting pipes, a cock having an outer casing with which said gas and air conducting pipes of the fixture are adapted to make connection, a plug contained within the valve-chamber of said casing inside the same, a passage communicating with the gas-conducting pipe and extending through said casing, one or more gas-passages within said plug, located to register with said gas-passage in the casing when the plug is turned to a certain position and to extend through said plug to open into the mixing-chamber of the burner, and which gas-passages in said casing and plug are so relatively disposed that the gas will become gradually cut off upon turning said plug, and in combination with said gas-passages, an air-passage in communication with the air-conducting pipe and extending through the wall of the casing, a passage b^{24} within the plug, registering therewith, and a contracted air-passage b^{25} extending through the plug to open into the mixing-chamber of the burner, which gas and air passages are so related that the gas and air may be simultaneously cut off upon turning said plug to a closed position, or the amount of gas partially cut off without changing the supply of air upon slightly turning the said plug.

8. A cock for a burner of the character specified, the said cock having an outer casing adapted to receive gas and air conducting pipes, a plug contained within the valve-chamber of said casing inside the same, passages leading from said pipes through the wall of the casing, gas and air passages within said plug and extending through the same to open into the mixing-chamber of the burner and which gas

and air passages in said plug are located to simultaneously register, respectively, with said gas and air passages in the casing, when said plug is in a certain position relatively to said casing, or to become disconnected therefrom and the gas and air entirely cut off upon turning said plug to a changed position, and which gas and air passages within said plug and casing are so related that, when said plug is in a certain position, upon slightly turning the same within the casing the quantity of air admitted to the mixing-chamber of the burner will not be changed, but the quantity of gas admitted to said chamber will be changed.

9. A cock for a burner of the character specified, the said cock having an outer casing adapted to receive gas and air conducting pipes, a plug contained within the valve-chamber of said casing, passages leading from pipes through the wall of the casing, gas and air passages within said plug and extending through the same to open into the mixing-chamber of the burner, and which gas and air passages are so related in relative size and location that, when said plug is in a certain position, upon slightly turning the same within the casing the quantity of air admitted to the mixing-chamber of the burner will not be changed, but the quantity of gas admitted to said chamber will be changed.

10. A cock for a burner of the character specified, the said cock having an outer casing adapted to receive gas and air conducting pipes, a plug contained within the valve-chamber of said casing, passages communicating with said pipes and leading through said casing, gas and air passages within said plug and extending through the same to open into the mixing-chamber of the burner, which gas and air passages in said plug and casing are located to register simultaneously with one another, when said plug is in a certain position, whereby both gas and air may together pass to the mixing-chamber of the burner or said gas and air be together cut off on turning said plug to a changed position, and which air-passage also in said plug is so related or graduated by the contraction thereof relatively to the air-passage in the casing and said gas-passages that upon slightly turning said plug the quantity of air admitted to the mixing-chamber of the burner will not be changed, but the quantity of gas admitted to the mixing-chamber will be changed.

11. A cock for a burner of the character specified, the said cock having an outer casing adapted to receive gas and air conducting pipes, a plug contained within the valve-chamber of said casing inside the same, a passage communicating with the gas-conducting pipe and extending through said casing, one or more gas-passages within said plug, located to register with said gas-passage in the casing when the plug is turned to a certain position and to extend through said plug to open into the mixing-chamber of the burner, and which gas-passages in said casing and plug are so relatively disposed that the gas will become gradually cut off upon turning said plug, and in combination with said gas-passages, an air-passage in communication with the air-conducting pipe and extending through the wall of the casing, a passage b^{34} within the plug, registering therewith, and a contracted air-passage b^{35} extending through the plug to open into the mixing-chamber of the burner, which gas and air passages are so related that the gas and air may be simultaneously cut off upon turning said plug to a closed position, or the amount of gas partially cut off without changing the supply of air upon slightly turning the said plug.

12. A cock for a burner of the character specified, said cock having an outer casing adapted to receive gas and air conducting pipes, a plug contained within the valve-chamber inside said casing, passages leading from said pipes through the wall of said casing, gas and air passages within said plug opening into the mixing-chamber of the burner, which passages are adapted to register with the passages in the casing when said plug is turned in one direction or position, or to break connection therewith when said plug is turned in another direction or position, and in combination with said passages, a gas by-passage in communication with the gas-conducting pipe and extending independently through the wall of said casing to the valve-casing on the interior thereof, an annular groove formed in said plug and located at a point to register with the end of said passage, and a passage extending from said annular groove through said plug to connect with the said gas-passage extending through the same and connecting with the mixing-chamber of the burner, substantially as and for the purposes set forth.

811,530. COTTON-CHOPPER. BLANCH C. BUTLER, Asheville, N. C. Filed Sept. 21, 1905. Serial No. 279,510.

Claim.—1. A runner, a cutter supported thereon, a shaft supported for rotation, and a cutter connected with the shaft and engaging the runner-supported cutter.

2. In a machine for chopping out plants, a cutter supported stationary with relation to the frame, and a rotary cutter engaging therewith.

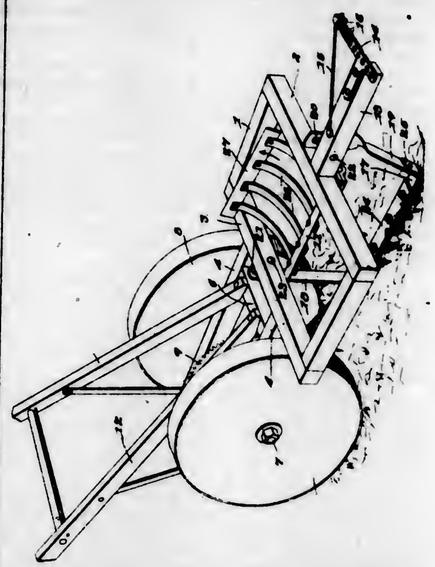

3. In a machine for chopping out plants, a cutter supported adjacent to the row of plants operated upon, and a movable cutter engaging therewith.

4. In a machine for chopping out plants, a cutter supported adjacent to the row of plants operated upon, and a movable cutter connected with and supported by a rotary shaft for engaging therewith.

5. In a machine for chopping out plants, a relatively stationary cutter, and means for supporting said cutter adjacent to a row of plants; in combination with a movable cutter adapted for engagement with a stationary cutter, a shaft supported for rotation, and supporting means connecting said shaft with the movable cutter.

6. In a machine for chopping out plants, a cutter supported adjacent to the row of plants, a shaft supported for rotation, and resilient carrying-arms connected with the shaft, and a cutter carried by said arms.

7. A frame, a runner connected adjustably therewith, a cutter supported upon the runner, a shaft supported for rotation, and a cutter connected with said shaft and engaging the cutter supported upon the runner.

8. A frame, a runner having arms connected adjustably with the frame, a cutter supported upon the runner, and a movable cutter engaging therewith.

9. A frame, carrying-wheels supporting the rear part of the frame, a runner supporting the front part of the frame, a cutter supported upon the runner, and a movable cutter engaging therewith.

10. A frame, carrying-wheels for the frame, a runner partly supporting the frame, a cutter supported upon the runner, and a movable cutter engaging therewith.

11. A frame, carrying-wheels connected therewith, a runner connected with the frame adjacent to and spaced from the line of draft, a cutter supported upon the runner, and a movable cutter engaging therewith.

12. In a machine for chopping out plants, a frame having rearward-extending side members, a wheel-carrying axle connected for rotation with said side members and having a bevel-gear, a longitudinal shaft supported for rotation and having a pinion meshing with the bevel-gear, carrying-arms extending from said shaft, a cutter carried by said arms, a runner having arms connected with the frame for vertical adjustment, and a cutter supported upon the runner.

13. A frame, carrying-wheels connected therewith, a runner connected with and partly supporting the frame said runner being disposed adjacent to the longitudinal center of the frame, a cutter supported upon the runner, a movable cutter engaging therewith, a stub-tongue connected with the frame, and a lateral draft-bar connected with the tongue.

811,581. WINDOW-SASH PIVOT. FRITZ J. GARRAT, Louisville, Ohio. Filed Apr. 20, 1905. Serial No. 256,488.

Claim.—In a window of the class described, a window-frame, and a sash-frame, the vertical rails of the sash-frame provided with metal strips having ribbed and grooved faces, channel-bars or strips, located adjacent and in normal contact with the metal strips upon the vertical members of the sash-frame, and provided with ribbed and grooved faces, plates located between the metal strips and vertical sash-rails and provided with studs extended through the metal strips, said studs having reduced end portions, plates secured to the channel-bars and provided with open flaring flanges having smooth rings, springs adapted to span the flanged openings and the springs secured to the reduced portions of the studs, substantially as and for the purpose specified.

811,583. PNEUMATIC STACKER. HENRY J. DAWE, Hopkins, Minn., assignor to Severin W. Swenson, Minneapolis, Minn. Filed Feb. 6, 1905. Serial No. 244,288.

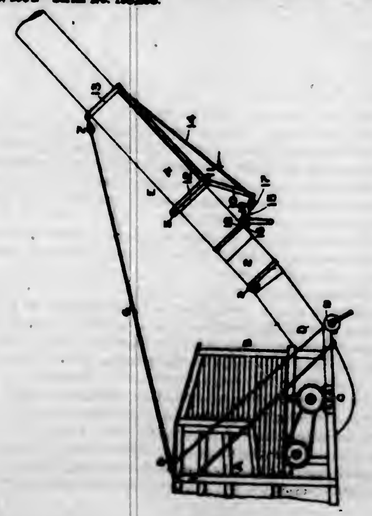

Claim.—1. In a pneumatic stacker, in combination, a foldable discharge-trunk having two hinged sections, an arm secured to the side of the upper section opposite the hinge, said arm extending downwardly and outwardly at an acute angle with said trunk-section and being of sufficient length to overlap the lower trunk-section when the trunk is extended, a cable connected with the arm and means upon the side of the lower section opposite the hinge for operating the cable.

2. In a pneumatic stacker, in combination, a foldable discharge-trunk having two hinge-connected sections, an arm secured to the side of the upper section opposite to the hinge, and extending downwardly and outwardly therefrom and at an acute angle therewith, said arm being of sufficient length to extend beyond the outer side of the lower section when the upper section is folded back, a cable connected with the arm, and cable-operating means upon the side of the lower section opposite to the hinge.

REISSUES.

12,440. SHOOTING-GALLERY. WILLIAM J. BOWERMAN, Detroit, Mich. Filed Dec. 5, 1905. Serial No. 290,402. Original No. 801,844, dated Oct. 17, 1905.

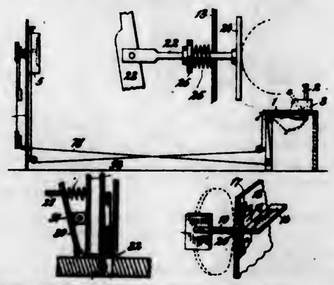

Claim.—1. In a coin-controlled machine of the character described, a laterally-movable sectional operating-lever, means for retaining said lever in upright position, including a movable bar, and means whereby one section may be moved relative to the other and actuate said retaining means to remove the same from the path of the lever, upon the insertion of a coin.

2. In a coin-controlled machine of the character described, an operating-lever pivoted for rocking movement, comprising sections slidable upon one another, means for normally retaining said lever in a stationary position, and means whereby one of said sections may slide and actuate said retaining means to move the same out of the path of the lever upon the insertion of a coin.

3. In a coin-controlled machine of the character described, an operating-lever pivoted at its lower end for rocking movement comprising sections slidable upon one another, means arranged intermediate the ends of the lever for normally retaining the same in upright position, means whereby one of said sections may be slid, means on said slidable section operatively associated with the retaining means to actuate and release the same upon the insertion of a coin, and resilient means for retaining said sections in normal position.

4. In a coin-controlled machine of the character described, an operating-lever comprising an inner section and an outer section having a slidable telescoping connection therewith, a lug on the outer section, a look for retaining said lever from movement, and releasing means actuated by said lug and operatively associated with said locking means for releasing the lever upon the insertion of a coin.

5. In a coin-controlled machine, the combination of an operating-lever comprising an inner section and an outer section having a slidable telescoping connection therewith, a look for retaining the said lever from movement, and means operatively associated with the outer section for moving said locking means out of the path of the lever upon the insertion of a coin.

6. In a coin-controlled machine, the combination of an operating-lever comprising an inner section and an outer section having a slidable telescoping connection therewith, a look for retaining said lever from movement, means operatively associated with the outer section for moving said locking means out of the path of the lever

upon the insertion of a coin, and means for retaining said sections in extended position.

12,441. **EXCAVATING-MACHINE.** CHARLES C. JACOBS, Amboy, Ill., assignor to The Jacobs' Steel Excavator Company, Amboy, Ill., a Corporation of Illinois. Filed Dec. 26, 1905. Serial No. 293,423. Original No. 794,410, dated July 11, 1905.

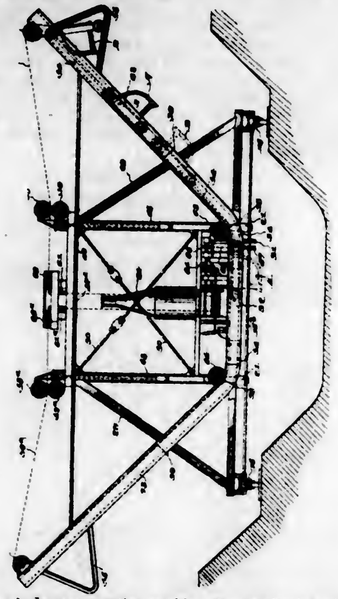

Claim.—1. In an excavating-machine, the combination with a supporting-frame, of a bucket-supporting track mounted thereon transversely of the ditch or trench to be dug and conforming to the cross-sectional profile of the latter, an excavating-bucket pivotally mounted to travel on said track, and means for drawing said bucket back and forth over said track, substantially as described.

2. In an excavating-machine, the combination with a supporting-frame, of a bucket-supporting track mounted thereon transversely of the ditch or trench to be dug and conforming to the cross-sectional profile of the latter, an excavating-bucket mounted to travel on said track, means for drawing said bucket back and forth over said track, and automatic bucket-discharging means on the end of said track, substantially as described.

3. In an excavating-machine, the combination with a supporting-frame, of a bucket-supporting track mounted thereon transversely of the ditch or trench to be dug and conforming to the cross-sectional profile of the latter, a pair of oppositely-faced excavating-buckets pivotally mounted to travel on said track, one of said buckets cutting and filling and the other returning idly on each travel across the ditch, and means for drawing said buckets back and forth over the track, substantially as described.

4. In an excavating-machine, the combination with a supporting-frame, of a bucket-supporting track mounted thereon transversely of the ditch or trench to be dug and conforming to the cross-sectional profile of the latter, a pair of oppositely-faced excavating-buckets pivotally mounted to travel on said track, one of said buckets cutting and filling and the other returning idly on each travel across the ditch, a link connecting said buckets, and means for drawing said buckets back and forth over the track, substantially as described.

5. In an excavating-machine, the combination with a supporting-frame, of a bucket supporting and guiding track mounted thereon transversely of the ditch or trench to be dug and conforming to the cross-sectional profile of the latter, means for bodily raising and lowering said track in a vertical plane by a single operation, an excavating-bucket mounted to travel on said track, and means for drawing said bucket back and forth over the latter, substantially as described.

6. In an excavating-machine, the combination with a supporting-frame, of a bucket supporting and guiding track mounted thereon transversely of the ditch or trench to be dug and conforming to the cross-sectional profile of the latter, means for bodily raising and lowering said track in a vertical plane, a pair of oppositely-faced connected excavating-buckets mounted to travel on said track, one of said buckets cutting and filling and the other returning idly on each travel from end to end of the track, and means for drawing said buckets back and forth over the latter, substantially as described.

7. In an excavating-machine, the combination with a supporting-frame, of a bucket supporting and guiding track mounted thereon transversely of the ditch or trench to be dug and conforming to the cross-sectional profile of the latter, automatic bucket-discharging means on each end of said track, means for raising and lowering said track, a pair of oppositely-faced connected excavating buckets or scoops mounted to travel on said track, one of said buckets cutting and filling and the other returning idly on each travel from end to end of the track, and means for drawing said buckets back and forth over the track, substantially as described.

8. In an excavating-machine, the combination with a supporting-frame, of a bucket supporting and guiding track mounted thereon transversely of the ditch or trench to be dug and conforming to the cross-sectional profile of the latter, means for bodily raising and lowering said track in a vertical plane by a single operation, an excavating bucket or scoop mounted to travel on said track, means for drawing said bucket back and forth over said track, and means for advancing the machine bodily from one cutting position to another, substantially as described.

9. In an excavating-machine, the combination with a supporting-frame, of a bucket-carrier mounted thereon and comprising a transversely-extending frame consisting of a horizontal intermediate section and upwardly and outwardly inclined end sections, a track comprising supporting and guiding rails extending from end to end of said carrier-frame, a truck mounted to travel on said track, a depending excavating bucket or scoop pivotally mounted on said truck, and means for drawing the truck back and forth over the track, substantially as described.

10. In an excavating-machine, the combination with a supporting-frame, of a bucket-carrier mounted thereon and comprising a transversely-extending frame consisting of a horizontal intermediate section and upwardly and outwardly inclined end sections adjustable relatively to said intermediate section, a track comprising supporting and guiding rails extending from end to end of said carrier-frame, a truck mounted to travel on said track, a depending excavating bucket or scoop mounted on said truck, and means for drawing the truck back and forth over the track, substantially as described.

11. In an excavating-machine, the combination with a supporting-frame, of a bucket-carrier mounted thereon and comprising a transversely-extending frame consisting of a horizontal intermediate section and upwardly and outwardly inclined end sections, said end sections being hinged to said intermediate section so as to be angularly adjustable relatively thereto, a track comprising supporting and guiding rails extending from end to end of said carrier-frame, a pair of connected trucks mounted to travel on said track, oppositely-faced excavating buckets or scoops yieldably mounted on and depending from said trucks, and means for drawing said trucks back and forth over the track, substantially as described.

12. In an excavating-machine, the combination with a supporting-frame and a transversely-disposed bucket-carrier mounted thereon, of a continuous track on said carrier having openings formed in the supporting-rails of the track near its ends, a bucket-supporting truck mounted to travel on said track and having wheels of different widths of tread at its opposite ends, one pair of wheels being adapted to drop through said openings of the track and the other pair to ride over the latter, and an auxiliary track adapted to support the narrow wheels of the truck and guide the bucket into discharging position, substantially as described.

13. In an excavating-machine of the class described, the combination with a bucket supporting and guiding track, of a truck mounted to travel thereon, an open-faced bucket or scoop pivotally mounted at its rear end between the side bars of said truck, and means affording a limited play of the forward end of said scoop transversely of the truck-frame, substantially as described.

14. In an excavating-machine of the class described, the combination with a bucket supporting and guiding track, of a pair of trucks mounted to travel thereon, a link connecting the inner adjacent axles of said trucks, a pair of open-faced excavating buckets or scoops pivotally and oppositely mounted in said trucks, respectively, and cables connected to said trucks and serving to alternately actuate the latter from end to end of said track, substantially as described.

15. In an excavating-machine, the combination with a supporting-frame, of a bucket supporting and guiding track mounted thereon transversely of the ditch or trench to be dug and conforming to the cross-sectional profile of the latter, screw-threaded rods rotatably mounted in said frame and supporting said track, means for rotating said rods whereby to bodily raise and lower said track, an excavating-bucket mounted to travel on said track, and means for drawing said bucket back and forth over the latter, substantially as described.

16. In an excavating-machine, the combination with a supporting-frame, of a bucket-carrier mounted thereon and comprising a transversely-extending frame consisting of a lengthwise-adjustable horizontal intermediate section, and upwardly and outwardly inclined end sections, a bucket-supporting track extending from end to end of said bucket-carrying frame, and a bucket or scoop mounted to travel over said track, substantially as described.

17. In an excavating-machine, the combination with a supporting-frame, of a bucket supporting and guiding track mounted thereon transversely of the ditch or trench to be dug and conforming to the cross-sectional profile of the latter, means for bodily raising and lowering said track in a vertical plane by a single operation through successive parallel positions, an excavating-bucket mounted to travel on said track, and means for drawing said bucket back and forth over the latter, substantially as described.

18. In an excavating-machine, the combination with a supporting-frame, of a bucket-supporting track mounted thereon transversely of the ditch or trench to be dug and conforming to the cross-sectional profile of the latter, a pair of excavating-buckets mounted to travel on said track, and means for discharging said buckets one at each end of the track, respectively.

19. In an excavating-machine for digging ditches, the combination with a supporting-frame, of a guide-track supported thereby and arranged transversely to the trench-line and conformable to the transverse contour of the trench; a pair of oppositely-facing excavating-buckets supported to travel back and forth along said guide-track; and flexible connection between the buckets permitting them to individually conform in their travel to deviations from a right line in the longitudinal contour of the guide-track.

20. In an excavating-machine for digging ditches, the combination with a supporting-frame, of a guide-track supported thereby and arranged transversely to the trench-line and conforming to the transverse contour of the trench; a pair of oppositely-facing and relatively spaced excavating-buckets supported to travel along said guide-track; flexible connection between the buckets permitting them to individually conform in their travel to deviations from a right line in the longitudinal contour of the guide-track; and means for drawing the pair of excavating-buckets back and forth along the track.

12,442. **HORN FOR PHONOGRAPHS, EAR-TRUMPETS, &c.** GUSTAVE H. VELLY, Manchester, England, assignor to United States Horn Company, New York, N. Y., a Corporation. Filed Oct. 26, 1903. Serial No. 178,351. Original No. 739,964, dated Sept. 29, 1903.

Claim.—1. A collapsible but self-sustained phonograph-horn, ear-trumpet or the like comprised of a number of flexible strips having curved meeting edges substantially as set forth.

2. A collapsible but self-sustained phonograph-horn, ear-trumpet or the like comprising a number of flexible strips having curved meeting edges and mounted on a flexible foundation, substantially as and for the purposes hereinbefore set forth.

3. A collapsible but self-sustained phonograph-horn, ear-trumpet or the like comprising a number of flexible strips having curved meeting edges, a flexible foundation for said strips and means for detachably securing the two extreme strips together, substantially as set forth.

4. A collapsible but self-sustained phonograph-horn, ear-trumpet or the like comprising a number of flexible strips having curved meeting edges, flexible connections between such edges and protecting means on the outer exposed edges, substantially as set forth.

5. A phonograph-horn, ear-trumpet or the like comprising a rigid conical tube and a collapsible trumpet-shaped mouth, the latter being made up of a number of flexible strips having curved meeting edges, and flexible connections at such edges, substantially as hereinbefore set forth.

6. A horn of the class described comprising a rigid conical tube, and a collapsible trumpet-shaped mouth made up of a number of flexible strips having curved meeting edges, said mouth being connected to said rigid conical tube, substantially as described.

7. A horn of the class described comprising a rigid conical tube, and a collapsible trumpet-shaped mouth made up of a number of flexible strips having curved meeting edges, said mouth being tangentially connected to said conical tube, substantially as described.

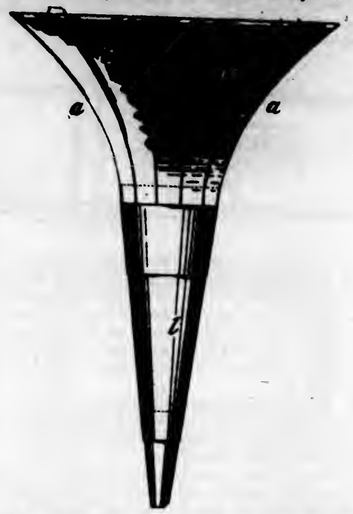

8. A phonograph-horn or the like comprising a number of flexed strips having curved meeting edges, and means joining said edges, said strips being so flexed and said edges so curved and joined that the horn is given a trumpet-like or bell-like form, the strips forming angles where said edges meet.

9. A phonograph-horn or the like comprising a number of strips each having a foundation or facing of linen or the like, said strips being so flexed and their edges so curved and joined that the horn is given a trumpet-like or bell-like form, the strips forming angles where said edges join or meet.

10. A phonograph-horn comprising a number of strips joined or meeting at their edges, said strips being so flexed and said edges so curved that the horn is given a trumpet-like or bell-like form; the strips forming angles where said edges join, and protecting means on the outer exposed edges or ends of the strips.

11. A horn comprising a funnel-like portion and a trumpet-shaped mouth portion, the latter comprising a number of strips provided with means joining them at their edges, said strips being flexed and said edges curved so as to produce the trumpet form of said mouth portion, and said strips having angular relation to one another, substantially as described.

12. A phonograph-horn comprising a number of flexed strips having curved meeting edges, means joining said strips edge to edge, said strips being so flexed and said edges so curved and joined that the horn is given a trumpet-like or bell-like form, the strips forming angles where said edges meet, and protecting devices applied upon the outer exposed edges or ends of the strips.

13. A phonograph-horn comprising a funnel-like portion and a mouth portion, the latter comprising a number of side portions extending lengthwise of the horn and joining one another at their borders, forming angles where joining, said sides so curved at their corner portions and so flexed as to give the mouth portion a trumpet-like or bell-like form, and their outer exposed ends being provided with protecting means.

14. A horn comprising a funnel-like portion and a trumpet-shaped mouth portion, the latter comprising a number of strips or sides provided with means joining them at their edges, said strips being flexed and said edges curved so as to produce the trumpet form of said mouth portion, and said strips having angular relation to one another, and protecting means on the outer exposed edges or ends of the strips.

12,443. **APPARATUS AND PROCESS FOR MANUFACTURING WIRE-GLASS.** THE SCHUMACHER WIRE GLASS COMPANY, New York, N. Y., assignee, by mesne assignments, of Ralph Longenecker, administrator of Edmund C. Schmertz, deceased. Filed Jan. 6, 1906. Serial No. 294,812. Original No. 791,216, dated May 30, 1905.

Claim.—1. The process of making glass sheets with wire inclosed therein, consisting in simultaneously forming a layer of glass and introducing wire thereto, and completing the sheet by forming another layer upon the first layer of glass, the process being carried on progressively.

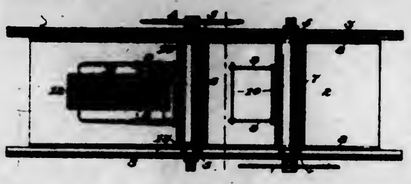

2. An apparatus for making sheets of glass with wire inclosed therein, consisting of a table, a leading roll to roll a layer of glass, means to support and introduce wire to the said layer, a second roll, behind the leading roll, to form a layer of glass on the first or underneath layer, the periphery of the second roll being higher above the table than that of the leading roll, and the two rolls being far enough apart to allow the glass for the second or upper layer to be poured between them.

3. In the manufacture of wire-glass, the combination of a table; a leading roll; means for introducing the wire in advance of the leading roll and a second roll whose body is higher from the bed of the table than that of the leading roll.

4. In the manufacture of wire-glass, the combination of a table; a leading roll with recessed ends; means for introducing the wire in advance of the leading roll and a second roll whose body is higher from the bed of the table than that of the leading roll.

5. In the manufacture of wire-glass, the combination of a table; a leading roll; means for introducing the wire in advance of the leading roll and a second roll whose body is substantially twice as high from the level of the casting-table as is the body of the leading roll.

6. An improvement in the process of manufacturing wire-glass which consists in rolling a sheet of glass of less thickness than the ultimate product required; simultaneously forcing wire upon said sheet and forming a second sheet of glass upon said first sheet.

7. An improvement in the process of manufacturing wire-glass which consists in rolling a sheet of glass of about half the ultimate thickness required; simultaneously with the formation of said sheet forcing wire in said sheet and forming a second sheet upon said first sheet.

12,444. **MACHINE FOR MOLDING CONCRETE BODIES.** WHITE CONCRETE MACHINE COMPANY, Columbus, Ohio, assignee, by mesne assignments, of Marion A. Wingel, deceased. Filed June 2, 1905. Serial No. 263,626. Original No. 694,122, dated Feb. 25, 1902.

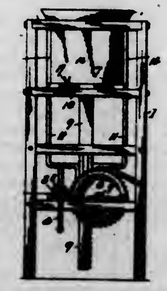

Claim.—1. A machine for molding concrete bodies, comprising in combination a framework and fixed cores projecting therefrom and a mold-box adapted to be raised and lowered about said cores.

2. A machine for molding concrete bodies, comprising in combination a framework and fixed cores projecting therefrom, and a mold-box and bottom plate therefor adapted to be raised and lowered about said cores.

3. A machine for molding concrete bodies comprising in combination a framework and fixed cores projecting therefrom, a mold-box and means for raising the same about the said cores.

4. A machine for molding concrete bodies comprising in combination a framework and fixed cores projecting therefrom, a mold-box, a bottom plate therefor and means for raising and lowering the mold-box and bottom plate about the said cores.

5. A machine for molding concrete bodies comprising in combination a framework and fixed cores supported therein, a mold-box having hinged sides and ends, and means for raising and lowering the said mold-box.

6. A machine for molding concrete bodies comprising in combination a framework, fixed cores, a mold-box having hinged sides and ends, a bottom plate to which the said sides and ends are hinged, means for raising and lowering the said mold-box and means for retaining the sides and ends in a vertical position when the mold-box is in a lowered position and permitting the sides and ends to fold outward when the mold-box is in a raised position.

7. A machine for molding concrete bodies comprising in combination a framework and fixed cores supported therein, a mold-box having its sides and ends hinged at their lower portions and means for retaining said sides and ends in vertical positions until the lower portion of the mold-box is elevated to the top of the frame and means for raising and lowering said mold-box.

8. A machine for molding concrete bodies comprising in combination a framework, a shaft journaled in said framework and pinions on said shaft, of a mold-box having hinged sides and ends and rigid cores adapted to extend within said mold-box, of sliding rack-bars, supporting devices on said rack-bars connected with said mold-box, the teeth of said pinions adapted to gear with the pinions of said rack-bar.

9. A machine for molding composition blocks comprising in combination a framework having connected standards and a fixed bed-plate 10 and fixed cores extending vertically from said bed-plate, a mold-box movably supported above said bed-plate, a bottom plate 18 in said mold-box, a mold-plate 22 removably supported on said bottom plate, the sides and ends of said mold-box being hinged in their lower portions, rollers journaled between the main frame and the mold-box sides and ends and means for raising and lowering said mold-box.

10. A machine for molding composition bodies, comprising in combination a stationary framework, a fixed bed-plate 10 therein, rigid cores 21 rising from said bed-plate, a mold-box above the bed-plate, a bottom plate in the mold-box, vertically-movable rack-bars, mold-box-supporting arms extending from said rack-bars and having a hinge connection with the sides of said mold-box, the ends of said mold-box having a hinge connection with the bottom plate thereof, rollers journaled in the upper portion of the framework and adapted to retain the sides and ends of the mold-box in vertical positions until said mold-box has been elevated to a predetermined height and means for raising and lowering said rack-bars.

11. In a machine for molding concrete bodies, the combination with a framework and fixed cores, of a mold-box having hinged members; and means for raising and lowering said mold-box vertically.

12. In a machine for molding concrete bodies, the combination with a framework and fixed cores, of a mold-box having hinged members, cores associated with the mold-box, and means for raising and lowering said mold-box vertically.

13. In a machine for molding concrete bodies, the combination with a framework and fixed cores, of a mold-box having hinged members, means for raising and lowering the mold-box, and means associated with the framework for retaining the members in a vertical position when the mold-box is in a lowered position and permitting the members to fold outward when the mold-box is raised.

14. In a machine for molding concrete bodies, the combination with a framework and fixed cores, of a mold-box having movable members and a bottom plate associated with the movable members, and means for raising and lowering the bottom plate.

15. In a machine for molding concrete bodies, the combination with a framework and fixed cores, of a mold-box having movable members and a bottom plate associated with the cores, and means for raising and lowering the bottom plate about the cores.

DESIGNS.

37,797. **BADGE.** WILLIAM S. GREEN, Peoria, Ill., assignor to The Brotherhood of Locomotive Firemen, Peoria, Ill., a Fraternal Benefit Association of Illinois. Filed Dec. 16, 1905. Serial No. 292,193. Term of patent 14 years.

37,797.

Claim.—The ornamental design for badge, as shown.

37,798. **REFLECTOR FOR LAMPS.** WILLIAM CHURCHILL, Corning, N. Y. Filed Dec. 5, 1905. Serial No. 290,436. Term of patent 14 years.

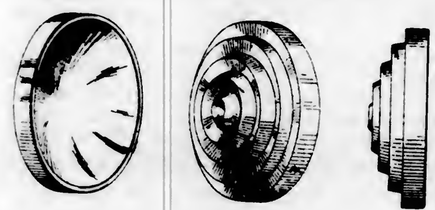

Claim.—The ornamental design for a reflector for lamps, as shown.

37,799. **ILLUMINATED CHANDELIER-SIGN.** JOHN L. DAWES, Pittsburg, Pa. Filed Dec. 21, 1905. Serial No. 292,867. Term of patent 3½ years.

Claim.—The ornamental design for an illuminated chandelier-sign, as shown.

37,800. **ILLUMINATED CHANDELIER-SIGN.** JOHN L. DAWES, Pittsburg, Pa. Filed Dec. 21, 1905. Serial No. 292,868. Term of patent 3½ years.

Claim.—The ornamental design for an illuminated chandelier-sign, as shown.

37,801. **ILLUMINATED CHANDELIER-SIGN.** JOHN L. DAWES, Pittsburg, Pa. Filed Dec. 21, 1905. Serial No. 292,869. Term of patent 3½ years.

Claim.—The ornamental design for an illuminated chandelier-sign, as shown.

37,802. **ILLUMINATED CHANDELIER-SIGN.** JOHN L. DAWES, Pittsburg, Pa. Filed Dec. 21, 1905. Serial No. 292,870. Term of patent 3½ years.

87,802.

Claim.—The ornamental design for an illuminated chandelier-sign, as shown.

87,808. SHEET-GLASS. FRANK SEDGMAN, Philadelphia, Pa., assignor to The Continuous Glass Press Company, a Corporation of Pennsylvania. Filed Dec. 18, 1905. Serial No. 292,263. Term of patent 14 years.

Claim.—The ornamental design for sheet-glass as shown.

TRADE-MARKS

PUBLISHED JANUARY 30, 1906.

The following trade-marks have been adjudged entitled to registration under the act of February 20, 1905, and are published in compliance with section 6 of said act. Said section provides:

"Any person who believes he would be damaged by the registration of a mark may oppose the same by filing notice of opposition, stating the grounds therefor, in the Patent Office within thirty days after the publication of the mark sought to be registered, which said notice of opposition shall be verified by the person filing the same before one of the officers mentioned in section two of this act. If no notice of opposition is filed within said time the Commissioner shall issue a certificate of registration therefor, as hereinafter provided for."

Marks which are stated to have been "Used ten years" are registrable under the last proviso of section 5 of said act, which is as follows:

"And provided further, That nothing herein shall prevent the registration of any mark used by the applicant or his predecessors, or by those from whom title to the mark is derived, in commerce with foreign nations or among the several States, or with Indian tribes, which was in actual and exclusive use as a trade-mark of the applicant or his predecessors from whom he derived title for ten years next preceding the passage of this act."

Section 14 of said act provides for the following fee:

"On filing notice of opposition to the registration of a trade-mark, ten dollars."

SER. No. 71. MEDICINES FOR THE REGULATION OF THE LIVER AND PURIFICATION OF THE BLOOD. THE A. H. LEWIS MEDICINE CO., St. Louis, Mo. Filed Apr. 1, 1905.

A rectangular panel having thereon the words, letters, and abbreviations "NATURE'S REMEDY. THE GREATEST LIVER REGULATOR AND BLOOD PURIFIER KNOWN. MANUFACTURED BY THE A. H. LEWIS MEDICINE CO. ST. LOUIS, MISSOURI." and the portrait of Dr. A. H. Lewis in the central portion of said panel and inclosed in a circular frame ornamented by sprays and leaves, with an ornamental scroll extending across the panel, on which appear words indicating the price of treatment, the ingredients of the medicine, and the diseases for which it is used as a remedy.

SER. No. 779. TOILET POWDER. THE STORK COMPANY, Boston, Mass. Filed Apr. 8, 1905.

The word "STORK" and the representation of a stork.

SER. No. 1,302. BAKING-POWDER. JACK FROST BAKING POWDER CO., St. Louis, Mo. Filed Apr. 12, 1905.

37,802.

Claim.—The ornamental design for an illuminated chandelier-sign, as shown.

37,808. SHEET-GLASS. FRANK SHUMAN, Philadelphia, Pa., assignor to The Continuous Glass Press Company, a Corporation of Pennsylvania. Filed Dec. 18, 1905. Serial No. 292,262. Term of patent 14 years.

Claim.—The ornamental design for sheet-glass as shown.

TRADE-MARKS

PUBLISHED JANUARY 30, 1906.

The following trade-marks have been adjudged entitled to registration under the act of February 20, 1905, and are published in compliance with section 6 of said act. Said section provides:

"Any person who believes he would be damaged by the registration of a mark may oppose the same by filing notice of opposition, stating the grounds therefor, in the Patent Office within thirty days after the publication of the mark sought to be registered, which said notice of opposition shall be verified by the person filing the same before one of the officers mentioned in section two of this act. If no notice of opposition is filed within said time the Commissioner shall issue a certificate of registration therefor, as hereinafter provided for."

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SER. No. 779. TOILET POWDER. THE STORK COMPANY, Boston, Mass. Filed Apr. 8, 1905.

The word "STORK" and the representation of a stork.

SER. No. 1,302. BAKING-POWDER. JACK FROST BAKING POWDER Co., St. Louis, Mo. Filed Apr. 13, 1905.

The pictorial representation of a landscape, in the center of which appears a small house, together with trees and shrubbery, the ground and the roof of the house being covered with snow. At the top of the pictorial representation appear the words "JACK FROST," the letters forming said words appearing as though covered with snow and frost. At the lower portion of the picture appear the words "BAKING POWDER."

SER. No. 1,311. GRANULATED SMOKING-TOBACCO. THE P. B. PERRY TOB. CO., Reidsville, N. C. Filed Apr. 12, 1905.

GOLD CRUMBS

The words "GOLD CRUMBS" arranged one above the other and separated by a circular panel, on which appears the representation of a bag of tobacco partly opened and the contents spilling therefrom. On the bag appears a label bearing the words "GOLD CRUMBS" and the representation of a circular panel and a bag of tobacco.

SER. No. 1,369. BEER. THE JOHN SCHNEIDER BREWING CO., Covington, Ky. Filed Apr. 13, 1905.

IXL

The letters "I X L."

SER. No. 1,488. LAXATIVE MEDICINES. SAMUEL BRUBAKER HARTMAN, Columbus, Ohio. Filed Apr. 14, 1905.

MANALIN

The word "MANALIN."

SER. No. 1,763. OVERALLS, APRONS, COATS, AND PANTS. CLEVELAND & WESTHILL COMPANY, Newburgh, N. Y. Filed Apr. 15, 1905.

The word "KEYSTONE" and the representation of a keystone.

SER. No. 1,547. LADIES' AND CHILDREN'S HATS. KING, BEERS, HARS MERCANTILE COMPANY, St. Louis, Mo. Filed Apr. 14, 1905. Used ten years.

The representation of a bee and a crown, associated with the word "KING."

SER. No. 1,730. CANNED FRUITS AND VEGETABLES. JAMES M. HOUSTON GROCER COMPANY, St. Louis, Mo. Filed Apr. 15, 1905. Used ten years.

The words "ROSE BUD" and the pictorial representation of a rose and three buds, together with an oblong panel, upon which one of the buds is shown, and several branches and twigs bearing the rose-buds.

SER. No. 1,782. ANVILS. WHITCOMB & HILGER, LIMITED, New York, N. Y. Filed Apr. 15, 1905.

The representation of a horseshoe and the word "AMERICAN" arranged above and the word "WROUGHT" arranged below the horseshoe.

SER. No. 2,062. STOGIES. THE R. & W. JOHNSTON CO., Pittsburg, Pa. Filed Apr. 17, 1905.

SER. No. 2,062.

WINNERS

The arbitrarily-selected word "WINNERS."

SER. No. 2,066. LIQUID COURT-PLASTER. CARPENTER CHEMICAL CO., Detroit, Mich. Filed Apr. 17, 1905.

The representation of a small drum with its upper head broken out and two kittens partially within the same and with their heads and shoulders above the upper rim of the same, together with the words "CAN'T BE BEAT" and a pair of drumsticks.

SER. No. 2,965. FLOUR MADE FROM WHEAT. PILLSBURY-WASHBURN FLOUR MILLS COMPANY, LTD., Minneapolis, Minn. Filed Apr. 25, 1905. Used ten years.

IMPROVED STRAIGHT

The words "IMPROVED STRAIGHT."

SER. No. 2,967. FLOUR MADE FROM WHEAT. PILLSBURY-WASHBURN FLOUR MILLS COMPANY, LTD., Minneapolis, Minn. Filed Apr. 25, 1905. Used ten years.

CARLETON

The word "CARLETON."

SER. No. 2,978. FLOUR MADE FROM WHEAT. PILLSBURY-WASHBURN FLOUR MILLS COMPANY, LTD., Minneapolis, Minn. Filed Apr. 25, 1905. Used ten years.

BEST

The word "BEST," having each letter divided centrally into two parts, the intervening space being occupied by a diamond or square arranged to leave a white margin between the diamond or square and the adjacent portion of the letter.

SER. No. 3,096. DICTIONARIES. G. & C. MERRIAM COMPANY, Springfield, Mass. Filed Apr. 26, 1905. Used ten years.

SER. No. 3,096.

A circle having a wreath eccentrically arranged therein, which inclosse the letters "N" and "W" arranged in a monogram.

SER. No. 3,097. DICTIONARIES. G. & C. MERRIAM COMPANY, Springfield, Mass. Filed Apr. 26, 1905. Used ten years.

The representation of a wreath inclosing the letters "N" and "W" arranged in the form of a monogram.

SER. No. 3,476. WRAPPING-PAPER, PAPER BAGS, AND PAPER SACKS. HOLLINGSWORTH & WHITNEY COMPANY, Boston, Mass. Filed Apr. 26, 1905.

The letters and word "H AND W" arranged as a monogram, the letter "H" being inclined to the line of its base and the letter "W" intertwined therewith.

SER. No. 3,502. WHISKY. SIDNEY F. MILLER, New York, N. Y. Filed Apr. 26, 1905.

PLATO WHISKEY

The words "PLATO WHISKEY," associated with a representation of the head of Plato upon a circular background with ornamental scrollwork at the side.

SER. No. 3,814. WHISKY. MARTIN J. ELSEA, Logansport, Ind. Filed May 1, 1905. Used ten years.

The pictorial representation of a landscape, in the center of which appears a small house, together with trees and shrubbery, the ground and the roof of the house being covered with snow. At the top of the pictorial representation appear the words "JACK FROST," the letters forming said words appearing as though covered with snow and frost. At the lower portion of the picture appear the words "BAKING POWDER."

SER. No. 1,211. GRANULATED SMOKING-TOBACCO. THE P. B. PENN TOB. CO., Reidsville, N. C. Filed Apr. 12, 1905.

GOLD CRUMBS

The words "GOLD CRUMBS" arranged one above the other and separated by a circular panel, on which appears the representation of a bag of tobacco partly opened and the contents spilling therefrom. On the bag appears a label bearing the words "GOLD CRUMBS" and the representation of a circular panel and a bag of tobacco.

SER. No. 1,369. BEER. THE JOHN BRENNER BREWING CO., Covington, Ky. Filed Apr. 13, 1905.

IXL

The letters "I X L."

SER. No. 1,433. LAXATIVE MEDICINES. SAMUEL BEUBAKER HARTMAN, Columbus, Ohio. Filed Apr. 14, 1905.

MANALIN

The word "MANALIN."

SER. No. 1,763. OVERALLS, APRONS, COATS, AND PANTS. CLEVELAND & WHITEHILL COMPANY, Newburgh, N. Y. Filed Apr. 15, 1905.

The word "KEYSTONE" and the representation of a keystone.

SER. No. 1,547. LADIES' AND CHILDREN'S HATS. KING, BRING, HAHN MERCANTILE COMPANY, St. Louis, Mo. Filed Apr. 14, 1905. Used ten years.

The representation of a bee and a crown, associated with the word "KING."

SER. No. 1,730. CANNED FRUITS AND VEGETABLES. JAMES M. HOUSTON GROCER COMPANY, St. Louis, Mo. Filed Apr. 15, 1905. Used ten years.

The words "ROSE BUD" and the pictorial representation of a rose and three buds, together with an oblong panel, upon which one of the buds is shown, and several branches and twigs bearing the rose-buds.

SER. No. 1,782. ANVILS. WHEELOCK & HILGER, LIMITED, New York, N. Y. Filed Apr. 15, 1905.

AMERICAN WROUGHT

The representation of a horseshoe and the word "AMERICAN" arranged above and the word "WROUGHT" arranged below the horseshoe.

SER. No. 2,082. STOCKS. THE R. & W. JENKINSON CO., Pittsburg, Pa. Filed Apr. 17, 1905.

SER. No. 2,082.

WINNERS

The arbitrarily-selected word "WINNERS."

SER. No. 2,066. LIQUID COURT-PLASTER. CARPENTER CHEMICAL CO., Detroit, Mich. Filed Apr. 17, 1905.

The representation of a small drum with its upper head broken out and two kittens partially within the same and with their heads and shoulders above the upper rim of the same, together with the words "CAN'T BE BEAT" and a pair of drumsticks.

SER. No. 2,965. FLOUR MADE FROM WHEAT. PILLSBURY-WASHBURN FLOUR MILLS COMPANY, LTD., Minneapolis, Minn. Filed Apr. 25, 1905. Used ten years.

IMPROVED STRAIGHT

The words "IMPROVED STRAIGHT."

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CARLETON

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BEST

The word "BEST," having each letter divided centrally into two parts, the intervening space being occupied by a diamond or square arranged to leave a white margin between the diamond or square and the adjacent portion of the letter.

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SER. No. 3,096.

A circle having a wreath eccentrically arranged therein, which incloses the letters "N" and "W" arranged in a monogram.

SER. No. 3,097. DICTIONARIES. G. & C. MERRIAM COMPANY, Springfield, Mass. Filed Apr. 26, 1905. Used ten years.

The representation of a wreath inclosing the letters "N" and "W" arranged in the form of a monogram.

SER. No. 3,476. WRAPPING-PAPER, PAPER BAGS, AND PAPER SACKS. HOLLINGSWORTH & WHITNEY COMPANY, Boston, Mass. Filed Apr. 28, 1905.

The letters and word "H AND W" arranged as a monogram, the letter "H" being inclined to the line of its base and the letter "W" intertwined therewith.

SER. No. 3,502. WHISKY. SIDNEY F. MILLER, New York, N. Y. Filed Apr. 28, 1905.

PLATO WHISKEY

The words "PLATO WHISKEY," associated with a representation of the head of Plato upon a circular background with ornamental scrollwork at the side.

SER. No. 3,814. WHISKY. MARTIN J. BLISH, Logansport, Ind. Filed May 1, 1905. Used ten years.

SER. No. 3,814.

HAND MADE
Woodlawn
SOUR MASH

The words "HAND MADE SOUR MASH," associated with the word "WOODLAWN" ornamented with scrollwork.

SER. No. 3,868. OYSTERS. HAAS BROS., New York, N. Y. Filed May 1, 1906.

BLUE POINT OYSTERS

The words "BLUE POINT OYSTERS," associated with the representation of an oyster-shell containing an oyster and an arrow or spear point arranged obliquely theresecross and having a pennant near the end thereof.

SER. No. 3,877. PLUG-CUT TOBACCO. WEBBERT BROTHERS TOBACCO COMPANY, St. Louis, Mo. Filed May 1, 1906.

ARROW

The word "ARROW" with the representation of a shield having thereon two crossed arrows.

SER. No. 3,887. KID AND LAMB-SKIN GLOVES. STERN BROTHERS, New York, N. Y. Filed May 1, 1906.

LUPIN

The word "LUPIN."

SER. No. 4,104. GELATIN. AMERICAN GLUE CO., Boston, Mass. Filed May 3, 1906. Used ten years.

BOSTON CRYSTAL GELATINE

The words "BOSTON CRYSTAL GELATINE."

SER. No. 4,171. LINIMENT. WILLIAM B. HADLEY, New York, N. Y. Filed May 3, 1906.

WUNDERWURK

The arbitrary word-symbol "WUNDERWURK" in light letters on a dark oblong background.

SER. No. 4,176. BLOUSES, OVERALLS, JUMPERS, TROUSERS, COATS, VESTS, AND WORKINGMEN'S APRONS. LEVI STRAUSS & CO., San Francisco, Cal. Filed May 3, 1906.

Two horses attached to opposite sides of a garment of the trousers or overalls kind and men driving the horses in opposite directions.

SER. No. 4,268. MEDICINE FOR THE CURE OF LIVER AND KIDNEY DISEASES. THOMPSON MEDICAL COMPANY, Titusville, Pa. Filed May 4, 1906.

BAROSMA

The word "BAROSMA."

SER. No. 4,557. COATS AND TROUSERS. J. SAMUELS & BRO., Providence, R. I. Filed May 6, 1906. Used ten years.

MANUFACTURERS OUTLET COMPANY

The words "MANUFACTURERS OUTLET COMPANY," together with the representation of a crown on each side of the word "OUTLET."

SER. No. 4,579. BUTTONS. DREYFUS-BRODY, RAFFLOER & CO., New York, N. Y. Filed May 6, 1906.

The representation of an escutcheon—an argent and a fess azure charged with a mullet of the field—and a small ribbon below said representation.

SER. No. 4,624. RYE WHISKY. ULMAN, BOYKIN & CO., Baltimore, Md. Filed May 8, 1906.

SER. No. 4,624.

WESTMORELAND CLUB

The words "WESTMORELAND CLUB," associated with a monogram composed of the letters, character, and abbreviation "U B & Co."

SER. No. 4,822. WAGONS. THE TIFFIN WAGON CO., Tiffin, Ohio. Filed May 9, 1906.

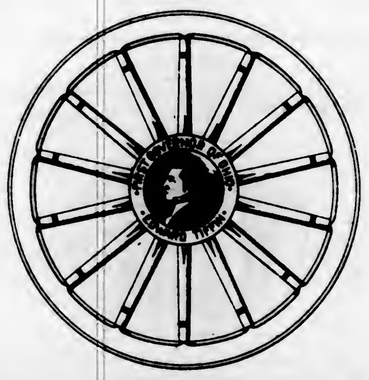

The representation of a wagon-wheel containing at the hub a portrait of the first Governor of Ohio, Edward Tiffin, deceased. Above the portrait appear the words "FIRST GOVERNOR OF OHIO," and below the portrait appears the name "EDWARD TIFFIN." On the spokes of the wheel appear bar-like transverse marks.

SER. No. 5,008. LINIMENTS OR LOTIONS. ROSEN & BRESSER, Chicago, Ill. Filed May 4, 1906.

The figure of an old man having long hair and a heavy beard, clothed in a flowing robe, holding aloft in his right hand a bottle surrounded by a halo, his left hand dropped to his side.

SER. No. 5,004. TONIC, BLOOD-PURIFIER, AND LIVER AND KIDNEY RENOVATOR. CARL O. F. BURKHARDT, Chicago, Ill. Filed May 4, 1906.

Himmalia Tonic

CASS GAY LA VARTS

The words "HIMMALIA TONIC" and the words "CASS GAY LA VARTS," associated with the representation of the head of a tiger with wide-open mouth.

SER. No. 5,218. LEATHER BOOTS AND SHOES. WINGO, ELLETT & CRUMP SHOE CO., Richmond, Va. Filed May 11, 1906.

KENMORE

The word "KENMORE."

SER. No. 5,284. COTTON PIECE GOODS. MASSACHUSETTS COTTON MILLS, Lowell, Mass. Filed May 11, 1906. Used ten years.

DELHI

The word "DELHI."

SER. No. 5,292. RYE WHISKY. O. GUFF & SONS, Baltimore, Md. Filed May 12, 1906. Used ten years.

Gordon

The word-symbol "GORDON."

SER. No. 5,336. WHISKY. THOMAS B. O KEEFE, Oswego, N. Y. Filed May 12, 1906.

WOODCOCK

The word "WOODCOCK" and the picture of a woodcock.

SER. No. 5,342. POWDERED PREPARATION USED CHIEFLY IN COOKING AND MADE FROM SKIM-MILK. BORDEN'S MILK PRODUCTS CO., Cortland, N. Y. Filed May 12, 1906.

SER. No. 5,842.

CREMFLOR

The word "CREMFLOR."

SER. No. 5,848. POWDERED PREPARATION USED CHIEFLY IN COOKING AND MADE FROM SKIM-MILK. REDERER MILK PRODUCTS CO., Cortland, N. Y. Filed May 12, 1905.

MILCFLOR

The word "MILCFLOR."

SER. No. 5,550. WHISKY. MORRIS WORTMANN, New York, N. Y. Filed May 13, 1905.

Red Seal Whiskey

The words "RED SEAL WHISKEY."

SER. No. 5,616. PHOTOGRAPHIC PAPER AND FILMS. SOCIETÉ ANONYME "LUNA," Lausanne, Switzerland. Filed May 15, 1905.

LUNA

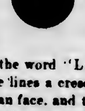

The combination of the word "LUNA" with a black disk, in which are drawn in white lines a crescent with human face, three stars in front of said human face, and the letters and character "V & C" crossing said disk and crescent, the said black disk being surrounded by a series of white pearls.

SER. No. 5,858. SUSPENSORY BANDAGES AND JOCK-STRAPS. THE S. H. WEYMORE CO., New York, N. Y. Filed May 16, 1905.

CENTURY

The word "CENTURY."

SER. No. 5,890. WHEAT-FLOUR. GWINN BROS. & CO., Huntington, W. Va., and Washington Court-House, Ohio. Filed May 17, 1905.

The Aldine device comprising a dolphin entwined about the stem of an anchor.

SER. No. 5,967. LINIMENT FOR EXTERNAL USE ON MAN OR BEAST. P. L. HOOVER & BROS., Carlisle, Ind. Filed May 18, 1905.

The head of a horse and that of a steer inclosed by a circular border.

SER. No. 6,000. SAWS. GEORGE NATHAN CLEMSON, Middletown, N. Y. Filed May 18, 1905.

The representation of a star surrounded by a circle.

SER. No. 6,020. PAPER BAGS. JOHN CLOCHESSY, New York, N. Y. Filed May 18, 1905.

WHALE BONE

The word "WHALEBONE" inclosed in an ellipse.

SER. No. 6,024. MALT EXTRACTS. THE TROMMER COMPANY, Fremont, Ohio. Filed May 18, 1905. Used ten years.

TROMMER

The arbitrary word "TROMMER."

SER. No. 6,066. POTASH, LYE, AND CAUSTIC SODA. A. MEISELSON'S SONS, Albany, N. Y. Filed May 19, 1905.

DAISY

The word "DAISY."

SER. No. 6,135. LEATHER BOOTS, SHOES, AND SLIPPERS. PRESTON B. KEITH SHOE CO., Brockton, Mass. Filed May 20, 1905.

The word "KONQUEROR."

SER. No. 6,219. WHISKY. REMMER B. HOMMERDOLL, Baltimore, Md. Filed May 22, 1905.

A rectangular background bearing a pictorial representation of the cruiser Maryland, the words "CRUISER MARYLAND," and a row-boat inclosed in an oval border and the words "FIRST IN LINE" and "PURE OLD MARYLAND RYE."

SER. No. 6,294. WHISKY. LOUIS ROSENWINE, Chicago, Ill. Filed May 22, 1905.

ROCKY MOUNTAIN

The words "ROCKY MOUNTAIN" and the representation of a circular panel, on which appears a mountain scene with rocks and trees in the foreground and the sun rising between the mountains.

SER. No. 6,329. HOSIERY. COOPER, WELLS & CO., St. Joseph, Mich. Filed May 23, 1905.

"Iron Clad"

The words "IRON CLAD" inclosed within quotation-marks, upon scroll-like panels at opposite sides of a central circular panel comprising concentric rings, within the center of which is shown the pictorial representation of a warship. The words "COOPER, WELLS & CO. ST. JOSEPH, MICH." and "ST. JOE KNIT SEAMLESS HOSIERY" appear within the concentric rings.

SER. No. 6,353. REMEDY FOR CROUP AND COLDS. ROBERT P. MENARD, Macon, Ga. Filed May 23, 1905. Used ten years.

MENARD'S French Croup Suet

The words "MENARD'S FRENCH CROUP SUET."

SER. No. 6,431. COVERT CLOTHS, VENETIANS, BROADCLOTHS, AND CHEVIOTS. ASCHER BROS., New York, N. Y. Filed May 24, 1905.

MOHEGAN

The word "MOHEGAN," mounted upon a panel.

SER. No. 6,546. WHISKY. L. W. LEVY & CO., Galveston, Tex. Filed May 24, 1905. Used ten years.

STONY FORD

The words "STONY FORD."

SER. No. 6,550. CANNED FRUITS AND VEGETABLES. PRATT-LOW PRESERVING CO., San Jose, Cal. Filed May 24, 1905.

DAFFODIL

The word "DAFFODIL," associated with a representation of a bunch of daffodils.

SER. No. 6,551. CARAMELS AND CANDIES. AMERICAN CARAMEL CO., Lancaster, Philadelphia, and York, Pa. Filed May 25, 1905.

P. C. W.

The letters "P. C. W." inclosed in a rectangular border formed of parallel lines.

SER. No. 6,553. CARAMELS AND CANDIES. AMERICAN CARAMEL CO., Lancaster, Philadelphia, and York, Pa. Filed May 25, 1905.

KEYSTONE CONFECTIONS

The representation of a keystone with a key appearing thereupon, associated with the words "KEYSTONE CONFECTIONS," all inclosed in a rectangular border.

SER. No. 6,751. CIGARETTES. SOCIÉTÉ ANONYME "LE KHÉDIVE," Brussels, Belgium, and Paris, France. Filed May 26, 1905.

The head of the late Khedive Tewfik I in a crown-surmounted circular frame, the words "LE KHÉDIVE," and the pictorial representation of two fighting cocks, associated with which are the words "MANUFACTURED IN EGYPT," the words "MANUFACTURE DE CIGARETTES EGYPTIENNES" arranged on a panel, the words "PAR AUTORISATION SPÉCIALE DE SON ALTESSE" arranged on a panel, the words "LA FLEUR DES TABACS D'ORIENT" arranged on a panel, the words "VENTE DANS TOUTES LES BONNES MAISONS" arranged on a panel, the abbreviation, word, and numerals "EXP. PARIS 1889," representation of medals, an escutcheon bearing the words "PAR LETTRE PATENTE FOURNISSEUR DE LA MAISON DE S. A. LE KHÉDIVE," a sphynx, the words "ALEXANDRIE & CAIRE," pyramids, the word "EGYPTE," the name "ED. LAURENS," the words "FOURNISSEUR DU GOUVERNEMENT FRANÇAIS," the facsimile signature "E. LAURENS," and a Turkish inscription in an oval frame, the whole surrounded by a rectangular ornamental frame.

SER. No. 7,030. HATS AND CAPS. EDWARD M. KNOX, New York, N. Y. Filed May 29, 1905.

A fanciful shield having two falcons rampant thereagainst. Centrally of the shield is a representation of a falcon, while in one corner of the shield is arranged a checkered surface. Above the shield is a representation of a falcon standing on a perch. Above this latter falcon is a scroll. Beneath the shield is a second scroll having thereon the words "MOVED BY PROFICIO." Beneath this second scroll are the words "KNOX NEW YORK."

SER. No. 7,043. LIQUID DRIERS. PRATT & LAMBERT, Buffalo, N. Y. Filed May 29, 1905. Used ten years.

Pratt's Patent Liquid Dryer.

The words "PRATT'S PATENT LIQUID DRYER."

SER. No. 7,051. REMEDIES FOR RHEUMATISM FOR INTERNAL AND EXTERNAL USE. HOT SHOT MEDICINE CO., Kane, Pa. Filed May 30, 1905.

The words "HOT SHOT" and a pyramid of shot in red color.

SER. No. 7,166. WOMEN'S, MISSES', AND CHILDREN'S SKIRTS OF ALL DESCRIPTIONS. M. GOLDMAN & CO., New York, N. Y., and Cleveland, Ohio. Filed June 1, 1905.

The representation of a butterfly and the words "THE BUTTERFLY SKIRT."

SER. No. 7,274. STOGIES. J. WILLIAMS & BROS., Meyersdale, Pa. Filed June 2, 1905.

The representation of a tobacco-leaf, upon which are arranged the words "ORIGINAL MEYERSDALE SEED STOGIES."

SER. No. 7,356. REMEDY FOR CATARRH, TUBERCULOSIS, AND ALLIED DISEASES. THE MISSIONAL BALSAM COMPANY, San Francisco and Palo Alto, Cal. Filed June 3, 1905.

A face view of a nun or sister of a Roman Catholic religious order, clothed in her appropriate costume, bearing upon the portion covering the breast the representation of a red Latin cross, a halo being shown back of her head and beside and partly in front of her an oval shield, and above her head the words "MARVELOUS BALSAM" and below her feet the words "ICH DIENE."

SER. No. 7,506. LADIES' SHOES. HAMEL & COMPANY, Newark, N. J. Filed June 6, 1905.

Her Majesty

The words "HER MAJESTY."

SER. No. 7,543. ELECTRIC MOTORS. BARTH, WYGANT & BROWN, Hornellsville, N. Y. Filed June 6, 1905.

ROYAL

The word "ROYAL."

SER. No. 7,596. SHADE-CLOTHS. AMORY, BROWNE & CO., Boston, Mass. Filed June 7, 1905.

FORTUNE

A wheel with a wing attached thereto in connection with the word "FORTUNE."

SER. No. 7,722. MEDICINES FOR PURIFYING THE BLOOD. THE M.I.S.T. CO., Toledo, Ohio. Filed June 9, 1905.

The capital letters "M.I.S.T." spaced by periods and associated with the words, abbreviation, and numeral "No. 2 NERVE TONIC TOLEDO, OHIO," arranged within a rectangular figure having a fancy border and a portrait of S. B. McMurray, deceased, displayed within an oval panel disposed within the rectangular figure at the left of said letters and words.

SER. No. 7,753. CHOCOLATES AND BONBONS. R. L. FERRY CO., Boston, Mass. Filed June 9, 1905.

Samoset

The word "SAMOSET" with the first letter "S" crossed by the representation of an arrow.

SER. No. 7,723. MEDICINES FOR PURIFYING THE BLOOD. THE M.I.S.T. CO., Toledo, Ohio. Filed June 9, 1905.

The word "M.I.S.T.," in capital letters, arranged across the face of a waterfall and represented as emerging from the mist rising therefrom, said waterfall being displayed within a rectangular figure and having at its left a mass of rocks, at its right a tablet projecting from a bed of flowers and bearing the words "THE ONLY SCROFULA, CATARRH, BLOOD, LIVER AND KIDNEY MEDICINE ON EARTH," and across its bottom, to the right of the rocks, a rectangular panel bearing the words "MURRAY'S INFALLIBLE SYSTEM TONIC," to the left of which panel is the word "MEANS." A triangular panel appears within the lower left-hand corner of the figure, in which is represented leaved branches.

SER. No. 7,754. STERLING-SILVER FLAT WARE, HOLLOW WARE, AND TABLEWARE. THEODORE W. FOSTER & SON CO., Providence, R. I. Filed June 9, 1905.

A flag having a triangular portion cut out from its outer or fly end and borne by a staff, the upper portion of which is shown, and upon the flag are carried the letters and character "F & B."

SER. No. 7,757. WATER SPRAYERS, SHOWERS, AND PARTS, FIXED OR PORTABLE. J. P. BOOTH MFG. CO., Boston, Mass. Filed June 9, 1905.

The Brasscrafters

The words "THE BRASSCRAFTERS."

SER. No. 7,766. BATTLES OF SQUARE OR CUBICAL FORM. THE COOK & BERNHEIMER CO., New York, N. Y. Filed June 9, 1905. Used ten years.

MOUNT VERNON

The words "MOUNT VERNON."

SER. No. 7,778. DULL-BLACK AND COLORED CALF LEATHER. BARNET LEATHER CO., New York, N. Y. Filed June 9, 1905.

OKAY

The word "OKAY."

SER. No. 7,857. UNDERSHIRTS AND DRAWERS AND UNION SUITS. THE DEIMEL LINEN-MESH SYSTEM COMPANY, San Francisco, Cal. Filed June 10, 1905.

The representation of a spinning-wheel contained within the letter "D," wherein the letter "D" is of conventionalized form, consisting of the letter "L" and an elongated curve constituting a monogram of the letters "L" and "D," the spinning-wheel provided with a distaff full of flax resting on the horizontal part of said conventionalized letter or monogram, the words "DR. DEIMEL'S LINEN-MESH UNDERWEAR" being in the curved portion thereof.

SER. No. 8,062. CONDITION-POWDERS FOR THE CURE AND ALLEVIATION OF AILMENTS OF ANIMALS, STOCK, AND POULTRY. FREDERIC G. BOYNTON, Boston, Mass. Filed June 13, 1905.

The words "SHERIDAN'S CAVALRY" and the representation of General Sheridan mounted upon a horse and apparently leading a cavalry charge in the foreground of a minor scene in which the representations of mounted soldiers appear, this matter being surrounded by an ornamental border of harmonizing design flanked by the heads of a cow, horse, chicken, and hog, each inclosed within circular borders, there being also a scroll extending between the borders of the two lower heads.

SER. No. 8,076. DYESTUFF. CASSELLA COLOR COMPANY, New York, N. Y. Filed June 14, 1905.

Oxydiaminogene

The word "OXYDIAMINOGENE."

SER. No. 8,515. GARTERS. CHRISTINA J. RIDLEY, New York, N. Y. Filed June 19, 1905. Used ten years.

New York

The words "NEW YORK."

SER. No. 8,619. NEUFCHATEL CHEESE. W. A. LAWRENCE & SON, Chester, N. Y. Filed June 19, 1905. Used ten years.

The figure of a cow.

SER. No. 8,690. BASE-BALLS. A. J. REACH CO., Philadelphia, Pa. Filed June 21, 1905. Used ten years.

OFFICIAL
American Association

The words "OFFICIAL AMERICAN ASSOCIATION."

SER. No. 9,005. SOUVENIR ARTICLES, CONSISTING OF BADGES, BROOCHES, MEDALS, PINS, CHARMS, AND BUTTONS. THE C. M. ROSSMAN CO., Attleboro, Mass. Filed June 24, 1905.

The letters "C M R" arranged as a monogram and inclosed in a diamond.

SER. No. 9,010. CANDY. REYHER & BROTHERS, INCORPORATED, Pittsburg, Pa. Filed June 24, 1905.

A circular seal having a serrated edge and bearing the word "REYHER'S" in ornamental script-like type.

SER. No. 9,084. CORN-FILE. BYRON PRINE, Detroit, Mich. Filed June 26, 1905.

"Kuro-Korno"

The words "KURO KORNO" inclosed in quotation-marks.

SER. No. 9,182. SYRUP AND MOLASSES. FRANCIS H. LEGGETT & COMPANY, New York, N. Y. Filed June 27, 1905.

EMPRESS

The word "EMPRESS."

SER. No. 9,185. CANNED LOBSTERS, MACKEREL, CLAMS, AND CLAM-CHOWDER. PORTLAND PACKING COMPANY, Portland, Me. Filed June 27, 1905. Used ten years.

STAR

The word "STAR."

SER. No. 9,259. VARNISHES AND JAPANS. VALENTINE & COMPANY, New York, N. Y. Filed June 27, 1905.

LAWSON

The representation of a shield bearing a monogram of the letters "L V Co" and a decorative scroll extending on each side of the shield bearing the word and figures "INCORPORATED 1882," with the word "LAWSON" above the shield.

SER. No. 9,261. IRON AND STEEL TUBES. SPANG, CHALFANT & Co., Pittsburg, Pa. Filed June 27, 1905.

"ETNA"

The word "ETNA" inclosed in quotation-marks within a diamond-shaped figure.

SER. No. 9,288. COFFEE. A. SCHILLING & COMPANY, San Francisco, Cal. Filed June 27, 1905. Used ten years.

Schilling's Best

The words "SCHILLING'S BEST."

SER. No. 9,292. SPICES. A. SCHILLING & COMPANY, San Francisco, Cal. Filed June 27, 1905. Used ten years.

Schilling's Best

The arbitrary words "SCHILLING'S BEST."

SER. No. 9,299. SOAP IN LIQUID, SOLID, PLASTIC, AND GRANULAR FORM. GEO. A. SCHMIDT, Chicago, Ill. Filed June 21, 1905.

IT

The word "IT."

SER. No. 9,328. OUTER SHIRTS AND DRESS-SHIRTS, COLLARS, AND CUFFS. CLUETT PEABODY & CO., Troy, N. Y. Filed June 28, 1905.

CLUPECO

The word "CLUPECO."

SER. No. 9,364. EXPLOSIVES. MASURITE EXPLOSIVE COMPANY, Masury, Ohio. Filed June 26, 1905.

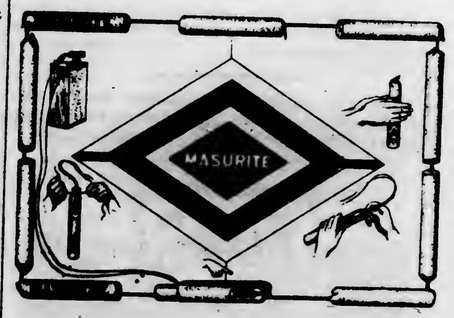

A series of concentric diamond-shaped figures bearing the word "MASURITE" inclosed in a rectangular border of separated cylinders, two of which bear the word "MASURITE." Within the border are shown an electric battery, a cylinder being rolled by two hands, a cylinder held in a hand with an exploder being inserted therein by another hand, two hands tying a cylinder after an exploder has been inserted therein, and a hand pointing to the central lower cylinder of the rectangular border, which cylinder shows an exploder therein connected by electric wires with the battery.

SER. No. 9,370. SMOKING AND CHEWING TOBACCOS. MICHIGAN TOBACCO WORKS, Adrian, Mich. Filed June 29, 1905.

SER. No. 9,870.

The words "RED AXE" and the pictorial representation of an ax having a red blade and an armored hand grasping the handle of the ax.

SER. No. 9,462. BLEACHED, UNBLEACHED, PRINTED, AND DYED TEXTILE FABRICS. THE RIDDLESTONE MANUFACTURING COMPANY, Riddlestone and Philadelphia, Pa. Filed June 30, 1905.

A representation of the facsimile signature of the original firm "WM. SIMPSON & SONS."

SER. No. 9,467. BLEACHED, UNBLEACHED, PRINTED, AND DYED TEXTILE FABRICS. THE RIDDLESTONE MANUFACTURING COMPANY, Riddlestone and Philadelphia, Pa. Filed June 30, 1905. Used ten years.

A rectangular cross-hatch border forming a central panel, on which is a second panel in contrasting color, associated with the words "DE LAINE FINISH."

SER. No. 9,476. BLEACHED, UNBLEACHED, PRINTED, AND DYED TEXTILE FABRICS. THE RIDDLESTONE MANUFACTURING COMPANY, Riddlestone and Philadelphia, Pa. Filed June 30, 1905.

A shield-like panel bearing the term "SILK C."

SER. No. 9,478. PRINTED AND DYED TEXTILE FABRICS. THE RIDDLESTONE MANUFACTURING COMPANY, Riddlestone and Philadelphia, Pa. Filed June 30, 1905.

The word "FROCKS."

SER. No. 9,511. HARD-BOILED CANDY. KINGS BROTHERS CO., Springfield, Mass. Filed June 30, 1905.

The silhouette representation of an automobile bearing a banner with the letter "K" thereon and an occupant in the automobile, associated with the words "AUTO POPS."

SER. No. 9,586. WHISKY. GREEN BROOK DISTILLING COMPANY, Cincinnati, Ohio. Filed July 1, 1905.

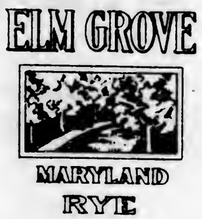

The words "ELM GROVE MARYLAND RYE" and a rectangular panel bearing the representation of a grove with a road therethrough on which is an automobile and the figures of a man and woman seated beneath one of the trees.

SER. No. 9,655. BLEACHED, UNBLEACHED, PRINTED, AND DYED TEXTILE FABRICS. THE RIDDLESTONE MANUFACTURING COMPANY, Riddlestone and Philadelphia, Pa. Filed July 3, 1905. Used ten years.

A rectangular-shaped border having semicircular inner border portions united to the sides near each end inclosing a representation of a braided background, associated with the words "DE LAINE FINISH."

SER. No. 9,681. CIGARS. S. S. PIERCE CO., Boston, Mass. Filed July 3, 1905.

The words "BODAS DE ORO" and the representation of a wedding party coming out of a church, with carriages and trees in the background.

SER. No. 9,844. INSECTICIDES. FAITH L. HANLIN, Chicago, Ill. Filed July 6, 1905.

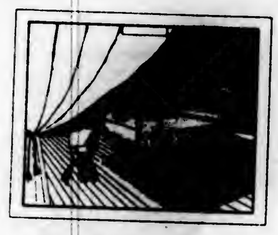

The representation of the interior of a bedroom inclosed in a rectangular frame with a portière in front and drawn to one side and showing a bed with a rug in the foreground with dead bugs under the bed and a bug on the bed holding a white flag, and on the rug appear the words "THE TOCO EXTERMINATOR FOR BED BUGS. USE ONCE A YEAR AND THE PLEASURE IS ALL YOURS," and in the foreground is also shown a shield supported by three rifles, against which shield is a bug holding a white flag.

SER. No. 9,900. DOUBLE-CANED CHAIRS AND ROCKERS. THE DELAWARE CHAIR CO., Delaware, Ohio. Filed July 7, 1905. Used ten years.

The words and abbreviation "THE DELAWARE, O., CHAIR."

SER. No. 9,906. PROPRIETARY COMPOUNDS USED FOR HEADACHE, NEURALGIA, AND SIMILAR COMPLAINTS. EMILE LAUTENBACH, Baltimore, Md. Filed July 7, 1905. Used ten years.

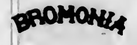

The word "BROMONIA."

SER. No. 9,927. PRINTED AND DYED COTTON TEXTILE FABRICS. THE RIDDLESTONE MANUFACTURING COMPANY, Riddlestone and Philadelphia, Pa. Filed July 8, 1905.

A representation of a lighthouse surrounded by an ornamental border, associated with the words "SILK FINISH VELVETTE."

SER. No. 9,982. LEATHER BOOTS AND SHOES. EDGAR GOLDSBERRY, Lafayette, Ind. Filed July 10, 1905. Used ten years.

SER. No. 9,982.

The representation of a diamond or lozenge shaped figure in red with the words "THE MODEL" in white thereon.

SER. No. 10,108. HIGH GRADE OF CHEWING-TOBACCO. RYAN-HAMPTON TOBACCO CO., Newburg, Ind. Filed July 11, 1905.

The representation of a straw hat and the words "STRAW HAT," associated with the word "CHEW" above the band, the word "NAVY" beneath.

SER. No. 10,175. BLEACHED, UNBLEACHED, PRINTED, AND DYED TEXTILE FABRICS. THE RIDDLESTONE MANUFACTURING COMPANY, Riddlestone and Philadelphia, Pa. Filed July 13, 1905. Used ten years.

A representation of a panel having a general oval contour with semicircular projections surrounded by an ornamental border, associated with a central scroll and bearing the words "EXTRA ALPACA FINISH CLOTH."

SER. No. 10,176. BLEACHED, UNBLEACHED, PRINTED, AND DYED TEXTILE FABRICS. THE RIDDLESTONE MANUFACTURING COMPANY, Riddlestone and Philadelphia, Pa. Filed July 13, 1905. Used ten years.

A rectangular border inclosing an elongated oval inner border having arrow-like terminations, the two borders being embraced at their sides by an ornamental clasp, associated with the words "SOFT FINISH."

SER. No. 10,253. LIQUID PREPARATION TO BE TAKEN INTERNALLY AS A REMEDY FOR PULMONARY DISEASES, INTESTINAL CATARRH, DYSENTERY, AND INFLAMMATION OF THE LIVER AND MAY BE APPLIED EXTERNALLY FOR WOUNDS AND BURNS. V. DE LEO, Tampa, Fla. Filed July 13, 1905.

SER. No. 10,253.

V. & L.
EPOCALINO

The word "EPOCALINO," associated with the representation of a four-leaf clover and the letters "V. DE L."

SER. No. 10,264. BROADAXES, ADZES, HATCHETS, AND BOYS' AND HUNTERS' AXES. EVANSVILLE TOOL WORKS, Evansville, Ind. Filed July 13, 1905.

The representation of the head of a fox.

SER. No. 10,302. HAIRCLOTH CHEVIOTS. THE RIDGTOWER MANUFACTURING COMPANY, Riddystone and Philadelphia, Pa. Filed July 14, 1905. Used ten years.

A ribbon scroll bearing the words "HAIR CLOTH CHEVIOTS," associated with the words "WM. SIMPSON & SONS."

SER. No. 10,307. BLEACHED, UNBLEACHED, PRINTED, AND DYED TEXTILE FABRICS. THE RIDGTOWER MANUFACTURING COMPANY, Riddystone and Philadelphia, Pa. Filed July 14, 1905. Used ten years.

A banner-shaped border upon the face of which are the words "WM. SIMPSON & SONS" and "LINEN FINISH."

SER. No. 10,308. BLEACHED, UNBLEACHED, PRINTED, AND DYED TEXTILE FABRICS. THE RIDGTOWER MANUFACTURING COMPANY, Riddystone and Philadelphia, Pa. Filed July 14, 1905. Used ten years.

A banner-shaped border bearing upon the face thereof the words "WM. SIMPSON & SONS" and "INDIA SILK STYLES."

SER. No. 10,320. REMEDY FOR HOG-CHOLERA. JOSEPH J. PAYER, Hamilton, Ohio. Filed July 14, 1905.

CORN BELT

The words "CORN BELT."

SER. No. 10,333. CHARCOAL. BERNARD S. FEINER, Springfield, Mass. Filed July 14, 1905.

A black seal having thereon a representation of a volcano partially inclosed by a triangular-shaped chevron, associated with the words "FEINER'S QUICK FIRE CHARCOAL" on said seal and chevron.

SER. No. 10,363. DRAPERY AND UPHOLSTERY CRETONNES. THE RIDGTOWER MANUFACTURING COMPANY, Riddystone and Philadelphia, Pa. Filed July 15, 1905.

A series of panels, in one of which is a conventional wing-like figure, associated with conventional representations of a lotus, and the words "EGYPTIAN" and "CRETONNE" in the other panels.

SER. No. 10,364. PRINTED AND DYED TEXTILE FABRICS. THE RIDGTOWER MANUFACTURING COMPANY, Riddystone and Philadelphia, Pa. Filed July 15, 1905.

A representation of three classically-draped women beside a sarcophagus in an attitude of mourning.

SER. No. 10,375. CHROME-TANNED LEATHER. P. RIELLY & SON, Newark, N. J. Filed July 15, 1905.

The word "NIKETES."

SER. No. 10,452. TAPESTRY, BRUSSELS, AND VELVET CARPETS. ROXBURY CARPET COMPANY, Boston, Mass. Filed July 17, 1905. Used ten years.

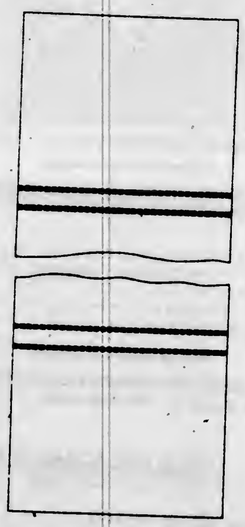

A pair of interrupted black lines situated near each edge of a carpet extending longitudinally of the fabric of the carpet from end to end upon the back of the same.

SER. No. 10,552. SHIRTINGS. THE RIDGTOWER MANUFACTURING COMPANY, Riddystone and Philadelphia, Pa. Filed July 19, 1905. Used ten years.

The word "ANCHOR," a representation of an anchor, a sailor leaning against a snubbing-post, and a background showing ships at sea, associated with the words "SHIRTINGS. WM. SIMPSON & SONS. PHILADELPHIA." and "WARRANTED FAST COLORS," the whole inclosed in a border representing anchors and chains.

SER. No. 10,690. SALVE. BICKMORE GALL CURE COMPANY, Old Town, Me. Filed July 22, 1905. Used ten years.

WORK THE HORSE

The words "WORK THE HORSE."

SER. No. 10,796. OIL-CUPS. THE LUNKENHEIMER COMPANY, Cincinnati, Ohio. Filed July 26, 1905. Used ten years.

PIONEER

The word "PIONEER."

SER. No. 10,916. CALFSKIN, PATENT-LEATHER, AND WAXED CALF. DOERR & REINHART, Worms, Germany. Filed July 27, 1905.

The representation of a shield having an upper panel, in which appear representations of a key and a star, and a lower panel, in which appear the letters, character, and word "D&R WORMS."

SER. No. 10,929. WIRE USED IN MAKING BOOTS AND SHOES. UNITED SHOE MACHINERY COMPANY, Boston, Mass. Filed July 12, 1905.

SER. No. 10,929.

IVI

The letters "I V I" arranged in a horizontal line in the sequence indicated.

SER. No. 10,931. EYELETS AND LACING-HOOKS. UNITED FAST COLOR EYELET COMPANY, Boston, Mass. Filed July 13, 1905.

A figure in the shape of a diamond.

SER. No. 10,962. ROPE. COLUMBIAN ROPE COMPANY, Auburn, N. Y. Filed July 26, 1905.

The representation of a coil of rope having upon one end of the coil a pictorial representation of the head and shoulders of a woman wearing upon her head a cap on the band of which is inscribed the word "COLUMBIA." Just above the head is represented a section of rope with frayed ends. Below the figure are the words and abbreviations "COLUMBIAN ROPE CO. AUBURN, N. Y."

SER. No. 10,979. WHISKY. SAMUEL WESTHEIMER & SON WHOLESALE LIQUOR CO., St. Joseph, Mo. Filed July 26, 1905.

The words "DOUBLE STANDARD" and the representation of three medallions, one produced in gold containing the head of Abraham Lincoln, one produced in silver bearing the head of Gen. George Washington, and the other produced in gold bearing the head of Andrew Jackson, the medallions being surmounted by a scroll held in the beak of an eagle and bearing the words "HONESTY PURITY EQUALITY," so located upon said scroll as to come over the medallions, beneath which medallions are the words "THE MONEY OF OUR HEROES." Above the first medallion the words "ABRAHAM LINCOLN," below the second the name "GEN. GEORGE WASHINGTON," and above the third medallion the name "ANDREW JACKSON" appear.

SER. No. 11,000. ANTISEPTIC REMEDY FOR INTERNAL AND EXTERNAL USE FOR MAN AND BEASTS FOR PAINS, ACHES, CUTS, BRUISES, RHEUMATISM, INDIGESTION, DIARRHEA, AND CUTANEOUS TROUBLES. HENRY C. POPE, Birmingham, Ala. Filed July 29, 1905.

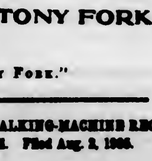

A circular figure of contrasting color bounded by a circle and subdivided into a central square and four equal segments, the letters "P. P." appearing on the square and the numerals "1888" appearing severally on the respective segments.

SER. No. 11,093. PISTOLS. COLT'S PATENT FIRE ARMS MANUFACTURING COMPANY, Hartford, Conn. Filed Aug. 1, 1905. Used ten years.

COLT'S PT. F.A.MFG.CO.
HARTFORD.CT.U.S.A.

The words and abbreviations "COLT'S PT. F. A. MFG. CO. HARTFORD, CT. U. S. A."

SER. No. 11,094. PISTOLS. COLT'S PATENT FIRE ARMS MANUFACTURING COMPANY, Hartford, Conn. Filed Aug. 1, 1905.

(NEW SERVICE)

The words ("NEW SERVICE"), and these have been used inclosed for distinction by parentheses.

SER. No. 11,174. WHISKY. VAN VLEET-MANSFIELD DRUG CO., Memphis, Tenn. Filed Aug. 3, 1905.

STONY FORK

The words "STONY FORK."

SER. No. 11,208. TALKING-MACHINE RECORDS. THE EDGLEWOOD CO., Chicago, Ill. Filed Aug. 2, 1905.

SILVER TONGUED

The words "SILVER TONGUED."

SER. No. 11,212. RIDING AND WALKING PLOWS. PARLIN & ORENDORFF CO., Canton, Ill. Filed Aug. 3, 1905.

SER. No. 11,212.

P. & O. CANTON PLOWS

The expression "P. & O. CANTON PLOWS."

SER. No. 11,253. BLEACHED, UNBLEACHED, PRINTED, AND DYED TEXTILE FABRICS. THE HOSTMANN MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa. Filed Aug. 4, 1905.

A representation of a lighthouse surrounded by water, a sailing vessel and steamer being represented, respectively, at the right and left of the lighthouse and the moon being represented as shining through clouds, associated with the words "EDDYSTONE" and "WM. SIMPSON & SONS," the whole being surrounded by an ornamental border.

SER. No. 11,296. VELVETEENS. A. WERTHEIMER AND BROTHER, New York, N. Y. Filed Aug. 5, 1905.

Boulevard

The word "BOULEVARD" in script letters with a paraph under the greater part thereof.

SER. No. 11,363. GUITARS AND MANDOLINS. LYON & HEALY, Chicago, Ill. Filed Aug. 7, 1905.

JUPITER

The word "JUPITER."

SER. No. 11,385. PIANOS. HAYNES BAUMEISTER, New York, N. Y. Filed Aug. 7, 1905. Used ten years.

Baumeister

The word "BAUMEISTER."

SER. No. 11,478. CLEANSING AND SCOURING PREPARATION IN JELLY, FLUID, PASTE, AND POWDER FORM. PALAMI COMPANY, Boston, Mass. Filed Aug. 10, 1905.

Palämi

The word "PALÄMI" in script.

SER. No. 11,588. LINIMENT FOR RHEUMATISM, NEURALGIA, SPRAINS, BRUISES, AND OTHER PURPOSES. JAMES M. HOOD, Albertville, Ala. Filed Aug. 11, 1905.

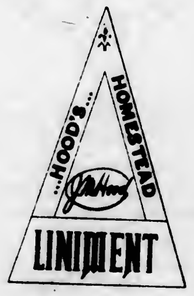

A triangular-shaped figure with the name "J. M. HOOD" in script writing inclosed in a paraph or flourish and arranged within the triangle and the words "HOOD'S HOMESTEAD LINIMENT" inscribed upon the sides and base of the triangle.

SER. No. 11,586. PAINT AND VARNISH REMOVER. TOCH BROTHERS, New York, N. Y. Filed Aug. 12, 1905.

ALMATOX

The word "ALMATOX."

SER. No. 11,578. VARNISHES. TOCH BROTHERS, New York, N. Y. Filed Aug. 12, 1905.

A rectangular panel having thereon the representation of an owl, a chimney from which smoke is issuing, and a rising sun, all being inclosed in a wreath and associated with the word "OWL," in the letter "O" of which appears an owl's head.

SER. No. 11,587. WHITE LEAD. TOCH BROTHERS, New York, N. Y. Filed Aug. 12, 1905. Used ten years.

The representation of a rising sun, and a monogram of the letters "T B," associated with the words "ARCTIC WHITE LEAD WARRANTED THE BEST SUBSTITUTE FOR PERFECTLY PURE LEAD."

SER. No. 11,616. PLOWS. A. BALDWIN & CO., LIMITED, New Orleans, La. Filed Aug. 12, 1905.

SOUTHERN BELLE

The words "SOUTHERN BELLE."

SER. No. 11,673. BLACK AND COLORED INKS IN FLUID, CRYSTAL, AND POWDERED FORM. ALBERT TURNER, Hulme Town, Manchester, England. Filed Aug. 15, 1905.

ORION.

The word "ORION."

SER. No. 11,776. HEEL-PROTECTORS. FRANK W. WHITCOMB, Boston, Mass. Filed Aug. 15, 1905.

The representation of a V-shaped piece of metal formed upon a flat base and having a hole therethrough and beside the V-shaped piece a nail standing erect on the point thereof.

SER. No. 11,818. EJECTORS. THE UNITED INJECTOR CO., New York, N. Y. Filed Aug. 19, 1905.

H-D

The letters "H" and "D" in Gothic type connected by a hyphen.

SER. No. 11,854. VETERINARY REMEDY FOR THE CURE OF FISTULA, POLL-EVIL, LUMP-JAW, SPAVIN, RINGBONE, SWEENY, CURBS, SPLINTS, THOROUGHPIN, COLLAR-BOILS, DISTEMPER, SPRAINS, SWELLING, CUTS, AND SORES IN HORSES AND CATTLE. HAMER'S SURE CURE COMPANY, Vermont, Ill. Filed Aug. 21, 1905.

A representation of the head and fore shoulders of a horse in a solid color having behind its ears and on its shoulder the representation of a sore with pus running therefrom in a contrasting color.

SER. No. 11,902. COTTON PIECE GOODS. EAGLE & PHENIX MILLS, Columbus, Ga. Filed Aug. 22, 1905.

The words "KIMONO SUITINGS" and the representation of a woman dressed in Japanese costume

SER. No. 11,913. WHISKY. MARVIN & MCANDREWS, Baltimore, Md. Filed Aug. 22, 1905.

SER. No. 11,918.

CELTIC CLUB

The arbitrarily-selected word-symbol "CELTIC CLUB."

SER. No. 11,944. PILLS TO BE USED FOR STOMACH DISORDERS, LIVER TROUBLE, AND IMPURE BLOOD, AND COUGH MEDICINE. SAMUEL SOLOMAN, New York, N. Y. Filed Aug. 23, 1905.

A representation of two fern-leaves and a monogram of the letters "B M C," the whole inclosed in an oval-shaped wreath of oats and associated with the words "BRADFORD'S HOME REMEDIES," appearing in said wreath.

SER. No. 11,954. DRESS-SHIRTS AS DISTINGUISHED FROM UNDERSHIRTS. ELIAS BROS. & CO., New York, N. Y. Filed Aug. 24, 1905. Used ten years.

Eureka

The word "EUREKA" in script letters in an inclined line and with a paraph under the word.

SER. No. 12,008. DYSPEPSIA-CAKES. HARALD A. C. DAHL, New York, N. Y. Filed Aug. 26, 1905. Used ten years.

The representation of the head of a child and an open box of cakes with the words "DAHL'S DYSPEPSIA CAKES" appearing on the box and on the cover therefor and the words "THIS IS WHAT YOU WANT" appearing at one side of the box.

SER. No. 12,009. DYSPEPSIA-CAKES. HARALD A. C. DAHL, New York, N. Y. Filed Aug. 26, 1905. Used ten years.

DAHL'S DYSPEPSIA CAKES.
ANTI DIETETICUS

The representation of a rectangular cake with the words "DAHL'S DYSPEPSIA CAKES" and "PANIS DIETETICUS" appearing thereon.

SER. No. 12,014. PRINTED AND DYED TEXTILE FABRICS. THE KEYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa. Filed Aug. 26, 1905. Used ten years.

The representation of an ornamental scroll bearing the words "WM. SIMPSON & SONS" with the words "FAST BLACK" below, associated with an obverse and reverse representation of a medal, the obverse bearing the words "AMERICAN INSTITUTE NEW YORK" and a representation of the coat of arms of said institute and the reverse bearing the words "AWARDED TO WM. SIMPSON & SONS FOR SUPERIOR CAMBRIC PRINTS 1869," the whole being inclosed in a border.

SER. No. 12,037. OLIVE-OIL. ANTONIO SUCCA, New York, N. Y. Filed Aug. 26, 1905.

The representation of an eagle standing erect with outstretched wings and a crown above its head, all arranged on a shield.

SER. No. 12,041. OINTMENT. RACHEL B. RAY, Eureka Springs, Ark. Filed Aug. 26, 1905.

The words "MIGHTY TO SAVE," associated with a portrait of the applicant.

Sm. No. 12,062. DRIED FRUITS, CANNED FRUITS, AND VEGETABLES. THE C. S. MESSER MERCANTILE COMPANY, Denver, Colo. Filed Aug. 26, 1905.

SOLITAIRE

The word "SOLITAIRE" in connection with the representation of a solitaire diamond ring.

Sm. No. 12,159. BEVERAGE IN EXTRACT FORM FOR THE CURE AND ALLEVIATION OF AILMENTS OF THE BLOOD, BRAIN, BODY TISSUE, AND NERVES. ARMAND G. THOMPSON, Chicago, Ill. Filed Sept. 2, 1905.

The portrait of the applicant, Armand G. Thompson, associated with his facsimile signature and the word "PHOSPERALE."

Sm. No. 12,161. PRETZELS. JOSEPH S. BACHMAN, Reading, Pa. Filed Sept. 2, 1905.

A blue oval with a serrated edge, a circle inside of said serrations, and a smaller centrally-disposed white oval with a serrated edge and the representation of a pretzel thereon. Above the smaller oval appears the word "BACHMAN'S" and below it the word and abbreviation "READING, PA."

Sm. No. 12,208. EGG NOODLES AND MACARONI. C. F. MUHLENS Co., Jersey City, N. J. Filed Sept. 2, 1905.

The words "WHITE LEGHORN" arranged in the form of an arc above an elliptical border, in which appears a design comprising the representation of two hands breaking an egg over a plate and a bunch of wheat-stalks fastened together just above the top of the border by a scroll-like ribbon tied in a knot and surrounding the top and sides of the border.

Sm. No. 12,188. WHEAT-FLOUR. THE SWEET SPRINGS MILLING COMPANY, Sweet Springs, Mo. Filed Sept. 2, 1905.

A brand in a circular frame containing the representation of a fox below which in a shield-like device are the words and abbreviation "RED FOX SWEET SPRINGS, MO.," around the upper section the words and abbreviation "SWEET SPRINGS MILLING CO." on one side in a scroll the word "BEAUTIFUL," and on the opposite in a scroll, the words "ROLLER PATENT."

Sm. No. 12,200. WHEAT-FLOUR. BAY STATE MILLING COMPANY, Winona, Minn., and Boston, Mass. Filed Sept. 2, 1905.

The word "WINGOLD," the representation of a mill and elevator in a fancy scroll-like frame, the words and letters "BAY STATE MILLING CO., WINONA, MINN. U. S. A.," and a scroll bearing the words "OUR HIGHEST GRADE PATENT," all surrounded by a fancy border.

Sm. No. 12,284. BLEACHED, UNBLEACHED, PRINTED, AND DYED TEXTILE FABRICS. THE RIVERSIDE MANUFACTURING COMPANY, Biddeford and Philadelphia, Pa. Filed Sept. 5, 1905.

Sm. No. 12,284.

A representation of a lighthouse surrounded by water in which floats a portion of a wreck, associated with the words "EDDYSTONE" and "WM. SIMPSON & SONS," the whole being surrounded by an ornamental border.

Sm. No. 12,366. WASHING-MACHINES. WAGER FOUNDRY AND MACHINE WORKS, Davenport, Iowa. Filed Sept. 8, 1905.

CASCADE

The word "CASCADE."

Sm. No. 12,467. SARDINES. VON BREMEN, MACILVAINE & Co., New York, N. Y. Filed Sept. 11, 1905.

The representation of a body of water containing icebergs and in the background the aurora borealis and in the foreground the word "AURORA."

Sm. No. 12,584. CARBONATED GINGER-ALE. LOWENSTEIN & Co., Atlanta, Ga. Filed Sept. 13, 1905.

The word "CASCADE," in script letters with a paraph, appearing against a red band, the words "GINGER ALE" below and appearing against a background of radiating lines, all being inclosed in a diamond-shaped gilt border.

Sm. No. 12,635. SOAP POWDER COMBINED WITH MINERAL INGREDIENTS. THE CUDAHY PACKING Co., Chicago, Ill., and South Omaha, Nebr. Filed Sept. 15, 1905.

Old Dutch Cleanser

The words "OLD DUTCH CLEANSER," associated with the representation of a woman attired in a short dress and wearing wooden shoes, an apron, and a hood, having one of her sleeves turned up and brandishing a stick, together with the words "CLEANS DIRT MAKES EVERYTHING SPICK AND SPAN."

Sm. No. 12,732. CRACKERS AND WAFERS. RICHMOND BAKING COMPANY, Richmond, Ind. Filed Sept. 18, 1905.

BUTTERNUT

The word "BUTTERNUT."

Sm. No. 12,735. SOAP CHIPS. J. T. KENNY & Co., St. Paul, Minn. Filed Sept. 18, 1905.

POKER BRAND

The words "POKER BRAND."

Sm. No. 12,770. CANDIES OF ALL KINDS. HAZELWOOD COMPANY, LIMITED, Spokane, Wash.; Galena, Ill.; Sioux City, Iowa; New York, N. Y., and Portland, Oreg. Filed Sept. 18, 1905.

Hazelwood

The word "HAZELWOOD" written in script with a paraph thereunder.

Sm. No. 12,806. TOILET WASH FOR THE SKIN. ROSE GLAUS, Crittenden, Ky. Filed Sept. 20, 1905.

A monogram of the letters "R G."

SER. No. 12,848. TOILET AND LAUNDRY SOAP. MAPLE CITY SOAP WORKS, Monmouth, Ill. Filed Sept. 21, 1905.

The words "TWO MAPLE LEAVES," associated with maple-leaves, between which said words are arranged, said leaves bearing the superscription "MAPLE CITY."

SER. No. 12,882. STRONG BLACK PLUG CHEWING-TOBACCO. GILBERT BRO & CO., Murray, Ky. Filed Sept. 21, 1905.

The words "BLACK DIAMOND" and the representation of a black diamond-shaped figure.

SER. No. 12,884. NITRO COMPOUNDS. JOVEITE MANUFACTURING COMPANY, Alexandria, Va. Filed Sept. 21, 1905. Used ten years.

JOVEITE

The word "JOVEITE."

SER. No. 12,886. LEATHER BOOTS AND SHOES. HARRY L. BOOM, Wheeling, W. Va. Filed Sept. 21, 1905.

The representation of a man attired in conventional afternoon walking-costume, wearing a silk hat and carrying a cane, and the hyphenated word "WALK-OVER" extending diagonally across the figure of the man.

SER. No. 12,888. COTTON CLOTH. HEWLETT & LEE, New York, N. Y. Filed Sept. 21, 1905.

The representation of a fictitious or fabulous animal. This animal is represented with uplifted tail curving over its back, teeth displayed, and fore-foot uplifted.

SER. No. 12,894. COTTON CLOTH. HEWLETT & LEE, New York, N. Y. Filed Sept. 21, 1905.

The representation of a Chinese unicorn in the peculiar type and style of Chinese art. The unicorn is represented with uplifted tail and head and with the mouth open in the act of catching a package falling from above.

SER. No. 12,895. COTTON CLOTH. HEWLETT & LEE, New York, N. Y. Filed Sept. 21, 1905.

An enlarged representation of a Chinese coin, on the surface of which are engraved characters in the Chinese language. Through an opening in the center of the coin appear the head and shoulders of a Chinese boy arrayed in the costume of that country and holding in each hand a number of coins of a Chinese type hung on cords.

SER. No. 12,909. STOP AND WASTE COCKS. A. Y. MCDONALD & MORRISON MANUFACTURING COMPANY, Dubuque, Iowa. Filed Sept. 22, 1905.

BIG PYN

The words "BIG PYN," through which is inserted a big pin.

SER. No. 12,935. TOOTH-POWDER. WOODMAN-DAVIS CO., Worcester, Mass. Filed Sept. 23, 1905.

Dr. Woodman's
Pearlozone

The words "DR. WOODMAN'S PEARLOZONE."

SER. No. 12,963. SEEDING-MACHINES. PEORIA DRILL AND SEEDER CO., Peoria, Ill. Filed Sept. 25, 1905.

"MOGUL"

The word "MOGUL" inclosed in quotation-marks.

SER. No. 13,018. SUSPENDERS FOR WEARING-APPAREL. RUDOLPH F. BARTEL, New York, N. Y. Filed Sept. 26, 1905.

Polo

The word "POLO."

SER. No. 13,087. KNITTED COVERS FOR HOT-WATER BOTTLES. GLOVERSVILLE KNITTING CO., Gloversville, N. Y. Filed Sept. 26, 1905.

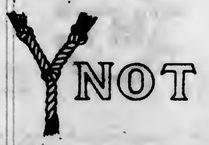

The representation of the letter "Y" constructed in open knitting and provided at the angle formed by the meeting of the inclined upper arms of the letter with a knot, knots also being shown upon each of the said inclined arms and adjacent to the upper ends thereof, associated with the word "NOT."

SER. No. 13,044. CORDIAL FOR BLENDING WHISKIES. ADOLPHUS REBERT, New York, N. Y. Filed Sept. 26, 1905.

The words "CHAVALLIER'S FAMOUS ROYAL BLENDINE" surmounted by the representation of a crown, to the left of which appears the pictorial representation of a lion and to the right of which appears the pictorial representation of a unicorn. The monogram "A R" appears upon a shield-shaped figure between the representations of the lion and unicorn and below the representation of the crown. A broken undulating line also appears between the figures and words forming the trade-mark.

SER. No. 13,050. CONCRETE WASHTRAYS. ECONOMY MANUFACTURING CO., New Haven, Conn. Filed Sept. 27, 1905.

A diamond-shaped figure inclosing the words "THE ECONOMY TRAY."

SER. No. 13,104. OILED CLOTHING. A. J. TOWER COMPANY, Boston, Mass. Filed Sept. 28, 1905.

The representation of a fish.

SER. No. 13,130. WATERPROOF PAPERS. F. W. BIRD & SON, Walpole, Mass. Filed Sept. 29, 1905. Used ten years.

SER. No. 13,130.

The representation of a girl supporting above her head a comparatively large portion of sheet material, which appears to serve as a protection to the person from the rain, which is indicated by slanting lines, the girl's feet resting upon lines representing the ground.

SER. No. 13,141. MAGAZINES. TRIBUNE Co., Chicago, Ill. Filed Sept. 29, 1905.

WORKER'S MAGAZINE

The words "WORKER'S MAGAZINE."

SER. No. 13,208. WHEELBARROWS AND THE PARTS THEREOF. THE KELLOGGSVILLE & JACOBS MANUFACTURING COMPANY, Columbus, Ohio. Filed Oct. 2, 1905. Used ten years.

"JACOBS"

The word "JACOBS" inclosed in quotation-marks.

SER. No. 13,232. TRUNKS, SUIT-CASES, TRAVELING-BAGS, AND THE VARIOUS STYLES OF SATCHELS AND TELESCOPES. HENRY POLLACK TRUNK Co., Dallas, Tex. Filed Oct. 4, 1905.

The representation of a parrot perched on the top edge of a trunk and having one of its legs uplifted with a catchet clutched in the clawed claw, associated with the words "POLLY BRAND."

SER. No. 13,319. NON-ALCOHOLIC BEVERAGES MADE OF COLA-NUTS. JOHN W. HALL, Baltimore, Md. Filed Oct. 5, 1905.

BISSI

The word-symbol "BISSI."

SER. No. 13,335. WHISKY. GLASHEEN & BARDEN DISTILLING & IMPORTING Co., Kansas City, Mo. Filed Oct. 5, 1905.

SUPERBA

The word "SUPERBA" and a fanciful scroll design with two concentric circles in the center inclosing the monogram "G & B."

SER. No. 13,449. CIGARS. HENRY T. OFFTERDINGER, Washington, D. C. Filed Oct. 9, 1905.

DEER HEAD

The words "DEER HEAD," a circular panel containing the representation of a deer's head, a wreath of stalks and heads of grain, and the letters "H. T. O." within a diamond-shaped figure.

SER. No. 13,452. CHOCOLATES. THE PHELPS COMPANY, Meadville, Pa. Filed Oct. 9, 1905.

A RARE BIT

The words "A RARE BIT."

SER. No. 13,460. IRON AND STEEL CASTINGS AND FORGINGS. THE MCCONWAY & TORLEY Co., Pittsburg, Pa. Filed Oct. 9, 1905.

The letters "M T" inclosed within the letter "C."

SER. No. 13,468. GRANULATED TOAST. DAVID JAMES BELL, Pittsburg, Pa. Filed Oct. 9, 1905.

SER. No. 13,468.

The word "MOST" and the representation of the bust of a woman carrying a dish of food, there being heads of wheat arranged on each side of the woman, the whole being inclosed in a rectangular frame.

SER. No. 13,560. SHAFT-HANGERS. CHRISTOPHER W. LEVALLEY, Milwaukee, Wis. Filed Oct. 12, 1905.

The words "DIAMOND RING" and the representation of a finger-ring carrying a setting. The word "DIAMOND" is shown printed across the setting and the word "RING" within the circle formed by the representation of a finger-ring.

SER. No. 13,561. BASE-BALL BATS. A. G. SPALDING & BROS., New York, N. Y. Filed Oct. 13, 1905.

MUSHROOM

The word "MUSHROOM."

SER. No. 13,777. TOILET SOAPS. MULHENS & KROPFF, New York, N. Y. Filed Oct. 20, 1905.

№4711

The abbreviation and number "No. 4711."

SER. No. 13,957. CORDIALS. MARIANI & Co., New York, N. Y. Filed Oct. 26, 1905.

Marianine

The word "MARIANINE."

SER. No. 14,088. EXTRUDED METALS. THE OSB BRASS MANUFACTURING COMPANY, Torrington, Conn. Filed Oct. 30, 1905.

SER. No. 14,083.

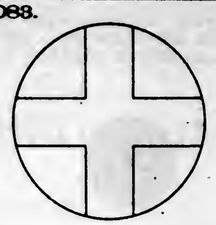

The representation of a Greek cross within a circle.

SER. No. 14,170. GLUE. CHEMISCHE FABRIK FÜR LEIM & DÜNGER "EICHENHAHN," Ludwigshafen A. R., Germany. Filed Nov. 1, 1905.

The representation of an ax, a compass, and a square superposed or crossing each other and inclosed in an elliptical border. This emblem is associated with the German words "SCHUTZ-MARKE GESETZ. DEPONIRT."

SER. No. 14,214. CIGARS, CHEROOTS, AND STOGIES. WISCONSIN CIGAR Co., Madison, Wis. Filed Nov. 2, 1905.

PERMIT

The word-symbol "PERMIT."

SER. No. 14,215. NATURAL, CONCENTRATED, AND CARBONATED MINERAL WATER. BLUE ROCK MINERAL SPRING COMPANY, Louisville, Ky. Filed Nov. 2, 1905.

BLUE ROCK

The words "BLUE ROCK."

SER. No. 14,219. CASTOR-OIL. MORRIS BROS., Allegheny, Pa. Filed Nov. 2, 1905. Used ten years.

The representation of a boy standing with legs spread, associated with the words "I LIKE IT."

SER. No. 14,280. OILSTONES, WATER-STONES, WHETSTONES, HONES, AND GRINDSTONES. THE SCRANTON WHETSTONE AND ABRASIVE WHEEL CO., Scranton, Pa. Filed Nov. 3, 1905.

The word "REX" and the representation of a crown appearing on a keystone, which is superimposed on a disk.

SER. No. 14,256. AERATED TONIC BEVERAGES AND SYRUPS FOR THE SAME. THE DR. PEPPER CO., Dallas, Tex. Filed June 24, 1905. Used ten years.

Dr. Pepper

The abbreviation and word "DR. PEPPER."

SER. No. 14,519. PREPARATION FOR THE RELIEF OF RHEUMATISM AND KINDRED AILMENTS. GEORGE L. SHAFER, Sacramento, Cal. Filed Nov. 11, 1905. Used ten years.

WAB-SKO-KA

The hyphenated word "WAB-SKO-KA."

SER. No. 14,580. DYES. PAAS DYE CO., Newark, N. J. Filed Nov. 13, 1905.

A colored egg bearing upon its surface the words "PAAS EASTER EGG DYES."

SER. No. 14,581. DYES. PAAS DYE CO., Newark, N. J. Filed Nov. 13, 1905. Used ten years.

Paas Egg Dyes

The words "PAAS EGG DYES."

SER. No. 14,559. LOCAL ANESTHETICS. BENJAMIN B. LAWRENCE, New York, N. Y. Filed Nov. 13, 1905.

ANÆSTHOL

The word "ANESTHOL."

SER. No. 14,638. ALKALINED ANTISEPTIC AND GERMICIDE. GERARD COMPANY, INCORPORATED, Philadelphia, Pa. Filed Nov. 15, 1905.

EUZONE

The word "EUZONE."

SER. No. 14,689. PREPARATION FOR EXTERNAL APPLICATION AND HAVING ANTISEPTIC, ANALGESIC, DISINFECTANT, AND DEODORANT PROPERTIES. ANTISEPTIC PHARMACAL COMPANY, St. Louis, Mo. Filed Nov. 15, 1905.

The representation of a bottle, beside which stands the figure of a partially-nude man, whose left arm rests against said bottle, a bottle being grasped in the hand on said arm.

SER. No. 14,662. LIQUID FOR INTERNAL USE AS AN ANTISEPTIC, TONIC, DIGESTIVE, AND BLOOD-PURIFIER. POTTER DRUG & CHEMICAL CORPORATION, Boston, Mass. Filed Nov. 15, 1905.

Cuticura

The word "CUTICURA."

SER. No. 14,663. OINTMENT. POTTER DRUG & CHEMICAL CORPORATION, Boston, Mass. Filed Nov. 15, 1905.

Cuticura

The word "CUTICURA."

SER. No. 14,760. CONSUMPTION REMEDY. THE PISO COMPANY, Warren, Pa. Filed Nov. 17, 1905. Used ten years.

PISO'S

The word "PISO'S."

SER. No. 14,739. CHICKEN-FEED. REED BROTHERS, Worcester, Mass. Filed Nov. 16, 1905.

The representation of a hen surrounded by chickens in various attitudes of movement, interest, and repose.

SER. No. 14,761. REMEDY FOR CATARRH. THE PISO COMPANY, Warren, Pa. Filed Nov. 17, 1905. Used ten years.

PISO'S

The word "PISO'S."

SER. No. 14,780. PREPARATION FOR THE TREATMENT OF RHEUMATISM, GOUT, SCIATICA, NEURALGIA, WORMS, TOOTHACHE, AND GENERAL DISEASES. ULRICH FREDERICK SCHLAPFER, Zurich, Switzerland. Filed Nov. 18, 1905.

Paracelsus

The word "PARACELSUS."

SER. No. 14,832. LIQUID PREPARATION FOR EXTERNAL APPLICATION FOR RHEUMATISM. HENRY B. FOWLER, Guilford, Conn. Filed Nov. 20, 1905.

VETOA
41424

The word and figures "VETOA 41424."

SER. No. 14,847. MEDICINES FOR VENEREAL DISEASES. CHARLES G. MARINO, Coney Island, N. Y. Filed Nov. 20, 1905.

CARAWA

The word "CARAWA."

SER. No. 14,888. PHARMACEUTICAL PREPARATIONS FOR THE TREATMENT OF KIDNEY DISEASES. McKESSON & ROBBINS, New York, N. Y. Filed Nov. 21, 1905.

THEOSALIN

The word "THEOSALIN."

SER. No. 15,116. GLASS LAMP-CHIMNEYS. LA RAPPE GLASS CO., Ottawa, Ill. Filed Dec. 1, 1905.

SILVER

The word "SILVER" inclosed within a narrow rectangular border.

SER. No. 15,126. HAIR-RESTORER. L. A. H. BRANDT, Buffalo, N. Y. Filed Dec. 1, 1905.

The portrait of Adolf Brandt on an oval panel.

SER. No. 15,180. LAGER-BEER. THE CONSUMERS PARK BREWING CO., New York, N. Y. Filed Dec. 1, 1905.

The representation of an imperial crown having streamers depending therefrom and a rosette located below said crown.

SER. No. 15,179. "ANTIDOT-OFF" COMPOSITIONS. AMERICAN OXYGEN COMPANY, New York, N. Y. Filed Dec. 4, 1905.

PARALOID

The word "PARALOID."

SER. No. 15,242. WHISKY. WHEELER ALLSOPP, Boston, Mass. Filed Dec. 6, 1905.

Ser. No. 15,242.

ZIGZAG

The word "ZIGZAG" with a zigzag line representing a flash of lightning crossing the same.

Ser. No. 15,884. FORCE-FEED LUBRICATORS AND THE PARTS THEREOF. GREENER, TWEED & Co., New York, N. Y. Filed Dec. 11, 1905.

MULTIPLUS

The word "MULTIPLUS."

Ser. No. 15,498. CIGARS, CHEROOTS, AND CIGARETTES MADE OF CIGAR-TOBACCO. CAYEY-CAGUAS TOBACCO COMPANY, New York, N. Y., and Island of Porto Rico. Filed Dec. 13, 1905.

Turabo

The word "TURABO."

Ser. No. 15,534. GLUE. CHARLES A. SCHEN, Boston, Mass. Filed Dec. 20, 1905.

HOLDFAST

The word "HOLDFAST," associated with the picture of a dog's head.

Ser. No. 15,553. WHISKY. S. HIRSCH & Co., Kansas City, Mo. Filed Dec. 21, 1905.

BEECH TREE

The words "BEECH TREE."

Ser. No. 15,555. FRUIT-TREES, BUDS, AND SCIONS THEREOF. OREGON NURSERY COMPANY LIMITED, Salem, Oreg. Filed Dec. 21, 1905.

miracle

The word "MIRACLE."

Ser. No. 15,590. HORSESHOES. BETHEL HORSE SHOE COMPANY, Catasauqua, Pa. Filed Dec. 22, 1905.

BOSS

The word "BOSS."

Ser. No. 15,608. LEATHER-DRESSINGS IN LIQUID, PASTE, AND SOLID FORM. THE FRANK MILLER COMPANY, New York, N. Y. Filed Dec. 22, 1905. Used ten years.

FRANK MILLER'S

The words "FRANK MILLER'S."

Ser. No. 15,617. RECORDS FOR TALKING-MACHINES. VICTOR TALKING MACHINE COMPANY, Camden, N. J. Filed Dec. 23, 1905.

GRAMOPHONE

The word "GRAMOPHONE."

Ser. No. 15,756. COMIC SECTIONS OR PAGES OF NEWSPAPERS. THE NEW YORK HERALD COMPANY, New York, N. Y. Filed Dec. 29, 1905.

BUSTER

The word "BUSTER."

Ser. No. 15,829. BOX-TOE MATERIAL AND INNER SOLING. FRANK W. WHITCHER, Boston, Mass. Filed Jan. 2, 1906.

VICTOR

The word "VICTOR."

Ser. No. 15,891. DUPLICATE-SALES-SLIP BOOKS AND PAPER PADS THEREFOR. CARTER-CRUME CO. LIMITED, Niagara Falls, N. Y. Filed Jan. 4, 1906.

CONTINUOUS

The word "CONTINUOUS."

TRADE-MARKS

REGISTERED JANUARY 30, 1906.

49,179. WOMEN'S LEATHER SHOES. A. H. BERRY SHOE COMPANY, Portland, Me.
The word "EVANGELINE."
Filed May 27, 1905. Serial No. 6,837. PUBLISHED DECEMBER 5, 1905.

49,180. BOOTS AND SHOES MADE OF LEATHER. A. L. JOSLIN COMPANY, Oxford, Mass.
The representation of the head of a carrier-pigeon, associated with the words "HOMER SHOE."
Filed June 6, 1905. Serial No. 7,556. PUBLISHED DECEMBER 5, 1905.

49,181. LYE AND POTASH. BROOKMAN MANUFACTURING COMPANY, Chicago, Ill.
The representation of a hand holding a can and pouring out a portion of the contents thereof, a label appearing upon the can and having thereon the words "BIG BONANZA."
Filed April 26, 1905. Serial No. 3,106. PUBLISHED DECEMBER 5, 1905.

49,182. WHISKY. BRAND BROTHERS COMPANY, Chicago, Ill.
The word "ALUMNUS."
Filed October 13, 1905. Serial No. 13,543. PUBLISHED DECEMBER 5, 1905.

49,183. HYDROSULFITE COMPOUND. CASSELLA COLOR COMPANY, New York, N. Y.
The word "HYRALDITE."
Filed June 14, 1905. Serial No. 8,079. PUBLISHED DECEMBER 5, 1905.

49,184. DYE-COLORS. W. CUSHING & Co., Foxcroft, Me.
The word "PERFECTION." Used ten years.
Filed September 30, 1905. Serial No. 13,167. PUBLISHED DECEMBER 5, 1905.

49,185. REMEDY FOR CERTAIN NAMED DISEASES. DR. M. F. GROVES' SON AND Co., Philadelphia, Pa.
A portrait of M. F. Groves, M. D., deceased, surrounded by an ornamental frame, the name "DR. GROVES" appearing above the frame.
Filed May 5, 1905. Serial No. 4,372. PUBLISHED DECEMBER 5, 1905.

49,186. EMBROIDERIES. TH. D. EISNER & SON, Brooklyn, N. Y.
The words "THE CONQUEROR."
Filed July 1, 1905. Serial No. 9,596. PUBLISHED AUGUST 29, 1905.

49,187. BRAIDS, BINDINGS, AND TRIMMINGS. FLETCHER MANUFACTURING COMPANY, Providence, R. I.
The representation of an uplifted arm holding a bow.
Filed September 14, 1905. Serial No. 12,556. PUBLISHED DECEMBER 5, 1905.

49,188. WRITING-PAPER. FOX RIVER PAPER COMPANY, Appleton, Wis.
The words "OLD BADGER BOND."
Filed July 12, 1905. Serial No. 10,193. PUBLISHED DECEMBER 5, 1905.

49,189. WHISKY. J. & A. FREIBERG, Cincinnati, Ohio.
The word "FIRESIDE," with a scroll extending lengthwise directly under said word.
Filed May 26, 1905. Serial No. 6,719. PUBLISHED DECEMBER 5, 1905.

49,190. WHISKY. FREIBERG & WORKUM, Cincinnati, Ohio.
The word "CLINTON."
Filed April 17, 1905. Serial No. 1,878. PUBLISHED MAY 23, 1905.

49,191. WHISKY. FRIEDMAN, KEILER & Co., Paducah, Ky.
The word and abbreviations "NEWPORT E. O. S." associated with an oval outline containing the name and address "FRIEDMAN, KEILER & Co., DISTILLERS, PADUCAH, KY.," the whole being used on a dark rectangular figure inclosed in a rectangular double outline border. Used ten years.
Filed May 1, 1905. Serial No. 3,800. PUBLISHED DECEMBER 5, 1905.

49,192. TONICS AND SPECIFICS. FRITTS & WIEHL, Chattanooga, Tenn.
The word "URACURA."
Filed April 1, 1905. Serial No. 145. PUBLISHED DECEMBER 5, 1905.

49,193. WHISKY. GLASNER & BARZEN DISTILLING & IMPORTING Co., Kansas City, Mo.
The word "DIPLOMAT" and a bust picture of John Jay inclosed in a circle.
Filed October 5, 1905. Serial No. 13,337. PUBLISHED DECEMBER 5, 1905.

49,194. WOOLEN, WORSTED, AND MOHAIR YARNS. HENRY E. FRANKENBERG Co., New York, N. Y.
The word "PEACOCK."
Filed May 16, 1905. Serial No. 5,921. PUBLISHED DECEMBER 5, 1905.

49,195. WOOLEN, WORSTED, AND MOHAIR YARNS. HENRY E. FRANKENBERG Co., New York, N. Y.
The representation of a peacock with his tail spread.
Filed May 16, 1905. Serial No. 6,112. PUBLISHED DECEMBER 5, 1905.

49,196. TRIMMINGS AND BRAIDS. HENRY E. FRANKENBERG COMPANY, New York, N. Y.
The arbitrary word "UTOPIA."
Filed August 21, 1905. Serial No. 11,847. PUBLISHED DECEMBER 5, 1905.

49,197. TRIMMINGS AND BRAIDS. HENRY E. FRANKENBERG COMPANY, New York, N. Y.
The representation of a winged cupid seated astride a lion and in the act of playing on a lyre.
Filed August 21, 1905. Serial No. 11,852. PUBLISHED DECEMBER 5, 1905.

49,198. WOOLEN, WORSTED, AND MOHAIR YARNS. HENRY E. FRANKENBERG COMPANY, New York, N. Y.
The arbitrary word "ARCADIA."
Filed August 21, 1905. Serial No. 11,853. PUBLISHED DECEMBER 5, 1905.

49,199. MONTHLY MAGAZINE. HOFFHEIMER SOAP Co. Chicago, Ill.
The "20TH CENTURY WORLD."
Filed August 7, 1905. Serial No. 11,333. PUBLISHED DECEMBER 5, 1905.

49,200. MONTHLY MAGAZINE. HOFFHEIMER SOAP Co., Chicago, Ill.
The representation of a scroll bearing the abbreviation and words "20TH CENTURY WORLD" and extending across a representation of the earth, on which appear portions of North and South America.
Filed August 11, 1905. Serial No. 11,546. PUBLISHED DECEMBER 5, 1905.

49,201. DENTIFRICE. HY-JEN CHEMICAL Co., Chicago, Ill.
The hyphenated word "HY-JEN."
Filed May 1, 1905. Serial No. 3,727. PUBLISHED DECEMBER 5, 1905.

49,202. MIXED DRINKS. JEAN JACQUES, Waterbury, Conn.
The representation of a tray, a cake of ice on the tray, and a forearm and hand apparently passed through the cake of ice, the hand grasping and holding a bottle on the cake of ice, together with the phrase "It's TASTY" produced upon the cake of ice.
Filed October 28, 1905. Serial No. 14,024. PUBLISHED DECEMBER 5, 1905.

49,203. INSECT-POISON. JENKINS BROS., New York, N. Y.
The representation of an elderly woman carrying an umbrella and a reticule, associated with the words "AUNT HANNAH."
Filed May 5, 1905. Serial No. 4,401. PUBLISHED DECEMBER 5, 1905.

49,204. BRANDY. JOHN BARDENHEIER WINE AND LIQUOR CO., St. Louis, Mo.
The words "KING OF ALL," associated with the representation of a lion standing upon a rock, palm-trees appearing in the background, all inclosed within a rectangular figure.
Filed May 3, 1905. Serial No. 4,177. PUBLISHED DECEMBER 5, 1905.

49,205. LEATHER BOOTS AND SHOES. JORDAN MARSH COMPANY, Boston, Mass.
The words "OLD BRICK" and the representation of a boot or shoe resting on a brick having on its front side the words "OLD BRICK." Above the representation of the boot or shoe on the brick, are the words "SCHOOL SHOE." Used ten years.
Filed June 24, 1905. Serial No. 8,870. PUBLISHED DECEMBER 5, 1905.

49,206. CRYSTALLINE SOLUBLE CHEMICAL. JULIUS M. KEIL, Western Springs, Ill.
The word "SOFTO."
Filed September 28, 1905. Serial No. 13,265. PUBLISHED DECEMBER 5, 1905.

49,207. COMPOUND FOR CLEANING AND DISINFECTING. KLEN-SO PHARMACAL COMPANY, Philadelphia, Pa.
The hyphenated word "KLEN-SO."
Filed September 7, 1905. Serial No. 12,310. PUBLISHED DECEMBER 5, 1905.

49,208. WHISKY. L. W. LEVY & Co., Galveston, Tex.
The letters "CHAD. BUFORD" printed or impressed in Old English type and arranged in the form of an arc around the representation of a horse's head, which is encircled by the representation of a leather belt, the latter being intersected by the representation of a jockey's cap.
Filed May 20, 1905. Serial No. 6,119. PUBLISHED DECEMBER 5, 1905.

49,209. LEATHER BOOTS AND SHOES. JOHN JUSTUS LATTEMANN, New York, N. Y.
The fanciful representation of an eagle with wings spread and on the breast of which is represented a shield, with the letter "L" upon the face of the shield.
Filed October 7, 1905. Serial No. 13,413. PUBLISHED DECEMBER 5, 1905.

49,210. CHLORID OF LIME. LEGGETT & BROTHER, New York, N. Y.
The name "RED RIDING HOOD" and below the same the picture of a child representing that character standing in a wood, with a wolf at the left and immediately behind her, such picture being inclosed in a rectangular border, the words "BRAND CHLORIDE OF LIME" being arranged immediately above said picture and the words "NEW YORK" being arranged at the lower part thereof, said words and picture being inclosed by a rectangular border, with the words "RED RIDING HOOD CHLORIDE OF LIME IS THE BEST" at the left thereof, said last-named words being arranged vertically in a supplemental panel. Used ten years.
Filed April 24, 1905. Serial No. 2,811. PUBLISHED DECEMBER 5, 1905.

49,211. COTTON PIECE GOODS. MASSACHUSETTS COTTON MILLS, Lowell, Mass.
The word "BURLINGTON." Used ten years.
Filed May 11, 1905. Serial No. 5,235. PUBLISHED DECEMBER 5, 1905.

49,212. COTTON PIECE GOODS. MASSACHUSETTS COTTON MILLS, Lowell, Mass.
The word "NIAGARA." Used ten years.
Filed May 11, 1905. Serial No. 5,261. PUBLISHED DECEMBER 5, 1905.

49,213. KITCHEN-CABINETS. CHARLES P. MCDOUGALL Indianapolis, Ind.
The name "MCDOUGALL" written or printed in square reversed italics, the letter "M" having its terminating portion carried beneath the "C."
Filed October 13, 1905. Serial No. 13,542. PUBLISHED DECEMBER 5, 1905.

49,214. COTTON DUCK. MOUNT VERNON-WOODBERRY COTTON DUCK COMPANY, Baltimore, Md.
The word "ELKWOOD," associated with the representation of an elk standing in front of the representation of a bush or tree.
Filed May 18, 1905. Serial No. 5,982. PUBLISHED AUGUST 8, 1905.

49,215. REMEDY FOR COUGHS, COLDS, CROUP, AND CONSUMPTION. CHAS. B. MUMFORD, Kansas City, Mo.
The abbreviations and word "U. S. NAVY" and the representation of a battle-ship upon a body of water with smoke issuing from the smoke-stacks of said ship. Used ten years.
Filed April 10, 1905. Serial No. 900. PUBLISHED DECEMBER 5, 1905.

49,216. WHISKY. JOHN POHLMAN & Co., Indianapolis, Ind.
The word "ROCKWOOD." Used ten years.
Filed October 5, 1905. Serial No. 13,328. PUBLISHED DECEMBER 5, 1905.

49,217. WHISKY. JOHN POHLMAN & Co., Indianapolis, Ind.
The word "ANNEX" on a perpendicular panel-shaped figure.
Filed October 5, 1905. Serial No. 13,329. PUBLISHED DECEMBER 5, 1905.

49,218. WHISKY. JOHN POHLMAN & Co., Indianapolis, Ind.
The word "PATCHEN" inclosed by a panel-shaped outline. Used ten years.
Filed October 5, 1905. Serial No. 13,330. PUBLISHED DECEMBER 5, 1905.

49,219. TOOTH WASHES AND POWDERS. PURITAN DRUG COMPANY, Boston, Mass.
The word "ASEPTIFOAM."
Filed June 17, 1905. Serial No. 8,420. PUBLISHED DECEMBER 5, 1905.

49,220. WHISKY. EDWARD J. QUINN, Washington, D. C.
The word "ORONOCO."
Filed April 11, 1905. Serial No. 1,134. PUBLISHED DECEMBER 5, 1905.

49,221. TOILET WATER AND LIQUID PERFUMES. R. HUDNUT'S PHARMACY, New York, N. Y.
The words "VIOLET SEC."
Filed June 21, 1905. Serial No. 8,666. PUBLISHED DECEMBER 5, 1905.

49,222. WHISKY. RAPHAEL & ZEUGSCHMIDT, Pittsburg, Pa.
The words "MOUNT UNION." Used ten years.
Filed October 5, 1905. Serial No. 13,293. PUBLISHED DECEMBER 5, 1905.

49,223. WHISKY. RAPHAEL & ZEUGSCHMIDT, Pittsburg, Pa.
The word "TIOGA." Used ten years.
Filed October 5, 1905. Serial No. 13,296. PUBLISHED DECEMBER 5, 1905.

49,224. WHISKY. CHARLES H. ROSS & Co., Baltimore, Md.
The words and numerals "Ross' 1846 RYE WHISKEY." Used ten years.
Filed October 7, 1905. Serial No. 13,411. PUBLISHED DECEMBER 5, 1905.

49,225. GRASS AND FIELD SEEDS. WM. G. SCARLETT, Baltimore, Md.
The representation of a shield, diagonally across which, from the upper right-hand corner, run two parallel dotted lines and in the upper left-hand corner of which is the letter "S," to each side of which is a dash between two dots, and over which shield is the word "SHIELD," and under which is the word "BRAND."
Filed August 24, 1905. Serial No. 11,964 PUBLISHED DECEMBER 5, 1905.

49,226. GRASS AND FIELD SEEDS. WM. G. SCARLETT, Baltimore, Md.
Two horns of a stag, between which is the letter "S," above which is the word "ANTLER," and under which is the word "BRAND."
Filed August 24, 1905. Serial No. 11,966. BUBLISHED DECEMBER 5, 1905.

49,227. CARBON BISULFID (CS_2). EDWARD R. TAYLOR, Penn Yan, N. Y.
The word "FUMA."
Filed September 11, 1905. Serial No. 12,461. PUBLISHED DECEMBER 5, 1905.

49,228. WEEKLY NEWSPAPER. THE BILLBOARD PUBLISHING COMPANY, Cincinnati, Ohio.
The word "BILLBOARD."
Filed July 15, 1905. Serial No. 10,403. PUBLISHED DECEMBER 5, 1905.

49,229. LEGGINGS OR OVERGAITERS. THE COLUMBIA OVERGAITER & LEGGING Co., Chicago, Ill.
The arbitrary and fanciful word "NOLEAK," associated with the illustration of a girl running and holding her skirts extended and wearing a legging, which is disclosed.
Filed April 26, 1905. Serial No. 3,523. PUBLISHED DECEMBER 5, 1905.

49,230. FASTENERS FOR THE WAISTBANDS OF TROUSERS. CATCH ON CLASP MFG. CO., Baltimore, Md.
The words "CATCH ON."
Filed June 6, 1905. Serial No. 7,521. PUBLISHED DECEMBER 5, 1905.

49,231. MACHINES FOR MAKING CONCRETE BUILDING-BLOCKS. CEMENT MACHINERY CO., Jackson, Mich.
The representation of four complete walls formed of plain and ornamental concrete building-blocks with entrances arranged through the front wall and through one of the side walls and with spheroidal cap-blocks at the sides of the entrances and on other portions of the wall.
Filed June 28, 1905. Serial No. 9,334. PUBLISHED DECEMBER 5, 1905.

49,232. PLOWS, LISTERS, AND HARROWS. EMERSON MANUFACTURING CO., Rockford, Ill.
The word "STANDARD." Used ten years.
Filed May 4, 1905. Serial No. 4,286. PUBLISHED DECEMBER 5, 1905.

49,233. SHIRTS, COLLARS, AND CUFFS. FELLOWS AND COMPANY, Troy, N. Y.
The words "STERLING BRAND," in connection with the conventional form of the letter "£," used as an abbreviation for the word libra or pound. Used ten years.
Filed July 24, 1905. Serial No. 10,732. PUBLISHED DECEMBER 5, 1905.

49,234. AUTOMOBILES AND MOTOR-CARS. BENJAMIN A. GRAMM, Chillicothe, Ohio.
The word "LOGAN" in Old English priory text letters, the tail of the letter "g" ending in a flourish.
Filed June 5, 1905. Serial No. 7,498. PUBLISHED DECEMBER 5, 1905.

49,235. SILKS. HENRY E. FRANKENBERG COMPANY, New York, N. Y.
The word "UTOPIA." Used ten years.
Filed August 21, 1905. Serial No. 11,843. PUBLISHED DECEMBER 5, 1905.

49,236. COTTON PIECE GOODS. INDIAN HEAD MILLS OF ALABAMA, Cordova, Ala.
The pictorial representation of an Indian baby in an Indian cradle or baby-pack on a ground covered with vegetation, associated with the word "SOPOSA."
Filed July 18, 1905. Serial No. 10,539. PUBLISHED DECEMBER 5, 1905.

49,237. WATCHES AND CLOCKS. ROBT. H. INGERSOLL & BRO., New York, N. Y.
The words "DOLLAR WATCH."
Filed April 5, 1905. Serial No. 471. PUBLISHED JUNE 13, 1905.

49,238. PORTLAND CEMENT. LEHIGH PORTLAND CEMENT CO., Ormrod and Allentown, Pa.
The representation of a seal surrounded by a band of contrasting color. On the upper part of the seal appears, in curved form, the word "LEHIGH," across the center, in a straight line, the word "PORTLAND," and on the lower part, in curved form, the word "CEMENT." Between the words "LEHIGH" and "PORTLAND" is a diamond-shaped figure bearing the initials and abbreviation "P L C Co" and between the words "PORTLAND" and "CEMENT" a barrel-shaped figure bearing the words and abbreviations "WORKS ORMROD LEHIGH CO. PENNA." Around the contrasting border appear the words and abbreviation "LEHIGH PORTLAND CEMENT COMPANY. OFFICE ALLENTOWN, PA."
Filed April 11, 1905. Serial No. 1,153. PUBLISHED DECEMBER 5, 1905.

49,239. CANDY. NEW ENGLAND CONFECTIONERY Co., Boston, Mass.
The representation of a heavy black circle inclosing three fields—namely, a central red field, on which appear the words "NÉCCO SWEETS," and two white fields respectively above and below the central field. The outer edges of all three fields are bordered by lines which are concentric with the black circle, and the edges of the upper and lower fields which are adjacent to the central field are separated therefrom by double curved lines.
Filed May 12, 1905. Serial No. 5,764. PUBLISHED DECEMBER 5, 1905.

49,240. SUITINGS FOR MEN AND BOYS. THOS. OAKES & Co., Bloomfield, N. J.
The word "METROPOLITAN." Used ten years.
Filed May 18, 1905. Serial No. 5,996. PUBLISHED DECEMBER 5, 1905.

49,241. LONG CLOTH. SHERMAN, REID & Co., New York, N. Y.
The word "IMPERIAL." Used ten years.
Filed June 26, 1905. Serial No. 9,041. PUBLISHED DECEMBER 5, 1905.

49,242. POLISHES FOR WOOD, METAL, MARBLE, AND GLASS. C. H. SMITH & Co., Boston, Mass.
The word "SPARKLENE." Used ten years.
Filed July 17, 1905. Serial No. 10,468. PUBLISHED DECEMBER 5, 1905.

49,243. BLOTTING-PAPER. THE EATON-DIKEMAN Co., Lee, Mass.
The word "COLUMBIAN."
Filed July 3, 1905. Serial No. 9,640. PUBLISHED DECEMBER 5, 1905.

49,244. PRINTED AND DYED TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa.
The representation of an ornamental border associated with a panel bearing the word "PRINTS," with the abbreviation, words, and character "WM. SIMPSON & SONS" and a representation of a rose above the panel, and the words, abbreviations, and character "MADE BY THE EDDYSTONE MFG. CO. SOLE MANUFACTURERS OF WM. SIMPSON & SONS' PRINTS." Used ten years.
Filed June 30, 1905. Serial No. 9,472. PUBLISHED DECEMBER 5, 1905.

49,245. DRAPERY AND UPHOLSTERY TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa.
The representation of a banner suspended from a bamboo rod and bearing the word "ART," associated with the representation of some Japanese lanterns and a spray of chrysanthemums and the words "JAPANESE" and "CRETONNE," and a bamboo rod beneath the same.
Filed July 6, 1905. Serial No. 9,805. PUBLISHED DECEMBER 5, 1905.

49,246. DRAPERY AND UPHOLSTERY FABRICS. THE EDDYSTONE MANUFACTURING Co., Eddystone and Philadelphia, Pa.
The word "PAREILSOIE" within an ornamental wreath.
Filed June 30, 1905. Serial No. 9,458. PUBLISHED DECEMBER 5, 1905.

49,247. WHISKY. THE EDGEWOOD DISTILLING COMPANY, Cincinnati, Ohio.
The representation of a fat man in full-dress costume with his hands in his pockets and a fez upon his head, standing upon a box.
Filed June 10, 1905. Serial No. 7,883. PUBLISHED DECEMBER 5, 1905.

49,248. GIN. THE FRANCIS GOWDY, DISTILLING Co., Melrose, Conn.
The words and abbreviation "THE FRANCIS GOWDY, DISTILLING Co." arranged in a curve above, and the word and abbreviation "MELROSE, CONN." arranged in a curve below, in connection with the words, character, and abbreviation "SUCCESSORS TO GOWDY, STILES & Co. RYE GIN OLD FASHIONED SOUR MASH TRIPLE COPPER DISTILLED," which are arranged in straight lines. Used ten years.

Filed September 29, 1905. Serial No. 13,140. PUBLISHED DECEMBER 5, 1905.

49,249. DISPLAY-FIXTURES. THE HEIMANN-MILLER MANUFACTURING COMPANY, St. Louis, Mo.
The words "MISSING LINK."
Filed September 21, 1905. Serial No. 12,841. PUBLISHED DECEMBER 5, 1905.

49,250. ELECTRIC-ARC LAMPS. THE JANDUS ELECTRIC Co., Cleveland, Ohio.
The word "JANDUS." Used ten years.
Filed July 18, 1905. Serial No. 10,512. PUBLISHED DECEMBER 5, 1905.

49,251. ELECTRIC FANS. THE JANDUS ELECTRIC Co., Cleveland, Ohio.
The word "GYROFAN."
Filed July 18, 1905. Serial No. 10,513. PUBLISHED DECEMBER 5, 1905.

49,252. DRAWING-PAPER. THE KEUFFEL & ESSER COMPANY, Hoboken, N. J.
The word "PARAGON."
Filed October 21, 1905. Serial No. 13,809. PUBLISHED DECEMBER 5, 1905.

49,253. OINTMENTS AND LOTIONS. THE LÉHEALOL PREPARATION Co., Melrose, Mass.
The word "LÉHEALOL" written in script with a paraph.
Filed June 22, 1905. Serial No. 8,785. PUBLISHED DECEMBER 5, 1905.

49,254. WATERPROOF FABRIC. THE STANDARD PAINT COMPANY, New York, N. Y.
The representation of a peacock with his tail spread out within a circle, in which also appear the letters "S P C." This is surrounded by a black ring, on which appears at the top the word "PEACOCK."
Filed April 17, 1905. Serial No. 2,027. PUBLISHED DECEMBER 5, 1905.

49,255. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio.
The abbreviation "No.," the numerals "175," and the words "NATIONAL WHIST."
Filed April 15, 1905. Serial No. 1,787. PUBLISHED DECEMBER 5, 1905.

49,256. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio.
The words "INITIAL SERIES."
Filed April 15, 1905. Serial No. 1,795. PUBLISHED DECEMBER 5, 1905.

49,257. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio.
The word "OWLS."
Filed April 15, 1905. Serial No. 1,804. PUBLISHED DECEMBER 5, 1905.

49,258. SKIRT-BRAIDS. THE WALTER STEWART COMPANY, New York, N. Y.
The word "NYSILK."
Filed September 14, 1905. Serial No. 12,601. PUBLISHED DECEMBER 5, 1905.

49,259. WHISKY. THE WEIDEMAN COMPANY, Cleveland, Ohio.
The word "CRICKET."
Filed April 10, 1905. Serial No. 914. PUBLISHED DECEMBER 5, 1905.

49,260. SHOE-DRESSING. THE WOLFF CHEMICAL COMPANY, Philadelphia, Pa.
The word "MILO."
Filed April 21, 1905. Serial No. 2,615. PUBLISHED JUNE 6, 1905.

49,261. CROCHET QUILTS. UNION MANUFACTURING COMPANY, Peterboro, N. H.
The words "BERLIN CROCHET QUILT." Used ten years.
Filed May 12, 1905. Serial No. 5,258. PUBLISHED DECEMBER 5, 1905.

49,262. CROCHET QUILTS. UNION MANUFACTURING COMPANY, Peterboro, N. H.
The representation of a lion rampant. A crown is shown upon the head and a collar upon the neck of the lion and a twisted bar beneath.
Filed September 13, 1905. Serial No. 12,515. PUBLISHED DECEMBER 5, 1905.

49,263. WHISKY. UNION WHOLESALE LIQUOR Co., Chicago, Ill.
The words "CASTING CLUB."
Filed April 3, 1905. Serial No. 253. PUBLISHED DECEMBER 5, 1905.

49,264. SHOES MADE OF LEATHER AND OF CANVAS. V. K. AND A. H. JONES Co., Lynn, Mass.
The arbitrary title "THE MIZPAH SHOE," associated with a heraldic display consisting of an escutcheon upon which is the capital letter "J," having griffin-supporters on each side and a crest crown at the top of the escutcheon.
Filed May 27, 1905. Serial No. 6,771. PUBLISHED DECEMBER 5, 1905.

49,265. PREPARATIONS FOR COLORING BUTTER. WELLS & RICHARDSON COMPANY, Burlington, Vt.
The word "DANDELION."
Filed September 9, 1905. Serial No. 12,423. PUBLISHED DECEMBER 5, 1905.

49,266. SILVER-PLATED FLAT WARE, HOLLOW WARE, AND TABLEWARE. WM. A. ROGERS LIMITED, New York, N. Y.
A diamond-shaped figure. About the figure are arranged the words "WARREN SILVER PLATE COMPANY," and beneath these words appear the words "NEW YORK." The words "QUADRUPLE PLATE" are arranged within the diamond-shaped figure.
Filed May 25, 1905. Serial No. 6,566. PUBLISHED DECEMBER 5, 1905.

49,267. CIGARS. ABRAHAM & STRAUS, New York, N. Y.
The word "KOMEEZY."
Filed April 19, 1905. Serial No. 2,313. PUBLISHED DECEMBER 5, 1905.

49,268. HOSIERY. AMERICAN STOCKING COMPANY, New York, N. Y.
The illustration of an eagle, together with a bust-picture of a boy and Washington, each inclosed in an oval and disposed one on each side of the eagle.
Filed September 9, 1905. Serial No. 12,404. PUBLISHED DECEMBER 5 1905.

49,269. STOVES, RANGES, FURNACES, AND BOILERS. BARSTOW STOVE COMPANY, Providence, R. I.
The words "BAY STATE." Used ten years.
Filed June 12, 1905. Serial No. 7,968. PUBLISHED DECEMBER 5, 1905.

49,270. WITHDRAWN.

49,271. BRONCHIAL LOZENGES AND THROAT-TABLETS. FROG IN YOUR THROAT Co., New York, N. Y.
The arbitrary expression "FROG IN YOUR THROAT." Used ten years.
Filed May 9, 1905. Serial No. 4,807. PUBLISHED DECEMBER 5, 1905.

49,272. IMITATION OF PERSIAN-LAMB FABRIC. JOHN & JAMES DOBSON, Philadelphia, Pa.
The word "PERSIANA."
Filed July 11, 1905. Serial No. 10,086. PUBLISHED DECEMBER 5, 1905.

49,273. LAGER-BEER. DUBUQUE BREWING & MALTING Co., Dubuque, Iowa.
The letter "D" inclosed in concentric circles and a circular band formed of stalks with barley-heads thereon and a vine of hops.
Filed April 14, 1905. Serial No. 1,551. PUBLISHED DECEMBER 5, 1905.

49,274. LUBRICATING-OILS. GALENA-SIGNAL OIL COMPANY, Franklin, Pa.
The word "GALENA."
Filed July 14, 1905. Serial No. 10,316. PUBLISHED DECEMBER 5, 1905.

49,275. THREADS, CHENILLE, TINSEL, AND ARRASENE. HENRY E. FRANKENBERG COMPANY, New York, N. Y.
The representation of a winged cupid seated astride a lion and in the act of playing on a lyre. Used ten years.
Filed August 21, 1905. Serial No. 11,850. PUBLISHED DECEMBER 5, 1905.

49,276. WHEAT-FLOUR. HESSEL MILLING COMPANY, East St. Louis, Ill.
The arbitrarily-selected word-symbol "WHITE BIRD."
Filed June 2, 1905. Serial No. 7,230. PUBLISHED DECEMBER 5, 1905.

49,277. HOSE-SUPPORTERS. CHRISTINA J. HIGLEY, New York, N. Y.
The arbitrary word-symbol "BRODWEB."
Filed July 20, 1905. Serial No. 10,618. PUBLISHED DECEMBER 5, 1905.

49,278. OILED CLOTHING. J. H. ROWE COMPANY, Portland, Me., and Gloucester, Mass.
The figure of an anchor in connection with the words "ANCHOR BRAND."
Filed June 12, 1905. Serial No. 7,958. PUBLISHED DECEMBER 5, 1905.

49,279. PLASTERS. JOHNSON & JOHNSON, New Brunswick, N. J.
The word "CANTHOS." Used ten years.
Filed October 28, 1905. Serial No. 13,992. PUBLISHED DECEMBER 5, 1905.

49,280. PLASTERS. JOHNSON & JOHNSON, New Brunswick, N. J.
The word "ZONAS." Used ten years.
Filed October 28, 1905. Serial No. 13,994. PUBLISHED DECEMBER 5, 1905.

49,281. MEMBRANES. JOHNSON & JOHNSON, New Brunswick, N. J.
The word "CARGILE."
Filed October 28, 1905. Serial No. 14,008. PUBLISHED DECEMBER 5, 1905.

49,282. SURGICAL DRESSINGS. JOHNSON & JOHNSON, New Brunswick, N. J.
The word "LINTON." Used ten years.
Filed October 28, 1905. Serial No. 14,010. PUBLISHED DECEMBER 5, 1905.

49,283. CATHETERS AND BOUGIES. JOHNSON & JOHNSON, New Brunswick, N. J.
The word "KINGSTONE." Used ten years.
Filed October 28, 1905. Serial No. 14,011. PUBLISHED DECEMBER 5, 1905.

49,284. MEDICAL PREPARATION FOR GENITO-URINARY DISEASES. ALFONS F. KALKHOFF, Toledo, Ohio.
The hyphenated word "SAN-CU-CO."
Filed July 21, 1905. Serial No. 10,686. PUBLISHED DECEMBER 5, 1905.

49,285. GASOLENE AND MARINE ENGINES. HENRY KEIDEL, Baltimore, Md.
The word "ARDMORE."
Filed June 15, 1905. Serial No. 8,297. PUBLISHED DECEMBER 5, 1905.

49,286. DEMULCENTS. LAVADURA CHEMICAL Co., Savannah, Ga.
The representation of a sloop-yacht under sail, with the word "LAVADURA" and the phrase "BEATS ANYTHING EVER PUT IN THE WATER" on its sails.
Filed October 7, 1905. Serial No. 13,402. PUBLISHED DECEMBER 5, 1905.

49,287. OVERCOATS, COATS, VESTS, AND TROUSERS. MARX & HAAS CLOTHING Co., St. Louis, Mo.
The words "JACK RABBIT" and the representation of the head of a jack-rabbit surrounded by concentric circles, associated with the words, character, and abbreviations "MARX & HAAS CLOTHING Co." and "ST. LOUIS."
Filed June 5, 1905. Serial No. 7,499. PUBLISHED DECEMBER 5, 1905.

49,288. COTTON PIECE GOODS. MASSACHUSETTS COTTON MILLS, Lowell, Mass.
The arbitrarily-selected word "FRONTIER."
Filed May 11, 1905. Serial No. 5,220. PUBLISHED DECEMBER 5, 1905.

49,289. REMEDY FOR PAIN, IN CRAYON FORM. JOHN DICE MCLAREN, New York, N. Y.
The arbitrary word "SIMCURE."
Filed April 18, 1905. Serial No. 2,145. PUBLISHED DECEMBER 5, 1905.

49,290. ROOFING AND WATERPROOFING MATERIAL. NATIONAL COAL TAR Co., Boston, Mass.
The representation of a genealogical tree having the words "COAL TAR" near the base of the trunk and the word "PITCH" at the upper portion of said trunk. Between the base and upper portion of the trunk are diverging branches and foliage, the diverging branches bearing the words "FIRST RUNNINGS AND LIGHT OILS," "ANILINE," "AMMONIACAL GAS LIQUOR," "CARBOLIC OILS with some NAPHTHALENE," "PHENOL," "CREOSOTE OILS AND NAPHTHALENE," "BASIC SUBSTANCES," "NAPHTHALENE," "HEAVY OILS," and "ANTHRACENE."
Filed April 22, 1905. Serial No. 2,693. PUBLISHED DECEMBER 5, 1905.

49,291. WHITE LEAD. NATIONAL LEAD COMPANY, Jersey City, N. J., and New York, N. Y.
The representation of a group of factory buildings inclosed in a semicircle and associated with the words "BROOKLYN WHITE LEAD COMPANY" inclosed in a circle.
Filed August 19, 1905. Serial No. 11,812. PUBLISHED DECEMBER 5, 1905.

49,292. WHITE LEAD. NATIONAL LEAD COMPANY, Jersey City, N. J., and New York, N. Y.
A representation of the zodiacal sign of Saturn and a cog-wheel within a square and circle, associated with the words, abbreviations, and character "RED SEAL BRAND, ST. LOUIS LEAD & OIL Co. ST. LOUIS, MO."
Filed July 27, 1905. Serial No. 10,867. PUBLISHED DECEMBER 5, 1905.

49,293. MOHAIR DRESS GOODS. N. ERLANGER, BLUMGART & Co., New York, N. Y.
The word "DRAGONIA," below which word are two dragons facing one another and holding between their upraised claws a panel bearing open shears encircled by a tape-measure.
Filed September 6, 1905. Serial No. 12,260. PUBLISHED DECEMBER 5, 1905.

49,294. CHOCOLATE DROPS. NEW ENGLAND CONFECTIONERY Co., Boston, Mass.
The word "LENOX," scrolls appearing beneath the word. Used ten years.
Filed May 15, 1905. Serial No. 5,721. PUBLISHED DECEMBER 5, 1905.

49,295. CANDY. NEW ENGLAND CONFECTIONERY Co., Boston, Mass.
The word "NECCO."
Filed May 15, 1905. Serial No. 5,724. PUBLISHED DECEMBER 5, 1905.

49,296. HYDRAULIC ENGINES AND RAMS. RIFE HYD. ENGINE MFG. Co., New York, N. Y., and Waynesboro, Va.
The words and abbreviation "RIFE ENGINE Co." arranged in a bent line, with the first "N" in the word "ENGINE" expanded at the top to form an ornamental scroll.
Filed October 19, 1905. Serial No. 13,775. PUBLISHED DECEMBER 5, 1905.

49,297. SHOVELS, SPADES, SCOOPS, AND SPADING-FORKS. SUPPLEE HARDWARE COMPANY, Philadelphia, Pa.
The fanciful term "THE COTTON BELT."
Filed October 21, 1905. Serial No. 13,833. PUBLISHED DECEMBER 5, 1905.

49,298. COTTON THREAD. THE CLARK MILE-END SPOOL COTTON Co., East Newark, N. J.
The designation "MILE-END." Used ten years.
Filed September 27, 1905. Serial No. 13,054. PUBLISHED DECEMBER 5, 1905.

49,299. URIC-ACID SOLVENT. THE DR. HASKINS Co., Toledo, Ohio.
The hyphenated word "RE-NU."
Filed May 8, 1905. Serial No. 4,675. PUBLISHED DECEMBER 5, 1905.

49,300. PRINTED AND DYED TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa.
The representation of an ornamental banner having a diagonally-arranged panel bearing the facsimile signature of the original firm of Wm. Simpson & Sons, associated with the words "SILVER GREYS" and "FAST COLORS." Used ten years.
Filed June 30, 1905. Serial No. 9,463. PUBLISHED DECEMBER 5, 1905.

49,301. PRINTED AND DYED TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa,

The representation of an ornamental banner having a diagonally-arranged panel bearing the facsimile signature of the original firm of Wm. Simpson & Sons, associated with the words "PURE INDIGO DYED." and "FAST COLORS." Used ten years.

Filed June 30, 1905. Serial No. 9,464. PUBLISHED DECEMBER 5, 1905.

49,302. PRINTED AND DYED COTTON TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa.

The words "SHEPHERD PLAIDS," associated with the abbreviation, words, and character "WM. SIMPSON & SONS. IMPROVED STYLES."

Filed June 30, 1905. Serial No. 9,465. PUBLISHED DECEMBER 5, 1905.

49,303. PRINTED AND DYED TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa.

The representation of a rectangular-shaped border having a diagonal panel intercepting a transverse label with triangular-shaped ornamental scrolls on either side of the diagonal panel, associated with the abbreviation, words, and character "WM. SIMPSON & SONS FAST BLACK. THIS COLOR IS GUARANTEED PERFECTLY FAST TO LIGHT SOAP AND PERSPIRATION." Used ten years,

Filed July 6, 1905. Serial No. 9,807. PUBLISHED DECEMBER 5, 1905.

49,304. PRINTED AND DYED TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa.

The representation of a panel bearing the words "NEW ALPACA FINISH MOURNING PRINTS," associated with a curved panel bearing the abbreviation, words, and character "WM. SIMPSON & SONS" superposed upon a cross-hatched base inclosed in a rectangular border having fancy corners. Used ten years.

Filed July 14, 1905. Serial No. 10,303. PUBLISHED DECEMBER 5, 1905.

49,305. PRINTED AND DYED TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa.

The representation of a cross-hatched panel inclosed in an ornamental border and bearing the words "SILVER GREYS." Used ten years.

Filed July 14, 1905. Serial No. 10,304. PUBLISHED DECEMBER 5, 1905.

49,306. PRINTED AND DYED TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa.

The representation of a cross-hatched panel inclosed in a rectangular ornamental border, associated with the words "ALPACA FINISH." Used ten years.

Filed July 14, 1905. Serial No. 10,305. PUBLISHED DECEMBER 5, 1905.

49,307. PRINTED AND DYED TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa.

The representation of an ornamental border inclosing a cross-hatched background bearing the abbreviation, words, and character "WM. SIMPSON & SONS FAST BLACK PRINTS. PHILADELPHIA." Used ten years.

Filed July 21, 1905. Serial No. 10,650. PUBLISHED DECEMBER 5, 1905.

49,308. OVERCOATS, COATS, VESTS, TROUSERS, AND KNEE-PANTS. THE F. B. Q. CLOTHING CO., New York, N. Y.

The words "THAT TOTALLY DIFFERENT."

Filed May 8, 1905. Serial No. 4,838. PUBLISHED DECEMBER 5, 1905.

49,309. COAL, COKE, AND CHARCOAL. THE GINN COMPANY, Ironton, Ohio.

A representation of his Satanic Majesty holding in his left hand a trident, with the word "RED" above and the word "DEVIL" below the figure, followed by the words "COAL, COKE, CHARCOAL," all printed in red.

Filed September 26, 1905. Serial No. 13,045. PUBLISHED DECEMBER 5 1905.

49,310. WEB-PERFECTING PRINTING-MACHINES. THE GOSS PRINTING PRESS COMPANY, Chicago, Ill.

The word "STRAIGHTLINE." Used ten years.

Filed August 10, 1905. Serial No. 11,466. PUBLISHED DECEMBER 5, 1905.

49,311. DIE-STOCKS. THE HART MANUFACTURING CO., Cleveland, Ohio.

The word "DUPLEX." Used ten years.

Filed October 25, 1905. Serial No. 13,940. PUBLISHED DECEMBER 5, 1905.

49,312. PRINTING-INKS. THE JAENECKE PRINTING INK CO., Newark, N. J.

The word "SESQUI."

Filed October 30, 1905. Serial No. 14,093. PUBLISHED DECEMBER 5, 1905.

49,313. EARTH-SCRAPERS. THE KILBOURNE & JACOBS MANUFACTURING COMPANY, Columbus, Ohio.

The word "WINNER."

Filed September 19, 1905. Serial No. 12,789. PUBLISHED DECEMBER 5, 1905.

49,314. EARTH-SCRAPERS. THE KILBOURNE & JACOBS MANUFACTURING COMPANY, Columbus, Ohio.

The word "BOSS."

Filed September 20, 1905. Serial No. 12,823. PUBLISHED DECEMBER 5, 1905.

49,315. MEDICINAL PREPARATION. THE LESLIE E. KEELEY CO., Dwight, Ill.

The words "DOUBLE CHLORIDE OF GOLD CURE" arranged in three parallel lines one above the other, the first line containing the word "DOUBLE," the second the word "CHLORIDE," and the third the word "OF," sloping on the left diagonally downward from left to right, and with the words "GOLD CURE" arranged in a diagonal line upon the left and below the other words and sloping downward from left to right, and all printed in plain capital letters. Used ten years.

Filed May 8, 1905. Serial No. 4,766. PUBLISHED DECEMBER 5, 1905.

49,316. LUBRICATING-GREASE. THE PHILADELPHIA GREASE MANUFACTURING CO., Philadelphia, Pa.

The representation of a diamond-shaped figure of a solid red color.

Filed June 1, 1905. Serial No. 7,297. PUBLISHED NOVEMBER 7, 1905.

49,317. TAR SOAP. THE PIONEER TAR SOAP CO., Dayton, Ohio.

The words "TRUE BLUE TAR SOAP" and a medallion bearing the picture of a child in Greenaway costume, the whole appearing on a rectangular blue background.

Filed April 12, 1905. Serial No. 1,287. PUBLISHED DECEMBER 5, 1905.

49,318. MALINES AND MOUSSELINES. THEO. TIEDEMANN & SON, New York, N. Y.

The representation of a lion rampant holding a club in his claw and a crown surmounting the lion's head.

Filed May 8, 1905. Serial No. 4,745. PUBLISHED DECEMBER 5, 1905.

49,319. COTTON PIECE GOODS. TREMONT & SUFFOLK MILLS, Lowell, Mass.

The arbitrarily-selected word "PRINCETON." Used ten years.

Filed May 10, 1905. Serial No. 4,962. PUBLISHED DECEMBER 5, 1905.

49,320. MICA FOR LUBRICATING PURPOSES. THE UNITED STATES MICA MINING AND MILLING CO., Chicago, Ill.

The representation of a double wedge-shaped latticed figure, upon which appear the words "MICA FLAKE" and associated with the words "AIR FLOATED."

Filed August 18, 1905. Serial No. 11,766. PUBLISHED DECEMBER 5, 1905.

49,321. WHITE LEAD. TOCH BROTHERS, New York, N. Y.

The words "TOCHSEDO WHITE LEAD," associated with the representation of a palette bearing the letter "T" and partly surrounded by a wreath. Used ten years.

Filed August 12, 1905. Serial No. 11,584. PUBLISHED DECEMBER 5, 1905.

49,322. LINIMENTS AND EMBROCATIONS. WILBUR F YOUNG, Springfield, Mass.

The word "ABSORBINE."

Filed April 24, 1905. Serial No. 2,783. PUBLISHED DECEMBER 5, 1905.

49,323. TUBE-EXPANDERS. AJAX MFG. CO., Allegheny, Pa.

The word "COLLINS." Used ten years.

Filed June 15, 1905. Serial No. 8,192. PUBLISHED DECEMBER 5, 1905.

49,324. METAL SCREWS. BABBITT BROS., Fitchburg, Mass

The word "SAMSON."

Filed October 25, 1905. Serial No. 13,941. PUBLISHED DECEMBER 5, 1905.

49,325. VEHICLE SPRING SEATS AND CUSHIONS. J. L. CLARK, Oshkosh, Wis.

The letters "L. S. S."

Filed July 10, 1905. Serial No. 9,976 PUBLISHED DECEMBER 5, 1905.

49,326. RAZORS. CHALLENGE CUTLERY CORPORATION, Bridgeport, Conn.

The word "RIFLE" and the representation of a rifle.

Filed April 15, 1905. Serial No. 1,779. PUBLISHED DECEMBER 5 1905.

49 327. MEDICINAL COMPOUND. JOHN P. CHOLEWINSKI, Chicago, Ill.

The words "PINET ALBA."

Filed May 31, 1905. Serial No. 7,120. PUBLISHED DECEMBER 5, 1905.

49,328. WASHING-POWDERS. CITRUS SOAP COMPANY, San Diego, Cal.

The representation of a lemon supported on a twig accompanied by leaves and having the word "CITRUS" printed on the lemon.

Filed May 2, 1905. Serial No. 4,045. PUBLISHED DECEMBER 5, 1905.

49,329. FARM-TRUCKS OR LOW-WHEEL WAGONS. DEERE & WEBBER CO., Minneapolis, Minn.

The words "COMMON SENSE."

Filed September 25, 1905. Serial No. 13,013. PUBLISHED DECEMBER 5, 1905.

49,330. FARM-TRUCKS OR LOW-WHEEL WAGONS. DEERE & WEBBER CO., Minneapolis Minn.

The word "UNIVERSAL."

Filed September 25, 1905. Serial No. 13,014. PUBLISHED DECEMBER 5, 1905.

49,331. FARM-TRUCKS OR LOW-WHEEL WAGONS. DEERE & WEBBER CO., Minneapolis, Minn.

The words "HARVEST KING."

Filed September 25, 1905. Serial No. 13,015. PUBLISHED DECEMBER 5, 1905.

49,332. WRITING-INKS AND WRITING FLUIDS. DIAMOND INK COMPANY, Milwaukee, Wis.

The word "DIAMOND," associated with a red diamond-shaped figure having thereupon the word "INKS."

Filed April 10. 1905. Serial No. 964. PUBLISHED DECEMBER 5, 1905.

49,333. JELLIES, JELLY-POWDERS, JAMS, AND PRESERVES. FRANCIS H. LEGGETT & COMPANY, New York, N. Y.

The word "PREMIER."

Filed September 25, 1905. Serial No. 12,973. PUBLISHED DECEMBER 5, 1905.

49 334. CHOCOLATE CONFECTIONERY. E. GREENFIELD'S SON & CO., New York, N. Y.

The words "DELATOUR CHOCOLATES." Used ten years.

Filed August 14, 1905. Serial No. 11,626. PUBLISHED DECEMBER 5, 1905.

49,335. PRESSED OR BLOWN GLASSWARE. A. H. HEISEY & CO., INC., Newark, Ohio.

The words "PLUNGER CUT."

Filed October 16, 1905. Serial No. 13,649. PUBLISHED DECEMBER 5, 1905.

49,336. MEDICINES FOR DISEASES OF THE VAGINA. W. H. HOLLIDAY, Albertville, Ala.

The words "QUEEN CORRECTOR," associated with the pictorial representation of a key.

Filed August 11, 1905. Serial No. 11,539. PUBLISHED DECEMBER 5, 1905.

49,337. SEWING-MACHINES AND PARTS THEREOF. ILLINOIS SEWING MACHINE CO., Rockford and Chicago, Ill.

The representation of a bonnet with strings flowing therefrom and appearing on a disk of contrasting color.

Filed May 11, 1905. Serial No. 5,219. PUBLISHED DECEMBER 5, 1905.

49,338. SILVER-PLATED HOLLOW WARE. INTERNATIONAL SILVER COMPANY, Meriden, Conn.

The words and abbreviation "VICTOR SILVER CO. QUADRUPLE PLATE" disposed within a circular band surrounding the fanciful representation of a horse rampant. Used ten years.

Filed November 4, 1905. Serial No. 14,319. PUBLISHED DECEMBER 5 1905.

49,339. SILVER-PLATED HOLLOW WARE. INTERNATIONAL SILVER COMPANY, Meriden, Conn.

The words, character, and abbreviations "MANUFACTURED AND PLATED BY SIMPSON HALL MILLER & CO. U. S. A." inclosed within a circle. Used ten years.

Filed November 4, 1905. Serial No. 14,336. PUBLISHED DECEMBER 5, 1905.

49,340. SILVER-PLATED HOLLOW WARE. INTERNATIONAL SILVER COMPANY, Meriden, Conn.

The words and abbreviation "WILCOX SILVER PLATE CO." disposed within a circular band inclosing the representation of crossed hammers and surrounded by the words and abbreviation "QUADRUPLE PLATE MERIDEN, CONN." Used ten years.

Filed November 4, 1905. Serial No. 14,339. PUBLISHED DECEMBER 5, 1905.

49,341. SILVER-PLATED HOLLOW WARE. INTERNATIONAL SILVER COMPANY, Meriden, Conn.

The words and abbreviation "DERBY SILVER CO. QUADRUPLE PLATE" disposed within a circular band surrounding the representation of a crown surmounted by the representation of an anchor. Used ten years.

Filed November 4, 1905. Serial No. 14,340. PUBLISHED DECEMBER 5, 1905.

49,342. SHOTGUNS, RIFLES, AND REVOLVERS. HENRY KEIDEL, Baltimore, Md.

The arbitrary and fanciful designation "HANOVER ARMS CO." Used ten years.

Filed June 15, 1905. Serial No. 8,292. PUBLISHED DECEMBER 5, 1905.

49,343. CHOCOLATE AND COCOA. KNICKERBOCKER CHOCOLATE COMPANY, New York, N. Y.

The representation of the historical character Peter Stuyvesant represented as dressed in the garb of the Knickerbockers, with a wooden leg and with a cane in his right hand and a sheathed sword at his left side, with the words "PETER STUYVESANT" on a curve below the picture.

Filed October 19, 1905. Serial No. 13,760. PUBLISHED DECEMBER 5, 1905.

49,344. LAUNDRY SOAP. MAPLE CITY SOAP WORKS, Monmouth, Ill.

The words "HARD MAPLE" arranged one above the other.

Filed September 21, 1905. Serial No. 12,846. PUBLISHED DECEMBER 5, 1905.

49,345. LAUNDRY SOAP. MAPLE CITY SOAP WORKS, Monmouth, Ill.

The words "MONDAY MORNING," which are associated with the pictorial representation of a house, hills in the background, and a rising sun, the whole appearing upon a rectangular panel.

Filed September 21, 1905. Serial No. 12,847. PUBLISHED DECEMBER 5, 1905.

49,346 COFFEE-BERRY. MILLIKEN, TOMLINSON CO., Portland, Me.

The word "SUPERBA."

Filed June 26, 1905. Serial No. 9,062. PUBLISHED DECEMBER 5, 1905.

49,347. LATHES. PATTERSON, GOTTFRIED & HUNTER, LIMITED, New York, N. Y.

A right-angled triangle represented in red.

Filed October 2, 1905. Serial No. 13,188. PUBLISHED DECEMBER 5, 1905.

49,348. MOTOR-CYCLES. W. F. REMPFIS, Reading, Pa.

The word "THOROUGHBRED."

Filed August 21, 1905. Serial No. 11,864. PUBLISHED DECEMBER 5, 1905.

49,349. LOCKS AND KEYS. RUSSELL & ERWIN MANUFACTURING COMPANY, New Britain, Conn.

The representation of two dragonic figures surrounding a diamond-shaped outline and inclosed in an irregular border.

Filed September 23, 1905. Serial No. 12,937. PUBLISHED DECEMBER 5, 1905.

49,350. WHEAT-FLOUR. S. HAMILL COMPANY, Keokuk, Iowa.

The words "OLIVE BRANCH," associated with the representation of several olive branches bearing olives, and a monogram of the letters and abbreviation "H S Co" between and dividing the two series of olive branches from each other.

Filed April 7, 1905. Serial No. 752. PUBLISHED JUNE 13, 1905.

49,351. CARRIAGES, BUGGIES, WAGONS, AND CARTS. STUDEBAKER BROTHERS MANUFACTURING COMPANY, South Bend, Ind.

The word "STUDEBAKER" arranged in a reversed curve, the letters appearing as yellow blocks with black sides and standing in perspective.

Filed September 8, 1905. Serial No. 12,394. PUBLISHED DECEMBER 5, 1905.

49,352. HORSE-DRAWN VEHICLES. STUDEBAKER BROTHERS MANUFACTURING COMPANY, South Bend, Ind.

The word "STUDEBAKER." Used ten years.

Filed September 8, 1905. Serial No. 12,396. PUBLISHED DECEMBER 5, 1905.

49,353. STEAM-VALVES AND WATER-VALVES. THE FAIRBANKS CO., New York, N. Y.

The letter, character, and abbreviation "F & Co" inclosed in a triangle.

Filed April 17, 1905. Serial No. 1,964. PUBLISHED DECEMBER 5, 1905.

49,354. STEAM-VALVES AND WATER-VALVES. THE FAIRBANKS CO., New York, N. Y.

The letter "F" inclosed in a triangle.

Filed April 17, 1905. Serial No. 1,966. PUBLISHED DECEMBER 5, 1905.

49,355 BRICKS AND ARTIFICIAL STONE. THE FLORIDA WHITE PRESSED BRICK COMPANY, Greencove Springs, Fla.

The letters "XX."

Filed October 31, 1905. Serial No. 14,135. PUBLISHED DECEMBER 5, 1905.

49,356. STOVES AND RANGES. THE GEM CITY STOVE CO., Dayton, Ohio.

The word "CLERMONT." Used ten years.

Filed July 1, 1905. Serial No. 9,564. PUBLISHED DECEMBER 5, 1905.

49,357. SHARPENING-STONES. THE PIKE MANUFACTURING COMPANY, Pike, Littleton, and Lisbon, N. H.; Hot Springs, Ark.; Orleans, Ind.; Evansville, Vt., and New York, N. Y.

The words "QUEER CREEK."

Filed October 20, 1905. Serial No. 13,795. PUBLISHED DECEMBER 5, 1905.

49,358. HONES. THE PIKE MANUFACTURING COMPANY, Pike, Littleton, and Lisbon, N. H.; Hot Springs, Ark.; Orleans, Ind.; Evansville, Vt., and New York, N. Y.

The words "EZY EDGE."

Filed October 20, 1905. Serial No. 13,796. PUBLISHED DECEMBER 5, 1905.

49,359. SELF-RAISING OR PANCAKE FLOUR. THE TOPEKA MILLING COMPANY, Topeka, Kans.

The word "RALSTON."

Filed April 12, 1905. Serial No. 1,190. PUBLISHED JUNE 27, 1905.

49,360. SCREW-DRIVERS. TOWER & LYON CO., New York, N. Y.

The word "CHAMPION." Used ten years.

Filed June 15, 1905. Serial No. 8,178. PUBLISHED DECEMBER 5, 1905.

49,361. SEWING-MACHINES AND PARTS THEREOF. UNION SPECIAL MACHINE COMPANY, Chicago, Ill.

The words "UNION SPECIAL." Used ten years.

Filed April 3, 1905. Serial No. 237. PUBLISHED DECEMBER 5, 1905.

49,362. SEWING-MACHINES AND PARTS THEREOF. UNION SPECIAL MACHINE COMPANY, Chicago, Ill.

The words "SAFE ELASTIC STITCH SEWING MACHINES," associated with the name and address "UNION SPECIAL S. M. CO. CHICAGO, ILL. U. S. A.," inclosed in an ellipse. Used ten years.

Filed April 3, 1905. Serial No. 238. PUBLISHED DECEMBER 5, 1905.

49,363. CHOCOLATES. VAN EMDEN COCOA CO., San Francisco, Cal.

The hyphenated name "Coco-Etts."

Filed October 23, 1905. Serial No. 13,870. PUBLISHED DECEMBER 5, 1905.

49,364. RECORDS FOR TALKING-MACHINES. VICTOR TALKING MACHINE CO., Camden, N. J.

The representation of a red disk applied to the central portion of the face of a disk sound-record.

Filed June 27, 1905. Serial No. 9,273. PUBLISHED DECEMBER 5, 1905.

49,365. OINTMENT. FRANK WATSON, Philadelphia, Pa.

The word "NITMOL."

Filed June 24, 1905. Serial No. 9,009. PUBLISHED DECEMBER 5, 1905.

49,366. TRUNKS. WELLEN & OICHMAN, New York, N. Y.

The words "THE UNIQUE."

Filed July 14, 1905. Serial No. 10,330. PUBLISHED DECEMBER 5, 1905.

49,367. BRAIDED CORD. WHITTIER MILLS, Chattahoochee, Ga.

The words "SOLID BRAID" placed in the annular space between two concentric circles, and the letters "U. S.," the word "CORD" and the abbreviation "Co." placed inside of the inner circle. Used ten years.

Filed September 13, 1905. Serial No. 12,527. PUBLISHED DECEMBER 5, 1905.

49,368. BRAIDED CORD. WHITTIER MILLS, Chattahoochee, Ga.

The word "SPIRAL."

Filed September 13, 1905. Serial No. 12,528. PUBLISHED DECEMBER 5, 1905.

49,369. MACARONI, SPAGHETTI, AND VERMICELLI. WOODCOCK MACARONI COMPANY, Rochester, N. Y.

The representation of a woodcock in a marsh surrounded by a circular band and the words "WOODCOCK BRAND."

Filed June 13, 1905. Serial No. 8,052. PUBLISHED DECEMBER 5, 1905.

LABELS

REGISTERED JANUARY 30, 1906.

12,633.—*Title:* "PENNA DELA." (For Cigars.) THEODOR KRIEG, Saginaw, Mich. Filed December 18, 1905.

12,634.—*Title:* "BIRNBAUM CIGAR CO'S. CASWELL." (For Cigars.) JACOB HABLE, Baltimore, Md. Filed December 30, 1905.

12,635.—*Title:* "AMERICAN CABINET." (For Cigars.) R. STEINECKE COMPANY, New York, N. Y. Filed November 20, 1905.

12,636.—*Title:* "HAASE'S DELIGHT." (For Cigars.) LOUIS HAASE, St. Louis, Mo. Filed September 9, 1905.

12,637.—*Title:* "ROSA DE FARINA." (For Cigars.) SCHMIDT & Co., New York, N. Y. Filed December 29, 1905.

12,638.—*Title:* "ES KAY WHISKEY." (For Whisky.) WILLIAM PENDLETON SHADE, Decatur, Ill. Filed January 2, 1906.

12,639.—*Title:* "MAGNET." (For Beer.) WILMANNS BROS. Co., Milwaukee, Wis. Filed August 10, 1905.

12,640.—*Title:* "VIOLET SELF RAISING PANCAKE FLOUR." (For Pancake-Flour.) ALBERS BROS. MILLING Co., Portland, Oreg. Filed December 29, 1905.

12,641.—*Title:* "VIOLET SELF RAISING BUCKWHEAT FLOUR." (For Buckwheat-Flour.) ALBERS BROS. MILLING Co., Portland, Oreg. Filed December 29, 1905.

12,642.—*Title:* "COLUMBIA OAT FLAKES." (For Oat-Flakes.) ALBERS BROS. MILLING Co., Portland, Oreg. Filed December 29, 1905.

12,643.—*Title:* "VIOLET WHEAT." (For Wheat-Flakes.) ALBERS BROS. MILLING Co., Portland, Oreg. Filed December 29, 1905.

12,644.—*Title:* "COLUMBIA WHEAT FLAKES." (For Wheat-Flakes.) ALBERS BROS. MILLING Co., Portland, Oreg. Filed December 29, 1905.

12,645.—*Title:* "KRAKRJAK." (For Biscuits.) UNION BISCUIT COMPANY, St. Louis, Mo. Filed December 30, 1905.

12,646.—*Title:* "SAUER'S PURE CONCENTRATED EXTRACT." (For Flavoring Extracts.) C. F. SAUER COMPANY, Richmond, Va. Filed December 29, 1905.

12,647.—*Title:* "LA CIGALE FRENCH BATH SACHET." (For Toilet Articles.) FRANCIS O'BRIEN, Chicago, Ill. Filed December 30, 1905.

12,648.—*Title:* "VOMITING SYRUP FOR DIPHTHERIA, CROUP, &c." (For Medicine.) KELLER BROS., Newark, N. J. Filed December 20, 1905.

12,649.—*Title:* "PATRICIAN SATIN GLOSS DRESSING." (For Shoe-Dressing.) FAUNCE & SPINNEY, Lynn, Mass. Filed December 8, 1905.

12,650.—*Title:* "PATRICIAN ALABASTINE." (For Shoe-Dressing.) FAUNCE & SPINNEY, Lynn, Mass. Filed December 4, 1905.

12,651.—*Title:* "DEXTRO." (For Stationery.) MANDEL SHURE, Chicago, Ill. Filed January 2, 1906.

PRINTS

REGISTERED JANUARY 30, 1906.

1,566.—*Title:* "COMING THRO' THE RYE." (For Whisky.) ky.) THE SAVAGE MANUFACTURING CO., Brooklyn, N. Y. Filed November 18, 1905.

1,567.—*Title:* "DON'T DISCHARGE THE COOK." (For Flour.) WASHBURN-CROSBY COMPANY, Minneapolis, Minn. Filed December 30, 1905.

1,568.—*Title:* "PUTMAN BOOTS." (For Boots.) H. J. PUTMAN & Co., Minneapolis, Minn. Filed January 2, 1906.

1,569.—*Title:* "PRIZE MEDAL BRAND GARMENTS." (For Underwear.) SALT LAKE KNITTING WORKS, Salt Lake City, Utah. Filed January 8, 1906.

1,570.—*Title:* "UGHI HEAP CANNED WHITE MAN." (For Talking-Machines.) ERNEST G. MCCLURE, Washington, Pa. Filed January 2, 1906.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

DECISION OF SECRETARY OF THE INTERIOR.

BLACKMORE v. HALL.

Decided January 16, 1906.

1. INTERFERENCE—APPEAL ON MOTION TO DISSOLVE—NON-APPEALABLE QUESTIONS RAISED.

Concerning an appeal taken to the Commissioner from a decision of the Primary Examiner denying a motion to dissolve an interference, *Held* that the appeal to the Commissioner, though alleging the appealable questions of interference in fact and irregularity in declaration, was one attempting to raise by indirection the non-appealable question of an opponent's right to make certain claims.

2. SUPERVISORY AUTHORITY OF SECRETARY OF INTERIOR OVER COMMISSIONER OF PATENTS—DISMISSAL OF APPEAL A QUASI-JUDICIAL DETERMINATION.

Where the Commissioner dismissed an appeal from the decision of the Primary Examiner denying a motion to dissolve an interference on the ground that the appeal, though alleging appealable grounds, only sought consideration of non-appealable questions, *Held* that the decision of the Commissioner was a quasi-judicial determination which bears more or less directly upon the merits of the controversy and presents a question over which the Secretary of the Interior has no supervisory jurisdiction by appeal or otherwise. (See *Butterworth* v. *Hoe*, 112 U. S., 50, and *Poole* v. *Avery*, 14 *Assistant Attorneys-General Opinions*, 177.)

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE ASSISTANT ATTORNEY-GENERAL.
Washington, D. C., January 16, 1906.

The Secretary of the Interior:

SIR: I have your reference of the 5th instant for opinion upon the questions presented by the proffered appeal to the Secretary of the Interior by Henry S. Blackmore from the action of the Commissioner of Patents in dismissing his appeal from the action of the Primary Examiner of the Patent Office denying the said Blackmore's motion to dissolve an interference declared upon his application for Letters Patent for an invention.

It appears that upon the filing of Blackmore's application for Letters Patent of the United States for a new method of producing aluminium, October 29, 1904, it was placed in interference with the application of one Joseph B. Hall, filed November 10, 1902, and that within the time prescribed by the Rules of Practice of the Patent Office Blackmore brought a motion under Rule 122 thereof to dissolve the interference upon the following grounds:

(1) That no interference in fact exists between the applications involved in said interference.

(2) That there has been such irregularity in declaring the interference as would preclude a proper determination of the question of priority.

(3) That the interferant, Hall, has no right to make a claim corresponding to any of the counts of the issue.

(4) That the subject-matter of the interference is not patentable to the party, Hall.

The motion was denied by the Primary Examiner upon all four grounds, and an appeal was taken to the Commissioner upon grounds 1 and 2.

Said Rule 122 provides that motion to dissolve an interference may be made upon any one or all of the four grounds relied upon in this case, and Rule 124 provides that appeal may be taken to the Commissioner from decisions upon all motions, except (1) motions to dissolve which deny the patentability of applicant's claim, and (2) motions which deny the right of the applicant to make the claim.

The decision of the Primary Examiner in denying the motion to dissolve upon the two grounds first mentioned—to wit: (1) that no interference in fact exists, and (2) irregularity in declaring the interference—presents questions which are, under Rule 124 of the Rules of Practice, appealable to the Commissioner of Patents, and that officer, responding to a request of the Secretary of the Interior for report upon this matter, admits so much, but says, in substance and effect, that the only reason assigned by the appellant in support of his first proposition that no interference in fact exists, rests upon the contention that Hall had no right to make a corresponding claim which is declared by Rule 124 to be *not* an appealable issue, and, further, that the claim of irregularity in declaring the interference rests only upon the contention that no interference in fact exists, so that the whole contention rests in its last analysis upon the non-appealable contention that Hall has no right to make a corresponding claim. From an examination of the papers, I am of opinion that this is so, and that Blackmore was attempting by indirection to take an appeal upon a question which is not appealable. The Commissioner so held upon the appeal, and even were I disposed to differ with him upon the merits I should still have to advise you that that decision was a *quasi*-judicial determination which bears more or less directly upon the merits of the controversy and presents a question over which the Secretary of the Interior has no supervisory jurisdiction by appeal or otherwise. (See *Butterworth* v. *Hoe*, 112 U. S., 50, and *Poole* v. *Avery*, 14 *Assistant Attorneys-General Opinions*, 177.)

The appeal should be dismissed.

Very respectfully,

(Signed) FRANK L. CAMPBELL,
Assistant Attorney-General.

Approved: January 16, 1906.

E. A. HITCHCOCK,
Secretary.

REPORT

OF THE

COMMISSIONER OF PATENTS

TO CONGRESS,

FOR THE YEAR ENDED DECEMBER 31, 1905.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., January 25, 1906.

To the Senate and House of Representatives of the United States of America in Congress assembled:

In compliance with section 494 of the Revised Statutes I have the honor to submit the following report of the business of the Patent Office for the year ended December 31, 1905:

RECEIPTS.

Detailed statement of all moneys received for patents, for copies of records or drawings, or from any source whatever.

Applications:		
Cash received		$1,594,762 00
Cash refunded		5,937 00
Net cash		1,588,825 00
Certificates of deposit		37,455 00
Total cash and certificates		1,626,280 00
Copies:		
Cash received		139,815 98
Cash refunded		8,106 74
Net cash		131,709 24
Certificates of deposit		407 56
Total cash and certificates		132,116 80
Recording assignments:		
Cash received		28,490 65
Cash refunded		1,353 13
Net cash		27,137 52
Certificates of deposit		131 00
Total cash and certificates		27,268 52
Subscriptions to Official Gazette:		
Cash received		13,336 72
Cash refunded		127 90
Net cash		13,208 82
Certificates of deposit		42 50
Total cash and certificates		13,251 32
Registration of prints and labels:		
Cash received		9,165 00
Cash refunded		1,383 50
Net cash		7,781 50
Certificates of deposit		60 00
Total cash and certificates		7,841 50
Aggregates.		
Cash received		$1,785,570 35
Cash refunded		16,908 27
Net cash		1,768,662 08
Certificates of deposit		38,096 06
Total cash and certificates		1,806,758 14

EXPENDITURES.

Amounts expended under the several appropriations from January 1, 1905, to December 31, 1905.

Salaries	$853,894 70
Scientific library	1,663 37
Transportation of publications to foreign countries	957 75
International Union for Protection of Industrial Property	701 77
Stationery	12,748 87
Postage on foreign matter	2,536 00
Furniture	6,109 77
Carpets	1,187 70
Ice	386 60
Telephones	1,062 90
Washing towels	178 39
Sundries	5,156 80
Law library	462 00
Official Gazette, (illustrations,) paid contractor	71,791 40
Photolithographing, paid contractor	125,571 82
Printing and binding, paid Public Printer for Official Gazette, indexes, printing specifications, and miscellaneous work	395,251 38
Total	1,479,633 22

RECEIPTS AND EXPENDITURES.

Receipts from all sources	$1,806,758 14
Expenditures	1,479,633 22
Surplus	327,124 92

Statement of balance in the Treasury of the United States on account of the patent fund.

Amount to the credit of the fund January 1, 1905	$5,863,866 76
Amount of receipts during the year 1905	1,806,758 14
Total	7,670,624 90
Deduct expenditures for the year 1905	1,479,633 22
Balance January 1, 1906	6,190,991 68

SUMMARY OF THE BUSINESS OF THE PATENT OFFICE.

Applications for patents for inventions	54,034
Applications for patents for designs	781
Applications for reissues of patents	156
Total	54,971
Caveats filed	1,896
Applications for registration of trade-marks	16,224
Applications for registration of labels	1,068
Applications for registration of prints	467
Disclaimers filed	5
Appeals on the merits	1,266
Total	20,926
Applications, etc., requiring investigation and action	17,004
Patents issued, including designs	30,270
Patents reissued	129
Total	30,399
Trade-marks registered	4,490
Labels registered	830
Prints registered	359
Total	5,679
Patents expired during the year	19,585
Patents withheld for non-payment of final fees	5,208
Applications allowed awaiting final fees	11,036

PATENTS ISSUED.

Patents issued to citizens of the United States, with the ratio of population to each patent granted.

States and Territories.	Patents and designs.	One to every—	States and Territories.	Patents and designs.	One to every—
Alabama	138	13,253	Nevada	7	6,047
Alaska	1	63,441	New Hampshire	92	4,473
Arizona	22	5,587	New Jersey	1,271	1,482
Arkansas	93	14,102	New Mexico	23	8,491
California	1,042	1,425	New York	4,392	1,654
Colorado	397	1,359	North Carolina	141	13,431
Connecticut	741	1,225	North Dakota	80	3,989
Delaware	47	3,930	Ohio	2,116	1,964
District of Columbia	232	1,201	Oklahoma	97	4,105
Florida	69	7,660	Oregon	127	3,256
Georgia	224	9,804	Pennsylvania	2,918	2,159
Hawaii	14	11,000	Porto Rico	1	.....
Idaho	43	3,762	Rhode Island	229	1,871
Illinois	2,923	1,649	South Carolina	70	19,147
Indiana	719	3,499	South Dakota	90	4,461
Indian Territory	36	10,887	Tennessee	180	10,601
Iowa	663	3,366	Texas	382	7,980
Kansas	389	3,780	Utah	68	4,069
Kentucky	243	8,836	Vermont	77	4,462
Louisiana	159	8,689	Virginia	206	9,000
Maine	119	5,835	Washington	278	1,863
Maryland	290	4,103	West Virginia	173	5,542
Massachusetts	1,798	1,560	Wisconsin	636	3,253
Michigan	980	2,470	Wyoming	40	2,313
Minnesota	508	3,447	United States Army	5	.....
Mississippi	92	16,861	United States Navy	18	.....
Missouri	947	3,280	United States Revenue Service	1	.....
Montana	103	2,362	Total	26,978	.....
Nebraska	219	4,879			

Patents granted to citizens of foreign countries.

Argentina	7	Mexico	13
Austria-Hungary	125	Natal	3
Belgium	40	Netherlands	20
Brazil	2	Newfoundland	1
Canada	413	New South Wales	34
Cape Colony	2	New Zealand	56
Ceylon	2	Norway	14
Chile	4	Portugal	1
China	1	Queensland	3
Cuba	12	Russia	45
Danish West Indies	1	San Salvador	1
Denmark	30	Scotland	72
Dutch Guiana	1	South Africa	2
Egypt	3	South Australia	5
England	770	Spain	7
France	303	Sweden	75
Germany	987	Switzerland	89
Honduras	1	Tasmania	2
India	10	Transvaal	23
Ireland	19	Victoria	31
Isle of Guernsey	1	Western Australia	8
Italy	40		
Japan	13	Total	3,292

The following tables present a comparative statement of the business of the Patent Office since the enactment of the statute of 1836 and exhibit in detail the business of the Office during the last calendar year:

Comparative statement of the business of the Office from 1837 to 1905, inclusive.

Year.	Applications.	Caveats filed.	Patents and reissues.	Cash received.	Cash expended.	Surplus.
1837	.....	.....	435	$29,269 08	$33,506 98	.....
1838	.....	.....	520	42,123 54	37,338 92	$4,784 62
1839	.....	.....	425	38,019 97	34,543 51	3,476 46
1840	765	228	473	38,056 51	39,020 67	.....
1841	847	312	495	40,413 01	52,666 87	.....
1842	761	291	517	36,505 63	31,241 43	5,264 20
1843	819	315	519	35,315 81	30,776 96	4,538 85
1844	1,045	380	497	42,809 26	36,344 53	6,164 73
1845	1,246	452	503	51,076 14	39,395 65	11,680 49
1846	1,272	448	638	50,264 16	46,158 71	4,105 45
1847	1,531	533	569	63,111 19	41,878 35	21,232 84
1848	1,628	607	653	67,576 99	58,906 84	8,670 85
1849	1,955	595	1,077	80,752 78	77,716 44	3,036 34
1850	2,193	602	993	86,927 05	80,100 95	6,826 10
1851	2,258	760	872	95,738 61	86,916 93	8,821 68
1852	2,639	996	1,019	112,056 34	95,916 91	16,139 43
1853	2,673	901	961	121,527 45	132,389 83	.....
1854	3,324	868	1,344	163,789 84	167,148 32	.....
1855	4,435	906	2,013	216,489 35	179,540 33	36,919 02
1856	4,960	1,024	2,505	192,566 02	199,981 02	.....
1857	4,771	1,010	2,898	196,122 01	211,562 09	.....
1858	5,364	943	3,710	203,716 16	193,193 74	10,522 42
1859	6,226	1,079	4,538	245,942 15	210,278 41	35,663 74
1860	7,663	1,084	4,819	256,352 59	252,820 80	3,531 79

Comparative statement of the business of the Office from 1837 to 1905, inclusive—Continued.

Year.	Applications.	Caveats filed.	Patents and reissues.	Cash received.	Cash expended.	Surplus.
1861	4,643	700	3,340	$137,384 44	$221,491 91	.....
1862	5,038	824	3,221	215,764 99	182,810 39	$32,944 06
1863	6,014	787	4,170	195,563 29	189,414 14	6,179 15
1864	6,972	1,063	5,020	240,919 98	229,868 00	11,051 98
1865	10,664	1,932	6,616	345,791 84	274,199 34	74,592 50
1866	15,269	2,722	9,450	495,665 38	361,724 28	133,941 10
1867	21,276	3,597	13,015	646,581 92	639,263 32	7,318 60
1868	20,445	3,705	13,378	681,585 86	628,679 77	52,886 09
1869	19,271	3,624	13,986	693,145 81	486,430 74	206,715 07
1870	19,171	3,273	13,321	669,456 76	557,147 19	112,309 57
1871	19,472	3,366	13,033	678,716 46	562,091 64	116,624 82
1872	18,246	3,090	13,590	699,726 39	665,595 00	34,131 39
1873	20,414	3,248	12,864	703,191 77	691,178 98	12,012 79
1874	21,002	3,181	13,599	738,278 17	679,288 41	58,989 76
1875	21,638	3,094	14,837	743,453 36	721,657 71	21,795 65
1876	21,425	2,997	15,595	757,987 65	652,542 60	105,445 05
1877	20,308	2,809	14,187	732,342 85	613,152 62	119,190 23
1878	20,260	2,755	13,444	725,375 55	593,082 89	132,292 66
1879	20,050	2,620	13,213	703,931 47	529,638 97	174,292 50
1880	22,012	2,490	13,947	749,685 32	538,865 17	210,820 15
1881	26,059	2,408	16,584	853,665 89	605,173 28	248,492 61
1882	31,522	2,553	19,267	1,009,219 45	683,867 67	325,351 78
1883	34,576	2,741	22,383	1,146,240 00	675,234 86	471,005 14
1884	35,600	2,582	20,413	1,075,798 80	970,579 76	105,219 04
1885	35,717	2,552	24,233	1,188,089 15	1,024,378 85	163,710 30
1886	35,968	2,613	22,506	1,154,551 40	992,503 45	162,047 95
1887	35,613	2,622	21,477	1,144,509 60	994,472 22	150,037 38
1888	35,797	2,251	20,506	1,118,516 10	973,108 78	145,407 32
1889	40,575	2,481	24,158	1,281,728 05	1,052,955 96	228,772 09
1890	41,048	2,311	26,292	1,340,372 66	1,099,297 74	241,074 92
1891	40,552	2,408	23,244	1,271,285 78	1,139,713 35	131,572 43
1892	40,753	2,290	23,559	1,286,331 88	1,110,739 24	175,592 59
1893	38,473	2,247	23,769	1,242,871 64	1,141,038 45	101,833 19
1894	38,439	2,286	20,867	1,187,439 58	1,100,047 12	87,392 46
1895	40,680	2,415	22,057	1,245,246 93	1,106,389 49	138,857 44
1896	43,982	2,271	23,373	1,324,059 83	1,113,413 71	210,646 12
1897	47,905	2,176	23,794	1,375,641 72	1,122,843 13	252,798 59
1898	45,842	1,659	22,267	1,137,734 48	1,136,196 20	1,538 28
1899	41,443	1,716	25,527	1,325,457 03	1,211,783 73	113,673 30
1900	41,980	1,731	26,499	1,350,828 53	1,260,019 62	90,808 91
1901	46,449	1,842	27,373	1,449,398 16	1,297,385 64	152,012 52
1902	49,641	1,861	27,886	1,552,859 08	1,393,345 54	159,513 54
1903	50,213	1,771	31,699	1,642,201 81	1,448,645 81	193,556 00
1904	52,143	1,808	30,934	1,657,326 53	1,476,000 38	181,326 15
1905	54,971	1,896	30,399	1,806,758 14	1,479,633 22	327,124 92

Statement showing the number of the first patent, design patent, and reissued patent, and the number of the first certificate of registration of a trade-mark, label, and print issued in each calendar year since July 28, 1836, when the present series of numbers of letters patent commenced, together with the total number of each issued during the year.

[The number of patents granted prior to the commencement of this series of numbering (July 28, 1836) was 9,957.]

Calendar year.	Number of first patent and certificate issued in each calendar year.						Number of patents and certificates of registration issued during each calendar year.							
	Patents.	Designs.	Reissues.	Trade-Marks.	Labels.	Prints.	Patents.	Designs.	Reissues.	Total patents.	Trade-Marks.	Labels.	Prints.	Total certificates.
1836 (July 28)	1	.....	.....	.....	.....	.....	109	.....	.....	.....	.....	.....	.....	.....
1837	110	.....	.....	.....	.....	.....	436	.....	.....	.....	.....	.....	.....	.....
1838	546	.....	1	.....	.....	.....	515	.....	6	.....	.....	.....	.....	.....
1839	1,061	.....	7	.....	.....	.....	404	.....	13	.....	.....	.....	.....	.....
1840	1,465	.....	20	.....	.....	.....	458	.....	10	.....	.....	.....	.....	.....
1841	1,923	.....	30	.....	.....	.....	490	.....	6	.....	.....	.....	.....	.....
1842	2,413	.....	36	.....	.....	.....	488	.....	13	.....	.....	.....	.....	.....
1843	2,901	1	49	.....	.....	.....	494	14	11	519	.....	.....	.....	.....
1844	3,395	15	60	.....	.....	.....	478	12	7	497	.....	.....	.....	.....
1845	3,873	27	67	.....	.....	.....	475	17	11	503	.....	.....	.....	.....
1846	4,348	44	78	.....	.....	.....	506	59	13	638	.....	.....	.....	.....
1847	4,914	103	91	.....	.....	.....	495	60	14	569	.....	.....	.....	.....
1848	5,409	163	105	.....	.....	.....	584	46	23	653	.....	.....	.....	.....
1849	5,993	209	128	.....	.....	.....	998	49	20	1,067	.....	.....	.....	.....
1850	6,961	268	158	.....	.....	.....	884	83	26	993	.....	.....	.....	.....
1851	7,995	341	184	.....	.....	.....	757	90	25	872	.....	.....	.....	.....
1852	8,622	431	209	.....	.....	.....	890	109	20	1,019	.....	.....	.....	.....
1853	9,812	540	226	.....	.....	.....	846	86	29	961	.....	.....	.....	.....
1854	10,368	626	258	.....	.....	.....	1,759	57	28	1,844	.....	.....	.....	.....
1855	12,117	663	286	.....	.....	.....	1,892	70	51	2,013	.....	.....	.....	.....
1856	14,008	753	337	.....	.....	.....	2,315	107	83	2,505	.....	.....	.....	.....
1857	16,324	880	420	.....	.....	.....	2,686	113	97	2,896	.....	.....	.....	.....
1858	19,010	973	517	.....	.....	.....	3,467	102	126	3,695	.....	.....	.....	.....
1859	22,477	1,075	643	.....	.....	.....	4,105	106	231	4,442	.....	.....	.....	.....
1860	26,642	1,183	674	.....	.....	.....	4,353	183	232	4,778	.....	.....	.....	.....
1861	31,005	1,266	1,108	.....	.....	.....	3,040	142	147	3,329	.....	.....	.....	.....
1862	34,645	1,508	1,253	.....	.....	.....	3,221	195	116	3,532	.....	.....	.....	.....
1863	37,286	1,703	1,389	.....	.....	.....	3,781	176	227	4,184	.....	.....	.....	.....
1864	41,647	1,879	1,598	.....	.....	.....	4,638	139	249	5,026	.....	.....	.....	.....
1865	45,695	2,018	1,844	.....	.....	.....	6,099	221	296	6,616	.....	.....	.....	.....
1866	51,784	2,220	2,140	.....	.....	.....	8,574	264	290	9,458	.....	.....	.....	.....

Statement showing the number of the first patent, design patent, and reissued patent—Continued.

Calendar year.	Number of first patent and certificate issued in each calendar year.						Number of patents and certificates of registration issued during each calendar year.							
	Patents.	Designs.	Reissues.	Trade-Marks.	Labels.	Prints.	Patents.	Designs.	Reissues.	Total patents.	Trade-Marks.	Labels.	Prints.	Total certificates.
1867	60,658	2,533	2,430	.....	.....	.....	12,301	325	400	13,026	.....	.....	.....	.....
1868	72,959	2,858	2,830	.....	.....	.....	12,544	446	420	13,410	.....	.....	.....	.....
1869	85,503	3,304	3,250	.....	.....	.....	12,957	506	534	13,997	.....	.....	.....	.....
1870	98,460	3,810	3,784	1	.....	.....	12,157	737	439	13,333	121	.....	.....	121
1871	110,617	4,547	4,223	122	.....	.....	11,687	905	464	13,056	486	.....	.....	486
1872	122,304	5,452	4,887	608	.....	.....	12,200	884	529	13,613	491	.....	.....	491
1873	134,504	6,336	5,216	1,009	.....	.....	11,616	747	501	12,864	492	.....	.....	492
1874	146,120	7,083	5,717	1,501	1	.....	12,230	896	483	13,599	559	232	.....	791
1875	158,350	7,999	6,200	2,150	233	.....	13,291	915	631	14,837	1,138	232	.....	1,370
1876	171,841	8,884	6,531	3,283	465	.....	14,172	802	621	15,595	959	472	.....	1,431
1877	185,813	9,686	7,452	4,247	937	.....	12,920	699	568	14,187	1,216	392	.....	1,608
1878	198,733	10,385	8,020	5,463	1,329	.....	12,345	580	509	13,444	1,455	492	.....	1,947
1879	211,078	10,975	8,529	6,918	1,821	.....	12,133	592	488	13,213	872	355	.....	1,227
1880	223,211	11,567	9,017	7,790	2,176	.....	12,926	515	506	13,947	349	203	.....	552
1881	236,137	12,082	9,523	8,139	2,379	.....	15,548	565	471	16,584	834	202	.....	1,036
1882	251,685	12,647	9,994	8,973	2,581	.....	18,135	861	271	19,267	947	304	.....	1,251
1883	269,820	13,506	10,265	9,920	42,885	.....	21,196	1,020	167	22,383	902	906	.....	1,808
1884	291,016	14,528	10,432	10,522	3,791	.....	19,147	1,150	116	20,413	1,021	513	.....	1,534
1885	310,163	15,678	10,548	11,843	4,304	.....	23,331	773	129	24,233	1,057	391	.....	1,458
1886	333,494	16,451	10,677	12,910	4,695	.....	21,797	595	116	22,508	1,029	378	.....	1,407
1887	355,291	17,046	10,793	13,939	5,073	.....	20,429	949	99	21,477	1,133	380	.....	1,513
1888	375,720	17,996	10,892	15,072	5,453	.....	19,585	835	86	20,506	1,059	327	.....	1,386
1889	396,306	18,830	10,978	16,131	5,780	.....	23,360	723	75	24,158	1,229	319	.....	1,548
1890	416,665	19,553	11,053	17,360	6,099	.....	25,322	886	84	26,292	1,415	304	.....	1,719
1891	443,937	20,439	11,137	18,775	6,403	.....	22,328	836	80	23,244	1,762	137	.....	1,899
1892	466,315	21,275	11,217	20,537	6,540	.....	22,661	817	81	23,559	1,737	a6	.....	1,743
1893	488,976	22,092	11,296	22,274	None.	1	22,768	902	99	23,769	1,677	None.	2	1,679
1894	511,744	22,994	11,397	23,951	Do.	3	19,875	928	64	20,857	1,806	Do.	4	1,810
1895	531,619	23,922	11,461	25,767	Do.	7	20,883	1,115	59	22,057	1,829	Do.	3	1,832
1896	552,502	25,037	11,520	27,586	6,546	10	21,867	1,445	61	23,373	1,813	1	32	1,846
1897	574,369	26,482	11,581	29,390	6,547	42	22,098	1,631	65	23,794	1,671	14	16	1,701
1898	596,467	28,113	11,646	31,070	6,561	58	30,404	1,803	60	22,267	1,238	200	35	1,473
1899	616,871	29,916	11,706	32,308	6,761	93	23,298	2,139	92	25,527	1,649	511	100	2,260
1900	640,167	32,055	11,798	33,957	7,272	193	24,660	1,758	81	26,499	1,721	737	93	2,551
1901	664,827	33,813	11,879	35,678	8,009	286	25,558	1,734	81	27,373	1,928	878	159	2,965
1902	690,385	35,547	11,960	37,606	8,887	445	27,136	640	110	27,886	2,006	767	158	2,931
1903	717,521	36,187	12,070	39,612	9,654	603	31,046	536	117	31,699	2,186	990	270	3,446
1904	748,567	36,723	12,189	41,798	10,644	873	30,267	557	110	30,934	2,158	1,114	297	3,569
1905	778,834	37,280	12,299	43,956	11,758	1,170	29,784	486	129	30,399	4,490	830	359	5,679

a Registration of labels practically suspended May 27, 1891, under decision of the United States Supreme Court in *Higgins et al.* v. *Keuffel et al.*, (55 O. G., 1139,) with the registration of No. 6,545, June 14, 1892. Resumed June 9, 1896, with the registration of No. 6,546.

Expenditures for photolithographing the Official Gazette since 1884–85.

Fiscal year.	Contractor.	Edition.	Pages.	Per page.	Cost.	Total cost.
1884–85	Norris Peters	6,500	5,040	$7 86	$39,614 40	$39,614 40
1885–86	do	6,500	a 130	a 7 86	a 1,021 80	
			5,816	7 45	43,329 20	44,351 00
1886–87	do	6,500	5,620	7 45	41,869 00	41,869 00
1887–88	do	6,500	5,528	7 45	41,183 60	41,183 60
1888–89	do	6,500	5,906	7 45	43,999 70	43,999 70
1889–90	do	6,500	7,522	7 45	56,038 90	
			b 1,074	b 2 75	b 2,953 50	58,992 40
1890–91	do	7,000	7,488	7 45	55,785 60	
			b 3,702	b 2 75	b 10,180 50	65,966 10
1891–92	Norris Peters Co	7,000	7,110	7 45	52,969 50	52,969 50
			7,234	7 45	53,908 30	
1892–93	do	7,000	b 16	b 3 09	b 48 00	
			b 16	b 3 50	b 56 00	
			b 364	b 2 75	b 1,001 00	54,998 30
			6,040	7 45	44,998 00	
1893–94	National Lithographic Co	7,000	c 849	c 5 30	c 4,499 70	
			c 554	.....	c 500 00	49,997 70
1894–95	Norris Peters Co	7,000	6,868	5 25	36,057 00	
			b 6,856	b 48	b 3,290 88	39,297 88
1895–96	A. B. Graham	7,000	7,664	5 10	39,035 40	
					b 3,290 90	42,326 30
1896–97	Norris Peters Co	7,000	7,926	4 50	35,712 00	35,712 00
1897–98	do	7,000	7,794	5 10	39,749 40	39,749 40
1898–99	do	7,000	8,226	5 60	46,065 60	46,065 60
1899–1900	do	7,000	9,838	5 60	55,092 80	55,092 80
1900–1901	do	7,000	9,986	6 25	62,100 00	62,100 00
1901–1902	do	7,000	10,656	6 25	66,600 00	66,600 00
1902–1903	do	7,000	12,018	6 25	75,112 80	75,112 80
1903–1904	do	7,000	13,466	6 25	84,162 80	84,162 50
1904–1905	Sackett & Wilhelms Lithographing & Printing Co.	7,000	13,640	5 50	75,020 00	75,020 00
1905–1906	do	7,000	d 14,600	4 60	d 67,160 00	d 67,160 00

a First edition furnished at previous contract price, new contract not having been executed.
b Back numbers reproduced.
c Expired patents published.
d Estimated.

Expenditures for photolithographic and photographic work since 1884–85.

Fiscal year.	Contractor.	Prize per page. Current issue.	Reproduction of exhausted copies	Library edition.	Photographic copies.	Total.	Official Gazette.	Grand total.
1884–85	Norris Peters	a$1 61	$1 58	†$2 90		$78,671 99	$39,614 40	$118,286 39
1885–86	do	a 1 61	† 1 00 ‡ 1 58	† 2 80		84,940 19	44,351 00	129,291 19
1886–87	do	a 1 61	† 1 00 ‡ 1 56	† 2 80		79,509 57	41,869 00	121,378 57
1887–88	do	a 1 61	† 1 00 ‡ 1 56	† 2 80		77,907 96	41,183 60	119,091 56
1888–89	do	a 1 61	† 1 00 ‡ 1 56	† 2 80		83,284 54	43,999 70	127,284 24
1889–90	do	a 1 61	† 1 00 ‡ 1 56	† 2 80		101,292 67	58,992 40	160,285 07
1890–91	do	a 1 61	† 1 00 ‡ 1 56	† 2 80		110,998 97	65,966 10	176,965 07
1891–92	Norris Peters Co	b 1 57	† 1 00 ‡ 1 56	† 2 80		99,992 58	52,969 50	152,962 08
1892–93	do	b 1 56 c 1 49	‡ 1 56 † 1 00	† 2 80		99,788 92	54,998 30	154,787 22
1893–94	National Lithographic Co	b 1 55 c 1 47	‡ 1 56 † 1 00	† 2 70		94,911 33	49,997 70	144,909 03
1894–95	Norris Peters Co	b 1 01 c 96	‡ 1 14 l 94	† 1 95		60,482 04	38,297 88	98,779 92
1895–96	A. B. Graham	d 1 0025 e 9775	k 735 l 93	‖ 1 10		58,866 60	42,326 30	101,192 90
1896–97	Norris Peters Co	f 84 e 655	m 65 n 60	‖ 1 00		58,960 78	35,712 00	94,672 78
1897–98	do	d 92 e 83	m 75 n 75	‖ 1 50		68,999 28	39,749 40	108,748 68
1898–99	do *Annie C. Bell	d 1 005 e 885	o 72 78	‖ 1 60	$60 07 w 095 y 125 v 05	75,999 85	46,065 60	122,065 45
1899–1900	Norris Peters Co *Henry C. Yates & Co	g 995 e 885	p 70 n 78	‖ 1 60	w 12 y 18 v 05	98,999 90	55,092 80	154,092 70
1900–1901	do	g 1 08 h 1 03	q 80	‖ 1 75	w 12 y 20 v 05	108,999 54	62,100 00	171,099 54
1901–1902	do	g 1 08 h 1 03	q 80	‖ 1 75	w 12 y 20 v 05	108,999 55	66,600 00	175,599 55
1902–1903	Norris Peters Co *Charles Parker	g 1 08 h 1 03	q 80	‖ 1 75	w 14 y 20	123,842 76	75,112 50	198,955 26
1903–1904	Norris Peters Co *W. E. Oliver	g 1 08 h 1 03	q 80	‖ 1 75	w 10 y 15	129,999 97	84,162 50	214,162 47
1904–1905	Sackett & Wilhelms Lithographing & Printing Co. *C. Parker	d 1 30 h 95	q 80 r 1 10 s 1 25	‖ 1 65	w 10 y 15	140,000 00	75,020 00	215,020 00
1905–1906	§A. B. Graham Co ‡Norris Peters Co *Columbia Planograph Co *W. E. Oliver 'Sackett & Wilhelms Lithographing & Printing Co.	d 896 aa 725 bb 705 cc 60	q 60 r 80 s 90	‖ 1 38	w 08 y 13	z130,000 00	z67,160 00	z197,160 00

§ For current issue.
a " reproduction of exhausted copies.
o " the library edition.
* " photographic work.
: " Official Gazette.
a " 152 thin, 2 thick, and 1 bond copies.
b " 102 " 2 " " 1 " " "
c " 34 " 2 " " 1 " " " of design patents and trade-marks.
d " 100 " 2 proof, 2 thick, and 1 bond copies.
e " 24 " 4 thick, and 1 bond copies of designs and trade-marks.
f " 100 " 2 " 1 " "
g " 75 " 2 proof, 2 thick, and 1 bond copies.
h " 50 " 4 thick, and 1 bond copies of designs and trade-marks.
i " 152 " and 2 thick copies of mechanical patents.
j " 12 copies of design patents and trade-marks.
k " 150 thin and 2 thick copies of mechanical patents.
l " 24 " " 2 " " " designs and trade-marks.
m " 150 copies of mechanical patents.
n " 24 " " design patents and trade-marks.
o " 100 " " mechanical patents.
p " 80 " " " "
q " 80 " each, mechanical and design patents and trade-marks.
r " 75 " " " " " " " "
s " 100 " " " " " " " "
t " 200 copies.
u " 295 "
v Size, 5 x 8 in.
w " 7 x 11 "
y " 10 x 15 "
z Estimated.
aa For 50 thin, 2 proof, 2 thick, and 1 bond copies of designs.
bb " 50 " 2 thick, and 1 bond copies of trade-marks.
cc " 2 copies of trade-marks for publication.

Table showing the number of patents issued by the United States and foreign countries from the earliest period to December 31, 1905. (Foreign figures for 1905 estimated.)

Countries.	To 1870, inclusive.	1871 to 1905.	Total.	Countries.	To 1870, inclusive.	1871 to 1905.	Total.
Argentina	83	5,460	5,543	Malta		59	59
Australia		900	900	Mauritius	113	260	373
Austria		41,741	41,741	Mexico	22	5,510	5,532
Austria-Hungary	15,350	67,583	82,933	Netherlands	4,535		4,535
Bahamas		2	2	Newfoundland	40	332	372
Barbados		134	134	New South Wales	236	11,715	11,951
Belgium	35,044	160,533	195,577	New Zealand	109	10,122	10,231
Bolivia	42	65	107	Norway	737	15,622	16,359
Brazil	185	4,824	5,009	Peru		160	160
British Guiana	32	94	126	Portugal	245	4,548	4,793
British Honduras	1	19	20	Queensland	67	6,255	6,322
Canada	4,081	96,347	100,428	Russia	1,464	15,788	17,252
Ceylon	58	589	647	St. Helena		4	4
Chile	266	1,399	1,665	South African Republic		1,172	1,172
Colombia		945	945	South Australia	123	6,221	6,344
Congo Free State		154	154	Spain		33,617	33,617
Denmark	464	15,074	15,538	Straits Settlements		148	148
Ecuador		8	8	Sweden	1,629	21,978	23,607
Fiji Islands		31	31	Switzerland		32,984	32,984
Finland	112	2,268	2,380	Tasmania	43	2,426	2,469
France	103,934	264,744	368,678	Transvaal		1,056	1,056
Germany	9,996	172,170	182,166	Trinidad	6	172	178
Great Britain	53,408	296,410	351,818	Tunis		579	579
Guatemala		57	57	Turkey		1,440	1,440
Hawaii (prior to August 12, 1898)		148	148	Uruguay		280	280
Hongkong		144	144	Venezuela		194	194
Hungary		30,211	30,211	Victoria	822	12,463	13,285
India	445	8,147	8,592	Western Australia		3,524	3,524
Italy and Sardinia	4,723	69,600	74,323				
Jamaica	22	170	192	Total foreign	238,437	1,446,577	1,685,014
Japan		9,823	9,823	United States	120,573	698,001	818,574
Leeward Islands		19	19				
Liberia		2	2	Grand total	359,010	2,144,578	2,503,588
Luxemburg		6,133	6,133				

The following comparison between the receipts, expenditures, applications filed, issues of the Office, the printed copies sold, copies of records furnished, and the number of employees for the years ended, respectively, December 31, 1899, and December 31, 1905, illustrates the growth of the business of the Patent Office:

Class.	1899.	1905.	Increase.	Per-centage of increase.
Receipts	$1,325,457.03	$1,806,758.14	$481,301.11	36.3
Expenditures	$1,211,783 73	$1,479,633.22	$267,849.49	22.1
Applications and caveats filed	45,990	74,626	28,636	62.2
Letters patent, design and reissue patents granted, and trade-marks, labels, and prints registered	27,787	36,078	8,291	29.8
Printed copies of patents furnished	1,451,519	1,863,367	411,848	28.3
Price received	$50,201.11	$71,738.75	$21,537.64	42.9
Words written in copies of records furnished	13,575,650	21,155,300	7,579,650	55.8
Number of employees	663	748	85	12.8

SUMMARY OF TABLES.

In 1905 there were received 54,034 applications for mechanical patents, 781 applications for design patents, 156 applications for reissues of patents, 16,224 applications for registration of trade-marks, 1,068 applications for registration of labels, and 467 applications for registration of prints. There were 30,270 patents issued, including designs, 129 patents reissued, and 4,490 trade-marks, 830 labels, and 359 prints registered. The number of patents that expired was 19,585. The number of allowed applications awaiting the payment of final fees was 11,036, and the number forfeited for non-payment of the final fees 5,208. The total receipts were $1,806,758.14, the expenditures $1,479,633.22, and the surplus of receipts over expenditures $327,124.92. The total balance to the credit of the Patent Office in the Treasury of the United States on January 1, 1906, was $6,190,991.68.

In proportion to population more patents were issued to citizens of the District of Columbia than to those of any of the States or Territories—1 to every 1,201. Next in order are the following: Connecticut, 1 to every 1,225; Colorado, 1 to every 1,359; California, 1 to every 1,425; New Jersey, 1 to every 1,482; Massachusetts, 1 to every 1,560; Illinois, 1 to every 1,649; New York, 1 to every 1,654; Washington, 1 to every 1,863; Rhode Island, 1 to every 1,871; Ohio, one to every 1,964; Pennsylvania, 1 to every 2,159; Wyoming, 1 to every 2,313; Montana, 1 to every 2,362; Michigan, 1 to every 2,470; Wisconsin, 1 to every 3,253; Oregon, 1 to every 3,256; Missouri, 1 to every 3,280; Iowa, 1 to every 3,366; Minnesota, 1 to every 3,447; Indiana, 1 to every 3,499; Idaho, 1 to every 3,762; Kansas, 1 to every 3,780; Delaware, 1 to every 3,930; North Dakota, 1 to every 3,989; Utah, 1 to every 4,069; Maryland, 1 to every 4,103; Oklahoma, 1 to every 4,105; South Dakota, 1 to every 4,461; Vermont, 1 to every 4,462; New Hampshire, 1 to every 4,473; Nebraska, 1 to every 4,879; West Virginia, 1 to every 5,542; Arizona, 1 to every 5,587; Maine, 1 to every 5,835; Nevada, 1 to every 6,047; Florida, 1 to every 7,660; Texas, 1 to every 7,980; New Mexico, 1 to every 8,491; Louisiana, 1 to every 8,689; Kentucky, 1 to every 8,836; Virginia, 1 to every 9 000, and Georgia, 1 to every 9,894. The fewest pat-

ents granted in proportion to the number of inhabitants were in the following States and Territories: Alaska, 1 to every 63,441; South Carolina, 1 to every 19,147; Mississippi, 1 to every 16,861; Arkansas, 1 to every 14,102; North Carolina, 1 to every 13,431; Alabama, 1 to every 13,253; Hawaii, 1 to every 11,000; Indian Territory, 1 to every 10,887, and Tennessee, 1 to every 10,691.

As to foreign patents, 987 were granted to citizens of Germany; 770 to those of England; 413 to those of Canada; 303 to those of France; 125 to those of Austria-Hungary; 89 to those of Switzerland; 75 to those of Sweden; 72 to those of Scotland; 56 to those of New Zealand; 45 to those of Russia; 40 each to those of Belgium and Italy; 34 to those of New South Wales; 31 to those of Victoria; 30 to those of Denmark; 23 to those of Transvaal; 20 to those of the Netherlands; 19 to those of Ireland; 14 to those of Norway; 13 each to those of Japan and Mexico; 12 to those of Cuba; 10 to those of India; 8 to those of Western Australia; 7 each to those of Argentina and Spain; 5 to those of South Australia; 4 to those of Chile; 3 each to those of Egypt, Natal, and Queensland; 2 each to those of Brazil, Cape Colony, Ceylon, South Africa, and Tasmania; 1 each to those of China, Danish West Indies, Dutch Guiana, Honduras, Isle of Guernsey, Newfoundland, Portugal, and San Salvador.

The condition of the examining divisions upon December 31 is indicated by the fact that of 38 divisions 13 were then taking up amended cases for action within fifteen days from the date of the last amendment, 21 were acting on cases within one month from the date of the last amendment, and the remaining 4 were in arrears between one and two months. The new work was from one to eight months in arrears. The total number of cases awaiting action on the part of the Office upon December 31 was 17,004.

The following table exhibits the claims of losses of cash said to have been transmitted by mail to this Office, covering the last six years. This statement shows a satisfactory reduction in the amount of these claimed losses during the last three years. It is to be noted that within their totals are included those amounts actually lost in the mail, if there were any such:

Year.	Cash received by unregistered mail.	Losses claimed.	
1900	*$8,000.00		$728.40
1901	*8,300.00	First eight months, $387.64; Last four months, 8.00	395.64
1902	*8,500.00		13.30
1903	10,058.71		2.95
1904	9,466.90		3.85
1905	9,147.37		3.20

*Estimated.

The following table shows the entire elimination in the last two years of expenditures of this Office caused by Office errors in the preparation of patents for publication:

Year.	Number of errors paid for.	Annual cost.
1897–98	774	$1,176 48
1898–99	774	1,176 48
1899–00	908	1,380 16
1900–01	717	1,089 84
1901–02	559	842 12
1902–03	476	704 48
1903–04	410	885 16
1904–05	589	557 45
1905–06	539	514 36
1906–07	581	452 02
1907–08	584	500 43
1908–09	713	658 82
1909–1900	682	623 92
1900–1901	727	778 71
1901–1902	665	713 37
1902–1903	520	558 05
1903–1904	178	187 13
1904–1905	(*)	(*)
1905–1906	(*)	(*)

*None that were productive of expense to the Office.

The work of restoration of printed patents to the files of this Office has continued and has resulted in considerable saving of the amounts which would otherwise have been required for reproducing exhausted copies. Reproductions of such exhausted copies of patents are now promptly furnished, and practically all such exhausted copies are reproduced.

The most important event in the business of this Office during the year 1905 was the passage and taking effect of the new trade-mark law of February 20, 1905. This act reduced the fee upon filing an application for trade-mark from twenty-five dollars to ten dollars, and immediately resulted in a great increase in the number of trade-mark applications. The increase may be appreciated by comparing the number of applications received in the year 1905, 16,224, with the number in the preceding year, 2,524, the number filed the past year thus being about six and one-half times the number filed the preceding year. The work thus laid upon this Office in the transaction of this large amount of new business has made it necessary to increase the force employed in the trade-mark division and has laid heavy burdens upon the examining division from which this force was drawn, as well as upon the clerical force drawn upon for the performance of the additional clerical work. To this should be added the increase in the number of applications for patents for the year 1905, such increase being 2,866. The great increase in these two branches of our work has overtaxed the present force of this Office, which is not able to keep this work up to a satisfactory state of promptness under the existing conditions. I consider it a matter of absolute necessity for the prompt and satisfactory transaction of the work of this Office that an increase of force, both of examiners and of clerks, be provided by Congress, and estimates for increases in our force have been submitted for this reason.

An examination of the figures covering receipts, expenditures, and work elements of the operations of this Office for the years 1899 and 1905 discloses an increase in work of about forty per cent., and in this period the increase in the number of employees of the Office is twelve and eight-tenths per cent. Manifestly such growth cannot continue without an increase of force corresponding to the increase of work, and in view of the fact that the general balance from the operations of this Office for the year 1905 amounts to $327,124.92, as shown in the preceding table of receipts and expenditures, I am of opinion that so much of this surplus as is necessary for the purpose should be devoted to increase of force to meet the existing conditions.

The increase of work and of force heretofore referred to calls attention again to the fact that the space allotted to this Office is not sufficient for the satisfactory and economical transaction of its business, and further space is greatly needed and if furnished would result in economy in the operations of this Office.

Respectfully submitted.

FREDERICK I. ALLEN,
Commissioner of Patents.

THE OFFICIAL GAZETTE OF THE United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

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Patents	643	No. 811,533 to No.	812,175 inclusive.
Designs	13	No. 37,804 to No.	37,816, inclusive.
Trade-Marks	189	No. 49,370 to No.	49,558, inclusive.
Labels	5	No. 12,652 to No.	12,656, inclusive.
Prints	2	No. 1,571 to No.	1,572, inclusive.
Reissues	5	No. 12,445 to No.	12,449, inclusive.
Total issue	857		

TO CITIZENS OF THE UNITED STATES.

States	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	9		Nevada		
Alaska, District of			New Hampshire	2	3
Arizona Territory	2		New Jersey	19	18
Arkansas	1		New Mexico Ter't'y		
California	32	5	New York	111	38
Colorado	8		North Carolina	2	
Connecticut	10	5	North Dakota	1	
Delaware	3	1	Ohio	40	12
District of Columbia	5		Oklahoma Territ'y	3	
Florida	2		Oregon		
Georgia	3	1	Pennsylvania	72	33
Hawaii Territory	4		Philippine Islands	1	
Idaho	2		Rhode Island	6	5
Illinois	49	15	South Carolina	3	
Indian Territory			South Dakota	2	
Indiana	16	4	Tennessee	4	5
Iowa	17		Texas	7	
Kansas	7		Utah	1	
Kentucky	6	3	Vermont	1	2
Louisiana	2	2	Virginia	8	1
Maine	2	2	Washington	7	
Maryland	7	6	West Virginia		
Massachusetts	30	18	Wisconsin	13	2
Michigan	23	1	Wyoming	1	
Minnesota	13	6	U. S. Army		
Mississippi	1		U. S. Navy		
Missouri	26	7			
Montana	3		Total to citizens of the United States	589	194
Nebraska	2	1			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina			Netherlands		
Austria-Hungary	3		Newfoundland		
Belgium			New South Wales	1	
Brazil			New Zealand		
British West Indies			Norway		
Canada	7		Persia		
Cape Colony			Queensland		
Chile			Roumania	1	
China			Russia		
Costa Rica			San Salvador		
Cuba			Scotland	1	
Denmark			South Africa		
Ecuador			Spain		
England	16	1	Sweden	6	
France	11		Switzerland		
Germany	19	1	Transvaal, South Africa		
India			Victoria		
Ireland	1		Western Australia		
Italy					
Japan			Total to citizens of foreign countries	67	2
Java					
Mexico	1				

Attorneys.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., February 1, 1906.

This Office has been advised by the Secretary of the Interior of the disbarment of the following attorneys from practice before the Department or any Bureau thereof: Marcena M. Murphy, Mount Vernon, Ohio, January 26, 1906; William H. Washington, Beaufort, S. C., January 31, 1906.

C. M. IRELAN,
Chief Clerk.

Drawings.

RULE 38.

38. When there are drawings the description will refer to the different views by figures and to the different parts by letters or numerals (preferably the latter).

RULE 52—EXTRACT.

(6) The different views should be consecutively numbered. Letters and figures of reference must be carefully formed. They should, if possible, measure at least one-eighth of an inch in height, so that they may bear reduction to one twenty-fourth of an inch; and they may be much larger when there is sufficient room. They must be so placed in the close and complex parts of drawings as not to interfere with a thorough comprehension of the same, and therefore should rarely cross or mingle with the lines. When necessarily grouped around a certain part, they should be placed at a little distance, where there is available space, and connected by short broken lines with the parts to which they refer. They must never appear upon shaded surfaces, and when it is difficult to avoid this, a blank space must be left in the shading where the letter occurs, so that it shall appear perfectly distinct and separate from the work. If the same part of an invention appear in more than one view of the drawing it must always be represented by the same character, and the same character must never be used to designate different parts.

It is suggested that numerals or letters be used without exponents.

APPLICATIONS UNDER EXAMINATION

Condition at Close of Business January 30, 1906.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
	In arrears—Under fifteen days.			
308	XV. Bread, Pastry, and Confections, Making, Coating, Laminated Sheets and Fabrics, Fuel, Glass, Hydraulic Lime and Cement, Paper-Making, Paving, and Plastics.	Jan. 24	Nov. 28	379
154	XI. Boot and Shoe Making, Boots, Shoes, and Leggings, Button, Eyelet, and Rivet Setting, Leather Manufacturing, Nailing and Stapling, Check-Controlled Apparatus, Whips and Whip Apparatus.	Jan. 20	Aug. 26	356
332	X. Carriages and Wagons	Jan. 18	Sept. 26	779
322	XXXVI. Curtains, Shades, and Screens, Drafting, Driers, Measuring Instruments, and Wind-Wheels.	Jan. 17	Dec. 30	214
148	XXXII. Carbonating Beverages, Dispensing Beverages, Dispensing-Cans, Metallic Shipping and Storing Vessels, Packaging Liquids, Paper Receptacles, Refrigeration, Wooden Receptacles.	Jan. 17	Sept. 22	602
321	I. Tillage, etc., Fences, and Railway Draft Appliances.	Jan. 16	Dec. 26	197
276	XXXVIII. Artesian and Oil Wells, Bottles and Jars, Care of Live Stock, Fishing and Trapping, Stationery, Stone-Working.	Jan. 16	Dec. 1	308
244	XXXV. Badges, Buckles, Buttons, and Clasps, Card, Picture, and Sign Exhibiting, Deposit and Collection Receptacles, Package and Article Carriers, Packing and Storing Vessels, Photography.	Jan. 16	Nov. 17	535
303	XVII. Linotyping, Printing, Matrix-Making, Nut and Bolt Locks.	Jan. 16	Nov. 3	336
144	XXIV. Apparel, Apparel Apparatus, Sewing-Machines, Surgery, Toilet.	Jan. 16	Oct. 16	485
175	III. Annealing and Tempering, Coating with Metal, Electro-chemistry, Metal-Founding, Metallurgy, Shaping Fluid Metal.	Jan. 15	Dec. 19	266
304	XXXIV. Railways, Railway-Brakes, Rolling-Stock.	Jan. 15	Dec. 8	356
	Under one month.			
379	XXIII. Acoustics, Coin-Handling, Horology, Recorders, Registers, Optics, Signals, Time Controlling Mechanism.	Jan. 12	Sept. 20	643
318	VI. Bleaching and Dyeing, Chemicals, Explosives, Fertilizers, Medicines, Preserving, Sugar and Salt.	Jan. 10	Nov 7	334
138	XXII. Air-Guns, Ammunition and Explosive Devices, Boats and Buoys, Catapults and Targets, Firearms, Marine Propulsion, Ordnance, Ships.	Jan. 10	Oct. 13	261
106	XXVI. Electricity, Generation, Electric Heaters, Electric Railways, Motive Power.	Jan. 10	July 20	696
107	XXXVII. Electricity, Conductors, Lighting, Special Apparatus.	Jan. 9	May 4	722
128	XIX. Stoves and Furnaces and Steam-Boiler Furnaces.	Jan. 8	July 25	661
179	XXXI. Alcohol, Charcoal and Coke, Distillation, Gas, Heating and Illuminating, Hides, Skins, and Leather, Liquid Coating Compositions, Oils, Fats, and Glue, Water Purification.	Jan. 6	Dec. 13	236
238	II. Bee Culture, Dairy, Label-Affixers, Paper Files and Binders, Presses, Store-Service, Tobacco, etc.	Jan. 6	Nov. 2	215
182	XXX. Fluid-Pressure Regulators, Lamps and Gas-Fittings, Type-Writing Machines.	Jan. 5	May 11	632

Applications Under Examination—Continued.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
327	XVIII. Steam-Engineering, etc	Jan. 4	Oct. 20	370
137	VIII. Beds, Chairs, Furniture, Kitchen and Table Articles, Store Furniture.	Jan. 4	Sept. 26	530
112	XXI. Textiles, Carding, Knitting, Spinning, Weaving, etc.	Jan. 3	July 15	584
232	IV. Bridges, Conveyers, Cranes and Derricks, Excavating, Hoisting, Hydraulic Engineering, Loading and Unloading, and Towers.	Jan. 2	Dec. 30	273
167	V. Fine Arts, Bookbinding, Harvesters, Jewelry, and Music.	Jan. 2	Dec. 4	368
324	XII. Elevators, Journal-Boxes, Lubricators, Machine Elements, Pulleys and Shafting.	Jan. 2	Oct. 30	427
	Between one and two months.			
307	XIV. Cutting and Punching Sheets and Bars, Farriery, Metal-Bending, Metal-Ornamenting, Metal Personal Wear, Making, Sheet-Metal Ware, Making, Tools, Wire-Working.	Dec. 28	Sept. 14	273
164	XXXIII. Canes, Canopies, Cutlery, Domestic Cooking Vessels, Electricity, Medical and Surgical, Electric Signaling, Fireproof Buildings, Harness, Masonry, Tents, and Umbrellas.	Dec. 26	Aug. 10	751
147	XXIX. Coopering, Roofs, Wheelwright-Machines, Wooden Buildings, Wood-Sawing, Wood-Turning, Woodworking-Tools.	Dec. 23	Oct. 2	340
312	VII. Velocipedes, Clutches, Fire-Escapes, Games and Toys, Ladders, Mechanical Motors, and Paper Manufactures.	Dec. 21	Nov. 1	466
179	XX. Artificial Limbs, Builders' Hardware, Dentistry, Locks and Latches, Safes, Undertaking.	Dec. 21	July 3	344
109	XVI. Telegraphy and Telephony	Dec. 15	Dec. 9	261
382	XXVIII. Air and Gas Engines, Air and Gas Pumps, Pneumatics.	Dec. 13	June 3	954
142	IX. Baths and Closets, Fire-Extinguishers, Hydraulic Motors, Pumps, Sewerage, and Water Distribution.	Dec. 7	June 14	1045
375	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, Washing Apparatus.	Dec. 5	Aug. 3	640
	Between two and three months.			
330	XIII. Arms, Projectiles, and Explosive Charges, Making, Metal-Working, Needle and Pin Making.	Nov. 20	Sept. 5	549
315	XXV. Butchering, Mills, Threshing, and Vegetable Cutters and Crushers.	Nov. 6	Aug. 15	513

Total number of applications awaiting action 17,891

159	TRADE-MARKS, DESIGNS, LABELS AND PRINTS.			
	Between one and two months.			
	Trade-Marks	Dec. 15	Dec. 1	3368
	Under fifteen days.			
	Designs	Jan. 27	Dec. 26	38
	Labels and Prints	Jan. 26	Jan. 26	8

Trade-Marks.

The publication of trade-marks under the act of February 20, 1905, in the OFFICIAL GAZETTE, commenced May 2, 1905, and will appear in each weekly number of the GAZETTE thereafter.

Extra copies of the trade-mark portion of the GAZETTE which will be sold separately, may be obtained single or in quantities for five cents each. Coupons will be taken in payment therefor

PATENTS

GRANTED FEBRUARY 6, 1906.

811,533. CONTROL OF AUTOMOBILE MOTORS. EDWARD H. ANDERSON, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed June 20, 1905. Serial No. 265,510.

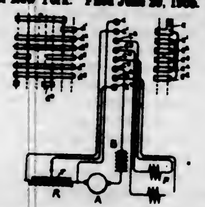

Claim.—1. In a single-motor drive for automobiles, a storage battery, a motor provided with a plurality of field-windings, and a controller having contacts arranged and connected to connect said motor to said battery with the field-windings in series, shunt one of the field-windings, remove said shunted field-winding without breaking the shunt, and then connect the field-windings in parallel.

2. In a single-motor drive for automobiles, a source of current-supply, a motor having two field-windings, a resistance, and a controller having contacts arranged to connect said motor to said source of current-supply with the field-windings in series with each other, then connect said field-windings in parallel with said resistance, then shunt one of said field-windings, then remove said resistance and cut out said latter field-winding without opening the shunt and finally connect the idle field-winding in parallel with the remaining field-winding.

3. In a single-motor drive for automobiles, a source of current-supply, a motor having two field-windings, a resistance, and a controller having a plurality of running positions and contacts arranged to connect said motor to said source of current-supply with its field-windings in series in one position of the controller, to place said resistance in parallel with the field-windings in a second position, to remove said resistance and connect the field-windings in parallel in a third position, and to first place a shunt about one of said field-windings and then disconnect said latter field-winding without breaking the shunt in passing from the second to the third position.

811,534. BUILDING-WALL CONSTRUCTION. WILLIAM M. AKINS and BENJAMIN F. HUDSON, Decatur, Iowa. Filed July 21, 1905. Serial No. 270,722.

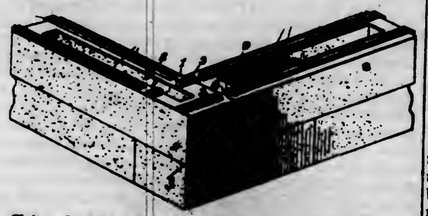

Claim.—1. A building-block provided on one face with longitudinally-extending grooves and on its opposite face with longitudinal ribs and transverse ribs spaced from each other and from the longitudinal ribs, and also provided on one side edge with vertical ribs and on one end edge with vertical ribs, the transverse ribs terminating short of the vertical ribs on one side edge of the block, as and for the purpose set forth.

2. A building-block provided on one face with longitudinally-extending grooves and on its opposite face with longitudinal ribs and transverse ribs spaced from each other and from the longitudinal ribs, and also provided on one side edge with vertical ribs and on one end edge with vertical ribs, the transverse ribs terminating short of the vertical ribs on one side edge of the block, and the vertical ribs on the end edge of the block terminating flush with the face thereof and producing an angular formation with the meeting ends of the longitudinal ribs.

3. In a building-wall construction the combination of the corner-block provided in one face with longitudinally-extending grooves and on the opposite face with longitudinal ribs and with transverse ribs spaced from each other and from one end of the longitudinal ribs, said corner-block being also provided on one side edge near one end thereof with vertical ribs in alinement with the transverse ribs and being also provided on one end edge with vertical ribs in alinement with the longitudinal ribs, the transverse ribs terminating short of their alining vertical ribs and the end vertical ribs terminating short of their alining longitudinal ribs and a main wall-block provided with vertical grooves designed to receive the side edge vertical ribs of the corner-block and provided on its opposite end with vertical ribs, said main-wall block being also provided with longitudinal ribs on one face terminating at one end short of said vertical grooves and in alinement therewith and terminating at their other ends short of the outer faces of the vertical ribs of said block, as and for the purpose set forth.

811,535. MEANS FOR MUTING VIBRATIONS IN RAILWAY-RAILS. JOHN ANDERSON, Boston, Mass. Filed May 31, 1904. Serial No. 210,230.

Claim:—1. In a device as described, a compound wholly non-metallic detachable muting-block or damper for railway-rails.

2. In a device as described, a compound, wholly non-metallic detachable muting-block or damper for railway-rails, said muting-block or damper comprising members of different sound-transmitting powers.

3. In a device as described, a compound, wholly non-metallic detachable muting-block or damper for railway-rails, said muting-block or damper comprising separate members of different sound-transmitting powers.

4. In a device as described, a compound, wholly non-metallic mute or damper for railway-rails, said mute comprising separate members of different sound-transmitting powers, said separate members being held in contact with each other by the same clamping means which hold the mute as a whole in contact with the web of the rail.

5. In a means for muting the noise in railway-rails as described, a plurality of compound, wholly non-metallic members applied to the web of the rail, said members being placed on opposite sides of the rail-web and connected in pairs, the members of each pair being connected by two or more attaching means.

6. The combination with a web of a railroad-rail of non-metallic muting means of different degrees of density, and means to clamp said muting means to said rail.

811,586. **INKSTAND.** FRANK M. ASHLEY, New York, N. Y. Filed Oct. 7, 1903. Serial No. 176,265.

Claim.—1. In an inkstand of the class described, the combination with a base portion provided with an annular groove in the bottom thereof, a sealing fluid in said annular groove, a cistern adapted to contain fluid, and a float carrying a dip-tube and dip, the edges of the float adapted to rest in said annular groove, and the dip-tube adapted to project into the said cistern; substantially as described.

2. In an inkstand of the class described, the combination with a base portion provided with an annular groove adapted to contain a sealing fluid, a removable cistern adapted to contain ink, a combined float, and ink-tube, the lower edges of said float adapted to rest in said annular groove and the dip-tube adapted to extend within said cistern.

3. In an inkstand of the class described, a base portion containing a fluid seal, in combination with an ink-cistern resting in said base portion, a combined float and dip-tube, said float inclosing said cistern and being of greater length than the same; substantially as shown and described.

4. In a stand of the class described, the combination of a base portion having a well therein, an ink-cistern adapted to contain ink, said cistern resting in said well by gravity alone, whereby it may be easily removed therefrom, a channel around the bottom of said well containing a heavy normally non-evaporable fluid, and a float having downwardly-extending sides, resting in said fluid, and a downwardly-extending ink-tube adapted to rest in the ink; substantially as described.

5. In an inkstand of the class described, the combination of a base portion having a removable cistern therein, a channel in said body opened at the top, the upper part of which is formed by the inside of said base portion and the outside of said cistern, a heavy normally non-evaporable fluid in the bottom of said channel and a float comprising an ink-tube, which extends downwardly into said cistern and having a dip-funnel on the top thereof, and an exterior wall which extends downwardly into said fluid in said channel; substantially as described.

6. In an inkstand of the class described, the combination with a base portion having a removable cistern therein, a fluid seal in said base portion, and a float adapted to trap a supply of air between said fluid seal and the ink on which said float rests, and means whereby the float will drop when a predetermined amount of ink has been used from said well due to the escape of air from the float whereby its emptiness is indicated; substantially as shown and described.

7. In an inkstand of the class described, a base portion containing a heavy normally non-evaporable seal in the base thereof, a removable ink-cistern containing ink resting in said base portion, a float comprising a cylindrical shell carrying a dip cup and tube, air inclosed within said float between said ink and said sealing fluid whereby said float is buoyed up, and by the compression of which, the ink is forced to the dip-cup; substantially as shown and described.

8. In an inkstand of the class described, the combination with a base portion containing a sealing fluid, a removable cistern and a float, said float comprising a dip-tube and side walls, the latter adapted to contact with said sealing fluid, and the dip-tube adapted to project into said cistern; substantially as described.

9. In an inkstand of the class described, the combination with a base portion provided with a groove, a sealing fluid in said groove, a removable cistern adapted to contain fluid, and a float carrying a dip-tube, the edges of the float adapted to rest in said groove and the dip-tube adapted to project into the said cistern; substantially as described.

811,587. **STOVEPIPE-THIMBLE.** HENRY R. AVERSY, Forsyth, Mo. Filed Mar. 10, 1905. Serial No. 249,499.

Claim.—1. The combination of an annular flange, provided on its inner edge with an annular bead, and arms extending at right angles from said flange, said arms having cross-slots, said flange adapted to be secured to the wall of the chimney around the stovepipe-hole, and a stovepipe provided with tongues adapted to pass through said cross-slots of the arms of said flange, and thus secure the pipe in the pipe-hole of the chimney, substantially as shown and described, and for the purposes set forth.

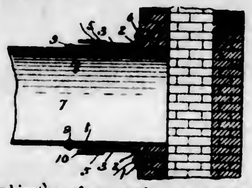

2. The combination of an annular stovepipe-flange, provided with arms extending at right angles from the face of said flange, their free ends provided with cross-slots, said flange adapted to be secured to a wall and around a stovepipe-hole, and a stovepipe provided with tongues adapted to pass through said cross-slots of said arms, and thus secure the said pipe in said stovepipe-hole, substantially as shown and described and for the purposes set forth.

3. The combination of an annular flange provided with a series of perforations, and with arms extending at right angles from the face of said flange and provided, near their free ends, with cross-slots; a pipe having at one end longitudinal slits, forming tongues, the tongued end of said pipe slipped through said flange and the tongues engaging said slots, the slitted end of said pipe, and said arms adapted to be thrust into the stovepipe-hole, and said flange to be secured to the wall, substantially as shown and described and for the purposes set forth.

811,588. **ELECTROLYTIC ELECTRICITY-METER.** CHARLES O. BASTIAN, London, England, assignor to The Bastian Meter Company Limited, London, England. Filed Mar. 10, 1904. Serial No. 197,580.

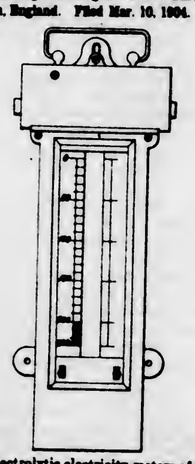

Claim.—1. In electrolytic electricity-meters of the character described, the combination with an electrolyte, of electrodes mounted therein, and a scale supported by the electrodes and arranged to measure the column of the electrolyte, substantially as described.

2. In electrolytic electricity-meters of the character described; the combination with a suitable electrolyte, of electrodes comprising suitably-supported hollow bodies of suitable metal one of which bodies envelops the other body said bodies being secured relatively to one another and spaced apart from one another and connected to the terminals of the meter, and a meter index or scale arranged inside the vessel holding the electrolyte said index or scale being mounted on one of said hollow bodies, substantially as and for the purposes described.

3. In electrolytic electricity-meters of the character described; the combination with a suitable electrolyte, of electrodes comprising cylinders of thin sheet-nickel one of which cylinders envelops the other cylinder said nickel cylinders being of different diameters and being secured concentrically and closely relatively to—but spaced apart from—one another and suitably connected to and supported by nickel conductor-rods which extend above the electrolyte and are connected to the terminals of the meter, and a meter index or scale arranged inside the vessel holding the electrolyte said index or scale being secured to one of said cylinders and to said conductor-rods, substantially as and for the purposes described.

811,589. **ELECTRICAL CONTROL SYSTEM.** RALPH H. BATES, Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed Feb. 1, 1905. Serial No. 243,720.

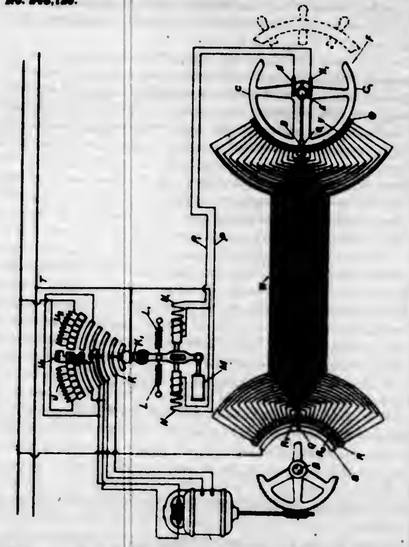

Claim.—1. The combination with a source of electrical energy, a motor, a controlled member operated thereby, and a controller for said motor, of electromagnets for operating said controller, a master-controller comprising a plurality of terminal pieces, and conducting-segments that are respectively connected to the windings of said electromagnets and that are separated and insulated from each other and engage all but one of said terminal pieces, and a controller comprising a plurality of terminal pieces that are respectively connected to the terminal pieces of the master-controller, and means operated by said controlled member for making circuit connections with said terminal pieces, the circuits of the said magnet-windings being interrupted when connection is made with the terminal that is connected with the idle terminal of the aforesaid controller.

2. The combination with a source of electrical energy, a motor, a controlled member operated thereby, and a controller for said motor, of electromagnets for operating said controller, a master-controller comprising a plurality of terminal pieces and conducting-segments that are respectively connected to the windings of said electromagnets and that are separated and insulated from each other and engage all but one of said terminal pieces, and a controller comprising a plurality of terminal pieces that are respectively connected to the terminal pieces of the master-controller, and means operated by said controlled member for making circuit connections with said terminal pieces.

811,540. **GUN-BEARING.** JOHN J. BAYNE, Alexandria, Va. Filed Nov. 29, 1904. Serial No. 234,735.

Claim.—1. In combination with a gun-mount, a gun with trunnions, auxiliary trunnions secured to the gun, ball-bearings, comprising a raceway surrounding said auxiliary trunnions, and elastic supports for said bearings, as set forth.

2. In combination with a gun-mount, a gun with trunnions, auxiliary trunnions secured to the gun, ball-bearings comprising a raceway surrounding said auxiliary trunnions, a yoke secured to said mount and provided with resilient arms for supporting said bearings, as set forth.

3. In combination with a gun-mount, a gun with trunnions, auxiliary trunnions secured to the gun, ball-bearings comprising a raceway surrounding said auxiliary trunnions, a yoke secured to said mount and provided with resilient arms for supporting said bearings, and an adjustable spring carried by said yoke and engaging said bearings, as set forth.

4. In combination with a gun having trunnions, a mount, auxiliary trunnions secured to the gun-trunnions, ball-bearings secured to the auxiliary trunnions, and elastic supports for said bearings, as set forth.

5. In combination with a gun-mount, a gun with trunnions, auxiliary trunnions secured to the gun, ball-bearings comprising raceways therefor, adapted to support the entire weight of the gun, yokes secured to the mount, and having resilient arms, and screws carried by said arms and engaging one of said raceways at each side of the gun, as set forth.

6. In combination with a gun-mount, a gun with trunnions, auxiliary trunnions secured to the gun, ball-bearings adapted to support the weight of the gun, disks forming raceways for said ball-bearings, yokes secured to the mount, and provided with flexible arms, set-screws carried by said arms and engaging one of said raceways at each side of the gun, and an adjustable spring carried by each of said yokes and engaging one of said raceways, as set forth.

7. In combination with a gun-mount, a gun with trunnions, auxiliary trunnions secured to the gun, ball-bearings comprising raceways surrounding said auxiliary trunnions, yokes secured to the mount and provided with resilient arms, set-screws carried by said arms and each engaging a raceway at each trunnion, a set-screw carried by each yoke intermediate its flexible arms, and a spring at each side of the gun secured to a raceway and supported by the set-screw intermediate said flexible arms, as set forth.

8. In combination with a gun and carriage therefor, trunnions upon said gun, a pair of bearing-disks at each trunnion, one of each pair being secured to its adjacent trunnion, balls between said bearing-disks, yokes secured to said carriage and provided with flexible arms, and set-screws carried by said arms and engaging a bearing-disk at each trunnion, as set forth.

9. In combination with a gun and carriage therefor, trunnions upon said gun, a pair of bearing-disks at each trunnion, one of each pair having a threaded shank portion engaging a threaded aperture in its adjacent trunnion, ball-bearings intermediate said bearing-disks, yokes having flexible arms, set-screws carried by said arms and engaging one of each pair of said bearing-disks at positions diametrically opposite, as set forth.

10. In combination with a gun and carriage therefor, trunnions upon said gun, a pair of bearing-disks at each trunnion, one of each pair having a threaded shank portion engaging a threaded aperture in its adjacent trunnion, ball-bearings intermediate said bearing-disks, yokes having flexible arms, set-screws carried by said arms and engaging one of each pair of said bearing-disks at positions diametrically opposite, a spring held yieldingly against one of each pair of said disks, and a set-screw supporting each spring, as set forth.

811,541. **HUB AND SPINDLE.** JACOB BOATRIGHT, Joplin, Mo. Filed July 12, 1905. Serial No. 269,265.

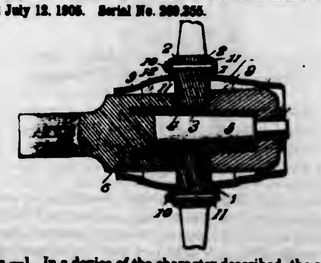

Claim.—1. In a device of the character described, the combination of a spoke-receiving disk, reinforcing-plates upon each side thereof, a tubular member passing through the spoke-receiving disk and projecting outwardly on both sides thereof, an axle-spindle passing through the tubular member, a cup-shaped bearing formed into-

gral upon the inner end of the spindle, and a similar cup-shaped member removably mounted upon the outer end of the spindle, said cup-shaped bearings embracing the projecting ends of the tubular member and fitting against the reinforcing-plates upon opposite sides of the spoke-receiving disk.

2. In a device of the character described, the combination of a spoke-receiving member, reinforcing-plates upon each side thereof, a tubular member passing through the spoke-receiving member and projecting outwardly on both sides thereof, a spindle passing through the tubular member, cup-shaped bearings mounted upon the spindle and embracing the projecting ends of the tubular member, and a casing secured upon each side of the spoke-receiving member, said casings projecting over the bearings and being spaced therefrom.

3. In a device of the character described, the combination of a spoke-receiving member, reinforcing-plates upon each side thereof, a tubular member passing through the spoke-receiving member and projecting outwardly on both sides thereof, a spindle passing through the tubular member, cup-shaped bearings mounted upon the spindle and embracing the projecting ends of the tubular member, and a casing secured upon each side of the spoke-receiving member and projecting outwardly over the bearings, and fastening members passing through the spoke-receiving member, reinforcing-plates, and casings.

811,542. INDICATOR. PRESCOTT S. BUCKINGHAM, Hayworth, Cal. Filed Mar. 27, 1905. Serial No. 252,266.

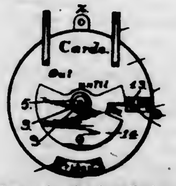

Claim.—In an indicator for the described purpose, the combination with an outer casing, of a day-disk rotatably held therein, a spindle to which the disk is secured; a quarter-hour plate superimposed on the day-disk and loosely mounted upon the spindle, an hour-disk rotatably held within the casing above the quarter-hour plate, a sleeve projecting from the hour-disk loosely fitting the spindle of the day-disk, a face-plate fitted to the casing and having on the face thereof lettering indicative of the information to be given, said face-plate having sight-openings therein for exposing to view the printed matter of the rotatable disks and quarter-hour plate, a spring-held swinging cover-plate movable on the face-plate, and a finger-piece extending from the quarter-hour plate through a slotted portion of the casing's circular wall.

811,548. FOUNTAIN SIGHT-FEED. HARRY J. CARLE, Chicago, Ill. Filed Mar. 24, 1905. Serial No. 251,769.

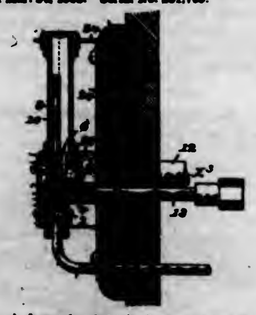

Claim.—1. A fountain sight-feed, comprising in combination, a trunk formed with an inlet-passage, duplicate end outlet passages intersecting the inlet-passage and a return-passage adjacent to one of said outlet-passages, a sight-feed tube communicating with the return and outlet passages aforesaid, a discharge-nozzle in said sight-tube communicating with the outlet-passage aforesaid, and a semirotary valve arranged at the intersection of the inlet and outlet passages and adapted to control the direction of the flow of fluid through the same, substantially as set forth.

2. A fountain sight-feed comprising in combination, a trunk formed with a horizontal inlet-passage, vertical upper and lower outlet-passages intersecting said horizontal passage and a return-passage arranged adjacent to said upper vertical passage, a sight-tube attached to the trunk with its interior in communication with said upper vertical and return passages, a semirotary valve arranged at the intersection of said vertical and horizontal passages and having an angular port adapted to successively register said passages, and control the direction of the flow of fluid through the same, substantially as set forth.

3. A fountain sight-feed comprising in combination, a trunk formed with a horizontal inlet-passage, vertical upper and lower outlet-passages intersecting said horizontal passage and a return-passage arranged adjacent to said upper vertical passage, a sight-tube attached to the trunk with its interior in communication with said upper vertical and return passages, a discharge-nozzle arranged within the sight-tube and communicating with said upper vertical passage, a semirotary valve arranged at the intersection of said vertical and horizontal passages and having an angular port adapted to successively register said passages, and control the direction of the flow of fluid through the same, substantially as set forth.

4. A fountain sight-feed, comprising in combination, a trunk formed with a series of inlet-passages, duplicate series of outlet-passages intersecting the series of inlet-passages, a series of return-passages adjacent to one series of outlet-passages and a longitudinal passage common to the series of return-passages, a series of sight-tubes communicating with the series of outlet and return passages aforesaid, and a semirotary valve arranged at the intersectoin of inlet and outlet passages and adapted to control the direction of the flow of fluid through said series of passages, substantially as set forth.

5. A fountain sight-feed, comprising in combination, a trunk formed with a series of inlet-passages, duplicate series of outlet-passages intersecting the series of inlet-passages, a series of return-passages adjacent to one series of outlet-passages and a longitudinal passage common to the series of return-passages, a series of sight-tubes communicating with the series of outlet and return passages aforesaid, a series of discharge-nozzles in said sight-tubes communicating with one series of outlet-passages, and a semirotary valve arranged at the intersection of the inlet and outlet passages and adapted to control the direction of the flow of fluid through said passages, substantially as set forth.

6. A fountain sight-feed, comprising in combination, a trunk formed with a series of horizontal inlet-passages, a series of vertical upper and lower outlet-passages intersecting the series of horizontal passages, a series of return-passages arranged adjacent to the series of upper vertical passages, and a longitudinal passage common to the series of return-passages, a series of sight-tubes attached to the trunk with their interiors in communication with said upper vertical and return passages, a semirotary valve arranged at the intersection of said vertical and horizontal passages and having a series of angular ports adapted to successively register said passages, and control the direction of the flow of fluid through the same, substantially as set forth.

7. A fountain sight-feed, comprising in combination, a trunk formed with a series of horizontal inlet-passages, a series of vertical upper and lower outlet-passages intersecting the series of horizontal passages, a series of return-passages arranged adjacent to the series of upper vertical passages, and a longitudinal passage common to the series of return-passages, a series of sight-tubes attached to the trunk with their interiors in communication with said upper vertical and return passages, a series of discharge-nozzles arranged within the sight-tubes and communicating with the upper series of vertical passages, a semirotary valve arranged at the intersection of said vertical and horizontal passages and having a series of angular ports adapted to successively register said passages and control the direction of the flow of fluid through the same, substantially as set forth.

8. A fountain sight-feed, comprising in combination, a trunk formed with an inlet-passage, duplicate outlet-passages intersecting the inlet-passage and a return-passage adjacent to one of said outlet-passages, a sight-feed tube communicating with the return and outlet passages aforesaid, a semirotary valve arranged at the intersection of the inlet and outlet passages and provided with angularly-arranged faces in a portion of its circumference, and a spring-follower adapted to engage such faces, substantially as set forth.

9. A fountain sight-feed, comprising in combination, a trunk formed with a series of inlet-passages, duplicate series of outlet-passages intersecting the series of inlet-passages, a series of return-passages adjacent to one series of outlet-passages and a longitudinal passage common to the series of return-passages, a series of sight-

tubes communicating with the series of outlet and return passages aforesaid, a semirotary valve arranged at the intersection of the inlet and outlet passages and provided with angularly-arranged faces in a portion of its circumference, and a spring-follower adapted to engage said surfaces, substantially as set forth.

10. A fountain sight-feed, comprising in combination, a trunk formed with a series of inlet-passages, duplicate series of outlet-passages, intersecting the series of inlet-passages, a series of return-passages adjacent to one series of outlet-passages and a longitudinal passage common to the series of return-passages, a series of sight-tubes communicating with the series of outlet and return passages aforesaid, a semirotary valve arranged at the intersection of the inlet and outlet passages and adapted to control the direction of the flow of fluid through said series of passages, and an angle-plate secured to the front of the trunk, and provided with a series of orifices in its upper flange to receive the base of the sight-tubes, substantially as set forth.

11. A fountain sight-feed, comprising in combination, a trunk formed with a series of inlet-passages, duplicate series of outlet-passages intersecting the series of inlet-passages, a series of return-passages adjacent to one series of outlet-passages and a longitudinal passage common to the series of return-passages, a series of sight-tubes communicating with the series of outlet and return passages aforesaid, a semirotary valve arranged at the intersection of the inlet and outlet passages and adapted to control the direction of the flow of fluid through said series of passages, and an angle-plate having a horizontal upper flange provided with a series of orifices to receive the upper ends of the sight-tubes, substantially as set forth.

811,544. GLASS-RETAINING DEVICE FOR SASHES. CHRISTOPHER C. CHARCEY, Hartford, Ala. Filed Apr. 3, 1905. Serial No. 253,606.

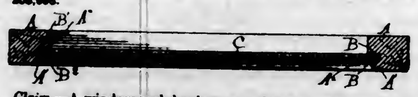

Claim.—A window-sash having an undercut groove for the reception of putty, B, behind the glass, C, under the lip portion A' of the sash, A, substantially in the manner and for the purposes, hereinbefore described and set forth.

811,545. TRUCK ATTACHMENT FOR SLEIGHS. JOHN M. CLOSSON, Hoosick Falls, N. Y., assignor of one-half to Bernard McCusker, Troy, N. Y. Filed May 15, 1905. Serial No. 260,207.

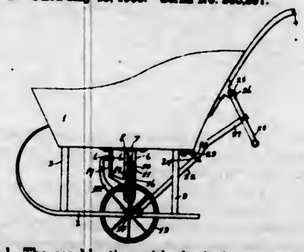

Claim.—1. The combination with the body and runners of a sleigh; of a brace mounted upon, and depending from, the under side of the sleigh-body; a truck-frame pivotally mounted upon the under side of the sleigh-body comprising in part an angle-lever having one end adapted to swing into and out of engagement with said brace, one of said engaging members being formed with a recess adapted to receive and fit the other; and a wheel mounted upon the other end of said angle-lever.

2. The combination with the body and runners of a sleigh; of a hanger attached to the bottom of the sleigh-body, said hanger having a depending brace; a truck-frame bracket in the form of an angle-lever pivotally connected with said hanger, and having one end adapted to swing into and out of engagement with and to receive and fit said brace; and a wheel mounted upon the other end of said lever.

3. The combination with the body and runners of a sleigh; of a pair of hangers attached to the bottom of the sleigh-body in line with each other transversely thereof, each having a depending brace; a pair of truck-frame brackets each in the form of an angle-lever pivotally connected with the respective hangers, and each having one end adapted to swing into and out of engagement with, and to receive and fit the brace on its respective hanger; a shaft or axle mounted in the other ends of said bracket-levers; and wheels mounted upon said shaft or axle.

4. The combination with the body and runners of a sleigh; of a hanger mounted upon the under side of the sleigh-body; a truck-frame having a wheel mounted thereon; a pivotal connection between the truck-frame and hanger; and means for fixedly mounting said pivotal connection upon the hanger in different positions of adjustment and means for swinging said truck-frame into and out of operative position in different positions of adjustment of said pivotal connection.

5. The combination with the body and runners of a sleigh; of a vertically-slotted hanger mounted upon the under side of the sleigh-body; a pivot-block adjustable longitudinally of the slot in the hanger; a truck-frame pivotally connected with said pivot-block; and a wheel mounted upon said truck-frame.

6. The combination with the body and runners of a sleigh; of a vertically-slotted hanger having a vertically-extended brace mounted upon the under side of the sleigh-body; a pivot-block adjustable longitudinally of the slot in the hanger; a truck-frame pivotally connected with said pivot-block and comprising in part an angle-lever having one end thereof adapted to receive and fit said brace in different positions of adjustment of said pivot-block; and a wheel mounted upon the other end of said lever.

811,546. PUNCHING-BAG. PATRICK J. CONROY, New York, N. Y. Filed Feb. 11, 1905. Serial No. 245,188.

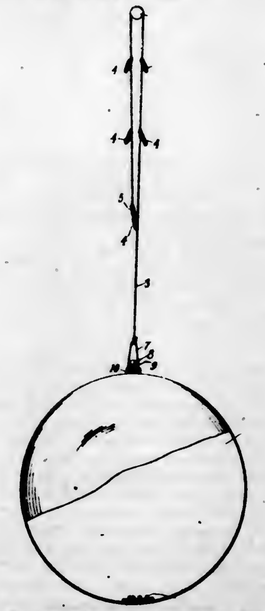

Claim.—1. In a punching-bag, a thin highly-expansible body, an air-valve connected with said body, and weighting material loosely disposed in said body, substantially as described.

2. In a punching-bag, a thin highly-expansible body, an air-valve connected with said body, an apportionable weighting material loosely disposed in said body, substantially as described.

3. In a punching-bag, a thin highly-expansible body, an air-valve connected with said body, weighting material loosely disposed in said body, an elastic coupling, a suspender having a plurality of loops, and means for connecting the free end of said suspender to any one of the loops thereon, substantially as described.

811,547. TUBULAR BOILER. FRANK P. COOPER, Cincinnati, Ohio. Filed Dec. 22, 1904. Serial No. 237,886.

Claim.—In a tubular boiler the combination of a horizontal cylindrical shell with tubes extending therethrough and slots in its

ends, a series of inclined tubes, headers at the upper and lower ends of the tubes each consisting of a rectangular chamber surmounted by a cylindrical chamber, the front cylindrical chamber having a slot in its upper surface and the rear cylindrical chamber having a series of openings in its upper surface, a front cross-box secured over the forward slot in the shell, and over the slot in the cylindrical chamber, the rear cross-box secured over the rear slot in the shell and having a series of openings in its lower wall, and a series of vertical pipes secured in the openings of the rear cross-box and the rear cylindrical chamber.

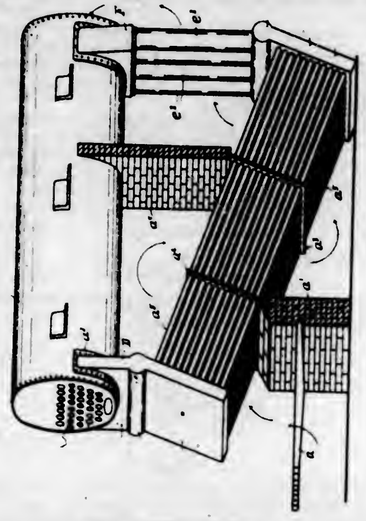

811,548. BUCKLE. JOHN J. CREEDON, Moline, Ill. Filed July 31, 1905. Serial No. 272,006.

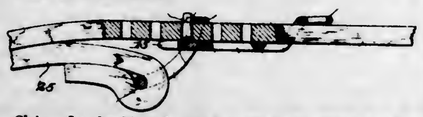

Claim.—In a buckle and trace, a frame having spaced side bars connected by end bars one of which is provided with a central rearwardly-extending lug having a flat bearing-surface and defining oppositely-disposed recesses the walls of which are curved, a vertically-disposed tongue spaced from the free end of the lug and adapted to engage one of the openings in the trace, a tug-bail extending through an opening in the frame and embracing the trace and having a cross-bar resting on the trace and provided in one edge thereof with a centrally-disposed recess for the reception of the tongue, and curved arms carried by the tug-bail and adapted to engage the curved walls of the recesses, whereby the trace will be securely clamped between the cross-bar and the flat bearing-surface at the free end of the rearwardly-extending lug.

811,549. VEHICLE-WRENCH. ANDREW DEPPENBAUER, Louisville, Ohio. Filed June 2, 1905. Serial No. 263,466.

Claim.—1. A device of the character described, comprising a body portion, hooks secured to said body portion at right angles to each other, and nut-clamping means carried by said body portion.

2. A device of the character described, comprising a resilient bar twisted intermediate its ends, hooks secured to said bar at right angles to each other, a fixed jaw carried by said bar, an adjustable jaw secured to said bar, and means for securing said adjustable jaw in a stationary position.

3. In a device of the character described, the combination of a resilient bar, said bar provided near one end with a portion extending at right angles to the body of the same, the ends of said bar bent over at right angles to the body, hooks secured to said bar and engaging the right-angled bent-over portions thereof, said hooks positioned at right angles to each other, a jaw fixedly secured to said bar, a removable threaded bolt secured in a stationary position upon said bar, said bolt provided with a head, an adjustable jaw provided with an elongated slot positioned upon said bar, said bolt engaging the slotted portion of said jaw, said adjustable jaw provided with parallel lips, constituting guides, and an adjustable locking-lever positioned upon the threaded portion of the bolt, said locking-lever comprising an apertured body portion, and an angular, integral arm extending therefrom.

4. A wrench, comprising a body portion, said body portion provided with angular, integral end portions, hooks secured to said bar and engaging said angular end portions, said hooks positioned at right angles to each other, a fixed and an adjustable jaw secured to said body portion, and stationary locking means engaging said adjustable jaw for securing the same in a fixed position.

5. A wrench comprising a body provided with a portion positioned at right angles to the main portion of said body, hooks carried by said body at substantially right angles to each other, one of said hooks carried by said portion of the body positioned at right angles to the main part thereof, and clamping means carried by said body.

811,550. RAILWAY-RAIL STAY. JAMES DONOVAN, Three Rivers, Mich., assignor, by mesne assignments, to Sheffield Car Company, Three Rivers, Mich., a Corporation of Michigan. Filed Apr. 20, 1905. Serial No. 256,631.

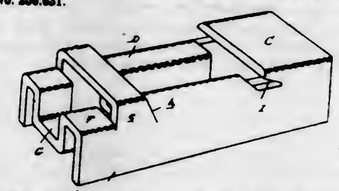

Claim.—1. In a railway-rail stay, the combination of a block having a seat for the rail-base, and a wedge passing lengthwise of the block for clamping the block to the rail.

2. In a railway-rail stay, the combination of a block having a seat for the rail-base, an overhanging hook at one side of the seat, and a wedge-bearing at the other side thereof and a wedge adapted to engage the bearing transverse to the rail and to clamp the block to the rail.

3. In a railway-rail stay, the combination of a block having a seat for a rail-base, a hook at one side of the seat, a cross-bar at the other side, and a wedge adapted to engage under the cross-bar and over the rail-base transverse to the rail.

4. In a railway-rail stay, the combination of a block having a seat for a rail-base, a hook at one side of the seat, a cross-bar at the other side having the inclined side h, and a wedge adapted to engage under the cross-bar and over the rail-base.

5. A railway-rail stay made of sheet metal, shaped to form a rail-seat, the hook at one side thereof, the cross-bars E and F at the other side, and the depressed portion G in the cross-bar F.

6. A railway-rail stay made of sheet metal comprising the sides B, a rail-seat D, the hook C at one side thereof, and the cross-bars E and F at the other side thereof.

811,551. ADJUSTABLE SEAT FOR WATER-CLOSETS. WILLIAM L. DOUD, Manila, Philippine Islands. Filed Aug. 30, 1904. Serial No. 223,251.

Claim.—1. In an adjustable water-closet seat, the combination of supporting-brackets each provided with a long slot and a short slot, a seat provided with two sets of pins adapted to engage said long slots and said short slots respectively, a cover pivotally mounted on said seat, means for providing an air-tight joint between said cover and said seat, a receptacle and means for providing an air-tight joint between said seat and said receptacle, substantially as described.

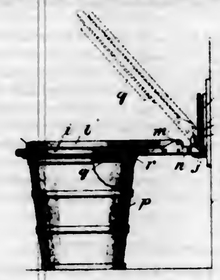

2. In an adjustable water-closet seat, the combination of a support, brackets secured thereto each provided with a long slot and a short slot respectively, said slots having their upper ends open, a seat provided with two sets of pins adapted to engage with said long slots and said short slots respectively, a cover pivotally mounted on said seat, a washer between said cover and said seat and washer and a circular projection on the under side of said seat and a receptacle the top of which is adapted to engage with said circular projection, substantially as described.

811,552. PROCESS OF MAKING HYDRATED OXID OF LEAD. JAMES H. BARDEN, New York, N. Y., and CARLETON ELLIS, Boston, Mass., assignors, by mesne assignments, of one-third to Sawyer, Foster and Hardy, Boston, Mass., a Firm. Filed Mar. 14, 1904. Serial No. 198,013.

Claim.—1. Process for making hydrated oxid of lead which consists in the electrolysis, with lead anodes, of hot aqueous solutions of purified brine; in mingling the products of said electrolysis; and in separating the so-formed hydrated oxid of lead.

2. Process for making hydrated oxid of lead which consists in the electrolysis, with lead anodes, of hot concentrated solutions of sodium chlorid; in mingling the anolyte and catholyte; in removing from the electrolyte the insoluble lead compounds thereby formed; and in returning the said electrolyte to the electrolytic cell.

3. Process for making hydrated oxid of lead which consists in the electrolysis, with lead anodes, of hot aqueous solutions of sodium chlorid; in mingling the anolyte and catholyte; in separating from the electrolyte the so-formed hydroxid of lead; and in bringing the said electrolyte again into the region of electrolytic action.

4. Process for the continuous production of hydrated oxid of lead which consists in the electrolysis, with lead anodes, of a hot aqueous solution of sodium chlorid; in commingling the anolyte and catholyte to produce hydrated oxid of lead and to re-form the original electrolyte; in removing therefrom the insoluble lead compounds; and in again subjecting the said electrolyte to aforesaid electrolysis.

811,553. GARMENT-SUPPORTER. ROBERT H. RUBY, Batavia, Iowa. Filed May 20, 1905. Serial No. 261,546.

Claim.—1. In garment-supporters a wire member having its ends bent into parallel U-shaped hooks and its center formed at right angles to the stem of said hooks, and a U-shaped plate member having means on its rear side to support the central portion of the hook member and recesses formed on its front side for the insertion of the points of the hooks.

2. In garment-supporters, a member having parallel hooks, a central portion disposed at substantially right angles to the stem of the hooks, the corners connecting the stems of the hooks and the central portion being bent so as to bring the central portion in toward the center of the hook, and a U-shaped plate member having means on its rear side to support the central portion of the hook member and recesses formed on its front side for the insertion of the points of the hooks.

3. In a garment-supporter, a plate member bent in the shape of an inverted U, a tongue formed on the inner face of the rear side of the plate, and the edges of the front side of the plate folded so as to form vertically-set cylindrical-shaped recesses on its front side, and a hooked member having its lower end adapted to slide under the tongue and to rest upon its base, and its upper or hooked ends to catch over the top of the plate and the points of the hooks to rest in the recesses.

4. In a garment-support, a plate member bent in the shape of an inverted U, a tongue cut out of and joined at its lower end to the rear side of the plate and the edges of the front side of the plate folded so as to form vertically-set tubular-shaped recesses on its front side, and a hooked member having its lower end adapted to slide under the tongue and to rest upon its base, and its upper or hooked ends to catch over the top of the plate and the points of the hooks to rest in the recesses.

5. The combination of a hooked wire member having its central portion set at an angle to the stems of the hooks, and the corners joining said central portion and the stems together extended out laterally; a U-shaped plate member having a tongue on its rear side and recesses on its front side, and said corners of the wire member adapted to slip over the rear side of the plate member and its central portion to catch under the tongue thereon, and the hooked ends to catch over the top of the plate member and insert in the recesses.

811,554. CORN-PLANTER. ERNST E. ENGLUND, Moline, Ill., assignor to D. M. Sechler Carriage Company, Moline, Ill., a Corporation of Illinois. Filed Sept. 13, 1905. Serial No. 278,284.

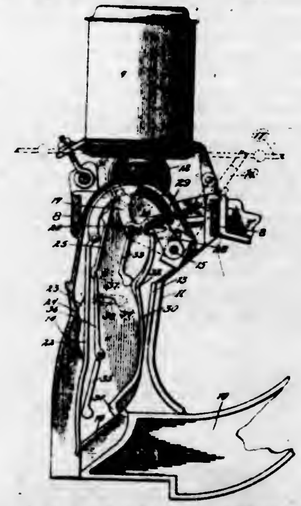

Claim.—1. In a corn-planter, the combination with check-rower mechanism, a seedbox and a hollow runner-shank, of an opening between said seedbox and the top of said runner-shank, an upper valve controlling said opening and forming an upper closure, a shelf opening to the heel of said runner-shank, a plunger adapted to move along said shelf and discharge seed therefrom to the ground, an opening above said shelf adapted to be closed by said plunger to form an intermediate closure, a valve-plate adapted to close against said shelf to form a bottom closure, and connections between said check-rower devices and said upper valve and said valve-plate and said plunger whereby when said upper and lower closures are opened by the action of the check-rower mechanism the plunger will close said intermediate closure and force the seed from the shelf and when said upper and lower closures are closed said intermediate closure will be open.

2. In a corn-planter, the combination with a hollow runner-shank, a sloping shelf at the heel of the runner, and an opening for the passage of seed at the top of the shank, of a valve adapted when operated to alternately open and close said opening, check-rower mechanism connected with said valve, a plate pivotally connected at its upper end with said valve and having a plunger-head at its lower end adapted to move back and forth on said shelf when said check-

rower mechanism is operated, an intermediate closure above said plate adapted to be closed by said plunger when moved to discharge the seed, and a valve-plate pivotally connected at its upper end with said valve and adapted to close against said shelf when said plunger is moved and to be lifted therefrom when said plunger moves along said shelf to discharge the seed, substantially as described.

3. In a corn-planter, the combination with a hollow runner-shank, a sloping shelf at the heel of the runner, and an opening for the passage of seed at the top of the shank, of a rocking valve adapted to swing past said opening and to alternately open and close the same when operated, check-rower mechanism connected with said rocking valve, a cam-plate pivotally connected at its upper end with said rocking valve and having a plunger-head at its lower end, a bearing in said shank adapted to bear upon said cam-plate and cause said plunger-head to slide back and forth along said shelf when the check-rower mechanism is operated, a series of plates extending across the opening in said runner from side to side to form a rear wall for the said tube and having the lower plate at a distance above said shelf adapted to be closed by said plunger, when moved to discharge the seed, to form an intermediate closure, a cam-plate pivotally connected at its upper end with said rocking valve, and a bearing on said runner-shank adapted to bear against said cam-plate and close the lower end of the same against said shelf to form a lower closure when said check-rowing devices are in their normal position, substantially as described.

4. In a corn-planter, the combination with a hollow runner-shank, a sloping shelf at the heel of the runner, an opening at the top of said runner-shank for the passage of seed, and check-rower mechanism, of a rocking valve pivoted in said runner-shank and adapted to swing past said opening to alternately open and close the same as said check-rower devices are operated, a plunger pivotally connected at its upper end to said rocking valve and adapted to slide back and forth on said plate as said check-rower mechanism is operated, a valve-plate pivotally connected at its upper end with said rocking valve and adapted to close against the end of said sloping shelf when said check-rower mechanism is in its normal position, a fixed plate 35 having a space between its lower end and said shelf adapted to be closed by said plunger when moved downward to discharge the seed, fixed plates 25 and 33 located in the upper part of said runner-shank with a space between them in the line of said discharge-opening, and a swinging plate 36 adapted to be rocked back against the lower end of the plate 25 or forward against the lower end of plate 33, substantially as described.

811,555. FISHING DEVICE. WILLIAM S. FREES, Bay City, Mich. Filed Aug. 15, 1905. Serial No. 274,894.

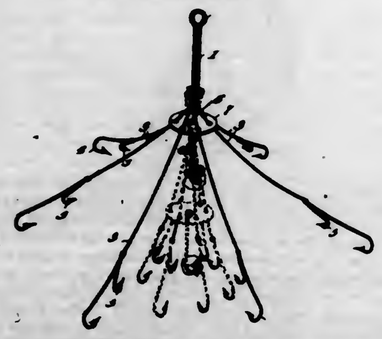

Claim.—1. In a device of the class described, the combination of a plurality of normally spaced apart hooks, bait-supporting means between said hooks, and a hydroplane arranged to force the hooks together when the device is pulled through water.

2. In a device of the class described, the combination of a plurality of spring-shanks normally spaced apart, hooks carried by said shanks, bait-supporting means between said hooks, and a hydroplane movable relatively to the shanks and arranged to force the same together as the device is given a sharp jerk when in water.

3. In a fish-trap, the combination of a plurality of spring-shanks normally arranged in diverging positions, an actuating member connected with the shanks to force the same together, hooks carried by the shanks, and a bait-hook connected with the actuating member and normally arranged in the space about which the several shanks are arranged.

4. In a fish-trap, the combination of a main shank, a plurality of shanks diverging from the main shank, and normally spaced apart by spring action, hooks carried by the diverging shanks, bait-supporting means arranged in the space about which the diverging shanks are disposed, and an actuating member supported by the diverging shanks and adapted by movement thereon to force the same together.

5. In a fish-trap, the combination of a plurality of shanks intertwisted at one end to form a main shank provided with an eye for attachment to the line, the plurality of shanks normally retaining divergent positions by spring action, and a plurality of hooks carried by the several shanks projected from the main shank, an actuating member slidable longitudinally on the plurality of divergent shanks, and a bait-hook connected with said actuating member.

6. In a device of the class described, the combination of a plurality of normally spaced apart hooks, and a hydroplane operably connected with said hooks to force the same together when the device is pulled sharply through water.

811,556. MAILING-TUBE. ALONZO L. GRAY, Vanderbilt, Pa. Filed July 3, 1905. Serial No. 268,066.

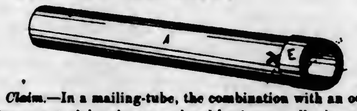

Claim.—In a mailing-tube, the combination with an outer tube of strong material and a paper band having an adhesive surface on one end thereof, of an inner tube of weaker material, having a cleft through its whole length, pierced with opposite perforations one on each side of said cleft near one end thereof, said inner tube being arranged to carry mail-matter and to slip into and out of said outer tube, a cord, drawn through said perforations folding on said outer tube, detachably fastened thereon by said adhesive band, holding said inner tube in position in said outer tube, and when torn away from said band affording facility for withdrawing said inner tube from within said outer tube.

811,557. FURNACE. SYLVESTER P. GREY, Indianapolis, Ind., assignor to Machinery Exchange, Indianapolis, Ind., a Copartnership. Filed Oct. 3, 1904. Serial No. 227,026.

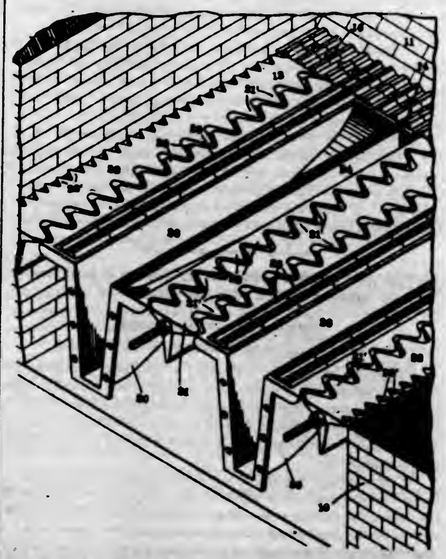

Claim.—1. In a furnace, the combination with an open-top fuel-chute, of a pair of air-passages arranged one upon each side of said fuel-chute and provided with perforated removable but normally stationary fuel-receiving caps, means for supplying a blast of air to said passages, and a rocking grate-bar flanking each of said air-passages.

2. In a furnace, the combination, with a transverse air-trunk, of longitudinal air-trunks extending forward therefrom and communicating therewith and provided with perforated normally stationary fuel-receiving tops, open-top fuel-chutes arranged between some of the pairs of said longitudinal air-trunks, and means for shoving fuel longitudinally into said chutes.

3. In a furnace, the combination, with a transverse air-trunk arranged across the furnace at the rear thereof, of longitudinal air-trunks extending forward therefrom and communicating therewith and provided with perforated fuel-receiving tops, open-top fuel-chutes arranged between some of the pairs of said longitudinal air-trunks, means for shoving fuel longitudinally into said chutes, and a steam-pipe running through said transverse air-trunk and discharging through the top thereof.

4. In a furnace, the combination, with a transverse air-trunk, of longitudinal air-trunks leading therefrom and communicating therewith and provided with perforated fuel-receiving tops, longitudinal open-top fuel-chutes arranged between pairs of said longitudinal air-trunks, rocking grate-bars arranged to flank each of said longitudinal air-trunks, and means for shoving fuel longitudinally into said fuel-chutes.

5. In a furnace, the combination, with a transverse air-trunk arranged across the furnace at its rear, of longitudinal air-trunks leading therefrom and communicating therewith and provided with perforated fuel-receiving tops, longitudinal open-top fuel-chutes arranged between pairs of said longitudinal air-trunks, rocking grate-bars arranged to flank each of said longitudinal air-trunks, means for shoving fuel longitudinally into said fuel-chutes, and a steam-pipe arranged in the air-trunk and discharging through the top thereof.

811,558. GATE. EDWARD B. HANKEN, New Douglas, Ill. Filed Apr. 7, 1905. Serial No. 254,576.

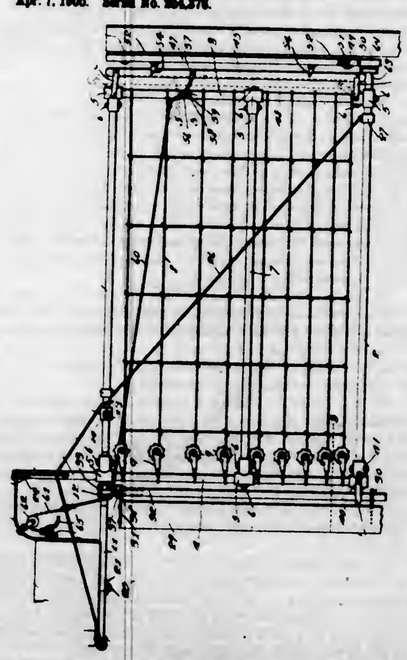

Claim.—1. The combination with a support, of an upright pintle-bar carried thereby, a swinging gate counterbalanced upon the top of the pintle-bar, and a substantially U-shaped clip loosely embracing the pintle-bar and straddling the lower portion of the gate, the sides of the clip being longitudinally slotted, and fastening means carried by the gate and adjustably engaging the slots.

2. The combination with a support, of a swinging gate having a rear extension pivotally sustained upon the top of the support, an upright rising from the gate in front of the pivotal support of the gate, a cross-bar carried by the upright, truss-bars extending from the top longitudinal bar of the gate rearwardly across the cross-bar and connected to the rear end of the extension, and a counterweight supported upon the extension in rear of the pivotal support.

3. The combination with a support, of a swinging gate having a rear extension pivotally sustained upon the top of the support, a counterbalance carried by the rear extension, an upright rising from the top of the gate, a brace extending between the counterweight and the upright, a latch carried by the free end of the gate, a guide carried by the brace in rear of the pivotal support of the gate, and a flexible latch-controlling element extending rearwardly from the latch and through the guide with portions extending at opposite sides of the gate.

4. The combination with a vertically-adjustable swinging gate, a latch-post having a vertically-adjustable keeper, a front extension at the lower edge of the gate for engagement with the keeper in the closed condition of the gate to support the gate against sagging.

5. The combination with a vertically-adjustable swinging gate, a latch-post having a vertically-adjustable keeper adjacent the lower end thereof, a longitudinal projection of the lower bar in front of the gate and disposed for engagement with the keeper in the closed condition of the gate and to support the gate against sagging.

6. The combination with a vertically-adjustable swinging gate, a latch-post having a vertically-adjustable keeper adjacent its lower end and open at opposite sides, a front extension of the lower bar of the gate disposed to enter the keeper through either side thereof and to support the gate against sagging when closed.

7. The combination with a vertically-adjustable swinging gate, a latch-post having a vertically-adjustable keeper upon the lower portion thereof, of a longitudinal bar extended in front of the gate and provided with an antifriction-roller to enter the keeper and support the gate against sagging when closed.

8. The combination with a vertically-adjustable swinging gate, a latch-post, a vertically-adjustable latch-bar carried by the post, upper and lower keepers carried by the bar, a projection extending in front of the gate and disposed to engage the lower keeper in the closed condition of the gate and to support the gate against sagging, and a latch carried by the gate for engagement with the upper keeper when the gate is closed.

9. The combination of a latch-post having upper and lower substantially horizontal projections, a latch-bar having longitudinal slots receiving the projections, adjustable heads carried by the outer ends of the fastenings and arranged to engage the latch-bar, a washer fitted between the bar and the post to adjust the former with respect to the latter, a keeper carried by the bar, and a vertically-adjustable swinging gate having a latch for engagement with the keeper

811,559. COIN SEPARATING, COUNTING, AND STACKING DEVICE. CHARLES F. HESS, Scranton, Pa. Filed Feb. 10, 1905. Serial No. 245,691.

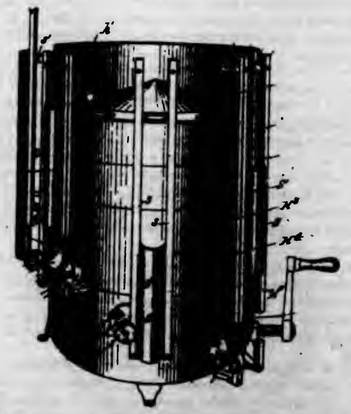

Claim.—1. In a device of the character set forth, the combination with a series of superposed carriers having apertures therein for the passage of coins of less diameters than the coins adapted to be

handled by the carriers and coin-receptacles in the carriers, of means for distributing the coins to the receptacles and means for discharging the coins from the receptacles in succession.

2. In an apparatus such as described, the combination with a series of superposed carriers having coin-receptacles therein and apertures for the passage of coins of smaller diameters than those to be held in the receptacles and means for imparting movement to said carriers, of dischargers working in said receptacles for discharging the coins therefrom and means for operating said dischargers successively to discharge the coins.

3. In an apparatus such as described, the combination with a series of superposed carriers having coin-receptacles therein and apertures in said receptacles for the passage of coins of less diameters than the coins adapted to be held in said receptacles, of means for moving said carriers and means for discharging the coins from the receptacles successively; substantially as described.

4. In a device of the character described, the combination with a rotary carrier having coin-receptacles therein and apertures for the passage of coins of smaller diameters than the coins adapted to be held by the receptacles, of spring-actuated discharging mechanism for discharging coins from the receptacles and means for retracting the discharging mechanism by the movement of the carrier.

5. In a device such as described, the combination with a rotary carrier, of a series of circumferentially-arranged coin-receptacles and apertures for the passage of coins of smaller diameters than those adapted to seat in the receptacle, of radially-movable spring-actuated discharging mechanism and means for retracting said discharging mechanism against the tension of its spring and embodying an incline; substantially as described.

6. In a device such as described, the combination with a rotary carrier having circumferentially receptacles therein, means for distributing coins to said receptacles and a casing having a coin-discharge aperture with which said receptacles register in succession, of a discharging mechanism operating to discharge the coins through said aperture in the casing embodying an impelling-spring and means for retracting the discharging mechanism.

7. In a device such as described, the combination with a rotary carrier having circumferentially-arranged coin-receptacles therein and apertures in said receptacles for the passage therethrough of coins of less diameter than the coins adapted to be held in said receptacles, of radially-movable discharging mechanism and means for moving said discharging mechanism radially outward to discharge the coins successively from the receptacles.

8. In a device such as described, the combination with a series of superposed carriers mounted on a common shaft adapted to be rotated thereby and each having a series of circumferentially-arranged coin-receptacles therein and apertures in the superposed carriers for the passage of coins of less diameters than those adapted to be held in the receptacles, of radially-movable discharging mechanism for each carrier, means for moving said discharging mechanism impulsively outward and means for retracting the discharging mechanism.

9. In a device such as described the combination with a rotary carrier having circumferentially-arranged coin-receptacles therein and means for discharging the coins from said receptacles in succession, of a distributer having a yielding face overlying said carrier for spreading and distributing the coins to the receptacles; substantially as described.

10. In a device such as described, the combination of a rotary carrier having circumferentially-disposed coin-receptacles therein and means for discharging the coins from said receptacles in succession, of a brush overlying the carrier for distributing the coins to the receptacles; substantially as described.

11. In a device of the character described, the combination of a rotary carrier having circumferentially-disposed coin-receptacles therein and discharging mechanism for discharging the coins from said receptacles in succession, of a yielding distributer overlying said carrier for distributing the coins to the receptacles; substantially as described.

12. In a device such as described, the combination with a rotary carrier having circumferentially-disposed coin-receptacles therein with apertures for the passage of coins of smaller diameters than those adapted to be held by the receptacles, and a yielding distributer for distributing the coins to the receptacles; substantially as described.

13. In an apparatus such as described, the combination with the rotary carrier having circumferentially-disposed coin-receptacles therein and apertures for the passage of coins of smaller diameters than those adapted to be held by the receptacles and a discharging mechanism for discharging the coins from the receptacles in succession, of a succession of brushes for distributing the coins to the receptacles and apertures, and means for yieldingly supporting said brushes in position in proximity to the carrier; substantially as described.

14. In an apparatus such as described, the combination with a rotary carrier having circumferentially-disposed coin-receptacles therein and means for discharging the coins from said receptacles in succession, of annular walls between which the coins are confined in position to enter the receptacles; substantially as described.

15. In a device such as described the combination with the rotary carrier having circumferentially-disposed coin-receptacles therein and means for discharging the coins from said receptacles in succession, of a casing embodying annular walls between which the coins are confined in position to enter the receptacles, and distributers between said walls in proximity to the carrier; substantially as described.

16. In a device such as described, the combination with the rotary carrier having circumferentially-disposed coin-receptacles therein and means for discharging the coins from said receptacles in succession, of a casing embodying annular walls overlying the carrier and between which the coins are confined in position to enter the receptacles and a pivoted distributer mounted between said annular walls in position to rest in proximity to the upper surface of the carrier; substantially as described.

17. In a device such as described, the combination with a rotary carrier having a series of circumferentially-disposed coin-receptacles therein, means for distributing the coins to the receptacles and annular walls between which the coins are confined in position to enter the receptacles, of a discharging mechanism embodying radially-movable dischargers, means for impelling said dischargers outwardly and a fixed incline for moving said dischargers inwardly.

18. In a device such as described the combination with a rotary carrier having a series of circumferentially-arranged coin-receptacles, of spring-actuated sliding dischargers working in said receptacles and a fixed incline for retracting said dischargers; substantially as described.

19. In a device for separating coins of differing diameters, the combination of a support on which the coins rest having apertures therethrough for the passage of coins of smaller diameter, said apertures having inclines at one side thereof and means for effecting a relative movement of the coins and support toward the sides of the apertures having the inclines.

20. In a separator for coins, the combination of a carrier having apertures therein for the passage of coins of smaller diameters, said apertures in part only conforming to the peripheral shape of the coins and having inclines on one side thereof, of means for distributing the coins to said apertures; substantially as described.

21. In a device such as described, the combination with a rotary carrier having apertures therein for the passage of coins of smaller diameters, and inclines on the rear sides of said apertures for preventing the entry of the forward edge of the coin into the apertures and means for distributing the coins to the apertures as the carrier is rotated; substantially as described.

22. In an apparatus such as described the combination with the rotary carrier having radially-arranged coin-receptacles therein, apertures in said receptacles of less diameters than the receptacles and inclines projecting into said apertures on the rear sides thereof, of means for rotating the carrier and means for discharging coins from the receptacles; substantially as described.

23. In a device for separating coins of different diameters, an apertured support over which the coins are distributed to the apertures in the support, said apertures having a transverse diameter equal to or greater than the coins adapted to pass therethrough and a projection extending below the level of the face of the support from one side of the aperture, said projection having an inclined upper face against which the forward edge of coins tending to enter the aperture are deflected upwardly and out of the aperture; substantially as described.

24. In an apparatus such as described, the combination of a series of separable units arranged in succession one above the other and each embodying a coin-carrier and discharging mechanism, said coin-carrier of each unit having apertures therethrough for the passage of coins of smaller diameters than those adapted to be discharged by the discharging mechanism of that unit.

25. In an apparatus such as described the combination with a cylindrical casing formed in separable sections arranged one above the other, of coin-separating and radially-operating discharging mechanisms mounted in each section, operating simultaneously to separate and discharge coins, the separating and discharging mechanisms for the larger coins being arranged above the separating and discharging mechanisms for the smaller coins; substantially as described.

26. In an apparatus such as described the combination with a cylindrical casing, a central shaft and means for rotating said shaft, of a series of coin separating and discharging mechanisms rotated by the shaft and located one above the other within the casing.

27. In an apparatus such as described, the combination with a series of rotary coin separating and distributing mechanisms arranged one above the other and adapted to each permit of the passage therethrough of coins of smaller denominations, of a series of coin-receivers disposed in succession around said coin separating and distributing mechanisms and each adapted to receive coins from one of said mechanisms; substantially as described.

28. In an apparatus such as described, the combination with a series of coin-carriers arranged one above the other on a vertical axis and adapted to rotate horizontally and coin separating and discharging means substantially as described, of a series of coin-receivers disposed in succession around said coin-carriers and each adapted to receive the coins discharged from one of said carriers, as set forth.

29. In an apparatus such as described, the combination with a horizontally-rotatable coin-carrier and means for discharging coins radially therefrom, of a counting and indicating mechanism controlled by the coin as discharged from the carrier and a movable coin-receiver whose position with relation to the carrier is controlled by said counting and indicating mechanism.

30. In an apparatus such as described, the combination with a horizontally-rotatable coin-carrier and means for discharging coins radially therefrom of a vertically-movable coin-receiver, mechanism controlling the position of said coin-receiver with relation to the carrier and itself controlled by the coin discharged from the carrier; substantially as described.

31. In an apparatus such as described, the combination with a horizontally-rotatable coin-carrier and means for discharging coins radially therefrom, of a vertically-movable coin-receiver into which the coins are distributed and feeding mechanism for the coin-receiver actuated by the discharged coin; substantially as described.

32. In an apparatus such as described, the combination with a horizontally-rotatable coin-carrier and mechanism for discharging coins radially therefrom, of vertically-arranged guides in proximity to said carrier, a coin-receiver mounted in said guides and feeding mechanism controlling the positon of said said receiver in the guides and having an operating part projecting into the path of the coin being discharged; substantially as described.

33. In an apparatus such as described, the combination with the coin separating and discharging mechanism, of a counting and indicating mechanism actuated by the coins being discharged, means for automatically returning said indicating mechanism to zero, and a coin-receiver advancing in unison with said mechanism whereby the counting mechanism will indicate the number or value of coins in the receiver when less than equal to the capacity of the receiver; substantially as described.

811,560. **CONCRETE BUILDING CONSTRUCTION.** JAMES B. HINCHMAN, Denver, Colo. Filed June 24, 1904. Serial No. 213,970.

Claim.—1. A shearing-arm for tension-rods consisting of a single piece of wire twisted upon itself and having one end formed in a loop said loop being bent at an angle to the arm and back upon itself.

2. A shearing-arm for tension-rods consisting of a single piece of wire twisted upon itself and having one end formed in a loop, the said loop being twisted so as to form a double loop and being bent at an angle to the arm and back upon itself.

3. A tension-rod for composite building purposes, having shearing-arms removably mounted at angles thereon, each of said shearing-arms having one of its ends bent at an angle to itself, the said tension-rod passing through the said bent end, and a wedge for securing the shearing-arms to the tension-bar inserted between each of the said shearing-arms and the tension-bar.

4. A tension-rod for composite building purposes comprising shearing-arms removably mounted thereon, each shearing-arm consisting of a single piece of wire twisted upon itself and having one of its ends formed in a loop the said looped end being bent at right angles upon itself, the said tension-rod passing through the said looped end and means for securing the shearing-arm to the tension-bar inserted between the said arm and bar.

5. A tension-rod for composite building purposes comprising shearing-arms removably mounted thereon, each shearing-arm consisting of a single piece of wire twisted upon itself and having one end formed in a loop, the said loop being twisted so as to be divided into a double loop and being bent at right angles upon itself, the said tension-rod passing through the said looped end and a wedge for securing the shearing-arm to the tension-bar inserted between the said arm and bar.

6. The combination with the reinforcing-rods of a reinforced concrete beam, of stirrups or shear-bars bent partially around said reinforcing-rods and provided with registering loops or eyes, key-bars passing through said loops or eyes and engaging the under side of said reinforcing-rods to hold said stirrups in place, substantially as described.

811,561. **LOCOMOTIVE-TENDER FRAME.** CLARENCE H. HOWARD, St. Louis, Mo. Filed Nov. 22, 1905. Serial No. 288,580.

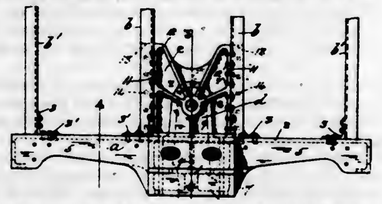

Claim.—1. In a locomotive-tender frame, the combination with the longitudinal sills, of an end sill having a central opening transversely therethrough for the draw-bar, a draw-bar pocket integral with the end sill and projecting rearwardly therefrom between the middle longitudinal sills, and in alinement with the said opening, a bracket projecting from each side of, and integral with the said pocket, and with the end sill, the said brackets having their outer lateral portions adapted to bear against the middle longitudinal sills, a pocket projecting from the front side of the end sill and integral therewith for receiving the buffer-springs, and means for fixing the said brackets and end sill respectively, to the longitudinal sills, substantially as described.

2. In a locomotive-tender frame, the combination with the longitudinal sills, of an end sill having a central opening transversely therethrough for the draw-bar, a draw-bar pocket integral with the end sill and projecting rearwardly therefrom between the middle longitudinal sills, and in alinement with the said opening, a pocket projecting from the front side of the end sill and integral therewith for receiving the buffer-springs, and means for fixing the end sill to the longitudinal sills, substantially as described.

3. In a locomotive-tender frame, the combination with the longitudinal sills, of an end sill having a central opening transversely therethrough for the draw-bar, a pocket projecting from the front side of the end sill and integral therewith for receiving the buffer-springs, and means for fixing the end sill to the longitudinal sills, substantially as described.

811,562. **FRICTION DEVICE FOR BRAKES AND CLUTCHES.** CHARLES W. HUNT, West New Brighton, N. Y. Filed June 14, 1905. Serial No. 265,142.

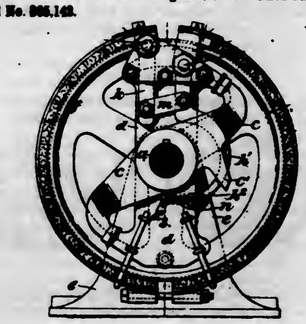

Claim.—1. A friction device for brakes and clutches, comprising a friction-band, a friction-surface to coöperate with said band, differential levers independent and substantially radial to which the ends of said band are respectively secured and means to move both of said levers in one direction or the other, whereby the ends of said band are moved differentially in one direction or the other.

2. A friction device for brakes and clutches, comprising a friction-band, a friction-surface to coöperate with said band, differential levers independent and substantially radial to which the ends of said band are respectively secured, a support for said levers, said support and said friction-surface being relatively movable, and means to move said levers in one direction or the other.

3. A friction device for brakes and clutches, comprising a friction-band, a friction-surface to coöperate with said band, differential levers independent and substantially radial to which the ends of said band are respectively secured, a support for said levers, a connection between said levers, and means to actuate said levers.

4. A friction device for brakes and clutches comprising a friction-band, a friction-surface to coöperate with said band, two substantially radial levers pivoted at points between their ends and having respectively unequal arms, the ends of the band being respectively secured to the outer ends of said levers, a common support for said levers, a link connecting the inner arms of said levers at different distances from the pivots respectively, and means to actuate said levers.

5. A friction device, comprising a friction-band, a stationary friction-surface to coöperate with said band, a driving part, a driven part, and differential levers mounted on said driven part and having the ends of said band connected thereto respectively.

6. A friction device, comprising a friction-band, a stationary friction-surface to coöperate with said brake, a driving part, a driven part, differential levers mounted on said driven part and having the ends of said band connected thereto respectively, and a link connecting said levers.

7. A friction device, comprising a friction-band, a stationary friction-surface to coöperate with said brake, a driving part, a driven part, differential levers mounted on said driven part and having the ends of said band connected therewith respectively, and a spring operating on one of said levers to maintain frictional contact between said band and said friction-surface.

8. A friction device, comprising a friction-band, a stationary friction-surface to coöperate with said brake, a driving part, a driven part, and differential levers mounted on said driven part and having the ends of said band connected thereto respectively, said driving part being adapted to engage one of said levers in backward movement.

811,563. LACQUER OR VARNISH. JOHN P. IZART, New York, N. Y. Filed Sept. 20, 1905. Serial No. 279,087.

Claim.—1. The new lacquer or varnish consisting of a distillate from oil-gas tar passing over below 200° centigrade in admixture with one of the group of chlorids consisting of chlorid of tin, chlorid of bismuth, chlorid of antimony, and chlorid of aluminium, substantially as described.

2. The new lacquer or varnish consisting of a distillate of oil-gas tar passing over below 200° centigrade admixed with aluminium chlorid, substantially as described.

3. The new lacquer or varnish consisting of a fraction of the distillate from oil-gas tar passing over below 200° centigrade in admixture with one of the group of chlorids consisting of chlorid of tin, chlorid of bismuth, chlorid of antimony, and chlorid of aluminium, substantially as described.

4. The new lacquer or varnish consisting of a fraction of the distillate of oil-gas tar passing over below 200° in admixture with aluminium chlorid, substantially as described.

811,564. ATTACHMENT TO SPECTACLES. JOHN P. JACKSON, Orleans, Ind. Filed Oct. 31, 1904. Serial No. 230,203.

Claim.—1. In an attachment for spectacles and the like, a frame including a pair of stirps curved to follow the general contour of the lower portions of a spectacle-frame, a nose-engaging spring connecting said stirps and tending to draw them toward each other, clips carried by the stirps and adapted to engage the frame of the spectacles, and auxiliary lenses carried by said stirps and disposed at an angle to the general plane to which the stirps and spring are arranged.

2. In an attachment for spectacles and the like, a frame including a pair of curved stirps, a spring connecting said stirps and tending to draw the same toward each other, nose-guards secured to the spring, auxiliary lens-supporting frames secured at their lower edges to the stirps at points near the ends of the latter, lenses in said supporting-frames, and spring-clips carried by said curved stirps and adapted to engage the frame of the main glasses.

811,565. WIRE BENDING AND TWISTING MACHINE. ARCHIBALD KENT and ROBERT ORR, New York, N. Y.; said Kent assignor to said Orr. Filed Mar. 11, 1905. Serial No. 249,581.

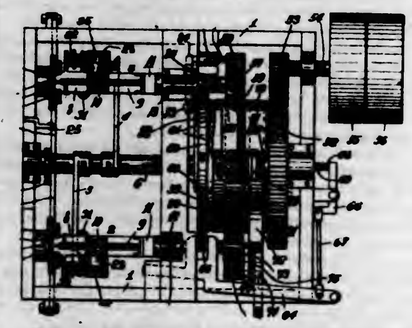

Claim.—1. In a machine of the character set forth, two wire-bending dies, having grooves, which, when brought together, form a closed mold, whose interior conforms substantially to the configuration of the blank desired and closely embraces the same, and means for opening and closing the mold.

2. In a machine of the character set forth, two wire-bending dies, having grooves, which, when brought together, form a closed mold, whose interior conforms substantially to the configuration of the blank desired and closely embraces the same, a core member adapted to be moved into and out of position between the dies, and around which the blank is bent, and means for operating the core member and for opening and closing the mold.

3. In a machine of the character set forth, two wire-bending dies, having grooves, which, when brought together, form a closed mold, whose interior conforms substantially to the configuration of the blank desired and closely embraces the same, a core member adapted to be moved into and out of position between the dies, and around which the blank is bent, means for operating the core member and for opening and closing the mold, and means for stripping the blank off the core member.

4. In a machine of the character set forth, two wire-bending dies, having grooves, which, when brought together, form a closed mold, whose interior conforms substantially to the configuration of the blank desired and closely embraces the same, a movable member in one of said dies adapted to assist in shaping the wire, and means for opening and closing the mold.

5. In a machine of the character set forth, two wire-bending dies, having grooves, which, when brought together, form a closed mold, whose interior conforms substantially to the configuration of the blank desired and closely embraces the same, a core member adapted to be moved into and out of position between the dies, and around which the blank is bent, a movable member in one of said dies adapted to assist in shaping the wire, and means for operating the core member and for opening and closing the mold.

6. In a machine of the character set forth, two wire-bending dies, having grooves, which, when brought together, form a closed mold, whose interior conforms substantially to the configuration of the blank desired and closely embraces the same, a core member adapted to be moved into and out of position between the dies, and around which the blank is bent, a movable member in one of said dies adapted to assist in shaping the wire, means for operating the core member and for opening and closing the mold, and means for stripping the blank off the core member.

7. In a machine of the character set forth, two wire-bending

dies, one of which is stationary, and the other of which is movable, having grooves, which, when brought together, form a closed mold, whose interior conforms substantially to the configuration of the blank desired and closely embraces the same, a hinge connecting the two dies, and means for operating the movable die to open and close the mold.

8. In a machine of the character set forth, two wire-bending dies, one of which is stationary, and the other of which is movable, having grooves, which, when brought together, form a closed mold, whose interior conforms substantially to the configuration of the blank desired and closely embraces the same, a hinge connecting the two dies, a core member pivoted at right angles to the hinge connecting the two dies, adapted to be moved into the stationary die before the mold is closed by the movable die, and means for operating the core member and the movable die to open and close the mold.

9. In a machine of the character set forth, two wire-bending dies, one of which is stationary, and the other of which is movable, having grooves, which, when brought together, form a closed mold, whose interior conforms substantially to the configuration of the blank desired and closely embraces the same, a hinge connecting the two dies, a core member pivoted at right angles to the hinge connecting the two dies, adapted to be moved into the stationary die before the mold is closed by the movable die, means for operating the core member and the movable die to open and close the mold, and means for stripping the blank off the core member.

10. In a machine of the character set forth, a stationary and a movable die, a hinge connecting the said dies, a core member pivoted at right angles to the hinge connecting the dies, and means for operating the core and movable die.

11. In a machine of the character set forth, a stationary and a movable die, a hinge connecting the said dies, a core member pivoted at right angles to the hinge connecting the dies, means for operating the movable die, a cam carried by the hinge connecting the dies, and means for operating the core member from the said cam.

12. In a machine of the character set forth, two wire-bending dies adapted to be brought together, a core member adapted to be moved into and out of position between the two dies, and around which the wire is bent, a stripping member surrounding the core member and moving therewith within which it recedes when moved out of position between the dies, and from which it emerges when moved into position between the dies.

13. In a machine of the character set forth, two wire-bending dies adapted to be brought together, a core member pivotally supported and adapted to be moved into and out of position between the two dies, and around which the wire is bent, a stripping member surrounding the said core member, pivoted eccentrically to the pivot of the core member, within which the said core member recedes when moved out of position between the dies, and from which it emerges when moved into position between the dies.

14. In a machine of the character set forth, two wire-bending dies, one of which is stationary, and the other of which is movable, a hinge connecting the said dies, a core member pivoted at right angles to the hinge of the dies, adapted to be moved into and out of position on the stationary die, and around which the wire is bent, a stripping member surrounding the said core member, pivoted eccentrically to the pivot of the said core member, within which the core member recedes when moved out of position from the stationary die, and from which it emerges when moved into position on the stationary die, a cam on the hinge connecting the dies, and means for operating the core member from the said cam

15. In a machine of the character set forth, two wire-bending dies, having grooves, which, when brought together, form a closed mold, whose interior conforms substantially to the configuration of the blank desired and closely embraces the same, means for opening and closing the mold, means for pinching the free ends of the wire, and means for rotating the mold.

16. In a machine of the character set forth, two wire-bending dies, having grooves, which, when brought together, form a closed mold, whose interior conforms substantially to the configuration of the blank desired and closely embraces the same, a core member adapted to be moved into and out of position between the dies, and around which the blank is bent, means for operating the core member and for opening and closing the mold, means for pinching the free ends of the wire, and means for rotating the mold.

17. In a machine of the character set forth, two wire-bending dies, having grooves, which, when brought together, form a closed mold, whose interior conforms substantially to the configuration of the blank desired and closely embraces the same, a core member adapted to be moved into and out of position between the dies, and around which the blank is bent, means for operating the core member and for opening and closing the mold, means for stripping the blank off the core member, means for pinching the free ends of the wire, and means for rotating the mold.

18. In a machine of the character set forth, two wire-bending dies, having grooves, which, when brought together, form a closed mold, whose interior conforms substantially to the configuration of the blank desired and closely embraces the same, a movable member in one of said dies adapted to assist in shaping the wire, means for opening and closing the mold, means for pinching the free ends of the wire, and means for rotating the mold.

19. In a machine of the character set forth, two wire-bending dies, having grooves, which, when brought together, form a closed mold, whose interior conforms substantially to the configuration of the blank desired and closely embraces the same, a core member adapted to be moved into and out of position between the dies, and around which the blank is bent, a movable member in one of said dies adapted to assist in shaping the wire, means for operating the core member and for opening and closing the mold, means for pinching the free ends of the wire, and means for rotating the mold.

20. In a machine of the character set forth, two wire-bending dies, having grooves, which, when brought together, form a closed mold, whose interior conforms substantially to the configuration of the blank desired and closely embraces the same, a core member adapted to be moved into and out of position between the dies, and around which the blank is bent, a movable member in one of said dies adapted to assist in shaping the wire, means for operating the core member and for opening and closing the mold, means for stripping the blank off the core member, means for pitching the free ends of the wire, and means for rotating the mold.

21. In a machine of the character set forth, two wire-bending dies, one of which is stationary, and the other of which is movable, having grooves, which, when brought together, form a closed mold, whose interior conforms substantially to the configuration of the blank desired and closely embraces the same, a hinge connecting the two dies, means for operating the movable die to open and close the mold, means for pinching the free ends of the wire, and means for rotating the mold.

22. In a machine of the character set forth, two wire-bending dies, one of which is stationary, and the other of which is movable, having grooves, which, when brought together, form a closed mold, whose interior conforms substantially to the configuration of the blank desired and closely embraces the same, a hinge connecting the two dies, a core member pivoted at right angles to the hinge connecting the two dies, adapted to be moved into the stationary die before the mold is closed by the movable die, means for operating the core member and the movable die to open and close the mold, means for pinching the free ends of the wire, and means for rotating the mold.

23. In a machine of the character set forth, two wire-bending dies, one of which is stationary, and the other of which is movable, having grooves, which, when brought together, form a closed mold, whose interior conforms substantially to the configuration of the blank desired and closely embraces the same, a hinge connecting the two dies, a core member pivoted at right angles to the hinge connecting the two dies, adapted to be moved into the stationary die before the mold is closed by the movable die, means for operating the core member and the movable die to open and close the mold, means for stripping the blank off the core member, means for pinching the free ends of the wire, and means for rotating the mold.

24. In a machine of the character set forth, a stationary and a movable die connected by a hinge at one end, gear-teeth on the said hinge, a reciprocating rack meshing with said gear-teeth, a core member pivoted at right angles to the hinge connecting the dies adapted to be moved into and out of position on the stationary die, means whereby the movement of the hinge is imparted to the core member, and means for causing the rack to reciprocate.

25. In a machine of the character set forth, a stationary and a movable die connected by a hinge at one end, gear-teeth on the said hinge, a reciprocating rack meshing with said gear-teeth, a core member pivoted at right angles to the hinge connecting the dies adapted to be moved into and out of position on the stationary die, a cam moving with the hinge, a friction-roll carried by the core whereby the movement of the hinge moves the core into position between the dies, and means for causing the rack to reciprocate.

26. In a machine of the character set forth, a stationary and a movable die connected by a hinge at one end, gear-teeth on the said hinge, a reciprocating rack meshing with said gear-teeth, a core member pivoted at right angles to the hinge connecting the dies

adapted to be moved into and out of position on the stationary die, a stripper surrounding the said core member, means whereby the

whose outer ends when closed are shaped in the form of a shaft, two

7. In a machine of the character set forth: means for folding the

8. In a wire-working tool, a pair of pivoted

adapted to be moved into and out of position on the stationary die, a stripper surrounding the said core member, means whereby the movement of the hinge is imparted to the core member and to the stripper, and means for causing the rack to reciprocate.

27. In a machine of the character set forth, a stationary and a movable die connected by a hinge at one end, gear-teeth on the said hinge, a reciprocating rack meshing with said gear-teeth, a core member pivoted at right angles to the hinge connecting the dies, a cam moving with the hinge, and a friction-roll carried by the core member, a stripper surrounding the core member and mounted on an eccentric whereby the movement of the hinge causes the core member to be moved into position between the dies and to free itself from the stripper and vice versa upon the return movement, and means for causing the rack to reciprocate.

28. In a machine of the character set forth, a stationary and a movable die connected by a hinge at one end, gear-teeth on the said hinge, a reciprocating rack meshing with the said gear-teeth, a core member pivoted at right angles to the hinge connecting the dies adapted to be moved into and out of position on the stationary die, means whereby the movement of the hinge is imparted to the core member, means for causing the rack to reciprocate and a movable member in the lower die for bending the wire inwardly and forwardly adapted to be operated when the dies are brought together.

29. In a machine of the character set forth, a stationary and a movable die connected by a hinge at one end, gear-teeth on the said hinge, a reciprocating rack meshing with said gear-teeth, a core member pivoted at right angles to the hinge connecting the dies adapted to be moved into and out of position on the stationary die, means whereby the movement of the hinge is imparted to the core member, means for causing the rack to reciprocate, a spring-detent normally in position over the stationary die adapted to prevent the wire from flying upward when the core member moves in over the lower die and adapted to be moved out of the way when the dies are brought together.

30. In a machine of the character set forth, a stationary and a movable die connected by a hinge at one end, gear-teeth on the said hinge, a reciprocating rack meshing with said gear-teeth, a core member pivoted at right angles to the hinge connecting the dies adapted to be moved into and out of position on the stationary die, means whereby the movement of the hinge is imparted to the core member, means for causing the rack to reciprocate, and means for preventing the wire from jumping out of the die.

31. In a machine of the character set forth, a head mounted in bearings at one end, a mold carried by said head composed of two dies whose outer ends are in the shape of a shaft or stud when closed, jaws for clasping said stud formed by the outer ends of the two dies of the mold, and means for rotating the head.

32. In a machine of the character set forth, the combination with a main shaft, of a head, wire-bending members on the said head, means for causing the said wire-bending members to act on the wire during the first third of the revolution of the main shaft, means for rotating the said head during the second third of the revolution of the said main shaft, and means for disengaging the wire-bending members during the third revolution of the said main shaft.

33. In a machine of the character set forth, the combination with a main shaft, of two heads, wire-bending members on each head, means for causing the said wire-bending members to act on the wire to bend the same during the first third of the revolution of the main shaft, means for rotating the said heads in unison during the second part of the revolution of the main shaft, and means for disengaging the said wire-bending members during the third part of the revolution of the main shaft.

34. In a machine of the character set forth, the combination with a main shaft, of two heads, a mold on each of said heads for bending the wire, means for closing the said mold during the first part of the revolution of the main shaft, means for rotating the two heads during the second part of the revolution of the main shaft, and means for opening the said molds during the third part of the revolution of the main shaft.

35. In a machine of the character set forth, the combination of a main shaft, two heads, wire-bending members on each of said heads, means located on the main shaft for closing the said wire-bending members to act and to disengage themselves from each other, transmission mechanism on the main shaft for driving the said heads periodically from the main shaft, wire-pinching mechanism adapted to be operated at periods corresponding to the rotating of the heads, a brake for retarding the motion of the transmission mechanism on the main shaft, and means for stopping the motion thereof.

36. In a machine of the character set forth, the combination with a head, a mold carried by the said head composed of two dies, whose outer ends when closed are shaped in the form of a shaft, two pivoted jaws adapted to grasp the outer ends of the said dies, wire-pinching mechanism carried by the said jaws, toggles controlling the said jaws, and means for closing and opening the said jaws.

811,566. **BODY-FORMING MACHINE.** ARCHIBALD KENT, New York, N. Y., assignor to James W. Kent, Brooklyn, N. Y. Filed Apr. 22, 1905. Serial No. 256,869.

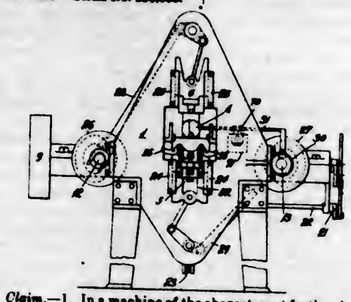

Claim.—1. In a machine of the character set forth, a hook-forming member comprising a pair of clamping-jaws for seizing the blank, one of which is provided with a beveled surface over which the blank is folded, a hook-forming tool for folding the edge of the blank over the said beveled surface, fixed straight guideways inclined throughout their length to correspond to the beveled surface of the clamping-jaw in which the hook-forming tool slides, and means for progressively causing the jaws to seize the blank and the hook-forming tool to travel in the guideways so as to fold the edge of the blank over the beveled surface aforesaid.

2. In a machine of the character set forth: a hook-former, comprising a pair of clamping-jaws adapted to hold the blank and one of which is provided with a beveled surface, a yielding gage for determining the width of the hook to be formed, guides fixed in an inclined position, a hook-forming tool traveling in said guides, and means for causing the hook-forming tool to travel in said guides thereby moving the gage out of the way and folding the tin over the beveled surface aforesaid.

3. In a machine of the character set forth: a hook-former, comprising a pair of clamping-jaws adapted to hold the blank and one of which is provided with a beveled surface, a yielding and horizontally-adjustable gage for determining the width of the hook to be formed, guides fixed in an inclined position, a hook-forming tool traveling in said guides, and means for causing the said hook-forming tool to travel in said guides thereby moving the gage out of the way and folding the tin over the beveled surface aforesaid.

4. In a machine of the character set forth: the combination of two hook-forming members located on each side of the path of progression of the blank through the machine, comprising two pairs of clamping-jaws having oppositely-disposed beveled surfaces one on one of said jaws of each pair, two pairs of guides fixed in an inclined position, hook-forming tools traveling in said guides, and means for causing the said hook-forming tools to travel in opposite directions in said guides.

5. In a machine of the character set forth: the combination of two hook-forming members located on each side of the path of progression of the blank through the machine, comprising two pairs of clamping-jaws having oppositely-disposed beveled surfaces one on one jaw of each pair, yielding gages adjacent to said jaws for determining the width of the hooks to be formed, two pairs of guides fixed in an inclined position, hook-forming tools traveling in said guides, and means for causing the said hook-forming tools to travel in opposite directions in said guides thereby moving the gages out of the way and folding the blank over the beveled surfaces.

6. In a machine of the character set forth: the combination of two hook-forming members located on each side of the path of progression of the blank through the machine, comprising two pairs of clamping-jaws having oppositely-disposed beveled surfaces one on one jaw of each pair, yielding and horizontally-adjustable gages adjacent to said jaws for determining the width of the hooks to be formed, two pairs of guides fixed in an inclined position, hook-forming tools traveling in said guides, and means for causing the said hook-forming tools to travel in opposite directions in said guides thereby moving the gages out of the way and folding the blank over the beveled surfaces.

7. In a machine of the character set forth: means for folding the blank around the horn, comprising a vertically-reciprocating slider, a primary former spring-seated thereon, two wings pivoted on the primary former, a rigid connection pivoted on the slider with one end and on one of the wings with its other end at a point eccentric to the pivot connecting the wing to the primary former, a yielding connection pivoted with one end on the slider and with its other end to the other wing also at a point eccentric to the pivot connecting the wing to the primary former, and means for reciprocating the slider.

8. In a machine of the character set forth: the combination of a horn, means for folding the blank around the horn, comprising a vertically-reciprocating slider, a plurality of forming members carried by said slider and adapted to act uninterruptedly to fold the blank around the horn upon the movement of the slider, means for expanding the horn, and a vertically-reciprocating hammer for clenching the seam of the body.

9. In a machine of the character set forth: the combination of a horn, means for folding the blank around the horn, comprising a vertically-reciprocating slider, a primary former spring-seated thereon, two wings pivoted on said primary former, pivots and connections between the slider and the wings, and means for operating said slider whereby the primary former acts first to clamp the blank on the horn, and the continued movement of the slider acts to cause the wings to fold the blank around the horn and to lock the hooks thereof, means for expanding the horn, and a vertically-reciprocating hammer for clenching the seam of the body.

10. In a machine of the character set forth: the combination of a horn, means for folding the blank around the horn, comprising a vertically-reciprocating slider, a primary former spring-seated thereon, two wings pivoted on the primary former, a rigid connection pivoted on the slider with one end and on one of the wings with its other end at a point eccentric to the pivot connecting the wing to the primary former, a vertical connection pivoted with one end on the slider and with its other end to the other wing also at a point eccentric to the pivot connecting the wing to the primary former, means for reciprocating the slider whereby the primary former acts first to clamp the blank on the horn, and the continued movement of the slider acts to cause the wings to fold the blank around the horn and interlock the hooks thereof, means for expanding the horn, and a vertically-reciprocating hammer for clenching the seam of the body.

11. In a machine of the character set forth: the combination with an expansible and collapsible horn, of an expander, an expander-lever connected to the expander, a stud on which said expander-lever is pivoted, means for adjusting the said stud, and a cam for operating the expander-lever.

12. In a machine of the character set forth, a horn comprising a main portion, a movable flap normally collapsed pivoted to the main portion so that when the horn is collapsed it presents a substantially continuous surface and when the horn is in its expanded position it forms a substantially complete cylinder as set forth, and means for moving the flap into its expanded position.

13. In a machine of the character set forth, the combination of two hook-forming members located upon each side of the path of progression of the blank through the machine, comprising two pairs of clamping-jaws having oppositely-disposed beveled surfaces, one on one of said jaws of each pair over which the blank is folded, two hook-forming tools each for folding the respective edge of the blank over the coöperating beveled surface, two fixed straight guideways inclined throughout their length to correspond to the beveled surfaces of the clamping-jaws in which the hook-forming tools slide, and means for progressively causing the jaws to seize the blank and the hook-forming tools to travel in opposite directions in the said guides so as to fold the edges of the blank over the beveled surfaces aforesaid.

811,567. **WIRE-WORKING TOOL.** GEORGE S. MAJORS, Schell City, Mo. Filed Dec. 20, 1904. Serial No. 237,851.

Claim.—1. In a wire-working tool, a pair of pivoted jaws, one of which is provided with a longitudinal slot adapted to receive one end of the wire to be twisted and the adjacent jaw with a wire-seat for coaction with said slot, there being an opening formed in the latter jaw disposed in the rear and to one side of the wire-seat for engagement with the opposite end of the wire.

2. In a wire-working tool, a pair of pivoted jaws provided with cutting edges, one of said jaws being provided with a longitudinal slot extending rearwardly from the cutting edge thereof and adapted to receive one end of the wire to be twisted and the adjacent jaw having a recess or wire-seat formed in its cutting edge for coaction with said longitudinal slot, there being an opening in the latter jaw for the reception of the opposite end of the wire.

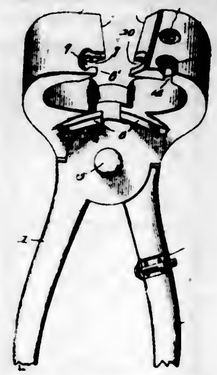

3. In a wire-working tool, a pair of pivoted jaws provided with cutting edges, one of said jaws being provided with a longitudinal slot extending rearwardly from the cutting edge thereof and adapted to receive one end of the wire to be twisted, and the adjacent jaw having a recess or wire-seat formed in its cutting edge for coaction with said longitudinal slot, there being an opening in the latter jaw for the reception of the opposite end of the wire, the walls of said slot, recess, and opening being countersunk.

4. In a wire-working tool, a pair of pivoted jaws provided with cutting edges, one of said jaws being provided with a longitudinal slot extending rearwardly from the cutting edge thereof and adapted to receive one end of the wire to be twisted and having a portion of its cutting edge adjacent to said slot cut away to facilitate the introduction of the wire, there being a recess or wire-seat in the cutting edge of the adjacent jaw for coaction with said slot, and a recess extending through said jaw to one side of the wire-seat for the reception of the opposite end of the wire.

5. In a wire-working tool, a pair of pivoted jaws having cutting edges, a longitudinal slot extending rearwardly from the cutting edge of one jaw and adapted to receive one end of the wire to be twisted, a recess or wire-seat formed in the cutting edge of the adjacent jaws for coaction with the longitudinal slot, said latter jaw being provided with an opening for the reception of the opposite end of the wire, there being a slot in said jaw extending inwardly from the side edge thereof.

811,568. **GRAPHOPHONE-REPRODUCER.** GEORGE A. MANWARING, Bayonne, N. J., assignor to American Graphophone Company, Washington, D. C., a Corporation of West Virginia. Filed Jan. 13, 1904. Serial No. 188,795.

Claim.—1. In a reproducer, the combination of a needle-receiving barrel having an axial bore and having also a longitudinal slot communicating with said bore for substantially the full length of the latter, and a spring-pressed lever pivoted in the upper end of said slot and having its lower face located entirely within said slot, whereby said face may present an extended bearing-surface against the side of an unnotched needle, the upper end of said lever being extended to provide a thumb-piece.

2. In a reproducer, a diaphragm, a stylus-bar connected therewith, a needle barrel or socket at one end of the stylus-bar, a hand-operable clamping-lever pivoted to the barrel and having an elongated gripping-surface extending longitudinally of the barrel and adapted to make extended engagement with the surface of a needle when in place in the barrel, and a spring acting on the lever to normally press its gripping-surface into clamping engagement with the needle.

3. In a reproducer, a diaphragm, a stylus-bar connected therewith, a needle barrel or socket at the outer end of the stylus-bar, a

hand-operable clamping-lever pivoted to the barrel and extending longitudinally with relation thereto, said lever having on one side of its pivot toward the open end of the barrel a gripping-face adapted to engage the surface of a needle in the barrel through a slot or opening in the wall of said barrel, and a coiled spring housed in a transverse recess or chamber opening at one side of the barrel said spring pressing at its outer end against the lever on the other side of its pivot thereby normally forcing the gripping-surface of said lever into clamping engagement with the needle.

811,569. WAGON-BODY. HORACE B. MARTIN, Athens, Ga. Filed Jan. 17, 1906. Serial No. 241,414.

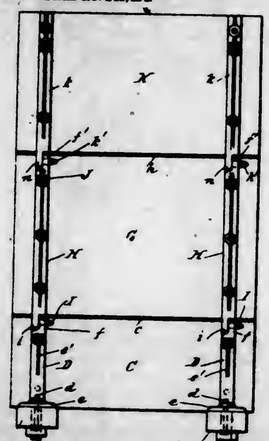

Claim.—1. The combination, with a lower and stationary wagon side, and supporting-pillars secured to the said side and having outwardly-projecting eyes on one-half of their upper end portions; of an adjustable side, and brace-bars secured to the said adjustable side and provided with downwardly and outwardly projecting stop-lugs on one-half of their lower end portions which overlap the said eyes and pivot-pins projecting from the said stop-lugs and engaging with the said eyes.

2. The combination, with a lower and stationary wagon side, and supporting-pillars secured to the said side and having outwardly-projecting eyes on one-half of their upper end portions; of an adjustable side, brace-bars secured to the said adjustable side and provided with downwardly and outwardly projecting stop-lugs on one-half of their lower end portions which overlap the said eyes and pivot-pins projecting from the said stop-lugs and engaging with the said eyes, said brace-bars having also outwardly-projecting eyes on one-half of their upper ends, a second adjustable side, and brace-bars secured to the said second adjustable side and provided with downwardly and outwardly projecting stop-lugs on one-half of their lower ends and having pivot-pins which engage with the last said eyes.

3. The combination, with a lower and stationary wagon side, and two pillars secured to the said side and having eyes on one side of their upper end portions; of a removable and adjustable wagon side, two bars secured to the said adjustable side and provided with stop-lugs on one side of their lower end portions which overlap the said eyes and bear against the said pillars and support the adjustable side when in an inclined position, and pivot-pins which project laterally in the same direction from one side of the said stop-lugs and which engage with the said eyes.

811,570. DRAFT APPARATUS FOR BOILER-FURNACES. ALEXANDRE H. MAGNIANT, Paris, France. Filed July 20, 1905. Serial No. 270,272.

Claim.—1. In a draft apparatus for boiler-furnaces, the combination of an ash-box, means for delivering a mixture of exhaust-steam, live steam and air therefrom, a blast-pipe and regulating means therein, said blast-pipe being connected to the means for delivering said mixture to the ash-box, substantially as shown and described.

2. In a draft apparatus for boiler-furnaces, the combination of an ash-box, a blast-pipe leading to the stack, regulating means in said blast-pipe, connecting means from said blast-pipe to said ash-box, a valve for regulating the quantity of exhaust-steam passing into the connecting means, means for injecting live steam into said connecting means, and means for introducing air and thus mixing the live steam, exhaust-steam and air, substantially as shown and described.

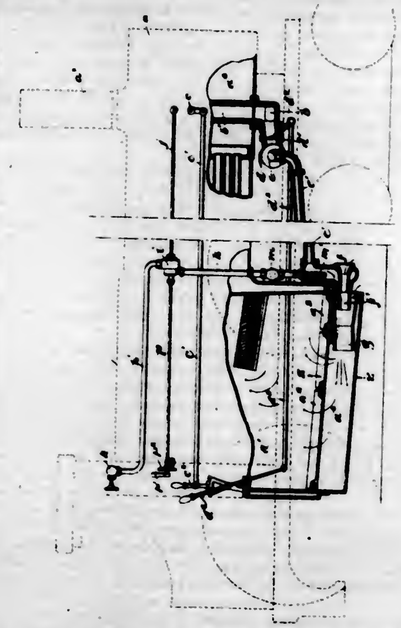

3. In a draft apparatus for boiler-furnaces, the combination of an ash-box, an injector provided with an air-inlet, a blast-pipe provided with regulating means, connections between the blast-pipe and the injector, a steam-blower, a live-steam pipe leading from the boiler to the injector, and a distributer located in the live-steam pipe for controlling the supply of steam to the injector and steam-blower, substantially as described.

4. In a draft apparatus for boiler-furnaces, the combination of an ash-box, injectors provided with air-inlets, a blast-pipe, means for regulating the exhaust-steam in said blast-pipe to produce the usual draft or by using only part of the exhaust to produce a current of gas from the furnace to the funnel, connections between the blast-pipe and the injectors, a steam-blower, a live-steam pipe leading from the boiler to the injectors, and a distributer located in the live-steam pipe for controlling the supply of steam to the injectors and steam-blower, substantially as described.

811,571. VENDING-MACHINE. ARTHUR MINGUINS, East Orange, N. J. Filed Feb. 8, 1905. Serial No. 244,696.

Claim.—1. In an automatic vending-machine, the combination with a casing, a package-receptacle and a coin-chute, of devices for retaining a good coin in said chute and operative only when the package-receptacle is empty, a push-rod and means actuated upon operating the push-rod to release the coin from the chute.

2. In an automatic vending-machine, the combination with a casing, a package-receptacle and a coin-chute, of devices for retaining a good coin in said chute and operative only when the package-receptacle is empty, a push-rod, means actuated upon operating the push-rod to release the coin from the chute, and means for refunding the coin.

3. In an automatic vending-machine, the combination with a casing and a receptacle for packages to be vended, of a frame, a plate fixed in said frame in an inclined position, a movable plate hinged adjacent to said fixed plate with an intervening coin-passage, means for retaining a coin between said plates when the receptacle is empty, a push-rod, means actuated upon pushing said rod for liberating the coin from its position between said plates, and means for refunding the coin when so liberated.

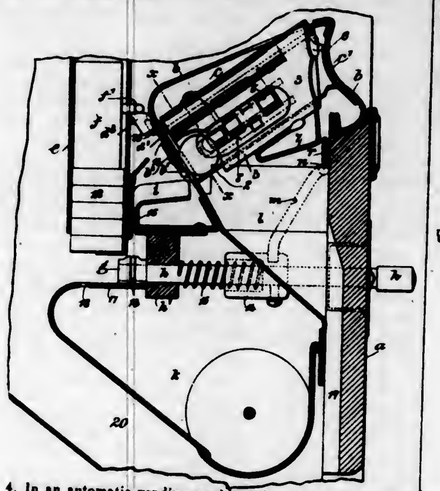

4. In an automatic vending-machine, the combination with a casing and a receptacle for packages to be vended, of a frame, a fixed plate mounted in an inclined position within said frame, a movable plate adjacent to said fixed plate with an intervening coin-passage, a gravity-plate pivoted in said frame at the lower end of the said coin-passage, means for closing the coin-passage by said gravity-plate when the package-receptacle is empty, means for liberating the coin from its position within the coin-passage and against the said gravity-plate, and means for refunding the coin when so liberated.

5. In an automatic vending-machine, the combination with a casing and a receptacle for packages to be vended, of a frame, a fixed plate mounted in an inclined position within said frame, a movable plate adjacent to said fixed plate with an intervening coin-passage, a gravity-plate pivoted in said frame at the lower end of the said coin-passage, a weight adapted to fit within the said package-receptacle, a projection on the same adapted to engage the said gravity-plate to swing the same across the said coin-passage when the machine is empty, and means for liberating the coin from its position within the coin-passage and against the said gravity-plate.

6. In an automatic vending-machine, the combination with a casing and a receptacle for packages to be vended, of a frame, a plate fixed in said frame, a movable plate hinged adjacent to said fixed plate with an intervening coin-passage, means for retaining a coin between said plates when the machine is empty, an inclined contact-arm secured to said movable plate, means for moving said movable plate through the intervention of said inclined contact-arm to liberate the coin from the coin-passage, and means for refunding the coin when so liberated.

7. In an automatic vending-machine, the combination with a casing and a receptacle for packages to be vended, of a frame, a plate fixed in said frame, a movable plate hinged adjacent to the said fixed plate with an intervening coin-passage, a push-rod, means for retaining the coin between said plates when the machine is empty, an inclined contact-arm secured to said movable plate, an arm fixed to said push-rod, a rod secured to said arm, a finger fixed in the said rod in such position as to contact with the said inclined contact-arm when the push-rod is moved inwardly, and means for refunding the coin.

8. In an automatic vending-machine, the combination with a casing and a receptacle for packages to be vended, of a frame, a plate fixed in said frame, a movable plate hinged adjacent to the said fixed plate with an intervening coin-passage, a push-rod, means for retaining the coin between said plates when the package-receptacle is empty, an inclined contact-arm secured to the said movable plate, an arm fixed to said push-rod, a rod secured to said arm, a finger fixed in the said rod in such position as to contact with the said inclined contact-arm when the push-rod is moved inwardly, a hopper, and a chute leading therefrom for refunding the coin.

811,572. HAY-CARRIER. RICHARD HELLER, Appleton, Wis. Filed May 13, 1905. Serial No. 260,501.

Claim.—1. In a carrier, a carriage having pairs of side members pivotally connected together, rollers mounted at the junction of the side members and at the outer ends thereof, and a frame carried by the side members.

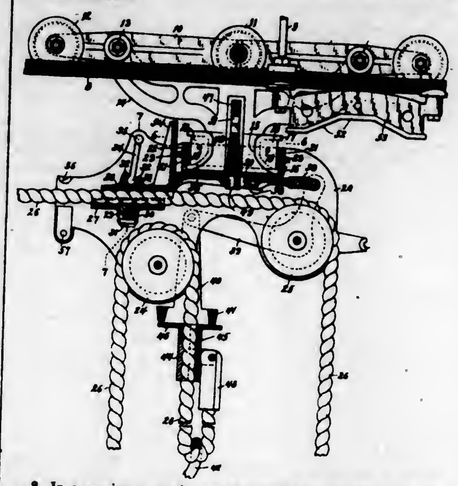

2. In a carrier, a carriage comprising pairs of side members pivotally connected together, rollers mounted at the pivotal junction of the side members and at the outer ends thereof, and a frame having pivotal connections with the side members at about one-third the distance from the end rollers to the intermediate rollers.

3. In a carrier, a carriage comprising pairs of side members, the members of each pair having a sliding pivotal connection with each other, rollers mounted at such connections, rollers mounted at the outer ends of the side members, and side frames each having pivotal connections with the side members of one pair at about one-third the distance from the end rollers to the intermediate rollers.

4. In a carrier, a pair of suitably-mounted side frames, a swivel-hub formed in sections which are carried by the side frames, radial webs with retaining and bearing flanges connecting their upper and lower ends respectively formed on the swivel-hub sections, means for connecting together the radial webs of the swivel-hub sections, a supporting-frame comprising side plates, ring-sections carried by the side plates and having tongue-and-groove connections with each other, said ring-sections fitting upon the swivel-hub and bearing upon the bearing-flange and against the edges of the radial webs, and means for connecting the side plates of the supporting-frame together.

5. In a carrier, a suitably-mounted supporting-frame having side plates, adjustable plates having teeth engaging in toothed openings of the side plates, a pivotal pin supported by the adjustable plates, a clamp member pivotally mounted on the pivotal pin, and a suitably-mounted coöperating member with means for operating it.

6. In a carrier, a carriage, a locking-pin carried thereby, a track on which the carriage travels, a trip-block on the track to engage and lift the locking-pin, a suitably-mounted locking-plate, and means on the locking-plate for engaging the trip-block when the locking-pin is raised to move the locking-plate beneath the locking-pin and thereby lock the carriage against moving on the track.

7. In a carrier, a track, a trip-block carried thereby, a carriage movable on the track, a locking-pin carried by the carriage to engage with and be lifted by the trip-block, a locking-plate mounted to slide beneath the locking-pin, a means on the locking-plate for engaging the trip-block and causing the locking-plate to slide beneath the locking-pin to lock the carriage on the track, and means for automatically removing the locking-plate from beneath the locking-pin.

8. In a carrier, a track, a trip-block mounted thereon, a carriage movable on the track, a locking-pin on the carriage to engage and be lifted by the trip-block, a locking-plate having means for engaging the trip-block to move it beneath the locking-pin, and a rope-clamp operated by the locking-plate.

9. In a carrier, a track, a trip-block mounted thereon, a carriage movable on the track, a locking-pin on the carriage to engage and be lifted by the trip-block, a locking-plate adapted to move beneath the locking-pin when said locking-pin is raised, a rope-clamp

operated by the locking-plate, a hoisting-rope passing through the rope-clamp, a stop on the hoisting-rope, and means adapted to be engaged by the stop for moving the locking-plate from beneath the locking-pin and causing the clamp to engage the hoisting-rope.

10. In a carrier, a track, a trip-block mounted thereon, a carriage movable on the track, a locking-pin on the carriage to be engaged and lifted by the trip-block, a locking-plate having an opening to receive the locking-pin, a rope-clamp having its clamping member carried by the locking-plate, a link suspending the clamping member, a bell-crank lever on which the locking-plate is supported, means on the locking-plate for engaging the trip-block when the locking-pin is raised for moving the locking-plate beneath the locking-pin and opening the rope-clamp, a hoisting-rope passing through the rope-clamp, and a stop on the hoisting-rope adapted to automatically cause the bell-crank lever to swing and move the locking-plate from beneath the locking-pin and to close the rope-clamp upon the hoisting-rope.

11. In a carrier, a track, a trip-block mounted thereon, a carriage movable on the track, a locking-pin slidable on the carriage and adapted to be engaged and lifted by the trip-block, a supporting-frame swiveled to the carriage and comprising side plates, a locking-plate having lugs passing through slots of the side plates, bell-crank levers pivoted to the supporting-frame and engaging the lugs of the locking-plate, a rope-clamp on the supporting-frame with its clamping member carried by the locking-plate, a link-plate having a rounded end pivotally mounted in a socket of the clamping member and also having trunnion-lugs pivotally mounted in the side plates of the supporting-frame, a hoisting-rope passing through the rope-clamp, means on the locking-plate for engaging the trip-block when the locking-pin is raised to move the locking-plate beneath the locking-pin and release the clamping member from the hoisting-rope, a yoke suspended from the bell-crank levers, a ring carried thereby and surrounding the hoisting-rope, and an adjustable stop on the hoisting-rope to engage the ring and cause the bell-crank levers to move the clamping-plate from beneath the locking-pin and close the rope-clamp upon the hoisting-rope.

12. In a device of the character described, an adjustable stop for a hoisting-rope, comprising a tubular rope-clamp formed in sections, ears on one section embracing the other section, and a cam-lever pivoted between the ears and clamping the sections together upon the hoisting-rope, said cam-lever being adapted to clasp the end of the hoisting-rope.

13. In a carrier, a track, a trip-block mounted thereon, a carriage movable on the track and comprising pairs of side members pivotally connected together, rollers mounted on the side members at their pivotal connections and at their ends, side frames having pivotal connections with the side members between the end rollers and the intermediate rollers, a locking-pin slidable in the side frames and adapted to be engaged and lifted by the trip-block, a swivel-hub formed in sections carried by the side frames, radial webs with retaining and bearing flanges at their upper and lower ends respectively mounted on the swivel-hub sections, a supporting-frame comprising side plates, ring-sections carried thereby with tongue-and-grooved connections with each other and mounted on the swivel-hub with a bearing on the bearing-flange and against the edges of the radial webs, a pulley mounted between the side plates of the supporting-frame, a hoisting-rope passing over said pulley, a pair of bell-crank levers mounted on the shaft of the pulley, a locking-plate pivotally connected to the bell-crank levers and having an opening into which the locking-pin projects, a rope-clamp through which the hoisting-rope passes having one member adjustable in the side plates and its clamping member formed with the locking-plate, a link-plate pivotally connected to the clamping member and to the side plates of the supporting-frame, said clamp being closed upon the hoisting-rope when the locking-plate is in position to receive the locking-pin in its opening, a projecting flange on the locking-plate adapted to be engaged by the trip-block when the locking-pin is raised for moving the locking-plate beneath the locking-pin and opening the rope-clamp, lugs on the side plates of the supporting-frame upon which the locking-plate bears, another pulley mounted in the supporting frame and having the hoisting-rope passing around it, a yoke suspended from the bell-crank levers, a ring carried thereby and surrounding the hoisting-rope, and an adjustable stop on the hoisting-rope having connection with the end thereof to form an engaging loop at the end of the hoisting-rope, said stop adapted to engage the ring and swing the bell-crank levers to move the locking-plate from beneath the locking-pin and to force the clamping member upon the hoisting-rope when the load has been elevated to the desired extent.

811,573. **FEED-BOX.** JAMES P. MCINTYRE, Chicago Lawn, Ill. Filed Nov. 23, 1904. Serial No. 234,070.

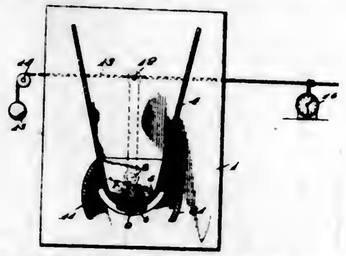

Claim.—1. In a device of the character described, the combination of a hopper, comprising a holding-board, sides, and front, said holding-board having an opening, a lever carried by said holding-board and projecting through said opening, valve means carried by said lever, and guard means carried by said hopper.

2. In a device of the character described, the combination of a hopper provided with means for spacing the same from the supporting-walls, a guard secured upon the front of said hopper and adapted to project below the horizontal plane of the bottom of said hopper, a lever movably mounted upon the rear portion of said hopper, and means carried by said lever for controlling the opening and closing of the discharge-aperture of said hopper.

3. In a device of the character described, the combination with a hopper provided with means for spacing the same from a wall, of a guard secured upon said hopper and projecting below the discharge portion thereof, valve means carried by said hopper engaging said discharge portion of the same, and means for automatically actuating said valve means engaging the discharge portion of said hopper.

4. In a device of the character described, the combination of a hopper comprising a back, sides, and front, said back having an opening, and valve-carrying means secured to said hopper and extending through the opening of said back.

5. In a device of the character described, the combination of a hopper, comprising a back, sides, and front, said back having a slot formed therein near the discharge-opening of the hopper, valve means positioned within the slotted portion of said back, and means for causing the movement of said valve means.

6. In a device of the character described, the combination of a hopper, comprising a holding-board, sides secured to said holding-board, a front secured to said sides, said hopper having a discharge-opening, said holding-board provided with a segmental slot formed therein near the discharge-opening of the hopper, parallel spacing-strips secured transversely of said holding-board and upon the back of the same, an angular lever secured to said holding-board and extending through said slot, valve means secured to said lever and normally closing the opening of said hopper, a guard secured to the discharge end of said hopper and inclosing said valve means, a weight secured to said lever, and means for automatically causing movement of said lever.

7. A device of the character described, comprising a hopper, the back of said hopper extending below the discharge end thereof, said back having an opening formed therein contiguous to the discharge end of the hopper, lever means secured to said hopper, said lever means extending through said slotted portion of the back, means carried by said lever for closing the discharge-opening of said hopper, a guard secured to said hopper and extending below the slotted portion of the back, comprising concavo-convexed sides, and substantially flat front, and means for causing movement of said lever means.

8. In a device of the character described, the combination with a hopper, of valve means coacting with said hopper, and a guard secured to said hopper, comprising concavo-convexed sides and a flat front.

9. In a device of the character described, the combination of a hopper provided with an opening formed in the back thereof, valve means movably positioned within said opening, and guard means secured to said hopper and extending below the horizontal plane in which said opening is formed.

10. The combination with a support, of a hopper provided with an opening spaced from said support, and valve-carrying means extending through the opening of said hopper and capable of closing the discharge end of the same.

11. The combination with a support, of a hopper having an elongated opening and provided with spacing means, secured to said support, and valve-carrying lever means extending through said elongated opening of said hopper, and normally closing the discharge end of the same.

12. In a device of the character described, the combination of a hopper provided with an elongated opening, valve means coacting with said hopper and positioned within the elongated open portion thereof, a weight secured to said valve means, and means for automatically causing movement of said valve means.

13. The combination with a support, of a hopper provided with an opening spaced from said support, lever means extending through said opening, valve means secured to said lever means, and a weight secured to said lever means.

14. The combination with a support, of a holder-board spaced from said support, a hopper formed upon said holder-board, said holder-board provided with an opening near the discharge end of said hopper, a movable support positioned within the opening of said holder-board, and valve means carried by said movable support.

811,574. **ROLLER-MILL.** JACOB M. NIKOLAI, Madison, Minn. Filed Mar. 13, 1905. Serial No. 249,760.

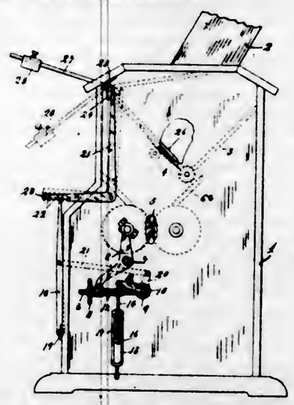

Claim.—1. In a roller-mill, the combination with a pair of opposing rollers, of means subject to the pressure of the grain on its way to said rollers, operating automatically to separate said rollers, when the pressure of the grain becomes abnormally light, substantially as described.

2. In a roller-mill, the combination with a pair of opposing rollers, of a separating-trip operative to separate said rollers when released, of a latch normally holding said trip against movement, and a controller for said latch normally holding the same operative and arranged to cause said latch to release said trip and cause the separation of the rollers, when the grain-pressure on said controller becomes abnormally light, substantially as described.

3. In a roller-mill, the combination with a pair of opposing rollers, of a spring-pressed trip under strain to separate said rollers, a latch normally holding said trip against movement, a pivoted weighted controller-plate having an arm for action on said latch, to cause the same to release said trip, which controller-plate is interposed in a path of movement of the grain on its way to said rollers and is normally held out of action by pressure of the said grain, substantially as described.

4. In a roller-mill, the combination with a pair of opposing rollers and a hopper located above the same, of a movable support for one of said rollers, a spring-pressed crank-acting trip connected to said roller-support and operative, when released, to separate said rollers, a pivoted latch normally holding said trip against movement, and a weighted pivoted controller-plate within said hopper, normally held inoperative by the pressure of grain in said hopper, and which controller-plate is provided with an arm arranged to act on said latch and cause the latter to release said trip, and said trip to separate the rollers, when the grain-pressure on said plate is abnormally light, substantially as described.

811,575. **HARROW.** WILLIAM L. GRAM, Kingston, Tenn. Filed Feb. 13, 1905. Serial No. 245,696.

Claim.—A harrow comprising side bars of angle metal having horizontal and depending vertical webs, the horizontal webs of the said bars being overlapped and pivotally connected together at their front ends, a rigid cross-bar of angle metal, having a horizontal web to lie on those of the side bars and a vertical web provided with notches at its ends to receive the horizontal webs of the side bars, and means to adjustably secure the ends of the horizontal web of the cross-bar to the horizontal webs of the side bars.

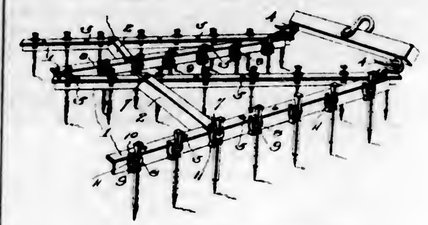

811,576. **BOTTLE-LABELING MACHINE.** THEODORE PANKOW, Sioux Falls, S. D. Filed Sept. 23, 1904. Serial No. 225,678.

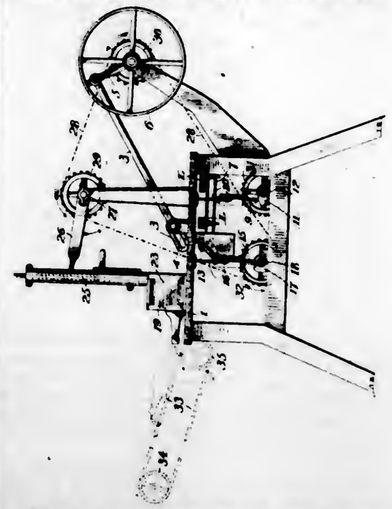

Claim.—1. In combination, a suitable guide, a forked carrier traveling thereon, yielding bottle-holding means at one end of the guide, means for supporting a pile of labels at the other end of the guide, a roller between said bottle-holding means and label-holding means, for supplying to the under side of said carrier a material to cause the labels to adhere thereto, means for reciprocating the carrier and for raising and lowering the roller and label-support and means for feeding bottles down through between the arms of the carrier, substantially as described.

2. In combination, a suitable guide, a forked carrier traveling thereon, yielding bottle-holding means at one end of the guide, a vertically-movable plunger, a plate for holding a pile of labels yieldingly supported by said plunger, a cam for raising and lowering the plunger, a second plunger, a roller supported thereby, a cam for raising and lowering said second plunger, means for reciprocating the carrier, and means for feeding the bottles, substantially as described.

3. In combination, a suitable frame including a horizontal guide, yielding bottle-supporting means at one end thereof, a forked carrier traveling in said guide, a crank-shaft journaled in the frame having a pitman connecting it to the slide, a vertically-movable label-support beneath the carrier, a cam-shaft having a cam for operating the label-holder, a roller beneath the carrier, a second cam-shaft having a cam for raising and lowering the roller, sprocket-wheels on the crank-shaft and cam-shafts and a single sprocket-chain engaging all said sprocket-wheels, substantially as described.

4. In combination, a suitable frame including a horizontal guide yielding bottle-supporting means at one end thereof, a forked carrier traveling in said guide, a crank-shaft journaled in the frame having a pitman connecting it to the slide, a vertically-movable label-support beneath the carrier, a cam-shaft having a cam for operating the label-holder, a roller beneath the carrier, a second cam-shaft having a cam for raising and lowering the roller, a vertically-movable plunger for forcing the bottle through said bottle-supporting means, a spring for holding said plunger elevated, a shaft having an arm adapted to engage and depress said plunger, sprocket-wheels on all of said shafts, and a single sprocket-chain meshing with all of said wheels, substantially as described.

811,577. CIRCULAR-KNITTING MACHINE. JOHN B. PAXTON and ELLIS I. O'NEILL, Philadelphia, Pa. Filed Sept. 30, 1903. Serial No. 176,344.

Claim.—1. In a circular-knitting machine a cam-cylinder fitted with two substantially parallel stitch-cams in proximity to each other and with a common return-way; means for sorting the needles into groups and deflecting said groups alternately into the range of one or other of said stitch-cams; and two thread-guides each in position to feed its thread only to the needles which are depressed by one of said stitch-cams, substantially as described.

2. In a circular-knitting machine a needle-cylinder fitted with needles having long and short butts and arranged in alternating groups; a cam-cylinder with a set of reciprocatory knitting-cams, of which that stitch-cam which leads during rotary knitting is provided with a transverse channel of partial depth, across which the short-butt needles pass, while the long-butt needles are deflected over the cam; a supplemental stitch-cam intermediately placed with reference to the regular stitch-cams and having its cam incline substantially parallel to that of the following stitch-cam; and two thread-guides, one of which is in position to feed its thread only into the short-butt needles as they are depressed by the supplemental stitch-cam, and the other of which is in position to feed its thread only into the long-butt needles as they are depressed by the following stitch-cam, substantially as described.

3. In a knitting-machine, a striping device consisting of long and short butt needles arranged in alternating groups; a regular stitch-cam; a supplemental stitch-cam a short distance in advance of the regular stitch-cam and having a needle-depressing cam-surface substantially parallel to, but not reaching to the height of the corresponding surface of the regular stitch-cam; means whereby only the long-butt needles are passed over the supplemental stitch-cam, whereby the two sets of needles are simultaneously depressed in parallel relation to each other—the long-butt needles by the regular stitch-cam—and the short-butt needles by the supplemental stitch-cam; and two separate thread-guides corresponding to the two stitch-cams and each feeding its thread only to the set of needles which is depressed by its stitch-cam.

4. In a circular-knitting machine a needle-cylinder fitted with needles having long and short butts and arranged in alternating groups; a cam-cylinder with a set of reciprocatory knitting-cams, of which that stitch-cam which leads during the rotary knitting is provided with a transverse channel of partial depth across which the short-butt needles pass, while the long-butt needles are deflected over the cam; a movable gate-cam of full depth guarding the entrance of said transverse channel on the side of the cam which is operative when during the reverse motion of reciprocation, it becomes a following stitch-cam; a supplemental stitch-cam intermediately placed with reference to, the regular stitch-cams and having its cam incline substantially parallel to that of the following stitch-cam; two thread-guides, one of which is in position to feed its thread only into the short-butt needles as they are depressed by the supplemental stitch-cam, and the other of which is in position to feed its thread only into the long-butt needles as they are depressed by the following stitch-cam, substantially as described.

5. In a circular-knitting machine a needle-cylinder fitted with needles having long and short butts and arranged in alternating groups; a cam-cylinder with a set of reciprocatory knitting-cams, of which that stitch-cam which leads during rotary knitting is provided with a transverse channel of partial depth, across which the short-butt needles pass, while the long-butt needles are deflected over the cam; a supplemental stitch-cam intermediately placed with reference to the regular stitch-cams and having its cam incline substantially parallel to that of the following stitch-cam: two thread-guides, one of which is in position to feed its thread only into the short-butt needles as they are depressed by the supplemental stitch-cam, and the other of which is in position to feed its thread only into the long-butt needles as they are depressed by the following stitch-cam; and a raising-cam in advance of said reciprocatory knitting-cam; immediately following by a corresponding depressing-cam, substantially as described.

6. In a circular-knitting machine a cam-cylinder fitted with two substantially parallel stitch-cams in close proximity to each other and having a common return-way; means for sorting the needles into groups and deflecting said groups alternately into the range of one or the other of said stitch-cams, by virtue of which those needles which are deflected into the range of the first of the two stitch-cams are not previously raised sufficiently to throw the loops which they carry below their latches; a raising-cam in advance of both said stitch-cams and the sorting means, whereby all of the needles are advanced sufficiently to throw the loops which they carry below their latches; and a depressing-cam immediately following said raising-cam, whereby they are all returned to the normal level before reaching said sorting means, substantially as described.

7. In a circular-knitting machine fitted with a set of reciprocatory knitting-cams a raising-cam in advance of that one of the reciprocatory set which leads during full knitting; a removable depressing-cam immediately following said raising-cam, which when in position returns all of the needles before they reach the reciprocatory set; sorting means whereby some of the needles are passed across the leading stitch-cam without being advanced by it, while the other needles are advanced by it in the regular way; a supplemental stitch-cam intermediately placed with relation to the regular stitch-cams of the reciprocatory set whereby those needles which have been passed across the leading stitch-cam are depressed in a separate line from those which are depressed by the following stitch-cam; and two thread-guides each feeding a separate thread into the two lines of descending needles, substantially as described.

8. In a circular-knitting machine a needle-cylinder fitted with needles having long and short butts and arranged in alternating groups; a cam-cylinder with a set of reciprocatory knitting-cams of which that stitch-cam which leads during full knitting is provided with a transverse channel of partial depth across which the short-butt needles are led without preliminary advance by the leading stitch-cam, while the long-butt needles are thus advanced; a supplemental stitch-cam intermediately placed with reference to the regular stitch-cams of the reciprocatory set, the upper edge of which reaches only to those needles which have failed to advance by reason of their having been led across the transverse channel of the leading stitch-cam; a movable raising-cam in advance of the reciprocatory set whereby when it is set in its position all of the needles may be caused to pass over the leading stitch-cam; and two thread-guides feeding separate threads, the one into the needles which are depressed by the supplemental stitch-cam, and the other into the needles which are depressed by the regular following stitch-cam, substantially as described.

9. In a circular-knitting machine a cam-cylinder fitted with a set of reciprocatory knitting-cams; means whereby certain of the needles are passed across the leading stitch-cam, without preliminary advance by it; a supplemental stitch-cam whereby these needles are depressed in a separate line from those which after passing over the leading stitch-cam are depressed by the following stitch-cam; and two thread-guides at different heights, the lowermost of which feeds its thread to the needles which are depressed by the special stitch-cam, while the other feeds its thread to the needles which are depressed by the regular following stitch-cam, substantially as described.

10. In a circular-knitting machine a cam-cylinder fitted with a set of reciprocatory knitting-cams; means whereby certain of the needles are passed across the leading stitch-cam, without preliminary advance by it; a supplemental stitch-cam whereby these needles are depressed in a separate line from those which after passing over the leading stitch-cam are depressed by the following stitch-cam; two separate thread-guides, one feeding its thread to the needles which are depressed by the special stitch-cam, and the other feeding its thread to the needles which are depressed by the regular following stitch-cam; and a sinker-ring provided with sinkers, with means whereby the sinkers are temporarily advanced in the region of the point where the thread which is fed to the needles which are depressed by the special stitch-cam is knit, substantially as described.

11. In a circular-knitting machine a cam-cylinder fitted with a set of reciprocatory knitting-cams; a special stitch-cam intermediately placed between the regular stitch-cams of the reciprocatory set; means whereby certain of the needles are deflected across the face of the leading stitch-cam without being advanced by it and into the range of the special stitch-cam; while the other needles after being advanced by the leading stitch-cam are depressed by the following stitch-cam in the usual manner, and two thread-guides coöperating the one with the needles which are actuated by the special stitch-cam, and the other with the needles which are actuated by the following stitch-cam, whereby separate threads are fed into each set for the production of striped knitting; substantially as described.

12. In a circular-knitting machine a cam-cylinder fitted with a set of reciprocatory knitting-cams; a special stitch-cam intermediately placed between the regular stitch-cams of the reciprocatory set; means whereby certain of the needles are deflected across the face of the leading stitch-cam without being advanced by it and into the range of the special stitch-cam; while the other needles after being advanced by the leading stitch-cam are depressed by the following stitch-cam in the usual manner; and a raising and depressing cam in advance of the set of reciprocatory knitting-cams, whereby all of the needles are preliminarily advanced and returned, and two thread-guides coöperating the one with the needles which are actuated by the special stitch-cam, and the other with the needles which are actuated by the following stitch-cam, whereby separate threads are fed into each set for the production of striped knitting; substantially as described.

13. In a circular-knitting machine a cam-cylinder fitted with a set of reciprocatory knitting-cams; a special stitch-cam intermediately placed between the regular stitch-cams of the reciprocatory set; means whereby certain of the needles are deflected across the face of the leading stitch-cam without being advanced by it and into the range of the special stitch-cam; while the other needles after being advanced by the leading stitch-cam are depressed by the following stitch-cam in the usual manner; a sinker-ring fitted with a special sinker-cam, whereby the sinkers are temporarily advanced in the region corresponding to the depression of certain of the needles by the special stitch-cam, and two thread-guides coöperating the one with the needles which are actuated by the special stitch-cam, and the other with the needles which are actuated by the following stitch-cam, whereby separate threads are fed into each set for the production of striped knitting; substantially as described.

811,578. SEWING-MACHINE. CHRISTIAN PFENNIGER, St. Louis, Mo., assignor to Landis Machine Company, St. Louis, Mo., a Corporation of Missouri. Original application filed Sept. 14, 1903. Serial No. 173,410. Divided and this application filed July 7, 1904. Serial No. 215,980.

Claim.—1. In a sewing-machine, a support, an overhanging head-frame, a shuttle in the overhanging head-frame, a needle coöperating with said support and substantially in alinement with said shuttle, a wax-pot below the needle and shuttle, a flue leading from said wax-pot to said needle and shuttle, a source of heat beneath the wax-pot, and pivoted deflectors interposed between the source of heat and the wax-pot; substantially as described.

2. In a sewing-machine, a support, stitch-forming members thereon, a wax-pot below said stitch-forming members, a housing surrounding the wax-pot and depending therefrom, a flue leading from said housing to said stitch-forming members, and pivoted deflectors movable to positions to permit the source of heat to act directly upon the wax-pot and movable to positions to deflect the heat from the wax-pot and through the flue; substantially as described.

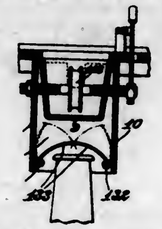

3. In a sewing-machine, a support, stitch-forming members thereon, a wax-pot, walls depending about the same and adapted to inclose a heater, one of said walls having an opening, a flue-section leading through said opening, housing-plates upon said support forming a flue leading to said stitch-forming members, and pivoted deflectors interposed between the wax-pot and the heater for deflecting the heat from the wax-pot; substantially as described.

811,579. LOOP-SPREADER FOR SEWING-MACHINES. CHRISTIAN PFENNIGER, St. Louis, Mo., assignor to Landis Machine Company, St. Louis, Mo., a Corporation of Missouri. Filed Aug. 14, 1905. Serial No. 274,110.

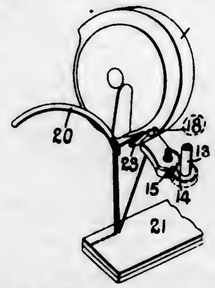

Claim.—1. In a sewing-machine, a needle, a split loop-opener pivotally mounted in a stationary bearing and having a swinging movement in a horizontal plane approximately at right angles to the path of movement of the needle, gear-teeth formed on said loop-opener, a thread-engaging part adjustably secured in the slotted portion of said loop-opener, a shaft having at its lower end a part provided with gear-teeth which mesh with the gear-teeth on the loop-opener, a cam-actuated rock-shaft, and a connection between said shaft and the first-mentioned shaft whereby movement is imparted to the loop-opener; substantially as described.

2. In a sewing-machine, a needle, a loop-opener pivotally mounted in a stationary bearing and having a swinging movement at right angles to the path of movement of the needle, gear-teeth formed on said loop-opener, a shaft extending parallel to the pivot of said loop-opener and having at its upper end an arm and at its lower end a part provided with gear-teeth which mesh with the gear-teeth on the loop-opener, a second shaft provided with an arm, means for rocking said shaft, and a link for connecting the arms of said shafts whereby movement is imparted to said loop-opener; substantially as described.

811,580. NEEDLE-GUIDE FOR SEWING-MACHINES. CHRISTIAN PFENNIGER, St. Louis, Mo., assignor to Landis Machine Company, St. Louis, Mo., a Corporation of Missouri. Filed Aug. 14, 1905. Serial No. 274,111.

Claim.—1. In combination, a needle-segment provided with a needle, a needle-guide comprising a rocking member having an arcuate edge, spaced lugs carried by said arcuate edge with alining needle-openings, and yielding means for holding said member and said needle-segment normally spaced apart; substantially as described.

2. A needle-guide comprising a pivoted member 6, a guide-lug 9 carried by said member 6 and a reinforcing-lug 10 spaced from the lug 9 and in line therewith, substantially as described.

811,580.

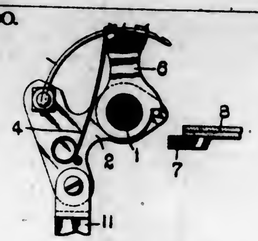

811,581. **HEATING DEVICE FOR SEWING-MACHINES.** Christian Pfeiffer, St. Louis, Mo., assignor to Landis Machine Company, St. Louis, Mo., a Corporation of Missouri. Filed Aug. 14, 1905. Serial No. 274,113.

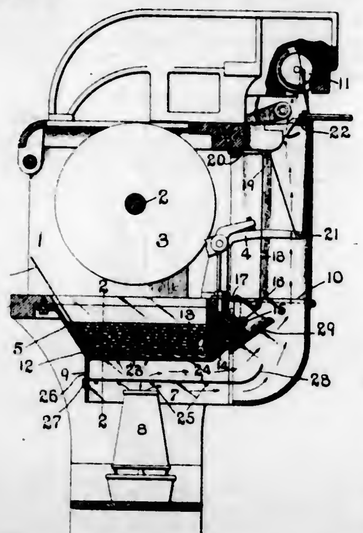

Claim.—1. In a sewing-machine, the combination with a wax-pot and a flue below the same and extending upwardly to the shuttle, of a burner in the flue below the wax-pot, and a sliding cut-off having a curved end extending upwardly in the flue, said cut-off being interposed between the burner and the wax-pot; substantially as described.

2. In a sewing-machine, the combination with a wax-pot having a nipple in one of its walls provided with an opening communicating with an opening through the wall of the wax-pot, an L-shaped flue having its horizontal portion below the wax-pot and its vertical portion extending above the same and terminating adjacent the shuttle, a burner in the horizontal portion of the flue, a deflector-slide interposed between the burner and the wax-pot, and a thread-guard adjacent to the nipple and projecting into the flue for deflecting the heat to prevent burning of the thread by the heat which may pass up the vertical portion of the flue; substantially as described.

3. In a sewing-machine, the combination with a wax-pot having a thread-opening in one wall thereof, a heat-deflector adjacent to the opening in the wall of the wax-pot and extending outwardly therefrom, a flue surrounding the opening and heat-deflector and having a horizontal portion below the wax-pot, a burner below the wax-pot, and means for cutting off the heat from the bottom of the wax-pot, said means being interposed between the burner and the wax-pot; substantially as described.

811,582. **MECHANISM FOR ADJUSTING THE LENGTHS OF STITCHES IN SEWING-MACHINES.** Christian Pfeiffer, St. Louis, Mo., assignor to Landis Machine Company, St. Louis, Mo., a Corporation of Missouri. Filed Aug. 14, 1905. Serial No. 274,115.

Claim.—1. In a sewing-machine, a slidable awl-carrying element, a lever for sliding the awl-carrying element, a part on the lever engaging the awl-carrying element, and means for effecting an adjustable connection between the said part and the lever to aline the awl with the needle of the sewing-machine; substantially as described.

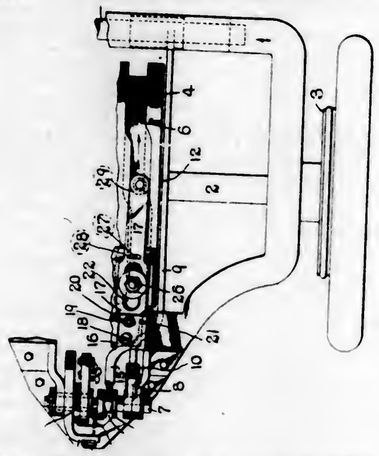

2. In a sewing-machine, a slidable awl-carrying element, a lever for sliding the awl-carrying element, a part on the lever engaging the awl-carrying element, means for effecting an adjustable connection between said part and the lever, and a variable fulcrum for said lever; substantially as described.

3. In a sewing-machine, a slidable awl-carrying element, a rocking lever for sliding said awl-carrying element and having an elongated slot, a variable fulcrum for said lever in said slot, and means independent of the fulcrum for preventing longitudinal movement of said lever; substantially as described.

4. In a sewing-machine, a shaft, a shiftable awl-carrying element on said shaft, a shifter engaging said awl-carrying element and having a socket, a lever having one end in said socket, and an adjusting device for varying the angle of inclination of the shifter with respect to the lever to aline the awl with the needle of the sewing-machine; substantially as described.

811,588. **THREAD-MEASURER FOR SEWING-MACHINES.** Christian Pfeiffer, St. Louis, Mo., assignor to Landis Machine Company, St. Louis, Mo., a Corporation of Missouri. Filed Aug. 14, 1905. Serial No. 274,118.

Claim.—1. In a sewing-machine, an element for measuring thread, a clamping means on the respective sides of the thread-measuring element said clamping means comprising a normally rigid base-plate, means for alternately clamping the thread against the respective end portions of said base-plate and means for temporarily destroying the rigidity of said base-plate, substantially as described.

2. In a sewing-machine, a thread-measuring element, means for alternately clamping the thread before and after each operation of the thread-measuring element said means comprising a rigid base-plate and a spring-plate above the same whose ends bind the thread first against one end portion of the base-plate and then against the other end of said base-plate, substantially as described.

3. In a sewing-machine, a thread-measuring element and a thread-clamping means comprising a base-plate having an inherent yielding tendency, means for normally holding the base-plate rigid, means for alternately clamping the thread to the base-plate near the respective ends thereof and means for temporarily destroying the rigidity of said base-plate, substantially as described.

4. In a sewing-machine, a thread-measuring element, and a thread-clamping means cooperating therewith comprising a base-plate, a spring-plate above the same, rocking elements for binding the respective ends of said spring-plate against the base-plate and a rocking cam for alternately actuating said rocking elements, substantially as described.

5. In a sewing-machine, a thread-measuring element, and a thread-clamping means cooperating therewith comprising a base-plate, a spring-plate above the same, rocking elements for binding the respective ends of said spring-plate against the base-plate and means for alternately actuating said rocking element, substantially as described.

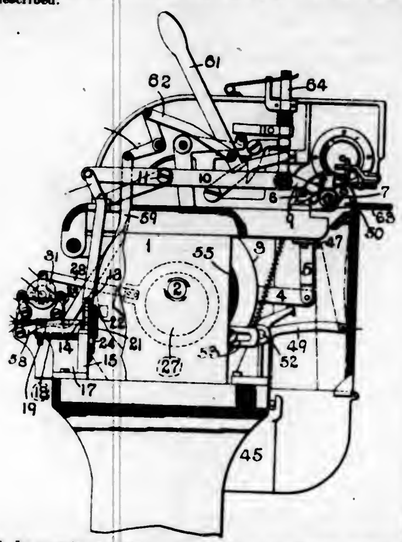

6. In a sewing-machine, a thread-measuring element comprising an arm, a rock-shaft carrying said arm, a rock-arm on said rock-shaft, a slide having a cam-face for engagement with said rock-arm, an actuating-cam for engagement with said rock-arm and means for moving the slide so as to vary the operative engagement of the actuating-cam with the rock-arm, substantially as described.

7. In a sewing-machine, a thread-measuring element a rocker-shaft carrying said thread-measuring element, an arm carried by said rocker-shaft, a slide having engagement with said arm, an actuating-cam for rocking the shaft and having intermittent engagement with said arm, a presser-foot mechanism, and means connected to the slide and to the presser-foot mechanism whereby the engagement of the slide with the arm on the rock-shaft will be governed by the position of the presser-foot above the work-table, substantially as described.

8. In a sewing-machine, the combination of a rocking thread-measuring element, a clamping base-plate above said thread-measuring element, a spring-plate above the base-plate, rocking elements adapted to alternately bind the respective ends of the spring-plate against the base-plate and a cam-actuated cam for alternately operating the rocking elements, substantially as described.

9. In a sewing-machine, the combination of a rocking thread-measuring element, a spring-plate, a base-plate, rocking elements above the spring-plate adapted to alternately bind the respective end portions of the spring-plate against the base-plate, a spring connecting said rocking elements and a rocking cam having alternate engagement with said rocking elements, substantially as described.

10. In a sewing-machine, the combination with a presser-foot, a lever connected to said presser-foot, a slide having a cam-face, a connection between the lever and slide, a rock-shaft, an arm connected to said rock-shaft and bearing against the cam-face, an actuating-cam for said rock-arm, a thread-measuring element carried by said rock-arm, said elements being arranged so that the position of the presser-foot with respect to the work will govern the position of the cam-face with respect to the rocker-arm and thereby control the operative engagement of the actuating-cam with respect to the rocker arm, substantially as described.

811,584. **UNDERREAMER FOR WELLS.** Charles Peters, Nampa, Idaho. Filed Mar. 10, 1905. Serial No. 249,469.

Claim.—1. A boring-head having lateral extensible counterboring-cutters adapted to fold by gravity, and spring-actuating means for extending the same in combination with an eccentric for repressing said spring-actuating means.

2. A boring-head having movable counterboring-cutters adapted to be folded by gravity, and yielding means for extending said cutters, in combination with a reciprocatory member connected with said yielding means for repressing the same, and an eccentric carried by the head and provided with laterally-projecting tripe for contact with the lower end of a pipe-section, said eccentric being operatively connected with the reciprocatory member.

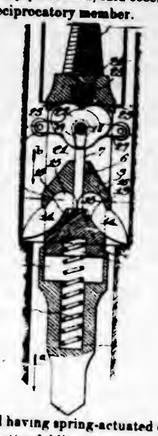

3. A boring-head having spring-actuated counterboring-cutters in combination with cutter-folding devices consisting of a reciprocatory member, and an eccentric having laterally-yieldable arms for contact with the lower end of a pipe-section, and adapted to impart motion to the reciprocatory member.

4. A boring-head having yielding counterboring-cutters disposed for contact at their inner ends, yielding means for holding said cutters extended, and an eccentric for moving said cutters to inoperative position.

5. A boring-head having movable counterboring-cutters housed therein, a plunger mounted to follow said cutters, and an eccentric operatively connected with said plunger for actuating the cutters.

6. A boring-head having recesses formed therein, movable counterboring-cutters housed in said recesses, a plunger disposed to follow said cutters and exclude borings from said recesses when the cutters are extended, and an eccentric operatively connected with said plunger for actuating the cutters.

7. A boring-head having movable counterboring-cutters housed therein, a spring-pressed plunger mounted for reciprocatory movement in the head and operatively connected to said cutters, and an eccentric carried by the plunger for depressing the latter and moving the cutters to operative position.

8. A boring-head having counterboring-cutters housed therein, a spring-actuated plunger having recesses formed therein to receive said cutters, and an eccentric for depressing the said plunger and moving the cutters to operative position.

9. A boring-head provided with opposite communicating recesses and an axial cavity, counterboring-cutters mounted respectively in said recesses for outward swinging movement at their lower ends and adapted to be housed by gravity, the inner ends of said cutters being in contact, a spring-actuated plunger mounted in said cavity, and an eccentric operatively connected with said plunger for actuating the cutters.

811,585. **UNIVERSAL TIMEPIECE.** Isaac F. Phelps, Woodville, Ohio. Filed Jan. 30, 1904. Serial No. 191,351.

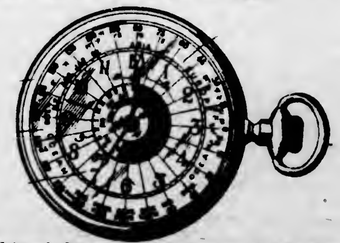

Claim.—1. In a geographical timepiece, the combination with hour and minute arbors and the usual hour and minute hands ar-

ranged to make a complete traverse in twelve hours and one hour, respectively, of a rotatable twenty-four-hour dial surrounding the hour-arbor and rotatable in the same direction as the hour-hand and once in twenty-four hours, a rigid twelve-hour local-time dial surrounding the twenty-four-hour dial, and a geographical dial surrounding the twenty-four-hour dial, the minute-hand once every hour, the hour-hand once every twelve hours, and the twenty-four-hour dial every twenty-four hours.

811,586. **DECOY-DUCK STEERING DEVICE.** Charles Pierce, Chicago, Ill. Filed Aug. 14, 1905. Serial No. 274,116.

plates pivoted adjacent to the end of the bar and forming supports on which the cable may be wound, levers pivoted to said plates and having their adjacent ends pivoted to each other, whereby movement of the levers is transmitted simultaneously to both plates to disengage

switch on certain predetermined engagements of said detent, whereby the extra dial may be marked corresponding to a clock-face and still each finger actuate the switch only once in twenty-four hours,

ranged to make a complete traverse in twelve hours and one hour, respectively, of a rotatable twenty-four-hour dial surrounding the hour-arbor and rotatable in the same direction as the hour-hand and once in twenty-four hours, a rigid twelve-hour local-time dial surrounding the twenty-four-hour dial, and a geographical dial surrounding and supporting the local-time dial, the several dials being located in substantially the same plane.

2. In a geographical timepiece, the combination with hour and minute hands and their arbors, of a twenty-four-hour dial rotatable on the hour-arbor in the same direction as the hour-hand but at a different speed and held in place by the hands, a rigid twelve-hour local-time dial surrounding the twenty-four-hour dial, and a peripherally-secured geographical dial surrounding the local-time dial and supporting the same, the several dials being located in the same plane and standard-meridian lines extending over both the local-time dial and the geographical dial from the periphery of the twenty-four-hour dial.

3. In a geographical timepiece, the combination with a twenty-four-hour dial, a twelve-hour dial, and a geographical dial, one of said dials being rotatable, of hour and minute hands, driving mechanism common to the hands and rotary dial and having frictional connection with the latter, and stop mechanism for holding the rotary dial stationary during the setting of the hands, whereby the necessity for turning the dial back after the hands have been set is avoided.

4. In a geographical timepiece, the combination with the hands, a rotary twenty-four-hour dial, a fixed local-time dial, and a fixed geographical dial, of driving mechanism for the rotary dial and the hands, a friction device normally connecting the rotary dial with its driving mechanism, and stop mechanism for holding the said dial stationary during the setting of the timepiece.

5. In a geographical timepiece, the combination with hour and minute hands and their arbors, of a twenty-four-hour dial rotatable on the hour-arbor and retained in place by the hour-hand, said dial making one complete rotation every twenty-four hours and moving in the same direction as the hour-hand, and a stationary combination-dial comprising a local twelve-hour dial, and a geographical dial divided by twenty-four equidistant standard-meridian lines properly numbered, each alternate line being disposed midway between two hour designations of the local-time dial.

6. In a geographical timepiece the combination with hour and minute hands and their arbors, of a twenty-four-hour dial rotatable on the hour-arbor, a stationary combination-dial located in the plane of the twenty-four-hour dial and comprising a local twelve-hour dial, and a geographical dial divided by twenty-four equidistant standard-meridian lines properly numbered, each alternate line being disposed midway between two hour designations of the local-time dial, and gearing whereby the minute-hand makes a complete traverse each hour, the hour-hand each twelve hours and the twenty-four-hour dial each twenty-four hours, the hour-hand indicating the hour on the local dial, the twenty-four-hour dial indicating the hour at any standard meridian, and the minute-hand serving to indicate the minutes past the hour designated by both the hour-hand and the twenty-four-hour dial.

7. In a geographical timepiece the combination with hour and minute hands and their arbors, of a twenty-four-hour dial rotatable on the hour-arbor once in twenty-four hours, a stationary combination-dial comprising a local twelve-hour dial and a geographical dial divided by twenty-four equidistant standard-meridian lines properly numbered, each alternate line being disposed midway between two hour designations of the local-time dial, a friction device normally connecting the twenty-four-hour dial with its driving mechanism, and stop mechanism for holding said dial stationary during the setting of the hands.

8. In a geographical timepiece, the combination with a rigid twelve-hour local-time dial and a geographical dial surrounding and supporting the same, of hour and minute hands and their arbors, mechanism for rotating said arbors, a twenty-four-hour dial rotatable on the hour-arbor and located in the plane of the first-named dials, a gear-wheel mounted on the hour-arbor, a friction device connecting said gear-wheel to the arbor, and gearing operatively connecting said gear-wheel to the twenty-four-hour dial.

9. In a geographical timepiece, the combination with a rigid twelve-hour local-time dial and a geographical dial surrounding and supporting the same, of hour and minute hands and their arbors, a twenty-four-hour dial surrounding the hour-arbor and located in substantially the same plane as the rigid dials, and a shaft geared to the hour and minute arbors and to the twenty-four-hour dial, said gearing being so proportioned that the minute-hand will rotate once every hour, the hour-hand once every twelve hours, and the twenty-four-hour dial every twenty-four hours.

811,586. DECOY-DUCK-TETHERING DEVICE. CHARLES A. SANUELL, Boston, Ill., assignor of one-half to Alexander H. Pensavitt, Boston, Ill. Filed June 22, 1905. Serial No. 266,429.

Claim.—1. A tether comprising two approximately semicircular members one of which is substantially rigid and has a swivel-eye permanently combined with it, the terminals of the member being provided with slots, and a flexible member having one terminal provided with a tongue permanently to engage one of the slots and its other terminal provided with a tongue for detachable engagement with the other slot.

2. A tethering device embodying two curved members one of which is substantially non-yielding and provided with terminal orifices and the other of which is yielding and provided with terminal tongues to engage the orifices, one of the tongues being bent to form a loop to hold the two members assembled, and a swivel permanently connected with the first-named member.

811,587. DECOY. CHARLES A. SANUELL, Boston, Ill. Filed Oct. 9, 1905. Serial No. 282,077.

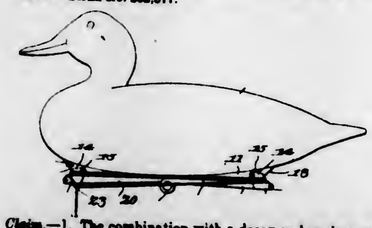

Claim.—1. The combination with a decoy and anchor-cable, of means upon which the cable may be wound, and means by which the entire cable may be disengaged by a single motion.

2. The combination with a decoy and anchor-cable of spaced plates upon which to wind the cable, and means to disengage the cable from the plates simultaneously and by a single motion.

3. The combination with a decoy and anchor-cable of spaced and pivoted plates upon which to wind the cable and means to move the plates simultaneously and pivotally by a single motion to disengage the cable.

4. The combination with a decoy and anchor-cable, of movable members forming a support on which the cable may be wound, and means for adjusting said members to cable-disengaging position.

5. The combination with a decoy and anchor-cable, of spaced and pivoted plates upon which the cable may be wound, and a pair of pivotally-connected levers pivoted to said plates and serving to simultaneously move the latter to disengage the cable.

6. The combination with a decoy, of a bar secured longitudinally of the decoy-body, an anchor-cable secured at one end to the bar,

plates pivoted adjacent to the end of the bar and forming supports on which the cable may be wound, levers pivoted to said plates and having their adjacent ends pivoted to each other, whereby movement of the levers is transmitted simultaneously to both plates to disengage the cable.

7. As a new article of manufacture, a bar provided with means for attachment to a body and having inclined ends, plates pivoted to said bar adjacent the ends thereof and forming with the inclined ends of the bar a pair of oppositely-disposed winding-surfaces, levers pivoted to the plates, and means for pivotally connecting the levers to each other, the intermediate pivot being arranged to pass beyond a plane including the pivotal connections of the plates and levers.

811,588. AUTOMATIC GAS-CONTROLLING DEVICE. HUGO SCHNEIDER, Cleveland, Ohio. Filed Sept. 11, 1905. Serial No. 277,822.

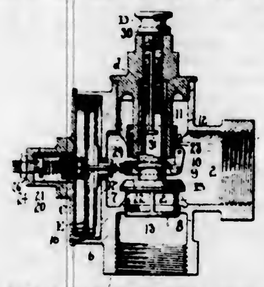

Claim.—1. In an automatic gas cut-off, a valve and valve-body, a gas-passage in said body, a catch for said valve, an expanding drum having open communication with said passage, operative connecting means for said drum and valve, and a valve adapted to cut off the flow of gas to said drum.

2. In an automatic gas cut-off, a valve-body and valve therein and an expanding drum open to the gas-pressure adapted to control the closing of said valve, and a supplemental valve connected with said drum adapted to close the gas-inlet of said drum.

3. In an automatic gas-controlling device, a valve-body and a main valve therein, a side chamber and an expanding drum therein having yielding side walls constructed of spring metal, in combination with means to hold the main valve open comprising a catch, operative releasing connections between said drum and said catch, and a valve in said connections to cut off the gas from said drum.

4. In an automatic gas cut-off, a valve-body and valve therein, in combination with an expanding drum and catch mechanism for said valve having connections united with the outer side of said drum, a spring adapted to bear against the drum, to release the catch mechanism, and an adjustable screw adapted to vary the tension of said spring for different gas-pressures acting upon said drum.

5. In an automatic gas cut-off, a body and gas-passage through the same, a main valve having a stem and an annular rib thereon, a guide for said stem and a sleeve on said guide, a catch suspended from said sleeve adapted to engage said rib, an expanding drum open to said gas passage and operating connections with said catch, said connections united with one side of said drum and a spring behind said connections.

6. In an automatic gas cut-off, a hollow body and a valve therein having a tubular stem, a catch adapted to hold said valve open and a device adapted to carry said valve into engagement with said catch, a removable supporting and guiding cap for said valve and said device, means to release said catch and means to raise said valve to cause the same to reengage with said catch comprising a rod engaged within the stem of said valve, a spring-pressed collar inside said stem adapted to be engaged by the lower end of said rod and a removable plug engaged with the upper end of said rod.

811,589. ELECTRIC TIME-SWITCH. CLYDE O. SHATTO, Sharon, Pa., and LEWIS S. DEITZER, Ravenna, Ohio. Filed June 18, 1903. Serial No. 162,265.

Claim.—1. The combination with the usual clock-face, hands and mechanism for operating the same, of an extra dial marked with a single series of numbers from 1 to 12, a switch adapted to be operated by the clockwork, a detent for controlling the same, fingers for tripping said detent, which fingers stand in proximity to the edge of said extra dial, and mechanism for controlling the actuation of said switch on certain predetermined engagements of said detent, whereby the extra dial may be marked corresponding to a clock-face and still each finger actuate the switch only once in twenty-four hours, substantially as described.

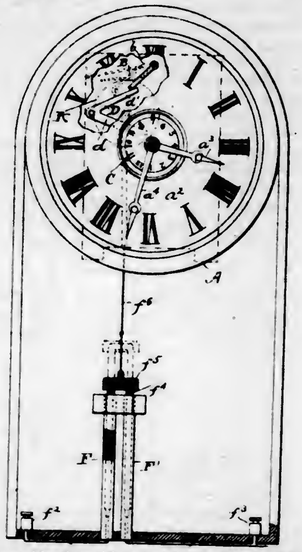

2. The combination with a clock having the usual face, hands and mechanism for driving it, of a small central dial carried by the hour-hand sleeve and numbered near its edge continuously from 1 to 12, said numbering extending entirely around the dial, a pair of fingers adjustably carried by said hour-hand sleeve and located behind said small dial but extending beyond the edge thereof, a switch and mechanism for operating the same, and means whereby said fingers actuate said operating mechanism to close or open the circuit only on certain predetermined engagements of said fingers, substantially as described.

811,590. NEEDLE-OPERATING MECHANISM FOR LOOMS. NELSON SHARUP, Amsterdam, N. Y. Filed Apr. 26, 1905. Serial No. 257,436.

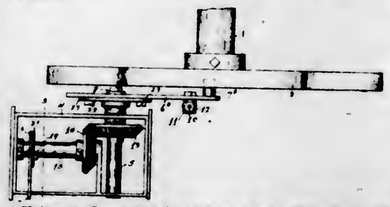

Claim.—1. In an Axminster loom, the combination with the needle-arm and the needle-cam; of a pair of rock-shafts at right angles to each other, upon one of which is fixed the needle-arm; bevel-gear connections between said rock-shafts; a rocker-arm fixed upon the other of said rock-shafts; and a cam-follower on said rocker-arm engageable with said cam.

2. In an Axminster loom, the combination with the needle-arm and the needle-cam; of a pair of rock-shafts at right angles to each other upon one of which said needle-arm is fixed; a rocker-arm fixed upon the other of said rock-shafts; a cam-follower on said rocker-arm engageable with said cam; a pair of intermeshing beveled gears on the respective rock-shafts capable of rotative adjustment each relatively to the arm on its shaft; and means for locking each of said beveled gears in adjusted position relatively to the arm on the shaft thereof.

3. In an Axminster loom, the combination with the needle-cam; of a pair of rock-shafts at right angles to each other; a pair of intermeshing beveled gears keyed or otherwise permanently secured against rotation on the respective shafts; a pair of rocker-arms, one

of which is the needle-arm; means for securing each of said rocker-arms in different positions of angular adjustment upon one of said

5. In a device of the character described, a suitable casing hav-

and ends, the ends being carried by the front and the front bein-

of which is the needle-arm; means for securing each of said rocker-arms in different positions of angular adjustment upon one of said rock-shafts; and a cam-follower on the other of said rocker-arms engageable with said cam.

4. In an Axminster loom, the combination with the needle-arm and the needle-cam; of a pair of rock-shafts at right angles to each other upon one of which is fixed the needle-arm; beveled gear connections between said rock-shafts; a rocker-arm capable of longitudinal adjustment upon the other of said rock-shafts; means for locking said rocker-arm in different positions of longitudinal adjustment upon its rock-shaft; and a cam-follower on said rocker-arm in engagement with said cam.

5. In an Axminster loom, the combination with the needle-arm and the needle-cam; of a pair of rock-shafts at right angles to each other upon one of which said needle-arm is fixed; a pair of intermeshing beveled gears on the respective rock-shafts; a rocker-arm fixed upon the other of said rock-shafts; and a pair of cam-followers mounted upon said rocker-arm engageable with opposing surfaces on said cam.

811,591. COMBINED HEATING AND ILLUMINATING DEVICE. SAMUEL S. ST. HOOR, Kansas City, Mo., assignor of one-fourth to William S. Cisgett and one-fourth to Mary H. Cisgett, Kansas City, Mo. Filed May 17, 1905. Serial No. 260,539.

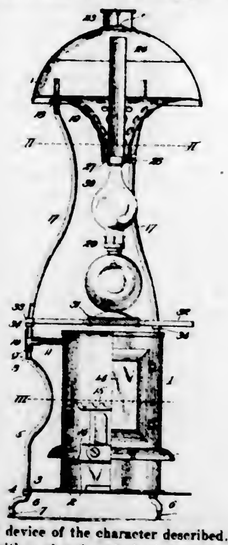

Claim.—1. A device of the character described, comprising a casing provided with perforations in its lower portion, a suitable drum having its lower portion perforated, a conduit or pipeway communicating at its lower end with the upper portion of the casing and at its upper end with said drum, means for adjustably supporting the drum upon said pipeway or conduit, and means for heating the air in said drum.

2. A device of the character described, comprising a casing provided with perforations in its lower portion, a suitable drum having its lower portion perforated, a conduit or pipeway communicating at its lower end with the upper portion of the casing and at its upper end with said drum, and a heater within the casing.

3. A device of the character described, comprising a casing provided with perforations in its lower portion and with a door-controlled opening, a suitable drum having its lower portion perforated, a conduit or pipeway communicating at its lower end with the upper portion of the casing and at its upper end with said drum, and means for heating the air in said drum.

4. In a device of the character described, a suitable casing having its lower portion perforated, a drum suitably supported and having its lower portion perforated, a conduit or pipeway communicating at its lower end with the upper portion of the casing and at its upper end with the drum, a lamp suitably supported and having its chimney arranged to discharge into the drum, and an adjustable tube arranged within the drum and having its lower end externally embracing the upper end of the lamp-chimney.

5. In a device of the character described, a suitable casing having its lower portion perforated, a drum suitably supported and having its lower portion perforated, a conduit or pipeway communicating at its lower end with the upper portion of the casing and at its upper end with the drum, a lamp suitably supported and having its chimney arranged to discharge into the drum, a tube arranged within the drum and having its lower end externally embracing the upper end of the lamp-chimney, and a deflecting-bell suspended from the top of the drum and overhanging the upper end of said tube.

6. In a device of the character described, a casing having its lower portion perforated, a drum having its lower portion perforated, a plurality of conduits or pipeways communicating with the upper portion of the casing, and projecting upward into the drum, collars on the conduits or pipeways below the drum to support the latter, a lamp having its chimney arranged to discharge into the drum, and a support for the lamp above the casing and supported by said conduits or pipeways.

7. A device of the character described comprising a casing having a perforated bottom, a drum having a perforated bottom, pipes leading from the casing into the drum, a lamp supported by said pipes, and a tube adjustably secured in the bottom of the drum and passing up into the same and having its lower end encircling the top of the chimney of the lamp.

811,592. FEED-BOX. JOHN S. H. STONEBURNER and CHARLES D. STONEBURNER, Arlington, Va. Filed Nov. 2, 1904. Serial No. 231,171.

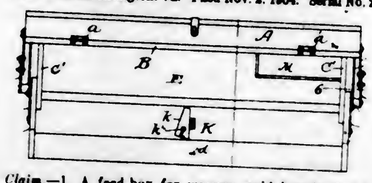

Claim.—1. A feed-box for wagons, said box having a back adapted to form an end-board of the wagon-body, and means carried by said back to enable the box to be applied to wagon-bodies of different widths, substantially as described.

2. A feed-box for wagons, said box having a back adapted to form an end-board of the wagon-body, and adjustable end portions carried by said back, whereby the box may be fitted to wagon-bodies of varying widths, substantially as described.

3. A feed-box for wagons, said box having a back adapted to form an end-board of the wagon-body, a sliding member at each end of the back having slots therethrough, a hooked plate extending across said slots, bolts extending through said back, slots, and plate, and nuts on said bolts for clamping said plate against the sliding member, substantially as described.

4. A feed-box having in combination a pivoted cover, a back, a bottom, a front and ends, said front being pivoted adjacent to the bottom of the box, and connections between said front and said cover for elevating the latter by the lowering of the front, said connections being adapted to rotate said cover and bring its free edge to the rear of a vertical line extending through the pivot thereof when the front is fully lowered, substantially as described.

5. A feed-box having in combination a pivoted cover, a back, a bottom, a front, and ends, said front being hinged to the bottom, and links connected to said front and said cover and adapted to rotate the cover to bring its free edge to the rear of a vertical line extending through the pivot thereof when the front is fully lowered, substantially as described.

6. A feed-box having in combination a back, a pivoted cover, a front, and ends, said ends being carried by the front and said front being pivoted to the bottom, links connecting the lower inner extremities of the ends and the cover and adapted to rotate the cover to bring its free edge to the rear of a vertical line extending through the pivot thereof when the front is fully lowered, substantially as described.

7. In a feed-box having in combination a back, a bottom, a pivoted cover, a front, and ends, said ends being carried by the front and said front being pivoted to the bottom, foldable links connecting the ends and the back of the box, and links connecting the lower inner extremities of the ends and the cover and adapted to rotate the cover to bring its free edge to the rear of a vertical line extending through the pivot thereof when the front is lowered to straighten said foldable links, substantially as described.

8. A feed-box having in combination a back, a bottom, a front, and ends, the ends being carried by the front and the front being hinged to the bottom, of transverse members extending from the back of the box to the front adjacent to the ends of the same, a plate secured to each of said members, said members being recessed back of said plate and said plate having an arc-shaped slot therein, a headed bolt extending through each of said ends and through said slot with the head in the recess between said plate and said member, and a nut for tightening said bolt whereby the members and ends may be kept in substantial contact, substantially as described.

9. A feed-box having in combination a back, a bottom, a front, and ends, said ends being carried by the front and said front being hinged to the bottom, a retaining-board extending longitudinally of the front from end to end of the same, said board being hinged to the front of the box, whereby it may be folded up when the box is closed, and means for supporting said board in an elevated position to retain the feed in the box when the front is lowered, substantially as described.

10. A feed-box having in combination, a back, a bottom, a front, and ends, said ends being carried by the front and the front being hinged to the bottom, a retaining-board carried by the front and extending from end to end of the same, said retaining-board being hinged to the front, whereby it may be folded down when the box is closed, a brace for said retaining-board, said brace being hinged to said board, a hook carried by said brace and an eye carried by the front board, whereby the brace may be supported in position to sustain the retaining-board in an elevated position when the front is lowered, substantially as described.

11. A feed-box having in combination a back, a bottom, a front, and ends, the ends being secured to the front and the front being hinged to the bottom, transverse members extending from the back to the front of the box when the latter is closed, said members being adjacent to the ends of the box, a retaining-board extending longitudinally of the front and hinged thereto whereby it may be folded down when the box is closed, and means for sustaining said board in an elevated position, the members being provided with a recessed portion or rabbet for the reception of said retaining-board when the box is closed, substantially as described.

12. A feed-box having in combination a back, a bottom, a front, and ends, the ends being carried by the front and the front being hinged to the bottom, transverse members adjacent to the ends and extending from the back of the box to the front of the same when the latter is closed, a canvas lining covering the bottom and front of the box, and means for retaining said members and ends in substantial contact substantially as described.

13. A feed-box having in combination a back, a bottom, a front, and ends, the ends being carried by the front and the front being hinged to the bottom, transverse members adjacent to said ends and extending from the back of the box to the front of the same when the latter is closed, a retaining-board extending the length of the box and hinged to said front whereby it may be folded down when the front is closed, and a canvas lining covering the bottom and front of the box and the surface of the retaining-board which folds down against said front, substantially as described.

14. A feed-box having in combination a back, a bottom, a front, ends, and a cover, said cover being hinged to the upper portion of the box and said front being hinged to the bottom and carrying said ends, transverse members adjacent to the ends and extending from the back to the front of the box when the latter is closed, means carried by said ends and in sliding engagement with said members for holding said ends and members in contact during the opening and closing movement of the front, a link connected to said means and said cover for raising said cover when the front is lowered, said link being adapted to rotate the cover to bring its free edge beyond the hinges thereof when the front is fully lowered, substantially as described.

811,593. CYLINDRICAL-BOX TRIMMER. WILLIAM H. STOUT, Dayton, Ohio. Filed June 9, 1905. Serial No. 264,393.

Claim.—1. In a cylindrical-box trimmer, the combination of a spindle having blank wheels thereon which support the box-cylinder, one of said wheels being adjustable to accommodate different depths of boxes, a swinging frame supporting a cutter, means for lowering said frame to bring the cutter in an operative position, and means for revolving the cutter while held in such position.

2. In a cylindrical-box trimmer, a spindle having bearings at one end, blank wheels on said spindle on one side of the bearings, one of said blank wheels being adjustable, and the other of said blank wheels having an embedded wooden rim, a swinging frame supporting a cutter, said cutter being in alinement with the wheel having the wooden rim, means for holding the swinging frame in an operative position for the cutter, and means for operating the cutter while the frame is so held, said cutter in its revolutions rotating the box-cylinder.

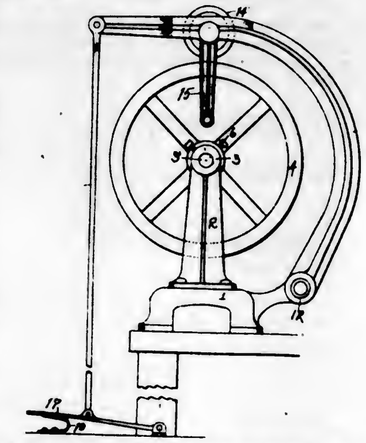

3. In a cylindrical-box trimmer, the combination with a spindle supported at one end on a standard, means upon said spindle for supporting a box to be trimmed, a swinging frame having its lower end hinged to the base, said swinging frame having a suitable curvature to clear the box, and the upper end of said swinging frame projecting forwardly, a foot-treadle connected to said upper end whereby the said frame may be lowered in its position, a revolving cutter supported in said frame in a position above the box, and means for revolving said cutter to trim the box.

811,594. DEVICE FOR SECURING DOORS, &c. CHARLES G. TAYLOR, Hartford, Conn. Filed Jan. 28, 1905. Serial No. 243,064.

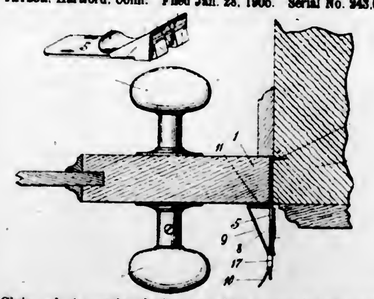

Claim.—1. A securing device comprising a plate having an opening, and adapted to be secured to part of the support of a closure; a stop or abutment movable upon said plate, and having a finger-grasp; means on said finger-grasp for entering said opening and locking said stop or abutment after it has been placed in position; and a spring rigid with the stop or abutment, and bearing against the plate.

2. A securing device comprising a slotted plate; means for securing said plate to the jamb of a door; a stop or abutment shaped to fit the plate, and provided with a finger-grasp on one side, and with a spring on the other side; and a locking-lug carried by the finger-grasp, and adapted to enter the slot of said plate.

3. A securing device consisting of a plate having spikes or prods adapted to be driven in the jamb of a door; a reversible stop or abutment upon said plate, and having a tongue adapted to enter the space between the prods; and means for attaching said stop or abutment to, and detaching it from, said plate.

4. A securing device comprising a plate adapted to be secured to a door-jamb, said plate having pairs of slots; a reversible stop or abutment mounted for sliding movement upon the plate and provided with lugs entering the slots, and means for causing said lugs to

snap into the slots when the stop is adjusted to its desired position, and also when it is reversed to cause said stop or abutment to cover the inner sides of the prods.

811,595. GAS-OPERATED MECHANISM FOR FIREARMS. CHARLES H. TAYLOR, Philadelphia, Pa., assignor, by mesne assignments, to KNOX TAYLOR, Highbridge, N. J. Filed Mar. 30, 1901. Renewed May 24, 1905. Serial No. 262,055.

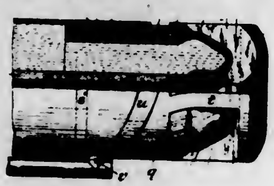

Claim.—1. The combination with a gun of a turbine actuated by the escaping gases of combustion, a reciprocating part and means whereby said reciprocating part is actuated by said turbine, substantially as described.

2. The combination with a gun of a rotatable attachment provided with vanes arranged spirally to the path of the escaping gases of combustion, a reciprocating part and operative connections between said attachment and said reciprocating part whereby said reciprocating part is actuated by said attachment, substantially as described.

3. The combination with a gun, of a turbine attachment comprising a casing having surfaces arranged to deflect rearwardly the escaping gases of combustion and vanes actuated by the gases, whereby the gases react to check the recoil.

4. The combination with a gun having a water-jacket of an end piece or cup secured in the end of the water-jacket and forming a seat for an external bearing and a rotatable part mounted in said bearing.

5. The combination with a gun having a water-jacket, of a turbine actuated by the escaping gases and having a bearing on said water-jacket and a gun mechanism operated by said turbine.

6. The combination with a gun having a water-jacket, of an end piece or cup secured in the end of the water-jacket, a turbine actuated by the escaping gases and having a bearing on said end piece or cup and a gun mechanism operated by said turbine.

811,596. REFRIGERATING APPARATUS FOR COOLING AIR. VICTOR TRADING, Vienna, Austria-Hungary. Filed Mar. 26, 1904. Serial No. 200,623.

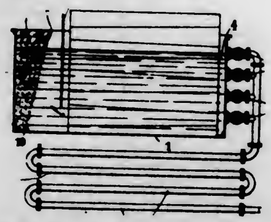

Claim.—1. A refrigerating apparatus comprising a receptacle, a perforated partition 6 separating the receptacle into two chambers, one adapted to receive solid saline material and the other a solution of the same, a vertically-adjustable partition in the latter compartment so that upon raising or lowering the partition the strength of the liquid on one side of the partition may be varied, and means for drawing off the liquid at different heights.

2. A refrigerator comprising a receptacle and a perforated partition pivoted to the bottom thereof and extending upwardly so as to divide said receptacle into two compartments adjustable as to their relative size.

3. A refrigerator comprising a receptacle and a partition pivotally connected to the bottom thereof, said partition being perforated and extending at an inclination to form a salt-chamber and an ice-chamber whereby the liquid resulting from the melting ice in rising in the two chambers renders variable the relative quantity of salt and ice which is effective, substantially as described.

811,597. LOOM. FRANÇOISE VOLAND, Villeurbanne, LOUIS DIRBERGER, Jallieu, and JEAN B. MONNET, Bourgoin, France. Filed June 9, 1905. Serial No. 264,494.

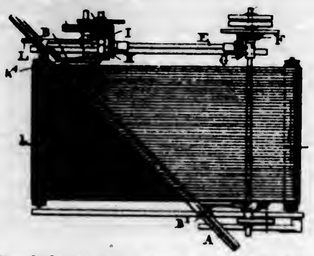

Claim.—1. In a loom for weaving fabrics of inclined texture the combination of a batten inclined to the direction of the warp and means for reciprocating said batten in a direction parallel to that of the warp-threads comprising a driving-shaft, rods of equal length connected to the batten and means whereby one of said rods is driven directly and the other indirectly from said driving-shaft substantially as described.

2. In a loom for weaving fabrics of inclined texture the combination of a batten inclined to the direction of the warp and means for reciprocating said batten in a direction parallel to that of the warp-threads comprising a driving-shaft, rods of equal length connected to the batten, crank mechanism adapted to drive one of said rods directly from the shaft, and bevel gear and crank mechanism intermediate the shaft and the other rod for driving the latter indirectly from said shaft substantially as described.

811,598. ATTACHMENT OR FIXTURE FOR HORSESHOES. JOHN W. TOWNSEND and NELSON S. TOWNSEND, Newark, N. J. Filed Jan. 12, 1905. Serial No. 240,693.

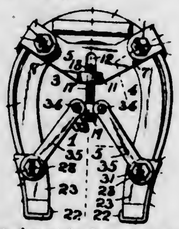

Claim.—1. An attachment for horseshoes to prevent slipping, comprising a forward retaining member consisting, essentially, of a main body having oppositely-extending end members, an upwardly-projecting retaining-lug upon each end member adapted to grasp the front portion of a horseshoe, each end member being provided with a screw-threaded receiving-hole, and a calk provided with a screw-shank screwed into each receiving-hole, a pair of rear retaining members arranged upon the heel ends of the shoe, each rear retaining member being provided with a screw-threaded receiving-hole, and a calk provided with a screw-shank screwed into each receiving-hole of a rear retaining member, a screw-threaded lug on the body of said forward retaining member, a screw-bolt in said screw-threaded lug, a cross-bar on said bolt, and connecting-links between the said bar and the rear retaining members, all arranged for drawing the said retaining members toward each other and securing the same in retaining positions upon the shoe, substantially as and for the purposes set forth.

2. In an attachment for horseshoes to prevent slipping, the combination, with a pair of rear retaining members, each member comprising a main body, a right-angled end piece and a web, all arranged to embrace the heel end of a horseshoe, of a forward retaining means consisting, essentially, of a main body having oppositely-extending end members, an upwardly-projecting retaining-lug upon each end member adapted to grasp the front portion of the shoe, a screw-threaded lug on the body of said forward retaining member, a screw-bolt in said screw-threaded lug, a cross-bar on said bolt, and connecting-links between the said bar and the rear retaining members, all arranged for drawing the said retaining members toward each other and securing the same in retaining positions upon the shoe, substantially as and for the purposes set forth.

3. In an attachment for horseshoes to prevent slipping, the combination, with a pair of rear retaining members, each member comprising a main body, a right-angled end piece, and a web, all arranged to embrace the heel end of a horseshoe, and a laterally-extending lug on said body, said lug being provided with a screw-threaded receiving-hole, of a calk provided with a screw-shank screwed into said receiving-hole, a forward retaining means adapted to grasp the forward end of the horseshoe, and means connected with said calks of the rear retaining members and with said forward retaining means for securing the same in position upon the shoe, substantially as and for the purposes set forth.

4. In an attachment for horseshoes to prevent slipping, the combination, with a pair of rear retaining members, each member comprising a main body, a right-angled end piece, and a web, all arranged to embrace the heel end of a horseshoe, and a laterally-extending lug on said body, said lug being provided with a screw-threaded receiving-hole, of a calk provided with a screw-shank screwed into said receiving-hole, a forward retaining means adapted to grasp the forward end of the horseshoe, and an adjusting means connected with said rear retaining members and said forward retaining means for drawing said rear retaining means toward said forward retaining means and securing the same in position upon the shoe, substantially as and for the purposes set forth.

5. In an attachment for horseshoes to prevent slipping, the combination, with a pair of rear retaining members, each member comprising a main body, a right-angled end piece, and a web, all arranged to embrace the heel end of a horseshoe, and a laterally-extending lug on said body, said lug being provided with a screw-threaded receiving-hole, of a calk provided with a screw-shank screwed into said receiving-hole, a forward retaining means consisting, essentially, of a main body having oppositely-extending end members, an upwardly-projecting retaining-lug upon each end member adapted to grasp the front portion of the shoe, each end member being provided with a screw-threaded receiving-hole, and a calk having a screw-shank screwed in each receiving-hole, and a fastening means connected with the central portion of the body of said forward retaining means and with the calks of said rear retaining members for securing the same in position upon the shoe, substantially as and for the purposes set forth.

6. In an attachment for horseshoes to prevent slipping, the combination, with a pair of rear retaining members, each member comprising a main body, a right-angled end piece, and a web, all arranged to embrace the heel end of a horseshoe, and a laterally-extending lug on said body, said lug being provided with a screw-threaded receiving-hole, of a calk provided with a screw-shank screwed into said receiving-hole, a forward retaining means consisting, essentially, of a main body having oppositely-extending end members, an upwardly-projecting retaining-lug upon each end member adapted to grasp the front portion of the shoe, each end member being provided with a screw-threaded receiving-hole, and a calk having a screw-shank screwed in each receiving-hole, and a fastening means adjustably connected with the central portion of the body of said forward retaining means and with the calks of said rear retaining members for securing the same in position upon the shoe, substantially as and for the purposes set forth.

7. In an attachment for horseshoes to prevent slipping, the combination, with a pair of rear retaining members, each member comprising a main body, a right-angled end piece, and a web, all arranged to embrace the heel end of a horseshoe, and a laterally-extending lug on said body, said lug being provided with a screw-threaded receiving-hole, of a calk provided with a screw-shank screwed into said receiving-hole, a forward retaining means consisting, essentially, of a main body having oppositely-extending end members, an upwardly-projecting retaining-lug upon each end member adapted to grasp the front portion of the shoe, each end member being provided with a screw-threaded receiving-hole, and a calk having a screw-shank screwed into each receiving-hole, a screw-threaded lug on the body of said forward retaining means, a screw-bolt in said screw-threaded lug, a cross-bar on said bolt, and connecting-links connected with the ends of said cross-bar and with the calks of said rear retaining members, all arranged for drawing the said rear retaining members toward the forward retaining means for securing the same in position upon the shoe, substantially as and for the purposes set forth.

811,599. MOTOR-WHEEL. ISAAC J. TURNER, New York, N. Y., assignor to Leander T. Chamberlain, New York, N. Y. Filed June 24, 1904. Serial No. 214,067.

Claim.—1. A rotative wheel comprising vanes normally tending to lie in a common plane at right angles to the axis of rotation, each vane having a flexible connection with the body of the wheel adjacent the circumference, and being disposed in part between such connection and the axis of rotation.

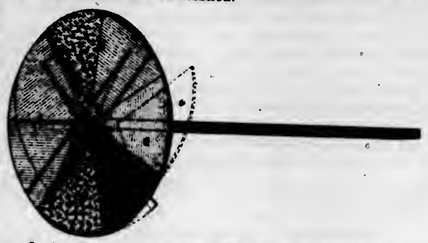

2. A rotative wheel formed from a single sheet of material, and comprising vanes having flexible connections adjacent the circumference of the wheel, and each disposed in part between such connection and the axis of rotation.

811,600. COMBINED WEEDER, ORCHARD-CULTIVATOR, AND FALLOW-PLOW. WILLIAM TURNER, Wenatchee, Wash. Filed Sept. 5, 1905. Serial No. 277,088.

Claim.—1. In a weeder the combination of a longitudinal beam, an axle connected to one end of the beam and provided with an arched portion, a wheel-frame adjustably connected to the opposite end of the beam, cutting-knives supported by the beam, a seat mounted upon the axle, a brace connecting the seat and the longitudinal beam, a lever mounted upon the brace, and a rod connecting the lever to the axle whereby the latter can be rotated to raise or lower the cutting-knives.

2. In a weeder, the combination of a longitudinal beam, cutting-knives supported by the beam, supporting-wheels at one end thereof, a sleeve at the opposite end thereof, a brace connecting the sleeve and the longitudinal beam, a lever mounted upon the brace, a shaft passing through the sleeve, a wheel-frame connected to the shaft, and a link connecting the lever and the shaft whereby the latter can be vertically adjusted with respect to the longitudinal beam.

3. In a weeder, the combination of a longitudinal beam, cutting-knives supported by the beam, an axle connected to the rear end of the beam and having an arched formation, a sleeve connected to the opposite end of the beam, a brace for the sleeve, a lever mounted upon said brace, a shaft passing through the sleeve, a wheel-frame connected to the shaft, a link connecting the shaft and the lever whereby the former may be vertically adjusted with respect to the longitudinal beam, a seat supported upon the rear axle, a brace for said seat, a lever mounted upon said brace, and a link member connecting the lever and the axle whereby the latter may be rotated to adjust the height of the cutting-knives.

811,601. WASHING-MACHINE. VILLIAM I. WALKER, Council Bluffs, Iowa. Filed June 2, 1905. Serial No. 263,389.

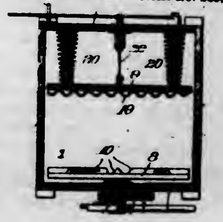

Claim.—1. In a washing-machine, in combination, two rubbing-boards; means for causing a rubbing action between said boards, one of said boards being yieldingly mounted; means for adjusting the range of movement of said yieldingly-mounted board; and means for locking said adjusting means.

2. In a washing-machine, in combination, a rotatable rubbing-board; means for rotating said board alternately in opposite directions; a yieldingly-mounted rubbing-board; means for adjusting the range of movement of said yieldingly-mounted board; and means for locking said adjusting means.

3. In a washing-machine, in combination, a rotatable rubbing-board; means for rotating said board; a yieldingly-mounted rubbing-board; means for adjusting the range of movement of said yieldingly-mounted board; a pivoted lever; a flexible connection between said lever and said yieldingly-mounted rubbing-board; and means for locking said lever in a predetermined position.

4. In a washing-machine, in combination, a suds-box; a rotatable rubbing-board; means for rotating said board; a rubbing-board slidably supported upon the bottom of said suds-box; a plurality of springs tending to move said last-mentioned rubbing-board toward said rotatable rubbing-board; and means for adjusting the range of movement of said spring-pressed rubbing-board.

811,602. MOLD FOR PLASTIC MATERIALS. ARTHUR S. WATTS, Victor, N. Y., assignor to The Locke Insulator Manufacturing Company, Victor, N. Y., a Corporation of New York. Filed Sept. 29, 1905. Serial No. 280,636.

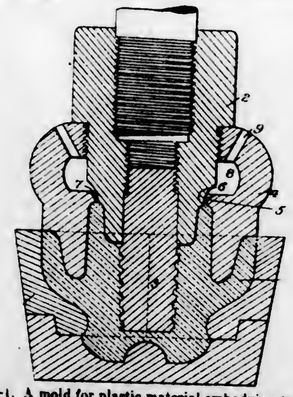

Claim.—1. A mold for plastic material embodying two cooperating members between which the plastic material is pressed, one of said members having an annular recess for forming a flange on the molded article and a narrow annular passage at the bottom of said recess for permitting the passage of air.

2. A mold for forming insulators from plastic materials embodying two cooperating members between which the material is pressed, one of said members having the annular recess for forming a petticoat on the insulator and a narrow annular passage at the extreme bottom of said recess for permitting the exit of air and an exceedingly narrow film of the material being molded, and the other mold member forming the exterior of the insulator.

3. A mold for forming insulators from plastic material embodying a member by which the material is pressed, said member having an annular shoulder thereon and having an outer annular section provided with a shoulder thereon corresponding to the first-mentioned shoulder to mold the edge of an insulator-petticoat and a narrow annular channel between said shoulders through which the air and a film of plastic material narrower than the petticoat may escape.

4. In a mold for forming insulators from plastic materials, the combination with a head provided with the annular shoulder 6, and a threaded projection extending beyond it, of an outer removable section 4 provided with an annular shoulder 5 corresponding to the shoulder 6, and separated therefrom by a narrow channel 7.

5. The combination with the mold-head having the shoulder 6, the projection 3 secured in the end of the head and having the exterior threaded portion, of the annular member 4 secured to the exterior of the head provided with the shoulder 5 arranged in close proximity to the shoulder 6 on the head to form a narrow passage 7 and the annular chamber 8.

811,603. PISTON-ROD PACKING. PHILO H. WEAVER, Pittsburg, Pa. Filed Mar. 17, 1905. Serial No. 250,527.

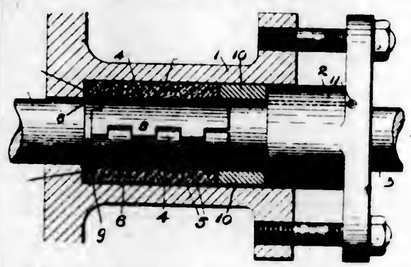

Claim.—1. In a piston-rod packing, the combination with the stuffing-box the gland and piston-rod, of a pair of metal sleeve members of approximate semicircular form in cross-section arranged within said stuffing-box around the said piston-rod and interlocking with one another by circumferentially-disposed laterally-engaging tongues, a soft packing in said stuffing-box surrounding the inner major part of said sleeve members, and a divided follower arranged over the outer end of said members between the soft packing and gland, as shown and set forth.

2. In a piston-rod packing, the combination with the stuffing-box the gland and piston-rod, of a metal sleeve arranged in said stuffing-box around said rod and longitudinally divided into two parts or sections interlocking with one another by circumferentially-disposed laterally-engaging tongues, a soft packing within said stuffing-box and surrounding the inner major part of said sleeve, a divided follower-ring arranged over the outer end of said tube between said soft stuffing and gland, and projections carried by the inner ends of said sleeve-sections to extend up into the stuffing-box, as shown and set forth.

3. In a piston-rod packing, the combination with the stuffing-box the gland and piston-rod, of a metal sleeve arranged in said stuffing-box around said rod and longitudinally divided into two parts or sections interlocking with one another by circumferentially-disposed laterally-engaging tongues, offsets formed in the inner ends of each of said tubular sections, segmental gibs engaging at their heads in said offsets, a soft packing within said stuffing-box surrounding the inner major part of said sleeve, and a divided follower-ring arranged over the end of said tube between the soft packing and gland, as shown and set forth.

4. In a piston-rod packing, the combination with the stuffing-box the gland and piston-rod, of a metal sleeve arranged in said stuffing-box around said rod and longitudinally divided into two parts or sections interlocking with one another by circumferentially-disposed laterally-engaging tongues, offsets formed in the inner ends of said tubular sections, segmental gibs engaging at their heads in said offsets, a soft packing within said stuffing-box surrounding the inner major part of said sleeve, a divided follower-ring arranged over the outer end of said tube between the soft packing and gland, and projections carried by the inner ends of said sleeve-sections to extend up into the stuffing-box, as shown and set forth.

5. In a piston-rod packing, the combination with the stuffing-box the piston-rod and gland, of a pair of metal sleeve members of approximate semicircular form in cross-section arranged within said stuffing-box around the said piston-rod and interlocking with one another by circumferentially-disposed laterally-engaging tongues, a soft packing in said stuffing-box surrounding the inner major part of said sleeve members, a divided follower arranged over the outer ends of said sleeve members between the said soft packing and gland, and an oil-opening extending through the cylindrical part of the gland to the interior of the stuffing-box, as shown and set forth.

6. In a piston-rod packing, the combination with the stuffing-box and rod, of a pair of sleeve members of approximately semicircular form in cross-section arranged within said stuffing-box around the said piston-rod and interlocking with one another by circumferentially-disposed laterally-engaging tongues, a soft packing within said stuffing-box and surrounding the inner major part of said sleeve members, and a gland on said rod and protruding into said box to compress the soft packing, as shown and set forth.

811,604. SAFETY DEVICE FOR ELEVATORS. FREDERICK A. WHEEL, Florello, Pa. Filed Apr. 26, 1904. Serial No. 206,317.

Claim.—1. In a safety device for elevators, the combination with racks provided in the side walls of the elevator-shaft, of an outer frame or cage having a top, side walls and bottom, an inner cage adapted to operate therein, spring-actuated locking-pins mounted for horizontal movement in the side walls of the outer cage adapted to engage with the racks, said inner cage adapted to force the locking-pins into engagement with the racks, substantially as described.

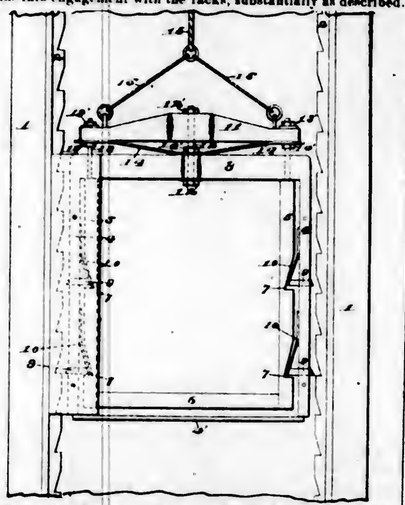

2. In a safety device for elevators, the combination of an outer frame or cage having a top beam, side walls and a bottom, an inner cage adapted to operate therein, spring-actuated locking-pins mounted for horizontal movement in the walls of the outer cage, racks formed in the side walls of the elevator-shaft, said pins being adapted to be forced into engagement with the racks by the inner cage and guide-plates secured to the side of said walls, substantially as described.

3. In a device for elevators, the combination with the outer frame or cage having a top beam, side walls and bottom, of an operating-beam adjustably seated on said top beam, a spring mounted between the operating-beam and the top beam, uprights suspended from the operating-beam extending downwardly through the top beam of the cage supporting a platform at the lower end thereof and being provided with angled recesses, spring-actuated pins mounted in the walls of the outer cage, racks mounted in the elevator-shaft, said pins being adapted to be operated by the walls of the recesses of the uprights upon movement of the same, substantially as described.

811,605. PLATE FOR SOLES AND HEELS OF SHOES. MANSFIELD M. WEST, Cleveland, Ohio. Filed Oct. 19, 1904. Serial No. 229,060.

Claim.—1. A plate for heels and soles of shoes, said plate comprising an elongated continuous outer edge portion curved to correspond to the contour of the heel or sole to which the plate is to be applied, a rounded shoulder or extension at each end of such outer portion, said shoulder extending inwardly a sufficient distance to clear the row of nails adjacent the edge of the heel or sole and having at the inner edge thereof a prong, and a portion intermediate of said shoulders and extending inwardly a greater distance than said shoulders and having at the inner extremity thereof a prong, substantially as specified.

2. A sheet-metal plate for heels and soles of shoes, said plate comprising a continuous curved outer portion corresponding in contour to the edge of the heel or sole to which the plate is to be applied, said plate being curved or deflected at the outer edge thereof from the plane of the main bearing-surface and being provided with a rounded shoulder at each end thereof projecting inwardly and provided with a prong for securing the same to the heel or sole, substantially as specified.

3. A plate for heels and soles of shoes, said plate comprising a continuous curved portion corresponding in contour to the edge of the heel or sole to which the plate is to be applied and having adjacent each end thereof a prong set in from the outer edge of the plate and a row of projections parallel with the outer curved edge of the plate and between the said prongs and said outer edge, the plate being curved or deflected from the plane of the main bearing-surface, such curve or deflection extending from said row of projections to the outer edge of the plate, substantially as specified.

811,606. COMBINED LISTER-PLOW AND PLANTER. WILLIAM H. WILLIAMS, Belle, Okla. Filed Feb. 8, 1905. Serial No. 244,799.

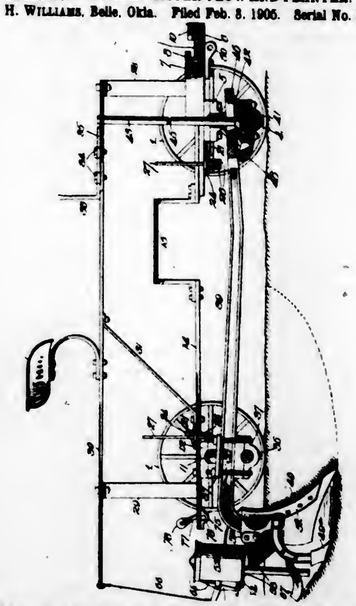

Claim.—1. In an agricultural machine, a carrying-frame, a crank-axle mounted thereon, a lister-plow journaled upon said crank-axle, and means to revolve said axle and cause the plow to make a furrow which tapers toward its ends.

2. In an agricultural machine, a carrying-frame, a crank-axle mounted thereon, a lister-plow journaled upon said crank-axle, and means for causing the movement of the machine to simultaneously revolve the plow.

3. In an agricultural machine, the combination of a carrying-frame, wheels supporting the rear end of the same, a crank-axles for said wheels, means to revolve the axle, a plow journaled on the crank of said axle, and means to tilt the plow up and down alternately as the plow respectively rises and descends with the crank.

4. In an agricultural machine, a suitable frame, a support for the front end of the frame, which is capable of turning, wheels supporting the rear end of the frame, a crank-axle for said wheels, a boxing on said crank-axle, a plow secured to the boxing and having the front end of its beam longitudinally slotted, and a rod or bolt extending through said slot.

5. In an agricultural machine, a semicircular frame, a crank-axle journaled therein, wheels journaled upon the ends of the crank-axle, clutch mechanism to lock said wheels rigid with the crank-axle, a frame engaging the semicircular frame and having a relative rotatable movement thereon to permit the front wheels to turn, a crank-axle journaled on the second frame, wheels journaled on said axle, clutch mechanism to throw said wheels in rigid relation with said axle, boxings journaled on said crank-axles, and a plow having its beam rigidly secured to the rear boxing and adapted to rest upon the front boxing.

6. In an agricultural machine a semicircular frame, a crank-axle journaled therein, wheels journaled upon the ends of the crank-

axle, clutch mechanism to lock said wheels rigid with the crank-axle, a frame engaging the semicircular frame and having a relative rotatable movement thereon to permit the front wheels to turn, a crank-axle journaled on the second frame, wheels journaled on said axle, clutch mechanism to throw said wheels in rigid relation with said axle, boxings journaled on said crank-axles, a plow having its beam rigidly secured to the rear boxing and adapted to rest upon the front boxing and having its front end slotted, a rod or bolt projecting from the front boxing up through said slot, a guide for the upper end of said rod, and arms projecting forwardly from the front crank to raise the front end of the beam more rapidly than the rear end is raised and thus tilt the plow-point upwardly.

7. In an agricultural machine a semicircular frame, a crank-axle journaled therein, wheels journaled upon the ends of the crank-axle, clutch mechanism to lock said wheels rigid with the crank-axle, a frame engaging the semicircular frame and having a relative rotatable movement thereon to permit the front wheels to turn, a crank-axle journaled on the second frame, wheels journaled on said axle, clutch mechanism to throw said wheels in rigid relation with said axle, boxings journaled on said crank-axles, a plow having its beam rigidly secured to the rear boxing and adapted to rest upon the front boxing and having its front end slotted, a rod or bolt projecting from the front boxing up through said slot, a guide for the upper end of said rod, arms projecting forwardly from the front crank to raise the front end of the beam more rapidly than the rear end is raised and thus tilt the plow-point upwardly, and means for locking the crank-axles at their highest point of movement.

8. In an agricultural machine, a carrying-frame, a crank-axle mounted thereon, a lister-plow journaled upon said crank-axle, means to revolve said axle and cause the plow to make a substantially segmental furrow in the ground, a seedbox movable with the plow and adapted to discharge seed rearward thereof, and means for effecting the discharge of the seed in each revolution of the plow.

9. In an agricultural machine, a carrying-frame a crank-axle mounted thereon, a lister-plow journaled upon said crank-axle, means to revolve said axle and cause the plow to make a substantially segmental furrow in the ground, a seedbox movable with the plow and adapted to discharge seed rearward thereof, means for effecting the discharge of the seed in each revolution of the plow, and coverers also movable with the plow to cover the seed dropped by the seedbox.

10. In an agricultural machine, a carrying-frame, a crank-axle mounted thereon, means for revolving the crank-axle, a plow-beam pivoted on said crank, a plow pivotally suspended from said beam, and a pivoted brace connecting the plow structure and framework.

11. In an agricultural machine, a carrying-frame, a crank-axle mounted thereon, a plow-beam pivoted on said crank, a plow pivotally suspended from said beam, and a pair of forwardly-diverging braces pivoted at their rear ends to the plow structure and at their front ends to the carrying-frame.

12. In an agricultural machine, a suitable frame, a support for the front end of the frame, which is capable of turning, wheels supporting the rear end of the frame, a revoluble crank-axle for the wheels, a plow-beam pendently supported from the crank-axle and having a longitudinally-slidable connection at its front end with the support for the front end of the frame, and a plow secured rigidly to the rear portion of the beam.

811,607. **SHUTTER.** JAMES G. WILSON, Larchmont, N. Y. Filed July 14, 1905. Serial No. 269,691.

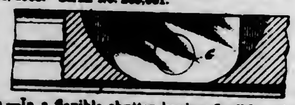

Claim.—In a flexible shutter having flexibly-united slats, the solid-shutter slat B having a narrow slit F running in the direction of its length, an opening G at substantially right angles to said slit and in registry therewith, and a piece of transparent material arranged in said slit to close said opening.

811,608. **COAL AND LIKE WASHER.** WILLIAM E. WINN, Pittsburg, Pa., assignor to Heyl & Patterson, Inc., Pittsburg, Pa., a Corporation of Pennsylvania. Filed Feb. 18, 1905. Serial No. 246,263.

Claim.—1. In a coal or like washer, the combination of a suitable pan having a riffled bottom, a series of freely-movable riffles in said bottom, and means for oscillating and imparting a percussive action to said pan.

2. In a coal or like washer, the combination of a suitable pan having a riffled bottom, a series of loose riffles alternating with stationary riffles, and means for oscillating and imparting a percussive action to said pan.

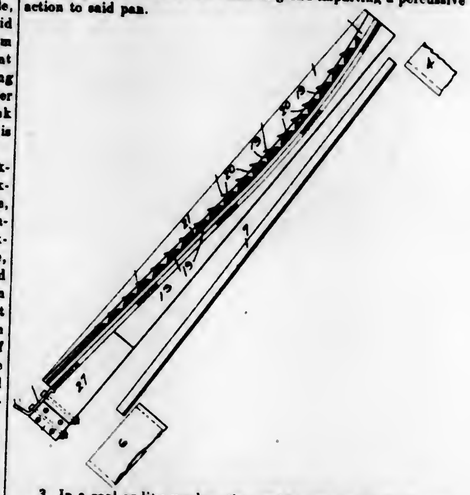

3. In a coal or like washer, the combination of a suitable pan having a riffled bottom, a series of loose riffles alternating with stationary riffles within the zone of fine impurities, and means for oscillating and imparting a percussive action to said pan.

4. In a coal or like washer, the combination of a suitable pan having a single curved bottom formed of riffles parallel with each other and having openings between the same, said openings being sufficiently small to retain a body of water within said pan during the washing operation, and means for oscillating and imparting a percussive action to said pan.

811,609. **COAL AND LIKE WASHER.** WILLIAM E. WINN, Pittsburg, Pa., assignor to Heyl & Patterson, Inc., Pittsburg, Pa., a Corporation of Pennsylvania. Filed Feb. 18, 1905. Serial No. 246,264.

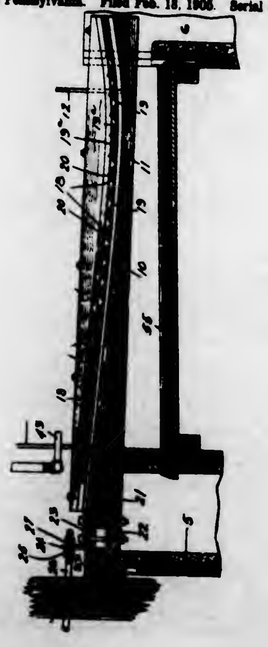

Claim.—1. In a coal or like washer, the combination of a suitable pan, a series of riffles forming the bottom of said pan with intervening spaces gradually diminishing in size toward the tail end of said pan, and means for oscillating and imparting a percussive action to said pan.

2. In a coal or like washer, the combination of a suitable pan, a series of riffles forming the bottom of said pan with intervening spaces within the zone of fine impurities, said spaces gradually diminishing in size toward the tail end of said pan, and means for oscillating and imparting a percussive action to said pan.

3. In a coal or like washer, the combination of a suitable pan, riffles forming the bottom of said pan, the riffles at the head of said pan having no intervening spaces, the riffles toward the tail end having intervening spaces gradually diminishing toward the tail end, and means for oscillating and imparting a percussive action to said pan.

4. In a coal or like washer, the combination of a suitable pan, riffles forming the bottom of said pan, the riffles at the head of said pan having no intervening spaces and with single inclined faces, the riffles at the tail of said pan having double inclined faces with intervening spaces gradually diminishing toward the tail end, and means for oscillating and imparting a percussive action to said pan.

811,610. **APPARATUS FOR DISPLAYING PICTURES.** STEFAN ŁACHER and EDWARD O. GOTTLIEB, New York, N. Y. Filed May 22, 1904. Serial No. 209,151.

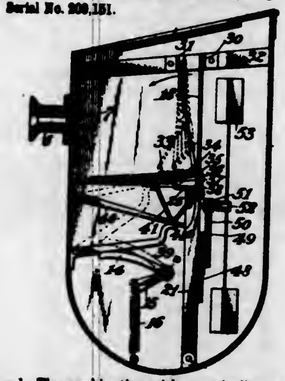

Claim.—1. The combination with a vertically-movable picture-supporting frame, capable of swinging movement, and a stop for limiting the forward movement of said frame, of picture-holders pivoted at different elevations to said frame and means for swinging said picture-holders to their upright positions and for afterward swinging and bodily elevating said frame so that the pictures carried thereby may assume positions behind said stop, as and for the purpose set forth.

2. The combination with a vertically-movable picture-supporting frame, capable of swinging movement, and a pair of stops between which said frame is adapted to swing, of picture-holders pivoted at different elevations to said frame and means for swinging said picture-holders to their upright positions and for afterward swinging and bodily moving said frame so that the pictures carried by said holders may assume positions between said stops, as and for the purpose set forth.

3. The combination with a vertically-movable picture-supporting frame, capable of swinging movement, and having a pair of supporting-flanges at its side ends, and a stop for limiting the forward movement of said frame, of picture-holders pivoted at different elevations to said flanges, and means for swinging said picture-holders to their upright positions and for afterward swinging and bodily elevating said frame, so that the pictures carried by said holders may assume positions behind said stop, as and for the purpose set forth.

4. The combination with a vertically-movable picture-supporting frame, capable of swinging movement, and a stop for limiting the forward movement of said frame, of picture-holders pivoted at different elevations to said frame, means for swinging said picture-holders to their upright positions and for afterward swinging and bodily elevating said frame so that the pictures carried by said holders may assume positions behind said stop and means for retarding the return movement of said frame to its normal position, as and for the purpose set forth.

5. The combination with a vertically-movable picture-supporting frame, capable of swinging movement, and a stop for limiting the forward movement of said frame, of picture-holders pivoted at different elevations to said frame, a lever fulcrumed to said frame and adapted to engage the lowermost of said picture-holders and means for rocking said lever, whereby said picture-holders are raised to their upright positions, said frame is rocked and bodily elevated and the pictures carried by said holders are caused to assume positions behind said stop, as and for the purpose set forth.

6. The combination with a vertically-movable picture-supporting frame, capable of swinging movement, and a stop for limiting the forward movement of said frame, of picture-holders pivoted at different elevations to said frame, an elbow-lever fulcrumed to said frame and having its free end adapted to engage the lowermost of said holders, means for limiting the dowaward movement of said lever and means for causing the upward movement of said lever, whereby said picture-holders are raised to their upright positions, said frame is rocked and bodily elevated and the pictures carried by said holders are caused to assume positions behind said stop, as and for the purpose set forth.

7. The combination with a picture-supporting frame comprising a pivoted member and a vertically-movable slide thereon, and a stop for limiting the forward swinging movement of said frame, of picture-holders pivoted at different elevations to said slide, and means for swinging said holders to their upright positions and for afterward elevating said slide, so that the pictures carried by said holders will assume a position behind said stop, as and for the purpose set forth.

8. The combination with a picture-supporting frame comprising a pivoted member and a vertically-movable slide thereon, and a stop for limiting the forward swinging movement of said frame, of picture-holders pivoted at different elevations to said slide, means for swinging said holders to their upright positions and for afterward elevating said slide, so that the pictures carried by said holders will assume a position behind said stop, and means for retarding the return movement of said slide, as and for the purpose set forth.

9. The combination with an operating-shaft, of a picture-supporting frame comprising a pivoted member and a vertically-movable slide thereon, a stop for limiting the forward movement of said frame, picture-holders pivoted at different elevations to said slide, and means thrown into operation by said shaft for swinging said holders to their upright positions and for afterward swinging said frame and bodily elevating said slide, whereby the pictures carried by said holders are caused to assume positions behind said stop, as and for the purpose set forth.

10. The combination with an operating-shaft, of a picture-supporting frame comprising a pivoted member and a vertically-movable slide thereon, a stop for limiting the forward movement of said frame, picture-holders pivoted at different elevations to said slide, means thrown into operation by said shaft for swinging said holders to their upright positions and for afterward swinging said frame and bodily elevating said slide, whereby the pictures carried by said holders are caused to assume positions behind said stop, and means for retarding the return movement of said slide, as and for the purpose set forth.

11. The combination with a picture-supporting frame comprising a plate pivoted at its lower end, and a vertically-movable slide thereon, the said slide being provided with a cross-head having forwardly-extending flanges thereon, constituting supports, and a stop for limiting the forward swinging movement of said frame, of picture-holders pivoted at different elevations to said supports, a lever fulcrumed to said slide and adapted to engage the lowermost of said holders, and means for rocking said lever upwardly, whereby said picture-holders are moved to their upright positions, said plate is rocked rearwardly on its pivot and said slide is bodily elevated so that the pictures carried by said holders will assume a position behind said stop, as and for the purpose set forth.

12. The combination with a picture-supporting frame comprising a plate pivoted at its lower end, and a vertically-movable slide thereon, the said slide being provided with a cross-head having forwardly-extending flanges thereon, constituting supports, and a stop for limiting the forward swinging movement of said frame, of picture-holders pivoted at different elevations to said supports, a lever fulcrumed to said slide and adapted to engage the lowermost of said holders, means for rocking said lever upwardly, whereby said picture-holders are moved to their upright positions, said plate is rocked rearwardly on its pivot and said slide is bodily elevated so that the pictures carried by said holders will assume a position behind said stop, and means for retarding return movement of said slide, as and for the purpose set forth.

13. The combination with a picture-supporting frame compris-

ing a plate pivoted at its lower end and a vertically-movable slide thereon, the said slide being provided with a cross-head having forwardly-extending flanges thereon, constituting supports, and a stop for limiting the forward swinging movement of said frame, of picture-holders pivoted at different elevations to said supports, an elbow-lever fulcrumed upon said slide whose free end is adapted to engage the lowermost of said holders, a stop for limiting the downward movement of said lever, and means for rocking said lever upwardly, whereby said holders are moved to their upright positions, said plate is moved rearwardly on its pivot and said slide is bodily elevated so that the pictures carried by said holders will assume a position behind said stop, as and for the purpose set forth.

14. The combination with a picture-supporting frame, comprising a plate pivotally mounted at its lower end and provided with side flanges, and a vertically-movable slide thereon, the said slide being provided with slotted side flanges which fit within the flanges on said plate, and also having a cross-head thereon provided with forwardly-extending flanges, constituting supports, and a pair of stops between which the upper end of said plate is adapted to swing, of picture-holders pivoted at different elevations to said supports, and means for moving said holders to their upright positions, for swinging said plate rearwardly and for elevating said slide so that the pictures carried by said holders will assume positions between said stops, as and for the purpose set forth.

15. The combination with a picture-supporting frame comprising a pivoted member and a vertically-movable slide thereon, and a stop for limiting the forward movement of said frame, of picture-holders pivoted at different elevations to said slide, means for moving said holders to their upright positions, for swinging said frame rearwardly and for elevating said slide so that the pictures carried by said holders will assume positions behind said stop, a rack carried by said slide, a pinion carried by said pivoted member and meshing with said rack, a fan-shaft, and a system of reducing gearing between said pinion and said fan-shaft, as and for the purpose set forth.

16. The combination with a picture-supporting frame, comprising a pivoted member and a vertically-movable slide thereon, and a stop for limiting the forward movement of said frame, of picture-holders pivoted at different elevations to said slide, an elbow-lever pivoted to said slide and adapted to engage the lowermost of said holders, a rock-shaft having an arm thereon, and connections between said arm and said elbow-lever, whereby when said shaft is rocked in one direction, said elbow-lever is raised, said picture-holders are moved to their upright positions, said frame is swung rearwardly and said slide is elevated so that the pictures carried by said holders are caused to assume a position behind said stop, as and for the purpose set forth.

811,611. STREET LETTER-BOX. ALBERT J. ARSENAULT, Boston, Mass. Filed July 3, 1905. Serial No. 268,081.

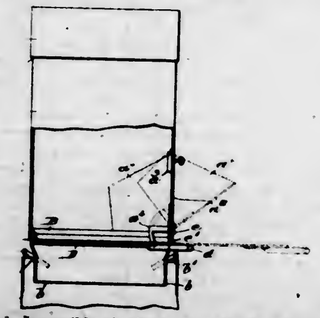

Claim.—1. In a mail-box having an opening in its lower end for the discharge of mail, a movable closure for said opening, a door closing an opening in the side of the box above the opening in the lower end thereof, and means carried by the door to lock the closure in closed position.

2. A mail-box having a movable bottom provided with an opening combined with a door having an attached locking device adapted to enter the opening in the movable bottom as the door is closed provided the movable bottom occupies its closed position.

3. A mail-box having a lower open end, an open frame secured to said lower open end, a movable bottom for said frame, a door closing an opening in the side of the mail-box above the frame, and a locking device for the movable bottom, said locking device being connected to the door.

4. In a mail-box, a body having an opening in its lower end, and provided with a door carrying a locking device, and a bottom to close said lower open end, said bottom having a member coacting with the locking device to prevent the closing of the door until the bottom occupies its closed position.

5. A mail-box having an opening in its lower end for the discharge of mail, a movable closure for said opening, a door closing an opening in the box above the lower end thereof, and means carried by and movable with the door to engage the closure and lock the same in closed position.

6. A mail-box having an open lower end, an open frame detachably secured to the lower end of the mail-box, a movable bottom for said frame, a door closing an opening in the mail-box above the frame and a locking device carried by the door and movable therewith and adapted to engage the bottom and lock the same in closed position when the door is closed.

811,612. GUIDING MEANS FOR BOWLING-ALLEY PIN SPOTTERS OR SETTERS. CHARLES L. BASTIAN, Chicago, Ill. Filed Mar. 20, 1905. Serial No. 250,909.

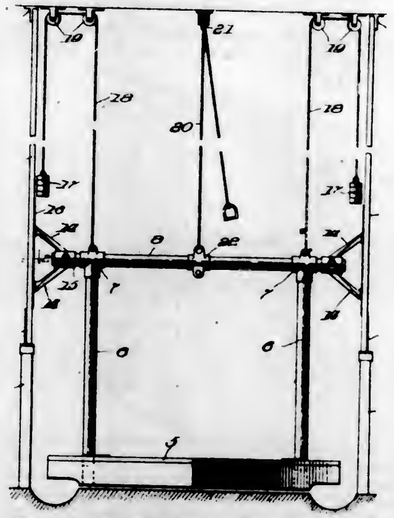

Claim.—1. The combination of a vertically-movable bowling-alley pin spotter or setter, uprights fastened thereto, a cross-rod fastened to said uprights, guides at the sides of the alley, and guide-brackets adjustably mounted on the ends of said cross-rod and arranged to travel in said guides.

2. The combination of a vertically-movable bowling-alley pin spotter or setter, uprights fastened thereto, a cross-rod, clamps fastening said cross-rod to said uprights, guides at the sides of the alley-guide-brackets adjustably mounted on the ends of said cross-rod, and shoes on said brackets arranged to travel against said guides.

3. The combination of a vertically-movable bowling-alley pin spotter or setter, uprights fastened thereto, a cross-rod, clampe fastening the cross-rod to the upper ends of the uprights, channel-guides extended upward from the kick-backs at the side of the alley, guide-brackets adjustably mounted on the ends of said cross-rod and comprising outwardly-diverging arms, and guide-shoes carried by said arms and traveling in said channel-guides.

811,613. ROTARY ENGINE. WILLIAM H. BATES, ROBERT C. DOUGLASS, and WILLIAM G. HOUSER, Chicago, Ill., assignors to The Marine Iron Works, Chicago, Ill., a Corporation of Illinois. Filed Mar. 22, 1905. Serial No. 251,482.

Claim.—1. A device of the kind described, comprising a cylinder provided with suitable ports, a liner adjustably mounted at each end of said cylinder, and a flange concentrically mounted upon each of said liners, in combination with a rotatable driver inclosing said flanges and eccentrically mounted to close the cylinder upon one side, and a plurality of unconnected pistons slidably mounted upon said driver and extending from the cylinder to the flanges.

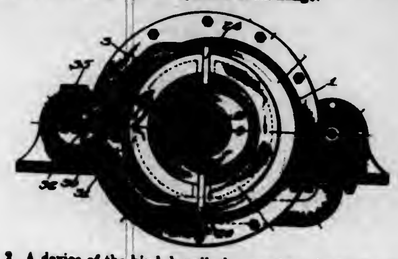

2. A device of the kind described, comprising a cylinder provided with injection and ejection ports, in combination with a pair of fixed flanges concentrically mounted within the cylinder, a ring loosely inclosing each flange, friction-reducing means arranged between the flanges and the rings, a rotatable driver inclosing the flanges, and eccentrically mounted to close the cylinder upon one side, and a plurality of unconnected pistons slidably mounted upon the driver and extending from the cylinder to the flanges.

3. A device of the kind described, comprising a cylinder provided with injection and ejection ports, in combination with a pair of fixed flanges concentrically mounted within the cylinder, a ring loosely inclosing each flange, antifriction-rollers arranged between each flange and its ring, a rotatable driver inclosing the flanges, and eccentrically mounted to close the cylinder upon one side, and a plurality of unconnected pistons slidably mounted upon said driver and extending from the cylinder to the flange.

4. A device of the kind described, comprising a cylinder provided with suitable injection and ejection ports, in combination with a pair of fixed flanges concentrically mounted within the cylinder, a ring rotatably inclosing each flange, a rotatable driver inclosing the flanges, and eccentrically mounted to close said cylinder upon one side, and a plurality of unconnected pistons slidably mounted upon said driver and extending from the cylinder to the flanges.

5. A device of the kind described, comprising a cylinder provided with suitable ports, a pair of liners adjustably mounted at the ends of said cylinder, a flange formed upon each liner and concentrically fixed within the cylinder, in combination with a rotatable driver inclosing the flanges and eccentrically mounted to close the cylinder upon one side, a plurality of radial slots formed in the periphery of said driver, and unconnected pistons slidably mounted in said slots each closing the space between the cylinder and said flanges.

6. A device of the kind described, comprising a cylinder provided with suitable ports, a liner adjustably mounted at each end of said cylinder, and a flange provided upon each liner concentrically fixed within the cylinder, in combination with a rotatable driver inclosing said flanges and eccentrically mounted to close the cylinder at one side, a plurality of radial slots formed in the periphery of said driver, unconnected pistons slidably mounted in said slots, each closing the space between the cylinder and said flanges, and means arranged upon said driver at each of said slots to prevent the passage of fluid between said driver and said pistons.

7. A device of the kind described, comprising a cylinder provided with suitable ports, a liner adjustably mounted at each end of said cylinder, and a tubular flange provided upon each liner concentrically fixed within the cylinder, in combination with a rotatable driver inclosing the flanges and eccentrically mounted to close the cylinder upon one side, a plurality of radial slots formed in the periphery of said driver, unconnected pistons slidably mounted in said slots each closing the space between the cylinder and said flanges, one or more grooves formed in the walls of said slots near the periphery of said driver and packing-strips fitted into each of said grooves each adapted to resiliently press against a piston and prevent the passage of fluid radially in said slots.

8. A device of the kind described, comprising a cylinder provided with ports, a pair of flanges concentrically fixed within said cylinder and a plurality of rings rotatably mounted upon each flange, in combination with a rotatable driver inclosing said flanges and eccentrically mounted to close the cylinder upon one side, a plurality of pistons slidably mounted upon said driver, each piston provided with and resting upon a single ring on each flange and substantially filling the space between said rings and said cylinder.

9. A device of the kind described, comprising a cylinder provided with suitable ports having a head securely attached to each end, a liner adjustably supported upon each head and means for adjusting the position of said liner, and a tubular flange formed upon each liner, projecting into, and concentric with said cylinder, in combination with a rotatable driver inclosing said flanges and eccentrically mounted to close the cylinder at one side at a point between said ports, a plurality of unconnected pistons slidably mounted upon said driver and closing the space between said cylinder and said flanges.

10. A device of the kind described, comprising a cylinder an adjustable liner at each end of said cylinder, a plurality of flanges concentrically fixed upon each liner ports communicating with said cylinder and a valve to control said ports, in combination with a rotatable driver inclosing a pair of said flanges and eccentrically mounted to close the cylinder upon one side between said ports, a plurality of pistons slidably and radially mounted upon said driver, each closing the space between said cylinder and said flanges.

11. A device of the kind described, comprising a cylinder provided with suitable ports, a liner adjustably mounted at each end of said cylinder, a flange concentrically mounted upon each of said liners and a ring rotatably mounted upon each flange, in combination with a rotatable driver inclosing said flanges and eccentrically positioned in said cylinder to close the same at one side, and a plurality of unconnected pistons slidably mounted upon said driver and extending from the cylinder to the flanges.

12. A device of the kind described, comprising a cylinder provided with suitable ports, a liner adjustably mounted at each end of said cylinder, a plurality of flanges formed concentrically upon each of said liners, and a ring rotatably mounted upon one flange of each liner, in combination with a rotatable driver inclosing said flange and eccentrically positioned in said cylinder to close the same at one side, and a plurality of unconnected pistons slidably mounted upon said driver and extending from the cylinder to the flanges.

13. A device of the kind described, comprising a cylinder provided with suitable ports, a liner adjustably mounted at each end of said cylinder, a flange concentrically mounted upon each of said liners and a plurality of rings rotatably mounted upon each flange, in combination with a rotatable driver inclosing said flanges and eccentrically positioned in said cylinder to close the same at one side, and a plurality of pistons slidably mounted upon said driver, each piston provided with and resting upon a single ring on each flange and substantially filling the space between said rings and said cylinder.

14. A device of the kind described, comprising a cylinder provided with suitable ports, a liner adjustably mounted at each end of said cylinder, a plurality of flanges formed concentrically upon each liner, and a plurality of rings rotatably mounted upon each flange, in combination with a rotatable driver inclosing said rings, and eccentrically positioned in said cylinder to close the same at one side, and a plurality of pistons slidably mounted upon said driver, each piston provided with and resting upon a single ring on each flange and substantially filling the space between said rings and said cylinder.

15. A device of the kind described, comprising a cylinder provided with suitable ports, a liner adjustably mounted at each end of said cylinder, and means for adjusting the position of said liner, and a tubular member for each liner arranged within the cylinder, in combination with a rotatable driver inclosing said tubular members and eccentrically mounted to close the cylinder at a point between said parts, a plurality of pistons slidably mounted upon said driver and closing the space between said cylinder and said tubular member.

811,614. WINDING MECHANISM FOR COTTON-LAPS. CHARLES BERNARD, Hericourt, France. Filed Dec. 27, 1904. Serial No. 238,821.

Claim.—1. In a winding mechanism for cotton-laps, a protective device for the lap-roller comprising an adjustable metal guard over said lap-roller, an axle connected to said guard, a handle on said axle, lever mechanism at each end of said axle and a cross-bar attached to the ends of said lever mechanism, said device so arranged as to effect mechanically the insertion of the end of the lap under the lap-roller, substantially as set forth.

2. In a winding mechanism for cotton-laps, a pair of winding-rolls, a lap-roller adjacent to and between said rolls, a curved metallic perforated shield over said lap-roller, means for raising the shield concurrently with the lap-roller, and means for inserting mechanically the end of the lap underneath the lap-roller.

3. In a winding mechanism for cotton-laps, winding-rolls, a lap-roller, a shield above said lap-roller, a revoluble shaft on said shield, hand mechanism adapted to turn said shaft, jointed levers at the ends of said shaft, a cross-bar attached to the ends of said levers guide-bars attached to the lower parts of said levers adjustable rel-

lowers on said guide-bars, and curved cams adapted to guide the said cross-bar in a definite curved course and parallel to the lap-roller.

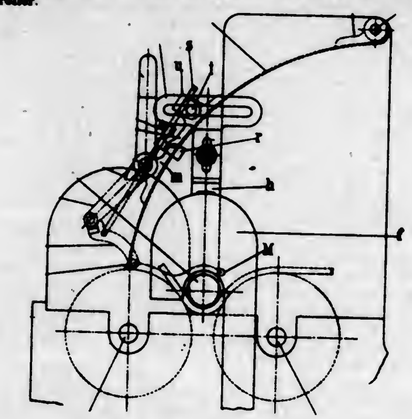

811,615. MEANS FOR LUBRICATING VEHICLE-WHEELS.

WILLIAM M. BOYD, Connersville, Ind., assignor of one-third to Chase Boyd and one-third to Ernest I. Boyd, Connersville, Ind. Filed May 29, 1905. Serial No. 262,579.

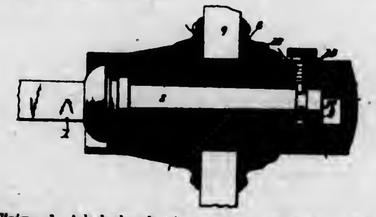

Claim.—1. A hub closed at its outer end and having a longitudinal bore, an axle-box seated in said bore and contacting with the bottom thereof, said hub and axle-box being apertured near their outer ends; a spindle engaging the axle-box and having an annular groove in registry with said apertures; and a tubular member extending through the apertures into the groove and having a closure at its outer end.

2. A hub, an axle-box closed at its outer end and engaging said hub, said hub and axle-box being apertured near their outer ends; a spindle engaging the axle-box and having an annular groove in registry with said apertures; and a tubular member extending through the apertures into the groove and having a closure at its outer end.

3. A hub, an axle-box in said hub, a spindle engaging the axle-box and having an annular groove, a washer member engaging said groove and having an aperture, and a tubular member extending through the hub and the axle-box into the aperture of the washer and provided with a closure at its outer end.

4. The combination with a spindle having an annular groove, of a hub having an axle-box, and a lubricating-tube extending beyond the inner surface of the axle-box and engaging the annular groove.

5. The combination with a spindle having an annular groove, of a hub having an axle-box, and a lubricating-tube extending beyond the inner surface of the axle-box and engaging the annular groove; said tube having near its inner end a plug provided with a feed-opening.

6. The combination with a spindle having an annular groove, of a hub having an axle-box, a lubricating member extending through the hub and axle-box, and a washer having a perforation affording a seat for the member engaging the annular groove and inner end of the lubricating member.

7. A hub having an axle-box, a spindle engaging said axle-box and having an annular groove, said spindle terminating short of the outer extremity of the axle-box, a closure for the latter whereby a chamber is formed adjacent to the outer end of the spindle, a tubular member extending through the hub and the axle-box into the annular groove of the spindle, and a closure at the other end of said tubular member.

811,616. FOLDING STEP-LADDER.

GEORGE W. BOSS, Woburn, Mass. Filed July 17, 1905. Serial No. 269,979.

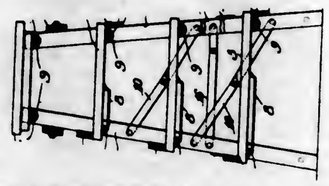

Claim.—1. In a folding step-ladder, a pair of stiles, each comprising two members, tread-supports connecting said members, and a series of treads pivoted to the tread-supports of one stile and having a sliding engagement with those of the other stile.

2. In a folding step-ladder, a pair of stiles each comprising two members, tread-supports connecting said members, a series of treads of different lengths pivoted to the tread-supports of one stile and having a sliding engagement with those of the other stile, and a cap-piece of less length than the shortest tread pivoted to the upper end of each stile.

3. In a folding step-ladder, a pair of stiles each having a plurality of tread-supports, a series of treads, each tread pivoted at one end to a tread-support of one stile and resting at the other end on a tread-support of the other stile, and cleats on said latter stile to engage the upper side of the treads as the ladder is opened.

4. In a folding step-ladder, a pair of stiles, a plurality of treads of different length, each tread being pivoted to one stile and having a sliding pivotal connection with the other stile, and a cleat on the latter stile to engage the upper side of the extreme end of each tread as the ladder is opened.

5. In a folding step-ladder, a pair of stiles, each comprising two members connected by tread-supports, a series of treads pivoted to the tread-supports of one stile and having sliding engagement with those of the other stile, and cross-pieces connecting the members of the latter stile and arranged to be engaged by the upper side of the treads when the ladder is open for use.

6. In a folding step-ladder, a pair of stiles, each comprising two members connected by tread-supporting rods, a series of treads, each tread pivoted at one end to a rod of one stile and resting at the other end on a rod of the other stile and a guide secured to each tread and embracing the corresponding rod of the latter stile.

7. In a folding step-ladder, a pair of stiles each comprising two members connected by tread-supports, a series of treads pivoted to the tread-supports of one stile and slidably connected to the tread-supports of the other stile, and jointed braces connecting the stiles.

8. In a folding step-ladder, a pair of stiles each comprising two members connected by tread-supports, a series of treads pivoted to the tread-supports of one stile and slidably connected to the tread-supports of the other stile, jointed braces connecting the stiles, and means to limit the spreading movement of the stiles caused by straightening the braces.

811,617. BRAKE FOR THE HUBS OF CYCLES.

WILLIAM CHAMBERLAIN and ARTHUR CHAMBERLAIN, Wigston Magna, England. Filed July 11, 1904. Serial No. 216,157.

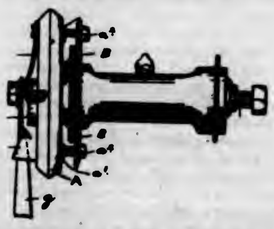

Claim.—A hub hand-brake for the wheels of cycles and other mannmotive or power-driven machines or vehicles comprising the following elements: a brake-shell A, lugs a', sectional fixing-plates B and nuts a^3, loosely fitting brake-segments C, the tapered peripheries

of which fit to the opposing portion of the brake-shell, a covering-plate E, the stud F', a cam-lever F carried by said stud, the said cam lying against one of the loose segments C, the outer end of the lever bored to carry a connecting-rod, a stop G, and a return-spring H, substantially as described.

811,618. CARBURETER FOR HYDROCARBON-ENGINES.

CHARLES H. CLAUDEL, Argenteuil, France. Filed May 26, 1904. Serial No. 209,976.

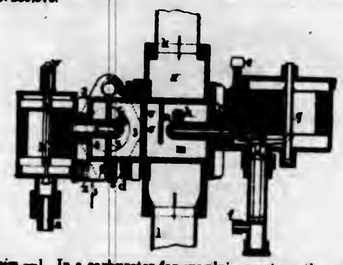

Claim.—1. In a carbureter for supplying motors, the combination of a vaporization or gasification chamber, a casing surrounding this chamber and providing for the exhaust-gases of the motor a passage having two parts which overlie different portions of said chamber, the outer walls of said parts being heat-conducting to an unequal extent, and means for varying the distribution or circulation of the exhaust-gases in the two parts of said passage.

2. In a carbureter for supplying motors, the combination of a vaporization or gasification chamber, a casing inclosing the same and providing for the exhaust-gases of the motor a passage having two parts which overlie different portions of said chamber, means for varying the distribution of the exhaust-gases in the two parts of said passage, and a heat-insulating layer covering the outer wall of one of said parts.

3. In a carbureter for supplying motors, the combination of a vaporization or gasification chamber, a casing inclosing the same and providing for the exhaust-gases of the motor a passage divided into two parts which overlie different portions of said chamber, the outer wall of one of these parts being thin and a good conductor of heat, and means for varying the distribution of the exhaust-gases in the two parts of said passage.

4. In a carbureter for supplying motors, the combination of a vaporization or gasification chamber, a casing inclosing the same and providing a passage for the exhaust-gases of the motor, a main outlet and a supplementary outlet for the exhaust-gases each leading from said passage, and means for regulating the flow of said gases through the supplementary outlet.

5. In a carbureter for supplying motors, the combination of a vaporization or gasification chamber, a casing inclosing the same and providing a passage for the exhaust-gases of the motor, said passage having two parts which overlie different portions of said chamber, means for varying the distribution or circulation of the exhaust-gases in the two parts of the passage, a supplementary outlet leading from one of the parts of said passage, and means for regulating the flow of said gases through the supplementary outlet.

6. In a carbureter for supplying motors, the combination of a vaporization or gasification chamber, a casing inclosing the same and providing for the exhaust-gases of the motor a passage having two parts which overlie different portions of said chamber, the outer walls of said parts being heat-conducting to an unequal extent, means for varying the distribution or circulation of the exhaust-gases in the two parts of said passage, a supplementary outlet leading from one of the parts of the passage, and means for regulating the flow of said gases through the supplementary outlet.

7. In a carbureter for supplying motors, the combination of a vaporization or gasification chamber, a casing inclosing the same and providing a passage for the exhaust-gases of the motor, said passage being divided into two parts which overlie different portions of said chamber, a heat-insulating layer covering a portion of the outer walls of one of said parts, means for varying the distribution or circulation of the exhaust-gases in the two parts of the passage, a supplementary outlet leading from one of the parts of said passage, and means for regulating the flow of said gases through the supplementary outlet.

8. In a carbureter for supplying motors a vaporization or gasification chamber with horizontal axis divided into two communicating compartments by a vertical baffle-plate, a combustible liquid-injector, opening into one of the compartments, and an air-suction conduit in communication on the one hand with the atmosphere on the other hand with the suction-pipe of the motor and separated from the second compartment of the chamber by means of a perforated partition, substantially as described and represented.

9. A carbureter for supplying motors comprising in combination a vaporization or gasification chamber with horizontal axis and divided into two communicating compartments by a vertical baffle-plate, a small air-inlet and an injector for combustible liquid opening into one of the compartments, and an air-suction conduit in communication on the one hand with the atmosphere, on the other hand with the suction-pipe of the motor and separated from the second compartment of the chamber by a perforated partition substantially as described and illustrated.

10. A carbureter for supplying motors comprising, in combination, a vaporization or gasification chamber with horizontal axis divided into two communicating compartments by means of a vertical baffle-plate, an injector for combustible liquid not capable of being vaporized at the ordinary temperature, opening into one of the compartments, means for heating the chamber, an air-suction conduit in communication on the one hand with the atmosphere, on the other hand with the suction-pipe of the motor and separated from the second compartment of the vaporization-chamber by means of a perforated partition, and an injector for volatile liquid opening into the said conduit, substantially as described and represented and for the purpose indicated.

11. A carbureter for supplying motors comprising, in combination, a vaporization or gasification chamber with horizontal axis divided into two communicating compartments by a vertical baffle-plate, an injector for combustible liquid not capable of being vaporized at the ordinary temperature opening into one of the compartments, means for heating the chamber, an air-suction conduit divided into two longitudinal compartments by a partition, each of the said compartments being in communication on the one hand with the atmosphere on the other hand with the suction-pipe of motor and one of them being separated from the second compartment of the chamber by a perforated partition, an injector for volatile liquid opening into the compartment of the conduit which is connected to the chamber, and means for regulating the admission of air into the other compartment of the conduit, substantially as described and illustrated and for the purpose indicated.

12. In a carbureter for supplying motors, the combination of a vaporization or gasification chamber divided by a baffle-plate into two communicating compartments, a casing enveloping said chamber and providing a passage for the exhaust-gases of the motor, means for varying the quantity of heat given up by these gases to said chamber, means for injecting liquid combustible into one of the compartments of said chamber, and an air-suction conduit adapted to lead from the atmosphere to the suction-pipe of the motor and separated from the second compartment of said chamber by means of a perforated partition.

13. In a carbureter for supplying motors, the combination of a vaporization or gasification chamber divided by a baffle-plate into two communicating compartments, a casing enveloping said chamber and providing a passage for the exhaust-gases of the motor, said passage being divided into two parts which overlie different portions of said chamber, means for varying the distribution or circulation of the exhaust-gases in the two parts of the passage, means for injecting liquid combustible into one of the compartments of said chamber, and an air-suction conduit adapted to lead from the atmosphere to the suction-pipe of the motor and separated from the second compartment of said chamber by a perforated partition.

14. In a carbureter for supplying motors, the combination of a vaporization or gasification chamber divided by a baffle-plate into two communicating compartments, a casing enveloping said chamber and providing a passage for the exhaust-gases of the motor, a supplementary outlet leading from said passage and means for regulating the flow of said gases through the same, means for injecting liquid combustible into one of the compartments of said chamber, and an air-suction conduit adapted to lead from the atmosphere to the suction-pipe of the motor and separated from the second compartment of said chamber by means of a perforated partition.

811,619. HORSESHOE.

FRED N. CLINE, Chicago, Ill. Filed May 2, 1904. Serial No. 205,858.

Claim.—1. A horseshoe comprising, in combination with the body or plate having on the under side calk-pockets, calks therein comprising a rubber-embedded metal skeleton, such skeleton hav-

ing an outline-bar and cross-bars spanning it deflected from the plane of the outline-bar, and nails securing the calk in the pocket entering through the pockets' marginal wall and extending over the outline-bar and under a cross-bar.

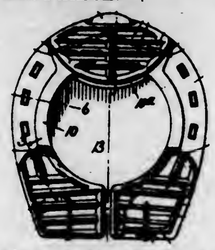

2. In a horseshoe, in combination with a shoe-plate having on the under side calk-pockets; calks comprising a rubber-embedded metal skeleton lodged in the pockets, and headless nails entered through the marginal wall of the pockets engaging the metal skeleton and driven into the rubber in which the skeleton is embedded with a range for further penetration thereinto sufficient to clear the marginal wall.

3. In a horseshoe, in combination with the body or plate, a toe-guard, 9, having a tang, 9*, and a clenching-lug, 9*, the plate having at the forward side a notch to receive the tang, and a recess in the upper surface to seat the clenching-lug.

4. In a horseshoe, in combination with the metal body or plate, a toe-guard, 9, having a tang, 9*, and shoulders, 9*, limiting the thrust of the tang across the plate, and a clenching-lug, 9*, the plate notched at the forward side to receive the tang, and recessed at the upper surface to receive the clenching-lug.

5. In a horseshoe, in combination with the metal body or plate, a toe-guard, 9, having a tang, 9*, and a clenching-lug, 9*, the plate having at the forward side a notch extending across its entire thickness adapted to receive the tang from below and having a recess in the upper surface to seat the clenching-lug, the lug having a terminal turned inward at right angles and the recess having a pocket at the inner end to receive such inturned terminal when the lug is folded into the recess.

811,620. BOBBIN-HOLDING MEANS FOR LOOM-SHUTTLES. ROBERT L. CUSHOCK, Anderson, S. C. Filed Jan. 3, 1903. Serial No. 137,004.

Claim.—1. In combination, a shuttle having rigid bobbin-holding surfaces and a bobbin having yielding rings for engaging said rigid surfaces, substantially as described.

2. In combination, a shuttle having opposing corrugated rigid bobbin-holding surfaces, a bobbin having rings for engaging said corrugated surfaces, and an elastic sleeve between the rings and bobbin, substantially as described.

811,621. AUTOMATIC PAPER-PERFORATING MACHINE. HERBERT L. DAVIS, Washington, D. C. Filed May 9, 1903. Serial No. 156,303.

Claim.—1. In a perforating-machine, the combination of a relatively movable plunger and die-block, a plurality of punches slidably mounted in said plunger, punch-locking devices carried by said plunger and held normally in inoperative position, and electrically-operated means controlled by a pattern-sheet, normally disengaged from said locking devices, to move said devices into position to lock said punches to said plunger in predetermined sequence, substantially as set forth.

2. In a perforating-machine, the combination of a relatively movable die-block and plunger, a plurality of punches slidably mounted in said plunger, a punch-locking dog for each punch normally held in inoperative position, means normally disengaged from said locking-dogs to move the latter into position to lock said punches to the plunger, and means controlled from a pattern to actuate said engaging means, substantially as described.

3. In a perforating-machine, the combination of a relatively movable plunger and die, a plurality of punches slidably mounted in said plunger, a locking-dog for each punch normally held in inoperative position, a reciprocatory catch for each dog normally held out of engagement therewith, means to cause the catches and dogs to engage, and automatic means to control the sequence of said engagements.

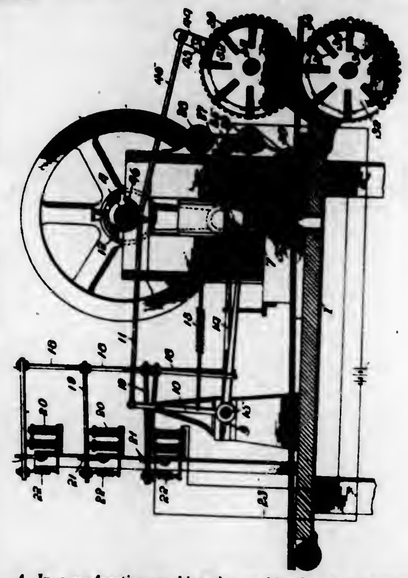

4. In a perforating-machine the combination of a relatively movable plunger and die, a plurality of punches slidably mounted in said plunger, an independent locking-dog for each punch having a recess therein normally held in line axially with the punch, means to move each of said dogs into position to lock the corresponding punch to the plunger, said means comprising a reciprocatory member, a series of catches pivoted thereto one for each dog, the ends of said catches passing adjacent to the ends of said dogs but normally held out of engagement therewith, and means to cause said catches to engage the corresponding dogs in predetermined sequence.

5. In a perforating-machine, the combination of a relatively movable plunger and die, a plurality of punches slidably mounted in said plunger, an independent locking-dog for each punch normally held in inoperative position, a reciprocatory member carrying a series of pivoted catches, means to reciprocate said member back and forth once for every up-and-down stroke of the plunger, the ends of said catches being adapted to engage the ends of said locking-dogs but normally held out of engagement therewith, supporting-rods carrying said catches, levers attached to said rods and means to actuate said levers in predetermined sequence to cause said catches to engage said dogs and the latter to be moved into operative position to lock the punches to the plunger.

6. In a perforating-machine, the combination of a relatively movable plunger and die, a plurality of punches slidably mounted in said plunger, independent locking-dogs mounted to slide transversely in said plunger adjacent to the ends of said punches, said dogs having recesses normally maintained in alinement with said punches, and means to move said dogs to lock said punches to said plunger, said means comprising a member carrying a plurality of hooked catches, means to reciprocate said member in a direction substantially transverse to the movement of the plunger, the hooked ends of said catches passing adjacent to the ends of the locking-dogs, means to normally maintain said ends out of engagement with the locking-dogs, and means to place said ends in position to engage said dogs during the reciprocation of said member whereby said dogs will lock the punches to the plunger, said last-mentioned means being automatically controlled by pattern mechanism.

7. In a perforating-machine, the combination of a relatively movable plunger and die, a series of punches axially movable in said plunger, independent locking means for said punches, a vibratory member carrying devices adapted to engage and operate said locking means, means to reciprocate said member, means to normally hold said devices and locking means disengaged, a series of electro-

magnets, and connections from the armatures thereof to said devices, and pattern mechanism arranged to control the circuits of said electromagnets.

8. In a perforating-machine, the combination of a relatively movable plunger and die, a series of punches axially movable in said plunger, locking-dogs for said punches transversely mounted to slide in said plunger, springs to normally maintain said dogs in inoperative position, a sliding member carrying a series of draw-bars adapted to engage and operate said locking-dogs, means to reciprocate said member, a series of electromagnets having pivoted armatures connected to said draw-bars, springs to normally maintain said armatures and draw-bars in inoperative position, means to close and open the circuits of said electromagnets comprising a contact-cylinder and a series of contact-fingers and means to feed a stencil or pattern sheet between said cylinder and fingers.

9. In a perforating-machine, the combination with a reciprocatory plunger carrying a plurality of punches capable of movement relative thereto, and a lock for each punch to hold it against movement, of actuating devices to place the locks in locking position with relation to the punches said devices being normally out of engagement with said locks, and pattern-controlled means to bring the actuating devices into engagement with their respective locks.

10. In a perforating-machine, the combination with a reciprocatory plunger carrying a plurality of punches capable of movement relative thereto and a lock for each punch to hold it against movement, of actuating devices to place the locks in locking position with relation to the punches said devices being normally out of engagement with the locks, and reciprocable toward and away from the latter, means to reciprocate said devices, and pattern-controlled means to place said devices in engagement with the locks during movement toward the same.

11. In a perforating-machine, the combination with a reciprocating plunger carrying a plurality of punches having movement relative thereto, and locks to lock the punches against movement, of actuating devices for the locks normally out of engagement therewith and having movement toward and away from said locks, and electrically-operated means controlled by a pattern-sheet to throw said devices into engagement with the locks during movement of said devices in one direction and to retain the said devices engaged with the locks during the reverse movement of said devices whereby the locks are actuated to lock the punches to the plunger.

12. In a perforating-machine, the combination with a reciprocating plunger carrying a plurality of punches having movement relative thereto, and locks to lock the punches against movement, of actuating devices for said locks normally disengaged therefrom, electrically-operated means controlled by a pattern-sheet to throw said devices into engagement with the locks to actuate the latter to lock the punches, and means to return the locks to normal position when out of operative relation to the actuating devices.

13. In a perforating-machine, the combination with a reciprocating plunger carrying a plurality of punches having movement relative thereto, and locks to lock the punches against movement, of actuating devices for the locks normally out of engagement therewith and having movement toward and away from said locks, electrically-operated means controlled by a pattern-sheet to throw said devices into engagement with the locks during movement of said devices in one direction and to retain the parts engaged during the reverse movement of said devices whereby the locks are actuated to lock the punches to the plunger, and means to return the locks to normal position when out of operative relation to the actuating devices.

14. In a perforating-machine, the combination with a reciprocating plunger carrying a plurality of punches having movement relative thereto, and locks to lock the punches against movement, of actuating devices for the locks normally out of engagement therewith and having continuous movement toward and away from said locks, and means to throw said devices into engagement with the locks during movement of said devices in one direction and to retain said devices engaged with the locks during the reverse movement of said devices whereby the locks are actuated to lock the punches to the plunger.

15. In a perforating-machine, the combination with a reciprocating plunger carrying a plurality of punches having movement relative thereto, and locks to lock the punches against movement, of actuating devices for the locks normally out of engagement therewith and having movement toward and away from said locks, and pattern-controlled electrically-operated means controlled by a pattern-sheet to throw said devices into engagement with the locks during movement of said devices in one direction and to retain said devices engaged with the locks during the reverse movement of said devices whereby the locks are actuated to lock the punches to the plunger.

811,622. AIR-CUSHION FOR VEHICLES. MURILLO DOWNER, Chicago, Ill. Filed May 7, 1904. Serial No. 206,842.

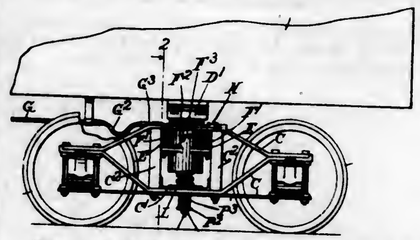

Claim.—1. In an air-cushioning device for vehicles an air-cushion to normally carry the load and a spring within such cushion adapted to provide an elastic support for the vehicle when the pressure of air is diminished in the cushion.

2. An air-cushion for vehicles comprising a cylinder and a plunger in combination with a spring normally in engagement with but one of the parts of such cushion, and adapted to engage with the other so as to support the vehicle when the air-pressure in the cylinder is diminished.

3. In an air-cushion for vehicles the combination of a cylinder, a plunger therein, a spring upon the plunger normally out of engagement with the end of the cylinder and adapted to be brought into engagement therewith when the pressure of air in the cylinder is diminished

4. An air-cushioning device for vehicles adapted to be interposed between the body of the vehicle and its running-gear, comprising an air-cylinder associated with one of such parts of the vehicle, a plunger in such cylinder such plunger and cylinder adapted to coact to normally carry the load and a flexible connection between the plunger and the other of such parts.

5. In an air-cushion for vehicles the combination of an air-cylinder, a plunger in such cylinder, a spring on each side of such plunger, the one within the air-chamber normally not under tension, the one on the other side of the plunger being adapted to form a connection between the plunger and one of the parts of the vehicle to be cushioned.

6. In an air-cushion for vehicles the combination of a floating bolster, a cylinder on such bolster having a removable cap and adapted to form a support for the vehicle-body, a plunger in the cylinder and a connection between the plunger and the running-gear of the vehicle.

7. In an air-cushion for vehicles the combination of a floating bolster, a cylinder on such bolster having a removable cap and adapted to form a support for the vehicle-body, a plunger in the cylinder, and an elastic support between the plunger and the running-gear of the vehicle.

8. In an air-cushion for vehicles the combination of a floating bolster, a cylinder on such bolster, a bearing-plate on the cylinder adapted to provide a sliding bearing for the vehicle-body, a plunger in such cylinder, and a flexible support interposed between the plunger and the running-gear of the vehicle.

9. In an air-cushion for vehicles the combination of a floating bolster, a cylinder on such bolster, a bearing-plate on the cylinder adapted to provide a sliding bearing for the vehicle-body, a plunger in such cylinder, a flexible support interposed between the plunger and the running-gear of the vehicle, and a device adapted to limit the upward travel of the floating bolster.

10. In an air-cushioning device for vehicles the combination of a floating bolster, an air-cushion interposed between such bolster and the running-gear of the vehicle, and a device for limiting the upward travel of the bolster comprising a bolt and an elastic device thereon adapted to be put under tension when the bolster is raised.

11. In an air-cushioning device for vehicles the combination of a floating bolster with a cylinder at each end, sliding bearings for the vehicle-body on such cylinders, plungers in the cylinders, and flexible connections between the plungers and the running-gear of the vehicle.

12. In an air-cushioning device for vehicles the combination of a floating bolster with a cylinder at each end, sliding bearings for the vehicle-body on such cylinders, plungers in the cylinders, flexible

connections between the plungers and the running-gear of the vehicle, and a support for the vehicle-body centrally of the bolster.

type-channels, of a bar located opposite the discharge end of the

blade on the carriage, and a key-lever connected to the blade and

rings being adapted to carry the type-holder into operative position

connections between the plungers and the running-gear of the vehicle, and a support for the vehicle-body centrally of the bolster.

13. In a cushion device for vehicles, the combination of an air-cushion to normally carry the load, with an auxiliary spring adapted to provide an elastic support when the pressure of air is diminished in the cushion.

811,623. **TYPE-SETTING MACHINE.** JOSEPH S. DUNCAN, Chicago, Ill., assignor to Addressograph Company, Chicago, Ill., a Corporation of Illinois. Filed May 28, 1904. Serial No. 209,266.

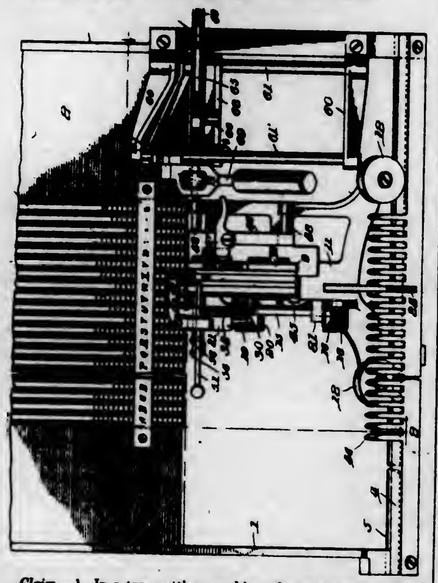

Claim.—1. In a type-setting machine, the combination with a series of type-channels, of a carriage adapted to travel adjacent to said channels, a type-holder on the carriage, setting means carried by the carriage for moving type from the channels into the holder, a key-lever for operating said setting means and forming a handle for moving said carriage, and means for locking the key-lever and through the key-lever locking the carriage during the setting operation.

2. In a type-setting machine, the combination with a series of type-channels, of a carriage, a type-holder on the carriage, setting means on the carriage for moving type from the channels into the holder, means for locking the carriage, and a lever adapted to be operated first to move the carriage into operative relation to a type-channel and then to engage the locking means to lock the carriage and operate the setting means.

3. In a type-setting machine, the combination with a series of type-channels, of a carriage, a type-holder on the carriage, setting means for moving type from the channels into the holder, a bar provided with teeth, and a lever for operating the setting means adapted to be engaged with said toothed bar to lock the carriage during the setting operation.

4. In a type-setting machine, the combination with a series of type-channels, of a carriage, a type-holder on the carriage, setting means for moving type from the channels into the holder, a bar provided with teeth forming sockets therebetween corresponding in relation to the type-channels, and a lever for operating the setting means adapted to enter one of said sockets to lock the carriage during the setting operation.

5. In a type-setting machine, the combination with a series of type-channels, of a bar located opposite the discharge end of the channels and having sockets corresponding in relation to the type-channels, a movable carriage arranged to travel between the type-channels and said bar, a type-holder on said carriage, setting means on the carriage for moving type from the channels into the holder, and a lever arranged to enter one of said sockets to lock the carriage during the setting operation.

6. In a type-setting machine, the combination with a series of type-channels, of a bar located opposite the discharge end of the channels and provided with teeth forming sockets in parallelism with the type-channels, a movable carriage arranged to travel between the type-channels and said bar, a type-holder on the carriage, a setter device on the carriage for moving type from the channels into the holder, and a lever connected to said carriage and setter for moving the carriage and then operating the setter and adapted to enter one of said sockets to lock the carriage during the setting operation.

7. In a type-setting machine, the combination with a series of type-channels, of a carriage, a type-holder on the carriage provided with one or more type-grooves, and setting means arranged to first move into one of the type-channels and then move the first type in said channel into a type-groove.

8. In a type-setting machine, the combination with a series of type-channels, of a type-holder, a carriage, a setter-blade on the carriage and means for operating said blade to first enter a channel between the first and second type therein and then move the first type from the channel into the holder.

9. In a type-setting machine, the combination with a series of type-channels, of a type-holder, a setter device moving in a rectangular orbit for moving the type from a channel into the holder, and means for operating said setter.

10. In a type-setting machine, the combination with a series of type-channels, of a carriage, a type-holder on the carriage, a setter device, an arm on the carriage carrying said setter, and means for operating said arm to cause said setter to travel in a rectangular orbit and move the type from a channel into the holder.

11. In a type-setting machine, the combination with a series of type-channels, of a carriage, a holder on the carriage, a setter device, means for moving said setter in an angular orbit to enter and move a type from a channel into the holder, and guiding means for the setter.

12. In a type-setting machine, the combination with a series of type-channels, of a carriage, a type-holder on the carriage, a setter device, an arm on the carriage carrying said setter, means for operating said arm, and guiding means for the arm to cause the setter to travel in a rectangular orbit and move the type from the channel into the holder.

13. In a type-setting machine, the combination with a series of type-channels, of a carriage, a type-holder on the carriage, a setter, an arm on the carriage carrying said setter, a key-lever for operating said setter-arm, a guide-lug on the carriage, and a lug on the setter-arm guided on said guide-lug to guide the setter-arm and setter.

14. In a type-setting machine, the combination with a series of type-channels, of a carriage, a type-holder, a setter device for moving type from the channels into the holder, and means for operating said setter comprising an arm carrying the setter, a key-lever, and a toggle connection between the setter-arm and key-lever.

15. In a type-setting machine, the combination with a series of type-channels, of a carriage, a type-holder on the carriage, a setter device, an arm on the carriage carrying said setter device, a key-lever, and an arm on the key-lever for engaging the setter-arm to cause the setter to move type from the channels into the holder.

16. In a type-setting machine, the combination with a series of type-channels, of a carriage, a type-holder on the carriage, a setter device, an arm on the carriage carrying said setter, a key-lever, a toggle connection between the setter-arm and the key-lever to cause the setter to move into a type-channel, and an arm on the key-lever to move the setter-arm and cause the setter to move the type from the channels into the holder.

17. In a type-setting machine, the combination with a series of type-channels, of a carriage, a type-holder, a setter device for moving type from the channels into the holder, an arm carrying said setter, a key-lever, a socket pivoted on the setter-arm, an arm 28 pivoted on the carriage, a roller on said arm 28 working in said socket-arm, a link connecting the key-lever with the arm 28, and an arm 37 to engage the setter-arm.

18. In a type-setting machine, the combination with a series of type-channels, of a type-holder, a setter device for moving the type from the channels into the holder, means for holding the type in the channels, and means for moving said holding means from the channel in which the setter is operated.

19. In a type-setting machine, the combination with a series of type-channels, of a type-holder, a setter device for moving type from the channels into the holder, an arm carrying said setter, a spring-arm on the machine for closing the discharge end of each channel, and means on the setter-arm for moving said spring-arm away from the channel when the setter moves therein.

20. In a type-setting machine, the combination with a series of type-channels, of a carriage, a type-holder on the carriage, a setter-blade on the carriage, and a key-lever connected to the blade and adapted to be depressed to cause the setter-blade to first enter a type-channel and then move the type into the holder.

21. In a type-setting machine, the combination with a series of type-channels, of a carriage, a type-holder on the carriage provided with one or more type-grooves, a setter device carried by the carriage for moving type from the channels into the holder, and means for adjusting the type-holder relative to said setter device.

22. In a type-setting machine, the combination with a series of type-channels, of a carriage, a type-holder on the carriage, a setter-blade on the carriage, means for adjusting the holder relative to said blade, and means for operating said blade to move type from the channels into the holder.

23. In a type-setting machine, the combination with a series of type-channels, of a carriage, a type-holder, a movable frame on the carriage carrying said type-holder, a setter device for moving type from the channels into the holder, and means for adjusting said frame on the carriage relative to said setter.

24. In a type-setting machine, the combination with a series of type-channels, of a carriage, a movable frame on the carriage, a type-holder carried by said frame, a setter device for moving type from the channels into said holder, and feed-dogs for adjusting said frame and holder on the carriage relative to the setter.

25. In a type-setting machine, the combination with a series of type-channels, of a carriage, a movable frame on the carriage, a type-holder carried by said frame, a setter device for moving type from the channels into said holder, a spring-actuated dog 53, and a lever 51 carrying a feed-dog and adapted to be operated to operate the feed-dog 53 to adjust the holder relative to the setter.

26. In a type-setting machine, the combination of a holder provided with a type-groove open at the top, and slug-setting means comprising a driver operating at a right angle to the groove to set a slug into the groove through its top.

27. In a type-setting machine, the combination of a holder provided with a type-groove open at the top, and slug-setting means comprising a driver arranged to operate above the top of a slug to set the slug into said groove through the top thereof.

28. In a type-setting machine, the combination of a holder provided with a type-groove open at the top, and slug-setting means movable lengthwise of the groove for setting slugs therein at any point along the groove.

29. In a type-setting machine, the combination of a holder provided with a type-groove open at the top, and slug-setting means arranged to operate above the holder and movable lengthwise of the groove for setting slugs into the groove through its top and at any point along the groove.

30. In a type-setting machine, the combination of a holder provided with a type-groove open at the top, a slug having its base wider than the open top of the groove, and means for setting said slug in the groove.

31. In a type-setting machine, the combination of a holder provided with a type-groove open at the top, a slug having its base wider than the open top of the groove, and means for setting said slug in the groove through the top thereof and at any point along the groove.

32. In a type-setting machine, the combination with means for setting type in a holder, of means for setting slugs capable of being compressed, said means comprising a contracted discharge, and a driver for moving the slugs through the discharge into the holder.

33. In a type-setting machine, the combination with means for setting type in a holder, of means for setting compressible slugs in the holder comprising a slug-channel, having a contracted discharge, means for moving said discharge into engagement with the holder, and a driver for moving the first slug in the channel through the discharge into the holder.

34. In a type-setting machine, the combination with means for setting type in a holder, of means for setting slugs in the holder comprising a discharge arranged to engage the holder and enter the type-groove therein, a driver, and means for operating said driver to force a slug through the discharge into the type-groove.

35. In a type-setting machine, the combination with means for setting type in a holder, of slug-setting means comprising a slug-supply, a discharge, means for adjusting the discharge relative to the holder, and means for moving a slug from the supply into the holder.

36. In a type-setting machine, the combination with means for setting type in a holder, of slug-setting means comprising a slug-supply, a discharge, a flexible frame carrying the discharge, means for moving said discharge into engagement with the holder and a driver for moving a slug through the discharge into the holder.

37. In a type-setting machine, the combination with a movable carriage, of a type-holder carried thereby, and a slug-setter, said carriage being adapted to carry the type-holder into operative position with relation to the slug-setter and said slug-setter being movable at right angles to the direction of movement of the carriage.

38. In a type-setting machine, the combination with a type-holder, of a slug-setter comprising a discharge, a driver, a lever connected to said discharge and driver and adapted to move the discharge into engagement with the holder and then operate the driver to move a slug into the holder.

39. In a type-setting machine, the combination with a type-channel, of a type-holder having a type-groove, setting means for moving the first type from the channel into the groove, and means operated by the setting means to bear against the face of the second type to hold the remaining type in place in the channel while the first type is being moved from the channel into the type-groove.

40. In a type-setting machine, the combination with a type-channel, of a type-holder having a type-groove, setting means for moving type from the channel into the groove, a spring-arm, and an arm operated by the setting means for pressing the spring-arm against the face of the second type to hold the remaining type in the channel while the first type is being moved from the channel into the groove.

811,624. **DRAFT-FORCING MECHANISM.** JULES J. DURAGE, Duluth, Minn. Filed Mar. 31, 1904. Serial No. 201,010.

Claim.—1. In draft-forcing mechanism the combination with a locomotive-engine, of a casing positioned in the boiler extension-front thereof; a fan-driving engine mounted in said casing, a housing mounted on the forward end of said casing, a rotary fan mounted in said housing and geared to said engine, air inlet and exhaust ports in said housing, said exhaust-ports communicating exterior to the jacket of the boiler with the ash-pan and fire-box of said locomotive, means for automatically and arbitrarily governing the speed of said fan-driving engine, substantially as described.

2. In draft-forcing mechanism, the combination with a boiler, fire-box and ash-pan, of a fan-housing provided with feed and exhaust ports, a rotary fan mounted in said fan-housing, an engine provided with suitable feed and exhaust ports and connected to said fan for revolving the same, a steam-conducting conduit extending from said boiler into said engine, a valve interposed in said steam-conducting conduit and adapted to govern the admission of steam to said engine and comprising a steam-conduit provided with two valve-gates adapted either simultaneously or singly to govern the passage of steam through said conduit, one of said gates being adapted in closed position to entirely close said conduit and the other of said gates in closed position being adapted only to reduce the capacity of said conduit, means for operating the first said gate arbitrarily, means for operating the second said gate automatically, and air-conducting conduits connecting the exhaust-ports of said fan-housing with said ash-pan, substantially as described.

3. In a draft-forcing mechanism, the combination with a locomotive of an engine-housing positioned in the extension-front of the locomotive, an engine positioned in said housing, a steam-conducting conduit extending from the boiler into said engine, a valve interposed in said conduit and provided with two gates adapted either simultaneously or singly to reduce the capacity of said conduit and one of said gates being further adapted to entirely close said conduit, governing means connecting the other one of said gates with the reverse-lever of said locomotive and adapted to be operated by said reverse-lever when said lever is at any position off the center, governing means extending from the first said valve to the cab of said engine and adapted to be arbitrarily operated independently of said reverse-lever, a pressure-reducing valve interposed in said conduit between the boiler and said valve, a fan-housing secured to said engine-housing and provided with an inlet and exhaust ports, a rotary fan mounted in said fan-housing and connected to said engine, and air-conducting conduits communicating with the exhaust-ports of said fan-housing and with the ash-pan chamber of said locomotive, substantially as described.

811,625. **INSTRUMENT FOR GRAPHICALLY SOLVING SPHERICAL TRIANGLES ON A PLANE SURFACE.** HERBERT H.

811,626. **STEAM-BOILER FURNACE.** BYRON B. ELDRED, Bronx-

products of combustion to elongate and inflate the flame, a boiler, | track to be engaged by a passing train, and intermediate connections

811,625. **INSTRUMENT FOR GRAPHICALLY SOLVING SPHERICAL TRIANGLES ON A PLANE SURFACE.** HERBERT H. BENSOME, Longueville, near Sydney, New South Wales, Australia. Filed June 15, 1905. Serial No. 265,579.

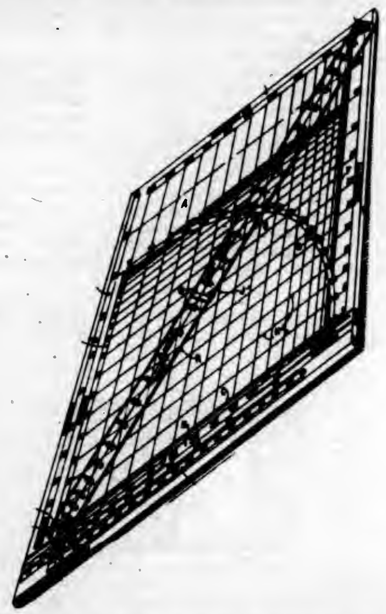

Claim.—1. An improved instrument for graphically solving spherical triangles on a plane surface consisting essentially of a rectangular plane surface on which are inscribed a graduated quadrant and various trigonometric and other scales in relation to said quadrant a slide on the slide-rule principle having thereon a scale of cosines and a scale of tangents in relation to said graduated quadrant and covering up the numbering of a scale of sines also in relation to said graduated quadrant a center-pin on said plane surface at the center of the graduated quadrant and a removable transparent radius bar or bars having centers adapted to take on the center-pin of the plane surface and having thereon scales of sines and cosines in relation to said center and the graduated quadrant of the plane surface substantially as herein described and explained.

2. An improved instrument for graphically solving spherical triangles on a plane surface consisting essentially of a rectangular plane surface on which are inscribed a graduated quadrant and various trigonometric and other scales in relation to said quadrant a slide on the slide-rule principle having thereon a scale of cosines and a scale of tangents in relation to said graduated quadrant and covering up the numbering of a scale of sines also in relation to said graduated quadrant a center-pin on said plane surface at the center of the graduated quadrant and a removable transparent radius-bar having two centers each adapted to take on the center-pin of the graduated quadrant of the plane surface and having scales of sines and cosines in relation to one such center (red) and having a scale of versines in relation to other said center (blue) which latter center is distant from the former the radius length of the graduated quadrant of the plane surface substantially as herein described and explained.

3. An improved instrument for graphically solving spherical triangles on a plane surface consisting essentially of a rectangular plane surface on which are inscribed a graduated quadrant and various trigonometrical and other scales in relation to said quadrant a slide on the slide-rule principle having thereon a scale of cosines and a scale of tangents in relation to said graduated quadrant and covering up the numbering of a scale of sines also in relation to said graduated quadrant a center-pin on said plane surface at the center of the graduated quadrant and removable transparent radius bar or bars having scales as set forth inscribed thereon substantially as herein described and explained.

811,626. **STEAM-BOILER FURNACE.** BYRON E. ELDRED, Brooklyn, N. Y., assignor to Combustion Utilities Company, New York, N. Y., a Corporation of New York. Filed Nov. 18, 1904. Serial No. 233,341.

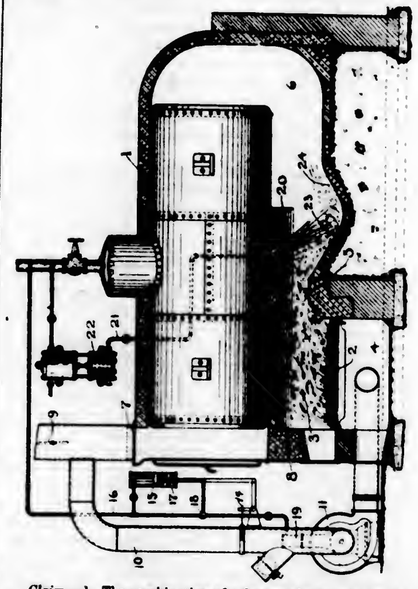

Claim.—1. The combination of a furnace for burning fuel having a seat of combustion, means to pass through said seat a fixed gaseous diluent which will elongate and inflate the flame and retard its combustion, a steam-boiler within radiative reach of the flame, and means for carrying the elongated flame out of substantial contact with the boiler-surfaces during its incipiency.

2. The combination of a furnace having a refractory roofed combustion-chamber, means to produce a long slow-burning flame therein inflated with waste stack-gases passed through the seat of combustion, and a steam-boiler within radiative reach of the flame.

3. The combination of a furnace having a seat of combustion, a draft-chamber anterior thereto and supplying draft through the seat of combustion, and a waste-gas outlet, a return-conduit connecting said outlet with said draft-chamber and having a mechanical draft-accelerator, means to supply air to said draft-chamber, a steam-boiler located over said seat of combustion and heated by the furnace flame and gases, and a refractory wall roofing the furnace between said seat and the boiler for separating the flame from the boiler.

4. The combination of a furnace having a seat of combustion, means to pass products of combustion through the fuel-seat to elongate the flame, a steam-boiler within reach of the elongated flame, one or more jet-outlets in the roof of the combustion-chamber so directed as to blow the flame away from the boiler-surfaces at a point remote from the fuel-seat, and means to force a gaseous pressure fluid through said jet-outlets.

5. The combination of a furnace having a grate, a combustion-chamber and an ash-pit, means to supply an artificially-accelerated draft-current of air and stack-gases to said ash-pit, a refractory wall roofing said combustion-chamber, a steam-boiler, one or more jet-outlets located in the upper part of the combustion-chamber between the grate and the heating-surfaces of the boiler and so directed as to carry the flame away from the boiler, and means to supply air to said jet-outlets.

6. The combination of a furnace having a seat of combustion, means to supply to said seat a forced-draft current of air and diluent products of combustion to elongate and inflate the flame, a boiler, and a flame-channel included in the furnace and having a refractory surface in heat-radiating relation to the boiler and provisions whereby the flame is carried away from the boiler into contact with said surface.

7. The combination of a furnace having a seat of combustion, means to supply to said seat a forced-draft current of air and diluent products of combustion to elongate and inflate the flame, a boiler, and a flame-channel included in the furnace and having a refractory surface in heat-radiating relation to the boiler and one or more air-jet outlets on the boiler side of said channel directed toward said surface.

8. The combination of a steam-boiler, a furnace having a seat of combustion and a flame-channel roofed with refractory material between said fuel-seat and the heating-surfaces of the boiler, means to supply products of combustion and air through said fuel-seat to produce an elongated slow-burning flame, and means to locally agitate the flame substantially at the beginning of said heating-surfaces.

9. In a steam-boiler furnace the combination of a boiler, a fire-box therefor, means to supply air and a neutral diluent to the fire in such manner as to elongate the flame, means to substantially complete the combustion of the elongated flame at a definite or predetermined point remote from the fire-box and in radiative relation to the boiler, and means to maintain the flame in a surrounding reverberative influence anterior to said point and out of substantial contact with the boiler.

10. In a steam-boiler furnace the combination of a boiler, a fire-box therefor having a seat of combustion, means to supply air and products of combustion through said seat, a refractory roofed chamber between the fire-box and the flues of the boiler, and means to supply an intercepting jet of air to the flame issuing from said chamber.

11. The combination of a boiler, a furnace having a seat of combustion, means to supply air and products of combustion through said fuel-seat, a refractory roofed flame-channel between said seat and the heating-surfaces of the boiler, and refractory surfaces heated by the flame and located beyond said channel in heat-radiating relation to the boiler.

12. In a steam-boiler furnace, a boiler, a seat of combustion, means to produce a long voluminous, slow-burning flame by inflation with waste stack-gases passed through the burning fuel and means to keep the long flame from contact with the relatively cold boiler-surfaces while combustion is incomplete, combined with refractory reverberative surfaces in radiating relation with the vaporizing-chamber of the boiler, heated by the flame and serving to maintain its ignition.

13. The combination of a horizontal return tubular boiler having a gas outlet or flue at its forward end, a fire-box under the forward part of the boiler having a seat of combustion, flame and gas passages extending rearwardly from the fire-box and forwardly through the boiler to the gas-outlet, a refractory wall roofing the fire-box between it and the forward part of the boiler, and means to pass products of combustion and air in predetermined proportion through said seat to elongate the flame.

14. The combination in a boiler-furnace of a support for burning solid fuel, means for supplying and passing through said support a neutral gaseous diluent in such manner as to inflate the flame and cool the fuel-bed, a boiler within heat-radiating reach of the flame, and means to keep the flame from contact with the boiler during its incipiency.

15. In a steam-boiler furnace the combination of a boiler, a fire-box therefor having a seat of combustion, means to pass through said seat a draft-current of air and neutral stack-gases, and means controlled by the steam-pressure for automatically varying the composition of the draft-current.

16. In a steam-boiler furnace the combination with the furnace of means for supplying air and for supplying stack-gases in the draft furnished to the fire, and means controlled by the steam-pressure for concurrently varying the volume and composition of the draft-current.

17. In a steam-boiler furnace, the combination of a boiler, a refractory walled fire-chamber, an inverted reverberatory arch beneath the boiler, means for producing an inflated slow-burning flame in the fire-chamber, air-introducing means for beating said flame down into the arch and completing its combustion, and means for carrying the resultant flame products into heat-radiating relation with the boiler.

811,627. **AUTOMATIC RAILROAD-SWITCH.** ROBERT K. FLOUTER, Lima, Ohio. Filed Apr. 10, 1905. Serial No. 254,651.

Claim.—1. The combination, with the main-line and siding rails; of switch-points adapted to connect one with the other; switch-throwing means consisting of a cranked shaft, connections between the crank thereof and the switch-points, and a separable polygonal connection between the shaft and operating member; a spring for returning the switch-points to normal, a lever arranged adjacent the track to be engaged by a passing train, and intermediate connections between said lever and the shaft for producing axial separation of the polygonal connection between the said shaft and the operating member.

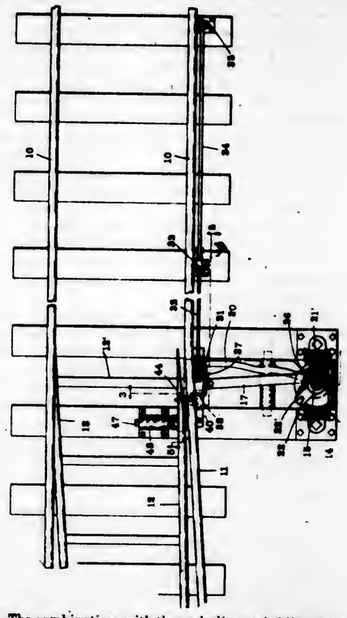

2. The combination, with the main-line and siding rails and the movable switch-points for connecting one with the other, of a switch-stand, a vertical cranked shaft journaled in said switch-stand and axially movable therein, an operating member mounted on the switch-stand, a polygonal axially-separable connection between said operating member and the shaft, a connection between the crank of said shaft and the switch-points, a lever adapted to engage said shaft and shift the same axially, a lever arranged adjacent the track for engagement by a train, and intermediate connections between said lever and the shaft-shifting lever, whereby operation of said last-mentioned lever will shift the switch-stand shaft axially to separate the connection between said shaft and the switch-stand-operating member.

3. The combination, with the main-line and siding rails and the movable switch-points connecting one with the other, of a switch-stand, a vertical cranked shaft journaled in said switch-stand and axially movable therein, an operating member movable on the switch-stand, a polygonal axially-separable connection between said operating member and the shaft, a connection between the crank of said shaft and the switch-points, a lever adapted to engage said shaft and shift the same axially, a lever arranged adjacent the track for engagement by a train, intermediate connections between said lever and the shaft-shifting lever whereby operation of said last-mentioned lever will shift the switch-stand shaft axially to separate the connection between said shaft and the operating member, a catch for normally retaining the spring from action upon the switch-points, and intermediate connections between said catch and the track-lever for automatically withdrawing the catch.

4. The combination, with the main-line and siding rails; of switch-points adapted to connect one with the other; switch-throwing means consisting of a cranked shaft, connections between the crank thereof and the switch-points, and a separable polygonal connection between the shaft and operating member; a spring for returning the switch-points to normal, means for normally preventing the action of said spring upon the automatic operation of the switch-points, a lever arranged adjacent the track to be engaged by a passing train, and intermediate connections between said lever and the shaft for producing axial separation of the polygonal connection between the said shaft and the operating member.

5. The combination, with the main-line and siding rails and the movable switch-points connecting one with the other, of a switch-stand, a vertical cranked shaft journaled in said switch-stand and

axially movable therein, an operating member movable on the switch-stand, a polygonal axially-separable connection between said operating member and the shaft, a connection between the crank of said shaft and the switch-points, a lever adapted to engage said shaft and shift the same axially, a lever arranged adjacent the track for engagement by a train, intermediate connections between said lever and the shaft-shifting lever whereby operation of said last-mentioned lever will shift the switch-stand shaft axially to separate the connection between said shaft and the operating member, a catch for normally retaining the spring from action upon the switch-points, and intermediate separable connections between said catch and the track-lever for automatically withdrawing the catch only when the switch-points are left open.

6. In an automatic switch-throwing apparatus, the combination, with the main-line and siding rails and the movable switch-points connecting one with the other, of an independent spring adapted to urge the switch-points to main-line-closing position, means for normally preventing the action of said spring on said switch-points, and means operated by the passage of a train to withdraw said preventing means only when the switch-points are out of main-line-closing position.

7. In an automatic switch-throwing apparatus, the combination, with the main-line and siding rails and the movable switch-points connecting one with the other, of a switch-stand, means operated by said switch-stand for manually throwing said switch-points from one position to the other, an independent spring for automatically throwing said switch-points to main-line-closing position, a catch arranged to normally prevent said action of said spring, an operating member arranged to withdraw said catch, and means automatically operated by the switch-stand for preventing the action of said operating member on the catch when the switch-points are in main-line position.

8. The combination, with the main-line and siding rails, of switch-points adapted to connect one with the other; switch-throwing means consisting of a cranked shaft, connections between the crank thereof and the switch-points, and a separable polygonal connection between the shaft and operating member; a spring for returning the switch-points to normal, a catch arranged to normally prevent said action of said spring, an operating member arranged to withdraw said catch, and intermediate connections between the switch-stand and said operating member for automatically preventing the action of said operating member on the catch when the switch-points are in main-line position.

9. In an automatic switch-throwing apparatus, the combination, with the main-line and siding rails and the movable switch-points connecting one with the other, of a switch-stand, means operated by said switch-stand for manually throwing said switch-points from one position to the other, a spring for automatically throwing said switch-points to main-line-closing position, a catch arranged to normally prevent said action of said spring, a rock-shaft, intermediate connections between said rock-shaft and said catch, train-operated means for operating said rock-shaft, and switch-stand-operated means for operating said rock-shaft into and out of catch-operating position when the switch-points are thrown out of and into main-line-closing position, respectively.

10. The combination, with the main-line and siding rails, of switch-points adapted to connect one with the other, switch-throwing means consisting of a cranked shaft, connections between the crank thereof and the switch-points, and a separable polygonal connection between the shaft and operating member, a spring for returning the switch-points to normal, a lever arranged adjacent the track to be engaged by a passing train, intermediate connections between said lever and the shaft for producing axial separation of the polygonal connection between the said shaft and the operating member, a catch arranged to normally prevent said action of said spring, a rock-shaft, intermediate connections between said rock-shaft and said catch, and switch-stand-operated means for shifting said rock-shaft into and out of catch-operating position when the switch-points are thrown out of and into main-line-closing position, respectively.

811,628. HAIR-PIN. Charles B. Pomeroy, Warren, Ohio. Filed Aug. 3, 1904. Serial No. 219,262.

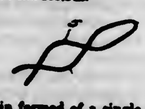

Claim.—A hair-pin formed of a single piece of material comprising arms and a connecting bight portion, the arms each being bent to form a helix of slightly more than one convolution, the axes of the helices diverging slightly as they recede from the said bight portion, and the free ends of the arms being extended in opposite directions.

811,629. COMBINED CURTAIN-POLE AND SHADE-ROLLER SUPPORT. Ernest B. Fenner, Helena, Mont. Filed Mar. 6, 1905. Serial No. 248,627.

Claim.—1. The herein-described device comprising a plate having means for attachment to a window and with one end bent laterally for bearing beneath the window-casing and with a curtain-shade-roller bracket extending laterally from the other end and with a vertical socket between the bracket and plate, and a standard supported in said socket and having means at its free end for supporting a curtain-pole.

2. The herein-described device comprising a plate having means for attachment to a window and with one end bent laterally for bearing beneath the window-casing and with a curtain-roller bracket extending laterally from the other end and a vertical socket between the plate and bracket, and a standard supported in said socket and having means at its free end for supporting a curtain-pole.

3. The herein-described device comprising a plate having means for attachment to a window and with one end bent laterally for bearing beneath the window-casing and with a curtain-roller bracket extending laterally from the other end and a vertical socket between the plate and bracket and with one side open, a standard supported in said socket and provided with means at the free end for supporting a curtain-pole, and a tongue extending from said plate transversely of said socket and bearing upon the standard supported therein.

811,630. BEARING. Charles Glover, New Britain, Conn., assignor to Corbin Screw Corporation, New Britain, Conn., a Corporation of Connecticut. Filed Oct. 10, 1905. Serial No. 282,145.

Claim.—1. A bearing having an outer grooved ring, an inner grooved ring, balls therein, and trough-shaped pieces of sheet metal for separating the balls.

2. A bearing having an outer grooved ring, an inner grooved ring, balls therein, and trough-shaped pieces of sheet metal for separating the balls, having recesses 5 and 6.

3. A bearing comprising an outer grooved ring, an inner grooved ring, a series of balls located between said rings, and a series of sheet-metal separators or spacers located between said balls, the sides of the separators being yielding to permit insertion and removal.

811,631. PIPE-COUPLING. Andrew W. Graham, Bradford, Pa., assignor of one-half to Lewis B. Mallery, Bradford, Pa. Filed Mar. 27, 1905. Serial No. 252,393.

Claim.—1. The combination in a pipe-coupling, of a sleeve having a centrally-enlarged portion and provided with end flanges the inner faces of which form tapering packing-seats, an independent packing-ring for each seat, a follower for each ring, and bolts for compressing the packing between the packing-seat and follower.

2. In a pipe-coupling, a sleeve having end flanges provided with tapered recesses in its outer ends, packing-rings bearing against the inner faces of the flanges, pipe gripping or clamping members arranged in said tapered recesses, and a clamping means engaging both the packing-rings and clamping members.

3. In a pipe-coupling, a sleeve having tapered end recesses, pipe-clamping members therein, a packing-ring, a follower therefor, and clamping-bolts extending through the flange and serving to draw the clamping members and follower toward each other.

4. In a pipe-coupling, a sleeve having an end flange provided with a tapered recess, a split ring seated therein and having peripheral notches, a packing-ring seated against the inner wall of the flange, a follower for said packing-ring and bolts connecting the follower and split ring.

5. A coupling having a plurality of staggered centering-tongues for independently engaging the ends of different pipe-sections

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811,632. PIPE-COUPLING. Andrew W. Graham, Bradford, Pa., assignor of one-half to Lewis B. Mallery, Bradford, Pa. Filed Apr. 18, 1905. Serial No. 256,261.

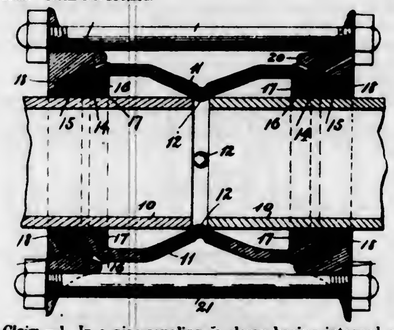

Claim.—1. In a pipe-coupling, a sleeve having inturned end portions, packing-rings in which the ends of the sleeves are embedded and compression means acting against the outer faces of the rings.

2. The combination in a pipe-coupling, of a coupling-sleeve having inturned end portions, and packing members extending between the inner face of the sleeve and the exterior of the pipe-sections, the packing also extending over the ends of the sleeve, and a compression means acting against the outer portion of the packing.

3. In a pipe-coupling, a sleeve having opposite end portions of reduced diameter, and packing members leading over such end portions, said packing members being adapted to be forced into place by the introduction of a pipe-section within the sleeve.

4. In a pipe-coupling, a coupling-sleeve having reduced end portions, a packing-ring having a central annular groove for the reception of the end portion of the sleeve, the inner portions of the ring being forced within the sleeve by the introduction of the pipe thereinto, and a compression means acting against the outer face of the packing-ring.

5. In a pipe-coupling, of a sleeve having reduced end portions, a packing-ring provided with an annular groove in which the end portion of the sleeve is seated, the inner face of the packing-ring being subjected to the pressure of the fluid in the pipe, and a packing clamping-ring engaging the outer face of the packing-ring.

6. In a pipe-coupling, a coupling-sleeve having its central portion provided with projections to be introduced between the adjacent ends of the pipe-sections to be coupled, the opposite ends of the sleeve being reduced in diameter, packing-rings grooved for the reception of the ends of the sleeve, and compression members acting against the outer faces of the rings.

7. In a pipe-coupling, a sleeve having inturned end portions, and packing-rings grooved for the reception of said end portions and disposed both inside and outside of said inturned ends.

8. In a pipe-coupling, the combination with pipe-sections, of a sleeve having enlarged portions to permit flexing of the pipe-line, and duplex packing-rings fitting against the pipe-sections and engaging both the inner and outer faces of the ends of the sleeve, whereby movement of the pipe-section at an angle with respect to the sleeve will compress the inner portion of the packing-ring at one side and the outer portion of the same packing-ring at the opposite side of the sleeve.

811,633. ATTACHMENT FOR PHONOGRAPHS. Lemas T. Groves, South New Berlin, N. Y. Filed Jan. 24, 1906. Serial No. 297,543.

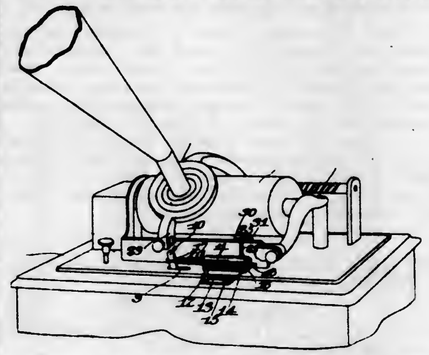

Claim.—1. In a phonograph, the combination with a motor-brake, of a feed-shaft, a sound-box carriage mounted for travel on said shaft, a trip-lever actuated by the sound-box carriage for controlling the brake, and an adjustable impact-pin carried by the trip-lever.

2. In a phonograph, the combination with a motor-brake, of a feed-shaft, a sound-box carriage mounted for travel on said shaft, a weighted trip-lever actuated by the sound-box carriage for controlling the brake, and a threaded impact-pin adjustably mounted on one end of the trip-lever.

3. In a phonograph, the combination with a motor-brake, of a feed-shaft, a sound-box carriage mounted for travel on said shaft, a spring-actuated rod connected to the brake and provided with a locking-notch, and a trip-lever adapted to engage the notch in the rod to hold the same in set position, said lever being actuated by the sound-box to release the rod and operate the brake.

4. In a phonograph, the combination with a motor-brake, of a feed-shaft, a sound-box carriage mounted for travel on said shaft, a spring-actuated rod connected to the brake and provided with a locking-notch, and a pivoted bell-crank trip-lever the short arm of which is weighted and adapted to engage said notch for holding the rod in set position, said lever being actuated by the sound-box carriage to release the rod and operate the brake.

5. In a phonograph, the combination with a motor-brake, of a feed-shaft, a sound-box carriage mounted for travel on said shaft, a spring-actuated rod connected to the brake and provided with a locking-notch, a pivoted bell-crank trip-lever the short arm of which is weighted and adapted to engage said notch for holding the rod in set position, and an adjustable impact-pin carried by the long arm of the lever for engagement with the said box-carriage.

6. In a phonograph, the combination with a motor-brake, of a feed-shaft, a sound-box carriage mounted for travel on said shaft, a casing provided with alined openings, a spring-actuated rod slidably mounted in the openings of the casing and provided at one end thereof with a locking-notch, a bell-crank trip-lever pivoted within the casing and having its short arm weighted and adapted to engage the locking-notch for holding said rod in set position, the long arm of said lever passing through an opening in the top of the casing for engagement with the said box-carriage.

7. In a phonograph, the combination with a motor-brake, of a feed-shaft, a sound-box mounted for travel on said shaft, a casing provided with alined openings, a rod slidably mounted in said openings and provided with a locking-notch, a detachable link engaging the rod and connected to the brake, a plate carried by the rod, a spring interposed between the plate and the casing, a bell-crank trip-lever pivoted within the casing the short arm of which engages the.

notch in the rod for holding the latter in set position, and an adjustable impact-pin carried by the long arm of the lever for engagement with the sound-box carriage.

811,634. BUILDING BLOCK OR WALL. MARTIN HAAS, Kalamazoo township, Kalamazoo county, Mich. Filed Mar. 7, 1904. Serial No. 196,966.

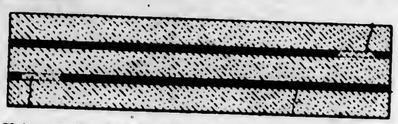

Claim.—1. In a building block or wall, the combination of an artificial stone or concrete body portion; and vertically-arranged sheets of corrugated paper having facings thereon, to form a cellular structure thereof, and having perforations therethrough, embedded in said body, the said perforations being arranged in an alternating manner in relation to each other, for the purpose specified.

2. In a building block or wall, the combination of an artificial stone or concrete body portion; and vertically-arranged sheets of paper having perforations therethrough embedded in said body, the said perforations being arranged in an alternating manner in relation to each other, for the purpose specified.

811,635. OIL-STOVE. WILLIAM P. HARRISON, Cincinnati, Ohio. Filed July 6, 1905. Serial No. 268,427.

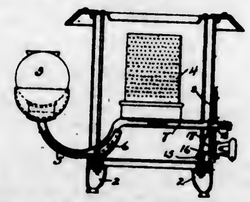

Claim.—In an oil-stove, an oil-reservoir and a burner rigidly connected together, a slotted front wall, with extension from the burner extending through said slot, a hand-wheel and crank with link connecting the crank to the burner extension inside the front wall and spring-bearing between the outer end of said extension and the front wall on the outside to hold the burner in any desired position, substantially as described.

811,636. TARGET. JOHN HIRSOLD, Detroit, Mich. Filed Apr. 10, 1905. Serial No. 254,879.

Claim.—1. In a target mechanism, a pivoted target, in combination with positive locking means operatively associated with the target for retaining the latter in the position in which it is placed by the projectile.

2. In a target mechanism, the combination with a support, of a target pivoted thereon for rocking movement, and locking means operatively associated with the target for retaining the latter in the position in which it is placed when struck by the projectile.

3. In a moving target, the combination with an endless carrier arranged for vertical travel, of a plurality of targets pivoted thereon for rocking movement in parallelism with and in angular relation to the carrier, and an automatic lock for each target for retaining the latter in parallelism with the carrier.

4. In a moving target, the combination with a vertically-traveling carrier, of a plurality of pivoted targets thereon, and a clutch connection between each target and the carrier.

5. In a moving target, the combination with a carrier, of targets supports thereon, shoulders upon said supports, and targets pivoted to the supports, having shoulders adapted to engage the support-shoulders.

6. In a moving target, a carrier comprising links, a pair of uprights on each link having shoulders formed thereon, an image pivoted between each pair of uprights and provided with inclined shoulders, engaging the upright shoulders and a depending finger or arm upon each image adapted to contact with the carrier and limit the movement of the target in one direction.

811,637. OIL-CELLAR FOR JOURNAL-BOXES. JAMES F. HILL, Norwalk, Ohio. Filed Apr. 5, 1904. Serial No. 201,691.

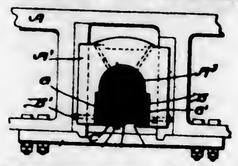

Claim.—1. In combination with an oil-cellar having a longitudinal opening, a plate adapted to cover said opening and transversely slotted, and bolts passing through said slots and adapted to hold the plate in place, the plate being transversely slidable with respect to the oil-cellar.

2. An oil-cellar having a longitudinal opening in the bottom of the same, said opening being arranged at one side of the longitudinal center of the cellar, a plate having transverse slots adjacent the ends and the bolts connecting said plate to the bottom of the cellar, the bottom face of the cellar being recessed to permit the lateral movement of the plate for the purpose of uncovering the longitudinal opening.

3. An oil-cellar having a longitudinal opening in the bottom thereof, said opening being arranged at one side of the longitudinal center, the bosses arranged at the ends of said opening, the side walls of said opening extending upwardly into the cellar and diverging at their upper ends, the plate having transversely-slotted ends and the bolts for connecting said plate to the bottom of the cellar, the bottom face of the cellar being recessed to permit the lateral movement of said plate as set forth.

811,638. SKIRT-SUPPORTER. PAUL W. HOFFMAN, Albany, N. Y. Filed Mar. 5, 1904. Serial No. 196,675.

Claim.—1. A skirt-supporter comprising a frame composed of parallel bars bent to form a narrow opening, an enlarged opening, and a second narrow opening, said three openings communicating, a slide operable on the frame, a plate provided with a shank and a stud, a hinge connection between the plate and the slide, and removable means for preventing the head passing through the enlarged opening.

2. A skirt-supporter comprising a frame formed with a shank-opening and an enlarged shank-head opening, a plate provided with a shank having a head, a slide mounted to operate on the frame, a hinge connection between the slide and the plate, a spring-latch pivoted to the frame adjacent the head-opening, the opposite end of the latch being bent to snap over the frame, to prevent the head passing through the head-opening.

811,639. TURBINE-ENGINE. PIM F. HOLSBERGEN, New York, N. Y. Filed May 26, 1904. Serial No. 209,869.

Claim.—1. In a bucket cycle for turbine-engines, the combination of a pair of rings and intermediate buckets, said buckets connected at the ends with the rings respectively, the said connection consisting of a parallel-sided recess of one part and a correspondingly-formed stud of the other part fitting the recess for securing the buckets from shifting relatively to the rings by centrifugal action, said rings and buckets also bolted together.

2. In a bucket cycle for turbine-engines, the combination of a pair of rings and intermediate buckets, said buckets connected at the ends with the rings respectively, the said connection consisting of a parallel-sided recess of one part and a correspondingly-formed integral stud of the other part for securing the buckets from shifting relatively to the rings by centrifugal action, said rings and buckets also bolted together.

3. In a bucket cycle for turbine-engines, the combination of a pair of rings and intermediate buckets, said buckets connected at the ends with the rings respectively, the said connection consisting of a parallel-sided groove in the rings, and parallel integral studs of the buckets fitting therein to secure the buckets from shifting relatively to the rings by centrifugal action, said buckets and rings also bolted together.

4. In a bucket cycle for turbine-engines, the combination of a pair of rings, and intermediate buckets, said buckets connected at the ends with rings respectively, the said connection consisting of a parallel-sided groove in the rings and parallel integral studs of the buckets fitting therein with filling-blocks in the grooves intermediately of the studs, to secure the buckets from shifting relatively to the rings by centrifugal action, said buckets and rings also bolted together.

811,640. OIL-FEEDING DEVICE. THOMAS J. KEHOE, Fort Wayne, Ind. Filed June 9, 1905. Serial No. 264,367.

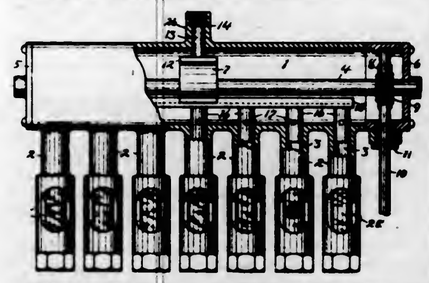

Claim.—1. In mechanism of the class described, a fountain having a series of independent leads communicating with its lower part; a series of plungers working in the leads respectively and each plunger having means in connection therewith for admission of oil from the fountain into the corresponding lead when the plunger is in uppermost position; outlet-valves arranged one in each of the leads, and located therein beneath the corresponding plungers; and mechanism in connection with the plungers to actuate the same.

2. In mechanism of the class described, a fountain having a series of independent leads communicating with its lower part; a series of plungers working in the leads respectively, and each plunger having means in connection therewith for admission of oil from the fountain into the corresponding lead when the plunger is in uppermost position; outlet-valves arranged one in each of the leads beneath the corresponding plungers, each valve being hollow, open at its top, and closed at its lower end, and having an annular shoulder which rests against a seat in the corresponding lead, and having also a port which affords communication for the downward passage of oil within the lead when the valve is moved below its normal position; compression-springs acting one against each of the valves to hold the latter in normal position; and mechanism in connection with the plungers to actuate the same.

3. In mechanism of the class described, a fountain having one or more leads communicating with its lower part; plungers working in the leads respectively, each being hollow, closed at its top, and open at its lower end, and having a side port which affords communication for the passage of oil from the fountain into the corresponding lead when the plunger is in uppermost position; an outlet-valve in each of the leads at points therein below the corresponding plunger; and mechanism in connection with the plungers to actuate the same.

4. In mechanism of the class described, a fountain having independent leads communicating with its lower part each lead having an outlet-valve; plungers working one in each lead, each plunger having means in connection therewith for admission of oil from the fountain into the corresponding lead when the plunger is in uppermost position; a yoke within the fountain, having connection with each plunger, and having also means in connection therewith to guide its movement; and a shaft extending within the fountain and having an eccentric mounted thereon, the latter engaging the yoke to actuate the same.

811,641. TRACTION-ENGINE. ALBERT G. KERN, Battlecreek, Mich., assignor to Nichols and Shepard Co., Battlecreek, Mich. Filed July 27, 1905. Serial No. 271,446.

Claim.—1. A combined platform-frame and draw-bar for traction-engines consisting of an open center frame of channel-iron having the side bars thereof connected to the side sheets of the fire-box and bent to form an integral end cross-bar connecting the side bars, and a spring-cushioned draw-bar connected solely to and carried wholly by said end cross-bar.

2. A combined platform-frame and draw-bar support for traction-engines consisting of an open center frame having side bars the end portions of which are deflected downward and connected to the side sheets of the fire-box, and a connecting-bar, and a draw-bar carried by the connecting-bar of the frame.

3. A combined platform-frame and draw-bar support for traction-engines consisting of an open center frame having side bars connected to the side sheets of the fire-box, and a connecting-bar, a draw head or block carried by the connecting-bar and provided with an arcuate spring-seat, a draw-bar passing through the connecting-bar and said head, and a spring interposed between a shoulder on the draw-bar and said seat.

811,642. HYDRAULIC SHAFT-PACKING FOR TURBINES. JAMES P. KEY, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed July 20, 1904. Serial No. 217,395.

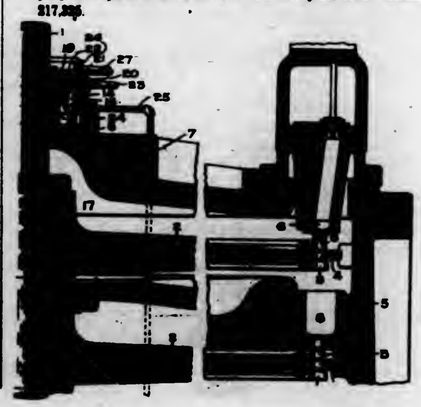

Claim.—1. The combination with a rotatable shaft, of a packing therefor comprising two packing-rings, one of which is rotatable, and means for yieldingly supporting one of them.

2. The combination with a rotatable shaft, of a packing therefor comprising two packing-rings, one stationary and the other rotating with the shaft, and means for causing one to bear with a yielding pressure on the other.

3. The combination with a rotatable shaft, of a packing therefor comprising two packing-rings, and means for rendering one of them yieldingly movable lengthwise of the shaft.

4. The combination with a rotatable shaft, of a packing therefor comprising a stationary packing-ring, a packing-ring bearing against the other and rotating with the shaft, and a support for said rotating ring yielding lengthwise of the shaft.

5. The combination with a rotatable shaft, of a packing-ring movable lengthwise thereon, a collar fixed on the shaft, springs between said collar and ring, and a stationary packing-ring bearing against the movable ring.

6. The combination with a rotatable shaft, of a collar fixed thereon, studs in said collar, a packing-ring movable lengthwise on said shaft and having sockets receiving said studs, springs in said sockets abutting on said studs, and a stationary packing-ring bearing on the movable ring.

7. The combination with a rotatable shaft, of a packing therefor comprising two packing-rings, one of which is rotatable, and means for introducing liquid under pressure between said rings.

8. The combination with a rotatable shaft, of a packing therefor comprising a stationary packing-ring, a rotatable packing-ring cooperating therewith, and a pipe conveying water under pressure to the joint between said rings.

9. The combination with a rotatable shaft, of a packing therefor comprising a stationary packing-ring having a grooved working face, a water-pipe communicating with the groove, and a rotatable packing-ring coöperating with the other.

10. The combination with a rotatable shaft, of a packing therefor comprising a stationary packing-ring having a grooved working face, a water-pipe communicating with the groove, a rotatable packing-ring, and a yielding support therefor on said shaft.

11. The combination with an elastic-fluid turbine, of a casing concentric with the shaft and communicating with the turbine-casing, a packing-ring in said casing having a groove in its working face, a water-pipe communicating with said groove, a rotatable packing-ring on the shaft, and means for draining off the leakage water.

12. The combination with an elastic-fluid turbine, of a casing concentric with the shaft and communicating with the steam-space, a carbon packing-ring in said casing having a groove in its working face, a tubular plug screwed through said casing and into said ring, a yielding packing-ring rotating with the shaft, an internal flange on said casing, and a drain-pipe from said flange.

811,643. ROASTING-FURNACE. FRANK KLEPETKO, New York, N. Y. Filed Nov. 6, 1905. Serial No. 286,043.

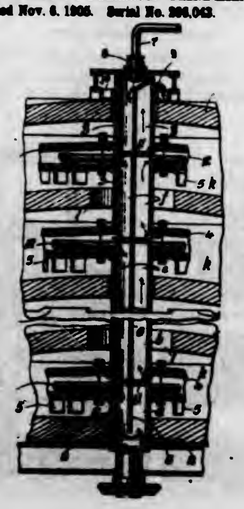

Claim.—1. In a rabble apparatus, a hollow shaft having its passage-way divided into longitudinal intercommunicating conduits and means for circulating a cooling medium therethrough in opposite directions, substantially as set forth.

2. In a rabble apparatus, a hollow rotatable shaft having its passage-way divided into longitudinal intercommunicating conduits and means for circulating a cooling medium therethrough in opposite directions, substantially as set forth.

3. In a rabble apparatus, a hollow rotatable shaft having its passage-way divided into longitudinal conduits and means for establishing communication between the conduits at one end of the shaft, substantially as set forth.

4. In a rabble apparatus, a hollow rotatable shaft having its passage-way divided into longitudinal conduits, means for establishing communication between the conduits at one end of the shaft, and means for circulating a cooling medium through the respective conduits in opposite directions, substantially as set forth.

5. In a rabble apparatus, a hollow shaft having its passage-way divided into longitudinal conduits communicating with one another at one end of the shaft, means for circulating a cooling medium through the respective conduits in opposite directions, and inlet means and outlet means for the circulating medium at one end of the shaft, substantially as set forth.

6. In a rabble apparatus, a hollow rabble-shaft having its passage-way divided into longitudinal conduits communicating with one another at the top of the shaft, means for circulating a cooling medium through the respective conduits in opposite directions, and inlet means and outlet means for the circulating medium at the bottom of the shaft, substantially as set forth.

7. In a rabble apparatus, a hollow shaft having its passage-way divided into longitudinal conduits communicating with one another at one end of the shaft, hollow arms leading from said conduits, means for circulating a cooling medium through the respective conduits and arms in opposite directions, and inlet means and outlet means for the circulating medium at one end of the shaft, substantially as set forth.

8. In a furnace having a plurality of hearths, a hollow rabble-shaft passing through the hearths and having its passage-way divided into contiguous intercommunicating conduits, a series of hollow arms leading from said conduits into the several hearths, a series of chambers distributed throughout each conduit and communicating with the hollow arms, and means for feeding a cooling medium into the conduits and circulating the same through the shaft and arms, substantially as set forth.

9. In a furnace having a plurality of hearths, a hollow rabble-shaft passing through the hearths and having its passage-way divided into contiguous conduits intercommunicating at one end of the shaft, a series of hollow arms leading from said conduits into the several hearths, a series of chambers distributed throughout each conduit and communicating with the hollow arms, and means for feeding a cooling medium into one of the conduits at the end of the shaft opposite to the intercommunicating passage between the conduits, and causing the same to circulate through the conduits and arms, and means for discharging the cooling medium from the shaft at a point adjacent to the inlet for the circulating medium, substantially as set forth.

10. In a furnace having a plurality of hearths, a hollow rabble-shaft passing through the hearths and having its passage-way divided into contiguous intercommunicating conduits, a series of hollow arms radiating from said conduits and extending into the several hearths, a series of chambers separated by transverse partitions distributed throughout each conduit, distributing-pipes leading from the respective chambers and opening into the adjacent arms, and a feed-pipe adapted to discharge a cooling medium into one of the conduits at a point removed from the point of intercommunication between the conduits, substantially as set forth.

11. In a rabble apparatus, a hollow rabble-shaft having its passage-way divided into longitudinal contiguous conduits having intercommunication at one end of the shaft, means for circulating a cooling medium through the conduits and through the intercommunicating passage, and inlet means and outlet means for the circulating medium at one end of the shaft, substantially as set forth.

12. In a rabble apparatus, a hollow rabble-shaft having its passage-way divided into longitudinal contiguous conduits having intercommunication at one end of the shaft, means for circulating a cooling medium through the conduits and through the intercommunicating passage, and inlet means and outlet means for the circulating medium at the end of the shaft opposite to the point of intercommunication between the conduits, substantially as set forth.

811,644. SINGLE-PHASE ALTERNATING-CURRENT MOTOR. BENJAMIN G. LAMME, Pittsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed Feb. 27, 1904. Serial No. 195,694.

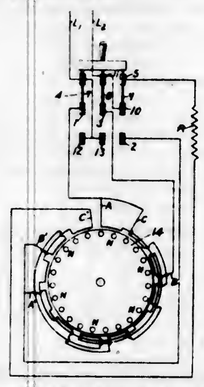

Claim.—1. A single-phase induction-motor having a main primary winding comprising two portions, means for connecting said portions in series for starting and in parallel for running and at the same time changing the number of magnetic poles produced by said winding and an auxiliary winding having a different time constant from that of the main winding.

2. A single-phase induction-motor having a main primary winding comprising two portions, means for connecting said portions in series for starting and in parallel for running and at the same time changing the number of magnetic poles produced by said winding and an auxiliary winding having a different time constant from that of the main winding and adapted to produce the same number of magnetic poles as the main winding under starting conditions.

3. A single-phase induction-motor having a main primary winding comprising two portions, means for connecting said portions in series for starting and in parallel for running and at the same time changing the number of magnetic poles produced by said winding and an auxiliary winding having a different time constant from that of the main winding and connected in parallel therewith for starting and which is adapted to produce the same number of magnetic poles as the main winding under starting conditions.

4. A single-phase induction-motor having a main primary winding comprising two portions, means for connecting said portions in series for starting and in parallel for running, the number of magnetic poles produced by said winding being thereby changed from 2× to X, and an auxiliary winding having a different time constant from that of the main winding and adapted to produce 2× magnetic poles under starting conditions.

5. A single-phase induction-motor having a main primary winding comprising two portions, means for connecting said portions in series for starting and in parallel for running, the number of magnetic poles produced by said winding being thereby changed from 2× to X, and an auxiliary winding having a different time constant from that of the main winding, in parallel with which it is connected for starting, and adapted to induce 2× magnetic poles.

811,645. ELECTRICAL MEASURING INSTRUMENT. EDWIN B. LEIB, Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed Nov. 21, 1903. Serial No. 183,166.

Claim.—1. In an electrical measuring instrument, the combination with an iron core comprising two approximately concentric rings connected together at one side and a stationary winding on a portion of said core, of a movable coil surrounding a portion of said core, means for opposing the movement of said movable coil and means for indicating the degree of said movement.

2. In an electrical measuring instrument, the combination with a laminated iron core comprising two approximately annular portions located the one within the other and an approximately radial portion joining the same, of a stationary winding on one of the annular core portions, a movable coil surrounding said portion, means for opposing the movement of said movable coil and means for indicating the degree of said movement.

3. In an electrical measuring instrument, the combination with a laminated iron core comprising two approximately annular portions located the one within the other and a substantially radial portion joining the same, of a stationary winding on one of the annular portions, a movable coil closed upon itself and comprising one or more turns around said annular portion and adapted for movement about an axis coinciding with the axis of said portion, the plane of the coil being approximately radial to the center of the core, means for opposing the movement of said movable coil and means for indicating the degree of said movement.

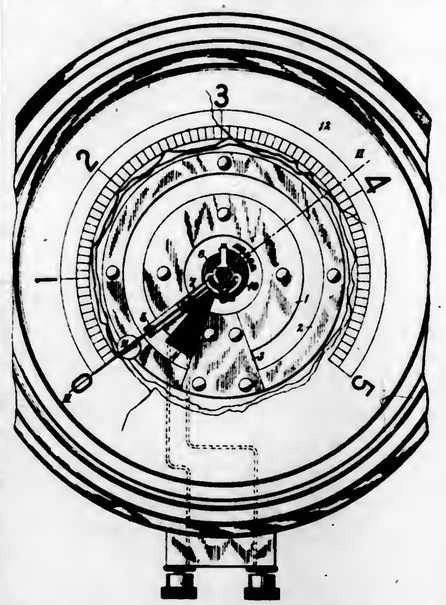

4. An electrical measuring instrument having a laminated iron core composed of two approximately annular portions located the one within the other, joined by means of a substantially radial portion and separated by an air-gap that is non-uniform in such manner and degree that the deflections of the instrument are proportional to the measured currents or voltages.

5. In an electrical measuring instrument, a laminated iron core composed of two approximately annular portions the one within the other and joined by means of a substantially radial portion, the inner portion of said core being of an accurate annular shape and the outer portion being of such shape as to produce a non-uniform air-gap between the two portions in order that the deflections of the instrument may be proportional to the measured currents or voltages.

6. In an electrical measuring instrument, actuating means comprising a stationary coil, an iron core comprising two approximately annular, concentric portions and a movable coil that surrounds one of said portions and the magnetic field of which opposes that of the stationary coil.

7. In an electrical measuring instrument, actuating means comprising a stationary coil, a movable coil and an iron core comprising two approximately annular, concentric portions, the movable coil being repelled from the stationary coil by the opposing effects of their magnetic fields.

8. An electrical measuring instrument comprising a laminated iron core composed of two approximately annular portions, one within the other and joined by means of a substantially radial portion, a stationary winding on a portion of said core and a movable coil surrounding one of said annular portions.

811,646. VEHICLE-WHEEL TIRE. JOHN H. LOUDEN, Philadelphia, Pa. Filed Apr. 15, 1905. Serial No. 255,663.

Claim.—1. In a vehicle-wheel, a supporting-ring, a pair of flanges, and a series of independent transversely-arranged spiral-spring tread units.

2. A vehicle-wheel comprising a hub, spokes, a rim, and a

2. A vehicle-wheel comprising a hub, spokes, a rim, and a series of independently-removable transversely-arranged spiral-spring tread units.

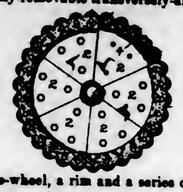

3. In a vehicle-wheel, a rim and a series of independent alternately-reversed transversely-arranged spiral-spring tread units.

811,647. BLOCK-MOLDING MACHINE. ANDREW J. LOVE, St. Louis, Mich. Filed Apr. 17, 1905. Serial No. 255,962.

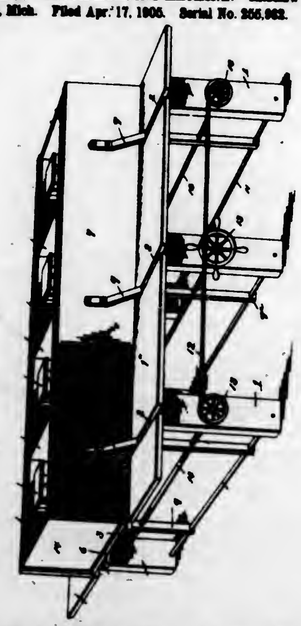

Claim.—1. A molding-machine comprising a bed, a bottom board slidable thereon, a pallet supported on the bottom board and slidable therewith, sides slidable laterally to and from the pallet, and end pieces supported between the sides.

2. A molding-machine comprising a bed, a bottom board slidable thereon, a series of pallets supported on the bottom board and slidable therewith, sides slidable to and from the pallets, and removable partitions and end boards held between the side boards.

3. A molding-machine comprising a bed having crosswise slots, a bottom board slidable lengthwise on the bed, a row of pallets on the bottom board, opposite sides slidable laterally to and from the pallets and having standards extending down through the slots, right and left threaded screws extending across under the bed and engaging the standards to advance or retract the sides, and partitions and end pieces between the sides.

4. In a multiple-block-molding machine, in combination, a bed, a bottom board supported thereon and extending lengthwise thereof, and slidable lengthwise thereon, and constructed to support the blocks and to withdraw the same from between opposite sides of the molds, side boards adjustable laterally on the bed, and mold-sections between the side boards and upon the bottom board.

5. The combination with a mold-bottom, of a hollow core, and sliding pins secured to the side walls of the core and adapted to be pushed down into said bottom to hold the core in place in the mold.

811,648. SHEET-METAL CAN. HENRY MAGARTHY, New York, N. Y., assignor to American Can Company, New York, N. Y., a Corporation of New Jersey. Filed May 31, 1905. Serial No. 263,976.

Claim.—1. In a large-diameter can for containing heavy materials, the combination with a can-body having a wide integral downwardly-projecting fold or ring, and a wide integral upwardly-projecting fold or ring terminating in a roll at its upper edge, the meeting ends of said folds or rings abutting together and being united by solder, and the meeting edges of the can-body blank overlapping each other and soldered together at the side seam of the can-body, of a slip-cover having an integral wide flange tightly fitting between and engaging said integral folds or rings of the can-body, said outer integral fold or ring of the can-body having a roll at its upper edge to facilitate the entrance of the flange of the cover between the same and said inner downwardly-projecting fold whereby the frictional engagement of the cover with the can-body is increased and the upper end or mouth of the can-body stiffened and strengthened and prevented from becoming distorted when the cover is being removed or replaced, substantially as specified.

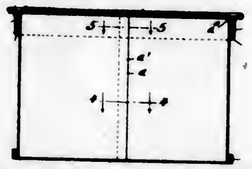

2. In a sheet-metal can, the combination with a can-body having a plurality of external wide folds or integral rings at its upper end, said rings being united and abutting together at their meeting ends, and the meeting edges of the can-body blank overlapping each other and soldered together at the side seam of the can-body, of a cover having an externally-projecting shoulder or bead and a wide slip-cover flange fitting between and engaging said integral folds or rings of the can-body, said outer integral fold or ring of the can-body having a roll at its upper edge, substantially as specified.

3. In a sheet-metal can, the combination with a can-body having a plurality of external wide folds or integral rings at its upper end, said rings being united and abutting together at their meeting ends, and the meeting edges of the can-body blank overlapping each other and soldered together at the side seam of the can-body, of a cover having a wide slip-cover flange fitting between and engaging said integral folds or rings of the can-body, said outer integral fold or ring of the can-body having a roll at its upper edge, said cover having an externally-projecting shoulder or bead and an annular recess forming with said roll of said outer fold or ring of the can-body, a channel to receive a sealing material, substantially as specified.

811,649. SHEET-METAL CAN. ISAAC J. MARCUSE, Richmond, Va., assignor to American Can Company, New York, N. Y., a Corporation of New Jersey. Filed Aug. 28, 1905. Serial No. 276,267.
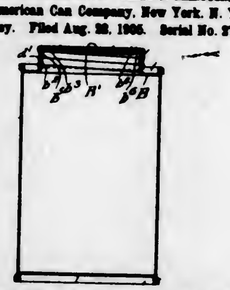
Claim.—1. In a can the combination with a top or upper head having a screw-neck furnished with an inturned flange at its upper edge, said inturned flange being provided with an annular recess or countersink to receive the rim of a rotary closing-plate, of a screw-cap having a segmental opening therein and a rotary closing-plate inside the cap and pivoted thereto, and fitting at its outer circular rim portion in the annular recess in said inturned flange of the screw-neck, said rotary closing-plate fitting between the screw-cap and screw-neck of the can and guided and supported thereby, substantially as specified.

2. In a can the combination with a top or upper head furnished with a screw-neck, provided with an inturned flange at its upper edge, of a screw-cap having a segmental opening therein and a rotary closing-plate fitting inside the cap and between the cap and the inturned flange of the screw-neck, one of said screw parts being furnished with a recess to receive said rotary closing-plate, said rotary closing-plate being supported and guided at its circular rim portion by said screw-cap and screw-neck, substantially as specified.

811,650. QUILTING-FRAME. DORA MASSEY, Dubberville, Tex. Filed Aug. 17, 1904. Serial No. 221,116.

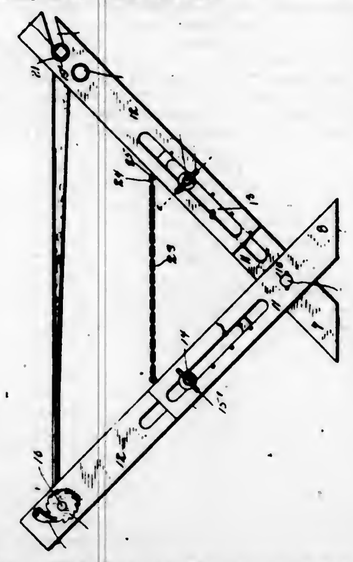

Claim.—A quilting-frame comprising two pairs of members pivotally connected adjacent to their lower ends, each member comprising a lower and an upper portion having alining longitudinal slots which are notched along one edge, a clamping-bolt engaged through each pair of alining slots and having a lip adapted to engage a pair of notches in the sides of the corresponding slots, thumb-nuts engaged with the bolts, said bolts being rotatable with their lips into and out of engagement with the notches, a flexible tie connecting the lower portions of the members at each side of the frame, and fabric-carrying rollers mounted in the upper ends of the members.

811,651. FRUIT-DISPLAY BOX. GEORGE B. MILLER, Riverside, Cal., assignor of one-half to Edward L. Pequegnat, Riverside, Cal. Filed May 31, 1905. Serial No. 263,049.

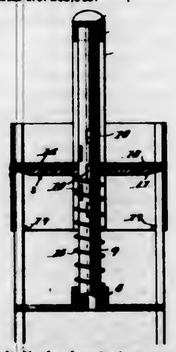

Claim.—1. A fruit-display box including a spring-pressed bottom and a guide-standard therefor constituting a ventilator.

2. A fruit-display box including a spring-pressed bottom, a yielding fruit-supporting surface combined therewith, and means for guiding the bottom and ventilating the fruit contained within the box.

3. A fruit-display box including a tubular standard provided with orifices, a spring surrounding the standard, and a bottom guided by the standard and resting upon the spring.

4. A fruit-display box including a spring-pressed bottom, a yielding fruit-supporting surface combined therewith, means for guiding the bottom and ventilating the fruit contained within the box, and means for limiting the downward movement of the bottom.

811,652. POTATO-PARER. HIRAM A. MITCHELL and THOMAS D. SINGLETON, Fall River, Mass. Filed Nov. 19, 1904. Serial No. 233,479.

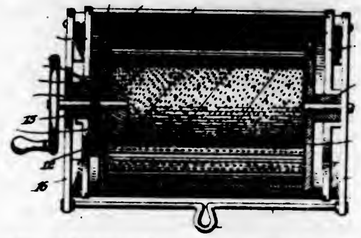

Claim.—A machine for paring poratoes and the like, comprising a trough, levers hinged near one side thereof, a shaft mounted on said levers and having secured to it a cylinder with roughened surface, an outer concentric cylinder rotatably supported on said shaft, an internal gear on one end of said outer cylinder, a pinion on the shaft, and an idle gear journaled on one of said levers between said pinion and internal gear.

811,653. SACK-FILLER. HERMAN E. MOSELEY, Rockymount, Va. Filed Feb. 9, 1905. Serial No. 244,979.

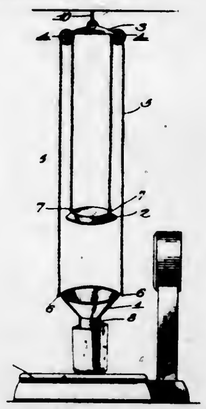

Claim.—1. A sack-filler embodying a suspended funnel, and a cover constituting a counterbalance.

2. A sack-filler embodying a funnel, a cover constituting a counterbalance, and suspending elements detachably connected with the funnel and the cover.

3. A sack-filler embodying a funnel, a cover therefor, constituting a counterbalance, an overhead support carrying sheaves, and flexible suspending elements engaging the sheaves and having their terminals connected respectively to the funnel and to the cover.

4. A sack-filler comprising a funnel provided with hooks, a cover therefor constituting a counterbalance and provided with hooks, and suspending elements having their terminals in engagement with the hooks.

811,654. ELECTRIC-WAVE DETECTOR. THOMAS J. MURPHY, New York, N. Y. Filed Dec. 17, 1904. Serial No. 237,206.

Claim.—1. In an electric-wave detector, electrodes in a magnetic field and bridged by magnetizable conducting particles, with means of producing motion between the said electrodes.

2. In an electric-wave detector, the combination of magnetizable electrodes in a magnetic field and bridged by magnetic conducting particles, together with means of restoring the "detector"

to its normal condition of high resistance, by a movement of the electrodes relative to one another as set forth.

with the roll of material as it is wound, and means for applying an adhesive to the web, substantially as described.

a roll, mechanism for driving the winding-rolls, a weight adapted to move said support to disconnect the winding-rolls from the driving

cuit, means for holding the second-mentioned means in its position assumed when the current is interrupted thereby, and mechanical

to its normal condition of high resistance, by a movement of the electrodes relative to one another as set forth.

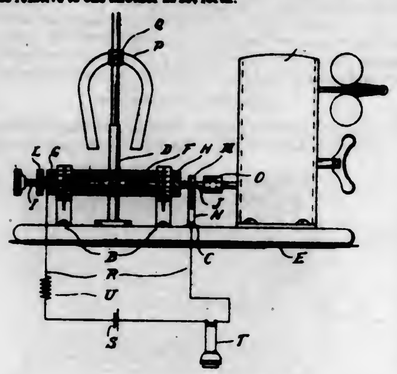

811,655. WINDING-MACHINE. ALBERT B. MCCAULEY, Denver, Colo. Filed Sept. 21, 1904. Serial No. 225,227.

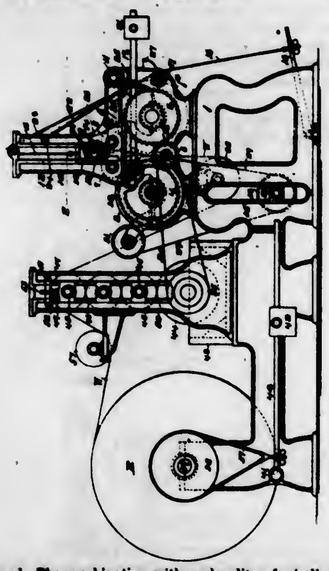

Claim.—1. The combination with a plurality of winding-rolls adapted to wind a web of material into a roll, of a laterally-displaceable ironing-roll having a greater surface speed coacting therewith and contacting with the roll of material as it is wound, substantially as described.

2. The combination with a plurality of winding-rolls adapted to wind a web of material into a roll, of a laterally-displaceable ironing-roll having a greater surface speed coacting therewith and contacting with the roll of material as it is wound, mechanism for driving said winding-rolls, and automatically-operating means for disconnecting said winding-rolls and driving mechanism at a predetermined point in the winding operation, substantially as described.

3. The combination with a plurality of winding-rolls adapted to wind a web of material into a roll, of a laterally-displaceable ironing-roll having a greater surface speed coacting therewith and contacting with the roll of material as it is wound, mechanism for driving said winding-rolls, and means controlled by said ironing-roll for disconnecting said winding-rolls and driving mechanism at a predetermined point in the winding operation, substantially as described.

4. The combination with a plurality of winding-rolls adapted to wind a web of material into a roll, of a laterally-displaceable ironing-roll having a greater surface speed coacting therewith and contacting with the roll of material as it is wound, and means for applying an adhesive to the web, substantially as described.

5. The combination with a plurality of winding-rolls adapted to wind a web of material into a roll and mechanism for driving said rolls, of a laterally-displaceable ironing-roll coacting therewith and contacting with the roll of material as it is wound, and connections for driving said ironing-roll independently of said winding-rolls, whereby its rotation may be continued after rotation of said winding-rolls has been arrested, substantially as described.

6. The combination with a plurality of winding-rolls adapted to wind a web of material into a roll and mechanism for driving said rolls, of a laterally-displaceable ironing-roll coacting therewith and contacting with the roll of material as it is wound, connections for driving said ironing-roll independently of said winding-rolls, whereby its rotation may be continued after rotation of said winding-rolls has been arrested, and automatically-operating means for disconnecting said winding-rolls and their driving mechanism at a predetermined point in the winding operation, substantially as described.

7. The combination with a plurality of winding-rolls adapted to wind a web of material into a roll and mechanism for driving said rolls, of a laterally-displaceable ironing-roll coacting therewith and contacting with the roll of material as it is wound, connections for driving said ironing-roll independently of said winding rolls, whereby its rotation may be continued after rotation of said winding-rolls has been arrested, and means controlled by said ironing-roll for disconnecting said winding-rolls and their driving mechanism at a predetermined point in the winding operation, substantially as described.

8. The combination with a movable support, of a plurality of winding-rolls carried thereby adapted to wind a web of material into a roll, mechanism for driving the rolls, and automatically-operating means for moving the support to disconnect the winding-rolls from the driving mechanism at a predetermined point in the winding operation, substantially as described.

9. The combination with a swinging support, of a plurality of winding-rolls carried thereby adapted to wind a web of material into a roll, mechanism for driving the rolls, and automatically-operating means for swinging the support to disconnect the winding-rolls from the driving mechanism at a predetermined point in the winding operation, substantially as described.

10. The combination with a movable support, of a plurality of winding-rolls carried thereby adapted to wind a web of material into a roll, mechanism for driving the roll, automatically-operating means for moving the support to disconnect the winding-rolls from the driving mechanism at a predetermined point in the winding operation, an ironing-roll also mounted in said support and coacting with said winding-rolls and contacting with the roll of material as it is wound, and connections for driving said ironing-roll independently of the winding-rolls whereby the rotation of said ironing-roll may be continued after rotation of said winding-rolls has ceased, substantially as described.

11. The combination with a swinging support, of a plurality of winding-rolls carried thereby adapted to wind a web of material into a roll, mechanism for driving the rolls, automatically-operating means for swinging the support to disconnect the winding-rolls from the driving mechanism at a predetermined point in the winding operation, an ironing-roll also mounted in said support and coacting with said winding-rolls and contacting with the roll of material as it is wound, and connections for driving said ironing-roll independently of the winding-rolls whereby the rotation of said pressing-roll may be continued after rotation of said winding-rolls has ceased, substantially as described.

12. The combination with a movable support, of a plurality of winding-rolls carried thereby adapted to wind a web of material into a roll, mechanism for driving the winding-rolls, an ironing-roll coacting with said winding-rolls and contacting with the roll of material as it is wound, and means controlled by said ironing-roll for moving the support to disconnect the winding-rolls from their driving mechanism at a predetermined point in the winding operation, substantially as described.

13. The combination with a swinging support, of a plurality of winding-rolls carried thereby adapted to wind a web of material into a roll, mechanism for driving the winding-rolls, an ironing-roll coacting with said winding-rolls and contacting with the roll of material as it is wound, and means controlled by said ironing-roll for swinging the support to disconnect the winding-rolls from their driving mechanism at a predetermined point in the winding operation, substantially as described.

14. The combination with a movable support, of a plurality of winding-rolls carried thereby adapted to wind a web of material into a roll, mechanism for driving the winding-rolls, a weight adapted to move said support to disconnect the winding-rolls from the driving mechanism at a predetermined point in the winding operation, an ironing-roll coacting with said winding-rolls and contacting with the roll of material as it is wound, a latch mechanism holding said weight out of operative position and means moving with the ironing-roll for releasing the latch mechanism, substantially as described.

15. The combination with a swinging support, of a plurality of winding-rolls carried thereby adapted to wind a web of material into a roll, mechanism for driving the winding-rolls, a weight adapted to swing said support to disconnect the winding-rolls from the driving mechanism at a predetermined point in the winding operation, an ironing-roll coacting with said winding-rolls and contacting with the roll of material as it is wound, a latch mechanism holding said weight out of operative position and means moving with the ironing-roll for releasing the latch mechanism, substantially as described.

811,656. SPARK-COIL. CHARLES P. L. HOXIE, Syracuse, N. Y. Filed Sept. 26, 1904. Serial No. 226,269.

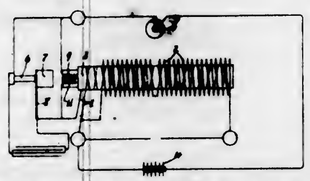

Claim.—1. The combination of a primary circuit, a secondary circuit, means for interrupting the current in the primary circuit, means for holding the first-mentioned means in its position assumed when the current is interrupted thereby, and mechanical means for making and breaking the primary circuit, substantially as and for the purpose described.

2. The combination of a primary circuit, a secondary circuit, means actuated by the current in the primary circuit for interrupting the current in said primary circuit, electromagnetic means for holding the first-mentioned means in its position assumed when the current is interrupted thereby, and mechanical means for making and breaking the primary circuit, substantially as and for the purpose specified.

3. The combination of a primary circuit, a secondary circuit, means for breaking the primary circuit to interrupt the current therein, electromagnetic means for holding the first-mentioned means in its position assumed when the current is interrupted thereby, said electromagnetic means being connected in the primary circuit to bridge the gap formed in the primary circuit by the first-mentioned means to interrupt the current therein, and mechanical means for making and breaking the primary circuit, substantially as and for the purpose set forth.

4. The combination of a primary circuit, a secondary circuit, means actuated by the current in the primary circuit for breaking the primary circuit to interrupt the current therein, electromagnetic means for holding the first-mentioned means in its position assumed when the current is interrupted thereby, said electromagnetic means being connected in the primary circuit to bridge the gap formed in the primary circuit by the first-mentioned means to interrupt the current therein and being of greater resistance than the part of the primary circuit through which no current passes when the first-mentioned means has interrupted the current, and mechanical means for making and breaking the primary circuit, substantially as and for the purpose described.

5. The combination of a primary circuit, a secondary circuit, means for interrupting the current in the primary circuit comprising a terminal in the primary circuit, an armature movable relatively to the terminal for making and breaking the primary circuit at the terminal, electromagnetic means for holding the first-mentioned means in its position assumed when the current is interrupted thereby, and mechanical means for making and breaking the primary circuit, substantially as and for the purpose specified.

6. The combination of a primary circuit, a secondary circuit, electromagnetic means having a core, and conductors connected respectively in said circuits, means for interrupting the current in the primary circuit, the operation of said means for interrupting the current being effected by the magnetic action of the core, means for causing the second-mentioned means to return to its position assumed before the operation thereof to interrupt the current in the primary circuit, electromagnetic means for holding the first-mentioned means in its position assumed when the current is interrupted thereby, said electromagnetic means having a core arranged endwise relatively to the first-mentioned core and forming essentially a continuation thereof, and mechanical means for making and breaking the primary circuit, substantially as and for the purpose specified.

7. The combination of a primary circuit, a secondary circuit, means for interrupting the current in the primary circuit, said means including an armature, and a plurality of means connected in the primary circuit for attracting the armature, one of said means continuing to attract the armature after the other has lost its power to prevent the return of the armature, substantially as and for the purpose described.

8. The combination of a primary circuit, a secondary circuit, electromagnetic means having a core, and conductors connected respectively in said circuits, means for interrupting the current in the primary circuit, the operation of said means for interrupting the current being effected by the magnetic action of the core, means for causing the second-mentioned means to return to its position assumed before the operation thereof to interrupt the current in the primary circuit, electromagnetic means for holding the first-mentioned means in its position assumed when the current is interrupted thereby, said electromagnetic means having a core arranged endwise relatively to the first-mentioned core and forming essentially a continuation thereof, and mechanical means for making and breaking the primary circuit, substantially as and for the purpose specified.

9. The combination with an induction-coil, of means for making and breaking the primary circuit of the induction-coil, and means for breaking and holding open the primary circuit during the time the first-mentioned means is in its position assumed when making the primary circuit.

10. In an induction-coil, a core, a primary conductor, and electromagnetic means having a conductor connected in circuit with the primary conductor, and a core fixed to the first-mentioned core, substantially as and for the purpose set forth.

11. In combination, an armature, the primary conductor of an induction-coil and means for attracting the armature independently of the primary conductor, said means being in electrical connection with the primary conductor when the circuit therethrough is complete, substantially as and for the purpose specified.

12. In an induction-coil, a core, a primary conductor, electromagnetic means arranged end to end relatively to the core and having a conductor connected in circuit with the primary conductor when the circuit through said primary conductor is complete, a core forming essentially a continuation of the first-mentioned core, and a conducting-shield encircling the conductor of the electromagnetic means, substantially as and for the purpose described.

811,657. COUCH-DISPLAY TRUCK. THOMAS B. O'BRIEN, Chicago, Ill. Filed Nov. 27, 1905. Serial No. 289,231.

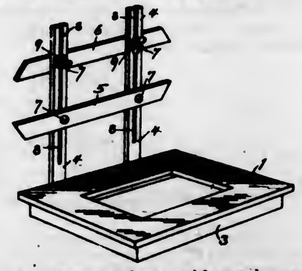

Claim.—1. A display truck or stand for couches, comprising a platform about twenty by thirty inches mounted on wheels and provided with a pair of slotted standards near one edge of the platform and a pair of horizontal bars provided with perforations and screw-bolts working through the perforations and slots and adapted to clamp the legs of the couch, as and for the purpose specified.

2. A display truck or stand for couches comprising a platform mounted on wheels and provided with a pair of slotted standards attached near one edge, with their lower ends extended below the platform to near the level of the bottom of the wheels and located at a distance from the adjacent wheels so as to be adapted to strike the floor and lift the said wheels off of the floor when the truck is slightly tilted toward the standards, as and for the purpose specified.

3. A display truck or stand for couches comprising a platform mounted on wheels and provided with clamping devices for holding a couch in a vertical position on the platform and a pendent part

at one edge of the platform located at a distance from the adjacent wheels so as to be adapted to strike the floor and lift said wheels off of the floor when the platform is slightly tilted from the horizontal, toward said pendent part, as and for the purpose specified.

811,658. FOLDING VIEW-HOLDER. PERRY M. O'CONNOR, St. Louis, Mo. Filed Aug. 31, 1903. Serial No. 171,492.

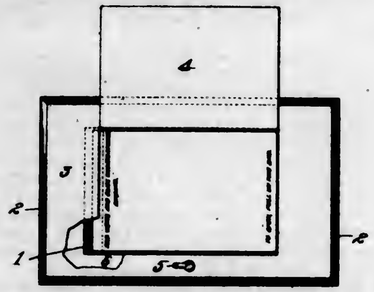

Claim.—1. In a folding view-holder, the combination with a back piece, a frame-piece, a cover-piece having a flap and having an overhanging portion, and folding views attached at one end to the casing, their opposite ends being designed to fit under an overhanging portion of the cover-piece; substantially as described.

2. In a folding view-holder, the combination with a back piece, of a frame-piece, a cover-piece having an overhanging edge 8 extending inwardly beyond the frame-piece, a bottom piece 6 for securing one edge of the folding views in position, the opposite edges of said folding views being designed to fit under the overhanging portion 8, a flap 4, and means for securing said flap in position; substantially as described.

3. A card provided with a recess on one side, one wall of which recess overhangs, and folding views designed to fit under said overhanging portion; substantially as described.

4. A card provided with a recess opening on one side only of the card, one wall of said recess overhanging, and folding views designed to fit under said overhanging wall; substantially as described.

5. A card provided with a recess having an overhanging wall, a foldable device containing illustrations or the like fitted in said recess and under said overhanging wall, and a movable cover for closing and opening the recess; substantially as described.

811,659. FOLDING BOX. PETER O'RILEY, Grand Rapids, Mich., assignor of one-half to Norman A. Perkins, Grand Rapids, Mich. Filed Jan. 31, 1905. Serial No. 243,573.

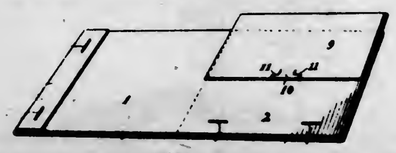

Claim.—A folding box comprising sides hinged to each other and adapted to fold in two parallel planes, one of said sides having a recess in its upper edge, a bottom having at one side a hinged extension secured to one of the said sides, and a hinged extension at the other side of the bottom, and provided with a T-shaped portion adapted to engage the recess and support the bottom.

811,660. PULP-TREATING MACHINE. HOWARD PARKER, Hudson, N. H., assignor to Improved Paper Machinery Company, Canton, Me., and Hudson, N. H., a Corporation of Maine. Filed Jan. 3, 1905. Serial No. 239,269.

Claim.—1. In combination, in a machine of the class specified, the tank, the cylinder revolubly mounted therein, compartments formed in the interior of the cylinder, and the suction-cap located in operative relation to the cylinder, and having independent suction-chambers.

2. In combination, in a machine of the class specified, the tank, the cylinder revolubly mounted therein, compartments formed in the interior of the cylinder, the suction-cap located in operative relation to the cylinder, independent chambers in the cap, inlet-ports through the rear wall of said cap into each chamber, said ports forming communication between the chambers and the compartments in the cylinder, and outlet-ports through the front wall of the cap from each chamber.

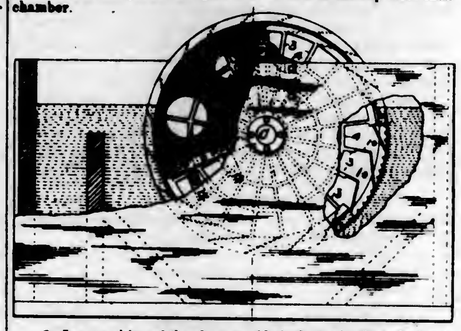

3. In a machine of the class specified, the tank, the pulp-forming cylinder revolubly mounted in the tank, compartments arranged in the interior of the cylinder, and means for subjecting each compartment to suction action of varying intensities.

4. In a machine of the class specified, the tank containing the solution, the cylinder revolubly mounted in the tank partly immersed in the solution, compartments arranged in the interior of said cylinder, and means for subjecting each compartment, first, to the action of a suction of considerable volume but slight intensity, and subsequently subjecting each compartment to a suction action of considerable intensity, substantially as described and for the purposes set forth.

5. The cylinder comprising in its construction suitable heads, and rods extending from end to end of the cylinder and having their ends located in the heads, wire wound spirally on said rods, a coating of solder or similar material applied to the wire for a short distance from each end of the cylinder, the sieve or screen applied over the whole surface of the cylinder, and an impervious coating applied on the screen at each end of the cylinder over the solder, substantially as described and for the purposes set forth.

6. The cylinder comprising in its construction suitable heads, and rods extending from end to end of the cylinder and having their ends located in the heads, wire wound spirally on said rods, said wire being wound more closely at the ends of the cylinder than in the center, a coating of solder or similar material applied to each end over the closely-wound wire, the sieve or screen applied over the whole surface of the cylinder, and an impervious coating applied on the screen at each end of the cylinder over the closely-wound wire, substantially as described.

7. In a cylinder in combination the shaft, the heads, partitions supported along their inner edges by the shaft and at their ends by the heads, notches in the upper edges of the partitions, the circumferential rings located in the notches, the lengthwise rods supported on the rings, the upturned stiffening-flange secured to the upper edges of the partitions, notches formed in the rods, and in the stiffening-flanges, wire wound about the cylinder and resting in the notches in the rods and flanges, and a sieve or screen applied over the whole to form the surface of the cylinder.

8. In a cylinder, in combination, the shaft having lengthwise grooves in its surfaces, the heads supported on the shaft and having peripheral rims, spokes, and lateral braces from spoke to spoke, partitions having their inner edges located in the grooves in the shaft and their outer edges slotted to receive the frame-rings and their ends secured by the spokes, said rings and a pervious shell, substantially as described.

9. In a machine of the class specified, the cylinder having a perforated shell, radial partitions extending from the shaft to the shell forming compartments within the cylinder, and U-shaped troughs secured at each side to adjacent partitions, substantially as described.

10. In a machine of the class specified, the cylinder having a perforated shell, radial partitions extending from the shaft to the shell forming compartments within the cylinder, and U-shaped troughs secured at each side to adjacent partitions, said troughs being inclined downwardly toward the ends of the cylinder, substantially as described.

11. A cylinder having heads, a shell, radial partitions extending lengthwise of the cylinder and having upwardly-extending continuous stiffening-flanges along their outer edges.

12. A cylinder having heads, a shell, radial partitions extending lengthwise of the cylinder having their edges slotted for the reception of rings, said rings, and an upstanding continuous flange secured to the outer edges of said partitions.

13. In a cylinder comprising heads, a shell, and radial partitions for supporting said shell, plates secured to the outer edges of said partitions at an angle thereto, and upstanding continuous stiffening-flanges secured to the edges of said plates.

14. A cylinder having heads, a shell, and radial partitions for supporting said shell, plates secured to the outer edges of said partitions at an angle thereto, said plates being slotted, and an upwardly-extending continuous stiffening-flange secured to the edge of said plate, substantially as described and for the purposes set forth.

811,661. DETACHABLE FASTENER AND BUTTON. JULIUS PINCUS, Norfolk, Va. Filed Jan. 26, 1905. Serial No. 242,761.

Claim.—1. A button or fastener comprising a beaded disk having a shank of an approximately elliptic cross-section, a rectangular slot passing through the shank, a flexible imperforate convex shell member, said disk being crimped to the shell member, a separable forked latch member adapted to engage the lower surface of the disk, a fastening-shank on the said latch member, a recessed block attached to and actuated by the convex shell portion for releasing the latch member from the disk, and a set of curved independent springs attached to the recessed block and adapted to bear upon the lower surface of the disk to restore the convex shell and the said block to their normal positions.

2. A fastener for buttons and the like comprising a perforated disk portion having a rounded edge, a perforated shank having an oval shape in cross-section, a flexible imperforate semispherical shell affixed to the said rounded edge of the disk, a detachable latch member having attachment-prongs thereon at one of its ends, a movable recessed block attached to the said imperforate shell, a set of diverging independent springs attached thereto and adapted to bear upon the lower surface of the disk when the shell is depressed for disengaging the latch member.

811,662. SHIRT-SLEEVE. TAYLOR PORTEAR, Jonesboro, Ark. Filed Nov. 15, 1904. Serial No. 232,883.

Claim.—1. A shirt-sleeve provided with a foldable lower portion adapted to be successively and accurately folded or rolled up on definite lines, and consisting of an enlarged bottom portion, a tapered portion, and an upper portion of less width than the lower enlarged portion.

2. A shirt-sleeve having a foldable lower portion having means for enabling it to be successively folded or rolled up to shorten it, and a stiffening-piece of a length less than the width of the sleeve to avoid interfering with the flexible character thereof, said stiffening-piece forming a guide for folding the sleeve.

3. A shirt-sleeve having a foldable lower portion enlarged at the bottom, a stiffening-piece of a width less than that of the sleeve secured to the same at the enlarged portion of the same, and means located adjacent to the stiffening-piece for drawing the enlarged portion of the sleeve together.

4. A shirt-sleeve having a foldable lower portion consisting of upper and lower portions of different widths and an intermediate connecting tapered portion, a longitudinal tab secured to the said upper portion and arranged within the area of the foldable portion, and a cuff attachment provided with means for detachably engaging the tab.

5. A shirt-sleeve having a lower foldable portion enlarged at the bottom, a cuff attachment, means for securing the same to the sleeve, and fastening devices secured to the enlarged portion of the sleeve in spaced relation and adapted to engage each other for drawing the enlarged portion of the sleeve together.

6. A shirt-sleeve having a foldable lower portion formed from a blank provided at its bottom with correspondingly-shaped portions adapted to be folded to provide an inner lining, said correspondingly-shaped portions when folded consisting of an enlarged bottom portion having approximately parallel side edges, a tapering intermediate portion having converging side edges, and an upper smaller portion.

811,663. TURBINE. FREDERICK W. REEVES, Allegheny, Pa., assignor of one-half to John R. James, Pittsburg, Pa. Filed Apr. 14, 1904. Serial No. 203,103.

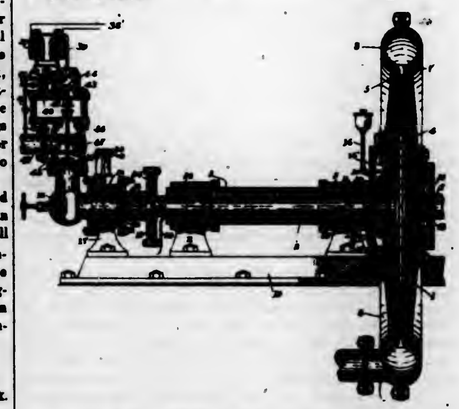

Claim.—1. In a steam-turbine, a primary wheel having internal tangentially-disposed outwardly-diverging nozzles opening into the periphery thereof and driven in a direction opposite the flow of steam by the initial energy of the steam acting in said nozzles, and a secondary wheel having tangentially-disposed peripheral vanes therein and driven in an opposite direction to that of the primary wheel by the velocity of the steam as it issues from the primary wheel nozzles, said secondary wheel entirely inclosing said primary wheel.

2. In a steam-turbine, a primary wheel having internal tangentially-disposed outwardly-diverging nozzles opening into the periphery thereof and driven in a direction opposite the flow of steam by the initial energy of the steam acting in said nozzles, and a secondary wheel having peripheral vanes therein and driven in an opposite direction to that of the primary wheel by the velocity of the steam as it issues from the primary-wheel nozzles, said secondary wheel entirely inclosing said primary wheel.

3. In a steam-turbine, a primary wheel having internal tangentially-disposed outwardly-diverging nozzles opening into the periphery thereof and driven in a direction opposite the flow of steam by the initial energy of the steam acting in said nozzles, and a secondary wheel having peripheral vanes therein and driven in an opposite direction to that of the primary wheel by the velocity of the steam as it issues from the primary-wheel nozzles, said secondary wheel entirely inclosing said primary wheel and provided with liquid sealing members at its axis.

4. In a steam-turbine, a primary wheel having internal tangentially-disposed outwardly-diverging nozzles opening into the periphery thereof adapted to be driven in one direction by the steam acting in said nozzles, and a secondary wheel the periphery of which

is provided with hook-shaped vanes extending over the periphery of said primary wheel and adapted to be driven in an opposite direction to that of said primary wheel, the vanes of said secondary wheel being disposed with their hook-shaped portion inwardly.

5. In a steam-turbine, a primary wheel having internal tangentially-disposed outwardly-diverging nozzles opening into the periphery thereof adapted to be driven in one direction by the steam acting in said nozzles, and a secondary wheel the periphery of which is provided with hook-shaped vanes extending over the periphery of said primary wheel and adapted to be driven in an opposite direction to that of said primary wheel, the vanes of said secondary wheel being disposed with their hooked-shaped portion inwardly and of increased thickness at their middle so as to contract the space therebetween at that point.

6. In a steam-turbine, a primary wheel having internal tangentially-disposed outwardly-diverging nozzles opening into the periphery thereof adapted to be driven in one direction by the steam acting in said nozzles, and a secondary wheel the periphery of which is provided with hook-shaped vanes extending over the periphery of said primary wheel and adapted to be driven in an opposite direction to that of said primary wheel, the vanes of said secondary wheel being disposed with their hook-shaped portion inwardly and their straight portions tangentially in an opposite direction to those of said primary wheel.

7. In a steam-turbine, a primary wheel having internal tangentially-disposed outwardly-diverging nozzles opening into the periphery thereof adapted to be driven in one direction by the steam acting in said nozzles, and a secondary wheel the periphery of which is provided with hooked-shaped vanes extending over the periphery of said primary wheel and adapted to be driven in an opposite direction to that of said primary wheel, the vanes of said secondary wheel being disposed with their hook-shaped portion inwardly and their straight portions tangentially in an opposite direction to those of said primary wheel.

8. In a steam-turbine, a primary wheel having internal tangentially-disposed outwardly-diverging nozzles opening into the periphery thereof adapted to be rotated in one direction by the steam acting in said nozzles, and a secondary wheel entirely inclosing said primary wheel the periphery of which is provided with hook-shaped vanes adapted to be driven in an opposite direction to that of said primary wheel by the action of the steam on said vanes as it issues from the nozzles of said primary wheel.

9. In a steam-turbine, a primary wheel having internal tangentially-disposed outwardly-diverging nozzles opening into the periphery thereof adapted to be rotated in one direction by the steam acting in said nozzles, and a secondary wheel entirely inclosing said primary wheel the periphery of which is provided with hook-shaped vanes disposed tangentially in an opposite direction to the nozzles of said primary wheel and adapted to be driven in an opposite direction to that of said primary wheel by the action of the steam on said vanes as it issues from the nozzles of said primary wheel.

10. In a steam-turbine, a primary wheel having internal tangentially-disposed outwardly-diverging nozzles opening into the periphery thereof adapted to be rotated in one direction by the steam acting in said nozzles, a secondary wheel entirely inclosing said primary wheel the periphery of which is provided with hook-shaped vanes adapted to be driven in an opposite direction to that of said primary wheel by the action of the steam on said vanes as it issues from the nozzles of said primary wheel, and a liquid seal between the shaft of said primary wheel and wall of said secondary wheel.

11. In a steam-turbine, a primary wheel having internal tangentially-disposed outwardly-diverging nozzles opening into the periphery thereof adapted to be rotated in one direction by the steam acting in said nozzles, a secondary wheel entirely inclosing said primary wheel the periphery of which is provided with hook-shaped vanes disposed tangentially in an opposite direction to the nozzles of said primary wheel and adapted to be driven in an opposite direction to that of said primary wheel by the action of the steam on said vanes as it issues from the nozzles of said primary wheel, and a liquid seal between the shaft of said primary wheel and wall of said secondary wheel.

12. In a steam-turbine, a hollow rotatable steam-conducting shaft communicating at one end with a stationary steam-supply member, a liquid sealing device interposed therebetween, a primary wheel carried by the opposite end of said hollow shaft and provided with internal tangentially-disposed outwardly-diverging nozzles opening out into the periphery of said wheel and communicating with said hollow shaft, a secondary wheel mounted upon a shaft and entirely inclosing said primary wheel the periphery of which is provided with hook-shaped vanes tangentially disposed in an opposite direction to those of the primary wheel, and a casing surrounding said secondary wheel and provided with an exhaust-opening.

13. In a steam-turbine, a hollow rotatable steam-conducting shaft communicating at one end with a stationary steam-supply member, a liquid sealing device interposed therebetween, a primary wheel carried by the opposite end of said hollow shaft and provided with internal tangentially-disposed outwardly-diverging nozzles opening out into the periphery of said wheel and communicating with said hollow shaft, a secondary wheel mounted upon a shaft and entirely inclosing said primary wheel the periphery of which is provided with hook-shaped vanes tangentially disposed in an opposite direction to those of the primary wheel, a casing surrounding said secondary wheel and provided with an exhaust-opening, a liquid seal between the wall of the secondary wheel and primary shaft, and a liquid seal between the shaft of said secondary wheel and the casing inclosing said wheel.

14. In a steam-turbine, a hollow rotatable steam-conducting shaft communicating at one end with a stationary steam-supply member, a liquid sealing device interposed therebetween, a primary wheel carried by the opposite end of said hollow shaft and provided with internal tangentially-disposed outwardly-diverging nozzles opening out into the periphery of said wheel and communicating with said hollow shaft, a secondary wheel mounted upon a shaft and entirely inclosing said primary wheel the periphery of which is provided with hook-shaped vanes tangentially disposed in an opposite direction to those of the primary wheel, and a casing surrounding said secondary wheel and provided with an exhaust-opening, in combination with a governor-controlled valve to permit steam to intermittingly pass through said stationary supply member to the primary wheel.

15. In a steam-turbine, a hollow rotatable steam-conducting shaft communicating at one end with a stationary steam-supply member, a liquid sealing device interposed therebetween, a primary wheel carried by the opposite end of said hollow shaft and provided with internal tangentially-disposed outwardly-diverging nozzles opening out into the periphery of said wheel and communicating with said hollow shaft, a secondary wheel mounted upon a shaft and entirely inclosing said primary wheel the periphery of which is provided with hook-shaped vanes tangentially disposed in an opposite direction to those of the primary wheel, a casing surrounding said secondary wheel and provided with an exhaust-opening, a liquid seal between the wall of the secondary wheel and primary shaft, and a liquid seal between the shaft of said secondary wheel and the casing inclosing said wheel, in combination with a governor-controlled valve to permit steam to intermittingly pass through said stationary supply member to the primary wheel.

16. In a steam-turbine, a hollow rotatable steam-conducting shaft communicating at one end with a stationary steam-supply member and carrying at its opposite end a primary wheel having internal outwardly-diverging nozzles opening out into the periphery thereof and communicating with said hollow shaft, a secondary wheel mounted upon the end of a shaft and entirely inclosing the primary wheel the periphery of which is provided with vanes tangentially disposed in an opposite direction to those of said primary wheel, a casing inclosing said secondary wheel and provided with an exhaust-opening, a liquid seal formed between the shaft of said primary wheel and wall of the secondary wheel, like seals between the casing and shafts of the primary and secondary wheels, and a valve-chamber provided with a valve communicating with said stationary steam-supply member, in combination with a governor to operate the valve of said chamber to intermittingly supply steam to the primary wheel.

17. In a steam-turbine, a hollow rotatable steam-conducting shaft communicating at one end with a stationary steam-supply member and carrying at its opposite end a primary wheel having internal outwardly-diverging nozzles opening out into the periphery thereof and communicating with said hollow shaft, a secondary wheel mounted on the end of a shaft and entirely inclosing the primary wheel the periphery of which is provided with vanes tangentially disposed in an opposite direction to those of said primary wheel, a casing inclosing said secondary wheel and provided with an exhaust-opening, a liquid seal formed between the shaft of said primary wheel and wall of the secondary wheel, like seals between the casing and shafts of the primary and secondary wheels, a liquid sealing device interposed between said hollow shaft and stationary steam-supply member, and a valve-chamber provided with a valve communicating with said stationary steam-supply member, in combination with a governor to operate the valve of said chamber to intermittingly supply steam to the primary wheel.

18. In a steam-turbine, a hollow rotatable steam-conducting shaft communicating at one end with a stationary steam-supply member and carrying at its opposite end a primary wheel having internal

outwardly-diverging nozzles opening out into the periphery thereof and communicating with said hollow shaft, a secondary wheel mounted upon the end of a shaft and entirely inclosing the primary wheel the periphery of which is provided with vanes tangentially disposed in an opposite direction to those of said primary wheel, a casing inclosing said secondary wheel and provided with an exhaust-opening, a liquid seal between the shaft of said primary wheel and wall of the secondary wheel, like seals between the casing and shafts of the primary and secondary wheels, a liquid sealing device interposed between said hollow shaft and stationary steam-supply member means to cause water to surround the primary-wheel shaft to cool the same, and a valve-chamber provided with a valve communicating with said stationary steam-supply member, in combination with a governor to operate the valve of said chamber to intermittingly supply steam to the primary wheel.

19. In a steam-turbine, a primary wheel receiving steam through its shaft and discharging the same through openings in its periphery, and a secondary wheel entirely inclosing the primary wheel the periphery of which is provided with vanes between which the steam passes upon issuing from the openings in the primary wheel.

20. In a steam-turbine, a primary wheel receiving steam at its axis and discharging the same from tangentially-disposed openings in its periphery, and a secondary wheel entirely inclosing said primary wheel the periphery of which is provided with vanes tangentially disposed in an opposite direction to the openings of said primary wheel.

21. In a steam-turbine, two power-generating wheels rotating in opposite directions, one receiving steam through a hollow shaft upon which it revolves and is driven by the initial energy of the steam and the other driven by the steam velocity acting upon vanes carried thereby after leaving the first-mentioned wheel, a liquid sealing device interposed between the hollow revoluble shaft of the steam pressure and expansion wheel and the fixed supply-pipe communicating therewith.

22. In a steam-turbine, two power-generating wheels rotating in opposite directions, one receiving steam through a hollow shaft upon which it revolves and is driven by the initial energy of the steam and the other driven by the steam velocity acting upon vanes carried thereby after leaving the first-mentioned wheel, a liquid sealing device interposed between the hollow revoluble shaft-pipe of the steam pressure and expansion wheel and the fixed supply-pipe communicating therewith, and a governor-controlled valve to intermittingly supply steam to said first-mentioned wheel.

23. In a steam-turbine, two power-generating wheels rotating in opposite directions, one receiving steam through a hollow shaft upon which it revolves and is driven by the initial energy of the steam and the other driven by the velocity acting upon vanes carried thereby after leaving the first-mentioned wheel, a liquid sealing device interposed between the hollow revoluble shaft of the steam pressure and expansion wheel and the fixed supply-pipe communicating therewith, and means for forming a vacuum between the said wheels and the casing inclosing the same.

24. In a steam-turbine, two power-generating wheels rotating in opposite directions, one receiving steam through a hollow shaft upon which it revolves and is driven by the initial energy of the steam and the other driven by the steam velocity acting upon vanes carried thereby after leaving the first-mentioned wheel, a liquid sealing device interposed between the hollow revoluble shaft of the steam-expansion wheel and the fixed supply-pipe communicating therewith, and a governor-controlled valve to intermittingly supply steam to said first-mentioned wheel, and means for forming a vacuum between the said wheels and the casing inclosing the same.

25. The combination with the primary wheel, of a hollow shaft, a steam-tube inclosed thereby, and a space between said tube and shaft partly filled with liquid said liquid adapted to cling to the interior wall of the shaft by centrifugal motion and prevent heating thereof.

26. The combination with the primary wheel, of a hollow shaft, a steam-tube inclosed thereby and rotatable therewith, and a space between said tube and shaft partly filled with liquid, said liquid adapted to cling to the interior wall of the shaft by centrifugal motion and prevent heating thereof.

811,664. FILTER. LLOYD V. ROOD, Meriotta, Ohio. Filed May 10, 1905. Serial No. 259,736.

Claim.—1. A filter comprising a body having an inlet near its top, a cover having a draw-off passage communicating with a central passage piercing the bottom of the cover, a tubular filtering element hung from the cover, a tube hung from the cover and communicating between the bore of the filtering element and the central passage of the cover, a water-wheel mounted upon the tube in cooperative relation with the inlet, and cleansing means carried by the water-wheel and working in coöperation with the filtering element.

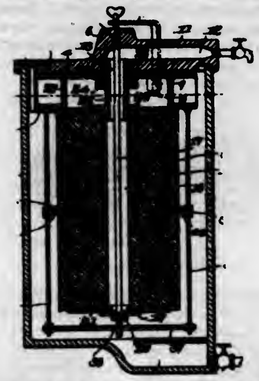

2. In a filter, the combination of a body, a cover having a draw-off passage centrally piercing the bottom of the cover, a tubular filtering element within the body, a hanger depending from the cover through the draw-off passage and the bore of the filtering element and connected to the latter, a tube depending from the cover with its lower end fitting the bore of the filtering element and its upper end in communication with the draw-off passage, the tube being provided with an external annular flange, a water-wheel having a hub rotatably embracing the tube and supported upon the flange thereof, and cleansing means carried by the water-wheel in coöperative relation with the filtering element.

3. A filter of the class described comprising a filtering element and a cleansing device mounted to rotate concentrically with respect to the filtering element and including a support working around the filtering element, a cleaning member having a crank-arm pivotally mounted upon the support, a centrifugal member pivoted upon the support independently of the arm, and a link carried by the centrifugal member and connected to the arm.

4. A filter of the class described comprising a filtering element and a cleansing device mounted to rotate concentrically with respect to the filtering element and including a support, a cleaning element having a crank-arm pivoted upon the support, a centrifugal member pivotally mounted upon the support independently of the arm, and a link rigidly carried by the centrifugal member and having a slidable connection with the arm.

5. In a filter, the combination of a casing, a filtering element therein, a water-wheel for actuation by the incoming water, a pair of substantially parallel rods hung from the wheel, sleeves rotatably mounted upon the rods, a crank-arm carried by one of the sleeves, a cleaning element carried by the crank-arm, a centrifugal member carried by the other sleeve, and a link rigidly carried by said other sleeve and connected to the arm.

6. A filter of the class described comprising a filtering element and a cleansing device mounted to rotate concentrically with respect to the filtering element and including a support working around the filtering element, a cleaning member mounted to swing upon the support, a centrifugal member mounted to swing upon the support independently of the cleaning member, and means connecting the centrifugal member and the cleaning member.

7. In a filter of the class described, the combination of a casing, a filtering element therein, a water-wheel for actuation by the incoming water, a pair of substantially parallel rods hung from the wheel, sleeves rotatably mounted upon the rods, a crank-arm carried by one of the sleeves, a cleaning element pivotally supported intermediate of its ends upon the crank-arm in frictional engagement with the filtering element, a centrifugal member carried by the other sleeve, and a link rigidly carried by said other sleeve and connected to the arm.

811,665. FLUID-PRESSURE MOTOR. FREDERICK SAGE, Redrock, Pa., assignor, by direct and mesne assignments, of forty-five one-hundredths to himself, thirty one-hundredths to Ross B. Sage, Redrock, Pa., and twenty-five one-hundredths to Cyrus H. Sage, Johnstown, Pa. Original application filed Oct. 20, 1904, Serial No. 229,206. Divided and this application filed Dec. 5, 1904. Serial No. 236,551.

Claim.—1. In a pumping-engine, the combination of a power-cylinder, a piston therein, passages leading to the opposite ends of the cylinder, a main valve for controlling said passages, said main valve being adapted to be moved by fluid-pressure, and means for exhausting fluid-pressure alternately from opposite sides of said main valve, said means comprising valves controlling exhaust-passages, actuating means for such valves projecting into the cylinder on opposite sides of the piston, and springs on said actuating means and extending beyond the ends thereof.

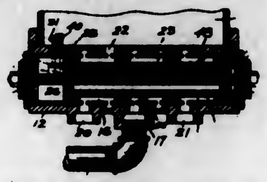

2. In a pumping-engine, the combination of a power-cylinder, a piston therein, passages leading to the opposite ends of the cylinder, a main valve for controlling said passages, said main valve being adapted to be moved by fluid-pressure, and means for exhausting fluid-pressure alternately from opposite sides of said main valve, said means comprising valves controlling exhaust-passages and provided with stems projecting into the cylinder on opposite sides of the piston, and cushioning means carried by said valve-stems.

3. A fluid-controlled valve for engines comprising a casing, a piston-valve slidably mounted therein and provided with an opening extending therethrough to both ends and having a port through its walls connecting the opening therein with a fluid-supply passage, and a guide-rod extending through the opening in the valve but only partially filling the same, whereby motive fluid may pass to the ends of said piston-valve.

4. A fluid-controlled valve for engines comprising a casing, a piston-valve slidably mounted therein and provided with an opening extending axially therethrough to both ends and having a port through its walls connecting the axial opening therein with a fluid-supply passage, a bolt extending through the axial opening of the valve but only partially filling the same, whereby motive fluid can pass to the ends of said piston-valve, and heads for said valve-casing secured in place by means of said bolt.

811,666. **SPEED-INDICATOR.** SAUL SOKULSKOFF, Philadelphia, Pa. Filed Sept. 11, 1905. Serial No. 277,813.

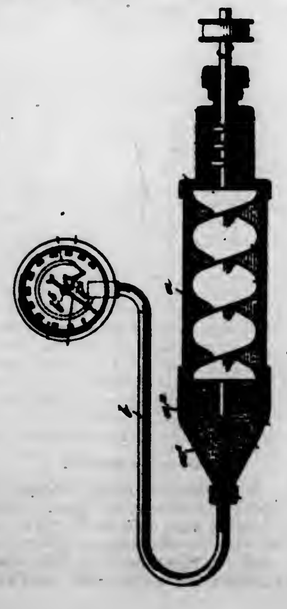

Claim.—1. In a speed-indicator, a cylinder adapted to receive and to confine a liquid, indicating means connected therewith and engaged by the liquid, a shaft arranged in said cylinder and extending therethrough, means arranged within said cylinder and secured to said shaft and adapted when actuated by the same to exert pressure on the liquid and by the liquid to actuate said indicating means, disks secured to said shaft, a sectional block connected with said cylinder and having chambers, the chambers of said block arranged to receive a portion of said shaft and its disks, a sleeve adapted to hold the sections of said block together, and said disks and blocks adapted to hold said pressure-exerting means in position in said cylinder and to prevent exit of the liquid from the same.

2. In a speed-indicator, a cylinder adapted to receive and to confine a liquid, indicating means connected therewith and engaged by the liquid, a shaft arranged in said cylinder and extending therethrough, a spiral screw arranged within said cylinder and secured to said shaft and adapted when actuated by the same to exert pressure on the liquid and by the liquid to actuate said indicating means, disks secured to said shaft, a sectional block connected with said cylinder having chambers arranged to receive a portion of said shaft and said disks, a sleeve having a stuffing-box adapted to hold the sections of said block together and said disks and block adapted to prevent longitudinal movement of said pressure-exerting means in said cylinder and in conjunction with said stuffing-box to prevent exit of the liquid from the same.

811,667. **FUSE FOR PROJECTILES.** HENRY C. SIMSON, West Kensington, England. Filed July 7, 1905. Serial No. 268,694.

Claim.—1. The combination of a fuse-body, a firing-pellet, means for normally preventing the pellet from moving rearward, and a spring engaging with the pellet and with the body and preventing the pellet from moving forward but not impeding its rearward movement.

2. The combination of a fuse-body, a firing-pellet, means for normally preventing the pellet from moving rearward, and a spring carried by the pellet and engaging with the body and preventing the pellet from moving forward but not impeding its rearward movement.

3. The combination of a fuse-body, a firing-pellet, means for normally preventing the pellet from moving rearward, a spring engaging with the pellet and with the body and preventing the pellet from moving forward but not impeding its rearward movement, and a ball partially projecting from a hole in the body and engaging with the pellet.

4. The combination of a fuse-body, a firing-pellet, means for normally preventing the pellet from moving rearward and a spring engaging with the pellet and with the body, the end of which when released tends to move inward but normally prevents the pellet from moving forward.

5. The combination of a fuse-body, a firing-pellet, means for normally preventing the pellet from moving rearward, a spring carried by the pellet and engaging with the body and preventing the pellet from moving forward but not impeding its rearward movement, and a ball partially projecting from a hole in the body and engaging with the pellet.

6. The combination of a fuse-body, a firing-pellet, means for normally preventing the pellet from moving rearward, a spring engaging with the pellet and with the body and preventing the pellet from moving forward but not impeding its rearward movement, a ball partially projecting from a hole in the body and engaging with the pellet, and a spring tending to force the ball radially inward out of the hole.

7. The combination of a fuse-body, a firing-pellet, means for normally preventing the pellet from moving rearward, a spring carried by the pellet and engaging with the body and preventing the pellet from moving forward but not impeding its rearward movement, a ball partially projecting from a hole in the body and engaging with the pellet, and a spring tending to force the ball radially inward out of the hole.

811,668. **FUSE FOR PROJECTILES.** HENRY C. SIMSON, West Kensington, England. Filed July 7, 1905. Serial No. 268,695.

Claim.—1. The combination of a firing-pellet, a radial bolt engaging with the pellet and a deformable part normally holding the bolt in position and exposed to the pressure of the gases in the gun.

2. The combination of a firing-pellet, a radial bolt engaging with the pellet, a pressure-plate abutting against the bolt and a compressible cup exposed to the pressure of the gases in the gun bearing on the plate.

811,669. **POWER-HAMMER FOR FORGING TAPERED WORK.** WILLIAM B. SWEENY, Boston, Mass. Filed July 25, 1903. Serial No. 166,943.

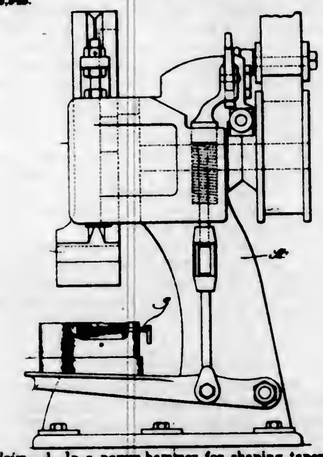

Claim.—1. In a power-hammer for shaping tapered work, a hammer and an anvil comprising a block having a recess and a member resting on and in sliding engagement with the bottom of the recess and normally free to rock about a single axis parallel to the face of the hammer, said member having its center of gravity below its axis and thereby being maintained in any adjusted position in the recess.

2. An anvil for power-hammers comprising a block, and a member supported thereby and normally free to rock about an axis parallel to the face of the hammer, said member having a substantially flat work-receiving face, one edge of which is rounded.

3. An anvil for a power-hammer, comprising a block having a parti-cylindrical recess, a rocking-anvil die received in said recess, said die having a work-receiving face and a cylindrical bottom to rest and slide upon the bottom of the recess as the die is rocked about an axis substantially in the plane of the work-receiving face.

4. An anvil for a power-hammer, comprising a block having a cylindrical recess, a substantially semicylindrical rocking-anvil die sustained in said recess, the sides of the recess embracing the sides of the die whereby the die has in any position a firm seat on the bottom of the recess.

5. An anvil for a power-hammer, having a work-receiving face which is free to rock about an axis located substantially in said face.

6. An anvil for a power-hammer, comprising a rocking-anvil die provided with a work-receiving face, one portion of which is flat, and the other portion of which has a rounded edge.

7. In a power-hammer, a reciprocating hammer and a two-part anvil, one of said parts of the anvil having a freely-movable face and the other a fixed face, both of said faces being situated beneath the hammer.

8. In a power-hammer for shaping tapered work, a reciprocating hammer, a fixed anvil-block having a portion constituting a fixed anvil-face, and a freely-rocking auxiliary-anvil die supported by said block, said auxiliary anvil and the fixed face of the anvil-block both being situated beneath the hammer.

9. An anvil-die, a block recessed to sustain said die, said die being normally free to tip under the action of the work, and means to eject scale from said recess by the rocking movement of the die.

10. An anvil-die having a projection at its convexed under side, and a block recessed to sustain said anvil-die loosely, said block having a pit and passages for the escape of scale.

11. In an anvil for a power-hammer, a block, and an anvil-die supported thereby to rock about an axis parallel to the hammer-face, the center of gravity of said die being below its axis.

12. An anvil for a power-hammer, comprising a block having a parti-cylindrical recess and a parti-cylindrical anvil-die received in said recess and capable of turning therein about an axis situated substantially in the face thereof.

13. In an anvil for a power-hammer, comprising an anvil-die, a block recessed to sustain said die that it may be tipped about an axis substantially in the face thereof.

811,670. **METHOD OF HEATING BY STEAM.** FRANK A. SIMMONDS, Grand Rapids, Mich. Filed Apr. 20, 1905. Serial No. 256,516.

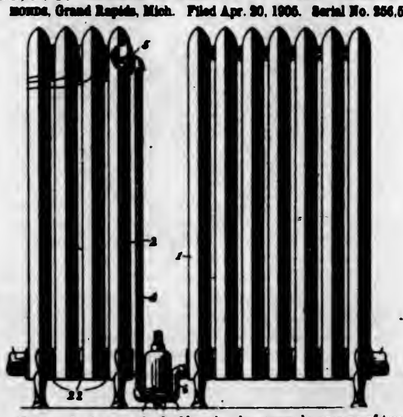

Claim.—1. In a method of heating by steam by means of two or more radiators connected in series and in which different temperatures and pressures are maintained, the improved method of revaporating the water consisting substantially of conducting the condensed water from the bottom of the high-pressure radiator and discharging the same into the lower-pressure radiator at a point above the bottom of the same.

2. In a method of heating by steam, substantially as herein described, the improved method of revaporating the condensed water by taking the same from the bottom of the high-pressure radiator and discharging said water into the top of the low-pressure radiator.

3. In a method of heating by steam by means of radiators connected in series, and in which different pressures and temperatures are maintained, the improved method of revaporating the condensed water consisting in discharging the same into the low-pressure radiator in a spray and above the bottom of the same.

4. The improved method of heating by steam comprising admitting the steam to a radiator under a certain pressure and abstracting heat therefrom until the steam is condensed to water, passing the water to a second radiator in which a materially less pressure is maintained and discharging the water into said radiator near the top thereof and opposite a horizontal passage therein.

811,671. **CRUSHER.** PETER L. SIMPSON, Chicago, Ill., assignor to Herbert S. Simpson, Chicago, Ill. Filed Feb. 20, 1903. Serial No. 94,056.

Claim.—1. In a crusher, the combination with hammers, and means for rotating them about adjacent centers so as to crush material between them, of means for inserting material between said hammers so that it will be crushed, a dividing-block located beneath the points of nearest approach of hammers to each other, and grate-bars extending in curves from said block and underneath the axes of said hammers.

2. In a crusher, the combination with a casing, a pair of parallel shafts rotated in opposite directions, and pivoted hammers carried

by said shafts, of means by which material may be inserted between the hammers on opposite shafts, a block located beneath the point at which material is crushed between said hammers, and grate-bars extending from said block in concaves under said shafts.

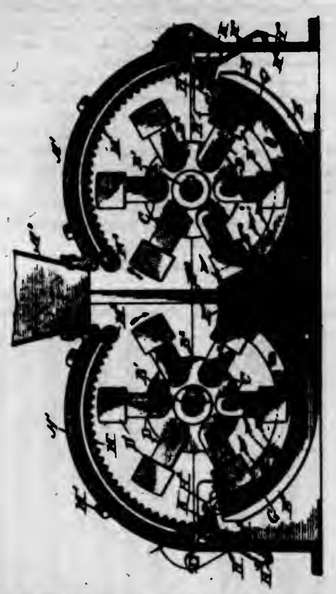

3. The combination with a casing provided with two cylindrical chambers communicating with each other, a rotating shaft located at the axis of each chamber, pivoted hammers supported on each shaft and moved thereby toward the hammers on the opposite shaft, and means by which material to be crushed may be inserted between the hammers on opposite shafts, of a dividing-block located at the junction of the two chambers and closely adjacent to said hammers, and grate-bars extending from said block in opposite directions so as to form the lower concave portion of each chamber.

4. In a crusher, the combination with a casing, a pair of parallel shafts rotated in opposite directions, and pivoted hammers carried by said shafts, of a block located beneath the point at which material is crushed between the hammers of opposite shafts, grate-bars extending in opposite directions from said block and forming concave surfaces under said shafts, and corrugated plates forming concave surfaces over said shafts.

5. The combination with a casing, a pair of parallel shafts, and pivoted hammers carried by said shafts, of a dividing-block located between and slightly below said shafts, concave grate-surfaces extending from said dividing-block underneath each shaft, and corrugated concave surfaces extending over said shafts.

6. The combination with a casing, a pair of parallel shafts, and pivoted hammers carried by said shafts, said casing having an opening located between and slightly above said shafts, of a dividing-block located between and slightly below said shafts, concave grate-surfaces extending in opposite directions from said block under said shafts, and concave corrugated surfaces extending in a similar manner from said opening over said shafts.

7. In a crusher, a casing consisting of two parts bolted and providing two cylindrical chambers communicating with each other, rotary hammers supported at the axes of said chambers, and liners adapted to be inserted between the parts of the casing whereby the distance between the axes of said chambers may be adjusted to and from each other.

8. In a crusher having two sets of hammers carried by corresponding shafts, a casing inclosing said hammers and providing bearings for said shafts, said casing being divided into two parts at some point between the two shafts, and means whereby the parts of said casing may be adjusted to and from each other so that the hammers on one shaft may be adjusted with respect to the hammers on the other shaft.

9. A rotating shaft, disks carried by said shaft, eccentrics carried by said disks, hammers pivoted upon said eccentrics, and means for adjusting said eccentrics so as to vary the distance of said hammers from the center of said shaft.

10. A series of cylindrical blocks united by an eccentrically-placed rod, bearings for said blocks, hammers supported on said rod between said blocks, and means for securing said blocks at different positions in their bearings.

11. The combination with an eccentric and a bearing therefor, said eccentric being provided with a hole for the reception of a pin and said bearing being provided with a series of similar holes adjacent to said eccentric, of washers provided with two pins one of which is adapted to be inserted in the hole in said eccentric and the other of which is adapted to be inserted in one of the holes in said bearing.

12. A series of grate-bars, a clamping-block for holding said bars to their seat, and an equalizing-lever adapted to simultaneously press said bars together and to operate said clamping-block.

13. In a crusher, a casing, revolving hammers supported within said casing, a series of grate-bars supported beneath said hammers and arranged concentrically therewith, an eccentrically-placed corrugated liner secured to the inside surface of the casing over said hammers, said liner being provided with an interior chamber, and means for admitting steam to said chamber.

14. A frame providing two interior and communicating chambers having axes parallel to each other, a series of bars forming part of the boundary of each chamber and arranged to be at a uniform distance from their respective axes, a corrugated liner forming the boundary of another part of each chamber, said liners being provided with interior steam-chambers and being so located that different parts lie at different distances from their respective axes, and means for admitting steam to the interior of said liners.

15. The combination with a rotating shaft, crushing devices carried thereby, and a grate-surface beneath said devices arranged to permit crushed material to fall therethrough, of a corrugated crushing-surface disposed eccentrically over said crushing devices, means for heating said corrugated surface.

16. The combination with a rotating shaft, crushing devices carried thereby, a grate-surface beneath said devices, and a casing inclosing said devices and grate-surface, of a corrugated plate secured to the inner surface of said casing over said crushing devices and eccentrically disposed with respect thereto, and means for heating said corrugated plate.

811,672. TRANSFER-PRESS AND ATTACHMENTS THEREFOR. BURGESS SMITH, Washington, D. C., assignor to John R. Hill, Washington, D. C. Filed Mar. 13, 1905. Serial No. 249,865.

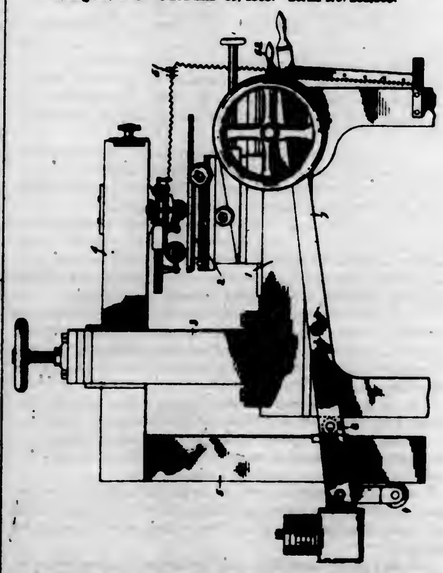

Claim.—1. In a transfer-press, the combination of a transfer-roll, an index member carried thereby and provided with notches, and a latch carried by the press in operative relation to said notches, substantially as described.

2. In a transfer-press, the combination of a transfer-roll, an index member carried thereby and provided with notches, and an automatically-operated latch carried by the press in operative relation to said notches, substantially as described.

3. In a transfer-press, the combination of a transfer-roll, an index member carried thereby and provided with index characters and notches, and a latch carried by the press in operative relation to said notches, substantially as described.

4. As an article of manufacture, a transfer-roll comprising an arbor, a roll secured thereon and provided with the usual peripheral characters, an index member provided with characters corresponding to those on said roll, and means for securing said index member on the roll-arbor with a predetermined relation between the corresponding characters on said roll and index member, substantially as described.

5. As an article of manufacture, a transfer-roll comprising an arbor, a roll secured thereon and provided with the usual peripheral characters, an index member provided with characters corresponding in kind and relative arrangement to those on the roll, and means for securing said index member on the roll-arbor with a predetermined relation between the several corresponding characters on said roll and index member, substantially as described.

6. In a transfer-press provided with a beam, the combination of a head adjustably supported on said beam, bearers carried by said head, said bearers constructed with operating-faces substantially parallel with the surface of the work and with inclined surfaces leading to said operating-faces, substantially as described.

7. In a transfer-press, the combination of a multiple-roll support, a plurality of transfer-rolls carried thereby, and means for adjusting said support to bring any desired one of said rolls into operative position, substantially as described.

8. In a transfer-press provided with a beam, the combination of a head adjustably supported on said beam, bearers carried by said head, a multiple-roll support adjustably mounted on said head, a plurality of transfer-rolls carried by said support, and means for adjusting said support to position any desired one of the rolls in coöperative relation to said bearers, substantially as described.

9. In a transfer-press, the combination of a multiple-roll support, a plurality of transfer-rolls carried thereby, means for adjusting said support to bring any desired one of said rolls into operative position, and means for locking said support in its several adjusted positions, substantially as described.

10. In a transfer-press provided with a beam, the combination of a head adjustably supported on said beam, bearers carried by said head, a multiple-roll support adjustably mounted on said head, a plurality of transfer-rolls carried by said support, means for adjusting said support to position any desired one of the rolls in coöperative relation to said bearers, and means for locking said support in its several adjusted positions, substantially as described.

11. In a transfer-press provided with a beam, the combination of a head adjustably supported on said beam, bearers carried by said head, a multiple-roll support adjustably mounted on said head, a plurality of transfer-rolls carried by said support, means for adjusting said support to position any desired one of the rolls in coöperative relation to said bearers, means for locking said support in its several adjusted positions, and means for automatically releasing said locking means upon depression of said roll-support, substantially as described.

12. In a transfer-press provided with a beam, the combination of a head adjustably supported on said beam, bearers carried by said head, a multiple-roll support adjustably mounted on said head, means for adjusting said support to position any desired one of the rolls in coöperative relation to said bearers, and means for locking the roll so positioned with any desired one of its characters in operative position, substantially as described.

811,673. ELECTRICAL BRUSH-HOLDER. MOWAT ST. CLAIR, Fort Wayne, Ind. Filed Mar. 27, 1905. Serial No. 252,155.

Claim.—1. In a commutator-brush holder, a supporting-casting having in connection therewith a rest; a guide-slot in said rest; a contact-plate in connection with a brush, the former ranging in said slot, and the latter seated upon said rest; a retracting-spring having connection with said casting, and also with said contact-plate, and acting to hold the brush against said rest; and an adjustable spring acting against the top of the brush to hold the same in contact with the commutator.

2. In a commutator-brush holder, a supporting-casting having in connection therewith a rest; a commutator-brush; a contact-plate in fixed relation with the brush; tension means in connection with the casting and contact-plate to hold the brush against the rest; and an adjustable spring acting to hold the brush into contact with the commutator.

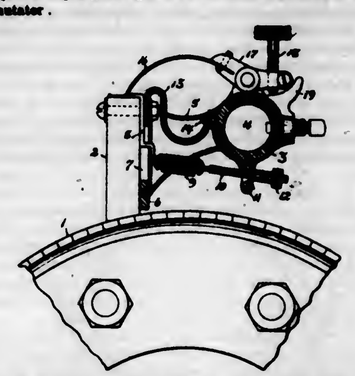

3. In a commutator-brush holder, a supporting-casting having a rest with a guide-slot therein; a commutator-brush seated against the rest and having means in connection therewith which extends into said slot to guide the brush; and two adjustable springs, one acting to hold the brush on said rest and the other to press the brush into contact with the commutator.

4. In a commutator-brush holder, a supporting-casting having in connection therewith an adjustable commutator-brush; a rocking lever pivoted on said casting, one end of the lever having means in connection with the brush to act against the latter to hold it into contact with the commutator, the opposite end of the lever having an adjusting-screw; and an upwardly-curved lug, in connection with the casting, affording a rest for the end of said adjusting-screw.

811,674. DUPLICATING-MACHINE. CLARENCE B. STEBBINS, Maywood, Ill., assignor to A. B. Dick Company, a Corporation of Illinois. Filed Jan. 19, 1905. Serial No. 241,848.

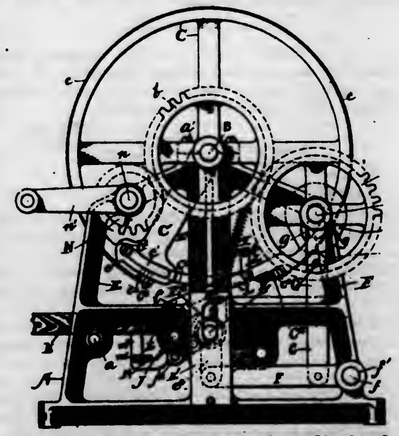

Claim.—1. In a duplicating-machine, the combination of a stencil-carrying cylinder, means for operating said cylinder, arms pivoted to the cylinder, a feeding cross-bar connecting the ends of the arms, springs connected with the arms for outwardly projecting the feeding cross-bar, and a feeding-table adapted to have sheets of paper moved thereover to be contacted by the feeding cross-bar under tension of the springs and advanced into printing position, substantially as described.

2. In a duplicating-machine, the combination of a stencil-carrying cylinder, means for operating said cylinder, arms pivoted to the cylinder, a feeding cross-bar connecting the ends of the arms,

springs connected with the arms for outwardly projecting the feeding cross-bar, a feeding-table adapted to have sheets of paper moved thereover to be contacted by the feeding cross-bar under tension of the springs and advanced into printing position, and an abutment adapted to be contacted by the feeding mechanism after the paper has been carried into printing position, substantially as described.

3. In a duplicating-machine, the combination of a stencil-carrying cylinder, a feed-table in suitable proximity thereto, a feeding-bar connected with the stencil-carrying cylinder and held in parallel relation thereto, springs for normally outwardly projecting the feeding-bar, stops adapted to be raised above the plane of the feeding-table in one position and to be lowered at a suitable time to allow the feeding-bar to strike a sheet of paper on the feeding-table and carry the same over the stops and into printing position, substantially as described.

4. In a duplicating-machine, the combination of a stencil-carrying cylinder, a roller slidably mounted in suitable proximity thereto, a link connected with the roller, an arm connected with the link, a cam, a connection between the arm and the cam for actuating the arm, a longitudinally-extending shaft, stops mounted thereon, a printing-table in suitable proximity to the stops, and a connection between the shaft and the link for operating the roller and stops simultaneously, substantially as described.

5. In a duplicating-machine, the combination with a stencil-carrying cylinder, and means for operating it, of a stop against which paper is fed by hand, means for removing said stop so that the paper may be advanced from the hand-fed position to a printing position, and an arm carried by said cylinder and arranged to so advance the paper.

6. In a duplicating-machine, the combination with a printing-cylinder, and a stencil carried thereby, of devices furnishing a stopping-point to which paper is fed by hand, automatically-operating devices for moving the paper from the hand-fed position to a second stopping-point, and means for moving the paper from the second stopping-point to engagement with the cylinder.

7. In a machine of the class described, primary and secondary stopping-points to which paper is fed prior to the beginning of the printing operation, means by which the paper may be fed by hand to the primary stopping-point, and mechanically-operating means by which the paper is fed from the primary to the secondary stopping-point.

8. The combination with a printing-cylinder, and means for operating it, of a roller movable to and from said cylinder, and stops actuated by the movement of said roller and arranged to limit the hand-feeding of paper to the cylinder.

811,675. CEMENT-FENCE-POST MOLD. GEORGE H. TRIBY, Ludington, Mich., assignor, by direct and mesne assignments, to The Economy Cement Post Machine Company, Ludington, Mich., a Corporation of Michigan. Filed Mar. 16, 1905. Serial No. 250,263.

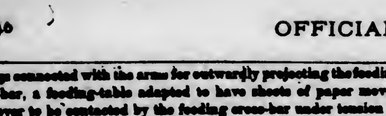

Claim.—1. A cement-fence-post mold, comprising the opposed flaring sides, each of said sides having marginal strengthening-flanges, and a longitudinally-extending strengthening-bead interposed between said flanges and the clamping-yokes adapted to embrace the sides and to bear upon said strengthening-flanges and said bead.

2. A mold for cement fence-posts, comprising the opposed tapering sides arranged to diverge and having strengthening-flanges, the end gates movably located between said divergent sides, a plurality of clamping-yokes of various sizes adapted to embrace said sides between their ends, and to slide into binding relation therewith.

3. A mold for cement fence-posts comprising the converging metallic sides, having strengthening-flanges at their margins, and a longitudinally-extending strengthening-bead interposed between said flanges, movable end gates located between said sides, clamping-yokes adapted to embrace the sides and to bear against the flanges and beads, there being upon said yokes a supporting cross-bar adapted to rest upon the upper flanges of the sides.

811,676. BOX. FREDERICK R. VINSON, Prospect, N. Y. Filed Aug. 28, 1903. Serial No. 171,669.

Claim.—1. A folding box comprising a bottom formed from a portion of the blank lying between the side walls of the box, side walls foldably connected with the bottom, flaps foldably connected with the ends of the side walls and adapted to be interlocked to form the ends of the box, a partition integral with the bottom and formed by a double fold from a part of the blank between the side walls, and division-pieces connected with the partition to form nests or compartments in the box.

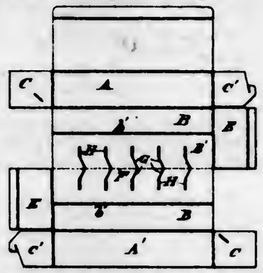

2. A folding box consisting of a bottom having upwardly-foldable parts adapted to form a double partition, division-pieces connected to said upwardly-foldable parts, side walls foldably connected with the bottom, flaps foldably connected with the ends of the side walls and adapted to interlock to constitute the ends of the box, the whole being adapted to lie flat and also adapted upon the act of interlocking the flaps to cause the double partition to assume its position to form the partition for the set-up box, substantially as described.

3. A folding box comprising a bottom having upwardly-foldable parts adapted to form a double partition, division-pieces connected to said double partition, side walls foldably connected with the said bottom, flaps foldably connected with the ends of the side walls and adapted to interlock to constitute the ends of the box, whereby the act of interlocking said flaps causes the bottom to be upwardly folded to form a partition for the set-up box, substantially as described.

4. A folding box having a principal partition integral with the bottom of the box and formed by a double fold taken from that portion of the blank which lies between the part which forms the bottom of the box, and division-pieces connected to said principal partition, all of the parts being adapted to be folded flat and the principal partition being adapted to be placed in position by the operation of setting up the box.

5. A knockdown box formed from a single blank adapted to be set up by folding on predetermined lines, that part of the blank between the part forming the side walls being divided into sections, two of the sections being adapted to be folded together to form the main partition in the box and to be placed in position by the operation of setting up the box, the remaining sections forming the bottom of the box, and division-pieces connected to the main partition.

811,677. LATERAL-MOTION DEVICE FOR CAR-TRUCKS. ROWE C. WASHBURN, Minneapolis, Minn. Filed Mar. 26, 1903. Serial No. 251,946.

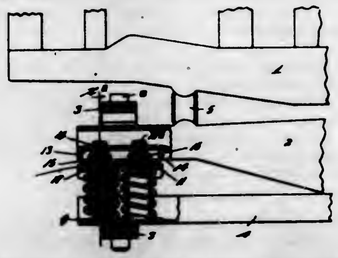

Claim.—1. The combination with a car-truck and a car-bolster, said bolster having flat bearing-surfaces, of bearing members underlying the flat surfaces of said bolster, secured against lateral movements with respect to the truck side frames and provided with flat bearing-surfaces, and flattened elliptical bearing-rollers interposed between said flat bearing-surfaces and having toothed engagement with both thereof, at points inward of the extremities of said rollers, whereby the engagement between said rollers and said flattened bearing-surfaces is continued outward of said toothed engagement, substantially as described.

2. The combination with a car-truck and a truck-bolster, said bolster having flat bearing-surfaces, of springs supported by the frame of said truck, beneath the flat surfaces of said bolster, combined spring-caps and roller-bases resting on said springs and provided with flat bearing-surfaces, and flattened rollers interposed between said flat bearing-surfaces and having toothed engagement with both thereof, substantially as described.

3. In a car-truck, the combination with trussed side frames having bolster-columns, of a spring-supported bearing-plate guided for vertical movements by said bolster-columns and provided with seats 17, a truck-bolster having the flat bearing-surfaces 13, formed with seats 16, and depending flanges 14, and elliptical rollers 15 interposed between said bearing-plate 11 and the bearing-surfaces 13 of said bolster, and provided with teeth 15', engaging said seats 16 and 17, substantially as described.

811,678. BALANCING DEVICE. WILLIAM L. WAYNE, Milwaukee, Wis. Filed Dec. 6, 1904. Serial No. 235,457.

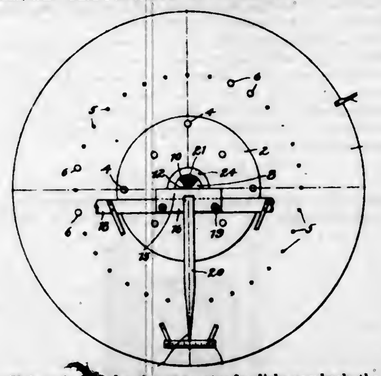

Claim.—1. In balancing apparatus for disks or wheels, the combination of a spindle upon which the disk or wheel to be balanced is mounted, there being V-shaped extensions from said spindle provided with knife-edges, supports for said spindle engaged by said knife-edges, a needle extending from one of said extensions, and an indicating-scale for said needle.

2. In balancing apparatus for balancing wheels or disks, the combination of a spindle upon which the wheel or disk to be balanced is mounted, said spindle being provided at its end with pivoting knife-edges, supports for said spindle engaged by said pivot edges, an indicating-needle extending from said spindle, and an indicating-scale for said needle.

3. In balancing apparatus for balancing wheels or disks, the combination of a spindle upon which the wheel or disk to be balanced is mounted, there being extensions from said spindle provided with knife-edges coincident with the axis of the spindle, supports for said spindle engaged by said knife-edges, an indicating-needle extending from one of said extensions, and a scale for said indicating-needle.

4. In a balancing device for balancing wheels or disks, the combination of a spindle upon which the disk or wheel to be pivoted is mounted, there being extensions from the ends of said spindle having knife-edges coincident with the axis of the spindle, bearings engaged by said knife-edges, balancing-ways upon which said bearings are mounted, an indicating-needle extending from one of said extensions, and an indicating-scale for said needle.

5. In a balancing device for balancing wheels or disks, the combination of a spindle upon which the wheel or disk to be balanced is mounted, there being extensions from the ends of said spindle disposed above the axis thereof, having knife-edges disposed coincident with the axis of the spindle, bearings engaged by said knife-edges, parallel balancing-ways separably engaged by said bearings, an indicating-needle secured to one of said extensions and extending downwardly therefrom with its center line extending perpendicularly through the axis of the spindle, and an indicating-scale for said needle.

6. In a balancing device for balancing wheels or disks, the combination of a spindle upon which the wheel or disk to be balanced is mounted, there being extensions from the ends of said spindle disposed above the axis thereof, said extensions having knife-edges at the lower end thereof disposed coincident with the axis of the spindle, steel bearing-plates engaged by said knife-edges, parallel supporting-ways upon which said bearings are movably mounted, an indicating-needle secured to one of the extensions and extending downwardly therefrom with its center line passing through the axis of the spindle, and an indicating-scale for said needle, the weight of the needle below the axis of the spindle being such as to balance the weight of the extensions above the axis of the spindle.

811,679. CAGE FOR CRUSHERS AND PULVERIZERS. MILTON F. WILLIAMS, St. Louis, Mo., assignor to Williams Patent Crusher & Pulverizer Company, St. Louis, Mo., a Corporation of Missouri. Filed Jan. 14, 1905. Serial No. 241,101.

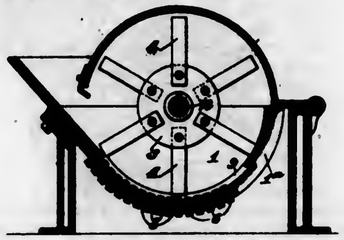

Claim.—1. The combination with a support having a curved groove, of cage-bars having reduced ends projecting into said groove whereby shoulders are provided on the cage-bars adjacent said grooves, a ring-mount coöperating with said shoulders, and means independent of said ring-mount for holding the cage-bars spaced apart; substantially as described.

2. The combination with a support having a curved groove, of cage-bars having reduced ends projecting into said groove whereby shoulders are provided on the cage-bars adjacent said grooves, an inner-ring mount coöperating with said shoulders, and means independent of said ring-mount for holding the cage-bars spaced apart; substantially as described.

3. The combination with a support having a curved groove, of cage-bars having reduced ends projecting into said groove whereby shoulders are provided on the cage-bars adjacent said grooves, an outer-ring mount coöperating with said shoulders, and means independent of said ring-mount for holding the cage-bars spaced apart; substantially as described.

4. The combination with a support having a curved groove, of cage-bars having reduced ends projecting into said groove whereby shoulders are provided on the cage-bars adjacent said grooves, inner and outer ring mounts coöperating with said shoulders, and means independent of said rings for holding the bars spaced apart; substantially as described.

5. The combination with a support having a curved groove, of cage-bars which extend into said groove, a ring-mount coöperating with said cage-bars, and fastening devices projecting through the ends of said cage-bars to secure a plurality of them together so as to form cage units; substantially as described.

6. The combination with a support having a curved groove, of cage-bars which extend into said groove, and means separate from the cage-bars and adapted to be inserted in said groove for changing the radial distances of said cage-bars from the center of the support; substantially as described.

811,680. CONTROLLER FOR SPARKING DEVICES OF GAS-ENGINES. DANIEL B. WILLEY, Alexandria Bay, N. Y., assignor of one-half to George W. Willey, Alexandria Bay, N. Y. Filed Apr. 24, 1905. Serial No. 257,268.

Claim.—1. In a gas-engine or the like, means for controlling the current to the igniters, comprising a set of contact-terminals for each igniter, each set consisting of a contact-terminal connected in a primary circuit of an induction-coil, and contact-terminals connected in the secondary circuit of the coil and to the igniter, all of said contacts being arranged in a single row, and means operating with the main shaft of the engine to close said contacts.

2. In a gas-engine or the like, means for controlling the current to an igniter, comprising a source of electricity, and an induction-coil in primary circuit therewith, the circuit having contacts, a secondary

circuit connected to the igniter and having contacts, and means actuated by the engine to close said contacts, comprising a series of brushes arranged to brush successively over all of said contacts.

4. A dado-cutter comprising a hub made in telescopic sections which are internally and externally threaded, whereby to screw together, three wheels mounted on the sections, one of the wheels held

Claim.—1. In a dredge, the combination with a swinging frame carrying an endless excavator, of a counterbalancing-weight, a

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circuit connected to the igniter and having contacts, and means actuated by the engine to close said contacts, comprising a series of brushes arranged to brush successively over all of said contacts.

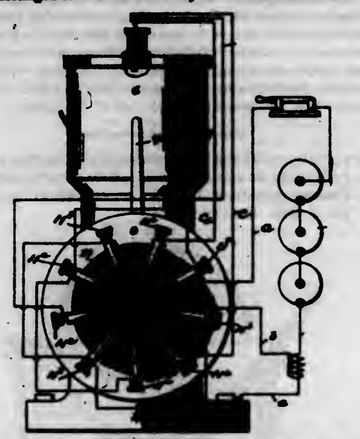

3. In a gas-engine or the like, means for controlling the current to a plurality of igniters, comprising a source of electricity, an induction-coil in primary circuit therewith, the circuit having contacts, a secondary circuit having contacts corresponding in number to the igniters and separate connections therefrom to the igniters respectively, all of said contacts being arranged in a single row, and means actuated by the engine to successively close said contacts.

4. In a gas-engine or the like, means for controlling the current to the igniters, comprising, in combination, a plurality of sets of brushes arranged in a single row around a shaft of the engine, the sets corresponding in number to the igniters, each set having a brush in the primary circuit of an induction-coil and a pair of brushes in the secondary circuit, and contacts carried by the shaft and revolving under said brushes and adapted to close the respective circuits.

5. In a gas-engine or the like, means for controlling the current to the igniters, comprising, in combination, a single shiftable ring extending around a shaft of the engine; a series of sets of brushes arranged in a single row—one set for each igniter—carried by the ring, each set having a brush in the primary circuit of an induction-coil, and a pair of brushes in a secondary circuit of the coil connected to an igniter; and contacts carried by the shaft and revolving therewith across the brushes, one of said contacts being a terminal in the primary circuit and the other being a connector to connect said pair of brushes.

811,681. DADO-CUTTER. RUEL WEIMAR, Los Angeles, Cal. Filed Aug. 16, 1904. Serial No. 220,575.

Claim.—1. A dado-cutter comprising a hub made in telescopic sections, wheels mounted on the sections, and means for adjusting the wheels with respect to each other on the sections.

2. A dado-cutter comprising a hub made in telescopic sections, and three wheels mounted on the sections, one of the wheels held by and between the sections.

3. A dado-cutter comprising a hub made in telescopic sections, three wheels mounted on the sections, one of the wheels held by and between the sections, and the other two wheels adjustable with respect to each other on the sections.

4. A dado-cutter comprising a hub made in telescopic sections which are internally and externally threaded, whereby to screw together, three wheels mounted on the sections, one of the wheels held by and between the sections.

5. A dado-cutter comprising a hub made in telescopic sections which are internally and externally threaded, whereby to screw together, three wheels mounted on the sections, one of the wheels held by and between the sections, and means for adjusting the other two wheels with respect to each other on the sections.

6. A dado-cutter comprising a hub composed of two sections adapted to partly telescope one another, a cutting-wheel adapted to be held between the two sections, cutting-wheels mounted on the sections, and cutting-teeth formed on the peripheries of the cutting-wheels, said cutting-wheel disposed between the cutting-wheels and being revoluble on the cutter-carrying hub.

7. The herein-described dado-cutter comprising the hub A composed of the members A′ and A″ adapted to partly telescope one over the other and hold a cutting-wheel therebetween, the cutting-wheels D and E screw-threaded on their interior having on their periphery cutting-teeth D′ and E′ respectively and the cutter-carrying wheel B disposed between the cutting-wheels D and E and being revoluble on the cutter-carrying hub, and the saw-teeth cutter F removably secured on the outer side of the cutter-teeth D′.

8. In a dado-cutter of the character herein described a cutting-wheel-carrying hub A composed of the members A′ and A″ the member A′ having on one end thereof a threaded offset adapted for screw-threaded engagement in the screw-threaded socket in the member A″, the member A′ of a central cutting-wheel having also a shoulder for the reception of the central cutting-wheel substantially as herein shown and described.

811,682. CUTTER-HEAD FOR WOOD-SHAPERS. RUEL WEIMAR, Los Angeles, Cal. Filed Dec. 19, 1904. Serial No. 237,574.

Claim.—A cutter-head for wood-shapers comprising a cylinder counterbored through the center and having a slot on each side of the bore parallel therewith and extending entirely through the head, cutters inserted in said slots, the cylinder recessed on opposite sides leaving diagonally-disposed faces and integral screw-threaded lugs, adjustable cutter-knife clamps recessed on their inner sides and wedge-shaped exteriorly and provided with elongated slots 14, and screws extending through said slots into the screw-threaded holes in the lugs for forcing the clamps against the cutter-knives.

811,688. DREDGE. FRANK YEOMAN, Oroville, Cal. Filed Aug. 17, 1905. Serial No. 274,570.

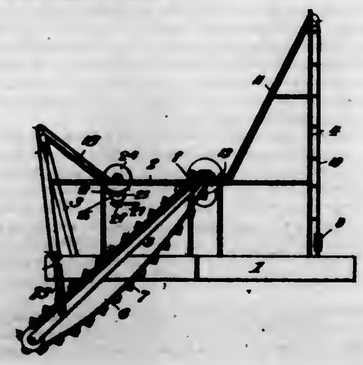

Claim.—1. In a dredge, the combination with a swinging frame carrying an endless excavator, of a counterbalancing-weight, a drum, flexible connections between said weight, said frame and said drum, and a variable-speed driving means for said drum.

2. In a dredge, the combination with a swinging frame carrying a chain of excavating-buckets, of vertical guides, counterbalanced weights slidable in said guides, a winding-drum, cables attached to the free end of said frame and wound upon said drum, and cables attached to said weights and wound upon said drum in a direction opposite to that of the first-mentioned cables, substantially as described.

3. In a dredge, the combination with a swinging frame carrying an endless excavator, of a counterbalancing-weight, a drum, flexible connections between said weight, said frame and said drum, a power-shaft, driving connections between the latter and said drum, and variable-speed friction-drive gearing between said power-shaft and said driving connections, substantially as described.

4. In a dredge, the combination with a swinging frame carrying an endless excavator, of a counterbalancing-weight, a drum, flexible connections between said weight, said frame and said drum, a power-shaft, gearing between said power-shaft and the shaft of said drum, said gearing comprising a longitudinal shaft, a counter-shaft geared to said power-shaft, a friction-disk upon said longitudinal shaft, a shaft extending radially with respect to said longitudinal shaft, a friction-wheel slidable upon but free to rotate with the last-mentioned shaft and adapted to engage said friction-disk, and a driving connection between said counter-shaft and said radially-disposed shaft, substantially as described.

5. In a dredge, the combination with a swinging frame carrying an endless excavator, of a drum, a cable wound upon said drum and attached to said frame, a power-shaft, drive-gearing between said power-shaft and the shaft of said drum and comprising a longitudinal shaft, a counter-shaft geared to said power-shaft, a friction-disk upon said longitudinal shaft, a shaft disposed radially with respect to said longitudinal shaft, a friction-wheel mounted to slide upon but keyed to rotate with said radially-disposed shaft, and a driving connection between the latter and said counter-shaft, substantially as described.

6. In a dredge, the combination with a floating body carrying a vertically-swinging endless excavator, of guide devices adjacent to the corners of said body, a series of winding-drums, and a series of cables or the like engaged with said guide and each having one of its ends wound upon one of said drums and its other end adapted for attachment to a stationary object whereby said floating body may be moved laterally.

7. In a dredge, the combination with a floating body carrying a vertically-swinging endless excavator, of guide devices adjacent to the corners of said body, winding-drums, cables wound upon said drums and engaged with said guide devices, the free ends of said cables being adapted to be secured to stationary objects, a driving mechanism for said drums, a driving mechanism for said excavator, and a variable-speed driving mechanism between the driving mechanism of said excavator and the driving mechanism of said drum, substantially as described.

8. In a dredge, the combination of a float, a vertically-swinging frame mounted therein, and an endless excavator mounted upon said frame, a series of side line drums, a driving-shaft for said drums, a power-shaft, longitudinal shafts geared to said drive and power shafts, a counter-shaft, frictional gearing between the ends of said counter-shaf tand said longitudinal shaft, and means for driving said counter-shaft, substantially as described.

9. In a dredge, the combination of a float, a vertically-swinging frame mounted therein, and an endless excavator mounted upon said frame, a series of side line drums, a driving-shaft for said drums, a power-shaft, longitudinal shafts geared to said driving and power shafts, a counter-shaft, frictional gearing between the ends of said counter-shaft and said longitudinal shaft, means for driving said counter-shaft, a main power-shaft, a counter-shaft geared to the latter and variable-speed driving connections between the latter-mentioned counter-shaft and the first-mentioned counter-shaft substantially as described

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811,684. BORING-MACHINE. PHINEAS H. ADAMS and ORRINGAR T. X. ADAMS, Chicago, Ill. Filed Mar. 11, 1905. Serial No. 249,812.

Claim.—In a boring-machine, in combination, head and tail stocks having standards thereon with centered openings, bushings in said openings, a boring-bar which extends through said bushings and is guided and supported thereby on both sides of the work, and centering chuck members for the work, mounted upon the respective standards.

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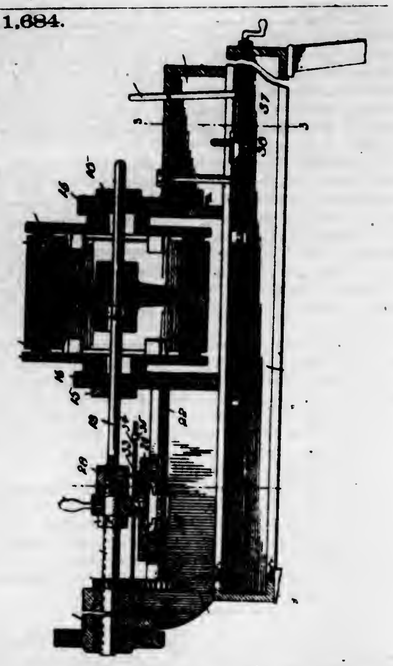

811,685. ROCK-DRILL. THOMAS E. ADAMS, Cleveland, Ohio. Filed May 27, 1905. Serial No. 262,619.

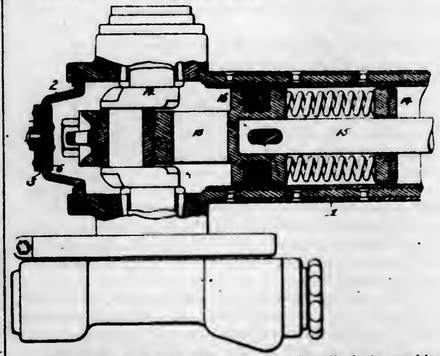

Claim.—1. In a device of the character described, the combination with means for inducing an air-current, of valve mechanism for controlling the direction of said air-current to control the direction of feed of lubricant in the device.

2. In a device of the character described, the combination with means for causing an air-current to pass through the device, of valve mechanism constructed to control the direction and volume of the air-current and the direction and volume of lubricant fed through the device.

3. In a device of the character described, the combination of movable parts causing an air-current to pass through the device causing the feed of lubricant therethrough, and valve mechanism at the rear end of the device for regulating the direction of the flow and the quantity thereof.

4. In a drill, the combination of movable parts causing an air-current to pass through the drill-barrel causing the feed of lubricant therethrough to lubricate the part regardless of the inclination of the barrel, and valve mechanism in the rear end of the drill and means for adjusting said valve mechanism to regulate the direction of flow of the air-current according to the position of the drill-barrel.

5. In a drill, the combination with a barrel, and movable parts therein causing an air-current to pass therethrough, of a rotary mem-

7. In a hose-rack, the combination of a pair of side arms, a series of hose-carrying cross-pins extending between said arms, a

derailment of the train, said pipe having portions thereof disposed at

pair of driven shafts and a sprocket-wheel on each of said shafts, of

5. In a drill, the combination with a barrel, and movable parts therein causing an air-current to pass therethrough, of a rotary member on the rear end of the drill-barrel, valves carried by the rotary member, one located inside the barrel and the other outside, and said member constructed to be moved into operative position in front of air-ports in the barrel end to regulate the direction of the flow of air through the barrel to compel the feed of lubricant regardless of the inclination of the barrel.

6. In a drill, the combination with a barrel, and movable parts therein causing an air-current therethrough, of a removable back door for the drill-barrel having air-ports therein, a metal disk mounted to turn on the back door, leather disks located on opposite sides of the door, having valves located opposite to each other, and both of said disks secured to turn with the metal disk, said leather disks having cut-out portions opposite to their valves and means on the metal disk to permit the same to be turned to move either of said valves into operative position over the air-ports and govern the flow of air therethrough.

7. In a drill, the combination with a drill-barrel and movable parts therein causing an air-current therethrough, of a removable back door at the rear end of the drill-barrel having air-ports therein, a rotary disk on the back door and check-valves carried by the rotary members at opposite sides of the air-ports and said rotary members constructed to move either of said valves into operative position against the air-ports to control the direction of flow of the air-current and feed of lubricant in the barrel.

8. In a drill, the combination with a drill-barrel and movable parts therein causing an air-current therethrough to distribute lubricant throughout the same, of a removable back door at the rear end of the drill-barrel having air-ports therein, and a rotary reversible valve mechanism on said door adapted to regulate the direction of flow of the air through the air-ports, and also govern the quantity of air passing therethrough.

811,686. **HOSE-RACK.** William D. Allen and Charles F. Bowen, Chicago, Ill., assignors to W. D. Allen Manufacturing Company, Chicago, Ill., a Corporation. Filed Feb. 8, 1905. Serial No. 244,749.

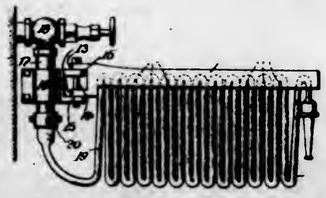

Claim.—1. In a hose-rack, the combination of a series of hose-carrying cross-supports, side supports between which said cross-supports extend, one of said side supports being shiftable to release the cross-supports and drop the hose from the rack and a releasable latch for holding said shiftable side support in normal position, substantially as described.

2. The combination with a hose-rack, of a series of hose-carrying cross-supports and a supporting device common to all of said cross-supports and shiftable to simultaneously release the same to drop the hose bodily from the rack, substantially as described.

3. In a hose-rack, the combination of a series of hose-carrying cross-supports, side supports between which said cross-supports extend, one of said side supports being pivoted to swing downwardly and release the cross-supports and releasable means for normally upholding said pivoted side support, substantially as described.

4. In a hose-rack, the combination of a series of hose-carrying cross-supports, side supports between which said cross-supports extend, one of said side supports being pivoted to swing downwardly and a latch at the outer end of the rack for normally upholding said swinging side support, said latch being releasable in the act of removing the hose from the rack, substantially as described.

5. In a hose-rack, the combination of a pair of side arms, of a series of hose-carrying cross-supports extending between said side arms and releasable means on one of said side arms for sustaining the pins in position, substantially as described.

6. In a hose-rack, the combination of a pair of side arms, a series of hose-carrying cross-pins extending between said arms and a shiftable support common to all of said pins on one of said side arms for releasably sustaining the same in position, substantially as described.

7. In a hose-rack, the combination of a pair of side arms, a series of hose-carrying cross-pins extending between said arms, a swinging supporting-ledge on one of said side arms for releasably sustaining the pins and a latch for normally upholding said ledge, substantially as described.

8. In a hose-rack, the combination with a pair of side arms, of a series of hose-carrying cross-pins pivotally connected at one end to one of said arms to swing downwardly therefrom, and shiftable supporting means on the other of said arms for releasably sustaining the free ends of said pins, substantially as described.

9. In a hose-rack, the combination with a pair of side arms, of a series of hose-carrying cross-pins pivotally connected at one end to one of said arms to swing downwardly therefrom, a supporting-ledge pivotally mounted on the other of said arms for releasably sustaining the free ends of said pins and a latch for upholding said supporting-ledge, substantially as described.

10. In a hose-rack, the combination with a pair of side arms, of a series of hose-carrying cross-pins pivotally and slidably connected at one end to one of said arms, and a support on the other of said arms with which the free ends of said pins slidably engage, said support being shiftable to release the ends of the pins and drop the hose from the rack, substantially as described.

11. In a hose-rack, the combination of a pair of side arms, one of said arms having a slot or guideway, a series of hose-carrying cross-supports having heads at one end loosely engaging said guideway to connect said pins to said arm and shiftable supporting means on the other of said arms for releasably sustaining the free ends of said cross-supports, substantially as described.

12. In a hose-rack, the combination of a pair of side arms, one of said arms having a slot or guideway, a series of hose-carrying cross-pins having heads at one end loosely engaging said slot to pivotally and slidably connect said pins to said arm, a swinging support on the other of said arms for upholding the free ends of the pins and a releasable latch for upholding said support, substantially as described.

13. In a hose-rack, the combination of a pair of side arms, one of said arms having a slot or guideway, a series of hose-carrying cross-pins having ball-heads at one end loosely engaging said slot or guideway, a supporting-ledge pivoted to the other of said arms to swing downwardly therefrom, and a latch arranged to be released in the act of removing the hose from the rack for normally holding said ledge in position to sustain the free ends of the pins, substantially as described.

811,687. **AUTOMATIC EMERGENCY AIR-BRAKE-OPERATING DEVICE FOR RAILWAYS.** John P. Birmingham, Lexington, Va., assignor to Robert Catlett and Robert Athelstan Marr, Lexington, Va.; William George Mathews, Clifton Forge, Va., and James Bailey Edmunds, Don Peters Halsey, and James William Gerow, Lynchburg, Va. Filed July 31, 1905. Serial No. 272,626.

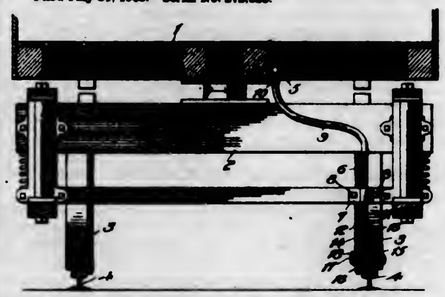

Claim.—1. In an automatic fluid-pressure brake system, the combination with the train-pipe, of a frangible pipe connected thereto and having a laterally-deflected portion terminating close to and at one side of the railway-rail, and a shoe portion extending across and close to the rail and terminating in a free end at the other side of the rail.

2. In an automatic fluid-pressure brake system, the combination of the train-pipe, a frangible pipe adapted to be broken by contact with the road-bed or track upon the derailment of the train, said pipe having portions thereof angularly disposed and presenting free angles, and a flexible pipe connecting said train and frangible pipes.

3. In an automatic fluid-pressure brake system, the combination with the train-pipe and a frangible pipe connected thereto and adapted to be broken by contact with the road-bed or track upon the derailment of the train, said pipe having portions thereof disposed at an angle to each other, one of said portions extending transversely of the track-rail and another extending longitudinally thereof, said pipe being weakened at the angles.

4. In an automatic fluid-pressure brake system, the combination of the train-pipe, and a frangible pipe connected thereto and adapted to be broken by contact with the road-bed or track upon the derailment of the train, said pipe having portions thereof disposed at angles to each other, said portions being arranged in different planes, the angles between the different angular portions of the pipe being free angles, for the purpose set forth.

811,688. **CENTERLESS ENGINE.** William H. Blodgett, Los Angeles, Cal., and William H. Miller, Boise, Idaho. Filed May 6, 1905. Serial No. 259,133.

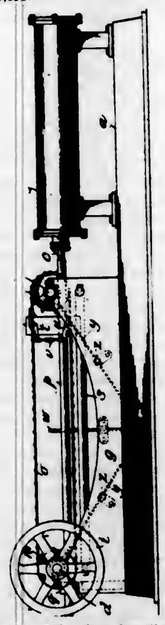

Claim.—1. In a device of the class described, the combination with the pair of driven shafts, and a sprocket-wheel on each of said shafts, of the chain connecting said wheels, the cross-head reciprocating adjacent the chain, the pawls adapted to engage the two runs of the chain for the purpose described, and the adjustable link connecting the pawls and adapted to regulate their engagement with the chain.

2. In a device of the class described, the combination with the pair of driven shafts, and a sprocket-wheel on each of said shafts, of the chain connecting said wheels, the cross-head reciprocating adjacent the chain, the pawls adapted to engage the two runs of the chain for the purpose described, and a link engaging the head of one pawl and the tail of the other.

3. In a device of the class described, the combination with a pair of driven shafts, and a sprocket-wheel on each of said shafts, of the chain having horizontal runs connecting said wheels, the cross-head reciprocating adjacent the chain, the hook-shaped pawls having cam-surfaces on the hooks and adapted to alternately engage the two runs of the chain, and a link connecting the pawls.

4. In a device of the class described, the combination with a pair of driven shafts and a sprocket-wheel on each of said shafts, of the chain having horizontal runs connecting said wheels, the cross-head reciprocating adjacent the chain, a pawl carried by said cross-head and adapted to engage the outer side of the upper run of the chain, another pawl carried by the cross-head and adapted to engage the inner side of the other run of the chain, and a link connecting said pawls.

5. In a device of the class described, the combination with a pair of driven shafts and a sprocket-wheel on each of said shafts, of the chain connecting said wheels, the cross-head reciprocating adjacent the chain, a pawl carried by said cross-head and adapted to engage the outer side of the upper run of the chain, another pawl carried by the cross-head and adapted to engage the inner side of the other run of the chain, and a link connecting the tail of the upper pawl with the head of the lower pawl.

6. In a device of the class described, the combination with a pair of driven shafts and a sprocket-wheel on each of said shafts, of the chain connecting said wheels, the cross-head reciprocating adjacent the chain, the hook-shaped pawls adapted to alternately engage the two runs of the chain, and having the cam-surfaces formed on the hooks, and an adjustable link connecting the pawls and adapted to regulate their engagement with the chain.

7. In a device of the class described, the combination with a pair of driven shafts and a sprocket-wheel on each of said shafts, of the chain connecting said wheels, the cross-head reciprocating adjacent the chain, the hook-shaped pawl *t* having the cam-surface formed on the hook and adapted to engage the outer side of the upper run of the chain, the hook-shaped pawl *u* having the cam-surface on the hook and adapted to engage with the inner side of the other run of the chain, both of said pawls being carried by the cross-head, and an adjustable link *v* connecting the tail of the pawl *t* with the head of the pawl *u*.

8. In a device of the class described, the combination with a pair of driven shafts and a pair of sprocket-wheels on each of said shafts, of the pair of sprocket-chains connecting said wheels, the cross-head reciprocating adjacent the chains, mechanism carried by said cross-head adapted to engage the upper or lower run of one or the other of said chains, and means for determining which of said chains shall be engaged and thereby the direction of rotation of the shafts controlled.

9. In a device of the class described, the combination with a pair of driven shafts and a pair of sprocket-wheels on each of said shafts, of the pair of sprocket-chains connecting said wheels, the cross-head reciprocating adjacent the chains, mechanism carried by said cross-head adapted to engage the upper or lower run of one or the other of said chains, and means for causing relative lateral movement of the chains and cross-head to determine which of said chains shall be engaged and thereby the direction of rotation of the shafts controlled.

10. In a device of the class described, the combination with a pair of driven shafts and a pair of sprocket-wheels on each of said shafts, of the pair of sprocket-chains connecting said wheels, the cross-head reciprocating adjacent the chains, mechanism carried by said cross-head adapted to engage the upper or lower run of one or the other of said chains, and means for moving the chains laterally to determine which of them shall be engaged by the mechanism on the cross-head and thereby the direction of rotation of the shafts controlled.

11. In a device of the class described, the combination with a pair of driven shafts and a pair of sprocket-wheels on each of said shafts, of a pair of sprocket-chains connecting said wheels, the cross-head reciprocating adjacent the chains, mechanism carried by said cross-head adapted to engage the upper or lower run of one or the other of said chains, and means for moving the sprocket-wheels and chains laterally to determine which of them shall be engaged by the mechanism on the cross-head and thereby the direction of rotation of the shafts controlled.

12. In a device of the class described, the combination with a pair of driven shafts each carrying a sleeve splined thereon, of a pair of sprocket-wheels secured on each of said sleeves, a pair of sprocket-chains connecting said wheels, the cross-head reciprocating adjacent the chains, mechanism carried by said cross-head adapted to engage the upper or lower run of one or the other of said chains, and means for moving the sleeves longitudinally of their shafts to determine which of said chains shall be engaged by the mechanism and thereby the direction of rotation of the shafts controlled.

13. In a device of the class described, the combination with a pair of driven shafts, each carrying a sleeve splined thereon and having the channel therein, of the pair of sprocket-wheels carried by each of said sleeves, the pair of sprocket-chains connecting said wheels, the cross-head reciprocating adjacent the chains, mechanism carried by said cross-head adapted to engage the upper or lower run of one or the other of said chains, the yoke-shaped levers engaging the usual channels in the sleeves, and means for moving said yoke-shaped levers.

14. In a device of the class described, the combination with a pair of driven shafts, each carrying a sleeve splined thereon and hav-

ing the channel therein, of the pair of sprocket-wheels carried by each of said sleeves, the pair of sprocket-chains connecting said wheels, the cross-head reciprocating adjacent the chains, mechanism carried by said cross-head adapted to engage the upper or lower run of one or the other of said chains, the yoke-shaped levers engaging the usual channels in the sleeves, and means for moving said yoke-shaped levers, consisting of the common lever connecting the upper ends of said yoke-shaped levers.

811,689. **BOTTLE-WRAPPER.** FRED W. R. BRADFORD, Malvern, Mass. Filed June 29, 1905. Serial No. 267,543.

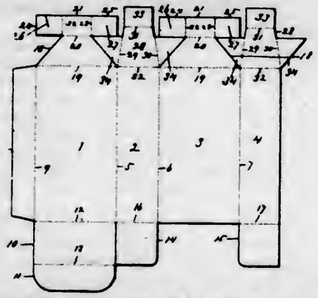

Claim.—1. In a bottle-wrapper for application to a bottle whose body portion is substantially rectangular in cross-section, the combination with the body-sections, of four flat extensions projecting upward therefrom and converging without meeting at their upper ends whereby an opening is provided for the upper end of the neck of the bottle, and means for locking said extensions together at their side edges whereby the four extensions completely surround the neck of the bottle but allow it to project through the upper end of the wrapper.

2. In a bottle-wrapper of the character described, the combination with the body-sections, of extensions projecting upward from the side body-sections, extensions projecting upward from the end body-sections, wings extending from the opposite side edges of the extensions from the end body-sections, neck portions extending upward from the extensions from the body-sections, and tongues extending from opposite side edges of alternate neck portions and provided with slits extending downward and upward respectively from the upper and lower edges thereof, whereby the tongues extending from said alternate neck portions are adapted to extend toward each other around the neck and interlock by means of adjacent slits, for the purpose set forth.

811,690. **PNEUMATIC LIFTING MEANS FOR GRAIN-DOORS.** TELEMAN B. BRANDON, Bellefontaine, Kans., assignor of one-third to Harry Hatfield and one-third to W. S. Foster, Bellefontaine, Kans. Filed Mar. 28, 1905. Serial No. 251,668.

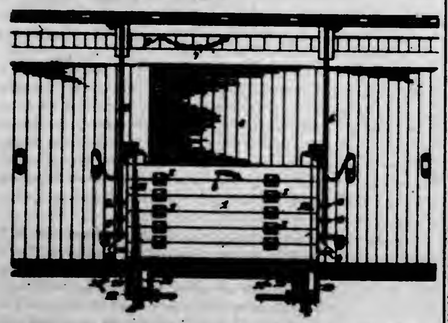

Claim.—1. The combination with a car having a grain-door, of a cylinder having a grain-door-lifting piston, said grain-door being movable independently of the piston, and means for actuating the piston to raise the door.

2. The combination with a car having a grain-door, of a vertical cylinder located beneath the door and having a piston for partially opening the same, said door being movable independently of the piston to enable it to be completely opened, means for actuating the piston in its door-opening movement, and means for permitting the said piston to return to its initial position after the door has been partially opened.

3. The combination with a car having a vertically-movable grain-door, of a grain-door carrier arranged to detachably receive the door and slidable on the car, and permitting the door to have an independent opening and closing movement and pneumatic lifting mechanism embodying a cylinder having a piston or plunger arranged to move the carrier upward.

4. The combination with a car having opposite grain-doors, of a storage tank or reservoir, vertical cylinders mounted beneath the car and having pistons or plungers arranged to raise the grain-doors to partially open the same, pipes connecting the cylinders with the storage tank or reservoir, and means for controlling the admission of fluid-pressure to the cylinders for permitting an independent operation of the doors.

5. The combination with a car having a grain-door, of lifting mechanism embodying a storage tank or reservoir, cylinders located beneath the car and having pistons for lifting the door, pipes connecting the cylinders with the storage tank or reservoir, and a valve located between the inner ends of the pipes for controlling the discharge of the fluid-pressure from the storage tank or reservoir and the admission of the same into the cylinders.

6. The combination with a car having a grain-door, of lifting mechanism embodying a fluid-pressure storage tank or reservoir, vertical cylinders located beneath the door and having pistons for lifting the same, branch pipes connecting the storage tank or reservoir with the lower ends of the cylinders, a valve located at the storage tank or reservoir for controlling the discharge of the fluid-pressure, and independent valves mounted on the cylinders for controlling the admission of the fluid-pressure to the cylinders.

7. The combination with a car having opposite grain-doors, of a fluid-pressure storage tank or reservoir, cylinders arranged in pairs for lifting the grain-doors, branch pipes also disposed in pairs and extending from the storage tank or reservoir to the cylinders, and independent valves for controlling the discharge of fluid-pressure from the tank or reservoir and the admission of the same into the cylinders.

8. The combination with a car having a grain-door, of a fluid-pressure storage tank or reservoir, cylinders having pistons for raising the grain-door, branch pipes extending from the storage tank or reservoir to the cylinders, a valve mounted on the tank or reservoir, and having lateral passages communicating with the said branch pipes, said valve-casing being provided between the passages and the storage tank or reservoir with a valve-seat, and a valve-plug arranged to engage the seat for controlling the discharge of the fluid-pressure.

9. The combination with a door, of hoisting mechanism arranged normally in position for engaging the door to partially open the same, said hoisting mechanism having a detachable connection with the door to permit the latter to have a continued independent movement after the hoisting mechanism has raised the door and dropped back to its normal position.

811,691. **PARTY TELEPHONE-LINE.** EDWARD A. BUELL, DeKalb, Ill. Filed Mar. 17, 1905. Serial No. 250,681.

Claim.—1. A telephone-line having a plurality of subscribers' stations associated therewith to constitute the same a party telephone-line, each of said subscribers' stations including selecting switching mechanism having a magnet in circuit relation with the line, a ratchet-wheel, a pawl operated by the magnet to escape the teeth of the ratchet-wheel, a spring operating upon the pawl to cause the same to move the ratchet-wheel, and a second magnet governing the circuit of the aforesaid magnet.

2. A telephone-line having a plurality of subscribers' stations associated therewith to constitute the same a party telephone-line, each of said subscribers' stations including selecting switching mechanism having a magnet in circuit relation with the line, a ratchet-wheel, a pawl operated by the magnet to escape the teeth of the ratchet-wheel, a spring operating upon the pawl to cause the same to move the ratchet-wheel, and a second magnet in circuit relation with the party-line governing the circuit of the aforesaid magnet.

3. A telephone-line having a plurality of subscribers' stations associated therewith to constitute the same a party telephone-line, each of said subscribers' stations including selecting switching mechanism having a magnet in circuit relation with the line, a ratchet-wheel, a pawl operated by the magnet to escape the teeth of the

ratchet-wheel, a spring operating upon the pawl to cause the same to move the ratchet-wheel, a dog preventing premature restoration of said wheel, and a releasing-magnet for moving said pawl and dog out of mechanical relation with the ratchet-wheel to permit its restoration.

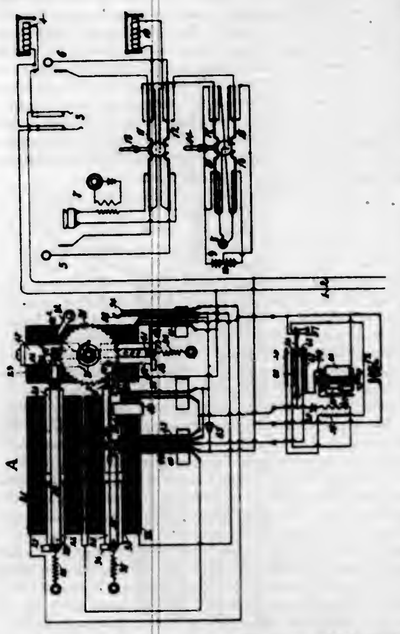

4. A telephone-line having a plurality of subscribers' stations associated therewith to constitute the same a party telephone-line, each of said subscribers' stations including selecting switching mechanism having a magnet in circuit relation with the line, a ratchet-wheel, a pawl operated by the magnet to escape the teeth of the ratchet-wheel, a spring operating upon the pawl to cause the same to move the ratchet-wheel, a second magnet governing the circuit of the aforesaid magnet, a dog preventing premature restoration of said wheel, and a releasing-magnet for moving said pawl and dog out of mechanical relation with the ratchet-wheel to permit its restoration.

5. A telephone-line having a plurality of subscribers' stations associated therewith to constitute the same a party telephone-line, each of said subscribers' stations including selecting switching mechanism having a magnet in circuit relation with the line, a ratchet-wheel, a pawl operated by the magnet to escape the teeth of the ratchet-wheel, a spring operating upon the pawl to cause the same to move the ratchet-wheel, a second magnet in circuit relation with the party-line governing the circuit of the aforesaid magnet, a dog preventing premature restoration of said wheel, and a releasing-magnet for moving said pawl and dog out of mechanical relation with the ratchet-wheel to permit its restoration.

6. A telephone-line having a plurality of subscribers' stations associated therewith to constitute the same a party telephone-line, each of said subscribers' stations including selecting switching mechanism having a magnet in circuit relation with the line, a ratchet-wheel, a pawl operated by the magnet to escape the teeth of the ratchet-wheel, a spring operating upon the pawl to cause the same to move the ratchet-wheel, a second magnet governing the circuit of the aforesaid magnet, a dog preventing premature restoration of said wheel, and a releasing-magnet in circuit relation with the line for moving said pawl and dog out of mechanical relation with the ratchet-wheel to permit its restoration.

7. A telephone-line having a plurality of subscribers' stations associated therewith to constitute the same a party telephone-line, each of said subscribers' stations including selecting switching mechanism having a magnet in circuit relation with the line, a ratchet-wheel, a pawl operated by the magnet to escape the teeth of the ratchet-wheel, a spring operating upon the pawl to cause the same to move the ratchet-wheel, a second magnet governing the circuit of the aforesaid magnet, a dog preventing premature restoration of said wheel, and a releasing-magnet in circuit relation with the line for moving said pawl and dog out of mechanical relation with the ratchet-wheel to permit its restoration.

8. A party-line subscriber's station having selecting switching mechanism including a magnet, step-by-step mechanism operated through the agency of said magnet, which thus constitutes a selecting-magnet, a governing-magnet, switching mechanism operated by the governing-magnet and controlling the circuit of the selecting-magnet, detent mechanism for holding the latter switching mechanism in the position to which it is operated by the governing-magnet, and a releasing-magnet and mechanism operated thereby for releasing the detent mechanism to permit of restoration of the latter switching mechanism.

9. A party-line subscriber's station having selecting switching mechanism including a magnet, step-by-step mechanism operated through the agency of said magnet, which thus constitutes a selecting-magnet, a governing-magnet, switching mechanism controlling the circuits of the selecting-magnet and signal-receiver, detent mechanism for holding the latter switching mechanism in the position to which it is operated by the governing-magnet, and a releasing-magnet and mechanism operated thereby for releasing the detent mechanism to permit of restoration of the latter switching mechanism.

10. A party-line subscriber's station having selecting switching mechanism including a magnet, step-by-step mechanism operated through the agency of said magnet, which thus constitutes a selecting-magnet, a governing-magnet, switching mechanism governing the circuits of the selecting-magnet and telephone, detent mechanism for holding the latter switching mechanism in the position to which it is operated by the governing-magnet, and a releasing-magnet and mechanism operated thereby for releasing the detent mechanism to permit of restoration of the latter switching mechanism.

11. A party-line subscriber's station having selecting switching mechanism including a magnet, step-by-step mechanism operated through the agency of said magnet, which thus constitutes a selecting-magnet, a governing-magnet, switching mechanism governing the telephone, signal-receiver and selecting-magnet circuits, detent mechanism for holding the latter switching mechanism in the position to which it is operated by the governing-magnet, and a releasing-magnet and mechanism operated thereby for releasing the detent mechanism to permit of restoration of the latter switching mechanism.

12. A party-line subscriber's station having selecting switching mechanism including a releasing-magnet for restoring the selecting mechanism to its normal condition, and a switching device operated by the releasing-magnet for opening the signal-receiving circuit.

13. A telephone-line having a plurality of subscribers' stations associated therewith, to constitute the same a party telephone-line, each of said subscribers' stations including selecting switching mechanism having a magnet in circuit relation with the line, a ratchet-wheel, a pawl operated by the magnet, to escape the teeth of the ratchet-wheel, a spring operating upon the pawl, to cause the same to move the ratchet-wheel in one direction, a spring for effecting the movement of the ratchet-wheel in a reverse direction, and a second magnet governing the circuit of the aforesaid magnet.

14. A telephone-line having a plurality of subscribers' stations associated therewith, to constitute the same a party telephone-line, each of said subscribers' stations including selecting switching mechanism having a magnet in circuit relation with the line, a ratchet-wheel, a pawl operated by the magnet, to escape the teeth of the ratchet-wheel, a spring operating upon the pawl, to cause the same to move the ratchet-wheel in one direction, a spring for effecting the movement of the ratchet-wheel in a reverse direction, and a second magnet in circuit relation with the party-line governing the circuit of the aforesaid magnet.

15. A telephone-line having a plurality of subscribers' stations associated therewith, to constitute the same a party telephone-line, each of said subscribers' stations including selecting switching mechanism having a magnet in circuit relation with the line, a ratchet-wheel, a pawl operated by the magnet, to escape the teeth of the ratchet-wheel, a spring operating upon the pawl, to cause the same to move the ratchet-wheel in one direction, a spring for effecting the movement of the ratchet-wheel in a reverse direction, a second magnet governing the circuit of the aforesaid magnet, a dog preventing premature restoration of said wheel, and a releasing-magnet for moving said pawl and dog out of mechanical relation with the ratchet-wheel, to permit its restoration.

16. A telephone-line having a plurality of subscribers' stations associated therewith, to constitute the same a party telephone-line, each of said subscribers' stations including selecting switching

mechanism having a magnet in circuit relation with the line, a ratchet-wheel, a pawl operated by the magnet, to escape the teeth of the ratchet-wheel, a spring operating upon the pawl, to cause the same to move the ratchet-wheel in one direction, a spring for effecting the movement of the ratchet-wheel in a reverse direction, a second magnet in circuit relation with the party-line governing the circuit of the aforesaid magnet, a dog preventing premature restoration of said wheel, and a releasing-magnet for moving said pawl and dog out of mechanical relation with the ratchet-wheel, to permit its restoration.

17. A telephone-line having a plurality of subscribers' stations associated therewith, to constitute the same a party telephone-line, each of said subscribers' stations including selecting switching mechanism having a magnet in circuit relation with the line, a ratchet-wheel, a pawl operated by the magnet, to escape the teeth of the ratchet-wheel, a spring operating upon the pawl to cause the same to move the ratchet-wheel in one direction, means for effecting the movement of the ratchet-wheel in a reverse direction, and a second magnet governing the circuit of the aforesaid magnet.

18. A telephone-line having a plurality of subscribers' stations associated therewith, to constitute the same a party telephone-line, each of said subscribers' stations including selecting switching mechanism having a magnet in circuit relation with the line, a ratchet-wheel, a pawl operated by the magnet, to escape the teeth of the ratchet-wheel, a spring operating upon the pawl, to cause the same to move the ratchet-wheel in one direction, means for effecting the movement of the ratchet-wheel in a reverse direction, and a second magnet in circuit relation with the party-line governing the circuit of the aforesaid magnet.

19. A telephone-line having a plurality of subscribers' stations associated therewith, to constitute the same a party telephone-line, each of said subscribers' stations including selecting switching mechanism having a magnet in circuit relation with the line, a ratchet-wheel, a pawl operated by the magnet, to escape the teeth of the ratchet-wheel, a spring operating upon the pawl, to cause the same to move the ratchet-wheel in one direction, means for effecting the movement of the ratchet-wheel in a reverse direction, a second magnet governing the circuit of the aforesaid magnet, a dog preventing premature restoration of said wheel, and a releasing magnet for moving said pawl and dog out of mechanical relation with the ratchet-wheel, to permit its restoration.

20. A telephone-line having a plurality of subscribers' stations associated therewith, to constitute the same a party telephone-line, each of said subscribers' stations including selecting switching mechanism having a magnet in circuit relation with the line, a ratchet-wheel, a pawl operated by the magnet, to escape the teeth of the ratchet-wheel, a spring operating upon the pawl, to cause the same to move the ratchet-wheel in one drection, means for effecting the movement of the ratchet-wheel in a reverse direction, a second magnet in circuit relation with the party-line governing the circuit of the aforesaid magnet, a dog preventing premature restoration of said wheel, and a releasing-magnet for moving said pawl and dog out of mechanical relation with the ratchet-wheel, to permit its restoration.

21. A party telephone-line extending from a plurality of subscribers' stations to an exchange, each subscriber's station having thereat a signaling-generator, a signal receiver or bell, switching mechanism serving, when unset, to permit of operative association between the signaling-generator and the line and between the telephone and the line, and, when actuated, to dissociate the generator and telephone from the line, additional switching mechanism for establishing operative association between the telephone and the line at a selected station, a detent engaging an actuated portion of the additional switching mechanism to hold the same in the position to to which it is set, electromagnetic apparatus governing the aforesaid switching mechanisms and also operating to break the engagement of the detent at a selected station, and apparatus at the exchange for governing the operation of the electromagnetic mechanisms at the different stations.

22. A party telephone-line extending from a plurality of subscribers' stations to an exchange, each subscriber's station having thereat a signaling-generator, a signal receiver or bell, switching mechanism serving, when unset, to permit of operative association between the signaling-generator and the line, and, when actuated, to dissociate the generator from the line, additional switching mechanism for establishing operative association between the telephone and the line at a selected station, a detent engaging an actuated portion of the additional switching mechanism to hold the same in the position to which it is set, electromagnetic apparatus governing the aforesaid switching mechanisms and also operating to break the engagement of the detent at a selected station, and apparatus at the exchange for governing the operation of the electromagnetic mechanisms at the different stations.

23. A party telephone-line extending from a plurality of subscribers' stations to an exchange, each substriber's station having thereat a signaling-generator, a signal receiver or bell, switching mechanism serving, when unset, to permit of operative association between the signaling-generator and the line, and, when actuated, to dissociate the generator from the line, additional switching mechanism for establishing operative association between the signal-receiver and the line at a selected station, a detent engaging an actuated portion of the additional switching mechanism to hold the same in the position to which it is set, electromagnetic apparatus governing the aforesaid switching mechanisms and also operating to break the engagement of the detent at a selected station, and apparatus at the exchange for governing the operation of the electromagnetic mechanisms at the different stations.

24. A party telephone-line extending from a plurality of subscribers' stations to an exchange, each subscriber's station having thereat a telephone, switching mechanism serving, when unset, to permit of operative association between the telephone and the line, and, when actuated, to dissociate the telephone from the line, additional switching mechanism for testablishing operative association between the telephone and the line at a selected station, a detent engaging an actuated portion of the additional switching mechanism to hold the same in the position to which it is set, electromagnetic apparatus governing the aforesaid switching mechanisms and also operating to break the engagement of the detent at a selected station, and apparatus at the exchange for governing the operation of the electromagnetic mechanisms at the different stations.

25. A party telephone-line extending from a plurality of subscribers' stations to an exchange, switching mechanism for establishing operative association between the telephone and the line at a selected station, a detent engaging an actuated portion of said switching mechanism to hold the same in the position to which it is set, electromagnetic apparatus governing the aforesaid switching mechanism and also operating to break the engagement of the detent at a selected station, and apparatus at the exchange for governing the operation of the electromagnetic mechanisms at the different stations.

26. A party telephone-line extending from a plurality of subscribers' stations to an exchange, switching mechanism for establishing operative association between the telephone and the line at a selected station, a detent engaging an actuated portion of said switching mechanism to hold the same in the position to which it is set, electromagnetic apparatus governing the aforesaid switching mechanism and also operating to break the engagement of the detent at a selected station, and apparatus for governing the operation of the electromagnetic mechanisms at the different stations.

27. Substation apparatus for party telephone-lines, including switching mechanism serving to control the association of the telephone with the line, a detent for holding the switching mechanism in the position to which is has been actuated, and electromagnetic mechanism for operating the said switching mechanism, to permit the detent to engage the same, and for breaking the engagement of the detent from connection with the switching mechanism.

28. Substation apparatus for party telephone-lines, including switching mechanism serving to control the association of the telephone with the line, a detent for holding the switching mechanism in the position to which it has been actuated, and electromagnetic mechanism for operating the said switching mechanism, to permit the detent to engage the same, and for breaking the engagement of the detent from connection with the switching mechanism, in combination with switching apparatus at an exchange for effecting the operation of said electromagnetic mechanism.

29. A party telephone-line extending from a plurality of substations to an exchange, signaling-generators at the substations, switching mechanism for establishing operative association between the signaling-generators and the line at the different stations, electromagnetic apparatus governing the aforesaid switching mechanism, and apparatus at the exchange for governing the operation of the electromagnetic mechanisms at the different stations.

30. A telephone-line extending from a substation to an exchange, a signaling-generator at the substation, switching mechanism for establishing operative association between the generator and the line, electromagnetic mechanism governing the operation of the switching mechanism, and apparatus at the exchange for governing the operation of the electromagnetic mechanism.

811,692. PARTY TELEPHONE-LINE. EDWARD A. BUELL, DeKalb, Ill. Filed May 1, 1905. Serial No. 258,276.

Claim.—1. A telephone-exchange system, including a party-line extending from a plurality of subscribers' stations to an exchange, each of said subscribers' stations having a signal bell or receiver, a signaling-generator, switching apparatus for controlling the association of the signaling-generator and signal-receiver with the line, selective mechanism governing the said switching apparatus and serving, when in an unselected condition, to effect dissociation between the signal-receiver and signaling-generator and the line, and, when in a selected position, to bring about the association of said signal-receiver and signaling-generator with the line, and apparatus at the exchange for operating the selective mechanism at the different stations, whereby the switching apparatus at the different stations may be operated to place the signal-receivers and signaling-generators thereat in connection with the line.

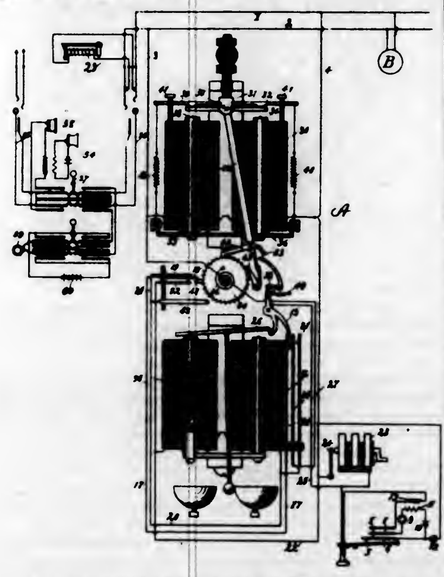

2. A telephone-exchange system, including a party-line extending from a plurality of subscribers' stations to an exchange, each of said subscribers' stations having a signal bell or receiver, a signaling-generator, switching apparatus for controlling the association of the signaling-generator, signal-receiver and telephone with the line, selective mechanism governing the said switching apparatus and serving, when in an unselected condition, to effect dissociation between the signal-receiver, the signaling-generator, the telephone, and the line, and, when in a selected position, to bring about the association of said signal-receiver, signaling-generator and telephone with the line, and apparatus at the exchange for operating the selective mechanism at the different stations, whereby the switching apparatus at the different stations may be operated to place the signal-receivers, signaling-generators and telephones thereat in connection with the line.

3. A telephone-exchange system, including a party-line extending from a plurality of subscribers' stations to an exchange, each of said subscribers' stations having a signaling-generator, a signal bell or receiver, switching apparatus for controlling the association of the signaling-generator and telephone with the line, selective mechanism governing the said switching apparatus and serving, when in an unselected condition, to effect dissociation between the signaling-generator, the telephone, and the line, and, when in a selected position, to bring about the association of said signaling-generator and telephone with the line, and apparatus at the exchange for operating the selective mechanism at the different stations, whereby the switching apparatus at the different stations may be operated to place the signaling-generators and telephones thereat in connection with the line.

4. A telephone-line, having a plurality of subscribers' stations thereon to constitute the same a party-line, each subscriber's station including a signal-receiver, a signaling-generator normally in operative relation therewith, and switching apparatus governing the association of the signal-receiver and telephone thereat with the line and operated by the signal-receiver.

5. A telephone-line, having a plurality of subscribers' stations thereon to constitute the same a party-line, each subscriber's station including a signal-receiver, a signaling-generator normally in operative relation therewith, and switching apparatus governing the association of the signal-receiver thereat with the line and operated by the signal-receiver.

6. A telephone-line, having a plurality of subscribers' stations thereon to constitute the same a party-line, selective mechanism at each station, a signal bell or receiver and switching apparatus at each station governing the association of the signal-receiver thereat with the line and governed by the signal-receiver, and apparatus at the exchange for operating the selective mechanisms at the different stations.

7. A telephone-line, having a plurality of subscribers' stations thereon to constitute the same a party-line, selective mechanism at each station, a signal bell or receiver and switching apparatus at each station governing the association of the signal-receiver and telephone thereat with the line and governed by the signal-receiver, and apparatus at the exchange for operating the selective mechanisms at the different stations.

8. A subscriber's station equipment, including a signal-receiver, a signaling-generator normally in operative relation with the signal-receiver, and switching mechanism operated by the signal-receiver and serving to control the association of the telephone and signaling-generator with the line.

9. A subscriber's station equipment, including a signal-receiver, a signaling-generator normally in operative relation with the signal-receiver, and switching mechanism operated by the signal-receiver and serving to control the association of the signal-receiver with the line.

10. A subscriber's station equipment, including a signal-receiver, a signaling-generator normally in operative relation with the signal-receiver, and switching mechanism operated by the signal-receiver and serving to control the association of the telephone, signal-receiver and generator with the line.

11. A subscriber's station equipment, including a signal-receiver, a signaling-generator normally in operative relation with the signal-receiver, and switching mechanism operated by the signal-receiver and serving to control the association of the telephone and signal-receiver with the line.

12. A subscriber's station equipment, including a signal-receiver, a signaling-generator normally in operative relation with the signal-receiver, and switching mechanism operated by the signal-receiver and serving to control the association of the signal-receiver and generator with the line.

13. A subscriber's station equipment, including a signal-receiver, a signaling-generator, and switching mechanism operated by the signaling-generator and serving to control the association of the telephone and signaling-generator with the line.

14. A subscriber's station equipment, including a signal-receiver, a signaling-generator, and switching mechanism operated by the signaling-generator and serving to control the association of the signal-receiver with the line.

15. A subscriber's station equipment, including a signal-receiver, a signaling-generator, and switching mechanism operated by the signaling-generator and serving to control the association of the telephone with the line.

16. A subscriber's station equipment, including a signal-receiver, a signaling-generator, and switching mechanism operated by the signaling-generator and serving to control the association of the telephone, signal-receiver and generator with the line.

17. A subscriber's station equipment, including a signal-receiver, a signaling-generator, and switching mechanism operated by the signaling-generator and serving to control the association of the telephone and signal-receiver with the line.

18. A subscriber's station equipment, including a signal-receiver, a signaling-generator, and switching mechanism operated by the signaling-generator and serving to control the association of the signal-receiver and generator with the line.

19. Substation apparatus for party telephone-lines including switching mechanism, a detent for holding the switching mechanism in the position to which it has been actuated, and electromagnetic mechanism including a signal-receiver for the substation, and serving to operate the said switching mechanism, to permit the detent to engage the same and for releasing the detent from connection with the said switching mechanism.

20. Substation apparatus for party telephone-lines, switching

mechanism, a detent for holding the switching mechanism in the

mechanism, a detent for holding the switching mechanism in the position to which it has been actuated, and electromagnetic mechanism for releasing the detent from connection with the switching mechanism, including a signal-receiver, which receiver serves to operate the switching mechanism, to permit the detent to engage the same.

21. A telephone-exchange system, including a party-line extending from a plurality of subscribers' stations to an exchange, each of said subscribers' stations having a signal bell or receiver, a signaling-generator, switching apparatus for controlling the association of the signaling-generator and signal-receiver with the line, selective mechanism governing the said switching apparatus and serving, when in an unselected condition, to effect dissociation between the signaling-generator and the line, and, when in a selected position, to bring about the association of said signaling-generator with the line, and apparatus at the exchange for operating the selective mechanism at the different stations, whereby the switching apparatus at the different stations may be operated to place the signaling-generators thereat in connection with the line.

811,693. KEY-RING. JOSÉ CALVO, San Francisco, Cal. Filed May 15, 1905. Serial No. 260,462.

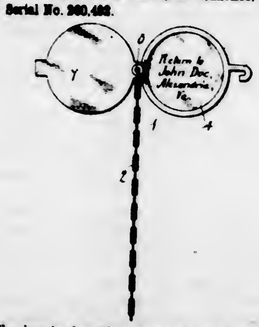

Claim.—The herein-described key-ring and tag comprising a depressed plate having an integral hook on one side thereof and a perforated lug on the other side opposite the hook, a cover for said plate having a perforated lug on one side thereof, and a projection to close the hook on the opposite side thereof, said perforated lugs being connected by an eyelet, a chain connected to said eyelet, said lug on the cover being adapted to be swung upon the eyelet as a pivot to close the hook on the depressed plate, substantially as described.

811,694. SEED-HARVESTER. THOMAS J. CAMPBELL, Lathrop, Mo. Filed June 20, 1904. Serial No. 213,259.

Claim.—1. In a machine of the class described, the combination of a frame, a stripping-bar at the front of the frame, said bar being angular in cross-section, an upwardly and rearwardly inclined support for the material, the forward end of the support being contiguous to said bar, a stripping-cylinder carrying fingers and arranged in operative relation to said bar and the forward end of said support, and a vibratory shouldered and apertured seed-separator in lapped relation to said support.

2. In a machine of the class described, the combination of a frame, a stripping-bar at the front of the frame, said bar being angular in cross-section, an upwardly and rearwardly inclined support for the material, the forward end of the support being contiguous to said bar, a stripping-cylinder carrying fingers and arranged in operative relation to said bar and the forward end of said support, a vibratory shouldered and apertured seed-separator in lapped relation to said support, and an elevator for the separated seed, consisting of an endless apron having a horizontal traverse and an upwardly-inclined traverse, and a second inclined apron contacting during a portion of its traverse with the first-named apron.

3. In a machine of the class described, a stripping-cylinder having a series of segments removably secured in place, stripping-fingers extending from said segments, a metal strip having holes for the fingers, and removably-secured cross-plates for securing the strip.

811,695. BOLTWORK FOR CIRCULAR DOORS. JOSEPH B. CAMBELL, New York, N. Y., assignor to Remington and Sherman Company, Philadelphia, Pa. Filed Apr. 8, 1905. Serial No. 254,545.

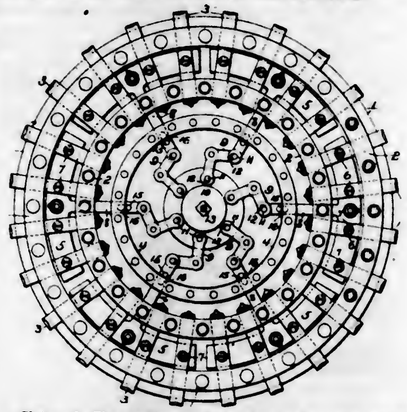

Claim.—1. The combination with a circular door, and a series of radially-disposed bolts thereon, of a series of segments each being movably connected with a plurality of bolts, and means for simultaneously moving all the segments.

2. The combination with a circular door, and a series of radially-disposed bolts thereon, of a series of segments, each being movably connected with a plurality of bolts, and means at the center of the door for simultaneously moving said segments.

3. The combination with a circular door, of parallel rings thereon having alined openings, radially-disposed bolts in said openings, a series of segments around the door each segment movably connected with a plurality of bolts, arms on the segments, and means at the center of the door for simultaneously moving said arms.

4. The combination with a circular door, and a series of radially-disposed bolts around the same, of a series of segments around the door and each segment movably connected with a plurality of bolts, arms on the segments, a rotary device at the center of the door, and bell-crank levers connecting the arms with said rotary device.

811,696. BOLTWORK FOR CIRCULAR DOORS. JOSEPH B. CAMBELL, New York, N. Y., assignor to Remington and Sherman Company, Philadelphia, Pa. Filed Apr. 10, 1905. Serial No. 254,696.

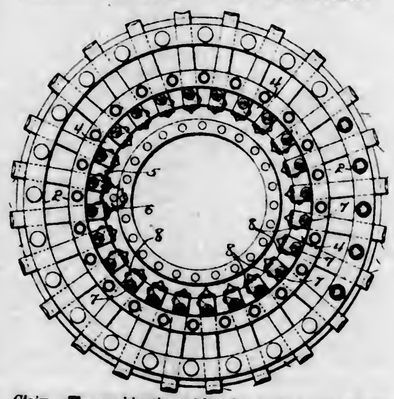

Claim.—The combination with a door and a series of radially-disposed bolts thereon, of a movable ring having a cam-slot for each and every bolt, pins carried by the bolts and located in the slots, gear-teeth on said ring and an operating-pinion meshing therewith.

811,697. BOLTWORK FOR CIRCULAR DOORS. JOSEPH B. CAMBELL, New York, N. Y., assignor to Remington and Sherman Company, Philadelphia, Pa. Filed Apr. 11, 1905. Serial No. 254,961.

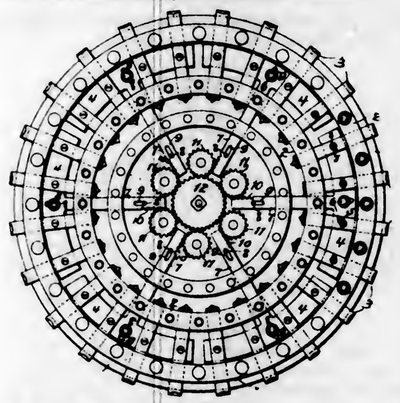

Claim.—1. The combination with a door and a series of radially-disposed bolts thereon, of a series of bars or segments each movably connected with a plurality of bolts, pinions for moving the segments and a pinion controlling all of the first-mentioned pinions.

2. The combination with a door and a series of radially-disposed bolts thereon, of a series of bars or segments each movably connected with a plurality of bolts and provided with an arm having rack-teeth, pinions engaging said racks, and means for simultaneously turning said pinions.

3. The combination with a door, and radially-disposed bolts thereon, of segments, each segment movably connected with a number of bolts, inwardly-projecting arms on the segments having gear-teeth thereon forming racks, pinions engaging said racks, and a central pinion in mesh with all of said first-mentioned pinions.

811,698. BOLTWORK FOR CIRCULAR DOORS. JOSEPH B. CAMBELL, New York, N. Y., assignor to Remington and Sherman Company, Philadelphia, Pa. Filed Apr. 11, 1905. Serial No. 254,963.

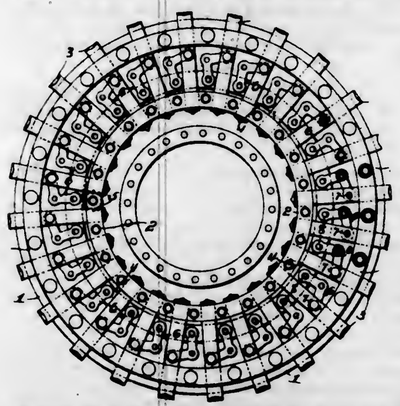

Claim.—1. The combination with a door, fixed rings thereon, and radially-disposed bolts mounted in said fixed rings, of bell-crank levers fulcrumed to the door and one located adjacent to each bolt and connected at one end thereto, and a ring movable about one of the fixed rings and connected with all of the levers.

2. The combination with a door and radially-disposed bolts thereon, of a bell-crank lever pivoted to the door beside each bolt, pins on the bolts projecting into slots in one end of the levers, a movable ring, pins thereon projecting into slots in the other ends of the levers, gear-teeth on said movable ring forming a rack, and an operating-pinion engaging said rack.

811,699. BOLTWORK FOR CIRCULAR DOORS. JOSEPH B. CAMBELL, New York, N. Y., assignor to Remington and Sherman Company, Philadelphia, Pa. Filed Apr. 12, 1905. Serial No. 255,116.

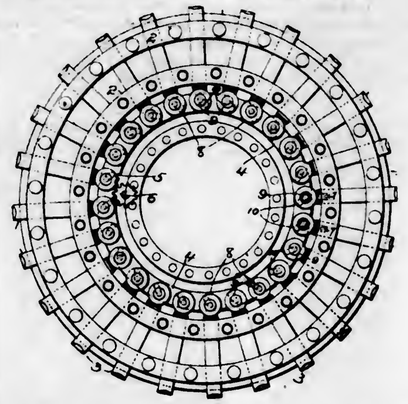

Claim.—1. The combination with a circular door, and a series of radially-disposed bolts thereon, of a movable ring on the door, removable heads secured to the inner ends of the bolts, and means connecting said heads and movable ring and operating to compel the movement of the bolts when the ring is moved.

2. The combination with a circular door, and a series of radially-disposed bolts thereon, of a movable ring on the door having cam-slots therein, heads removably secured to the inner ends of the bolts, and pins carried by said heads and projecting into the cam-slots of the movable ring.

3. The combination with a circular door, parallel fixed rings thereon, and radially-disposed bolts mounted in said rings, of a movable ring located inside the inner fixed ring and having cam-slots therein, removable heads on the inner ends of the bolts, pins carried by said heads and projecting into the cam-slots of the movable ring, gear-teeth on said movable ring, and an operating-pinion engaging said gear-teeth.

811,700. BOLTWORK FOR CIRCULAR DOORS. JOSEPH B. CAMBELL, New York, N. Y., assignor to Remington and Sherman Company, Philadelphia, Pa. Filed Apr. 13, 1905. Serial No. 255,300.

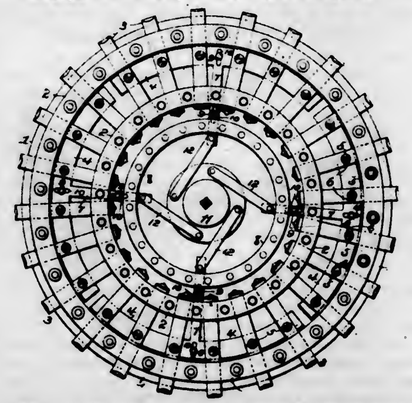

Claim.—1. The combination with a door and a series of radially-disposed bolts arranged in circular form on the door, of a series of segments each being movably connected with a plurality of bolts, a rotary member at the center of the door, and links connecting said rotary member with the segments.

2. The combination with a circular door and a series of radially-disposed bolts arranged in circular form on the door, of a series of segments each being movably connected with a plurality of bolts, an inwardly-projecting arm on each segment, a rotary member at the

center of the door and links connecting said rotary member with said arms.

3. The combination with a circular door, parallel fixed rings thereon, and radially-disposed bolts mounted in said rings, of a movable ring located inside the inner fixed ring and having cam-slots therein, removable heads on the inner ends of the bolts, pins carried by said heads and projecting into the cam-slots of the movable ring, gear-teeth on said movable ring, and an operating-pinion engaging said gear-teeth, and a spring-pressed latch engaging said gear-teeth.

811,701. DISPLAY DEVICE. JOSEPH BARNETT, Chicago, Ill. Filed Aug. 28, 1905. Serial No. 276,102.

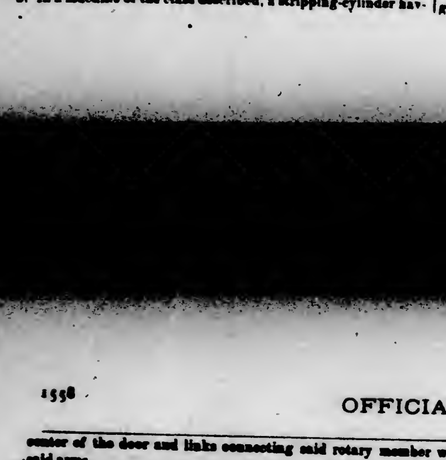

Claim.—1. In a display device, the combination with a revoluble display element, of a hammer, and a trigger to release the hammer, said trigger projecting into the path of the revoluble display element for operation thereby.

2. In a display device, the combination with a revoluble display element, of a hammer, a trigger to release the hammer, said trigger projecting into the path of the revoluble display element for operation thereby, and a spring for returning the trigger to its normal position.

3. In a display device, the combination with a revoluble display element, of a hammer, a trigger to release the hammer, said trigger projecting into the path of the revoluble display element for operation thereby, and a spring for returning the trigger to its normal position, said spring being adjustable.

4. In a display device, the combination with a revoluble display element, of a hammer, a trigger to release the hammer, said trigger projecting into the path of the revoluble display element for operation thereby, and a spring for returning the trigger to its normal position, said spring being adjustable, and a stop for limiting the movement of the trigger.

811,702. ELECTRIC CIRCUIT-CONTROLLER. JOSEPH BARNETT, Chicago, Ill. Filed Aug. 28, 1905. Serial No. 276,103.

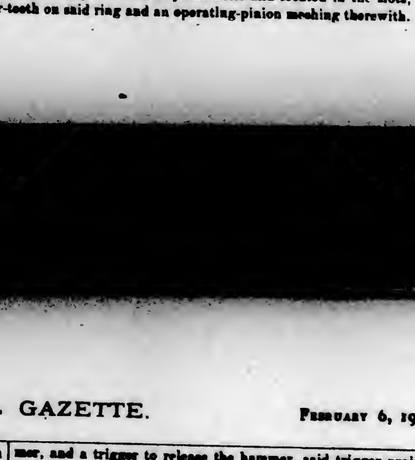

Claim.—1. In an electric circuit-controller, the combination with a revoluble display element, of a hammer, a trigger to release the hammer, said trigger projecting into the path of the revoluble display element for operation thereby, and a spring for returning the trigger to its normal position.

2. In an electric circuit-controller, the combination with a revoluble display element, of a hammer, a trigger to release the hammer, said trigger projecting into the path of the revoluble display element for operation thereby, a spring for returning the trigger to its normal position, said spring being adjustable.

3. In an electric circuit-controller, the combination with a revoluble display element, of a hammer, a trigger to release the hammer, said trigger projecting into the path of the revoluble display element for operation thereby, a spring for returning the trigger to its normal position, said spring being adjustable, and a stop for limiting the movement of the trigger.

811,703. ELECTRIC CIRCUIT-CONTROLLER. JOSEPH BARNETT, Chicago, Ill. Filed Aug. 28, 1905. Serial No. 276,104.

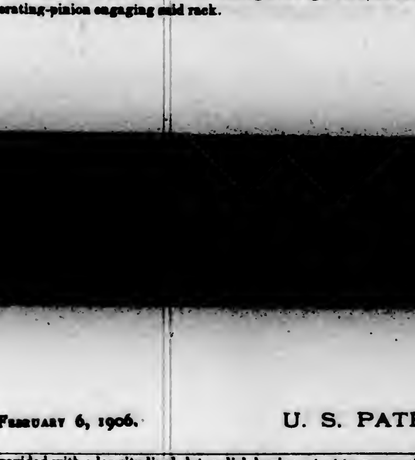

Claim.—1. In an electric circuit-controller, the combination with a revoluble display element, of a hammer, a trigger to release the hammer, said trigger projecting into the path of the revoluble display element for operation thereby, and a spring for returning the trigger to its normal position.

2. In an electric circuit-controller, the combination with a revoluble display element, of a hammer, a trigger to release the hammer, said trigger projecting into the path of the revoluble display element for operation thereby, a spring for returning the trigger to its normal position, said spring being adjustable.

3. In an electric circuit-controller, the combination with a revoluble display element, of a hammer, a trigger to release the hammer, said trigger projecting into the path of the revoluble display element for operation thereby, a spring for returning the trigger to its normal position, said spring being adjustable, and a stop for limiting the movement of the trigger.

811,704. ELECTRIC CIRCUIT-CONTROLLER. JOSEPH BARNETT, Chicago, Ill. Filed Aug. 28, 1905. Serial No. 276,105.

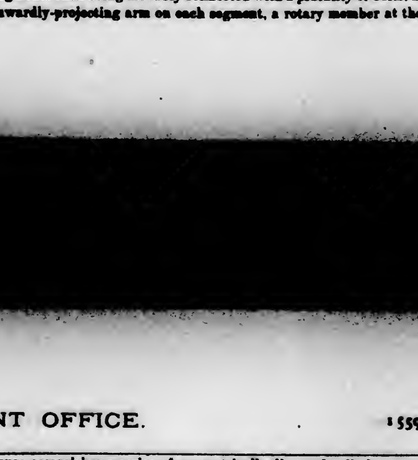

Claim.—1. In an electric circuit-controller, the combination with a revoluble display element, of a hammer, a trigger to release the hammer, said trigger projecting into the path of the revoluble display element for operation thereby, and a spring for returning the trigger to its normal position.

2. In an electric circuit-controller, the combination with a revoluble display element, of a hammer, a trigger to release the hammer, said trigger projecting into the path of the revoluble display element for operation thereby, a spring for returning the trigger to its normal position, said spring being adjustable.

3. In an electric circuit-controller, the combination with a revoluble display element, of a hammer, a trigger to release the hammer, said trigger projecting into the path of the revoluble display element for operation thereby, a spring for returning the trigger to its normal position, said spring being adjustable, and a stop for limiting the movement of the trigger.

center of the door and links connecting said rotary member with said arms.

3. The combination with a circular door, parallel fixed rings thereon, and a series of radially-disposed bolts mounted in said fixed rings, of a series of segments located between the rings and between the bolts and door, pins on the bolts engaging in openings in the segments, inwardly-projecting arms on the segments, a rotary disk at the center of the door, and links connecting said disk with the arms.

811,701. **BOLTWORK FOR CIRCULAR DOORS.** JOSEPH B. CAMBELL, New York, N. Y., assignor to Remington and Sherman Company, Philadelphia, Pa. Filed Apr. 17, 1905. Serial No. 256,006.

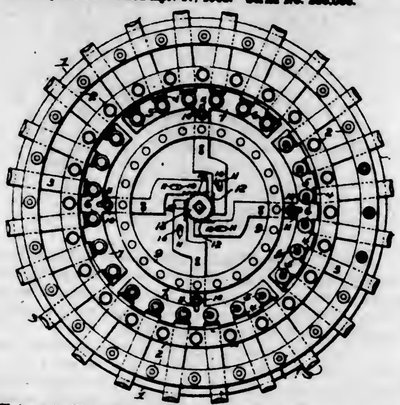

Claim.—1. The combination with a circular door and a series of radially-disposed bolts thereon, of a series of radially-movable segments, each segment movably connected with a number of bolts, arms on the segments provided with racks, and a single pinion meshing with the racks of all the arms to move them radially.

2. The combination with a circular door, parallel fixed rings thereon, and a series of radially-disposed bolts movable in said fixed rings, a series of segments inside the inner ring, removable heads on the inner ends of the bolts movably connected with the segments, arms on the segments provided with racks, and an operating-pinion engaging all the racks.

811,702. **INITIATING APPARATUS.** LEWIS D. COOK, Mount Holly Springs, Pa. Filed Apr. 10, 1905. Serial No. 254,891.

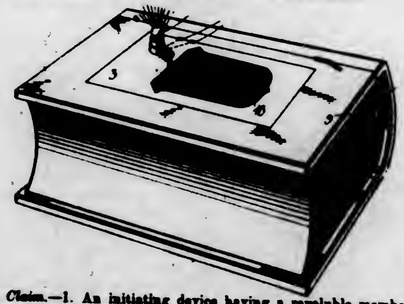

Claim.—1. An initiating device having a revoluble member, means to revolve the same, means to lock and predetermine the extent of the revolution thereof, electric lamps on opposite sides of said revoluble member, successively displayed by the rotation thereof, a source of energy, and connections including the same and the said lamps.

2. An initiating device having a revoluble member, means to lock and predetermine the extent of the revolution thereof, electric lamps on opposite sides of said revoluble member, a source of energy and connections to successively include the respective lamps in circuit with the source of energy as the revoluble member rotates.

3. In apparatus of the class described, the combination of a revoluble display element, and a firing mechanism including a hammer, and a trigger to release the hammer, said trigger projecting into the path of the revoluble display element for operation thereby.

811,703. **DRAFT-EQUALIZER.** SYDNEY B. DAVIS, Minneapolis, Minn. Filed Feb. 7, 1905. Serial No. 244,534.

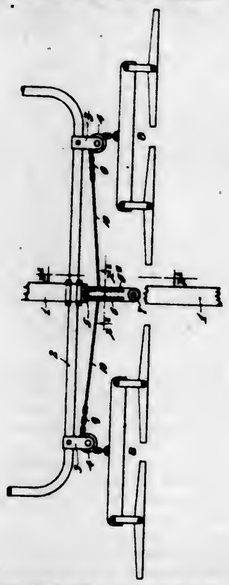

Claim.—In a machine of the character described, the combination with a pole and a frame having a transversely-extended front bar 2 rigidly secured to said pole, of an equalizing-lever 6 pivoted to said pole with its free end turned rearward and terminating slightly forward of said bar 2, said lever having two parallel rows of perforations, the sheave-bearings 3 secured to said frame-bar 2 on opposite sides of the pole, the sheaves 4 mounted on said sheave-bearings 3, the rods 10 adjustably engaged with the perforations of said equalizing-lever 6, and the chains 9 attached to the outer ends with devices to which horses may be hitched, substantially as described.

811,704. **CATAMENIAL BANDAGE.** EDWARD S. DIX, New York, N. Y., assignor to The Borated Spontaky Company, Brooklyn, N. Y., a Corporation of New York. Filed Oct. 16, 1903. Serial No. 177,230.

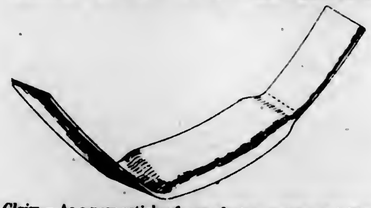

Claim.—As a new article of manufacture a catamenial bandage comprising a knitted tube, absorbent material therein, a non-elastic woven strip, substantially of the width of the said tube when flattened, embedded in said cotton, transverse stitching attaching said strip at its ends to said tube, the ends of said tube extending beyond said woven strip and forming means for attachment.

811,705. **WATCH-PENDANT ATTACHMENT.** CARP D. HATCH, Allen, Mich. Filed Apr. 21, 1905. Serial No. 256,760.

Claim.—1. The combination with a pendant, of a crown, a disk mounted for longitudinal movement therein and held against rotation relatively thereto, and a cone-shaped coiled spring housed within the crown and bearing against the disk.

2. The combination with a pendant, of a crown having a stud provided with a longitudinal slot, a disk having a tent to engage the slot, and a spring housed within the crown and bearing against the disk.

3. The combination with a pendant, of a crown having a stud provided with a longitudinal slot, a disk having a tent to engage the slot, and a cone-shaped coiled spring housed within the crown and bearing against the disk.

811,706. **APPARATUS FOR GENERATING GAS.** BYRON E. BLOOD and CARLETON ELLIS, New York, N. Y., assignors to Combustion Utilities Company, New York, N. Y., a Corporation of New York. Filed Feb. 21, 1905. Serial No. 246,788.

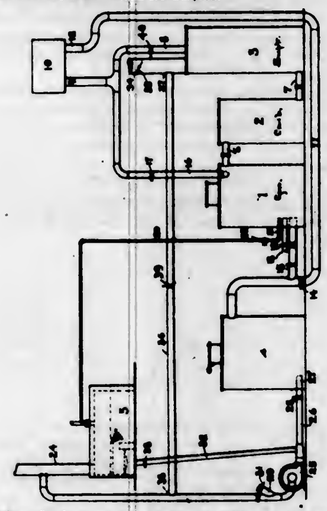

Claim.—1. Apparatus for generating illuminating-gas consisting of a water-gas generator and carburetor, a gas-producer, means for supplying carbon dioxid and air to said gas-producer, means for regulating the relative amounts of the carbon dioxid and air, and means for mixing the water-gas and producer-gas in predetermined amount.

2. Apparatus for generating illuminating-gas consisting of a water-gas generator and carburetor, a gas-producer, a steam-boiler furnace, means for supplying carbon dioxid from said steam-boiler, and air to said gas-producer, means for regulating the relative amounts of the carbon dioxid and air, and means for mixing the water-gas and producer-gas in predetermined amount.

3. Apparatus for generating illuminating-gas consisting of a water-gas generator and carburetor, a gas-producer, means for supplying the products of combustion to the air-blow and air to said gas-producer, means for regulating the relative amounts of the carbon dioxid and air, and means for mixing the water-gas and producer-gas in predetermined amount.

811,707. **CYLINDER FOR TREATING HEATED METAL.** JOHN P. BLAIR, Torrington, Conn., assignor to The Coe Brass Manufacturing Company, a Corporation of Connecticut. Filed May 6, 1905. Serial No. 259,247.

Claim.—1. A container for treating heated metal under pressure comprising a series of concentrically-disposed cylinders, and a filling of non-heat-conducting material interposed between the cylinders, the outer cylinder of said series being formed of telescoping sections.

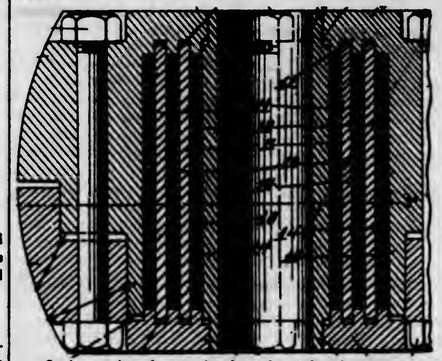

2. A container for treating heated metal under pressure comprising a series of concentrically-disposed cylinders, and a filling of non-heat-conducting material interposed between the cylinders, the outer cylinder of said series being formed of adjustable telescoping sections shaped to engage and compress said filling.

3. A container for treating heated metal under pressure comprising a series of concentrically-disposed cylinders, and a filling of non-heat-conducting material interposed between the cylinders, the outer cylinder of said series being formed of telescoping sections recessed to serve as an inclosing jacket for the other cylinders.

4. A container for treating heated metal under pressure comprising a cylinder, a covering therefor consisting of alternate layers of pressure and heat resisting material, and a sectional inclosing jacket for the covering having inwardly-extending flanges encircling the cylinder, the sections of said jacket being movable relatively to each other to exert pressure upon the layers of heat-resisting material.

5. A container for treating heated metal under pressure comprising a cylinder, a covering therefor consisting of alternate layers of pressure and heat resisting material, a sectional inclosing jacket for the covering having flanges encircling the cylinder at its ends, and means for giving said sections movement relatively to each other.

6. A container for treating heated metal under pressure comprising a cylinder, a sectional jacket therefor, the sections of the jacket being movable relatively to each other and having flanges arranged to close the ends of an annular chamber formed between the cylinder and its jacket, and a suitable filling for the chamber.

7. A container for treating heated metal under pressure comprising a series of pressure-resisting cylinders concentrically arranged, a suitable filling interposed between the cylinders, and a two-part inclosing jacket, the members of said jacket being movable relatively to each other and having integral portions shaped to encircle the cylinder at its ends and exert pressure in opposite directions upon the filling.

8. A container for treating heated metal under pressure comprising a series of cylinders arranged one within the other, and an inclosing jacket formed in sections and each section provided with an integral flange shaped to interlock with the inner cylinder of said series and having annular recesses therein to receive the ends of the outer cylinders.

9. A cylinder for treating heated metal under pressure comprising a series of concentrically-disposed cylinders varying in length and thickness, and a filling of non-heat-conducting material interposed between the cylinders, the outer cylinder of said series being formed of telescoping sections bolted together and each section provided with a head recessed to receive the ends of the other cylinders.

10. A container for treating heated metal under pressure comprising a series of pressure and heat resisting cylinders concentrically arranged in alternating relation, and a sectional inclosing jacket therefor, the sections of said jacket being provided with flanges having annular ribs extending between the pressure-resisting cylinders and exerting pressure upon the heat-resisting cylinders interposed between the same.

11. A container for treating heated metal under pressure comprising a cylinder, a covering for the cylinder consisting of a series of cylinders arranged concentrically with said first-named cylinder, non-conducting material interposed between said concentric cylin-

ders, a two-part telescoping jacket inclosing the covering

ders, a two-part telescoping jacket inclosing the covering, and means for moving the parts of the inclosing jacket relatively to each other.

811,708. BALL-BEARING. SAMUEL S. BYERLEY, Philadelphia, Pa. Filed Sept. 21, 1905. Serial No. 279,405.

Claim.—1. A bearing comprising the combination of concentric rings whereof one is grooved on its inner and whereof the other is grooved on its outer face, balls interposed between said rings and arranged in said grooves, and a cage comprising a crown-toothed ring having between its teeth countersinks and having the ends of its teeth enlarged and provided with concave faces to permit of the insertion of balls and having the shanks of the teeth inclined to form with said countersinks and the enlarged heads ball-sockets, substantially as described.

2. A bearing comprising the combination of concentric rings whereof one is grooved on its inner and whereof the other is grooved on its outer face, balls interposed between said rings and arranged in said grooves, and a cage comprising a crown-toothed ring having between its teeth ball-seats and having the ends of its teeth enlarged and provided with passages to permit of the insertion of balls and having the shanks of the teeth arranged to form with said ball-seats and the enlarged heads ball-sockets, substantially as described.

811,709. JACK FOR STRAM-DREDGES, &c. JAMES G. FAIRBANKS and GEORGE L. SAUER, Marion, Ohio. Filed Nov. 19, 1903. Serial No. 181,575.

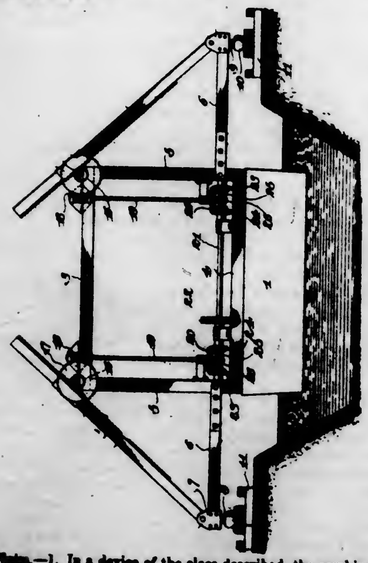

Claim.—1. In a device of the class described, the combination with a body, of a supporting element pivotally connected with and projecting from said body, a bearing member carried by the element, an operating member connected with said element and provided with a rack, and means for actuating said operating member, said means comprising a rotary pinion in mesh with the rack, a drive-shaft, means for operating the latter, and operative connections between the drive-shaft and pinion for actuating the latter.

2. In a device of the class described, the combination with a body, of a supporting element pivotally connected with and projecting from said body, a bearing member carried by the element, an operating member connected with said element and provided with a rack, and means for actuating said operating member, said means comprising a counter-shaft, a pinion thereon in mesh with the rack, a drive-shaft, means for operating the same, and mechanism actuated by the drive-shaft for driving the counter-shaft.

3. In a device of the class described, the combination with a body, of a supporting element pivotally connected with and projecting from said body, a bearing member carried by the element, an operating member connected with said element and provided with a rack, and means for actuating said operating member, said means comprising a counter-shaft, a pinion fixed thereon in mesh with the rack, a worm-wheel fixed on the counter-shaft, a drive-shaft, means for operating the same, and a worm-shaft operated by the drive-shaft and provided with a worm engaging the worm-wheel for driving the counter-shaft.

4. In a device of the class described, the combination with a body, of a supporting element pivotally connected with and projecting from said body, a bearing member carried by the element, an operating member connected with said element and provided with a rack, and means for actuating said operating member, said means comprising a counter-shaft, a pinion fixed thereon and in mesh with the rack, a worm-wheel fixed on the counter-shaft, a worm-shaft having a worm engaging the latter wheel for operating the counter-shaft, a gear fixed on the worm-shaft, a drive-shaft, means for operating the same, a pair of idle pinions on the drive-shaft in mesh with said gear, and a clutch member capable of engaging either pinion to reversely rotate the worm-shaft or for releasing both pinions to lock the latter shaft.

5. The combination with a body, of a tension-bar pivotally connected to the body, an obliquely-disposed spud pivotally connected to the outer end of the tension-bar, a guiding means for said spud, and means for positively feeding said spud longitudinally through said guide.

811,710. RAILWAY-MAIL-BAG DEVICE. CHESTER A. GARBER, Brookville, Ohio. Filed Sept. 11, 1905. Serial No. 278,022.

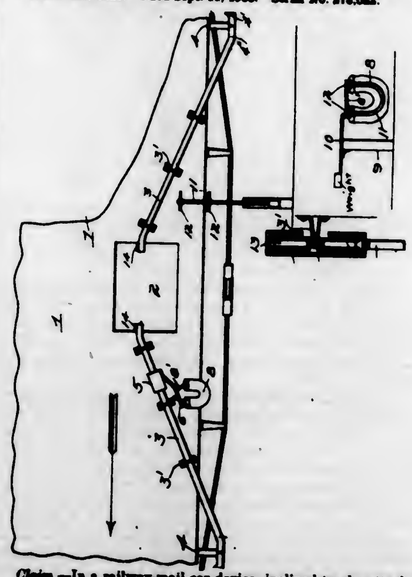

Claim.—In a railway-mail-car device, inclined tracks attached to a side of the car and projecting into the car, the lower ends of said tracks terminating horizontally, means for supporting said tracks away from the side of the car, a carrier movable on each of said tracks, said carrier having an arm with a hook thereon, in combination with a crane upon which the mail-bags are supported in a position to be engaged by said arm and removed from the crane, said crane having reversible pins upon which the mail-bags are suspended, substantially as shown and described.

811,711. HAT AND COAT RACK. ALVAH W. GOSS, Zanesville, Ohio. Filed May 9, 1905. Serial No. 259,893.

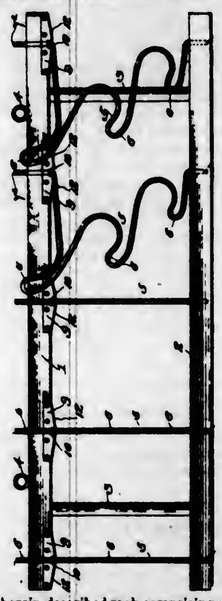

Claim.—The herein-described rack comprising a pair of horizontally-disposed, parallel supporting-bars spaced apart by cross-bars 3, resilient hooks 5 pivotally mounted at their ends between said supporting-bars, said hooks being constructed and mounted to swing from a position at right angles to said supporting-bars to an inoperative position flat against the same, holding-plates 9 secured to the upper supporting-bar, the lower edge of said plates being inclined downwardly from their ends to the center and provided with a notch with which said hooks are adapted to spring into engagement, thereby locking the same in operative position, and finger-pieces 7 formed on the upper pivoted ends of said hooks, said finger-pieces passing through the upper supporting-bar to enable said hooks to be swung to an inoperative position, substantially as described.

811,712. ADJUSTABLE STAND FOR FLOWER-POTS. ADOLPH GRAEFE, Brooklyn, N. Y. Filed July 25, 1905. Serial No. 271,186.

Claim.—1. An adjustable support of the class described, comprising a base, a standard projecting from the base and having a cylindrical bore, a cylindrical stem adjustable within said bore and having a series of circumferential shoulders or projections, means carried by the standard for engaging said shoulders, and a table or platform carried by the stem.

2. An adjustable support of the class described, comprising a base, a standard projecting therefrom and having a cylindrical bore, a cylindrical stem adjustable within said bore and having a series of circumferential shoulders or projections and a circumferential tapered or beveled surface intermediate between said shoulders and leading thereto, a pawl mechanism carried by the standard and projecting into operative engagement with said shoulders and tapered surface, and a table or platform carried by the stem.

3. An adjustable support of the class described, comprising a base, a tubular standard having a separable detachable connection with the base, a stem adjustable within said detachable standard and separable therefrom, means carried by the standard for engaging the stem, and a table or platform separably and detachably connected to the stem.

4. An adjustable support of the class described, comprising a base, a tubular cylindrical standard detachably connected with the base, a cylindrical stem adjustable in the cylindrical bore of the tubular standard and separable from the latter, said stem having a circumferential series of projecting shoulders, means carried by the standard for engaging said shoulders, and a table or platform detachably carried by the stem.

5. An adjustable support of the class described, comprising a base, a tubular cylindrical standard detachably connected with said base, a cylindrical stem adjustable in the corresponding bore of the tubular standard and separable from the latter, said stem having a series of circumferential shoulders and a circumferential tapered or beveled surface intermediate between the shoulders and leading thereto, a pawl mechanism carried by the standard and operatively engaging said shoulders and tapered surface, and a table or platform detachably carried by the stem.

6. An adjustable support of the class described, comprising a supporting-base, a standard projecting from the base and having a cylindrical bore, a revolving stem adjustable within said bore and having a vertical series of shoulders or projections circumferentially extending around said stem, means carried by the standard for engaging said cylindrical shoulders or projections at any point of the revolving movement of the stem, and a table or platform carried by the stem.

7. An adjustable support of the class described, comprising a supporting-base, a standard having a cylindrical bore and a separable detachable connection with said base, a revolving stem adjustable within said bore and separable from the standard and having a vertical series of shoulders or projections circumferentially extending aroud said stem, means carried by the standard for engaging said cylindrical shoulders or projections at any point of the revolving movement of the stem, and a table or platform separably and detachably connected to the stem.

811,713. INVALID-BEDSTEAD. LOUIS J. GROSJEAN, Chicago, Ill. Filed July 10, 1905. Serial No. 269,084.

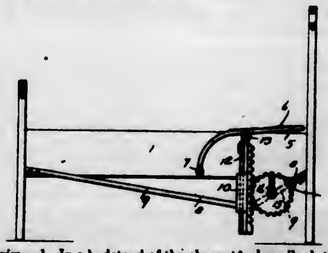

Claim.—1. In a bedstead of the character described, the combination with a supporting-frame, of a back-prop frame hingedly connected to said supporting-frame, a gear-frame arranged below said supporting-frame, vertically-disposed guide-bars arranged on said supporting and gear frames, rack-bars slidably mounted in said guide-frames, guide-rollers mounted on the upper end of said rack-bars, and means whereby said rack-bars are operated to raise and support said rack-frames, and said back-prop frame, substantially as described.

2. In a bedstead of the character described, the combination with a supporting-frame, of a back-prop frame hingedly connected to said supporting-frame, a gear-frame arranged below said supporting-frame, vertically-disposed channeled guide-bars arranged on said supporting and gear frames, rack-bars slidably mounted in said channeled guide-bars, means formed on said rack-bars to retain

the same in engagement with said rack-bar frames, grooved guide-rollers mounted on said rack-bars to engage the side bars of said back-stop frame, a transversely-disposed shaft journaled in said gear-frame, gear-wheels fixed on said shaft to engage said racks, a pawl to engage said gear-wheels and to hold the same against retrograde movement, and a crank-handle arranged on said shaft, substantially as described.

811,714. **FASTENING FOR HORSE-COLLARS.** PIERRE GUINDOLLET, St. Amand, France. Filed June 17, 1904. Serial No. 213,063.

Claim.—1. A fastener for horse-collars composed of two metal plates, one of which called male part having a tongue-piece, the said male part being provided with a recess for the lever and with an opening for the lower beak or catch of the lever the female part being provided with a cavity for the tongue-piece and having a lever terminating in a projection device, a spiral spring mounted on a fixed rod, and a lower beak or catch of the lever.

2. A fastening for horse-collars composed of two metal plates one of which called male part having a tongue-piece which penetrates in a corresponding recess of the female part and raises the lever of this part, the said male part being provided with a corresponding recess for the lever, and with an opening corresponding to the lower beak or catch of the lever, the other called female part being provided with a cavity corresponding to the tongue-piece of the male part and having a lever entering the recesses of the male part, a spiral spring operating the lever and a lower beak or catch adapted to engage in the corresponding opening of the tongue-piece of the male part, substantially as herein described and set forth.

811,715. **GUN-SHIELD.** ROBERT A. HADFIELD and ALEXANDER G. M. JACK, Sheffield, England. Filed Apr. 19, 1905. Serial No. 256,282.

Claim.—1. A cast-steel gun-shield comprising an inclined and transversely-convex central front portion and curved or sloping extensions at the sides and top thereof and integral therewith forming the sides and roof, respectively, of the shield and presenting a smooth external surface, the front portion having an upright, elongated gun-aperture formed therein.

2. A cast-steel gun-shield having its front portion, roof and sides integral and externally convexed, the front portion having a gun-aperture formed therein and reinforced around its edges.

3. A cast-steel gun-shield comprising a rearwardly-inclined and transversely-convex central front portion of maximum thickness and provided with a gun-aperture, and curved sides and a roof integral with said front portion and gradually decreasing in thickness therefrom.

4. A partly-spherical cast-steel gun-shield comprising an apertured central front portion and integral extensions thereof forming the roof and sides of the shield, and an integral reinforce along the rear edge of the shield.

5. A one-piece cast-steel gun-shield of partly-spherical or dished shape, with roof and sides integral with and curved or sloping from the central front portion, and presenting a smooth external surface, a slot or window-like aperture for a gun being formed in said front portion.

6. A one-piece cast-steel gun-shield of partly-spherical or dished shape, having an apertured, inclined central front portion of maximum thickness from the base upward and curved or sloping extensions integral therewith constituting the roof and sides and gradually decreasing in thickness toward the open rear end of the shield.

811,716. **MACHINE FOR SHARPENING DISKS.** WILLIAM F. HARVEY, Dunlin, Kans. Filed Feb. 2, 1905. Serial No. 243,570.

Claim.—The combination, with an anvil, and upper and lower brackets H and D secured thereto; of a main arm having its lower end pivoted to the lower bracket D and having its upper end arranged above the level of the top of the anvil, a brace-arm pivoted at one end to the upper end of the said main arm and having its other end slidable in the upper bracket H and provided with a nut, and a pin projecting from the middle part of the said brace-arm and adapted to support the disks with their concave sides uppermost.

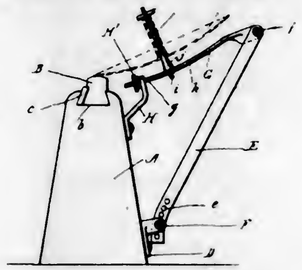

811,717. **DUMP-CAR.** HARRY S. HART and WINFIELD YOST, Chicago, Ill., assignors to Rodger Ballast Car Company, Chicago, Ill., a Corporation of Illinois. Filed Feb. 13, 1905. Serial No. 245,461.

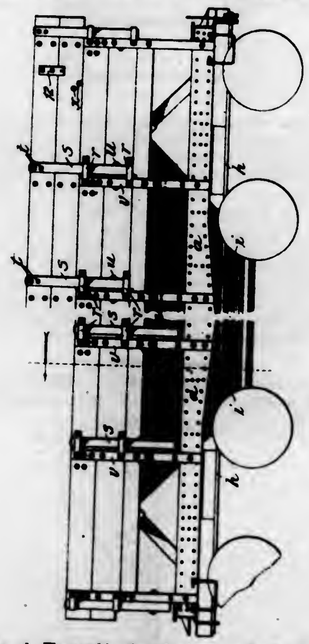

Claim.—1. The combination of a dump-car having the usual inclined sides and ends and vertically-arranged sides above the inclined sides having folding upper sections, and extension ends in the same plane as the inclined ends having a swinging and a removable section.

2. In a car of the class described, the combination of a supporting-frame portion, a V-shaped hopper-bottom secured thereto and extending longitudinally thereof, vertical side portions attached to the supporting-framework of the car and extending upwardly therefrom and formed of lower stationary and upper foldable sections, stakes for holding said side portions in their extended position, and inclined end portions arranged at each end of the car between the stationary and foldable side boards and formed of a plurality of sections, one of which is pivotally and the other removably secured in position so that they may be extended or collapsed, and means for operatively holding the parts in extended and collapsed positions, substantially as described.

3. In a car of the class described, the combination of a supporting-frame portion, a V-shaped hopper portion secured thereto extending longitudinally thereof and depending therefrom, vertically-arranged side boards secured to the framework of the car and extending upwardly therefrom above the V-shaped portion of the hopper and formed of a lower stationary portion and an upper inwardly-foldable portion, stakes exteriorly arranged for holding the parts in extended position, inclined end boards arranged between the stationary and foldable portions of the side boards and provided with a lower swinging section and an upper removable section arranged to be extended or collapsed, and means for operatively holding the parts in their extended or collapsed position, substantially as described.

4. In a car of the class described, the combination of a supporting-frame portion, a V-shaped hopper portion secured thereto extending longitudinally thereof and depending therefrom, vertically-arranged side boards secured to the supporting-frame and extending above the V-shaped hopper-bottom comprising lower fixed and upper swinging sections arranged to swing inwardly and downwardly in parallel engagement with the fixed sections, inclined end boards arranged at each end of the car and formed of lower outwardly and downwardly swinging sections and upper sections removably secured in position so as to be arranged between the swinging side-board portions when in their extended and folded conditions, and means for securing the parts in their extended and folded positions, substantially as described.

5. In a car of the class described, the combination of a supporting-frame portion, a V-shaped hopper portion secured thereto extending longitudinally thereof and depending therefrom, vertically-arranged side boards secured to the supporting-frame and extending above the V-shaped hopper-bottom comprising lower fixed and upper swinging sections arranged to swing inwardly and downwardly in parallel engagement with the fixed sections, inclined end boards arranged at each end of the car and formed of lower outwardly and downwardly swinging sections and upper sections removably secured in position so as to be arranged between the swinging side-board portions when in their extended and folded conditions, means for securing the parts in their extended and folded positions, and removable filler portions arranged between the removable inclined end-board sections and the upper swinging sections of the side boards when the parts are in their extended positions, substantially as described.

6. In a car of the class described, the combination of a supporting-frame portion, a V-shaped hopper-bottom secured thereto and extending longitudinally of the car with its apex arranged near the longitudinal center thereof, vertical side portions attached to the supporting-framework of the car and extending upwardly therefrom formed of lower stationary and upper foldable sections, inclined end portions formed of a removable portion extending from one fixed hopper side portion to the other and an upper removable portion extending from one foldable side portion to the other and removably secured thereto, and means for holding said side portions in extended condition, substantially as described.

7. In a car of the class described, the combination of a supporting-frame portion provided with a dumping-bottom, side portions attached to the supporting-framework of the car formed of lower fixed and upper foldable portions, inclined end portions having movable portions and lower fixed portions extending from one fixed side frame portion to the other, and upper removable end frame portions extending from one foldable side frame portion to the other and removably secured thereto.

8. In a car of the class described, the combination of a supporting-frame portion provided with a dumping-bottom, side portions attached to the supporting-framework of the car formed of lower fixed and upper foldable portions, inclined end frame portions having movable portions extending from one fixed side frame portion to the other, and inclined upper end frame portions extending from one foldable side frame portion to the other and adapted to be removably secured thereto when such foldable side frame portions are in raised and lowered positions respectively.

9. In a car of the class described, the combination of a supporting-frame provided with a dumping-bottom, side portions attached to the supporting-framework of the car formed of lower fixed and upper foldable portions, end frame portions each having a movable portion extending from one fixed side portion to the other and an upper removable portion extending from one foldable side portion to the other, and means for holding each side and end frame portions in position.

811,718. **HOOF MIXTURE.** FRANK B. HATCH, Winnipeg, Canada. Filed June 10, 1905. Serial No. 265,049.

Claim.—1. The herein-described hoof mixture consisting of water, saltpeter, sal-ammoniac, sulfate of copper and strong ammonia substantially as described and for the purpose specified.

2. The herein-described hoof mixture consisting of water, one quart, saltpeter one ounce or thereabout, sal-ammoniac one ounce or thereabout, strong ammonia one-half dram or thereabout, sulfate of copper one-half dram or thereabout substantially as described and for the purpose specified.

811,719. **DUMPING-WAGON.** JOHN HEBERLING, Rochester, N. Y. Filed Mar. 6, 1905. Serial No. 248,378.

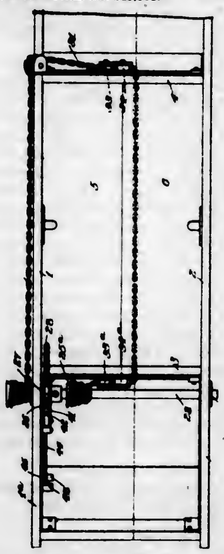

Claim.—1. In a dump-wagon, the combination with a box, a movable bottom door thereon and a winding-shaft, extending transversely of the box at one end thereof, of projections on the ends of the door and similar projections on each end of the box, a flexible connection attached at each of its ends to the shaft and passing first beneath the projection at one end of the door thence over the projection on the adjacent end of the box, thence passing over the projection at the other end of the box and beneath the other projection on the door and means for operating the shaft.

2. In a dump-wagon, the combination with a box, movable bottom doors thereon and a winding-shaft extending transversely of the box at one end thereof, of projections on the ends of one of the doors and similar projections on the ends of the box, a flexible connection having its end portions passing beneath said door projections and over those at each end of the box, the intermediate portion of said connection passing beneath the other door and having its two extremities connected to the winding-shaft and means for operating the latter.

3. In a dump-wagon, the combination with a box, movable bottom doors thereon one of which is provided with end projections and a winding-shaft extending transversely of the box at one end thereof, of projections on each end of the box, a chain extending beneath and over the respective projections at the end of the door and box which are adjacent the shaft, thence passing beneath the other door and over and under the projections arranged respectively on the other end of the box and door, the two extremities of the chain extending upwardly from the door projections and being secured to the winding-shaft and means for operating the latter.

4. In a dump-wagon, the combination with a box, a movable bottom thereon and a winding-shaft extending transversely thereof and having an end projecting beyond a side of the box, of projections on the ends of the box, a flexible connection having one end attached to the projecting end of the shaft and extending along one side of the box, thence beneath the bottom and connected at its other extremity to the shaft between the sides of the box.

5. In a dump-wagon, the combination with a box, a movable bottom thereon, a winding-shaft extending transversely thereof at one end of the box and having an end projecting beyond one side thereof and a guide-pulley located at the other end of the box, of a flexible connection attached at one end to the shaft between the box sides and at the other end to the projecting end of the shaft and extending beneath the box and along the side thereof and passing over the guide-pulley thereon.

6. In a dump-wagon, the combination with a box, a movable bottom thereon, a winding-shaft and a flexible connection between it and the bottom, of a ratchet-wheel on the shaft, a locking-pawl coöperating therewith, a lever pivoted on the box, connections between it and said pawl for operating the latter in one direction to disengage it when the lever is moved in one direction and releasing it when said lever is moved in the opposite direction, means for actuating the pawl into operative position independently of the lever and means for rotating the shaft.

7. In a dump-wagon, the combination with a box, a movable bottom thereon, a winding-shaft and a flexible connection between it and the bottom, of a ratchet-wheel on the shaft, a locking-pawl coöperating therewith and means for normally holding it in operative position, a pivoted foot-operated releasing-arm, connections between said arm and the pawl operating only to disengage the pawl from the ratchet-wheel when the arm is moved in one direction and means coöperating with the ratchet-wheel for rotating the shaft.

8. In a dump-wagon, the combination with a box having an end, a movable bottom for the box, a winding-shaft extending transversely of the box adjacent the end thereof and a flexible connection between it and the bottom, of a ratchet-wheel on the shaft, a pivoted operating-lever engaging the end of the wagon-box to limit its movement in one direction, a thrust-pawl on the lever coöperating with the ratchet-wheel when the lever is moved away from the end of the box, said pawl having an end adapted to engage the end of the box to move it into inoperative position when the movement of the lever is arrested.

9. In a dump-wagon, the combination with a box, comprising sides and ends, of movable bottom-sections on the box, upwardly-extending flanges on the bottom-sections embracing the outer faces of the box sides and hinge members supporting the ends of the bottom-sections on the box having corner-pieces supporting said flanges.

811,720. **DISPLAY-RACK.** CHARLES G. HEDGE, Manchester, Ohio. Filed June 13, 1905. Serial No. 264,896.

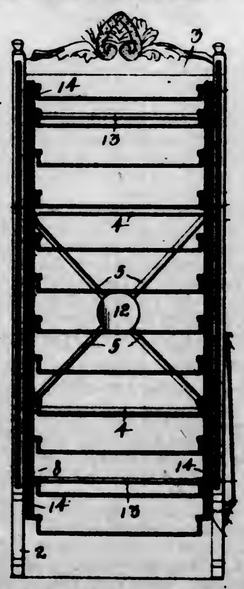

Claim.—In a display-rack, the combination with a supporting-frame comprising upright parallel side bars, a cross-bar connecting the upper ends of said side bars, diagonally and horizontally disposed brace-bars, castings secured to said side bars, said castings having formed therein threaded sockets to receive the threaded outer ends of said brace-bars, a centrally-disposed casting having threaded sockets formed therein to receive the threaded inner ends of said diagonal brace-bars, and endless conveyer mechanism arranged on said supporting-frame, display-shelves carried by said mechanism, and means to pivotally connect said shelves with said conveyer mechanism whereby the former will always assume a horizontal position while being carried around by said conveyer mechanism, substantially as described.

811,721. **SHUTTLE.** EDUARD HERING, West Hoboken, N. J. Filed June 21, 1905. Serial No. 266,196.

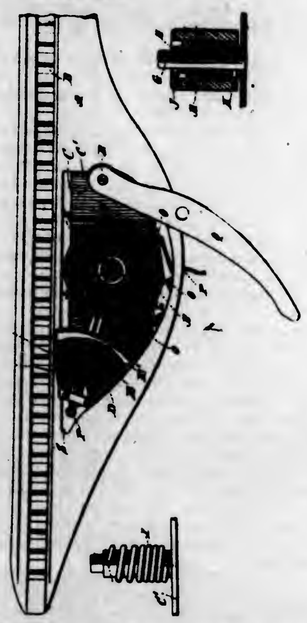

Claim.—1. In a shuttle, a support, a coil-spring arranged around said support, and a spool adapted to be carried by said support and provided with a pin arranged to engage said coil-spring to lock the spool to the support.

2. In a shuttle, a support, a spool adapted to be carried by said support, and a resilient member for locking said spool to the support.

3. In a shuttle, a support, a spool adapted to be carried by said support, and provided with locking means, and a coil-spring engaging said locking means for locking said spool to the support.

4. In a shuttle, a support, a sleeve on said support, a coil-spring around said sleeve, a spool adapted to be carried by said support, and a projection on said spool arranged to engage said coil-spring to lock the spool to the support.

5. In a shuttle, a support, a coil-spring around said support, the coils of said spring becoming wider apart as they near the free end of the support, a spool, arranged to be slipped over the free end of said support and provided with a projection adapted to enter into engagement with the coil-spring at the point where the coils are widest apart, to lock the spool to the support.

811,722. **DRILL-CHUCK.** FRITZ J. HOMMEDIEU, Detroit, Mich., assignor to National Twist Drill & Tool Company, Detroit, Mich., a Corporation of Michigan. Filed Mar. 7, 1904. Serial No. 197,691.

Claim.—1. In a drill-chuck, the combination with a shank member having a longitudinal split and chambered cylindrical head portion formed with an inclined outer edge, a bushing member having a

longitudinal slit therein and a tapered head, and a sleeve having a threaded engagement with the head and formed with a tapered outer end portion adapted to simultaneously engage the respective tapered ends of the shank and bushing.

2. In a drill-chuck, the combination with an expansible chambered head, of a compression-sleeve having a threaded engagement with the head, and a tapered end portion engaging the forward edge of the head, and a bushing within the head provided with a tapered portion at its forward edge adapted to engage the tapered parts of the sleeve.

3. The combination of a main chuck consisting of a shank, longitudinally-slitted head and an exterior sleeve having a screw-threaded engagement with the head for contracting the members of the head, of a split reducing-bushing adapted to fit the head, a bearing on the bushing adapted to be engaged by said sleeve, whereby the sleeve on the outside of the main chuck will contract and directly compress the jaws of the bushing when the sleeve is moved rearward.

811,723. **PNEUMATIC SULKY.** SAMUEL B. JERALD, Waterloo, Iowa. Filed Apr. 26, 1905. Serial No. 257,427.

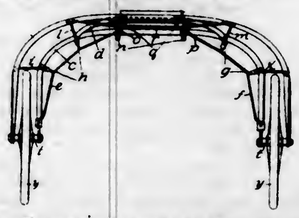

Claim.—The combination, with the wheels, seat and thills of a pneumatic sulky, of an arch consisting of three curved members, the upper members arranged at angles one in front of and the other behind the lower member, and each approximately parallel to the lower member, and with their ends meeting to support the outer ends of the wheel-spindles, bracing connecting the inner member to the outer members, a reinforcing-arch superposed upon said inner member, and suitable trusses for supporting the middle sections of said outer arches.

811,724. **CROCHET-WORK BUTTON.** IRENE KALLIWODA, Sopron, Austria-Hungary. Filed June 28, 1904. Serial No. 214,490.

Claim.—1. A button of the kind described, made of a center part formed of long stitches (trebles), and long double crochets worked into said stitches, substantially as described.

2. A button of the character described, made of pairs of long stitches (trebles) and long double crochets of chain-stitches worked between said long stitches and said crochets, substantially as described.

3. A crochet-work button, made of a center part, an outer annular part formed into a row of tambour-stitches worked over with close stitches (*a*), a row of tambour-stitches of single thread and another row of double thread worked around the first row, substantially as described.

811,725. **MEANS FOR SOLDERING ALUMINIUM.** ARTHUR W. KING, London, England, assignor to Charles Rogers, London, England. Filed Aug. 15, 1905. Serial No. 273,976.

Claim.—A coating whereby ordinary solder can be used to solder aluminium, which is obtained by melting together to a low red heat and well mixing ten parts soft solder composed of tin and lead of the character specified, five parts of pure zinc and five to eight parts of aluminium.

811,726. **HEMP-BREAKING MACHINE.** WILLIAM H. KLARK and JAMES P. LOWRY, Winchester, Ky. Filed Nov. 4, 1903. Serial No. 179,854.

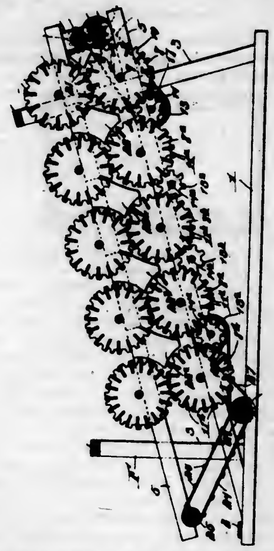

Claim.—A hemp-breaking machine embodying a plurality of pairs of breakers, driving-gears meshing with the lower series of breakers and having their journals disposed below those of the said breakers whereby the lower breakers may be closely disposed thereby to prevent any tendency of the gears to catch and mutilate the hemp, inward-curved angularly-arranged guide members having pointed terminals disposed between the succeeding pairs of breakers, and an endless conveyer arranged at the lower end of the machine and disposed at an angle oblique to the plane of the travel of the hemp therethrough, the lower end of the conveyer being arranged below the lowest breaker, whereby the hemp discharged from this breaker is caused to be caught by the conveyer.

811,727. **ADJUSTABLE CURVED TYPE AND CYLINDER.** HENRY L. KOEHLER, Deer Park, Ky. Filed Oct. 19, 1904. Serial No. 229,065.

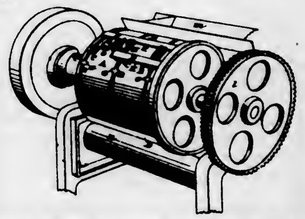

Claim.—1. The combination of a revoluble cylinder encircled by mortises, flanged strips having dovetails fitting loosely in the mortises, curved type having flanges adapted to slide between the cylinder and the flanges on the strips, means for fastening the strips to the cylinder and means for securing the type between the strips all as and for the purposes set forth.

2. The combination of a revoluble cylinder encircled by mortises, flanged strips having dovetails fitting loosely in the mortises, circularly-curved type having flanges adapted to slide between the cylinder and the flanges on the strips, screws passing through the dovetails for fastening the strips to the cylinder, and plates and screws for securing the type between the strips all as and for the purposes set forth.

3. The combination of a revoluble cylinder, adjustable flanged strips, extending along said cylinder, adapted to freely slide around said cylinder and to be firmly attached thereto at any point thereon,

curved flanged type adapted to be secured between a pair of such stripe, and means for firmly attaching said stripe to the cylinder at any point, substantially as described.

811,728. SHEET-METAL RECEPTACLE. DAVID R. LEVIN and GABRIEL B. SUNDSTROM, Chicago, Ill.; said Sundstrom assignor to said Levin. Filed Jan. 30, 1905. Serial No. 243,330.

Claim.—1. In a sheet-metal receptacle, the combination of a body having side walls, and a head fitting within the body near one end, said head having at its edge a flange disposed at an acute angle both to the head and the adjacent part of the side walls and extending toward the adjacent end of the walls of said body, said walls being curled inwardly around said flange and having an edge bearing endwise into the inner apex of the angle between said flange and head, and said flange bearing endwise against the inner surface of said curled part, said curled part having contact with said flange only along the line of the edge of said flange and along the line of the apex of the angle between said flange and head.

2. A sheet-metal receptacle, comprising side walls and a head fitting within said walls near one end, said head having at its edge a flange disposed at an angle to the head and extending toward the adjacent end of the side walls, said walls being curled inwardly around said flange, and the curled part of said walls having its edge forced endwise into the inner apex of the angle between said flange and head so as to bear abruptly against the flange and expand the same outward to form a tight joint with said walls.

811,729. SHEET-METAL HUMIDOR. HENRY MACARTHY, New York, N. Y., assignor to American Can Company, New York, N. Y., a Corporation of New Jersey. Filed Oct. 26, 1905. Serial No. 284,493.

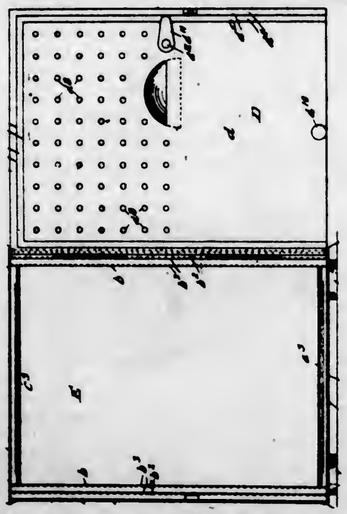

Claim.—1. In a sheet-metal humidor, the combination with double, hollow, upright sides provided with perforations in the inner walls thereof, and furnished with rabbets or angle-shoulders on the front upright edges thereof, of a double, hollow, hinged door and water-receptacle furnished with perforations in its inner wall above the water-receptacle portion thereof, and provided with rabbets or angle-shoulders on its upright edges, substantially as specified.

2. In a sheet-metal humidor, the combination with the upright side plates, of a double-walled, hollow, hinged door for containing water in its lower portion, and provided with perforations through the inner wall of the door at the upper portion thereof to enable the vapor or moisture to pass into the humidor from the water in the hinged door, substantially as specified.

811,780. LOOSE-LEAF BOOK. GEORGE H. MANGER, Des Moines, Iowa, assignor of one-fourth to John Weber, Jr., Des Moines, Iowa. Filed May 23, 1905. Serial No. 261,795.

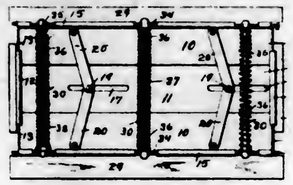

Claim.—1. In a book, the combination of a back-frame, rods detachably connected with said back-frame, coil-springs, caps on the ends of the coil-springs, having said rods passed through them to pivotally connect them with the back-frame.

2. In a book, the combination of a back-frame, rods at the sides of the back-frame, coil-springs and caps for the coil-springs, each provided with a head formed with an opening to receive a rod and also formed with arms extended away from the head, then toward each other forming shoulders designed to engage the coils of the springs and secure the caps to the springs, said rods passed through the openings in said caps.

3. In a book, the combination of a back-frame, coil-springs connected at their ends to the sides of the back-frame and two stiffening-rods detachably inserted in the ends of the springs, and spaced apart at the centers of the springs.

4. In a book, the combination of a back-frame, coil-springs connected at their ends to the sides of the back-frame and two stiffening-rods at the opposite ends of one of the springs and one stiffening-rod at the central portion of one of the springs.

5. In a book, the combination of a back-frame, rods detachably connected to the sides of the back-frame, a number of coil-springs, caps for the ends of the coil-springs each comprising a body portion formed with an opening to receive said rod and also formed with arms having shoulders thereon to receive the ends of the coil-springs, headed stiffening-rods inserted in some of said arms, said heads engaged by the shoulders and a stiffening-rod at the central portion of one of the coil-springs.

6. In a book, a back-frame comprising a central strip formed with longitudinal slots and with its ends inclined upwardly, inwardly and downwardly, side pieces slidingly connected with the central piece and provided with side margins formed with loops and end margins slidingly inserted in the end portions of the central piece, the sliding bar below the central piece, pins passed through the slots in the former piece, arms pivoted to said pins extended outwardly and pivoted to the side pieces of the frame whereby longitudinal movement of the bar will move the side pieces inwardly and outwardly relative to each other and contractible coil-springs connected to the upturned side edges of the side pieces.

7. In a book, a back-frame comprising a central strip formed with longitudinal slots and with its ends inclined upwardly, inwardly and downwardly, side pieces slidingly connected with the central piece and provided with side margins formed with loops and end margins slidingly inserted in the end portions of the central piece, the sliding bar below the central piece, pins passed through the slots in the central piece, arms pivoted to said pins extended outwardly and pivoted to the side pieces of the frame whereby longitudinal movement of the bar will move the side pieces inwardly and outwardly relative to each other and a locking-lug formed with a keyhole connected to said bar.

8. In a book, a back-frame comprising a central strip formed with longitudinal slots and with its ends inclined upwardly, inwardly and downwardly, side pieces slidingly connected with the central piece and provided with side margins formed with loops and end margins slidingly inserted in the end portions of the central piece, the sliding bar below the central piece, pins passed through the slots in the central piece, arms pivoted to said pins extended outwardly and pivoted to the side pieces of the frame whereby longitudinal movement of the bar will move the side pieces inwardly and outwardly relative to each other, a locking-lug formed with a keyhole connected to said bar, a back-piece connected with the said central portion of the back-frame, said back-piece formed with a recess to receive the sliding bar and locking-lug, said back-piece also formed with a keyhole in line with that of the locking-lug.

811,781. LIFTING-JACK. HUGH M. MARSH, Chicago, Ill. Filed Oct. 4, 1905. Serial No. 281,205.

Claim.—1. In a lifting-jack, in combination, a standard, a lever pivoted to the standard, a rack-bar in sliding engagement with the standard, a pawl carried by the lever, a spring-rod engaging the pawl, and means carried by the lever for engaging the spring to deflect it as the lever makes its stroke.

2. In a lifting-jack, in combination, a standard, a lever pivoted to the standard, a rack-bar in sliding engagement with the standard, a pawl pivoted to the standard, a pawl pivoted to the lever, a spring-rod connecting the pawls, and a spring-deflector carried by the lever.

3. In a lifting-jack, in combination, a standard, a lever pivoted to the standard, a rack-bar in sliding engagement with the standard, a pawl pivoted to the standard, a pawl pivoted to the lever, a spring-rod connecting the pawls, and a spring-deflector pivotally united to the lever and engaging the wall of the standard.

4. In a lifting-jack, in combination, a standard, a lever pivoted to the standard, a rack-bar in sliding engagement with the standard, a pawl pivoted to the standard, a pawl pivoted to the lever, a spring-rod connecting the pawls, a spring-deflector pivotally united to the lever and engaging the wall of the standard, and a movable jaw mounted on the spring-deflector.

5. In a lifting-jack, in combination, a standard, a lever pivoted to the standard, a rack-bar in sliding engagement with the standard, a pawl pivoted to the standard, a pawl pivoted to the lever, a spring-rod connecting the pawls, an arm pivotally secured to the lever and in sliding engagement with the standard, a shoulder set transversely on the arm, and a movable jaw mounted on the arm.

6. In a lifting-jack, in combination, a standard, a lever pivoted to the standard, a rack-bar in sliding engagement with the standard, a pawl pivoted to the lever, a pawl pivoted to the standard, a spring-rod bearing on the pawls and having a coil intermediate its ends, and a spring-deflector carried by the lever and recessed to receive the coil.

7. In combination, a ratchet member, two pawls engaging the ratchet member, a spring-rod connecting the pawls, a pivoted lever for actuating one of the pawls, and a spring-deflector carried by the lever.

8. In a lifting-jack, in combination, a standard, a ratchet-bar reciprocating in the standard, a hand-lever pivoted to the standard, a pair of pawls engaging the bar, one being pivoted to the standard and the other to the lever, a spring-rod uniting the pawls, an arm pivoted to the lever and in sliding engagement with the standard and having transverse jaws engaging the spring.

9. In a lifting-jack, in combination, a standard, a ratchet-bar reciprocating in the standard, a hand-lever pivoted to the standard, a pair of pawls engaging the bar, one being pivoted to the standard and the other to the lever, a spring-rod uniting the pawls, an arm pivoted to the lever and in sliding engagement with the standard and having a transverse shoulder engaging the spring, a jaw slidingly engaging the arm, and an eccentric mounted on the arm and controlling the jaw.

10. In a lifting-jack, in combination, a standard, a ratchet-bar reciprocating in the standard, a lever, a spring-actuated pawl, and automatic means for reversing the spring action on the pawl as the lever approaches the limits of its stroke.

11. In a lifting-jack, in combination, a standard, a ratchet-bar reciprocating in the standard, a lever, a spring-controlled pawl pivoted on the lever, a spring-controlled retaining-pawl pivoted on the standard, and means carried by the lever for reversing the spring action on the pawls as the lever reaches the limits of its stroke.

12. In a lifting-jack, in combination, a standard, a ratchet-bar reciprocating in the standard, a lever, a spring-controlled pawl pivoted on the lever, and means carried by the lever for reversing the spring action on the pawl as the lever reaches the limits of its stroke.

13. In a lifting-jack, in combination, a standard, a ratchet-bar reciprocating in the standard, a lever, a spring-controlled retaining-pawl pivoted on the standard, and means carried by the lever for reversing the spring action on the pawl as the lever reaches the limits of its stroke.

811,782. ARMOR FOR PNEUMATIC TIRES. ALANSON A. MOORE, Detroit, Mich., assignor of one-half to Frank H. Bessenger, Detroit, Mich. Filed Feb. 21, 1905. Serial No. 246,767.

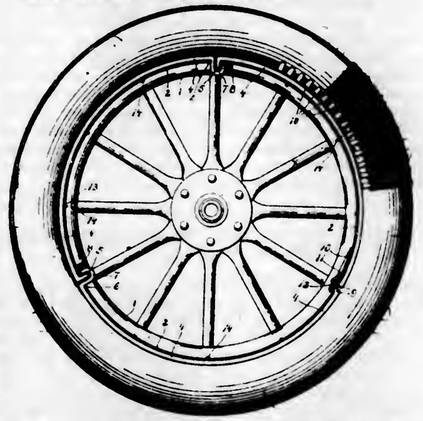

Claim.—1. The combination with a tire and a rim of greater width than that portion of the tire which engages said rim, of a securing-band engaging the outer surface of the rim at one side of the tire, means on the ends of said band for drawing said ends toward each other to clamp the band to the rim, a series of chains extending transversely across the tire and forming an armor therefor, and means for securing the ends of the chains to said band.

2. The combination of a tire having laterally-extending flanges, a wheel-rim, bands engaging the outer surface of the rim and each provided with a laterally-extending flange to engage the flanges on the tire and hold the same to the rim, means on the ends of the bands for drawing the ends toward each other to clamp the bands to the rim, a tire-armor, and means for securing the armor to the said bands.

3. The combination with a tire and a wheel-rim to which the tire is secured, of an armor for the tire consisting of a series of independent chains, a securing-band engaging the outer surface of the wheel-rim at one side of the tire, means on the ends of said band for drawing said ends toward each other to clamp the band about the rim, adjustable means for securing each of said chains to said band, and means for preventing the said band from slipping laterally from the rim.

4. The combination with a tire and a wheel-rim to which the tire is secured, of an armor for the tire, a securing-band to engage the outer surface of the rim adjacent to the tire and made in two or more parts, an arm formed on one end of one part of the band, a hook on the adjacent end of the other part to embrace said arm, a set-screw carried by the hook and engaging the arms to force the ends of the parts of the band toward each other to clamp the same to the rim, and means for securing the armor to the said band.

5. The combination with a tire and a wheel-rim to which the tire is adapted to be secured, of an armor for the tire, a securing-band to which the armor is attached adapted to engage the outer surface of the rim at one side of the tire, laterally-bent arms on the ends of said band, a lever pivotally attached to one of said arms and provided with a notch in one side at a distance from its pivot, and a loop pivotally attached to the arm on the adjacent end of the band and adapted to engage the notch in the lever when the same is passed through said loop.

6. The combination with a tire and a wheel-rim to which the tire is adapted to be secured, of an armor consisting of independent chains extending transversely of the tire with their edges in contact, securing-bands adapted to engage the outer surface of the rim at each side of the tire and each provided with a series of holes, means on said bands for drawing the ends of each toward each other to clamp the bands about the rim, adjusting-screws engaging the holes in the bands, stirrups attached to the ends of the chains, and nuts secured in said stirrups and engaging the screws.

7. The combination with a tire and a wheel-rim to which the tire is adapted to be secured, of a flexible strip on the tread of the tire, a series of independent flexible plates secured to said strip, a series of independent flat chains extending transversely of the tire in engagement with said plates, and means for adjustably and detachably securing the ends of the chains to the wheel-rim to form an armor for the tire and hold the strip with its plates in place.

8. The combination with a pneumatic tire, of a wheel-rim of greater width than the base of the tire which is adapted to be secured thereto and provided with longitudinal slots and notches in its edges, an armor consisting of independent chains formed of links woven flat and each having a central portion with parallel edges and tapering end portions, adjusting-screws secured to the ends of said chains, securing-bands engaging the outer surface of the rim at each side of the tire and each provided with a series of holes to receive the adjusting-screws, inwardly-extending arms on the ends of the bands extending through the notches in the rim, a lever pivoted to one of said arms on each band and provided with a notch in its side, a loop pivoted to the adjacent arm on each band to engage the notch in the lever, and pins on the bands to engage the slots in the rim.

811,733. **WINDOW-SCREEN.** ERNEST B. MORROW, Bluffton, Ind. Filed Jan. 23, 1905. Serial No. 242,236.

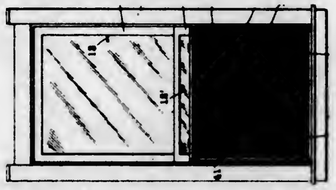

Claim.—1. A window-screen consisting of, a suitable frame and reticulated covering for said frame, a flap forming part of the upper cross-bar of said frame but hinged thereto, the inner edge of said flap being adapted to lie closely adjacent a portion of the window-sash, and a second flap hinged to the inner edge of the first-mentioned flap and having its inner edge projected into close proximity to the glass of the sash.

2. A window-screen consisting of, a suitable frame the upper cross-bar of which is narrower than the sides to which it is attached, and a flap hinged to the inner edge of said cross-bar and having an inner edge adapted to lie in close proximity to portions of the window-sash.

3. A window-screen consisting of a suitable frame and having an upper cross-bar of less width than the sides, a flap hinged to the inner edge of said cross-bar and extending substantially to the width of the sides, said flap having a rabbet formed in its lower inner corner, a flexible strip laid in said rabbet, a second flap of less thickness than the first flap hinged to the inner edge thereof, and a flexible strip carried by the inner edge of the said second flap, all substantially as and for the purpose set forth.

811,734. **AUTOMATIC GOVERNING DEVICE FOR GASOLENE-ENGINES.** DAVID C. MCCARROLL, Kansas City, Mo. Filed Nov. 20, 1904. Serial No. 233,702.

Claim.—1. In valve-operating mechanism a rotary shaft, a main cam-plate fixed on said shaft, and a supplemental cam-plate loosely connected with said shaft and having its cam in a normally open or extended position from the fixed cam said plates having registering openings extending tangentially to the said shaft, an angle-bar having an inclined edge within said registering openings adapted to move said loose cam-plate toward a coincident position with the cam on the fixed cam-plate and self-adjusting means for holding the supplemental cam-plate in contact with the said inclined edge of said angle-bar.

2. In valve-operating mechanism a rotary shaft, a main cam-plate fixed on said shaft and having a slot extending tangentially to the circumference of said shaft, an angle-bar having an inclined edge within said slot and a cam-blade loosely connected with said shaft and normally in an open position from the cam on the main cam-plate and having a notch in the direction of said angle-bar and a radial arm on said blade and resilient means for retaining the notched portion of the cam-blade in contact with the inclined edge of said angle-bar.

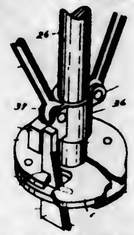

3. The combination in an engine with the governor-shaft and governor and with a valve-operating spring-controlled valve-stem on the engine of a compound cam on the governor-shaft consisting of a main cam-plate and cam fixed on said shaft and a supplemental member of said compound cam loosely connected with said shaft, said main and supplemental cam-plates having suitable registering openings extending tangentially to the circumference of said shaft said loose member of the compound cam having its cam-surface in a normally open or extended position from the cam on the fixed cam-plate and in the opposite direction to the rotation of said shaft both cam-surfaces of the compound cam being adapted to come into contact with the spring-actuated valve-stem and control the time of the opening and closing of said valve by the reciprocal movement of the loose member, and a movable angle-bar actuated by the governor having an inclined edge within said registering openings in said fixed and loose members of said compound cam with which inclined edge the side of the opening in the loose member contacts said angle-bar acting to vary the movements of the loose member of the compound cam from the reciprocal action of the valve-stem.

4. The combination in a gas-engine with the cylinder and piston and piston-rod, of a driving-shaft actuated thereby, gas supply and exhaust casings on said cylinders and valves within said casings, spring-retracted valve-stems connected with said valves, a governor-shaft and governor, a movable sleeve on said shaft, operated by the governor, means for transmitting power to the governor-shaft from the driving-shaft, a main cam-plate on the governor-shaft, having a slot therein, a supplemental cam plate or blade, a collar connected therewith extending around the shaft of the governor, an arm on said collar, a spring connected with the main cam-plate and said arm, and an angle-bar in the slot of the main cam-plate connected with the movable sleeve on the shaft of the governor and bearing against the supplemental cam-blade.

811,735. **DISH-WASHING MACHINE.** JOSEPHINE D. MCELROY, Leavenworth, Kans. Filed Aug. 7, 1905. Serial No. 273,158.

Claim.—The herein-described dish-washing machine consisting of a boiler having an upwardly-projecting pivot 2 from the bottom thereof, a reticulated dish-receptacle revolubly mounted on said pivot within said boiler, a bail on the upper end of said receptacle, said bail having formed therein a square socket 5, a combined bearing-frame and cover arranged on the upper end of said boiler, said frame comprising curved straps 7, a crank-shaft journaled in said bearing-frame and adapted to engage the squared socket in said bail, a crank arranged on said shaft, a knife and fork receptacle arranged on the bottom of said dish-receptacle, and a dish-holding tray adjustably secured in said receptacle to hold the dishes therein, substantially as described.

811,736. **PNEUMATIC STRAW-STACKER.** JOSEPH W. HETHEY, Indianapolis, Ind., assignor to The Indiana Manufacturing Company, Indianapolis, Ind., a Corporation of West Virginia. Filed June 26, 1905. Serial No. 267,626.

Claim.—1. The combination, in a pneumatic stacker, of a horizontally-positioned turn-table, a centrally-arranged driving-shaft vertically mounted therein, a horizontally-arranged fan-shaft mounted above said driving-shaft, a blast mechanism and conveyer structure pivotally mounted on said turn-table with the axes of the pivots and of the fan-shaft substantially coincident, a suitable means for revolving said turn-table, and suitable means for swinging the blast mechanism and conveyer structure on its pivot.

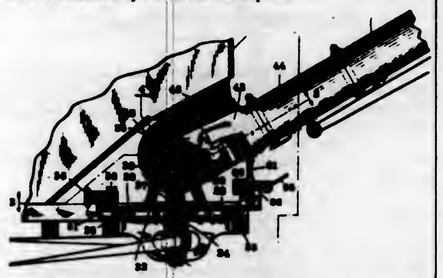

2. The combination, in a pneumatic stacker, of a horizontally-positioned turn-table, a driving-shaft vertically mounted therein, bearings carried by said turn-table at diametrically opposite sides of said driving-shaft, and a blast mechanism and conveyer-tube structure provided with gudgeons which rest in said bearings, the said gudgeons being hollow and forming the bearings for the fan-shaft of the blast mechanism.

3. The combination, in a pneumatic stacker, of a turn-table, a centrally-arranged driving-shaft mounted in said turn-table, bearings also mounted on said turn-table on diametrically opposite sides of said driving-shaft and extending to and beyond the end of said driving-shaft, a rigidly-constructed blast mechanism and conveyer structure provided with hollow gudgeons which extend to and rest in said bearings and which also form bearings for the fan-shaft, said driving-shaft and said fan-shaft being arranged so that their axes intersect, and suitable power-transmission devices connecting said two shafts.

4. The combination, in a pneumatic stacker, of a turn-table, a rigidly-constructed blast mechanism and conveyer structure pivotally mounted on said turn-table, a means of swinging said structure relatively to the turn-table consisting of a pivoted screw, a suitable screw-socket engaging therewith, and a pivoted housing in which said socket is mounted.

5. The combination, in a pneumatic stacker, of a horizontally-positioned turn-table, supports independent of the driving-shaft therefor, a driving-shaft mounted centrally in said turn-table, bearings carried by said turn-table at opposite sides of said driving-shaft, a blast mechanism and conveyer structure pivotally mounted in said bearings, and power-transmission devices connecting the driving-shaft and the fan-shaft of the blast mechanism.

6. The combination, in a pneumatic stacker, of a turn-table, a blast mechanism and conveyer structure carried thereby, a vertically-arranged driving-shaft mounted centrally in said turn-table, and suitable supports for said turn-table independent of said shaft.

7. The combination, in a pneumatic stacker, of a suitable horizontally-pivoted straw-receiving hopper having a conveyer-pipe leading therefrom, a suitable blast mechanism communicating with said hopper, the axes of the blast mechanism and of the hopper-pivot being coincident, a turn-table provided with bearings for the support of said devices, and a vertical driving-shaft positioned centrally in said turn-table.

8. The combination, in a pneumatic stacker, of a horizontally-rotatable turn-table, a vertical driving-shaft mounted centrally therein, a blast mechanism embodying a horizontal shaft positioned vertically above said driving-shaft, power-transmission devices connecting said two shafts, and a suitable horizontally-pivoted straw-receiving hopper having a conveyer-pipe leading therefrom, the axes of the hopper-supporting pivots and of the blast mechanism shaft being coincident.

811,737. **GAS-GENERATOR.** CHARLES L. PARSONS, Durham, N. H. Filed July 23, 1904. Serial No. 217,044.

Claim.—1. In a gas-generator, a tank provided with an overflow communicating with said tank adjacent the bottom, a receptacle open at the bottom and closed at the top disposed within the tank, means within the receptacle for supporting a solid in granular form and means for supplying a liquid under constant head to the top of the receptacle.

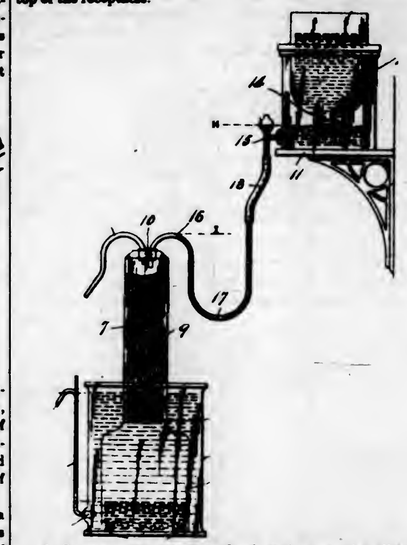

2. In a gas-generator, a tank adapted to contain a liquid and provided with an overflow communicating therewith adjacent the bottom, a receptacle open at the bottom and submerged in the tank, a hollow solid-containing column open at the bottom, integral with and communicating with the said receptacle, a tube provided with a liquid seal and communicating with the column and an elevated reservoir adapted to supply liquid to the column through the pipe at a constant pressure equal to the normal pressure exerted on the gas by the liquid in the said tank.

3. In a gas-generator, a reservoir adapted to contain a liquid, a vessel with a reduced neck inverted in said reservoir, and disposed to form a liquid seal, a pipe connected with the reservoir below the level of the vessel-neck and provided with a liquid seal, a tank adapted to contain a liquid and provided with an overflow communicating therewith adjacent the bottom, a receptacle open at the bottom and submerged in the tank, a hollow solid-containing column open at the bottom and integral with and communicating with the said receptacle and disposed to receive a liquid from the said pipe and all so disposed that the pressure of the liquid from the reservoir shall equal the pressure of the liquid in the tank and be sustained thereby through the medium of the gas in the receptacle.

811,738. **RAILWAY-SWITCH.** LOUIS R. PARSONS, Stronghurst, Ill. Filed July 27, 1905. Serial No. 271,500.

Claim.—1. The combination with a main track and a siding, of a movable switch-point, a crank disk or element, operative connections between the crank of said disk and said point, an oscillatory device, a connection between said device and said disk, trip-levers upon said oscillatory device, means for limiting the swinging movement of said levers, and means for holding said levers normally in a projected position.

2. The combination with a main track and a siding, of a movable switch-point, a crank disk or element, operative connections between the crank of said disk and said point, an oscillatory disk formed with a segmental-shaped recess, radially-projecting trip-levers pivoted in said recess and adapted to swing inwardly into the same, and springs for retaining said trip-levers in engagement with the ends of said recess.

3. The combination with a main-line track and a siding, of movable switch-points, a bar connecting said points, a crank-disk, a link connecting said bar and the crank of said disk, oscillatory disks mounted adjacent to said tracks and formed with segmental-shaped recesses, cranks connecting said oscillatory disks and said crank-disk, levers pivoted in the recesses in said oscillatory disks, and springs for holding said levers in engagement with the ends of said disks, substantially as described.

4. The combination with a main-line track and a siding, of movable switch-points, a shaft journaled beneath same and formed at

with the other, a bracket upon said brace, a bar pivotally connected with the bracket and carrying a level, and an index-plate connected

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and of less immersed area than the immersed area of the hull, whereby said hull may be lifted above the surface of the water at high

4. The combination with a main-line track and a siding, of movable switch-points, a shaft journaled beneath same and formed at diametrically opposite points with notches to receive said points, a beveled gear, a beveled pinion upon said shaft and in mesh with said gear, and oscillatory devices mounted adjacent to said tracks, and links connecting said devices and said gear, substantially as described.

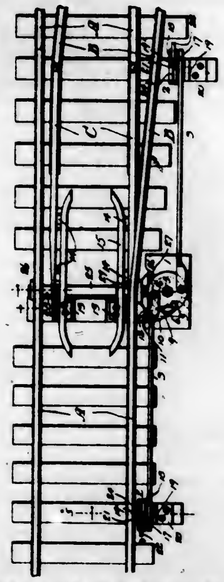

5. The combination with a main-line track and a siding, of movable switch-points, a bar connecting said points, a locking-shaft journaled beneath said points and having notches to receive the latter, a beveled gear, a beveled pinion upon said shaft in mesh with said gear, a crank-pin upon said gear, a link pivoted to said bar and formed with a slot to receive said crank-pin, oscillatory disks mounted adjacent to said tracks and formed with recesses, links connecting said disks and said gearing, levers pivotally mounted in the recesses in said disks, and springs for holding said levers in engagement with the ends of said recesses, substantially as described.

811,739. GRADE-LEVEL. DAVID W. PELPREY and WILLIAM S. RIDDLE, Haleyville, Ala. Filed Nov. 16, 1905. Serial No. 287,715.

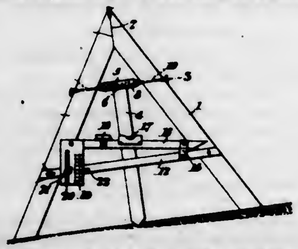

Claim.—1. In a grade-level, a frame including legs or side members having oblique hingedly-connected ends, a third leg having a tubular head, a pivot for said head including a bolt and a pair of end members connected thereby, and tightening-bolts extending through apertures in the side members of the frame and engaging threaded recesses in the ends of the pivot member.

2. In a grade-level, a frame including a pair of side members and a third pivotally-supported member, and pivotal supporting means for said third member including means whereby the side members of the frame are drawn toward each other and toward said third member.

3. In a grade-level, a frame including side members, a brace connected pivotally with one of said side members and detachably with the other, a bracket upon said brace, a bar pivotally connected with the bracket and carrying a level, and an index-plate connected with the level-carrying bar and having a slot engaging a fastening member upon the brace-bar.

811,740. HINGE. MAURICE L. PETER and WILLIAM J. SHURBET, Columbus, Ohio. Filed May 25, 1905. Serial No. 262,131.

Claim.—1. A hinge having one of its members provided with projections adapted to engage one side of a door-jamb or the like, and a screw carried by the member adapted to engage the opposite side of the jamb to fasten the member in place.

2. In a hinge, an elongated member provided at its pivot end with lugs, and an adjustable fastening device carried at the opposite end of the member.

3. In a hinge, the combination with the hinge member, of an elongated hinge member pivotally connected with the first-named hinge member and provided with lugs at its point of connection with the said member, the said elongated member having a lug at its outer or free end, and a screw-threaded fastening device adjustably mounted in the lug.

811,741. WRENCH. PETER T. PETERSON, Spatten, Minn. Filed May 29, 1905. Serial No. 262,262.

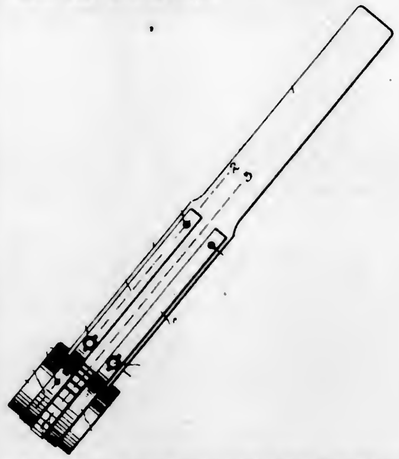

Claim.—A wrench comprising a handle having a curved recess in one of its ends and longitudinally-extending recesses in one of its faces, a rotary head of cylindrical form seated in said curved recess and formed with a nut-engaging socket, clamping-bands surrounding said head and having one of their ends secured upon said handle and their opposite ends seated in said longitudinal recesses, clamping-strips for retaining said bands in said recesses, clamping-screws passed through said bands and strips and into said handle, an annular series of ratchet-teeth upon said head, and a spring-pawl upon said handle to engage said teeth.

811,742. DRIP ATTACHMENT FOR BOTTLES. MARGARET PETER, San Francisco, Cal. Filed June 19, 1905. Serial No. 265,669.

Claim.—1. A drip attachment for bottles, comprising a section of absorbent material having a plurality of slits, each slits forming inwardly-projecting tongues of said material to secure said attachment to the neck of a bottle, substantially as described.

2. A drip attachment for bottles comprising a section of absorbent material having a central orifice and a plurality of tongues of said material projecting inwardly to said orifice for securing said attachment to the neck of a bottle, substantially as described.

3. A drip attachment for bottles comprising a section of absorbent material having a plurality of equidistant tongues projecting inwardly to a central orifice in said attachment for securing said attachment to the neck of a bottle, substantially as described.

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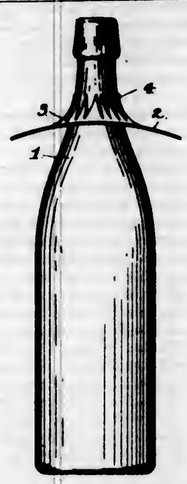

811,743. MARINE NAVIGATION. SIDNEY A. REEVE, Brooklyn, N. Y., assignor to William M. Meacham and Larned H. Meacham, Chicago, Ill. Filed July 31, 1905. Serial No. 267,796.

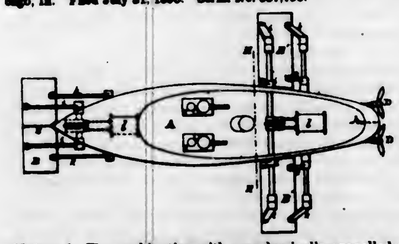

Claim.—1. The combination with a mechanically-propelled vessel of plates located on each side thereof, and having their front and rear edges independently connected to the vessel by swinging links, and means for swinging the said links on their upper pivots and holding them in adjusted position.

2. The combination with a mechanically-propelled vessel of plates located on each side thereof, and having their front and rear edges independently connected to the vessel by swinging links, a plate extending across and under the bow and having similar swinging links connected therewith, and means for swinging the links on their upper pivots and holding them in adjusted position.

3. The combination with a mechanically-propelled vessel, of the plate B at the bow and the plates B' each side of the hull, each of said plates having their front and rear edges connected to the vessel by the independent swinging links *i k*, and means for swinging the links on their upper pivots and holding them in adjusted position.

4. In a water-conveyance, the combination with a body or vessel for receiving the passengers or load, of inclined supporting-plates connected thereto and moving edgewise through the water at an inclination to the longitudinal horizontal line to give support to the body or vessel, said inclined supporting-plates extending below the bottom of the body of the vessel, so that when the conveyance is in motion the body of the vessel may be supported entirely above the surface of the water, substantially as specified.

5. In a water-conveyance, the combination with a body or vessel for receiving the passengers or load, of inclined supporting-plates connected thereto and moving edgewise through the water at an inclination to the longitudinal horizontal line to give support to the body or vessel, and a propeller for imparting forward motion to the conveyance, said inclined supporting-plates extending below the bottom of the body of the vessel, so that when the conveyance is in motion the body of the vessel may be supported entirely above the surface of the water, substantially as specified.

6. A self-propelled vessel having a flotative body or hull, and a reactionary surface extended below the molded surface of said hull and of less immersed area than the immersed area of the hull, whereby said hull may be lifted above the surface of the water at high speeds by reaction.

7. The combination with a self-propelled vessel of two or more supporting-plates arranged one above another and attached to the vessel by means of movable standards.

8. In a water-conveyance, the combination with a body or vessel, of a front inclined supporting or carrying plate B, and rear inclined carrying-plates B' B', the latter arranged one at each side of the conveyance, and at opposite angles to each other in respect to a transverse horizontal line.

9. In a water-conveyance, the combination with a body or vessel, of a front inclined supporting or carrying plate B, and rear inclined carrying-plates B' B', the latter arranged one at each side of the conveyance, and at opposite angles to each other in respect to a transverse horizontal line, and a propeller.

10. The combination with a boat or vessel, of supporting-plates on opposite sides of the vessel and adapted to be extended below the bottom of the same, movable supports for said plates and manually-regulated means for adjusting said plates simultaneously as to their angle relative to the line of motion.

11. The combination with a boat or vessel, of supporting-plates on opposite sides of the vessel and adapted to be extended below the bottom of the same, movable supports for said plates, and manually-regulated means for adjusting said plates simultaneously as to their depth of submergence.

811,744. COMBUSTION-ENGINE. FRITZ REICHENBACH, Charlottenburg, Germany. Filed Mar. 9, 1905. Serial No. 249,203.

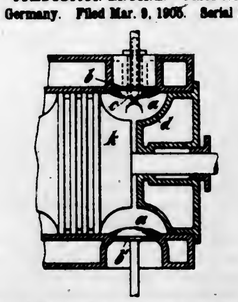

Claim.—1. In an internal-combustion engine, the combination of a cylinder having a head, a piston, the piston and head forming when in juxtaposition an annular combustion-chamber, inlet and exhaust valves, and a fuel-injector arranged tangentially to said annular chamber, for the purpose set forth.

2. In a double-acting internal-combustion engine, the combination of a cylinder having a head, a piston carried by a rod working through said head, the adjacent faces of the piston and head being so shaped as to form an annular chamber when they are in juxtaposition, inlet and exhaust valves, and a fuel-injector arranged tangentially to said annular chamber, for the purpose set forth.

811,745. SIDE-DELIVERY HAY RAKE AND LOADER. MADISON REW, Grinnell, Iowa. Filed Oct. 17, 1904. Serial No. 228,788.

Claim.—1. In a side-delivery hay rake and loader, a laterally and upwardly moving conveyer provided with means for raking the hay from the ground and elevating it to a point of discharge.

2. In a side-delivery hay rake and loader, a laterally and upwardly moving conveyer provided with means for raking the hay from the ground and elevating it to a point of discharge, and means for adjustably supporting the delivery end of the conveyer.

3. In a side-delivery hay rake and loader, a wheel-bearing frame, a laterally and upwardly moving conveyer mounted at the rear of said frame provided with means for gathering the hay from the ground and elevating it to a point of discharge, and means for supporting the rear side of the conveyer, for the purposes stated.

4. In a side-delivery hay rake and loader, a wheel-supported frame, a traction-wheel mounted therein, a laterally and upwardly moving conveyer provided with means for gathering the hay from the ground and elevating it to a point of discharge, and means for operatively connecting the conveyer with the traction-wheel.

5. In a side-delivery hay rake and loader, a wheel-supported frame, a traction-wheel mounted therein, a laterally and upwardly

moving conveyer provided with means for gathering the hay from

means for connecting the free end of the

moving conveyer provided with means for gathering the hay from the ground and elevating it to a point of discharge, means for operatively connecting the conveyer with the traction-wheel, and means for varying the point of discharge of the conveyer.

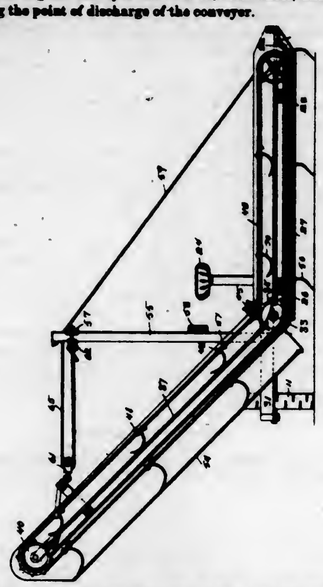

6. In a side-delivery hay rake and loader, a wheel-supported frame, a traction-wheel mounted therein, a laterally and upwardly moving conveyer provided with means for gathering the hay from the ground and elevating it to a point of discharge, means for operatively connecting the conveyer with the traction-wheel, and means for tightening the conveyer on its supports.

7. In a side-delivery hay rake and loader, a wheel-supported frame, a traction-wheel mounted therein, a laterally and upwardly moving conveyer provided with means for gathering the hay from the ground and elevating it to a point of discharge, means for operatively connecting the conveyer with the traction-wheel, means for varying the point of discharge of the conveyer, and means for tightening the conveyer on its supports.

8. In a side-delivery hay rake and loader, a frame, a traction-wheel in the frame, a lower carrier-frame at the rear of the frame, means for supporting the rear side of the lower carrier-frame, an upper carrier-frame pivoted at one end of said lower carrier-frame, means for supporting the free end of the upper carrier-frame, and an endless conveyer provided with means for gathering the hay from the ground and elevating it laterally, supported by the upper and lower carrier-frames, for the purposes stated.

9. In a side-delivery hay rake and loader, a frame, a traction-wheel in the frame, a lower carrier-frame at the rear of the frame, means for supporting the rear side of the lower carrier-frame, an upper carrier-frame pivoted at one end of said lower carrier-frame, means for supporting the free end of the upper carrier-frame, an endless lateral conveyor supported by the upper and lower carrier-frames, comprising two endless chains connected by a series of rotatably-mounted shafts, a series of teeth mounted on each of said shafts, and a guide-roller designed to maintain the teeth in position as the carrier is operated for raking hay from the ground and elevating it laterally.

10. In a side-delivery hay rake and loader, a frame, a traction-wheel in the frame, a lower carrier-frame at the rear of the frame, means for supporting the rear side of the lower carrier-frame, an upper carrier-frame pivoted at one end of said lower carrier-frame, means for supporting the free end of the upper carrier-frame, an endless conveyor provided with means for raking and elevating hay laterally from the ground, supported by the upper and lower carrier-frames, and draft sprocket-wheels for operating said conveyor.

11. In a side-delivery hay rake and loader, a frame, a traction-wheel in the frame, a lower carrier-frame at the rear of the frame, means for supporting the rear side of the lower carrier-frame, an upper carrier-frame pivoted at one end of said lower carrier-frame, means for supporting the free end of the upper carrier-frame, an endless conveyor provided with means for raking and elevating hay laterally from the ground supported by the upper and lower carrier-frames, draft sprocket-wheels for operating said conveyor, and means for maintaining the conveyor in engagement with the sprocket-wheels.

12. In a side-delivery hay rake and loader, a frame, a traction-wheel in the frame, a lower carrier-frame at the rear of the frame, means for supporting the rear side of the lower carrier-frame, an upper carrier-frame pivoted at one end of said lower carrier-frame, means for supporting the free end of the upper carrier-frame an endless conveyer provided with means for raking hay from the ground and supported by the upper and lower carrier-frames, and a trough mounted beneath the upper carrier-section through which the hay is to be drawn by the conveyer in elevating it to a point of discharge.

13. In a side-delivery hay rake and loader, a frame, a traction-wheel in the frame, a lower carrier-frame at the rear of the frame, means for supporting the rear side of the lower carrier-frame, an upper carrier-frame pivoted at one end of said lower carrier-frame, means for supporting the free end of the upper carrier-frame, an endless conveyer supported by the upper and lower carrier-frames, teeth in the conveyer, a trough mounted beneath the upper carrier-section through which the hay is to be drawn by the teeth on the conveyer in elevating it to a point of discharge, and means for adjusting the free end of the upper carrier upwardly and downwardly, said means being within the reach of an operator sitting on the seat of the loader.

14. In a side-delivery hay rake and loader, two carrier-frames, a laterally and upwardly moving endless conveyer capable of gathering the hay from the ground and elevating it to a point of discharge comprising two endless chains, a series of rocking shafts connecting these chains, a series of teeth mounted upon these shafts, and a guide-roller designed to coact with the carrier-frames around which the conveyer passes for maintaining the shafts against rocking movement as the teeth are raking and elevating hay.

15. In a side-delivery hay rake and loader, two carrier-frames, a laterally and upwardly moving endless conveyer capable of gathering the hay from the ground and elevating it to a point of discharge, comprising two endless chains, a series of rocking shafts connecting these chains, a series of teeth mounted upon these shafts, a guide-roller designed to coact with the carrier-frames around which the conveyer passes for maintaining the shafts against rocking movement as the teeth are raking and elevating hay, and means for adjustably supporting the delivery end of the elevating-conveyer.

811,746. **ROAD-BED.** GEORGE ROSS and STEPHEN F. DEAL, Kansas City, Mo. Filed June 9, 1905. Serial No. 264,982.

Claim.—The herein-described road-bed, consisting of a rolled and hardened admixture of a layer of natural earth with the following-named liquids: crude petroleum, asphaltum, and crude carbolic acid, in the proportions of, eighty per cent. of crude petroleum, fifteen per cent. of liquid asphaltum, and five per cent. of crude carbolic acid; substantially as described.

811,747. **ROTARY ENGINE.** WILLIAM J. ROWE and ARBA L. WYTHOCK, Cleveland, Ohio. Filed Mar. 3, 1904. Serial No. 196,264.

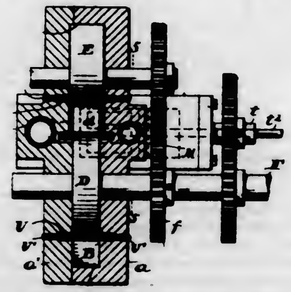

Claim.—1. In a rotary engine, the combination of a casing containing a cylindrical piston-chamber, a rotary piston, of smaller diameter located therein, a piston-blade secured thereto, there being two inlet-ports leading to one side of the annular space within said chamber around said piston, and two outlet-ports leading from the opposite side thereof, and said casing containing two cylindrical chambers with which said inlet and outlet ports respectively communicate, and there being an inlet-port to one of said chambers and an outlet-port from the other, with two cylindrical valves which are mounted respectively in said chambers and are each provided with two ports, and mechanism connecting said valves whereby they may be rocked simultaneously, substantially as and for the purpose specified.

2. In a rotary engine, the combination of a casing containing a cylindrical piston-chamber, a rotary piston therein having a piston-blade, and a movable abutment, there being two inlet-ports through one end of said piston-chamber but on opposite sides of said abutment, and two exhaust-ports through the other end of said piston-chamber and on opposite sides of said abutment, an exhaust-valve chamber with which the two exhaust-ports connect, an inlet-valve chamber with which the two inlet-ports connect, a valve in each of said two chambers adapted to simultaneously open one of the ports connected with it and to close the other port, connections between said two valves whereby they operate simultaneously, a cylindrical cut-off-valve chamber communicating with the inlet-valve chamber referred to, a rotary cut-off valve, and mechanism connecting said valve with the rotary piston, substantially as and for the purpose specified.

3. In a rotary engine, the combination of a casing which contains two intersecting cylindrical chambers of unequal diameter, a parallel cylindrical cut-off chamber adapted to be connected with the steam-supply, and two valve-chambers each having two ports connecting it to the larger of the intersecting chambers and one having an exhaust-port and the other being connected with said cut-off chamber, valves in said valve-chambers to control and direct the flow of steam through the ports which communicate with said larger chamber, with a rotary cut-off valve in the cut-off chamber, a rotary piston carrying the blade in the larger of the intersecting chambers, a rotary abutment in the third chamber in peripheral contact with the piston and having a peripheral recess, and mechanism connecting said three rotatable elements, substantially as and for the purpose specified.

4. In a rotary engine, the combination of a casing containing a cylindrical piston-chamber, a rotary piston therein having a piston-blade, and a movable abutment, there being two inlet-ports to one end of said piston-recess and on opposite sides of said abutment and two exhaust-ports to the other end of said piston-chamber and on opposite sides of said abutment, with a valve for controlling the passage of steam to either of said inlet-ports, a rotary cut-off controlling the flow of steam to said valve, and mechanism intermediate of said piston and cut-off valve for operating the latter, substantially as and for the purpose specified.

811,748. **SMOKELESS FURNACE.** FRANK D. SHEPHERD, Salt Lake City, Utah. Filed Mar. 18, 1904. Serial No. 198,810.

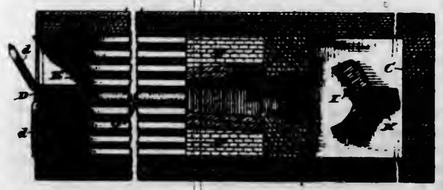

Claim.—1. A furnace, comprising a grate, a longitudinal partition-wall dividing the ash-pit, beneath the grate, a bridge-wall supporting the rear end of the grate, doors upon either side of said partition-wall, a second partition-wall in rear of said bridge-wall, and extending from the floor to the lower side of the boiler, a flume extending through said bridge-wall and through said partition-wall, side walls built on said bridge-wall for increasing the depth of said flume, said side walls flaring rearwardly, and a curved deflector-wall opposite the rear exit of said flume and presenting a concave face toward said flume.

2. In a furnace, the combination of a grate, a bridge-wall having a flume formed therein which flume is open at its forward end and is open above to the boiler, and a deflector-wall opposite the rear end of said flume to deflect the gases upward toward the boiler and laterally.

3. In a furnace, the combination of a grate, a bridge-wall, and a partition-wall, there being a flume constructed through said bridge-wall and said partition-wall, and a deflector-wall spaced from the rear end of said flume for throwing the gases upward and laterally against the under side of the boiler.

4. In a furnace, the combination of a grate, a bridge-wall, and a partition-wall, there being a flume constructed through said bridge-wall and said partition-wall, and a deflector-wall spaced from the rear end of said flume for throwing the gases upward and laterally against the under side of the furnace, said flume increasing in cross-sectional area progressively in a rearward direction.

5. In a furnace, the combination of a front wall having air-admitting openings at each side of the center and below the level of the grate, a grate, a longitudinal wall beneath the grate and dividing the ash-pit into two chambers, a bridge-wall, and a partition-wall having a flume extending therethrough, and a deflector-wall opposite the rear end of said flume and having a reëntrant front face, said deflector-wall being adapted to throw the flames against the under side of the boiler.

6. In a furnace, the combination of a front wall having air-admitting openings in each side of the center and below the level of the grate, a grate, a longitudinal wall beneath the grate and dividing the ash-pit into two chambers, a bridge-wall, a partition-wall, said bridge and partition walls having a flume extending therethrough, and a deflector-wall opposite the rear end of said flume and having a reëntrant front face, said flume having side walls built upon said bridge-wall for increasing its depth.

7. In a furnace, the combination of a grate, a bridge-wall, and a flume passing through said bridge-wall, and formed partially by vertical walls extending forward from said bridge-wall, said vertical walls approaching each other in a rearward direction.

811,749. **AUTOMATIC MIXER AND DISTRIBUTER.** AMOS N. SOMERS, Sharon, Mass. Filed July 7, 1905. Serial No. 268,691.

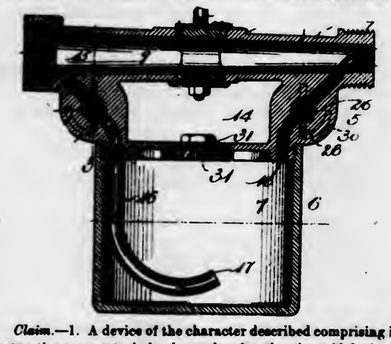

Claim.—1. A device of the character described comprising in its construction a receptacle having a chamber therein, said device provided with a main passage outside said chamber, said main passage having an inlet and an outlet orifice, said device provided with an inlet-passage leading from said main passage at the inlet end thereof to said chamber, a tube connected to said inlet-passage and projecting therefrom downwardly toward the bottom of said chamber, said device provided with an outlet-passage leading from said chamber into the outlet end of said main passage, a stop-cock located in said main passage between the points where said inlet and outlet passages connect with said main passage, graduations whereby the angular location of said stop-cock relatively to the median line of said main passage is indicated, a stop-cock located in each of said inlet and outlet passages, respectively, and graduations whereby the extent of opening of said last-named stop-cocks is indicated.

2. A device of the character described comprising in its construction a receptacle having a chamber therein, said device provided with a main passage outside said chamber, said main passage having an inlet and an outlet orifice, said device provided with an inlet-passage leading from said main passage at the inlet end thereof to said chamber, a tube connected to said inlet-passage and projecting therefrom downwardly toward the bottom of said chamber, said device provided with an outlet-passage leading from said chamber into the outlet end of said main passage, a stop-cock located in said main passage between said inlet and outlet passages, and a stop-cock located in each of said inlet and outlet passages, respectively.

3. A device of the character described comprising in its construction a receptacle having a chamber therein, said device provided with a main passage outside said chamber, said main passage

having an inlet and an outlet orifice, said device provided with an inlet-passage leading from said main passage at the inlet end thereof to said chamber, a tube connected to said inlet-passage and projecting therefrom downwardly toward the bottom of said chamber and curved at its lower end to extend partly around said chamber, said device provided with an outlet-passage leading from said chamber into the outlet end of said main passage, a stop-cock located in said main passage between said inlet and outlet passages, and a stop-cock located in each of said inlet and outlet passages, respectively.

4. A device of the character described comprising in its construction a receptacle having a chamber therein, said device provided with a main passage outside said chamber, said main passage having an inlet and an outlet orifice, said device provided with an inlet-passage leading from said main passage at the inlet end thereof to said chamber, a tube connected to said inlet-passage and projecting downwardly therefrom toward the bottom of said chamber and curved at its lower end to extend partly around said chamber, said device provided with an outlet-passage leading from said chamber into the outlet end of said main passage, a tube leading from said outlet-passage into said main passage at its outlet end, bent at the free end thereof, and terminating concentric with said main passage adjacent to the outlet-orifice thereof.

5. A device of the character described comprising in its construction a top and a base, detachably fastened together, said base comprising in its construction a receptacle having a chamber therein, said top comprising in its construction a tubular handle extending transversely across said receptacle and terminating at its opposite ends in an inlet and an outlet orifice, respectively, with screw-threaded projections thereon, a stop-cock in said tubular handle between said orifices, said top provided with an inlet-passage extending from the interior of said tube adjacent to said inlet-orifice to the interior of said receptacle and with an outlet-passage leading from the interior of said receptacle to the interior of said tube adjacent to said outlet-orifice, and a stop-cock located in each of said inlet and outlet passages, respectively.

811,750. **HEAT-STORING COMPOUND.** FREDERIC O. SPIESER, Brooklyn, N. Y. Filed Aug. 29, 1905. Serial No. 276,283.

Claim.—1. A heat-storing compound consisting of acetate of soda and chlorid of calcium.

2. A heat-storing compound consisting of acetate of soda, chlorid of calcium and hyposulfite of soda.

3. A heat-storing compound consisting of a heat-storing salt, and chlorid of calcium.

4. A heat-storing compound consisting of a heat-storing salt and a non-poisonous, soft, crystalline substance, adapted to cause the formation of a comparatively soft crystal and to regulate the amount of heat to be generated by the compound without producing a poisonous mixture.

811,751. **GEARING.** FRANCIS M. STANBAUGH, St. Louis, Mo., assignor to The American Brake Company, St. Louis, Mo., a Corporation of Missouri. Filed Mar. 7, 1905. Serial No. 248,849.

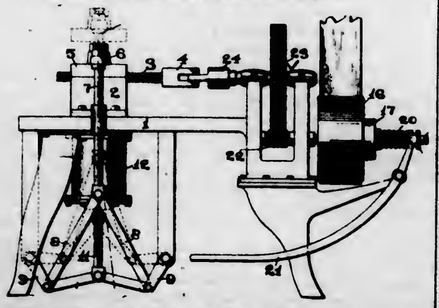

Claim.—In a machine of the class described, a mandrel, a shaft on which said mandrel is mounted, a gear on said shaft, a drive-shaft, a pinion thereon that meshes with said gear, a loose pulley mounted on said drive-shaft and provided with a friction-face, a clutch member splined to said shaft and having a cooperating friction-face, a follower reciprocatingly mounted on the drive-shaft, a spring surrounding the drive-shaft and interposed between the follower and the clutch member, and a lever in engagement with said follower and adapted to be actuated for moving the clutch member into engagement with the loose pulley and holding it there with a yielding pressure; substantially as described.

811,752. **STEAM OR GAS TURBINE.** JOHANN STUMPF, Berlin, Germany, assignor to General Electric Company, a Corporation of New York. Filed Oct. 6, 1904. Serial No. 227,353.

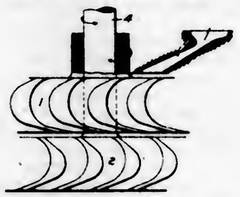

Claim.—1. In an elastic-fluid turbine, the combination of a nozzle or fluid-discharging device, a primary bucket-wheel receiving motive fluid from the nozzle or fluid-discharging device, and a secondary bucket-wheel receiving motive fluid directly from the primary wheel, the buckets of the secondary wheel being so shaped that its speed exceeds that of the primary wheel.

2. In an elastic-fluid turbine, the combination of a nozzle, a primary bucket-wheel receiving motive fluid from the nozzle, a secondary bucket-wheel receiving motive fluid directly from the primary wheel, the buckets of the wheels being so shaped that the speed of the secondary wheel exceeds that of the primary wheel, and primary and secondary shafts connected respectively to the said wheels.

3. An elastic-fluid turbine comprising primary and secondary bucket-wheels, a nozzle and shafts connected to the wheels, in combination with load devices connected respectively to the shafts, the secondary wheel and load device connected thereto revolving at a speed greater than that of the primary wheel and its connected load device.

811,753. **HARROW-TOOTH.** JAMES M. ULSH, Lancaster, Pa. Filed July 29, 1905. Serial No. 271,802.

Claim.—1. The combination with a tooth-bar, of a harrow-tooth having its top portion arranged beneath the tooth-bar with the terminal extended upward at the front of the said bar, said tooth being extended rearwardly and downwardly from the tooth-bar, and an inclined fastening device piercing the tooth-bar and the top portion of the harrow-tooth and extending from the back of the upper portion of the tooth-bar to the lower front portion thereof and having its lower end arranged at the front of the terminal of the upper portion of the harrow-tooth at a point in advance of the bottom of the tooth-bar, whereby when pressure is applied to the point of the tooth, the entire strain will be against the bottom of the tooth-bar and transversely of the fastening device.

2. The combination with a tooth-bar, of a harrow-tooth having its top portion sigmoidally bent into substantially a horizontal compound curve, the front portion of the curve presenting a concave upper face and lying beneath the tooth-bar and extending upward at the front of the same, and an inverted inclined fastening device piercing the tooth-bar and the harrow-tooth and extending from the back of the upper portion of the tooth-bar to the lower portion of the front of the same, the head of the bolt being arranged at the front of the upwardly-extending terminal of the top portion of the harrow-tooth and at a point in advance of the bottom of the tooth-bar, whereby when the point of the tooth is subjected to pressure, the entire strain will be against the bottom of the tooth-bar and transversely of the bolt.

3. The combination with a tooth-bar, of a harrow-tooth having its top portion sigmoidally bent into substantially a horizontal compound curve, the front portion of the curve presenting a concave upper face and lying beneath the tooth-bar and extending upward at the front of the same, and an inverted inclined fastening device piercing the tooth-bar and the harrow-tooth and extending from the back of the upper portion of the tooth-bar to the lower portion of the front of the same, the head of the bolt being arranged at the front of the upwardly-extending terminal of the top portion of the harrow-tooth and at a point in advance of the bottom of the tooth-bar, whereby when the point of the tooth is subjected to pressure, the entire strain will be against the bottom of the tooth-bar and transversely of the bolt, and a brace provided with a sigmoidally-bent top portion conforming to the configuration of the harrow-tooth and fitted against the back and upper face of the top portion of the same and secured to the harrow-tooth and to the tooth-bar by the said bolt.

811,754. **STRAINER.** ALEXANDER L. WEST, Gowris, Iowa. Filed Feb. 6, 1905. Serial No. 244,403.

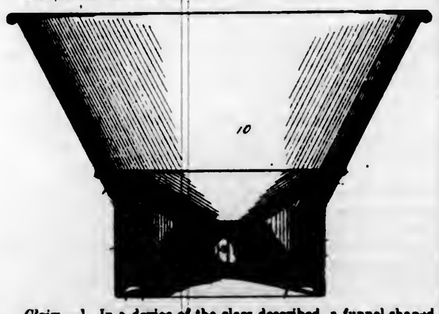

Claim.—1. In a device of the class described, a funnel-shaped portion having a number of openings in the lower portion of its sides, a screen in each of these openings, and an oval bottom for the funnel, and a funnel-shaped screen inverted and placed upon the bottom, for the purposes stated.

2. In a device of the class described, a funnel-shaped portion having a number of openings in the lower portion of its sides, a screen in each of these openings, an oval bottom for the funnel, an inverted-funnel-shaped screen having a funnel attached to its upper end designed to engage the first-mentioned funnel when the inverted-funnel-shaped screen is placed upon the bottom.

3. In a device of the class described, a funnel-shaped portion having a number of openings in the lower portion of its sides, a screen in each of these openings, an oval bottom for the funnel, an inverted-funnel-shaped screen having a funnel attached to its upper end designed to engage the first-mentioned funnel when the inverted-funnel-shaped screen is placed upon the bottom, a circular band at the lower end of the funnel-shaped screen, and means for securing the funnel-shaped screen between the band and the lower portion of the funnel attached to the screen rigidly in position relative to each other.

4. In a strainer, a funnel-shaped portion, a circular portion at the bottom of the funnel-shaped portion having a number of openings in it, a woven-wire screen in each of these openings, a bottom connected with the lower end of the circular portion, a funnel-shaped screen inverted and placed upon the bottom, comprising two circular bands, and means for securing these bands in position relative to each other.

5. In a strainer, a funnel-shaped portion, a circular portion, at the bottom of the funnel-shaped portion having a number of openings in it, a woven-wire screen in each of these openings, a bottom connected with the lower end of the circular portion, a funnel-shaped screen inverted and placed upon the bottom, comprising two circular bands, bands connecting the upper and lower circular bands, and a wire between said upper and lower bands.

811,755. **HARNESS-FASTENER.** THOMAS WRIGHT, Mountainview, Wyo., assignor of one-half to James Perry, Mountainview, Wyo. Filed July 21, 1905. Serial No. 270,720.

Claim.—A harness-fastener comprising a body portion designed to be secured to one of the parts to be fastened together and provided at its outer end with a curved arm, an eye member pivotally secured to said body portion and of such length that its eye will project partially beyond the curved arm when in registry therewith, the body portion being further provided with a notch at one side of the curved arm and connecting therewith whereby the eye member may be turned out of registry with said arm to expose its entire eye, and a stud designed to be secured to the other part to be fastened, the said stud being provided with a head of a diameter to pass through said eye, and of a diameter larger than the partially-exposed portion thereof, when the latter is in registry with the said arm

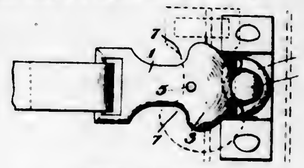

811,756. **AUTOMATIC VENDING-MACHINE.** GEORGE C. YOCUM, Scranton, Pa. Filed Oct. 28, 1904. Serial No. 230,346.

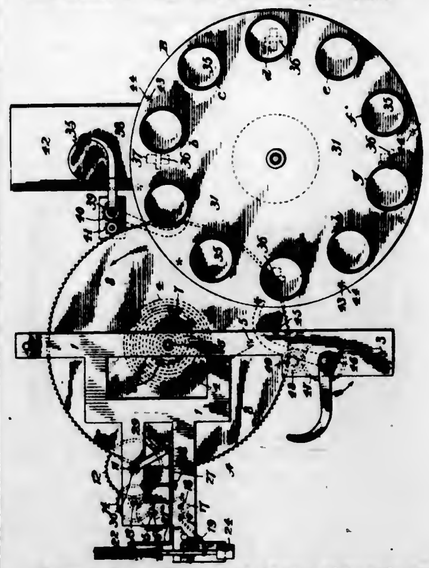

Claim.—1. The combination with a motor, and means for starting and stopping the same, of a movable magazine-carrier having a series of magazines thereon and supporting means, movable with the carrier, for supporting articles in the magazines, a delivery device operated by the motor and arranged to remove an article from one of said magazines while the carrier is stationary, and mechanism operated by said motor for moving the carrier intermittently to bring the magazines successively into operative relation to said delivery device.

2. The combination with a motor, and means for starting and stopping the same, of a movable magazine-carrier having a series of magazines thereon and supporting means, movable with the carrier, for supporting articles in the magazines, a delivery device and means for moving said device to eject an article from one of said magazines each time the motor is started into operation, and while the carrier is stationary, and a feeding device arranged to operate said carrier one step after the delivery device has operated two or more times.

3. The combination with a motor comprising an operating-gear, and means for stopping and starting the motor, of a magazine-carrier having a series of magazines thereon and supporting means, movable with the carrier, for supporting articles in the magazines, a delivery-arm geared to said operating-gear and arranged to pass between the magazine and said supporting means to remove an article from said magazine while the carrier is stationary, and a feeding device geared to said operating-gear and arranged to move the carrier intermittently.

4. The combination with a motor having an operating-gear, and means for stopping and starting the motor, of a rotatable magazine-carrier arranged adjacent to said gear and having a series of magazines thereon and means, movable with said carrier, for supporting articles in the magazines, an article-delivery arm driven by said gear and arranged to pass between said magazines and supporting means to remove articles from the magazines, and an arm operated by said gear and arranged to move the magazine-carrier intermittently.

5. In an automatic vending-machine, a magazine-carrier comprising a horizontally-arranged rotatable table, a series of magazines supported above and rotatable with said table, a rotatable delivery-arm arranged to pass between said table and the lower ends of said magazines, a rotatable feed-arm arranged to move said table intermittently and a motor for operating said delivery and feed arms.

6. In an automatic vending-machine, the combination with a motor, of a magazine-carrier comprising a horizontally-arranged centrally-pivoted table, a disk or spider rotatable with the table and having a circular series of magazines secured thereto and supported with their lower ends a short distance above the table, a corresponding series of pins or studs secured to said table, a feed-arm operatively connected to the motor and adapted to engage said studs successively, and a delivery-arm operatively connected to the motor and adapted to pass between the table and the lower ends of the magazines.

811,757. GAS-ENGINE. Vincent G. Apple, Dayton, Ohio. Filed Dec. 5, 1904. Serial No. 235,563.

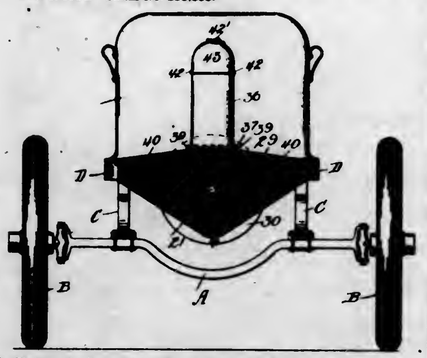

Claim.—1. In combination, vertical engine-cylinders, supports therefor laterally extended beyond the engine-cylinders, an engine-crank below the top of said supports, valve-gearing above the engine-cylinders, a sheathing for the cylinders, a canopy arranged when in normal position to constitute a continuation of the sheathing and movable to give access to the valve-gearing, and doors arranged when closed to constitute a continuation of the cylinder-sheathing disposed to overlie the laterally-extended portions of the supports.

2. In combination, vertical engine-cylinders, supports therefor, valve-gearing above the engine-cylinders, a water-jacket sheathing for the cylinders, and a movable canopy arranged when in normal position to constitute a continuation of the sheathing and movable to give access to the valve-gearing.

3. In combination, vertical engine-cylinders, separated supports therefor laterally extended beyond the cylinders, mechanism appurtenant to the engine disposed above the engine-cylinders, mechanism appurtenant to the engine disposed between the said supports, a sheathing for the cylinders, a canopy arranged when in normal position to constitute a continuation of the sheathing and movable to give access to the mechanism above the cylinders, and doors arranged when closed to overlie the engine-supports, said canopy-doors and sheathing constituting the exterior of the engine.

4. In combination, a frame, supports bridging the frame, a vertical engine-cylinder supported centrally on the frame, the engine-crank below the top of the frame, and doors arranged when closed to constitute covers for the supports between the engine-cylinders and the supporting-frame.

5. In combination, a frame, supports bridging said frame, a gas-engine cylinder supported centrally of said frame, the engine-crank below the top of the support, valve-gearing above the engine-cylinder, and an inclosure for the engine parts comprising an immovable central sheathing structure constituting part of the cylinder water-jacket, and movable doors arranged when closed to constitute continuations of the sheathing and when open to give access to the engine-crank and to the valve mechanism.

6. In combination, a vertical-cylinder engine, a frame and trusses for supporting said engine in the frame, one of said trusses comprising a bridge-piece extending from one side of the frame to the other, a truss member therebelow, and a strut member connecting said bridge and truss members.

7. In combination, the vertical cylinders of a gas-engine, the crank-shaft therefor, a frame and truss members for supporting the engine in said frame, each comprising a bridge member spanning the frame from side to side, a truss member therebeneath, a strut member connecting the bridge and truss members and affording support to the crank-shaft.

8. In combination, an engine-cylinder having a gas-duct therefor, of a supporting-frame for the cylinder comprising a member having integrally formed therein a passage arranged for communication with the gas-duct of the engine-cylinder to form a continuation therefor.

9. In combination, a gas-engine cylinder, gas inlet and outlet ducts associated with said cylinder, a frame, and means for supporting said cylinder in the frame, having formed integrally therein passages for communication with the inlet and outlet ducts of the engine-cylinder to constitute continuations thereof.

10. In combination, a vertical-cylinder engine, a supporting-frame therefor, a crank-casing in the frame open at its rear end only, a crank-shaft within the casing, and a fan fly-wheel arranged adjacent the open end of the casing and disposed to propel air away from the open end of said casing.

11. In combination, an engine comprising a cylinder, a crank and a removable piston, a casing for the crank comprising a door arranged and adapted to permit the removal of the piston.

12. In combination, an engine comprising a cylinder, a crank, a sectional piston-rod, the parts whereof are separately connected, the piston and its associated piston-rod part being fashioned to permit their removal from the cylinder without disturbing the crank, and a casing for the crank comprising a door arranged and adapted to permit the removal of the said piston.

811,758. INDUCTION-MOTOR CONTROL. Albert H. Armstrong, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed June 26, 1905. Serial No. 267,341.

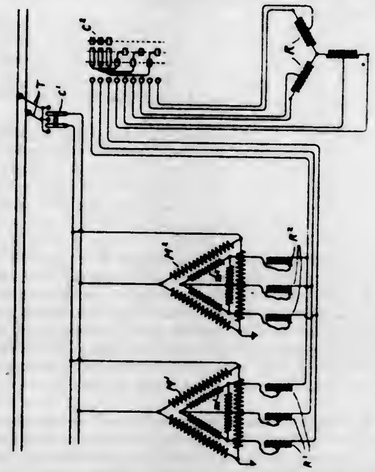

Claim.—1. In combination with a vehicle, a plurality of induction-motors mechanically connected to the driving-wheels of said vehicle, means under the control of the motorman for controlling said motors simultaneously, and means for adjusting the relative torques of said motors.

2. In combination with a vehicle, a plurality of induction-motors mechanically connected to the driving-wheels of said vehicle, means under the control of the motorman for controlling said motors simultaneously, and means for adjusting independently the relative resistances of the secondary circuits of said motors.

3. In combination with a vehicle, a plurality of induction-motors mechanically connected to the driving-wheels of said vehicle, a controlling-switch adapted to vary simultaneously the resistances in the secondary circuits of said motors to control the speed of the vehicle, and means for adjusting independently the relative resistances in the secondary circuits of said motors to vary the relative speed-torque characteristics of said motors.

4. In combination with a vehicle, a plurality of induction-motors mechanically connected to the driving-wheels of said vehicle, a switch under the control of the motorman for controlling said motors simultaneously, and independent adjustable resistances placed near the several motors and connected in their secondary circuits.

5. In combination with a vehicle, a plurality of induction-motors mechanically connected to the driving-wheels of said vehicle, the secondary windings of the several motors being connected electrically in parallel, a controlling-switch in the secondary circuit adapted to vary the resistance therein, and independent adjustable resistances connected in series with the several rotor-windings respectively.

811,759. ELECTRODEPOSITION. William C. Arsem, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed July 25, 1904. Serial No. 218,097.

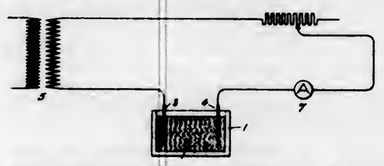

Claim.—1. The process which consists in passing an alternating current between electrodes in an electrolyte to deposit a coherent coating of metal from said electrolyte.

2. The process which consists in passing an alternating current through a solution to deposit a coherent coating of uncombined metal from said solution.

3. The process of electroplating, consisting in passing an alternating current through an electrolyte by means of suitable electrodes, to deposit an uncombined metal in coherent form from the electrolyte, on an electrode.

4. The process of electroplating, consisting in passing an alternating current through an aqueous solution of a metal by means of suitable electrodes, to deposit on said electrodes a coherent coating of metal from said solution.

5. The process of electroplating, consisting in passing an alternating current through an aqueous solution of platinum by means of suitable electrodes, thereby depositing platinum from the solution.

6. The process of electrodeposition, consisting in passing an alternating current through an electrolyte thereby depositing a metal, said electrolyte being such that the negative radical liberated by the current will not substantially corrode the deposited metal.

7. The process of electrodeposition, consisting in passing an alternating current between electrodes immersed in an electrolyte containing a metal, thereby depositing metal from the electrolyte on the electrodes, said electrolyte being such that the negative radical liberated by the current will not substantially corrode the deposited metal.

8. The process of electrodeposition, consisting in passing an alternating current between electrodes immersed in a solution of a platinum salt, thereby depositing platinum, said solution being such that the negative radical liberated by the current will not substantially corrode the deposited metal.

811,760. RAKE ATTACHMENT. Frank X. Berkele, Jr., Hiteman, Iowa. Filed Oct. 16, 1905. Serial No. 283,047.

Claim.—The combination of a rake, a clearing-plate operating upon the teeth thereof, an operating-lever connected to the clearing-plate and provided at an intermediate point with a fulcrum-block, a U shaped clip fitting around the rake-handle and having the fulcrum-block pivoted between its arms, a coil-spring interposed between the end of the operating-lever and the rake-handle, said spring being connected at one end to a thimble fitting over the extremity of the operating-lever while its opposite end is connected to a spring clamping member which engages with the rake-handle, and a guide and stop member fitting around a portion of the operating-lever adjacent the clearing-plate and being adapted to limit the outward throw of the latter by longitudinal adjustment upon the rake-handle.

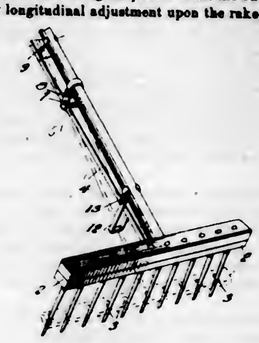

811,761. CASH-REGISTER. William F. Bockhoff, Indianapolis, Ind., assignor to National Cash Register Company, Jersey City, N. J., a Corporation of New Jersey. Filed Jan. 19, 1898. Serial No. 702,651.

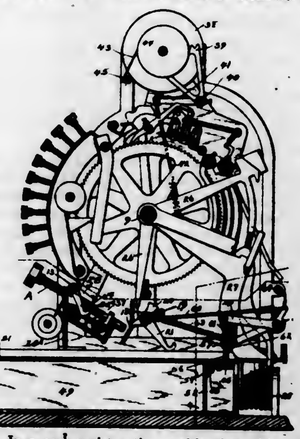

Claim.—1. In a cash-register, the combination with a framework, and a sliding drawer therein having separate compartments, of a sliding cover-plate for each of said compartments; mechanism whereby the opening of the drawer results in the cover-plate of one of said compartments moving outward with the drawer and the cover-plate of the remaining compartment remaining in its inner position; and independent means common to all of said cover-plates for simultaneously exposing all of said compartments upon the opening of the drawer.

2. In a cash-register, the combination with a movable money-repository divided into compartments and designed to be moved to open position at each operation of the machine, of guarding means normally closing said compartments and adjustable to expose the same singly when the repository is opened; selective manipulating devices for the machine allotted to the different compartments with provisions for automatically determining which one of the same shall be exposed in an operation of the register; and means common to all of said guarding means for effecting the exposure of all of said compartments upon the operation of the register.

3. In a cash-register, the combination with a sliding money-repository divided into compartments, of separate covers for the compartments; means for locking the covers; selective manipulating devices for the machine with provisions for unlocking a certain cover to predetermine which compartment shall be exposed when the repository slides to open position in any operation of the machine; and means common to all of said covers for simultaneously unlocking all of the same to expose all of the compartments upon the attendant operation of the machine.

4. In a cash-register, the combination with a drawer divided into a series of separate compartments, of a series of independent

covers therefor; a series of independent pins arranged each to engage one of said covers; and means for throwing all of said pins into engagement with their covers whereby all of the compartments may be simultaneously uncovered.

5. In a cash-register, the combination with a plurality of receptacles, of a plurality of registering mechanisms; a series of special keys for predetermining which receptacle shall be exposed and for controlling the operation of the corresponding registering mechanism; a series of amount-keys common to all of said registering mechanisms; and interlocking means between said amount-keys and said special keys.

6. In a cash-register, the combination with a plurality of receptacles, of a plurality of registering mechanisms; a series of special keys for predetermining which receptacle shall be exposed and for controlling the operation of the corresponding registering mechanism; a series of amount-keys common to all of said registering mechanisms; and locking means for the special keys controlled by said amount-keys.

7. In a cash-register, the combination with a plurality of receptacles, of a plurality of registering mechanisms; a series of special keys for predetermining which receptacle shall be exposed and for controlling the operation of the corresponding registering mechanism; a series of amount-keys common to all of said registering mechanisms; interlocking means between said amount-keys and said special keys; and an auxiliary key for disabling said interlocking means.

8. In a cash-register, the combination with a plurality of receptacles, of a plurality of registering mechanisms; a series of special keys for predetermining which receptacle shall be exposed and for controlling the operation of the corresponding registering mechanism; a series of amount-keys common to all of said tegistering mechanisms; means for locking said special keys until one of said amount-keys has been operated; and an auxiliary special key for operating said lock independently of the amount-keys.

9. In a cash-register, the combination with a cash-drawer divided into a series of compartments, a series of covers for said compartments, a series of registering mechanisms corresponding to said compartments, a series of amount-keys common to said registering mechanisms, and a series of special keys for predetermining which compartment shall be exposed and for controlling the operation of the corresponding registering mechanism; of means for locking said special keys until one of said amount-keys has been operated; and an auxiliary special key for disabling said lock and permitting the exposure of any desired compartment without the attendent operation of any registering mechanism.

10. In a cash-register, the combination with a sliding drawer having separate compartments, of a sliding cover-plate for each of said compartments; a series of special keys for predetermining which compartment shall be exposed; a rocking lever pivoted in proximity to the end of each special key; a plunger positioned over the rear end of each cover-plate to engage an aperture formed in said cover-plate; a latch for each cover-plate for latching the plate to the cash-drawer and positioned in proximity to said aperture so as to be engaged by said plunger to unlatch said cover-plate from the cash-drawer; and intermediate connections between said rocking lever and said plunger for forcing said plunger through said aperture and tripping said latch upon the operation of the corresponding special key.

11. In a cash-register, the combination with a sliding drawer having separate compartments, of a sliding cover-plate for each of said compartments; a series of special keys for predetermining which compartment shall be exposed; a rocking lever pivoted in proximity to the end of each special key; a plunger positioned over the rear end of each cover-plate to engage an aperture formed in said cover-plate; a latch for each cover-plate for latching the plate to the cash-drawer and positioned in proximity to said aperture so as to be engaged by said plunger to unlatch said cover-plate from the cash-drawer; intermediate connections between said rocking lever and said plunger for forcing said plunger through said aperture and tripping said latch upon the operation of the corresponding special key; and a drawer-latch having an operating member extending into position to be engaged and operated by any one of said rock-levers upon the operation of any one of the special keys.

12. In a cash-register, the combination with a sliding drawer having separate compartments, of a sliding cover-plate for each of said compartments; a series of special keys for predetermining which compartment shall be exposed; a rocking lever pivoted in proximity to the end of each special key; a plunger positioned over the rear end of each cover-plate to engage an aperture formed in said cover-plate; a latch for each cover-plate for latching the plate to the cash-drawer and positioned in proximity to said aperture so as to be engaged by said plunger to unlatch said cover-plate from the cash-drawer; intermediate connections between said rocking lever and said plunger for forcing said plunger through said aperture and tripping said latch upon the operation of the corresponding special key; and a common rock-shaft having arms attached thereto for simultaneously operating all of said intermediate connections to carry all of said plungers through said apertures.

13. In a cash-register, the combination with a plurality of receptacles, of a series of special keys for predetermining which receptacle shall be exposed; locking means for normally locking said special keys; a series of amount-keys with connections for operating said locking means to unlock said special keys; and an auxiliary key for operating said locking means to release said special keys independently of said amount-keys

14. In a cash-register, the combination with a cash-drawer divided into a series of compartments, of a series of clerks' keys for predetermining which compartment shall be exposed; locking means for normally locking said clerks' keys; a series of amount-keys with connections for unlocking said clerks' keys; means connected with said clerks' keys for unlocking said cash-drawer; and a "change" key and connections for unlocking said clerks' keys independently of said amount-keys.

15. In a cash-register, the combination with a plurality of cash-receptacles, of a series of special keys for predetermining which receptacle shall be exposed; a rock-shaft carrying pawls for normally locking said special keys; a series of amount-keys; connections between said amount-keys and said rock-shaft for unlocking said pawls upon the operation of any amount-key; and an auxiliary key and connections for rocking said shaft independently of said amount-keys whereby to unlock said special keys

811,762. **TIDE POWER.** RUFUS B. CADE, Seattle, Wash. Filed Dec. 10, 1904. Serial No. 236,304.

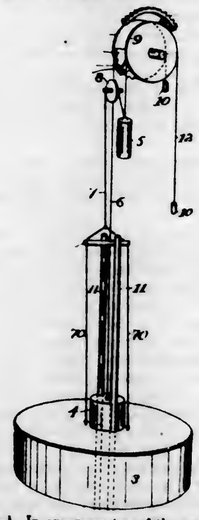

Claim.—1. In an apparatus of the type set forth, a float, two power-weights, one of said weights being directly engaged by the float to be lifted, an elevated guide, a flexible connection between said float and other weight passing over said guide, and mechanism operated by said weights.

2. In an apparatus of the type set forth, a shaft, a float, two power-weights, one of said weights being directly engaged by the float to be lifted, an elevated guide, a flexible connection between said float and other weight passing over said guide, and means whereby said shaft is rotated during the raising and lowering of said weight

3. In an apparatus of the type set forth, a rotatably-supported shaft, two drive-wheels having releasable driving connections with said shaft, a flexible means passing over one of said drive-wheels, a power-weight connected to said means at one side of said last drive-wheel, a take-up weight on said means at the opposite side of said drive-wheel, a float for raising said power-weight, means whereby said power-weight will lower independently of the float, and means for rotating the other drive-wheel with the shaft during the upward movement of said power-weight

4. In an apparatus of the type set forth, a rotatably-supported shaft, a float, two drive-wheels having releasable driving connections with said shaft, an elevated guide, two power-weights, a flexible connection between said float and one of said weights passing over said guide, the other of said weights being directly engaged by said float to be lifted, and means connected with said weights for rotating said drive-wheels alternately in a common direction during movement of said weights in one direction.

5. In an apparatus of the type set forth, a rotatably-supported shaft, a float, two drive-wheels having releasable driving connection with said shaft, a power-weight engaging said float to be lifted, a flexible means connected to said weight and passing over one of said drive-wheels, an elevated guide, a flexible means secured to said float and passing over said elevated guide and the other drive-wheel, a power-weight secured to said last flexible means intermediate said guide and drive-wheel, and take-up weights on the free ends of said flexible means.

6. In an apparatus of the type set forth, a rotatably-supported shaft, two drive-wheels having releasable driving connections with said shaft, a float, guides for the float, a weight engaging on said float between said guides, a flexible means connected to said weight and passing over one of said drive-wheels, a flexible means passing over said other drive-wheel and having connection with the float, and means whereby said last-named drive-wheel is operated with the shaft as the float rises.

7. In an apparatus of the type set forth, a float, two power-weights, one of said weights being controlled to be directly engaged by the float to be lifted, an elevated guide, a flexible means connecting the float and other weight and passing over said elevated guide, a motor mechanism operated by the respective weights alternately, and a device for controlling the speed of the motor and reduce the rate of fall of the weights to less than that of the float.

8. In an apparatus of the type set forth, a rotatably-supported shaft, two drive-wheels having releasable driving connections with said shaft, a float, two power-weights, one of said weights engaging said float to be lifted, a flexible means connected to said weight passing over one of said drive-wheels, an elevated guide, and a flexible means secured to the other power-weight and passing over the other drive-wheel and guide and having one of its end portions divided into two branches and secured to the float on opposite sides of said first weight.

9. In an apparatus of the type set forth, two power-weights, one of said weights being controlled to be directly engaged by the float to be lifted, an elevated guide, a flexible means connecting the float and other weight and passing over said elevated guide, a motor mechanism containing two drive-wheels having releasable driving connection with the rest of the mechanism, a flexible means extending from each weight over its respective drive-wheel, and take-up weights connected with the free ends of said last flexible means.

811,763. **STREET CONNECTION FOR PITOMETERS.** JOHN A. COLE, Chicago, Ill. Filed Apr. 19, 1905. Serial No. 256,466.

Claim.—1. The combination with a liquid-conduit, of a pipe or passage extending from the surface of the ground and communicating with the interior of said conduit, a pitometer extending through said pipe or passage into said conduit, means for closing the top of the said pipe or passage against the pitometer, and a valve for closing said pipe or passage on the withdrawal of the pitometer, substantially as described.

2. The combination with a water main or pipe, of a pipe or passage extending from the surface of the ground and communicating with the interior of said main, and a pitometer extending through said pipe or passage into said main, said construction including a means for guiding the pitometer centrally through the pipe or passage when inserting the same, substantially as described.

3. A street connection for applying a pitometer to a water main or pipe comprising a casing extending from the main or pipe to the surface of the ground, and a valved pipe or passage within the same connected with the interior of the main, capable of admitting a pitometer, said pipe or passage being provided with a valve for opening and closing said passage and a guiding portion for directing the pitometer in inserting the same, substantially as described.

4. In a street connection for applying a pitometer to a water main or pipe, the combination with the tap, of the valve, the guiding-section, the pipe connection above these and the stuffing-box, substantially as described.

5. In a street connection for applying a pitometer to a water main or pipe, the combination with a water main or pipe, of a pipe or passage extending from the surface of the ground to the said water main or pipe, said pipe or passage being provided with a valve to open the same for the admission of a pitometer and to close it on the removal thereof, of a stuffing-box at the upper end of said pipe or passage, a casing inclosing said pipe or passage, a detachable cover for closing the upper end of said pipe or passage when there is no pitometer passing through the stuffing-box and a detachable cover for closing the upper end of said casing above the upper end of said pipe or passage, substantially as described.

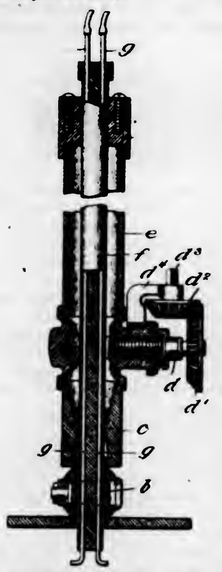

6. A street connection for applying a pitometer to a water main or pipe, comprising a casing from the main or pipe to the surface of the ground, a pipe or passage within the same connecting with the interior of the main or pipe, said pipe or passage being provided with a valve for opening and closing the same, and guiding means for directing the pitometer in inserting the same, substantially as described.

811,764. **CHIMNEY-CAP.** AUSTIN E. COLBGROVE and SHELTON REED, Cynthiana, Ky. Filed Feb. 15, 1906. Serial No. 345,727.

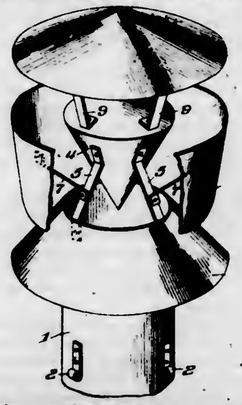

Claim.—A chimney-cowl substantially as described and comprising the collar 1, the loop members 2 exterior of the collar 1, the deflecting-frustum 3 at the upper extremity of the collar 1, the upward-flaring band 6 above the frustum 3 and having its smaller end

lowermost, the rods or bars 5 projected upwardly from the upward

9. In an air-brake system, an independent source of compressed

lowermost, the rods or bars 5 projected upwardly from the upward extremity of the collar 1, the deflecting-cone 4 exposed above the collar 1 and encircled by the band 6, the rods or bars 7 attached at their lower ends to the rods or bars 5 between the ends of the latter and secured at their upper ends to the band 6 aforesaid to support the same, the hollow top 8 above the cone 4, and the rods or bars 9 attached at their lower ends to the top of the cone 4 and at their upper ends to the under side of the hollow top, supporting the latter.

811,765. AIR-BRAKE SYSTEM AND AUTOMATIC VALVE. FRED B. COREY, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Sept. 16, 1904. Serial No. 224,651.

Claim.—1. In combination with a train of cars, an independent source of compressed air on each car, a control-pipe extending through the train, and an automatic valve on each car responsive to variations in the pressures both in the control-pipe and in the brake-cylinder, and adapted to connect the brake-cylinder to the source of pressure or to atmosphere.

2. In combination with a train of cars, an independent source of compressed air on each car, a control-pipe extending through the train, and an automatic valve on each car connected to said control-pipe and adapted to connect brake-cylinder to the source of pressure or to atmosphere, said valve being arranged to return to lap position when the pressures in control-pipe and brake-cylinder bear a predetermined relation to each other.

3. In a train of cars, an independent source of compressed air on each car, a control-pipe extending through the train, an automatic valve on each car responsive to variations of the pressures in both the control-pipe and the brake-cylinder and adapted to establish connections for applying and releasing the brakes, and means for raising and lowering the pressure in the control-pipe.

4. In a train of cars, an independent source of compressed air on each car, a control-pipe extending through the train, an automatic valve on each car comprising a movable member and a valve controlled thereby adapted to establish connections for applying and releasing the brakes, means for impressing on said member two forces tending to move it in the same direction and proportional respectively to the pressure in the control-pipe and in the brake-cylinder, means for impressing on said member a substantially constant opposing force, and means for raising and lowering the pressure in the control-pipe.

5. In a train of cars, an independent source of compressed air on each car comprising two reservoirs, a control-pipe extending through the train, a manually-controlled valve connecting one of said reservoirs to said control-pipe, an automatic valve connected to the control-pipe and adapted to connect brake-cylinder to the second reservoir or to atmosphere, and means for preventing a flow of air from the second to the first reservoir.

6. In a train of cars, an independent source of compressed air on each car comprising two reservoirs, a control-pipe extending through the train, a manually-controlled valve connecting one of said reservoirs to said control-pipe, an automatic valve connected to the control-pipe and adapted to connect brake-cylinder to the second reservoir or to atmosphere, and a check-valve inserted in the connection between the two reservoirs.

7. In a train of cars, a control-pipe extending through the train, a movable member responsive to variations in pressure in both the control-pipe and the brake-cylinder, two relay-valves arranged to be operated respectively by the movement of said member in one direction or the other, and two valves controlled by said relays and adapted and arranged to establish connections respectively for applying and for releasing the brakes.

8. In an air-brake system, a control-pipe extending through the train, two rigidly-connected diaphragms, connections from the brake-cylinder to one side of one diaphragm, connections from the control-pipe to the corresponding side of the other diaphragm, means for impressing a substantially constant opposing force on said diaphragms, two relays arranged to be operated respectively by the movement of said diaphragms in one direction or the other, and two valves controlled by said relays and adapted and arranged respectively to establish connections for applying and for releasing the brakes.

9. In an air-brake system, an independent source of compressed air on each car, a control-pipe extending through the train, two rigidly-connected diaphragms, connections from brake-cylinder to one side of one of said diaphragms from said control-pipe to the corresponding side of the other diaphragm, means for impressing a substantially constant opposing force on said diaphragms, two relay-valves arranged to be operated respectively by the movement of said diaphragms in one direction or the other, and two valves controlled by said relays and arranged respectively to connect brake-cylinder to said source of pressure and to atmosphere.

811,766. SYSTEM OF MOTOR CONTROL. FRED B. COREY, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Oct. 1, 1904. Serial No. 226,754.

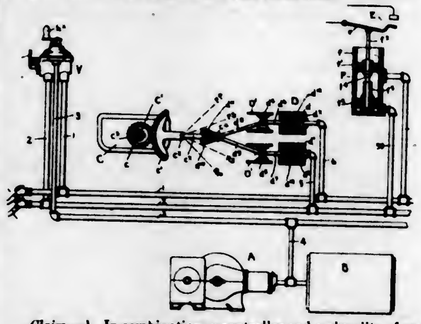

Claim.—1. In combination, a controller and a plurality of operating devices therefor acting thereon in succession, the direction of movement of the controller being determined by the order in which said operating devices are actuated.

2. In a system of motor control, a switch for determining the direction in which current passes through the motors and for controlling the series and parallel motor connections, a plurality of operating devices therefor acting thereon in succession to produce successively series and parallel motor connection, the order in which said operating devices are actuated determining the direction of rotation of the motors.

3. In a system of motor control, a switch for determining the direction of passage of current through the motors and for controlling the series and parallel motor connections, duplicate operating devices, acting successively upon the switch to produce the series and parallel connections of the motors, the order in which said operating devices are actuated determining the direction of the flow of current through the motors.

4. In a system of motor control, a controlling-switch for determining the direction of flow of current through the motors and for controlling the series and parallel connections of the motors, a pair of pneumatically-actuated devices associated with each switch for operating the same, two pipes communicating with said pairs of operating devices, and means for connecting said pipes successively with a source of compressed-fluid supply.

5. In a system of motor control, a controlling-switch, a pair of pneumatically-actuated devices associated with said switch for operating the same, two train-pipes communicating with said pair of operating devices, and means for energizing said train-pipes successively, the order in which the train-pipes are energized determining the direction of movement of the car or train.

6. In a system of motor control, a controller, a pair of operating devices associated with said controller, and means for actuating said operating devices successively, the direction of movement of the train being determined by the order in which said operating devices are actuated.

7. In a system of motor control, a controller, a pair of operating devices for said controller, their successive operations serving to move the controller respectively to series and parallel positions and the direction of movement of the train being determined by the order in which said controller-operating devices are applied.

8. In a system of motor control, a motor-circuit, a controller therefor, a pair of operating devices for the controller, either of said operating devices serving to move the controller to series position and the other to move it to parallel position, the direction of movement of the train being determined by the order in which the operating devices are applied.

9. In a system of motor control, a motor-controller, a pair of operating devices for said controller, either of said operating devices serving to move it to series position and the other to move it to parallel position, the direction of movement of the car or train being determined by the order in which the operating devices are applied, and means for controlling said operating devices from a single point.

10. In a system of control, a motor-circuit and an oscillating controller therefor, a pair of pistons or diaphragms, chambers in which said pistons or diaphragms are mounted, means for admitting compressed fluid to said chambers in succession and connection between said controller and the piston or diaphragms such that the controller is oscillated in one direction or the other, according to the order in which compressed fluid is supplied to said chambers.

11. An oscillating driven member, a pair of reciprocatory driving members therefor and connections between the driven member and the driving members such that the driven member is oscillated in one direction or the other depending upon the order in which said driving members are applied.

12. An oscillating driven member, a pair of reciprocatory driving members arranged to operate in succession upon said driven member to give it successive movement in the same direction, and connections between said driving and driven members whereby the reversal of the order in which the driving members are operated reverses the direction in which the driven member is oscillated.

13. In combination, an oscillating driven member, a pair of reciprocatory driving members, a slotted link pivoted to each driving member, and a projection from the driven member extending through the slots in said links.

14. In combination, an oscillating driven member, a pair of reciprocatory driving members having paths of movement on opposite sides of the axis of the oscillating members, a slotted link pivoted to each driving member, and a projection from the driven member extending through the slots in said links.

15. In combination, an oscillating driven member, a pair of reciprocatory driving members having paths of movement on opposite sides of the axis of the oscillating member, a slotted link pivoted to each driving member, and a projection from said reciprocatory member extending through the slots in said links and located near the inner ends of said slots when the parts are in their inoperative positions.

16. In a control system, a circuit-closing switch, a plurality of superimposed pistons or diaphragms operatively related thereto, a plurality of pipes, and operative connection between said pistons and said pipes whereby pressure in either pipe moves a piston to close said switch.

17. In a control system, a circuit-closing switch, a chamber, a plurality of pistons or diaphragms associated therewith and operatively related to said switch, a plurality of pipes opening into said chamber upon corresponding sides of said pistons or diaphragms, and means for admitting compressed fluid to said pipes.

18. In a control system, a circuit-closing switch, a chamber, a plurality of independent pistons or diaphragms associated therewith one of which pistons or diaphragms is operatively related to said switch, a stop for limiting the movement of the pistons or diaphragms toward each other, and means for admitting compressed fluid to either of said pistons or diaphragms.

811,767. BRACELET. EMIL DREWS, Pforzheim, Germany. Filed Nov. 23, 1904. Serial No. 234,567.

Claim.—1. A device having securing members thereon, an adjustable band and means on the band whereby said band, device and means coöperate to hold the device in position on the band, said means engaging the securing members and the band sliding through the means.

2. A flexible band and a device to be secured thereto and provided with securing members, in combination with members one of which is connected to one end of the band and the other slidable thereon, said last-named members adapted to engage the securing members.

3. A device having securing members thereon, a flexible band, a member hinged to one end of the band and a similar member free to slide on the band and said last-named members engaging the securing members, whereby said device, members and band coöperate to hold the device in position on the band.

4. A bracelet comprising a flexible band, an ornament, and means locking the ornament to the band and necessitating flexure of the latter and rotation of the ornament to disconnect the same from the band.

5. A bracelet comprising a flexible band, an ornament, and means locking the ornament to the band and necessitating flexure of the latter and rotation of the ornament to disconnect the same from the band; in combination with means for adjusting and locking the band to the arm.

6. A bracelet comprising a flexible band, an ornament of greater width than the width of said band, locking devices for detachably locking the ornament to the band consisting of membrs on the band and ornament coöperating to hold the latter in contact with the band and to require flexure of said band and rotation of the ornament to disengage the latter from the locking members on the band.

7. A bracelet comprising a band, and locking devices for locking an ornament thereto so organized as to require rotation of said ornament to disengage the same from the locking members on the band and thereby release the slidable member, said devices consisting of two locking members on the band, one of which is slidable thereon, and coöperating locking members on the ornament.

8. The combination with an ornament having T-shaped members thereon, a band and two locking members thereon having T-shaped slots, said band passing through the head of the slots and the members held in the stem of the slots.

9. The combination with an ornament having T-shaped members thereon, a band, two locking members having T-shaped slots, and one of them secured to one end of the band and the other adapted to slide on the band, said band passing through the heads of the slots, and a clasp to fasten the free end of the band to its body.

811,768. PLANER-HEAD AND CUTTER. JOHN B. FORBES, Mill Valley, Cal. Filed July 1, 1904. Serial No. 215,032.

Claim.—1. A planer-head for woodworking, comprising a cylinder provided with deep peripheral grooves spaced widely apart and having walls of unequal depth, in combination with cutters, a wedge or key in each groove of substantially the depth of one wall, but of less depth than the other, and screw-bolts for securing said wedges passing substantially tangentially from the periphery of the head through the wall of greater depth to press said key against the cutter; all constructed and arranged to provide a wide clearance-space or throat between the cutter and the junction of the deeper wall with the periphery of the head.

2. A planer-head for woodworking, comprising a cylinder, having deep peripheral grooves spaced widely apart and having walls of unequal depth relatively to the periphery of the cylinder, the deeper wall converging outwardly toward the other wall to form a dovetail seat and then extending to the periphery tangentially, in combination with a cutter, a wedge or key in each dovetail seat, and screw-bolts for securing said wedges; all constructed and arranged to provide a wide clearance-space or throat between the cutter and the junction of the angular wall with the periphery of the head.

811,769. PLANER-HEAD. JOHN B. FORBES, San Francisco, Cal. Filed July 6, 1905. Serial No. 268,343.

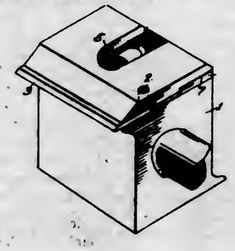

Claim.—1. In a planer-head, a cap, the rear edge of which is re-

terns for the back being nested in such a manner that the side lines,

Claim.—1. In a planer-head, a cap, the rear edge of which is recessed longitudinally upon its under surface and shouldered, and a support for engaging with the bit and holding it in position, the rear edge of the support being thicker than the forward edge and provided with shoulders for engaging with the shoulders of the cap.

2. In combination with a planer-head, a cap having a recess in its rear edge, means for securing the cap to the head, a bit held between the forward parts of said cap and head and a block held between the rear parts of said parts so that the bit will abut against the forward edge thereof, said block having a thickened rear part adapted to engage with the recessed part of the cap, said thickened part and the recessed part being corrugated, the corrugations engaging with each other.

811,770. **PRINTED DRESS-PATTERN.** WILLIAM FREEMAN, New York, N. Y. Filed July 2, 1904. Serial No. 215,191.

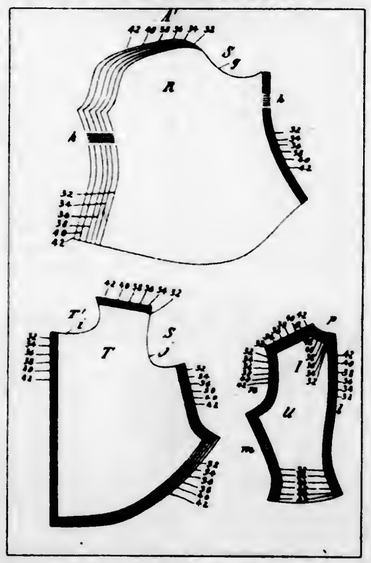

Claim.—1. A base having printed thereon a set of patterns of graduated sizes for a sleeve; said patterns being nested in such a manner that the distinguishing-lines of each smaller size lie wholly between the lines of the next larger size, and so that the lines extending along one side of the nest continue and form converging shoulder-lines, which merge into a single armpit-line.

2. A base having printed thereon a set of patterns of graduated sizes for the front of a dress-waist; said patterns being nested in such a manner that the side, top and bottom lines of each smaller size are distinct from and lie wholly between the corresponding lines of the next larger size, and so that all of the patterns coincide or form a single line at both the armpit and the neck.

3. As an article of manufacture a set of patterns of graduated sizes for a dress-waist, comprising patterns for the front of the waist, and patterns for the back of the waist; the front patterns being nested in such a manner that the side, top and bottom lines of each smaller size are distinct from and lie wholly between the corresponding lines of the next larger size, and so that all of the patterns coincide or form a single line at the armpit; and the patterns for the back being nested in such a manner that the side lines, the armpit-liner and the shoulder and neck lines of each smaller size are distinct from and lie wholly between the corresponding lines of the next larger size, and so that all of the patterns coincide or form a single line at the bottom of the waist.

4. As an article of manufacture a set of patterns of graduated sizes for a dress-waist, comprising patterns for the front of the waist, patterns for the back of the waist, and patterns for the sleeve; the front patterns being nested in such a manner that the side, top and bottom lines of each smaller size are distinct from and lie wholly between the corresponding lines of the next larger size, and so that all of the patterns coincide or form a single line at the armpit; the patterns for the back being nested in such a manner that the side lines, the armpit-lines and the shoulder and neck lines of each smaller size are distinct from and lie wholly between the corresponding lines of the next larger size, and so that all of the patterns coincide or form a single line at the bottom of the waist; and the sleeve-patterns being nested in such a manner that both side lines of each smaller size are distinct from and lie wholly between the side lines of the next larger size, and so that the side lines in one set continue and form converging shoulder-lines, which merge into a single armpit-line; all of the patterns coinciding or forming a single line at the bottom end of the sleeve.

5. A pattern comprising a base and unsymmetrical demarking-outlines printed thereon; said outlines being broken and spaced to form sections of a complete pattern-outline, whereby said base may be folded or cut in the spaces between the broken lines, and said outlines joined to make a complete pattern-outline; corresponding sets of equally-spaced marks occupying the spaces between the broken sections, for guiding the user in joining the sections.

811,771. **MACHINE FOR SHAPING THE ENDS OF METAL BARS.** HENRY GRIESENBRUCH, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Sept. 29, 1903. Serial No. 175,204.

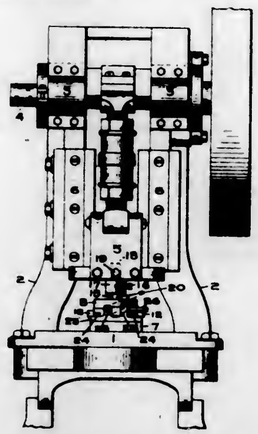

Claim.—1. A machine for shaping the ends of metal bars, comprising a shearing-tool, a work-holder adjacent to the line of movement of said tool and having one or more slots transverse to said line of movement, and a work-rest in each slot having its end conforming to the shape of the tool.

2. A machine for shaping the ends of metal bars, comprising a shearing-tool, a work-holder adjacent to the line of movement of said tool and having one or more transverse slots, and a work-rest in each slot having its upper surface inclined slightly upward toward the tool.

3. A machine for shaping the ends of metal bars, comprising a shearing-tool, a work-holder adjacent to the line of movement of said tool having one or more radial slots inclined slightly upward toward the tool, a rest in each slot, and means for clamping the work in said slots.

4. A machine for shaping the ends of metal bars, comprising a shearing-tool, a work-holder adjacent thereto and provided with transverse slots inclined slightly upward toward the tool, a removable rest in each slot having its end conforming to the shape of the tool, and means for clamping the work in said slots.

5. A machine for shaping the ends of metal bars, comprising a shearing-tool, a rotatable work-holder concentric with said tool and having one or more radial slots, and a clamping-screw entering each slot.

6. A machine for shaping the ends of metal bars, comprising a shearing-tool, a rotatable work-holder concentric therewith and having one or more radial slots, and a guide on said holder engaging with said tool to keep it in alinement with said slots.

7. In a machine for shaping the ends of metal bars, the combination with a cylindrical work-holder having radial slots of different sizes, of a shearing-tool having cutting edges corresponding with said slots, and a guide on said cylinder engaging with said tool during its entire stroke to keep it in proper alinement with said slots.

8. In a machine for shaping the ends of metal bars, a work-holder comprising a plate, a cylinder rotatable thereon and having radial slots, and a gage adjustable radially to said cylinder.

9. In a machine for shaping the ends of metal bars, a work-holder comprising a plate, a cylinder rotatable thereon and having radial slots, and a gage adjustable radially to said cylinder and provided with a pivoted slot.

10. In a machine for shaping the ends of metal bars, a gage comprising a block provided with ears, and a stop pivoted to one of said ears for movement into inoperative position and engaging with the other.

11. In a machine for shaping the ends of metal bars, a work-holder comprising a plate having a shallow circular socket at one end and slots parallel with a radius of said socket, a cylinder rotatable in said socket and having radial slots and a circumferential groove, retaining-segments fastened to said plate and projecting into said groove, clamping-screws entering said radial slots, and a gage-block having a pivoted stop and adjustable in said parallel slots.

811,772. **UNIVERSAL MOLDING-BOX.** JOHN L. GLEASON, Boston, Mass. Filed Feb. 25, 1905. Serial No. 247,266.

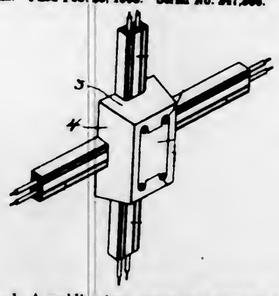

Claim.—1. A molding-box comprising integral metallic bases and sides adapted to be secured externally upon the surface of a wall with one of said bases adjacent the wall, and having openings in its sides for the reception of the ends of electrical wires and moldings, the outer base or front of the box being smaller than the other and the sides convergently inclined with respect thereto, and said outer base having an opening; and a plate or cover extending over said opening flush with said outer base and detachably secured thereto, the plate having an orifice and slots for securing an electrical fixture thereto and permitting passage of wires therethrough.

2. A molding-box comprising integral metallic top or front, bottom and side walls, the top or front being of less area than the bottom or rear and the sides being inclined with relation thereto, converging from bottom to top or front, the box having in its sides openings for the reception of ends of moldings and wires of an exposed wiring system and having also openings in its bottom and top, a plug detachably secured in the opening of the bottom, and a detachable cover secured to the top of the box extending over the opening therein.

3. A molding-box having a metallic integral top, bottom and side walls formed with lateral openings for receiving the ends of wires of an exposed electric wiring system and the top having an opening, and a cover or lid detachably secured to the box and extending over said opening, said cover being formed with a central orifice and slots concentrically and radially arranged with respect to said orifice.

811,773. **SYSTEM OF DISTANT ELECTRICAL CONTROL.** JOSH. GEMMELL, Lynn, Mass., assignor to General Electric Company, a Corporation of New York. Filed Sept. 14, 1904. Serial No. 224,267.

Claim.—1. In a system of distant electrical control, the combination with a movable object, of an electric motor for moving it, a relay controlling the motor and having opposed electromagnets, rheostats respectively in circuit with said magnets, means for simultaneously varying said rheostats in inverse ratio, a rheostat in circuit with both magnets, and means for automatically varying the portion thereof in circuit with each magnet in accordance with the movement of said object, and in inverse ratio to the variation of the aforesaid rheostats.

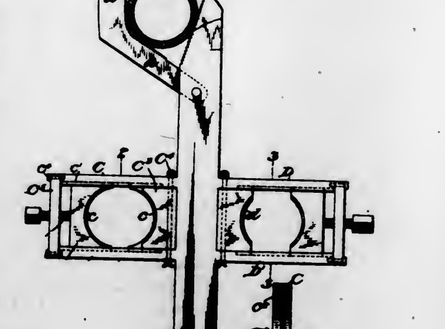

3. In a system of distant electrical control, the combination with a movable object, of an electric motor for moving it, a relay controlling said motor, two balanced circuits including said relay, means at the controlling-station for unbalancing said circuits, and means operated by the motor for restoring said balance, comprising an indicator at the controlling-station for indicating the position of the movable object.

4. In a system of distant electrical control, the combination with a movable object, of an electric motor for moving it, a relay controlling said motor, two balanced circuits including said relay, means at the controlling-station for unbalancing said circuits, and means operated by the motor for restoring said balance, comprising an indicator at the controlling-station, consisting of a rheostat connected across said circuits, a movable contact therefor, and two solenoids for moving said contact, connected respectively with said circuits.

5. In a system of distant electrical control, the combination with a movable object, of an electric motor for moving it, a switch for reversing said motor, two electromagnets for operating said switch, two parallel conductors each including one of said magnets, two rheostats at the controlling-station, connected with one side of the line, means for simultaneously connecting them inversely with said conductors, a rheostat connected across said conductors, a movable contact therefor connected with the other side of the line, solenoids for moving said contact, each connected with one of said conductors, two rheostats at the working station connected with the same main as those at the controlling-station, and means controlled by the movable object for connecting said rheostats with said circuits in inverse ratio.

811,774. **THREADER AND CUTTER.** WILLIAM C. GRIFFIN, Verdigris, Nebr. Filed Nov. 6, 1903. Serial No. 180,081.

Claim.—A device of the character described, comprising a handle provided with integral laterally-extending fixed members, each having a longitudinal groove in its inner face and a transverse hole, inner and outer dies having lateral projections engaging and slidable in the said grooves the inner die having a hole registering with the holes in the laterally-extending members, a pin C^4 removably engaging said holes, a removable section C^5 connecting the ends of said arms, a threaded hole in said section and a screw E projecting through said hole and arranged to engage with one of said dies for the purpose of adjusting it inwardly, substantially as described.

811,775. **AMUSEMENT DEVICE.** ELIOT KEEN and RAYMOND F. AYERS, New York, N. Y. Filed May 8, 1905. Serial No. 259,279.

Claim.—1. In an amusement device, the combination with a slidable hollow body or object a cross-piece the ends of which project beyond the body on both sides and form pivots on which the body turns, of propelling means located in said body and adapted to move therein against the walls thereof to thereby slide said body, substantially as described.

2. In an amusement device, the combination with a slidable hollow body or object, a support for said body and a cross-piece the ends of which project beyond the body on both sides and form pivots on which the body turns, of propelling means located in said body and adapted to move on said support and within and against the walls of said body to thereby slide the body on said support, substantially as described.

3. In an amusement device, the combination with a slidable hollow body or object, a support for said body and a cross-piece the ends of which project beyond the body on both sides and form pivots on which the body turns, of spherical propelling means located therein and adapted to move on said support and within and against the walls of said body to thereby slide the body on the support, substantially as described.

811,776. **INTERCHANGEABLE CURVED TYPE AND PLATE.** HENRY L. KOEHLER, Deer Park, Ky. Filed Mar. 20, 1905. Serial No. 251,087.

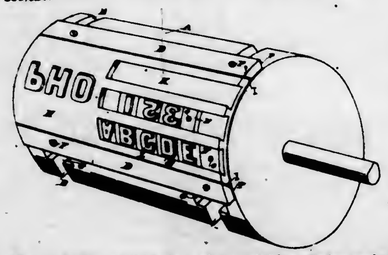

Claim.—1. The combination of a revoluble cylinder encircled by mortises, beveled strips having dovetails fitting loosely in the mortises, and a beveled curved plate having on its outer surface, mortises, and beveled curved type and screws and end pieces fitting therein, and means for fastening the strips to the cylinder, all substantially as described.

2. The combination of a revoluble cylinder encircled by mortises, beveled strips having dovetails fitting loosely in the mortises, a beveled curved plate having on its outer surface, mortises, beveled curved type fitting therein, and means for fastening the strips to the cylinder, all substantially as described.

811,777. **ANGLE-MEASURING INSTRUMENT.** ALBERT KÖHLER, Jena, Germany, assignor to The Firm of Carl Zeiss, Jena, Germany. Filed Dec. 28, 1904. Serial No. 238,686.

Claim.—1. A telescopic angle-measuring free-hand instrumen consisting of a telescope, a circular scale rotatable about an axis—which is central to it and fixed relatively to the telescope—and passing through the focus of the telescope transversely to the optical axis, and a director rigidly connected to the scale and subject to an invariable terrestrial force.

2. A telescopic angle-measuring free-hand instrument consisting of a telescope, a transparent circular scale rotatable about an axis—which is central to it and fixed relatively to the telescope—and passing through the focus of the telescope transversely to the optical axis, and a director rigidly connected to the scale and subject to an invariable terrestrial force.

3. A telescopic angle-measuring free-hand instrument consisting of a telescope, a transparent circular scale rotatable about an axis—which is central to it and fixed relatively to the telescope—and passing through the focus of the telescope transversely to the optical axis, and a director rigidly connected to the scale and subject to an invariable terrestrial force, the focal length of the telescopic objective being equal to the radius of the scale.

811,778. **INSULATING MATERIAL.** CHARLES C. HALL, Alexandria, Ind. Filed May 11, 1905. Serial No. 259,994.

Claim.—An insulating material consisting of a commixture of asbestos and ground wood-pulp in the proportion of ninety-two per cent. of asbestos and eight per cent. of wood-pulp, and an oleaginous substance with which the compound is permeated throughout.

811,779. **RAIL-JOINT.** PERCY H. HARPER, Wellston, Ohio. Filed Sept. 19, 1905. Serial No. 279,091.

Claim.—1. In a rail-joint, the combination of rail ends, one of which has engaging devices on the respective portions of its base-flange and the other having the respective portions of its base-flange extended beyond the rail end and separated by a slot and adapted to overlap the respective portions of the base-flange of the other rail end and engage the engaging devices thereon, the aforesaid slot being adapted to receive the web of the opposite rail end.

2. In a rail-joint, the combination of rail ends, one of which has raised parts on the respective portions of its base-flange and the other having the respective portions of its base-flange offset upwardly and extended beyond the rail end and provided with hook-shaped ends, said extended portions being separated by a slot which is adapted to receive the web of the opposite rail end and said hook-shaped ends being adapted to hook over and engage the raised parts on the respective portions of the base-flange of the other rail end.

3. In a rail-joint, the combination of rail ends, one of which has raised parts transverse to its base-flanges, a web portion projecting beyond the ends of said flanges, oppositely-beveled members on the end of its web above said projecting portion, and an upright projection on the end of its head; the other rail end having its base-flanges extended beyond its web, transversely grooved on the under side and separated by a central slot, oppositely-beveled members on the end of the web, and an upright notch in the end of its head.

4. In a rail-joint, the combination of rail ends, each having oppositely-beveled members on the end of its web which are disposed one above the other, those on one rail end being adapted to engage those on the other rail end.

811,780. **FLASH-LIGHT CARTRIDGE.** GUSTAV H. HERRMANN, Schwedenitz, Germany. Filed Nov. 25, 1903. Serial No. 183,670.

Claim.—1. A flash-light cartridge comprising a seamless, porous tube of animal-hair fabric containing flash-powder, substantially as and for the purposes set forth.

2. A flash-light cartridge comprising a seamless, porous tube of animal-hair fabric, composition flash-powder contained therein, a fuse in contact with said charge and protruding from said seamless tube, and means for closing the ends of said tube, substantially as and for the purposes set forth.

811,780.

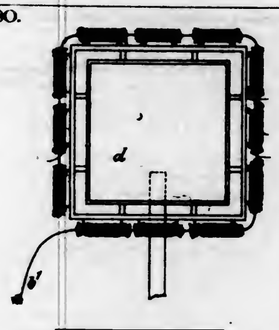

811,781. **DOUGH-RAISER.** WILLIAM H. HOLLANDER, Evansville, Ind. Filed Dec. 28, 1904. Serial No. 238,570.

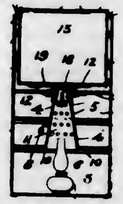

Claim.—1. In a device of the class described, the combination with a casing and means for heating the interior of said casing, of a dough-box within said casing and separated therefrom, said dough-box being raised above the casing, means connecting the casing to said dough-box at the top, said means provided with outlet-apertures for the heat, and a lid for said dough-box.

2. In a device of the class described, the combination with a casing and means for heating the interior of said casing, of a dough-box within said casing and separated therefrom, said dough-box being raised above the casing, beveled strips separating the casing and the dough-box and connecting them together at the top of said casing and dough-box, said beveled strips provided with heat-outlet apertures, and a top adapted to close the dough-box.

3. In a device of the class described, the combination with a casing, of a combustion-chamber therein, a plurality of compartments therein, one of said compartments being separated from the casing, the other of said compartments being provided with shelves, a flue running through one of said compartments provided with apertures adapted to direct air into the compartment through which it runs, a damper in said flue adapted to change the current of heated air through said flue, a shield protecting the top of the compartment through which the flue runs, and a shield protecting the bottom of the separated compartment.

811,782. **METALLIC RAILWAY-TIE.** PRESTON T. LARGE, North Tonawanda, N. Y. Filed Sept. 14, 1905. Serial No. 278,422.

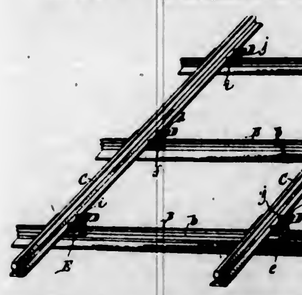

Claim.—1. A metallic tie having a horizontal base and a vertical web which is corrugated horizontally, substantially as set forth.

2. A metallic tie having a horizontal base and a horizontally-corrugated web which projects upwardly from the central part of the base, substantially as set forth.

3. A metallic tie having a vertical web which is corrugated horizontally and a rail-holder having a vertical web which is corrugated horizontally and secured to the web of said tie, substantially as set forth.

4. A metallic tie having a horizontal base and a horizontally-corrugated web projecting upwardly from the central part of said base, and a rail-holder having a horizontal top plate and a web projecting downwardly from said top, and having horizontal corrugations which fit into the corrugations of the web on said base, substantially as set forth.

5. A metallic tie having a horizontal base and a horizontally-corrugated web projecting upwardly from the central part of said base, a rail-holder having a horizontal top plate and a web projecting downwardly from said top and having horizontal corrugations which fit into the corrugations of the web on said base, and bolts connecting the webs of the tie and the rail-holder, substantially as set forth.

811,783. **STAMPING-PRESS.** HENRY C. LAVERY, West Superior, Wis., assignor to Mills Novelty Company, Chicago, Ill. Filed Dec. 12, 1903. Serial No. 134,933.

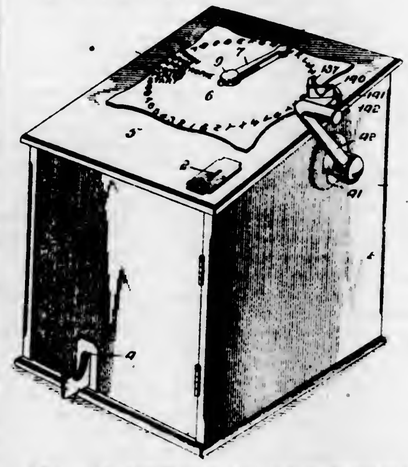

Claim.—1. In a stamping-press, blank-handling mechanism having a rotatable anvil-support and also comprising means for positioning, temporarily holding, releasing, and delivering a blank, spacing mechanism coöperating with said support to effect a step-by-step movement thereof, a rotatable die-holder having a plurality of plunger die elements, means for selecting the individual die elements for the printing position, and an operating mechanism having means for actuating the spacing mechanism and also for actuating the selected plunger die element.

2. In a stamping-press, blank-handling mechanism having an anvil-support for the blank and comprising means for positioning, temporarily holding, releasing, and delivering a blank, a die-holder in the form of a rotary type-wheel bearing a plurality of spring-retracted plunger die elements and provided with an upstanding circular centering-rack, and operating mechanism including an actuator for the selected die elements, and a combined setting and registering dog coöperating with the rack of the wheel.

3. In a machine of the class described, blank-handling mechanism having an anvil-support for the blank and also comprising means for positioning, temporarily holding, releasing, and delivering a blank, a die-holder in the form of a rotary type-wheel bearing a plurality of spring-retracted plunger die elements and having a centering-rack, spacing mechanism for effecting character spacing, an operating mechanism including an actuator for the selected die element, and a combined setting and registering dog having members coöperating respectively with the rack of the type-wheel and also with the spacing mechanism for actuating the latter.

4. In a machine of the class described, blank-handling mechanism having a rotatable anvil-support for the blank and also comprising means for positioning, temporarily holding, releasing, and de-

livering a blank, spacing mechanism coöperating with the anvil-support to effect a step-by-step movement thereof, a die-holder in the form of a rotary type-wheel overlapping the anvil-support and provided with a plurality of movable die elements and a centering-rack, means for selecting the individual die elements, and operating mechanism including a reciprocatory plunger-actuator for the selected die element, and a reciprocatory combined setting and registering dog having separate members coöperating respectively with the said rack and the spacing mechanism for the anvil-support.

5. In a machine of the class described, blank-handling mechanism having a rotatable anvil-support for the blank, spacing mechanism for the support including a pawl-carrier and an advancing member, a die-holder in the form of a rotary type-wheel bearing a plurality of die elements and having a centering-rack, and an operating mechanism including a main working shaft, a reciprocatory die-actuating plunger operated from the shaft, and a reciprocatory dog also operated from said shaft and having separate members coöperating respectively with the rack of the type-wheel and the advancing member of the pawl-carrier.

6. In a machine of the class described, a blank-handling mechanism having an anvil-support in the form of a ratchet-wheel, spacing mechanism including a swinging pawl-carrier having a pawl coöperating with the ratchet-wheel and also having an advancing member, a die-holder in the form of a rotary type-wheel, and operating mechanism including a main working shaft, a reciprocatory die-actuating plunger operated from said shaft, and a reciprocatory combined setting and registering plunger coöperating with the type-wheel and also with the advancing member of the pawl-carrier.

7. In a machine of the class described, blank-handling mechanism having an anvil-support in the form of a ratchet-wheel, character-spacing mechanism essentially comprising a swinging pawl-carrying frame bearing a pawl coöperating with the ratchet-wheel and an operating-lever yieldingly connected with the frame, said operating-lever being provided with an advancing member, a rotary type-wheel bearing die elements, and operating mechanism including a main working shaft, a reciprocatory die-actuator plunger, and a reciprocatory combined setting and registering dog having separate members coöperating respectively with the type-wheel and with the advancing member for the pawl-carrier of the spacing mechanism.

8. In a machine of the class described, blank-handling mechanism having a rotatable support in the form of a ratchet-wheel, character-spacing mechanism comprising a pivotally-supported swinging pawl-carrying frame having a member provided with a pendent arresting projection, and an operating-lever pivotally supported on the frame and having a yielding connection therewith, said operating-lever for the pawl-carrying frame also being provided with an arm extension consititutting an advancing member, a rotary die-holder in the form of a wheel bearing thereon stops of varying projection with which coöperates the arresting projection of the pawl-carrying frame, and operating mechanism including a die-actuator for the selected die, and a dog having a member operating against the advancing member for the pawl-carrying frame of the spacing mechanism.

9. In a machine of the class described, blank-handling mechanism having a step-by-step rotated anvil-support and also comprising means for positioning, temporarily holding, releasing, and delivering a blank, a rotary die-holder including a type-wheel bearing the individual die elements, and a die-adjusting shaft provided at one end with a selecting member or actuator, and operating mechanism having means, operated from a common shaft, for actuating the selected die element and also for effecting character-spacing through the movement of the anvil-support.

10. In a machine of the class described, printing mechanism having individual die elements, the blank-handling mechanism having a rotatable anvil-support, and an auxiliary blank-setting device comprising means for varying the position of the anvil-support.

11. In a machine of the class described, printing mechanism having individual die elements, blank-handling mechanism having a rotatable anvil-support for the blank, and an auxiliary blank-setting device having a geared connection with the anvil-support to provide for varying the position thereof.

12. In a machine of the class described, printing mechanism having individual die elements, blank-handling mechanism having a rotatable anvil-support, and an auxiliary blank-setting device including an adjusting-shaft bearing an indicator and having a geared connection with the anvil-support.

13. In a machine of the class described, printing mechanism having individual die elements, blank-handling mechanism having a rotatable anvil-support for the blank, and an auxiliary blank-setting device including an adjusting-shaft, and a ratchet-gear connection between said shaft and the anvil-support.

14. In a machine of the class described, printing mechanism having individual die elements, blank-handling mechanism having a rotatable anvil-support for the blank, and an auxiliary blank-setting device including an adjusting-shaft bearing an indicator and ratchet interlocked wheels having a geared connection with the anvil-support.

15. In a machine of the class described, printing mechanism having individual die elements, blank-handling mechanism having a rotatable anvil-support for the blank, and an auxiliary blank-setting device including an adjusting-shaft bearing upon its exterior end an indicator, a ratchet adjusting-wheel made fast to said shaft, a setting-gear loose upon the said shaft and bearing a pawl coöperating with said ratchet adjusting-wheel, and a gear-wheel fast with the anvil-support and meshing with the said setting-gear.

16. In a machine of the class described, printing mechanism having individual die elements, blank-handling mechanism having a rotatable anvil-support for the blank, and an auxiliary blank-setting device comprising a spring-returned adjusting-shaft bearing an indicator and having a ratchet-gear connection with the anvil-support, a ratchet-locking device for holding the shaft in its adjusted position, and mechanism for releasing the ratchet-locking device by the finishing operation of the machine.

17. In a machine of the class described, printing mechanism having individual die elements, blank-handling mechanism having a rotatable anvil-support for the blank, a blank-holding device including a lifting member, and an auxiliary blank-setting device comprising an adjusting-shaft having a ratchet-gear connection with the anvil-support and bearing a ratchet-locking disk, and a pivotally-supported pawl-frame bearing a catch-pawl coöperating with said locking-disk and having an element moved against by the lifting member of said holding device at the finishing operation.

18. In a machine of the class described, printing mechanism having individual die elements, blank-handling mechanism including an anvil-support for the blank and comprising means for positioning and delivering the blank, a holding device for clamping and releasing the automatically-positioned blank upon the anvil, and controlling mechanism comprising means for setting and releasing the holding device respectively after the positioning of a blank and at the completion of the stamping operation.

19. In a machine of the class described, printing mechanism having individual die elements, blank-handling mechanism including an anvil for the blank and comprising means for positioning and delivering the blank, a holding device for clamping and releasing the automatically-positioned blank upon the anvil-support, controlling mechanism for the holding device, and operating mechanism coöperating with said controlling mechanism to provide for setting and releasing the holding device respectively after the positioning of a blank and at the completion of the stamping operation.

20. In a machine of the class described, printing mechanism having individual die elements, blank-handling mechanism having a rotatable anvil, a holding device including a movable clamping-spindle carrying a presser-foot for clamping upon the blank, said clamping-spindle being rotatable with the anvil, and mechanism comprising means for moving the clamping-spindle in directions for setting and releasing purposes.

21. In a machine of the class described, printing mechanism having individual die elements, blank-handling mechanism having a rotatable anvil, a holding device having a reciprocatory and rotatable clamping-spindle bearing a presser-foot, operating mechanism, a clutch arranged to provide an operative connection between the operating mechanism and the holding device, and means for controlling the adjustment of said clutch.

22. In a machine of the class described, printing mechanism having individual die elements, blank-handling mechanism having an anvil for the blank, a holding device including a spindle bearing a presser-foot, an operating device, a clutch arranged to provide an operative connection between the operating device and the spindle of the holding device, and means for controlling the adjustment of said clutch through the action of the operating device.

23. In a machine of the class described, printing mechanism, blank-handling mechanism having a rotatable anvil-support, a holding device essentially comprising a reciprocatory and rotatable clamping-spindle bearing a presser-foot, and a spring-pressed clamp-carrying bracket interlocked with the clamping-spindle, an operating device, a clutch arranged to provide an operative connection between the said operating device and the clamp-carrying bracket, and a clutch-shifter coöperating with said clutch and controlled through the movement of the operating device.

24. In a machine of the class described, printing mechanism, blank-handling mechanism including an anvil for the blank and a feed-lever element, a holding device for the blank including a reciprocatory and rotatable clamping-spindle bearing a presser-foot, and a spring-pressed clamp-carrying bracket interlocked with the spindle, an operating device, a clutch arranged to provide an operative connection between the operating device and the said bracket, a clutch-shifter coacting with the clutch for adjusting the position thereof, and also having an operative connection with said feed-lever element, and a motion-transmitting element operable from the operating device and having a self-releasable clutch connection with the feed-lever element, said motion-transmitting element also acting as a holder for said clutch-shifter.

25. In a machine of the class described, printing mechanism, blank-handling mechanism including a rotatable anvil for the blank, and a feed-lever element having a supplemental holding-stud, a holding device for the blank including a movable clamping-spindle having a spring-pressed bracket member, an operating device having a lifting-cam, a clutch member consisting of a pivotally-mounted spring-adjusted lever carrying a clutch rod or finger adapted to provide an operative connection between said lifting-cam and the bracket member of the spindle, a clutch-shifter consisting of a pivotally-supported oscillating lever provided with a release-arm bearing an adjusting-pin or projection coöperating with the clutch member, said oscillating lever being further provided at an intermediate point with an offstanding latch-arm and at one end with a curved guide-section arranged for engagement by the supplemental holding-pin of the feed-lever element, an operating-spring connected with the said oscillatory lever and tending to normally move the same in a direction for adjusting the clutch member out of action, arresting means for checking the clutch-shifter against movement at the finishing operation, and a motion-transmitting element operable from the operating device and having a releasable clutch connection with the feed-lever element, said motion-transmitting element having a holding stud or pin coöperating with the latch-arm of the clutch-shifter lever.

26. In a machine of the class described, printing mechanism, a blank-support, a magazine for the blanks, blank-feeding mechanism comprising means for transferring a blank onto the support, operating mechanism for stamping and spacing purposes, and a self-releasable clutch connection between the blank-feeding mechanism and the said operating mechanism.

27. In a machine of the class described, printing mechanism, a support for the blank, blank-feeding mechanism comprising means for positioning a blank onto the support and including a lever element, operating mechanism for stamping and spacing purposes, and a motion-transmitting element operable from said operating mechanism and having a self-releasable clutch connection with said feed-lever element.

28. In a machine of the class described, printing mechanism, a support for the blank, blank-feeding mechanism comprising means for positioning a blank onto the support and including a feed-lever element, operating mechanism for stamping and spacing purposes, and a motion-transmitting element operable from the operating mechanism and having a temporary clutch connection with the feed-lever element, said clutch connection being self-releasable during the initial movement in unison between the said two elements.

29. In a machine of the class described, printing mechanism, a support for the blank, a guideway, a working magazine arranged over and in communication with the guideway, blank-feeding mechanism including a transferrer-slide working in the guideway and through the working magazine, and operating mechanism for stamping and spacing purposes, said operating mechanism including a motion-transmitting element having a self-releasable clutch connection with the blank-feeding mechanism.

30. In a machine of the class described, printing mechanism, a support for the blank, a yielding abutment arranged over the support, a swinging self-acting spring-actuated ejector arranged to sweep over the support, and blank-feeding mechanism including a transferrer arranged to move the blank onto the support against the ejector and said abutment.

31. In a stamping-press, the combination with the printing mechanism and the blank-handling mechanism including a transferrer, of a working magazine for holding the blanks acted upon by the transferrer, a separate storage-magazine having a plurality of supply-chambers individually registrable with the working magazine, and means for moving a filled supply-chamber into registration with the working magazine after the chamber in use has been emptied of its blanks.

32. In a stamping-press, the combination with the printing mechanism and the blank-handling mechanism having transferring means, of a working magazine for the blanks acted upon by the transferring means, a storage-magazine having a plurality of supply-chambers individually registrable with the working magazine, means for holding a supply-chamber in registration with the working magazine until the former is emptied, and means for adjusting the storage-magazine to bring a filled supply-chamber into registration with the working magazine.

33. In a stamping-press, the combination with the printing and blank-handling mechanisms, of a working magazine, a storage-magazine having a plurality of supply-chambers individually registrable with the working magazine, means for holding a supply-chamber in registration with the working magazine until the former is emptied, and means for automatically adjusting the storage-magazine to bring a filled supply-chamber into registration with the working magazine.

34. In a stamping-press, the combination with the printing and blank-handling mechanisms, of a working magazine, a storage-magazine having a plurality of supply-chambers individually registrable with the working magazine, means for holding a supply-chamber in registration with the working magazine until the former is emptied, and means for automatically adjusting the storage-magazine to bring a filled supply-chamber into registration with the working magazine through the action of the blank-feeding mechanism.

35. In a machine of the class described, the combination with the printing and blank-handling mechanisms, of a working magazine, a rotatable turret storage-magazine having a plurality of supply-tubes individually registrable with the working magazine and each having a follower provided with a tappet projection, and a magazine-actuator operable from the blank-handling mechanism and adapted to engage against the individual tappet projections when the latter pass into the path of the actuator.

36. In a machine of the class described, the combination with the printing and blank-handling mechanisms, of a working magazine, a rotatable turret storage-magazine having a plurality of upright supply-tubes individually registrable with the working magazine and each having a guiding-rod for the blanks, a floating follower working in each supply-tube and having a tappet-lug projecting exterior thereto, and a spring-retracted swinging magazine-actuator operated from the blank-handling mechanism and having a strike member adapted to engage the individual tappet-lugs when the latter pass into the path of movement of the actuator.

37. In a machine of the class described, the combination with the printing and blank-handling mechanisms, of a working magazine, a rotatable turret storage-magazine having a plurality of upright supply-tubes individually registrable with the working magazine and each having a guiding-rod for the blanks, a floating follower working in each supply-tube and having a tappet-lug projecting exterior thereto, a spring-retracted swinging magazine-actuator operated from the blank-handling mechanism and having a strike member adapted to engage the individual tappet-lugs when the latter pass into the path of movement of the actuator, and a rigid guiding-bar arranged to constitute a check and guide engaged by the tappet-lug of the filled supply-tube brought into register with the working magazine.

38. In a machine of the class described, the combination with the printing and blank-handling mechanisms, of a working magazine, and a storage-magazine having a plurality of supply-tubes each open at its lower end and an automatically-adjusted cover-plate arranged to cover and uncover the open end of each supply-tube.

39. In a machine of the class described, the combination with the printing and blank-handling mechanisms, of a working magazine, and a rotatable storage-magazine having a plurality of supply-tubes open at their lower ends and individually registrable with the working magazine, and a spring-held cover-plate arranged to cover and uncover the open end of each supply-tube and having a pivotal support at one end, each cover-plate when in a closed position being adapted to be displaced to an uncovering inactive position by contact with the working magazine.

40. In a machine of the class described, printing mechanism, blank-handling mechanism, means for effecting a stamping of the characters in a circle upon the blank, a holding device for the blank, an operating device having a self-releasable clutch connection with the blank-handling mechanism, and means for automatically throwing the holding device in and out of action.

41. In a stamping-press, printing mechanism, blank-handling mechanism, and an auxiliary blank-setting device comprising means for setting the blank to variable positions in its printing position.

42. In a stamping-press, printing mechanism, blank-handling mechanism comprising means for positioning the blank, and an auxiliary blank-setting device comprising means for varying the printing position of the blank.

tubular body, a header, substantially horizontal, communicating with said tubular body, and a cluster of water-tubes *g* connecting the

pins in said holes, and rubber stripe intermediate the rows of recesses and arranged in such a manner that a row of recesses on the one plate

the stem against accidental withdrawal and means for preventing independent rotation of the point and body portion

iliary blank-setting device comprising means for varying the printing position of the blank.

811,784. FLYING TOY. LYNN B. MATHEWS, Pittsburg, Pa. Filed Feb. 16, 1905. Serial No. 245,969.

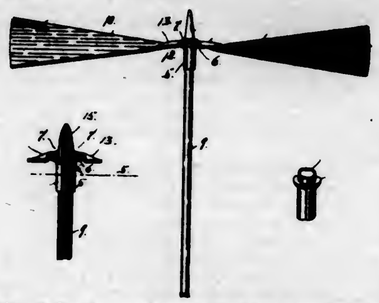

Claim.—1. In a device of the class described, the combination of a ferrule provided with a collar near one extremity, the ferrule having an interiorly-projecting tongue, a winged part having a central apertured portion adapted to receive the shorter part of the ferrule and engage the said collar, the shorter part of the ferrule being bent down on the central part of the winged portion to hold the latter in place, and a stem having a pointed extremity, the stem being inserted in the ferrule and its pointed extremity projecting beyond the winged portion sufficiently to allow the device to spin upon a surface, substantially as described.

2. In a toy of the class described, the combination of a winged part having a central portion provided with strengthening-webs extending outwardly from the opening, a ferrule having a collar engaged by the central part of the winged portion, the ferrule being upset or bent downwardly on the winged portion to hold the latter in place, the central part of the winged portion being also bent downwardly upon the collar, and an operating-stem inserted in the ferrule for the purpose set forth.

3. In a device of the class described, the combination of a ferrule provided with a collar near one extremity, the ferrule having an interiorly-projecting tongue, a winged part having a central apertured portion adapted to receive the shorter part of the ferrule and engage the said collar, the shorter part of the ferrule being bent down on the central part of the winged portion to hold the latter in place, and a stem connected with the ferrule for the purpose set forth.

811,785. STEAM-BOILER. PAUL MEURISSE, Lille, France. Filed July 18, 1905. Serial No. 270,215.

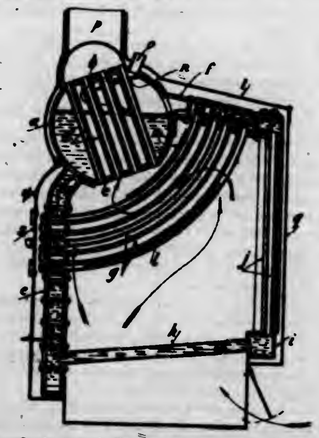

Claim.—1. A steam-boiler comprising an upper transverse tubular body *a* situated in the path of the products of combustion in combination with a vertical header *c* communicating with the said tubular body, a header, substantially horizontal, communicating with said tubular body, and a cluster of water-tubes *g* connecting the two headers, and substantially concentric with the tubular body *a*, substantially as described and for the purpose specified.

2. A steam-boiler comprising an upper transverse tubular body *a* situated in the path of the products of combustion and having two opposite flat portions *b*, *c*, forming tube-plates slightly inclined to the horizontal, in which are expanded fire-tubes *d*, in combination with a vertical header *c* communicating with the said tubular body, a substantially horizontal header *f* discharging into said tubular body, and a nest of water-tubes *g* connecting the two headers substantially concentric with the tubular body *a*, substantially as described and for the purpose specified

3. A steam-boiler comprising an upper transverse tubular body *a* having two flat portions *b*, *c*, forming tube-plates slightly inclined to the horizontal, in which are expanded fire-tubes *d*, in combination with a vertical header *c* communicating with said tubular body; a header, substantially horizontal, communicating with said tubular body; a nest of water-tubes *g* connecting the two headers, and substantially concentric with the tubular body; water-circulating tubes *h* connected at one end to the verical layer of water; a transverse collector *i*, into which the other ends of the tubes *h* discharge; said tubes *h* being situated in proximity to the grate; and a group of vertical tubes *j* forming a water-wall, and connecting the transverse collector *i* with the horizontal header, substantially as described and for the purpose specified.

4. A steam-boiler, comprising an upper transverse tubular body *a*, having two flat portions, *b* and *c*, forming tube-plates, slightly inclined to the horizontal, into which are expanded fire-tubes *d* in combination with a vertical header *c* communicating wth the said tubular body; a header *f*, substantially horizontal, communicating with the said tubular body; a nest of water-tubes *g* traversing the two headers, and having their ends at the side of the vertical header slightly narrowed and perforated on the bottom side, while the ends at the side of the other header are perforated throughout their circumference; tubes *h*, for the circulation of water, discharging at one end into the vertical header; a transverse collector *i*, into which the other ends of the water-tubes *h* discharge; and a group of vertical tubes *j* forming a water-wall, and connecting the transverse collector *i* with the horizontal header *f*, substantially as described and for the purpose specified.

811,786. TOOL-HOLDER. FRANKLIN P. MILLER, Bloomfield, N. J. Filed Mar. 15, 1904. Serial No. 198,947.

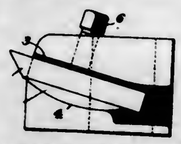

Claim.—1. A tool-holder consisting of a block recessed to receive a post to secure it to the bed or carrier of a lathe, tapered in a plane transverse to the axis of the post, and provided with a side recess and means to secure a tool in an inclined position therein, substantially as set forth.

2. A tool-holder consisting of a block recessed to receive a post tapered at each end in a plane transverse to the axis of the post, forming converging side faces, with an inclined recess in each face, and means for securing a tool therein, substantially as set forth.

811,787. APPARATUS FOR PRINTING BOOKS IN TYPE FOR THE BLIND. ROBERT MOSHER, Bucharest, Roumania. Filed May 9, 1905. Serial No. 259,543.

Claim.—1. A printing apparatus provided with a pair of plates each composed of alternate rows of recessed strips and pads, the pads of one plate being opposite the recessed strips of the other plate, and pins removably secured to the recessed strips, substantially as specified.

2. A printing apparatus provided with a pair of hinged plates having rows of rectangular recesses, and intermediate rubber strips arranged in such a manner that a row of recesses on the one plate is opposite a rubber strip on the other plate, the said recesses having conical holes formed in their bottom surfaces, and conical pins in said holes, substantially as specified.

3. A printing apparatus provided with a pair of hinged plates having rows of rectangular recesses, holes communicating therewith,

pins in said holes, and rubber strips intermediate the rows of recesses and arranged in such a manner that a row of recesses on the one plate is opposite a rubber strip on the other plate, the rubber strips being secured between the rows of recesses in dovetailed grooves, substantially as specified.

4. A printing apparatus provided with a recessed plate, pins removably secured thereto, and a reversible cover adapted to engage the pins, substantially as specified.

5. A printing apparatus provided with a pair of hinged plates having recesses, communicating conical perforations, pins removably secured within the perforations, and pads intermediate the recesses, substantially as specified.

6. A printing apparatus provided with a pair of hinged plates having recesses, communicating perforations, dovetail grooves between the recesses, pins removably secured within the perforations, and pads engaging the dovetail grooves, substantially as specified.

7. A printing apparatus provided with a plate having recesses, communicating perforations, pins removably secured within the perforations and projecting beyond the plate, and means coöperating with the pins, whereby the pins are caused to form impressions, substantially as specified.

8. A printing apparatus provided with a plate having recesses, communicating perforations, pins removably secured within the perforations, a cover adapted to engage the pins, and means coöperating with the pins, whereby the pins are caused to form impressions, substantially as specified.

9. A printing apparatus provided with a plate having recesses, communicating perforations, pins removably secured within the perforations and projecting beyond the plate, a reversible cover, means for removably hinging the cover to the plate, and means coöperating with the pins, whereby the pins are caused to form impressions, substantially as specified.

10. A printing apparatus composed of a plate having recesses, communicating perforations, connected pins removably secured within the perforations, and means coöperating with the pins, whereby the pins are caused to form impressions, substantially as specified.

811,788. SPLICING-PIN. JOHN L. MCPARDEN, HENRY L. WILKIE, and WILLIAM H. LEWIS, Detour, Mich. Filed June 20, 1905. Serial No. 266,171.

Claim.—1. A splicing-pin comprising a body portion having a longitudinally-extending recess in one end, a detachable point, a stem upon the point adapted to be seated within the recess and means for preventing independent rotation of the point and stem.

2. A splicing-pin comprising a body portion having a longitudinally-extending recess in one end, a detachable point, a stem upon the point adapted to be seated within the recess, means for holding the stem against accidental withdrawal and means for preventing independent rotation of the point and body portion.

3. A splicing-pin comprising a body portion having a smooth bore in one end, a detachable point slidably mounted within the bore, and means for detachably securing the said point within the bore.

4. A splicing-pin comprising a recessed body portion; a detachable point extending therefrom, and means for preventing independent rotation of the point and stem in any direction.

811,789. SEAM FOR SEWED ARTICLES. LAWRENCE ORMEBODE, New York, N. Y., assignor to Union Special Sewing Machine Company, Chicago, Ill., a Corporation of Illinois. Filed June 3, 1904. Serial No. 211,061.

Claim.—1. A seam for sewed articles, comprising a body fabric, threads having loops passed alternately therethrough at points substantially one behind the other, a locking-thread passing through each pair of said loops, and lying over the edge, and surrounding one or the other of said threads on the upper surface of said fabric; substantially as described.

2. A seam for sewed articles, comprising a body fabric, threads having loops passed alternately therethrough at points substantially one behind the other, but lying on the under surface of the fabric, diagonal to each other and with their points together, a third thread passing through both loops at their point of meeting, and lying over the edge, and surrounding one or the other of the threads upon the upper surface of the fabric; substantially as described.

3. A seam for sewed articles, comprising a body fabric, threads having loops passed alternately therethrough at points substantially one behind the other, a locking-thread passing through each of said loops and lying over the edge and passing under one row of loops on the upper surface of the fabric, and surrounding one of said threads on the upper surface of the fabric; substantially as described.

811,790. SEAM FOR SEWED ARTICLES. LAWRENCE ORMEBODE, New York, N. Y., assignor to Union Special Sewing Machine Company, Chicago, Ill., a Corporation of Illinois. Filed June 3, 1904. Serial No. 211,064.

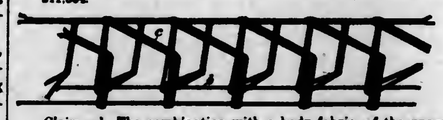

Claim.—1. The combination with a body fabric, of the upper threads, each having loops passed down through the fabric, a third thread engaging each pair of said loops, and lying upon the under face of the fabric and a fourth thread engaging the loops of said third thread and lying upon the upper surface of the fabric and concatenated with the upper threads, upon the upper surface of the fabric, substantially as described.

2. The combination with a body fabric, of the upper threads, having loops passed down therethrough, a third thread, passing through two consecutive loops of the respective threads on the under surface of the fabric and lying upon the under surface of the fabric and a fourth thread passing through the loops of said third thread and extending upon the upper surface of the fabric and surrounding the loops of one thread and being covered by the threads between the loops of the other thread, substantially as described.

3. The combination with a body fabric, of the upper threads having loops passed down therethrough, a third thread, passing through two consecutive loops of the respective threads on the under surface of the fabric and lying upon the under surface of the fabric and a fourth thread passing through the loops of said third thread and extending upon the upper surface of the fabric and surrounding the loops of one thread and being covered by the threads between the loops of the other thread, said fourth thread between the points of its passage through the loops, of the third thread lying along the edge of the fabric, substantially as described.

811,791. MEANS FOR OPERATING DRILLS. OLIN S. PROCTOR, Denver, Colo. Filed Apr. 29, 1905. Serial No. 258,101.

Claim.—1. A rock-drill of the class described, including a cyl-

inder, a piston, and means for introducing motive fluid to the cylinder, of a by-pass leading from the drill-cylinder to a point forward of

when the tenons are forced into the grooves portions of the tenons are

one edge of one tenon on each lamina being undercut, the angle be-

5. The combination with three parallel helical wire springs two

inder, a piston, and means for introducing motive fluid to the cylinder, of a by-pass leading from the drill-cylinder to a point forward of the piston for delivering fluid to the drill-hole, and a check-valve located in said by-pass and adapted to allow fluid to pass therethrough to the drill-hole but arranged to prevent the return of the rock cuttings into the cylinder.

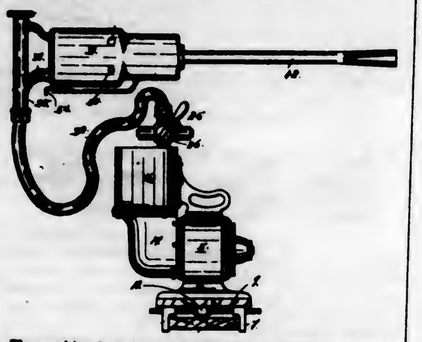

2. The combination of a motor cylinder and piston, a drill-cylinder and piston, a conduit connecting the two cylinders, a by-pass leading from the drill-cylinder to a point forward of the piston for delivering fluid to the drill-hole, and means for controlling the passage of air from the motor-cylinder whereby the air is forced into the drill-cylinder during the forward movement of the motor-piston, but rarefaction of the air in the drill-cylinder prevented during the backward movement of the motor-piston, whereby the only outlet for the air from the drill-cylinder is by way of the said by-pass, substantially as described.

3. The combination of a motor-cylinder, a piston therein, a drill-cylinder piston constituting a hammer, a drilling-tool located forward of the hammer and having a longitudinal passage therethrough for delivering fluid to the drill-hole, a conduit between the two cylinders, a by-pass leading from the drill-cylinder to a point in front of the drilling-tool, a valve for controlling the said by-pass, valve mechanism for controlling the passage of air between the two cylinders, said mechanism being constructed to allow the air to pass freely from the motor-cylinder to the drill-cylinder during the forward movement of the motor-piston while the rarefaction of the air in the drill-cylinder is prevented during the return movement of the motor-piston, the motor-cylinder being supplied with air from the atmosphere during the reverse movement of its piston, and adjustable means connected with the drill-cylinder whereby the air may be allowed to escape from the conduit into the atmosphere, or compelled to pass to the drill-cylinder as desired.

811,792. **DYNAMO-ELECTRIC MACHINE.** HENRY G. REIST, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed May 7, 1904. Serial No. 207,867.

Claim.—1. In a dynamo-electric machine, an annular core, conductors projecting from said core, a casing surrounding said core, brackets formed on said casing, a ring supported by said brackets against which the projecting conductors rest, and a ring concentric with and surrounding the first-mentioned ring and engaging the outer edges of said conductors.

2. In a dynamo-electric machine, an annular core, conductors projecting from said core, a casing surrounding said core, brackets formed on said casing, a ring supported by said brackets against which the projecting conductors rest, a ring concentric with and surrounding the first-mentioned ring engaging the outer edges of said conductors, and means for varying the circumference of said ring.

3. In a dynamo-electric machine, an annular core, conductors projecting from said core, a casing surrounding said core, brackets formed on said casing, a ring supported by said brackets against which the projecting conductors rest, a ring concentric with and surrounding the first-mentioned ring engaging the outer edges of said conductors, and means for rigidly securing said second ring to the core.

4. In combination, a support formed with a plurality of undercut grooves, laminæ each formed with a pair of tenons which enter grooves in said support, said tenons and said grooves being of different shapes, and adjacent layers of laminæ breaking joints whereby when the tenons are forced into the grooves portions of the tenons are bent and a space is left between other portions of the tenons and the walls of the slot into which bent-up portions of the tenons of the laminæ in an adjacent layer are received.

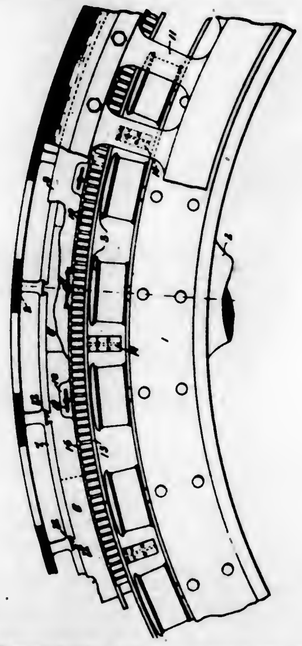

5. In a dynamo-electric machine, a laminated core, dovetail projections on the laminations of said core, and a support formed with retaining-slots adapted to receive said projections, the edges of said projections having a different slope from the sides of said slots.

6. In combination, a support having undercut grooves formed in it, and laminæ secured to said support by tenons entering said grooves, each lamina being formed with two tenons, portions of the side edges of which are separated by a distance less than the distance between the corresponding portions of the walls of the grooves in which they enter.

7. In combination, a support having undercut grooves formed in it, laminæ secured to the support by tenons entering said grooves, each of said laminæ being formed with a plurality of tenons, the tenons and grooves being so proportioned and shaped that when assembled a portion of one at least of the tenons will be distorted.

8. In combination, a support having undercut grooves in it, and laminæ secured thereto by tenons entering said grooves, each of said laminæ being formed with two tenons, portions of the side edges of which are separated by distances different from the distances between corresponding portions of the side walls of the grooves.

9. In combination, a support having an undercut groove formed in it, and a lamina provided with a tenon which enters said groove, one side of said tenon being undercut more than the corresponding wall of said groove, and the parts being so arranged that when the tenon is forced in the groove a portion at the tip of the tenon is turned up.

10. In a dynamo-electric machine, an external armature comprising an outer annular supporting-frame and an inner annular core, armature-conductors carried by the core, the ends of said conductors projecting beyond the core, a radial stiffening member connected to one end of said supporting-frame, and means carried thereby for supporting the projecting ends of the armature-conductors.

11. In combination, a support having grooves cut in it, the sides of which are undercut at an angle of about forty-five degrees with the face of the support, and laminæ secured to said support by tenons entering said groove, one side of each tenon being undercut at an angle of about thirty degrees with the face of the support.

12. In combination, a support having undercut grooves formed in it, laminæ secured to said support by tenons entering said groove, one edge of one tenon on each lamina being undercut, the angle between the undercut edge of the tenon and the body of the lamina being less than the angle between the wall of the slot and the face of the support, and the parts being so proportioned and arranged that a portion of the undercut side of the tenon is turned up by the wall of the slot in assembling the laminæ on the support.

13. In a dynamo-electric machine, a laminated core, dovetail projections on the laminations of said core, and a member slotted to receive said projections and adapted to support said core, the edges of said projections making a more acute angle with the adjacent edges of the laminations than the sides of the slots in said member make with the adjacent surface of said member.

14. In a dynamo-electric machine, a laminated core, a slotted member supporting said core, projecting dovetails on the laminations of said core engaging the slots in said member, said projections having only one edge sloping, and adjacent projections in the same slot being arranged with their sloping edges facing in opposite directions.

15. In a dynamo-electric machine, a laminated core, a slotted member supporting said core, projecting dovetails on the laminations of said core engaging the slots in said member, said projections having only one edge sloping, and a portion of said projections having their sloping edges facing in an opposite direction to the sloping edges of the other projections.

16. In a dynamo-electric machine, a laminated core, a slotted member supporting said core, projecting dovetails on the laminations of said core engaging the slots in said member, said projections having only one edge sloping, and a portion of said projections having their sloping edges facing in an opposite direction to the sloping edges of the other projections, said sloping edges making a more acute angle with the adjacent edges of the laminations than the sides of the slots in said member make with the adjacent surface of said member.

811,793. **METHOD OF MAKING WATERPROOF WELTS.** JOHN R. REYNOLDS, Hartford, Conn., assignor to The Waterproof Welt and Filler Company, Hartford, Conn., a Corporation of Delaware. Filed Sept. 21, 1905. Serial No. 279,466.
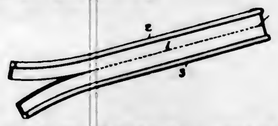
Claim.—1. The method of making a waterproof welt which consists in placing a mass of vulcanized waterproof material in a plastic condition in a suitable receptacle, forcing the mass through a die to form a thin flat strip having a plurality of rounds or beads thereon, vulcanizing the strip and finally cutting the strip between the beads to form a plurality of welts.

2. The method of making a waterproof welt which consists in placing a mass of vulcanized waterproof material in a plastic condition in a suitable receptacle, forcing the mass through the die to form a thin flat strip having a bead on each edge, vulcanizing the strip and finally cutting the strip midway between the beads to form two welts.

811,794. **BELT.** JOHN RUSSELL, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed July 9, 1904. Serial No. 215,283.

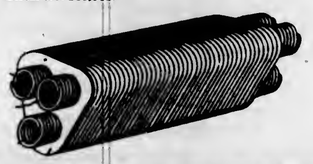

Claim.—1. A belt consisting of an elastic core and a covering of loose washers.

2. A belt having an elastic core comprising one or more helical springs, and a covering of loose washers.

3. A belt consisting of a plurality of parallel helical springs, and a plurality of loose washers assembled on the same in close contact.

4. A belt consisting of a plurality of parallel helical wire springs having their turns close together, and a plurality of loose leather washers strung on said springs in close contact.

5. The combination with three parallel helical wire springs two in contact and the third equidistant from both, of a plurality of triangular washers each having an S-shaped hole and a circular hole.

6. In a belt, an elastic core member in the form of a helical spring, and a covering of loose washers.

811,795. **WALL-RECEPTACLE.** HOWARD B. SARGENT, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Nov. 19, 1903. Serial No. 181,864.

Claim.—1. A receptacle comprising a base of insulating material having a central and two end cavities in its upper side, a contact-sleeve and center contact secured in the central cavity, a binding-post secured in each of the end cavities and electrically connected to the said sleeve and center contact respectively, and a face-plate connected to said base and provided with a central opening and a lid therefor.

2. A receptacle comprising a base of insulating material having around central cavity in its upper face and two cavities in its lower face communicating with said central cavity, a flanged contact-sleeve in said central cavity, a yoke-shaped metal connection adapted to engage the flange of the sleeve and having an arm extending through the side of the sleeve and into one of the lower cavities, a center contact extending through an aperture in the opposite side of said sleeve and into the other lower cavity, means for securing said connection and center contact to the base, and means located in the upper face of said base for connecting the said connection and center contact to an electric circuit.

3. A receptacle comprising a base of insulating material having a central cavity and two end cavities in its upper side, holes extending from the bottom of said base into said end cavities for the passage therethrough of the line-wires, binding-posts secured in said end cavities, and two metal contacts located in said central cavity adapted to coöperate with an incandescent lamp and electrically connected to the respective binding-posts.

4. A receptacle comprising an insulating-base having a central and two end cavities in its upper face and two end cavities in its lower face communicating with the inner end of the central cavity, metallic contacts located in said central cavity, binding-posts located in said upper end cavities, and electrical connections between said binding-posts and said metallic contacts.

5. A plug-receptacle formed of a single block of insulating material having a circular central socket and isolated chambers each side of the central socket, a threaded metallic shell lining the walls of the central socket, a metallic contact at the center of the bottom of the socket, a binding-post with a binding-screw in an isolated chamber each side of the central socket, a metallic connection extending through an opening in the wall between the central socket and one chamber and joining one binding-post and the threaded shell, and a metallic connection extending through an opening in the wall between the central socket and another chamber and joining the other binding-post and the central contact.

6. A plug-receptacle formed of a single block of insulating material having a circular central socket and isolated chambers each side of the central socket, a threaded metallic shell lining the walls of the cental socket, a metallic contact at the center of the bottom of the socket, a binding-post with a binding-screw in an isolated chamber each side of the central socket, a metallic connection extending through an opening in the wall between the central socket and one chamber and joining one binding-post and the threaded shell, a metallic connection extending through an opening in the wall between the central socket and another chamber and joining the other binding-post and the central contact, a plate fastened to the front of the receptacle and covering the socket and the chambers, and a lid hinged to the plate.

811,796. **SNAP-SWITCH.** HOWARD B. SARGENT, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed July 8, 1904. Serial No. 215,288.

Claim.—1. In a quick-break switch, the combination with a contact-post, of a clip secured to the top thereof, and consisting of a middle portion having integral overlapping end portions folded over in opposite directions.

2. In a quick-break switch, the combination with a contact-post, of a clip secured to the top thereof, and consisting of a middle

of the shaft also receiving the driver for the pusher-chain of the said loading apparatus while the other part of said shaft carries a pinion

2. In a quick-break switch, the combination with a contact-post, of a clip secured to the top thereof, and consisting of a middle portion having integral overlapping end portions folded over in opposite directions, said end portions having registering holes giving access to the middle portion where it is secured to said post.

3. In a quick-break switch, the combination with a spindle, of a switch-blade rotatably mounted thereon, a spring connecting them, a stationary stop-plate, two catches rotating with the switch-blade and movable radially to the spindle, and two arms on said spindle for simultaneously actuating said catches.

4. In a quick-break switch, the combination with a spindle, of a switch-blade rotatably mounted thereon, a spring connecting them, a stop-plate in which said spindle is journaled, guide-flanges rotatable with the switch-blade, two similar catch-plates located on opposite sides of the spindle and sliding between said flanges, and a double-ended pin transverse to said spindle for simultaneously actuating said catches in opposite directions radially to said spindle.

5. In a quick-break switch, the combination with a spindle, of a switch-blade rotatably mounted thereon, a spring connecting them, a stop-plate in which said spindle is journaled, guide-flanges rotatable with said switch-blade, two catch-plates located on opposite sides of the spindle between said flanges with their adjacent edges in contact, each plate having a recess through which the spindle passes and provided with shoulders 20 21, and a double-ended pin transverse to said spindle and engaging with said shoulders.

6. In a quick-break switch, the combination with a spindle provided with two oppositely-arranged arms, of two plates movable in opposite directions in the plane of said arms, and recesses in the adjacent edges of said plates engaged by said arms.

7. In a quick-break switch, the combination with a spindle, of a stop-plate, and radially-movable catches simultaneously actuated by said spindle and engaging said stop-plate at opposite points.

811,797. **APPARATUS FOR LOADING GUNS IN TURRETS, &c.** CHARLES P. R. SCHNEIDER, Le Creusot, France. Filed Oct. 5, 1904. Serial No. 227,208.

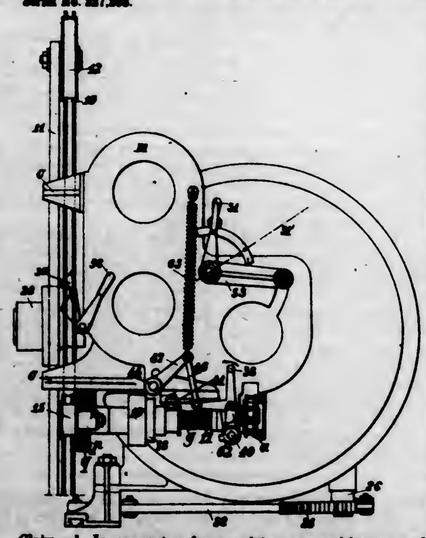

Claim.—1. In apparatus for supplying ammunition to and loading guns mounted in turrets or the like, said apparatus being operated by a common driving mechanism, the combination of a cage furnished with a charging or loading apparatus and a divided shaft the extremities of which carry the two elements of a clutch, one part of the shaft also receiving the driver for the pusher-chain of the said loading apparatus while the other part of said shaft carries a pinion constantly in engagement with the chain of the charge-hoist, and a brake which is normally kept applied but which is automatically released by the contact with the gun or a fixed portion of the turret or mounting.

2. A hoisting-cage provided with a revolver or revolving cylinder having three or more receptacles or chambers for the projectile and the cartridges, this revolver being arranged to turn in the casing and being actuated by transmission-gear comprising a cam, pinion and chain connected to the endless pusher-chain of the continuous charging apparatus.

3. In combination, an ammunition-hoisting cage, a charging-plate, pivoted upon a shaft carrying a lever which is provided with a roller adapted to automatically engage with a cam of the gun or of the waiting tray for the automatic depression of the plate.

4. In combination, an ammunition-hoisting cage, a pivotally-supported charging-plate thereon and a tappet engaging an object in the path of the cage to automatically raise and lower said plate.

5. In an ammunition hoisting and loading device for guns, the combination of a hoisting-cage, a loading device for transferring the ammunition from the cage to the gun, a power device, and a connection operable at will to connect said power device to said cage or said loading device.

6. In ammunition hoisting and loading apparatus, the combination of an ammunition-hoisting cage, loading mechanism carried thereby, a two-section shaft on said cage, means for raising and lowering said cage in engagement with one of said shaft-sections, a brake normally applied to said section during movement of the cage, brake-release means in the path of said cage permitting rotation of said section when said brake is released, a clutch device normally restrained from action for connecting and disconnecting said shaft-sections, and clutch-operating means for throwing in and out of operation said loading mechanism.

7. In an ammunition hoisting and loading device for guns, the combination of a hoisting-cage having a revolving ammunition-carrier therein, a loading device for transferring the ammunition from the carrier to the gun, power mechanism in operative relation with said cage and loading device, and operative connections between said loading device and carrier whereby the latter is rotated by the movements of said loading device.

8. In an ammunition hoisting and loading device, the combination of an ammunition-hoisting cage, power mechanism for raising and lowering the same, a shaft on said cage taking power from said mechanism, loading mechanism on the cage having a clutch connection with said shaft and automatic clutch-operating means for throwing the loading mechanism in and out of connection with said shaft.

9. In an ammunition hoisting and loading device, the combination of an ammunition-hoisting cage, power mechanism for raising and lowering the same, a shaft on said cage for taking power from said mechanism, loading mechanism on the cage having a clutch connection with said shaft, a brake device normally holding said shaft from rotation, and automatic brake-release means for releasing said shaft to permit the same to transmit power to the loading mechanism when said clutch device is closed.

10. In an ammunition hoisting and loading device, the combination of a hoisting-cage, power mechanism for raising and lowering the same, a revolvible shaft on said cage engaging said power mechanism, a brake normally restraining said shaft from rotation and automatic brake-release means for releasing said shaft to stop the upward movement of said cage.

811,798. **PENCIL-SHARPENER.** HENRY H. A. SCHWARZ, Brighton, England. Filed Dec. 27, 1904. Serial No. 238,569.

Claim.—1. A sharpening device of the class described embodying a guide provided with a suitable flat guiding-surface, and a cutting-blade having the cutting edge thereof arranged at an acute angle to and longitudinally of said guide and disposed at one side thereof, said guide comprising a flat body extending from the blade at approximately a right angle thereto, the heel of the blade being in contact with the adjacent side of the guide.

2. A sharpening device consisting of a cutting-blade, and a guide for said blade arranged at an acute angle to the cutting edge thereof, the heel of the blade being interlocked with the guide, where-

by these parts are reinforced against lateral movement relative to one another.

3. A sharpening device consisting of a cutting-blade, and a guide for said blade arranged at an acute angle to the cutting edge thereof, the guide comprising a flat body located in a plane approximately at a right angle to the plane including the cutting-blade, the body of the guide being formed with a recess or depression receiving the heel of the blade and affording interlocking connection between these parts.

811,799. **BELT-SHIFTING FOR SPEED-CONES.** OTTO SEIDEMANN, Jena, Germany, assignor to The Firm of Carl Zeiss, Jena, Germany. Filed July 24, 1905. Serial No. 270,979.

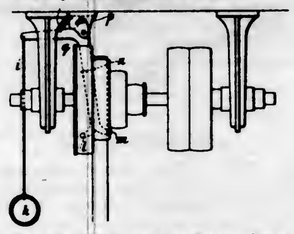

Claim.—In a belt-shifting appliance for speed-cones the combination, with the movable carrier of the belt-fork, of a self-acting device, permanently tending to move the carrier in the direction toward the next higher step against the resistance of the belt tightened on its actual step, and of means for moving the carrier in the direction toward the next lower step against the power of the self-acting device.

811,800. **ROLLER FOR TYPE-WRITERS.** WILLIAM A. SMALL, San Francisco, Cal., assignor, by direct and mesne assignments, to Noiseless Typewriter Company, a Corporation of California. Filed Aug. 15, 1904. Serial No. 220,880.

Claim.—A roller for type-writers comprising a hollow wooden body having an enlarged head at one end thereof, a wooden sleeve having a threaded engagement with the other end thereof, a soft-rubber tube encircling the wooden body between the head and sleeve, and an external sheath encircling the tube and head and sleeve, substantially as described.

811,801. **OIL-CUP.** NATHAN SMITH, Stevensville, Md. Filed Mar. 10, 1905. Serial No. 249,621.

Claim.—A hand-oiler comprising a contractible, flexible bulb, an integral flange extending from the bottom thereof and adapted to support the same in an upright position, a metallic ring embedded within the flange and having one edge flush with the bottom of the flange, said ring constituting a wear device, and an outlet-tube detachably connected to the top of the bulb, the bottom of said oiler being adapted to be forced inward at points surrounded by the ring.

811,802. **BUCKET FOR IMPULSE WATER-WHEELS.** WILLIAM S. SMITH, Berkeley, Cal. Filed Oct. 27, 1903. Serial No. 178,705.

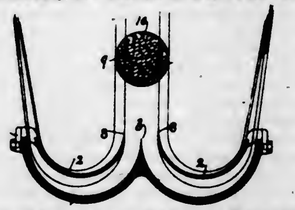

Claim.—1. In a bucket for impulse water-wheels of the hurdy-gurdy type a divided main portion which is substantially a complete bucket and supplementary curved portions located on opposite sides of the dividing-wedge of the maiu portion and suitably secured to the main portion.

2. In a bucket for impulse water-wheels of the hurdy-gurdy type a divided main portion which is substantially a complete bucket and supplementary curved portions located on opposite sides of the dividing-wedge of the main portion, independently constructed and mechanically secured to the main portion.

3. In a bucket for impulse water-wheels of the hurdy-gurdy type a divided main portion which is substantially a complete bucket and supplementary curved portions symmetrically located on opposite sides of the dividing-wedge of the main portion, symmetrically placed with respect to the curved parts of the main portion and suitably secured to the main portion.

4. In a bucket for impulse water-wheels of the hurdy-gurdy type a divided main portion which is substantially a complete bucket, supplementary curved portions symmetrically located on opposite sides of the dividing-wedge of the main portion, symmetrically placed with respect to the curved parts of the main portion, the inner or working curved surfaces being approximately parallel to the inner or working curved surfaces of the main portion.

5. In a bucket for impulse water-wheels of the hurdy-gurdy type a divided main portion which is substantially a complete bucket, supplementary curved portions symmetrically placed with respect to the curved parts of the main portion, the inner or working faces of the main and supplementary portions being approximately parallel, there being a clear space between the main and supplementary parts through which water flowing over the working surface of the main part can freely pass, the supplementary parts being suitably secured to the main part in such a manner as not to interfere with the free discharge of water from the main part.

6. In a bucket for impulse water-wheels of the hurdy-gurdy type a divided main portion which is substantially a complete bucket, supplementary curved portions suitably secured to the main portion in such a manner as not to interfere with the free flow of water over the surface of the main portion, the side of each supplementary portion which is adjacent to the dividing-wedge of the main portion being substantially parallel to this dividing-wedge, and at a distance

from it which is less than half the diameter of the stream of water entering the bucket, there being clear space between the sides of the supplementary portions and the dividing-wedge of the main portion through which a portion of the stream discharging into the bucket can freely enter the main portion.

7. In a bucket for impulse water-wheels of the hurdy-gurdy type a divided main portion which is substantially a complete bucket, supplementary curved portions suitably secured to the main portion in such a manner that the sides of the supplementary portion adjacent to the dividing-wedge of the main portion are substantially parallel to this dividing-wedge and at a distance from it which is less than half the diameter of the stream of water discharging into the bucket, the metal at the lips of the sides of the supplementary portions which are adjacent to the dividing-wedge of the main portion being reduced in thickness so as to present cutting edges to a stream of water impinging upon them, the curves of the inner or working faces of the supplementary portions at these cutting edges terminating in planes which are substantially parallel to the plane of the water-wheel.

8. A bucket for impulse water-wheels provided with a multiplicity of dividing edges in the path of the entering stream, these dividing edges being substantially parallel to each other and lying in the median plane of the water-wheel or in planes parallel to this median plane and being substantially the lines of tangency of the deflecting-surfaces of the bucket with the median plane of the water-wheel or with planes parallel to this median plane.

9. A bucket for impulse water-wheels provided with a multiplicity of dividing edges in the path of the entering stream, these dividing edges being substantially parallel to each other and lying in the median plane of the water-wheel or in planes parallel to this median plane and being substantially the lines of tangency of the deflecting-surfaces of the bucket with the median plane of the water-wheel or with planes parallel to this median plane, and independent curved deflecting-surfaces arranged in two groups, these groups being substantially duplicates and symmetrically placed on opposite sides of the median plane of the water-wheel, the members of each group being approximately concentric and having the receiving edges substantially tangent to the median plane of the water-wheel or to planes parallel to this median plane, the discharge edges being at angular distances from the receiving edges approximating to one hundred and eighty degrees.

811,803. SASH-FASTENER. JOHN W. STATON, Brownwood, Tex. Filed June 15, 1905. Serial No. 265,423.

Claim.—The combination with a window-frame and sashes therein; of a rod having screw-threads at one end and extending through and secured to the upper end of the sash, said rod having oppositely-disposed series of notches therein and said rod extending between the sashes, and forked spring locking-plates rigidly secured at one end to the sashes and straddling the rod and adapted to engage the notches in the series farthest removed from the sashes to which said plates are secured, and laterally-extending wings at the free end of each locking-plate, the weight of said sashes being adapted to clamp the rod between the sashes and their locking-plates.

811,804. WASHING-MACHINE. JOHN W. STRAUS, Decatur, Ill. Filed Oct. 6, 1904. Serial No. 227,178.

Claim.—In a washing-machine, a rectangular-shaped receptacle provided with continuous independent transversely-ribbed strips on the interior thereof separated by intervening spaces and arranged longitudinally of the receptacle on its sides and bottom and with the strips situated on the bottom supported by spacing-blocks.

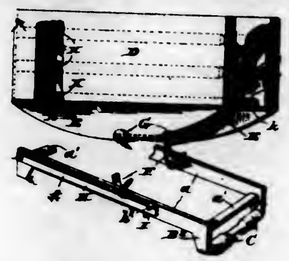

811,805. STEAM-TURBINE. JOHANN STUMPF, Berlin, Germany, assignor to General Electric Company, a Corporation of New York. Filed Dec. 26, 1901. Renewed Sept. 19, 1904. Serial No. 224,960.

Claim.—1. In a steam or gas turbine, the combination of a bucket-wheel and a nozzle-frame, of nozzles fixed in the frame, the said nozzles comprising an inlet part having a round section, a straight expansion part having a rectangular section and a narrow passage situated between these parts, substantially as described and for the purpose set forth.

2. In a steam or gas turbine, the combination of a bucket-wheel and a nozzle-frame, of nozzles fixed in the frame, the said nozzles comprising an inlet part having a round section, a straight expansion part having a rectangular section and a narrow passage situated between these parts, the nozzles being situated so as to leave only a small wedge-shaped part between the expansion part of the same, substantially as described and for the purpose set forth.

3. In an elastic-fluid turbine, the combination of a bucket-wheel, a nozzle-support which has the same curvature as the wheel and is provided with a number of openings arranged in the same plane, and detachable nozzles which are located in said openings and in close proximity so as to discharge the motive fluid in a solid jet.

4. In an elastic-fluid turbine, the combination of a bucket-wheel, a nozzle-support having the same curvature as the wheel and provided with a number of closely-associated openings which discharge the fluid in a solid column, detachable nozzles located in said openings, and means for securing the nozzles in place.

5. In an elastic-fluid turbine, the combination of a bucket-wheel, a nozzle-support having the same curvature as the wheel and provided with a number of closely-associated openings, nozzles located in said openings which may be removable by moving them in the direction of their length, and individual devices for securing the nozzles in place which are so arranged that one nozzle can be removed without disturbing the other or others.

6. In an elastic-fluid turbine, the combination of a bucket-wheel having peripheral buckets, a nozzle-support which surrounds the wheel and is in proximity thereto, nozzle-receiving openings formed in the support which are closely associated, and a plurality of nozzles located in said openings which are nearer together at their inner than their outer ends, shoulders on the nozzles which determine their positions, and means for securing the nozzles in place.

7. In an elastic-fluid turbine, the combination of a bucket-wheel, a nozzle-support, and a plurality of closely-associated and individually-removable nozzles which discharge fluid to the wheel in the form of a solid jet, the said nozzles being alike in form.

8. In an elastic-fluid turbine, the combination of a bucket-wheel, a nozzle-support, a plurality of closely-associated detachable nozzles which discharge fluid to the wheel in the form of a solid jet, the said nozzles being alike in form, and means for securing the several nozzles to the support.

811,806. MIRROR FOR SURGICAL, DENTAL, AND LIKE USES. ROBERT WALKER, Newark, N. J. Filed Nov. 24, 1905. Serial No. 288,231.

Claim.—1. In a mirror-holder, the combination of a concaved back plate or support and a spring frame or holder adapted to be engaged with and drawn into the support and simultaneously grip the mirror, substantially as described.

2. In a mirror-holder, the combination of a concaved back plate or support and a spring frame or holder having its edge formed to engage the mirror and itself adapted to engage and be drawn into the back plate or support whereby the mirror is simultaneously gripped by the frame, substantially as described.

3. In a mirror-holder, the combination of a concaved back plate or support and a spring-frame having its edge turned over to grip the mirror and itself provided centrally with a stud to engage the back plate or support, whereby the frame is simultaneously caused to grip the mirror, substantially as described.

4. In a mirror-holder, the combination of a concaved back plate or support and a spring frame or holder having its edge turned over to engage the mirror and provided centrally with a screw-threaded stud to engage the back plate or support, substantially as described.

811,807. FIREARM. JOSEPH H. WINSOR, Springfield, Mass. Filed July 11, 1905. Serial No. 269,214.

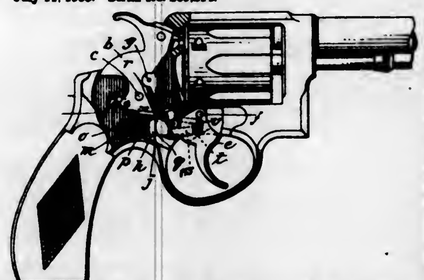

Claim.—1. In a firearm, a hammer, a trigger, and a retracting device for the hammer consisting of a slidable wedge-block located between the under side of the hammer and the frame, a positive connection consisting of a link extending between said block and the trigger, a spring having a bearing on said block and on a suitable abutment on the frame, to actuate both the block and the trigger.

2. In a revolver, a hammer and a retracting device therefor, and a hand to rotate the cylinder, a trigger, and an elbow-lever pivotally mounted on the latter; one arm of which bears on the hand one side of the pivotal point of the latter, and a link connected to the other arm of the elbow-lever and extending to said retracting device, together with a spring to actuate the latter and the trigger and to hold the hand in operative relation to the cylinder of the revolver.

3. In a revolver, a trigger and a hand thereon to rotate the cylinder, and an elbow-lever pivoted on the trigger one arm of which bears on the hand one side of the pivotal point of the latter, a link pivotally connected to the other arm of the elbow-lever, and a spring to apply endwise pressure to said link to move the trigger in one direction and through said elbow-lever to hold the hand in operative relation to the cylinder of the revolver.

4. In a firearm, a hammer, a trigger, and a retracting device for the hammer, said device having a bearing on and being positively actuated by the trigger but not attached thereto, and a spring to move the retracting device and trigger to retract the hammer after the trigger has been actuated to effect the discharge of the arm.

5. In a firearm, a hammer, a trigger, and a retracting device for the hammer consisting of a slidable wedge-block located between the under side of the hammer and the frame, a connection consisting of a link extending between said block and the trigger, and a spring bearing on the block to move the latter and said trigger to normal position after the trigger has been actuated to fire the arm.

6. In a firearm, a hammer, a trigger, and a retracting device for the hammer consisting of a slidable wedge-block located between the under side of the hammer and the frame, a positive connection consisting of a link extending between said block and the trigger, the rear end of said block being provided with a chamber, a spring in said chamber having a suitable abutment on the frame and serving to actuate both the block and the trigger.

7. In a firearm, a hammer, a trigger, and a retracting device for the hammer connected with the trigger and movable by the latter to inoperative position, said device constituting also a safety device, and a spring bearing on said retracting device and on the frame to normally hold the device in a position to block the fall of the hammer.

811,808. CAR-COUPLING. SOLOMON W. WIBEL and WILLIAM R. CUNNINGHAM, Denver, and HORACE A. GRAY, Arvada, Colo. Filed Jan. 30, 1905. Serial No. 243,173.

Claim.—1. The combination with a draw-head, of a coupling device mounted therein and vertically movable for coupling and uncoupling purposes, the draw-head being also provided with upper and lower spindles provided with projections located within the chamber of the draw-head, and exteriorly-located engaging parts consisting of a cam and an arm, substantially as described.

2. The combination with a draw-head, of a coupling device suitably connected with the draw-head and vertically movable, upper and lower spindles journaled in the draw-head and having interiorly-located projections one of which is adapted to act on the coupling device of the opposite draw-head to hold the latter in the locking position, while the other is adapted to raise the same coupling device to the unlocked position, the two spindles being provided with exteriorly-located engaging parts to facilitate manipulation, for the purpose set forth.

3. The combination with a draw-head having a pin, of a coupling-hook connected with the draw-head and engaging the pin, the said hook being vertically movable for coupling and uncoupling purposes, a second draw-head provided with a pin adapted to be engaged by the coupling-hook of the first-named draw-head, each draw-head being also provided with upper and lower spindles journaled therein and having interiorly-located engaging parts adapted to act on the coupling device for locking and unlocking purposes, the spindles being also provided with exteriorly-located coöperating parts to facilitate manipulation for the purpose set forth.

4. The combination with a draw-head, of a coupling device suitably connected with the draw-head, spindles journaled in the draw-head above and below and having interior projections adapted to act on the coupling device of the opposite draw-head, one of the spindles having an exteriorly-located arm and the other an exteriorly-located cam, the arm and the cam being arranged to coöperate for coupling and uncoupling purposes, the opposite draw-head being provided with a pin adapted to engage the coupling-hook for coupling purposes, substantially as described.

5. The combination of two draw-heads each being provided with a rigid pin, a coupling device having two hook-shaped extremities adapted to engage both pins when the draw-heads are coupled, each draw-head being also provided with upper and lower spindles having projections adapted to act on the adjacent extremities of the coupling device, the spindles being also provided with exteriorly-located engaging parts to facilitate manipulation.

6. The combination with two draw-heads, of a coupling device having hook-shaped extremities adapted to enter the respective draw-heads, devices located in the lower parts of the draw-heads for engaging the coupling-hook extremities, upper and lower spindles journaled in each draw-head and adapted to act on the adjacent extremity of the coupling device for unlocking and locking purposes, the said spindles of the draw-heads being provided with exteriorly-located parts engaging for coupling and uncoupling purposes, the exterior parts on the two draw-heads being located on opposite sides for the purpose set forth.

811,809. EXPLOSIVE-ENGINE. JOSEPH A. WILLIAMS, Cleveland, Ohio. Filed Sept. 27, 1904. Serial No. 226,110.

Claim.—1. The combination with an explosive-engine including a cylinder and a separable stationary combustion-chamber, of means for forcing a scavenging charge of air through the same at a

time when the combustion-chamber is not in communication with the cylinder.

2. In an incandescent-lamp guard, the combination with a supporting-base having an upright flange provided with radial lugs

of the cylinder and covering the outlet-ports when in closed position and having one end closed and adapted to rest against said main-

a clamp attached to the beam and holding said sockets in position

time when the combustion-chamber is not in communication with the cylinder.

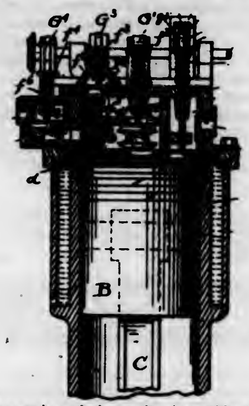

2. In a four-cycle explosive-engine, in combination, a cylinder, a separable stationary combustion-chamber, and exhaust-passage for the cylinder leading from said combustion-chamber, and means for forcing a scavenging charge of air through said combustion-chamber at a period of the cycle when the engine is not exhausting.

3. In an explosive-engine, in combination, a cylinder, a stationary combustion-chamber, a valve between the same and the cylinder, and means for forcing the air through the combustion-chamber when said valve is closed.

4. In an explosive-engine, in combination, a cylinder, a crank-casing connected thereto, a separable stationary combustion-chamber, a passage-way leading from the crank-chamber to the combustion-chamber, and a valve for controlling said passage-way.

5. In an explosive-engine, in combination, a cylinder, a stationary combustion-chamber, a valve for controlling communication between the two, means for forcing a scavenging charge through the combustion-chamber, a valve for controlling such charge, and means for opening said valve when the combustion-chamber valve is closed.

6. In an explosive-engine, in combination, a cylinder, a crank-casing connected thereto, a separate stationary combustion-chamber, a passage-way leading from the crank-chamber to the combustion-chamber, a scavenging-valve for controlling said passage-way, a partition between the combustion-chamber and cylinder, a valve controlling an opening in said partition, and means for opening the scavenging-valve when the last-mentioned valve is closed.

7. In an explosive-engine, in combination, a cylinder, a combustion-chamber divided into compartments, a valve for controlling communication between the compartments, means for admitting a scavenging charge into the compartment farthest from the cylinder, and means for simultaneously holding open the valve between the compartments, and the exit-valve from the compartment nearest the cylinder.

8. In an explosive-engine, in combination, a cylinder, a closed crank-casing connected therewith, a plurality of combustion-chambers communicating with each other and one communicating with the cylinder, an igniter in the combustion-chamber which communicates with the cylinder, a valved exhaust passage-way from said combustion-chamber, means controlling communication between the combustion-chambers, a valved passage-way from the crank-casing leading into the combustion-chamber farthest from the igniter to admit a scavenging charge of air thereto.

9. In an explosive-engine, in combination, a cylinder, a stationary combustion-chamber, a valve controlling communication between the two, a crank-shaft, mechanism operated from the motion thereof to operate said valve, and means for forcing a scavenging charge through the combustion-chamber when the valve is closed.

811,810. LAMP-GUARD. MONTRAVILLE M. WOOD, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed July 11, 1904. Serial No. 213,003.

Claim.—1. In an incandescent-lamp guard, the combination with a supporting-base having a notched flange, of a cage adapted to be secured to said base by a bayonet-joint fastening, and locking means comprising a radially-movable cage-rib capable of engagement with said notched flange.

2. In an incandescent-lamp guard, the combination with a supporting-base having an upright flange provided with radial lugs and a notch, of a cage having a flanged ring containing notches to register with said lugs, and a rib having a loose foot adapted to spring into the notch in said upright flange and lock the cage to the base.

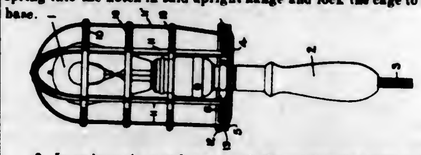

3. In an incandescent-lamp guard, the combination with a supporting-ring 5 having a flange 6 provided with lugs 7, a notch 8, and a bevel 9 adjacent to said notch, of a cage having a loose resilient rib 11', and a ring 12 provided with an internal flange 13 containing notches 14.

811,811. STOPPER FOR BOTTLES. JAMES J. ALLISON, Rockfalls, Ill. Filed May 23, 1905. Serial No. 261,544.

Claim.—1. A stopper for bottles of the class named, comprising a hollow plug, adapted to be held in the neck of the bottle, and provided at its inner end with an inwardly-opening valve; and means for conducting the liquid contents of the bottle from the bottom thereof to the inner end of said plug; substantially as set forth.

2. In a device of the class named, a hollow flexible plug, provided in its inner end with an inwardly-opening valve; a hollow stopper, supported in the neck of the bottle, and embracing the lower part of the plug; and means for conducting the contents of the bottle to the inner end of said plug; substantially as and for the purpose set forth.

3. In a bottle-stopper, the combination of the stopper 2, fixed in the neck of the bottle; the hollow plug 4, embraced by the stopper 2, having an inwardly-opening valve in its inner end, and provided with the sleeve 6 centrally of such plug; and the pipe 3, providing a passage for the contents of the bottle to the plug 4; substantially as shown and set forth.

4. In a device of the class named, the combination of the stopper 2, fixed in the neck of the bottle; the hollow plug 4, embraced by the stopper 2, having an inwardly-opening valve in its inner end; the cap 8, fixed on the top of the bottle, and provided with an opening 9, in line with the opening in the plug 4; and the pipe 3, extending from the lower end of the stopper 2 to the bottom of the bottle; substantially as shown and described.

811,812. STAND-PIPE FOR RAILWAYS. EDWARD V. ANDERSON, Pittsburg, Pa. Filed Jan. 16, 1904. Serial No. 189,342.

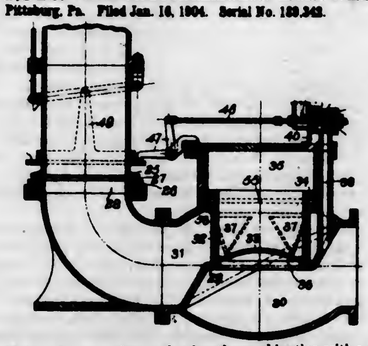

Claim.—1. In a valve mechanism the combination with a casing provided with a valve-seat in its interior, of a hollow cylinder within said casing surrounding said valve-seat at one end and open at its opposite end and having openings at its side for the flow of liquid when the valve is open, a cylindrical valve substantially fitting the interior of the cylinder and covering the outlet-ports when in closed position and having one end closed and adapted to seat against said valve-seat, and means for operating said valve.

2. In a valve mechanism the combination with a casing provided with a valve-seat in its interior, of a hollow cylinder within said casing surrounding said valve-seat at one end and open at its opposite end and having openings at its side for the flow of liquid when the valve is open, a cylindrical valve substantially fitting the interior of the cylinder and covering the outlet-ports when in closed position and having one end closed and adapted to seat against said valve-seat, an operating-cylinder in axial alinement with the first-named cylinder, a piston therein connected to said valve and means for admitting fluid under pressure to the operating-cylinder on the side of the piston opposite said valve and for permitting the escape of said fluid.

3. In a valve mechanism the combination with a casing provided with an internal valve-seat and embodying in its construction two internal hollow cylinders differing in diameter and having a common axis, one end of the smaller cylinder surrounding the valve-seat and its opposite end communicating with the larger cylinder, the smaller cylinder having outlet for the flow of liquid when the valve is open, a combined valve and piston having its valve portion when closed, substantially fitting the smaller cylinder throughout the length thereof and guided thereby and having the end opposite the piston portion constructed to seat on the valve-seat, the piston portion fitting the larger cylinder a passage connecting the larger cylinder with a source of supply and with a waste-passage and a valve for alternately closing said passages.

811,813. VALVE. EDWARD V. ANDERSON, Pittsburg, Pa. Filed Dec. 30, 1904. Serial No. 239,005.

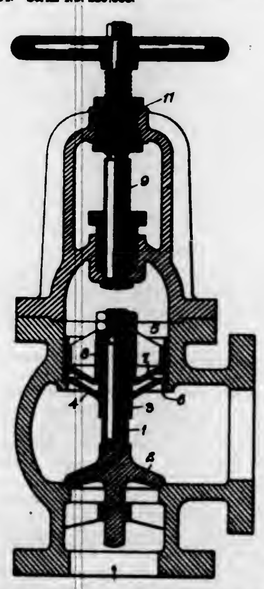

Claim.—1. A check or non-return valve mechanism having in combination a valve, a hollow piston movable with and independent of the valve, a second piston connected to the valve and arranged within the hollow piston, substantially as set forth.

2. A check or non-return valve mechanism having in combination a valve, a piston movable with and independent of the valve, a stop for limiting the movement of the piston and a second piston connected to the valve, substantially as set forth.

811,814. PLOW. JEFFERSON H. BAKER, Collinsville, Tex. Filed Oct. 6, 1905. Serial No. 281,606.

Claim.—1. In a plow, the combination of a beam, a stock applied thereto, sockets secured to the beam near the rear end portion thereof, handles having the lower ends secured to said sockets, and a clamp attached to the beam and holding said sockets in position thereon, the upper portion of the stock being bifurcated to form spaced members upon opposite sides of the beam, said spaced members coacting with the sockets to hold the same in position.

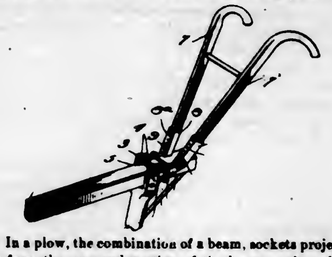

2. In a plow, the combination of a beam, sockets projecting upwardly from the rear end portion of the beam, each socket being formed with an integral foot extending therefrom longitudinally of the beam at a side of the latter, a U-shaped clamp and clamp-plate embracing the rear end portion of the beam and engaging the feet of the sockets to secure the same to said beam, handles having the lower ends thereof mounted in the sockets, and means for securing said handles to the sockets.

3. In a plow, the combination of a beam, sockets arranged at the rear end portion of the beam, handles mounted in said sockets, and a stock attached to the beam and coacting with the sockets to hold the same in position.

4. In a plow, the combination of a beam, sockets arranged at the rear end portion of the beam, handles mounted in said sockets, feet or extensions projected from the sockets and arranged on opposite sides of the beam, said beam being formed with recesses to receive said extensions, a clamp secured to the beam and holding the extensions of the sockets in the recesses in which they are arranged, a stock secured to the beam and having its upper end formed with spaced members engaging the extensions on the sockets and coacting therewith to hold the sockets in position, and a brace between the rear end of the beam and the stock.

811,815. LIFE-SAVING BOAT. AUGUST BAUMGART, Lind, Wash. Filed June 9, 1905. Serial No. 264,537.

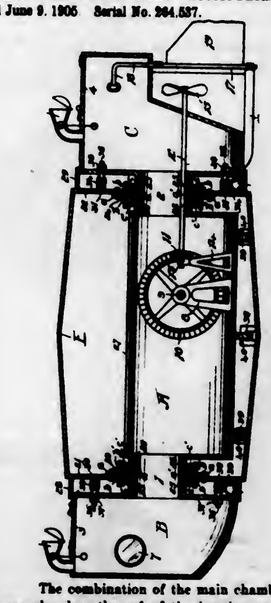

Claim.—The combination of the main chamber, of the forward and rear chambers thereof, of the housing or movable cover provided with disks surrounding the main chamber, and an annulus provided with a pair of annular spaces and secured to the disks of said housing.

2. The combination of the main chamber, of the forward and rear chambers thereof, of the housing or movable cover provided

ing series of punch-controlling arms, said arms being formed on the

arranged to convey an elastic medium and project the same upon a

and a coin-slot cover, of a three-armed lever of which one arm en-

2. The combination of the main chamber, of the forward and rear chambers thereof, of the housing or movable cover provided with disks surrounding the main chamber, an annulus or ring approximately in the form of a cross in cross-section secured to said disks, annular or ring plates secured to the ends of the horizontal legs thereof, and forming a pair of annular spaces between the lower vertical leg and said annular spaces.

3. The combination of the main chamber, of the forward and rear chambers thereof, of the housing or movable cover surrounding the main chamber provided with disks, an annulus provided with a pair of annular spaces secured to the disks thereof and a plurality of set-wheels or rollers the periphery thereof working on the outer face of said disks.

4. The combination of the main chamber, of the forward and rear chambers thereof, of the housing or movable cover surrounding the main chamber provided with disks, an annulus provided with a pair of annular spaces secured to the disks thereof and a plurality of set-wheels or rollers the periphery thereof working on the outer face of said disks and means for adjustably securing said set-wheels or rollers to the forward and rear chambers of the life-boat.

5. The combination of the main chamber, of the forward and rear chambers thereof, of the housing or movable cover surrounding the main chamber provided with disks, an annulus secured to the end disks thereof and provided with annular spaces one of said annular spaces adapted to be filled with packing and the other with roller-bearings to permit the housing or outer movable cover to freely revolve.

6. In combination with the forward and rear chamber of the life-boat and the movable cover or housing thereof provided with disks, a plurality of rollers or set-wheels, the periphery thereof working upon the disks of the aforesaid movable cover, and said rollers or set-wheels being secured to the forward and rear chambers by means of a forked-shaped member, and adjusted by means of a nut or bur.

7. The combination of the main chamber, of the forward and rear chambers thereof, and of the housing or movable cover surrounding the main chamber provided with disks, an annulus provided with a pair of annular spaces secured to the disks of said movable cover or housing, a plurality of set-wheels, the periphery thereof working on the outer face surface of aforesaid disks, and means for adjusting said set-wheels to prevent longitudinal movement of the housing upon the collars communicating with the aforesaid forward and rear chambers.

811,816. **PERFORATING-MACHINE.** HARRY S. BERGEN, Dayton, Ohio. Filed May 31, 1904. Serial No. 210,364.

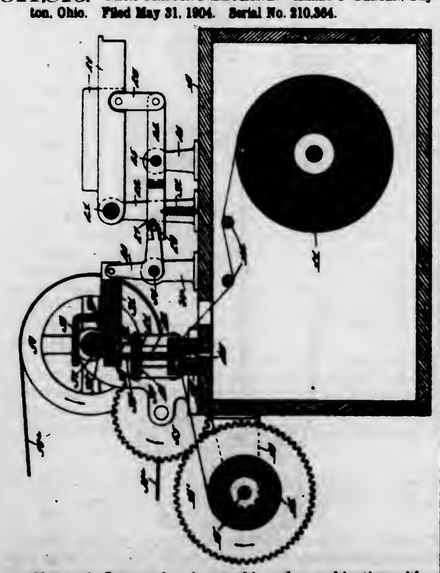

Claim.—1. In a perforating-machine, the combination with a series of keys, a series of reciprocatory punches corresponding thereto, and means for feeding paper below said punches; of a corresponding series of punch-controlling arms, said arms being formed on the upper side with a cut-away portion adjacent to a raised portion, and formed on the lower side with a slot for engaging the respective punch; an eccentric-shaft extending transversely above said arms; means connected with said keys for operating said arms to carry said raised portion thereof into the path of movement of said eccentric-shaft; and means for rotating said shaft in such direction that the frictional contact of the shaft with said arm assists the key movement of the arm in carrying the raised portion thereof into operative position.

2. In a perforating-machine, the combination with a series of keys, a series of reciprocatory punches corresponding thereto and normally spring-retracted, and means for feeding paper below said punches; of a corresponding series of punch-controlling arms, said arms being formed on the upper side with a cut-away portion adjacent to a raised portion, and formed on the lower side with a slot of such shape as to permit movement of the arm at right angles to the punch independently of the punch, but engaging the punch to cause the latter to follow the arm during its reciprocatory movements in the direction of the reciprocatory movements of the punch; an eccentric-shaft extending transversely above said arms; means connected with said keys for operating said arms to carry said raised portion thereof into the path of movement of said eccentric-shaft; and means for rotating said shaft to cause the reciprocation of the punches when said raised portion of the controlling-arms is in the path of movement of said shaft.

3. In a perforating-machine, the combination with a series of keys, a series of reciprocatory punches corresponding thereto and normally spring-retracted, and means for feeding paper below said punches; of a corresponding series of punch-controlling arms, said arms being formed on the upper side with a cut-away portion adjacent to a raised portion, and formed on the lower side with a slot of such shape as to permit movement of the arm at right angles to the punch independently of the punch, but engaging the punch to cause the latter to follow the arm during its reciprocatory movements in the direction of the reciprocatory movements of the punch; an eccentric-shaft extending transversely above said arms; means connected with said keys for operating said arms to carry said raised portion thereof into the path of movement of said eccentric-shaft; means for rotating said shaft to cause the reciprocation of the punches when said raised portion of the controlling-arms is in the path of movement of said shaft; and a retracting-arm connected with the punch-controlling arm and extending over the upper side of said eccentric-shaft at such distance from the controlling-arm as to permit the free rotation of said shaft between the retracting-arm and the cut-away portion of the controlling-arm without causing the reciprocation of said controlling-arm, but when the controlling-arm is operated by the key, the distance between the retracting-arm and the raised portion of the controlling-arm being such that the said eccentric-shaft will strike both the said raised portion and the said retracting-arm successively in its rotary movement.

4. In a perforating-machine, the combination with a series of keys, and a series of reciprocatory punches corresponding thereto; of a corresponding series of punch-controlling arms, said arms being formed on the upper side with a cut-away portion adjacent to a raised portion, and formed on the lower side with a slot of such shape as to permit movement of the arm at right angles to the punch independently of the punch, but engaging the punch to cause the latter to follow the arm during its reciprocatory movements in the direction of the reciprocatory movements of the punch; an eccentric-shaft extending transversely above said arms; means connected with said keys for operating said arms to carry said raised portion thereof into the path of movement of said eccentric-shaft; means for rotating said shaft to cause the reciprocation of the punches when said raised portion of the controlling-arms is in the path of movement of said shaft; and an intermittent feed and locking device for feeding paper below said punches only when the punches are withdrawn from the paper and for locking the feed while the punches are perforating the paper.

811,817. **MACHINE FOR COMBING WOOL.** ISAAC BENT, Rhode Island. Filed Apr. 12, 1905. Serial No. 255,122.

Claim.—1. In a machine for combing wool the herein-described apparatus adapted to force the wool slivers into the combs by pressure exerted through an elastic medium, comprising means to convey said medium from a source of supply to a position above said slivers, circles of combs, and means to secure the slivers in the combs.

2. In a wool-combing machine, the herein-described apparatus comprising a series of circle combs, a series of conduits adapted and arranged to convey an elastic medium and project the same upon a sliver of wool in a manner that the wool is pressed below the points of the said combs at the meeting place of the circles.

3. In a machine for combing wool the circle combs, the conduits provided with by-passages having terminals adapted for lateral and vertical adjustment in their relation to the combs, and means to vertically and horizontally adjust and support said conduits relative to the tangential junction of the circles.

4. In a wool-dabbing apparatus, a series of circle combs, a series of conduits provided with means for deflecting a part of their contents, and having foraminous floors arranged to deliver pressure at a predetermined angle directly to the junction of the circles, a series of by-passages supported by said conduits provided with fan-shaped terminals, and means within said terminal to diffuse the volume of air as it passes to the orifices.

5. A wool-dabbing apparatus composed of a series of members transmitting an elastic medium from a source of supply to the circles of a wool-comb, two or more fan-shaped terminals coacting with said members provided with sinuous partitions, perforations therein to disseminate the volume of pressure into converging and diverging streams to secure an equalized pressure over the wool sliver before it enters the junction of the combs, the circle of combs, and means to maintain the sliver of wool within the said circle.

6. In an apparatus for confining slivers of wool to the combs, two or more main conduits having each flaring orifices covered by foraminous plates, apertures in each plate enlarged to permit egress of an increased volume of pressure over that issuing through the associated perforations, so as to confine the wool at a precise point in the circles, in combination with rotatable means to retain the wool below the points of the combs, the said combs and means for the manual adjustment and maintenance vertically of said rotatable devices and conduits.

7. In combination the circle combs and conduit carrying fluid under pressure, terminals thereto having foraminous barriers and orifices, and provided with means to deflect the fluid-pressure into separate currents, rotatable brushes or aprons for confining the wool below the points after the confinement of the sliver by fluid-pressure, and the presser-feet having means for their axial and vertical adjustment, and adapted to confine the wool to the circles after passing the junction of the combs.

811,818. **MONEY-BOX.** ROBERT H. BISHOP and WILLIAM DOWN, Highgate, England, assignors of two-thirds to Lyonel Edwin Clark and Sydney Francis Stapleton, London, England. Filed Mar. 23, 1905. Serial No. 251,462.

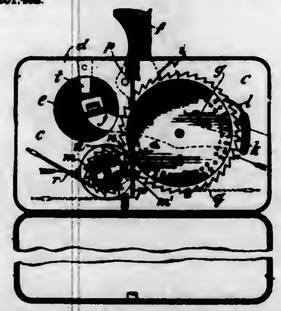

Claim.—1. In a money-box of the kind specified, a counting mechanism, a coin-operated lever for actuating said counting mechanism, and a pivoted coin-slot cover engaging directly with said lever for preventing the passage of the coin into the box when said cover is open.

2. In a money-box of the kind specified, a counting mechanism, a coin-operated lever for actuating said counting mechanism, and a pivoted coin-slot cover engaging with said lever which lever moreover cooperates with the said cover through the medium of a coin, the said coin being caused by the closing of the cover to move the lever to a position to permit the coin to pass into the box.

3. In a money-box, the combination with counting mechanism and a coin-slot cover, of a three-armed lever of which one arm engages with the counting mechanism, another arm serves to prevent the passage of the coin into the box and the third arm engages with the coin-slot cover and is operated by the opening of said cover to prevent the passage of the coin into the box when said cover is open and operated by the closing of said cover with a coin between them to permit the passage of the coin into the box and to actuate the counting mechanism.

811,819. **THERMO-ELECTRIC COUPLE.** WILLIAM H. BRISTOL, New York, N. Y. Filed June 30, 1905. Serial No. 267,834.

Claim.—1. A thermo-electric couple being separable or capable of division between its hot and cold ends.

2. A sectional or separable thermo-electric couple provided with connecting means between the hot and cold ends.

3. A thermo-electric couple comprising a primary section and a secondary section and means adapted to connect said primary and secondary sections between the hot and cold ends of the couple.

4. A thermo-electric couple comprising a primary section and a secondary section, and an open slotted joint adapted to connect the primary and secondary sections between the hot and cold ends of the couple.

5. The combination with an indicating device or recording instrument, of a sectional or separable thermo-electric couple provided with connecting means between the hot and cold ends.

6. The combination with an indicating or recording instrument, of a thermo-electric couple comprising a primary section and a secondary section and means adapted to connect said primary and secondary sections between the hot and cold ends of the couple.

811,820. **ROLLER-TABLE.** HENRY J. BURKHEIM, Pittsburg, Pa. Filed July 8, 1904. Serial No. 215,839.

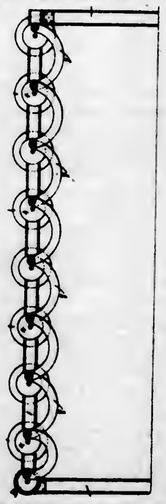

Claim.—In a roller-table, the combination of a series of rolls adapted for coöperation in feeding material across the table and arranged in the same longitudinal plane, of a driving means at one end of the table, a pitman connecting said driving means to the adjacent roll, and pitmen connecting each of the rolls with the next succeeding roll, each of said pitmen being curved downwardly from its end connection with the rolls, whereby to permit side delivery from the table without interference with the pitmen.

811,821. **DRIER.** HORACE B. CAMP, Akron, Ohio. Filed July 20, 1903. Serial No. 170,568.

Claim.—The combination in a device of the class described com-

prising an inclosing shell, a plurality of sprocket-wheels mounted in said shell, said sprocket-wheels being arranged in pairs the members of each pair being oppositely disposed with respect to the

tween said lamps and the delivery-chamber aforesaid, substantially as set forth.

6. The combination with a bottle having a retaining ledge and a rounded head, of a cap having angularly disposed arms with legs

arms, legs depending from the arms, and an expansible ring con-

prising an inclosing shell, a plurality of sprocket-wheels mounted in said shell, said sprocket-wheels being arranged in pairs the members of each pair being oppositely disposed with respect to each other, parallel conveyer-chains arranged to run on said sprocket-wheels, means on said conveyer-chains to support ware-carrying pallets, pallets on said supporting means, means to operate said chains in a step-by-step movement, means to create a plurality of air-currents in said shell adjacent the course of said ware-carrying pallets, and means to direct said currents through said ware.

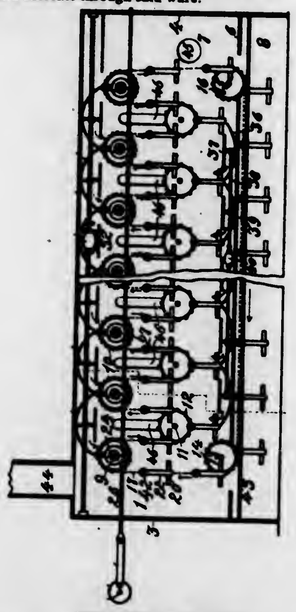

811,822. AUTOMATIC CIRCUIT-BREAKING SAFETY APPLIANCE FOR USE IN TROLLEY-WIRE SYSTEMS FOR ELECTRIC TRACTION. JAMES CARTER, Stalybridge, GEORGE HALL, Manchester, and ARTHUR PARSONS, Leeds, England. Filed Oct. 20, 1904. Serial No. 229,555.

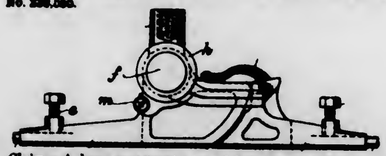

Claim.—A hanger cut-out comprising a support *a*, an arm *b* swiveled intermediate of its ends to said support, the distance from said swivel to one end of said arm being greater than the distance from the swivel to the other arm, so that the one end is heavier than the other, a second arm having a forked end swiveled to said support *a*, the forks thereof inclosing the small end of the other arm, a contact carried by the short end of the first arm, said contact being adapted to engage with the second arm and means for securing line-wires to the free ends of the arms, substantially as described.

811,823. GASOLENE LIGHTING SYSTEM. JOHN B. CHRISTIAN, Minneapolis, Minn. Filed Aug. 3, 1903. Renewed July 19, 1905. Serial No. 270,436.

Claim.—1. In a gasolene lighting system of the class herein described, the combination of a main gasolene-storage chamber, an intermediate receiving-chamber of small capacity connected to the main chamber and adapted to be supplied therefrom by gravity, means for introducing and controlling a supply of compressed air to said intermediate chamber, a delivery-chamber of small capacity connected to said intermediate chamber and adapted to be supplied therefrom, means for controlling communication between the chambers aforesaid, a series of stationary lamps, and pipe connections between said lamps and the delivery-chamber aforesaid, substantially as set forth.

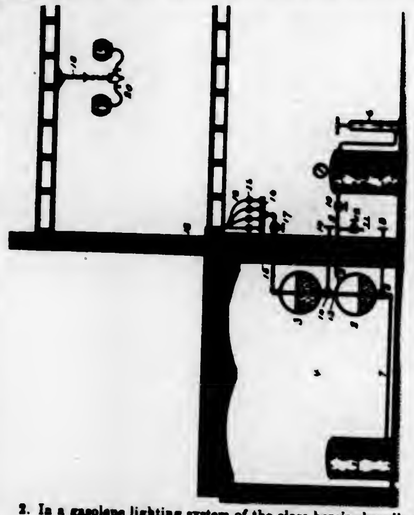

2. In a gasolene lighting system of the class herein described, the combination of a main gasolene-storage chamber free from pressure, an intermediate receiving-chamber of small capacity connected to the main chamber and adapted to be supplied therefrom by gravity, means for introducing and controlling a supply of compressed air to said intermediate chamber, a delivery-chamber of small capacity connected to said intermediate chamber and adapted to be supplied therefrom, means for maintaining pressure in said delivery-chamber, means for controlling communication between the chambers aforesaid, a series of stationary lamps, and pipe connections between said lamps and the delivery-chamber aforesaid, substantially as set forth.

811,824. BOTTLE-CLOSURE. FRANCIS W. H. CLAY, Pittsburg, Pa. Filed Jan. 4, 1905. Serial No. 239,898.

Claim.—1. A bottle closure comprising a body for covering the bottle opening, resilient flat arms on the body at an angle thereto and adapted to bend down, rigid legs on the arms for embracing and engaging the bottle head when the arms are depressed, substantially as described.

2. The combination with a bottle head having a retaining ledge, of a closing cap comprising a body with rigid circumference, flat spring arms outside the circumference set at an angle with the body, depending legs on the arms embracing the bottle head and having catches to engage the ledge, the diameters of the head and cap being such that the angle between the arms and legs is spread when the cap is forced down over the head, substantially as and for the purpose described.

3. The combination with a rounded bottle head having a circumferential ledge 9, of a metallic stopper cap comprising a disk 11, angular resilient flat arms 13 with depending rigid legs 13 and catch lips 15 adapted to engage the ledge.

4. In a bottle closure a disk having upwardly slanting flat arms capable of bending, downturned rigid legs to embrace a bottle head, and means to lock the legs on the head, substantially as described.

5. The combination with a rounded bottle head having a flat top seating surface and an outside annular ledge, of a closing disk having an annular ridge engaging the head, and angularly disposed flat arms with depending legs adapted to engage said ledge and press the ridge downward, the dimensions being such that the legs on the arms are circumferentially spread in springing over the ledge, substantially as described.

6. The combination with a bottle having a retaining ledge and a rounded head, of a cap having angularly disposed arms with legs thereon embracing the head, and retained thereon and exerting resilient pressure thereon, said arms being bent and adapted to be spread by the rounded bottle head to release the cap when the latter is pushed down on the bottle.

7. The combination with a bottle head having a sloping outer surface and a retaining ledge, of a resilient cap with divided sides adapted to engage the head and snap over the ledge, and adapted to be spread and released when said cap is pressed down on the head beyond its elastic limit, substantially as described.

8. The combination with a rounded bottle head having a retaining ledge, of a stopper cap having flat resilient arms with legs thereon engaging the head, the angle between the said arms and legs being sharper than the curve of the head, whereby the legs are spread and released when the cap is pressed down upon the head beyond the elastic limit of the arms and legs.

9. A bottle closing cap having resilient engaging legs substantially as set forth, adapted to lock itself on the bottle head when the legs are pressed downward, and to be released by spreading the legs when pressed further downward upon the bottle head, substantially as described.

10. A bottle closing cap comprising a flat disk, 11, with an annular ridge, 14, and having upwardly bent arms 12, and downwardly bent legs 13 with catch spurs 15, arranged substantially as described.

11. A bottle closing cap having an annular ridge or bead 14 to engage a flat topped surface of a bottle, and resilient means in the cap for exerting pressure on the bead, substantially as described.

12. In a bottle closing cap a series of resiliently-mounted legs for embracing the bottle head and having punched out lips 15 to engage the head, substantially as described.

13. The combination with a bottle head of rounded contour, of a closing cap therefor having resilient members adapted to engage the head when the cap is pressed on, the members having heads adapted to be spread by further pressure down on the head, to thereby release the engaging members.

14. The combination with a bottle head having an anchorage ledge and a rounded top, of a closing cap comprising legs to engage said ledge, a cover part to close the bottle mouth, and flat spring arms on the cover attached to the legs at an angle and adapted to spread said angle as the cap is pushed on the head to engage the legs on said ledge, and to be further depressed on the head and spread the said angle still further and release the legs, substantially as described.

15. The combination with a rounded bottle head having an anchorage ledge, of a closing cap thereon sprung out of normal position and exerting a self induced pressure on the bottle mouth by engagement with said ledge, the engaging part of the cap having a sharper curve than the head and adapted to be further spread to release the engagement by pressing the said part further down on the head, substantially as described.

811,825. BOTTLE-CLOSURE. FRANCIS W. H. CLAY, Pittsburg, Pa. Filed July 15, 1905. Serial No. 269,842.

Claim.—1. In a bottle-closure, in combination with a bottle-head having an anchorage thereon, a cap comprising a part covering the bottle-mouth, a corrugated ring engaging the anchorage, and a connection between said two parts resiliently drawing them together to exert self-induced pressure of the cap itself upon the bottle-mouth.

2. The combination of a bottle-head having an anchorage-ledge with a closing-cap thereon comprising a cover-plate, a resilient expansible ring engaging the ledge and bent portions connecting the plate and ring and resiliently pressing them toward each other, substantially as described.

3. In a bottle-closing cap, the combination of an expansible ring adapted to snap over and engage the head of the bottle, a cover-plate for the mouth of the bottle, and resilient bent members connecting the ring and plate, adapted to be sprung out of normal position in application, whereby the plate is drawn down and the cap exerts self-induced pressure on the bottle-mouth to close it.

4. A bottle-closing cap comprising a cover having spring-arms, legs depending from said arms, and a ring connecting the ends of said legs and adapted to engage the head of the bottle.

5. A bottle-closing cap comprising a cover having resilient arms, legs depending from the arms, and an expansible ring connecting the arms and adapted to automatically engage the bottle-head and by means of said legs to hold the arms sprung out of normal position in application.

6. A bottle-closing cap comprising a cover part, an anchorage part adapted to engage the bottle-head, and a bent part connecting the cover and anchorage part, adapted to have the sides of its bend sprung out of normal position in applying the cap, to thereby resiliently draw the cover and anchorage together and exert pressure of the cover on the bottle-mouth.

7. A bottle-closing cap comprising a part adapted to engage and fasten on the head, a closing cover part for the mouth of the bottle, and resilient members connecting the said cover and anchorage parts adapted to become pressed so as to draw said parts together and exert resilient pressure on the bottle-mouth, whereby no elastic packing is required.

8. The combination with a bottle-head having an anchorage-ledge, of a closure comprising a ring engaging the ledge, a cover for the mouth of the bottle, and parts connecting the ring and cover formed of bent resilient metal and adapted by compression of the bend to draw down the cover toward the anchorage, to make the seal.

9. In a bottle-closure, a cap adapted to fit over the bottle-head and having means to engage the head so as to be retained thereon, and a cover for the bottle-mouth, bent members connecting the said cover part to the engaging means and the bend adapted to be compressed to shorten said connecting members and thereby press the cover down on the bottle-mouth.

10. In a bottle-closure the combination with a bottle-head having an outside retaining-ledge, of a cap having a cover for the mouth of the bottle, a part engaging said retaining-ledge, and resilient bent portions connecting the cover and retaining part and adapted to be compressed in order to draw the cover down on the bottle-mouth.

811,826. PROCESS OF MAKING 4-IMINO-2-6-DIOXYPYRIMIDIN. MAX CONRAD, Aschaffenburg, and WALTER BECKH, Darmstadt, Germany. Filed Nov. 3, 1904. Serial No. 231,267.

Claim.—1. The process of producing 4-imino-2.6-dioxypyrimidin, which process consists in condensing urea and cyanacetic-acid ester in the presence of an alkali-condensing agent, substantially as described.

2. The process of producing 4-imino-2.6-dioxypyrimidin, which process consists in condensing urea and cyanacetic-acid ethylester in the presence of an alkali-condensing agent, substantially as described.

811,827. PROCESS OF MAKING PYRIMIDIN DERIVATIVES. MAX CONRAD, Aschaffenburg, and WALTER BECKH, Darmstadt, Germany. Original application filed Nov. 3, 1904, Serial No. 231,267. Divided and this application filed Oct. 21, 1905. Serial No. 283,767.

Claim.—1. The process of producing 4-imino-2.6-dioxypyrimidin, which process consists in condensing acidyl derivatives of urea with cyanacetic-acid esters in the presence of alkali-condensing agents.

2. The process of producing 4-imino-2.6-dioxypyrimidin, which process consists in condensing acetyl-urea with cyanacetic-acid ester in the presence of an alkali-condensing agent.

3. The process of producing 4-imino-2.6-dioxypyrimidin, which process consists in condensing acetyl-urea with cyanacetic-acid ethyl ester in the presence of an alkali-condensing agent.

811,828. PROCESS OF MAKING PYRIMIDIN DERIVATIVES. MAX CONRAD, Aschaffenburg, and WALTER BECKH, Darmstadt, Germany. Original application filed Nov. 3, 1904, Serial No. 231,267. Divided and this application filed Oct. 21, 1905. Serial No. 283,766.

Claim.—1. The process of producing alkyl-4-imino-2.6-dioxypyrimidins having the above-given general formula, which process consists in condensing alkyl-ureas of the above-characterized kind and cyanacetic-acid esters in the presence of alkali-condensing agents, substantially as described.

2. The process of producing alkyl-4-imino-2.6-dioxypyrimidins having the above-given general formula which process consists in condensing alkyl-ureas of the above-characterized kind and cyanacetic-acid ethyl ester in the presence of alkali-condensing agents, substantially as described.

3. The process of producing 3-methyl-4-imino-2.6-dioxypyrimidin, which process consists in condensing methyl-urea with cyanacetic-acid ethyl ester in the presence of an alkali-condensing agent, substantially as described.

811,829. PROCESS OF MAKING PYRIMIDIN DERIVATIVES. MAX CONRAD, Aschaffenburg, and WALTER BECKH, Darmstadt, Ger-

said plate and coöperating therewith, and a port in said plate arranged to register with said auxiliary passage

joined by means of hinges, a pivoted door or gate secured to each of

811,833. PACKING FOR ELASTIC-FLUID TURBINES. WIL-

811,829. **PROCESS OF MAKING PYRIMIDIN DERIVATIVES.** MAX CONRAD, Aschaffenburg, and WALTER BECKH, Darmstadt, Germany. Original application filed Nov. 3, 1904, Serial No. 231,267. Divided and this application filed Oct. 24, 1905. Serial No. 283,709.

Claim.—1. The process of producing alkyl-4-imino-2.6-dioxypyrimidins of the above-given general formula, which process consists in condensing acidyl-alkyl-ureas of the above-characterized kind and cyanacetic-acid ester in the presence of alkali-condensing agents and contemporary splitting off of the acidyl groups.

2. The process of producing alkyl-4-imino-2.6-dioxypyrimidins of the above-given general formula, which process consists in condensing acetyl-alkyl-ureas of the above-characterized kind with cyanacetic-acid esters in the presence of alkali-condensing agents.

3. The process of producing alkyl-4-imino-2.6-dioxypyrimidins of the above-given general formula, which process consists in condensing acetyl-alkyl-urea of the above-characterized kind with cyanacetic-acid ethyl ester in the presence of an alkali-condensing agent.

4. The process of producing 3-methyl-4-imino-2.6-dioxypyrimidin, which process consists in condensing acetyl-methyl-urea with cyanacetic-acid ethyl ester in the presence of an alkali-condensing agent.

811,830. **VALVE FOR DOOR-CHECKS.** NATHAN W. CRANDALL, New Britain, Conn., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn., a Corporation of Connecticut. Filed Oct. 5, 1904. Serial No. 227,198.

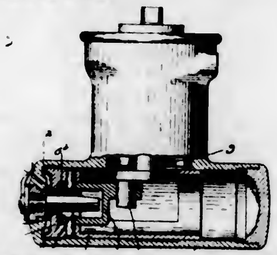

Claim.—1. In a liquid door-check, a piston having a passage through its head and an auxiliary passage adjacent thereto, a valve having a hub thereon projecting through said passage in said piston-head and having a port arranged to register with said auxiliary passage through said head and a plug mounted in the check-case and engaging with said valve whereby the angular position of the latter may be varied to increase or diminish the cross-sectional area of the fluid-passage formed by the said auxiliary passage and the port in said valve.

2. In a liquid door-check, a piston provided with a passage through its head and having an auxiliary port therein, an open valve-body loosely seated in said passage and constructed to take a flat seat against the front face of the piston-head and to automatically open when the piston is moved in one direction, and to automatically close when the piston is moved in the opposite direction, said valve-body having a port located to register with the auxiliary port of the piston-head, and means to vary the operative position of the valve for the purpose described.

3. In a liquid door-check, a piston, a valve loosely mounted in the head of said piston and arranged to bear flatwise against an outer seat thereon when the piston is moved in one direction and to become freed from said seat when the piston moves in an opposite direction, an auxiliary liquid-passage through said valve and piston-head, means for adjusting said valve by rotation to increase or diminish the cross-sectional area of said auxiliary passage.

4. In a liquid door-check, a piston, a valve loosely mounted in the head of said piston and arranged to bear flatwise against an outer seat thereon when the piston is moved in one direction and to become freed from said seat when the piston moves in an opposite direction, an auxiliary liquid-passage through said valve and piston-head, means for adjusting said valve to increase or diminish the cross-sectional area of said auxiliary passage, said means comprising a rotatable plug carried by the check-casing and engaging said valve but non-rotatable independently thereof.

5. In a liquid door-check, a piston, a main passage and an auxiliary passage through the piston-head, a valve for both of said passages comprising a plate loosely held by said piston-head and overstanding said auxiliary passage and a rotatable plug loosely fitting said plate and coöperating therewith, and a port in said plate arranged to register with said auxiliary passage.

6. In a liquid door-check, a piston having a main and an auxiliary passage through its head and a concentric groove of gradually-decreasing cross-sectional area extending from said auxiliary port to the surface of the head, a valve for both of said passages comprising a plate loosely held by said head and overstanding said auxiliary passage, a rotatable plug loosely fitting said plate, the latter having a port arranged to register with said auxiliary passage, and means for adjusting said rotatable plug to change the operative position of said valve.

811,831. **BRUSH-FILLING MACHINE.** FRANK C. CURTIS, Troy, N. Y., assignor to The Universal Brush Company, a Corporation of New York. Filed Apr. 1, 1905. Serial No. 253,221.

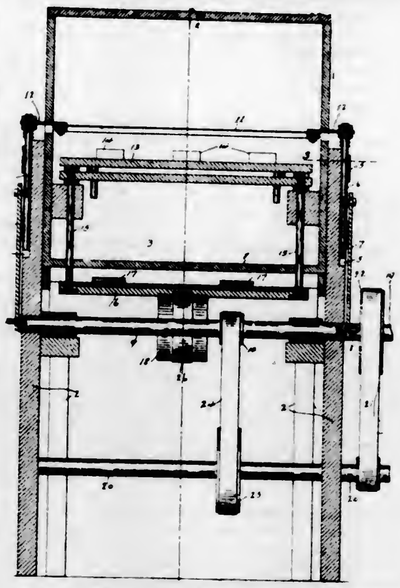

Claim.—1. In a machine of the class described, the combination with a bristle-feeding bristle-agitator; of a support for a bristle-receiving plate below the agitator; and means for imparting to said support jarring movements independently of the movements of said agitator.

2. In a machine of the class described, the combination with a bristle-feeding bristle-agitator; and mechanism for agitating the same; of a support for a bristle-receiving plate below the agitator; and means for imparting to said support jarring vertical movements of less amplitude than the movements of said agitator.

3. In a machine of the class described, the combination with a bristle-feeding bristle-agitator; and mechanism for agitating the same; of a support for a bristle-receiving plate below the agitator; and means for imparting to said support jarring vertical movements differing in time from the movements of the agitator.

4. In a machine of the class described, the combination with a bristle-feeding bristle-agitator; and mechanism for agitating the same; of a support for a bristle-receiving plate below the agitator; and means for imparting to said support jarring vertical movements differing in time and amplitude from the movements of the hopper.

5. In a machine of the class described, the combination with a bristle-feeding bristle-agitator; and crank mechanism for agitating the same; of a bristle-receiving plate having a plurality of bristle-recesses; a support for the plate below the agitator; and a cam adapted to impart to said support jarring movements at variance with the movements of the agitator.

811,832. **VENTILATING APPARATUS.** HARRY DE WALLACE, Watertown, N. Y. Filed Jan. 26, 1905. Serial No. 242,868.

Claim.—1. A ventilating apparatus, comprising two frames joined by means of hinges, a pivoted door or gate secured to each of said frames, a catch provided on each door or gate adapted to hold the same in a closed position, a pair of rearwardly-projecting wings or flanges secured to the horizontal edges of said doors, and at right angles to the plane of said door or gate, and a screen secured to the back of each of said frames, substantially as shown and described.

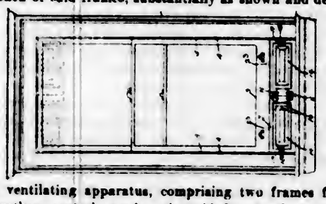

2. A ventilating apparatus, comprising two frames foldably joined together, central openings in said frames, doors or gates adapted to fit and close said openings, hinges connecting said doors or gates to said frames, wings or flanges secured to the horizontal edges of said doors or gates, screens attached to the back of the frames and adapted to limit the movement of said doors or gates, substantially as shown and described.

3. A ventilating apparatus, comprising two frames hinged together and adapted to be attached to a window-frame, a central opening in each of said frames, doors or gates pivotally joined to said frames and adapted to fit and close said openings to prevent the admission of air into a room, and also adapted to be swung open for the purpose of admitting air into a room, a latch on each door adapted to hold the same in a closed position, a pair of wings secured to the opposite edges of each door, a lug or angular projection formed on each wing adapted to limit the movement of a door, and a screen disposed across the central opening of each frame, all substantially as and for the purposes described and shown.

4. A ventilating apparatus, comprising two frames hinged or pivoted together, central rectangular openings formed in said frame, doors or gates hinged to said frames and adapted to admit or exclude a volume of air, wings secured to the outer side of each door or gate and adapted to confine the flow of air to a channel formed by said wings and said door or gate, a screen secured to the back or weather side of each frame adapted to exclude insects, snow and sleet from a room, and means for attaching said ventilating apparatus to a window-sash, substantially as shown and described.

5. A ventilating apparatus, comprising a pair of rectangular frames of equal size joined together by means of a hinge or hinges, the abutting ends of said frames being reversely rabbeted to prevent the leakage of air through said joint, a central rectangular opening in each of said frames, and a movable door or gate hinged or pivoted to each of said frames whereby either or both of said rectangular openings may be opened or closed for the purpose of admitting or excluding a volume of air, substantially as shown and described.

6. A ventilating apparatus, comprising two frames foldably hinged together, the combined length of said frames being equal to the width of a window-sash, a rectangular opening formed in the center of each of said frames, a door or gate hinged on one side, and adapted to close or open the rectangular opening, of each of said frames, for the purpose of admitting or excluding a volume of air, and a screen upon the back of each of said frames and extending across said rectangular opening, adapted to prevent the admission of insects, &c., substantially as shown and described.

7. A ventilating apparatus, comprising two frames having barbeted ends and joined together by means of hinges, a central opening in each frame, a gate or door hinged to each frame and adapted to be operated to close said opening for the purpose of excluding fresh air from a room, and also adapted to be swung open on said hinges for the purpose of admitting air of any desired volume into a room, a pair of wings or flanges oppositely disposed upon the rear surface of each door or gate adapted to form a channel for the flow of a current of air into a room or compartment, a lug disposed at right angles to each of said wings or flanges, and a screen secured to the back and across the central opening in each frame, adapted to prevent the opening of said doors or gates beyond a certain limit, substantially as shown and described.

8. A ventilating apparatus, comprising two frames pivotally joined together and adapted to be placed in a window either above or below, and in line with the sash thereof, devices adapted to form a connection between the ventilating apparatus and a window-sash, and a pair of doors or gates pivotally mounted upon said apparatus for the purpose of regulating the flow of air into or from a room, substantially as shown and described.

811,833. **PACKING FOR ELASTIC-FLUID TURBINES.** WILLIAM L. R. EMMET, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed July 19, 1904. Serial No. 217,211.

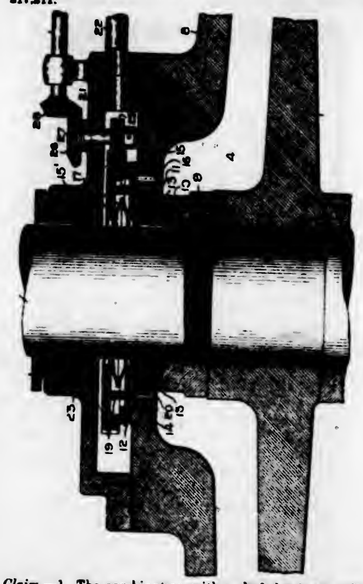

Claim.—1. The combination with a shaft having a collar, of a packing-ring resting on said collar, an annular holder for said ring, a gland surrounding said holder, and springs between said gland and holder.

2. The combination with a shaft having a collar, of a packing-ring resting on said collar, an annular holder for said ring having a flange bearing thereon, a gland surrounding said holder and having a flange, a steam-tight connection between said flanges, and ports leading into the space between said flanges.

3. The combination with a shaft having a collar provided with radial grooves, of a carbon packing-ring resting on said collar, an annular holder for said ring having a flange bearing thereon and ports passing through it, a gland splined on said holder and having a flange, and a steam-tight connection between said flanges.

4. The combination with a shaft having a collar provided with radial grooves, of a carbon packing-ring resting on said grooved collar, an annular holder for said ring provided with ports and having a flange bearing on said ring, a gland splined on said holder and having a flange, a steam-tight connection between said flanges, and springs between said flanges.

5. The combination with a shaft having a collar provided with narrow radial grooves running from the outside partly across the same, of a carbon packing-ring resting both on the grooved and ungrooved surface of the collar, and means for exerting a pressure on said ring.

6. The combination with a shaft having a collar, of a carbon packing-ring resting thereon, and an annular holder having a flange bearing on the ring and containing radial grooves running part way across the ring.

7. The combination with a shaft having a collar, of a packing for said shaft resting on said collar, a rotatable screw-threaded gland, springs between said gland and packing, a casing inclosing said parts, and means for rotating said gland from outside said casing.

811,834. **STAIR-TREAD.** CHARLES W. ENGLEHEIM, Newark, N. J., assignor of one-half to Adolph B. Fink, Newark, N. J. Filed June 14, 1905. Serial No. 265,118.

Claim.—1. A stair-tread comprising a plate provided with a top portion and a front downwardly-extending portion, said portions having an opening, downwardly-extending prongs on the edges of the plate bordering the part of the opening in the top portion and laterally-extending prongs on the edges bordering the part of the opening in the front portion, substantially as described.

2. A stair-tread comprising a plate provided with a top portion and a front downwardly-extending portion, said portions having an opening, prongs on the edges of the plate bordering the opening in the top portion and front portion, substantially as described.

or away from said side of the frame, a table-top pivotally connected with said table-base near the inner edge thereof, and adjusting means connecting the table-top and table-base, whereby the inclination of

having a part projecting beyond its insulating-ring to engage with the gasket whereby a water-tight joint is formed, substantially as described.

outer cavity, two metallic leading-in strips, one at each end, and each extending from an outer cavity through one of said openings into the corresponding inner cavities, means within each inner cavity

2. A stair-tread comprising a plate provided with a top portion and a front downwardly-extending portion, said portions having an opening, prongs on the edges of the plate bordering the opening in the top portion and front portion, substantially as described.

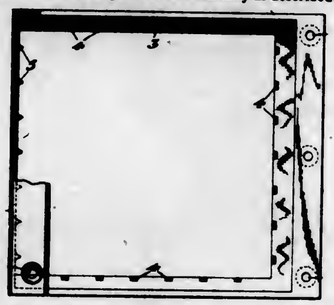

3. A stair-tread comprising a plate provided with a top portion and a front downwardly and inwardly extending portion, said portions having an opening, prongs on the edges of the plate bordering the opening in the top portion and front portion, substantially as described.

4. A stair-tread comprising a plate provided with a top portion and a front downwardly-extending portion, said portions having an opening and a groove in their under face bordering said opening and prongs on the edges of the plate bordering the opening in the top portion and front portion, substantially as described.

5. A stair-tread comprising a plate provided with a top portion and a front downwardly and inwardly extending portion said portion having an opening, downwardly-extending prongs on the edges of the plate bordering the part of the opening in the top portion and laterally-extending prongs on the edge of the plate bordering the part of the opening in the front portion, substantially as described.

6. A stair-tread comprising a plate provided with a top portion and a front downwardly and inwardly extending portion, said portions having an opening and a groove in their under face bordering said opening, downwardly-extending prongs on the edges of the plate bordering the part of the opening in the top portion and laterally-extending prongs on the edges of the plate bordering the part of the opening in the front portion, substantially as described.

811,835. SAW-DRESSING MACHINE. LARS L. FILSTRUP, Chicago, Ill., assignor to Covel Manufacturing Company, Chicago, Ill., a Corporation of Illinois. Filed Mar. 1, 1904. Serial No. 196,003.

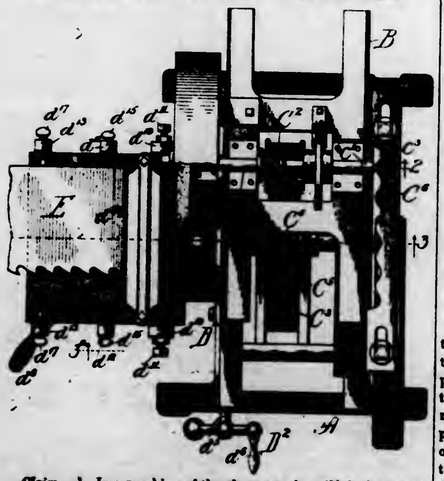

Claim.—1. In a machine of the character described, the combination of a frame, a table-support connected therewith and provided with a horizontal guide projecting perpendicular to the adjacent side of the frame, a table-base mounted on said guide to move toward or away from said side of the frame, a table-top pivotally connected with said table-base near the inner edge thereof, and adjusting means connecting the table-top and table-base, whereby the inclination of the table-top may be varied, for the purpose set forth.

2. In a machine of the character described, a table-support equipped with a guide, a table-base mounted on said guide and provided at the inner portion with pivot-supports, interchangeable table-tops provided at their inner portions with means for attaching them to said pivot-supports, and means at different positions on the table-base for securing the outer portions of the table-tops, whereby either table-top may be used, as desired.

3. In a machine of the character described, the combination of a table-support equipped with a horizontal guide, a table-base mounted on said guide, means for moving the table-base on its guide, pivot-supports at the lateral edges of the inner portion of the table-support, a table-top pivoted thereon at its inner end, means for adjusting the outer end of the table-top vertically, and means for clamping the table-top to the table-base after adjustment of inclination, for the purpose set forth.

4. The combination of a table-support provided with a guide, a table-base adjustably connected with said guide, a table-top pivotally connected with the inner end of said table-base, an adjusting-screw for varying the height of the outer end of the table-top with relation to the table-base, and clamping-screws serving to secure the table-top to the table-base after adjustment of the inclination of the table-top.

5. A table-base for a machine of the character described, comprising a horizontal member provided at its inner end with lateral upturned pivotal lugs, intermediately with lateral upturned lugs for securing the outer end of a relatively short table-top, and at its outer end with lateral upturned lugs for securing the outer end of a relatively long table-top.

6. The combination with the frame and grinding-wheel of a machine of the character described, of a table-support adjustable vertically with relation to the frame, and provided with a guide at right angles to the grinding-wheel, a table-base adjustably connected with said guide, and interchangeable table-tops for said table-base, for the purpose set forth.

7. A table-base for the purpose set forth, comprising a member equipped with guide-connecting means and provided at its inner end with a pair of relatively high perforate pivotal lugs, intermediately with a pair of relatively low perforate securing-lugs, and at its outer end with a pair of perforate securing-lugs of intermediate length, for the purpose set forth.

8. In a machine of the character described, the combination with the frame thereof, of a vertically-movable table-support, a vertical screw connected therewith and equipped with a worm-wheel, and a horizontal worm engaging said worm-wheel and provided with a stem projecting past one end of the frame and equipped with a handle, for the purpose set forth.

811,836. ELECTRICAL HOSE-SIGNALING APPARATUS. WILLIAM FOWLER, Colorado Springs, Colo. Filed June 14, 1904. Serial No. 212,585.

Claim.—1. In electrical hose-signaling apparatus, the combination of coupling members equipped with insulating-rings, two contact-rings located in the insulating-ring of one member, two contact-pins located in the insulating-ring of the other member and adapted to engage the rings of the first-named member, three conductors mounted on the line of hose, two of them being connected with the pins of one coupling member, and two of them with the rings of the other coupling member, while the third conductor is connected with the body of each coupling member, a revoluble ring carried by one of the coupling members, said ring having an annular recess therein and a gasket in said recess, said gasket being located outside of the insulating-ring of the member which carries the revoluble ring and being engaged by the end of said member and the cooperating member having a part projecting beyond its insulating-ring to engage with the gasket whereby a water-tight joint is formed, substantially as described.

2. In apparatus of the class described, a hose-coupling consisting of two cooperating coupling members equipped with insulating-rings and contact devices for completing a signaling-circuit through the coupling, a ring having an annular recess therein carried by one member and a gasket carried in said recess and having a portion located outside of the insulating-ring of one coupling member and engaged by both coupling members for the purpose of making a water-tight joint, the gasket being located beyond and separated from the waterway of the coupling.

3. The combination of a line of hose carrying three electrical conductors, contacts mounted on one member of the coupling of the hose and exteriorly exposed, the said contacts being connected with two of the conductors of the line and insulated from the coupling member, the third conductor of the line being connected with the body of the coupling member, the said coupling member having a projection located between the insulated contacts, an electrical key provided with spring-actuated contacts adapted to engage the insulated contacts of the coupling member, the said key having a third contact shaped to receive the projection of the coupling member which projection is provided with a recess, means mounted on the key whereby the latter is made to interlock with the projection of the coupling member comprising a spring-actuated pawl adapted to enter the recess of the said projection, branch conductors leading from the several contacts of the electrical key, and a portable bell or signal device with which the branch conductors are suitably connected.

4. The combination with a line of hose provided with three electrical conductors leading to one of the coupling members, exposed contacts mounted on one of the coupling members to which two of the conductors of the line lead, the third conductor leading to the body of the coupling member, the latter having a projection provided with a recess an electrical key having three contacts insulated from each other and adapted to form electrical connection on the coupling member with the three conductors of the line, one of the contacts consisting of a thimble adapted to receive the projection of one of the coupling members, the key being provided with a spring-actuated pawl adapted to engage the recess of the coupling-member projection, three branch conductors leading from the contacts of the electrical key, a portable bell to which the three branch conductors lead, a revoluble spool upon which the bell mechanism is mounted, a casing in which the spool is located, the conductors being adapted to wind on the spool which is spring-actuated for the purpose, a portable battery, two insulated contact-rings mounted on the spool and connected with the respective poles of the battery, and suitable connections whereby as the push-button or circuit-closer of the bell is closed, the the bell mechanism is in circuit with the battery.

5. The combination with a line of hose provided with three electrical conductors leading to one of the coupling members, two of the said conductors being insulated from the coupling member, while the other conductor is connected with the said member, the latter having a projection provided with a recess; an electrical key adapted to be connected with the coupling member and having three contacts insulated from each other and adapted to form a suitable electrical connection on the coupling member with the three conductors of the line, one of the conductors forming a socket adapted to receive the projection of one coupling member the key having a spring-actuated pawl adapted to engage the recess of the coupling-member projection, three branch conductors connected with the contacts of the key, a bell or signal device with which the three branch conductors are suitably connected, and a spool mounted on the bell-casing and upon which the three conductors of the electrical key may be wound for the purpose set forth.

6. An apparatus of the class described, the combination with a hose and a coupling member connected therewith, of an insulating-ring with which the coupling member is provided, threaded contacts inserted in the coupling member and entering the insulating-ring to hold the latter in place, the said contacts being exposed at the outer surface of the member and being insulated from the metal part of the latter, and conductors connected with the said contacts, substantially as described.

811,837. SUPPORT FOR INCANDESCENT LAMPS. ERWIN R. GILL, Yonkers, N. Y. Filed Jan. 17, 1905. Serial No. 241,663.

Claim.—1. In a device of the class described a wall-section having a pair of electrically-separated cavities on its inner side and a corresponding pair of electrically-separated cavities on its outer side and having openings joining each inner cavity to its corresponding outer cavity, two metallic leading-in strips, one at each end, and each extending from an outer cavity through one of said openings into the corresponding inner cavities, means within each inner cavity for making electrical connection between each leading-in strip and an electric wire, a lamp-supporting section fitting over said wall-section, a lamp-socket thereon, and means for making electrical connections between each of said leading-in strips and said socket, substantially as described.

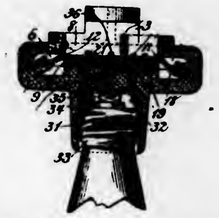

2. In a device of the class described, a wall-section and a lamp-supporting section made each with a flat face to fit the other and each having two open cavities in said faces pierced on opposite sides with semicircular openings, insulated electric wire passing through and fitting said openings and having each a bare portion within its appropriate cavity, a lamp-socket on the outer side of the lamp-supporting section, a threaded shell in said socket, a central screw having its head in the bottom of said socket and extending through both sections of the entire device, a side screw passing through the edge of said shell and through both sections of the device and leading-in strips extending from the threaded tips of said two screws to the bare parts of said insulated wires, substantially as described.

3. As an article of manufacture, a support for incandescent lamps comprising the following parts, to wit: a wall-section having an inner flat face with a cavity at each end semicircularly pierced on the opposite sides and having corresponding cavities on its under side separated by an insulating-partition and each communicating by an opening with its corresponding inner cavity; in combination with a lamp-supporting section having a flat inner face with cavities semicircularly pierced on opposite sides, all to register with the inner cavities on the wall-section, and a socket on the outer side of said lamp-supporting section, substantially as described.

4. In a device of the class described, a wall-section having an insulating-partition on its under side, two leading-in strips extending outward from the foot of said partition, permanent retaining-screws passing through the body of said wall-section and said leading-in strips, a lamp-supporting section fitting over said wall-section and provided with cavities to go over the heads of said screws and two connecting and securing screws passing through both of said sections and screwing into said two strips, substantially as described.

811,838. MACHINE FOR INSERTING LACING-STUDS. PERLEY R. GLASS, Quincy, Mass., assignor to The Peerless Machinery Company, Boston, Mass., a Corporation of Massachusetts. Filed June 29, 1903. Serial No. 163,470.

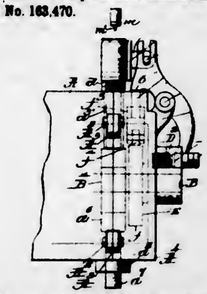

Claim.—1. In a machine of the class described, a clenching member, a plunger, a hook-sustaining plate carried by said plunger, means to supply said hook-sustaining plate with hooks when the plunger occupies one of its extreme positions, means to move the plunger after supplying said plate with a hook, and means to slide said plate transversely with relation to the longitudinal axis of said plunger, to withdraw the plate from a set hook before the return of the plunger to its starting-point.

2. In a machine of the class described, a movable plunger grooved at its end, a hook-sustaining plate carried by said plunger and having its upper side located in a plane below the upper end of said plunger, and means to slide said plate transversely with relation to the longitudinal axis of said plunger to withdraw the same from the throat of a set hook while the upper end of the plunger contacts with the stock in which the hook has been set.

3. In a machine of the class described, a plunger, means to raise and lower the same, a hook-sustaining plate mounted at the end of and guided by said plunger, a lever in operative engagement with said plate at both extreme positions of the plunger, and means to move said lever to slide said plate transversely to said plunger at the end thereof to withdraw said plate from a set hook.

4. In a machine of the class described, a plunger, a hook-sustaining plate guided by said plunger and located at one end thereof, and means controlled by a spring to maintain the end of said plate in normal position to receive the throat of a hook.

5. In a machine of the class described, a plunger, means to reciprocate said plunger, a hook-sustaining plate guided at the end thereof, and means coacting with said plate to move the same transversely with relation to the longitudinal axis of said plunger to withdraw said plate from the throat of a set hook

6. In a machine of the class described, the combination with a plunger, of a hook-sustaining plate, a lever, and a spring to move it to cause said plate to enter the throat of a lacing-hook, and a continuously-moving actuator to act upon said lever after setting the hook to withdraw said sustaining-plate from the throat of the hook.

7. In a machine of the class described, a raceway, a clenching device, a plunger having a guideway, a hook-sustaining plate slidably mounted at the end of said plunger, and means to slide automatically said plate controlled in its direction of movement by said guideway, the plate being moved transversely to the longitudinal axis of said plunger.

8. In a machine of the class described, a plunger, a hook-sustaining plate located at the end thereof and notched at its edge to receive the neck of the hook as the throat of the hook to be set comes onto the edge of said plate, and means to slide automatically said plate at right angles to the longitudinal axis of said plunger to withdraw said plate from the throat of the hook after the latter has been set in the stock.

9. In a machine for setting lacing-hooks, a plunger having a recess at its upper end to receive the head of a hook, said recess being wider than the width of the head of the hook to be set, a hook-sustaining plate slidably sustained by said plunger and having its hook-receiving edge in and crossing said groove, said plate having a notch in its edge to receive the neck of the hook as the latter comes into setting position on said plate, and means to automatically move said plate outwardly in said plunger to withdraw the plate from the throat of the hook after the same has been set in the stock that the hook and plunger may be separated one from the other.

10. In a machine of the class described, a raceway, a clenching device, a plunger having its upper end recessed to form a space for the reception of the head of a lacing-hook, a slidable hook-sustaining plate sustained at the upper end of said plunger, the end of said plate being adapted to be embraced by the throat of the hook to be set, means to actuate said parts to effect the thrusting of the shank of the hook through the stock that the clenching device may expand the shank of the hook, and means to move said plate in said plunger at right angles to the longitudinal axis thereof to withdraw said plate from the throat of said hook preparatory to lowering the plunger.

11. In a hook-setting machine, a plunger having a horizontal guideway and a hook-receiving space, and a hole for a guide-rod, combined with a hook-sustaining plate located in said guideway, and provided with a guide-rod entering the hole of said plunger.

12. In a hook-setting machine, a plunger and a carrying member therefor, means to adjust the plunger on the carrying member, a hook-sustaining plate carried by said plunger, and means to move said plate substantially at right angles to the longitudinal axis of said plunger to withdraw said plate from a set hook.

13. In a hook-setting machine, a plunger, means to move the same longitudinally, a hook-sustaining plate guided in the upper portion of said plunger, a lever mounted on the framework of the machine, said lever being loosely connected at its upper end with said hook-sustaining plate, and means to move said lever to withdraw the hook-sustaining plate from the throat of the set hook.

14. In a machine of the class described, a raceway, a plunger, means for carrying said plunger, means for adjusting said plunger on said carrying means, means for holding said plunger in its adjusted position in said carrying means, a hook-sustaining plate guided at the end of said plunger and adapted to receive a hook from said raceway, a clenching device to set in stock the shank of a hook held by said plate, and means to thereafter slide said plate transversely to the longitudinal axis of said plunger to withdraw said plate from the throat of the set hook.

811,839. **MACHINE FOR SETTING LACING HOOKS OR STUDS.** PERLEY R. GLASS, Quincy, Mass., assignor to The Peerless Machinery Company, Boston, Mass., a Corporation of Massachusetts. Filed Oct. 23, 1903. Serial No. 178,941.

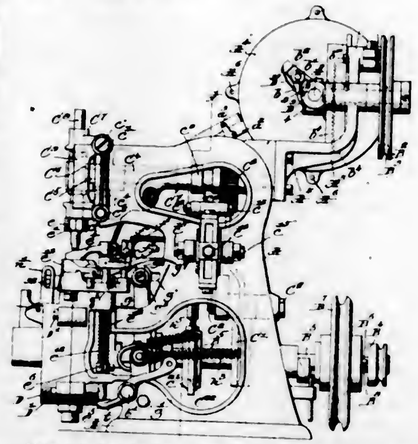

Claim.—1. In a hook-setting machine, a plunger, and a movable hook-sustaining plate mounted therein and provided at its upper side with a setting-pocket to receive and position the shoulder of the hook to be set, and means to move said hook-sustaining plate laterally with relation to the longitudinal axis of said plunger.

2. In a hook-setting machine, a plunger, a hook-sustaining plate located at the end thereof and guided thereby and provided at its upper side with a setting-pocket to receive, act against and position the shoulder or that part of the hook at the enlarged end of the shank to which is joined the neck of the hook.

3. In a hook-setting machine, aplunger, a hook-sustaining plate movably mounted in said plunger and having at its upper side a raised portion recessed to receive and position the hook, and having a notch in its end to embrace the neck of said hook.

4. In a hook-setting machine, a stock-support, a punch to punch the stock for the reception of the shank of a hook to be set in the stock, means to move the punch to feed the stock, a clenching-surface, combined with a plunger, a hook-sustaining plate carried thereby, means to move said plunger and plate to set the hook carried by said plate, and means to move said plate at right angles to the longitudinal axis of said plunger after the hook has been set.

5. In a hook-setting machine, a plunger having a laterally-movable hook-sustaining plate provided at its upper end with a setting-pocket to receive and position the hook to be set, a punch having a clenching-surface, means for automatically moving said punch to enter and then to feed the stock into setting position.

6. A plunger, a hook-sustaining plate carried thereby, a delivery-raceway for conducting hooks to said hook-sustaining plate, a device, and means to move it to supply hooks to said delivery-raceway one by one and stop the supply of hooks to said raceway when a hook has been improperly lodged therein.

7. In a hook-setting machine, a stock-support, a punch provided with a clenching-surface, means to move said punch to punch a hole in and to feed the stock over the stock-support, combined with a plunger, a hook-sustaining plate carried thereby and means to change the relative position of said plunger with its hook-sustaining plate and said clenching-surface to set in stock a hook sustained by said plate, and means to move said plate at the end of said plunger and substantially at right angles to the longitudinal axis thereof to withdraw said plate from the throat of a set-hook.

8. In a machine of the class described, a delivery-raceway, a separator having a finger to receive the hooks to be delivered to said raceway, a shaft to which said separator is attached, a stop, a dog adjustably mounted on said shaft to provide for locating the finger of the separator correctly in said raceway, means acting normally to retain one end of said dog against said stop and maintain said separator in position to receive a hook, and means acting on said dog to turn the same and the separator to effect the delivery of a hook.

9. In a machine of the class described, a delivery-raceway, a separator having a finger to receive the hook to be delivered to said raceway, a shaft to which said separator is attached, a stop, a dog adjustably mounted on said shaft to provide for locating the finger of the separator correctly in said raceway, and means acting normally to retain one end of said dog against said stop and maintain said separator in position to receive a hook, a lever, and a spring-pressed pawl pivoted on said lever, said pawl when said lever is moved in one direction meeting said dog and turning said separator to deliver a hook.

10. In a machine of the class described, a delivery-raceway, a separator having a finger to receive a hook to be delivered to said raceway, a shaft to which said separator is attached, a stop, a dog adjustably mounted on said shaft to provide for locating the finger of the separator correctly in said raceway, and means acting normally to retain one end of said dog against said stop and maintain said separator in position to receive a hook, and a lever provided with a spring-pressed pawl that is acted upon by the end of the dog to depress said pawl during the backward movement of said lever after having turned the separator.

11. In a machine of the class described, a main raceway, a delivery-raceway, a separator at the junction of said raceways presenting a finger occupying a normal position to receive from the main raceway and sustain a hook, combined with a lever, and a separator-moving pawl movable with said lever, a spring acting against said pawl, and an adjusting device to determine the extent of movement of said pawl by said spring.

12. In a machine for setting lacing-hooks, a hopper, a rotatable lifter therein for selecting hooks from a mass of hooks, a raceway upon which said rotatable lifter delivers lacing-hooks, means to move said lifter forwardly and to return the same automatically to its starting-point should its forward movement have been obstructed by a lodged hook.

13. In a machine for inserting lacing-hooks, a raceway, a hopper, a series of blades to pick up hooks contained in said hopper, means to bring the blades in register with said raceway and to turn said blades backwardly should the forward movement of a blade be obstructed by a hook lodged between a blade and the raceway.

14 In a machine of the class described, a raceway, a hook-lifter having a ratchet-wheel provided with notches, a toothed p wl-carrier having a pawl to engage the notches of said ratchet-wheel, a rack in engagement with the teeth of said pawl-carrier, a lever, means to move said lever, and a spring connecting said lever with said rack and moving the latter in a direction to turn the hook-lifter in a direction to deliver to said raceway the hooks sustained thereby, said spring being adapted to yield when the movement of the lifter is obstructed to obviate breaking the machine.

15. In a machine of the class described, a raceway, a hook-lifter having a ratchet-wheel provided with notches, a toothed pawl-carrie having a pawl to engage the notches of said ratchet-wheel, a rack in engagement with the teeth of said pawl-carrier, a lever, means to move said lever, a spring connecting said lever with said rack and moving the latter in a direction to turn the hook-lifter in a direction to deliver to said raceway the hooks sustained thereby, and means coacting with said pawl at the end of each forward stroke of the pawl-carrier to release said pawl from the notch of the ratchet-wheel that the pawl-carrier and pawl may be moved backwardly.

16. In a machine of the class described, a raceway, a hook-lifter having a ratchet-wheel provided with notches, a toothed pawl-carrier having a pawl to engage the notches of said ratchet-wheel, a slotted rack in engagement with the teeth of said pawl-carrier, a lever having a pin entering the slot of said rack, a spring connecting said lever with said rack, means to move said lever in one direction that the spring connected therewith may move the rack to turn the hook-lifter to deliver hooks to said raceway, said spring yielding and permitting the rack-bar to stop when the movement of the lifter is obstructed by a hook, the pin of said lever, when the latter is moved in an opposite direction, meeting one end of the slot in said rack-bar and causing the pawl when in engagement with a notch of said ratchet-wheel to turn the same and the lifter backwardly as and for the purpose described.

17. In a machine of the class described, a hopper having a passage for the delivery of hooks, a rotatable hook-lifter, a raceway to which the hook-lifter delivers hooks, a ratchet-wheel fast on the axis of said hook-lifter, a pawl-carrier, a pawl having a lug engaging a notch in said ratchet-wheel, means to release said pawl, and yielding means for actuating said pawl-carrier whereby in case of clogging of the lifter by a hook the pawl will stop short of making its full stroke and will remain in engagement with the notch of the ratchet-wheel during the back stroke of the pawl and pawl-carrier, said pawl moving backwardly with it the ratchet-wheel and the hook-lifter that the obstruction may be removed.

18. In a machine of the class described, a hopper, a hook-lifter, a shaft sustaining the same, a pawl-carrier mounted loosely on said shaft, yielding actuating means for said pawl-carrier, a pawl mounted on said carrier, a ratchet-wheel fixed to said shaft and having notches to be engaged by said pawl, and a device to lift and disengage said pawl from the notches of said wheel only after the pawl-carrier has been moved for its full feeding stroke.

19. In a machine of the class described, a lacing-hook lifter having an attached ratchet-wheel provided with notches, combined with actuating means therefor comprising a pawl and pawl-carrier, a rack connected therewith, a spring connected with said rack, a lever joined with said spring, and means to move said lever said spring permitting the pawl-carrier to be arrested when the lifter is clogged but without stopping said lever.

20. In a machineof the class described, a lifter for lacing-hooks, and a shaft to which said lifter is connected, combined with actuating means therefor comprising a pawl-carrier and pawl, a ratchet-toothed wheel fixed to the shaft carrying the lifter, and yielding means for actuating said pawl-carrier and pawl that their movement may be arrested whenever the lifter is clogged by a hook, said pawl at such times retaining its engagement with the ratchet-wheel, and turning said lifter backwardly that the lacing-hook which clogged the lifter may be removed therefrom.

21. In a machine of the class described, a punch and set, means to move the same laterally to feed the stock, combined with a top end gage movable longitudinally therewith during the feeding operation.

22. In a machine of the class described, a punch and set, and means to move the same laterally to feed the stock combined with a top end gage adjustable with relation to said punch and set and movable longitudinally therewith in the operation of feeding the stock.

23. In a machine of the class described, a punch and set, a slide carrying said punch and set, means to move the punch in the slide, means to move the slide while the punch is in the stock that the latter may feed the stock, and two end gages carried by and movable with said slide as the punch is moved to feed the stock.

24 In a hook-setting machine, stock-feeding means and connected end gages movable therewith and determining the position of the stock prior to the engagement of the stock by the stock-feeding means.

25. In a hook-setting machine, a stock-support, a punch-bar having a punch for feeding the stock, a slide sustaining a punch-bar, means to move the punch-bar to enter the stock to feed the same, means to move the slide horizontally that the punch may feed the stock, and an end gage movable with the slide and punch as the latter feeds the stock.

26. In a hook-setting machine, a stock-support, a punch, means to move the same vertically and horizontally, and two end gages movable horizontally with said punch and determining the position of the shoe-upper on the stock-support prior to the action of the punch in feeding the stock.

27. In a machine for setting lacing-hooks, stock-feeding means including a sliding frame, an end gage movable longitudinally with said frame during the feeding of the stock, and devices to adjust the feeding stroke of the stock-feeding means and gage to the size number of the shoe, that the bottom and top hooks of a series of hooks may be properly set irrespective of the length or size of the shoe.

28. In a hook-setting machine, a stock-support, a clamping-foot, means to move it to clamp and release the stock, a punch, a carrying-slide therefor, means to acuate the punch in said slide to punch a hole in the stock while the latter is clamped on the stock-support, means to move said slide and punch laterally while the stock is unclamped that the punch may move the stock over the work-support, a plunger having means to sustain the hook to be set, actuating means for said plunger, and an end gage carried by said slide, to operate substantially as described.

29. In a hook-setting machine, a stock-support, a clamping-foot, means to move it to clamp and release the stock, a punch, a carrying-slide therefor, means to actuate the punch in said slide to punch a hole in the stock while the latter is clamped on the stock-support, means to move said slide and punch laterally while the stock is unclamped that the punch may move the stock over the work-support, a plunger having means to sustain the hook to be set, actuating means for said plunger, and two end gages carried by said slide, one being adjustable with relation to the other and operating substantially as described.

811,840. HOOK-SETTING MACHINE. PERLEY R. GLASS, Quincy, Mass., assignor to The Peerless Machinery Company, Boston, Mass., a Corporation of Massachusetts. Filed Oct. 3, 1904. Serial No. 226,936.

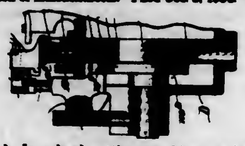

Claim.—1. In a hook-setting machine, a plunger-carrier and plunger, combined with a movable hook-sustaining plate having a slot at its end, the wall of which helps to secure the head of the hook while the hook is being set.

2. In a hook-setting machine, a plunger-carrier and plunger, combined with a movable hook-sustaining plate having a slot at its end, the wall of which helps to support the head of the hook while the hook is being set, said plate having a notch at right angles to said slot to receive the neck of the hook.

3. In a hook-setting machine, a plunger, a hook-sustaining plate sustained loosely by said plunger, a stationary stripper carried by said plunger and normally out of engagement with the head of the hook and means to withdraw said plate from the throat of said hook, said stripper engaging the edge of the top of the hook as the plate is withdrawn from the throat thereof thus insuring the discharge of the hook from said plate.

4. In a machine of the class described, a plunger having a head grooved for the reception of a hook-sustaining plate, a hook-sustaining plate guided by the head of said plunger, a stripper sustained by said head and occupying a position always between the opposite ends of said plate, means to move said plate transversely of the longitudinal axis of the plunger to withdraw the end of the plate from the throat of the stud, said stripper insuring the discharge of the hook from the hook-sustaining plate.

5. In a hook-setting machine, a hook-delivery raceway, a plunger-carrier and plunger, means to adjust one of said parts with relation to the other part to provide for varying thicknesses of stock, a hook-sustaining plate slidably sustained at the end of said plunger, means to move said plunger vertically for a defined distance whatever the thickness of the stock, and an adjustable stop to arrest the upper part of the plunger in its descent that the hook-sustaining plate may be stopped in exact alinement with said hook-delivery raceway.

6. In a hook-setting machine, a plunger-carrier, a plunger loosely mounted therein and provided with a hook-sustaining plate, a raceway to deliver hooks to the hook-sustaining plate, and an adjustable stop to arrest the plunger in its descent and stop the end of the hook-sustaining plate exactly in line with said raceway.

7. In a hook-setting machine, a plunger-carrier, a plunger loosely mounted therein and a spring interposed between said plunger and plunger-carrier, a hook-sustaining plate mounted in said plunger, a raceway to deliver hooks to said plate, and an adjustable stop to arrest the plunger in its descent to stop the end of the hook-sustaining plate exactly in line with said raceway, said spring permitting the plunger-carrier to descend to its starting-point without moving the plunger.

8. In a hook-setting machine, a plunger, a hook-sustaining plate carried thereby and having a block joined thereto, combined with a lever having an extension engaging said block loosely, and means to move said lever.

9. In a hook-setting machine, a plunger, a hook-sustaining plate carried thereby, a sleeve, a screw connecting said plate and sleeve, and a lever engaged loosely by said sleeve, and means to move said lever.

10. In a hook-setting machine, the combination with the plunger having a hook-sustaining plate to receive and carry a hook to be set, a work-support having a wear-plate the face of which acts as guide for the side of the hook as the latter is being moved during the setting operation.

11. In a hook-setting machine, a work-plate having a wear-plate provided with a vertical face to act against one side of the hook being set, and a seating device to enter the groove in the neck of the hook, as and for the purpose set forth.

811,841. HOOK-SETTING MACHINE. PERLEY R. GLASS, Quincy, Mass., assignor to The Peerless Machinery Company, Boston, Mass., a Corporation of Massachusetts. Filed Oct. 13, 1904. Serial No. 228,008.

Claim.—1. In a machine of the class described, a punch and set, means to cause the punch to enter and feed the shoe-upper, a top end gage movable with said punch during its feeding operation, and another top end gage sustained independently of said punch and made adjustable with relation to said first gage according to the size of the shoe being provided with hooks.

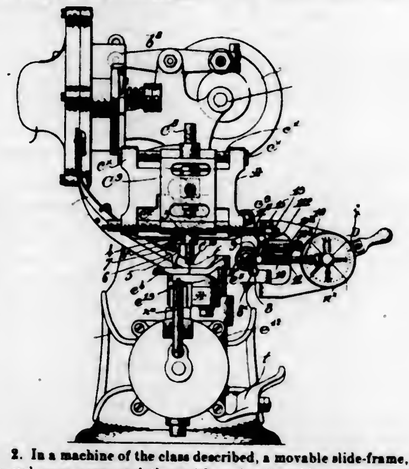

2. In a machine of the class described, a movable slide-frame, a top end gage connected therewith and adjustable longitudinally thereon, a punch carried by said frame, means to move the punch to enter the material, and means to move the frame to feed the material, combined with a second longitudinally-adjustable top end gage sustained by the framework of the machine and occupying a stationary position with relation to the top end gage sustained by said slide-frame, a finger movable with said second top end gage in its adjustment, and an indicator coacting with finger.

3. In a machine of the class described, a slide-frame, a combined punch and set carried thereby, means to move said slide-frame to and fro, means to cause the punch to enter the stock and feed the latter as the slide-frame is moved in one direction, a top end gage connected with said slide-frame and movable therewith in its to-and-fro movements.

4. In a machine of the class described, a stock-support, a slide-frame provided with a set and punch, a top end gage fixed to and movable only longitudinally with said head, and another adjustable top end gage separated from said frame.

5. In a machine of the class described, a stock-support, a slide-frame provided with a set and punch, a top end gage fixed to and movable only longitudinally with said frame, and another adjustable top end gage sustained independently of said frame, combined with a edge gage intermediate said top end gages.

6. In a machine of the class described, a slide-frame having a boss at its lower end, a punch located in said boss, a collar surrounding said boss, and a top end gage adjustable laterally on said collar.

811,842. LOOM FOR MAKING PILE FABRICS. ALBERT A. GORDON, Jr., Worcester, Mass., assignor to Crompton & Knowles Loom Works, a Corporation of Massachusetts. Filed Dec. 9, 1904. Serial No. 236,084.

Claim.—1. In a loom of the class described, the combination with the lay, and a pivotally-supported and swinging frame at the end of the lay, carrying a shuttle-box, of connections intermediate the lay and the swinging frame, one of said connections having a locking-arm thereon to engage a part of the lay and lock the swinging frame and lay together, during a portion of their movement.

2. In a loom of the class described, the combination with the lay, and a pivotally-supported and swinging frame at the end of the lay, carrying a shuttle-box, of connections intermediate the lay and the swinging frame, and a locking device carried on the swinging frame, and adapted to engage a part of the lay, to lock the swinging frame and lay together, during a portion of their movement, said locking device connected with and operated by the connections intermediate the lay and the swinging frame.

3. In a loom of the class described, the combination with the lay, and a pivotally-supported and swinging frame at the end of the lay carrying a shuttle-box, of connections intermediate the lay and the swinging frame, and a locking device to lock the swinging frame and lay together, during a portion of their movement, and an adjusting-screw, adapted to maintain the proper relative positions of the swinging frame and lay.

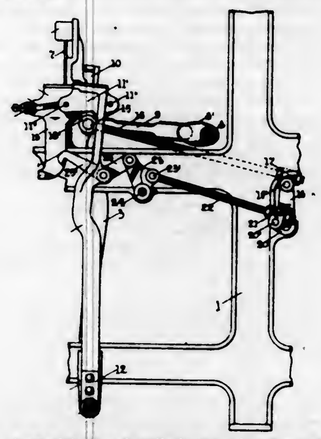

4. In a loom of the class described, the combination with the lay, and a pivotally-supported and swinging frame at the end of the lay, carrying a shuttle-box, of connections intermediate the lay and the swinging frame, and a locking device, connected with and operated by said connections, to lock said frame to the lay during a portion of their movement, and an adjusting-screw carried on the lay, and adapted to engage the swinging frame when the same is locked to the lay.

5. In a loom of the class described, the combination with the lay, and a pivotally-supported and swinging frame at the end of the lay, carrying a shuttle-box, of connections intermediate the lay and the swinging frame, said connections comprising a connector from the lay to an arm on a rock-shaft, and said rock-shaft, a second arm on said rock-shaft, a connector from said arm to a lever or arm fast on a lever, and rock-shaft, and said rock-shaft, and a connection from said lever or arm to the swinging frame, the relative position of the parts being such, that the movement of the swinging frame relatively to the lay is accelerated at certain times.

811,843. DAMPENER FOR SHEET FEEDS OR SEPARATORS. CHARLES G. HARRIS, Niles, Ohio, assignor to The Harris Automatic Press Company, Niles, Ohio, a Corporation of Ohio. Filed Feb. 24, 1905. Serial No. 247,130.

Claim.—1. A moistening device for paper feeding or pushing elements, comprising an imperforate fluid-containing body from which the fluid will gradually seep to the outer surface sufficient to moisten a paper-engaging element.

2. A moistening device for paper feeding or pushing elements, comprising an imperforate fluid-containing body from which the fluid will seep to the outer surface in quantity not exceeding that which may be taken up by evaporation.

3. A moistening device for paper feeding or pushing elements, comprising a fluid-containing body of such density of composition that the fluid will gradually seep to the outer surface thereof, and means for sealing such body as against the admission of air.

4. A moistening device for paper-feeding bands or rollers comprising a fluid-containing body of diatomaceous earth from which the fluid will be caused to seep to the outer surface in quantity not exceeding that which may be taken up by evaporation or by a paper-engaging element contacting therewith.

5. A moistening device for paper-feeding bands or rollers comprising a fluid-containing body of diatomaceous earth from which the fluid will be caused to seep to the outer surface in quantity not exceeding that which may be taken up by evaporation or by a paper-engaging element contacting therewith, and means for controlling the admission of air to such body to increase the flow therefrom.

811,844. TOOL FOR HOLDING FIRE-BRICKS OF WATER-TUBE BOILERS. PATRICK HEELY and JOHN KEMM, Brooklyn, N. Y. Filed July 7, 1905. Serial No. 268,734.

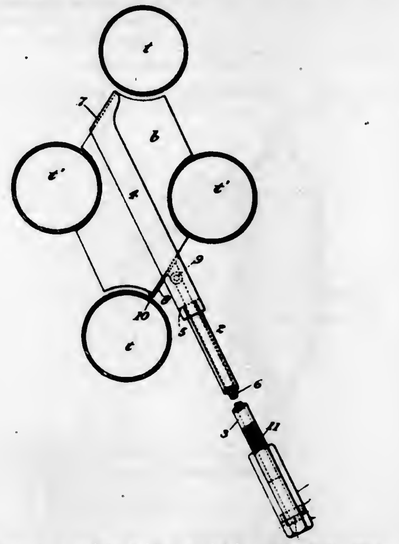

Claim.—1. A tool for holding fire-bricks at diagonally opposite corners of the bricks and for inserting said bricks in or removing them from water-tube boilers, embodying a rod-like carrier, and means on said carrier for clamping and releasing a fire-brick at diagonally opposite corners thereof.

2. A tool for holding and inserting or removing the fire-bricks of water-tube boilers, embodying a rod-like carrier, a pair of clamps projecting respectively from and engaging a brick at opposite sides of the longitudinal axis of said carrier, and means for adjusting one of said clamps relatively to the other.

3. A tool for holding and inserting or removing the fire-bricks of water-tube boilers, embodying a rod-like carrier, a pair of clamps projecting respectively from and engaging a brick at opposite sides of the longitudinal axis of said carrier at obtuse angles thereto, and means for adjusting one of said clamps relatively to the other.

4. A tool for holding and inserting or removing the fire-bricks of water-tube boilers, embodying a rod-like carrier, a pair of clamps projecting respectively from and engaging a brick at opposite sides of the longitudinal axis of said carrier each clamp being with respect to the carrier substantially at a right angle in the line of its height and at an obtuse angle in the line of its base.

5. A tool for holding and inserting or removing the fire-bricks of water-tube boilers, embodying a rod-like carrier, a pair of clamps projecting respectively from and engaging a brick at opposite sides of the longitudinal axis of said carrier one of said clamps being movable lengthwise of said carrier and also mounted to swing on said carrier to change its angular position.

6. A tool for holding and inserting or removing the fire-bricks of water-tube boilers, embodying a rod-like carrier, a pair of clamps projecting respectively from and engaging a brick at opposite sides of the longitudinal axis of said carrier one of said clamps having an angular brick-supporting lip, and means for adjusting one of said clamps relatively to the other.

7. A tool for holding and inserting or removing the fire-bricks of water-tube boilers, embodying a two-part rod-like carrier, a pair of clamps projecting respectively from and engaging a brick at opposite sides of the longitudinal axis of the two parts of said carrier, and means for moving one part of the carrier relatively to the other.

8. A tool for holding and inserting or removing the fire-bricks of water-tube boilers, embodying a two-part rod-like carrier the two parts of which are connected by screw-threads and are adjustable thereby relatively to each other, and a pair of clamps projecting respectively from and engaging a brick at opposite sides of the longitudinal axis of the two parts of said carrier.

9. A tool for holding fire-bricks at diagonally opposite corners of the bricks and for inserting said bricks in or removing them from

water-tube boilers, embodying a two-part rod-like carrier one part of which constitutes a guide and the other part a slide movable along said guide, a pair of clamps projecting respectively from said guide and slide for clamping and releasing a fire-brick at diagonally opposite corners thereof, and means for adjusting the slide along said guide and for holding the same in its adjusted position.

811,845. HYDROCARBON-GAS GENERATOR. LEO HENDERSON, Peoria, Ill. Filed Mar. 6, 1905. Serial No. 248,780.

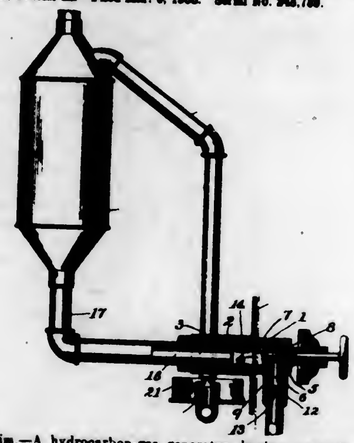

Claim.—A hydrocarbon-gas generator, having a supply-duct for connection with a source of liquid hydrocarbon, provided with a small valve-controlled orifice arranged to emit the said liquid hydrocarbon in the form of a jet, a superheating-chamber arranged in line with said orifice to receive said jet of hydrocarbon, a gas-pipe connected to said chamber, a subburner for heating said chamber, means to supply said burner with gas generated in said chamber, a commingling-passage between said chamber and said jet-orifice, said commingling-passage being open to the atmosphere, a movable sleeve surrounding said passage to vary the size of the opening of said passage to the atmosphere, and a flame-shield carried by said sleeve between said subburner and said jet.

811,846. PERPETUAL CALENDAR. CHARLES P. HIDDEN, Baltimore, Md. Filed Mar. 1, 1905. Serial No. 247,231.

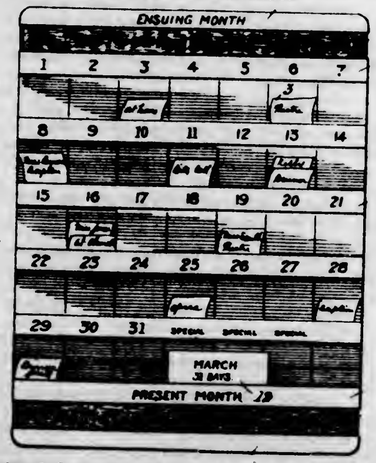

Claim.—1. In a perpetual calendar, the combination of a book carrying a series of strips which are inscribed with the days of the month and secured at the lower edge only to the back, and extending entirely across the book from side to side thereby producing continuous pockets for memorandum-cards, and an endless band on which is inscribed the days of the week, and the said band being placed loosely over and around the back and adapted to be moved laterally in either direction independently of the back to adjust the days of the week to the days of the month, substantially as specified.

2. In a perpetual calendar, the back thereof having the days of the month fixed thereon in horizontal rows, and arranged to be read from left to right, combined with two independent horizontally-placed and movable endless bands inscribed with the days of the week, in duplicate, one set of inscriptions forming the continuation of the other, and one band being arranged over the rows of figures indicating the days of the month, and the other similar band, being situated below the said rows of figures, substantially as and for the purpose specified.

811,847. LOOM FOR WIRE FABRICS OR GAUZE. EDWARD HOLLINGWORTH, Debdens, England, assignor to Crompton & Knowles Loom Works, a Corporation of Massachusetts. Filed Oct. 20, 1904. Serial No. 229,236.

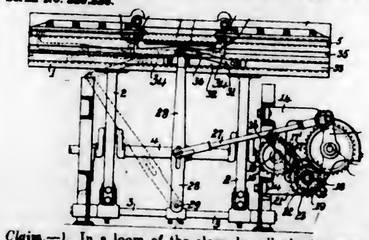

Claim.—1. In a loom of the class described, the combination with a continuously-driven gear or pinion, and an oscillating lever, and connections from said lever to a shuttle, for traversing the shuttle across the loom, of mechanism intermediate said continuously-driven gear or pinion, and said oscillating lever, to cause said lever to dwell at each extremity of its movement, said mechanism consisting of a gear having a stud or roll thereon entering a longitudinal slot in an arm or lever, and said lever loosely mounted on a shaft, and having loosely mounted on one end a bevel-gear which meshes with a bevel-gear mounted loosely on a shaft, and said bevel-gear having peripheral teeth thereon meshing with a pinion on a continuously-driven rotary shaft, and said shaft, a second bevel-gear loosely mounted and in mesh with the bevel-gear on said lever, and having peripheral teeth thereon which mesh with a gear, and said gear, and a crank connected therewith, and a connection from said crank to the oscillating lever.

2. In a loom of the class described, a lever centrally pivoted on a block or slide and adapted to be moved endwise to and fro across the lay, said lever having upturned fingers or projections adapted to enter corresponding recesses or grooves in the respective ends of the shuttles, a cam groove or slide in the lay, which is engaged by a stud or roll on said lever, to move said lever as it is carried across the lay, to cause one finger on said lever to be engaged with and the other to be disengaged from the shuttle, alternately, connections intermediate said slide and an oscillating lever, and said oscillating lever, and means for giving a dwell thereto at each extremity of its movement, said means consisting of a continuously-driven gear or pinion, a gear having a stud or roll thereon entering a longitudinal slot in an armor or lever, and said lever loosely mounted on a shaft, and having loosely mounted on one end a bevel-gear, which meshes with a bevel-gear mounted loosely on a shaft, and said bevel-gear, having peripheral teeth thereon meshing with a pinion on a continuously-driven rotary shaft, and said shaft, a second bevel-gear loosely mounted, and in mesh with the bevel-gear on said lever, and having peripheral teeth thereon which mesh with a gear, and said gear, and a crank connected therewith, and a connection from said crank to the oscillating lever.

811,848. DENTAL CLAMP. EDSON L. HUTCHINSON, Honolulu, Hawaii. Filed Apr. 5, 1905. Serial No. 253,904.

Claim.—1. In a dental clamp of the kind described, a U-shaped body portion having one leg bifurcated and the other terminating in a clamping-jaw, and a lever pivoted between the ends of the bifurcation and coöperating with said clamping-jaw.

2. In a dental clamp of the kind described, a lever pivoted to one end of the clamp and capable of sliding laterally upon said pivot.

3. A dental clamp comprising a body *a*, a jaw *b*, legs *c c'* connected by a bar *d*, and a lever *g* provided with a jaw *h* and capable of turning upon the bar *d* and of sliding upon same between the ends of the legs *c c'*.

811,849. TEETH-SEPARATOR. EDSON L. HUTCHINSON, Honolulu, Hawaii. Filed June 3, 1905. Serial No. 263,616.

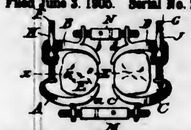

Claim.—1. In an apparatus for separating teeth, two bows, adjustable connections between the bows, each bow composed of two sections, each section provided with a separating-jaw, one section of each bow provided with a bar adapted to slide in the end of the other section, and means for instantly clamping and releasing the sections, substantially as described.

2. In an apparatus for separating teeth, two bows, adjustably connected by right and left handed screws, each bow composed of two sections, each section provided with a separating-jaw, one section of each bow provided with a bar adapted to slide in the end of the other section, and means for instantly clamping and releasing the sections, substantially as described.

3. In an apparatus for separating teeth, the combination of the sectional bows A C provided with the jaws *a c* and the bars F G respectively, the sectional bows B D provided with the jaws *b d* and bifurcated ends in which the bars F G respectively are adapted to slide, and means for clamping said bars in various positions in said bifurcated ends.

4. In an apparatus for separating teeth, a sectional bow provided with a bar having a threaded hole to engage a screw P, and a piece Q swiveled on the end of said screw, for the purpose described.

5. In combination, the sectional bows A C, connected by the screw-bar M, and provided with jaws *a c*, bars F G, screws P with pieces Q, and the sectional bows B D, connected by the screw-bar N, and provided with the jaws *b d* and bifurcated ends in which are respectively pivoted the cam-levers H J and shoes K L, for the purpose and substantially as described.

811,850. SHAFT CARRIER AND TUG. WILLIAM M. JOHNSON, Detroit, Mich. Filed May 11, 1905. Serial No. 260,005.

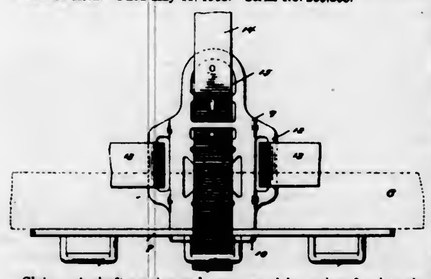

Claim.—A shaft carrier and tug comprising a bar fixed to the under side of the shaft and having a series of loops depending therefrom, and a plate to which the tug is attached, having its lower end curved under the shaft and provided with an opening through which one of said loops extends, and having at its upper end a buckle to attach the back-strap which is extended down outside the shaft and inserted through the loop under the said opening.

811,851. LATERALLY-MOVABLE DUMPING-VEHICLE. JOHN W. KING, New York, N. Y., assignor to Lawson Boat and Car Company, New York, N. Y., a Corporation of New Jersey. Filed May 17, 1905. Serial No. 260,941.

Claim.—1. In a vehicle, the combination with the underframe having a track and lateral bearings, of the laterally-movable box provided with antifriction means engaging said track and downwardly-extending projections adapted to engage and rock on said bearings while the box is completing its lateral movement and thereby imparting simultaneous rotary movement thereto, substantially as described.

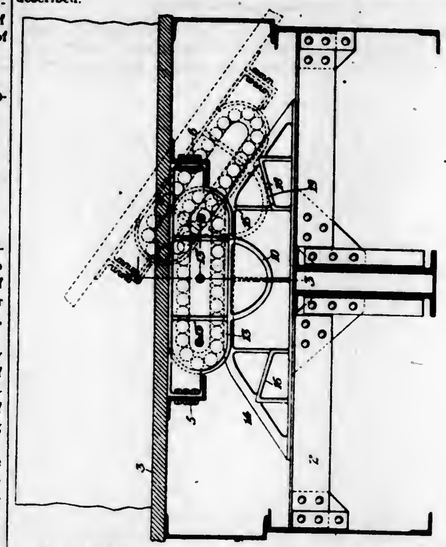

2. In a vehicle, the combination with the underframe having a track and lateral inclined bearings, of the laterally-movable box provided with antifriction means engaging said track and downwardly-extending projections adapted to engage and rock on said bearings while the box is completing its lateral movement and thereby imparting simultaneous rotary movement thereto, substantially as described.

3. In a vehicle, the combination with the underframe having a track and lateral bearings, of the laterally-movable box provided with downwardly-extending rounded projections adapted to engage and rock on said bearings while the box is completing its lateral movement thereby imparting simultaneous rotary movement thereto, substantially as described.

4. In a vehicle, the combination with the underframe having a track and inclined lateral bearings, of the laterally-movable box provided with antifriction means engaging said track and downwardly-extending rounded projections adapted to engage and rock on said bearings while the box is completing its lateral movement thereby imparting simultaneous rotary movement thereto, substantially as described.

5. In a vehicle, the combination with the underframe having a track and lateral bearings, of the laterally-movable box provided with antifriction means engaging said track and downwardly-extending rounded projections adapted to engage and rock on said bearings while the box is completing its lateral movements thereby imparting simultaneous rotary movement thereto, substantially as described.

6. In a vehicle, the combination with the underframe having a track and lateral bearings, of the laterally-movable box provided with a raceway, antifriction devices therein engaging said track and downwardly-extending projections adapted to engage and rock on said bearings while the box is completing its lateral movement thereby imparting simultaneous rotary movement thereto, substantially as described.

7. In a vehicle, the combination with the underframe having a track and lateral inclined bearings, of the laterally-movable box provided with a raceway, antifriction devices therein engaging said tracks and downwardly-extending rounded projections adapted to engage and rock on said bearings while the box is completing its lateral movement, thereby imparting simultaneous rotary movement thereto, substantially as described.

8. In a vehicle, the combination with the laterally-movable box provided with downwardly-extending projections and a raceway having a continuous passage open at the bottom, antifriction devices therein, of the underframe having a track projecting through the

opening in the raceway into engagement with said antifriction devices and lateral bearings engaged by said projections while the box is completing its lateral movement thereby imparting simultaneous rotary movement to said box, substantially as described.

811,852. METHOD OF ASCERTAINING THE COMPASS DIRECTION OF MOVING OBJECTS. ISIDOR KITSEE, Philadelphia, Pa. Filed May 18, 1901. Renewed Jan. 15, 1906. Serial No. 130,296.

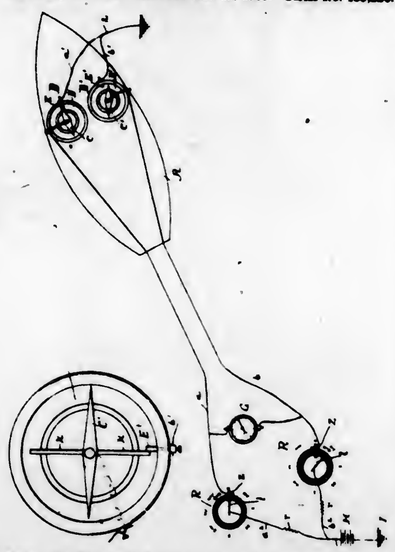

Claim.—1. The method of ascertaining the compass direction of moving objects, which consists in passing a current of electricity through a movable member of a compass, and a resistance which changes the flow of the current in accordance with the direction of the moving object, causing an indicator to vary in accordance with the current-flow, and indicating the compass direction of the moving object by a variable resistance through the medium of which latter said indicator is restored to equilibrium.

2. The method of ascertaining the compass direction of moving objects, which consists in passing a current of electricity through a movable member of a compass and a Wheatstone bridge, disturbing the balance of said bridge by the varying position of said movable compass member, and restoring the balance of the bridge by a variable resistance adapted to indicate, through the degree of resistance necessary for the restoration of the balance of said bridge, the compass direction of the moving object.

3. The method of ascertaining the compass direction of moving objects, which consists in passing a current of electricity through a movable member of a compass and a Wheatstone bridge, disturbing the balance of said bridge by the varying position of said movable compass member, indicating the disturbed condition of said balance in accordance with the varying position of the movable compass member, and restoring the balance of the bridge by a variable resistance adapted to indicate, through the degree of resistance necessary for the restoration of the balance of said bridge, the compass direction of the moving object.

4. The method of ascertaining the compass direction of moving objects, which consists in passing a current of electricity through a movable member of a compass and a Wheatstone bridge, disturbing the balance of said bridge by increasing the resistance of one arm thereof through the varying position of the movable member of the compass, and restoring the balance of said bridge by decreasing the resistance of said arm until such resistance is equal to that of the second arm of the bridge, the value of the resistance removed from the first-mentioned arm being adapted to indicate the compass direction of the moving object.

5. The method of ascertaining the compass direction of moving objects, which consists in passing a current of electricity through a movable member of a compass and a Wheatstone bridge, disturbing the balance of said bridge by increasing the resistance of one arm thereof through the varying position of the movable member of the compass, indicating the degree of increased resistance, and restoring the balance of said bridge by decreasing the resistance of said arm until such resistance is equal to that of the second arm of the bridge, the value of the resistance removed from the first-mentioned arm being adapted to indicate the compass direction of the moving object.

6. The method of ascertaining the compass direction of moving objects, which consists in passing a current of electricity through a movable member of a compass and a Wheatstone bridge, disturbing the balance of said bridge by increasing the resistance of one arm thereof through the varying position of the movable member of the compass, and restoring the balance of said bridge through the medium of a variable resistance by means of which the resistance in said arm is equalized with the resistance in a second arm of the bridge, said variable resistance being adapted to indicate the compass direction of the moving object.

811,853. RADIATOR, STEAM-CONDENSER, AND THE LIKE. FREDERICK LANFLOUGH, Willesden, England. Filed Apr. 26, 1905. Serial No. 257,470.

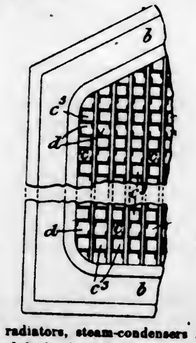

Claim.—1. In radiators, steam-condensers and the like, the combination of a tank-body, flat tubes communicating between the upper and lower portions of said body, trough-shaped gills or radiating surfaces formed of sheet metal, apertures in said gills or radiating surfaces and outwardly-extending flanges by which the gills or radiating surfaces are soldered between the tubes substantially as set forth.

2. In a radiator, steam-condenser and the like the combination of a tank-body, flat tubes communicating between the upper and lower portions of said tank-body and headers or filling-in pieces placed between the flat tubes at top and bottom thereof to form continuous plain surfaces to which the upper and lower parts of the tank can be readily soldered substantially as set forth.

3. In a radiator, steam-condenser and the like the combination of a filling-cap provided with spring-bolts, and a filling tube or nozzle having a notched inwardly-projecting rim under which the spring-bolts are pressed thus securing the filling-cap normally in position but allowing it to be raised by undue pressure and thereby give vent to the steam through the notches in the rim and so prevent injury to the radiator substantially as herein set forth.

811,854. PROCESS OF TINNING OR COATING METAL SHEETS WITH TIN OR OTHER METALLIC COATINGS. JOHN LEE, Philadelphia, Pa. Filed Aug. 18, 1903. Serial No. 169,930.

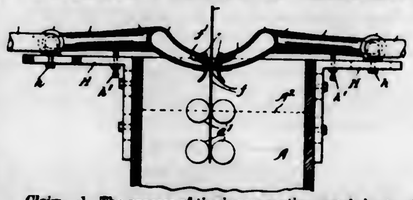

Claim.—1. The process of tinning or coating metal sheets with metallic coatings, consisting in passing or conveying the metal sheets to be coated through the molten coating metal and the oil or flux thereon, and subjecting the sheets as they pass with their lower edges horizontal up out of the coating metal and the oil or flux thereon, to superheated compressed air projected in a wide blast approximately the width of the sheet against the surfaces of the sheet while the tin or metal coating thereon is yet fluid, whereby the tinning operation is facilitated, the thickness of the tin coating regulated and made uniform; surplus tin removed; selvage edges at the bottom edges of the sheets prevented, and the surface of the sheet cleaned from grease, oil or flux substantially as specified.

2. The process of tinning, consisting in passing with their lower edges horizontal sheets to be tinned up through molten tin and the oil or flux thereon and projecting superheated compressed air in a wide blast approximately the width of the sheet against the surfaces of the sheet as they issue upwardly from the tinning-pot, and while the tin coating thereon is yet fluid, substantially as specified.

3. The process of coating metal sheets with a metallic coating consisting in passing the sheet with its lower edge horizontal upwardly through molten metal and the oil or flux thereon, and projecting heated compressed fluid in a wide blast approximately the width of the sheet against the surfaces of the sheet, as it issues upwardly from the molten metal and the oil or flux thereon, whereby the tinning operation is facilitated; the thickness of the tin coating regulated and made uniform; surplus tin removed; selvage edges at the bottom edges of the sheets prevented, and the surface of the sheet cleaned from grease, oil or flux substantially as specified.

4. The process of tinning metal sheets consisting in passing the sheet with its lower edge horizontal upwardly through molten tin and the oil or flux thereon and between wide blasts of heated fluid projected downwardly against the sheet as it issues from the molten tin and the oil or flux thereon, substantially as specified.

5. The process of coating metal sheets with metallic coating, consisting in passing the sheet with its lower edge horizontal upwardly through the molten coating metal and the oil or flux thereon between wide blasts of heated air projected downwardly against the surfaces of the sheet, whereby the tinning operation is facilitated; the thickness of the tin coating regulated and made uniform; surplus tin removed; selvage edges at the bottom edges of the sheets prevented, and the surface of the sheet cleaned from grease, oil or flux substantially as specified.

6. The process of tinning metal sheets consisting in passing a sheet with its lower edge horizontal upwardly through molten tin and the oil or flux thereon between wide blasts of hot air as it issues from a tinning-pot, and while the tin coating thereon is yet molten, substantially as specified.

811,855. RAILROAD. GEORGE A. LE FEVRE, Orangeburg, N. Y. Filed Mar. 11, 1905. Serial No. 249,563.

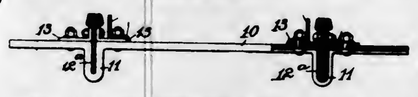

Claim.—1. A railroad comprising rails made plain and without flanges between the head and bottom portions, and a relatively flat sleeper having depending seats to receive the rails, the said seats forming transverse wings or flanges of substantially the width of the flat part of the sleeper which extend below the general level of the sleeper.

2. The combination of the flangeless rail and the relatively flat sleeper having a seat therein to receive the rail, the seat being formed by bending down the sleeper, thus making a transverse wing of substantially the width of the flat part of the sleeper extending well below the general bottom portion of the sleeper.

3. A railroad, comprising a cross-sleeper having depending seats, rails without base-flanges, the said rails having their webs held in the seats of the sleeper, and an angle guard-rail secured to the sleeper.

811,856. REVERSING-BRAKE FOR TURBINE-ENGINES. HUGO LENTZ, Berlin, Germany. Filed June 26, 1905. Serial No. 267,093.

Claim.—1. In combination, a turbine-wheel, a casing therefor provided with an annular chamber, a projection on the wheel and moving through said chamber, and means for interposing elastic resisting medium in the chamber to the travel of the projection.

2. In combination, a turbine-wheel, a casing therefor, an annular chamber between said parts, a projection carried by said wheel, and means for interposing elastic resisting medium in the chamber to the travel of the projection.

3. In combination, a turbine-wheel, a casing therefor, an annular chamber between said parts, a projection carried by said wheel, and means for supplying steam to said chamber to interpose a yielding resistance to the travel of the projection.

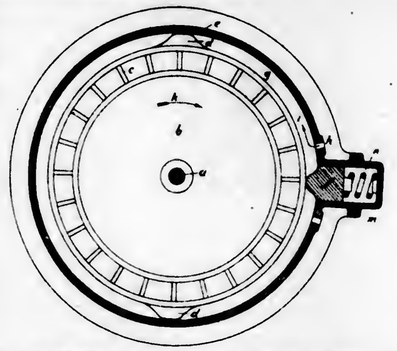

4. In combination, a turbine-wheel, a casing therefor, an annular chamber between said parts, a projection carried by said wheel and moving through the chamber, a movable projection carried by the casing and entering the chamber, and means for interposing elastic resisting medium between the two projections.

5. In a reversing-brake device for turbines, a rotary piston, a projection driven by said piston, and means for interposing elastic resistance medium in the path of said projection.

811,857. HANGER FOR SIFTERS AND SCREENS. JOSEPH T. LEONARD, Sedalia, Mo. Filed May 10, 1905. Serial No. 259,799.

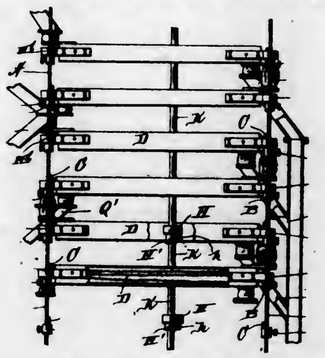

Claim.—1. An improved hanger for bolting-screens comprising, in combination with a screen and fixed upright shafts, spiral springs fastened to said screen and having each an end closely coiled to form a socket, adjustable collars mounted upon said shafts and pins carried by said collars and engaged by said coils, and means for imparting a gyrating motion to the screen, as set forth.

2. An improved hanger for bolting-screens comprising, in combination with a screen and fixed upright shafts, coil-springs fastened to said screen and having each an end closely coiled to form a socket, collars mounted upon said shafts, a pin carried by each collar, a set-screw for holding said collar in adjusted positions, said pins adapted to engage said coils at the end of said springs, an eccentric mounted in suitable bearings in the screen, a shaft to which said eccentric is fixed whereby a gyrating motion may be imparted to the screen mounted upon the springs which are upon edge, as set forth.

811,858. MEANS FOR LUBRICATING WHEELS. GEORGE W. LOVEJOY, Tehachapi, Cal., assignor of one-half to Leo Harris, Tehachapi, Cal. Filed May 6, 1905. Serial No. 259,214.

Claim.—1. The combination of a wheel, an axle-box secured to the wheel and closed at one end, and an axle provided with a tubular spindle open at the outer end and having an intermediate lateral outlet and provided at its inner portion with an oil hole or passage, said

spindle being arranged within the axle-box and having its open end fitted against the inner face of the closed end of the axle-box for retaining a lubricant within the spindle.

2. The combination of a wheel, an axle-box closed at one end and having its other end threaded, an axle having a tubular spindle fitted within the axle-box and open at one end, said spindle provided with an intermediate outlet and having its open end fitted against the closed end of the axle-box, a packing arranged at the open end of the axle-box, and an adjustable gland or nut engaging the threaded end of the axle-box and the packing.

3. The combination of a wheel having an axle-box closed at one end and threaded at the other, an axle having a hollow spindle open at one end and provided with an intermediate lateral outlet, said axle being also provided with a shank having a longitudinal oil hole or passage communicating with the hollow spindle, an adjustable gland or nut engaging the threaded end of the axle-box and having a tapered opening and provided with an interior shoulder, and a packing arranged within the tapered opening of the gland or nut and interposed between the latter and the axle.

4. The combination of a standard having its lower portion bent at an angle, an inclined wheel having an axle-box closed at one end, an inclined axle secured to the lower end of the standard and provided with a tubular spindle open at one end and provided with an intermediate outlet, the open end of the spindle being fitted against the closed end of the axle-box, and means located at the open end of the axle-box for securing the axle therein.

811,859. ELECTRIC RESISTANCE ELEMENT. ALBERT L. MARSH, Lake Bluff, Ill., assignor to The Hoskins Company, Chicago, Ill., a Corporation of Illinois. Filed Mar. 15, 1905. Serial No. 250,309.

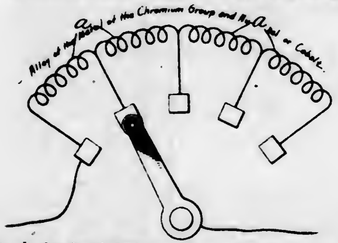

Claim.—1. An electric resistance element composed of a metal alloy consisting of one of the metals of the chromium group, in the proportion of less than fifty per cent. of the element, and more than fifty per cent. of metal having the properties of nickel and cobalt.

2. An electric resistance element comprising a strip, strand or filament formed of an alloy of nickel and one of the metals of the chromium group.

3. An electric resistance element comprising an annealed strip, strand or filament formed of an alloy of nickel and one of the metals of the chromium group.

4. An electric resistance element formed of a metal alloy consisting of nickel and chromium.

5. An electric resistance element formed of a metal alloy consisting of chromium in the proportion of less than fifty per cent. of the element and nickel in the proportion of more than fifty per cent. of the element.

811,860. BRIQUETING-PRESS. HOWARD E. MARSH, Palms, Cal., assignor of one-half to William P. Wagy, Los Angeles, Cal. Filed June 27, 1905. Serial No. 267,108.

Claim.—1. A briquet-press provided with a series of disconnected molding-boxes, an endless guide for said boxes, reciprocating compressing means for said boxes, and means constructed to operate said reciprocating compressing means to compress the charge in said boxes and for simultaneously moving said reciprocating means and their boxes through their orbit.

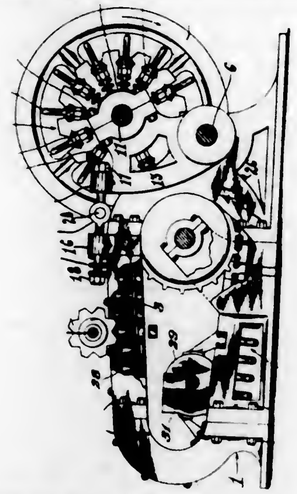

2. A frame provided with an endless guide, a series of molds adapted to move along said guide, compressing means for moving said molds along said guide and for compressing material in said molds, and means for discharging material therefrom.

3. A frame provided with an endless guide extending in a vertical plane, a series of contacting molds adapted to move along said guide, and compressing means engaging the ascending molds to move the same forward.

4. A frame provided with an endless guide, a series of disconnected molds adapted to move along said guide, a compressing-drum closing the mouths of said molds during a portion of their travel, means for moving said molds and for compressing material against said drum in said molds, and means for emptying said molds.

5. A frame provided with an endless guide, a series of disconnected contacting molds adapted to slide in said guide, compressing means for moving said molds and for compressing material thereinto, and means for emptying said molds.

6. A compressing-drum, a molding-box, means for guiding the molding-box with its open mouth on the compressing-drum, a plunger in said box, means for engaging the plunger and forcing it inward and at the same time onward, to move the box along its orbit, and means for simultaneously engaging the box to hold it against the drum.

7. A drum, a molding-box, means for guiding the molding-box with its open mouth against the drum, a plunger in the box, rotary means for engaging the plunger to move it inward and onward, and resilient means for engaging the box to hold it against the drum.

8. A drum, a molding-box, means for guiding the molding-box with its open mouth against the drum, a plunger in said box, a gear having a face to engage said plunger and move it inward and onward, and tension-bolts carried by said gear to engage said box and hold it against the drum.

9. A molding-box, means for closing the mouth of the box, means for guiding the box in a path, a plunger in the box, rotary means for engaging the plunger to force it inward as the box moves onward in its path, and means on said rotary means for engaging the box at the same time that the rotary means engages the plunger.

10. A frame, molding means, means for guiding said molding means in a path in said frame, and rotary means yieldingly mounted on the frame and arranged to simultaneously advance and operate said molding means.

11. In a press, a frame, a series of disconnected molds arranged to move in a determined path in said frame, a rock-bar mounted on said frame, rotary compressing means mounted on said rock-bar and constructed to operate said molds, and tension means for holding toward the molds said rotary compressing means.

12. In a press, a frame, molding means arranged to move in a determined path in said frame, a rock-bar mounted on said frame, rotary compressing means mounted on said rock-bar and constructed to operate said molding means, and tension means for holding toward the molding means said rotary compressing means, the center of gravity of the rock-bar and its attachments being rearward of the vertical drawn from the shaft of the rock-bar to cause gravity of the compressing means to hold the tension means normally at a constant tension.

13. A briqueting-press provided with a series of disconnected molds, rotary means for operating said molds, rocking means carrying said rotary means, link means for connecting the rocking means with the frame of the press, and yielding tension means for holding said rotary means toward the molds.

14. A frame, molding means moving in an orbit therein, a molding-drum closing the mouths of the molding means at a portion of said orbit, rocking means, a shaft journaled therein, balance-wheels fixed on the shaft, a compressing-gear fixed on the shaft and constructed to operate and advance the molding means successively.

15. Disconnected molding-boxes moving in an orbit, plungers in said boxes respectively having projecting stems, and a rotary ejector-gear arranged to engage said stems to depress the same.

811,861. TUBE-MAKING MACHINE. GEORGE B. MELLINGER, Scottdale, Pa., assignor of two-thirds to Robert Skemp and Joseph R. Stauffer, Scottdale, Pa. Filed Oct. 20, 1904. Serial No. 229,348.

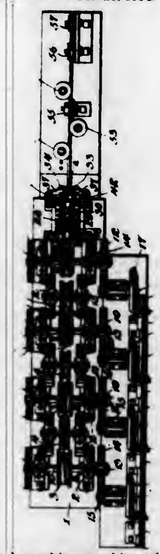

Claim.—1. In a tube-making machine, the combination with skelp-bending mechanism, of edge-flexing mechanism arranged to exert an inward radial pressure upon the tube adjacent to one edge after said tube is formed by the skelp-bending mechanism, and tube-contracting rolls disposed in quartering arrangement to form a constricted pass within which the tube is contracted.

2. In a tube-making machine, the combination with skelp-bending mechanism adapted for the formation of a tube, of a series of edge-flexing rolls disposed to operate upon the tube at successive points after said tube has been formed by the skelp-bending mechanism, and tube-contracting mechanism.

3. In a tube-making machine, the combination with skelp-bending mechanism adapted for the formation of a tube, of a series of edge-flexing rolls arranged to flex one edge of the tube inwardly to present the edges of the skelp out of coincident relation, and tube-contracting rolls disposed in quartering relation about a constricted pass within which the tube is contracted to convolute form.

4. The combination with a series of skelp-bending rolls adapted to bend the skelp into cylindrical form, of edge-flexing rolls disposed beyond the skelp-bending rolls and arranged to flex one edge of the tube inwardly, and tube-contracting rolls located beyond the edge-flexing rolls and forming a constricted pass within which the tube is contracted to lap the edges thereof.

5. In a tube-making machine, the combination with mechanism for bending the skelp to the form of a tube having its edges lapped, of means for expanding the tube to present its edge faces out of lapping relation.

6. In a tube-making machine, the combination with mechanism for bending the skelp into the form of a tube having its edges lapped, of a mandrel arranged to expand the tube to present its edges out of lapping relation.

7. In a tube-making machine, the combination with mechanism for bending the skelp into the form of a tube having lapped edges, of means for expanding the tube to present the edges thereof out of lapping relation, and means for outwardly flexing that edge of the tube having the greatest inward stress, substantially as described.

8. In a tube-making machine, the combination with mechanism for bending the skelp into the form of a tube having its edges lapped, of a mandrel disposed to expand the tube to present its edges out of lapping relation, and an edge-flexing die carried by the mandrel and arranged to flex one edge of the tube outwardly beyond the normal dimensions of the tube.

9. In a tube-making machine, the combination with mechanism for bending the skelp into tubular form, means for flexing one edge only of the tube inwardly, means for contracting the tube, and tube-expanding means.

10. The combination with mechanism for bending the skelp into tubular form, of edge-flexing mechanism arranged to flex one edge of the tube inwardly, tube-contracting mechanism arranged to contract the tube to lap the edges thereof, means for expanding the tube to normal dimensions, and means for flexing outwardly beyond the normal dimensions of the tube that edge of the skelp which was previously flexed inwardly.

11. In a tube-making machine, the combination with an edge-flexing device, of tube-contracting mechanism located beyond the same, tube-expanding mechanism located beyond the contracting mechanism, and a second edge-flexing device located beyond the tube-expanding mechanism, the first edge-flexing device serving to flex an edge of the tube in one direction prior to the contraction and expansion of the tube, and the other edge-flexing device serving to flex the edge of the tube in the opposite direction after the tube has been contracted and expanded.

12. The combination with a series of skelp-bending rolls arranged to bend the skelp into cylindrical form, of an edge-flexing roll, tube-contracting rolls, a tube-expanding mandrel, and an edge-flexing die disposed in the order stated to act successively upon the same portion of the tube.

13. In a tube-making machine, the combination with a series of skelp-bending rolls arranged to bend the skelp into cylindrical form, a series of edge-flexing rolls disposed beyond the skelp-bending rolls to flex one edge of the tube inwardly, tube-contracting rolls disposed in quartering relation about a constricted pass within which the tube is contracted to convolute form, a mandrel disposed to expand the contracted tube to its original cylindrical form, and a die disposed to flex outwardly beyond its normal plane that edge of the tube which was previously flexed inwardly from its normal plane.

14. In a tube-making machine, the combination with means for bending the skelp into the form of a complete butt-joint tube, of means for transforming said butt-joint tube into a lap-joint tube, said last-named means including a series of contracting-rolls arranged to form a constricted pass the wall of which is of volute form.

15. In a tube-making machine, the combination with skelp-bending mechanism, of edge-flexing mechanism arranged to flex one edge of the tube inwardly after said tube is formed by the skelp-bending mechanism, and tube-contracting means for contracting the tube to cause the edges thereof to overlap.

16. In a tube-making machine, the combination with skelp-bending mechanism, of edge-flexing mechanism arranged to exert an inward radial pressure upon the tube adjacent to one edge after said tube is formed by the skelp-bending mechanism, and means for contracting the tube to cause the overlapping of the edges thereof.

17. In a tube-making machine, the combination with skelp-bending mechanism adapted for the formation of a tube, of means for flexing one edge of the tube inwardly to present the edges of the skelp out of coincident relation, and tube-contracting rolls forming a constricted pass within which the tube is contracted to convolute form.

18. In a tube-making machine, the combination with means for bending the skelp into cylindrical form, of means disposed beyond the skelp-bending means for flexing one edge of the tube inwardly,

and means located beyond the edge-flexing means for contracting the tube to cause the overlapping of its edges.

19. In a tube-making machine, the combination with a series of skelp-bending rolls adapted to bend the skelp into cylindrical form, of an edge-flexing roll disposed beyond the skelp-bending rolls and arranged to flex one edge of the tube inwardly to present the edges of the skelp out of coincident relation, and means located beyond the edge-flexing roll for contracting the tube to cause the edges thereof to overlap.

20. In a tube-making machine, the combination with mechanism for bending the skelp into the form of a tube having lapped edges, of means for transforming the tube thus formed into a butt-joint tube, said transforming means including means for outwardly-flexing that edge of the tube having the greatest inward stress.

21. In a tube-making machine, the combination with skelp-bending means arranged to bend the skelp into cylindrical form, of edge-flexing means, tube-contracting means, tube-expanding means, and a second edge-flexing means, all disposed in the order stated to act successively upon the same portion of the skelp.

22. In a tube-making machine, the combination with mechanism for bending the skelp to form a butt-joint tube, of mechanism for contracting said butt-joint tube to transform the same into a lap-joint tube, and mechanism for expanding the transformed tube to again produce a tube of the butt-joint type.

23. In a tube-making machine, the combination with skelp-bending mechanism, of an edge-flexing roll arranged to flex one edge of the tube inwardly after said tube is formed by the skelp-bending mechanism, and tube-contracting means for contracting the tube to cause the edges thereof to overlap.

24. In a tube-making machine, the combination with mechanism for bending the skelp into the form of a tube having its edges lapped, of a mandrel disposed to expand the tube to present its edges out of lapping relation, and edge-flexing means arranged to flex one edge of the tube outwardly beyond the normal dimensions of the tube.

25. In a tube-making machine, the combination with mechanism for bending the skelp to the form of a tube having its edges lapped, of mechanism for expanding the tube to urge the inner edge outwardly beyond a point opposite the other edge, whereby when the outward pressure is relieved, the outwardly-expanded edge will spring back to complete the formation of a butt-joint tube.

811,862. GUARD FOR BOILER-TUBE CLEANERS. EUGENE METTLER, Indianapolis, Ind. Filed Mar. 17, 1904. Serial No. 198,895.

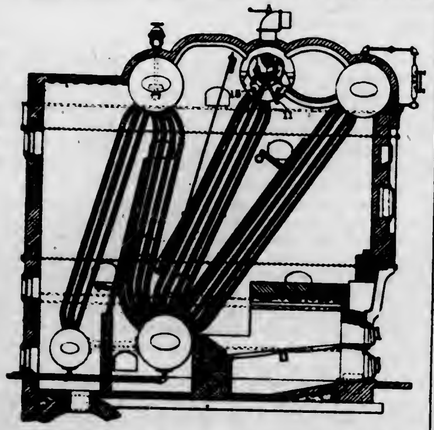

Claim.—1. The combination, with a water-tube-boiler-cleaning tool of the rotary fluid-stream type, of a guard-tube slidably mounted upon the supply-hose and adapted to incase the tool during the time of transfer from one tube to another, said guard-tube being so constructed as to prevent backward movement of the fluid stream when the guard-tube 2 is extended over the tool.

2. The combination with a water-tube-boiler cleaner of the rotary fluid-stream type, of a guard-tube sleeved upon the supply-hose and provided with a packing at its inner end and adapted to engage the main body of the cleaner, the arrangement being such that said guard-tube may be moved longitudinally upon the supply-hose and may be caused to incase the tool during the time of transfer from one tube to the other.

811,863. AIR-BRAKE. HERBERT H. MULLER and CHARLES V. ROTH, Lancaster, Pa., assignors of one-third to John W. Holman, Lancaster, Pa. Filed July 21, 1904. Serial No. 217,476.

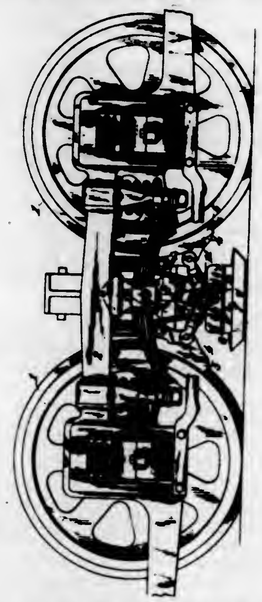

Claim.—1. A car-brake having, in combination, two opposed wheel-brake shoes, an intermediate rail-brake shoe, connections between the brake-shoes whereby the forces applied thereto act in three distinct lines meeting at an intermediate point and are thus caused to react on each other, and brake-actuating mechanism.

2. A car-brake having, in combination, two opposed wheel-brake shoes, an intermediate rail-brake shoe, and a brake-actuating device separately connected to the three brake-shoes for applying them together, the connections causing the forces applied to the several brake-shoes to react on each other.

3. A car-brake having, in combination, two opposed wheel-brake shoes, an intermediate rail-brake shoe, the latter operating in an opposite direction to the former, and a brake-actuating device connected to the three brake-shoes at a substantially central location which is surrounded by the brake-shoes and adapted to apply them all together, the connections causing the forces applied to the several brake-shoes to react on each other.

4. A car-brake having, in combination, two wheel-brake shoes connected by a toggle, a rail-brake shoe, and a brake-actuating device acting between the knuckle of the toggle and the rail-brake shoe so as to raise the former and depress the latter.

5. A car-brake having, in combination, two opposed wheel-brake shoes connected by a toggle, a rail-brake shoe, and a brake-lever having its fulcrum supported by said rail-brake shoe and having an arm taking under the knuckle of the toggle.

6. A car-brake having, in combination, two opposed wheel-brake shoes connected by a toggle, a rail-brake shoe below the knuckle of the toggle, and a wedge adapted to enter between said knuckle and rail-brake shoe to lift the former and depress the latter for application of the brakes.

7. A car-brake having, in combination, two opposed w brake shoes connected by a toggle, a rail-brake shoe below knuckle of the toggle, a brake-lever having an arm taking under the knuckle of the toggle, and a movable wedge adapted to enter between the rail-brake shoe and fulcrum of the lever for depressing said rail-brake shoe by pressure of said fulcrum on said wedge.

8. A car-brake having, in combination, two opposed wheel-brake shoes connected by a toggle, a rail-brake shoe, a bent brake-lever having an arm taking under the knuckle of the toggle, and a movable wedge adapted to enter between the rail-brake shoe and elbow of said lever and sustain pressure thereof as the lever rocks on its elbow as a fulcrum.

9. A car-brake having, in combination, two opposed wheel-brake shoes connected by a toggle, a rail-brake shoe, and a bent brake-lever having its fulcrum supported by said rail-brake shoe and having an arm taking under the knuckle of the toggle, the elbow of said lever having a cam adapted, when the lever is moved for lifting said knuckle, to bear downward and depress the rail-brake shoe

10. A car-brake having, in combination, two opposed wheel-brake shoes connected by a toggle, a rail-brake shoe, and a bent brake-lever having its fulcrum supported by said rail-brake shoe and having an arm taking under the knuckle of the toggle, the elbow of said lever having a cam adapted when the lever is moved to lift said knuckle to bear downward and depress the rail-brake shoe, a movable wedge adapted to enter between the rail-brake block and said elbow of the lever, and means automatically controlling movement of the wedge to compensate for wear of the brake-shoes.

11. A car-brake having, in combination, two opposed wheel-brake shoes connected by a toggle, a rail-brake shoe, a bent brake-lever having an arm taking under the knuckle of the toggle, and a movable wedge adapted to enter between the rail-brake shoe and elbow of said lever and sustain pressure thereof as the lever rocks on its elbow as a fulcrum, and means for automatically varying movement of the wedge to compensate for wear of the brake-shoes.

12. A car-brake having, in combination, two opposed wheel-brake shoes connected by a toggle, a rail-brake shoe below the knuckle of the toggle, a brake-lever having an arm taking under the knuckle of the toggle, and a movable wedge adapted to enter between the rail-brake shoe and fulcrum of the lever for depressing said rail-brake shoe by pressure of said fulcrum on said wedge, and automatic means controlling movement of the wedge to compensate for wear of the brake-shoes.

13. A car-brake having, in combination, two opposed wheel-brake shoes connected by a toggle, a rail-brake shoe below the knuckle of the toggle, and a wedge adapted to enter between said knuckle and rail-brake shoe to lift the former and depress the latter for application of the brakes, and means automatically varying movement of the wedge to compensate for wear of the brake-shoes.

14. A car-brake having, in combination, two opposed wheel-brake shoes connected by a toggle, a rail-brake shoe, and a brake-lever having its fulcrum supported by said rail-brake shoe and having an arm taking under the knuckle of the toggle, and means for automatically increasing the distance between the fulcrum of said lever and the rail-brake shoe to compensate for wear of the brake-shoes.

15. A car-brake having, in combination, two opposed wheel-brake shoes connected by a toggle, a rail-brake shoe, and a brake-lever having its fulcrum supported by said rail-brake shoe and having an arm taking under the knuckle of the toggle, and automatic means for taking up wear of the brake-shoes allowing a constant stroke of the brake-lever.

16. A car-brake having, in combination, two wheel-brake shoes connected by a toggle, a rail-brake shoe, and a brake-actuating device acting between the knuckle of the toggle and the rail-brake shoe so as to raise the former and depress the latter, and an automatic take-up device compensating for wear of the brake-shoes.

17. A car-brake having, in combination, two opposed wheel-brake shoes, an intermediate rail-brake shoe, and a brake-actuating device acting between the rail-brake shoe and wheel-brake shoes for applying them in different directions, and means automatically compensating for wear of the brake-shoes.

18. A car-brake having, in combination, two opposed wheel-brake shoes connected by a toggle, a rail-brake shoe, a brake-lever having an arm taking under the knuckle of the toggle, means for moving said lever to lift said knuckle, a movable wedge adapted to enter between the rail-brake shoe and fulcrum of the lever for depressing said rail-brake shoe by pressure of said fulcrum on said wedge, and means for moving said wedge including a resilient telescopic push-rod therefor containing a spring for yieldingly maintaining the length of said push-rod.

19. A car-brake having, in combination, two opposed wheel-brake shoes connected by a toggle, a rail-brake shoe, a bent brake-lever having an arm taking under the knuckle of the toggle, a wedge adapted to enter between the elbow-fulcrum of said lever and the rail-brake shoe, a main brake-actuating lever, a connecting-rod connected thereto and to the other arm of said bent brake-lever, an intermediate lever having a short arm also connected to said main lever and having a long arm, and a connecting-rod connecting said long arm and said wedge.

20. A car-brake having, in combination, two opposed brake-shoes connected by a toggle, a rail-brake shoe, a bent brake-lever movable transversely of the rail having an arm taking under the knuckle of the toggle, a wedge movable also transversely of the rail adapted to enter between the elbow-fulcrum of said lever and the rail-brake shoe, a main brake-actuating lever, a connecting-rod connected thereto and to the other arm of said bent brake-lever, an intermediate lever having a short arm also connected to said main lever and having a long arm, and a connecting-rod connecting said long arm and said wedge.

21. A car-brake having, in combination, a brake-shoe, an adjacent bearing-surface, a wedge, an actuating device for forcing said wedge between said surface and brake-shoe for applying the brake, and means for automatically varying the movement of said wedge to compensate for wear, allowing a constant movement of said actuating device.

22. A car-brake having, in combination, a brake-shoe, an adjacent bearing-surface, a wedge adapted to be forced between said surface and brake-shoe to apply the brake, and means for moving said wedge comprising a resilient telescopic rod.

23. A car-brake having, in combination, a brake-shoe, an adjacent bearing-surface, a wedge adapted to be forced between said surface and brake-shoe to apply the brake, and means for moving said wedge comprising a push-rod with an included spring adapted to yield when resistance on the wedge overcomes resistance of the spring.

24. A car-brake having, in combination, a brake-shoe, a brake-actuating lever, and an automatic movable take-up device acting between the fulcrum of said lever and brake-shoe to compensate for wear of the brake-shoe.

25. A car-brake having, in combination, a brake-shoe, a brake-actuating lever, and a movable wedge between the fulcrum of the lever and said brake-shoe, the pressure of said fulcrum when on the wedge applying the brake when the lever is moved in operative direction, said wedge being automatically adjustable to take up the wear of the brake-shoe.

26. A car-brake having, in combination, a brake-shoe, a brake-actuating lever whose fulcrum acts against the brake-shoe to apply the brake, and a movable wedge adapted to enter between the fulcrum and brake-shoe as the lever is rocked or turned to apply the brake.

27. A car-brake having, in combination, a brake-shoe, a brake-lever for applying the brake and a movable wedge adapted to engage and shift the fulcrum of the lever, and means controlled by the wear of the brake-shoe for automatically moving said wedge to compensate for the wear.

28. A car-brake having, in combination, a brake-shoe, a cam, and a wedge which when the cam is operated moves between the cam and brake-shoe for applying the latter by pressure from the cam.

29. A car-brake having, in combination, a wheel-brake shoe, a brake-lever having an arm connected therewith, and an adjustable wedge under the fulcrum of said lever, the brake-lever being arranged between the wedge and brake-shoe.

30. A car-brake having, in combination, two opposed wheel-brake shoes connected by a toggle, and a bent brake-lever fulcrumed at its elbow and having an arm which takes under the knuckle of the toggle.

31. A car-brake having, in combination, two opposed wheel-brake shoes connected by a toggle, and a wedge adapted to move under the knuckle of the toggle and lift it in applying the brakes.

32. A car-brake having, in combination, two opposed wheel-brake shoes connected by a toggle, a brake-lever having an arm taking under the knuckle of the toggle, and a wedge under the fulcrum of the lever.

33. A car-brake having, in combination, a rail-brake shoe, a cam, and a wedge which moves between the cam and brake-shoe to depress the latter by coöperative action of said cam and wedge.

34. A car-brake having, in combination, a rail-brake shoe, a bent brake-lever whose elbow-fulcrum acts against the brake-shoe, and a wedge between said elbow and brake-shoe.

35. A car-brake having, in combination, a wheel-brake shoe, a rail-brake shoe, a brake-lever having an arm connected to the wheel-brake shoe and having its fulcrum supported by the rail-brake shoe, and a movable wedge acting between the fulcrum of said lever and said rail-brake shoe.

36. A car-brake having, in combination, a wheel-brake shoe, a rail-brake shoe, and a bent lever having its elbow acting as a fulcrum against the rail-brake shoe and having an arm connected to the wheel-brake shoe.

37. A car-brake having, in combination, a wheel-brake shoe, a

rail-brake shoe, and a bent lever having its elbow acting as a fulcrum against the rail-brake shoe and having an arm connected to the wheel-brake shoe, and a movable wedge acting under the elbow of said lever.

38. A car-brake having, in combination, a wheel-brake shoe, a rail-brake shoe, a bent brake-lever having its elbow-fulcrum supported by the rail-brake shoe and having an arm operatively connected to the wheel-brake shoe, a wedge adapted to enter between the elbow of the lever and the rail-brake shoe, and means for simultaneously moving the wedge and rocking the lever.

39. A car-brake having, in combination, a wheel-brake shoe, a rail-brake shoe, a bent brake-lever having its elbow-fulcrum supported by the rail-brake shoe and having an arm operatively connected to the wheel-brake shoe, a wedge adapted to enter between the elbow of the lever and the rail-brake shoe, means for operating the lever to apply the wheel-brake shoe, and means for more rapidly moving the wedge.

40. A car-brake having, in combination, a brake-shoe, a brake-applying device comprising a wedge, and a push-rod for moving said wedge to operative position having an included spring adapted to yield under a certain resistance, thereby moving said wedge varying distances to compensate for wear of the brake-shoe.

41. A car-brake having, in combination, two wheel-brake shoes connected by a toggle, and a brake-lever movable in a direction transverse to the rail and having an arm taking under the knuckle of the toggle.

42. A car-brake having, in combination, two wheel-brake shoes connected by a toggle, an intermediate rail-brake shoe, a brake-lever operating in a direction transverse to the rail having its fulcrum supported by the rail-brake shoe and having an arm taking under the knuckle of the toggle.

43. A car-brake having, in combination, two wheel-brake shoes connected by a toggle, an intermediate rail-brake shoe, and a brake-actuating device operating in a direction transverse to the rail and acting between the knuckle of the toggle and said rail-brake shoe to raise the former and depress the latter.

44. A car-brake having, in combination, two opposed wheel-brake shoes connected by a toggle, the arms of said toggle having turn-buckles with threaded sockets in their outer ends engaged by threaded stems of members pivoted to the brake-shoes and with plain sockets in their inner ends engaged by plain stems of the knuckle members.

45. A car-brake having, in combination, two opposed wheel-brake shoes connected by a toggle, an intermediate rail-brake shoe, the pintle of the toggle-knuckle passing through a vertical slot in the rail-brake block, a brake-lever movable transversely to the rail having its fulcrum supported by the rail-brake shoe and having an arm taking under the knuckle of the toggle, and a movable wedge acting between the rail-brake shoe and knuckle of the toggle.

46. A car-brake having, in combination, two opposed wheel-brake shoes and a rail-brake shoe between adjacent wheels at each side of a truck, a toggle connecting each pair of wheel-brake shoes, a brake-lever for each set of brakes having a fulcrum supported by the rail-brake shoe and having an arm taking under the knuckle of the toggle, a wedge supported on each rail-brake shoe adapted to act under the fulcrum of the lever, a central lever, connections between it and the opposite brake-levers, and connections between it and the opposite wedges adapted to move the latter more rapidly than the brake-levers.

47. A car-brake having, in combination, two opposed wheel-brake shoes, an intermediate rail-brake shoe, and a brake-actuating device connected to the three brake-shoes at a location intermediate any two of the same and adapted to apply them all together by the same movement, all the brake-shoes being connected to react upon each other.

48. A car-brake having, in combination, two opposed wheel-brake shoes and an intermediate rail-brake shoe having connection at a centralized or inclosed point whereby the forces due to application of the brakes are in approximate equalization, and a brake-actuating device acting at said point and applying the several brakes in opposed directions.

49. A car-brake having, in combination, a wheel-brake shoe, a rail-brake shoe, and a brake-lever having an arm connected to the wheel-brake shoe and having its fulcrum on a movable wedge which acts between said lever and the rail-brake shoe.

50. A car-brake having, in combination, two wheel-brake shoes connected by a toggle, a rail-brake shoe, a brake-lever having an arm supporting the knuckle of the toggle and its fulcrum on a sliding wedge which acts between said lever and the rail-brake shoe.

51. In a car-brake, a rail-brake shoe yieldingly suspended from the truck-frame, a lever operating to depress said shoe, and means for accelerating the movement of the shoe under the action of the lever in proportion to the increased distance the shoe has to travel as it wears away.

52. In a car-brake, a rail-brake shoe, wheel-brake shoes, and a lever adapted to apply the wheel-brake shoes and simultaneously depress the rail-brake shoe, in combination with means acting on said lever to compensate for wear by imparting an accelerated movement to the rail-brake shoe in proportion to the increased distance it has to travel as it wears away.

53. In a car-brake, a rail-brake shoe, wheel-brake shoes, a toggle connecting the latter, a lever having an arm acting on said toggle to apply the wheel-brake shoes and an elbow operating to simultaneously depress the rail-brake shoe, in combination with a sliding wedge adapted to take under said elbow and gradually increase the throw of the lever as the shoe wears away.

54. In a car-brake, wheel-brake shoes, and an intermediate rail-brake shoe, and connections whereby pressure exerted in applying the brakes acts and reacts on each of the connected shoes, in combination with means for exerting such pressure transversely of said connections and of the direction of motion of the car, including an operating-lever movable in the direction of motion of the car, and connections between said operating-lever and such pressure-applying means extending transversely of the car from the center to the sides thereof.

55. In a car-brake, the combination with wheel-brake shoes and an intermediate rail-brake shoe, connections between said shoes for applying pressure thereto, and means for exerting such pressure and imparting a differential speed accelerating the movement of the rail-brake shoe.

56. In a car-brake, the combination with wheel-brake shoes, and an intermediate rail-brake shoe, connections between said shoes for applying pressure thereto, means for exerting pressure on said shoes and accelerating the motion of the rail-brake shoe, and a self-adjusting device for automatically taking up the wear of the rail-brake shoe.

811,864. **DENTAL AND SURGICAL OBTUNDER.** WILLIAM L. MOORE and EDSON L. HUTCHINSON, Honolulu, Hawaii. Filed Apr. 24, 1905. Serial No. 257,104.

Claim.—1. An obtunder comprising a hand-tool provided with a chamber containing an anesthetizing medium and having means to hold a frangible capsule, means for puncturing the capsule, and means for delivering the contents of the fractured capsule into said chamber to produce a pressure to expel said anesthetizing medium.

2. An obtunder comprising a hand-tool having a chamber containing an anesthetizing medium, said chamber having a valve-controlled outlet, said tool also having means to hold a frangible capsule, means for puncturing said capsule, said hand-tool having passages communicating with said chamber whereby on the puncturing of said capsule the contents of the latter are expanded into the chamber.

3. An obtunder comprising a casing having a chamber containing an anesthetizing medium, said chamber having an outlet-passage, a part movable relative to the casing and having a chamber to contain a frangible capsule, means for puncturing the capsule and communicating passages between the two chambers whereby on the puncturing of the capsule the contents of the latter are expanded into the anesthetizing-chamber.

4. The combination of a casing having a chamber containing a packing saturated with a vaporizable medium, said chamber having a valve-controlled outlet, a cap screwing onto said casing and having a chamber to contain a frangible capsule, a puncturing-tool in the path of the contained capsule and communicating passages between the two chambers whereby the contents of the capsules may be expanded into the chamber in the casing.

5. The combination of a casing provided with an exit-tube and having the chamber to contain a vaporizable medium, caps screwing onto each end of said casing, one of said caps having a chambered portion to contain a frangible capsule, a puncturing-tool and passages communicating with the chamber in the casing to deliver the contents of the fractured capsule.

6. The combination of a hollow casing, caps screwing onto opposite ends thereof, one of said caps provided with a valved discharge and having a tubular projection which communicates with said discharge extending into the chamber in the casing, means at the opposite end of the casing for holding a frangible capsule, a puncturing-tool, means for compressing said capsule, and means for delivering the contents of the punctured capsule into the chamber in the casing.

7. The combination of a casing having a chamber to contain a vaporizable medium, said chamber having a valved discharge-tube, a hollow cap screwing onto the casing adapted to contain a frangible capsule, a puncturing-tool on the adjacent end of the casing and said casing having ports communicating with the chamber in the casing to deliver the contents of the punctured capsule.

811,865. **CENTRIFUGE ATTACHMENT FOR ELECTRIC FANS.** WILLIAM L. MOORE, Honolulu, Hawaii. Filed June 15, 1905. Serial No. 265,311.

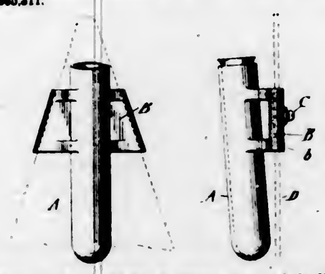

Claim.—1. An attachment for electric fans and the like, comprising a socket to receive a test-tube, and means for securing said socket to a fan-blade.

2. An attachment for electric fans and the like, comprising a socket to receive a test-tube, and lateral arms for securing said socket to a fan-blade.

3. An attachment for electric fans and the like, comprising a socket to receive a test-tube, lateral arms having flanges adapted to engage the edges of a fan-blade, and means for locking said flanges to the blade.

4. An attachment for electric fans and the like, comprising a tubular receptacle to receive a test-tube, lateral arms extending therefrom, inturned flanges on said arms, and screws for securing the arms to a fan-blade.

811,866. **FENCE-TIE.** OSCAR D. MORSE, Adrian, Mich. Filed May 25, 1905. Serial No. 262,169.

Claim.—1. In a tie for wire fencing, the combination with the crossed strand and stay wires crimped at their point of crossing, of a tie-wire in the form of a staple having its loop end contacting and crossing the strand-wire at one side of the stay-wire, legs passing in the rear of the stay-wire, the terminal of one leg being formed into a backwardly-turned eye which embraces the stay-wire close to the strand-wire, the terminal of the other leg crossing the strand-wire beyond the stay-wire in the rear of said strand-wire, its end being bent in the form of an embracing eye around the strand-wire and crossing said strand-wire obliquely in the plane of that portion of the leg crossing the outer face of the strand-wire.

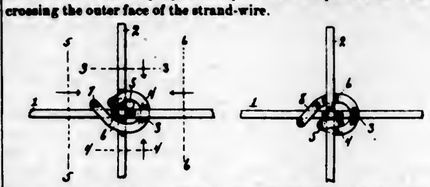

2. In a tie for wire fencing, the combination with the crossed strand and stay wires crimped at their point of crossing, of a tie in the form of a staple having its loop end contacting and crossing the outer face of the strand-wire, one leg of the staple passing in the rear of the stay-wire and in the rear of the strand-wire, its terminal being formed into an embracing eye around the strand-wire, the other leg passing in the rear of the stay-wire only and having its terminal formed into an embracing eye around the stay-wire adjacent the strand-wire.

811,867. **FURNACE.** JOHN J. O'SHEA and JEREMIAH O'SHEA, Chicago, Ill. Filed Dec. 18, 1903. Renewed Dec. 26, 1905. Serial No. 293,336.

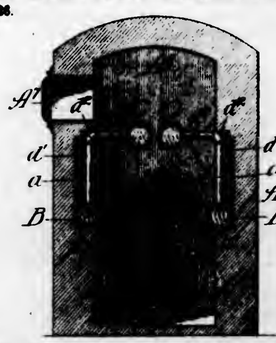

Claim.—1. In a furnace of the character described, the combination of a combustion-chamber provided with a suitable grate, substantially horizontal pipes arranged along opposite sides of the lower portion of said combustion-chamber, series of tubes rising from said pipes within said combustion-chamber, a substantially horizontal tubular grate in communication with said series of tubes, and a superposed combustion-chamber, of which said second-named grate forms the bottom, said last-named chamber having a charging-door and a smoke-stack connection, for the purpose set forth.

2. In a furnace of the character described, the combination of a combustion-chamber provided with a suitable grate and adjacent to said grate with ledges, substantially horizontal water-pipes located above said ledges, a superposed combustion-chamber, a pair of parallel pipes located between the lower and upper combustion-chambers, and water-tubes joining the pipes and comprising horizontal and vertical members, the horizontal members forming with the second-named pair of pipes a tubular grate for the upper combustion-chamber, for the purpose set forth.

3. In a furnace of the character described, the combination of a combustion-chamber provided with a suitable grate, a pair of longitudinal pipes located at the sides of said combustion-chamber near the base thereof and having ends projecting through the end walls of the furnace, a common supply-pipe for the said pipes, substantially vertical tubes rising from said first-named pipes, and a tubular grate at the upper portion of said combustion-chamber comprising in its structure substantially horizontal tube-sections and a longitudinal pipe or pipes in communication therewith and having ends projecting through the end walls of said furnace, for the purpose set forth.

4. In a furnace of the character described, the combination of a combustion-chamber provided with a suitable grate, a pair of pipes arranged at opposite sides of the lower portion of said combustion-chamber and having ends projecting through an end wall of said furnace, a transverse supply-pipe communicating with the projecting ends of said first-named pipes, a pair of centrally-located pipes at the upper portion of said combustion-chamber having ends projecting

through an end wall of the furnace, a transversely-extending outgoing pipe communicating with the projecting ends of said last-named

Claim.—1. In a furnace, a casing divided into separate heating-

of the brackets and supported by the flanges thereof and composed of

3. In a heating-device, a casing

through an end wall of the furnace, a transversely-extending outgoing pipe communicating with the projecting ends of said last-named pair of pipes, and a series of tubes connecting each member of said first-named pair of pipes with the corresponding member of said second-named pair of pipes and comprising horizontal sections forming with said pair of centrally-located pipes a tubular grate.

5. In a furnace of the character described, the combination of a combustion-chamber provided with a suitable grate and having recessed walls, a pair of pipes located in the lower portion of the recesses of said walls, a pair of centrally-located pipes having their ends supported in the end walls of said furnace above said first-named pipes, and a series of tubes connecting each member of said first-named pair of pipes with the corresponding member of said second-named pair of pipes, each tube having a substantially vertical portion lying in a recess of the corresponding wall and a substantially horizontal portion communicating with the corresponding member of said second-named pair of pipes, for the purpose set forth.

6. In a furnace of the character described, the combination of a combustion-chamber provided with a suitable grate, a pair of horizontal pipes located at opposite sides of the lower portion of said combustion-chamber and having ends projecting through the end walls of said furnace and equipped with removable plugs, a series of tubes rising from each one of said pipes within the combustion-chamber, a superposed combustion-chamber, and a tubular grate, comprising in its structure a pipe or pipes having ends projecting through the end walls of said furnace and equipped with removable plugs, and substantially horizontally disposed tubes in communication with said last-named pipe or pipes and said first-named tubes, for the purpose set forth.

811,868. **MECHANICAL MOVEMENT.** HANS J. PAARMANN, Davenport, Iowa, assignor to H. F. Brammer Manufacturing Company, Davenport, Iowa, a Corporation of Iowa. Filed Dec. 21, 1903. Serial No. 186,962.

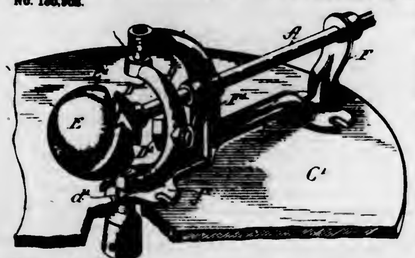

Claim.—The combination with a rotative shaft provided at its end with a spherical head having on its surface an irregular groove, and a frame in which said shaft has bearing, of an oscillatory yoke which oscillates about an axis at right angles to the axis of said rotative shaft and provided between its ends with a rotatively-mounted shoe which traverses said groove of the head, said yoke being provided at its upper end with an integral stud, and the frame being provided with a socket engaged by said stud, and the lower end of the yoke being provided with a cylindric bearing adapted to engage a bearing in said frame and provided below said bearing portion with a downwardly-opening socket.

811,869. **HOT-AIR FURNACE.** NATHAN POOR, Peabody, Mass. Filed May 5, 1904. Serial No. 206,426.

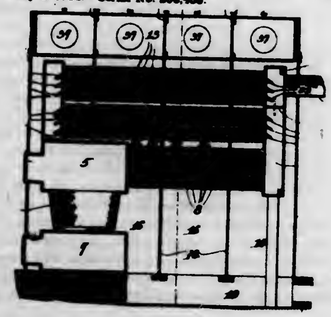

Claim.—1. In a furnace, a casing divided into separate heating-chambers, a combustion-chamber, a plurality of heating-flues through which hot gases of combustion circulate, said flues passing through the heating-chambers, and means to close all communication between said combustion-chamber and one or more of said flues.

2. In a furnace, a casing divided into separate heating-chambers, a combustion-chamber, a plurality of flues for hot products of combustion, said flues passing through said heating-chambers, and dampers for closing the ends of some of the flues.

3. In a furnace, a casing divided into separate heating-chambers, a distributing-pipe connected to each heating-chamber, a cold-air chamber common to all the heating-chambers, a combustion-chamber, flues through which the hot products of combustion from the combustion-chamber circulate, said flues extending through the heating-chambers, and means for closing all communication between said combustion-chamber and certain of the flues.

4. In a furnace, a casing divided into separate heating-chambers, a heater within said casing, said heater having a combustion-chamber, a rear chamber, flues connecting said combustion-chamber and rear chamber, a front drum, other flues connecting the rear chamber and the front drum, a smoke-chamber and still other flues connecting the front drum and smoke-chamber, said flues passing through the various heating-chambers, a distributing-pipe connected to each heating-chamber and means to close the ends of a portion of said flues.

5. In a furnace, a casing divided into separate heating-chambers, a heater within said casing, said heater having a combustion-chamber, a rear chamber, flues connecting said combustion-chamber and rear chamber, a front drum, other flues connecting the rear chamber and the front drum, a smoke-chamber and still other flues connecting the front drum and smoke-chamber, said flues passing through the various heating-chambers, a distributing-pipe connected to each heating-chamber, and means to close the ends of one or more of the flues whereby the amount of effective heating-surface in the heating-chambers can be varied.

6. In a furnace, a plurality of heating-chambers, a distributing-pipe connected to each heating-chamber, means to heat the air on its passage through said heating-chambers, and means to connect one heating-chamber to a second heating-chamber, and to simultaneously and independently connect a third heating-chamber to a fourth heating-chamber.

7. In a furnace, a plurality of separate heating-chambers, a distributing-pipe connected to each heating-chamber, means to heat the air on its passage through each heating-chamber, a distributing-trunk divided into compartments, dampers controlling openings between adjacent compartments, and other dampers controlling openings between the compartments of the trunk and the adjacent heating-chambers.

811,870. **DRINKING AND FEEDING APPLIANCE FOR BIRD-CAGES.** HERMANN QUITTNER, Berlin, Germany. Filed Dec. 20, 1904. Serial No. 237,714.

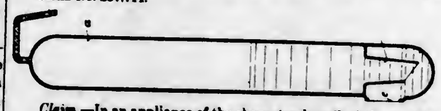

Claim.—In an appliance of the character described, the combination, with a tubular vessel closed at the top and bottom and having an aperture at one side near the bottom, of a transverse partition formed just above the upper edge of said aperture and provided with an opening, and a tube depending from said opening and having its lower end open and cut obliquely to the longitudinal axis of the tube, substantially as and for the purpose herein set forth.

811,871. **COAL-WASHER.** GEORGE S. RAMSAY, St. Marys, Pa. Filed Oct. 10, 1903. Serial No. 176,569.

Claim.—1. A coal-washer, comprising a sluiceway, an endless belt or belts, and scrapers carried by the endless belt or belts and composed of a body portion arranged to clear the sluiceway, an inclined strip of yieldable material arranged on the front face of the body portion and inclined backwardly from the direction of advance of the scrapers and having its edge engaging the bottom of the sluiceway, and means for securing the strip of yieldable material to the said body portion.

2. A coal-washer, comprising a sluiceway, sprocket-wheels, endless chains having brackets arranged at intervals and provided with seats and projecting flanges, and scrapers mounted in the seats

of the brackets and supported by the flanges thereof and composed of a body portion arranged to clear the sluiceway and having its front inclined backward from the direction of advance of the scrapers, an inclined elastic strip arranged on the front face of the body portion and supported by the same and having its edges engaging and adapted to be flexed by the sluiceway, and means for supporting the elastic strip.

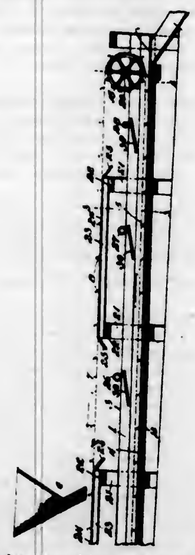

3. A coal-washer, comprising a sluiceway having a glass bottom-lining presenting a smooth surface, an endless belt or belts provided with scrapers of yielding material engaging the glass bottom, and means for feeding material and water to the sluiceway, whereby both the scrapers and the glass bottom are wet and the former are caused to adhere to the latter.

4. A coal-washer, comprising a sluiceway having a glass bottom-lining presenting a smooth upper face, an endless belt or belts provided with scrapers operating in the sluiceway, said scrapers being provided with rigid bottom portions, yielding projecting portions engaging the glass lining, and means for supplying water to the sluiceway.

5. A coal-washer, comprising a sluiceway provided with a smooth bottom-lining of glass and having metallic side linings, an endless belt or belts provided wjth scrapers having projecting yieldable portions, the edges of the yieldable portions being engaged with the bottom and sides of the sluiceway, and means for supplying water to the sluiceway.

6. A coal-washer, comprising an inclined sluiceway, scrapers operating in the sluiceway, a coal-chute discharging into the sluiceway, and a plurality of water-supply pipes arranged in spaced relation between the coal-chute and the upper end of the sluiceway, one of the pipes being of reduced diameter and discharging clear water into the sluiceway near the upper end thereof to clarify the same and expose the material carried by the scrapers.

7. A coal-washer, comprising an inclined sluiceway, an endless belt or belts provided with scrapers operating in the sluiceway, and transversely-disposed water-supply pipes of different diameters, the larger pipe being adapted to discharge water which has been used, and the smaller pipe being arranged at the upper portion of the sluiceway and discharging clear water to clarify the same and to expose to view the material carried by the scrapers.

811,872. **LACING DEVICE.** MOSES RIES, Milwaukee, Wis. Filed June 18, 1904. Serial No. 213,096.

Claim.—1. In a lacing device, a pair of flaps, curved tubular lacing-guides carried thereby, a lacing having sections for each flap passing through the lacing-guides of said flap, and intermediate lacing-guides having a pair of oppositely-curved guide-tubes through which the lacing-sections of both flaps are passed between their connections with the lacing-guides of the flaps.

2. In a lacing device, a pair of flaps, lacing-guides carried thereon comprising curved guide-tubes, a tongue member underlapping the flaps, double lacing-guides carried thereby comprising a pair of curved guide-tubes, and a lacing having portions passed through the guide-tubes of each flap independent of the other, the guide-tubes of the double lacing-guides of the tongue member receiving the lacing of each of the flaps between the guide-tubes of said flaps.

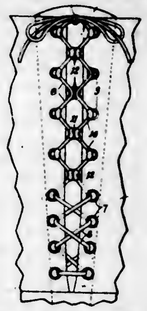

3. In a lacing device, a lacing-guide comprising a securing means, and a pair of oppositely-disposed curved guide-tubes carried thereby.

4. In a lacing device, a lacing-guide comprising a pair of joined oppositely-disposed curved guide-tubes.

811,873. **MOLDING-MACHINE.** JOHN ROEMER, Platteville, Wis. Filed May 20, 1905. Serial No. 261,472.

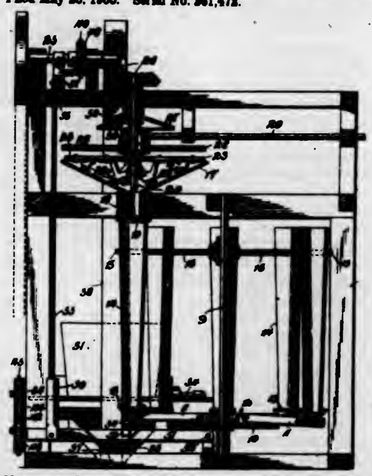

Claim.—1. In apparatus of the class described, the combination with a mold-support, of a mold mounted thereon, mixing mechanism mounted over the mold, means for delivering the material from the mixing mechanism to the mold, an elevator delivering to the mixing mechanism, and measuring mechanism delivering the material to the lower portion of the elevator.

2. In apparatus of the class described, the combination with a movable mold, of mixing mechanism mounted thereover, means for delivering the material from the mixing mechanism to the mold, an elevator located at one side of the mold-support and delivering to the mixing mechanism, and measuring mechanism located at one side of the mold-support and having a delivery-spout associated with the boot of the elevator.

3. In apparatus of the class described, the combination with a movable carrier, of a plurality of molds mounted thereon, mixing mechanism mounted thereover and including a hopper having a delivery-spout disposed at one side of the axis of rotation of the carrier, the molds on said carrier being successively movable into alinement with the spout, means for controlling the passage of material to the molds, and means for feeding material to the mixing mechanism.

4. In apparatus of the class described, the combination with a mold-support, of a mold mounted thereon, a hopper located thereover and delivering to the mold, mixing and moistening mechanism

pivotally mounted on the carrier, a vertically-movable actuating device located beneath the carrier, and means for operating the device,

said enlarged end having a central slot open at one end, a slot eccentric to the center slot communicating at right angles with its open

the receptacle covered with a protecting medium composed of compressed dinitrocellulose.

4. In apparatus of the class described, the combination with a mold-support, of a mold mounted thereon, a hopper located thereover and delivering to the mold, mixing and moistening mechanism mounted on the hopper, means for feeding material to the hopper, and a spreader located between the feeding means and hopper, and means for controlling the passage of mixed material from the hopper to the molds.

5. In apparatus of the class described, the combination with a carrier, of a plurality of molds mounted on the carrier, a hopper located over the carrier and having a delivery-spout disposed over the path of movement of the molds, mixing mechanism mounted in the hopper, means for feeding material to the hopper, and a downwardly and outwardly inclined spreader located between the feeding means and hopper and over the mixing means.

6. In apparatus of the class described, the combination with a mold-support, of a mold mounted thereon, a hopper delivering to the molds, an upright rotatable shaft, mixers carried by the shaft and located in the hopper, a downwardly-inclined conical spreader-table secured to the shaft and located over the hopper, means for delivering material upon the table, and means for controlling the passage of mixed material from the hopper to the mold.

7. In apparatus of the class described, the combination with a movable support, of molds located thereon, a hopper located thereover and delivering successively to the molds, rotatable mixing means operating in the hopper, means for controlling the passage of material from the hopper to the molds, and rotatable sprinkling means located over the hopper.

8. In apparatus of the class described, the combination with a rotatable carrier, of a plurality of molds mounted thereon and rotatable therewith, a hopper located over the carrier at one side of its axis of rotation and having a delivery-spout disposed over the path of movement of the molds and delivering to said molds, mixing and sprinkling means movably mounted in and over the hopper, means for controlling the passage of material through the delivery-spout to the molds, and means for feeding material to the hopper.

9. In apparatus of the character described, the combination with a rotary carrier, of a plurality of radiating mold-supporting arms pivoted upon the carrier, means for swinging the arms to jar the molds mounted thereon, and means for feeding concrete to the molds.

10. In apparatus of the character described, the combination with a rotary carrier, of a plurality of radiating arms pivoted at their inner ends upon the carrier, molds supported on the outer ends of the arms, means for successively swinging the arms to jar the molds mounted thereon, and means for feeding concrete to each mold while the same is being jarred.

11. In apparatus of the class described, the combination with a rotatable carrier, of a plurality of oscillatory mold-supports pivotally mounted on the carrier, and rotatable therewith, and means for successively oscillating the supports.

12. In apparatus of the character described, the combination with a movable carrier, of a plurality of molds movably mounted thereon and movable therewith, common means for successively shaking the molds, and common means for feeding material successively to the molds, said shaking and feeding means operating simultaneously on the same mold.

13. In apparatus of the character described, the combination with a movable carrier, of a plurality of molds movably mounted thereon and movable therewith, common means located below the molds for successively shaking the same, said molds being successively movable into coöperation with the shaking means, and means for feeding material successively toward the molds, said feeding means being disposed over the shaking means and operating simultaneously therewith on the same mold.

14. In apparatus of the character described, the combination with a rotatable carrier, of a plurality of radiating arms pivoted at their inner ends upon the carrier, molds mounted on the outer ends of the arms, means for successively oscillating the arms, said arms being successively movable over the operating means, and concrete-feeding means located above the oscillating means and arranged to feed material to the mold that is being operated by the oscillating means.

15. In apparatus of the class described, the combination with a vertically-movable oscillatory and pivotally-mounted mold-support, of a pivotally-mounted actuating-bar located beneath the same and movable in an upright direction, and means for effecting the movement of the bar to oscillate the support.

16. In apparatus of the class described, the combination with a rotatable carrier, of a plurality of oscillatory mold-supporting arms pivotally mounted on the carrier, a vertically-movable actuating device located beneath the carrier, and means for operating the device, said mold-supporting arms being successively movable over and into the path of movement of the actuating device upon the rotation of the carrier.

17. In apparatus of the class described, the combination with a rotatable carrier, of a plurality of mold-supporting arms pivotally mounted on the carrier, a pivoted actuating-bar located beneath the carrier, said mold-supporting arms being rotatable with the carrier and successively movable into and out of the path of movement of the actuating bar, and means associated with the bar for effecting the movement thereof.

18. In apparatus of the class described, the combination with a movable carrier, of a plurality of mold-supports movably mounted on and movable with the carrier, means located over the carrier for feeding material successively to the molds, and means located beneath the carrier for successively shaking the mold-supports while the material is being fed thereto.

19. In apparatus of the class described, the combination with a rotatable carrier, of a plurality of molds movably mounted thereon, means located above the carrier and over the path of movement of the molds for successively feeding material thereto, and means located beneath the molds for successively shaking the same while material is being fed thereto.

20. In apparatus of the class described, the combination with a rotatable carrier, of a plurality of mold-supporting arms pivotally mounted on the carrier, means for mixing and feeding material to the molds of the carrier, said means including a hopper having a delivery-spout disposed above the path of movement of the molds mounted on the arms, a shaking arm pivotally mounted beneath the carrier and beneath the spout of the hopper, said arm being arranged to engage the mold-supporting arms for successively moving the same when beneath the hopper, and common means for moving the arm and the mixing and feeding mechanism.

21. In apparatus of the class described, the combination with a support movable in an upright direction, of means for effecting the movement of the support, a cupped holder mounted on the support, and a mold having an open bottom that fits in the cupped holder.

22. In apparatus of the class described, the combination with a support movable in an upright direction, of means for effecting the movement of the support, a cupped holder mounted on the support, a guide located above the holder, and a mold slidably mounted in the guide and having an open bottom that detachably fits in the cupped holder

23. In apparatus of the class described, the combination with a mold-support, of mixing mechanism located thereover, means for feeding material from the mixing mechanism to a mold placed on the support, a revoluble spreader located over the mixing mechanism and delivering material thereto, and means for feeding material to said revoluble spreader.

24. In apparatus of the class described, the combination with a mold-support, of a hopper located thereover and delivering to the molds placed on the support, mixing mechanism operating in the hopper, a rotary spreader located over the hopper and of less diameter than the same, means for feeding material to the spreader, and a sprinkler located over the hopper and beneath the spreader, said sprinkler delivering water to the hopper.

25. In apparatus of the class described, the combination with material-mixing means, of means for sprinkling water slowly thereupon during the stirring action, means for feeding the mixture to a mold, and means for imparting a shaking movement to the mold during the feeding action to compact the material therein as rapidly as it is fed thereto.

26. In apparatus of the class described, the combination with material-mixing means, of means for moistening the material while being mixed, means for feeding the mixture to a mold, and means for shaking the mold during the feeding action.

27. In apparatus of the class described, the combination with means for measuring material and mixing the same in a dry state, of means for thoroughly stirring the mixture and sprinkling water slowly thereupon during the stirring action, means for feeding the mixture to a mold, and means for imparting a shaking movement to the mold during the feeding action to compact the material therein as rapidly as it is fed thereto.

811,874. **WINDOW-SHADE BRACKET.** EMMA M. RUFF, Brooklyn, N. Y. Filed Sept. 26, 1905. Serial No. 280,114.

Claim.—1. A bracket for a shade-roller, consisting of a plate enlarged at one end, its other end terminating in an attaching-screw, said enlarged end having a central slot open at one end, a slot eccentric to the center slot communicating at right angles with its open end, a recess communicating at right angles with said open end at the other side of the central slot, and an open slot communicating with the eccentric slot and the recess in alinement with the central slot, for the purpose stated.

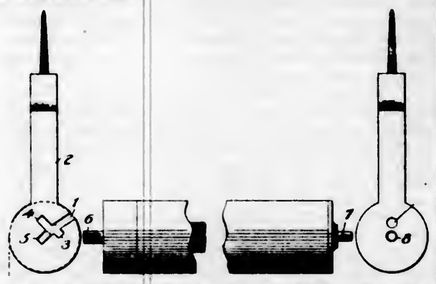

2. A bracket for shade-roller, consisting of a plate enlarged at one end, its other end terminating in an attaching-screw, said enlarged end having a central slot open at one end, a slot eccentric to the center slot communicating at right angles with its open end at one side, a recess communicating with said open end at right angles to the other side of said central slot, and an open slot communicating with the eccentric slot and said recess in alinement with the central slot, in combination with a companion bracket having a pair of openings, one central and the other eccentric thereto, for the purpose stated.

811,875. **INSECT-CATCHER.** JACOB SAMUELS, Chicago, Ill., assignor to Bee-Hive Fly Catcher Company, Kenosha, Wis., a Corporation of Wisconsin. Filed Apr. 4, 1904. Serial No. 201,507.

Claim.—1. An insect-catcher comprising two helical members coated with an adhesive substance, the axes of which members are substantially coincident.

2. An insect-catcher made from a piece of sheet material, said material having two spiral slits therein whose axes are substantially identical, the material between said slits being connected by a central portion, whereby said sheet may be extended in the direction of its thickness, portions of said sheet material being coated with an adhesive substance.

811,876. **MEANS FOR CORKING OR CLOSING BOTTLES OR OTHER RECEPTACLES.** CONRAD SCHROEDER, Milwaukee, Wis. Filed Oct. 15, 1904. Serial No. 228,608.

Claim.—1. A stopper or closure for receptacles, consisting of a device adapted to be applied to and close the opening of a receptacle, the said device having the surface thereof which is exposed to the contents of the receptacle covered with a protecting medium of dinitrocellulose, said protecting medium being of dinitrocellulose both when originally applied to the stopper or closure, and after application thereto.

2. A stopper or closure for receptacles, consisting of a device adapted to be applied to and close the opening of a receptacle, the said device having its entire surface covered with a protecting medium of dinitrocellulose said protecting medium being of dinitrocellulose both when originally applied to the stopper or closure, and after application thereto.

3. A stopper or closure for receptacles, consisting of a device adapted to be applied to and to close the opening of a receptacle, said device having the surface thereof which is exposed to the contents of the receptacle covered with a protecting medium composed of compressed dinitrocellulose.

4. A stopper or closure for receptacles, consisting of a device adapted to be applied to and to close the opening of a receptacle, said device having its surface covered with a protecting medium, the said protecting medium composed of compressed dinitrocellulose.

811,877. **PHONOGRAPH-HORN.** CAMILLUS A. SENNE, New York, N. Y. Filed Nov. 1, 1904. Serial No. 231,008.

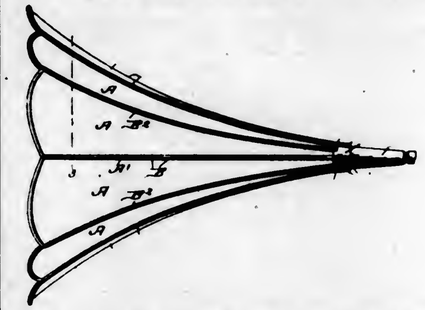

Claim.—1. A horn comprising a series of blades, each having flanges upon their longitudinal edges, ribs engaging said flanges, and a sleeve having tubular portions in which the alternate ribs are held.

2. A horn comprising a series of blades, each having flanges upon their longitudinal edges, ribs engaging said flanges, a sleeve having tubular portions in which the alternate ribs are held, and a tube-nozzle for supporting the said sleeve.

3. A horn comprising a series of blades, each having flanges upon their longitudinal edges, ribs engaging the flanges, the alternate ribs projecting beyond the inner ends of the blades, a sleeve having tubular sections in which the projecting ends of the ribs are held, a tube-nozzle for supporting the sleeve and strips engaging the remaining alternate ribs.

4. A horn comprising a series of flanged blades arranged in pairs, the blades of each pair being united by means of ribs which extend beyond the inner ends of the blades, tubular ribs for uniting the abutting edges of each pair, and means for engaging the projecting ends of the first-named ribs.

5. A horn comprising a series of blades arranged in pairs each pair having a rib projecting therefrom, a sleeve having tubular portions in which the projected ends of the ribs are held, tubular ribs for uniting the edges of each pair of blades, strips arranged within the said tubular ribs, and a tube-nozzle for supporting the sleeve.

6. A horn comprising a series of tapering blades, each being flanged upon their longitudinal edges, tubular ribs engaging the abutting flanges of each blade for locking the said blades together, the alternate ribs projecting beyond the inner ends of blades, a sleeve having tubular sections in which the projected ends of the ribs are held, and a tube-nozzle for supporting the sleeve.

7. A horn comprising a series of blades, each being tapered from its outer to its inner end, and flanged along the said tapering edges, tubular ribs engaging the flanges for uniting the blades, the alternate ribs projecting beyond the blades and made solid, strips arranged within the opposite alternate ribs, and a sleeve connected to the projected ends of the ribs.

8. A horn of the kind described, comprising a series of tapering blades arranged in pairs, each blade being flanged upon its longitudinal tapering edges, said blades being arranged in pairs, ribs engaging the flanges to unite the blades to form the pairs, said ribs projecting beyond the inner ends of each pair, a sleeve having tubular portions in which the projected ends of the ribs are held, tubular ribs engaging the abutting flanges of each pair, and strips arranged within the last-named ribs.

9. A horn of the kind described, comprising a series of tapering blades, each having a flange upon its longitudinal edges, said blades being arranged in pairs, and held together by tubular ribs, the ends of which project beyond the inner ends of the blades, a sleeve having tubular portions in which the projected ends of the ribs are held, tubular ribs engaging the abutting flanges of each pair of blades, semi-cylindrical strips arranged within the last-mentioned ribs and engaging the flanges of the blades for the purpose specified.

10. A horn comprising a series of longitudinal tapering blades, each having its longitudinal edges bent outwardly and inwardly to form flanges which diverge when the abutting edges of the flanges are placed together, tubular ribs fitting over the flanges, the alternate ribs projecting beyond the inner ends of the blades, a sleeve having tubular sections in which the said projecting ends of the ribs are held, the remaining alternate ribs being of the same length as the blades, and strips arranged within the last-mentioned ribs, said strips having one end bent to provide a ring all substantially as and for the purpose specified.

811,878. STEAM-TURBINE. WILLIAM B. SHEPARD, Paris, France. Filed July 13, 1904. Serial No. 216,274.

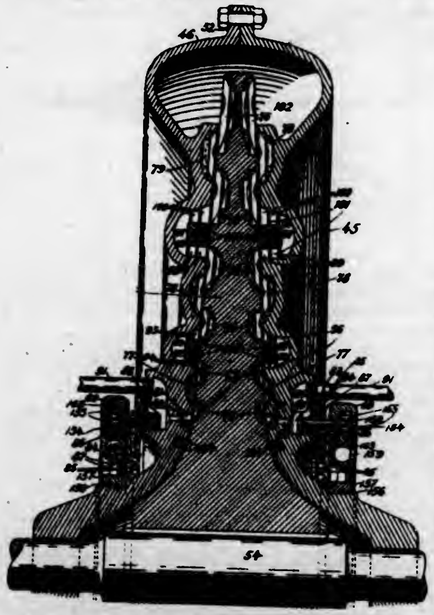

Claim.—1. An elastic-fluid turbine comprising a rotating disk and fixed envelop having reëntrant inclosed guiding-passages so constructed on each that the coördination of the fixed and moving inclosed guiding-passages, present a free, direct and unobstructed passage for the fluid to exhaust in a continuous and radial sinusoidal movement.

2. An elastic-fluid turbine comprising a rotating disk, having concentric rows of radially-positioned inclosed reëntrant guiding-passages on one side thereof adapted to receive an elastic motive fluid at one end and reflect it in a backward direction at the other end as regards each of said passages; said ends being parallel with each other and located along the same radial line.

3. An elastic-fluid turbine comprising a rotating disk and fixed envelop having reëntrant inclosed guiding-passages successively longer and longer from the admission-passages, and so constructed in each that the coördination of the fixed and moving guiding-passages present an open, continuous, and unobstructed passage, of continuously-increasing cross-section from the entrance of the passage to the exhaust.

4. An elastic-fluid turbine comprising a rotating disk having concentric rows of reëntrant inclosed guiding passage-ways on one side thereof, means for continuously delivering to said passage-ways at their ends nearest to the axis an elastic motive fluid of a predetermined and uniform density whereby they are caused to exhaust said fluid in tangential directions with respect to the direction of rotation of the disk at their ends farthest from the axis, the two ends of each passage-way being disposed on the same radial line relatively to the axis of said disk.

5. An elastic-fluid turbine comprising a rotating disk having reëntrant inclosed guiding-passages in concentric rows on one side thereof adapted to receive an elastic motive fluid in a forward tangential direction at their ends nearest the axis, reflecting it in a backward tangential direction at their ends farthest from the axis, in combination with ports in concentric rows communicating between any exhaust end of any of said passages and the next succeeding admission end, the ends of the ports and passages being grouped in radial lines.

6. An elastic-fluid turbine comprising a rotating disk having two or more concentric circular series of curved, radially-positioned guiding-surfaces therein, a series of nozzles adapted to project the motive fluid against each of said series of guiding-surfaces in succession, and means for taking up steam-exhaust from the first series and directing it into the nozzles of the second series.

7. An elastic-fluid turbine comprising a rotating disk having concentric rows of reëntrant inclosed guiding-passages on one side thereof, whose openings are radially disposed and adapted to receive an elastic motive fluid and reflect it in a backward direction, in combination with one or more expansion-nozzles adapted to project a stream of elastic motive fluid into said passages in a partly or wholly tangential direction.

8. An elastic-fluid turbine comprising a discoid rotating member and an envelop therefor, each having reëntrant inclosed guiding-passages so constructed that the coördination of these guiding-passages shall present an open and continuous passage of gradually and continuously increasing section and length from the entering end to the exhaust end.

9. An elastic-fluid turbine comprising a rotating member, a stationary member juxtaposed thereto, a plurality of circular series of reëntrant inclosed guiding-passages on the adjacent sides of said two members, each adapted to receive the motive fluid from the other and reflect it back, and means for directing one or more streams of such fluid into the innermost series of rotating passages whereby said fluid is caused to pass radially outward, acting a succession of times upon said rotating member to impel the same, each rotating reëntrant guiding-passage consisting of a recess in the face of said rotating member with plane sides and a curved bottom and top.

10. An elastic-fluid turbine comprising a rotating member having circular series of guiding-surfaces upon one face thereof adapted to receive and reflect a current of elastic motive fluid, a stationary member juxtaposed to said rotating member and having a receiving-chamber formed therein opposite to and between two of said circular series, said chamber having passage-ways arranged to receive the fluid from one series and project it against the next, and means for projecting a current of said fluid against the first series.

11. An elastic-fluid turbine comprising a rotating member having circular series of guiding-surfaces upon one face thereof adapted to receive and reflect a current of elastic motive fluid, a stationary member juxtaposed to said rotating member and having a receiving-chamber formed therein opposite to and between two of said circular series, said chamber having passage-ways arranged to receive the fluid from one series and project it against the next, means for separating said two series from each other to prevent the fluid from passing from one to the other except through said receiving-chamber thus causing different pressures to prevail in the respective series and enabling the expansion to take place by successive steps or stages.

12. A multiple-stage expansion-turbine comprising a discoid rotating member having circular series of guiding-surfaces upon one face thereof adapted to receive and reflect a current of elastic motive fluid, one or more expansion-nozzles arranged to direct a current of said fluid against the first of said series, a receiving-chamber opposite and between two of said series, passage-ways adapted to receive said fluid from one of said series and conduct it into said chamber, one or more expansion-nozzles leading from said chamber and directing said fluid against the other series, and packing means isolating the steam leaving the first nozzle or nozzles from the others, whereby the expansion takes place in successive stages.

13. An elastic-fluid impulse-turbine comprising a rotating discoid member having a plurality of sets of circularly-arranged guiding surfaces adapted to receive the motive fluid in a partially-tangential direction and reflect the same, absorbing a portion of its kinetic energy, stationary members juxtaposed to the respective sides and each having guiding-surfaces opposite to and between those on the rotating member and adapted to receive the steam from one set and deliver it to another set of said surfaces, one or more receiving-chambers opposite to and between another pair or pairs of said rotating sets of guide-surfaces, passage-ways adapted to receive said fluid from one set and deliver it to said receiving-chamber and expansion-nozzles adapted to project the steam from said receiving-chamber against the next set of said rotating guide-surfaces, expansion-nozzles adapted to deliver the fluid at initial pressure against the first set of said rotating guide-surfaces, and means for confining the fluid undergoing each stage of expansion.

14. An elastic-fluid turbine comprising a discoid rotating member having a plurality of circular series of crescent-shaped inclosed expanding passage-ways on one side thereof, each arranged to receive the motive fluid in a partially-tangential direction at the inner end and reflect it in a partially-tangential direction at the outer end, whereby said fluid has a radially-outward motion, and a circular series of impelling-nozzles on the casing adjacent and opposite to said rotating passage-ways and adapted to direct said fluid into the latter.

15. An elastic-fluid turbine comprising a discoid rotating member having a plurality of circular series of crescent-shaped hollows forming buckets on one side thereof, each arranged to receive the motive fluid in a partially-tangential direction at the inner end and reflect it in a partially-tangential direction at the outer end, whereby said fluid has a radially-outward motion, a circular series of tangentially axially positioned impelling-nozzles adjacent and opposite to said rotating buckets and adapted to direct said fluid against the latter, and a plurality of valves adapted to close independently the respective nozzles.

16. An elastic-fluid turbine comprising a discoid rotating member having a plurality of circular series of laterally-reëntrant buckets extending into one side thereof, each arranged to receive a motive fluid with respect to said buckets tangentially at the inner end which is at a certain distance from the center of said member, and to reflect it oppositely and parallel to the tangential direction of admission at the outer end of said bucket at a distance from the center greater than the inner end above mentioned, a circular series of impelling-nozzles respectively opposite to said rotating buckets and adapted to direct said fluid against the latter, a plurality of valves adapted to close independently the said nozzles respectively, and means for successively opening and closing said valves in accordance with variations of the load.

17. An elastic-fluid impulse-turbine comprising a rotating discoid member having several concentric series of crescent-shaped inclosed expanding passage-ways formed in the face thereof, the passage-ways of each series being adapted to receive the motive fluid in a tangential direction at their inner ends and reflect and discharge it backwardly at their outer ends, one or more stationary sets of similar inclosed expanding passage-ways in the casing arranged opposite and adjacent to and between the successive pairs of concentric series of rotating passage-ways and adapted to receive the fluid from one set and reflect and discharge it into the next set, the passage-ways of the several series being arranged in radial ranks, and means for projecting a current of said fluid into the passage-ways of the innermost series.

18. An elastic-fluid impulse-turbine comprising a rotating discoid member having several concentric series of buckets formed in the face thereof, the buckets of each series being adapted to receive the motive fluid in a partially-tangential direction at their inner ends and reflect and discharge it backwardly at their outer ends, one or more stationary sets of buckets arranged opposite and adjacent to and between the successive pairs of concentric series of rotating buckets and adapted to receive the fluid from one set and reflect and discharge it into the next set, and means for projecting a current of said fluid against the buckets of the innermost set, in conjunction with one or more annular receiving-chambers taking the place of some of said stationary sets of buckets and having passage-ways receiving the fluid from one set of rotating buckets and expansion-nozzles discharging it against the next outer set, and packing-rings interposed between said passage-ways and nozzles and isolating the several stages of expansion of said fluid.

19. In an elastic-fluid turbine, a disk-shaped wheel having buckets formed in its side, each comprising a segmental obliquely-disposed recess substantially semicircular in outline but having an oblique straight tangential portion at one end thereof.

20. In an elastic-fluid turbine, a disk-shaped wheel having buckets formed in its side, each comprising a segmental obliquely-disposed recess substantially semicircular in outline but having an oblique straight tangential portion at the entering end thereof.

21. In an elastic-fluid turbine, a disk-shaped wheel having buckets comprising segmental obliquely and radially disposed recesses formed in it, and a semicircular block arranged near the center of each said recess so as to close the central part thereof.

22. In an elastic-fluid turbine, a disk-shaped rotating member having a plurality of circularly-arranged buckets therein, said buckets being formed of oblique radially-set plates embedded in said member, the latter having an annular recess traversed by said plates, and semicircular oblique-faced blocks between said plates, closing the central part of the aperture of each bucket.

23. In an elastic-fluid turbine a disk-shaped rotating member having several concentric circular series of radially-disposed buckets, said buckets being formed by circular grooves or recesses in the side of said member and obliquely-set radially-disposed plates traversing said grooves and embedded in said member.

24. In an elastic-fluid turbine, a disk-shaped rotating member having several concentric circular series of radially-disposed buckets, said buckets being formed by circular grooves or recesses and obliquely-set radially-disposed plates each traversing all of said grooves and embedded in said member.

25. In an elastic-fluid turbine, the combination of a body-piece and a separately-formed bucket member, secured thereto and comprising a segmental circularly-recessed piece and radially-disposed plates set oblique to the surface and traversing the recess.

26. In an elastic-fluid turbine, buckets comprising a circularly-recessed piece, radially-disposed plates set oblique to the surface and traversing the recess, and a member or members closing the central portion of the aperture of said recess.

27. In an elastic-fluid turbine, a bucket formation comprising a cast-metal piece having obliquely-set radially-disposed plates cast thereinto and recesses formed between the adjacent plates, blocks interposed between the successive plates, and closing the central portion of the aperture of said buckets, and fastenings passing through the plates and blocks and securing the whole rigidly together.

28. An elastic-fluid turbine comprising a wheel having several circular series of buckets on each face, a casing surrounding said wheel and juxtaposed to the faces thereof and carrying likewise one or more concentric circular series of buckets, the latter being opposite to and between pairs of said buckets; an annular steam-chest formed in said casing; a ring of expansion-nozzles arranged to direct a current of motive fluid against the first series of wheel-buckets; ports connecting the nozzles individually with the steam-chest; individual valves adapted to close the respective ports annular receiving-chambers formed in said casing opposite to and between two adjacent series of wheel-buckets; a circular row of passage-ways adapted to conduct the fluid from the inner of said adjacent series to said receiving-chamber; a ring of secondary expansion-nozzles adapted to project the fluid in said chamber against the outer of said adjacent series; a ring of packing material between the casing and the wheel opposite said chamber and between said adjacent series of wheel-buckets; and an annular exhaust-chamber formed in said casing around the outer margin of said wheel.

29. In a multiple-expansion elastic-fluid turbine in conjunction with a wheel member, a construction for a receiving-chamber comprising a stationary member having an annular recess adjacent to the wheel, an annular block or segment closing the central part of the opening of said recess so as to leave passage-ways on each side thereof; and a series of transverse guide-plates forming partition across said chamber and passage-ways.

30. In a multiple-expansion elastic-fluid turbine in conjunction with a wheel member a construction for a receiving-chamber comprising a stationary member having an annular recess adjacent to the wheel, an annular block or segment closing the central part of the opening of said recess so as to leave passage-ways on each side thereof; and a series of transverse guide-plates cast in said block or segment and bent obliquely forward at the opening of said passage-ways, forming partitions across said chamber and passage-ways.

31. In an elastic-fluid turbine, a steam-packing between a stationary and rotating part comprising a ring of packing material set in a groove in one part, screws in said part adapted to thrust said ring forward against the other part, and other screws in the same part adapted to draw the ring back against said first-mentioned screws, whereby the ring is held rigidly in place in close juxtaposition to, but not necessarily in contact with the other part.

32. An elastic-fluid turbine, a rotating member a stationary member juxtaposed thereto, and having an annular groove, a packing-ring in said groove, screws at the back of said groove adapted to thrust said ring forward, and other screws at the back of said ring adapted to draw said ring back.

33. An elastic-fluid turbine comprising a wheel having an a surface on each side thereof, a casing juxtaposed thereto and having a circular ring of nozzles on each side of the wheel, a circular row of valves on each side governing the nozzles, a pair of regulating-rings governing the valves on the respective sides and means interconnecting the two regulating-rings, whereby they are caused to turn simultaneously, thereby opening the same number of valves on each side whereby end thrust due to unbalanced pressure is avoided.

34. An elastic-fluid turbine comprising a rotating disk and fixed envelop having inclosed guiding-passages on each, reëntrant obliquely to the plane of rotation, and so relatively located that the coördination of the passages presents a radially sinusoidal path for the fluid.

36. In an elastic-fluid turbine, rotating and fixed elements each having passages in concentric rows, and coördinated into sinusoidal paths which are respectively in planes oblique to the plane of rotation of said rotating element, and which extend radially outward from the center of rotation, the passages in succession from the center out being longer and longer radially, wider and wider circularly, and deeper and deeper obliquely to the plane of rotation.

36. In an elastic-fluid turbine, the combination of a rotating member having concentric circular rows of inclosed passages reëntrant obliquely to the plane of rotation of the rotating member, each passage being adapted to guide the elastic fluid radially outward from the axis of rotation, and successively forward and backward with respect to the direction of rotation of said member, and a stationary member having concentric circular rows of ports, each port serving to guide the elastic fluid from the exhaust end of one of the passages first named in one circular row, to the admission end of one of the passages in the next row on the rotating member, the admission ends being nearer the axis of rotation than the exhaust ends, and the two ends of any passage being about radially in line with each other.

37. An elastic-fluid turbine, comprising a shaft, a disk thereon, whose axis is the axis of said shaft, and rows of reëntrant guiding inclosed passages for the fluid, at different distances from said axis, any one of said passages extending first inwardly from one side of said disk toward the other side thereof, and at the same time obliquely of both of said sides and of the axis of said disk, and secondly, toward the first-named side from the second-named side of said disk, and at the same time both obliquely of said axis and of said sides.

38. In an elastic-fluid turbine, a discoid rotating body having formed on one face thereof a plurality of circular series of reëntrant buckets, the buckets having their openings radially disposed and the buckets in the several series being disposed in radial ranks, the openings of a bucket in each series on one radial line; and means for directing a current of impelling fluid against the innermost series, receiving it therefrom and redirecting it against the next outer series, and so on to the outermost series.

39. In an elastic-fluid turbine, a discoid rotating body having formed on one face thereof a plurality of circular series of reëntrant buckets, the buckets having their openings radially disposed and the buckets in the several series being disposed in radial ranks, the openings of a bucket in each series on one radial line; an envelop having a face coöperating therewith and in juxtaposition thereto and having thereon similar circular series of reëntrant buckets, the latter being disposed likewise in radial ranks coinciding with those of said rotating body; and means for directing a current of impelling fluid against the innermost side of the innermost rotating buckets, which current is reflected back and forth passing radially outward to the outer ends of the outermost rotating buckets.

811,879. **HOT-AIR ENGINE.** FAIRIS N. SILVEY, Boaz, Ala. Filed May 19, 1905. Serial No. 261,194.

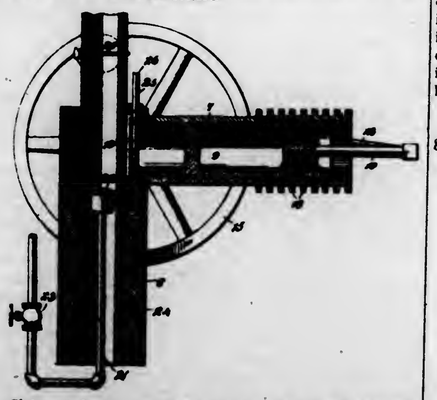

Claim.—1. In an engine of the class described, the combination with a working chamber and a motive-fluid chamber joined thereto and communicating therewith, of a piston operating in the working chamber, a displacer operating in the motive-fluid chamber, and means for heating the motive-fluid chamber at its juncture with the working chamber and creating a draft of air against certain of the walls of the motive-fluid chamber to cool the portions of the same that are separated from the working chamber.

2. In an engine of the class described, the combination with a working chamber and a motive-fluid chamber, of a piston operating in the working chamber, a displacer operating in the motive-fluid chamber, an open flue extending through the motive-fluid chamber and connected to opposing walls thereof, constituting a reinforcement for said walls and means for creating a draft through said flue to cool a portion thereof and of the chamber.

3. In an engine of the class described, the combination with a casing having a working chamber and motive-fluid chamber, of a piston operating in the working chamber, a displacer operating in the motive-fluid chamber, a flue extending through the motive-fluid chamber and connected to the opposing heads thereof, constituting a reinforcement therefor, and a heater located in the flue and heating a portion thereof to heat the motive-fluid chamber, said heater also creating a draft through a portion of the flue to cool the same.

4. In an engine of the class described, the combination with a casing having a working chamber and a motive-fluid chamber communicating therewith, of a flue extending longitudinally through the motive-fluid chamber and connected to opposing walls, forming a reinforcement therefor, said flue having an inlet and an outlet, a piston operating in the working chamber, a displacer-body operating in the motive-fluid chamber and surrounding the flue, and a heater located in the flue contiguous to the juncture of the chambers.

5. In an engine of the class described, the combination with a casing having a working chamber and a motive-fluid chamber disposed in convergent relation, said chambers communicating at their points of convergence, a flue extending longitudinally through the motive-fluid chamber and constituting a reinforcement therefor, a heater in the flue heating a portion of the motive-fluid chamber and causing a draft of air to cool another portion, a working piston operating in the working chamber, a displacer operating in the motive-fluid chamber longitudinally of the flue, and means for effecting the operation of the displacer.

6. In an engine of the class described, the combination with a casing having a working chamber and a motive-fluid chamber disposed in convergent relation, the inner convergent ends of said chambers being in communication, a flue extending longitudinally through the motive-fluid chamber, a piston operating in the working chamber, a tubular displacer operating in the motive-fluid chamber and surrounding the flue, and a heater located in the flue contiguous to the juncture of the chambers and heating said juncture, said heater causing a draft of air through the outer portion of the flue to heat the corresponding portion of the motive-fluid chamber.

7. In an engine of the class described, the combination with a horizontally-disposed working cylinder, of a depending substantially upright motive-fluid cylinder having direct communication with the working cylinder at its upper end, a piston operating in the working cylinder, a flue extending longitudinally through the motive-fluid cylinder and connecting the ends thereof, a tubular displacer operating longitudinally in the motive-fluid cylinder and surrounding the flue, means for actuating the displacer, and a heater located in the flue, said heater heating the upper portion of the motive-fluid cylinder at the juncture thereof with the working cylinder and effecting a draft of air through the lower portion of the flue to cool the lower portion of said motive-fluid cylinder.

811,880. **LATCH.** JAMES O. STEENBLAND and WILLIAM WEAVER, Blanchardville, Wis. Filed Apr. 25, 1905. Serial No. 257,230.

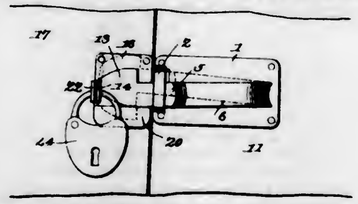

Claim.—1. A latch comprising an attaching-plate having a slot provided with corresponding inwardly-directed bearing projections, and a swinging latch having a flat pivot member passing through the slot and capable of rocking upon the bearing projections of said slot.

2. A latch comprising an attaching-plate having a slot provided with corresponding inwardly-directed projections, and a swinging latch having a flat pivot member passing through the slot and projected at the opposite side of the plate to form a handle for manipulating the latch, said pivot member engaging the projections of the slot as bearing-points.

3. In a latch, the combination of a swinging latch member provided with a catch-head having a laterally-directed perforate ear, a keeper including an attaching-plate and a laterally-directed flange provided with a seat to receive the catch-head, and a supplemental keeper provided at one end with a lateral perforate ear having a perforation, said supplemental keeper capable of being connected to the attaching-plate of the main keeper with its ear at either end thereof, the perforate ears of the supplemental keeper and the latch being adapted to receive the shackle of a lock.

4. In a latch, the combination of an attaching-plate having a transverse loop at one end thereof and provided at its opposite end with an opening, a swinging latch member having a handle upon its outer side and provided with a pivot member fitted in the opening of the plate, the free portion of the latch member working in the loop and provided at its extremity with an arrow-head catch having a laterally-directed ear provided with a perforation, a main keeper including an attaching-plate having a laterally-directed flange provided with an opening to receive the head of the latch and also provided with a downwardly-inclined guide-lip at the outer edge of the flange, and a reversible supplemental keeper capable of connection with the attaching-plate of the main keeper and provided with a laterally-directed ear having a perforation, the perforate ears of the supplemental keeper and the latch being adapted to receive the shackle of a lock.

811,881. **BABY-TENDER.** GEORGE P. STEINBACH, Baltimore, Md. Filed Jan. 4, 1905. Serial No. 239,600.

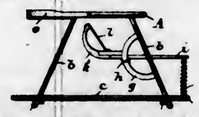

Claim.—1. A baby-tender having in combination a stationary body-surrounding device; a seat having pivots or trunnions and supported to permit movement independently of said surrounding device and provided with an arm projecting rearward from the seat and also provided with a standard attached centrally to said seat and projecting forward therefrom; a strip of fabric having one end secured to the seat and the other secured to the said standard and unsupported between its ends; and means connected with said rear projecting arm to cause a yielding resistance when a child is on the seat.

2. The combination of a stationary body-surrounding device; a rigid seat, F, supported below said body-surrounding device to permit vertical movement independent thereof; a standard, *k*, attached to said rigid seat and projecting centrally therefrom forward and upward; and a strip of flexible fabric extending in an inclined position with respect to said rigid seat and free to yield or move independently of the seat, whereby when the front of the seat and said standard tilt downward the child which was resting on the rigid seat will slip forward from said seat and rest on said flexible inclined strip of fabric.

811,882. **WATER-CLOSET.** CHARLES A. SULLIVAN, Windsor, Canada. Filed Jan. 3, 1905. Serial No. 239,282.

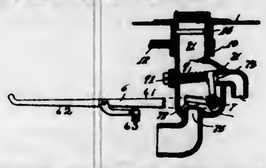

Claim.—A connection between the flush-tank and a closet-bowl provided with valve-seats adapted to be alternately opened and closed by valves oscillating on a common center, a valve-shaft on said center and valve-carrying arms secured to said shaft, substantially as described.

811,883. **UPHOLSTERING APPARATUS.** MATHIAS TAUBER, Chicago, Ill., assignor of one-half to Edward Pokorny, Chicago, Ill. Filed June 21, 1905. Serial No. 266,264.

Claim.—1. An upholstering apparatus comprising means for piercing the backing material, and a movable frame carrying a plurality of tubes adapted to extend through the openings thus formed for keeping said openings clear of the stuffing material.

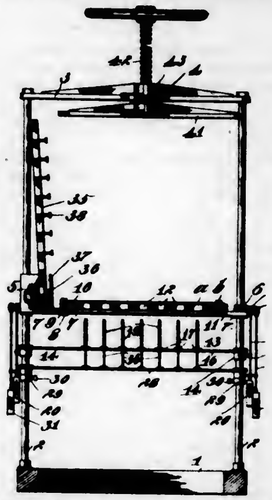

2. An upholstering apparatus comprising means for piercing the backing material, and means for keeping the openings thus formed clear of the stuffing material, said last-mentioned means comprising movably-supported tubes adapted to extend through said openings.

3. An upholstering apparatus comprising a supporting-framework, a frame slidably mounted in said framework and carrying a plurality of needles for piercing the backing material, and a second frame, also slidably mounted in said framework, carrying a plurality of tubes through which said needles are adapted to extend, said tubes being adapted to extend through the openings formed by said needles.

4. An upholstering apparatus comprising a perforated work-board for supporting the work, a plurality of tubes arranged to be moved through the perforations in said work-board and adapted to extend into the materials being operated upon, and a plurality of needles arranged to be moved into and out of said tubes.

5. An upholstering apparatus comprising a perforated work-board for supporting the work, and two independently-movable frames, one of said frames carrying a plurality of tubes adapted to be projected through the openings in said work-board, and the other frame carrying a plurality of needles each adapted to fit within one of said tubes.

6. An upholstering apparatus comprising a perforated work-board for supporting the work, a plurality of tubes adapted to be moved into and out of the openings in said work-board, and a plurality of needles adapted to be moved into and out of said tubes, the upper ends of said tubes being adapted to receive the shanks of the buttons and support the heads thereof.

7. An upholstering apparatus comprising a supporting-framework, a work-board pivotally mounted therein, a presser-board for forcing buttons through a portion of the materials being operated upon, which presser-board has a connection with said framework permitting a pivotal and a rectilineal movement of said presser-board, said presser-board carrying a plurality of pins each adapted to engage a button.

8. An upholstering apparatus having means for forcing buttons through a portion of the materials being operated upon, said means comprising a presser-board, pivot-pins for said presser-board, supporting members having elongated openings therein in which said pivot-pins are adapted to lie, and means for moving said presser-board bodily in a straight line.

9. In an upholstering apparatus, in combination, a work-board; means for piercing material laid on said work-board; tubes adapted to be projected through the openings thus formed for keeping the openings clear of the stuffing material; and means for forcing buttons through a portion of the materials being operated upon.

10. In an upholstering apparatus, in combination, a pivotally-mounted work-board; means for piercing material laid on said work-

board; tubes adapted to project through the openings thus formed for keeping the openings clear of the stuffing material; and means comprising a pivotally-mounted presser-board for forcing buttons through a portion of the materials being operated upon.

811,884. SALICYLIC-ACID METHYLENE ACETATE AND PROCESS OF MAKING SAME. FRIEDRICH W. S. VALENTINER, Leipsic, Germany. Filed May 12, 1905. Serial No. 260,123. (Specimens.)

Claim.—1. The herein-described method of producing salicylic-acid methylene acetate consisting in reacting on acetyl salicylic acid with formaldehyde.

2. The new composition of matter having the formula $C_{16}H_{16}O_5$ constituting salicylic-acid methylene acetate, soluble in water and melting at 108°, as described.

811,885. WRENCH. WILLIAM WEBB and WARNER W. HILBRETH, Gloversville, N. Y. Filed Oct. 11, 1905. Serial No. 282,355.

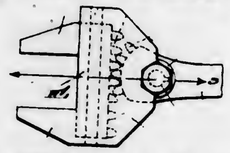

Claim.—1. A wrench comprising a handle with rack-teeth at the end thereof, a bolt mounted in an aperture in said handle, a lug projecting from said bolt and engaging an offset in the aperture of the handle, a pivotal jaw having shank portion with walls spaced apart and pivotally mounted upon said bolt, a laterally-movable jaw mounted between the parallel walls of the pivotal jaw and having rack-teeth engaging the teeth of said handle, a locking-lever having a threaded aperture and fitted over the threaded end of said bolt and designed to coöperate with the bolt and walls of the pivotal jaw to hold the laterally-movable jaw in an adjusted position, as set forth.

2. A wrench comprising a handle with rack-teeth at the end thereof, a bolt mounted in an aperture in said handle, a lug projecting from said bolt and engaging an offset in the aperture of the handle, a pivotal jaw having shank portion with walls spaced apart and pivotally-mounted upon said bolt, a laterally-movable jaw mounted between the parallel walls of the pivotal jaw and having rack-teeth engaging the teeth of said handle, a rib projecting from the inner face of one of the walls of the pivotal jaw and having a play in a recess formed in the shank portion of the laterally-movable jaw, a lever having a threaded aperture fitted over the threaded end of said bolt and adapted to coöperate with the bolt and walls of the pivotal jaw to hold the laterally-movable jaw in an adjusted position, as set forth.

811,886. CONSTRUCTION OF SUBMARINE BOATS. THOMAS H. WHELESS, New York, N. Y. Filed Nov. 3, 1903. Serial No. 179,745.

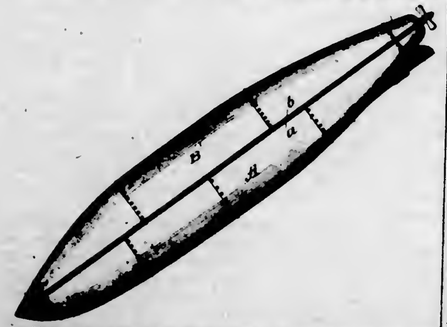

Claim.—1. A hull for submarine boats, consisting of two separate structures provided with flanges along the edges thereof, the said flanges being secured together to form a hull, with angle-irons secured in the fillets of said flanges, substantially as described.

2. In a hull for submarine boats, the combination with a lower flanged member, of an upper flanged member adapted to be secured to the lower, means for securing said flanges together, and longitudinal stiffeners for strengthening the fillets of said flanges, substantially as described.

3. In a hull for submarine boats, the combination with one member provided with a flange along the periphery thereof, of a second member provided with a similar flange registering with the first, means for securing said flanges together, whereby a complete hull is formed, and angle-irons secured in the fillets of said flanges, substantially as described.

4. A hull for submarine boats comprising bow and stern castings, flanged upper and lower members secured to said bow and stern castings and to each other, angle-irons secured in the fillets of said flanges, and framing mounted in said hull for stiffening the same, substantially as described.

5. A hull for submarine boats comprising bow and stern castings, flanged upper and lower members secured to said bow and stern castings and to each other, angle-irons secured in the fillets of said flanges, fore-and-aft beams connecting said bow and stern castings, and transverse ribs extending between said fore-and-aft beams, substantially as described.

6. A hull for submarine boats comprising bow and stern castings, flanged upper and lower members secured to said bow and stern castings and to each other, fore-and-aft beams projecting into sockets in the said bow and stern castings and connecting the same, and transverse ribs extending between the said fore-and-aft beams, substantially as described.

7. A hull for submarine boats, consisting of two separate structures each semi-elliptical in cross-section provided with flanges along the edges thereof, the said flanges being secured together to form a hull, with angle-irons secured in the fillets of said flanges, substantially as described.

8. A hull for submarine boats comprising bow and stern castings, flanged upper and lower members secured to said bow and stern castings and to each other, each member being semi-elliptical in cross-section, angle-irons secured in the fillets of said flanges, and framing mounted in said hull for stiffening the same, substantially as described.

9. A hull for submarine boats comprising bow and stern castings, flanged upper and lower members secured to said bow and stern castings and to each other, angle-irons secured in the fillets of said flanges, each member being semi-elliptical in cross-section, fore-and-aft beams connecting said bow and stern castings, and transverse ribs extending between said fore-and-aft beams, substantially as described.

10. A hull for submarine boats comprising bow and stern castings, flanged upper and lower members secured to said bow and stern castings and to each other, each member being semi-elliptical in cross-section, fore-and-aft beams projecting into sockets in the said bow and stern castings and connecting the same, and transverse ribs extending between said fore-and-aft beams, substantially as described.

11. A hull for submarine boats comprising bow and stern castings, flanged upper and lower members secured to said bow and stern castings and to each other, and fore-and-aft side beams connecting said bow and stern castings, and forming a lap-joint with said flanges, substantially as described.

12. A hull for submarine boats comprising bow and stern castings, flanged upper and lower members secured to said bow and stern castings and to each other, fore-and-aft side beams projecting into sockets in the said bow and stern castings and connecting the same, and forming a lap-joint with said flanges, and transverse ribs extending between the said fore-and-aft beams, substantially as described.

13. In a hull for submarine boats, the combination with a lower flanged member, of an upper flanged member adapted to be secured to the lower angle-irons mounted in the fillets of said flanges and bolts securing said angle-irons and flanges together, substantially as described.

811,887. HIGH-SPEED MOTOR-BOAT. THOMAS H. WHELESS, New York, N. Y. Filed Jan. 5, 1905. Serial No. 239,785.

Claim.—1. A high-speed motor-boat having fine lines below the water-line, with the bow deeper than the stern, and having buoyancy-chambers provided at each side above the water-line and tapering upward and outward, and being provided with a weighted keel, substantially as described.

2. A high-speed motor-boat having fine lines below the water-line with the bow deeper than the stern, and having buoyancy-chambers provided at each side above the water-line and tapering upward and outward, and being provided with a hollow keel weighted at its base and opening upward into the boat, substantially as described.

3. A high-speed motor-boat, provided with fine lines below the water-line, with the bow deeper than the stern, buoyancy-chambers arranged above the water-line and at each side of the boat, and a deep weighted keel tapering upward from the center toward the bow and stern, substantially as described.

4. A high-speed motor-boat, provided with fine lines below the water-line, with the bow deeper than the stern, buoyancy-chambers arranged above the water-line and at each side of the boat, and a deep hollow weighted keel tapering upward from the center toward the bow and stern, substantially as described.

5. A high-speed motor-boat having fine lines below the water-line and having buoyancy-chambers provided at each side above the water-line and tapering upward and outward and also being inclined downward from the bow aft, and being provided with a weighted keel, substantially as described.

6. A high-speed motor-boat having fine lines below the water-line and having buoyancy-chambers provided at each side above the water-line and tapering upward and outward and also being inclined downward from the bow aft, and being provided with a hollow keel weighted at its base and opening upward into the boat, substantially as described.

7. A high-speed motor-boat having fine lines below the water-line, with the bow deeper than the stern, and having buoyancy-chambers provided at each side above the water-line and tapering upward and outward and also being inclined downward from the bow aft, and being provided with a weighted keel, substantially as described.

8. A high-speed motor-boat having fine lines below the water-line, with the bow deeper than the stern, and having buoyancy-chambers provided at each side above the water-line and tapering upward and outward and also being inclined downward from the bow aft, and being provided with a hollow keel weighted at its base and opening upward into the boat, substantially as described.

9. A high-speed motor-boat, provided with fine lines below the water-line, with the bow deeper than the stern, buoyancy-chambers arranged above the water-line and at each side of the boat, and tapering from the center toward each end of the boat, and a deep weighted keel tapering upward from the center toward the bow and stern, substantially as described.

10. A high-speed motor-boat, provided with fine lines below the water-line, with the bow deeper than the stern, buoyancy-chambers arranged above the water-line and at each side of the boat, and tapering from the center toward each end of the boat, and a deep hollow weighted keel tapering upward from the center toward the bow and stern, substantially as described.

811,888. EXPLOSIVE-ENGINE. JOSEPH A. WILLIAMS, Cleveland, Ohio. Filed Jan. 9, 1905. Serial No. 240,139.

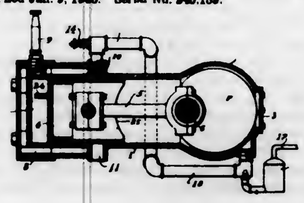

Claim.—1. In an explosive-engine, a cylinder, a compression-chamber, a conductor for the explosive mixture connecting the said cylinder and chamber, a valve located in said conductor near the intake opening into the cylinder through which air is admitted into the conductor and compression-chamber, a device independent of said valve for supplying fuel communicating with the conductor beyond the valve from the cylinder, whereby when air is drawn through the valve and conductor into the chamber it will become carbonized as it passes the said device, and when the mixture is admitted to the cylinder it will be preceded by air which has not been so carbonized for the purpose of expelling the exploded gases from the cylinder.

2. In an explosive-engine, a cylinder, a compression-chamber for the explosive mixture, a pipe connecting the cylinder and said chamber, a valve for admitting air to the pipe, said valve being connected to the pipe near the cylinder intake-opening, and a fuel-supply connected to said pipe immediately adjacent the compression-chamber, whereby a column of air is provided in the pipe between the fuel-supply and the cylinder for scavenging the cylinder in advance of the entrance of the explosive mixture.

3. In an explosive-engine, a cylinder, a compression-chamber for the explosive mixture, a pipe connecting the said cylinder and chamber, an inwardly-opening check-valve for air connected with said pipe near the cylinder intake-opening, and a device for supplying fuel connected with said pipe immediately adjacent to the compression-chamber, the construction and arrangement being such that when air is drawn through the valve and pipe into the said chamber it will be carbonized as it passes the fuel-supply but the air between the said fuel-supply and the cylinder will not be carbonized, and when communication is opened between the pipe and the cylinder the said uncarbonized air will first enter the cylinder and expel the exploded gases before the explosive mixture is admitted.

4. In an explosive-engine, a cylinder, a closed crank-chamber connected with the front end of the cylinder and chamber, a pipe leading from said cylinder to the chamber and communicating with both of the same, a valve opening into said pipe near the cylinder intake-opening, through which valve the air is admitted into the pipe and crank-chamber, and a device for supplying fuel communicating with the pipe immediately adjacent to its entrance into the crank-chamber, the arrangement and construction being such that when air is admitted to the crank-chamber it will be carbonized as it passes over the fuel-supply, and when the mixed gases are admitted to the cylinder they will be preceded by a column of air confined in the pipe near the cylinder to expel the exploded gases therefrom.

5. In an explosive-engine, a cylinder, a compression-chamber for the explosive mixture, a conductor for the mixture connecting the said cylinder and chamber, a valve near the inlet of said cylinder for admitting air to the conductor, means at the opposite end of said conductor immediately adjacent to the compression-chamber for admitting a fuel-supply thereto, said means being entirely independent of the air-valve, the arrangement of the cylinder, the compression-chamber, the conductor the valve and said means being such that a blast of air will be admitted to the cylinder in advance of the explosive mixture for the purpose of expelling the exploded gases therefrom.

6. In an explosive-engine, a cylinder, a crank-chamber within which the explosive mixture is compressed, a crank within said chamber, a piston within the cylinder, the forward end of which is adapted to enter the crank-chamber, said end of the piston being concaved in shape so as to accommodate the movement of the crank, a conductor connecting the crank-chamber with the cylinder, a valve for admitting air to said conductor near its inlet to the cylinder, and means independent of the said valve for supplying fuel to the conductor immediately adjacent to the crank-chamber, for the purpose specified.

811,889. WEFT-REPLENISHING LOOM. HORACE WYMAN and JOSEPH T. CYR, Worcester, Mass., assignors to Crompton & Knowles Loom Works, a Corporation of Massachusetts. Filed May 8, 1905. Serial No. 259,380.

Claim.—1. In a weft-replenishing loom, a magazine comprising two sets of compartments or guideways, an outer set, and an inner overlaying set, the terminals of the inner set interposed between the terminals of the outer set, and the terminals of the inner set being turned downward at an angle to the main portion of the compartment or guideway.

2. In a weft-replenishing loom, a pivoted magazine having two sets of guideways or compartments for filling-carriers, each set having two guideways or compartments, and the inner set overlaying the outer set, with its two terminals interposed between the two termi-

nals of the outer set, and all four terminals substantially the same distance from the axis of the magazine.

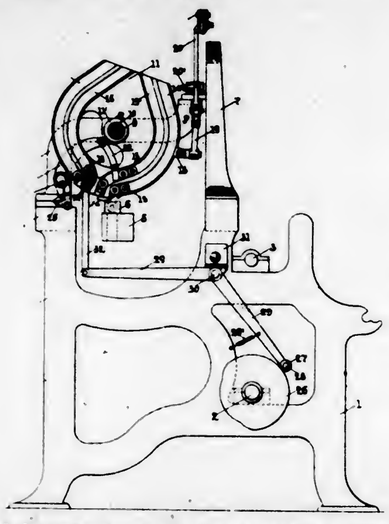

3. In a weft-replenishing loom, a magazine having a compartment or guideway carrying a series of filling-carriers overlaying a series of filling-carriers in another compartment or guideway, and said compartment or guideway, and each compartment or guideway having a terminal adapted to be placed under a transferrer, and means to move the filling-carriers of the overlaying series, which cover the terminal of the outer compartment or guideway, to admit free access of the transferrer to the terminal of said outer guideway.

4. In a weft-replenishing loom, a magazine comprising two sets of compartments or guideways for filling-carriers, one of the two sets comprising two outer compartments, one on each side of the transferrer, and the other of the two sets comprising two inner compartments, one on each side of the transferrer, the filling-carriers of the inner set overlaying the filling-carriers of the outer set, and each compartment having a terminal position for the lowest filling-carrier in each compartment.

5. In a weft-replenishing loom, a magazine comprising four compartments or guideways for four series of superposed filling-carriers, each compartment having a terminal for its lowest filling-carrier, and the magazine adapted to be moved to place either one of the terminals under the transferrer.

6. In a weft-replenishing loom, a magazine carrying bobbins or filling-carriers, a transferrer for the filling-carriers, normally positioned above a filling-carrier, and means to communicate an upward movement to the transferrer, to raise it above its normal position, and permit a retained filling-carrier to pass under it.

811,890. **DOOR OPENER AND CLOSER FOR MINES.** FRANK KOEHLER, Fryburg, Pa. Filed Sept. 16, 1905. Serial No. 278,733.

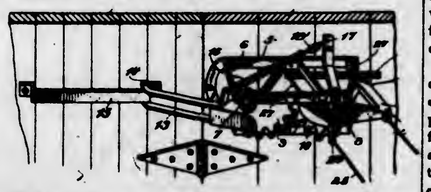

Claim.—1. In a device for opening and closing gates, the combination of a bracket, a segment carried thereby and provided with means for connection with a gate, a second segment carried by said bracket and arranged to mesh with said first-mentioned segment and provided with suitable connecting wires, cables or rods to operate the same, and a spring connected to said first-mentioned segment to assist in opening and closing the gate, substantially as described.

2. In a device for opening and closing gates, the combination of two pivoted members arranged to mesh with each other, one of said members being provided with means for connection with a gate, the other of said pivoted members being provided with a suitable connecting wire, cable or rod, and a spring connected to the first-mentioned member to assist in opening and closing the gate, substantially as described.

3. In a device for opening and closing gates, the combination of two pivoted members provided with teeth and arranged to mesh with each other, means for connecting one of said members to a gate, the other of said members being provided with a connecting wire, cable or rod, a spring connected to said first-mentioned member to assist in opening and closing the gate, and means remote from said pivoted members for operating the same, substantially as described.

4. In a device for opening and closing gates, the combination of two pivoted toothed members arranged to mesh with each other, one of said members being provided with means for connection with a gate, the other of said pivoted members being provided with a connecting wire, cable or rod, and an operating device remote from said members arranged to operate the same through the medium of said wire, cable or rod, substantially as described.

811,891. **AUTOMATIC HEN'S NEST.** ALFRED J. ADSHEER, Diehlstadt, Mo. Filed June 13, 1905. Serial No. 265,106.

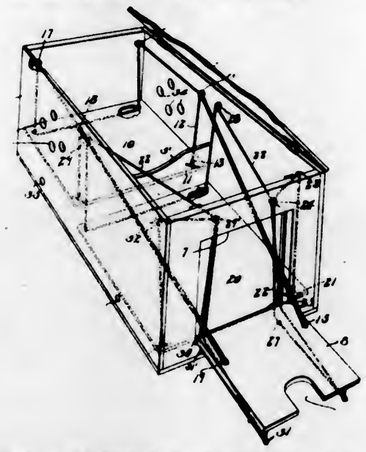

Claim.—1. In a device of the class described, a casing provided with a pivoted door having an opening formed in its free end, a nest-supporting platform arranged within the casing and adapted to close the door when the platform is depressed, and an actuating-platform operatively connected with the door for opening the latter and simultaneously elevating the nest-supporting platform.

2. In a device of the class described, a casing provided with a movable door, a vertically-movable nest-supporting platform, arranged within the casing and adapted to close the door when the platform is depressed, and an actuating-platform operatively connected with the door for opening the latter and simultaneously elevating the nest supporting the platform; there being an opening formed in the walls of the casing below said platforms to permit the escape of air.

3. In a device of the class described, a casing having a pivoted door the free end of which is provided with an opening, a partition extending transversely of the casing and dividing the latter into a plurality of communicating compartments, a nest-supporting platform mounted for vertical movement in one of the compartments and adapted to close the door when said platform is depressed, and an actuating-platform mounted for vertical movement in the opposite compartment and operatively connected to the door for opening the latter and simultaneously elevating the nest-supporting platform.

4. In a device of the class described, a casing provided with a pivoted door, a nest-supporting platform mounted for vertical movement within the casing, a flexible connection between the platform and the inner face of the door for closing the latter when the platform is depressed, an actuating-platform coacting with the nest-supporting platform and movable simultaneously in the opposite direction, and a flexible connection between the actuating-platform and the outer face of the door for opening the latter.

5. In a device of the class described, a casing provided with a pivoted door having an opening in its free edge, brackets secured to the door on each side of the opening and adapted to support the door when in lowered position, a nest-supporting platform arranged within the casing and adapted to close the door when the platform is depressed, an actuating-platform mounted for vertical movement within the casing, and a flexible connection between the actuating-platform and the brackets for opening the door.

6. In a device of the class described, a casing having a pivoted door, a partition extending transversely of the casing and dividing the latter into a plurality of communicating compartments, guiding devices secured to the side walls of the casing, a nest-supporting platform mounted for vertical movement in one of the compartments, a flexible medium extending across the bottom of the platform and passing through the guiding devices for connection with the inner face of the door for closing the latter, an actuating-platform disposed within the opposite compartment, and a flexible connection between the actuating-platform and the outer face of the door for opening said door.

7. In a device of the class described, a casing provided with a downwardly-swinging pivoted door having an opening formed in its free end, brackets secured to the door, a partition extending transversely of the casing and dividing the latter into a plurality of communicating compartments, a nest-supporting platform mounted for vertical movement in one of the compartments, a flexible connection between the platform and the inner face of the door for closing the latter, an actuating-platform mounted within the opposite compartment, and a flexible medium secured to the actuating-platform and extending beneath the pivoted edge of the door for engagement with the brackets whereby the downward movement of the actuating-platform will automatically open the door.

811,892. **SAFETY DEVICE FOR MINE-ELEVATORS.** ISAAC M. ADAMS, Shenandoah, Pa., assignor of one-half to William Stein, Shenandoah, Pa. Filed Sept. 18, 1905. Serial No. 278,961.

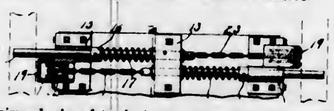

Claim.—1. A safety device for mine-elevators, comprising a pair of spring-projected bolts arranged in parallel relation at the bottom of the cage, each bolt extending inward from the side of the cage to a point beyond the median line thereof, a guide-block arranged at the central portion of the bottom of the cage and having openings for the passage of said bolts, guide-blocks arranged at the outer edges of the cage-platform for the passage of the bolts, said blocks being also arranged to form shaft-supports, chain-guides, shafts having bearings in said blocks, sheaves mounted on the shafts, chains extending around said sheaves and connected to the bolts, said chains being connected to the hoisting-cable and tending to hold the bolts retracted while the cable remains intact.

2. A safety device for mine-elevators, comprising a plurality of locking-bolts arranged in pairs, each pair of bolts extending from the side of the car to a point beyond the median line thereof, a guide-block arranged at the center of the cage, and having openings for the reception of said bolts, auxiliary blocks arranged at the sides of the car for the reception of the bolts, means for projecting said bolts, chains extending from the bolts, connecting-bars coupled to said chains, and auxiliary chains extending from the upper ends of said bars to the hoisting-ring.

811,893. **SAFETY DEVICE FOR MINE-CAGES.** ISAAC M. ADAMS, Shenandoah, Pa., assignor of one-half to William Stein, Shenandoah, Pa. Filed Sept. 26, 1905. Serial No. 280,697.

Claim.—1. In a safety device for mine-cages, a supporting-bar arranged below the floor of the cage, springs tending to depress said bar, spring-projected locking-bolts carried by the bar and arranged when projected to engage the horizontal sills of the shaft-timbering, and bolt-retracting connections between the bolts and the hoisting-cable, said members being placed under sufficient stress to retract the bolts and slightly elevate the carrying-bar, the cushioning-springs of the latter serving as compensating means for the bolts.

2. In a safety device for mine-cages, a plurality of bolts depending from the floor of the cage, a bar or plate slidably mounted on said bolts, stops arranged at the lower ends of the bolts for limiting downward movement of the plate, springs surrounding the bolts and tending to maintain the plate in its lowest position, spring-projected bolts supported by said plate, and flexible connections extending between said bolts and the hoisting-cable, said connections being placed under sufficient stress to retain the bolts retracted and the cushioning-springs slightly compressed.

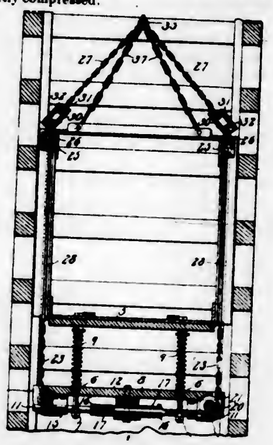

811,894. **CAN-OPENER.** LOUIS ALDEN, Jr., Bryn Mawr, Pa. Filed July 10, 1905. Serial No. 268,899.

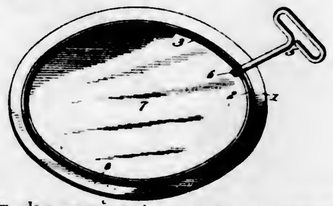

Claim.—In a can-opener, the combination of a receptacle provided with a V-shaped groove stamped in it, the metal being severed at intervals at the apex of the groove to form integral connecting portions, and a severing or unsealing wire soldered in the groove and fitting against the walls thereof and spaced from the apex of the groove and from the walls of the mouth of the same to provide solder-receiving-spaces.

811,895. **CROSS-ARM CONSTRUCTION FOR TELEGRAPH-POLES, &c.** OLIVER C. ALLEN, Greenfield, Ind. Filed May 17, 1905. Serial No. 260,763.

Claim.—1. The combination with a telegraph-pole and the like, of a pair of parallel cross-arms centrally secured thereto, one on each side of the pole, and a clamping means secured to the extreme ends of the cross-arms on each side of the pole for bracing them together, substantially as set forth.

2. The combination with double cross-arms on telegraph-poles and the like, of means for bracing the ends of said cross-arms consisting of a horizontal rod, and means on each end of said rod adapted to be clamped to the ends of the cross-arms.

3. The combination with double cross-arms on telegraph-poles

and the like, of means for bracing the ends of said cross-arms which consists of a threaded horizontal rod, a pair of bracing-clamps on each end thereof, and nuts on said rod at each side of said bracing-clamps for clamping them on the cross-arms.

4. The combination with double cross-arms on telegraph-poles and the like, of means for bracing the ends of said cross-arms which consists of a horizontal threaded rod, a pair of bracing-clamps on each end thereof, the members of said clamps having inturned heels that abut against each other, toe-pieces adapted to penetrate the cross-arms, and nuts on said rod for tightening and holding said bracing-clamps in engagement with the cross-arms.

811,896. **PROCESS OF TREATING WASTE FIBER.** URIAH C. ALLEN, Sandyhill, N. Y. Filed Mar. 26, 1904. Serial No. 200,190.

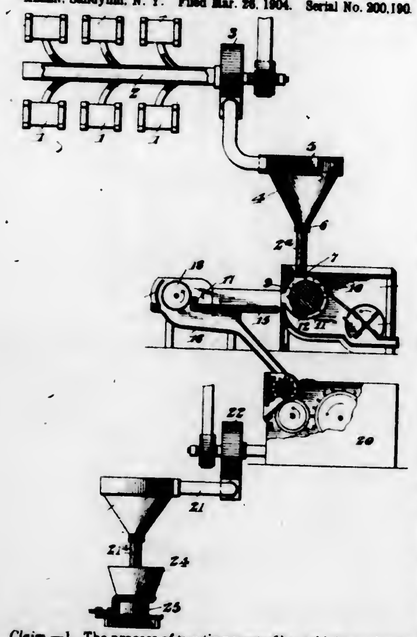

Claim.—1. The process of treating waste fiber which consists in first subjecting it to the action of a gyrating current of air to remove the dust, and thereafter disintegrating the fibrous mass and separating the trash therefrom.

2. The process of treating waste fiber which consists in first subjecting it to a gyrating current of air to remove the dust, next separating the small particles of trash, and finally separating the large pieces of trash from the fiber.

3. The process of treating waste fiber which consists in first subjecting it to a gyrating current of air to remove the dust, next separating the small particles of trash, next separating the large pieces of trash from the fiber, and finally again subjecting the fiber to the action of a current of air to remove the dust remaining.

4. That process of treating mote-cotton which consists in first subjecting it to the action of a gyrating current of air to remove the dust, next separating the small particles of trash by suction, and thereafter disintegrating the fibrous mass and separating the large pieces of trash therefrom.

5. The process of treating mote-cotton which consists in first subjecting it to a gyrating current of air to remove the dust, next removing the small particles of trash by suction, and thereafter rotating the fibrous mass at high speed to separate the large pieces of trash by centrifugal force.

6. That process of treating mote-cotton which consists in first subjecting it to the action of a gyrating current of air to remove the dust, next separating the small particles of trash by suction, next rotating the fibrous mass at high speed to separate the large pieces of trash by centrifugal force, and thereafter separating the motes from the cotton.

7. That process of treating mote-cotton which consists in subjecting it to the action of a gyrating current of air to remove the dust, next removing the small particles of trash by suction, next separating the large pieces of trash by centrifugal force, next separating the motes from the cotton, and finally again subjecting the cotton to the action of a gyrating current of air to remove any dust remaining.

811,897. **CULTIVATOR.** SILAS E. BAILOR, Tarkio, Mo. Filed June 13, 1905. Serial No. 265,038.

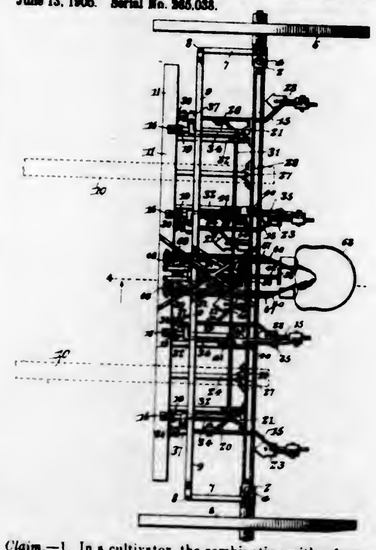

Claim.—1. In a cultivator, the combination with a frame, of an arch, cultivating devices connected with the arch, and flexible connections between the frame and the arch for supporting the latter, said flexible connections extending along the sides of the arch.

2. In a cultivator, the combination with a frame, of a plurality of arches, separate gangs of cultivating devices mounted on the arches, substantially vertical links depending from the frame for movably suspending the arches from the frame, and means for adjusting the arches.

3. In a cultivator, the combination with a frame, of a plurality of arches, substantially vertical spaced link connections movably suspending the arches from the frame, gangs of cultivating devices mounted on the arches, and means for adjusting the arches.

4. In a cultivator, the combination with a frame, of a plurality of arches movably connected with the frame, gangs of cultivating devices mounted on the arches, and mechanism carried by the frame for adjusting the gangs of cultivating devices.

5. In a cultivator, the combination with a frame, of a plurality of arches movably connected with the frame, gangs of cultivating devices mounted on the arches, and mechanism for adjusting the gangs of cultivating devices independently of each other, said mechanism being carried by the arches in the movement thereof.

6. In a cultivator, the combination of a frame, an arch movably connected therewith, cultivating devices connected with the arch and arranged to swing upward and downward, adjusting mechanism for raising and lowering the cultivating devices, and supporting means rigid with the arch and having the adjusting mechanism mounted on it.

7. In a cultivator, the combination of a frame, an arch movably suspended therefrom, cultivating devices pivotally connected with the arch and adapted to swing upward and downward, arms rigid with and extending from the arch, and adjusting mechanism supported by the arms and connected with the cultivating devices for raising and lowering the same.

8. In a cultivator, the combination with a frame, of an arch movably suspended from the frame and provided with rigid projecting arms, cultivating devices pivotally connected with the arch, a rock-shaft mounted on the projecting arms and having a depending arm, an operating-lever also mounted on the rock-shaft and forming a depending arm, and means for connecting the said depending arms with the cultivating devices.

9. In a cultivator, the combination with a frame, of an arch, substantially vertical links depending from the frame and connected with the arch, cultivating devices connected with the arch, and independent bracing means pivotally connected with the arch and with the frame for permitting the said arch to move laterally of the cultivator.

10. In a cultivator, the combination of a frame, an arch, links depending from the frame and connected with the arch at opposite sides thereof, and braces extending rearwardly from the lower portions of the sides of the arch and pivotally connected with the same and with the frame.

11. In a cultivator, the combination with a frame, of an arch movably suspended from the frame, cultivating devices connected with the arch, and inclined braces pivotally connected with the sides of the arch and with the frame.

12. In a cultivator, the combination with a frame, of an arch movably suspended from the frame, cultivating devices connected with the arch, and a horizontal brace pivotally connected with the arch and with the frame.

13. In a cultivator, the combination with a frame, of an arch movably suspended from the frame, cultivating devices connected with the arch, and horizontal and inclined braces pivotally connected with the arch and with the frame and maintaining the former in an upright position.

14. In a cultivator, the combination with a frame, of separate gangs of cultivating devices, an operating rock-shaft, and means for connecting the rock-shaft with the gangs of cultivating devices, whereby the said gangs are moved toward and from each other when the rock-shaft is rotated.

15. In a cultivator, the combination with a frame, of separate gangs of cultivating devices, an operating rock-shaft, means for connecting the rock-shaft with the gangs of cultivating devices, whereby the said gangs are moved toward and from each other when the rock-shaft is rotated, and means for locking the rock-shaft against rotation.

16. In a cultivator, the combination with a frame, of separate gangs of cultivating devices, an operating-shaft located between the gangs of cultivating devices and provided with opposite arms, means for connecting the arms with the cultivating devices, and means for locking the shaft against rotation for securing the gangs of cultivating devices in their adjustment.

17. In a cultivator, the combination with a frame, of separate gangs of cultivating devices, a shaft connected with the cultivating devices and provided with a head, and a bearing or socket receiving the head, said head and socket being provided with means for interlocking them with each other, whereby the shaft is held against rotation.

18. In a cultivator, the combination with a frame, of separate gangs of cultivating devices, a shaft connected with the cultivating devices and provided with a head, a bearing or socket receiving the head, said head and socket being provided with means for interlocking them with each other whereby the shaft is held against rotation, and a spring for maintaining the head and the socket in their interlocked relation.

19. In a cultivator, the combination with a frame, of a plurality of cultivating devices, and a shaft connected with the cultivating devices, said shaft being mounted for rotation for moving the cultivating devices toward and from each other and being also capable of oscillation for moving the cultivating devices simultaneously in the same direction.

20. In a cultivator, the combination with a frame, and pivotally-mounted axles, of shiftable connecting means for the axles, cultivating devices, and a rock-shaft connected with the cultivating devices and arranged to engage the shiftable connection for moving the cultivating devices and shiftable connection simultaneously.

21. In a cultivator, the combination with a frame, of pivotally-mounted axles, a shiftable connection for the axles, cultivating devices, operating mechanism for the cultivating devices, and a fastening device for detachably securing the operating device to the shiftable connection

22. In a cultivator, the combination with a frame, of pivotally-mounted axles, a shiftable connection for the axles, cultivating devices, operating mechanism for the cultivating devices, an arm extending from the shiftable connection and having a recess or opening to receive the operating mechanism, and a movable locking device for securing the operating mechanism in the recess or opening of the said arm.

23. In a cultivator, the combination with a frame, of cultivating devices, a shaft connected with the cultivating devices, pivotally-mounted axles, a shiftable connection for the axles having an arm, and a ratchet mounted on the frame for holding the shaft, said shaft being arranged to engage either the ratchet or the arm.

24. In a cultivator, the combination with a frame, of pivotally-mounted axles, a shiftable connection for the axles having an arm, cultivating devices, a bracket mounted on the frame and having a bearing, a shaft mounted in the bearing and connected with the cultivating devices and arranged to engage the said arm, mechanism also mounted on the bracket and secured to the shiftable connection for actuating the same, and treadles connected with the said mechanism for enabling the shiftable connection to be controlled by the feet of the operator.

25. In a cultivator, the combination with a frame, of an arch, cultivating devices connected with the arch, and links forming flexible connection between the frame and the arch for supporting the latter, said links extending along the sides of the arch.

26. In a cultivator, the combination with a frame, of an arch provided at the lower ends of its sides with laterally-extending pivots, cultivating devices connected with the pivots of the arch, and flexible connections extending from the frame to the said pivots for supporting the arch.

27. In a cultivator, the combination with a frame, of an arch, cultivating devices connected with the arch, flexible connections between the frame and the top of the arch, and separate flexible connections between the frame and the bottom of the arch.

28. In a cultivator, the combination with a frame, of an arch, cultivating devices connected with the arch, links connecting the top of the arch with the frame, and separate links depending from the frame and connected with the bottom of the arch for supporting the latter.

29. In a cultivator, the combination with a frame, of an arch, flexible connections depending from the frame and connected with the bottom of the arch for supporting the latter, and horizontal and inclined links connected with the frame and with the top and bottom of the arch respectively for maintaining the latter in an upright position.

811,898. **COLLAPSIBLE REEL.** AARON BILLSTEIN, Baltimore, Md., assignor to The Friedenwald Company of Baltimore City, Baltimore, Md., a Corporation of Maryland. Filed July 14, 1905. Serial No. 269,695.

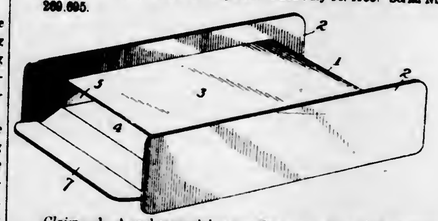

Claim.—1. A reel comprising two flange members and an intermediate transverse member, the said reel being adapted to be erected and collapsed without disconnecting its members.

2. A reel comprising two flange members and an intermediate box member to the sides of which the flange members are connected, the said reel being collapsible without disconnecting the flange members from the box member.

3. A reel comprising two flange members and an intermediate folding box to which the flange members are permanently connected, the said box being collapsible, for the purpose set forth.

4. A reel comprising a rectangular folding box having a tubular body and end flaps adapted to inclose the space within the box, and two flange members permanently connected to opposite sides of the box, the said box and flange members being collapsible to bring all of the members thereof substantially into the same plane, for the purpose set forth.

811,899. **COLLAPSIBLE REEL.** AARON BILLSTEIN, Baltimore, Md., assignor to The Friedenwald Company of Baltimore City, Baltimore, Md., a Corporation of Maryland. Filed July 14, 1905. Serial No. 269,696.

Claim.—1. A collapsible reel comprising two side plates or flanges and a plurality of transverse collapsible tubular members connected at their ends to said plates or flanges.

2. A collapsible reel comprising two side plates or flanges and a plurality of transverse collapsible tubular members, said flanges and tubular members being constructed to interlock.

3. A collapsible reel comprising a pair of flange members each having two slots therein and a tubular connecting member having at

an expanding portion carried by the mouthpiece for expanding the flexible portion against said flange, substantially as described.

means operated by the lateral swing of the trolley-pole for operating

prising a disk which rotates with the winding-rollers, a spring-pressed

3. A collapsible reel comprising a pair of flange members each having two slots therein and a tubular connecting member having at each end a flap passing through said slots, said flap having its end connected to said tubular member.

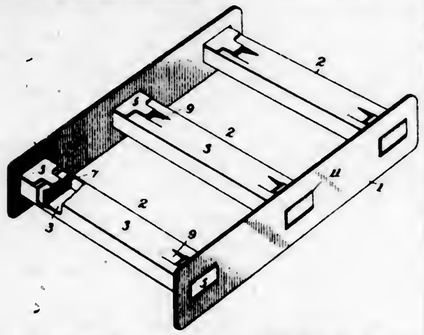

4. A collapsible reel comprising two flange-sections, each section being provided with two slots, in combination with a tubular transverse member having at each end a flap adapted to pass out through one slot in a flange member and in through the other slot therein, and said flap having at its free end ears which engage an opening in the body of the tubular member.

5. A collapsible reel comprising two flange members provided with pairs of parallel slots and a transverse member consisting of a collapsible tube provided at its ends with tongues for interlocking with the slots in the flange members and with means for locking the said tongues in engagement with the flange members.

6. In a collapsible reel comprising a pair of flange members and a plurality of tubular collapsible transverse members, said tubular members having flaps adapted to interlock with the flange members.

7. A collapsible reel comprising flange members and transverse tubular members having openings therein adapted to receive the finger of an operator, flaps on the ends of said tubular members adapted to interlock with the flange members, and adapted to be pushed through the openings by the finger of the operator and having ears to interlock with the said tubular member.

8. In a collapsible reel, a collapsible tubular member having the end flaps 5 and 10 at each end whereby the ends may be closed and rendered secure and having the slits 8 forming enlarged openings near the ends adapted to receive the ends of the flaps 5, said flaps having the ears 7 adapted to interlock with the slits 8 for the purpose set forth.

9. A reel comprising two side plates or flanges, each having a plurality of pairs of slots therein, and a plurality of tubular transverse members each adapted to be securely interlocked at its ends with the flange members, said tubular members being collapsible, for the purpose set forth.

811,900. **FOLDING PHONOGRAPH-HORN.** JAMES T. BROWN, New York, N. Y. Filed Dec. 31, 1904. Serial No. 239,941.

Claim.—1. A horn comprising a mouthpiece, a flexible portion, and coöperating means on said mouthpiece and flexible portion for expanding the latter and clamping it in expanded position, substantially as described.

2. A horn comprising a mouthpiece, a flexible portion, and cooperating tapered means on said mouthpiece and flexible portion for expanding the latter and clamping it in expanded position, substantially as described.

3. A horn comprising a mouthpiece, a flexible portion, coöperating tapered means on said mouthpiece and flexible portion for expanding the latter and clamping it in expanded position, and means for locking said flexible portion on the mouthpiece in expanded position, substantially as described.

4. A horn comprising a mouthpiece, a flexible portion, an annular flange carried by the flexible portion for limiting its expansion, and an expanding portion carried by the mouthpiece for expanding the flexible portion against said flange, substantially as described.

5. A horn comprising a mouthpiece, a flexible portion, a tapered annular flange carried by the flexible portion for limiting its expansion, and a tapered expanded portion carried by the mouthpiece for expanding the flexible portion against said flange, substantially as described.

6. A horn comprising a rigid mouthpiece-section and a collapsible section, said collapsible section being expanded by a movement of one of said sections relatively to the other.

7. A horn comprising a rigid mouthpiece-section and a collapsible section, the former telescoping within the latter and operative to expand the latter by the movement relative thereto.

8. A horn comprising a rigid mouthpiece-section and a collapsible section, the former telescoping within the latter and the latter being expanded by a relatively longitudinal movement of one of said sections.

811,901. **HINGED-LEAF BUTTON.** HENRY CASE, Gloversville, N. Y. Filed Mar. 9, 1905. Serial No. 249,191.

Claim.—1. A button, having a hinged leaf, a spring upon which the hinged leaf is pivoted, a casing for the said spring and a shoe upon which the spring and casing are fixed against relative longitudinal movement.

2. A button, having a spring, a leaf provided with a two-part plate containing pivots engaging the spring, a casing for the said spring and a shoe upon which the spring and casing are fixed against relative longitudinal movement.

3. A button, having a spring provided with pivot-ears and locking-cams on said ears, a leaf having a pivot-plate pivoted to said ears and adapted to engage with the cams, a casing for said spring and a shoe upon which the spring and casing are fixed against relative longitudinal movement.

4. A button, having a hinged leaf, a spring upon which the hinged leaf is pivoted, a casing for the said spring and within which the spring is fixed against longitudinal movement and a shoe upon which the spring and casing are fixed against relative longitudinal movement.

5. A button, having a shoe, a casing fixed on said shoe, a two-armed spring fixed in said casing against longitudinal movement, the free ends of said arms having ears and cams and a leaf pivotally connected to said ears and adapted to coöperate with said cams so as to be capable of being held thereby in a position at right angles to the casing and in a position substantially parallel to the casing.

811,902. **HYDRAULIC CEMENT AND PROCESS OF MAKING THE SAME.** CARLE D. CLARK, Clifton, Ariz. Filed Dec. 24, 1904. Serial No. 238,201.

Claim.—1. The process of making hydraulic cement, which consists in hydraulically classifying the tailings from concentrating or other mills treating ores with an aluminous silicious gangue, mixing them with a calcareous substance, reducing the mass to powder, burning the mixture to a clinker, and pulverizing said clinker.

2. The process of making hydraulic cement, which consists in pulverizing tailings from concentrating or other mills treating ores with an aluminous silicious gangue, hydraulically classifying said pulverized tailings, combining them with a calcareous substance by clinkering, and then grinding the clinker.

3. A hydraulic cement composed of a base clinkered with hydraulically-classified tailings from concentrating or other mills treating ores with an aluminous silicious gangue.

4. A hydraulic cement composed of limestone clinkered with hydraulically-classified tailings from concentrating or other mills treating ores with an aluminous silicious gangue.

811,903. **ANNOUNCING DEVICE FOR RAILWAY-CARS.** ARTHUR D. CLOUD, Davenport, Iowa. Filed Apr. 1, 1905. Serial No. 253,377.

Claim.—1. In automatic announcing apparatus for electrically-propelled cars, the combination with a car provided with a laterally-swinging trolley-pole, an announcing device carried by the car, and means operated by the lateral swing of the trolley-pole for operating the announcing device.

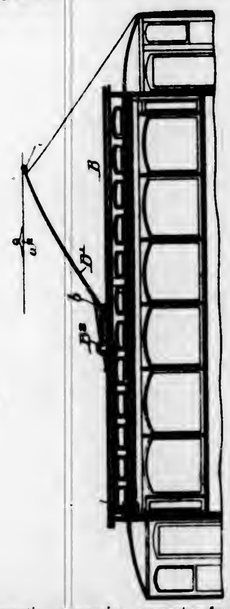

2. In automatic announcing apparatus for electrically-propelled cars, the combination with a car provided with a laterally-swinging trolley-pole, an electrically-actuated announcing device carried by the car, a switch for controlling the circuit that operates the announcing device, and an electromagnet carried by the trolley-pole for operating said switch.

3. In automatic announcing apparatus for electrically-propelled cars, the combination with a car provided with a laterally-swinging trolley-pole, an announcing device carried by the car, a trolley-wire provided with laterally offset or displaced portions along which the trolley-wheel passes, and means operated by the lateral swing of the trolley-pole for operating the announcing device.

4. In automatic announcing apparatus for electrically-propelled cars, the combination with a car provided with a laterally-swinging trolley-pole, an electrically-actuated announcing device carried by the car and a trolley-wire provided with laterally offset or displaced portions along which the trolley-wheel passes, and a switch operated by the lateral swing of the trolley-pole for controlling the circuit that operates said announcing device.

5. In automatic announcing apparatus for electrically-propelled cars, the combination with a car provided with a laterally-swinging trolley-pole, an electrically-actuated announcing device carried by the car, a trolley-wire provided with laterally offset or displaced portions along which the trolley-wheel passes, a switch carried by the car for controlling the circuit that operates the announcing device, and an electromagnet carried by the swinging trolley-pole for operating said switch.

6. An announcing device for the purpose set forth, comprising an announcing-strip, a winding mechanism comprising rollers about which said strip is wound, and a locking mechanism for locking the winding mechanism, comprising a shaft which rotates with the winding-rollers, a disk on the shaft provided with a peripheral notch, a spring-pressed latch provided with a finger adapted to engage said notch to arrest the winding mechanism, means for retracting the latch from the disk, means for temporarily holding the latch away from the disk comprising a pivoted lever provided with a pivoted trigger which permits the latch to move past the same, but acts as a stop to hold the latch away from the disk, and a cam on said shaft acting on said lever to release the trigger from the said latch to permit the latter to interlock with the disk.

7. An electrically-actuated announcing device comprising an announcing-strip, winding mechanism embracing rollers about which the strip is wound, a motor for driving said winding mechanism, a locking mechanism for locking the winding mechanism comprising a disk which rotates with the winding-rollers, a spring-pressed latch adapted for locking engagement with the disk, a magnet for retracting said latch from the disk, means for temporarily holding said latch away from the disk and constructed to subsequently release the same, circuits in which said motor and magnet are included, and a quick-acting switch in the motor-circuit comprising a terminal carried by said latch adapted to be brought into contact with an associated terminal of the circuit when the latch is retracted from the locking-disk and to be separated to open the circuit when the latch again engages the locking-disk, a cam, a lever actuated by said cam and provided with a trigger past which the latch is moved when retracted from the disk, and which supports the same until said disk begins to rotate, the cam afterward acting on said lever to release the latch to permit it to drop into contact with the disk.

8. An electrically-actuated announcing device for the purpose set forth, comprising an announcing-strip, winding mechanism embracing rollers to which the ends of said strip are attached, a reversible electric motor for operating said winding mechanism, a locking device for arresting the winding mechanism and for releasing it preparatory to a further movement of the announcing-strip, and electrically-actuated means for reversing the motor to reverse the direction of movement of said strip, comprising opposing magnets, a switch located between and alternately acted upon by said magnets, normally open circuits in which said magnets are included, and a traveling terminal adapted to alternate engagement with the terminals of said normally open magnet-circuits.

9. An announcing device for the purpose set forth comprising an announcing-strip, winding mechanism embracing rollers to which the ends of said strip are attached, a reversible electric motor for operating said winding mechanism, a locking mechanism for arresting the winding mechanism at the end of a predetermined movement of the strip and for releasing the winding mechanism preparatory to a subsequent winding movement thereof, and a reversing-switch for reversing said motor embracing a swinging switch, opposed magnets on the opposite sides thereof, terminals carried by said switch adapted for engagement with opposing pairs of terminals of the motor-armature circuits, normally open circuits in which the actuating-magnets are included, and a traveling terminal adapted for alternate engagement with the terminals of said normally opened magnet-circuits.

10. An announcing device for the purpose set forth, comprising an announcing-strip, winding mechanism embracing rollers to which the ends of the strip are attached, a reversible electric motor for actuating said winding mechanism, a locking device for locking the mechanism at the end of a predetermined movement of the strip, and for releasing said locking mechanism preparatory to a subsequent movement of the strip, embracing a shaft which rotates with the winding-rollers, a stop-disk on said shaft, an electrically-releasable locking-latch engaging said disk and a reversing-switch mechanism comprising a swinging switch provided with terminals adapted for alternate engagement with opposing pairs of terminals of the armature and field-magnet circuits, two opposing magnets included in normally open circuits by which said switch is swung on its pivot, said shaft being screw-threaded and a screw-threaded nut on said shaft which travels endwise of the shaft as the shaft revolves, and constituting a terminal of the normally open magnet-circuits adapted to engage stationary terminals of said magnet-circuits to close the same.

11. An announcing device for the purpose set forth, comprising an announcing-strip, a winding mechanism embracing rollers to which the ends of the strip are attached and upon which it is wound, an electric motor for actuating said winding mechanism, a stop device for arresting the winding mechanism, electrically-actuated means for releasing said stop device, normally open circuits in which said motor and releasing mechanism are included, and having adjacent terminals and a switch vibrating between said terminals for alternately opening and closing the motor and lock-releasing circuits.

12. An announcing device for the purpose set forth comprising an announcing-strip, a winding mechanism embracing rollers to which the ends of the strip are attached and upon which it is wound, an electric motor for actuating said winding mechanism, a stop device for arresting the winding mechanism, electrically-actuated means for releasing said stop device, normally open circuits in which said motor and releasing mechanism are included and having adjacent terminals, a switch vibrating between said terminals for opening and closing the releasing mechanism and motor-circuits, said motor-circuit being provided adjacent to the locking device with a normally open switch which is closed when the locking device is operated to release the winding mechanism, and is opened when the locking device is again brought into action to arrest the winding mechanism.

811,904. **LOCKING MECHANISM FOR STRETCHING-FRAMES.**

811,904. **LOCKING MECHANISM FOR STRETCHING-FRAMES.** JAMES A. COUNSELLY, Ludlow, Pa. Filed Sept. 1, 1905. Serial No. 276,769.

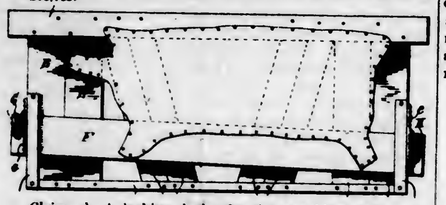

Claim.—1. A locking device for the movable member of a stretching-frame, comprising a strap having at one end a laterally-extending portion for engaging the edge of said member, and a pawl pivotally connected to the opposite end of said strap, substantially as described.

2. A locking device for the movable member of a stretching-frame, comprising a strap having at one end a laterally-extending hook-shaped portion, for engaging the edge of said member, and at the opposite end a laterally-projecting curved seat, projecting on the opposite side of said strap from said hook-shaped portion, a pawl having a curved portion engaging said seat, and a loose pivotal connection between said pawl and said strap, whereby the strain on said pawl is transmitted to said seat, substantially as described.

3. A locking device for the movable member of a stretching-frame comprising a strap having at one end a laterally-extending hook-shaped portion, and at the other end a laterally-extending flange provided with a curved seat, and a shoulder at each side of said seat, a pawl having one end constructed to engage said seat, and adapted to engage said shoulders to limit its movements, a pivotal device connecting said pawl and strap but permitting the engagement of the pawl with said seat, and means for attaching said strap to the said movable member to prevent accidental displacement, substantially as described.

4. A locking device for the movable member of a stretching-frame comprising a strap having a laterally-extending portion for engaging an edge of said movable member and provided with a laterally-projecting curved seat, of a reversible pawl having a curved end portion for engaging said seat, and means for pivotally connecting said pawl to said strap without interfering with its engagement with said seat, whereby said locking devices may be made right and left without alteration of parts, substantially as described.

5. The combination with a stretching-frame having stationary and movable stretching members, and provided with a toothed rack, of a locking device for the movable member, comprising a strap having a hook-shaped portion at one end to engage an edge of the movable member, and provided at its other end with a laterally-extending lug having a curved seat and shoulder at each side of said seat, a pawl having a curved portion at one end to engage said seat, and being loosely pivoted to said strap, and provided with a sharpened edge at its other end to engage said rack and means for attaching said strap to said movable member to prevent accidental displacement, substantially as described.

811,905. **WELL-DRILLING APPARATUS.** ALLEN CRAIG and EDWARD DOUBLE, Los Angeles, Cal. Filed May 31, 1904. Serial No. 210,329.

Claim.—1. A well-drilling rig comprising a band-wheel, a shaft therefor, pulleys or sheaves loose thereon, a clutch on the shaft adapted to revolve with said shaft, means for operatively connecting said clutch with either of said pulleys, a bull-wheel, a rope connecting the same with one of said pulleys, a calf or casing wheel, a rope connecting the same with the other pulley, and means for driving the band-wheel.

2. A well-drilling rig comprising a band-wheel, a shaft therefor, loose pulleys thereon, means operatively connected with said shaft for operatively connecting either of said pulleys with said shaft, a bull-wheel, a calf or casing wheel, belts connecting said bull and casing wheels with their respective pulleys on said shaft, and means for driving said band-wheel.

3. A well-drilling rig comprising a band-wheel, a shaft whereon the same is fixed, pulleys loose on said shaft, means for operatively connecting said pulleys to said shaft as desired means for connecting a walking-beam to said shaft, a bull-wheel a calf or casing wheel, means operatively connecting said bull and calf wheels with their respective loose pulleys, and means for driving said band-wheel.

4. A well-drilling rig comprising a band-wheel, a shaft whereon the same is fixed, pulleys loose on said shaft, means for operatively connecting said pulleys to said shaft as desired, means for connecting a walking-beam to said shaft, a bull-wheel, a calf or casing wheel, means operatively connecting said bull and calf wheels with their respective loose pulleys, a sand-reel driven from said band-wheel, and means for driving the band-wheel.

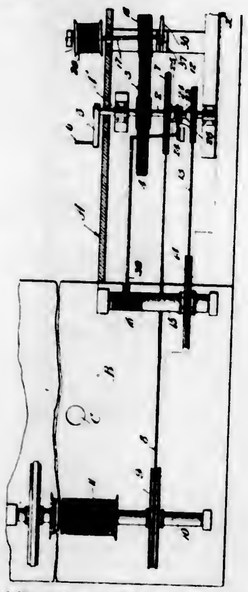

5. A well-drilling rig comprising a shaft, loose pulleys on said shaft, means for rotating said shaft, a bull-wheel, a calf-wheel, ropes connecting said bull-wheel and calf-wheel respectively with their respective loose pulleys, and means carried by said shaft whereby either of said loose pulleys may be operatively connected with said shaft to rotate therewith.

6. A well-drilling rig comprising a shaft, loose pulleys on said shaft, a clutch carried by said shaft, a shipping-lever for operating said clutch to engage either of said pulleys, a calf-wheel, a bull-wheel, means operatively connecting said calf and said bull wheels with their respective loose pulleys, and means for driving said shaft.

7. A well-drilling rig comprising a band-wheel, a shaft therefor, a loose pulley thereon, a clutch carried by said shaft for engaging said loose pulley, a calf-wheel, a rope or belt connecting said calf-wheel and loose pulley, a bull-wheel, means for driving said bull-wheel from said shaft, and means for operating said clutch.

811,906. **ELECTRIC COUPLING.** JOHN J. DOSSERT, New York, N. Y., assignor to Dossert & Company, a Corporation of New York. Filed Aug. 17, 1904. Serial No. 221,063.

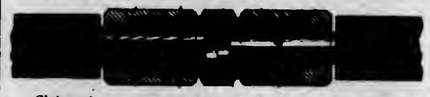

Claim.—1. A connector for electrical conductors comprising end coupling-sections having conductor-receiving openings, an intermediate coupling-section having a conductor-receiving opening, split sleeves having oppositely-tapered ends housed between each of said end coupling-sections, and said intermediate section, and means for drawing said end sections toward said intermediate section to compress said split sleeves, and force them into close mechanical and electrical contact with conductor ends.

2. A connector for electrical conductors comprising two internally-threaded end coupling-sections having oppositely-tapered bores, an externally-threaded intermediate coupling-section having a bore, the ends of which are oppositely tapered, and two split sleeves having oppositely-tapered ends housed within the tapered bores of said intermediate and end coupling-sections and adapted to be forced into close mechanical and electrical contact with conductor ends when the coupling-sections are drawn together.

811,907. **BRANCH COUPLING FOR ELECTRIC CONDUCTORS.** JOHN J. DOSSERT, New York, N. Y., assignor to Dossert & Company, a Corporation of New York. Filed Feb. 9, 1905. Serial No. 244,868.

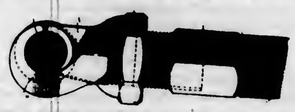

Claim.—1. A branch coupling for electric conductors consisting of a hook provided with a shank, said hook constituting one member of a clamp, a member mounted on said shank, and formed with a clamping portion directly opposed to said hook, said member being movable to bring said clamping portion in clamping relation to the hook, means whereby said member is removable from the shank by lateral movement with relation thereto and means on the shank to move said member.

2. A branch coupling for electric conductors, consisting of a hook provided with a shank, said hook constituting one member of a clamp, a member slidably mounted on said shank and formed with a clamping portion directly opposed to said hook, said member being movable longitudinally of the shank to bring said clamping portion in clamping relation to the hook, means whereby said member may be removed from the shank by a lateral movement with relation thereto and means on the shank to slide said member.

3. A branch coupling for electric conductors consisting of a hook provided with a shank having a longitudinal opening therein, said hook constituting one member of a clamp, a member slidably disposed in said opening and laterally removable therefrom and formed with a clamping portion directly opposed to said hook, said member being movable longitudinally of the shank to bring said clamping portion in clamping relation to the hook and means on the shank to slide said member.

4. A branch coupling for electric conductors consisting of a hook constituting one member of a clamp, provided with a threaded shank having a longitudinal opening extending entirely through the same from side to side, a member slidably disposed in said opening and removable therefrom by lateral movement with relation to the shank, said member being formed with a clamping portion directly opposed to said hook, and a nut on said shank for moving said member longitudinally of the shank to bring the clamping portion in clamping relation to the hook.

5. A branch coupling for electric conductors, consisting of a shank provided with a clamping-jaw at one end, a clamping member slidably disposed on the said shank for movement toward and away from the jaw, means whereby said member is separable from the shank by lateral movement with relation thereto, and means carried by the shank to move the clamping member.

6. A branch coupling for electric conductors, consisting of a hook provided with a shank, said hook constituting one member of a clamp, a member slidably mounted on said shank and having a clamping portion to cooperate with said hook, and means whereby said member is removable from the shank by a lateral movement with relation thereto, and means to hold said member in clamping position.

811,908. **SPLIT-SLEEVE CONNECTOR.** JOHN J. DOSSERT, New York, N. Y., assignor to Dossert & Company, a Corporation of New York. Filed Feb. 9, 1905. Serial No. 244,867.

Claim.—1. The combination with the end of an electrical conductor, of a coupling-section surrounding the said end, an engaging coupling-section cooperating with the first-named coupling-section, and an intermediate conducting split sleeve having oppositely-tapering surfaces between the said coupling-sections and the conductor, the said coupling-sections being provided with internal oppositely-sloping surfaces corresponding to the surfaces of the sleeve and the sleeve itself being formed of two interlocking halves slitted throughout their entire length, each half being composed of a plurality of similar segments having flexible connections between them.

2. The combination with the bared end of a conducting wire or cable, of a conducting split sleeve having oppositely-tapering surfaces surrounding the said end, and coupling-sections provided with means for pressing lengthwise upon the tapering surfaces and compressing the split sleeve, the sleeve being formed in interlocking sections slitted through their entire length, each section being composed of a plurality of segments having flexible connections between them.

3. As an element of a coupling for the bared ends of conducting wires or cables, a conducting split sleeve having oppositely-tapering surfaces and formed in interlocking halves, each half being composed of a plurality of similar segments having flexible connections between them.

4. As an element of a coupling for the ends of conducting wires or cables, a conducting split sleeve formed in interlocking sections, each section composed of a plurality of segments having flexible connections between them.

811,909. **LAND-ROLLER.** WILEY J. DUNHAM, Berea, Ohio. Filed Sept. 23, 1905. Serial No. 279,593.

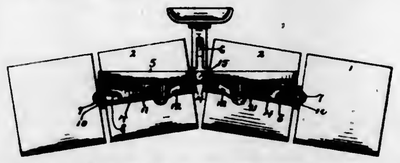

Claim.—1. In a land-roller, the combination of rollers, each roller having a separate shaft, a frame mounted on each of said shafts of said rollers, a draft-frame, means for forming a slidable connection between the frames of said rollers and said draft-frame and means for mechanically causing said rollers to move apart when either or both of the rollers are moved out of a horizontal position.

2. In a land-roller, the combination of rollers, each roller having a separate and independent shaft, a frame mounted on each of said shafts of said rollers, a draft-frame, means for forming a slidable connection between said frames of said rollers and said draft-frame and links securing the inner ends of said frames of said rollers to said draft-frame.

3. In a land-roller, the combination of rollers, each roller having a separate shaft, a frame mounted on each of said shafts, a draft-frame, means for forming a slidable connection between said roller-frames and said draft-frame, arms secured to said draft-frame and links connecting said arms and said roller-frames.

4. In a land-roller, the combination of rollers, each roller having a separate shaft, a frame mounted on each of said shafts, a draft-frame comprising two side pieces arranged to extend longitudinally of said rollers and a cross-bar secured to said side pieces at their center, and means for mounting said draft-frame on said roller-frames.

5. In a land-roller, the combination of a plurality of rollers, each roller having a separate shaft, a frame mounted on each of said shafts, a draft-frame arranged above said roller-frames, said draft-frame comprising two side pieces secured together by means of a cross-bar fastened to the respective side pieces near their centers, means for forming a slidable connection between said draft-frame and said roller-frames and links secured to said draft-frame and to said roller-frames.

6. In a land-roller, the combination of rollers, each roller having a separate shaft, a rectangular frame mounted on each of said shafts, trunnions formed at the front and back of said frames at the outer ends thereof, a draft-frame, arms arranged on said draft-frame at the outer ends thereof and provided with slots arranged to receive said trunnions on said roller-frames, arms arranged on said draft-frame near the center thereof and links connecting said last-mentioned arms and the inner ends of said roller-frames, substantially as described and for the purpose set forth.

811,910. **CARTRIDGE.** ALBERT H. EMERY, Stamford, Conn. Filed Mar. 12, 1903. Serial No. 147,843.

Claim.—1. A plate of explosive material for cartridges constructed with raised ribs upon its opposite faces, the ribs on one face being opposite the spaces on the other and extending from the exterior toward the interior of the plate.

2. A cartridge constructed with a longitudinal series of transverse sections or plates of explosive material, each having a large

central opening, said plates or sections being separated from each other at suitable intervals by ribbed plates which form lighting-passages, the whole cartridge being suitably secured together, to form a cartridge with a large central orifice through which the gases of combustion can pass to the front of the cartridge.

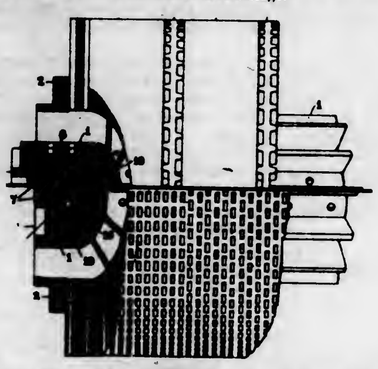

3. A cartridge constructed with a longitudinal series of short transverse sections or plates of explosive material, each section being formed with or having a large central orifice coaxial with the cartridge, open to permit the free passage of the gases of combustion to the front of the cartridge, and secured together by a rod or rods of explosive material, said plates or sections being separated from each other at suitable intervals by ribbed plates which form lighting and venting passages.

4. A cartridge constructed with short transverse sections of explosive material, each section having a large number of longitudinal holes forming a burning-surface which increases as combustion progresses, and separating ribbed plates interposed between said sections at suitable intervals, said plates having igniting and venting passages, each of the said sections and plates having a large central orifice, coaxial with the cartridge, through which the gases of combustion can pass to the front of the cartridge.

5. A cartridge constructed with short transverse sections of explosive material, each section having a large number of longitudinal holes forming a burning-surface which increases as combustion progresses, and separating ribbed plates interposed between said sections at suitable intervals, said plates having igniting and venting passages, said sections and plates being suitably secured together, and each of the said sections and plates having a large central orifice, coaxial with the cartridge, through which the gases of combustion can pass to the front of the cartridge.

6. A cartridge constructed with short transverse sections of explosive material, each section having a large number of longitudinal holes minutely dividing the body of the sections into thin walls, and transmitting flame uniformly to all parts of the interior of the sections; said holes being hexagonal and disposed so as to give equal thickness of walls between them and insure substantial completion of combustion of most of the entire mass at the time the walls are burned through; and separating ribbed plates interposed between said sections at suitable intervals, said plates having igniting and venting passages, each of the said sections and plates having a large central orifice, coaxial with the cartridge, through which the gases of combustion can pass to the front of the cartridge.

7. In a cartridge, the central tube of explosive around which a large part of the cartridge is secured, said tube being constructed with a series of longitudinal ribs on its exterior which, with the surrounding cartridge, form longitudinal cells and longitudinal lighting and venting passages for the surrounding cartridge.

8. In a cartridge, the central tube of explosive around which a large part of the cartridge is secured, said tube being constructed with a series of longitudinal ribs on its exterior which, with the surrounding cartridge, form longitudinal cells and longitudinal lighting and venting passages for the surrounding cartridge, and having powder in these longitudinal cells.

9. In a cartridge, a central tube of explosive material, around which a large part of the cartridge is assembled, this tube having a series of cells or pockets, in which is placed explosive material, and caps or nuts to aid in securing powder placed in said pockets or cells.

10. A cartridge constructed with an exterior annular body of slow-burning powder, containing a longitudinal tube of explosive material interior thereto, through which the charge is ignited, having external radial ribs centering it within the body of slow-burning powder and forming pockets, and a rapid-pressure-developing powder contained within said pockets.

11. A cartridge constructed with an exterior annular body of slow-burning powder, containing a quick-burning charge of rapid-pressure-developing powder, a longitudinal tube containing the quick-burning powder and centering it within the exterior annular body, said containing-tube having a series of longitudinal external ribs forming large passages through which the gases from the slow-burning powder when developed can pass through to the front of the cartridge.

12. A cartridge consisting of separate concentric annular bodies of explosive material, perforated to increase their surface of combustion, and projections, ribs or rods, separating and holding said bodies concentric, and leaving large longitudinal air-spacing between them, through which the gases from combustion pass to the front of the cartridge.

13. A cartridge consisting of separate concentric annular bodies of explosive material perforated to increase their surface of combustion, and projections, ribs or rods, separating and holding said bodies concentric, and leaving large longitudinal air-spacing between them through which the gases from combustion pass to the front of the cartridge the exterior diameter of the inner annular body being smaller than the bore of the gun in which it is to be fired.

14. A cartridge consisting of separate concentric annular bodies of explosive material perforated to increase their surface of combustion, and projections, ribs or rods, separating and holding said bodies concentric, and leaving large longitudinal air-spacing between them through which the gases from combustion pass to the front of the cartridge, the exterior diameter of the outer annular body being nearly or quite equal to the diameter of the chamber of the gun in which it is to be fired.

15. A cartridge consisting of separate concentric annular bodies of explosive material perforated to increase their surface of combustion, and projections, ribs or rods, separating and holding said bodies concentric, and leaving large longitudinal air-spacing between them through which the gases from combustion pass to the front of the cartridge, the exterior diameter of the outer annular body being nearly or quite equal to the diameter of the chamber of the gun in which it is to be fired, the exterior diameter of the inner member being smaller than the bore of the gun and so secured to the outer that soon after combustion begins it will pass forward into the bore of the gun and be consumed while the outer body is consumed largely or wholly within the chamber of the gun.

16. A cartridge consisting of separate concentric annular bodies of explosive material perforated to increase their surface of combustion, longitudinal rods separating said bodies, so as to leave large air-spacing between them, and heads or nuts through which the rods secure the concentric bodies together.

17. A cartridge constructed with an outer annular body of slow-burning powder perforated with radial holes, with such thickness of walls that they will be substantially burned through at the time the projectile leaves the gun, and an inner annular body around a central stem of explosive material, said inner body being made up of series of longitudinal sections or thick plates separated from each other by thin ribbed plates, said longitudinal sections being perforated with a series of longitudinal holes, having such thickness of walls as will cause them to burn through when the projectile has reached that position in the chase of the gun where a large reduction of the burning-surface becomes desirable.

18. A cartridge constructed with an outer annular body of slow-burning powder perforated with radial holes, with such thickness of walls that they will be substantially burned through at the time the projectile leaves the gun, and an inner annular body around a central stem of explosive material, said inner body being made up of a series of longitudinal sections or thick plates separated from each other by thin ribbed plates, said longitudinal sections being perforated with a series of longitudinal holes, having such thickness of walls as will cause them to burn through when the projectile has reached that position in the chase of the gun where a large reduction of the burning-surface becomes desirable, the inner annular body being separated from the outer by an annular space which forms a passage for the flow of gases to the front of the cartridge.

19. A cartridge constructed with an annular body perforated with a large number of radial holes minutely dividing up the walls for ignition and burning, with a rapidly-increasing surface of combustion, the size, form and arrangement of these perforations being such that the section of the perforation rapidly increases from the interior outward, and the walls around the perforations have substantially the same thickness throughout.

20. A cartridge constructed with an annular body perforated with a large number of radial holes minutely dividing up the walls for ignition and burning, with a rapidly-increasing surface of combustion, the size, form and arrangement of these perforations being such that the section of the perforation rapidly increases from the interior outward, and the walls around the perforations have substantially the same thickness throughout, said annular body having a large central orifice through which the products of combustion pass to the front of the cartridge.

21. A cartridge constructed with an outer and an inner annular body, one of which has a large number of radial perforations minutely dividing up the walls for ignition and burning and the other of which is constructed of a series of longitudinal sections perforated with a large number of longitudinal holes and separated from each other by ribbed plates which form igniting and venting passages.

22. A cartridge constructed with an outer and an inner annular body, the outer one of which has a large number of radial perforations minutely dividing up the walls for ignition and burning, and the inner of which is constructed of a series of longitudinal sections perforated with a large number of longitudinal holes, and separated from each other by ribbed plates which form igniting and venting passages.

811,911. CAR-STEP. DELBERT A. FAUT, Chicago, Ill. Filed Feb. 11, 1905. Serial No. 245,214.

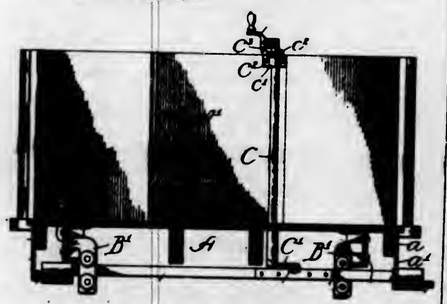

Claim.—1. The combination with a car-body of a transversely-slidable frame, a step fixedly mounted upon each end thereof, one of said steps being normally sheathed and the other normally projected, and means for actuating said sliding frame, for the purpose set forth.

2. The combination with a car-body of a transversely-slidable frame, steps supported thereon, a forwardly-projecting member connected with said frame, a rock-shaft equipped with an arm having pin-and-slot connection with said member, and means for actuating the rock-shaft, for the purpose set forth.

811,912. MUSICAL INSTRUMENT. WILLIAM B. FLEMING, South Pasadena, Cal. Filed Mar. 15, 1905. Serial No. 250,268.

Claim.—1. In a musical instrument in combination, two independently-traveling and independently-driven music-sheets, each provided with perforations at one side thereof arranged in pairs consisting of a long and a short perforation; independent motors for driving said sheets; means to supply power for driving said motors; means to cut off said power-supply for each sheet whenever it travels faster than its companion sheet, said means being actuated through the said short perforations, each sheet controlling its own cut-off mechanism; and means to restore said power-supply to either of said motors when the slower-traveling sheet catches up with the advance sheet, said means being actuated through the long perforations of both sheets.

2. In a musical instrument in combination, two independently-traveling music-sheets, each provided with perforations arranged in pairs consisting of a long and a short perforation; a take-up roll for each of said sheets; an independent motor for driving each of said take-up rolls; a brake for each take-up roll; means to supply power for driving said motors; means to cut off said power-supply for each sheet whenever it travels faster than its companion sheet, said means being actuated through the said short perforations, each sheet controlling its own cut-off mechanism; and means to restore said power-supply to either of said motors when the slower-traveling sheet catches up with the advance sheet, said means being actuated through the long perforations of both sheets.

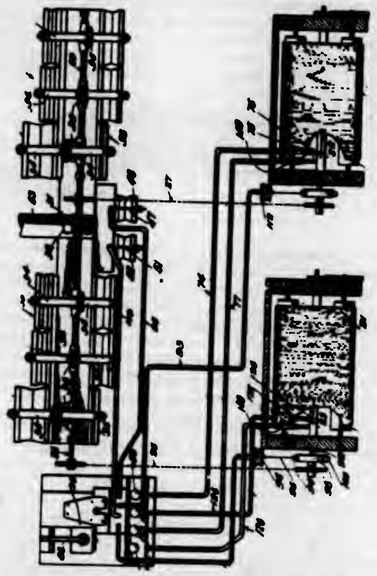

3. In a musical instrument in combination, a perforated music-sheet provided with perforations arranged in pairs consisting of a long and a short perforation, each long perforation being arranged to project beyond both extremities of the short perforation; a take-up roll for said music-sheet; a motor for driving said take-up roll; a brake for said take-up roll; and pneumatically-actuated mechanism arranged to control said motor and said brake.

4. In combination two perforated music-sheets, each provided with perforations at one side thereof arranged in pairs consisting of a long and a short perforation; two shafts on which said sheets are mounted, one sheet on each shaft; independent motors for driving said shafts; said motors having the driving-shafts thereof in common line; disks secured upon the contiguous ends of said motor-shafts, one disk being secured to one shaft and the other disk being secured to the other shaft; means to supply power for driving said motors; means to cut off said power-supply for each sheet whenever it travels faster than its companion sheet, said means being actuated through the said short perforations, each sheet controlling its own cut-off mechanism; and means to restore said power-supply to either of said motors when the slower-traveling sheet catches up with the advance sheet, said means being actuated through the long perforations of both sheets.

5. In a musical instrument a plurality of perforated music-sheets, each provided with perforations at one side thereof arranged in pairs consisting of a long and a short perforation; take-up rolls mounted on shafts, one for each sheet, said take-up rolls being provided with means for securing said music-sheets thereto; motors composed of a plurality of oppositely-disposed pneumatics, one motor for each take-up roll; crank-shafts operatively connected to said pneumatics, one for each motor; means to alternately connect the members of each pair of pneumatics of said motors to suction; means to connect the shaft driven by said motors with the take-up rolls of the music-sheet; means governed by the short perforations at the edges of the music-sheet to cut off the power which drives the motors whereby the travel of the music-sheets is stopped, each sheet controlling its own stop-page mechanism; and means to restore the power to the stopped motor, said means being controlled by the long perforations of both sheets.

811,913. ELECTRIC GUN. SAMUEL T. PEETS, Jr., Victoria, Mexico, assignor of three-fourths to Obed C. Billman, Lodi, Ohio. Filed Dec. 16, 1903. Serial No. 184,725.

Claim.—1. In an electromagnetic gun, the combination with a

suitable barrel, a series of openings arranged along said barrel, and insulated walls formed within said openings, of a projectile adapted and arranged to overlap and separate the magnetic fields of the

plunger operating in said receiver, a supporting-frame with spaced and comprising a plate having a pair of shoulders arranged on oppo-

suitable barrel, a series of openings arranged along said barrel, and insulated walls formed within said openings; of a series of connector-plugs mounted in said openings and normally insulated from said barrel and adapted to contact with a projectile having magnetic properties, a spring adapted to normally hold said connector-plugs in contact with said insulated walls, an insulated electric wire wound about said barrel to form a series of helices connected to said connector-plugs, and an electric generator connected to said connector-plugs and said barrel through said helices.

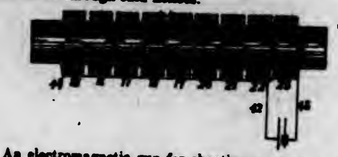

2. An electromagnetic gun for shooting magnetic projectiles, comprising a suitable barrel, a series of surrounding coils or helices, a series of openings arranged along said barrel, insulated walls formed about said openings, a series of connector-plugs mounted in said openings and normally adapted to be engaged by the projectile, a series of springs mounted in said openings and adapted to normally hold said connector-plugs in contact with said insulated walls, and an electric generator connected to said helices and barrel.

811,914. **POULTRY-FOUNTAIN.** GRANT F. GILLENWATERS, East Sacramento, Cal. Filed Sept. 2, 1905. Serial No. 276,854.

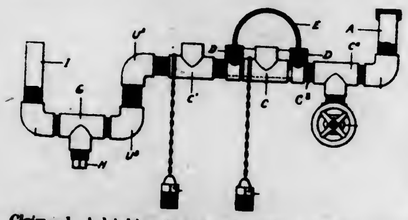

Claim.—1. A drinking-fountain comprising a conduit provided with an inlet and outlet, a drinking-cup normally open to the atmosphere and connected with the conduit and interposed between said inlet and outlet, said outlet arranged slightly below the level of the top of the cup whereby flow may take place through the conduit without overflowing the cup, said cup arranged at an elevation above the ground, an incline leading up to said cup, and a wicket partly inclosing the cup.

2. A drinking-fountain comprising a conduit formed of a series of conjoined pipe-sections and pipe connections, said conduit having upturned ends arranged at different levels and provided with an inlet intermediate of its ends, drinking-cups comprising T's interposed in the conduit with central branches pointed upward and normally open to the atmosphere, the outlet end of said conduit arranged at a slightly lower level than the top of said upturned branches.

3. A drinking-fountain comprising a conduit composed of a series of conjoined pipe sections and connections, said conduit having an inlet, and having a drop U-shaped portion adjacent to its discharge end, a drain-plug in the bend of said U, drinking-cups between said U and the inlet, and the upper end of the outer arm of the U arranged at a lower level than the top of said cups.

811,915. **PNEUMATIC-TUBE CASH-CARRIER.** DANIEL S. HAGER, Toledo, Ohio. Filed Nov. 9, 1905. Serial No. 286,492.

Claim.—In a device of the described character, a pair of cylindrical shells disposed one within the other and rotatable relatively to each other, said shells having corresponding openings in their sides adapted to be thrown into and out of coincidence, a stop secured to the inner shell and adapted to engage the edge of the opening in the outer shell, and a guide-piece upon the stop, said guide-piece being adapted and arranged to overlap and engage the margin of the opening in the outer shell.

811,916. **NUT-LOCK.** LEMUEL A. HALL, Christiana, Pa. Filed Apr. 4, 1905. Serial No. 253,949.

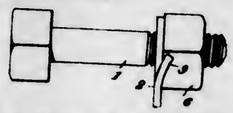

Claim.—1. A nut-lock comprising a bolt, a nut coöperating therewith, a washer having a tongue adapted to be bent up into engagement with said nut in order to prevent any relative turning thereof, and a separable locking member fitting in a recess in the washer having communication with the bolt-receiving opening therein, and adapted to bite into the threads of the bolt to prevent any turning of the washer thereon.

2. In a nut-lock, the combination of a bolt, a nut, a washer having a dovetail recess in communication with the opening therein, and also having a locking-tongue adapted to be bent up into engagement with an edge of said nut, and a locking member of approximately triangular form in cross-section and adapted to fit in the aforementioned dovetail recess and to bite into the threads of said bolt.

3. In a nut-lock, the combination of a bolt, a nut, a washer having a dovetail recess in communication with the opening therein, and also having a locking-tongue adapted to be bent up into engagement with an edge of said nut, and a locking member of approximately triangular form in cross-section and adapted to fit in the aforementioned dovetail recess and bite into the threads of the bolt, the biting edge of said locking member being beveled off to admit of its being easily placed in position and of its ready advancement under action of the nut.

811,917. **LUBRICATOR.** JOSEPH HANSON, Inwood, Iowa. Filed Oct. 23, 1905. Serial No. 284,080.

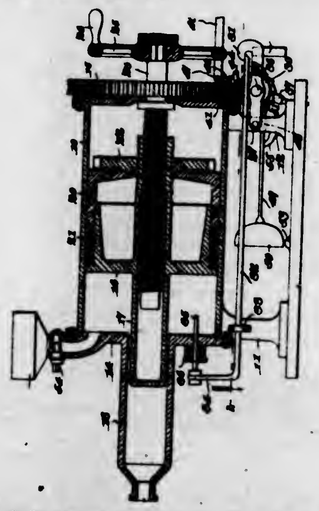

Claim.—1. In a force-feed lubricator, a receiver for the lubricant, a plunger operating in said receiver, a supporting-frame with spaced sides having bearings intermediate the ends and connected at one end by a transverse member and swinging from the other end, one of said side members having a catch-recess, a drive-shaft journaled in said bearings, means for constantly rotating said shaft, gearing between said shaft and plunger, a movable member detachably engaging said recess, a trip disposed in the path of the plunger and operatively connected to said movable member, whereby when the plunger reaches a certain predetermined position the trip will be actuated to release the frame and permit the gearing to be disconnected by gravity.

2. In a force-feed lubricator, a receiver for the lubricant, a plunger operating in said receiver, a supporting-frame with spaced sides having bearings intermediate the ends and connected at one end by a transverse member and swinging from the other end, a drive-shaft journaled in said bearings and extended at one end beyond the frame, a ratchet-wheel carried by the extended end of said shaft, an arm swinging upon said shaft and provided with pawls engaging said ratchet, means for vibrating said arm to cause the constant intermittent rotation of said shaft, gearing between said shaft and plunger, a trip movably disposed in the path of the plunger and detachably engaging said frame, and means for causing the plunger to actuate the trip.

811,918. **KITCHEN-CABINET.** WILLIAM M. HENSON, Kansas City, Mo. Filed May 17, 1905. Serial No. 260,866.

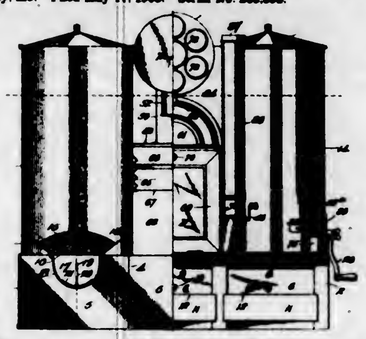

Claim.—1. A kitchen-cabinet, comprising a base, cylinders mounted thereon, front and back plates also mounted thereon and connecting said cylinders, accordion cleats secured at their front ends to the front plate and at their rear ends to the back plate, an adjustable shelf carried by said cleats, and a door-controlled opening in said front plate to give access to the space between said cleats and below said shelf.

2. A kitchen-cabinet, comprising a base, cylinders mounted thereon, front and back plates also mounted thereon and connecting said cylinders, a drum secured in the upper ends of the front and back plates and having a transverse partition, a cup depending from the rear compartment of the drum and provided with a pair of stationary apertured plates, a valve for said cup, comprising a pair of apertured plates to operate in conjunction with the first-named plates for discharging a measured quantity of the commodity in the rear compartment of the drum, and a crank-handle for operating said valve to effect such discharge or to close the bottom of the cup; a horizontal partition connecting the front and rear plates below the cup, and a door-controlled opening in the front plate to give access to the space between the cup and said partition.

3. A kitchen-cabinet, comprising a base, cylinders mounted thereon, front and back plates also mounted thereon and connecting said cylinders, a drum secured in the upper ends of the front and back plates, and having a transverse partition, a cup depending from the rear compartment of the drum and provided with a pair of stationary apertured plates, a valve for said cup, comprising a pair of apertured plates to operate in conjunction with the first-named plates for discharging a measured quantity of the commodity in the rear compartment of the drum, and a crank-handle for operating said valve to effect such discharge or to close the bottom of the cup, a reciprocatory rod suitably guided and pivoted to said crank-handle, a horizontal partition connecting the front and rear plates below the cup, and a door-controlled opening in the front plate to give access to the space between the cup and said partition.

4. A kitchen-cabinet comprising a base having its front side rounded and provided with a plurality of openings in the rounded portion, segmental doors normally closing said openings and fitting within the base and provided at their lower edges with flanges to externally embrace the contiguous portion of the base, and at their rear edges with weighted ends within the base, and with end pieces having a pivotal relation with the base, the plane of the pivotal point being forward of the weighted ends of the doors.

811,919. **TROLLEY-REPLACER.** ROBERT B. HIGGINS, St. Louis, Mo. Filed Aug. 14, 1905. Serial No. 274,132.

Claim.—1. A trolley-replacer for application to a trolley-wire and comprising a plate having a pair of shoulders arranged on opposite sides of, and spaced from the wire, the outer sides of the shoulders being provided with inclined flanges for directing a trolley-wheel into engagement with the wire.

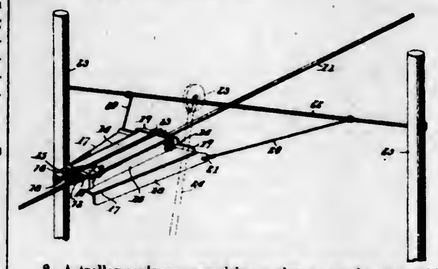

2. A trolley-replacer comprising a plate secured at its middle line to the trolley-wire and having flanges on each side adjacent the wire at one end and receding from the wire and from each other toward the opposite end, and shoulders disposed between the flanges and the wire.

3. The combination with a trolley-wire, of a member having a shoulder extending longitudinally thereof and adjacent to and below the wire, the said shoulder widening laterally throughout its length and provided along its outer longitudinal edge with a downturned flange.

4. The combination with a trolley-wire, of a member provided with a groove embracing the wire, means for clamping the groove upon the wire, a shoulder extending parallel with the groove and adjacent and below the wire the said shoulder widening laterally throughout its length and provided along its outer longitudinal edge with a downturned flange.

5. The combination with a trolley-wire, of a member provided with a longitudinal groove embracing the wire and means for clamping the wire within the groove, a shoulder extending parallel with the groove and adjacent to and below the wire and separated therefrom by a longitudinal channel, the said shoulder widening laterally throughout its length and provided along its longitudinal edge with a downturned flange.

6. The combination with a trolley-wire, of a member provided with a central longitudinal fold embracing the wire, means for clamping the wire within the fold, longitudinal shoulders adjacent to and parallel with and upon opposite sides of and below the wire and separated therefrom by longitudinal channels, the said shoulders widening laterally throughout their lengths, and guy-wires secured to the sides of the member and arranged to hold the member horizontal and from longitudinal displacement upon the trolley-wire.

811,920. **ADDING-MACHINE.** GEORGE N. HINCHMAN and HENRY SCHROEDER, St. Louis, Mo., assignors to The Standard Adding Machine Company, St. Louis, Mo., a Corporation of Missouri. Filed Jan. 25, 1904. Serial No. 190,506.

Claim.—1. In an adding-machine, the combination with adding devices corresponding to the numerical orders, of a series of keys, movable members each actuated by one of said keys, a movable member actuated by all of said keys, and a translating device bringing said adding devices successively within control of both of said movable members.

2. In an adding-machine, the combination with adding devices corresponding to the numerical orders, of a series of keys, cradles each actuated by one of said keys, a cradle actuated by all of said keys, and a translating device bringing said adding devices successively within control of both of said cradles.

3. In an adding-machine, the combination with adding devices corresponding to the numerical orders, of indicating devices for said adding devices, a series of keys, movable members each actuated by one of said keys, a movable member actuated by all of said keys, and a translating device bringing said indicating devices successively within control of both of said movable members.

4. In an adding-machine, the combination with adding devices corresponding to the numerical orders, of a series of keys, a plurality of cradles each actuated by one of said keys, a cradle actuated by all of said keys, and a translating device bringing said adding devices successively within control of both of said cradles.

5. In an adding-machine, the combination with adding devices corresponding to the numerical orders, of a series of keys, a plurality

of cradles each actuated by one of said keys, a cradle actuated by all

ber actuated by said order-keys, a locking device actuated by said

of cradles each actuated by one of said keys, a cradle actuated by all of said keys, a carriage, and movable members mounted in said carriage, each movable member cooperating with a single cradle and successively bringing said adding devices within control of both of said cradles.

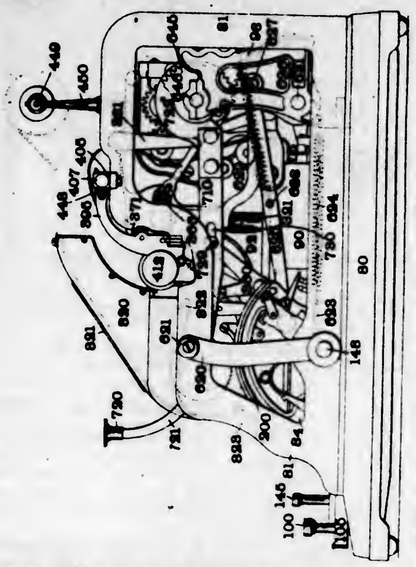

6. In an adding-machine, the combination with adding devices corresponding to the numerical orders, of a set of keys, a plurality of cradles provided with cross-bars, a translating device for bringing said adding devices successively within control of said cross-bars, pendent links pivoted to said cradles, cross-bars carried by said links, and means for actuating said latter cross-bars from said keys.

7. In an adding-machine, the combination with adding devices corresponding to the numerical orders, of a series of keys, cradles provided with cross-bars, a translating device for bringing said adding devices successively within control of said cross-bars, pendent links pivoted to said cradles, cross-bars removably carried in said links, and means for actuating said latter cross-bars from said keys.

8. In an adding-machine, the combination with adding devices corresponding to the numerical orders, of a series of keys, supporting devices provided with hooks, cradles pivotally mounted in said hooks, translating devices for successively bringing said adding devices within control of said cradles, pendent links pivoted to said cradles and arranged below said supporting members, whereby the displacement of the cradles is prevented, cross-bars carried by said links, and means for actuating said cross-bars from said keys.

9. In an adding-machine, the combination with adding devices corresponding to the numerical orders, of a series of keys, cradles, a translating device successively bringing said adding devices within control of said cradles, pendent links pivoted to said cradles, cross-bars carried by said links, guides for said cross-bars, and means for operating said cross-bars from said keys.

10. In an adding-machine, the combination with adding devices corresponding to the numerical orders, of a series of keys, cradles, a translating device successively bringing said adding devices within control of said cradles, pendent links carried by said cradles, cross-bars carried by said links, a set of stops on said keys each adapted to cooperate with one of said cross-bars, and a second set of stops each adapted to cooperate with a different cross-bar.

11. In an adding-machine, the combination with adding devices, of a translating device, a series of order-keys controlling said translating device, a set of digit-keys controlling said adding devices, a movable member actuated by the operation of said order-keys, and a locking mechanism operated by the movement of said digit-keys for locking said movable member and thereby said order-keys.

12. In an adding-machine, the combination with adding devices, of a translating device, order-keys controlling said translating device, digit-keys controlling said adding devices, a movable member actuated by said order-keys, a locking device actuated by said digit-keys to lock said movable member, an operating-handle, and means for releasing said locking device by the movement of said handle.

13. In an adding-machine, the combination with adding devices, of digit-keys controlling said adding devices, an operating-handle, a full-stroke device for said handle, reversing means for said full-stroke device, and connections for rendering said reversing means inoperative.

14. In an adding-machine, the combination with adding devices, of digit-keys controlling said adding devices, an operating-handle, a full-stroke device for said handle, reversing means for said full-stroke device, and connections operated by the movement of said digit-keys for rendering said reversing device inoperative.

15. In an adding-machine, the combination with adding devices, of a translating device, order-keys for controlling said translating device, an operating-handle, a lock for said handle, and mechanism operating through the movement of said order-keys for controlling said lock.

16. In an adding-machine, the combination with adding devices, of a translating device, order-keys for controlling said translating device, digit-keys for controlling said adding devices, an operating-handle, a lock for said handle, mechanism controlled by the movement of said order-keys for controlling said lock, and a second mechanism operated by the movement of said digit-keys for controlling said lock.

17. In an adding-machine, the combination with adding devices corresponding to the numerical orders, of a plurality of stops controlling said adding devices, keys for positioning said stops, positive locking means for locking said stops in position, and a repeat-key for actuating said locking means.

18. In an adding-machine, the combination with adding devices corresponding to the numerical orders, of a plurality of stops for controlling said adding devices, keys for positioning said stops, locking devices for said stops, mechanism for returning said stops to normal position, and a repeat-key for operating said locking devices and throwing said mechanism out of operation

19. In an adding-machine, the combination with adding devices corresponding to the numerical orders, of a plurality of stops controlling said adding devices, keys for positioning said stops, a locking-plate locking said stops in position, and a repeat-key for operating said plate.

20. In an adding-machine, the combination with adding devices corresponding to the numerical orders, of a plurality of stops controlling said adding devices, keys for positioning said stops, a plate for returning said stops to normal position, and a locking-plate carried by said first-named plate and movable relative thereto.

21. In an adding-machine, the combination with adding devices corresponding to the numerical orders, of a plurality of stops controlling said adding devices, keys for positioning said stops, a plate for returning said stops to their normal position, and a locking-plate slidably mounted on said first-named plate.

22. In an adding-machine, the combination with adding devices corresponding to the numerical orders, of a plurality of stops controlling said adding devices, keys for positioning said stops, and a locking-plate for locking said stops, said locking-plate being provided with means for completely positioning any stop which has been partly positioned.

23. In an adding-machine, the combination with adding devices corresponding to the numerical orders, of a plurality of stops controlling said adding devices, pins carried by said stops, keys for positioning said stops, a locking-plate cooperating with said pins to lock said stops, and inclined tongues carried by said locking-plate for operating on said pins to position any stop which has been partially positioned.

24. In an adding-machine, the combination with adding devices corresponding to the numerical orders, of a plurality of stops controlling said adding devices, pins carried by said stops, keys for positioning said stops, a plate cooperating with said pins to return said stops to their normal position, and a locking-plate carried by said first-named plate and cooperating with said pins to lock said stops in position.

25. In an adding-machine, the combination with adding devices corresponding to the numerical orders, of a plurality of stops controlling said adding devices, pins carried by said stops, keys for positioning said stops, a plate cooperating with said pins to return said stops to their normal position, and a locking-plate slidingly carried by said first-named plate and cooperating with said pins to lock said stops in position.

26. In an adding-machine, the combination with adding devices corresponding to the numerical orders, of a plurality of stops for controlling said adding devices, keys for positioning said stops, and a spring-mounted plate movable in the direction of the length of said stops for returning said stops to their normal position.

27. In an adding-machine, the combination with digit-keys, of printing devices controlled thereby, hammers cooperating with said printing devices, actuating mechanism for said hammers, and an error-key for throwing said actuating mechanism out of operation.

28. In an adding-machine, the combination with digit-keys, of printing devices actuated thereby, hammers for said printing devices, pivotally-mounted plates, hooks carried by said plates and adapted to engage said hammers, and a translating device for positioning said plates to cause the engagement of said hooks and hammers.

29. In an adding-machine, the combination with digit-keys, of printing devices controlled thereby, hammers for said printing devices, pivoted plates, hooks carried by said pivoted plates and adapted to engage with said hammers, a translating device for causing said hooks to engage with said hammers, and an error-key for disengaging said hooks from said hammers.

30. In an adding-machine, the combination with digit-keys, of printing devices controlled thereby, hammers for said printing devices, pivotal plates, hooks mounted on said plates, a translating device for causing the engagement of said hooks and hammers, and an error-key for disengaging said hooks and hammers.

31. In an adding-machine, the combination with digit-keys, of printing devices controlled thereby, hammers for said printing devices, pivoted plates, hooks pivotally carried by said plates and adapted to engage with said hammers, an operating-handle for actuating said plates to operate said hammers, and an error-key for moving said hooks independently of said plates to disengage said hooks and hammers.

32. In an adding-machine, the combination with digit-keys, of printing devices controlled thereby, hammers for said printing devices, pivotal plates carrying hooks adapted to engage said hammers, detents controlling said plates, and a translating device for releasing said detents

33. In an adding-machine, the combination with digit-keys, of printing devices controlled thereby, hammers for said printing devices, pivotal plates, hooks pivoted on said plates and adapted to engage said hammers, detents controlling said plates, a translating device for releasing said detents, and an error-key for moving said hooks independently of said plates to release said hooks from said hammers.

34. In an adding-machine, the combination with digit-keys, of printing devices controlled thereby, hammers for said printing devices, mechanism for operating said hammers, a translating device for positioning said operating mechanism, and a locking device for locking said mechanism in its operative position.

35. In an adding-machine, the combination with digit-keys, of printing devices controlled thereby, hammers for said printing devices, operating mechanism for said hammers, a translating device for positioning said operating mechanism, a locking device for locking said mechanism in operative position, and a repeat-key controlling said locking device.

36. In an adding-machine, the combination with digit-keys, of printing mechanism controlled thereby, hammers for said printing mechanism, pivotal plates for operating said hammers, detents controlling the position of said plates, and a locking device for said detents.

37. In an adding-machine, the combination with digit-keys, of printing devices controlled thereby, hammers for said printing devices, pivotal plates operating said hammers, detents controlling the position of said plates, a locking device for said detents, and a repeat-key controlling said locking device.

38. In an adding-machine, the combination with digit-keys, of printing devices controlled thereby, hammers for said printing devices, pivotal plates, hooks pivoted on said plates and adapted to actuate said hammers, a member adapted to cooperate with said hooks to release the same from said hammers, and means for actuating said member.

39. In an adding-machine, the combination with digit-keys, of printing devices controlled thereby, hammers for said printing devices, pivotal plates, hooks pivoted on said plates and adapted to actuate said hammers, a movable member adapted to release said hooks from said hammers, and an error-key for actuating said member.

40. In an adding-machine, the combination with digit-keys, of printing devices controlled thereby, hammers for said printing devices, pivotal plates, hooks pivoted on said plates and adapted to actuate said hammers, projections carried by said hooks, a blade adapted to cooperate with said projections and release said hooks from said hammers, and an error-key for actuating said blade.

41. In an adding-machine, the combination with digit-keys, of printing devices controlled thereby, hammers for said printing devices, pivotal plates, hooks pivoted to said plates and adapted to actuate said hammers, projections carried by said hooks, a blade for cooperating with said projections to release said hooks from said hammers, an error-key, a sliding member actuated by said error-key, and a pivotal finger carried by said sliding member and adapted to operate said blade.

42. In an adding-machine, the combination with digit-keys, of printing devices controlled thereby, hammers for said printing devices, pivotal plates, hooks carried by said plates and adapted to actuate said hammers, an error-key, mechanism operated by said error-key for moving said hooks independently of said plates to release said hooks and hammers, and mechanism also operated by said error-key for returning said plates to their normal position.

43. In an adding-machine, the combination with digit-keys, of printing devices controlled thereby, detents for said printing devices, an error-key, and connections operated by said error-key for releasing said detents.

44. In an adding-machine, the combination with adding devices, of pivotal members controlling said adding devices, digit-keys controlling said pivotal members, a total-key, and an alining device for said pivotal members operated by said total-key.

45. In an adding-machine, the combination with adding devices, of printing-sectors provided with teeth for engaging said adding devices, digit-keys controlling said printing-sectors, an alining device engaging with the teeth of said sectors to aline the printing, and a total-key for operating said alining device.

46. In an adding-machine, the combination with printing-sectors, of pivoted hooks engaging directly with said printing-sectors, stops for individually releasing said hooks, digit-keys for operating said stops, and a total-key for simultaneously releasing all of said hooks.

47. In an adding-machine, the combination with printing-sectors, of a pivotally-mounted shaft, hooks pivoted on said shaft, means for individually swinging said hooks on said shaft and releasing the sectors, and means for swinging said shaft to release all of said sectors.

48. In an adding-machine, the combination with printing-sectors, of a pivotally-mounted shaft, hooks pivoted on said shaft and engaging said sectors, an abutment, projections carried by said hooks, digit-keys for individually swinging said hooks on said shaft and releasing said sectors, and a total-key for swinging said shaft to bring said projections in engagement with said abutment and release all of said sectors.

49. In an adding-machine, the combination with a plurality of toothed members corresponding to the numerical orders, of idle wheels and carrying devices immovable toward and away from each other but movable toward and away from said toothed members, and adding-wheels movable relatively to said idle wheels and carrying devices.

50. In an adding-machine, the combination with a plurality of pivoted toothed members corresponding to the numerical orders, of idle wheels and carrying devices immovable toward and away from each other but movable toward and away from said pivoted toothed members, and adding-wheels movable relatively to said idle wheels and carrying devices.

51. In an adding-machine, the combination with a plurality of toothed printing-sectors, of idle wheels and carrying devices immovable toward and away from each other but movable toward and away from said printing-sectors, and adding-wheels movable relatively to said idle wheels and carrying devices.

52. In an adding-machine, the combination with a plurality of toothed members corresponding to the numerical orders, of a movable frame, idle wheels and carrying devices carried by said frame, a second frame carried by said first-named frame, and adding-wheels carried by said second frame and movable relatively to said idle wheels and carrying devices.

53. In an adding-machine, the combination with a plurality of pivoted toothed members corresponding to the numerical orders, of a movable frame, idle wheels and carrying devices carried by said frame, a second frame carried by said first-named frame, and adding-wheels carried by said second frame and movable relatively to said idle wheels and carrying devices.

54. In an adding-machine, the combination with a plurality of toothed printing-sectors, of a movable frame, idle wheels and carrying devices carried by said frame, a second frame carried by said first-

named frame, and adding-wheels carried by said second frame and movable relatively to said idle wheels and carrying devices.

named frame, and adding-wheels carried by said second frame and movable relatively to said idle wheels and carrying devices.

55. In an adding-machine, the combination with a plurality of toothed members corresponding to the numerical orders, of a pivoted frame, idle wheels and carrying devices carried by said frame, a second movable frame carried by said first-named frame, and adding-wheels carried by said second frame and movable relatively to said idle wheels and carrying devices.

56. In an adding-machine, the combination with a plurality of pivoted toothed members corresponding to the numerical orders, of a pivoted frame, idle wheels and carrying devices carried by said frame, a second movable frame carried by said first-named frame, and adding-wheels carried by said second frame and movable relatively to said idle wheels and carrying devices.

57. In an adding-machine, the combination with a plurality of toothed printing-sectors, of a pivoted frame, idle wheels and carrying devices carried by said frame, a second movable frame carried by said first-named frame, and adding-wheels carried by said second-named frame and movable relatively to said idle wheels and carrying devices.

58. In an adding-machine, the combination with a plurality of toothed members corresponding to the numerical orders, of a pivoted frame, idle wheels and carrying devices carried by said frame, a second frame pivoted to said first-named frame, and adding-wheels carried by said second-named frame.

59. In an adding-machine, the combination with a plurality of pivoted toothed members, of a pivoted frame, idle wheels and carrying devices carried by said frame, a second frame pivoted to said first-named frame, and adding-wheels carried by said second frame.

60. In an adding-machine, the combination with a plurality of toothed printing-sectors, of a pivoted frame, idle wheels and carrying devices carried by said frame, a second frame pivoted to said first-named frame, and adding-wheels carried by said second-named frame.

61. In an adding-machine, the combination with a plurality of toothed members corresponding to the numerical orders, of digit-keys controlling said toothed members, a movable frame, idle wheels carried by said frame, carrying mechanism also carried by said frame, and adding mechanism normally in engagement with said carrying mechanism, and means for moving said adding mechanism into engagement with said idle wheels.

62. In an adding-machine, the combination with a plurality of toothed members corresponding to the numerical orders, of digit-keys controlling said toothed members, a movable frame, idle wheels carried by said frame and normally out of engagement with said toothed members, adding mechanism also carried by said frame, a second movable frame, adding-wheels carried by said movable frame and means for moving said adding-wheels out of engagement with said carrying mechanism into engagement with said idle wheels.

63. In an adding-machine, the combination with a plurality of toothed members corresponding to the numerical orders, of digit-keys controlling said toothed members, idle wheels normally out of engagement with said toothed members, adding-wheels operated by said idle wheels, a total-key, and connections operated by said total-key for moving said idle wheels into engagement with said toothed members.

64. In an adding-machine, the combination with a plurality of toothed members corresponding to the numerical orders, of digit-keys controlling said toothed members, a movable frame, idle wheels carried by said frame and normally out of engagement with toothed members, adding mechanism also carried by said frame, a second movable frame, adding-wheels carried by said second frame, an operating-handle, connections operated by said handle for moving said first-named frame to bring said idle wheels into engagement with said toothed members, and means also operated from said handle for moving said adding-wheels into engagement with said idle wheels.

65. In an adding-machine, the combination with a plurality of toothed members corresponding to the numerical orders, of digit-keys controlling said toothed members, a pivotal frame, idle wheels carried by said frame and normally out of engagement with said toothed members, carrying mechanism also carried by said frame, a second pivotal frame, adding-wheels carried by said frame and normally in engagement with said adding mechanism, means for moving said idle wheels into engagement with said toothed members, and means for moving said adding-wheels into engagement with said idle wheels and out of engagement with said carrying mechanism.

66. In an adding-machine, the combination with a plurality of toothed members corresponding to the numerical orders, of digit-keys controlling said toothed members, a pivotal frame, idle wheels carried by said frame and normally out of engagement with toothed members, carrying mechanism also carried by said frame, a second pivotal frame, adding-wheels carried by said second frame and normally in engagement with said carrying devices, an operating-handle, means actuated by said handle for moving said idle wheels into engagement with said toothed members, and mechanism also operated by said handle for moving said adding-wheels into engagement with said idle wheels.

67. In an adding-machine, the combination with a plurality of toothed members corresponding to the numerical orders, of digit-keys controlling said toothed members, a movable frame, idle wheels carried by said frame and normally out of engagement with said toothed members, carrying mechanism also carried by said frame, adding-wheels normally in engagement with said carrying mechanism, a total-key, and connections operated by said total-key for moving said idle wheels into engagement with said toothed members and said adding-wheels into engagement with said idle wheels.

68. In an adding-machine, the combination with a plurality of toothed members corresponding to the numerical orders, of digit-keys controlling said toothed members, a movable frame carrying idle wheels adapted to be brought into communication with said toothed members, a second pivotal frame carrying adding-wheels adapted to be brought into communication with said idle wheels, means for simultaneously swinging said frames, and means for returning said toothed members to actuate said adding-wheels.

69. In an adding-machine, the combination with a plurality of toothed members corresponding to the numerical orders, of digit-keys for limiting the movement of said toothed members, a frame carrying idle wheels adapted to be brought into communication with said toothed members, a second frame carrying adding-wheels adapted to be brought into communication with said idle wheels, means for moving said frames to connect said wheels and toothed members, and means for releasing said toothed members.

70. In an adding-machine, the combination with a plurality of toothed members corresponding to the numerical orders, of digit-keys for limiting the movement of said toothed members, a movable frame carrying idle wheels, mechanism for moving said frame to bring said idle wheels into communication with said toothed members, an operating-handle for operating said mechanism, a total-key, and connections operated by said total-key for throwing said mechanism out of operation.

71. In an adding-machine, the combination with a plurality of toothed members corresponding to the numerical orders, of digit-keys for limiting the movement of said toothed members, a movable frame carrying idle wheels adapted to be brought into mesh with said toothed members, a second frame carrying adding-wheels adapted to be brought into communication with said idle wheels, an operating-shaft, mechanism for moving said first-named frame and operated by said shaft, said mechanism also moving said second frame to hold said adding-wheels and idle wheels in mesh.

72. In an adding-machine, the combination with a plurality of toothed members corresponding to the numerical orders, of digit-keys controlling said toothed members, adding-wheels normally out of operative connection with said toothed members, a non-rotatable stop for said adding-wheels normally out of the path thereof, means for moving said adding-wheels into operative engagement with said toothed members, and means for moving said stop into the path of said adding-wheels.

73. In an adding-machine, the combination with a plurality of toothed members corresponding to the numerical orders, of digit-keys controlling said toothed members, adding-wheels normally out of operative connection with said toothed members, a non-rotatable stop for said adding-wheels normally out of the path thereof, a total-key, connections operated by said total-key for bringing said adding-wheels into operative connection with said toothed members, and connections also operated by said total-key for moving said stop into the path of said adding-wheels.

74. In an adding-machine, the combination with a plurality of toothed members corresponding to the numerical orders, of digit-keys controlling said toothed members, idle wheels normally out of engagement with said toothed members, adding-wheels normally out of engagement with said idle wheels, a non-rotatable stop for said adding-wheels normally out of the path thereof, means for moving said idle wheels into engagement with said toothed members, means for moving said adding-wheels into engagement with said idle wheels, and means for moving said stop into the path of said adding-wheels.

75. In an adding-machine, the combination with a plurality of toothed members corresponding to the numerical orders, of digit-keys controlling said toothed members, idle wheels normally out of engagement with said toothed members, adding-wheels normally

out of engagement with said idle wheels, a non-rotatable stop for said adding-wheels normally out of the path thereof, a total-key, connections operated by said total-key for moving said idle wheels into engagement with said toothed members, connections operated by said total-key for moving said adding-wheels into engagement with said idle wheels, and means also operated by said total-key for moving said stop into the path of said adding-wheels.

76. In an adding-machine, the combination with indicating devices corresponding to the numerical orders, of digit-keys controlling said indicating devices, adding devices, a total-key for transferring the sum from said adding devices to said indicating devices, and an error-key for retransferring the sum from said indicating devices to said adding devices.

77. In an adding-machine, the combination with a plurality of indicating devices corresponding to the numerical orders, of digit-keys controlling said indicating devices, adding devices, a rotary member for bringing said adding devices into connection with said indicating devices, a total-key, and connections operated by said total-key for throwing said rotary member out of operation.

78. In an adding-machine, the combination with a plurality of indicating devices corresponding to the numerical orders, of digit-keys controlling said indicating devices, adding devices, a member bringing said adding devices into connection with said indicating devices, an operating-handle for actuating said member, a total-key, and connections operated by said total-key to shift said member and render it inoperative.

79. In an adding-machine, the combination with a plurality of indicating devices corresponding to the numerical orders, of digit-keys controlling said toothed members, adding devices, a rotary member for bringing said adding devices into connection with said indicating devices, an operating-handle for operating said rotary member, a member movable longitudinally of said rotary member, a total-key, and means carried by said total-key for actuating said longitudinally-movable member.

80. In an adding-machine, the combination with a plurality of indicating devices corresponding to the numerical orders, of digit-keys controlling said indicating devices, adding devices, a rotary member, actuating mechanism carried by said rotary member for bringing said adding devices into connection with said indicating devices, an operating-handle for actuating said adding devices, and a total-key for throwing said operating connections out of action.

81. In an adding-machine, the combination with a plurality of indicating devices corresponding to the numerical orders, of digit-keys controlling said indicating devices, adding devices, an operating-handle, operating connections actuated by said handle for throwing said adding devices into connection with said indicating devices, a second set of operating connections, and a total-key for actuating said second set of connections and throwing first set of connections out of action.

82. In an adding-machine, the combination with a plurality of indicating devices, corresponding to the numerical orders, of digit-keys controlling said indicating devices, a movable frame, adding devices carried by said frame, a rotary member, a cam on said rotary member for moving said frame to bring said adding devices into connection with said indicating devices, and means for moving said cam out of operation.

83. In an adding-machine, the combination with a plurality of indicating devices corresponding to the numerical orders, of digit-keys controlling said indicating devices, a movable frame, adding devices carried by said frame, a rotary member for moving said frame to bring said adding devices into connection with said indicating devices, an operating-handle for actuating said rotary member, and a total-key for throwing said rotary member out of operative connection with said frame.

84. In an adding-machine, the combination with a plurality of indicating devices corresponding to the numerical orders, of digit-keys controlling said indicating devices, a movable frame, adding devices carried by said frame, a rotary member, an operating-handle actuating said rotary member, a cam carried by said rotary member and cooperating with said frame, said cam being movable longitudinally of said rotary member, and means for moving said cam longitudinally of said member to disengage said cam from said frame.

85. In an adding-machine, the combination with a plurality of indicating devices corresponding to the numerical orders, of digit-keys controlling said indicating devices, a pivotal frame, adding mechanism carried by said frame, a rotary member, a cam carried by said rotary member and cooperating with said frame to move said adding devices into operative connection with said indicating devices, an operating-handle for actuating said rotary member, a second rotary member also cooperating with said frame to move said adding devices into connection with said indicating devices, a total-key, operating connections actuated by said total-key for operating said second rotary member, and operating connections also actuated by said total-key for moving said first rotary member out of operation.

86. In an adding-machine, the combination with a plurality of indicating devices corresponding to the numerical orders, of digit-keys controlling said indicating devices, adding mechanism, operating devices for moving said adding mechanism into connection with said indicating devices, mechanism for throwing said devices out of operation, a total-key for actuating said connections, and an error-key also actuating said connections.

87. In an adding-machine, the combination with a plurality of indicating devices corresponding to the numerical orders, of digit-keys controlling said indicating devices, adding devices, a rotary member, a cam carried by said rotary member for moving said adding devices into engagement with said indicating devices, a total-key, connections operated by said total-key for throwing said cam out of operation, an error-key, and connections operated by said error-key for throwing said cam out of operation.

88. In an adding-machine, the combination with a plurality of indicating devices corresponding to the numerical orders, of adding devices, a total-key, operating connections actuated by said total-key for moving said adding devices into engagement with said indicating devices, and operating connections also actuated by said total-key for releasing said indicating devices.

89. In an adding-machine, the combination with a plurality of indicating devices corresponding to the numerical orders, of adding devices, a total-key, means operated by said total-key for moving said adding devices into engagement with said indicating devices, operating connections also operated by said total-key for releasing said indicating devices, a locking device for said adding devices, and means operated by the return of said total-key for releasing said locking device.

90. In an adding-machine, the combination with a plurality of indicating devices corresponding to the numerical orders, of adding devices, a total-key, means operated by said total-key for moving said adding devices into engagement with said indicating devices, and a pivoted detent controlled by said total-key for holding said adding devices into engagement with said indicating devices.

91. In an adding-machine, the combination with a plurality of indicating devices corresponding to the numerical orders, of adding devices, a total-key, means operated by said total-key for moving said adding devices into engagement with said indicating devices, a pivoted hook for engaging with said adding devices to hold the same in engagement, and a projection carried by said hook and extending in the path of said total-key.

92. In an adding-machine, the combination with a plurality of indicating devices corresponding to the numerical orders, of adding devices, a total-key, a cam carried by said total-key for moving said adding devices into engagement with said indicating devices, a locking device for said adding devices, and means operated by the return of said total-key for releasing said locking device.

93. In an adding-machine, the combination with a plurality of indicating devices corresponding to the numerical orders, of a movable frame carrying idle wheels, a second movable frame carrying adding-wheels, a total-key, connections operated by said total-key to move the first-named frame to connect said idle wheels and indicating devices, means also operated by said total-key to connect said adding-wheels and idle wheels, a detent engaging said second frame, and means operated by the return of said total-key for releasing said detent.

94. In an adding-machine, the combination with a plurality of indicating devices corresponding to the numerical orders, of adding devices actuated by said indicating devices, a total-key, connections operated by said total-key for bringing said adding device into engagement with said indicating devices, an operating-handle, and a locking device operated by the movement of said total-key for preventing the return of said handle.

95. In an adding-machine, the combination with a plurality of indicating devices corresponding to the numerical orders, of adding devices actuated by said indicating devices, a total-key, mechanism operated by said total-key for bringing said adding devices into engagement with said indicating devices, an operating-handle, a locking device operated by the movement of said total-key for preventing the return of said handle, and mechanism operated by the release of said total-key for disengaging said locking device.

96. In an adding-machine, the combination with a plurality of indicating devices corresponding to the numerical orders, of adding devices actuated by said indicating devices, a total-key, mechanism

operated by said total-key for bringing said adding devices into engagement with said indicating devices, an operating-handle, a rotary member actuated by said handle, a detent, and connections between said detent and total-key for moving the former into the path of said rotary member.

97. In an adding-machine, the combination with a plurality of indicating devices corresponding to the numerical orders, of adding devices actuated by said indicating devices, a total-key mechanism operated by said total-key for bringing said adding devices into engagement with said indicating devices, an operating-handle, a rotary member actuated by said handle, a detent, and yielding connections between said detent and total-key for moving the former into the path of said rotary member.

98. In an adding-machine, the combination with a plurality of indicating devices corresponding to the numerical orders, of digit-keys controlling said indicating devices, means for returning said indicating devices, an operating-handle, and a slotted link communicating the movement of said handle to said returning means.

99. In an adding-machine, the combination with a plurality of indicating devices corresponding to the numerical orders, of digit-keys controlling said indicating devices, means for returning said indicating devices, an operating-handle, a rotary member actuated by said handle, and a slotted link connecting said rotary member and returning means.

100. In an adding-machine, the combination with a plurality of indicating devices corresponding to the numerical orders, of digit-keys controlling said indicating devices, means for returning said indicating devices, and locking devices for said returning means.

101. In an adding-machine, the combination with a plurality of indicating devices corresponding to the numerical orders, of digit-keys controlling said indicating devices, means for returning said indicating devices, an operative handle, connection between said handle and returning means, a locking device for said returning means, and connections between said handle and locking device.

102. In an adding-machine the combination, with a plurality of indicating devices corresponding to the numerical orders, of digit-keys controlling said indicating devices, means for returning said indicating devices, an operating-handle, a rotary member actuated by said handle, a slotted link connecting said rotary member and returning means, a locking device for said returning means, and a cam carried by said rotary member for actuating said locking device.

103. In an adding-machine, the combination with a plurality of indicating devices corresponding to the numerical orders, of digit-keys controlling said indicating devices, means for returning said indicating devices, an operating-handle, connections bringing said handle into operative connection with said returning device both on the forward stroke and on the return of said handle, and means for locking said returning device.

104. In an adding-machine, the combination with a plurality of indicating devices corresponding to the numerical orders, of digit-keys controlling said indicating devices, means for returning said indicating devices, an operating-handle, a detent, and yielding connections between said detent and total-key for moving the former into the path of said rotary member.

105. In an adding-machine, the combination with a plurality of indicating devices corresponding to the numerical orders, of digit-keys controlling said indicating devices, means for returning said indicating devices, an operating-handle, and a locking device for said returning means operative upon the forward movement of said handle, said locking devices being inoperative upon the return of said handle.

106. In an adding-machine, the combination with a plurality of indicating devices corresponding to the numerical orders, of digit-keys controlling said indicating devices, means for returning said indicating devices, locking devices for said returning means, an operating-handle, a rotary member actuated by said handle, and a cam carried by said rotary member and operating said locking devices during the forward movement of said handle, said cam being inoperative upon the return of the handle.

107. In an adding-machine, the combination with a plurality of indicating devices corresponding to the numerical orders, of digit-keys controlling said indicating devices, means for returning said indicating devices, an operating-handle, a rotary member actuated by said handle, a slotted link operatively connecting said rotary member with said returning means both on the forward stroke and the return of the handle, a locking device for said returning means, and a cam carried by said rotary member and actuating said locking device during the forward movement of the handle, said cam being inoperative upon the return of the said handle.

108. In an adding-machine, the combination with a plurality of indicating devices corresponding to the numerical orders, of keys controlling said indicating devices, a repeat-key, and a locking device operated by said repeat-key for locking said first-named keys against movement.

109. In an adding-machine, the combination with a plurality of indicating devices corresponding to the numerical orders, of operating-keys controlling said indicating devices, a comb locking said operating-keys, a repeat-key, means operated by said repeat-key for actuating said comb, a total-key, means actuated by said total-key for actuating said comb, an operating-handle, and connections operated by said handle for operating said comb.

110. In an adding-machine, the combination with a plurality of adding devices, of operating-keys controlling said adding devices, locking devices coöperating with said keys, and means operated by the depression of one of said keys for moving the locking devices on one side thereof in one direction and the locking devices on the other side thereof in the other direction to lock all the remaining keys.

111. In an adding-machine, the combination with a plurality of indicating devices corresponding to the numerical orders, of operating-keys controlling said indicating devices, locking devices coöperating with said keys, and means operated by the depression of one of said keys for moving the locking devices on one side thereof in one direction and the locking devices on the other side thereof in the other direction to lock all the remaining keys.

112. In an adding-machine, the combination with a plurality of indicating devices corresponding to the numerical orders, of operating-keys for said indicating devices, locking devices for said keys consisting of a plurality of sets of connected plates, projections carried by said sets and interlocking, and means carried by said keys for moving said plates.

113. In an adding-machine, the combination with a plurality of indicating devices corresponding to the numerical orders, of operating-keys therefor, a plurality of sets of connected plates, interlocking devices between said sets, inclined faces carried by said plates, and pins carried by said keys for engaging with said inclined faces.

114. In an adding-machine, the combination with adding devices, of operating-keys for said adding devices, locking-plates arranged between said keys and interlocking connections between said plates, whereby the depression of two keys at the same time is prevented.

115. In an indicating device for adding-machines, the combination with a toothed segment, of feeding-dogs coöperating with said segment, a track adjacent to said toothed segment, and means for moving said segment to bring said dogs into engagement with said track.

116. In an indicating device for adding-machines, the combination with a toothed segment yielding laterally, of an indicator adjacent to said toothed member, a pointer carried by said toothed member, feeding-dogs normally in engagement with said toothed member, and means for disengaging said dogs by the lateral movement of said segment.

117. In an indicating device for adding-machines, the combination with a member movable step by step, of an arm in the path of said member, a hammer pivoted to said arm, a bell adapted to be struck by said hammer, connections between said arm and hammer for moving the latter, and means for throwing said connections out of operation.

118. In an indicating device for adding-machines, the combination with a member movable step by step, of an arm in the path of said member, a second arm pivoted to said first-named arm, a dog pivoted to said second-named arm and engaging with said first-named arm, means for releasing said dog, a hammer carried by said second arm, and a bell adapted to be struck by said hammer.

119. In an adding-machine, the combination with adding mechanism, of printing devices therefor, a platen coöperating with said printing devices, a feed-dog for said platen, an arm connected with said feed-dog, an adjustable block in said arm, a rock-shaft, a link connecting said adjustable block and rock-shaft, and means for actuating said rock-shaft from said adding mechanism.

811,921. EXTENSION-COUCH. JOHN HOST, San Francisco, Cal. Filed July 27, 1904. Serial No. 218,208.

Claim.—1. The combination with a frame bearing a stationary locking-shoulder, and a swinging leaf pivoted thereon, of a bar-form locking-link pivoted at one end on said leaf and provided at its lower edge near its inner end with a narrow notch, the lower edge of the inner end of said link riding on said locking-shoulder when the leaf is raised above the horizontal, thereby to elevate the notch so that the acquired momentum of the parts and inertia of the link will be sufficient to cause the notch to clear the locking-shoulder when the leaf is dropped, substantially as and for the purpose set forth.

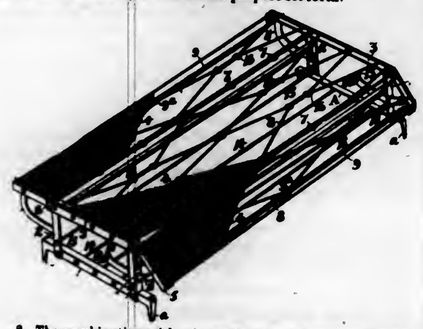

2. The combination with a frame bearing a stationary locking-shoulder, and a swinging leaf pivoted thereon, of a bar-form locking-link pivoted at one end on said leaf and having a straight lower edge provided with a notch near its inner end, the lower edge of said inner end riding on the locking-shoulder when the leaf is raised above the horizontal position, whereby the notch is elevated sufficiently to clear the locking-shoulder when the leaf is dropped from an abnormally high position, substantially as and for the purpose set forth.

3. An extension couch-frame comprising end base-pieces and vertical posts and top bars, extension-bars pivoted to the ends of the top bars capable of being opened or closed about the pivots, elastic cables extended between the ends of the main portion and of the extensions, and means connecting the exterior cables with the outer bars of the extensions to maintain a transverse tension of the cables.

4. An extension-couch comprising end base-pieces and vertical posts and top bars rigid therewith, extension-bars pivoted at the ends of the top bars, a bed-bottom extended between the ends of the main portion and of the extensions, and having the side edges of said bottom connected with the rigid outer bars of the extensions to maintain a transverse tension of said bottom.

5. An extension-couch comprising end base-pieces and vertical posts and top bars rigid therewith, extension-bars pivoted at the ends of the top bars, and having bars along their longitudinal edges, and a flexible bed-bottom extended between the ends of the main portion and of the extensions, and having the side edges connected with the said side bars of the extensions whereby a transverse tension of said bottom is maintained.

6. An extension-couch comprising end base-pieces and vertical posts and top bars rigid therewith, extension-bars pivoted at the ends of the top bars, and having rigid bars along their sides, a bed-bottom extended between the ends of the main portion and of the extensions, and having its side edges connected to the rigid bars of said extensions whereby a transverse tension of said bottom is maintained, and parallel rods extending from base-piece to base-piece and fixed thereto and serving as a holder for a supplemental mattress.

7. A couch-frame comprising angle-iron base-pieces and angle-iron posts and top bars rigid therewith, angle-iron extensions pivoted to the ends of the top bars, said posts provided with slots, and braces pivoted to the extensions and slidable through the slots of the posts said braces having their inner ends provided with notches and the portion beyond said notches made higher than the portion anterior to the notch for the purpose herein described.

8. An extension-couch comprising main end frames, side extensions hinged to the top bars of said end frames, braces with locking-notches to engage with slots in the main frame and retain the extensions in a horizontal position, elastic cables and superposed woven-wire fabric extended between the ends of the main portion and of the extensions, and centrally-disposed hooks or links by which the exterior cables may be connected with the rigid outer bar of the extension to maintain a transverse tension of the cables.

9. An extension-couch consisting of main end frames and connecting bars and rods, extension-frames pivoted to the top bars of the main frame, notched braces by which the extensions may be retained in an elevated position, independent elastic wire-fabric sections by which the main body and the extensions are covered, and clips by which the contiguous and parallel edges of said sections are united.

10. An extension-couch consisting of main end frames, extension-frames pivoted to the end frames at points below the upper edges whereby said upper edges are separated when the extensions are closed and brought together when the extensions are raised to a horizontal position, independent woven-wire mattress fabric sections stretched upon the main top frame and extensions, and clips by which the contiguous parallel edges of said fabric are united.

811,922. LOOP FOR HAMMOCKS. HERMAN L. HOHLFELD, Philadelphia, Pa. Filed Sept. 25, 1905. Serial No. 280,054.

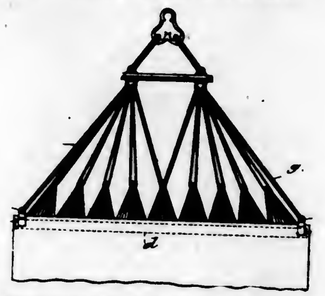

Claim.—1. In a device of the character described, in combination with a spreader-bar of a hammock, of a loop, consisting of a plate presenting a broad bearing-surface to said hammock and prongs adapted to pass through said spreader-bar so as to connect the hammock and plate to said bar.

2. In a device of the character described, in combination with a spreader-bar of a hammock, of a loop, consisting of a plate, means integral with said plate adapted to pass through said bar and hammock-cloth surrounding the same so as to connect said plate and hammock-cloth to said bar.

3. In a device of the character described, in combination with a spreader-bar of a hammock, of a loop, consisting of a plate having an eye and prongs, means adapted to be engaged by said prongs, said prongs adapted to pass through said spreader-bar and hammock-cloth to connect the same with each other, when bent at the free ends over said means.

4. In a device of the character described, in combination with a spreader-bar of a hammock and its cords, of a loop, consisting of a plate having an eye and prongs, a locking-bar adapted to be engaged by said prongs, said prongs adapted to pass through said spreader-bar and hammock-cloth to connect the same with each other, when bent at the free ends over said locking-bar, and said eye adapted to receive said cords to assist in the support of said hammock-cloth.

5. In a device of the character described, in combination with a spreader-bar of a hammock, of a loop, consisting of a bent plate having prongs laterally projecting therefrom, a locking-bar having a groove adapted to be engaged by said prongs, said prongs adapted to pass through said spreader-bar and cloth of said hammock to connect the same with each other by clamping both the plate and locking-bar to the spreader-bar, when bent over and into the groove of said locking-bar.

6. In a device of the character described, in combination with a spreader-bar of a hammock and its cords of a loop, consisting of a bent plate having an eye and staples or prongs laterally projecting therefrom, said plate adapted to partly surround said spreader-bar, a locking-bar having a groove adapted to be engaged by the staples, said staples adapted to pass through said spreader-bar and cloth of said hammock to connect the same with each other by clamping both the plate and locking-bar to said spreader-bar when bent over and into the groove of said locking-bar, and said eye adapted to receive said cords to assist in the support of said hammock-cloth by said plate, prongs and locking-bar.

811,923. LOADING, CONVEYING, AND DUMPING DEVICE. BENJAMIN HOWLAND, Pontiac, Mich. Filed Aug. 20, 1904. Serial No. 220,205.

Claim.—1. In a combined loading conveying and dumping device, the combination of a body mounted upon traveling wheels, a motor mounted on the front end of said body, a windlass to be operated by said motor, means for gathering a load operated by said windlass, a bridge pivotally attached to the rear end of said traveling

device adapted to operate as a brace against the resistance of the loading mulk, and to be raised when loaded, substantially as described.

2. In a device of the character described, the combination of a receptacle and a powder-ejecting bag within the pocket, and having

ferent lengths and located one above the other, having their ends

811,928. SAFETY-STARTING DEVICE FOR ELECTRIC MOTORS.

device adapted to operate as a brace against the resistance of the loading pulls, and to be raised when loaded, substantially as described.

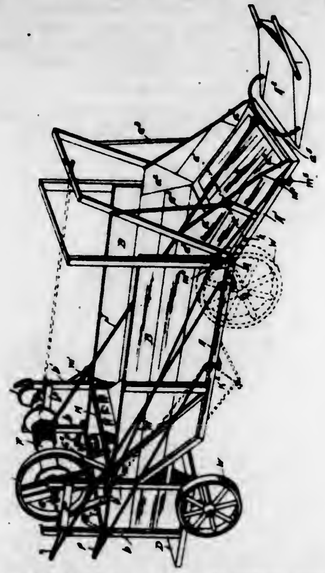

2. In a combined loading, conveying and dumping device, the combination of a body adapted to travel upon wheels, motor means carried thereby adapted to draw the material to be loaded thereonto, a bridge pivoted to the end adapted to serve as a brace, and means connecting said bridge and said motor means whereby the bridge may be hauled up and held in position to support a part of the load during the movement of the vehicle, substantially as described.

3. In a combined loading and conveying and dumping device, the combination of a body adapted to travel upon wheels, means mounted thereon whereby the material to be loaded can be drawn into and dumped upon the floor thereof, a bridge adapted to form a brace and also as means for controlling the passage thereover of the loading means, the bottom of said device and said bridge having dump-boards and means for controlling the same, substantially as described.

4. In a combined loading conveying and dumping device, in combination with the body mounted upon traveling wheels, a bridge pivotally attached to the rear end of said body, means for raising and lowering the bridge, and a pivoted dump-board located in said bridge, affording when dropped an inclination of greater angle than the bridge when the same is dropped, and means for operating said dump-board, substantially as described.

5. In a combined loading, conveying and dumping device, the combination of a body member adapted to travel upon wheels, a bridge member pivoted to one end of said body member, dump-boards pivoted to and forming a part of the floor portion of said members, said boards being so adjusted that one end is raised while the other descends under the influence of the load, and means carried by said body portion whereby said boards may be raised and lowered, substantially as described.

811,924. **DEVICE FOR APPLYING POWDER TO THE PERSON.** OTTO H. HUMAN, Jersey City, N. J. Filed Aug. 10, 1905. Serial No. 273,683.

Claim.—1. An article of personal wear comprising a pocket or receptacle and an upwardly-discharging powder-bag therein provided with an expansion-spring.

2. A powder-bag adapted to discharge upwardly and having a partition between its ends and an expansion-spring below the said partition.

3. A powder-bag adapted to discharge upwardly and having a pervious partition between its ends and an expansion-spring within the bag below said partition.

4. An article of wearing-apparel provided with a pocket or receptacle and a powder-ejecting bag within the pocket, and having its discharge at the arm-pit portion, and an expansion-spring.

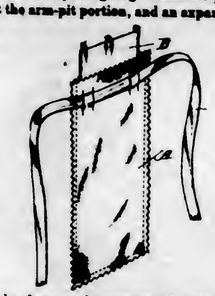

5. An article of personal wear formed with a pocket at its arm-pit portion and a powder-ejecting bag within the pocket and adapted when compressed to discharge the powder upwardly.

811,925. **FASTENING DEVICE.** ISAAC JACKSON, Glossop, England. Filed May 17, 1905. Serial No. 260,917.

Claim.—1. A fastener comprising a relatively thin plate adapted to be secured or released by a rotary motion, said plate having openings for engagement with the lugs of a key, that wall of at least one of the openings which is to be engaged by the key-lug being undercut, substantially as described.

2. A fastener comprising a relatively thin plate adapted to be secured or released by a rotary motion, said plate having openings therethrough provided with undercut walls, substantially as described.

3. A fastener having openings 4, and bent up at the edge between the openings to form rounded ribs, substantially as described.

811,926. **REINFORCED CONCRETE.** EDGAR B. JARVIS, Toronto, Canada. Filed May 31, 1904. Serial No. 210,563.

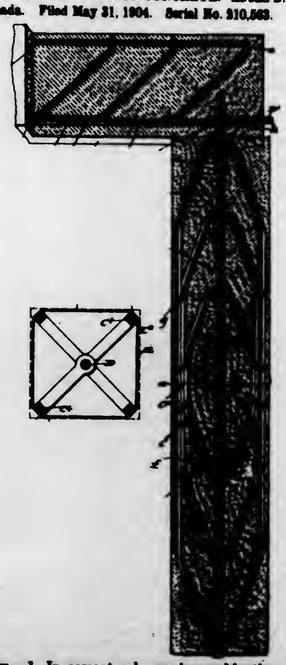

Claim.—1. In cement columns in combination a plurality of trusses each consisting of a central rod and a plurality of bars of different lengths and located one above the other, having their ends bent obliquely and converging to the central rod said rod passing through the ends of all the bars as and for the purpose specified.

2. In cement structures, in combination a beam having in it a truss consisting of a central rod and a plurality of bars of different lengths, located one above the other having their ends bent obliquely, a column containing a plurality of like trusses secured to the central rod and a link-bar connecting the trusses in the beam and column as and for the purpose specified.

3. A strengthening truss or device for concrete structures comprising a frame composed of a plurality of sets of radially-arranged bars, each set consisting of a plurality of straight portions of different lengths secured together and having inwardly-inclined portions connected to the inwardly-inclined portions of the other sets, and a wire mesh encircling the sets of bars and in contact with the outer surface of the straight portions thereof, substantially as described.

811,927. **REINFORCED TRUSS FOR CONCRETE.** EDGAR B. JARVIS, Toronto, Canada. Filed Dec. 15, 1904. Serial No. 236,967.

Claim.—1. In a reinforcing-truss for concrete, the combination with the beam having a plurality of openings, of a bar extending underneath the beam and upwardly and outwardly through the openings and having obliquely-arranged ends oppositely inclined toward the ends of the beam as and for the purpose specified.

2. In a reinforcing-truss for concrete, the combination with the beam having a plurality of openings, of a bar extending underneath the beam and upwardly and outwardly through the openings and having obliquely-arranged ends oppositely inclined toward the ends of the beam and provided with spurs as and for the purpose specified.

3. In a reinforcing-truss for concrete, the combination with the I-beam having a plurality of openings, of a bar extending underneath the beam and upwardly and outwardly through the openings and having obliquely-arranged ends oppositely inclined toward the ends of the beam as and for the purpose specified.

4. In a reinforcing-truss for concrete, the combination with the beam having a plurality of openings, of a plurality of bars extending underneath the beam and upwardly and outwardly through the openings, the shortest being located in the center, each of the bars having obliquely-arranged ends extending through the openings and oppositely inclined toward the ends of the beam as and for the purpose specified.

5. In a reinforcing-truss for concrete, the combination with the beam having a plurality of openings, of a plurality of bars extending underneath the beam and upwardly and outwardly through the openings, the shortest being located in the center, each of the bars having obliquely-arranged ends extending through the openings and oppositely inclined toward the ends of the beam and separating-blocks located between the portions of the bars extending underneath the beam as and for the purpose specified.

6. In a reinforcing-truss for concrete, the combination with the main bar or beam, of supplemental bars suitably held thereto and provided with obliquely-arranged ends, the said bars increasing in cross-sectional area from the center outwardly as and for the purpose specified.

7. In a reinforcing-truss for concrete, the combination with the beam having a plurality of openings, of a plurality of bars extending underneath the beam and upwardly and outwardly through the openings, the shortest being located in the center, each of the bars having obliquely-arranged ends extending through the openings and oppositely inclined toward the ends of the beam and separating-blocks located between the portions of the bars extending underneath the beam, the said separating-blocks and ends of the bars being so arranged as to provide openings between the bars themselves, and the bars and the beam, and ends of the bars as and for the purpose specified.

8. In a reinforcing-truss for concrete, the combination with the beam having a plurality of openings, of a bar extending underneath the beam and upwardly and outwardly through the openings and having obliquely-arranged ends oppositely inclined toward the ends of the beam and held in place by the contact of the upper and lower sides of the obliquely-shaped ends on the edges of the openings as and for the purpose specified.

811,928. **SAFETY STARTING DEVICE FOR GAS-ENGINES.** ALVIN S. JOHNSON, Minneapolis, Minn., assignor of one-fourth to F. J. Moore, Minneapolis, Minn. Filed May 14, 1904. Serial No. 207,893.

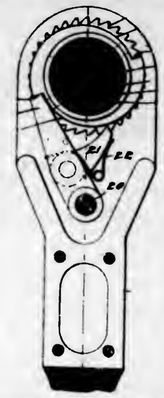

Claim.—1. The combination, with a gas-engine crank-shaft, of an arm loosely mounted thereon, mechanism for locking said arm on said shaft when it is turned in one direction, mechanism for tripping said locking mechanism upon the reverse movement of said shaft and arm, and means for holding said locking mechanism in its unlocked or inoperative position after being tripped, for the purpose specified.

2. In a device of the class described, the combination, with a crank-shaft having stops or shoulders, of a loosely-mounted crank-arm, a pawl thereon arranged to engage said shoulders when said arm is turned in one direction, mechanism for tripping said pawl upon the reverse movement of said arm and shaft, and a spring-pressed pin arranged to drop behind said pawl and hold it in its unlocked position.

3. The combination, with an automobile-car body, of a crank-shaft projecting therethrough, two sleeves arranged on said shaft, one within the other, the outer sleeve being fixed and having a series of external ratchet-teeth, the inner sleeve being connected with said shaft and provided with suitable stops or shoulders, a crank-arm loosely mounted on said sleeves, a pawl pivoted on said arm and adapted to bear upon said movable sleeve and engage said shoulders when said arm is turned in one direction, and a click pivoted on said pawl between its pivot and point of engagement with said shoulders and engaging the teeth of said ratchet to trip said pawl when said shaft and arm are turned in the other direction.

811,929. **RAILWAY-TRACK-GRADING MACHINE.** EDWARD M. JONES, St. Louis, Mo. Filed May 1, 1905. Serial No. 258,417.

Claim.—1. In a railway-track-grading machine, a car, a moldboard carried thereby, and means carried by the car whereby the moldboard is shifted from one side of the car to the other; substantially as specified.

2. In a railway-track-grading machine, a car, a moldboard carried thereby, and mechanism connected to and actuated by one of the car-axles whereby the elevation of the moldboard is changed so as to regulate its horizontal travel; substantially as specified.

3. In a railway-track-grading machine, a car, a sectional moldboard carried thereby, and connections between the car and moldboard whereby the latter is shifted from one side of the car to the other, substantially as specified.

4. In a railway-track-grading machine, a car, a moldboard carried thereby, and adapted to scrape the ground on each side of the car; connections between the car and the moldboard whereby the latter is shifted from one side of the car to the other and suitable gearing from certain of the car-axles to the shifting connections for operating the latter, substantially as specified.

5. In a railway-track-grading machine, a car, a sectional moldboard connected to the said car; means whereby said sectional moldboard is shifted from one side of the car to the other, and suitable braces extending from the moldboard to the side of the car, substantially as specified.

6. In a railway-track-grading machine, a car, a moldboard connected to said car, means whereby said moldboard and its connec-

tions are shifted from one side of the car to the other; braces between the moldboard and car; suitable gearing from certain of the car-axles to the shifting connections, and means whereby this gearing is thrown into or out of operation, substantially as specified.

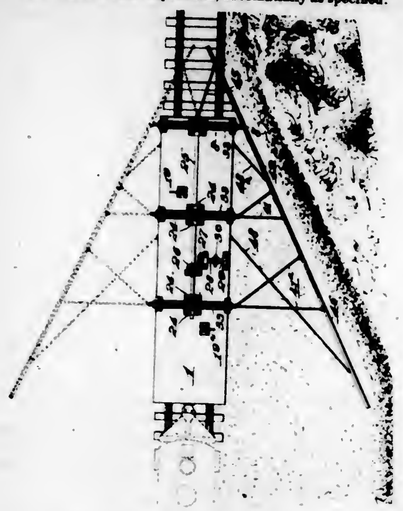

811,930. PAPER-PULP-ASSORTING APPARATUS. BERNHARD KIELHORN, Holyoke, Mass. Filed May 19, 1905. Serial No. 261,264.

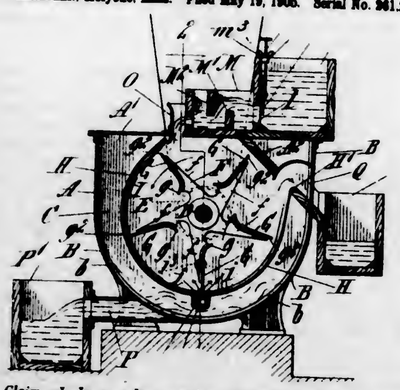

Claim.—1. In a pulp-assorting apparatus, the combination with a casing having an outlet-opening, and a chamber-inclosing screen, within and separated from the walls of the casing, and having a pulp-inlet opening and a pulp-outlet opening, of a centrifugal wheel within said screen, having the blades or wings thereof at their portions toward the axis of their revolution inclined forwardly relatively to the direction of rotation of said wheel.

2. A pulp-assorting apparatus consisting of a casing having an outlet-opening and a chamber-inclosing screen within and separated from the walls of the casing, and having a pulp-inlet opening and a pulp-outlet opening, and also having an air-entrance opening leading through the end of the casing and communicating into the interior of the chamber within the screen, of a centrifugal wheel within said screen, operable to force the pulp outwardly against the said screen, and means for rotating the said wheel.

3. In a pulp-assorting apparatus, the combination with an approximately cylindrical screen-shell having a pulp-entrance opening at its upper portion and to one side of its axis, and having a pulp-residue-outlet opening at an upper portion thereof sidewise opposite from said entrance-opening, of a fan-wheel rotatable within the screen-inclosed chamber, a chamber-inclosing casing outside of the said screen having a pulp-opening leading from a lower portion thereof, and a water-supply pipe extending longitudinally within the last-named chamber and having jet-holes directed through the bottom of the screen.

4. A pulp-assorting apparatus comprising a casing having an outlet-opening, and a chamber-inclosing screen, within and separated from the walls of the casing, and having pulp inlet and outlet openings leading to and from said screen-inclosed chamber, an axially horizontal centrifugal wheel within said screen, and a water-supply pipe ranging horizontally and in proximity to the screen, and having jet-holes directed substantially toward the wheel-axis and for delivering water under pressure, and distributed, into the screen-inclosed chamber.

811,931. FENCE-MAKING MACHINE. WALTER C. KINGARD, St. Charles, Ill. Filed Mar. 26, 1906. Serial No. 308,402.

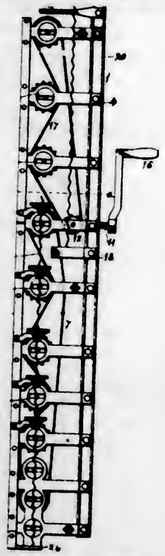

Claim.—1. In a portable fence-making machine, the combination of a suitable frame, twisters supported by the frame, and a series of stay-wire guides, each guide comprising a movable section.

2. In a portable fence-making machine, the combination of a suitable frame, twisters supported by the frame, and a series of stay-wire guides, each guide comprising two movable sections.

3. In a portable fence-making machine, the combination of a suitable frame, twisters supported by the frame, a series of stay-wire guides, each comprising two movable sections, and stops limiting the closing movement of the section.

4. In a portable fence-making machine, the combination of a suitable frame, twisters supported by the frame, a series of stay-wire guides, each guide comprising two movable sections, and stops limiting the opening movement of the sections.

5. In a portable fence-making machine, the combination of a suitable frame, twisters supported by the frame, a series of stay-wire guides, each guide comprising two movable sections, a stop limiting the closing movements and stops limiting the opening movements of the sections.

6. In a portable fence-making machine, the combination of a suitable frame, twisters supported by the frame, and a series of stay-wire guides, each guide comprising a self-closing section.

7. In a portable fence-making machine, the combination of a suitable frame, twisters supported by the frame, and a series of stay-wire guides, each guide comprising two self-closing sections.

8. In a portable fence-making machine, the combination of a suitable frame, twisters supported by the frame, and a series of stay-wire guides, each guide comprising a movable section having its upper portion weighted.

9. In a portable fence-making machine, the combination of a suitable frame, twisters supported by the frame, and a series of stay-wire guides, each guide comprising two movable sections having their upper portions weighted.

10. In a portable fence-making machine, the combination of a suitable frame, twisters supported by the frame, a series of stay-wire guides, each guide comprising two movable sections having their meeting edges curved outwardly.

11. In a portable fence-making machine, the combination of a suitable frame, twisters supported by the frame, each twister composed of ends provided with transverse openings, a center division having a transverse opening and a bar across the opening.

12. In a portable fence-making machine, the combination of a suitable frame, twisters supported by the frame, a support for the frame having a series of adjustable open loops whereby the openings may be closed.

811,932. BAND-CUTTER AND FEEDER. PETER R. KRAMER and GEORGE B. WILSON, Stillwater, Minn. Filed May 31, 1904. Serial No. 210,330.

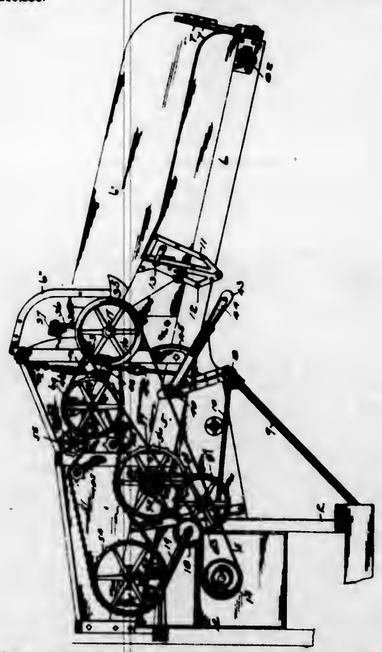

Claim.—1. In a band-cutter and feeder, the combination, with a casing, of a bundle-carrier, a shaft 83 provided near the discharge end of said carrier, a series of curved arms mounted on said shaft, a driven sprocket-wheel, a clutch mechanism connecting said wheel and said shaft, pressure-plates arranged to overhang said shaft between said arms, and mechanism including a spring-pressed adjustable arm connecting said pressure-plates with said clutch device, whereby when the accumulation of grain on said plates exceeds a certain amount said clutch will be operated to stop said shaft and retarding-arms, substantially as described.

2. In a band-cutter and feeder, the combination, with a casing, of a shaft 83 mounted therein, retarding-arms carried by said shaft, a clutch connected with said shaft, a series of pressure-plates arranged to extend between said retarding-arms, a shaft 93 whereon said plates are mounted, a crank-arm 94 secured on said shaft 93, an arm 96 pivoted on said shaft 93 and having an adjustable connection with said arm 94, a spring-pressed rod connected with said arm 96, and an arm 98 connecting said arm 96 and said clutch and arranged to operate the same to stop said retarding device when the weight of the grain on said plates exceeds a predetermined amount.

3. In a band-cutter and feeder, the combination, with a casing, of a bundle-carrier, a shaft 17 provided above the same, a series of band-cutting knives carried by said shaft, a pulley 16 and a disk 23 secured on said shaft, a disk 24 loosely mounted on said shaft and having an inwardly-turned flange 26, arms 27 pivoted on said disk 23 and carrying friction-blocks 28, weights 30 carried by said arms, a rod 29 connecting one arm on one side of its pivot with the other arm on the opposite side of its pivot, a spring connected with one of said arms and arranged to oscillate them and withdraw said blocks from contact with said flange, but allowing them to be thrown outward by centrifugal force to engage said flange, substantially as described.

4. The combination, with a carrier and its shaft, of a rock-shaft having a series of arms overhanging said carrier, a driving mechanism connected with said carrier-shaft, operative connections provided between said rock-shaft and said driving mechanism for disconnecting the latter when said arms are raised by the pressure of the grain, and a continuously-operating mechanism in constant engagement with said carrier-shaft for operating the same at a slower speed after the disconnection of said driving mechanism.

5. The combination, in a band-cutter and feeder, with a bundle-carrier and its shaft 57, of a rock-shaft 69 arranged above said carrier and having a series of arms overhanging the same, a clutch mechanism provided on said shaft 57, operative connections provided between said clutch mechanism and said shaft 69, a driven sprocket-wheel 56 loosely mounted on said shaft 57, and means for driving said shaft 57 from said wheel when said clutch mechanism is disconnected by the movement of said rock-shaft.

6. In a band-cutter and feeder, the combination, with a casing, of a carrier having a shaft 57, a rock-shaft 69 provided above said carrier, and having a series of arms 73 arranged to overhang the same, a clutch mechanism provided on said shaft 57 and operatively connected with said shaft 69 and arranged to be alternately set and released by the rocking of said shaft 69, a flanged hub 74 and a sprocket 75 secured on said shaft 57, said hub having projections 76, a sprocket-wheel 56 loosely mounted on said shaft 57, dogs 77 secured on said wheel and adapted to engage said projections, and means for driving said sprocket 56.

7. In a band-cutter and feeder, the combination, with a casing, of a bundle-carrier and its shaft, and means for driving the same, a rock-shaft 69 arranged above said carrier and provided with a series of arms overhanging said carrier, a clutch mounted on said bundle-carrier shaft and comprising a fixed and a movable driven member, a bell-crank lever 65 arranged to engage the movable member of said clutch, a rod 67 having one end connected to said bell-crank, a crank-arm 68 mounted on said shaft 69 and connected to the other end of said rod, and a spring 70 provided on said rod 67 and normally under compression to hold the members of said clutch in their locked position, substantially as described.

8. The combination, with a carrier and its shaft and a driving mechanism connected therewith, of means operated by the pressure of the grain for temporarily disconnecting said driving mechanism from said shaft, and a continuously-operating mechanism in constant engagement with said shaft for operating the same at a slower speed after the disconnection of said driving mechanism.

9. The combination, with a carrier and its shaft and a driving mechanism connected therewith, of means arranged to be operated by the pressure of grain for disconnecting said driving mechanism from said shaft when an overplus of grain accumulates on said carrier, and a continuously-operating mechanism in engagement with said shaft and normally idle by reason of the greater speed of the shaft but becoming operative to drive said shaft when it is disconnected from said driving mechanism.

10. The combination, with a carrier and its shaft and a driving mechanism connected therewith, of means operated by the pressure of the grain for disconnecting said driving mechanism and releasing said shaft, a continuously-operating sprocket-wheel and a ratchet mechanism interposed between said wheel and shaft and normally idle but arranged to engage and drive said shaft when it is disconnected from said driving mechanism.

11. The combination, with a carrier and its shaft and driving mechanism connected therewith, of means operated by the pressure of the grain for disconnecting said driving mechanism from said shaft, a continuously-operating sprocket-wheel loosely mounted on said shaft, and dogs carried by said wheel and arranged to engage projections on said shaft and drive the same when it is disconnected from said driving mechanism.

811,933. PROTECTIVE ATTACHMENT FOR INFANTS' HIGH CHAIRS. JOHN KUSEL, Chicago, Ill. Filed May 31, 1905. Serial No. 262,894.

Claim.—1. In combination with an infant's high chair having side arms, a swinging guard provided with a cross guard-board pivoted to the back of the chair and adapted when lowered to rest upon the side arms and a guard post or pin rigidly secured at its upper end, and depending from the cross guard-board to the seat of the chair,

and means for locking the lower end of the guard post or pin to the seat of the chair, substantially as described.

8. An injector-burner comprising a body having an oilway terminating in an outlet having a concave bottom, a partition, an air-

terminating above the plane of the top wall of the steam-discharge

and means for locking the lower end of the guard post or pin to the seat of the chair, substantially as described.

2. The combination with an infant's high chair having side arms, a swinging guard provided with side arms adapted when lowered to rest upon the side arms of the chair and pivoted to the back of the chair and a cross guard-board secured to the arms, a depending protective post or pin rigidly secured at its upper end to the lower face of the cross guard-board and adapted to have its lower end inserted into a socket in the bottom of the chair and a spring-lock for automatically locking the guard post or pin at its lower end when inserted into the socket, substantially as described.

811,934. **AUTOMATIC PACKING.** EDWARD S. LEA and JULIUS DEGEN, Trenton, N. J., assignors, by mesne assignments, to Lea-Degen Pump Company, Trenton, N. J., a Corporation of New Jersey. Filed May 6, 1905. Serial No. 259,150.

Claim.—1. A construction for packing revoluble shafts against leakage of fluid on either side thereof, consisting of the shaft, a sleeve surrounding said shaft, and fixed to the shaft a collar thereon, a flexible packing element having angularly-disposed walls, one of which is adapted to press against said collar, and the other against a surface at right angles to the collar and parallel to the shaft.

2. A construction for packing revolving shafts against the leakage of fluid on either side thereof, consisting of a sleeve surrounding the shaft, and fixed to the shaft a collar rotating with the shaft, a flexible packing element having right-angularly-disposed walls, one of which may be pressed against said collar, and the other against a surface at right angles to said collar and parallel to the shaft, and means to press said walls of said element in both directions against both surfaces.

3. A construction for packing revolving shafts against the leakage of fluid on either side thereof, consisting of a sleeve surrounding the shaft, and fixed to the shaft a collar rotating with the shaft, a flexible packing element having right-angularly-disposed walls, one of which may be pressed against said collar, and the other against a surface at right angles to said collar and parallel to the shaft, and a spring exerting its force upon the packing element to press it against the collar.

4. A construction for packing revolving shafts against the leakage of fluid on either side thereof, consisting of a sleeve surrounding the shaft, and fixed to the shaft a collar rotating with the shaft, a flexible packing element having right-angularly-disposed walls, one of which may be pressed against the collar and the other against a surface at right angles to the collar and parallel to the shaft, a member fitting in the angular recess of the packing elements and means to press the packing and the member against or toward the collar.

5. A construction for packing rotating shafts against the leakage of fluid on either side thereof, consisting of a sleeve surrounding the shaft, and fixed to the shaft collars rotating with the shaft, flexible packing elements each having right-angularly-disposed walls one of each of which may be pressed against the collars in opposite directions and the other against surfaces at right angles to said collars and parallel to the shaft, and means to create the pressure.

6. A construction for packing revolving shafts against the leakage of fluid on either side thereof, consisting of a sleeve surrounding said shaft, and fixed to the shaft collars rotating with the shaft, flexible packing elements having right-angularly-disposed walls one of each of which may be pressed against the collars and the others against surfaces at right angles to said collars and parallel to the shaft, members fitting in the angular recess of said elements, and a spring to press said elements and members in opposite directions against and toward the collars.

7. A construction for packing revolving shafts against the leakage of fluid on either side thereof, consisting of a sleeve surrounding the shaft, and fixed to the shaft collars rotating with the shaft, a flexible packing element having right-angularly-disposed walls one of which may be pressed against said collars and the other against surfaces at right angles to said collars and parallel to the shaft, a duct through which pressure may be forced against said packing elements to force them to a packing position.

811,935. **INJECTOR-BURNER.** LOUIS K. LEARY, Los Angeles, Cal. Filed Sept. 8, 1903. Renewed June 13, 1905. Serial No. 265,066.

Claim.—1. An injector-burner comprising a body provided with an oilway terminating in two parallel discharge slots or ducts, the bottom of said way being concaved at its communication into one of said slots or ducts, and a steamway, said ducts arranged beyond the discharge-opening of said steamway and discharging across the plane of discharge therefrom.

2. An injector-burner comprising a body provided with an oilway terminating in a wide concave-bottomed discharge-outlet, and a recessed plate affixed to said body and forming a steamway terminating in a thin wide discharge-slot, and means for directing the oil from said discharge-outlet right angularly across the plane of discharge from said steamway.

3. An injector-burner comprising a body provided with an oilway, a recessed plate affixed to said body and forming a steamway terminating in a thin wide discharge-slot, and an end block or end wall for said body and forming a downward extension of said oilway adapted to project the oil downwardly across the plane of the steam-discharge, the bottom of said oilway being depressed at its center, where it communicates into said downward extension.

4. An injector-burner comprising a body provided with an oilway terminating in two discharge slots or ducts, and with a steamway terminating in a thin wide discharge-outlet, one of said oil-discharge ducts communicating into the steam-discharge slot, the other duct discharging across the plane of discharge from said steam-discharge slot.

5. An injector-burner comprising a body comprising an oilway terminating in two discharge slots or ducts separated by an inwardly-projecting lip or partition extending above one of said ducts, and with a steamway terminating in a thin discharge-slot, one of said oil-ducts communicating into the steam-discharge slot, the other duct discharging across the plane of discharge from said steam-discharge slot.

6. An injector-burner comprising a body having an oilway terminating in two discharge slots or ducts separated by a lip or partition forming the floor of the outward duct, said lip or partition having a concave upper face, the floor of the other duct also concaved, and said body provided with a steamway terminating in a discharge-slot adapted to impinge steam against the oil from said ducts.

7. An injector-burner comprising a body having an oilway terminating in an outlet having a concave bottom, a partition or lip superposed above said bottom and having a concaved upper face, a downwardly-projecting wall forming a discharge-slot between such wall and the end of said concaved bottom, and an outer wall forming a second discharge-slot, said body provided with a steamway discharging across the plane of discharge of said oil-discharge ducts.

8. An injector-burner comprising a body having an oilway terminating in an outlet having a concave bottom, a partition or lip superposed above said bottom and having a concaved upper face, a downwardly-projecting wall forming a discharge-slot between such wall and the end of said concaved bottom, and an outer wall forming a second discharge-slot, and a recessed plate affixed to said body and forming a steamway, the front wall of the recess of said plate extended upward to form a thin wide discharge-slot discharging at an angle to the plane of discharge from said oil-ducts.

9. An injector-burner comprising a body having an oilway terminating in an outlet having a concave bottom, a partition or lip superposed above said bottom and having a concaved upper face, a downwardly-projecting wall forming a discharge-slot between such wall and the end of said concaved bottom, and an outer wall forming a second discharge-slot, and a recessed plate affixed to said body and forming a steamway, the front wall of the recess of said plate extended upward to form a thin wide discharge-slot, the first-named oil-slot discharging into said steam-slot, and the second oil-duct discharging across the plane of discharge of said steam-discharge slot.

10. An injector-burner provided with an oilway terminating in a wide thin discharge-outlet, the floor of the discharge-outlet concaved, and a steamway adapted to impinge steam against the oil from said oilway, and a drip-guard extending above said ways and adapted to prevent the precipitation of water into the atomizing-oil.

11. An injector-burner comprising a body provided with an oilway terminating in two discharge slots or ducts, and with a steamway terminating in a thin wide discharge-outlet, one of said oil-discharge ducts communicating into the steam-discharge slot, the other duct discharging across the plane of discharge from said steam-discharge slot, said body provided at its front end with an upwardly-inclined drip-guard.

12. An injector-burner comprising a body having an oilway terminating in two discharge slots or ducts separated by a lip or partition forming the floor of the outward duct, said lip or partition having a concave upper face, the floor of the other duct also concaved, and said body provided with a steamway terminating in a discharge-slot adapted to impinge steam against the oil from said ducts, said body provided with a forwardly-extending upwardly-inclined drip-guard.

13. An injector-burner comprising a body provided with an oilway terminating in a wide, thin discharge-outlet, said body provided at its under side with a recess or cavity, a detachable plate secured on said body below said recess or cavity, said plate being recessed to form a steamway, said recess or cavity in the bottom face of said body forming an expansion-chamber, an inlet into said steamway, said inlet opening thereinto at an angle to the discharge from said steamway, and means for directing the oil from said oilway across the plane of discharge from said steamway.

14. An injector-burner comprising a body provided with an oilway terminating in a wide, concave bottom discharge-outlet, the under face of said body provided with a cavity, a recessed plate affixed to said body opposite said cavity and forming a steamway terminating in a wide steam-discharge slot, the recess in the bottom face of said body forming an expansion-chamber, and said body provided with an end block or end wall forming a downward extension of said oilway adapted to project the oil downwardly across the plane of the steam-discharge.

15. An injector-burner comprising a body provided with an oilway and two discharge slots or ducts, said oilway communicating directly into the primary discharge-duct and a plate superposed above said primary duct, and over which said way communicates into the secondary duct, and a steamway discharging across the plane of discharge of said ducts.

16. An injector-burner comprising a body provided with an oilway having a downwardly-expanded outer portion and two discharge ducts or slots, said oilway communicating directly into the primary discharge-duct, a plate or floor superposed above said primary duct in substantially the plane of the floor of the unexpanded portion of the oilway and over which said way communicates into the secondary duct, and a steamway discharging across the plane of discharge of said ducts.

17. An injector-burner comprising a body provided with an oilway and two discharge slots or ducts extending angularly with respect to said way, said oilway communicating directly into the primary duct, a partition above said primary duct over which said way communicates into the secondary duct, and a steamway discharging right angularly across the planes of said discharge-ducts, said body provided with a lip extending beyond the point of discharge from said steamway and spaced apart from the edge or end of the walls of the primary oil-discharge duct, the end of the outer wall of said duct terminating above the plane of the top wall of the steam-discharge slot and the end of the outer wall of said secondary duct terminating above the plane outer wall of said primary duct.

18. An injector-burner comprising a body provided with an oilway, two oil-discharge slots or ducts and a steamway, said ducts discharging right angularly across the plane of discharge from said steamway, the end of the outer wall of the inner duct terminating above the plane of the upper edge of the steamway and the outer wall of the outer duct terminating above the plane of the edge of said outer wall of said inner duct to provide for the upward expansion of the steam from the steamway.

19. An injector-burner comprising a body provided with oil and steam ways, two oil-discharge ducts and a steam-discharge slot, the lower wall of the steam-discharge slot extended outwardly across the plane of the inner duct, the outer wall of the inner duct terminated above the plane of the upper edge of the discharge-slot.

20. An injector-burner comprising a body provided with oil and steam ways, two oil-discharge ducts, and a steam-discharge slot, the lower wall of the steam-discharge slot extended outwardly across the plane of the inner duct, the outer wall of the inner duct terminated above the plane of the discharge-slot, and the outer wall of the outer duct terminated above the plane of the end of said outer wall of said inner duct.

811,936. **APPARATUS FOR APPLYING TIRES TO WHEELS.** AXEL R. LE MOON, Chicago, Ill., assignor to Nelson & Le Moon, Chicago, Ill., a Copartnership. Filed Nov. 25, 1903. Serial No. 182,089.

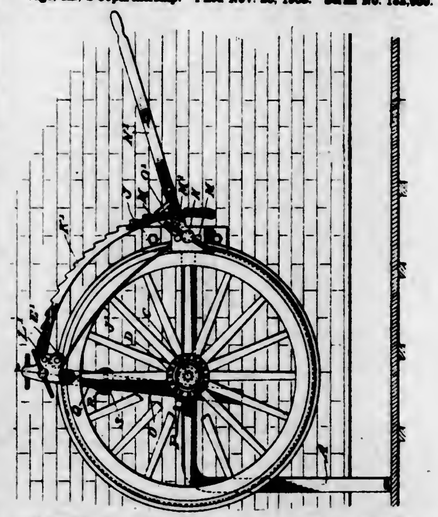

Claim.—1. In a tire-applying device, a wheel-support, means for clamping the wheel against rotary movement upon its rotary support, an arm pivotally mounted concentric with the wheel-support, a bracket carried by said arm and including jaws, deflecting-rollers carried by said jaws and arranged to engage underneath the unapplied portions of the tire-binding wires, said bracket being pivotally mounted upon said arm for rocking adjustment relative thereto, means for clamping said bracket in adjusted position, whereby the peripheral surfaces of said rollers may be brought substantially flush with the edges of the flanges of the wheel-channel, and means for rocking said arm, as and for the purpose set forth.

2. In a tire-applying device, a supporting-frame, a stud carried thereby and arranged to extend through the hub of a wheel to support the same, means for clamping the wheel against rotary movement upon said stud, an arm pivotally mounted upon said stud, a bracket pivotally mounted upon said arm for rocking adjustment relative thereto and including jaws, means for clamping said bracket in adjusted position, means for moving said jaws toward and from each other, guide-rollers carried by said jaws and arranged to rest upon the edges of the flanges of the wheel-channel, deflecting-rollers also mounted upon said jaws and in inclined relation with respect to the planes of said flanges, said deflecting-rollers being arranged to engage underneath the unapplied portions of the tire-binding wires, and means for rocking said arm, as and for the purpose set forth.

811,937. CLOSET-TANK. FRANK H. LEMMERMANN, Columbus, Ohio, assignor to The Columbus Brass Company, Columbus, Ohio, a Corporation of Ohio. Filed June 8, 1905. Serial No. 264,894.

Claim.—A tank, comprising a wooden shell, an unattached sheet-metal lining for the bottom and inner sides of said shell, means on said shell for holding the upper edge of said lining with freedom of vertical movement in respect to the said shell and holding means, and space between said upper edge and confining means for said vertical movement.

811,938. GRAIN-HANDLING APPARATUS. ELMER H. LOGAN, Larned, Kans. Filed Mar. 3, 1905. Serial No. 248,357.

Claim.—1. The combination of a portable supporting-frame, a carrying-frame mounted on said supporting-frame and adjustable longitudinally of the same, an elevator mounted on the said carrying-frame with its ends projecting beyond the sides of the supporting-frame, and means for adjusting the elevator vertically upon the carrying-frame.

2. The combination of a carrying-frame, a vertically-adjustable elevator carried thereby, standards at one end of the elevator, a drag pivotally supported upon said standards, and means for simultaneously operating the drag and the elevator.

3. In an apparatus of the character described, the combination of a movable supporting-frame having curved slots which terminate at their opposite ends at opposite sides of the longitudinal center of said frame, and an elevator extending through said supporting-frame and having trunnions engaging the slots thereof, and provided at its receiving end with a caster to rest upon the ground.

4. In an apparatus of the character described, the combination of a movable supporting-frame having curved slots which terminate at their opposite ends at opposite sides of the longitudinal center of said frame, an elevator extending through said supporting-frame and having trunnions engaging the slots thereof, and provided at its receiving end with a caster to rest upon the ground, and means for moving said trunnions upward or downward in said slots.

5. In an apparatus of the character described, the combination of a movable supporting-frame having curved slots which terminate at their opposite ends at opposite sides of the longitudinal center of said frame, an elevator extending through said supporting-frame and having trunnions engaging the slots thereof, and provided at its receiving end with a caster to rest upon the ground, means for moving said trunnions upward or downward in said slots, and means for securing said trunnions at the desired point of adjustment in said slots.

6. In an apparatus of the character set forth, the combination of a head-box having a side arranged to depend therefrom, an elevator having vertically-arranged converging wings which form a hopper with the pendent side of the header-box, and a drag arranged to project into the header-box and feed the material therein to the hopper.

7. In an apparatus of the character described, the combination of a movable supporting-frame, an elevator supported from and projecting beyond the sides of said frame and adjustable longitudinally thereof, a header-box, an endless drag pivotally supported from the elevator, and means for yieldingly swinging the drag upward or downward when projected into the header-box.

8. In an apparatus of the character set forth, the combination of a supporting-frame having curved slots in its sides, an elevator extending through said frame and provided on its sides with trunnions engaging said curved slots, and means for moving the trunnions along the slots and securing them at any desired point.

811,939. FEED-WATER MECHANISM. WILLIAM LOUDON and JOHN J. HENDRICKS, Seattle, Wash. Filed Mar. 22, 1905. Serial No. 251,473.

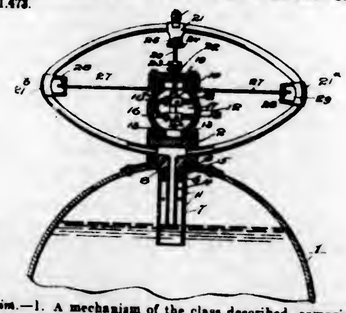

Claim.—1. A mechanism of the class described, comprising a base member, provided with a three-way passage, an apertured, hollow member removably secured to said base member, an inner tubular member of less length than said apertured member removably secured to said base member, an elliptical, expansible tubing provided with right and left threaded surfaces formed upon its ends removably secured to said base member, a valve-casing secured to said base member, said valve-casing having an inlet and outlet opening, a movable valve positioned within said casing, yokes positioned upon said tubing at diametrically opposite points, adjustable stay-rods connecting said valve-casing and yokes, valved means secured to said tubing and providing direct communication between the interior of said tubing and the outer atmosphere, a valve-stem secured to said valve, said stem provided with an integral extension, and means for adjustably securing said valve-stem to said tubing.

2. A mechanism of the class described, comprising a base member provided with oppositely right and left threaded openings and a threaded opening formed at right angles to said openings, an inner tubing threaded into said right-angled opening, an apertured, outer tubing of greater length than said inner tubing removably secured to said base member, an elliptical tubing provided with right and left threaded surfaces formed upon its ends secured within said base member, a valve-casing removably secured upon said base member, a movable valve positioned within said valve-casing, a removable cap carried by said casing, said valve comprising members provided with depending legs, a stem secured to said valve and extending through said cap, adjustable rods secured to said casing, yokes connecting said rods to the narrowest portion of said ellipse, a valved vent formed upon said expansible tubing, and means for adjustably securing said stem to said expansible tubing.

3. In a mechanism of the class described, the combination of a base member, inner and outer tubular members secured to said base member, a valve-casing secured to said base member, a movable valve positioned within said casing, an elliptical, expansible member secured to said base member, and means connecting said expansible member to said valve.

4. In a mechanism of the class described, the combination of a base member, an inner and an outer apertured tubing secured to said base member, an elliptical expansible member secured to said base member, a valve-casing, a movable valve mounted therein, means connecting said valve with said expansible tubing, and means connecting said expansible tubing to opposite portions of said valve-casing.

5. In a mechanism of the class described, the combination with a boiler, of a base element secured to said boiler, means depending from said base element to the water-surface in said boiler, elliptical, expansible means secured to said base element, and valve means assembled with said base element and connected to said expansible means.

6. In a mechanism of the class described, the combination with a boiler, of a base element, depending, hollow members secured to said base element, an expansible member secured to said base element, a valve-casing secured to said base element, a valve mounted within said casing, adjustable means connecting said valve and expansible member, and laterally-extending means connecting said valve-casing and said expansible member.

7. In a mechanism of the class described, the combination with a boiler, of a base element removably positioned upon said boiler, a removable, inner tubing secured to said base element and extending downwardly in said boiler, an outer, apertured, removable tubing secured to said base element and extending downwardly in said boiler, said outer tubing of greater length than the inner tubing, a removable, expansible member secured to said base element, a valve, and adjustable means connecting said valve and expansible member.

8. In a mechanism of the class described, the combination with a boiler, of a single, looped expansible member carried by said boiler, an inner and an outer member carried by said boiler, one of said members in communication with said expansible member, said inner and outer members extending downward into the boiler, and valve means assembled with said expansible member.

9. In a mechanism of the class described, the combination with a boiler, of hollow members of different dimensions extending downwardly in said boiler, expansible means secured in a communicating position with said hollow members and carried by said boiler, a vent-valve secured to said expansible means, and valve means adjustably secured to said expansible means.

10. In a mechanism of the class described, the combination with a boiler, of hollow members extending into said boiler, one of said members provided with apertures, valve means, and means connected to said members and valve means for actuating said valve means.

11. In a mechanism of the class described, the combination with a boiler, of an inner and outer hollow member carried by said boiler, said outer member provided with an aperture, and valve-actuating means carried by said hollow members.

12. In a mechanism of the class described, the combination with a boiler, of members of different lengths extending into said boiler, and valve-actuating means connected with said members.

13. In a mechanism of the class described, the combination with a boiler, of removable members of different lengths positioned within said boiler, and valve-actuating means connected with said members.

14. In a mechanism of the class described, the combination with a boiler, of expansible means carried by said boiler, valve means coacting with said expansible means, and members, one inclosing the other, positioned within said boiler and extending to the water-column for permitting of the actuation of said expansible means when the water in the boiler has fallen below a predetermined level.

15. In a mechanism of the class described, the combination of a base element, a single looped, expansible member secured to said base element, valve means coacting with said member, and an inner and an outer member secured to said base element.

16. In a mechanism of the class described, the combination with a base element, of inner and outer members of different lengths secured to said base element, a looped, expansible member secured to said base element, and valve means coacting with said expansible member.

811,940. MACHINE FOR CUTTING SHEETS. CHARLES H. MARSTON, Reading, and ARTHUR P. HOLDEN, Malden, Mass., assignors to The National Shawmut Bank, Boston, Mass. Filed July 3, 1905. Serial No. 268,158.

Claim.—1. A cutting-machine comprising a table, a stationary blade, a clamp mounted on the table and yieldingly held away from the work-supporting surface thereof, a movable blade pivotally mounted with respect to the table, and means carried by the movable blade arranged to engage directly upon the clamp upon actuation of said movable blade and press and hold the same against the work while the latter is being cut.

2. A cutting-machine comprising a table, a shear-blade fixed thereto, a movable blade pivoted thereto in shearing relation with the fixed blade, a clamp supported near the work-supporting surface of the table, and a presser carried by the movable blade arranged to engage and travel along the clamp to press the clamp against the work while said movable blade is being actuated to cut the work.

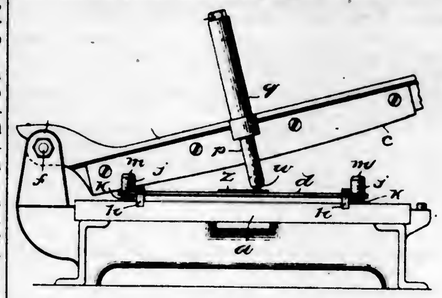

3. A cutting-machine comprising a table, a shear-blade fixed thereto, a movable blade pivoted thereto in shearing relation with the fixed blade, a clamp supported near the work-supporting surface of the table, and a presser carried by and yieldingly projected from the movable blade arranged to engage and press the clamp against the work while said movable blade is being actuated to cut the work.

4. A cutting-machine comprising a table, a shear-blade fixed thereto, a movable blade pivoted thereto in shearing relation with the fixed blade, a clamp yieldingly held away from the work-supporting surface of the table, a presser carried by the movable blade and capable of moving relatively thereto and arranged to engage the clamp when the movable blade is brought into operative relation with the fixed blade, and means for yieldingly holding the presser in contact with the clamp.

5. A cutter comprising a table, a stationary shear-blade fixed thereto, an arm pivoted to the table, a shear-blade mounted on the arm, a guideway formed on the arm, a plunger movably held in the guideway, yielding means tending to project the plunger, and a clamp held above the surface of the table in position to be engaged by the plunger and pressed against the work supported on the table during the movement of the arm which brings the shear-blades into operative relation.

6. A cutter comprising a table, a stationary shear-blade fixed thereto, an arm pivoted to the table, a shear-blade mounted on the arm, a guideway formed on the arm, a plunger movably held in the guideway, yielding means tending to project the plunger, an anti-friction-roll carried by the plunger, and a clamp held above the surface of the table in position to be engaged by the roll on the plunger and pressed against the work supported on the table during the movement of the arm which brings the shear-blades into operative relation.

7. A cutting-machine comprising a table, a plate having a gaging edge located above and movable perpendicularly with respect to the work-supporting surface thereof, yielding means holding the plate separated from the table, shearing-blades arranged to trim the edge of a sheet supported on the table, and yielding means of greater power than the first said yielding means for pressing the plate against the sheet in opposition to said first yielding means when the sheet is being trimmed.

8. A cutting-machine comprising a table, cutting instrumentalities, guiding-studs mounted on the table adjacent said instrumentalities, a plate having a gaging edge for positioning the work located and guided by said studs, springs positioned by said studs normally holding the plate away from the table, and a spring-plunger for engaging and pressing the plate against the table when the cutting instrumentalities are operating.

811,941. CHLORATE-POWDER. CHARLES H. MATHEWS, Rio, Wis. Filed Sept. 9, 1905. Serial No. 277,706.

Claim.—1. The herein-described composition of matter comprising gasolene, spirits of turpentine, alcohol, water, sugar, and potassium chlorate, substantially as described.

2. The herein-described composition of matter composed of one part granulated sugar, one and one-half parts potassium chlorate, and enough of liquid composed of one part gasolene, one part spirits

of turpentine, one part alcohol, and two parts water to moisten the mixture.

811,942. CIGAR FOR ASTHMA. AARON MENDELSOHN, San Francisco, Cal. Filed Aug. 21, 1905. Serial No. 275,142.

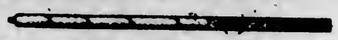

Claim.—1. A cigar or cigarette having the center formed of the stems and heads of stramonium and cherry-leaves inclosing or intertwining therewith to form a binder throughout the length of the stramonium filling serving as a binder therefor, and an exterior wrapper of tobacco-leaves.

2. An article of manufacture consisting of stramonium-stems clustered and disposed longitudinally to form a central filling, cherry-leaves inclosing or intertwined therewith a binder throughout the length of the stramonium filling serving as a binder therefor and an exterior wrapper of tobacco-leaves.

811,943. ROCK-BORING MACHINE. WILLIS C. MOORE, Los Angeles, Cal. Filed Oct. 20, 1905. Serial No. 283,576.

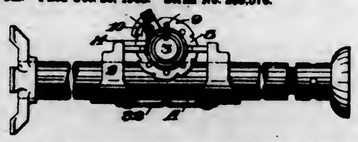

Claim.—1. A boring-machine comprising in combination a threaded spindle having means at one end for the attachment of a drill, a feed-nut on said spindle, a stationary support in which said nut is rotatably mounted, means for rotating the spindle, and means automatically operated by the spindle for turning the nut periodically in unison with the spindle.

2. A boring-machine comprising a threaded spindle having means at one end for the attachment of a drill, a feed-nut on said spindle, a support on which said nut is rotatably mounted, means for rotating the spindle, means for intermittently holding the nut against rotation, and automatically-operated means for releasing the nut and allowing it to turn at intervals in unison with the spindle.

3. The combination in a boring-machine, of a threaded spindle having means at one end for carrying a drill, a feed-nut on the spindle, a support on which said nut is rotatably mounted, means for rotating the spindle, means for holding the nut from turning, and means automatically operated by the spindle to release the nut from its locked position and allowing it to turn periodically in unison with said spindle.

4. The combination in a boring-machine, of a threaded spindle having means at one end for holding a drill, a feed-nut on the spindle, a support on which the nut is mounted to rotate, means for rotating the spindle, means for holding the nut against rotation, and means operated by the rotative movement of the spindle to release the nut and allow the nut and spindle to turn in unison.

5. The combination in a boring-machine, of a threaded spindle having means for carrying a drill, a nut on the spindle, a support in which the nut is mounted to rotate, means for rotating the spindle, means for holding the nut against rotation, and adjustable means automatically and intermittently operated by the spindle for releasing the nut to allow the latter to turn for longer or shorter periods in unison with the spindle.

6. The combination in a boring-machine, of a threaded spindle having means for holding a drill, a feed-nut on the spindle, a support in which the nut is mounted to rotate, means for rotating the spindle, means for holding the nut against rotation, and adjustable means operated by the spindle to release the nut to allow it to turn periodically in unison with the spindle.

7. In a boring-machine, the combination of a threaded spindle having means for holding a drill, a feed-nut on the spindle, a support for the nut, said support having lateral segmental projections, and suitably-supported hook members engaging said projections to hold the drill to the work, said segmental projections loosely engaged over said hook members and permitting a limited oscillatory movement of the spindle, and means for rotating the spindle.

8. In a boring-machine, the combination of a threaded spindle having means for holding a drill, a feed-nut on the spindle, a support in which the feed-nut is mounted to rotate, means for rotating the spindle, a spring-pressed dog engaging the nut to hold the latter against rotation, a cam member turnable with and slidable lengthwise relative to the spindle, and means operated by the cam member to actuate the dog to release the nut.

9. In a boring-machine, the combination of a threaded spindle having means for holding the drill, a feed-nut on the spindle, a support in which the feed-nut is mounted to rotate, means for rotating the spindle, a spring-pressed dog engaging the nut to hold the latter against rotation, a cam member turnable with and slidable lengthwise relative to the spindle, means operated by the cam member to actuate the dog to release the nut, and means for varying the length of the period of the turning movement of the nut relative to a complete revolution of the spindle.

811,944. VEHICLE RUNNING-GEAR. GRANT MCHENRY, Mount Liberty, Ohio. Filed Apr. 11, 1905. Serial No. 254,994.

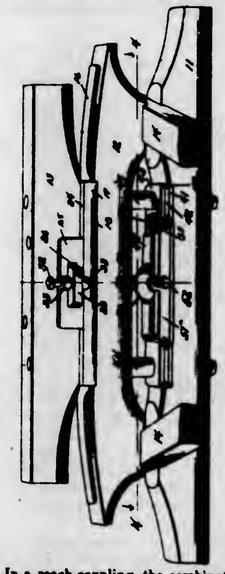

Claim.—1. In a reach-coupling, the combination with an axle having a socketed plate, of a reach having at its end a ball fitting in the socket, a retaining-plate over the ball, a block secured to the first-mentioned plate, and a set-screw threaded through said block and bearing on the retaining-plate.

2. In a vehicle running-gear, the combination with a bolster having a socket and a transverse groove in its under side, of a sand-board having a projecting headed stud entering the socket, keys extending through the groove and having their inner ends shaped to fit the stud below the head, and means for securing the keys.

3. In a vehicle running-gear, the combination with a bolster having a socket and a transverse groove in its under side, of a plate secured to the bolster and having openings registering with the socket and groove, a sand-board having a projecting stud entering the socket, keys extending through the groove into engagement with the stud, and means carried by the aforesaid plate for securing the keys.

4. In a vehicle running-gear, the combination with a bolster having a socket and a transverse groove in its under side, of a wear-plate secured to the bolster and having openings registering with the socket and groove, a sand-board having a wear-plate provided with a projecting stud entering the socket, keys extending through the groove into engagement with the stud, and means carried by the first-mentioned plate for securing the keys.

811,945. GRINDING-MILL. CUNNINGHAM H. MCLAUGHLIN, Winona, Minn., assignor to New Winona Manufacturing Co., Winona, Minn., a Corporation of Minnesota. Filed Mar. 6, 1903. Serial No. 146,426.

Claim.—1. In a grinding-mill, the combination, with a fixed bur, of a longitudinally-movable shaft, a bur provided thereon and normally in cooperation with said fixed bur, a spring provided at one end of said shaft and normally tending to move said shaft lengthwise and separate said burs, a ball-bearing provided at the opposite end of said shaft to receive the thrust thereof, a housing or cage for said bearing, a yoke having a rocker bearing on said cage, springs connected with said yoke and arranged to overcome the tension of said first-named spring and hold said burs in grinding engagement with one another, and mechanism for relieving the pressure of said springs on said shaft to allow said first-named spring to move it lengthwise and separate said burs, substantially as described.

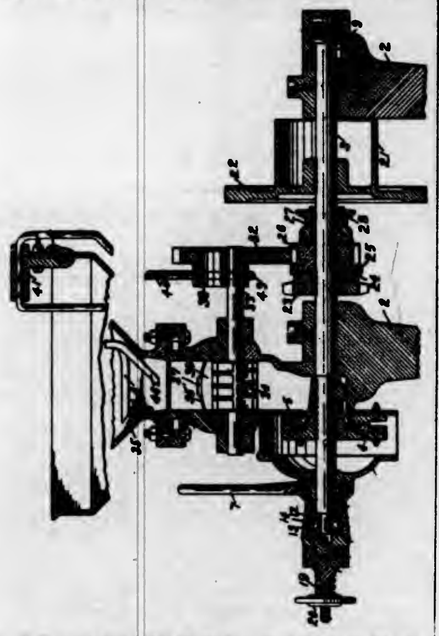

2. In a grinding-mill, the combination, with a fixed bur, of a longitudinally-movable shaft, a bur provided thereon and normally in cooperation with said fixed bur, a spring normally tending to move said shaft lengthwise and separate said burs, a ball-bearing provided at one end of said shaft to receive the endwise thrust thereof, a housing or cage for said bearing, a yoke having a central bearing on said cage, springs connected with ends of said yoke on each side of said bearing and arranged to overcome the tension of said first-named spring to hold said burs in grinding engagement with one another, and mechanism for relieving the pressure of said yoke-springs on said shaft to allow said first-named spring to move it lengthwise and separate said burs.

3. In a grinding-mill, the combination, with a frame and a fixed bur mounted thereon, of a longitudinally-movable shaft, a bur mounted on said shaft and movable therewith, a cage provided at one end of said shaft and comprising a cup 11 having an opening to receive the end of said shaft, and a plate 15 covering the open end of said cup and provided with a boss 16, a ball-bearing provided within said cup and adapted to receive the endwise thrust of said shaft, a spring-pressed yoke engaging said boss and normally tending to hold said burs together, and mechanism for relieving the pressure of said yoke on said boss and shaft to allow said burs to separate, substantially as described.

4. In a grinding-mill, the combination, with a frame and a hopper provided with a feed mechanism, of a fixed bur, a longitudinally-movable shaft, a bur mounted on said shaft and arranged to cooperate with said fixed bur, mechanism for moving said shaft lengthwise to separate said burs, a clutch-gear 23 secured on said shaft, a clutch member 25 arranged to move lengthwise on said shaft and engage said clutch-gear and having gear-teeth 26 in operative connection with said feed mechanism, a yoke 28 having rods 29 adjustably secured with said frame, and springs 30 provided on said rods 29, substantially as described.

5. In a grinding-mill, the combination, with a frame and a hopper provided with a revolving feed mechanism, of a fixed bur, a longitudinally-movable shaft, a bur mounted thereon and arranged to cooperate with said fixed bur, a clutch mounted on said shaft and comprising a fixed and a movable member, said movable member having gear-teeth operatively connected with said feed mechanism, a spring-pressed yoke engaging said movable clutch member and normally tending to hold it in engagement with said fixed member, and mechanism for moving said shaft lengthwise to separate said burs, and said clutch member and simultaneously stop the grinding and feeding operation.

6. In a grinding-mill, the combination, with a frame and hopper, of a revolving feed mechanism provided with a gear 32 having an eccentric 39, a rod 40 adjustably mounted on said hopper and having a forked end to straddle said eccentric, and fingers at its opposite end which project horizontally across the discharge-opening in said hopper, for the purpose specified.

7. In a grinding-mill, the combination, with a frame and hopper, of a feed mechanism, a rod 40 mounted on said hopper and arranged to be oscillated vertically by the movement of said feed mechanism, and said rod having fingers arranged to project horizontally across the discharge-opening in said hopper and prevent the clogging of the material therein during the feeding operation, substantially as described.

8. In a grinding-mill, the combination, with a frame and hopper provided with a revolving feed mechanism having a gear 32, of a fixed bur, a longitudinally-movable shaft, a bur secured thereon and cooperating with said fixed bur, means for moving said shaft lengthwise to separate said burs, a clutch member 23 secured on said shaft, a movable clutch member 25 movable lengthwise on said shaft and having gear-teeth to engage the teeth of said gear 32, and a spring-pressed yoke engaging said movable clutch member and normally tending to hold it in engagement with said clutch member 23 but allowing them to separate when said shaft is moved lengthwise, substantially as described.

811,946. CLAM-SHELL BUCKET. JOHN MCMYLER, Cleveland, Ohio. Filed May 22, 1905. Serial No. 261,545.

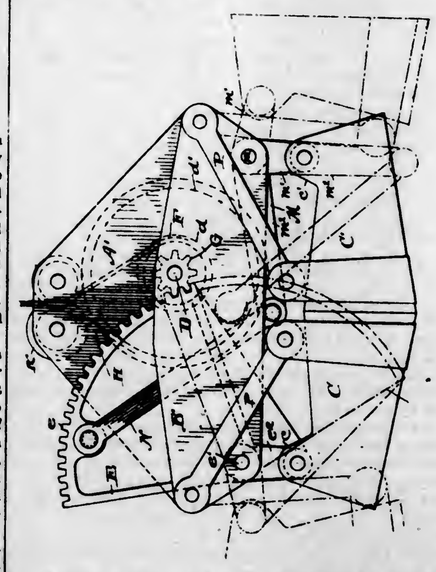

Claim.—1. In a clam-shell bucket, the combination with the frame, and two bucket-jaws, of levers pivoted to opposite ends of said frame and having depending arms which are pivotally connected with the upper rear ends of the bucket-jaws, means for swinging said lever-arms to move their depending arms toward and from each other, and links P pivotally connected with the upper front parts of said bucket-jaws and with the frame at points above the rear ends of said jaws.

2. In a clam-shell bucket, the combination with the frame, and two bucket-jaws, of levers pivotally connected with the said frame

at opposite ends thereof and having depending arms which are respectively pivoted to the sides of the rear ends of said bucket-jaws, mechanism operating on the levers at one end of the frame to rock them back and forth, a link connecting the levers at one end of the frame with the levers at the other end of the frame and transmitting motion from one to the other, and links P pivotally connected with the sides of the front ends of said jaws and with the frame at points above the rear end of said jaws.

3. In a clam-shell bucket, the combination with the frame, and two bucket-jaws, of the levers E E mounted in the frame at one end thereof, and having depending arms which are pivotally connected with the rear end of one bucket-jaw, the bell-crank levers M, M mounted in the frame at the other end thereof and having depending arms which are pivotally connected with the rear end of the other bucket-jaw, means transmitting motion from the first-mentioned levers to said bell-crank levers, mechanism mounted in the frame for rocking the first-mentioned levers, and links P pivotally connected with the front ends of said bucket-jaws and with the frame at points above the rear ends of said jaws.

4. In a clam-shell bucket, the combination with the frame, and two bucket-jaws, of gear-segments mounted on alined axes in one end of the bucket-frame and having depending arms which are pivotally connected with the rear end of one bucket-jaw, a power-shaft mounted in the frame and carrying pinions engaging said segments, bell-crank levers M M mounted on alined axes in the other end of said frame and having depending arms which are pivotally connected with the rear end of the other bucket-jaw, links N connecting the horizontal arms of said bell-crank levers with the gear-segments, means for rotating the said power-shaft in either direction, and links P having their lower ends pivotally connected to the front ends of the bucket-jaws and having their upper ends pivotally connected with the frame at points above the rear ends of said bucket-jaws.

811,947. **WELL-DRILLING APPARATUS.** IRA L. NEELY, Independence, Kans. Filed Apr. 26, 1904. Serial No. 204,896.

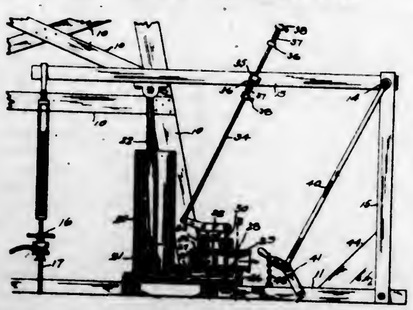

Claim.—1. A well-drilling apparatus including a walking-beam adapted to operate well-drilling tools, an upwardly-extending support to which said walking-beam is fulcrumed, said upwardly-extending support being fulcrumed at its lower end, means for moving said upwardly-extending support so as to give the beam longitudinal movement, and a stop to limit the longitudinal movement of said walking-beam.

2. A well-drilling apparatus including a foundation-frame, upwardly-extending posts pivoted at their lower ends to said foundation, a rod connecting the upper ends of said posts, a walking-beam pivoted on said rod, means connected with one end of said walking-beam for grasping the drilling-cable, means for actuating said walking-beam, a hand-lever mounted on the foundation-frame, and a connecting-rod extending from said lever to the superstructure that tilts said superstructure rearward away from the well being drilled when such movement is desired.

811,948. **FOLDING UMBRELLA.** JOHN H. NEWEL, Washington, Pa. Filed Nov. 18, 1904. Serial No. 233,468.

Claim.—In a folding umbrella, the combination of a sectional handle adapted to be screwed together, of sectional bows or ribs secured to said handle and provided with a single hinge-joint, together with an annular slide or clasp for embracing the joint and preventing the bows or ribs from folding when the umbrella is in use, all substantially as and for the purposes shown and described.

811,948.

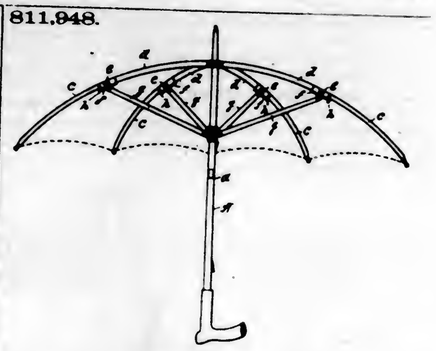

811,949. **STAMP.** HENRY H. NORRINGTON, West Bay City, Mich. Filed July 11, 1904. Serial No. 216,161.

Claim.—1. In combination with a stamp of the class described; a fixed bracket-plate connecting the two side members of said stamp; a plate pivotally mounted on said bracket-plate near its middle; said plate being adapted to revolve in its own plane and parallel to the plane of said bracket-plate; and stamps on the opposite edges of said revoluble plate.

2. In combination with a stamp of the class described, a bracket-plate immovably secured to said stamp; a plate pivotally mounted near its middle on said bracket-plate, said plate being adapted to revolve in its own plane about said pivot and having its opposite edges turned up; and stamps secured to said turned-up edges.

3. In combination with a stamp of the class described, a bracket-plate immovably secured to said stamp; a plate pivotally mounted near its middle on said bracket-plate, said plate being adapted to revolve in its own plane about said pivot and having its opposite edges turned up; and stamps secured to said turned-up edges; together with outwardly-projecting flanges on the ends of said plate, for the purposes set forth.

811,950. **DIAL-TRANSMITTER.** CHARLES F. PEARCE, New York, N. Y., assignor to Frederick Pearce, New York, N. Y. Filed Sept. 9, 1905. Serial No. 277,714.

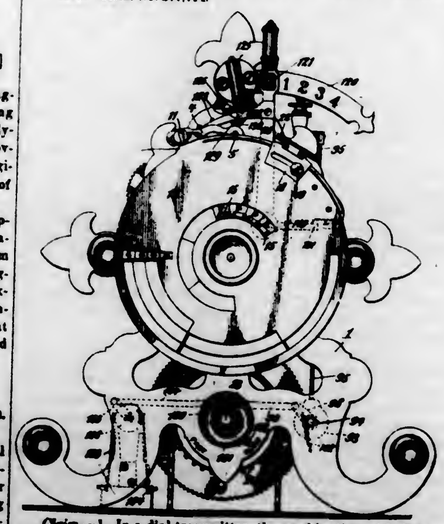

Claim.—1. In a dial-transmitter, the combination with dials, a controlling-arm, and means for rotating the one with respect to the

other, of a retarding device for regulating the speed of such rotation, said retarding device including two fly-fans mounted upon one spindle and arranged normally to rotate together, and means for disconnecting one of said fans from rotative relation with the other said fan.

2. In a dial-transmitter, the combination with dials, a controlling-arm, and means for rotating the one with respect to the other, of a retarding device for regulating the speed of such rotation, said retarding device comprising two fly-fans arranged to rotate synchronously, and means for disconnecting one of said fans, and for holding it positively against rotation at such times, while the other fan is permitted to rotate freely.

3. In a dial-transmitter, the combination with dials, a controlling-arm, and means for rotating the one with respect to the other, of a retarding device for regulating the speed of such rotation, said retarding device comprising a clock-train and two fly-fans arranged to rotate in unison, a circuit-selecting switch, and hand operating means therefor, a cam, also operated by said hand operating means, and means controlled by said cam for disconnecting one of the said fly-fans.

4. In a dial-transmitter, the combination with dials, a controlling-arm, and means for rotating the one with respect to the other, of speed-retarding means for controlling the speed of such rotation, including a gear-train and two fly-fans, said fans comprising a main and a supplemental fan arranged to normally engage each other, means for disengaging the supplemental fan from engagement with the other fan, a circuit-selecting switch, and means for operating the said circuit-selecting switch at the time the said supplemental fly-fan is caused to engage or disengage the other said fan.

5. In a dial-transmitter, the combination with dials, a controlling-arm, and means for rotating the one with respect to the other, of a retarding device for regulating the speed of such rotation, said retarding device comprising two normally connected fly-fans and means for freeing one of said fans from engagement with the other.

6. In a dial-transmitter, the combination with dials, a controlling-arm, and means for rotating the one with respect to the other, of a retarding device for regulating the speed of such rotation, said retarding device comprising a clock-train, a spindle in gear therewith, a fly-fan in driving relation upon said spindle, another fly-fan loosely surrounding said spindle, but provided with a portion adapted to engage a part in driving relation with said spindle, whereby the two said fans may rotate together, and means for lifting said fan out of such driving relation, and for holding said fan entirely clear of said spindle, and parts rotating therewith.

7. In a dial-transmitter, the combination with dials, a controlling-arm, and means for rotating the one with respect to the other, of a retarding device, including a clock-train, a spindle in gear therewith, a fan in driving relation upon said spindle, another fan loosely mounted upon said spindle, said fan provided with a flange, a lever engaging said flange for lifting said fan into and out of driving relation with the first said fan, and a housing for receiving said flange.

8. In a dial-transmitter, the combination with a plurality of dials adapted to be rotarily adjusted, one with respect to the other, of a clamp for simultaneously locking all of the said dials together.

9. In a dial-transmitter, the combination with a plurality of dials adapted to be rotarily adjusted, one with respect to the other, individual locking means between the said dials, and an independent clamp for clamping all of the said dials together in their adjusted positions.

10. In a dial-transmitter, the combination with a plurality of dials adapted to be rotarily adjusted, one with respect to the other, of a clamp for locking the said dials together, comprising a bracket secured to one dial and overhanging the others, a cam arranged in its operation to clamp the dials between itself and the said bracket, and an operating-lever for said cam.

11. In a dial-transmitter, the combination with dials, a controlling-arm, and means for rotating the one with respect to the other, of driving means for effecting such rotation, a clutch for said driving means, clutch-releasing mechanism, tripping means therefor, and an actuating device in which energy is stored during the aforesaid rotation to be imparted to the clutch-releasing mechanism when the same is tripped.

12. In a dial-transmitter, the combination with dials, a controlling-arm, and means for rotating the one with respect to the other, of driving means for effecting such rotation, a clutch for said driving means, clutch-releasing mechanism, tripping means therefor, and a spring-plunger arranged to engage the clutch-releasing mechanism during the aforesaid rotation, and a little prior to the operation of the tripping mechanism.

13. In a dial-transmitter, the combination with dials and a controlling-arm, of driving means for rotating the controlling-arm, a clutch for said driving means, clutch-operating mechanism, tripping means including a locking-detent engaging a part of said clutch-releasing mechanism, a spring-pressed plunger for engaging said clutch-operating mechanism during the movement of the arm, and a projection for operating said tripping means upon a further movement of said arm.

14. In a dial-transmitter, the combination with dials, a controlling-arm, and driving means for rotating the one with respect to the other in one direction, of spring-pressed means for returning the parts to normal position, means for adjusting the tension thereof, and a retarding device for regulating the speed of such return movement.

15. In a dial-transmitter, the combination of a dial, a controlling-arm, and means for rotating the one with respect to the other, the said means comprising a gear-train, and a weight-motor, the weight-motor composed of two chain-wheels, one connected to the gear-train and the other to winding means, an endless chain arranged over said chain-wheels with a loop between them, a weight suspended from said loop, idler-wheels secured to a stationary support around which the other end of the chain is passed, and an idler-pulley upon the said weight for supporting the opposite loop of said chain, substantially as set forth.

16. In a dial-transmitter, the combination with dials, a controlling-arm, and means for rotating the one with respect to the other, of circuit make and break devices operated during the said rotation, and means operated by the relative rotation of said parts for mechanically throwing the circuit make and break devices into and out of operative relation.

17. In a dial-transmitter, the combination with dials, a controlling-arm, and means for rotating the one with respect to the other, of line-circuit make and break devices controlled thereby, and means for throwing the said circuit make and break devices into and out of operative relation, said means including an electromagnet and a local-circuit breaker.

18. In a dial-transmitter, the combination with dials, a controlling-arm, and means for rotating the one with respect to the other, of line-circuit make and break devices controlled thereby, means for mechanically throwing the circuit make and break devices into and out of operative relation, and locking means for holding them in their position in operative relation, when so adjusted.

19. In a dial-transmitter, the combination with dials, a controlling-arm, and means for rotating the one with respect to the other, of line-circuit make and break devices controlled thereby, means electrically controlled for mechanically throwing the circuit make and break devices into and out of operative relation, and eccentrically-controlled locking means for holding them in their position in operative relation when so adjusted.

20. In a dial-transmitter, the combination with dials, a controlling-arm, and means for rotating the one with respect to the other, of cams connected for rotation therewith, contact-springs arranged to be operated by said cams, and means for moving said contact-springs into and out of operative relation with said cams.

21. In a dial-transmitter, the combination with dials, a controlling-arm, and means for rotating the one with respect to the other, of cams connected for rotation therewith, contact-springs arranged to be operated by said cams, and electrically-controlled means for moving said contact-springs into and out of operative relation with said cams.

22. In a dial-transmitter, the combination with dials, a controlling-arm, and means for rotating the one with respect to the other, of cams connected for rotation therewith, contact-springs arranged to be operated by said cams, means for moving said contact-springs into and out of operative relation with said cams, and locking means for holding them in their position in operative relation when so moved.

23. In a dial-transmitter, the combination with dials, a controlling-arm, and means for rotating the one with respect to the other, of cams connected for rotation therewith, contact-springs arranged to be operated by said cams, means for moving said contact-springs into and out of said operative relation with said cams, and electrically-controlled locking means for holding them in their position in operative relation when so moved.

24. In a dial-transmitter, the combination with dials, a controlling-arm, and means for rotating the one with respect to the other, of cams connected for rotation therewith, contact-springs arranged to be operated by said cams, means including an electromagnet for moving said contact-springs into and out of operative relation with said cams, and a local-circuit breaker for said electromagnet.

25. In a dial-transmitter, the combination with dials, a controlling-arm, and means for rotating the one with respect to the other, of

cams connected for rotation therewith, contact-springs arranged to be operated by said cams, means including an electromagnet for moving said contact-springs into and out of operative relation with said cams, and an electromagnet locking and releasing device therefor.

26. In a dial-transmitter, the combination with dials, a controlling-arm, and means for rotating the one with respect to the other, of cams connected for rotation therewith, pivoted contact-springs arranged to be operated by said cams, an electromagnet, an armature therefor connected to said contact-springs, and a local-circuit breaker for said electromagnet.

27. In a dial-transmitter, the combination with dials, a controlling-arm, and means for rotating the one with respect to the other, of cams connected for rotation therewith, pivoted contact-springs arranged to be operated by said cams, an electromagnet, an armature therefor connected to said contact-springs, a latch for holding said armature in its attracted position, and electromagnetic means for releasing said latch.

28. In a dial-transmitter, the combination with dials, a controlling-arm, and means for rotating the one with respect to the other, of cams connected for rotation therewith, pivoted contact-springs arranged to be operated by said cams, an electromagnet, an armature therefor connected to said contact-springs, a latch for holding said armature in its attracted position, electromagnetic means for releasing said latch, and a local circuit make and break device for alternately making and breaking circuit through the said electromagnetic means.

811,951. **GREENHOUSE AND OTHER GLAZED STRUCTURE.** PAUL M. PIERSON, Cushing, N. Y., assignor to The Pierson-Sefton Company, Jersey City, N. J., a Corporation of New Jersey. Filed May 7, 1903. Serial No. 156,006.

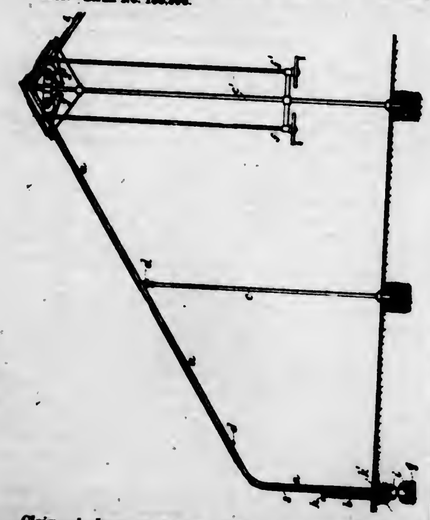

Claim.—1. In a greenhouse or similar glazed structure, a series of sash-bars substantially continuous and extending unbroken from the foundation to a point adjacent to the ridge-bar, and each comprising a bent form of metal bar for strength and a part connected thereto and to which the glasses are in turn connected, said bars each including the short vertical side, the inclined top and curved intersection.

2. In a greenhouse or similar glazed structure, a series of sash-bars substantially continuous and extending unbroken from the foundation to a point adjacent to a termination-plate, and each comprising a bent form of metal bar for strength and a part connected thereto and to which the glasses are in turn connected, said bars each including the short vertical side, the inclined top and curved intersection, and with plates of glass contacting at the meeting edges and extending between the sash-bars and continuous for the length of said complete bars.

3. In a greenhouse or similar glazed structure, a series of sash-bars substantially continuous and extending unbroken from the foundation approximately to the center ridge-bar and each comprising a form of metal of bent cross-section for strength, and a wooden bar covering and lying parallel with and connected to the metal bar and constructed to receive the plates or lights of glass, and each of which sash-bars includes the short vertical side, the long inclined top part and curved intersection.

4. In a greenhouse or similar glazed structure, a series of sash-bars substantially continuous extending unbroken from the foundation approximately to the center ridge-bar and each comprising a form of metal of U shape in cross-section for strength, and a wooden bar received in and covering with the metal bar lying parallel with and connected to the metal bar and having a projecting rib of narrower width with side shoulders to receive putty as seats for the plates or lights of glass, and each of which sash-bars includes the short vertical side, the long inclined top part and curved intersection.

5. In a greenhouse or other glazed structure, a series of sash-bars substantially continuous and each comprising the short vertical sides, the inclined top and curved intersection, and each bar consisting of a metal part for strength and a wooden part parallel and continuous, the wooden part at one end stopping at the sill and at the other end at the ventilating-sashes near the top, and the metal bar continuing at the top to a connection with the ridge-bar and at the other and lower end to connection with the foundation.

6. In a greenhouse or similar glazed structure, a series of sash-bars each comprising a short vertical side, an inclined top and curved intersection, and composed at the curved intersection and adjacent portions of an inner or under part of metal and an outer part of wood.

7. In a greenhouse or similar glazed structure, a series of sash-bars substantially continuous and extending from the foundation to a point adjacent to the ridge-bar and each comprising a bent form of metal for strength and a part connected thereto and to which the glasses are in turn connected, said bars each including the short vertical side, the inclined top and curved intersection, and plates of glass between the sash-bars from end to end forming a continuous surface of glass.

811,952. **GLASS-TANK FURNACE.** JULIUS PROBERT, Greensburg, Pa. Filed Jan. 26, 1904. Serial No. 190,949.

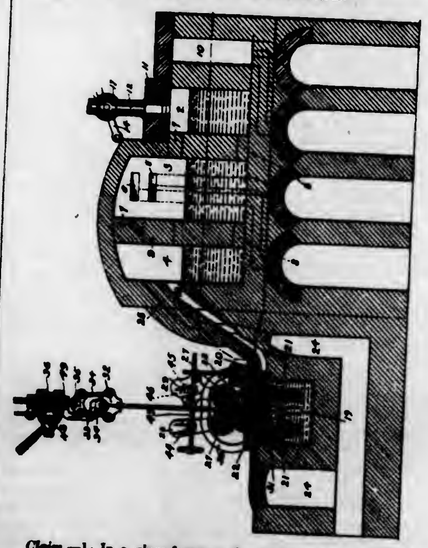

Claim.—1. In a glass-furnace, the combination of a melting-chamber or source of supply of molten glass, a delivery-chamber for delivering the molten glass for further treatment, and fluid-pressure devices for driving the glass from the melting-chamber to the delivery-chamber by the direct action of the fluid-pressure upon the molten glass; substantially as specified.

2. In a glass-furnace, the combination of a melting-chamber, a fluid-pressure chamber, a refining or delivery chamber, said chambers having communicating passages one with the other, a drawing-chamber, and a communicating passage between the refining-chamber and the drawing-chamber; substantially as specified.

3. In a glass-furnace, the combination of a source of supply of molten glass, a drawing or gathering tank situate on a level below the level of the source of supply, a passage leading to the drawing or gathering tank, from the source of supply, at a point above the normal level of the glass in said source of supply, and fluid-pressure devices for causing the molten glass to rise to the level of the passage leading from the source of supply to the gathering-tank and to flow through such passage; substantially as specified.

4. In a glass-furnace, the combination of a melting-chamber, a refining or delivery chamber, a fluid-pressure chamber having fluid-pressure devices, said chambers having open passages one from the other, a drawing or gathering tank, a passage leading from the source of supply of molten glass to the gathering or drawing tank, and heating-flues arranged in the walls of said furnace, whereby the gathering or drawing tank and the passage leading thereto may be kept at a temperature sufficient to prevent the congealing of the molten glass in the tank; substantially as specified.

5. In a glass-furnace, the combination of a source of supply of molten glass, fluid-pressure devices for driving the glass from the source of supply, a gathering or drawing tank, a passage connecting the source of supply and the gathering or drawing tank, and a movable gate for closing the connection between said passage and the drawing or gathering chamber; substantially as specified.

6. In a glass-furnace, the combination of a source of supply of molten glass, a drawing-tank, a passage connecting the source of supply with the drawing-tank, a gate for opening and closing said passage, a wing, or wings, situate in said drawing-tank and dividing the tank into compartments, said compartments communicating with each other below the normal surface of the glass, a fluid-pressure passage leading into one of said compartments, and a slot situate in the cover of another of said compartments; substantially as specified.

7. In a glass-furnace, the combination of a melting-tank, a fluid-pressure chamber, devices for applying fluid-pressure to the molten glass, said chambers communicating one with the other, a delivery-passage for the delivery of the molten glass, and a receptacle situate below said passage; substantially as specified.

8. In a glass-furnace, the combination of a melting-chamber, a gathering-tank, a fluid-pressure chamber at one end of the gathering-tank, and a delivery-chamber at the other end of the gathering-tank, said chambers and tanks communicating with each other, and fluid-pressure devices for causing the circulation of the molten glass through said chambers; substantially as specified.

811,953. **NECK-YOKE CENTER.** HENRY B. GUNN, Comstock, Tex., assignor of one-half to Alfred A. Newell, Comstock, Tex. Filed Mar. 3, 1905. Serial No. 248,208.

Claim.—1. A neck-yoke center comprising a tubular member, an inclined collar thereon, a protecting-piece surrounding the tubular member and resting against the collar, a washer varying in thickness and surrounding the tubular member, said washer abutting against the protecting-piece, and a collar movably engaging the tubular member and bearing against the washer.

2. A neck-yoke center comprising a tubular member having an inclined collar thereon, the rear end of the tubular member extending beyond the inclined collar, a pointed projection upon the inclined collar, a protecting-piece having a squared upper end, said protecting-piece surrounding the tubular member and resting against the inclined collar and pointed projection, an irregular washer having a thickened and beveled upper portion, said washer surrounding the tubular member and resting against the protecting-piece, a removable squared and beveled collar screwed upon the tubular member and holding the irregular washer in position, and a screw extending between the removable collar and the tubular member for locking said collar in position.

811,954. **METHOD OF BRAZING STEEL AND COPPER.** JOHN F. RICHARDSON, Pittsburg, Pa. Filed Oct. 27, 1904. Serial No. 230,586.

[redacted]

Claim.—1. A method of brazing steel and copper, consisting of heating a piece of steel to a white heat, then spreading a flux over the surface of the steel, the placing a thin sheet of brass substantially coextensive with the steel thereon and again spreading a suitable flux upon the surface of the brass and then laying the piece of copper which is to be welded to the steel upon the flux and brass, and then submitting the same to suitable rolls or a compressor whereby the three sheets of material are compressed, substantially as described.

2. A method of brazing steel and copper, consisting of heating a piece of steel to a white heat and spreading a flux upon its one surface, then applying a thin sheet of brass of an area equal to that of said surface to this surface and again spreading a flux upon the brass, and then placing a piece of copper to be brazed to the steel upon the sheet of brass and flux and submitting the same to a compressing means whereby they are forced into engagement with each other under pressure.

3. The method of forming a composite sheet of steel and copper consisting in heating a sheet of steel, applying a flux to said sheet while the sheet is in heated condition, then laying a sheet of brass upon the sheet of steel, then laying a sheet of copper upon said sheet of brass and melting the sheet of brass by the initial heat of said sheet of steel, and then while the brass is in melted condition compressing the composite sheet.

4. The method of brazing steel and copper consisting of heating the steel, placing a flux upon said steel, then placing brass upon said steel, and lastly placing a sheet of copper upon said brass, and then welding said metals together by pressure while the steel retains a part of its initial heat.

811,955. **REVERSING MECHANISM FOR EXPLOSIVE-ENGINES.** EDWIN B. ROBERTSON, East Norwalk, Conn. Filed Feb. 20, 1905. Serial No. 246,408.

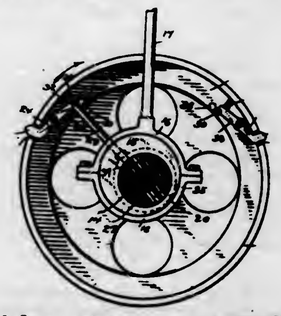

Claim.—1. In an explosive-engine, the combination with a shaft, a fly-wheel and spring-controlled oppositely-acting driving-dogs and corresponding stop-pins on its inner face, of an eccentric having a loosely-mounted hub, an ignition device operated by the eccentric, and a rod extending from the eccentric-hub into the path of the driving-dogs and stop-pins, substantially as described, for the purpose specified.

2. In an explosive-engine, the combination with a fly-wheel having a hub provided with a circumferential groove and spring-controlled oppositely-acting driving-dogs and corresponding stop-pins on its inner face, of an eccentric having a hub loose on the fly-wheel hub, an ignition device operated by the eccentric, a rod carried by the eccentric-hub and extending into the path of the driving-dogs and stop-pins, and a pin engaging the groove in the fly-wheel hub, substantially as described, for the purpose specified.

3. In an explosive-engine, the combination with a fly-wheel having openings in its periphery and spring-controlled oppositely-acting driving-dogs and corresponding stop-pins on its inner face, said driving-dogs having arms projecting through the openings in the periphery of the fly-wheel, of an eccentric having a loosely-mounted hub, an ignition device operated by the eccentric, and a rod extending therefrom into the path of the driving-dogs and stop-pins, the eccentric being operated by one of said driving-dogs when the fly-wheel is turning forward and by the other driving-dog when it is reversing.

4. The combination with an explosive-engine having a body provided with a hub, and a fly-wheel provided with a hub and having oppositely-acting driving-dogs and corresponding stop-pins on its inner face, of an eccentric having a hub loosely mounted on said body and fly-wheel hubs, and having a rod extending into the path of the driving-dogs and stop-pins, and an ignition device operated by the eccentric.

5. The combination with the body of an explosive-engine having a hub, and a fly-wheel provided with a hub having a circumferential groove, and oppositely-acting driving-dogs and corresponding stop-pins on its inner face of an eccentric having a hub loosely mounted on said body and fly-wheel hubs and having a rod extending into the path of the driving-dogs and stop-pins and a pin engaging the groove in the fly-wheel hub, whereby the eccentric-carrying hub is held against lateral displacement and an ignition device operated by the eccentric.

6. In an explosive-engine, the combination with a fly-wheel having a hub and oppositely-acting driving-dogs and corresponding stop-pins on its inner face of an eccentric having a hub with a rod extending into the path of the driving-dogs and stop-pins, said rod being locked between one driving-dog and the corresponding stop-pin to actuate the eccentric when the fly-wheel is turning forward and being locked between the other driving-dog and the corresponding stop-pin to actuate the eccentric when the fly-wheel is reversing and an ignition device operated by the eccentric.

7. In an explosive-engine, the combination with a fly-wheel having openings in its periphery, and spring-controlled oppositely-acting driving-dogs and corresponding stop-pins on its inner face, said driving-dogs having arms projecting through the openings in the fly-wheel in position to be tripped and notches at their inner ends of an eccentric having a hub with a rod extending therefrom, the outer end of said rod being adapted to be locked between one of the driving-dogs and the corresponding stop-pin and driven by said dog to actuate the eccentric when the fly-wheel is turning forward and to be engaged by the other stop-pin to again pick up the eccentric after the forward driving-dog has been tripped and to be locked between the stop-pin by which it has been engaged and the other driving-dog and be driven by the latter to actuate the eccentric when the fly-wheel is reversing and an ignition device operated by the eccentric.

8. In an explosive-engine, the combination with a fly-wheel having spring-controlled oppositely-acting driving-dogs and corresponding stop-pins on its inner face of an eccentric having a loosely-mounted hub with an arm extending into the path of the driving-dogs and stop-pins and an ignition device operated by the eccentric, substantially as described, for the purpose specified.

9. In an explosive-engine, the combination with a fly-wheel having spring-controlled oppositely-acting driving-dogs and corresponding stop-pins on its inner face of an eccentric having a loosely-mounted hub with a rod extending into the path of the driving-dogs and stop-pins, means for retaining the eccentric-hub against lateral movement and an ignition device operated by the eccentric.

811,956. **ELECTRICAL MEASURING INSTRUMENT.** MAURICE C. RYPINSKI, New York, N. Y. Filed Mar. 15, 1905. Serial No. 250,189.

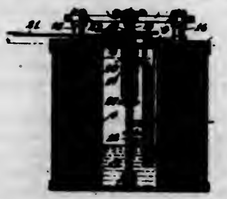

Claim.—1. In an electrical measuring instrument the combination of a stationary coil, a receptacle containing a damping fluid supported within said coil, a moving system comprising magnetic members suspended within said receptacle, and an indicating-needle supported exteriorly of the receptacle.

2. In an electrical measuring instrument the combination of a stationary coil, a removable receptacle containing a damping fluid supported within said coil, and a moving piston supported within said receptacle.

3. In an electrical measuring instrument the combination of a stationary coil, a removable receptacle containing a damping fluid supported within said coil, a moving system supported within said receptacle, and means to prevent the escape of said fluid from said receptacle in whatever position the instrument may be placed.

4. In an electrical measuring instrument the combination of a stationary coil, a receptacle containing a damping fluid supported within said coil, an apertured cap closing one end of said receptacle, a moving system comprising a shaft passing through the cap-aperture and supported on a bearing in said receptacle, and means to prevent the escape of the damping fluid through said aperture.

5. In an electrical measuring instrument the combination of a stationary coil, a removable receptacle containing a damping fluid supported within said coil, a moving system supported within said receptacle, said system comprising a pivoted shaft having a magnetic member attached thereto.

6. In an electrical measuring instrument the combination of a stationary coil, a receptacle containing a damping fluid supported within said coil, an apertured cap closing one end of said receptacle, a moving system comprising a shaft passing through the cap-aperture, and a fluid-deflector secured to said shaft.

7. In an electrical measuring instrument the combination of a stationary coil, a removable receptacle containing a damping fluid supported within said coil, a moving system comprising a shaft, bearings for said shaft one of which is within said receptacle and the other carried by a frame supported on said receptacle.

8. In an electrical measuring instrument the combination of a stationary coil, a removable receptacle containing a damping fluid supported within said coil, a moving system supported within said receptacle, said system comprising a shaft having secured thereto a magnetic member and an indicating-needle, and a scale-plate secured to said receptacle.

9. In an electrical measuring instrument the combination of a stationary coil, a removable receptacle containing a damping fluid supported within said coil, a cap closing one end of said receptacle, a fixed magnetic member secured to said cap, and a moving magnetic member suspended in said receptacle and normally adjacent to said fixed member.

811,957. **LOCK-NUT.** CHARLES RYSTROM, Rockford, Ill. Filed Mar. 13, 1906. Serial No. 147,992.

Claim.—1. As a new article of manufacture, a lock-nut composed of a spirally-coiled body having flattened outer faces an internal screw-threaded opening, the coils in their normal position being separated, and means carried by the nut for holding the coils compressed.

2. As a new article of manufacture, a lock-nut composed of a spirally-coiled body having an internal screw-threaded opening the coils of which normally tend to separate and in which position they are out of register, and removable clips carried by opposite sides of the nut normally tending to hold the coils compressed and the threads in continuous register.

3. As a new article of manufacture, a resilient, spirally-coiled body having an internal screw-threaded opening and having external flattened portions, and a plurality of removable clips holding said coiled body in a compressed condition, each of said clips being flattened on its outer side and bearing internally against one of the flattened portions of said coiled body.

4. As a new article of manufacture, a lock-nut comprising a compressible and expansible spirally-coiled body having an internal screw-threaded opening, the threads of which are continuous when the coils are compressed and broken when the coils are expanded, said nut being adapted for application to a bolt only when the coils are compressed, and means forming a part of the article and engaging the ends thereof for holding the coils of the nut compressed and the threads continuous so that the nut may be applied to a bolt, said means being removable to permit the coils of the nut to expand.

811,958. **KNOCKING-PEN.** GUSTAV SCHMIDT and FREDERICK SCHMIDGALL, Cincinnati, Ohio, assignors to The Cincinnati Butchers Supply Company, a Corporation of Ohio. Filed July 1, 1905. Serial No. 267,992.

Claim.—1. A knocking-pen forming substantially an inclosure provided with an inlet and an outlet opening, a door to control the inlet, a swinging flap and a tilting floor which control the outlet, locking means to positively hold one of these two latter parts in normal position and means whereby these parts are permanently connected so as to move together for opening as well as for closing.

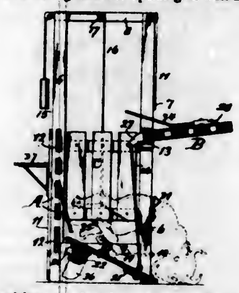

2. A knocking-pen forming substantially a four-sided box-frame of which one of the ends and a side are movable to permit opening, a floor supported to tilt sidewise, locking devices to hold the movable side in closed position and means to connect this side to the floor to also hold this latter in its normal position and to cause both to move together when the side is unlocked.

3. A knocking-pen forming substantially a four-sided structure of which one of the ends and a side are movable to permit opening, a hingedly-connected floor adapted to tilt transversely, locking-latches to hold the movable side in closed position, operating devices to manipulate them and means to connect this side to the floor to hold this latter in its normal position and to cause also both to move together when the side is unlocked.

4. A knocking-pen forming substantially a four-sided box-frame of which one of the ends and a side are movable to permit opening, a floor supported to tilt, locking-latches to hold the movable side in its closed position, one at each of its ends, mechanism whereby these latches are connected for simultaneous operation and means to connect the movable side to the floor to cause them to move together.

5. In a knocking-pen forming substantially a four-sided box-frame of which one of the ends and a side are movable to permit opening, a floor supported to tilt transversely, locking means to hold the movable side releasably in its closed position, lever-arms projecting from the movable side and links connecting these arms to the floor so that both this latter and the particular side move together.

6. A knocking-pen forming substantially a four-sided box-frame of which one of the ends and a side are movable to permit opening, a floor pivotally supported at its ends and adapted to tilt sidewise, means to manipulate the movable parts and to hold them in normal positions and a leg below this floor to support the same between its ends in normal position.

7. A knocking-pen forming substantially a four-sided box-frame, having a movable end to permit entrance, a side supported to swing laterally to permit exit, a bottom adapted to tilt sidewise means to manipulate these parts and a bouncing-board on the inner side of the side opposite the swinging side.

8. A knocking-pen forming substantially a four-sided box-frame of which one of the ends and a side are movable to permit opening, a floor supported to tilt sidewise, means to operate these parts, a platform-stage on the outside of the permanent side and a ladder to mount the same.

811,959. **AUTOMATIC CONTROLLING DEVICE FOR GAS-STOVES.** WILLIAM B. SCHOFIELD and MILLARD P. OSBORN, Merchantville, N. J. Filed Feb. 27, 1905. Serial No. 247,868.

Claim.—1. In an automatic controlling device for gas-stoves and the like, the combination of a bracket having a clamping device for detachable attachment to the stove, a movable primary actuating device carried by said bracket and adapted to be actuated by the weight of a vessel placed upon it, a valve to control the fuel-supply to the burner, power-transmitting connections between said valve and movable primary actuating device, and igniting devices carried by said bracket and controlled by the movement of said primary actuating device.

2. In an automatic controlling device for gas-stoves and the like, the combination of a movable primary actuating device adapted to be moved by a vessel placed on the stove, valve mechanism to control the fuel-supply to the burner, power-transmitting connections between said valve mechanism and the primary actuating part arranged to fully open the supply to the burner through said valve mechanism, and means manually controlled at will to adjust the supply-opening through said valve mechanism and automatically controlled to return said valve mechanism to full position when the valve passage-way is closed by said power-transmitting connections with the primary actuating part, whereby said valve mechanism, when again operated by the placing of a vessel on the stove, will be fully opened irrespective of the previous adjustment of said means controlled at will.

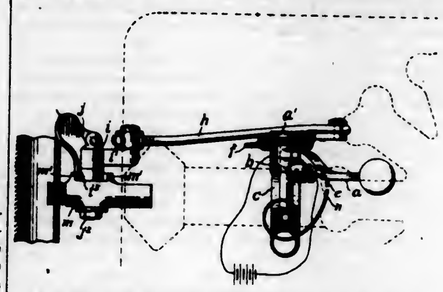

3. In an automatic controlling device for gas-stoves and the like, the combination of a movable primary actuating device adapted to be moved by a vessel placed on the stove, a main valve to control the fuel-supply to the burner, power-transmitting connections between said main valve and primary actuating part, an auxiliary controlling-valve for independently controlling the fuel-supply when said main valve is opened, and means for automatically returning said auxiliary controlling-valve to full position when the main valve is closed.

4. In an automatic controlling device for gas-stoves and the like, the combination of a movable primary actuating device adapted to be moved by a vessel placed on the stove, a main valve to control the fuel-supply to the burner actuated by said primary actuating device to fully open or close the valve passage-way, and an auxiliary hand-controlled controlling-valve carried by said main valve and adapted to control its valve passage-way.

5. In an automatic controlling device for gas-stoves and the like, the combination of a primary actuating device adapted to be moved by a vessel placed on the stove, a main valve to control the fuel supply to the burner actuated by said primary actuating device, and an auxiliary controlling-valve carried by said main valve and moving with it, but independently movable with reference to said main valve to control the valve passage-way thereof.

6. In an automatic controlling device for gas-stoves and the like, the combination of a primary actuating device adapted to be moved by a vessel placed on the stove, a main valve to control the fuel-supply to the burner actuated by said primary actuating device, and an auxiliary controlling-valve carried by said main valve and moving with it, but independently movable with reference to said main valve to control the valve passage-way thereof, and means for returning said auxiliary controlling-valve to normal full position with reference to said main valve when the main valve is actuated.

7. In an automatic controlling device for gas-stoves and the like, the combination of a primary actuating device adapted to be moved by a vessel placed on the stove, a tabular valve *i* located in the fuel-supply pipe and having a port to control the fuel-supply said valve *i* being actuated by the primary actuating device, and an auxiliary independently-adjustable controlling-valve *j* carried by said tubular valve *i* and having a port normally registering with the port of said valve *i*.

8. In an automatic controlling device for gas-stoves and the like, the combination of a primary actuating device adapted to be moved by a vessel placed on the stove, a tabular valve *i* located in the fuel-supply pipe and having a port to control the fuel-supply said valve *i* being actuated by the primary actuating device, and an auxiliary independently-adjustable controlling-valve *j* carried by said tubular valve *i* and having a port normally registering with the port of said valve *i*, and means to move said controlling-valve with its port in register with the port of the valve *i* when the latter is moved into open or closed position by the primary actuating device.

9. In an automatic controlling device for gas-stoves and the like, the combination of a primary actuating device adapted to be moved by a vessel placed on the stove, a rotary tubular valve *i* located in the fuel-supply pipe and having a port to control the fuel-supply, said valve *i* being actuated by the primary actuating device, stops to limit

the movement of said valve *i* at open and closed positions, an auxiliary independently-adjustable controlling-valve *j* carried by said tubular valve *i* and having a port normally registering with the port of said valve *i*, and a projection *b* carried by said valve *j* and adapted to strike the limit-stops of the valve *i* whereby said auxiliary controlling-valve will be automatically returned to position with its port registering with the port of the valve *i* when said valve is moved into open or closed position by the primary actuating device.

10. In an automatic controlling device for gas-stoves and the like, the combination of a primary actuating device adapted to be moved by a vessel placed on the stove, a valve to control the fuel-supply to the burner actuated by said primary actuating device, and an igniting device arranged adjacent to the burner and controlled by the primary actuating device, said igniting device embracing a thermostatic electric sparking point adapted to move out of sparking proximity when heated by the flame from the burner.

11. In an automatic controlling device for gas-stoves and the like, the combination of a primary actuating device adapted to be moved by a vessel placed on the stove, a valve to control the fuel-supply to the burner actuated by said primary actuating device, a pair of sparking points arranged adjacent to the burner and embraced in a normally open electric circuit, a contact-piece in circuit with the source of electric energy and one of said points and a contact-piece carried by the primary actuating device in circuit with the other sparking point.

12. In an automatic controlling device for gas-stoves and the like, the combination of a primary actuating device adapted to be moved by a vessel placed on the stove, a valve to control the fuel-supply to the burner actuated by said primary actuating device, a pair of sparking points arranged adjacent to the burner and embraced in a normally open electric circuit, a contact-piece in circuit with the source of electric energy and one of said points and a contact-piece carried by the primary actuating device in circuit with the other sparking point one of said sparking points consisting of a thermostatic strip adapted to move out of sparking proximity when heated by the flame from the burner.

811,960. **MOUNTING FOR EYEGLASSES.** HARRY A. SEIDEL, Lebanon, Pa. Filed Oct. 27, 1905. Serial No. 284,730.

Claim.—1. An eyeglass-mounting comprising a bridge or spring having guards formed integral therewith on the ends thereof, said guards having an opening therein and provided with laterally-extending flanges, and lugs on the free ends of the guards for attaching posts thereto.

2. An eyeglass-mounting comprising a bridge or spring having guards formed integral therewith on the ends thereof, said guards having an opening therein and provided with inwardly-extending flanges, and protuberances, and lugs for attaching posts thereto.

3. An eyeglass-mounting comprising a rod-like bridge or spring having integral guards at the ends thereof provided with an opening, and laterally-extending flanges bounding part of the opening, and lugs for attaching posts thereto.

4. An eyeglass-mounting comprising a bridge or spring having bends at the ends thereof and terminating in open guards integral therewith and having inwardly-extending flanges, and lugs at the ends of the guards.

5. An eyeglass-mounting comprising a bridge or spring having a bend at each end, a bend adjacent the first bend, guards integral with the bridge at the ends thereof, approximately C-shaped, and provided with laterally-extending flanges, and lugs.

811,961. **AUTOMATIC AIR-COUPLING.** EDMUND V. SHIRTZ, Fond du Lac, Wis., and DENVER B. MOURNER, Belle Plaine, Iowa. Filed Apr. 12, 1905. Serial No. 255,262.

Claim.—1. An air-coupler having a horizontally-slidable block for connecting it with the draw-bar of a car, said block being adapted to yield to conform to the horizontal play of the draw-bar.

2. An air-coupler having a sliding block, said block being provided with a transverse pin for pivotally connecting it with the draw-bar of a car.

3. An air-coupler comprising a supporting member having a slidable block for connecting it with a draw-bar, and a coupling member movably connected with the supporting member.

4. An air-coupler comprising a supporting member having a slidable block for connecting it with a draw-bar, a coupling member movably connected with the supporting member, and resilient means for normally holding said members in alinement.

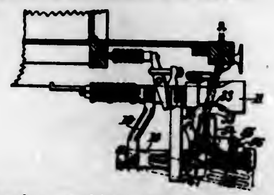

5. A coupler, comprising two members, one member having a depression and the other member having a longitudinal spring entering said depression to yieldingly retain the members in alinement.

6. An air-coupler comprising a supporting member, and a coupling member having a spring projecting toward the supporting member, the supporting member having means for engaging the spring, said spring normally acting to keep said members in alinement.

7. An air-coupler comprising a supporting member, and a coupling member having a longitudinal bar-spring projecting toward the supporting member, the supporting member having means for engaging the spring; said coupling member having an air-brake passage therein, a valve in the passage, and a stem for the valve adapted to be operated by a companion coupler.

8. An air-coupler comprising a coupling member having an air-brake passage, a valve movable longitudinally of the coupler and adapted to close the passage, a longitudinal stem projecting beyond the surface of said member, and a rearwardly-inclined surface adapted to engage a similar projecting stem of a companion coupler.

9. An air-coupler comprising a coupling member having a projection provided with a slanting lower surface and with a notch, and a plate adjacent to said projection corresponding in shape with the notch but extending in the opposite direction.

10. An air-coupler comprising a coupling member having a pair of projections, one of said projections being provided with a slanting lower surface and adapted to enter a space between similar projections upon the companion coupling member, a notch on one of said projections, and a plate corresponding in shape with the notch but extending in the opposite direction.

11. An automatic air-coupler comprising a coupling member having a pair of projections, one of said projections being provided with a slanting lower surface and adapted to enter a space between similar projections upon a companion coupling member, the projection having a slanting surface, being provided with a notch, and the coupling member being provided with a plate between the two projections, said plate corresponding in shape with the notch but extending in the opposite direction.

12. An automatic air-coupler comprising a coupling member having means for locking it to a companion member of the same shape, said coupling member being provided with a passage for the air of an air-brake system, a passage for connection with an air-signal system, and a steam-passage, each of said passages having an outlet and said outlets being located adjacent to each other upon the inner surface of the coupling member.

811,962. **COPY-HOLDER.** CHARLES V. SHANNON, Dawson, Canada. Filed June 23, 1904. Serial No. 213,377.

Claim.—1. In a copy-holder, the stationary rack-bar and carriage connected thereto, a movable rack-bar having slots therein, a rock-bar having lifting-bars located in said slots, and a depressible spring-rod for rocking said rock-bar to lift the movable bar, whereby the carriage is disengaged from the stationary rack-bar and engaged by the movable rack-bar.

2. In a copy-holder and spacer, a stationary rack-bar and carriage connected thereto, a space-bar on said carriage, a movable rack-bar having slots therein, a rock-bar having lifting-rods located in said slots, a depressible rod bearing on said rock-bar adapted to lift the movable bar whereby the carriage is disengaged from the stationary rack-bar and engaged by the movable rack-bar, and means for returning the movable rack-bar to normal position when pressure is released on the depressible bar, all combined substantially as described.

3. The combination of a stationary rack-bar and a slotted movable rack-bar, a carriage and a series of pawls carried thereby engaging said stationary bar, a space-bar carried by the carriage, a rock-bar having rocker-arms in the slots of the movable bar for lifting said bar whereby the pawls are disengaged from the stationary bar and engaged by the movable bar, and a spring connected to the movable bar for returning it to original position.

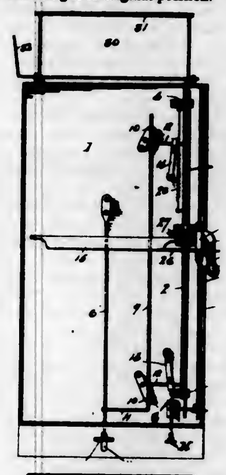

811,963. **TARGET.** HERBERT A. SHAULIS, New York, N. Y., assignor to Shaulis Amusement Construction Company, New York, N. Y., a Corporation of New York. Filed July 3, 1905. Serial No. 268,146.

Claim.—1. A game apparatus comprising a figure of a base-ball batter and of a base-ball catcher, with means for supporting them in upstanding positions; the figure of the batter being provided with an extended bat, and also with means for signaling when the bat is struck by a ball thrown by the player.

2. A game apparatus comprising a figure of a base-ball batter and a figure of a catcher, with means for supporting them in upstanding positions; the figure of the batter being provided with an extended bat, and the figure of the catcher being provided with a receptacle into which may drop some of the balls thrown past the bat.

3. A game apparatus comprising a figure of a base-ball batter and a figure of a catcher, with means for securing and bracing each of them in upstanding position; the figure of the batter being provided with an extended bat, which is movably mounted upon said batter, so as to be displaceable by a ball striking the same while the batter remains motionless.

4. A game apparatus comprising a figure of a base-ball batter and a figure of a catcher, with means for securing them in upstanding position; the figure of the batter being provided with an extended bat, which is movably mounted so as to be displaceable by a ball striking the same while the batter remains motionless, and means for returning said bat to normal position after being struck.

5. A game-set comprising a profiled figure of a base-ball batter and a profiled figure of a catcher, with means for securing them in upstanding positions; the figure of the batter being provided with an extended bat, and each of said figures being formed of a plate of metal suitably painted upon its front side, with a stiffening-rib, such as 7, fixed upon the back of each plate.

6. A game apparatus comprising a profiled figure of a base-ball batter and a profiled figure of a catcher, the figure of the batter being provided with an extended bat, each of said figures provided with prongs upon its feet to stick into the ground or floor, and also with a hinged rear support or brace to rest upon the ground.

7. A game apparatus comprising a figure of a base-ball batter and a figure of a catcher, with means for supporting them in upstanding positions; the figure of the batter being provided with an extended bat and with means for signaling whenever the bat is struck by a ball thrown by the player, and the figure of the catcher being provided with a receptacle into which may drop some of the balls thrown past the bat.

8. A game apparatus comprising a figure of a base-ball batter and a figure of a catcher, both having means whereby they may be secured and braced upon the ground or floor; the figure of the batter being provided with an extended bat and with means for signaling whenever the bat is struck by a ball thrown by the player, and an opening being formed in the body of the catcher, and a receptacle being provided in rear of said opening for the balls thrown at the bat.

9. A game apparatus comprising a figure of a base-ball batter and a profiled figure of a base-ball catcher; the batter being provided with an extended bat, and the catcher having a receptacle for the thrown balls, the opening for said receptacle being in the body of the catcher.

10. A game apparatus comprising a figure of a base-ball batter provided with an extended bat, which is hinged upon the body of the batter, and a figure of a catcher, provided with a receptacle for balls thrown at the bat.

11. A game apparatus comprising a profiled figure of a base-ball batter and a profiled figure of a catcher, each of said figures provided with prongs upon its feet to stick into the ground or floor, and also with a hinged rear support or brace to rest upon the ground, the figure of the batter being provided with an extended bat and with means for signaling when the bat is struck, and the figure of the catcher having a receptacle for the thrown balls.

811,964. **TOY WHIP.** WILLIAM F. SIMON, West Hoboken, N. J. Filed Aug. 22, 1904. Serial No. 221,698.

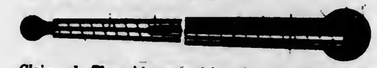

Claim.—1. The whip comprising the core, the exterior body formed of thin narrow coiled metal, the interior string fastened at the outer end of said body to prevent undue extension of the same, and the knob fastened on the butt-end of said core, said knob having a cavity to receive the said end of said core and the adjacent ends of said body and string; substantially as set forth.

2. The whip comprising the core, the exterior body formed of thin narrow coiled metal, the interior string, and the knobs at the ends of said body, said string being fastened at its inner end at the base of said core and at its outer end connected with the outer one of said knobs; substantially as set forth.

811,965. **TRUCK.** JOHN D. SMYTH, Cheraw, S. C., assignor of one-half to Pee Dee Iron Works, Cheraw, S. C. Filed Aug. 23, 1905. Serial No. 275,410.

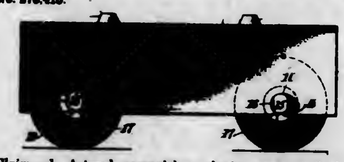

Claim.—1. A truck comprising a body constructed of a single piece of material bent upon itself to form an upper section and downwardly-extending side sections, the side sections being provided with transversely-alined openings, an axle provided with grooves for receiving the side walls of the openings, and wheels loosely mounted on the axle within the said body.

2. In a truck, a body constructed of one piece of sheet metal, comprising an upper section having guides for the articles carried, and downwardly extending side members provided with openings in their lower edges, the said openings being in transverse alinement, and axles introduced into the said openings, which axles have grooves in their sides receiving the side walls of the said openings, and wheels mounted loosely on the said axles within the said body.

3. In a truck, the combination with a body constructed of one piece of metal bent upon itself to form a top section having a guide for the material to be carried, and downwardly-extending side sections having vertical slots in their lower edges adjacent to the ends of the sides, transversely-opposing slots being in transverse alinement, axles provided with grooves in opposite sides at their ends, which grooves are adapted to receive the side walls of the openings in the body, the lower edges of the side walls of the said openings being projected beneath the said axles, and wheels loosely mounted on the said axles within the body, the washers of said wheels extending practically to the side members of the body, as set forth.

811,966. **MEANS FOR AGING AND PURIFYING LIQUORS.** ROBERT A. STEWART, San Francisco, Cal., assignor of one-half to A. J. Knoblock, San Francisco, Cal. Filed Feb. 3, 1904. Renewed Dec. 11, 1905. Serial No. 291,265.

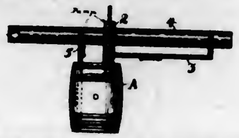

Claim.—An apparatus for aging and purifying alcoholic liquors consisting of a containing vessel, a chamber 4 supported in rotation with the vessel and having a pipe extending into the vessel to a point near the bottom thereof, a pump connected to the upper part of the vessel, a pipe 3 connected to the pump and to the chamber, and a valve in the chamber for the admission of fresh accretions of oxygen thereto.

811,967. **ELECTRIC CAR.** LEWIS B. STILLWELL, Lakewood, N. J. Filed July 29, 1904. Serial No. 218,695.

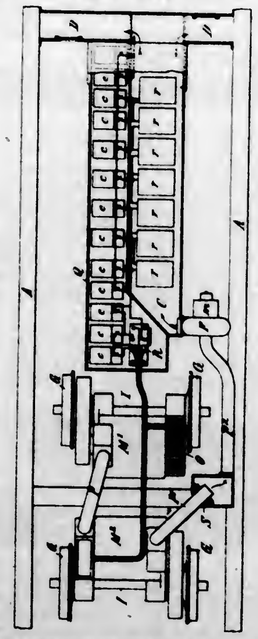

Claim.—1. In electric cars the combination of a motor and rheostats, chambers containing said elements, means for causing a current of air at substantially atmospheric pressure to flow through said chambers and for conveying the air so heated to the interior of the car.

2. In electric cars the combination of a chamber beneath the floor of the car, a heat-generating element of the electrical motive-power equipment of said car contained in said chamber, a fan, or equivalent device, for causing a current of air at substantially atmospheric pressure to flow through said chamber, and a conduit connecting said chamber with the interior of said car.

3. In electric cars the combination of a chamber, a heat-generating element of the electrical motive-power equipment of said car contained in said chamber, a fan rotated by the motor propelling said car, means for automatically maintaining the direction of the moving air into or out of the car constant irrespective of the direction in which the motor rotates, and a conduit connecting said chamber with the interior of said car.

4. In electric cars the combination of a chamber, a heat-generating element of the electrical motive-power equipment of said car contained in said chamber, an entrance-passage to said chamber provided with a valve, means for automatically shifting said valve as the direction of the movement of the car is reversed, and means for conveying the air thus heated to the interior of the car.

5. In electric cars, the combination of a chamber, a heat-generating element of the electric motive-power equipment of said car contained in said chamber, an entrance-passage to said chamber provided with a valve and means for shifting said valve as the direction of the movement of the car is reversed, said means consisting of electrically-actuated mechanism interlocked with the electric circuits by which the car movements are determined.

6. In electric cars, the combination of a chamber, a motor contained in said chamber, means for causing a current of air to circulate through said chamber and means for eliminating from said current iron-dust before it is introduced into said chamber.

7. In electric cars, the combination of a chamber, a motor contained in said chamber, means for causing a current of air to circulate through said chamber, and a magnetic screen past which the current circulates before reaching said chamber.

811,968. **ELEVATING DEVICE.** JOSEPH C. STIRLING, Bakerstown, Pa., assignor, by direct and mesne assignments, of two-sixths to D. W. Stirling and two-sixths to J. Ritta, Glade Mills, Pa. Filed July 25, 1905. Serial No. 271,196.

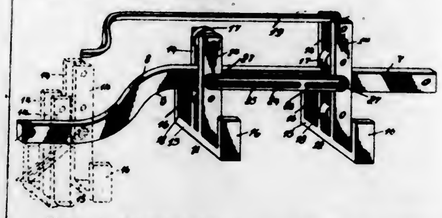

Claim.—1. In a device of the character described, the combination with a band-wheel journaled in stationary bearings and a rope carried by said band-wheel, of a track mounted above said band-wheel, said track having one end out of alinement with the other end thereof, hangers suspended upon said track and engaging said rope and means to move the hangers along the track and thereby elevate the rope.

2. In a device of the character described the combination with a band-wheel and a rope carried by said band-wheel, of hangers suspended upon said band-wheel and adapted to engage said rope, a curved track arranged adjacent the band-wheel, said hangers being carried on said track and said track serving to elevate said hangers above said band-wheel, and means to move said hangers.

3. In a device of the character described the combination with a band-wheel journaled in stationary bearings, a rope passing over said band-wheel, a track arranged over the band-wheel, said track having ltaends at different levels, a hanger suspended from said track and engaging said rope, a lever arranged at a point removed from said track and connections between said lever and said hanger whereby the movement of the lever will move the hanger to different positions on the track and thereby raise or lower said rope.

4. In a device of the character described the combination of a rigid track having a raised portion, movable hangers suspended upon said track and adapted to engage a rope, means to adjustably connect the hangers together, and means to move said hangers off and on said raised portion.

811,969. **APPARATUS FOR PURIFYING AIR.** ALLAN P. SWAN, Dundalk, Ireland. Filed Dec. 17, 1904. Serial No. 287,208.

Claim.—1. In apparatus for purifying air the combination of a chamber adapted for the reception of a number of balls or spherical bodies, means for applying viscous liquid to the said bodies and means operative near the discharge end of the apparatus for effecting the cleansing of the said bodies.

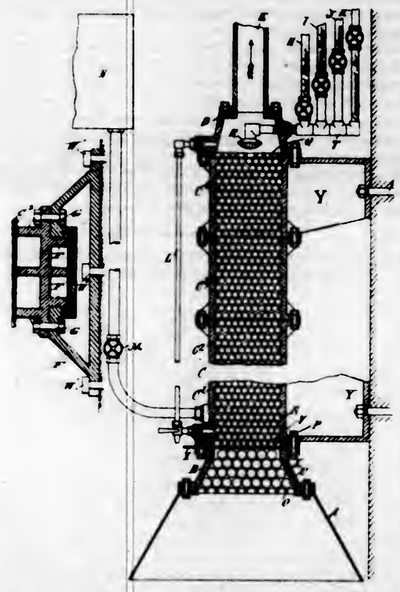

2. In apparatus for purifying air, the combination of a chamber adapted for the reception of a number of balls, or spherical bodies, means for applying viscous liquid to the said bodies means operative near the discharge end of the apparatus for effecting the cleansing of the said bodies and means for conducting a current of air into and through said chamber and bodies.

3. In apparatus for purifying air, the combination of a chamber adapted for the reception of a number of balls or spherical bodies, means for applying viscous liquid to the said bodies and means operative near the discharge end of the apparatus for effecting the cleansing and the sterilizing of the said bodies.

4. In apparatus for purifying air, the combination of a chamber adapted for the reception of a number of balls or spherical bodies, means for supplying viscous liquid to the said chamber and serving the said bodies with a coating of such liquid, means operative near the discharge end of the apparatus for effecting the cleansing and the sterilizing of the said bodies and means for conducting a current of air into and through the said chamber and bodies.

5. In apparatus for purifying air, the combination of a chamber, balls or spherical bodies in the said chamber, a tank or container for viscous liquid, a pipe leading from the said tank to the chamber and a valve or diaphragm in said chamber, a conical or taper piece on the end of said chamber, a movable partition between the same and balls or spherical bodies in said conical or taper piece.

6. In apparatus for purifying air, the combination of a chamber, balls or spherical bodies in the said chamber, a tank or container for viscous liquid, a pipe leading from the said tank to the chamber, a valve or diaphragm in said chamber a conical or taper piece on the end of said chamber, a movable partition between the same and balls or spherical bodies in said conical or taper piece and means for effecting the cleansing of the balls or spherical bodies.

7. In apparatus for purifying air, the combination of a chamber, balls or spherical bodies in the said chamber, a tank or container for viscous liquid, a pipe leading from the said tank to the chamber, a valve or diaphragm in said chamber a conical or taper piece on the end of said chamber, a movable partition between the same and balls or spherical bodies in said conical or taper piece means for effecting the cleansing of the said balls or spherical bodies and means for effecting the sterilization of the said bodies.

8. In apparatus for purifying air, the combination of a chamber, balls or spherical bodies in the said chamber means for applying viscous liquid to the said bodies, and purifying media a conical or taper piece beneath said chamber, balls or spherical bodies in said conical or taper piece and a movable plate between said chamber and conical or taper piece.

9. In apparatus for purifying air, the combination of a chamber, adapted for the reception of a number of balls or spherical bodies means for applying viscous liquid to the said bodies, means operatively arranged at the discharge end of the apparatus for effecting the cleansing of the said bodies and means for rotating the said chamber.

10. In apparatus for purifying air, the combination of a chamber balls or spherical bodies in the said chamber, a tank, a pipe leading from the said tank to the chamber a conical or taper piece detachably secured to one end of said chamber, balls or spherical bodies in said conical or taper piece and a wall-bracket on said chamber.

11. In apparatus for purifying air, the combination of a chamber, balls or spherical bodies in the said chamber, a tank, a pipe leading from the said tank to the chamber a union on said pipe and a bracket on the said chamber a conical or taper piece detachably secured to one end of said chamber, balls or spherical bodies in said conical or taper piece.

12. In apparatus for purifying air, the combination of a chamber, balls or spherical bodies in the same chamber, a conical or taper piece on said chamber, balls or spherical bodies in said conical or taper piece, a movable plate interposed between the balls of the chamber and of the conical or taper piece means for applying viscous liquid to the said bodies and means for effecting the cleansing of the said bodies.

13. In apparatus for purifying air, the combination of a chamber, balls or spherical bodies in the said chamber, a conical or taper piece on the said chamber, balls or spherical bodies in the said conical or taper piece, means for shutting off the chamber from the said taper piece, means for applying viscous liquid to the said bodies and means for effecting the cleansing of the said bodies.

14. In apparatus for purifying air, the combination of a chamber, balls or spherical bodies in the said chamber, a conical or taper piece on the said chamber, balls or spherical bodies in the said taper piece, means for shutting off the said chamber from the said taper piece, a frame, a covering of coarse flannel on the said frame, means for applying viscous liquid to the said bodies and means for effecting the cleansing of the said bodies.

15. In apparatus for purifying air, the combination of a chamber, balls or spherical bodies in the said chamber, a grid or grating at the lower end of the said chamber, a conical or taper piece on the said chamber, balls or spherical bodies in the said taper piece, a grid or grating at the lower end of the said taper piece, a means for shutting off the said chamber from the said taper piece, a frame, a covering of coarse flannel on the said frame, means for applying a viscous liquid to the said bodies and means for effecting the cleansing of the said bodies.

16. In apparatus for purifying air, the combination of a chamber, balls or spherical bodies in the said chamber, a conical or dome shaped cover or cap a distributing appliance service-pipes to the said appliance for cold water, warm water, steam and compressed air, a grid or grating at the lower end of the said chamber, a conical or taper piece on the said chamber, balls or spherical bodies in the said taper piece, a grid or grating at the lower end of the said taper piece, means for shutting off the said chamber from the said taper piece, a frame, a coarse flannel covering to the said frame, and means for applying viscous liquid to the said bodies.

17. In apparatus for purifying air, the combination of a chamber, balls or spherical bodies in the said chamber, a conical or dome shaped cover or cap a grid or grating at the lower end of the said cover or cap, a distributing appliance, service-pipes to the said appliance for cold water, warm water, steam, compressed air, a grid or grating at the lower end of the said chamber, a conical or taper piece on the said chamber, balls or spherical bodies in the said taper piece, a grid or grating at the lower end of the said taper piece, means for shutting off the said chamber from the said taper piece, a frame, a coarse flannel to the said frame and means for applying viscous liquid to the said bodies.

18. In apparatus for purifying air, the combination of a chamber having balls or spherical bodies of hollow formation and means for holding the said bodies in position relatively in the said chamber, means for applying viscous liquid to the said bodies and means for effecting the cleansing of the said bodies.

19. In apparatus for purifying air, the combination of a chamber having therein balls or spherical bodies of hollow formation and means for holding the said bodies in position relatively in the said chamber, means for applying viscous liquid to the said bodies, means

for effecting the cleansing of the said bodies and means for effecting the sterilization of the said bodies.

20. In apparatus for purifying air, the combination of a chamber and a conical piece thereon with balls or spherical bodies therein, means for applying viscous liquid to the said bodies and means for effecting the cleansing of said bodies.

811,970. GAS-BURNER. ROBERT SWINBURNE, New York, N. Y., and EDUARD B. HEBLER, Lyndhurst, N. J. Filed Nov. 21, 1904. Serial No. 233,626.

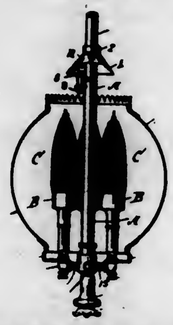

Claim.—1. In gas-lighting apparatus the combination with a plurality of burners one of which is constantly ignited of means to deflect the gas from a burner which is not ignited to the flame of the burner which is constantly ignited, substantially as described.

2. In a gas-lighting apparatus the combination with a constantly-ignited pilot-burner and main burners of means to deflect gas from the main burners to the pilot-flame, whereby all the main burners are simultaneously ignited, substantially as described.

3. In a gas-burner, the combination with a constantly-ignited pilot-burner and main burners of a gas-deflector provided with a vent, substantially as described.

4. In a cluster gas-light, the combination with a plurality of burners, of a globe-holder consisting of a plurality of slotted and bent arms adjustably guided on said burners, substantially as described.

5. The combination in a gas-light of burners provided with a plurality of pipes and tips and said tips having flattened sides and seats, and slotted and bent globe-holder arms seated on said seats and on said pipes, substantially as described.

6. The combination in a gas-cock of a body having a conical bore, a conical plug seated therein, a spring on the inner end of said plug and a confining-ring provided with a recess for said spring, substantially as described.

7. The combination in a gas-cock, of a body 20 provided with a conical bore and recessed spring-chamber, a conical ported plug 21 seated in said bore, a spring 22 on the inner end of said plug and bearing on the said body 20, and a recessed confining-ring 25 on said plug, substantially as described.

8. The combination in gas-lighting apparatus of a main supply-pipe, a plurality of burners connected therewith and provided with guide-seats, a rotatable adjusting device mounted on said main supply-pipe, a plurality of adjustable globe-holding arms guided on said seats, and operative connections between said arms and said adjusting device, whereby all said arms are simultaneously adjusted, substantially as described.

811,971. PROCESS OF MANUFACTURING MILK PREPARATIONS. SALAMON SOKOLY and EMERICH KOVÁCS, Budapest, Austria-Hungary. Filed Oct. 13, 1902. Serial No. 127,181.

Claim.—1. In the manufacture of milk preparations the subprocess of making an easily-digestible whey which is approximately germ-free from cows' milk, consisting in heating the milk to a temperature as high as possible below the coagulation-point of albumen, introducing carbonic acid at a high pressure substantially in excess of four atmospheres and agitating the milk, whereby the ingredients in suspension are precipitated, and drawing off the clear whey free from the precipitate.

2. In the manufacture of milk preparations, the process of making an easily-digestible product resembling human milk which is approximately germ-free from cows' milk, which consists in heating the same to a temperature as high as possible below the coagulation-point of albumen, introducing carbonic acid under high pressure substantially in excess of four atmospheres and agitating the milk, whereby the ingredients in suspension are precipitated, removing the carbonic acid, separating the clear whey from the precipitate, sterilizing the precipitate, and adding to the whey a sufficient percentage of the precipitate to supply the milk ingredients necessary to form the desired product.

3. In the manufacture of milk preparations the process of making an easily-digestible product resembling human milk which is approximately germ-free from cows' milk, which consists in heating the same to a temperature as high as possible below the coagulation-point of albumen, introducing carbonic acid under high pressure substantially in excess of four atmospheres and agitating the milk, whereby the ingredients in suspension are precipitated, removing the carbonic acid, separating the clear whey from the precipitate, and adding to the whey a sufficient percentage of pasteurized or sterilized milk ingredients to form the desired product.

811,972. TELEPHONE SYSTEM. ELMER A. TREPHERD, Geneseo, Ill. Filed Sept. 3, 1903. Serial No. 171,861.

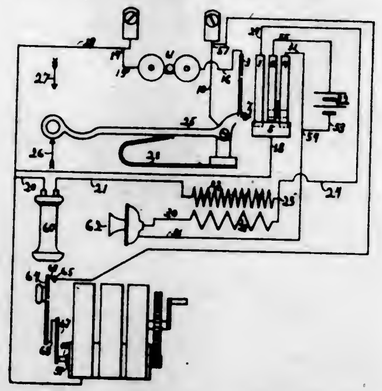

Claim.—1. In a telephone set, a transmitter, a receiver, and a switch-hook, and means, including circuit connections, whereby the switch-hook, when in one position, connects said receiver and transmitter in closed local circuits, and when in another position operatively connects said transmitter and receiver to transmit and receive over the line.

2. In combination, in a telephone set, a transmitter, a receiver, and a switch-hook, means whereby said switch-hook when in one position operatively connects said transmitter and receiver for transmitting and receiving to and from the line, and means whereby the switch-hook when in another position connects said transmitter and receiver in dead closed local circuit.

3. In combination with a telephone transmitter and receiver, a switch-hook adapted to be moved to two positions, suitable circuit connections, and contact parts controlled by the switch-hook arranged and adapted when the hook is down to short-circuit the transmitter and receiver without thereby short-circuiting the line, and when the hook is raised to operatively connect the transmitter and receiver for transmitting to and receiving from the line.

4. In combination, in a telephone set, a local battery, a transmitter, an induction-coil having primary and secondary windings, a receiver and a switch-hook, suitable circuit connections, and contact parts associated with the switch-hook, all arranged and adapted to establish when the hook is down closed local circuits, including the receiver, transmitter, and induction-coil windings, and excluding the local battery, and when the hook is raised to establish a closed local circuit including the local battery, the primary winding of the induction-coil and the transmitter, and to connect the secondary coil and the receiver for inclusion in the line-circuit.

5. In a telephone set, a transmitter, a local battery, a switch-hook, means associated with the switch-hook for control thereby arranged to establish a closed circuit including the battery and transmitter when the hook is moved in one direction, and means associated with said hook for establishing a closed local circuit including the transmitter and excluding the battery when the hook is moved in the other direction.

6. In combination in a telephone system, a switch-hook, contacts 1 and 2, arranged to be closed by the switch-hook when in raised position, contact 3 adapted to be connected with the switch-hook when the latter is in depressed position, plate 5, disposed for connection with spring 1 when the latter is freed from the hook, and contact-spring 4, arranged for connection with the plate 5 only when the hook is depressed, line binding-posts, a bell connected between spring 3 and one binding-post, a constant connection between the hook and the other binding-post, a receiver constantly connected with the first said binding-post, and connected also with spring 1, a transmitter connected to springs 1 and 4, and a local battery connected with springs 2 and 4, as and for the purposes described.

811,973. LOADER AND UNLOADER. OWEN J. TRAVIS, Denver, Colo. Filed July 27, 1905. Serial No. 271,494.

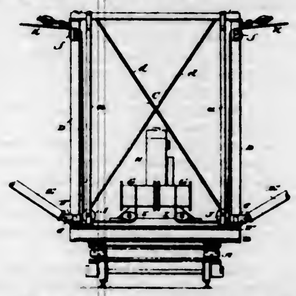

Claim.—1. In a loader and unloader, the combination of a body, a horizontally swinging or turning frame mounted on said body, an upright frame fixed to and rising from one end of said horizontally swinging or turning frame upright turn-posts mounted in the horizontally-swinging frame and the upright frame so as to rotate about their axes; said posts being arranged adjacent to opposite sides of the horizontally swinging or turning frame, booms connected to the turn-posts so as to swing horizontally with same, cables complementary to the booms for raising and lowering goods thereon, and means on the horizontally swinging or turning frame for taking up and letting out the cables.

2. In a loader and unloader, the combination of a wheel-supported body, a horizontally swinging or turning frame mounted on said body, an upright frame fixed to one end of said horizontally swinging or turning frame, upright turn-posts mounted in the horizontally-swinging frame and the upright frame so as to rotate about their axes, booms connected to the turn-posts so as to move horizontally with the posts and swing vertically independent of the same, adjustable connections intermediate the turn-posts and the booms for holding the latter against downward movement, cables complementary to the booms for raising and lowering rails or other goods thereon, and means on the horizontally swinging or turning frame for taking up and letting out the cables.

811,974. WINDOW-SCREEN. HARRY W. TUTHILL, Middletown, N. Y. Filed Nov. 15, 1905. Serial No. 287,462.

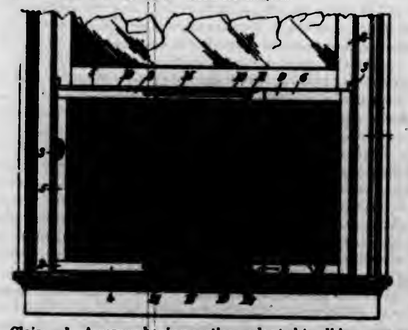

Claim.—1. A screen having sections adapted to slide one upon the other, one of said sections having slots therein, bolts carried by the opposite sections and received respectively through said slots, and sliding plates attached to one of said screen-sections and adapted to move therewith to close said slot.

2. A window-screen comprising in combination, a section having bars with slots therein, a second section having bars with bolts passing through said slots, sliding plates carried by said first bars and having openings therein receiving said bolts, whereby the movement of said bolts when said screen is extended, will extend said sliding plates.

3. A window-screen comprising in combination, a section having bars with slots therein, a second section adapted to slide thereupon and having bars with bolts passing through said slots, said first bars having grooves therein, sliding plates mounted respectively in said grooves, and having slots therein receiving said bolts.

4. A window-screen comprising in combination, a section having bars with slots therein, a second section adapted to slide thereupon and having bars with bolts passing through said slots, said first bars having grooves therein, sliding plates mounted respectively in said grooves, and having slots therein receiving said bolts, whereby the extension of said screen-sections will extend said sliding plates, and means for limiting the extension movement of said sliding plates.

811,975. MACHINE FOR BENDING ANGLE-IRONS. WILHELM VOLLMER, Winfield, N. Y. Filed Mar. 8, 1905. Serial No. 249,089.

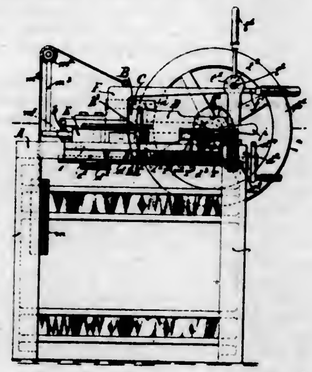

Claim.—1. In a machine for bending angle-iron, the combination of a bed, a forming-block mounted thereon, means for bending the angle-iron against the said block, and a presser-plate hinged to said forming-block and adjustable therealong at its hinged end.

2. In a machine for bending angle-iron, a bed, a forming-block mounted thereon, a guide-block also mounted thereon, a bending-lever, a presser-plate hinged to said forming-block, and means mounted on said bed, independent of said guide-block, for adjusting the free end of said presser-plate.

3. In a machine for bending angle-iron, a bed, a forming-block mounted thereon, means cooperating with said forming-block for bending the angle-iron against the same, a presser-plate hinged to said forming-block, means for locking the free end of said presser-plate in operative position, and automatic means for returning said presser-plate to inoperative position upon the release of said locking means.

4. In a machine for bending angle-iron, a bed, a forming-block mounted thereon, means for bending the angle-iron against said forming-block, a presser-plate hinged to said forming-block and counterweighted so as to normally rest in inoperative position, and means for locking the free end of said presser-plate in operative position.

5. In a machine for bending angle-iron, a forming-block, means for bending the angle-iron against the same, a presser-plate hinged to said forming-block, standards, a shaft carried by said standards and shiftable into and out of the path of said presser-plate, and means on said shaft to position said presser-plate.

6. In a machine for bending angle-iron, a forming-block, means for bending the iron against the same, a presser-plate hinged to said forming-block, standards, and a shaft journaled in said standards and provided with a cam adapted to engage the free end of said presser-plate, said shaft being shiftable into and out of the path thereof.

7. A machine for bending angle-iron comprising in its construc-

tion a forming-block, means for bending the angle-iron against the same, a presser-plate hinged to said forming-block, standards, a brace extending between said standards, and a shaft journaled in said standards and carrying a cam adapted to coöperate with said brace in positioning the free end of said presser-plate.

8. A machine for bending angle-iron comprising in its construction a forming-block, means for bending the iron against the same, a presser-plate hinged to said forming-block, vertically-adjustable standards, and a shaft carried by said standards and provided with means to position the free end of said presser-plate.

9. In a machine for bending angle-iron, a bed, a forming-block mounted thereon, a guide-block likewise mounted thereon, a bending-lever pivoted laterally to said guide-block, and a bending-finger carried by said forming-block for retaining the horizontal flange of the angle-iron against buckling in a vertical direction.

10. In a machine for bending angle-iron, the combination of a forming-block, a pivoted bending-lever coöperating therewith, and a finger pivoted to said forming-block in the same plane as said bending-lever is pivoted, and serving to maintain one flange of the iron against buckling

11. In a machine for bending angle-iron, the combination of a forming-block, a superposed presser-plate, a bending-lever coöperating with said block and plate, and a buckle-preventing finger pivoted to said presser-plate and movable in the same direction as said bending-lever.

12. In a machine for bending angle-iron, a forming-block, a superposed presser-plate, means for bending the iron against said forming-block, and coöperating means carried by said forming-block and presser-plate for preventing the buckling of one flange of the angle-iron while the same is being bent.

13. In a machine for bending angle-iron, the combination of a forming-block, a superposed presser-plate, a laterally-pivoted bending-lever, and laterally-swinging buckle-preventing fingers carried by said presser-plate and forming-block.

14. In a machine for bending angle-iron, a forming-block having a laterally-swinging buckle-preventing finger the upper face of which is flush with that of said forming-block, a presser-plate superposed on said forming-block and carrying a similar finger adapted to coöperate with the first, the lower face thereof being flush with that of said presser-plate, and a laterally-pivoted bending-lever coöperating with said forming-block and presser-plate.

15. In a machine such as described, a bed, a forming-block mounted thereon and having a recess at the forming end, a laterally-pivoted bending-lever, a buckle-preventing finger laterally pivoted to said forming-block, and a foot carried by said finger and engaging the bed, said foot being movable into the recess of said forming-block.

811,976. HAND MAIL-MARKING MACHINE. HENRY B. WAITE, Newton, Mass. Filed Nov. 4, 1904. Serial No. 231,368.

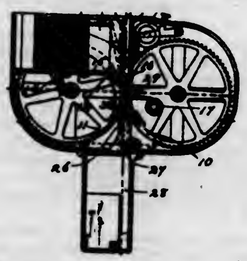

Claim.—1. A hand mail-marking machine comprising an inclined chute for the letters, coöperating rotary impelling and printing segments, and a yieldable stop free to be displaced by a letter that is actuated by said segments and normally crossing the path of a letter beyond the point where the said segments first contact with a letter, whereby said stop will temporarily hold a letter in proper position during the travel of the segments prior to their taking hold of the letter, the path of the letters to said stop being entirely unobstructed.

2. A mail-marking machine comprising a rotary printing member and a rotary impression member, and a yieldable stop crossing the path of the letters beyond the point where said members first contact with a letter, whereby a letter will be arrested in position to be actuated by said members, the path of the letters to said stop being entirely unobstructed, said stop being free to be displaced by a letter that is actuated by said members.

3. A mail-marking machine comprising a rotary printing member and a rotary impression member, one of said members being yieldable relatively to the other, and a yieldable stop crossing the path of the letters beyond the point where said members first contact with a letter, whereby a letter will be arrested in position to be actuated by said members, the path of the letters to said stop being entirely unobstructed, said stop being free to be displaced by a letter that is actuated by said members.

4. A mail-marking machine comprising an inclined letter-chute, a yieldable stop crossing said chute and free to be displaced by a letter that is pushed down the chute, and rotary coöperating printing and impression members mounted in positions that will bring their coacting printing and impression faces during rotation into gripping relation with a letter held by said stop, whereby the letter is fed directly by said faces.

5. In a mail-marking machine, the combination of means for supporting a stack of letters in position for feeding by one hand of the operator, and a pair of revoluble marking and carrying devices having a handle for their rotation by the other hand, said devices cooperating through an arc of subetantially from one-seventh to one-fifth of the circle of their travel, and means being provided for insuring rotation of said devices in peripheral unison.

6. A hand mail-marking machine comprising revolving feeding-grippers having printing impression and carrying surfaces, one of said surfaces being yieldable, and a yieldable stop crossing the path of a letter at a point beyond the point of coöperation of said grippers, a hopper or receptacle below the plane of the path of the letters and means for deflecting letters in a straight path from an upright to a prone position as they drop into said receptacle.

7. A mail-marking machine comprising intermeshing gears, one carrying a printing member and the other carrying an impression member, said members having gripping printing and impression surfaces in one plane, and a stop for holding a letter in position to be directly grasped by the faces of said members, said stop being free to be displaced by a letter that is actuated by said surfaces, the path of the letters to said stop being entirely unobstructed.

811,977. CORN-PLANTER. IRA A. WEAVER, Springfield, Ill., assignor to Sattley Manufacturing Company, Springfield, Ill., a Corporation of Illinois. Filed Dec. 12, 1902. Serial No. 135,013.

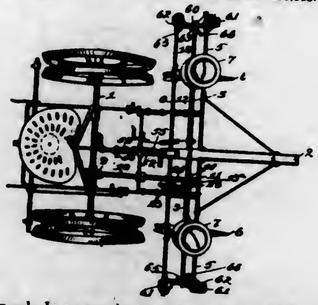

Claim.—1. In a corn-planter, a seedbox, a seed-plate, grooved out on the under side of its outer edge, a cut-off, and a wheel adapted to rise successively into the seed-cells, substantially as described.

2. In a corn-planter, a seedbox, a seed-plate containing seed-cells having a flaring mouth upon their inner sides, the seed-plate being grooved out on the under side of its outer edge, a cut-off, and a wheel adapted to rise successively into the seed-cells, substantially as described.

3. In a corn-planter, a seedbox, a seed-plate provided with seed-cells, a cut-off, and a plunger mounted beneath the seed-cells and in front of the cut-off, substantially as and for the purposes specified.

4. In a corn-planter, a seedbox, a seed-plate provided with seed-cells and beveled upon its lower face between the seed-cells, a cut-off, a plunger with a wheel mounted at its upper end beneath the seed-cells and adapted to rise upward and into the seed-cells and in front of the cut-off, substantially as and for the purposes specified.

5. In a corn-planter, a seedbox containing an oscillating agitator, a seed-plate provided with seed-cells, a cut-off, and a wheel adapted to rise successively into the seed-cells, substantially as and for the purposes specified.

6. In a corn-planter, a seedbox containing an oscillating agitator, a seed-plate provided with seed-cells and beveled upon its lower face between the seed-cells, a cut-off, a vertically-mounted plunger beneath the seed-cells and in front of the cut-off, substantially as and for the purposes specified.

7. In a corn-planter, a seedbox containing an oscillating agitator, a seed-plate provided with seed-cells, and beveled upon its lower face between the seed-cells, a cut-off consisting of an obliquely-mounted cut-off plunger and a vertically-mounted ejector-plunger having a small wheel mounted on its upper end beneath the seed-cells and in front of the cut-off, substantially as and for the purposes specified

8. In a corn-planter, a seedbox containing a seed-plate, a cut-off consisting of an obliquely-mounted plunger, a vertical ejector-plunger beneath the seed-plate and adapted to rise upward and into the seed-cells, an oscillating agitator mounted eccentrically to the seed-plate, substantially as and for the purposes specified.

9. In a corn-planter, a removably-mounted seedbox containing a seed-plate, a cut-off consisting of an obliquely-mounted plunger, a vertical ejector-plunger with a wheel mounted at its upper end beneath the seed-plate and adapted to rise upward and into the seed-cells, an oscillating agitator mounted eccentrically to the seed-plate, substantially as and for the purposes specified.

10. In a corn-planter, a seedbox, a shaft controlling the mechanism of the seedbox, a wheel notched on the outer edge and mounted loosely on the latter shaft, an arm keyed to the shaft and carrying a pawl mounted outside of the periphery of the notched wheel, a lever mounted between the notched wheel and the arm and engaging the pawl that the motion imparted by the driving-axle may be imparted to the mechanism of the seedbox when the lug on the check-row shaft is disengaged from the clutch mechanism, substantially as and for the purposes specified.

11. In a corn-planter, a tongue, a hand-lever, a foot-lever pivoted to the hand-lever and having a spring connected with the tongue, and a lug upon the hand-lever adapted to hold the foot-lever in engagement, substantially as and for the purposes specified.

12. In a corn-planter, a tongue, a runner-frame, a hand-lever, a foot-lever pivoted to the hand-lever and having a spring connected with the runner-frame, and a lug upon the hand-lever adapted to hold the foot-lever in engagement, the tension of the spring being adapted to be released or applied by the movement of the foot-lever, substantially as and for the purposes specified.

13. In a corn-planter, a tongue, a locking hand-lever, a foot-lever pivoted to the locking hand-lever and having a spring connection with the tongue, a lug upon the locking hand-lever adapted to hold the foot-lever in engagement, the main bar of the locking hand-lever being provided with a loop to hold the locking hand-lever and its attached plunger disengaged from the ratchet, substantially as and for the purposes specified.

14. In a corn-planter, a seedbox comprising a base-ring, a gear-plate mounted within the ring and provided with upwardly-projecting lugs, a seed-plate mounted upon and actuated by the gear-plate, an inwardly-beveled ring surrounding the seed-plate and provided with a platform, an oscillating agitator pivotally mounted underneath the platform eccentrically to the seed-plate, a cut-off mounted upon and through the platform, and a vertical roll journaled in the bracket beneath the base-ring and provided with a spring, substantially as and for the purposes specified.

15. In a corn-planter, a check-row shaft, 12, provided with the arm 26, and lug, 27, and the depending lug, 24, and held in position by the spring, 25; the shaft, 3, provided with sprocket, 11, and clutch-sprocket, 13, a collar, 14, lugs, 15, 17, 19 & 20, spring, 21, and arm, 22, substantially as and for the purposes specified.

16. In a corn-planter, the combination of the conducting-tube 29, the hook 32 at the top of the conducting-tube, the seedbox 7 provided upon its bottom with the opening 33 adapted to fit over and receive the hook 32, the gear-plate 34 provided with depending teeth, and the pinion 37 adapted to engage with the teeth on the gear-plate 34, substantially as specified.

17. In a corn-planter, the combination of a driving-axle, a check-row shaft, a seedbox provided with a base-plate, a gear-plate, a seed-plate, containing seed-cells having beveled mouths, an oscillating agitator, a cut-off, and a vertical plunger beneath the seed-plate and operating vertically into the seed-cells, a pinion intermeshing with the gear-plate mounted on a transverse shaft and actuated by a chain-and-sprocket connection with the driving-axle, the chain-and-sprocket mechanism being connected and disconnected by a clutch mounted on the transverse shaft and alternately caught and released by a lug mounted on the check-row shaft, substantially as and for the purposes specified.

18. The combination with a movable disk having seed-cells, of means disposed underneath said disk to engage and tilt the seeds, substantially as set forth.

811,978. STRAWBERRY-VINE TRIMMER. NELS A. WIBORG, Cleveland, Iowa. Filed July 26, 1905. Serial No. 271,703.

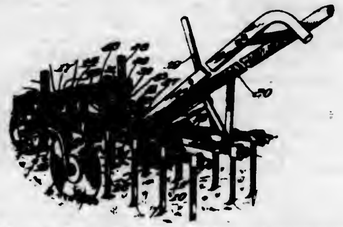

Claim.—1. In a strawberry-vine trimmer, in combination, a cultivator-head, shovel-carrying members pivotally united to the head, a transverse bar resting on the head, a cutting-blade adjustably secured to the bar at each side of the head, and means for laterally swinging the shovel-carrying members.

2. In a strawberry-vine trimmer, in combination, a cultivator having a head and shovel-carrying members meeting in the head, a bolt for pivotally uniting one of such members with the head, a transverse bar resting on the cultivator-head and apertured to receive the bolt, and a cutting-blade carried by the bar.

811,979. SPRING-SCALE. OTTO C. WEISS, New York, N. Y., assignor of one-half to Oscar Mayer, New York, N. Y. Filed Dec. 31, 1904. Serial No. 239,206.

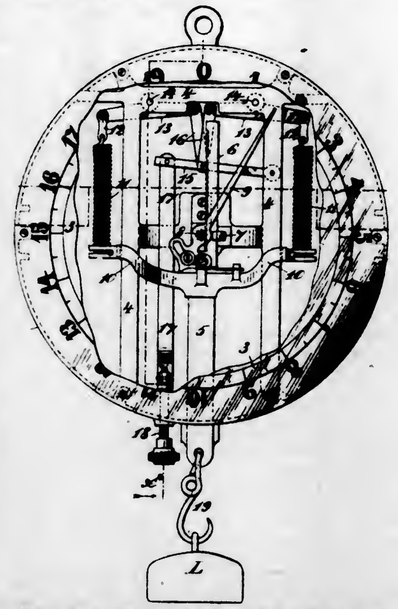

Claim.—1. A spring-scale, having two distensible spiral springs which support the load, two alike spring-levers, one arm of each being coupled to the upper end of its spring, a tare-adjusting screw, and lever mechanism between said screw and the other arms of the spring-levers for simultaneously, and uniformly lifting both springs to regulate the tare.

2. A spring-scale, having a plurality of like distensible spiral springs which support the load, like spring-levers, one for each spring and each having an arm coupled to its spring, a regulating-lever, links 16, one for each spring-lever, said links being coupled at a common point to the regulating-lever and at their other ends to the

respective spring-levers, and means for adjusting the regulating-lever to bring the hand to zero on the dial.

3. A spring-scale, having a draw-bar from which the load is to be suspended, a cross-head on said bar, two like, distensible upright springs coupled below to said cross-head, two spring-levers, one arm of each of which is coupled to the upper end of one of said springs, and means for rocking or turning said spring-levers simultaneously about their respective fulcrums, for raising and lowering the springs said means comprising an intermediate lever, connecting-links, a screw, and a bar between said screw and regulating-lever.

4. A spring-scale, having a draw-bar from which the load is to be suspended, a distensible coiled spring for weighing, coupled at one end to said draw-bar, a spring-lever, one arm of which is coupled to the other end of said spring, a tare-adjusting screw, and means between said screw and the other arm of the spring-lever, for operating the last-named lever through the medium of the screw, said means comprising an intermediate lever and connecting-bar.

5. A spring-scale, having a draw-bar from which the load is to be suspended, said bar being provided with a cross-head, two upright weighing-springs 11, coupled at their lower ends to said cross-head, two spring-levers 13, provided with links 12 which couple an arm of each spring-lever to the upper end of its respective weighing-spring, a regulating-lever 15, links 16 which couple the other arms of the respective spring-levers to said regulating-lever, a tare-regulating screw 18, and a bar connecting said screw with said regulating-lever.

811,980. **SPRING-SCALE.** OTTO C. WIESE, Brooklyn, N. Y., assignor of one-half to Oscar Mayer, New York, N. Y. Filed Aug. 2, 1905. Serial No. 272,374.

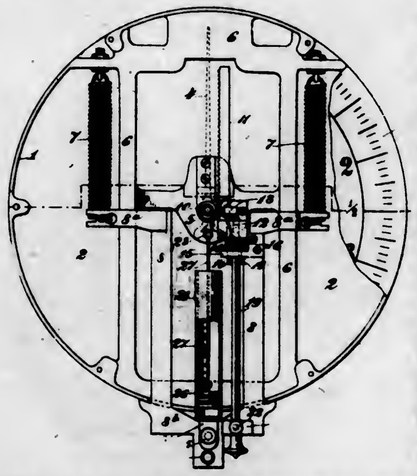

Claim.—1. A spring-scale, having a casing, a runner, a spring mechanism to which said runner is coupled, a nut-block mounted in guides on the runner, the said guides, a screw-threaded upright rod 19, mounted in bearings on the runner and screwing through said nut-block, a spring mechanism below said block, an upright rack loosely coupled to the nut-block at its lower end, a central arbor provided with a hand to traverse the scale-dial, the said dial, and a pinion on said arbor and gearing with said rack.

2. A spring-scale, having a casing, a runner, a weighing-spring mechanism to which said runner is coupled, means actuated by the runner for designating the weight of any article or thing suspended from the runner, and means for steadying and measurably retarding the vibrations of the runner in weighing, said means comprising an upright cylinder secured removably at its lower end to the runner exterior to the casing, a piston in said cylinder, and a rod connecting said piston with a fixed part of the casing at a point above the cylinder.

3. A spring-scale, having a casing, two weighing-springs therein, a U-shaped runner S, having arms S^5, to which the weighing-springs are coupled, and a tie-piece S^6, exterior to the casing, an upright cylinder 23, secured removably to the said tie-piece of the runner at its lower end, said cylinder being disposed between the upright members of the runner, a piston 26, which fits loosely in said cylinder, a rod 27, connecting said piston to a fixed part of the casing above the cylinder, and means whereby the extent of movement of the runner antagonistic to the weighing-springs designates the weight.

811,981. **DRIVING MECHANISM.** FRANK B. WILDMAN and BYARD G. LOGUE, Norristown, Pa., assignors to Mollinhaul & Wildman Manufacturing Co., Norristown, Pa. Filed Aug. 3, 1904. Serial No. 219,397.

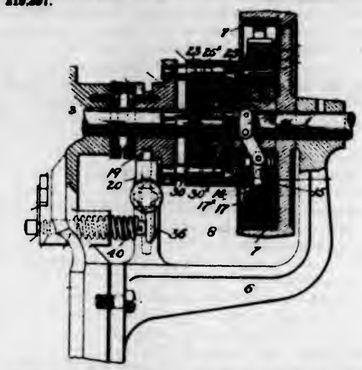

Claim.—1. In combination, with the shaft, a pulley, a friction member fixed on the shaft, a second friction member in engagement therewith, a split-ring connection between the said second friction member and the pulley, with means for controlling the said split-ring connection, and a clutch between the said second friction member and a fixed part of the frame, substantially as described.

2. In combination with the shaft and the pulley loose thereon, a friction member secured to the shaft, a second friction member with connection between the said second friction member and the loose pulley adapted to be adjusted to connect with or disconnect the said second friction member from the loose pulley, a collar arranged to slide on the shaft, a clutch member associated with the said collar, and a clutch member fixed to a frame part, means extending from the said collar to the adjustable connection between the second friction member and the pulley, the said collar, when moved one way, setting the said adjustable connection to drive the second friction member and also to release the clutch, and when moved in the opposite direction throwing the clutch into operation and simultaneously releasing the adjustable connection of the second friction member, substantially as described.

3. In combination with the shaft and the pulley loose thereon, a collar arranged to slide longitudinally on the shaft, friction connections between the shaft and the pulley, clutch means between the shifting collar and a part of the frame and means for operating the collar, the said collar when moved in one direction controlling the friction devices to drive the shaft from the pulley and when moved in the opposite direction engaging the clutch members, the said friction devices then acting as braking means, substantially as described.

4. In combination, the pulley and its shaft, means for connecting the pulley with and disconnecting the same from the shaft, a slidable collar controlling the said connection, and a clutch also controlled by the said slidable collar, said clutch being adapted to arrest the movement of the parts when the driving connection is released, and means for operating the collar, substantially as described.

5. In combination with the shaft, a pulley loose thereon, friction devices between the shaft and the pulley, the connection between the said friction devices and the pulley, a collar slidable on the shaft with means for controlling the said connection, a clutch controlled by the collar and rendered effective when the collar is thrown back to release the driving connection whereby the friction devices will then act as a brake, the lever for operating the sliding collar and means for holding the said lever in a central position, substantially as described.

6. In combination in a driving mechanism, a shaft and pulley with friction driving elements between them, a clutch associated with said friction elements and a detachable connection between the said friction elements and the pulley, with means for controlling the parts whereby when the pulley is detached from the friction elements, the clutch is thrown in to make the said friction elements act as a brake, substantially as described.

7. In combination the shaft, a friction member fixed on the shaft, a casing, a friction-plate, said casing and plate inclosing the fixed friction member, an adjustable resilient connection between the plate and casing and means for controlling the plate and casing, substantially as described.

811,982. **CONTROLLER MECHANISM FOR TURBINES.** JAMES WILKINSON, Birmingham, Ala., assignor to Wilkinson Turbine Company, a Corporation of Alabama. Filed Jan. 26, 1905. Serial No. 243,621.

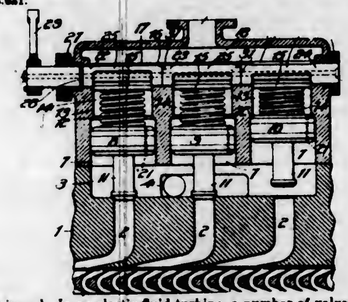

Claim.—1. In an elastic-fluid turbine, a number of valves controlling the flow of motor fluid through nozzle-passages, fluid-pressure motors to operate said valves, and secondary valves interposed between said motors and an exhaust-pressure, which cause said turbine-valves to be opened or closed by cutting their motors into or out of communication with said exhaust.

2. In a turbine, a number of nozzle-passages, fluid-pressure-controlled valves therefor, and secondary valves controlling exhaust-ports only for the valve-actuating fluid to cause the nozzle-valves to open or close in any desired manner.

3. In a turbine, a number of nozzle-passages, valves therefor, fluid-motors to actuate said valves, a port through which pressure is exhausted from each motor, and governor-controlled valves for said ports which control said nozzle-valves by regulating the exhaust from their motors.

4. In a turbine, a number of nozzle-passages, a rotor against which fluid is discharged by said passages, a number of valves for said passages, fluid-motors to actuate said valves comprising cylinders open at one end to high pressure and at the other to an exhaust, means to cause said high pressure to establish itself in the exhaust end of said cylinder, and a number of controller-valves which regulate the exhaust of pressure from said cylinders.

5. In a turbine, a number of nozzle-passages through which motor fluid is directed against a rotatable element, a number of rotary valves controlling the flow of motor fluid through said passages, and means to move said valves together, said valves being adapted to successively open or close said passages.

6. In a multiple-nozzle turbine, nozzle-passages, a set of rotary valves controlling the flow of fluid through said passages, means to move said valves simultaneously, and means to adjust said valves to produce any desired successive opening or closing of said passages.

7. In an elastic-fluid turbine, a number of nozzle-passages adapted to discharge motor fluid against a rotatable element, a set of rotary valves adjustably connected together and adapted to be moved simultaneously by hand or governor to effect any desired successive opening or closing of said passages.

8. In an elastic-fluid turbine, a number of nozzle-passages adapted to discharge motor fluid against a rotatable element, fluid-actuated valves for said passages, and a set of rotary controller-valves for controlling, by exhaust-pressure means, the operation of said nozzle-valves.

9. In an elastic-fluid turbine, a number of nozzle-passages adapted to discharge motor fluid against a rotatable element, fluid-actuated valves for said passages, controller means for said valves comprising a group of rotary valves, adapted to be simultaneously moved by a common actuator, which control by fluid-pressure means the operation of said nozzle-passage valves.

10. In an elastic-fluid turbine, a number of motor-fluid induction-passages, valves therefor, fluid-motors to operate said valves, a port for the exhaust of fluid-pressure from said motors, and a number of governor-controlled rotary valves acting to control said nozzle-valves by regulating the exhaust of fluid-pressure from their respective motors.

11. In an elastic-fluid turbine, a number of motor-fluid induction-passages, valves therefor, fluid-motors to operate said valves, ports for the exhaust of fluid-pressure from said motors which enter a common valve-chamber, and a governor-actuated valve means to successively open said ports.

12. In an elastic-fluid turbine, a number of motor-fluid induction-passages, valves therefor, fluid-motors to operate said valves, ports for the exhaust of fluid-pressure from said motors, and a multi-ported valve device adapted to successively open or close said ports, thereby controlling the operation of said first-mentioned valves.

13. In an elastic-fluid turbine, fluid-induction passages, fluid-pressure-controlled valves therefor, and a controller means comprising a multiported valve device and a number of conduits for valve-controlling fluid-pressure, the ports in said valve device and the conduits with which they are adapted to register being so arranged relatively as to produce a successive registering of said parts with said conduits, as said device is moved.

14. In an elastic-fluid turbine, fluid-induction passages, fluid-pressure-controlled valves therefor, a number of conduits for valve-controlling fluid-pressure, and a compound valve device for said conduits which has adjustable parts to effect a successive opening or closing of said conduits.

15. In an elastic-fluid turbine, fluid-induction passages, fluid-pressure-controlled valves therefor, a number of conduits for valve-controlling fluid-pressure, a compound valve device therefor having adjustable controller portions which may be set to open or close said conduits in any desired successive order.

16. In an elastic-fluid turbine, a motor-fluid-supply passage, a number of nozzle-passages leading therefrom and discharging against a rotatable element, a controller mechanism comprising a number of cylinders which communicate at one end with said supply-passage, and at the other with an exhaust-passage, valves for said nozzles, pistons for operating said valves which move in said cylinders, a multiple-valve device for successively opening communication between said cylinders and exhaust, and governor means to actuate said device.

17. In an elastic-fluid turbine, the combination with a number of nozzles, and piston-actuated valves therefor, of a fluid-pressure controller mechanism comprising a casing formed with cylinders for said pistons and with an exhaust-passage, ports leading from said cylinders to said exhaust-passage, a common valve-seat intersecting said exhaust-ports, a set of secondary valves disposed in said seat end to end, and means to actuate said latter valves.

18. In combination with a multiple-nozzle turbine having fluid-pressure-actuated nozzle-valves, a controller-casing comprising ports leading from the valve-actuating devices and communicating with an exhaust, a valve-chamber intersecting said exhaust-ports, a rotary valve-controller means in said chamber, which is removable through a side opening in said casing.

19. In combination with a multiple-nozzle turbine having fluid-pressure-actuated nozzle-valves, a controller-casing comprising ports leading from the valve-actuating devices and communicating with an exhaust, a valve-chamber intersecting said exhaust-ports, a number of rotary valves disposed end to end in said chamber, means to actuate said valves, and means to adjust them to open and close said exhaust-ports successively.

20. In an elastic-fluid turbine, a number of induction-nozzles, piston-actuated valves for said nozzles, cylinders for said pistons exposed below to the motor-fluid pressure and above to an exhaust through valve-controlled ports, means to provide for the slow admission of high pressure above said pistons, springs tending to seat said valves, a number of controller-valves for the exhaust of said cylinders, and a common actuator for said controller-valves which moves them simultaneously.

21. In an elastic-fluid turbine, a motor-fluid-supply chamber, a plurality of induction-passages leading from said chamber and adapted to discharge the fluid against a rotatable element, a controller-casing provided with a number of cylinders, pistons therein exposed below to the pressure in said supply-chamber, means to permit a restricted flow of said high pressure above said pistons, valves operated by said pistons for controlling the flow of fluid through said passages, springs tending to close said valves, and a number of secondary valves which control the operation of pistons by regulating the exhaust of pressure from the cylinders above them.

22. In an elastic-fluid turbine, a number of fluid-induction passages and piston-actuated valves therefor, in combination with a controller mechanism comprising an exhaust-passage, a number of ports communicating therewith and with the cylinders for said pistons, a number of similar valves for opening and closing said exhaust-ports,

means to adjust the position of said latter valves relatively to each other, and governor-controlled means to actuate them.

13. In an elastic-fluid turbine, a rotary valve controlling the

separate wheel-compartments in combination with fluid streams for

adapted to hold the latter to their support by being shrunk thereon

means to adjust the position of said latter valves relatively to each other, and governor-controlled means to actuate them.

23. In a controller-casing for a number of nozzle-valves, motors for actuating said valves, exhaust-passages leading from said motors through the controller-casing to an exhaust-pressure, a number of rotary valves adjustably connected to each other, a seat for said valves leading through said casing and intersecting said passages, and means to operate said valves.

811,983. VALVE MECHANISM FOR FLUID-MOTORS. JAMES WILKINSON, Birmingham, Ala., assignor to Wilkinson Turbine Company, a Corporation of Alabama. Filed Feb. 2, 1905. Serial No. 243,883.

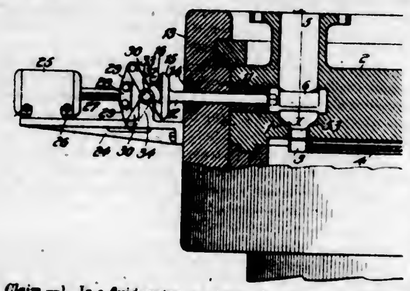

Claim.—1. In a fluid-motor, a rotary valve, a power device for moving said valve, and motion-transmission means between said valve and actuator which increase the power of the latter in moving said valve against an opposing force.

2. In a motor, a rotary fluid-pressure valve, a port or passage controlled by said valve, an actuator adapted to move said valve with increasing power, and means to enable said actuator to positively force said valve against its seat to close said port or passage.

3. In a motor, a rotary valve for a fluid-conduit, a shoulder on said valve, a stop adapted to engage said shoulder to arrest the travel of said valve after it has assumed a closed position, and power devices to force said valve against its stop and seat.

4. In a motor, a rotary fluid-pressure valve controlling a fluid port or passage, an actuator connected through power-increasing devices to said valve, and means, to stop the travel of said valve when it has closed said port or passage, which acts, as a fulcrum, against which said actuating devices force said valve to hold it against its seat.

5. In a motor, a rotary motor-fluid valve, an adjustable stop to arrest the movement of the valve as it assumes its closed position, and valve-operating mechanism which acts against said stop, as a fulcrum, to force said valve against its seat.

6. In a motor, a rotary motor-fluid valve, and a toggle-press for actuating said valve with variable speed and power against resistance and forcing it against its seat.

7. In an elastic-fluid turbine, a rotary motor-fluid valve, a reciprocatory actuator for said valve, a gear transmission means between said actuator and valve and an adjustable stop for said valve.

8. In a motor, a fluid-passage, a rotary valve therefor, a toggle-press, and gear means to transmit motion from said toggle-press to said valve.

9. In an elastic-fluid turbine, a nozzle-passage having a radially-elongated admission end and a peripherally-elongated discharge end which covers a section of a set of buckets mounted upon a rotating element, in combination with a substantially radially disposed rotary valve for controlling the flow of fluid-pressure through said nozzles.

10. In a turbine, a nozzle-passage having an entrance which is radially elongated and an intermediate portion which is contracted radially and gradually elongated peripherally to its discharge end which corresponds substantially in radial width with a set of rotatable buckets, and a rotary valve for controlling the flow of motor fluid through said nozzles.

11. In an elastic-fluid turbine, a rotary motor-fluid valve, and a reciprocating actuator therefor which moves in the direction of the axis of rotation of said valve, said valve and actuator being disposed substantially radially to the axis of rotation of the turbine.

12. In a multistage turbine, a rotary nozzle-valve, a reciprocating motor for actuating said valve which is disposed in substantial axial alinement with said valve.

13. In an elastic-fluid turbine, a rotary valve controlling the flow of motor fluid against a rotatable element, a reciprocating actuator for said valve disposed end to end therewith, and transmission means between said valve and actuator whereby the latter's lineal movement is converted into rotary motion and applied to the former to fully open and close the same.

14. In a turbine, a nozzle-passage, a substantially radially disposed rotary valve therefor which is operated by a gear device at one end thereof, and a fluid-motor for actuating said gear means and controlling the operation of said valve.

15. In a turbine, a nozzle-passage, a substantially radially disposed rotary valve therefor provided with gear-teeth at one end, and a valve-operating mechanism comprising a toothed element which meshes with the toothed end of said valve for rocking the same.

16. In an elastic-fluid turbine, a diaphragm-partition, a fluid-conduit between stages leading through said diaphragm, a rotary valve for said conduit having its inner end provided with gear-teeth, and gear means meshing with said valve-gear and driven by a power device disposed within the turbine.

17. In a multistage turbine, a rotary stage-valve, an actuator therefor within the turbine, and a lever connection between said actuator and valve which moves in a plane substantially parallel with that of a diaphragm-partition.

18. In a motor, a fluid-passage, a valve therefor, a power device to operate said valve, and toggle means for transmitting motion from said device to said valve which comprise a pair of levers journaled on a stationary axis, toggle-links connecting said levers to said power device, and gear means to transmit motion from said levers to said valve.

19. In a turbine divided into wheel-compartments by diaphragms, a fluid-conduit between wheel-compartments, a rotatable valve for said conduit, and an actuator for said valve comprising a cylinder carried by said diaphragm, a piston and its rod which travel substantially radially from the turbine-shaft, one or more toothed levers pivotally mounted on the diaphragm and connected to said rod, and gear means for rocking said valve which mesh with said toothed lever or levers.

20. In an elastic-fluid turbine, a diaphragm-partition, a rotary valve seated in a shoulder of said diaphragm and controlling a stage-nozzle passage, a fluid-motor mounted on said diaphragm and having a radially-movable piston-rod, a gear driven by said rod and meshing with a gear connected to said valve, and antifriction means to take up the end thrust of said gear on said valve.

21. In a motor-fluid, a rotary fluid-pressure valve, a reciprocating motor movable axially with relation to said valve and connected to one end thereof, and an antifriction thrust-bearing for the other end of said valve.

22. In a fluid-motor, a rotary fluid-pressure valve, a reciprocating motor movable axially with relation to said valve and connected to one end thereof, and an adjustable antifriction thrust-bearing for the other end of said valve.

23. In a turbine, a diaphragm, a rotary valve seated therein, a motor for operating said valve connected to one end thereof, a screw-plug inserted in said diaphragm opposite the other end of said valve, a ball-race in said plug, and balls therein which engage said valve end.

24. In an elastic-fluid turbine, a conduit through which motor fluid is adapted to flow against a rotatable element, a rotatable valve therefor, means for moving said valve which projects outside of the turbine, and a reciprocating motor disposed without the turbine and connected to said stem.

25. In an elastic-fluid turbine, a diaphragm-partition dividing the turbine into wheel-compartments, strengthening-webs leading radially from the center of the diaphragm to or near its periphery, valves for motor-fluid passages, and actuating devices therefor which are mounted on the diaphragm between said webs.

811,984. ELASTIC-FLUID TURBINE. JAMES WILKINSON, Providence, R. I., assignor to Wilkinson Turbine Company, a Corporation of Alabama. Filed May 23, 1905. Serial No. 261,676.

Claim.—1. In an elastic-fluid turbine, a working passage for the motor fluid therein comprising successive rows of rotating buckets, means to deliver the motor fluid at greater velocity to the first row or rows of buckets than to the succeeding rows, and means to discharge fluid from said buckets subjected to the higher velocities, said means consisting of openings of substantially the same cross-sectional area as the initial fluid-supply openings, for the purposes described.

2. In a turbine, rows of nozzles coöperating with rows of revolving buckets, bucket-wheels supporting said buckets and disposed in separate wheel-compartments in combination with fluid streams for moving said buckets, means to cause the streams to act with greater velocity on the first row or rows of buckets than on the succeeding rows, and independent valves for cutting said streams into and out of service, said nozzles being so proportioned for the first stages that when said valves are open, the row or rows of buckets in the first wheel-compartment are substantially cut out of service.

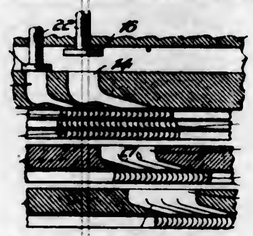

3. In a turbine, the provision of a velocity-stage compartment, motor-fluid supply and discharge openings therefor of substantially the same cross-sectional area, rotatable buckets therein, means to control the supply of motor-fluid to said compartment, and a working passage comprising stationary guide devices for the fluid and interposed rows of rotating buckets into which passage the motor fluid flows from said velocity-stage compartment and in which the velocity developed in its passage through the turbine is abstracted.

4. In a turbine, a compartment and means therein for fractionally abstracting velocity from fluid-pressure and converting it into rotary motion, fluid supply and discharge ports for said compartment of substantially the same cross-sectional area, valve means to vary the supply of fluid to said compartment, and one or more compartments having means therein to further abstract velocity from the fluid-pressure discharged from said first-mentioned compartment.

5. In a multistage turbine, supply-nozzles and coöperating buckets for each stage adapted to drive the turbine under normal-load conditions, the supply nozzle or nozzles for the initial stage being adapted to convert a greater per cent. of the fluid-pressure into velocity than the succeeding nozzles and one or more overload-nozzles adapted to discharge fluid-pressure, to compensate overload conditions, into said initial stage, the cross-sectional area for the discharge opening or openings for said stage corresponding substantially with the combined cross-sectional area of the nozzles supplying fluid-pressure thereto.

6. In a turbine having a plurality of separate compartments to which the fluid-pressure is delivered in succession, nozzle-passages connecting said compartments and rotatable buckets within said stages which coöperate with said nozzle-passages and convert fluid velocity into mechanical power, in combination with a plurality of nozzles for admitting an overload supply of pressure to the turbine, said overload-nozzles being equal in number with the supply-passages for the compartments into which they discharge, but of less capacity.

7. In a multistage turbine in which the fluid-pressure is fractionally expanded, the combination with a supply-nozzle for an initial stage, of an overload supply-nozzle arranged in juxtaposition to said supply-nozzle, and a discharge-opening from said initial stage formed by a nozzle-passage leading to a succeeding stage, said nozzle-passage being disposed in line with the fluid streams flowing through said supply and overload nozzles and being of a capacity calculated to cause the motor fluid to flow through the said initial stage without material driving effect upon the buckets therein when the overload-nozzle is in service.

8. In a multistage turbine having a plurality of supply-nozzles for an initial stage designed to admit sufficient fluid to drive the turbine up to its full load capacity, the combination with a plurality of overload supply-nozzles designed to admit an additional supply of motor fluid to said initial stage, said overload-nozzles being of smaller capacity than the supply-nozzles and arranged each in close relationship with a supply-nozzle, and stage-nozzle passages leading from said initial compartment and communicating with a succeeding stage.

811,985. TURBINE BUCKET-WHEEL. JAMES WILKINSON, Providence, R. I., assignor to Wilkinson Turbine Company, a Corporation of Alabama. Filed July 3, 1905. Serial No. 268,286.

Claim.—1. In a turbine, a plurality of buckets, a support therefor, and a locking-ring engaging said support and said buckets and adapted to hold the latter to their support by being shrunk thereon, substantially as described.

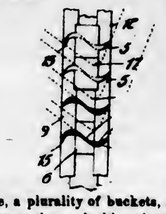

2. In a turbine, a plurality of buckets, a support upon which said buckets are mounted, two locking-rings disposed on opposite sides of the support and in engagement therewith, the said rings being adapted to engage said buckets and to lock the same to said support by being shrunk, and means to fasten the rings to the bucket-support, substantially as described.

3. In a turbine, a plurality of buckets, a support therefor, and means to fasten said buckets to said support by shrinking an element or elements which engage both buckets and support.

4. In a turbine, a plurality of buckets, a support therefor, a locking element which engages said support and buckets and is adapted to lock these parts together by being shrunk, and means to fasten said elements to the bucket-support.

5. In a turbine, a plurality of buckets, a support therefor, locking elements which engage said support and buckets and are adapted to lock these parts together by being shrunk, and means to fasten said elements to the bucket-support.

6. A turbine bucket-wheel formed with a flanged rim portion, buckets having flanged base portions engaging said rim, and a ring formed with shoulders adapted, when the ring has been shrunk, to engage the rim of said wheel and the flanged bases of said buckets, a clearance being left between the ring-shoulders and buckets or rim to provide for this shrinkage, and means to secure said ring to said wheel.

7. A turbine bucket-wheel, buckets, said wheel and buckets having portions adapted to be engaged by locking means, said locking means comprising two rings adapted to be shrunk into engagement with the wheel and buckets, and bolts or rivets for securing said rings to the wheel.

8. In a turbine, a bucket-support, and buckets thereon having reversely-disposed impact-surfaces, the reverse side of the bucket opposite a concave impact-surface being convex and of greater thickness than the middle portion of the bucket.

9. In a turbine, a bucket formed on a double curve, thickest at the bends of the curve and tapering to the sides and center.

10. In a turbine, a plurality of buckets 5, and a support therefor, substantially as described.

11. In a turbine, a bucket having duplicate reversely-disposed impact-faces in the form of double curves, meeting at the bucket edges and arranged so as to leave metal of varying thickness between them at different parts of the bucket.

811,986. MARINE TURBINE. JAMES WILKINSON, Birmingham, Ala., assignor to Wilkinson Turbine Company, a Corporation of Alabama. Filed Sept. 1, 1904. Serial No. 223,010.

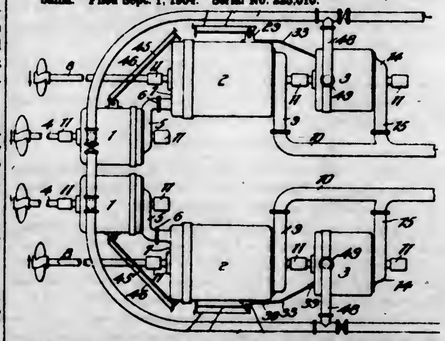

Claim.—1. In a set of marine turbines, a high-pressure, two-speed, forward-driving turbine, and a low-pressure turbine operat-

ing in series therewith, independent shafts for said turbines, and a reversing-turbine connected to one of said shafts.

2. In a set of marine turbines, a high-pressure multicellular turbine having full and cruising speed working passages, a shaft therefor, a turbine adapted to operate in series with said high-pressure turbine, a shaft therefor, and a high-pressure reversing-turbine connected to one of said shafts.

3. In a set of marine turbines, a high-pressure turbine having working passages for driving a shaft at full and cruising speeds, a turbine connected up in series therewith, a separate shaft for said latter turbine, and an independent reversing-turbine connected to said latter shaft.

4. The combination with a forward-driving turbine and a reversing-turbine, of one or more valve-controlled nozzle-passages for each turbine, and a common controller mechanism for regulating the admission of motor fluid to said turbines.

5. The combination with a forward-driving turbine having a plurality of admission-nozzles, and a reversing-turbine having a plurality of admission-nozzles, of a fluid-pressure-controller mechanism adapted to control the admission of motor fluid to one of said turbines while cutting said other turbine out of service.

6. The combination in a set of turbines, of a forward-driving turbine, a reversing-turbine, motor-fluid-admission passages for each of said turbines, fluid-pressure-actuated means to open and close said passages, and a controller mechanism having conduits leading to the said fluid-actuated means of both turbines, said mechanism being adapted to close the admission-passages for one turbine and to control the opening of the admission-passages for the other.

7. In a set of marine turbines, the combination of two forward-driving turbines operating in series and connected to different shafts, and a reversing-turbine, with a controller means adapted to control the operation of the set of turbines by regulating the flow of motor fluid between the turbines connected in series and the admission of motor fluid to the reversing-turbines.

8. The combination of a forward-driving and a reversing-turbine both connected to a common shaft, with a common controller mechanism comprising fluid-actuated means to vary the admission of motor fluid to said turbines, a fluid-pressure-controller chamber, conduits leading therefrom to said several fluid-actuated means, and valve means operating to admit different fluid-pressures to said conduits to control the operation of said means and cut one of said turbines out of service, and to control the admission of motor fluid to the active turbine.

9. In a fluid-pressure-controller mechanism for a set of turbines, a plurality of fluid-pressure-admission nozzles for each turbine, fluid-actuated means to open and close said nozzles, conduits to connect said means with a controller-chamber, and valve means in said chamber adapted to control the admission of motor fluid to one of said turbines while cutting it off from the other, substantially as described.

10. In a fluid-pressure-controller mechanism for two independent turbines, motor-fluid-supply passages for said turbines, fluid-pressure-actuated valves to open and close said passages, conduits for conducting controller fluid-pressure to the valves of said turbines, and a controller-valve means to open said conduits to a high or low pressure to cause the valves which they control to open or close.

11. The combination of a turbine, and a fluid-pressure-controller means therefor, with a reversing-turbine, fluid-actuated valves therefor, and conduits leading from said controller means to said valves, said means being adapted to control the valves of said reversing-turbine in one operating position, when it cuts off the supply of fluid-pressure to said first-mentioned turbine.

12. In a set of marine turbines, a shaft, a forward-driving and a reversing-turbine connected to said shaft, a plurality of supply-valves and nozzles for each turbine, and a common controller means for the supply-valves of both turbines.

811,987. MARINE TURBINE. JAMES WILKINSON, Birmingham, Ala., assignor to Wilkinson Turbine Company, a Corporation of Alabama. Filed Sept. 15, 1904. Serial No. 224,886.

Claim.—1. In a fluid-controller means for a turbine, fluid-controlled means to open and close nozzle-passages, pipes communicating with said means and disposed within a reduced portion of the turbine-casing, a fluid-controller chamber, and conduits leading therefrom which are detachably connected to said pipes.

2. In a turbine having an inner casing and a removable outer casing, fluid-pressure-controlled valves within the turbine, fluid-conducting pipes seated in the same or different cut-away portions of the inner casing and adapted to admit a high or low pressure to said valves, a controller-valve controlling the admission or exhaust of pressure to other pipes which are coupled to the first-mentioned pipes.

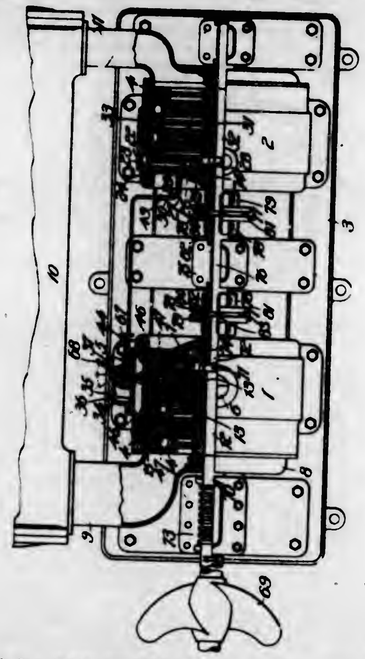

3. In a turbine having an inner casing and a removable shell surrounding it, nozzle-passages, valves therefor, motors to actuate the valves, conduits leading to said motors through the casing, pipes communicating with said conduits and disposed in a reduced portion of said casing so as to be below or flush with its outer periphery, and a fluid-controller means carried by said shell and adapted to control the admission of fluid-pressure to said pipes.

4. The combination with a turbine having an inner casing and an outer shell, a recess in said casing, one or more pipes disposed therein, a controller-chamber, pipes leading therefrom through said shell, means to couple said latter pipes to the pipes in the casing, and means, controlled by the pressure in said pipes which regulate the operation of the turbine.

5. In a turbine, a supply-head for a wheel-compartment, a valve-chamber therein leading inwardly from its outer periphery, a valve-seat disposed in the outer end of said chamber and communicating with a motor-fluid-supply chamber, a valve in said valve-chamber, a nozzle-passage leading therefrom through said head, a fluid-motor for operating said valve comprising a cylinder formed by the inner end of said chamber, a piston therein for operating said valve, and means to communicate a controller-fluid pressure to said cylinder.

6. In a supply-head for a wheel-compartment, a chamber therein leading from its periphery inwardly, a partition therein, a valve having a stem passing through said partition and connected to a piston, a fluid-supply opening adapted to be closed by said valve, a nozzle-passage supplied with motor-fluid pressure when said opening is open, means tending to move said valve in one direction, and controller means exposing said piston to a pressure which will cause it to move in the opposite direction.

7. In a turbine, a supply-valve, a chamber for said valve leading radially into the valve-bearing portion, a supply-passage communicating with the outer end of said chamber, a circular valve-seat inserted in the outer end of said chamber, a nozzle-passage communicating with said chamber, a piston connected to said valve and movable in the inner end of said chamber as a cylinder, means to admit a high pressure against said piston to close said valve, and controller means to open said valve.

8. In a turbine, a plurality of supply-valves, a valve-bearing portion, radial chambers therein within which the valves are disposed and from which lead nozzle-passages, pistons for actuating said valves, a motor-fluid-supply chamber, valve-seats at the outer end of said chambers through which motor fluid enters from said supply-chamber, passages to expose said pistons to a high pressure tending to close said valves and a controller-fluid pressure tending to open them, and springs cooperating with said latter pressure to open the valves.

9. In a controller means for a turbine, a chamber to which high pressure is admitted, a multiported valve-seat, a valve thereon held to its seat by said chamber-pressure, means to unbalance said valve by admitting low or atmospheric pressure between it and its seat, and conduits leading from the ports in said seat to valve means which control the discharge of motor fluid against rotating buckets in the turbine.

10. In a controller means for a turbine, a chamber to which high and low pressures are admitted, a valve therein exposed to said pressures and unbalanced thereby, a seat to which said valve is firmly held by said pressures, passages leading to said chamber, said valve being adapted to admit said low pressure to said passages in groups, independent sets of nozzle-passages controlled by said groups of passages and adapted to be cut out of service when said low pressure is admitted to their respective groups of passages, and means to admit high pressure to one group of passages to open one or more of the nozzle-passages of a set.

11. In a turbine having a plurality of fluid-pressure-controlled valves, a controller mechanism comprising a plurality of conduits for the valve-controlling fluid which lead from a controller-chamber, a valve therein adapted to open a part of said conduits to the admission of a low pressure, and a controller device adapted to control the admission of high pressure to the other of said conduits.

12. In a turbine having a plurality of fluid-actuated valves, a controller mechanism therefor comprising a plurality of conduits for valve-actuating fluid opening into a controller-chamber, a multi-ported valve therein to control the admission of low pressure to said conduits in groups, and a slide-valve acting between high and low pressures and operating successively to admit one or the other of said pressures to the conduits of a group.

13. A controller mechanism for a multiple-valve turbine comprising a controller-chamber formed in a movable casing and exposed to high pressure, a plurality of passages which communicate with said chamber and conduct fluid-pressure therefrom to control the operation of a set of turbine-valves, a second set of independent turbine-valves, one or more chambers in said casing in communication with a low or atmospheric pressure, and a plurality of passages which communicate said latter pressure to the latter set of turbine-valves.

14. In a controller mechanism for a turbine, a multiported casing, a multiported valve-shell with ports which are adapted to register with different groups of ports in said casing, one or more recesses in said shell which are exposed to a low or atmospheric pressure and which are adapted to communicate with the group or groups of ports in said casing which are not in register with the ports in said shell, a plurality of turbine-valves and means to control their operation comprising motors, passages connecting said motors with the ports in said casing, and means to cause said valves to close when their motors are exposed to a low pressure through said passages.

15. In a controller mechanism for a turbine, a chamber supplied with high pressure, a multiported valve-seat therein, a valve-shell mounted and movable on said seat and provided with a set of ports, means to admit high and low pressure to said shell, means to adjust said shell to move its ports into register with a set of ports in said seat, means to admit the high or low pressure in said shell to one or more of the ports therein, said shell acting as a valve to admit low pressure to the ports in said seat not in register with its ports, and means to connect the ports in said seat with fluid-pressure-controlled means to vary the fluid-pressure supply to the turbine.

16. In a turbine, groups of working passages at different distances from the shaft-center, means to cut said working passages out of service comprising valves, actuating-pistons therefor, cylinders for said pistons, spring means tending to move said valves to their closed position in nozzle-passages which they control, and means to admit a controller-fluid pressure to said chambers comprising a plurality of conduits and a controller-valve adapted to admit a low or atmospheric pressure to the motor-cylinders of the valves for one set of working passages, in combination with means to admit high or low pressure to the motor-cylinders of the other working passages.

17. In a controller mechanism for a turbine, a controller-pressure chamber, a multiported valve-seat therein, and a valve-shell adapted to control the admission of high or low pressure to the ports in said seat in groups, said shell comprising a plurality of ports to which a high or low pressure is admitted by a controller-valve, and a plurality of chambers exposed to a low or atmospheric pressure and adapted to communicate with the ports in the seat not in register with the ports in said shell, in combination with fluid-pressure-actuated means within the turbine to vary the flow of motor fluid.

18. In a set of turbines driving a common shaft, a bearing for said shaft between said turbines, and means, interposed between said bearing and the turbines, to prevent, by a forced circulation of air, the conduction of excessive heat to said bearing.

19. In a compound turbine, a plurality of separate shells, a shaft, one or more bucket-bearing elements in each shell which are connected to said shaft, a bearing for said shaft, between two of said shells, and ventilated couplings in said shaft to prevent the conduction of heat from the shells to said bearing.

20. In combination with a turbine, a shaft therefor, a bearing for said shaft, a coupling interposed between the turbine and bearing, and means to prevent the heat of the shaft portion in the turbine being transmitted through said coupling to said bearing.

21. In combination with a turbine, a shaft formed in two parts, one entering the turbine and driven thereby which becomes highly heated by the temperature of the motor fluid in the turbine, the other mounted in the bearing, and a coupling adapted to be cooled by the circulation of air, which connects said parts of the shaft together.

22. In combination with a turbine, a sectional shaft, a bearing in which one section of said shaft is supported, said other section being disposed within the turbine, and means to connect the shaft-section together and leave an air-space between their adjacent ends, as and for the purposes described.

23. In combination with a turbine, a sectional shaft therefor, one section being subjected to the heat within the turbine, a bearing in which the other section is supported, flanged portions carried by the adjacent ends of said sections, means to connect said portions to couple the shaft-sections together, shoulders on the abutting faces of said flanged portions which set them apart to form an air-space between them.

24. In combination with a turbine, a sectional shaft therefor, a coupling connecting the sections of said shaft and disposed between the turbine and a bearing for the shaft, said coupling comprising collars rigidly connected to an end of each shaft and to each other, and air-passages formed in and between said collars and so arranged that the coupling acts, when rotated, with centrifugal effect to maintain a cooling circulation of air which prevents the conduction of heat through the coupling to said bearing.

25. A turbine, a sectional shaft therefor, a bearing for said shaft, and means to connect the sections of the shaft, which comprise two collars each having a hub portion keyed to an end of a shaft-section, bolt-holes leading through circular shouldered portions of said collars, bolts which connect said collars, said shoulders being adapted to abut so as to leave a clearance between the collars, and air-passages leading through said hub portion of a collar, said shaft-sections being reduced when they abut.

26. The combination of a motor, a shaft driven thereby, a bearing for said shaft disposed without the motor, and means interposed between the motor and bearing to prevent the conduction of heat through said shaft from the motor to said bearing by inducing currents of air between parts of said shaft.

811,988. FLUSHING-VALVE. CHARLES F. WHITE, Hamilton, Ohio, assignor to Michael D. Heilrich, Evansville, Ind. Filed June 30, 1905. Serial No. 267,893.

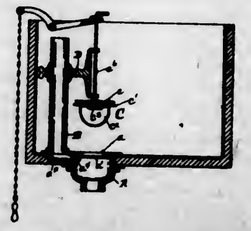

Claim.—1. In a flushing-valve the combination of a valve-seat consisting of a flange surrounding an opening, a valve consisting of a disk to contact the valve-seat and a buoyant member situated below the disk and being of a diameter such as to pass through said opening.

2. In a flushing-valve the combination of a cup adapted to be

seated in the bottom of a flushing-tank having an internal annular flange near its top forming a valve-seat, a means for coupling the

8. In a gas-regulating Bunsen burner, the combination with the

3. In a condenser vacuum-breaker, the combination with th

seated in the bottom of a flushing-tank having an internal annular flange near its top forming a valve-seat, a means for coupling the flushing-pipe to its bottom and a valve consisting of a disk to seat against the flange, and a buoyant member located beneath the disk and of a size such as to pass through the flange into the cup.

3. In a flushing-valve the combination of a casting in the shape of a cup to be seated in the bottom of a flushing-tank and having near its top an interior annular flange together with a valve consisting of a metallic disk to seat against the valve-seat and a ball below the disk of a diameter which is to pass through the annular flange into the cup.

811,989. **GAS-REGULATING BUNSEN BURNER.** CHARLES B. WHITE, Waterbury, Conn., assignor to The Plume and Atwood Manufacturing Company, Waterbury, Conn., a Corporation of Connecticut. Filed Aug. 5, 1905. Serial No. 272,809.

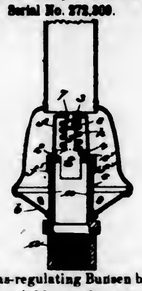

Claim.—1. In a gas-regulating Bunsen burner, the combination with the nipple, of a revoluble member surrounding the upper end thereof and within the Bunsen burner and revoluble therewith, an internal valve-spring actuated in one direction and guided by the nipple, and means actuated by the movement of the revoluble member for actuating the valve in the other direction for controlling the supply of gas.

2. In a gas-regulating Bunsen burner, the combination with the nipple, of a revoluble member surrounding and extending above the upper end thereof so as to form an internal chamber, and which revoluble member is within the Bunsen burner and is revoluble therewith, an internal valve contained within said chamber and guided by the nipple, and means actuated by the movement of the revoluble member for actuating the valve for controlling the supply of gas.

3. In a gas-regulating Bunsen burner, the combination with the nipple, of a revoluble member surrounding the upper end thereof and within the Bunsen burner and revoluble therewith, an internal valve guided by the nipple and located between the same and the said revoluble member, and means actuated by the movement of the revoluble member for imparting a longitudinal axial movement to the valve for controlling the supply of gas

4. In a gas-regulating Bunsen burner, the combination with the nipple having an elongated perforation in its upper end, of a revoluble member surrounding and extending beyond the upper end thereof and having a central hole and forming an internal chamber, a valve located therein and having a body extending down into the perforation of the revoluble member, and means for actuating the valve.

5. In a gas-regulating Bunsen burner, the combination with the nipple having an elongated perforation in its upper end, of a revoluble member surrounding and extending beyond the upper end thereof and having a central hole and forming an internal chamber, a valve located therein and having a body extending down into the perforation of the nipple and up into the perforation of the revoluble member, and opposite vertically-disposed circular cams for actuating the valve with the turning of the revoluble member.

6. In a gas-regulating Bunsen burner, the combination with the nipple having an elongated perforation in its upper end and a revoluble member surrounding and extending beyond the upper end thereof and having a central hole and forming an internal chamber, of a valve comprising a body portion *g*, shoulders 4, stem 5, conical head 6 and a square and recessed upper end 7.

7. In a gas-regulating Bunsen burner, the combination with the nipple having an elongated perforation in its upper end and a revoluble member surrounding and extending beyond the upper end thereof and having a central hole and forming an internal chamber, of a valve comprising a body portion *g*, shoulders 4, stem 5, conical head 6, and a square and recessed upper end 7, and a helical spring in said chamber around the upper end of said valve with one end bearing on the under surface of the revoluble member and the lower end on the shoulders of said valve.

8. In a gas-regulating Bunsen burner, the combination with the nipple having an elongated perforation in its upper end and a revoluble member surrounding and extending beyond the upper end thereof and having a central hole and forming an internal chamber, of a valve comprising a body portion *g*, shoulders 4, stem 5, conical head 6 and a square and recessed upper end 7, and opposite vertically-disposed circular cams formed with the revoluble member and adapted to come beneath the shoulders of the valve.

9. In a gas-regulating Bunsen burner, the combination with the nipple having an elongated perforation in its upper end and a revoluble member surrounding and extending beyond the upper end thereof and having a central hole and forming an internal chamber, of a valve comprising a body portion *g*, shoulders 4, stem 5, conical head 6 and a square and recessed upper end 7, opposite vertically-disposed circular cams formed with the revoluble member and adapted to come beneath the shoulders of the valve, and a helical spring *h* surrounding the valve at one end bearing upon the shoulders thereof and at the upper end bearing upon the upper side of the revoluble member and acting to keep the valve down to its seat or against the surfaces of said cams.

10. In a gas-regulating Bunsen burner, the combination with the nipple, of a revoluble member surrounding the upper end thereof and extending above the same so as to form a valve-receiving chamber, a spring-returned valve inclosed and surrounded by the revoluble member and located between the same and the upper end of the nipple and coacting devices for actuating the valve for controlling the supply of gas.

11. In a gas-regulating Bunsen burner, the combination with the nipple, of a revoluble member surrounding the upper end thereof and extending above the same forming a chamber between the upper ends of said parts, an internal valve within said chamber having a lower portion received in an aperture of the nipple and having shoulders contacting with the revoluble member and means for guiding the said internal valve so that the same is raised and lowered by the turning movement of the revoluble member controlling the supply of gas.

12. In a gas-regulating Bunsen burner the combination with the nipple, of a revoluble member surrounding and extending beyond the upper end thereof and having a central hole and forming an internal chamber, of a valve comprising a body portion, shoulders, a stem, conical head and upper end, a helical spring in said chamber around said valve, means for moving the valve axially of the burner and means for preventing the valve turning with such movement.

811,990. **VACUUM-BREAKER FOR CONDENSERS.** BRONSON C. WOODFORD, New York, N. Y., assignor to International Steam Pump Company, New York, N. Y., a Corporation of New Jersey. Filed Feb. 8, 1905. Serial No. 244,712.

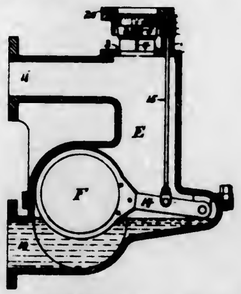

Claim.—1. The combination with a condenser, of a vacuum-breaker having an air-inlet valve exposed to atmospheric pressure on its outer side, a valve-actuating piston, a control-valve and passages for varying the pressure on said piston to open and close the air-inlet valve, and a float and connections for actuating said control-valve to secure the opening of the air-inlet valve when the liquid in the condenser reaches a certain level.

2. The combination with a condenser, of a vacuum-breaker having the inlet-valve exposed to atmospheric pressure on its outer side, a piston connected to said valve and exposed to atmospheric pressure tending to open the valve, a control-valve and passages for connecting the opposite side of the piston with the atmosphere or condensing chamber, and a float and connections for actuating said control-valve.

3. In a condenser vacuum-breaker, the combination with the air-inlet valve *b*, of piston *c* connected to the valve *b*, said valve and piston being exposed to atmospheric pressure on their adjacent sides, pressure-chamber 19 on the opposite side of said piston, passages for connecting said chamber 19 with the atmosphere or the condenser, and a float-actuated control-valve *a* controlling said passages, substantially as described.

4. In a condenser vacuum-breaker, the combination with the air-inlet valve *b*, of piston *c* connected to the valve *b*, said valve and piston being exposed to atmospheric pressure on their adjacent sides, pressure-chamber 19 on the opposite side of said piston, passages 16, 17, 18 for connecting said pressure-chamber with the atmosphere or the condenser, control-valve *a* controlling said passages, float F, and link 15 connecting said float to control-valve *a* for actuating said control-valve.

811,991. **CABLE CONVEYER.** ALFRED M. ACKLIN, Pittsburg, Pa., assignor to Heyl & Patterson, Inc., Pittsburg, Pa., a Corporation of Pennsylvania. Filed Nov. 23, 1904. Serial No. 234,080.

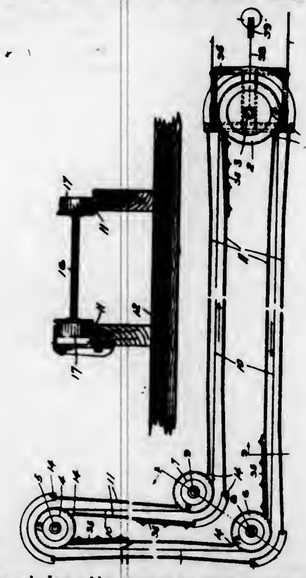

Claim.—1. In a cable conveyer, the combination of two or more sheaves, an endless cable engaging same, a truck or carriage, a track for same, and an intermediate flexible connection between said truck and cable adapted when connected to the cable to swing into a position at right angles, or approximately, to the axes of said sheaves.

2. In a cable conveyer, the combination of two or more sheaves, an endless cable engaging same, a truck or carriage, a track for same, and an intermediate hinged connection between said truck and cable adapted when connected to the cable to swing into a position at right angles, or approximately, to the axes of said sheaves.

3. In a cable conveyer, the combination of two or more sheaves, an endless cable engaging same, a truck or carriage, a track for same, and a swinging clamp between said truck and cable adapted when connected to the cable to swing into a position at right angles, or approximately, to the axes of said sheaves.

4. In a cable conveyer, the combination of two or more sheaves, an endless cable engaging same, a truck or carriage, a track for same, a bracket extending down from said truck, and a swinging clamp connected to said bracket and adapted to engage said cable and when connected to the cable to swing into a position at right angles, or approximately, to the axes of said sheaves.

5. In a cable conveyer, the combination of two or more sheaves, an endless cable engaging same, a truck or carriage, a track for same, a bracket extending down from said truck having bearings therein, a clamp connected to said cable, said clamp having a bearing therein, and a pin passing through said bearings in said bracket and clamp, said clamp when connected to the cable being adapted to swing into a position at right angles, or approximately, to the axes of said sheaves.

6. In a cable conveyer, the combination of two or more sheaves, an endless cable engaging same, a truck or carriage, a track for same, the upper faces of said sheaves forming a support for said truck in passing over same, and an intermediate flexible connection between said truck and cable.

811,992. **MANICURING APPLIANCE.** ANNA A. ARGUS and DOROTHY B. CAMERON, New York, N. Y. Filed July 1, 1905. Serial No. 267,997.

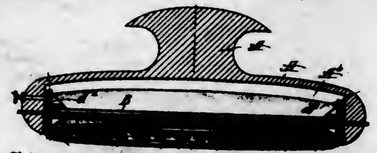

Claim.—1. A manicuring appliance comprising a shell or casing having end walls, a spindle rotatably supported between said walls and having recessed heads thereon, and a plurality of pads adapted to engage the recesses of said heads.

2. A manicuring appliance comprising a frame or body having bearings, a spindle rotatably supported between said bearings, heads or flanges on said spindle said heads or flanges having spaced recesses upon their inner faces, a plurality of pads having supporting-ribs therein, and arranged to be sprung into corresponding recesses of said heads or flanges.

3. A manicuring appliance, comprising a frame or body having bearings thereon, a spindle rotatably disposed between said bearings, a pair of collars having flattened peripheral faces secured to said spindle, flanged disks surrounding said collars to form recesses therewith, and a pad engaging two of the corresponding recesses.

4. A manicuring appliance, comprising a frame or body having bearings, a spindle having recessed heads thereon, a pad having a longitudinal supporting-rib arranged to engage the recesses in said heads, and locking means for fixing the rotative adjustment of the spindle in any desired relation.

5. A manicuring appliance, comprising a frame or body, a spindle rotatably supported in said frame or body and having recessed heads thereon, locking means for holding said spindle in any desired relation, a supporting-rib of a length greater than the distance between the walls of corresponding recesses, and engaging such recesses and a pad including a wrapper and a packing material therein surrounding said supporting-rib.

6. As an article of manufacture, a manicuring-pad having an outer tube or wrapper of flexible material, a stiffening-rib therein, a packing material between said stiffening-rib and wrapper, the rib and wrapper being so arranged as to leave a longitudinal recess throughout the pad.

7. A manicuring appliance, comprising a shell or casing having side and end walls, a spindle rotatably journaled between said end walls, collars having flattened faces upon said spindle, flanged disks surrounding said collars so as to form heads or flanges having recesses, locking means for holding said heads in any position of rotative adjustment, and pads having an outer tube or wrapper of flexible material, a stiffening-rib therein and a supporting-rib adapted to engage the recesses of said heads or flanges, said supporting-rib being adapted to spring into bowed relation between the corresponding recesses of said heads or flanges.

811,993. **MUSIC-LEAF TURNER.** JOSEPH BAHL and JOSEPH C. BAHL, Chicago, Ill. Filed Mar. 24, 1905. Serial No. 251,260.

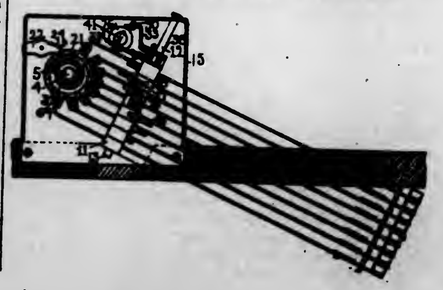

Claim.—1. In a music-leaf turner, in combination, a series of

means for vibrating said members, and contact means operated by

carrier, adjustable circuit-controlling devices carried thereby, means

tending to vibrate said fingers toward and away from said stops in

Claim.—1. In a music-leaf turner, in combination, a series of independently-swinging arms having means to engage the leaves, and an escapement mechanism comprising a shaft having a series of hinged teeth arranged to engage said arms respectively and to release the same by rotation of the shaft.

2. In a music-leaf turner, in combination, a series of independently-swinging arms having means to engage the leaves, and an escapement mechanism comprising a shaft having thereon a series of hinged teeth projecting from the shaft in different directions and engageable with the arms, and means to turn the shaft intermittently, to release the arms successively.

3. In a music-leaf turner, in combination, a series of swinging leaf-carrying arms, and an escapement mechanism comprising a shaft having thereon a ratchet and a series of teeth engaging the arms respectively, and a manually-operated pawl engageable with the ratchet to turn the shaft.

4. In a music-leaf turner, in combination, a series of swinging leaf-carrying arms, an escapement mechanism having a shaft provided with teeth engaging the arms, and pneumatically-actuated means to turn the shaft intermittently, to release the arms successively.

5. The combination with a music-board having a reversible section, of a music-leaf turner on the board, and a music-holding clamp on said reversible section, arranged to hold music-sheets at the fold when they are engaged by the turner.

6. The combination with a music-board having a slot therein, of a music-leaf turner having a series of arms which may be advanced or retracted through the slot, and a flap arranged to cover the slot when the arms are retracted.

811,994. **TELEGRAPH-TRANSMITTER.** JOHN C. BARCLAY, New York, N. Y., assignor to Western Union Telegraph Company, New York, N. Y., a Corporation of New York. Filed Feb. 27, 1905. Serial No. 247,462.

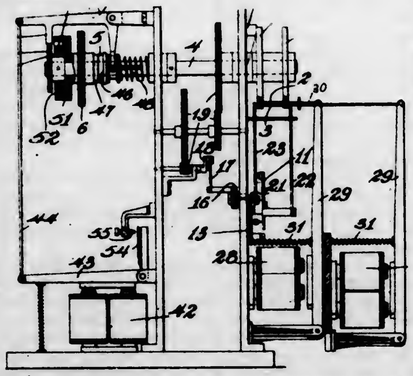

Claim—1. In a telegraph-transmitter, the combination with a movable carrier, adjustable circuit-controlling devices carried thereby, and means for adjusting said devices variably according to the character to be transmitted, of contact mechanism comprising controlling members adapted to be vibrated but arranged to be controlled in such vibration by said circuit-controlling devices, driving means automatically operated adapted to vibrate said members, and contact means operated by the vibration of said members.

2. In a telegraph-transmitter, the combination with a movable carrier, adjustable circuit-controlling devices carried thereby, and a keyboard and means operated thereby for adjusting said devices variably according to the character to be transmitted, of contact mechanism comprising controlling members adapted to be vibrated but arranged to be controlled in such vibration by said circuit-controlling devices, driving means automatically operated adapted to vibrate said members, and contact means operated by the vibration of said members.

3. In a telegraph-transmitter, the combination with a movable carrier, adjustable circuit-controlling devices carried thereby, magnets and means operated thereby for adjusting said devices, and selecting means controlling said magnets, of contact mechanism comprising controlling members adapted to be vibrated but arranged to be controlled in such vibration by said circuit-controlling devices, means for vibrating said members, and contact means operated by the vibration of said members.

4. In a telegraph-transmitter, the combination with a movable carrier, adjustable circuit-controlling devices carried thereby, magnets and means operated thereby for adjusting said devices, and a keyboard comprising selecting means controlling said magnets, of contact mechanism comprising controlling members adapted to be vibrated but arranged to be controlled in such vibration by said circuit-controlling devices, means for vibrating said members, and contact means operated by the vibration of said members.

5. In a telegraph-transmitter, the combination with a movable carrier, adjustable circuit-controlling devices carried thereby, and means for adjusting said devices variably according to the character to be transmitted, of contact mechanism comprising controlling members adapted to be vibrated but arranged to be controlled in such vibration by said circuit-controlling devices, driving means automatically operated adapted to vibrate said members, contact means operated by the vibration of said members, and means for arresting said carrier during the adjustment of said circuit-controlling devices.

6. In a telegraph-transmitter, the combination with a movable carrier, adjustable circuit-controlling devices carried thereby, and a keyboard and means operated thereby for adjusting said devices variably according to the character to be transmitted, of contact mechanism comprising controlling members adapted to be vibrated but arranged to be controlled in such vibration by said circuit-controlling devices, driving means automatically operated adapted to vibrate said members, contact means operated by the vibration of said members, and means for arresting said carrier during the adjustment of said circuit-controlling devices.

7. In a telegraph-transmitter, the combination with a movable carrier, adjustable circuit-controlling devices carried thereby, magnets and means operated thereby for adjusting said devices, and selecting means controlling said magnets, of contact mechanism comprising controlling members adapted to be vibrated but arranged to be controlled in such vibration by said circuit-controlling devices, means for vibrating said members, contact means operated by the vibration of said members, and means for arresting said carrier during the adjustment of said circuit-controlling devices.

8. In a telegraph-transmitter, the combination with a movable carrier, adjustable circuit-controlling devices carried thereby, magnets and means operated thereby for adjusting said devices, and a keyboard comprising selecting means controlling said magnets, of contact mechanism comprising controlling members adapted to be vibrated but arranged to be controlled in such vibration by said circuit-controlling devices, means for vibrating said members, contact means operated by the vibration of said members, and means for arresting said carrier during the adjustment of said circuit-controlling devices.

9. In a telegraph-transmitter, the combination with a movable carrier, adjustable circuit-controlling devices carried thereby, operating mechanism for said carrier comprising means for driving said carrier intermittently, and means for adjusting said circuit-controlling devices arranged to adjust the same while the carrier is stationary, of contact mechanism comprising controlling members adapted to be vibrated but arranged to be controlled in such vibration by said circuit-controlling devices, means other than said circuit-controlling devices for vibrating said members, and contact means operated by the vibration of said members.

10. In a telegraph-transmitter, the combination with a movable carrier, adjustable circuit-controlling devices carried thereby, means comprising a clutch for driving said carrier, and a magnet and means operated thereby for opening said clutch, magnets and means operated thereby for adjusting said circuit-controlling devices, selecting means controlling said adjusting-magnets, and means operated by said clutch-magnet likewise controlling said adjusting-magnets and arranged to prevent the operation thereof until the clutch is open, of contact mechanism controlled by said circuit-controlling devices.

11. In a telegraph-transmitter, the combination with a movable carrier, adjustable circuit-controlling devices carried thereby, means comprising a clutch for driving said carrier, a magnet and means operated thereby for opening said clutch, adjusting-magnets and means operated thereby for adjusting said circuit-controlling devices, selecting means controlling said adjusting-magnets, and a relay controlled by said clutch-magnet having contact devices arranged to prevent the operation of said adjusting-magnets until after the clutch has opened and to cause said magnets to disengage their adjusting means from said circuit-controlling devices prior to the closing of said clutch, of contact mechanism controlled by said circuit-controlling devices.

12. In a telegraph-transmitter, the combination with a movable carrier, adjustable circuit-controlling devices carried thereby, means comprising a clutch for driving said carrier, a magnet and means operated thereby for opening said clutch, adjusting-magnets and means operated thereby for adjusting said circuit-controlling devices, selecting means controlling said adjusting-magnets, and a relay controlled by said clutch-magnet and having contact means arranged to close circuit through the selected adjusting-magnets upon the commencement of movement of its armature in one direction and to break said circuit prior to the completion of such movement, of contact mechanism controlled by said circuit-controlling devices.

13. In a telegraph-transmitter, the combination of a movable carrier, adjustable circuit-controlling devices carried thereby, magnets for adjusting said circuit-controlling devices, and a keyboard and means operated thereby controlling the circuits of said magnets.

14. In a telegraph-transmitter, the combination of a movable carrier, adjustable circuit-controlling devices carried thereby, magnets for adjusting said circuit-controlling devices, and a keyboard comprising selecting-contacts each corresponding to and controlling a circuit through one of said adjusting-magnets, and also comprising selecting means, differently operated by the different keys of said keyboard, operating said selecting-contacts.

15. In a telegraph-transmitter, the combination of a movable carrier, adjustable circuit-controlling devices carried thereby, magnets for adjusting said circuit-controlling devices, and a keyboard comprising selecting mechanism including contacts controlling the circuits of the several adjusting-magnets and a master-contact, closed by each key after the closing of the selecting-contacts operated thereby, said master-contact controlling the circuits of all said adjusting-magnets.

16. In a telegraph-transmitter, the combination of a movable carrier, adjustable circuit-controlling devices carried thereby, magnets for adjusting said circuit-controlling devices, a stop-magnet arranged when operated to arrest the movement of said carrier, a keyboard comprising selecting mechanism including contacts controlling the circuits of the several adjusting-magnets and a master-contact, closed by each key after the closing of the selecting-contacts operated thereby, said master-contact controlling said stop-magnet, and means operated by said stop-magnet controlling the circuits of all of said adjusting-magnets.

17. In a telegraph-transmitter, the combination of a movable carrier, adjustable circuit-controlling devices carried thereby, magnets for adjusting said circuit-controlling devices, a stop-magnet arranged when operated to arrest the movement of said carrier, a keyboard comprising selecting mechanism including contacts controlling the circuits of the several adjusting-magnets and a master-contact, closed by each key after the closing of the selecting-contacts operated thereby, said master-contact controlling said stop-magnet, and a relay operated by said stop-magnet having contact means arranged to close circuit through the selected adjusting-magnets upon the commencement of movement of its armature and to break such circuit prior to the completion of such movement.

18. In a telegraph-transmitter, the combination of a movable carrier, longitudinally-movable stops carried thereby, means for adjusting said stops, contact mechanism comprising controlling means having springs tending to press said controlling means against said stops, and means other than said stops for vibrating said controlling means.

19. In a telegraph-transmitter, the combination of a movable carrier, longitudinally-movable stops carried thereby, operating mechanism for said carrier comprising means for driving said carrier intermittently, means for adjusting said stops arranged to operate while said carrier is stationary, contact mechanism comprising controlling means having springs tending to press said controlling means against said stops, and means other than said stops for vibrating said controlling means.

20. In a telegraph-transmitter, the combination of a movable carrier, longitudinally-movable stops carried thereby, operating mechanism for said carrier comprising means for driving said carrier intermittently, means for adjusting said stops arranged to operate while said carrier is stationary, and contact mechanism comprising controlling-fingers spring-pressed toward said stops, means tending to vibrate said fingers toward and away from said stops in synchronism with the passage of the stops, and contact means operated by the vibration of said fingers.

21. In a telegraph-transmitter, the combination of a driving-shaft, a drum thereon, longitudinally-movable stops carried thereby, operating mechanism for said carrier comprising means for driving said shaft intermittently, means for adjusting said stops arranged to operate while the shaft is stationary, and contact mechanism comprising controlling-fingers spring-pressed toward said stops, means tending to vibrate said fingers toward and away from said stops in synchronism with the passage of the stops, and contact means operated by the vibration of said fingers.

22. In a telegraph-transmitter, the combination of a driving-shaft, a drum thereon, longitudinally-movable stops carried thereby, means for adjusting said stops, and contact mechanism comprising controlling-fingers spring-pressed toward said stops, means tending to vibrate said fingers toward and away from said stops in synchronism with the passage of the stops, and contact means operated by the vibration of said fingers.

23. In a telegraph-transmitter, the combination with a driving-shaft, a drum thereon, longitudinally-movable stops carried thereby, means for adjusting said stops, and contact mechanism comprising controlling-fingers spring-pressed toward said stops, one of said fingers arranged to be arrested in its movement by the opposite stop if said stop be in normal position, but to be free to move in case said stop has been adjusted, the other finger arranged to be unimpeded in its movement by said stops when the latter are in normal position, but to be arrested in its movement by the stop opposite it if such stop has been moved to its adjusted position, and contact means operated by the vibration of said fingers.

24. In a telegraph-transmitter, the combination with a moving carrier, circuit-controlling means carried thereby, and a clutch for driving said carrier, of a locking-wheel likewise driven by said clutch, means for opening said clutch and engaging said locking-wheel to lock the carrier, and a friction-drag tending to rotate the carrier while so locked.

25. In a telegraph-transmitter, the combination of a rotatably-mounted drum, longitudinally-movable stops carried thereby, radially-arranged adjusting-arms, push-pins operated thereby for moving said stops longitudinally, means for operating said arms, means guiding said push-pins, and means for resetting the stops.

26. In a telegraph-transmitter, the combination of a rotatably-mounted drum, longitudinally-movable stops carried thereby, adjusting-magnets arranged circularly about said drum, armature-levers therefor provided with means for moving said stops longitudinally, means for operating said arms, means guiding said push-pins, and means for resetting the stops.

27. In a telegraph-transmitter, the combination of a movably-mounted carrier, longitudinally-movable stops carried thereby, adjusting-magnets, armature-levers therefor provided with means for moving said stops longitudinally, means for resetting said stops, means for arresting the movement of the carrier, and a relay operated by said arresting means and having contact means controlling the circuits of said adjusting-magnets and arranged to complete such circuits, as to said contact means, upon the beginning of the movement of the armature of said relay, and to break such circuits prior to the completion of the movement of said armature.

28. In a telegraph-transmitter, the combination with a keyboard, transmitting-contact mechanism, and operating mechanism controlled by said keyboard and controlling the operation of said transmitting-contact mechanism, of a relay controlled by said transmitting-contact mechanism and provided with contact means arranged to repeat the signals of said contact mechanism into a line-circuit, said relay provided with means for giving bias.

811,995. **PRINTING MECHANISM.** JOHN C. BERCLAY, New York, N. Y., assignor to Western Union Telegraph Company, New York, N. Y., a Corporation of New York. Filed Mar. 24, 1905. Serial No. 251,804.

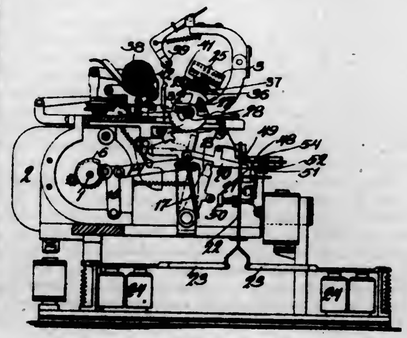

Claim.—1. The combination with printing mechanism comprising means for printing at will any one of a plurality of characters, operating means therefor comprising a driver, a plurality of engaging means, and means for moving any one of said engaging means into position for engagement with said driver, of locking means for said engaging means which holds any one of the latter which has been operated, in position for engagement until engaged with said driver.

2. The combination with printing mechanism comprising selecting means, a driver therefor, and engaging means for operatively connecting said selecting means and driver, of operating means for said engaging means, and locking means for holding said engaging means in position for engagement until such engagement is accomplished.

3. The combination with printing mechanism comprising selecting means, a driver therefor, and engaging means for operatively connecting said selecting means and driver, of operating means for said engaging means, locking means for holding said engaging means in position for engagement until such engagement is accomplished, and means for releasing the locking means.

4. The combination with printing mechanism comprising selecting means, a driver therefor, and engaging means connected to said selecting means and normally out of, but arranged to be drawn into, position for engagement with said driver, of operating means for said engaging means, and locking means for holding said engaging means in position for engagement with the driver until such engagement is accomplished.

5. The combination with printing mechanism comprising selecting means, a driver therefor, and engaging means connected to said selecting means and normally out of, but arranged to be drawn into, position for engagement with said driver, of operating means for said engaging means, locking means for holding said engaging means in position for engagement with the driver until such engagement is accomplished, and means for releasing the locking means.

6. The combination with printing mechanism comprising tumblers, gear-sectors for rotating the same, a driver, and pawls carried by said gear-sectors and normally out of engagement with said driver, but arranged to be drawn into position for such engagement, of operating means for said pawls, and locking means for holding each pawl, when the latter is moved into position for engagement with the driver, in such position until engaged by the driver.

7. The combination with printing mechanism comprising tumblers, gear-sectors for rotating the same, a driver, and pawls carried by said gear-sectors and normally out of engagement with said driver, but arranged to be drawn into position for such engagement, of operating means for said pawls, locking means for holding each pawl, when the latter is moved into position for engagement with the driver, in such position until engaged by the driver, and means for releasing said locking means.

8. The combination with printing mechanism comprising tumblers, gear-sectors for rotating the same, a driver, and pawls carried by said gear-sectors and normally out of engagement with said driver, but arranged to be drawn into position for such engagement, of operating means for said pawls, locking means for holding each pawl, when the latter is moved into position for engagement with the driver, in such position until engaged by the driver, and means operated by said driver for releasing said locking means.

9. The combination with printing mechanism comprising tumblers, gear-sectors for rotating the same, a driver, and pawls carried by said gear-sectors and normally out of engagement with said driver, but arranged to be drawn into position for such engagement, operating means for said pawls, latches for the said pawls adapted to engage and hold each pawl when the latter is moved into position for engagement with the driver, and means for releasing said latches.

10. The combination with printing mechanism comprising tumblers, gear-sectors for rotating the same, a driver, and pawls carried by said gear-sectors and normally out of engagement with said driver, but arranged to be drawn into position for such engagement, operating means for said pawls, latches for the said pawls adapted to engage and hold each pawl when the latter is moved into position for engagement with the driver, and means operated by the driver for releasing said latches.

11. The combination with printing mechanism comprising tumblers, gear-sectors for rotating the same, a driver, and pawls carried by said gear-sectors and normally out of engagement with said driver, but arranged to be drawn into position for such engagement, operating means for said pawls, latches for the said pawls adapted to engage and hold each pawl when the latter is moved into position for engagement with the driver, and a universal release-bar operated by said driver as it moves forward, and arranged when operated to engage and release whichever of said latches has been operated.

12. The combination with printing mechanism comprising tumblers, gear-sectors for rotating the same, a driver, and pawls carried by said gear-sectors and normally out of engagement with said driver, but arranged to be drawn into position for such engagement, of rods for operating said pawls, spring-pressed locking-bolts therefor each adapted to engage a lug on the corresponding rod when said rod is depressed, and means operated by the driver for releasing said rods.

811,996. **RELAY.** JOHN C. BARCLAY, New York, N. Y., assignor to Western Union Telegraph Company, New York, N. Y., a Corporation of New York. Filed July 11, 1905. Serial No. 269,164.

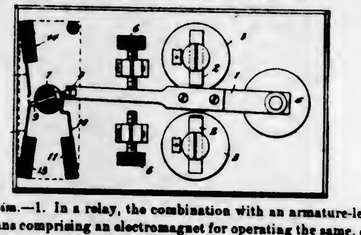

Claim.—1. In a relay, the combination with an armature-lever and means comprising an electromagnet for operating the same, of a vibrating member separately mounted but having a driving connection with said armature-lever, and a plurality of projecting contact-pieces carried thereby and insulated from each other, and other contact devices against which said contact-pieces of the vibrating member play as the latter vibrates, thereby making and breaking contact.

2. In a relay, the combination with an armature-lever and means comprising an electromagnet for operating the same, of a vibrating member separately mounted but having a driving connection with said armature-lever, a plurality of projecting contact-pieces carried thereby and insulated from each other, contact devices against which said contact-pieces of the vibrating member play as the latter vibrates, thereby making and breaking contact, and other contact-pieces in permanent electrical connection with said vibrating contact-pieces, arranged to make connection therewith while permitting motion thereof.

3. In a relay, the combination with an armature-lever and means comprising an electromagnet for operating the same, of a rocker of insulating material mounted to oscillate and having a driving connection with said armature-lever, contact-pins carried thereby extending through said rocker, and each projecting therefrom at one end, contact-brushes permanently in contact with said pins and serving to convey electric current thereto, and other contact-brushes arranged in proximity to the said projecting ends of said pins and arranged to make and break contact therewith as the rocker oscillates.

811,997. **STITCH-SEPARATOR AND PRICKING-UP MACHINE.** THOMAS D. BARRY, Brockton, Mass. Filed May 23, 1905. Serial No. 261,573.

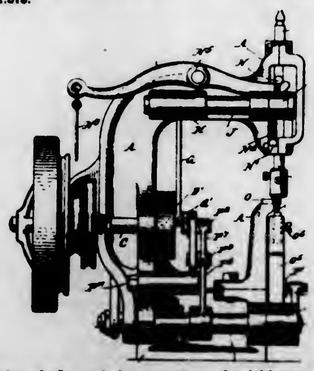

Claim.—1. In a stitch-separating and pricking-up machine, a work-support, a stitch-separator adapted to enter between the stitches and indent the same, mechanism for operating said stitch-separator, means for varying the indentation of said stitch-separator, a device engaging the bottom of the sole for moving the shoe after each indentation, independently of the movement of the stitch-separator, and mechanism for operating said feed device to move the work between the stitch-indenting operations.

2. In a stitch-separating and pricking-up machine, a work-support, a yielding stitch separator adapted to enter between the stitches and indent the same, mechanism for operating said stitch-separator, means for varying the indentation of said stitch-separator, a device engaging the bottom of the sole for moving the shoe after each indentation independently of the movement of the stitch-separator, and mechanism for operating said feed device to move the work between the stitch-indenting operations.

3. In a stitch-separating and pricking-up machine, a work-support, a stitch-separator adapted to enter between the stitches to indent the same, mechanism for operating the stitch-separator, means for varying the indentation of said stitch-separator, a presser-foot for the work, a device engaging the bottom of the sole for moving the shoe after each indentation independently of the movement of the stitch-separator, and mechanism for operating said feed device to move the work between the stitch-indenting operations.

4. In a stitch-separating and pricking-up machine, a work-support, a stitch-separator operating to enter between the stitches to indent the same, mechanism for actuating said stitch-separator, means for varying the indentation of said stitch-separator, a feed device for engaging the bottom of the sole to move the shoe after each indentation independently of the movement of the stitch-separator, a carrier for said feed device, means for adjusting said feed device on said carrier to accommodate the stitches, and mechanism for operating said feed device to move the work between the stitch-indenting operations.

5. In a stitch-separating and pricking-up machine, a work-support, a stitch-separator operating to enter between the stitches to indent the same, mechanism for actuating said stitch-separator, means for varying the indentation of said stitch-separator, an awl-feed operating to engage the sole of the shoe to move the same after each indentation independently of the movement of the stitch-separator, a carrier for said awl-feed, means for adjusting said awl-feed on said carrier to accommodate the stitches, and mechanism for actuating said awl-feed to move the work between the stitch-indenting operations.

6. In a stitch-separating and pricking-up machine, a work-support, a stitch-separator operating to enter between the stitches to indent the same, mechanism for actuating said stitch-separator, means for varying the indentation of said stitch-separator, an awl-feed operating to engage the bottom of the sole to move the shoe after each indentation independently of the movement of the stitch-separator, an oscillating arm on which said awl-feed is mounted, means for adjusting said awl-feed on said arm to accommodate the stitches, and means for actuating said arm to move the work between the stitch-indenting operations.

811,998. **AMUSEMENT DEVICE.** EDWARD S. BENEDICT, New York, N. Y. Filed Aug. 25, 1905. Serial No. 275,706.

Claim.—1 The combination with a movable vehicle, of means for directing a stream of water into the path of travel of the vehicle, and means controlled by the movement of the vehicle for starting and stopping the flow of water.

2. The combination with a track for vehicles, of means for directing a stream of water into the path of travel of the vehicle on the track, and means for automatically stopping the stream when the vehicle approaches it

3. The combination of means for directing a stream of water into the path of travel of a vehicle, means for automatically stopping the stream when the vehicle approaches it, and means for starting the flow of water after the vehicle has passed through the path thereof.

4. The combination of means for directing a stream of water into the path of a vehicle, a shaft located adjacent to the path and having means adapted to be engaged by a vehicle for rotating the shaft, means for stopping said stream of water, and means for connecting said shaft and said last-named means.

5. A track for vehicles having a shaft located adjacent thereto, means on the shaft adapted to be engaged and turned by a vehicle on the track, a drum on said shaft, a flexible member adapted to be wound on the drum, a water-controlled device connected with said flexible member, and means for directing a flow of water against said track.

6. The combination with means for directing a stream of water in a certain path, means for controlling the flow of water in said stream, a flexible member connected with said last-named means, a drum upon which said member is adapted to be wound, a shaft connected with the drum, and a gear mounted on said shaft.

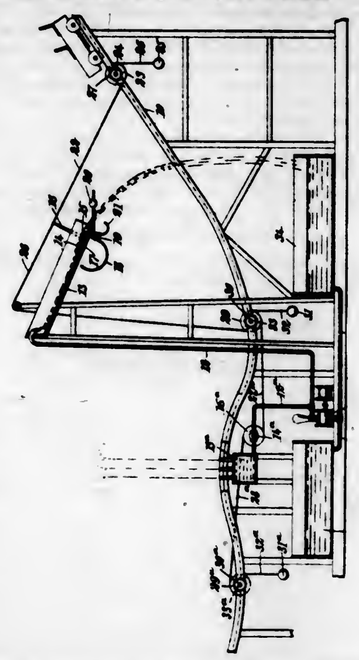

7. The combination with means for directing a stream of water in a certain path, means for controlling said stream of water, a pair of flexible members connected with said last-named means, a pair of drums upon which said members are adapted to be wound, and a gear connected with each of said drums whereby the rotation of the gears will cause the drums to be rotated to wind up the flexible members thereon.

8. The combination of a pump, a device for directing a stream of water, means connected with the pump for supplying said device with water, means for controlling the flow of water through said device, a pair of flexible connections extending from said last-named means in two directions whereby a pull on one of said members will stop the flow of water and a pull on the other will start it, a pair of drums upon which said members are adapted to be wound, means rigidly connected with said drums for causing them to be rotated to wind up the flexible members thereon in succession, and counterweights for normally unwinding the flexible members from said drums.

9. The combination of a pump, a fountain, an inclined trough, means connected with the pump for supplying the fountain and trough with water, means for controlling the flow of water through said fountain, means for controlling the flow of water through said trough, each of said two last-named means comprising a drum, a flexible connection adapted to be wound on the drum and connected with the means for supplying water, and a pinion on each drum, and a vehicle adapted to move adjacent to said fountain and trough and having a rack for engaging said pinion and operating the same.

10. The combination of a railway, a fountain located adjacent thereto, and adapted to force a stream of water across the path of a vehicle on the railway, an inclined trough located above the railway, means for supplying water to the fountain and trough, means for controlling said supplying means, and means operable by the passage of a vehicle for operating said controlling means.

11. A water-trough having an open end, an opening in its bottom, and means for alternately closing the end and the opening.

12. An inclined water-trough having means at its lower end for directing water in a stream to represent a natural waterfall, an outlet above said means, and means for alternately rendering said first-named means inoperative and closing the outlet.

13. The combination of a trough having two discharge-outlets,

means for alternately opening said outlets, and a movable trough located below the first-named trough and adapted to intercept water discharged from the two outlets.

tongs attached to the pipe nearer to said table and fixed upon said table.

2. The combination with a casing a valve mounted on a movable valve-stem therein, an arm for lifting the valve-stem, said arm being

covered adjacent the edge of the body portion, tongues cut from the blank excepting along certain lines which are scored, lips surrounded

means for alternately opening said outlets, and a movable trough located below the first-named trough and adapted to intercept water discharged from the two outlets.

14. The combination of a trough having two discharge-outlets, means for alternately opening said outlets, and a movable trough located below the first-named trough and adapted to intercept water discharged from the two outlets; said trough having a portion located below each outlet, and a counterweight for moving one of said portions out of operative position.

15. An artificial waterfall, comprising an inclined trough having an open lower end and an opening in its bottom above said end, and a pivoted trough located below said opening in the bottom of the main trough, said trough being provided with a lip adapted to project into a position below the open end of the main trough.

811,999. **SAFETY-RAZOR.** PETER A. BENNY, Boston, Mass. Filed June 29, 1905. Serial No. 268,169.

Claim.—1. A pocket-razor comprising a handle, a stud normally depressed within said handle, means for extending said stud from said handle, and means for supporting a blade on said stud.

2. A pocket-razor having a handle with an opening in the extremity thereof, a depressible stud mounted in said opening, a member engaging said stud and affording means for projecting the same from said handle, a blade, and means for supporting said blade on said stud.

3. A pocket-razor comprising a handle having an opening in the extremity thereof, a threaded stud mounted in said opening, a spring constraining said stud inwardly, a cap rotatably mounted on the extremity of said handle and engaging the threads of said stud, a guard-plate detachably connected to the said stud and a blade carried by said guard-plate.

4. A pocket safety-razor comprising a handle having an angular opening in the extremity thereof, a stud having an angular neck mounted in said opening and having a threaded shank projecting therebeyond, a spring under the head of said stud and tending to force the same inwardly, a cap rotatably mounted on the extremity of said handle and engaging the threads of said stud, and a guard-plate having a threaded opening adapted to receive the extremity of said stud and adapted to carry the blade.

812,000. **ROTARY FOR OIL-WELLS.** HORACE D. BERNARD, Beaumont, Tex. Filed Sept. 16, 1905. Serial No. 278,985.

Claim.—1. In a pipe-rotary in combination, a rotatable table, means for fixing the same against rotation, a rotatable ring mounted on said table, a bracket carried by said ring and adapted to engage pipe-tongs attached to the pipe, and means for rotating said ring.

2. In a pipe-rotary in combination, a rotatable table, a rotatable ring carried thereby, means for locking said ring and said table together, means for locking said table against rotation, and a bracket carried by said ring and adapted to engage pipe-tongs attached to the pipe.

3. In a rotary in combination, a rotatable table having an opening through which a pipe may pass upwardly, a rotatable ring mounted on said table, a bracket carried by said ring, pipe-tongs adapted to be engaged by said bracket when attached to said pipe, a second pipe-tongs adapted to be attached to said pipe, and means for securing said second pipe-tongs against rotation.

4. In a rotary in combination, a rotatable table, means for locking the same against rotation, said table having a central opening through which a pipe may pass upwardly, a rotatable ring mounted on said table, means for locking said ring to said table, said ring having lugs upon the upper face thereof, and a bracket attached to said lugs and projecting upwardly from said ring, said bracket presenting notches on the opposite sides thereof adapted to engage the pipe-tongs.

5. In a rotary in combination, a bed-plate, a table rotatably mounted thereupon, means for locking said table against rotation on said bed-plate, a ring rotatably mounted on the edge of said table, said table and said ring having openings formed in the joint therebetween, and removable pins adapted to occupy said openings to lock said ring to said table, a member carried by said ring and adapted to engage pipe-tongs attached to a pipe passing up through said table, and a second member projecting upwardly to receive a second pipe-tongs attached to the pipe nearer to said table and fixed upon said table.

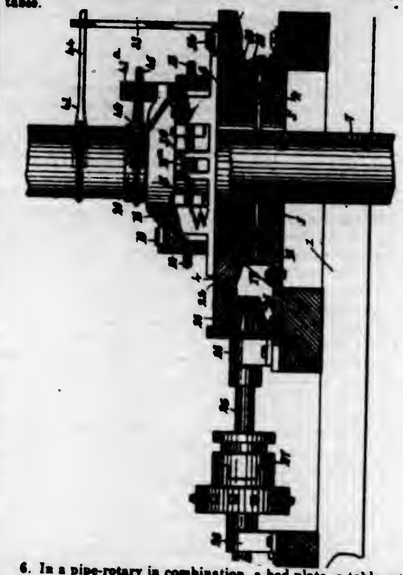

6. In a pipe-rotary in combination, a bed-plate, a table rotatably mounted thereupon, said table and said bed-plate having alining openings through which a pipe may pass upwardly, said table having a circumferential groove, clips projecting into said groove and securing said table to said bed-plate, means for locking said table against rotation, a ring rotatably mounted on said table, a bracket carried by said ring and adapted to engage a pipe-tongs applied to said pipe, and a fixed member projecting upwardly from said table and adapted to engage a second pipe-tongs attached to said pipe nearer to said table.

812,001. **FIRE-EXTINGUISHING DEVICE.** WILLIAM C. BILS, New York, N. Y. Filed Mar. 26, 1905. Serial No. 251,207.

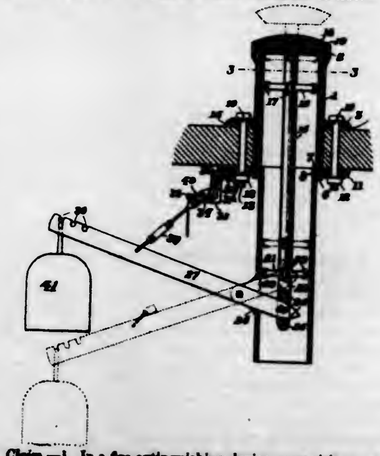

Claim.—1. In a fire-extinguishing device, comprising a casing, a valve-seat extending downwardly from the top into said casing, a valve mounted on a valve-stem, and adapted to register with the valve-seat on the top of the casing; spiders fixed to said valve-stem for guiding the valve-stem in its movements, a projection fixed to one of the spiders and extending downward in said casing, a lever operatively attached to said projection, a graduated scale of notches on the outer end of the lever for engaging a weight and a turnbuckle connection for holding the lever to the means for operating same.

2. The combination with a casing a valve mounted on a movable valve-stem therein, an arm for lifting the valve-stem, said arm being mounted on the side of said casing and the end of the arm extending into the casing, adapted to engage with rollers mounted on a projection attached to the valve-stem, and a fusible joint connecting the arm with a lock-pin in a yoke attached to a washer on the under side of the tank, and means for manually withdrawing the lock-pin from the yoke, thereby releasing the valve-operating mechanism.

3. The combination with a water-tank, a casing secured to and projecting from the bottom of said tank, a valve mounted on a movable valve-stem in said casing, a lever for lifting the valve-stem, said lever being mounted on the side of the casing, one end of said lever extending into the casing, said end being adapted to engage with rollers mounted on a projection attached to the valve-stem, a fusible joint, separable by heat, connecting the lever with a lock-pin in a yoke which is attached to a washer secured to the bottom of the tank, and means for manually withdrawing the lock-pin from the yoke thereby releasing the valve-operating mechanism.

4. The combination with a water-tank, a casing secured to the bottom of said tank, a valve mounted on an actuating valve-stem in said casing, a lever for lifting the valve-stem, said lever being mounted on the side of the casing, one end of the lever extending into the casing, said end being adapted to engage with rollers mounted on a projection attached to the valve-stem, a thermally-controlled joint connecting the lever with a locking means in a yoke attached to a washer on the bottom of the tank, and means for manually withdrawing the locking means from the yoke thereby releasing the valve-operating mechanism.

812,002. **CANDY-HOLDER.** GUSTAV A. BEHLER, Philadelphia, Pa. Filed May 3, 1905. Serial No. 258,587.

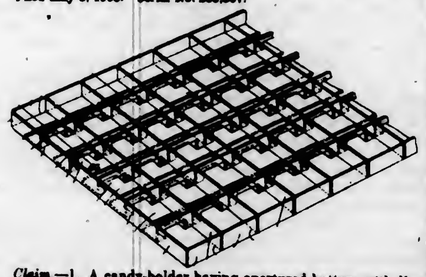

Claim.—1. A candy-holder having apertured bottom with lips integral with the bottom and extending into said apertures, integral tongues at an angle to said bottom and apertured with the apertures complemental to said lips, said tongues being complemental to the apertures of the bottom.

2. A candy-holder comprising partitions formed by intermediate portions of the blank and extending from one side of the holder to the other, integral tabs forming the sides of the holder, and tongues extending upwardly between the partitions, said tongues and the bottom of the holder being apertured, the apertures of the bottom being complementary to the tongues.

3. A candy-holder comprising partitions formed by intermediate portions of the blank and extending from one side of the holder to the other, integral tabs forming the sides of the holder, and tongues extending upwardly between the partitions, said tongues and the bottom of the holder being apertured, the apertures of the bottom being complementary to the tongue, and means integral with the bottom and surrounded by the apertures thereof.

4. A candy-holder comprising partitions formed by intermediate portions of the blank and extending from one side of the holder to the other, integral tabs forming the sides of the holder, and tongues extending upwardly between the partitions, said tongues and the bottom of the holder being apertured, the apertures of the bottom being complementary to the tongue, and means integral with the bottom and surrounded by the apertures thereof, said integral means being complementary to the apertures of the tongue.

5. A candy-holder formed from a blank and comprising in a single element, a bottom with apertures with lips, tabs extending at a right angle to the bottom, a partition between each line of apertures and apertured tongues extending at right angles to the bottom and to said partitions, the apertures of the tongues being formed by the cutting of the said lips.

6. In a blank for forming a holder for candy, a body portion, tabs extending at suitable intervals on each side thereof and being scored adjacent the edge of the body portion, tongues cut from the blank excepting along certain lines which are scored, lips surrounded by the cuts for said tongues and a plurality of scored lines extending between said tongues.

812,003. **ANCHOR FOR GUY-WIRES.** JASPER BLACKBURN, Chillicothe, Mo. Filed May 24, 1905. Serial No. 261,264.

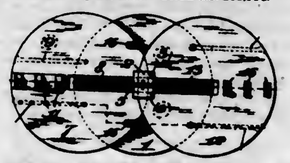

Claim.—1. In an anchor for guy-wires, a base-plate and a pair of plates equal in diameter to the base-plate and adapted to slide in opposite directions on said base-plate, substantially as specified.

2. In an anchor for guy-wires, a base-plate, a post integral with and extending upwardly therefrom, and a plurality of plates equal in diameter to the base-plate and adapted to slide in opposite directions away from the post; substantially as specified.

3. In an anchor for guy-wires, a base-plate, a post projecting upwardly from said base-plate, and a plurality of plates equal in diameter to the base-plate and arranged to be shifted laterally relative the base-plate and post; substantially as specified.

4. In an anchor for guy-wires, a base-plate, a post integral therewith and projecting upwardly therefrom, and a pair of plates equal in diameter to the base-plate and adapted to be shifted in opposite directions relative one another, and there being slots formed in said shifting plates through which slots passes the post carried by the base-plate; substantially as specified.

5. An anchor for guy-wires, constructed with a base-plate, a pair of plates arranged to slide upon said base-plate, there being grooves formed in the under sides of the sliding plates, and pins projecting upwardly from the base-plate into the grooves in the sliding plates; substantially as specified.

6. An anchor for guy-wires, constructed with a base-plate, a plurality of plates arranged to slide laterally upon said base-plate, a post integral with the base-plate, there being slots formed in the sliding plates through which the post projects, there being grooves formed in the under sides of the sliding plates, pins projecting upwardly from the base-plate into the grooves, and lugs formed integral with the tops of the sliding plates to be engaged by suitable separating devices; substantially as specified.

812,004. **MOLDING-MACHINE.** PHILIBERT BONVILLAIN, Paris, France. Filed Apr. 24, 1905. Serial No. 257,056.

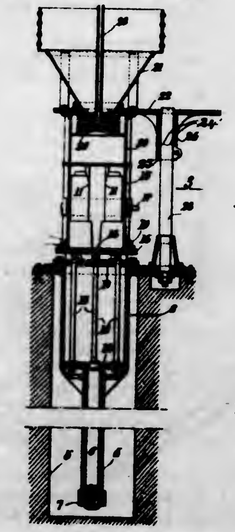

Claim.—In a molding-machine, the combination with a fixed table adapted to hold one or more similar patterns, a stripping-plate

14. An apparatus of the character described, comprising a hook-

Claim.—A jar-wrench comprising a handle formed at one end

Claim.—In a molding-machine, the combination with a fixed table adapted to hold one or more similar patterns, a stripping-plate for surrounding said patterns, vertical rods fixed to the stripping-plate and passing through the fixed table, a plate connecting the lower extremities of said vertical rods, a piston having its upper extremity fixed to said plate, a cylinder in which the piston moves, said cylinder being rigidly connected with the fixed table, a frame for surrounding the patterns and resting upon the stripping-plate, a vertical column fixed at the side of the machine, a rotatable support upon the column, a second frame of the same form as the one which surrounds the patterns, the same being fixed to the said support, a hopper surmounting the second frame, and a rammer conforming to the interior form of said frames and fitted to surround the patterns, substantially as described and for the object specified.

812,005. **MACHINE FOR SCOURING GARMENTS, FABRICS, &c.** ANDRÉ F. BORNOT, Philadelphia, Pa. Filed Jan. 9, 1904. Serial No. 188,387.

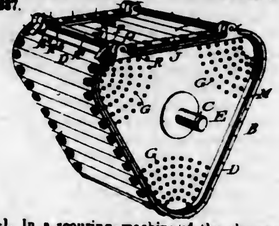

Claim.—1. In a scouring-machine of the character stated, a rumble consisting of a body, a closing-cover for the inlet thereof, braces around said body, longitudinally-extending braces on said cover, pairs of ears respectively at the pivotal and free ends of said cover, the members of each pair of ears having registering openings therein, an axial bolt passing through the ears at the pivotal end of said cover, securing-bolts passing through the ears at the free end of said cover and a tubular casing extending transversely over the cover and containing said securing-bolts.

2. In a scouring-machine of the character stated, a rumble consisting of a body, a closing-cover for the inlet thereof, braces on said body and cover respectively, ears continuous of the braces of the body, ears continuous of the braces of the cover and a fastening device in the adjacent ears of the cover and body.

3. In a scouring-machine of the character stated, a rumble consisting of a body, a closing-cover for the inlet thereof, braces on said body and cover respectively, ears continuous of the braces of the body, ears continuous of the braces of the cover, said ears having registering openings, fastening devices for the cover in said openings, and lips extending forwardly from the cover and continuous of the ears thereof and adapted to overhang the adjacent portion of the body and rest thereupon.

812,006. **APPARATUS FOR THE CONSTRUCTION OF PLASTIC WALLS.** DAVID W. BOYER, Waterloo, Iowa. Filed Aug. 12, 1905. Serial No. 273,995.

Claim.—1. An apparatus of the character described, comprising mold-sections having projections carried by their outer faces adjacent to the upper and lower edges, and having recesses in their outer faces, and stripe extending in the recesses and holding said sections in a vertical alinement.

2. An apparatus of the character described, comprising mold-sections, oppositely-arranged projections carried by the abutting ends, locking-plates having recesses to receive said projections, outwardly-extending projections carried by the upper and lower edges of said sections, and recesses in the outer side walls thereof, and a strip resting within the said recesses and holding said sections in vertical alinement.

3. An apparatus of the character described, comprising a backing, mold-sections adjacent thereto, tapering bolts securing said sections to the backing, oppositely-arranged projections carried by the abutting ends of said sections and forming tapering dovetail projections, locking-plates having dovetail recesses to receive said projections, outwardly-extending projections carried by the upper and lower edges of said sections, and having recesses in the outer side walls thereof, and a strip resting in said recesses of said projections and held therein and holding the said sections in a vertical alinement against lateral movement.

4. An apparatus of the character described, comprising a backing, mold-sections adjacent thereto, tapering bolts having a reduced screw-threaded portion passing through the backing, a nut carried thereby on the outside of the backing and the opposite end of said bolt having a reduced screw-threaded portion passing through the mold-sections, and a nut carried by said screw-threaded portion on the inside and outside of the mold-sections.

5. An apparatus of the character described, comprising a backing, mold-sections adjacent thereto, tapering bolts having a reduced screw-threaded portion passing through the backing, a nut carried thereby on the outside of the backing and the opposite end of said bolt having a reduced screw-threaded portion passing through the mold-sections, removable tapering sleeves carried by said reduced screw-threaded portion, and nuts carried thereby on the outside of the sleeve and on the inside and outside of the mold-sections.

6. An apparatus of the character described, comprising a plurality of separate mold-sections, a strip passing along the abutting edges of adjacent sections, and means for interlocking the sections with the strip.

7. An apparatus of the character described, comprising a plurality of mold-sections arranged out of line with each other, and a locking-strip spanning the junction of the said mold-sections and serving to interlock them in proper position.

8. An apparatus of the character described for forming structures with angular-arranged walls, comprising a plurality of mold-sections arranged at an angle to each other, and a locking-strip spanning the apex of the angle and extending parallel with the said sections and serving to lock them in position.

9. An apparatus of the character described for forming arch-work, comprising a plurality of mold-sections placed in arch relation, and a combined arch-shaped supporting and holding strip interlocking with said mold-sections.

10. An apparatus of the character described, comprising mold-sections having projections carried by their outer faces adjacent its upper and lower edges, and having recesses in their outer faces, and a horizontally-arranged thin strip extending in the recesses and holding said sections in a vertical alinement.

11. An apparatus of the character described, comprising mold-sections having projections carried by their outer faces adjacent their upper and lower edges, and having recesses in their outer faces, horizontally-arranged thin stripe extending in the recesses and holding said sections in a vertical alinement, projections carried by the vertical edges of the mold-sections and forming tapering dovetail projections, and a locking-plate having a dovetail recess to receive said projections and holding the ends of said sections together.

12. An apparatus of the character described, comprising a backing, mold-sections adjacent thereto, tapering bolts having a reduced screw-threaded portion passing through the backing, a nut carried thereby on the outside of the backing, and the end of said bolt having an elongated reduced screw-threaded portion passing through the mold-sections, a series of removable tapering sleeves loosely mounted on said reduced screw-threaded portion, and nuts carried thereby on the outside of the sleeve, one on each side of the mold-sections.

13. An apparatus of the character described, comprising a backing, mold-sections removably supported by the backing, outwardly-extending projections carried by the outer faces, mold-sections adjacent their upper and lower edges, and having recesses in their sides adjacent the edge of the section, and stripe extending horizontally across the line of juncture of the sections and resting in the recesses in the lugs of the adjoining sections.

14. An apparatus of the character described, comprising a backing, mold-sections removably supported thereby, and locking-plates having longitudinal recesses in their upper and lower edges to receive the adjoining edges of the mold-sections, and locking the same together.

15. An apparatus of the character described, comprising a backing, mold-sections removably supported by the backing, outwardly-extending projections carried by the outer faces of the mold-sections adjacent their upper and lower edges and alternately carried by the upper and lowar sections, and having recesses in their faces adjacent the edge of the section, and elongated thin flat strips resting in the recess in the lugs of the adjoining sections and bearing against the outer faces of the sections.

16. An apparatus of the character described, comprising a backing, mold-sections removably supported thereby, and locking-plates having longitudinally-extending recesses in their upper and lower edges of a size to snugly receive the straight smooth adjoining edges of the mold-sections and locking the same together.

812,007. **POTATO-DIGGER.** D O BOWMAN, Rockford, Mich. Filed Jan. 15, 1904. Serial No. 189,176.

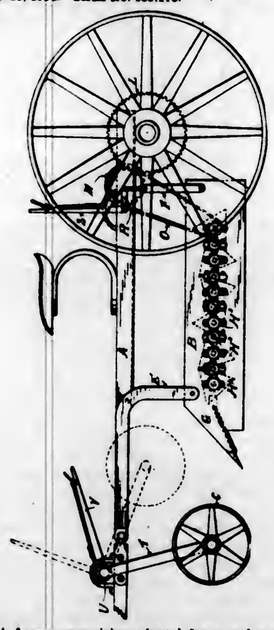

Claim.—A frame comprising pivotal front and rear sections, wheels mounted on the latter, a U-shaped axle mounted on the front section in close proximity to the pivotal connection of the frame, and wheels supported thereby, a segment carried by the front section and forming a bearing for the U-shaped axle, and a lever having means for engaging the segment to lock the axle in a raised or lowered position.

812,008. **WRENCH.** DANIEL BRAXTON, Baltimore, Md., assignor of one-third to Charles J. Dobler, Baltimore, Md. Filed Mar. 3, 1905. Serial No. 248,294.

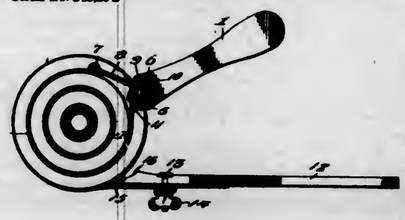

Claim.—A jar-wrench comprising a handle formed at one end with a point, and with a curved surface projecting from said point, of a band bent laterally at said point, the free end of the band being bifurcated, and a set-screw carried by the handle to engage the walls of said bifurcation, said set-screw fixedly securing the opposite end of the band to the handle whereby to secure the band in adjusted position on the handle.

812,009. **CHUTE FOR UNLOADING RAILWAY-CARS.** JOSEPH H. BRASEAL, Birmingham, Ala. Filed Sept. 2, 1905. Serial No. 276,851.

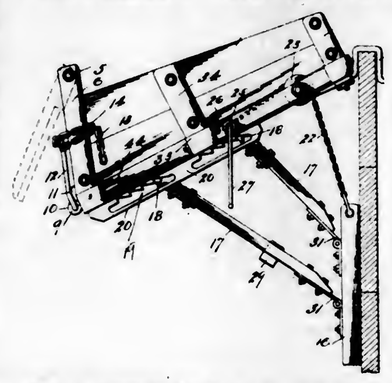

Claim.—1. A portable chute for the purpose described, having means for attachment to a car, and having brace-stays adjustably connected to the chute, and adjustable braces extending from the stays to the chute, all combined.

2. A portable chute provided with hooks for attachment to a car, brace-stays flexibly connected to the chute and in position to rest against the car, and adjustable braces extending from said stays to the chute, all combined.

3. The combination with a portable chute, of brace-stays connected by flexible means to said chute, and braces hinged to the stays and engaging racks at the lower side of the chute.

4. The combination with a portable chute, of a pair of brace-stays connected thereto by the chains, a windlass on the chute by which said chains may be wound, and adjustable braces extending from the stays to the lower part of the chute.

5. The combination with a chute, of brace-stays connected thereto by chains, a windlass by which said chains may be wound, and adjustable braces interposed between said stays and the chute, substantially as described.

6. The combination with a chute, of brace-stays connected by chains to the lower part thereof, means for adjusting the effective length of said chains, braces hinged to said stays, and means for securing the ends of said braces remote from the stays to the chute in adjusted position.

7. The combination with a chute and means for suspending the same at the side of a car, of a gate hinged above the mouth of the chute, a rock-shaft having cranks which turn to position to hold the gate closed, and means for holding said rock-shaft.

8. The combination with a chute-body having a hinged gate at one side and suspending means at the other side, of brace-stays and braces attached to the said body to fold against the same for storage or transportation.

9. The combination with a chute and braces for supporting the same from the side of a car, of suspending-hooks adjustable longitudinally of said chute.

812,010. **JOINTED RULE.** DENNIS J. BRENNAN, Shenandoah, Pa. Filed Sept. 20, 1905. Serial No. 279,612.

Claim.—1. A jointed rule having a spring interposed between two of its jointed sections tending normally when the rule is closed to press said sections apart.

2. A jointed rule having a spring carried by one of two jointed sections and tending normally when the rule is closed to press said sections apart.

3. A jointed rule having one of two jointed sections provided with a recess, a spring secured on the inner edge of said section and having a free end portion working in said recess, and a projection

having its outer edge lying between said spring and the inner edge of the other section when the rule is closed and being carried by the other of said sections, whereby when said sections are closed the

812,012.

to the lower face of said seat approximately centrally at the front thereof and of greater length than the rear legs and adapted to rest

or locking-surfaces thereon, and supported on the upper part of the frame portion, and engaging the barrel extension at two places, and

having its outer edge lying between said spring and the inner edge of the other section when the rule is closed and being carried by the other of said sections, whereby when said sections are closed the spring will be depressed.

4. A jointed rule having one of two jointed sections provided with a recess, a spring secured to the inner edge of said section and having a free end portion working in said recess and provided with a projection extending beyond the inner edge of said section whereby when said sections are folded together the spring will be depressed by contact of the second section with said projection.

812,011. CLOTHES-FRAME. CHARLES W. BROSE, New Comerstown, Ohio. Filed Aug. 21, 1902. Serial No. 120,543.

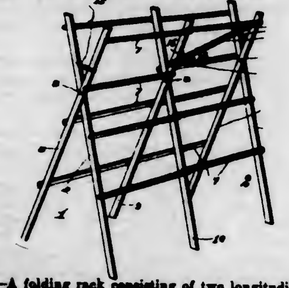

Claim.—A folding rack consisting of two longitudinally-foldable and laterally-spreadable sections, each section comprising a pair of uprights arranged side by side and pivotally joined together at points between their ends and a series of longitudinal members arranged on the outside edges of the said upright members on opposite sides of said pivotal connections and having their outer ends pivoted to said uprights, the inner ends of said longitudinal members which lie in approximately the same planes, being overlapped and pivoted to one of a pair of transversely-pivoted uprights which serve as a joining means for the two sections, each section having a single longitudinal member arranged in proximity to the transverse pivotal connections of the uprights, and on opposite sides of the frame from each other, and having their inner ends pivotally connected each to one of the aforesaid uprights joining the said sections together, respectively, substantially as set forth.

812,012. WINDING-MACHINE. GEORGE W. BROMLEY, Lake View, N. J. Filed Apr. 11, 1905. Serial No. 254,957.

Claim.—The combination of the frame, two rotary bobbin-driving shafts arranged parallel with each other, a traverse-rail, thread-guides, one for each shaft and one of them being carried by said traverse-rail, means for supporting the other thread-guide on said traverse-rail, a fixed shaft, a bracket carried by said fixed shaft, a stud arranged in said bracket and alined, and adapted to coact, with one of said rotary shafts to support a bobbin, an upright carried by said fixed shaft, a rod arranged in said upright, another bracket carried by said rod, another stud arranged in said last-named bracket and alined, and adapted to coact, with the other rotary shaft to support another bobbin, means for rotating said rotary shafts, and means for effecting the traverse of said traverse-rail, substantially as described.

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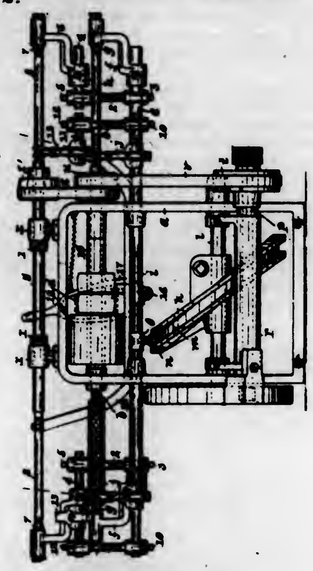

812,013. FOLDING STAIR-CHAIR. BERNET C. BROWER and JOHN D. H. SCHULS, Brooklyn, N. Y. Filed Aug. 26, 1905. Serial No. 275,262.

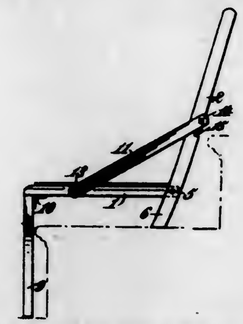

Claim.—1. A folding stair-chair comprising a seat, a pair of short rear supporting-legs pivoted to the sides of said seat, and a front supporting-leg hinged to the lower face of said seat approximately centrally at the front thereof and of greater length than the rear legs.

2. A folding stair-chair comprising a seat, a pair of short rear supporting-legs pivoted to the sides of said seat, a front supporting-leg hinged to the lower face of said seat approximately centrally at the front thereof and of greater length than the rear legs, and means to prevent the collapsing of the rear legs when the chair is extended.

3. A folding stair-chair comprising a seat, a pair of vertically-extending members pivoted at a point in proximity to the lower ends thereof to said seat and having that portion depending below said seat constituting a pair of short rear supporting-legs, a back-frame secured to said members, a front supporting-leg hinged to the lower face of said seat approximately centrally at the front thereof and of greater length than the rear legs, and means for retaining said members and back-frame in an upright position when the chair is extended.

4. A folding stair-chair comprising a seat adapted to be arranged over the top surface of a step, a pair of short rear supporting-legs pivoted to the said seat and adapted to rest upon the surface over which the chair-seat is arranged, and a front supporting-leg hinged to the lower face of said seat approximately centrally at the front thereof and of greater length than the rear legs and adapted to rest upon a surface below the plane of the surface over which the chair-seat is arranged.

5. A folding stair-chair comprising a seat adapted to be arranged over the top surface of a step, a pair of short rear supporting-legs pivoted to the said seat and adapted to rest upon the surface over which the chair-seat is arranged, and a front supporting-leg hinged to the lower face of said seat approximately centrally at the front thereof and of greater length than the rear legs and adapted to rest upon a surface below the plane of the surface over which the chair-seat is arranged, said front and rear legs of such length as to suspend the chair-seat at a point above the surface over which said seat is arranged.

6. A folding stair-chair comprising a seat adapted to be arranged over the top surface of a step, a pair of short rear supporting-legs pivoted to the said seat and adapted to rest upon the surface over which the chair-seat is arranged, a front supporting-leg hinged to the lower face of said seat approximately centrally at the front thereof and of greater length than the rear legs and adapted to rest upon the surface below the plane of the surface over which the chair-seat is arranged, and means to prevent the collapsing of said rear legs when the chair is extended.

7. A folding stair-chair comprising a seat, a pair of short rear supporting-legs pivoted thereto, a transversely-extending front supporting-leg arranged centrally of the said seat at the front thereof and having an enlarged top upon which said seat rests when the chair is extended, and a hinge for connecting the front leg to the seat, said hinge of a length equal to the length of the enlarged top of the leg.

812,014. STACKER FOR GRAIN OR THE LIKE. JOHN H. BULLOCK, Millerton, Kans. Filed June 24, 1905. Serial No. 266,770.

Claim.—1. A stacker for grain, comprising a substantially cylindrical base-section and a crown-section, the crown-section comprising a cylindrical portion for engaging into the base-section, and a conical portion having a base of greater diameter than the base-section and secured to the cylindrical portion, whereby to form an overhang at the edge of the crown of the stack.

2. A stacker for grain, comprising a base-section and a crown-section, the grain-section comprising a cylindrical portion for engaging into the base-section, and a conical portion having a base of greater diameter than the base-section and secured to the cylindrical portion, whereby to form an overhang at the edge of the crown of the stack, the base-section being substantially cylindrical and of greater diameter at its top than at the bottom, whereby to form a tapering base for the stack.

812,015. RECOIL-OPERATED FIREARM. MARTIN BYE, Worcester, Mass., assignor to Harrington & Richardson Arms Company, a Corporation of Massachusetts. Filed July 23, 1904. Serial No. 217,241.

Claim.—1. In a firearm, the combination with the frame, the slidable barrel and barrel extension thereon, and the slidable breech-bolt within the barrel extension, of a positive locking-bolt for the breech-bolt, having two projections or locking-surfaces thereon, and supported on the frame, and engaging the barrel extension, and adapted to be moved into engagement with the breech-bolt to lock the same, and out of engagement therewith to release the same.

2. In a recoil-operated firearm, a positive sliding double locking-bolt for locking the breech-bolt in its forward position, said locking-bolt consisting of a plate having its central part open or perforated, and an extension at each end on one side forming the locking-surface, and each extension having one edge beveled, and said locking-bolt operated on the recoil of the barrel, to release the breech-bolt and allow its recoil.

3. In a recoil-operated firearm, the combination with a frame portion, a barrel, a barrel extension, and a breech-bolt slidable therein, of a positive slidable double locking-bolt, having two projections or locking-surfaces thereon, and supported on the upper part of the frame portion, and engaging the barrel extension at two places, and adapted to be moved by the movement of the barrel extension, into and out of engagement with the breech-bolt, at two places, to lock the same in its forward position, and to release the same, to be moved back to its rear position.

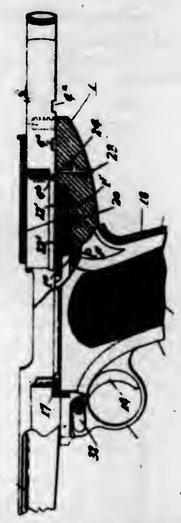

4. In a firearm, the combination with the barrel and barrel extension, the slidable breech-bolt, and the firing-pin therein, and actuating-springs for the breech-bolt and the firing-pin, within the breech-bolt, of a sear having a projection adapted to extend in the path of the firing-pin, a trigger, a trigger-pawl for engaging the sear to move it out of engagement with the firing-pin, and a slidable longitudinally-moving safety-bar adapted to engage the sear to prevent its movement, said safety-bar connected with and operated by a lever at the rear of the handle, and said lever.

5. In a firearm, the combination with the sear, and means to operate it to release the firing-pin to discharge the firearm, of a longitudinally-sliding safety-bar extending in a groove in the upper side of the frame, adapted to engage directly with the sear to prevent its operation, and a lever located at the rear of the handle and connected with said sliding safety-bar, to move the same and release the sear.

6. In a firearm, the combination with a sear, and means to operate it to release the firing-pin to discharge the firearm, of a longitudinally-sliding safety-bar moving in a groove in the upper side of the frame, and having a front hook end adapted to engage the sear to prevent its operation, and a lever located at the rear of the handle and connected with said sliding safety-bar, to move the same and release the sear.

7. In a firearm, the combination with the sear, and means to operate it to release the firing-pin to discharge the firearm, of a longitudinally-sliding safety-bar, adapted to engage and lock the sear and prevent its operation, and a lever located at the rear of the handle and connected with said sliding safety-bar, to move the same and release the sear, and a rotary bolt having a projection thereon, and a thumb-lever attached to said bolt for operating the same, said projection adapted to be moved into engagement with the sliding safety-bar to lock the same, and prevent accidental discharge of the firearm, and to be moved out of engagement with the same to release the sliding bar.

8. In a firearm, the combination with the frame, and the slidable breech-bolt, of a slide at the rear of the handle, and away from and disconnected with the magazine, said slide having a reciprocating movement within the frame, with its outer engaging end extending through the lower side of the frame, at the rear of the handle, and held in its normal position by a spring, and adapted to be moved by the hand of the operator into engagement with the breech-bolt, when it is moved into its rearmost position, and held in engagement therewith, to lock the same.

9. In a firearm having a handle, the combination with the sear, and means to operate it to release the firing-pin to discharge the fire

arm, of a longitudinal sliding safety-bar, adapted to engage and lock the sear to prevent its operation, and a lever located in an opening at the rear of the handle and connected directly with said sliding safety-bar to move the same and release the sear, and said lever having projections thereon to engage recesses in the end of the handle, to detachably secure said lever to the handle.

812,016. **HANDLE FOR FIREARMS.** MARTIN BYE, Worcester, Mass., assignor to Harrington & Richardson Arms Company, a Corporation of Massachusetts. Filed Jan. 7, 1905. Serial No. 239,986.

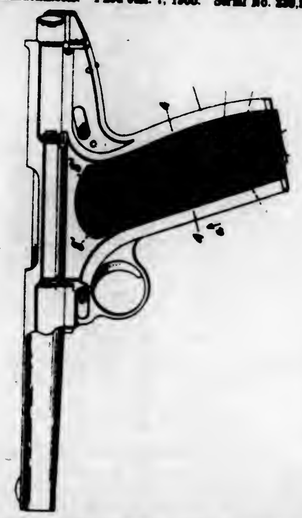

Claim.—1. In a firearm, the combination with the handle portion, of detachable cheek-pieces having stationary headed screws or attaching devices upon their inner surface, adapted to engage recesses in the handle portion, to secure the cheek-pieces thereto, and means for holding said attaching devices in engagement with said recesses, said means comprising a plate on the outer or lower end of the handle portion, substantially as shown and described.

2. In a firearm, the combination with the handle portion, of detachable cheek-pieces having stationary headed screws or attaching devices upon their inner surface, adapted to engage recesses in the handle portion to secure the cheek-pieces thereto, and means for holding said attaching devices in engagement with said recesses, said means comprising a detachable plate on the outer or lower end of the handle portion, and means for attaching and detaching said plate, substantially as shown and described.

3. In a firearm, the combination with the handle portion, of a plate having a projection thereon to extend into a recess in the end of the handle, and a rotatable stud thereon, and a projection on said stud, and an external handle to rotate said stud and move said projection into and out of engagement with a recess in the end of the handle, to attach said plate thereto, and detach it therefrom, substantially as shown and described.

812,017. **PRESSURE-REGULATOR.** ALBERT B. CARMICHAEL, Westerly, R. I., administrator of Alexander Carmichael, deceased. Filed Jan. 16, 1905. Serial No. 241,469.

Claim.—1. In a piston having a passage, a soft disk having a corresponding passage and a follower counterbored as described, and a tube having a web near its mid-length combined and arranged to serve substantially as herein specified.

2. The tube M in separable parts of different diameter and one having a web M' in combination with a soft disk, having an aperture adapted to receive it, and with a piston and a follower having each a passage and one counterbored, all substantially as herein specified.

3. A soft disk having a thick segment and an aperture in combination with a short tube having a web near its mid-length and with a correspondingly-apertured piston and follower, one of which is recessed to match, all substantially as herein specified.

812,018. **METHOD OF AND MEANS FOR RAILWAY-TRACK CONSTRUCTION.** EDWARD R. CLEMENT, Washington, D. C. Filed Dec. 18, 1905. Serial No. 292,220.

Claim.—1. The method of laying surface-contact railway-track, comprising the following steps: first arranging supporting means to carry rails during construction approximately at their final level, second supporting the rails and contacts with the latter and the securing devices supported upon the rails, and third, building final supporting means under and about the rails and contacts, substantially as described.

2. The method of laying surface-contact railway-track which comprises the following steps: first excavating and laying feeder-conduit; second, laying temporary supports; third, laying rails on the temporary supports with permanent securing devices such as yokes carried upon them; fourth centering and supporting at level upon the rails, contact devices and their appurtenances; and fifth filling or building up about both rail-supports and contacts or their supports to produce an integral monolithic composition-body, substantially as described.

3. The method of laying electric-railway track which consists in suitably excavating, supporting the rails temporarily and the contact apparatus upon the rails or rail-supports and building up around the whole a permanent supporting-body, substantially as described.

4. Apparatus for laying electric-railway track, comprising temporary rail-supports, and contact-supports, each with adjustable securing means, substantially as described.

5. Apparatus for railway construction comprising the channel-beam, with central holding means and adjustable securing means for attachment to the rails, substantially as described.

6. The apparatus described for constructing electric-railway track comprising the temporary rail-supports, and the channel beams or gages having approximately central securing means for the contacts or their supports, and terminal means for attachment to the rails or the supports thereof, substantially as described.

812,019. **BIN.** CHARLES COBBS, New York, N. Y. Filed Sept. 12, 1903. Serial No. 172,803.

Claim.—In bins the combination with a case having an opening in the front and a compartment in the rear of the opening, and a bin housed in the compartment and adapted to be swung in and out of the same, pivoted supports for the bin consisting of arms each of which has a part parallel to and rigidly fastened to the bottom of the bin and a downwardly-inclined part the lower end of which is extended downward below the bottom of the bin and pivotally connected to a plate let into the side of the case below the compartment to facilitate the detachment of the bin from the case and its removal therefrom, substantially as specified.

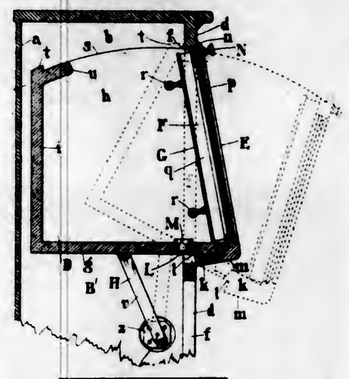

812,020. **EMBALMING-CATHETER.** HENRY M. CRIPPEN, Ballston Spa, N. Y., assignor to The Max Huncke Chemical Co., Brooklyn, N. Y. Filed Nov. 4, 1905. Serial No. 285,859.

Claim.—1. A catheter of the character specified, comprising a tube and a flexible member, and an outer slidable shield thereon.

2. A catheter of the character specified, comprising a tube and a coil-spring member, and an outer slidable shield thereon.

3. A catheter of the character specified, comprising a tube and a flexible member, an outer slidable shield thereon, and an elastic sleeve engaging the inner end of the shield and the tube, whereby to prevent leakage therebetween.

4. A catheter of the character specified, comprising a tube and a coil-spring member, an outer shield slidable thereon, and a sleeve engaging the end of the shield and the tube for preventing leakage of matter from between the inner end of the shield and the tube.

5. A catheter of the character specified, comprising a tube and a flexible member, and an outer slidable shield provided with a sleeve at the inner end thereof for engaging the tube.

6. A catheter of the character specified, comprising a tube and a flexible member, an outer sheild slidable thereon, and a sleeve of an elastic member surrounding the joint between the tube and the inner end of the shield, a portion of which fits upon the tube and the remaining portion of which fits upon the inner end portion of the shield.

812,021. **FAUCET-LOCK.** WILLIAM T. DAHL, Bottineau, N. D. Filed Sept. 15, 1904. Renewed Nov. 4, 1905. Serial No. 285,988.

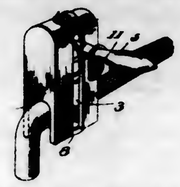

Claim.—1. A faucet-lock comprising a block open at bottom, the front and rear walls being recessed to straddle and rest upon the body of the faucet and support the lock, the side wall of the block being bifurcated to receive the key of the faucet, the walls of said bifurcation engaging the wing of the faucet-key and preventing movement thereof.

2. As an article of manufacture, a faucet-lock consisting of a hollow block open at the lower end and having a side wall slotted longitudinally from the lower end upwardly to snugly receive the faucet-key to hold the same against movement, said faucet-key adapted to project outwardly between the walls of the slot and below the upper end thereof, the front and rear walls of said block being longitudinally slotted for a comparatively short distance upwardly to snugly straddle the faucet-body and thereby center the block thereon and hold the same against horizontal oscillation, substantially as described.

812,022. **CAR FENDER AND BRAKE.** LEE A. DEVIN, San Francisco, and FRANK S. ATKINS, Oakland, Cal. Filed Nov. 6, 1905. Serial No. 285,969.

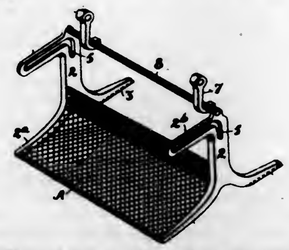

Claim.—1. The combination with a car having projections on its sides, of an emergency-brake comprising a frame having rearwardly-extending shoes adapted to contact with the track-rails said frame slidably guided by said projections, and mechanism by which said frame may be moved to project the shoes beneath the wheels of the car.

2. The combination with a car having projections on its sides, of a protective device comprising a fender and emergency-brake said brake including side frames and means for suspending them from the car, said frames having substantially horizontal channels receiving said car projections, and having, also, rearwardly-extending track-shoes, and a lever and connections by which the fender and brake may be moved substantially horizontally, and the track-shoes projected beneath the wheels of the car.

3. In a car fender and brake, side frames having front fender-supporting extensions and rearwardly-extending track-shoes, and slotted suspending-arms at the top, fixed pins extending into the slots, hangers and a lever connected therewith by which to raise and lower and move the fender horizontally.

812,028. **FISHING-REEL.** FREDERICK L. DICKSON, El Paso, Tex. Filed Feb. 21, 1905. Serial No. 246,696.

Claim.—1. In a device of the class described, in combination, a bracket having a body adapted to be attached to a rod, said body having a laterally-disposed arm integral therewith, a disk collar of enlarged diameter rigidly attached to said arm adjacent to said body, and a reel rotatably mounted on said arm and abutting against said collar.

bearing and to counteract its tendency to rotate with the spindle, | spect to the perforations and jam-nuts for locking the said members

2. In a device of the class described, in combination, a bracket adapted to be attached to a rod and presenting a laterally-disposed arm, a reel rotatably mounted upon said arm, said arm having an extension beyond said reel with an opening therethrough, a collar mounted upon said arm adjacent to the face of said reel, and a tapered pin engaging said collar and preventing rotation thereof, said tapered pin passing movably through said opening and retaining said reel.

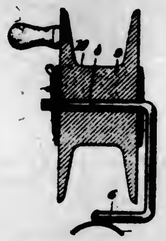

3. In a device of the class described, in combination, a bracket adapted to be attached to a rod and presenting a laterally-disposed arm with an opening near the extremity thereof, a reel rotatably mounted upon said arm, a collar mounted upon said arm adjacent to said opening, said collar having an eye on the outer face thereof, and a tapered pin passing through said eye and through said opening.

4. In a device of the class described, in combination, a bracket adapted to be attached to a rod and presenting a laterally-disposed arm with an opening at the extremity thereof, a reel rotatably mounted upon said arm, a collar mounted upon said arm adjacent to the outer face of said reel, said collar presenting an eye on the outer face thereof, and a tapered pin having a hooked extremity passing through said eye and said opening, said pin affording means for retaining said reel and locking said collar against rotation.

5. In a device of the class described, in combination, a bracket adapted to be attached to a rod and presenting a laterally-disposed arm, a collar fixed near the inner extremity of said arm, a reel mounted rotatably upon said arm and abutting on said collar, said arm projecting beyond said reel and having an opening therethrough, a second collar mounted upon said arm and abutting on the outer face of said reel, said second collar having an eye on the outer face thereof, and a pin passing through said eye and said opening, said pin affording means for locking said reel.

812,024. **MEANS FOR HANGING OVERDRIVEN CENTRIFUGAL MACHINES.** GEORGE DUNKEL, Jersey City, N. J. Filed Jan. 27, 1904. Serial No. 190,893.

Claim.—1. In a centrifugal apparatus, the combination of a universal joint, a bearing supported upon and supplemental to said universal joint above the hemispherical center thereof, a spindle suspended upon said universal joint and rotatable upon said bearing, the suspension of said spindle being directly on said bearing, and means receiving the upper end of the spindle and forming a support for a buffer.

2. In a centrifugal apparatus, the combination of a universal joint, a bearing supported upon and supplemental to said universal joint above the hemispherical center thereof, a spindle suspended upon said universal joint and rotatable upon said bearing, the suspension of said spindle being directly on said bearing, and means receiving the upper end of the spindle and forming a support for a buffer, and a resilient buffer through which said means passes, said buffer constructed to centralize the shaft without interfering with its rotation.

3. In a centrifugal apparatus, the combination of a universal joint and a roller-bearing above the same, a spindle suspended upon said universal joint and rotatable upon said bearing, said bearing being supplemental to and disposed above the hemispheric center of said universal joint, means receiving freely the upper end of said spindle, means engaging said spindle between said bearing and said first-mentioned means, and a buffer surrounding and supported by said first-mentioned means.

4. In a centrifugal apparatus, the combination of an antifriction-bearing and a universal joint, a spindle suspended upon said universal joint and directly rotatable upon said bearing, said bearing being supplemental to and supported on said universal joint above the hemispheric center thereof, a resilient buffer around the upper end of the said spindle for centralizing the same, means surrounding the upper end of said spindle and extended through said buffer, and means cooperating with the hemispherical bearing and disposed at right angles to the length of the spindle to restrict the oscillation of said bearing and to counteract its tendency to rotate with the spindle.

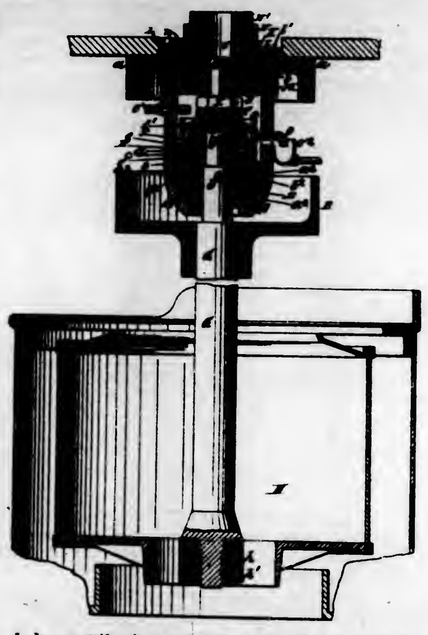

5. In a centrifugal apparatus, the combination of an antifriction-bearing and a universal joint, a spindle suspended upon said joint and directly rotatable upon said bearing, said bearing being supplemental to and supported on said universal joint above the hemispheric center thereof, a resilient buffer around the upper end of said spindle for centralizing the same, means surrounding the upper end of said spindle and extended through said buffer, and means cooperating with the hemispherical bearing and disposed at right angles to the length of the spindle to restrict the oscillation of said bearing and to counteract its tendency to rotate with the spindle.

6. In a centrifugal apparatus the combination of a spindle suspended upon a universal joint and rotatable upon a bearing supported upon said universal joint above the hemispheric center thereof, said bearing of rotation and said universal joint, a resilient buffer surrounding the end of said rotatable spindle above its center of suspension, a bushing interposed between said upper end of the spindle and the resilient medium, said bushing being formed at its lower extremity with a flange having a convex surface concentric with the said center of suspension, and a bearing-plate interposed between said convex surface of the flange and the resilient medium, said bearing-plate being formed with a concave surface concentric to said center of suspension.

7. In a centrifugal apparatus, the combination of an antifriction-bearing and a universal joint, a spindle suspended upon said universal joint and directly rotatable upon said bearing, said bearing being supplemental to and supported on said universal joint above the hemispheric center thereof, a resilient buffer around the upper end of said spindle for centralizing the same, means surrounding the upper end of said spindle and extended through said buffer, and means cooperating with the hemispherical bearing and disposed at right angles to the length of the spindle to restrict the oscillation of said bearing and to counteract its tendency to rotate with the spindle.

8. In a centrifugal apparatus, the combination of an antifriction-bearing and a universal joint, a spindle suspended upon said universal joint and directly rotatable upon said bearing, said bearing being supplemental to and supported on said universal joint above the hemispheric center thereof, a resilient buffer around the upper end of said spindle for centralizing the same, means surrounding the upper end of said spindle and extended through said buffer, means cooperating with the hemispherical bearing and disposed at right angles to the length of the spindle to restrict the oscillation of said bearing and to counteract its tendency to rotate with the spindle, said spindle being hung from a central point with which all bearing-surfaces are concentric, and a bearing-plate for said buffer, having a curved bearing on the means which passes through said buffer.

9. In a centrifugal apparatus, the combination of a universal joint, a roller-bearing supported upon and supplemental to said universal joint, a spindle suspended upon said universal joint, and rotatable on said bearing, and a resilient buffer surrounding the upper end of said spindle, and extended above the same.

10. In a centrifugal apparatus, the combination of a universal joint, and a roller-bearing supported upon and supplemental to said universal joint, a spindle supported upon and suspended from said universal joint and rotatable on said bearing, a resilient buffer surrounding the upper end of the spindle and extended above the same, and means beneath said bearing and cooperating with said joint to counteract the tendency of said spindle to oscillate laterally.

812,025. **SIGNAL.** CHARLES R. DOWLER, Lamar, Colo., assignor to The Colorado Railway Signal Company, a Corporation of Colorado. Filed Jan. 14, 1905. Renewed Dec. 18, 1905. Serial No. 292,272.

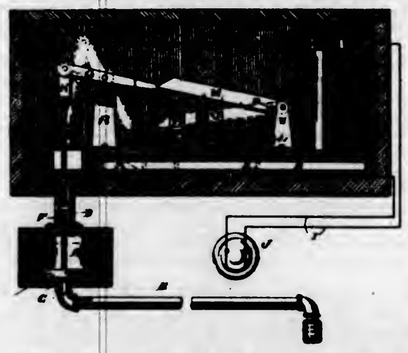

Claim.—1. The combination in a signal, of a box having an opening wherethrough fluid may enter into the box, a float in the box, a circuit-closer adapted for operation through rising action of the float, an electrical circuit having a battery and signal device therein, and means whereby the circuit-closer may be held set ready for operation through suitable connection, upon the next rising action of the float.

2. The combination in a signal, of a box suitably located at high-water level, a pipe extending from the box to position adapted to lead the high water into the box, a float in the box, a rod extending from the float, circuit-closing means wherewith the far end of said rod is connected, circuit-wires, a battery and a signal device, and means whereby the circuit-closer may be held set adapted to be operated by rising action of the float substantially as described.

3. The combination in a circuit-closer, of circuit-terminals, an arm yieldingly held at circuit-closing position, a free acting dog whereby said arm may be held out of circuit-closing position, means adapted to lift the circuit-closing arm to normal open-circuit position, and means operating the lifting-arm, substantially as described.

4. The combination in a signal employing a float and suitable connecting means, of a circuit-closer adapted for operation by a float and its connections, the circuit-closer consisting of an oscillating arm adapted for operation through the float connections, circuit-terminals, an arm yieldingly held completing circuit through the terminals, a dog whereby the circuit-closing arm may be held at open-circuit location and in position for engagement thereof by the free end of the oscillating arm, substantially as described.

812,026. **EJECTOR.** CHARLES A. DEVER, Champaign, Ill. Filed May 23, 1905. Serial No. 261,734.

Claim.—The combination with a well-tube of a fluid-pressure tube extending into the well-tube and having a plurality of perforations near the lower end, a cap having screw-threaded engagement with the lower end of the pressure-tube for closing the same, a head comprising cup-shaped members having screw-threaded engagement with said pressure-tube, the adjacent open ends of said members being spaced apart to form an annular port, the walls thereof being inclined upward and outward, the said port being centrally arranged with respect to the perforation and jam-nuts for locking the said members as adjusted.

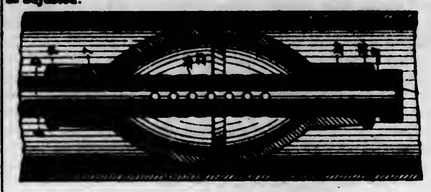

812,027. **FIBROUS PLASTIC RAILWAY-TORPEDO.** FRANK DUTCHER, Versailles, Pa. Filed Aug. 31, 1905. Serial No. 276,389.

Claim.—1. An improved railway-torpedo made of a denotating compound when in a plastic state, and a separate inclosing case therefor.

2. An improved railway-torpedo made of a detonating compound when in a plastic state, and a waterproof inclosing fibrous case therefor.

3. An improved railway-torpedo, comprising a fibrous containing-case, a detonating compound placed within the case when in a plastic condition, and an inclosing fibrous case for said containing-case.

4. An improved railway-torpedo, comprising a fibrous containing-case, a detonating compound placed within the said case when in a plastic condition, a fibrous inclosing case, and means for connecting the inclosing case with the containing-case.

5. An improved railway-torpedo, comprising a fibrous containing-case, a detonating compound placed within the case when in a plastic condition, and a fibrous inclosing case connected with the containing-case.

6. An improved railway-torpedo, comprising a flanged fibrous containing-case, a detonating compound placed within the case when in a plastic condition, a flanged inclosing case, the flanges of the two cases being connected together.

7. An improved railway-torpedo, comprising a fibrous flanged containing-case, a detonating compound placed within the containing-case when in a plastic condition, a flanged inclosing case, and a holding means surrounding the flange of the inclosing case.

8. An improved railway-torpedo, comprising a fibrous case, a detonating compound therein, and a strap-attaching member consisting of an elongated plate having ends passing through the case and bent downward upon the inner side thereof, and clamping the strap between it and the outer side of the case.

9. An improved railway-torpedo, comprising a fibrous case, a strap-attaching member extending to the inside of the case, a detonating compound within the case, and a fibrous disk between the detonating compound and the said strap-attaching member.

812,028. **FLASH-LIGHT COMPOSITION.** ARTHUR HOMBERGER, Elberfeld, Germany, assignor to Farbenfabriken of Elberfeld Co., New York, N. Y., a Corporation of New York. Filed June 17, 1905. Serial No. 265,306.

Claim.—1. The herein-described new flash-light powders being prepared from metallic powders, which have a strong affinity for oxygen and are therefor easily combustible and the combustion of which produces a light of great intensity, with tungstic acid and derivatives, which flash-light powders burn slowly in comparison to the ordinary flash-lights for instantaneous exposure and produce great luminosity, substantially as described.

2. The herein-described new flash-light powder being a mixture of magnesium with tungstates, substantially as described.

812,029. **KILN.** HENRY T. HYMANSON, San Francisco, Cal., assignor of one-half to George W. Clarke, East Liverpool, Ohio. Filed June 10, 1905. Serial No. 264,963.

Claim.—1. In a kiln, the combination with a suitable base, of a

3. In a device for controlling the flow of water, a pipe and casing

Claim.—1. In a kiln, the combination with a suitable base, of a gas-burner, a jacket, and a fire-pot within said jacket, said fire-pot having a thick bottom and walls tapering in thickness toward the top.

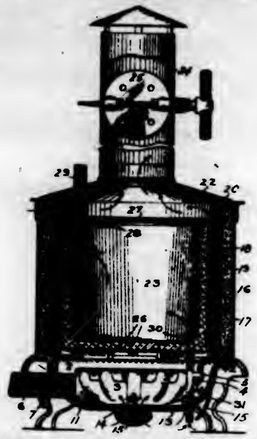

2. In a kiln, combination with suitable base, of a gas-burner, an inclosed heating-chamber having a flue leading therefrom, a damper controlling said flue, a fire-pot within said chamber, means for admitting air to said fire-pot from below, a cover for said fire-pot, and a pipe leading from said fire-pot and passing out through the walls of said fire-chamber to the atmosphere.

812,080. FLUSHING-TANK VALVE. JOB E. ERICSON, San Francisco, Cal. Filed June 26, 1905. Serial No. 266,963.

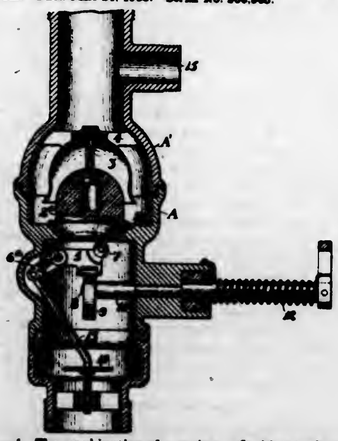

Claim.—1. The combination of a casing, a flushing-tank valve, a seat upon which the valve is closable, a hood located above the valve and within which the valve lies when opened, said casing having a passage which surrounds the hood and through which the flushing-water passes without pressure upon the valve, and means for opening the valve said means including a pivoted lever below the valve and having one portion to contact therewith to lift the valve, and a member suspended from the opposite portion of the lever in the path of the rush of water whereby said member is actuated by the water-flow to hold the valve open until the water is discharged.

2. In a flushing apparatus, a pipe and casing through which the water is discharged, a hood located in the upper part of the casing and having an annular passage for the water around it, a valve-seat located below the hood, a valve reciprocable between the seat and the hood, a lever-arm below the valve having one end to engage said valve whereby the valve is raised from its seat into the hood, and means carried by the other end of the lever-arm and actuated by the water-flow by which the valve is held until the water is discharged.

3. In a device for controlling the flow of water, a pipe and casing through which the water flows, a valve-seat located within the casing, a vertically-movable valve closable upon the seat, a hood fixed above the valve when opened, said hood having an annular water-passage around it, a fulcrumed lever, one end of which contacts with the valve to open it, means carried by the other end of the lever and within the path of the flowing water whereby the valve is retained in an open position during said flow.

4. In a flushing and like device, a passage and casing through which the water is delivered, a valve-seat located within the casing, a rising and falling valve closable upon the sea, means for opening said valve, said means comprising a fulcrumed lever, one end of which contacts with the bottom of the valve, a shaft having a cam or eccentric contacting with said lever, said shaft being rotatable so that the cam will act through the lever to open the valve, a rod suspended from the opposite end of the lever carrying a disk in the path of the flowing water so that the pressure upon the disk will hold the valve open, and a hood located above the valve, within which the valve is protected during the flowing of the water.

812,081. TRUSS. GEORGE M. FARLINGER, Rossland, Canada, assignor to C. B. Heard, Victoria, British Columbia, Canada. Filed Apr. 27, 1905. Serial No. 257,791.

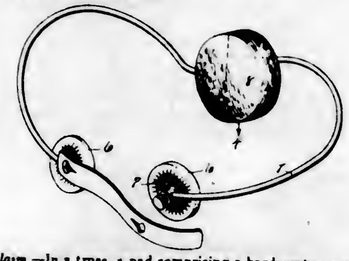

Claim.—In a truss, a pad comprising a hard center, a yielding ring surrounding the same, a covering for said center and ring passed around the center and ring and interposed between the two and doubled upon itself at the acting face of the pad, and a soft covering over said ring and covering, all substantially as shown and described.

812,082. LUBRICATOR. JOHN C. FICKES, Steubenville, Ohio, assignor to Buckeye Lubricating Company, Steubenville, Ohio, a Corporation of Ohio. Filed Aug. 4, 1905. Serial No. 272,709.

Claim.—1. In a lubricator, the combination with a suitable reservoir having a drain-opening and sight-openings, of a detachable head carried by said reservoir, said head having a condensing-chamber formed therein with a suitable opening, said head having an opening formed therein in substantially horizontal alinement with said opening, a steam-pipe extending through said head into said reservoir, an oil-receptacle carried by said head and communicating with said reservoir, said head having vertically-disposed ports formed therein, and communicating with said chamber, a pipe carried by said head and communicating with one of said ports and extending downwardly into said reservoir, said head having a cleansing-port formed therein, needle-valves controlling the first-named ports, sight-glasses carried by said head, substantially as described.

2. In a lubricator, the combination with a suitable reservoir adapted to contain a premelted lubricant, of a head having a lubricant-receptacle formed therein, said head having a chamber formed therein, said head having a plurality of ports formed therein, establishing communication between said reservoir and said chamber, said head having an outlet-opening and said chamber having an opening at its top in substantially horizontal alinement with the outlet-opening of the head, means to separately control the communication between the chamber and the reservoir through said ports, and a steam-pipe extending through said lubricant-receptacle and through a port establishing communication between said receptacle and said reservoir to heat the lubricant in said receptacle.

3. In a lubricating device, the combination with a reservoir having a detachable head, of a chamber formed in said head, and having an opening in its top, said head being provided with an opening disposed in substantially horizontal alinement with the opening in the top of said chamber, and said head being formed with a port extending from the chamber to the reservoir, a pipe extending into said reservoir and adapted to convey steam thereto, and means for controlling the passage of condensed steam from the reservoir into the chamber, through the said ports.

4. In a lubricating device, the combination with a reservoir and a detachable head mounted on said reservoir, said head being formed with a central chamber having an opening at its top, said head being also formed with a lateral opening in substantial alinement with the opening at the top of said chamber and said head being formed with an oil-receptacle disposed at one side of said chamber and with ports leading from said chamber to said reservoir and from said receptacle to said reservoir, of a steam-pipe passing through said receptacle and through the port leading from said receptacle to the reservoir, said head being formed with a by-pass port leading from said reservoir to the space between the lateral opening in the head and the opening at the top of said chamber.

5. In a lubricator, the combination with a suitable reservoir of a detachable head carried by said reservoir, said head having a condensing-chamber formed therein and with an opening in its top, said head having an outlet-opening disposed in substantially horizontal alinement with the opening in the top of said chamber, an oil-receptacle formed integral with said head, and communicating with said reservoir, said head being formed with a vertically-disposed port providing communication between the reservoir and chamber, and said head being provided with a port leading from the reservoir to a point between the opening in the top of the chamber and the outlet-opening of said head.

6. In a lubricator, the combination with a suitable reservoir of a detachable head carried by said reservoir, said head having a condensing-chamber formed therein and with an opening in its top, said head having an outlet-opening disposed in substantially horizontal alinement with the opening in the top of said chamber, an oil-receptacle formed integral with said head, and communicating with said reservoir, said head being formed with a vertically-disposed port providing communication between the reservoir and chamber, and said head being provided with a port leading from the reservoir to a point between the opening in the top of the chamber and the outlet-opening of said head, and a pipe carried by said head and extending from said port to a point adjacent the bottom of said reservoir.

812,083. COLUMN. ALONZO H. FLOWERS, Miami, Fla. Filed July 1, 1904. Serial No. 215,011.

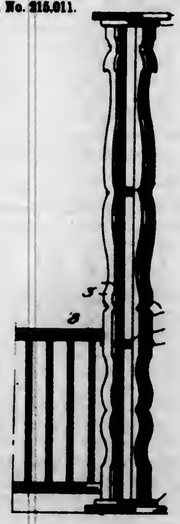

Claim.—A column comprising a plurality of longitudinal bars having flat sides and continuous straight inner edges, the bars being also provided with edgewise openings extending transversely through the same, solid spacing-blocks having on their peripheries squared bearings arranged at suitable distances apart so as to contact with the straight inner edges of the bars, said blocks being provided with openings extending into their solid body portions, said openings coinciding with the openings of the bars, bolts secured in the openings of the bars and those of the blocks to permit of the flat sides of the bars being spaced at equal distances apart throughout their entire lengths, the bars being further provided on opposite ends with disks and supporting-blocks, and said bars when secured to the blocks having their surrounding front face edges extending outwardly, substantially as specified.

812,084. REIN-HOLDER. ISHAM G. FORSHEE, Versailles, Ky. Filed Aug. 29, 1905. Serial No. 276,304.

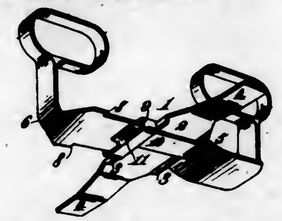

Claim.—1. A rein or line holder having a longitudinal base-support, a cross-support engaging the base-support and formed with reduced extremities continued into inwardly-projecting horizontally-disposed loops which are held at an elevation above the said cross-support, an under clasp secured at one extremity, and means for detachably securing the free extremity of said clasp.

2. A rein or line holder having oppositely-disposed rein-loops, and a clasp secured to the under portion thereof to removably engage a part of the harness.

3. A rein-holder having rein-loops, a resilient clasp extending across the under portion of the same and secured at one end, and means for detachably securing the free end of said clasp.

4. A rein-holder having rein-loops and a lower longitudinally-extending seat, a clasp extending across the seat, and means for detachably securing one end of the clasp.

5. A rein-holder having a longitudinally-disposed base-rest formed with an under seat and tongues at its opposite extremities, a cross support intersecting the base-rest and provided with reduced extremities continued into inwardly-projecting horizontally-disposed rein-loops, a clasp extending across the under portion of the base-rest, and a loop slidable on part of the cross-support to detachably engage one end of the clasp.

6. A rein-holder having a longitudinally-extending base-support, a cross-support engaging the base-support and provided with reduced extremities bent upwardly and continued into inwardly-projecting rein-loops, a portion of the cross-supports having outer stop-shoulders, a box-loop slidable on the portion of the support having the stop-shoulders, and a resilient clasp extending across the under side of the base-support, the box-loop being movable over the free extremity of the clasp.

812,085. NUT-LOCK. JAMES W. FRANKLIN, Boston, Ga. Filed May 5, 1905. Serial No. 259,944.

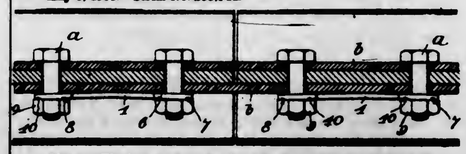

Claim.—The herein-described nut-lock, consisting of the spring-washer made from a rod 1 of steel and having its intermediate portion bent reversely, as at 2, 3 and having its end portions oppositely curved to form the openings 5 for the bolts *a*, said oppositely-curved portions being provided with notches 6, said notches each having an abrupt shoulder 7 and an inclined portion 8, in combination with the bolts *a* and nuts 9, said nuts each having upon their inner face pro-

jections 10 which register with and engage the notches 6, said projections each having an inclined face and an abrupt shoulder to engage and fit the notches 6, essentially as described.

812,086. SHUTTER-BOWER. JOHN L. GUYOT, Mount, Pa. Filed Oct. 15, 1904. Serial No. 228,579.

Claim.—1. A shutter-bower comprising two pivoted bars adjustable on their pivots to different inclined positions vertically and laterally with relation to the shutters, one of said bars being provided with notches or seats and spaced retaining-hooks and the other with a hook to engage said notches or seats and adapted to be held in alinement with the first-named member by the retaining-hooks thereon.

2. A shutter-bower comprising two pivoted members adjustable on their pivots to different inclined positions with relation to the shutters, one of said members being provided in its upper edge with a series of keepers and the other with a latch-hook projecting rearwardly from its upper edge to engage said keepers to connect the two members together in a variety of positions, the said member having the keepers further being provided with forwardly-projecting upper and lower retaining-hooks disposed in close relation but at different distances from the free extremity of said member, said hooks being adapted to engage the latch-hook-carrying member when said latch-hook is engaged with one of the keepers to hold the members rigidly connected, said retaining-hooks having their adjacent edges beveled to form an interposed throat extending diagonally to the axis of the keeper member, substantially as and for the purpose described.

812,087. VEHICLE. JOHN H. HARRON and JOHN J. PETRABORG, Aitkin, Minn. Filed Feb. 23, 1905. Serial No. 246,371.

Claim.—1. The combination with a vehicle-body, of side bars and end bars pivotally connected at their ends to one another, and each pivotally connected intermediate its ends to the vehicle-body.

2. The combination with a vehicle-body, of side bars and end bars each pivoted centrally to the respective sides and ends of the vehicle-body, and being pivotally connected with one another, and supports for the vehicle carried by sundry of said bars.

812,088. REGULATION OF ELECTRIC CURRENTS WHICH FEED ELECTRIC ARCS. JOHANNES ERICHSEN, Ludwigshafen-on-the-Rhine, Germany, assignor to Badische Anilin & Soda Fabrik, Ludwigshafen-on-the-Rhine, Germany, a Corporation. Filed Nov. 23, 1904. Serial No. 234,503.

Claim.—The process of supplying currents to a plurality of circuits containing arcs suitable for the production of compounds of nitrogen and oxygen with the minimum displacement of phase, which consists in generating an alternating current, supplying therewith the primary of a transformer and an arc, and feeding a different arc with the secondary current from the transformer.

812,088.

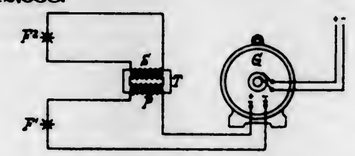

812,089. RAIL-JOINT. DAVID HEWITT, Homewood, Pa. Filed Oct. 26, 1905. Serial No. 284,462.

Claim.—1. In a rail-joint, the combination with rails having a single row of recesses formed centrally of in the bottom of the base-flanges, of a chair having openings formed therein, a single row of centrally-disposed pins carried by said chair and adapted to extend into the recesses of said rails, said chair having a flanged edge, an angularly-disposed flange carried by the opposite edge of said chair, fish-bars engaged by said chair and adapted to support rails mounted upon said chair, one of said fish-bars having its edge cut away to receive the flange on one side of the base-plate, the other of said fish-bars having notches in its edge registering with the openings in the chair and means to secure one of said bars in engagement with said chair, substantially as described.

2. In a rail-joint, the combination with rails having recesses formed therein, of a chair, pins carried by said chair and adapted to engage in said recesses, flanges carried by the edges of said chair, fish-bars engaging said flanges and supporting the confronting ends of said sections of rails upon said chair, one of said fish-bars having its edge cut away to receive the flange at one edge of said chair, the other of said fish-bars having notches in its edge and means to lock said fish-bars in engagement with said chair, substantially as described.

812,040. RAIL-BOND FOR STREAM AND ELECTRIC RAILWAYS. FRANK C. HOFFMAN, Somerville, N. J. Filed Nov. 12, 1904. Serial No. 232,599.

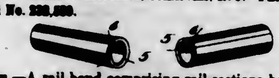

Claim.—A rail-bond comprising rail-sections having the webs of their meeting ends provided with tapered openings therein, split sleeves having cut-away overlapping edges mounted in said openings, a wire having angular bent ends, said ends passing through said sleeves, and said sleeves serving to be forced or driven into said openings to tightly embrace the inclosed ends of the wire which action also permits of said sleeves being capable of conforming to the configuration of said tapered openings in said webs, substantially as specified.

812,041. DECORTICATOR. FRANZ HOLTHAUSEN, Hessen, Germany. Filed Jan. 3, 1905. Serial No. 239,469.

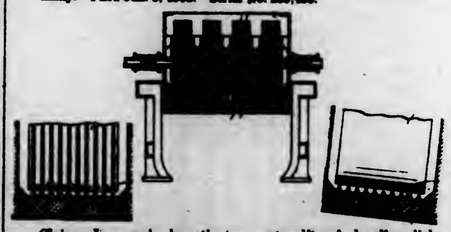

Claim.—In a grain-decorticator, a plurality of abrading-disks mounted on a horizontal shaft, ribs on said disks in line with the direction of rotation of the disks, a set of stationary segments cooperatively arranged beneath the disks and being provided with parallel ribs on their surfaces adjacent the disks, said ribs of the segments extending slightly transversely to the direction of rotation of the disks, for the purpose specified.

812,042. DEVICE FOR MEASURING THE THICKNESS OF PAPER. BENJAMIN S. HUDSON, Castleton, N. Y. Filed Oct. 17, 1902. Serial No. 127,754.

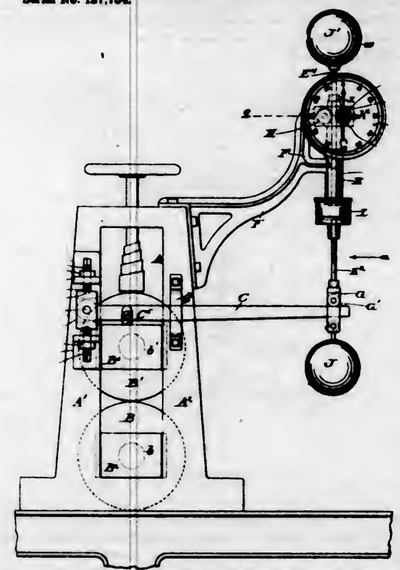

Claim.—1. In a device for measuring the thickness of a running web of paper while moving between the finishing-cylinders of a calendering-machine, the combination with a movable part of a calendering-machine, a scale comprising marks of divisions and subdivisions, a pointer adapted to be brought to marks or points on said scale which arbitrarily indicate thickness, a pivoted lever connected to the movable part of the calendering-machine, a reservoir containing fluid, means intermediate the lever and the reservoir for forcing the fluid against a piston and a piston operatively connected with the pointer, the movement of the lever forcing the fluid against the piston to bring the pointer and a thickness-mark on the scale into correspondence when the lever is moved.

2. In combination, a calendering mechanism having actuating mechanism, an indicator, indicator-actuating mechanism, a fluid-reservoir of larger area than the end of the actuating mechanism and coöperating therewith, a piston in said reservoir which is disconnected from the end of the actuating mechanism, a rod connected therewith, and a pivoted lever connected with the rod and actuated by the actuating mechanism on the calendering mechanism, the indicator registering the thickness of the paper.

3. In combination, a calendering mechanism, an indicator, mechanism for operating the indicator, a fluid-reservoir of larger area than the end of the mechanism which operates the indicator and operatively connected therewith, a piston in said reservoir which is disconnected from the end of the latter actuating mechanism, a rod connected with the piston, and a pivoted lever connected with the rod and actuated by the calendering mechanism, the indicator registering the thickness of the paper.

4. In combination, a calendering mechanism having a movable part, an indicator, a roller connected to the pointer of the indicator, a rod contacting with said roller, a piston at the end of the rod, a fluid-reservoir of larger area than the piston and coöperating therewith, a piston in the reservoir, a piston-rod connected therewith, and a pivoted lever actuated by the movable part of the calender mechanism as the paper passes through the same, the movement of the lever indicating at the indicator the thickness of the paper.

5. In combination, a calender mechanism, an indicator, a roller connected to the pointer of the indicator, a rod contacting with said roller, a weight on the upper end of the rod, a piston at the opposite end of the rod, a cylinder in which the piston operates, a fluid-reservoir of larger area than the piston, a piston in the reservoir, a rod connected to said latter piston, a weight at the end of the rod, a pivoted lever actuated by the calendering mechanism, the movement of the lever indicating at the indicator the thickness of the paper.

6. A device for measuring the thickness of paper comprising a frame, an indicator bearing scale-marks, a pointer coöperating with the scale-marks, a roller secured to the pointer, a rod engaging the periphery of the roller, a cylinder in which the end of the rod operates, a reservoir containing fluid and communicating with the cylinder, a piston in the reservoir and means for connecting the piston with a paper-treating machine, whereby the thickness of the paper being treated will cause the piston to force the fluid against the rod and actuate the pointer.

7. A device for measuring the thickness of paper comprising a frame, an indicator bearing scale-marks, a pointer coöperating with the scale-marks, a roller secured to the pointer, a second roller spaced from the pointer-roller, a rod passing between the rollers and in contact therewith, a cylinder in which the end of the rod operates, a reservoir containing fluid and communicating with the cylinder, a piston in the reservoir, and means for connecting the piston with a paper-treating machine, whereby the thickness of the paper being treated will cause the piston to force the fluid against the rod and actuate the pointer.

8. A device for measuring the thickness of paper, comprising a frame, an indicator bearing scale-marks, a pointer coöperating with the scale-marks, a roller connected to the pointer, a rod for operating mechanism between the roller and a calendering-machine for ing the roller, means for adjusting the roller in relation to the rod, imparting motion to said roller when paper is being treated.

9. A device for measuring the thickness of paper, comprising a frame, an indicator bearing scale-marks, a pointer coöperating with the scale-marks, a rod actuating the pointer, a weight carried by one end of the rod, a piston formed on the other end of the rod, a cylinder in which the piston operates, a reservoir containing liquid and communicating with the cylinder, a piston in the reservoir and spaced from the piston on the rod, a rod connected to the reservoir-piston, a yoke on the end of said rod, a weight connected to the yoke, and a pivoted lever fitting in the yoke.

10. A device for measuring the thickness of paper, comprising a frame, an indicator bearing scale-marks, a pointer coöperating with the scale-marks, a piston actuating the pointer, a cylinder in which the piston operates, a reservoir of larger area than the cylinder and containing fluid and communicating with the cylinder, a piston in the reservoir spaced from the cylinder, and means for connecting the piston to a paper-treating machine.

812,043. SIDE BRACE OR ANCHOR FOR DREDGERS. JAMES P. KARR, Monticello, Ind. Filed Nov. 12, 1903. Serial No. 180,869.

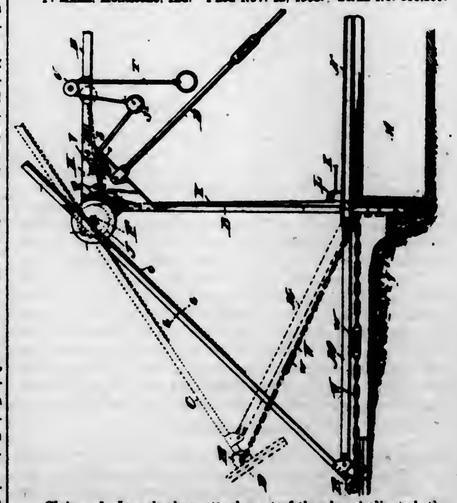

Claim.—1. In a dredger attachment of the class indicated, the combination with a scow or equivalent, and a frame thereon, of a

spud or brace, and means for guiding the same on the frame, a bar connecting it pivotally with the scow, and a platform which is pivotally connected with the lower end of the brace at a point nearer its

ing a bolt-retracting means, a locking device for said retracting means, operating means for said device, and operating means for

said base or mat, and one end thereof to be buried in the river-bank

oped or brace, and means for guiding the same on the frame, a bar connecting it pivotally with the scow, and a platform which is pivotally connected with the lower end of the brace at a point nearer the outer edge of the platform than the inner edge of the same, substantially as and for the purpose specified.

2. In a dredger attachment of the class indicated, the combination with the scow and a vertical frame thereon, of the inclined brace and a bar pivotally connecting its lower end with the scow, a platform having a socket for reception of the spherical end of the brace; and provided with lateral ears, and chains extending therefrom toward the ends of the scow and provided with turnbuckles, substantially as shown and described.

3. In a dredger attachment of the class indicated, the combination with a scow, a vertical frame, a rotatable shaft having a pinion and arranged in bearings on said frame, a brace constructed of metal and having side flanges or ribs, a rack arranged in the groove between said flanges, and a bar which pivotally connects the lower end of the brace with the scow, substantially as described.

4. In a dredger attachment of the class indicated, the combination with a scow or equivalent, and a vertical frame thereon, of a brace, a platform, and a bar which pivotally connects the lower end of the brace with the scow, of a shaft mounted in bearings on the upper portion of the frame, and provided with a pinion engaging the rack of the brace and with a winding-drum, and a hoisting-cable applied to the latter and extending downward to the deck of the scow, and means for locking the said shaft, substantially as described.

5. In a dredger attachment of the class indicated, the combination with a scow, and a frame fixed thereon, of a brace having a rack-bar, a platform, and a bar which pivotally connects the lower end of the brace with the scow, of a shaft which is journaled in the upper portion of said frame, and provided with a pinion engaging the rack of the brace, and a wheel provided with sockets, of a slidable bolt adapted to engage the said wheel, and means for moving the same into or out of engagement with the wheel, substantially as described.

6. In a dredger attachment of the class indicated, the combination with the scow, a frame fixed thereon, and a platform and brace, of a rotatable shaft having a pinion which engages the rack of the brace, and the wheel provided with sockets, a slidable locking-bolt adapted to engage said wheel, a pivoted lever and a link connecting it with the bolt, whereby the adjustment of the free end of the lever effects engagement and disengagement of the bolt with the wheel, substantially as described.

7. In a dredger attachment of the class indicated, the combination with a scow, a vertical frame, an inclined brace having a rack-bar, of a shaft journaled horizontally in said frame, and a pinion thereon which engages the rack, and a wheel provided with peripheral sockets, a slidable locking-bolt adapted to engage said sockets, a pivoted and weighted lever, and a link connecting it with the bolt, and a rope attached to the free end of the lever and serving to raise it, as and for the purpose specified.

8. In a dredger attachment of the class indicated, the combination with the scow, and a vertical frame fixed thereon, of an inclined brace having a rack affixed, a rotatable shaft arranged horizontally on said frame and provided with a pinion which engages the rack and with a wheel having peripheral sockets which are undercut as described, of a slidable bolt having an enlarged head, and means for operating the same, substantially as described.

9. In a dredger attachment of the class indicated, the combination with the scow, and a frame fixed thereon, of an inclined brace having a rack affixed, a rotary shaft journaled horizontally in said frame and having a pinion which engages the rack, and a wheel provided with peripheral sockets which are undercut as described, a slidable bolt having an enlarged head adapted to enter said sockets, and keepers arranged adjacent to the wheel and adapted to engage a shoulder formed on the head of the bolt, substantially as described.

10. In a dredger attachment of the class indicated, the combination with the scow, a frame mounted thereon, an inclined brace having a rack-bar, a shaft journaled in said frame and having a pinion engaging the rack-bar, and a wheel provided with sockets, of a slidable bolt held in keepers on said frame, a pivoted weighted lever, and a link connecting it with the said bolt, and a stop-plate arranged on the frame for engagement with the inner end of the lever, for holding the bolt engaged with the wheel, substantially as described.

812,044. **BOLT OPERATING AND LOCKING MECHANISM.** WILLIAM J. KAMMERMAN, Buffalo, N. Y., assignor to Cary Safe Company, Buffalo, N. Y., a Corporation of New York. Filed Mar. 26, 1903. Serial No. 149,329.

Claim.—1. A bolt operating and locking mechanism comprising a bolt-retracting means, a locking device for said retracting means, operating means for said device, and operating means for said bolt-retracting means, said operating means for said device moving in an opposite direction with respect to the direction of movement of the operating means for the said bolt-retracting means, said bolt-retracting means when in its operative position engaging said locking means and retaining it from movement until the retracting means is moved to inoperative position, combined with one or more bolts connected to said retracting means and adapted to be moved in one direction by said means, and a casting means engaging said bolt or bolts for operating it or them in the opposite direction when said retracting means is released.

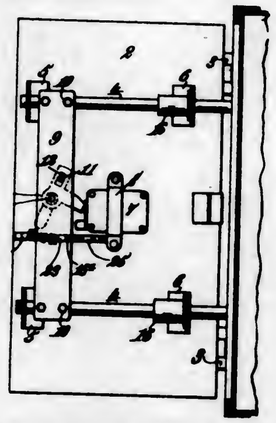

2. A bolt operating and locking mechanism comprising a bolt-retracting means, a locking device for said retracting means, a key for operating said device, and a handle for operating said bolt-retracting means, said key operating in a different direction with respect to the direction of movement of the said handle, said bolt-retracting means when in its operative position engaging said locking means and retaining it from movement until the retracting means is moved to inoperative position, combined with a bolt connected to said retracting means and adapted to be moved in one direction by said means, and a casting means engaging said bolt for operating it in the opposite direction when said retracting means is released.

3. A bolt operating and locking mechanism comprising a bolt-retracting means, a locking device for said retracting means, operating means for said device, and operating means for said bolt-retracting means, said operating means for said device moving in an opposite direction with respect to the direction of movement of the operating means for the said bolt-retracting means, combined with one or more bolts connected to said retracting means and adapted to be moved in one direction by said means, a casting means engaging said bolt or bolts for operating it or them in the opposite direction when said retracting means is released, and a trip device for releasing said retracting device.

4. A bolt operating and locking mechanism comprising a bolt-retracting means, a locking device for said retracting means, a key for operating said device, and a handle for operating said bolt-retracting means, said key operating in a different direction with respect to the direction of movement of the said handle, combined with one or more bolts connected to said retracting means and adapted to be moved in one direction by said means, a casting means engaging said bolt or bolts for operating it or them in the opposite direction when said retracting means is released, and a trip device for releasing said retracting device.

5. A bolt operating and locking mechanism comprising a bolt-retracting means, a locking device for said retracting means, operating means for said device, and operating means for said bolt-retracting means, said operating means for said device moving in an opposite direction with respect to the direction of movement of the operating means for the said bolt-retracting means, said bolt-retracting means when in its operative position engaging said locking means and retaining it from movement until the retracting means is moved to inoperative position, combined with one or more bolts connected to said retracting means and adapted to be moved in one direction by said means, a casting means engaging said bolt or bolts for operating it or them in the opposite direction when said retracting means is released, and a trip device for releasing said retracting device.

6. A bolt operating and locking mechanism comprising a bolt-retracting means, a locking device for said retracting means, a key for operating said device, and a handle for operating said bolt-retracting means, said key operating in a different direction with respect to the direction of movement of the said handle, said bolt-retracting means when in its operative position engaging said locking means and retaining it from movement until the retracting means is moved to inoperative position, combined with a bolt connected to said retracting means and adapted to be moved in one direction by said means, a casting means engaging said bolt for operating it in the opposite direction when said retracting means is released, and a trip device for releasing said retracting device.

7. A bolt operating and locking device comprising as a part thereof, a bolt-retracting means, said means comprising a bolt-carrying bar, a lug secured to said bar, a bell-crank having one of its arms slotted into which operates the said lug, a shaft having its inner end fixed to said bell-crank, a handle fixed to the outer end of said shaft, and a beveled lug carried by said bar, combined with a trip device engaging said beveled lug and acting as a means for retaining said retracting means in its operative position.

8. A bolt operating and locking device comprising as a part thereof means for simultaneously and automatically casting a plurality of bolts, said means comprising a barrel for each of the bolts, an expansion-spring arranged in the barrel and adapted to surround the bolts, combined with a bolt extending through each of the barrels and each having a protuberance engaging its respective spring for compressing it when the bolt is moved in one direction, a bar for connecting the bolts together, and a trip engaging the bar for arresting the movement thereof, thereby retaining the springs in a compressed position until the trip is released to permit of the automatic and simultaneous casting of the bolts.

9. A bolt operating and locking device comprising the combination with a bolt, of a retracting means connected with the bolt and adapted when operated to move the bolt in one direction, a casting means engaging the bolt and adapted to move it in an opposite direction, and a locking means for the retracting means when the bolt is cast, said retracting means when moved to operative position adapted to act as a retaining means for holding the locking means in an inoperative position.

812,045. **FASCINE.** HENRY F. KELLNER, North Platte, Nebr., assignor to Jennie Whitney, Fremont, Nebr. Filed Apr. 27, 1905. Serial No. 257,563.

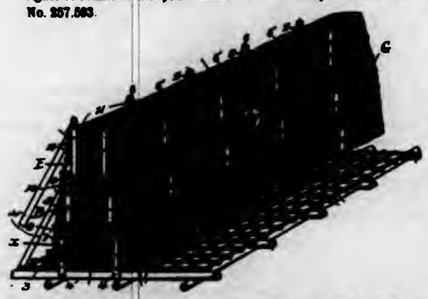

Claim.—1. A fascine of permeable substance, built up of sections and having opposite ends projecting beyond the main body portion.

2. A fascine of permeable substance, consisting of a plurality of sections, and having projecting ends, in combination with a mat or base.

3. A fascine of permeable substance, consisting of a plurality of sections, the lower sections being secured to a mat or base, wire covering secured to each side of said sections and the top of said mat or base, and means for bracing said sections, substantially as described.

4. A fascine, comprising a wall of permeable substance protected by means of wire covering, and having opposite projecting ends in combination with a base or mat having the wire covering and provided with brace members to support aforesaid wall.

5. A fascine of the character described consisting of a base or mat provided with a wire covering, upright sections of permeable substances extending upward from said base or mat to form the permeable wall, said wall having opposite ends projecting beyond said base or mat, and one end thereof to be buried in the river-bank, and in combination with the shore-cables to help support and hold the fascine in place.

812,046. **SHELL-FUSE.** WILLIAM M. KINSHAW, Washington, D. C. Filed Nov. 11, 1904. Serial No. 232,341.

Claim.—1. In a shell-fuse, the combination with a suitable stock, of a normally restrained time mechanism, a fixed magazine, and means fired by the charge in the fixed magazine to release the time mechanism.

2. In a shell-fuse, the combination with a suitable stock of a normally restrained time mechanism, a fixed magazine, means fired by the charge in the fixed magazine to release the time mechanism, and means for regulating the speed of travel of said time mechanism.

3. In a shell-fuse, the combination with a suitable stock, of a fixed magazine, a normally restrained time mechanism, and an ejector for releasing said time mechanism.

4. In a shell-fuse, the combination with a suitable stock, of a fixed magazine, a normally restrained time mechanism, an ejector for releasing said time mechanism, and means for regulating the speed of travel of the time mechanism.

5. In a shell-fuse, the combination with a suitable stock, of a normally restrained time mechanism, a fixed magazine, means fired by the charge in the fixed magazine to release the time mechanism, and a valve for regulating the speed of travel of said time mechanism.

6. In a shell-fuse, the combination with a suitable stock, of a fixed magazine, a normally restrained time mechanism, an ejector for releasing said time mechanism, and a valve for regulating the speed of travel of the time mechanism.

7. In a shell-fuse, the combination with a suitable stock, of a fixed magazine, a normally restrained traveling magazine, means for releasing said traveling magazine, and means for causing the traveling magazine to move at a uniform rate of speed.

8. In a shell-fuse, the combination with a suitable stock, of a fixed magazine, a normally restrained traveling magazine, means for releasing said traveling magazine, and cup-washers or valves adapted to cause the traveling magazine to travel or move at a uniform rate of speed.

9. In a shell-fuse, the combination with a suitable stock, of a fixed magazine, a normally restrained traveling magazine, means for releasing said traveling magazine, and cup-washers or valves attached to the traveling magazine, and adapted to cause the same to move at a uniform rate of speed.

10. In a shell-fuse, the combination with a suitable stock, of a fixed magazine, a normally restrained traveling magazine, means for releasing said traveling magazine, cup-washers or valves adapted to cause the traveling magazine to move at a uniform rate of speed, and means for controlling the speed.

11. In a shell-fuse, the combination with a suitable stock, of a fixed magazine, a normally restrained traveling magazine, means for releasing said traveling magazine, cup-washers or valves swiveled to the traveling magazine, and an air-valve for controlling the speed of said traveling magazine.

12. In a time-fuse, the combination with a movable magazine, of an air-cushioning device, whereby the said magazine is caused to move at a uniform rate of speed.

13. In a time-fuse, the combination with a movable magazine, of an air-cushioning device, whereby the said magazine is caused to move at a uniform rate of speed, and means for controlling the speed.

14. In a time-fuse, the combination with a movable magazine, of an air-cushioning device adapted to cause said magazine to move at a uniform rate of speed, and an air-valve for regulating the escape of air to control the speed.

15. In a shell-fuse, the combination with a suitable stock, of a fixed magazine, a normally restrained traveling magazine, an ejector adapted to release said traveling magazine, and an air-cushioning device, adapted to cause the traveling magazine to move at a uniform rate of speed.

16. In a shell-fuse, the combination with a suitable stock, of a fixed magazine, a normally restrained traveling magazine, a powder-containing ejecter adapted to release said traveling magazine, an air-cushioning device, adapted to cause the traveling magazine to move at a uniform rate of speed, and a valve for controlling the speed.

17. In a time-fuse, the combination with a suitable stock, of a time mechanism composed of a spring-actuated traveling magazine having a locking-sleeve at one end and an air-cushioning device at the other end.

18. In a time-fuse, the combination with a suitable stock, of a spring-actuated traveling magazine having a locking-sleeve at one end and an air-cushioning device at the other end, and means for controlling the rate of speed of said traveling magazine.

19. In a shell-fuse, the combination with a suitable stock, of a normally restrained time mechanism, a fixed magazine, means fired by the charge in the fixed magazine to release said time mechanism, and a primer-chamber surrounding the air-cylinder.

20. In a shell-fuse, the combination with a suitable stock, of a normally restrained time mechanism, a fixed magazine, means fired by the charge in the fixed magazine to release said time mechanism, a cylinder inclosing the time mechanism, and a primer-chamber surrounding said cylinder and in communication therewith.

21. In a shell-fuse, the combination with a suitable stock, of a fixed magazine, a spring-actuated traveling magazine, adapted to be normally restrained, means for releasing said traveling magazine, means for causing the traveling magazine to move at a uniform rate of speed, a primer-chamber, and means for controlling the speed of said traveling magazine.

22. In a shell-fuse, the combination with a suitable stock, of a traveling magazine, a fixed magazine, and means fired by the charge in the fixed magazine to release the traveling magazine.

23. In a shell-fuse, the combination with a suitable stock, of a traveling magazine normally held against movement, and an ejector adapted to be fired by the charge in the fixed magazine to release the traveling magazine.

24. In a shell-fuse, the combination with a suitable stock, of a traveling magazine, an air-cushioning device carried by the traveling magazine, and means fired by the charge in the fixed magazine to release said traveling magazine.

25. In a shell-fuse, the combination with a suitable stock, of a traveling magazine, means for normally holding the traveling magazine against movement, a fixed magazine, means fired by the charge in the fixed magazine to release said holding means and release said traveling magazine.

26. In a shell-fuse, the combination with a suitable stock, of a traveling magazine, means for normally holding the traveling magazine against movement, a fixed magazine, an air-cushioning device attached to said traveling magazine, and means fired by the charge in the fixed magazine to release said holding means and thereby release the traveling magazine.

812,047. MATCH-BOX. ROBERT B. KING, Beaufort, N. C. Filed Sept. 9, 1905. Serial No. 277,726.

Claim.—1. A match-box having a magazine, and a contracted feed-channel below the same and provided with an outlet at one end thereof, the lower edges of the walls of the channel forming guide-flanges and having inturned portions adjacent to the rear end of the channel to constrict the same at that point, and a match-ejector having a scratch-surface and coacting guide-flanges and front and rear projections to, respectively, normally close the outlet and engage the end of a match to be fed forward, the outlet being of such size as to permit tilting of the match as it is withdrawn to permit the beaded end thereof to be manually pressed against said scratch-surface and ignited.

2. A match-box having a magazine and a contracted feed-channel below the same and provided with an outlet, the lower edges of the walls of the channel forming guide-flanges, and a match-ejector having coacting guide-flanges and front and rear projections to respectively normally close the outlet and engage the end of a match to be fed forward.

3. A match-box having a magazine and a contracted feed-channel below the same and provided with an outlet, the lower edges of the walls of the channel forming guide-flanges and having inturned portions adjacent to the rear end of the channel to constrict the same at that point, and a match-ejector having coacting guide-flanges and front and rear projections to respectively normally close the outlet and engage the end of a match to be fed forward.

812,048. GAME APPARATUS. GEORGE F. KIRBY, New Bedford, Mass. Filed May 16, 1904. Serial No. 208,217.

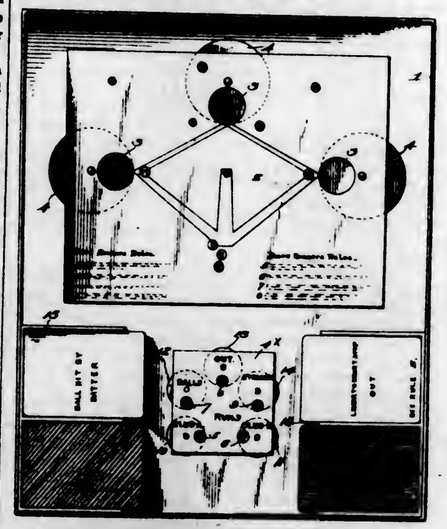

Claim.—1. A game-board having a representation of a base-ball field, openings at the bases of the field and a revoluble disk under each of said openings, said disks having symbols to indicate the base-runners at the bases during the progress of the game.

2. A game-board having a representation of a base-ball field, openings at the bases of the field, and movable devices having symbols and coacting with the said openings to display the symbols to indicate the base-runners at the bases during the progress of the game.

812,049. MUSICAL INSTRUMENT. ARAMUS M. KRUEGER, Bellville, Tex. Filed Dec. 22, 1904. Serial No. 238,606.

Claim.—1. A stringed musical instrument provided with a lyre-shaped hollow body having hollow side arms, and a hollow cross-bar connecting the ends of the side arms of the body with each other and communicating with the interior thereof.

2. A stringed musical instrument provided with a lyre-shaped hollow body having a hollow cross-bar connecting the ends of the side arms of the body with each other communicating with the interior of said side arms and a hollow neck and head connecting the body with the said cross-bar.

3. A stringed musical instrument comprising a body having hollow side arms and a hollow cross-bar connecting the side arms with each other and communicating with the interior of said side arms a hollow neck extending from the upper end of the body and in communication therewith, and a hollow head on the said neck, connected with the said cross-bar and in communication with the interior thereof.

4. A stringed musical instrument comprising a body having hollow side arms and a hollow cross-bar connecting the side arms with each other and in communication with the interior thereof a hollow neck extending from the upper end of the body and in communication therewith, a hollow head on the said neck, connected with the said cross-bar and establishing communication between the interior of the neck and the cross-bar and solid ornaments on the free ends of the side arms.

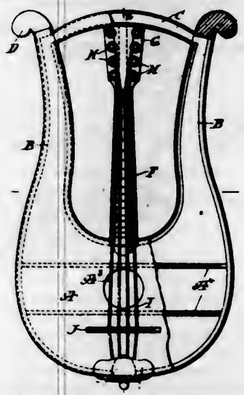

5. A stringed musical instrument provided with a lyre-shaped hollow body having a hollow, arched cross-bar, connecting the ends of the side arms of the body with each other and establishing communication between the said side arms.

812,050. WINDOW-LOCK. NICHOLAS A. KUKELER, Braddock, Pa. Filed Oct. 12, 1905. Serial No. 282,827.

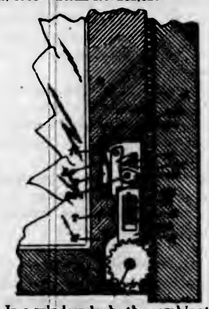

Claim.—1. In a window-lock, the combination with a window-frame and a sash slidably mounted therein, of a rack carried by said frame, said sash having recesses and a slot formed therein, a toothed wheel journaled in one of said recesses and adapted to engage said rack, a spring-pressed contact-block mounted in said slot and adapted to engage said toothed wheel, a spring-pressed latch mounted in the other of said recesses and adapted to engage said contact-block, a shaft journaled in said frame and a cam carried by said shaft and adapted when the shaft is rotated to engage said latch and said contact-block, substantially as described.

2. In a window-lock, the combination with a window-frame, and a sash slidably mounted therein, of a rack carried by said window-frame, a toothed wheel journaled in said sash and adapted to engage said rack, a spring-pressed contact-block slidably mounted in said sash and adapted to engage said toothed wheel, a spring-pressed latch adapted to engage said block and lock said block in engagement with said wheel, means actuated from the exterior of said sash to alternately move said latch and said contact-block, substantially as described.

812,051. RECLINING-CHAIR. HENRY J. LANAGAN, Clinton, Iowa. Filed July 24, 1905. Serial No. 271,208.

Claim.—1. The combination with the side members of a seat-frame adapted to support a seat, of guide-bars secured to the members, a sliding frame superposed upon the bars and disposed below the upper edges of the seat-frame, retracting and cushioning mechanisms operatively connected with the sliding frame, and a back pivotally connected with the seat-frame and with the sliding frame.

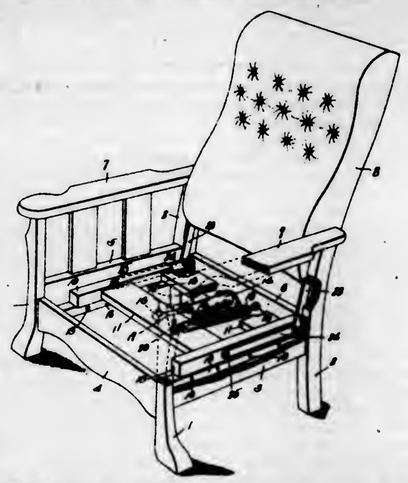

2. The combination with the side members of a seat-frame, of guide-bars secured to the inner sides thereof, a sliding frame mounted upon the bars and disposed below the upper edges of the side members, retracting and cushioning mechanisms operatively connected with the sliding frame, a back detachably combined with the seat-frame, links pivotally connected with the slide-bars, and arms rigid with the back and connected with the links.

3. In a chair, the combination with the rear legs having curved bearings, of a back having pintles to engage the bearings, a seat-frame adapted to support a seat, guide-bars secured to the inner faces of the seat-frame, a sliding frame mounted upon the guide-bars, and cushioning and retracting mechanisms connecting the seat-frame and the sliding frame.

812,052. LIQUID FORCING OR PUMPING DEVICE. LOUIS J. C. LARSEN, New York, N. Y., assignor of one-half to Adolph Rauh, New York, N. Y. Filed Aug. 7, 1905. Serial No. 273,075.

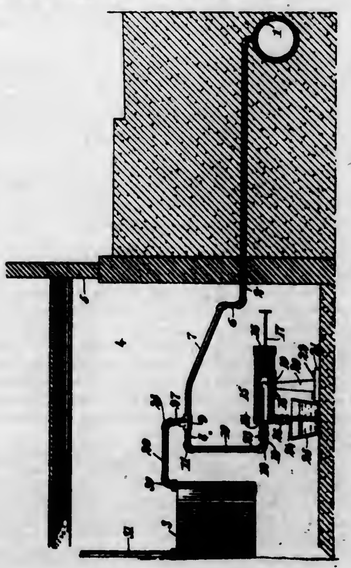

Claim.—In liquid-forcing devices of the character described, the combination with a service-pipe leading from a street gas-main to a house, of a pump provided with a suction-pipe and a discharge-pipe, a connection from said discharge-pipe to said service-pipe, and a branch leading from said connection to a meter.

812,053. WIRE-STAY. LYMAN G. LEACH, Wilton, Ohio, assignor of one-half to Charles A. Hinkley, Cleveland, Ohio. Filed May 20, 1905. Serial No. 261,295.

Claim.—1. A wire-stay consisting of a substantially U-shaped piece of metal having an opening formed therein, said piece of metal being bent to engage wires passing through said opening, substantially as described.

2. A wire-stay consisting of a piece of metal having an opening formed therein, said piece of metal being bent to engage wires passing through said opening.

3. A wire-stay consisting of a piece of metal having an opening formed therein, said piece of metal being bent to a substantially S shape to retain wires passing through said opening and the layers of metal formed by the bending of said piece, substantially as described.

4. A wire-stay consisting of a substantially S-shaped piece of metal, said piece of metal having openings formed therein through which wires are adapted to pass, substantially as described.

5. A wire-stay consisting of a piece of metal of substantially U shape, and having an opening intersecting the bend, and having an integral portion extending from below the said opening upwardly toward the same, said integral portion having its upper end notched to receive a wire extending through said opening.

812,054. ADJUSTABLE WAGON-BOX. MOSES LEHNART, Charlton, Iowa. Filed Sept. 6, 1905. Serial No. 277,231.

Claim.—1. In combination with a wagon-box, of a pair of separate supplemental frames superposed thereon, and means whereby these frames are locked down on the upper edge of the wagon-box or held above the same and separated from each other, substantially as set forth.

2. In combination with a wagon-box, of a pair of supplemental frames, and means for holding these frames on the upper edge of the wagon-box or elevated above the same and separated from each other, said means embodying vertical standards attached to the frames and having their lower ends working in sockets carried by the wagon-box.

3. In combination with a wagon-box provided with a series of stake-sockets pivotally mounted on the wagon-box, standards or stakes adapted to slide in these sockets and carrying a supplemental frame or box at their upper ends, and means for locking the standards in their raised position.

4. In combination with a wagon-box carrying a series of stake-sockets, each socket being pivoted at its upper end so as to swing forward and backward at its lower end, a stake working vertically in each socket and means for locking the stake in its elevated position, and a supplemental frame or frames supported on the stakes.

5. In combination with a wagon-box provided with a series of stake-sockets each pivoted at its upper end so that its lower end will have a forward and backward movement, a fastening device for the lower end of the socket, a supporting-stake working in each socket and means for locking it in its elevated position, and a supplemental frame or frames mounted on the stakes.

6. In combination with a wagon-box carrying a series of stake-sockets, each socket consisting of a plate provided with a vertical series of latch-receiving holes, a stake working vertically in each socket and carrying a spring-latch adapted to engage in one of said holes, and a supplemental frame or frames carried by the stakes, for the purpose set forth.

7. In combination with a wagon-box carrying a series of sockets, a stake working vertically in each socket and means for locking the stake in its elevated position, a top frame or rack attached to the stakes, an intermediate frame slidingly mounted on the stakes, and means for lifting and holding up the intermediate frame when the stakes are raised above a predetermined point, for the purpose set forth.

812,055. FLOOR-SCRAPER. STEPHEN A. M. LENVILLE, Concordia, Kans. Filed July 24, 1905. Serial No. 271,070.

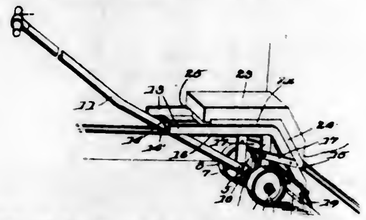

Claim.—1. In a device of the class described, a wheeled truck, a weight-receiving platform carried by the truck and having one end thereof deflected downwardly, a pair of clamping members secured to the deflected end of the truck, and a scraping-tool interposed between the clamping members and adjustable laterally of the truck.

2. In a device of the class described, a wheeled truck provided with an operating-handle, a weight-receiving platform carried by the truck and having one end thereof secured to the operating-handle and its free end deflected downwardly, and a scraping-blade secured to the deflected end of the truck and adjustable laterally beyond the wheels of the latter.

3. In a device of the class described, a wheeled truck provided with an operating-handle, a horizontally-disposed weight-receiving platform carried by the truck and having one end thereof secured to the operating-handle and its free end deflected downwardly, and a scraping-blade carried by the deflected end of the platform, said blade being movable into and out of contact with the work by the movement of the operating-handle.

4. In a device of the class described, a wheeled truck, a supporting-frame mounted on the axle of the truck, a pair of spaced angle-irons secured to the supporting-frame and forming a weight-receiving platform, and a scraping-blade carried by the truck and adjustable laterally beyond the wheels thereof.

5. In a device of the class described, a wheeled truck, a weight-receiving platform secured to the truck and having its free end deflected downwardly, and a scraping-tool secured to the deflected end of said platform and adjustable laterally beyond the wheels of the truck.

6. In a device of the class described, a truck, a weight-receiving platform secured to the truck and having its free end deflected downwardly, a scraping-tool secured to the deflected end of the platform and adjustable laterally of the truck, a plurality of weights mounted on the platform, and means for preventing accidental displacement of said weight.

7. In a device of the class described, a wheeled truck, a weight-receiving platform mounted on the truck and having its free end deflected downwardly toward the wheels thereof, a bar extending transversely of the platform at the free end of the latter, a scraping-tool secured to said platform, and a weight provided with an angular extension for engagement with the transverse bar of the platform.

8. In a device of the class described, a truck, a weight-receiving platform mounted on the truck and having one end thereof deflected downwardly, a scraping-tool secured to the deflected end of the platform, a weight mounted on said platform and having one end thereof inclined or beveled.

812,056. PLOW. CHARLES H. LITTLE, Chicago, Ill. Filed Aug. 11, 1905. Serial No. 273,830.

Claim.—1. A plow-shovel comprising a body portion, and a pair of upright outwardly-disposed blades provided with sharpened and inwardly-turned lower cutting edges.

2. A plow-shovel comprising a body portion and forwardly-projecting angularly-disposed blades having at their lower edges inwardly-turned sharpened cutting portions.

3. A plow-shovel comprising a body portion, and angularly-disposed blades having at their lower edges inwardly-turned sharpened cutting portions and a vertical recess formed between the blades.

4. A plow-shovel formed in a single piece and comprising a central body portion, and oppositely-disposed forwardly-extending blades provided at their lower edges with inwardly-turned sharpened cutting portions.

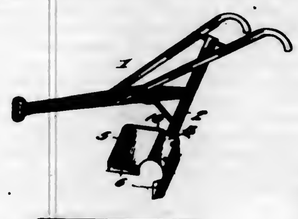

812,057. SEED-PLANTER. JOSEPH W. LITTLE, Westpoint, Miss. Filed June 13, 1905. Serial No. 265,011.

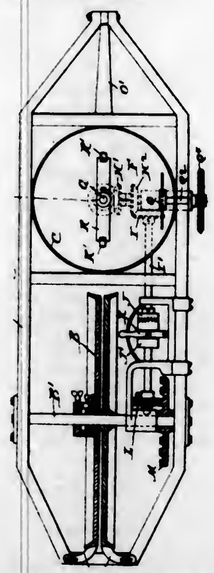

Claim.—1. In a seed-planter, a suitable framework, a furrow-opener arranged at the forward end of the machine, a bed-plate secured in the forward portion of the framework, a feed-tube depending from the bed-plate, a covering-wheel arranged at the rear of the machine directly behind the feed-tube, a seed-hopper arranged above the bed-plate, a vertical shaft extending upward through the center of the bed-plate, mechanism for communicating power from the covering-wheel to this vertical shaft, means for varying the speed of said shaft, a clutch for throwing said shaft in or out of actionwhile the machine is traveling, an annular channel opening upward formed in the bed-plate, a feed-plate arranged above the bed-plate and removably secured to the central vertical shaft, a plurality of scrapers or wings carried by said feed-plate and adapted to travel within the annular channel, the annular channel provided with an opening extending through the bed-plate directly above the feed-tube, the feed-plate provided with a plurality of openings formed through the same, the bed-plate provided with a second opening located directly over the feed-tube, the openings of the feed-plate adapted to pass over said last-named opening of the bed-plate, a plate forming the bottom of the hopper arranged over the feed-plate and secured to the bed-plate, said plate being provided with an opening directly above the annular channel and also an opening under which the openings of the feed-plate will pass, both of said openings being out of register with the openings of the bed-plate connecting with the feed-tube, and means for closing either one of the openings through the upper plate, as and for the purpose specified.

2. In a seed-planter, a framework, a bed-plate secured to the framework near the forward end thereof, a furrow-opener arranged at the forward end of the machine, a feed-tube depending from the bed-plate and communicating with the rearward end of the furrow-opener, a covering-wheel journaled at the rear of the framework directly behind the feed-tube, a gear-wheel secured upon the same shaft as the covering-wheel, the face of said gear-wheel being provided with a series of different-size miter-gears, a seed-hopper arranged over the bed-plate, a central vertical shaft journaled in the bed-plate and extending below the same, a rearward-extending shaft, a movable miter-gear secured to the rear end of this shaft and adapted to be placed in the mesh with other of the miter-gears upon the differential gear, a train of gears adapted to transmit movement from the rearwardly-extending shaft to the vertical shaft in the hopper, the rearwardly-extending shaft being composed of two parts, a clutch, one member of which is secured to one half of the shaft, the other member being feathered upon the other half of the shaft, a lever for moving the slidable member in or out of clutch with the fixed member, an annular channel opening upward formed in the bed-plate, said annular channel being provided with an opening through the bed-plate above the feed-tube, a feed-plate removably secured to the vertical shaft, a series of wings or scrapers extending outward radially from said feed-plate and adapted to revolve within the channel, the feed-plate being provided with a series of openings formed through the same, the bed-plate being provided with an opening located over the feed-tube over which the openings of the feed-plate are adapted to pass as the plate revolves, a plate arranged above the feed-plate and removably secured to the bed-plate, this plate forming also the bottom of the hopper, said top plate being provided with an opening located directly above the annular channel, and also an opening under which the openings of the feed-plate will pass, both of said openings being out of alinement with the openings through the bed-plate, movable plates arranged above the top plate for the closing of either of the openings in the top plate, or for decreasing the size of said openings, a wheel journaled within the hopper, said wheel provided with a series of arms radiating from the same, said arms adapted to revolve so that the ends extend into the openings in the top plate directly over the channel, means for revolving this wheel from the power-shaft, and an agitator adapted to revolve within the hopper, as and for the purpose specified.

812,058. BOTTLE-STOPPER. WILLIAM F. MAHONY, Washington, D. C. Filed May 1, 1905. Serial No. 258,204.

Claim.—1. A bottle-stopper comprising a body portion, and a pull-tab projecting from the circumferential edge thereof, said tab having an aperture formed therein to receive the thumb or finger nail.

2. A bottle-stopper comprising a body portion, and a projecting pull-tab formed integral with said body portion and having an aperture therein to receive the thumb or finger nail.

3. A bottle-stopper comprising a body portion, and a pull-tab projecting from the circumferential edge thereof and having an aperture formed therein, the inner margin of said tab-aperture coinciding with the circumferential edge of said stopper.

4. A bottle-stopper comprising a body portion and a substantially U-shaped tab projecting from the circumferential edge thereof.

5. A bottle-stopper comprising a body portion, and a substantially U-shaped tab formed integral with said body portion and projecting from the circumferential edge thereof.

6. A bottle-stopper comprising a body portion, an integral pull-tab projecting from the circumferential edge of said body portion and having an aperture therein, the marginal edges of the stopper and tab-aperture being formed on curved lines and without abrupt angles, whereby the tendency of the parts to tear is eliminated or reduced.

812,059. RAIL-JOINT. UMBERTO G. MARCUCCI, East Oakland, Cal. Filed Jan. 28, 1905. Serial No. 243,073.

Claim.—1. In a rail-joint, the combination of two adjacent rails, an angular fish-plate comprising separable vertical and horizontal members, and nuts and bolts for securing the fish-plate in applied position, the horizontal member of said fish-plate engaging said nuts to lock them in applied position.

2. In a rail-joint, the combination of two adjacent rails, an angular fish-plate comprising separable vertical and horizontal members, the meeting edges of said members being beveled in reverse directions, and nuts and bolts adapted to secure the fish-plate in applied position, the horizontal member of said fish-plate engaging the nuts to lock them in applied position.

3. In a rail-joint, the combination of two adjacent rails, a base-chair provided on its under side with transversely and longitudinally strengthening ribs, fish-plates; one of said fish-plates comprising separable vertical and horizontal members, and nuts and bolts for securing the fish-plates in applied position, the separable horizontal member of said fish-plate engaging said nuts to lock them in applied position.

812,060. **HAY ELEVATOR AND CONVEYER.** ADOLPH MELLQUIST and OSCAR A. WESTERSON, Cannon Falls, Minn. Filed March 23, 1905. Serial No. 251,702.

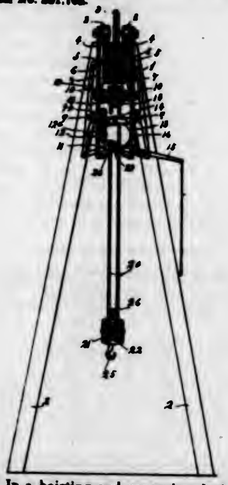

Claim.—1. In a hoisting and conveying device, the combination with a track having a series of lock depressions and a truck movable over said track, of a hoisting device applied to said truck, a lock mounted on said truck, and engageable with said lock depressions on the track, to lock said truck thereto, a latch for securing said hoisting device, with its load elevated, and connections thereby, said lock and said latch are thrown into and out of action in alternative order, substantially as described.

2. The combination with an elevated track having a series of lock depressions and a truck movable thereon, of a "block-and-tackle" hoisting device, applied to said truck, a pair of lock-levers, pivoted to said truck-frame and engageable on the opposite sides of said track, with said lock depressions to lock said truck thereto, a latch-hook, engageable with the movable block of said hoisting device, to lock the same in an elevated position, and connections whereby said movable block, on reaching its elevated position, releases said lock-levers from said lock depressions and throws said latch-hook into action upon itself, substantially as described.

3. The combination with an elevated track and a truck movable thereon, said track having alined recesses in its opposite sides, of the lock-levers 10, pivoted to the sides of the truck-frame and engageable with the lock-recesses of said track, a toggle, connecting the lower ends of said lock-levers, a latch-hook pivoted to the truck-frame and connected to said toggle, and a "block-and-tackle" hoisting device, having a movable block provided with a perforated head, arranged to set upon said toggle, to render said latch-levers inoperative and adapted to be engaged by latch-hook, substantially as described.

4. The combination with an elevated track, having in its sides lock-recesses 5, of a truck made up of a frame 7, and wheels 8, said frame embracing said track and said wheels running thereon, the latch-levers 10 pivoted to the sides of said frame and engageable with said lock-recesses 5, a toggle 11, connecting the lower ends of said levers, the latch-hook 13, pivoted to said frame and connected to said toggle, by a sliding link 12, the perforated aliming-plate 28, at the lower portion of said frame, the lever 15, pivoted to said frame and attached to said latch-hook, the sheaves 18, mounted on the said truck-frame, above said aliming-plate, the tackle-block 22, having the perforated head 26 and sheaves 21, and the cable 20, working over said sheaves 18 and 21, the perforated head 26, of which tackle-block is adapted to project through one of the perforations of said aliming-plate into engagement with said toggle 11 and adapted to be engaged by said latch-hook 13, substantially as described.

812,061. **GRAPPLE-FORK.** ADOLPH MELLQUIST and OSCAR A WESTERSON, Cannon Falls, Minn. Filed Mar. 23, 1905. Serial No. 251,703.

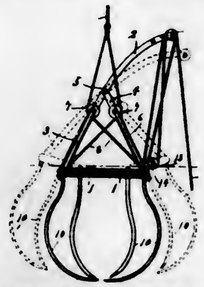

Claim.—1. The combination with a pair of scoops, a long arm rigidly secured to one thereof, and a short arm, rigidly secured to the other thereof, the said two arms being pivotally connected, of suspending cables arranged to cause scoops to close onto the load, under the action of gravity, and a cable connection between the upper end of said long arm and one of the scoop portions, for opening the scoops, substantially as described.

2. The combination with a pair of scoops, of a long arm rigidly secured to one thereof, a short arm rigidly secured to the other thereof, said short arm being pivoted to the intermediate portion of said long arm, a sheave on the upper end of the said long arm, a sheave connected to the lower end of said short arm, a cable running over said two sheaves and arranged to separate said scoop-sections, other sheaves on said two arms, and crossed cables attached to said scoops, passed over said latter-noted sheaves and connected at their upper end, said suspended cables operating to close the scoops under the action of gravity, substantially as described.

812,062. **BARREL.** JOHN T. MILLIGAN and JOSHUA D. MARVIL, Laurel, Del., assignors to Collapsible Barrel Company, Laurel, Del., a Corporation of Delaware. Filed Feb. 28, 1905. Serial No. 247,726.

Claim.—1. A barrel having a chime, a head composed of a plurality of parts to fit in said chime, and a wedge-like filling-piece to fit between one of the parts of the head and the body of the barrel, and having a notch to receive said head part the side edges of the latter being in parallelism.

2. A barrel having a chime, a head composed of a plurality of parts to fit in said chime, and a wedge-like filling-piece to fit between one of the parts of the head and the body of the barrel, and having a notch to receive said head part, the side edges of the latter being in parallelism and also having a projection to fit into said chime.

3. A barrel having a head composed of at least three parts, the barrel having a chime to receive the head, the side edges of the intermediate part of the head being in parallelism, and a wedge-like filling-piece to be driven longitudinally of the barrel into the space between one end of the said intermediate head-piece and the body of the barrel.

812,063. **WINDING MECHANISM FOR STUMP-EXTRACTORS.** GEORGE B. MERCHANT, Johnston, S. C. Filed May 31, 1905. Serial No. 263,046.

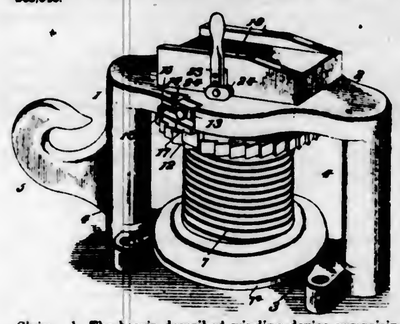

Claim.—1. The herein-described winding device comprising a drum for a cable having a spiral groove formed thereon, a sectional shell also having a spiral groove and designed to fit on and inclose said drum for regulating the diameter thereof, said shell being formed to fit in the grooves of the drum, means for holding such shell to the drum, and means for actuating the latter.

2. The herein-described winding device comprising a frame, a drum mounted therein having a ratchet-wheel at one end, a pawl or catch mounted on said frame for engaging said ratchet-wheel, a plate-spring affixed to the frame and designed to engage said pawl at either of two points, according as the pawl is in or out of engagement with said ratchet-wheel, and means for actuating the drum.

3. The herein-described winding device comprising a frame, a drum mounted therein having a ratchet-wheel at one end, a pawl or catch mounted on said frame for engaging said ratchet-wheel and having an overhanging flange, a plate-spring engaging said pawl for holding it in engagement with said ratchet-wheel, said plate-spring being capable of engaging said flange for holding the pawl out of engagement with said ratchet-wheel, and means for actuating the drum.

4. The combination with the frame having top and bottom members, of the drum rotatably mounted between said members, means mounted on the top member for preventing accidental unwinding of the drum, the sweep-bar casting located above said member, capable of being moved vertically, means for normally interlocking said casting with the drum when the former is in its lowermost position, and means mounted on said casting and engaging said top member for disengaging said casting from the drum.

5. The combination with the frame, of the drum rotatably mounted therein, means for preventing the accidental unwinding of the drum, the shaft with which said drum rotates, the sweep-bar casting, means for normally interlocking said casting to said shaft, and a lever for disengaging the sweep-bar casting from the shaft.

6. The combination with the frame, of the shaft mounted therein having a rounded portion fitting in an opening of the frame and also having a squared portion, the drum having at one end a squared chamber to accommodate said squared portion, means for preventing the accidental unwinding of the drum, the sweep-bar casting mounted above said frame and designed to interlock with said shaft, and means for disengaging said casting from the shaft.

7. The combination with the frame, of the shaft mounted therein having a rounded portion fitting in an opening of the frame and also having a squared portion, the drum having at one end a squared chamber to accommodate said squared portion, means for preventing the accidental unwinding of the drum, the sweep-bar casting mounted above said frame and designed to interlock with said shaft, and a lever mounted on said casting having cam-like or rounded portions for engaging said frame for disengaging the casting from said shaft.

8. The combination with the frame, and the shaft, of the drum movable with said shaft, the sweep-bar casting, means for interlocking the latter with said shaft, means for disengaging such casting, and a crank for turning said shaft and drum independently of the casting.

812,064. **CIGAR RETAINER AND CUTTER.** SAMUEL P. MILLER, Boston, Mass. Filed Mar. 27, 1905. Serial No. 252,173.

Claim.—1. In an article as described, the combination of a cylindrical body open at the end, bayonet-slots in one end thereof, and a second cylinder closed at one end and having studs thereon adapted to coöperate with the aforesaid bayonet-slots by which means the two cylindrical portions may be detachably interlocked.

2. In a device as described, a cylindrical body portion open at both ends, and bayonet-slots in one end thereof, a second cylindrical body closed at one end and having studs adapted to coöperate with the aforesaid bayonet-slots, a diaphragm mounted within said first-named cylindrical portion and a spiral spring inclosed between the said diaphragm and the said second cylindrical body whereby the two cylindrical bodies are held in separable interlocked relation.

3. In a device as described, a cylindrical body having a hole in one side thereof for the insertion of a cigar-tip, and bayonet-slots in one end thereof, a diaphragm within said cylindrical body, a second cylindrical body adapted to be slidably mounted within said first-named cylindrical body and having studs on one end thereof adapted to engage the aforesaid bayonet-slots and thereby to hold the two cylindrical bodies in separable interlocked relation and a spiral spring interposed between the aforesaid diaphragm and the second cylindrical body, the inner end of the said second cylindrical body constituting a cutting-blade by which the ends of the cigar when inserted in the hole aforesaid may be cut off.

812,065. **GLASS-WORKING FURNACE.** IRA A. MILLIRON, Franklin, Pa. Filed Aug. 1, 1905. Serial No. 272,177.

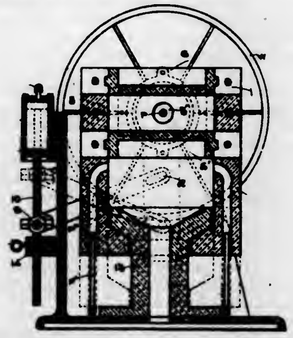

Claim.—1. A glass-working furnace having a central heat-chamber, glass-receptacles located upon opposite sides of said chamber with their bottoms in juxtaposition, and means of revolving said furnace.

2. A vertically-revoluble glass-working furnace having an inclosed heat-chamber with means of admitting heat thereto, said chamber having glass-receptacles located upon opposite sides thereof with their openings facing outward.

3. A glass-working furnace having glass-receptacles in its top and bottom sides, a heat-chamber located between said receptacles, means of generating heat in said chamber, in combination with means of revolving said furnace, and means of generating heat beneath the same.

4. A vertically-revoluble glass-working furnace having a plurality of glass-receptacles located in the walls thereof, and means of generating heat between said receptacles.

5. The combination with a revoluble furnace having a central heat-chamber and the glass-receptacles located at opposite sides thereof, of means of generating supplementary heat beneath said furnace, means of revolving said furnace and means of preventing the revolving of said furnace.

6. A revoluble glass-working furnace having an interior heat-chamber the glass-receptacles located in the walls of said chamber, in combination with a supplementary furnace, means of bringing said supplementary furnace into proximity to said first-mentioned furnace and of removing the same therefrom.

812,066. **TRUCK.** HENRY W. MOORE, Anderson, Ind., assignor of one-fifth to Mattie G. Moore, Madison county, Ind. Filed Feb. 4, 1905. Serial No. 244,227.

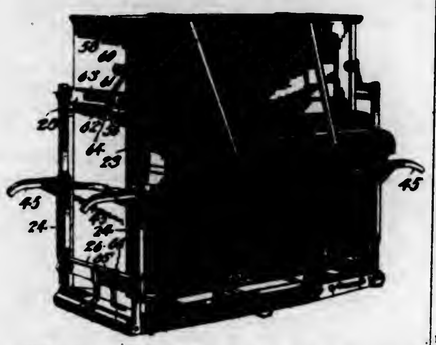

Claim.—1. In a truck of the character described, the combination of a base-frame, upright end frames, extension-arms on the upright end frames adjustably engaging the base-frame, automatic locking devices on the base-frame for fastening the extension-arms thereto, and means for simultaneously retracting said locking devices.

2. In a truck of the character described, the combination of a base-frame provided with guides, upright end frames, rack-bars on the end frames slidable in said guides, dogs within the guides for engaging said rack-bars, and means for retracting said dogs from the exterior of the guides.

3. In a truck of the character described, the combination of a base-frame provided with guides, upright end frames, rack-bars on the end frames slidable in said guides, automatic dogs within the guides for adjustably locking said rack-bars to the base-frame, and means for simultaneously releasing the dogs of each end frame.

4. In a truck of the character described, the combination of a base-frame, upright end frames extension-arms on the upright end frames slidably engaging guides on the base-frame, automatic locking devices on the base-frame to lock the arms thereto, and means for retracting said device from the exterior of the base-frame.

5. In a truck of the character described, the combination of a base-frame, upright end frames, extension-arms on the upright end frames engaging the base-frame, said arms being provided with rack-teeth, dogs upon the base-frame to engage the rack-teeth, and operating devices for raising the dogs to disengage them from said teeth.

6. In a truck, the combination of a main frame provided with guides and having a central seating portion arranged below the plane of its ends, upright end frames having members slidably secured in said guides, rollers upon the top and bottom portions of each end frame, rollers at the center of the main frame, and means for lowering the central rollers so that the main frame may be tilted in either direction to run upon the central rollers and base-rollers of one of the end frames and to raise them so that the main frame will rest upon its said central seating portion and the rollers of both end frames, substantially as described.

7. A truck having central rollers and end rollers, adjustable brackets carrying the central rollers, bolts for locking said brackets in their adjusted positions, and means for simultaneously projecting and retracting the bolts.

8. A truck having central rollers and end rollers, brackets carrying the central rollers, said brackets being adjustably mounted, bolts for holding the brackets in their adjusted positions, a device controlling the action of both bolts, and means for operating said device from either or both sides of the truck.

9. A truck having central rollers and end rollers, adjustable brackets carrying the central rollers, spring-actuated bolts for securing said brackets in their adjusted positions, a device for simultaneously retracting the bolts, and means for operating said device from either side of the truck.

10. In a truck, the combination of a base-frame, upright end frames adjustably connected with the base-frame, and angular supporting-brackets pivotally mounted upon the end frames and adapted to be projected inwardly from said frames to serve as supplementary supports.

11. A truck comprising a base-frame, upright end frames adjustably secured thereto, each of said frames having slotted stems, handles pivotally mounted within the slotted standards, locking-pins upon the handles, and slotted links receiving said pins and pivotally connected within the slots of the standards, the slots of the links being formed with a series of receiving-notches to receive the locking-pins whereby the handles may be adjusted and locked at different angles and folded substantially parallel with the end frames.

12. A truck having supporting-rollers provided with sets of ratchet-teeth projecting in opposite directions, and a reversible locking-pawl adapted to engage either set of teeth to hold the roller against retrograde movement in either direction.

13. A truck having supporting-rollers provided with oppositely-projecting sets of ratchet-teeth, pawls reversible to engage either set of teeth, guides and operating devices for the pawls, and means for locking the pawls to the guides in either of their adjusted positions.

812,067. **TOOL.** DE HAVEN MORRIS, Wilmington, Del. Filed May 31, 1904. Serial No. 210,209.

Claim.—1. In a tool of the character stated, a head, a handle-receiving eye, the blade-end walls of which are divided, independent arms extending outwardly from said walls, said walls and arms being primarily spread apart and of resilient nature a handle, a blade within said arms and secured thereto, a spur on an inner side wall of said eye adapted to engage said handle and an additional fastening device for said handle consisting of a pin passing through a side wall of said eye and through said handle and clenched on the latter.

2. In a tool of the character stated, a head, an eye therein, a handle in said eye, an opening in a side wall of said eye, and a pin passing through said opening and through said handle and having its inner end deflected on an opposite imperforate portion of said eye and clenched on said handle.

3. A tool of the character stated consisting of a head, an eye therein, a handle in said eye, an opening in a side wall of said eye, the portion of the other wall opposite to said opening being imperforate and a pin passing through said opening and handle and having its inner end deflected on the imperforate portion and clenched on said handle.

812,068. **BOTTLE-CAPPING MACHINE.** HERMAN MÜLLER, Astoria, and EUGENE ZIPPRICH, New York, N. Y., assignors to Budde & Westermann, New York, N. Y., a Corporation of New York. Filed Jan. 20, 1905. Serial No. 241,874.

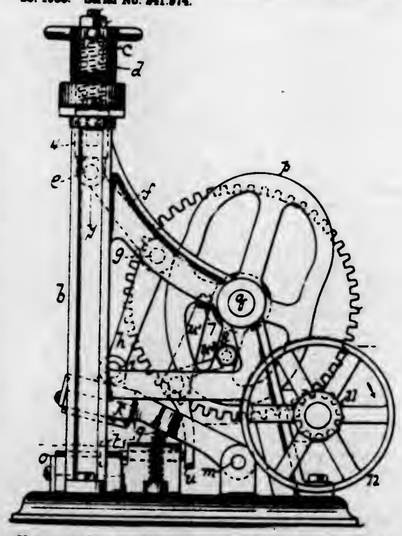

Claim.—1. In a machine for capping bottles and the like a pair of jaws and a jaw-actuating means comprising a cam with actuating portions of unequal height separated by low or inactive portions.

2. In a machine for capping bottles and the like the combination with jaws of a jaw-actuating cam having actuating portions of varying eccentricity with low or inactive portions therebetween to variously actuate or compress the jaws and open or release the same a number of times during one rotation of the cam.

3. In a machine for capping bottles and the like the combination with a stationary jaw, a movable jaw, and an actuating-cam and suitable connections for conveying motion from the cam to the movable jaw, said cam having unequal jaw or actuating parts with intermediate low or releasing parts.

4. In a machine for capping bottles and the like, the combination with jaws and actuating means thereof, of a clutch and clutch engaging and releasing means actuated by the bottles and the actuating means for respectively engaging and releasing the clutch.

5. In a capping-machine the combination with jaws and jaw-actuating means of a clutch, a lever for the clutch, a stud on the actuating means and a slide at the jaws said stud and slide being made to actuate the lever to release and engage the clutch.

6. A pair of jaws and an actuating-cam for one of the jaws, a driver or pulley for the cam, a clutch for connecting the driver and the cam, a lever for freeing or uncoupling the clutch and allowing it to engage, a stud on the cam to actuate the lever for uncoupling the clutch, and a slide in the jaws in the path of a bottle introduced therebetween and actuated thereby for setting the lever to allow the clutch to couple or engage.

7. A pair of bottle-capping jaws, an actuating-cam therefor, a pulley or driver, a clutch for connecting the driver and cam, a releasing-arm for the clutch, a lever for setting the arm, a stud on the cam for setting the lever one way, and a slide at the jaws actuated by an inserted bottle to set the lever in the opposite direction.

8. A capping-machine having a jaw-actuating toggle-joint and a cam made to act against the links of the joint to straighten the same.

9. A capping-machine having jaws, a toggle-joint having one link connected to the jaws, a bearing-point for the other link and a cam made to engage the links to compress the jaws.

10. A capping-machine having jaws, an actuating toggle-joint therefor, and a spring-pressed or yielding bearing-pivot for the toggle-joint.

11. A capping-machine having jaws, an actuating toggle-joint therefor, a bearing or pivot for one link of the toggle-joint, an adjustable stem for the pivot, a spring made to act on the stem, and an adjustable cap or thimble for supporting the stem.

12. A capping-machine having jaws and an actuating toggle-joint therefor, a bearing or pivot for the toggle-joint and provided with a stem, an adjustable thimble in which the stem is adjustable, and a spring for the stem.

13. A capping-machine having jaws and jaw-actuating means, and a bottle-actuated slide for bringing the actuating means into operation, said slide being composed of adjustable sections for lengthening or shortening the same.

812,069. **ATTACHMENT FOR BOAT-DAVITS.** NEIL MURCHISON, New York, N. Y. Filed Feb. 1, 1905. Serial No. 243,654.

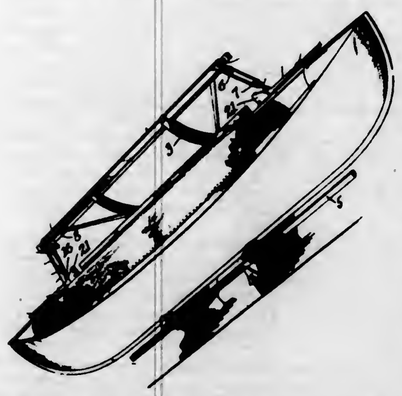

Claim.—1. The combination of a pair of connected davits each having a curved portion to support and overhang a boat, means for suspending one end of the boat from each of said curved portions, means for rocking the davits to swing the boat into and out of them, and means for simultaneously operating both of said suspending means.

2. The combination of a pair of connected davits each having a curved portion to support and overhang a boat, means for suspending one end of the boat from each of said curved portions, means for rocking the davits to swing the boat into and out of them, means for simultaneously operating both of said suspending means, and additional means for lifting the boat out of the chocks of the davits.

3. The combination of a pair of connected davits each having a curved portion to support and overhang a boat, means for suspending one end of the boat from each of said curved portions, means for rocking the davits to swing the boat into and out of them, means for simultaneously operating both of said suspending means, and additional means for lifting the boat out of the chocks of the davits; said last-named means comprising a lever fulcrumed to the suspending means and connected with the boat.

4. The combination of a pair of connected davits each having a curved portion to support and overhang a boat, means for suspending one end of the boat from each of said curved portions, means for rocking the davits to swing the boat into and out of them, means for simultaneously operating both of said suspending means, additional means for lifting the boat out of the chocks of the davits, and means for securing said last-mentioned means in position to hold the boat on said supporting means.

5. The combination with a boat-davit, of means for lifting a boat therefrom, and means for thereafter lowering the boat and the lifting means.

6. The combination with a boat-davit, of means for lifting a boat to free it therefrom, means for securing the lifting means in a stationary position on the boat, and additional means for thereafter raising or lowering the boat with the lifting means.

7. The combination with a boat-davit, of means for suspending a boat therefrom, and means pivotally mounted on the boat for steadying the boat with respect to the davit.

8. The combination with a boat-davit, of means for suspending a boat therefrom, and means for steadying the boat with respect to the davit; said steadying means comprising a lever for lifting the boat.

9. The combination with a boat-davit, of means for suspending a boat therefrom, and means for steadying the boat with respect to the davit; said steadying means comprising a lever for lifting the boat, and means for securing the lever in two different positions.

10. The combination with a boat-davit having chocks, of a boat adapted to be supported in the chocks, two levers for lifting the ends of the boat from the chocks, and additional means for simultaneously lowering the ends of the boat.

11. The combination with a boat-davit having chocks for supporting a boat, of a pair of falls and tackle each connected with one end of the boat, means for operating both sets of tackle simultaneously, and two levers for lifting the ends of the boat from the chocks.

12. The combination of a boat-davit having a top plate, a fall and tackle connected with the top plate, a lever connected with the running-block of the tackle and pivotally connected with the boat, means for securing the lever to the top plate, and means for securing the lever to the boat.

13. The combination of a boat-davit having a top plate, a fall and tackle connected with the top plate, and a lever fulcrumed to the running-block of the tackle and having a variable pivotal connection with the boat.

14. The combination of a pair of tackles, a fall connected with each tackle, means for connecting the running-blocks of both tackles with the boat, and means for simultaneously winding up the falls.

15. The combination of two sets of tackles each one being provided with a fall, means for simultaneously winding up said falls, and means for connecting the running-blocks of both tackles with the boat, said means comprising a pair of levers one fulcrumed to each of the running-blocks, said levers being pivotally connected with the boat.

812,070. **REVERSIBLE WINDOW.** STANLEY MCAFEE, North Adams, Mass. Filed Nov. 3, 1904. Serial No. 231,217.

Claim.—The combination, with a window-casing, provided with removable sections for detaching and removing the sash-weights, and rounded bearings for the sashes at one side, of the window-sash having a rounded form at one side to cooperate with said rounded bearings, middle and facing beads adapted at one side for the sashes to turn thereon as pivots, and means for securing and releasing the sashes at the side opposite to that first mentioned.

812,070.

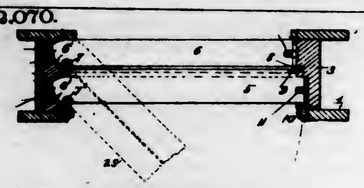

812,071. **SECTIONAL GRATE-BAR.** WILLIAM MCCLAVE, Scranton, Pa., assignor to McClave-Brooks Company, a Corporation of Pennsylvania. Filed Nov. 3, 1904. Serial No. 231,260.

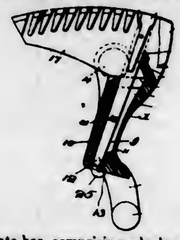

Claim.—1. A grate-bar, comprising a body portion and removable caps provided with cutting edges, the body portion having walls of unequal heights, the higher wall engaging the caps at points opposite the cutting edges thereof with respect to the axis of the grate-bar and offering an abutment of great strength to them when the bar is rocked to cut out ashes and clinkers.

2. A grate-bar, comprising a body portion provided with sockets and caps provided with socket-engaging portions, said sockets flaring upwardly and downwardly from the central parts thereof, one longitudinal wall of said body portion being thickened at its upper portion to increase the strength thereof, and the flaring of the lower portions of the sockets facilitating the discharge of materials therefrom.

3. A grate-bar comprising a body portion having elongated sockets formed therein, the said sockets having flaring-outlets at their lower ends, removable fuel-engaging caps mounted upon the bar and provided with shanks extending into the said sockets, the body portion being formed with V-shaped lugs arranged in each of said sockets projecting from one of the walls thereof to hold the lower ends of the shanks in position, and the inclined surfaces of the V-shaped lugs preventing the collection of ashes or dust in the sockets.

4. A grate-bar, comprising a socketed body portion having an abutment edge rising from one of its side walls and removable caps each having a shank formed to fit into a socket of the body portion of the bar and laterally-extending webs, some of which are formed with recesses capable of fitting upon said abutment edge of the cap portion of the bar.

5. A grate-bar, comprising a socketed body portion having an abutment edge rising from one of its side walls and removable caps each comprising a shank formed to fit into a socket of the body portion of the bar and laterally-extending webs, the webs upon one side of the shank being shorter than those upon the other side, the said short webs being formed with recesses capable of fitting upon said abutment edge of the body portion of the bar.

6. A grate-bar, comprising a body portion and removable caps having ends adapted to be driven into fuel and shanks engaging the said body portion, the body portion having walls of unequal heights, the higher wall engaging the shanks at higher points, than the lower wall, so as to be approximately opposite the ends of the caps with respect to the shanks and forming abutments for driving the caps into the fuel when the bar is rocked.

812,072. **FURNACE-COMBUSTION-CHAMBER STRUCTURE.** WILLIAM MCCLAVE, Scranton, Pa., assignor to McClave-Brooks Company, Scranton, Pa. Filed Aug. 24, 1905. Serial No. 275,089.

Claim.—1. A furnace-combustion-chamber structure, comprising a bridge-wall having a parti-cylindrical portion, the curve of the cylindrical portion being struck on an arc from a point approximately central with respect to the fuel on the grate of said furnace.

2. In a furnace-combustion-chamber structure, the combination of a bridge-wall having its front face curved for concentrating the heat centrally of the furnace-grate and a front arch overhanging the said grate and formed with a downwardly-extending retaining edge adapted to direct gases toward the center of the said grate for coacting with the said bridge-wall for preventing the escape of unconsumed gases.

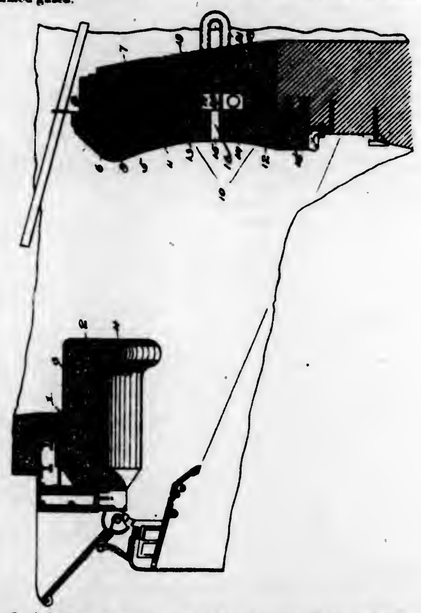

3. A furnace structure comprising a bridge-wall having a partially-cylindrical front surface, the axis of said cylindrical portion being central with respect to the furnace-grate.

4. A bridge-wall structure comprising a wall formed with a discharge-opening leading into the combustion-chamber of the furnace, an air-passage being formed within said wall, and a tube extending from said passage through the rear portion of the wall and to a point supplying air to said discharge-opening.

5. In a furnace-combustion-chamber structure, the combination with a bridge-wall having a plurality of passages arranged therein, one of said passages adapted to be supplied with air, of a pipe leading from one of said passages to a point for being supplied with heat from the combustion-chamber, and extending to the other of said passages, means of communication being provided between said other passage and the combustion-chamber.

6. In a furnace-combustion-chamber structure, the combination with a bridge-wall formed with openings leading into the combustion-chamber, a passage being formed in the bridge-wall communicating with said discharge-openings, a plurality of pipes communicating with said passage and extending beyond the bridge-wall to a point for being heated, and means within the bridge-wall for supplying air to said pipes.

7. In a furnace-combustion-chamber structure, the combination with a bridge-wall, provided with a plurality of air-passages, and means of communication between one of said passages and said combustion-chamber, of a U-shaped tube connecting said passages and extending to a point for being subjected to the action of heat from the combustion-chamber.

8. A bridge-wall structure for furnaces, comprising blocks arranged in proper relation and having their front edges curved to form a partially-cylindrical surface upon the front of the wall, the axis of said partially-cylindrical surface lying near the center of the combustion-chamber of the furnace and an overhanging ridge made up of anchored blocks arranged near the upper edge of said bridge-wall.

9. In a furnace-combustion-chamber structure, the combination with a hollow bridge-wall divided into passages, and pipes connecting said passages and extending beyond the rear face of the bridge-wall, means of communication between one of said passages and the combustion-chamber being provided, and means for supplying air to the other of said passages being also provided.

10. In a furnace combustion-chamber, the combination with a hollow bridge-wall divided into passages, means being provided for supplying air to one of said passages, and the other of said passages being provided with a discharge means communicating with the combustion-chamber, of a tube connecting said passages and extending beyond the face of the bridge-wall, that portion of said tube extending beyond the wall being arranged in an inclined plane.

11. A bridge-wall structure made up of fire-resisting bricks and blocks, said bricks and blocks being arranged to form air-ducts properly separated from each other, spacing-blocks arranged in the face of the bridge-wall adjacent to the fire-box of the furnace, the said blocks being slightly separated to form outlet-passages for one of the ducts in the bridge-wall, and pipes connecting the ducts and extending to the rear of the bridge-wall for subjecting the air which passes through the same to the action of the products of combustion.

12. A bridge-wall structure for furnaces having upper and lower interchangeable blocks, spacing-blocks mounted between the interchangeable blocks and separated to form passages between them, an air-duct being formed in the bridge-wall to the rear of the spacing-blocks, air-conducting pipes extending from the said duct outwardly through the rear face of the bridge-wall and thence backwardly into the bridge-wall structure, the said bridge-wall being provided with a second lower duct communicating with the said pipes.

13. An air-feeding bridge-wall for furnaces, comprising a series of interchangeable facing-blocks, overhanging heat-directing blocks mounted above the said facing-blocks, transverse air-feeding ducts being formed in the bridge-wall to the rear of the said facing-blocks and having outlet-passages extending between the facing-blocks, looped pipes connecting the said ducts and arranged diagonally with respect to the ducts, the looped portions of the pipes extending to the rear of the bridge-wall for receiving the effect of the column of heated products which sweep downwardly over the bridge-wall.

14. A bridge-wall structure for furnaces comprising upper and lower interchangeable blocks, spacing-blocks interposed between the interchangeable blocks, and means for directing heated air to the combustion-chamber between the interchangeable blocks.

15. A bridge-wall structure for furnaces, the combination of upper and lower interchangeable blocks, partially inclosing an air passage-way, blocks interposed between said interchangeable blocks and spaced apart for affording a passage between said passage-way and the combustion-chamber, and means for supplying heated air to said passage-way.

812,073. **POSTAGE-STAMP-BOOK CABINET.** JOSEPH P. MCDONALD, Philadelphia, Pa. Filed June 20, 1905. Serial No. 266,195.

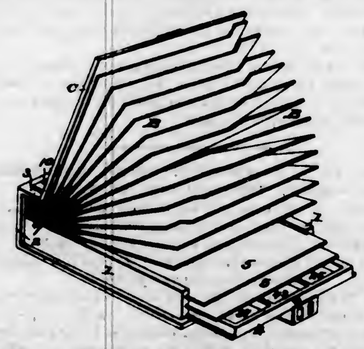

Claim.—1. The improved postage-stamp cabinet, comprising a box-like base portion having a slidable drawer and plates arranged over the same and all spaced apart vertically, and a foldable portion comprising a series of stiff leaves and fixed back strips to which the same are hinged, the said strips being gradually increased in width from the top downward, the leaves being correspondingly increased in length from the bottom upward, and a rigid cover hinged to the back of the base portion in rear of the upper foldable leaves, substantially as described.

2. The improved postage-stamp cabinet comprising the box-like base portion having slidable holders for stamps, a superimposed series of hinged foldable leaves, and a stiff cover, and the clasp 11 hinged to the base and adapted to engage the cover whereby it secures the latter upon the leaves and holds the slidable parts in place, as shown and described.

812,074. **CABINET.** HARRY F. MCDONNELL, Latrobe, Pa. Filed June 24, 1905. Serial No. 266,747.

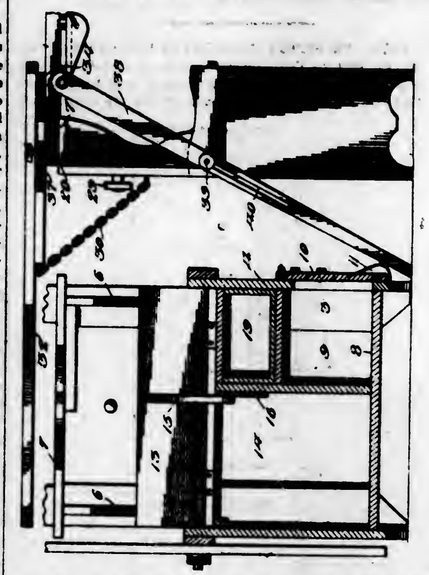

Claim.—1. The combination with a cabinet, of a standard hinged thereto and having a depending arm provided with an opening, a turn-button adapted for entrance through said opening and to be turned into engagement with the standard, and a board attached to and adapted for movement with the latter.

2. The combination with a cabinet, of a supporting-standard hinged thereto to swing from a vertical to a horizontal position, a depending arm carried by the standard, a latching member adapted for engagement with said arm to lock the standard in vertical position, an ironing-board attached to and for movement with the standard, and a supporting-leg pivoted between its ends and operatively engaged with the standard for automatic movement thereby to supporting position.

812,075. **SCREW-CONNECTING DIE AND STOCK.** WILLIAM J. MCKENNEY, Barnett, Ill. Filed Mar. 23, 1905. Serial No. 251,646.

Claim.—1. In a threading-tool, the combination of a stock, a rotary carrier held by the stock, said carrier being provided with sets of longitudinal slots, a holding-ring within the carrier, adjusting-screws connecting the ring to the carrier and adjustable in one set of slots to permit the ring to be adjusted toward and from the stock, radially-adjustable dies mounted in the carrier-ring, screws carried by the carrier-ring for radially adjusting said dies, said screws being adjustable in the other set of slots in the carrier, and means for rotating the carrier.

2. In a threading-tool, the combination of a stock provided with a chamber in one of the arms thereof, a cover for said chamber provided with a transverse slot, a rotary die-carrier held by the stock, said carrier being provided with ratchet-teeth, pivoted pawls mounted within the chamber and provided with portions to engage the ratchet-teeth to rotate the die-carrier in opposite directions, a spring arranged between and acting on said pawls to normally throw them into engagement with the ratchet-teeth, a transversely-sliding block ar-

ranged within the chamber and adapted to be adjusted in one direction or the other to throw the pawls alternately into and out of operation, and an adjusting member connected with the block and projecting exteriorly through and movable in the transverse slot in the cover, said adjusting member comprising a screw, whereby the block may be clamped in adjusted position.

812,076. **TRANSFER APPARATUS FOR WIRE HEDDLES.** ENGELBERT NEUHAUS, Crefeld, Germany, assignor of one-half to the Firm of A. Weyers & Cie., Crefeld, Prussia, Germany, doing business under the laws of the German Empire. Filed Nov. 9, 1903. Serial No. 180,394.

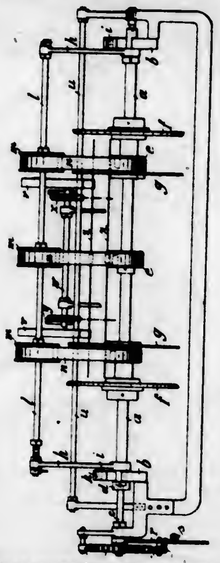

Claim.—1. In an automatic transfer apparatus for wire heddles and the like, the combination of a shaft with rollers or drums fastened to it on the periphery of which compartments of equal capacity are formed by a series of radially-arranged rods or equivalent means and bands or cords fastened by one end to these drums, which bands wind around the layers of heddles and hold them in place, substantially as described.

2. In an automatic transfer apparatus for wire heddles and the like, the combination of a shaft with drums, radially-arranged rods and ribbons fastened to these drums and placed upon upright arms at a certain distance from the main shaft, a counter-shaft with an equal number of drums to which the other end of the ribbons is fastened and so arranged that the ribbons on the drums of one of the shafts can unwind when the other shaft winds up, substantially as described.

3. In an automatic transfer apparatus for wire heddles and the like, the combination of the main shaft being detachably coupled to a stationary driving-shaft on which latter a ratchet-pawl mechanism is mounted, the feeding distance of which is equal to the division in compartments of the drums by the radially-arranged rods, substantially as described.

4. In automatic transfer apparatus for heddles or the like, the combination of a stationary horizontal shaft, a detachable shaft in line with and coupled to said stationary shaft, compartment wheels or drums on said detachable shaft, means on said stationary shaft for imparting intermittent movement to said shaft, a supporting-frame for both shafts, an upwardly-extending open-eyed journal secured to said frame and in which the detachable shaft is journaled, and a lateral extension out of line with said shaft and loosely mounted thereon and engaging with said journal for securing the shaft in position.

5. In an automatic transfer apparatus for wire heddles and the like, the combination of a second stationary shaft being placed at a distance above the stationary driving-shaft in line with and detachably connected to the counter-shaft of the apparatus, means for actuating the same by a bell-crank lever on the main shaft, a free wheel mounted on the second shaft, and a link chain running over the sprocket of the free wheel, held at one end by the bell-crank and at the other end by a stationary spring, and another common ratchet and stop on the second shaft for fixing the motions thus imparted, substantially as described.

6. The combination of an automatic transfer apparatus for wire heddles and the like, being connected with a wire-heddle machine or the like in a position for receiving, means for actuating the same and stationary open guides placed in an inclined position toward the transfer apparatus, guiding the objects coming from the machine into the compartments of apparatus as these are successively presented in rotation, substantially as described.

7. In an automatic transfer apparatus for wire heddles and the like, the combination of the main shaft, compartment-drums on the shaft, and two disks placed outside of the end drums on the main shaft, substantially as described.

8. In an automatic transfer apparatus for wire heddles and the like, the combination of drums with bands placed on its main and counter shafts, and a spiral spring compressible between one bearing and an adjustable collar on the counter-shaft for imparting friction and thus keeping the bands taut, substantially as described.

9. In automatic transfer apparatus for wire heddles or the like, the combination with the heddle-making machine and the like, of intermittently-rotatable compartment-wheels, curved elastic arrow-pointed fingers intermediate between said heddle-making machine and said compartment-wheels, and means for imparting a rocking semicircular movement to said fingers.

10. The combination of an automatic transfer apparatus for wire heddles and the like, being attached to or connected with a heddle-making machine in a position for feeding or discharging, means for actuating the same, and two or more stationary curved rods directed toward the main shaft of the apparatus between the radial rods, which arrest the heddles falling from the apparatus, so that the radial rods still control their movements, and open straight guides at the lower end of the curved rods by which the heddles pass one by one to the machine, substantially as described.

11. In an apparatus for the purpose specified, a shaft, rods extended radially from the shaft and forming walls of a plurality of compartments, and binding-bands attached to the shaft.

12. In an apparatus of the class described, the combination with a shaft, of a plurality of rods extended radially therefrom, a counter-shaft, and binding-bands engaged to wind around heddles on the first-named shaft, the said bands being given off from the counter-shaft.

13. In an apparatus for the purpose described, a shaft, a plurality of rods extended radially therefrom, means for placing heddles between the rods, and binding-bands for the heddles.

14. In an apparatus for the purpose described, a shaft, a plurality of rods extended from the shaft, guides for directing heddles between the rods, and devices for transferring heddle-wires to positions between the rods.

15. In an apparatus for the purpose specified, a shaft, rods extended radially therefrom, a rotary part, curved fingers carried by said rotary part and having curved resilient ends, and binding-bands secured at one end to the said shaft.

812,077. **SWITCH-LOCKING DEVICE.** HENRY H. NICHOLS, Philadelphia, Pa. Filed Nov. 11, 1905. Serial No. 286,881.

Claim.—1. In a railway-switch, the combination with a movable switch-tongue, of a stud rigidly connected thereto, a toggle-lever pivoted at one end, a connection between said stud and toggle-lever, and a weighted arm adapted to act upon the free end of said toggle-lever to hold the switch-tongue in its extreme positions.

2. In a railway-switch, the combination with a switch-tongue, and a depending stud connected thereto, a toggle-lever pivoted at one end, a weighted lever having connection between the toggle-lever and the depending stud on the switch-tongue whereby the weighted lever may throw the toggle-lever and the switch-tongue and hold them positively in their extreme positions.

3. A switch comprising a switch-tongue, a drop member thereon, actuating means engaging said member, a toggle-lever pivoted at one end and a bodily-movable element connected to the free end of said toggle-lever, said actuating means being secured to the toggle-lever, whereby the bodily-movable element is adapted to throw the switch-tongue through said means and to hold it in its extreme positions.

4. A switch comprising a switch-tongue, a depending stud thereon, a horizontally-movable device pivoted at one end, a connection between said depending stud and said device, and a vertically-movable weight connected to the free end of said device and adapted to throw the switch-tongue and to hold said switch-tongue in its extreme positions.

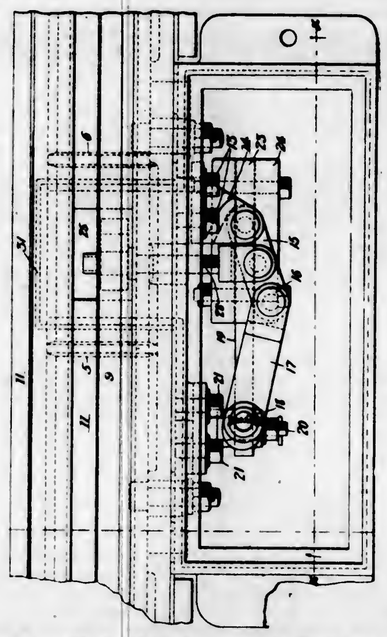

5. In a switch, the combination with a switch-tongue, of a depending stud secured thereto, a horizontally-movable toggle-lever pivoted at one end, a vertically-movable weight connected to the toggle-lever at its free end, and a connection between said toggle-lever and the switch-tongue whereby when said switch-tongue is moved the toggle-lever is positively held in its extreme positions.

6. In a switch, the combination with a switch-tongue, of a depending stud secured thereto, a horizontally-movable toggle-lever pivoted at one end, a connection between said toggle-lever and the switch-tongue, a weighted lever pivoted at one end and a stud connection between said weighted lever and said toggle-lever.

7. In a switch, the combination with a support, of a switch-tongue mounted to move thereon, a depending stud on said switch-tongue, a casing, a horizontally-movable toggle-lever pivoted within the casing, a connection between said toggle-lever and said switch-tongue, a vertically-movable weighted lever pivoted at one end, and a pin connection between said weighted lever and said toggle-lever whereby the toggle-lever is thrown to either extreme position when the switch-tongue is moved so as to carry it past the center.

8. In a switch, the combination with a support, of a switch-tongue adapted to move thereon, a depending arm upon the switch, a casing, ears secured to said casing, a toggle-lever pivoted at one end of said ears and provided with a long and short arm pivoted in the center, a connection from said short arm to the switch-tongue, a vertically-movable lever having a weight at one end, a post secured to the casing on which said weighted lever is pivoted, and a stud integral with said weighted lever, and movably secured to the long arm of the toggle-lever whereby when the toggle-lever is moved past the center by the tongue the weight of the lever is adapted to throw the toggle-lever and thus the switch-tongue, through their connection, to the extreme opposite positions.

9. In a switch, the combination with a switch-tongue base-plate, a switch-tongue mounted thereon, and operating parts for said switch, of a casing removably secured to the base-plate adapted to hold said switch parts, a trap adapted to drain said base-plate, and a slanting bottom to said casing and provided with an aperture to drain the casing.

812,078. **KNIFE-HOLDER FOR VENEER-LATHES.** MARTIN H. NORTON, Newport, Vt. Filed May 26, 1903. Serial No. 158,603.

Claim.—1. A knife-holder embodying a pair of clamping elements, a knife held between the elements, and means for transversely flexing a length of the knife edgewise or in the plane of the knife.

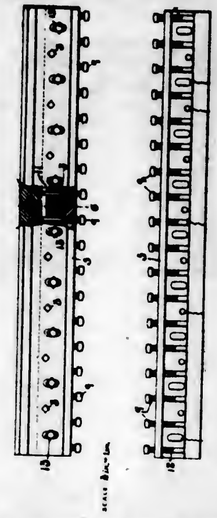

2. A knife-holder comprising a pair of clamping elements, a knife disposed between the elements, presser-pins engaging the rear edge of the knife, and means for exerting pressure on the pins to effect transverse flexing of a length of the knife.

3. A knife-holder embodying a pair of clamping elements, a knife disposed between the elements, clamping-screws for connecting the elements and locking the knife in position, presser-pins engaging the rear edge of the knife, and pressure-bolts coacting with the presser-pins to effect transverse flexing of the length of the knife.

4. A knife-holder embodying a pair of clamping elements, one of which is provided with spaced threaded orifices and open-sided recesses communicating therewith, a knife disposed between the elements, means for clamping the two elements together, presser-pins disposed within the recesses and engaging the rear edge of the knife, and pressure-bolts engaging the threaded orifices and coacting with the presser-pins to effect flexing of the knife.

812,079. **HEATING-STOVE.** ANSELM T. NYE, Marietta, Ohio. Filed Mar. 20, 1905. Serial No. 251,115.

Claim.—1. In a heating-stove, abutting sections each provided with a packing-groove in alinement with the groove in the other section and disposed diagonally to the line of jointure between the sections, and a packing disposed in said grooves.

2. In a heating-stove, abutting sections each having its edges provided with portions disposed in different horizontal planes and an intermediate diagonally-disposed packing-groove in alinement with the groove of the other section, and a packing disposed in said grooves diagonally to the line of jointure.

3. In a heating-stove, a body portion provided with a packing-groove at its upper face, a drum seated at its lower end in said groove, and a cap-plate for said drum provided with a depending flange in alinement with said groove to seat therein when the drum is removed.

4. In a heating-stove, a body portion provided with a packing-groove and flange and seat at its upper face, a drum seated at its lower end in said groove, a cover-plate for said drum, a dome provided with a flange and rib at its lower portion to rest upon the flange and seat upon said body, and a discharge-pipe from said dome extending through said cover-plate.

5. In a heating-stove, a body portion having at its top a supporting-flange and packing-groove, a dome disposed upon said flange, a drum surrounding said dome and extending at the outer face of said flange, a cap-plate located upon said drum and adapted to seat in said groove when the drum and dome are removed, and a conducting-pipe extending from the dome to said cap-plate.

6. In a heating-stove, a body portion having at its top a vertical flange and a laterally-disposed flange, a dome supported upon said

vertical flange, a drum surrounding said dome and the outer face of said vertical flange, a lateral extension from said drum disposed over the lateral flange of the body portion, and means for securing said extension and lateral flange in contact.

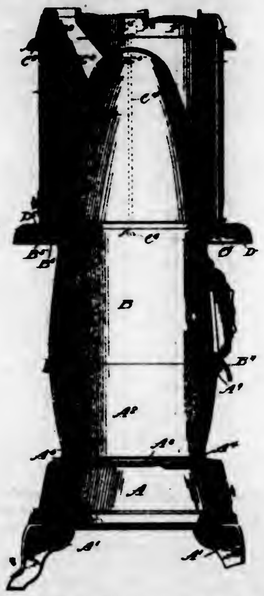

7. In a heating-stove, a body portion having at its top a vertical supporting-flange, and a laterally-disposed flange concentric thereto, a dome having a horizontal flange to rest upon the vertically-disposed flange and a depending flange extending within said vertically-disposed flange, a drum surrounding said dome and vertically-disposed flange, means for retaining said drum to the laterally-disposed flange, a cap-plate resting upon said drum, and a conducting-pipe extending from said plate to said dome.

8. In a heating-stove, a body portion provided at its top with a shoulder, a dome having a discharge-opening and a depending flange to rest upon said shoulder, a discharge-pipe from the upper portion of said dome provided with a flange to overlap the edges of said opening, a packing-recess beneath said overlapping flange, a vertically-disposed flange upon the stove-body at the outer side of said shoulder thereon, a cap-plate connected to said discharge-pipe, and a drum extending from said cap-plate to the outer face of the vertical flange upon the stove-body.

812,080. **RAIL-JACK AND THE LIKE.** FRANZ OBELIANDT, Fuerth, Germany. Filed Feb. 17, 1905. Serial No. 246,118.

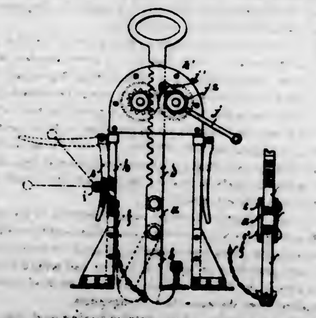

Claim.—A lifting-jack comprising an operating-gearing, a hook operatively connected therewith, the hook portion being mounted to swing, a hook-detaching lever, and a chain secured to said hook and slidably connected with said lever.

812,081. **COMBINATION-RACK.** JOHN S. OLIVER and CHARLES J. THOMAS, Baltimore, Md. Filed July 7, 1905. Serial No. 268,605.

Claim.—1. In a garment-rack, the combination of a casing, a stationary clamping element, a movable clamping element pivotally mounted in advance of its inner end within the casing and carrying upon its inner end an arcuate toothed rack and a locking projection, a spring bearing upon the inner end of the movable clamping member to force the same downward and the outer end upward, and a sliding spring-actuated dog adapted to engage the rack and adapted to be retracted by the key, the locking projection of the movable member being adapted to engage and lock the same from withdrawal when the dog is retracted.

2. In a garment-rack, the combination of a casing provided with supports for an umbrella or similar object, a stationary clamping element, a movable spring-retracted clamping element pivotally mounted upon the casing and provided with a rack and a key-locking element, a spring-actuated locking-dog to engage the rack, said dog adapted to be retracted by an inserted key, pivotally-mounted gripping-jaws for engaging the objects supported by the aforesaid supports, said jaws being provided with actuating-arms projecting into the casing, and a spreader pivotally attached to the inner end of the movable clamping element and movable between said arms to spread them apart and close the clamping-jaws.

812,082. **ATTACHMENT FOR FAUCETS.** GUSTAVE A. OLLEN, Providence, R. I. Filed May 16, 1905. Serial No. 260,693.

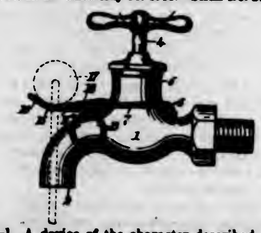

Claim.—1. A device of the character described, comprising a clasp for attachment to an upright portion of a faucet, a clamp for adjacent side portions of the discharge-spout of the faucet, and a hook for supporting the bail of a vessel.

2. A device of the character described, comprising a single piece of wire having the extremities thereof twisted together at the ends, thence curved outwardly and crossing each other to form an approximately circular clasp, the two members of the wire then being bent horizontally beyond the clasp, thence laterally and returned in the direction of the clasp and terminating in vertically-disposed sprung loops having a centrally-disposed transverse connecting-arch, the returned portions of said members being inwardly and upwardly inclined.

3. A device of the character described, comprising a single piece of wire having the extremities thereof twisted together at the ends, thence curved outwardly and crossing each other to form an approximately circular clasp, the two members of the wire then being bent horizontally beyond the clasp, thence laterally and returned in the direction of the clasp and terminating in vertically-disposed sprung loops having a centrally-disposed transverse connecting-arch, each of the connected portions of the device beyond the clasp being upturned to form a hook.

812,083. **SMELTING-FURNACE.** ALLEN R. PARTRIDGE, San Francisco, Cal., assignor, by mesne assignments, to The Vancedora Mine Equipment Company, a Corporation of California. Filed Oct. 26, 1904. Serial No. 230,670.

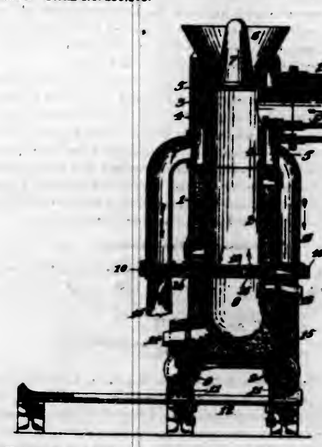

Claim.—In combination with a smelter, having a double wall near its upper end forming a hot-air space, an outlet-pipe communicating with the interior of the stack, an inlet-pipe concentric therewith and communicating with the hot-air space, an exhaust-fan in connection with the outlet-pipe, and a fan-blower in connection with the inlet-pipe.

812,084. **COAL-HANDLING PLANT.** WILLIAM J. PATTERSON and LEWIS J. ROSS, Pittsburg, Pa., assignors to Heyl & Patterson, Pittsburg, Pa., a Copartnership. Filed Jan. 9, 1904. Serial No. 188,385.

Claim.—1. In a coal handling and storage plant, the combination of a suitable track, an elevated traveling bridge on said track, a conveyer on said bridge, a carriage adapted to travel across said bridge, an outwardly-projecting frame on said carriage, a coal-lifting device carried by said frame and adapted to discharge the coal onto said conveyer, and a conveyer traveling parallel with said track and adapted to receive the coal from said first-mentioned conveyer.

2. In a coal handling and storage plant, the combination of a suitable track, a traveling bridge on said track, a coal-lifting device carried by said bridge, a series of buckets traveling parallel with said track and adapted to receive the coal from said coal-lifting device, a traveling frame on said track in the rear of said bridge, and an elevator on said frame adapted to receive the contents of said buckets.

3. In a coal handling and storage plant, the combination of a suitable track, an overhead traveling bridge on said track, a coal-lifting device carried by said bridge, a series of overhead traveling buckets parallel with said track and adapted to receive the coal from said coal-lifting device, a traveling frame on said track in the rear of said bridge, and an elevator on said frame adapted to receive the contents of said buckets.

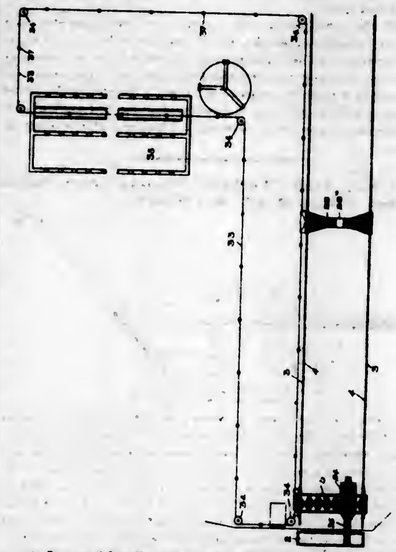

4. In a coal handling and storage plant, the combination of a track, a double inclined traveling frame on said track, an inclined elevator on said frame, and a discharge-chute at the upper end of said frame into which said elevator discharges its contents.

5. In a coal handling and storage plant, the combination of a track, a series of overhead traveling buckets traveling parallel with said track, an elevated traveling frame on said track, an elevator on said frame adapted to receive the contents of said conveyer, and a discharge-chute at the upper end of said frame into which said elevator discharges its contents.

6. In a coal handling and storage plant, the combination of a track, a traveling frame on said track, an elevator on said frame, a chute at the lower end of said frame adapted to discharge into said elevator, and a discharge-chute at the upper end of said frame into which said elevator discharges its contents.

7. In a coal handling and storage plant, the combination of a track, a double inclined traveling frame on said track, an inclined elevator on said frame, and two or more discharge-chutes at the upper end of said frame into which said elevator discharges its contents.

8. In a coal handling and storage plant, the combination of a suitable track, a traveling bridge on said track, a coal-lifting device carried by said bridge, a conveyer traveling parallel with said track adapted to receive the coal from said coal-lifting device, a traveling frame on said track in the rear of said bridge, and an elevator on said frame adapted to receive the contents of said conveyer.

9. The combination with apparatus for unloading materials from cars, barges and the like, and means independent of said apparatus for placing said materials in storage, of means for adapting said unloading apparatus for use in reclaiming the stored materials from any desired point of the storage pile.

10. The combination with apparatus for unloading materials from cars, barges and the like, and means independent of said apparatus for conveying said materials to a distance from the unloading apparatus and depositing them in storage, of means for adapting said unloading apparatus for use in reclaiming the stored materials from any desired point of the storage pile.

11. The combination with movable apparatus for unloading materials from cars, barges and the like, and means independent of said apparatus for conveying said materials to storage, of means for transporting said unloading apparatus to any desired point of the storage pile to be used in reclaiming the stored material from storage.

12. In a coal handling and storage plant, the combination of a suitable track, an elevated traveling bridge on said track, and coal or like lifting device carried by said bridge, independent means for

placing in storage the coal lifted by said lifting device, and means for moving said traveling bridge along said track, whereby said lifting device may be employed to reclaim the coal from the storage pile at any desired point.

13. The combination with apparatus for unloading materials from cars, barges and the like, and means independent of said apparatus for placing said materials in storage, of means for adapting said unloading apparatus for use in reclaiming the stored materials from any desired point of the storage pile, and means for moving said unloading apparatus to any desired point of the storage pile to be used in reclaiming the stored material from storage.

812,085. **PLATE-JOINT.** ALEXANDER M. PEARCE, Pittsburg, Pa. Filed Aug. 19, 1905. Serial No. 274,844.

Claim.—1. In a plate-joint, the combination of the plates, the jaws thereof, a pin passing through the jaws, a plate carried by and shiftable with the pin, said plate having an eccentric edge extending across the joint between the jaws, means by which the pin and plate may be rotatably shifted, and clamping means to adjustably fix the pin.

its length, insulated electric wires severally connected to the secondary coil at intermediate points of its length and to the electric insulated wire leading from one pole of the primary coil, an electric

legs for said side section, folding leaves upon said side section, means for supporting said leaves in their open position, and means for retaining said side platform-section in its folded position between

placing in storage the coal lifted by said lifting device, and means for moving said traveling bridge along said track, whereby said lifting device may be employed to reclaim the coal from the storage pile at any desired point.

13. The combination with apparatus for unloading materials from cars, barges and the like, and means independent of said apparatus for conveying said materials to a distance from the unloading apparatus, means for depositing said materials in storage, means for adapting said unloading apparatus for use in reclaiming the stored materials from storage, and means for adapting said original conveying means to convey the materials so lifted by said unloading apparatus.

812,085. PLOW ATTACHMENT. WILLIAM J. PATTETT, Centralia, Wash. Filed Jan. 23, 1905. Serial No. 242,216.

Claim.—A plow having its beam projecting laterally landward beyond the land-side plane of the share and standard, a jointer comprising a standard attached to and depending from the land-side face of the beam, an arm connected end to end to the lower end of the standard for axial movement, and a rotary disk cutter journaled on said arm and disposed on that side thereof which is opposed to the land-side plane of the plow, the lower edge of the disk cutter being disposed without the land-side plane of the plow to cut and turn a shallow, narrow furrow on the side next to the land side of the plow and in advance of, to the land side of, and out of line with, the large furrow made by the plow, substantially as described.

812,086. SAW-SET. ALONZO H. PRINCE, Somerville, Ala. Filed Aug. 22, 1904. Serial No. 221,769.

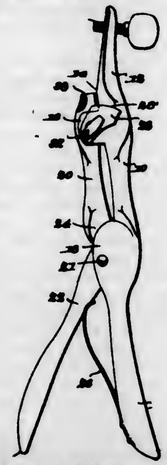

Claim.—1. A saw-set comprising a pair of members, a rotatably-shiftable pivot-pin piercing the members as a fulcrum connection therefor and projected at opposite sides of the members, each projected end having a non-circular portion, one terminal being provided with a finger-piece and the opposite terminal being threaded, gage-plates having non-circular openings receiving the respective non-circular portions of the pin and provided with corresponding eccentric edges extending across the joint between the pivotally-connected members, and a clamping-nut fitted to the threaded terminal of the pin.

2. A saw-set comprising a pair of cooperating jaw members, a rotatably-shiftable pin piercing one of the jaw members, a gage-plate carried by and shiftable with the pin, said plate having an eccentric edge extending across the joint between the jaws, means by which the pin and plate may be rotatably shifted, and clamping means to adjustably fix the pin.

812,087. MOISTENING DEVICE. PIER A. PETERSON, New York, N. Y., assignor to Frank P. Hunt, Nyack, N. Y. Filed May 23, 1905. Serial No. 261,769.

Claim.—1. A moistening device comprising a chambered body provided with a lower opening, a roller mounted to revolve at the opening in the body, a slotted guard-plate located above the roller within the body, a cover for the body, a handle adjustable in the cover, and a follower secured to the handle.

2. In a moistening device, a box-body having an opening in its lower portion extending through from front to rear, a moistening-roller journaled in the sides of the body at the said opening, a slotted guard-plate located above the roller within the body, a handle, means for adjusting the said handle relative to the body, and a follower secured to the handle and being normally located within the body.

3. A moistening device consisting of a box-body having a lower opening extending through from front to rear, a moistening-roller journaled in said body at said opening, an upwardly-arched slotted guard-plate secured within said body above said roller, the side edges of which plate extend out through the said front and rear openings, a cover for the body, a handle adjustably connected with the cover, and a follower secured to the inner end of the said handle.

4. A moistening device consisting of a box-body having an opening at its lower portion extending through from front to rear, a moistening-roller journaled in said body at the said opening, a slotted guard-plate secured within the body, the longitudinal edges of which guard-plate extend out through the openings in the body, a cover hinged to the said body, which cover is provided with a central opening and an interiorly-threaded collar around the opening, a handle having an exteriorly-threaded portion which is fitted to the said collar, and a follower attached to the inner end of the handle.

812,088. CARTRIDGE-EXTRACTING IMPLEMENT. WALTER W. PITMON, Marco, Cal. Filed Dec. 30, 1902. Serial No. 137,141.

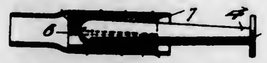

Claim.—In a device of the class described, a tubular sleeve wholly composed of a plurality of cooperating relatively movable segmental sections, an external series of rearwardly-pitched teeth or serrations provided on and extending peripherally of the sleeve, said teeth being extended beyond the plane of the face of the sleeve and the latter having its interior wall gradually and diminishingly tapered from front to rear, a correspondingly-tapered mandrel fitted within and free from positive engagement with the sleeve to permit relative sliding and rotary movement of the parts, said mandrel having its forward larger end rounded and being of greater length than the sleeve, whereby said rounded end may be projected in advance of the sleeve to facilitate entrance of the device into a shell, and a disk-like head fixed on the rear smaller end of the mandrel.

812,089. ELECTRIC TRANSFORMER AND CONNECTIONS. HERBERT F. PROVANDIE, Malvern, Mass. Filed Nov. 11, 1904. Serial No. 232,366.

Claim.—A primary coil or winding, a secondary coil or winding within the primary coil, a core of bunched longitudinal wires within the secondary coil, wooden heads supporting the opposite ends of the core, insulation of primary and secondary coils and of core and secondary coil, and surrounding primary coil, a closed shell or case containing primary and secondary coils, core and wooden heads and their said insulations, and iron particles packed within the shell about the insulation surrounding the primary coil, in combination with insulated electric wires, one leading from one pole and another from the opposite pole of the primary coil and respectively connected to the opposite poles of any suitable source of electric energy, a series of electric contacts, insulated electric wires, one connected to each of the electric contacts and the others connected to the secondary coil, but severally at separate intermediate points and at one end only of its length, insulated electric wires severally connected to the secondary coil at intermediate points of its length and to the electric insulated wire leading from one pole of the primary coil, an electric switch arranged to be placed in and out of contact with each of said electric contacts, and an insulated electric wire connected to said switch and to a binding-post separate from the binding-post connected to one pole of the primary coil, all as substantially as described and for use and operation and purposes specified.

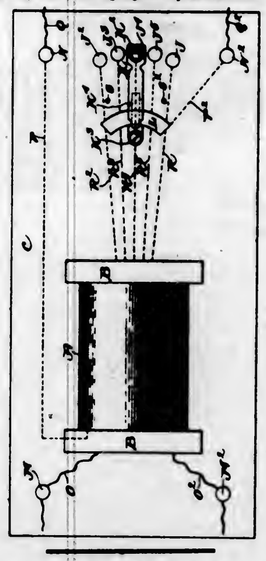

812,090. BANANA-CRATE. HENRY ROSE, Shreveport, La. Filed Apr. 13, 1905. Serial No. 255,303.

Claim.—The herein-described banana-crate consisting of the two separable longitudinal sections comprising end pieces 2 with longitudinal slats 4 secured thereto, tongues 5 on the end pieces of one section to extend across the end pieces at their juncture and keepers 8 on one section to accommodate the tongues, fasteners 10 passing through the keepers and tongues and keeper-plates 12 for holding the fasteners in place, a pasteboard lining arranged in said crate, and packing-rolls connected longitudinally to the slats and pasteboard lining, substantially as described.

812,091. COMBINED SCAFFOLD AND STEP-LADDER. JOHN H. ROSE, Shreveport, La. Filed May 5, 1905. Serial No. 259,940.

Claim.—1. A device of the character described, comprising a main platform-section, supporting-legs hingedly connected at the front and rear ends of the same, side platform-sections hingedly connected to the sides of said main platform-section and adapted to fold between said supporting-legs, and foldable legs upon said side platform-sections.

2. A device of the character described comprising a main platform-section having supporting-legs, one being in the form of a step-ladder, means for bracing said legs apart, a collapsible side platform-section adapted to be folded between said supporting-legs, and means for retaining said side platform-section between said legs.

3. A device of the character described comprising a main platform-section, hinged supporting-legs upon the same, one being in the form of a step-ladder, means for bracing said legs apart, a side platform-section hinged to said main section, foldable supporting-legs for said side section, folding leaves upon said side section, means for supporting said leaves in their open position, and means for retaining said side platform-section in its folded position between said supporting legs.

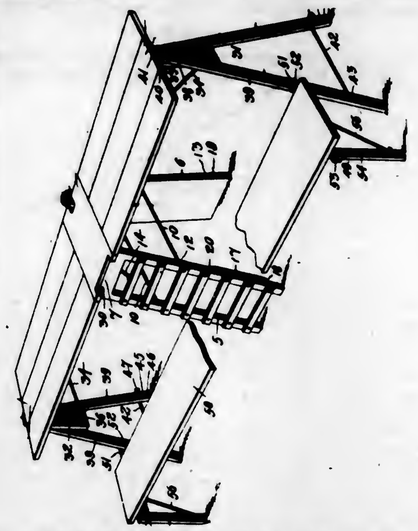

4. A device of the character described comprising a main platform-section, supporting-legs hinged thereto, one being in the form of a step-ladder, hook-rods for bracing said legs apart, a side platform-section consisting of a center board hinged at one of its ends to said main section, hinged leaves upon said center board, turn-buttons for supporting said leaves in their open position, a block hinged upon the outer end of said center board, a brace-rod for holding said block in its open position, folding legs pivotally mounted upon said block, and a brace-rod for connecting the latter-mentioned legs.

5. A device of the character described comprising a main platform-section having a recessed portion at one of its ends and a wheel or roller journaled at its other end, supporting-legs hinged upon the under side of said main section, the leg adjacent to said recess being in the form of a step-ladder, a hook-rod for bracing said legs apart, side platform-sections each consisting of a center board hinged at its inner end upon one side of said main section, leaves hinged upon the sides of said center boards, turn-buttons for supporting said leaves in their open position, a hinged block at the other end of each of the center boards, detachable brace-rods engaged with said block, legs pivoted upon said blocks, a hook-rod for bracing said legs apart, means for adjusting one or more of said legs, and means for retaining said side platform-sections in their folded positions between the first-mentioned supporting-legs.

6. The combination with the supporting-legs of a scaffold, of folding frames pivotally connected thereto and each consisting of a horizontal member, a pivoted vertical member or leg and a detachable brace-rod, and a table-top removably mounted upon the horizontal members of said frame.

812,092. DOOR-LATCH. EDWARD H. ROY, Nashville, Tenn. Filed Feb. 18, 1905. Serial No. 246,286.

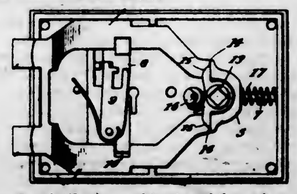

Claim.—In a latch, the combination of the casing, a latch-bolt comprising similar members connected at their inner ends by means of a yoke, a knob-spindle hub fitted in the yoke and having its arms

arranged to engage with the extremities of said yoke, a guide-pin located upon one side of the knob-spindle hub and

annular extension provided with notches formed upon its periphery

rigid member and a lower turning member projecting below the said

lel with the tank, characterized by having

arranged to engage with the extremities of said yoke, a guide-pin located upon one side of the knob-spindle hub and having engagement with said yoke, and a post upon the opposite side of said knob-spindle hub to form a stop therefor and beveled upon opposite sides to provide ample movement for said hub, substantially as specified.

812,093. DOUBLETREE AND WHIFFLETREE COUPLING. GEORGE B. RUSSELL, Carrollton, Ill. Filed Apr. 19, 1905. Serial No. 256,336.

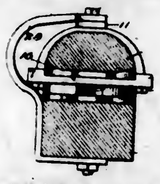

Claim.—1. A device of the character described comprising a primary plate provided with a central squared recess and an aperture, parallel ribs formed upon said plate, each of said ribs provided with a concave upper surface and with a vertical side, said plate provided with an annular extension formed upon its base, an auxiliary plate provided with a hollow annular extension projecting from its upper face, said annular extension of the auxiliary plate provided with squared notches, a draft-bolt positioned upon and securing said plates together, a removable clip carried by said primary plate, said removable clip provided with a threaded aperture, a clevis provided with apertured ends positioned upon said clip and draft-bolt, a crown-bolt positioned within one of the apertures of said clevis and threaded into the aperture of said clip, and means carried by said draft-bolt for securing said clevis in a fixed position thereon.

2. In a device of the character described, the combination with a support, of a primary and an auxiliary plate, parallel ribs formed upon said primary plate, each of said ribs provided with a beveled upper surface, said primary plate provided with a recess, a bolt provided with a squared head positioned upon said plates, the squared head of said bolt positioned within the squared recess of said primary plate, a removable clip carried by said primary plate, and means connecting the upper portion of said clip and the lower portion of said bolt with said support.

3. A device of the character described comprising a primary and an auxiliary plate, said primary plate, provided with an annular downward extension and a squared central recess, said auxiliary plate provided with an annular extension, said extension provided with notches formed upon its periphery means for securing said plates together, a clip carried by said primary plate, and means for securing said clip in a fixed position upon said plate.

4. A device of the character described comprising a primary and an auxiliary plate, said primary plate provided with ribs, each of said ribs having a beveled upper face and a vertical side, means for securing said plates together, a clip carried by said plates, means for securing said clip, primary and auxiliary plates in an assembled position.

5. In a device of the character described the combination with a support, of an auxiliary plate carried by said support, said auxiliary plate provided with a central recess and an aperture, squared notches formed upon said auxiliary plate, a primary plate provided with an aperture and an annular extension positioned upon said auxiliary plate, and having the annular extension projecting into the central recess, said primary plate provided with apertured, lateral extensions, ribs formed contiguous to said lateral extensions upon said plate, each of said ribs provided with beveled and vertical faces, said primary plate provided with a squared central recess and an aperture, the aperture of said primary plate registering with the aperture of said auxiliary plate, a draft-bolt provided with a squared head positioned within the central aperture of said primary plate and the registering aperture of said auxiliary plate, the squared head of said draft-bolt positioned within the squared recess of said primary plate, a removable clip carried by said primary plate, the ends of said clip positioned within the apertured portion of said lateral extensions, nuts positioned upon the ends of said clip, and means carried by said support and connecting the clip and draft-bolt with said support.

6. A coupling device comprising a primary plate provided with parallel ribs, each rib provided with vertical and beveled faces, said primary plate provided with apertured lateral extensions projecting therefrom, contiguous to said ribs, an auxiliary plate provided with an annular extension formed integral upon its upper surface, said annular extension provided with notches formed upon its periphery, said primary plate provided with an extension projecting downwardly therefrom and adapted to be positioned within the annular extension of said auxiliary plate, and means securing said plates together.

812,094. STARTING-CRANK FOR ENGINES. GEORGE B. SELDEN, Jr., Rochester, N. Y. Filed Jan. 30, 1905. Serial No. 243,260.

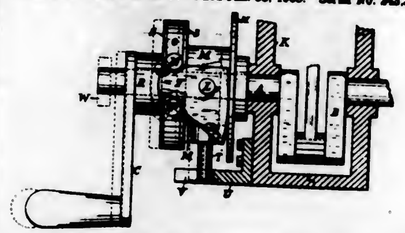

Claim.—1. The combination of a crank-shaft, a starting-clutch member revolving therewith, a starting-crank provided with a clutch member corresponding to that on the shaft, a non-rotating support, a movable lever on the support for disengaging said clutch members when said crank-shaft revolves backward, and means arranged at right angles to the axis of revolution to actuate said cam on said backward movement, as and for the purposes set forth.

2. The combination of a crank-shaft, a starting-clutch member revolving therewith, a part having a plane surface at right angles to the crank-shaft, a starting-crank provided with a clutch member corresponding to that on the shaft, a second clutch mounted on the starting-crank, and means operating between said second clutch and the plane surface to disconnect the starting-clutch members from each other, as and for the purposes set forth.

3. The combination of a crank-shaft, a starting-clutch member revolving therewith, a disk, a starting-crank provided with a clutch member corresponding to that on the shaft, and provided with a second clutch, and means operating between said second clutch and said disk to disconnect the starting-clutch members from each other, as and for the purposes set forth.

4. The combination of a crank-shaft, a starting-crank, a starting-clutch member revolving with said crank-shaft, a movable part having a plane surface at right angles to the crank-shaft, an oppositely-acting clutch member carried by the starting-crank, and means located between said clutch members and the plane surface for disconnecting said clutch members on the reverse rotation of the crank-shaft, as and for the purposes set forth.

5. The combination of a crank-shaft, a starting-crank, a starting-clutch member revolving with said crank-shaft, a part having a plane surface at right angles to the crank-shaft, an oppositely-acting clutch member carried by the starting-crank, a non-rotating support, and means operating between the clutch members and the plane surface to disconnect the clutch members on the reverse rotation of the crank-shaft, as and for the purposes set forth.

6. The combination of a crank-shaft, a starting-crank, a starting-clutch member revolving with said crank-shaft, a part having a plane surface at right angles to the crank-shaft, an oppositely-acting clutch member carried by the said starting-crank, a non-rotating support, a lever pivoted to said support and bearing at one end against said plane surface and connected at the other end with the clutch member on the starting-crank, as and for the purposes set forth.

7. The combination of a crank-shaft, a starting-crank, a starting-clutch member revolving with said crank-shaft, a part having a plane surface at right angles to said crank-shaft, a clutch on the starting-crank, said clutch comprising an inner member having a part adapted to engage with the starting-clutch member, and an outer member adapted to engage with the inner member on the reverse rotation of the crank-shaft, a non-rotating support, and means attached to the support and operated by the outer member of said clutch for disconnecting the members of the starting-clutch, as and for the purposes set forth.

812,095. FIFTH-WHEEL. MATTHEW H. SHERWOOD, Scranton, Pa., assignor of one-half to Burnham K. Nyce, Scranton, Pa. Filed Mar. 9, 1905. Serial No. 249,295.

Claim.—1. A fifth-wheel for vehicles, comprising an upper rigid member and a lower turning member projecting below the said upper member to engage a support having a movable engagement with the upper member and an attaching portion formed upon the upper member and projecting in a plane below the plane of bearing and capable of perforation at any point for securing it to the running-gear of a vehicle.

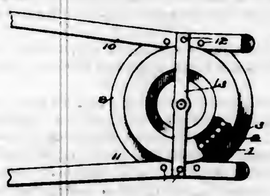

2. A fifth-wheel for vehicles, comprising a lower supporting member having a bearing formed therein, an upper supporting member resting upon said lower member and overhanging the same and an attaching-flange projecting from the upper member in a plane below that of the plane of bearing of the upper member to which portions of a running-gear may be secured the lower supporting member extending sufficiently below the upper supporting member to engage a support.

3. A fifth-wheel for vehicles, comprising a lower supporting member, an upper member resting thereon and having inner and outer walls overhanging and inclosing the lower member and a lateral projecting horizontal flange extending outwardly from the upper member entirely around the same for attachment to any kind of running-gear the said lower supporting member projecting sufficiently below the upper member for attachment to adjacent parts of the running-gear.

4. A fifth-wheel for vehicles, comprising a lower circular member and an upper circular member, the upper member having downwardly-extending walls overhanging the lower member and laterally-extending flanges projecting from each of the said walls affording attaching means for various kinds of running-gear.

5. A fifth-wheel for vehicles, comprising a lower supporting member having an annular runway formed therein, antifriction bearing means mounted in said runway and an upper member fitting upon said lower member and having a bearing for engaging and resting upon said antifriction means, laterally-extending flanges projecting from the upper member and capable of receiving the reaches or hounds of various kinds of running-gear, the said flange affording means to which the portions of the running-gear may be bolted or secured at any point.

812,096. RAILROAD TANK-CAR. GEORGE L. SOUTHARD, Southard, Okla., assignor to Union Tank Line Company, Bayonne, N. J., a Corporation of New Jersey. Filed Mar. 27, 1905. Serial No. 252,356.

Claim.—1. A railroad tank-car in which buffing stresses are transmitted jointly by the tank and a stress-transmitting member parallel thereto, characterized by having in the tank connections with respect to such stresses a looseness which is taken up when a certain degree of buffing stress is attained, substantially as described.

2. A railroad tank-car in which buffing stresses are transmitted jointly by the tank and a stress-transmitting member parallel thereto, characterized by having in the tank connections with respect to such stresses a looseness which is taken up by a small movement against large resistance, substantially as described.

3. A railroad tank-car in which buffing stresses are transmitted jointly by the tank and a stress-transmitting member parallel thereto, characterized by having in the tank connections with respect to such stresses a looseness which is taken up by the shortening of said parallel member under compression within its limit of elasticity, substantially as described.

4. A railroad tank-car in which buffing stresses are transmitted jointly by the tank and a stress-transmitting member parallel thereto, characterized by having constant and uniform tank connections with respect to pulling stresses, along with a limited looseness in the tank connections with respect to buffing stresses, substantially as described.

5. A railroad tank-car in which buffing stresses are transmitted jointly by the tank and a stress-transmitting member parallel thereto, characterized by having adjustable pulling connections for the tank along with buffing connections therefor which are loose to a limited extent, substantially as described.

6. A railroad tank-car with stress-transmitting member parallel with the tank, characterized by having longitudinally-adjustable pulling connections for the tank, substantially as described.

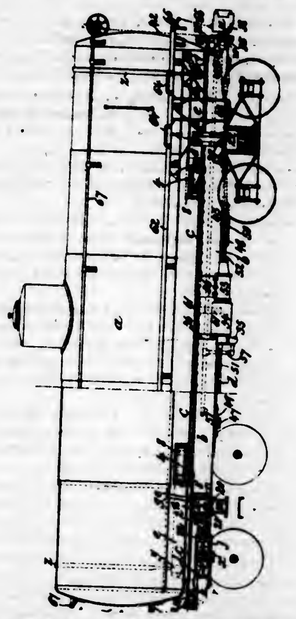

7. A railroad tank-car in which buffing stresses are transmitted jointly by the tank and a stress-transmitting member parallel thereto, characterized by having a limited looseness with respect to buffing stresses in the connections of a tank which is held from independent longitudinal motion not required for taking up said looseness, substantially as described.

8. A railroad tank-car with stress-transmitting member parallel with the tank, characterized by having tank connections at the ends of the tank, which connections restrain independent longitudinal motion otherwise while allowing expansion of the tank or shortening of the said parallel member to take place, substantially as described.

9. A railroad tank-car with two parallel stress-transmitting members, one of which is constituted by the tank, said car having a limited looseness in the tank connections with respect to buffing stresses and also having said members interconnected to prevent independent longitudinal movement except as such movement may be required in taking up said looseness, substantially as described.

10. A railroad tank-car composed of a tank, an underframe, and wheeled trucks, and characterized by tank connections which are loose to a limited extent with respect to buffing stresses, substantially as described.

11. A railroad tank-car composed of a tank, an underframe, and wheeled trucks, and characterized by tank connections which are loose to a limited extent with respect to buffing stresses, but tight with respect to stresses tending to move the tank bodily on the underframe, substantially as described.

12. A railroad tank-car having the tank removable from the body-bolsters and the buffing and pulling appliances and provided with attaching means which not only retain the tank in place on the body-bolsters, but also support the buffing and pulling appliances and transmit buffing and pulling stresses between them and the tank, substantially as described.

13. A railroad tank-car having a removable tank and also a parallel stress-transmitting member, the tank provided with attaching means which not only retain the tank in place on the body-bolsters, but also support the buffing and pulling appliances and transmit buffing and pulling stresses between them and the tank, substantially as described.

14. A railroad tank-car composed of a removable tank, an underframe, and wheeled trucks, and provided with tank-attaching means which not only retain the tank in place on the body-bolsters, but also

support the buffing and pulling appliances and transmit buffing and pulling stresses between them and the tank, substantially as described.

15. A railroad tank-car having a removable tank and also a parallel stress-transmitting member, the tank provided with attaching means which not only retain the tank in place on the body-bolsters, but also support the buffing and pulling appliances and transmit buffing and pulling stresses between them and the tank, substantially as described.

16. A railroad tank-car having a removable tank and also a parallel stress-transmitting member, the tank provided with attaching means which not only retain the tank in place on the body-bolsters, but also support the buffing and pulling appliances and transmit buffing and pulling stresses between them and the tank, substantially as described.

17. A railroad tank-car having a removable tank and also a parallel stress-transmitting member, the tank provided with attaching means which not only retain the tank in place on the body-bolsters, but also support the buffing and pulling appliances and transmit buffing and pulling stresses between them and the tank, substantially as described.

18. A railroad tank-car having a removable tank and also a parallel stress-transmitting member, the tank provided with attaching means which not only retain the tank in place on the body-bolsters, but also support the buffing and pulling appliances and transmit buffing and pulling stresses between them and the tank, substantially as described.

19. A railroad tank-car having a removable tank and also a parallel stress-transmitting member, the tank provided with attaching means which not only retain the tank in place on the body-bolsters, but also support the buffing and pulling appliances and transmit buffing and pulling stresses between them and the tank, substantially as described.

20. A railroad tank-car having a removable tank and also a parallel stress-transmitting member, the tank provided with attaching means which not only retain the tank in place on the body-bolsters, but also support the buffing and pulling appliances and transmit buffing and pulling stresses between them and the tank, substantially as described.

21. A railroad tank-car having a removable tank and also a parallel stress-transmitting member, the tank provided with attaching means which not only retain the tank in place on the body-bolsters, but also support the buffing and pulling appliances and transmit buffing and pulling stresses between them and the tank, substantially as described.

22. A railroad tank-car having a removable tank and also a parallel stress-transmitting member, the tank provided with attaching means which not only retain the tank in place on the body-bolsters, but also support the buffing and pulling appliances and transmit buffing and pulling stresses between them and the tank, substantially as described.

23. A railroad tank-car having a removable tank and also a parallel stress-transmitting member, the tank provided with attaching means which not only retain the tank in place on the body-bolsters, but also support the buffing and pulling appliances and transmit buffing and pulling stresses between them and the tank, substantially as described.

24. A railroad tank-car having a removable tank and also a parallel stress-transmitting member, the tank provided with attaching means which not only retain the tank in place on the body-bolsters, but also support the buffing and pulling appliances and transmit buffing and pulling stresses between them and the tank, substantially as described.

25. A railroad tank-car having a removable tank and also a parallel stress-transmitting member, the tank provided with attaching means which not only retain the tank in place on the body-bolsters, but also support the buffing and pulling appliances and transmit buffing and pulling stresses between them and the tank, substantially as described.

26. A railroad tank-car having a removable tank and also a parallel stress-transmitting member, the tank provided with attaching means which not only retain the tank in place on the body-bolsters, but also support the buffing and pulling appliances and transmit buffing and pulling stresses between them and the tank, substantially as described.

27. A railroad tank-car having a removable tank and also a parallel stress-transmitting member, the tank provided with attaching means which not only retain the tank in place on the body-bolsters, but also support the buffing and pulling appliances and transmit buffing and pulling stresses between them and the tank, substantially as described.

28. A railroad tank-car having a removable tank and also a parallel stress-transmitting member, the tank provided with attaching means which not only retain the tank in place on the body-bolsters, but also support the buffing and pulling appliances and transmit buffing and pulling stresses between them and the tank, substantially as described.

29. A railroad tank-car having a removable tank and also a parallel stress-transmitting member, the tank provided with attaching means which not only retain the tank in place on the body-bolsters, but also support the buffing and pulling appliances and transmit buffing and pulling stresses between them and the tank, substantially as described.

30. A railroad tank-car having a removable tank and also a parallel stress-transmitting member, the tank provided with attaching means which not only retain the tank in place on the body-bolsters, but also support the buffing and pulling appliances and transmit buffing and pulling stresses between them and the tank, substantially as described.

31. A railroad tank-car having a removable tank and also a parallel stress-transmitting member, the tank provided with attaching means which not only retain the tank in place on the body-bolsters, but also support the buffing and pulling appliances and transmit buffing and pulling stresses between them and the tank, substantially as described.

32. A railroad tank-car having a removable tank and also a parallel stress-transmitting member, the tank provided with attaching means which not only retain the tank in place on the body-bolsters, but also support the buffing and pulling appliances and transmit buffing and pulling stresses between them and the tank, substantially as described.

33. A railroad tank-car having a removable tank and also a parallel stress-transmitting member, the tank provided with attaching means which not only retain the tank in place on the body-bolsters, but also support the buffing and pulling appliances and transmit buffing and pulling stresses between them and the tank, substantially as described.

34. A railroad tank-car having a removable tank and also a parallel stress-transmitting member, the tank provided with attaching means which not only retain the tank in place on the body-bolsters, but also support the buffing and pulling appliances and transmit buffing and pulling stresses between them and the tank, substantially as described.

35. A railroad tank-car having a removable tank and also a parallel stress-transmitting member, the tank provided with attaching means which not only retain the tank in place on the body-bolsters, but also support the buffing and pulling appliances and transmit buffing and pulling stresses between them and the tank, substantially as described.

36. A railroad tank-car having a removable tank and also a parallel stress-transmitting member, the tank provided with attaching means which not only retain the tank in place on the body-bolsters, but also support the buffing and pulling appliances and transmit buffing and pulling stresses between them and the tank, substantially as described.

37. A railroad tank-car having a removable tank and also a parallel stress-transmitting member, the tank provided with attaching means which not only retain the tank in place on the body-bolsters, but also support the buffing and pulling appliances and transmit buffing and pulling stresses between them and the tank, substantially as described.

38. A railroad tank-car having a removable tank and also a parallel stress-transmitting member, the tank provided with attaching means which not only retain the tank in place on the body-bolsters, but also support the buffing and pulling appliances and transmit buffing and pulling stresses between them and the tank, substantially as described.

39. A railroad tank-car having a removable tank and also a parallel stress-transmitting member, the tank provided with attaching means which not only retain the tank in place on the body-bolsters, but also support the buffing and pulling appliances and transmit buffing and pulling stresses between them and the tank, substantially as described.

40. A railroad tank-car having a removable tank and also a parallel stress-transmitting member, the tank provided with attaching means which not only retain the tank in place on the body-bolsters, but also support the buffing and pulling appliances and transmit buffing and pulling stresses between them and the tank, substantially as described.

41. A railroad tank-car having a removable tank and also a parallel stress-transmitting member, the tank provided with attaching means which not only retain the tank in place on the body-bolsters, but also support the buffing and pulling appliances and transmit buffing and pulling stresses between them and the tank, substantially as described.

42. A railroad tank-car having a removable tank and also a parallel stress-transmitting member, the tank provided with attaching means which not only retain the tank in place on the body-bolsters, but also support the buffing and pulling appliances and transmit buffing and pulling stresses between them and the tank, substantially as described.

43. A railroad tank-car having a removable tank and also a parallel stress-transmitting member, the tank provided with attaching means which not only retain the tank in place on the body-bolsters, but also support the buffing and pulling appliances and transmit buffing and pulling stresses between them and the tank, substantially as described.

44. A railroad tank-car having a removable tank and also a parallel stress-transmitting member, the tank provided with attaching means which not only retain the tank in place on the body-bolsters, but also support the buffing and pulling appliances and transmit buffing and pulling stresses between them and the tank, substantially as described.

45. A railroad tank-car having a removable tank and also a parallel stress-transmitting member, the tank provided with attaching means which not only retain the tank in place on the body-bolsters, but also support the buffing and pulling appliances and transmit buffing and pulling stresses between them and the tank, substantially as described.

46. A railroad tank-car having a removable tank and also a parallel stress-transmitting member, the tank provided with attaching means which not only retain the tank in place on the body-bolsters, but also support the buffing and pulling appliances and transmit buffing and pulling stresses between them and the tank, substantially as described.

47. A railroad tank-car having a removable tank and also a parallel stress-transmitting member, the tank provided with attaching means which not only retain the tank in place on the body-bolsters, but also support the buffing and pulling appliances and transmit buffing and pulling stresses between them and the tank, substantially as described.

48. A railroad tank-car having a removable tank and also a parallel stress-transmitting member, the tank provided with attaching means which not only retain the tank in place on the body-bolsters, but also support the buffing and pulling appliances and transmit buffing and pulling stresses between them and the tank, substantially as described.

49. A railroad tank-car having a removable tank and also a parallel stress-transmitting member, the tank provided with attaching means which not only retain the tank in place on the body-bolsters, but also support the buffing and pulling appliances and transmit buffing and pulling stresses between them and the tank, substantially as described.

50. A railroad tank-car having a removable tank and also a parallel stress-transmitting member, the tank provided with attaching means which not only retain the tank in place on the body-bolsters, but also support the buffing and pulling appliances and transmit buffing and pulling stresses between them and the tank, substantially as described.

support the buffing and pulling appliances and transmit buffing and pulling stresses between them and the tank, substantially as described.

15. A railroad tank-car having a saddle-plate under each end of a tank removably attached thereto, and also having buffing and pulling appliances permanently attached to said saddle-plate between the body-bolster and the end of the car, substantially as described.

16. A railroad tank-car having an underframe composed of cross-connected sills and saddle-plates, the former extending through the body-bolsters and receiving the buffing and pulling appliances between them, and the saddle-plates overlying said appliances and being permanently attached to said sills in proximity thereto so as to aid in upholding said appliances against stresses tending to depress the same, substantially as described.

17. A railroad tank-car having an underframe composed of cross-connected sills and saddle-plates permanently attached thereto, said sills extending through the body-bolsters, and the saddle-plates lying mainly between the bolster centers and the ends of the car, substantially as described.

18. A railroad tank-car having an underframe composed of cross-connected sills and saddle-plates permanently attached thereto, said sills extending through the body-bolsters, and the saddle-plates lying mainly between the bolster centers and the ends of the car and being attached to said sills between the bolsters and the ends of the car, substantially as described.

19. A railroad tank-car having saddle-plates and also longitudinal sills composed of flanged beams with flanges horizontal between said saddle-plates, these latter having seats on said sills conforming with their curvature, substantially as described.

20. A railroad tank-car having saddle-plates and also longitudinal sills composed of flanged beams with flanges horizontal between said saddle-plates and swaged under the latter to furnish seats conforming with the saddle-plates curvature, substantially as described.

21. A railroad tank-car having stress-transmitting longitudinal sills and also having means whereby buffing stresses are transmitted through the tank after being first received by the end portions of said sills, which car is further characterized by reinforcement of said end portions of the sills as compared with their middle portions, substantially as described.

22. A railroad tank-car having stress-transmitting longitudinal sills, and also having means whereby buffing stresses are transmitted through the tank after being first received by the end portions of said sills, which car is further characterized by saddle-plates secured to said end portions of the sills and connected with said tank for transmitting buffing stresses between it and the buffing and pulling appliances, substantially as described.

23. A railroad tank-car having saddle-plates which extend beyond the bolsters and are attached to the buffing and pulling appliances and which are also attached to the tank by tank-bands beyond the bolsters so that the ends of the tank constitute supporting cantalivers for upholding the buffing and pulling appliances, substantially as described.

24. A railroad tank-car having saddle-plates which extend beyond the bolsters and are attached to the buffing and pulling appliances and which are also removably attached to the tank beyond the bolsters so that the ends of the tank constitute supporting cantalivers for upholding the buffing and pulling appliances, substantially as described.

25. A railroad tank-car having saddle-plates located under the ends of the tank and removably connected therewith, and also having a separate set of bed-plank at each end of the tank between the latter and the corresponding saddle-plate, substantially as described.

26. A railroad tank-car having saddle-plates under the ends of the tank, and also having means for removably attaching each saddle-plate to the tank on both sides of the corresponding body-bolster, substantially as described.

27. A railroad tank-car having saddle-plates under the ends of the tank, and also having means for transmitting buffing stresses between the saddle-plates and tank and for removably attaching each saddle-plate to the tank on both sides of the corresponding body-bolster, substantially as described.

28. A railroad tank-car composed of a tank, an underframe, and wheeled trucks, said underframe being composed of longitudinal sills which receive the draft-rigging between them and with saddle-plates which overlie said draft-rigging, and said tank resting in said saddle-plates and connected therewith by tank-bands and by means to restrain independent longitudinal and rotary movement on the part of said tank, substantially as described.

29. A railroad tank-car having two sets of angle-pieces, bolted together, one set on the tank and the other set on parts by which the tank is supported, substantially as described.

30. A railroad tank-car having the tank connected with tank-supporting parts by bolts which extend lengthwise of the car, substantially as described.

31. A railroad tank-car having the tank connected with an underframe by bolts which extend lengthwise of the car, substantially as described.

32. A railroad tank-car having the tank connected with saddle-plates by bolts which extend lengthwise of the car, substantially as described.

33. A railroad tank-car having a tank with projecting devices on the bottom thereof on opposite sides of the longitudinal middle portion of said bottom, leaving the said middle portion clear, and also having means whereby buffing stresses can be communicated to the tank through said devices, substantially as described.

34. A railroad tank-car in which buffing stresses are transmitted through the tank by contact of projecting devices on the tank with tank-supporting parts with which said devices are out of contact in the absence of buffing stress, substantially as described.

35. A railroad tank-car composed of a tank, an underframe of longitudinal sills and saddle-plates, and wheeled trucks, and further characterized by projecting devices on the tank normally out of contact with opposing parts of the underframe and also by means for holding the tank in place on said underframe while allowing such motion as results from expansion of the tank or shortening of the underframe, substantially as described.

36. A railroad tank-car composed of a tank, an underframe of longiudinal sills and saddle-plates, and wheeled trucks, and further characterized by projecting devices on the tank normally out of contact with opposing parts of the underframe, yet near enough to come together upon shortening of the underframe under buffing stress, substantially as described.

37. In combination with an underframe of longitudinal sills and saddle-plates, a tank provided with projecting devices secured to the tank laterally beyond the sills and longitudinally behind the saddle-plates, substantially as described.

38. In combination with an underframe, a removable tank provided with projecting devices having sloped faces for guiding the tank into position on the underframe, substantially as described.

39. In combination with an underframe, a removable tank provided with projecting devices having sloped faces for guiding the tank into position on the underframe, and vertical faces for communication of buffing stress when the tank is in position, substantially as described.

40. A railroad tank-car composed of an underframe, a tank, and wheeled trucks, and characterized by possessing each of the following features, namely, longitudinal sills extending through the body-bolsters and receiving the draft-rigging between them, saddle-plates lying mainly between the bolster centers and the ends of the car and being secured to said sills, tank-bands secured to said saddle-plates near the ends of the car, projecting devices secured to the tank laterally beyond said sills and longitudinally behind said saddle-plates, companion devices on said saddle-plates, and bolts between the two sets of devices, substantially as described.

41. A railroad tank-car having saddle-plates which lie mainly between the bolster centers and the ends of the car and which are provided near the car ends with combined tank-band brackets and push-pockets, substantially as described.

42. A combined tank-band bracket and push-pocket, substantially as described.

43. A push-pocket having a curved base, substantially as described.

44. A push-pocket composed of a curved base, a side wall, and a bottom, substantially as described.

45. A push-pocket composed of a curved base, a side wall, a back, and a bottom, substantially as described.

46. A combined bracket and push-pocket, composed of a base, a side wall, a ledge on one side of said wall to form the bottom of the push-pocket, and a ledge on the other side of said wall to form part of the bracket, substantially as described.

47. A railroad tank-car having sills which receive the draft-rigging between them and also having an open-bottomed nose-piece which is provided with lugs on opposite sides of the draw-bar opening in position to underlie the ends of a cross-support for said draw-bar, substantially as described.

48. A nose-piece having vertical attaching-flanges interconnected by a horizontal transverse web, and also having lugs on opposite sides of the draw-bar opening in position to underlie the ends of a cross-support for said cross-bar, substantially as described.

49. A nose-piece having a pulley-bracket secured thereto on one side of the draw-bar opening in said nose-piece, substantially as described.

50. A nose-piece having secured thereto a pulley-bracket in the form of a beat metal strip with its ends lapped and fastened to the nose-piece, substantially as described.

51. A pulley-bracket in the form of a beat metal strip with its ends brought together in a parallel position, provided with a lug for the end of the brake-chain, substantially as described.

52. A railroad tank-car having an underframe composed of longitudinal sills with outboard arms and center blocks, the center blocks which are located between said sills and are secured to the vertical webs thereof being open-topped and composed each of a horizontal plate and upright sides with a series of vertical transverse webs, substantially as described.

53. A center block for a bolster, composed of a horizontal plate, a circular disk on the under face of said plate, upright sides, and a series of transverse vertical webs, the spaces between said webs being open above, substantially as described.

54. A center block for a bolster composed of a horizontal plate, a circular disk on the under face of said plate, upright sides, and a number of transverse vertical webs decreasing in height toward the center, the spaces between said webs being open above, substantially as described.

55. A four-sided outboard bearing-arm, having a vertical web flanged on each of its four edges, and also having its bottom offset near its outer end to leave a side bearing, substantially as described.

56. A railroad tank-car having a tank with devices fastened thereto and arranged to make contact longitudinally of the tank with tank-supporting parts to which said tank is removably attached, and also having tight cover-plates inside the tank over the areas of fastening said devices, substantially as described.

57. A railroad tank-car in which buffing stresses are transmitted jointly by the tank and a stress-transmitting member parallel thereto, characterised by having on the cylindrical or body portion of the tank connections for such stresses in which connections is provided a looseness to be taken up when a certain degree of buffing stress is attained, substantially as described.

58. A railroad tank-car in which buffing stresses are transmitted jointly by the tank and a stress-transmitting member parallel thereto, characterised by having on the cylindrical or body portion of the tank connections for such stresses in which connections is provided a looseness to be taken up by a small movement against large resistance, substantially as described.

59. A railroad tank-car having tank seats or saddles underlying a removable tank not only at the regions of the body-bolsters, but also between said regions and the ends of the tank, and also having means for attaching the buffing and pulling appliances to said tank between said body-bolster regions and the ends of the tanks, substantially as described.

812,097. TRAM-CAR AND OTHER LIKE VEHICLE.

Herbert A. Stanley and John H. Abson, Preston, England. Filed Feb. 6, 1905. Serial No. 244,630.

Claim.—1. In tram-cars, or like vehicles, the combination with a body, of a dash secured to said body, said dash comprising longitudinally-grooved uprights, and segmental plates secured within the grooves of said uprights.

2. In tram-cars, or like vehicles, the combination with a body, of a dash secured to said body, said dash comprising sections, and clamping means for securing said sections in a fixed position.

3. In tram-cars, or like vehicles, the combination with a body, of a dash carried by said body, said dash comprising segmental sections, and clamping means for securing said sections in a fixed position.

4. In tram-cars, or like vehicles, the combination of a body provided with an outer wall, a top deck or roof formed upon said body and terminating upon one side near said outer wall, said outer wall and top deck forming a passage for permitting of drainage of said deck.

5. In tram-cars, or like vehicles, the combination with a body, said body provided with a ventilator, of a top deck or roof secured to said body above said ventilator, a side wall terminating above said ventilator, said side wall and deck provided with a passage therebetween providing a drainage for the top deck and opening outside of said ventilator.

6. In tram-cars, or like vehicles, the combination with a body structure, of a ventilator secured to said body, a superstructure formed upon said body, said superstructure provided with a passage extending from the floor thereof through said superstructure contiguous to the outside of said ventilator.

7. In a tram-car, or like vehicle, the combination with a body, of a superstructure formed upon said body, said superstructure provided with a passage opening upon one side of said body and contiguous to the floor of said superstructure, a slidable sash carried by said superstructure, said sash adapted to be positioned within said passage.

8. In a tram-car, or like vehicle, the combination with a body, of a roof or deck positioned upon said body, said roof or deck provided with a longitudinal rail, an outside wall positioned contiguous to said rail, said outside wall and rail spaced apart for forming a drain-passage.

9. In a tram-car, or like vehicle, the combination with a body, of a longitudinal rail secured to said body, an outside board secured contiguous to said rail, said board and rail spaced apart for forming a passage, a superstructure formed upon said body, a slidable sash of the roof-cover carried by said superstructure, said superstructure provided with a passage of greater width than and communicating with the passage formed between the board and rail, and said sash adapted to be positioned within the passage of said superstructure.

10. In a car, the combination with a stairs provided with a tread and a riser, said riser provided with an aperture, a hinged door secured to said stairs, adapted to be normally positioned parallel with said riser for closing said aperture, a catch carried by said stairs and normally engaging said door for securing it in a closed position, and an auxiliary catch secured to said stairs and being capable of engaging and retaining said door in an opened position parallel to said tread.

11. In tram-cars and other like vehicles, the combination with the perforated riser of the stairs that lead to the top deck, of a hinged flap and catch devices, so arranged that the flap can be folded against the riser to close the perforations, or be opened clear thereof, and be held in either position by one or other of the catch devices.

812,098. CELLULOSE COMPOUND AND PROCESS OF MAKING THE SAME.

Robert W. Strehlenert, Djursholm, Sweden, and Friedrich Reubold, Ludwigshafen-on-the-Rhine, Germany, assignors to Badische Anilin und Soda Fabrik, Ludwigshafen-on-the-Rhine, Germany, a Corporation. Filed Sept. 8, 1905. Serial No. 277,496.

Claim.—1. The process for the production of acetyl cellulose which consists in treating cellulose with an acetylating agent and with an acid which assists in promoting the reaction, in the presence of an indifferent solvent so that the acetyl cellulose remains undissolved.

2. The process for the production of acetyl cellulose which consists in treating cellulose with acetic anhydrid and with dilute sulfuric acid in the presence of an indifferent solvent so that the acetyl cellulose remains undissolved.

3. The process for the production of acetyl cellulose which consists in treating cellulose with acetic anhydrid and with dilute sulfuric acid in the presence of benzene so that the acetyl cellulose remains undissolved.

4. As a new article of manufacture a new form of acetyl cellulose which resembles cotton-wool in appearance, but has a hard feel and is brittle, is soluble in chloroform and acetone, and insoluble in water.

812,099. BABY-BED.

Arthur K. Taylor, Jacksonville, Fla. Filed Aug. 29, 1905. Serial No. 276,262.

Claim.—1. A crib arranged to be disposed transversely above a bed and having legs hinged to each end and proportioned to engage opposite side rails.

2. A crib arranged to be disposed transversely above a bed and

having legs associated in pairs and hinged to each end and proportioned to engage opposite side rails.

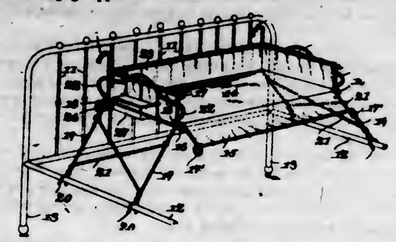

3. A crib arranged to be disposed transversely above a bed and having legs at each end provided with forked terminals proportioned to embrace the side rails.

4. A crib arranged to be disposed transversely above a bed and having legs hinged to the ends and each provided with a forked terminal proportioned to embrace the side rail.

5. A crib arranged to be disposed transversely above a bed and having legs associated in pairs and hinged to each end and each leg terminating in forked fingers proportioned to embrace the side rail.

6. A crib having legs at each end means whereby the legs may be folded beneath the crib-body and means for varying the interval between the ends of the legs to correspond with the width of a bed and means carried by the legs to engage opposite side rails of the bed.

7. A crib having legs at each end arranged to fold beneath the crib-body and brace-pieces rigid with the legs and arranged to contact with the body-frame when the legs are unfolded.

8. A crib having legs hinged to each end and means for varying the operative interval between the legs to correspond with different widths of beds and means carried by the legs to engage opposite side rails of a bed.

9. A crib having supporting-legs pivoted to its opposite ends and movable to inoperative position below the crib, side hooks projecting upward from the crib for engagement with a support, and a laterally-extended loop carried by the side of the crib and directed outward therefrom for engagement with a vertical portion of the support.

812,100. DUMPING-WAGON. GEORGE H. THOMAS, Philadelphia, Pa. Filed Mar. 11, 1905. Serial No. 249,618.

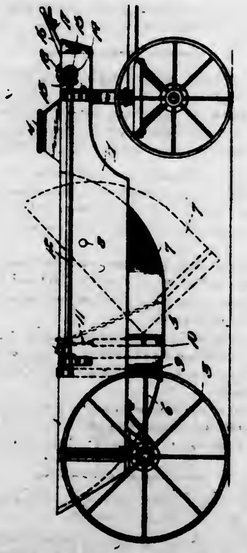

Claim.—In a device of the class described, a frame, a tray mounted therein and including a movable section, winding-shafts disposed upon opposite sides of the frame and having bevel-gears fixed thereon, flexible elements connected with said section and adapted to be wound upon the shafts, a counter-shaft extended between and having bevel-gears engaging those on the winding-shafts, a ratchet fixed on the counter-shaft, an operating-lever pivoted on the latter and having a pawl adapted for engagement with the ratchet to actuate the counter-shaft, and a latching member adapted for normally locking said shaft against rotation.

812,101. PRESS. HORACE THURSTON, Providence, R. I., assignor of one-half to Charles H. Schott, Brooklyn, N. Y. Filed July 13, 1905. Serial No. 269,226.

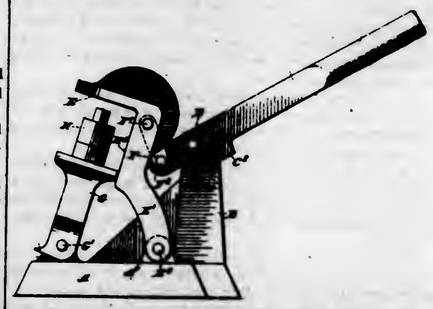

Claim.—1. A press comprising a base, swinging jaws each pivotally connected with said base, and a lever also pivotally mounted on said base and operatively connected with one of said jaws to swing it, one of the said jaws having a guide engaged by the other jaw, to cause one jaw to follow its mate as it is swung by the lever, so as to maintain both jaws in proper working relation to each other.

2. A press comprising a base, a swinging jaw pivoted thereto and provided with a guide, another jaw likewise pivoted to the base and arranged to lean and ride against the guide during the movement of the jaws, a lever fulcrumed on said base, and a link the ends of which are pivoted to said lever and to the first-named jaw respectively.

3. A press comprising a base, two swinging jaws pivoted thereto, one of said jaws being provided with a guide and the other with an engaging portion so arranged that gravity will cause one jaw to lean against the other and follow its movement, and means for swinging the jaw against which the other leans.

812,102. SWITCH AND SIGNAL. CHARLES TROUP, Watseka, Ill. Filed Sept. 30, 1905. Serial No. 280,788.

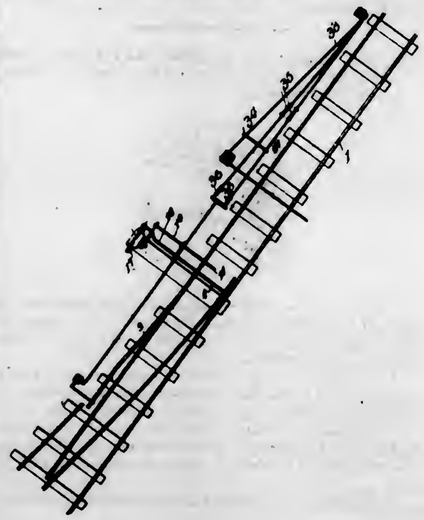

Claim.—1. In a railway-switch, the combination of the switch-point, a bar arranged transversely of the switch and having an end portion extending beneath the switch-point and the rail adjacent thereto and provided with a stop, a bell-crank lever having one arm connected to said bar and its outer arm connected to a signal, and means for operating said outer bar to project its stop into or out of the path of the switch-point and to simultaneously operate the signal.

2. In a railway-switch, the combination of a switch-point, a pivoted bar having an end portion extended beneath the switch-point and the rail adjacent thereto and provided with a stop to engage with the switch-point, a bell-crank lever having one arm connected to said bar and the other arm connected with a signal, whereby the latter is simultaneously operated upon actuation of the bar to project its stop into or out of the path of the switch-point, a switch-stand, and connecting means between the operating-lever of the switch-stand and the aforementioned bar.

3. In a railway-switch, the combination of a switch-point, a lock therefor, a bar 15 operatively connected with the said lock, a switch-stand embodying an operating-lever 13, and connecting means between the operating-lever and the bar 15, whereby movement of the lever 13 to effect its release actuates the said lock and further movement of said operating-lever to throw the switch effects disconnection of said lever from the bar 15.

4. In combination, a movable switch-point, a lock therefor, a bar 15, connecting means between said bar and the lock, a switch-stand embodying an operating-lever 13, and a fork having swivel connection with the bar 15 and adapted to embrace the movable handle portion of the lever 13, whereby initial movement of the handle portion effects a release of the lock, and whereby a continued movement of the lever 13 disengages it from the swivel-fork

5. In combination with a switch, a signal and coöperative actuating means for the signal and switch, of a movable element 23, a pair of coöperating dogs 25, springs 30 conjunctively arranged with reference to said dogs, and corresponding pairs of arms 27 and 28, the parts being arranged to admit of independent operation of separate switch-operating mechanisms.

812,103. LIGHT-PROJECTOR. EMILE L. P. TURENNE, Paris, France, assignor to The Firm of Barbier, Benard & Turenne, Paris, France. Filed June 5, 1905. Serial No. 263,836.

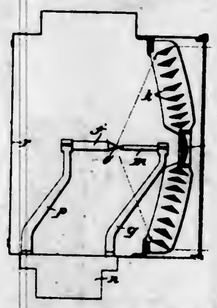

Claim.—In a projector, the combination with a source of light, of an optical device comprising a substantially concentric series of catadioptric glass rings arranged in a curve with an overlapping profile, substantially as described.

812,104. LOOP-SHIELD. ANTONE F. WARNER, Jackson, Mich. Filed Mar. 30, 1905. Serial No. 253,982.

Claim.—A loop-shield made of a single piece of metal bent substantially U-shaped, lugs projecting from the longitudinal edges of said shield and bent over the outer faces thereof with their outer edges flush with the ends of the shield, lugs projecting from the edges of the plate at its longitudinal center and bent to form angled hooks extending over the bent portion of the shield, with spaces on either side of said lugs which project from the center of the shield, and the opposite parallel walls of the latter, as set forth.

812,105. ADVERTISING PROJECTING APPARATUS. FERDINAND WITZELEB and MAX OSBORNE, New York, N. Y. Filed Apr. 17, 1905. Serial No. 256,170.

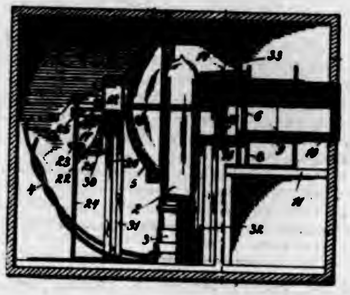

Claim.—An advertising apparatus consisting of a portable box, a reflector and projecting-lenses mounted therein, electric lights placed between said lenses and the reflector, a clockwork located to the rear of the reflector, a transparent dial located to the rear of the lenses in front of the lights, hands mounted on said dial, a connection from said hands to the clockwork, shafts, rolls mounted thereon, means for rotating one of the shafts from the clockwork and a plurality of indicating-belts mounted on said rolls and arranged to pass adjacent the dial, substantially as described.

812,106. SELF-FEEDING DERRICK-TABLE. VIRGIL WINN, Toler, Wash. Filed July 13, 1905. Serial No. 269,857.

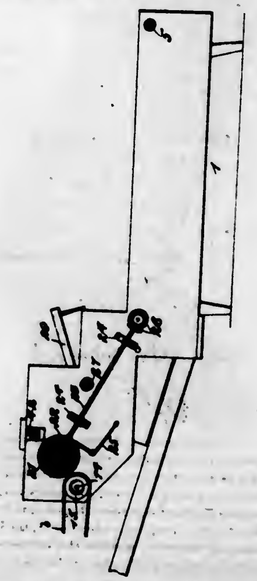

Claim.—A machine of the class described comprising a table having a draper, a revolvable spiked roller spaced from the discharge end of the draper, a deflecting-board for the material which drops from the space between the draper and the spiked roller, a support under said deflecting-board, a carrier having one end resting on said support, said draper and spiked roller discharging on said carrier, and a rocking mechanism operating upon said spiked roller.

812,107. LATCH FOR REFRIGERATOR-DOORS. EDWARD J. WEBB, Memphis, Tenn. Filed Mar. 28, 1905. Serial No. 251,590.

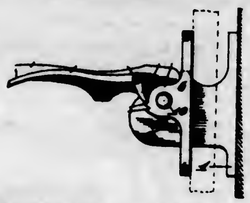

Claim.—1. In a refrigerator-door latch, the combination with a keeper, a door-bracket, a latch pivoted to said bracket and adapted to engage said keeper, and a trigger pivoted to said latch and arranged to engage said bracket, substantially as set forth.

2. In a refrigerator-door latch, a keeper, a door-bracket, a latch pivoted to said door-bracket and adapted to engage said keeper, a trigger pivoted to said latch, and teeth forming a part of said door-bracket and adapted to receive the engagement of said trigger, substantially as set forth.

812,108. PLASTIC COMPOSITION. GEORGE C. WYATT, Rome, Ga. Filed May 6, 1905. Serial No. 259,222.

Claim.—A dry powder for plaster consisting of lime, sawdust, clay, sand, plaster-of-paris, and cement, in substantially the proportions stated.

812,109. FENCE-POST. GEORGE R. WYATT, Redwood City, Cal., assignor of one-fourth to Walter M. Barret and one-fourth to Edward F. Fitzpatrick, Redwood City, Cal. Filed Sept. 21, 1905. Serial No. 279,421.

Claim.—1. A metal fence-post, having a longitudinal channel therein said channel having parallel undercut side walls and an angular bottom wall, and also formed with a series of notches in corresponding corners of the post, a series of hook members spaced by the notches in said corners, and a keeper-key shaped to fit into the channel and insertible therein through one end thereof, the key when inserted bearing upon the fence-wire material that occupies the notches and is seated upon the bottom of the channel by the introduction of said key.

2. A fence-post having a quadrangular body, a longitudinal channel therein, and notched at intervals in corresponding corners, said notches intersecting the channel, said channel having its side walls undercut so as to widen it near the bottom thereof, said bottom having obtuse-angular form, a series of angular hook members at each corner that is adjacent to the channel, free ends of said hook members constituting the side walls of the channel, a fence-wire stretched in each pair of opposite notches across the bottom of the channel, and a keeper-key fitting in the channel and laterally below the hook members, the key being insertible only through one end of the channel, and adapted for bearing upon the fence-wires and kinking them into contact with the angular bottom of the channel.

3. A corner-post to a fence, having a channel extended longitudinally in two sides that together form a right angle, each channel having parallel sides that are undercut, and the bottom of each channel rendered obtuse-angular in form, each of the three corners of the post nearest to the channels therein having spaced transverse notches therein which intersect respective channels, hook-like angular members on corners of the post spaced apart in series by the notches, and keeper-keys fitted loosely in respective channels so as to bear upon the fence-wire material that occupies the notches.

4. A keeper-key for a fence-post, rabbeted on side edges at opposite corners giving it T shape in cross-section, and thus adapted to slide endwise into an undercut channel in the side of said fence-post, whereby to secure fence-wire material embedded in the channel.

5. A fence-post having a transverse groove in the upper portion of its body having serrations in its bottom surface, and a brace-rod having a flat limb serrated on the transverse end wall thereof, said limb being adapted for entering the transverse groove and engaging the serrations on its end with those in the bottom of the groove.

6. A prop-brace for a corner fence-post, comprising a metal rod flattened near each end, and bent where flattened at an obtuse angle on the body of the brace-rod, thus producing a flat limb on one end that enters a transverse rectangular notch in a side of the corner-post near its upper end, and a notched or open slotted flange at the normally lower end of the brace-rod, said flange having straddling engagement with the lower portion of a line-fence post, whereby to hold the corner-post erect.

812,110. FLOUR BLEACHER AND PURIFIER. ROBERT I. AGNER, Salem, Va. Filed Mar. 25, 1905. Serial No. 252,040.

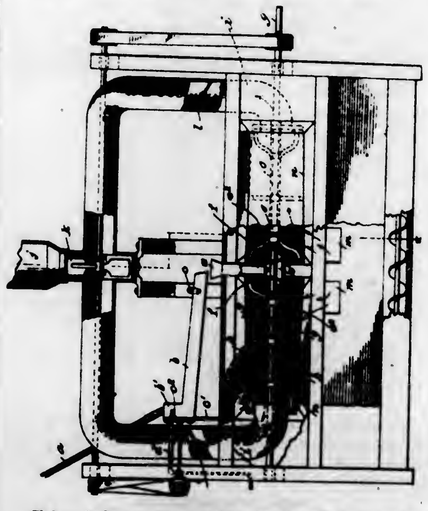

Claim.—1. In an apparatus of the class described, the combination of means for drying out and feeding the flour, and means for removing the lighter impurities, consisting of a casing closed except for the provision of air-inlets at its opposite sides about midway its length, a shaft running longitudinally through the casing, and carrying a pair of bolting-reels having their inner ends closed and located near each other, said reels each tapering toward its outer end, a chute adapted to receive the flour from the feeder and extending down between the inner ends of the reels, a horizontal open-ended tube communicating with said chute and having its ends extending into the adjacent inner ends of the reels, spring-actuated valves for the ends of this tube, reversely-curved screw-blades on the aforesaid shaft within said tube, exhaust-pipes extending out from the outer ends of the respective reels, and provided with valves and means for creating a suction through these exhaust-pipes for the purpose set forth.

2. In an apparatus of the class described, the combination of means for feeding the flour and means for subjecting the flour to the action of a current of air to remove the lighter impurities this latter means consisting of a casing closed except for the provision of air-inlets at opposite sides below the reels hereinafter mentioned, a shaft running longitudinally through the casing and carrying a pair of bolting-reels arranged end to end on the shaft, a chute adapted to receive the flour from the feeder and extending down between the inner ends of the reels, a horizontal open-ended tube communicating with said chute and having its ends extending into the adjacent inner ends of the reels, valves normally closing the ends of this tube, means on the shaft within the tube for oppositely feeding the flour past said valves simultaneously, exhaust-pipes extending out from the outer ends of the respective reels, and means for creating a draft up through the reels and the exhaust-pipes.

3. In an apparatus of the class described, the combination of a casing, a shaft extending longitudinally through the casing and carrying a pair of reels arranged end to end on the shaft, means for rotating the shaft and its reels, means for conducting flour down through the top of the casing and feeding it into both inner ends of the reels simultaneously, exhaust-pipes connecting the respective tail ends of the reels, means for creating a regulated suction through these pipes, said casing being closed all round except for the provision of inlet-openings below the reels, and a pair of brushes mounted upon opposite sides of the casing above the inlet-openings and engaging the opposite sides of the reels, these brushes serving not only to clean the meshes of the reels but also as partitions to direct the air-draft upward through the reels.

4. In an apparatus of the class described, the combination of a casing, a shaft extending longitudinally through the casing and carrying a pair of reels arranged end to end on the shaft, means for rotating the shaft and its reels, means for conducting flour down through the top of the casing and feeding it in through the center of both inner ends of the reels simultaneously, exhaust-pipes connecting to the respective tail ends of the reels, means for creating a regulated suction through these pipes, said casing being closed all round except for the provision of inlet-openings below the reels.

812,111. PENDENT GAS AND OTHER LAMP. FREDERICK A. ANDREWS, London, England, assignor to W. A. S. Benson and Company, Limited, London, England. Filed Oct. 13, 1904. Serial No. 229,085.

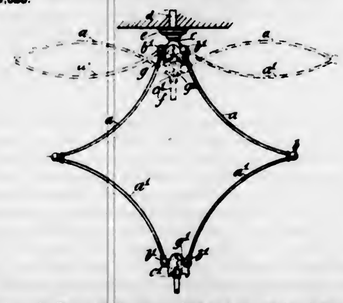

Claim.—1. In a pendent gas-lamp, the combination with the supply-pipe, of a union, a pair of sockets on said union, two hollow plugs each having one of its ends connected with one of said sockets, sockets on the other ends of said plugs, a pair of tubular arms connected with said second pair of sockets and having swiveled relation to the said union, intermeshing toothed sectors between the adjacent ends of said arms, hollow plugs connected to the other ends of said arms, a second pair of tubular arms pivotally connected to the first pair by means of said last-named plugs, a union for establishing connection with the burner, a third pair of hollow plugs pivotally connecting the second pair of arms in said union, and intermeshing toothed sectors between the adjacent ends of said second pair of arms, the arms all lying in planes substantially parallel with each other and at right angles to the planes of the plugs.

2. In a pendent lamp, the combination of a union, a pair of tubular arms pivotally jointed at their inner ends to said union, means for mechanically gearing the inner ends of said arms together, a second pair of tubular arms having their inner ends pivotally jointed to the outer ends of the first pair, a union, means for pivotally jointing the outer ends of said second pair of arms to said last-named union, means for mechanically gearing the inner ends of the second pair of arms together, and resilient rotation-opposing devices interposed at two of the joints.

3. In a pendent lamp, a pair of substantially parallel hollow plugs, means for connecting said plugs with a gas-supply pipe, a pair of partially-rotatable pipes connected to said plugs, means for gearing said pipes together so as to cause them to move in unison, a second pair of hollow plugs connected to said pipes and substantially parallel with the first pair of plugs, a second pair of pipes connected to said plugs and in a plane substantially parallel with the plane of the first pair of pipes, a third pair of hollow plugs substantially parallel with the first pair of plugs, means for connecting said third pair of plugs with a common burner-tube, means for gearing the second pair of pipes mechanically together, all of said pipes being capable of partial rotation about the axes of the respective plugs, and means for offering limited resistance to said rotation.

4. In a gas-pendant, the combination of two unions, a pair of tubular arms pivotally jointed to each other and to said unions on one side of the central line, a second pair of tubular arms pivotally jointed to each other and to said unions on the opposite side of said central line, intermeshing toothed sectors gearing said pairs of arms together near one of said unions, intermeshing toothed sectors gearing said pair of arms together near the other union, and springs coiled around the joints between the arms of each pair and connected to said arms for resisting their turning about the joint and so counteracting the weight of the lamp on the joints between the arms.

812,112. BRIDLE-BIT. ALONZO B. CAMPBELL, Coraopolis, Pa. Filed Mar. 8, 1905. Serial No. 248,985.

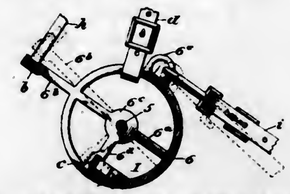

Claim.—A bridle-bit embodying two similar check-rings, each having a cross-bar and a central hub on each cross-bar, said hubs supporting a transverse bit-bar, a curb-bar extended down at a right angle from each cross-bar and merging into the body of the ring, said curb-bars each having a slot therein near the ring, an eye formed on each ring opposite the curb-bar, and a check-lever extended outside of each ring in alinement with the cross-bar therein and projected forwardly, said levers each having an opening at its free end for the engagement therewith of an end of an overdraw-rein.

812,113. EYEGLASS-MOUNTING. EDWARD M. CARD, Middlefield, Conn. Filed Oct. 6, 1905. Serial No. 281,690.

Claim.—1. In an eyeglass-mounting, lens-receiving heads, levers movably connected with the heads, nose-pieces carried respectively by the levers, and an operating member associated with and for moving the levers to adjust the nose-pieces relatively.

2. In an eyeglass-mounting, lens-receiving heads, a pair of levers pivoted between their ends respectively to the heads, nose-pieces carried by the levers, and an operating-screw connecting the levers and operable for moving the latter to adjust the nose-pieces relatively.

812,114. METALLIC PACKING. EDWARD M. COOK, Elyria, Ohio. Filed July 18, 1905. Serial No. 270,206.

Claim.—1. A packing-ring composed of a single set of segments having engaging ends, said ends being formed to provide radial cuts on one side and tangential cuts on the other side of the ring.

2. A packing-ring composed of segments, each having two integral portions, one set of portions of the several segments cooperating to form one half and the other set of portions the other half of the

body of the ring, said portions of the segments having their ends constructed to respectively form radial cuts on one side and tangential cuts on the other side of the ring.

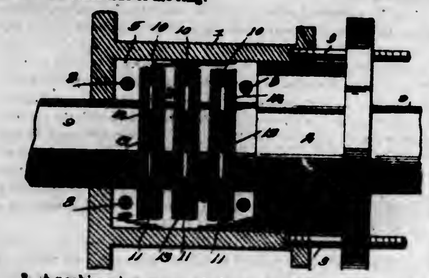

3. A packing-ring composed of a single set of segments having engaging ends, said ends being formed to provide radial cuts on one side and tangential cuts on the other side of the ring, said radial and tangential cuts being disposed upon lines between each other so as to break joint around the surface of the ring.

4. A packing-ring comprising segments, each composed of two parallel integral parts, one of said parts having its ends tangentially and the other radially beveled, irrespective tangentially and radially beveled parts of the several segments forming opposite sides of the body of the ring and tangential and radial cuts, the tangential cuts being disposed upon one side of the ring and the radial cuts upon the opposite side of the ring and on lines between said tangential cuts.

812,115. **DEVICE FOR FASTENING FOLDED PAPERS.** WILLIAM R. COON, Govanda, N. Y. Filed Nov. 26, 1904. Serial No. 234,802.

Claim.—1. A sheet having an uncut edge folded over upon the sheet and secured at a plurality of points to the said sheet, the body of the sheet being adapted to be folded and its opposing edge inserted under the folded edge between the secured points.

2. A sheet having one edge folded and secured at the sides and intermediate the sides, the body of the sheet being adapted to be folded and also have its opposite edge inserted beneath the folded edge of the sheet, the opposite edge being cut away in order to accommodate the secured portions of the folded edge.

812,116. **SHOE-FORM.** CHARLES B. CONNIN, Grand Rapids, Mich., assignor of one-half to Charles F. Aispuro, Grand Rapids, Mich. Filed Mar. 28, 1905. Serial No. 252,501.

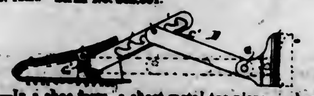

Claim.—In a shoe-form, a sheet-metal toe-piece, a sheet-metal sole-piece, a link pivotally attached to the toe-piece and the sole-piece, an adjustable toggle pivotally secured to the link and carrying a heel-piece.

812,117. **ELECTRICALLY ACTUATED AND CONTROLLED SELF-PLAYING MUSICAL INSTRUMENT.** GEORGE H. DAVIS, West Orange, N. J. Filed Mar. 28, 1904. Serial No. 200,494.

Claim.—1. An electrically-controlled playing attachment for musical instruments embodying a plurality of electromagnets, a dynamo forming a part of the attachment, circuit connections between the dynamo and said magnets, and a prime motor for driving the dynamo.

2. In an electrically-controlled musical instrument, a dynamo, electrically-controlled playing devices in circuit with the dynamo, and a prime motor to drive the dynamo.

3. In an electrically-controlled musical instrument, the combination with a drum and magnet-controlled playing devices, of a dynamo in circuit with said magnets and a motor to drive said dynamo and the drum.

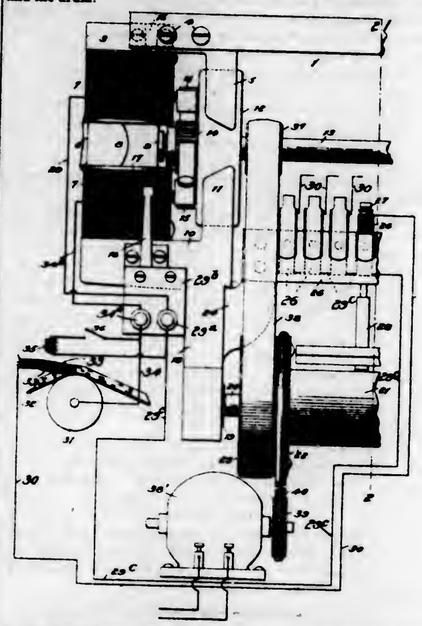

4. In an electrically-controlled musical instrument, the combination wth a plurality of magnetic controlling devices and a rail to support said devices, of a dynamo in circuit with said magnets, the field-casting of which constitutes a support for the rail.

5. In an electrically-controlled musical instrument, the combination with a plurality of magnetic controlling devices, a rail to support said devices and a drum, of a dynamo in circuit with the operating devices, the field-casting of said dynamo including an arm serving as a support for the rail and a hanger in which the drum is journaled.

6. In an electrically-controlled musical instrument controlled by a note-sheet, the combination with magnetic controlling devices and means to feed the note-sheet, of an electric machine capable of use either as a motor or as a generator of current, and connections whereby it may be used as a motor to drive the sheet-feeding means, a circuit including said machine and the magnetic controlling devices, a battery to supply current to run the motor and energize the controlling devices, a cut-out to disconnect the battery from said circuit, and means to operate the machine as a generator when the battery is disconnected from said circuit, for supplying current to the circuit which includes the magnetic controlling devices.

812,118. **DRIVING-AXLE FOR AUTOMOBILE VEHICLES.** JULES R. G. DESIS and LOUIS M. J. DE BOISSE, Paris, France. Filed June 14, 1904. Serial No. 212,519.

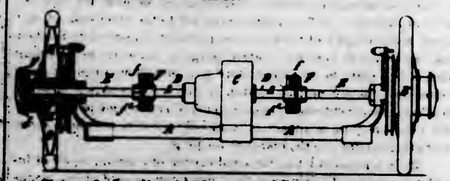

Claim.—1. In a live axle for automobile vehicles, the combination with a central shaft having a differential gear arranged thereon and toothed disks at the extremities of said shafts, of end shafts having internally-toothed drums meshing with said toothed disks, said end shafts also having toothed disks at their outer extremities, and

of internally-toothed drums secured to the road-wheels, said road-wheel drums engaging the toothed disks upon outer extremities of the end shafts.

2. A live axle for automobile vehicles, comprising a bridge, a central shaft, end shafts journaled in said bridge, said central shaft coupled to said end shafts, a differential gear upon said central shaft, a gear-case to said differential gear, said central shaft being journaled in said gear-case, a socket screwed into said gear-case, said socket being thereby adjustable in said gear-case, and a propeller-shaft journaled in said socket, said propeller-shaft having means for engaging and driving the differential gear.

3. A live axle for automobile vehicles comprising a bridge, tubular ends to said bridge, a central shaft, end shafts journaled in said tubular ends and coupled to said central shaft, road-wheels revolubly mounted upon said tubular ends, toothed connections between said road-wheels and said end shafts, a differential gear upon said central shaft, a gear-case to said differential gear, said gear-case being secured to the bridge and forming journals for said central shaft, a bevel-wheel mounted upon said differential gear, a socket screw-threaded into said gear-case so as to be adjustable therein, a propeller-shaft journaled in and passing through said screwed socket, and a bevel-pinion upon the inner end of the propeller-shaft, said pinion engaging said bevel-wheel and being adjustable for wear.

812,119. **SANDPAPERING-MACHINE.** ARTHUR B. DENISON, Beloit, Wis. Filed Nov. 30, 1904. Serial No. 234,201.

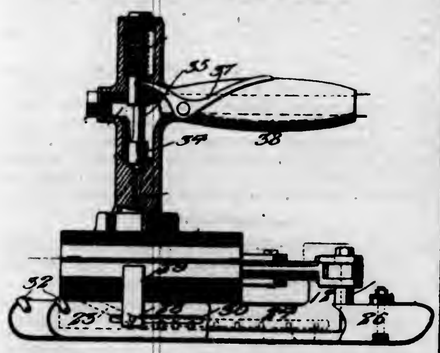

Claim.—1. In a device of the class described, a pair of cylinders, pistons arranged for reciprocation in the cylinders, polishing members connected to and for movement with the respective pistons, means for admitting air under pressure to the cylinders for operating the pistons, and a tubular member disposed between the polishing devices and having discharge-ports directed to the latter, said member being in communication with the cylinders and adapted to receive the exhaust from the latter.

2. In a device of the class described, a pair of cylinders, pistons movable therein, polishing devices connected to and for movement with the respective pistons, means controlled by the movement of the pistons for admitting a fluid under pressure alternately to the cylinders, and a tubular exhaust member communicating with the cylinders and extended between the polishing devices, said member having discharge-ports for directing the exhaust fluid toward the polishing devices.

3. In a device of the class described, a pair of reversely-movable polishing devices, operating members connected therewith, a tubular member between the polishing devices and having discharge-ports directed toward the latter, and means for admitting fluid to and for actuating the operating members, the fluid being adapted to exhaust through the tubular member for preventing accumulations beneath the polishing devices.

4. In a device of the class described, a reciprocatory polishing device, a tubular member sustained adjacent the side thereof and provided with exhaust-ports directed toward the device, an operating member connected with said device, and means for admitting fluid under pressure to the operating member, and a tubular member for actuating the polishing device and preventing accumulations thereof beneath.

5. In a device of the class described, a movable polishing member, means for operating the same, a tubular member disposed and sustained at one side of the polishing device and having ports directed toward the latter, and means for admitting fluid under pressure through the member to prevent accumulations beneath the polishing device.

812,120. **COMBINED ABDOMINAL SUPPORT AND HOSE-SUPPORTER.** NELLIE L. DISNEY, Bridgeport, Conn. Filed Oct. 4, 1905. Serial No. 281,204.

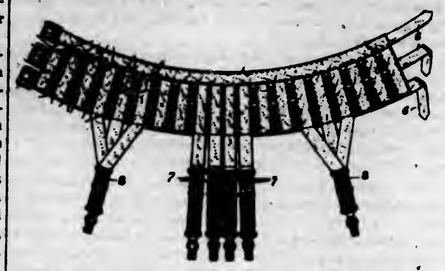

Claim.—1. A combined abdominal support and hose-supporter, comprising a waistband having depending therefrom the non-elastic flexible strips spaced apart, a plurality of elastic webbings spaced apart and crossing said strips, said webbings and strips being stitched together, suitable fastenings at the end of the support, and stocking-engaging members depending from said support.

2. A combined abdominal support and hose-supporter, comprising a waistband having depending therefrom the non-elastic flexible strips spaced apart, a plurality of elastic webbings spaced apart and crossing said strips at right angles whereby openings are provided between said webbings and strips, suitable fastenings at the ends of the support, and stocking-engaging members depending from the front and side portions of said support.

3. A combined abdominal support and hose-supporter, comprising vertically-disposed non-elastic strips and horizontally-disposed elastic webbings, which strips and webbings are spaced apart and cross each other and are secured together by stitching, suitable fastenings whereby the support may be secured around the waist of the wearer, and stocking-engaging members which depend from the lower edge of the support at the front and sides.

812,121. **TEMPORARY BINDER.** JOHN J. EDWARDS, Ann Arbor, Mich. Filed Mar. 16, 1906. Serial No. 306,433.

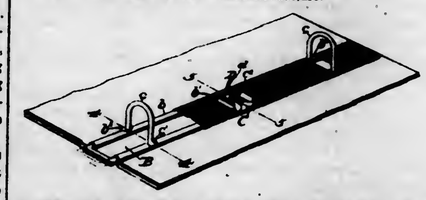

Claim.—1. A temporary or loose-leaf binder comprising a holder adapted for attachment to the back of a book-cover, a binding-wire hinged along one margin of the holder and provided with hooks extending across the body of the holder and having end portions constructed to engage with retaining means along the opposite margin of the holder for securing the hooks in closed position, and means along the latter margin adapted to engage and lock said end portions of the hooks.

2. A temporary or loose-leaf binder comprising a holder adapted for attachment to the back of a book-cover, a binding-wire having an intermediate portion rotatively secured to said holder along one margin thereof and rigid hooks at opposite extremities of said intermediate portion extending transversely of the holder to the opposite margin thereof, and means along the latter margin constructed to engage with the ends of said hooks for locking and holding them in closed position.

3. A temporary or loose-leaf binder comprising a holder adapted for attachment to the back of a book-cover, a binding-wire having an intermediate portion hinged along one margin of said holder and provided with rigid hooks and a projection extending transversely of the holder to the opposite margin thereof, and a locking

member slidably secured along said opposite margin adapted to en-

member slidably secured along said opposite margin adapted to engage said projection and positively lock and hold the hooks in closed position.

4. A temporary binder comprising a suitable holder, a hinged binding-wire having hooks, a projection extending from said binding-wire transversely of the holder in the same direction as the hooks, and a triple locking device consisting of a sliding member having notches or recesses therein to receive said hooks and tongue and adapted to be slid into engagement with said hooks and tongue and thereby firmly lock the binding-wire with the hooks in closed position, substantially as described.

5. A temporary binder for holding sheets and the like, comprising a holder adapted for attachment to the back of a book-cover, a binding-wire hinged longitudinally on said holder along one margin thereof and having lateral hooks extending transversely of the holder to its opposite margin for insertion through the sheets, and means adapted to engage said hooks for positively locking said wire with its hooks closed on the holder, substantially as described.

6. A temporary binder for holding sheets and the like, comprising a back plate or holder adapted for attachment to the back of a book-cover, a binding-wire hinged longitudinally along one margin of the holder and having lateral hooks extending transversely of the holder to its opposite margin for insertion through the sheets, and manipulative means on the latter margin of the back plate adapted to engage said hooks for positively locking said wire in position with its hooks closed or turned down on the back plate and for releasing said wire to permit turning thereof to open or raise the hooks and permit attachment or removal of the sheets, substantially as described.

7. A temporary binder comprising a back plate or holder, a binding-wire hinged longitudinally thereto having lateral hooks for insertion through the sheets and having a rigid lateral tongue, and a manipulative device on the holder adapted to engage said hooks and tongue to hold the hooks closed down on the holder and to release said hooks and tongue to permit opening or raising of the hooks, substantially as described.

8. A temporary binder comprising a back plate, a binding-wire having a hook and a locking member integral therewith, and means in the back plate for engaging said hook and locking member to lock the binding-wire in normal closed position, substantially as described.

9. A temporary binder comprising a back plate, a binding-wire having a portion pivotally secured in the back plate and provided with a hook, a tongue on the pivot portion, and means in the back plate adapted to engage said hook and tongue to prevent pivotal movement of the binding-wire, substantially as described.

10. A temporary binder comprising a back plate, a binding-wire having hooks at opposite ends and an intermediate pivot portion secured in the back plate and having a loop therein, a locking-slide in the back plate adapted to engage said hooks and loop to prevent pivotal movement of the binding-wire, and means for manipulating said slide, substantially as described.

11. A temporary binder comprising a back plate having a fold extending along one edge thereof forming a pivot-seat, a binding-wire having a hook and locking projection and a pivot portion secured in said seat, and means in the back plate coöperating with said projection to prevent pivotal movement of the binding-wire, substantially as described.

12. A temporary binder comprising a back plate, having its opposite edges folded, a binding-wire having a pivot portion secured in one of said folds and provided with a hook or hooks, a projection on the pivot portion, and a locking-slide secured in the other fold and movable along the back plate to engage said projection and prevent pivotal movement of the binding-wire, substantially as described.

13. A temporary binder comprising a back plate having its edges bent over upon itself longitudinally thereof so as to form a pivot-seat for the binding-wire and a slideway along the opposite edge thereof for a locking-slide, a binding-wire having a centrally-disposed projection and hooks at its ends rotatively supported in said pivot-seat, a slidable rod fitted in said slideway having notches or recesses therein confronting the ends of said hooks and projection when the hooks are closed upon the back plate, and notches or recesses in the edge of the back plate to receive the ends of said hooks, substantially as described.

14. A temporary binder for holding sheets of paper and the like, comprising a suitable holder independent of but adapted for attachment to the back of a book cover or support, and a binding-wire rotatively secured along one side of said holder and provided with hooks arranged to swing transversely of the holder and having their ends constructed to engage with retaining means at the opposite side or margin of the holder, together with means at the opposite side of the holder for engaging the ends of said hooks so as to retain them in closed position.

15. A temporary binder for holding sheets of paper and the like, comprising a holder independent of but adapted for attachment to a suitable support and consisting of an oblong plate having its opposite sides turned over upon itself or folded, a binding-wire rotatively secured in one of said folds and provided with hooks arranged to swing transversely of the holder to the opposite fold; said hooks having their ends constructed to coact with suitable retaining-means on the holder, and means at the latter fold or opposite side of the holder for engaging the ends of said hooks and retaining them in closed position.

16. A temporary or loose-leaf binder comprising an oblong holder having spaced openings or notches therein along one of its longer margins, a binding-wire hinged to said holder along its opposite margin, curved hooks extending from said binding-wire transversely of the holder having their ends adapted to enter said openings or notches, and means for engaging the ends of the hooks entered in said openings or notches to prevent the withdrawal thereof, substantially as described.

17. A temporary or loose-leaf binder comprising an oblong holder adapted for attachment to the back of a book-cover and having openings or notches along one margin thereof to receive the ends of hooks entered therein, a binding-wire rotatively secured on said holder and having a hook or hooks extending transversely thereof adapted to enter said openings or notches, said hooks having end portions constructed to engage retaining means within the holder, together with means for engaging said end portions and preventing the withdrawal of the hooks.

18. A temporary or loose-leaf binder comprising an oblong holder adapted for attachment to the back of a book-cover and having its longer marginal portions turned back upon itself or folded, and also having openings or notches along one of said longer margins, a binding-wire rotatively secured to said holder in one of said folds and having hooks arranged to extend across and enter the openings in the opposite fold, and means for engaging the ends of the hooks entering said openings to prevent the withdrawal thereof.

812,122. **GRINDING-MACHINE.** RILEY D. FASSETT, Denver, Colo., assignor of one-half to William H. Neff, Denver, Colo. Filed Dec. 3, 1904. Serial No. 235,574.

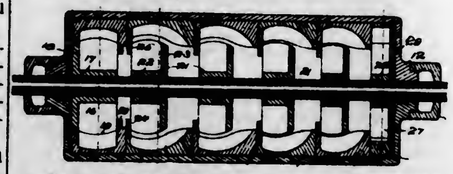

Claim.—1. In a machine of the character described, the combination with a series of rotatable beaters, of a series of stationary boxes surrounding said beaters and forming grinding-compartments, the internal diameters of said boxes diminishing from one end toward the other of said series, the external diameter of all of said boxes being equal, and each box having a series of pockets therein formed by integral ribs therebetween.

2. In a machine of the character described, the combination with a series of rotatable beaters, of a series of stationary boxes surrounding said beaters and forming grinding-compartments, the internal diameters of said boxes diminishing from one end toward the other of said series, and each of said boxes having a series of pockets therein, each pocket being of varying depth.

3. In a machine of the character described, the combination with a series of rotatable beaters, of a series of stationary boxes surrounding said beaters and forming grinding-compartments, the internal diameters of said boxes diminishing from one end toward the other of said series, and each box having a series of peripheral pockets therein forming ribs therebetween, each pocket having converging walls and being of varying depth.

4. In a machine of the character described, the combination with a series of beaters each comprising similarly-curved blades having irregular ends; of a series of stationary boxes surrounding the beaters and forming communicating grinding-compartments of different diameters, each box conforming in contour to the ends of the blades and having pockets therein.

5. In a machine of the character described, the combination with a series of rotatable beaters each comprising a hub, similarly-curved blades extending therefrom and having irregular ends, and means for connecting the blades at opposite edges; of a series of stationary boxes surrounding the beaters and forming grinding-compartments of different diameters, the inner surface of each box conforming in contour to the ends of the blades therein and having pockets forming ribs therebetween.

6. In a machine of the character described, the combination with a casing, of a series of rotatable beaters therein, each comprising a hub, similarly-curved blades extending therefrom and having irregular ends, and bracing means connecting the opposite edges of the blades, sectional boxes within the casing and surrounding the beaters, said boxes forming grinding-compartments and each box having an irregular working face conforming in contour to the ends of the blades.

7. In a machine of the character described, the combination with a casing comprising sections movably connected; of a series of rotatable beaters within the casing and each comprising a hub, similarly-curved blades, and bracing means connecting the edges of the blades, sectional boxes within the casing and surrounding the beaters, said boxes forming grinding-compartments of different diameters and having irregular inner faces conforming to the contour of the ends of the blades.

8. In a machine of the character described, the combination with a casing having an inlet and an outlet, of a series of rotatable beaters within the casing, and each comprising a hub, similarly-curved blades and strengthening devices connecting the edges of blades, means rotatable with the beaters for forcing material into engagement therewith, a discharge device within the casing having blades curved in a direction opposite to the blades of the beaters and a series of sectional boxes within the casing and surrounding the rotatable devices therein.

9. In a machine of the character described, the combination with a sectional casing, and means for securing the same in closed position; of a series of beaters rotatably mounted within the casing and each comprising a hub; similarly-curved blades having irregular working ends and bracing means connecting the blades, a series of sectional boxes within the casing and surrounding the beaters, said boxes having irregular working faces conforming in contour to the ends of the blades therein, means for forcing material into the boxes at one end and having blades curved in a direction opposite to those of the beaters, and a discharge device rotatably mounted within the casing.

10. In a machine of the character described, the combination with a sectional casing having an inlet and an outlet, and means for securing the same in closed position, of a shaft rotatably mounted in the casing, a series of rotatable beaters secured upon the shaft and each comprising a hub, blades having irregular working ends and bracing devices connecting the blades, a series of sectional boxes within the casing and surrounding the beaters, each of said boxes having an irregular working face conforming in contour to the ends of the blades, rotatable means adjacent the inlet for forcing material into the boxes, and a rotatable discharge device adjacent the outlet.

11. In a machine of the character described, the combination with a casing having an inlet and an outlet; of a rotatable shaft within the casing, a series of sectional boxes within the casing and forming grinding-compartments of different diameters, each of said boxes having an irregular working face, and end boxes within the casing and adjacent the inlet and outlet, each of said end boxes having an eccentric working face, a rotatable device within the inlet-box for forcing material into the adjoining boxes, a rotatable discharge device in the outlet-box, and a series of rotatable grinding devices in the grinding-compartments.

12. In a machine of the character described, the combination with a casing having an inlet and an outlet, a box within the casing and adjacent the inlet, said box having an eccentric working face, a rotatable feeding device within said box for drawing material through the inlet, said device comprising a hub and curved blades extending therefrom, a series of rotatable beaters within the casing each comprising a hub and similar blades curved in a direction opposite to those on the feeding device, sectional boxes within the casing and surrounding the beaters, said boxes being of different internal diameters and having irregular working faces and rotatable means for discharging material through the outlet.

13. In a machine of the character described, the combination with a series of rotatable beaters having blades with curved ends; of a series of stationary ribs surrounding each of said beaters to form a grinding chamber, said ribs conforming in contour to the ends of the blades and forming a continuous passage with waved walls.

14. In a machine of the character described, the combination with a series of rotatable beaters, having blades with curved ends; of a series of stationary ribs surrounding each of said beaters and conforming in contour to the ends of the blades, the series of ribs forming a passage having waved walls.

15. In a machine of the character described, the combination with a rotatable beater: of a stationary box surrounding the beater having ribs, said ribs forming pockets in the inner surface of said box, said pockets having overhanging walls.

16. In a machine of the character described, the combination with a series of rotatable beaters having blades with curved ends, of a series of stationary boxes surrounding the beaters, said boxes being of different internal diameters and forming a continuous passage diminishing in diameter from one end to the other thereof, and ribs integral with the inner surfaces of the boxes, and conforming in contour with the ends of the blades, said ribs forming pockets therebetween of varying depths, said pockets having overhanging walls.

17. In a mechanism of the class described, the combination of a sectional casing, each section of said casing provided with a semicylindrical end portion, caps positioned upon the semicylindrical end portions of said sections, and grinding means positioned within said casing.

18. In a mechanism of the class described, the combination with a casing, of a rotatable beater positioned within said casing, said beater comprising a hub, similarly-curved blades extending from said hub, spacing means engaging said blades, and an intermediate short blade carried by said spacing means and positioned between each two of said similarly-curved blades.

19. In a mechanism of the class described, the combination with a casing, of a rotatable beater positioned within said casing, said beater comprising a hub provided with similarly-curved blades, spacing means engaging one side of each of said blades, and an intermediate blade positioned between each two of said similarly-curved blades and engaging said spacing means.

812,123. **MACHINE FOR MOLDING BUILDING-BLOCKS.** ALEXANDER A. FORBES, Duluth, Minn. Filed Mar. 31, 1905. Serial No. 253,033.

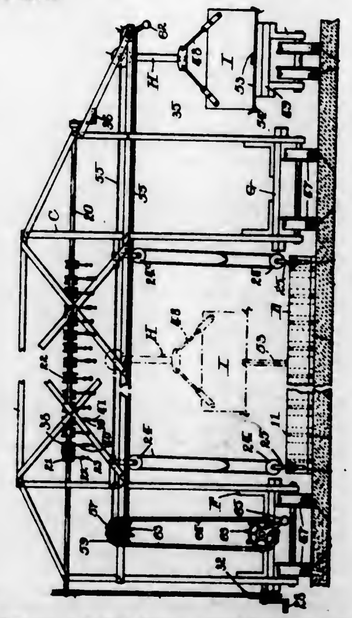

Claim.—1. A machine of the class set forth, comprising, in combination, a suitable base formed with a plurality of holders for mold-cores, mold-frame sides resting upon said base, mechanism above said base for lifting said sides and cores, and means for permitting said mechanism to be shifted.

2. A machine of the class set forth, comprising, in combination,

a traveler, a base below said traveler having a plurality of holders for mold-cores, a plurality of mold-frame parts on said base, and means carried by said traveler for raising said mold-frame parts and cores.

3. A machine of the class set forth, comprising, in combination, a traveler, a base below said traveler having means for holding a plurality of mold-frame parts together, and means carried by said traveler for raising said mold-frame parts.

4. A machine of the class set forth, comprising, in combination, a traveler, a base below said traveler having means for holding a plurality of mold-frame parts together, and means carried by said traveler for raising said mold-frame parts, and means for dumping the molding material out of said carrier.

17. A machine of the class set forth, comprising, in combination, a temporary mold-frame, a core, a base having means for hold-

said base, cores upon said holders, an overhead bridge, trucks below said bridge, a plurality of hoisting-drums carried by said bridge for raising said sides and cores, means for revolving said drums, means for holding said sides and cores in elevated position, a track upon

cular, with an annular cone-shaped depression in its outer face and a pivot-bolt opening through the center thereof, a channel formed in the edges of the flanges of the bases to register and so form an open-

a traveler, a base below said traveler having a plurality of holders for mold-cores, a plurality of mold-frame parts on said base, and means carried by said traveler for raising said mold-frame parts and cores.

3. A machine of the class set forth, comprising, in combination, a traveler, a base below said traveler having means for holding a plurality of mold-frame parts together, and means carried by said traveler for raising said parts.

4. A machine of the class set forth, comprising, in combination, a temporary mold-frame, a base for holding said mold-frame, overhead traveling mechanism adapted to separate said frame from said base, and a carrier on said traveling mechanism.

5. A machine of the class set forth, comprising, in combination with a mold frame and core, said frame having a pair of longitudinal detachable sides, a parting-wall between said sides, transverse division sides arranged in pairs across the spaces between the longitudinal sides and parting-wall to divide the same into a plurality of molds and means for permitting the transverse division sides to collapse, a base, means for holding the parts of said frame and core on said base, a traveler, and means on said traveler for withdrawing the parts of said frames.

6. A machine of the class set forth, comprising, in combination, a temporary mold-frame, a base below said frame, a bridge above said frame, means for supporting the ends of said bridge, means carried by said bridge for separating said frame and base, a carrier, and means for moving said carrier upon said bridge.

7. A machine of the class set forth, comprising, in combination, a temporary mold-frame forming a plurality of molds, a base below said frame, means for separating said frame and base and carrying the parts removed away from the molded blocks, and means for carrying molding material to said molds.

8. A machine of the class set forth, consisting, in combination, of a traveler, a base, below said traveler, provided with means for holding mold-cores, a frame, surrounding said cores, adapted to form a plurality of molds on said base, means on said traveler for lifting said frame, means also on said traveler for lifting said cores, and a carrier coöperating with said traveler for conveying molding material to said frame.

9. A machine of the class set forth, consisting, in combination, of a traveler, a base below said traveler, mold-frame sides on said base, means for detachably holding said sides together on said base to form a mold, means on said traveler for removing said sides, and a carrier movable upon said traveler for molding material.

10. A machine of the class set forth, consisting, in combination, of a base having means for holding a mold-frame, a traveler having means for permitting the same to be shifted above said base, means on said traveler for lifting said mold-frame, means for holding said mold-frame in superior position, and means coöperating with said traveler for carrying molding material to said mold-frame.

11. A machine of the class set forth, consisting, in combination, of a mold-frame, a base adapted to support, and formed with a core-holder in, said frame, a traveler for removing said frame from said base, means for permitting said frame to be returned to said base, and a carrier coöperating with said traveler for conveying molding material to said frame.

12. A machine of the class set forth, consisting, in combination, of a traveler, a base below said traveler, a mold-frame resting on said base, means carried by said traveler for engaging and lifting said mold-frame, means for holding said mold-frame in superior position, and means on said traveler for conveying molding material to said frame.

13. A machine of the class set forth, consisting, in combination, of a traveler, a base below said traveler, a mold-frame, means on said base for holding said mold-frame, means carried by said traveler for lifting parts of said mold-frame, a carrier, and means for moving said carrier on said traveler.

14. A machine of the class set forth, consisting, in combination, of an overhead traveler, a base below said traveler, mold-frame sides and cores on said base, means on said base for holding said sides and cores to form a mold, means on said traveler for removing said sides and cores, a carrier, and means for moving said carrier on said traveler.

15. A machine of the class set forth, comprising, in combination, a temporary mold-frame, a base, means for holding the parts of said mold-frame on said base, a traveler above said base, means for lifting the parts of said mold-frame on said traveler, and a carrier for molding material on said traveler.

16. A machine of the class set forth, comprising, in combination, a temporary mold-frame, a base for holding said mold-frame, a traveler above said mold-frame, means on said traveler for removing said mold-frame, a carrier, means for moving said carrier above said mold-frame, and means for dumping the molding material out of said carrier.

17. A machine of the class set forth, comprising, in combination, a temporary mold-frame, a core, a base having means for holding said frame and core, a traveler having means to permit the same being moved above said base, means on said traveler for removing said frame and core, a carrier on said traveler, and means for moving said mold-frame above said base.

18. A machine of the class set forth, comprising, in combination, a temporary mold-frame, a base for holding said mold-frame, a carrier above said base, means for moving said carrier, a bucket, and means for detachably holding said bucket on said carrier.

19. A machine of the class set forth, comprising, in combination with a temporary mold frame and core, a base having means for holding said frame and core, a traveler having means to permit the same being moved above said base, means on said traveler for lifting said frame and core, a carrier, means for moving said carrier on said traveler, a bucket, means for detachably connecting said bucket to said carrier, and means for emptying said bucket.

20. A machine of the class set forth, comprising, in combination, a temporary mold-frame, a base having means for holding said frame, a traveler having means to permit the same being moved above said mold-frame, means on said traveler for lifting said frame, a carrier, a track on said traveler, and means for moving said carrier upon said track.

21. A machine of the class set forth, comprising, in combination, a temporary mold-frame, a base having means for holding said frame, a traveler above said base, means on said traveler for lifting the parts of said frame, a carrier, and a track upon which said carrier is adapted to move upon said traveler.

22. A machine of the class set forth, comprising, in combination, a temporary mold-frame, a base for holding said mold-frame, a traveler above said mold-frame, means on said traveler for removing said mold-frame, a carrier, and means for moving said carrier.

23. A machine of the class set forth, comprising, in combination with a base provided with means for holding the parts of a mold-frame, sides and a core forming said mold-frame, a bridge above said mold-frame, a truck under each end of said bridge, and means on said bridge for lifting and holding said sides and core suspended, for the purposes specified.

24. A machine of the class set forth, comprising, in combination with a base formed with means for holding the parts of a mold-frame, detachable sides adapted to form a mold, trucks adapted to move on said base, an overhead bridge between said trucks and above said mold-frame, and means carried by said overhead bridge for raising said sides and for carrying molding material to said mold-frame.

25. A machine of the class set forth, comprising, in combination with a base, a mold-frame upon said base, an overhead bridge above said mold-frame, trucks for supporting said bridge, means carried by said bridge for raising said mold-frame, and a carrier on said bridge for molding material.

26. A machine of the class set forth, comprising, in combination with a base, a mold-frame upon said base, an overhead bridge above said mold-frame, trucks below said bridge, shafts carried by said bridge, drums upon said shafts, cables carried by said drums for lifting said mold-frame, and means for revolving said shafts.

27. A machine of the class set forth, comprising, in combination with a suitable base, sides on said base adapted to form a mold, an overhead bridge, trucks below said bridge, tracks upon said base upon which said trucks are adapted to run, a plurality of hoisting-drums on said frame for raising the sides of said mold-frame, and means for revolving said drums and holding said sides elevated.

28. A machine of the class set forth, comprising, in combination with a suitable base, sides on said base adapted to form a mold-frame, an overhead bridge, trucks below said bridge, tracks upon which said trucks are adapted to run, a plurality of hoisting-drums upon said bridge, means for revolving said drums and for holding said sides in elevated position, a carrier upon said bridge, and a bucket upon said carrier.

29. A machine of the class set forth, consisting, in combination with a suitable base formed with core-holders, of mold-frame sides on said base, cores upon said holders, an overhead bridge above said mold-frame sides, trucks below said bridge, hoisting-drums upon said bridge for raising said mold-frame sides and cores, means for revolving said drum, and means for holding said sides and cores in elevated position.

30. A machine of the class set forth, consisting, in combination, of a suitable base formed with core-holders, mold-frame sides upon said base, cores upon said holders, an overhead bridge, trucks below said bridge, a plurality of hoisting-drums carried by said bridge for raising said sides and cores, means for revolving said drums, means for holding said sides and cores in elevated position, a track upon said bridge, a carrier adapted to travel upon said track over the mold-frame, and means for moving said carrier.

31. A machine of the class set forth, consisting, in combination with a base formed with core-holders, of mold-frame sides on said base, cores between said sides and on said holders, an overhead bridge, trucks below said bridge, a track upon said bridge, and a carrier for molding material adapted to travel upon said track.

32. A machine of the class set forth, consisting, in combination with a suitable base formed with core-holders, of mold-frame sides resting upon said base, cores between said sides and on said holders, an overhead bridge, trucks below said bridge, a track on said bridge, a carrier for molding material adapted to travel upon said track, and means for moving said carrier.

33. A machine of the class set forth, comprising, in combination with a suitable base formed with core-holders, mold-frame sides on said base, cores between said sides and on said holders, an overhead bridge, trucks below said bridge, a track on said bridge, a carrier adapted to travel upon said track, means for moving said carrier, a detachable bucket on said carrier, and a truck below said bucket adapted to support the same when detached from said carrier.

34. A machine of the class set forth, consisting, in combination with a suitable base formed with core-holders, mold-frame sides on said base, cores between said sides and on said holders, an overhead bridge, trucks below said bridge, means carried by said bridge for raising said sides and cores and for holding them in elevated position, a track carried by said bridge, a carrier adapted to travel on said track, a detachable bucket on said carrier, means for moving said carrier, a truck adapted to support said bucket when detached from said carrier, and parallel tracks on said base for all of said trucks to run upon.

812,124. **FORMALDEHYDE HYDROSULFITE AND PROCESS OF MAKING SAME.** EMILE A. FOURNEAUX, New York, N. Y., assignor to Hermann A. Metz, New York, N. Y. Filed Mar. 30, 1905. Serial No. 253,267.

Claim.—1. The process of making basic zinc formaldehyde hydrosulfite (S) which consists in reacting with a suitable alkali compound upon a solution of zinc hydrosulfite treated with formaldehyde, substantially as described.

2. As a new article of manufacture, basic zinc formaldehyde hydrosulfite (S) occurring as a white crystalline precipitate, capable of being dried on the water-bath in the open air without decomposing, and one part capable of reducing about one and one-half parts of pure indigo in the form of indigo sulfonic acid, substantially as described.

3. The process of making alkali formaldehyde hydrosulfite (S) which consists in reacting with a suitable alkali compound upon the basic zinc formaldehyde hydrosulfite (S), substantially as described.

4. The process of making sodium formaldehyde hydrosulfite (S) which consists in reacting with sodium carbonate upon basic zinc formaldehyde hydrosulfite (S), substantially as described.

5. The process which consists in reacting with a suitable alkali compound upon a solution of zinc hydrosulfite treated with formaldehyde, thereby forming basic zinc formaldehyde hydrosulfite (S), and then reacting with a suitable alkali compound upon said basic zinc formaldehyde hydrosulfite (S) to form alkali-formaldehyed hydrosulfite (S), substantially as described.

812,125. **TELEPHONE-TRANSMITTER ARM.** WILLIAM D. GEAREY, Philadelphia, Pa. Filed Mar. 7, 1901. Serial No. 50,366.

Claim.—1. A telephone-transmitter support comprising a base having spring cheek-plates, means to secure said base horizontally, and an arm secured to said base, comprising the following instrumentalities: two twin castings each concave on one side, with enlarged heads and bases, each head being also concave and the two heads when put together forming a circular cup, a threaded thimble secured to said cup, a spring-contact supported in but insulated from the cup and thimble, the base of each casting being substantially circular, with an annular cone-shaped depression in its outer face and a pivot-bolt opening through the center thereof, a channel formed in the edges of the flanges of the bases to register and so form an opening for passing the conductor-cords, the axis of said opening being approximately parallel to the face of the supporting base-plate, and a conductor led from the contact-thimble through the arm and the said opening, where it emerges above the base in every position of the arm, substantially as described.

2. In a telephone-transmitter arm the combination of the pair of mate castings having registering concave inner faces, a supporting-base, an opening for passage of conductors in the heel or pivot end of the arm, a projecting flange or boss surrounding said opening in whole or in part, and a pivot-bolt securing the arm on the base, whereby the said boss or flange acts as a stop against the base, and prevents breaking or damaging the conductors by turning the arm too far up or down, substantially as described.

3. A telephone-transmitter support comprising a base having spring cheek-plates, means to secure said base horizontally, and an arm secured to said base, comprising the following instrumentalities: two twin castings each concave on one side, with enlarged heads and bases, each head being also concave and the two heads when put together forming a circular cup, a threaded thimble secured to said cup, a spring-contact supported in but insulated from the cup and thimble, the base of each casting being substantially circular, with an annular cone-shaped depression in its outer face and a pivot-bolt opening through the center thereof, a channel formed in the edges of the flanges of the bases to register and so form an opening for passing the conductor-cords, the axis of said opening being approximately parallel to the face of the supporting base-plate, with a projecting flange or boss to serve as a stop against the same and limit the motion of the arm, a pair of cone-washers with flat bases against the inner faces of the cheek-plates and cones in the arm-base depressions, and a pivot-bolt extending through cheek-plates, cone-washers and arm-bases, substantially as described.

4. A telephone-support comprising a base having cheek-plates, an arm composed of two twin concave members having their butt-ends held together between the cheek-plates, and turning on annular faces thereon; the outer or transmitter-carrying ends of the arm members being expanded so that when put together they constitute a cup, a circular transmitter-support secured within said cup, and means for securing the two halves of the arm around and to said transmitter-support, whereby they are held together, substantially as described.

812,126. **LIGHTNING-ARRESTER.** WILLIAM GIFFORD, Thompsonville, Mich., assignor of one-half to E. M. DIXON, Thompsonville, Mich. Filed May 23, 1905. Serial No. 261,277.

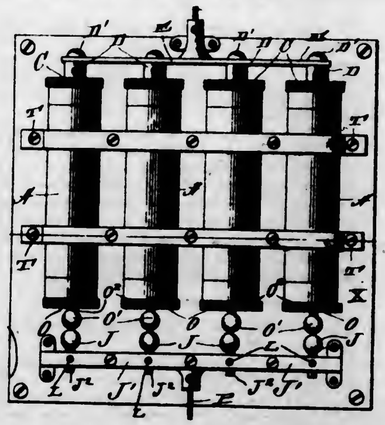

Claim.—A lightning-arrester comprising a series of insulating-tubes adapted to hold a non-inductive material, metallic caps fitted to the ends of said tubes, a bar connected to corresponding caps, a binding-post projecting from said bar and a line-wire connected to said post, means for holding said bar to the caps, a series of plugs having shank portions fitted to the caps at the lower ends of the tubes, a bar having set-screws therein, balls having shank portions passing through apertures in the bar carrying said set-screws and held in ad-

justed positions by the latter, a ground-wire connected to said set-screw-carrying bar, a carbon resting upon each bottom of the tubes, and a carbon disk having a threaded shank portion, fitting within a threaded opening in each cap at the tops of the tubes, said shank portion of the carbon disk being surrounded by an air-space, as shown and described.

812,127. COLLAR-SUPPORTER. OLIVER G. GOODMAN and BRADFORD L. GOODMAN, Birmingham, England. Filed Aug. 14, 1905. Serial No. 274,223.

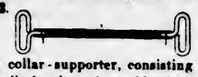

Claim.—1. A collar-supporter, consisting of a flexible stem formed by a close coil of spring-wire and having means for its attachment at the opposite ends, substantially as set forth.

2. A collar-supporter consisting of a flexible stem formed from a close coil of spring-wire, and attachment-loops or eyes having shanks which are inserted into and secured with the ends of the said stem, substantially as set forth.

812,128. LIFTING-JACK. WILLIAM H. GRIFFITH, Worthington, Ind. Filed Jan. 18, 1905. Serial No. 241,067.

Claim.—1. The combination with a lifting-jack, of a supplemental jaw arranged and adapted to coöperate with the movable parts of the lifting-jack whereby to form a vise.

2. The combination with the bar or standard of a lifting-jack, and runners mounted thereon, with means for automatically gripping the runners to the bar or standard, of a supplemental jaw mounted on the bar or standard and adapted to coöperate with one of the runners whereby to transform the jack into a vise.

3. The combination with a base, and a bar or standard pivotally supported thereon, of runners mounted on the bar or standard, means for locking them thereto, and a supplemental jaw adapted to be employed to coöperate with the runner whereby the lifting-jack may be transformed into a vise.

4. The combination with the bar or standard of a lifting-jack, of a runner having a V-shaped chamber therein located directly beneath the load, a wedge-shaped block fitted to said chamber and carrying a grip-block, and a cam-lever for forcing said V-shaped block in one direction.

5. The combination with a bar or standard, of a runner having a V-shaped chamber therein located directly beneath the load, a wedge-shaped block fitted to said chamber and carrying a grip-block, a spring for moving said wedge-shaped block into position to cause the grip-block to lock the runner to the bar or standard, and means for releasing said block therefrom.

6. The combination with a bar or standard, of a runner mounted to slide thereon and provided with a V-shaped chamber located directly beneath the load, a wedge-shaped block fitted therein, a grip-block carried by the wedge-shaped block, a spring for normally raising the wedge-shaped block, the runner having a diagonally-disposed slot therein, a pin extending through this slot from the block, cam-lever mounted on the pin and adapted to engage a shoulder on the runner whereby to force the block against the action of the spring and release the runner from the bar or standard.

812,129. AUTOMOBILE. BEN B. HERVEY, Spokane, Wash. Filed Aug. 15, 1905. Serial No. 274,396.

Claim.—1. In an automobile, the combination of a supporting-frame comprising relatively long longitudinal bars, connected at their front ends by a cross-bar, spaced pairs of relatively short longitudinal bars arranged without the relatively long bars at the rear ends thereof and spaced apart therefrom, the cross-bars connecting the ends of the pairs and the relatively long bars, an axle fixed on the front ends of the relatively long bars, wheels on the ends of the axle, alined shafts having oppositely-disposed crank-arms journaled on the pairs of bars and on the relatively long bars, and with a crank-arm on either side of said long bars, wheels on the shafts between the members of the pairs of bars, a counter-shaft journaled in front of the shafts and provided at either end with oppositely-disposed crank-arms arranged on either side of the long bars, connecting-rods between the corresponding crank-arms, a bevel-gear on the counter-shaft, a power-shaft journaled longitudinally on the frame and a bevel-gear thereon meshing with bevel-gear on the counter-shaft.

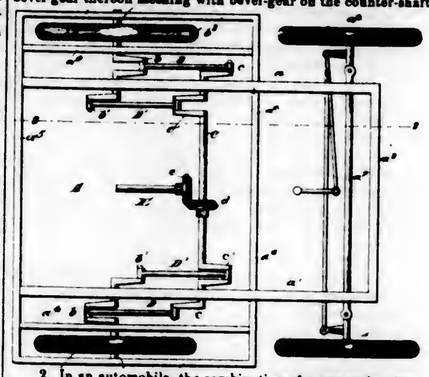

2. In an automobile, the combination of a supporting-frame, a plurality of shafts having oppositely-projecting crank-arms journaled in the frame, wheels on the shafts, a counter-shaft journaled in the frame and provided at either end with crank-arms corresponding to the crank-arms of the first-named shaft, connecting-rods between the corresponding crank-arms, a bevel-gear on the counter-shaft, and a power-shaft journaled longitudinally of the frame and provided with a bevel-gear meshing with the bevel-gear on the crank-shaft.

3. In an automobile, the combination of a supporting-frame, a plurality of alined shafts journaled in the frame, wheels on the shafts, a counter-shaft journaled in the frame, oppositely-arranged driving connections between each of the alined shafts and the counter-shaft, a power-shaft, and connections between the power-shaft and the counter-shaft.

4. In an automobile, the combination of a supporting-frame, a plurality of alined shafts journaled in the frame, and provided with oppositely-projecting crank-arms, wheels on the shafts, a counter-shaft journaled in the frame and provided at either end with crank-arms corresponding to the crank-arms of the alined shafts, connections between the corresponding arms, a power-shaft, and connections between the power-shaft and the counter-shaft.

5. In an automobile, the combination of a supporting-frame, comprising relatively long longitudinal bars, spaced pairs of relatively short longitudinal bars arranged without the long bars at the rear ends thereof and spaced apart therefrom, cross-bars connecting the longitudinal bars, wheels journaled on either side of the frame between the members of the respective pairs of bars and means whereby to drive the wheels.

812,130. VACUUM-TRAP. GEORGE M. HILGER, Chicago, Ill. Filed Dec. 24, 1904. Serial No. 238,243.

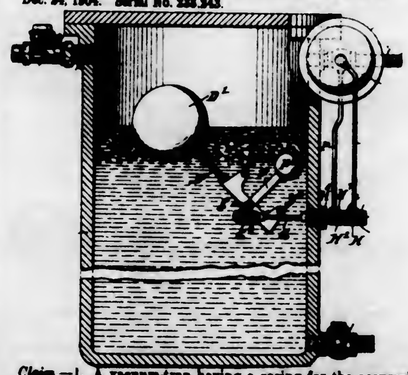

Claim.—1. A vacuum-trap having a casing for the accumulation of the liquid, a connection with a pressure-supply and a vacuum apparatus, a valve mechanism in the said connection, for alternately connecting the casing with the pressure-supply and the vacuum apparatus, a fluid-pressure device for actuating the said valve mechanism, and a float-controlled valve for alternately connecting the said fluid-pressure device with the said vacuum apparatus and the atmosphere.

2. The combination with a casing, of a valve mechanism, a float-lever carrying a float acted on by the liquid accumulating in the casing, the said float-lever being provided with projections on the same side of the lever at opposite sides of its fulcrum, a weighted lever mounted to swing on the fulcrum of the float-lever, and extending between the said projections on the float-lever, the said projections being adapted to alternately engage opposite sides of said weighted lever, and a slotted link engaged by the said weighted lever and connected with the said valve mechanism.

3. The combination with a device to be controlled, of a weighted lever connected with the said device, and a float-lever carrying a float, and provided with two projections extending from the same side of the lever and located at opposite sides of the fulcrum, the said projections being adapted to alternately engage opposite sides of the said weighted lever.

4. The combination with a diaphragm-casing, and a spring-pressed diaphragm therein, of a valve-casing having connection with the apparatus to be controlled, a connection with a pressure-supply, a connection with a vacuum-producing device, and valves controlled by the said diaphragm, for alternately connecting the said apparatus connection with the pressure-supply and the vacuum-producing apparatus.

5. The combination with a diaphragm-casing, and a spring-pressed diaphragm therein, of a valve-casing having connection with the apparatus to be controlled, a connection with a pressure-supply, a connection with a vacuum-producing device, valves controlled by the said diaphragm, or alternately connecting the said apparatus connection with the pressure-supply and the vacuum-producing apparatus, and a float-controlled valve having connection with the pressure side of the diaphragm and with the said vacuum connection.

6. The combination with a liquid receiving and discharging casing having an inlet and a discharge for the liquid, a valve mechanism, a float-controlled device connected with the said valve mechanism, a valve-casing having connection with the said liquid receiving and discharging casing, a connection with a pressure-supply, a connection with a vacuum-producing device, a spring-pressed diaphragm alternately connected by the said valve mechanism with the atmosphere and the said vacuum-producing connection, and valves in the said valve-casing, controlled by the said diaphragm.

7. A vacuum-trap comprising a casing for the accumulation of the liquid, a connection between the said casing and a pressure-supply and a vacuum apparatus, a valve mechanism in the said connection, for alternately connecting the casing with the pressure-supply and the vacuum apparatus, a diaphragm-casing, a spring-pressed diaphragm therein connected with the valve mechanism to actuate the latter, and a float-controlled valve for alternately connecting the diaphragm-chamber with the atmosphere and the vacuum apparatus.

812,131. PUMP-ROD EJECTOR. WILLIAM HOBENSTRA, Harrison, S. D. Filed Sept. 3, 1905. Serial No. 276,804.

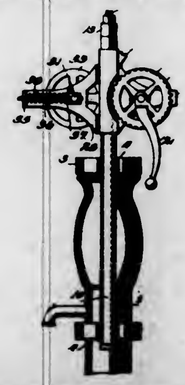

Claim.—1. In a device of the character described, the combination with a pump-rod, of a standard, pump-rod-engaging means carried by the standard, and means for moving the pump-rod-engaging means upwardly to eject the pump-rod.

2. In a device of the character described, the combination with a pump-rod, of a standard, a member movably mounted upon the standard, means carried by said member to engage the pump-rod, and means for moving the member upward to eject the pump-rod.

3. In a device of the character described, the combination with a pump-rod, of a standard, a rack-bar movably mounted thereon, means carried by the rack-bar to engage the pump-rod, a cog-wheel, and means for turning the cog-wheel to raise the standard to eject the pump-rod.

4. In a device of the character set forth, the combination with a pump-rod, of a standard, a member movably mounted thereon, means carried by said member to engage the pump-rod, guiding means carried by the standard, and means for raising said member vertically to eject the pump-rod.

5. In a device of the character described, the combination with a pump-rod, of a standard, a member movably mounted thereon, means carried by the member to engage the pump-rod, pulleys carried by the standard to guide the pump-rod as it is being ejected, and means to move the member vertically to eject the pump-rod.

6. In a device of the character described, the combination with a pump-rod, of a standard, a member movably mounted thereon, means carried by the member to engage the pump-rod, a bracket fixed to the standard, a shaft carried by said bracket, a pulley mounted upon said shaft, means carried by the shaft to engage the member to the bracket secured to the standard, and a pulley yieldingly mounted on said last-named bracket.

7. In a device of the character described, the combination with a pump-rod, of a standard, a rack-bar movably mounted thereon, means carried by the rack-bar to engage the pump-rod, a bracket secured to the standard, a shaft carried by said bracket, a pulley mounted on said shaft, a cog-wheel mounted on said shaft and adapted to engage the rack-bar, another bracket secured to the standard, and a pulley yieldingly mounted on said last-named bracket.

8. In a device of the character described, the combination with a pump-rod, of a standard, means carried by the standard for ejecting the pump-rod, and a yielding member to guide the pump-rod as it is being ejected.

9. In a device of the character described, the combination with a pump-rod, of a standard, means carried by the standard for ejecting the pump-rod, a pulley journaled in fixed bearings, and a pulley yieldingly journaled, said pulleys serving to guide the pump-rod as it is being ejected.

10. In a device of the character described, the combination with a pump-rod, of a standard, means carried by the standard for ejecting the pump-rod, a pulley journaled in fixed bearings, another pulley journaled in yielding bearings and pivotally mounted, said pulleys serving to guide the pump-rod as it is being ejected.

812,132. FILE. JOHN F. HUBER, Lockport, N. Y., assignor to Huber Account Register Company, Buffalo, N. Y. Filed Aug. 7, 1905. Serial No. 273,113.

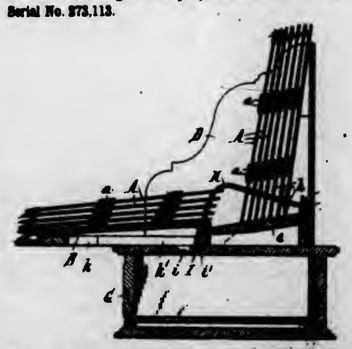

Claim.—1. The combination of a holder, a series of movable leaves thereon, and one or more flexible extensible connecting members attached to said holder and having sliding connections with said leaves, whereby the connecting member or members can move relative to said leaves in the direction of the planes thereof, substantially as set forth.

2. The combination of a holder, a series of movable leaves thereon, and one or more flexible elastic connecting members attached to said holder and passing through elongated slots in said leaves,

whereby the connecting member or members can move relative to said leaves in the direction of the planes thereof, substantially as set forth.

3. The combination of a holder, a series of movable leaves thereon, and one or more flexible extensible connecting members detachably secured to said holder and having sliding connections with said leaves whereby the connecting member or members can move relative to said leaves in the direction of the planes thereof, substantially as set forth.

4. The combination of a holder, a series of movable leaves thereon, flexible elastic connecting members passing through elongated slots in said leaves, cross-bars attached to the opposite ends of said connecting members, and means for detachably securing said cross-bars to said holder, substantially as set forth.

5. The combination of a holder, a slotted sliding shelf therein, a series of movable leaves on said holder, and one or more flexible extensible connecting members attached to said holder and having sliding connections with said leaves, said connecting member or members passing through the slot or slots of said shelf, substantially as set forth.

812,133. SURGICAL TABLE. THOMAS J. JAMES, ROBERT MCALLISTER, and WILLIAM S. BYRAM, Minneola, Mont. Filed June 3, 1905. Serial No. 263,622.

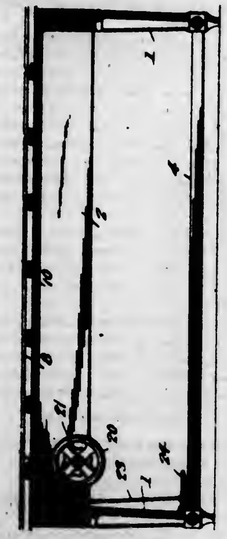

Claim.—1. In a surgical table, a frame, a top comprising a plurality of sections, a rotary head, operative connections between the head and a pair of sections, a winding-shaft, and a flexible connecting element between the head and shaft, the latter being operable for imparting movement through the head and connections to the sections.

2. In a surgical table, a frame, a top comprising a plurality of sections, a rotary drum, link connections between the drum and a pair of the sections, a belt normally wound on the drum, and means for unwinding the belt to rotate the drum and through the intermediate connections impart movement to the sections.

3. In a surgical table, a frame, a top comprising a plurality of sections, devices engaging and designed to support the end sections in folded position at the ends of the frame, and mechanism connected with a pair of the other sections for moving the latter from each other upon the frame.

4. In a surgical table, a frame, a top comprising a plurality of sections, rollers carried by a pair of said sections and adapted for travel on the frame, and mechanism operatively connected with said pair of sections and operable for moving the latter from each other.

812,134. SHADE-ROLLER. WILLIAM D. JAMES, Saginaw, Mich., assignor to Cumber Shade Roller Company, Bay City, Mich. Filed Oct. 9, 1903. Serial No. 176,811.

Claim.—1. The combination with a shade-roller spring and a spindle, of a bung having a reduced and recessed end; a metal cup inserted in the reduced and recessed end of said bung, to receive the spindle of the said shade-roller, substantially as described.

2. The combination in a shade-roller, with a spindle and a spring, of a bung fixed in the roller, a hollow support projecting from the bung and adapted to receive one end of the spindle, the spring surrounding the projecting support, and a strengthening means received within the projecting support to form a seat for the end of the spindle.

3. The combination with a shade-roller provided with a spindle, spring and bung, of a hollow nose carried by the bung and surrounded by the spring, the tendency of which spring is to compress the nose, one end of the spindle received in the hollow nose and a hollow reinforcing member seated in the nose and inclosing the end of the spindle, the member preventing a compression of the nose upon the end of the spindle.

812,135. MANUFACTURE OF HOLLOW METALLIC BALLS FROM SHEET METAL. ALLEN JOHNSTON, Ottumwa, Iowa. Original application filed Apr. 4, 1903. Serial No. 151,419. Divided and application filed Aug. 21, 1903. Serial No. 170,371. Again divided and this application filed Mar. 3, 1905. Serial No. 248,310.

Claim.—1. The process of making hollow metallic balls from sheet-metal blanks by stamping said blank into the shape of a cup having a rounded bottom and a serrated rim, and then closing the cup and swelling or expanding the same to form a ball of larger diameter than the cup.

2. The process of making hollow metallic balls from a strip of metal by first severing a piece to form a rectangular blank, stamping it into the shape of a cup having a rounded bottom and a serrated rim, and then closing the cup and simultaneously swelling or expanding the same to form a ball of larger diameter than the cup.

3. The process of making hollow metallic balls from a strip of metal by first severing a piece to form a rectangular blank, stamping it into the shape of a cup having a rounded bottom and a serrated rim, and then closing the cup and swelling or expanding the same to form a ball of larger diameter than the cup.

4. The process of making hollow metallic balls from sheet metal by first forming a rectangular blank, stamping it into the shape of a cup having a rounded bottom and a serrated rim, and then closing the cup and swelling or expanding the same to form a ball of larger diameter than the cup.

5. The process of making hollow metallic articles from sheet-metal blanks by stamping said blank into the shape of a cup, and then closing the cup and swelling or expanding the same to form an article of larger diameter than the cup.

6. The process of making hollow metallic articles from sheet-metal blanks by stamping said blank into the shape of a cup, and then closing the cup and simultaneously swelling or expanding the same to form an article of larger diameter than the cup.

7. The process of making hollow metallic articles from sheet-metal blanks by stamping said blank into the shape of a cup, having a serrated rim, and then closing the cup and swelling or expanding the same to form an article of larger diameter than the cup.

8. The process of making a hollow metallic article from a rectangular sheet-metal blank by stamping or drawing said blank into the shape of a cup having a closed bottom and a serrated rim, the edges of the points or apices of said rim being convexly curved, and then closing the open end of the cup.

9. The process of making a hollow metallic ball from a rectangular sheet-metal blank by stamping or drawing said blank into the shape of a cup having a rounded bottom and a serrated rim, the edges of the points or apices of said rim being convexly curved, and then closing the open end of the cup to form a sphere.

10. The process of making a hollow metallic ball from a square sheet-metal blank by stamping or drawing said blank into the shape of a cup having a rounded bottom and a serrated rim, the edges of the points or apices of said rim being convexly curved, and then closing the open end of the cup to form a sphere.

11. The process of making a hollow metallic ball from a square sheet-metal blank by stamping or drawing said blank into the shape of a cup having a rounded bottom and a serrated rim, the edges of the points or apices of said rim being convexly curved, and then closing the cup and swelling or expanding the same to form a ball of larger diameter than the cup.

812,136. SASH-HOLDER. ANDREW A. JONES, Cincinnati, Ohio. Filed May 18, 1905. Serial No. 261,064.

Claim.—1. In a window-sash tightener, a dog, adapted to be pivoted in the side strip of the window-sash, a hollow head on said dog, a foot extending from said dog, a sash-cord extending into said hollow head, means for holding said sash-cord in place in said hollow head, in combination with a sash-weight for tilting said dog to impinge against the parting-strip of the window-frame, as and for the purposes set forth.

2. In a window-sash tightener, a dog, adapted to be pivoted in side strip of the window-sash, a hollow head on said dog, a foot, extending from said dog, a sash-cord extending into said hollow head, a plate covering said hollow head and screwed in place, in combination with a sash-weight for tilting said dog to impinge against the parting-strip of the window-frame, as and for the purposes set forth.

812,137. TRACTION-ENGINE. WILBUR S. KELLEY, Newton, Iowa, assignor of one-half to Charles C. Kooper, Newton, Iowa. Filed Oct. 17, 1904. Serial No. 228,334.

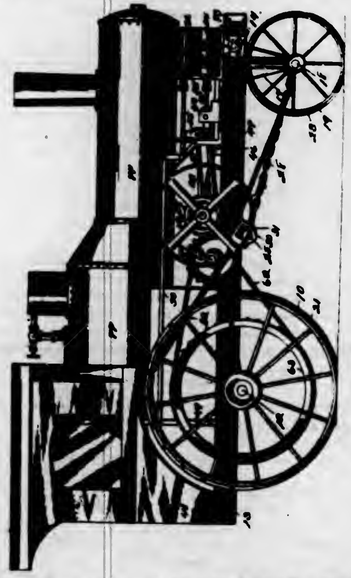

Claim.—1. In an engine, a frame formed of channel-iron bent on opposite sides of its center and having its end portions extended in parallel lines, a steering-truck supporting the closed forward end portion of said frame, a traction-truck supporting the rear open end portion of said frame, an engine and driving mechanism mounted on said frame, detachable connections between said driving mechanism and the traction-truck, a boiler mounted on said frame independent of the engine and driving mechanism, a hoisting-shaft mounted transversely of the forward end portion of said frame, a cable on said shaft, and detachable connections between said hoisting-shaft and the driving mechanism.

2. In a traction-engine, a supporting-frame formed with an aperture in one end, guide-rollers opposite each other and extending into said aperture, a drum-shaft mounted transversely of said frame adjacent said aperture and parallel with said rollers, a cable on said shaft and extending through said aperture between said rollers, and means for driving said shaft.

3. In a traction-engine, a rigid frame, trucks supporting said frame, a pillow-block on said frame, a boiler supported on said pillow-block and frame, engine-beds supported on said frame independent of the boiler, engines supported on said beds independent of the boiler, fraction mechanism on said frame independent of the boiler, driving mechanism mounted on said frame independent of the boiler, and adapted to be connected to the traction mechanism at times and to the machine to be driven at times, and connections between said engines and said driving mechanism.

4. In a traction-engine, a rigid frame, a traction-truck supporting the rear end of said frame, a steering-truck supporting the forward end of said frame, a boiler mounted on said frame, steering mechanism mounted on said frame and connected with said steering-truck, driving mechanism mounted on said frame and arranged for connection with the traction mechanism at times and with a machine to be driven at times, an engine mounted on said frame, connections between said engine and the driving mechanism, a hoisting mechanism carried by said frame and arranged to be connected to the driving mechanism at times, a cable leading from said hoisting mechanism, guides for said cable, the steering mechanism, driving mechanism, engine, connections and hoisting mechanism being independent of the boiler.

5. In a traction-engine, a rigid frame, a traction-truck supporting the rear end of said frame, a steering-truck supporting the forward end of said frame, a boiler mounted on said frame, steering mechanism mounted on said frame and connected with said steering-truck, driving mechanism mounted on said frame and arranged for connection with the traction mechanism at times and with a machine to be driven at times, an engine mounted on said frame, connections between said engine and the driving mechanism, a hoisting mechanism carried by said frame and arranged to be connected to the driving mechanism at times, the rigid frame formed with an opening in its forward end, guides above and below said opening, and a cable leading from said hoisting mechanism through said opening and between said guides, the steering mechanism, driving mechanism, engine, connections and hoisting mechanism being independent of the boiler.

6. In a traction-engine, a rigid frame, trucks supporting said frame, a pillow-block on said frame, a boiler supported on said pillow-block and frame, engine-beds supported on said frame independent of the boiler, engines supported on said beds independent of the boiler, traction mechanism on said frame independent of the boiler, driving mechanism mounted on said frame independent of the boiler, and adapted to be connected to the traction mechanism at times and to a machine to be driven at times, connections between said engines and said driving mechanism, a hoisting mechanism carried by said frame independent of the boiler, detachable connections between said hoisting mechanism and the driving mechanism, a cable leading from said hoisting mechanism, and guides for said cable.

7. In a traction-engine, a rigid frame, traction-trucks and steering-trucks supporting said frame, an engine and driving mechanism on said frame, detachable connections between said driving mechanism and the traction-trucks, a hoisting-shaft transversely of said frame, detachable connections between said hoisting-shaft and the driving mechanism and a cable leading from and adapted to be wound on said hoisting-shaft.

8. In an engine a frame formed of channel-iron bent on opposite sides of its center and having its end portions extended in parallel lines, a steering-truck supporting the closed forward end portion of said frame, a traction-truck supporting the rear open end portion of said frame, an engine and driving mechanism mounted on said frame, detachable connections between said driving mechanism and the traction-truck, and a boiler mounted on said frame independent of the engine and driving mechanism.

9. In an engine, a supporting-frame formed with an aperture in its forward end, an engine and driving mechanism mounted on said frame, a hoisting-shaft mounted across said frame, detachable connections between said driving mechanism and hoisting-shaft, guide-rollers on said frame above and below the apertures therein, and a

cable leading from and adapted to be wound on said hoisting-shaft and extending through said aperture and between said guide-rollers.

10. In a traction-engine, a supporting-frame formed with an aperture in one end, guide-rollers opposite each other and extending into said aperture, a drum-shaft mounted transversely of said frame adjacent said aperture and parallel with said rollers, a cable on said shaft and extending through said aperture between said rollers, and means for driving said shaft, the said means comprising a pinion on said shaft, a gear-wheel meshing with said pinion, a pinion on the shaft of said gear-wheel, a gear-wheel meshing with said last-named pinion, and a pinion on the shaft of said last-named gear-wheel.

11. In a traction-engine, a rigid frame, trucks supporting said frame, a pillow-block on said frame, a boiler supported on said pillow-block and frame, engine-beds supported on said frame independent of the boiler, engines supported on said beds independent of the boiler, traction mechanism on said frame independent of the boiler, driving mechanism mounted on said frame independent of the boiler, and adapted to be connected to the traction mechanism at times and to a machine to be driven at times, connections between said engines and said driving mechanism, a hoisting mechanism carried by said frame independent of the boiler, detachable connections between said hoisting mechanism and the driving mechanism, a cable leading from said hoisting mechanism, guides for said cable, and a pinion on said shaft, a gear-wheel meshing with said pinion, a pinion on the shaft of said gear-wheel, a gear-wheel meshing with said last-named pinion, and a pinion on the shaft of said last-named gear-wheel.

12. In a traction-engine, a rigid frame, trucks supporting said frame, a pillow-block on said frame, a boiler supported on said pillow-block and frame, engine-beds supported on said frame independent of the boiler, engines supported on said beds independent of the boiler, traction mechanism on said frame independent of the boiler, driving mechanism mounted on said frame independent of the boiler, and adapted to be connected to the traction mechanism at times and to a machine to be driven at times, connections between said engines and said driving mechanism, a hoisting mechanism carried by said frame independent of the boiler, detachable connections between said hoisting mechanism and the driving mechanism, a cable leading from said hoisting mechanism, guides for said cable, and a pinion on said shaft, a gear-wheel meshing with said pinion, a pinion on the shaft of said gear-wheel, a gear-wheel meshing with said last-named pinion, and a pinion on the shaft of said last-named gear-wheel, the several openings located between the circumference of the barrel and the bore of the piece, and the ingress to the rear of the piece.

Claim.—1. In combination, a fence-post provided with a plurality of notches at intervals in its length forming seats for wires, over a single line of the message, means for causing successive lines

cable leading from and adapted to be wound on said hoisting-shaft and extending through said aperture and between said guide-rollers.

10. In a traction-engine, a rigid frame, trucks supporting said frame, a pillow-block on said frame, a boiler supported on said pillow-block and frame, engine-beds supported on said frame independent of the boiler, engines supported on said beds independent of said boiler, driving mechanism actuated by said engines, traction mechanism arranged for attachment to said driving mechanism at times, and steering mechanism arranged for manual operation of the forward truck.

812,138. WASHING-MACHINE. CHARLES L. KELLY, Grant, Ky. Filed June 13, 1905. Serial No. 265,020.

Claim.—1. In a washing-machine, a tub, a pair of rock-shafts journaled therein, links carried by the rock-shafts, a frame pivoted to the normally upper ends of the links and provided with a keeper, a rubbing member pivoted to the normally lower ends of the links, a second rubbing member pivoted at one end of the frame and adapted to swing upward, and a locking member carried by the second rubbing member for engagement with the keeper to lock said member in normal position in the frame.

2. In a washing-machine, a tub, a pair of rock-shafts journaled therein, links fixed upon the shafts to project normally above and below the same, closures extended between the links at opposite sides of the shaft, a frame pivoted to the upper ends of the links and provided with a keeper, a rubbing member journaled to the lower ends of the links, a second rubbing member pivoted in the frame and adapted to swing upward therefrom, a locking member carried by the second rubbing member for engagement with the keeper to lock the member in normally closed position, and means for operating the shafts to reciprocate the rubbing members relatively.

812,139. HAME. HENRY N. KEMPTON, Terry, Mont. Filed May 13, 1905. Serial No. 260,308.

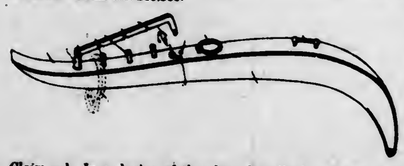

Claim.—1. In a device of the class described, a hame, a plurality of relatively-spaced outwardly-projecting arms carried thereby, said arms being provided at their outer ends with seats or recesses, a pivoted keeper adapted to close over said arms and seat within said recesses, and means for locking the keeper in closed position.

2. In a device of the class described, a hame provided with a plurality of spaced members, a movable keeper adapted to close over said members and a pivoted locking member designed for engagement with the keeper to lock the latter against movement.

812,140. GUN-BARREL FOR PISTOLS, RIFLES, AND ORDNANCE. PERRY B. KNOX, Utica, N. Y. Filed June 14, 1901. Renewed July 25, 1905. Serial No. 267,944.

Claim.—1. A rifled barrel containing a series of perforations at the muzzle, adjacent to and encircling the bore, having the egress of the several openings located between the circumference of the barrel and the bore of the piece, and the ingress to the rear of the muzzle.

2. A rifled barrel containing a series of longitudinal gas-escape channels located between the circumference of the barrel and the periphery of the bore, having their openings at the muzzle, and intersecting the bore rearwardly thereof, permitting a portion of the gas-pressure to thereby escape past the bullet, in direction of and substantially parallel to the line of flight, prior to the exuding of the bullet, thus forming a preceding, encompassing, and separate current from the one immediately thereafter issuing from the bore.

3. A rifled barrel containing a series of perforations encircling the muzzle, entering the bore at an angle to the line of flight, with means which enter into said perforations by means of which one or more of said perforations can be diminished, adjusted or varied in capacity.

4. A rifle-barrel containing a series of perforations encircling the muzzle and entering the bore of the piece, in combination with one or more plugs inserted therein for regulating the escape of gas therefrom.

5. A gun-barrel containing a series of perforations or gas-escape openings encircling the muzzle, with one or more plugs inserted therein, for the purpose of reducing or regulating the maximum flow of gas therefrom.

6. A rifled barrel perforated at or near the muzzle with a series of holes encircling the same and radiating from the bore outward with means for partially closing said holes by the use of plugs or their equivalent entering said holes, essentially as shown and described.

7. A rifled barrel containing a series of perforations or gas-escape openings encircling the muzzle and entering the bore thereof, with means entering into any one or more of said perforations by which the circumferential area of gas-escape may be diminished, regulated or changed wholly or in part, essentially as described.

8. A rifle-barrel containing a series of perforations or gas-escape openings encircling the muzzle, and means by which the longitudinal area of gas-escape may be varied, regulated, or changed independently of the circumferential area, essentially as set forth.

9. A rifled barrel containing a series of perforations or gas-escape openings near the nozzle, with means consisting of perforated plugs inserted therein, by which the distance from the muzzle to the nearest full openings may be increased or diminished, and the area or volume of escape be thereby changed or regulated as desired.

10. A gun-barrel containing a series of gas-escape openings encircling the bore, fitted with plugs containing openings through which the propelling force may find exit prior to the bullet leaving the muzzle thereof.

11. A gun-barrel containing a multiple of longitudinal gas-escape channels, adjacent to and encircling the bore of the piece, having their exits between the circumference of the barrel and the periphery of the bore, intersecting the bore rearwardly of the muzzle, through which a portion of the gas-pressure may escape prior to the parting of the rear end of the bullet with the muzzle of the piece in direction of the line of flight: in combination with spirally-cut grooves or rifling within the bore of the piece.

12. A rifle-barrel containing a series of lateral gas-escape channels, one or more of which are estopped at the outer opening of same with plugs, coalescing with a series of longitudinal gas-escape channels located between the circumference of the bore and the circumference of the barrel, permitting the gas to escape approximately parallel to the line of flight separately from the blast issuing from the bore.

812,141. FENCE-POST. JAMES W. KIDD, Okmulgee, Okla. Filed June 20, 1905. Serial No. 266,139.

Claim.—1. In combination, a fence-post provided with a plurality of notches at intervals in its length forming seats for fence-wires, fence-wires received in the notches, and a tie member of U form with one side thereof disposed on one side of the post to engage the fence-wires, the other side of the tie member being disposed on the opposite side of the post and coöperating to prevent displacement of the fence-wires from the notches and displacement of the tie member from the post.

2. In combination, a fence-post having a plurality of seats to receive the line-wires, a tie member to engage the line-wires and prevent displacement thereof, and a band about the post adapted to prevent displacement of the tie member.

3. In combination, a fence-post provided with relatively notched portions forming seats, a U-shaped tie member adapted to embrace opposite sides of the fence-post, and a band about said post provided with a loop to engage a side of the tie member.

812,142. FACSIMILE-TELEGRAPH. EDUARD E. KLEINSCHMIDT, New York, N. Y., assignor to Frederick Kleinschmidt, New York, N. Y. Filed Jan. 18, 1901. Serial No. 43,754.

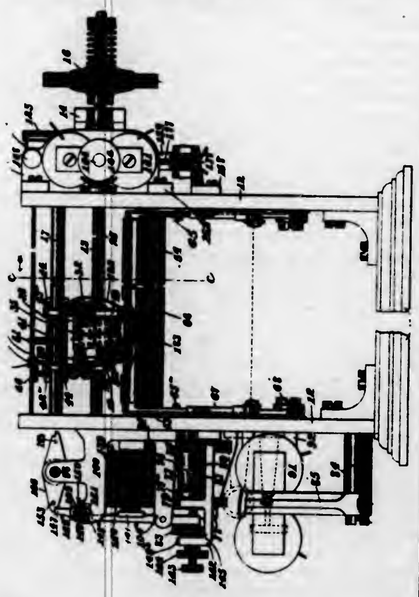

Claim.—1. A facsimile-telegraph comprising means for holding a message-sheet, a plurality of styluses arranged to travel in a straight line over a single individual and legibly separate line of the message, means for causing successive lines of the message to be intermittently presented to and to be traversed by the said styluses, and means for connecting the said styluses to a single line-wire.

2. A facsimile-telegraph comprising means for holding a message-sheet, a plurality of styluses, means for causing the styluses to travel over a portion of a line of the message in a direction at right angles to the direction of the line, and means for causing the styluses to travel over successive portions of the line.

3. A facsimile-telegraph, comprising means for holding a message-sheet, a plurality of styluses, means for causing the styluses to travel over a specific portion of a line of a message, and means for shifting the styluses at intermittent intervals a distance approximately equal to the length of the specific portion traversed.

4. A facsimile-telegraph comprising means for holding a message-sheet, a plurality of styluses, means for causing the styluses to travel over a portion of a line of the message in a direction at an angle to the direction of the line and a spiral course over the said portion of the line, and means for causing the styluses to travel over successive portions of the line.

A facsimile-telegraph, comprising means for holding a message-sheet, a plurality of styluses arranged to travel transversely over a single line of the message, means for causing successive lines of the message to be traversed by the said styluses, and means for connecting the said styluses to a single line-wire.

6. A facsimile-telegraph, comprising means for holding a message-sheet, a plurality of styluses arranged to travel transversely over a single line of the message, means for causing successive lines of the message to be traversed by the said styluses, and means for causing the styluses to travel in opposite directions over the alternate lines.

7. A facsimile-telegraph, comprising means for holding a message-sheet, a plurality of styluses arranged to travel over a specific legibly-separate area or self-distinguishable portion of the message longitudinally of the message-sheet and at an angle to the transverse direction of the message across the message-blank, and means for causing the styluses to move transversely of the message-sheet to cover successive portions of the message.

8. A facsimile-telegraph, comprising means for holding a message-sheet, a plurality of styluses arranged to travel over a specific legibly-separate area or self-distinguishable portion of the message and at an angle to the transverse direction of the message across the message-blank, and means for moving the styluses to successive portions of the message and for causing the styluses to travel over such portions at separate intervals.

9. A facsimile-telegraph, comprising means for holding a message-sheet a plurality of styluses arranged to travel in a path longitudinally of the message-sheet over a certain specific legibly-separate area or self-distinguishable portion and at an angle to the transverse direction of the message across the message-blank, means for causing the said styluses to travel over similar portions of the message transversely thereof, and means for presenting successive portions of the message to the styluses.

10. A facsimile-telegraph, comprising means for holding a message-sheet, a plurality of styluses arranged to travel transversely over a single line of the message; means for causing the said styluses to transmit a specific legibly-separate area or self-distinguishable portion of the said line, means for stopping the said styluses and shifting them to successive portions of the said line and means for presenting successive lines of the message to said styluses.

11. A facsimile-telegraph, comprising means for holding a message-sheet, a plurality of styluses arranged to travel longitudinally of the message-sheet over a certain specific legibly-separate area or self-distinguishable portion of the message to transmit the same, means for stopping the said styluses and shifting them transversely to the next following successive portion of the same line, and means for advancing the message-sheet successive spaces of one line each to present successive lines of the message to the styluses.

12. A facsimile-telegraph, comprising means for holding a message-sheet, a plurality of styluses arranged in circular series; means for causing said styluses to travel in a vertical plane over the message-sheet to successively contact with fragmentary particles of the message, means for causing the styluses to travel in a spiral course over a line of the message and means for moving the styluses to successive portions of the message.

13. A facsimile-telegraph comprising means for holding a message-sheet, a plurality of styluses arranged in a circular series; means for causing said styluses to travel in a vertical plane over the message-sheet at an angle to the direction of the line to successively contact with fragmentary particles of the message and means for moving the styluses to successive portions of the message.

14. A facsimile-telegraph comprising means for holding a message-sheet, a plurality of styluses arranged in a circular series; means for causing said styluses to travel in a vertical plane over the message-sheet at an angle to the direction of the line to successively contact with fragmentary particles of the message, means for causing the styluses to travel in a spiral course over a line of the message and means for moving the styluses to successive portions of the message.

15. A facsimile-telegraph, comprising means for holding a message-sheet, a plurality of styluses arranged in circular series; means for causing the said styluses to travel in a vertical plane longitudinally of the message-sheet to transmit a certain specific legibly-separate area or self-distinguishable portion of the message, means for causing the styluses to travel transversely over a single line of the message to transmit successive portions of the same, and means for causing successive lines of the message to be traversed by said styluses.

16. A facsimile-telegraph, comprising means for holding a message-sheet, a plurality of styluses arranged in circular series; means for causing said styluses to travel in a vertical plane whereby successively to contact with the message-sheet, means for moving said styluses over a single line of the message, means for causing succes-

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sive lines of the message to be traversed by said styluses, and means for causing the styluses to travel in opposite directions over the al-

27. In a facsimile-telegraph, comprising means for holding a message-sheet, a rotary stylus-carrier provided with

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39. In a facsimile-telegraph, a rotary stylus-carrier comprising a block of insulating material, a metallic casing surrounding the

intermittently actuates the turning devices, spring-operated means for throwing the said turning devices out of connection with the feed-

sive lines of the message to be traversed by said styluses, and means for causing the styluses to travel in opposite directions over the alternate lines.

17. A facsimile-telegraph, comprising means for holding a message-sheet, and a rotary stylus-carrier, a plurality of styluses mounted upon the said stylus-carrier in a substantially spiral series; means for causing said stylus-carrier to rotate in a vertical plane relatively to the message-sheet whereby the styluses will successively contact therewith at diffent portions of the sheet to transmit a certain specific legibly-separate area or self-distinguishable portion of the message, means for shifting the said stylus-carrier whereby the styluses will rotate over successive portions of the same line of the message, means for presenting successive lines of the message to the said styluses.

18. A facsimile-telegraph, comprising means for holding a message-sheet, and a rotary stylus-carrier, a plurality of styluses mounted upon the said stylus-carrier; means for causing said stylus-carrier to rotate in a vertical plane respectively to the message-sheet whereby the styluses will successively contact therewith at different portions of the sheet to transmit a certain specific legibly-separate area or self-distinguishable portion of the message; means for shifting the said stylus-carrier whereby the styluses will rotate over successive portions of the same line of the message and means for presenting successive lines of the message to the said styluses.

19. In a facsimile-telegraph comprising means for holding a message-sheet, and a rotary stylus-carrier, a plurality of styluses mounted upon the said stylus-carrier in a substantially spiral series; means for causing said stylus-carrier to rotate in a vertical plane respectively to the message-sheet whereby the styluses will successively contact therewith at different portions of the sheet to transmit a portion of the message, means for operating the said stylus-carrier whereby the styluses will rotate over successive portions of the same line of the message; and means for presenting successive lines of the message to the said styluses.

20. A facsimile-telegraph, comprising means for holding a message-sheet, a rotary stylus-carrier, means for rotating the same in a vertical plane relatively to the message-sheet, a plurality of styluses arranged in a substantially spiral series around the said carrier, means for shifting the said carrier to successive portions of the message, and means for stopping and starting said carrier when thus shifting the same.

21. A facsimile-telegraph comprising a message-sheet, a rotary stylus-carrier; means for rotating the same in a vertical plane relatively to the message-sheet; and a plurality of styluses arranged in a substantially spiral series around the said carrier.

22. A facsimile-telegraph comprising means for holding a message-sheet, a rotary stylus-carrier provided with a plurality of styluses traveling in a vertical plane relatively to the message-sheet, means for shifting the said stylus-carrier transversely of the message-sheet to transmit successive portions of the same line, and means for advancing the message-sheet the successive spaces of one line.

23. A facsimile-telegraph, comprising means for holding a message-sheet, a rotary stylus-carrier provided with a plurality of styluses traveling in a vertical plane relatively to the message-sheet, means for operating the said stylus-carrier transversely in a specific direction of the message-sheet to transmit successive portions of the same line, and means for advancing the message-sheet the successive spaces of one line.

24. A facsimile-telegraph, comprising means for holding a message-sheet, a rotary stylus-carrier provided with a plurality of styluses traveling in a vertical plane relatively to the message-sheet, means for shifting the said stylus-carrier transversely of the message-sheet to transmit successive portions of the same line, means for causing the stylus-carrier to travel in a reverse direction over each alternate line, and means for actuating the paper-advancing means and the stylus-carrier-reversing means simultaneously.

25. A facsimile-telegraph, comprising means for holding a message-sheet, a rotary stylus-carrier, means for causing said carrier to rotate in a vertical plane relatively to the message-sheet, a plurality of electrically-separated circular series of styluses upon the said stylus-carrier, whereby a plurality of styluses will be simultaneously in contact with the message-sheet; and means for connecting the said plurality of series of styluses to a single line-wire.

26. A facsimile-telegraph comprising means for holding a message-sheet, a rotary stylus-carrier provided with styluses extending around the same and traveling in a vertical plane with respect to the message-sheet, means for rotating said stylus-carrier in a constant plane spirally of the transverse course or direction of the message, means for shifting the said stylus-carrier to successive portions of the message, and means for changing the direction of the shifting means.

27. In a facsimile-telegraph, comprising means for holding a message-sheet, a rotary stylus-carrier provided with styluses extending around the same and traveling in a vertical plane with respect to the message-sheet, means for rotating said stylus-carrier in a constant plane spirally of the transverse course or direction of the message, and means for operating the said stylus-carrier to traverse successive portions of the message.

28. A facsimile-telegraph, comprising means for holding a message-sheet. a rotary stylus-carrier provided with a plurality of styluses arranged around the same and traveling in a vertical plane with respect to the message-sheet, means for rotating the stylus-carrier, means for stopping and starting the stylus-carrier at intervals, and means for shifting the stylus-carrier to successive portions of the message when the carrier is stopped.

29. A facsimile-telegraph, comprising means for holding a message-sheet, a rotary stylus-carrier provided with styluses extending around the same and traveling in a vertical plane relatively to the message-sheet, means for rotating the said stylus-carrier; means for stopping the carrier at intervals, means actuated by the stopping means for starting and stopping the carrier, and means for shifting the carrier to successive portions of the message.

30. A facsimile-telegraph, comprising means for holding a message-sheet, a rotary stylus-carrier provided with styluses extending around the same and traveling in a vertical plane relatively to the message-sheet, means for rotating the said stylus-carrier in constant plane, means for stopping and starting the same at each revolution thereof; means for shifting the said carrier to successive portions of the message after each revolution; means for changing the direction of the shifting means and means for advancing the message-sheet the successive space of one line at each change of direction of the shifting means of the carrier.

31. In a facsimile-telegraph, a rotary stylus-carrier adapted to be operated in a vertical plane, two series of styluses extending around said stylus-carrier in a substantially spiral arrangement, each series being electrically separated from the other, electrical connections from each of the series of styluses to a single line-wire, and means for separating the impulses of said styluses.

32. In a facsimile-telegraph, a rotary stylus-carrier adapted to be operated in a vertical plane, two series of styluses extending around said stylus-carrier, each series being electrically separated from the other, electrical connections from each of the series of styluses to a single line-wire, and means for separating the impulses of said styluses.

33. In a facsimile-telegraph, a rotary transmitting stylus-carrier comprising two insulated sections, and two series of transmitting-styluses mounted respectively upon said sections, and means for sending separate impulses from the styluses of each series.

34. In a facsimile-telegraph, a rotary stylus-carrier comprising a block of insulated material, metallic sections secured upon said block and mutually disconnected, and two series of styluses mounted in a substantially spiral arrangement respectively upon said sections, whereby they will range parallel one with the other.

35. In a facsimile-telegraph, a rotary stylus-carrier comprising a block of insulated material, a metallic casing surrounding the same and divided into electrically-separated sections, and two series of styluses connected respectively with the said sections and projecting radially of the stylus-carrier, the inner ends of the said styluses being inserted in the insulated block.

36. In a facsimile-telegraph, the combination with a main rotary shaft and a worm-shaft, of the revoluble stylus-carrier having its frame mounted upon the said worm-shaft and its body portion slidably mounted upon the main shaft of a tube extending across the frame, a pair of nuts mounted in the ends of the said tube and engaging the worm-shaft and means for adjusting the said nuts and for securing the tube to the frame.

37. In a facsimile-telegraph, the combination with a rotary shaft, of a stylus-carrier mounted thereon and consisting of an insulating-block, spirally cut out upon its periphery, a sectional metallic casing secured upon the said block, styluses mounted in the said sectional casing, and in the said block and projecting radially, caps or collars mounted upon each end of the insulating-block and connected thereto and to the sectional casing, and electrically separate from the rotary shaft, and brushes at either side of the carrier bearing respectively upon the end caps or collars.

38. In a facsimile-telegraph, a rotary stylus-carrier comprising a block of insulating material, a metallic casing surrounding the same and divided into electrically-separate sections formed with a spiral slot between them, plates secured to the said casing at either side of the slot, and two series of styluses mounted in the said plates, and projecting radially of the stylus-carrier.

39. In a facsimile-telegraph, a rotary stylus-carrier comprising a block of insulating material, a metallic casing surrounding the same and divided into electrically-separate sections formed with a spiral slot between them, plates secured to the said casing at either side of the slot, and two series of styluses mounted in the said plates, and projecting radially of the stylus-carrier; the inner ends of the said styluses being yieldingly and slidably mounted in the insulating-block.

40. In a facsimile-telegraph, the combination with a main rotary shaft and a parallel worm-shaft, of a stylus-carrier, comprising a frame mounted upon the worm-shaft and provided with adjustable nuts and working upon the said worm-shaft; means for adjusting the position of the stylus-carrier upon the worm, and a rotary body portion mounted upon the rotary shaft and slidable thereon, the said rotary body portion being provided with circular series of styluses mounted therein.

41. In a facsimile-telegraph, the combination with a rotary stylus-carrier and means for actuating the same, of a message-paper-feed roller mounted in vertical alinement with the stylus-carrier, spring-actuated pressure-rollers bearing against either side of the feed-roller, means for moving the feed-roller in a vertical path away from the stylus-carrier, means for limiting the movement of the pressure-rollers when the feed-roller is withdrawn, and means for throwing the feed-roller back to position and sustaining it.

42. In a facsimile-telegraph, the combination with a rotary stylus-carrier and means for actuating the same, of a message-paper-feed roller mounted in relation to the said stylus-carrier, pressure-rollers bearing against either side of the same, adjustable cams above the feed-roller to limit its upward movement, and operating-cams below the said roller for raising and lowering the same.

43. In a facsimile-telegraph, the combination with a rotary stylus-carrier and means for actuating the same, of a message-paper-feed roller mounted in relation to the said stylus-carrier, and intermittent means for turning the said roller to advance the message-paper the distance of one line after the stylus-carrier has traversed one line of the message.

44. In a facsimile-telegraph, the combination with a rotary stylus-carrier and means for actuating the same, of a message-paper-feed roller, and means actuated by the stylus-carrier to the end of each line for turning the feed-roller to advance the message-sheet the distance of one line after the stylus-carrier has traversed one line of the message.

45. In a facsimile-telegraph, the combination with a rotary stylus-carrier and means for actuating the same, of a message-paper-feed roller, and electrically-actuated means actuated by the stylus-carrier at the end of each line for turning the feed-roller to advance the message-sheet the distance of one line after the stylus-carrier has traversed one line of the message.

46. In a facsimile-telegraph, the combination with a rotary stylus-carrier and means for actuating the same, of a message-paper-feed roller, and electrically-actuated means actuated by the stylus-carrier for turning the feed-roller to advance the message-sheet the distance of one line after the stylus-carrier has traversed one line of the message.

47. In a facsimile-telegraph the combination with a rotary stylus-carrier and means for actuating the same of a message-paper-feed roller, means for moving the stylus-carrier longitudinally of the said roller, and means for turning the said roller to advance the message-sheet the distance of one line, said means being actuated by the stylus-carrier at the end of its travel over each line of the message.

48. In a facsimile-telegraph, the combination with a rotary stylus-carrier and means for actuating the same, of a message-paper-feed roller mounted in relation thereto, means for raising and lowering the said feed-roller, means for intermittently turning the same; means for throwing the turning devices out of connection therewith to prevent rotation thereof and permit of its raising and lowering.

49. In a facsimile-telegraph, the combination with a rotary stylus-carrier, and means for actuating the same, of a message-paper-feed roller mounted in relation to said stylus-carrier, means for raising and lowering the same, a gear carried by one end of the roller, a gear in connection therewith to rotate the same; means actuated by the stylus-carrier for operating the latter gear at the end of each line of the message, and means for throwing the said gear out of engagement with the gear on the feed-roller.

50. In a facsimile-telegraph, the combination with a rotary stylus-carrier, and means for actuating the same, of a message-paper-feed roller, mounted beneath the stylus-carrier, pressure-rollers at either side thereof, means for raising and lowering the said feed-roller; means for turning the same, means whereby the stylus-carrier intermittently actuates the turning devices, spring-operated means for throwing the said turning devices out of connection with the feed-roller, and means for holding the said devices in connection therewith against the spring.

51. In a facsimile-telegraph, the combination with a rotary stylus-carrier, and means for actuating the same, of a message-paper-feed roller mounted beneath the same, pressure-rollers at either side thereof, means for raising and lowering the said feed-roller, a gear carried by the said feed-rolle , a slidable gear adapted to engage therewith to turn the roller, a hollow shaft on which the latter gear is slidably mounted, a spring tending to slide the said gear normally out of engagement with the gear of the feed-roller, and a screw adapted to press the slide of the said gear into engagement against the spring.

52. In a facsimile-telegraph, the combination with a rotary stylus-carrier, and means for actuating the same, of a message-paper-feed roller mounted beneath the said stylus-carrier and adapted to raise and lower the same adjustable cams above the said roller for limiting its upward movement, operating-cams below the said roller for raising and lowering the same and to maintain it in the raised position, spring-actuated pressure-rollers at either side of the paper-feed roller, means for limiting the inward movement of the said pressure-rollers when the feed-roller is lowered, a gear upon the end of the feed-roller, a gear mounted in engagement with the same, a hollow slotted shaft on which the said gear is slidably mounted, the said gear being provided with a pin which projects through the slot of the shaft a spring within the shaft tending to throw the gear normally out of engagement with the gear of the feed-roller, and a screw mounted in the hollow shaft and bearing against the pin to slide the gear into engagement against the spring.

53. In a facsimile-telegraph, the combination with a rotary stylus-carrier, and a shaft for actuating the same, of means in connection with the said shaft for shifting the stylus-carrier longitudinally thereof intermittently.

54. In a facsimile-telegraph, the combination with a rotary shaft, and a stylus-carrier mounted thereon, to rotate therewith and longitudinally movable thereupon of means in connection with the said shaft for stopping the same intermittently, and means upon and in connection with the said shaft for shifting the said stylus-carrier longitudinally thereof intermittently.

55. In a facsimile-telegraph, the combination with a rotary shaft, and a stylus-carrier mounted thereon to rotate therewith and longitudinally movable thereupon of means upon and in connection with the said shaft for stopping the same intermittently; means for shifting the stylus-carrier longitudinally thereof intermittently, and means actuated by the stop devices for releasing the shaft.

56. In a facsimile-telegraph the combination with a rotary shaft and a stylus-carrier mounted thereon to rotate therewith and longitudinally movable thereupon, of means upon and in connection with the said shaft for stopping the same intermittently; means upon and in connection with the said shaft for shifting the said stylus-carrier longitudinally thereof intermittently, means for reversing the direction of movement of the stylus-carrier, and means carried by the stylus-carrier for actuating the reversing means at the end of each line of travel of the said carrier.

57. In a facsimile-telegraph, the combination with a rotary shaft, and a stylus-carrier mounted thereon to rotate therewith and longitudinally movable thereupon, of means upon and in connection with the said shaft for stopping the same intermittently, means upon and in connection with the said shaft for shifting the stylus-carrier longitudinally thereof intermittently; means for reversing the direction of movement of the stylus-carrier; means carried by the stylus-carrier for actuating the reversing means at the end of each line of travel of the said carrier, means for supporting a message-sheet in relation to the stylus-carrier, means for advancing the message-sheet successive distances of one line and means whereby the said message-sheet-advancing means will be actuated at the end of each line of travel of the stylus-carrier.

58. In a facsimile-telegraph, the combination with a rotary shaft, and a stylus-carrier mounted thereon to rotate therewith and longitudinally movable thereupon, of stop devices upon the said shaft, a magnet mounted adjacent thereto, an armature-lever mounted in connection with the magnet and comprising means for engaging the stop device of the shaft, and means for energizing the said magnet to attract the armature-lever and release the shaft.

59. In a facsimile-telegraph, the combination with a rotary shaft, and a stylus-carrier mounted thereon to rotate therewith and longitudinally movable thereupon, of stop devices upon the said shaft; a magnet mounted adjacent thereto, an armature-lever mount-

ed in connection with the magnet and comprising means for engaging the stop device of the shaft, and means upon and in connection with the armature-lever whereby the contact of the stop device of the shaft therewith will initiate the energizing on the magnet to attract the said armature-lever and release the shaft.

60. In a facsimile-telegraph, the combination with a rotary shaft, and a stylus-carrier mounted thereon to rotate therewith and longitudinally movable thereupon, of stop devices upon the said shaft, a magnet mounted adjacent thereto, an armature-lever mounted in connection with the magnet and comprising means for engaging the stop device of the shaft, a sliding contact device mounted upon the armature-lever and adapted to be moved by the stop device of the shaft; a second contact device upon the said lever which the sliding contact normally engages, a circuit including the said contacts and adapted to energize the magnet when the contacts are disengaged, whereby the movement of the sliding contact will initiate the energizing of the said magnet to attract the armature-lever and release the shaft.

61. In a facsimile-telegraph, the combination with a rotary shaft and a stylus-carrier mounted thereon, of a stop device carried by the said shaft, a magnet mounted adjacent thereto, an armature-lever mounted in relation to the said magnet and provided with a shoulder, means for normally retracting the armature-lever to bring the shoulder into the path of movement of the stop device of the shaft, normally engaging contacts upon the said armature-lever adapted to be disconnected by the engagement of the stop device with the shoulder thereof, a circuit including the said contacts and a source of electrical energy which is short-circuited when the contacts engage, and means whereby when the short circuit is broken the current thereof will energize the magnet to attract the armature and withdraw its shoulder from the stop device.

62. In a facsimile-telegraph the combination with a main rotary shaft and a stylus-carrier mounted thereon and longitudinally movable thereupon of a shifting-shaft connected with the stylus-carrier and adapted to move the same longitudinally of its shaft, rotary means for actuating the shifting-shaft and means for permitting the same intermittently to actuate the shifting-shaft.

63. In a facsimile-telegraph, the combination with a main rotary shaft and a stylus-carrier mounted thereon and longitudinally movable thereupon, of a shifting-shaft connected with the stylus-carrier and adapted to move the same longitudinally of its shaft, rotary means for actuating the shifting-shaft, and means actuated by the stylus-shaft for permitting the same intermittently to actuate the shifting-shaft.

64. In a facsimile-telegraph, the combination with a main rotary shaft and a stylus-carrier mounted thereon and longitudinally movable thereupon, of a shifting-shaft connected with the stylus-carrier and adapted to move the same longitudinally of its shaft, means in connection therewith for communicating rotary motion to the shifting-shaft intermittently, electromagnetic devices for operating the intermittent devices and means for causing the said electromagnetic devices to act at each specific number of revolutions of the stylus-shaft.

65. In a facsimile-telegraph, the combination with a main rotary shaft and a stylus-carrier mounted thereon and longitudinally movable thereupon, of a shifting-shaft for moving the stylus-carrier upon its shaft, a sectional rotary shaft geared to the said shifting-shaft, and means for connecting and disconnecting the sections of the shaft to cause the same intermittently to actuate the shifting-shaft.

66. In a facsimile-telegraph, the combination with a main rotary shaft and a stylus-carrier mounted thereon and longitudinally movable thereupon, of a shifting-shaft for moving the said stylus-carrier upon its shaft, a sectional rotary shaft geared to the said shifting-shaft, a friction-clutch connecting the said sections, and stop devices upon one of the sections, stop devices mounted adjacent thereto to engage the same to stop the said sectional shaft, and means for intermittently releasing the said section.

67. In a facsimile-telegraph, the combination with a main rotary shaft and a stylus-carrier mounted thereon and longitudinally movable thereupon, of a shifting-shaft connected with the stylus-carrier and adapted to move the same longitudinally of its shaft, a rotary shaft geared thereto, and means for reversing the gear connections of the rotary shaft and the shifting-shaft whereby the stylus-carrier may be moved in opposite directions.

68. In a facsimile-telegraph, the combination with a main rotary shaft and a stylus-carrier mounted thereon and longitudinally movable thereupon of a shifting-shaft connected with the stylus-carrier and adapted to move the same upon its shaft, a sectional rotary shaft geared to the said shifting-shaft, a friction-clutch connecting the sections stop devices upon one of the said sections, stop devices mounted adjacent thereto, a magnet mounted in relation thereto, an armature-lever adapted when attracted by the said magnet to disengage the stop devices and permit partial revolution of the rotary shaft-section, and means operated by the stylus-shaft for energizing the said magnet.

69. In a facsimile-telegraph, the combination with a main rotary shaft and a stylus-carrier mounted thereon and longitudinally movable thereupon, of a shifting-shaft connected with the stylus-carrier and adapted to move the same longitudinally of its shaft, and means governed by the stylus-shaft for actuating the said connecting means intermittently at a specific number of revolutions of the said shaft.

70. In a facsimile-telegraph, the combination with a main rotary shaft and a stylus-carrier mounted thereon and longitudinally movable thereupon, of the shifting-shaft connected to the said stylus-carrier to move the same upon its shaft, a sectional rotary shaft geared in connection with the said shifting-shaft, a friction-clutch connecting the sections, stop devices upon one of the said sections, a pawl adapted to engage the same, a magnet mounted adjacent thereto, an armature-lever adapted when attracted to move the pawl and release the stop devices to permit partial revolution of the said shaft-section; a circuit including the said magnets, brushes mounted adjacent to the stylus-shaft, and means upon the stylus-shaft for connecting the said brushes at each specific number of revolutions thereof whereby to energize the magnets.

71. In a facsimile-telegraph, the combination with a main rotary shaft and a stylus-carrier mounted thereon and longitudinally movable thereupon, of a shifting-shaft connected to the said stylus-carrier to move the same upon its shaft, a sectional rotary shaft geared in connection with the said shifting-shaft a friction-clutch connecting the sections, stop devices upon one of the said sections, a pawl adapted to engage the same, a magnet mounted adjacent thereto, an armature-lever adapted when attracted to move the pawl and release the stop devices to permit partial revolution of the said shaft-section, a circuit including the said magnet, brushes mounted adjacent to the stylus-shaft means upon the stylus-shaft for connecting the said brushes at each specific number of revolutions thereof whereby to energize the magnet, means for reversing the gear connections of the rotary shaft and the shifting-shaft, an electromagnetic device for actuating the said reversing means and devices operated by the stylus-carrier for energizing the said electromagnetic devices.

72. In a facsimile-telegraph, the combination with a rotary stylus-carrier, of a message-paper-feed roller and a shaft with which it is adapted to turn, insulated heads in the said roller connecting the same with the shaft, an adjusting-nut mounted upon the shaft to tighten the roller thereon, and gear connections for turning the said roller which are adapted to be disconnected to permit adjustment thereof.

73. In a facsimile-telegraph, the combination with a rotary shaft and a stylus-carrier mounted thereon and longitudinally movable thereupon, of a worm-shaft ranging parallel with the stylus-shaft and connected with the stylus-carrier to move the same longitudinally, gears carried by the worm-shaft, rotary means for actuating the said gears, clutch devices for alternately connecting the gears to the worm-shaft; and electromagnetic means for actuating the said clutch devices.

74. In a facsimile-telegraph, the combination with a shaft and a stylus-carrier mounted thereon and longitudinally movable thereupon, of a shifting-shaft connected with the stylus-carrier to move the same upon its shaft; devices for reversing the action of the shifting-shaft, said devices being comprised in an electric circuit, and means for changing the polarity of the said circuit.

75. In a facsimile-telegraph, the combination with a shaft and a stylus-carrier mounted thereon and longitudinally movable thereupon, of a shifting-shaft connected with the stylus-carrier to move the same upon its shaft; devices for reversing the action of the shifting-shaft, said devices being comprised in a circuit, and means actuated by the stylus-carrier for changing the polarity of the circuit at the end of each line of travel of the stylus-carrier.

76. In a facsimile-telegraph, the combination with a rotary shaft and a stylus-carrier mounted thereon to rotate therewith and longitudinally movable thereupon, of means upon and in connection with the said shaft for stopping the same intermittently, means upon and in connection with the said shaft for shifting the said stylus-carrier longitudinally thereof intermittently, means comprised in an electric circuit for reversing the direction of movement of the stylus-carrier, and means actuated by the stylus-carrier for changing the polarity of the circuit.

77. In a facsimile-telegraph, the combination with a rotary

shaft and a stylus-carrier mounted thereon to rotate therewith and longitudinally movable thereupon, of means upon and in connection with the said shaft for stopping the same intermittently, means upon and in connection with the said shaft for shifting the said stylus-carrier longitudinally thereof intermittently; means comprised in an electric circuit for reversing the direction of movement of the stylus-carrier, a current-changer, a rod for actuating the current-changer, and means whereby the movement of the stylus-carrier actuates said rod.

78. In a facsimile-telegraph the combination with a rotary shaft and a stylus-carrier mounted thereon to rotate therewith and longitudinally movable thereupon, of means upon and in connection with the said shaft for stopping the same intermittently, means upon and in connection with the said shaft for shifting the said stylus-carrier longitudinally thereof intermittently, and means for reversing the direction of movement of the stylus-carrier, said means including magnets comprised in an electric circuit, an armature-lever connected with one of the magnets and means for changing the polarity of the armature-lever.

79. In a facsimile-telegraph the combination with a rotary shaft and a stylus-carrier mounted thereon to rotate therewith and longitudinally movable thereupon, of means upon and in connection with the said shaft for stopping the same intermittently, means upon and in connection with the said shaft for shifting the said stylus-carrier longitudinally thereof intermittently, means for reversing the direction of movement of the stylus-carrier and means including magnets comprised in an electric circuit, an armature-lever connected with one of the magnets and means for changing the polarity of the circuit, a current-changer included in the circuit and adapted to change the polarity of the current to the armature-lever and means controlled by the stylus-carrier for actuating the current-changer.

80. In a facsimile-telegraph the combination with a main rotary shaft and a stylus-carrier mounted thereon and longitudinally movable thereupon, of a shifting-shaft connected with the stylus-carrier and adapted to move the same longitudinally of its shaft, means controlled by the stylus-shaft for actuating the shifting-shaft intermittently, devices upon and in connection with the shifting-shaft for reversing the same, magnets comprised in an electric circuit, an armature connected to one of the magnets and to the shaft-reversing means, a current-changer included in the circuit, and means controlled by the stylus-carrier for actuating the current-changer to change the polarity of the armature-lever.

81. In a facsimile-telegraph, the combination with a main rotary shaft and a stylus-carrier mounted thereon and longitudinally movable thereupon, of a shifting-shaft connected with the stylus-carrier and adapted to move the same longitudinally of its shaft, means controlled by the stylus-shaft for actuating the shifting-shaft intermittently, devices upon and in connection with the shifting-shaft for reversing the same, magnets comprised in an electric circuit, an armature-lever connected to one of the magnets and to the shaft-reversing means, a current-changer included in the said circuit and comprising adjustable contacts, and contact devices mounted upon the same, a rod connected with the said contact devices, and means controlled by the stylus-carrier for shifting the said rod whereby the current-changer will change the polarity of the armature-lever.

82. In a facsimile-telegraph, the combination with a rotary shaft and a stylus-carrier mounted thereon to rotate therewith and longitudinally movable thereupon, of means upon and in connection with the said shaft for stopping the same intermittently; means upon and in connection with the said shaft for shifting the said stylus-carrier longitudinally thereof intermittently; means for reversing the direction of movement of the stylus-carrier, said means being comprised in an electric circuit and including a current-changer; a rod mounted adjacent to the stylus-carrier; a friction-sleeve upon the said rod, and connections from the stylus-carrier to the said friction-sleeve.

83. In a facsimile-telegraph, the combination with a main rotary shaft and a stylus-carrier mounted thereon and longitudinally movable thereupon, of a shifting-shaft connected with the stylus-carrier and adapted to move the same longitudinally of its shaft, means actuated by the stylus-shaft for causing the intermittent devices to act; devices upon and in connection with the shifting-shaft for reversing the same; magnets comprised in an electric circuit; an armature-lever connected to one of the magnets and to the shaft-reversing means; a current-changer included in the circuit devices and adapted to bring them in connection with the adjustable contacts; means bearing upon the said contact devices for governing the action thereof; a friction-sleeve mounted upon the said rod; and an arm upon the stylus-carrier connected with the said friction-sleeve.

84. In a facsimile-telegraph, the combination with a stylus-carrier and means for actuating the same, of a message-paper-feed roller; means comprised in an electric circuit for turning the said feed-roller specific distances, and means controlled by the stylus-carrier for closing the said circuit to operate the turning means.

85. In a facsimile-telegraph, the combination with a stylus-carrier and means for actuating the same, of a message-paper-feed roller, means comprised in an electric circuit for turning the said feed-roller specific distances, and means controlled by the stylus-carrier for closing the said circuit at the end of each line of travel of the stylus-carrier.

86. In a facsimile-telegraph, the combination with a stylus-carrier and means for actuating the same, of a message-paper-feed roller, means comprised in an electric circuit for turning the same specific distances, and means connected with the stylus-carrier and adapted to close the said circuit by contacting with markings upon the message-paper.

87. In a facsimile-telegraph, the combination with a stylus-carrier and means for actuating the same, of a message-paper-feed roller, means comprised in an electric circuit for turning the same specific distances, a brush connected with the stylus-carrier and adapted to close said circuit by contacting with markings upon the message-paper, and a relay limiting the closing of the said contacting means, whereby the circuit will be closed only by contact thereof with a prolonged marking.

88. In a facsimile-telegraph, the combination with a stylus-carrier and means for actuating the same, of a message-paper-feed roller, a ratchet-wheel mounted in connection therewith, an armature-lever carrying means for turning the ratchet a specific number of teeth, magnets for actuating the said armature-lever, and means governed by the stylus-carrier for energizing said magnets.

89. In a facsimile-telegraph, the combination with a stylus-carrier and means for actuating the same, of a message-paper-feed roller, an armature-lever mounted in relation thereto; means upon and in connection with the said armature-lever and the said feed-roller, whereby the movement of the armature-lever will turn the roller, and electromagnetic means for actuating the said armature-lever.

90. In a facsimile-telegraph, the combination with a stylus-carrier and means for actuating the same, of a message-paper-feed roller; an armature-lever mounted in relation thereto, means upon and in connection with the said armature-lever and the said feed-roller, whereby the movement of the stylus-carrier will turn the roller, a magnet adapted to actuate the said armature-lever and comprised in an electric circuit, and means carried by the stylus-carrier for closing the said circuit.

91. In a facsimile-telegraph, the combination with a stylus-carrier and means for actuating the same, of a message-paper-feed roller; means comprised in an electric circuit for turning the said roller; means controlled by the stylus-carrier for closing the circuit; a relay governing the closing of said circuit, and means for retarding the action of the relay.

92. In a facsimile-telegraph, the combination with a stylus-carrier and means for actuating the same, of a message-paper-feed roller, gear connections upon the said roller, means for disconnecting the gears; a ratchet-wheel connected with said gears, an armature-lever provided with a pawl adapted to turn the said ratchet-wheel, and electromagnetic means for actuating the said armature-lever.

93. In a facsimile-telegraph, the combination with a stylus-carrier, means for moving the same, over a line of the message, and means for reversing the movement of the stylus-carrier, of a message-paper-feed roller, means for turning the same; means comprised in an electric circuit for actuating the stylus-carrier-reversing means, and means comprised in the said circuit for actuating the feed-roller-turning means.

94. In a facsimile-telegraph, the combination with a stylus-carrier, means for moving the same over a line of the message, and means for reversing the movement of the stylus-carrier of the message-paper-feed roller, means for turning the same; means comprised in an electric circuit for actuating the stylus-carrier-reversing means and means carried by the stylus-carrier for controlling the said circuit.

95. In a facsimile-telegraph, the combination with a rotary shaft a stylus-carrier mounted thereon, a shifting-shaft connected with the said stylus-carrier to move the same longitudinally, a message-paper-feed roller, and means for turning the same, of means upon and in connection with the stylus-shaft for stopping and starting the carrier at intervals, means upon and in connection with the said shaft for actuating the shifting-shaft at intervals; means comprised in an electric circuit for reversing the said shifting-shaft, means comprised in the said circuit for actuating the feed-roller-turning

means, and means carried by the stylus-carrier for closing the said circuit.

of opposite polarity; local circuits including respectively the sets or series of recording-stylus devices, a main line connecting with the

vices, relays connected with the main circuit and adapted to be actu-

strip corresponding to the length of continuous travel or stroke of a

means, and means carried by the stylus-carrier for closing the said circuit.

96. In a facsimile-telegraph, transmitting-stylus devices separated in sets or series connected with sources of electrical energy of opposite polarity, recording-stylus devices similarly separated in sets or series, means for sending an impulse from one set of transmitting-styluses when the opposite styluses are in contact with message matter, and means for causing the said impulses to actuate recording-styluses corresponding in position to the contacting transmitting-styluses.

97. In a facsimile-telegraph, transmitting-stylus devices separated in sets or series of opposite polarity, recording-stylus devices similarly separated in sets or series, and means whereby the contacting transmitting-stylus will send to the corresponding recording-styluses an impulse initially of opposite polarity to the transmitting-stylus.

98. In a facsimile-telegraph, transmitting-stylus devices separated in sets or series connected with sources of electrical energy of opposite polarity; recording-stylus devices similarly separated in sets or series; means for sending an impulse from one set of transmitting-styluses when the opposite styluses are in contact with message matter, and devices of opposite polarity between the transmitter and recorder for conveying the transmitting impulse to the corresponding recording-stylus.

99. In a facsimile-telegraph, transmitting-stylus devices separated in sets or series connected with sources of electrical energy of opposite polarity; recording-stylus devices similarly separated in sets or series, means for sending impulses from one set of transmitting-styluses when the opposite styluses are in contact with message matter, means for causing the said impulse to actuate recording-styluses corresponding in position to the contacting transmitting-styluses, and means for sending an impulse to each contacting recording-stylus when both contacting transmitting-styluses are in contact with message matter.

100. In a facsimile-telegraph, transmitting and recording stylus devices included in local circuits, a main line connecting the same, means governed by the transmitting-styluses for sending impulses from their local circuit over the main line to the recording-stylus circuit, and means governed by the said writing impulses for actuating the local recording-circuit to operate the contacting recording-styluses.

101. In a facsimile-telegraph, transmitting and recording stylus devices included in local circuits, a main line connecting the same, means governed by the transmitting-styluses for sending impulses from their local circuit over the main line to the recording-stylus circuit, means governed by the said writing impulses for actuating the local recording-circuit to operate the contacting recording-stylus, and means included in the main line for maintaining a weak current over the line.

102. In a facsimile-telegraph, transmitting and recording stylus devices, each divided into two sets or series; a local circuit including the transmitting-styluses and including sources of electrical energy of opposite polarity; local circuits of opposite polarity including respectively the sets or series of recording-stylus devices, a main line connecting with the transmitter local circuit to receive impulses of opposite polarity therefrom, and devices in the main line connecting with the respective recorder-circuits to cause the same to actuate a contacting recording-stylus when the impulse initiated by the corresponding transmitting-stylus passes over the line.

103. In a facsimile-telegraph, transmitting and recording stylus devices, each divided into two sets or series; a local circuit including sources of electrical energy of opposite polarity; local circuits of opposite polarity including respectively the sets or series of recording-stylus devices, a main line connecting with the transmitting local circuit to receive impulses of opposite polarity therefrom, and relays of opposite polarity included in the main line and adapted to actuate respectively the recorder-circuits.

104. In a facsimile-telegraph, transmitting and recording stylus devices, each divided into two sets or series; a local circuit including the transmitting-styluses and including sources of electrical energy of opposite polarity; local circuits including respectively the sets or series of recording-stylus devices, a main line connecting with the transmitting local circuit to receive impulses of opposite polarity therefrom, means in the main line for actuating the recorder-circuits, and a relay connecting with the main line and adapted to actuate both recorder-circuits when no current passes over the line during the operation of the devices.

105. In a facsimile-telegraph, transmitting and recording stylus devices, each divided into two sets or series; a local circuit including the transmitting-styluses and including sources of electrical energy of opposite polarity; local circuits including respectively the sets or series of recording-stylus devices, a main line connecting with the transmitting local circuit to receive impulses of opposite polarity therefrom, a relay connecting with the main line and adapted to actuate both recorder-circuits when no current passes over the line during the operation of the device, and a relay included in the main line and adapted to maintain a constant weak current over the line between each writing impulse.

106. In a facsimile-telegraph, transmitting and recording stylus devices, each divided into two sets or series; a local circuit including sources of electrical energy of opposite polarity; local circuits including respectively the sets or series of recording-stylus devices, a main line connecting with the transmitting local circuit to receive impulses of opposite polarity therefrom, a relay connecting with the main line and adapted to actuate both recorder-circuits when no current passes over the line during the operation of the device, and a relay included in the main line and adapted to maintain a constant weak current over the line between each writing impulse, said relay being actuated by the writing impulses and comprising means whereby it will send over the line impulses of opposite polarity.

107. In a facsimile-telegraph, transmitting and recording stylus devices, each divided into two sets or series, a local circuit including the transmitting-stylus devices and including sources of electrical energy of opposite polarity; local circuits including the respective sets of the recording-stylus devices; means for short-circuiting one or both sets of the transmitting-styluses; a main line connecting the transmitting and recording circuits, relays of opposite polarity connected with the said main line and with the respective recorder-circuits and adapted to actuate the recorder-circuits to operate their stylus devices, and means for actuating both recorder-circuits when both of the transmitting-stylus devices are short-circuited.

108. In a facsimile-telegraph, transmitting and recording stylus devices, each divided into two sets or series, a local circuit including the transmitting-stylus devices and including sources of electrical energy of opposite polarity; local circuits including the respective sets of the recording-stylus devices; means for short-circuiting one or both of the transmitting-styluses; a main line connecting the transmitting and recording circuits, and relays of opposite polarity connected with the main line and with the respective recorder-circuits and adapted to actuate the recorder-circuits to operate their stylus devices.

109. In a facsimile-telegraph, transmitting and recording stylus devices, each divided into two sets or series, a local circuit including the transmitting-stylus devices and including sources of electrical energy of opposite polarity; local circuits including the respective sets of the recording-stylus devices; means for short-circuiting one or both of the transmitting-styluses; a main line connecting the transmitting and recording circuits, relays of opposite polarity connected with the main line and with the respective recorder-circuits and adapted to actuate the recorder-circuits to operate their stylus devices; and relay included in the main line and adapted to maintain a constant weak current over the line between each writing impulse.

110. In a facsimile-telegraph, transmitting and recording stylus devices, each divided into two sets or series, a local circuit including the transmitting-stylus devices and including sources of electrical energy of opposite polarity; local circuits including the respective sets of the recording-stylus devices; means for short-circuiting one or both of the transmitting-styluses; a main line connecting the transmitting and recording circuits, relays of opposite polarity connected wth the main line and with the respective recorder-circuits and adapted to actuate the recorder-circuits to operate their stylus devices, and a neutral relay connected with the main line and adapted to acuate both the recorder-circuits when there is no current passing over the line.

111. In a facsimile-telegraph transmitting and recording stylus devices connected by suitable circuits and adapted to work in unison, message-paper-feed mechanism mounted in relation to each of the stylus devices; means comprised in an electric circuit for operating the message-paper-feed mechanism said circuits being connected to the main circuit which connects the transmitting and recording devices and relays connected with the main circuit and adapted to be actuated by writing impulses from the transmitting-styluses to operation of the message-paper-feed mechanism.

112. In a facsimile-telegraph, transmitting and recording stylus devices connected by suitable circuits and adapted to work in unison, message-paper-feed mechanism mounted in relation to each of the stylus devices; means comprised in an electric circuit for operating the message-paper-feed mechanism, said circuit being connected to the main circuit which connects the transmitting and recording devices, relays connected with the main circuit and adapted to be actuated by writing impulses from the transmitting-styluses to operate a message-paper-feed mechanism, means for retarding the action of the said relays, and means controlled by the transmitting-styluses for sending a prolonged impulse to actuate the said relays.

113. In a facsimile-telegraph, transmitting and recording stylus devices connected by a main line, means for actuating said styluses; devices for stopping the same, electromagnetic devices for releasing the said stylus devices, a short circuit connected with the said electromagnetic devices, and means actuated by the stopping devices for opening the said short circuit and energizing the said electromagnetic devices.

114. In a facsimile-telegraph transmitting and recording stylus devices connected by a main line; means for actuating the said styluses; devices for stopping the same, electromagnetic devices for releasing the said stylus devices, a short circuit connected with the said electromagnetic devices, means actuated by the stopping devices for opening the said short circuit and energizing the said electromagnetic devices, a second short circuit connected with the first and governed by a relay, and means controlled by the transmitting-stylus devices for opening the latter short circuit and for closing it at intervals.

115. A facsimile-telegraph, comprising rotary stylus-carriers, carrying respectively transmitting and recording styluses; means for actuating the same; message-paper-feed mechanism; means for advancing the same to present successive lines of the message; means for stopping and starting the devices in unison; means for actuating the stylus-carriers to travel over a line of the message; means comprised in an electric circuit for actuating the advancing means of the message-paper-feed mechanism; means for preventing the actuation of the starting devices and means carried by the transmitting-stylus carrier and whereby the feed-roller-turning devices will be actuated and whereby the said devices will be withheld from action during the turning of the message-paper-feed mechanism.

116. In a facsimile-telegraph, the combination with a stylus-carrier means for rotating the same, a message-paper-feed mechanism, means comprised in an electric circuit for operating the said feed mechanism, of a brush carried by the stylus-carrier and means whereby the circuit of the turning devices will be closed when the brush is in prolonged contact with matter upon the message-paper.

117. In a facsimile-telegraph, the combination with the stylus-carrier, means for rotating the same, a message-paper-feed mechanism, and means comprised in an electric circuit for operating the feed mechanism, of a brush carried by the stylus-carrier, means whereby the circuit of the turning devices will be closed when the brush is in prolonged contact with the matter upon the message-paper, and means comprised in the said circuit for reversing the movement of the stylus-carrier.

118. In a facsimile-telegraph, the combination with transmitting and recording stylus devices, and a main line connecting them of governing devices in connection with one of the said stylus devices, comprising a plurality of stripe or surfaces separated by spaces, and contact devices therefor, and means for passing the writing impulses through the said governing devices, whereby the amount of travel of the recording-stylus devices will be restricted to the width of one strip, the said stripe being of a predetermined width corresponding to the predetermined length of continuous travel or successive strokes of the transmitting-stylus devices.

119. In a facsimile-telegraph, the combination with transmitting and recording stylus devices, of governing devices comprising one or more stripe corresponding to one or more transmitting-styluses and of an individual predetermined width corresponding with the length of continuous travel or strokes of a stylus, and the said strip or stripe being succeeded or followed each by a space corresponding to the extent of travel of the stylus devices during the intervals between message impulses.

120. In a facsimile-telegraph the combination with transmitting and recording stylus devices, rotary shafts on which they are mounted, and a main line connecting the devices of means upon the recording-shaft, governed by the writing impulses over the line for causing the said shaft to travel specific distances each corresponding to the length of continuous travel or successive strokes of a transmitting-stylus during a writing impulse.

121. In a facsimile-telegraph the combination with transmitting and recording stylus devices, rotary shafts on which they are mounted, a main line connecting the devices, of magnetic devices in connection with the recorder-shaft comprising separate stripe or surfaces energized by the writing impulses over the line and adapted when energized to prevent rotation of the recorder-shaft after it has rotated a specific distance during a writing impulse the width of the strip corresponding to the length of continuous travel or stroke of a stylus.

122. In a facsimile-telegraph the combination with transmitting and recording stylus devices, rotary shafts on which they are mounted, a main line connecting the devices of a cylinder comprising a plurality of stripe and electromagnetic means upon the recorder-shaft adapted to be attracted by the said stripe to prevent rotation of the shaft a distance greater than the width of a strip during a writing impulse, and means for energizing the same by a contacting impulse.

123. In a facsimile-telegraph the combination with transmitting and recording stylus devices, and a main line connecting the devices, of a device comprising a plurality of separated strips and electromagnetic means upon the recorder-shaft adapted to be attracted by the said stripe to prevent rotation of the shaft a distance greater than the width of a strip during the writing impulse, and means for energizing the same by a contacting impulse.

124. In a facsimile-telegraph, the combination with transmitting and recording stylus devices, rotary shafts on which they are mounted, and a main line connecting the devices, of a cylinder comprising a plurality of strips, and magnetic armatures or fingers having tapered ends adapted to be attracted by the said strips to prevent the rotation of the shaft a distance greater than the width of a strip during a writing impulse.

125. In a facsimile-telegraph, the combination with transmitting and recording stylus devices, rotary shafts on which they are mounted, and a main line connecting the devices of a cylinder surrounding the recorder-stylus shaft and comprising a plurality of longitudinal strips proportioned in number to the styluses, an insulating-spool surrounding the recorder-shaft, wire coils upon the same, connections from the main line to the said coils whereby they are energized by a writing impulse, and tapered armatures or fingers mounted upon the recorder-shaft and adapted to be attracted by the strips to regulate the travel of the recorder-shaft during a writing impulse.

126. A facsimile-telegraph, comprising means for holding a message-sheet, a plurality of styluses arranged to travel transversely over a single line of the message, means for causing successive lines of the message to be traversed by the styluses, and means for causing the styluses to travel in opposite directions over the alternate lines, means comprised in a single electric circuit for actuating the means for presenting successive lines and the stylus-alternating means; and means controlled by the said styluses for governing the said circuit.

127. In a facsimile-telegraph, comprising means for holding a message-sheet, a plurality of styluses arranged in circular series; means for causing the styluses to travel in a vertical plane whereby successively to contact with the message-sheet, means for moving said styluses over a single line of the message, means for causing successive lines of the message to be traversed by said styluses, means for causing the styluses to travel in opposite directions over the alternate lines, means comprised in a single electric circuit for actuating the means for presenting successive lines and the stylus-alternating means, and means controlled by the said styluses for governing the said circuit.

128. In a facsimile-telegraph, a stylus-carrier means for actuating the same, means for stopping the same intermittently a magnet mounted adjacent said stopping devices, an armature-lever mounted in relation to the magnet and comprising means for engaging the stopping devices, and means upon and in connection with the armature-lever whereby the engagement of the stopping device will initiate the energizing of the magnet to attract the said armature-lever and release the sylus-carrier.

812,143. **SPRING-HUB FOR VEHICLES.** WILLIAM M. LEYPORT, Providence, R. I., assignor of one-half to Emmett Ainley, Providence, R. I. Filed Sept. 30, 1905. Serial No. 279,218.

Claim.—1. In a yielding or resilient hub for vehicle-wheels, the combination of a non-revoluble circular frame, a spring-pressed axle-skein movably mounted and guided therein, a plurality of ball-holders adjustably mounted in the outer periphery of said frame, a flanged revoluble ring located outside of and concentric with said frame member having its inner face provided with a peripheral groove or seat and arranged to be secured to the spokes of the wheel, and anti-friction-balls revolubly mounted in said holder members and bearing against the said grooved portion of the revoluble ring, substantially as described.

2. In a spring-hub of the character described, the combination with a stationary circular frame, antifriction-balls adjustably mounted therein and a vertically-movable spring-pressed axle-skein also

supported and guided in said frame, of a revoluble ring member c arranged outside of and concentrically with said frame having its inner or concave face provided with a circumferential groove adapted to form a seat for said balls, and side plates d secured to and revoluble with said ring and extending toward the center of the hub to form a dust-guard and protector, substantially as described.

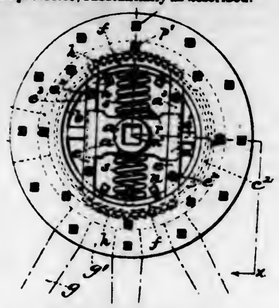

812,144. DUMB-BELL. ALEXANDER W. MACKENZIE and JAMES ROSS, Edinburgh, Scotland, assignors of one-third to John Gill, Edinburgh, Scotland. Filed Sept. 6, 1904. Serial No. 223,420.

Claim.—1. A dumb-bell comprising an air-tight inflatable body having a central tubular portion and substantially spherical end portions carried thereby, and an inflating and deflating valve, substantially as described.

2. A dumb-bell having a hand portion consisting of an air-tight receptacle made of practically unstretchable flexible material, and an inflating and deflating valve, substantially as described.

3. A dumb-bell consisting of an inner air-tight elastic chamber or receptacle *a*, *b*, an outer cover *d* of practically unstretchable flexible material, an inflating and deflating valve *c* and hollow spheres or balls *e*, combined and arranged substantially as described.

4. A dumb-bell consisting of an air-tight receptacle made of practically unstretchable flexible material, an inflating and deflating valve *c* and hollow metallic spheres or balls *e*, combined and arranged substantially as described.

812,145. FREIGHT-CAR. OTTO W. MEISSNER, Chicago, Ill., assignor to Badger Ballast Car Company, Chicago, Ill., a Corporation of Illinois. Filed Mar. 27, 1905. Serial No. 252,574.

Claim.—1. In a freight-car, the combination of side trusses extending longitudinally of the car and forming portions of side frames which extend above such trusses, end frames, side doors mounted above such trusses in the side frames, a hopper-bottom mounted between such side trusses, and dumping-door mechanism for dumping the load from such hopper.

2. In a freight-car, the combination of side trusses extending longitudinally of the car, side frames extending above and having their lower portions formed by such trusses, end frames, a roof supported by such side and end frames, doors mounted in the side frames between the top of the trusses and the roof, and a hopper mounted between such trusses and end frames and provided with dumping-door mechanism for dumping the load from such hopper.

3. In a freight-car, the combination of side trusses extending longitudinally of the car and forming portions of side frames which extend above such trusses, side doors mounted above such trusses in the side frames, a hopper-bottom mounted between the side trusses and provided with dumping-door mechanism, and transverse frame mechanism extending across the car and secured to the upper members of the side trusses and the upper portion of the side frames.

4. In a freight-car, the combination of side trusses extending longitudinally of the car and forming portions of side frames which extend above such trusses, end frames, doors mounted in the side frames above the side trusses, a hopper-bottom mounted between the side trusses and provided with dumping-door mechanism, a central longitudinal sill mounted between the side portions of the hopper, and stay-rod mechanism mounted upon such longitudinal sill and secured to the hopper sides.

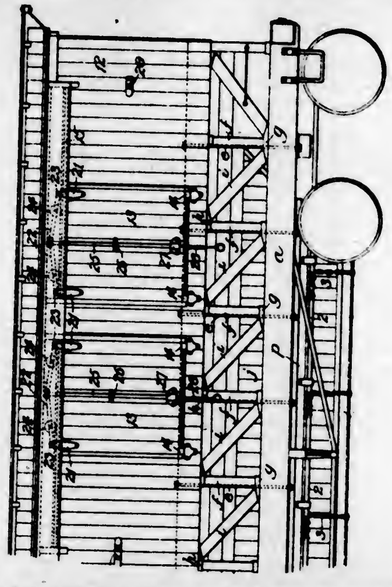

5. In a freight-car, the combination of side trusses extending longitudinally of the car, side frames extending above and having their lower portions formed by such trusses, end frames, a roof supported by such side and end frames, doors mounted in the side frames between the top of the trusses and the roof, a hopper mounted between such trusses and end frames and provided with dumping-door mechanism for dumping the load from such hopper, and transverse frame mechanism extending transversely across the car and secured to the top plates of the side trusses and the upper portion of the side frames.

6. In a freight-car, the combination of side trusses extending longitudinally of the car and forming portions of side frames which extend above such trusses, end frames, side doors mounted above such trusses in the side frames, a hopper-bottom mounted between such side trusses, dumping-door mechanism for dumping the load from such hopper, and lining portions secured to the inner side of such side trusses and extending above the upper edges of the hopper flush with the inner surfaces of the hopper sides.

7. In a freight-car, the combination of side trusses extending longitudinally of the car, side frames extending above and having their lower portions formed by such trusses, end frames, side doors mounted above the side trusses in the side frames, a hopper-bottom having inclined side portions extending downward between the side trusses toward the center of the car, and a dumping-door mounted upon such hopper and provided with a slot at its lower edge for receiving the lower edge of the opposite inclined side hopper portion.

8. In a freight-car, the combination of side trusses extending longitudinally of the car, side frames extending above and having their lower portions formed by such trusses, end frames, side doors mounted above the side trusses in the side frames, a hopper-bottom having inclined side portions extending downward between the side trusses toward the center of the car, a dumping-door for such hopper provided with an angle-iron mounted upon its lower edge movable into and out of engagement with the lower outer surface portion of the opposite inclined hopper side, and means for operating such dumping-door.

812,146. METHOD OF PRODUCING TUBES. GEORGE B. MELLINGER, Scottdale, Pa., assignor of two-thirds to Robert Stamp and Joseph R. Stauffer, Scottdale, Pa. Original application filed Oct. 20, 1904. Serial No. 229,243. Divided and this application filed Jan. 23, 1905. Serial No. 242,697.

Claim.—1. That improvement in the art of tube-making which consists in bending the skelp into tubular form with its longitudinal edges opposed, flexing the skelp to present its edges out of coincidence, and contracting the tube to lap the edges of the skelp.

2. That improvement in the art of tube-making which consists in bending the skelp into cylindrical form with its longitudinal edges opposed, flexing one edge inwardly by radial pressure to present its edges out of coincidence, and uniformly contracting the tube by the application of radial pressure at a plurality of diametrically-opposed points.

3. That improvement in the art of tube-making which consists in bending the skelp into tubular form with its edges lapped, and thereafter expanding the tube to present the longitudinal edge faces of the skelp in abutting relation to each other.

4. That improvement in the art of tube-making which consists in bending the skelp into tubular form with its edges lapped, expanding the tube to present the edges out of lapping relation, and flexing the inner edge outwardly by the application of sufficient force to partially counteract its inward stress while insuring the apposition of the edge faces of the skelp when the flexing pressure is relieved.

5. That improvement in the art of tube-making which consists in bending the skelp to the form and dimensions of the finished tube, contracting the tube into convolute form, and expanding the tube to its original form.

6. That improvement in the art of tube-making which consists in bending the skelp into convolute form and thereafter expanding the tube into cylindrical form with the longitudinal edge faces of the skelp abutting each other.

7. That improvement in the art of tube-making which consists in bending the skelp into convolute form, expanding the tube into cylindrical form, flexing outwardly that edge of the skelp having the greatest inward stress, and relieving the flexing pressure to permit the flexed edge of the skelp to spring back into the plane of the cylindrical tube.

8. That improvement in the art of tube-making which consists in bending the skelp into cylindrical form, flexing one edge only of the skelp inwardly, contracting the tube into convolute form, and expanding the tube to cylindrical form, substantially as and for the purpose specified.

9. That improvement in the art of tube-making which consists in bending the skelp into cylindrical form, inwardly flexing one edge of the skelp, contracting the tube into convolute form, expanding the tube into cylindrical form, outwardly flexing the edge previously flexed inwardly, and permitting the flexed edge to spring back to complete the formation of a cylindrical butt-joint tube, all substantially as and for the purpose specified.

10. That improvement in the art of tube-making which consists in bending the skelp into cylindrical form, flexing one edge inwardly by the application of radial pressure thereto, contracting the tube to cause the overlapping of its edges, expanding the tube to present the edges thereof out of lapping relation, and flexing the inner edge outwardly by the application of radial pressure to partially counteract its inward stress while insuring the apposition of the edge faces of the skelp when the flexing pressure is relieved.

11. That improvement in the art of tube-making which consists in bending the skelp to the form of a tube having its edges lapped, urging the inner edge outwardly beyond a point opposite the other edge, and releasing the outwardly-urged edge to permit the same to spring back into abutting relation with the other edge of the skelp to complete the formation of a butt-joint tube.

12. That improvement in the art of tube-making which consists in urging the inner edge of a lap-joint tube outwardly beyond a point opposite the other edge to partially counteract the inward stress of the outwardly-urged edge, and in releasing said outwardly-urged edge to permit the same to spring back into abutting relation with the other edge to form a butt-joint tube.

812,147. APPARATUS FOR MOLDING MATERIALS WHICH SET BY THE ADDITION OF WATER THERETO. JOHN A. MCCONNELL, Allegheny, Pa., assignor to McConnell Asbestos & Covering Co., Pittsburg, Pa., a Corporation of Pennsylvania. Original application filed Apr. 27, 1901, Serial No. 57,809. Divided and this application filed Feb. 23, 1904. Serial No. 194,809.

Claim.—1. In apparatus for wetting, mixing and molding materials which set by the addition of water thereto, the combination with mechanism for wetting and mixing the material, of a series of traveling molds for receiving the wet material from the mixer, and a tilting overflow-trough located beneath the molds at the discharge end of the mixer for receiving the overflow from the molds.

2. In apparatus for wetting, mixing and molding materials which set by the addition of water thereto, the combination with mechanism for wetting and mixing the material, of a chute for conveying the wet material from the mixer, a series of molds adapted to pass underneath the chute and receive the material therefrom, a sleeking device adjacent the chute, and an overflow trough or reservoir underneath the molds below the chute for receiving and storing the overflow from the molds.

3. In apparatus for molding materials which set by the addition of water thereto, the combination of a traveling series of trough-shaped molds, and cores for said molds arranged longitudinally of said molds and lying centrally therein and which automatically swing out of and into said molds under the influence of gravity.

4. In apparatus for molding materials which set by the addition of water thereto, the combination of traveling chains, trough-shaped molds carried thereby, and removable cores for the molds pivoted with relation thereto and arranged to lie centrally within the outer faces of the molds.

5. In apparatus for molding materials which set by the addition of water thereto, the combination of traveling chains, trough-shaped molds carried thereby, longitudinal core-pieces for said molds, and arms on said core-pieces pivoted with relation to and arranged to lie centrally within the outer faces of the molds.

6. In apparatus for molding materials which set by the addition of water thereto, the combination of molds having open ends, removable cores therefor, and plates attached to said cores the edges of which fit the inner surfaces of the molds, thereby forming removable ends for the molds.

7. In apparatus for molding materials which set by the addition of water thereto, the combination of traveling chains, open-ended molds carried thereby, removable cores for said molds, end pieces at-

tached to said cores, and means for pivotally securing the cores with relation to the molds.

8. In apparatus for molding materials which set by the addition of water thereto, the combination of traveling chains, molds carried thereby, a receiving table or belt, inclined rods attached to the traveling chains, and connections between said rods and the molds whereby the latter automatically slide down the inclined rods in close proximity to the receiving table or belt and automatically slide back into position on the chains.

9. In apparatus for molding materials which set by the addition of water thereto, the combination of traveling chains, open-ended molds carried thereby, a receiving table or belt, and inclined rods attached to the chains and having the molds slidably connected thereto, said rods being wider apart at their outer ends whereby the molds will automatically slide down the inclined rods in close proximity to the receiving-belt and be slightly spread thereby.

10. In apparatus for molding materials which set by the addition of water thereto, the combination of traveling chains, molds carried thereby, a receiving table or belt, inclined rods attached to the chains, a stop or projection on the free end of said rods, and connections between the molds and said rods whereby the former can automatically slide down said rods into close proximity to the receiving-belt and contact with said stop or projection.

812,148. APPARATUS FOR MOLDING PLASTIC MATERIAL. JOHN A. MCCONNELL, Allegheny, Pa., assignor to McConnell Asbestos & Covering Co., Pittsburg, Pa., a Corporation of Pennsylvania. Original application filed July 18, 1903, Serial No. 166,067. Divided and this application filed Feb. 23, 1904. Serial No. 194,811.

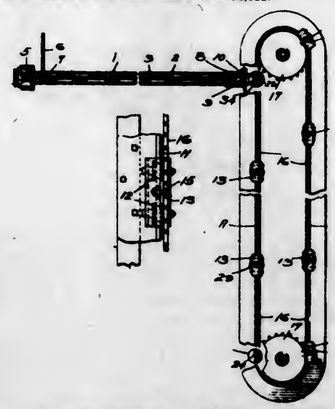

Claim.—1. In apparatus for molding in a substantially liquid condition materials which set by the addition of water thereto, the combination with mixing and wetting apparatus having a discharge-opening, of an endless series of tight-bottomed molds, and mechanism for carrying the said molds in succession underneath the discharge-opening of the mixing and wetting apparatus.

2. In apparatus for molding in a substantially liquid condition materials which set by the addition of water thereto, the combination with mixing and wetting apparatus, of an endless series of molds having tight bottoms, means for delivering the material from the mixer, and mechanism for giving an intermittent travel to said molds and carrying the same in succession underneath said delivering means.

3. In apparatus for molding in a substantially liquid form materials which set by the addition of water thereto, the combination of a series of vertical molds each composed of two sections hinged together and having tight bottoms, means for locking the said sections together, suspending means connected to the bottoms of said molds, and an overhead carrier to which said suspending means are connected.

4. In apparatus for molding articles from materials which set by the addition of water thereto, the combination of a series of molds, an overhead track, trolleys thereon from which the molds are suspended, an endless chain, and connecting means between the same and said trolleys.

5. In apparatus for molding articles from materials which set by the addition of water thereto, the combination of a series of molds, an overhead track, trolleys on said track from which the molds are suspended, an endless chain, connections between the same and the trolleys, sprocket-wheels around which said chain passes, and driving means connected to one of said sprockets.

6. A mold for forming articles from materials which set by the addition of water thereto comprising two vertically-arranged sections hinged together, fastening means for said sections, and a support therefor, and suspending means connected to said support.

7. A mold of the character described comprising two vertically-arranged sections hinged together, fastening means therefor, a core in said mold, and a support for said molds and core, and suspending means connected to said support.

8. A mold of the character described comprising two vertically-arranged sections hinged together, fastening means for the same, a base upon which the same are supported, and a core connected to said base, and suspending means connected to said base.

9. A mold of the character described comprising two vertically-arranged sections hinged together, fastening means therefor, a base therefor, a core supported in said mold, and suspending means attached to said base.

10. A mold of the character described comprising two vertically-arranged sections, means for securing the same together, and a core arranged vertically in the center of said molds and provided with oppositely-arranged wings, one of said wings extending out to and connecting with the mold, and the other of said wings being narrower.

11. A mold of the character described comprising two vertically-arranged sections, means for securing the same together, a base therefor, a core arranged vertically in said mold and supported on said base, and a funnel resting on said mold and provided with means for centering the upper end of said core.

812,149. TAPE-HOLDER. JOHN MCLEAN, Newark, N. J., assignor to The Whitehead & Hoag Company, Newark, N. J., a Corporation of New Jersey. Filed Oct. 3, 1902. Serial No. 126,530.

Claim.—1. In a tape-holder, a shell having a flaring open end, in combination with a cup-shape disk fitting over and upon the flaring open end of the shell and provided with a covering of celluloid having its edges crimped over the edges of the disk and between said edges and the flaring end of the shell.

2. In a tape-holder, a shell having one end formed with an annular bead or shoulder, a metal disk covering the open end of the shell and having an annular flange encircling the bead, and a second disk of celluloid applied to the outer face of the first-named disk and having its marginal edge crimped over the edge of the flange and adjacent bead to lock the disks to the shell.

3. A tape-holder comprising a circular shell, a spring-actuated drum arranged within said shell, a tape winding around said drum and projecting through a slot in the shell, said shell being provided with a beaded edge, a metallic disk having an inturned flange on its edge adapted to loosely inclose the beaded edge of said shell and a non-metallic covering having a flanged edge crimped around the inturned edge of said disk, and filling the space between the inside of the flange of the disk and the outer wall of the said shell.

812,150. TAPE-MEASURE. JOHN MCLEAN, Newark, N. J., assignor to The Whitehead & Hoag Company, Newark, N. J., a Corporation of New Jersey. Filed June 10, 1904. Serial No. 211,862.

Claim.—In a device of the character described, the combination of a circular band 1, the disk 8 having inturned marginal flanges 9 embracing the edge of said band, the plate 11 having its edge interposed between the edge of the band and the said disk 8, the hub 12 carried by said plate, the celluloid covering 16 having its marginal edge turned over upon the marginal flange of said disk, the reel 6 mounted on said hub, the tape 5 wound on said reel, the ring 13 having an inturned marginal edge, and the celluloid covering 16 having its marginal edge turned over and inwardly upon the inturned edge of said plate 13, substantially as described.

812,151. FLUID-OPERATED ENGINE. BRUNO V. HORSTMAN, Milwaukee, Wis. Original application filed Sept. 13, 1902, Serial No. 173,691. Divided and this application filed Nov. 20, 1904. Serial No. 234,757.

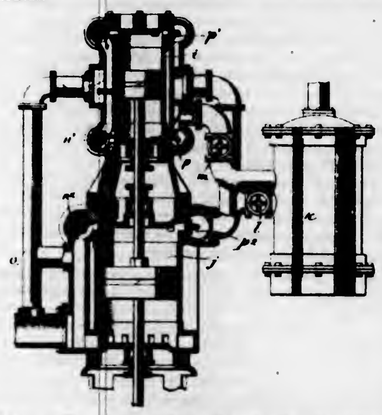

Claim.—1. In an engine adapted to deliver a blow, the combination of two cylinders; a piston working in each of said cylinders; a piston-rod common to said pistons; means for admitting steam simultaneously and at the same pressure to the upper face of each of said pistons; and means for admitting steam to the under face of one of said pistons while steam is exhausted from the opposite face of each of said pistons.

2. In an engine, the combination of a pair of cylinders; a piston working in each of said cylinders; a piston-rod common to said pistons; a receiver; means for delivering steam simultaneously from said receiver to the corresponding end of both cylinders; and means for admitting steam to the opposite end of one of said cylinders while the pistons are moving in the opposite direction.

3. In an engine, the combination of a pair of cylinders; a piston working in each of said cylinders; a piston-rod common to said pistons; a receiver; means for admitting steam from said receiver to the upper end of each of said cylinders; means for admitting steam from said receiver to the lower end of the upper cylinder; and a condenser connected to the lower end of the lower cylinder.

4. In an engine, the combination of a pair of cylinders; a piston working in each of said cylinders; a piston-rod common to said pistons; a receiver; means for admitting steam from said receiver to the upper end of each of said cylinders; means for admitting steam from said receiver to the lower end of the upper cylinder; a condenser connected to the lower end of the lower cylinder and in communication therewith at all times; a valved port affording communication between the lower end of the upper cylinder and the condenser; and a valved port affording communication between the upper end of the lower cylinder and the condenser.

812,152. MACHINE FOR MAKING ALL-TOBACCO CIGARETTES. ALFRED H. RANDALL, Jr., Philadelphia, Pa., assignor of one-half to Pembroke D. Horton, Philadelphia, Pa. Filed Oct. 11, 1904. Serial No. 227,982.

Claim.—1. In a machine for making cigarettes, wrapper-cutting mechanism, rolling mechanism, means for conveying the wrapper to the rolling mechanism, a plurality of scale-beams, filler-receptacles secured to one end of the scale-beams, means for feeding the filler to said scale-receptacles, means for automatically emptying the scale-receptacles simultaneously when all the scale-receptacles are down, means for conveying the filler to the rolling-table, a clutch for controlling the wrapper-cutter, transfer apparatus and rolling mechanism, means for operating said clutch as many times after the scale-receptacles are empty as there are scale-beams less one, and means for arresting the release of the clutch until all of the scale-beams are down, when the clutch will be released automatically, as and for the purpose specified.

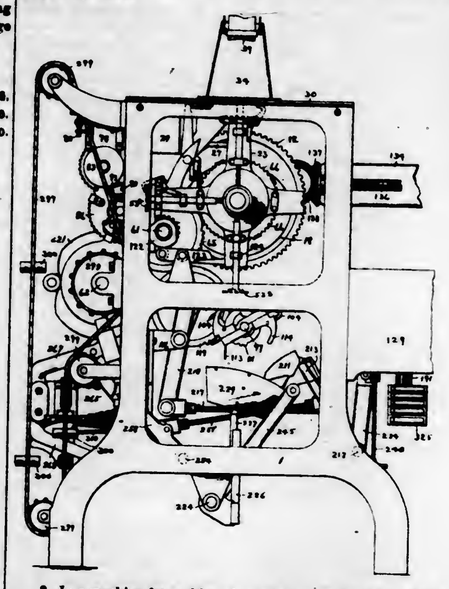

2. In a machine for making cigarettes, wrapper-cutting mechanism, rolling mechanism, means for delivering the wrapper to the rolling mechanism, a plurality of scale-beams, filler-receptacles secured upon one end of the scale-beams, means for feeding the filler to each scale-receptacle, means for automatically cutting off the feed from each scale-receptacle as each receptacle is filled with the proper weight of material and descends, means for automatically emptying all the scale-receptacles simultaneously when all of said scale-receptacles have descended, means carrying the filler to the rolling mechanism, an electromagnetic-controlled clutch controlling the wrapper cutting, transferring and rolling mechanism, whereby said parts are operated one step each time the magnets of said clutch are energized, a switch, electric means for energizing the magnets of the clutch by means of the switch as many times after the scale-receptacles are emptied as the total number of scale-receptacles less one, and means for then changing the course of the current so that the clutch-magnets cannot be energized until all of the scale-receptacles are down, thus completing the circuit and energizing the magnets.

3. In a machine for making cigarettes, a clutch, electromagnets controlling said clutch, a wrapper-cutting mechanism, rolling mechanism, means for transferring the wrapper to the rolling mechanism, all of said elements adapted to operate synchronically one step at a time each time the clutch is operated, a plurality of scale-beams, scale-receptacles secured at one end of each beam, an independent feeding mechanism for each scale-receptacle, electromagnetic means for starting the feed when the scale-receptacle is up and stopping the feed when the scale-receptacle is down, means for automatically emptying the scale-receptacles when all of said receptacles are down, a rotating commutator adapted to operate synchronically with the operating mechanism, two contact-points located in juxtaposition to each scale-beam, each set of contact-points being connected to the next set in series, the two contact-points of each set adapted to be connected one with the other when the scale-receptacles are lowered, a switch adapted to be operated by the operator, electrical connections extending from the switch, a commutator and contacts, the conducting-stripe upon the commutator so arranged that the circuit will be established through the switch, commutator and clutch-magnets each time the switch is closed for as many times after the scale-receptacles have been emptied as the total number of said scale-receptacles less one, the circuit then being changed by the commutator so that it must pass through the switch, commutator and all of the contacts of the scale apparatus before the magnets of the clutch can again be energized, as specified.

4. In a machine for making cigarettes, a wrapper-cutting, a wrapper-delivering, a wrapper-pasting, a cigarette-rolling, a ciga-

rette trimming and delivering mechanisms, a series of scale-beams, scale-receptacles secured upon one end of said scale-beams, a feeding mechanism for feeding the filler to the scale-receptacles, means whereby all of the scale-receptacles are emptied when all of the scale-receptacles are down, means for operating the machine synchronically whereby one wrapper is cut, transferred, pasted and one cigarette is rolled, trimmed and delivered each time the machine is operated, means for operating the machine irrespective of the position of the scale-beams as many times after the scale-receptacles have been emptied as there are scale-beams less one, and means for preventing the next movement of the machine until all of the scale-beams are down, as and for the purpose specified.

5. In a machine of the character described, a series of scale-beams, scale-receptacles secured to one end of said scale-beams, an independent feeding mechanism for each scale-beam adapted to feed into the scale-receptacles, means for operating the feeding mechanism consisting of a constantly-rotating member common to all the feeding devices, second members, one for each feeding device and journaled concentric with the rotary member but separate therefrom, driving mechanism connecting each second member with its feeding device, electromagnets arranged upon one of the members, the other member of each feeding device acting as an armature, two contact-points arranged in juxtaposition to each scale-beam, the contact-points of each set adapted to be electrically connected when the scale-receptacle is up and the electrical connection broken when the scale-receptacle is down, a source of electricity, an electric circuit from one terminal of the source of electricity to one of the contacts of each scale-beam, and from the other contact of each scale-beam, to and through the electromagnets of the feeding device of the same scale-beam, back to the other terminal of the source of electricity.

6. In a machine of the character described, a series of scale-beams, scale-receptacles secured to said scale-beams, an independent feeding device for feeding the filler to each scale-receptacle, means for operating said feeding device, consisting of a constantly-rotating shaft, a series of disks, one for each feeding device secured upon said shaft and adapted to rotate therewith, electromagnets carried by said disk, disk-shaped armatures journaled concentric with the rotating shafts but independent thereof, said armatures arranged in juxtaposition to the cores of the magnets, a source of electricity, electric switches adapted to be closed when the scale-receptacles are up, an independent electric circuit for each filling device including in the same the source of electricity of said device, and the electroswitch of its particular scale-beam so that when the electromagnets are energized the armature will be caused to rotate therewith, and means for transmitting the movement of the armatures to the feeding devices independent of one another, as specified.

7. In a machine of the character described, a manufacturing portion, a feeding and weighing portion, a series of scale-beams included in the weighing portion, scale-receptacles secured to the scale-beams adapted to receive filler from the feeding device, a stationary electromagnet arranged in juxtaposition to the scale-beam, an armature carried by the scale-beam, the tendency of the magnet when energized being to hold the scale-receptacle lowered, a commutator adapted to rotate with intermediate movements synchronically with the manufacturing mechanism, there being as many movements in a complete revolution of the commutator as there are scale-beams, said commutator adapted to make one complete revolution between the successive emptying of the scale-receptacles, means for preventing the last movement of the commutator until all the scale-receptacles are lowered, an electric circuit through the magnets adjacent the scale-beam and through the commutator upon this last movement to hold the scale-receptacles down against vibration while said receptacles are emptied, as specified.

8. In a machine of the character described, scale-beams, scale-receptacles carried by said scale-beams, a stationary electromagnet arranged in juxtaposition to the scale-beams, armatures carried by the scale-beams, the tendency of said magnet when energized being to tilt the scale-beam so as to hold the scale-receptacle raised, a commutator adapted to revolve synchronically with the operation of the machine, an electric circuit containing the magnets and certain conducting-strips upon the commutator, said strips so arranged upon the commutator that said magnets will be energized for a short period directly after the scale-receptacles have been emptied, as specified.

9. In a machine of the character described, a series of independent operating scale-beams, scale-receptacles carried by said scale-beams, independent feeding mechanisms for each scale-beam, said feeding mechanism consisting of an endless belt, the filler adapted to lie upon the upper run of said belt, two rollers, one arranged upon the other, the belt at its rearward end adapted to pass around the lowermost roller so that the filler will pass between the upper roller and the belt, a separating-roller arranged at the rear of the two feeding-rollers, picker-teeth protruding from said separating-roller adapted to shred and separate the tobacco as it passes from the belt into the scale-receptacles, means for revolving the feeding-rollers, and means for arresting the movement of said rollers when the scale-receptacle is down, and starting said rollers when the scale-receptacle is up, as and for the purpose specified.

10. In a machine of the character described, a series of independently-operating scale-beams, a scale-receptacle carried by each scale-beam, an independent feeding mechanism for each scale-receptacle, each consisting of two rollers, one arranged above the other a slight distance apart, an endless belt, upon the upper run of which the tobacco is adapted to lie, the rearward end of said belt passing around the lowermost roller, corrugations formed in the periphery of the upper roller, a constantly-revolving separating-roller arranged at the rear of the two feeding-rollers, picker teeth or pins protruding from the periphery of said roller for shredding or separating the tobacco as it issues from the feed-rollers, a chute for conveying the tobacco to the scale-receptacles, driving mechanism for operating the feed-rolls, electrical contacts arranged in juxtaposition to each scale-beam, and electric means for starting the driving mechanism when the contacts are closed and stopping said driving mechanism when the contact is broken, as specified.

11. In a machine of the character described, rolling mechanism, a series of scale-beams, scale-receptacles carried by said scale-beams, feeding mechanism, means for automatically emptying the scale-receptacles when all of them are down, means for carrying the filler to the rolling mechanism consisting of an endless belt, pockets secured to said belt, said belt adapted to be driven synchronically with the movement of the rolling mechanism, said belt arranged so that the pocket is always underneath the scale-receptacles when the same are emptied, as specified.

12. In a machine of the character described, in combination, a wrapper-carrier apparatus, consisting of radial arms, flat plates secured to the outer ends of said arms against which the wrapper is held, a pasting mechanism consisting of a rotating member adapted to rotate synchronically with the wrapper-transfer, a lever pivoted to said rotary member upon each side of its pivot, pasting-rolls journaled in one end of the levers, springs secured to the other ends of the levers tending to throw the rollers outward, means for revolving the rollers upon their own axis as the rotary member revolves, said rollers adapted to come in contact with a portion of one end of the wrapper, a paste-roll, a paste-receptacle arranged above the roll, means for revolving the paste-roll in contact with the paste in the receptacle synchronically with the movement of the wrapper-transfer apparatus, the pasting-rolls adapted to come in contact with the paste-rolls as they revolve, as specified.

13. In a machine of the character described, the combination, a wrapper-cutting mechanism and pasting mechanism with a carrier mechanism, consisting of a hub mounted upon a shaft, radial arms extending outward from said shaft, said hub adapted to rotate synchronically with the wrapper cutting and pasting mechanism, rods mounted to slide radially along the radial arms, flat plates secured to the outer ends of said rods, springs tending to force said rods outward, fingers adapted to automatically engage and hold the wrapper to the plates as said wrapper is presented to be pasted, means to be operated at the option of the operator for retracting or pushing inward the radial rod and plate which is presented to the pasting mechanism, as specified.

812,153. TRIMMING ATTACHMENT FOR SEWING-MACHINES. WILLIAM B. RISE, Maplewood, N. J., assignor of one-half to Frank Burke, Newark, N. J. Filed Jan. 3, 1905. Serial No. 239,486.

Claim.—1. In a sewing-machine, the combination with the cloth-plate, needle and needle-operating means, of a fulcrum-plate removably seated on said cloth-plate, a fulcrum-pin supported by said fulcrum-plate, a rocking plate arranged on said pin, a slotted shearing-knife extending from said rocking plate to a coöperating knife near said needle, a set-screw arranged in the slot of said knife, a lever-arm also supported by said fulcrum-plate and extending to a slotted bracket, and said slotted bracket attached to a part of the needle-operating means, and said coöperating shearing-knife, substantially as set forth.

2. In a sewing-machine, the combination with the cloth-plate, needle and needle-operating means, of a fulcrum-plate separably attached to the cloth-plate, a rocking plate pivoted on said fulcrum-plate, a slotted shearing-knife adjustably fastened on said rocking plate and turned downward at its free end and sharpened to form a cutting edge, a coöperating cutting-blade fixed upon the cloth-plate, a lever-arm also attached to the rocking plate and extending therefrom to a bracket separably clamped to a part of the needle-operating means, substantially as set forth.

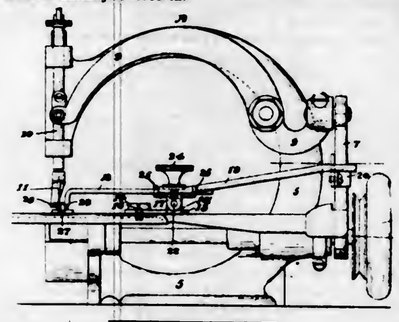

812,154. CONTINUOUS STEAM-COOKER. ROBERT H. SCOTT and LYMAN O. STEINHOFF, Simcoe, Canada; said Scott assignor to Arthur C. Lea, Simcoe, Canada. Filed Apr. 1, 1905. Serial No. 253,333.

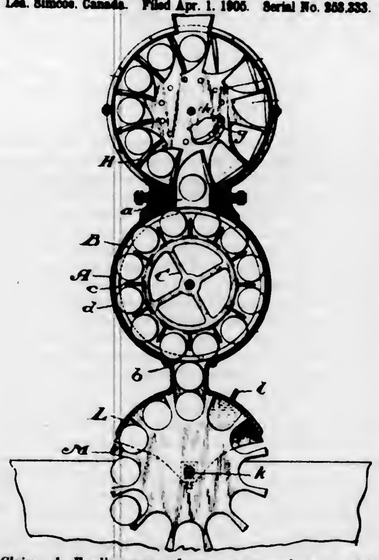

Claim.—1. Feeding means for a cannery-cooker comprising a cylindrical casing with inlet and discharge apertures therein, in combination with a steam-tight cylinder journaled therein and provided with peripheral pockets adapted to contain cans; a valve for each pocket pivoted on the cylinder and adapted to open and close the peripheral opening of said pocket; and means for opening each of said valves to receive a can and for closing it immediately after the discharge of a can, substantially as described.

2. Feeding means for a cannery-cooker comprising a cylindrical casing with inlet and discharge apertures therein, in combination with a steam-tight cylinder journaled therein and provided with peripheral pockets adapted to contain cans; valves adapted to open and close the peripheral openings of said pockets; means for opening each of said valves to receive a can and for closing it immediately after the discharge of a can; and means for forming a communication between the outer air and the pocket behind each valve, substantially as described.

3. Discharge means for a cannery-cooker comprising a cylindrical segment-casing with an inlet-aperture at the top, in combination with a steam-tight cylinder journaled therein and provided with peripheral pockets adapted to contain cans and a sufficiency of water to shut out the steam in the cooker; and means for supplying water to each pocket before it reaches the inlet-aperture, substantially as described.

4. Feeding means for a cannery-cooker comprising a cylindrical casing with inlet and discharge apertures therein, in combination with a steam-tight cylinder journaled therein and provided with peripheral pockets adapted to contain cans; a swing-valve pivoted at one side of each pocket near the periphery of the cylinder, the opposite side of the pocket being formed on the arc of a circle struck with the pivot of the valve as a center; and means for opening each of said valves to receive a can and for closing it immediately after the discharge of a can, substantially as described.

5. A cannery-cooker provided with a receiving-hopper; and an endless conveyer discharging into said hopper and provided with receptacles adapted to receive cans, in combination with a second conveyer parallel to and close beside the first and adapted to bring cans on end; and means timed with the second conveyer for knocking a can off the said conveyer onto its side in one of the receptacles of the first conveyer, substantially as described.

6. Two cannery-cookers, each provided with a receiving-hopper; endless conveyers discharging into the hoppers of the cookers and provided with receptacles adapted to receive cans, in combination with a second endless conveyer leading to a point between the first two; and an arm operated from the second conveyer and adapted to alternately sweep cans onto the two first conveyers, substantially as described.

7. Two cannery-cookers, each provided with a receiving-hopper; endless conveyers discharging into the hoppers of the cookers and provided with receptacles adapted to receive cans on their sides, in combination with a second endless conveyer leading to a point between the first two; an arm operated from the second conveyer and adapted to alternately sweep cans onto the first two conveyers; and bottom stops adapted to catch the bottom edges of the cans to insure their falling on their sides on the conveyers, substantially as described.

8. Two cannery-cookers, each provided with a receiving-hopper; endless conveyers discharging into the hoppers of the cookers and provided with receptacles adapted to receive cans on their sides, in combination with a second endless conveyer leading to a point between the first two; an arm operated from the second conveyer and adapted to alternately sweep cans onto the first two conveyers; bottom stops adapted to catch the bottom edges of the cans to insure their falling on their sides on the conveyers; and guides adjacent to each of the second conveyers adapted to center the cans on the conveyer, substantially as described.

812,155. FIBER-BALING MACHINE. ARTHUR M. SHRADLEY, Stockton, Cal. Filed Sept. 19, 1904. Serial No. 224,968.

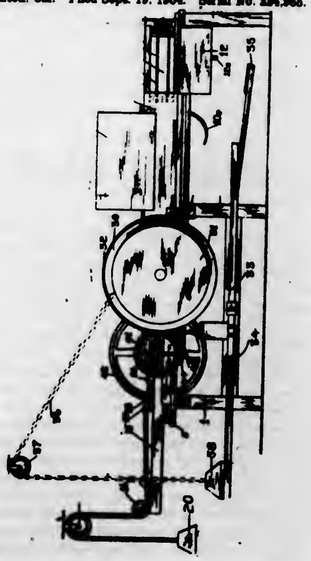

Claim.—1. In a device of the kind described, the combination of a suitable frame, a compression-chamber mounted on the frame, a plunger arranged in said compression-chamber, a horizontal shaft mounted on the frame, cones carried by said shaft, a cross-bar attached to the plunger, chains attached to said cross-bar and winding around said cones, a second horizontal shaft mounted on the frame, intermeshing gearing carried by said shafts, a pulley carried by said second shaft, clutch mechanism comprising clutch members carried by said second shaft and said pulley, a lever pivoted on the frame and connected to said clutch mechanism, a spool carried by said first-named shaft, a chain carried by said spool, a weight attached to said chain, a brake-wheel carried by said shaft, a brake-band surrounding said brake-wheel, a pivoted lever attached to said brake-band, said weight being adapted to bear on the end of said pivoted lever to bring the brake-band into contact with the brake-wheel, substantially as described.

2. In a device of the kind described, the combination of a suitable frame, a compression-chamber mounted on the frame, a plunger arranged in the compression-chamber, a horizontal shaft mounted on the frame, a cross-bar attached to the plunger, flexible connections attached to the cross-bar and winding around said shaft, a second horizontal shaft mounted on the frame, intermeshing gearing carried by said shafts, a pulley carried by said second shaft, clutch mechanism carried by said pulley and said second shaft, a lever pivoted on the frame, and connected to said clutch mechanism, a third chain connected to the first-named shaft, a weight attached to said last-named chain, a brake-wheel carried by said first-named wheel, a brake-band surrounding said brake-wheel, a lever pivoted to said brake-band, said weight being adapted to bear on said lever.

812,156. **BLANK SMOKELESS-POWDER CARTRIDGE.** Pim Sparrs, Wilmington, Del. Filed Sept. 13, 1905. Serial No. 278,290.

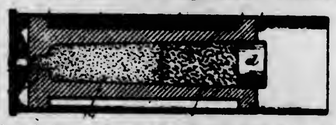

Claim.—1. A smokeless-powder charge comprising a cartridge-case, a powder-receptacle having rigid walls inserted within the case and held in permanent relation thereto and spaced permanently therefrom to form an air-space between the outer wall of the receptacle and the inner wall of the case.

2. A smokeless-powder charge comprising a cartridge-case, a powder-receptacle having a rigid bottom and rigid walls and held in permanent relation to the case; a charge within the receptacle consisting of powder and a filling material, said charge extending outwardly from the bottom of the receptacle and not exceeding in length that of either the case or the receptacle.

3. A smokeless-powder charge comprising a cartridge-case, a powder-receptacle having rigid walls inserted within the case and held in permanent relation thereto, the interior walls of the receptacle being tapered inwardly toward its lower or inner end.

812,157. **COMBINED ANIMAL TETHER AND FEED-BAG.** Frank H. Thompson, Haw River, N. C. Filed Apr. 1, 1905. Serial No. 253,206.

Claim.—1. A standard adapted at one end for insertion into the ground and with a collapsible feed-receptacle at the other end.

2. A standard formed in two sections, clamping means for movably uniting the adjacent ends of said sections, the free end of one of said standard-sections for insertion into the ground, and a collapsible feed-receptacle connected to the other standard-section.

3. A standard disposed in vertical position, means for tethering an animal to said standard, and a collapsible feed-receptacle attached to said standard.

4. A standard, a frame swinging from said standard, means for supporting said frame at right angles to said standard and a flexible feed-receptacle suspended from said frame.

5. A standard formed in two sections, clamping means for movably uniting the adjacent ends of said sections one of said sections adapted for insertion into the ground, a frame swinging from the other of said standard-sections, supporting means extending between said frame and standard and detachably connected thereto, and a collapsible feed-receptacle suspended from said frame.

7. A standard, a frame swinging from said standard, detachable means for supporting said frame extended from said standard, and a flexible feed-receptacle suspended from said frame.

8. A standard, a frame swinging from said standard, a plate swinging from said standard and spaced from said frame, links movably coupling said frame and plate, means for supporting said plate and the frame coupled thereto in extended position and a flexible feed-receptacle suspended from said frame and bearing upon said plate when distended.

9. A standard, a frame swinging from said standard, a plate swinging from said standard and spaced from said frame, links movably coupling said frame and plate, a brace member swinging from said plate, means for coupling the free end of said brace member detachably to said standard, and a flexible feed-receptacle suspended from said frame and bearing upon said plate when extended.

10. A standard formed in two sections movably united by a clamp-bolt, a frame swinging from one of said standard-sections, and a plate swinging from one of said standard-sections and spaced from said frame, links movably connecting the free ends of said frame and plate, a flexible feed-receptacle suspended from said frame and bearing upon said plate when distended, and a brace member swinging from said plate and engaging said clamp-bolt and held in operative position thereby.

11. A standard formed in two sections having transverse apertures for receiving a clamp-bolt, one of said standard-sections having spaced studs and the other standard-section having spaced recesses for receiving the studs when the standard-sections are disposed in longitudinal alinement, in combination with a collapsible feed-receptacle connected to one of said standard-sections.

12. A standard formed in two sections, clamping means for movably uniting the adjacent ends of said sections, one of said sections adapted for insertion into the ground, and with a laterally-extending stop extending therefrom to limit the movement, in combination with a collapsible feed-receptacle connected to the other standard-section.

812,158. **GRILLE-PLATE.** William S. Tuttle, Brooklyn, N. Y., assignor to Tuttle & Bailey Mfg. Company, Brooklyn, N. Y., a Corporation of New York. Filed Apr. 26, 1904. Serial No. 204,995.

Claim.—1. A sheet-metal grille-plate having a substantially flat marginal flange and alternate bars and slots running from the margin at one side to the margin at the opposite side, the bars having longitudinal reinforcing-flanges provided with transverse apertures, and additional bars running transversely and through the apertures of the first-named bars.

2. A sheet-metal grille-plate having a substantially flat margin and its central body provided with a series of bars and intervening slots both running continuously from the margin at one side to the margin at the opposite side, each bar having parallel reinforcing-flanges depending from its longitudinal edges, said flanges being provided with transverse apertures, and additional straight bars running transversely of the first-named bars and through said apertures.

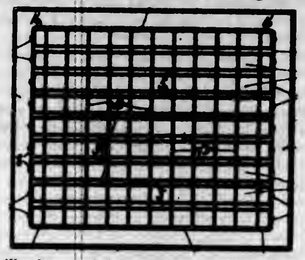

3. A grille-plate consisting of a sheet-metal body having its central portion provided with parallel bars and intervening parallel spaces, the bars having reinforcing-flanges provided with transverse apertures, and additional bars inserted transversely through said apertures.

4. A grille-plate consisting of a sheet-metal body having its central portion provided with a series of lengthwise bars and intervening lengthwise slots, the portions of the plate at the ends of the slots forming retaining-lugs projecting from the plate, and transverse bars resting in the retaining-lugs.

5. A grille-plate consisting of a sheet-metal body having its central portion provided with a series of lengthwise bars and intervening lengthwise slots, reinforcing-ribs projecting from the longitudinal edges of the bars and provided with transverse apertures, transverse bars running through said apertures, and laterally-projecting shoulders on the transverse bars to prevent their endwise displacement.

6. A grille-plate consisting of a substantially flat margin and a series of bars having their ends united to opposite sides of the margin and their intermediate portions spaced apart to form intervening spaces, said bars having reinforcing-ribs projecting from their longitudinal edges and provided with transverse apertures, transverse bars running through said apertures, additional transverse bars at the ends of the first-named bars, and means for securing the additional transverse bars to the plate.

7. A sheet-metal grille-plate having a series of bars and intervening spaces of substantially the same length as the bars, each bar having a depending flange at each longitudinal edge and of substantially half the width of the adjacent space, said plate having integral retaining-lugs at the end of the spaces, and transverse bars held by said lugs.

8. A sheet-metal grille-plate having lengthwise-bars and intervening spaces of substantially the same length as the bars, reinforcing-ribs united to the longitudinal edges of said bars, additional bars running transversely at the ends of the first-named bars, said plate having integral lugs at the ends of said spaces and engaging said additional bars to hold them in place.

812,159. **PRESSER-FOOT AND MECHANISM FOR OPERATING THE SAME.** John N. Whipple, St. Louis, Mo., assignor to Landis Machine Company, St. Louis, Mo., a Corporation of Missouri. Filed Feb. 18, 1903. Serial No. 94,397.

Claim.—1. The combination with a presser-foot, of a presser-bar, connection between said presser-foot and presser-bar whereby raising of the latter effects depression of the former and vice versa, a spring 47 tending to raise said presser-bar, a bail 45°, an arm 48 pivoted to said bail, a saddle-block 49, a bail 50, a spring 51, and means coöperating with the outer end of the arm 48 for moving the same and the presser-bar vertically; substantially as described.

2. The combination with a presser-foot, of a presser-bar to which the same is connected, a clamp on said presser-bar having one member extending rearwardly, a bifurcated arm coöperating with said extended member of the clamp, a cam for rocking said bifurcated arm, and a yielding wall in said cam; substantially as described.

3. The combination with a presser-foot, of a presser-bar to which the same is connected, a clamp coöperating with said bar and having a rearwardly-extending member, a bifurcated arm coöperating with said extended member, one of the jaws of said arm being pivoted, and a lever coöperating with said bifurcated arm to relieve the rearwardly-extending clamp member; substantially as described.

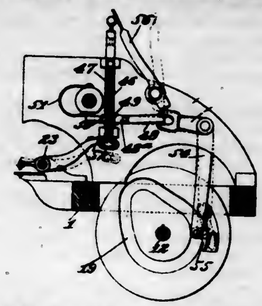

4. The combination with a presser-foot having a rearwardly-extending arm, of a presser-bar having slot connection with said arm, a buffer on the end of said arm, a clamp coöperating with said presser-bar, and means coöperating with said clamp to move the bar vertically; substantially as described.

812,160. **CHANGE-MAKING MACHINE.** Thomas S. Wilkie, Phœnix, Ariz., assignor to The American Patent Promotion Company, Phœnix, Ariz., a Corporation of Arizona. Filed Dec. 22, 1904. Serial No. 237,960.

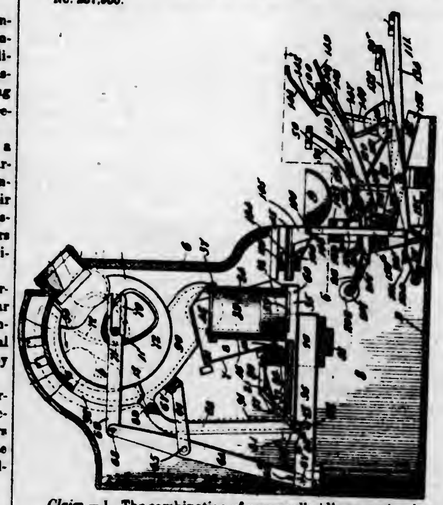

Claim.—1. The combination of a normally idle operating-key, a coin-deliver controller, a coin-slot guard, and means operated by said guard to connect the said deliverer-controller to said normally idle key for operation thereby.

2. A change-making machine having coin-deliverer controllers, operating-keys, means to connect them to certain of the controllers, and means to throw said keys out of operation and to simultaneously operate certain other of the controllers.

3. A machine of the character described comprising coin-holding means, tilting coin-deliverers, means for feeding coins from said holding means to said deliverers and means for controlling the operation of said coin-deliverers, substantially as described.

4. A machine of the character described comprising coin-holding means, vertically-movable coin-deliverers, means for feeding coins from said holding means to said deliverers, and means for moving said deliverers to an inoperative position, substantially as described.

5. A machine of the character described comprising coin-holding means vertically-movable coin-deliverers, and means for elevating one or more of said deliverers out of the paths of their respective coin-feeding means, substantially as described.

6. A machine of the character described comprising coin-holding means, coin-feeding means, vertically-movable coin-deliverers, and a key-lever for elevating one of said deliverers out of the path of its coin-feeding means, substantially as described.

7. A machine of the character described comprising coin-holding means, coin-feeding means, vertically-movable coin-deliverers, and a key-lever for elevating one or more of said deliverers out of the paths of their respective coin-feeding means, substantially as described.

8. A machine of the character described comprising coin-holders, coin-feeders, movable coin-deliverers, means operated by said coin-feeders for actuating said coin-deliverers, and means for preventing the operation of said coin-deliverers by said coin-feeders, substantially as described.

9. A machine of the character described comprising coin-holders, coin-feeders, movable coin-deliverers, means operated by said coin-feeders for actuating said coin-deliverers, and means for moving said coin-deliverers out of the path of their actuating means, substantially as described.

10. A machine of the character described comprising coin-holders, coin-feeders, coin-deliverers movable angularly with respect to said coin-feeders, means carried by said coin-feeders for operating said coin-deliverers, and means for preventing the operation of one or more of said coin-deliverers, substantially as described.

11. A machine of the character described comprising coin-holders, coin-feeders, coin-deliverers movable angularly with respect to said coin-feeders, means carried by said coin-feeders for operating said coin-deliverers and means for moving one or more of said coin-deliverers out of the path of said operating means, substantially as described.

12. In a machine of the class described, the combination of a coin-holder, a movable coin-deliveror, a movable coin-feeder, said feeder and deliverer having coacting means whereby the latter may be operated by the former, a feeder-operator, coin-controlled means to connect said feeder-operator and said feeder, and means to prevent the operation of the coin-deliveror by the coin-feeder.

13. In a machine of the character described, the combination of a tilting coin-deliverer, a sliding coin-feeder to carry a coin thereto, and coacting means for tilting the deliverer after the coin has been carried thereto by the feeder.

14. In a machine of the character described, the combination of a tilting coin-deliverer, a sliding coin-feeder coacting therewith, and a cam-and-pin connection between said feeder and said deliverer for tilting said deliverer when the feeder is moved in one direction and restoring the same to its normal position when said feeder is moved in the opposite direction, substantially as described.

15. In a machine of the character described, the combination of a tilting coin-deliverer, a sliding coin-feeder coacting therewith, said feeder and deliverer having coacting means for operating the latter and means for preventing the operation of said deliverer, substantially as described.

16. The combination of a coin-holder, a sliding coin-feeder, a tilting coin-deliverer, fed and tilted by the coin-feeder, to deliver a coin, and means to prevent the tilting of the deliverer by the feeder.

17. In a machine of the character described, the combination of a coin-feeder, a movable element, a tilting coin-deliverer mounted upon said element to coact with said feeder, and a stop for limiting the tilting movement of said deliverer, substantially as described.

18. In a machine of the character described, the combination of a coin-feeder, a movable element, a tilting coin-deliverer mounted upon said element to coact with said feeder, means upon said feeder for actuating said deliverer and a key-lever for operating said element to move said deliverer out of the path of its operating means, substantially as described.

19. In a machine of the character described, the combination of a coin-holder, a coin-deliveror, a coin-feeder for feeding coins from said holder to said deliveror, a sliding feeder-operator and means for connecting and disconnecting said feeder-operator to and from said feeder, substantially as described.

20. In a machine of the character described, the combination of a coin-holder, a coin-deliveror, a coin-feeder for feeding coins from said holder to said deliveror, a sliding feeder-operator, means for moving said feeder-operator, and means for imparting the motion of said feeder-operator to said feeder, substantially as described.

21. In a machine of the character described, the combination of a coin-holder, a coin-deliverer, a coin-feeder for feeding coins from said holder to said deliverer, a feeder-operator, and a coin-controlled means for connecting said feeder and feeder-operator, substantially as described.

22. In a machine of the character described, the combination of a coin-deliverer, a feeder therefor, a feeder-operator, a swinging element for connecting said feeder and feeder-operator together, and coin-controlled means for operating said swinging element, said coin-controlled means coacting with the feeder-operator.

23. The combination of a coin-feeder mounted for sliding movement, a feeder-operator mounted for sliding movement, means to actuate the feeder-operator, a swinging element to connect said feeder and feeder-operator together for simultaneous movement, a spring to normally retain the swinging element in disengaged position with respect to the feeder and feeder-operator, and a check-actuated lever to engage the swinging element with the feeder and feeder-operator and cause said feeder and feeder-operator to move in unison.

24. In a machine of the character described, the combination of a sliding coin-feeder, provided with a slot, a sliding feeder-operator provided with a slot, a movable element adapted to enter said slots to lock said feeder and feeder-operator together, and means for operating said element, substantially as described.

25. In a machine of the character described, the combination of a coin-feeder, a feeder-operator, a coanector for said feeder and feeder-operator, a rotary element having a coin or check receiving pocket, a lever coacting with said element and adapted to actuate said connector, and a trip upon said lever adapted to be engaged by a coin or check in the pocket of said element, substantially as described.

26. In a machine of the character described, the combination of a coin-holder, a coin-conductor leading thereto, a rotary coin-receiving element, and a swinging coin-conducting element coacting with said rotary coin-receiving element and communicating with said coin-conductor, substantially as described.

27. In a machine of the character described, the combination of a coin-holder, a coin-conductor leading thereto, a coin-receiving disk formed with a coin-pocket in its periphery, a troughed arc-shaped coin-conducting element, coacting with said disk and said conductor, and a trip-roller in said troughed arc-shaped element, substantially as described.

28. In a machine of the character described, the combination of a suitable frame or casing formed with a coin-slot, a coin-guide upon the inner side of said frame or casing adjacent to said slot, a coin-receiving disk mounted adjacent to said guide and formed in its periphery with a coin-pocket, whereby a coin of a predetermined size will be retained in said pocket by said guide, and a coin of a smaller size than that designed to be inserted in said slot, will be permitted to fall out of said pocket, said slot preventing coins of larger denomination from being placed in said coin-pocket, substantially as described.

29. In a machine of the character described, the combination of a disk having a coin-pocket in its periphery, a troughed arc-shaped operating-lever coacting therewith, and a trip-roller journaled in said troughed lever and adapted to be engaged by a coin in the pocket of said disk, substantially as described.

30. In a machine of the character described, the combination of a coin-feeder, a feeder-operator therefor, a shaft, a disk upon said shaft formed with a cam-slot, a lever connected to said feeder-operator and pivoted intermediate its ends, a link connected to said lever and formed with a forked end to engage said shaft, and a stud upon said link to travel in said cam-slot, substantially as described.

31. In a machine of the character described, the combination of a sliding coin-feeder formed with a coin-pocket of less width than the diameter of said coin, and a tilting coin-deliverer adapted to pick said coin from said pocket, substantially as described

32. A change-making machine having a series of coin-deliverer controllers of inferior value, a series of operating-keys therefor, means to enable any desired number of the controllers to be simultaneously operated by an appropriate key, a substitute coin-deliverer controller of a value equal to that of the sum of the inferior-value-coin-deliverer controllers, and means to alternately put the inferior-value-coin-deliverer controller and the substitute coin-deliverer controller into operation.

33. A change-making machine having a series of coin-deliverer controllers of inferior value, operating-keys therefor, a substitute coin-deliverer controller of a value equal to that of the sum of the inferior-value-coin-deliverer controllers, a series of coin-deliverer controllers of superior value, two alternately-operative superior-value series of keys for said superior-value-coin-deliverer controllers, and means to put one of the superior-value series of keys and either the inferior-value series of keys or the substitute coin-deliverer controller out of operation.

34. A change-making machine having a series of coin-deliverer controllers of inferior value, a series of inferior-value operating-keys therefor, means to enable any desired number of the controllers to be simultaneously operated by an appropriate key, a substitute coin-deliverer controller of a value equal to that of the sum of the inferior-value-coin-deliverer controllers, a series of coin-deliverer controllers of superior value, two alternately-operative superior-value series of keys for said superior-value-coin-deliverer controllers, and means to put one of the superior-value series of keys and either the inferior-value series of keys or the substitute coin-deliverer controller out of operation.

35. In a machine of the character described, the combination of a suitable support, a crank-shaft mounted therein, a series of coin-receiving elements upon said shaft for coins of different denominations, a holder for coins of different denominations, conductors for directing the coins placed in said elements into said holder, deliverers for the coins in said holder, coin-feeders for said deliverers, operators for said feeders, drive connections between said shaft and said operators, coin-actuated means coacting with said coin-receiving elements for locking said feeders to said operators, and means to receive the coins discharged from said deliverers, substantially as described.

36. A change-making machine having two groups of purchase-keys, one for use when a certain value or multiples thereof are to be deducted from a coin deposited in the machine and the other for use when intermediate values are to be deducted, and means for preventing the use of more than one of said groups at the same time.

37. A change-making machine having two groups of purchase-keys, one for use when a certain value or multiples thereof are to be deducted from a coin deposited in the machine and the other for use when intermediate values are to be deducted and means for rendering one of said groups inoperative.

38. A change-making machine having two groups of purchase-keys, one for use when a certain value or multiples thereof are to be deducted from a coin deposited in the machine and the other for use when intermediate values are to be deducted and means for simultaneously throwing one of said groups into operation and the other out of operation.

39. A change-making machine having two groups of purchase-keys, one for use when a certain value or multiples thereof are to be deducted from a coin deposited in the machine and the other for use when intermediate values are to be deducted, and a swinging element for preventing the use of one or the other of said groups.

40. In a machine of the character described, the combination of a superior-coin-deliverer controller, a plurality of inferior-coin-deliverer controllers, a swinging element coacting with said superior-coin-deliverer controller, key-levers for operating one or more of said inferior-coin-deliverer controllers, and key-levers for operating said swinging element and a predetermined number of said inferior-coin-deliverer controllers, substantially as described.

41. In a machine of the character described, the combination of a dime-deliverer controller, a nickel-deliverer controller, five one-cent-deliverer controllers, and means for alternately moving said dime-deliverer controller or said nickel and one-cent deliverer controllers to an inoperative position, substantially as described.

42. In a machine of the character described, the combination of a dime-deliverer controller, a nickel-deliverer controller, five one-cent-deliverer controllers, and means for simultaneously moving said dime-deliverer controller into an operative position and said nickel and one-cent deliverer controllers to inoperative positions, substantially as described.

43. In a machine of the character described, the combination of a dime-deliverer controller, a nickel-deliverer controller, five one-cent-deliverer controllers, and cams for simultaneously moving said dime-deliverer controller into an operative position and said nickel and one-cent deliverer controllers to inoperative positions.

44. In a change-making machine the combination of a suitable frame, a swinging bracket mounted thereon, and a removable coin-holder slidably mounted upon said bracket, substantially as described.

812,161. **RUDDER.** GEORGE T. ARNOLD, Oshkosh, Wis., assignor of one-half to Harry W. Lewis, Oshkosh, Wis. Filed July 26, 1904. Serial No. 218,667.

Claim.—1. The combination with a boat, of a rod secured to the stern thereof and spaced therefrom and arranged for movement of its upper end toward and away from the stern, and a rudder having eyes, said rudder being disposed with its eyes in engagement with the rod.

2. The combination with a boat, of a rod secured at its lower end to the stern of the boat and spaced therefrom, said rod being arranged for movement of its upper end toward and away from the stern, a rudder, eyes carried by the rudder and removably engaged with the rod, and means for holding the upper end of the rod at the limit of its movement in the direction of the stern.

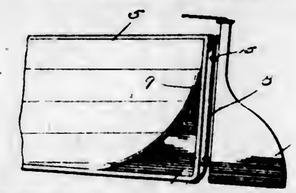

3. The combination with a boat, of a rod connected at one end with the boat for movement of its other end toward and away from the boat, a rudder having eyes in which the rod is engaged, and means for holding the rod against movement.

4. The combination with a boat, of a rod hinged at one end to the boat for movement toward and away from the latter, a rudder having eyes engaged with the rod, and means for holding the rod against movement away from the boat.

5. The combination with a boat, of a rod secured to the boat, and arranged for movement of one end toward and away from the boat, a rudder having eyes engaged with the rod, and means for holding the rod against movement laterally of the boat.

812,162. **PNEUMATIC TUBE FOR STORE SERVICE.** THOMAS BERRY, Indianapolis, Ind. Filed Dec. 18, 1905. Serial No. 292,330.

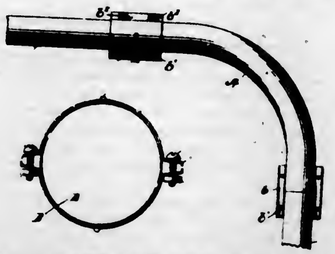

Claim.—1. A pneumatic tube for store service comprising a plurality of sections coupled together by a divided sleeve, a separate divided cylindrical section secured within said sleeve with its joint to one side of the joint in said sleeve, each edge of said sleeve having an outwardly-extending flange, which flanges extend toward each other at an angle and have their outer edges turned toward each other and adapted to meet to form a rib with a closed outer edge, and clamping-bolts extending through said flanges to draw them toward each other and clamp said sleeve upon said tube-sections, substantially as set forth.

2. In a pneumatic tube for store service, &c., the combination with two sections thereof, of a clamping-sleeve for securing them together comprising two parts, each part being substantially semicylindrical in form with outwardly-extending flanges on its edges, clamping-bolts extending through said flanges, and a second semicylindrical part secured within each part of said clamping-sleeve with one edge extending beyond the edge of said clamping-sleeve part and its other edge not extending to the edge of said sleeve part, whereby said internal sections when brought together form a complete cylinder with a smooth interior surface with joints to one side of the joints between said sleeve parts, substantially as set forth.

812,163. **PANORAMIC CAMERA.** JULIUS A. BAUM, San Francisco, Cal. Filed Aug. 9, 1904. Serial No. 219,126.

Claim.—1. In an apparatus of the character described, the combination of a camera-frame, a lens, means for rotating the frame about a vertical axis through the optical center of the lens, a film-support, mechanism for moving a film over said support in the direction opposite to its movement due to the rotation of the frame about said vertical axis, a revolving wheel carried on the camera-frame and operatively connected with said mechanism to move the film backward,

and an element with which said wheel engages to impart revolution to said wheel from the rotation of the camera-frame, the speed so imparted to said wheel varying directly as the distance from said vertical axis, substantially as described.

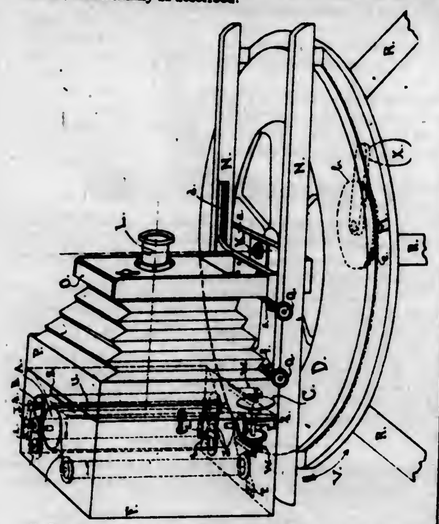

2. In an apparatus of the character described, the combination of a camera-frame, a lens, means for rotating said frame about a vertical axis through the optical center of the lens, a film-support, means for moving a film over said support, in the direction opposite to its movement due to the rotation of the frame about said vertical axis, a wheel for operating said moving film, and an element having a surface with which said wheel is in frictional contact, said surface being one of revolution about a point in said vertical axis, whereby the velocity of said wheel varies as its distance from the vertical axis, substantially as described.

3. In an apparatus of the character described, the combination of a camera-frame, a lens, means for rotating the frame about a vertical axis through the optical center of the lens, a film-support, means for moving a film in the direction opposite to its motion due to the rotation of the frame about said vertical axis, said means comprising a vertical shaft, a horizontal shaft, bevel-gears on said shafts meshing with each other, a friction-disk on said horizontal shaft, and an element having a surface of revolution about a point in said vertical axis as center, with which element the friction-disk has frictional engagement to rotate the disk by the revolution of the camera-frame, substantially as described.

4. In an apparatus of the character described, the combination of a camera-frame, a lens, means for rotating the frame about a vertical axis through the optical center of the lens, a film-holder carried on said frame, supply and winding rollers in said film-holder, a roller over which said film is passed, means for driving said latter roller, including a horizontal shaft, bevel-gears on said shaft and on the shaft of the roller, a disk on said horizontal shaft, and an element having a surface of revolution about a point in said vertical axis as center with which said disk has engagement, to revolve the disk as the camera-frame rotates, substantially as described.

5. In an apparatus of the character described, the combination of a camera-frame, a lens means for rotating the frame about a vertical axis through the optical center of the lens, a film-holder, supply and winding spools therein, a roller over which said film passes, a pressure-roller, resilient means for pressing said pressure-roller against said first roller, and means operated by the revolution of the camera-frame for revolving said first roller in a direction so that the film travels thereover in the direction opposite to its motion due to the camera-frame as a whole, substantially as described

6. In an apparatus of the character described, the combination of a camera-frame having an aperture, a lens, means for rotating said frame about a vertical axis through the optical center of the lens, a film-holder carried on the camera-frame, a roller in said film-holder over which the film passes and whose axis is in the plane of the middle of the aperture and lens, means for revolving the roller in a direction so that the film passes thereover in a direction opposite to that due to the motion of the camera-frame, supply and winding spools, and a braking device for the supply-spool whereby the film is maintained tight over the roller, substantially as described.

812,164. CONTACT-BOX FOR ELECTRIC-RAILWAY SYSTEMS. GEORGE L. CAMPBELL, Williamsport, Pa., assignor to Railways Surface Contact Supplies Company, a Corporation of Delaware. Filed Dec. 20, 1904. Serial No. 238,014.

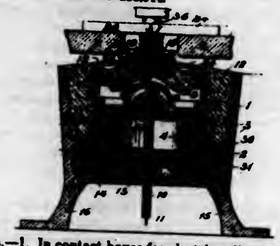

Claim.—1. In contact-boxes for electric-railway systems, a metallic casing formed with internal lugs having inclined lower faces adjacent the bottom of said casing, a box within said casing and provided with lugs having inclined upper faces coöperating with the lugs on said casing, an insulating supporting member between said box and casing, insulating wedging members between the coöperating lugs on said box and casing, the spaces between said box and casing being filled with insulating-cement, said box being provided with a projecting conducting-cover of non-magnetic material, magnetic cores in said cover and projecting within said box, an insulated contact within said box to be connected with a feed-wire, a coöperating electrical contact on said cover and a hollow spherical closer of magnetic material normally out of contact with said cover and adapted to be magnetically actuated by said cores under the influence of the car-magnet to close electrical connection between said contacts.

2. In contact-boxes for electric-railway systems, a metallic casing formed with internal lugs, a box within the casing and provided with lugs coöperating with the lugs on said casing, wedging insulating members between said box and casing, the spaces between said box and casing being filled with an insulating sealing medium, said box being provided with a conducting-cover of non-magnetic material, magnetic cores in said cover, an insulated contact within said box to be connected with a feed-wire, a coöperating electrical contact on said cover, and a hollow hemispherical closer of magnetic material normally resting on an insulated support within said box and adapted to be magnetically actuated by said cores under the influence of the car-magnet to close electrical connection between said contacts.

3. In contact-boxes for electric-railway systems, a casing formed with internal lugs having inclined faces adjacent the bottom of said casing, a box within said casing provided with lugs having inclined upper faces coöperating with the lugs on said casing, insulating members, including wedging members engaging said lugs between said box and said casing, the spaces between said box and casing being filled with an insulating sealing medium, said box being provided with a projecting conducting-cover and means to electrically connect said cover with a feed-wire.

4. In contact-boxes for electric-railway systems, a casing formed with internal lugs, a box within said casing and separated therefrom by insulating members, means on said box coöperating with said lugs to hold said box and casing in relative position and insulate them from each other, the spaces between said box and casing being filled with an insulating sealing medium, said box being provided with a cover of conducting material and means to electrically connect said cover with a feed-wire.

5. In contact-boxes for electric-railway systems, a casing formed with internal lugs, a box within said casing and insulated therefrom, said box having means coöperating with said lugs to hold said box and casing in proper relative position and the spaces between said box and casing being filled with an insulating viscous sealing medium.

6. In contact-boxes for electric-railway systems, a casing formed with internal lugs having inclined lower faces, a box within said casing and provided with lugs having inclined upper faces coöperating with the lugs on said casing and insulating members comprising wedging members between said lugs to separate said box and said casing.

7. In contact-boxes for electric-railway systems, a box having a conducting non-magnetic cover, magnetic cores in said cover, an insulating-support within said box, a contact on said support to be connected with a feed-wire, a coöperating inclined laterally-disposed contact on said cover, a hollow closer-shell loosely fitting over a guide formed on said support and adapted to make electrical connection between said contacts when drawn upward by said cores under the influence of a car-magnet.

812,165. TIRE. JOHN L. CONNABLE, Chattanooga, Tenn.; Caroline Augusta Connable, executrix of said John L. Connable, deceased, assignor of one-half to Frank L. Connable, Wilmington, Del. Filed Apr. 3, 1901. Serial No. 54,167.

Claim.—1. In a rubber tire in combination with a rim, retaining means, a passage or passages in the tire for said retaining means, a rigid bearing-plate supported solely by its bearing in the rim and engagement with the tire and having a rigid bearing on the rim and provided with a thin, sharp projecting portion having its bearing edge extending into said passage or passages whereby said retaining means are suspended independently of the rubber tire and without pressure on the walls of said passage or passages, substantially as described

2. In a rubber tire in combination with a rim, retaining means, a rigid bearing-plate having a rigid bearing on the rim and provided with a bridge or lug projecting at an angle thereto having an edge over which said retaining means are drawn and stretched, said edge formed with embracing portions adapted to receive and support said retaining means and hold the same out of contact with the resilient portion of the tire, said plate supported solely by said bearing on the rim and the projection of the bridge or lug into the tube, substantially as described.

3. In a rubber tire, in combination with a rim, retaining means for the tire, a rigid bearing-plate provided with a projecting bridge or lug adapted to support said retaining means and a thin non-elastic section of the tire between said plate and said rim whereby said plate will be given a rigid bearing on said rim but will be retained within said tire and protected from the weather said plate supported solely by its bearing from and on the rim and engagement of said bridge with the tire, substantially as described.

4. In a rubber tire, in combination with retaining means, a series of separated rigid bearing-plates independent of the rim and provided with base portions having a rigid bearing thereon said plates embedded in the tire, and having projecting bridges rising from said base portions over which said retaining means are stretched and bent, and held independently of the rubber, substantially as described.

5. In a rubber tire having a retaining-wire, a bearing-plate for said retaining-wire having all of its edges flanged, substantially as described.

6. In a rubber tire, a retaining-wire, a bearing-plate for said retaining-wire having its end edges rolled or bent up at an angle to the body portion of the plate and forming rounded edges and holding-flanges, substantially as described.

7. In a rubber tire, retaining means, a bearing-plate having side flanges extending at an angle from the plate and on which the retaining means are supported, and end flanges forming with the side flanges a rubber-gripping channel in the plate, substantially as described.

8. In a rubber tire, a retaining-wire, a bearing-plate having diagonally opposite supporting-bridges, and a strengthening-rib extending longitudinally of the plate, substantially as described.

812,166. HARNESS-MOTION FOR LOOMS. HENRY CYR, Biddeford, Me., assignor to Draper Company, Hopedale, Mass., a Corporation of Maine. Filed Nov. 2, 1905. Serial No. 285,282.

Claim.—1. A harness-motion for looms having, in combination, a heddle-frame, a rocking lever operatively connected therewith, a roll on said lever, a cam-lever to coöperate with said roll to depress the heddle-frame, said cam-lever having a locking-rest to engage the roll when the heddle-frame is in lowered position, and independent means acting at such times through the rocking lever to maintain the roll in the locking-rest.

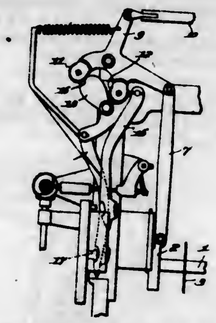

2. A harness-motion for looms having, in combination, a heddle-frame, a rocking member operatively connected therewith and provided with a follower, a cam-lever to coöperate with said follower to depress the heddle-frame, said cam-lever having a locking-rest to engage the follower when the heddle-frame is in lowered position, and means acting at such time to maintain the follower and locking-rest in coöperation, to prevent accidental movement of the cam-lever.

3. A harness-motion for looms having, in combination, a heddle-frame, a rocking member operatively connected therewith and provided with a follower, a cam-lever to coöperate with said follower to depress the heddle-frame, said cam-lever having a locking-rest to engage the follower when the heddle-frame is in lowered position, and a spring under tension at such time acting to maintain the follower and locking-rest in coöperation.

4. A harness-motion for looms, having in combination, a heddle-frame, a rocking member operatively connected therewith and provided with a follower, a cam-lever to coöperate with said follower to depress the heddle-frame, said cam-lever having a locking-rest to engage the follower when the heddle-frame is in lowered position, and a spring fixed at one end and connected at its other end with the rocking lever and stretched by movement thereof to lower the heddle-frame, the tension of the spring acting when the heddle-frame is in lowered position to press the follower into the locking-rest and thereby prevent disengagement and improper movement of the cam-lever.

5. A harness-motion for looms having, in combination, a heddle-frame, means to reciprocate it, including a cam-lever having a locking-rest, and a follower to engage the locking-rest when the heddle-frame is in lowered position, and means rendered operative at such time to maintain the follower in coöperation with the locking-rest.

6. A harness-motion for looms having, in combination, a heddle-frame, means to reciprocate it, means to lock the heddle-frame in raised or lowered position, and a safety device acting only when the heddle-frame is in lowered position to insure the operation of the locking means at such time.

812,167. ANTIVIBRATOR BURNER FOR INCANDESCENT GAS-LIGHTS. CHARLES P. REMANE, Manchester, England. Filed Jan. 27, 1905. Serial No. 242,998.

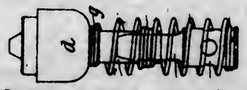

Claim.—1. In a burner for incandescent gas-lights the combination of a mixing-chamber having a mixing-tube extending upward the upper end of said tube being tapered, a burner-head having a socket extending downward and surrounding said mixing-tube and of larger internal diameter than the external diameter of the mixing-tube and a helical spring loosely surrounding said mixing-chamber and socket and constricted at each end so as to embrace the mixing-chamber at its base and to grip the socket underneath said burner-head.

2. In a burner for incandescent gas-light the combination of a mixing-chamber having a mixing-tube extending upward, a burner-head having a socket extending downward and surrounding said mixing-tube, said socket having an internal diameter larger than the

external diameter of said mixing-tube, and a helical spring loosely surrounding said mixing-chamber and socket, and constricted at both ends and at an intervening point in such a manner as to embrace the said mixing-chamber and socket at each end and at the said intervening point, substantially as described.

3. In a burner for incandescent gas-light the combination of a mixing-chamber having a mixing-tube extending upward, a burner-head having a socket extending downward and surrounding said mixing-tube, said socket having an internal diameter larger than the external diameter of said mixing-tube, and a helical spring loosely surrounding said mixing-chamber and socket, and constricted at both ends and at an intervening point in such a manner as to embrace the said mixing-chamber and socket at each end and at the said intervening point, and a perforated shade for said burner, substantially as described.

4. In a burner for incandescent gas-light the combination of a mixing-chamber having a mixing-tube extending upward, a burner-head having a socket extending downward and surrounding said mixing-tube, said socket having an internal diameter larger than the external diameter of said mixing-tube, and a helical spring loosely surrounding said mixing-chamber and socket, and constricted at both ends and at an intervening point in such a manner as to embrace the said mixing-chamber and socket at each end and at the said intervening point, and a perforated shade for said burner, said shade being arranged to cover a portion of the window to which the trap is attached.

with a surface-level in proximity to, but not in contact with, the drum-surface under the magnet-pole, an inlet for the ore whereby it may

ing the first funnel and having a discharge-tube adjustable by means of a valve, a third funnel

external diameter of said mixing-tube, and a helical spring loosely surrounding said mixing-chamber and socket, and constricted at both ends said at an intervening point in such a manner as to embrace the said mixing-chamber at its lower end and to grip said socket underneath the burner-head at its upper end and to embrace the socket at the intervening point without gripping it.

812,168. STOCKING. JOHN H. FREEMAN, New York, N. Y., assignor of one-half to Thomas A. O'Callaghan, Hoboken, N. J. Filed Oct. 9, 1903. Serial No. 176,948.

Claim.—1. A stocking having secured thereto an attaching portion for a garter-clasp provided with upwardly-divergent sides to distribute the strain upon the stocking material.

2. A stocking having at its upper end attaching portions for garter-clasps, said attaching portions diverging from their lower central points toward their upper edges to distribute the strain upon the stocking material.

3. A stocking having attaching portions imposed thereon adjacent to its upper end, and having inclined sides, secured to said stocking, and a horizontal upper edge free therefrom, substantially as specified.

4. A stocking having a plurality of attaching portions imposed thereon having inclined sides secured along the edges of said inclined sides to said stocking, and horizontal upper edges arranged parallel with the upper edge of the stocking, substantially as specified.

5. A stocking having a plurality of attaching portions of triangular outline imposed thereon and incorporated into the same, and united at their inclined edges with said stocking, and having their bases on a line with the upper edge of the stocking but free therefrom, substantially as specified.

6. The combination in a hose of a leg portion having a top edge or open end in a plane transverse to the general axial line of the limb of the wearer when the hose is in use, of a pair of attaching devices carried thereby and having lines of securement on the leg adjacent to and below such top and diverging thereto ward and ending in free edges at the edge of the said leg portion and adapted when engaged by a fastener and under the influence of a supporter to circumferentially constrict the said top edge of the leg portion upon the leg of the wearer in said plane, substantially as specified.

812,169. FLY-TRAP. WILLIAM H. GRASSER, Leland, Idaho, assignor of one-third to Augusta Grasser and one-third to Jasper P. Grasser, Orofino, Idaho. Filed Apr. 19, 1905. Serial No. 256,630.

Claim.—1. The combination with a window of a fly-trap removably secured thereto in position to cover a portion of the window said trap comprising a body portion having closed ends, a foraminous rear wall, an inwardly-directed tapered chute in its wall which lies away from the window said chute having translucent walls, and a window-shade secured to the body portion and extending therebelow said shade being arranged to cover a portion of the window to which the trap is attached.

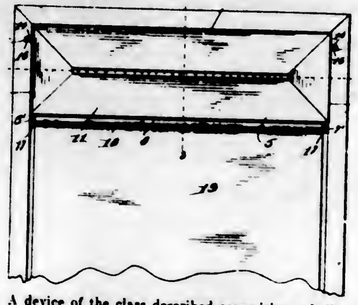

2. A device of the class described comprising a hollow body portion including ends having downwardly-extending portions, said body portion having a foraminous rear wall arranged for the passage of light into the body portion, an inwardly-directed chute carried by the body portion at its forward side, said chute having translucent walls and having an ingress-passage formed therein, attaching devices carried by the ends of the body portion for supporting the same, and shade-supporting devices secured to the inner surfaces of the downwardly-extending portions of the ends.

812,170. APPARATUS FOR MAGNETIC SEPARATION OF IRON ORE. GUSTAF GRÖNDAL, Djursholm, Sweden. Filed Nov. 12, 1903. Serial No. 180,904.

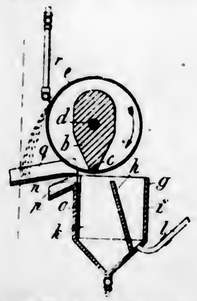

Claim.—1. Apparatus for magnetically separating ores, consisting of a magnet, a moving surface under the magnet-pole, a compartment having an overflow to maintain a body of liquid with a surface-level in proximity to but not in contact with said moving surface under the magnet-pole, an inlet for the ore whereby it may float suspended in the said liquid, and an outlet for the non-magnetic material from the lower part of the compartment, and a channel to carry off the magnetic material which has been drawn out of the water.

2. Apparatus for magnetically separating ores, consisting of a magnet, a moving surface under the magnet-pole, a compartment having an overflow to maintain a body of liquid with a surface-level in proximity to but not in contact with said moving surface under the magnet-pole and at the same time to carry off the less magnetic particles drawn to the surface of but not out of the water, an inlet for the ore whereby it may float suspended in the said liquid, an outlet for the non-magnetic material from the lower part of the compartment and a channel to carry off the magnetic material drawn out of the water.

3. Apparatus for magnetically separating ores, consisting of a magnet, a moving surface under the magnet-pole, two compartments, the first adapted to receive the ore suspended in water and to overflow the same into the second compartment, the two adapted to maintain the body of liquid with a surface-level in proximity to, but out of contact with, said moving surface under the magnet-pole, an outlet for the non-magnetic material from the lower part of the second compartment, and a channel to carry off the magnetic material which has been drawn out of the water.

4. Apparatus for magnetically separating ores, consisting of a magnet, a revolving lamellated drum having the magnet-pole within it, a compartment having an overflow to maintain a body of liquid with a surface-level in proximity to, but not in contact with, the drum-surface under the magnet-pole, an inlet for the ore whereby it may float suspended in the said liquid and an outlet for the non-magnetic material from the lower part of the compartment and a channel to carry off the magnetic material which has been drawn out of the water.

5. An apparatus for magnetically separating iron ores, comprising a stationary electromagnet, having a pole-piece formed with an elongated edge, a rotating hollow drum of a magnetically indifferent material provided with iron lamellæ in its mantle surrounding the pole-piece, and means for passing the current containing the suspended material to be separated past, beneath and out of contact with the drum in such a manner that the direction of motion is at right angles against the edge of the pole-piece of the magnet, and the same as the direction of motion of the drum whose mantle moves between the edge of the pole-piece and the current of water, said means consisting of a vessel located under the drum, a partition dividing it into two compartments lying side by side, the one compartment being provided at the bottom with a supply-pipe for the suspended material, and the other compartment being provided at the bottom with a discharge-conduit for the non-magnetic part of the material, and at the top with an overflow-discharge for the less magnetic part of the material.

812,171. MAGNETIC ORE-SEPARATOR. GUSTAF GRÖNDAL, Djursholm, Sweden. Filed Nov. 3, 1904. Serial No. 231,238.

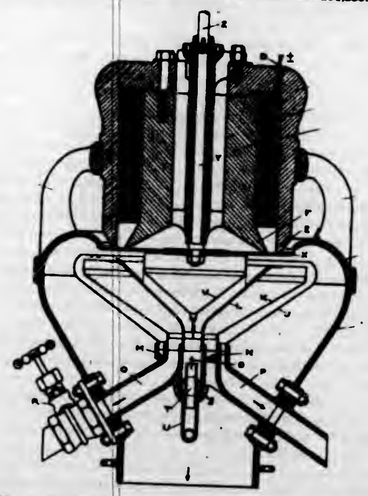

Claim.—1. A magnetic separator for ore suspended in water, comprising an electromagnet with its pole-pieces directed downward, a horizontal rotary disk beneath said poles and means for feeding ore suspended in water upward from below toward the disk and horizontally in close proximity thereto, but out of contact therewith, as and for the purpose set forth.

2. A magnetic separator for ore suspended in water, comprising an annular electromagnet with its pole-pieces directed downward, a rotary disk beneath said pole-pieces and beneath said disk two annular vessels, means for supplying ore suspended in water upward through one of said vessels and over the edge to the other, and in close proximity to, but out of contact with, the rotary disk.

3. A magnetic separator for ore suspended in water, comprising an electromagnet with its pole-pieces directed downward, a rotary disk beneath said pole-pieces, and beneath said disk two annular vessels, means for supplying ore suspended in water upward through one of said vessels and to the other, with an outer vessel to receive and collect the rich ore drawn out of the water and thrown off the disk by centrifugal force.

4. A magnetic ore-separator comprising an upright cylindrical electromagnet having its pole pieces directed downward in the shape of concentric rings, a rapidly-rotating disk beneath the pole-pieces, and beneath the said disk a funnel provided with a conical disperser inserted in it and with tubes for the suspended material and for water, opening into the lower part of the funnel, another funnel surrounding the first funnel and having a discharge-tube adjustable by means of a valve, a third funnel surrounding the second funnel having a discharge-tube, and a collecting vessel surrounding the circumference of the disk.

5. A magnetic separator for ore suspended in water, comprising an electromagnet, a moving surface beneath the pole-piece, and above the water-level a vessel for receiving ore suspended in water below said moving surface, an inlet to the lower part of said vessel and a water-jet tube in the said inlet to press the water and ore upward.

812,172. MAGNETIC SEPARATION OF IRON ORE. GUSTAF GRÖNDAL, Djursholm, Sweden. Original application filed Nov. 12, 1903. Serial No. 180,904. Divided and this application filed Dec. 3, 1904. Serial No. 235,304.

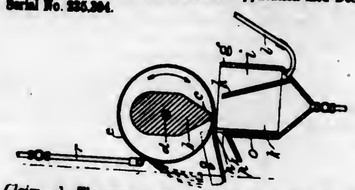

Claim.—1. The process of separating pulverized ore, consisting in suspending said ore in a body of liquid, maintaining the surface-level of this liquid substantially horizontal under a moving surface in proximity to but free from contact with the surface of the liquid, magnetically lifting the more magnetic particles out of the water to said moving surface, removing the particles from the latter at another point, and withdrawing the non-magnetic material at the bottom of the body of liquid.

2. The process of separating pulverized ore, consisting in suspending said ore in a body of liquid, maintaining the horizontal surface-level of this liquid under a moving surface in proximity to but free from contact with the surface of the liquid by maintaining a surface overflow, magnetically lifting the more magnetic particles out of the liquid into a layer on the said moving surface, gathering the layer of particles which have been lifted out of the water, and withdrawing the non-magnetic material at the bottom of the body of the liquid.

3. The process of separating pulverized ore, consisting in leading a stream of liquid carrying the ore horizontally below in proximity to but free from contact with a moving surface, magnetically pulling the most magnetic particles of ore up out of the liquid into a layer on said moving surface and at the same time gathering less magnetic particles of ore in the liquid near its surface and leading the same away and letting the dead ore sink down in the liquid and flow away.

812,173. MAGNETIC ORE-SEPARATOR. GUSTAF GRÖNDAL, Djursholm, Sweden. Original application filed Nov. 3, 1904. Serial No. 231,238. Divided and this application filed Apr. 7, 1905. Serial No. 254,296.

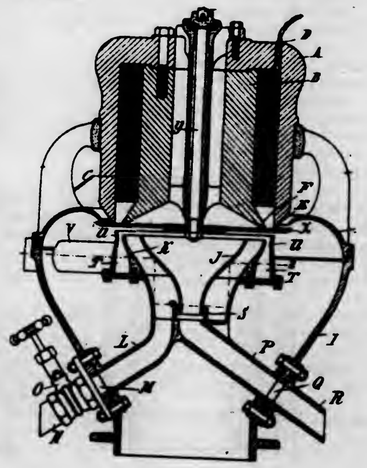

Claim.—1. A magnetic separator for powdered ore suspended in water, comprising an upright cylindrical electromagnet having its pole-pieces directed downward in the shape of concentric rings, beneath said pole-pieces a rapidly-rotating disk mounted on a vertical shaft and beneath said disk two annular vessels concentric to each other, an inlet for the fluid to the outer vessel and an adjustable discharge at the bottom of the inner vessel, the space inside said inner annular vessel being provided with an outlet for the fluid.

2. A magnetic separator for powdered ore suspended in water, comprising an upright cylindrical electromagnet having its pole-pieces directed downward in the shape of concentric rings, beneath said pole-pieces a rapidly-rotating disk mounted on a vertical shaft and beneath said disk two annular vessels concentric to each other, an inlet for the fluid to the outer vessel and an adjustable discharge at the bottom of the inner vessel, the space inside said inner annular vessel being provided with an outlet for the fluid, and a collecting vessel surrounding the circumference of the disk.

812,174. METHOD OF MANUFACTURING IRON SPONGE.

GUSTAF GRÖNDAL, Djursholm, Sweden. Original application filed Mar. 31, 1905. Serial No. 253,441. Divided and this application filed Apr. 4, 1905. Serial No. 253,876.

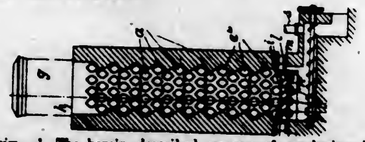

Claim.—1. The herein-described process of producing iron sponge, consisting in continually feeding the iron ore and carbon mixture through a furnace, and feeding a mixture of combustible gas and air divided into a number of streams repeatedly through the mixture in said furnace to reduce said mixture to iron sponge.

2. The herein-described process of producing iron sponge, consisting in continually feeding the iron ore and carbon mixture through a furnace, and feeding a mixture of combustible gas and air divided into a number of streams repeatedly through the mixture in said furnace to reduce said mixture to iron sponge, and feeding one of the components of said gas mixture divided into a number of streams repeatedly through the iron sponge produced.

3. The herein-described process of producing iron sponge, consisting in continually feeding the iron ore and carbon mixture through a furnace, feeding a mixture of combustible gas and air divided into a number of streams repeatedly through the mixture in said furnace to reduce said mixture to iron sponge, feeding one of the components of said gas mixture divided into a number of streams repeatedly through the iron sponge produced, and carrying away the gases evolved from the mixture of iron ore and carbon during the reducing operation from the spot where they are generated.

4. The herein-described process of producing iron sponge, consisting in continually feeding the iron ore and carbon mixture through a furnace, and feeding a mixture of combustible gas and air divided into a number of streams repeatedly through the mixture in said furnace to reduce said mixture to iron sponge, and admitting a cooling agent for cooling the iron sponge.

5. The herein-described process of producing iron sponge, consisting in continually feeding the iron ore and carbon mixture through a furnace, and feeding a mixture of combustible gas and air divided into a number of streams repeatedly through the mixture in said furnace to reduce said mixture to iron sponge, and admitting a cooling agent for cooling the iron sponge, without coming into physical contact therewith.

812,175. SHEET-METAL POCKET-BOX.

ISAAC J. MARQUIS, Richmond, Va., assignor to R. A. Patterson Tobacco Co., Richmond, Va., a Corporation of Virginia. Filed July 3, 1905. Serial No. 268,079.

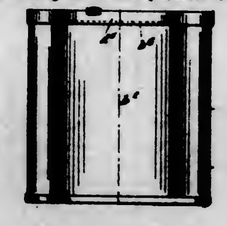

Claim.—1. The sheet-metal pocket-box herein shown and described, and comprising a curved or reniform bottom head, a curved or reniform body secured at its lower end to said bottom head and having an inwardly-curved or concave front wall and an outwardly-curved or convex back wall, and rounded side walls uniting said front and back walls, said outwardly-curved or convex back wall having at the upper end thereof an integral hinge-lip and a recess to receive the hinge-lips of the cover-flange, and said concave or inwardly-curved front wall having a strengthening-rib near the upper end thereof, and a curved or reniform hinged cover having an integral flange surrounding and snugly fitting the upper end of the box-body to hold the cover closed, the back convex curved portion of said cover-flange having an integral hinge-lip and being inclined or cut away to accommodate the convex or outwardly-curved back wall of the body and permit the hinged cover to open, the concave front wall of the body being free to spring inward under external pressure thereon and thus contract or loosen the body within the surrounding cover-flange to facilitate the opening of the hinged cover, substantially as specified.

2. A sheet-metal pocket-box having a reniform body with a convex back wall and concave front wall, and a hinged cover having a concave front flange and convex back flange hinged to the convex back wall of the body, said hinged convex portion of the cover-flange being inclined or cut away to permit the cover to open, the flange of the cover surrounding and snugly fitting the upper end of the body to hold the cover closed, and the concave front wall of the body being free to spring inward and thus contract or loosen the upper end of the body within the cover-flange to facilitate the opening of the hinged cover, substantially as specified.

3. In a sheet-metal pocket-box, the combination with a curved or reniform body, having a convex back wall and concave front wall, of a hinged cover having a flange concave at its front portion and convex at its rear portion, the flange of the cover surrounding and snugly fitting the upper end of the body to hold the cover closed, and the concave front wall of the body being free to spring inward and thus contract or loosen the upper end of the body within the cover-flange to facilitate the opening of the hinged cover, substantially as specified.

4. In a sheet-metal pocket-box, the combination with a curved or reniform body, having a convex back wall and concave front wall, of a hinged cover having a flange concave at its front portion and convex at its rear portion, the convex wall of the body having an integral hinge-lip at the upper end thereof, and the convex portion of the cover-flange having integral hinge-lips for pivotally connecting the same to the body of the box, the flange of the cover surrounding and snugly fitting the upper end of the body to hold the cover closed, and the concave front wall of the body being free to spring inward and thus contract or loosen the upper end of the body within the cover-flange to facilitate the opening of the hinged cover, substantially as specified.

5. In a sheet-metal pocket-box, the combination with a curved or reniform body, having a convex back wall and concave front wall, of a hinged cover having a flange concave at its front portion and convex at its rear portion, the convex wall of the body having an integral hinge-lip at the upper end thereof, and the convex portion of the cover-flange having integral hinge-lips for pivotally connecting the same to the body of the box, said convex portion of the cover-flange being inclined or cut away to accommodate the convex curvature of the back wall of the body, the flange of the cover surrounding and snugly fitting the upper end of the body to hold the cover closed, and the concave front wall of the body being free to spring inward and thus contract or loosen the upper end of the body within the cover-flange to facilitate the opening of the hinged cover, substantially as specified.

6. In a sheet-metal pocket-box, the combination with a curved or reniform body, having a convex back wall and concave front wall, of a hinged cover having a flange concave at its front portion and convex at its rear portion, the convex wall of the body having an integral hinge-lip at the upper end thereof, and the convex portion of the cover-flange having integral hinge-lips for pivotally connecting the same to the body of the box, said convex portion of the cover-flange being inclined or cut away to accommodate the convex curvature of the back wall of the body, the concave front wall of the body being provided with a strengthening-rib at the upper end thereof, the flange of the cover surrounding and snugly fitting the upper end of the body to hold the cover closed, and the concave front wall of the body being free to spring inward and thus contract or loosen the upper end of the body within the cover-flange to facilitate the opening of the hinged cover, substantially as specified.

7. In a sheet-metal box, the combination with a curved or reniform body composed of tin-plate or other flexible elastic sheet metal and having a convex back wall and concave front wall, of a hinged cover having a flange concave at its front portion and convex at its back portion, and surrounding and snugly engaging the upper end of the body to hold the cover closed, the inward spring of the concave front wall of the body under pressure serving to contract or loosen the body within the cover-flange and permitting the hinged cover to swing open, substantially as specified.

8. In a sheet-metal pocket-box, the combination with a reniform body of tin-plate having a concave front wall and convex back wall, of a hinged cover having a flange concave at its front portion and convex at its rear portion and surrounding and engaging the upper end of the body, the concave front wall of the tin-plate body being free to spring inward under external pressure to contract or loosen the upper end of the body within the cover-flange, substantially as specified.

9. In a sheet-metal pocket-box, the combination with a curved or reniform body composed of flexible spring sheet metal and having a concave front wall, of a cover having a flange surrounding and engaging the upper end of the body, the cover-flange being concave at its front portion, the inward spring of the concave front wall of the body serving to contract or loosen the body within the cover-flange to facilitate the opening of the cover, substantially as specified.

REISSUES.

12,445. MACHINE FOR TRIMMING AND APPLYING SHADE GOODS.

EPHRAIM O. ENGBERG, Salt Lake City, Utah, assignor to John Beecher Patton, Kent, Ohio. Filed July 22, 1905. Serial No. 270,876. Original No. 754,750, dated Mar. 15, 1904.

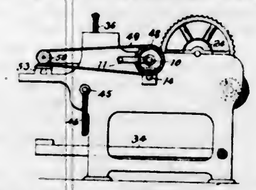

Claim.—1. In a machine for making window-shades, the combination with means for holding a web of shade material, of shade-roller-holding means, means for rotating the shade-roller-holding means to wind the material on the roller, means for trimming the edges of the material lengthwise thereof, means for cutting the material transversely, together with mechanism for creasing the material transversely thereof for forming the loop for the shade-slat and arranged in advance of the trimming means.

2. In a machine for making window-shades, the combination with means for holding a web of shade material, of shade-roller-holding means, means for rotating the shade-roller-holding means, a feeding device for the material forcing the same toward the shade-roller-holding means, knives for cutting the material lengthwise thereof, means for cutting the material transversely, together with devices for creasing the material transversely thereof for forming a loop for the shade-slat.

3. In a machine for making window-shades, the combination with means for holding a roll of shade material, of shade-roller-holding means, means for rotating the shade-roller-holding means, knives for cutting the material lengthwise thereof, feed-rolls located between the roll of material-holding means and said knives, means for cutting the material transversely, together with movable folding-blades creasing the material at distinct points for forming the shade-slat loop.

4. In a machine for making window-shades, the combination with means for holding a web of shade material, of shade-roller-holding means adapted to removably hold a shade-roller, feed-rolls for forcing the material toward the shade-roller-holding means, together with mechanism for creasing the material transversely thereof for forming a loop for the shade-slat.

5. In a machine for making window-shades, the combination with means for holding shade material, of shade-roller-holding means, means for rotating the shade-roller-holding means, knives for cutting the material lengthwise, folding means acting on the material and folding the same for the shade-slat, and a feeding device for forcing the material toward the folding means.

6. In a machine for making window-shades, the combination with means for holding a web of shade material, means for supporting a shade-roller to wind the material thereon, creasing devices for creasing the material transversely thereof at two distinct points for the shade-slat hem or loop, and means whereby the distance between the folds may be increased or diminished to make different sizes of loops for different sizes of shade-slats.

7. In a machine for making window-shades, the combination with means for holding shade material, of movable folding-blades forming distinct folds in the material to make the shade-slat loop or hem, and means whereby the distance between the folds may be increased or diminished to make different sizes of loops for different sizes of shade-slats.

8. In a machine for making window-shades, the combination with a frame and means for holding shade material, of means for winding the material on a shade-roller, trimming devices for trimming the edges of the material, mechanism for folding and creasing the material transversely thereof to form the loop for the shade-slat having two bends and an inturned end, together with means by which the material may be cut transversely.

9. In a machine for making window-shades, the combination with means for holding a web of shade material, of shade-roller-holding means adapted to removably hold a shade-roller, means for rotating the shade-roller-holding means for winding the material on the roller, together with mechanism for folding and creasing the material transversely thereof for forming a loop for the shade-slat.

10. In a machine of the character described, the combination with means for holding shade material, of means for rotating a shade-roller to wind the material thereon, together with folding means acting on the material and forming the loop for the shade-slat.

11. In a machine of the character described, the combination with means for holding a web of shade material, of folding and creasing devices adapted to fold and crease the material for forming the loop for the shade-slat, means for cutting the material lengthwise thereof, tension devices, together with means for cutting the material transversely thereof after the material has been creased.

12. In a machine of the character described, the combination with means for holding shade material, of two movable folding devices and independent creasing means having movable members for folding and creasing the material transversely thereof and forming the loop for the shade-slat, tension devices for the material, together with means for cutting the material transversely thereof.

13. In a machine of the character described, the combination with means for holding a web of shade material, means for removably holding a shade-roller, means for rotating the shade-roller-holding means to wind the material on the roller, together with mechanism for acting on the material transversely thereof and forming a loop having two bends adapted to hold the shade-slat.

14. In a machine for making window-shades, the combination with means for holding a web of shade material, of means for rotating a shade-roller to wind the material thereon, and creasing means for creasing the material transversely thereof and forming a loop having two bends and an inturned end extending within the loop.

15. In a machine for making window-shades, the combination with a frame and means for holding shade material, of means for operating on a shade-roller to wind the material thereon, means for cutting the material transversely, together with means for forming a shade-slat loop or socket at the point where the material is cut transversely.

16. In a machine of the character described, the combination with a frame, of means for holding shade material on the frame, means for rotating a shade-roller for winding the material thereon, together with means having movable members clamping the material between them and forming a shade-slat loop or socket in which one end is bent inward within the loop.

17. In a machine for making window-shades, the combination with means for holding shade material, of means for cutting the material transversely, together with two movable folding devices, and independent movable creasing devices acting on the material after it is folded means adjacent to the transverse cutting means for forming a shade-slat loop or socket having two bends with an inturned end adapted to lie close to the body of the material and within the loop.

18. In a machine for making window-shades, the combination with means for holding shade material, of independent holding devices, an independent movable creasing devices acting on the material after it has been folded for forming a shade-slat loop or socket in the material having two bends with an inturned end extending within the loop.

19. In a machine for making window-shades, the combination

with a frame, of means for holding shade material on the frame, feeding means for the material, knives for slitting the material lengthwise thereof, means for cutting the material transversely, together with folding and creasing means comprising two independently-movable folding-blades, one working in advance of the other, and independent creasing means having movable members acting on the material to finish the creases after the blades have folded the same.

20. In a machine for making window-shades, the combination with a frame, of means for holding a roll of shade material on the frame, feeding means for the material, means for rotating a shade-roller for winding the material thereon, means for cutting the material transversely, together with folding and creasing means comprising independently-movable folding-blades, and independent creasing means having movable members acting on the material to finish the creases after the blades have folded the same.

21. In a machine for making window-shades, the combination with a frame, of means for holding a roll of shade material on the frame, means for feeding the material, means for rotating a shade-roller for winding the material thereon, knives for slitting the material lengthwise thereof, means for cutting the material transversely, together with mechanism for folding and creasing the material at two distinct points for forming the shade-slat loop.

22. In a machine for making window-shades, the combination with a frame, of means for holding a roll of shade material on the frame, means for feeding the material, means for rotating a shade-roller for winding the material thereon, knives for slitting the material lengthwise thereof, means for cutting the material transversely, folding and creasing means comprising two independently-movable folding-blades, one working in advance and at a distinct point from the other, and independent creasing means having movable members acting on the material to finish the creases after the blades have folded the same, together with means for moving the creasing devices and blades independently of each other.

23. In a machine for making window-shades, the combination with means for holding shade material, of a device for trimming the material lengthwise thereof, together with mechanism for forming a shade-slat loop or socket having two bends with an inturned end extending within the loop, and a movable knife adapted to cut the material transversely.

24. In a machine for making window-shades, the combination with means for holding shade material, of means for winding the material on a shade-roller, means for trimming the material lengthwise thereof, a knife movable transversely of the machine to cut the material transversely, together with mechanism for forming a shade-slat loop or socket having two bends with an inturned end extending within the loop.

25. In a machine for making window-shades, the combination with means for holding shade material, of means for forming a shade-slat loop or socket, means for cutting the material transversely, together with a tension device comprising two rotatable rollers one of which is yieldingly forced toward the other.

26. In a machine for making window-shades, the combination with a frame and means for holding a web of shade material on the frame, of creasing devices having movable members, together with two folding devices adapted to move simultaneously one in advance of the other and coacting with said creasing devices for forming a loop for the shade-slat.

27. In a machine of the character described, the combination with a frame and means for holding shade material on the frame, of creasing devices having movable members, together with two folding devices adapted to move simultaneously one in advance of the other and coacting with said creasing devices to form two distinct folds and forming a loop for the shade-slat having an inturned end extending within the said loop.

28. In a machine of the character described, the combination with a frame, means for holding a web of shade material thereon, of creasing means having a fixed member and two movable members, means for moving the goods into the space between said members, together with independent movable means for operating the movable members of the creasing means and forming a loop having two bends with a short end extending within said loop.

29. In a machine of the character described, the combination with a frame, of means for folding and creasing shade material transversely thereof and forming a loop for the shade-slat, comprising creasing means having movable and fixed members and two folding devices for forcing the goods between the creasing means, the said folding devices operating one in advance of the other on the material at two distinct points to form separate folds.

30. In a machine for making window-shades, the combination with means for holding shade material, of two folding-blades, and means for giving one blade a longer movement than the other.

31. In a machine for making window-shades, the combination with means for holding shade material of two reciprocatory folding-blades, creasing devices for finishing the folds made by the blades, and means for moving the blades to form one fold deeper than the other.

32. In a machine for making window-shades, the combination with means for holding shade material, of two folding-blades forming two distinct folds in the material, and means for moving one blade to form a deeper fold than the other.

33. In a machine for making window-shades, the combination with means for holding shade material, of devices forming two folds of different depths in the material.

34. In a machine for making window-shades, the combination with means for holding shade material of devices forming two distinct folds in the material, and independent movable devices for clamping the folds to finish the creasing.

35. In a machine for making window-shades, the combination with means for holding shade material, of creasing devices, a cross-head movable toward and from the same, a folding-blade independent of the head, a second blade movable with the head, and means for imparting a longer movement to one blade than the other.

36. In a machine for making window-shades, the combination with means for holding shade material, of two reciprocatory folding-blades yieldingly held together and acting on the material at two distinct points, one of said blades forming a deeper fold in the material than the other.

37. In a machine for making window-shades, the combination with means for holding shade material, of a cross-head, a folding-blade carried directly by the cross-head, a second folding-blade yieldingly held to said cross-head, and means for giving a greater movement to the yieldingly-held blade than to the cross-head.

38. In a machine for making window-shades, the combination with means for holding shade material, of creasing devices having movable members, a cross-head movable toward the same, a blade carried directly by the cross-head, a second blade yieldingly held to the cross-head and normally movable therewith, together with mechanism for imparting a greater movement to the yieldingly-held blade than to the cross-head.

39. In a machine for making window-shades, the combination with means for holding shade material, of creasing devices having movable members, two folding devices adapted to move simultaneously one in advance of the other and coacting with said creasing devices for forming a loop for the shade-slat, together with means for causing one folding device to form a deeper fold than the other.

40. In a machine for making window-shades, the combination with means for holding shade material, of two folding-blades acting on the material at two distinct points, together with creasing devices having movable members coacting with the blades for forming the shade-slat loop.

41. In a machine for making window-shades, the combination with means for holding shade material, of reciprocatory folding-blades acting on the material at two distinct points, creasing devices having movable members for finishing the creases after the blades have ceased to act on the material, and cams for operating the creasing devices.

42. The combination with a frame, of rockably-mounted members, means for rocking said members to crease the fabric between them, and means for moving said fabric into the space between said members prior to the rocking thereof.

43. The combination of a stationary member, a movable creaser-bar coacting therewith, a movable wall coacting with the creaser-bar, said parts serving to form two creases in a section of fabric, and means for operating said parts.

44. The combination of a stationary member, a movable creaser-bar coacting therewith, a movable wall coacting with the creaser-bar, said parts serving to form two creases in a section of fabric, means for operating said parts, and means for pressing the fabric between said parts prior to the creasing movement thereof.

45. The combination of a stationary member, a movable creaser-bar coacting therewith, a movable wall coacting with the creaser-bar, said parts serving to form two creases in a section of fabric, means for operating said parts, and two blades serving to press said fabric between said parts prior to the creasing action thereof.

46. The combination of a stationary member, a movable creaser-bar coacting therewith, a movable wall coacting with the creaser-bar, said parts serving to form two creases in a section of fabric, and means for operating said parts, such means comprising a cam bearing against one of the parts and means for mounting and operating the cam.

47. The combination with a frame, of a stationary member, a movable creaser-bar coacting therewith, a movable creaser-wall coacting with the bar, means for operating the bar and wall, a cross-head, a blade carried directly thereby, and a second blade yieldingly mounted on the cross-head, said blade coacting with the creaser bar and wall.

48. The combination with creasing devices, of a cross-head movable toward and from the same, a blade carried directly by the cross-head, and a second blade carried yieldingly thereby.

49. The combination with creasing devices, of a cross-head movable toward and from the same, a blade carried directly thereby, a second blade carried movably on the cross-head, a spring actuating the second blade, a spring actuating the cross-head, and means for operating the cross-head and the second-named blade successively.

50. The combination with means for holding shade material, of creasing devices having movable members, a cross-head movable toward and from the same, a folding-blade carried directly by said cross-head, a second blade adapted to act upon the material at a point distinct from the first-mentioned blade, a yielding connection between one of the blades and the cross-head whereby said blade and cross-head may move in unison or one blade permitted to move independently of the cross-head, means for operating the cross-head and blades so as to force the material between the creasing devices, and means for actuating the movable members of the creasing devices.

51. The combination with means for holding shade material, of creasing devices having movable members, a reciprocatory cross-head movable toward and from the same, a folding-blade carried directly by said cross-head, a second blade adapted to act upon the material at a point distinct from the first-mentioned blade, springs forming a yielding connection between one of the blades and the cross-head whereby said blade and cross-head may move in unison or one blade permitted to move independently of the cross-head, means for operating the cross-head and blades so as to give one blade a longer movement than the cross-head and to force the material between the creasing devices, and means for actuating the movable member of the creasing devices.

52. The combination with creasing devices, of a cross-head movable toward and from the same, a blade carried directly thereby, a second blade carried movably on the cross-head, a spring actuating the second blade, a spring actuating the cross-head, means for operating the cross-head and the second-named blade successively, said means for operating the cross-head and second blade comprising a treadle, an extensive connection between the treadle and cross-head, and a connection between the treadle and second blade, the latter connection permitting a certain independent movement of the treadle.

53. The combination with a frame, of a stationary member, a rocking creaser-bar coacting therewith, a swinging wall coacting with the creaser-bar, means for operating said bar and wall, a cross-head, a blade carried thereby, a rod in connection with the cross-head, a spring bearing between the cross-head and creaser-bar, a second spring bearing between the creaser-bar and frame, a second blade movably mounted on the cross-head, a spring acting between the second blade and cross-head, a rod in connection with the second blade, and means for successively moving the said rods.

54. The combination with a frame having means for carrying and operating on a shade fabric, of a guide, a bearing adjustable thereon, and serving to carry one end of the shade-roller, a second bearing adjustable on the guide, a head revolubly mounted in the bearing and capable of engaging the other end of the shade-roller, and means for revolving the head.

55. The combination with a frame having means for carrying and operating on a shade fabric, of a guide, a bearing adjustable thereon, and serving to carry one end of the shade-roller, a second bearing adjustable on the guide, a head revolubly mounted on the bearing and capable of engaging the other end of the shade-roller, means for revolving the head, said means comprising a revolubly-driven sleeve, and a shaft in connection with the head and slidably fitted in the sleeve, said sleeve and shaft being engaged to drive the one from the other.

56. The combination of a framing, two cutting devices mounted at the sides of the framing respectivly to trim the edges of a length of fabric, creasing means mounted on the framing to which the fabric is passed, as it moves from the cutting devices, and means for operating the cutting and creasing devices.

57. The combination of a framing, two cutting devices mounted at the sides of the framing respectively to trim the edges of a length of fabric, creasing means mounted on the framing to which the fabric is passed as it moves from the cutting devices, means for operating the cutting and creasing devices, and a strip or bar extending transversely of the framing between the cutting and creasing devices and adapted to have a knife run over it to sever the fabric into lengths.

58. The combination of a framing, a transverse guide thereon, a bracket adjustably mounted on the guide, two coacting rotary cutters carried by the bracket, two shafts on which said cutters are respectively splined, and means for driving the shafts.

12,446. SELF-INDEXING LOOSE-LEAF LEDGER. SIMEON KIRTLEY, Columbia, Mo. Filed Sept. 11, 1905. Serial No. 278,051. Original No. 767,200, dated Aug. 9, 1904.

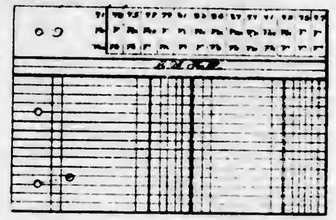

Claim.—1. A series of original loose self-indexing sheets having a portion of their edges cut away, and portions of said cut-away sheets being exposed and having suitable identifying characters upon the said exposed portions, in combination with an additional series of transfer-sheets interchangeable with said original sheets and provided with identifying characters the same as those of the original sheets, and having detachable cut-away portions separated from their main bodies by perforated lines, substantially as specified.

2. A series of original loose self-indexing sheets having a portion of their edges cut away, and portions of said cut-away sheets being exposed and having suitable identifying characters upon the said exposed portions, in combination with an additional series of transfer-sheets interchangeable with said original sheets and provided with identifying characters the same as those of the original sheets, and having detachable cut-away portions separable from the bodies of the transfer-sheets by a line of perforations, substantially as specified.

3. A series of original loose self-indexing sheets having a portion of their edges cut away, and portions of said cut-away sheets being exposed and having suitable identifying characters upon the said exposed portions, in combination with an additional series of transfer-sheets interchangeable with said original sheets and provided with identifying characters the same as those of the original sheets, and having detachable cut-away portions separable from the bodies of the transfer-sheets by a line of perforations; extra duplicate perforated transfer-sheets and temporary bindings for all the sheets, substantially as specified.

4. A self-indexing ledger or book, provided with interchangeable loose cut-away leaves for the letters of the alphabet, portions of the said cut-away leaves being exposed, the initial letter with second and third letters of names placed on certain of said exposed portions, and the initial letter placed only with the second letter on certain of said exposed portions, and having a space adjacent thereto for the insertion of the third letter of the names, and the initial being placed alone on certain of said exposed portions and having spaces adjacent thereto for the insertion of the second and third letters of names which cannot be anticipated, different identifying characters on the exposed portions of the different cut-away leaves; and an additional series of interchangeable loose cut-away sheets adapted to be located in a transfer ledger or book and provided with leaves and identifying characters the same as those of the original ledger or book, in combination with a third series of insert blank sheets identical in size and shape with those previously mentioned but devoid of an index, and a fourth series of blank sheets adapted to receive additional or subsequently-occurring accounts and identical with those of the third series, except cut back one step farther so as to expose the first indexed sheet beneath, and also provided with identifying characters to distinguish them from each other, substantially as specified.

5. The combination of two self-indexing loose-leaf ledgers or books, one of which is an original and the other a transfer book each having a separate series of blank sheets which are cut away so as to expose the sheet beneath them, and the sheets of both books provided upon said cut-away portions with corresponding identifying charac-

ters, and a third series of insert blank sheets identical in size and shape with those previously mentioned, but devoid of an index, substantially as specified.

6. The combination of two self-indexing loose-leaf ledgers or books, one of which is an original and the other a transfer book each having a separate series of blank sheets which are cut away so as to expose the sheet beneath them, and the sheets of both books provided upon said cut-away portions with corresponding identifying characters, a third series of insert blank sheets identical in size and shape with those previously mentioned but devoid of an index, and a fourth series of blank sheets adapted to receive additional or subsequently-occurring accounts and identical with those of the third series, except cut back one step farther so as to expose the first indexed sheet beneath, and also provided with identifying characters to distinguish them from each other, substantially as specified.

7. The combination of two self-indexing loose-leaf ledgers or books, one of which is an original and the other a transfer book each having a separate series of blank sheets which are cut away so as to expose the sheets beneath them, and the sheets of both books provided upon said cut-away portions with the first letter of the names to be indexed, and having a blank space adjacent thereto for additional characters, the said original book having also a third series of insert blank sheets identical in size and shape with those previously mentioned but devoid of an index, and a fourth series of blank sheets adapted to receive additional or subsequently-occurring accounts and identical with those of the third series, except cut back one step farther so as to expose the first indexed sheet beneath, and also provided with identifying characters to distinguish them from each other, substantially as specified.

8. The combination of two self-indexing loose-leaf ledgers or books, one of which is an original and the other a transfer book each having a separate series of blank sheets which are cut away so as to expose the sheets beneath them, and the sheets of both books provided upon said cut-away portions with the first two letters of the names to be indexed, and having a blank space adjacent thereto for additional characters, the said original book having also a third series of insert blank sheets identical in size and shape with those previously mentioned but devoid of an index, and a fourth series of blank sheets adapted to receive additional or subsequently-occurring accounts and identical with those of the third series, except cut back one step farther so as to expose the first indexed sheet beneath, and also provided with identifying characters to distinguish them from each other, substantially as specified.

9. The combination of two self-indexing loose-leaf ledgers or books, one of which is an original and the other a transfer book each having a separate series of blank sheets which are cut away so as to expose the sheet beneath them, and the sheets of both books provided upon said cut-away portions with the first three letters of the names to be indexed, and having a blank space adjacent thereto for additional characters, the said original book having also a third series of insert blank sheets identical in size and shape with those previously mentioned but devoid of an index, substantially as specified.

10. The combination of two self-indexing loose-leaf ledgers or books, one of which is an original and the other a transfer book each having a separate series of blank sheets which are cut away so as to expose the sheets beneath them, and the sheets of both books provided upon said cut-away portions with the first three letters of the names to be indexed, and having a blank space adjacent thereto for additional characters, the said original book having also a third series of insert blank sheets identical in size and shape with those previously mentioned but devoid of an index, and a fourth series of blank sheets adapted to receive additional or subsequently-occurring accounts and identical with those of the third series, except cut back one step farther so as to expose the first indexed sheet beneath, and also provided with identifying characters to distinguish them from each other, substantially as specified.

11. The combination of two self-indexing loose-leaf ledgers or books, one of which is an original and the other a transfer book each having a separate series of blank sheets which are cut away so as to expose the sheet beneath them, and the sheets of both books provided with the first three letters of the names to be indexed, and having a blank space adjacent thereto for additional characters, a third series of insert blank sheets identical in size and shape with those previously mentioned but devoid of an index, substantially as specified.

12. The combination of two self-indexing loose-leaf ledgers or books, one of which is an original and the other a transfer book each having a separate series of blank sheets which are cut away so as to expose the sheet beneath them, and the sheets of both books provided with the first three letters of the names to be indexed, and having a blank space adjacent thereto for additional characters, a third series of insert blank sheets identical in size and shape with those previously mentioned, but devoid of an index, substantially as specified.

12,447. CAR. WILLIAM A. CASWELL, Chicago, Ill., assignor, by mesne assignments, to National Coal Dump Car Company, Chicago, Ill., a Corporation of South Dakota. Filed Jan. 5, 1906. Serial No. 294,799. Original No. 808,394, dated Dec. 5, 1905.

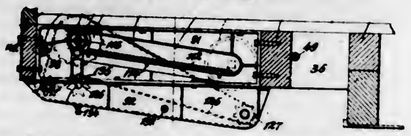

Claim.—1. The car having all its longitudinal sills located centrally and having a level and unobstructed floor above the plane of the sills, extending from end to end and from side to side of the car, said floor embodying two series of outwardly-opening doors hinged to the outside of the sills.

2. The car all whose longitudinal sills are located centrally, and provided with a level unobstructed floor above the sills, extending from end to end, and side to side of the car, such floor embodying outwardly-opening doors hinged outside of the line of the sills.

3. The car having all its longitudinal sills located centrally, and having a series of dump-doors in its floor extending from end to end of the car and hinged to the outside of the sills.

4. The car having all its longitudinal sills located centrally, and also having a level floor from end to end, the side portions of said floor being formed by doors hinged to the outside of the sills and opening at their outer edges.

5. The car having all its longitudinal sills located centrally and also having a level floor from end to end, the side portions of said floor embodying doors hinged to the sills and opening at their outer edges and located over the trucks.

6. The car having its longitudinal sills located centrally and also having a level floor extending from end to end of the car and outwardly-opening dump-doors in said floor, said doors being provided with supports adapted to control the extent of their opening, and to permit only a partial opening when that is desired.

7. The car whose longitudinal underframing consists of center and intermediate sills, and whose side walls are braced by heavy diagonal braces extending from stake to stake, and entered at their upper ends under bent-over portions of the stakes, substantially as specified.

8. The car having stakes 46 with bent-over portions 45, and diagonal braces entered under said bent-over portions, substantially as specified.

9. The car having only centrally-located sills, a level and unobstructed floor throughout, and a superstructure provided with a base-strip, said floor embodying a series of outwardly-opening doors located outside the sills and extending under said base-strip.

10. The combination with the center and intermediate sills, of a bolster consisting of a top bar with its ends bent down, a bottom bar, outside casting 58, the webbed casting 66, and the casting 68, substantially as specified.

11. The combination with the center and intermediate sills, of a bolster-bar, outside casting 58, webbed casting 66, and the stakes passing down through the forked ends of the top bar and the webbed casting, substantially as specified.

12. The car having its headers or cross-frame members provided with webbed castings which extend from the intermediate sills outward to the stakes and support the latter, substantially as specified.

13. The car having headers embodying webbed castings extending outward from the intermediate sills and beams below said castings extending outward from the center sills, substantially as specified.

14. The header consisting of the webbed casting 77, the beam 75 and the outside end casting, substantially as specified.

15. The header consisting of the webbed casting 77, the beam 75, the outside end casting, and the shell-casting 83, substantially as specified.

16. The car whose longitudinal load-supporting members consist solely of the center sills, the intermediate sills and the braced side walls of the box, and provided with dump-doors in its floor along its side walls opening toward the outside of the track, substantially as specified.

17. The combination with the dump-door of a car, of means for supporting the swinging edge of the door when closed, consisting of rollers movable downward back from said edge, substantially as specified.

18. The combination with the dump-door of a car, of means for supporting the swinging edge of the door when closed, consisting of rollers movable downward back from said edge, and a shaft supporting said rollers, substantially as specified.

19. The combination with the dump-door of a car, of a shaft and rollers thereon for supporting the swinging edge of the door, said shaft being movable bodily dowaward and back from said edge, substantially as specified.

20. The combination with the dump-door of a car, of a shaft and rollers thereon for supporting the swinging edge of the door, said shaft being movable bodily downward and back from said edge, and means for so moving said rollers, substantially as specified.

21. The combination with the dump-door of a car, of a shaft and rollers thereon for supporting the swinging edge of the door, said shaft being movable bodily downward and back from said edge, and means for moving said shaft, substantially as specified.

22. The combination with the dump-door of a car, consisting of rollers located below the door and movable from their normal positions in which they hold the door closed, and acting to support the door in all of its positions, substantially as specified.

23. The combination with the dump-door of a car, of a shaft and rollers thereon for supporting the swinging edge of the door, said shaft being movable bodily downward and backward and being also rotatable, substantially as specified.

24. The combination with the dump-door of a car, of a shaft and rollers thereon for supporting the swinging edge of the door, said shaft being movable bodily downward and backward and being also rotatable, and means for rotating the shaft, substantially as specified.

25. The combination with the dump-door of a car, of a shaft and rollers thereon for supporting the swinging edge of the door, said shaft being movable bodily downward and backward and being also rotatable, means for rotating the shaft, and racks and pinions for moving the shaft bodily, substantially as specified.

26. The combination with the dump-door of a car, of a shaft and rollers thereon for supporting the swinging edge of the door, said shaft being movable bodily downward and backward and being also rotatable, and the rollers being loosely mounted on the shaft, substantially as specified.

27. The combination with the dump-door of a car, of a shaft and rollers thereon for supporting the swinging edge of the door, said shaft being movable bodily downward and backward and being also rotatable, means for rotating the shaft, stationary racks supported in the cross-traming, and pinions on the shaft, whereby the rotation of the shaft causes its bodily movement, substantially as specified.

28. The combination with the cross-frame members of the car and a longitudinal series of dump-doors, of a shaft passing through said members, and carrying loose rollers for supporting the doors, inclined racks in said members meshing with pinions on the shaft, and means for rotating the shaft and giving it a bodily movement to open the doors, substantially as specified.

29. The car, the underframing whereof consists of center and intermediate sills, end sills, bolsters, needle-beams and headers, the latter located between the bolsters and needle-beams, substantially as specified.

30. The car having a longitudinal series of dump-doors along each of its sides, and headers or cross-frames extending between the doors of each series and affording them lateral support.

31. The car having a longitudinal series of dump-doors along its sides, headers or cross-frame members between adjacent doors, and a shaft extending through and sustained by said headers and supporting the doors, substantially as specified.

32. The car having a longitudinal series of dump-doors along its sides, headers or cross-frame members between adjacent doors, and a shaft extending through and sustained by said headers and supporting the doors, said shaft being also supported at its outer end from the end sill, substantially as specified.

33. The car having its bolsters and headers all provided with cast-metal ends having formed in them inclined ways for the door-supporting shafts, substantially as specified.

34. The car having its bolsters and headers all provided with cast-metal ends having inclined openings and racks for the door-supporting shafts and their operating-pinions, substantially as specified.

35. The car wherein are combined the dump-doors, the cross members between the doors having cast-metal ends with inclined openings and racks, and the door-supporting shafts moving through said openings and having pinions meshing with the racks, substantially as specified.

36. The car wherein are combined the dump-doors, the cross members between the doors having cast-metal ends with inclined openings and racks, the end sill having a casting also provided with an inclined opening and rack, and the door-supporting shaft moving through said openings and having pinions meshing with the racks, substantially as specified.

37. The combination with the end sill and bodily-movable door-supporting shaft, of the casting 91 applied to said sill and provided with an opening in which the end of the shaft may be supported and be moved, substantially as specified.

38. The car having an endwise-movable door-supporting shaft located wholly inside the end sill, in combination with such end sill having an opening therethrough permitting the removal of the shaft when in one of its positions, substantially as specified.

39. The door-supporting shaft having the rollers and pinions carried by it readily releasable so they may be slipped off, and itself removable endwise from the car, in combination with the frame members through which the shaft passes, substantially as specified.

40. The combination with the doors and the cross-frame members having inclined openings therethrough, of a bodily-movable and rotating door-supporting shaft sustained in said openings and removable endwise therefrom, substantially as specified.

41. The car having its side walls braced by braces 42 whose lower ends are supported upon the bolsters and needle-beams, substantially as specified.

42. The car having its side walls braced by braces 42 supported at their lower ends upon bolsters and needle-beams, and themselves supporting the stakes of the intermediate headers, substantially as specified.

43. In a car of the class described, the combination of a supporting-frame, a drop-bottom formed of a plurality of swinging doors secured to the supporting-frame and rolling mechanism adapted to contact such doors to close and hold the same in closed position, substantially as described.

44. In a car of the class described, the combination of a supporting-frame portion, a drop-bottom portion therefor formed of a plurality of swinging sections pivotally secured together at each side of a longitudinal center of the car, a reciprocating bar extending longitudinally of the car, and movable transversely thereof in engagement with each swinging section, and means for reciprocating said bar to open and close the swinging sections, substantially as described.

45. In a car of the class described, the combination of a supporting-framework provided with a rock bottom formed of a plurality of swinging sections pivotally secured thereto, a reciprocating bar having a bearing portion in the supporting-framework of the car and contacting the under side of each swinging section, and means for reciprocating said bar to open and close the swinging sections, substantially as described.

46. In a car of the class described, the combination of a supporting bottom frame, a drop-floor section hinged in said frame, means supporting said section and contacting with its under surface and movable back and forth between its hinged edge and its swinging edge, and regulating the opening by the extent of its movement, means for operating the said supporting means, and means for arresting said operating means at an intermediate position.

47. In a car of the class described, the combination of a supporting bottom frame, a drop-floor section hinged in said frame, means supporting the swinging side of the section and contacting with its under surface and movable from the hinged side toward the swinging side to close the section and regulating the door by the position to which the supporting means are moved, and means for operating said supporting means.

48. In a car of the class described, the combination of a supporting bottom frame, a drop-floor section hinged to a longitudinal member of the frame, means supporting said section and contacting with its under surface and movable toward and from said longitudinal frame member in opening and closing said section, said means being sustained in the cross-framing of the bottom, and means for operating said supporting means.

49. In a car of the class described, the combination of a supporting bottom frame, a drop-floor section hinged to a central longitudinal member of the frame and opening at its outer edge, means

supporting said section and contacting with its under surface and movable outward from said frame member inclosing the section, said means being sustained in the cross-framing in the bottom, and means for operating said supporting means.

50. The combination with the hinged dumping-door of a flat-bottom car, of means for supporting the door in its closed and open positions, such means consisting of a rigid bar located under and extending lengthwise across the door and movable toward the opening side of the door to close the same and toward the hinged side to open it, supports for said bar at each end of the door, and means for controlling said bar.

51. The combination with a hinged dumping-door of a flat-bottom car, of means for supporting the door in its closed and open positions, such means consisting of a rigid bar located under and extending lengthwise across the door and movable toward the opening side of the door to close the same and toward the hinged side to open it, supports for said bar at each end of the door, and means for controlling said bar adapted to hold it rigidly in intermediate position.

52. The combination with a hinged dumping-door of a flat-bottom car, of means for supporting the door in its closed and open positions, such means consisting of a rigid bar having a bearing contact with the under side of the door and extending lengthwise across it, and movable toward the hinged side of the door to open it, and toward the opening side to close it, supports for said bar at each end of the door, and means for controlling the bar.

53. The combination with a hinged dumping-door of a flat-bottom car, of means for supporting the door in its closed and open positions, such means consisting of a rigid bar extending lengthwise across the door and having a bearing contact with it at each end, said bar being movable toward the opening side of the door to close it and toward the hinged side to open it, supports for said bar at each end of the door, and means for controlling the bar.

54. The combination with a hinged dumping-floor section, of a rigid bar extending across the section and movable transversely of the section and always in bearing contact therewith, means for controlling said bar in its different positions, and supports for the bar located outside the section.

55. The combination with a hinged dumping-floor section, of a rigid bar extending across the section and movable transversely of the section and always in bearing contact therewith, means for controlling said bar in its different positions, and ways outside the section on which said bar rests and travels.

56. In a dump-car, the combination of a car-frame, a dumping-door pivotally mounted in such car-frame movable to open and closed position, a shaft reciprocatingly mounted beneath and supporting such door in both open and closed positions, and means for supporting the shaft and thereby the dumping-door in both open and closed positions.

57. In a dump-car, the combination of a car-frame, dumping-doors pivotally mounted in such car-frame movable to open and closed positions, a shaft reciprocatingly mounted beneath and supporting such doors, and supporting mechanism having upwardly and outwardly inclined supporting-surface portions upon which such shaft is mounted and provided with looped portions at the lower end of such inclined portions for limiting the movement of the shaft and thereby the dumping-doors.

58. In a car, the combination of a car-frame having longitudinal sill mechanism, end sills and transverse beams between such end sills, a dumping-door secured to the car-frame movable to open and closed positions, and dumping-door-supporting mechanism supported by such transverse beams said supporting mechanism being movable longitudinally of the door.

59. In a car, the combination of a car-frame having longitudinal sill mechanism and transverse beams mounted between the ends of the car-frame, dumping-doors secured to such car-frame movable to open and closed positions, and door-operating mechanism mounted in such transverse beams and connected with the dumping-doors said supporting mechanism being movable longitudinally of the door.

60. In a car, the combination of a car-frame having transverse beams, dumping-doors secured to such car-frame movable to open and closed positions, and door supporting and operating shaft mechanism beneath the dumping-doors and supported by the transverse beams said supporting mechanism being movable longitudinally of the door.

61. In a car, the combination of a car-frame having transverse beams mounted between the ends of the car, dumping-doors secured to the car-frame movable to open and closed positions, shaft mechanism mounted in such transverse beams beneath the dumping-doors and operatively connected therewith for opening and closing the doors and supporting them in closed position, and means for operating such shaft mechanism said shaft mechanism being movable longitudinally of the door.

62. In a car, the combination of a car-frame having longitudinal sill mechanism, end sills and transverse beams secured to such longitudinal sills and extending transversely of the car, dumping-doors mounted in the car-frame on opposite sides of its longitudinal center movable to open and closed positions and having their inner edges hinged to the car-frame forming flat-bottom portions for the car when in closed position, and door operating and supporting shafts mounted in the transverse beams beneath the dumping-doors and operatively connected therewith said shafts being movable longitudinally of the door.

63. In a car, the combination of a car-frame having transverse beams between the ends thereof, dumping-doors secured to such car-frame movable to open and closed positions, and shafts extending longitudinally of the car supported by such transverse members of the car-frame and in operative engagement with the swinging sides of the dumping-doors outside their longitudinal centers for supporting them.

12,448. **APPARATUS FOR STERILIZING LIQUIDS.** John C. Miller, Canton, Ohio, assignor, by mesne assignments, to The Miller Pasteurizing Machine Co., Canton, Ohio, a Corporation of New Jersey. Filed July 17, 1903. Serial No. 166,065. Original No. 678,893, dated July 23, 1901.

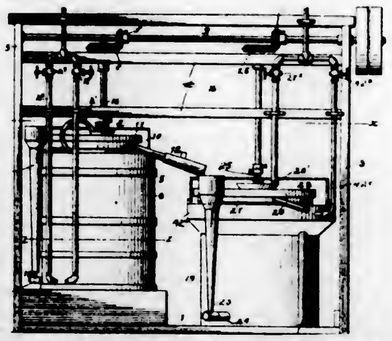

Claim.—1. In an apparatus of the character described, the combination with a heater comprising a tub, two cylinders placed within the tub one within the other, one of said cylinders being provided with a feed-screw which works against the other cylinder, of a steam or hot-water pipe located within the tub exterior to the cylinders, and an injector located in the tub to eject the water therefrom and inject it into the innermost cylinder whereby a uniform temperature is maintained between the two cylinders, substantially as set forth.

2. In an apparatus of the character described, the combination with a heater comprising a tub and two cylinders placed within the tub one within the other, one of said cylinders being provided with a feed-screw which works against the other cylinder, of a steam or hot-water pipe located within the tub exterior to the cylinders, and an injector located within the tub to eject the water therefrom and inject it into the innermost cylinder whereby a uniform temperature is maintained between the two cylinders, substantially as set forth.

3. In an apparatus of the character described, the combination with a heater comprising a tub and two cylinders placed within the tub one within the other, of a steam or hot-water-discharge pipe located in the bottom of the tub exterior to the cylinders, and an injector leading from the tub to the innermost cylinder, substantially as set forth.

4. In an apparatus of the character described, the combination with a heater comprising a tub and two cylinders placed within the tub one within the other, of a steam or hot-water coil located in the bottom of the tub exterior to the cylinders, a vertical pipe extending downwardly and in close proximity to the bottom of the innermost cylinder, and an injector leading from the tub and adapted to discharge into the vertically-disposed pipe within the cylinder, substantially as set forth.

5. The combination of a cooler comprising an inner and outer cylinder, the inner cylinder being provided with a feed-screw to engage the inner wall of the outer cylinder, the outer cylinder being provided with an external tortuous water-passage and with an upper trough which communicates with the space formed between the two cylinders, and the inner cylinder being provided with a lateral flange or guard extending over said trough, a second trough arranged around the outer cylinder and extending laterally beyond the first-named trough and adapted to receive the overflow from the inner cylinder, a water-pipe communicating with the inner cylinder and the tortuous passage of the outer cylinder, a pipe communicating with the lower end of the tortuous passage and the last-named trough, substantially as set forth.

6. In a mechanism for treating milk and other liquids, the combination of an outer water-holding vessel having a thin wall on the outer side of a milk-passage, a duct leading milk to the bottom of the said milk-passage, a trough or receptacle for the milk at the upper end of the said passage, an inner rotary vessel adapted to hold a body of water and having a thin wall forming the inner side of the milk-passage, and a shield carried by the said inner vessel and extending outward over the said milk-trough and turned down to leave its outer edge in vertical lines which are outside of the vertical lines of the milk-trough and adapted to direct the overflow from the inner water-holding vessel into the outer one, substantially as set forth.

7. In an apparatus for treating milk, the combination of an inner water-holding vessel, a second vessel, the adjacent walls of said vessels forming a relatively thin passage-way for the milk between them, and the said inner vessel being adapted to hold a body of water normally cut off from the outer vessel, means for rotating one of said vessels relatively to the other one, an outer water-holding vessel arranged to hold a body of water around said second vessel, a water-heater in one of said water-holding vessels adapted to heat the water therein approximately to a predetermined temperature, and a water-heater adapted to continuously supply heated water to the second water-holding vessel of substantially the same temperature as that of the heated water in the first water-holding vessel.

8. In an apparatus for treating milk, the combination of an inner water-holding vessel and an outer water-holding vessel with their adjacent walls arranged to form a relatively thin passage-way for the milk between them, the inner water-holding vessel being adapted to hold a body of water normally cut off from the said body of water in the said outer water-holding vessel, a water-heater in one of said vessels adapted to raise the temperature of the water therein to the desired degree, a water-heater for the other vessel adapted to continuously deliver heated water to it from the first vessel, and means for rotating one of said vessels relatively to the other one.

9. In an apparatus for treating milk, the combination of an inner water-holding vessel, an outer water-holding vessel, the inner wall of the latter and the outer wall of the fomer being arranged to provide a relatively thin passage-way for the milk between them, the said inner water-holding vessel being adapted to hold a body of water normally cut off from the body of water in the outer water-holding vessel, means for continuously supplying water to the inner water holding vessel near the bottom thereof, means for continuously supplying water to the outer water-holding vessel, means for feeding the milk to the bottom of said milk passage-way, means for collecting the milk at the top of said milk passage-way, and means for rotating one of said water-holding vessels relatively to the other one, substantially as set forth.

10. In an apparatus for pasteurizing or sterilizing milk without injuring its cream-giving qualities, the combination of means for causing the milk to be treated to travel in a relatively attenuated stream or film, means for suddenly and uniformly heating all of the particles of said milk while it is so traveling, means for causing said milk after it has been heated to flow in a second relatively attenuated stream or film, means for immediately directing the said heated milk from the delivery-point of the said first stream or film to the receiving-point of the said second stream or film, and means for suddenly and continuously without pause removing the heat from the milk while it is traveling in said second stream or film.

11. In an apparatus for treating milk to pasteurize or sterilize it without injuring its cream-giving qualities, the combination of two closely-adjacent heat-conducting walls arranged to form a relatively thin passage-way for the milk between them, means for substantially uniformly heating said walls to the same desired degree, means for introducing the milk to be treated between said walls, means for causing it to flow rapidly therebetween to the point of its delivery from said passage-way, whereby all of the milk particles are suddenly and uniformly heated, a cooler having a heat-conducting surface, means for immediately directing the uniformly-heated milk from the delivery-point of said heated-milk passage-way to the said heat-conducting surface of the cooler, means for causing the milk to travel along said cooling-surface in a relatively attenuated stream or film, and means for maintaining the said cooling-surface at the necessary degree of temperature to suddenly and continuously without pause remove the said heat from all of the particles of the milk and to reduce the temperature of the milk to the desired degree.

12. In an apparatus for treating milk to pasteurize or sterilize it without injuring its cream-giving qualities, the combination of two closely-adjacent heat-conducting walls arranged to form a relatively thin passage-way for the milk between them, means for substantially uniformly heating said walls to the same desired degree, means for introducing the milk to be treated between said walls, means for causing it to flow rapidly therebetween in a circuitous path to the point of its delivery from said passage-way, whereby all of the milk particles are suddenly and uniformly heated, a cooler having a heat-conducting surface, means for immediately directing the uniformly-heated milk from the delivery-point of said milk passage-way to the said heat-conducting surface of the cooler, means for causing the milk to travel along said cooling-surface in a relatively attenuated stream or film, and means for maintaining the said cooling-surface at the necessary degree of temperature to suddenly and continuously without pause remove the said heat from all of the particles of the milk and to reduce the temperature of the milk to the desired degree.

13. In an apparatus for pasteurizing or sterilizing milk without injuring its cream-giving qualities, the combination of a pair of heat-conducting walls arranged to form a relatively thin passage-way for the milk to be treated between them, means for substantially uniformly heating the said walls to the same desired degree, means for introducing the milk to be treated between said walls, means for causing the milk to flow rapidly therebetween to the point of its delivery from said passage-way whereby all of the particles are suddenly and uniformly heated, a second pair of heat-conducting walls arranged to form a second relatively thin passage-way for the milk between them, means for cooling each of said last-described walls to the desired temperature, means for conducting the heated milk from the said first milk passage-way immediately to the receiving-point of the second milk passage-way, and means for causing the milk to flow rapidly and continuously through the said second passage-way, whereby the heat is suddenly and continuously removed from all of its particles.

14. In an apparatus for pasteurizing or sterilizing milk without injuring its cream-giving qualities, the combination of a pair of heat-conducting walls arranged to form a relatively thin passage-way for the milk to be treated between them, means for substantially uniformly heating the said walls to the same desired degree, means for introducing the milk to be treated between the said walls, means for causing the particles of milk to flow rapidly in a circuitous path therebetween to the point of their delivery from said passage-way whereby all of its particles are suddenly and uniformly heated, a second pair of heat-conducting walls arranged to form a second relatively thin passage-way for the milk between them, means for cooling each of said last-described walls to the desired temperature, means for conducting the heated milk from the said first milk passage-way immediately to the receiving-point of the said second milk passage-way, and means for causing the milk to flow rapidly and continuously through the said second passage-way whereby the heat is suddenly and continuously without pause removed from all of said particles.

15. In an apparatus for pasteurizing or sterilizing milk without injuring its cream-giving qualities, the combination of an inner water-holding cylinder, an outer cylinder, the adjacent walls of said cylinders forming a relatively thin passage-way for the milk between them, means for holding a body of water around said outer cylinder, means for rotating one of said cylinders relative to the other one, means for maintaining the water around the walls of said milk passage-way heated to substantially the same temperature, means for supplying milk from a relatively high level to the bottom of said milk passage-way, means for collecting it at the top thereof, a second pair of concentric cylinders having their adjacent walls arranged to form a relatively thin passage-way for the milk between them, said passage-way being arranged at a lower level than the level of the first-described milk passage-way, means for rotating one of said last-described cylinder-walls relative to the other one, means for supplying cooling medium of the desired temperature to each of said walls, and means for immediately directing the heated milk collected at the top of the first-described milk passage-way to the bottom of said cooling passage-way.

12,449. **ELECTRICALLY-PROPELLED VEHICLE.** Russell Thayer, Philadelphia, Pa. Filed July 20, 1905. Serial No. 271,804. Original No. 704,080, dated July 5, 1904.

Claim.—1. An automobile provided with an electric motor and a storage battery; having wheels constructed and arranged to traverse the tracks of a railway system; with a trackless road-bed independently of said system; a trolley-pole arranged to engage said main; a contact-wheel arranged to engage

37,804.

37,807. **EARTHENWARE CLOSET-BOWL.** Edward T. Webster, Milwaukee, Wis. Filed Nov. 17, 1905. Serial No. 287,902. Term of patent 14 years.

Claim.—1. An automobile provided with an electric motor and a storage battery; having wheels constructed and arranged to traverse the tracks of a railway supply system, with said motor in operative connection with said system, and, to traverse a trackless road-bed, independently of said system, with said motor in operative connection with said battery, substantially as set forth.

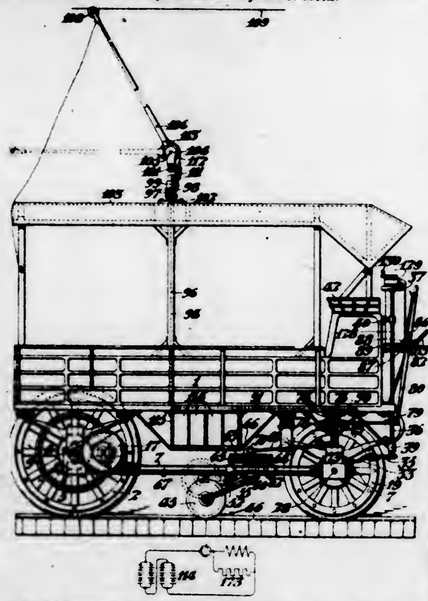

2. An automobile provided with an electric motor and a storage battery, having wheels constructed and arranged to traverse the tracks of a railway supply system, with said motor in operative connection with said system and said battery connected to be charged thereby, and, to traverse a trackless road-bed, independently of said system, with said motor in operative connection with said battery, substantially as set forth.

3. An automobile provided with an electric motor and a storage battery, having wheels constructed and arranged to traverse the tracks of a railway supply system, with said motor in operative connection with said system, and, to traverse a trackless road-bed, independently of said system, with said motor in operative connection with said battery; and, manually-operative means arranged to contemporaneously transfer the operative circuit connections of said motor from said system to said battery, substantially as set forth.

4. In an automobile provided with an electric motor and a storage battery; constructed and arranged to traverse the railway-tracks of a system comprising an overhead-trolley supply-main, and to traverse a trackless road-bed independently of said trolley system; a trolley-pole arranged to engage said main; and, adjustable means arranged to electrically connect said motor with the railway-tracks, substantially as set forth.

5. In an automobile provided with an electric motor and a storage battery; constructed and arranged to traverse the railway-tracks of a system comprising an overhead-trolley supply-main; and to traverse a trackless road-bed independently of said trolley system; a trolley-pole arranged to engage said main; and, an adjustable contact-wheel arranged to electrically connect said motor with the railway-tracks, substantially as set forth.

6. An automobile provided with an electric motor and a storage battery, having wheels constructed and arranged to traverse the tracks of a railway system comprising an overhead-trolley supply-main, and, to traverse a trackless road-bed independently of said trolley system; a trolley-pole arranged to engage said main; and, cooperatively-related means arranged to electrically connect said motor with said overhead main and railway-tracks, substantially as set forth.

7. In an automobile provided with an electric motor and a storage battery; constructed and arranged to traverse the railway-tracks of a system comprising an overhead supply-main, and to traverse a trackless road-bed independently of said system; a trolley-pole arranged to engage said main; a contact-wheel arranged to engage said tracks; and, manually-operative means to raise and lower said trolley-pole and contact wheel, substantially as set forth.

8. In an automobile provided with an electric motor and a storage battery; constructed and arranged to traverse the railway-tracks of a system comprising an overhead supply-main, and to traverse a trackless road-bed independently of said system; a trolley-pole arranged to engage said main; a contact-wheel arranged to engage said tracks; and, manually-operative means connecting said trolley-pole and contact-wheel arranged to contemporaneously adjust them, substantially as set forth.

9. An automobile provided with an electric motor and a storage battery, having wheels constructed and arranged to traverse the tracks of a railway supply system, with said motor in operative connection with said system, and said battery connected to be charged thereby and, to traverse a trackless road-bed, independently of said system, with said motor in operative connection with said battery; an auxiliary resistance; and means to connect said resistance in circuit with said battery during the charging operation and to eliminate said resistance from said circuit during the discharging operation, substantially as set forth.

10. An automobile provided with wheels constructed and arranged to traverse the tracks of a railway supply system, and to traverse a trackless road-bed independently of said system; a storage battery; a plurality of electric motors; means arranged to alternately effect the operation of said motors in connection with the supply-mains of said system and in connection with said battery, substantially as set forth.

11. An automobile provided with wheels constructed and arranged to traverse the tracks of a railway supply system, and to traverse a trackless road-bed, independently of said system; a storage battery; two electric motors; means arranged to alternately effect the operation of said motors in connectionwith the supply-mains of said system and in connection with said battery, substantially as set forth.

12. In an automobile constructed and arranged to traverse the railway-tracks of an overhead-trolley supply system and to traverse a trackless road-bed independently of said trolley system; a storage battery; two electric motors; and, a manually-operative controller, comprising cooperative switching means arranged to alternately effect the operation of said motors, respectively in connection with the supply-mains of said system and in connection with said battery, substantially as set forth.

13. In an automobile constructed and arranged to traverse the railway-tracks of an overhead-trolley supply system and to traverse a trackless road-bed independently of said system; a storage battery; two electric motors, respectively constructed and arranged to operate at different voltages; and means arranged to alternately effect the operation of said motors, respectively in connection with the supply-mains of said system and in connection with said battery, substantially as set forth.

14. In an automobile constructed and arranged to traverse the railway-tracks of an overhead-trolley supply system and to traverse a trackless road-bed independently of said system; a storage battery; two electric motors having alined shafts respectively in operative relation with opposite supporting-wheels of said vehicle; differential gearing connecting said shafts; and, means arranged to alternately effect the operation of said motors, respectively in connection with the supply-mains of said system and in connection with said battery, substantially as set forth.

15. In an automobile constructed and arranged to traverse the railway-tracks of an overhead-trolley supply system and to traverse a trackless road-bed independently of said system; a wheel on said vehicle comprising a metallic flange arranged to make electrical contact with one of said railway-tracks; and, a tire on said wheel arranged to insulate it from a trackless road-bed traversed by said vehicle, substantially as set forth.

DESIGNS.

37,804. SOCIETY BADGE OR BUTTON. KASIMIR STACHOWSKI, Chicago, Ill. Filed Nov. 22, 1905. Serial No. 288,004. Term of patent 7 years.

37,804.

Claim.—The ornamental design for a society badge or button, as shown.

37,805. BRACELET. JOHN BENNETT, Attleboro, Mass., assignor to Electric Chain Company, a Corporation of Maine. Filed Dec. 20, 1905. Serial No. 292,671. Term of patent 3½ years.

Claim.—The ornamental design for a bracelet, as shown.

37,806. TRADING-STAMP. SIEGMUND HERTZMANN, San Francisco, Cal., assignor to Mission Gold Bond Co., San Francisco, Cal., a Corporation of California. Filed Dec. 19, 1905. Serial No. 292,517. Term of patent 7 years.

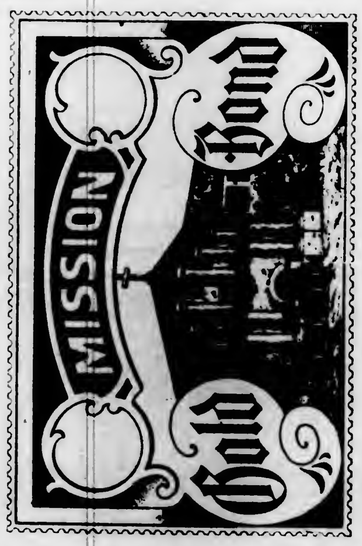

Claim.—The ornamental design for a trading-stamp, as shown.

37,807. EARTHENWARE CLOSET-BOWL. EDWARD T. WEBSTER, Milwaukee, Wis. Filed Nov. 17, 1905. Serial No. 287,902. Term of patent 14 years.

Claim.—The ornamental design for an earthenware closet-bowl, as shown.

37,808. REFLECTOR FOR ARTIFICIAL LIGHTS. OTIS A. MYGATT, New York, N. Y. Filed Dec. 5, 1903. Serial No. 183,975. Term of patent 14 years.

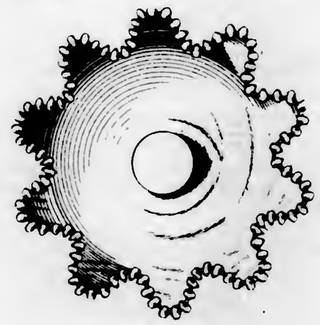

Claim.—The ornamental design for a reflector, as shown and described.

37,809. ILLUMINATOR. OTIS A. MYGATT, New York, N. Y. Filed July 14, 1905. Serial No. 269,734. Term of patent 14 years.

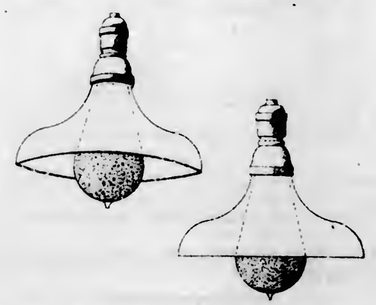

Claim.—The ornamental design for an illuminator, as shown and described.

87,810. STEERING-WHEEL. WILLIAM L. ADAMS, South Portland, Me. Filed Nov. 18, 1905. Serial No. 288,080. Term of patent 7 years.

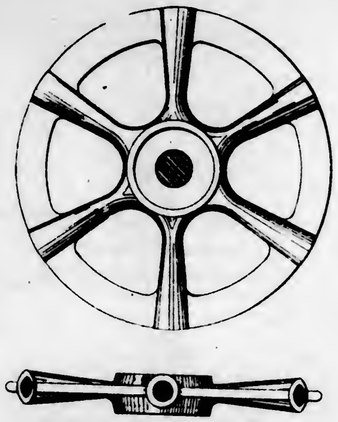

Claim.—The ornamental design for a steering-wheel, as shown.

87,811. CLAY BUILDING-BLOCK. FRANK J. MERKLE, Zanesville, Ohio. Filed Aug. 14, 1905. Serial No. 274,233. Term of patent 14 years.

Claim.—The ornamental design for a clay building-block as shown.

87,812. REFLECTOR OF PRISMATIC GLASS. OTIS A. MYGATT, New York, N. Y. Filed July 15, 1905. Serial No. 269,894. Term of patent 14 years.

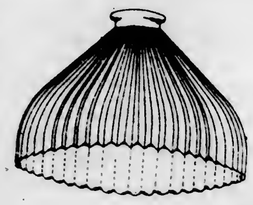

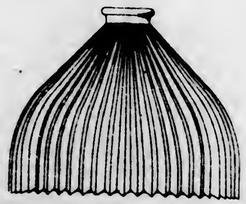

Claim.—The ornamental design for a reflector of prismatic glass, as shown and described.

87,813. REFLECTOR OF PRISMATIC GLASS. OTIS A. MYGATT, New York, N. Y. Filed Aug. 2, 1905. Serial No. 272,443. Term of patent 14 years.

87,813.

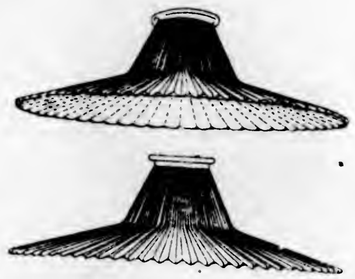

Claim.—The ornamental design for a reflector of prismatic glass, as shown and described.

87,814. RUG. ADOLPH PETZOLD, Philadelphia, Pa., assignor to John H. Bromley and Edward Bromley, copartners trading as John Bromley & Sons, Philadelphia, Pa. Filed Dec. 30, 1905. Serial No. 294,023. Term of patent 3½ years.

Claim.—The ornamental design for a rug, as shown.

87,815. RUG. ADOLPH PETZOLD, Philadelphia, Pa., assignor to John H. Bromley and Edward Bromley, copartners trading as John Bromley & Sons, Philadelphia, Pa. Filed Dec. 30, 1905. Serial No. 294,023. Term of patent 3½ years.

Claim.—The ornamental design for a rug, as shown.

87,816. RUG. ADOLPH PETZOLD, Philadelphia, Pa., assignor to John H. Bromley and Edward Bromley, copartners trading as John Bromley & Sons, Philadelphia, Pa. Filed Dec. 30, 1905. Serial No. 294,024. Term of patent 3½ years.

Claim.—The ornamental design for a rug, as shown.

TRADE-MARKS

PUBLISHED FEBRUARY 6, 1906.

The following trade-marks have been adjudged entitled to registration under the act of February 20, 1905, and are published in compliance with section 6 of said act. Said section provides:

"Any person who believes he would be damaged by the registration of a mark may oppose the same by filing notice of opposition, stating the grounds therefor, in the Patent Office within thirty days after the publication of the mark sought to be registered, which said notice of opposition shall be verified by the person filing the same before one of the officers mentioned in section two of this act. If no notice of opposition is filed within said time the Commissioner shall issue a certificate of registration therefor, as hereinafter provided for."

Marks which are stated to have been "Used ten years" are registrable under the last proviso of section 5 of said act, which is as follows:

"And provided further, That nothing herein shall prevent the registration of any mark used by the applicant or his predecessors, or by those from whom title to the mark is derived, in commerce with foreign nations or among the several States, or with Indian tribes, which was in actual and exclusive use as a trade-mark of the applicant or his predecessors from whom he derived title for ten years next preceding the passage of this act."

Section 14 of said act provides for the following fee:

"On filing notice of opposition to the registration of a trade-mark, ten dollars."

SER. No. 246. WHISKY. W. H. JONES AND CO., Boston, Mass. Filed Apr. 3, 1905. Used ten years.

HANOVER

The word "HANOVER."

SER. No. 290. COFFEE. THE H. G. TOMBLER GROCERY CO., Easton, Pa. Filed Apr. 3, 1905.

The words "BLUE KNOT" arranged on a background consisting of the representation of a shield of solid color draped with a ribbon forming a double bow or knot at the top.

SER. No. 416. ALE. THE ROBERT SMITH ALE BREWING COMPANY, Philadelphia, Pa. Filed Apr. 5, 1905.

SER. No. 416.

TIGER HEAD

The fanciful title "TIGER HEAD" and the representation of a tiger's head.

SER. No. 647. CHOCOLATES, BONBONS, AND SIMILAR CANDIES. RUSSELL & CO., Cambridge, Mass. Filed Apr. 6, 1905.

Russell's Original OLD FASHIONED

The word "RUSSELL'S" written in script and upwardly inclined, the final "s" having a long wide flourish. An ornamental border surrounds this word consisting of a series of dots and circles, and within the border, following the word "RUSSELL'S," are the words "OLD FASHIONED," while within the upper right-hand corner of said border is the word "ORIGINAL" surmounting a scroll ornament.

SER. No. 899. REMEDIES FOR THE CURE OF BLOOD DISEASES AND RHEUMATISM. CHAS. B. MUNFORD, Kansas City, Mo. Filed Apr. 10, 1905. Used ten years.

SER. No. 899.

The words "MUMFORD'S UNITED STATES NAVY" and a picture representing a sign-board bearing the words and character "UNITED STATES NAVY BLOOD & RHEUMATIC REMEDY." and a man on crutches with one foot bandaged and apparently reading the sign. Diagonally across the picture and the words "UNITED STATES NAVY," above said picture, is printed a facsimile of the signature of the proprietor—viz., "CHAS. B. MUMFORD."

SER. No. 1,046. OVERALLS, COATS, AND TROUSERS. RED DIAMOND CLOTHING CO., St. Louis, Mo. Filed Apr. 10, 1905.

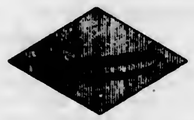

The word "DIAMOND" in script upon a diamond-shaped figure printed in red.

SER. No. 1,115. WATCHES. ELGIN NATIONAL WATCH COMPANY, Elgin and Chicago, Ill. Filed Apr. 11, 1905. Used ten years.

ELGIN WATCH CO.

The words and abbreviation "ELGIN WATCH CO."

SER. No. 1,151. TOOL-STEEL AND STEEL BARS, RODS, AND SHEETS. HAWKRIDGE BROS., Boston, Mass. Filed Apr. 11, 1905.

The pictorial representation of a hawk perched on a ridge with water and distant land in the background.

SER. No. 1,166. FLEXIBLE WATERPROOF FABRIC FOR USE AS ROOFING, DAMP COURSES, AND OTHER PURPOSES. THE STANDARD PAINT COMPANY, New York, N. Y. Filed Apr. 11, 1905. Used ten years.

RUBEROID

The word "RUBEROID."

SER. No. 1,196. BOLA...ES. BRAUN BROS., Baltimore, Md. Filed Apr. 12, 1905. Used ten years.

SER. No. 1,196.

A red disk upon which is printed the words "No. 1 PORTO RICO MOLASSES," associated with the words "WM. M. POWELL & CO. BALTIMORE, MD." arranged in a circle around the aforesaid words, being printed in stenciled letters of plain type.

SER. No. 1,207. BUTTERIN OR OLEOMARGARIN. BRAUN & FITTS, INC., Chicago, Ill. Filed Apr. 12, 1905. Used ten years.

GILT EDGE

The words "GILT EDGE."

SER. No. 1,222. WHISKY. MICHAEL F. MCDONOUGH, Philadelphia, Pa. Filed Apr. 12, 1905.

A player standing by a wicket in the attitude of a bowler, a circle substantially encompassing the player, and a bat on either side of the circle.

SER. No. 1,256. CANNED FRUITS AND VEGETABLES. PRATT-LOW PRESERVING CO., San Jose, Cal. Filed Apr. 12, 1905.

Crossed horizontal and vertical arms, each of red color and having enlarged keystones at opposite ends, and upper and lower segments of a contrasting color extending across the keystones of the vertical arm and having their ends extending to the keystones of the horizontal arm.

SER. No. 1,337. VERTICAL-PLANE CAR-COUPLERS. THE NATIONAL MALLEABLE CASTINGS COMPANY, Cleveland, Ohio. Filed Apr. 13, 1905.

ATLAS

The word "ATLAS."

SER. No. 1,339. VERTICAL-PLANE CAR-COUPLERS. THE NATIONAL MALLEABLE CASTINGS COMPANY, Cleveland, Ohio. Filed Apr. 13, 1905.

CLIMAX

The word "CLIMAX."

SER. No. 1,566. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio. Filed Apr. 15, 1905.

THE STAGE

The words "THE STAGE."

SER. No. 1,614. WHITE LEAD. WETHERILL & BROTHER, Philadelphia, Pa. Filed Apr. 15, 1905. Used ten years.

The title "EAGLE," the representation of an eagle with outstretched wings, an olive branch in his beak, a torch in one talon, and a spray of leaves in the other talon. Above the representation of the eagle is the representation of a number of stars. Associated with the above are the words "SECOND QUALITY WHITE LEAD WETHERILL & BROTHER, MANUFACT'RS, PHILADELPHIA," and a circular border surrounding the mark.

SER. No. 1,748. CIGARETTES. THE MILLER, DUBRUL & PEYERS MFG. CO., Cincinnati, Ohio. Filed Apr. 15, 1905.

The word "BROWNIE" and the representation of brownies smoking cigarettes arranged on a panel.

SER. No. 1,781. RAZORS. CHALLENGE CUTLERY CORP., Bridgeport, Conn. Filed Apr. 15, 1905.

The word "SPEED," the letters "W. B." with a period after each letter, and the representation of a running hare.

SER. No. 1,929. WHEAT-FLOUR. THE KENNEWEG COMPANY, Cumberland, Md. Filed Apr. 17, 1905.

The word "IVORY," associated with the words "THE KENNEWEG CO. FANCY PATENT CUMBERLAND, MD." and the letters and dots "·X· X· X· X·" and figures "241," all inclosed in an ornamental border.

SER. No. 1,967. BEARING METAL. THE FAIRBANKS CO., New York, N. Y. Filed Apr. 17, 1905. Used ten years.

The arrangement in concentric circles of the words "FAIRBANKS" and "BEARING" arranged between the circles and with the word "METAL" inclosed within the inner circle.

SER. No. 2,020. SALVES. WONDERFUL DREAM SALVE CO., Detroit, Mich. Filed Apr. 17, 1905.

The portrait of Hannah D. McDonald and her facsimile signature, associated with the words "WONDERFUL DREAM" in the arc of a circle following the outline of the circular border, which incloses the whole trade-mark.

SER. No. 2,101. ELECTRIC BATTERIES. LECLANCHÉ BATTERY CO., New York, N. Y. Filed Apr. 18, 1905. Used ten years.

The representation of a triumphal arch bearing the words "QONDA" and "TRIUMPH OF THE LECLANCHÉ BATTERY CO." and under which is passing a procession, the arch, as well as the banners carried in the procession, bearing also words and clauses descriptive of the goods and their merits, and people viewing said procession.

SER. No. 2,349. REMEDIES, AS TRAS, &c., FOR THE CURE AND ALLEVIATION OF LIVER AND KIDNEY AFFECTIONS, HEADACHE, COUGHS, DIARRHEA, CHOLERA, CHILLS AND FEVER, LA GRIPPE, AND CONSTIPATION. HENRY A. BLAIR, San Antonio, Tex. Filed Apr. 21, 1905.

The words "MOTHER SUPERIOR," associated with the fanciful portrait of a woman wearing the conventional garb of a Mother Superior. At one side of the mark is arranged a vertical strip of red and at the other side a vertical strip of green.

SER. No. 2,602. LIQUID MEDICINE TO BE TAKEN INTERNALLY AS A CURE FOR ORGANIC AND NERVOUS DISEASES. THE GIN-SENG-GIN COMPANY, Cincinnati, Ohio. Filed Apr. 21, 1905.

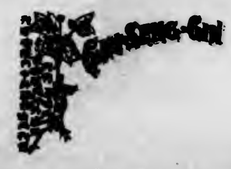

The picture of the root, stalk, and flower of a plant, and simulations of Chinese characters, accompanied by the hyphenated syllables "GIN-SENG-GIN."

SER. No. 2,685. TAPS, DIES, REAMERS, SCREW-PLATES, DIE-STOCKS, AND TAP-WRENCHES. THE J. M. CARPENTER TAP & DIE CO., Pawtucket, R. I. Filed Apr. 21, 1905.

The letter "C," associated with a figure approximating the letter "V," the "C" being placed between the arms of the "V."

SER. No. 2,710. SHIRTS, SHIRT-WAISTS, AND BLOUSES. HUTCHINSON, PIERCE & CO., New York, N. Y. Filed Apr. 23, 1905. Used ten years.

STAR

The word "STAR" and a representation of a star, used singly or together.

SER. No. 2,862. FLAVORING EXTRACTS AND PREPARATIONS. BAKER EXTRACT COMPANY, Portland, Me., and Springfield, Mass. Filed Apr. 24, 1905.

The representation of a bivalve-shell of an approximately circular contour and having a scalloped edge.

SER. No. 2,878. HATS, CAPS, AND BONNETS. COLLINS & FAIRBANKS COMPANY, Boston, Mass. Filed Apr. 24, 1905. Used ten years.

A scroll or ribbon crossed upon itself and with its ends reversed.

SER. No. 2,904. SOLID-GOLD FINGER-RINGS. PECKHAM SEAMLESS RING M'F'G. CO., New York, N. Y. Filed Apr. 24, 1905.

The letter "S" inclosed within a diamond-shaped figure.

SER. No. 3,168. PHOTOGRAPHIC DRY-PLATES. HAMMER DRY PLATE COMPANY, St. Louis, Mo. Filed Apr. 26, 1905.

The representation of a hammer, the words and abbreviation "HAMMER DRY PLATE CO." appearing upon the handle.

SER. No. 3,165. WHISKY. THE UNION DISTIL. CO., Cincinnati, Ohio. Filed Apr. 26, 1905.

The picture of a yacht race, comprising a large yacht in the center with sails set and other yachts and vessels following closely in the rear, all inclosed in a circle or panel and associated or in combination with the words "OLD YACHT CLUB" arranged in the form of an arc above the picture.

SER. No. 3,354. WHISKY. BLUTHENTHAL & BICKART, Atlanta, Ga. Filed Apr. 26, 1905. Used ten years.

The words "MARK ROGERS" and the portrait of the head of an old man having a white beard and wearing a slouch hat holding a whisky-glass in one of his hands and inclosed in a circle.

SER. No. 3,550. COCOA-OATMEAL PREPARATIONS. M. MICHAELS & SONS, New York, N. Y. Filed Apr. 29, 1905.

The word "COCOVENA."

SER. No. 3,410. WHISKY. H. WEBSTER COMPANY, New York, N. Y. Filed Apr. 26, 1905.

The words "KENTUCKY FAVORITE" printed above upon a curved panel and also around the representation of a horseshoe, which representation of a horseshoe, together with the figures "1869," are printed upon a banner bordered and decorated with elaborate scrollwork and similar ornamentation, the banner being suspended above the representation of a barrel having the representation of a horseshoe and the words "KENTUCKY FAVORITE" upon its head and resting upon a pedestal in the shape of a rectangular parallel-epipedon with scroll-shaped supports bearing the words "PURE WHISKY," beneath which is the representation of a vase containing a spray of leaves and having a scarf attached to either side, the whole being inclosed in a rectangular border.

SER. No. 3,612. BOOTS, SHOES, AND SLIPPERS OF LEATHER OR TEXTILE MATERIAL OR BOTH AND SOLES THEREOF. ERWIN C. BURT COMPANY, New York, N. Y. Filed Apr. 29, 1905. Used ten years.

BURT

The word "BURT."

SER. No. 3,670. BOOK-PAPER, NEWSPAPER, WRAPPING-PAPER, PASTEBOARD, AND OTHER PAPERS MADE WHOLLY OR PRINCIPALLY FROM WOOD-PULP. INTERNATIONAL PAPER COMPANY, New York, N. Y. Filed Apr. 29, 1905.

A circular landscape, in the foreground of which appears a spruce-tree and in the background other spruce-trees and a hill, the picture being surrounded by a wreath tied at the bottom with a ribbon. Said ribbon is inscribed with the words "INTERNATIONAL PAPER CO.," and concentric circles around the wreath.

SER. No. 3,979. SALAD-DRESSING AND SAUCES. E. R. DURKEE & CO., New York, N. Y. Filed May 3, 1905.

The word "CHALLENGE."

SER. No. 3,785. WHISKY. THE J. J. DOUGLAS CO., Louisville, Ky. Filed May 1, 1905. Used ten years.

A rectangular panel bearing the name and words "JIM DOUGLAS HAND MADE SOUR MASH WHISKEY" and a central circular figure inclosing the words "JIM DOUGLAS HAND MADE SOUR MASH OLD STYLE KENTUCKY WHISKEY," surrounded by an annular band on which appear the words "SUPERIOR QUALITY" with rays radiating from said band. In connection with the above is also used the name and place of business of the applicant, "THE J. J. DOUGLAS CO. INCORPORATED LOUISVILLE KY.," written in script.

SER. No. 3,981. HAIR-COLOR RESTORER OR HAIR-DYE. HENRY A. MAYOR, Kansas City, Mo. Filed May 1, 1905.

Mayor's Walnut Oil.

The words "MAYOR'S WALNUT OIL," associated with a portrait of Henry A. Mayor, beneath which is placed the signature of Henry A. Mayor, said portrait and signature being surrounded by a rectangular border.

SER. No. 4,101. BREAKFAST-FOODS PREPARED FROM CEREALS. POSTUM CEREAL CO., LIMITED, Battlecreek, Mich. Filed May 3, 1905.

Grape Nuts

The compound word "GRAPE-NUTS" represented in ornamental letters of one color upon a background of another color.

SER. No. 4,178. WHISKY. JOHN BARDENHEIER WINE AND LIQUOR CO., St. Louis, Mo. Filed May 3, 1905.

MOONLIGHT

The word "MOONLIGHT."

SER. No. 4,228. COATS, OVERCOATS, RAIN-COATS, WAISTCOATS, (OR VESTS,) TROUSERS, AND BREECHES. WITHEE, (a Firm,) New York, N. Y. Filed May 3, 1905.

SER. No. 4,228.

The representation of a shield carrying a gauntlet in the dexter and a shoe in the sinister half and surmounted by a helmet and surrounded by a formal scroll and having a crest consisting of the representation of the upper part of the body of a sheep facing the right, its left foot raised and its right leg arched, its right foot resting on a bar, which bar passes under the upper part of the body of the sheep.

SER. No. 4,255. COVERS FOR CORSETS, LADIES' PANTS, AND VESTS. THE MALINE MILAS COMPANY, Salem, N. C. Filed May 4, 1905.

PERFECT FITTING "Maline" UNDER-WEAR

The word "MALINE" inclosed in quotation-marks within a diamond-shaped border upon which appear the words "PERFECT FITTING UNDERWEAR," together with ornamental stars.

SER. No. 4,272. CIGARETTE-HOLDERS. ARTHUR QUINTON WALSH, New York, N. Y. Filed May 4, 1905.

X-PELLER

The hyphenated word "X-PELLER."

SER. No. 4,376. HAIR-TONICS. LANMAN & KEMP, New York, N. Y. Filed May 5, 1905.

ORIENTAL TONIC

The representation of a woman in a room dressing her hair in front of a mirror, upon the support of which appear various toilet accessories, associated with the words "ORIENTAL TONIC."

SER. No. 4,514. WHISKY. SAMPLE & CO., New York, N. Y. Filed May 6, 1905.

SER. No. 4,514.

The word "ANGLER," associated with a water scene, in which there is a man standing upon a rock fishing, an Indian holding a dip-net, and a man in a canoe.

SER. No. 4,522. WHISKY. TROST BROS., Louisville, Ky. Filed May 6, 1905.

GOOD CHEER

The words "GOOD CHEER."

SER. No. 4,555. HATS OF ALL KINDS. DANBURY HAT COMPANY, New York, N. Y. Filed May 6, 1905. Used ten years.

NEW YORK.

The representation of a shield having two panels crossing the same, two winged griffins rampant against the shield, radiating rays above the outstretched claws of the griffins, and a panel crossing said rays, associated with the words "EXTRA QUALITY DANBURY HAT COMPANY INCORPORATED NEW YORK" and the facsimile signature of F. W. Clinton, president.

SER. No. 4,577. HATS. F. P. GARDINER & Co., Newport, R. I., and New York, N. Y. Filed May 6, 1905.

THE VIRGINIA VINTAGE

The words "THE VIRGINIA VINTAGE."

SER. No. 4,695. HAMS, BREAKFAST-BACON, SUGAR-CURED SHOULDERS, DRY-SALT SIDES, DRY-SALT BELLIES, SMOKED SIDES, AND SMOKED BELLIES. DUNLEVY & BROTHER, Pittsburg, Pa. Filed May 8, 1905.

A string or rope formed of strands of contrasting color, the body of the same being of light color and one of the strands of red.

SER. No. 4,705. SELF-PLAYING PIANOS AND PIANO-PLAYERS. THE AUTOPIANO COMPANY, New York, N. Y. Filed May 8, 1905.

PIANISTA

The word "PIANISTA."

SER. No. 4,750. LEATHER AND CLOTH BOOTS, SHOES, AND SLIPPERS. HANAN & SON, New York, N. Y. Filed May 8, 1905. Used ten years.

HANAN & SON HANAN NEW YORK

The word "HANAN" within an ellipse, the words and character "HANAN & SON" appearing above the ellipse and the words "NEW YORK" appearing below the ellipse.

SER. No. 4,774. HATS. BOOCHER, FORCE & GOODBAR HAT COMPANY, St. Louis, Mo. Filed May 8, 1905. Used ten years.

MOUND CITY

The word-symbol "MOUND CITY."

SER. No. 4,885. LAUNDRY SOAP. PROUTY-BOWLER SOAP COMPANY, Des Moines, Iowa. Filed May 9, 1905. Used ten years.

A rectangular figure on which are a vertical and horizontal panels and ornamental scrollwork, the words and name "WHITE LAUNDRY SOAP PROUTY-BOWLER SOAP CO, DES MOINES, IOWA." appearing on the horizontal panels, and a diamond-shaped figure bearing a four-leaf clover having on its petals the letters and abbreviation "P B S Co" on the vertical panel.

SER. No. 4,892. CHEMICAL PREPARATION FOR THE TREATMENT OF DISEASES CHARACTERIZED BY HYPERSECRETION OF MUCUS. McKesson & Robbins, New York, N. Y. Filed May 10, 1905.

BLENNOSTASINE

The word "BLENNOSTASINE."

SER. No. 4,946. ORNAMENTAL POTTERY-WARE, COMPRISING VASES, BOWLS, LAMP-BASES, AND JARS. THE AMERICAN TERRA COTTA AND CERAMIC COMPANY, Chicago, Ill. Filed May 10, 1905.

TECO

The word "TECO" displayed with the "T" having a long stem and a cross-line extending farther to the right than to the left of said stem, the letters "E," "C," and "O" being arranged below the right-hand portion of the cross-line in vertical arrangement, reading from top to bottom.

SER. No. 5,000. GINGHAMS. SMYTH, HOGG & CO., New York, N. Y. Filed May 10, 1905.

CLASSICS

The word "CLASSICS."

SER. No. 5,025. PRODUCT OF CORN IN FLAKE FORM. AMERICAN HOMINY COMPANY, Indianapolis, Ind. Filed May 11, 1905.

QUICK MALT

The words "QUICK MALT."

SER. No. 5,026. PRODUCT OF INDIAN CORN IN FLAKE FORM. AMERICAN HOMINY COMPANY, Indianapolis, Ind. Filed May 11, 1905.

SER. No. 5,026.

CEREALINE

The word "CEREALINE."

SER. No. 5,072. VELVETEENS, CORDUROYS, AND OTHER COTTON-VELVET FABRICS. WM. OPHEIM & SONS, New York, N. Y. Filed May 11, 1905. Used ten years.

ELBERON

The word "ELBERON."

SER. No. 5,086. CORSETS, CORSET-WAISTS, AND CORSET-STEELS. KORS BROS., New York, N. Y. Filed May 11, 1905.

Nemo

The word "NEMO."

SER. No. 5,216. MILK-COOLERS. DAIRYMENS SUPPLY COMPANY, Philadelphia, Pa. Filed May 11, 1905.

The representation of a clover-leaf in front of a circular disk, associated with the word "BESTOV."

SER. No. 5,313. POULTRY-FOOD. MARION W. SAVAGE, Minneapolis, Minn. Filed May 13, 1905. Used ten years.

A panel bearing the applicant's monogram "M W S" near the center. Below the monogram are the words "POULTRY FOOD," and above the monogram is the word "INTERNATIONAL." At the top and bottom of the panel are representations of a rural landscape with poultry in the foreground.

SER. No. 5,314. HEALING PINE-OIL. MARION W. SAVAGE, Minneapolis, Minn. Filed May 13, 1905.

The representation of a pine forest and the words "INTERNATIONAL SILVER PINE HEALING OIL."

SER. No. 5,357. STEEL FISHING-RODS. THE HORTON MFG. CO., Bristol, Conn. Filed May 13, 1905. Used ten years.

BRISTOL

The word "BRISTOL."

SER. No. 5,360. ADVERTISING-CARTONS. COLE LITHOGRAPHING COMPANY, Chicago, Ill. Filed May 13, 1905.

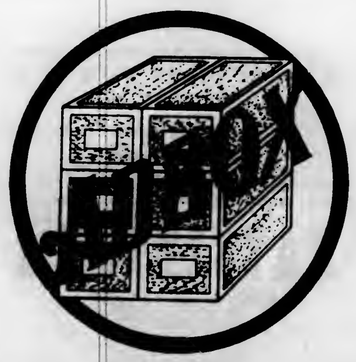

The representation of an advertising-carton surrounded by a circular border and having the words "ADDOX" impressed across its face.

SER. No. 5,492. STEEL BARS, RODS, BILLETS, BLOOMS, SHEETS, PLATES, SLABS, STRIPS, BLOCKS, AND FORGINGS. HOWE BROWN & CO., LTD., Pittsburg, Pa. Filed May 13, 1905.

MEXMINE

The word "MEXMINE."

SER. No. 5,512. STEEL BARS, RODS, BILLETS, BLOOMS, SHEETS, PLATES, SLABS, STRIPS, BLOCKS, AND FORGINGS. CRUCIBLE STEEL COMPANY OF AMERICA, Pittsburg, Pa. Filed May 13, 1905. Used ten years.

MONARCH

The word "MONARCH."

SER. No. 5,515. STEEL BARS, RODS, BILLETS, BLOOMS, SHEETS, PLATES, SLABS, STRIPS, BLOCKS, AND FORGINGS. CRUCIBLE STEEL COMPANY OF AMERICA, Pittsburg, Pa. Filed May 13, 1905. Used ten years.

XP

The characters "X P."

SER. No. 5,517. STEEL BARS, RODS, BILLETS, BLOOMS, SHEETS, PLATES, SLABS, STRIPS, BLOCKS, AND FORGINGS. CRUCIBLE STEEL COMPANY OF AMERICA, Pittsburg, Pa. Filed May 13, 1905. Used ten years.

TX

The characters "T X."

SER. No. 5,564. SNUFF. BYFIELD SNUFF CO., Byfield, Mass. Filed May 13, 1905. Used ten years.

The words "RED TOP" inclosed in a series of concentric circles in connection with the representation of a frame inclosing a fanciful bust picture of a girl and the words "PEARSON'S MILLS" on an elliptical panel, together with the words "PEARSON'S RED TOP SNUFF BYFIELD, MASS." at the left.

SER. No. 5,570. HAVANA CIGARS. ROTHENBURG & SCHLOSS, Kansas City, Mo. Filed May 13, 1905.

The representation of the head of a woman of the brunette type surrounded by an ornamental border flanked by scroll-like figures, there being an ornamental panel above the border and a centrally-located winged figure and the words "LA BELLE SUPREME," which appear within the panel.

SER. No. 5,656. SHEETINGS AND DRILLINGS. BAILEY COTTON MILLS, Bailey, S. C. Filed May 15, 1905.

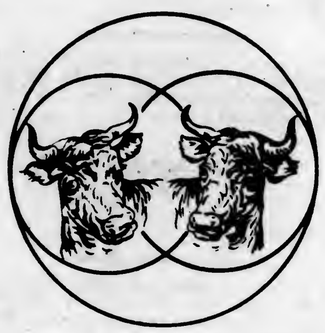

The representation of two steers' heads inclosed in intersecting circles, all within the boundary of a larger circle.

SER. No. 5,765. WHISKY. SAMUEL WESTHEIMER & SON WHOLESALE LIQUOR COMPANY, St. Joseph, Mo. Filed May 16, 1905.

Silver King

The words "SILVER KING."

SER. No. 5,796. BLENDED WHISKY. WILLIAM B. SEEL, Harrisburg, Pa. Filed May 16, 1905.

A monogram formed by intertwining the letters and character "W & S" represented on a shield on the head of a barrel, with a spray of grain beneath the barrel and the word "CONESTOGA" on the head of the barrel above the shield.

SER. No. 5,847. HOSIERY. ONEIDA HOSIERY COMPANY, Oneida, N. Y. Filed May 16, 1905.

CADET

The word "CADET" in block letters, with a bust of a boy in uniform and wearing a military cap within the large letter "C" of the word.

SER. No. 5,943. OINTMENTS. FOSTER-MILBURN CO., Buffalo, N. Y. Filed May 18, 1905.

The portrait of James Doan arranged within two encircling bands or rings having between said bands two segmental fields—one arranged above and the other below said portrait—with the words "DOAN'S OINTMENT" in the upper field and having scrolls or ribbons extending from each side of said portrait across the lower ends of the upper field

SER. No. 5,969. COUGH-DROPS FOR COUGHS AND COLDS. WILLIAM W. SMITH, Poughkeepsie, N. Y. Filed May 18, 1905.

The representation of two bust portraits of male figures representing the Smith Brothers arranged on a rectangular panel, the portrait on the left representing William W. Smith and on the right Andrew Smith, deceased. Above the portraits the words "SMITH BROTHERS" are printed, and between the portraits appear the letters "S. B.," the words "COUGH DROPS," the letters "S. B.," with hands pointing thereto, and the words "STAMPED ON EACH DROP POUGHKEEPSIE, N. Y."

SER. No. 5,989. FLAVORING-SYRUP FOR BEVERAGES. JNO. B. DANIEL, Atlanta, Ga. Filed May 18, 1905. Used ten years.

DANIEL'S

PASSIFLORA

KOKO-KOLO SYRUP.

The words "DANIEL'S PASSIFLORA KOKO-KOLO SYRUP."

SER. No. 6,068. WHIP-CENTERS. THE STERLING WHIP COMPANY, Westfield, Mass. Filed May 19, 1905.

The representation of a whale.

SER. No. 6,106. CYCLES, MOTOR-CYCLES, AND PARTS THEREOF. THE BIRMINGHAM SMALL ARMS CO., LD., Birmingham, England. Filed May 19, 1905.

SER. No. 6,106.

The representation of three stacked rifles.

SER. No. 6,160. COLLARS, COLLAR-PADS, AND BACK-BANDS. COUCH BROTHERS & J. J. HAGAN CO., Atlanta and East Point, Ga. Filed May 20, 1905.

A representation of a man in a vehicle resembling a tricycle with goats behind as a means of propulsion.

SER. No. 6,166. CAPS AND CORKS. THE PHOENIX CAP COMPANY, New York, N. Y. Filed May 20, 1905.

PHOENIX

The word "PHOENIX."

SER. No. 6,280. WHISKY. SAMPLE & CO., New York, N. Y. Filed May 23, 1905.

SUNNYSIDE

The word "SUNNYSIDE."

SER. No. 6,287. CHOCOLATE AND COCOA. SOCIÉTÉ ANONYME DES CHOCOLATS DE MONTREUX, SCHAUD & FILS, Montreux, Canton of Vaud, Switzerland. Filed May 23, 1905.

The representation of a baby and the hand of a lady offering a piece of chocolate to said baby. Below the figure of the baby is arranged the word "SCHAUD'S" in ornamental script, the baby, hand, and the word "SCHAUD'S" being inclosed by a plain oblong border, the words "CHOCOLAT DE MONTREUX" being arranged above the border, the words "THE BEST—THAT'S ALL" arranged at both sides of the same, and the words "IDEAL SWISS MILK CHOCOLATE" at the lower part of the border.

SER. No. 6,382. COTTON PIECE GOODS. CLIFTON MANUFACTURING CO., Clifton, S. C. Filed May 23, 1905.

FOXHALL

The representation of two running horses with jockeys thereon and the representation of a clubhouse with a banner flying therefrom, associated with the word "FOXHALL."

SER. No. 6,384. GOLD, SILVER, AND PLATED SPOONS. MILLIE B. LOGAN, Rochester, N. Y. Filed May 23, 1905.

A portrait of Susan B. Anthony, associated with the name "SUSAN B. ANTHONY."

SER. No. 6,399. POLISHING-SOAP. KENDALL MFG. CO., Providence, R. I. Filed May 23, 1905.

The word "SUNORIA" and the representation of a landscape with sun rays appearing above the horizon, there being in the foreground lines of trees and the representation of a stone fence with a gate therein through which a road passes.

SER. No. 6,401. SOAP. KENDALL MFG. CO., Providence, R. I. Filed May 23, 1905.

SER. No. 6,907. CIGARS. CHARLES B. PERKINS, Boston, Mass. Filed May 30, 1905.

SER. No. 7,286.

SER. No. 7,550. CHEMICAL COMPOUNDS FOR THE REMOVAL OF GREASE, OIL, AND SCALE FROM BOILERS AND THE PREVENTION OF THE FORMATION OF NEW SCALE, &c. H. ROSE

SER. No. 6,401. SOAP. KENDALL MFG. CO., Providence, R. I. Filed May 29, 1905.

The words "FRENCH LAUNDRY SOAP" appearing within the upper corner of a rectangular border, which also incloses a river scene, with trees, houses, a bridge, and a boat in the background and in the foreground the representation of a woman kneeling on the margin of the river in the act of washing clothes. Around the inside border is a second border, between which and the inside border representations of frogs in different positions appear.

SER. No. 6,849. HATS AND CAPS OF ALL KINDS. DUNLAP & CO., New York, N. Y. Filed May 29, 1905.

The representation of an elongated panel composed of two irregular-shaped shields united by an intermediate panel, on which panel and shields appear the words "DUNLAP & CO." and below the latter "N. Y." Over the center of the shield stands a Maltese cross, on which is a stag's head, and above the Maltese cross, in curved lines, appear the words "EXTRA QUALITY."

SER. No. 6,905. CIGARS. CHARLES B. PERKINS, Boston, Mass. Filed May 29, 1905.

The words "MONTE ROSA" and the representation of the head and shoulders of a young woman of the brunette type wearing upon her shoulders a mantle of red, white, and yellow, the whole being inclosed within a circular ornamental border superimposed upon a panel of gold having a border of white and gold and having produced thereon sprays of apple-blossoms, and the representation of medals, which appear below the panel on either side of the figure.

SER. No. 7,121. CANNED FRUITS AND VEGETABLES. JOHN EDUARD KEMPE, Dunnsville, Va. Filed May 31, 1905. Used ten years.

The words "OLD DOMINION."

SER. No. 6,907. CIGARS. CHARLES B. PERKINS, Boston, Mass. Filed May 29, 1905.

The word "GINITA" and the representation of the head of a young woman of brunette type wearing upon her head a band of pink, and upon her neck a necklace of pearls, and a bodice of shady blue, the figure being partially surrounded by a border of harmonizing ornamental design comprising lilies, bluebells, and other flowers and medals.

SER. No. 7,198. WHISKY. HARRY KAHN, Cincinnati, Ohio. Filed June 1, 1905.

The word "COTTONDALE."

SER. No. 7,226. TOILET SOAP. MEDICAL LAKE SALTS MFG. CO., Spokane, Wash. Filed June 2, 1905.

The words "INDIAN HEAD" and the representation of an Indian's head.

SER. No. 7,282. PULLEYS, BLOCKS, AND PARTS THEREOF. BOSTON & LOCKPORT BLOCK COMPANY, Boston, Mass. Filed June 2, 1905.

STAR

The designation of a star either by word or symbol.

SER. No. 7,286. BAGS OF PAPER, CLOTH, AND LIKE MATERIALS. EAGLE PAPER CO., Richmond, Va. Filed June 2, 1905.

SER. No. 7,286.

A rectangular panel bearing the words "RAW HIDE" and the words "BAGS. UNEXCELLED. EXTRA STRONG. FULL COUNT." Said panel also contains the representation of a butcher in a butcher-shop in the act of removing a hide from a suspended beef. The words "RAW HIDE" also appear on the beef.

SER. No. 7,453. RUBBER BOOTS, SHOES, AND SANDALS. BENTLEY & OLMSTED COMPANY, Des Moines, Iowa. Filed June 5, 1905.

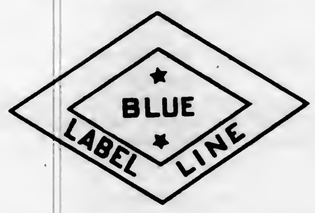

The representation of two diamond-shaped figures, one inclosing the other, the sides being parallel and the inner diamond inclosing two stars, associated with the words "BLUE LABEL LINE."

SER. No. 7,486. MEDICINAL TEA. JOHN T. DAVISON, Pueblo, Colo. Filed June 5, 1905.

The words "THE ST. CRISPIN REMEDIES" arranged upon a St. Crispin cross, having in the background the rays of the sun.

SER. No. 7,550. CHEMICAL COMPOUNDS FOR THE REMOVAL OF GREASE, OIL, AND SCALE FROM BOILERS AND THE PREVENTION OF THE FORMATION OF NEW SCALE, &c., IN BOILERS. THE BIRD-ARCHER COMPANY, New York, N. Y. Filed June 6, 1905.

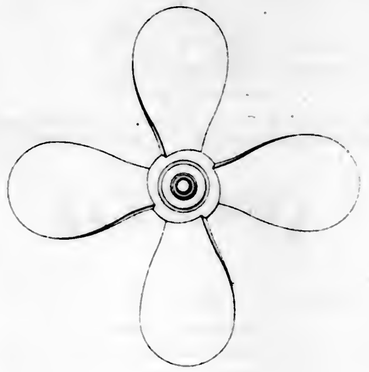

A representation of a screw-propeller.

SER. No. 7,555. STOVES, RANGES, FURNACES, AND CASTINGS THEREFOR. GORHANN BROS. & KAHLER CO., New Albany, Ind. Filed June 6, 1905.

A representation of a shield, upon which are displayed the words "ANTLER STOVES & RANGES," a monogram comprising the characters "G B & K Co.," a representation of a pair of antlers partly surrounding said monogram, and the words "NEW ALBANY, IND.," a scroll being disposed across the top of the representation of the shield and the words "GORHANN BROS. & KAHLER CO." being displayed on the scroll.

SER. No. 7,561. BOILER-CLEANING COMPOUNDS. JOHN CALLAHAN AND CO., INC., Seattle, Wash. Filed June 6, 1905.

The picture or representation of Uncle Sam as he is commonly depicted and the arbitrarily-selected word "YANKEE."

SER. No. 7,808. POCKET-KNIVES. HERMANN BÖKER & Co., Solingen, Germany. Filed June 7, 1905.

The representation of a leafless tree.

SER. No. 7,658. RAILROAD LAMPS AND LANTERNS. ARMSPEAR MANUFACTURING COMPANY, New York, N. Y. Filed June 8, 1905.

ARMSPEAR

The word-symbol "ARMSPEAR."

SER. No. 7,717. WHISKY. MALONE DISTILLING CO., Colgate, Md. Filed June 8, 1905.

A double circular band inclosing the letter "C," which is partly surrounded by a wreath and surmounted by a crest consisting of the head of a griffin on a striped horizontal bar. Above this symbol is the word "COLGATE" in a curved line.

SER. No. 7,804. TRIMMINGS FOR FREIGHT-CAR DOORS, COMPRISING DOOR HANGERS, FASTENERS, AND GUIDE-BRACKETS. CAMEL COMPANY, Chicago, Ill. Filed June 10, 1905.

CAMEL

The word "CAMEL."

SER. No. 7,805. TRIMMINGS FOR FREIGHT-CAR DOORS, COMPRISING HANGERS FOR DOORS, FASTENERS, AND GUIDE-BRACKETS. CAMEL COMPANY, Chicago, Ill. Filed June 10, 1905.

The pictorial representation of a camel.

SER. No. 7,850. ELECTRIC LAMPS. THE FRANKLIN ELECTRIC MFG. CO., Hartford, Conn. Filed June 10, 1905.

FEMCO

The word "FEMCO."

SER. No. 7,884. PRINTING-INK. THE STANDARD PRINTING INK COMPANY, Cincinnati, Ohio, and Chicago, Ill. Filed June 10, 1905.

The representation of a crow perched upon a branch and the word "CROW" across the breast of the crow.

SER. No. 7,890. FILES AND RASPS AND HANDLES AND HOLDERS THEREFOR. NICHOLSON FILE COMPANY, Providence, R. I. Filed June 12, 1905.

N.F.CO.

The letters and abbreviation "N. F. Co."

SER. No. 7,891. FILES AND RASPS AND HANDLES AND HOLDERS THEREFOR. NICHOLSON FILE COMPANY, Providence, R. I. Filed June 12, 1905. Used ten years.

NICHOLSON FILE CO.

The legend "NICHOLSON FILE CO."

SER. No. 7,892. FILES AND RASPS AND HANDLES AND HOLDERS THEREFOR. NICHOLSON FILE COMPANY, Providence, R. I. Filed June 12, 1905.

A representation of two crossed files, associated with the word "NICHOLSON" above, and the letters "U. S. A." below the files.

SER. No. 7,898. FILES AND RASPS AND HANDLES AND HOLDERS THEREFOR. NICHOLSON FILE COMPANY, Providence, R. I. Filed June 12, 1905.

A representation of two crossed files, associated with "N. F." above and "Co." below.

SER. No. 7,894. FILES AND RASPS AND HANDLES AND HOLDERS THEREFOR. NICHOLSON FILE COMPANY, Providence, R. I. Filed June 12, 1905.

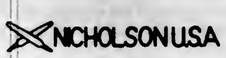

Two crossed files, associated with the word "NICHOLSON" and the characters "U. S. A." arranged longitudinally or tandem fashion.

SER. No. 7,895. FILES AND RASPS AND HOLDERS AND HANDLES THEREFOR. NICHOLSON FILE COMPANY, Providence, R. I. Filed June 12, 1905.

A representation of two crossed files, associated with the word "NICHOLSON" below.

SER. No. 7,975. COFFEE. ROBINSON-BAKER GROCERY COMPANY, Kansas City, Mo. Filed June 12, 1905.

The representation of a bunch of colored flowers usually described as morning-glories, which are interspersed with green morning-glory leaves. Above the representation of the flowers are the words "MORNING GLORY" while below are the words "ROASTED COFFEE."

SER. No. 8,050. VARNISHES. JOHN BABCOCK & Co., Boston, Mass. Filed June 13, 1905. Used ten years.

A rectangular panel bearing thereon the words "BABCOCK'S VARNISH," the word "VARNISH" appearing on a horizontally-curved panel, with another curved panel above the same and a rectangular ornamental panel below the same.

SER. No. 8,115. MEN'S AND BOYS' HATS AND CAPS. FRANK SCHOOLS & Co., Philadelphia, Pa. Filed June 14, 1905.

The word "CHESWICK," associated with the representation of a lozenge-shaped figure having three feathers thereon, and above which are a Maltese cross and the words "ICH DIEN," while on the opposite sides of the figure are the head of a unicorn and the head of a lion supported by scroll-like figures, and beneath the word "CHESWICK" are the words "PALAIS ROYAL, LONDON."

SER. No. 8,187. MEN'S NEGLIGÉE AND DRESS SHIRTS. J. M. ROBINSON, NORTON & Co., Louisville, Ky. Filed June 14, 1905.

The representation of a tiger's head inclosed in two concentric circles between which appear the words, letters, character, and abbreviation "TIGER BRAND J. M. R. N. & Co."

SER. No. 8,279. WHISKIES. THE J. C. MAREN LIQUOR CO., Birmingham, Ala. Filed June 15, 1905.

A design showing three red barrels of different size piled one upon the other, the largest at the bottom, the medium in the center, and the smallest on the top. The center barrel bears the words "THREE RED BARRELS."

SER. No. 8,285. WHISKY. A. D. KIRK Co., Buffalo, N. Y. Filed June 15, 1905.

The word "CINCO" and the representation of an oval-shaped panel showing a tropical scene, with an ostrich in the foreground

SER. No. 8,618.

SER. No. 8,795. LOCKS. SUPPLEE HARDWARE COMPANY, Philadelphia, Pa. Filed June 17, 1905.

SER. No. 8,285. WHISKY. A. D. KERR CO., Buffalo, N. Y. Filed June 15, 1905.

OLD AMBER

The words "OLD AMBER" and the representation of a round dial representing the proof of the goods framed in scrolls and ears of rye.

SER. No. 8,335. ILLUMINATING-OILS. STANDARD OIL CO. OF NEW YORK, New York, N. Y. Filed June 16, 1905. Used ten years.

STANDARD

The word "STANDARD."

SER. No. 8,353. COATS, VESTS, TROUSERS, AND OVERCOATS. CHARLES C. HAUGER, Indianapolis, Ind., and Dayton and Columbus, Ohio. Filed June 16, 1905.

HAUGER'S SUIT $9.99 OVER COAT HOUSE

A device comprising a circular figure having a panel across its face, said circular figure being located between upper and lower angular panels, associated with which is the word "HAUGER'S" arranged in the upper angular panel and the word "HOUSE" arranged in the lower angular panel, the character and numerals "$9.99," followed by a scroll figure, arranged in the panel across the face of the circular figure, the word "SUIT" and the words "OVER COAT" arranged upon said circular figure above and below said panel, and the words "NO MORE" and "NO LESS" also arranged upon said circular figure.

SER. No. 8,355. CIGARS AND CHEROOTS. OTTO EISENLOHR & BROS., Philadelphia, Pa. Filed June 16, 1905. Used ten years.

The word "CINCO" and the representation of an oval-shaped panel showing a tropical scene, with an ostrich in the foreground holding a horseshoe in its mouth, on one side of which panel is a woman in the costume of a Quaker standing in front of a spinning-wheel in front of an open fireplace, and on the other side is a man in the Quaker costume walking along the street and holding in one hand an umbrella.

SER. No. 8,376. PRINTED BOOKS. VEDANTA SOCIETY, New York, N. Y. Filed June 16, 1905.

A body of water ruffled by the winds, the sun rising from the horizon, a full-blown lotus flower rearing its head above two floating leaves, and a swan sailing on the troubled waters. A serpent in circular form and with upraised hood and outstretched fangs incloses the design. In the middle portion of the snake, below the design, are Sanskrit words meaning "May the Self Inspire and Guide Us." Below this is a scroll bearing the words "VEDANTA SOCIETY" in the middle and on one side the words "EST. 1894" and on the other side the words "INC. 1898."

SER. No. 8,435. POCKET-KNIVES. F. KÖLLER & CO., Solingen, Germany. Filed June 17, 1905.

MAGNA WEXL

The words "MAGNA WEXL."

SER. No. 8,605. FILTERING APPARATUS AND FILTER-CYLINDERS. BERKEFELD-FILTER GESELLSCHAFT, G. M. B. H., Celle, Germany. Filed June 20, 1905.

Berkefeld-Filter

The representation of two serpents having their heads directed to opposite sides and being each twisted about a stick, the words "BERKEFELD-FILTER" appearing between the two serpents.

SER. No. 8,618. STICKY FLY-PAPER. THE MIDGET FLY PLATE COMPANY, San Francisco, Cal. Filed June 19, 1905.

SER. No. 8,618.

MIDGET

The word "MIDGET."

SER. No. 8,650. WHISKY. GEORGE COHN, Louisville, Ky. Filed June 21, 1905.

GREAT WESTERN

The words "GREAT WESTERN."

SER. No. 8,743. MATTRESSES AND PILLOWS AND FEATHERS FOR MATTRESSES AND PILLOWS. THE RANDALL MATTRESS COMPANY, Cleveland, Ohio. Filed June 21, 1905.

R

A white letter "R" on a dark background and the whole inclosed in a circular panel.

SER. No. 8,783. REMEDY FOR DYSENTERY, DIARRHŒA, CHOLERA MORBUS, SUMMER COMPLAINT, AND PAINS IN THE STOMACH AND BOWELS. CLARENCE L. WELLS, Troy, N. Y. Filed June 23, 1905. Used ten years.

STODDARD'S CHOLERA SPECIFIC

The words "STODDARD'S CHOLERA SPECIFIC."

SER. No. 8,787. MEDICINE FOR THE TREATMENT OF ALCOHOLISM. THOMAS JOHNSTON, Freeport, N. Y. Filed June 23, 1905.

The representation of a box containing a number of bottles and with the lid thrown open and a portion of one side of the box removed, together with a bottle and a glass outside of the box at one end thereof. The lid of the box bears the inscription "THE JOHNSTON HOME TREATMENT CURES DRUNKENNESS," and the bottles are labeled with the inscription "THE JOHNSTON HOME TREATMENT FOR ALCOHOLISM," and the glass has a measuring-scale thereon and is inscribed with the words "TABLE," "DESSERT," and "TEA."

SER. No. 8,795. LOCKS. SUPPLIES HARDWARE COMPANY, Philadelphia, Pa. Filed June 17, 1905.

An annular-shaped figure and a pointed bar projected partly through the same.

SER. No. 8,809. LAUNDRY STARCH. THE S. W. NOGGLE WHOLESALE & MFG. CO., Kansas City, Mo. Filed June 23, 1905.

ECLIPSE

The word "ECLIPSE."

SER. No. 8,828. CIGARETTES. BUTLER-BUTLER, (INCORPORATED,) New York, N. Y. Filed June 23, 1905.

HORSE GUARDS

The words "HORSE GUARDS."

SER. No. 8,848. TOILET AND LAUNDRY SOAP. HASKINS BROS. & CO., Sioux City, Iowa, and Omaha, Nebr. Filed June 23, 1905. Used ten years.

The words "BEAT 'EM ALL" inclosed within an ornamental border, the words "HASKINS BROS. & CO. OMAHA & SIOUX CITY" being arranged above the mark and within the border and the word "SOAP" beneath the mark.

SER. No. 9,013. LIQUID VEGETABLE COMPOUND FOR THE CURE OF RHEUMATISM. FRANK G. BLAND, Clarksburg, W. Va. Filed June 20, 1905.

The letters "V R C" upon a shaded field inclosed in a rectangular panel with a surrounding circular border.

SER. No. 9,126. WHISKY. HARRY B. BLOCK, St. Louis, Mo. Filed June 26, 1905.

SER. No. 9,296.

SER. No. 9,485. BRANDY. P. J. BOWLIN LIQUOR CO., St. Paul, Minn. Filed June 30, 1905.

SER. No. 9,592.

Ser. No. 9,126. WHISKY. Harry B. Block, St. Louis, Mo. Filed June 26, 1905.

The words "High Life."

Ser. No. 9,203. TOILET WATERS. Bliss Perry, Minneapolis, Minn. Filed June 27, 1905.

The pictorial representation of a female head with the words "French Hygienic Water" arranged thereabout in the form of a circle.

Ser. No. 9,204. FILES. Vautier Frères, Carouge, Switzerland. Filed June 27, 1905.

A representation of a tobacco-pipe.

Ser. No. 9,206. UNDERWEAR, DRAWERS, TIGHTS, VESTS, AND UNION-SUITS. Chas. A. Stevens & Bros., Chicago, Ill. Filed June 27, 1905.

Formoda

The word "Formoda."

Ser. No. 9,279. COMBS. Schrader & Helms, New York, N. Y. Filed June 27, 1905.

Olive doré

The words "Olive doré."

Ser. No. 9,296. TABLE OIL-CLOTH, CARRIAGE ENAMEL-CLOTH, BAG-MUSLIN, AND OTHER LIGHT-WEIGHT OIL-CLOTHS. Standard Table Oil Cloth Co., New York, N. Y. Filed June 27, 1905.

Ser. No. 9,296.

The letters "T O C," the letter "T" occupying the middle position and having the top extending over the letters "O" and "C," and the surrounding elliptical-shaped figure.

Ser. No. 9,396. WRAPPING-PAPERS. Hurbs & Corning Co., Baltimore, Md. Filed June 29, 1905.

ORIOLE

The word "Oriole," associated with the pictorial representation of an oriole bird resting on the limb of a tree.

Ser. No. 9,401. MALT EXTRACT. Paragon Malt Extract Company, New York, N. Y. Filed June 30, 1905.

PARAGON

The word "Paragon."

Ser. No. 9,481. PRINTED AND DYED TEXTILE FABRICS. The Keystone Manufacturing Company, Eddystone and Philadelphia, Pa. Filed June 30, 1905.

CLOISONNE EFFECTS.

The words "Cloisonné Effects."

Ser. No. 9,484. BRANDY. P. J. Bowlin Liquor Co., St. Paul, Minn. Filed June 30, 1905.

The word "Minerva" and a shield bearing the monogram "P J B L Co," ornamented with grapes and grape leaves and vines.

Ser. No. 9,485. BRANDY. P. J. Bowlin Liquor Co., St. Paul, Minn. Filed June 30, 1905.

The word "Fortuna" and a shield bearing the monogram "P J B L Co" ornamented with grapes and grape leaves and vines.

Ser. No. 9,526. BREAKFAST-FOOD MADE FROM WHEAT. Marion W. Savage, Minneapolis, Minn. Filed June 30, 1905.

The representation of an apple, the word "Minne" on one side and the letters "Lis" on the other side.

Ser. No. 9,527. WALL-PAPER. Penn Wall Paper Company, Pittsburg, Pa. Filed June 30, 1905.

The letter "P" surrounded by a wreath.

Ser. No. 9,565. ANTIFRICTION METALS. Elmer S. Shimer, Milton, Pa. Filed July 1, 1905.

The word "Shimer" written in script, with the initial letter "S" peculiarly joined to the following letter "h" and the final letter "r" concluding with a flourish, with the coined word "Antifrix" appearing within a diamond-shaped figure before and after the said word "Shimer."

Ser. No. 9,592. KNIVES, FORKS, AND SPOONS MADE OF BRITANNIA METAL. Gebr. Noelle, Lüdenscheid, Germany. Filed July 1, 1905.

Ser. No. 9,592.

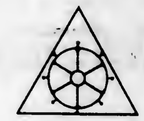

The representation of a steering-wheel inclosed within an equilateral triangle, the respective sides of which touch a handle of the wheel.

Ser. No. 9,593. ENAMEL FOR COATING THE INTERIORS AND EXTERIORS OF BARRELS, CASKS, TANKS, &c. The Hamrick Tank & Barrel Hard Shell Enameling Co., Philadelphia, Pa. Filed July 1, 1905. Used ten years.

The representation of a tortoise upon the ground carrying a barrel upon its back, and the word "Hamrick's" on the barrel, and the words "Hard-Shell Enamel" on the back of the tortoise.

Ser. No. 9,594. OINTMENT FOR THE CURE OF ECZEMA. Nathaniel M. Shire, New York, N. Y. Filed July 1, 1905.

The word "Itchikill," which is arranged on the representation of a freckled leaf surrounded by a circular border having inwardly-projecting ornamental spurs, said leaf and border being surrounded by a concentric circle forming a circular band, the words "Itchikill" and "Eczema Ointment" being arranged on the circular band respectively above and below said leaf.

Ser. No. 9,648. SYRUP. Gibson, Cooper & Company, St. Paul, Minn. Filed July 3, 1905.

Whynot

The word "Whynot."

Ser. No. 9,650. BLUING. Gibson, Cooper and Company, St. Paul, Minn. Filed July 3, 1905.

SER. No. 9,650.

Whynot

The word "WHYNOT."

SER. No. 9,651. CHOCOLATES. GRIGGS, COOPER AND COMPANY, St. Paul, Minn. Filed July 3, 1905.

Whynot

The word "WHYNOT."

SER. No. 9,652. CRACKER-MEAL. GRIGGS, COOPER & COMPANY, St. Paul, Minn. Filed July 3, 1905.

Whynot

The word "WHYNOT."

SER. No. 9,665. CIDER VINEGAR. CHAS. H. MEYER & CO., Freeport, Ill. Filed July 3, 1905.

SEEK NO FARTHER

The arbitrary word-symbol "SEEK NO FARTHER."

SER. No. 9,758. BEER. ANHEUSER-BUSCH BREWING ASSOCIATION, St. Louis, Mo. Filed July 3, 1905.

The words "FAUST'S OWN" and the pictorial representation of the head of the character knownas "Faust," the said pictorial representation being located within a circular border upon which the words "FAUST'S OWN" appear.

SER. No. 9,882. HOSIERY. MARIETTA KNITTING CO., Marietta, Ga. Filed July 6, 1905.

Radium

The word "RADIUM."

SER. No. 9,848. COMPOUND FOR THE TREATMENT OF AFFECTIONS OF THE RESPIRATORY PASSAGES. HERBERT F. BURNS, Washington, D. C. Filed July 6, 1905.

SER. No. 9,848.

Cassapine

The word "CASSAPINE."

SER. No. 9,929. BIRD-FOOD. ASCHENBACH & MILLER, Philadelphia, Pa., assignors to Aschenbach & Miller, Incorporated, a Corporation of Pennsylvania. Filed July 5, 1905. Used ten years.

The representation of a canary bird on a twig, circular panels on the right and left thereof, a singing bird on a twig on one panel, a parrot on a perch on the other panel, a field at bottom on which said birds and panels appear, a field on top, a bar on the latter field, and the words "BIRD FOOD COMPANY" on said bar.

SER. No. 9,981. CORN-STARCH. WARNER SUGAR REFINING COMPANY, Waukegan, Ill. Filed July 10, 1905.

The letter "W" on a black background inclosed within a circle from which radiate three ears of corn appearing on black panel-like figures, being joined by arcs of bands arranged concentrically with and around the circle around the letter "W" and the entire back being inclosed within two circles concentric with the first-named circle.

SER. No. 10,000. LIQUID MEDICAL COMPOUND USED FOR PAINTING OR APPLYING TO DISEASED SKIN AND ABNORMAL GROWTHS UPON THE SKIN OR BODY. JOHN JAY CHAMBERS, Seattle, Wash. Filed July 10, 1905.

PEDALINE

The word "PEDALINE."

SER. No. 10,001. MACHINES FOR CUTTING STENCILS. THE DIAGRAPH COMPANY, St. Louis, Mo. Filed July 10, 1905.

DIAGRAPH

The word "DIAGRAPH."

SER. No. 10,005. SHIRTINGS AND SHEETINGS. WAMSUTTA MILLS, New Bedford, Mass. Filed July 11, 1905.

The words "WAMSUTTA MILLS" and the representation of the corporation's factory at New Bedford.

SER. No. 10,006. SHIRTINGS AND SHEETINGS. WAMSUTTA MILLS, New Bedford, Mass. Filed July 11, 1905.

TUSCARORA

A pictorial representation of an Indian seated upon a rugged eminence in the foreground of a marine scene comprising water, boats, and mountains in the distance, the Indian being shown as pointing upward with his right hand and holding in the other hand a weapon of war, there being also a shield lying at his feet and the word-symbol "TUSCARORA."

SER. No. 10,112. ESPECIALLY HIGH GRADE OF PLUG-TOBACCO. RYAN-HAMPTON TOBACCO CO., Newburg, Ind. Filed July 11, 1905.

R & B's GREENVILLE

The letters "R" and "B's" with the character "&" between, associated with the word "GREENVILLE" beneath, all arranged on a rectangular figure.

SER. No. 10,118. CHEWING-TOBACCO. RYAN-HAMPTON TOBACCO CO., Newburg, Ind. Filed July 11, 1905. Used ten years.

R&B

The letters "R & B" appearing between two horizontal lines in a barrel-shaped figure.

SER. No. 10,124. ILLUMINATING-OILS. STANDARD OIL CO. OF NEW YORK, New York, N. Y. Filed July 1, 1905.

The representation of an arrow, upon the shaft of which the Japanese characters "SHO-RI," meaning victory, are shown and which is crossed by a double-headed arrow or spear, along the shaft of which appears the word "VICTORY."

SER. No. 10,164. CANNED CORN. P. HOHENADEL, Jr., Janesville, Wis., and Rochelle, Ill. Filed July 12, 1905.

KEY CITY

The words "KEY CITY" and the design of a key.

SER. No. 10,165. CANNED CORN. P. HOHENADEL, Jr. Co., Janesville, Wis. Filed July 12, 1905.

The words "PRIDE OF JANESVILLE" and the picture of a castle with its surrounding landscape, which comprises a body of water in the foreground, foliage in the midground, and hills in the background.

SER. No. 10,166. CANNED CORN. P. HOHENADEL, Jr., CANNING Co., Rochelle, Ill. Filed July 12, 1905.

The words "PRIDE OF ROCHELLE" and the representation of a boating scene, in which two girls handling oars appear to be seated in one end of a boat, or shell used as such, in the other end of

which is shown a basket containing ears of corn and other vegeta-

The representation of a five-pointed star upon which appears

SER. No. 10,540.

SER. No. 10,593.

which is shown a basket containing ears of corn and other vegetables.

SER. No. 10,246. COTTON SHEETINGS AND DRILLS. KENSO IWAHARA, New York, N. Y. Filed July 13, 1905.

The representation of a stout Chinaman with scroll, bearing Chinese characters "ICHI-DAN-WA-KI," meaning a graduate with the highest honor.

SER. No. 10,257. WATCH-GLASSES. ALBERT BERGER & Co., New York, N. Y. Filed July 13, 1905.

W.B.&Cie

The letters, character, and abbreviation "W. B & CIE."

SER. No. 10,266. PORTLAND CEMENT. KANSAS PORTLAND CEMENT Co., Iola, Kans. Filed July 13, 1905.

The representation of a sunflower, associated with the word "SUNFLOWER" and surrounded by two concentric circles, with the words "KANSAS PORTLAND CEMENT CO. IOLA, KANSAS." between the two circles.

SER. No. 10,314. LUBRICATING-OILS. SALEMA-SIGNAL OIL COMPANY, Franklin, Pa. Filed July 14, 1905.

The representation of a five-pointed star upon which appears the letter "G."

SER. No. 10,325. ASBESTOS SOCK-SOLES. THE DR. HOGYNS' ASBESTOS SOCK CO., London, England. Filed July 14, 1905.

A representation of a human foot in outline and skeleton above an asbestos sock-sole surrounded by parallel ellipses containing between them the inscription "DR. HOGYNS ASBESTOS HYGIENIC SOCKS" and an ornamental stop between the first and last words.

SER. No. 10,331. DISINFECTANT, PRESERVATIVE, AND BACTERICIDE. CARBO CHEMICAL CO., Jersey City, N. J. Filed July 14, 1905.

Carno

The word "CARNO."

SER. No. 10,339. WHISKY. HANNAH & HOGG, Chicago, Ill. Filed July 15, 1905. Used ten years.

Old Cameron

The words "OLD CAMERON," associated with the monogram "H H" on a shield surmounted by a crown.

SER. No. 10,374. CHOCOLATE AND COCOA USED AS A BEVERAGE AND FOR COOKING PURPOSES, AND SWEET CHOCOLATE IN CAKE FORM. WILLIAM H. BAKER, Winchester, Va. Filed July 15, 1905.

FLEUR DE LIS

The words "FLEUR DE LIS."

SER. No. 10,443. WASHING-BLUE. THE SAWYER CRYSTAL BLUE COMPANY, Boston, Mass. Filed July 17, 1905. Used ten years.

H. Sawyer

The facsimile signature "H. SAWYER."

SER. No. 10,540. PANTS, OVERALLS, COATS, AND VESTS. RICHARDSON, ROBBINS DRY GOODS CO., St. Joseph, Mo. Filed July 18, 1905.

SER. No. 10,540.

The representation of a hunter wearing a cap and having on a hunting-suit and leggings and holding a gun in his hands.

SER. No. 10,546. STOVES, RANGES, GAS-STOVES, AND ATTACHMENTS, AND PARTS AND REPAIRS THEREFOR. SILL STOVE WORKS, Rochester, N. Y. Filed July 18, 1905. Used ten years.

HAS NO EQUAL

The words "HAS NO EQUAL."

SER. No. 10,548. STOVES, RANGES, GAS-STOVES, AND ATTACHMENTS AND PARTS AND REPAIRS THEREFOR, SUCH AS WATER-FRONTS, FIRE-BRICKS, FIRE-POTS, GRATES, AND FIRE-BOX LININGS. SILL STOVE WORKS, Rochester, N. Y. Filed July 18, 1905.

RADIX

The word "RADIX."

SER. No. 10,549. POWDERED LAUNDRY STARCH. FAULTLESS STARCH CO., Kansas City, Mo. Filed July 18, 1905.

The representation of a star with rays radiating therefrom and associated with the words "FAULTLESS STARCH."

SER. No. 10,593. BRAIDED SASH-CORD. SAMPSON CORDAGE WORKS, Boston, Mass. Filed July 20, 1905. Used ten years.

SER. No. 10,593.

SPOT CORD

The arbitrary words "SPOT CORD."

SER. No. 10,704. COCOA. C. J. VAN HOUTEN & ZOON, Weesp, Holland. Filed July 22, 1905. Used ten years.

VAN HOUTEN

The words "VAN HOUTEN."

SER. No. 10,705. GOLD RINGS. SAMUEL W. LINDSAY, Omaha, Nebr. Filed July 22, 1905.

The representation of a watchcase with the letter "L" in the center of the watchcase.

SER. No. 10,737. CRUSHED OATS. THE GREAT WESTERN CEREAL Co., Chicago, Ill. Filed July 24, 1905.

MOTHER'S

The word "MOTHER'S."

SER. No. 10,886. NON-INTOXICATING MALT BEVERAGE. DALLAS BREWERY, Dallas, Tex. Filed July 28, 1905.

The representation of a steer's head surrounded by a circular band on which the word "NON INTOXICATING" is placed, associated with the words "LONG HORN" arranged on an oblong panel surrounded by scrollwork.

120 O. G.—110

SER. No. 10,847. LEATHER BOOTS AND SHOES. H. H. BROWN & Co., Boston, Mass. Filed July 26, 1905.

SER. No. 11,109.

SER. No. 10,847. LEATHER BOOTS AND SHOES. H. H. BROWN & Co., Boston, Mass. Filed July 26, 1905.

Forilla

The word "GORILLA."

SER. No. 10,848. LEATHER BOOTS AND SHOES. THE JOHNSON & WATSON CO., Greensboro, N. C. Filed July 26, 1905.

Biltmore

The word "BILTMORE."

SER. No. 10,918. PACKING MATERIALS FOR USE IN STUFFING-BOXES AND THE LIKE. RICHARD KLINGER, Gumpoldskirchen, Austria. Filed July 27, 1905.

Klingerit

The word "KLINGERIT."

SER. No. 11,014. ANESTHETIC. ISAAC FEINSTEIN, Hopkinsville, Ky. Filed July 29, 1905.

Yukatol

The word "YUKATOL" with a paraph.

SER. No. 11,019. WOOD BLOCKS FOR PAVING. UNITED STATES WOOD PRESERVING COMPANY, New York, N. Y. Filed July 29, 1905.

The representation of an eagle with arrows in its talons and with its wings outspread in circular form and associated with the letters "U S."

SER. No. 11,109. SAUCE FOR SPAGHETTI. SILVIA PROSSIANTI, Chicago, Ill. Filed Aug. 1, 1905.

SER. No. 11,109.

The word "LUCULLUS" and thereunder the picture of a man eating spaghetti with a fork from a dish in front of him.

SER. No. 11,110. PREPARATIONS OF MEAT-JUICE AND COMPOUND OF MEAT-JUICE AND GLYCERIN. VALENTINE'S MEAT JUICE COMPANY, Richmond, Va. Filed Aug. 1, 1905.

The letter "V" formed by two twigs crossed at the bottom with a bird's nest resting between the arms of the letter.

SER. No. 11,115. PRINTED AND DYED TEXTILE FABRICS. THE KEYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa. Filed Aug. 1, 1905.

A diamond-shaped figure bearing the representation of the head and a portion of the body of a dog arranged within an ornamental scroll frame and associated with the words "FRIENDLY STYLES."

SER. No. 11,169. STEEL, FOUNTAIN, AND STYLOGRAPHIC PENS AND PENHOLDERS. PERRY & COMPANY LIMITED, Birmingham, England. Filed Aug. 2, 1905.

A rectangular panel divided obliquely by a band into two trapezoidal figures, of which the left-hand figure incloses the word "PERRY," while the right-hand figure is divided obliquely by a narrower band and contains in its upper portion a diamond-shaped design surrounding the monogram "J P & Co."

SER. No. 11,247. PREPARATION OF LECITHIN (OBTAINED FROM BRAIN) IN COMBINATION WITH NUCLEO PROTEIDS. FAIRCHILD BROS. & FOSTER, New York, N. Y. Filed Aug. 4, 1905.

LECIBRIN

The word "LECIBRIN."

SER. No. 11,249. PREPARATION OF HYDROCHLORIC ACID IN COMBINATION WITH PROTEID. FAIRCHILD BROS. & FOSTER, New York, N. Y. Filed Aug. 4, 1905.

OXYNTIN

The word "OXYNTIN."

SER. No. 11,288. PORTLAND CEMENT. THE GLENS FALLS PORTLAND CEMENT CO., Glens Falls, N. Y. Filed Aug. 5, 1905.

The word "INVICTA."

SER. No. 11,306. BABBITT METAL AND ANTIFRICTION AND BEARING METALS FOR THE JOURNAL PARTS OF MACHINES AND MACHINERY. JOHN FINN METAL WORKS, San Francisco, Cal. Filed Aug. 7, 1905.

SEQUOIA

The word "SEQUOIA."

SER. No. 11,307. BABBITT METAL AND ANTIFRICTION AND BEARING METALS FOR THE JOURNALED PARTS OF MACHINES AND MACHINERY. JOHN FINN METAL WORKS, San Francisco, Cal. Filed Aug. 7, 1905.

SER. No. 11,307.

AIDION

The word "AIDION."

SER. No. 11,308. ANTIFRICTION AND BEARING METALS FOR THE JOURNALS OF MACHINES AND MACHINERY. JOHN FINN METAL WORKS, San Francisco, Cal. Filed Aug. 7, 1905.

A disk surrounded by a circular border and bearing the letters "M and W" and a monogram composed of the letters "J F."

SER. No. 11,328. INSULATED WIRE AND INSULATED-WIRE CABLES. PHILLIPS INSULATED WIRE CO., Pawtucket, R. I. Filed Aug. 7, 1905.

The representation of a globe encircled by two coils of cable between which appears the word "IDEAL" inclosed in quotation-marks.

SER. No. 11,329. INSULATED CONDUCTING-WIRES FOR TELEGRAPHS, TELEPHONES, ELECTRIC LIGHTS, &c. PHILLIPS INSULATED WIRE CO., Pawtucket, R. I. Filed Aug. 7, 1905.

The letters "O. K." inclosed in quotation-marks on a black disk surrounded by concentric circles.

SER. No. 11,371. STRINGS FOR VIOLINS AND GUITARS. LYON & HEALY, Chicago, Ill. Filed Aug. 7, 1905. Used ten years.

SUPERLATIVE

The word "SUPERLATIVE."

SER. No. 11,611. LUBRICATING-OILS. CREW LEVICK CO., Philadelphia, Pa. Filed Aug. 12, 1905.

SER. No. 11,611.

CREWLEVICK

The arbitrary word "CREWLEVICK."

SER. No. 11,452. WAGONS. WEBER WAGON COMPANY, Chicago, Ill. Filed Aug. 9, 1905.

The representation of a Maltese cross having thereon the words and figures "WEBER KING OF ALL ESTABLISHED 1845."

SER. No. 11,645. LEATHER BOOTS, SHOES, AND SLIPPERS. PARKER, HOLMES & COMPANY, Boston, Mass. Filed Aug. 14, 1905.

Fashiondale

The word "FASHIONDALE."

SER. No. 11,647. LEATHER BOOTS, SHOES, AND SLIPPERS. PARKER, HOLMES & COMPANY, Boston, Mass. Filed Aug. 14, 1905.

The head of a lion holding in its mouth by the staff a flag on which is displayed the hyphenated word "SHU-KING."

SER. No. 11,688. ASPHALTIC WATERPROOFING COMPOUND. HYDREX FELT & ENGINEERING CO., Portland, Me.; East Walpole, Mass.; New York, N. Y., and Chicago, Ill. Filed July 31, 1905.

HYDREX

The word "HYDREX."

SER. No. 11,738. GERMICIDES FOR EXTERNAL AND INTERNAL USE IN LIQUID FORM. ARTHUR H. SWAIN, Fremont, Ohio. Filed Aug. 17, 1905.

SER. No. 11,788.

ELECTRO-GEN

The words "ELECTRO-GEN" separated by hyphens.

SER. No. 11,757. SHIP-LOGS AND SOUNDING-MACHINES. THOMAS WALKER & SON, LTD., Birmingham, England. Filed Aug. 15, 1905.

CHERUBAL

The word "CHERUBAL."

SER. No. 11,792. ALIMENTARY PRODUCTS MADE FROM MALT OR MALT EXTRACT, IN COMBINATION WITH OTHER SUITABLE SUBSTANCES. BRÜDER WIESER EXPORT MALZFABRIK HAUSER & SOBOTKA, Stadlau, near Vienna, Austria-Hungary. Filed Aug. 19, 1905.

CANDOL

The word "CANDOL."

SER. No. 11,798. SHEET-METAL ROOFING-PLATES. ROBERT J. HYNDMAN, Cincinnati, Ohio. Filed Aug. 19, 1905.

The word "PROTECTOR," associated with the representation of steam sailing vessels.

SER. No. 11,802. FINISHED OR DRESSED LEATHER. CORONA KID COMPANY, Boston, Mass., assignor to Corona Kid Manufacturing Company, Boston, Mass., a Corporation of Massachusetts. Filed Aug. 19, 1905.

The words "CORONA COLT," in connection with a pictorial representation of a colt, the whole surrounded by an oval border.

SER. No. 11,803. FINISHED OR DRESSED LEATHER. CORONA KID COMPANY, Boston, Mass., assignor to Corona Kid Manufacturing Company, Boston, Mass., a Corporation of Massachusetts. Filed Aug. 19, 1905.

The words "CORONA KID," in connection with the pictorial representation of a crown, the whole surrounded by an oval border.

SER. No. 11,813. WHITE LEAD AND OXIDS OF LEAD. NATIONAL LEAD COMPANY, Jersey City, N. J. Filed Aug. 19, 1905. Used ten years.

The words and abbreviation "THE BRADLEY WHITE LEAD CO. NEW YORK."

SER. No. 11,886. SPICES OF ALL VARIETIES AND MUSTARD. SCHWABACHER BROS. & CO. INC., Seattle, Wash. Filed Aug. 21, 1905.

The representation of a shield having thereon the words "SILVER SHIELD BRAND."

SER. No. 11,887. CHEMICALLY-PURE BORAX. SARA B. SMITH, Livermore, Cal. Filed Aug. 21, 1905.

The signature of the firm—to wit, "SMITH BROS."—and beneath the same on a scroll the monogram composed of the letters "S B" fancifully arranged, with a bar projecting from opposite sides of said scroll and having the word "CHEMICALLY" on one side and the words "PURE BORAX" on the other, there being also beneath said words the words "NONE GENUINE WITHOUT THIS TRADE MARK," the whole being inclosed by a rectangular figure.

SER. No. 11,888. WINES. SARA B. SMITH, Livermore, Cal. Filed Aug. 21, 1905.

The representation of a shield having thereon a monogram composed of the letters "J P S," the shield being surrounded by grapes and leaves and having over the same the words "OLIVINA-IDEAL VINTAGES."

SER. No. 11,842. SOOTHING-SYRUP FOR THE CURE OF WIND-COLIC, GRIPING IN THE BOWELS, DIARRHEA, AND ALL TROUBLES CONSEQUENT UPON TEETHING. CHARLES ROBERT KOPP, York, Pa. Filed Aug. 21, 1905. Used ten years.

KOPP'S
"BABY'S FRIEND"

The words "KOPP'S "BABY'S FRIEND," the words "BABY'S FRIEND" being inclosed in quotation-marks.

SER. No. 11,870. BUILDING, ROOFING, AND SHEATHING PAPER. BARRETT MANUFACTURING COMPANY, New York, N. Y. Filed Aug. 21, 1905. Used ten years.

The letter "B" upon a diamond-shaped background.

SER. No. 11,871. TAR AND PITCH. BARRETT MANUFACTURING COMPANY, New York, N. Y. Filed Aug. 21, 1905. Used ten years.

The letter "B" upon a diamond-shaped background.

SER. No. 11,899. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "1" in a circle, all within a rectangular figure.

SER. No. 11,900. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "2" in a circle, all within a rectangular figure.

SER. No. 11,901. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "3" in a circle, all within a rectangular figure.

SER. No. 11,902. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "4" in a circle, all within a rectangular figure.

SER. No. 11,903. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "5" in a circle, all within a rectangular figure.

SER. No. 11,904. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "6" in a circle, all within a rectangular figure.

SER. No. 11,905. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "7" in a circle, all within a rectangular figure.

SER. No. 11,906. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "8" in a circle, all within a rectangular figure.

SER. No. 11,907. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "9" in a circle, all within a rectangular figure.

SER. No. 11,908. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "10" in a circle, all within a rectangular figure.

SER. No. 11,909. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "11" in a circle, all within a rectangular figure.

SER. No. 11,910. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "12" in a circle, all within a rectangular figure.

SER. No. 11,911. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "13" in a circle, all within a rectangular figure.

SER. No. 11,912. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "14" in a circle, all within a rectangular figure.

SER. No. 11,913. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "15" in a circle, all within a rectangular figure.

SER. No. 11,914. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "16" in a circle, all within a rectangular figure.

SER. No. 11,915. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "17" in a circle, all within a rectangular figure.

SER. No. 11,916. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "18" in a circle, all within a rectangular figure.

SER. No. 11,917. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "19" in a circle, all within a rectangular figure.

SER. No. 11,918. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "20" in a circle, all within a rectangular figure.

SER. No. 11,919. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "21" in a circle, all within a rectangular figure.

SER. No. 11,920. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "22" in a circle, all within a rectangular figure.

SER. No. 11,921. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "23" in a circle, all within a rectangular figure.

SER. No. 11,922. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "24" in a circle, all within a rectangular figure.

SER. No. 11,923. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "25" in a circle, all within a rectangular figure.

SER. No. 11,924. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "26" in a circle, all within a rectangular figure.

SER. No. 11,925. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "27" in a circle, all within a rectangular figure.

SER. No. 11,926. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "28" in a circle, all within a rectangular figure.

SER. No. 11,927. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "29" in a circle, all within a rectangular figure.

SER. No. 11,928. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "30" in a circle, all within a rectangular figure.

SER. No. 11,929. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "31" in a circle, all within a rectangular figure.

SER. No. 11,930. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "32" in a circle, all within a rectangular figure.

SER. No. 11,931. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "33" in a circle, all within a rectangular figure.

SER. No. 11,932. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "34" in a circle, all within a rectangular figure.

SER. No. 11,933. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "35" in a circle, all within a rectangular figure.

SER. No. 11,934. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "36" in a circle, all within a rectangular figure.

SER. No. 11,935. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "37" in a circle, all within a rectangular figure.

SER. No. 11,936. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "38" in a circle, all within a rectangular figure.

SER. No. 11,937. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "39" in a circle, all within a rectangular figure.

SER. No. 11,938. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "40" in a circle, all within a rectangular figure.

SER. No. 11,939. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "41" in a circle, all within a rectangular figure.

SER. No. 11,940. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "42" in a circle, all within a rectangular figure.

SER. No. 11,941. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "43" in a circle, all within a rectangular figure.

SER. No. 11,942. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "44" in a circle, all within a rectangular figure.

SER. No. 11,943. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "45" in a circle, all within a rectangular figure.

SER. No. 11,944. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "46" in a circle, all within a rectangular figure.

SER. No. 11,945. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "47" in a circle, all within a rectangular figure.

SER. No. 11,946. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "48" in a circle, all within a rectangular figure.

SER. No. 11,947. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "49" in a circle, all within a rectangular figure.

SER. No. 11,948. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "50" in a circle, all within a rectangular figure.

SER. No. 11,949. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "51" in a circle, all within a rectangular figure.

SER. No. 11,950. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "52" in a circle, all within a rectangular figure.

SER. No. 11,951. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "53" in a circle, all within a rectangular figure.

SER. No. 11,952. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "54" in a circle, all within a rectangular figure.

SER. No. 11,953. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "55" in a circle, all within a rectangular figure.

SER. No. 11,954. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "56" in a circle, all within a rectangular figure.

SER. No. 11,955. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "57" in a circle, all within a rectangular figure.

SER. No. 11,956. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "58" in a circle, all within a rectangular figure.

SER. No. 11,957. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "59" in a circle, all within a rectangular figure.

SER. No. 11,958. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "60" in a circle, all within a rectangular figure.

SER. No. 11,959. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "61" in a circle, all within a rectangular figure.

SER. No. 11,960. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "62" in a circle, all within a rectangular figure.

SER. No. 11,961. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "63" in a circle, all within a rectangular figure.

SER. No. 11,962. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "64" in a circle, all within a rectangular figure.

SER. No. 11,963. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "65" in a circle, all within a rectangular figure.

SER. No. 11,964. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "66" in a circle, all within a rectangular figure.

SER. No. 11,965. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "67" in a circle, all within a rectangular figure.

SER. No. 11,966. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "68" in a circle, all within a rectangular figure.

SER. No. 11,967. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "69" in a circle, all within a rectangular figure.

SER. No. 11,968. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "70" in a circle, all within a rectangular figure.

SER. No. 11,969. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "71" in a circle, all within a rectangular figure.

SER. No. 11,970. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "72" in a circle, all within a rectangular figure.

SER. No. 11,971. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "73" in a circle, all within a rectangular figure.

SER. No. 11,972. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "74" in a circle, all within a rectangular figure.

SER. No. 11,973. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "75" in a circle, all within a rectangular figure.

SER. No. 11,974. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "76" in a circle, all within a rectangular figure.

SER. No. 11,975. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "77" in a circle, all within a rectangular figure.

SER. No. 11,976. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "78" in a circle, all within a rectangular figure.

SER. No. 11,977. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "79" in a circle, all within a rectangular figure.

SER. No. 11,978. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "80" in a circle, all within a rectangular figure.

SER. No. 11,979. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "81" in a circle, all within a rectangular figure.

SER. No. 11,980. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "82" in a circle, all within a rectangular figure.

SER. No. 11,981. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "83" in a circle, all within a rectangular figure.

SER. No. 11,982. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "84" in a circle, all within a rectangular figure.

SER. No. 11,983. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "85" in a circle, all within a rectangular figure.

SER. No. 11,984. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "86" in a circle, all within a rectangular figure.

SER. No. 11,985. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "87" in a circle, all within a rectangular figure.

SER. No. 11,986. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "88" in a circle, all within a rectangular figure.

SER. No. 11,987. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "89" in a circle, all within a rectangular figure.

SER. No. 11,988. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "90" in a circle, all within a rectangular figure.

SER. No. 11,989. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "91" in a circle, all within a rectangular figure.

SER. No. 11,990. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "92" in a circle, all within a rectangular figure.

SER. No. 11,991. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "93" in a circle, all within a rectangular figure.

SER. No. 11,992. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "94" in a circle, all within a rectangular figure.

SER. No. 11,993. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "95" in a circle, all within a rectangular figure.

SER. No. 11,994. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "96" in a circle, all within a rectangular figure.

SER. No. 11,995. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "97" in a circle, all within a rectangular figure.

SER. No. 11,996. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "98" in a circle, all within a rectangular figure.

SER. No. 11,997. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "99" in a circle, all within a rectangular figure.

SER. No. 11,998. CLOTHING. ROGER & BROWN MFG. COMPANY, Columbus, Ohio. Filed Aug. 22, 1905.

The words "ROGER & BROWN MFG. CO." and the figure "100" in a circle, all within a rectangular figure.

SER. No. 11,899. TICKINGS. EAGLE & PHENIX MILLS, Columbus, Ga. Filed Aug. 22, 1905.

D D

The words "PREMIUM EXCELSIOR TICKINGS" and the representation of a heroic female figure wearing upon her head a crown and clothed in red and blue flowing garments and holding in one hand a flag and in the other a sword, the scabbard of which hangs at her side. The figure is surrounded by ornamental scrolls and panels and medals and the words and character "EAGLE & PHENIX MILLS COLUMBUS, GEORGIA" and the letters "D D."

SER. No. 11,900. TICKINGS. EAGLE & PHENIX MILLS, Columbus, Ga. Filed Aug. 22, 1905.

A O A

The words "PREMIUM EXCELSIOR TICKINGS" and the representation of a heroic female figure wearing upon her head a crown and clothed in red and blue flowing garments and holding in one hand a flag and in the other a sword, the scabbard of which hangs at her side. The figure is surrounded by ornamental scrolls and panels and medals and the words and letters "A O A."

SER. No. 11,901. TICKINGS. EAGLE & PHENIX MILLS, Columbus, Ga. Filed Aug. 22, 1905.

B B

The words "PREMIUM EXCELSIOR TICKINGS" and the representation of a heroic female figure wearing upon her head a crown and clothed in red and blue flowing garments and holding in one hand a flag and in the other a sword, the scabbard of which hangs at her side. The figure is surrounded by ornamental scrolls and panels and a number of medals and the words "EAGLE & PHENIX MILLS COLUMBUS, GEORGIA." and the letters "B B."

SER. No. 11,908. LEATHER BOOTS AND SHOES. WESTHEIMER-SWARTS SHOE CO., St. Louis, Mo. Filed Aug. 22, 1905.

The representation of a clover-leaf bearing upon its leaflets the letters "W S S C" inclosed within a circular border having two lateral extensions, in one of which appear the words "CLOVER BRAND SHOES" and in the other the words "ALWAYS JUST CORRECT."

SER. No. 11,922. SOLDERING FLUID FOR TIN, BRASS, COPPER, AND LIKE METALS. NON-CORROSIVE COATING CO., Connellsville, Pa. Filed Aug. 22, 1905.

la-Pataocin

The coined word "LA-PATAOCIN" surrounded by a rectangular panel.

SER. No. 11,998. LARD AND LARD COMPOUNDS. SWIFT AND COMPANY, Chicago, Ill. Filed Aug. 25, 1905.

A conventionalized representation of a cut jewel and rays radiating therefrom.

SER. No. 12,003. CURE FOR CONSUMPTION. PERRY M. FORD, Columbus, Ohio. Filed Aug. 25, 1905.

FI-FOR

The word "FIFOR" printed as a hyphenated word "FI-FOR" and as a monogram.

SER. No. 12,081. ACETYLENE-GAS GENERATORS. JUAN DE DIOS TRIADA, New York, N. Y. Filed Aug. 29, 1905.

ASTRAL

The word "ASTRAL."

SER. No. 12,172. TOOL-STEEL AND STEEL BARS, RODS, AND SHEETS AND TOOLS MADE FROM STEEL. HAWKRIDGE BROTHERS, Boston, Mass. Filed Sept. 2, 1905. Used ten years.

HAWK

The word "HAWK."

SER. No. 12,287. CHILDREN'S LEATHER SHOES. WATSON-PLUMMER SHOE COMPANY, Chicago, Ill. Filed Sept. 5, 1905.

The representation of a little district school-house having painted across one side thereof the words and numeral "DISTRICT No. 3" set in the midst of a landscape scene, the foreground of which consists of a playground with school children at play therein, while the background is a perspective of meadow, trees, and hills, the whole being inclosed in a solid black oval-shaped border, on which appear in white letters the words "WATSON-PLUMMER SHOE CO." and "RED SCHOOL HOUSE SHOES."

SER. No. 12,180. FLOUR. THE SWEET SPRINGS MILLING COMPANY, Sweet Springs, Mo. Filed Sept. 2, 1905.

STRAIGHT

The representation of a capital letter "M" above the word "STRAIGHT" and bearing the words "SWEET SPRINGS MILLING CO. SWEET SPRINGS, MO."

SER. No. 12,280. SELF-RAISING FLOUR. THE DAVIS MILLING COMP., St. Joseph, Mo. Filed Sept. 6, 1905. Used ten years.

The representation of the head of a negress and the words "AUNT JEMIMA'S" associated therewith.

SER. No. 12,198. WHEAT-FLOUR. THE SWEET SPRINGS MILLING COMPANY, Sweet Springs, Mo. Filed Sept. 2, 1905.

The representation of the capital letter "S" bearing upon the upper arm the words and abbreviation "SWEET SPRINGS MILLING Co," in a curved line upon the middle section "BEAUTIFUL ROLLER PATENT," upon the lower arm the words and abbreviation "SWEET SPRINGS Mo.," and at intervals the letter "S" inclosed in a circle.

SER. No. 12,808. DRESS GOODS AND LININGS COMPOSED OF SILK OR ADMIXTURES OF SILK WITH OTHER SUBSTANCES, SUCH AS COTTON AND WOOL. MARTIN L. COHN CO., New York, N. Y. Filed Sept. 7, 1905.

RITEKIND PRICES

A representation of a wax seal bearing the words "RITEKIND SILKS," the words "RITEKIND PRICES" appearing below the representation.

SER. No. 12,369. EMBALMING FLUIDS. THE VENUS CHEMICAL CO., New York, N. Y. Filed Sept. 8, 1905.

VENO

The word "VENO."

SER. No. 12,400. COFFEE. CONSUMERS SUPPLY COMPANY, St. Louis, Mo. Filed Sept. 8, 1905.

SER. No. 12,400.

PURETA

The word "PURETA."

SER. No. 12,410. ANTIMALARIAL TONICS. WHITTEMORE MEDICINE CO., Louisville, Ky. Filed Sept. 9, 1905.

The word "TROPICTONE" associated with the letter "R," having an oblique straight line across its tail and having behind its center a representation of a bottle from which rays radiate. A dash appears below the word "TROPICTONE," and the word "TROPICTONE" appears on the letter "R."

SER. No. 12,411. ANTIMALARIAL TONICS. WHITTEMORE MEDICINE CO., Louisville, Ky. Filed Sept. 9, 1905.

The word "FEBRI-TONE," associated with the letter "R," having an oblique straight line across its tail and having behind its center a representation of a bottle from which rays radiate. A straight horizontal line appears below the word "FEBRI-TONE," and the word "FEBRI-TONE" appears on the letter "R."

SER. No. 12,440. REMEDY FOR BRONCHITIS, PNEUMONIA, AND OTHER LUNG AND THROAT AFFECTIONS. J. EDWARD HANSON, Pass Christian, Miss. Filed Sept. 11, 1905.

Prun-Ammonia

The hyphenated words "PRUN-AMMONIA."

SER. No. 12,445. WOVEN CARPETS AND RUGS. BIGELOW CARPET COMPANY, Boston, Mass. Filed Sept. 11, 1905. Used ten years.

LANCASTER

The word "LANCASTER."

SER. No. 12,525. ROLL-PAPER HOLDERS AND CUTTERS. UNITED STATES PAPER CUTTER CO., St. Louis, Mo. Filed Sept. 13, 1905.

ROYAL

The word "ROYAL."

SER. No. 12,547. SILK PIECE GOODS. CLARENCE WHITMAN & CO., New York, N. Y. Filed Sept. 14, 1905.

The representation of two entwined winged serpents having griffin-like heads with a shuttle interposed between the bodies thereof.

SER. No. 12,565. PILLS FOR BILIOUSNESS AND CONSTIPATION. MUNYON'S HOMEOPATHIC HOME REMEDY CO., Philadelphia, Pa. Filed Sept. 14, 1905.

The representation of a paw-paw tree having a sign-board projecting across the same and the words "MUNYON'S PAW-PAW PILLS" on said sign-board.

SER. No. 12,566. COTTON PIECE GOODS. EAGLE & PHENIX MILLS, Columbus, Ga. Filed Sept. 14, 1905.

The words "CABLE COTTONADES" and the pictorial representation of the company's mills.

SER. No. 12,568. COTTON PIECE GOODS. EAGLE & PHENIX MILLS, Columbus, Ga. Filed Sept. 14, 1905.

The representation of a female wearing a plumed helmet and the armor of a knight bearing upon her shoulder a blue flag and the representation of an ornamental quartered coat of arms, associated with the word "BEAUVAIS."

SER. No. 12,567. COTTON PLAIDS AND STRIPES. EAGLE & PHENIX MILLS, Columbus, Ga. Filed Sept. 14, 1905.

The words "RESCUE PLAIDS," the representation of a bird's nest containing young birds and apparently resting on a cluster of wild-rose leaves and blossoms and surrounded by a circular border, and the representation of a bird resembling a robin perched upon a limb in the foreground of a rural scene comprising a stream, hills, woods, and flowers.

SER. No. 12,621. COTTON DUCK. MOUNT VERNON-WOODBERRY COTTON DUCK COMPANY, Baltimore, Md. Filed Sept. 14, 1905. Used ten years.

WOODBERRY

The word "WOODBERRY."

SER. No. 12,657. WASHES OR LOTIONS TO RID ANIMALS OF VERMIN. PRATT FOOD CO., Philadelphia, Pa. Filed Sept. 15, 1905.

The representation of a serrated seal and a crescent, associated with the word "PRATTS" and the words "OF PHILADELPHIA" on a flourish underneath the same, all appearing on the representation of the crescent and the words "ANIMAL DIP" on the representation of the serrated seal.

SER. No. 12,664. WHISKY. JOSEPH M. SCHWARTZ, Wheeling, W. Va. Filed Sept. 15, 1905.

The representation of a wax seal bearing the words "SCHWARTZ'S SPECIAL" and the words "WHEELING, W. VA." appearing below the representation.

SER. No. 12,665. WHISKY. JOSEPH M. SCHWARTZ, Wheeling, W. Va. Filed Sept. 15, 1905.

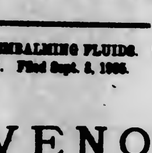

The representation of a wax seal bearing the words "SCHWARTZ'S SPECIAL" and the words "WHEELING, W. VA." appearing below the representation.

SER. No. 12,666. WHISKY. JOSEPH M. SCHWARTZ, Wheeling, W. Va. Filed Sept. 15, 1905.

The representation of a wax seal bearing the words "SCHWARTZ'S SPECIAL" and the words "WHEELING, W. VA." appearing below the representation.

SER. No. 12,667. WHISKY. JOSEPH M. SCHWARTZ, Wheeling, W. Va. Filed Sept. 15, 1905.

The representation of a wax seal bearing the words "SCHWARTZ'S SPECIAL" and the words "WHEELING, W. VA." appearing below the representation.

SER. No. 12,668. WHISKY. JOSEPH M. SCHWARTZ, Wheeling, W. Va. Filed Sept. 15, 1905.

The representation of a wax seal bearing the words "SCHWARTZ'S SPECIAL" and the words "WHEELING, W. VA." appearing below the representation.

SER. No. 12,669. WHISKY. JOSEPH M. SCHWARTZ, Wheeling, W. Va. Filed Sept. 15, 1905.

The representation of a wax seal bearing the words "SCHWARTZ'S SPECIAL" and the words "WHEELING, W. VA." appearing below the representation.

SER. No. 12,670. WHISKY. JOSEPH M. SCHWARTZ, Wheeling, W. Va. Filed Sept. 15, 1905.

The representation of a wax seal bearing the words "SCHWARTZ'S SPECIAL" and the words "WHEELING, W. VA." appearing below the representation.

SER. No. 12,818. CALICOES FOR PRINTING AND DYEING. THE ARNOLD PRINT WORKS, North Adams, Mass. Filed Sept. 18, 1905. Used ten years.

The word "ARNOLD."

SER. No. 12,819. CALICOES FOR PRINTING AND DYEING. THE ARNOLD PRINT WORKS, North Adams, Mass. Filed Sept. 18, 1905. Used ten years.

The word "ARNOLD."

SER. No. 12,820. CALICOES FOR PRINTING AND DYEING. THE ARNOLD PRINT WORKS, North Adams, Mass. Filed Sept. 18, 1905. Used ten years.

The word "ARNOLD."

SER. No. 12,821. CALICOES FOR PRINTING AND DYEING. THE ARNOLD PRINT WORKS, North Adams, Mass. Filed Sept. 18, 1905. Used ten years.

The word "ARNOLD."

SER. No. 12,822. CALICOES FOR PRINTING AND DYEING. THE ARNOLD PRINT WORKS, North Adams, Mass. Filed Sept. 18, 1905. Used ten years.

The word "ARNOLD."

SER. No. 12,823. CALICOES FOR PRINTING AND DYEING. THE ARNOLD PRINT WORKS, North Adams, Mass. Filed Sept. 18, 1905. Used ten years.

The word "ARNOLD."

SER. No. 12,824. CALICOES FOR PRINTING AND DYEING. THE ARNOLD PRINT WORKS, North Adams, Mass. Filed Sept. 18, 1905. Used ten years.

The word "ARNOLD."

Ser. No. 12,664. WHISKY. Joseph H. Schwartz, Plymouth, Pa. Filed Sept. 15, 1905.

Pemlex

The word "Pemlex."

Ser. No. 12,665. WHISKY. Joseph H. Schwartz, Plymouth, Pa. Filed Sept. 15, 1905.

Marshdale

The word "Marshdale."

Ser. No. 12,667. WHISKY. Joseph H. Schwartz, Plymouth, Pa. Filed Sept. 15, 1905.

SILKSMOOTH

The word "Silksmooth."

Ser. No. 12,668. WHISKY. Joseph H. Schwartz, Plymouth, Pa. Filed Sept. 15, 1905.

YUGETA

The word "Yugeta."

Ser. No. 12,713. LEAD-PENCILS. Eagle Pencil Company, New York, N. Y. Filed Sept. 16, 1905.

RADIUM

The word "Radium," having rays radiating therefrom.

Ser. No. 12,810. CREAM FOR THE TREATMENT OF THE SKIN. Pond's Extract Company, New York, N. Y. Filed Sept. 20, 1905. Used ten years.

Pond's Extract Cream

The words "Pond's Extract Cream."

Ser. No. 12,754. TYPE-WRITING MACHINES. The Oliver Typewriter Company, Chicago, Ill. Filed Sept. 18, 1905.

A red circle surrounding an Oliver type-writing machine.

Ser. No. 12,802. SOOTHING-SYRUP. Presto Pharmacal Company, Reading, Pa. Filed Sept. 20, 1905.

GRAND MA'S

SECRET

The words "Grand Ma's Secret" and the pictorial representation of an old lady wearing a cap and shawl.

Ser. No. 12,812. OPALESCENT FLUID WITH A VERY DIFFUSIVE ODOR, SUCH FLUID BEING A DISTILLATION OF HAMAMELIS, USED FOR EXTERNAL AND INTERNAL APPLICATION. Pond's Extract Company, New York, N. Y. Filed Sept. 20, 1905. Used ten years.

A pictorial device or landscape having in its foreground a tall shrub that extends from the lower left-hand corner to and nearly filling the upper part of the device. The shrub is of a peculiar form and has blossoms as well as leaves. In the middle ground is a meandering river, and beyond it are men with axes felling shrubs or small trees and a wagon laden with trees or shrubs and drawn by horses. In the background is a high hill, near the base of which is a mill or distillery with smoke ascending from its chimney.

Ser. No. 12,813. OPALESCENT FLUID WITH A VERY DIFFUSIVE ODOR, SUCH FLUID BEING A DISTILLATION OF HAMAMELIS, USED FOR EXTERNAL AND INTERNAL APPLICATION. Pond's Extract Company, New York, N. Y. Filed Sept. 20, 1905. Used ten years.

POND'S EXTRACT

The words "Pond's Extract."

Ser. No. 12,814. OINTMENTS. Pond's Extract Company, New York, N. Y. Filed Sept. 20, 1905. Used ten years.

POND'S EXTRACT

OINTMENT

The words "Pond's Extract Ointment."

Ser. No. 12,815. OPALESCENT FLUID WITH A VERY DIFFUSIVE ODOR, BEING A DISTILLATION OF HAMAMELIS, USED FOR INTERNAL AND EXTERNAL APPLICATION. Pond's Extract Company, New York, N. Y. Filed Sept. 20, 1905. Used ten years.

A rectangular figure formed by the duplicated words "Pond's Extract," said duplicated words being arranged parallel to each other and connected by two elongated lines at the sides, the "P's" in the words "Pond's" connected by one line and the last "T's" in the words "Extract" connected by another line.

Ser. No. 12,816. CATARRH REMEDIES. Pond's Extract Company, New York, N. Y. Filed Sept. 20, 1905. Used ten years.

POND'S EXTRACT

CATARRH CURE

The words "Pond's Extract Catarrh Cure."

Ser. No. 12,817. VETERINARY REMEDIES FOR HORSES AND ALL DOMESTIC ANIMALS. Pond's Extract Company, New York, N. Y. Filed Sept. 20, 1905. Used ten years.

POND'S EXTRACT VETERINARY REMEDY

The words "Pond's Extract Veterinary Remedy."

Ser. No. 12,824. EARTH-SCRAPERS. The Kilbourne & Jacobs Manufacturing Company, Columbus, Ohio. Filed Sept. 20, 1905. Used ten years

COLUMBUS

The word "Columbus."

Ser. No. 12,843. HOSE-SUPPORTERS. Pioneer Suspender Company, Philadelphia, Pa. Filed Sept. 21, 1905.

RUBBER-GRIP

The hyphenated word "Rubber-Grip."

Ser. No. 12,845. SOAP FOR LAUNDRY AND FOR TOILET AND FOR HOUSEHOLD USE. Maple City Soap Works, Monmouth, Ill. Filed Sept. 21, 1905.

The words "Maple City," associated with and superimposed upon the representation of maple-leaves.

Ser. No. 12,874. MENS' VESTS AND WAISTCOATS. Fred'k H. Sprague Co., Orange, Mass. Filed Sept. 21, 1905. Used ten years.

Russian Vests

The words "Russian Vests."

Ser. No. 12,877. STORAGE BATTERIES. The Storage Battery Supply Co., New York, N. Y. Filed Sept. 21, 1905.

Ser. No. 12,877.

Ser. No. 12,945. YEAST-CAKE. Star Yeast Cake Co., Richmond

Ser. No. 13,089. HOT-AIR FURNACES. The Wise Furnace Co.,

Ser. No. 13,155. REMEDY FOR THE NERVES. B. H. Bacon Co.,

SER. No. 12,877.

The representation of a large and a small bottle and the conventional representation of satan appearing standing on the bottles and holding his trident over the mouth of the large bottle, from which mouth extend conventional flashes, the letters "S B S" and the abbreviation "Co." appearing on the large bottle and the whole being inclosed by an ornamental border.

SER. No. 12,898. MEDICINE FOR KIDNEY AFFECTIONS. MABEL ALICE HAMILTON, Boston, Mass. Filed Sept. 22, 1905.

YO-YO

The hyphenated word "Yo-Yo."

SER. No. 12,921. SALVE. JOHN H. PATTEN, Butler, Mo. Filed Sept. 23, 1905.

PATTEN'S
LIGHTNING SALVE

The words "PATTEN'S LIGHTNING SALVE."

SER. No. 12,928. TONICS. WINTERSMITH MEDICINE CO., Louisville, Ky. Filed Sept. 23, 1905.

The words "VINO TONICO DE WINTERSMITH" arranged within a rectangular panel containing the facsimile signature "C. H. WINTERSMITH" near its lower end and surmounted by a substantially triangular ornamental figure, the said figure having the general appearance of an oblong body supported by two flowering stems and having corolla rising from its upper edge and having a fan-like figure at its lower edge.

SER. No. 12,945. YEAST-CAKE. STAR YEAST CAKE CO., Richmond, Va. Filed Sept. 23, 1905.

STAR

The representation of a star and the word "STAR," the latter being arranged over the star in a horizontally-curved line.

SER. No. 12,954. MEDICAL TABLET FOR THE CURE OF MALARIA AND SIMILAR DISEASES. WARREN M. MACLEOD, Philadelphia, Pa. Filed Sept. 25, 1905.

MALARIA-ANTITOXIN

The picture of a mosquito pierced through by an arrow, associated with the words "MALARIA-ANTITOXIN."

SER. No. 12,956. OUTER AND DRESS SHIRTS. HUGH H. MCCLELLAN, Troy, N. Y. Filed Sept. 25, 1905. Used ten years.

Peerless

The word "PEERLESS."

SER. No. 12,964. LADIES', MEN'S, AND CHILDREN'S LEATHER SHOES. SIMON HIRSBERG, Boston, Mass. Filed Sept. 26, 1905.

The words "PAUL REVERE SHOE" and a picture representing Paul Revere on horseback riding through a country village.

SER. No. 13,043. SKIRTS. PUSCH BROTHERS, St. Louis, Mo. Filed Sept. 26, 1905.

PROGRESS BRAND

The words "PROGRESS BRAND" inclosed in a rectangle.

SER. No. 13,089. HOT-AIR FURNACES. THE WISE FURNACE CO., Akron, Ohio. Filed Sept. 28, 1905.

The representation of an owl sitting upon the limb of a tree; in connection with the word "WISE."

SER. No. 13,048. SUSPENDERS FOR TROUSERS. GORDON MANUFACTURING COMPANY, New Rochelle, N. Y. Filed Sept. 27, 1905.

A circle surmounted by a Maltese cross. Within the circle is inscribed the word "GORDON."

SER. No. 13,070. INTERNAL-COMBUSTION ENGINES. THE PROGRESSIVE MFG. CO., Torrington, Conn. Filed Sept. 27, 1905.

EAGLE

The word "EAGLE."

SER. No. 13,079. MAGAZINE OR PERIODICAL. GEORGE F. TIBBY, Waterville, Me. Filed Sept. 27, 1905.

THE AMERICAN HOME

The words "THE AMERICAN HOME."

SER. No. 13,098. GENUINE MINED AND CUT TURQUOISE. THE ASTRO TURQUOISE COMPANY, New York, N. Y. Filed Sept. 28, 1905.

A monogram of the letters "A Z T" above a horizontal line.

SER. No. 13,155. REMEDY FOR THE NERVES. B. H. BADER CO., Rochester, N. Y. Filed Sept. 30, 1905.

The representation of a crown, in combination with the words "CELERY KING."

SER. No. 13,160. COAL. MERCHANTS COAL COMPANY, Baltimore, Md. Filed Sept. 30, 1905.

ORENDA

The word "ORENDA."

SER. No. 13,172. CRACKERS AND BISCUITS. GREEN GREEN & CO., Dayton, Ohio. Filed Sept. 30, 1905.

A monogram of the letters "G G & Co.," with the capital letters "G G" face to face and the words "& Co." between the letters and with the word "GOOD" above and the word "GOODS" below the monogram, the whole being inclosed in a circle.

SER. No. 13,212. CANNED VEGETABLES AND FRUITS. STODDARD, GILBERT & CO., New Haven, Conn. Filed Oct. 2, 1905.

The picture of a house of cottage type, adjacent to which is a flagpole from which a flag is flying bearing the word "HERMITAGE," the house being represented as built upon an elevation with surrounding rocks and low shrubbery.

SER. No. 13,215. CHAMPAGNE. ROBERT H. JOHNS, Bath, N. Y. Filed Oct. 4, 1905.

SER. No. 13,215.

WHITE PEARL

The words "WHITE PEARL."

SER. No. 13,250. WHEAT-FLOUR. J. H. KENNEDY MILLING COMPANY, Glencoe, Minn. Filed Oct. 3, 1905.

UNCLE SAM

The words "UNCLE SAM," associated with a conventional representation of Uncle Sam with a sheaf of wheat in his arms.

SER. No. 13,268. LEATHER BOOTS AND SHOES. THE MANSFIELD SHOE MANUFACTURING COMPANY, Cincinnati, Ohio. Filed Oct. 3, 1905.

Unfit

The word-symbol "UNFIT."

SER. No. 13,317. FACE LOTION. RICHARD T. HARDY, Baltimore, Md. Filed Oct. 5, 1905.

R·U.

The letters and characters "R· U·"

SER. No. 13,387. CIGARS, CHEROOTS, AND CIGARETTES MADE OF CIGAR-TOBACCO. CAYEY CAGUAS TOBACCO COMPANY, New York, N. Y. Filed Oct. 6, 1905.

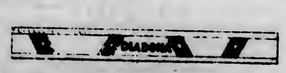

A representation of a strip-band with a beaded edge, top, and bottom, the spaces between said beaded edges being divided by four diagonal panels, the two inner panels sloping in opposite directions and the two outer panels sloping in opposite directions, the alternate panels being parallel to each other, each of said four panels containing a star. Between the two inner panels is the word "DIADONA."

SER. No. 13,382. TOOLS FOR CLEANING STEAM-BOILERS. POWER SPECIALTY CO., Detroit, Mich. Filed Oct. 6, 1905.

The word "DIAMOND" and a wreath arranged on a diamond-shaped figure.

SER. No. 13,397. WHISKY. BIEBER BROS. & CO., Lynchburg, Va. Filed Oct. 7, 1905.

PIEDMONT CLUB

The words "PIEDMONT CLUB."

SER. No. 13,470. PIANOS. A. M. MCPHAIL PIANO CO., Boston, Mass. Filed Oct. 10, 1905. Used ten years.

Mc Phail

The word "MCPHAIL."

SER. No. 13,485. BUTTER. CURRIER-TODD CO., Lawrence, Mass. Filed Oct. 11, 1905.

A broken circle inclosing the words "OUR C. T. CO. LAWRENCE MASS. DANISH CREAMERY" arranged one above the other.

SER. No. 13,492. SPECTACLE AND EYEGLASS FRAMES. BAY STATE OPTICAL COMPANY, Attleboro, Mass. Filed Oct. 11, 1905.

BESTO

The word "BESTO."

SER. No. 13,506. AUTOMOBILE-HORNS. GABRIEL HORN MFG. CO., Cleveland, Ohio. Filed Oct. 11, 1905.

GABRIEL

The word "GABRIEL."

SER. No. 13,514. SHORTENING FOR PASTRY. AMBON & PERSON, Jersey City, N. J. Filed Oct. 12, 1905.

BA-KO

The hyphenated word "BA-KO" imprinted in white letters upon a substantially rectangular dark background or panel.

SER. No. 13,519. GAME-BOARDS. LOUIS HUDSEN, Nogales, Ariz. Filed Oct. 12, 1905.

YAQUI TROUBLES

The words "YAQUI TROUBLES."

SER. No. 13,536. WHISKY. CHARLES ROTH, Cincinnati, Ohio. Filed Oct. 13, 1905.

WAR EAGLE

The words "WAR EAGLE."

SER. No. 13,541. CLUTCHES. T. B. WOOD'S SONS, Chambersburg, Pa. Filed Oct. 13, 1905.

UNIVERSAL GIANT

The words "UNIVERSAL GIANT."

SER. No. 13,550. WHEAT-FLOUR. NEW LONDON MILLING COMPANY, New London and Willmar, Minn. Filed Oct. 13, 1905.

SER. No. 13,550.

The word "KNEADED," surrounded by an annular border which contains in the upper section the words and abbreviation "NEW LONDON MILLING CO.," in the lower section the word and abbreviation "WILLMAR, MINN.," and on either side a star.

SER. No. 13,595. HOSE-SUPPORTERS. PIONEER SUSPENDER COMPANY, Philadelphia, Pa. Filed Oct. 14, 1905.

LOCK-GRIP

The hyphenated word "LOCK-GRIP."

SER. No. 13,648. ROPE-CLIPS. AMERICAN HOIST & DERRICK COMPANY, St. Paul, Minn. Filed Oct. 16, 1905. Used ten years.

CROSBY

The word "CROSBY."

SER. No. 13,658. ORGANS. OSCAR HERMANN, New York, N. Y. Filed Oct. 16, 1905.

Concerto.

The word "CONCERTO."

SER. No. 13,661. GARDEN, TRUCKING, AND FLOWER SEEDS AND BULBS. GEORGE TAIT & SONS, Norfolk, Va. Filed Oct. 17, 1905.

Ser. No. 13,661.

A serrated disk or seal containing a scroll bearing the words "THOROUGHBRED SEEDS," having a thistle bloom and leaves in the background, the whole being inclosed in a circle and associated with the words "GEORGE TAIT & SONS NORFOLK. VA." arranged in circular form around the outside of the ring.

Ser. No. 13,717. WHISKY. ALBANY WINE & LIQUOR CO., Albany, N. Y. Filed Oct. 18, 1905.

The word "EVERMORE," associated with a monogram of the letters and character "A W & L Co" inclosed in a circle surmounted by a crown and the number "18" appearing on the left of the circle and the number "97" on the right thereof.

Ser. No. 13,782. MAINSPRINGS. SWARTCHILD & Co., Chicago, Ill. Filed Oct. 20, 1905.

BLACK SHIELD

A shield that is black except for a white border-line and a white letter "S" in the center of the shield, an eagle surmounting the shield, a streamer upon which appear the words "ACCURACY" "DISPATCH," and the words "BLACK SHIELD" underneath the shield.

Ser. No. 13,898. MATTRESSES. THE JOHN RENDNER COMPANY, San Francisco, Cal. Filed Oct. 24, 1905.

Kapokeen

The word "KAPOKEEN."

Ser. No. 13,908. TEA. ACKER, MERRALL & CONDIT COMPANY, New York, N. Y. Filed Oct. 24, 1905.

Ser. No. 13,908.

The representation of several mountains, at the foot of which is a body of water. In the foreground is the representation of a tea-field in which are several native women picking tea, one of whom is standing erect with a tea-basket on her head. In the center of the said representation are the words "PEKIA WAVERS," the whole representation being surrounded by a fancy border, near the base of the main panel being a fancy ornamentally-bordered panel and in the lower corners of the main panel being the representation of an elephant's head holding a package of tea in his trunk.

Ser. No. 13,945. PAPER AND ENVELOPS, INCLUDING BOTH RULED AND UNRULED COMMERCIAL AND CORRESPONDENCE PAPER OF ALL KINDS, BOTH SHEET AND BOUND FORM. FITZ ALLEN FLINN, New York, N. Y. Filed Oct. 26, 1905.

The representation of a male figure attired to resemble an American Colonist. The figure is depicted as carrying a musket in one hand, and the attire of the figure is substantially that worn by the male American Colonists at the time of the Revolutionary war between the American Colonists and Great Britain.

Ser. No. 13,973. SOAP. EDWARD A. OLDS, New York, N. Y. Filed Oct. 27, 1905.

A stand of flags and a shield, the flags extending on opposite sides of the shield.

Ser. No. 14,022. SASH-PULLEYS. NORRIS SASH PULLEY COMPANY, Baltimore, Md. Filed Oct. 28, 1905. Used ten years.

Norris

The word "NORRIS."

Ser. No. 14,029. SPRING-WATER. THEODORE C. BATES, North Brookfield, Mass. Filed Oct. 31, 1905.

Ser. No. 14,029.

The word "QUABAUG" and the picture of the head of the Indian chief King Philip wearing a feather headdress, the words "KING PHILIP" appearing beneath the picture.

Ser. No. 14,138. BOOTS, SHOES, AND SLIPPERS OF LEATHER OR TEXTILE MATERIAL OR BOTH AND SOLES THEREFOR. NATH'L. FISHER & Co., New York, N. Y. Filed Oct. 31, 1905.

OROPAX

The word "OROPAX."

Ser. No. 14,144. WRENCHES. WALWORTH M'F'G. Co., Boston, Mass. Filed Oct. 31, 1905. Used ten years.

Stillson

The word "STILLSON."

Ser. No. 14,365. CANDIES AND CHOCOLATE OF ALL KINDS. STEPHEN F. WHITMAN & SON, Philadelphia, Pa. Filed Nov. 6, 1905. Used ten years.

WHITMAN'S

The word "WHITMAN'S."

Ser. No. 14,398. SCOURING-SOAP. BON AMI COMPANY, New York, N. Y. Filed Nov. 7, 1905. Used ten years.

BON AMI

The words "BON AMI."

Ser. No. 14,402. CANDIES AND CHOCOLATES OF ALL DESCRIPTIONS. STEPHEN F. WHITMAN & SON, Philadelphia, Pa. Filed Nov. 8, 1905.

Whitman's

The word "WHITMAN'S" in heavy script with a paraph extending from the terminal letter backward and beneath the entire word.

Ser. No. 14,405. LEATHER BOOTS AND SHOES. WILLIAM J. NEWMAN, Boston, Mass. Filed Nov. 8, 1905. Used ten years.

Newman the Shoeman

The words "NEWMAN THE SHOEMAN."

Ser. No. 14,421. SHEETINGS. THE COURTENAY MFG. Co., Newry, S. C. Filed Nov. 8, 1905.

The allegorical representation of Neptune arranged within a frame on which is the word "TRIDENT" and the representation of shells at the corners. Also arranged within the frame is the representation of seahorses and a fish.

Ser. No. 14,439. CORSETS. BERDEY & SOMMS, New York, N. Y. Filed Nov. 9, 1905.

SULTANA

The word "SULTANA."

Ser. No. 14,451. RIBBONS. PASSAVANT & Co., New York, N. Y. Filed Nov. 9, 1905.

The word "EDISON" printed in script upwardly slanting toward the right and crossing the figure of a woman holding in her

right hand an electric lamp from which rays of light are represented as radiating. The woman is represented as standing upon a pictorial illustration of lightning.

SER. No. 14,476. SILVER-PLATED HOLLOW WARE. INTERNATIONAL SILVER COMPANY, Meriden, Conn. Filed Nov. 10, 1905.

The representation of an ornamental circular scroll-shaped figure, associated with the words "SUPERIOR SILVER Co" inclosed in concentric circles.

SER. No. 14,478. SILVER-PLATED HOLLOW WARE. INTERNATIONAL SILVER COMPANY, Meriden, Conn. Filed Nov. 10, 1905.

The representation of three stars, associated with the words "EUREKA SILVER CO QUADRUPLE PLATE" inclosed in a circle.

SER. No. 14,498. MEN'S OUTER SHIRTS. HANNAGH & STIFFIN, Memphis, Tenn. Filed Nov. 11, 1905.

A picture of a steamboat with the word "ROSALIE" extending diagonally across it.

SER. No. 14,560. CARPETS. MORRIS AND COMPANY, Yardville, N. J. Filed Nov. 13, 1905.

A red triangle.

SER. No. 14,566. TICKET ISSUING AND RECORDING MACHINES. GENERAL FARE REGISTER CO., Dayton, Ohio. Filed Nov. 13, 1905.

SER. No. 14,566.

OHMERGRAPH

The coined word "OHMERGRAPH."

SER. No. 14,649. PAPER BAGS. THE UNION BAG & PAPER COMPANY, New York, N. Y. Filed Nov. 15, 1905.

CHAMPION

The arbitrary word "CHAMPION."

SER. No. 14,650. STIFF FUR HATS. S. C. HOLLEY & Co., Danbury, Conn. Filed Nov. 15, 1905.

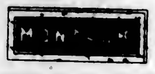

The word "MONTAUK."

SER. No. 14,694. LITHIA-WATER. WILLIAM G. TAYLOR, Richmond, Va. Filed Nov. 15, 1905. Used ten years.

Fonticello

The word-symbol "FONTICELLO."

SER. No. 14,841. BUTTON PARTS. CHARLES HENRY SCHOTT, New York, N. Y., and Providence, R. I. Filed Nov. 20, 1905. Used ten years.

The words "SCHOTT BROS."

SER. No. 14,959. RHEUMATIC REMEDIES. PHELPS DRUG Co., Warren, Pa. Filed Nov. 24, 1905.

A circular band and the figures "1900" and beneath the same the figures 7-10-6-10," associated with the words "CROCKER'S RHEUMATIC REMEDY" appearing on the band.

SER. No. 15,084. CERTAIN PREPARATION FOR SCOURING AND CLEANSING WOOL, FULLING YARN OR CLOTH, WASHING FLOORS, WINDOWS, AND SIMILAR SURFACES. INDIA ALKALI WORKS, Boston, Mass. Filed Nov. 20, 1905. Used ten years.

SAVOGRAN

The word "SAVOGRAN."

SER. No. 15,181. BAKING-POWDER. THE SOUTHERN MANUFACTURING Co., Richmond, Va. Filed Dec. 4, 1905.

The representation of a horseshoe with the words "GOOD LUCK." These words appear on the arc of a circle above the representation of a horseshoe. The words "ONE SPOON" are located inside the horseshoe, and the words "BAKING POWDER" are run through the bottom of the horseshoe, the word "BAKING" being inclined upward and the word "POWDER" downward. On each side of the horseshoe are several representations of the four-leaf clover

SER. No. 15,225. REMEDY FOR CUTS, WOUNDS, STRAINS, SPRAINS, BRUISES, BURNS, SCALDS, STINGS, BITES, RHEUMATISM, NEURALGIA, PAINS AND ACHES, CHILBLAINS, SORE THROAT, SWELLINGS, CORNS, PILES, AND LIKE COMPLAINTS. G. C. HANFORD MANUFACTURING Co., Syracuse, N. Y. Filed Nov. 13, 1905. Used ten years.

Balsam of Myrrh

The words "BALSAM OF MYRRH."

SER. No. 15,281. WHISKY. ROTH & Co., San Francisco, Cal. Filed Dec. 6, 1905. Used ten years.

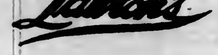

The word "LAWTON'S."

SER. No. 15,491. COMBINATION OF CIGAR AND CHEWING TOBACCO HAVING THE OUTWARD APPEARANCE AND CONSISTENCY OF AN ORDINARY CIGAR. ALFRED MARQUARDT, Omaha, Nebr. Filed Dec. 12, 1905.

The word "DEUTSCHLANDCHEW" within the outline of a cigar.

SER. No. 15,482. SONG-BIRDS. MAX GEISLER, Omaha, Nebr. Filed Dec. 13, 1905.

The words "LIVING MUSIC BOX."

SER. No. 15,492. CAP-MANTLES. WILLIAM H. SCHAEFER, Toledo, Ohio. Filed Dec. 13, 1905.

The words "ROYAL BLUE" in large-sized bold-faced capitals, having associated therewith the name "SCHAEFER'S" arranged across the face thereof in open-faced capitals, and the words "CAP MANTLES" in capitals arranged below the same, the whole being inclosed within a fanciful scroll border.

SER. No. 15,513. LUMBERMEN'S RUBBERS FOR MEN, BOYS, AND YOUTHS AND MEN'S, BOYS' YOUTHS', WOMEN'S, MISSES', AND CHILDREN'S RUBBER BOOTS. LEWIS PRATT ROSS, Rochester, N. Y. Filed Dec. 19, 1905.

The representation of the bust of a conventional picture or cut of a Quaker, above which appears the word "QUAKER" on a curve and below which appears the word "QUALITY" on a curve, the bust and the words being inclosed in a nearly oval border, containing within said border at either side two ornamental scrolls and three small dots or dashes.

SER. No. 15,535. PLATE, DRY-PLATE, AND WINDOW GLASS. FELIX CONRAD & COMPANY, New York, N. Y. Filed Dec. 20, 1905.

The letters "F. C. & Co." surrounded by an elliptical band, above which appears a crown surmounted by three ostrich plumes and having ornamental streamers attached thereto.

SER. No. 15,539. LEAD-PENCILS. EAGLE PENCIL COMPANY, New York, N. Y. Filed Dec. 23, 1905.

SER. No. 15,596.

SER. No. 15,671.

SER. No. 15,717. POULTRY-FOOD. THE ALBERT DICKINSON COMPANY, Chicago, Ill. Filed Dec. 28, 1905.

Ser. No. 15,589. LEAD-PENCILS. Eagle Pencil Company, New York, N. Y. Filed Dec. 26, 1905.

MIKADO

The word "Mikado."

Ser. No. 15,542. FEATHER DUSTERS. Chicago Feather Duster Co., Chicago, Ill. Filed Dec. 20, 1905.

I.B.T.

The letters "I. B. T." in connection with a running ostrich and the words "Feather Duster."

Ser. No. 15,566. INKSTANDS. Century Inkstand Company, New York, N. Y. Filed Dec. 21, 1905.

Century

The word "Century."

Ser. No. 15,572. LEAD-PENCILS. American Lead Pencil Co., New York, N. Y. Filed Dec. 21, 1905. Used ten years.

Carbon

The word "Carbon."

Ser. No. 15,645. DRIED AND EVAPORATED FRUITS. National Grocer Company, Chicago, Ill. Filed Dec. 26, 1905.

LIGHT HOUSE

The words "Light House" and the pictorial representation of a marine scene showing a lighthouse on a ledge of rock, from the top of which lighthouse is shown a flash of light thrown out to sea upon a vessel.

Ser. No. 15,596. INCANDESCENT MANTLES FOR GAS-LAMPS. Bandt Light Company, New York, N. Y. Filed Dec. 28, 1905.

Ser. No. 15,596.

NOKIK

The word "Nokik."

Ser. No. 15,666. BASE-BALL BATS. J. F. Hillerich & Son, Louisville, Ky. Filed Dec. 26, 1905. Used ten years.

LOUISVILLE SLUGGER
MADE BY
J. F. HILLERICH & SON.
LOUISVILLE, KY.

The words "Louisville Slugger Made By J. F. Hillerich & Son, Louisville, Ky.," inclosed within an oval-shaped border.

Ser. No. 15,670. GINS. Carl P. Lauber, Philadelphia, Pa. Filed Dec. 27, 1905.

The representation of an arbor of lattice-work over which trail grapevines bearing fruit. Upon the top of the front arch of the arbor is an enlarged wine-cup mounted on a pedestal, and on the ground at the base of said arch, on either side of the opening therein, stand groups of bottles. Within the archway stands a male child unclad and leaning against a barrel mounted on a trestle, his left hand holding a wine-cup raised above his head, the head of the barrel being marked with my last name "Lauber," and the letters "C P" in monogram form above said name.

Ser. No. 15,671. BRANDIES AND FRUIT-BRANDIES. Carl P. Lauber, Philadelphia, Pa. Filed Dec. 27, 1905.

Ser. No. 15,671.

The representation of an arbor of lattice-work over which trail grapevines bearing fruit. Upon the top of the front arch of the arbor is an enlarged wine-cup mounted on a pedestal, and on the ground at the base of said arch, on either side of the opening therein, stand groups of bottles. Within the archway stands a male child unclad and leaning against a barrel mounted on a trestle, his left hand holding a wine-cup raised above his head, the head of the barrel being marked with my last name, "Lauber," and the letters "C P" in monogram form above said name.

Ser. No. 15,678. VINEGAR. H. J. Heinz Company, Allegheny, Pa. Filed Dec. 27, 1905.

REX AMBER.

The words "Rex Amber."

Ser. No. 15,695. WHEAT-FLOUR. Phœnix Mill Co., Minneapolis, Minn. Filed Dec. 7, 1905.

PHOENIXOTA

The word "Phœnixota."

Ser. No. 15,696. WHEAT-FLOUR. Phœnix Mill Co., Minneapolis, Minn. Filed Dec. 8, 1905.

PHOENIX LILY

The words "Phœnix Lily."

Ser. No. 15,717. POULTRY-FOOD. The Albert Dickinson Company, Chicago, Ill. Filed Dec. 28, 1905.

CRESCENT

The word "Crescent."

Ser. No. 15,722. WHISKY. Steinhardt Bros. & Co., New York, N. Y. Filed Dec. 28, 1905.

Old Methusalem

The representation of the head of an old man with white hair and white flowing beard inclosed in a circular frame, together with fancy scroll work, associated with the words "Old Methusalem."

Ser. No. 15,724. SKIRT-DISTENDERS. Alexander M. Grean, New York, N. Y. Filed Dec. 28, 1905.

NOT-A-HOOP

The hyphenated word "Not-A-Hoop."

Ser. No. 15,788. PHOTOGRAPHIC FILMS. Compagnie Générale de Photographies Cinématographes et Appareils de Précision, Paris, France. Filed Dec. 16, 1905.

The representation of a rooster.

Ser. No. 15,757. RIBBONS. Samuel Berman & Company, New York, N. Y. Filed Dec. 30, 1905.

RADIUM

The word "Radium."

Ser. No. 15,768. BUTTER. The D. H. Wood Butter Co., Elgin, Ill. Filed Dec. 30, 1905. Used ten years.

MONOGRAM

The words "Monogram Brand," associated with a monogram composed of the word "The," the letters "D. R. W. B.," and

Ser. No. 15,886.

Ser. No. 15,910. WRAPPING-PAPER, PAPER BAGS, AND PA-

Ser. No. 15,917.

The words "MONOGRAM BRAND," associated with a monogram composed of the word "THE," the letters "D H W B," and the abbreviation "Co," said monogram being inclosed within a circular border with scrolls extending therefrom.

SER. No. 15,808. WHEAT-FLOUR. THE CENTRAL KANSAS MILLING COMPANY, Lyons, Kans. Filed Jan. 3, 1906.

KANSAS PRIDE

The words "KANSAS PRIDE."

SER. No. 15,811. CORDS, LINES, TWINES, AND ROPES. SAMSON CORDAGE WORKS, Boston, Mass. Filed Jan. 3, 1906. Used ten years.

MASSACHUSETTS

The word "MASSACHUSETTS."

SER. No. 15,812. CORDS, LINES, TWINES, AND ROPES. SAMSON CORDAGE WORKS, Boston, Mass. Filed Jan. 3, 1906.

SAMSON

The word "SAMSON."

SER. No. 15,858. READY FELT ROOFING. BUCHANAN FOSTER COMPANY, Philadelphia, Pa. Filed Jan. 3, 1906.

The representation of two monkeys seated upon a roll of roofing-felt, one end of which is unrolled and held above their heads as a weather-shield, the whole surmounted by the word "CONGO."

SER. No. 15,885. COUNTER-SHAFTS AND APPURTENANCES THERETO. THE MORRISON WHEBER COMPANY, Central Falls, R. I. Filed Jan. 4, 1906.

MULTI-PULL

The word "MULTI-PULL."

SER. No. 15,886. AUTOMOBILES AND THEIR COMPONENT PARTS. THE BIRMINGHAM SMALL ARMS CO. LTD., Birmingham, England. Filed Jan. 4, 1906.

SER. No. 15,886.

The representation of three stacked rifles.

SER. No. 15,887. COAL. HULL COAL & COKE CORPORATION, Roanoke, Va. Filed Jan. 4, 1906.

The representation of a circular coal-screen bearing the words, character, and abbreviation "CIRCULAR SCREENED HULL COAL & COKE CORPORATION, ROANOKE, VA." On the front of the screen is a diamond-shaped red panel bearing the words "RED JACKET COAL."

SER. No. 15,905. WRAPPING-PAPER, PAPER BAGS, AND PAPER SACKS. HOLLINGSWORTH & WHITNEY COMPANY, Boston, Mass. Filed Jan. 5, 1906. Used ten years.

AROOSTOOK

The word "AROOSTOOK," associated with the representation of a steamboat.

SER. No. 15,906. WRAPPING-PAPER, PAPER BAGS, AND PAPER SACKS. HOLLINGSWORTH & WHITNEY COMPANY, Boston, Mass. Filed Jan. 5, 1906. Used ten years.

COBBOSSEE

The word "COBBOSSEE."

SER. No. 15,907. WRAPPING-PAPER, PAPER BAGS, AND PAPER SACKS. HOLLINGSWORTH & WHITNEY COMPANY, Boston, Mass. Filed Jan. 5, 1906. Used ten years.

TACONNET

The word "TACONNET."

SER. No. 15,908. WRAPPING-PAPER, PAPER BAGS, AND PAPER SACKS. HOLLINGSWORTH & WHITNEY COMPANY, Boston, Mass. Filed Jan. 5, 1906. Used ten years.

WINSLOW

The word "WINSLOW."

SER. No. 15,910. WRAPPING-PAPER, PAPER BAGS, AND PAPER SACKS. HOLLINGSWORTH & WHITNEY COMPANY, Boston, Mass. Filed Jan. 5, 1906.

ALQUIN

The word "ALQUIN."

SER. No. 15,913. WRAPPING-PAPER, PAPER BAGS, AND PAPER SACKS. HOLLINGSWORTH & WHITNEY COMPANY, Boston, Mass. Filed Jan. 5, 1906.

ALGO

The word "ALGO," associated with the representation of the head of an ox.

SER. No. 15,913. WRAPPING-PAPER, PAPER BAGS, AND PAPER SACKS. HOLLINGSWORTH & WHITNEY COMPANY, Boston, Mass. Filed Jan. 5, 1906.

KADJO

The word "KADJO," associated with the representation of an eagle at rest.

SER. No. 15,915. WRAPPING-PAPER, PAPER BAGS, AND PAPER SACKS. HOLLINGSWORTH & WHITNEY COMPANY, Boston, Mass. Filed Jan. 5, 1906.

IRQUO

The word "IRQUO."

SER. No. 15,916. WRAPPING-PAPER, PAPER BAGS, AND PAPER SACKS. HOLLINGSWORTH & WHITNEY COMPANY, Boston, Mass. Filed Jan. 5, 1906.

OWL

The word "OWL," associated with the representation of an owl.

SER. No. 15,917. WRAPPING-PAPER, PAPER BAGS, AND PAPER SACKS. HOLLINGSWORTH & WHITNEY COMPANY, Boston, Mass. Filed Jan. 5, 1906.

SER. No. 15,917.

FORT

The word "FORT," associated with the representation of a colonial fort.

SER. No. 15,920. WRITING-PAPER. HOLLINGSWORTH & WHITNEY COMPANY, Boston, Mass. Filed Jan. 5, 1906.

SEBO

The word "SEBO."

SER. No. 15,924. CATAMENIAL BANDAGES. THE BORATED SPECIALTY COMPANY, New York, N. Y. Filed Jan. 5, 1906.

The representation of a lunar crescent having seated therein a partially-draped female figure holding in its hands an irregularly disposed streamer bearing the inscription "CRESCENT BRAND B. S. N."

SER. No. 15,940. TEA AND COFFEE POTS AND COFFEE-URNS. SILVER & COMPANY, New York, N. Y. Filed Jan. 6, 1906. Used ten years.

The inscription "THE MARION HARLAND TEA & COFFEE POT" surrounded by an oval border.

SER. No. 15,954. HAIR-CLIPPERS. BROWN & SHARPE MANUFACTURING COMPANY, Providence, R. I. Filed Jan. 6, 1906.

FIGARO

The word "FIGARO."

SER. No. 15,962. WOOD AND CABINET SCRAPERS. B. C. ATKINS & COMPANY, Indianapolis, Ind. Filed Jan. 6, 1906.

Rams-Horn

The word "RAMS-HORN."

SER. No. 16,086. RABBITT AND ANTIFRICTION METAL. [illegible] Co. Filed Jan. 8, 1906.

SER. No. 16,128. FOOD-STUFF FOR HORSES, MULES, COWS, HOGS, AND POULTRY. [illegible] Co. Filed Jan. 8, 1906.

SER. No. 16,086. BABBITT AND ANTIFRICTION METAL. COTTON SEALING BEARING & SUPPLY CO., Atlanta, Ga. Filed Jan. 8, 1906.

The word "ARCTIC" and the representation of a polar bear on a floe of ice.

SER. No. 16,088. LEATHER BOOTS, SHOES, AND SLIPPERS. PARKER HOLDEN & COMPANY, Boston, Mass. Filed Jan. 9, 1906.

AUROCHS

The word "AUROCHS."

SER. No. 16,092. CANNED FRUITS. GUGGENHEIM & VON DAMMER, New York, N. Y. Filed Jan. 10, 1906.

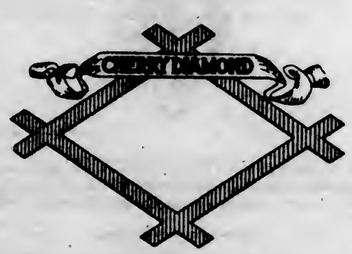

A representation in cherry-red color of a diamond composed of four bars intersecting each other and of the word-symbol "CHERRY DIAMOND" set upon a representation of a ribbon stretched across the upper part of the diamond.

SER. No. 16,093. PAPER FOR WRAPPING FOOD PRODUCTS. GUSTAV STADER, New York, N. Y. Filed Jan. 10, 1906.

PEARL

The word "PEARL."

SER. No. 16,111. TYPE-WRITING MACHINES. WELLINGTON TYPEWRITER COMPANY, New York, N. Y. Filed May 17, 1905. Used ten years.

The word "WELLINGTON."

SER. No. 16,128. FOOD-STUFF FOR HORSES, MULES, COWS, HOGS, AND HORNED CATTLE. EWA PLANTATION CO., Honolulu, Hawaii. Filed Jan. 11, 1906.

An elongated diamond inclosing a circle or disk within which appears a picture of the sugar houses and mill of the Ewa Plantation Company, while the words "SUGAR BRAN" are printed in the elongated portions of the said diamond.

SER. No. 16,130. CARRIAGES. H. H. BABCOCK COMPANY, Watertown, N. Y. Filed Jan. 11, 1906. Used ten years.

BABCOCK

The word "BABCOCK."

SER. No. 16,131. FIRE-ENGINES. INTERNATIONAL POWER COMPANY, Providence, R. I. Filed Jan. 11, 1906. Used ten years.

AMOSKEAG

The word "AMOSKEAG."

SER. No. 16,145. BLANK BOOKS. THOMAS D. TAYLOR, Boston, Mass. Filed Jan. 12, 1906.

Cash Credit

The words "CASH CREDIT."

SER. No. 16,150. LEATHER BOOTS AND SHOES. ROBERTS, JOHNSON & RAND SHOE COMPANY, St. Louis, Mo. Filed Jan. 12, 1906.

Betsy Ross

The words "BETSY ROSS."

SER. No. 16,157. FARM, CHURCH, AND SCHOOL BELLS. THE C. S. BELL CO., Hillsboro, Ohio. Filed Jan. 12, 1906. Used ten years.

CRYSTAL

The word "CRYSTAL."

TRADE-MARKS

REGISTERED FEBRUARY 6, 1906.

49,370. WATERPROOF HATS. A. J. TOWER COMPANY, Portland, Me., and Boston, Mass.
The words "STORM KING."
Filed May 29, 1905. Serial No. 6,891. PUBLISHED DECEMBER 12 1905.

49,371. BONE-PHOSPHATE. BAUGH & SONS COMPANY, Philadelphia, Pa.
The representation of a bull standing erect, the front half of which presents an appearance as in life, while the rear half is shown in skeleton form.
Filed April 22, 1905. Serial No. 2,685. PUBLISHED DECEMBER 12, 1905.

49,372. LAUNDRY AND TOILET SOAP AND SOAP POWDER. BEACH SOAP COMPANY, Lawrence, Mass.
The word "WORLD." Used ten years.
Filed April 26, 1905. Serial No. 3,167. PUBLISHED NOVEMBER 14, 1905.

49,373. CONFECTIONERY. C. POYET, INC., New York, N. Y.
The word "ONYX."
Filed October 9, 1905. Serial No. 13,436. PUBLISHED DECEMBER 12, 1905.

49,374. TOBACCO AND TOBACCO PRODUCTS. G. W. CHASE & SON MERCANTILE CO., St. Joseph, Mo.
The representation of a rectangular figure having a scroll border with circular gilt figures at intervals on its top and ends, each bearing a wreath and the letter "V." On the lower side of the rectangular figure is an elongated red band bearing the words "WARRANTED CLEAR HAVANA FILLER." Within the border is a red ellipse bearing the words "CHASE'S NICKEL SNAP."
Filed May 2, 1905. Serial No. 4,017. PUBLISHED NOVEMBER 21, 1905.

49,375. HAVANA CIGARS. HAVANA COMMERCIAL COMPANY New York, N. Y.
The words "LA AFRICANA" arranged within the upper half of the border of a double ellipse and a monogram of the letters "E G," arranged at the center of the mark. The word "HABANA" has also been arranged within the lower half of the border. Used ten years.
Filed August 8, 1905. Serial No. 11,421. PUBLISHED DECEMBER 12, 1905.

49,376. SOAP. HOFFHEIMER SOAP CO., Chicago, Ill.
The representation of the earth, above which appears the bust view of a woman in the act of scrubbing the same, associated with the words "A THOROUGH CLEANER" "ABSOLUTELY PURE" the words "20TH CENTURY SOAP" appearing on the globe, all being inclosed in wreaths of vapor arising from a pail.
Filed August 7, 1905. Serial No. 11,334. PUBLISHED DECEMBER 12, 1905.

49,377. SMOKING AND CHEWING TOBACCO. HOFFMAN AND CO., Red Hook, N. Y.
The words "RED HOOK."
Filed April 15, 1905. Serial No. 1,706. PUBLISHED MAY 30, 1905.

49,378. WATERPROOFING FELT. HYDREX FELT & ENGINEERING CO., East Walpole, Mass.
The word "HYDREX."
Filed June 2, 1905. Serial No. 7,278. PUBLISHED DECEMBER 12, 1905.

49,379. STIMULATING AND NON-INTOXICATING TONIC BEVERAGE. INEEDA-COFFEE CO., Louisville, Ky.
The colored word "INEEDA" printed in a curved line, and in the style of type shown.
Filed June 12, 1905. Serial No. 7,954. PUBLISHED DECEMBER 12, 1905.

49,380. PLASTERS. JOHNSON & JOHNSON, New Brunswick, N. J.
The word "WOOD'S." Used ten years.
Filed October 28, 1905. Serial No. 13,995. PUBLISHED DECEMBER 12, 1905.

49,381. SOAP. JOHNSON & JOHNSON, New Brunswick, N. J.
The word "SYNOL."
Filed October 28, 1905. Serial No. 14,003. PUBLISHED DECEMBER 12, 1905.

49,382. FILES AND RASPS. KEARNEY & FOOT COMPANY, Paterson, N. J.
The letters "K & F" inclosed in an oval border.
Filed June 14, 1905. Serial No. 8,132. PUBLISHED DECEMBER 12, 1905.

49,383. SHOULDER-BRACES, CHEST-EXPANDERS, AND SUSPENDERS. KNICKERBOCKER BRACE CO., Easton, Pa.
The representation of the upper portion of two figures from the back, one a man and the other a woman, in colonial costume, each with an arm extended, each figure having a shoulder-brace.
Filed May 23, 1905. Serial No. 6,395. PUBLISHED DECEMBER 12, 1905.

49,384. NON-INTOXICATING TABLE-MALT. LAURITZEN MALT CO., Minneapolis, Minn.
The words "GOLD FOAM."
Filed July 1, 1905. Serial No. 9,588. PUBLISHED DECEMBER 12, 1905.

49,385. GUITARS AND MANDOLINS. LYON & HEALY, Chicago, Ill.
The words "AMERICAN CONSERVATORY."
Filed August 7, 1905. Serial No. 11,362. PUBLISHED DECEMBER 12, 1905.

49,386. INFANTS' HATS AND CAPS. S. MAYER & SONS, New York, N. Y.
The representation of a stork standing in a nest and holding an infant with his bill and a number of infants disposed within the nest.
Filed April 14, 1905. Serial No. 1,526. PUBLISHED DECEMBER 12, 1905.

49,387. LAUNDRY SOAP. MAGIC SOAP CO., LT'D., New Orleans, La.
The representation of a fish, associated with the words "BUFFALO SOAP," all being inclosed in an elliptical ornamental border.
Filed July 28, 1905. Serial No. 10,953. PUBLISHED DECEMBER 12 1905.

49,388. LAUNDRY AND TOILET SOAP. MAGIC SOAP CO., LT'D., New Orleans, La.
The representation of a sow and her litter, associated with the words "CREAM OLIVE SOAP WHAT IS HOME WITHOUT A MOTHER," all being inclosed in an ellipse.
Filed July 28, 1905. Serial No. 10,954. PUBLISHED DECEMBER 12, 1905.

49,389. TAR SOAP. EDWARD A. OLDS, New York, N. Y.
The words "PACKER'S ALL-HEALING TAR SOAP." Used ten years.
Filed October 27, 1905. Serial No. 13,972. PUBLISHED DECEMBER 12, 1905.

49,390. ALE. RUETER & COMPANY, (INCORPORATED,) Roxbury, Mass.
The representation of a bucket, shovel, and rake with handles crossing each other and interlacing with the character "&," the

letter and abbreviation "R" and "Co" appearing upon the sides of the figure and the words "SEMPER IDEM" beneath the same, all within a circle upon a circular background.

Filed June 5, 1905. Serial No. 7,390. PUBLISHED DECEMBER 12, 1905.

49,391. CIGARS. S. S. PIERCE Co., Boston, Mass.

The words "LA IBERIA," together with the representation of a female figure seated between two pillars and carrying a shield on which is represented a lion rampant, and the picture of a lion couchant at her feet, with boxes and bunches of cigars and the representation of palms in the foreground, the background representing a general landscape.

Filed July 3, 1905. Serial No. 9,678. PUBLISHED DECEMBER 12 1905.

49,392. CIGARS. S. S. PIERCE Co., Boston, Mass.

A triangular-shaped shield having curved sides and a heavy border with the figure of a lion rampant bearing a crown on its head in the center and the words "PURITAS ET CURA" on the border and the words "EL LEON DEL REY" above the shield.

Filed July 3, 1905. Serial No. 9,679. PUBLISHED DECEMBER 12, 1905.

49,393. WASHBOARDS. THE AMERICAN WASHBOARD COMPANY, Cleveland, Ohio.

The word "COMPETITION." Used ten years.

Filed May 10, 1905. Serial No. 4,863. PUBLISHED DECEMBER 12, 1905.

49,394. ABRADANT. THE CARBORUNDUM COMPANY, Niagara Falls, N. Y.

The word "CARBORUNDUM."

Filed April 27, 1905. Serial No. 3,228. PUBLISHED DECEMBER 12, 1905.

49,395. PURE RED LEAD. THE EAGLE WHITE LEAD Co., Cincinnati, Ohio.

The representation of an eagle perched on a rock bearing a ribbon in its beak and appearing against a panel of red as a background.

Filed July 20, 1905. Serial No. 10,605. PUBLISHED DECEMBER 12, 1905.

49,396. ABRADING MATERIALS AND TOOLS. THE PIKE MANUFACTURING COMPANY, Pike, Littleton, and Lisbon N. H.; Hot Springs, Ark.; Orleans, Ind.; Evansville, Vt., and New York, N. Y.

The word "PIKE'S." Used ten years.

Filed October 20, 1905. Serial No. 13,792. PUBLISHED DECEMBER 12, 1905.

49,397. HOSE-SUPPORTERS. THE WARNER BROS. Co., Bridgeport, Conn.

The word "SECURITY." Used ten years.

Filed October 12, 1905. Serial No. 13,533. PUBLISHED DECEMBER 12, 1905.

49,398. CERTAIN NAMED VEHICLES. DEERE & WEBBER COMPANY, Minneapolis, Minn.

The representation of a deer's head within an ornamental circle surrounded by rays.

Filed April 17, 1905. Serial No. 2,043. PUBLISHED DECEMBER 12, 1905.

49,399. SAWS. HENRY DISSTON & SONS, INCORPORATED, Philadelphia, Pa.

The word "ORIOLE."

Filed October 31, 1905. Serial No. 14,107. PUBLISHED DECEMBER 12, 1905.

49,400. SAWS. HENRY DISSTON & SONS, INCORPORATED, Philadelphia, Pa.

The word "TRIUMPH."

Filed October 31, 1905. Serial No. 14,111. PUBLISHED DECEMBER 12, 1905.

49,401. SAWS. HENRY DISSTON & SONS, INCORPORATED, Philadelphia, Pa.

The word "IDEAL."

Filed October 31, 1905. Serial No. 14,112. PUBLISHED DECEMBER 12, 1905.

49,402. SAWS. HENRY DISSTON & SONS, INCORPORATED, Philadelphia, Pa.

The word "LUMBERMAN."

Filed October 31, 1905. Serial No. 14,119. PUBLISHED DECEMBER 12, 1905.

49,403. SAWS. HENRY DISSTON & SONS, INCORPORATED, Philadelphia, Pa.

The word "VIM."

Filed October 31, 1905. Serial No. 14,120. PUBLISHED DECEMBER 12 1905.

49,404. BABBITT METAL. NATIONAL LEAD COMPANY, Jersey City, N. J., and New York, N. Y.

The words "OLD HICKORY" and a pictorial representation of Gen. Andrew Jackson.

Filed November 8, 1905. Serial No. 14,409. PUBLISHED DECEMBER 12, 1905.

49,405. BABBITT METAL. NATIONAL LEAD COMPANY, Jersey City, N. J., and New York, N. Y.

The words "HEAVY PRESSURE METAL." Used ten years.

Filed November 8, 1905. Serial No. 14,410. PUBLISHED DECEMBER 12, 1905.

49,406. BABBITT METAL. NATIONAL LEAD COMPANY, Jersey City, N. J., and New York, N. Y.

The words "STERLING JOURNAL METAL." Used ten years.

Filed November 8, 1905. Serial No. 14,411. PUBLISHED DECEMBER 12, 1905.

49,407. BABBITT METAL. NATIONAL LEAD COMPANY, Jersey City, N. J., and New York, N. Y.

The words "BEARING METAL." Used ten years.

Filed November 8, 1905. Serial No. 14,412. PUBLISHED DECEMBER 12, 1905.

49,408. BABBITT METAL. NATIONAL LEAD COMPANY, Jersey City, N. J., and New York, N. Y.

The words "No. 1 JOURNAL METAL." Used ten years.

Filed November 8, 1905. Serial No. 14,413. PUBLISHED DECEMBER 12, 1905.

49,409. SOLDER. NATIONAL LEAD COMPANY, Jersey City, N. J., and New York, N. Y.

The word "STANDARD" and the pictorial representation of a soldering-iron and tinner's shears crossed one upon the other. Used ten years.

Filed November 8, 1905. Serial No. 14,419. PUBLISHED DECEMBER 12 1905.

49,410. FILES AND RASPS AND HOLDERS AND HANDLES THEREFOR. NICHOLSON FILE COMPANY, Providence, R. I.

The pictorial representation of a workman at his bench surrounded by an ornamental border, associated with the words and abbreviation "NICHOLSON FILE Co." and the characters "N F Co" in the form of a monogram. Used ten years.

Filed June 12, 1905. Serial No. 7,896. PUBLISHED DECEMBER 12, 1905.

49,411. FILES AND RASPS. NICHOLSON FILE COMPANY, Providence, R. I.

The word "AMERICAN," associated with the representation of a triangle. Used ten years.

Filed June 12, 1905. Serial No. 7,898. PUBLISHED DECEMBER 12, 1905.

49,412. FILES AND RASPS. NICHOLSON FILE COMPANY, Providence, R. I.

The words "MCCLELLAN FILE Co." and the letters "M F Co" arranged in a monogram on the representation of a Maltese cross. Used ten years.

Filed June 12, 1905. Serial No. 7,905. PUBLISHED DECEMBER 12, 1905.

49,413. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.

The word "GEM." Used ten years.

Filed May 2, 1905. Serial No. 3,964. PUBLISHED DECEMBER 12, 1905.

49,414. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.

The number "69." Used ten years.

Filed May 5, 1905. Serial No. 4,298. PUBLISHED DECEMBER 12, 1905.

49,415. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.

The number "98." Used ten years.

Filed May 5, 1905. Serial No. 4,305. PUBLISHED DECEMBER 12, 1905.

49,416. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.

The words "SQUARED FARO." Used ten years.

Filed May 5, 1905. Serial No. 4,309. PUBLISHED DECEMBER 12, 1905.

49,417. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.

The word "HART'S." Used ten years.

Filed May 5, 1905. Serial No. 4,330. PUBLISHED DECEMBER 12, 1905.

49,418. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.

A design consisting of a dark ace of spades, in the center of which is shown an infant seated with his left leg crossed over his right leg and holding in his left hand five playing-cards outspread. Around the child curves a spray of flowers and leaves like a vine. From each lower corner a spray of leaves springs upward having a few buds or berries thereon, and toward the top, on each side, is a figure of a cupid among the leaves with arms stretched toward the center to uphold a crown at the top of the design. Used ten years.

Filed May 11, 1905. Serial No. 5,007. PUBLISHED DECEMBER 12, 1905.

49,419. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio.

The words and character "ARMY & NAVY."

Filed April 15, 1905. Serial No. 1,562. PUBLISHED DECEMBER 12, 1905.

49,420. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio.

The word "CONGRESS."

Filed April 15, 1905. Serial No. 1,568. PUBLISHED DECEMBER 12, 1905.

49,421. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio.

The word "CUPID."

Filed April 15, 1905. Serial No. 1,613. PUBLISHED DECEMBER 12, 1905.

49,422. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio.

The word "CYCLIST."

Filed April 15, 1905. Serial No. 1,788. PUBLISHED DECEMBER 12, 1905.

49,423. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio.

The word "THISTLE."

Filed April 15, 1905. Serial No. 1,796. PUBLISHED DECEMBER 12, 1905.

49,424. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio.

The word "LOTUS."

Filed April 15, 1905. Serial No. 1,800. PUBLISHED DECEMBER 12, 1905.

49,425. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio.

The word "WHEEL."

Filed April 15, 1905. Serial No. 1,806. PUBLISHED DECEMBER 12, 1905.

49,426. PLAYING-CARDS. A. DOUGHERTY, New York, N. Y.

The words or phrase "DOUGHERTY'S PLAYING CARDS." Used ten years.

Filed May 15, 1905. Serial No. 5,673. PUBLISHED DECEMBER 12, 1905.

49,427. OILED CLOTHING. A. J. TOWER COMPANY, Portland, Me., and Boston, Mass.

The word "NEPTUNE."

Filed June 12, 1905. Serial No. 7,935. PUBLISHED DECEMBER 12, 1905.

49,428. TRUNKS, VALISES, AND SATCHELS. ABRAHAM & STRAUS, New York, N. Y.

The word "LETHERSOL."

Filed June 2, 1905. Serial No. 7,235. PUBLISHED DECEMBER 12, 1905.

49,429. VELVETEENS. COCHECO Mfg. Co., Dover, N. H.

The representation of a unicorn rampant inclosed by a laurel wreath and surmounted by a crown.

Filed June 24, 1905. Serial No. 8,961. PUBLISHED DECEMBER 12, 1905.

49,430. PISTOLS. COLT'S PATENT FIRE ARMS MANUFACTURING COMPANY, Hartford, Conn.

The word "COLT." Used ten years.

Filed October 28, 1905. Serial No. 14,014. PUBLISHED DECEMBER 12, 1905.

49,431. NEEDLES. CHARLES H. CROWLEY, New York, N. Y.

The words "LION BRAND," together with the representation of the head and fore legs of a lion. Used ten years.

Filed August 16, 1905. Serial No. 11,707. PUBLISHED DECEMBER 12, 1905.

49,432. HAY-TEDDERS. DEERE & WEBBER Co., Minneapolis, Minn.

The words "THE NEW HAY CHIEF."

Filed November 10, 1905. Serial No. 14,472. PUBLISHED DECEMBER 12, 1905.

49,433. CERTAIN NAMED ELECTRIC MACHINES. DIEHL MANUFACTURING COMPANY, Elizabethport, N. J.

The word "DIEHL." Used ten years.

Filed May 15, 1905. Serial No. 5,734. PUBLISHED DECEMBER 12, 1905.

49,434. CARTRIDGES. ELEY BROTHERS LIMITED, London, England.

The representation of a shield having an ornamental border and with a monogram of the letters "E B L" upon its face.

Filed April 13, 1905. Serial No. 1,388. PUBLISHED DECEMBER 12, 1905.

49,435. GOLD-LEAF. STEPHEN HICKSON, New York, N. Y.

The word-symbol "EUREKA."

Filed June 19, 1905. Serial No. 8,536. PUBLISHED DECEMBER 12, 1905.

49,436. HARVESTERS, MOWERS, AND REAPERS. INTERNATIONAL HARVESTER Co. OF AMERICA. Chicago, Ill.

A figure of a general trapezoidal form having its acute corners at its broader end cut away and having at its smaller end a centrally-arranged curved projection.

Filed August 31, 1905. Serial No. 12,109. PUBLISHED DECEMBER 12, 1905.

49,437. COTTON PIECE GOODS. JACKSON COMPANY, Nashua, N. H.

The picture of an Indian maiden, dressed in the costume of a savage, holding a spear, standing in the midst of a tropical scene.

Filed June 24, 1905. Serial No. 8,990. PUBLISHED DECEMBER 12, 1905.

49,438. DRESS-SILKS. LIBERTY SILK Co., New York, N. Y.

The word "GRANDMOTHER."

Filed May 25, 1905. Serial No. 6,651. PUBLISHED DECEMBER 12, 1905.

49,439. INSULATING-TAPE. MASSACHUSETTS CHEMICAL COMPANY, Walpole, Mass.

The word "ARMATAPE."

Filed October 25, 1905. Serial No. 13,939. PUBLISHED DECEMBER 12, 1905.

49,440. DRILLINGS AND SHEETINGS. MASSACHUSETTS COTTON MILLS, Lowell, Mass.

The word "ROME." Used ten years.

Filed May 11, 1905. Serial No. 5,230. PUBLISHED DECEMBER 12, 1905.

49,441. BURIAL-CASKETS, COFFINS AND FIXTURES THEREFOR. NATIONAL CASKET Co., New York, N. Y.

The word "NATIONAL." Used ten years.

Filed May 15, 1905. Serial No. 5,742. PUBLISHED DECEMBER 12, 1905.

49,442. LADIES' AND MISSES' SHIRT-WAISTS AND SUITS. ROSENTHAL BROS. Co., New York, N. Y.

The word "UNIQUE" and the representation of two full-blown roses on their stems contained within a circular border, and a scroll which appears at the base of the stems of the roses. Used ten years.

Filed June 9, 1905. Serial No. 7,771. PUBLISHED DECEMBER 12, 1905.

49,443. WOVEN SILK FABRICS. HERMAN SIMON, Union, N. J.

The word "REGATTA" and a marine scene representing a regatta.

Filed April 11, 1905. Serial No. 1,183. PUBLISHED DECEMBER 12, 1905.

49,444. HORSE-NAILS. STANDARD HORSE NAIL COMPANY, New Brighton, Pa.
The word "BEAVER."
Filed June 15, 1905. Serial No. 8,214. PUBLISHED DECEMBER 12, 1905.

49,445. HORSE-NAILS. STANDARD HORSE NAIL COMPANY, New Brighton, Pa.
The representation of a bright strip or streak extending longitudinally on an edge of a blue horse-nail.
Filed June 15, 1905. Serial No. 8,215. PUBLISHED DECEMBER 12, 1905.

49,446. DRAPERY AND UPHOLSTERY TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING CO., Eddystone and Philadelphia, Pa.
The word "CRESCENT."
Filed June 30, 1905. Serial No. 9,455. PUBLISHED DECEMBER 12, 1905.

49,447. DRAPERY AND UPHOLSTERY TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING CO., Eddystone and Philadelphia, Pa.
The word "CRESCENT," associated with a representation of a crescent and the words "ART ROBES."
Filed June 30, 1905. Serial No. 9,456. PUBLISHED DECEMBER 12, 1905.

49,448. DRAPERY AND UPHOLSTERY TEXTILE FABRICS. THE EDYSTONE MANUFATKURING COMPANY, Eddystone and Philadelphia, Pa.
The word "CLOVER," associated with the representation of a four-leaf clover.
Filed June 30, 1905. Serial No. 9,457. PUBLISHED DECEMBER 12, 1905.

49,449. DRAPERY AND UPHOLSTERY TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING CO., Eddystone and Philadelphia, Pa.
The word "CLOVER."
Filed June 30, 1905. Serial No. 9,461. PUBLISHED DECEMBER 12, 1905.

49,450. PRINTED AND DYED TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa.
The representation of a rectangular border having reëntrant corners, with an inner border interlocked with the outer border at the corners, the two borders being embraced by an ornamental clamp, associated with the words "FAST BLACK." Used ten years.
Filed June 30, 1905. Serial No. 9,468. PUBLISHED DECEMBER 12, 1905.

49,451. PRINTED AND DYED TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa.
The representation of a rectangular border having diagonal lines at its ends forming a lozenge-shaped panel with triangular latticed corners, associated with the words "ILLUMINATED GREYS." Used ten years.
Filed June 30, 1905. Serial No. 9,471. PUBLISHED DECEMBER 12, 1905.

49,452. DRAPERY AND UPHOLSTERY TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa.
The representation of a horseshoe with a four-leaf clover and the words "GOBELIN ART DRAPERY."
Filed July 3, 1905. Serial No. 9,653. PUBLISHED DECEMBER 12, 1905.

49,453. DRAPERY AND UPHOLSTERY TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa.
The arbitrary word "EDGEWOOD," associated with the word "DRAPERIES," and both superposed upon some ornamental scrollwork with an ornamental border.
Filed July 3, 1905. Serial No. 9,654. PUBLISHED DECEMBER 12, 1905.

49,454. DRAPERY AND UPHOLSTERY TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa.
The word "ELYSIAN."
Filed July 3, 1905. Serial No. 9,803. PUBLISHED DECEMBER 12, 1905.

49,455. DRAPERY AND UPHOLSTERY TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa.
The representation of a four-leaf clover.
Filed July 6, 1905. Serial No. 9,804. PUBLISHED DECEMBER 12, 1905.

49,456. DRAPERY AND UPHOLSTERY TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa.
The word "CLOVER" and a representation of a four-leaf clover, associated with the representation of a piece of art drapery having superposed at its corners two additional pieces, and the abbreviation, words, and character "WM. SIMPSON & SONS."
Filed July 14, 1905. Serial No. 10,300. PUBLISHED DECEMBER 12, 1905.

49,457. VALVES, HYDRANTS, AND VALVE-INDICATORS. THE LUDLOW VALVE MANUFACTURING COMPANY, Troy, N. Y.
The word "LUDLOW." Used ten years.
Filed April 1, 1905. Serial No. 184. PUBLISHED DECEMBER 12, 1905.

49,458. PINS. THE PLUME & ATWOOD MFG. CO., Waterbury, Conn., and New York, N. Y.
The word "COLUMBIA."
Filed April 28, 1905. Serial No. 3,437. PUBLISHED JUNE 6, 1905.

49,459. STEAM AND WATER PACKING. AMERICAN STEAM PACKING COMPANY, Boston, Mass.
The word "AMERICAN."
Filed April 28, 1905. Serial No. 3,383. PUBLISHED JUNE 13, 1905.

49,460. FILES AND RASPS. ARCADE FILE WORKS, Anderson, Ind.
The representation of a horseshoe, associated with the word "ARCADE."
Filed June 12, 1905. Serial No. 7,916. PUBLISHED DECEMBER 12, 1905.

49,461. FILES AND RASPS. ARCADE FILE WORKS, Anderson, Ind.
The words "THE ARCADE FILE WORKS," associated with the representation of a file, a horseshoe with the word "ARCADE" on the horseshoe, and a seal.
Filed June 12, 1905. Serial No. 7,917. PUBLISHED DECEMBER 12, 1905.

49,462. REMEDY FOR THE NERVES. B. H. BACON CO., Rochester, N. Y.
The words "CELERY KING." Used ten years.
Filed September 30, 1905. Serial No. 13,154. PUBLISHED DECEMBER 12, 1905.

49,463. LEATHER KNOWN AS KID. MARTIN BRADENKOFF, Wilmington, Del.
The words "DIAMOND BACK" and the representation of a turtle.
Filed June 1, 1905. Serial No. 7,148. PUBLISHED DECEMBER 12, 1905.

49,464. PILLS AND TABLETS. EMILE BRUNOR, New York, N. Y.
The words "DR. BRUNORS CONSTIPATION CURE" and the representation of a red cross. Used ten years.
Filed June 16, 1905. Serial No. 8,273. PUBLISHED DECEMBER 12, 1905.

49,465. WHISKY. CARSTAIRS, MCCALL & CO., Philadelphia, Pa.
The word "CARSTAIRS," associated with the words "RYE" and "BOTTLED BY CARSTAIRS, MCCALL & CO., PHILADELPHIA," inclosed in a rectangular outline, in the center of which appears a circular design bearing a winged dragon carrying a sword and holding in one claw a sheaf of grain, with radiating lines in background, beneath which is a fanciful scroll design bearing the name "CARSTAIRS, MCCALL & CO." Used ten years.
Filed October 30, 1905. Serial No. 14,054. PUBLISHED DECEMBER 12, 1905.

49,466. CORSETS. ALBERT ROMAINE COLTON, Newark, N. J.
The representation of a woman having her corsets laced by a young girl, associated with which are the words "COLTON'S INVISIBLE LACING." The woman is represented as saying "LOOK AT MY BACK," while to the girl are attributed the words "OH, MAMMA, HOW EASY IT PULLS."
Filed August 22, 1905. Serial No. 11,920. PUBLISHED DECEMBER 12, 1905.

49,467. LAXATIVE COMPOUND OR PREPARATION. HERBERT SUTHERLAND COOLEY, Keyport, N. J.
The words "SWEET MINT OLA." These words are arranged within a scroll border, and from the parallel perpendiculars of the letter "M" of the word "MINT," at top and bottom, project prolonged horizontal bars.
Filed September 15, 1905. Serial No. 12,637. PUBLISHED DECEMBER 12, 1905.

49,468. HAIR WAVERS AND CURLERS. ALBERTINE DREES, Newark, N. J.
The word "ALBERTA."
Filed May 1, 1905. Serial No. 3,881. PUBLISHED DECEMBER 12, 1905.

49,469. SAWS OF ALL KINDS. E. C. ATKINS & COMPANY, Indianapolis, Ind.; New York, N. Y.; Memphis, Tenn.; Atlanta, Ga.; Minneapolis, Minn.; Portland, Oreg.; Seattle, Wash.; San Francisco, Cal.; Chicago, Ill., and Toronto, Canada.
The words "SEGMENT GROUND."
Filed June 12, 1905. Serial No. 8,003. PUBLISHED DECEMBER 12, 1905.

49,470. PUBLICATIONS TREATING OF ELECTROTECHNICS. ELECTRICAL REVIEW PUB. CO., New York, N. Y.
The words "ELECTRICAL REVIEW."
Filed July 11, 1905. Serial No. 10,085. PUBLISHED DECEMBER 12, 1905.

49,471. THREAD-YARN. ELIZABETH MILL CO., Providence, R. I.
The words "ELIZABETH MILLS" in plain block letters.
Filed June 3, 1905. Serial No. 7,369. PUBLISHED DECEMBER 12, 1905.

49,472. FILES AND RASPS. G. & H. BARNETT COMPANY, Philadelphia, Pa.
The letters "A N" in the form of a monogram, associated with the representation of a file.
Filed June 12, 1905 Serial No. 7,926. PUBLISHED DECEMBER 12 1905.

49,473. STERLING-SILVER FLAT WARE, HOLLOW WARE, AND TABLEWARE. HAMILTON AND HAMILTON, JR., Providence, R. I.
A star and the characters "H. & H."
Filed May 20, 1905. Serial No. 6,157. PUBLISHED DECEMBER 12, 1905.

49,474. MAGAZINE OR PERIODICAL. HOMEFOLKS PUBLISHING COMPANY, a Corporation, Chicago, Ill.
The words "THE HOMEMAKER."
Filed October 30, 1905. Serial No. 14,095. PUBLISHED DECEMBER 12, 1905.

49,475. WHISKY. JACOBS & GARRETT, Memphis, Tenn.
The words "OLD GARRETT," above which is a shield design upon which appears the monogram "J & G" inclosed in a double circle, and beneath the word "GARRETT" appear the words "BOURBON NONE GENUINE WITHOUT SIGNATURE" and the facsimile signature of the firm-name "JACOBS & GARRETT."
Filed October 30, 1905. Serial No. 14,066. PUBLISHED DECEMBER 12, 1905.

49,476. FILES AND RASPS. KEARNEY & FOOT COMPANY, Paterson, N. J.
The words "KEARNEY & FOOT CO." upon the representation of a file and the letters "K & F" inclosed in an oblong border. Used ten years.
Filed June 12, 1905. Serial No. 7,928. PUBLISHED DECEMBER 12, 1905.

49,477. WHISKY. MORRIS LANGE, Cincinnati, Ohio.
The representation of a landscape comprising a stream of water in the foreground having a rocky shore, above which ascends a cliff with a house, trees, and foliage in the background, the whole associated or in combination with the word "UNDERCLIFF," arranged in the form of an arc above the landscape.
Filed June 16, 1905. Serial No. 8,312. PUBLISHED DECEMBER 12, 1905.

49,478. FOUNTAIN-PENS. L. E. WATERMAN COMPANY, New York, N. Y.
The words "WATERMAN'S IDEAL FOUNTAIN PEN N. Y."
Filed May 5, 1905. Serial No. 4,350. PUBLISHED DECEMBER 12, 1905.

49,479. CANVAS STITCHED, AND BALATA BELTING. NEW YORK LEATHER BELTING CO., New York, N. Y.
The word "VICTOR."
Filed April 6, 1905. Serial No. 610. PUBLISHED DECEMBER 12, 1905.

49,480. LEATHER BOOTS, SHOES, AND SLIPPERS, AND UPPER AND SOLE LEATHER. PACKARD & FIELD, Brockton, Mass.
The representation of a human foot visible through the upper of a boot or shoe, within which it is inclosed, and in connection therewith the words "KORRECT SHAPE" inscribed on the remaining upper portion of the shoe. Used ten years.
Filed May 27, 1905. Serial No. 6,807. PUBLISHED DECEMBER 12, 1905.

49,481. RESTORED OR DEVULCANIZED RUBBER. PHILADELPHIA RUBBER WORKS, Philadelphia, Pa.
The word "EUREKA." Used ten years.
Filed July 15, 1905. Serial No. 10,389. PUBLISHED DECEMBER 12, 1905.

49,482. WATCHES, WATCHCASES, AND WATCH-MOVEMENTS. PHILADELPHIA WATCH CASE CO., Riverside, N. J.
The word "WALDORF." Used ten years.
Filed May 8, 1905. Serial No. 4,597. PUBLISHED DECEMBER 12, 1905.

49,483. WATCHES, WATCHCASES, AND WATCH-MOVEMENTS. PHILADELPHIA WATCH CASE CO., Riverside, N. J.
The word "PERFECTION." Used ten years.
Filed May 8, 1905. Serial No. 4,604. PUBLISHED DECEMBER 12, 1905.

49,484. DISTILLATION OF HAMAMELIS. POND'S EXTRACT COMPANY, New York, N. Y.
The representation of a diamond-shaped figure arranged within a rectangular figure formed by the duplicated words "POND'S EXTRACT" connected at the sides—that is to say, with the first and last letters of each duplicate set of words joined. Used ten years.
Filed September 20, 1905. Serial No. 12,811. PUBLISHED DECEMBER 12, 1905.

49,485. TOILET WATER. R. HUDNUT'S PHARMACY, New York, N. Y.
The representation of a bunch of violets and the name "RICHARD HUDNUT" in script, associated with the words "NEW YORK," "TOILET WATER," and "VIOLET SEC."
Filed June 21, 1905. Serial No. 8,667. PUBLISHED DECEMBER 12, 1905.

49,486. CANDY. REYMER & BROTHERS INCORPORATED, Pittsburg, Pa.
The representation of Fort Duquesne, associated with the words "FORT DUQUESNE" and the numerals "1764."
Filed June 16, 1905. Serial No. 8,351. PUBLISHED DECEMBER 12, 1905.

49,487. BLANK BOOKS, TABLETS, RULED AND FLAT PAPERS. ROARING SPRING BLANK BOOK CO., Roaring Spring, Pa.
The representation of a central disk bearing a monogram of the letters "R S B" and inclosed by two double-line concentric circles of varying diameter, having eleven circular dots between the circles, and the whole figure crossed by a short double-edged sword having a point resembling a pen.
Filed June 19, 1905. Serial No. 8,535. PUBLISHED DECEMBER 12, 1905.

49,488. MONTHLY MAGAZINE. S. H. MOORE CO., New York, N. Y.
The words "THE LADIES' WORLD."
Filed September 12, 1905. Serial No. 12,492. PUBLISHED NOVEMBER 21, 1905.

49,489. GRASS AND FIELD SEEDS. WM. G. SCARLETT, Baltimore, Md.
The representation of a wreath, within which is the letter "S," above which is the word "EMPIRE," and under which is the word "BRAND."

Filed August 24, 1905. Serial No. 11,965. PUBLISHED DECEMBER 12, 1905.

49,501. BRANDY. THE WM. BERGENTHAL CO., Milwaukee, Wis.

Filed May 24, 1905. Serial No. 6,458. PUBLISHED DECEM-

Filed November 9, 1905. Serial No. 14,486. PUBLISHED DE-

Filed August 24, 1905. Serial No. 11,965. PUBLISHED DECEMBER 12, 1905.

49,490. GRASS AND FIELD SEEDS. WM. G. SCARLETT, Baltimore, Md.

The representation of an oak-leaf, on which is the letter "S," above which is the word "OAK," and under which is the word "BRAND."

Filed August 24, 1905. Serial No. 11,967. PUBLISHED DECEMBER 12, 1905.

49,491. GRASS AND FIELD SEEDS. WM. G. SCARLETT, Baltimore, Md.

The representation of a maple-leaf, on which is the letter "S," above which is the word "MAPLE," and under which is the word "BRAND."

Filed August 24, 1905. Serial No. 11,969. PUBLISHED DECEMBER 12, 1905.

49,492. GRASS AND FIELD SEEDS. WM. G SCARLETT, Baltimore, Md.

The representation of a bird, on which is the letter "S," above which is the word "ORIOLE," and under which is the word "BRAND."

Filed August 24, 1905. Serial No. 11,970. PUBLISHED DECEMBER 12, 1905.

49,493. TOILET-PAPER. STONE & FORSYTH, Boston, Mass.

The arbitrary word-symbol "SIGNET," composed of shaded capital letters, which gradually increase in size from the center to each end, arranged in a straight line within an oval figure with a deep border. Above the outside of the oval figure are the words "STONE & FORSYTH" and below the said figure the word "BOSTON."

Filed May 9, 1905. Serial No. 4,834. PUBLISHED DECEMBER 12, 1905.

49,494. CLOCKS. THE ANSONIA CLOCK COMPANY, Ansonia, Conn., and New York, N. Y.

The word "ANSONIA." Used ten years.

Filed November 3, 1905. Serial No. 14,239. PUBLISHED DECEMBER 12, 1905.

49,495. ANTISEPTIC AND GERMICIDE. THE BUDNER PHARMACAL COMPANY, New York, N. Y.

The word "SANORINE."

Filed July 14, 1905. Serial No. 10,321. PUBLISHED DECEMBER 12, 1905.

49,496. GOLD-PLATED RINGS. THE F. H. SADLER CO., Attleboro, Mass.

The letter "S" surrounded by two circular rings.

Filed April 7, 1905. Serial No. 718. PUBLISHED DECEMBER 12, 1905.

49,497. WATCH-MOVEMENTS. THE HAMPDEN WATCH CO., Canton, Ohio.

The words "MOLLY STARK" displayed on a scroll.

Filed April 19, 1905. Serial No. 2,229. PUBLISHED DECEMBER 12, 1905.

49,498. FOOD AND MEDICINE FOR LIVE STOCK AND POULTRY. THE HERB MEDICINE COMPANY, Springfield, Ohio.

A rectangular figure divided into three transverse panels, within the upper one of which appear the word "LIGHTNING," the representation of a horse, and a horse's head inclosed within a circular figure, upon the middle one of which appears the representation of a rooster and a hen, to the left of which is the head of a turkey inclosed within a scroll-shaped figure and to the right of which is the head of a duck inclosed within a circular figure, and in the lower panel of which appears the word "LIGHTNING," associated with the representation of a cow, a portion of a hog, and the head of a sheep appearing upon an oblong panel.

Filed April 26, 1905. Serial No. 3,457. PUBLISHED DECEMBER 12, 1905.

49,499. COMIC SECTION OF NEWSPAPERS. THE NEW YORK HERALD COMPANY, New York, N. Y.

The words "BUSTER BROWN."

Filed November 20, 1905. Serial No. 14,302. PUBLISHED DECEMBER 12, 1905.

49,500. GUN AND PISTOL CARTRIDGES AND PARTS THEREOF. THE UNION METALLIC CARTRIDGE COMPANY, Bridgeport, Conn.

The letter "U." Used ten years.

Filed July 26, 1905. Serial No. 10,808. PUBLISHED NOVEMBER 28, 1905.

49,501. BRANDY. THE WM. BERGENTHAL CO., Milwaukee, Wis.

The representation of a shield, within which appear the word "MONTILLA" and a star formed by superimposed triangles inclosing a cross, the shield being partially surrounded by grapevines showing leaves and bunches of grapes. Used ten years.

Filed May 25, 1905. Serial No. 6,573. PUBLISHED DECEMBER 12 1905.

49,502. WHISKY. TO-KALON VINEYARD CO., Chicago, Ill.

The words "FIRST NATIONAL," associated with the picture of the front of a bank-building inclosed within a fanciful rectangular outline with rounded corners and a fancy ornamental design at each end.

Filed October 30, 1905. Serial No. 14,057. PUBLISHED DECEMBER 12, 1905.

49,503. WEEKLY NEWSPAPER. W. C. & F. P. CHURCH, INCORPORATED, New York, N. Y.

The words "ARMY AND NAVY GAZETTE." Used ten years.

Filed October 25, 1905. Serial No. 13,943. PUBLISHED DECEMBER 12, 1905.

49,504. REMEDY FOR CERTAIN NAMED DISEASES. VAN VLEET-MANSFIELD DRUG CO., Memphis, Tenn.

The words "MANSFIELD'S MISSISSIPPI DIARRHŒA CORDIAL" and the representation of an old-fashioned steamboat. Used ten years.

Filed September 6, 1905. Serial No. 12,287. PUBLISHED DECEMBER 12, 1905.

49,505. VERMIFUGE. VAN VLEET-MANSFIELD DRUG CO., Memphis, Tenn.

The words "SWEET'S HONEY VERMIFUGE." Used ten years.

Filed September 6, 1950. Serial No. 12,289. PUBLISHED DECEMBER 12, 1905.

49,506. PREPARATION FOR CERTAIN NAMED DISEASES. VAN VLEET-MANSFIELD DRUG CO., Memphis, Tenn.

The word "FEMENINA" and a pictorial representation of a young lady, her face being a full or front view, the neck, bust, and right arm bare, the latter being raised across the bosom and supporting loose flowing drapery, together with the representation of a leafy branch, which appears over the left shoulder.

Filed September 6, 1905. Serial No. 12,290. PUBLISHED DECEMBER 12, 1905.

49,507. REMEDY FOR CERTAIN NAMED DISEASES. VAN VLEET-MANSFIELD DRUG CO., Memphis, Tenn.

The words "SWEET'S WILD CHERRY CURE." Used ten years.

Filed September 6, 1905. Serial No. 12,292. PUBLISHED DECEMBER 12, 1905.

49,508. FOLDING CANVAS HAMMOCKS AND SWINGS. GEORGE H. WINANS, Kalamazoo, Mich.

The word "QUEEN."

Filed October 20, 1905. Serial No. 13,791. PUBLISHED DECEMBER 12, 1905.

49,509. REMEDY FOR CERTAIN NAMED DISEASES. WELLS & RICHARDSON COMPANY, Burlington, Vt., and Montreal, Canada.

The representation of a device composed of a disk with serrated edges bearing the words "WILLS' ENGLISH PILLS," the word "WILLS'" being arranged around the upper section, the word "PILLS" being similarly arranged around the lower, and the word "ENGLISH" between upon a curved scroll-like band. Used ten years.

Filed September 9, 1905. Serial No. 12,424. PUBLISHED DECEMBER 12, 1905.

49,510. LEATHER BOOTS AND SHOES. A. W. TEDCASTLE & Co., Boston, Mass.

The representation of a shoe-bottom having a counter extending from the heel end thereof and having the toe end cut off.

Filed Octbber 30, 1905. Serial No. 14,041. PUBLISHED DECEMBER 12, 1905.

49,511. WHISKY. B. S. FLERSHEIM MERCANTILE CO., Kansas City, Mo.

The words "OLD BONDAGE."

Filed October 30, 1905. Serial No. 14,072. PUBLISHED DECEMBER 12, 1905.

49,512. CHEMICAL FINISHING COMPOUND. RÖSS BERNHEIM, Pforzo-Augsburg, Germany.

The arbitrarily-coined word "VOLUMIN."

Filed May 24, 1905. Serial No. 6,458. PUBLISHED DECEMBER 12, 1905.

49,513. MOLASSES. BOSTON MOLASSES CO., Boston, Mass.

The word "XTRAVIM."

Filed October 5, 1905. Serial No. 13,310. PUBLISHED DECEMBER 12, 1905.

49,514. BRANDY. CALIFORNIA WINE ASSOCIATION, San Francisco, Cal.

The words "FOLLE BLANCHE."

Filed October 30, 1905. Serial No. 14,035. PUBLISHED DECEMBER 12, 1905.

49,515. WHISKY. CARSTAIRS, MCCALL & CO., Philadelphia, Pa.

The word "INVINCIBLE," associated with the words "RYE" and "BOTTLED BY CARSTAIRS, MCCALL & CO. PHILADELPHIA," inclosed in a rectangular outline, in the center of which appears a circular design bearing a winged dragon carrying a sword and holding in one claw a sheaf of grain, with radiating lines in background, beneath which is a fanciful scroll design bearing the name "CARSTAIRS, MCCALL & CO." Used ten years.

Filed October 30, 1905. Serial No. 14,053. PUBLISHED DECEMBER 12, 1905.

49,516. FLEXIBLE TUBING. CHICAGO TUBING & BRAIDING CO., Chicago, Ill.

The word "REX."

Filed November 4, 1905. Serial No. 14,324. PUBLISHED DECEMBER 12, 1905.

49,517. PAINT-BRUSHES. E. CLINTON & Co., Philadelphia, Pa.

The word "CLINTON." Used ten years.

Filed April 21, 1905. Serial No. 2,532. PUBLISHED DECEMBER 12, 1905.

49,518. WHISKY. E. E. DOWNHAM CO., Alexandria, Va.

The words "OLD MANSION" and a representation of the mansion-house at Mount Vernon, Va. Used ten years.

Filed June 6, 1905. Serial No. 7,536. PUBLISHED DECEMBER 12, 1905.

49,519. SALT. FRANCIS H. LEGGETT & COMPANY, New York, N. Y.

The word "NABOB."

Filed September 25, 1905. Serial No. 12,975. PUBLISHED DECEMBER 12, 1905.

49,520. LARD. FRANCIS H. LEGGETT & COMPANY, New York, N. Y.

The word "NABOB."

Filed September 25, 1905. Serial No. 12,976. PUBLISHED DECEMBER 12, 1905.

49,521. WHISKY. GEO. H. GOODMAN COMPANY, Paducah, Ky.

The words "RED ROCK" and a monogram composed of the letters "G H G Co."

Filed May 3, 1905. Serial No. 4,139. PUBLISHED DECEMBER 12, 1905.

49,522. WHISKY. GLASNER & BARZEN DISTILLING & IMPORTING CO., Kansas City, Mo.

The words "BELLE SPRINGS" and a fanciful circular figure inclosing a monogram of the letters and character "G & B."

Filed October 5, 1905. Serial No. 13,336. PUBLISHED DECEMBER 12, 1905.

49,523. CEYLON TEA. JABURG BROS., New York, N. Y.

The words "TEA FLOWERS."

Filed September 14, 1905. Serial No. 12,543. PUBLISHED DECEMBER 12, 1905.

49,524. ARTIFICIAL TEETH AND PARTS CONNECTED THEREWITH. JOHNSON & LUND, Philadelphia, Pa.

The word "KAZAN."

Filed April 24, 1905. Serial No. 3,923. PUBLISHED DECEMBER 12, 1905.

49,525. TONICS. KATHARMON CHEMICAL CO., St. Louis, Mo.

The words "HAGER'S CORDIAL OF COD LIVER OIL." Used ten years.

Filed September 21, 1905. Serial No. 12,879. PUBLISHED DECEMBER 12, 1905.

49,526. PACKINGS. KRASBEY & MATTISON COMPANY, Ambler, Pa.

The word "AUTOBESTOS."

Filed November 9, 1905. Serial No. 14,486. PUBLISHED DECEMBER 12, 1905.

49,527. WHISKY. LAVENTHAL BROS., Sacramento, Cal.

The word "SILKWOOD."

Filed October 30, 1905. Serial No. 14,070. PUBLISHED DECEMBER 12, 1905.

49,528. BOOKS. WM. H. LEE, Chicago, Ill.

The fanciful outline figure composed of a plurality of curved lines or arcs, the upper side of the figure consisting of four outwardly-concave arcs joined so as to form three exterior cusps, each end of the figure consisting of an outwardly-convex arc, and the lower side of the figure consisting of two reversed curves, the end arcs and reversed curves being joined so as to form one exterior and two interior cusps, while the whole figure is symmetrical about a vertical axis.

Filed October 30, 1905. Serial No. 14,103. PUBLISHED DECEMBER 12, 1905.

49,529. WHEAT-FLOUR. LISTMAN MILL COMPANY, La Crosse, Wis.

The words "LISTMAN'S BEST." Used ten years.

Filed April 17, 1905. Serial No. 1,845. PUBLISHED DECEMBER 12, 1905.

49,530. LEATHER BOOTS AND SHOES. M. N. ARNOLD Co., North Abington and Boston, Mass.

The word "KING." Used ten years.

Filed July 14, 1905. Serial No. 10,322. PUBLISHED DECEMBER 12, 1905.

49,531. WHEAT-FLOUR. MAPLETON MILLING COMPANY, Mapleton, Minn.

The word "MAPLESOTA."

Filed August 28, 1905. Serial No. 12,053. PUBLISHED DECEMBER 12 1905.

49,532. WHISKY. FELIX P. MORWAY & SON, Worcester, Mass.

The words "FOGGY DEW CLUB."

Filed October 30, 1905. Serial No. 14,068. PUBLISHED DECEMBER 12, 1905.

49,533. NEWS PERIODICALS AND MAGAZINES. MUNICIPAL NEWS ASSOCIATION, New York, N. Y.

The words "MUNICIPAL NEWS."

Filed September 2, 1905. Serial No. 12,171. PUBLISHED DECEMBER 12, 1905.

49,534. REMEDY FOR HEADACHE, NEURALGIA, AND NERVOUSNESS. JAMES G. MUNSON, San Jose, Cal.

The hyphenated word "YE-TI-VA."

Filed September 6, 1905. Serial No. 12,284. PUBLISHED DECEMBER 12, 1905.

49,535. WHISKY. ANGELO MYERS, Philadelphia, Pa.

The word "NESHAMINY," associated with the words "RYE WHISKEY ANGELO MYERS PHILADELPHIA," all inclosed within a dotted shield-shaped outline. Used ten years.

Filed October 5, 1905. Serial No. 13,312. PUBLISHED DECEMBER 12, 1905.

49,536. MEDICINE FOR CERTAIN NAMED DISEASES. JAMES H. NEAGLE, Oakland, Cal.

The words "LIFE GRANULES."

Filed May 25, 1905. Serial No. 6,645. PUBLISHED DECEMBER 12, 1905.

49,537. MEDICINE FOR CERTAIN NAMED DISEASES. PERCY R. PALETHORPE, Louisville, Ky.

The word "PERSOLA."

Filed September 27, 1905. Serial No. 13,082. PUBLISHED DECEMBER 12, 1905.

49,538. WATCHES, WATCHCASES, AND WATCH-MOVEMENTS. PHILADELPHIA WATCH CASE CO., Riverside, N. J.

The word "PREMIER" surrounded by an elongated hexagonal border.

Filed May 8, 1905. Serial No. 4,603. PUBLISHED DECEMBER 12, 1905.

49,539. LEATHER BOOTS AND SHOES. ROBERTS, JOHNSON & RAND SHOE CO., St. Louis, Mo.

The words "OUR FAMILY."

Filed June 5, 1905. Serial No. 7,503. PUBLISHED DECEMBER 12, 1905.

49,540. LEATHER BOOTS AND SHOES. ROBERTS, JOHNSON & RAND SHOE CO., St. Louis, Mo.

The word "PATRIOT."

Filed June 6, 1905. Serial No. 7,504. PUBLISHED DECEMBER 12, 1905.

49,541. LEATHER BOOTS AND SHOES. ROBERTS, JOHNSON & RAND SHOE CO., St. Louis, Mo.

The word "PLANET."

Filed June 5, 1905. Serial No. 7,505. PUBLISHED DECEMBER 12, 1905.

49,542. WHISKY. ROSENFIELD BROS. & CO., Chicago, Ill.

The words "SUN BEAM" and a representation of the sun with beams projecting in all directions from it. Used ten years.

Filed June 19, 1905. Serial No. 8,454. PUBLISHED DECEMBER 12, 1905.

49,543. CANNED CORN. S. N. HYDE CO., Hydes, Md.

The portrait of S. N. Hyde and a facsimile of his signature arranged in a circular field.

Filed May 10, 1905. Serial No. 4,919. PUBLISHED DECEMBER 12, 1905.

49,544. WHISKY. HENRY SANDER, Philadelphia, Pa.

The figures and letters "12 P. M." written diagonally between two lines, above and below which is a fanciful scroll design inclosed in a triangular figure, all arranged on a rectangular background of contrasting color.

Filed October 30, 1905. Serial No. 14,065. PUBLISHED DECEMBER 12, 1905.

49,545. UTERINE TONIC AND SEDATIVE. THE ELI LILLY & COMPANY, Indianapolis, Ind.; New York, N. Y.; Chicago, Ill.; St. Louis and Kansas City, Mo., and New Orleans, La.

The word "FEMAGEN."

Filed September 18, 1905. Serial No. 12,749. PUBLISHED DECEMBER 12, 1905.

49,546. LEATHER BELTING. THE GRATON AND KNIGHT MANUFACTURING COMPANY, Worcester, Mass.

The representation of three acorns on an oak-twig, with the letters "G K" above and the figures "1851" below said twig, inclosed by two concentric circles, between which are the words "ROYAL WORCESTER."

Filed June 22, 1905. Serial No. 8,774. PUBLISHED DECEMBER 12, 1905.

49,547. BISCUITS, CRACKERS, AND WAFERS. THE HITCHNER BISCUIT CO., West Pittston, Pa.

The word "CRESO."

Filed September 29, 1905. Serial No. 13,137. PUBLISHED DECEMBER 12, 1905.

49,548. WOODEN LADDERS OF ALL KINDS. THE MILLER LADDER COMPANY, Chicago, Ill.

The word "MILLER." Used ten years.

Filed June 7, 1905. Serial No. 7,594. PUBLISHED DECEMBER 12, 1905.

49,549. BAKING-POWDER. THE SEA GULL SPECIALTY CO., Baltimore, Md.

The representation of a parrot and a monkey on the limb of a tree and the words "PARROT AND MONKEY." The representation is surrounded by a scroll. The parrot holds in its claw a cracker, and the monkey holds a can in its arm.

Filed August 3, 1905. Serial No. 11,220. PUBLISHED DECEMBER 12, 1905.

49,550. LEATHER BOOTS, SHOES, AND SLIPPERS. THE STETSON SHOE COMPANY, Weymouth, Mass.

The representation of a spray of red roses having superimposed thereon a diamond or lozenge shaped figure so shaped as to be longer than it is wide, said figure being colored red and having within it the words "THE STETSON SHOE."

Filed November 10, 1905. Serial No. 14,483. PUBLISHED DECEMBER 12, 1905.

49,551. WHISKY. TO-KALON VINEYARD CO., Chicago, Ill.

The words "OLD MONASTERY," associated with a picture of an old monastery bordered by trees and shrubs. Used ten years.

Filed October 30, 1905. Serial No. 14,056. PUBLISHED DECEMBER 12, 1905.

49,552. WHISKY. TO-KALON VINEYARD CO., Chicago, Ill.

The word "NORTHLAND," associated with a fanciful shield design bearing the picture of a lily and of a mountain-peak and also bearing a monogram of the letters "T K."

Filed October 30, 1905. Serial No. 14,058. PUBLISHED DECEMBER 12, 1905.

49,553. WHISKY. TO-KALON VINEYARD CO., Chicago, Ill.

The word "HOUSEHOLD," associated with a fanciful shield design bearing the picture of a lily and of a mountain-peak and also bearing a monogram of the letters "T K."

Filed October 30, 1905. Serial No. 14,059. PUBLISHED DECEMBER 12, 1905.

49,554. PILE REMEDY. LEVI B. TRANSUE, Hazleton, Pa.

The representation of a male figure dressed in ancient costume and standing upon the world. The figure is also represented as holding a bottle in each hand.

Filed September 21, 1905. Serial No. 12, 889. PUBLISHED DECEMBER 12, 1905.

49,555. HORSE-RENOVATING POWDERS. JAMES J. WALSH, Quincy, Ill.

The word "COMMON-SENSE."

Filed September 27, 1905. Serial No. 13,046. PUBLISHED DECEMBER 12, 1905.

49,556. COLIC MEDICINE FOR HORSES. JAMES J. WALSH, Quincy, Ill.

The word "COMMON-SENSE."

Filed September 27, 1905. Serial No. 13,047. PUBLISHED DECEMBER 12, 1905.

49,557. DISINFECTANTS. WARREN BROTHERS COMPANY, Boston, Mass.

The word "CIDE."

Filed May 20, 1905. Serial No. 6,183. PUBLISHED DECEMBER 12, 1905.

49,558. REMEDY FOR CERTAIN NAMED DISEASES. WELLS & RICHARDSON COMPANY, Burlington, Vt., and Montreal, Canada.

The words "WILLS' ENGLISH PILLS." Used ten years.

Filed September 9, 1905. Serial No. 12,429. PUBLISHED DECEMBER 12, 1905.

LABELS

REGISTERED FEBRUARY 6, 1906.

12,652.—*Title:* "DR. M. F. ROBERTS' MALARIACIDE." (For Medicine.) MALARIACIDE MANUFACTURING CO., San Francisco, Cal. Filed January 11, 1906.

12,653.—*Title:* "KING BEE—HONEY AND ROCK." (For a Tonic for Coughs and Colds.) N. BENJAMIN SON INC., Brooklyn, N. Y. Filed January 12, 1906.

12,654.—*Title:* "WEDGWOOD." (For Salmon.) STEWART BROTHERS COMPANY, Omaha, Nebr. Filed January 13, 1906.

12,655.—*Title:* "JERSEY CHEESE." (For Cheese.) LOUIS JOLISSAINT, Chicago, Ill. Filed December 22, 1905.

12,656.—*Title:* "PRIDE OF GEORGIA." (For Syrup.) THE GEORGIA SYRUP CO., Bainbridge, Ga. Filed January 10, 1906.

PRINTS

REGISTERED FEBRUARY 6, 1906.

1,571.—*Title:* "BORDEN'S COLUMBIAN BRAND EVAPORATED CREAM." (For Evaporated Cream.) BORDEN'S CONDENSED MILK CO., New York, N. Y. Filed December 18, 1905.

1,572.—*Title:* "DESIGNS FOR PLAYING CARD SPOTS OR PIPS." (For Playing-Cards.) WILLIS W. RUSSELL CARD CO., New York, N. Y. Filed January 2, 1906.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

POTTER v. MCINTOSH.

Decided January 12, 1906.

1. INTERFERENCE—APPEAL ON PRIORITY—CONSIDERATION OF PATENTABILITY.

Where a party who cannot prevail upon priority takes an appeal from the decision against him thereon merely for the purpose of attacking the patentability of the issue, *Held* that the appeal raises merely the question of priority, and the decision below must ordinarily be affirmed without consideration of the question of patentability, for the reasons given in *Sobey* v. *Holsclaw*, (119 O. G., 1922.)

2. SAME—SAME—SAME.

Whatever objections there may be to the policy and rule preventing appeal from decisions affirming patentability or right to make claims in those cases where affirmance may result in preventing the issue of a patent to a party who, in the event of a contrary decision, might have been entitled thereto, this policy and rule are believed to be in accordance with sound reason and unimpeachable in their application to cases where the would-be appellant upon patentability has in any event no standing before the Office as a claimant for a patent upon the matter in question.

3. SAME—SAME—SAME—STATEMENT OF EXAMINERS-IN-CHIEF.

Where in their decision on priority one Examiner-in-Chief found the issue to be patentable and another found it unpatentable and the third was absent. *Held* that the case is not distinguished in substance from one where all three found the issue unpatentable, since by their divided opinion they affirm the conclusion of the Primary Examiner that the issue is patentable.

APPEAL from Examiners-in-Chief.

EMERGENCY-BRAKES.

Mr. Albert G. Davis for Potter. (*Mr. Arthur A. Buck* of counsel.)

Mr. Charles H. Roberts for McIntosh.

ALLEN, *Commissioner:*

This is an appeal by Potter from the decision of the Examiners-in-Chief awarding priority of invention to McIntosh.

In this case the appellant failed to allege in his preliminary statement dates of invention early enough to overcome the record date of his opponent and brings this appeal for the sole purpose of attacking the patentability of the issue and preventing the grant of a patent to his opponent for the invention defined therein. An appeal of this kind was brought and disposed of in the case of *Sobey* v. *Holsclaw*, (119 O. G., 1922.)

It was pointed out there that upon such appeal as the present the case is before me simply upon the question of the priority of the parties with regard to the subject-matter of the issue and that the junior party having conceded in his preliminary statement that he was subsequent to his opponent in the possession of this matter there is nothing for me to do but to affirm the decision of the Examiners-in-Chief in favor of the senior party. I am convinced that Potter should not be heard upon this appeal in opposition to the grant of a patent to McIntosh on the ground that the issue is not patentable. The reasons for this conclusion were set forth fully in *Sobey* v. *Holsclaw*, *supra*, and need not be repeated here.

The circumstances of the present case do not appear to be distinguished from those of that case except in regard to the matter of recommendation by the Examiners-in-Chief under Rule 126. In the former case the Examiners-in-Chief after considering the arguments upon patentability refused to include in their decision upon priority a statement that in their opinion the issue was not patentable. In the present case one Examiner-in-Chief found the issue to be patentable and another found that it was not patentable, and they so stated. The third was absent. This distinction between the cases is not one of consequence. In this case the Primary Examiner has twice found the issue to be patentable, the second time upon *inter partes* consideration on the motion by Potter for dissolution. Under established policy, expressed in Rule 124, parties are denied the right of appeal from decisions affirming the patentability of claims. In spite of this policy and rule Potter has, in effect, had the benefit of an appeal to the Examiners-in-Chief, who by their divided opinion failed to disturb the conclusion of the Primary Examiner that the issue is patentable. No reason is seen for permitting Potter to continue this course of irregular appeal. Whatever objections there may be to the policy and rule preventing appeal from decisions affirming patentability or right to make claims in those cases where affirmance may result in preventing the issue of a patent to a party who, in the event of a contrary decision, might have been entitled thereto, this policy and rule are believed to be in accordance with sound reason and unimpeachable in their application to cases like the present, where the would-be appellant upon patentability has in any event no standing before the Office as a claimant for a patent upon the matter in question.

In this case, as in *Sobey* v. *Holsclaw*, counsel for appellant requests that it appear in this decision that I refused him permission to argue upon the patentability of the issue at the hearing upon this appeal. He was so refused, for the reasons given herein and in the decision in the case referred to.

The decision of the Examiners-in-Chief affirming the decision of the Examiner of Interferences awarding priority of invention to McIntosh is affirmed.

DECISIONS OF THE U. S. COURTS.

Court of Appeals of the District of Columbia.

BAUER *v.* CRONE.

Decided December 5, 1905.

INTERFERENCE—PRIORITY.

Held that the controversy turned entirely upon the facts in evidence; that in addition to the burden imposed upon him by the patents regularly issued to Crone, Bauer has that of overcoming the effect of the successive adverse decisions in the Patent Office; that the evidence on behalf of Bauer is uncertain, fraught with suspicion, and cannot be accepted as sufficient proof of the facts essential to establish the appellant's averments either as originally made or as sought to be amended, and that the decision of the Commissioner must be affirmed.

Mr. F. W. H. Clay and *Mr. Melville Church* for the appellant.

Mr. Chas. C. Gill and *Mr. Wm. G. Henderson* for the appellee.

SHEPARD, *J.*:

The invention in controversy in this proceeding is defined in the following issue in three counts:

1. A brake-beam fulcrum in one integral piece of forged metal folded about its center and forming the angularly-disposed sides and at its ends having flanges, said sides being connected at their outer ends only, substantially as described.
2. A forged-metal brake-beam fulcrum comprising the angularly-disposed side members having at their inner ends flanges, said side members having at their inner ends laterally reversely offset end portions for the formation of said flanges, combined with means connecting said members adjacent to said flanges, and said members beyond their connecting means being apertured to receive the bolt for the brake-lever, substantially as described.
3. A forged-metal brake-beam fulcrum comprising the angularly-disposed sides having at their inner ends reverse offsets forming flanges, and means for connecting said sides to the body-beam, said offsets permitting without materially stretching the metal, the formation of said flanges and the setting of said sides into their angular positions, substantially as set forth.

The appellee, Seth A. Crone, claims under three patents. Count 1 of the issue corresponds to a claim in the first of these, No. 720,676, issued February 17, 1903; count 2 corresponds to a claim in the second, No. 731,668, issued June 23, 1903; count 3 corresponds to a claim in the third, No. 731,865, granted June 23, 1903. Bauer's application embracing each of the counts was filed October 14, 1903. In his preliminary statement, he alleged conception of the invention, on or about June 1, 1900; production of sketches and drawings on or about June 27, 1900, showing count 1, and showing counts 2 and 3 on or about September 3, 1902; disclosure to others of count 1 about June 27, 1900, and of counts 2 and 3 about September 3, 1902; construction of full-size models of all, and reduction to practice on or about November 10, 1902. He also alleged that since said last date he has had at least five thousand or ten thousand of the described fulcrums made and used. About the time that the taking of testimony was begun, Bauer moved to amend his preliminary statement by setting back the date of making drawings and disclosures of the invention comprised in counts 2 and 3 from September 3, 1902, to August 15, 1902, and his date of reduction to practice from November 10, to October 1, 1902. This amendment was denied. The Examiner of Interferences, and the Examiners-in-Chief on appeal to them, decided in favor of Crone upon all three counts. Bauer then appealed to the Commissioner, but on the hearing abandoned his appeal as to count 1. The Commissioner affirmed the decision of the Examiners-in-Chief, and Bauer has prosecuted his appeal therefrom as to counts 2 and 3.

The controversy turned entirely upon the facts in evidence, and in addition to the burden imposed upon him by the patents regularly issued to Crone, Bauer has that of overcoming the effect of the successive adverse decisions in the Patent Office.

The evidence on behalf of Bauer has been fully and fairly reviewed in each of the decisions referred to, and we could add nothing material thereto by further discussion. We agree fully with them that this evidence is uncertain, fraught with suspicion, and cannot be accepted as sufficient proof of the facts essential to establish the appellant's averments either as originally made or as sought to be amended.

The decision must be affirmed. It is so ordered, and that the proceedings herein be certified to the Commissioner of Patents in accordance with the requirements of the law. Affirmed.

Court of Appeals of the District of Columbia.

FRENCH *v.* HALCOMB.

Decided December 5, 1905.

1. INTERFERENCE—ORIGINALITY.

Evidence considered and *Held* insufficient to clearly prove that the invention of the issue originated with French rather than Halcomb.

2. SAME—BURDEN OF PROOF—APPLICANT *v.* PATENTEE.

An applicant in interference with a patent granted before the filing of the application has the burden of proving his case beyond a reasonable doubt, and this burden is not discharged where the testimony merely raises a doubt as to which of the two parties made the invention or whether a third party may not have contributed the essential idea which led to the invention.

3. SAME—EVIDENCE OF INVENTOR PRACTICALLY UNCORROBORATED.

The statements in a memorandum of a note-book produced by French, one of the interfering parties, and alleged to disclose the invention in issue *Held* insufficient to prove conception where it appears that the entry was seen by no one and there is no corroborative evidence on the point except a statement of another witness that French produced such a book at a given date.

Mr. Geo. H. Christy and *Mr. M. A. Christy* for the appellant.

Mr. Alfred Wilkinson for the appellee.

SHEPARD, *J.*:

This is an interference proceeding involving the invention of high-grade steel as described in the following three counts of the issue of interference:

1. A high-grade steel containing less than 1.20 per cent. of carbon, and from six per cent. to fifteen per cent. of molybdenum.
2. A high-grade steel containing less than 1.20 per cent. of carbon, from six per cent. to fifteen per cent. of molybdenum and from 2.50 per cent. to six per cent. of chromium.
3. A high-grade steel containing less than 1.20 per cent. of carbon, from six per cent. to fifteen per cent. of molybdenum, from 2.50 per cent. to six per cent. of chromium and less than two per cent. of silicon.

The junior party, Edmund L. French filed his application May 6, 1903. His preliminary statement alleges conception about December 31, 1899, disclosure on the same date, and reduction to practice on or about April 24, 1902.

Halcomb's claim is founded on a patent issued March 10, 1903, upon an application filed January 21, 1903. No preliminary statement by him is found in the record, and he has taken no testimony. His date of conception and constructive reduction to practice are fixed by his application.

Upon the evidence taken by French in support of his claim, the Examiner of Interferences awarded priority to

Halcomb. This decision was reversed by the Examiners-in-Chief. They, in turn, were reversed by the Commissioner who decided in favor of Halcomb.

Having filed his application after the patent had been issued to Halcomb, French is charged with the burden of establishing his prior right beyond a reasonable doubt.

The several decisions of the Patent Office tribunals show that the points at issue have received very careful consideration, and those of the Examiner of Interferences and the Commissioner review the testimony at length.

Both parties are deeply skilled in the art of manufacturing high-grade steel particularly adapted for making tools used in working steel, and capable of operation at high speed. Halcomb was formerly the president of the Sanderson works at Syracuse, N. Y. In July, 1900, that plant was taken over with many others by a new organization called The Crucible Steel Company of America, of which Halcomb then became president, holding the office until June, 1902. Before this date, the invention of the issue was reduced to practice at the Sanderson works.

In 1897, French, who was then twenty-seven years of age, was employed as a chemist by the Sanderson Company. Subsequently, as stated by him, he had—

charge of the formulæ for making steel and general charge of the metallurgical end of the business there.

While Halcomb was president of the Sanderson company he had constant direction and supervision of all the analyses made and experiments tried. After removal to Pittsburg as president of the general owning corporation, he frequently visited the Sanderson works, and through reports and letters from French was advised of all that took place there until the relinquishment of his last position in June, 1902. During the whole period there was constant competition with high-speed tool-steels of foreign manufacture. It appears from the testimony of French, that, before 1898, or 1899, molybdenum had not been used to any extent as an ingredient of tool-steel, and that after experiments therewith at the Sanderson works, it was decided in November, 1900, to substitute it for the tungsten grade, then in general use. In the meantime, or shortly after, the Crucible Steel Company acquired a practical monopoly of molybdenum in the United States.

The record sets forth lengthy correspondence between French and Halcomb, relating to many analyses of steel, the product of different manufacturers, specimens of which were generally sent by Halcomb for the purpose, and to experiments carried on by French chiefly, at least, under Halcomb's instructions. This began September 24, 1901, and ended May 3, 1902. In this first letter from Halcomb to French, dated September 24, 1901, he said:

I don't want any experimental steels to be made at Syracuse or elsewhere without my previous knowledge and sanction, nor must any change be made either in the mixtures.

The testimony in general shows not only that the advantages of the use of molybdenum instead of tungsten were recognised fully, but that low-carbon mixtures were already in general use. It seems, also, that the suggestion of a combination of very low carbon with molybdenum came from one B. V. Maxwell, also an expert employee of the Crucible Co. Writing to Halcomb, under date of January 12, 1902, he refers to a new steel, which he says is a "wonder," of the following composition: 11½ per cent. tungsten, 2½ per cent. chromium and eight-tenths of 1 per cent. carbon. He then suggests that the Sanderson works—get out for experiment, a few pieces for test of a very low carbon, molybdenum self-hardenings teel.

Prior to that, as shown by French's letter of December 6, 1901, he had made an analysis of a sample of Capital steel, manufactured by others, which had been sent by Maxwell. This shows a composition of tungsten, chromium, silicon and forty-one one-hundredths of carbon. In concluding this letter to Halcomb he says:

There is not a steel in existence that can stand long against our Mo. steel treated, and as long as we can keep a fair control over the molybdenum market, we can laugh at competition in the steel-hardening line.

It would protract this opinion to an unusual length to undertake to review all of this correspondence, nor is it important to do so.

Counsel for French refer especially to his letter to Halcomb of March 14, 1902, as first disclosing this invention among the experimental analyses therein given. The Commissioner expressed the opinion in his decision that French's suggested composition was nothing more than the report of the result of Halcomb's directions in his letter of January 14, and March 1, 1902. The first of these directs a sample made according to the analysis of the "Capital" steel, hereinabove mentioned, for test by Maxwell. Attention is also called to what Maxwell had said about the composition of another steel—the "wonder" described in Maxwell's letter of January 12—and concludes:

This latter we could easily duplicate, but I also think that molybdenum can be substituted for tungsten to advantage.

In this letter he refers to samples of steels sent to French and gives analyses that had been made at other works belonging to the Crucible Co. Two of these showed tungsten, by substituting molybdenum for which, according to the well-known proportion of about one for two, as indicated in former letters to French, the composition of the issue was substantially disclosed. Moreover, he adds:

I would like you to get more information for me on those steels. Make some tests with them and see how you think they are as compared with our S. H. Mo. specially treated, and whether you think there is anything in having the carbon lower.

It is not necessary for the purposes of this case to consider whether Maxwell may not have contributed the idea which led directly to the specific composition that has been declared patentable, or whether Halcomb had a substantial conception of the same when he gave his directions to French to make experiments upon that line. Nor need we determine that what French may have come upon in carrying out the directions of Halcomb accrued to the latter as his employer for that purpose. It is sufficient only to say that all of the testimony taken together has no greater effect than to raise a doubt merely as to whether French or Halcomb had the first conception of the invention. The raising of such a doubt, however, does not meet the requirement of the burden imposed by the established rule upon one who seeks to overcome a regularly-issued patent.

A part of the testimony, considered in reaching the foregoing conclusion, consists of a long memorandum in a note-book produced by French. This memorandum, bearing date September 14, 1900, is too lengthy to be recited. Assuming that it discloses the "low-carbon idea" completely, the proof of it is insufficient. French kept this book to himself. No one read the entry. One witness testifies that French produced a book like this in May, 1902. He gives no precise date, but any time in May was more than a month after the letters passed between French and

Halcomb, that have been particularly referred to above. Moreover, the witness's recollection of what he heard is rather indefinite. The practically uncorroborated evidence of the inventor himself cannot be accepted as proof of conception. (*Winslow* v. *Austin*, 14 App. D. C., 141; *Garrells* v. *Freeman*, 21 App. D. C., 207, 212.)

Again, there are some circumstances tending to cast doubt upon the actual date of this memorandum. Throughout French's entire correspondence with Halcomb, there is no reference to it. In a letter written December 16, 1902, to Halcomb's successor as president of the Crucible Co., he refers to an idea he had had for securing patents for the company's benefit upon all mixtures then in use. The particular composition is not mentioned, save as it may be included in all the mixtures of molybdenum, and he goes on to say:

> I believe we should take out patents covering the use of molybdenum alone for high-speed steels, and for all high percentages of molybdenum and chromium, also patents for low percentages of the same, such as might be used in magnet and other special steels.

No applications seem to have been prepared, certainly none were filed, until after Halcomb's patent had been brought to his attention. He refers to this in a letter to Smith of March 31, 1903. Making no statement of his own invention, he says:

> I regret that my delay in giving you the specifications as required by our patents attorneys has perhaps allowed Mr. Halcomb to step in first and secure rights, and am sorry now I took so much pains to have the claims broad. The patent I had in mind would have covered a wider field than Halcomb's in case the magnet-steels had proven a success.

After some further correspondence between the same parties, relating to patent applications, French wrote on April 28, 1903, for his letters to Halcomb of March 28, 29, April 5 and 6, 1902, saying:

> These letters should show whether Mr. Halcomb instructed me, as his own idea, to duplicate the various high-speed steels of which I sent him an analysis, or whether I made the suggestion that it be done and get his approval.

This is followed by those analyses, seven in number, that were given in the correspondence with Halcomb. The letter then proceeds as follows:

> These were duplicated here by making molybdenum steels with one-half the percentage they contained in tungsten, approximately, and were given the numbers at the left of the table above, which you will find to correspond with the table of experimental steels already in your hands. I think the letters I have mentioned above as missing will supply the information we want as to the originality of the idea, if there was any. It seems to me that it will be best to work on the fact that what was done by the Sanderson Bros. Steel Co. while Mr. Halcomb was here, and afterward while he was president of the Crucible Steel Co., was not original with him or with me, but was merely imitation of what had already been accomplished with molybdenum by others. I find that we made an analysis of Crescent Mo. self-hardening here before we ever made it ourselves. A sample of Crescent Mo. steel analyzed April 1, 1900, showed C. 1.65, Mo. 3.98, Cr. 4.22, and it is probable that the ingot made at the Sanderson works April 18, 1899, was a copy of this, the analysis being so similar, namely, C. 1.60, Mo. 4.03, Cr. 4.02. Mr. Halcomb added .64 silicon to this analysis on general principles, it being our practice at that time to use about that amount of silicon in our tungsten self-hardening steel.
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> In the same way that we copied the Crescent steel for high-carbon self-hardening, we imitated the various makes of foreign low-carbon steel, and Mr. Halcomb says to me in a letter dated March 31, 1902: "It is quite evident now that every one is working on low carbons, and that is what we have got to do."

This was written on receipt of the list of analyses quoted in the first part of this letter. Mr. Halcomb says further in his letter of the 31st March:

> I think that Krupp's would be a very good steel to duplicate, with, say, .75 carbon, 9.75 tungsten, or half that quantity Mo., 3.00 chromium, .25 to .35 silicon. There is not a great deal of difference, I should think, between that and Vickers-Maxim, though for the latter add a little more chromium and use a little less tungsten. Suppose you make an ingot of each, one being of the analysis I have just given you and the other like Vickers-Maxim, .78 carbon, 7.35 tungsten, or one-half the amount of Mo., and 3.75 chromium. Then we will find out which is the better of the two. The Styrian steel must be a great deal more expensive than either of the others. Still it would be interesting to know what results could be obtained with about .60 carbon, 10.00 Mo. and 6.50 Cr.
>
> I believe you will find that in my letter of March 28 to Mr. Halcomb, or that of March 29, I suggested to him that we duplicate all the foreign steels, analysis of which I gave him and contained in the table on the first page of this letter.
>
> I am certain that he never gave me any suggestions or instructions as to the analysis of steel No. 5 or No. 9, both of which proved superior to any of the others, and both of which have been used as our regular steels.
>
> I send inclosed a copy of matter in my note-book under date of September 14, 1900, which will show that I had the low-carbon idea long before it was used in this country or abroad, and that I told Mr. Halcomb about it. I never made the experiments spoken of in my notes, being discouraged from trying them at that time by Mr. Halcomb's opposition, he having no faith in what I proposed.

It is singular, to say the least, that one now claiming the invention, and with his note-book and the correspondence before him, should have suggested a doubt whether it was original with him or Halcomb either, and also whether it was an invention at all because an imitation of what had already been accomplished by others. Although he sent the memorandum of the note-book for the consideration of the patent experts of his company, it seems that the only thing he then claimed as original was the "low-carbon idea."

It does not appear when the low-carbon steels of foreign manufacture, which French analyzed in 1901 and 1902, were first made, but the "low-carbon idea" was certainly not a new one in 1900, because French's witness, Gardner, who was manager of the Sanderson works, said that low-carbon self-hardening steels had been made years ago by two different English manufacturers, and that he had formerly been in the service of one of them as assistant manager of the rolling-mills.

We are far from being convinced that French was the first to conceive the specific invention of the issue, and must, therefore, affirm the decision of the Commissioner. It is so ordered, and that this decision be certified to the Commissioner of Patents as the law requires. Affirmed.

Court of Appeals of the District of Columbia.

GILES REMEDY COMPANY v. GILES.

Decided December 12 1905.

1. TRADE-MARKS — APPEAL TO COURT — INTERFERENCE DECLARED UNDER ACT OF 1881.

   A trade-mark interference declared under the act of 1881, but not decided until after the passage of the act of February 20, 1905, is appealable to the Court of Appeals of the District of Columbia under the act of February 20, 1905, where the only application involved has been amended to bring it under the provisions of that act.

2. SAME—SAME—PENDING APPLICATION.

   A trade-mark application which was involved in an interference at the time of the passage of the act of February 20, 1905, was a pending application such as might be amended to bring it under the act.

3. SAME—INTERFERENCE—PRIORITY OF ADOPTION AND USE.

   Where it appears that Sanford Giles first adopted and used the trade-mark and secured registration thereof and subsequently the mark was used by him and by Daniel Giles at a single place of business under the name of the Giles Remedy Company until a disagreement between them which resulted in their separation, *Held* that Sanford Giles was the owner of the mark and that judgment of priority must be in his favor.

4. SAME—SAME—SAME—RIGHT ACQUIRED BY TRANSFER.

   Where a trade-mark registrant is shown to have been the first to adopt and use the mark and to have been the owner at the time he secured the registration, he is not to be defeated in an interference by showing that his opponent subsequently acquired title to the mark from him. Such showing might in appropriate proceedings justify compelling the transfer of the certificate of registration; but it does not justify the holding that the later applicant was the first to adopt and use the mark.

5. SAME—OWNERSHIP BY PARTNERS—RIGHTS UPON DISSOLUTION.

   The general rule that when a partner retires from a partnership and assents to the retention by the other partners of the possession of the old place of business and the future conduct of the business by them under the old name the trade-mark remains with the latter has no application to the facts of this case.

6. SAME—SAME—SAME—WITHDRAWAL OF MEMBER.

   In the absence of express agreement a trade-mark used theretofore by one who enters into partnership with others does not at the dissolution of the partnership, caused by the withdrawal of the member bringing the mark into the partnership, remain the property of the partnership.

Mr. W. H. Chamberlin and *Mr. Geo. L. Wilkinson* for the appellant.

Mr. W. C. Jones and *Mr. Geo. R. Hamlin* for the appellee.

DUELL, *J.*:

Preliminary to a decision as to the correctness of the finding of the Commissioner of Patents that priority of adoption and use of the trade-mark in issue was by the appellee, Sanford F. Giles, we are called upon to determine whether this is a case where an appeal lies to this court, a motion having been made to dismiss the appeal on the ground that this court is without jurisdiction to entertain the appeal. The material facts disclosed by the record will be briefly stated. Under the law of 1881 a certificate of registration of the trade-mark in controversy was granted to Sanford F. Giles on June 29, 1897. The Giles Remedy Company, a corporation of the State of Illinois, on September 15, 1904, made application for substantially the same trade-mark, and an interference on October 11, 1904, was declared between Sanford F. Giles, the registrant, and the application of the Giles Remedy Company. Both parties took proofs, and on the proofs and proceedings a hearing was had before the Examiner of Interferences who, on March 11, 1905, found in favor of the registrant, Sanford F. Giles. Limit of appeal was fixed to expire March 31, 1905, and on that date an appeal to the Commissioner was duly taken. The decision of the Examiner of Interferences was affirmed by the Commissioner on June 29, 1905. Under the law of 1881 an appeal did not lie to this court in interferences relating to trade-marks. Such appeal was provided for by the law of 1905 which went into effect April 1, 1905. Section 24 of that law made the following provision for pending trade-mark cases:

> Sec. 24. That all applications for registration pending in the office of the Commissioner of Patents at the time of the passage of this act may be amended with a view to bringing them, and the certificates issued upon such applications, under its provisions, and the prosecution of such applications may be proceeded with under the provisions of this act.

The appellant, being an applicant, on the 6th of April, 1905, filed its petition asking to amend the application involved in this proceeding to bring it within the provisions of the act, and this petition was received and approved by the Patent Office.

We do not see how the Patent Office could have lawfully refused the petition, for the application of the Giles Remedy Company for registration of its claimed trade-mark was pending in the office of the Commissioner of Patents at the time of the passage of the act. While the act did not take effect until April 1, 1905, it was passed—that is approved—February 20, 1905. On that date the Examiner of Interferences had not filed any decision, and of course no appeal had been taken to the Commissioner of Patents. At the April, 1905, term of this court we reviewed at length the question as to what was a pending application for registration of a trade-mark as that term was used in the act of 1905, and under our ruling in that case, to which reference is made, without again stating our conclusions and the reasons therefor, the application of the Giles Remedy Company, appellant, is clearly a "pending" application and was such not only on the 20th of February, 1905, when the act was approved, but also on April 1, 1905, when it went into effect. Section 7 of the act provides for the declaration of an interference between a registered mark and an application for the registration of a conflicting mark and section 9 provides for an appeal in such interferences to this court. Appellant is rightfully in this court, and the motion to dismiss his appeal must accordingly be denied.

This brings us to the consideration of the merits of the appeal. The facts, so far as they are material to the decision of any questions which are properly before us in this proceeding, are substantially these.

Daniel S. Giles, Sr., through whom the Giles Remedy Company, appellant, became vested with any claim of title it may have to the trade-mark in question, undoubtedly originated the medicine in connection with which the trade-mark is used, and disposed of it by gift or sale, in small quantities for years before Sanford F. Giles put the medicine on the market. Both father and son sold the medicine before the trade-mark came into being. It is equally well proven that Sanford F. Giles originated the trade-mark, and in September, 1894, caused labels for bottles, and also other printed matter, to be printed by a printing establishment located at Kansas City. These labels had on them a seal with serrated edges and upon the seal the words "Giles Magic Lotion." At that time he lived at Pleasanthill, Mo., and was by occupation a telegraph operator. For a year or more prior to September, 1894, he had sold the medicine, probably using the trade-mark, and had put it out under the name of the Giles Remedy Company. He was undoubtedly the first to use that tradename. In 1896 he removed to Kansas City, and for a time lived with his father, both engaged in putting the medicine on the market in a happy-go-lucky sort of a way. There was no partnership, at least at the commencement of their relations, and, so long as they continued to live at Kansas City, it can hardly be said that this record discloses that their relations amounted in law to a partnership relation. A bank account was kept by Sanford but that does not prove that the business carried on was his, nor does it tend to prove a partnership. From an examination of the testimony we conclude that each sold what he could and used the proceeds as he pleased; that each sought to make a living out of the business, and as long as one had enough for that object he cared little what amount of money the other made out of the business. It was a relation that was quite natural between a father and son whose feelings for each were natural, and such as often exists between father and son. The business at first was small, and each worked in an independent sort of a way, and each in his own way sought to increase the business. We fail to discover sufficient to warrant us in a conclusion that in the spring of 1897, when Sanford executed and filed the application for registration of the trade-mark, he had divested himself of the right to file the application in his own name so that a trade-mark could be lawfully issued to him upon his own application. No doubt his father thought, and had a right to think, that the trade-mark was to be used by him as well as by Sanford. But the latter having been the first to adopt and use the trade-mark, and not having parted with his interest in it, and having continued its use, had not by acquiescing in its use by his father in the manner shown forfeited his right to claim the mark as his own property. Conceding that his father furnished the money used in procuring the trade-mark, we cannot, in view of the loose way in which the business was carried on, infer or find from that fact that a partnership existed between them. It was in fact at that time the same as though two peddlers living under the same roof, made up their packs without paying much attention to who paid the most for the goods they sold, or what became of the proceeds so long as one if he had more money than he needed would lend it to the other.

It was a very natural relation, under the circumstances, to exist. We hardly think that the father's right to use the mark had in the spring of 1897 ripened into a legal right that he could then have enforced. Undoubtedly as the years passed and the business increased, and books were kept and a bank account was kept in the name of the Giles Remedy Company (a trade-name devised by Sanford F. Giles) against which both could check, there developed a more business-like relation. But as we look at the question we are called upon to decide, any finding we might make as to the later relations between the father and son, and their several relations to the business, would be of no moment. Another forum is provided for the determination of those questions. If Sanford F. Giles was the first to adopt and use the trade-mark in question, and not having ceased to use, or not having parted with the legal title to register the mark when he did—all which we have found—it would be a vain thing for us to find that after the registration he had parted with an interest, or any part, of the exclusive right to use the mark. The title to the certificate of registration, if claimed under some act or set of acts done or performed after its issue, cannot as a rule be determined in an interference proceeding. Such question is, we apprehend, to be tried in a proceeding brought to compel the assignment of the issued certificate, or by some analogous proceeding. There may hereafter be found some exception to the general rule, but this is not one and we have now none in mind. An interference proceeding under the trade-mark law is instituted to determine priority of adoption and use, and when it is found that one of the parties to the interference was the first to adopt and use the mark in accordance with the requirements of the law, and was the sole owner of the mark when he applied for and received the certificate of registration the inquiry instituted by the interference proceedings terminates. If a later applicant seeks to re-register the mark for any lawful reason, and it appears that his title is based upon the same adoption and use as claimed by the prior registrant it cannot be successfully contended that he has any standing in an interference unless, at least, he shows that the entire right, title and interest in the mark has become vested in him. Appellant has failed to show this, for any right vested in the corporation, appellant, is such title as Daniel S. Giles, Sr., had in the mark when he attempted to assign all interest in the mark to it and caused the application for registration to be filed in its name. Daniel S. Giles, Sr., is not shown to have had at any time such title as would have permitted him to register the mark. He did not originate it nor first put it in use. Nothing, so far as this record discloses, vested in him at any time the exclusive right to its use. That after its registration by Sanford F. Giles he acquired some rights we think the record discloses. At the best those rights are not shown to be exclusive or to warrant a judgment of priority in his favor. The partnership, if it be admitted that a partnership existed between father and son, did not vest him with the exclusive right to the mark; and when the relation was terminated by the father's annexing the bank account, and the departure of the son from the common place of business, the condition that then arose did not in law vest the father with all rights to the mark on the ground that the son had abandoned his rights.

The propositions of law advanced by the appellee are well founded and sustained by many adjudicated cases. Briefly summed up they are that registration of a trade-mark is grantable only to its owner, and such owner is the one first to adopt and use the mark as provided by law. The Trade-Mark Acts of 1881 and 1905, and the adjudications under the former act all sustain the proposition. That the right to use a trade-mark owned by a partnership—after its dissolution, generally is vested in all of the members who continue in the same line of trade. (*Menendez* v. *Holt*, 128 U. S., 514.) That in the absence of an express agreement, a trade-mark used theretofore by one who enters the partnership does not at the dissolution of the partnership, caused by the withdrawal of the member bringing the mark into the partnership, remain the property of the partnership. (*Am. & Eng. Encyc. of Law*, 2nd Ed., Vol. 28, p. 406, and cases there cited.)

It is undoubtedly true as urged by appellant that when a partner retires from a partnership and assents to the retention by the other partners of the possession of the old place of business and the future conduct of the business by them under the old name that the trade-mark remains with the latter. The facts in the present case do not warrant the application of that rule of law for the retirement must be voluntary, or thereafter acquiesced in, and the retention of the business must have also been acquiesced in and not practically forced.

It appears that the parties to this interference are engaged in a litigation pending in the courts of the State of Illinois, and their respective rights to the registered trade-mark can there be determined. As before stated we have no call to determine that question having found that Sanford F. Giles lawfully registered the mark in controversy and that the appellant has failed to show that after such registration it became the sole owner of the registered mark and of all rights thereto pertaining.

In our opinion the Commissioner of Patents was right in awarding judgment of priority of adoption and use of the trade-mark to the appellee, Sanford F. Giles, and his decision should therefore be affirmed. The clerk of the court will certify this opinion, and the proceedings in this court in the premises, to the Commissioner of Patents, according to law. Affirmed.

Notice.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., February 2, 1906.

The following assignment from The Pennsylvania Railroad Company dedicating to the public the invention secured by United States Letters Patent No. 790,690, granted May 23, 1905, to William F. Kiesel, Jr., for improvements in tank-cars has been recorded in the assignment records of this Office and is published for the information of the public.

F. I. ALLEN,
Commissioner.

Whereas Letters Patent of the United States were granted May 23, 1905, to William F. Kiesel, Jr., of Altoona, Pa., numbered 790,690, for improvements in tank-cars; and

Whereas The Pennsylvania Railroad Company, a corporation of the State of Pennsylvania, whose principal office and place of business is in the city of Philadelphia, in said State, by virtue of an assignment from said William F. Kiesel, Jr., dated November 5, 1904, and recorded in the United States Patent Office November 17, 1904, in Liber T-70, page 250, of the Transfers of Patents, is now the sole owner of said Letters Patent, and of all right, title and interest therein, and of the invention covered thereby; and

Whereas the said The Pennsylvania Railroad Company is desirous that the invention described and claimed in and by said Letters Patent may be freely made and used within the United States and its Territories and without compensation to said company:

Now therefore this indenture witnesseth: that the said The Pennsylvania Railroad Company does hereby grant to the public of the United States, and to each and every member thereof, including persons, firms and corporations, the right to make, to make and use, to use, and to vent to others to be used, the said invention described and claimed in and by said Letters Patent numbered 790,690, granted May 23, 1905, to said William F. Kiesel, Jr., as aforesaid, the same being an improvement in tank-cars, without any liability under said Letters Patent to said The Pennsylvania Railroad Company, or to its successors or assigns, the said right so granted to continue during the full term for which said Letters Patent are or may be granted and to extend to any reissues, renewals or extensions thereof.

But nothing herein contained shall be construed as an assertion or as an acknowledgment by the said The Pennsylvania Railroad Company of the validity of the said Letters Patent numbered 790,690, or of any reissue or extension thereof, or as an assumption by said The Pennsylvania Railroad Company of any liability which may now or hereafter be incurred by any one in the manufacture, sale, or use of the invention covered by said Letters Patent, growing out of the infringement of any other patent or patents.

In witness whereof the said The Pennsylvania Railroad Company has caused these presents to be signed by its vice-president and its corporate seal to be hereto affixed this tenth day of January, A. D. 1906.

[L. S.] THE PENNSYLVANIA RAILROAD COMPANY,
By SAMUEL REA,
Vice-President.

Attest:
LEWIS NEILSON,
Secretary.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

VOL. 120—No. 7. TUESDAY, FEBRUARY 13, 1906. PRICE—$5 per year.

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TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	3	1	Nevada	.....	.....
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Florida	3	1	Oregon	5	.....
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Idaho	2	.....	Rhode Island	1	1
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Maine	2	10	Washington	6	.....
Maryland	4	6	West Virginia	2	3
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Minnesota	11	2	U. S. Army	.....	.....
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TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Algeria	1	.....	Netherlands	1	.....
Argentina	1	.....	Newfoundland	.....	.....
Austria-Hungary	5	.....	New South Wales	2	.....
Belgium	3	2	New Zealand	1	.....
British West Indies	.....	.....	Norway	1	.....
Canada	7	.....	Persia	.....	.....
Cape Colony	.....	.....	Queensland	.....	.....
Chile	.....	.....	Roumania	.....	.....
China	.....	.....	Russia	.....	.....
Costa Rica	.....	.....	San Salvador	.....	.....
Cuba	.....	.....	Scotland	1	.....
Denmark	.....	.....	South Africa	.....	.....
Ecuador	.....	.....	Spain	.....	.....
England	18	1	Sweden	1	.....
France	10	.....	Switzerland	.....	.....
Germany	25	2	Transvaal, South Africa	2	.....
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Italy	2	.....			
Japan	1	.....	Total to citizens of foreign countries	83	5
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Mexico	1	.....			

Printed Copies of Patents.

A printed copy of the complete specification and drawings of any patent published herein can be obtained for five cents.

Trade-Marks.

The publication of trade-marks under the act of February 20, 1905, in the OFFICIAL GAZETTE, commenced May 2, 1905, and will appear in each weekly number of the GAZETTE thereafter.

Extra copies of the trade-mark portion of the GAZETTE, which will be sold separately, may be obtained single or in quantities for five cents each. Coupons will be taken in payment therefor.

Interference Notice.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., February 7, 1906.

John H. Thompson & Company, their assigns or legal representatives, take notice:

An interference having been declared by this Office between the application of Charles H. Montanye, of New York, N. Y., for registration of a trade-mark and a trade-mark registered to John H. Thompson & Company, of Detroit, Mich., and the notice of said declaration mailed by the Patent Office in the usual manner to the said John H. Thompson & Company having been returned undelivered, notice is hereby given to the said John H. Thompson & Company, their assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents, in order that the notices of declaration heretofore sent by and returned to the Office may be forwarded to them.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN,
Commissioner.

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business February 6, 1906.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
	Under fifteen days.			
308	XV. Bread, Pastry, and Confections, Making, Coating, Laminated Sheets and Fabrics, Fuel, Glass, Hydraulic Lime and Cement, Paper-Making, Paving, and Plastics.	Jan. 27	Dec. 8	358
221	I. Tillage, etc., Fences, and Railway Draft Appliances.	Jan. 26	Dec. 26	191
378	XXXVIII. Artesian and Oil Wells, Bottles and Jars, Care of Live Stock, Fishing and Trapping, Stationery, Stone-Working.	Jan. 24	Dec. 14	337
148	XXXII. Carbonating Beverages, Dispensing Beverages, Dispensing-Cans, Metallic Shipping and Storing Vessels, Packaging Liquids, Paper Receptacles, Refrigeration, Wooden Receptacles.	Jan. 24	Sept. 27	596
322	XXXVI. Curtains, Shades, and Screens, Drafting, Driers, Measuring Instruments, and Wind-Wheels.	Jan. 23	Jan. 10	231
344	XXXV. Baggage, Buckles, Buttons, and Clasps, Card, Picture, and Sign Exhibiting, Deposit and Collection Receptacles, Package and Article Carriers, Packing and Storing Vessels, Photography.	Jan. 23	Nov. 27	529
308	XVII. Linotyping, Printing, Matrix-Making, Nut and Bolt Locks.	Jan. 23	Nov. 13	321
379	XXIII. Acoustics, Coin-Handling, Horology, Recorders, Registers, Optics, Signals, Time Controlling Mechanism.	Jan. 23	Sept. 27	659
154	XI. Boot and Shoe Making, Boots, Shoes, and Leggings, Button, Eyelet, and Rivet Setting, Leather Manufacturing, Nailing and Stapling, Check-Controlled Apparatus, Whips and Whip Apparatus.	Jan. 23	Aug. 30	354
175	III. Annealing and Tempering, Coating with Metal, Electrochemistry, Metal-Founding, Metallurgy, Shaping Fluid Metal.	Jan. 22	Dec. 26	281
128	II. Bee Culture, Dairy, Label-Affixers, Paper Files and Binders, Presses, Store-Service, Tobacco, etc.	Jan. 22	Nov. 15	229
144	XXIV. Apparel, Apparel Apparatus, Sewing-Machines, Surgery, Toilet.	Jan. 22	Oct. 18	481
	Under one month.			
332	X. Carriages and Wagons	Jan. 20	Sept. 26	821
138	XXII. Air-Guns, Ammunition and Explosive Devices, Boats and Buoys, Catapults and Targets, Firearms, Marine Propulsion, Ordnance, Ships.	Jan. 18	Oct. 16	275
183	XXX. Fluid-Pressure Regulators, Lamps and Gas-Fittings, Type-Writing Machines.	Jan. 18	May 18	640
179	XX. Artificial Limbs, Builders' Hardware, Dentistry, Locks and Latches, Safes, Undertaking.	Jan. 16	July 3	360
304	XXXIV. Railways, Railway-Brakes, Rolling-Stock.	Jan. 15	Dec. 26	303
284	XII. Elevators, Journal-Boxes, Lubricators, Machine Elements, Pulleys and Shafting.	Jan. 13	Nov. 10	403
107	XXXVII. Electricity, Conductors, Lighting, Special Apparatus.	Jan. 13	June 1	707
218	VI. Bleaching and Dyeing, Chemicals, Explosives, Fertilizers, Medicines, Preserving, Sugar and Soap.	Jan. 12	Nov. 16	349
122	XIX. Stoves and Furnaces and Steam-Boiler Furnaces.	Jan. 12	Aug. 7	643

Applications Under Examination—Continued.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
172	XXXI. Alcohol, Charcoal and Coke, Distillation, Gas, Heating and Illuminating, Hides, Skins, and Leather, Liquid Coating Compositions, Oils, Fats, and Glue, Water Purification.	Jan. 10	Dec. 20	229
327	XVIII. Steam-Engineering, etc	Jan. 10	Nov. 2	371
105	XXVI. Electricity, Generation, Electric Heaters, Electric Railways, Motive Power.	Jan. 10	Aug. 2	693
112	XXI. Textiles, Carding, Knitting, Spinning, Weaving, etc.	Jan. 8	July 25	579
	Between one and two months.			
307	XIV. Cutting and Punching Sheets and Bars, Farriery, Metal-Bending, Metal-Ornamenting, Metal Personal Wear, Making, Sheet-Metal Ware, Making, Tools, Wire-Working.	Jan. 5	Sept. 21	280
232	IV. Bridges, Conveyers, Cranes and Derricks, Excavating, Hoisting, Hydraulic Engineering, Loading and Unloading, and Towers.	Jan. 4	Jan. 2	300
137	VIII. Beds, Chairs, Furniture, Kitchen and Table Articles, Store Furniture.	Jan. 4	Oct. 5	568
167	V. Fine Arts, Bookbinding, Harvesters, Jewelry, and Music.	Jan. 3	Dec. 6	364
147	XXIX. Coopering, Roofs, Wheelwright-Machines, Wooden Buildings, Wood-Sawing, Wood-Turning, Woodworking-Tools.	Dec. 29	Oct. 18	341
164	XXXIII. Canes, Canopies, Cutlery, Domestic Cooking Vessels, Electricity, Medical and Surgical, Electric Signaling, Fireproof Buildings, Harness, Masonry, Tents, and Umbrellas.	Dec. 26	Aug. 14	739
312	VII. Velocipedes, Clutches, Fire-Escapes, Games and Toys, Ladders, Mechanical Motors, and Paper Manufactures.	Dec. 21	Nov. 1	459
375	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, Washing Apparatus.	Dec. 18	Aug. 12	677
109	XVI. Telegraphy and Telephony	Dec. 15	Dec. 9	290
382	XXVIII. Air and Gas Engines, Air and Gas Pumps, Pneumatics.	Dec. 13	June 1	975
142	IX. Baths and Closets, Fire-Extinguishers, Hydraulic Motors, Pumps, Sewerage, and Water Distribution.	Dec. 7	June 17	1066
	Between two and three months.	Nov. 29	Sept. 6	561
330	XIII. Arms, Projectiles, and Explosive Charges, Making, Metal-Working, Needle and Pin Making.			
315	XXV. Butchering, Mills, Threshing, and Vegetable Cutters and Crushers.	Nov. 6	Aug. 15	526
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159	TRADE-MARKS, DESIGNS, LABELS AND PRINTS.			
	Between one and two months.			
	Trade-Marks	Dec. 28	Dec. 8	3062
	Under fifteen days.			
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Communications to the Patent Office.

RULE 9. A separate letter should in every case be written in relation to each distinct subject of inquiry or application. Assignments for record, final fees, and orders for copies or abstracts must be sent to the Office in separate letters.

PATENTS

GRANTED FEBRUARY 13, 1906.

812,176. RECISION-ENGINE. FREDERICK D. ALTHAUSER, New York, N. Y. Filed June 21, 1905. Serial No. 266,230.

Claim.—1. A recision-engine comprising a rotary piston, its shaft, a loose piston-ring, piston end plates overlapping the ends of the ring to form a piston-chamber, suitable inlet and outlet ports in the piston and rollers for supporting the ring eccentric to the piston and its shaft.

2. A recision-engine comprising a rotary piston having radially-sliding oppositely-arranged wings, a piston-shaft, a loose piston-ring eccentric to the shaft, piston end plates overlapping the ends of the ring to form two piston-chambers and rollers for supporting the ring with its inner wall in engagement with the periphery of the piston at one point and inlet and outlet ports in the piston for controlling the admission and exhaust of steam.

3. A recision-engine comprising a rotary piston, its shaft, a loose piston-ring, means for supporting the ring eccentric to the shaft, piston end plates overlapping the ends of the ring, radially-sliding piston-wings engaging the inner wall of the ring, inlet and outlet ports in the piston and valves for controlling the admission and exhaust of steam.

4. A recision-engine comprising a rotary piston, its shaft, a piston-ring loosely mounted eccentric to the piston with one point of its inner wall in engagement with one point of the periphery of the piston, piston end plates overlapping the ends of the ring, radially-sliding piston-wings engaging the inner walls of the ring, ports in the piston upon opposite sides of each of the wings, reversing-disks and valves arranged to coact with the piston for controlling the admission and exhaust of steam to and from one or the other side of each piston-wing.

5. A recision-engine comprising a rotary piston, its shaft, a loose piston-ring supported eccentric to the shaft with one point of the inner walls of the ring in engagement with one point on the periphery of the piston, piston end plates overlapping the ends of the piston-ring, radially-sliding piston-wings engaging the inner walls of the piston-ring, ports in the piston opening through its periphery upon opposite sides of each of the piston-wings, reversing-disks carried by the piston end plates and inlet and outlet valves arranged to operate the reversing-disks and means for controlling the movement of the inlet and outlet valves.

6. The combination with the rotary piston of a recision-engine and its shaft, of a reversing-disk located at the inlet end of the piston for controlling the movement of the piston, an inlet-valve for controlling the movement of the disk and means for moving the inlet-valve.

7. The combination with the rotary piston of a recision-engine and its shaft, of a reversing-disk located at the inlet end of the piston for controlling the movement of the piston, an inlet-valve for controlling the movement of the disk, means for moving the inlet-valve and an adjustable cut-off for the inlet-valve.

8. The combination with the rotary piston, of a recision-engine and its shaft, of a loose ring supported eccentric to the piston with its inner walls at one point in engagement with the periphery of the piston, two oppositely-disposed radially-sliding piston-wings, means for yieldingly holding the wings in engagement with the inner walls of the piston-ring and piston end plates overlapping the ends of the ring.

9. The combination with the rotary piston of a recision-engine, its shaft, radially-sliding piston-wings and two sets of ports leading from the ends of the piston to the opposite sides of each piston-wing, of a reversing-disk fitted to the end of the piston arranged to open the one or the other set of ports and a valve arranged to move the reversing-disk to the opposite limits of its movements for controlling the movement of the piston in the one or the other direction.

10. The combination with the rotary piston of a recision-engine and its shaft, of an outlet-valve mounted on the shaft and a reversing-disk interposed between the end of the piston and the face of the said valve.

11. The combination with the rotary piston of a recision-engine and its shaft, of a valve, a reversing-disk interposed between the end of the piston and the face of the valve, a cam, means for reciprocating the valve and means controlled by the movement of the valve for bringing the cam into and out of engagement with the disk for moving the disk to the limits of its movements in both directions.

12. A recision-engine comprising a hollow casing, a loose piston-ring therein, a rotary piston, its shaft, means for supporting the piston-ring eccentric to the shaft, radially-sliding piston-wings, piston end plates overlapping the ends of the ring, inlet and exhaust ports in the casing, ports in the piston, an inlet-valve having its inlet-ports opening into the interior of the casing exterior to the piston, an outlet-valve having its outlet-port opening to the exhaust-port in the casing and reversing-disks interposed between the valves and the ends of the piston for controlling the passage of steam from the interior of the casing through the inlet-valve and piston to the outlet-valve upon the proper sides of the piston-wings.

13. A recision-engine comprising a rotary piston, its shaft, a piston-ring, oppositely-arranged piston-wings, rods passing through the shaft and springs interposed between the ends of the rods and the wings for holding the wings in yielding engagement with the inner wall of the piston-ring.

812,177. TYPE-WRITING MACHINE. ENGLAND J. BARKER, Morgan Park, Ill. Filed Dec. 19, 1904. Serial No. 237,443.

Claim.—1. In a type-writing machine the combination of the carrier and manifold-ribbon spools carried thereby, stationary devices for intermittently moving said spools, a reel-frame supported independently of but movable with said carrier, and means carried by said reel-frame for supporting a roll of paper.

2. In a type-writing machine the combination of the carrier and manifold-ribbon spools carried thereby, stationary devices for intermittently moving said spools, a reel-frame supported independently of but movable with said carrier, and means carried by said reel-frame for supporting two independent rolls of paper.

3. In a type-writing machine the combination of the carrier, type mechanism, inking devices for making the original impression therefrom, manifold-ribbon spools carried by said carrier, stationary devices for intermittently moving said spools, a reel-frame sup-

ported independently of but movable with said carrier, and means carried by said reel-frame for supporting two rolls of paper.

type mechanism, inking devices for making the original impression therefrom, manifold-ribbon spools carried by said carrier, stationary devices for intermittently moving said spools, a reel-frame sup-

steel comprising a fusible compound of sodium chlorid (NaCl), and potassium chlorid (KCl) substantially as described.

2. A melt or bath for hardening tools or articles of steel com-

Claim.—1. In combination in a machine for printing and banding postal cards and like articles, means for printing the cards in multiple and delivering them in direct lines in piles of the desired

ported independently of but movable with said carrier, and means carried by said reel-frame for supporting two rolls of paper.

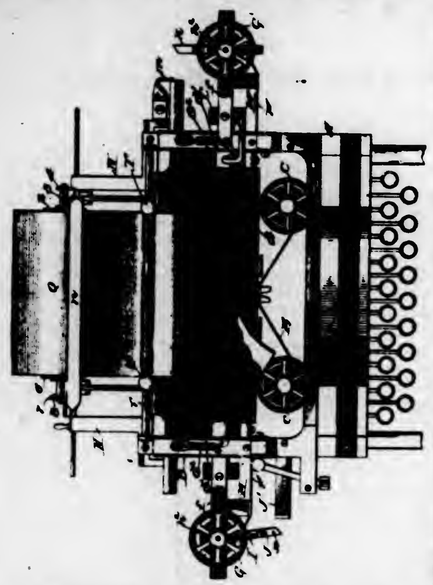

4. In a type-writing machine the combination with the carrier and the ribbon-spools carried thereby, of a reel-frame supported independently of but movable with said carrier, means carried by said reel-frame for removably supporting a roll of paper, consisting of a stationary central boss and an oppositely-disposed pivoted boss normally pressing toward the same.

5. In a type-writing machine the combination with a reciprocal carrier, of a reel-frame supported independently of but movable with said carrier, means carried by said reel-frame for removably supporting a roll of paper, consisting of a stationary central boss and an oppositely-disposed pivoted boss normally pressing toward the same.

6. In a type-writing machine the combination with a reciprocal carrier, of a reel-frame supported independently of but movable with said carrier, means carried by said reel-frame for removably supporting a plurality of independent rolls of paper, said means consisting of a series of stationary central bosses mounted on one side of said frame and a corresponding number of oppositely-disposed pivoted bosses each normally pressing toward the stationary boss on the opposite side of said reel-frame.

7. In a type-writing machine the combination with the carrier, type mechanism, inking devices for making the original impression therefrom, and manifold carbon devices carried by said carrier, of a reel-frame supported independently of but movable with said carrier, means carried by said reel-frame for removably supporting a plurality of independent rolls of paper, said means consisting of a series of stationary central bosses mounted on one side of said frame and a corresponding number of oppositely-disposed pivoted bosses each normally pressing toward the stationary boss on the opposite side of said reel-frame.

8. In a type-writing machine the combination with the carrier and manifold-ribbon spools carried thereby, stationary devices for intermittently moving said spools, a reel-frame supported independently of but movably with said carrier, means carried by said reel-frame for supporting a roll of paper, and bearings in said means in which said roll of paper is removably journaled.

9. In a type-writing machine the combination with the carrier and manifold-ribbon spools carried thereby, stationary devices for intermittently moving said spools, a reel-frame supported independently of but movable with said carrier, means carried by said reel-frame for supporting two independent rolls of paper, and bearings in said means in which said rolls of paper are removably journaled.

10. In a type-writing machine the combination with the carrier, type mechanism, inking devices for making the original impression therefrom, manifold-ribbon spools carried by said carrier, stationary devices for intermittently moving said spools, a reel-frame supported independently of but movable with said carrier, means carried by said reel-frame for supporting two rolls of paper and bearings in said means in which said rolls of paper are removably journaled.

11. In a type-writing machine the combination with the carrier, and manifold-ribbon spools carried thereby, devices for intermittently moving said spools, a reel-frame supported independently of but movable with said carrier, means carried by said reel-frame for removably supporting a roll of paper, consisting of a stationary central boss, and an oppositely-disposed pivoted boss normally pressing toward the same.

12. In a type-writing machine the combination with the carrier and manifold-ribbon spools, carried thereby, devices for intermittently moving said spools, a reel-frame supported independently of but movable with said carrier means carried by said reel-frame for removably supporting a plurality of independent rolls of paper, said means consisting of a series of stationary central bosses mounted on one side of said frame, and a corresponding number of oppositely-disposed pivoted bosses each normally pressing toward a stationary boss on the opposite side of said reel-frame.

13. In a type-writing machine, the combination with a stationary supporting-frame, the reciprocal carrier thereon, and the ink-ribbon spools carried by said carrier, of a truck, reciprocal synchronously with said carrier, a reel-frame supported by said truck and comprising two uprights, a stationary bearing connected to one of said uprights and a movable bearing connected to the other upright, and means for centering a roll of paper comprising centering-bosses mounted on said bearings and arranged opposite each other, one of which is adapted to be moved toward and from the opposite boss.

14. In a type-writing machine, the combination with a stationary supporting-frame, the reciprocal carrier thereon, and the ink-ribbon spools carried by said carrier, of a truck, reciprocal synchronously with said carrier, a reel-frame supported by and connected to said truck and comprising two uprights, a stationary bearing connected to one of said uprights and a movable bearing connected to the other upright, and means for centering a roll of paper comprising centering-bosses mounted on said bearings and arranged opposite each other, one of which is adapted to be moved toward and from the opposite boss.

15. In a type-writing machine, the combination with a stationary supporting-frame, the reciprocal carrier thereon, and the ink-ribbon spools carried by said carrier, of a truck, two uprights secured to and arising from said truck which are connected to said carrier, and means for supporting a roll of paper consisting of a stationary bearing connected to one of said uprights, an arm pivoted to the other of said uprights and bearings connected to and carried by said arm.

16. In a type-writing machine the combination, with the carrier having brackets extending from the ends thereof, manifold-ribbon spools carried thereby, spindles on which said spools are mounted which are journaled in said brackets, and pawl-and-ratchet devices operatively connected to said spindles, of stationary means for actuating said pawl-and-ratchet devices, a reel-frame supported independently of but movable with said carrier, and means carried by said reel-frame for supporting a roll of paper.

17. In a type-writing machine the combination with a carrier having brackets extending from the ends thereof, manifold-ribbon spools carried thereby, spindles on which said spools are mounted which are journaled in said brackets, a ratchet-wheel secured to said spindle, and a lever fulcrumed thereon a pawl pivotally connected to said lever, of stationary means engaged by said levers, a reel-frame supported independently of but movable with said carrier, and means carried by said reel-frame for supporting a roll of paper.

18. The combination with the paper-feed carriage of a type-writing machine; brackets carried thereby having their ends projecting beyond the ends of said carriage; a ribbon-reel mounted on the unsecured ends of said brackets; a ratchet connected to each reel; and disengageable pawls projecting on opposite sides of said brackets and alternately cooperating with said ratchet-disks, whereby the ribbon may be automatically reeled from either of said reels, and called upon the other.

812,178. **MELT OR BATH FOR HARDENING STEEL.** SIMPLEY H. BRATSHAW, Hulme, Manchester, England, assignor to George Hunt, New York, N. Y. Filed Mar. 31, 1905. Serial No. 253,141.

Claim.—1. A melt or bath for hardening tools or articles of steel comprising a fusible compound of sodium chlorid (NaCl), and potassium chlorid (KCl) substantially as described.

2. A melt or bath for hardening tools or articles of steel comprising a compound of several salts soluble in water, any one of which separately melts at a higher temperature than the compound and a carburizing agent substantially as described.

812,179. **WHEEL.** CHARLES A. BRINLEY, Philadelphia, Pa., assignor to The American Pulley Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Nov. 23, 1904. Serial No. 234,070.

Claim.—1. In a wheel, the combination with a sheet-metal rim comprising axially-alined members; of a primarily separate partition-flange extending beyond said rim and between said members, and, means extending through said partition-flange and rim, maintaining them in rigid relation, substantially as set forth.

2. In a wheel, the combination with a sheet-metal rim comprising axially-alined members having inwardly-turned flanges; of a primarily separate partition-flange extending beyond said rim and between said flanges, and, means extending through said partition-flange and rim, maintaining them in rigid relation, substantially as set forth.

3. In a wheel, the combination with a sheet-metal rim comprising axially-alined members forming opposed semicylindric sections; of a partition-flange formed of primarily separate semicircular sections extending beyond said rim and between said members, substantially as set forth.

4. In a wheel, the combination with a sheet-metal rim comprising axially-alined members forming opposed semicylindric sections; of a partition-flange formed of semicircular sections extending beyond said rim and between said members; the joints between said rim-sections and said partition-flange sections being in staggered relation; and, means securing said rim-sections and partition-flange sections in rigid relation, substantially as set forth.

5. In a wheel, the combination with a sheet-metal rim comprising axially-alined sectoral members; of a partition-flange comprising sectoral members extending beyond said rim and between its members; and, means securing said members in rigid relation, substantially as set forth.

6. In a wheel, the combination with a sheet-metal rim comprising axially-alined sectoral members; of a partition-flange comprising sectoral members extending beyond said rim and between its members; the joints between said rim members and said flange members being in staggered relation; and, means securing said members in rigid relation, substantially as set forth.

7. In a wheel, the combination with a sheet-metal rim comprising axially-alined sectoral members; of a partition-flange comprising sectoral members extending beyond said rim and between its members; the joints between said rim members and said flange members being in staggered relation; and, means securing said members in rigid relation, substantially as set forth.

8. In a wheel, the combination with a sheet-metal rim comprising axially-alined sectoral members having inwardly-turned flanges; of a partition-flange comprising sectoral members extending beyond said rim and between said flanges; the joints between said rim members and said flange members being in staggered relation; and, means securing said members in rigid relation, comprising spoke members and rivets extending through the same, substantially as set forth.

9. In a wheel, the combination with a sheet-metal rim comprising axially-alined sectoral members, having inwardly-turned flanges; of a partition-flange comprising sectoral members extending beyond said rim and between said flanges; spoke members upon opposite sides of said flanges; and, means extending through said spoke members and said flanges, securing the same in rigid relation, substantially as set forth.

812,180. **POSTAL-CARD PRINTING AND BANDING MACHINE.** WILLIAM H. BOWEN, Jersey City, N. J., assignor to Wentworth & Graham, New York, N. Y., a Firm. Filed Aug. 5, 1897. Serial No. 647,169.

Claim.—1. In combination in a machine for printing and banding postal cards and like articles, means for printing the cards in multiple and delivering them in direct lines in piles of the desired number to receptacles, the receptacles for receiving the cards, means for moving the piles from the receptacles in direct and parallel lines to banding devices and in position to be moved forward from the banding devices by contact of the next succeeding pile therewith in each parallel line, and means for banding the package.

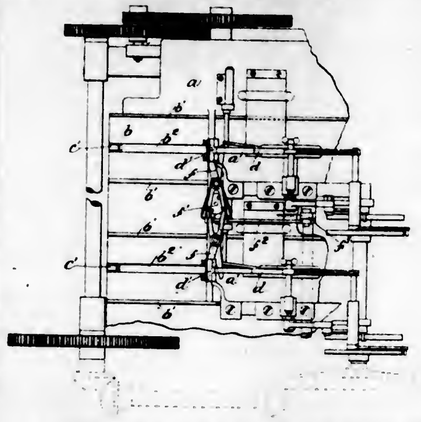

2. In combination in a machine for printing and banding postal cards and like articles, means for printing the cards in multiple and in parallel lines and delivering them in piles of the desired number to receptacles, the receptacles, means for moving the piles from the receptacles in a direct line to banding devices, and also in like lines from the banders, and the banding devices.

3. In combination in an apparatus for printing and banding postal cards and like articles, means for printing the cards side by side and in parallelism and delivering them in direct lines in piles of the desired number to receptacles, the receptacles for receiving the cards, means for moving each of the parallel piles from the receptacles in a direct line to a banding device, means for banding the packages, said means for moving the piles from the receptacles in a direct line to the banding devices also effecting the discharge of the piles from the banders.

4. In combination in a machine for printing and banding postal cards and like articles, means for printing the cards side by side and delivering them in piles composed of the desired number to receptacles arranged side by side, the receptacles, means for moving the piles directly from the receptacles to banders appurtenant thereto, and the banding devices, the several packages being moved in the same horizontal plane.

5. In combination in an apparatus for printing and banding postal cards and like articles, means for printing the cards side by side and delivering them in parallel piles composed of the desired number to receptacles for said piles, the receptacles, means for moving the cards in parallel lines and in the same horizontal plane and directly from said piles to banding devices appurtenant to each receptacle, and means for banding the packages, said means for moving the cards from the piles to the banding devices being adapted to eject the banded packages from the banders.

6. In combination in an apparatus for printing and banding postal cards and like articles, means for printing the cards in multiple side by side and for delivering them to receptacles, the receptacles arranged side by side, means for moving the piles in parallel lines from said receptacles to banding devices, a banding device arranged appurtenant to each receptacle for operating upon the pile of cards delivered therefrom, and means for moving the piles in parallel lines from the banders, each pile being moved to the banders and away therefrom by the contact of the next preceding pile.

812,181. **EXTENSOMETER.** WALTER CAPTELO, Sharon, Pa. Filed July 10, 1905. Serial No. 269,057.

Claim.—1. In an extensometer, the combination of the frame adapted to be connected to the specimen, levers pivoted to said frame, and links connected to said levers on respectively opposite

sides of their respective fulcra and also connected to the specimen at a point distant from said levers, substantially as described.

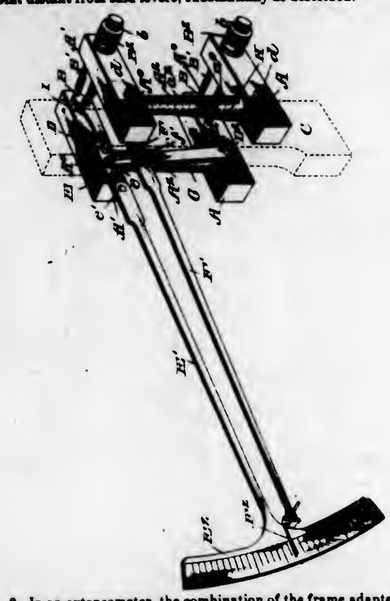

2. In an extensometer, the combination of the frame adapted to be connected to the specimen, levers pivoted to said frame, and links connected to said levers on respectively opposite sides of their respective fulcra and also connected to the specimen at a point distant from said levers, a graduated scale being carried by one of said levers and a pointer carried by the other lever, substantially as described.

3. In an extensometer, the combination of the frame adapted to be connected to the specimen, levers pivoted to said frame, and links connected to said levers on respectively opposite sides of their respective fulcra and also connected to the specimen at a point distant from said levers, with steadying-springs connected to said levers and to said frames for taking up the lost motion of said levers, substantially as described.

4. In an extensometer, the combination of the frame adapted to be connected to the specimen, levers pivoted to said frame, and links connected to said levers on respectively opposite sides of their respective fulcra and also connected to the specimen at a point distant from said levers, a graduated scale being carried by one of the levers and a pointer carried by the other lever, with steadying-springs connected to said levers and to said frame for taking up the lost motion of said levers, substantially as described.

5. In an extensometer, the combination of the frame adapted to be connected to the specimen, levers pivoted to said frame, and each provided with an arm or extension hinged thereto, and links connected to said levers on respectively opposite sides of their respective fulcra and also connected to the specimen at a point distant from said levers, substantially as described.

6. In an extensometer, the combination of the frame adapted to be connected to the specimen, levers pivoted to said frame, and each provided with an arm or extension hinged thereto, and links connected to said levers on respectively opposite sides of their respective fulcra and also connected to the specimen at a point distant from said levers, a graduated scale being carried by one of said arms and a pointer carried by the other arm, substantially as described.

7. In an extensometer, the combination of the frame adapted to be connected to the specimen, levers pivoted to said frame, and each provided with an arm or extension hinged thereto, and links connected to said levers on respectively opposite sides of their respective fulcra and also connected to the specimen at a point distant from said levers, with steadying-springs connected to said levers and to said frames for taking up the lost motion of said levers, substantially as described.

8. In an extensometer, the combination of the frame adapted to be connected to the specimen, levers pivoted to said frame, and each provided with an arm or extension hinged thereto, and links connected to said levers on respectively opposite sides of their respective fulcra and also connected to the specimen at a point distant from said levers, a graduated scale being carried by one of the arms and a pointer carried by the other arm, with steadying-springs connected to said levers and to said frame for taking up the lost motion of said levers, substantially as described.

9. In an extensometer, the combination of a laterally and longitudinally adjustable frame, holders mounted in said frame to engage the specimen, levers pivoted to said frame, links connected to said levers on respectively opposite sides of their respective fulcra, and holders carried by said links and connected to the frame and adapted to be connected to the specimen at a point distant from said levers, substantially as described.

10. In an extensometer, the combination of a laterally and longitudinally adjustable frame, holders mounted in said frame to engage the specimen, levers pivoted to said frame, and links connected to said levers on respectively opposite sides of their respective fulcra, and holders carried by said links and connected to the frame and adapted to be connected to the specimen at a point distant from said levers, a graduated scale being carried by one of said levers and a pointer carried by the other lever, substantially as described.

11. In an extensometer, the combination of a laterally and longitudinally adjustable frame, holders mounted in said frame to engage the specimen, levers pivoted to said frame, and links connected to said levers on respectively opposite sides of their respective fulcra, and holder carried by said links and connected to the frame and adapted to be connected to the specimen at a point distant from said levers, with steadying-springs connected to said levers and to said frames for taking up the lost motion of said levers, substantially as described.

12. In an extensometer, the combination of a laterally and longitudinally adjustable frame, holders mounted in said frame to engage the specimen, levers pivoted to said frame, and links connected to said levers on respectively opposite sides of their respective fulcra, and holders carried by said links and connected to the frame and adapted to be connected to the specimen at a point distant from said levers, a graduated scale being carried by one of the levers and a pointer carried by the other lever, with steadying-springs connected to said levers and to said frame for taking up the lost motion of said levers, substantially as described.

13. In an extensometer, the combination with levers, of means for pivotally connecting said levers to the specimen, links connected to said levers respectively on opposite sides of their respective fulcra, and means for connecting said links to the specimen at a distance from the points of connection of said levers with the specimen, substantially as described.

812,182. **AUTOMATIC STAY-RELEASE.** LOUIS P. CHUTE, Minneapolis, Minn. Filed July 20, 1905. Serial No. 270,446.

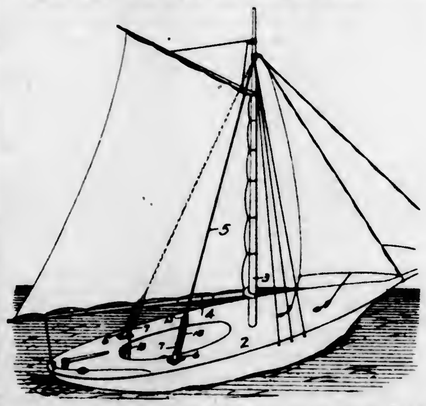

Claim.—1. The combination, with a mast and stay, of means for automatically releasing said stay when pressure is applied laterally thereon, substantially as described.

2. In a sail-boat, the combination, with the mast and boom, of a backstay, and means inserted into said stay and adapted to automatically release the same when the stay is struck by said boom, substantially as described.

3. The combination, with a sail-boat deck and mast and the boom, of a backstay, a housing, a frame pivoted therein, a toothed wheel mounted in said frame, a rope connected with said stay and normally held between said wheel and said housing and adapted to be released when said frame is oscillated, substantially as described.

4. The combination, with a sail-boat deck and mast, of a backstay, a housing, an oscillating frame mounted therein, a wheel carried by said frame and provided with a series of ratchet-teeth on each side and lower intermediate teeth, the wall of said housing being provided with teeth to engage with said ratchet-teeth and coöperating with the teeth between them, and a rope carried by said frame and connected with said stay and passing between the wall of said housing, and the intermediate teeth on said wheel and the pivot of said frame on said housing being out of line with the axis of said wheel and said stay, substantially as described.

5. The combination, with a mast and backstay, a housing, an oscillating frame mounted therein, a wheel carried by said frame, a rope connected with said stay and arranged to pass between said wheel and the wall of said housing and be gripped and held thereby, and the pivot of said frame being out of line with the axis of said stay, substantially as described.

812,183. **TELEGRAPH-KEY.** WILLIAM O. COFFE, Cleveland, Ohio, assignor, by direct and mesne assignments, to Benjamin F. Bellows, Cleveland, Ohio. Filed Jan. 11, 1904. Serial No. 188,448.

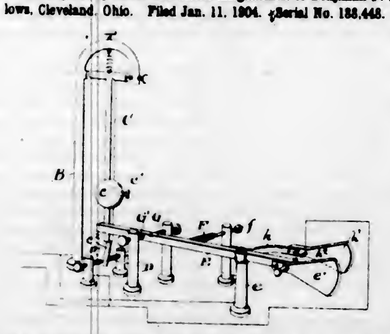

Claim.—1. In a telegraph-key, in combination, a gravity-vibrator adapted to swing by its own tendency and thereby make and break the circuit, a finger-key adapted to release the vibrator, and an adjacent finger-key adapted to open and close the circuit independently of the vibrator.

2. In a telegraph-transmitter, the combination of a stop and a spring coöperating therewith, each forming a terminal of an electric circuit, and a pendulum carrying one of said terminals, and means for holding said pendulum from swinging and allowing it to swing as desired.

3. In a telegraph-key, in combination, a stop, a spring coöperating therewith each forming a terminal of an electric circuit, and a pendulum carrying one of said terminals, and means for holding said pendulum from swinging and allowing it to swing as desired, a finger-piece for operating said means, and an adjacent finger-piece for closing the circuit independently of the pendulum.

4. The combination of an arm adapted to vibrate and make and break an electric contact, a key-lever engaging said arm to prevent its vibrating, a finger-piece on said key-lever for moving it to release said arm, and an adjacent finger-piece for making the contact independently of said arm.

5. The combination of a standard, a depending pendulum supported thereby, a spring carried by said pendulum and adapted to swing the same freely in both directions, an electric terminal coöperating therewith, and a key-lever adapted to control said pendulum.

6. The combination of a standard, a pendulum suspended therefrom, a spring carried by said pendulum at its lower end, a stop-screw forming an electric terminal which said spring is adapted to engage, and a key-lever adapted to bear against said pendulum and normally hold it with the spring out of contact with the stop-screw.

7. The combination of a standard, a pendulum suspended therefrom, a spring carried by said pendulum, a stop-screw forming an electric terminal which said spring is adapted to engage, a key-lever adapted to bear against said pendulum and normally hold it with the spring out of contact with the stop-screw, and a weight adjustably carried by said pendulum for varying its effective length.

8. The combination of a standard, a pendulum supported thereby and adapted to swing freely in both directions, an electric terminal coöperating therewith, and a key-lever adapted to control said pendulum, a finger-piece for operating said key-lever and an adjacent finger-piece for making dashes.

9. The combination of a pendulum, terminals coöperating therewith to make and break an electric circuit, a key-lever, and finger-pieces carried by said lever and adapted by one movement to swing the lever into engagement with said pendulum and by another movement to make and break an independent circuit.

10. The combination of a pendulum, terminals coöperating therewith to make and break an electric circuit and to transmit a rapid succession of short impulses through said circuit, and means for interrupting the movement of the pendulum, said means consisting of a key comprising a pivoted lever carrying a pair of finger-pieces, by one of which the key is given a movement to make and break another circuit.

11. In a telegraphic transmitter, in combination, a vibrator adapted to make and break an electrical circuit, a key-lever for controlling the operation of said vibrator, and an independent circuit-controller carried by said lever.

12. In a telegraphic-transmitter, the combination of a vibrating controller including a spring, said spring constituting one terminal of an electric circuit, a coöperating terminal, finger mechanism adapted to be operated by the thumb and finger pressing in opposite directions, lever mechanism operatable thereby and adapted to allow the controller to vibrate and bring said terminals into contact, and a pair of contacts additional to said controller, one of said contacts being operatively connected with the finger mechanism.

13. In a telegraphic transmitter, the combination of a contact and a spring coöperating therewith, each forming a terminal of an electric circuit, a vibrating circuit-controller having a uniform rate of oscillation and carrying one of said terminals, means for holding said controller from swinging and for allowing it to swing as desired, a pair of contacts additional to said controller, and finger means for operating such allowing means and for closing said last-mentioned contacts.

14. The combination with a controller adapted to vibrate and make and break an electric circuit, a lever adapted to engage said controller and prevent its vibrating, a finger-piece movable in one direction independently of said lever, a pair of contacts independent of said controller, one of said contacts being movable and rigidly connected with said finger-piece, whereby the movement of such finger-piece may close such contacts without moving said lever, and means for moving said lever in the opposite direction to release the controller.

15. The combination of a controller adapted to vibrate and make and break an electric circuit, a lever adapted to engage said controller and prevent its vibrating, a spring acting on said lever to normally hold it in such position, a finger-piece connected with the lever and adapted to move it away from the vibrator, a pair of contacts additional to the vibrator, and means connected with one of said contacts and movable with said lever in the direction to release the vibrator and movable independently of said lever in the opposite direction.

16. In a telegraphic transmitter, the combination of a contact and a spring coöperating therewith, each forming a terminal of an electric circuit, a vibrating circuit-controller having a uniform rate of oscillation and carrying one of said terminals, a member adapted to initiate the vibration of said controller, a spring acting on said member to hold the controller in idle position, a pair of contacts additional to said controller, and finger mechanism adapted to be operated by the thumb and finger pressing in opposite directions and serving by one of such movements to close said additional contacts and by the other to move said member to render the controller active.

17. In a telegraphic transmitter, the combination of a contact and a spring coöperating therewith, each forming a terminal of an electric circuit, a circuit-controller capable of making and breaking a circuit at a uniform rate and carrying one of said terminals, a lever normally engaging said controller to hold said spring and contact out of engagement, and means coöperating with said lever for making and breaking the circuit independently of said controller, substantially as set forth.

18. In a telegraphic transmitter, the combination of a controller adapted to vibrate and make and break a circuit, finger mechanism adapted to be operated by the thumb and finger pressing in opposite directions, a pair of contacts additional to said controller adapted to be closed by one of said pressures, and mechanism between the finger mechanism and the controller positively engaging the controller and actuatable by the opposite pressure to render said controller active.

19. In a telegraph instrument, the combination of a vibrator

19. In a telegraph instrument, the combination of a vibrator adapted to be held at one end and vibrate at the other and carrying a spring constituting one terminal of an electric circuit, a contact and a stop, a finger-piece and mechanism controlled thereby for normally holding said vibrator against the stop and with the contacts open but adapted to allow the vibrator to make a succession of contacts.

20. In a telegraphic transmitter, the combination of a vibrator, said vibrator carrying one terminal of an electric circuit and including a normally constrained spring, a coöperating terminal, a finger-piece, and lever mechanism operated thereby and adapted to hold the terminals out of contact with the spring constrained or to permit the vibrator to operate and bring said terminals into contact.

21. In a telegraphic transmitter, the combination of a controller capable of vibrating and making and breaking a circuit and including a spring, a restraining-arm therefor, a spring acting on said arm to cause it to prevent the controller from vibrating, a pair of contacts independent of said controller, and finger mechanism having two movements, by one of which it closes the independent contacts, and by the other of which it moves the arm against the action of the spring to render the controller active.

22. In a telegraphic transmitter, the combination of a vibrator capable of making and breaking a circuit at a uniform rate, key-lever mechanism normally engaging said vibrator and preventing it from operating, means coöperating with said mechanism for making and breaking the circuit independently of said vibrator, said mechanism being capable of a movement to withdraw it from engagement with said vibrator, substantially as set forth.

23. In a telegraphic instrument, the combination of a vibratory controller including a spring supported at one end, a contact and a stop on opposite sides of the path of vibration of said controller, a finger-piece, and mechanism controlled thereby for normally holding said controller against the stop with the contacts open, but adapted to render it active to vibrate and make a succession of contacts.

24. In a telegraphic transmitter, the combination of a circuit-controller, finger mechanism adapted to be operated by the thumb and finger pressing in opposite directions, a pair of contacts additional to the controller adapted to be closed by one of said pressures, and mechanism between the finger mechanism and the controller positively engaging the controller and actuatable by the other of said pressures to render said controller active.

25. In a telegraphic transmitter, the combination of a circuit-controller capable of making and breaking a circuit at a uniform rate, finger-key mechanism, a contact for said mechanism, mechanical means extending between said mechanism and said controller and normally preventing the operation of said controller, said mechanism being capable of two movements, by one of which it actuates said mechanical means to permit the operation of said controller, and by the other of which it engages its contact.

26. In a telegraphic transmitter, the combination of a circuit-controller, means for rendering said controller inactive, finger-key mechanism, a contact therefor, said mechanism being capable of two movements, by one of which it operates said means and renders the controller active, and by the other of which it is brought into operative relation with its contact.

27. In a telegraphic transmitter, the combination of a controller capable of making and breaking a circuit at a uniform rate, a pivoted arm normally preventing the operation of said controller, finger mechanism and a contact for said mechanism, said mechanism being capable of two movements, by one of which it moves the arm to permit the operation of the controller, and by the other of which it engages its contact.

28. In a telegraphic transmitter, the combination of a circuit-controller, a pivoted member, means acting on said member to hold said controller in inactive position, finger mechanism and a contact therefor, said mechanism being capable of two movements, by one of which it operates said member to render the controller active, and by the other of which it is brought into operative relation with its contact.

812,184. THERMAL PROTECTOR AND ALARM. FRANK B. COOK, Chicago, Ill. Filed Dec. 13, 1902. Serial No. 135,676.

Claim.—1. A protector, comprising a plate of metal, rods inserted transversely through said plate of metal, line and switchboard springs mounted upon said rods, the line-springs between the switchboard-springs and plate, heat-coil devices removably mounted upon the ends of said springs, a brass mounting-strip secured to the edge of said plate, the switchboard-springs normally pulling upon the heat-coil devices, and away from said plate, and a pair of parallel rows of carbon lightning-arresters mounted upon said brass strip, each carbon lightning-arrester being electrically connected with an adjacent line-spring together with a normally open alarm-circuit, each of said outer switchboard-springs being adapted, when released, to constitute part of the alarm-circuit.

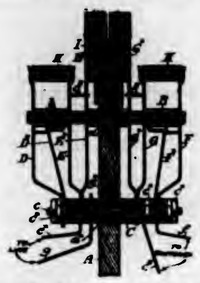

2. A protector, comprising a flat plate of metal, rods of insulation inserted transversely through said plate, line and switchboard springs mounted on certain of said rods, the other rods of insulation serving to separate the different pairs of line and switchboard springs, and heat-coil devices mounted upon said springs, the switchboard-springs normally pulling upon the heat-coil devices, and away from said plate together with a normally open alarm-circuit, each of said outer switchboard-springs being adapted, when released, to constitute part of the alarm-circuit.

3. A protector, comprising a flat plate of metal, line and switchboard springs arranged in pairs and mounted in two rows, one at each side of said plate of metal, said springs all being insulated from said plate of metal, and heat-coil devices removably mounted upon the ends of said springs, the switchboard-springs normally pulling upon the heat-coil devices, and away from said plate together with a normally open alarm-circuit, each of said outer switchboard-springs being adapted, when released, to constitute part of the alarm-circuit.

4. In a self-contained piece of protective apparatus, the combination of a flat metal plate, line and switchboard springs mounted in pairs at one side of said plate, other line and switchboard springs mounted in similar pairs at the other side of said plate, all of said springs being insulated from said plate, heat-coil devices removably mounted upon the ends of said springs, the switchboard-springs normally pulling upon the heat-coil devices, and away from said plate, and a number of carbon lightning-arresters mounted along the edge of said plate, and arranged in two parallel rows extending between the two parallel rows of heat-coil devices, each carbon lightning-arrester being electrically connected with an adjacent line-spring, and also with the said flat metal plate together with a normally open alarm-circuit, each of said outer switchboard-springs being adapted, when released, to constitute part of the alarm-circuit.

5. The combination of a flat metal plate, a row of rods or strips of insulating material inserted transversely through the plate, another row of rods or strips of insulating material inserted through the plate, each of said last-mentioned rods being provided with a metal core, line-springs mounted on said last-mentioned rods and arranged at each side of the said plate, said line-springs being insulated from the said metal cores, switchboard-springs also mounted upon the said last-mentioned rods, the switchboard-springs at one side of the plate being electrically connected with the cores, the other switchboard-springs being insulated from the said cores, and heat-coil devices removably mounted upon the ends of said springs, the first-mentioned rods of insulation serving to maintain the proper distance between the pairs of line and switchboard springs.

6. The combination, in a self-contained piece of protective apparatus, of a flat metal plate, rods or strips of insulation inserted through the upper portion of said plate, said rods being connected at each side by metal rods, switchboard-springs suitably mounted and insulated from said plate, said switchboard-springs being normally out of contact with said metal rods, but adapted to make contact with said metal rods, line-springs, each line-spring being associated with a switchboard-spring, and heat-coil devices removably mounted upon said springs, the switchboard-springs normally pulling upon the heat-coil devices, and away from said plate together with a normally open alarm-circuit, each of said outer switchboard-springs being adapted, when released, to constitute part of the alarm-circuit.

7. The combination, in a protector, of a flat metal plate, suitable pieces of insulation inserted transversely through said plate, alarm-circuit contacts mounted on certain of said pieces of insulation, line and switchboard springs mounted on the other pieces of insulation, said switchboard-springs being adapted to engage the

said contacts, but adapted to be normally out of contact with the same, suitable heat-coil devices removably applied to the ends of said line and switchboard springs, the switchboard-springs normally pulling upon the heat-coil devices, and away from said plate, and carbon lightning-arresters arranged in two parallel rows along the edge of said metal plate, one block of each carbon lightning-arrester being electrically connected with an adjacent line-spring, and the other block of each lightning-arrester being electrically connected with said plate together with a normally open alarm-circuit, each of said outer switchboard-springs being adapted, when released, to constitute part of the alarm-circuit.

8. A self-contained piece of protective apparatus, comprising a flat strip adapted to serve as a mounting or support, line and switchboard springs mounted in pairs at each side of said strip, heat-coil devices removably applied to the ends of said springs, the switchboard-springs normally pulling upon the heat-coil devices, and away from said plate, and carbon lightning-arresters mounted in two parallel rows along the edge of said plate, one block of each lightning-arrester being electrically connected with an adjacent line-spring, and the other block of each lightning-arrester being electrically connected with a member which is adapted to be connected to ground together with a normally open alarm-circuit, each of said outer switchboard-springs being adapted, when released, to constitute part of the alarm-circuit.

9. In a device of the character described, the combination of a suitable support, outer switchboard-springs and inner line-springs suitably mounted at one side of said support, heat-coil devices removably applied to the ends of said springs, a normally open ground-circuit including said support, each line-spring when released being adapted to constitute part of said ground-circuit, and a normally open alarm-circuit, each of said outer switchboard-springs being adapted when released to constitute part of said alarm-circuit, and the line-springs being mounted intermediate of the said support and switchboard-springs.

10. In a device of the character described, the combination of a metal support, an inner line-spring and an outer switchboard-spring suitably mounted at one side of said support, a heat-coil device removably applied to the ends of said springs, a normally open ground-circuit including said support and line-spring in series, and an alarm-circuit normally open at two points and including said switchboard-spring, the line-spring being mounted intermediate of the support and switchboard-spring.

11. A thermal protector and alarm apparatus, comprising a metal support, a row of heat-coil devices mounted at each side of said support, a normally open ground-circuit including said support, line-terminals connected with the said heat-coil devices and all mounted at one side of said support, and switchboard-terminals also suitably connected with said heat-coil devices and all mounted at the other side of said support, said heat-coil devices having line and switchboard springs, the line-springs being mounted intermediate of the support and switchboard-springs, together with a normally open alarm-circuit, each switchboard-spring when released being adapted to constitute part of said alarm-circuit.

12. A thermal protector and alarm apparatus, comprising a metal support, line and switchboard springs mounted in pairs at each side of said support, heat-coil devices removably applied to each of said pairs of springs, line-terminals connected with said line-springs and all mounted at one side of said support, switchboard-terminals suitably connected with said switchboard-springs and all mounted at the other side of said support, a normally open ground-circuit including said support, each line-spring when released being adapted to constitute part of said ground-circuit, together with a normally open alarm-circuit, each switchboard-spring when released being adapted to constitute part of the alarm-circuit.

13. In a device of the character described, the combination of a suitable support, line and switchboard springs mounted on said support, an auxiliary spring between the said line and switchboard springs, a heat-coil device applied to the ends of the line and switchboard springs and holding the same normally under tension, a pair of metal rods both mounted between the line and switchboard springs, one rod being normally out of contact with the auxiliary spring and the other rod being normally out of contact with the switch-board-spring, whereby both rods are engaged by their respective springs when the switchboard-spring is released and moves away from the rods, together with a normally open alarm-circuit including said rods and including also said auxiliary and switchboard springs.

14. The improved thermal protector and alarm apparatus comprising a support with a row of thermal cut-outs at each side thereof, together with line-terminals and switchboard-terminals, the line-terminals all being arranged at one side of said support, and the switchboard-terminals all at the other side of said support, substantially as shown and described.

812,185. LOCK-NUT. HEBERIAN H. CRAWFORD, El Paso, Tex. Filed Dec. 19, 1904. Serial No. 237,586.

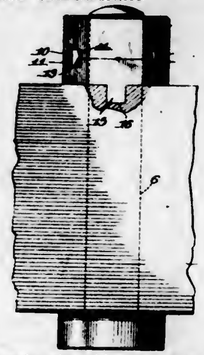

Claim.—The combination with a support having a plurality of rectangular openings formed therein, of a threaded bolt passing through said support, a nut engaging the threaded end of the bolt and having a pair of seating-recesses formed in its lower face and disposed parallel with the sides of the nut, said recesses being arranged at an acute angle to each other and of the same lengths as the adjacent sides of the nut, a washer having a smooth central bore and of the same shape as the nut interposed between the latter and the support and provided with oppositely-disposed depending angular lugs for engagement with the openings in the support, said washer being also provided with a plurality of seating-recesses arranged in triangular form and adapted to register with the seating-recesses of the nut when the latter is adjusted, and a locking-key adapted to engage said recesses and having its opposite ends bent laterally into engagement with the sides of the nut and washer, respectively.

812,186. APPARATUS FOR SMELTING AND CONVERTING ORES. ARTHUR M. DAY, Butte, Mont. Filed Oct. 29, 1904. Serial No. 230,468.

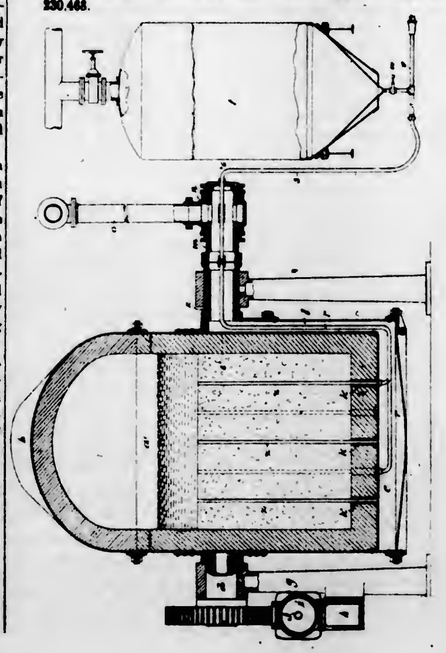

Claim.—1. In apparatus for smelting and converting ores, the combination of a smelting vessel having a wind-box and a number of twyers leading therefrom into the lower part of the smelting-chamber, and fusible twyer extensions leading upwardly from the twyers, substantially as described.

2. In apparatus for smelting and converting ores the combination of a smelting vessel provided with a wind-box having an air-blast connection and with a number of twyers leading from the wind-box into the smelting-chamber, fusible twyer extensions leading upwardly from the twyers, a separate compressed-air-supply connection with one of the twyers, and a closed receptacle for holding fluent material connected at the top with a source of compressed air and at the bottom with the air-supply connection leading to one of the twyers, substantially as described.

3. In apparatus for smelting and converting ores the combination of a smelting vessel provided with a wind-box having an air-blast connection and with a number of twyers leading from said wind-box into the smelting-chamber, fusible twyer extensions leading upwardly from the twyers, a separate compressed-air-supply connection with one of the twyers, and a closed receptacle for holding fluent material, having a valve-controlled connection with the air-supply connection leading to one of the twyers, substantially as described.

4. In apparatus for smelting and converting ores, a smelting vessel having an air-blast connection at the bottom and fusible twyer extensions leading upwardly into said vessel from the lower part thereof, substantially as described.

5. In apparatus for smelting and converting ores, the combination of a smelting vessel having an air-blast connection at the bottom and fusible twyer-tubes extending upwardly therefrom, substantially as described.

6. In apparatus for smelting and converting ores, the combination of a smelting vessel provided with twyers, a main air-supply connected with some of the twyers, and a closed receptacle for holding fluent material connected at the top with a compressed-air supply and at the bottom with an auxiliary pipe or passage leading from the air-supply to one of said twyers, substantially as described.

7. In apparatus for smelting and converting ores, the combination of a smelting vessel provided with twyers and mounted on trunnions, one of which is hollow and has a detachable tubular extension connected with the twyers and formed with a lateral opening, and an air blast or supply pipe provided with a sleeve in which the trunnion extension is adapted to turn and with which it forms an annular passage in communication with the lateral opening in said extension and with said air blast or supply pipe, substantially as described.

8. In apparatus for smelting and converting ores, the combination of a smelting vessel provided with twyers and mounted on trunnions one of which is hollow and has a detachable tubular extension connected with the twyers and formed with a lateral opening, an air blast or supply pipe and a branch pipe provided with a sleeve in which said trunnion extension is adapted to turn and with which it communicates through said lateral opening, said branch pipe having a swivel connection with the main blast-pipe whereby said trunnion extension when detached may be swung away from the associated trunnion, substantially as described.

9. In apparatus for smelting and converting ores, the combination of a smelting vessel provided with twyers and mounted on trunnions one of which has a detachable extension forming therewith an air-supply connection to the twyers, an air blast or supply pipe provided with a sleeve in which said trunnion extension is adapted to turn and through which it communicates with said pipe, an auxiliary air-blast pipe connected with a twyer and running through the main air-blast passage to said trunnion extension, and a flexible extension of said auxiliary pipe connected therewith by a joint which is adapted to be made and unmade by the coupling and uncoupling of the trunnion extension, substantially as described.

10. In apparatus for smelting and converting ores the combination of a smelting vessel provided with twyers, a main air blast or supply pipe connected with some of said twyers, a number of closed receptacles or reservoirs for holding fluent material, each connected at the top with a source of compressed air and having at the bottom a valve-controlled connection with an auxiliary blast-pipe leading from the source of compressed air to one of said twyers, substantially as described.

11. In apparatus for smelting and converting ores the combination of a smelting vessel provided with twyers, a main air-supply pipe connected with some of the twyers, a number of closed receptacles for holding fluent material connected at the top with a source of compressed air and each having at the bottom valve-controlled connections with a like number of auxiliary blast-pipes each leading to a twyer and connected with the source of compressed air, substantially as described.

12. In apparatus for smelting and converting ores the combination of a smelting vessel provided with twyers and mounted on trunnions, one of which has a detachable extension forming therewith an air-supply connection to the twyers, a compressed-air-supply pipe provided with an internally-recessed sleeve in which said trunnion extension is adapted to turn and through which it communicates with said pipe, a number of closed receptacles for holding fluent material connected at the top with a source of compressed air and having at the bottom valve-controlled connections with auxiliary blast-pipes which communicate with the compressed-air supply and have flexible connections with said trunnion extension, and pipes leading therefrom through the associated trunnion to certain twyers and adapted to make tight joints with the corresponding pipes in said extension when it is attached to said trunnion, substantially as described.

13. In apparatus for smelting and converting ores the combination of a smelting vessel provided with twyers and mounted on trunnions, one of which is hollow and is connected with some of the twyers and with an air-blast supply, and an auxiliary air-blast pipe leading through said hollow trunnion to one of the twyers, substantially as described.

14. In apparatus for smelting and converting ores the combination of a smelting vessel provided with twyers and mounted on trunnions, one of which is hollow and has a detachable tubular extension forming an air-supply connection for some of the twyers, a main air-blast pipe connected with said extension, an auxiliary passage leading from said hollow trunnion to one of the twyers and an auxiliary air-blast pipe leading into said extension and adapted to make a tight joint with the auxiliary passage in the trunnion when said extension is coupled thereto, substantially as described.

812,187. MAILING-TUBE SHEET AND WRAPPER. HARRY DEL MAR, New York, N. Y. Filed July 5, 1904. Serial No. 215,283.

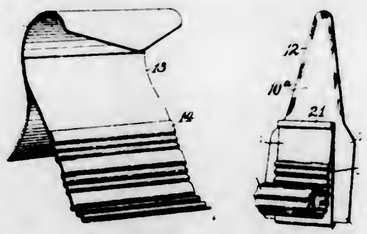

Claim.—1. A device of the kind described, comprising a sheet adapted to be rolled up and to receive the address on the back, a second sheet secured to the first sheet, and an extension corrugated on both sides secured to the edge of the second sheet, whereby the three sheets can be rolled up together to form a tube the corrugated portions being constructed so that the corrugations shall nest one within the other.

2. A device of the kind described, comprising a sheet adapted to be rolled up and to receive the address on the back, and an unbacked corrugated extension carried on the inner side of the sheet and adapted to roll up therewith, the corrugations being arranged on the extension so that they shall nest one within the other when the said extension is rolled.

3. A device of the kind described, comprising a sheet adapted to carry the address on its back, and an unbacked corrugated extension fastened to the sheet at a point between its end portions so that a part of the sheet shall overlap the extension and the corrugations on the extension being arranged so that when the sheet is rolled the corrugations shall nest one within the other.

812,188. WHIFFLETREE CONNECTION. OSCAR C. DICKERMAN, Gainesville, Tex. Filed July 26, 1905. Serial No. 271,209.

Claim.—1. A whiffletree-connector comprising a yoke to straddle a whiffletree and its support, a cross-bar connecting the ends of the yoke and movable longitudinally of the latter, and a spring exerting tension between the yoke and the cross-bar.

2. A whiffletree-connector comprising a yoke embracing the whiffletree, a plate provided with openings through which the ends of the yoke extend, and springs disposed to exert a tension between the plate and the yoke.

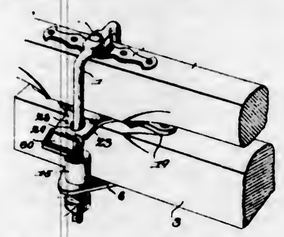

3. A whiffletree-connector comprising a yoke embracing the whiffletree, a plate provided with sleeves disposed upon opposite sides of the whiffletree and through which the ends of the yoke pass, and springs disposed within the sleeves and arranged to exert a tension between the plate and the yoke.

4. A whiffletree-connector comprising a yoke embracing the whiffletree, a plate engaging the ends of the yoke, a pivot-pin passing through the bow of the yoke through the whiffletree and through the plate, and a spring arranged to exert a tension upon the yoke.

5. A whiffletree-connector comprising a yoke embracing the whiffletree, a plate provided with sleeves disposed upon opposite sides of the whiffletree and through which the ends of the yoke are passed, springs disposed within the sleeves and arranged to exert a tension between the plate and the yoke, a pivot-pin passing through the bow of the yoke through the whiffletree and through the plate, and a spring arranged to exert a pressure upon the yoke.

6. In a whiffletree-connector, bearing-plates secured to the whiffletree and to the member to which the whiffletree is connected, an elastic washer carried by one plate, and means for holding the plates in elastic coöperative relation.

7. In a whiffletree-connector, a yoke embracing the whiffletree and the member to which the whiffletree is connected, a plate secured to the member and provided with openings through which the ends of the yoke pass, bearing-plates disposed between the whiffletree and the member, an elastic washer carried by one plate, a spring arranged to exert a pressure upon the whiffletree and the bearing-plates.

8. In a whiffletree-connector, a bearing-plate secured to the whiffletree, a bearing-plate secured to the member to which the whiffletree is pivoted and having a rearwardly-extending rigid loop, and means for holding the plates in elastic coöperative relation

9. In a whiffletree-connector, a bearing-plate secured to the whiffletree, a bearing-plate secured to the member to which the whiffletree is pivoted and having a rearwardly-extending rigid loop provided with an intermediate opening, a yoke embracing the whiffletree and the member to which the whiffletree is connected, and an arm passing through the opening of the bearing-plate and a spring arranged to exert an elastic pressure upon the whiffletree and the bearing-plate.

10. A whiffletree-coupling comprising a yoke to straddle the whiffletree and its support, a cross-bar for connection with the support and engaged by the sides of the yoke, and a pivot-pin rigidly carried by the plate and engaging the bow of the yoke.

11. A whiffletree-coupling comprising a yoke to straddle the whiffletree and its support, a cross-bar for connection with the support and provided with openings for the slidable reception of the arms of the yoke, tension devices between the arms of the yoke and the cross-bar, and a pivot-pin piercing the bow of the yoke and engaged with the cross-bar.

12. A whiffletree-coupling comprising a yoke to straddle the whiffletree and its support, a cross-bar for connection with the support and provided with openings for slidably receiving the arms of the yoke, springs embracing the arms of the yoke and engaging the cross-bar, adjustable nuts fitted to the ends of the yoke and engaging the springs to vary the tension thereof, and a pivot-pin piercing the bow of the yoke and engaging the cross-bar.

13. A whiffletree-coupling comprising a yoke to straddle the whiffletree and its support, a cross-bar for connection with the support and engaging the ends of the yoke, a pivot-pin rigidly carried by the plate and piercing the bow of the yoke, and a removable head carried by the top of the upper end of the pin and bearing against the top of the yoke.

14. A whiffletree-coupling comprising a yoke to straddle the whiffletree and its support, a cross-bar for connection with the support and having the ends of the yoke engaged therewith, a pivot-pin piercing the bow of the yoke and engaged with the cross-bar, and a wear-plate having an opening loosely receiving the pivot-pin and provided with a rearward extension having an opening receiving one of the arms of the yoke and terminating at its outer end in a brace-strap-receiving loop.

812,189. TOILET ARTICLE. HARRY A. DORR, Providence, R. I. Filed July 10, 1905. Serial No. 269,123.

Claim.—As an article of manufacture, a toilet article comprising a body formed of veneer embodying characteristics of an ordinary wooden toothpick, one end of said body being reduced to a point, the opposite end of said body being beveled to form a comparatively wide and thin extremity, said extremity being smoothly curved or rounded.

812,190. CHURN. JOHN W. DOWDEN, Pearl, La. Filed June 17, 1905. Serial No. 265,766.

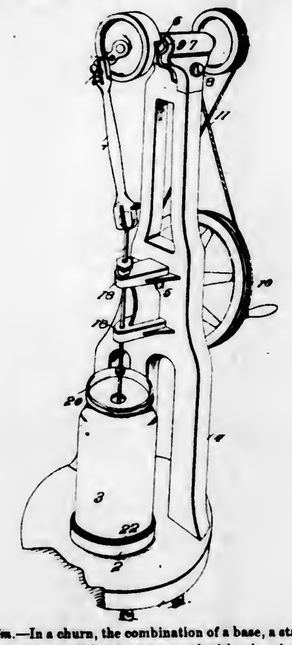

Claim.—In a churn, the combination of a base, a standard rising therefrom and provided at its upper end with a bearing comprising two clamp members having a split metal ring between them which takes the wear and can be adjusted to fit the shaft, a shaft mounted in the bearing and having a crank-wheel at one end, a churn-body supported upon the base, a dasher having operative connection with the crank-wheel, and means for causing the crank-wheel to rotate.

812,191. ADVERTISING DEVICE. ALFRED DUNHILL, South Hampstead, England. Filed Sept. 7, 1904. Serial No. 223,633.

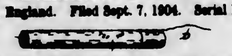

Claim.—An advertising device consisting of a strip of paper bearing advertising matter rolled upon itself in the form of a tube and having its outer edge secured to the body and a string passed longitudinally through the roll, and a filling of material in imitation of tobacco within the roll, substantially as described.

812,192. LOCOMOTIVE-HEADLIGHT. EDGAR A. EDWARDS, Cincinnati, Ohio, assignor, by mesne assignments, to Metropolitan Trust & Savings Bank, trustee, a Corporation of Illinois. Filed Nov. 26, 1901. Serial No. 83,886.

Claim.—1. In a locomotive-headlight, the combination of a cas-

Claim.—1. In a locomotive-headlight, the combination of a casing open at both the front and top, and two intersecting paraboloidal reflectors having a common focus and arranged one to reflect the light from said focus forward and the other upward, substantially as set forth.

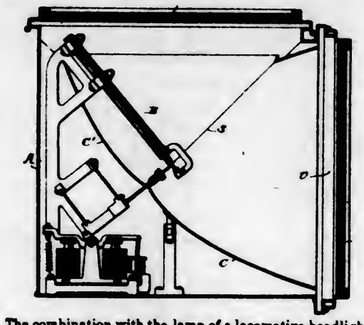

2. The combination with the lamp of a locomotive-headlight, of a paraboloidal reflector, the focus of which corresponds with the light of said lamp and arranged to project the light-rays forward, and a second paraboloidal reflector intersecting the first, having the same focus and arranged to project the light-rays upward, substantially as set forth.

3. The combination with the lamp of a locomotive-headlight, of a paraboloidal reflector, the focus of which corresponds with the light of said lamp and arranged to project the light-rays forward, a second paraboloidal reflector intersecting the first, having the same focus and arranged to project the light-rays upward, and a casing with end and top openings for the passage of the light-rays forward and upward and transparent coverings for said openings, substantially as set forth.

4. The combination in a locomotive-headlight, of a casing with openings at the top and front, and intersecting paraboloidal reflectors, having a common focus arranged to project light-rays forward and upward, and a lamp arranged to produce the flame at said focus, substantially as set forth.

812,193. PROCESS OF BLAST COMBUSTION.

BYRON E. ELDRED, Brooxville, N. Y., assignor to Combustion Utilities Company, New York, N. Y., a Corporation of New York. Filed Apr. 8, 1905. Serial No. 254,476.

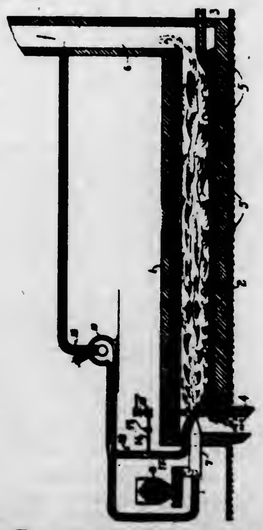

Claim.—1. The process of producing a voluminous flame of large heating area which consists in projecting into an unobstructed hot-walled chamber of refractory material an ignited blast of suspended fuel carried by air containing sufficient products of combustion to retard burning and completing the combustion by radiant heat from the walls.

2. The process of producing a voluminous flame of large heating area which consists in projecting into an unobstructed chamber with roof of refractory heat-radiating material an ignited blast of suspended fuel carried by air containing sufficient products of combustion to retard burning and completing the combustion by radiant heat from the roof.

3. The process of producing a voluminous flame of large heating area which consists in projecting into an unobstructed hot-walled chamber of refractory material a blast of powdered coal carried by air containing sufficient products of combustion to retard burning and completing the combustion by radiant heat from the walls.

4. The process of producing a voluminous flame of large heating area which consists in projecting into an unobstructed chamber with roof of refractory heat-radiating material a blast of powdered coal carried by air containing sufficient products of combustion to retard burning and completing the combustion by radiant heat from the roof.

5. The process of burning pulverized fuel which consists in projecting pulverized fuel into a reverberatory furnace in susbension in a forcible current composed entirely of air and products of combustion, such products being in sufficient amount to retard combustion by the air of the current and completing combustion by radiant heat.

6. The process of producing differential heating which consists in forming a voluminous flame of large heating area in an unobstructed hot-walled chamber of refractory material by an ignited blast of suspended fuel carried by air containing sufficient products of combustion to retard burning and locally intensifying combustion at a desired point by a cross-jet containing air.

7. The process of producing differential heating which consists in forming a voluminous flame of large heating area in an unobstructed hot-walled chamber of refractory material by an ignited blast of suspended fuel carried by air containing sufficient products of combustion to retard burning and locally intensifying combustion at a desired point and to a desired degree by a cross-jet containing air and products of combustion in regulated proportions.

8. The herein-described process of intensifying the combustion of a blast-current of powdered coal diluted with products of combustion which consists in subjecting the same to the impingement of a high-pressure jet of air.

9. The process of intensifying the temperature of flame which consists in subjecting a fuel-laden current to impingement by an air-jet diluted with a neutral fixed gas.

10. The process of intensifying the temperature of flame which consists in subjecting a fuel-laden current to impingement by an air-jet diluted with gaseous products of combustion.

11. The process of intensifying the combustion of a blast-current of powdered fuel which consists in subjecting the same to impingement by a high-pressure jet of air diluted with products of combustion.

12. The process of regulating the temperature of flame which consists in subjecting a fuel-laden current to impingement by a jet of dilute air in such manner as to increase the normal temperature of combustion, and varying the proportion of diluent to air.

13. The process of obtaining regulated temperatures in a furnace which consists in producing a blast-flame of previously-unignited fuel, subjecting a current of the same composition to impingement by a dilute air-jet to locally intensify its combustion, and varying the proportion of diluent in the jet to vary the local temperature.

14. The process of obtaining regulated temperatures in a furnace which consists in producing a blast-flame of powdered coal diluted with products of combustion, acting on a similar current with an air-jet diluted with products of combustion to obtain a local high temperature, and varying that temperature by varying the proportion of diluent to air in the jet.

812,194. POWER-GAS PRODUCING AND CONSUMING APPARATUS.

CARLETON ELLIS, New York, N. Y., assignor to Combustion Utilities Company, New York, N. Y., a Corporation of New York. Filed May 11, 1905. Serial No. 260,986.

Claim.—1. In a power-gas producing and consuming apparatus, the combination of a gas-producer, a gas-engine, a cooled gas-delivery pipe connecting producer and engine; a cooled pipe connection abstracting products of combustion from the engine and delivering the same into the producer, and means opening directly into the atmosphere for admitting air into the cooled products of combustion.

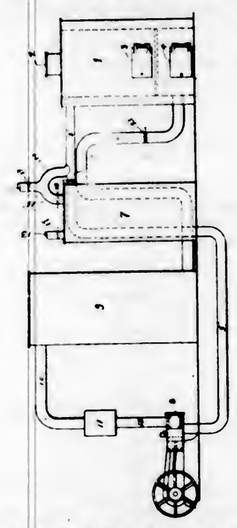

2. In a power-gas producing and consuming apparatus, the combination of a gas-producer, a gas-engine, a cooling vessel adapted to contain water, a gas-delivery pipe connecting producer and engine and passing through said vessel, a pipe connection abstracting products of combustion from the engine and delivering the same into the producer, also passing through said vessel, means opening directly into the atmosphere for admitting air into the products of combustion cooled thereby and means also admitting vapors from said vessel into the products of combustion.

3. In a power-gas producing and consuming apparatus, the combination of a gas-producer, a gas-engine, a gas-delivery pipe connecting producer and engine, a cooling vessel adapted to contain water, a pipe connection abstracting products of combustion from the engine and delivering the same into the producer, and passing through said vessel, means opening into the atmosphere for admitting air into said products after passing the vessel, and means also admitting vapors from said vessel into said products of combustion.

4. In a power-gas producing and consuming apparatus, the combination of a gas-producer, a gas-engine, a gas-delivery pipe connecting producer and engine, means for returning products of combustion from the engine to the producer, means for cooling said products of combustion, and means for mingling the cooled products of combustion with cool air and with water-vapor.

5. In a power-gas producing and consuming apparatus, the combination of a gas-producer, a gas-engine, a gas-delivery pipe connecting producer and engine, a purifying device in said delivery-pipe, means for returning products of combustion from the engine to the producer, means for cooling said products of combustion, means for the admission of air to the cooled products and means for the admission of water-vapor.

6. In a power-gas producing and consuming apparatus, the combination of a gas-producer, a gas-engine, a water-cooled gas-delivery pipe connecting producer and engine, a water-cooled pipe connection abstracting products of combustion from the engine and delivering the same into the producer and means for introducing the water vaporized in said cooling into the products of combustion after cooling.

812,195. EXPLOSIVE COMPOUND.

RICHARD ESCALES, Munich-Schwabing, Germany. Filed Dec. 31, 1902. Serial No. 137,363.

Claim.—1. An explosive composition containing an oxygen-carrier and in addition an easily-oxidizable metal in the shape of metal wool for enhancing the dynamic effect of the said composition.

2. An explosive composition containing an oxygen-carrier and in addition aluminium wool for enhancing the dynamic effect of said composition.

3. An explosive composition consisting of Westfalite and aluminium wool, substantially as described.

4. An explosive composition containing ammonium nitrate and aluminium wool, substantially as described.

812,196. APPARATUS FOR MEASURING ELECTRIC RESISTANCES.

SYDNEY EVERSHED, Streatley, England, assignor to himself, and Evershed and Vignoles Limited, Chiswick, England, a Corporation. Filed Feb. 27, 1904. Serial No. 195,610.

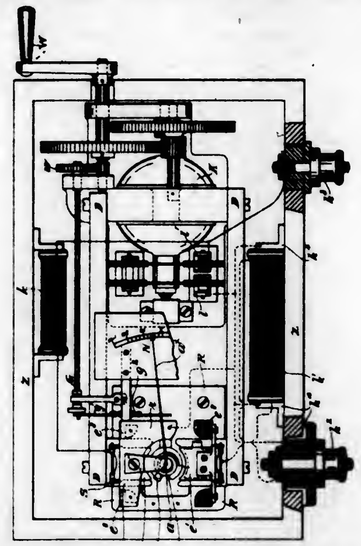

Claim.—1. In combination, a generator of electric current, in close proximity to said generator, a direct-reading moving-coils ohmmeter with two coils, and a portable box inclosing the same for testing electrical resistance.

2. In combination, a generator of electric current; a direct-reading moving-coils ohmmeter in close proximity thereto; means for releasing the torsion of the conductors which convey current to and from the moving coils; and a portable box inclosing the same.

3. In combination, a generator of an electrical current, a direct-reading moving-coils ohmmeter in close proximity thereto; means for releasing the torsion of the conductors which convey current to and form the moving coils; electrically-guarded insulations to avoid leakage; and a portable box inclosing the same.

4. In combination, a hand-operated dynamo; a direct-reading moving-coils ohmmeter in close proximity thereto; duplex flexible conductors to the moving coils of said ohmmeter; fixed clamps adapted to alternately clamp and release the said conductors; means for actuating the clamps; and a portable box inclosing the same.

5. In combination, a direct-reading ohmmeter having moving coils and an index-finger rotatable relatively to fixed magnetic poles; flexible conductors to the moving coils of said ohmmeters; fixed clamps adapted to alternately clamp and release the said conductors; and means for actuating the said clamps.

6. In combination, a generator of electric current; a direct-reading moving-coils ohmmeter in close proximity thereto; guard-plates adapted to support the insulators of the apparatus; connections from the guard-plates to the source of current to prevent leakage; and a portable box inclosing said apparatus.

7. In combination, a generator of electric current; a direct-reading ohmmeter having moving coils and an index-finger rotatable relatively to fixed magnetic poles; said coils being connected at one end to the axis of said finger; a pair of flexible conductors connected to the other end of one of the movable coils; a pair of flexible conductors insulated from the said axis and connected to the other end of the other movable coil; six contacts about the said axis adapted to connect said flexible conductors to the line-circuits; and means for closing and releasing the said contacts with the said flexible conductors intermittently.

8. In combination, a hand-operated dynamo; a direct-reading ohmmeter having moving coils and an index-finger rotatable rela-

tively to a fixed magnet; said coils having their common terminal

tively to a fixed magnet; said coils having their common terminal connected with the axis of the said finger; a pair of flexible conductors connected to the said axis; a pair of flexible conductors upon an insulated sleeve of the said axis, and connected to the other end of one of the movable coils; a pair of flexible conductors upon an insulated sleeve of the said axis and connected to the other end of the other movable coil; six contact-clamps arranged about the said axis and adapted to make contact with said flexible conductors; circuits thereto from dynamo and external terminals; and means, operated from the dynamo, for causing the said clamp-contacts to intermittently and alternately make contact with, and release, the said flexible conductors.

812,197. METHOD OF INSTRUCTION. HARVEY R. FULLER, Kirksville, Mo. Filed July 10, 1905. Serial No. 269,119.

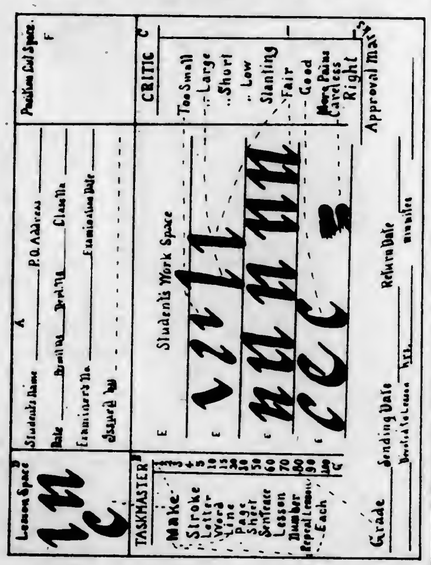

Claim.—1. The herein-described method of instruction, constituting a substitute for oral written or sign methods comprising a critic a work-space adjacent to the said "critic" and adapted to be connected thereto by correction or approval lines as and for purposes fully set forth.

2. The herein-described system of instruction constituting a substitute for oral, written or sign methods of instruction comprising a lesson-space a "taskmaster" adjacent thereto and adapted to be joined to the said taskmaster by assignment-lines, and also comprising a work-space a "critic" adjacent thereto adapted to be joined to work in said work-space by correction or approval lines as and for purposes fully set forth.

812,198. BIT-BRACE. JACOB GREBERT, Buffalo, N. Y. Filed Aug. 27, 1904. Serial No. 222,426.

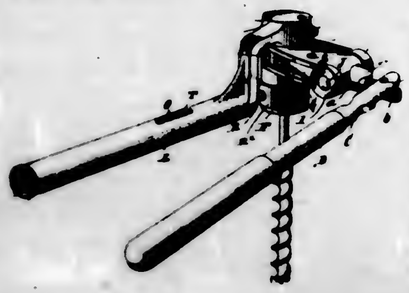

Claim.—1. A bit-brace comprising in combination, a pressure-bar and a stock mounted to rotate therein and be governed thereby, said stock having a ratchet-wheel rigid therewith, a handle having a head rotatable on said stock and carrying a pawl engaging said ratchet-wheel, and a braking device carried by said pressure-bar engaging said stock and resisting rotation on the return of the pawl.

2. A bit-brace comprising in combination, a hollow pressure-bar having an offset arm, a stock mounted to rotate in said arm and having a ratchet-wheel rigid thereon, a handle rotatable on said stock and carrying a pawl engaging said ratchet-wheel, and a braking device comprising a brake-shoe and a rod mounted in said pressure-bar.

3. A bit-brace comprising in combination, a hollow pressure-bar having an offset arm, a stock mounted to rotate in said arm and having a ratchet-wheel rigid thereon, a handle rotatable on said stock and carrying a pawl engaging said ratchet-wheel, and a braking device comprising a brake-shoe, a rod carrying said brake-shoe mounted in the pressure-bar, a spring tending to force said rod inward to hold said brake-shoe against the stock, and means for drawing said rod outward against the action of said spring.

4. A bit-brace comprising in combination, a hollow pressure-bar having an offset arm and longitudinal slots at diametrically opposite points, a stock mounted to rotate in said offset arm and having a ratchet-wheel rigid thereon, a handle rotatable on said stock and carrying a pawl engaging said ratchet-wheel, and a braking device comprising a rod mounted in said pressure-bar and having its ends projecting therefrom and its outer end threaded, a brake-shoe at the inner end of said rod, an adjusting-nut fitting onto the threaded end of said rod, a pin passing through said rod and guided in the slots in the pressure-bar, a stop-bushing held in said pressure-bar, and spiral springs surrounding said bar and bearing with its ends against said pin and bushing, respectively.

5. A bit-brace comprising in combination, a pressure-bar and a stock mounted to rotate therein and be governed thereby, said stock having a ratchet-wheel rigid therewith, an operating-handle carrying a pawl engaging said ratchet-wheel and having a head rotatable on said stock provided with a radial shank, and a holding portion pivoted to said shank and capable of being swung at an angle to or in line with said shank, means for locking the handle and shank rigid when alined, and a braking device carried by said pressure-bar engaging said stock and resisting rotation on the return of the pawl.

812,199. COMPOUND STEAM-ENGINE. ROBERT P. GIBBONS, Kopu, New Zealand. Filed Feb. 4, 1903. Serial No. 141,983.

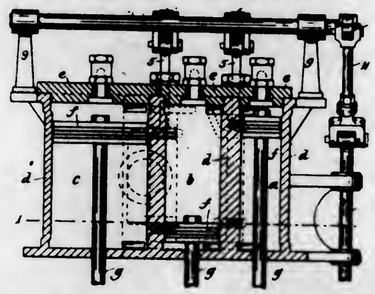

Claim.—1. A compound engine comprising a plurality of cylinders and pistons therein arranged adjacent to and parallel with each other, cranks for said pistons successively spaced in such manner that the crank for the larger piston precedes the crank for the next smaller piston by approximately one hundred and ninety degrees, an admission-valve and chamber for the high-pressure cylinder, an exhaust-valve and chamber for the low-pressure cylinder and a valve and chamber between each cylinder of the series but out of line therewith, each cylinder being connected by ports at each end with the valve-chambers preceding and following in series, and a common operating means for all the valves, said means actuating alternate valves in the series in opposite directions in timed relation to the operation of the pistons and in such manner that each valve will open the inlet-port to its piston before the piston completes its stroke.

2. A compound engine comprising a plurality of cylinders and pistons therein arranged adjacent to and parallel with each other, cranks for said pistons successively spaced in such manner that the crank for each piston precedes the crank of the next succeeding piston by approximately one hundred and ninety degrees, an admission-valve and valve-chamber for the initial cylinder of the series, an exhaust-valve and valve-chamber for the terminal cylinder, and a valve-chamber and valve arranged between each cylinder and the one succeeding in the series, each cylinder being connected by ports at its opposite ends with the cylinders preceding and following in the series, and a common operating means for all of the valves, said means constructed to actuate alternate valves in opposite directions in timed relation to the reciprocation of the pistons and in such manner that each valve will open the inlet-port to its cylinder before the piston therein completes its stroke.

3. In a compound engine the combination with the cylinders arranged alongside each other and connected at each end by ports leading to the cylinders immediately preceding and following in the series, the end cylinders of the series being provided respectively with admission and exhaust ports, pistons in said cylinders and connected with the shafts by cranks which are alternately substantially opposite each other, piston-valves seated in the cylinder-bodies and adapted to control said ports, a rock-shaft extending across the cylinder-heads and arms secured thereto and extending oppositely and each connected with one of the valves.

812,200. COIN-CONTROLLED CLOCK AND MONEY-BOX. HUGO GILLER, New York, N. Y. Filed Nov. 7, 1904. Serial No. 231,656.

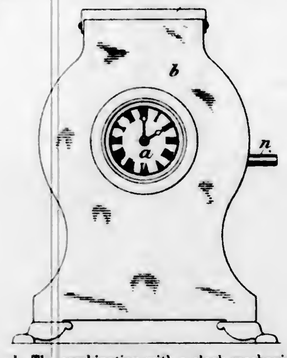

Claim.—1. The combination with a clock mechanism, of a lug on the winding-arbor, a stop-lever normally engaging said lug, means to move the stop-lever into abnormal position, a latch to hold said stop-lever in abnormal position, and a dog pivoted on the latch in the path of said lug and free to move in one direction only, substantially as described.

2. The combination with a clock mechanism, of a lug on the winding-arbor, a stop-lever pivoted adjacent to said arbor and normally engaging the lug thereon to prevent the winding of the clock, means to disengage said stop-lever, and a latch to hold said stop-lever in abnormal position and pivoted adjacent to the winding-arbor to be operated by the movement of the lug thereon to disengage said stop-lever, substantially as described.

3. The combination with a clock mechanism, of a lug on the winding-arbor, a stop-lever pivoted adjacent to said arbor to engage said lug, means to move the stop-lever into abnormal position, a latch to hold said stop-lever in abnormal position and pivoted adjacent to the arbor, and a dog pivoted on said latch in the path of said lug on the winding-arbor and free to move in one direction only, substantially as described.

812,201. METHOD OF MOUNTING AND AUTOMATICALLY ADJUSTING THE LAMPS OF MOTOR ROAD-VEHICLES. LÉONCE GIRARDOT, Puteaux, France. Filed Oct. 14, 1904. Serial No. 228,474.

Claim.—A device for automatically adjusting the lamps of motor-cars in accordance with changes in the direction of traveling comprising in combination a rotary lamp-support c pivotally mounted on a ball-bearing, a plate b supporting said ball-bearing and rigidly fixed to the cooling-jacket or the frame of the motor-car, a horizontal rod d attached by one end to the rotatory lamp-support c, a vertical rod d' connected by one end to the free end of the horizontal rod d, provided at its other end with a fork h, and pivoted in an intermediate point to the cooling-jcket or the frame of the motor-car, two collars g g mounted on the steering-rod f and adapted to engage with the forked end of the vertical rod d', and a spring i connecting one end of the lamp-support to a fixed part of the frame.

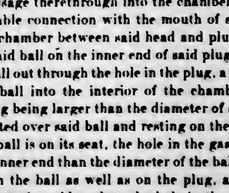

812,202. FLEXIBLE JOINT FOR PIPES. WARREN A. GREENLAW, Boston, Mass., assignor of one-half to Wesley W. Blair, Newton, Mass. Filed May 13, 1905. Serial No. 260,283.

Claim.—1. A flexible pipe-joint, comprising a chambered head having a neck with a passage therethrough into the chamber, a tubular plug having a separable connection with the mouth of said head, a ball inclosed in the chamber between said head and plug, a concave annular seat for said ball on the inner end of said plug, a stem projecting from said ball out through the hole in the plug, a passage through said stem and ball into the interior of the chamber, the passage through the plug being larger than the diameter of said stem, an annular gasket fitted over said ball and resting on the inner end of the plug when the ball is on its seat, the hole in the gasket being of less diameter at its inner end than the diameter of the ball so that the gasket is seated on the ball as well as on the plug, whereby the rearward movement of the ball carries with it the said gasket and washer, an annular flange on the interior of the head around the opening from the neck, said flange projecting into the chamber in the head, a coil-spring surrounding said flange, one end of said spring being seated on said metallic washer and the other end bearing against the rear wall of the chamber, said spring normally holding said ball and gasket to their seats in said tubular plug, and holding said ball and washer away from their seats on said flange.

2. A flexible pipe-joint, comprising a chambered head having a neck with a passage therethrough into the chamber, a tubular plug having a separable connection with the mouth of said head, a ball inclosed in the chamber between said head and plug, a concave annular seat for said ball on the inner end of said plug, a stem projecting from said ball out through the hole in the plug, a passage through said stem and ball into the interior of the chamber, the passage through the plug being larger than the diameter of said stem, an annular gasket fitted over said ball and resting on the inner end of the plug when the ball is on its seat, the hole in the gasket being of less diameter at its inner end than the diameter of the ball so that the gasket is seated on the ball as well as on the plug, an annular metal washer resting on the said gasket, the hole in the washer being of less diameter than that of the hole in the gasket and tapering so as to be seated on the ball as well as on the gasket, whereby the rearward movement of the ball carries with it the said gasket and washer, an annular flange on the interior of the head around the opening from the neck, said flange projecting into the chamber in the head, and having a concave seat for the ball when the ball is pushed backward from its seat on the plug, a coil-spring surrounding said flange, one end of said spring being seated on said metallic washer and the other

tively to a fixed magnet; said coils having their common terminal connected with the axis of the said finger; a pair of flexible conductors connected to the said axis; a pair of flexible conductors upon an insulated sleeve of the said axis, and connected to the other end of one of the movable coils; a pair of flexible conductors upon an insulated sleeve of the said axis and connected to the other end of the other movable coil; six contact-clamps arranged about the said axis and adapted to make contact with said flexible conductors; circuits thereto from dynamo and external terminals; and means, operated from the dynamo, for causing the said clamp-contacts to intermittently and alternately make contact with, and release, the said flexible conductors.

812,197. METHOD OF INSTRUCTION. HARVEY R. FULLER, Kirksville, Mo. Filed July 10, 1905. Serial No. 269,119.

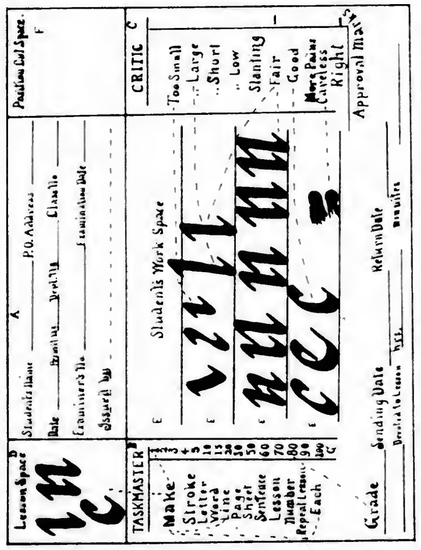

Claim.—1. The herein-described method of instruction, constituting a substitute for oral written or sign methods comprising a critic a work-space adjacent to the said "critic" and adapted to be connected thereto by correction or approval lines as and for purposes fully set forth.

2. The herein-described system of instruction constituting a substitute for oral, written or sign methods of instruction comprising a lesson-space a "taskmaster" adjacent thereto and adapted to be joined to the said taskmaster by assignment-lines, and also comprising a work-space a "critic" adjacent thereto adapted to be joined to work in said work-space by correction or approval lines as and for purposes fully set forth.

812,198. BIT-BRACE. JACOB GEISERT, Buffalo, N. Y. Filed Aug. 27, 1904. Serial No. 223,436.

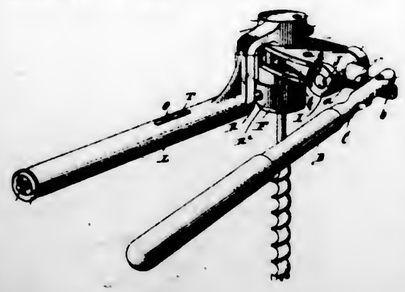

Claim.—1. A bit-brace comprising in combination, a pressure-bar and a stock mounted to rotate therein and be governed thereby, said stock having a ratchet-wheel rigid therewith, a handle having a head rotatable on said stock and carrying a pawl engaging said ratchet-wheel, and a braking device carried by said pressure-bar engaging said stock and resisting rotation on the return of the pawl.

2. A bit-brace comprising in combination, a hollow pressure-bar having an offset arm, a stock mounted to rotate in said arm and having a ratchet-wheel rigid thereon, a handle rotatable on said stock and carrying a pawl engaging said ratchet-wheel, and a braking device comprising a brake-shoe and a rod mounted in said pressure-bar.

3. A bit-brace comprising in combination, a hollow pressure-bar having an offset arm, a stock mounted to rotate in said arm and having a ratchet-wheel rigid thereon, a handle rotatable on said stock and carrying a pawl engaging said ratchet-wheel, and a braking device comprising a brake-shoe, a rod carrying said brake-shoe mounted in the pressure-bar, a spring tending to force said rod inward to hold said brake-shoe against the stock, and means for drawing said rod outward against the action of said spring.

4. A bit-brace comprising in combination, a hollow pressure-bar having an offset arm and longitudinal slots at diametrically opposite points, a stock mounted to rotate in said offset arm and having a ratchet-wheel rigid thereon, a handle rotatable on said stock and carrying a pawl engaging said ratchet-wheel, and a braking device comprising a rod mounted in said pressure-bar and having its ends projecting therefrom and its outer end threaded, a brake-shoe at the inner end of said rod, an adjusting-nut fitting onto the threaded end of said rod, a pin passing through said rod and guided in the slots in the pressure-bar, a stop-bushing held in said pressure-bar, and spiral springs surrounding said bar and bearing with its ends against said pin and bushing, respectively.

5. A bit-brace comprising in combination, a pressure-bar and a stock mounted to rotate therein and be governed thereby, said stock having a ratchet-wheel rigid therewith, an operating-handle carrying a pawl engaging said ratchet-wheel and having a head rotatable on said stock provided with a radial shank, and a holding portion pivoted to said shank and capable of being swung at an angle to or in line with said shank, means for locking the handle and shank rigid when alined, and a braking device carried by said pressure-bar engaging said stock and resisting rotation on the return of the pawl.

812,199. COMPOUND STEAM-ENGINE. ROBERT P. GIBBONS, Kopa, New Zealand. Filed Feb. 4, 1903. Serial No. 141,923.

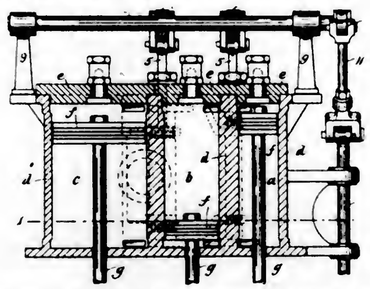

Claim.—1. A compound engine comprising a plurality of cylinders and pistons therein arranged adjacent to and parallel with each other, cranks for said pistons successively spaced in such manner that the crank for the larger piston precedes the crank for the next smaller piston by approximately one hundred and ninety degrees, an admission-valve and chamber for the high-pressure cylinder, an exhaust-valve and chamber for the low-pressure cylinder and a valve and chamber between each cylinder of the series but out of line therewith, each cylinder being connected by ports at each end with the valve-chambers preceding and following in series, and a common operating means for all the valves, said means actuating alternate valves in the series in opposite directions in timed relation to the operation of the pistons and in such manner that each valve will open the inlet-port to its piston before the piston completes its stroke.

2. A compound engine comprising a plurality of cylinders and pistons therein arranged adjacent to and parallel with each other, cranks for said pistons successively spaced in such manner that the crank for each piston precedes the crank of the next succeeding piston by approximately one hundred and ninety degrees, an admission-valve and valve-chamber for the initial cylinder of the series, an exhaust-valve and valve-chamber for the terminal cylinder, and a valve-chamber and valve arranged between each cylinder and the one succeeding in the series, each cylinder being connected by ports at its opposite ends with the cylinders preceding and following in the series, and a common operating means for all of the valves, said means constructed to actuate alternate valves in opposite directions in timed relation to the reciprocation of the pistons and in such manner that each valve will open the inlet-port to its cylinder before the piston therein completes its stroke.

3. In a compound engine the combination with the cylinders arranged alongside each other and connected at each end by ports leading to the cylinders immediately preceding and following in the series, the end cylinders of the series being provided respectively with admission and exhaust ports, pistons in said cylinders and connected with the shafts by cranks which are alternately substantially opposite each other, piston-valves seated in the cylinder-bodies and adapted to control said ports, a rock-shaft extending across the cylinder-heads and arms secured thereto and extending oppositely and each connected with one of the valves.

812,200. COIN-CONTROLLED CLOCK AND MONEY-BOX. HUGO GILLER, New York, N. Y. Filed Nov. 7, 1904. Serial No. 231,656.

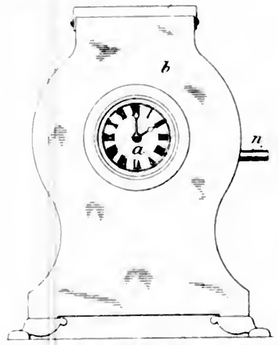

Claim.—1. The combination with a clock mechanism, of a lug on the winding-arbor, a stop-lever normally engaging said lug, means to move the stop-lever into abnormal position, a latch to hold said stop-lever in abnormal position, and a dog pivoted on the latch in the path of said lug and free to move in one direction only, substantially as described.

2. The combination with a clock mechanism, of a lug on the winding-arbor, a stop-lever pivoted adjacent to said arbor and normally engaging the lug thereon to prevent the winding of the clock, means to disengage said stop-lever, and a latch to hold said stop-lever in abnormal position and pivoted adjacent to the winding-arbor to be operated by the movement of the lug thereon to disengage said stop-lever, substantially as described.

3. The combination with a clock mechanism, of a lug on the winding-arbor, a stop-lever pivoted adjacent to said arbor to engage said lug, means to move the stop-lever into abnormal position, a latch to hold said stop-lever in abnormal position and pivoted adjacent to the arbor, and a dog pivoted on said latch in the path of said lug on the winding-arbor and free to move in one direction only, substantially as described.

812,201. METHOD OF MOUNTING AND AUTOMATICALLY ADJUSTING THE LAMPS OF MOTOR ROAD-VEHICLES. LEONCE GIRARDOT, Puteaux, France. Filed Oct. 14, 1904. Serial No. 228,474.

Claim.—A device for automatically adjusting the lamps of motor-cars in accordance with changes in the direction of traveling comprising in combination a rotary lamp-support *c* pivotally mounted on a ball-bearing, a plate *b* supporting said ball-bearing and rigidly fixed to the cooling-jacket or the frame of the motor-car, a horizontal rod *d* attached by one end to the rotatory lamp-support *c*, a vertical rod *d'* connected by one end to the free end of the horizontal rod *d*, provided at its other end with a fork *h*, and pivoted in an intermediate point to the cooling-jeket or the frame of the motor-car, two collars *g g* mounted on the steering-rod *f* and adapted to engage with the forked end of the vertical rod *d'*, and a spring *i* connecting one end of the lamp-support to a fixed part of the frame.

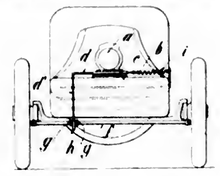

812,202. FLEXIBLE JOINT FOR PIPES. WARREN A. GREENLAW, Boston, Mass., assignor of one-half to Wesley W. Blair, Newton, Mass. Filed May 13, 1905. Serial No. 260,283.

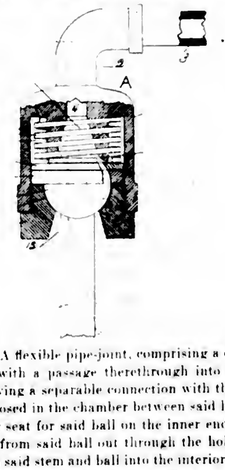

Claim.—1. A flexible pipe-joint, comprising a chambered head having a neck with a passage therethrough into the chamber, a tubular plug having a separable connection with the mouth of said head, a ball inclosed in the chamber between said head and plug, a concave annular seat for said ball on the inner end of said plug, a stem projecting from said ball out through the hole in the plug, a passage through said stem and ball into the interior of the chamber, the passage through the plug being larger than the diameter of said stem, an annular gasket fitted over said ball and resting on the inner end of the plug when the ball is on its seat, the hole in the gasket being of less diameter at its inner end than the diameter of the ball so that the gasket is seated on the ball as well as on the plug, whereby the rearward movement of the ball carries with it the said gasket and washer, an annular flange on the interior of the head around the opening from the neck, said flange projecting into the chamber in the head, a coil-spring surrounding said flange, one end of said spring being seated on said metallic washer and the other end bearing against the rear wall of the chamber, said spring normally holding said ball and gasket to their seats in said tubular plug, and holding said ball and washer away from their seats on said flange.

2. A flexible pipe-joint, comprising a chambered head having a neck with a passage therethrough into the chamber, a tubular plug having a separable connection with the mouth of said head, a ball inclosed in the chamber between said head and plug, a concave annular seat for said ball on the inner end of said plug, a stem projecting from said ball out through the hole in the plug, a passage through said stem and ball into the interior of the chamber, the passage through the plug being larger than the diameter of said stem, an annular gasket fitted over said ball and resting on the inner end of the plug when the ball is on its seat, the hole in the gasket being of less diameter at its inner end than the diameter of the ball so that the gasket is seated on the ball as well as on the plug, an annular metal washer resting on the said gasket, the hole in the washer being of less diameter than that of the hole in the gasket and tapering so as to be seated on the ball as well as on the gasket, whereby the rearward movement of the ball carries with it the said gasket and washer, an annular flange on the interior of the head around the opening from the neck, said flange projecting into the chamber in the head, and having a concave seat for the ball when the ball is pushed backward from its seat on the plug, a coil-spring surrounding said flange, one end of said spring being seated on said metallic washer and the other

end bearing against the rear wall of the chamber, said spring normally holding said ball and gasket to their seats in said tubular plug, and holding said ball and washer away from their seats on said flange.

812,203. JEWELRY-DISPLAY DEVICE. MAX HERZ, New York, N. Y. Filed June 5, 1905. Serial No. 263,752.

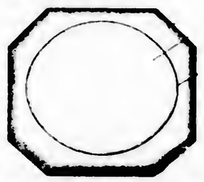

Claim.—1. A display device for jewelry, the same consisting of a suitable frame provided with an opening, a pad or cushion of soft material on which the jewelry may be mounted for display, the said pad being provided on its edge with a comparatively stiff member adapted to fit within the opening in the frame to retain the pad therein, a detached cover for said pad, the pad and cover being adapted to be inserted in and removed from said opening in the frame, the said cover fitting between said pad and opening, substantially as and for the purpose set forth.

2. A display device for jewelry, the same consisting of a frame provided with a suitable opening, a pad or cushion of soft material having a closed hand or hoop of suitably stiff and yielding material mounted on the edge of said pad and adapted to be sprung into the opening in said frame to retain the pad therein, a detached cover for said pad, the said pad with said cover adapted to be together inserted in and removed from said opening in the frame, the said cover fitting between said pad and opening, substantially as and for the purpose set forth.

812,204. PROCESS OF MANUFACTURING PHOTOGRAPHIC PAPERS. IGNAS HOFFSUMMER, Düren, Germany. Filed Sept. 16, 1905. Serial No. 278,775.

Claim.—1. A process for making photographic papers, consisting in a fibrous layer being laid over and attached to the raw paper and finally emulsioning said layer, substantially as described.

2. An improved photographic paper consisting of a layer of fibrous material laid over the raw paper and attached thereto by an adhesive substance, substantially as hereinbefore set forth.

812,205. RAILWAY-SWITCH. FRED A. HOWARTH, Johnstown, and JOHN J. MCKINLAY, Amsterdam, N. Y., assignors of one-fourth to said McKinlay, one-fourth to Frank D. Oliver, one-fourth to Louis K. Mayfender, and one-fourth to Ella Howarth, Johnstown, N. Y. Filed Sept. 7, 1905. Serial No. 277,333.

Claim.—1. In a railway-switch having main and side tracks with movable members whereby the switch can be opened, the combination with the movable track members; and spring mechanism for automatically closing the switch; of a switch-operating plate adjacent to the inner side of a stationary side-track rail and of a length greater than the distance between any two neighboring wheels of a car or train; a connection between said plate and a neighboring movable switch member; and means for operating said plate to open the switch.

2. In a railway-switch having main and side tracks with movable members whereby the switch can be opened, the combination with the movable track members; and spring mechanism for automatically closing the switch; of a switch-operating plate adjacent to the inner side of a stationary side-track rail and of a length greater than the distance between any two neighboring wheels of a car or train; a connection between said plate and a neighboring movable switch member; an operating-handle connected with said plate; and an automatic spring-lock for said handle.

3. In a railway-switch having main and side tracks with movable members whereby the switch can be opened, the combination with the movable track members; and spring mechanism for automatically closing the switch; of a switch-operating plate adjacent to the inner side of a stationary side-track rail and of a length greater than the distance between any two neighboring wheels of a car or train; a connection between said plate and a neighboring movable switch member; a rock-shaft parallel with said plate and side track; a plurality of rocker-arms on said rock-shaft; connections between the respective rocker-arms and said plate; and means for rocking said rock-shaft.

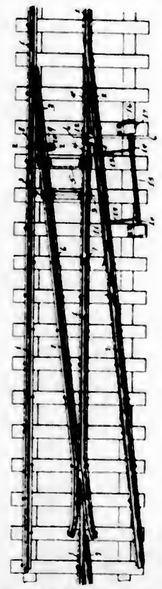

4. In a railway-switch having main and side tracks with movable members whereby the switch can be opened, the combination with the movable track members; and spring mechanism for automatically closing the switch; of a switch-operating plate adjacent to the inner side of a stationary side-track rail and of a length greater than the distance between any two neighboring wheels of a car or train; a connection between said plate and a neighboring movable switch member; a rock-shaft parallel with said plate and side track; a plurality of rocker-arms on said rock-shaft; connections between the respective rocker-arms and said plate; a handle for rocking said shaft; and an automatic spring-lock for said handle.

812,206. FLOATING ELEVATOR OR LIGHTER. MICHAEL S. IVERSON, New York, N. Y. Filed Mar. 14, 1904. Serial No. 197,918.

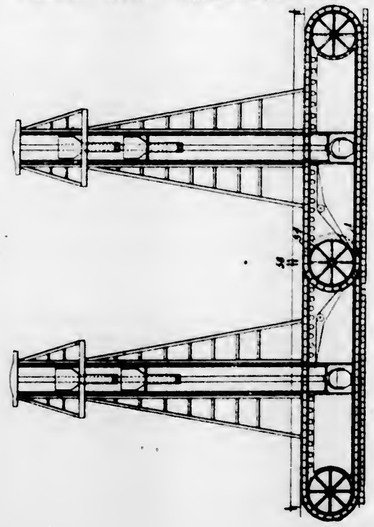

Claim.—1. A band conveyer comprising a series of buckets, the band having upper and lower reaches, and the buckets being so attached that they are inverted while in the upper reach, a wheel over which said band runs upwardly, and a belt running upon said wheel and partly along the upper reach of said band, and covering the mouths of the buckets while running up over said wheel and after they leave the wheel.

2. A band conveyer comprising a sprocket-chain, a series of buckets attached thereto, the band having upper and lower reaches, and the buckets being so attached that they are inverted while in the upper reach, a sprocket-wheel for driving the band, a wheel over which said bands run upwardly, a belt running upon the last-mentioned wheel, an idle pulley for said belt between said wheels and immediately beneath the upper reach of said band, rolls supporting both the lower and upper reaches of said band and also the reach of said belt between said idle pulley and said upwardly-running band-wheel, and guards for coöperation with said rolls, said guards extending along said reaches in contiguity with the upper sides thereof.

3. A band conveyer comprising a sprocket-chain, a series of buckets attached at their open ends to said chain, the band having upper and lower reaches, wheels whereon the band runs, including a sprocket-wheel and an idle wheel over which the band runs upwardly, a bucket-closing belt running over said idle wheel and partly along the upper reach, rolls supporting both said belt and the upper and lower reaches of said band, a fixed guide for the lower reach of the band between said band-wheels, and a fixed guard overlying the upper reach of the band and curving around said band-wheels to the lower side thereof.

4. In combination, a band conveyer comprising a series of buckets and having a lower reach in which the buckets are supported in normal condition and an upper reach in which the buckets are inverted, means for driving the band, a bin having provision whereby it may discharge into the buckets of the lower reach, means for covering the mouths of the buckets while they travel from the lower to the upper reach and partly along the upper reach, and means for receiving the discharge from the buckets in the upper reach.

5. In combination, a band conveyer comprising a series of buckets and having a lower reach in which the buckets are supported in normal condition and an upper reach in which the buckets are inverted, wheels for operating the band, a bin having a floor interposed between the reaches and located closely adjacent to the lower reach, said floor being provided with a discharging-aperture above said lower reach, a belt traveling over one of the operating-wheels and covering the mouths of the loaded buckets while they travel to the upper reach, and means for receiving the discharge from the buckets in the upper reach.

6. In combination, a band conveyer comprising a series of buckets and having a lower reach in which the buckets are supported in normal condition and an upper reach in which the buckets are inverted, wheels for operating the band, a bin having a floor beneath which said lower reach travels, said bin being divided into a series of compartments, and said floor being provided with a series of gates overlying said lower reach, means for opening any gate independently of the others, a belt traveling over one of said wheels and covering the mouths of the loaded buckets while they travel upwardly and partly along the upper reach, and means for receiving the discharge from the buckets in the upper reach.

7. In combination, a band conveyer having upper and lower reaches, a bin having a sloping floor beneath the lower portion of which said lower reach travels and also having means for discharging into said lower reach, a hinged floor-leaf provided with a set of lifting-arms, a shaft extending along said leaf, chain connections from said shaft to said arms, whereby the winding of the chain on the shaft lifts the arms and leaf, a pinion upon said shaft, a gear meshing with said pinion, a sprocket-chain connected to said gear, and a hand-wheel having a sprocket-pinion over which said chain runs.

8. An elevator comprising a band conveyer provided with buckets and having a lower reach in which the buckets are supported in normal condition and an upper reach in which the buckets are inverted, means for discharging into the buckets in the lower reach, a belt for covering the mouths of the loaded buckets as they travel to and partly along the upper reach, a chute beneath said upper reach for receiving the discharge from the buckets, a bucket into which said chute discharges, and means for hoisting said bucket.

9. An elevator comprising a band conveyer provided with buckets and having a lower reach in which the buckets are supported in normal condition and an upper reach in which the buckets are inverted, a bin having means for discharging into the buckets in the lower reach, a belt for covering the mouths of the loaded buckets as they travel to and partly along the upper reach, a chute beneath the buckets in the upper reach at the end of said belt and provided with spouts upon its opposite sides, and gates for the spouts.

10. An elevator comprising a band conveyer provided with buckets and having a lower reach in which the buckets are supported in normal condition and an upper reach in which the buckets are inverted, wheels whereon the band runs, a bin having a floor above said lower reach and provided with means for discharging into said lower reach, a belt running over one of said wheels and covering the mouths of the loaded buckets, an idle pulley under said upper reach, whereon said belt runs, a chute beneath said upper reach at said idle pulley, and a spout or discharge for said chute at one side of said band conveyer.

11. An elevator comprising a band conveyer provided with buckets and having a lower reach in which the buckets are supported in normal condition and an upper reach in which the buckets are inverted, means for closing the filled buckets while they move to and along the upper reach, a bin discharging into the lower reach, a chute beneath said upper reach, spouts for said chute at the sides of said conveyer, gates for said spouts, shafts into which said spouts open, buckets into which said spouts discharge, and means for hoisting the last-mentioned buckets up said shafts.

12. The combination of a band conveyer provided with buckets and having a lower reach in which the buckets are supported in normal condition and an upper reach in which the buckets are inverted, a bin discharging into the lower reach, means for closing the filled buckets as they move to the upper reach, a chute beneath said upper reach, a spout for said chute at the side of said conveyer, a bucket into which said spout discharges, and means for weighing and hoisting the filled bucket.

13. An elevator comprising a band conveyer provided with buckets and having a lower reach in which the buckets are supported in normal condition and an upper reach in which the buckets are inverted, means for closing the buckets as they move upwardly and along the upper reach, a chute beneath the upper reach, spouts for said chute at the sides of said conveyer, shafts into which said spouts open, buckets into which said spouts discharge, means for hoisting said buckets up said shafts, a dumping-chute upon one side of the elevator for one of said shaft-buckets, and two dumping-chutes one above the other upon the other side of said elevator, one for each of said shaft-buckets.

14. An elevator comprising a plurality of band conveyers each provided with buckets and each having an upper reach and a lower reach, bins having means for discharging into the lower reaches, chutes beneath the upper reaches, and hoisting-buckets into which the chutes discharge.

15. An elevator comprising a plurality of band conveyers each provided with buckets and each having an upper reach in which the buckets are inverted and a lower reach in which the buckets are in normal condition, bins having floors sloping upwardly from both sides of the lower reaches and having means for discharging into the lower reaches, belts for closing the filled buckets as they move up and along the upper reaches, chutes beneath the upper reaches and each having discharges upon opposite sides, buckets for receiving the discharges from said chutes, means for hoisting said receiving-buckets, and dumping-chutes for said receiving-buckets.

16. An elevator comprising two adjoining band conveyers, each being provided with buckets and having a lower reach in which the buckets are in normal condition and an upper reach in which the buckets are inverted, a pair of wheels over which each band runs, a wheel in one pair being mounted side by side with a wheel in the other pair, belts closing the mouths of the buckets as they move up and along the upper reaches and chutes beneath said upper reaches.

17. A lighter having bins whose flooring slopes downwardly from the sides toward the center of the vessel, partitions dividing said bins into compartments, gates in the flooring along the middle of the vessel, means for opening said gates independently of one another, two adjoining band conveyers, each conveyer being provided with buckets and having a lower reach in which the buckets are in normal condition and an upper reach in which the buckets are inverted, said lower reaches running beneath said gates, a pair of wheels over which each band runs, a wheel in one pair being mounted side by side with a wheel in the other pair, belts closing the mouths of the filled buckets as they move up and along the upper reaches, chutes beneath the upper reaches, shafts at the sides of each chute, buckets in the shafts into which the chutes discharge, means for hoisting the buckets, and dumping-chutes for the buckets.

18. A lighter having a deck and a bottom, a band conveyer provided with buckets and comprising a lower reach running along said

bottom and an upper reach running along the upper side of said deck, wheels over which the buckets run, flooring immediately overlying said lower reach and sloping upwardly therefrom to the sides of the lighter, partitions dividing the space between said deck and said flooring-apertures in the flooring above the buckets in said lower reach, gates for closing the apertures, a belt closing the mouths of the buckets as they pass from the lower to the upper reach, a chute at the termination of said belt and below said upper reach, a discharge for said chute, and means for hoisting the material discharged from the chute.

19. A lighter having bins arranged about a well, a conveyer to carry material from the bins to the well, and means for hoisting the material and discharging the same, comprising a superstructure or elevator above the well, a pair of buckets receiving material from the conveyer, means for hoisting the buckets, a chute for each bucket to receive the material therefrom, said chutes being arranged to discharge on opposite sides of the lighter, a third chute arranged above one of the others, discharging on the same side, and extending across the superstructure or elevator to receive material from the other bucket, as set forth.

812,207. **CORNER CONSTRUCTION FOR CARRIAGE-BODIES.** JEREMIAH P. JOHNSON, Detroit, Mich. Filed Feb. 13, 1905. Serial No. 245,489.

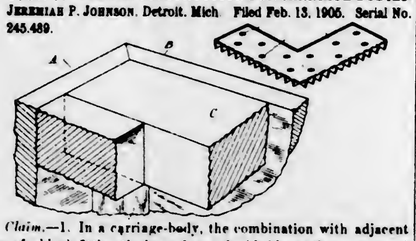

Claim.—1. In a carriage-body, the combination with adjacent sides, of a block fitting the inner faces of said sides at the corner, and a metallic angle bridging the joint between said block and sides around the corner, being provided with apertures for securing devices on opposite sides of said joint, and with its outer edges turned notched and embedded in the edges of the sides, and securing devices passing through said apertures into the sides and block.

2. In a carriage-body, the combination with adjacent sides, of a filling-block engaging the angle between the inner faces of said sides, of a metallic angle F having the turned outer flanges *c*, and the double series of apertures *a* and *b*, said angle being arranged to bridge the joint between the sides and block, and securing-pins passing through said double series of apertures and respectively engaging the block and the sides, and the flanges *c* being embedded in the edges of the sides, the pins in said sides being arranged near the inner faces thereof between said inner faces and said embedded flanges.

3. A metallic angle for box-corners, comprising an L-shaped plate having its outer edges turned to form flanges and notched to form a series of points and a double series of apertures for the securing nails or screws, substantially as and for the purpose set forth.

4. A carriage-body, comprising a sill, side and end panels adjoining each other, and secured respectively to the side and end of said sill, and a metallic angle bridging the joint between said sides and sill at the bottom thereof, being provided with notched flanges for embedding in the sides and end a series of apertures between said flanges and the line of joint with the sill, a second series of apertures in the portion underlapping the sill, and securing-pins engaging said apertures and embedded in the sides and sill.

5. In a carriage-body, a sill formed of hard wood, thin side and end panels of soft wood adjoining each other, and secured respectively to the sides and end of said sill, an L-shaped metallic angle underlapping the joint between the panels and sill, being provided with projecting points at its outer edge for embedding in said panels, a series of apertures between said points and the line of joint with the sill, a second series of apertures in the portion underlapping the sill, securing-pins engaging the latter series for fastening the angle to said sill, and securing-pins engaging the first series and embedded in said panels, the latter being held from splitting by the embedded points of said angle and the securing of the same to the sill.

812,208. **CRANK.** WILLIAM R. HARLESSEMS, Two Rivers, Wis. Filed Sept. 9, 1905. Serial No. 277,776.

Claim.—A crank having a hollow hub, arms extending therefrom at either end, a longitudinal exterior groove in the hub, a split hub arranged over the groove, tightening-bolts connecting the split-hub members, whereby the latter may be adjusted longitudinally of said hub, and held in frictional contact against the latter, a supplementary screw in threaded connection with one member of said split hub, arranged to impinge against the bottom wall of said groove, whereby the hub is held against twisting under normal strain and also held against longitudinal movement, and an arm extending from the other member of the aforesaid split hub.

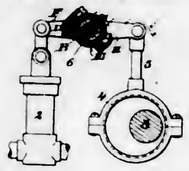

812,209. **HARP.** NICOLAUS KOLBY, Chicago, Ill., assignor to Henry Detmer, Chicago, Ill. Filed Nov. 20, 1905. Serial No. 288,229.

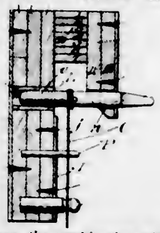

Claim.—1. In a harp, the combination with a principal neck having a bearing for a tuning-pin, of a supplemental neck also having a bearing for said tuning-pin, and a string winding upon said tuning-pin between said bearings.

2. In a harp, the combination of a principal neck for said harp, a supplemental neck, a bearing in said principal neck, a bearing in said supplemental neck, a tuning-pin supported in said bearings, and a string winding upon said pin between said principal neck and said supplemental neck.

3. In a harp, the combination of a principal neck with a bearing therein for a tuning-pin, a supplemental neck with a bearing therein for a tuning-pin, a tuning-pin supported in said bearings, said tuning-pin having a screw-thread upon one end thereof, and a string winding upon said tuning-pin.

4. In a harp, the combination of a principal neck, a supplementary neck, a bearing in said principal neck, a bearing in said supplemental neck, a tuning-pin supported in said bearing, said tuning-pin having means upon one end thereof adapted to engage suitable means in its bearing whereby the rotation of the pin moves said pin inwardly, and a string winding upon said pin.

5. In a harp, a neck comprising in combination a principal neck made up of a plurality of layers of material secured together, a supplemental neck made up of a plurality of layers of material secured together, and a web portion between said principal neck and said supplemental neck, said principal and supplemental necks being provided with bearings for a tuning-pin.

6. In a harp, a neck comprising in combination a principal neck made up of a plurality of layers of material secured together, a supplemental neck made up of a plurality of layers of material secured together, and a web portion connecting said principal neck and said supplemental neck, said web portion being also made up of a plurality of layers of material secured together.

7. In a harp, the combination of a principal neck, a supplemental neck, and a web portion between said principal and supplemental necks made up of a plurality of layers of material, said principal and supplemental necks having each a series of bearings for tuning-pins.

8. In a harp, the combination of a principal neck, a supplemental neck, and a web portion between said principal and supplemental necks, said web portion being made up of a plurality of layers of material, said principal and supplemental necks being reinforced with metallic strips.

9. In a harp, the combination of a principal neck, a supplemental neck, a web portion connecting said principal and supplemental necks, a metal strip reinforcing said principal neck and shaped to conform to the curves thereof and a metal strip reinforcing said supplemental neck, said strip also conforming to the curves of the neck.

10. In a harp, the combination of a principal neck, a supplemental neck of less width than the principal neck, a web portion connecting said principal and supplemental necks, a tuning-pin having one of its ends supported in the principal neck and its opposite end projecting through the supplemental neck, a metal plate secured to the principal neck and extending substantially the length of the latter, and a metal plate secured to the supplemental neck and extending substantially the length of said supplemental neck.

812,210. **PIPE-CUTTER.** ALEXANDER KOVACS, Chicago, Ill., assignor of one-half to Arpad M. Barothy, Chicago, Ill. Filed July 20, 1905. Serial No. 270,517.

Claim.—1. In a pipe-cutter, the combination of a casing, a bar slidably mounted in the casing, a movable pivot-stud rigidly secured to the slidable bar, a fixed pivot-stud rigidly secured to the casing, a wheel-bracket pivoted to the movable stud and provided with a slot embracing the fixed stud, a knife-adjusting plate extending at an angle to the bracket, a plate to which the knife-adjusting plate is pivoted, said latter plate being pivoted to the movable stud and provided with a slot embracing the fixed stud, an adjusting means carried by the plate and adapted to regulate the knife-carrying plate, a lower wheel on the bracket, an upper wheel, an arm to which the upper wheel is pivoted, a knife carried by the cutter-adjusting plate and means for moving the movable bar, substantially as described.

2. In a pipe-cutter, the combination of a fixed pivot, a relatively movable pivot, a bracket pivoted to the movable pivot and provided with a slotted portion embracing the pivot, a knife and knife-adjusting mechanism pivoted to the movable pivot and provided with a slot embracing the fixed pivot, and means for varying the distance between the two pivots, substantially as described.

3. In a pipe-cutter, the combination of a fixed pivot, a relatively movable pivot, a bracket pivoted to the movable pivot and provided with a slotted portion embracing the fixed pivot, a knife, a knife-adjusting plate, a plate to which the knife-adjusting plate is pivoted, said latter plate being pivoted to the movable pivot and provided with a slot embracing the fixed pivot, means for regulating the relative position of the pivoted plates and means for regulating the distance between the two pivots, substantially as described.

4. In a pipe-cutter, the combination of a fixed pivot, a relatively movable pivot, a bracket pivoted to the movable pivot and provided with a slotted portion embracing the fixed pivot, a knife, a knife-adjusting plate, a plate to which the knife-adjusting plate is pivoted, said latter plate being pivoted to the movable pivot and provided with a slot embracing the fixed pivot, means for regulating the relative position of the pivoted plates, a slidable bar to which the movable pivot is rigidly secured, a casing to which the fixed pivot is rigidly secured, and a handle carried by the casing and provided with a screw-threaded shank adapted to regulate the position of the slidable bar with respect to the casing, substantially as described.

5. In a pipe-cutter, the combination of a fixed pivot, a relatively movable pivot, a wheel-carrying bracket pivoted to the movable pivot and provided with a pair of slotted arms embracing the fixed pivot, knife-adjusting plates united in a solid head and positioned between the slotted bracket-arms, an inner plate between the knife-adjusting plates to which said plates are pivoted, said inner plate being pivoted to the movable pivot and provided with a slotted portion embracing the fixed pivot, a knife mounted between the knife-adjusting plates, an adjusting-screw carried by the inner plate and adapted to regulate the position of the knife-adjusting plates, a slidable bar to which the movable pivot is rigidly secured, a casing to which the fixed pivot is rigidly secured, and means for adjusting the movable bar, substantially as described.

6. In a pipe-cutter, the combination of a fixed pivot, a relatively movable pivot, a wheel-carrying bracket pivoted to the movable pivot and provided with a pair of slotted arms embracing the fixed pivot, knife-adjusting plates united in a solid head and positioned between the slotted bracket-arms, an inner plate between the knife-adjusting plates to which said plates are pivoted, said inner plate being pivoted to the movable pivot and provided with a slotted portion embracing the fixed pivot, a knife mounted between the knife-adjusting plates, an adjusting-screw carried by the inner plate and adapted to regulate the position of the knife-adjusting plates, a slidable bar to which the movable pivot is rigidly secured, means for adjusting the movable bar, and a wheel rotatably mounted on the knife-adjusting plates and provided with a circumferential rib in alinement with the cutting end of the knife, substantially as described.

7. In a pipe-cutter, the combination of a fixed pivot, a relatively movable pivot, a wheel-carrying bracket pivoted to the movable pivot and provided with a pair of slotted arms embracing the fixed pivot, knife-adjusting plates united in a solid head and positioned between the slotted bracket-arms, an inner plate between the knife-adjusting plates to which said plates are pivoted, said inner plate being pivoted to the movable pivot and provided with a slotted portion embracing the fixed pivot, a knife mounted between the knife-adjusting plates, an adjusting-screw carried by the inner plate and adapted to regulate the position of the knife-adjusting plates, a slidable bar to which the movable pivot is rigidly secured, a casing to which the fixed pivot is rigidly secured, means for adjusting the movable bar, a bracket pivoted to the knife-adjusting plates, a spring for holding the bracket forward under tension and a wheel carried by the bracket and provided with a circumferential rib in alinement with the cutting end of the knife, substantially as described.

8. In a pipe-cutter, the combination of a casing provided with a substantially bow-shaped arm, an upper wheel pivoted to the arm, an adjustable wheel-carrying bracket, a rear wheel secured thereto, a knife, an adjustable support for the knife, a bracket pivoted to the adjustable support, a spring bearing against the bracket, a wheel carried by the bracket and provided with a circumferential rib in alinement with the cutting end of the knife and means for regulating the position of the rear wheel and knife with respect to one another, substantially as described.

9. In a pipe-cutter, the combination of a knife, a rear wheel adjustably mounted with respect to the knife, a casing, an upwardly-extending supporting-arm secured to the casing, a pair of upper wheels, a cross-head provided with ears to which the wheels are pivoted, a pivot for securing the cross-head to the supporting-arm, a finger secured to the cross-head and extending through the supporting-arm and adjustable therein, and set-screws bearing against the finger for adjusting the position of the cross-head and the wheels pivoted thereto, substantially as described.

10. In a pipe-cutter, the combination of a casing, a bar slidably mounted in the casing, a bow-shaped supporting-arm upwardly extending from the casing and provided at its end with a suitable bearing-surface, a fixed pivot rigidly secured to the casing, a relatively movable pivot rigidly secured to the slidable bar, a screw-threaded handle-shank for regulating the position of the slidable bar, a bracket pivoted to the movable pivot and provided with a pair of slotted arms embracing the fixed pivot, a wheel pivoted to the opposite end of the bracket, knife-adjusting plates extending in angular relation to the bracket and united at their outer end, a knife rigidly secured to the knife-adjusting plates, an inner plate embraced by the knife-adjusting plates to which said plates are pivoted, said inner plates being pivoted to the movable pivot and provided with a slot embracing the fixed pivot, a neck outwardly extending from the inner plate and terminating in a head, and an adjusting-screw mounted in the head and adapted to regulate the position of the knife-adjusting plates, substantially as described.

11. In a pipe-cutter, the combination of a handle provided on its end with screw-threads, an upper relatively fixed roller, a rear roller adapted to be adjusted by the rotation of the screw-threaded handle, a cutter-carrying plate, an adjusting-screw adapted to regulate the cutter-carrying plate, and a resiliently-mounted guide-wheel provided with a rib in line with the end of the cutter, substantially as described.

12. In a pipe-cutter, the combination of a relatively fixed roller,

an adjustably-mounted rear roller, an adjustably-mounted wheel provided with a rib in line with the end of the cutter adapted to enter the groove formed by the cutter, substantially as described.

812,211. AUTOMATIC DISCHARGE FOR WASHING APPARATUS. CONSTANTIN KUHL, Vienna, Austria-Hungary. Filed Aug. 1, 1905. Serial No. 272,261.

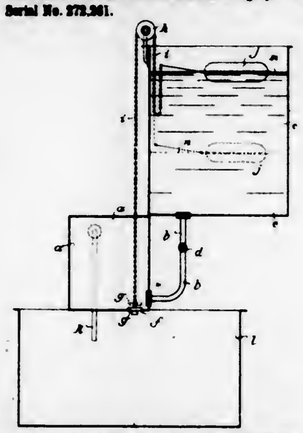

Claim.—An automatic discharge device for washing apparatus comprising two receptacles *a* and *c*, a valve *f* at the bottom of the receptacle *a*, a plug *g* for said valve, a float *j* in the receptacle *c* and a connection from the said float to the plug *g* for controlling the valve by said float.

812,212. PAPER BOX OR CARTON. TOM J. LANDRUM, Louisville, Ky. Filed May 25, 1904. Serial No. 209,757.

Claim.—1. A paper box or carton for the purpose set forth, comprising a paper box the bottom of which is composed of the inwardly-bent extensions of the four sides thereof, two of which are glued together and the other two loose and bent in and out or zigzag to receive the impact of the article dropped in the box, and the top or other end of said box closed by overlapped extensions of the back and front and a closing-strip formed by an extension of one side of the box, said closing-strip terminating in a tongue adapted to be inserted in the box at the front end thereof; together with a thick cardboard cover bent around three sides of the box with its edges projecting slightly beyond the latter, as herein shown and described.

2. In a paper box or carton for the purpose set forth, the combination, of a box made from a single blank comprising the body portion, the closing-flaps a^7, a^7 and a^8 at one end and the flaps a^4, a^5 and a^3 a^3 at the other end, the flaps a^4 and a^3 being overlapped and glued together to form the bottom of the box when the body of the blank is bent upon itself to form the body of the box, and the flaps a^6 a^6 bent inward upon said bottom and further bent in and out or zigzag above the same to form a yielding support, substantially as shown and described.

3. In a paper box or carton for the purpose set forth, the combination, of a box made from a single blank comprising the body portion, the closing-flaps a^7, a^7 and a^8 at one end and the flaps a^4, a^5, and a^3 a^3 at the other end, the flaps a^4 and a^3 being overlapped and glued together to form the bottom when the box is formed, while the flaps a^6 a^6 are bent inward upon said bottom and further bent in and out or zigzag above said bottom to provide a yielding support; together with a cardboard cover bent around three sides of the box and glued thereto, as herein shown and described.

812,213. HAY-LOADER. JOHN W. LATHAM, Chicago, Ill., assignor to International Harvester Company, a Corporation of New Jersey. Filed Oct. 11, 1905. Serial No. 282,866.

Claim.—1. In a hay-loader, the combination of an axle and carrying-wheels mounted thereon, an elevator and carrier frame mounted upon said axle and extending upward and forward therefrom, a supplemental frame pivotally mounted upon said axle and extending forward and in rear thereof, having its forward end adjustably connected with the elevator-frame, and a raking-cylinder mounted at the rear end thereof.

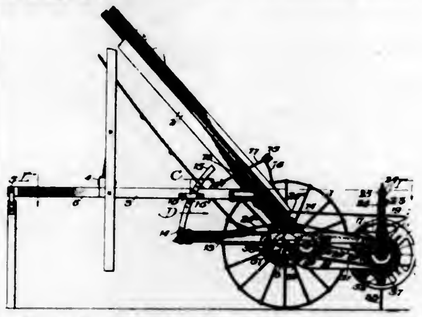

2. In a hay-loader, the combination of an axle and carrying-wheels mounted thereon, an elevator and carrier frame mounted upon said axle and extending upward and forward therefrom, a supplemental frame pivotally mounted upon said axle and extending forward and in rear thereof, having its forward end adjustably connected with the elevator-frame, and a raking-cylinder yieldingly mounted at the rear end thereof.

3. In a hay-loader, the combination of an axle and carrying-wheels mounted thereon, an elevator and carrier frame mounted upon said axle and extending upward and forward therefrom, a supplemental frame pivotally mounted upon said axle and extending forward and in rear thereof, having its forward end connected with the elevator-frame by means of bars secured to one of the frames and slidably connected with the other, and adjustable stops connected with the bars in a manner to limit the upward movement of the forward end of said supplemental frame, and a raking-cylinder mounted at the rear end thereof.

4. In a hay-loader, the combination of an axle and carrying-wheels mounted thereon, an elevator and carrier frame mounted upon said axle and extending upward and forward therefrom, a supplemental frame pivotally mounted upon said axle and extending forward and in rear thereof, having its forward end connected with the elevator-frame by means of bars curved concentrically relative to the axle and having one end secured to said supplemental frame and their opposite ends passing freely through loops secured to said elevator-frame, transverse openings in said bars, and pins received by said openings and contacting with said loops in a manner to limit the upward movement of the forward end of said supplemental frame, and a raking-cylinder yieldingly mounted at the rear end thereof.

5. In a hay-loader, the combination of an axle and carrying-wheels mounted thereon, an elevator and carrier frame mounted upon said axle and extending upward and forward therefrom, a supplemental frame pivotally mounted upon said axle and extending forward and in rear thereof and having its forward end connected with the elevator-frame, brackets secured to the rear end of said frame at opposite sides thereof, said brackets having vertically-arranged slots therein, a shaft extending across said frame and having its ends loosely mounted in said slotted brackets, and a raking-cylinder rotatably mounted upon said shaft.

6. In a hay-loader, the combination of an axle and carrying-wheels mounted thereon, an elevator and carrier frame mounted upon said axle and extending upward and forward therefrom, a supplemental frame pivotally mounted upon said axle and extending forward and in rear thereof and having its forward end connected with the elevator-frame, brackets secured to the rear end of said frame at opposite sides thereof, said brackets having vertically-arranged slots therein, a shaft extending across said frame and having its ends loosely mounted in said slotted brackets, springs operative to suspend the shaft in said brackets, and a raking-cylinder rotatably mounted on the shaft.

7. In a hay-loader, the combination of an axle and carrying-wheels mounted thereon, an elevator and carrier frame mounted upon said axle and extending upward and forward therefrom, a supplemental frame pivotally mounted upon said axle and extending forward and in rear thereof and having its forward end connected with the elevator-frame, brackets secured to the rear end of said frame and at opposite sides thereof, said brackets having vertically-arranged slots therein, a shaft extending across said frame and having its ends loosely mounted in said slotted brackets, links having their lower ends secured to said shaft and their upper ends passing loosely through openings in the upper ends of said brackets, and coiled springs surrounding the links above said brackets and operative to yieldingly support said shaft, and a raking-cylinder rotatably mounted upon said shaft.

8. In a hay-loader, the combination of an axle and carrying-wheels mounted thereon, an elevator and carrier frame mounted upon said axle and extending upward and forward therefrom, a supplemental frame pivotally mounted on said axle and extending forward and in rear thereof and having its forward end connected with the elevator-frame, brackets secured to the rear end of said frame and at opposite sides thereof, said brackets having vertically-arranged slots therein, a shaft extending across said frame and having its ends loosely mounted in said slotted brackets, links having their lower ends secured to said shaft and their upper ends passing loosely through openings in the upper ends of said brackets, coiled springs surrounding the links above said brackets, supplemental links having their upper ends secured to the upper ends of the first-mentioned links and their lower ends passing loosely through openings in the brackets, a cross-bar having its opposite ends secured to said supplemental links, and a raking-cylinder rotatably mounted upon said shaft.

9. In a hay-loader, the combination of an axle and carrying-wheels mounted thereon, an elevator and carrier frame mounted upon said axle and extending upward and forward therefrom, a supplemental frame pivotally mounted on said axle and extending forward and in rear thereof and having its forward end connected with the elevator-frame, a raking-cylinder mounted at the rear end of said supplemental frame, a cross-bar arranged above said cylinder and supported at opposite ends upon the frame, compressor-bars extending longitudinally above said elevator and carrier frame and having their lower ends slidably connected with said cross-bar.

10. A raking mechanism for hay-loaders comprising, in combination, a fixed shaft, oppositely-disposed heads rotatably mounted upon said shaft, said heads being connected by means of bars secured to the peripheries thereof, a series of bands secured to said bars in a manner to have intervening spaces between the bands, a raking-cylinder mounted within said bands, and heads having rake-teeth and means for projecting and retracting said teeth through said spaces.

11. A raking mechanism for hay-loaders comprising, in combination, a fixed shaft, oppositely-disposed heads rotatably mounted upon said shaft, said heads being connected by means of bars secured to the peripheries thereof, a series of bands secured to said bars in a manner to have intervening spaces between the bands, said bands having inwardly-turned edges, a raking-cylinder mounted within said bands, and heads having rake-teeth and means for projecting and retracting said teeth through said spaces.

12. In a hay-loader, the combination of an axle and carrying-wheels mounted thereon, an elevator and carrier frame mounted upon said axle and extending upward and forward therefrom, a supplemental frame extending forward and in rear of said axle, comprising side bars and having its forward end adjustably connected with the elevator-frame, a raking-cylinder carried by the rear end of said supplemental frame, journal-boxes secured to said side bars and having said axle journaled therein, short shafts journaled in said boxes in rear of said axle and having pinions secured to their outer ends and sprocket-wheels to their inner ends upon opposite sides of said side bars, pinions secured to the axle and meshing with said first-named pinions, sprocket-wheels connected with said raking-cylinder, and sprocket-chains connecting the two sets of sprocket-wheels.

13. In a hay-loader, the combination of an axle and carrying-wheels mounted thereon, an elevator and carrier frame mounted upon said axle and extending upward and forward therefrom, a supplemental frame extending forward and in rear of said axle, comprising side bars and having its forward end connected with the elevator-frame, a raking-cylinder carried by the rear end of said supplemental frame, journal-boxes secured to said side bars and having said axle journaled therein, short shafts journaled in said boxes in rear of said axle and having pinions secured at their outer ends and sprocket-wheels to their inner ends upon opposite sides of said side bars, pinions secured to the axle and meshing with said first-named pinions, sprocket-wheels connected with said raking-cylinder, sprocket-chains connecting the two sets of sprocket-wheels, and shields depending from said side bars inside said sprocket-chains.

812,214. HANDLE ATTACHMENT FOR BOWLING-BALLS. SAMUEL H. LAW, HARRISON O. LAW, and SAMUEL H. LAW, Jr., New York, N. Y. Filed Apr. 18, 1905. Serial No. 256,230.

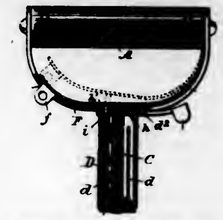

Claim.—1. A handle attachment for bowling-balls, comprising a handle portion and a laterally-expansible shank portion rotatably secured together, said shank being adapted to enter and frictionally engage the wall of a socket in a bowling-ball, and means whereby said shank may be expanded or contracted by independently rotating said handle or shank.

2. A handle attachment for bowling-balls, comprising a handle portion and a laterally-expansible shank rotatably secured thereto, said shank being adapted to enter a socket in a bowling-ball and frictionally engage the walls thereof, means operated by the rotation of the handle for expanding said shank, and a finger-piece projecting laterally from the upper end of said shank.

3. A handle attachment for bowling-balls, comprising a handle portion having a screw-threaded shaft or bolt projecting therefrom, a tubular shank rotatably mounted on said shaft, said shank being split at one end to permit of lateral expansion and contraction, and a conical nut on said shaft having its conical surface in contact with the split end of said shank, whereby independent rotation of said handle portion or shank will cause said shank to expand or contract.

4. A handle attachment for bowling-balls, comprising a handle portion and a laterally-expansible shank rotatably secured together, means whereby said shank will be expanded by independent rotation of said handle or shank, and means for locking said handle and shank against independent rotation.

5. In a handle attachment for bowling-balls, a handle-piece, a yoke secured to the ends thereof, a screw-threaded shaft fixedly secured to said yoke having a conical nut mounted thereon, a tubular shank mounted on said shaft between said yoke and said nut, said shank being split to permit of expansion by said nut, a spring-arm mounted on the handle portion of the attachment, a pin carried by said arm adapted to engage said yoke and said shank for preventing independent rotation thereof, and means for locking said strap and said yoke together.

812,215. CORN-HARVESTER. JOHN F. LEEPER, Alton, Ill. Filed May 29, 1905. Serial No. 262,784.

Claim.—1. In a harvester, a suitable platform, adapted to be advanced over the field, a depositing-surface for the cut material, a rock-shaft having a series of arms for retaining the material on the surface on which it has been deposited, a series of belts disposed in proximity to the depositing-surface, arms carried by the belts and projecting beyond the surface, suitable running-wheels for the machine, and intermediate gearing under the control of the operator for periodically setting the belts into motion and rocking the shaft to a releasing position for the arms carried thereby, substantially as set forth.

2. In a harvester, a suitable platform, a depositing-surface at the receiving side thereof inclining downward toward the discharging side, a longitudinally-disposed rock-shaft at the discharging side of the machine, a rotatable shaft parallel to the rock-shaft at the opposite side of the machine, a series of transverse belt conveyers disposed between the shafts, arms formed on the conveyers and projecting beyond the depositing-surface, running-wheels for the machine, an operating-lever under the control of the operator, and intermediate connections to simultaneously impart motion to the belt conveyers and rock the rock-shaft to a releasing position, the parts operating substantially as, and for the purpose set forth.

3. In a harvester, a suitable platform, a series of cutters, a permanently-advancing feed belt or chain for the stalks fed to the cutters, a transversely-disposed belt conveyer, means for setting the same intermittently into action for removing the contents from the side of the machine, substantially as set forth.

4. In a harvester, a depositing-surface for the cut material, a

platform, running-wheels therefor, bevel-gears on said wheels, pinions meshing with the gears, parallel shafts leading from the pinions, suitable cutters, intermediate connections between the latter and one of the shafts, a controlling-lever, a clutch member on one of the parallel shafts controlled by the depression of the controlling-lever, a belt conveyar for removing the contents deposited on the machine, intermediate connections between the conveyer and the clutch member for imparting motion to the conveyer upon depression of the controlling-lever, devices for temporarily retaining the material in position on the machine and means coupled to the controlling-lever for shifting the retaining devices and thereby releasing the contents upon the removal thereof by the conveyer, substantially as set forth.

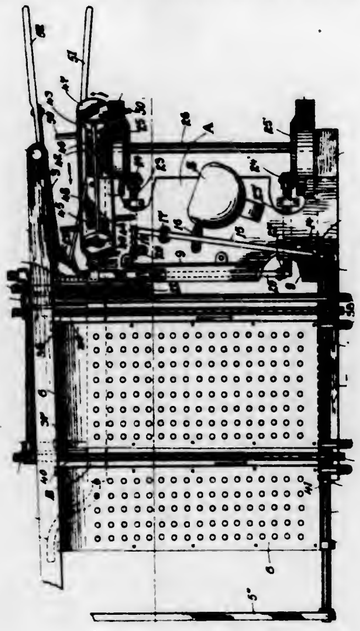

812,216. POWER-CONTROLLING LEVER. GEORGE W. LORIMER, Piqua, Ohio. Filed June 14, 1902. Serial No. 111,625.

Claim.—1. The combination with a power-controlling lever and its actuating-handle, of a locking dog or bolt mounted thereon, and an actuating thimble or collar forming a section of the actuating-handle, and means concealed within the handle for operatively connecting the thimble with the bolt or dog.

2. The combination with a power-controlling lever, of a hollow actuating-handle secured thereto, a locking-plate, a locking-dog concealed in the handle, and a rotary thimble or collar mounted on said lever and connected with the dog for causing the same to engage and disengage the plate.

3. The combination with a power-controlling lever, of a locking-dog mounted thereon, a locking-plate engaged by and a rotary thimble or collar mounted on the lever and having a cam for holding the dog out of locking position or permitting it to hold the lever locked, at will.

4. The combination with a power-controlling lever, of a locking-bolt working in a longitudinal guide in said lever, an actuating thimble or collar mounted on the lever and connecting with the bolt, a rotatable locking-plate mounted on the lever, a pinion secured to said plate and a fixed rack as and for the purpose described.

5. The combination with a power-controlling lever, of a locking-bolt, a hollow handle concealing said bolt, an actuating-thimble forming a part of said handle, a locking-plate mounted on the lever, a fixed rack, an intermediate means between the rack and the locking-plate for rotating the same.

6. The combination with a power-controlling lever, of a locking bolt or dog carried thereby, an operating thimble or sleeve provided with a cam operatively connected with said bolt or dog and a locking-plate adapted to be engaged by said bolt or dog.

812,217. COMBINED GAS WASHER AND SCRUBBER. LEON P. LOWE, San Francisco, Cal. Filed May 17, 1904. Serial No. 208,346.

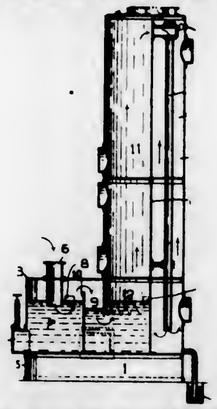

Claim.—1. In a device of the character described, the scrubber comprising a vertical shell, a vertical partition therein dividing the same into two chambers, a spray operating in the first chamber, a pipe conducting the gas from the top of said first chamber to the bottom of the second chamber, and a spray operating in the second chamber, substantially as described.

2. The combined gas washer and scrubber comprising a substantially L-shaped shell, the horizontal member being provided with an overflow, a gas-inlet extending below the level of the overflow, and a transverse partition dividing the horizontal member into two chambers, the shell of the vertical member on the side next the horizontal member being extended below the top of said horizontal member but not to the bottom thereof, a vertical partition in said vertical member dividing it into two chambers, a spray in the first chamber, a gas-pipe leading from the top of said first chamber to the bottom of the second chamber, and a spray in the second chamber, substantially as described.

812,218. GAS-PURIFIER. LEON P. LOWE, San Francisco, Cal. Filed Nov. 7, 1904. Serial No. 231,616.

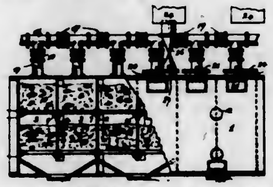

Claim.—1. A gas-purifier comprising a casing divided vertically into a horizontal series of chambers, and having connections at the top whereby the gas can be passed in succession through the chambers, each chamber having a vertical partition dividing it into two compartments connected at the bottom, and a door at the bottom of each chamber opposite to the vertical partition therein, substantially as described.

2. A gas-purifier comprising a casing divided vertically into a horizontal series of chambers, and having connections at the top whereby the gas can be passed in succession through the chambers, each chamber having a vertical partition dividing it into two compartments connected at the bottom, movable supports in each compartment for purifying material, and a door at the bottom of each chamber opposite to the vertical partition therein, substantially as described.

3. A gas-purifier comprising a casing divided vertically into a horizontal series of chambers, each chamber having a vertical partition dividing it into two compartments connected at the bottom, a pipe extending over, and parallel with said chambers, a valved connection from said pipe to each chamber, a valve in the pipe over each partition, movable supports in each compartment for purifying material, and an opening for removing the material from the bottom of each chamber, substantially as described.

812,219. FEEDING MECHANISM. WILLIAM S. LOCKETT, East Orange, N. J., assignor to International Cigar Machinery Company, New York, N. Y., a Corporation of New Jersey. Filed May 28, 1904. Serial No. 210,908.

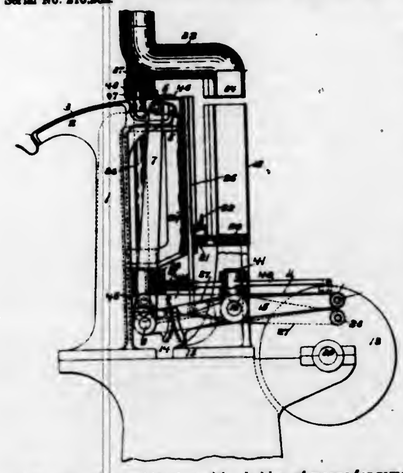

Claim.—1. The combination with a holder, of means for removing a plurality of individual charges and conveying them separately to and assembling them at a common delivery-point, and a rolling mechanism, substantially as described.

2. The combination with a holder, of means for removing a plurality of individual charges of varying volume therefrom and conveying them separately to and assembling them at a common delivery-point, and a rolling mechanism, substantially as described.

3. The combination with a rolling mechanism, of a holder, means and for removing a plurality of individual charges from the holder transferring the charges separately to and assembling them in the rolling mechanism, substantially as described.

4. The combination with a holder having a plurality of compartments, of means for removing individual charges from the compartments and transferring them to and assembling them at a common delivery-poiat, and a rolling mechanism, substantially as described.

5. The combination with a rolling mechanism, of a holder, a charge-carrier adapted to carry a plurality of charges, means for moving the charge-carrier between the holder and the rolling mechanism, and means for causing the carrier to deliver the charges successively to the rolling mechanism, substantially as described.

6. The combination with a rolling mechanism, of a holder, a charge-carrier adapted to carry a plurality of charges of varying volume, means for moving the charge-carrier between the holder and the rolling mechanism, and means for causing the carrier to deliver the charges successively to the rolling mechanism, substantially as described.

7. The combination with a rolling mechanism, of a holder having a plurality of compartments, means for removing a charge from each compartment and for transferring the charges separately to and assembling them in the rolling mechanism, substantially as described.

8. The combination with a holder comprising a plurality of compartments, of means for removing individual charges from the holder and transporting them separately to and assembling them at a common delivery-point, substantially as described.

9. The combination with a holder, of a suction charge-separator operating to remove a plurality of individual charges from the holder and transport them to a common delivery-poiat, substantially as described.

10. The combination with a holder, of a suction charge-separator operating to remove a plurality of individual charges varying in volume from the holder and transport them to a common delivery-point, substantially as described.

11. The combination with a rolling mechanism, of a holder for granular material, a suction charge-separator operating to remove a plurality of charges from the holder, and means for actuating the separator to transfer the charges to the rolling mechanism, substantially as described.

12. The combination with a rolling mechanism, of a holder, a suction charge-separator operating to remove a plurality of charges varying in volume from the holder, and means for actuating the separator to transfer the charges to the rolling mechanism, substantially as described.

13. The combination with a holder for granular material, of suction charge-removing means, means for effecting relative movements between the holder and the removing means, whereby the removing means is positioned with respect to the material in the holder, and means whereby the material in the holder and the removing means are brought into juxtaposition.

14. The combination with a rolling mechanism, of a holder for granular material, suction charge-removing means, and means for moving the charge-removing means into taking position with respect to the holder and delivery position with respect to the rolling mechanism, and means whereby the material in the holder and the removing means are brought into juxtaposition.

15. The combination with a rolling mechanism, of a holder for granular material, a suction charge-removing device, and means for causing said device to remove charges from the holder and transfer them to the rolling mechanism, substantially as described.

16. The combination with a holder comprising a plurality of compartments, of charge-removing means coöperating with each compartment, and means for actuating said charge-removing means to remove charges from the compartments and to assemble them at a common delivery-point, said charge-removing means being constructed to remove charges of varying volume from different compartments, substantially as described.

17. The combination with a rolling mechanism, of a holder comprising a plurality of compartments, suction charge-removing means coöperating with each compartment, and mechanism for actuating said charge-removing means to remove charges from the compartments and deliver them to the rolling mechanism, substantially as described.

18. The combination with a rolling mechanism, of a holder comprising a plurality of compartments, suction charge-removing means coöperating with each compartment, said charge-removing means being constructed to remove charges of different volumes from different compartments, and means for actuating said charge-removing means to deliver the charges to the rolling mechanism, substantially as described.

19. The combination with a holder, of a suction charge-carrier having a plurality of operating-faces varying in area, means for producing a relative movement between the charge-carrier and the holder and for causing the faces to deliver at a common point, substantially as described.

20. The combination with a holder having a plurality of compartments, of a suction charge-carrier having a plurality of operating-surfaces, one for each compartment, said surfaces differing in area, and means for moving the carrier to bring its surfaces to a common discharging-point, substantially as described.

21. The combination with a rolling mechanism, of a holder having a plurality of compartments, a suction-carrier having a plurality of operating-surfaces varying in area, and means for moving the carrier so as to bring the surfaces of the carrier into discharging position with respect to the rolling mechanism, substantially as described.

22. The combination with a rolling mechanism, of a holder having a plurality of compartments, means for maintaining the material at a substantially constant level in the compartments, a suction-head having a plurality of operating-surfaces, one for each compartment, the surfaces varying in area, and means for moving the head from the holder to the rolling mechanism, substantially as described.

23. The combination with a rolling mechanism, of a holder having a plurality of compartments, a suction-head having a plurality of operating-surfaces differing in area, means for moving the head from the holder to the rolling mechanism, and a discharging device coöperating with the surfaces, substantially as described.

24. The combination with a rolling mechanism, of a holder having a plurality of compartments, a suction-head having a plurality of operating-surfaces differing in area, means for moving the head from

the holder to the rolling mechanism, and a scraper coöperating with the surfaces, substantially as described.

25. The combination with a rolling mechanism, of a holder having a plurality of compartments, means for maintaining the material at a substantially constant level in the compartments, a suction-head having a plurality of operating-surfaces, one for each compartment, the surfaces varying in area, means for moving the head from the holder to the rolling mechanism, and a discharging device coöperating with the surfaces, substantially as described.

26. The combination with a rolling mechanism, of a holder having a plurality of compartments, means for maintaining the material at a substantially constant level in the compartments, a suction-head having a plurality of operating-surfaces, one for each compartment, the surfaces varying in area, means for moving the head from the holder to the rolling mechanism, and a scraper coöperating with the surfaces, substantially as described.

812,220. **FEEDING MECHANISM.** WILLIAM S. LUCKETT, East Orange, N. J., assignor to International Cigar Machinery Company, New York, N. Y., a Corporation of New Jersey. Filed May 28, 1904. Serial No. 210,908.

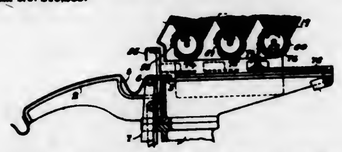

Claim.—1. The combination with a holder comprising a plurality of compartments, of a suction charge-remover operating to move individual charges varying in volume from the holder, and a transferring device on which the charges are deposited and by which they are carried to a common delivery-point, substantially as described.

2. The combination with a rolling mechanism, of a holder, a suction charge-remover operating to remove a plurality of charges varying in volume from the holder, and a transferring device on which the charges are deposited and by which they are carried to the rolling mechanism, substantially as described.

3. The combination with a holder comprising a plurality of compartments, of suction charge-removing means coöperating with each compartment, means for actuating said charge-removing means to remove charges from the compartments, and a transferring device for the charges, substantially as described.

4. The combination with a holder comprising a plurality of compartments, of suction charge-removing means coöperating with each compartment, means for actuating said charge-removing means to remove charges from the compartments, said charge-removing means being constructed to remove charges of varying volume from the different compartments, and a transferring device for the charges, substantially as described.

5. The combination with a rolling mechanism, of a holder comprising a plurality of compartments, suction charge-removing means coöperating with each compartment, mechanism for actuating said charge-removing means to remove charges from the compartments, and a transferring device for conveying the charges to the rolling mechanism, substantially as described.

6. The combination with a rolling mechanism, of a holder comprising a plurality of compartments, suction charge-removing means coöperating with each compartment, said charge-removing means being constructed to remove charges of different volume from each of the compartments, means for actuating said charge-removing means, and a transferring device which receives the charges from the removing means and carries them to the rolling mechanism, substantially as described.

7. The combination with a holder for granular material, of a rotating suction-cylinder operating in the holder and acting to remove charges therefrom, substantially as described.

8. The combination with a holder for granular material, of a charge-remover comprising a plurality of rotary suction-cylinders operating in the holder and acting to remove charges therefrom, and operating means for the cylinders, substantially as described.

9. The combination with a holder comprising a plurality of compartments, of a charge-remover including a rotary suction-cylinder for each compartment, and means for operating the cylinders, substantially as described.

10. The combination with a holder, of a charge-remover comprising a plurality of rotary suction-cylinders having varying operating areas, and means for operating the cylinders, substantially as described.

11. The combination with a holder having a plurality of compartments, of a charge-remover comprising a plurality of rotary suction-cylinders, one for each compartment, said cylinders having varying operating areas, and means for operating the cylinders, substantially as described.

12. The combination with a rolling mechanism, of a holder, a charge-remover comprising a plurality of rotary suction-cylinders, operating means for the cylinders, and a transferring device for receiving the charges from the cylinders and delivering them to the rolling mechanism, substantially as described.

13. The combination with a rolling mechanism, of a holder comprising a plurality of compartments, of a charge-remover including a rotary suction-cylinder for each compartment, means for operating the cylinders, and a transferring device for receiving the charges from the cylinders and delivering them to the rolling mechanism, substantially as described.

14. The combination with a rolling mechanism, of a holder, a charge-remover comprising a plurality of rotary suction-cylinders having varying operating areas, means for operating the cylinders, and a transferring device for receiving the charges from the cylinders and delivering them to the rolling mechanism, substantially as described.

15. The combination with a rolling mechanism, of a holder having a plurality of compartments, of a charge-remover comprising a plurality of rotary suction-cylinders, one for each compartment, said cylinders having varying operating areas, means for operating the cylinders, and a transferring device for receiving the charges from the cylinders and delivering them to the rolling mechanism, substantially as described.

16. The combination with a holder, of a charge-remover comprising a plurality of rotary suction-cylinders, a carrier, and means for reciprocating the carrier beneath the cylinders to receive the charges successively therefrom, substantially as described.

17. The combination with a holder, of a charge-remover comprising a plurality of rotary suction-cylinders having varying operating areas, a carrier, and means for reciprocating the carrier beneath the cylinders to receive the charges successively therefrom, substantially as described.

18. The combination with a rolling mechanism, of a holder, a charge-remover comprising a plurality of rotary suction-cylinders having varying operating areas, a carrier, and means for reciprocating the carrier beneath the cylinders to receive the charges successively therefrom and carry them to the rolling mechanism, substantially as described.

19. The combination with a rolling mechanism, of a carrier, means for causing successive charges of varying volume to be deposited on the carrier, means for moving the carrier with respect to the rolling mechanism, and delivery means, substantially as described.

20. The combination with a rolling mechanism, of a carrier, means for depositing charges of tobacco varying in volume on the carrier, means for moving the carrier into coöperative relation with the rolling mechanism, and delivery means, substantially as described.

21. The combination with a rolling mechanism, of a carrier, means for depositing charges of tobacco varying in volume on the carrier, means for moving the carrier into coöperative relation with the rolling mechanism, and a scraper for removing the charges from the carrier, substantially as described.

22. The combination with a rolling mechanism, of a holder, a suction operating charge-remover operating to remove charges of varying volume from the holder, a carrier on which charges are successively deposited, means for moving the holder into coöperative relation with the rolling mechanism, and delivery means, substantially as described.

23. The combination with a rolling mechanism, of a holder, charge-removing means comprising a plurality of rotary suction-cylinders having operating-surfaces of varying areas, whereby they remove charges of varying volume, a carrier, means for moving the carrier beneath the cylinders whereby the charges are successively deposited on the carrier, and for moving the carrier into coöperative relation with the rolling mechanism, and delivery means, substantially as described.

24. The combination with a rolling mechanism, of a holder, charge-removing means comprising a plurality of rotary suction-cylinders having operating-surfaces of varying areas, whereby they remove charges of varying volume, a carrier, means for moving the carrier beneath the cylinders whereby the charges are successively deposited on the carrier and for moving the carrier into coöperative relation with the rolling mechanism, and a scraper for removing the charges from the carrier, substantially as described.

812,221. **MACHINE FOR USE IN PACKING BISCUITS.** ARTHUR MAGNAN, Montreal, Canada. Filed Mar. 13, 1905. Serial No. 249,966.

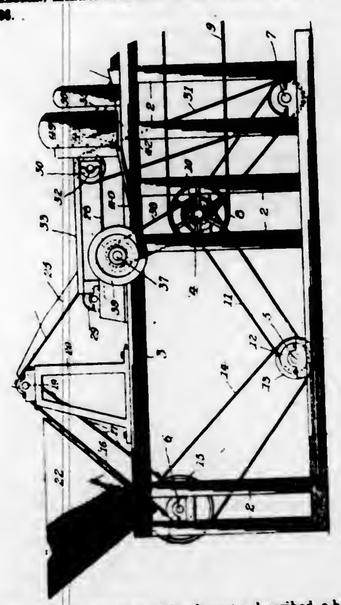

Claim.—1. In a machine of the character described, a hopper, a conveyer, a gravity-chute, a plurality of successively-operable, gravity-stops, oppositely-beveled slides adapted to actuate said stops, and a reciprocatory plunger.

2. In a machine of the character described, a hopper, a conveyer, a gravity-chute, a plurality of intermittently-reciprocatory gravity-stops projecting into said chute, oppositely-beveled slides adapted to lift said stops, and a reciprocatory plunger.

3. In a machine of the character described, a hopper, a yieldable flap near the discharge-orifice thereof, a conveyer, a gravity-chute, a plurality of independently-reciprocatory gates coöperating therewith, slidable and oppositely-beveled members adapted to lift said gravity-operable gate, and a reciprocatory plunger.

4. In a machine of the character described, a hopper, a conveyer, an inclined chute, a belt adapted to travel at less speed than said conveyer, a second chute, gravity-stops projecting into said second chute, oppositely-beveled slides for lifting said stops, and a stacker.

5. In a machine of the character described, a hopper, a conveyer, an inclined chute, a belt therebeyond, a second inclined chute, gravity-operable stops in said chute, reciprocatory means for intermittently lifting said stops, a feed-table, and a stacker operable in conjunction therewith.

6. In a machine of the character described, a hopper, a conveyer, an inclined chute, stops in said chute, means for reciprocating said stops, a feed-table, a stacker, and means operable from the stop-actuating means for actuating said stacker.

7. In a machine of the character described, a hopper, a conveyer, an inclined chute, a belt adapted to travel at a less speed than said conveyer, a second chute, reciprocatory stops operable in series, and independently adapted to project into said second chute, means for operating said stops, and plungers actuated by the stop-operating means.

8. In a machine of the class described, a hopper, a conveyer, an inclined chute, intermittently-operable gravity-stops, reciprocatory plungers, and slidable members adapted to impinge said plungers and to lift said stops.

9. In a machine of the class described, a hopper, a conveyer, an inclined chute, a belt adapted to travel at a less speed than said conveyer, a chute therebeyond, stops in said last-mentioned chute, a plunger, and a slidable member adapted to lift said stops and to actuate said plunger.

10. In a machine of the class described, a hopper, a conveyer, an inclined chute, a belt adapted to travel at less speed than said conveyer, an inclined chute therebeyond, stops in said last chute, a feed-table, spring-actuated gripe on said table, and a stacker adapted to spread said gripe.

11. In a machine of the character described, a conveyer, an inclined chute leading therefrom, a belt, a second chute therebeyond, a plurality of vertically-reciprocatory gates adapted to enter said chute, slides for actuating said gates, a feed-table divided into longitudinal channels, spring-actuated engaging members projecting into said channels, and plungers adapted to be projected into said channels, said plungers being actuated by said slides.

12. In a machine of the character described, feeding means, an inclined chute, stops in said chute, means for reciprocating said stops, and a stacker comprising spring-actuated guides and reciprocatory plunger.

13. In a machine of the character described, feeding means, an inclined chute, stops operable in series in said chute, a stacker comprising spring-actuated guides and reciprocatory plunger, and a reciprocatory member adapted to operate said stops and said plunger.

812,222. **RAILWAY BALLAST-PLOW.** OTTO W. MEISSNER, Chicago, Ill., assignor to Rodger Ballast Car Company, Chicago, Ill., a Corporation of Illinois. Filed Nov. 18, 1905. Serial No. 288,080.

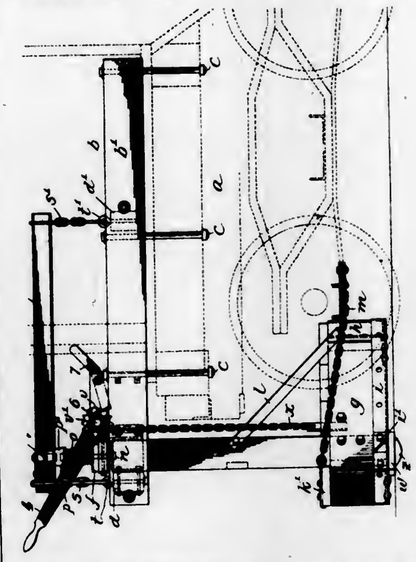

Claim.—1. The combination with a railway ballast-car of a framework secured to the rear end thereof, comprising side and end bars and angle-straps forming vertical passage-ways, a plow, standards rigidly secured to the plow and passing through the vertical passage-ways in the framework, and means for adjusting the standards.

2. The combination with a railway ballast-car of a framework secured to the rear end thereof, a plow, and cushioned means for supporting the plow in the framework.

3. The combination with a railway ballast-car of a framework secured to the rear end thereof having vertical passage-ways therethrough, a plow, standards secured to the plow passing through the vertical passage-ways, a cross-piece connecting the standards above the framework, a fulcrum-bolt having a fulcrum member mounted on the cross-piece, a spring interposed between the fulcrum member and the cross-piece, and a lever fulcrumed in the fulcrum member and connected to the framework at its ends.

4. The combination with a railway ballast-car of a framework, a plow mounted for vertical movement in the framework, cushioned means detachably connected to the framework for securing the plow

in operative position, and means for raising and lowering the plow when the securing means is released.

5. The combination with a railway ballast-car of a framework comprising side and end bars, angle-straps mounted on the side and end bars and forming passage-ways therewith, a plow having standards mounted in the passage-ways, a shaft journaled in the framework, flexible connections between the shaft and plow, means for rotating the shaft, a ratchet-wheel on the shaft, and a pawl on the framework engaging the ratchet.

812,223. CONCRETE PILE, PILLAR, &c. GUSTAVE L. MOUCHEL, London, England. Filed Apr. 3, 1905. Serial No. 253,569.

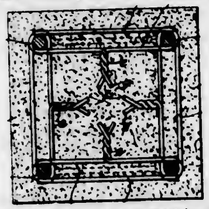

Claim.—1. A concrete structure comprising lengths of metal embedded in concrete, struts between said lengths of metal, and links formed of wire twisted on itself at the side thereof, and projecting ends to said links, substantially as described.

2. A concrete structure comprising lengths of metal embedded in concrete, struts between said lengths of metal and links formed of wire twisted on itself at the side thereof, projecting ends to said links, said projecting ends lying toward the center of the structure, substantially as described.

3. A reinforcing device for concrete structures having embedded rods therein, comprising an elongated link the ends of which are adapted to fit over such rods so as to tie them together, and said link being formed of wire the ends of which are brought together at one side of the link and are twisted around each other and extend in a direction away from the link to form a projecting part of the link.

4. A reinforcing device for concrete structures having embedded rods therein, comprising an elongated link the ends of which are adapted to fit over such rods so as to tie them together, and said link being formed of wire the ends of which are brought together at one side of the link and are twisted around each other and extend in a direction away from the link to form a projecting part of the link, the projecting part being in the plane of the link.

5. A concrete pile comprising lengths of metal embedded in concrete, struts between said lengths of metal, and links formed of wire twisted on itself at the side thereof, projecting ends to said links, said projecting ends lying toward the center of the pile, substantially as described.

6. A concrete beam comprising lengths of metal embedded in concrete, struts between said lengths of metal and links formed of wire twisted on itself at the side thereof, projecting ends to said links, said projecting ends lying toward the center of the beam, substantially as described.

812,224. CAN-TESTING MACHINE. CHARLES B. MCDONALD, Chicago, Ill. Filed Sept. 11, 1905. Serial No. 277,982.

Claim.—1. In a can-testing machine, a sealing-head provided with a fixed sealing-plate and a relatively movable sealing-plate and provided with air-passages opening through the fixed sealing-plate for admitting pressure to a can held between the plates, a slidable rod upon which the movable sealing-plate is mounted, mechanism for moving the slidable rod, a flexible diaphragm in communication with the air-passage through the sealing-head, a plunger, a catch-finger adapted to hold the plunger raised when the diaphragm is in one position and adapted to allow the plunger to fall when the diaphragm is in another position, a cam adapted to actuate the rod-moving mechanism to discharge perfect cans at a predetermined point, a trip-lever adapted to be contacted and thrown by the plunger when the latter is actuated by the leakage of air from an imperfect can, a cam movable with the trip-lever and adapted when moved to actuate the rod-moving mechanism to discharge an imperfect can at a predetermined point, substantially as described.

2. In a can-testing machine, the combination of a revoluble plate having a plurality of sealing-heads radially projecting therefrom, each of the sealing-heads having a fixed sealing-plate and a relatively movable sealing-plate for holding and sealing the cans between the plates, a slidable rod upon which the movable sealing-plate is mounted, mechanism for sliding the rod to lock and release the cans, a diaphragm adapted to be actuated by the pressure admitted to the cans, a plunger adapted to be held in one position when full pressure is exerted on the diaphragm, and adapted to be moved to a different position when the reduced pressure of a leaky can is exerted on the diaphragm, a trip-lever adapted to be contacted and thrown by the plunger when in one position, a cam-finger connected and movable with the trip-lever and adapted when moved to actuate the mechanism controlling the slidable rod to discharge one kind of can at a predetermined point, and a cam adapted to actuate the mechanism controlling the slidable rod to discharge the other class of cans at a predetermined point, substantially as described.

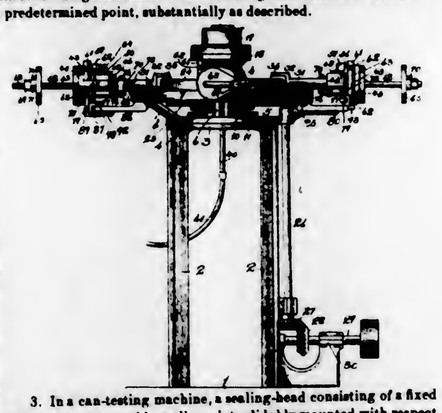

3. In a can-testing machine, a sealing-head consisting of a fixed sealing-plate, a movable sealing-plate slidably mounted with respect to the fixed sealing-plate, an air-passage opening through the fixed sealing-plate and adapted to discharge compressed air into a can, a diaphragm in communication with the air-passage, a stud with a beveled end adapted to be raised and lowered by the movements of the diaphragm, a catch-finger provided with a beveled end adapted to abut against the beveled end of the stud, a plunger provided with a shoulder adapted to be engaged by the catch-finger to hold the plunger in raised position when pressure is exerted on the diaphragm to raise the stud and outwardly project the catch-finger, means actuated by the plunger when in lowered position for discharging imperfect cans at a predetermined point, and means for discharging perfect cans at a predetermined point, substantially as described.

4. In a can-testing machine, a sealing-head consisting of a fixed sealing-plate, a movable sealing-plate slidably mounted with respect to the fixed sealing-plate, an air-passage opening through the fixed sealing-plate and adapted to discharge compressed air into a can, a diaphragm in communication with the air-passage, a stud with a beveled end adapted to be raised and lowered by the movements of the diaphragm, a catch-finger provided with a beveled end adapted to abut against the beveled end of the stud, a plunger provided with a shoulder adapted to be engaged by the catch-finger to hold the plunger in raised position when pressure is exerted on the diaphragm to raise the stud and outwardly project the catch-finger, a lever for moving the movable sealing-plate, a cam for throwing the lever to discharge perfect cans at a predetermined point, a trip mechanism adapted to be actuated by the projected plunger to throw the lever and discharge imperfect cans at a different predetermined point, substantially as described.

5. In a can-testing machine, a sealing-head adapted to receive and pneumatically seal a can and provided with an air-passage for admitting compressed air to the interior of the can, a flexible diaphragm having one of its surfaces in direct communication with the air-passage leading to the can for normally causing pressure to act on one side only of the diaphragm for outwardly projecting the same, the pressure being equal within the can and against the diaphragm, mechanism actuated by a retraction of the diaphragm due to a decrease of pressure within the can and against the diaphragm for discharging an imperfect can at a predetermined point, means for holding the can against the sealing-head, and mechanism for discharging the perfect cans at a predetermined point, substantially as described.

6. In a can-testing machine, a sealing-head adapted to receive and pneumatically seal a can and provided with an air-passage for admitting compressed air to the interior of the can, a flexible diaphragm having one of its surfaces in direct communication with the air-passage leading to the can for normally causing pressure to act on one side only of the diaphragm for outwardly projecting the same, the pressure being equal within the can and against the diaphragm, a stud carried on the uncompressed side of the diaphragm, and mechanism actuated by the fall of the stud due to the retraction of the diaphragm for discharging the imperfect cans at a predetermined point, means for holding the can against the sealing-head, and mechanism for discharging perfect cans at a predetermined point, substantially as described.

7. In a can-testing machine, a sealing-head adapted to receive and pneumatically seal a can and provided with an air-passage for admitting compressed air to the interior of the can, a flexible diaphragm having one of its surfaces in direct communication with the air-passage leading to the can for normally causing pressure to act on one side only of the diaphragm for outwardly projecting the same, the pressure being equal within the can and against the diaphragm, a stud resting upon the outer side of the diaphragm, a spring surrounding the stud and adapted to equalize the pressure on both sides of the diaphragm, and mechanism actuated by the retraction of the stud for discharging the imperfect cans at a predetermined point, means for holding the can against the sealing-head, and mechanism for discharging the perfect cans at a predetermined point, substantially as described.

8. In a can-testing machine, a sealing-head adapted to receive and pneumatically seal a can and provided with an air-passage leading to the interior of the can, a diaphragm having its inner face only in direct communication with the air-passage for receiving thereon a pressure equal to the pressure within the can, a plunger adapted to be actuated by movements of the diaphragm due to a decrease of pressure thereon caused by leakage from the can, and mechanism actuated by the plunger for releasing an imperfect can at a predetermined point, means for holding the can against the sealing-head, and mechanism for releasing perfect cans at a different predetermined point, substantially as described.

812,225. BOLT-CLIPPER AND PUNCH. JOHN L. PAINTER, Bellevue, Ohio. Filed Nov. 7, 1905. Serial No. 286,230.

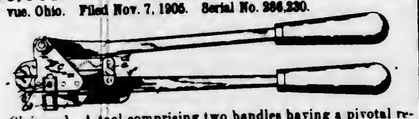

Claim.—1. A tool comprising two handles having a pivotal relation to each other, one of said handles having a fixed cutting-jaw at one end thereof, a movable jaw arranged between said handles, and means for operating said jaw, whereby it will be given an oblique movement relative to the fixed jaw.

2. A tool comprising two handles having a pivotal relation to each other, one of said handles having a fixed cutting-jaw and a punch-socket at one end thereof, a punch slidably mounted in said jaw, a movable jaw arranged between said handles, means for operating said jaw whereby it will be given an oblique movement relative to the fixed jaw and means for lifting said punch.

3. A tool comprising an upper handle and a lower handle having a pivotal relation to each other said lower handle having a fixed cutting-jaw at one end thereof, a movable jaw arranged between said handles and pivotally connected to the lower handle, means for operating said jaw by frictional contact with the upper handle, and a spring bearing against said movable jaw and lift.

4. A tool comprising an upper handle and a lower handle having a pivotal relation to each other, said lower handle having a fixed cutting-jaw and a punch-socket at one end thereof, a movable jaw arranged between said handles, said jaw adapted to move obliquely relative to the fixed jaw, means for operating said jaw from the upper handle said means comprising a roller-bearing, and means for lifting said punch.

5. A tool comprising an upper movable element and a lower fixed element, said fixed element having a cutting-jaw, and punch-socket arranged therein, a punch slidably mounted in said socket, a spring adapted to lift said punch, a movable jaw mounted between said elements and adapted to depress said punch said jaw pivoted on said fixed element and connected with said movable element with an antifrictional bearing therebetween.

812,226. DEVICE FOR OPERATING MANDREL-BARS. PETER C. PATTERSON, McKeesport, Pa., assignor to National Tube Company, Pittsburg, Pa., a Corporation of New Jersey. Filed Feb. 4, 1904. Serial No. 192,080.

Claim.—1. In apparatus for operating mandrel-bars, the combination with the housings, of a pair of grooved rolls mounted therein, movable bearings for one of said rolls, an adjustable saddle-piece, and springs between said saddle-piece and the movable bearings.

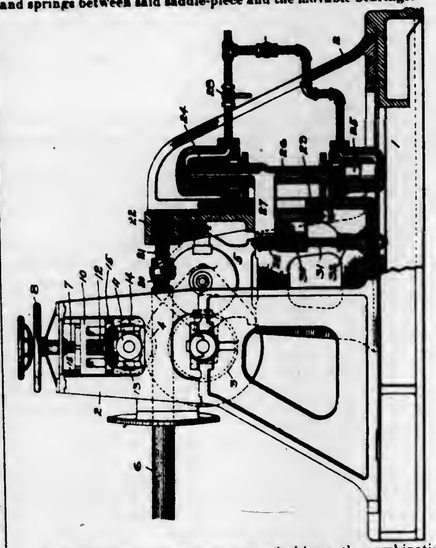

2. In apparatus for operating mandrel-bars, the combination with the housings, of a pair of grooved rolls mounted therein, movable bearings for one of said rolls, trunnions on said bearings, sliding bearings movable vertically in said housings and provided with seats for said trunnions, and adjusting means for said bearings.

3. In apparatus for operating mandrel-bars, the combination with the housings, of a pair of grooved rolls mounted therein, movable bearings in one of said rolls, trunnions on said bearings, sliding bearings vertically movable in said housings and provided with seats for said trunnions, adjusting means for said bearings, and springs between said bearings and adjusting means.

4. In apparatus for operating mandrel-bars, the combination of housings, positively-driven grooved rolls mounted therein, an abutment to the rear of said rolls and arranged to move vertically, and power mechanism connected to said abutment and arranged to positively draw the same downwardly, and to automatically raise the same.

5. In apparatus for operating mandrel-bars, the combination of housings, positively-driven grooved rolls mounted therein, a vertically-movable abutment to the rear of said rolls, and a vertical reciprocating motor connected to said abutment and arranged to positively draw the same downwardly and to automatically raise the same.

6. In apparatus for operating mandrel-bars, the combination with positively-driven grooved rolls, of a sliding abutment to the rear thereof, differential power-cylinders, rigidly-connected pistons for said cylinders, and connections from said pistons to said abutment for moving the same.

7. In apparatus for operating mandrel-bars, the combination with positively-driven grooved rolls, of a vertically-movable abutment to the rear thereof, vertically-arranged differential power-cylinders, and connections between the same and said abutment for raising and lowering the same

8. In apparatus for operating mandrel-bars, the combination with driven grooved rolls of a vertically-movable abutment to the rear thereof, a motor connected to said abutment for raising and lowering the same, a guide-rod passing through an opening in said abutment, and cushioning-springs on said rod both above and below said abutment.

9. In apparatus for operating mandrel-bars, the combination with driven grooved rolls of a vertically-movable abutment to the rear thereof, a pair of vertically-arranged power-cylinders of different sizes, a piston-rod therefor, connections between the piston-rod and said abutment, means for maintaining constant pressure in the smaller of said cylinders, and means for admitting pressure to, and releasing same from, the larger of said cylinders.

812,227. **ELASTIC METAL FELLY.** ALBERT PROST, Hanover, Germany. Filed Jan 12, 1905. Serial No. 240,778.

Claim.—1. An elastic metallic felly for vehicle-wheels comprising in combination a concave plate *b* and a curved plate leading inwardly from one of the edges of said concave plate.

2. An elastic metallic felly for vehicle-wheels comprising in combination a concave plate *b* and a curved plate leading inwardly from one of the edges of said concave plate and a cylindrical plate bridging said concave plate.

3. An elastic metallic felly for vehicle-wheels comprising in combination a concave plate *b* and a curved plate leading inwardly from one of the edges of said concave plate and an annular rod supporting the other edge of said concave plate.

4. An elastic metallic felly for vehicle-wheels comprising a concave plate *b*, a convex plate *c* and a curved plate extending from one edge of plate *b* to one edge of plate *c*.

5. An elastic metallic felly for vehicle-wheels comprising a concave plate *b*, a convex plate *c* and a curved plate extending from one edge of plate *b* to one edge of plate *c* and cylindrical plates *d e* bridging said plates *b c* respectively.

812,228. **FLUID-PRESSURE METAL-WORKING MACHINE.** CASIMIR VON PHILP, Bethlehem, Pa., assignor to The Bethlehem Steel Company, South Bethlehem, Pa., a Corporation of Pennsylvania. Filed Aug. 24, 1904. Serial No. 223,014.

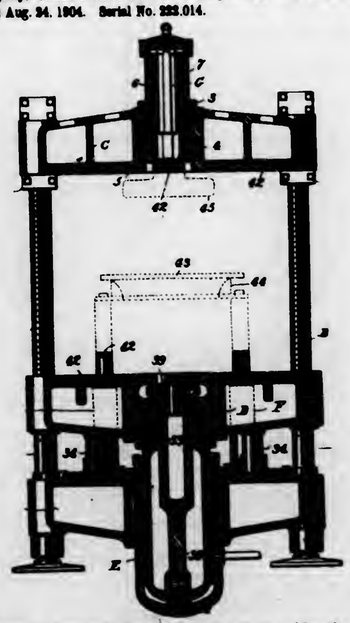

Claim.—1. In a fluid-pressure metal-working machine, the combination with a platen, of a fluid-pressure cylinder and plunger mounted in said platen, a bed-plate, a plurality of jacks upon the bed-plate for supporting the work, and means for moving said jacks with relation to said platen, for the purpose set forth.

2. In a fluid-pressure metal-working machine, the combination with a platen, of a fluid-pressure cylinder mounted thereon, a bed-plate, tracks upon said bed-plate, jacks for supporting the work mounted upon said tracks, and means for moving said jacks along said tracks, for the purpose set forth.

3. In a fluid-pressure metal-working machine, the combination with a platen, of a fluid-pressure cylinder mounted thereon, a bed-plate, tracks upon said bed-plate, jacks for supporting the work mounted upon said tracks, and screw-and-nut connections between said bed-plate and said jacks, for the purpose set forth.

4. In a fluid-pressure metal-working machine, the combination with a platen, of a fluid-pressure cylinder mounted thereon, a bed-plate, radial tracks upon said bed-plate, jacks for supporting the work mounted upon said tracks, and means for moving said jacks along said tracks, for the purpose set forth.

5. In a fluid-pressure metal-working machine, the combination with a platen, of a fluid-pressure cylinder mounted thereon, a bed-plate, radial tracks upon said bed-plate, jacks for supporting the work mounted upon said tracks, and screw-and-nut connections between said bed-plate and said jacks, for the purpose set forth.

6. In a fluid-pressure metal-working machine, the combination with a platen, of a fluid-pressure cylinder mounted thereon, a bed-plate, tracks upon said bed-plate, fluid-pressure jacks for supporting the work mounted upon said tracks, and means for moving said jacks along said tracks, for the purpose set forth.

7. In a fluid-pressure metal-working machine, the combination with a platen, of a fluid-pressure cylinder mounted thereon, a bed-plate, tracks upon said bed-plate, fluid-pressure jacks for supporting the work mounted upon said tracks, and screw-and-nut connections between said bed-plate and said jacks, for the purpose set forth.

8. In a fluid-pressure metal-working machine, the combination with a platen, of a fluid-pressure cylinder mounted thereon, a bed-plate, radial tracks upon said bed-plate, fluid-pressure jacks for supporting the work upon said tracks, and means for moving said jacks along said tracks, for the purpose set forth.

9. In a fluid-pressure metal-working machine, the combination with a platen, of a fluid-pressure cylinder mounted thereon, a bed-plate, radial tracks upon said bed-plate, fluid-pressure jacks for supporting the work mounted upon said tracks, and screw-and-nut connections between said bed-plate and said jacks, for the purpose set forth.

10. In a fluid-pressure metal-working machine, the combination with a bed-plate, of upper and lower platens supported thereon, a fluid-pressure working cylinder mounted in said upper platen, a central plunger for supporting the work, and means for raising said plunger, for the purpose set forth.

11. In a fluid-pressure metal-working machine, the combination with a bed-plate, of upper and lower platens supported thereon, a fluid-pressure cylinder mounted in the upper platen, jacks for supporting the work mounted at a distance from the center, and a central plunger, for the purpose set forth.

12. In a fluid-pressure metal-working machine, the combination with a bed-plate, of upper and lower platens supported thereon, a fluid-pressure cylinder having its plunger connected to said lower platen, said plunger being hollow, and a second plunger acting as a support for the work mounted within the first plunger, for the purpose set forth.

13. In a fluid-pressure metal-working machine, the combination with a bed-plate, of upper and lower platens supported thereon, a fluid-pressure cylinder having its plunger connected to said lower platen, said plunger being hollow, and a second plunger acting as a support for the work mounted within the first plunger and movable independently thereof, for the purpose set forth.

14. In a fluid-pressure metal-working machine, the combination with a bed-plate, of upper and lower platens mounted thereon, a fluid-pressure cylinder mounted in the upper platen, a fluid-pressure cylinder having its plunger connected to the lower platen, said plunger being hollow, fluid-pressure jacks for supporting the work mounted upon said bed-plate and extending above the lower platen, and a central plunger for supporting the work mounted within the aforesaid plunger, for the purpose set forth.

15. In a fluid-pressure metal-working machine, the combination with a bed-plate, of upper and lower platens supported thereon, a fluid-pressure working cylinder slidably mounted in a slot in said upper platen, said cylinder having lugs bearing upon the top of said platen, and other lugs entering grooves in the sides of said slot, said grooves being located between the top and bottom of said upper platen, for the purpose set forth.

16. In a fluid-pressure metal-working machine, the combination with a bed-plate, of upper and lower platens supported thereon, a fluid-pressure working cylinder slidably mounted in a slot in said upper platen, said cylinder having lugs bearing upon the top of said platen, other lugs entering grooves in the sides of said slot, said grooves being located between the top and bottom of said upper platen, and set-screws carried by the lugs bearing upon the top of the platen and adapted to engage with said platen, for the purpose set forth.

17. In a fluid-pressure metal-working machine, the combination with a bed-plate, of upper and lower platens supported thereby, a fluid-pressure working cylinder mounted in the upper platen, said cylinder comprising an outer cylinder, a plunger therein, and a guide arranged within the plunger for preventing rotation of said plunger with relation to said outer cylinder, for the purpose set forth.

18. In a fluid-pressure metal-working machine, the combination with a bed-plate, of upper and lower platens supported thereby, and a fluid-pressure working cylinder mounted in the upper platen, said cylinder comprising an outer cylinder, a hollow plunger therein, a guide fixed to the head of said cylinder and extending within said plunger, said guide having longitudinal grooves, and lugs upon said plunger extending within said grooves, for the purpose set forth.

19. A fluid-pressure cylinder comprising an outer cylinder, a hollow plunger therein, a guide projecting from the cylinder-head within said plunger, said guide having longitudinal grooves, and lugs secured to said plunger and projecting into said grooves, for the purpose set forth.

812,229. **SASH-LOCK.** JAMES POWER, Methuen, Mass. Filed Mar. 7, 1905. Serial No. 248,784.

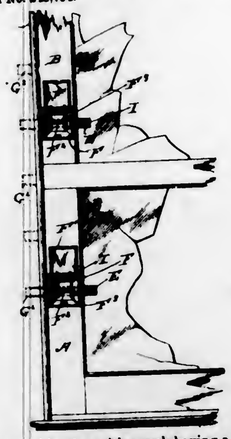

Claim.—The combination with a sash having a horizontal bore and a recess communicating with said bore, of a sleeve fitting in said recess provided with horizontal and vertical slots communicating with each other, a box fitting in said recess having slots formed in its rear wall, corresponding with the slots of the sleeve, a bolt provided with annular ribs arranged in said sleeves, a spring arranged at one end of the sleeve, a pin secured to the bolt extending through the slots of the sleeve and box, and provided with a head, and a hinged cover adapted to close said box, for the purpose described.

812,230. **EMPTYING APPARATUS FOR CLAY-BINS.** CHARLES W. RAYMOND, Dayton, Ohio. Filed Apr. 6, 1905. Serial No. 254,147.

Claim.—1. In an emptying apparatus for storage-bins, a feed chain or carrier revolving over the floor of the bin, means for imparting lateral movement to said feed-chain during its revolving movement, and automatic means for reversing the lateral movements during the revolving movement.

2. In an emptying apparatus for bins, a feed-chain revolving over the floor of the bin, sliding sprocket-wheels upon which said feed-chain is mounted, a yoke engaging one of said sprocket-wheels, a screw-shaft upon which the said yoke is mounted, and means for reversing the direction of rotation of the screw-shaft to reverse the lateral movements of the feed-chain, through the yoke.

3. In an emptying apparatus for bins, the combination with a bin, of a feed-chain revolving over the floor thereof, sprocket-wheels upon which said feed-chain is mounted, shafts upon which said sprocket-wheels are slidingly mounted, a yoke engaging one of said sprocket-wheels, a screw-shaft upon which said yoke is mounted, clutch and pulley mechanism on said screw-shaft, and means for throwing said clutch to reverse the movements of the screw-shaft and therewith the yoke.

4. In an emptying apparatus for storage-bins, a clay-bin, a feed-chain revolving over the floor of said bin, laterally-sliding sprocket-wheels upon which said chain is mounted, a controlling-yoke engaging one of said sprocket-wheels, a screw-shaft upon which said yoke is mounted, clutch and pulley devices on said screw-shaft, means for rotating the pulleys in opposite directions, arms engaging said yoke at the limit of its movement in either direction, and mechanism between said arms and said clutch devices whereby the clutch is shifted to reverse the movement of the screw-shaft.

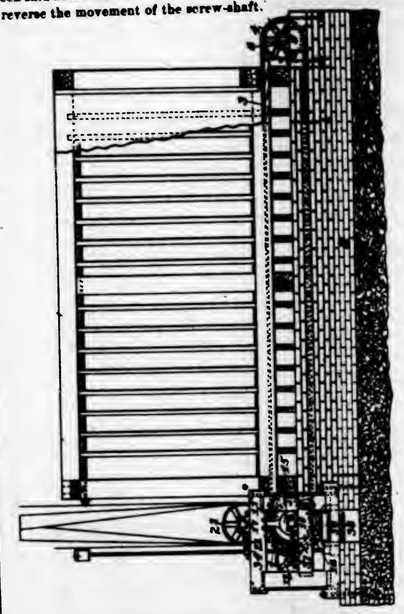

5. In an emptying apparatus for storage-bins, a bin, a feed-chain revolving over the floor of said bin, laterally-movable sprocket-wheels supporting said feed-chain, a controlling-yoke engaging one of said sprocket-wheels, a screw-shaft upon which said yoke is mounted, clutch and pulley mechanism mounted upon said screw-shaft and whereby the direction of rotation of the screw-shaft is reversed, means for reversing said direction at the limit of the movement of the yoke in either of its lateral directions, and an off-conveyer to receive from the feed chain or carrier.

812,231. **PULVERIZER.** GEORGE RAYMOND, Chicago, and JOHN H. FINLAY, Warsaw, Ill. Filed July 26, 1902. Renewed May 31, 1905. Serial No. 263,182.

Claim.—1. In a pulverizing-mill, the combination with a rotating drum having pockets, of peripheral openings in said pockets,

peripheral scoops adapted to guide material to said openings, tumblers confined within said pockets, and a screen surrounding said drum and rotating therewith, substantially as described.

2. In a pulverizing-mill, the combination with a rotating drum, of pockets in said drum, peripheral openings in said pockets, tumbler-balls confined within said pockets, said pockets being provided with inclines 15 and sockets 16, whereby said balls are carried in said sockets during the upward part of their revolution and with raceways to guide the motion of said tumblers, and a cylindrical screen surrounding said drum and rotating therewith, substantially as described.

3. In a pulverizing-mill, the combination with a rotating drum, of pockets in said drum, peripheral openings in said pockets, tumbler-balls confined within said pockets, said pockets being provided with inclines 15 and sockets 16, whereby said balls are carried in said pockets during the upward part of their revolution and with raceways to guide the motion of said tumblers, a cylindrical screen surrounding said drum and rotating therewith, and scoops adapted to guide material to said openings, substantially as described.

4. In a pulverizing-mill, the combination with hub portions 7 of similar drum-sections 8, provided with pockets 10, said drum-sections being displaced angularly, and tumblers confined within said pockets, substantially as described.

5. In a pulverizing-mill, the combination with hub portions 7 of similar drum-sections 8, provided with pockets 10, said drum-sections being displaced angularly, wooden wedges whereby said drum-sections are keyed to said hub portions, and tumblers confined within said pockets, substantially as described.

812,232. **INJECTOR.** LEVI RHODES, Spokane, Wash., assignor to Motor Traction Company, Spokane, Wash., a Corporation. Filed Apr. 21, 1904. Serial No. 204,283.

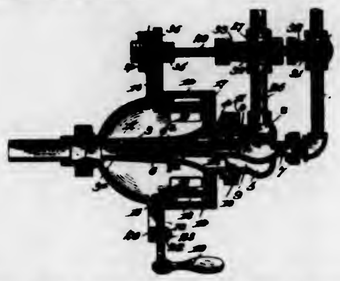

Claim.—1. In an injector, the combination with the air-nozzle having air-admission ports, of a revoluble shutter for controlling said ports, means for operating the shutter an oil-nozzle projecting within said air-nozzle, an oil-inlet having a valve, a steam-nozzle projecting within said oil-nozzle, a steam-inlet having a valve, and means operated by the shutter to simultaneously control said valves, substantially as described.

2. In combination with a rotary air-controlling shutter of an injector having an oil and a steam inlet, of a single valve-stem for controlling both of said inlets, and means whereby the operation of the shutter will operate said stem, substantially as and for the purpose set forth.

3. In an injector, the combination with an air, an oil, and a steam nozzle, of a rotary shutter for controlling the admission of air to the air-nozzle, having a rack, a pinion operated by said rack, having a screw-threaded bore, a valve-stem for controlling the flow of both oil and steam, having screw-threads thereon adapted to gear with the threaded bore of said pinion, substantially as and for the purpose set forth.

812,233. **TRIPOD-HEAD.** MONTAGUE C. ROCK, Sunnyside, England. Filed May 16, 1905. Serial No. 260,660.

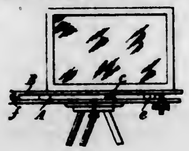

Claim.—1. In a device for the purpose set forth, the combination of a plate member adapted to be secured to the stand or tripod, a second plate member adapted to hold a camera and furnished at one end with clip-pieces between which and said end the tripod plate member may be introduced when the plates are set at right angles, a stop on the tripod plate member, means for holding the camera plate member up to this stop when the plate members are at right angles and means for securing the plate members together when superposed in parallel planes, substantially as described.

2. In a device for the purpose set forth, the combination of the plate member A adapted to be secured to the stand or tripod and having at one end the retaining-flange *g* and at the other end the slot *i*, and the plate member B adapted to hold a camera and having one end adapted to engage beneath said flange *g* and the other end provided with the clip-pieces *l* and the screw and nut *k*, the whole arranged and adapted to operate substantially as described and illustrated.

812,234. **WATCH.** HERMANN ROOST, St. Imier, Switzerland. Filed Jan. 12, 1904. Serial No. 188,680.

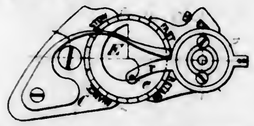

Claim.—In a watch-movement, the combination with a cock having a circular recess formed in its upper sufrace, of a disk resting loosely in said recess, which disk has an eccentric opening, a regulator pivoted to said cock and having an arm which extends loosely over said disk, a pin fixed at the end of said arm and extending into the opening in the disk, a spring attached to the cock and bearing against the arm, thereby pressing the pin on the end of the arm against the edge of the opening in the disk, said spring also extending over the upper surface of the disk, said spring and arm holding the disk in the recess the cock having a portion on each side of the recess cut away to afford access to the disk, substantially as set forth.

812,235. **MERCHANDISE-HOOK.** JOSEPH A. A. ROULEAU, St. Cunegonde, Canada, assignor of one-half to Charles Hugh James Bowden, Montreal, Canada. Filed Nov. 24, 1905. Serial No. 288,962.

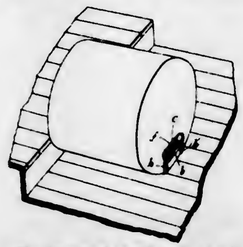

Claim.—1. The improved merchandise-hook consisting of a main bar with a plurality of bent fingers at one side, a handle portion at the opposite side and a guard projection on the bar substantially as described.

2. The improved merchandise-hook consisting of a bearing-bar with a pair of fingers at one side such fingers being disposed with the portions thereof contiguous to the bar in the same plane as the bearing-face of the latter, and the sides of their bent ends toward such bar serrated, and a handle portion upon the side of the bar opposite to the finger and extending in the plane of the said opposite side for the purpose of providing a space between the plane in which the handle lies and the plane of the said bearing-face of the bar substantially as described.

812,236. **JACK-CORD DISTRIBUTER.** BENNO SALMANN, Berlin, Germany. Filed Nov. 16, 1905. Serial No. 287,734.

Claim.—1. In a telephone-exchange, the combination with a plurality of distribution-switchboards each provided with a hearing-plug, of a plurality of connection-switchboards each provided with a jack, a jack-cord distributer comprising two rows of binding-posts or the like, a plurality of cords connecting the hearing-plugs in said plurality of distribution-switchboards with the binding-posts or the like in the one row of said jack-cord distributer, a plurality of jack-cords connecting the jacks in said plurality of connection-switchboards with the binding-posts or the like in the other row of said jack-cord distributer, shiftable cords for connecting at will the several binding-posts or the like of the one row with those of the other row in said jack-cord distributer, and means for fastening the ends of said shiftable cords on the binding-posts or the like in said jack-cord distributer.

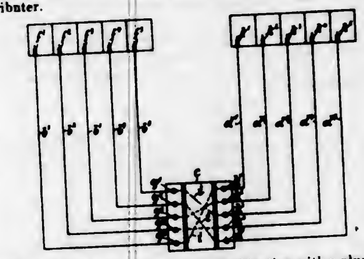

2. In a telephone-exchange, the combination with a plurality of distribution-switch-boards each provided with a hearing-plug, of a plurality of connection-switchboards each provided with a jack, a jack-cord distributer comprising two rows of binding-posts or the like, a plurality of cords shiftably connecting the hearing-plugs in said plurality of distribution-switchboards with the binding-posts or the like in the one row of said jack-cord distributer, a plurality of jack-cords shiftably connecting the jacks in said plurality of connection-switchboards with the binding-posts or the like in the other row of said jack-cord distributer, shiftable cords for connecting at will the several binding-posts or the like of the one row with those of the other row in said jack-cord distributer, and means for fastening the ends of said shiftable cords on the binding-posts or the like in said jack-cord distributer.

812,237. **TONE-MODULATING DEVICE FOR PIANOS.** JOSE SAMPERE, New York, N. Y., assignor to The Regina Company, Rahway, N. J., a Corporation of New Jersey. Filed Aug. 15, 1904. Serial No. 220,800.

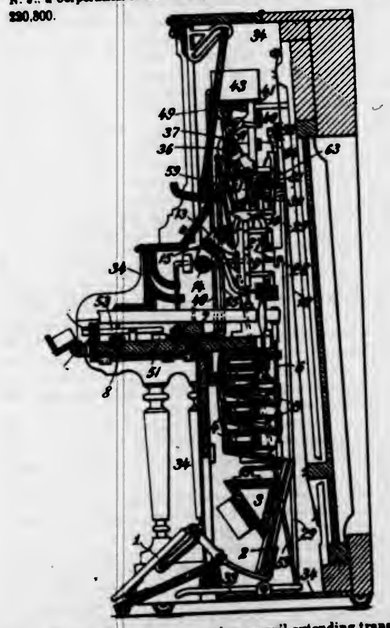

Claim.—1. In a piano, a continuous rail extending transversely of the strings, a sectional rail spaced from said continuous rail and extending parallel therewith, and pneumatically-operated devices for moving the sections of the second-named rail individually, the actuating portions of said devices being arranged between the continuous rail and the sectional rail.

2. In a piano, a continuous rail extending transversely of the strings, a sectional rail spaced from said continuous rail and extending parallel therewith, and pneumatically-operated devices for moving the sections of the second-named rail individually, the actuating portions of said devices being arranged between the continuous rail and the sectional rail, and an operating device for the continuous rail, the actuating portions of said device being located on the side of the said rail opposite to that on which the first-named operating devices are placed.

812,238. **WINDOW-VENTILATOR.** DIEDRICH SCHAFER, Sacramento, Cal. Filed May 3, 1905. Serial No. 258,621.

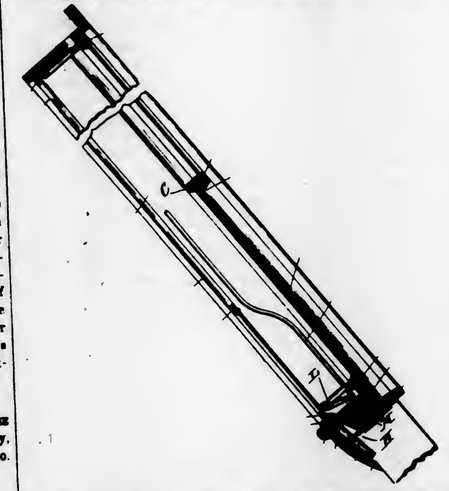

Claim.—1. In a window-ventilator, a horizontal screen-frame secured to the top rail of the upper sash, and a vertical screen-frame acting in conjunction with said horizontal frame to form an insect and dust proof deflector for the top of the casing, substantially as shown and described.

2. In a window-ventilator, a horizontal screen-frame secured to the top rail of the upper sash, and a vertical screen-frame secured to the free edge of said horizontal frame, substantially as shown and described.

3. In a window-ventilator, a horizontal screen-frame secured to the top rail of the upper sash, a vertical screen-frame secured to the free edge of said horizontal frame, and a housing in the top of the casing to receive said vertical frame, substantially as shown and described.

4. In a window-ventilator, a frame slidably mounted in the window-casing, a screen-frame secured to the lower edge of said frame, a box or casing beneath the window-sill to receive said screen-frame, and a screen-frame secured to the bottom rail of the lower sash to bridge the space between the sash and the first-named frame, substantially as shown and described.

5. In a window-ventilator, a frame slidably mounted in the window-casing, a screen-frame hinged to the lower edge of said frame, a box or casing beneath the window-sill to receive said screen-frame, and a horizontal screen-frame secured to the bottom rail of the lower sash to bridge the space between said sash and the first-named frame, substantially as shown and described.

6. In a window-ventilator, a frame slidably mounted in the window-casing, a screen-frame secured to the lower edge of said frame, a box or casing beneath the window-sill to receive said screen-frame, a screen-frame secured to the bottom rail of the lower sash, a screen-frame hinged to the last-named screen-frame, and grooves in the window-casing to guide said hinged frame, substantially as shown and described.

7. In a window-ventilator, a frame slidably mounted in the window-casing, a screen-frame hinged to the lower edge of said frame, a box or casing beneath the window-sill to receive said screen-frame,

a screen-frame secured to the bottom rail of the lower sash, a screen-frame hinged to the last-named screen-frame, and the window-casing formed with grooves to guide said hinged frame, substantially as shown and described.

812,239. **REPLANTING ATTACHMENT FOR CULTIVATORS.** WILLIAM J. SUMMER, Aripo, Iowa. Filed Dec. 5, 1905. Serial No. 290,449.

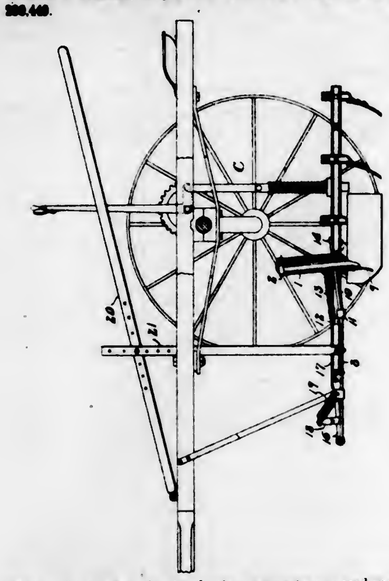

Claim.—1. A supporting-bar having an aperture, a seed-receptacle slidably engaging said bar, and bottom members in said receptacle adjacent to the upper and under sides of the bar and having apertures adapted for alternate registry with the aperture in the bar.

2. A supporting-bar having an aperture, a slidably-supported seed-receptacle having apertured bottom members adjacent to the upper and under sides of the bar, spring means for moving the receptacle in a forward direction upon the bar, and an earth-engaging member connected with the receptacle.

3. A supporting-bar, a seed-receptacle slidable thereon, means for limiting the forward and rearward movement of the receptacle, and means for normally forcing the receptacle in a forward direction.

4. A supporting-bar, a seed-receptacle slidable thereon, means for limiting the forward and rearward movement of the receptacle, spring means for normally forcing the receptacle in a forward direction, and a furrow-opener connected with the receptacle for engagement with the earth to anchor said receptacle for rearward movement against the tension of the spring.

5. A hinged supporting-bar, a seed-receptacle slidable thereon, means for limiting the forward and rearward movement of the receptacle, a spring for normally forcing the receptacle in a forward direction, and a furrow-opener connected with the receptacle for engagement with the earth to anchor said receptacle for rearward movement against the tension of the spring.

6. A hinged supporting-bar, spring means for normally elevating the free end of the supporting-bar, a spring-actuated seed-receptacle slidably engaging the supporting-bar, and an earth-engaging blade connected with the receptacle.

7. A supporting-bar having stop-lugs, a seed-receptacle slidably engaging the bar between the lugs, a spring connecting the receptacle with one of the lugs, and an earth-engaging blade upon the receptacle.

8. A supporting-bar having stop-lugs, a seed-receptacle slidably engaging the bar between the lugs, a spring connecting the receptacle with one of the lugs, an earth-engaging blade connected with the receptacle and having a shank, and a sleeve upon said shank encircling the supporting-bar.

9. A supporting-bar, spring means for normally elevating the free end of said bar, a spring-actuated seed-receptacle slidable upon the bar and having an earth-engaging member, and lever means for depressing the supporting-bar against the tension of the lifting-spring.

10. A bracket having an upright, a supporting-bar hingedly connected with the bracket, a spring connecting the supporting-bar with the upright, a spring-actuated seed-receptacle slidably engaging the supporting-bar and having an earth-engaging member, and lever means for depressing the supporting-bar.

11. A bracket comprising two adjustably-connected members, one of said members being provided with an upright, a supporting-bar hingedly connected with one of the members of the bracket, a spring connecting the supporting-bar with the upright, a spring-actuated seed-receptacle slidably engaging the supporting-bar and having an earth-engaging member, and lever means for depressing the supporting-bar.

812,240. **OPERATING-TABLE.** JOSEPH SCHONTYL, CHRISTIAN JAEGER, and PAUL WALSLEBEN, Brooklyn, N. Y., assignors to David Frank, Brooklyn, N. Y., and John Trounstine, New York, N. Y. Filed Mar. 10, 1903. Serial No. 147,045.

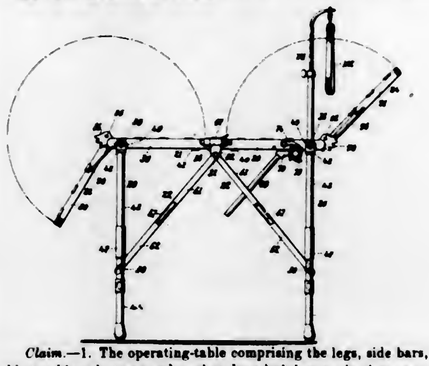

Claim.—1. The operating-table comprising the legs, side bars, table-top hinged at one end, and rack-and-pinion mechanism operable by a crank for raising and lowering said top from its other end, said top being normally set in between said side bars, and said side bars and top being independently composed of hinged sections in end-to-end relation with the pintles of the hinges in line with each other and about on a line with the transverse center of the table so that they may be together folded downwardly and also so that said top may be independently given the position of a double incline for certain operations, combined with foldable means adjacent to the center of the table for, after the table-top has been raised to an inclined position, firmly supporting the hinged end section of said top in its inclined position while the other section of said top is being lowered at its outer end by said rack-and-pinion mechanism to create the double incline, the foldable head and foot frames at the ends of the table and one of which is carried by the free end of said top, and means for adjusting the inclination of said frames; substantially as set forth.

2. The operating-table comprising the legs, side bars, table-top hinged at one end, and rack-and-pinion mechanism operable by a crank for raising and lowering said top from its other end, said side bars and top being independently composed of hinged sections in end-to-end relation with the pintles of the hinges about on a line with the transverse center of the table so that they may be together folded downwardly and also so that said top may be independently given the position of a double incline for certain operations, combined with foldable means adjacent to the center of the table for, after the table-top has been raised to an inclined position, firmly supporting the hinged end section of said top in its inclined position while the other section of said top is being lowered at its outer end by said rack-and-pinion mechanism to create the double incline, the foldable head and foot frames at the ends of the table and one of which is carried by the free end of said top, and means for adjusting the inclination of said frames; substantially as set forth.

3. The operating-table comprising the side bars, the hinged legs composed of hinged foldable sections, the foldable leg-braces hinged at their upper ends at about the center of said side bars and adapted at their lower ends to be detachably connected to said legs, the table-top hinged at one end, and means for raising and lowering said top from its other end, said side bars and top each being independently composed of sections hinged together at about the transverse center of the table so that they may be together folded downwardly and also so that said top may be independently given the position of a double incline for certain operations, combined with means adjacent to the center of the table for supporting the hinged end section of said top in an upwardly-inclined position while the other section of said top is inclined downwardly, means connected with said side bars for locking their sections together at their joint in horizontal extended position, means connected with the hinged table-top sections for locking them together at their joint in their horizontal extended position, and the head and foot frames at the ends of the table; substantially as set forth.

4. The operating-table comprising the legs, side bars, table-top hinged at one end, and means for raising and lowering said top from its other end, said side bars and top each being independently composed of sections hinged together at about the transverse center of the table so that they may be together folded downwardly and also so that said top may be independently given the position of a double incline for certain operations, combined with means adjacent to the center of the table for supporting the hinged end section of said top in an upwardly-inclined position while the other section of said top is inclined downwardly, means connected with said side bars for locking their sections together at their joint in horizontal extended position, means connected with the hinged table-top sections for locking them together at their joint in their horizontal extended position, and the head and foot frames at the ends of the table; substantially as set forth.

5. The operating-table comprising the side bars, the hinged legs composed of hinged foldable sections, the movable sleeves on said legs to pass over the joint between said sections, and the hinged sectional foldable leg-braces adapted at their lower ends to be detachably connected to said legs and to be locked thereto by the lower edge of said sleeves, combined with the table-top hinged at one end, and means for raising and lowering said top from its other end, said side bars and top being composed of sections hinged together at about the transverse center of the table so that they may be folded; substantially as set forth.

6. The operating-table comprising the side bars, legs, hinged table-top, and means for raising and lowering said top from its free end, combined with the frame hinged at the end of said table-top, and the pawl-and-ratchet mechanism for securing said frame in its desired positions, said mechanism comprising the ratchet-plates 85, the plates 83 constituting a part of said frame and having the recesses 84, the rod 87 whose transverse portions engage said recesses and said ratchet-plates and whose end portions 88 extend along the sides of said frame and then turn inwardly through apertures in said frame, and the pins 90 which afford supports for said end portions 88; substantially as set forth.

812,241. **COMB.** CHARLES M. SHUBERT, Philadelphia, Pa. Filed June 7, 1905. Serial No. 264,120.

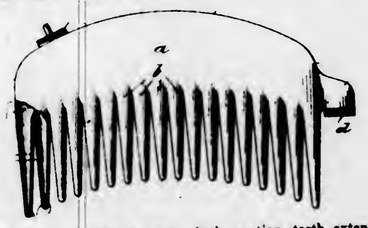

Claim.—1. A comb having a body portion, teeth extending from said body portion and arranged in a curve with respect to the same, the ends of said teeth being arranged in a curve with respect to the longitudinal axis of the teeth so as to permit of a simultaneous engagement of all the teeth with the scalp of a head, when the comb assumes a certain oblique position with respect thereto.

2. A comb having a body portion, teeth having a chamber extending from said body portion and arranged in a curve with respect to the same, outlet-openings arranged above the closed ends of said teeth and adapted to connect the chamber thereof with the exterior surface of the same and the free ends of said teeth being arranged in a curve with respect to the longitudinal axis of the same.

3. A comb having a hollow body portion formed of yielding walls adapted to receive a liquid preparation, teeth having a chamber extending from said body portion and arranged in a curve with respect to the same and adapted to receive the liquid preparation from said body portion, outlet-openings arranged adjacent to the ends of said teeth and adapted to connect the chamber thereof with the exterior surface of the same and to conduct the liquid preparation thereto, the free ends of said teeth being arranged in a curve in respect to the longitudinal axis of the same, and the yielding walls of said body portion being adapted when moved toward each other to force the liquid preparation into the teeth and from the same over the free ends of the teeth.

4. A comb having a hollow body portion, an air-valve having a projecting stem adapted, when depressed, to permit of the entrance of air into said body portion, hollow teeth extending from said body portion and arranged in a curve with respect to the same, openings arranged in each of said teeth adjacent to the closed end of the same and adapted to connect the interior of the teeth with the exterior surface thereof, said body portion and teeth adapted to receive a liquid preparation and to permit of an outflow of the same through said openings, and the free ends of said teeth arranged in a curve in respect to the longitudinal axis to permit in conjunction with the curvature in the location of the same with respect to the body portion of a simultaneous engagement of all the teeth with the scalp of the head.

5. A comb having a hollow body portion, an air-valve having a projecting stem adapted when depressed to permit of the entrance of air into said body portion, a screw-cap arranged in said body portion and adapted when removed therefrom to permit of the entrance of a liquid preparation into said body portion, hollow teeth extending from said body portion and arranged in a curve with respect to the same, openings arranged in each of said teeth adjacent to the closed end and adapted to connect the interior of the teeth with the exterior surface thereof, said body portion adapted to conduct the liquid into said teeth and to permit of an outflow through said openings and the free ends of said teeth arranged in a curve with respect to the longitudinal axis to permit in conjunction with the curvature in the location of the teeth with respect to said body portion of a simultaneous engagement of all the teeth with the scalp of the head.

812,242. **SHADE-FIXTURE.** SIDNEY L. SKINNER, Ottawa, Ill., assignor to Michael C. Seiter, Ottawa, Ill. Filed Mar. 7, 1905. Serial No. 248,840.

Claim.—A shade-fixture comprising bars, of rectangular form in cross-section, arranged horizontally with their inner portions lapped and having their outer ends bent forwardly to form brackets, a clamp having a body of rectangular form arranged on and supported by the lapped portions of the bars and also having a screw-bearing in the longitudinal center of one of its end walls and engaging the adjacent edges of the bars, and hangers having lateral arms at their upper ends terminating in depending barbs and also having eyes at their lower ends; the said eyes being rectangular in form and disposed parallel to the depending barbs so as to receive the horizontal bars and hold the latter against axial movement.

812,243. **CIRCULATING SYSTEM FOR BEER-FILTERS.** MAX STAHL, Chicago, Ill., assignor to Charles H. Loew, Lakewood, Ohio. Filed Mar. 18, 1905. Renewed Dec. 21, 1905. Serial No. 292,739.

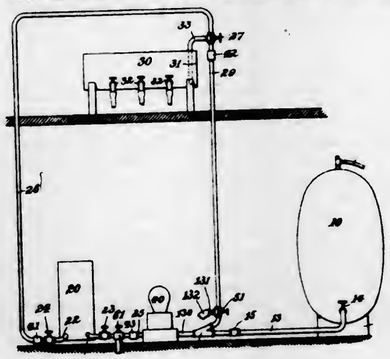

Claim.—1. The combination with a beer-filter, a source of beer-supply under pressure and a suitable conduit leading therefrom to the filter, of means intermediate the source of supply and the filter whereby the column of fluid is kept supplied to the filter when the source of supply is cut off.

2. The combination with a beer-filter, a source of beer-supply under pressure and a suitable conduit leading therefrom to the filter, of means intermediate the source of supply and the filter whereby the column of fluid is kept supplied to the beer-filter when the source of supply is cut off, comprising a pump and connections between the same and the outlet and inlet of the filter.

3. The combination of a chip cask, a beer-filter and a racking apparatus with a pump a conduit leading thereto from the racking apparatus and a connection between the pump and the filter.

4. The combination of a chip cask, a beer-filter, a conduit between them, a pump a conduit from the outlet of the filter to the inlet of the pump means for connecting the outlet of the pump to the conduit leading from the chip cask to the filter and means forshutting off the beer from the chip cask.

5. The combination of a chip cask, a beer-filter, a racking apparatus and conduits between the chip cask and the filter and the racking apparatus and the filter, with a conduit leading from the racking apparatus to the filter, a pump in the line of said conduit and suitable valves whereby the supply of beer is cut off from the chip cask and the racking apparatus and caused to pass through the pump in a circulating current.

812,244. STEAM SHOVEL AND DREDGE. GEORGE B. TURNER, Bellefontaine, Ohio, assignor to The Bellefontaine Foundry & Machine Company, Bellefontaine, Ohio, a Corporation of Ohio. Filed Feb. 27, 1905. Serial No. 247,494.

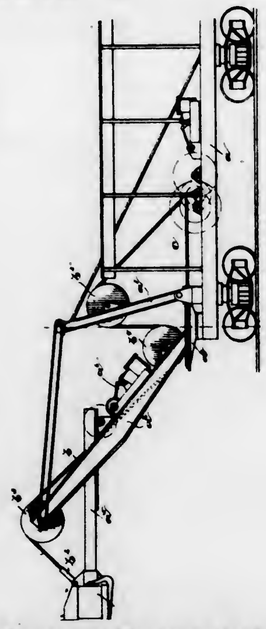

Claim.—1. In a structure of the character described, a main portion, a swinging boom, a dipper, a housing adjacent thereto, a sheave withia said housing, a single-lead double hoisting-cable, the bight of which engages said sheave and operating means for said hoisting-cable, substantially as and for the purpose specified.

2. In a structure as described, a main portion, a swinging boom, and a superstructure thereon, double-grooved sheaves arranged in said boom and superstructure, a dipper, a housing adjacent thereto, a single-groove sheave withia said housing, a double hoisting-cable, the bight of which engages with said single-groove sheave, and which is led over the said double-grooved sheaves, and having a portion of its lead substantially coincident with the axial line of the swinging boom, substantially as and for the purpose specified.

812,245. STEAM-DREDGE. GEORGE B. TURNER, Bellefontaine, Ohio, assignor to The Bellefontaine Foundry & Machine Company, Bellefontaine, Ohio, a Corporation of Ohio. Filed Mar. 20, 1905. Serial No. 251,179.

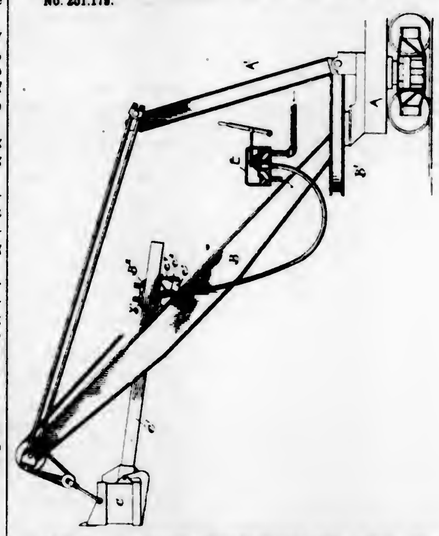

Claim.—1. In a dredge, the combination with a dipper, and a handle therefor having straight parallel edges, of a grip for said dipper-handle comprising a shaft having bearings in the boom, bearing members on said shaft on which said dipper-handle rests, a plate above said dipper-handle, and coöperating with said bearing members to clamp said dipper-handle, and means for moving said plate in relation to said bearing-blocks, substantially as specified.

2. In a dredge, the combination with a dipper, and a handle therefor, of a grip for said dipper-handle comprising a shaft, a main-frame member on said shaft, bearing members on said shaft, longitudinally-movable members extending through said main-frame member, a plate secured to said longitudinally-movable members and adapted to engage the upper side of the dipper-handle, a yoke connecting said longitudinally-movable members, and an operating-lever adapted to move said longitudinally-movable members to cause the dipper-handle to be clamped between the said bearing members and plate, substantially as specified.

3. In a dredge, the combination with a dipper, and a handle therefor, of a grip for said dipper-handle comprising a shaft having bearings in the boom, a main-frame member secured to said shaft, bearing members also on said shaft, longitudinally-movable members located in said main-frame member, a plate secured to said longitudinally-movable members and adapted to operate with the bearing members to clamp the dipper-handle; a yoke connecting the lower extremities of said longitudinally-movable members, an operating member engaging with said yoke, a cylinder secured to said main-frame member and having a piston within said cylinder, a connection between the piston-rod of said piston and the operating-lever, whereby the dipper-handle will be clamped by said plate and bearing members by the operation of the piston within the cylinder, substantially as and for the purpose specified.

4. In a dredge, the combination with a dipper, and a handle therefor, of a grip for said handle, comprising a shaft having bearings in the boom, a main-frame member mounted on said shaft, longitudinally-movable members extending through said main-frame member, a plate secured to said longitudinally-movable members, and adapted to engage the upper side of the dipper-handle, bearing members supported on said shaft adapted to engage the lower side of the dipper-handle, a yoke connecting the lower extremities of said longitudinally-movable members, pendent links on said shaft forming a fulcrum for an operating-lever adapted to engage said yoke, a cylinder having a piston therein secured to the main-frame member, a connection between said piston and the operating-lever, substantially as and for the purpose specified.

5. In a dredge, the combination with a dipper and a handle therefor, a support, a stationary clutch member supported thereby, bearing members formed on said support on which said dipper-handle rests, a movable clutch member above said dipper-handle coöperating with said stationary clutch member to clamp said dipper-handle, an oscillating member, connections between said oscillating member and said movable clutch member, substantially as specified.

6. In a dredge, the combination with a dipper and a handle therefor, a support having bearings in the boom, a stationary clutch member formed on said support, a longitudinally-movable member, a movable clutch member secured to said longitudinally-movable member, an oscillating sleeve, a yoke connected to said sleeve, and also connected to said longitudinally-movable member, and connections between said piston and said oscillating sleeve, for the purpose specified.

812,246. JACQUARD-MACHINE FOR LOOMS. JULES VERDOL, Lyon, France. Filed Dec. 29, 1903. Serial No. 187,084.

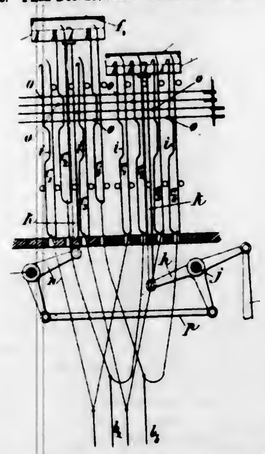

Claim.—1. In a double-lifting jacquard-machine of the Verdol system, the combination of two griff-frames, provided with depressing-plates f', g' to cause the lifting-wires to descend, a cylinder-driver and a mechanism for drawing along the perforated paper moved alternately by the griff-frames, said mechanism consisting of a latch l acting upon the cylinder-driver at reduced speed so as to cause it to advance each time by one division, of a brake z preventing the cylinder-driver from being drawn along too far by its acquired speed, of a pulley-jack s, a large lever x actuating said pulley-jack at slight speed so as to bring finally the cylinder-driver into its position and to maintain it there.

2. In a double-lifting jacquard-machine of the Verdol system, the combination of the two griff-frames, provided with depressing-plates, of a set of needles, lifting-wires, two of which are actuated by each needle, and of lifting-wires hollowed on one portion of their height so as to prevent them from being pushed back by the needles when they are lifted.

812,247. PROCESS OF REDUCING IRON ORE. GUSTAV M. WESTMAN, New York, N. Y. Filed June 24, 1903. Serial No. 163,576.

Claim.—1. The process of reducing iron ore which consists in subjecting air mixed with steam in a continuous heated current to the action of glowing coke to form carbon monoxid and hydrogen and so regulating the proportion of air to the steam that the resulting gases will have a temperature of about 1,100° centigrade and finally passing the gases at said temperature through the ores to be reduced, substantially as described.

2. The process of reducing iron ore which consists in subjecting air mixed with steam in a continuous heated current to the action of glowing coke having limestone mixed therewith, whereby carbon monoxid and hydrogen free from sulfur are formed and so regulating the proportion of air to the steam that the resulting gases will have a temperature of about 1,100° centigrade, and finally passing the gases at said temperature through the ores to be reduced, substantially as described.

3. The process of reducing iron ore which consists in introducing water into a continuous current of air, heating the mixed air and water to form steam, passing the air and steam through glowing coke to form carbon monoxid and hydrogen, regulating the proportion of air to the steam so that the resulting gases will have a temperature of about 1,100° centigrade and passing the gases at said temperature through the ores to be reduced, substantially as described.

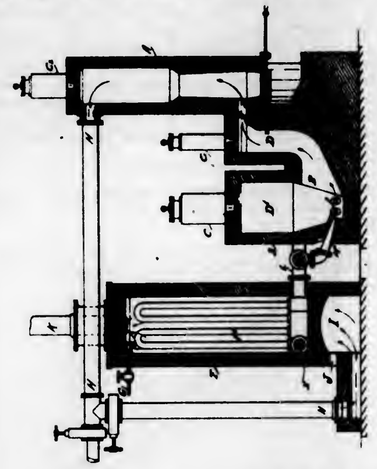

4. The process of reducing iron ore which consists in introducing water into a continuous current of air, heating the mixed air and water to form steam, passing the air and steam through glowing coke mixed with limestone to form carbon monoxid and hydrogen free from sulfur, regulating the proportion of air to the steam so that the resulting gases will have a temperature of about 1,100° centigrade and passing gases at said temperature through the ores to be reduced, substantially as described.

5. The process of reducing iron ore which consists in subjecting air mixed with steam in a continuous heated current to the action of glowing coke to form carbon monoxid and hydrogen and so regulating the proportion of air to the steam that the resulting gases will have a temperature of about 1,100° centigrade and finally causing the gases at said temperature to act upon the ores to be reduced in the presence of a small percentage of carbon, substantially as described.

6. The process of reducing iron ore which consists in subjecting air mixed with steam in a continuous heated current to the action of glowing coke mixed with limestone to form carbon monoxid and hydrogen free from sulfur and so regulating the proportion of air to the steam that the resulting gases will have a temperature of about 1,100° centigrade and finally causing the gases at said temperature to act upon the ores to be reduced in the presence of a small percentage of carbon, substantially as described.

7. The process of reducing iron ore which consists in introducing water into a continuous current of air, heating the mixed air and water to form steam, passing the air and steam through glowing coke to form carbon monoxid and hydrogen, regulating the proportion of air to the steam so that the resulting gases will have a temperature of about 1,100° centigrade and finally causing the gases at said temperature to act upon the ores to be reduced in the presence of a small percentage of carbon, substantially as described.

8. The process of reducing iron ore which consists in introducing water into a continuous current of air, heating the mixed air and water to form steam, passing the air and steam through glowing coke mixed with limestone to form carbon monoxid and hydrogen free from sulfur, regulating the proportion of air to the steam so that the resulting gases will have a temperature of about 1,100° centigrade and finally causing the gases at said temperature to act upon the ores to be reduced in the presence of a small percentage of carbon, substantially as described.

9. The process of reducing iron ore which consists in spraying water into a current of air, raising the temperature of the mixed air and water to form air and steam, passing the air and steam through incandescent carbon to form carbon monoxid and hydrogen, and subjecting the gases thus formed to the action of the incandescentt carbon, regulating the proportion of air to steam so that the resulting gases will have a temperature of about 1,100° centigrade, and then

causing the gases at said temperature to act upon the ores to be reduced in the presence of a small percentage of carbon, substantially as described.

10. The process of reducing iron ore which consists in spraying water into a current of air, raising the temperature of the mixed air and water to form air and steam, passing the air and steam through incandescent carbon mixed with lime to form carbon monoxid and hydrogen, and subjecting the gases thus formed to the action of the incandescent carbon and lime whereby pure gases are generated, regulating the proportions of the air and steam so that the resulting gases will have a temperature of about 1,100° centigrade, and then causing the gases at said temperature to act upon the ores to be reduced in the presence of a small percentage of carbon, substantially as described.

812,248. CANDLE-HOLDER. LEWIS M. WILDS, North Walpole, N. H. Filed Oct. 26, 1905. Serial No. 284,416.

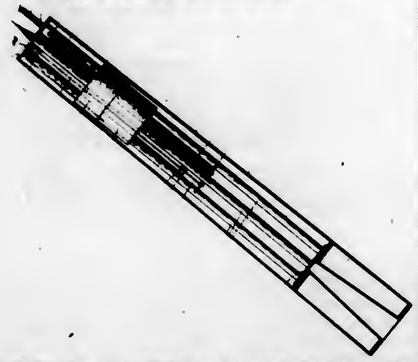

Claim.—1. In a candle-holder, a counterweighted vertically-movable candle-receptacle, and means to vary the effective weight of the counterweight as the candle burns.

2. In a candle-holder, a vertically-movable candle-receptacle, a counterweight connected to the receptacle, and means to relieve the receptacle of a portion of the weight of the counterweight as said receptacle moves upwardly due to the burning of the candle.

3. In a candle-holder, a counterweighted vertically-movable candle-receptacle, means to engage the lighted end of the candle to maintain the flame in a constant position, and means to vary the effective weight of the counterweight as the candle burns.

4. In a candle-holder, a vertically-movable candle-receptacle, means to engage the lighted end of the candle thereby to maintain the flame in a constant position, a counterweight connected to the receptacle, and means to relieve the receptacle of a portion of the weight of the counterweight as said receptacle moves upwardly.

5. In a candle-holder, a vertically-movable candle-receptacle, a counterweight connected thereto, means to guide the candle-receptacle in its movement, and means to relieve it of a portion of the weight of the counterweight as the candle burns.

6. In a candle-holder, a vertically-movable candle-receptacle, a counterweight connected thereto, said counterweight being made in two parts, and means to arrest the movement of one part of the counterweight when the candle is partly burned.

7. In a candle-holder, a vertically-movable candle-receptacle, a counterweight connected to said receptacle, said counterweight being made in two parts, a stop to engage one part as the counterweight descends and thereby relieve the candle-receptacle of a portion of the weight of the counterweight.

8. In a candle-holder, a vertically-movable candle-receptacle, guide-rods between which the receptacle moves and by which it is guided, a counterweight encircling the guide-bars and connected to the receptacle, said counterweight being made in two parts, and means to arrest the movement of one of the parts when the candle is partially burned.

9. In a candle-holder, a vertically-movable candle-receptacle, a counterweight therefor, and pivoted dogs to engage the lighted end of the candle.

10. In a candle-holder, a vertically-movable candle-receptacle, guide-rods between which said receptacle moves and by which it is guided, a guideway for the receptacle, and dogs pivoted to the guides and adapted to engage the upper end of the candle.

812,249. KEROSENE-LAMP. JACOB WILENTZ, New York, N. Y. Filed May 2, 1905. Serial No. 258,489.

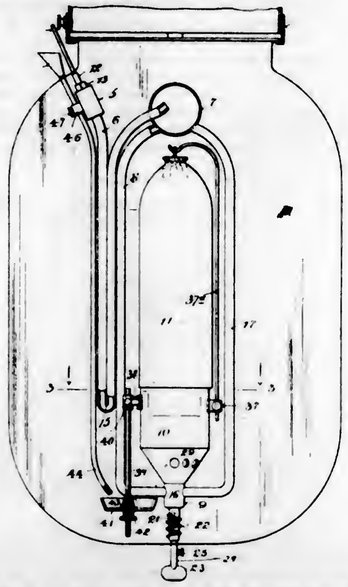

Claim.—1. In an article of the class described a burner comprising a flared portion having perforations in one side only and covered by a centrally-perforated diaphragm, a tube extending about said central perforation, a cap having a serrated lower edge covering said tube, and a cylinder surmounting said flared portion and surrounding said cap.

2. In an article of the class described, a burner comprising a flared lower portion, a cylindrical tube surmounting said flaring portion; a gauze surmounting said tube, a perforated plate fixed to said flared portion at its top; a tube fixed to said plate and inclosing said opening, and a cap with serrations in its lower edges, inclosing said last-mentioned tube.

812,250. GRINDING-MILL. JAMES S. WOODCOCK, New Lexington, Ohio. Filed July 13, 1905. Serial No. 269,457.

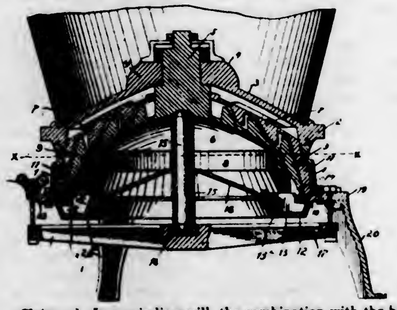

Claim.—1. In a grinding-mill, the combination with the base-ring, its supports, the bridge-tree and the spindle, of means fixedly supported at each end by the base-ring and engaging with the spindle for holding the same in place.

2. In a grinding-mill, a base-ring having a trough formed therein provided with leg-engaging lugs, and legs secured to the lugs, and a detachable outer casing secured to the base-ring independently of the lugs and the legs.

3. In a grinding-mill, a base-ring formed with a trough provided with laterally-projecting lugs, and a bridge-tree supported from the lugs and having adjustable connection with one of said lugs.

4. In a grinding-mill, the combination with a base-ring formed with a trough, supports for the ring and a spindle supported within the ring, of bracing means for the spindle engaging about the same and extending across the base-ring.

5. In a grinding-mill, the combination with a base-ring formed with a trough, a conveyer mounted in the trough and a spindle supported within the ring, of a grinding member rotatably mounted on the upper end of the spindle and provided with a projecting flange, and an inner annular bar member fitting about the grinding member and resting on the flange thereof and provided with projections adapted to engage the conveyer to impart motion thereto.

6. In a grinding-mill, a base-ring having laterally-extending lugs, an outer casing detachably supported on the upper side of the base-ring and independently of the lugs, and legs detachably secured to the lugs independently of the casing, in combination with a spindle supported within the base-ring, and a grinding-cone supported on the upper end of the spindle.

812,251. LEVEL. TONY ALEXANDER, Brookhaven, Miss. Filed Mar. 25, 1905. Serial No. 252,076.

Claim.—1. In a leveling device, a hollow body of globular or spherical form filled with a liquid with the exception of a minute space forming an air-bubble, and having indicia at different points in its surface, each indice consisting of a series of concentric circles.

2. In a leveling device, a hollow body of globular or spherical form filled with a liquid with the exception of a minute space forming an air-bubble, and having indicia at different points in its surface, each indice consisting of a series of concentric circles, and a cross intersecting the lines of the circles and the centers of the cross and circles coinciding.

3. In a leveling device, a hollow body of spherical or globular form containing a liquid and an air-bubble, and provided with indicia at different points in its surface and formed with a neck and a base, said base being hollow upon its under side and the neck adapted to receive a stopper, the end of which is adapted to project into the space of said hollow base.

4. In a leveling device, a hollow body of globular form having indicia pressed into its inner surface to increase the concavity and containing liquid and an air-bubble.

812,252. HAY-NET. MORRIS H. ALLWARDT, Jordan Valley, Oreg. Filed Aug. 2, 1905. Serial No. 272,428.

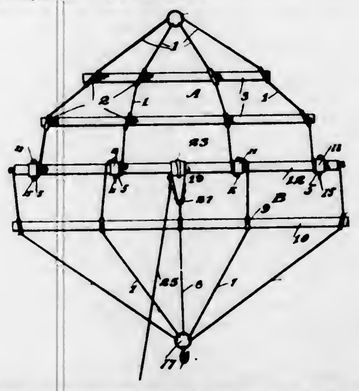

Claim.—A hay-net comprising the complemental net parts A and B, each of said parts consisting of a plurality of transverse bars and a plurality of ropes connected therewith, one of the transverse bars of the part B being rotatable, pins projecting from the outer ends of the rotatable bars aforesaid and having the outermost ropes of the part B connected therewith, a supporting-arm projecting laterally from the central portion of the rotatable bar and provided with a bearing in which said bar is rotatably mounted, a clutch-flange projecting from the rotatable bar adjacent the bearing of the arm aforesaid and formed with a lateral cam extension, a locking-dog of bell-crank form pivoted to the arm, one arm of said dog being adapted to engage with the cam of the clutch-flange, the other arm of said dog having a pull-rope connected therewith, pins permanently applied to the rotatable bar adjacent its ends and having the extremities thereof detachably connected with the outermost ropes of the part A of the net, other pins detachably applied to the rotatable bar and having detachable connection at one end with the innermost ropes of the part A, the opposite ends of said detachable pins being permanently connected with ropes of the part B, rings connected with the outer ends of the several ropes of the parts A and B of the net, and a hook-pulley applied to one of the rings for the purpose specified.

812,253. BOWLING-ALLEY-PIN SPOTTER. CHARLES L. BASTIAN, Chicago, Ill. Filed Dec. 27, 1904. Serial No. 238,517.

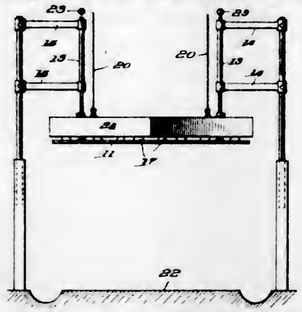

Claim.—1. In a vertically-movable pin-spotter for bowling-alleys, normally open movable positioning devices, and means forming part of the movable spotter and normally out of operative engagement with said devices and movable relatively thereto for engaging and moving said devices into closed position to receive the pins.

2. A vertically-movable pin-spotter for bowling-alleys, comprising movable positioning devices constructed to open by gravity when the spotter is raised, and means forming part of the movable spotter for closing said devices to receive the pins, said devices and means being normally out of operative engagement and said means being adapted to engage and move the devices into closed position when the spotter is lowered to receive the pins.

3. A vertically-movable pin-spotter for bowling-alleys, embodying movable positioning devices, and means forming part of the movable spotter and located beneath said devices and normally out of operative engagement therewith for moving them into closed position to receive the pins.

4. A vertically-movable pin-spotter for bowling-alleys, comprising movable positioning devices, and a plate beneath said devices and movable relatively thereto for moving them into closed position to receive the pins.

5. In a vertically-movable pin-spotter for bowling-alleys, normally open pivoted positioning devices, and means forming part of the movable spotter and normally out of operative engagement with said devices and movable relatively thereto for engaging and swinging said devices into closed position to receive the pins.

6. A vertically-movable pin-spotter for bowling-alleys, embodying pivoted positioning devices, and means beneath said devices and normally out of operative engagement therewith and movable relatively thereto for engaging and swinging them into closed position to receive the pins.

7. A vertically-movable pin-spotter for bowling-alleys, comprising pivoted positioning devices, and a plate beneath said devices and movable relatively thereto for moving them into closed position to receive the pins.

8. A vertically-movable pin-spotter for bowling-alleys, embodying movable positioning devices, means for supporting said devices, and means normally out of operative engagement with said positioning devices and movable relatively thereto and adapted to engage and roove said devices into closed position.

9. A vertically-movable pin-spotter for bowling-alleys, embody-

ing movable positioning devices, means for supporting said devices, and a plate beneath the positioning devices and movable relatively thereto, said devices and plate being arranged to engage each other when the spotter is lowered to move the devices into closed position to receive the pins.

10. A vertically-movable pin-spotter for bowling-alleys, comprising a bottom plate, a top plate, one of said plates being movable relative to the other, and movable positioning devices suspended from the top plate and adapted to engage the bottom plate and be moved thereby into closed position to receive the pins.

11. In a vertically-movable pin-spotter for bowling-alleys, the combination of a bottom plate, a top plate, a fixed stop for limiting the downward movement of the bottom plate, and movable positioning devices carried by the top plate and adapted to engage the bottom plate and be moved thereby into closed position to receive the pins.

12. In a vertically-movable pin-spotter for bowling-alleys, the combination of two plates spaced apart one above the other and provided with openings to receive the pins, one of said plates being movable relative to the other, and normally open movable positioning devices arranged between said plates and adapted to be moved to closed position during the continued downward movement of said relatively movable plate by engagement with the other plate after it has come to rest.

13. In a vertically-movable pin-spotter for bowling-alleys, the combination of two members spaced apart one above the other, and movable toward and from each other and provided with openings to receive the pins, normally open movable positioning devices suspended from the under side of the top member and adapted to engage the bottom member, and a fixed stop for limiting the downward movement of the bottom member.

14. In a vertically-movable pin-spotter for bowling-alleys, the combination of two members spaced apart one above the other and movable toward and from each other and provided with openings to receive the pins, normally open movable positioning devices suspended from the under side of the top member, and guides on the bottom member arranged to be engaged by the positioning devices when said members move toward each other.

15. In a vertically-movable pin-spotter for bowling-alleys, the combination of two members spaced apart one above the other and movable toward and from each other and provided with openings to receive the pins, normally open movable positioning devices suspended from the under side of the top member and adapted to engage the bottom member, guides on the bottom member beneath the positioning devices, and a fixed stop for limiting the downward movement of the bottom member.

16. In a pin-spotter for bowling-alleys, the combination of a vertically-movable plate, rods connected to said plate and guided at the sides of the alley, devices for adjusting the downward movement of said plate, and movable positioning devices supported above said plate and movable vertically with and adapted to engage said plate.

17. A vertically-movable pin-spotter for bowling-alleys, comprising movable positioning devices constructed to open by gravity when the spotter is raised, means for raising the spotter to clear the pins, and a single means forming part of the movable spotter and normally out of engagement with said positioning devices for simultaneously engaging and moving all of said devices into closed position to receive the pins when the spotter is lowered.

812,254. **TIRE-TIGHTENER.** LEWIS W. BENSON, Wichita, Kans. Filed Jan. 7, 1905. Serial No. 240,074.

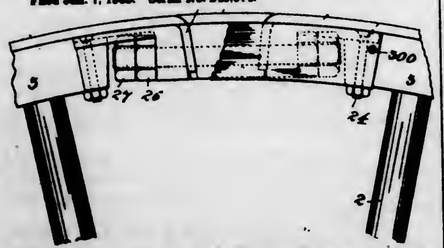

Claim.—The combination with the abutting ends of a wheel or felly and a tire having downturned apertured ends, of an apertured bridge block or key inserted between said downturned ends, L-shaped supporting-blocks engaging the inner faces of said downturned ends, clips upon the ends of said rim or felly, a double screw passed through said blocks and the ends of said tire and having its center secured against rotation in said bridge-block, nuts upon the ends of said screw, a casing covering the inner and side faces of the ends of said rim or felly, and bolts or similar fastening means passed through the supporting-blocks, the felly, the clips and said casing, substantially as described.

812,255. **INKING APPARATUS FOR STAMP-CANCELING AND POSTMARKING MACHINES.** FREDRIK BJURSTRÖM, New York, N. Y. Original application filed July 8, 1904. Serial No. 215,534. Divided and this application filed Jan. 19, 1905. Serial No. 241,727.

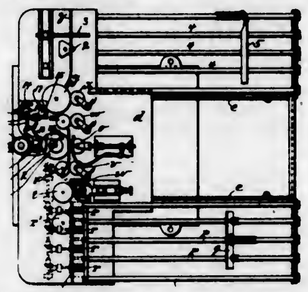

Claim.—1. The combination with the die-roll, and distributing-roll, of an ink-fountain having a lateral wick containing discharge-passage partitioned from the main space, the wick in the main space connecting with the wick of the discharge-passage over the partition, and a clamp gripping the wick on the top of the partition.

2. The combination with the die-roll, and distributing-roll, of an ink-fountain having a lateral wick containing discharge-passage partitioned from the main space, the wick in the main space connecting with the wick of the discharge-passage over the partition, vertical guard-flanges to the wick-passage, and a clamp gripping the wick on the top of the partition.

3. The combination with the distributing-roll, of a pivoted support therefor, a lever-arm of said support, a notched keeper-latch engaging said lever-arm, and a spring to maintain the engagement.

812,256. **APPARATUS FOR COOLING LIQUIDS.** GEORGE F. BLACK, Baltimore, Md. Filed July 31, 1905. Serial No. 272,087.

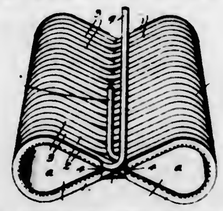

Claim.—1. A liquid-cooling apparatus comprising tubular core-pieces, a pipe having inner coils extending around the core-pieces and crossed between said core-pieces, and outer coils also extending around the core-pieces and disposed intermediate the inner coils.

2. A liquid-cooling apparatus comprising tubular core-pieces having outwardly-extending flanges at their ends, a pipe having inner coils extending around the core-pieces and crossed between said core-pieces, and outer coils also extending around the core-pieces and disposed intermediate the inner coils, and having their intermediate portions opposite the crossed portions of the inner coils spaced therefrom.

812,257. **BOTTLE-CAP LIFTER.** ALBA C. BOOTH, Burlington, Vt. Filed Feb. 1, 1905. Serial No. 243,671.

Claim.—A bottle provided with a groove or slot on one side into which a lifter may be inserted for removing the cap from the bottle, the said groove terminating in a notch at its upper end as herein described.

812,257.

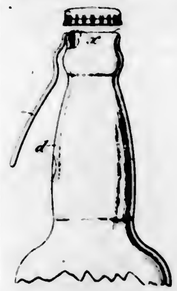

812,258. **AUTOMATIC BENDING-MACHINE.** LOUIS H. BRINKMAN, West Hartford, Conn., assignor to Whitlock Coil Pipe Company, West Hartford, Conn., a Corporation of Connecticut. Filed Dec. 12, 1904. Serial No. 236,515.

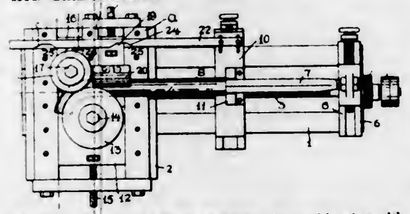

Claim.—1. In a pipe-bending machine, the combination with a forming-roll and a bending-roll, of means for advancing a pipe between said rolls, and means automatically controlled by the movement of the pipe for moving the bending-roll toward said forming-roll.

2. In a pipe-bending machine, the combination with a forming-roll and a bending-roll, of means for advancing a pipe between said rolls, and means for advancing said bending-roll toward said forming-roll, and for allowing it to recede therefrom at predetermined points in the movement of the pipe.

3. In a pipe-bending machine, the combination with a forming-roll, of a bending-roll, means for advancing a pipe to be bent between said rolls, and a recessed plate for advancing said bending-roll to an operative position and allowing it to withdraw therefrom, means for longitudinally moving said plate simultaneously with the movement of the pipe.

4. In a pipe-bending machine, the combination with a forming-roll and a bending-roll, of means for advancing a pipe to be bent between said rolls, and means automatically controlled by the movement of the pipe for advancing said bending-roll toward said forming-roll, for holding it in said position and for allowing it to recede therefrom.

5. In a pipe-bending machine, the combination of forming and bending rolls, a fixed mandrel, means for imparting a longitudinal movement to the pipe on said mandrel and between said rolls, and means automatically controlled by the movement of the pipe for moving the bending-roll toward said forming-roll.

6. In a pipe-bending machine, the combination of a mandrel held at one end from longitudinal movement, with its free end adapted to enter the pipe to be bent, means for pushing the pipe off the free end of the mandrel, a forming and a bending roll arranged to apply a bending strain to the pipe as it is delivered from the mandrel, means for adjusting said rolls relatively to the mandrel, and means for moving the bending-roll relatively to the forming-roll as determined by the longitudinal movement of the pipe.

7. In a pipe-bending machine, the combination of a framework provided with ways, a carriage movable along said ways, means for actuating said carriage, a mandrel held at one end from longitudinal movement, a pusher-plate attached to said carriage and adapted to contact with the end of a pipe held on said mandrel, a forming-roll, a bending-roll, arranged to apply a bending strain to the pipe as it is pushed from the free end of said mandrel, means for moving the bending-roll toward the forming-roll as determined by the forward movement of the pipe, and a support for the pipe behind said bending-roll and opposite the forming-roll.

8. In a pipe-bending machine, the combination of bending and forming rolls for applying a bending strain to a pipe passing between said rolls, a mandrel held at one end with its free end adapted to enter the pipe, means for forcing the pipe off the free end of the mandrel, and means automatically controlled by the movement of the pipe, for changing the position of said rolls relatively to each other.

9. In a pipe-bending machine, the combination of a forming-roll, a bending-roll, means for imparting a longitudinal movement to the pipe to be bent between said rolls, a slidable block carrying said bending-roll, and means for moving said slidable block consisting of a recessed plate and means for moving said plate simultaneously with the forward movement of the pipe.

812,259. **TIRE-PROTECTOR.** JOHN E. CAPS, Kansas City, Mo. Filed Jan. 31, 1905. Serial No. 243,477.

Claim.—1. In a tire-protector, a yielding body, and a puncture-resisting member located therein and comprising a strip of resilient material extending longitudinally through the body and disposed in a plurality of overlapping convolutions.

2. In a tire-protector, a yielding body having an outer shoe comprising sections, rivets connecting the sections and constituting anti-slipping devices, and a puncture-resisting member located inside the shoe and comprising a strip of resilient sheet metal extending longitudinally through the body in a plurality of overlapping convolutions.

3. In a tire-protector, a yielding body, a puncture-resisting member located in and covered by the body and consisting of a plurality of layers, binidngs embracing the edges of the layers, a lining located inside the member, and means for fastening the protector upon a tire.

4. In a tire-protector, a yielding body, a puncture-resisting member located in the body and constituting a plurality of layers, bindings embracing the edges of the layers, and fastening means for securing the member in the body, said means engaging the body and passing through the bindings.

5. In a tire-protector, a yielding body having an outer shoe, a puncture-resisting member located in the body inside the shoe and consisting of a plurality of layers, bindings embracing the edges of the layers, and fastening means for securing the member in the body, said means passing through the bindings and the shoe.

6. In a tire-protector, a yielding body having a shoe comprising sections, a puncture-resisting member comprising a resilient sheet-metal strip wound into a plurality of overlapping convolutions or layers, bindings embracing the margins of the layers, rivets passing through the sections of the shoe and projecting beyond the same to form antislipping means, and rivets passing through the binding and the shoe and projecting beyond the same, said latter rivets also constituting antislipping means.

7. In a tire-protector, a yielding body having a shoe, a metallic puncture-resisting member located inside the shoe, puncture-resisting scales interposed between the member and shoe, a lining located inside the puncture-resisting member, and means for securing the protector over a tire.

8. In a tire-protector, a yielding body having a shoe, a puncture-resisting member located inside the shoe, puncture-resisting scales interposed between the member and shoe, each of said scales extending transversely of said member and shoe and the width of the former, and means for securing the protector over a tire.

9. In a tire-protector, a yielding body having an outer shoe, a puncture-resisting member located inside the shoe, fastening devices for securing the shoe and member together, and scales interposed between the member and shoe and extending transversely thereof, said scales having their terminals located between the fastening devices.

10. In a tire-protector, a yielding body having an outer shoe, a

puncture-resisting member located inside the shoe and consisting of a plurality of layers of resilient sheet metal, bindings embracing the margins of the layers, spaced fastening devices extending through the bindings and the shoe, and scales interposed between the shoe and the member and having tapered terminals that engage between the fastening devices.

11. In a tire-protector, a yielding body having an outer shoe comprising sections of flexibe material, a metallic puncture-resisting member located inside the shoe, a lining arranged inside the member and fastening devices passing through the shoe and terminating at the metallic member, said devices projecting beyond the shoe to constitute antislipping means, and said metallic member preventing the wearing of the lining by the fastening devices.

12. In a tire-protector, a yielding body having an outer shoe comprising sections, a puncture-resisting member located inside the shoe and comprising superposed layers, bindings covering the margins of the layers, fastening devices passing through the shoe and terminating at the member, and other fastening devices for securing the member and shoe together and passing through the bindings, said devices projecting beyond the shoe to form antislipping means.

13. In a tire-protector, a yielding body having an outer shoe comprising longitudinally-disposed sections, a puncture-resisting member located inside the shoe and comprising a strip of sheet metal wound into a plurality of superposed convolutions, metal binding-stripe embracing the margins of the convolutions, a plurality of spaced fastening devices passing through the bindings and through the shoe, transversely-disposed scales interposed between the member and shoe and having their terminals located between said fastening devices, and other fastening devices for securing the shoe-sections together, said devices terminating at the scales and projecting beyond the shoe to constitute antislipping means.

14. In a tire-protector, the combination with a shoe, of means for securing the same upon a tire, a heat-insulating lining located inside the shoe, and puncture-resisting means interposed between the shoe and lining.

15. In a tire-protector, the combination with a shoe, of means for securing the same upon a tire, a metallic puncture-resisting member disposed inside the shoe and a heat-insulating lining located inside the member and having a yielding granular body, said lining being interposed between the member and tire when the protector is in place on said tire.

16. In a tire-protector, the combination with a shoe, an inner heat-insulating lining having a yielding body of granular cork, and an interposed puncture-resisting member comprising yielding metallic layers, of means for attaching the protector to a tire.

17. In a tire-protector, the combination with a shoe, of means for attaching the same upon an ordinary tire, and a heat-insulating lining located inside the shoe and comprising a casing of spaced walls, and a body of granular cork located between said walls.

18. In a tire-protector, the combination with a shoe, of a puncture-resisting member located inside the same, a heat-insulating lining disposed inside the member, means for connecting said several elements, and means for attaching the protector to a tire.

19. In a tire-protector, the combination with a shoe, of a resilient sheet-metal puncture-resisting member arranged inside the same and formed of a strip having overlapping convolutions, means for securing the shoe and member together, a casing located inside the member, a body of granular cork arranged in the casing, and means for securing the casing and shoe together.

20. In a tire-protector, the combination with a yielding body having puncture-resisting means, of hinge-ears comprising doubled straps embracing the margins of the body and projecting therefrom, and other ears hinged to the projecting portions of said first-mentioned ears and carrying rim-engaging hooks.

21. In a tire-protector, the combination with a puncture-resisting metal strip, of a resilient coating of waterproof material covering the strip, and a body inclosing the strip and coating, and including an outer shoe, and means for attaching the protector to a tire.

22. In a tire-protector, the combination with a member comprising a plurality of puncture-resisting layers of thin metal, of resilient waterproof material covering said layers, a lining covering the inner side of the member, a shoe covering the outer side of said member, and means for securing the protector over a tire.

23. In a tire-protector, the combination with a body partially circular in cross-section, of a plurality of puncture-resisting layers formed of thin sheet metal, and layers of resilient waterproof material interposed between the puncture-receiving layers, the whole being inclosed by said body, and means for securing the said protector upon a tire.

812,260. **SHEET-FEEDING MACHINE.** FRANK L. CROSS, Mystic, Conn., assignor to Cross Paper Feeder Company, Boston, Mass., a Corporation of Maine. Filed July 12, 1902. Serial No. 115,308.

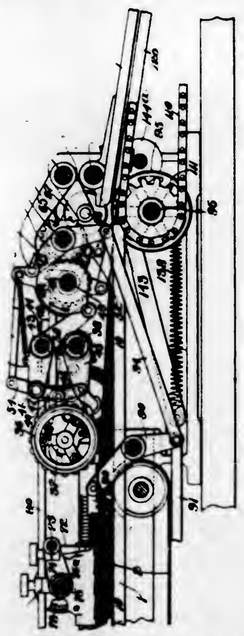

Claim.—1. In a sheet-feeder the combination with a support, of a movable loader, provided with means for laying a bank of feathered sheets upon said support as it moves over said support, substantially as described.

2. In a sheet-feeder the combination with a support, of a loader, means for operating said loader to lay a bank of feathered sheets upon said support, and means for feeding forward said bank and loader, substantially as described.

3. In a sheet-feeder the combination with sheet-separating devices, of a feed-table, a loader, means for operating said loader to lay a bank of feathered sheets upon said feed-table, and means for feeding said bank and loader toward the separating devices, substantially as described.

4. In a sheet-feeder the combination with a feed-table, of a movable loader comprising a supply-table, a curved guideway leading from the supply-table to the feed-table and means for feeding a bank of feathered sheets through the curved throat as the loader moves over the feed-table, substantially as described.

5. In a sheet-feeder the combination with a feed-table, of a movable loader comprising a supply-table, a feed-drum between the end of the supply-table and feed-table, curved guides coöperating with said feed-drum to form a curved guideway leading from the supply-table to the feed-table, and means for rotating said drum as the loader moves over the supply-table, substantially as described.

6. In a sheet-feeder the combination with a feed-table, of a loader comprising a supply-table, a curved guideway leading from said supply-table to said feed-table, a feeding-drum on one side of said curved guideway, a rack a gear connected with said drum and engaging said rack whereby as the loader is moved the drum is rotated, substantially as described.

7. In a sheet-feeder the combination with a feed-table, of a loader comprising a supply-table and feeding means for transferring a bank of feathered sheets from the supply-table to the feeding-table, a worm-wheel connected to said means, a screw-shaft engaged by said worm-wheel, whereby the operation of the feeding means is accompanied by a movement of the loader over the feed-table, and means for locking the worm-wheel whereby a rotation of the screw-shaft advances the loader without operating the feeding means, substantially as described.

8. In a sheet-feeder the combination with a feed-table, and means for advancing a feathered bank of sheets thereon, of a loader comprising a supply-table, a curved guideway leading from said supply-table to said feed-table, a feed-drum at one side of said guideway, worm-wheels connected with said drum, screw-shafts engaging said worm-wheels, means for locking said worm-wheels, whereby rotation of said shafts or rotation of said worm-wheels will move said loader, substantially as described.

9. In a sheet-feeder the combination with a feed-table of a loader comprising a supply-table, a drum between the tables, curved guides coöperating with said drum to form a curved guideway, pressure-rolls coöperating with said drum to feed a bank of feathered sheets through the guideway and means for rotating said drum and rolls and for moving the loader over the feed-table, substantially as described.

10. In a sheet-feeder the combination with feeding mechanism, of mechanism for arresting the action of the same, a latch for engaging said arresting mechanism and holding it out of operation, a pawl through the movement of which the latch is disengaged, and a toothed member for operating said pawl with which the pawl is engaged by the action of the sheet, substantially as described.

11. In a sheet-feeder the combination with a feeding device, of mechanism for arresting the action of the same, a latch for engaging said arresting mechanism and holding it out of operation, a pawl through the movement of which the latch is disengaged, a toothed member for operating said pawl with which the pawl is engaged by the action of the sheet, and mechanism for resetting the arresting mechanism, substantially as described.

12. In a sheet-feeder the combination with a combing-roll, of mechanism for lifting the same from the sheets, a latch for engaging said lifting mechanism and holding it out of action, a pawl connected with said latch, and a toothed member for operating said pawl to disengage said latch, and means for engaging said pawl with said toothed member by the action of the sheet, substantially as described.

13. In a sheet-feeder the combination with a combing-roll, of devices for lifting the same from the sheets, a lever connected with said devices, a latch for engaging said lever and preventing its movement, a pawl connected with said latch, a toothed member for operating said pawl to disengage said latch, means for engaging said pawl with said toothed member by the action of the sheet, and a cam for returning said lever into position to be engaged by said latch, substantially as described.

14. In a sheet-feeder the combination with a combing-roll, of an arm for engaging the sheets, a toggle connected with said arm and combing-roll, mechanism controlled by the sheet for straightening the toggle to bring the arm upon the sheets and lift the combing-roll, substantially as described.

15. In a sheet-feeder the combination with a combing-roll, of an arm for engaging the sheets, a shaft from which the combing-roll is supported, a toggle between said arm and shaft, and mechanism controlled by the sheet for straightening said toggle to bring the arm upon the sheets and lift the combing-roll, substantially as described.

16. In a sheet-feeder the combination with a combing-roll, of an arm for engaging the sheets, a shaft from which the combing-roll is supported, a toggle between said arm and shaft, mechanism controlled by the sheet for straightening the toggle to bring the arm upon the sheets and lift the combing-roll, and mechanism for thereafter lifting said arm from the sheets, substantially as described.

17. In a sheet-feeder the combination with a combing-roll, of an arm for engaging the sheets, a toggle connected with said arm and combing-roll, mechanism controlled by the sheet for straightening said toggle to bring the arm upon the sheets and lift the combing-roll, mechanism for raising and lowering the arm and combing-roll, and mechanism for contracting the toggle prior to the lowering of the combing-roll and arm, substantially as described.

18. In a sheet-feeder the combination with a combing-roll, of an arm for engaging the sheets, devices between the arm and roll for lifting the roll when the arm is depressed, sheet-controlled mechanism for operating said devices to bring the arm upon the sheets and lift the combing-roll, and mechanism for lifting said arm from the sheets, substantially as described.

19. In a sheet-feeder the combination with a combing-roll, of an arm for engaging the sheets, devices between the arm and roll for lifting the roll when the arm is depressed, sheet-controlled mechanism for operating said devices to bring the arm upon the sheets and lift the combing-roll, mechanism for raising and lowering the arm and combing-wheel, and mechanism for resetting the devices between the arm and roll prior to the lowering of the arm and roll, substantially as described.

20. In a sheet-feeder the combination with a combing-roll, of a clamp arranged to engage the top sheet and hold it in place and means for engaging said clamp with the top sheet when the combing-roll is thrown out of action, substantially as described.

21. In a sheet-feeder the combination with a combing-roll, of delivery devices, a clamp, means for engaging the clamp with the top sheet when the combing-roll is thrown out of action, and means for disengaging said clamp from the sheet when the delivery devices are thrown into action, substantially as described.

22. In a sheet-feeder the combination with a combing-roll, of delivery devices, a clamp, means for engaging said clamp with the top sheet when the combing-roll is thrown out of action and disengaging said clamp when the delivery devices are thrown into action, a second clamp and means for engaging said clamp with the second sheet prior to the action of the delivery devices and disengaging said clamp prior to the action of the combing-roll, substantially as described.

23. In a sheet-feeder the combination with sheet-separating devices of a clamp for engaging the sheets, mechanism for lowering said clamps upon banks of varying height and raising said clamp a substantially fixed distance above the top of the bank, substantially as described.

24. In a sheet-feeder the combination with a clamp, of a ratchet connected therewith, a reciprocating pawl for engaging said ratchet to raise and lower said clamp, and means for disengaging said pawl on lowering stroke, and engaging it on the raising stroke, whereby the clamp is raised the same distance above the sheets each time, substantially as described.

25. In a sheet-feeder the combination with sheet-separating devices, delivery devices to which the sheets are presented by the separating devices, guides in front of which the sheets are delivered by the delivery devices, and means for operating the delivery devices to start the sheets with an accelerated motion and to bring the sheet into position at the front guides with a retarded motion, substantially as described.

26. In a sheet-feeder the combination with combing-rolls the action of which is arrested by the top sheet, delivery devices to which the sheet is presented by the combing-rolls, and means for operating the delivery devices to grasp and release the sheet when both the sheet and delivery devices are at substantially a state of rest, substantially as described.

27. In a sheet-feeder the combination of a set of rolls to which the sheets are presented, a set of forwarding-rolls, guides for supporting the sheets advanced by said rolls, and means for intermittently engaging the rolls in each set with each other, and means for rotating said rolls when engaged with an accelerated and then a retarded speed, substantially as described.

28. In a sheet-feeder the combination of rolls 95, guides 120, rolls 103, a crank, connections between said crank and rolls 95 and 103 for rotating said rolls, drop-rolls 97 and 105 for coöperating with rolls 95 and 103, to advance the sheet, substantially as described.

29. In a sheet-feeder the combination with a combing device controlled by the sheet advanced thereby, of mechanism for feeding a bank of feathered sheets to said device, and means for operating said mechanism during the comb succeeding a long comb, substantially as described.

30. In a sheet-feeder the combination with a combing device controlled by the sheet advanced thereby, of mechanism for feeding a bank of feathered sheets to said device, and means for operating said mechanism to feed the bank during substantially the entire comb succeeding a long comb, substantially as described.

31. In a sheet-feeder the combination with a combing device controlled by the sheet advanced thereby, of mechanism for feeding a bank of feathered sheets to said device, and means for operating said mechanism to feed the bank of sheets when there is an increase in the length of comb, substantially as described.

32. In a sheet-feeder the combination with a combing device, controlled by the sheet advanced thereby, of mechanism for feeding a bank of feathered sheets to said device, and means for operating said mechanism when there is an increase in the comb to feed the bank a distance proportional to the increase, substantially as described.

33. In a sheet-feeder the combination with a combing device, of mechanism for feeding a bank of feathered sheets to said device, comprising a ratchet and a reciprocating pawl, and means dependent upon the advance of the sheet by the combing device for controlling the advancing action of said pawl, substantially as described.

34. In a sheet-feeder the combination with a combing device, of mechanism for feeding a bank of feathered sheets to said device, comprising a ratchet and a reciprocating pawl, and means dependent upon the advance of the sheet by the combing device for arresting the advancing action of said pawl, substantially as described.

35. In a sheet-feeder the combination with a combing device.

of mechanism for feeding a bank of feathered sheets to said device, comprising a ratchet and reciprocating pawl, and means dependent upon the advance of the sheet by the combing device for arresting the advance of said pawl, substantially as described.

36. In a sheet-feeder the combination with a combing device, of mechanism for feeding a bank of feathered sheets to said device comprising a ratchet, a pawl, means for advancing said pawl, means for returning said pawl to initial position, and sheet-controlled means for arresting said advancing means, substantially as described.

37. In a sheet-feeder the combination with a combing device, of mechanism for feeding a bank of feathered sheets to said device comprising a ratchet, a pawl, a pawl-carrying lever, a reciprocating rod for moving said lever in one direction, a spring for moving said lever in the other direction, a ratchet-bar connected with said lever, and a stop-pawl engaged with said bar by the action of the sheet, substantially as described.

38. In a sheet-feeder, the combination with a combing-roll, of mechanism for lowering said roll upon banks of varying thickness and raising said roll a substantially fixed distance above the top of the bank, substantially as described.

39. In a sheet-feeder, the combination with a combing-roll, of a ratchet connected therewith, a reciprocating pawl for engaging said ratchet to raise and lower said roll which disengages said ratchet on the lowering stroke, whereby the combing-roll is raised substantially the same distance above the sheets each time, substantially as described.

40. In a sheet-feeder the combination with a combing-roll, of a lever for raising and lowering the same, a ratchet-bar connected to said lever, a pawl-carrying lever, a pawl carried by said pawl-carrying lever, a stop for the pawl whereby the pawl disengages the ratchet-bar on the return stroke, and a cam for oscillating said pawl-carrying lever, substantially as described.

41. In a sheet-feeder the combination with sheet-separating devices, delivery devices provided with traveling surfaces for engaging and feeding forward the sheets to which the sheets are presented by the separating devices, guides in front of which the sheets are delivered by the delivery devices, and means for starting said traveling surfaces with an accelerated motion and stopping them with a retarded motion, substantially as described.

42. In a sheet-feeder the combination of sheet-separating devices, delivery devices provided with traveling surfaces acting progressively along the sheet to feed it forward, guides in front of which the sheets are delivered by the delivery devices, and means for moving said traveling surfaces from substantially a state of rest with an accelerated motion as the sheets are presented to them and with a retarded motion when they deliver the sheets at the front guides, substantially as described.

43. In a sheet-feeder the combination with sheet-separating devices, delivery devices provided with traveling surfaces acting progressively along the sheet to feed it forward, guides in front of which the sheets are delivered by the delivery devices, and means for moving said traveling surfaces with a gradually-retarded motion as they deliver the sheet at the front guides, substantially as described.

44. In a sheet-feeder the combination of delivery devices, provided with traveling surfaces acting progressively along the sheet to feed it forward, mechanism for presenting individual sheets to the delivery devices, means for operating said traveling surfaces to grasp and release the sheet when both the sheet and said surfaces are approximately at rest, and means for operating said traveling surfaces to start the sheet with an accelerated motion and to stop it with a gradually-retarded motion, substantially as described.

45. In a sheet-feeder the combination of delivery devices, provided with traveling surfaces acting progressively along the sheet to feed it forward, mechanism for presenting individual sheets to the delivery devices, and means for operating the traveling surfaces to start the sheet from substantially a state of rest with an accelerated motion and to bring it into position with a gradually-retarded motion, substantially as described.

46. In a sheet-feeder the combination of delivery-rolls, mechanism for presenting individual sheets thereto, and means for operating said rolls to advance the sheet from approximately a state of rest with an accelerated motion and to bring the sheet into position with a gradually-retarded motion, substantially as described.

47. In a sheet-feeder the combination of delivery devices provided with traveling surfaces acting progressively along the sheet to feed it forward, mechanism for presenting individual sheets to the delivery devices, and means for operating said traveling surfaces to grasp and release the sheets when both the sheet and the surfaces are approximately at rest, substantially as described.

48. In a sheet-feeder the combination of devices separating individual sheets, delivery devices to which the sheets are presented, provided with traveling surfaces acting progressively along the sheets to feed them forward, and means for operating the traveling surfaces to grasp and release the sheet when both the sheet and surfaces are approximately at rest, substantially as described.

49. In a sheet-feeder the combination of delivery-rolls, mechanism for presenting individual sheets thereto, and means for gradually retarding the motion of said rolls as they complete their forwarding action, substantially as described.

50. In a sheet-feeder the combination of delivery devices, provided with traveling surfaces acting progressively along the sheet to feed it forward, mechanism for presenting individual sheets to the delivery devices, means for operating said traveling surfaces to bring the sheet into position with a retarded motion and to release the sheet when the surfaces and sheets are approximately at rest, substantially as described.

51. In a sheet-feeder the combination of delivery devices, provided with traveling surfaces acting progressively along the sheet to feed it forward, mechanism for presenting individual sheets to said delivery devices, and means for operating said surfaces to grasp the sheet when the surfaces and sheet are approximately at rest and to start the sheet with an accelerated motion, substantially as described.

52. In a sheet-feeder the combination of delivery-rolls, mechanism for presenting individual sheets thereto, and means for operating said rolls to advance the sheet from a state of rest with an accelerated motion, substantially as described.

53. In a sheet-feeder the combination of delivery devices provided with traveling surfaces acting progressively along the sheet to feed it forward, mechanism for presenting individual sheets to said delivery devices, and means for gradually retarding the motion of said traveling surfaces as they complete their forwarding action, substantially as described.

54. In a sheet-feeder the combination of delivery devices provided with traveling surfaces acting progressively along the sheet to feed it forward, guides in front of which the sheets are delivered by the delivery devices, and means for gradually retarding said surfaces as they bring the sheets into position at the guides, substantially as described.

55. In a sheet-feeder the combination with a combing device, of mechanism for feeding a bank of feathered sheets to said device, comprising a ratchet and reciprocating pawl, and means for arresting the advancing action of said pawl when the combing ceases, substantially as described.

56. In a sheet-feeder the combination with combing-rolls the action of which is arrested by the top sheet, delivery-rolls between which the sheet is advanced by the combing-rolls, means for engaging and disengaging said rolls, a supplemental set of delivery-rolls, front guides, and means for gradually retarding the motion of said supplemental rolls to deliver the sheet at the front guides with a gradually-retarded motion, substantially as described.

57. In a sheet-feeder the combination of sheet-delivery devices provided with surfaces acting progressively along the sheet, mechanism for presenting individual sheets to the delivery devices, means for reciprocating said surfaces and varying their speed to deliver the sheets with a gradually-retarded motion, substantially as described.

58. In a sheet-feeder the combination of delivery-rolls, means for presenting individual sheets thereto, a second set of rolls, front guides and means for gradually retarding the motion of said second set of rolls as they forward the sheet to the front guides, substantially as described.

59. In a sheet-feeder the combination of two sets of delivery devices provided with surfaces acting progressively along the sheet, means for operating said devices to transfer the sheet from the first set of devices to the second when both sets are traveling at substantially the same surface speed, front guides before which the sheets are delivered by the second set of delivery devices, and means for gradually retarding the second set of devices as they deliver the sheet.

60. In a sheet-feeder the combination of delivery-rolls for forwarding sheets, supplemental delivery devices provided with surfaces acting progressively along the sheet, front guides before which the sheets are delivered by the supplemental devices, and means for giving the supplemental devices substantially the same surface speed as the rolls as the sheet is transferred to said devices and then retarding the surface speed of said supplemental devices to slow down the sheet.

61. In a sheet-feeder the combination with a combing-roll, of a sheet-retaining device and means for forcing said device against the top sheet with a retaining pressure when the combing-roll is thrown out of action, substantially as described.

62. In a sheet-feeder the combination with a combing-roll, of delivery devices, a sheet-retaining device, means for forcing said device against the top sheet with a retaining pressure when the combing-roll is thrown out of action, and means for relieving said pressure when the delivery devices are thrown into action.

63. In a sheet-feeder the combination with two independently-controlled sheet-advancing devices, a sheet-retaining device corresponding to each advancing device, means for forcing each retaining device against the top sheet with a retaining pressure when the corresponding advancing device is thrown out of action, substantially as described.

64. In a sheet-feeder the combination with two independently-controlled sheet-advancing devices, of sheet-delivery devices, a sheet-retaining device corresponding to each advancing device, means for forcing each retaining device against the top sheet with a retaining pressure when the corresponding advancing device is thrown out of action, and means for relieving the pressure of the retaining devices when the delivery devices are thrown into action, substantially as described.

65. In a sheet-feeder the combination with two independently-controlled combing-rolls, a sheet-retaining clamp corresponding to each roll, means for forcing each clamp against the top sheet with a retaining pressure when the corresponding combing-roll is thrown out of action, substantially as described.

66. In a sheet-feeder the combination with two independently-controlled combing-rolls, delivery devices, a sheet-retaining clamp corresponding to each roll, means for forcing each clamp against the top sheet with a retaining pressure when the corresponding combing-roll is thrown out of action, and means for relieving said pressure when the delivery devices are thrown into action, substantially as described.

67. In a sheet-feeder the combination with two independently-controlled combing-rolls, a sheet-retaining clamp corresponding to each roll, means for engaging each clamp with the top sheet when the corresponding combing-roll is thrown out of action, substantially as described.

68. In a sheet-feeder the combination with two independently-controlled combing-rolls, delivery devices, a sheet-retaining clamp corresponding to each roll, means for engaging each clamp with the top sheet when the corresponding combing-roll is thrown out of action, and means for disengaging said clamps when the delivery devices are thrown into action, substantially as described.

69. In a sheet-feeder the combination with a combing-roll, of a frame carrying said roll, mechanism for raising and lowering said frame at regular intervals, an arm for engaging the sheets, and sheet, controlled devices between said arm and frame for raising said frame and supporting it from the arm, substantially as described.

70. In a sheet-feeder the combination with a combing-roll, of a frame carrying said roll, an arm adapted to bear upon the sheets, sheet-controlled devices between the arm and frame for raising said frame and supporting it from the arm, delivery devices, and mechanism for raising the combing-roll frame when the delivery devices are thrown into action, substantially as described.

71. In a sheet-feeder the combination with a combing-roll, of a frame carrying said roll, an arm adapted to bear upon the sheets, sheet-controlled devices between the arm and frame for raising said frame and supporting it from the arm, mechanism for raising and independently supporting the frame, and means for returning the raising devices to inactive position when the frame is raised, substantially as described.

812,231. LUBRICATOR. CHARLES C. DODGE, Bloomfield, N. J., assignor to the Dodge Lubricator Company, Boston, Mass., a Corporation of Massachusetts. Filed Nov. 20, 1904. Serial No. 234,736.

Claim.—1. In a lubricator such as described the combination with a reservoir for the lubricant having a plurality of discharge-ducts, of a rotary pump-carrier and pump located in the reservoir in position to be submerged in the lubricant and having a duct adapted to register successively with the first-mentioned ducts, fixed projections for operating the pump and means for rotating the carrier

2. In a lubricator such as described the combination with a reservoir for the lubricant having a plurality of discharge-duct openings, of a rotary pump-carrier located in the reservoir in position to be submerged in the lubricant and seated over said openings for closing the same, a pump in the carrier, there being a duct from said pump adapted to register successively with the said openings and means for rotating the carrier and operating the pump; substantially as described.

3. In a lubricator such as described, the combination with a reservoir for the lubricant having a plurality of discharge-duct openings, of a rotary carrier located in the reservoir in position to be submerged in the lubricant and seated over said openings to close the same, a pump in said carrier, there being a duct leading to the pump and normally open to the reservoir but adapted to register with the openings in succession and means for rotating the carrier and operating the pump; substantially as described.

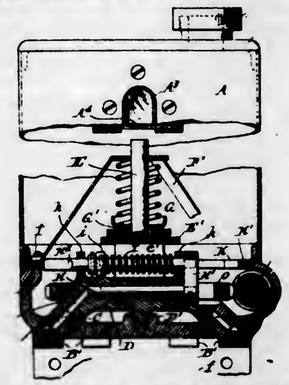

4. In a force-feed lubricator the combination with the reservoir having a seat therein formed by projections constituting the terminals of discharge-ducts, of a rotary pump-carrier mounted on said seat to close the openings, a pump on the carrier, there being a pump-duct normally open to the reservoir but adapted to be brought into registry with the openings by the rotation of the carrier, means for rotating the carrier and operating the pump; substantially as described.

5. In a force-feed lubricator the combination with the reservoir having the annular conical seat therein and openings in said seat constituting the terminals of discharge-ducts, of a rotary pump-carrier having a conical working face having its bearing in said seat, a pump in said carrier, there being a pump-duct leading out through the working face of the carrier, means for rotating the carrier and for operating the pump; substantially as described.

6. In a force-feed lubricator, the combination with the reservoir having the annular conical seat therein with projections constituting the terminals of discharge-ducts, of a rotary pump-carrier having a conical working face having its bearing in said seat, a pump in said carrier, there being a pump-duct normally open to the reservoir between the projections but adapted to be brought into registry with the openings by the rotation of the carrier, means for rotating the carrier and operating the pump; substantially as described.

7. In a force-feed lubricator the combination with the base having the discharge-duct terminals therein, the rotary pump-carrier and pump and the drive-gear for the carrier all journaled in the base and the projections for operating the pump mounted on the base, of the removable casing carried by the base and constituting the reservoir for the lubricant; substantially as described.

8. A force-feed lubricator embodying a separable base and casing constituting the reservoir, of a pump mechanism located within the reservoir and supported together with its operating mechanism entirely on the base and independently of the casing; whereby the casing and base may be separated without disturbing the pump mechanism; substantially as described.

9. In a force-feed lubricator such as described, the combination with the reservoir, having discharge-ducts, reciprocatory pump, operating devices therefor and rotary carrier on which the pump and operating devices are mounted, controlling the communication between the pump and discharge-ducts, of means for rotating the carrier, a fixed ring having projections thereon for retracting the pump-plunger and a spring for advancing the pump-plunger; substantially as described.

10. In a force-feed lubricator such as described, the combination with the reservoir and rotary pump-carrier mounted in the reservoir, of a horizontally-arranged pump in said carrier, a horizontal operating-stem for the pump-plunger and fixed projections in the reservoir with which said stem cooperates to control the said plunger; substantially as described.

11. In a force-feed lubricator, the combination with the reservoir having a base, with an apertured seat in said base and a rotary carrier taking its bearing in said seat, of a pump in the carrier having

a discharge-duct adapted to register with said apertures, a spider having arms secured to the base, a spring interposed between the spider and carrier and means for rotating the carrier and operating the pump; substantially as described.

12. In a force-feed lubricator, the combination with the reservoir having a base with an apertured seat in said base and a rotary carrier taking its bearing in said seat, of a pump in the carrier, a spring for advancing the plunger of the pump, a controlling-ring having projections for retracting the plunger of the pump and removably secured in the base, a spring for holding the carrier down and a discharge-duct for the pump adapted to register with the apertures in the seat; substantially as described.

13. In a force-feed lubricator the combination with the reservoir having a base provided with an annular conical seat having discharge-apertures therein, of a rotary carrier having a central bearing and conical working face fitting the conical seat, a pump in said carrier having a discharge-duct adapted to register with the apertures in the seat, fixed annular controlling-ring having projections, a spring-pressed pump-plunger stem coöperating with said projections and a worm and gear for rotating the carrier; substantially as described.

14. A force-feed lubricator having an annular seat projecting on the inner side of its base, with discharge-apertures in said seat, a rotary carrier taking its bearing on said seat and center bearings for said carrier located entirely within the reservoir, gearing for rotating the carrier also located within the reservoir, a reciprocatory pump in the carrier, there being a discharge-duct for the pump adapted to register with the openings in the seat, a spring for advancing the pump-plunger and fixed projections within the reservoir for retracting the pump-plunger against the tension of its spring, the number of said projections corresponding to the number of discharge-openings in the seat; substantially as described.

15. In a force-feed lubricator, the combination with a reservoir, having a plurality of separated projections constituting the terminals of discharge-ducts, of a rotary pump-carrier bearing against said projections, a pump in said carrier, there being a pump-duct normally open to the reservoir between said projections but adapted to register successively with said terminals as the carrier rotates, and instrumentalities for rotating the carrier and operating the pump.

16. In a force-feed lubricator, the combination with a reservoir, having a plurality of separated projections constituting the terminals of discharge-ducts and arranged substantially in a circle, of a rotary carrier seated against said projections, a pump carried by said carrier, and having a duct adapted to register alternately and successively with the spaces between said projections and said terminals, a pump communicating with said duct, means for rotating the carrier, fixed projections for operating the pump-plunger in one direction, and a spring for operating said plunger in the opposite direction.

17. In a force-feed lubricator, the combination with the reservoir having a circular series of discharge-duct openings, of a rotary carrier journaled on a vertical axis in the reservoir, to normally seat over and close said discharge-duct openings, a pump-barrel in said carrier and having an inlet-outlet passage adapted to register successively with the series of openings aforesaid, means for rotating the carrier, a pump-plunger in said barrel and means for reciprocating the same, a spring for holding the carrier down to its seat in the reservoir and a fixed part for maintaining the tension of the spring; substantially as described.

18. In a lubricator such as described, the combination with the reservoir having a plurality of discharge-duct openings arranged in a circular series, of a rotary pump-carrier located in the reservoir in position to be submerged in the lubricant and having a duct adapted to register with the first-mentioned openings, a central bearing at the lower end of the carrier and a spring for holding the carrier down to its seat; substantially as described.

19. In a lubricator such as described, the combination with the reservoir, a rotary pump-carrier having a central journal, fixed supports for the journal located respectively above and below the carrier, projections in the reservoir having discharge-duct openings therein, a pump located in the carrier and having an inlet-outlet opening adapted to register successively with the said discharge-openings, means for rotating the carrier and means for operating the pump; substantially as described.

20. In a lubricator such as described, a reservoir, a rotary carrier mounted therein on central supporting means held by fixed parts above and below the carrier, there being a circular series of discharge-duct openings in the bottom of the reservoir, a pump in the carrier having an inlet-outlet opening adapted to register successively with the discharge-duct openings, means for rotating the carrier and means for operating the pumps; substantially as described.

21. In a lubricator such as described, the combination with a reservoir for the lubricant having a plurality of discharge-ducts, a pump-carrier located in the reservoir in position to be submerged in the lubricant and having a duct adapted to communicate successively with the first-mentioned ducts, a horizontally-arranged pump in the carrier and horizontally-projecting cam-surfaces for operating the pump.

812,262. WINDOW-SHADE BRACKET. ABRAM B. DUNKLE, Stockton, Pa. Filed Oct. 15, 1903. Serial No. 177,191.

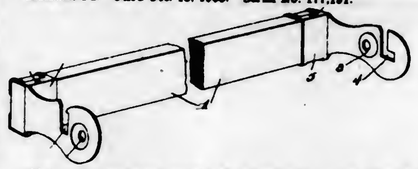

Claim.—1. As a new article of manufacture, a window-shade bracket having roller-engaging means and provided with an elongated base-plate, the upper end of which is bent in readiness to be suspended on a supporting strip or bar, the lower end of said base-plate being weakened by the removal of a portion of the metal to form a bar or strip that may be bent by the fingers in a direction transverse of the length of the base.

2. As a new article of manufacture, a window-shade bracket formed of a piece of sheet metal bent to form an elongated base, and a shade-roller-supporting arm at an angle to the base, one end of the base, from a point adjacent to the juncture of the latter with the arm, being bent in readiness to engage a supporting strip or bar, and the opposite end of the base being weakened by cutting away a portion of the metal, thereby to form a manually-bendable portion, substantially as specified.

812,263. ENVELOP-SEALING MACHINE. CHARLES J. FANCHER and HUBERT S. FARNELER, West Granby, Conn., assignors to Simplex Manufacturing Company, Hartford, Conn., a Corporation of Connecticut. Filed Sept. 28, 1904. Serial No. 226,307.

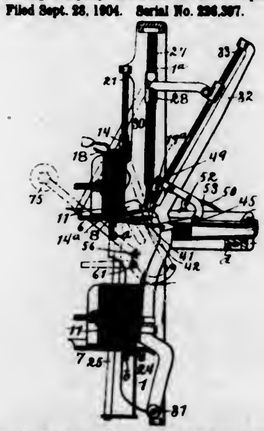

Claim.—1. In an envelop-sealing-machine, horizontal envelop supports or platforms arranged at different levels and means to remove individual envelops from one such platform and permit the same to pass by gravity to another.

2. In an envelop-sealing machine, horizontal envelop-retaining means arranged at different levels, means to remove individual envelops from one such level and permit the same to pass by gravity to another, and means to moisten the envelop-flaps during the transfer.

3. In an envelop-sealing machine, envelop supports or platforms arranged at different levels, means to remove individual envelops from one such platform and permit the same to pass by gravity to another, and means to moisten the envelop-flaps during the transfer from one platform to the other and while leaving the first.

4. In an envelop-sealing machine, horizontal envelop-retaining means arranged at different levels and means to remove individual envelops from one such level and permit the same to pass by gravity to another.

5. In an envelop-sealing machine, envelop supports or platforms arranged at different levels, means to remove individual envelops from one such platform and permit the same to pass by gravity to another, means to moisten the envelop-flaps during the transfer from one platform to another and while leaving the first, and means to seal the envelops by compression.

6. The combination, in an envelop-sealing machine, with a platform and a follower thereon tensioned in one direction, of a reciprocating plate adapted to constantly limit the movement of said follower in the direction of the force exerted by the tension means, the movement permitted said plate being such that its lower edge never rises above the level of the top of the follower or passes below the level of the bottom thereof.

7. The combination, in an envelop-sealing machine, with a platform, a spring-pressed follower thereon, and a reciprocating plate adapted to limit the movement of said follower in the direction of the force exerted by the spring, of a pivotally-mounted confining device adapted to rest upon and hold in place one or more envelops on said platform between the follower and plate and adjacent the latter, during the upward movement of the plate.

8. The combination, in an envelop-sealing machine, with a platform upturned at its front edge, and a follower on said platform, of a reciprocating plate operating above such upturned edge.

9. The combination, in an envelop-sealing machine, with a platform having an upturned edge, and an auxiliary platform or strip extending forward of such edge, of a follower on the first-mentioned platform, and a reciprocating plate in front of said follower.

10. The combination, in an envelop-sealing machine, with a platform and a follower, of a combined envelop stop and flap-opener in front of said follower, and means to reciprocate such combined stop and flap-opener only between the adjacent edge or end of said platform and some point below the level of the upper edge of the follower.

11. In an envelop-sealing machine, the combination with a platform having a follower thereon, and stop-fingers adapted to operate in front of said follower, of guide members, slides mounted on such members, bars connecting said fingers and slides, and means to reciprocate the slides, substantially as set forth.

12. In an envelop-sealing machine, the combination with a platform having a follower thereon, and stop-fingers adapted to operate in front of said follower, of guide members, slides mounted on such members, bars connecting said fingers and slides, arms pivotally mounted at their lower terminals, a presser-plate carried by such arms in front of the follower, operating means for said arms located above said plate, and means to reciprocate said slides and actuate such operating means, substantially as set forth.

13. The combination, in an envelop-sealing machine, with two platforms one above the other, and followers on said platforms, of a reciprocating stop-plate in front of the upper follower, reciprocating stop-fingers in front of the lower follower, and means to simultaneously actuate such reciprocating members.

14. In an envelop-sealing machine, two platforms, one above the other, reciprocating members at or adjacent the front ends of said platforms, and operating mechanism adapted to actuate said reciprocating members in each direction, during one cycle of the mechanism, with a rest between each movement of the reciprocating members.

15. In an envelop-sealing machine, two platforms, one above the other, reciprocating members at or adjacent the front ends of said platforms, operating mechanism adapted to actuate said reciprocating members in both directions, during one cycle on the mechanism, with a pause between each movement of the reciprocating members, and means to cause the latter to be fixed or locked during such pauses.

16. The combination, in an envelop-sealing machine, with a reciprocating stop and flap-opening plate, and reciprocating stop-fingers to assist in holding the envelops after being sealed, of actuating mechanism for such reciprocating members, trips connected with such mechanism, and a crank-arm adapted to sequentially engage and release said trips.

17. The combination, in an envelop-sealing machine, with a reciprocating stop and flap-opening plate, and reciprocating stop-fingers to assist in holding the envelops after being sealed, of actuating mechanism for such reciprocating members consisting of a shaft, a trip-arm on said shaft, a stud, a second trip-arm on said stud, a train of pinions between said shaft and stud, and a crank-arm adapted to sequentially engage and release said trip-arms.

18. In an envelop-sealing machine, the combination with a platform and a follower thereon, of arms pivotally mounted at their lower terminals, a presser-plate carried by such arms in front of said follower, operating means for said arms located above said plate, and means to actuate such operating means, substantially as and for the purpose set forth.

19. In an envelop-sealing machine, the combination with a platform and a follower thereon, of reciprocating stop-fingers adapted to operate in front of said follower, arms pivotally mounted at their lower terminals, a presser-plate carried by such arms in front of the follower and provided with slots opposite said fingers, operating means for said arms located above said plate, and means to actuate such operating means, substantially as and for the purpose set forth.

20. In an envelop-sealing machine, a continuously-reciprocating and intermittently-oscillating wiper and an intermittently-reciprocating wiper-support.

21. In an envelop-sealing machine, a continuously-reciprocating and intermittently-oscillating wiper, a reservoir provided with exposed absorbent material, and an intermittently-reciprocating wiper-support, said wiper being adapted to alternately contact with said absorbent material and said support.

22. In an envelop-sealing machine, a continuously-reciprocating wiper, an intermittently-reciprocating wiper-support, and means to cause said wiper to forcibly fall upon said support.

23. In an envelop-sealing machine, a continuously-reciprocating and intermittently-oscillating wiper, a reciprocating wiper-support, and means to cause said wiper to be withdrawn from said support by a dragging movement.

24. In an envelop-sealing machine, a continuously-reciprocating and intermittently-oscillating wiper, a reservoir located at the front of the machine, having exposed absorbent material therein, and means to cause said wiper when in its forward position to forcibly fall upon such material.

25. In an envelop-sealing machine, a continuously-reciprocating and intermittently-oscillating wiper, a reservoir located at the front of the machine, having exposed absorbent material therein, and means to cause said wiper, as it approaches the end of its forward movement, to be dragged over such material.

26. The combination, in an envelop-sealing machine, with a vertically-reciprocating flap-opener, of a continuously-reciprocating and intermittently-oscillating wiper, and an intermittently-reciprocating wiper-support.

27. The combination, in an envelop-sealing machine, with a vertically-reciprocating flap-opening plate provided with a forwardly-extending beak, of a continuously-reciprocating and intermittently-oscillating wiper and an intermittently-reciprocating wiper-support, both being adapted to move back adjacent to said plate and said wiper being adapted to pass both sides of said beak.

28. The combination, in an envelop-sealing machine, with a reciprocating flap-opener, of a wiper and a wiper-support, means to move said wiper and support into a position immediately adjacent said flap-opener, the wiper and support being separated and again united during such movement, and means to elevate the flap-opener while the wiper and support are adjacent thereto.

29. In an envelop-sealing machine, a vertically-reciprocating depressor, and a horizontally-reciprocating wiper and wiper-support, the depressor and the wiper with its support being adapted to cross each other's paths of travel.

30. The combination, in an envelop-sealing machine, of a vertically-reciprocating depressor, a horizontally-reciprocating wiper and wiper-support, and means to elevate said depressor during the rearward movement of said wiper and its support and to withdraw the wiper and its support from beneath the depressor when the latter descends.

31. In an envelop-sealing machine, a vertically-reciprocating flap-opener, a vertically-reciprocating depressor, and a horizontally-reciprocating wiper and wiper-support adapted to play back and forth in front of the plane of said flap-opener beneath said depressor when the latter is elevated.

32. In an envelop-sealing machine, an intermittently vertically reciprocating flap-opener, a continuously-reciprocating depressor, and a horizontally-reciprocating wiper and wiper-support adapted to pass beneath said depressor when elevated, into contiguity with said flap-opener when depressed.

33. In an envelop-sealing machine, a reciprocating flap-opening plate provided with a forwardly-extending beak, and a reciprocating depressor operating in front of said beak.

34. In an envelop-sealing machine, an intermittently-reciprocating flap-opener, a continuously-reciprocating depressor, and means to elevate said depressor while said flap-opener is down and to depress the depressor while the flap-opener is in its elevated position.

35. The combination, in an envelop-sealing machine, of a slidingly-mounted wiper, a slidingly-mounted wiper-support, resilient

connections between said wiper and support, stops arranged to limit the movement of the support in one direction, and means to directly actuate the wiper.

36. The combination, in an envelop-sealing machine, with cams, of a slidingly-mounted wiper provided with cam-engaging members arranged to ride over said cams, to raise the wiper and to pass beneath the same.

37. The combination, in an envelop-sealing machine, with cams and supports for the same, said cams being adapted to be elevated at one end from said supports, of a slidingly-mounted wiper provided with cam-engaging members adapted to ride over said cams, to raise the wiper, and to pass under and out beneath the free ends of the cams.

38. The combination, in an envelop-sealing machine, of a frame provided with guide members, arms pivoted at their bases to said frame, provided with obliquely-directed guide members and carrying a presser-plate adapted to assist in sealing the envelops, sliding connections between the frame-guide members and the arm-guide members, and means to reciprocate said sliding connections on the guide members.

39. The combination, in an envelop-sealing machine, with a frame provided with guide members, of arms provided with obliquely-directed guide members and carrying a presser-plate adapted to assist in sealing the envelops, and sliding connections between the frame-guide members and the arm-guide members, through the medium of which said arms and presser-plate are oscillated when said connections are reciprocated on the guide members.

40. The combination, in an envelop-sealing machine, of a frame provided with guide members, arms pivoted at their bases to said frame and provided with obliquely-directed guide members, sliding connections between the frame-guide members and the arm-guide members to oscillate said arms when said connections are reciprocated on the guide members, and wiper mechanism connected with and reciprocated by the arms.

41. The combination, in an envelop-sealing machine, of a frame provided with guide members, arms pivoted at their bases to said frame, provided with obliquely-directed guide members and carrying a presser-plate adapted to assist in sealing the envelops, and sliding connections between the frame-guide members and the arm-guide members to oscillate said arms and plate when said connections are reciprocated on the guide members.

42. The combination, in an envelop-sealing machine, of a frame provided with guide members, arms pivoted at their bases to said frame, provided with obliquely-directed guide members and carrying a presser-plate adapted to assist in sealing the envelops, sliding connections between the frame-guide members and the arm-guid members to oscillate said arms and plate when said connections are reciprocated on the guide members, and horizontally-reciprocating wiper mechanism connected with the arms.

43. The combination, in an envelop-sealing machine, with a frame provided with guide members, arms pivoted at their bases to said frame, provided with obliquely-directed guide members and carrying a presser-plate adapted to assist in sealing the envelops, and sliding connections between the frame-guide members and the arm-guide members, of a shaft journaled in the frame, crank-arms on said shaft, and links connecting said crank-arms with said sliding connections.

44. An envelop-sealing machine, comprising means to retain an envelop in a substantially upright position, such means consisting of a support for the lower edge of the envelop, a forwardly-tensioned support at the back and a rising and falling support at the front, and other means to engage the sealing-flap of the envelop to withdraw said envelop from the retaining means.

45. An envelop-sealing machine, comprising means to retain an envelop in a substantially upright position, such means consisting of a support for the lower edge of the envelop, a forwardly-tensioned support at the back and a rising and falling support at the front, and other means to engage the sealing-flap of the envelop to withdraw said envelop from the retaining means and for moistening the flap.

46. An envelop-sealing machine, comprising means to retain an envelop in a substantially upright position, such means consisting of a support for the lower edge of the envelop, a forwardly-tensioned support at the back and a rising and falling support at the front, and other means to engage the sealing-flap of the envelop to withdraw said envelop from the retaining means and for moistening the flap, and additional means for sealing the flap.

47. In an envelop-sealing machine, a vertically-reciprocating depressor, and a horizontally-reciprocating wiper and envelop-flap support, the depressor and the support being adapted to cross each other's paths of travel.

48. In an envelop-sealing machine, a reciprocating wiper for the inner side of the flap, a reciprocating support for the flap and wiper, means to cause said wiper and support to move in the same directions, the former traveling farther than he latter, and means to cause the wiper to fall upon the support or the inner side of the flap thereon.

49. In an envelop-sealing machine, a reciprocating wiper for the inner side of the flap, a reciprocating support for the flap and wiper, and means to cause said wiper to travel in the same direction with said support for a greater distance than the support.

812,264. COMPOSITE BOOM FOR STEAM-SHOVELS AND THE LIKE. WALTER FERRIS, South Milwaukee, Wis., assignor to The Bucyrus Company, South Milwaukee, Wis., a Corporation of Wisconsin. Filed June 10, 1905. Serial No. 264,663.

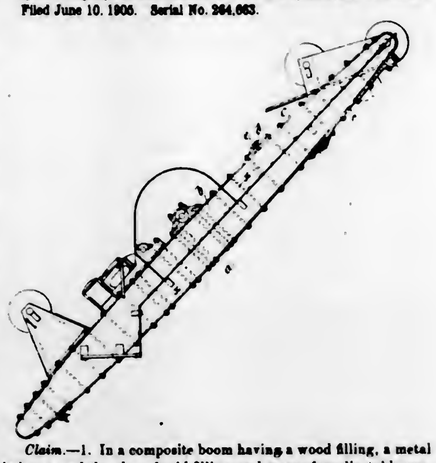

Claim.—1. In a composite boom having a wood filling, a metal binder around the edge of said filling, and means for adjustably connecting the ends of said binder.

2. In a composite boom having a wood filling, a sectional metal binder around the edges of said filling, and means for adjustably connecting the adjacent ends of the binder-sections.

3. In a composite boom having a wood filling, a metal binder around the edge of said filling, lugs on the ends of said binder and bolts coöperating with said lugs for adjustably connecting the ends of the binder.

4. In a composite boom having a wood filling, sectional metal binding-plates around the edge of said filling, lugs on the ends of the plate-sections, and bolts coöperating with adjacent lugs for adjustably connecting the plates.

5. In a composite boom having a wood filling and metal side and edge plates, a boom-guy lug attached to the under side of the boom, engaging and supporting the side and edge plates.

6. In a composite boom having a wood filling and metal side and edge plates, a boom-guy lug attached to the under side of the boom, engaging and supporting the side and edge plates, said lug comprising a strap having a pin-bearing thereon and vertical flanges along the edges of said strip.

7. In a composite boom having a wood filling and metal side and edge plates, a boom-guy lug comprising a strap riveted to the edge plate below the point-sheave, a pin-bearing on said strap and flanges along the sides of said strap engaging the edges of the side plates.

812,265. WIRE-FENCE TOOL. HENRY HAMMERMEISTER, Millersport, Ohio. Filed Sept. 9, 1905. Serial No. 277,751.

Claim.—1. A wire-fence tool comprising a drawing-head provided with wire-engaging means, a cross-bar movably mounted in the head adapted to form a fixed bearing for the head, and oppositely-movable operating-levers having pivotal connection with the head and the cross-bar.

2. A wire-fence tool comprising a drawing-head provided with wire-engaging teeth, a cross-bar on which the head is slidably mounted, oppositely-movable hand-levers pivotally connected with the bar, and links pivotally connected with the levers and the cross-bar.

3. A wire-fence tool comprising a substantially U-shaped drawing-head provided with a plurality of wire-engaging teeth, a cross-bar on which the head is slidably mounted provided with a post-receiving notch, hand-levers having offset ends connected to the bar, and toggle-links having pivotal connection with the cross-bar and the levers.

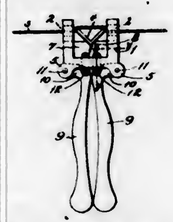

812,266. PUMPING APPARATUS. CHRISTIAN C. HILL, Chicago, Ill.; Clothilde B. Hill, executrix of said Christian C. Hill, deceased, assignor to The Steel Ball Company, Chicago, Ill., a Corporation of Wisconsin. Filed Dec. 23, 1904. Serial No. 238,046.

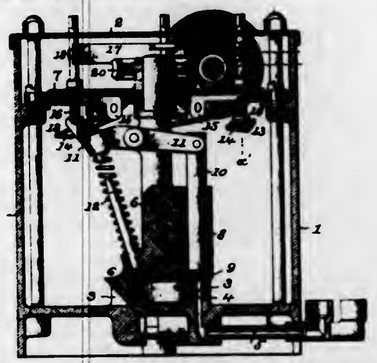

Claim.—1. A pumping apparatus, comprising a stationary member carrying a circular cluster of bearing-lugs in spaced relation and formed with outlet-passages in their bearing-faces, a revoluble head having bearing at one end on said bearing-lugs, there being a pump-cylinder carried by said head and having an inlet-outlet passage adapted to alternately register with the spaces between said lugs and with the outlet-passages therein, means for revolving said head, a pump-plunger in said cylinder, and means for reciprocating said plunger, substantially as set forth.

2. A pumping apparatus, comprising a stationary member provided with a circular series of outlet-passages, a revoluble head having bearing at one end on said member, there being a pump-cylinder carried by said head and having an inlet-outlet passage adapted to serially register with the series of outlet-passages aforesaid, means for revolving said head, a pump-plunger in said cylinder and means for reciprocating said plunger, the same comprising a circular series of cams equal in number to the series of outlet-passages, means for effecting an individual adjustment of said cams, and an intermediate operative connection between the said cams and the pump-plunger, substantially as set forth.

3. A pumping apparatus, comprising a stationary member provided with a circular series of outlet-passages, a revoluble head having bearing at one end on said member, there being a pump-cylinder carried by said head and having an inlet-outlet passage adapted to serially register with the series of outlet-passages aforesaid, means for revolving said head, a pump-plunger in said cylinder, and means for reciprocating said plunger, the same comprising a circular series of cams equal in number to the series of outlet-passages, a series of individual screws for effecting independent adjustment of said cams, and an intermediate operative connection between said cams and the pump-plunger, substantially as set forth.

4. A pumping apparatus, comprising a stationary member provided with a circular series of outlet-passages, a revoluble head having bearing at one end on said member, there being a pump-cylinder carried by said head and having an inlet-outlet passage adapted to serially register with the series of outlet-passages aforesaid, means for revolving said head, a pump-plunger in said cylinder and means for reciprocating said plunger, the same comprising a circular series of cams on said spider equal in number to the series of outlet-passages, means for effecting an individual adjustment of said cams, and an intermediate operative connection between said cams and the pump-plunger, substantially as set forth.

5. A pumping apparatus, comprising a stationary member provided with a circular series of outlet-passages, a revoluble head having bearing at one end on said member, a stationary spider forming a bearing for the other end of the head, there being a pump-cylinder carried by said head and having an inlet-outlet passage adapted to serially register with the series of outlet-passages aforesaid, means for revolving said head, a pump-plunger in said cylinder and means for reciprocating said plunger, the same comprising a circular series of cams on said spider equal in number to the series of outlet-passages, means for effecting an individual adjustment of said cams, and an intermediate operative connection between said cams and the pump-plunger, substantially as set forth.

6. A pumping apparatus, comprising a stationary member provided with a circular series of outlet-passages, a revoluble head having bearing at one end on said member, a stationary spider forming a bearing for the other end of the head, there being a pump-cylinder carried by said head and having an inlet-outlet passage adapted to serially register with the series of outlet-passages aforesaid, means for revolving said head, a pump-plunger in said cylinder and means for reciprocating said plunger, the same comprising a circular series of cams on said spider equal in number to the series of outlet-passages, a series of individual screws for effecting individual adjustment of said cams, and an intermediate operative connection between said cams and the pump-plunger, substantially as set forth.

7. A pumping apparatus, comprising a stationary member provided with a circular series of outlet-passages, a revoluble head having bearing at one end on said member, a stationary spider forming a bearing for the other end of the head, there being a pump-cylinder carried by said head and having an inlet-outlet passage adapted to serially register with the series of outlet-passages aforesaid, means for revolving said head, a pump-plunger in said cylinder and means for reciprocating said plunger, the same comprising a circular series of cams on said spider equal in number to the series of outlet-passages, a series of individual screws for effecting individual adjustment of said cams, a yoke-piece provided with resilient eyes for frictional engagement with the shanks of said screws, and an intermediate operative connection between said cams and the pump-plunger, substantially as set forth.

8. A pumping apparatus, comprising a stationary member carrying a circular cluster of bearing-lugs in spaced relation and formed with outlet-passages in their bearing-spaces, a revoluble head having bearing at one end on said bearing-lugs, there being a pump-cylinder arranged at one side of the axis of rotation of said head and having an inlet-outlet passage adapted to alternately register with the spaces between said lugs and with the outlet-passages therein, means for revolving said head, a pump-plunger in said cylinder, and means for reciprocating said plunger, substantially as set forth.

9. A pumping apparatus, comprising a stationary member provided with a circular series of outlet-passages, a revoluble head having bearing at one end in said member, there being a pump-cylinder arranged at one side of the axis of rotation of said head and having an inlet-outlet passage adapted to serially register with the outlet-passages aforesaid, means for revolving said head, a pump-plunger in said cylinder, and means for reciprocating said plunger, the same comprising a circular series of cams equal in number to the series of outlet-passages, means for effecting an individual adjustment of said cams, and an intermediate operative connection between said cams and the pump-plunger, substantially as set forth.

10. A pumping apparatus, comprising a stationary member provided with a circular series of outlet-passages, a revoluble head having bearing at one end in said member, there being a pump-cylinder arranged at one side of the axis of rotation of said head and having an inlet-outlet passage adapted to serially register with the outlet-passages aforesaid, means for revolving said head, a pump-plunger in said cylinder, and means for reciprocating said plunger the same comprising a circular series of cams equal in number to the series of outlet-passages, a series of individual screws for effecting independent adjustment of said cams, and an intermediate operative connection between said cams and the pump-plunger, substantially as set forth.

11. A pumping apparatus, comprising a stationary member

provided with a circular series of outlet-passages, a revoluble head having bearing at one end in said member, there being a pump-cylinder arranged at one side of the axis of rotation of said head and having an inlet-outlet passage adapted to serially register with the outlet-passages aforesaid, means for revolving said head, a pump-plunger in said cylinder, and means for reciprocating said plunger the same comprising a circular series equal in number to the series of outlet-passages, a series of individual screws for effecting independent adjustment of said cams, a yoke-piece provided with a series of resilient eyes having frictional engagement with the shanks of said screws, and an intermediate operative connection between said cams and the pump-plunger, substantially as set forth.

12. A pumping apparatus, comprising a stationary member provided with a circular series of outlet-passages, a revoluble head having bearing at one end on said member, a stationary spider forming a bearing for the other end of the head, there being a pump-cylinder arranged at one side of the axis of rotation of said head and having an inlet-outlet passage adapted to serially register with the series of outlet-passages aforesaid, means for revolving said head, a pump-plunger in said cylinder and means for reciprocating said plunger, the same comprising a circular series of cams on said spider equal in number to the series of outlet-passages, means for effecting an individual adjustment of said cams, and an intermediate operative connection between said cams and the pump-plunger, substantially as set forth.

13. A pumping apparatus, comprising a stationary member provided with a circular series of outlet-passages, a revoluble head having bearing at one end on said member, a stationary spider forming a bearing for the other end of the head, there being a pump-cylinder arranged at one side of the axis of rotation of said head and having an inlet-outlet passage adapted to serially register with the series of outlet-passages aforesaid, means for revolving said head, a pump-plunger in said cylinder and means for reciprocating said plunger, the same comprising a circular series of cams on said spider equal in number to the series of outlet-passages, a series of individual screws for effecting independent adjustment of said cams, and an intermediate operative connection between said cams and the pump-plunger, substantially as set forth.

14. A pumping apparatus, comprising a stationary member provided with a circular series of outlet-passages, a revoluble head having bearing at one end on said member, a stationary spider forming a bearing for the other end of the head, there being a pump-cylinder arranged at one side of the axis of rotation of said head and having an inlet-outlet passage adapted to serially register with the series of outlet-passages aforesaid, means for revolving said head, a pump-plunger in said cylinder and means for reciprocating said plunger, the same comprising a circular series of cams on said spider equal in number to the series of outlet-passages, a series of individual screws for effecting independent adjustment of said cams, a yoke-piece provided with resilient eyes for frictional engagement with the shanks of said screws, and an intermediate operative connection between said cams and the pump-plunger, substantially as set forth.

15. A pumping apparatus, comprising a stationary member carrying a circular cluster of bearing-lugs in spaced relation and formed with outlet-passages in their bearing-faces, a revoluble head having bearing at one end on said bearing-lugs, there being a pump-cylinder carried by said head and having an inlet-outlet passage adapted to alternately register with the spaces between said lugs and with the outlet-passages therein, means for revolving said head, a pump-plunger in said cylinder, a spring for moving said plunger in one direction and a cam mechanism for moving said plunger in the other direction, substantially as set forth.

16. A pumping apparatus, comprising a stationary member provided with a circular series of outlet-passages, a revoluble head having bearing at one end on said member, there being a pump-cylinder carried by said head and having an inlet-outlet passage adapted to serially register with the series of outlet-passages aforesaid, means for revolving said head, a pump-plunger in said cylinder, a spring for moving said plunger in one direction and a cam mechanism for moving said plunger in the other direction, the same comprising a circular series of cams equal in number to the series of outlet-passages, means for effecting an individual adjustment of said cams, and an intermediate operative connection between said cams and the pump-plunger, substantially as set forth.

17. A pumping apparatus, comprising a stationary member provided with a circular series of outlet-passages, a revoluble head having bearing at one end on said member, there being a pump-cylinder carried by said head and having an inlet-outlet passage adapted to serially register with the series of outlet-passages aforesaid, means for revolving said head, a pump-plunger in said cylinder, a spring for moving said plunger in one direction and a cam mechanism for moving said plunger in the other direction, the same comprising a circular series of cams equal in number to the series of outlet-passages, a series of individual screws for effecting independent adjustment of said cams, and an intermediate operative connection between said cams and the pump-plunger, substantially as set forth.

18. A pumping apparatus comprising a stationary member provided with a circular series of outlet-passages, a revoluble head having bearing at one end on said member, a stationary spider forming a bearing for the other end of the head, there being a pump-cylinder carried by said head and having an inlet-outlet passage adapted to serially register with the series of outlet-passages aforesaid, means for revolving said head, a pump-plunger in said cylinder, a spring for moving said plunger in one direction, and a cam mechanism for moving said plunger in the other direction, the same comprising a circular series of cams equal in number to the series of outlet-passages, means for effecting an individual adjustment of said cams, and an intermediate operative connection between said cams and the pump-plunger, substantially as set forth.

19. A pumping apparatus, comprising a stationary member provided with a circular series of outlet-passages, a revoluble head having bearing at one end on said member, a stationary spider forming a bearing for the other end of the head, there being a pump-cylinder carried by said head and having an inlet-outlet passage adapted to serially register with the series of outlet-passages aforesaid, means for revolving said head, a pump-plunger in said cylinder, a spring for moving said plunger in one direction, and a cam mechanism for moving said plunger in the other direction, the same comprising a circular series of cams equal in number to the series of outlet-passages, a series of individual screws for effecting said independent adjustment of said cams, and an intermediate operative connection between said cams and the pump-plunger, substantially as set forth.

20. A pumping apparatus, comprising a stationary member provided with a circular series of outlet-passages, a revoluble head having bearing at one end in said member, there being a pump-cylinder arranged at one side of the axis of rotation of said head and having an inlet-outlet passage adapted to serially register with the outlet-passages aforesaid, means for revolving said head, a spring for moving said plunger in one direction, and a cam mechanism for moving said plunger in the other direction, the same comprising a circular series of cams equal in number to the series of outlet-passages, means for effecting an individual adjustment of said cams, and an intermediate operative connection between said cams and the pump-plunger, substantially as set forth.

21. A pumping apparatus, comprising a stationary member provided with a circular series of outlet-passages, a revoluble head having bearing at one end in said member, there being a pump-cylinder arranged at one side of the axis of rotation of said head and having an inlet-outlet passage adapted to serially register with the outlet-passages aforesaid, means for revolving said head, a spring for moving said plunger in one direction, and a cam mechanism for moving said plunger in the other direction, the same comprising a circular series of cams equal in number to the series of outlet-passages, a series of individual screws for effecting independent adjustment of said cams, and an intermediate operative connection between said cams and the pump-plunger, substantially as set forth.

22. A pumping apparatus, comprising a stationary member provided with a circular series of outlet-passages, a revoluble head having bearing at one end on said member, a stationary spider forming a bearing for the other end of the head, there being a pump-cylinder arranged at one side of the axis of rotation of said head and having an inlet-outlet passage adapted to serially register with the series of outlet-passages aforesaid, means for revolving said head, a pump-plunger in said cylinder, a spring for moving said plunger in one direction, and a cam mechanism for moving said plunger in the other direction, the same comprising a circular series of cams on said spider equal in number to the series of outlet-passages, means for effecting an individual adjustment of said cams, and an intermediate operative connection between said cams and the pump-plunger, substantially as set forth.

23. A pumping apparatus, comprising a stationary member provided with a circular series of outlet-passages, a revoluble head having bearing at one end on said member, a stationary spider forming a bearing for the other end of the head, there being a pump-cylinder arranged at one side of the axis of rotation of said head and having an inlet-outlet passage adapted to serially register with the series of outlet-passages aforesaid, means for revolving said head, a pump-plunger in said cylinder, a spring for moving said plunger in one direction, and a cam mechanism for moving said plunger in the other direction, the same comprising a circular series of cams equal in number to the series of outlet-passages, a series of individual screws for effecting independent adjustment of said cams, and an intermediate operative connection between said cams and the pump-plunger, substantially as set forth.

24. A pumping apparatus, comprising a stationary member provided with a circular series of outlet-passages, a revoluble head having bearing at one end on said member, a stationary spider forming a bearing for the other end of the head, there being a pump-cylinder carried by said head and having an inlet-outlet passage adapted to serially register with the series of outlet-passages aforesaid, means for revolving said head, a pump-plunger in said cylinder and means for reciprocating said plunger, and a spring arranged between said spider and a collar on the revoluble head and adapted to hold said head to its bearing on the stationary member, substantially as set forth.

812,267. **HORSE FLY-NET.** ALBERT HOST, Wellston, Ohio. Filed July 22, 1905. Serial No. 270,351.

Claim.—1. In a harness, the combination with the back-strap, breeching and quarter-straps, each provided with orifices, of fly-net lashes threaded through the orifices of the respective straps and held against movement relatively thereto.

2. The combination with the overcheck-strap, back-strap, breeching-strap and quarter-straps of a harness, of fly-net lashes threaded therethrough.

812,268. **COFFEE-ROASTING MACHINE.** FRANK T. HOLMES, Brooklyn, N. Y., assignor of one-half to Huntley Manufacturing Company, Silvercreek, N. Y. Filed July 12, 1905. Serial No. 269,310.

Claim.—1. The combination of a perforated revolving drum, means for heating the same, an inclosing stationary casing, a suction-spout arranged in the side of the casing, lengthwise of the drum, and wings on the drum which sweep through the space between the drum and the casing and carry the chaff to said suction-spout, substantially as set forth.

2. The combination of a perforated revolving drum, means for heating the same, an inclosing stationary casing, a suction-spout arranged in the side of the casing, lengthwise of the drum, and at the descending side of the same, wings on the drum which sweep through the space between the drum and the casing and carry the chaff to the suction-spout, a settling-chamber with which said spout is connected, and an exhaust-fan connected with said chamber, substantially as set forth.

3. The combination of a perforated, revolving, open-ended drum, a burner projecting a flame into the same, an inclosing stationary casing, a suction-spout arranged in the side of the lower portion of the casing and extending lengthwise of the drum, and a suction-fan connected with said spout, substantially as set forth.

4. The combination of a stationary inclosing casing having its front and rear heads provided with open annular frames for the admission of air and having a guard-flange on the inner side of the front head, and a perforated roasting-drum having its front end arranged adjacent to said guard-flange and having its rear end constructed to fit around the adjacent annular frame, substantially as set forth.

5. The combination of a stationary inclosing casing, having its front and rear heads provided with open annular frames for the admission of air and having a guard-flange on the inner side of the front head, a perforated roasting-drum having its front end arranged adjacent to said guard-flange and having its rear end fitted around the adjacent annular frame, a suction-spout connected with said casing, and a suction-fan connected with said spout, substantially as set forth.

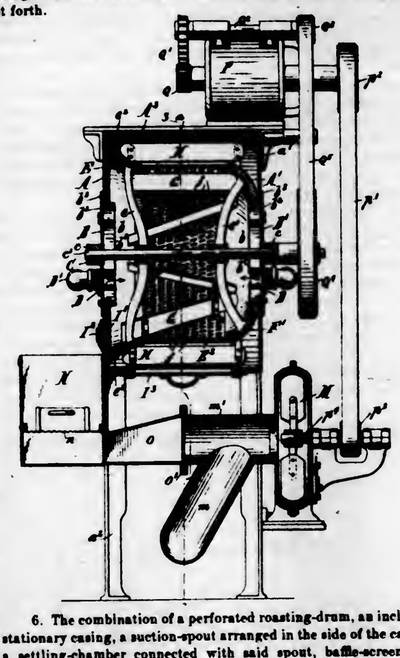

6. The combination of a perforated roasting-drum, an inclosing stationary casing, a suction-spout arranged in the side of the casing, a settling-chamber connected with said spout, baffle-screens arranged in said chamber, and a suction-fan connected with said chamber, substantially as set forth.

7. The combination of a perforated roasting-drum, an inclosing stationary casing, a suction-spout arranged in the side of the casing, a settling-chamber connected with said spout, a cooling-chamber for the roasted coffee, a suction-fan, and spouts leading from said settling-chamber and said cooling-chamber to said suction-fan, substantially as set forth.

812,269. **WATER-LEVEL-GAGING INSTRUMENT.** ROBERT H. HORTON, Utica, N. Y., assignor to Daniel L. Mott, Utica, N. Y. Filed May 17, 1905. Serial No. 260,765.

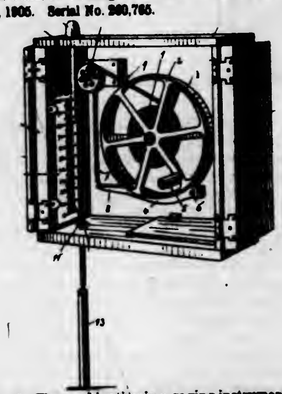

Claim.—1. The combination in a gaging instrument of the character described of a casing arranged to be secured in a fixed position, a scale on the interior of the casing, a graduated gage-chain, a reel in the casing, an opening in the bottom of the casing at the foot of the scale, means for causing the gage-chain to pass from the reel in close proximity to the said scale and through the opening and means for controlling the rotation of the reel, substantially as set forth.

2. The combination in a gaging instrument of a casing adapted to be secured in a fixed position, an adjustable scale in said casing, a reel in said casing and means for controlling the movement of the reel, a graduated gage-chain adapted to be wound on the reel and passing from thence in close proximity to said scale and through an opening in the casing at the foot of the scale, substantially as set forth.

3. The combination in a gaging instrument of the character described of a casing adapted to be secured in a fixed position, a fixed observation-mark within the casing, a reel mounted in the casing, a graduated gage-chain passing in close proximation to said observation-point and thence through an opening in the bottom of the casing, and a gage-chain weight adapted to pass through said opening and be housed in the casing, substantially as set forth.

4. The combination in a gaging instrument of the character described of a casing adapted to be secured in a fixed position, an adjustable scale secured in the casing having a projecting arm extending to the exterior of the casing by means of which the position of the scale can be nicely determined, a reel mounted in the casing, a graduated gage-chain adapted to be wound on the reel and passing in close proximity to the scale and through an opening in the casing at the foot of the scale, a weight arranged on the end of the gage-chain adapted to be passed through said opening and housed in the casing, and means for operating and securing said reel in adjusted position, substantially as set forth.

812,270. ORE-SORTING BELT. FRANK W. JACQUES, Victor, Colo. Filed Jan. 24, 1905. Serial No. 242,534.

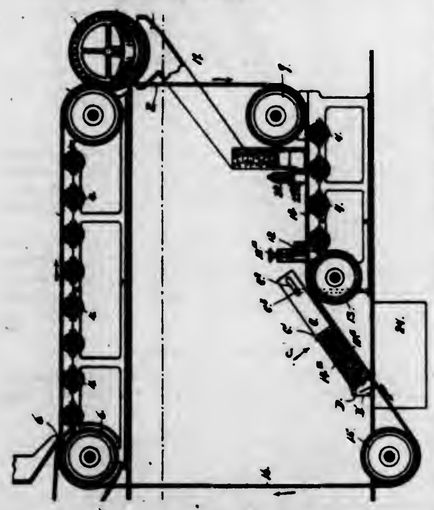

Claim.—1. In an ore-belt apparatus, the combination with suitable supporting mechanism, of an endless traveling belt one portion of which is located considerably higher than the other, and suitable means for taking the material discharged from the upper portion of the belt, grading the same, and discharging one grade of it upon the reverse surface of the lower or return portion thereof.

2. The combination with suitable supporting apparatus, of an endless traveling belt so mounted that one portion thereof is considerably higher than the other, the lower or return portion thereof having its reverse surface exposed to receive the ore, means located at the rear extremity of the upper portion of the belt for receiving the discharge from the upper portion of the belt and separating the finer portion therefrom, and means for delivering the said finer portion of the material, upon the lower reverse surface of the belt for the purpose set forth.

3. In ore-belt apparatus, the combination with a suitable support, of an endless traveling belt having one portion higher than the other, a chute for receiving the discharge from the rear extremity of the upper portion of the belt, a rotary grizzly into which the said material is discharged by the chute, and another chute for receiving the finer portion of the material from the grizzly and discharging it upon the reverse side of the lower or return portion of the belt.

4. The combination with a suitable support, of an endless traveling ore-belt having one portion located considerably higher than the other, the lower belt portion being the return portion thereof, having its reverse surface exposed to receive the ore, means for receiving the discharge from the upper portion of the belt and grading the same, and means for delivering one grade of the material to the lower reverse surface of the belt, and a device mounted to set on the material to remove it from the lower portion of the belt for the purpose set forth.

5. The combination with a suitable support, of an endless traveling ore-belt having horizontal upper and lower portions, a part of the lower run being inclined, the upper portion being considerably more elevated than the lower portion, the lower portion having its reverse side exposed to receive the ore, the inclined portion being located at the forward extremity of the lower portion, and a device placed above the inclined portion of the belt whereby the material is automatically discharged therefrom, substantially as described.

6. In an ore-belt apparatus, the combination with suitable supporting mechanism, of an endless traveling belt, one portion of which is located higher than the other, suitable means for taking the material discharged from the upper portion of the belt and discharging it upon the reverse surface of the lower or return portion thereof, means mounted above the lower portion of the belt and adapted to separate the same to facilitate the ore-sorting operation, and means mounted above the lower portion of the belt remote from where the ore is fed to the latter, for removing the material from both sides of the belt, and receptacles mounted on opposite sides of the belt to receive the said discharge, substantially as described.

7. In ore-belt apparatus, the combination of an endless traveling belt or apron one portion of which is located above the other, suitable means for taking the material discharged from the upper portion of the belt grading or classifying it and delivering one grade of it to the reverse surface of the lower or return portion thereof, and a device for removing the material from the lower portion of the belt, the said device being located remote from the point of discharge and consisting of inclined wings or blades adapted to remove the material from the belt as the latter travels thereunder, and discharge the same at suitable points on opposite sides.

8. The combination with an endless traveling belt or apron having upper and lower parallel or approximately parallel portions, means for feeding the material to be treated upon the upper surface of the upper part of the belt, means for receiving the discharge from the upper portion of the belt, and delivering it to the reverse side of the lower portion of the belt, and a device mounted above the lower portion of the belt remote from the point of discharge, and consisting of inclined wings occupying a position close to the belt and adapted to remove the material thereon and discharge the same on opposite sides of the belt, and an arm pivoted at the apex or angle of the inclined wings and adapted to swing in either direction, whereby all of the material may be discharged on either side of the belt as desired.

9. In an ore-belt apparatus, the combination of an endless traveling belt or apron one part of which is considerably higher than the other, means for delivering the ore to be treated, to the upper portion of the belt, a rotary grizzly for receiving the discharge from the upper portion of the belt, a chute for receiving the finer material which passes through the grizzly between its extremities, and arranged to discharge the said material upon the lower portion of the belt, a vertically-adjustable spreader located adjacent the point of the discharge and extending transversely of the belt, and a discharge device mounted above the belt remote from the spreader and consisting of stationary inclined wings located to scrape the material from the belt and discharge the same on opposite sides thereof, an arm pivotally connected with the apex or angle of the inclined wings and adapted to be swung in either direction for the purpose of discharging the whole of the material on either side of the belt, and a small V-shaped device located above the central portion of the belt and directly in front of the pivoted arm when in its central position whereby the material upon the belt is prevented from interfering with the action of said arm.

812,271. PNEUMATIC-DESPATCH-TUBE SYSTEM. JOHN S. JACQUES, Dorchester, Mass. Filed May 24, 1905. Serial No. 261,903.

Claim.—1. In a pneumatic-despatch-tube system, an ejector provided with an inlet and an outlet orifice, a despatch-tube provided with an inlet and an outlet orifice, said tube connected to said ejector intermediate said ejector inlet and outlet orifices, a terminal valve adapted to close each of said despatch-tube orifices, respectively, means for normally closing said valves, an electromagnet and a catch adapted to hold one of said terminal valves open and to be operated by said electromagnet, the other of said terminal valves adapted to close the circuit of said magnet and operates said catch to release the valve held thereby.

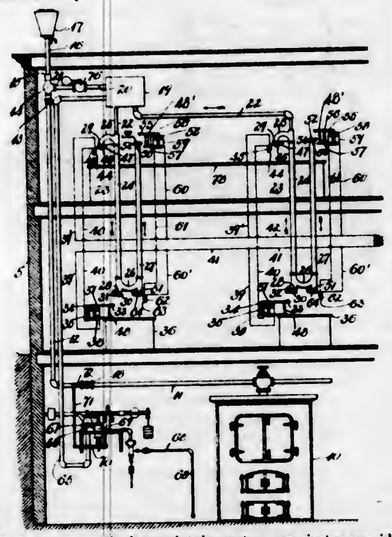

2. In a pneumatic-despatch-tube system, an ejector provided with an inlet and an outlet orifice, a despateh-tube provided with an inlet and an outlet orifice, said tube connected to said ejector intermediate said ejector inlet and outlet orifices, a terminal valve adapted to close each of said despatch-tube orifices, respectively, means for normally closing said valves and an electromagnet having an armature formed as a catch to engage one of said terminal valves, the other of said terminal valves adapted to close the circuit of said magnet and operate said catch to release the valve held thereby.

3. In a pneumatic-despatch-tube system, an ejector provided with an inlet and an outlet orifice, a transmission and a return tube, each of said tubes provided with an inlet and an outlet orifice, respectively, one of said tubes connected to said ejector intermediate said ejector inlet and outlet orifices, a terminal valve adapted to close each of said tube-outlet orifices, respectively, means for normally closing said valves, a connecting-tube joining said transmission and return tubes together, an electromagnet and a catch adapted to hold one of said terminal valves open, and to be operated by said electromagnet, one of the other of said valves adapted to close the circuit of said magnet and operate said catch to release the valve held thereby.

4. In a pneumatic-despatch-tube system, an ejector provided with an inlet and an outlet orifice, a despatch-tube provided with an inlet and an outlet orifice, a vacuum-reservoir connected to said despatch-tube and to said ejector intermediate the inlet and outlet orifices of said ejector, a terminal valve adapted to close each of said despatch-tube orifices, respectively, means for normally closing said valves, an electromagnet, and a catch adapted to hold one of said terminal valves open, and to be operated by said electromagnet, the other of said valves adapted to close the circuit of said magnet and operate said catch to release the valve held thereby.

5. In a pneumatic-despatch-tube system, an ejector provided with an inlet and an outlet orifice, a despatch-tube provided with an inlet and an outlet orifice, a vacuum-reservoir connected to said despatch-tube and to said ejector intermediate the inlet and outlet orifices of said ejector, a terminal valve adapted to close each of said despatch-tube-outlet orifices, respectively, means for normally closing said valves, an electromagnet, a catch adapted to hold one of said terminal valves open, and to be operated by said electromagnet, the other of said valves adapted to close the circuit of said magnet and operate said catch to release the valve held thereby, and a check-valve located between said vacuum-reservoir and ejector.

6. In a pneumatic-despatch-tube system, an ejector provided with an inlet and an outlet orifice, a despatch-tube provided with an inlet and an outlet orifice, a vacuum-reservoir connected to said despatch-tube and to said ejector intermediate the inlet and outlet orifices of said ejector, a terminal valve adapted to close each of said despatch-tube orifices, respectively, means for normally closing said valves, an electromagnet, a catch adapted to hold one of said terminal valves open, and to be operated by said electromagnet, the other of said valves adapted to close the circuit of said magnet and operate said catch to release the valve held thereby, and a receptacle adapted to contain steam, air, or the like under pressure connected to the inlet-orifice of said ejector.

7. In a pneumatic-despatch-tube system, an ejector provided with an inlet and an outlet orifice, a vacuum-reservoir connected to said despatch-tube and to said ejector intermediate the inlet and outlet orifices of said ejector, a terminal valve adapted to close each of said despatch-tube orifices, respectively, means for normally closing said valves, an electromagnet, a catch adapted to hold one of said terminal valves open, and to be operated by said electromagnet, the other of said valves adapted to close the circuit of said magnet and operate said catch to release the valve held thereby, a receptacle adapted to contain steam, air, or the like under pressure connected to the inlet-orifice of said ejector, and a throttle-valve interposed between said ejector and receptacle.

8. In a pneumatic-despatch-tube system, an ejector provided with an inlet and an outlet orifice, a despatch-tube provided with an inlet and an outlet orifice, a vacuum-reservoir connected to said despatch-tube and to said ejector intermediate the inlet and outlet orifices of said ejector, a terminal valve adapted to close each of said despatch-tube orifices, respectively, means for normally closing said valves, an electromagnet, a catch adapted to hold one of said terminal valves open, and to be operated by said electromagnet, the other of said valves adapted to close the circuit of said magnet and operate said catch to release the valve held thereby, a receptacle adapted to contain steam, air or the like under pressure connected to the inlet-orifice of said ejector, a throttle-valve interposed between said ejector and receptacle, and mechanism to open and close said throttle-valve.

9. In a pneumatic-despatch-tube system, an ejector provided with an inlet and an outlet orifice, a despatch-tube provided with an inlet and an outlet orifice, a vacuum-reservoir connected to said despatch-tube and to said ejector intermediate the inlet and outlet orifices of said ejector, a terminal valve adapted to close each of said despatch-tube orifices, respectively, means for normally closing said valves, an electromagnet, a catch adapted to hold one of said terminal valves open, and to be operated by said electromagnet, the other of said valves adapted to close the circuit of said magnet and operate said catch to release the valve held thereby, a receptacle adapted to contain steam, air or the like under pressure connected to the inlet-orifice of said ejector, a throttle-valve interposed between said ejector and receptacle, fluid-pressure-controlled mechanism to open and close said throttle-valve, and a pipe operatively connecting said vacuum-reservoir to said mechanism, whereby said mechanism is operated and said throttle-valve opened and closed.

812,272. CORN-SHOCK LOADER AND CARRIER. JOHN D. KAYLOR, Harrison township, Logan county, Ohio. Filed Jan. 6, 1905. Serial No. 239,950.

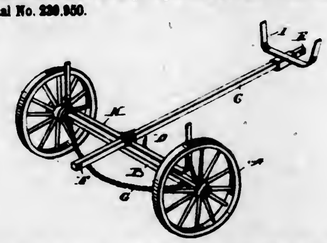

Claim.—1. In a corn-shock loader and carrier, the wheels A, axle B, lever C, chain G, arms K and the arms I, adjustable on the lever to accommodate them to shocks of different length, as and for the purpose set forth.

2. In a corn-shock loader and carrier, the wheels A, axle B, lever C, chain G, arms K adjustable arms I and means for securing several carriers in train, as and for the purpose set forth.

812,273. LIFTING DEVICE FOR GANG AND SULKY PLOWS. FRED J. KELLY, Lansing, Mich., assignor to H. Bement's Sons, Lansing, Mich., a Corporation of Michigan. Filed May 17, 1904. Serial No. 208,480.

Claim.—1. In combination, a plow-frame, a plow with means for suspending the same from the frame, means for raising said plow, an automatically-operable hook pivoted in said lifting means and a stationary lug adapted to be engaged by said hook on the beam of the plow, substantially as described.

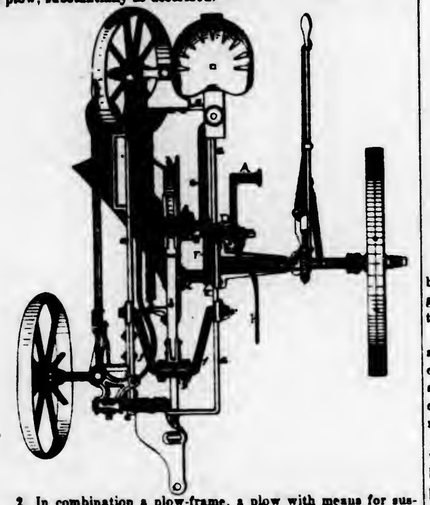

2. In combination a plow-frame, a plow with means for suspending the same from the frame, means for raising said plow including a shaft, a lever thereon, a bail between said shaft and plow-beam, a hook pivoted to the shaft and operatively connected to said bail, and a lug adapted to be engaged by said hook attached to the beam of said plow.

3. In combination with a plow and frame from which said plow is adjustably suspended, a lever for raising said plow, a bail connecting said lever with the beam of said plow, a hook pivoted on the shaft of said lever and loosely connected to said bail, and a lug adapted to be engaged by said hook, substantially as described.

4. In combination with a plow and frame from which said plow is adjustably suspended, a lever for raising said plow, mounted on said frame, a bail connecting said lever with the beams of said plow, a hook pivoted on the shaft of said lever means on the hook for engaging said bail and a lug adapted to be engaged by said hook, substantially as described.

5. In combination with a plow and frame from which said plow is adjustably suspended, a lever for raising said plow, a bail connecting said lever with the beam of said plow, a hook pivoted on the shaft of said lever, a lug adapted to be engaged by said hook, and a foot-lever connected to said hook for releasing said clutch, substantially as described.

6. In combination, a plow-beam, a frame from which the latter is adjustably suspended, a lever for raising said plow, a bail operatively connected with said lever and beam, a hook loosely connected to said bail, and a lug on the beam adapted to be engaged by said hook upon the operation of said lever.

7. In combination, a plow-beam, a frame from which the latter is adjustably suspended, a plate on the beam having an outwardly-extended lug thereon, a shaft, a bail connected respectively to said shaft and plate, a lever operatively associated with said bail, and a hook operable upon the movement of said lever and bail adapted to engage said lug.

8. In combination a plow-beam, a frame from which said beam is suspended, a shaft on the frame having a serrated bearing-face, a bail operatively connected adjacent its respective ends to said shaft and beam, a lever for adjusting the beam, having a serrated bearing-face adapted to engage the complementary face of the shaft whereby the adjustable connection is formed, and means for retaining the beam in adjustable positions.

9. In combination, a plow-beam and a frame from which the plow-beam is suspended, a lever for raising said plow, a shaft to which said lever is pivoted, a bail connected respectively to the shaft and plow-beam, a second lever operatively connected intermediate its ends to said bail, and having at its lower end a hook, and a lug on the beam adapted to be engaged by said hook.

812,274. **FENCE.** JOHN KEMPF, Jr., Salt Lake City, Utah. Filed May 31, 1905. Serial No. 263,606.

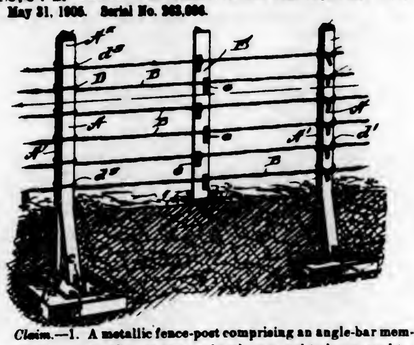

Claim.—1. A metallic fence-post comprising an angle-bar member and a brace member constructed and arranged to be secured together to clamp the longitudinal wires therebetween, the lower portions of said members being separated to form a base for the post.

2. A metallic fence-post comprising an angle-bar member and a brace member constructed and arranged to be secured together to clamp the longitudinal wires therebetween, the lower portions of said members being separated to form a base for the post, and an anchor to which the lower ends of said members are adapted to be connected.

3. A metallic fence-post comprising an anchor-plate, a straight, vertical angle-bar mounted thereon, a brace member mounted on said base at a distance from said angle-bar and bent so that in its upper portion it enters the concavity of said angle-bar to form therewith a clamp for the longitudinal wires and means to secure said members together.

4. A metallic fence-post comprising a straight angle-bar member and a tubular brace member adapted to enter the concavity of said angle-bar member and form therewith a clamp for the longitudinal wires of the fence, said tubular member being bent away from said angle-bar member near its lower end so as to give stability to the post, and means to secure said members together.

5. A metallic fence-post comprising an angle-bar member and a brace member having its upper portion straight and adapted to extend into the concavity of the angle-bar member to form therewith a clamp for the longitudinal wires, and having its lower portion bent outward away from the angle-bar member, and an anchor connecting the lower ends of the two fence-post members.

6. A metallic fence-post comprising an angle-bar member and a brace member having its upper portion straight and adapted to extend into the concavity of the angle-bar member to form therewith a clamp for the longitudinal wires, and having its lower portion bent outward away from the angle-bar member, the fence-post members being slotted at their lower ends and an anchor having a horizontal portion and a vertical portion adapted to enter the slots in the fence-post members and secured therein to connect the lower ends of such members.

812,275. **ARTIFICIAL LIMB.** WILLIAM M. KEMPOEL, Duluth, Minn. Filed May 31, 1905. Serial No. 263,197.

Claim.—In an artificial limb, the combination with a socket portion for the reception of the wearer's limb, of a concentric wall-cushion formed of factice, a composition of a fat oil or oils and sulfur, positioned in said socket, substantially as described.

812,276. **WEED-CUTTER.** JOHN KELLEHER, Los Angeles, Cal. Filed Oct. 10, 1904. Serial No. 227,833.

Claim.—A weed-cutter provided with a cutting-blade having a substantially flat, straight, underground portion extending rearwardly parallel with the surface of the earth, the cutting edge of said underground portion inclined laterally to the direction of draft, a shank for attaching said blade to an implement, and a bent portion connecting the shank to the straight portion, the forward edge of said bent portion being in position to encounter the soil throughout substantially the entire length thereof and lying in the plane of the side of a cylinder parallel with the line of draft.

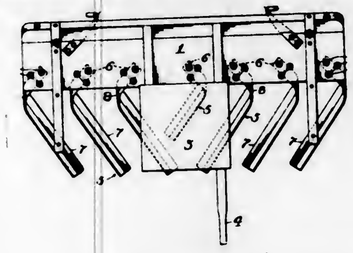

812,277. **TURBINE-DRIVEN LOCOMOTIVE.** HUGO LENTZ, Berlin, Germany. Filed Aug. 16, 1905. Serial No. 274,376.

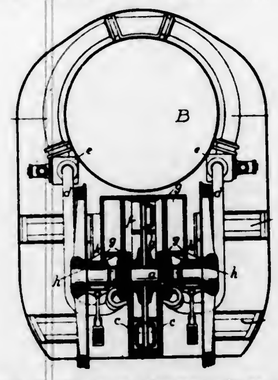

Claim.—1. In combination, a locomotive-frame, a driving-axle therefor, a turbine-wheel connected with said axle, a turbine-casing, for said wheel, provided with bearing parts which rest upon axle-boxes through which the axle passes.

2. In combination, a locomotive-frame, a driving-axle therefor, a turbine-wheel connected with said axle, a turbine-casing, for said wheel, provided with bearing parts which are connected with axle-boxes through which the axle passes.

812,278. **SEED-PLANTER.** PHILIP LE SUEUR, Los Angeles, Cal. Filed Aug. 11, 1904. Serial No. 220,323.

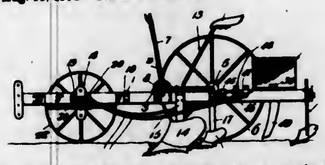

Claim.—1. In combination with a plow-beam, a pair of plates bolted to the beam and having a series of holes, a pair of bushings in opposite holes, an axle through the bushings, a wheel on the axle, cranks on the axle, knuckle-joints on the axles, pitmen having ends extending into the knuckle-joints, the pitman having a series of holes, and pins through the knuckle-joints and pitmen, a hopper having a central discharge hole, a pair of slides over the hole, and having seed-holes, and detachable connections from the pitmen to the slides.

2. The combination with a dropper-slide, and an operating-axle, carrying a crank, of a knuckle-joint pivotally mounted on said crank and a pitman longitudinally adjustable in said knuckle-joint and connected to said dropper-slide.

3. The combination with a dropper-slide, and an operating-axle carrying a crank, of a knuckle-joint pivotally mounted on said crank and connected to said dropper-slide, said knuckle-joint comprising an eye member, having a hole at right angles to the eye and a cotter-pin through the member, the pitman having a series of holes for receiving the cotter-pin.

4. A seed-planter having a beam comprising bars, dropper-slides between said bars, cross-head guides supported on and extending across said bars and connected with said slides, respectively, and pitmen outside said bars and connected with and supported by said cross-heads, respectively.

5. In a seed-planter, a beam comprising two bars formed with a front loop for receiving the wheel and with a larger rear loop with a pair of bars extending from the neck of the front loop through the center of the rear loop and uniting with the back bar of the rear loop, a hopper on the latter pair of bars, suitable dropping-slides, a wheel within the front loop, cranks for the wheel, and suitable connections from the cranks to the slides, a rear axle on the large loop, wheels on on the axle, and suitable plows carried by the frame.

6. In combination with a plow-beam, a hopper mounted thereon, dropper-slides for the hopper, cross-head guides on opposite sides of the beam in front of the hopper, cross-heads mounted on the respective guides, a gage-wheel and axle, cranks thereon, pitmen connecting the cranks and respective cross-heads, and means for detachably connecting the dropper-slides with the cross-heads.

7. In combination with a plow-beam, a hopper mounted thereon, dropper-slides for the hopper, cross-head guides on opposite sides of the beam in front of the hopper, cross-heads mounted on the respective guides, a gage-wheel and axle, cranks thereon, pitmen connecting the cranks and cross-heads, screws threaded into the cross-heads, each dropper-slide having a hole for engaging an end of a screw.

8. In combination with a plow-beam, a hopper mounted thereon, dropper-slides for the hopper, cross-head guides on the beam, cross-heads mounted on the guides, an operating-axle carrying cranks, knuckle-joints pivotally mounted on the cranks, pitmen adjustable in the knuckle-joints, and connected to the cross-heads, and means for detachably connecting the dropper-slides with the cross-heads.

9. In combination with a plow-beam, a hopper mounted thereon, slideways in the hopper-bottom, dropper-slides to slide therein, anticlogging gates pivotally attached to the sides of the slideways at the front and rear end of said hopper, said anticlogging gates exerting a yielding pressure upon the outer ends of the dropper-slides.

10. In combination with a plow-beam, a hopper mounted thereon, slideways in the hopper-bottom, dropper-slides to slide therein, anticlogging gates pivotally attached to the sides of the slideways at the front and rear ends of the hopper, said anticlogging gates provided with means for automatically adjusting themselves to thick and thin dropper-slides.

812,279. **AUTOMATIC ENGINE-STOP.** NATHANIEL C. LOCKE, Salem, Mass., assignor to Locke Regulator Company, Kittery, Me., a Corporation of Maine. Filed Apr. 10, 1905. Serial No. 254,735.

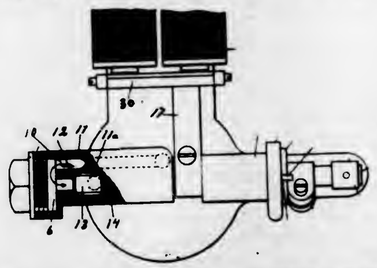

Claim.—1. The combination with a main shut-off valve and its casing, of a coöperating puppet-valve and its casing, an auxiliary valve and its casing, a passage from the inlet end of the puppet-casing extending through the auxiliary-valve casing to the outlet end of the puppet-casing, and means for actuating the auxiliary valve to

control the said passage, whereby the main shut-off valve may be controlled.

2. The combination with a main shut-off valve, a puppet-valve, and an auxiliary valve, casings for each valve, a passage connecting the casings, the puppet-valve being located in said passage between the main and auxiliary valves, and means for actuating said auxiliary valve to control said passage and thus control the shut-off valve.

3. The combination with a main shut-off valve, of a puppet-valve and an auxiliary valve, casings for each valve, a passage controlling said casings, the auxiliary valve being located in the passage so as to control the same, and means for actuating said auxiliary valve by imparting thereto a rotary reciprocating motion.

4. The combination with a main shut-off valve, a puppet-valve, an auxiliary valve, casings for said valves, a passage controlling said casings, the auxiliary valve being located in said passage so as to control the same, an electric circuit, in which said auxiliary valve is inserted, and means whereby the closing of said circuit will actuate the auxiliary valve to open said passage and actuate the shut-off valve.

5. The combination with a main shut-off valve and its casing, of a puppet-valve and an auxiliary valve, a casing for the two valves last named independent of the main-valve casing, a passage connecting the seats of the puppet and auxiliary valves, a passage connecting the two casings, and means for actuating the auxiliary valve to control the passage between the same and the puppet-valve and thus control the operation of the main shut-off valve.

6. The combination of a piston connected with a puppet; a casing therefor; an automatic auxiliary-valve casing provided with an exhaust-steam chamber; a passage from the top side of the piston to the outlet end of the puppet-casing; and an automatically-actuated valve controlling said passage, said auxiliary valve being formed on a rockable spindle extension formed with a quick-screw and mounted in a threaded socket in the auxiliary valve casing; a latch fast on said extension; a spring operatively connected with said extension; a movable armature provided with a shoulder to engage said latch; a magnet; and means to hold said armature in engagement with said latch.

7. The combination with a main shut-off valve, of a piston connected with a puppet and casing therefor, a passage controlling the piston-casing with the outlet end of the puppet-casing, and an electrically-actuated auxiliary valve controlling said passage, a casing therefor, said auxiliary valve being formed on a rockable spindle provided with a quick-screw mounted in a threaded bearing in the auxiliary-valve casing; a latch fast on said spindle; a spring operatively connected with said spindle; an armature provided with a shoulder to engage said latch; a magnet; and means to hold said armature in engagement with said latch.

812,280. COMPUTING CHEESE-CUTTER. GEORGE P. LOUISO and CHARLEY H. HENSLEY, Anderson, Ind., assignors of one-third to said Louiso and two-thirds to Jesse L. Vermillion, Anderson, Ind. Filed Apr. 14, 1905. Serial No. 255,640.

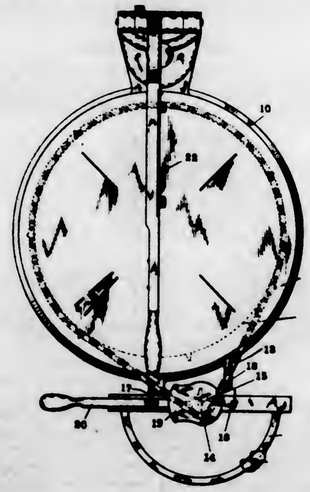

Claim.—1. In a cheese-cutter, the combination with the base, of a cheese-carrying table rotatably mounted thereon, an operating-shaft arranged substantially parallel with the axis of the table, a chain-engaging member carried by said shaft, a chain-engaging member carried by the table, an endless chain passing around the said two members, means for keeping said chain tight to prevent independent movement of the table, and an operating member adapted to drive the shaft and chain in one direction only.

2. In a cheese-cutter, the combination with a base and a knife carried thereby, of a cheese-carrying table rotatably mounted on said base in position to coöperate with said knife, a shaft-carrier movably mounted on said base, an operating-shaft journaled in said carrier, an endless belt passing around said shaft and said table to drive the table, means for adjusting the shaft-carrier so as to vary the distance between the axis of the table and said shaft whereby the belt may be held tight to prevent independent movement of the table, and means for driving said shaft and chain in one direction only.

3. In a cheese-cutter, the combination with a base and a knife carried thereby, of a cheese-carrying table rotatably mounted on said base in position to coöperate with said knife, a shaft-carrier movably mounted on said base, an operating-shaft journaled in said carrier, an endless belt passing around said shaft and said table to drive the table, means for adjusting the shaft-carrier so as to vary the distance between the axis of the table and said shaft whereby the belt may be held tight to prevent independent movement of the table, a single-acting clutch-driving connection adapted to engage said shaft to drive the same in one direction only, and an indicator-bar carried by the shaft-carrier in conjunction with said clutch-driver.

4. In a cheese-cutter, the combination with a base, of a rotatable cheese-carrying table mounted thereon, a shaft-carrier movably mounted on said base, a shaft journaled in said carrier substantially parallel with the axis of the table, an endless belt passing around said table and said shaft, means for driving the shaft, and means for adjusting the shaft-carrier on the base, for the purpose set forth.

5. In a cheese-cutter, the combination with a base, of a rotatable cheese-carrying table mounted thereon, a shaft-carrier movably mounted on said base, a shaft journaled in said carrier substantially parallel with the axis of the table, an endless belt passing around said table and said shaft, means for driving the shaft, means for adjusting the shaft-carrier on the base, an indicator-bar mounted on the shaft-carrier to move therewith and arranged in conjunction with the shaft-operating means to indicate the amount of movement thereof.

812,281. ROLLING-MACHINE. ALFRED MASION, Molenbeek, Belgium, assignor to Société Générale du Laminage Annulaire, Brussels, Belgium. Filed Jan. 5, 1905. Serial No. 239,756.

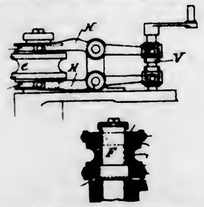

Claim.—1. In a rolling-machine, the combination with a roll, of knives or shears connected with the roll to rotate therewith, and movable toward and from each other in the direction of the axis of the roll, and means for simultaneously adjusting the knives or shears.

2. In a rolling-machine, the combination with a roll, of a circular knife or shear connected with said roll, means for locking the shear to the roll to prevent independent rotation and to permit the shear to be adjusted in the direction of the axis of the roll and means for adjusting the knife or shear.

812,282. HORSE-POWER. JOHN G. MOLE, Batavia, Ill. Filed Dec. 30, 1901. Serial No. 87,801.

Claim.—In a horse-power, the combination with a supporting-base provided with a number of vertical bearing-sleeves, of a driving gear-wheel, the friction-rollers loosely mounted on said sleeves, a bolt inserted upward therethrough, a lock-nut threaded on said bolt, a guide bearing-plate, loosely mounted thereon and overlapping a part of said gear-wheel and recessed in the under side to engage the lock-nut and the upper hub end of said rollers, substantially as set forth.

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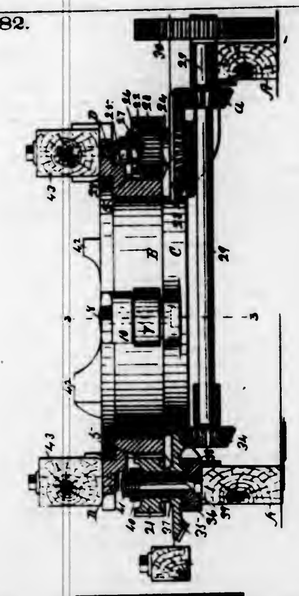

812,283. DIE-PRESS. CHARLES L. MCBRIDE, Toledo, Ohio. Filed Mar. 27, 1905. Serial No. 252,268.

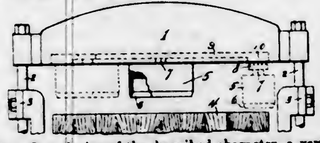

Claim.—In a device of the described character, a vertically-reciprocable horizontal beam having in its face an internally-enlarged longitudinal slot with enlarged openings at each end, combined with a cutting-die, a shank projecting from the middle of the back of the die, and a head on the extremity of the shank adapted to enter said enlarged opening and to engage said longitudinal slot.

812,284. MOSQUITO-NET-FRAME ATTACHMENT FOR BEDSTEADS. WILLIAM K. MCCARDELL, Houston, Tex. Filed June 24, 1905. Serial No. 266,325.

Claim.—1. In a device of the class described, spaced rods swinging from one end and extending longitudinally of a bedstead and above the same, a stretcher-bar slidable upon said rods, and provided with a central guide member, a guy-cord connected at the ends of said rods and slidable through said guy members, a mosquito-net canopy suspended from said bar, and means for moving said bar longitudinally of said rods to cause the same rods to be folded parallel to each other and transversely of said bedstead.

2. In a device of the class described, a supporting-frame having means for attachment to a bedstead, rods spaced apart and mounted to swing from said frame and extending longitudinally of a bedstead and above the same, a stretcher-bar slidable upon said rods and provided with a central guide member, a guy-cord connected at the ends to said rods and passing loosely through said guide member, a guide-pulley connected to said supporting-frame, a pull-cord connected to said stretcher-bar and leading through said guide-pulley and thence through said guide member and a pull-cord connected to said stretcher-bar, and a mosquito-net canopy suspended from said bar.

3. In a device of the class described, a supporting-frame having means for attachment to a bedstead, rods spaced apart and mounted to swing from said frame and extending longitudinally of a bedstead and above the same, a stretcher-bar slidable upon said rods and provided with a central guide member, a guy-cord connected at the ends to said rods and passing loosely through said guide member suspension-cords extending between said supporting-frame and stretcher-bar a mosquito-net canopy connected detachably to said suspension-cords, and means for moving said stretcher toward and away from said supporting-frame.

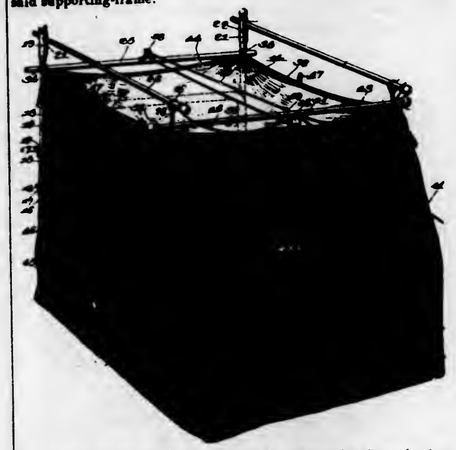

4. In a device of the class described, a supporting-frame having means for attachment to a bedstead, rods spaced apart and mounted to swing from said frame and extending longitudinally of said bedstead and above the same, a stretcher-bar slidable upon said rods and provided with a central guide member, a guy-cord connected at the ends to said rods and passing loosely through said guide member, suspension-cords extending between said supporting-frame and stretcher-bar, a mosquito-net canopy having spaced loops, means for connecting said loops to said suspension-cords, and means for moving said stretcher-bar toward and away from said supporting-frame.

5. In a device of the class described spaced vertical members located adjacent to the head portion of a bedstead, means for detachably connecting said vertical members to a bedstead, a stay member connected between said rods swinging from said vertical members, a stretcher member slidable upon said rods and provided with a central guide member, a guide-pulley upon said stay member a draw-cord connected to said stretcher-bar and leading through said guide-pulley and thence through said guide member a draw-cord connected to said stretcher member, and a mosquito-net canopy suspended from said stretcher-bar.

6. In a device of the class described spaced vertical members located adjacent to the head portion of a bedstead, and provided with laterally-extending pins, sleeves rotative upon said vertical members and provided with vertical slots having transverse extensions for engaging said pins and limited in their movement thereby, rods rigidly connected to said sleeves and extending laterally therefrom, a mosquito-net canopy suspended from said rods, and means for folding said rods parallel to each other and transversely of said bedstead.

7. In a device of the class described spaced vertical members located adjacent to the head portion of a bedstead, means for detachably connecting said vertical members to a bedstead, a stay member connected between said vertical members, spaced rods swinging from said vertical members, a stretcher member slidable upon said rods and provided with a central guide-pulley upon said stay member a draw-cord connected to said stretcher-bar and leading through said guide-pulley and thence through said guide member a draw-cord connected to said stretcher member, suspension-cords connected between said vertical members and stretcher member, and a mosquito-net canopy provided with spaced loops for detachable connection to said suspension-cords.

812,285. LOCKED-SEAM CAN-BODY MACHINE. JOHN H. MORROY, Chicago, Ill. Filed Apr. 7, 1903. Serial No. 151,838.

Claim.—1. In a device of the class described, the combination with the roller having the seaming-groove therein, of the coöperating roller having the tucking-blade slidingly mounted therein and coöperating with the groove, a stationary member coöperating with the said blade to control the sliding movement thereof as its roller rotates and means for rotating said rollers.

2. In a device of the class described, the combination with the roller having the seaming-groove therein, of the coöperating roller

having the tucking-blade slidingly mounted therein and coöperating with the groove, means within the latter roller for holding the blade immovable relative to the roller carrying it until it has completely entered the groove and then releasing it so that it can be withdrawn, and means for rotating said rollers.

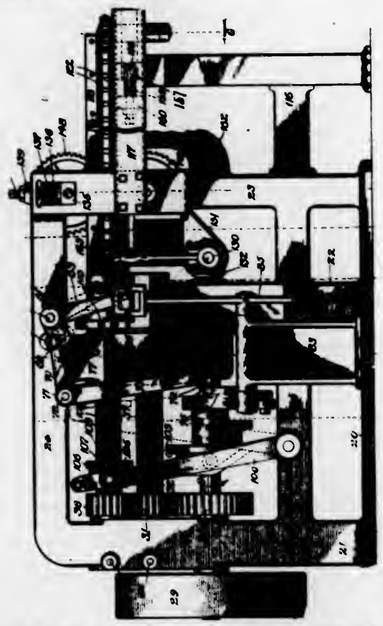

3. In a device of the class described, the combination with the roller having the seaming-groove therein, of the coöperating roller having the tucking-blade slidingly mounted therein and coöperating with the groove, means for holding the blade immovable relative to the roller carrying it until it has completely entered the groove and then releasing it so that it can be withdrawn, means for withdrawing the blade as soon as it is released, and means for rotating said rollers.

4. In a device of the class described, the combination with the roller having the seaming-groove therein, of the coöperating roller having the tucking-blade slidingly mounted therein and coöperating with the groove, means for holding the blade rigid until it has completely entered the groove and then releasing it so that it can be withdrawn, said means consisting of a stationary central portion about which the second roller rotates, said central portion being provided with the cam-recess into which the tucking-blade can drop, and means for rotating said rollers.

5. In a device of the class described, the combination with the roller having the seaming-groove therein, of the coöperating roller having the tucking-blade slidingly mounted therein and coöperating with the groove, a stationary center about which the second roller rotates, said center being provided with the bearing-surface and cam-recess which holds the blade rigid until it has completely entered the groove and then releases it so that it can be withdrawn, a spring interposed between the blade and the second roller to withdraw the blade as soon as the cam-groove is reached, and means for rotating said rollers.

6. In a device of the class described, the combination with the roller having the seaming-groove therein, of the coöperating roller having the tucking-blade slidingly mounted therein at an acute angle to the line connecting the centers of the rollers, a stationary center about which the second roller rotates having the bearing-surface for the tucking-blade and the cam-recess into which it can drop when it has completely entered the seaming-groove, and means for rotating said rollers.

7. In a device of the class described, the combination with the roller having the seaming-groove therein, of the roller coöperating therewith having the tucking-blade engaging the seaming-groove, discharge mechanism coöperating with the first-mentioned roller, means for rotating said rollers, means for holding said rollers firmly in engagement while the can is being formed thereon, and means for releasing them when the can is being discharged.

8. In a device of the class described, the combination with the roller having the seaming-groove therein and making two complete revolutions at each operation, of the second roller coöperating therewith having the tucking-blade engaging the seaming-groove, a discharge mechanism coöperating with the first-mentioned roller, means for rotating said rollers, a movable bearing for said second-mentioned roller, and a cam coöperating with said bearing to hold said rollers firmly together as the can-body is formed thereon, and for releasing them when the can-body is discharged.

9. In a device of the class described, the combination with the roller having the seaming-groove therein, of the stationary center about which said roller rotates, the coöperating roller having the tucking-blade engaging the seaming-groove, a stationary can-support attached to said stationary center, and mechanism for discharging a can-body upon said stationary support.

10. In a device of the class described, the combination with the roller having the seaming-groove therein, of the stationary center about which said roller rotates, the coöperating roller having the tucking-blade engaging the seaming-groove, a stationary can-support attached to said stationary center, mechanism for discharging a can-body upon said stationary support, and means for carrying a can along said support after it has been placed thereon by the discharge mechanism.

11. In a device of the class described, the combination with the roller having the seaming-groove therein, of the stationary center about which said roller rotates, the coöperating roller having the tucking-blade engaging the seaming-groove, a stationary soldering-bar attached to said stationary center, mechanism for discharging a can-body from the first roller onto the soldering-bar, means for carrying the can along said soldering-bar after it has been placed thereon by the discharge mechanism, and supports extending along the soldering-bar and adapted to support the soldering mechanism for soldering the side seam as the can is carried along the bar by said means.

12. In a device of the class described, the combination with the roller having the seaming-groove therein, of the stationary center about which said roller rotates, the coöperating roller having the tucking-blade engaging the seaming-groove, a stationary can-support attached to said stationary center, mechanism for discharging a can-body from the first-mentioned roller upon said stationary support, and mechanism for pressing the seam of the can-body.

13. In a device of the class described, the combination with the roller having the seaming-groove therein, of the stationary center about which said roller rotates, the coöperating roller having the tucking-blade engaging the seaming-groove, a stationary soldering-bar attached to said stationary center, mechanism for discharging a can-body from the first-mentioned roller upon said stationary soldering-bar, means for pressing the seam of the can-body, means for carrying the can along said soldering-bar after it has been placed thereon by the discharge mechanism, and stationary supports along said soldering-bar adapted to support soldering mechanism for soldering the side seam of the can as it is moved along the bar by said means.

14. In a device of the class described, the combination with the roller having the seaming-groove therein, of the stationary center about which said roller rotates, the coöperating roller having the tucking-blade engaging the seaming-groove, a stationary can-support attached to said stationary center, mechanism for discharging a can-body upon said stationary support, and mechanism on said support for pressing the seam of the can-body.

15. In a device of the class described, the combination with the roller having the seaming-groove therein, of the stationary center about which said roller rotates, the coöperating roller having the tucking-blade engaging the seaming-groove, the stationary can-support attached to said stationary center, mechanism for discharging a can-body upon said stationary support, and mechanism on said support for pressing the seam of the can-body consisting of the roller within said support and the pressing-roller coöperating therewith.

16. In a device of the class described, the combination of the two rollers over which the can-body passes and with both of which it engages, with the pressing-roller engaging one of said first-mentioned rollers, a shaft to which it is secured, and a gear-wheel on said shaft, the supporting-roller opposed to the pressing-roller through the two first-mentioned rollers, the shaft upon which it is mounted and the gear-wheel on said shaft meshing with said first-mentioned gear-wheel, means for feeding the can-bodies past said rollers, and means for rotating said gears adapted to carry the can-bodies between the rollers faster than the feeding means moves them.

17. In a device of the class described, the combination of the two rollers over which the can-body passes and with both of which it engages, with the pressing-roller engaging one of said first-mentioned rollers, the supporting-roller opposed to the pressing-roller through the two first-mentioned rollers, and bearings for the three first-mentioned rollers permitting them to move in the line of the axes of the four rollers.

18. In a device of the class described, the combination of the two rollers over which the can-body passes and with both of which it engages, with the pressing-roller engaging one of said rollers, adjustable springs coöperating with the movable bearings for said pressing-roller, and means for feeding the can past said rollers.

19. In a device of the class described, the combination with the body-forming mechanism, of the blank-table from which the blanks are fed one by one to said mechanism, the feeding mechanism for the blanks, and a retarding device comprising a plurality of rollers adapted to be moved into engagement with the top of the blank before it is fed forward.

20. In a device of the class described, the combination with the body-forming mechanism, of the blank-table from which the blanks are fed one by one to said mechanism, the feeding mechanism for the blanks, an edge gage on the blank-table, and a retarding device adapted to be moved diagonally onto the top of the blank to carry its edge into engagement with the edge gage.

21. In a device of the class described, the combination with the body-forming mechanism, of the blank-table from which the blanks are fed one by one to said mechanism, an edge gage thereon, the feeding mechanism for the blanks, and a retarding and positioning device comprising a plurality of rollers adapted to be moved diagonally onto the top of the blank to carry its edge into engagement with the edge gage and to hold it down while operated upon by the feeding mechanism.

22. In a device of the class described, the combination with the body-forming mechanism, of the blank-table from which the blanks are fed one by one to said mechanism, the feeding mechanism for the blanks, a lever carrying a retarding device comprising a plurality of rollers adapted to be moved into engagement with the top of the blank before it is fed forward, and means for adjusting the limit of movement of the lever.

23. In a device of the class described, the combination with the body-forming mechanism, of the blank-table from which the blanks are fed one by one to said mechanism, the feeding mechanism for the blanks, a lever carrying a retarding device comprising a plurality of rollers adapted to be moved into engagement with the top of the blank before it is fed forward, and means for adjusting the limit of movement of the lever consisting of an adjustable pin carried by said lever and a slotted operating-lever coöperating with said pin.

24. In a device of the class described, the combination with the roller having the seaming-groove therein, of the coöperating roller having the tucking-blade engaging the seaming-groove, a blank-table upon which the blank is laid close to said rollers, a reciprocating feeding member engaging the blank, means for giving the feeding member a uniform movement, and an adjustable engaging face on said feeding member.

25. In a device of the class described, the combination with the roller having the seaming-groove therein, of the coöperating roller having the tucking-blade engaging the seaming-groove, a blank-table upon which the blank is laid close to said rollers, a feeding-slide engaging the blank, means for positively giving the slide a uniform movement to feed the blank, an adjustable engaging member on said slide, and a spring for returning said slide to normal position.

812,286. MECHANICAL RECORDING-SCALE. EDWARD MCGARVEY, Youngstown, Ohio. Filed May 31, 1904. Serial No. 210,513.

Claim.—1. A scale provided with rotatable recording mechanism, a movable poise, a flexible connection between the poise and the recording mechanism adapted to limit its rotation in one direction, with independent means for rotating the recording mechanism to take up the slack in the flexible connection and for pressing a flexible strip against said recording mechanism, substantially as set forth.

2. A scale provided with recording mechanism, a depressible actuating-lever therefor, a movable poise, and a flexible connection between the poise and the recording mechanism, substantially as set forth.

3. A scale provided with rotatable recording mechanism, a frictional actuating device therefor, a movable poise, and a flexible connection between the poise and the recording mechanism adapted to limit its rotation in one direction, substantially as set forth.

4. The combination with a scale-beam provided with an adjustable poise, of a pivoted printing-wheel having peripheral type, a frictional actuating device engaging the printing-wheel, and a connecting-chain attached to the poise and to the printing-wheel adapted to limit its rotation in one direction during subsequent inoperative movement of the actuating device, substantially as set forth.

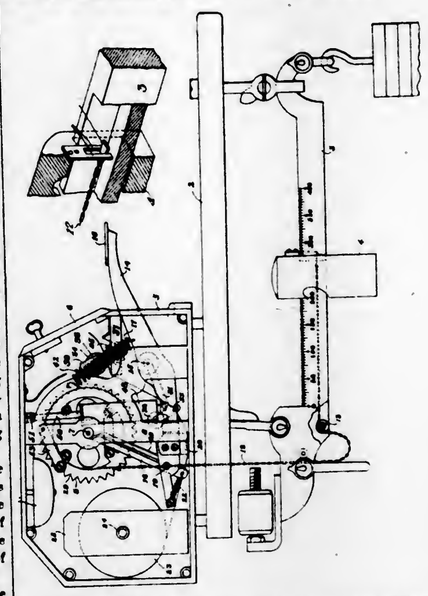

5. The combination with a scale-beam provided with an adjustable poise, of a pivoted printing-wheel provided with stamping-type on its periphery, means for rotating the wheel, means for limiting its rotation connected with the movable poise and depending upon the position thereof, and means for pressing a recording-surface against the wheel, substantially as set forth.

6. The combination with a scale-beam provided with an adjustable poise, of a pivoted printing-wheel provided with peripheral stamping-type, means for rotating the wheel to bring the type into register, a limiting flexible connection connected with the wheel and with the poise, a recording-strip, means for pressing the strip against the wheel, and means for feeding the strip, substantially as set forth.

7. The combination with a scale-beam provided with an adjustable poise, of a pivoted printing-wheel, a movable poise, and an intervening connection between the poise and wheel by which its rotation is limited, means for rotating the wheel, means for pressing a recording-surface against the wheel, means for positively holding the wheel during the printing operation, and means for feeding the strip, substantially as set forth.

8. The combination with a scale-beam provided with an adjustable poise, of a pivoted printing-wheel, a poise, an intervening connection adapted to limit the movement of the wheel, an inking device, a recording-strip, and a depressible lever provided with means for bringing the strip into contact with the wheel, means for feeding the strip, means for inking the type of the wheel, and a pivoted friction-bar arranged to actuate the wheel, substantially as set forth.

9. The combination with a scale-beam provided with an adjustable poise, of a printing pivoted wheel having peripheral type, actuating mechanism therefor arranged to rotate the printing-wheel, a movable poise connected with the printing-wheel and arranged to limit its rotation dependent on the position of the poise, means for pressing a recording-surface against the type of the wheel, and a signal device, substantially as set forth.

10. The combination with a scale-beam and movable poise thereon, of a rotatable pivoted type-wheel, a flexible connection between the type-wheel and the poise whereby its rotation in one direction is limited, means for pressing a recording-strip against the type-wheel, means for positively actuating the type-wheel, and means for returning it, substantially as set forth.

11. In a recording-scale, the combination with a scale-beam and a movable poise mounted thereon, of a pivoted wheel provided with peripheral type, a flexible connection between the poise and said wheel arranged to limit its rotation in one direction, a pivoted spring-retracted lever provided with a friction-arm arranged to rotate the wheel, means for positively locking the wheel, means for feeding a printing-strip, an inking device, and a pressing-platen incorporated with said lever arranged to press the strip against the type of the wheel, substantially as set forth.

12. The combination with a pivoted type-wheel and a movable check flexibly connected therewith arranged to arrest its rotation, of a pivoted lever provided with a friction-bar arranged to rotate the type-wheel, and a supplemental type-wheel arranged to operate in combination with the first type-wheel, with means for independently adjusting said supplemental wheel dependent on the presence and absence of the scale-weights, substantially as set forth.

13. The combination with a primary pivoted wheel provided with peripheral type, a movable check flexibly connected therewith, a frictional hub, and an actuating-lever provided with a pivoted friction-bar; of a supplemental type-wheel provided with a pinion, a rack-bar in engagement with said pinion provided with an actuating-spring arranged to impart motion to said rack-bar and supplemental type-wheel and a weight-rack adapted to support the weights in alinement with said bar so that upon removal of one or more weights constituting abutments for said rack-bar the bar will become operative, substantially as set forth.

14. The combination with a primary pivoted type-wheel provided with peripheral type, a poise, an intervening flexible connection, and a pivoted lever provided with a friction-bar arranged to actuate the type-wheel; of a supplemental type-wheel provided with a pinion, a spring-actuated rack in engagement therewith arranged to make abutting contact against the scale-weights when in position on the rack, and strip-pressing mechanism, and wheel-locking devices incorporated with the pivoted lever, substantially as set forth.

15. In a scale, the combination of a primary and a secondary type-wheel, a pivoted lever provided with friction-bars arranged to rotate said wheels, strip-pressing mechanism incorporated with said lever, a units-beam provided with a poise, a supplemental beam provided with a poise and connections from said poises to the primary and secondary wheels whereby their rotation is limited according to the position of the poise, substantially as set forth.

16. Mechanism for rotating a type-wheel consisting of the combination therewith of a pinion provided with spider-arms adapted to bear against the wheel, and a rack-bar in engagement with said pinion with means for limiting rotation of the wheel, substantially as set forth.

17. Mechanism for rotating a type-wheel consisting of a pinion provided with spider-arms adapted to bear against the wheel, and a rack-bar in engagement with said pinion, with means for actuating the rack-bar with means for limiting rotation of the wheel, substantially as set forth.

18. In a recording-scale, the combination with a pivoted type-wheel, of a pivoted actuating-lever provided with a pivoted bar having a friction-surface arranged to rotatably engage the hub of the wheel, means for impacting a pressure through said friction-bar upon the hub, and means for limiting the rotation of the wheel in conformity with the reading of the scale-beam, substantially as set forth.

812,287. **TEST-CLAMP.** THEODORE NAGEL, Chicago, Ill., assignor of one-half to Lathrop H. Collins, Chicago, Ill. Filed Dec. 19, 1904. Serial No. 237,457.

Claim.—1. A clamp comprising a suitable holder, a screw tapped into said holder, two clamping-plates each having enlarged openings through which said screw extends whereby they are adapted to be tilted independently of each other and said screw.

2. A clamp comprising a suitable holder, a screw tapped into said holder, two clamping-plates each having enlarged openings through which said screw extends, whereby they are adapted to be tilted independently of each other and said screw and one of said plates having longitudinal grooves in the surface opposed to the other plate.

3. A clamp comprising a suitable rectangular channel-shaped holder, a screw tapped into said holder, and a flat clamping-plate having an enlarged opening therein the edges of which are concentric with said screw through which said screw extends and said plate adapted to be tilted independently of said screw.

4. A clamp comprising a suitable channel-shaped holder, a screw tapped into said holder, two clamping-plates each having enlarged openings through which said screw extends, whereby they are adapted to be tilted independently of each other and said screw.

5. A clamp comprising a suitable channel-shaped holder, a screw tapped into said holder, two clamping-plates each having enlarged openings through which said screw extends, whereby they are adapted to be tilted independently of each other and said screw, and one of said plates having longitudinal grooves in the surface opposed to the other plate.

6. A clamp comprising a suitable rectangular channel-shaped holder, a screw tapped into said holder, and a flat clamping-plate having an enlarged opening therein the edges of which are concentric with said screw through which said screw extends which has its side edges nearest said holder beveled, and said plate adapted to be tilted independently of said screw.

7. A clamp comprising a suitable channel-shaped holder, a screw tapped into said holder, two clamping-plates each having enlarged openings through which said screw extends, whereby they are adapted to be tilted independently of each other, and said screw, the plate engaging the bottom of said holder having its side edges adjacent thereto beveled or undercut.

8. A clamp comprising a suitable channel-shaped holder, a screw tapped into said holder, two clamping-plates each having enlarged openings through which said screw extends, whereby they are adapted to be tilted independently of each other and said screw, one of said plates having longitudinal grooves in the surface opposed to the other plate, and the one engaging the bottom of said holder having its side edges undercut.

9. A clamp comprising a suitable rectangular holder, a screw tapped into said holder, and a flat clamping-plate having an enlarged opening therein the edges of which are concentric with said screw through which said screw extends and with which it has a swiveled engagement and said plate adapted to be tilted independently of said screw.

10. A clamp comprising a suitable holder, a screw tapped into said holder, two clamping-plates each having enlarged openings through which said screw extends, one of said plates having a swiveled engagement with said screw whereby both are adapted to be tilted independently of each other and said screw.

11. A clamp comprising a suitable holder, a screw tapped into said holder, two clamping-plates each having enlarged openings through which said screw extends, one of said plates having a swiveled engagement with said screw whereby both are adapted to be tilted independently of each other and said screw, one of said plates having longitudinal grooves in the surface opposed to the other plate.

12. A clamp comprising a suitable rectangular channel-shaped holder, a screw tapped into said holder, and a flat clamping-plate having an enlarged opening therein the edges of which are concentric with said screw through which said screw extends and with which it has a swiveled engagement, and said plate adapted to be tilted independently of said screw.

13. A clamp comprising a suitable channel-shaped holder, a screw tapped into said holder, two clamping-plates each having enlarged openings through which said screw extends, one of said plates having a swiveled engagement with said screw whereby both are adapted to be tilted independently of each other and said screw.

14. A clamp comprising a suitable channel-shaped holder, a screw tapped into said holder, two clamping-plates each having enlarged openings through which said screw extends, said plates having a swiveled engagement with said screw whereby both are adapted to be tilted independently of each other and said screw.

15. A clamp comprising a suitable rectangular channel-shaped holder, a screw tapped into said holder, and a flat clamping-plate having an enlarged opening therein the edges of which are concentric with said screw through which said screw extends, which has a swiveled engagement with said screw and has its side edges nearest said holder beveled, and said plate adapted to be tilted independently of said screw.

16. A clamp comprising a suitable channel-shaped holder, a screw tapped into said holder, two clamping-plates each having enlarged openings through which said screw extends, one of said plates having a swiveled engagement with said screw whereby both are adapted to be tilted independently of each other and said screw, the plate engaging the bottom of said holder having its side edges adjacent thereto beveled or undercut.

17. A clamp comprising a suitable channel-shaped holder, a screw tapped into said holder, two clamping-plates each having enlarged openings through which said screw extends, one of said plates having a swiveled engagement with said screw whereby both are adapted to be tilted independently of each other and said screw, one of said plates having longitudinal grooves in the surface opposed to the other plate, and the one engaging the bottom of said holder having its side edges undercut.

18. A clamp comprising a suitable rectangular holder, a screw having a convexed bearing-boss adjacent to the head thereof, and a flat clamping-plate having an enlarged opening through which said screw extends the edges of which engaged by said boss are countersunk.

19. A clamp comprising a suitable holder, a screw tapped into said holder and having a bearing-boss adjacent to the head thereof, two clamping-plates each having enlarged openings through which said screw extends whereby they are adapted to be tilted independently of each other and said screw, the plate which is engaged by said boss having a countersunk seat therefor concentric with its opening.

20. A clamp comprising a suitable channel-shaped holder, a screw tapped into said holder and having a bearing-boss adjacent to the head thereof, two clamping-plates each having enlarged openings through which said screw extends, one of said plates having a swiveled engagement with said screw whereby both are adapted to be tilted independently of each other and said screw, one of said plates having longitudinal grooves in the surface opposed to the other plate, and the one engaging the bottom of said holder having its side edges undercut, and the plate which is engaged by said boss having a countersunk seat therefor concentric with its opening.

21. A clamp comprising a suitable channel-shaped holder, a screw having a convexed bearing-boss adjacent to the head thereof, and a clamping-plate having an enlarged opening through which said screw extends the edges of which engaged by said boss are countersunk.

22. A clamp comprising a suitable rectangular channel-shaped holder, a screw tapped into said holder and having a bearing-boss adjacent to the head thereof, two flat clamping-plates each having enlarged openings through which said screw extends whereby they are adapted to be tilted independently of each other and said screw, and the plate which is engaged by said boss having a countersunk seat therefor concentric with its opening.

812,288. **LOCK-SEAM PIPE.** HANS P. G. NORSTRAND, Chicago, Ill. Filed Jan. 24, 1903. Serial No. 140,432.

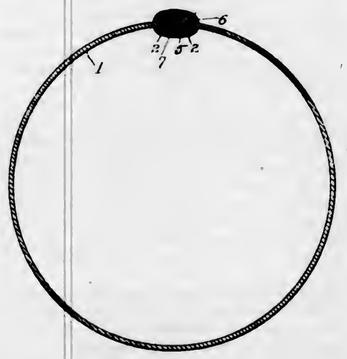

Claim.—1. A lock-seam pipe, comprising the pipe proper formed of sheet metal and having a longitudinal seam, wires extending longitudinally of the pipe and over which the longitudinal edges of the pipe are turned to form enlarged terminal portions having a shoulder at the base of the turn, and a locking-strip arranged to be bent over and clamped around said enlarged terminal portions, said locking-strip having a shoulder adapted to coöperate with the shoulder on the enlarged terminal portion.

2. A lock-seam pipe comprising the shell or pipe proper formed of sheet metal and having a longitudinal seam, wires over which the longitudinal edges of the pipe are turned, and whose longitudinal axis lies on the neutral axis of the shell, and a locking-strip engaging and holding such edges to lock the joint or seam.

3. A lock-seam pipe having a longitudinal seam and comprising the shell or pipe-body whose longitudinal edges are flat and of a thickness uniform with the shell, wires over which such edges are turned and whose longitudinal axis lies on the neutral axis of the shell, and a locking-strip engaging and holding such edges to lock the joint or seam.

4. A lock-seam pipe having a longitudinal seam and comprising the shell or pipe-body formed of sheet metal, wires over which the longitudinal edges of the pipe are turned to form a shoulder at the base of the turn, and a locking device consisting of an I-shaped strip whose flange portions are bent over the edges of the pipe with their extreme ends abutting the body of the pipe, one of said flange portions forming a shoulder adapted to coöperate with the shoulder at the base of the turn, whereby such flange portions embrace such edges and lock the joint or seam.

5. A lock-seam pipe having a longitudinal seam, and comprising the shell or pipe-body formed of sheet metal, wires over which the longitudinal edges of the pipe are turned to form enlarged terminal portions having a shoulder extending along the base of the turn, and a locking device consisting of an I-shaped strip whose flange portions are bent over the enlarged terminal portions of the pipe, one of said flange portions forming a shoulder adapted to coöperate with the shoulder at the base of the turn, and packing arranged in the inner corners of the locking-strip to seal the joint or seam.

6. A lock-seam pipe, comprising the pipe proper formed of sheet metal and having a longitudinal seam, the edges of said pipe being turned back upon themselves in an open loop to form enlarged and elastic terminal portions, and a locking-strip engaging and holding such enlarged and elastic terminals to lock the joint or seam.

7. A lock-seam pipe, comprising the pipe proper formed of sheet metal and having a longitudinal seam, wires over which the longitudinal edges of the pipe are turned, without being brought into close contact therewith, to form enlarged and elastic terminal portions, and a locking-strip arranged to engage and hold said portions to lock the joint or seam.

8. A lock-seam pipe, comprising the pipe proper formed of sheet metal and having a longitudinal seam, the longitudinal edges of the pipe adjacent to the seam being turned back upon themselves in an open loop to form elastic enlargements, and a locking-strip of substantially I-beam section whose web portion is arranged between the edges of the pipe, and whose top and bottom flanges are pressed upon and substantially surround said elastic enlargements.

9. A lock-seam pipe, comprising the pipe proper formed of sheet metal and having a longitudinal seam, wires over which the longitudinal edges of the pipe are turned to form a substantially cylindrical enlargement whose longitudinal axis lies in the neutral axis of the shell of the pipe, and a locking-strip of substantially I-beam section arranged to engage and hold said edges.

10. A lock-seam pipe, comprising the pipe proper formed of sheet metal and having a longitudinal seam, the longitudinal edges of said pipe being turned back on themselves in an open loop to form elastic enlargements of rounded exterior, a locking-strip of substantially I-beam section arranged to engage and hold such enlarged edges, and packing interposed in the space lying between the rounded exterior of said enlargements and the angular interior surfaces of said I-beam locking-strip.

11. A lock-seam pipe, comprising the pipe proper formed of sheet metal and having a longitudinal seam, wires extending along the edges of the pipe adjacent to said seam and over which the edges of the pipe are turned, without being rigidly secured thereto to form a shoulder at the base of the turn, and a locking-strip arranged to engage and hold said edges, said strip having a portion adapted to coöperate with said shoulder.

12. A lock-seam pipe, comprising the shell proper having a longitudinal seam, wires extending along said seam over which the longitudinal edges of the pipe are turned, but not rigidly secured thereto, the longitudinal axes of said wires lying in the neutral axis of said pipe, and a locking-strip clamped upon said edges to lock the joint or seam.

13. A lock-seam pipe, comprising the pipe-body formed of sheet metal and having a longitudinal seam the edges of said pipe-body being turned back upon themselves in an open loop the base of which projects outside of the plane of the pipe to form a shoulder, said loop forming an enlarged terminal portion, and a locking-strip adapted to embrace the said terminal portions and having a shoulder adapted to coöperate with the shoulder at the base of the turn.

812,289. **PRICE-SCALE.** ORANGE O. OMAR, Dayton, Ohio, assignor to The Computing Scale Company, Dayton, Ohio, a Corporation of Ohio. Filed Oct. 24, 1905. Serial No. 284,256.

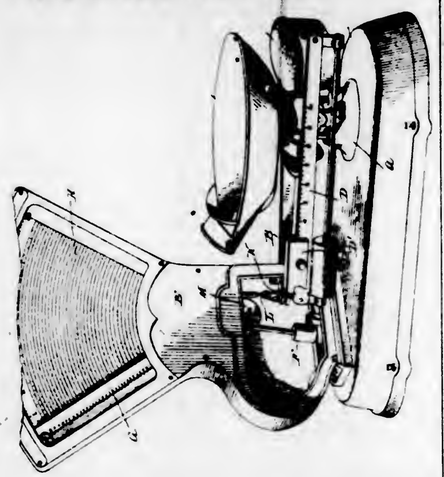

Claim.—1. In a price-scale, the combination with the base, the scale-beam pivotally supported on the base and the goods-receiver pivotally supported by the beam, of a price-chart arranged in a vertical plane diagonal to the beam, a connected indicator and pendulum-counterbalance pivoted to move in a plane parallel with the chart and diagonal to the plane in which the beam swings and a connection between the pendulum-counterbalance and beam embodying a needle-point pivot and socket-bearing therefor whereby the length of the leverage is kept uniform in the action of the scale.

2. In a price-scale, the combination with the base, the beam mounted on transverse pivots to swing in a vertical plane longitudinally of the base and a platform mounted on the beam, of a price-chart arranged in a vertical plane diagonal to the plane in which the beam swings, a combined indicator and pendulum counterbalance pivoted to swing in a plane parallel with and in front of the chart and diagonal to the plane in which the beam swings and a connection between the counterbalance and beam embodying a flexible connector, a yoke and a needle-point pivot on the beam, to prevent variation due to the different planes in which the connected parts move; substantially as described.

3. In a price-scale the combination with the scale-base, the beam pivoted thereon to swing in a vertical plane longitudinally of the base, and a platform supported by the beam, of a vertically-extending housing mounted on the base and having a segmental upper end extending in a vertical plane diagonal to the plane of movement of the beam, a price-chart in the upper part of the housing and exteaded in the plane of the same, a combined indicator and pendulum-weight counterbalance, pivoted in the housing to swing in a plane parallel with the chart and a flexible connection between the beam and counterbalance member embodying a yoke and a single-point pivot whereby changes in leverage due to the different arcs in which the connected members swing is prevented; substantially as described.

812,290. **BEAM-PRESSER.** HENRY PARSONS, Marlboro, Mass. Filed July 2, 1904. Serial No. 215,144.

Claim.—1. In a machine of the class specified, a vertically-adjusted bed-frame formed with a perforated lug at each end, stationary ways in each side of the framework in which said lugs are arranged, a vertical screw-threaded rod arranged in each lug, bearings for each end of said rods connected to the framework and separate from said lugs or bed, a horizontal rod, a gear upon each end of said rod, a complemeatal gear on the lower end of each vertical rod, a nut on each vertical rod under and supporting one of said lugs and having provisions to prevent turning, and a ratchet for turning one of said vertical rods.

2. In a machine of the class specified, a vertically-adjusted bed-frame formed with a perforated lug at each end, stationary ways in each side of the framework in which said lugs are arranged, a vertical screw-threaded rod arranged in each lug, bearings for each end of said rods connected to the framework and separate from said lugs or bed, a horizontal rod, a gear upon each end of said rod, a complemental gear on the lower end of each vertical rod, one of the gears of said horizontal rod being mounted to be slid out of engagement with its complemental gear, and connections between said rods and said lugs.

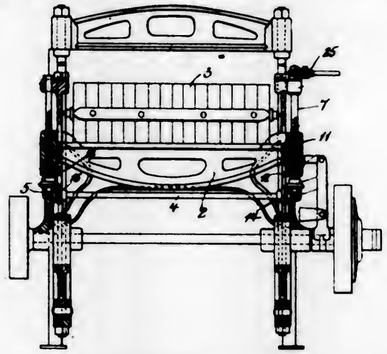

812,291. **MOLDING-MACHINE.** LEWIS M. PRATT and ERASTUS H. VAN NATTA, Belleville, Kans.; said Pratt assignor to said Van Natta. Filed May 4, 1905. Serial No. 258,861.

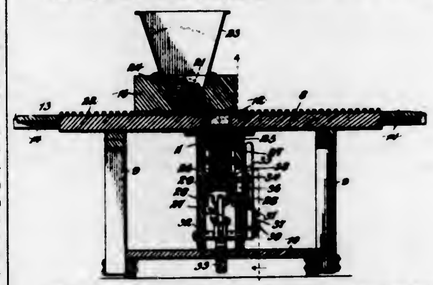

Claim.—1. In a molding-machine, the combination with a mold, of a reciprocatory plunger movable therein, a reciprocatory head against which the plunger detachably bears, an actuating hand-lever fulcrumed beneath the head and having an angularly-disposed link member rigidly carried thereby, another link member pivoted at one end to the said angularly-disposed link member and pivoted at its other end to the head, and independently manually operated means engaging the plunger to move the same away from the head.

2. In a molding-machine, the combination with a mold, of a reciprocatory plunger movable therein, a reciprocatory head detachably bearing against the plunger, toggle-lever mechanism pivotally connected to the head for moving the same and thereby the plunger, a rod interposed between the head and plunger and bearing against the latter to carry the same away from the head, said rod being detachable from the head, and a lever having a link connection with the rod.

3. In a molding-machine, the combination with a table having a mold therein, of means mounted on the table for feeding material to the mold, a reciprocatory plunger movable in the mold, a reciprocatory head against which the plunger detachably bears, an actuating hand-lever fulcrumed beneath the head and having an angularly-disposed link member rigidly carried at its inner end, the outer end of said lever projecting beyond the table, another link member pivoted at one end to said angularly-disposed link member and pivoted at its other end to the head, another manually-actuated lever fulcrumed beath the table and projecting beyond the same, and means connected to the inner end of the latter lever and associated with the plunger for moving the same away from the head.

4. In a molding-machine, the combination with a mold, of a reciprocatory pressing and ejecting plunger movable therein, spaced

guides located beneath the mold, one of said guides having a slot, a reciprocatory head slidably mounted on the guides and detachably engaging the plunger, toggle-links pivoted to each other and to the head for reciprocating the same, a lever having a fixed connection with the lower set of links for moving the same, a reciprocatory device passing through the slot of the guide and engaging the plunger to carry the same away from the head, and a lever having a link connection with said device.

812,292. **WASHING-MACHINE.** THOMAS C. PURVIS, Chicago, Ill. Filed June 19, 1905. Serial No. 265,840.

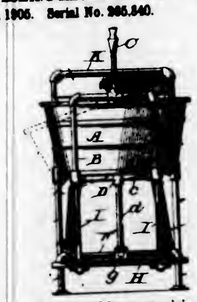

Claim.—1. A washing-machine comprising a suitable stand, a rocking frame supported and fulcrumed on the same, a circular tub supported by said rocking frame, a treadle fulcrumed at its center of length and means connecting the ends of the same with said rocking frame.

2. A washing-machine comprising a suitable stand, a normally horizontal spring-returnable rocking frame supported and fulcrumed on the same, a circular tub supported by said rocking frame, a treadle fulcrumed at its center of length and means connecting the ends of the same with said rocking frame.

3. A washing-machine comprising a suitable stand having a longitudinal pivot-bar, a rocking frame supported and fulcrumed on said bar, a circular tub supported and secured on said rocking frame, a treadle fulcrumed mediate its ends in the same vertical plane as said rocking frame and means connecting the end portions of said treadle with the ends of said rocking frame.

4. A washing-machine comprising a suitable stand, a rocking frame supported and fulcrumed on the same, a circular tub supported by said rocking frame, a treadle fulcrumed at its center of length and connecting-rods connecting the ends of the same with said rocking frame.

5. A washing-machine comprising a suitable stand, a normally horizontal spring-returnable rocking frame supported and fulcrumed on the same, a circular tub supported by said rocking frame, a treadle fulcrumed at its center of length and connecting-rods connecting the ends of the same with said rocking frame.

6. A washing-machine comprising a suitable stand having a longitudinal pivot-bar, a rocking frame supported and fulcrumed on said bar, a circular tub supported and secured on said rocking frame, coil-springs connecting the ends of said rocking frame to the base of said stand, a treadle fulcrumed mediate its ends in the same vertical plane as said rocking frame and means connecting the end portions of said treadle with the ends of said rocking frame.

7. A washing-machine comprising a suitable stand having a longitudinal pivot-bar, a rocking frame supported and fulcrumed on said bar, a circular tub supported and secured on said rocking frame, coil-springs connecting the ends of said rocking frame to the base of said stand, a treadle fulcrumed mediate its ends in the same vertical plane as said rocking frame and connecting-rods connecting the end portions of said treadle with the ends of said rocking frame.

8. A washing-machine comprising a suitable stand having a seat for a stationary tub, a longitudinal-pivot-bar alining therewith, a rocking frame supported and fulcrumed on said bar, a circular tub supported and secured on said rocking frame, a treadle fulcrumed mediate its ends in the same vertical plane as said rocking frame, and means operatively connecting the ends of said treadle and rocking frame.

9. A washing-machine comprising a suitable stand having a seat for a stationary tub, a longitudinal pivot-bar alining therewith, a normally horizontal spring-returnable rocking frame supported and fulcrumed on said bar, a circular tub supported and secured on said rocking frame, a treadle fulcrumed mediate its ends in the same vertical plane as said rocking frame, and means operatively connecting the ends of said treadle and rocking frame.

10. A washing-machine comprising a suitable stand having a seat for a stationary tub, a longitudinal pivot-bar alining therewith, a normally horizontal spring-returnable rocking frame supported and fulcrumed on said bar, a circular tub supported and secured on said rocking frame, a treadle fulcrumed mediate its ends in the same vertical plane as said rocking frame, and connecting-rods operatively connecting the ends of said treadle and rocking frame.

812,293. **MONUMENT.** FRITZ G. RANTEAU, Great Falls, Mont. Filed Sept. 15, 1903. Renewed Dec. 13, 1905. Serial No. 292,269.

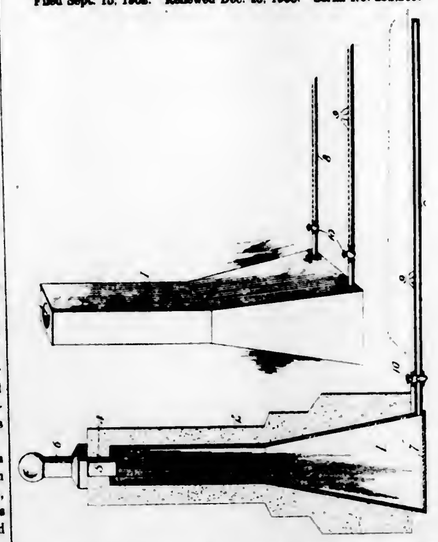

Claim.—1. A monument, comprising a non-corrosive metallic tank, a covering molded thereabound, a detachable cap forming a closure for the tank, and a valved pipe extending laterally from the bottom of the tank and adapted to be embedded in the ground, that portion of the pipe between its outer end and the valve being perforated.

2. The combination with a monument, consisting of a tank, and a covering molded therearound and simulating stone, of a plurality of parallel pipes extending laterally from the bottom of the tank and adapted to be embedded in the ground, and a valve in each pipe, the tops of the pipes between the valves and the outer ends having series of perforations or outlets therein.

812,294. **WING-NUT.** ALBERT S. REED, Chicago, Ill., assignor of one-half to Elijah T. Harris, Chicago, Ill. Filed May 29, 1905. Serial No. 262,806.

Claim.—1. A wing-nut comprising a shell consisting of a stamped and folded sheet-metal blank, the folded end portions of the blank forming the wings and the central portion of the blank forming the socket, and a nut conforming to the shape of said socket inserted therein.

2. A wing-nut comprising a sheet-metal shell formed with a central socket portion shaped to receive a nut and having its walls extended and folded to form wings, and a separate nut held within said socket.

3. As a new article of manufacture, a winged shell adapted to hold

a nut, said shell consisting of an oblong sheet-metal blank having its end portions folded together along a central line to form wings, and a central portion of said blank struck up to form a socket conforming in shape to a nut

812,295. MACHINE FOR MAKING BATTERY-GRIDS. WILLARD F. RICHARDS, Buffalo, N. Y., assignor to Gould Storage Battery Company, New York, N. Y., a Corporation of West Virginia. Filed Dec. 3, 1901. Serial No. 84,565.

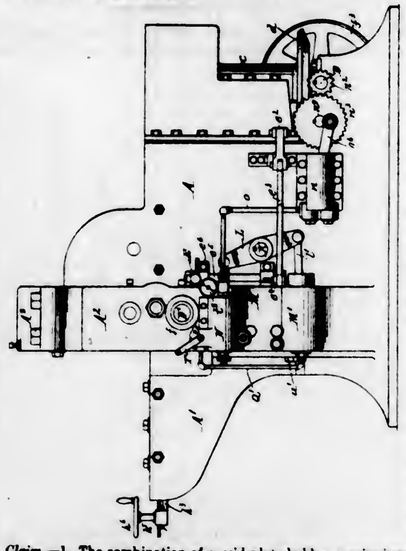

Claim.—1. The combination of a grid-plate holder, a spinning-roll mounted to move toward the grid-plate in said holder, means for reciprocating one of said parts, means for driving said spinning-roll, a fluid-operated device for pressing said spinning-roll yieldingly toward the grid-plate in said holder and the movement of which is opposed by fluid-pressure, a valve controlling the operating fluid for said fluid-operated device, and means for gradually relieving said opposing pressure, whereby only a gradual movement of the spinning-roll toward the grid-plate is allowed regardless of the actuation of said valve, substantially as set forth.

2. The combination of a grid-plate holder, means for reciprocating the same, a spinning-roll mounted to move toward the grid-plate in said holder, means for driving said spinning-roll, a fluid-operated device for pressing said spinning-roll yieldingly toward the grid-plate in said holder, a valve for controlling the operating fluid for said device, and fluid-pressure means for retarding the movement of said device, whereby only a gradual movement of the spinning-roll toward the grid-plate is allowed regardless of the actuation of said valve, substantially as set forth.

3. The combination of a grid-plate holder, means for reciprocating the same, spinning-rolls mounted on opposite sides of said plate-holder to move toward the grid-plate in said holder, means for driving said spinning-rolls, fluid-operated mechanism for pressing said spinning-rolls yieldingly toward the grid-plate in said holder, a valve for admitting the operating fluid to said mechanism, and fluid-pressure means for retarding the movement of said mechanism, whereby only a gradual movement of the spinning-rolls toward the grid-plates is allowed regardless of the actuation of said valve, substantially as set forth.

4. The combination of a grid-plate holder, means for reciprocating the same, spinning-rolls mounted on opposite sides of said plate-holder to move toward the grid-plate in said holder, means for driving said spinning-rolls, a cylinder, a piston in said cylinder and connected to said spinning-rolls, a valve for admitting operating fluid to said cylinder to move said piston and press said spinning-rolls toward the grid-plate, the operative movement of said piston being opposed by fluid-pressure, and means for gradually relieving the pressure opposing the movement of said piston, whereby only a gradual movement of the spinning-rolls toward the grid-plates is allowed regardless of the actuation of said valve, substantially as set forth.

5. The combination of a grid-plate holder, spinning-rolls mounted on opposite sides of said plate-holder and movable toward the latter, means for driving said spinning-rolls, cylinders, fluid-operated pistons in said cylinders, means connecting said pistons to cause them to move oppositely, connections between said pistons and spinning-rolls whereby the latter are moved toward said plate-holder, a valve controlling the admission of operating fluid to said cylinders, and means for controlling the exhaust from said cylinders to cause a gradual movement of said pistons, substantially as set forth.

6. The combination of a grid-plate holder, rotary spinning-rolls movable toward and from said plate-holder, cylinders, connected fluid-operated pistons in said cylinders, connections between the same and said spinning-rolls for moving the latter toward the plate, a valve controlling the admission and exhaust of operating fluid to and from said cylinders alternately, and means for causing a gradual exhaust from said cylinders, substantially as set forth.

7. The combination of a reciprocating frame, a grid-plate holder supported by said frame, a bar projecting from one end of said grid-plate holder and constituting a handle therefor, a bracket secured to said reciprocating frame and in which said bar is guided, said bar having rack-teeth on one side and a series of stop-shoulders on another portion, a gear-pinion journaled in said bracket and meshing with said rack-teeth, an operating-handle for said pinion, and a spring-pressed latch mounted on said bracket and held against said bar and adapted to automatically engage with said stop-shoulders to arrest the movement of the grid-plate holder by said pinion, substantially as set forth.

8. The combination of a horizontal grid-plate holder, horizontal spinning-rolls arranged one above and one below said plate-holder, rock-shafts, connections between said rock-shafts and said spinning-rolls for moving the same toward and from each other, and means connecting said rock-shafts whereby the weight of one roll counterbalances that of the other, substantially as set forth.

9. The combination of a horizontal reciprocating grid-plate holder, horizontal spinning-rolls arranged one above and one below said plate-holder, toggles for moving said rolls toward and from each other, horizontal rock-shafts, connections between said rock-shafts and said toggles, and links connecting said rock-shafts whereby said rolls counterbalance each other, substantially as set forth.

812,296. RAIL-JOINT. LEONARD J. ROBICHAUX, NICHOLAS CAILLOUET, and HUBERT F. DELHAYE, Charenton, La. Filed Apr. 3, 1905. Renewed Nov. 24, 1905. Serial No. 288,902.

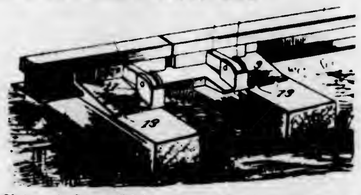

Claim.—1. In a rail-joint, the combination of the rails provided with holes, a chair having registering holes, a locking-plate having lugs projecting therefrom to pass through the registering holes of the chair and rails, and a locking-dog for holding said locking-plate in position.

2. In a rail-joint, the combination of the rails provided with holes, a chair having registering holes, a locking-plate having lugs projecting therefrom to pass through the registering holes of the chair and rails, a locking-dog for holding said locking-plate in position, and a spring for holding said locking-dog against accidental displacement.

3. In a rail-joint, the combination of the rails provided with holes, a chair having registering holes, a locking-plate having lugs projecting therefrom to pass through the registering holes of the chair and rails, spaced lugs projecting from the base of said chair, and a dog pivoted to said spaced lugs and adapted to hold said locking-plate in position.

4. In a rail-joint, the combination of the rails provided with holes, a chair having registering holes, a locking-plate having lugs projecting therefrom to pass through the registering holes of the chair and rails, spaced lugs projecting from the base of said chair, a dog pivoted to said spaced lugs and adapted to hold said locking-plate in position, and a spring for holding said dog against accidental displacement when in its normal position.

5. In a rail-joint, the combination of the rails provided with holes, a chair having registering holes, a locking-plate having lugs projecting therefrom to pass through the registering holes of the rails and chair, spaced lugs projecting from the base of said chair, a dog pivoted to said spaced lugs and adapted to hold said locking-plate in position, a metallic spring between said spaced members, and an eccentric portion on said pivoted member adapted to engage with said spring.

812,297. SHOCK-COMPRESSOR. JOHN M. SCHEBLER, Hamburg, Ind., assignor of one-half to George M. Schebler, Indianapolis, Ind. Filed Nov. 16, 1904. Serial No. 233,977.

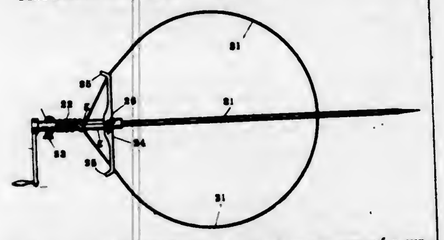

Claim.—1. The combination, in a shock-compressor, of a support, a winding-drum carried thereby, a head sleeved on said winding-drum and longitudinally movable thereon, a pawl-and-ratchet connection between the head and drum, and a rope, the ends whereof are arranged to be secured to the outer end of said winding-drum in use, whereby as said winding-drum is revolved the said rope is wound up at both ends and held in wound-up condition by the ratchet and pawl, the head carrying said pawl being held in position by forcible contact with the shock being compressed.

2. The combination, in a shock-compressor, of a support, a winding-drum carried by said support, and provided with ratchet grooves or teeth extending longitudinally thereof, a head mounted on said winding-drum and containing a pawl adapted to engage with said grooves or teeth and to travel longitudinally of said winding-drum as the winding operation proceeds, and a rope the ends whereof are secured to said winding-drum.

812,298. SILO. DAVID A. SCHLICHTER, Brown City, Mich. Filed Dec. 31, 1904. Serial No. 239,266.

Claim.—1. The combination with a silo provided with a series of doors, of a ladder for said silo, the ladder comprising a series of levers pivotally secured intermediate their ends to the doors, each door carrying at least two levers, the handles of which normally lie in alinement with and project toward each other, the adjacent ends of the levers nearly engaging one another, the opposite ends of the levers being convexed, and catches for the levers, said catches stationarily mounted on the walls of the silo adjacent the levers, opposing concave faces on each catch inclined away from the wall of the silo and terminating at their upper ends in a shoulder to prevent the levers from passing beyond the horizontal in one direction, the convex ends of the levers engaging the concave faces of the catches, whereby the rounds of the ladder are removably locked in position and also serve to hold the doors in place, the rounds being secured more firmly by the ascent or descent thereof.

2. The combination in a silo having an opening therein and doors for closing the opening, of a pair of oppositely-located levers pivotally mounted on each door and catches carried by the silo and engaged by the outer ends of the levers, the inner ends of the levers when in locked position projecting horizontally toward each other to form the rounds of a ladder, the levers being locked by the ascent of a person.

3. The combination in a silo having an opening therein and doors for closing the opening, of a pair of oppositely-located levers pivotally mounted on each door and catches carried by the silo and engaged by the outer ends of the levers, the inner ends of the levers when in locked position projecting horizontally toward each other to form the rounds of a ladder, means on the catches engaged by the outer ends of the levers to prevent the inner ends from moving downward out of horizontal position, the levers being locked by the ascent of a person.

812,299. NUT-LOCK. JOHN SCHMITT, Brooklyn, N. Y. Filed July 5, 1904. Serial No. 215,318.

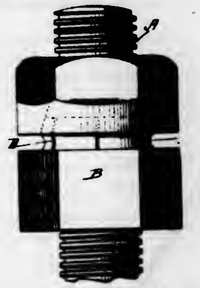

Claim.—A nut-lock, comprising a working nut, provided with an annular boss, upon one face, said boss being provided with threads having square biting edges, said boss being radially slotted and beveled and flared outwardly, in combination with a lock-nut having a conical-shaped recess in its lower face, the lower edges of the inclined walls of which are cut away, said recess adapted to engage the beveled face of the annular boss, for the purpose of wedging the biting edges of the boss, into the threads of the bolt.

812,300. FISH-TRAP. ARMAND L. SCHUPBACH, New Britain, Conn. Filed Apr. 15, 1905. Serial No. 255,811.

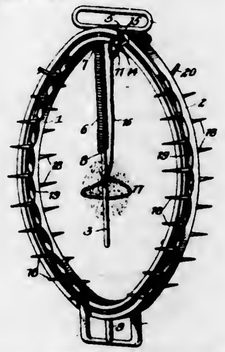

Claim.—1. A trap of the class described, comprising a pair of spring-actuated frames forming jaws, a pivot connecting the frames and extending into the same to form a bait-holder, and means for holding the trap set and for tripping the same.

2. A trap of the class described, comprising a pair of frames forming coöperating jaws, a pivot connecting the frames and extending into the same to form a bait-holder, a spring also mounted on the pivot for actuating the jaws, and means for holding the trap set and for tripping the same.

3. A trap of the class described, comprising a pair of open frames, pivots connecting the frames at diametrically opposite points and provided with handles, one of the handles being connected with one of the frames, and the other handle being connected with the other frame, and means for holding the trap set and for tripping the same.

4. A trap of the class described, comprising a pair of open frames, pivots connecting the frames at diametrically opposite points and provided with handles arranged exteriorly of the frames and consisting of loops, one of the loops being rigid with one of the frames and adapted to be connected to a line and the other loop being rigid with the other frame, and means for holding the trap set and for tripping the same.

5. A trap of the class described, comprising a pair of open frames forming coöperating jaws, a pivot piercing the frames and having an exterior laterally-projecting loop forming a handle and adapted to receive a line, and means for holding the trap set and for tripping the same.

6. A trap of the class described, comprising a pair of open frames, a pivot connecting the frames and extending into the same to provide a bait-holder and exteriorly of the same to form a loop-shaped handle, a spring disposed on the inner portion of the pivot for actuating the jaws, and means for holding the trap set and for tripping the same.

7. A trap of the class described, comprising a pair of open spring-actuated frames pivotally connected and provided with spurs projecting from the engaging edges of the frames, and means for preventing the spurs from coming in contact with the frames when the trap is sprung.

8. A trap of the class described, comprising a pair of open spring-actuated frames pivotally connected and provided at their engaging edges with projecting spurs, and a stop extending from one frame and arranged to be engaged by the other to limit the closing movement of the trap.

9. A trap of the class described, comprising a pair of open spring-actuated frames pivotally connected and having beveled engaging edges, spurs or teeth projecting from the engaging edges, and means for limiting the closing movement of the trap to prevent the spurs or teeth of one of the frames from coming in contact with the other frame.

10. A trap of the class described, comprising a pair of open pivotally-connected spring-actuated frames, and a catch arranged when the frames are opened to their set position to automatically lock the same in such position, and means for holding a bait and for connecting the latter with the catch.

11. A trap of the class described, comprising a pair of pivoted spring-actuated frames, and a catch mounted on one of the frames and having an engaging portion located in the path of the other frame and arranged to be directly engaged by the same when the frames are opened to their set position whereby the frames are automatically locked in such position.

12. A trap of the class described, comprising a pair of pivoted spring-actuated frames, a bait-holder located within the frames, a catch mounted on one frame and arranged to automatically engage the other and to be disengaged therefrom by an inward pull, and means for connecting the catch with a bait.

13. A trap of the class described, comprising inner and outer spring-actuated frames pivoted together, a substantially U-shaped catch secured at one side to the inner face of the inner frame and having its other side located exteriorly of the said inner frame and arranged in the path of the outer frame and provided with means for engaging the same, and means for connecting the catch with a bait.

14. A trap of the class described, comprising a pair of open frames, and a pivot connecting the frames and extending into the same to provide a bait-holder and exteriorly of the same to form a loop-shaped handle.

812,301. **EXTENSIBLE SCAFFOLD-BOARD.** CHARLES SCHWEDT, Buffalo, N. Y. Filed Feb. 20, 1905. Serial No. 246,523.

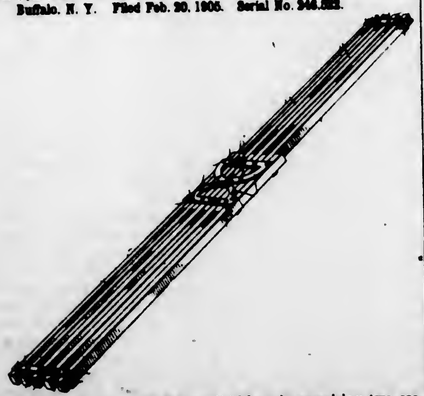

Claim.—1. An extensible scaffold-board comprising two sections formed of intermeshing strips, the strips of each section being suitably connected at their outer ends and having straps connecting their inner or intermeshed ends, saids straps being arranged on opposite sides of the board and having bolts securing opposite straps to said strips, the straps on one side of the intermeshed ends of the sections comprising a straight portion disposed transversely and a curved portion connected to said straight portion.

2. An extensible scaffold-board comprising two sections formed of intermeshing strips, the strips of each section being suitably connected at their outer ends and having straps connecting their inner or intermeshed ends, said straps comprising each a straight portion and a curved portion.

3. In an extensible scaffold-board having two sections formed of intermeshing strips, a strap connecting said strips and comprising a straight portion and a curved portion having its ends connected to said straight portion.

4. An extensible scaffold-board comprising two sections formed of parallel intermeshing strips, the strips of each section being connected by straps arranged in pairs, the straps of each pair being on opposite sides of the board and having securing-bolts passing through the latter and said straps, and washers between one of the straps of each pair and the strips forming the sections, said washers surrounding said securing-bolts.

5. An extensible scaffold-board comprising two sections formed of intermeshing strips, the strips of each section being suitably connected at their outer ends and having straps connecting their inner or intermeshed ends, said straps being arranged on opposite sides of the board and having bolts securing opposite straps to said strips, the strap on the under side of each section comprising a straight portion disposed transversely and a curved portion connecting the ends of said straight portion.

812,302. **CAR-REPLACER.** JOHN M. SCUDDER, Farmington, Ill. Filed Nov. 2, 1905. Serial No. 285,606.

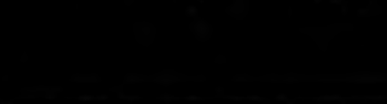

Claim.—A car-replacer, comprising a hollow metallic member, having a central longitudinal portion which has double-beveled surfaces, a hollow conical-shaped projection at one end of said double-beveled portion, a headed bolt passing through an aperture in the apex of said conical-shaped projection, a chain secured to said bolt, the opposite end of the member having an aperture in the end thereof, and an anchorage-chain secured thereto, and wings upon said member with their upper surfaces inclined, as set forth.

812,303. **FOOT-MEASURE.** CHARLES SHIVERICK, Omaha, Nebr. Filed Nov. 4, 1904. Serial No. 231,435.

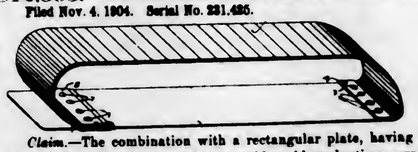

Claim.—The combination with a rectangular plate, having a plurality of scale-graduations upon one side, said graduations corresponding to the length, and width of a human foot, of a flexible holder extending from said plate at one end, and a collar slidably held upon said plate, said flexible member being secured to said collar.

812,304. **EXPLOSIVE-GAS ENGINE.** EDWARD G. SHORTT, Carthage, N. Y. Filed Sept. 24, 1903. Serial No. 174,703.

Claim.—1. An explosive-gas engine having a cylinder with a combustion-chamber and a piston working therein, an exhaust-chamber, a fuel-duct, an air and fuel combining chamber, having free and unobstructed communication with said combustion-chamber, an air-compression compartment, and a vacuum-space intermediate the combustion-chamber and the compression-compartment, a valved passage-way leading from the vacuum-space to said exhaust-chamber, valve mechanism for allowing air under pressure from said compression-compartment together with fuel, to simultaneously enter the combining-chamber, and means for actuating said mechanism exposed on one side to the atmosphere and on the other side to the vacuum-space, as set forth.

2. An explosive-gas engine having a cylinder with a combustion-chamber and a piston working therein, an exhaust-chamber, a fuel-duct, an air and fuel combining chamber, having free and unobstructed communications with said combustion-chamber, an air-compression compartment, and a vacuum-space intermediate the combustion-chamber and the compression-compartment, a valved passage-way leading from the vacuum-space to said exhaust-chamber, valve mechanism for allowing air under pressure from said compression-compartment together with fuel, to simultaneously enter the combining-chamber, a pneumatic cylinder positioned in a passage-way communicating with said vacuum-space, a piston in said pneumatic cylinder and adapted to actuate said valve mechanism, and means for regulating the supply of air to said pneumatic cylinder, as set forth.

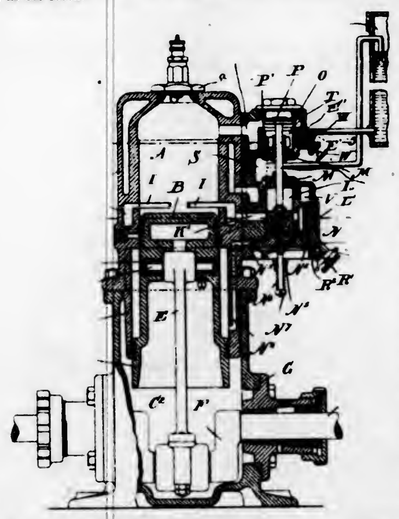

3. An explosive-gas engine having a cylinder with a combustion-chamber and a piston working therein, an exhaust-chamber, with ports leading thereto from the lower portion of the combustion-chamber, a fuel-duct, an air and fuel combining chamber, having free and unobstructed communication with the combustion-chamber, an air-compression compartment, the lower end of said piston being enlarged and adapted to form, with the adjacent wall of the cylinder in which it works, a vacuum-space, which communicates through a valve-regulated passage-way with said exhaust-chamber, valve mechanism for allowing the air under pressure from said compression-compartment and fuel to simultaneously enter the combining-chamber, and means for actuating said mechanism exposed on the one side to the atmosphere and on the other side to the vacuum-space, as set forth.

4. An explosive-gas engine having a cylinder with a combustion-chamber and a piston working therein, an exhaust-chamber, a fuel-duct, an air and fuel combining chamber, having free and unobstructed communication with said combustion-chamber, an air-compression compartment, a vacuum-space being formed intermediate the combustion-chamber and the compression-compartment, a pneumatic cylinder with a duct leading therefrom and communicating with said vacuum-space, and valve mechanism for regulating the supply of air from the compression-compartment and fuel to the combining-chamber, simultaneously with the closing of the exhaust to the atmosphere, as set forth.

5. In an explosive-gas engine, a combustion-chamber, an air-compression compartment, a piston working in said chamber and having an enlarged end to compress air into said compartment, a vacuum-space being formed intermediate the circumference of said piston and the wall of the compression-compartment, a combining-chamber, having free communication with the combustion-chamber, an exhaust-chamber with ports leading to the combustion-chamber and to the atmosphere, an induction-valve controlling the feeding of air and fuel to the combining-chamber, a stem upon which said valve is mounted, a pneumatic cylinder, a piston mounted in said cylinder and exposed on one side to the atmosphere and on the other side to the vacuum-space, said piston having a contracted portion for controlling the port leading from the exhaust-chamber, as set forth.

6. In an explosive-gas engine, a combustion-chamber, an air-compression compartment and a vacuum-space, a piston working in said chamber, and having an enlarged end adapted to compress air within said compartment, an exhaust-chamber of measured capacity communicating with the combustion-chamber and with the atmosphere, a combining-chamber communicating with the combustion-chamber, a duct leading from said air-compression compartment to convey air from the latter to the combining-chamber, a pneumatic cylinder and piston working therein, a duct leading from said cylinder to said vacuum-space, an induction-valve and stem secured thereto, which is also fastened to said piston in said cylinder, and valve mechanism in connection with said piston in the cylinder, and means for actuating said mechanism exposed on the one side to the atmosphere and on the other side to the vacuum-space, and means for allowing a given quantity of air to enter the pneumatic cylinder to break the vacuum, as set forth.

7. In an explosive-gas engine, a combustion-chamber, an air-compression compartment and a vacuum-space, a piston working in said chamber, and having an enlarged end adapted to compress air within said compartment, an exhaust-chamber of measured capacity communicating with the lower portion of the chamber and with the atmosphere, an induction-valve for regulating the supply of air and fuel to the combustion-chamber, a pneumatic cylinder, a piston having an enlarged head working in said cylinder and provided with a contracted portion regulating the exit passage-way between said exhaust-chamber and the atmosphere, a valve regulating the ingress of air to said cylinder, said induction-valve actuated by said piston in said cylinder, the latter having communication with said vacuum-space, as set forth.

8. An explosive-gas engine comprising a combustion-chamber, a working piston therein, an annular chamber for receiving the residue of the products of combustion, an induction-valve, a pneumatic cylinder, a piston working therein, having a contracted portion regulating the exit passage-way from said annular chamber to the atmosphere, a valve-regulated air-inlet duct leading to the pneumatic cylinder, a stem on which the piston of said cylinder is mounted, an induction-valve mounted on said stem, and opening into a combining-chamber, a shell in which an enlarged portion of the working piston travels forming a vacuum-space, a port leading from said space to the pneumatic cylinder, an air-compression chamber, a crank-shaft mounted therein, and a pitman between said working piston and shaft, and a duct formed in the casing of the engine and leading from the air-compression chamber to said induction-valve, whereby air under pressure may be fed to the combining-chamber as the induction-valve is unseated, as set forth.

9. An explosive-gas engine comprising a combustion-chamber, a working piston mounted therein, a shell extending below the combustion-chamber, an enlarged portion of said piston working therein, an air-compression compartment, an annular chamber for receiving the residue of the products of combustion, a pneumatic cylinder, a piston having an enlarged headed portion working in said cylinder and a contracted portion regulating communication between the exhaust-chamber and the atmosphere, a stem fitted to said piston in said cylinder, and an induction-valve secured to said stem and regulating the flow of air and fuel to the combining-chamber, as set forth.

10. An explosive-gas engine having a combustion-chamber, a receiving-chamber communicating therewith into which the residue of the products of combustion is forced, a working piston mounted in the combustion-chamber, a shell below the combustion-chamber, forming a space in which an enlarged portion of the working piston reciprocates, an air-compression compartment, a mixing-chamber into which air is conducted from said air-compression compartment, an induction-valve and stem on which the same is mounted, a pneumatic cylinder, a passage-way leading therefrom to said space, a portion of the piston in said cylinder controlling communication between the receiving-chamber and the atmosphere, a guide-piece through which said stem passes, and a spring for normally holding the induction-valve closed, as set forth.

11. In an explosive-gas engine, a combustion-chamber and an air-compression compartment, a piston in said chamber, a receiving-chamber communicating with the combustion-chamber and into which the residue of the products of combustion is forced, an induction-valve, a stem on which the same is mounted, a shell extending below the combustion-chamber, an enlarged portion of said piston working within said shell, a vacuum-space formed between the enlarged portion of said piston and shell, a pneumatic cylinder, a duct leading therefrom to said vacuum-space, a piston mounted in said cylinder and connected to the induction-valve, and a valve-regulated

air-inlet duct leading to said cylinder, a duct leading from the air-compression chamber to the combining-chamber, a valve-regulated

2. A submarine boat, having an optical instrument for receiving and deflecting an image down to the eyepiece of the instrument

which the catch aforesaid is adapted to pass, a shaft mounted on the

2. As an improved article of manufacture, a steel or malleable

air-inlet duct leading to said cylinder, a duct leading from the air-compression chamber to the combining-chamber, a valve-regulated fuel-aperture opening to the seat of the induction-valve, and a spring-actuated valve regulating the passage-way between said air-compression chamber and said receiving-chamber, as set forth.

812,305. CORE FOR PAPER-ROLLS. SALMA H. SMART, Grand Rapids, Wis., assignor to Earl B. Smart, Grand Rapids, Wis. Filed June 15, 1905. Serial No. 265,263.

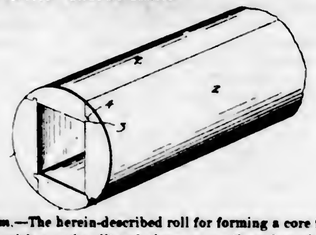

Claim.—The herein-described roll for forming a core for paper-rolls comprising a plurality of pieces or sections 2, each provided with a longitudinal tongue on one edge and a corresponding longitudinal groove on one side, said pieces being locked together to form a roll of circular cross-section, and said roll having a rectangular opening extending longitudinally therethrough, substantially as described.

812,306. MEANS FOR STEERING SUBMARINE AND SUBMERGIBLE BOATS. LAWRENCE Y. SPEAR, Greenport, N. Y., assignor to Electric Boat Company, Greenport, N. Y. Filed May 26, 1904. Serial No. 209,978.

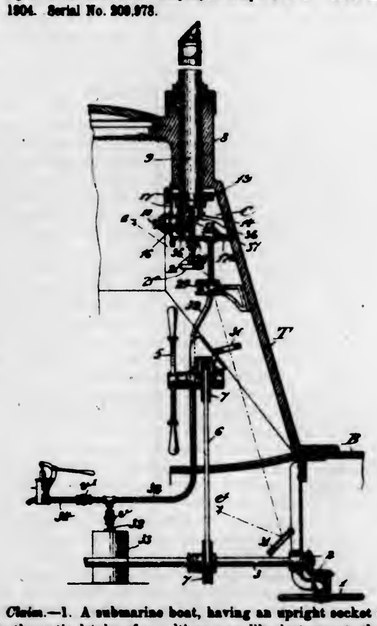

Claim.—1. A submarine boat, having an upright socket to receive the optical tube of an altiscope or like instrument, the said tube, open at its lower end and carrying at its upper end a deflecting-reflector to receive the image, a chamber within the boat below said socket, a hollow support 14 in said chamber, said support having a nook 15 which enters the lower end of the optical tube, a deflecting-reflector 13 in said support, an eyepiece-socket 16 extending through the wall of the said chamber and connected with said wall and with the support 14, the glass 18 in the inner end of the socket 16, the eyepiece mounted slidably in said socket 16, means for rotating the optical tube, a visual indicator actuated by the rotation of said tube to indicate the extent of its rotation, and a telltale-compass 29 situated adjacent to the said eyepiece.

2. A submarine boat, having an optical instrument for receiving and deflecting an image down to the eyepiece of the instrument within the boat for observation, means for rotating axially the optical tube of said instrument, a visual indicator operated by said tube and adjacent to the said eyepiece, to denote the degree of rotation of the tube, a telltale-compass below and adjacent to the eyepiece, a magnifying-lens below said compass, and a reflector below said lens to reflect the readings of the compass to the steersman below.

3. A submarine boat having a steering-wheel and mechanism for a steersman, or helmsman, an auxiliary steering-wheel above the level of the latter for the observer, connecting mechanism whereby the boat may be steered by said auxiliary wheel, a telltale-compass within the range of vision of the observer, and a magnifying-lens and reflector, the latter being so disposed as to reflect the readings of said compass within the range of vision of the steersman below.

812,307. BAG-HOLDER. GEORGE STEARNS, Chicago, Ill. Filed Jan. 3, 1905. Serial No. 239,329.

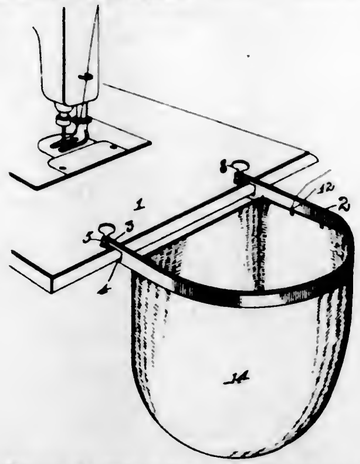

Claim.—1. In a device of the character described, a strip of resilient material, suitably-spaced parallel longitudinally-disposed arms projecting from each end of the strip, the free portions of the arms being enlarged, set-screws passing through the enlarged portions of certain of the arms to act in conjunction with the enlarged portions of the remainder of the arms to form clamps, and removable contact-pieces carried by the set-screws.

2. In a device of the character described, a strip of resilient material, suitably-spaced parallel longitudinally-disposed arms projecting from each end of the strip, the free portions of the arms being enlarged, set-screws passing through the enlarged portions of certain of the arms to act in conjunction with the enlarged portions of the remainder of the arms to form clamps and yieldable contact-pieces removably carried by the set-screws.

812,308. BOX-FASTENER. HENRY STOTZ, Albert Lea, Minn. Filed June 7, 1905. Serial No. 264,191.

Claim.—1. In a fastening for receptacles, the combination of a catch-plate, an arm extending from the catch-plate, a lug projected from the catch-plate, a catch extending from the arm aforesaid, a shaft mounted in the arm and lug of the catch-plate, and an engaging member projected from the shaft for cooperation with the catch.

2. In a fastening for receptacles, the combination of a receptacle, a strip at the front portion of the receptacle, a catch-plate secured to the front of the receptacle, a catch projected from said catch-plate, a cover for the receptacle provided with a slot through which the catch aforesaid is adapted to pass, a shaft mounted on the catch-plate and passing through the strip aforesaid, and an engaging

which the catch aforesaid is adapted to pass, a shaft mounted on the catch-plate and passing through the strip aforesaid, and an engaging member carried by said shaft for cooperation with the catch, as specified.

3. In a fastener for receptacles, the combination of a case or box, a cover therefor, a catch-plate applied to the box, a catch projecting from said plate and coacting with the cover, a shaft journaled in the catch-plate, and an engaging member projecting from the shaft and arranged to cooperate with the catch to hold the cover closed.

812,309. BROOM-HANDLE. THOMAS I. SWAGERTY, Pleasanton, Kans. Filed June 9, 1905. Serial No. 264,468.

Claim.—As a new article of manufacture a broom comprising a handle provided at its lower end with a threaded projecting pin and with a casing flared outwardly and projecting beyond the end of the said pin, and a brush portion having at its upper end a shank formed with a longitudinally-extending recess and a keeper embedded in said shank and extending transversely across said recess and provided with a threaded aperture in line with the recess and designed for threaded engagement with the pin, the flared casing providing a guiding means for the reception of the said shank and a proper entry thereinto of the projecting pin, as and for the purpose set forth.

812,310. LOGGING-SLED. ANDREW SWANSON, St. Francis, Minn. Filed May 13, 1905. Serial No. 260,206.

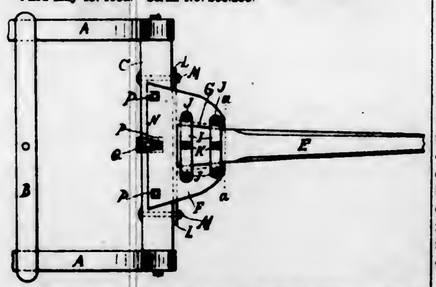

Claim.—1. As an improved article of manufacture, a steel or malleable casting having the horizontal flanges N with bolt-holes adapting said flanges to be bolted to the upper and lower side of the roller of a logging-sled, the vertical side flanges L securable to the front side of the roller, the tapering socket G for the pole, the integral bottom H and the straps I to keep the pole in the socket, and bolts applied substantially as and for the purpose set forth.

2. As an improved article of manufacture, a steel or malleable casting having the horizontal flanges N with bolt-holes adapting said flanges to be bolted to the upper and lower side of the roller of a logging-sled, the vertical side flanges L securable to the front side of the roller, the tapering socket G for the pole, the integral bottom H and the straps I to keep the pole in the socket, the reinforcing side ribs S, and bolts applied substantially as shown and described.

3. The combination with the pole and roller of a logging-sled, of a casting having a tapering socket or pocket open at the top and front, and the flanges L and N securable to three sides of the roller, and bolts therethrough, said pole having its rear end tapered to fit in the socket and straps bolted to the casting across the pole.

4. The combination with the pole and roller of a logging-sled, of a casting having a tapering socket or pocket open at the top and front, and the flanges L and N securable to three sides of the roller, and bolts therethrough, said pole having its rear end tapered to fit in the socket, straps bolted to the casting across the pole, and the bolts K through the straps, the pole and the casting.

5. The combination with the pole and roller of a logging-sled, of a casting having a tapering socket or pocket open at the top and front, and the flanges L and N securable to three sides of the roller, and bolts therethrough, said pole having its rear end tapered to fit in the socket, straps bolted to the casting across the pole, and the bolts K through the straps, the pole and the casting, and the draft-hook Q and R, arranged substantially as set forth.

812,311. FIBER-MIXER. EMIL TYDEN, Hastings, Mich. Filed Mar. 18, 1905. Serial No. 250,751.

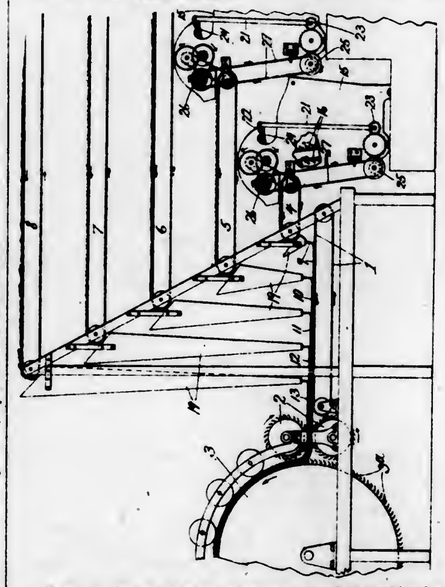

Claim.—1. In a machine for the purpose stated, in combination with a blending-machine comprising a carrier for feeding material thereto; a plurality of devices for feeding the material to be blended, each of said feeding devices comprising an endless carrier for delivering material therefrom, such carriers being terminated at their delivery side in position for delivering upon said endless feed-carrier of the blending-machine, one in front of another, along the path of movement of the carrying-ply of said carrier, and means for regulating the rate of delivery of the several feeding devices independently of each other.

2. In a machine for the purpose indicated, in combination with a blending-machine comprising an endless carrier for feeding the same; a plurality of devices for feeding the several materials to be blended, each of said feeding devices comprising an endless carrier for delivering the material, said endless carriers of the several feeding devices being arranged successively one above another, each terminating at its delivery side beyond the one below it, above the endless feeding-carrier of the blending-machine, and means for regulat-

ing the rate of delivery of said delivering-carriers independently of each other.

3. In a machine for the purpose indicated, in combination with a blending-machine comprising an endless carrier for feeding the same, a plurality of feeding devices for delivering different materials to said carrier having their delivering means arranged for delivery successively, one in front of another, on said carrier, for producing superimposed layers of the different materials thereon, said feeding devices having variable-speed driving means and means for regulating the speed of each independently of the others.

4. In a mechanical organization for the purpose indicated, in combination with a blending-machine having an endless carrier for feeding it, a plurality of feeding devices, each comprising a receptacle for the material to be fed and means for engaging and carrying away the same, and having each an endless traveling delivery belt or apron, said feeding devices being arranged at successively more and more elevated positions, one behind another, back of the receiving end of the carrier of the blending-machine, the delivery-apron of each feeding device at the rear being extended above all the feeding devices in front of it, said several aprons terminating at their forward or delivery side successively farther and farther forward above the carrier of the blending-machine as they are located successively farther and farther rearward from the receiving side thereof.

5. In a machine for the purpose stated, in combination with a blending-machine comprising a horizontal carrier for feeding material thereto, a plurality of devices for supplying to such carrier the material to be blended, each comprising an endless carrier for delivering material therefrom, such carriers being located one above another, each terminating farther forward than the one below it along the path of movement of said horizontal carrier of the blending-machine.

6. In a machine for the purpose indicated, in combination with a blending-machine comprising a horizontal carrier for feeding the same, a plurality of devices for supplying to such carrier the several materials to be blended, each of said devices comprising an endless carrier for delivering the material, said endless carriers being arranged successively one above another, above the horizontal feeding-carrier of the blending-machine, and each terminating at its delivery side farther forward than the one below it along the path of feeding movement of said blending-machine carrier, and means for regulating the rate of delivery of said several delivering-carriers independently of each other.

812,312. COVERED SPOON. HENRY D. WARD, Worcester, Mass., assignor of one-half to Ira B. Hubbard, Worcester, Mass. Filed Mar. 20, 1905. Serial No. 251,011.

Claim.—1. The combination with the bowl and handle of a spoon, of a cover hinged to the spoon at the junction of the handle and bowl, a bar hinged at one end to said cover, ways on said handle for said bar, and arms at the opposite end of said bar adapted to inclose the thumb of the operator.

2. The combination with the bowl and handle of a spoon, of a hinged cover for said bowl, a slidable bar extending lengthwise said handle, means on the end of said bar for engaging the thumb, and a curved arm on the end of said handle adapted for a finger-rest.

3. As an article of manufacture, a spoon comprising a bowl and handle having its free end upturned, a cover for said bowl hinged at the junction of the bowl and handle, a sliding bar sliding in ways on said handle and pivotally connected with said cover, a bar and upwardly-curved arms on the end of said sliding bar adapted to engage the thumb and an upwardly-curved arm near the end of said handle providing a space between said arm and the upturned end of the handle to receive the forefinger.

812,313. CAST TRUCK-BOLSTER. EDWIN C. WARBURN, Minneapolis, Minn. Filed Mar. 25, 1905. Serial No. 251,948.

Claim.—1. A hollow cast bolster having outwardly-converging upper and lower web portions and having a central longitudinal and vertically-extended web formed with a reinforced rib that extends approximately parallel to the lower web of said bolster and unites with the upper web thereof, substantially as described.

2. A hollow cast truck-bolster having outwardly-converging upper and lower webs and having the vertical longitudinally-extended central web 10 provided on its opposite faces with the transversely-extended reinforcing-ribs 11 and 12, said ribs 11 extending approximately parallel with the bottom web of said bolster and the said rib 12 extending from the top web to the bottom web of said bolster.

812,314. KNITTING-MACHINE. CHARLES H. WHITCHER, Ipswich, Mass. Filed Dec. 23, 1903. Serial No. 186,267.

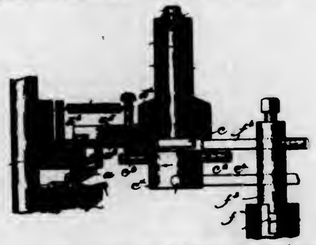

Claim.—1. In a knitting-machine, the combination with a dial-needle bed, a dial-cam plate and its drawing-in cam, a vertical shaft having a cam, and means to rotate said shaft intermittingly, and devices intermediate the cam on said vertical shaft and the said drawing-in cam that said cam on the vertical shaft may change the position of said drawing-in cam according to the class of knitting to be done.

2. In a knitting-machine having a needle-bed and cam-ring for moving a series of cylinder-needles: a dial-needle bed and dial-cam plate for moving a series of dial-needles to coact with the cylinder-needles, a drawing-in cam for the dial-needles, a vertical shaft having a cam, means acting automatically to rotate said shaft, and means intermediate the cam on said shaft and said drawing-in cam that said shaft as it is rotated may insure two different positions for said drawing-in cam according as it is desired to knit royal-rib or plain-rib stitch.

3. In a knitting-machine having a needle-bed and cam-ring for moving a series of cylinder-needles, a dial-needle bed and dial-cam plate for moving a series of dial-needles to coact with the cylinder-needles, a drawing-in cam for the dial-needles, a slide-bar connected with said drawing-in cam, a vertical shaft having a double-ended cam, a spring acting normally to bear said slide-bar toward said double-ended cam, and means acting automatically to rotate said shaft that its cam may insure two different positions for said slide-bar and the drawing-in cam according as it is desired to knit the royal-rib or plain-rib stitch.

4. In a knitting-machine, a drawing-in cam, a connected slide-bar, a vertical shaft having a cam, and two series of arms below said cam, said arms occupying a position in different horizontal planes, two fingers one coacting with each set of said arms, and a pattern-surface to change the position of one of said fingers to stop the rotation of said cam when only plain-rib knitting is to be done.

5. In a knitting-machine, a drawing-in cam, a connected slide-bar, a vertical shaft having a cam, and two series of arms below said cam, said arms occupying positions in different horizontal planes, a stationary finger coacting with one set of said arms during the knitting of each course of stitches, and a pattern-controlled finger which may be put in position to be struck by the other set of said arms or into a position out of the path of movement of said set of arms to thereby arrest the rotation of the shaft having said cam.

6. In a knitting-machine, a dial-cam plate having a pivoted drawing-in cam, a slide connected with said drawing-in cam, a plate connected with said dial-cam plate and serving as a guide for said slide, a hollow hub, a shaft rotatably mounted in said hub and having a cam and projecting arms, a pattern-surface, a stationary finger, and a movable pattern-controlled finger, the position of the pattern-controlled finger determining whether or not the shaft having said cam shall be rotated intermittingly for the production of a royal-rib stitch, or if said shaft and its cam shall be stopped, for the production of a plain-rib stitch.

812,315. SHOE-TREE. WILLIAM D. WILDER, Brockton, Mass. Filed Apr. 30, 1905. Serial No. 258,568.

Claim.—A shoe-tree comprising a front portion, a heel portion having a longitudinal slot, and a vertical opening intersecting such slot, a link pivotally connected to the front portion of the tree and extending into said longitudinal slot of the heel portion, said link having notches in its lower side, a screw-stem in the vertical opening of the heel portion, recessed on one side to receive the link and having a tooth to engage any of the notches of the link, and a handle, bearing on the heel portion of the tree, having screw-threaded engagement with the screw-stem and forming a nut to move the screw-stem endwise to engage or disengage the link to permit longitudinal adjustment of the heel portion of the tree on the link.

812,316. FALSE REED FOR LOOMS. WILBUR B. WINGATE, Lawrence, Mass., assignor of one-half to Hamson Loom Harness Company, Lawrence, Mass., a Corporation of Massachusetts. Filed Feb. 16, 1905. Serial No. 245,948.

Claim.—1. As an article of manufacture, a false reed comprising two cores and a reed consisting of a cord passed alternately and progressively from one core to the other, said cord being knotted to one core and braided to the other.

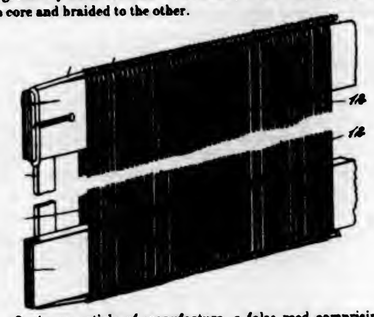

2. As an article of manufacture, a false reed comprising two cores and a reed consisting of a cord passed alternately and progressively from one core to the other, said cord being knotted to one core and braided to the other, and a suitable framework for supporting and maintaining said false reed.

3. As an article of manufacture, a false reed comprising two cores and a reed, the latter consisting of a cord passed alternately and progressively from one core to the other, said cord being bonded to said cores.

4. As an article of manufacture, a false reed comprising two cores and a reed consisting of a cord passed alternately and progressively from one core to the other and bonded to each core at each turn, said cord passing alternately from the front side of one core to the rear side of the other core, and vice versa, and a framework for supporting and maintaining said reed.

812,317. WOODWORKING-MACHINE. OLMEDO C. WYSONG, Greensboro, N. C. Filed Nov. 5, 1904. Serial No. 231,479.

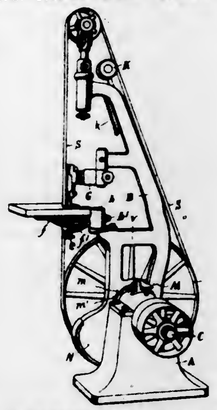

Claim.—1. In a mechanism of the character specified, a base, a frame located at one side thereof and pivoted thereto, said frame being adjustable to varying positions relative to the base, means for locking the frame to the adjusted position, a band-carrying pulley mounted upon a shaft journaled within said pivot, and a band-carrying pulley adjustable relative to said frame.

2. In a mechanism of the character indicated, a base, a frame located at one side thereof and pivoted thereto, said frame being adjustable to varying positions relative to the base, and counterweighted so as to turn freely from one position to another, means for locking the frame to the adjusted position, a pulley mounted upon a shaft journaled within said pivot, an idler-pulley carried by and adjustable relative to the frame.

3. In a mechanism of the character indicated, a base, a frame pivoted thereto, a pulley mounted on a shaft journaled in said pivot, a pulley carried by the frame and adjustable relative thereto, a work-table carried by and adjustable relative to said frame.

4. In a band-carrying mechanism a frame journaled to the base, and adapted to be adjusted to varying positions of inclination, a work-carrying table carried by said frame and means for adjusting the table to varying angles, and shifting it into and out of position for use.

5. In a woodworking-machine, a frame provided with band-carrying pulleys and adapted to be adjusted to varying angles of inclination, a work-table, and an adjustable form above said table supporting one face of the band, said work-table and form being carried by said adjustable frame.

6. In a mechanism of the character indicated, a base, a frame pivoted thereto, a pulley mounted on a shaft journaled in said pivot, a pulley carried by the frame and adjustable relative thereto, and a work-table carried by said frame.

812,318. AUTOMATIC DRIVING AND REVERSING MECHANISM. WILLIAM B. YATES, Chicago, Ill. Filed Sept. 19, 1904. Serial No. 225,110.

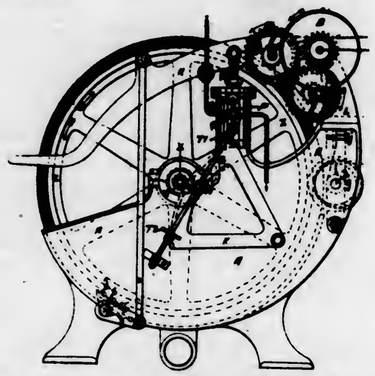

Claim.—1. A frictional transmission mechanism having a plurality of driving members, a driven member, and fluid-pressure-operated means adapted to alternately bring said driven member into engagement with said driving members.

2. In a driving and reversing mechanism, a plurality of positively-driven friction-rolls rotating in opposite directions, a driven member adapted to contact with said rolls at predetermined intervals, and a fluid-pressure organ for controlling said contact.

3. A driving and reversing mechanism having a plurality of positively-driven friction-rolls rotating in opposite directions, a member adapted to be driven in opposite directions by frictional contact with said rolls and means adapted to cause said contact at predetermined intervals.

4. A friction driving and reversing mechanism having a plurality of positively-driven friction-rolls, a driven member, a fluid-pressure cylinder and piston, and transmission mechanism between said piston and friction-rolls adapted to alternately bring said rolls into driving contact with the driven member.

5. In a friction driving and reversing mechanism, a single power-shaft moving constantly in one direction, a plurality of friction-rolls driven in unison, in opposite directions, by said shaft, swinging journals within which the rolls are mounted, a driven member adapted to receive alternately motion in either direction through contact with the rolls, a fluid-pressure organ connected with the swinging journals of the rolls for the purpose of forcing them alternately into contact with the driven member at predetermined intervals, and means whereby the travel of the driven member admits fluid-pressure to one and the other side of the fluid-pressure organ, causing reversal of the direction of motion at predetermined intervals.

6. In a driving and reversing mechanism, a prime mover running in one direction, a swinging cradle, suitable gearing carried thereby, and friction driving-rolls, with a fluid-pressure mechanism adapted to operate the swinging cradle to give said rolls the necessary pressure for propulsion.

7. In a reversing mechanism, the combination of a prime mover running in one direction, a swinging cradle, suitable gearing carried thereby, and friction driving-rolls, with a valve-operated pressure mechanism adapted to alternate the pressure on said rolls, to give the necessary contact for propulsion in one or the other direction.

8. In a reversing mechanism, the combination of a prime mover running in one direction, and a swinging cradle, suitable positive, power-transmitting gearing and friction driving and pressure-giving mechanism for propulsion carried thereby, with a suitable valve or cock, tappet-rod, tappet-plate, sector or rack carrying a tappet-pin, all operated from the body to be reversed.

9. In a reversing mechanism, the combination of a prime mover revolving in one direction, a swinging cradle, suitable positive, power-transmitting gearing and friction driving and pressure-giving mechanism for propulsion carried thereby, a suitable valve or cock, tappet-rod, tappet-plates, sector or rack carrying a tappet-pin, and a pinion frictionally attached to the body to be reversed, giving movement to the other members, in the manner specified, as and for the purpose described.

812,319. CONVEYER. GILBERT I. SIBBS, Glenavon, Ill. Filed Oct. 18, 1905. Serial No. 283,296.

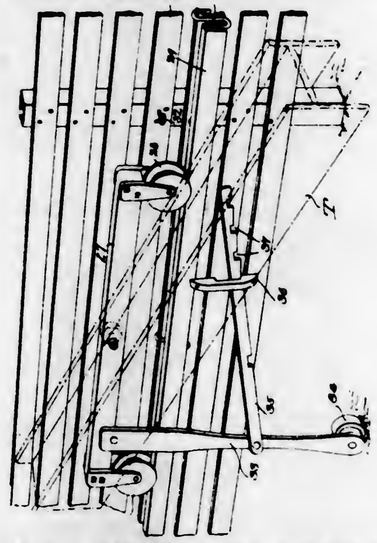

Claim.—1. A foldable casing, an endless carrier in said casing, shafts supporting the endless carrier, a frame pivoted upon a protruding end of the lower shaft, a driven shaft journaled in the frame, intermeshing bevel-gears upon the driven shaft and the protruding end of the carrier-shaft, an auxiliary shaft journaled in the pivoted frame, a carrier-trough hinged upon said shaft, an endless carrier in the trough supported at one end upon the auxiliary shaft, and means for transmitting motion from the latter to the driven shaft.

2. In a device of the class described, a casing, and a bar pivotally connected with one side of said casing and provided at the ends thereof with track-engaging rollers in combination with an arm pivoted upon the opposite side of the casing, and a ground-engaging wheel at the free end of said arm.

3. In a device of the class described, a casing, a bar pivoted upon one side thereof, track-engaging rollers supported by said bar at opposite sides of the fulcrum of the latter, and a movable supporting-track in combination with an arm pivoted upon the opposite side of the casing and a ground-engaging wheel at the free end of said arm.

4. A casing, rotary track-engaging means connected with one side of the casing, an arm connected pivotally with the other side of the casing, and a ground-engaging wheel at the free end of said arm.

5. A casing, rotary track-engaging means connected with one side thereof, a wheel-carrying arm connected pivotally with the other side of the casing, and means for adjusting said arm and for retaining it at various adjustments.

6. A casing, rotary track-engaging means connected with one side thereof, a wheel-carrying arm pivoted upon the other side of the casing, a notched lever connected pivotally with said arm, and a cleat upon the casing confining said lever and adapted to engage the notches therein.

7. A portable elevator-casing provided upon one side with rotary track-engaging means and upon the other side with rotary ground-engaging means.

8. A portable elevator-casing, rotary track-engaging means connected with one side of the casing, rotary ground-engaging means connected adjustably with the other side of the casing, and a movable track provided with means whereby it may be supported in operative position.

812,320. PARQUET-FLOORING. ROBERT A. ALEXANDER, Meriden, Conn. Filed Aug. 10, 1905. Serial No. 273,654.

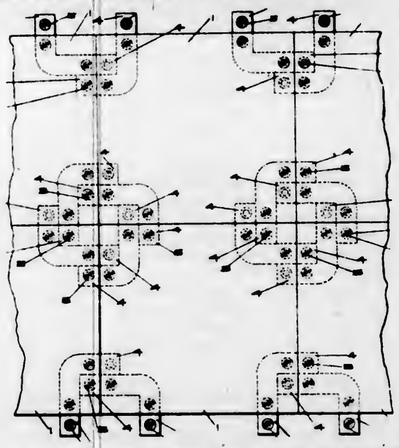

Claim.—In a flooring, a series of sections, plates secured to the sections, each of said plates projecting from two sides of the section to which it is attached; each section overlying a plate of every abutting section and having similar plates similarly projecting and adapted to fit under the abutting sections of the flooring as and for the purpose described.

812,321. VEHICLE-TIRE. HUGH R. AULD, Boston, Mass. Filed Feb. 13, 1905. Serial No. 245,264.

Claim.—1. A tire comprising a strip of rubber having flanges upon each side of the tread portion for supporting the retaining-wires, and a stiffener consisting of rigid longitudinal side bars located in the base portion of the tire beneath the flanges with their widest dimensions parallel to the base, there being thick cushions of rubber between the side bars and the wire-engaging surfaces of the flanges, and a cross-bar joined to the side bars and embedded in the rubber.

2. A tire comprising a strip of rubber having flanges upon each side of the tread portion for supporting the retaining-wires, and a stiffener consisting of rigid, flat metallic side bars extending longitudinally of the tire and embedded therein closely adjacent the side and base surfaces thereof, and a cross-bar joined to the side bars, bent sharply toward the tread-surface of the tire and embedded in the rubber, whereby the stiffener is securely connected to the tire and cushions of rubber are provided between the wire-engaging surfaces of the flanges and the side bars of the stiffener.

3. A tire comprising a continuous strip of rubber having a tread portion and a base portion extended on both sides of the tread portion to form flanges for supporting retaining bands or wires, and a stiffener consisting of a rigid metallic frame or grid having side bars extending longitudinally of the tire located at the sides thereof beneath the wire-engaging surfaces of the flanges, and cross-bars joined to the side bars, said cross-bars being displaced at their intermediate portions toward the tread-surface of the tire and separated from each other by relatively wide spaces, whereby they are completely surrounded by and deeply embedded in the rubber of the tire while a thick cushion is provided between the wire-engaging surfaces of the flanges and the side bars.

4. A tire comprising a continuous strip of rubber having a tread portion and a base portion extended on both sides of the tread portion to form flanges for supporting retaining bands or wires, a stiffener consisting of a rigid metallic frame or grid embedded in the base portion of the tire, and a fabric covering extending around the base portion of the tire and over the wire-engaging surfaces of the flanges.

5. A rubber tire having a tread portion and a base portion formed with lateral flanges, a fabric covering extending over the side and upper surfaces of the flanges and the sides of the said tread portion adjacent the flanges and vulcanized to the tire, and a stiffener consisting of side bars embedded in the sides of the base portion, extending longitudinally thereof, and a cross-bar joined to said side bars and embedded in the tire.

6. The combination with a wheel-rim channel of a rubber tire formed with a tread portion and a base portion, the latter having flanges projecting beside the tread portion and seated in the rim-channel, retaining-wires surrounding and engaged with the outer surfaces of the said flanges, binding members of frictioned fabric vulcanized to the tire extending over the wire-engaging surfaces of the flanges between the wires and the rubber and upon the sides of the tread portion, the said binding members being carried outward on the sides of the tread portion beyond the wires, whereby the tendency of the flanges to tear away from the body of the tire is resisted, and a stiffener embedded in the base portion beneath and out of contact with the retaining-wires.

7. The combination with a vehicle-wheel rim, of a rubber tire having lateral flanges at its base adapted to seat in the rim and to support longitudinal retaining-wires, stiffening members embedded in the tire close to the base-surface beneath the retaining-wires, and compression members extending transversely of the tire from one stiffening member to the other, connected to hold them apart, and arched to exert the maximum resistance to compression stresses.

812,322. BEAM-COMPASS. THOMAS H. BARKER, Oakland, Cal. Filed July 17, 1905. Serial No. 269,935.

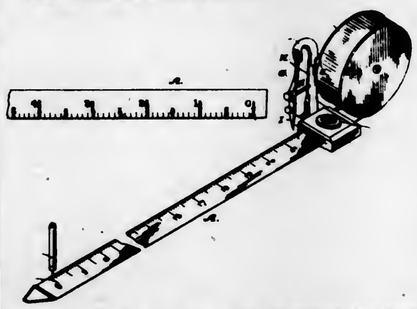

Claim.—1. In a beam-compass, the combination of a beam, a sliding detachable clamp provided with a flat bearing-surface arranged to lie on and slide over the surface to be marked, a post extending upward from the clamp, a tool-holding piece secured thereto, a drawing instrument provided with a marking-point in the plane of the flat bearing-surface of the clamp, a spring-tongue for connecting the drawing instrument to the tool-holding piece, and a screw for adjusting the drawing instrument relatively to the said clamp, substantially as set forth.

2. In a beam-compass, the combination of a flexible beam, a detachable clamp arranged to be adjusted along the said beam, a perpendicularly-arranged post mounted on the clamp, a tool-holding piece connected to the outer end of the post, a drawing instrument, and a spring-tongue for connecting the drawing instrument to the tool-holding piece, the said post, tool-holding piece and drawing instrument being separable from each other, substantially as set forth.

812,323. CHILD'S FOLDING CARRIAGE. WALTER H. BARKER, Harrow, England. Filed Aug. 14, 1905. Serial No. 274,173.

Claim.—1. In a folding carriage, the combination with a pair of hinged frames of traveling wheels mounted upon short axles at-

2. In a hoisting apparatus the combination with an engine having supply and exhaust ports, of adjustable means for partially and

apparatus, nuts having cam-faces and carried by said shaft to be

Claim.—1. In a coin-sorting apparatus, a helical rail on which the coins roll, a vertical or nearly-vertical wall at the external side of

Claim.—1. In a folding carriage, the combination with a pair of hinged frames, of traveling wheels mounted upon short axles attached to brackets hinged to the lower ends of the frames, and means such as a spring-catch for locking the brackets in the extended and folded positions, substantially as hereinbefore described.

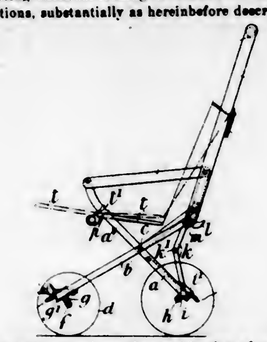

2. In a folding carriage, the combination of a pair of hinged frames, traveling wheels pivoted thereto in such a manner that they can be folded beneath the same, a back-frame secured to one of the hinged frames, arms connecting the back-frame with the other hinged frame and a flexible seat secured to one of the hinged frames and to the back-frame, substantially as described.

3. In a folding chair, the combination of a pair of hinged frames mounted on traveling wheels pivoted with respect thereto, a back-frame rigidly secured to one of the hinged frames, a folding seat, the lower end of which is attached to the other hinged frame and the other end to a wire clip, and of guides upon the back-frame for adjustably securing the wire clip to the back-frame, substantially as hereinbefore described.

4. In a folding chair, the combination of a pair of hinged frames mounted on traveling wheels pivoted with respect thereto, a back-frame rigidly secured to one of the hinged frames, a folding seat, the lower end of which is attached to the other hinged frame and the other end to a wire clip, of guides upon the back-frame for adjustably securing the wire clip to the back-frame, a hinged stay connecting the two hinged frames and a catch for locking the hinged frames in the extended position, substantially as described.

812,324. STEAM HOISTING APPARATUS. GEORGE W. BOLLMAN, Pittsburg, Pa., assignor to Otis Elevator Company, Jersey City, N. J., a Corporation of New Jersey. Filed Oct. 29, 1904. Serial No. 230,469.

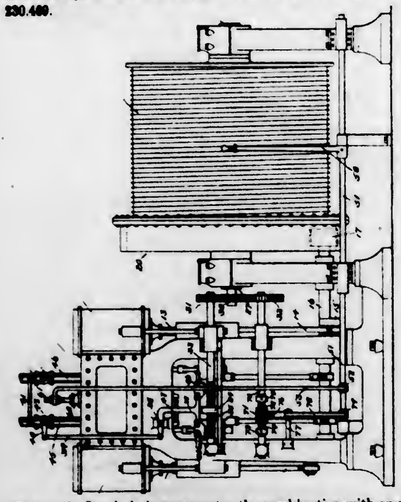

Claim.—1. In a hoisting apparatus the combination with an engine having supply and exhaust ports, of automatic means for partially closing both supply and exhaust ports.

2. In a hoisting apparatus the combination with an engine having supply and exhaust ports, of adjustable means for partially and automatically closing both supply and exhaust ports.

3. In a hoisting apparatus the combination with an engine having supply and exhaust ports, of automatic means for partially closing both supply and exhaust ports and then fully closing said ports.

4. In a hoisting apparatus the combination with an engine having supply and exhaust ports, of adjustable means for automatically partially closing both supply and exhaust ports and then fully closing said ports.

5. In a hoisting apparatus, the combination with an engine having supply and exhaust ports, of means for partially closing both supply and exhaust ports, and independent means for thereafter fully closing said ports.

6. In a hoisting apparatus, the combination with an engine having supply and exhaust ports, of adjustable means for partially closing both supply and exhaust ports, and independent means for thereafter fully closing said ports.

7. In a hoisting apparatus, the combination with an engine having supply and exhaust ports, of adjustable means for partially and automatically closing both supply and exhaust ports, and independent automatic means for then fully closing said ports.

8. In combination with hoisting apparatus, of a threaded shaft connected thereto, a traveling pinion on said threaded shaft, limit-stops for said pinion, a gear in mesh with said pinion, and means connected to said gear and operated thereby for slowing down or stopping the hoisting apparatus.

9. In a hoisting apparatus the combination with an engine having supply and exhaust ports, of adjustable means for partially closing both supply and exhaust ports automatically after the engine has made a desired number of revolutions, and independently-adjustable means for fully closing the ports and stopping the engine after the partial closing of said ports.

10. In a hoisting apparatus the combination with an engine having supply and exhaust ports, of an automatic device operated by some moving part of the machine for first partially closing both supply and exhaust ports and then fully closing the ports.

11. In a hoisting apparatus the combination with an engine having supply and exhaust ports, a winding-drum driven by such engine, adjustable means actuated by the movement of the winding-drum for partially closing both supply and exhaust ports automatically after the winding-drum has made a desired movement and independently-adjustable means also driven by the movement of the winding-drum for stopping the engine after such partial closing of said ports.

12. In combination with hoisting apparatus, of a screw-threaded shaft connected to rotate in harmony therewith, a traveling pinion on said shaft and moved along the same longitudinally, limit-stops for changing the longitudinal movement of said pinion to a rotative motion, a gear continually in mesh with said pinion, and means connected with said gear to be operated thereby to slow down or stop the hoisting apparatus upon rotation of said pinion.

13. In hoisting apparatus, the combination with a hoisting-drum, a threaded shaft geared to move with the hoisting-drum, a traveling nut having gear-teeth on its exterior surface, limit-stops for said nut, a segmental gear in mesh with said nut, and means connected with said segmental gear for slowing down or stopping the hoisting-drum when the nut engages a limit-stop.

14. In combination with hoisting apparatus, of controlling means therefor, a threaded shaft, a traveler on said shaft, a lever connected to the controlling means, and a cam on said lever in the path of said nut.

15. In combination with hoisting apparatus, of controlling means therefor, a threaded shaft connected to rotate in harmony with the movement of the hoisting apparatus, a traveling nut on said threaded shaft, means for restricting said nut to a longitudinal movement, a lever connected to said controlling means, and cams at predetermined points in the path of travel of said nut to effect the operation of said controlling apparatus at corresponding positions of the hoisting apparatus.

16. In combination with hoisting apparatus, of controlling means therefor, a threaded shaft connected to said hoisting apparatus, a longitudinally-traveling nut on said shaft, a pivoted lever, cams on two of the arms of said lever and in the path of travel of said nut to be engaged by said nut at the limits of movement of said hoisting apparatus, and means coacting with a third arm of said lever for operating said controlling apparatus to slow down or stop said hoisting apparatus.

17. In combination with hoisting apparatus, of means for controlling same, a threaded shaft rotatively connected to said hoisting apparatus, nuts having cam-faces and carried by said shaft to be moved longitudinally, a pivoted lever having arms in the path of travel of said nuts to be engaged by said cam-faces at predetermined times, and means coacting with said lever for operating said controlling means for slowing down or stopping said hoisting apparatus when a cam engages said lever.

812,325. CUTTING AND REAMING KNIFE. WILLIAM BROWER, Manlius, Ill., assignor of one-half to Max P. Seibel, Manlius, Ill. Filed Aug. 14, 1905. Serial No. 274,180.

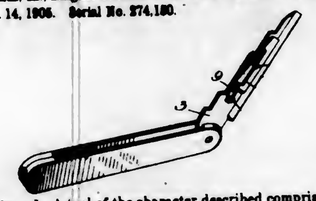

Claim.—1. A tool of the character described comprising a handle, a tapering blade connected to said handle, said blade having one of its edges turned or bent longitudinally, and a series of notches arranged in the opposite edge of said blade to form parallel offset cutting edges, substantially as described.

2. A tool of the character described comprising a handle a tapering blade connected to said handle, said blade having formed therein a longitudinally-disposed slot, and having one of its edges turned or bent longitudinally, a series of notches arranged in the opposite edge of said blade to form offset, parallel cutting edges, and a plate adjustably mounted on one side of said blade to slide over the slot in the latter, substantially as described.

3. A tool of the character described comprising a handle, a slotted blade pivotally connected to said handle to close therein, one edge of said blade being obliquely disposed or tapered toward the point of the same, a series of offset cutting edges formed in said oblique edge, a laterally-projecting flange formed on the straight back edge of said blade and a plate adjustably secured to the former to slidably engage said flange, substantially as described.

812,326. RECOIL-BRAKE FOR AUTOMATIC GUNS. JOHN M. BROWNING, Ogden, Utah. Filed June 30, 1904. Serial No. 214,773.

Claim.—1. In an automatic gun, the combination with a recoiling barrel, a friction-brake connected with the barrel and operating through the recoiling movement of the barrel for reducing the shock of recoil, and means separate from the barrel for increasing the friction of said brake upon the firing of the gun.

2. In an automatic gun, the combination of a recoiling barrel, a magazine, a friction-brake connected to the barrel to move rearward therewith and reduce the shock of recoil, and auxiliary means separate from the barrel for increasing the friction of said brake on the magazine upon the firing of the gun.

3. In an automatic gun, the combination with a recoiling barrel, of a tubular magazine, a friction-brake connecting with the magazine over which it rides to reduce the shock of recoil, and auxiliary means separate from the barrel for increasing the friction of the brake on the magazine upon the firing of the gun.

4. In an automatic gun, the combination with a recoiling barrel, of a friction-brake connected with the barrel and reducing the shock when the barrel is recoiling, and braking the shock following the return of the barrel to firing position, and auxiliary means independent of the barrel and removable from the brake, for regulating the friction of said brake upon the firing of the gun.

5. An automatic gun, a recoiling barrel, a split collar connected thereto, a rigid piece parallel with the barrel and surrounded by said collar, the spring for returning the barrel, and a beveled ring pressed by said spring against said collar to contract the same.

812,327. APPARATUS FOR SORTING OR SEPARATING COINS. BJARNE CRAMHEIM, Kongsberg, Norway. Filed Mar. 27, 1905. Serial No. 252,294.

Claim.—1. In a coin-sorting apparatus, a helical rail on which the coins roll, a vertical or nearly-vertical wall at the external side of said rail having coin-apertures therein, and means to give the coins such inclined position relatively to the axis of the helical rail that they are automatically lifted to roll on edge under the influence of the centrifugal force.

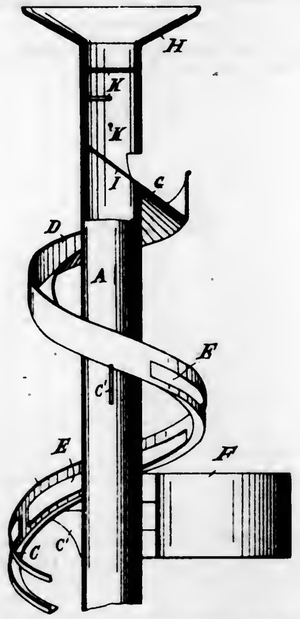

2. In a coin-sorting apparatus, a helical rail on which the coins roll, a vertical or nearly-vertical wall at the external side of said rail having coin-sorting apertures therein, and an incline to give the coins such inclined position relatively to the axis of the helical rail that they are automatically lifted to roll on edge under the influence of the centrifugal force.

3. In a coin-sorting apparatus, a helical rail on which the coins roll, a vertical or nearly-vertical wall at the external side of said rail having longitudinal coin-sorting apertures therein, and an incline at the upper end forming a continuation of the rail adapted to give the coins such inclination relatively to the axis of the rolling-path that they are automatically lifted to roll on edge under the influence of the centrifugal force.

4. In a coin-sorting apparatus, a helical rail, a vertical or nearly-vertical wall at the external side of said rail having longitudinal coin-sorting apertures therein, the successive apertures increasing in height, and a continuation of the rail at the upper end having such inclination as to cause the coins to be automatically lifted to roll on edge under the influence of the centrifugal force.

5. In a coin-sorting apparatus, a post, a helical rail carried by the same, a wall at the outer edge of the rail having coin-sorting apertures therein, a chute on the post having a bottom to direct coins onto the rail and of such inclination as to cause the coins to automatically turn on edge under the influence of the centrifugal force given by the rail.

6. In a coin-sorting apparatus, a post, a chute mounted thereon, means in the chute to prevent the coins from choking the same, a vertical or nearly-vertical wall, an inclined helical rail connecting the chute and wall, said chute and rail having such inclination as to cause the coins to automatically turn on edge under the influence of the centrifugal force given by the rail.

7. In a coin-sorting apparatus, a central post, a hopper mounted thereon, a chute fed from said hopper, cross-bars in the chute, an inclined bottom in said chute, a helical rail forming a continuation of said bottom and supported by said post, a vertical or nearly-vertical wall at the outer edge of said rail and having longitudinal coin-sorting apertures therein.

8. In a coin-sorting apparatus, a central hollow post having a

lateral aperture near its top, a hopper mounted on the top, cross-bars mounted in the post beneath the hopper, an incline in the post beneath the cross-bars, a helical rail mounted on the exterior of the

812,880. LUBRICATOR. CHARLES C. DODGE, Newark, N. J., assignor to The Dodge Lubricator Company, Boston, Mass., a Corporation of Massachusetts. Filed Oct. 16, 1905. Serial No. 283,261.

teeth on its periphery to be engaged by said operating-stem, substantially as described.

9. In a lubricator such as described, the combination of a res-

box, and means for drawing the pieces toward each other against the resistance of the resiliency of the strips.

lateral aperture near its top, a hopper mounted on the top, cross-bars mounted in the post beneath the hopper, an incline in the post beneath the cross-bars, a helical rail mounted on the exterior of the post and forming a continuation of the incline, a vertical or nearly-vertical wall at the outer edge of said rail having longitudinal coin-entering slots therein, and a receptacle supported by the post in close proximity to each slot to receive the coins falling through said slots.

812,828. DENTAL MATRIX. WILLIAM CHENOWAW, Atlanta, Ga. Filed Nov. 10, 1905. Serial No. 286,691.

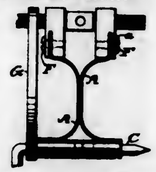

Claim.—1. A dental matrix comprising flexible members, means connecting and coöperating with said members for placing them under tension, and a rigid bow-brace having detachable connection with said matrix for imparting rigidity to the same.

2. A dental matrix comprising a pair of flexible members, means connecting said members at their opposite ends, means for placing said members under tension, and a rigid bow-brace connecting the opposite ends of one of said members.

3. A dental matrix comprising a pair of flexible members connected at their opposite ends, each member consisting of a nut formed with a slot extending from the front and parallel with the sides thereof and a flexible band, one end of which is adapted to fit in the slot of said nut, and means, such as a screw, for detachably connecting the band and nut.

812,829. APPARATUS FOR APPLYING MOLTEN SOLDER TO SHEET METAL, CAN-CAPS, &c. WILLIAM G. DAUGHERTY, Baltimore, Md. Filed Oct. 18, 1905. Serial No. 283,253.

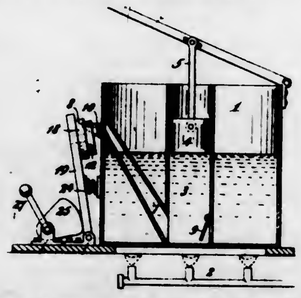

Claim.—1. In an apparatus for applying molten solder to sheet metal, can-caps and other articles, the combination of a holding means for the article having an inclosed space next to the surface of the article, which space limits the extent of the surface of the article which receives the molten solder, and means for forcing molten solder into said space and against the said surface of the article, substantially as and for the purposes described.

2. In an apparatus for applying molten solder, the combination of separable dies between which the can-cap or other article is held, one of said dies having a space which is inclosed by the die and by the solder-receiving surface of the article, and means for forcing molten solder into said space and against said surface of the article, substantially as and for the purposes described.

3. In combination with a mold or receptacle for holding the can-cap or similar article with only that portion of the article exposed where the solder is to be applied, means for forcing solder into said receptacle, substantially as set forth.

4. In an apparatus for applying molten solder, the combination of a mold or receptacle for holding the can-cap or other article with only that portion of the article exposed where the solder is to be applied, a device for forcing solder into said receptacle, and means for bringing together and for separating the said receptacle and the solder-forcing device, substantially as set forth.

812,830. LUBRICATOR. CHARLES C. DODGE, Newark, N. J., assignor to The Dodge Lubricator Company, Boston, Mass., a Corporation of Massachusetts. Filed Oct. 16, 1905. Serial No. 283,281.

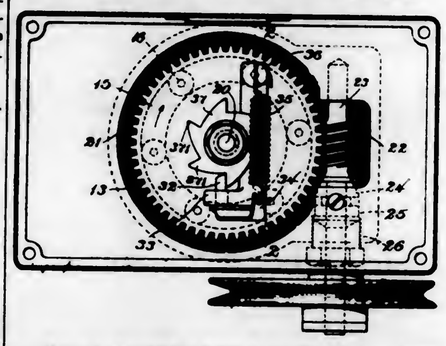

Claim.—1. In a lubricator such as described, the combination with a reservoir for the lubricant having a plurality of discharge-ducts, of a rotary pump-carrier and pump located in the reservoir and having a duct adapted to register successively with the first-mentioned ducts, an arbor on which the said pump-carrier is supported, and a fixed cam on said arbor having projections for operating the pump, and means for rotating the carrier.

2. In a lubricator such as described, the combination with a reservoir for the lubricant having a plurality of discharge-ducts whose mouths are in the same plane, of a carrier having a flat under face and having a duct adapted to register successively with the discharge-ducts, a pump extending across the said carrier, means for rotating the carrier, and means for operating the pump.

3. In a lubricator such as described, the combination with a reservoir having a plurality of annular bosses, with discharge openings or ducts, said bosses all having their faces in the same plane, of a rotary pump-carrier located in the reservoir and having a flat bottom face seated upon said bosses, said carrier having a pump and a duct from said pump adapted to register successively with the said openings, and means for rotating the carrier and operating the pump.

4. In a lubricator, such as described, a reservoir having a base with a cup-shaped depression, said depression having in its bottom a series of bosses with outlet-ducts therethrough, a rotary pump-carrier arranged in the cup-shaped depression and seated upon said bosses and having a pump discharge-duct adapted to register successively with the outlet-ducts, a pump on said carrier, and means for rotating the carrier and operating said pump.

5. In a lubricator such as described, a reservoir having a base provided with a series of outlet-ducts, a fixed arbor secured to said base, a pump-carrier mounted to turn on said arbor and having a pump discharge-duct adapted to register successively with said outlet-ducts, a cam fixed against rotation on said arbor and having cam-teeth, a pump on said carrier whose plunger is adapted to be controlled by said cam-teeth, and means for rotating said carrier.

6. In a lubricator, such as described, a reservoir having its base provided with a series of outlet-ducts, an arbor, a pump-carrier rotatable on said arbor and seated against the mouths of said outlet-ducts, said carrier having a pump discharge-duct adapted to register successively with said outlet-ducts, a pump on said carrier comprising a cylinder and a piston, an operating-stem connected to said piston, a spring for moving the piston in one direction, a cam supported by said arbor and held thereby against rotation for moving the piston in the opposite direction, and means for rotating said pump-carrier.

7. In a lubricator, such as described, the combination with a reservoir-base having outlet-ducts, of a fixed upright arbor, a pump-carrier rotatable on said arbor and seated against said outlet-ducts, said carrier having a pump and a pump discharge-duct adapted to register successively with said outlet-ducts, a non-rotary cam mounted on said arbor above said pump-carrier and having teeth on its periphery for operating said pump, an adjustable abutment on said arbor, and a spring interposed between said abutment and said cam for yieldingly forcing said carrier against its seat.

8. In a lubricator, such as described, the combination of a reservoir-base, an upright arbor fixed to said base, a rotary carrier journaled on said arbor, a horizontal pump on said carrier to one side of said arbor, an operating-stem connected to the pump-plunger and arranged radially of the carrier, and a disk on said arbor having cam-teeth on its periphery to be engaged by said operating-stem, substantially as described.

9. In a lubricator such as described, the combination of a reservoir-base, an upright arbor fixed to said base, a rotary carrier journaled on said arbor, a horizontal pump on said carrier on one side of said arbor, a horizontal operating-stem for the pump-plunger, and fixed projections with which said stem coöperates to control the plunger.

812,831. COIN-CONTROLLED APPARATUS. FREDERICK J. DOLE, New York, N. Y., assignor to The Great American Automatic Vending Machine Company, Hoboken, N. J., a Corporation of New Jersey. Filed Dec. 30, 1904. Serial No. 238,888.

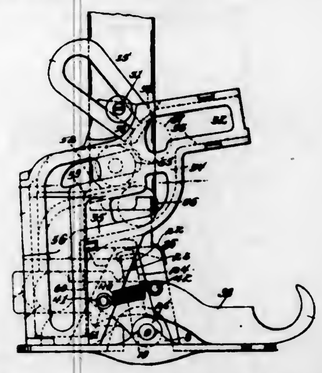

Claim.—1. In a coin-controlled apparatus having a coin-slot, the combination of an operating-bar having an abutment-face for engaging the edge of a coin passed through such slot, a rocking plate having an abutment-face for the engagement of the opposite edge of the coin for rocking said plate when the bar is advanced, means for returning the bar to initial position, and means for returning the plate to initial position after the bar has been partially returned, whereby the resulting separation of the abutment-faces of such plate and bar will release the coin.

2. In a coin-controlled apparatus, having a coin-slot, the combination of an operating-bar having an abutment-face for engaging the edge of a coin passed through such slot, a rocking plate having an abutment-face for the engagement of the opposite edge of the coin for rocking said plate when the bar is advanced, means for returning the bar to initial position, and means for returning the plate to initial position after the bar has been partially returned, whereby the resulting separation of the abutment-face of such plate and bar will release the coin, and for striking the coin for displacing it from an operative position.

3. In a coin-controlled apparatus having a coin-slot, the combination of an operating-bar having an abutment-face for engaging the edge of a coin passed through such slot, the said face being convex with the chord of the arc disposed substantially vertical, the curvature corresponding approximately to that of the coin, a rocking plate having an abutment-face for engagement by the opposite edge of the coin to be thereby rocked when the bar and coin are advanced, means for returning the bar to initial position, and means for returning the plate to initial position after said bar has been partially returned, whereby the resulting separation of the said abutment-faces will release the coin.

812,832. HAY-BALING PRESS. DEMPSEY S. ROSENFIELD, Savannah, Ga., assignor of one-half to J. Lawton Hiers, Savannah, Ga. Filed Feb. 9, 1903. Serial No. 142,574.

Claim.—1. In a baling-press, the combination with a plunger-head and its actuating mechanism, of a press-box frame provided with flexible resilient metallic strips upon its respective sides, tail-frame side pieces carried by the projecting ends of said strips in the rear of the box, and means for drawing the frame side pieces toward each other.

2. In a baling-press, the combination with a plunger-head and its actuating mechanism, of a press-box frame provided with a pair of resilient metallic strips upon its respective sides, tail-frame side pieces carried by the projecting ends of said strips in the rear of the box, and means for drawing the pieces toward each other against the resistance of the resiliency of the strips.

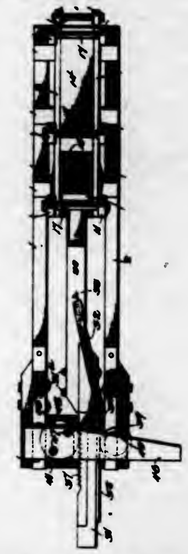

3. In a baling-press, the combination with a plunger-head, its actuating mechanism, and a press-box frame provided with side pieces and a plurality of pairs of oppositely-disposed uprights, of flexible resilient metallic strips upon opposite sides of the press-box frame and secured respectively to the forward uprights and projecting beyond the rearward uprights, tail-frame side pieces carried by the projecting ends of said strips respectively in the rear of the box, and means for drawing the tail-frame side pieces toward each other.

812,833. SIEVE. AXEL W. ERSTROM, Stanton, Iowa. Filed July 6, 1905. Serial No. 268,563.

Claim.—1. A wire sieve having two sets of parallel wires, one of said sets comprising every other wire, said sets being normally in the same plane, and means for throwing one set out of plane with the other to thereby increase the spaces between the wires, said sets having cross-wires embracing each of the parallel wires to steady them against lateral displacement.

2. A wire sieve having two sets of parallel wires, one of said sets comprising every other wire, said sets being normally in the same plane, and means for throwing one set out of plane with the other to thereby increase the spaces between the wires, said sets having cross-wires embracing each of the parallel wires to steady them against lateral displacement, and means for stretching the parallel wires, substantially as set forth.

3. A wire sieve having two sets of parallel wires, one of said sets comprising every other wire, said sets being normally in the same plane and means for throwing one set out of plane with the other to thereby increase the spaces between the wires, said means consisting of cam-bars journaled in the frame of the sieve and having deep notches for every other wire and shallow notches for every other wire and means for rocking the cam-bars simultaneously.

4. A wire sieve having two sets of parallel wires, one of said sets comprising every other wire, said sets being normally in the same plane, and means for throwing one set out of plane with the other to thereby increase the spaces between the wires, said means consisting of cam-bars journaled in the frame of the sieve and having deep notches for every other wire and shallow notches for every other wire and means for rocking the cam-bars simultaneously, said rocking means consisting of rocker-arms on the cams, a rod pivotally connecting said rocker-arms together, a thumb-nut on one end of the rod and a retracting-spring at the other end.

812,834. HUB-WRENCH. MARSHALL P. EDWARDS, Stillwater, Okla. Filed Mar. 9, 1905. Serial No. 249,260.

loose driving-pulley, said driving-pulley being provided with a clutch member, the clutch member on the shaft, slidable thereon and

pivotally attached to the rod, and means for holding the lever against movement, substantially as and for the purpose specified.

Claim.—1. A float-valve, comprising an open-ended casing having a straight cylindrical bore formed at one end with a valve-seat,

812,334. HUB-WRENCH. MARSHALL P. EDWARDS, Stillwater, Okla. Filed Mar. 9, 1905. Serial No. 249,289.

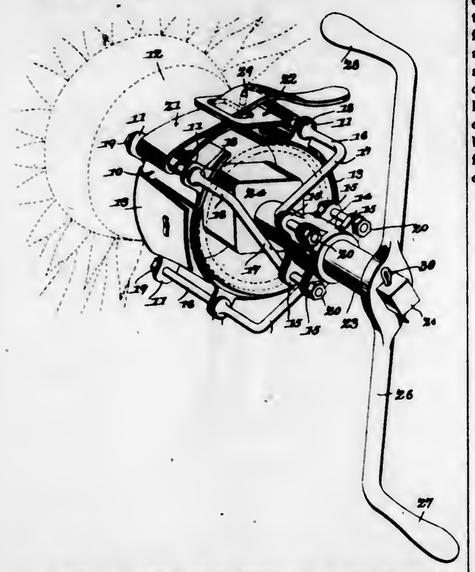

Claim.—1. A hub-wrench comprising a divided flexible hub-embracing band, means for binding the band upon a hub, an open-ended sleeve disposed at one side of the band and in line with the longitudinal axis thereof, connecting means between the sleeve and the band to automatically maintain the former in axial alinement with the band, and a wrench having a shank portion slidable through and rotatable in the sleeve.

2. A hub-wrench comprising a divided resilient band, a strap connected to the ends of said band for binding the same on a wheel-hub, and a wrench rotatively disposed relative to said band and movable toward and away from the same.

3. A hub-wrench comprising a divided resilient band, means for binding said band on a wheel-hub, a wrench for bearing over the binding-nut of the axle end and having a stock extending from the same, a sleeve in which said stock is slidably and rotatively disposed, and means for movably connecting said sleeve to said band.

4. In a hub-wrench, a divided band having means for binding on a wheel-hub, a sleeve disposed centrally of said band, spaced rods rotatively connected to said band and to said sleeve and with lateral offsets between the band and sleeve, and a wrench-stock rotatively and slidably engaging said sleeve for engagement with the nut of the wheel.

5. In a hub-wrench, a divided band having means for binding on a wheel-hub and with spaced ears extending laterally from the ends, a sleeve disposed centrally of said hub and having spaced lateral ears, spaced rods mounted for rotation in said band-ears and in said sleeve-ears and each provided with a lateral offset between the band and sleeve, and a wrench member mounted for rotation in said sleeve and slidable through the same

6. A hub-wrench comprising a divided flexible band, means to clamp the same upon a hub, an annular series of rods disposed in substantial parallelism with the axis of the band and rotatably mounted upon the exterior of the band, said rods being projected at one edge of the band and provided with crank-terminals, an open-ended sleeve located between and loosely carried by the crank-terminals of the rods, and a wrench element having a shank rotatable within and movable endwise through the sleeve.

812,335. SACK-FILLING MACHINE. JAMES J. FERGUSON and SIMON P. OSWALD, Nashville, Tenn. Filed July 3, 1905. Serial No. 268,126.

Claim.—The herein-described sack-filling machine comprising the hopper, the conveyer-tube into which the hopper discharges, the conveyer-worm in said tube, having the shaft provided with the loose driving-pulley, said driving-pulley being provided with a clutch member, the clutch member on the shaft, slidable thereon and connected thereto for revolution therewith, the upright guide-frame, the platform guided by the said frame, the shaft mounted on said frame, above said platform and having pulleys of unequal diameter, a cable wound on one of said pulleys and connected to the platform, a cable wound in the reverse direction on the other of said pulleys, a counterweight attached to the last-mentioned cable, the bell-crank lever mounted on the guide-frame, connections between the bell-crank lever and the shiftable clutch member, the spring acting on the bell-crank lever to normally disengage the shiftable clutch member from that of the driving-pulley, and means connected to the bell-crank lever to move the latter against the tension of said spring.

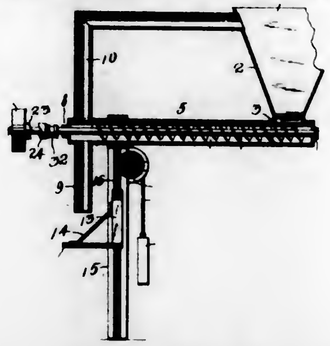

812,336. MACHINE FOR FORMING CONCRETE BLOCKS. EMERSON C. GLATFELTER, New Philadelphia, Ohio. Filed Aug. 23, 1905. Serial No. 275,402.

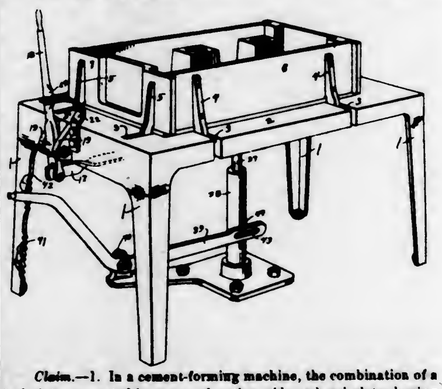

Claim.—1. In a cement-forming machine, the combination of a bed-plate supported in proper elevation, side and end plates having secured thereto arms, and the arms pivotally connected and extended below the bed-plate, a sleeve mounted upon a bearing and its upper end provided with a head, and bars located at right angles to each other, links secured to said bars and plate-bars adapted to be operated by the links connected to the right-angled bars, and a lever adapted to oscillate or rock the right-angled bars, and means for holding the lever in fixed adjustment, and a rod connected to the lever and to one of the right-angled bars, substantially as and for the purpose specified.

2. In a machine of the class described, the combination of a suitable bed-plate, side and end mold-plates, bars secured to said end and side mold-plates and extended below said plates means for adjusting the side and end plate bars, and holding said bars in fixed adjustment, means for rocking the side and end mold-plates, a follower normally located upon the bed-plate, a spider or head, a reciprocating rod adapted to support said spider or head, and the spider or head provided with pins adapted to engage the bottom or under side of the follower, said spider or head secured to the reciprocating rod, a hollow standard adapted to receive the reciprocating rod, a lever pivotally attached to the rod, and means for holding the lever against movement, substantially as and for the purpose specified.

3. In a machine of the class described, the combination of a bed-plate supported in proper elevation, a bearing extended from below the bed-plate and a rotating sleeve mounted thereon, said rotating sleeve provided with a head, grooves formed in the head and in the bed-plate, antifriction-balls located in the grooves and the head of the sleeve provided with bars, said bars located at right angles to each other, side and end mold-plates provided with pivoted arms, bars pivotally attached to the lower ends of the pivoted arms, and links secured to the right-angled bars, and the right-angled bars secured to the head of the rotating sleeve at their inner ends and their outer ends secured to the bars connected to the pivoted arms, an operating-lever having connected at its lower end an operating-rod, said operating-rod connected at its opposite end to one of the right-angled bars secured to the head, substantially as and for the purpose specified.

4. In a machine of the class described, the combination of a bed-plate supported in proper elevation, a bearing extended from below the bed-plate, a rotating sleeve mounted thereon, said rotating sleeve provided with a head, grooves located in the head and in the bed-plate, antifriction-balls located in the grooves and the head of the sleeve provided with bars, said bars located substantially at right angles to each other, side and end mold-plates provided with pivoted arms, bars pivotally attached to the lower ends of the pivoted arms, links secured to the bars fixed to the head of the rotating sleeve at their inner ends, and their outer ends secured to the bars connected to the pivoted arms fixed to the mold-plates, an operating-lever having connected at its lower end an operating-rod, said operating-rod connected at its opposite end to one of the bars fixed to the rotating head and means for adjusting the side and end mold-plates to and from each other, substantially as and for the purpose specified.

5. In a machine of the class described, the combination of a bed-plate supported in proper elevation, side and end mold-plates provided with pivoted arms bars connected to the lower ends of the pivoted mold-plate arms, means for actuating the pivoted arms upon their pivotal points, a follower located upon the bed-plate, a spider provided with pins and the pins adapted for contact with the lower face of the follower, said spider secured to a reciprocating rod, a hollow standard adapted to receive the reciprocating rod, a spring located below the reciprocating rod and within the hollow standard and means for reciprocating the rod and the spider, substantially as and for the purpose specified.

812,337. FLOAT-VALVE. WILLIAM GRAY, Springfield, Mass., assignor of one-half to James C. Robertson, Springfield, Mass. Filed Sept. 29, 1904. Serial No. 226,433.

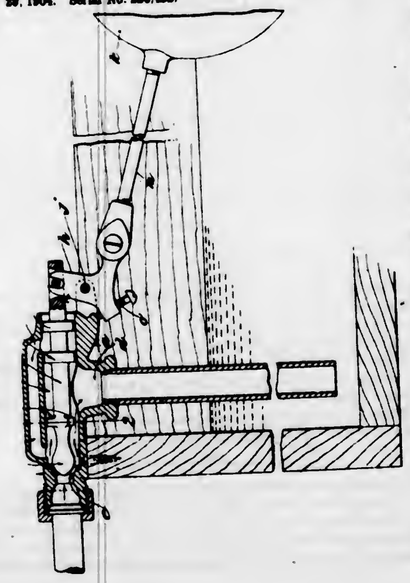

Claim.—1. A float-valve, comprising an open-ended casing having a straight cylindrical bore formed at one end with a valve-seat, said casing being further provided with an intermediate outlet, and with a separate suction-passage in communication with the bore contiguous to the valve-seat and at a point between one open end and the outlet, a packingless float-operated plunger arranged within the bore and provided at one end with a valve, and at the opposite end portion with a head loosely fitting the open end of the casing.

2. A float-valve, comprising an open-ended casing having a straight cylindrical bore formed at one end with a valve-seat, said casing being further provided with an intermediate outlet, and with a separate longitudinal suction-passage paralleling the bore and in communication with the latter contiguous to the valve-seat and also at a point between one open end and the outlet, and a packingless float-operated plunger arranged within the bore and provided at one end with a valve, and at its opposite end portion with a pair of spaced heads both located at one side of the plane of the outlet.

812,338. MOTOR-DRIVEN VEHICLE. HANS T. HANSEN, Wauwatosa, Wis. Filed Apr. 15, 1905. Serial No. 255,703.

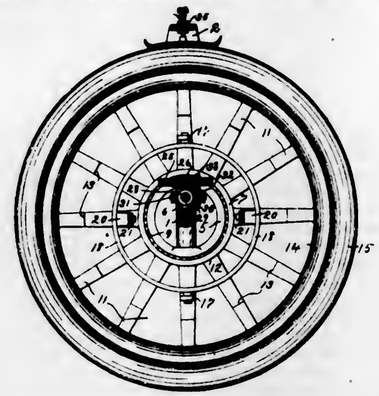

Claim.—1. In a vehicle of the described class, the combination of a central fixed axle-shaft provided with vertically-extending pivot-studs; an oscillatory ring mounted on said pivot-studs; a wheel having its hub rotatably mounted on said ring; and driving mechanism having universal-joint connection with the wheel exterior to the hub and substantially in the plane of the wheel-rim.

2. In a vehicle of the described class, the combination of a centrally-pivoted wheel-support; a wheel-hub rotatable on said support; a wheel connected with the outer end of the hub and dished inwardly; and driving mechanism having universal-joint connection with the wheel between the hub and rim.

3. In a vehicle of the described class, the combination of a central pivoted wheel-support; a wheel-hub rotatable on said support; a wheel connected with the outer end of the hub and dished inwardly; and driving mechanism having universal-joint connection with the wheel between the hub and the rim; together with means for steering said wheel.

4. In a vehicle of the described class, the combination of a wheel having spokes connected with the outer end of the hub and offset inwardly at an intermediate point; a ring pivotally connected on opposite sides with two of the spokes, substantially in the plane of the wheel-rim; and a driving member having arms pivotally connected with said ring on opposite sides and at right angles to the line of wheel connection.

5. In a vehicle of the described class, the combination of a central fixed axle-shaft; an oscillatory ring supported from the shaft by vertical pivot-bearings; a wheel rotatably mounted on said ring; and driving mechanism having universal-joint connection with the wheel, between said ring and the rim of the wheel.

6. In a vehicle of the described class, the combination of a central fixed axle-shaft; an oscillatory ring supported from the shaft by vertical pivot-bearings; a wheel rotatably mounted on said ring; and driving mechanism having universal-joint connection with the wheel between said ring and the rim of the wheel; together with means mounted on the stationary shaft, for oscillating said ring.

7. In a vehicle of the described class, the combination of a central fixed axle-shaft; an oscillatory ring supported from the shaft by vertical pivot-bearings; a wheel rotatably mounted on said ring; and driving mechanism having universal-joint connection with the wheel between said ring and the rim of the wheel; together with a toothed segment mounted on said ring, and gear connections for transmitting motion to oscillate the ring through said segment.

8. In a vehicle of the described class, the combination of a central fixed axle-shaft; an oscillatory ring supported from the shaft by vertical pivot-bearings; a wheel rotatably mounted on said ring; and driving mechanism having universal-joint connection with the wheel between said ring and the rim of the wheel; together with means for oscillating said ring.

812,339. **WAGON-BRAKE.** JACOB HAPPEL, Anchorage, Ky. Filed Aug. 24, 1905. Serial No. 275,501.

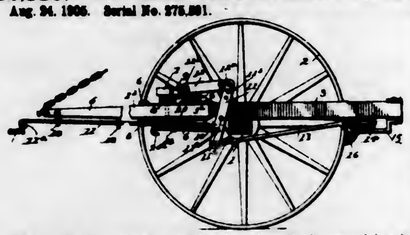

Claim.—1. A mechanism of the class described, comprising in combination with the wheeled axle, hounds secured thereto with their front ends spaced apart to form a channel, bridge-pieces secured to said hounds to bridge said channel, a tongue mounted between said bridge-pieces and said hounds in said channel and capable of longitudinal movement, a hammer-pin and a cross-tree secured to said tongue, a hammer-strap secured to said tongue and said hammer-pin, a lever pivotally secured to said axle, a rod connecting one end of said lever with said hammer-strap, a brake-beam having brake-shoes slidably mounted on said hounds, a rod connecting said brake-beam to the other end of said lever, a second rod secured to said other end of said lever and passing along the under side of the tongue, said second rod having a hook for engaging with the traces of the harness at times, substantially as shown and described.

2. A mechanism of the class described, comprising in combination with a wheeled axle, hounds secured thereto with their front ends spaced apart to form a channel, bridge-pieces secured to said hounds to bridge said channel, a tongue mounted between said bridge-pieces and said hounds in said channel and capable of longitudinal movement, a hammer-pin and a cross-tree secured to said tongue, a hammer-strap secured to said tongue and said hammer-pin, a lever pivotally secured to said axle, a rod connecting one end of said lever with said hammer-strap, a brake-beam having brake-shoes slidably mounted on said hounds, a rod connecting said brake-beam to the other end of said lever, a second rod secured to the other end of said lever and passing along the under side of the tongue, said second rod having a hook for engaging with the traces of the harness at times, a third rod secured to said axle, and passing under said tongue and extending to the front thereof, means for securing a supplemental tree to said third rod, to which a third horse may be secured without interfering with the operation of the pivoted lever and the tongue, all being arranged substantially as shown and described.

3. A mechanism of the class described, comprising in combination with a wheeled axle, hounds secured thereto with their front ends spaced apart to form a channel, bridge-pieces secured to said hounds to bridge said channel, a tongue mounted between said bridge-pieces and said hounds in said channel and capable of longitudinal movement, a hammer-pin and a cross-tree secured to said tongue, a hammer-strap secured to said tongue and said hammer-pin, a lever pivotally secured to said axle, a rod connecting one end of said lever with said hammer-strap, a brake-beam having brake-shoes slidably mounted on said hounds, a rod connecting said brake-beam to the other end of said lever, a second rod secured to the other end of said lever and passing along the under side of the tongue, said second rod having a hook for engaging with the traces of the harness at times, a third rod secured to said axle, and passing under said tongue and extending to the front thereof, means for securing a supplemental tree to said third rod, to which a third horse may be secured without interfering with the operation of the pivoted lever and the tongue, and means for locking said tongue from longitudinal movement at times, substantially as shown and described.

812,340. **SEPARATOR.** HENRY M. HARDENOVER, Madison, Wis. Filed Apr. 3, 1905. Serial No. 253,566.

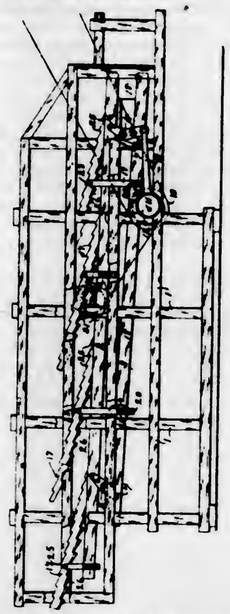

Claim.—1. In a separator of the described class, the combination of a vibratory frame; straw-supporting devices mounted on said frame; and a set of beaters arranged to project upwardly between the straw-supporting devices; each of said beaters consisting of a rotary straight-sided rectangular plate, arranged in such relation to the frame that its corners will project above the straw-supporting devices successively as the plate is rotated; said plates being exposed above such devices at varying distances during the vibration of the frame.

2. In a separator of the described class, the combination of a set of superposed vibratory frames; supporting cross-shafts mounted on stationary bearings between said frames, and provided with arms connected with each of the frames; means for vibrating said frames into and out of proximity with each other; a series of inclined straw-supporting toothed bars mounted on each of said frames, with the bars of one frame having raised rear end portions projecting a substantial distance over the lower front end portions of the bars on the other frame, in all positions of frame adjustment.

3. In a separator of the described class, the combination of a vibratory frame; toothed straw-supporting bars arranged in sets on said frame; and a set of beaters arranged to project upwardly between the toothed bars of one of the sets of bars; each of said beaters consisting of a rotary straight-sided rectangular plate, arranged in such relation to the bars that its corners will project above the bars successively as the plate is rotated; said plates being exposed above the bars at varying distances during the vibration of the frame.

4. In a separator of the described class, the combination of a set of vibratory frames; toothed straw-supporting bars arranged in sets on each of said frames; and a set of beaters arranged to project upwardly between the toothed bars of one of the sets of bars; each of said beaters consisting of a rotary straight-sided rectangular plate arranged in such relation to the bars that its corners will project above the bars successively as the plate is rotated, and at varying distances dependent upon the position of the bars; the bars between which said beaters extend being arranged in pairs, one on each side of each beater and in comparatively close proximity thereto.

812,341. **FASTENING DEVICE FOR VEHICLE END-GATES.** JAMES W. HIRD, Benton, Wis. Filed Apr. 3, 1905. Serial No. 253,715.

Claim.—The herein-described fastening for vehicle end-gates, consisting of an end-gate hinged at its lower end and enlarged at its upper end, said end-gate having apertures at opposite sides near its upper end, a bolt mounted to revolve in keepers upon each side of the vehicle-body, said bolts each having a laterally-projecting head formed on its outer end and adapted to pass through the apertures in the end-gate when turned in one position, and a lever secured to the ends of each of said bolts for rotating the same and turning the laterally-projecting head to the position to lock the end-gate against said head, substantially as described.

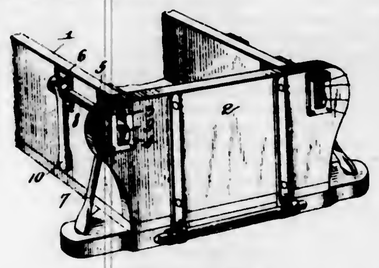

812,342. **COW, CALF, AND COLT WEANER.** WILLIAM T. HORNE, Hillsboro, Tex. Filed Aug. 17, 1905. Serial No. 274,083.

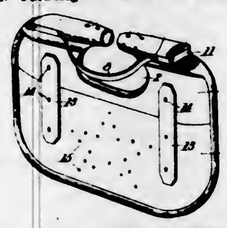

Claim.—1. A weaner, provided with nostril-engaging prongs made hollow and having stiffening members inserted therein.

2. A weaner, having nostril-engaging prongs made hollow and perforated laterally, and having stiffening-tubes also perforated and adapted to contain medicinal or other remedial agents or the like.

3. A weaner, having nostril-engaging prongs made hollow and provided with stiffening members, and means to hold such stiffening members in place.

4. A weaner, having nostril-engaging prongs made hollow and provided with stiffening members, and a bow-spring engaging said prongs and adapted to retain the stiffening members in place.

5. A weaner, having nostril-engaging prongs made hollow and having stiffening members inserted therein, and a lower detachable and renewable portion.

6. A weaner, having a nostril-engaging portion of soft rubber provided with hollow prongs containing stiffeners and a detachable lower portion of paper or other inexpensive material.

812,343. **TILTING BIN AND COVER.** WILLIAM C. HORNER, Indianapolis, Ind., assignor to Charles P. McDougall, Indianapolis, Ind. Filed Oct. 7, 1905. Serial No. 281,860.

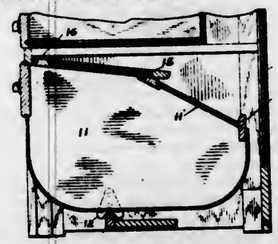

Claim.—1. The combination, with a suitable casing, of a bin movably mounted therein and having an open top, a cover member mounted in said casing in position to cover said opening when the bin is closed, a laterally-movable pivotal connection between said cover member and casing, and a stop member carried by the bin and adapted to engage the cover to limit outward movement of the bin, for the purpose set forth.

2. The combination, with a suitable inclosing casing, of a bin pivotally mounted therein by a separable pivotal support and having an open top, a cover pivotally mounted in the casing at its forward end by means permitting lateral vertical displacement of the pivots, and a stop member carried at the rear of the bin and adapted to engage the cover member to limit outward swing of the bin.

812,344. **ADJUSTABLE SUPPORT.** BENJAMIN H. HOWARD, Mount Eden, Ky. Filed July 9, 1904. Serial No. 215,906.

Claim.—1. An adjustable support comprising in combination, a horizontal member consisting of a tubular member A, and a rod B longitudinally adjustable therewithin, legs comprising perforated tubular lengths and rod-like lengths slidably embraced therein, pins in said perforations limiting the relative movements of said perforated lengths with said rod-like lengths, clamping-T's provided one for each of said legs and permanently attached thereto and individually and revolubly uniting each of said legs to said horizontal member and adjustable along the latter, whereby the legs may be independently positioned along said horizontal member and angularly adjusted thereto, braces joining the lower ends of each pair of legs together and detachably affixed to one leg and pivotally affixed to the other, stiffening members diagonally connecting the lower end of each leg with the body of the horizontal member, casters upon the ends of said legs, and a middle extensible supporting member adjustably affixed to the aforesaid horizontal member, substantially as described.

2. In a paper-hanger's support, an imperforate, horizontal extensible member comprising a socketed means, and a rod slidably connected thereto within said socket, in combination with a plurality of independent extensible supporting means slidably and revolubly adjustable thereto, each comprising tube-like members having perforations extending therethrough and rod-like members capable of longitudinal movement within said tube, means for fixing said tube and rod relatively to one another, and braces connecting said horizontal member with the supporting member.

3. An adjustable support comprising in combination, a horizontal bridge member consisting of an imperforate tubular member, and a rod longitudinally adjustable therewithin, legs comprising perforated tubular lengths and imperforate rod-like lengths slidably embraced therein, pins in said perforations limiting the movement of said imperforate lengths into said perforated lengths, single clamping-T's uniting each of said legs to said horizontal member and revolubly and slidably adjustable along the latter, braces joining the lower ends of each pair of legs together, said braces being each detachably affixed to one leg and pivotally affixed to the other, stiffening members diagonally connecting by clamping-collars the lower end of each leg with the body of the horizontal member, casters upon the ends of said legs, and a middle extensible supporting member adjustably affixed to the aforesaid horizontal member, substantially as described.

4. A trestle comprising an extensible bridge-bar consisting of an imperforate tubular member and a rod telescopically engaged within same, extensible legs for supporting said bridge-bar, said legs consisting each of a single pipe-T, a thumb-screw engaging through a threaded perforation in the top part of each said T whereby same may be clamped at will at predetermined positions along said bridge-bar in diverse angular relationship thereto, imperforate rods affixed within the short leg of each said T, a perforate tubular leg member telescopically inclosing the free end of said rod, a pin adapted to be inserted through any one of said perforations whereby the insertion of said rod into said tubular member may be checked without pre-

venting the complete withdrawal therefrom, casters mounted upon the lower ends of said tubular members, braces portably but detachably affixed to one such tubular member but having the other end in connection therewith, a spur-wheel engaging said second spur-wheel being fixedly mounted upon said counter-shaft, the whole being so arranged that the double-clutch member may be shifted out

lar upper track-rail circular in cross-section, a tubular lower track-rail of an inverted-U shape in cross-section, a supporting-bracket

walls of the pulley-frame, the inner end of said upper portion having a pivot-eye, the pulley-frame having pivot-eyes on its inner walls, and

venting the complete withdrawal therefrom, casters mounted upon the lower ends of said tubular members, braces portably but detachably affixed to one such tubular member but having the other end hook-shaped for ready detachable engagement to another tubular member whereby the lower ends of each pair of legs may be positively positioned relative to one another, stiffening members extending diagonally from the lower end of each leg to points intermediate the ends of said bridge member, clamping-collars uniting the ends of said members to the adjacent trestle portions, and an extensible supporting-leg joined to an intermediate portion of said bridge-bar, substantially as described.

5. In a trestle, the combination of the legs comprising the lower sections, the vertically-adjustable upper legs comprising the upper sections and adapted to be embraced within the lower sections, suitable means for limiting the downward movement of said upper section, an elongated hook device for connecting said lower sections and preventing the latter from spreading, said device being detachably connected to one leg and permanently but pivotally affixed to the other, single T's uniting the upper end of each leg to the horizontal bar, said T's carrying each thumb-clamps for immovably affixing same, whereby each leg may be independently positioned in diverse angular and lateral relationship to said horizontal bar, a horizontal, extensible, compound bar, the same comprising a tubular member and a rod-like member telescopically arranged in said tubular member, diagonally-arranged braces pivotally connected at each end to collars embracing said legs and said horizontal bar respectively and a middle extensible support, substantially as described.

812,345. **TRANSMISSION-GEARING.** EMIL HUBER, Detroit, Mich. Filed Nov. 15, 1905. Serial No. 131,475.

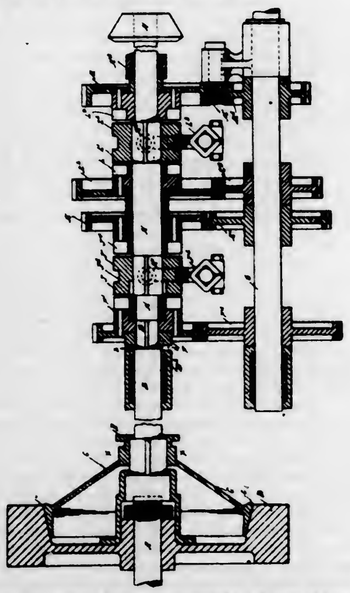

Claim.—1. A change-speed gear consisting of a combination of a driving-shaft, a driven shaft, means for connecting and disconnecting said shafts, a spur-wheel and a clutch member fixed upon said driven shaft a counter-shaft, a spur-wheel upon said counter-shaft in constant engagement with the first-mentioned spur-wheel, whereby said counter-shaft is driven, a secondary shaft continuing in line with said driven shaft, a clutch member slidably engaging but rotatably fixed thereon and adapted to engage the clutch member upon the driven shaft, said clutch member being fashioned and engaging substantially as hereinbefore described, whereby the driving-shaft is enabled to drive the driven shaft with the same speed, a spur-wheel normally rotating freely upon said secondary shaft, the clutch member engaging said secondary shaft being made with an opposite clutch-section adapted to engage the spur-wheel normally rotating freely upon said secondary shaft and compelling said spur-wheel to rotate in connection therewith, a spur-wheel engaging said second spur-wheel being fixedly mounted upon said counter-shaft, the whole being so arranged that the double clutch member may be shifted centrally out of engagement with the two opposite clutch members, detaching the secondary shaft from the counter-shaft, or into engagement with the clutch member upon the spur-wheel running loosely upon the secondary shaft whereby the said spur-wheel through the intervention of the gearing upon the counter-shaft will drive said secondary shaft with a speed proportional to the gearing, gear-wheels K^3 and M normally rotating freely upon said secondary shaft, a second pair of companion clutch members upon the last-mentioned gear-wheels normally rotating freely on the secondary shaft, a second similar pair of clutch members mounted between said companion clutch members and gear-wheels and adapted to engage either one or be adjusted centrally out of engagement with both companion clutch members, gear-wheels on the counter-shaft adapted to engage the last-mentioned gear-wheels and means for shifting the last-named pair of clutch members, substantially as described.

2. The combination of a driven shaft, a gear-wheel and a clutch member fixed on said driven shaft, a counter-shaft, a gear-wheel fixed on said counter-shaft and meshing with the gear-wheel on the driven shaft, a secondary shaft in line with the driven shaft, a gear-wheel K and clutch member J^4 normally rotatable on said secondary shaft, clutch member adapted to engage the secondary shaft with the driven shaft and to unite the gear-wheel K with the secondary shaft, a gear-wheel K′ on the counter-shaft meshing with the gear-wheel K, a gear-wheel K^2 normally rotatable on the secondary shaft, a gear-wheel K^3 fixed upon the counter-shaft and engaging with the gear-wheel K^2, a gear-wheel M on the secondary shaft normally rotatable thereon, a gear-wheel upon the counter-shaft connected with the gear-wheel M, clutch members located between the gear-wheels K^2 and M and adapted to connect one or the other of the gear-wheels K^2 or M with the secondary shaft.

812,346. **DOOR-HANGER.** JOHN H. LAWRENCE, Sterling, Ill., assignor of one-half to Edwin F. Lawrence, Sterling, Ill. Filed Feb. 2, 1905. Serial No. 243,733.

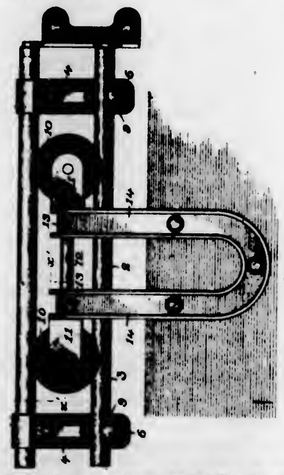

Claim.—1. In a hanger for doors and the like, the combination of upper and lower stationary track-rails, brackets for supporting said rails in separated relation, a frame located between said track-rails, and means for movably connecting the frame and rails together, said frame having supporting connection with a door or the like, substantially as set forth.

2. In a hanger for doors and the like, the combination of an upper track-rail, a tubular lower track-rail of an inverted-U shape in cross-section, a supporting-bracket having upper and lower lateral arms carrying said rails, the lower arm having a receiving-socket for the base of the lower rail, a frame located between said track-rails, and means for movably connecting the frame and rails together, said frame having supporting connection with a door or the like, substantially as set forth.

3. In a hanger for doors and the like, the combination of a tubular upper track-rail circular in cross-section, a tubular lower track-rail of an inverted-U shape in cross-section, a supporting-bracket having upper and lower lateral arms carrying said rails, the upper arm having a semicircular socket and a longitudinal tongue at its outer end for engagement with the upper track-rail, the lower arm having a receiving-socket for the base of the lower track-rail, a frame located between said track-rails, means for movably connecting the frame and rails together, and said frame having supporting connection with a door or the like, substantially as set forth.

4. In a hanger for doors and the like, the combination of an upper and lower track-rail arranged in separated relation, supporting-brackets for said track-rails, a pair of flanged track-wheels confined between said track-rails, yokes in which said track-wheels are mounted, a horizontal bar connecting said yokes, and a suspension member pivotally connected to said bar, substantially as set forth.

5. In a hanger for doors and the like, the combination of a tubular track-rail of an inverted-U shape in cross-section, and a bracket having a lateral supporting-arm formed with a receiving-socket for the base of said track-rail, substantially as set forth.

6. In a hanger for doors and the like, the combination of a tubular track-rail of an inverted-U shape in cross-section, and a bracket-arm having a lateral arm provided with a pair of parallel ribs in separated relation to form a receiving-socket for the base of said track, substantially as set forth.

812,347. **DOOR-HANGER.** JOHN H. LAWRENCE, Sterling, Ill., assignor of one-half to Edwin F. Lawrence, Sterling, Ill. Filed July 31, 1905. Serial No. 271,220.

Claim.—1. A door-hanger comprising a track, a frame having vertical walls and pivot-eyes upon its inner wall, a hanger-strap adapted to be attached to a door and provided with an angular upper portion extending through the vertical walls of the frame and a pivot-eye located at the inner end of the said upper portion, and a pivot-rod connecting the pivot-eyes of the strap and the frame together; substantially as set forth.

2. A door-hanger comprising a frame provided with an opening in its vertical walls, means for effecting a sliding engagement between said frame and a track-rail, a hanger-strap adapted for attachment to a door and provided with an angular upper portion adapted to pass through the opening in the vertical walls of the frame, the inner end of said upper portion having a pivot-eye, the frame having pivot-eyes on its inner wall, and a pivot-rod connecting the pivot-eyes of the strap and frame together, substantially as set forth

3. A door-hanger comprising a frame provided with an opening in its vertical walls and with a ledge or flange at the bottom of the opening in the front wall of the frame, means for effecting a sliding engagement between said frame and a track-rail, a hanger-strap adapted for attachment to a door and provided with an angular upper portion adapted to pass through the opening in the vertical walls of the frame, the inner end of said upper portion having a pivot-eye, the frame having pivot-eyes on its inner wall, and a pivot-rod connecting the pivot-eyes of the strap and frame together, substantially as set forth.

4. A door-hanger comprising a pulley-frame provided with a central opening in its vertical walls, a pair of track-pulleys journaled in said frame at the sides of said opening, a hanger-strap adapted for attachment to a door and provided with an angular upper portion adapted to pass through the opening in the vertical walls of the pulley-frame, the inner end of said upper portion having a pivot-eye, the pulley-frame having pivot-eyes on its inner wall, and a pivot-rod connecting the pivot-eyes of the strap and pulley-frame together, substantially as set forth.

5. A door-hanger comprising a pulley-frame provided with a central opening in its vertical walls and with a ledge or flange at the bottom of the opening in the front wall of the frame, a pair of track-pulleys journaled in said frame at the sides of said opening, a hanger-strap adapted for attachment to a door and provided with an angular upper portion adapted to pass through the opening in the vertical walls of the pulley-frame, the inner end of said upper portion having a pivot-eye, the pulley-frame having pivot-eyes on its inner walls, and a pivot-rod connecting the pivot-eyes of the strap and pulley-frame together, substantially as set forth.

812,348. **HASP-FASTENER.** JOHN H. LAWRENCE, Sterling, Ill., assignor of one-half to Edwin F. Lawrence, Sterling, Ill. Filed Sept. 5, 1905. Serial No. 276,231.

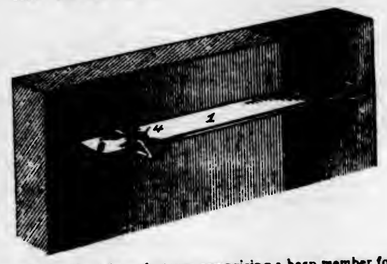

Claim.—1. A hasp-fastener comprising a hasp member formed at one end with a downturned angular extension and near the other end with a series of integral bars to form a transverse pivot-eye, substantially as set forth.

2. A hasp-fastener comprising a hasp member formed at one end with a downturned angular extension and near the other end with a series of integral bars bent in opposite directions alternately to form a transverse pivot-eye, substantially as set forth.

3. A hasp-fastener comprising a hasp member formed at one end with a downturned angular extension and near the other end with a series of integral bars bent to form a transverse pivot-eye, the end of the hasp member having an extension beyond said pivot-eye to constitute a stop for said member in its thrown-up position, substantially as set forth.

4. A hasp-fastener comprising a hasp member formed at one end with a downturned angular extension and near the other end with a series of integral bars bent in opposite directions alternately to form a transverse pivot-eye the end of the hasp member having an extension beyond said pivot-eye to constitute a stop for said member in its thrown-up position, substantially as set forth.

812,349. **OBSTETRICAL INSTRUMENT.** FRANK LEDGERWOOD, Greenfield, Iowa. Filed Oct. 27, 1905. Serial No. 284,736.

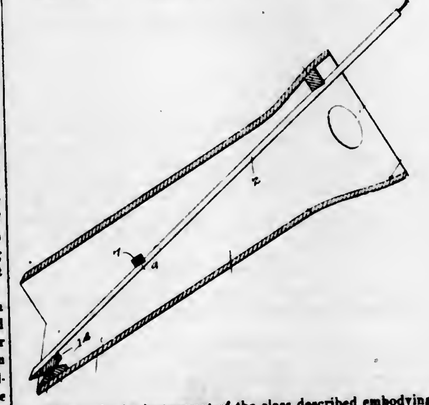

Claim.—1. An instrument of the class described embodying a tube having at one end a gripping member, a fulcrum arranged in the tube, and a lever adapted to engage with the fulcrum and provided at one end with a gripping member to coact with that of the tube.

2. An instrument of the class described comprising a tube provided at one end with a lip, a lug combined with the inner face of the lip and constituting a gripping member, a fulcrum arranged within the tube, a lever adapted to engage the fulcrum and provided at one end with a lug constituting a gripping member to coact with that of

the lip, and means for locking the two gripping members in operative relation to each other.

3. An instrument of the class described comprising a tube pro-

2. A device of the class described comprising an oil-receptacle, a shaft, and a tube communicating with the receptacle and deliver-

its end portions of different diameters, the bushing being provided with an annular passage 5 and longitudinal passage 7, and the lining having annular passage 4 in communication with passage 5 and

upper section, brushes extending therefrom and engaging the clamping-rings, and lamp-supporting wires wound on the drum and electrically connected to the collecting-ring.

the lip, and means for locking the two gripping members in operative relation to each other.

3. An instrument of the class described comprising a tube provided at one end with a lip carrying a rounded gripping member, and at its other end an abutment provided with a seat, a fulcrum disposed intermediate of the ends of the tube and provided on its under side with a seat, a lever adapted to engage the seats of the fulcrum and the abutment and provided at one end with a rounded gripping member to coact with that of the tube, and means for holding the lever in locked engagement with the abutment.

4. An instrument of the class described comprising a tube provided at one end with a gripping member and at its other end with an abutment provided with a seat and with finger-holds, a lever adapted to engage the seats of the fulcrum and abutment and having stops to coact therewith to prevent longitudinal movement, a rounded gripping member carried by the lever and adapted to coact with that of the tube, and means for locking the lever in the seat of the abutment.

5. An instrument of the class described comprising a tube provided at one end with a rounded gripping member, an adjustable fulcrum combined with the tube, and a lever adapted to coact with the fulcrum and provided at one end with a rounded gripping member to coact with that of the tube.

6. An instrument of the class described comprising a tube provided at one end with a gripping member, a fulcrum arranged in the tube, and a lever adapted to engage the fulcrum and provided at one end with a gripping member to coact with that of the tube and at its other end with hooks.

7. An instrument of the class described comprising a tube provided at one end with a gripping member, a fulcrum arranged in the tube, and a lever adapted to engage the fulcrum and provided at one end with a gripping member to coact with that of the tube and at its other end with hooks, the opposed faces of the gripping members and the hooks, being covered by yielding material.

812,350. METHOD OF STRAIGHTENING WOODEN HANDLES. JAMES W. MAXEY, Louisville, Ky. Filed Feb. 21, 1905. Serial No. 246,703.

Claim.—The method of straightening crooked handles of white hickory or similar wood which discolors if steamed or loses elasticity if soaked in hot water too long, which consists in soaking them in substantially boiling water for a time less than that which discolors them, substantially as specified, and then straightening the handles into proper shape.

812,351. TOBACCO-PIPE. JOHN MOLONEY, Miller's Forest, New South Wales, Australia. Filed Nov. 21, 1905. Serial No. 288,405.

Claim.—A pipe having a vertical chamber parallel with the bowl of the pipe, a hollow tapered separator-plug closing said chamber at the top, said plug having holes therein, some of said holes being in line with the bore in the stem of the pipe, said chamber having a small depression at its bottom, a passage leading from the bowl to the chamber, a passage in line with the first-mentioned passage, connecting the chamber with the exterior of the pipe and a plug closing said last-named passage.

812,352. LUBRICATION-PIPE. JOHANN MÜHLRAD, Jasło, Austria-Hungary. Filed May 24, 1905. Serial No. 262,103.

Claim.—1. A device of the class described comprising an oil-receptacle, a shaft, and vacuum-controlled means communicating with the receptacle and delivering to the shaft whereby a flow of the lubricant is effected in proportion to the speed of the shaft.

2. A device of the class described comprising an oil-receptacle, a shaft, and a tube communicating with the receptacle and delivering to the shaft said tube being restricted at its receiving end whereby a flow of the lubricant is effected in proportion to the speed of the shaft.

3. A device of the class described comprising an oil-receptacle, a shaft, a tube projecting into a vacuum-chamber communicating with the shaft and closed to the receptacle, said tube communicating at its opposite end with the receptacle and having said outer end contracted.

4. A device of the class described comprising a bearing-box provided with an oil-receptacle, a shaft, a tube projecting into a vacuum-chamber formed in said box, said chamber being closed to said receptacle and open to said shaft, said tube having a contracted inlet and being bent to bring said inlet in close proximity to the lower wall of said receptacle.

812,353. STEAM-ENGINE. JOSEPH F. MURPHY, Beals, Tex. Filed Mar. 20, 1905. Serial No. 251,026.

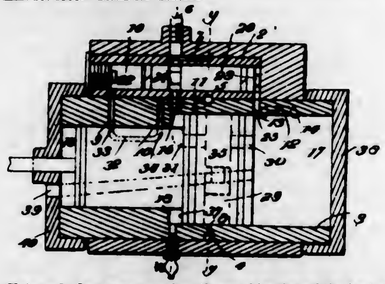

Claim.—1. In a steam-engine, the combination of the body provided with a working cylinder and a valve-chamber and having communicating passages, a piston arranged to operate in said cylinder and adapted to control certain passages and having a transverse opening and longitudinal openings intersecting said transverse opening, a valve mounted to slide in the transverse opening of the piston for controlling the longitudinal passages thereof and actuated at each end of the stroke of the piston by steam-pressure, and a valve mounted in the valve-chamber and moved therein by pressure of the steam controlled by the said piston.

2. In an engine, the combination of a cylinder provided with passages for admission of the steam or motive medium, a piston mounted in said cylinder and provided with corresponding passages, the one providing an outlet for the exhaust or spent steam and the other admitting the steam from one side of the piston to the other for operation by low pressure, said piston having a transverse opening intersecting the passages formed therein, a valve mounted in the transverse opening of the piston and positively actuated in each direction by pressure of the steam, and means for supplying steam or like motive medium to the cylinder for driving the piston.

3. In an engine of the type described, the combination of a cylinder having opposite end portions of different diameters and having a valve-chamber and provided with steam-passages, a piston mounted in the cylinder and comprising parts of different diameters corresponding to the end portions of the cylinder, the smaller portion of the piston having a passage to establish communication between one end of the valve-chamber and the steam-supply when the piston is at the limit of its stroke in one direction, and a valve transversely mounted in the piston and adapted to control passages thereof and positively actuated by direct steam-pressure.

4. In combination, an engine-cylinder and valve-chamber in communication by means of openings 9, 15 and 25 and having steam-passages 4, 11, 10, 5, 7 and 12, and having opening 8, a piston arranged in the cylinder and provided with a transverse opening and passages 30, 32 and 28, the passage 32 adapted to register with the openings 9 and 10 when the piston is at the limit of its stroke in one direction, a valve slidably mounted in the transverse opening of the piston, and a valve mounted in the aforesaid valve-chamber and adapted to be moved by direct steam-pressure controlled by the action of the piston.

5. A steam-engine comprising a body having openings corresponding to the cylinder and valve-chamber, a bushing fitted into the smaller opening and substituting the valve-chamber, a lining fitted in the larger opening and forming the working cylinder and having its end portions of different diameters, the bushing being provided with an annular passage 5 and longitudinal passage 7, and the lining having annular passage 4 in communication with passage 5 and formed with openings 8, 9, 10, 15 and 25 and with passage 12, a valve slidably mounted in the valve-chamber and having a portion between its ends reduced to form the passage 24, a piston having its end portions of different diameters and arranged to operate in the respective end portions of the cylinder and provided with passage 32, transverse opening 29 and passages 28 and 30 intersecting the transverse opening 29, and a valve mounted in the opening 29 and having a part between its ends reduced to form passage 36, the several parts being arranged to operate substantially in the manner set forth.

812,354. INDICATOR. JOHN P. MURPHY, Sacramento, Cal. Filed May 27, 1905. Serial No. 262,673.

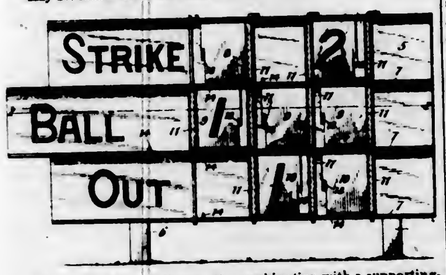

Claim.—1. In an indicator, the combination with a supporting-plate, of spaced flanges located on the same, said plate having an index designation disposed between the flanges, swinging flaps arranged between the flanges and having indicating-symbols that are exposed when the flaps are turned in a predetermined direction, and hinge-pintles for said flaps engaged with the said flanges.

2. In an indicator, the combination with a support having a plurality of index designations thereon, of a plurality of series of single swinging flaps, each series being in line with one of the index designations, and common hinge-pintles for securing flaps of the different series to the support.

3. In an indicator, the combination with a supporting-plate, of spaced horizontally-disposed flanges located on the same, said plate having index designations located between the flanges, lines of flaps movably mounted between the flanges, and hinge-pintles passing through the flanges and constituting pivotal supports for the flaps, one face of each flap having an indicating-symbol and each of said flaps swinging to a position over the adjacent flap when swung in one direction and exposing the symbol carried thereby.

812,355. INCANDESCENT-LIGHT HANGER. ROBERT D. McINTYRE, Mansfield, Ohio, assignor of one-half to Sherman Harter, Mansfield, Ohio. Filed Mar. 6, 1905. Serial No. 248,062.

Claim.—1. In a device of the class described, a casing formed of upper and lower sections, means for connecting the sections to each other, spring-arms carried by the upper section at points outside the section and having spindle-receiving openings, a spring winding-drum having a spindle extending through said openings, collecting-rings carried by the drum, conductors arranged within the upper section, brushes extending therefrom and engaging the clamping-rings, and lamp-supporting wires wound on the drum and electrically connected to the collecting-ring.

2. In a device of the class specified, a two-part shell or casing, each member having an insulating-collar for the passage of current-conducting wires, spring-catches for holding the two members of the casing together, a spring-strip extending over the upper part of the casing and forming at its upper end a hanger or support, the lower portion of the strip being provided with spindle-receiving openings, a winding-drum having a spindle extending through said openings and provided with an insulating-cover, collecting-rings carried by the winding-drum, current-conductors arranged within the upper portion of the casing and connected to the leading-in wires, brushes carried by the current-conductors and engaging the current-collecting rings, current-conducting wires passing out through the insulating-collar of the lower part of the casing and forming a lamp-support, the upper ends of said wires being wound upon the drum and connected to the collecting-rings, and a spring for winding said drum.

812,356. LIFTING APPARATUS. JACOB NEUBAUER, Wells, Minn. Filed June 26, 1905. Serial No. 266,963.

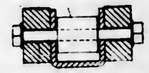

Claim.—1. An apparatus of the class described comprising a frame consisting of parallel pairs of uprights, a brace-rod hinged to the upper end of one upright of each pair, a horizontal shaft journaled in the upper ends of said uprights, a winding-cable carried by said shaft, and means for turning said shaft.

2. An apparatus of the class described consisting of two pairs of uprights mounted upon wheels, a horizontal shaft journaled in the upper ends of said uprights, a downwardly-depending winding-cable carried by said shaft, a sprocket-chain supported upon one of said uprights and operatively connected with said shaft, an actuating-handle for said chain, and a brake supported upon said upright and engaging with said chain.

3. An apparatus of the class described consisting of two pairs of uprights mounted upon wheels and interspaced to form an intermediate driveway, cross-bars connecting the lower ends of each pair of uprights, a horizontal shaft journaled in the upper ends of said uprights, a sprocket carried by one end of said shaft, a chain connecting said sprocket with a sprocket supported upon the lower end of one of said uprights, actuating means for said chain, and a brake for said chain pivotally supported upon the adjacent upright.

4. An apparatus of the class described consisting of two pairs of uprights mounted upon wheels and interspaced to form an intermediate driveway, cross-bars connecting the lower ends of each pair of uprights, a horizontal shaft journaled in the upper ends of said uprights, a sprocket carried by one end of said shaft, a chain connecting said sprocket with a sprocket supported upon the lower end of one of said uprights, actuating means for said chain, a brake for said chain pivotally supported upon the adjacent upright, and a tightener for said chain slidably supported upon said upright.

812,357. DRY METHOD OF PREPARING LEAD COMPOUNDS. JOHN P. NEVILLE, Oakland, Cal. Filed Aug. 29, 1905. Serial No. 276,246.

Claim.—1. The dry method of preparing white lead, red lead and litharge for commercial use which consists in subjecting the material to be treated to the action of a pulverizer to reduce it into a powder, withdrawing by air-suction the powder from within the pulverizer, and discharging the dust-laden air into an arrester wherein the heavier particles of carbonate of lead separate by gravity from the laden air.

2. The dry method of preparing white lead, red lead and litharge for commercial use, which consists in converting the material to be treated into a powder, withdrawing the powdered material by air-suction, discharging the dust-laden air into an arrester wherein the heavier particles of lead separate by gravity from the laden air, and finally discharging the air from the arrester into a collector to free the air of any particles of carbonate of lead carried thereby.

3. The dry method of preparing carbonate of lead for commercial use, the same consisting in reducing the material to be treated into a powder, withdrawing by air-suction the powdered material, discharging the dust-laden air into a suitable collector for separating the lead particles from the dust-laden air and impregnating the

flowing body of dust-laden air with a gas, such as ozone, to oxidize and eliminate all foreign substances and such acetate of lead as may

duced end, and a locking-bar pivoted to one of said members and arranged for connection with one of the straps, said locking-bar se-

of closed and open positions so as to contact said swinging bottom-

otally secured to said vibratable mechanisms and rock-shaft, and a

flowing body of dust-laden air with a gas, such as ozone, to oxidize and eliminate all foreign substances and such acetate of lead as may be contained in the powdered carbonate carried by the body of air.

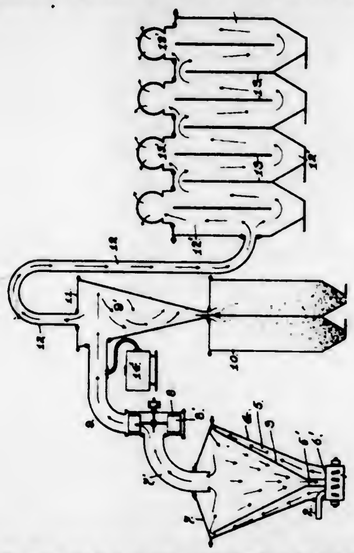

4. The dry method of preparing carbonate of lead for commercial use, which consists in reducing the material to be treated to a powder, withdrawing the powder thus formed by a flowing body of air, and impregnating the flowing body of dust-laden air with a gas—such as ozone—to oxidize and eliminate all foreign substance and oxidize such acetate of lead as may be contained in the powdered carbonate carried by the body of air, and finally separating the dust-laden air of the particles of lead carbonate held therein.

812,358. APPARATUS FOR USE IN HOSPITALS, SICK-ROOMS, AND LIKE PLACES. FREDERICK M. OLIVER, Pendleton, Oreg. Filed June 20, 1905. Serial No. 266,116.

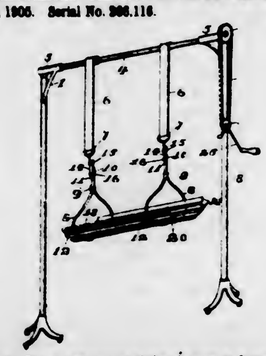

Claim.—1. In an apparatus of the character described comprising a framework including a revoluble shaft, means for revolving said shaft, means for locking said shaft against movement in one direction, straps connected with said shaft, frame-carrying tongs connected with said straps, each of said tongs including two members pivotally connected, each of said members being formed with a reduced end, and a locking-bar pivoted to one of said members and arranged for connection with the strap.

2. In an apparatus of the character described comprising a framework including a revoluble shaft, means for revolving said shaft, means for locking said shaft against movement in one direction, straps connected with said shaft, frame-carrying tongs connected with said straps, each of said tongs including two members pivotally connected, each of said members being formed with a reduced end, and a locking-bar pivoted to one of said members and arranged for connection with one of the straps, said locking-bar securing the members in closed position when supported by the strap.

812,359. DUMP-CAR. SPENCER OTIS, Chicago, Ill., assignor to National Coal Dump Car Company, Rapid City, S. D., a Corporation of South Dakota. Filed Feb. 8, 1904. Serial No. 192,635.

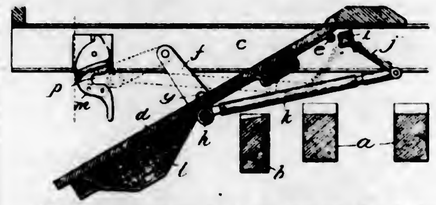

Claim.—1. In a dump-car of the class described, the combination of a supporting-framework, a drop-bottom therefor formed of a plurality of swinging sections pivotally secured at their inner edges to the framework of the car at each side of the longitudinal center thereof, compound-lever mechanism pivotally secured to the framework of the car and adapted to swing and hold the swinging sections in closed position, pivoted latch mechanism for locking and holding the lever mechanism and thereby the swinging sections of the drop-bottom in closed position, and means for operating the said compound-lever mechanism, substantially as described.

2. In a dump-car of the class described, the combination of a supporting-framework, a drop-bottom therefor formed of a plurality of swinging sections pivotally secured at their inner edges to the framework of the car and at each side of the longitudinal center thereof, vibratable lever mechanism pivotally secured to the framework of the car to close said drop-bottom sections, pivoted latch mechanism for holding said vibratable lever mechanism and thereby the drop-bottom sections in closed position, and lever mechanism pivotally connected with said vibratable lever for vibrating the same, substantially as described.

3. In a dump-car of the class described, the combination of a supporting-framework, a drop-bottom portion formed of a plurality of swinging sections pivotally secured at their inner edges to the frame portion at each side of the longitudinal center thereof, a plurality of vibratable levers pivotally secured to the framework of the car, a rod engaging said vibratable lever mechanism for swinging the same and thereby the drop-bottom sections into and out of closed position, a rock-shaft, and a connecting-rod pivotally connected with said rod and with the rock-shaft to operate said vibratable lever mechanism, substantially as described.

4. In a dump-car of the class described, the combination of a supporting-framework, a drop-bottom portion formed of a plurality of swinging sections pivotally secured at their inner edges to the frame portion at each side of the longitudinal center thereof, a plurality of vibratable levers pivotally secured to the framework of the car, a rod engaging said vibratable lever mechanism for swinging the same into and out of closed position, a rock-shaft, a connecting-rod pivotally connected with said rod and with the rock-shaft to operate said vibratable lever mechanism, and pivoted latch mechanism for holding said rod and vibratable lever mechanism and thereby the drop-bottom sections locked in closed position, substantially as described.

5. In a dump-car of the class described, the combination of a supporting-framework, a drop-bottom therefor composed of a plurality of swinging sections pivotally secured at their inner edges to the supporting-framework of the car and at each side of the longitudinal center thereof, swinging lever mechanism pivotally secured to the framework of the car, rod mechanism connecting a plurality of said swinging levers together whereby they are swung into and out of closed and open positions so as to contact said swinging bottom-sections and close or open the same, and means for swinging said rod and lever mechanisms into and out of said positions, substantially as described.

6. In a dump-car of the class described, the combination of a supporting-framework, a drop-bottom therefor composed of a plurality of swinging sections pivotally secured at their inner edges to the supporting-framework of the car and at each side of the longitudinal center thereof, a plurality of swinging lever mechanisms pivotally secured to the framework of the car, rod mechanism connected with said swinging lever mechanisms and adapted to swing therewith into and out of open and closed positions so as to open and close said swinging sections, a rock-shaft, and a connecting-rod pivotally secured to said rock-shaft and to said rod and swinging lever mechanisms so as to swing the same into and out of said positions, substantially as described.

8. In a dump-car of the class described, the combination of a supporting-framework, a drop-bottom therefor composed of a plurality of swinging sections pivotally secured at their inner edges to the supporting-framework of the car and at each side of the longitudinal center thereof, a plurality of swinging levers pivotally secured to the framework of the car and provided with mechanism at their lower ends with which they swing into and out of closed and open positions, a rock-shaft, a connecting-rod pivotally connecting said rock-shaft and swinging lever mechanisms together so as to swing the same with the rod mechanism into and out of said positions, and pivoted latch mechanism for holding said rods and swinging levers and thereby the drop-bottom sections locked in closed position, substantially as described.

9. In a dump-car of the class described, the combination of a supporting-framework, a drop-bottom portion therefor composed of a plurality of swinging sections pivotally secured at their inner edges to the supporting-framework of the car and at each side of the longitudinal center thereof, a plurality of swinging levers pivotally secured to the framework of the car and provided with slots at their lower ends, rod mechanism arranged in the slots of said swinging levers with which it is swung into and out of closed and open positions, a rock-shaft, and a connecting-rod pivotally secured to said rock-shaft and rod and swinging lever mechanism for swinging the parts into and out of said positions, substantially as described.

10. In a dump-car of the class described, the combination of a supporting-framework, a drop-bottom therefor composed of a plurality of swinging sections pivotally secured at their inner edges to the supporting-framework of the car and at each side of the longitudinal center thereof, a plurality of swinging levers pivotally secured to the framework of the car and provided with slots at their lower ends, rod mechanism arranged in the slots of said swinging levers with which it is swung into and out of closed and open positions, a rock-shaft, a connecting-rod pivotally secured to said rock-shaft and rod and swinging lever mechanism for swinging the parts into and out of operative position, and latch mechanism arranged to engage said rod and hold the same with the swinging levers and thereby the drop-bottom sections in closed positions, substantially as described.

11. A car provided with a suitable track, drop-door, in combination with a wedge member movable on said track beneath said door and a compound lever for moving said member outwardly and inwardly to close and open the door respectively, substantially as described.

12. In a dump-car, the combination of a car-frame, a dumping-door pivotally mounted therein, and door-supporting mechanism mounted in the car-frame in engagement with the door and movable transversely thereof between its longitudinal center and outer swinging edges, for supporting the door in both opened and closed positions at or outside of its longitudinal center.

13. In a dump-car of the class described, the combination of a plurality of dumping-doors forming the drop-bottom thereof and extending longitudinally of the car, a rock-shaft, and lever mechanism pivotally secured to the rock-shaft and secured to the frame of the car outside of the longitudinal center of the doors for operating said dumping-doors, substantially as described.

14. In a dump-car of the class described, the combination of a supporting-framework, a drop-bottom therefor composed of a plurality of swinging sections pivotally secured at their inner edges to the framework of the car at each side of the longitudinal center, a plurality of vibratable door-supporting mechanisms pivotally secured in slotted plates on the framework of the car for closing and opening said swinging sections, rod mechanism for securing a plurality of said vibratable mechanisms together and holding them against lateral displacement, a rock-shaft, a connecting-rod pivotally secured to said vibratable mechanisms and rock-shaft, and a plurality of fixed latches secured to the framework of the car for holding said vibratable mechanisms in their closed position, substantially as described.

15. In a dump-car, the combination of a car-frame, a dumping-door pivotally mounted therein, door-supporting mechanism mounted in the car-frame in engagement with the door, and movable transversely thereof between its longitudinal center and outer swinging edges for supporting the door in both opened and closed positions at or outside of its longitudinal center, and means for preventing the movement of the door-engaging portion of such supporting mechanism beyond the longitudinal center of the door.

16. In a dump-car, the combination of a car-frame, a dumping-door pivotally mounted therein, and door-supporting mechanism pivotally connected with the car-frame between the side of the car and the longitudinal center of the door and in engagement with the door between its longitudinal center and outer swinging edges when in opened position and during the movement of the door.

17. In a dump-car, the combination of a car-frame, dumping-doors pivotally mounted therein, and door-supporting mechanism connected with the car-frame between the side of the car and the longitudinal center of the dumping-doors and in engagement with such doors between their longitudinal centers and outer swinging edges in both opened and closed positions, for operating such doors and supporting them at or outside of their longitudinal centers in their open and closed positions.

812,360. AUXILIARY VEHICLE-SEAT. THOMAS W. PARKS, Alexandria, Ind., assignor of one-half to Walter B. Chenoweth, Alexandria, Ind. Filed Mar. 9, 1905. Renewed Jan. 9, 1906. Serial No. 295,302.

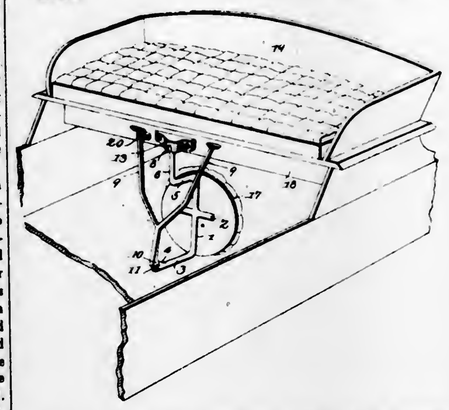

Claim.—1. The combination with a vehicle-seat, of a bracket secured thereto, a seat-bracket having a universal connection with the first-mentioned bracket to permit folding of the seat-bracket beneath the main seat, and a foldable prop for the seat-bracket.

2. The combination with a vehicle-seat, of a bracket secured thereto and provided with a socket intersected in its front by an upright slot and in its bottom by a horizontal slot communicating with the upright slot, a substantially horizontal seat-bracket having a ball working in the socket of the first-mentioned bracket, and a foldable prop carried by the seat-bracket.

3. An auxiliary seat for vehicles comprising a substantially horizontal seat-bracket having a pendent standard at its front end and a rearwardly-extending stem at its other end, said stem terminating in a ball, an attaching-bracket having a socket for the loose reception of the ball, and a prop member hinged to the standard of the seat-bracket.

4. The combination with a vehicle-seat, of an auxiliary seat including a seat-bracket having a universal connection with the vehicle-seat and a foldable leg-standard for the bracket, the bracket capable of being inverted and swung back beneath the vehicle-seat when the leg-standard is folded against the bracket, and means carried by the vehicle-seat for engagement with the leg-standard in the folded condition of the auxiliary seat to hold the latter against looseness.

5. The combination with a vehicle-seat, of an auxiliary seat including a seat-bracket having a universal connection with the vehicle-

seat and a foldable leg-standard for the bracket, the bracket capable of being inverted and swung back beneath the vehicle-seat when the leg-standard is folded against the bracket, and a turn-button mounted upon the vehicle-seat in position to engage the leg-standard of the auxiliary seat in the folded condition thereof to hold the same against looseness.

812,361. **TUBE, CONDUIT, AND PIPE CLEANER.** ALFRED PICKLES, Wakefield, and PERCY R. SEWELL, Bradford, England. Filed Oct. 8, 1903. Serial No. 176,267.

Claim.—1. In an apparatus for cleaning pipes and the like, the combination with a spindle, of a set of cutters fast to the spindle, a sleeve loosely mounted on the spindle and provided with a set of cleaning-brushes, means for rotating the spindle and means for rotating the sleeve independent of the spindle.

2. In an apparatus for cleaning pipes and the like, the combination with a spindle, of a set of cutters mounted at one end of the spindle and means for rotating the spindle mounted at the other end thereof, a sleeve loosely mounted on the spindle between the cutters and the spindle-rotating means, brushes mounted on the sleeve and means for rotating the sleeve independent of the spindle.

3. In an apparatus for cleaning pipes and the like, the combination with a series of rotary cutters mounted on a spindle a turbine also mounted on the spindle and adapted to rotate the same, a sleeve loose on the spindle, and helical plates provided with bristles clamped between them, mounted on the sleeve.

812,362. **CONSTRUCTION OF OIL-CUPS.** JAMES POWELL, Cincinnati, Ohio, assignor to The Wm. Powell Co., Cincinnati, Ohio, a Corporation of Ohio. Filed May 31, 1905. Serial No. 263,006.

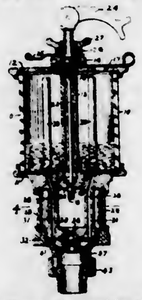

Claim.—1. In an oil-cup, the combination of an oil-reservoir, consisting of a top, a bottom provided with an outlet-opening and an intervenient shell, a tie-post seated in the bottom and projecting above the top, a nut provided thereat to hold the parts of the cup together, a valve controlling the outlet, a rotary stem for actuating this valve, a pivotally-attached handle to manipulate this stem, a notched locking-arm adjustably mounted on the projecting end of the tie-post and above the nut thereon and adapted to engage the handle to hold the valve-stem against rotation and a clamping-nut also fitted on the projecting end of the tie-post above the locking-arm to hold the same in its adjusted position.

2. In an oil-cup, the combination of an oil-reservoir consisting of a top, a bottom provided with an outlet-opening and an intervenient shell, a tie-post seated in the bottom and projecting above the top with a nut provided thereat to hold the parts of the cup together, a valve controlling the outlet, a rotary stem for actuating the same, a pivotally-attached handle to manipulate this stem, a notched locking-arm adjustably mounted on the projecting end of the tie-post and above the nut thereat mentioned and adapted to engage the handle to hold the valve-stem against rotation, a spring-washer and a clamping-nut both mounted above the projecting part of the tie-post to hold the locking-arm in its adjusted position with a yielding pressure.

3. In an oil-cup, the combination of an oil-reservoir provided with an outlet-opening, a valve controlling this outlet, a rotary stem for actuating this valve, a handle pivotally attached to the upper end of this stem to manipulate the same, a locking-arm pivotally mounted and provided with serrations around its hub and with a notch in its free end adapted to engage the valve-handle to hold the valve-stem against rotation, a boss which forms the pivot for this locking-arm and has a projecting shoulder also serrated upon which the serrated part of the locking-arm rests, a spring-washer adapted to act against this serrated part of the locking-arm and means to hold the spring-washer in place.

4. In an oil-cup, the combination of an oil-reservoir and a sight-feed chamber below the same, the bottom of the former constituting also the top of the latter and dividing the two, there being a valve-controlled passage in this dividing-bottom whereby the oil-reservoir communicates with the sight-feed chamber, and a final outlet provided in the bottom of this latter and vent-ducts provided within the general structure which are open to this final outlet below the sight-feed chamber and communicating directly and independently with the interior of the oil-reservoir.

5. In an oil-cup, the combination of an oil-reservoir provided with a valve-controlled outlet, a sight-feed chamber below this outlet having a final outlet in its bottom, a check-valve controlling this final outlet and vent-ducts prorided within the general structure which communicate with this final outlet independent of the check-valve therein and open to the interior of the oil-reservoir.

6. In an oil-cup, the combination of an oil-reservoir provided with a valve-controlled outlet in its bottom, a sight-feed chamber below this bottom having a final outlet in its bottom, connecting means to hold its bottom to the bottom of the oil-reservoir, continuous perforations being provided in the two bottoms and in the means connecting them which form vent-ducts and the open ends of which communicate with the final outlet and with the oil-reservoir and tubes mounted within this latter and on the upper ends of these perforations.

7. In an oil-cup, the combination of an oil-reservoir provided with a valve-controlled outlet in its bottom, a sight-feed chamber below this bottom consisting of a shell and a bottom which has a final outlet and connecting means within and surrounded by this shell to hold the bottom of the sight-feed chamber to the under side of the bottom of this oil-reservoir with the shell mentioned clamped between the two bottoms.

8. In an oil-cup, the combination of an oil-reservoir provided with a valve-controlled outlet in its bottom, a sight-feed chamber below this bottom consisting of a shell and a bottom which has a final outlet, posts within this shell to hold the bottom of the sight-feed chamber to the under side of the bottom of the oil-reservoir with the shell mentioned held between the two bottoms, continuous perforations being provided in these two latter and in the posts connecting them which form vent-ducts and the open ends of which communicate with the final outlet and with the oil-reservoir and tubes mounted within this latter and on the upper end of these perforations.

9. In an oil-cup, the combination of an oil-reservoir and a sight-feed chamber below it, both in communication by a valve-controlled passage between the two, an attaching-nipple below the sight-feed chamber, there being a passage whereby this latter communicates with the attaching-nipple, a reducing-nipple below this latter and a coupling-nut to connect the two nipples.

10. In an oil-cup, the combination of an oil-reservoir and a sight-feed chamber below it, both in communication by a valve-controlled passage between the two, an attaching-nipple below the sight-feed chamber, there being a passage whereby this latter communicates with the attaching-nipple, a check-valve controlling this passage in one direction and vent-ducts provided within the general structure whereby the attaching-nipple communicates with the interior of the oil-cup independent of the check-valve.

11. In an oil-cup, the combination of an oil-reservoir and a sight-feed chamber below it, both in communication by a valve-controlled passage between the two, an attaching-nipple below the sight-feed chamber, there being a passage provided within the general structure whereby the attaching-nipple communicates with the sight-feed chamber and independent vent-ducts whereby this latter communicates with the interior of the oil-cup.

12. In an oil-cup, the combination of an oil-reservoir and a sight-feed chamber below it, both in communication by a valve-controlled passage between the two, an attaching-nipple below the sight-feed chamber, there being passages provided within the general structure whereby this attaching-nipple communicates with the sight-feed chamber and independently with the interior of the oil-cup, a reducing-nipple below this attaching-nipple and means to connect the two nipples.

812,363. **FEED AND LITTER CARRIER.** JAMES W. PROVAN, Oshawa, Canada. Filed Apr. 1, 1904. Serial No. 201,180.

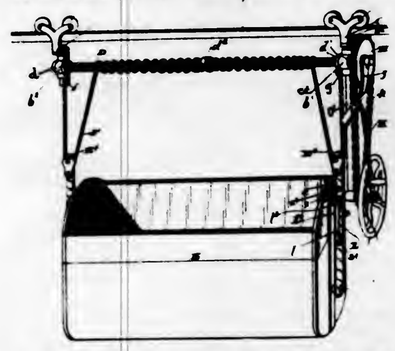

Claim.—1. In a feed and litter carrier, in combination a short depending suspension-bar and a long suspension-bar, the spindle journaled in the ends of the long and short bars, the collars on the spindle on each side of each bar, the sprocket-gear having the upper sprocket-wheel secured on the end of the spindle outside of the long bar and the lower sprocket-wheel journaled on a stud at the bottom of the long bar and the box adjustably supported on the main spindle by the cord as specified.

2. In a litter-carrier, the combination with the bars and wheels, and a spindle journaled on the bars, of the box, the hanger pivotally connected to the end of the box and provided with forked upper ends carrying pulleys, the cord secured to the eyes on the bars and passing under the pulleys at the top of the hangers of the box and fastened to the spindle as and for the purpose specified.

3. The combination with the box and hangers pivotally connected to the end of the box, the spindle, and bars in which the same is journaled and means for supporting the hangers from the spindle, of a bar secured in the end of the box and provided with a notch, and means for throwing the box away from the hanger, so as to release such hanger from the notch as and for the purpose specified.

4. The combination with the box and hanger pivotally connected to the end of the box, the spindle, and bars in which the same is journaled and means for supporting the hangers from the spindle, of a bar secured in the end of the box and provided with a notch, a lever pivoted on the bar, and means for operating the lever, so as to throw the notched bar clear of the hanger in order to dump the box as and for the purpose specified.

812,364. **COKE-DRAWING MACHINE.** DANIEL A. RAHAGE, Percy, Pa. Filed Nov. 1, 1905. Serial No. 285,441.

Claim.—1. A coke-drawing mechanism, which comprises a wheel-frame, a cylinder axially mounted on the center thereof to turn in the horizontal plane, a frame surrounding the cylinder and having a seat to engage a stud axially on the wheeled frame, the stud-axle having a horizontally-disposed gear fixedly mounted thereon, a pinion on a shaft mounted on the annular frame on the cylinder adapted to mesh with the gear-wheel on the supporting-frame, a fluid-pressure feed, a piston working within the cylinder, a valve mechanism detachably mounted on the annular frame on the cylinder, the casing of said valve having two feed-ports, an inlet and an exhaust, a valve operating in said casing for alternately moving the opposite one of the inlets in communication with the feed-port and at the same time bringing the other feed-port into communication with the exhaust-leads from the feed-ports, one of which discharges into the rear end of the cylinder, the other one of which discharges into the front end of the cylinder, and a draw or scraping device detachably mounted on the front of the piston-rod, all being arranged substantially as shown and described.

2. A coke-drawing machine, comprising in combination, a truck-frame having a central axial stud, and a horizontal gear fixedly mounted thereon, a cylinder mounted upon the axial stud to turn in a horizontal plane, a pinion and a shaft for the same mounted on the cylinder, said pinion engaging the horizontal gear, a source of fluid-pressure, a regulating-valve mechanism mounted on the cylinder having a feed-pipe connection that discharges into one end of the cylinder, another feed-pipe connection that discharges into the other end of the cylinder, and having a feed-inlet and an exhaust, the piston within the cylinder having its rod extended and a scraper-frame connected to the front end of the piston, as set forth.

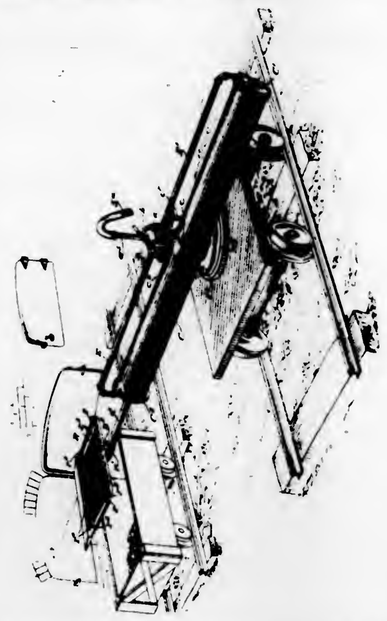

3. A coke-drawing means comprising a truck-carriage having a centrally-disposed turn-table, a cylinder mounted on said turn-table, means mounted on the cylinder for actuating the turn-table devices, a pressure-fluid lead-pipe that discharges into one end of the casing, a second pipe that discharges into the other end of the casing, a source of fluid-pressure supply, a controlling-valve mechanism mounted on the cylinder and adapted to have a flexible connection with the fluid-pressure supply, said valve also connecting with the feed-pipes to the cylinder, a lever device for setting the valve to cut out one feed-pipe as it exhausts the other, the piston and its rod, and a scraper device detachably mounted on the end of said rod as set forth.

4. In a coke-drawing mechanism of the character described, the combination with the wheeled frame, the cylinder mounted to turn in a horizontal plane, means for adjusting the cylinder, means for feeding and exhausting the fluid-pressure in the cylinder to actuate the piston, said means being carried by the cylinder, the piston and its rod and a drawing or scraper device, comprising a frame having a series of forwardly-extending bars, a spear-shaped cross member that joins the front ends of the said bars, a rib or latch pivotally secured to each of the said bars, and mounted to normally drop to a horizontal position when the scraper is inserted into the coke and to rise to a vertical position when the scraper is pulled, said scraper having guide-rolls at the rear edges, all being arranged substantially as shown and described.

5. In a coke-drawing mechanism of the character described, the combination with a wheeled frame, the cylinder mounted thereon to turn in a horizontal plane, means for adjusting the cylinder and means for feeding and exhausting a fluid-pressure of the cylinder to actuate the piston, said means being carried by the cylinder, the piston and its rod, and a drawing or scraper device mounted on the outer end of the rod which comprises a frame having a series of forwardly-extending bars, a spear-shaped cross member that joins the front end of said bars, a rib or latch pivotally secured to each of said bars and mounted to normally drop to a horizontal position when the scraper is inserted into the coke and rise to a vertical position when the scraper is pulled out, substantially as shown and described.

812,365. **MOLD FOR CONCRETE WALLS.** JOHN L. RICHARDSON, Bloomsburg, Pa., assignor of one-half to Fred J. Richard, Bloomsburg, Pa. Filed Apr. 19, 1905. Serial No. 256,506.

the core, and a retaining-screw passed through the outer end of the bushing and threaded longitudinally into the free end of the core.

having a pair of annular flanges disposed substantially at a right angle to each other and provided with a plurality of radial partitions

2. In an internal-combustion engine the combination of a governor-controlled air-valve; a governor-controlled liquid-fuel valve; a governor-controlled water-valve; two reservoirs for containing liq-

812,365. **MOLD FOR CONCRETE WALLS.** JOHN L. RICHARDSON, Bloomsburg, Pa., assignor of one-half to Fred J. Richard, Bloomsburg, Pa. Filed Apr. 19, 1905. Serial No. 256,506.

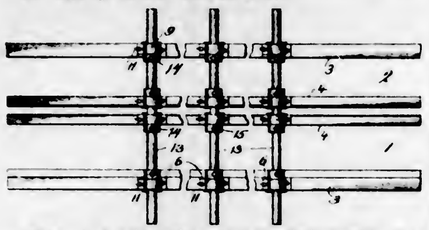

Claim.—1. A mold for the purpose described comprising form-plates, a rod extending transversely above said plates, and means for connecting and adjusting said plates independently of each other on said rod.

2. A mold for the purpose described comprising form-plates, a rod extending transversely above said plates, a clamp adapted to engage said rod carried by each of said plates whereby said plates are capable of independent connection with and adjustment on said rod.

3. A mold for the purpose described comprising two sets of plates assembled to form wall-sections separated by an air-space, a rod extending transversely above said plates, a clamp adapted to engage said rod carried by each of said plates whereby said plates are capable of independent connection with and adjustment on said rod.

4. A mold for the purpose described comprising form-plates, a rod extending transversely above said plates, a gage for each plate adjustably mounted on said rods, a clamp adapted to engage said rod carried by each of said plates whereby said plates may be connected to and adjusted on said rod independently of each other.

5. A mold for the purpose described comprising two sets of plates assembled to form wall-sections separated by an air-space the inner plates of said sections having their opposing faces inclined so as to converge toward each other downwardly, a correspondingly-shaped spreader adapted to be inserted into the space between said inner plates, a rod extending transversely above said plates, a clamp adapted to engage said rod carried by each of said plates whereby said plates may be connected to and adjusted on said rod independently of each other.

6. A mold for the purpose described comprising form-plates a rod extending transversely above said plates, means for connecting and adjusting said plates independently of each other on said rod, and a tie-rod passing through said plates to clamp them to the preceding course, said tie-rod being so disposed as to rest upon the top of said course when the parts of the mold are assembled.

812,366. **PIPE-DRESSING TOOL.** WILLIAM RITSCHARD, Columbus, Ohio. Filed Dec. 31, 1904. Serial No. 239,949.

Claim.—1. In an implement of the class described, a body, a journal-stem carried thereby and comprising a core, a bushing mounted on the core, a screw connecting the outer ends of the core and bushing to hold the same against relative longitudinal movement, the body and bushing being provided, one with a key and the other with a socket that receives the key to hold the bushing against rotary movement on the core, and a cutter carried by the body and disposed at an inclination to the core.

2. In an implement of the class described, a body having a tapering work-receiving socket, a journal-stem extending centrally within the socket, said body having a recessed key-seat at the inner end of the socket at one side of the base of the core, a cutter carried by the body and projecting into the socket, a bushing detachably fitted upon the core and having a lateral outstanding key at its inner end that fits in the socket and holds the bushing against rotation on the core, and a retaining-screw passed through the outer end of the bushing and threaded longitudinally into the free end of the core.

812,367. **ATTACHMENT FOR GARMENT-SUSPENDERS.** WILLIAM F. ROWELL, Deadwood, S. D. Filed Sept. 25, 1905. Serial No. 280,085.

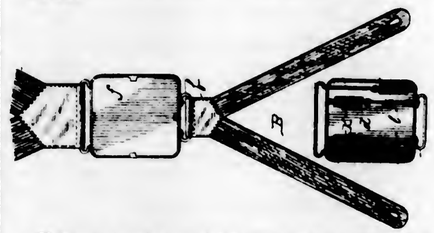

Claim.—1. A spring attachment for garment-suspenders consisting of a casing, rods working in pairs independently of each other in opposite sides of the rim of said casing; coiled contractile springs connected within said casing to said rods and casing; and bows outside of said casing connected to said rods; said parts being combined substantially as described.

2. A spring attachment for garment-suspenders having a casing with a covering-plate, bows on opposite sides of the rim of said casing, each having a pair of rods connected therewith and passing through said rim, and inner and outer pairs of springs within said shell and connected to said rods and casing, the inner springs being connected to one of said pairs of rods and the outer springs being connected to the other pair of rods, said parts being combined substantially as described.

3. An attachment for garment-suspenders consisting of a casing with a covering-plate, bows outside of opposite sides of the rim of said casing, pairs of rods passing through opposite sides of said rim, one of said pairs of rods being between the other pair, and coiled contractile springs secured to said rods and to the casing, and one of said bows being of greater width than the other bow, said parts being combined substantially as described.

812,368. **ROTARY ENGINE.** CARL A. SANDBORG, Bloomington, Ill. Filed May 8, 1905. Serial No. 259,406.

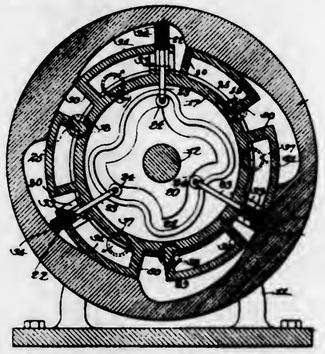

Claim.—1. The combination with a frame, of a stationary piston supported thereby, radially-slidable abutments carried by the piston, a shaft extending through said piston, a revoluble cylinder carried by the shaft and provided with steam-chambers into which the abutments may be moved, and a cam-disk carried by the cylinder for moving the abutments.

2. The combination in a rotary engine, of a frame, a stationary piston supported thereby and having peripheral pockets, a plurality of radially-movable abutments guided by the piston, a shaft, a revoluble cylinder carried by the shaft and provided with steam-chambers into which the abutments may be moved, a disk carried by the cylinder and provided with a cam-groove, and stems secured to the abutments and provided with pins or antifriction-rollers entering said cam-groove.

3. In a rotary engine, the combination with a stationary piston having a pair of annular flanges disposed substantially at a right angle to each other and provided with a plurality of radial partitions dividing the periphery of the piston into a series of pockets, a revoluble piston having a plurality of steam-chambers, packing-rings between the flanges of the piston and the cylinder, a disk carried by the cylinder and provided with a cam-groove, radially-movable abutments carried by the piston, guiding means for such abutments, and stems secured to such abutments and provided with pins or antifriction-rollers entering said cam-groove.

812,369. **BUILDING-BLOCK.** FRANK M. SAWYER, Charlotte, N. C. Filed Mar. 9, 1905. Serial No. 249,256.

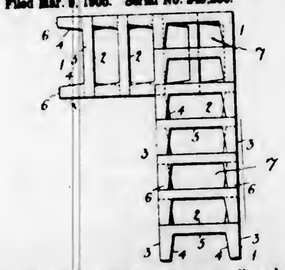

Claim.—The herein-described building-wall made up of bricks or blocks having three unbroken surfaces 2, 3, 3, the surfaces 3, 3, forming feet 6, the inner walls 4 of which are oblique and providing the inner wall or web 5, said blocks being placed in reverse order in each alternate layer to break joint and to provide vertical ventilating-spaces 7 between the bricks and to form cross bracing-webs in the corners of the wall, essentially as described.

812,370. **ASH-PAN.** LOUIS C. SCHOTTO, St. Louis, Mo. Filed June 30, 1905. Serial No. 267,794.

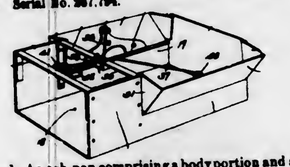

Claim.—1. An ash-pan comprising a body portion and side wings, portions of the side walls of the pan-body being of reduced height, and the wings being pivoted to such portions of reduced height.

2. An ash-pan comprising a body portion and side wings, portions of the side walls of the pan-body being of reduced height, and the wings being pivoted at the top of such portions, the ends of the wings being arranged to swing within the body of the pan.

3. An ash-pan having depressions in its side walls, and wings mounted to swing within said depressions and extending inwardly to the body of the pan at the ends.

4. An ash-pan comprising a body portion and wings, portions of the side walls being of reduced height, and the wings being pivoted at the top of such portions, transverse stay-bars connecting those portions of the side walls of full height, one of said bars having a central depression, and pivotally-connected levers extending through the depressed portion of the stay and movably connected to said wings.

5. An ash-pan comprising a body and wings, portions of the side walls of the pan being of reduced height, and the wings being pivoted at the top of such portions and of such width that when moved inward their upper edges will be substantially in alinement with the upper edges of the main portion of the side walls.

812,371. **SPEED-REGULATOR FOR EXPLOSIVE-ENGINES.** JOHN A. SPROUL, New York, N. Y., assignor to General Power Company, a Corporation of New Jersey. Filed Mar. 16, 1904. Serial No. 198,345.

Claim.—1. In an internal-combustion engine the combination of an air throttling-valve, a fuel throttling-valve, and a water throttling-valve, with a governor adapted to vary the quantity of the combustible charge, and the relative proportions of air, fuel and water, in coördination with the variations in quantity of said charge.

2. In an internal-combustion engine the combination of a governor-controlled air-valve; a governor-controlled liquid-fuel valve; a governor-controlled water-valve; two reservoirs for containing liquid, each provided with means for maintaining the surface of the liquid contained therein at a constant height; a connecting-passage, or pipe from one of said reservoirs to said liquid-fuel valve; and a connecting-passage, or pipe from the other of said reservoirs to said water-valve.

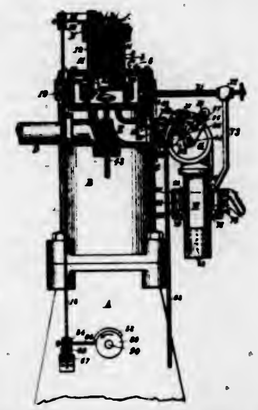

3. In an internal-combustion engine the combination of an air throttling-valve, a fuel throttling-valve, a water throttling-valve, a liquid-fuel receptacle, and a water-receptacle, each of said receptacles having a discharge passage-way opening into the air-inlet passage at a level above the surface of the liquids contained in said receptacles, with a governor adapted to vary the quantity of the combustible charge, and the relative proportions of air, fuel and water, in coördination with the variations in quantity of said charge.

4. In an internal-combustion engine adapted to inhale water, the combination of a common admission-passage and valve for admitting a mixed charge of air, fuel and water, a governor adapted to control simultaneously and independently, the supply of air and fuel contained in each charge; a reservoir for holding water; a pipe, or vertical passage-way connecting with said reservoir having an inlet near the bottom of the reservoir, and an outlet in said admission-passage, with means for maintaining a constant level in said water-reservoir, said level being below the level of said outlet in said admission-passage.

5. In an internal-combustion engine having a cylinder and piston therein adapted to employ the reduced internal pressure, occurring during each suction-stroke in order to inhale water as a constituent ingredient of the fuel charge, the combination of a common admission passage and valve for admitting air, fuel and water, means for enabling said piston during said suction-stroke to inhale the air, fuel and water, with means for automatically varying in coördination the proportions of said air, fuel and water, and the volume of mixture, so as to provide relatively weaker mixtures for higher compressions and increasingly stronger mixtures for the lower compressions.

6. In an internal-combustion engine having independent air, fuel and water valves, the combination with a governor of means for enabling said governor to vary the relative proportions of air, fuel and water contained in the combustible mixture, and an ignition mechanism operatively connected with said governor for varying the time of ignition in coördination with said variation in relative proportions, substantially as, and for the purpose specified.

7. In an internal-combustion engine in which the governor controls simultaneously and independently the supply of air, fuel and water, composing the successive charges admitted to the engine, and the time of firing each charge, the combination of an air throttling-valve, a fuel throttling-valve, and a water throttling-valve, with a governor adapted to vary the quantity of the combustible charge, and the relative proportions of air, fuel and water, in coördination with the variation in quantity of said charge.

8. In an internal-combustion engine in which the governor controls simultaneously and independently, the supply of air, fuel and water composing the successive charges admitted to the engine, and the time of firing each charge, the combination of an air throttling-

valve, a fuel throttling-valve and a water throttling-valve, all operating simultaneously and independently, the supply of air and fuel contained in each charge; a fuel throttling-valve connected by, and opening into said

spaces in said pieces, buffers provided with tongues and beveled por-

to the platform, said auxiliary motors being located at points inter-

valve, a fuel throttling-valve and a water throttling-valve, all opening into a common admission-passage, or valve-chamber, and an electrical ignition-timing mechanism, with a governor, adapted to control in unison, the proportions and quantity of air, fuel and water, and the time of ignition.

9. The combination with an internal-combustion engine of a governor adapted to control in unison the relative movements of an air-valve, a fuel-valve, a water-supply device, and an electric ignition-timing device; said governor operatively controlling in common the movements of said mechanisms so as to determine (1) the relative proportions of air, fuel and water contained in each combustible charge; (2) the volume of each charge; and thereby the degree of compression of each charge; (3) the internal temperature of the combustion-chamber; (4) and the time of ignition of said combustible charge.

10. In an internal-combustion engine, the combination of a governor adapted to control an air-valve, a fuel-valve, a water-supply mechanism, and an ignition-timing mechanism, so as to alter the time of firing, and the relative proportions between the air, fuel and water, and the total quantity of said air, fuel and water entering the combustion-chamber of the engine, and thereby the compression, and temperature of each successive combustible charge in said combustion-chamber, in response to the variations in speed, or power, with means for changing the limits of rotative speed within which said governor performs said common control.

11. In an internal-combustion engine in which the governor controls simultaneously and independently, the supply of air, fuel and water composing the successive charges admitted to the engine, the combination of a liquid-fuel reservoir and a water-reservoir, each of said reservoirs connecting with a throttling-valve which has an outlet located within the air-inlet passage, and in the path of the inward air-current, an air throttling-valve, opening into said air-inlet passage, with a governor for controlling all of said valves, and a working piston adapted by its movement during the suction-stroke to inhale the air, fuel and water forming the combustible mixture simultaneously.

12. In an internal-combustion engine having a cylinder and piston therein, the combination of a liquid-fuel reservoir, a liquid-fuel throttling-valve, an air throttling-valve, a governor, and valve-operating devices connected with said governor for imparting movements to each of said throttling-valves whereby said governor varies the volume of mixture and also increases the proportion of fuel as the volume of mixture is decreased; with means for enabling said piston to inhale liquid fuel from said reservoir during the suction-stroke, the air and fuel being inhaled at the same time, temperature and pressure, and at a common place of admission, substantially as described.

13. In an internal-combustion engine adapted to inhale water for internal cooling, the combination of a piston adapted by its suction movement to inhale each ingredient of a combustible mixture at the same time, the same temperature, under the same pressure, and through the same admission-valve and also to atomize and commingle the liquid ingredients with the air-supply; a governor adapted to vary the volume of the fuel mixtures, as well as the relative proportions of the constituent ingredients in said mixtures; a combustion-chamber in which the air charge absorbs and incorporates the vapors evolved from the atomized liquids commingled with, and held in suspension by said air charge; substatially as, and for the purpose specified.

14. The combination with the admission-passage of an internal-combustion engine, of a combustion-chamber in which the vapors of the liquid ingredients of the fuel charge are evolved by heat while intermingled with the air charge, and of air, fuel and water are evolved by heat while intermingled with throttling-valves communicating with said admission-passage; and a governor having a yielding connection with two of said throttling-valves and a rigid connection with the third.

15. In an internal-combustion engine the combination, with an air-admission passage of a liquid throttling-valve consisting of a tubular body supported by, and passing across said air-admission passage and held therein by a nut or screws, having a centrally-located outlet-opening in the form of a nozzle in the path of the air through said air-admission passage; a screwed valve-stem within said body, a hollow removable seat within said body, meeting said stem at or near said outlet, and a gland or packing nut for preventing leakage about said stem.

16. In an internal-combustion engine, the combination of an admission-passage; a perforated pipe connecting said passage with the atmosphere; an admission-valve, connecting said passage with the combustion-chamber; an air throttling-valve restricting said passage; a fuel throttling-valve supported by, and opening into said passage; between said air throttling-valve and said admission-valve, having an outlet at substantially right angles to said passage, in close proximity to the restricted opening of said air throttling-valve; an inertia-governor; a yielding connection with said fuel throttling-valve; and mechanism for actuating said fuel throttling-valve by said governor through said yielding connection, so as to vary both the actual and the relative openings of said throttling-valve.

17. In an internal-combustion engine adapted to have its operation started by means of a limited, or predetermined supply of volatile liquid fuel, the surface level of which is steadily lowered, and the quantity contained in each successive charge continuously lessened, the combination of a governor-actuated air throttling-valve, a reservoir for holding the predetermined supply of volatile liquid fuel, an opening in said reservoir for filling the same, a pipe or passage-way connecting the lower part of said reservoir with the inlet-passage of said air throttling-valve, having an outlet lower than said opening for filling, but arranged so that said reservoir cannot be emptied by gravity; said outlet discharging substantially at a right angle to the path, or direction of the air-current, entering said air throttling-valve.

812,372. **LOCK-BUCKLE.** JOHN SHAW, Kirwin, Wyo. Filed Mar. 6, 1905. Serial No. 248,730.

Claim.—1. A lock-buckle comprising a frame, a tongue connected with the frame, one end of the frame having a raised transverse part and the other end of the frame being provided with a lock, and a locking-bar hinged to the rear transverse part of the frame, while its opposite extremity is provided with a part adapted to enter the lock-casing, the locking-bar occupying a position in line with the tongue of the buckle for the purpose set forth.

2. As an improved article of manufacture, a buckle comprising a frame, a tongue hinged to the pin of the frame, a raised transverse part extending upwardly from the pin, a bar hinged to the raised transverse part, a lock connected with the forward part of the buckle-frame, the said bar being provided with a part adapted to enter the casing of the lock for locking purposes.

3. In a buckle, the combination of a frame, tongue and tongue-pins, of a rear transverse part connected with the buckle-frame and located above the pin thereof, a lock connected with the forward part of the buckle-frame, and a bar hinged to the rear transverse part and having a part entering the casing of the lock for the purpose set forth.

4. The combination with a buckle-frame and its tongue, of a lock rigidly connected with one extremity of the buckle-frame, and a bar hinged to the opposite extremity of the buckle-frame and having a part adapted to enter the lock, the bar being located in line with the tongue of the buckle for the purpose set forth.

812,373. **PNEUMATIC-TIRE PROTECTOR.** LESTER L. SIDWELL, Rivera, Cal. Filed Sept. 23, 1904. Serial No. 226,661.

Claim.—1. A tire-protector comprising a series of curved protecting-pieces, buffers secured between said pieces and means for securing the said curved protecting-pieces upon the tire, said means adapted to slide upon the said curved pieces.

2. A tire-protector comprising a series of curved protecting-pieces provided with dovetailed recesses therein, buffers having dovetailed tongues adapted to be secured in said recesses and means for retaining said protecting-pieces upon the tire.

3. A tire-protector comprising curved protecting-pieces having cut-away portions in the adjoining edges thereof and dovetailed recesses in said pieces, buffers provided with tongues and beveled portions adapted to be secured between the adjacent edges of said protecting-pieces and means for retaining said protecting-pieces upon the tires.

4. A tire-protector comprising a series of curved protecting-pieces having hooks upon the ends thereof, buffers secured between said pieces, wires adapted to be seated upon the hooks and adapted to automatically slide thereon when the tire is contracted and expanded.

5. A tire-protector comprising curved protecting-pieces having hooks upon the extremities thereof and provided with grooves upon the inner faces of said pieces, buffers adapted to be secured between the adjoining edges of said protecting-pieces and means for retaining said pieces upon the tire.

6. A tire-protector comprising a series of curved protecting-pieces having hooks upon the ends thereof and provided with grooves upon the inner faces of said pieces, buffers secured between the adjacent edges of said pieces and means for securing the said pieces upon the tire.

812,374. **MOVABLE ROADWAY.** ISAAC D. SMEAD, Cincinnati, Ohio, assignor to Burton A. Smead, Cincinnati, Ohio. Filed May 24, 1904. Serial No. 209,554.

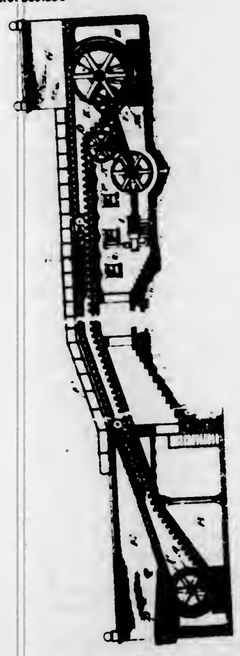

Claim.—1. In an apparatus of the character described, the combination of an endless platform; means for supporting the upper stretch of the platform throughout its length; means for supporting the lower stretch thereof; a main motor for driving the platform; and a series of auxiliary chain-motors arranged at various points in the length of the platform, said chain-motors engaging both the upper and lower stretches of the platform.

2. In an apparatus of the character described, the combination of an endless platform; a main motor for driving the same; and an auxiliary motor comprising an endless chain provided with engaging teeth or projections, said auxiliary motor being located at a point intermediate the loops or ends of the platform and engaging the upper and lower stretches thereof.

3. In an apparatus of the character described, the combination of an endless platform; means for supporting the upper stretch of the platform throughout its length; means for supporting the lower stretch thereof; a main motor for driving the platform, said motor being located adjacent to the loop or end of the platform; and a series of auxiliary chain-motors also employed for imparting motion to the platform, said auxiliary motors being located at points intermediate the loops or ends of the platform and engaging the upper and lower stretches thereof, substantially as described.

4. In an apparatus of the character described, the combination of an endless platform; a main driving-motor; a series of auxiliary driving-motors; and means for starting and stopping the various motors in unison.

5. In an apparatus of the character described, the combination of an endless platform; means carried by one face of the platform for supporting the upper stretch thereof throughout its course of travel; track mounted upon the opposite face of the platform; and a support acting in conjunction with said track to sustain the lower stretch of the platform throughout its length.

6. In an apparatus of the character described, the combination of a suitable support; an endless platform comprising a series of jointed sections; means secured to the under face of said sections for properly supporting and guiding the platform throughout the length of its upper stretch; means upon the outer face of the platform for properly supporting and guiding the lower stretch thereof during its course of travel; and a motor for driving the platform.

7. In an apparatus of the character described, the combination of a suitable support or framework; an endless platform comprising a series of sections pivotally connected together; means for driving said platform; a series of rollers S, S′ upon the inner face of the platform; tracks T, T′ mounted upon the framework in line with said rollers; tracks U, U′ likewise secured upon the inner face of the platform; a series of rollers V, V′ in line with said tracks U, U′; tracks Q, Q′ mounted upon the outer face of the platform; and rollers P, P′ in line with said last-named tracks.

8. In an apparatus of the character described, the combination of an endless platform comprising a series of sections; a series of driving members secured to said platform-sections and pivotally connected to each other; a main motor for driving said platform; and a series of auxiliary motors disposed throughout the length of the platform, said motors imparting motion to said platform through the driving members thereof.

9. In an apparatus of the character described, the combination of an endless platform comprising a series of sections; driving members secured to said platform and pivotally connected to each other; a main motor; and an auxiliary motor, said auxiliary motor comprising a sprocket-chain, one stretch of which engages with the driving members secured to the platform, and means for driving said sprocket-chain.

10. In an apparatus of the character described, the combination of an endless platform comprising a series of sections; driving members secured to said platform and pivotally connected to each other; a main motor; and an auxiliary motor, said auxiliary motor comprising a sprocket-chain, means for holding the upper stretch of said chain in engagement with the driving members, and means for imparting motion to said sprocket-chain.

11. In an apparatus of the character described, the combination of an endless platform comprising a series of sections; driving members secured to said platform and pivotally connected to each other; a main motor; and an auxiliary motor, said auxiliary motor comprising an endless sprocket-chain, means for holding the upper stretch thereof in engagement with the driving members of the platform, means for guiding the lower stretch of the sprocket-chain, and means for imparting motion to said chain.

12. In an apparatus of the character described, the combination of an endless platform comprising a series of sections; driving members secured to said platform and pivotally connected to each other; a main motor; and an auxiliary motor, said auxiliary motor comprising an endless sprocket-chain, means for holding the upper stretch thereof in engagement with the driving members of the platform, means for guiding the lower stretch of said sprocket-chain and causing the same to engage the lower stretch of the endless platform, and means for imparting motion to said chain.

812,375. **ROCK-DRILL.** CLARK J. SMITH, Ottumwa, Iowa, assignor to The Hardsog Wonder Drill Company, Ottumwa, Iowa. Filed Aug. 7, 1905. Serial No. 273,126.

Claim.—1. In an apparatus of the class described, a supporting-casing, a drilling mechanism supported therein and feedable therethrough, means coöperatively connecting the supporting-casing and the drilling mechanism to permit the drilling mechanism being fed forward at each forward impulse of the drill-hammer, and means whereby said drilling mechanism can be bodily withdrawn from said supporting-casing, substantially as shown and described.

2. In an apparatus of the class described, a drilling mechanism

including a reciprocating hammer and a longitudinal drill-casing, a

7. An apparatus of the class described, comprising a drilling mechanism consisting of a longitudinal tubular casing, having an

tion of the drill upon its longitudinal axis substantially as shown and described.

2. The combination of a door for an air-tight apartment; a door-frame comprising jambs *a*, and *b*, a lintel *c*, blocks *k*, *l*, *r*, and *q*, a

including a reciprocating hammer and a longitudinal drill-casing, a supporting-casing for receiving said drill-casing, said drill-casing having an exterior thread, means whereby said drill-casing can be rotated on its longitudinal axis to feed the same forward, means carried by said supporting-casing for coöperatively engaging the threaded portion of the drill-casing to enable it to have a threaded connection with the drill-casing, and means whereby said last-named means can be released from operative connection with the drill-casing to permit the drill-casing being drawn out of the supporting-casing, substantially as shown and described.

3. An apparatus of the class described, comprising a drill including a casing and a reciprocating hammer operable therein, said drill-casing having an externally-threaded portion, a supporting-casing having an internal bore for receiving said drill-casing, a drill-casing-engaging member on said supporting-casing for engaging said threaded portion of the drill-casing to lock the same to the supporting-casing, means carried by the drill-casing whereby the drill-casing can be turned on its longitudinal axis to feed the same, said drill-casing and said drill-casing-engaging member being so arranged as to permit the drill to be automatically fed forward on its longitudinal axis at each forward impulse of the hammer, all being arranged substantially as shown and described.

4. An apparatus of the class described, comprising a drill including a drill-casing and a reciprocating hammer operable therein, said drill-casing having an externally-threaded portion, a supporting-casing having an external bore for receiving said drill-casing, a drill-casing-engaging member on said supporting-casing for engaging said threaded portion of the drill-casing to lock the same to the supporting-casing, means carried by the drill-casing whereby the casing can be turned on its longitudinal axis to feed the same, said drill-casing and said drill-casing-engaging member being so arranged as to permit the drill-casing to be automatically fed forward on its longitudinal axis at each forward impulse of the hammer, and means for moving said member carried by the supporting-casing to move the drill-casing along its longitudinal axis through the supporting-casing substantially as shown and described.

5. An apparatus of the class described, comprising a drilling mechanism consisting of a drill-casing and a hammer mechanism reciprocally mounted therein, means for operating said hammer mechanism, a supporting-casing consisting of a longitudinal tubular member for receiving said drill-casing, said drill-casing capable of having longitudinal movement through said supporting-casing, a screw connection between said supporting-casing and said drill-casing, means for turning said drill-casing on its longitudinal axis to feed the same, and means for moving said drill-casing longitudinally through said supporting-casing, all being arranged substantially as shown and described.

6. An apparatus of the class described, comprising a drilling mechanism consisting of a drill-casing and a hammer mechanism reciprocally mounted therein, means for operating said hammer mechanism, a supporting-casing consisting of a longitudinal tubular member for receiving said drill-casing, said drill-casing capable of having longitudinal movement through said supporting-casing, a screw connection between said supporting-casing and said drill-casing, means for turning said drill-casing on its longitudinal axis to feed the same, means for moving said drill-casing longitudinally through said supporting-casing, said drill-casing and said supporting-casing and their screw connections being arranged to permit automatic feed of the drill-casing forward through the supporting-casing at each forward impulse of the hammer without rotating the casing, substantially as shown and described.

7. An apparatus of the class described, comprising a drilling mechanism consisting of a longitudinal tubular casing, having an external thread, a hammer-barrel fitted within said casing, a drill-chuck within said hammer-barrel at its forward end, a closure-plug within said hammer-barrel at its rearward end, inlet-apertures communicating with the interior of the hammer-barrel, and the interior of the drill-casing, exhaust-ports for the hammer-barrel, a reciprocating hammer within the hammer-barrel, means for admitting compressed air into the drill-casing, a handle member secured to the drilling-casing whereby the same can be turned on its longitudinal axis a tubular supporting-casing having a bore for receiving the drill-casing, a worm-gear mounted in said supporting-casing, and adapted to mesh with the thread on the drill-casing, a hand-wheel for turning said worm-gear, said worm-gear and said drill-casing being arranged to allow the drill-casing to automatically feed forward at the forward movement of the hammer, while simultaneously permitting the drill-casing to be turned on its longitudinal axis by means of the handle, all being arranged substantially as shown and described.

8. An apparatus of the class described, comprising drilling mechanism consisting of an elongated tubular casing having an external thread, a tubular hammer-barrel fitted within said casing, a drill-chuck within said hammer-barrel at its forward end, a closure-plug within said hammer-barrel at its rearward end, inlet-apertures connecting with the interior of the hammer-barrel and the interior of the drill-casing, exhaust-ports for the hammer-barrel, a reciprocating hammer within the hammer-barrel, means for admitting compressed air into the drill-casing, a handle member secured to the drill-casing whereby the same can be turned on its longitudinal axis, a tubular supporting-casing having a bore for receiving the drill-casing, a worm-gear mounted in said supporting-casing and adapted to mesh with the threads on the drill-casing, a hand-wheel for turning the worm-gear, said worm-gear and said drill-casing being arranged to allow the drill-casing to be automatically fed forward by the forward movements of the hammer, while simultaneously permitting the drill-casing to be turned on its longitudinal axis by means of the handle, and means for mounting said supporting-casing to permit adjustment of the drilling mechanism with the longitudinal axis of the drill-casing at any angle substantially as shown and described.

9. In a rock-drill, a supporting-casing, a drill-casing, screw connections between the supporting and drill casings, and means whereby the drill-casing can be ejected from the supporting-casing without turning the same on its longitudinal axis.

10. In an apparatus of the class described, the combination with the drill-casing, a supporting-casing for receiving the drill-casing, of means for screwing the drill-casing through the supporting-casing, and means carried by the supporting-casing and coöperating with the drill-casing for permitting the drill-casing to be automatically fed through the supporting-casing in one direction by the impulse of the drill-hammer, substantially as shown and described.

11. In an apparatus of the class described, the combination with the drill-casing, a supporting-casing for receiving the drill-casing, of means for screwing the drill-casing through the supporting-casing, and means carried by the supporting-casing and coöperating with the drill-casing for permitting the drill-casing to be automatically fed through the supporting-casing in one direction by the impulse of the drill-hammer and means coöperating with said last-named means for moving the drill-casing through the supporting-casing in the direction of its longitudinal axis without turning the drill-casing substantially as shown and described.

12. An apparatus of the class described, the combination with the drilling mechanism including a drill-casing and a reciprocating hammer, of a supporting-casing adapted to receive said drill-casing, screw connections between said drill-casing and said supporting-casing, means carried by the drill-casing whereby the same can be turned on its longitudinal axis to feed it through the supporting-casing, means carried by the supporting-casing for permitting the drill-casing to be moved in the direction of its longitudinal axis through the supporting-casing without rotating the drill-casing, substantially as shown and described.

13. An apparatus of the class described, the combination with the drilling mechanism including a drill-casing and a reciprocating hammer, of a supporting-casing adapted to receive said drill-casing, screw connections between said drill-casing, and said supporting-casing, means carried by the drill-casing whereby the same can be turned on its longitudinal axis to feed it through the supporting-casing, means carried by the supporting-casing for permitting the drill-casing to be moved in the direction of its longitudinal axis through the supporting-axis without rotating the drill-casing, and for permitting the drill-casing to be fed through the supporting-casing, by each forward impulse of the drill-hammer, independent of the rotation of the drill upon its longitudinal axis substantially as shown and described.

14. An apparatus of the class described, comprising in combination with a drilling mechanism including a drill-casing and a reciprocating hammer therein, of a supporting-casing, means for feeding the drill-casing through the supporting-casing, by rotating the same on its longitudinal axis and means for feeding the drill-casing through the supporting-casing without rotating the drill-casing on its longitudinal axis, substantially as shown and described.

15. In a rock-drill, a supporting-casing, a drill-casing, connections between the supporting and drill casings whereby the drill-casing can be fed through the supporting-casing, and means whereby the drill-casing can be ejected from the supporting-casing without turning the same on its longitudinal axis.

812,376. RIFLE-TELESCOPE. FREDERICK L. SMITH, Chicopee Falls, Mass. Filed Aug. 26, 1903. Serial No. 171,155.

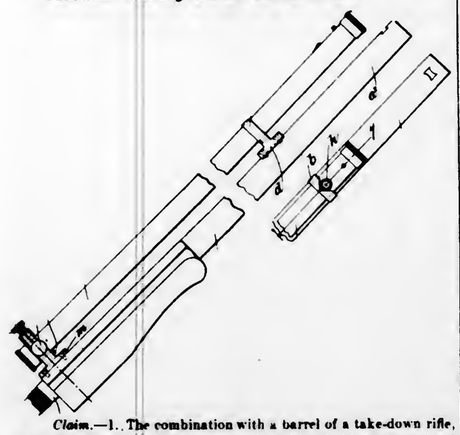

Claim.—1. The combination with a barrel of a take-down rifle, of a telescope mounted thereon provided with suitable horizontal and vertically-disposed cross-hairs, suitable mounts for the telescope located near each end of the barrel and in which the telescope is longitudinally slidable, a stop on the telescope to engage one of said mountings to prevent the rotation of the telescope when in an adjusted postion, and to locate said cross-hairs in their proper position.

2. The combination with a barrel of a take-down rifle, of a telescope mounted thereon provided with suitable horizontal and vertically-disposed cross-hairs, suitable mounts for the telescope located near each end of the barrel and in which the telescope is longitudinally slidable, a stop on the barrel to engage one of said mountings to prevent the rotation of the telescope when in an adjusted position and to locate said cross-hairs in their proper position, together with devices to effect the vertical and horizontal adjustment of the telescope.

812,377. DOOR-FRAME, DOOR, AND ADJUNCTIVE MECHANISM FOR AIR-TIGHT COMPARTMENTS. S. PRICE STEVENSON, Chester, Pa. Filed July 24, 1901. Serial No. 69,575.

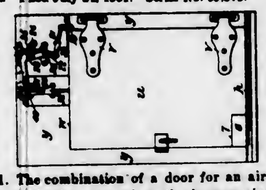

Claim.—1. The combination of a door for an air-tight apartment; a door-frame having a port above the door-opening proper and adapted to permit the passage of a rail with a free space between its track and the upper portion of said port; a shutter hinged to the door-frame above said port, said shutter having a vertical slot extending from its lower edge throughout a portion of its height, whereby said shutter may be swung downward to close the interspace between said port and the top and sides of said rail, substantially as set forth.

2. The combination of a door for an air-tight apartment; a door-frame comprising jambs *a*, and *b*, a lintel *c*, blocks *k*, *l*, *r*, and *q*, a casing *y*, provided with a port which is adapted to permit the passage of a rail above said door with a free space between said track and the upper portion of said port; a shutter hinged to the door-frame above said port and provided with a slot extending vertically from its lower edge throughout a portion of its height, whereby said shutter may be swung downward to close the interspace between said port and the top and sides of said rail, substantially as set forth.

3. The combination of a door for an air-tight apartment; a door-frame therefor provided with a port arranged above the door-opening, and adapted to permit the passage of a rail with a free space between its track and the upper portion of said port; a shutter hinged to the door-frame above said port and having a vertical slot extending from its lower edge throughout a portion of its height, the lower margin of said shutter extending downward below the bottom of said port and into the opening for the door, but substantially flush with the face of the door-frame, whereby said shutter can be swung downwardly to close the interspace between said port and the sides and top of the rail, and the door proper can be closed upon the lower margin of said shutter, substantially as set forth.

4. A door for an air-tight apartment; a door-frame having a port adapted to permit the passage of a suspended rail with a free space between the track thereof and the top of said port; a shutter hinged to the door-frame above said port and adapted to close the opening about the top and sides of said rail; and actuating mechanism, substantially as set forth, operatively connecting said shutter with said door, whereby the shutter is positively opened and closed by the movement of the door in opening and closing.

5. In a door and door-frame for air-tight apartments a port for a suspended rail-track, and a shutter fitted to close said port, in combination with a positive means of opening and closing said shutter from the motion of the door, and arranged to close shutter before closing the door and to open the door before opening the shutter as and for the purpose set forth.

6. In a mechanism for operating a shutter and door for closing the doorway of air-tight apartments, a cam connected to and receiving motion from the opening and closing of the door, and having a slot therein engaging a roller connected with said shutter, said slot having such configuration as to impart motion to the shutter during a portion of the motion of the door and hold the shutter in fixed position during another portion of such motion as set forth.

7. In a door-frame and door for air-tight apartments, a port for a suspended rail-track and a shutter fitted to open and close said port, in combination with a mechanism connecting said shutter with said door arranged to open said shutter as soon as the door has opened sufficiently to clear said shutter and to hold said shutter open during the further opening of the door substantially as set forth.

8. In a refrigerating apparatus, the combination of a housing having a door adapted to close an entrance, and an opening above the door, plates adapted to cover said opening, a lever, connections between said plates and the said lever, a means for actuating the lever and thereby opening or closing said plates simultaneously with the opening or closing of the door.

812,378. PAPER-BAG MACHINE. FREDERICK E. STRASBURG, Rumford Falls, Me., assignor to Continental Paper Bag Company, a Corporation of Maine. Filed Sept. 29, 1904. Serial No. 226,551.

Claim.—1. The combination of a revoluble carrier, a folding-bed fixed thereon, means mounted coaxial with the folding-bed and revolving therewith to open out the forward end of a tucked-paper tube and fold the same down into a diamond form, an oscillatable lever pivotally mounted in the revoluble carrier, a front finger 115 mounted in the free end of the oscillatable lever for entering the mouth of the bag-blank to hold the lower ply thereof to the folding-bed during the formation of the diamond fold, all combined and operating together substantially as described.

2. The combination of a revoluble folding-bed having side clips 100, 101 thereon, a pair of oppositely-disposed trunnions 134, 135 mounted for oscillation about their own axes respectively, and for revolution with the folding-bed, a pair of gripper-fingers carried by each trunnion, said fingers being mounted in their respective trunnions for vibration inwardly and outwardly with respect to the folding-bed and one of each pair of said fingers being mounted for vibration toward and away from the other finger of its respective pair, all combined and operating together substantially as described.

3. The combination of a revoluble folding-bed 102, a transfer-roll 93 and a revoluble folding-bed 187 each having side clips there-

on: means coacting with the first folding-bed to open out and fold down into a diamond form the forward end of a tucked-paper tube, and means coacting with the second folding-bed to fold the rear and

gases and vapors from said distilling and combustion chambers, said intermediate chambers communicating with the flame-trunk, and means supplying heated air to said flame-trunk.

812,381. COMBINED HEATING AND COOKING STOVE. JAMES W. TATUM, Durham, N. C., assignor of one-half to DeWitt C.

adapted to be secured one in advance of the other to the forward end of a plow-beam, a lifter, pivoted to the front clamp, formed with a rearwardly-extending arm, passing through and normally supported

on: means coacting with the first folding-bed to open out and fold down into a diamond form the forward end of a tucked-paper tube, and means coacting with the second folding-bed to fold the rear and front flaps of the diamond fold to form a bag-bottom, all combined and operating together substantially as described.

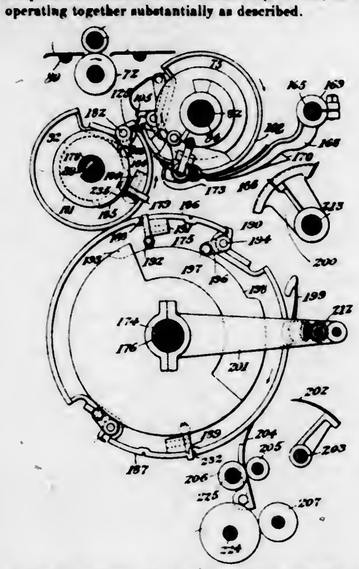

4. The combination of a revoluble folding-bed 102, a transfer-roll 92 and a revoluble folding-bed 187 each having a pair of side clips and a front clip thereon; means coacting with the first folding-bed for forming a diamond fold on the forward end of a tucked-paper tube, and means coacting with the second folding-bed for folding the flaps of the diamond fold to form a bag-bottom, all combined and operating together substantially as described.

5. The combination of a revoluble folding-bed 102, a transfer-roll 92 and a revoluble folding-bed 187 each having means for holding a bag-blank thereon; means coacting with the first folding-bed to open out and fold down into a diamond form the forward end of a bag-blank and means coacting with the second folding-bed to fold the rear and front flaps of the diamond fold, all combined and operating together substantially as described.

812,379. DEVICE FOR RECOVERING ARTICLES FROM DEEP WELLS. EDWARD A. STUBLER, Oil City, Pa. Filed Oct. 10, 1905. Serial No. 282,133.

Claim.—As a new article of manufacture, a tool of the class described, the exterior of which fits the bore of the well and terminates at the bottom in an edge, and which is formed with a two-part bore, the upper part of said bore being cylindrical and the lower part thereof flaring outwardly from said cylindrical part to the lower edge of the tool; said flaring part being formed with thread-cutting members and said cylindrical part being formed with a continuous thread which extends upwardly from said thread-cutting members; whereby said tool is adapted to cut a screw-thread upon articles of different diameters and to engage the screw-thread on said cylindrical part therewith.

812,380. FURNACE. TOSABURO SUZUKI, Sumamura, Japan. Filed Mar. 3, 1905. Serial No. 248,310.

Claim.—1. A furnace comprising a main combustion-chamber, a secondary combustion-chamber, a flame-trunk connecting said chambers, a distilling-chamber formed in said main combustion-chamber, intermediate mixing-chambers adapted to receive distilled gases and vapors from said distilling and combustion chambers, said intermediate chambers communicating with the flame-trunk, and means supplying heated air to said flame-trunk.

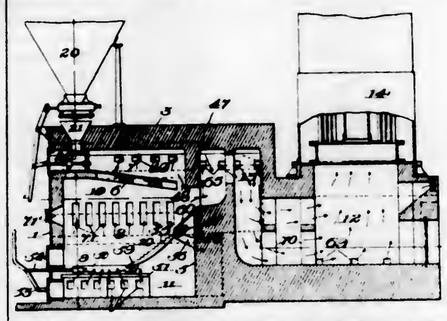

2. A furnace comprising a combustion-chamber having a main outlet-passage for the products of combustion, means supplying heated air to said outlet, a distilling-chamber formed in said combustion-chamber, and means whereby the distilled gases are conveyed to the outlet-passage.

3. A furnace comprising a combustion-chamber having a main outlet-passage, air chambers or jackets surrounding said combustion-chamber, means controlling the admission of air to said chambers, said air-chambers having openings terminating in said main outlet-passage, mixing-chambers located between said combustion and air chambers, a distilling-chamber formed in said combustion-chamber, means whereby the distilled gases and vapors are conveyed to said mixing-chambers, and means whereby said gases and vapors are conveyed to said main outlet-passage.

4. A furnace comprising a main combustion-chamber, a secondary combustion-chamber, a flame-trunk connecting said chambers, a distilling-chamber formed in said main combustion-chamber, intermediate mixing-chambers adapted to receive distilled gases and vapors from said distilling and combustion chambers, said intermediate chambers communicating with the flame-trunk, means supplying heated air to said flame-trunk, and means whereby heated air may be introduced in said secondary chamber.

5. A furnace comprising a combustion-chamber, having a main outlet-passage for the products of combustion, means supplying heated air to said outlet, a distilling-chamber formed in said combustion-chamber, means whereby the distilled gases are conveyed to the outlet-passage, and a secondary combustion-chamber connected with said main outlet-passage.

6. A furnace comprising a combustion-chamber, having a main outlet-passage for the products of combustion, means supplying heated air to said outlet, a distilling-chamber formed in said combustion-chamber, means whereby the distilled gases are conveyed to the outlet-passage, a secondary combustion-chamber connected with said main outlet-passage, and means whereby heated air may be supplied to said last-mentioned chamber.

7. A furnace comprising a combustion-chamber having a main outlet-passage, air chambers or jackets surrounding said combustion-chamber, means controlling the admission of air to said air-chambers, said air-chambers having openings terminating in said main outlet-passage, mixing-chambers located between said combustion and air chambers, a distilling-chamber formed in said combustion-chamber, means whereby the distilled gases and vapors are conveyed to said mixing-chambers, means whereby said gases and vapors are conveyed to said main outlet-passage, and a secondary chamber connected with said main outlet and adapted to receive the products of combustion, gases and air.

8. A furnace comprising a combustion-chamber having a main outlet-passage, air chambers or jackets surrounding said combustion-chamber, means controlling the admission of air to said chambers, said air-chambers having openings terminating in said main outlet-passage, mixing-chambers located between said combustion and air chambers, a distilling-chamber formed in said combustion-chamber, means whereby the distilled gases and vapors are conveyed to said mixing-chambers, means whereby said gases and vapors are conveyed to said main outlet-passage, a secondary combustion-chamber connected with said main outlet and adapted to receive the products of combustion, gases and air, and means supplying heated air to said secondary chamber.

812,381. COMBINED HEATING AND COOKING STOVE. JAMES W. TATUM, Durham, N. C., assignor of one-half to Dewitt C. Mangum, Durham, N. C. Filed Apr. 14, 1905. Serial No. 255,645.

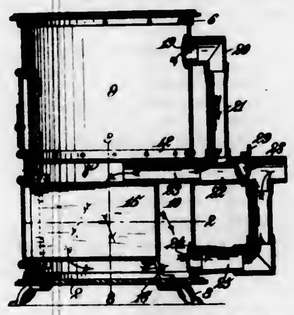

Claim.—1. In a combined heating and cooking stove, a shell having a horizontal partition extending entirely across the same and dividing the shell into two compartments, one located directly above the other, an oven located in the lower compartment, flues located entirely outside the shell and communicating with said compartments, and a damper located in one of said flues and arranged to cause the products of combustion from the upper compartment to pass directly into the lower compartment or to the chimney.

2. In a combined heating and cooking stove, a shell having a horizontal partition therein extending entirely across the same and dividing the shell into two compartments one located directly above the other, an oven located in the lower compartment, said oven being smaller than said compartment whereby a space is provided entirely around the closed walls thereof, flues located entirely outside the shell and having communication with the said compartments, and a damper in one of said flues arranged to cause the products of combustion to pass from the upper compartment directly into the lower compartment or to the chimney.

3. In a combined heating and cooking stove, a shell a horizontal partition extending entirely across the same and dividing the shell into two compartments, one located directly above the other, two pipes having communication with the lower compartment, a pipe having communication with one of the said two pipes and with the upper compartment, and a damper arranged to cause the products of combustion to pass from the upper compartment directly into the lower compartment or to the chimney.

4. In a combined heating and cooking stove, a shell, a horizontal partition extending entirely across the same and dividing the shell into two compartments, one located directly above the other, an oven located in the lower compartment and elevated above the bottom thereof, two pipes having communication with the lower compartment, a pipe communicating at one end with one of the said two pipes and at its other end with the upper compartment, and a damper arranged to cause the products of combustion to pass from the upper compartment directly into the lower compartment or to the chimney.

5. In a combined heating and cooking stove, a shell, a horizontal partition extending entirely across the shell and dividing the same into two compartments, one located directly above the other, an oven in the lower compartment, a pipe extending into said compartment and having its inner end disposed above the oven, a second pipe leading from the bottom of the lower compartment and communicating with the first-named pipe, a flue leading from the upper compartment and communicating with the said pipe that extends into the lower compartment, and a damper arranged to cause the products of combustion to pass from the upper compartment directly into the lower compartment or to the chimney.

812,382. ATTACHMENT FOR PLOWS. ANTHONY THIELEN, Bryant, Iowa. Filed Oct. 26, 1905. Serial No. 284,512.

Claim.—1. An attachment for plows comprising front and rear clamps, adapted to be secured one in advance of the other to the forward end of a plow-beam, and a lifter, pivoted to the front clamp, formed with a rearwardly-extending arm, passing through and normally supported by the rear clamp, and a hook extending downwardly from the rear side of the rear clamp to a point under the latter.

2. An attachment for plows comprising front and rear clamps, adapted to be secured one in advance of the other to the forward end of a plow-beam, a lifter, pivoted to the front clamp, formed with a rearwardly-extending arm, passing through and normally supported by the rear clamp, and a hook extending downwardly from the rear side of the rear clamp to a point under the latter and a spring for holding the lifter in operative position.

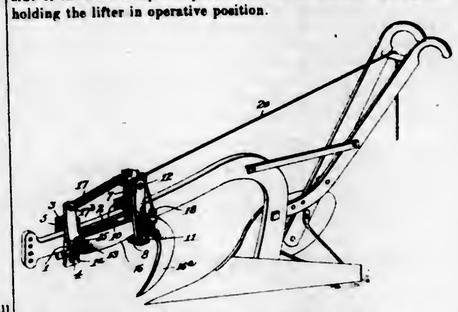

3. An attachment for plows comprising front and rear clamps, a lifter, pivoted to the front clamp, formed with an upwardly-projecting arm, a rearwardly-extending arm, normally supported by the rear clamp, and a hook extending downwardly from the rear side of the rear clamp to a point under the latter, and a spring for holding the lifter in operative position, connected at one end to the rear clamp and at the other end to the upwardly-projecting arm.

4. An attachment for plows comprising front and rear clamps, a spacing-plate within the clamps, a lifter, pivoted to the front clamp, formed with an upwardly-projecting arm, a rearwardly-extending arm, normally supported by the rear clamp and a hook extending downwardly from the rear side of the rear clamp to a point under the latter, and a spring, for holding the lifter in operative position, connected at one end to the rear clamp and at the other end to the upwardly-projecting arm.

5. An attachment for plows comprising a front clamp, a rear clamp having a hole at its upper end, a lifter, pivoted to the front clamp, formed with an upwardly-projecting arm, having a hole at its upper end, a rearwardly-extending arm, normally supported by the rear clamp, and a hook extending downwardly from the rear side of the rear clamp to a point under the latter, and a tension-spring for holding the lifter in operative position, having hooked ends engaging the holes of the rear clamp and the upwardly-projecting arm respectively.

6. An attachment for plows comprising a front clamp consisting of a pair of plates and lower and upper bolts whereby the front clamp is secured to the forward end of a plow-beam, a pivot-stud secured to the front clamp, a rear clamp, adapted to be secured to the plow-beam behind the front clamp, a lifter, mounted upon the pivot-stud, formed with a rearwardly-extending arm, passing through and normally supported by the rear clamp, and a hook extending downwardly from the rear side of the rear clamp to a point under the latter.

7. An attachment for plows comprising front and rear clamps, adapted to be secured one in advance of the other to the forward end of a plow-beam, a spacing-plate within the clamps, a pivot-stud extending through the spacing-plate and the front clamp, a lifter, mounted upon the pivot-stud, formed with a rearwardly-extending arm, passing through and normally supported by the rear clamp, and a hook extending downwardly from the rear side of the rear clamp to a point under the latter.

8. An attachment for plows comprising a front clamp, adapted to be secured to the forward end of a plow-beam, a rear clamp consisting of a pair of plates and a lower bolt, and an upper bolt whereby the rear clamp is secured behind the front clamp, to a plow-beam and a lifter pivoted to the outer clamp, formed with a rearwardly-extending arm, passing through and normally supported by the lower bolt of the rear clamp, and a hook extending downwardly from the rear side of the rear clamp to a point under the latter.

9. An attachment for plows comprising a front clamp, adapted to be secured to the forward end of a plow-beam, a rear clamp, adapted to be secured to the plow-beam behind the front clamp, and consisting of outer, intermediate and inner plates, lower and upper spacing-collars between the intermediate and inner plates, a lower bolt securing the outer, intermediate and inner plates and the lower spacing-collar together, an intermediate bolt securing the outer and intermediate plates together, an upper bolt securing the intermediate and inner plates and the upper spacing-collar together, a lifter,

pivoted to the front clamp, formed with a rearwardly-extending arm, passing through and normally supported by the lower spacing-collar and limited in its upward movement by the upper spacing-collar, and a hook extending downwardly from the rear side of the rear clamp to a point under the latter.

10. An attachment for plows comprising a front clamp, a rear clamp having an eye at its upper end, a lifter, pivoted to the front clamp, formed with a rearwardly-extending arm normally supported by the rear clamp, and a hook extending downwardly from the rear side of the rear clamp to a point under the latter, and having an eye at its heel, and a lifting flexible connection connected to the hook-eye and passing through the clamp-eye.

812,383. METHOD OF MAKING INNERSOLES AND THE LIKE. ANDREW THOMA, Cambridge, Mass., assignor to Clifton Manufacturing Company, Boston, Mass., a Corporation of New Jersey. Filed Mar. 13, 1905. Serial No. 249,683.

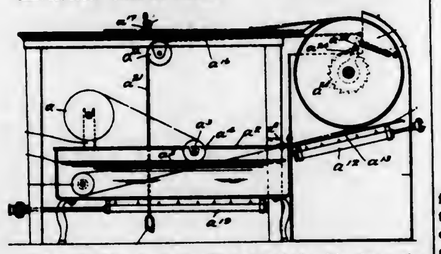

Claim.—1. The herein-described method of making innersoles, consisting of providing an innersole foundation of leather or other suitable material, and a fabric strip of cementitious coated reinforce material, softening and rendering pliable said strip in a liquid bath, rendering the coating sticky by heat and applying the same to said innersole foundation while still moist.

2. The herein-described method of making innersoles, consisting of providing an innersole foundation of leather or other innersole-foundation material, and a fabric strip of reinforce material, applying to one side of said strip a coating of cement capable of adhering to said foundation material, permitting said coating to dry, rendering pliable said strip by soaking it in a liquid bath until the liquid has permeated and softened the entire body of the fabric, and cementing the same to said innersole foundation while still in said pliable, softened condition.

3. The herein-described method of making innersoles, consisting of providing an innersole foundation of leather or other suitable material, and a fabric strip of reinforce material, applying to said strip a coating of cementing material which is unaffected by water, softening and rendering pliable said strip in a liquid bath, subjecting said coating to an intense dry heat, and cementing the same to said innersole foundation while still moist.

4. The herein-described method, consisting of applying to a strip of fabric a base of sticky compound, adhesive to the fabric, then applying to said base a normally non-sticky compound which is capable of becoming sticky under heat, permitting the same to dry and set, and then subjecting the coated side only of said fabric strip to an intense dry heat, and applying it under pressure to the article to be reinforced.

5. The herein-described method, consisting of applying to a strip of fabric a base of sticky compound, adhesive to the fabric, then applying to said base a normally non-sticky compound which is capable of becoming sticky under heat, permitting the same to dry and set, then passing said coated strip through a hot liquid bath, then subjecting the same to an intense dry heat, and applying the same while still moist to the article to be reinforced.

6. The herein-described method of forming a reinforcing-strip, consisting of applying to one side of a strip of fabric a base of sticky compound adhesive to the fabric, then applying to said base a normally non-sticky non-oxidizing compound unaffected by water, and capable of becoming sticky under dry heat, and then drying the same.

7. The herein-described method, consisting in providing a strip of reinforcing material with a cementitious coating whose cementitious character is not injured by water, then immersing said strip in hot water a sufficient time to soften and render the same pliable, then subjecting the coated side of the strip momentarily to a dry heat, and applying the same under pressure to the article to be reinforced.

8. The herein-described method, consisting of coating a strip of fabric with a base of sticky compound adhesive to the fabric, coating said base with a normally non-sticky compound, permitting the same to dry and set, rendering said coating sticky by the application of heat, and forcibly pressing together, when cold, said coated fabric and the article to be reinforced.

9. The herein-described method, consisting of providing a strip of fabric with a coating having a base adhesive to the fabric and a normally non-sticky outer surface capable of being rendered sticky by heat and of remaining sticky for a considerable time thereafter when cold, permitting said coating to dry and set, applying an intense heat to said coated fabric for developing the said stickiness of said coating, permitting the same to cool, and then forcibly pressing the cold, sticky fabric in place on the article being reinforced.

812,384. REINFORCING FABRIC FOR INNERSOLES. ANDREW THOMA, Cambridge, Mass., assignor to Commonwealth Trust Company, trustee, Buffalo, N. Y. Filed May 15, 1905. Serial No. 260,558.

Claim.—1. As an article of manufacture, a strip of reinforcing fabric, coated on one side with a base of sticky compound adhesive to the fabric, and an external coating on said base of non-sticky, non-oxidizing compound unaffected by water, and capable of becoming sticky under dry heat.

2. As an article of manufacture, a strip of reinforcing fabric, having a coating on one side, normally tacky next to the fabric and decreasingly tacky toward the exterior surface of the coating, which can be rolled without sticking the roll together, said coating being rendered exceedingly sticky by the application of dry heat.

3. As an article of manufacture, a strip of reinforcing fabric, coated on one side with a base of normally sticky compound and with an external coating thereon of normally non-sticky compound unaffected by water and capable of being rendered sticky by heat.

4. As an article of manufacture, a strip of reinforcing fabric, having a coating on one side whose external surface is normally non-sticky, said coating being capable of being rendered sticky by heat and being thereafter capable of adhesion when cold.

5. As an article of manufacture, a strip of reinforcing fabric, having an external coating normally non-sticky, but capable of being rendered sticky by heat, and containing a large percentage of gutta-percha, combined with ingredients maintaining said stickiness when cold.

6. As an article of manufacture, a strip of reinforcing fabric, having a base containing a large percentage of resinous residuum of petroleum, and an external coating containing a large percentage of resinous gutta-percha.

7. As an article of manufacture, a strip of reinforcing fabric, having a base containing a resinous residuum of petroleum and a sticky vegetable gum, and an external coating thereon containing a small percentage of said residuum of petroleum, and a large percentage of said vegetable gum and resinous gutta-percha, the latter predominating.

812,385. OPERATING MECHANISM FOR AUTOMATIC CAR-COUPLINGS. EDGAR E. TURNEY, Peru, Ind., assignor of one-third to Nelson H. Tunks and one-third to Katie C. Heinig, Peru, Ind. Filed Nov. 1, 1905. Serial No. 285,374.

Claim.—1. In a means for operating automatic car-couplers, the combination with the coupler-lock, of an operating-rod, a bushing secured against rotation upon said rod, an arm adjustable upon said bushing, and a clevis slidably connected with the outer end of said arm and connected at its lower end with the coupler-lock, substantially as described.

2. In a means for operating automatic car-couplers, the combination with the coupler-lock, of an operating-rod, a bushing secured against rotation upon said rod, an arm adjustable upon said bushing, and a clevis connecting the arm with the coupler-lock, said clevis being slidably carried at the outer end of said arm and having means for adjusting the same in the direction of its length, substantially as described.

3. In a means for operating automatic car-couplers, an operating-rod having a squared end, a bushing having a square perforation to fit upon said end and held against rotation thereon, said bushing having a flange provided with radial teeth, an arm mounted upon the bushing and also provided with radial teeth to engage the teeth upon the flange, said arm having an elongated slot at its outer end, a nut upon the rod to secure the arm when adjusted relative to the bushing, and a clevis connecting the slotted end of the coupler-arm with the coupler-lock, said clevis consisting of two parts having interengaging teeth to permit the same to be adjusted in the direction of their length, and means for securing said clevis parts in adjusted position, substantially as described.

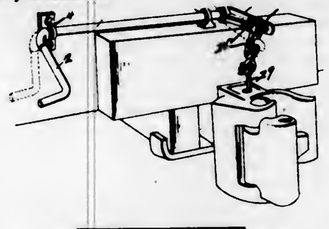

812,386. SUSPENSION-BRACKET. FREDERICK H. WALDEN, Worcester, Mass. Filed Apr. 30, 1904. Serial No. 205,732.

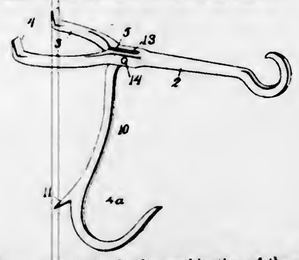

Claim.—In a painter's hook, the combination of the member having the hook at one end and a pair of upwardly-reaching engaging spurs at its other end, and the brace pivoted between said spurs at one end and having the downwardly-projecting spur near its other end and the large hook; said parts being arranged to permit said shank to be swung up parallel with said member with its large hook encircling the smaller hook of said member.

812,387. SWINGING HAMMOCK. MERRIAN N. WERTS, Thomasville, Ga. Filed Jan. 21, 1905. Serial No. 242,161.

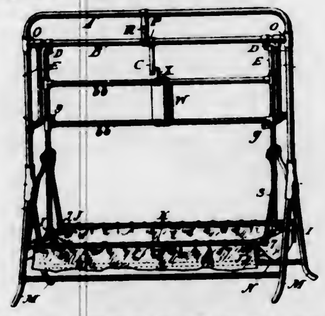

Claim.—1. In a device of the class described consisting of a main frame, folding legs at bottom thereof, a turnable horizontal cross-bar at the top of main frame, a hammock folding frame pivoted to said bar, adjusting-levers secured to the ends of said bar, and guides at the bottom of said levers, limiting the movement of hammock-frame substantially as shown and described.

2. In a device of the class described, comprising a main frame consisting of two end pieces with folding legs at bottom, a horizontal top bar, and two horizontal bars secured to the folding legs; a turnable horizontal bar near the top of the main frame, adjusting-levers secured to each end of said bar, a hammock-frame and guides secured to the bottom of said levers for limiting the movement of the hammock-frame, a striking-lever in line of adjusting-levers, in center of said turnable bar, and a clockwork-motor mounted on hammock-frame, substantially as described.

3. A main frame comprising two upright end members, folding legs at bottom thereof, a horizontal turnable bar mounted near the top of upright end members, adjusting-levers secured to the turnable bar at each end thereof, a striking-lever secured to said bar, a hammock-frame swinging from knife-edge hanger-brackets on said bar, and a clockwork-motor engaging the striking-lever, substantially as described.

4. In a device of the class described, a main frame with a turnable horizontal bar near the top, with a striking-lever in center secured thereto and a clamp clasping it near said striking-lever and also attached to the top bar of main frame, and loosened or tightened to both top bar and said turnable horizontal bar by means of a lock-bolt so that when it is tightened it will hold the turnable horizontal bar rigid thereby securing the striking-lever in a rigid position to receive the pallet-wire and so remain until changed by the adjusting-lever, enabling the clockwork-motor to swing the hammock on level and unlevel places alike, substantially as described.

5. In a device of the character described a main frame composed of top bar, end bars with folding legs at bottom, bottom bars horizontally attached to said legs, a cylindrical turnable bar with adjusting-levers, a striking-lever, and a clamp attached thereto, a T-bracket with a socket for the reception of the cylindrical turnable cross-bar, said T-bracket with socket being a permanent fixture of the main frame and a support for the turnable bar that supports the hammock, the said cylindrical bar with knife-edge brackets on same, and a hammock suspended thereto by two perpendicular bars hanging on the two knife-edge brackets by a sharp oblong eye in top of said perpendicular bars which supports the hammock at bottom of same, substantially as described.

6. In a device of the class described, a main frame with folding legs at bottom, with a turnable supporting-bar with ends protruding into the socket of T-bracket, with knife-edge brackets, a striking-lever and adjusting-levers attached thereto, two perpendicular rods supported on said knife-edged brackets and two horizontal bars attached to said perpendicular rods, with a clockwork-motor attached thereto, a hammock hinged to bottom of said perpendicular bars, in a way that said hammock will fold upwardly and fall to a level supported by four stay-rods with lower ends passing through turnable sockets at each corner, said sockets being turnable in such way that they will allow the stay-rods to slip through them and slip upwardly along said rods, thus allowing the hammock to be folded together closely to the main frame so that when the legs of main frame are folded together the whole structure will occupy but little room as hereinbefore substantially described.

812,388. ACETYLENE-GAS APPARATUS. PAUL H. WIDMAN, Denver, Colo. Filed May 13, 1905. Serial No. 260,337.

Claim.—1. In an acetylene-gas apparatus, in combination with a gasometer, a generating-chamber surmounted by a purifying-chamber and constructed to contain a gas-generating agent, a water-tight cooling-chamber within said generating-chamber, means to admit the gas generated from said agent into said purifying-chamber, and means to conduct the gas from the purifying-chamber through said cooling-chamber to the gasometer.

2. In an acetylene-gas apparatus, in combination with a gasometer, a generating-chamber, a horizontally-disposed foraminated partition dividing said generating-chamber into a generating-compartment constructed to contain a gas-generating substance and a purifying-chamber constructed to contain a purifying agent, and a water-tight cooling-chamber inside said generating-chamber spaced from its walls and communicating with the gasometer and with the purifying-chamber.

3. In an acetylene-gas apparatus, in combination an expandible gasometer, a generator, two separated chambers each containing a purifying agent, a cooling-chamber, a tank, means to convey gas from said generator successively through one of said purifier-chambers and said cooling-chamber into said tank, and means to conduct the gas arising above the surface of the water in the latter, through the second purifying-chamber into the gasometer and below the surface of the water contained therein.

4. In an acetylene-gas apparatus, a generator comprising a closed receptacle, a horizontally-disposed perforated partition divid-

ing the interior of said receptacle into a generating and a superposed purifying compartment, a water-tight vessel located inside and spaced from the former, a series of intercommunicating shells located on said vessel, each shell containing a plurality of superposed, apertured carbid-holders.

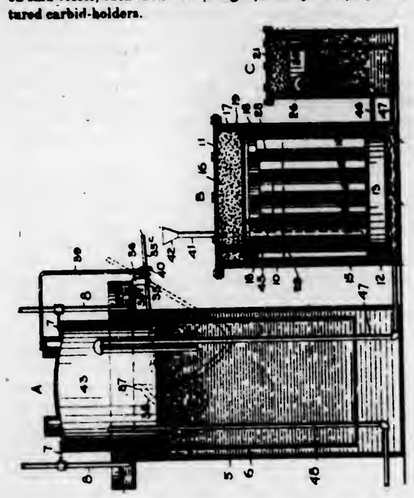

5. In an acetylene-gas apparatus, in combination a gasometer, a water-reservoir comprising a generating-chamber and a superposed purifying-chamber, a cooling-chamber within said generating-chamber, a tank, a second purifying-chamber surmounting same, means to convey gas from the generating-chamber successively through the first-named purifying-chamber and the cooling-chamber into the tank, and means to conduct the gas arising above the surface of the water in the latter through the second purifying-chamber into the gasometer and below the surface of the water contained therein.

6. In an acetylene-gas apparatus, in combination a gasometer, a water-reservoir comprising a generating-chamber and a superposed purifying-chamber, a cooling-chamber within said generating-chamber, a tank, means to convey gas from the generating-chamber successively through the purifying-chamber and the cooling-chamber into the tank, and means to conduct the gas arising above the surface of the water in the latter, into the gasometer and below the surface of the water contained therein.

812,389. LOG-DOG. CHARLES W. WILLETT, Portland, Oreg. Filed Aug. 14, 1905. Serial No. 274,156.

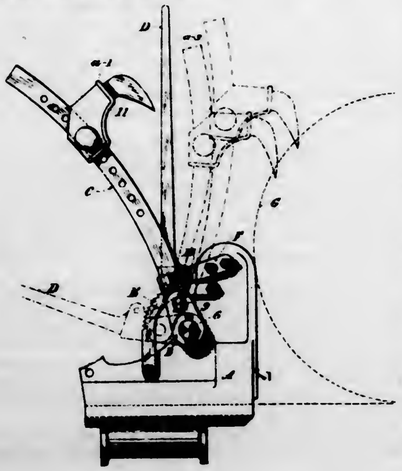

Claim.—1. In a sawmill-dog mechanism on a sliding knee of a movable carriage, a combination comprising a dog-bar pivotally mounted at its foot at a suitable height in the lower socket or pair of jaws of a knuckle B and carrying a dog provided with means to secure and adjust the same thereon; an operating-lever D pivotally mounted at its toe in the upper socket or pair of jaws of the knuckle B, adapted to engage the socket with its heel and be guided over a toothed quadrant-bar in sliding engagement, also provided with means at its lower end to automatically lock the lever on or release it from the teeth of the quadrant; a knuckle B, at its lower end, pivotally mounted on the knee A and provided with upper and lower sockets or pairs of jaws, with an opening in the upper socket adapting it to be received and guided on the quadrant-bar and having perforations in each socket and the lower end for pivots; a toothed quadrant-bar adapted to receive the knuckle through an opening in its upper socket; a dog-bar fulcrum and stop-hook F fixedly secured to the knee A, all substantially a described.

2. In a sawmill-dog mechanism on a sliding knee of a movable carriage, a combination comprising a dog-bar pivotally mounted at its foot at a suitable height in the lower socket or pair of jaws of a knuckle B and carrying a dog provided with means to secure and adjust the same thereon; an operating-lever D pivotally mounted at its toe in the upper socket or pair of jaws of the knuckle B, adapted to engage the socket with its heel and be guided over a toothed quadrant-bar in sliding engagement, also provided with means at its lower end to automatically lock the lever on or release it from the teeth of the quadrant; a knuckle B, at its lower end, pivotally mounted on the knee A and provided with upper and lower sockets or pairs of jaws, with an opening in the upper socket adapting it to be received and guided on the quadrant-bar and having perforations in each socket and the lower end for pivots; a toothed quadrant-bar adapted to receive the knuckle through an opening in its upper socket; all substantially as described.

3. A sawmill-dog mechanism having a dog-bar pivotally mounted at its foot at a suitable height in the lower socket of a knuckle B and carrying a dog provided with means to secure and adjust the same thereon, an operating-lever D pivotally mounted at its toe in the upper socket of the knuckle B adapted to engage the socket with its heel and having means in the lower end to automatically lock it on or release it from the toothed quadrant E, also the knuckle-mounting B provided with an upper lever-socket and lower dog-bar socket, each perforated as also the lower end for pivots thereof, the upper socket having an opening to receive the quadrant-bar and guide the knuckle thereon, also the toothed quadrant-bar E adapted to receive the knuckle as stated and a dog-bar fulcrum and stop-hook F fixedly secured to a knee A, all substantially as described.

4. In a sawmill-dogging mechanism, a knuckle-mounting for the lever and dog-bar, having a pivot-mounting at its lower end, a lower socket or pair of jaws for the dog-bar, an upper socket or pair of jaws for the operating-lever, each perforated for the pivots thereof and the upper socket provided with an opening for the knuckle to receive and be guided on a quadrant-bar, substantially as described.

812,390. WHIFFLETREE-HOOK. GEORGE W. WILSON, Rockcreek, Idaho, assignor of one-half to James E. McEvoy, Hagerman, Idaho. Filed May 23, 1905. Serial No. 261,769.

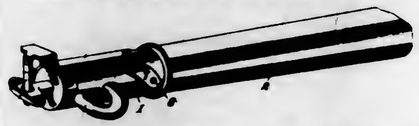

Claim.—1. In a device of the class described, the combination of a whiffletree, a trace-receiving hook arranged at the side thereof, a trace-receiving tongue located at the end of the whiffletree, and a movable trace-holder provided with means for engaging the tongue and for simultaneously closing the entrance to the hook.

2. In a device of the class described, the combination of a whiffletree, a trace-receiving hook arranged at the side thereof, a trace-receiving tongue located at the end of the whiffletree, and a pivoted trace-holder arranged to swing upward and downward to open and close it and provided with means for confining a trace in engagement with the tongue or the hook.

3. In a device of the class described, the combination of a whiffletree, a trace-receiving hook arranged at the side thereof, a trace-receiving tongue located at the end of the whiffletree, and a pivoted trace-holder arranged to swing upward and downward to open and close it and provided with means for confining a trace in engagement with the tongue or the hook, said trace-holder being also provided with clamping means for holding it in its closed position.

4. In a device of the class described, the combination of a whiffletree provided at the side with a hook and having a tongue at the end, and a pivoted trace-holder arranged to open and close and provided with means for confining the trace in engagement with the hook or tongue, said trace-holder being also provided with a pair of clamping-jaws located at opposite sides of the whiffletree for retaining the trace-holder in its closed position.

5. In a device of the class described, the combination of a whiffletree provided at the side with a hook and having a tongue at the end, and a pivoted trace-holder provided with means for engaging the tongue for retaining the trace thereon, said trace-holder being also provided with a pair of clamping-jaws located at opposite sides of the whiffletree, the jaw adjacent to the hook being extended at the bill of the same to close the entrance to the hook.

6. In a device of the class described, the combination of a whiffletree provided with a side hook and having an end tongue, and a pivoted trace-holder provided with opposite clamping-jaws and having an extended end portion arranged to engage the tongue.

7. In a device of the class described, the combination of a whiffletree provided with an end tongue, and a pivoted trace-holder provided at opposite sides of the whiffletree with clamping-jaws and having a hook at its end for engaging the tongue.

8. In a device of the class described, the combination of a whiffletree provided with a tongue, and a pivoted trace-holder having laterally-extending clamping-jaws and provided with a hook consisting of an inner arm or shank and a narrow depending bill arranged to extend through the tongue.

9. In a device of the class described, the combination of a whiffletree provided with a hook having its bill arranged in spaced relation with the whiffletree, a pivoted trace-holder provided at opposite sides of the whiffletree with clamping-jaws for retaining the trace-holder in its closed position, the clamping-jaw adjacent to the hook being provided with an extension located in the space between the bill of the hook and the whiffletree.

10. In a device of the class described, the combination of a whiffletree having a side hook and provided at the end with a tongue, and a trace-holder comprising a body portion provided at its inner end with ears pivoted to the whiffletree, clamping-jaws extending laterally from the outer end of the trace-holder, and a hook located between the clamping-jaws and extending from the outer end of the body portion of the trace-holder.

812,391. HOG-TRAP. ALBERT AUCHLY, Montgomery, Mo. Filed Jan. 3, 1905. Serial No. 239,433.

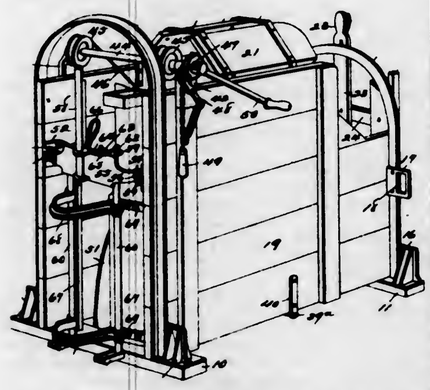

Claim.—1. In a machine of the class described, the combination of sides, two parallel platform-strips pivoted at their forward ends, means for elevating their rear ends, sheet-metal covers for said strips, a strip between the parallel strips, means for pivoting the parallel strips to the strip between them at a point some distance from the front end thereof, a cross-piece fixed to the central strip in the rear of its pivotal point, two strips secured to the ends of said cross-piece adjacent to the outer edges of the parallel strips, rigid shields

fixed to the inner forward ends of the outer strips and projected upwardly and a crank-shaft having its central portion pivoted to the rear ends of the said central strip and the two outside strips and having its ends pivotally supported.

2. In a device of the class described, the combination of sides, two channel-bars secured to the inner faces of the rear ends of the sides, an arch connected to the sides, a trap-door slidingly mounted in the said channel-bars, a gravity-hook at the top of the trap-door to engage the under surface of the top of the arch when the trap-door is at its lower limit of movement and a gravity-hook mounted near the bottom of the trap-door to engage the top of the arch and support the trap-door when at its upper limit of movement, for the purposes stated.

3. In a device of the class described, the combination of sides, an arch at the rear of the sides for supporting them, two channel-bars secured to the inner faces of the sides in the rear of the arches, a trap-door vertically movable in said channel-bars, a gravity-hook mounted near the top of the trap-door projected through an opening therein and formed with a handle at its upper end, said hook having a shoulder designed to engage the under surface of the arch when the trap-door is at its lower limit to prevent upward movement of the trap-door, a hook near the bottom of the trap-door pivoted thereto and projected to an opening therein, said hook formed with a shoulder and handle, the handle on the rear face of the trap-door, said hook designed when the trap-door is elevated to engage the top of the arch and hold the trap-door in its elevated position.

4. In a device of the class described, the combination of sides, brackets secured to the sides near the front thereof and formed with dovetailed grooves open at their forward ends and a front having a cross-piece having projections with enlarged heads designed to enter the dovetailed grooves and to pivotally support the front and to prevent the sides from spreading.

5. In a device of the class described, the combination of sides, brackets secured to the inner faces of the front ends of the sides and formed with dovetailed grooves open at their forward ends, a cross-piece formed with rounded projections at its ends and enlarged heads on the rounded projections, said projections and heads designed to enter the dovetailed grooves and to pivotally support the cross-piece and to prevent the sides from spreading, pins passed through the brackets in front of the rounded ends, and a front secured to the said cross-piece.

6. In a device of the class described, the combination of sides, a cross-piece pivotally supported at the forward ends of the sides, two metal tubes secured to the cross-piece, two metal arches having said tubes passed through them, the arches projecting in front of the tubes, said arches formed with extensions at their ends and two guide-boards bolted to the said extensions with their central portions spaced apart.

7. In a device of the class described, the combination of sides, a front having a central vertically-arranged opening, a platform, means for tilting the rear end of the platform upwardly and two arched metal strips secured to the sides near the top thereof and board secured to the under surface of said arched strips to prevent an animal on the tilted platform from backing up out of the top of the frame.

812,392. CUSHIONING APPARATUS FOR ELEVATOR-SHAFT GATES. WILLIAM BARDSLEY, Kearney, N. J. Filed Mar. 28, 1905. Serial No. 252,471.

Claim.—1. A vertically-movable gate, and a counterbalance-weight therefor, said weight being connected with the gate by a flexible connection and arranged to move vertically, combined with a cushioning apparatus for coöperation with said flexible connection and comprising a vertically-arranged cylinder and checking-piston therein and one of which constitutes a movable member, said gate and flexible connection being adapted to have a greater extent of movement than said movable member and to move independently of the same during a part of the closing movement of said gate and to effect the movement of said movable member to create the cushion during another portion of such closing movement; substantially as set forth.

2. A vertically-movable gate, and a counterbalance-weight therefor, said weight being connected with the gate by a flexible connection and arranged to move vertically, combined with a cushioning apparatus for coöperation with said flexible connection and comprising a vertically-arranged cylinder and checking-piston therein through both of which said flexible connection freely passes and one of which is movable upon the other to create the cushion, and means carried by said flexible connection for engaging said movable mem-

ber only during a portion of the closing movement of the gate and moving the same to create the cushion; substantially as set forth.

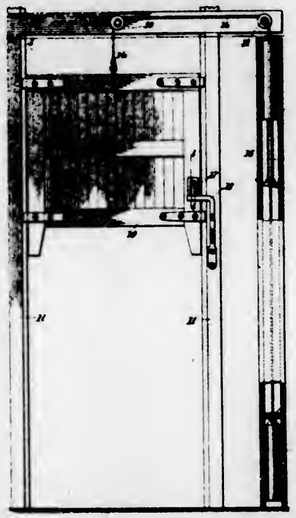

3. A gate and a counterbalance-weight therefor, said weight being connected with the gate by a flexible connection and arranged to move vertically, combined with a cushioning apparatus through which said flexible connection passes and which comprises the fixed cylinder having the central guiding-tube open at both ends, and hollow piston-rod carrying the piston and encompassing said tube, said piston-rod normally extending from said cylinder in position to be struck, upon the closing of the gate, by a part carried by said flexible connection, for moving said piston-rod and piston within said cylinder and creating the cushion; substantially as set forth.

4. A vertically-movable gate, and a counterbalance-weight therefor, said weight being connected with the gate by a flexible connection and arranged to move vertically, combined with a cushioning apparatus for coöperation with said flexible connection and comprising the vertically-arranged cylinder having the central guiding-tube open at both ends, and the hollow piston-rod carrying the piston and encompassing said tube, one of said parts being movable and the other fixed and said flexible connection being freely extended downwardly through said cylinder, piston and rod and provided with means for engaging said movable part only during a portion of the closing movement of the gate and moving the same to create the cushion; substantially as set forth.

812,393. WELL-DRILLING MACHINE. DAVID L. BAUGHER, Paola, Kans., assignor of one-half to John P. Thayer, Paola, Kans. Filed Mar. 8, 1905. Serial No. 249,120.

Claim.—1. In a well-drilling machine, the combination of a supporting-frame, an oscillating shaft mounted thereon, a segmental arm fixed upon one end of said shaft, a crank-arm fixed upon the opposite end, a drum and a ratchet-rim loosely supported on said shaft, an arm 10, a shaft 3, and a ratchet-lever carrying a pawl which engages said ratchet-rim, substantially as described.

2. In a well-drilling machine, a supporting-frame, an oscillating shaft supported on the frame, a ratchet-rim carried by said shaft, a drum, a segmental arm fixed upon one end of said shaft, a crank-arm fixed upon the opposite end, a shaft 3, an arm 10 fixed thereon, a rope connecting said segmental arm to said arm 10, a derrick, a spiral spring connected to the derrick, and a rope-clamp attached to said spring, substantially as described.

3. In a well-drilling machine a supporting-frame, an oscillating shaft, a segmental arm rigid to one end thereof, and a crank-arm rigid to the opposite end, a drum mounted on said shaft, a ratchet-rim carried by the drum, a concave-faced pulley carried by the crank-arm, a yoke adapted to prevent disengagement of a rope from said pulley, a rocking-lever, pawls carried by the lever, said pawls adapted to alternately engage the ratchet-rim, substantially as described.

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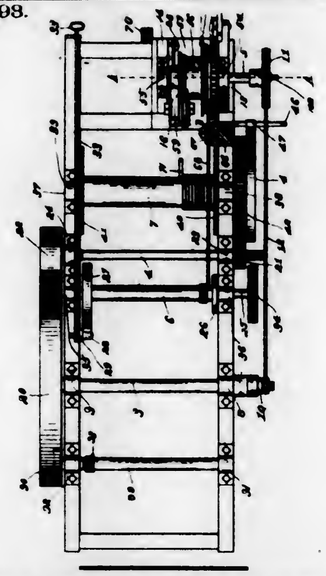

812,394. PEDESTAL-TABLE. THADDEUS C. BEACH, St. Johns, Mich. Filed Mar. 3, 1905. Serial No. 248,080.

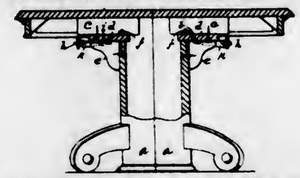

Claim.—1. Adjusting mechanism comprising two adjacent structures, one of which is stationary, and the other of which is movable at one extremity thereof, having a wedge-shaped recess therebetween, a wedge to move longitudinally in said recess, a bolt located in said recess upon which said wedge is mounted, and a nut upon said bolt to actuate said wedge, whereby the movable structure is actuated.

2. Adjusting mechanism comprising two adjacent structures, one of which is stationary and the other of which is movable at one extremity thereof, provided with a wedge-shaped recess therebetween, a stationary bolt located in said recess, a wedge to move longitudinally of the bolt in the recess, and a nut upon the bolt to actuate said wedge.

3. Adjusting mechanism comprising two adjacent structures, one of which is stationary and the other of which is movable at one extremity thereof, having a wedge-shaped recess therebetween, a stationary bolt located in said recess, a wedge to move longitudinally of the bolt within the recess, and a nut upon said bolt to actuate the wedge, said nut engaged with the wedge to actuate the wedge in opposite directions.

4. Adjusting mechanism comprising two adjacent constructions having a recess therebetween, a bolt located in said recess, a wedge movable longitudinally of the bolt in the recess, and a nut upon said bolt to actuate the wedge, said nut provided with a flange and the wedge recessed to receive the flange of the nut whereby the wedge may be actuated by the nut in opposite directions.

5. In an extension-table the combination of separable top sections, separable pedestal-sections, transverse plates uniting the pedestal-sections with the top sections, exterior brackets upon the pedestal-sections, each of said transverse plates, and its companion bracket constructed with a wedge-shaped recess therebetween, a stationary bolt located in said recess, a wedge movable longitudinally of the bolt within the recess between the corresponding transverse plate and its companion bracket, and a nut upon the bolt to actuate the wedge.

6. An adjusting device for the purpose described comprising in combination a bolt, a wedge carried upon said bolt and movable longitudinally of the bolt, and a nut upon said bolt to actuate the wedge, said nut engaged with the wedge to actuate the wedge in opposite directions upon the bolt.

7. The combination of a bolt, a wedge movable longitudinally of the bolt, a nut upon the bolt to actuate the wedge, said nut provided with a flange, and the wedge constructed with a recess to receive the flange of the nut whereby the wedge may be actuated by the nut in opposite directions.

8. In an extension-table the combination of separable pedestal-sections, exterior brackets upon the pedestal-sections, respectively, a plate rigidly secured to each of said sections, each of said brackets and its companion plate formed with a wedge-shaped recess therebetween, a stationary bolt located in said recess, a wedge movable longitudinally of the bolt within the recess, and a nut upon the bolt to actuate the wedge, whereby the lower extremities of the pedestal-sections may be forced inward, the one toward the other.

9. In an extension-table the combination of separable pedestal-sections movable at their lower extremities each provided with a bracket and with a stationary plate above the corresponding bracket, a stationary bolt extending between each bracket and its companion plate, a wedge movable longitudinally of the bolt between each bracket and its companion plate, and means to actuate the wedge, whereby the lower extremities of the sections will be forced inward, the one toward the other.

10. In an extension-table the combination of separable pedestal-sections, brackets secured to the said sections, a stationary plate rigidly secured upon the top of each of said sections, each of said brackets and its companion plate formed with a wedge-shaped recess therebetween, a stationary bolt located in the recess formed with a hook at its inner end engaged with the corresponding plate, a wedge carried on the opposite end of said bolt, and means to actuate the wedge whereby the lower extremity of said sections will be forced inward, the one toward the other.

812,395. PORTABLE DENTAL FURNACE. FREDERICK S. BELTHA, Brookline, Mass. Filed June 2, 1904. Renewed Jan. 9, 1906. Serial No. 295,256.

Claim.—1. In a portable dental furnace, a metallic muffle having an opea mouth, and a shell-like outer casing inclosing the muffle with a clearance between them and entirely open at its rear end and bottom, the muffle being attached to and supported by the closed front end of the casing.

2. In a portable dental furnace, a metallic muffle having an open mouth, a thin, shell-like casing inclosing the muffle with a clearance between them and entirely open at its rear end and bottom, the front end of the casing having an opening to receive the muffle, retaining-ears on said end of the casing to frictionally engage and hold the muffle in place within the casing, and a handle attached to the latter.

3. In a portable dental furnace, a metallic muffle having an open mouth, a metallic, shell-like casing inclosing the muffle with a clearance between them for the circulation of flame, the casing being entirely open at its rear end and bottom and having a closed front end through which the muffle is extended and to which it is attached, a shield projecting beyond the mouth of the muffle at the bottom thereof, and a handle attached to the casing.

4. In a portable dental furnace, a metallic muffle having an open mouth, a casing inclosing the muffle with a clearance between them for the circulation of flame, the casing being open at its rear end and bottom to expose the muffle to the direct flame and having a closed front end through which the muffle is extended and to which it is attached, the closed end of the casing being laterally extended beyond the perimeter of the muffle, and ears on said closed end of the casing to frictionally engage and retain the muffle in position in the casing.

5. In a portable dental furnace, a metallic muffle having an open mouth, a casing inclosing the muffle with a clearance between them for the circulation of flame, the casing being open at its rear end and bottom and having a closed front end through which the muffle is extended and to which it is attached, a shield projecting beyond the mouth of the muffle at the bottom thereof, ears on the closed end of the casing to frictionally engage and hold the muffle in position in the casing, and an elongated handle secured to the casing.

6. In a portable dental furnace, a metallic muffle having an open mouth, a metallic, semicylindrical outer casing inclosing the muffle with a clearance between them and having an opening in its top, the rear end and bottom of the casing being open and its front end closed, means to frictionally and detachably connect the muffle and the closed end of the casing, and an elongated handle secured to the latter.

812,396. DISPLAY-RACK. FRANK E. BEWYER, Newton, Iowa. Filed July 19, 1904. Serial No. 217,190.

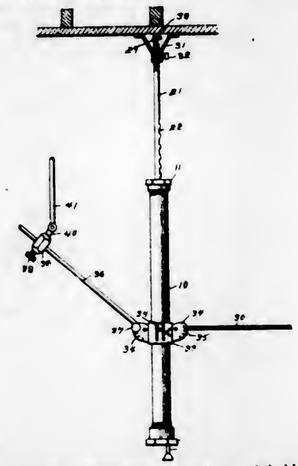

Claim.—1. The combination of a rod, a rack-holder slidingly mounted on the rod, a ball-retainer secured at one end of the rack-holder, balls therein engaging the rod, a ball-retainer secured at one end of the rod, and balls therein engaging the rack-holder.

2. The combination of a supporting-rod, a tubular standard having one end of the rod slidingly mounted therein, a ball-retainer secured at one end on the inside of the tubular standard, balls therein engaging the rod, a second ball-retainer slidingly mounted inside of the tubular standard and fixed to the rod, balls therein engaging the tubular standard and a gripping device inside of the tubular standard engaging the rod.

3. The combination of a notched supporting-rod, a tubular standard slidingly mounted on the supporting-rod, a gripping-plate pivotally mounted within the tubular standard having an opening therein through which the supporting-rod is passed, said plate in one position engaging the notches of the supporting-rod and in another position permitting the supporting-rod to freely slide through the opening thereof, a grip-actuating rod within the tubular standard and projecting beyond it operatively connected with the gripping-plate and a spring normally holding the grip-actuating rod to position with the gripping-plate in engagement with one of the notches of the supporting-rod.

4. The combination of a notched supporting-rod, a tubular standard having the rod slidingly mounted therein, a ball-retainer secured to one end of the tubular standard, balls therein engaging the rod, a support connected with the ball-retainer, a gripping-plate, having a central opening to admit the rod, pivotally mounted at one edge in said support and a grip-actuating rod connected with the opposite edge of the gripping-plate and projected beyond the tubular standard.

5. The combination of a notched supporting-rod, a tubular standard encircling one end of the notched rod, screw-caps on the tubular standard, a ball-retainer secured to one end of the tubular standard, balls therein engaging the rod, a gripping-plate having an opening therein to receive the rod pivotally mounted at one edge on said ball-retainer, a link connected to the opposite edge of the gripping-plate, a grip-actuating rod slidingly mounted in the tubular standard pivoted to said link, a handle on the opposite end of said grip-actuating rod projected through the cap, a spring normally holding the grip-actuating rod in position with the gripping-plate engaging the notched supporting-rod.

812,397. BINDER FOR LOOSE LEAVES OF BOOKS. JACOB P. BOEHNER, Freeport, Ill. Filed Sept. 6, 1904. Serial No. 223,562.

Claim.—1. In a binder for loose leaves of books, in combination, a back plate having a plurality of L-shaped slots therein and transverse lugs thereon, the latter provided with concentric circular bearings extending therethrough, a longitudinally-slidable rock-shaft mounted in the bearings in the lugs on the back plate, semirings, corresponding in number with the slots in the back plate and rigidly secured, by one end of each thereof, to the rock-shaft, and projecting transversely therefrom and parallel to each other through the slots in the back plate, and adapted to slide in the vertical arms of such slots and to be rocked over into and detained in their horizontal arms, semirings, the counterparts of and corresponding in number with the hereinbefore-mentioned semirings and fast mounted, on the back plate, parallel to each other and adjacent to the outer ends of the vertical arms of the slots therein, and a spring normally acting, through the longitudinally-slidable rock-shaft, to maintain the movable semirings in operative relation to and in engagement with their counterpart stationary semirings, substantially as described.

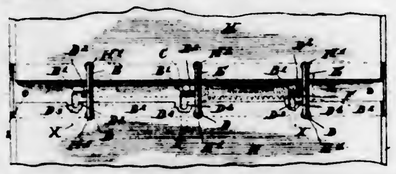

2. In a binder for loose leaves of books, in combination, a trough-like back piece, preferably D-shaped in cross-section, a back plate fast thereto and having a plurality of L-shaped slots therein and transverse lugs thereon, the latter provided with concentric circular bearings extending therethrough, a longitudinally-slidable rock-shaft mounted in the bearings in the lugs on the back plate, semirings, corresponding in number with the slots in the back plate and rigidly secured, by one end of each thereof, to the rock-shaft, and projecting transversely therefrom and parallel to each other through the slots in the back plate, and adapted to slide in the vertical arms of such slots and to be rocked over into and detained in their horizontal arms, semirings, the counterparts of and corresponding in number with the hereinbefore-mentioned semirings and fast mounted, on the back plate, parallel to each other and adjacent to the outer ends of the vertical arms of the slots therein, and a spring normally acting, through the longitudinally-slidable rock-shaft, to maintain the movable semirings in operative relation to and engagement with their counterpart stationary semirings, substantially as described.

3. In a binder for loose leaves of books, in combination, a trough-like back piece A, preferably D-shaped in cross-section, a back plate B fast thereto and having a plurality of L-shaped slots B′ therein and transverse lugs B^2 thereon, the latter provided with concentric circular bearings B^3 extending therethrough, a longitudinally-slidable rock-shaft C, mounted in the bearings B^3 in the lugs B^2 on the back plate B, semirings D, corresponding in number with the slots B′ in the back plate B and rigidly secured by one end D′ of each thereof, to the rock-shaft C, and projecting transversely therefrom and parallel to each other through the slots B′ in the back plate B, and adapted to slide in the vertical arms D^2 of such slots B′ and to be rocked over into and to be detained in their horizontal arms D^2, semirings E, the counterparts of and corresponding in number with the semirings D and fast mounted, on the back plate B, parallel to each other and adjacent to the outer ends of the vertical arms D^2 of the slots B′ therein, a spring encircling the rock-shaft C and serving therethrough to maintain the movable semirings D in operative relation to and engagement with their counterpart stationary semirings E, and covers G, connected with the back of the holder, substantially as described.

812,398. **ADJUSTABLE DIE-STOCK.** BRADFORD BORDEN, Warren, Ohio, assignor, by mesne assignments, to The Borden Company, Warren, Ohio, a Corporation of Ohio. Filed Jan. 4, 1905. Serial No. 239,689.

Claim.—1. A die-stock comprising an open-front housing having end walls, sectional dies within the housing between such walls, a free sliding adjuster filling the spaces between the dies and the end walls for moving the former toward and away from each other, said adjuster having stops on its front face adjacent its edges, and means for limiting the extreme movements of the adjuster and holding the latter and the dies as against lateral displacement during the cutting operation, such means comprising spring-pressed bolts mounted in the housing and having their heads overlapping the side edges of the adjuster, and means for simultaneously drawing the heads of said bolts tight against the adjuster.

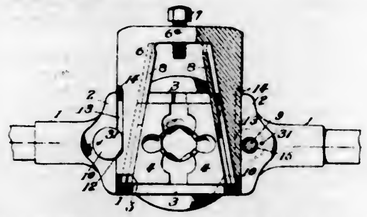

2. A die-stock comprising an open-front housing having opposite end walls, sectional dies between such end walls having grooves in their front faces, a free sliding adjuster having side members filling the spaces between the dies and the end walls for moving the former toward and away from each other, said side members having grooves in their outer faces and tongues on their inner faces fitting the grooves of said dies, spring-pressed bolts mounted in said end walls and having their heads extended into said grooves of said side members, and means for simultaneously binding the heads of both bolts against said side members.

3. A die-stock comprising a housing having end walls, sectional dies within the housing, a free sliding adjuster for filling the spaces between the dies and said end walls and for effecting the movements of the dies toward and away from each other, a centering device, means for actuating such centering device, means mounted in the housing for limiting the extreme movements of the adjuster and preventing the lateral displacement thereof, and means for controlling such latter means operated simultaneously with and by the means for actuating the centering device.

4. A die-stock comprising a housing having end walls, sectional dies within the housing, a free sliding adjuster for filling the spaces between the dies and said end walls and for effecting the movements of the dies toward and away from each other, a centering device, means for actuating such centering device, means mounted in the housing for preventing the lateral displacement of the adjuster, and means for controlling such latter means operated simultaneously with and by the means for actuating the centering device.

5. A die-stock comprising a housing having end walls, sectional dies within the housing, a free sliding adjuster for filling the spaces between the dies and said end walls and for effecting the movements of the dies toward and away from each other, a centering device, means for actuating such centering device, spring-pressed bolts mounted in said housing having their heads over-lapping portions of said adjuster, stops on the latter with which said heads engage for limiting the extreme movements of the adjuster, said bolts also preventing the lateral displacement of the latter, and means for drawing said bolts against the adjuster, such means being controlled by the actuating means of the centering device.

6. A die-stock comprising a housing, sectional dies within the latter, a free sliding adjuster having side members filling the spaces between the dies and said end walls for effecting the movements of the dies toward and away from each other, said side members having grooves in their front faces, spring-pressed bolts extended through said housing and having their heads projecting into said grooves, retaining-pins passed through said bolts, adjusting-plates having beveled ends engaging said retaining-pins for moving said bolts as against the spring-pressure thereon, a centering device, and a common means for simultaneously actuating the latter and said adjusting-plates.

7. The combination with the housing, the sectional dies and the adjuster for the latter, of the spring-pressed bolts passed transversely through the housing having their heads overlapping the edges of the adjuster, retaining-pins passed through the bolts, adjusting-plates having slotted beveled ends engaging said pins, and also having lugs, a centering device having two sliding jaws formed with lugs, and an actuating-plate having two sets of cam-slots to receive all of said lugs, whereby as the centering-jaws are moved toward each other the adjusting-plates will be forced between the housing and said retaining-pins.

8. The combination with the housing, the sectional dies and the adjuster for the latter, of the spring-pressed bolts passed transversely through the housing having their heads overlapping the edges of the adjuster, a centering device having opposite jaws, adjusting-plates for engaging said bolts and moving them into engagement with the adjuster, said adjusting-plates being capable of being moved to a greater extent than is required to so move said bolts, and a controlling-plate for simultaneously moving said jaws and adjusting-plates, the latter permitting the former to be adjusted to accommodate bolts or pipes of different sizes.

812,399. **MANUFACTURE OF SILICA GLASS.** JAMES P. BOTTOMLEY, Walkend, ROBERT S. HUTTON, Manchester, and ARTHUR PAGET, North Cray, England. Filed Mar. 21, 1905. Serial No. 251,321.

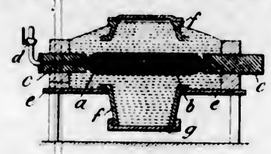

Claim.—1. The improved process of manufacturing articles of silica glass which consists in heating the crude material by means of the heat generated by a resistance such as carbon placed in an electric circuit until the requisite mass is in a plastic condition, then while still plastic shaping the mass by internal blowing.

2. The improved process of manufacturing articles of silica glass which consists in heating the crude material by means of the heat generated by a resistance such as carbon placed in an electric circuit and out of contact with the material to be fused until the requisite mass is in a plastic condition, then while still plastic shaping the mass by internal blowing.

3. The improved process of manufacturing articles of silica glass which consists in fusing the crude material by means of the heat generated by a hollow perforated resistance-core placed in an electric circuit, then securing the fused mass to the extremities of the core and then passing compressed air or gas through said core so as to effect the shaping of the fused mass *in situ*.

4. The improved process of manufacturing articles of silica glass which consists in fusing the crude material by means of the heat generated by a resistance placed in an electric circuit, then securing the extremities of the fused mass, then blowing the fused mass and effecting the shaping *in situ*.

812,400. **INDICATING-TARGET.** RENÉ M. V. BRENER, Schaerbeeck-Brussels, Belgium. Filed July 25, 1904. Serial No. 218,143.

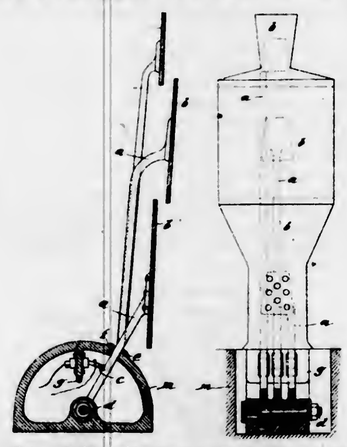

Claim.—1. In combination, a series of separate parts of the target all supported on distinct levers, a pin-support for the same at the basis of a case, a slot in the said case directed toward the line of firing, one part of said slot forming a means of support of the target-arms at an inclined position of rest, the other part of the said slot forming an upward check to the recoil of the said targets, and means for making electrical contact when the targets are driven back.

2. In combination, a series of separate parts of the target all held in a position of rest with their weight passing beyond their supports toward the firing direction, a pin-support for the same at the basis of a case, a contact-piece upon the outer face of each bar, and two spring-pressed pistons, adapted to close together under the recoil of the beam, each of said pistons having differential springs to maintain an elongated contact.

3. In combination, a series of separate parts of the target, all held in a position of rest with their weight passing beyond their support toward the firing direction, and a counterbalance-weight extended toward the direction of firing to give an adjustable control to the resilience of the target-faces.

812,401. **WIRE-STRETCHING DEVICE.** WILLIAM BROAD, Aliquippa, Pa. Filed May 23, 1905. Serial No. 261,743.

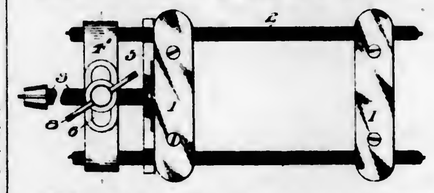

Claim.—In a device of the character described, a vise-head formed in sections, one of said sections having an elongated hollow boss, the opening of the boss conforming to the contour of the boss, a second section having an elongated boss adapted to fit snugly within the opening of the first-named section, said boss having a centrally-threaded recess, a screw member engaging the threads of the recess, said screw member being provided with a head bearing against the first-named section and a presser-head operatively connected to one of the sections.

812,402. **LUBRICATING DEVICE FOR WHEELS AND AXLES.** GASTON A. BRONDER, Brooklyn, N. Y. Filed Apr. 29, 1903. Serial No. 154,765.

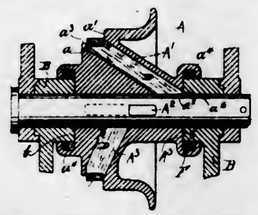

Claim.—1. The combination of an axle, a wheel thereon having ducts leading from an outer circumferential portion thereof to the bearing-surface on the axle, and extending from end to end of said surface and helically around the same, the ducts tapering from the bearing-surface to the said outer portions of the wheel, there being hoods extending from the hubs of the wheel, and wicks in the ducts and hoods.

2. The combination of an axle, a wheel thereon having ducts leading from an outer circumferential portion thereof to the bearing-surface on the axle, and extending from end to end of said surface and helically around the same, the ducts tapering from the bearing-surface to the said outer portion, hoods extending from the hubs of the wheel, wicks in the ducts and hoods, a wick wrapped around the wheel covering the wicks in the ducts, a wiper bearing against the wrapped wick, and an oil-reservoir for the wiper.

812,403. **SHINGLING-HATCHET.** WILLIAM V. BROWN, Berwick, Canada. Filed Oct. 5, 1905. Serial No. 281,493.

Claim.—1. A hatchet constructed with one side face of the head portion and one side face of the blade portion in longitudinal alinement and with a transverse aperture intermediate the blade and the head portion, an inclined supporting-web extending from said aperture, a plane-bit bearing upon said web and extending through said aperture, a chip-breaker bearing upon said plane-bit and protruding into said aperture, and means for adjustably clamping said chip-breaker and plane-bit to said web.

2. A hatchet constructed with one side face of the head portion and one side face of the blade portion in longitudinal alinement and with a transverse aperture intermediate the blade and the head portion, an inclined supporting-web extending from said aperture, a plane-bit bearing upon said web, and extending through said aper-

ture, a chip-breaker bearing upon said plane-bit and protruding into said aperture and formed with laterally-extending shoulders bearing upon the hatchet-blade at the ends of the aperture.

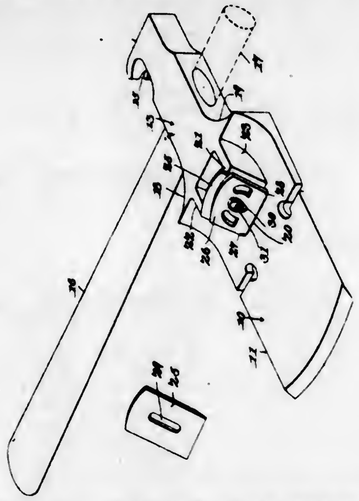

3. A hatchet constructed with a relatively broad thin blade with parallel side edges and a contracted head portion whereby finger-grips are formed at the juncture of the head portion and blade, the head portion carrying a hammer-face and through which the handle is inserted and with one face of the head portion and one face of the blade in longitudinal alinement an aperture disposed transversely through the blade and an inclined web extending from said aperture at one side and merging into the head portion, a plane-bit bearing against said web and extending through said aperture, a chip-breaker bearing upon said plane-bit and protruding into said aperture, and means for adjustably clamping said plane-bit and chip-breaker upon said web.

812,404. EAVES-TROUGH CLAMP. GEORGE M. BUTLER and CHARLES G. BERINGER, Washburn, Ill. Filed Mar. 22, 1905. Serial No. 251,370.

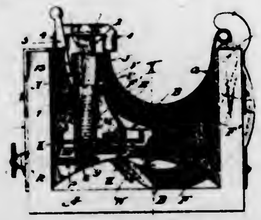

Claim.—1. In an eaves-trough clamp, devices for receiving and holding one edge of an eaves-trough, a plurality of members of varying size below the same for receiving troughs of different sizes each of said members being employed only for the size of trough corresponding thereto and a clamping member for descending upon the opposite edge of the trough and holding it in place within the member designed for it.

2. In an eaves-trough clamp, devices for receiving and holding one edge of an eaves-trough, a member for receiving and supporting the trough for the purposes described, and a clamp at the opposite edge of the trough for holding the said trough, said member adapted to pass out of the way to be replaced by another member of a different size for the purposes described.

3. In an eaves-trough clamp, devices for receiving and holding in place one edge of an eaves-trough, a removable U-shaped member for receiving said trough, a clamp for crowding down and holding the trough in the said member, and means for supporting the member in its proper position.

4. In an eaves-trough clamp, devices for receiving and holding in place one edge of an eaves-trough, a removable member for receiving the trough and in which said trough fits, a clamp for holding the trough in place within the member, means for supporting the member in position, the means adapted to release the said members and engage others of different size.

5. In an eaves-trough clamp, a support, devices mounted thereon to receive and hold an edge of the trough, a member pivoted at one extremity on the support and adapted for the reception of the trough, a clamp for descending upon the opposite edge of the trough for forcing it into and holding it within the member, supporting means for sustaining the member at its free end but adapted to release the member, and a similar member of different size adapted for separate engagement with the supporting means for the purposes described.

6. In an eaves-trough clamp, a support, overhanging hooked devices for receiving one edge of the trough, a U-shaped member pivoted at one end to the support below the devices described, its other end adapted to be raised for receiving the trough, horizontally-adjusted means for supporting it in position for use, a clamp for descending upon the free edge of the trough for holding it within the member, and a second pivoted member of different size adapted for engagement with the horizontally-adjustable means for receiving a trough of different size, the clamp adapted also to sustain the different-sized troughs in place.

7. In an eaves-trough clamp, a support, hooked devices secured thereto for receiving one edge of the trough, a vertically-movable member for holding the trough, means for holding that member in rigid position for use, a vertically-movable clamp for bearing upon the opposite edge of the trough and means for releasing the clamp to permit it to rise to release the trough.

8. In an eaves-trough clamp, a support, devices for receiving and holding one edge of the trough, a plurality of trough-supporting members of different sizes, adjustable means for separately holding any one of the members in a raised position for use, an adjustable clamp for engaging the free edge of the trough, and means in connection with said clamp for holding it in engagement with the said trough.

9. In an eaves-trough clamp, a support, devices for receiving and holding one edge of the trough, a plurality of trough-supporting members of different sizes, adjustable means for separately holding any one of the members in raised position for use, an adjustable clamp for engaging the free edge of the trough, and means in connection with said clamp for holding it in engagement with the said trough, the latter means adapted to release said clamp to free the trough.

10. In an eaves-trough clamp, a support, means for holding one edge of the trough, a plurality of adjustable members of different sizes for separately holding the trough and an adjustable device for engaging any one of the said adjustable members for holding it in a fixed position and adapted for releasing the same, and a clamp carried on and moving with the said device for clamping the separate different-sized troughs.

11. In an eaves-trough clamp, a support, devices for holding one side of the trough, a clamp for holding the opposite side, a plurality of members of a different size each for supporting troughs corresponding in size and form thereto each being vertically adjustable to bring it to a height that will meet the bottom and fit the trough and support it for the purposes explained.

812,405. CARPET-STRETCHER. EUGENE S. CAROTHERS, Westpoint, Miss. Filed Mar. 14, 1905. Serial No. 250,064.

Claim.—1. In a carpet-stretcher, the combination of a clamp comprising jaws, means for clamping said jaws together, a plurality of flat springs carrying said jaws and tending to maintain them in open position, an operating means for said clamp provided with a plurality of cranks, and link connections between said cranks and flat springs, substantially as described.

2. In a carpet-stretcher, the combination of a clamp comprising jaws, means for clamping said jaws together, a plurality of resilient means connecting said jaws, an operating means for said clamp provided with a plurality of cranks, and link connections between said cranks and resilient means, substantially as described.

3. In a carpet-stretcher, the combination of a clamp comprising jaws, means for clamping said jaws together, a plurality of resilient means connecting said jaws, an operating means for said clamp provided with a plurality of cranks, common means for actuating said several cranks, and link connections between said cranks and resilient means, substantially as described.

4. In a carpet-stretcher, the combination of a clamp comprising jaws, means for clamping said jaws together, a plurality of flat springs carrying said jaws and tending to maintain them in open position, an operating means for said clamp provided with a plurality of cranks, a common means for actuating said several cranks, and link connections between said cranks and flat springs, substantially as described.

812,406. CAN-OPENER. CHARLES COCHRAN, Plattsburg, N. Y. Filed June 30, 1905. Serial No. 267,830.

Claim.—1. A can-opener formed out of a single piece of wire and comprising a shank and a handle, said handle being formed by looping the wire upon itself and coiling it about the shank, the ends of the wire being bent downwardly to form a cutting-blade which is sharpened on one side throughout its entire length and is inclined relative to the shank so that various sizes of openings can be cut according to the amount the cutting-blade is pressed into the can, while the shank is formed with a series of zigzag portions which lie approximately in the plane of the handle, the free end of the shank being sharpened so as to provide a puncturing-point.

2. A can-opener formed out of a single piece of wire and comprising a shank one end of which is provided with a puncturing-point while the opposite end is provided with a handle formed by looping the wire upon itself and coiling it about the shank, the ends of the wire being bent downwardly to form a cutting-blade which is sharpened on one side throughout its entire length and inclined to the shank so that various sizes of openings can be cut according to the amount the cutting-blade is pressed into the can.

812,407. HYDRANT. ELIAS CRONSTEDT, St. Paul, Minn. Filed Nov. 3, 1903. Serial No. 179,667.

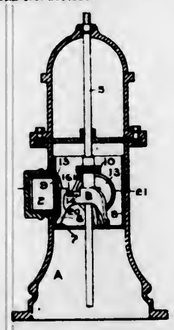

Claim.—1. In a hydrant, the combination with a casing formed with discharge-openings, of a rotatable spider arranged within the casing, a plurality of radially-slidable disk valves supported by the spider, valve-stems carried by said valves, and outwardly-extending retaining-keys removably supported in said valve-stems, for the purpose set forth.

2. In a hydrant, the combination with a casing formed with discharge-openings, of a rotatable spider arranged within said casing, disk valves slidably supported in said spider and curved to fit the inner wall of said hydrant, valve-stems carried by said valves and slidable in said spider, and retaining-keys extending through said valve-stems and outwardly from the sides thereof, for the purpose set forth.

3. In a hydrant, the combination with its outer wall or casing provided with discharge-openings, of a rotatable spider arranged within said casing, a plurality of disk valves slidably supported in said spider and curved to fit the inner wall of said hydrant, said valves being each formed with a sharp outer edge, and means for rotating said spider.

4. In a hydrant, the combination with its outer wall or casing having discharge-openings, of a rotatable spider arranged within said casing, disk valves slidably supported in said spider and curved to fit the inner wall of said hydrant, keys holding said valves supported in said spider, said keys being each provided with an outer cutting edge, as and for the purpose set forth.

5. In a hydrant, the combination with its outer wall or casing having discharge-openings, and a valve-stem centrally supported in said hydrant, of a spider rotatably mounted upon said valve-stem, disk valves curved to fit the inner wall of said hydrant, valve-stems carried by said valves and slidable in said spider, and retaining-keys extending through said valve-stems, said keys each having an outer cutting edge, as and for the purpose set forth.

6. In a hydrant, the combination with its outer wall or casing having discharge-openings, of a bushing fitted in said casing and provided with openings registering with the discharge-openings, a spider rotatable within said bushing and resting upon a flange carried thereby, disk valves for said openings curved to fit the inner wall of said hydrant, inwardly-extending supporting-stems for said valves slidable in openings in said spider, retaining-keys extending through said stems, each of said keys being provided with an outer cutting edge, and means for rotating said spider.

812,408. EDUCATIONAL DEVICE FOR TEACHING SPHERICS. ROY E. DICKERSON, Boulder Creek, Cal. Filed Aug. 19, 1905. Serial No. 274,818.

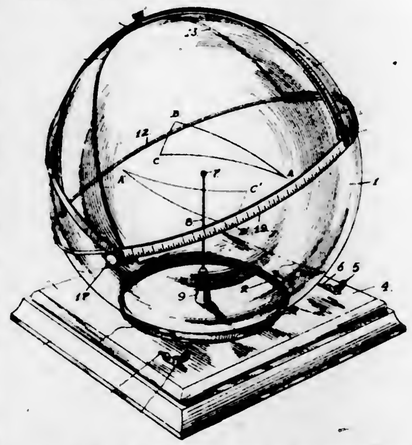

Claim.—1. In an educational device for teaching spherics, a transparent, spherical board, having a center sight.

2. In an educational device for teaching spherics, a transparent, hollow, spherical board, having a center sight.

3. An educational device for teaching spherics, comprising a transparent, hollow, spherical board, having an open foot; a base on which the board is supported by its foot, and a clamping device engaging the foot for removably connecting the board with the base.

4. An educational device for teaching spherics, comprising a transparent, hollow, spherical board, having an open foot by which it is supported; a base with means for detachably connecting the board thereto, and means on the base for supporting accessory devices within the transparent, hollow board.

5. An educational device for teaching spherics, comprising a transparent, hollow, spherical board, having an open foot by which it is supported; a base with means for detachably connecting the board

thereto, and a post rising from the base through the open foot of the board, adapted to support accessory devices within said transparent hollow board.

Claim.—1. In a machine of the character described, the combination, with a sewing mechanism for making a double row of stitching, and a supporting-frame arm 2 of a feeding device arranged to

of the lower guide, said guides being arranged to act on the work in advance of the presser-foot and direct the same in a flat condition, and a cutting device, substantially as set forth.

pointed needle arranged above the bed-plate, a bobbin, a bobbin-case, a rotary loop-taker arranged below the bed-plate and containing the bobbin-case, a needle loop-seizing point on said loop-taker

thereto, and a post rising from the base through the open foot of the board, adapted to support accessory devices within said transparent hollow board.

6. An educational device for teaching spherics, comprising a transparent, hollow, spherical board, having an open foot by which it is supported; a base with means for detachably connecting the board thereto; a post rising from the base through the open foot of the board, and a center sight having a stem removably fitted to said post.

7. An educational device for teaching spherics, comprising a transparent, hollow spherical board, having an open foot by which it is supported; a base with means for detachably connecting the board thereto; a post rising from the base through the open foot of the board, and a figure form having a stem removably fitted to the post whereby said form is supported within said transparent hollow board.

8. In an educational device for teaching spherics, the combination of a transparent, hollow, spherical board, with a figure form removably fitted in its cavity in such relation to its wall as to be capable of being traced upon the surface of the board.

9. In an educational device for teaching spherics, and in combination with a spherical board, a spherical protractor adjustably fitted thereto and comprising a great-circle band, and suitable half-circle bands secured thereto.

10. In an educational device for teaching spherics, and in combination with a spherical board, a spherical protractor adjustably fitted thereto and comprising a great-circle band, and suitable half-circle bands secured thereto, said bands having scales and reading-arms for measuring angles and arcs.

11. In an educational device for teaching spherics, the combination of a transparent spherical board with a spherical protractor adjustably fitted to its surface and comprising a great-circle band and suitable half-circle bands secured thereto, said bands having scales and reading-arms for measuring angles and arcs.

12. In an educational device for teaching spherics, the combination of a transparent spherical board having a center sight, and a spherical protractor adjustably fitted to the surface of said board and comprising a great-circle band and suitable half-circle bands secured thereto, said bands having scales and reading-arms for measuring angles and arcs.

13. In an educational device for teaching spherics, the combination of a transparent spherical board, and a concave transfer-plate adapted to be fitted to and to slide over the surface of said board.

14. In an educational device for teaching spherics, the combination of a transparent spherical board, and a concave transfer-plate adapted to be fitted to and to slide over the surface of said board, said transfer-plate being made of transparent material.

812,409. SEWING AND CUTTING MACHINE. JACOB DIEHL, Cleveland, Ohio, assignor to Standard Sewing Machine Company, Cleveland, Ohio, a Corporation of Ohio. Filed Nov. 21, 1890. Serial No. 737,738.

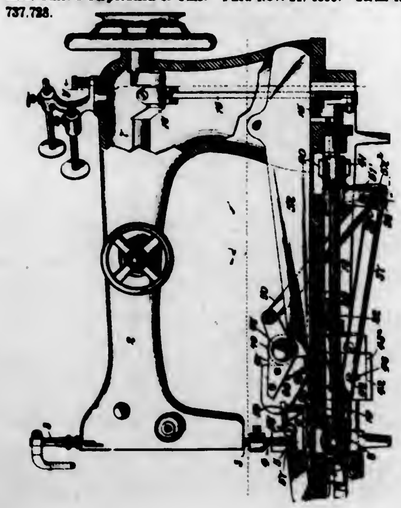

Claim.—1. In a machine of the character described, the combination, with a sewing mechanism for making a double row of stitching, and a supporting-frame arm 2, of a feeding device arranged to feed toward the base of said arm, a cutting device independent of the sewing mechanism located in the path of the work as it is fed from said sewing mechanism and in position to cut or split the same between the two rows of stitching so that the two parts of the work may pass one at each side of said arm, and means for actuating said feeding and cutting devices and causing them to alternately act upon the work.

2. In a machine of the character described, the combination, with a sewing mechanism for making a double row of stitching, and a supporting-frame arm 2, of a feeding device arranged to feed toward the base of said arm, a pivoted cutting device located between the sewing-point and the base of said arm in the path of the work as it is fed from the sewing mechanism and in position to cut or split the same between the two rows of stitching, and means for actuating said feeding and cutting devices and causing them to alternately act upon the work.

3. In a machine of the character described, the combination, with a sewing mechanism for making a double row of stitching, and a supporting-frame arm 2, of a feeding device arranged to feed toward the base of said arm, a pivoted cutting device supported upon the bed-plate of the machine in a position to cut or split the work between the two rows of stitching as it is fed from the sewing mechanism on a line extending from the stitching-point to the base of said arm, and means for actuating said feeding and cutting devices and causing them to alternately act upon the work.

4. In a machine of the character described, the combination, with a sewing mechanism for making a double row of stitching, of a feeding device, a cutting device independent of the sewing mechanism located in the path of the work as it is fed from said sewing mechanism and in a position to cut or split the same between the two rows of stitching, means for actuating said feeding and cutting devices and causing them to alternately act upon the work, comprising a transverse rock-shaft 34, and separate adjustable connections from said rock-shaft to the feeding and cutting devices, substantially as set forth.

5. In a machine of the character described, the combination, with a sewing mechanism for making a double row of stitching comprising a needle-actuating shaft and an overhanging support carrying the same, of a feeding device for feeding the material parallel with the said needle-shaft and support, a pivoted cutting device located in position to cut or split the work between the rows of stitching in a line parallel with the said needle-shaft support as the work is fed from the sewing mechanism, and a rock-shaft arranged transversely to said needle-actuating shaft and supported on the under side of the bed-plate of the machine, said rock-shaft having operative connections with the said feeding and cutting devices for actuating the same, substantially as set forth.

6. In a machine of the character described, the combination, with a sewing mechanism for making a double row of stitching, of a cutting device located in the path of the work as it is fed from the sewing mechanism and in position to cut or split the same between the two rows of stitching, means located at the rear of the cutting device at each side of the line of cut for spreading apart the severed portions of the work, and stretching the material evenly at the point of cutting and means for automatically feeding the work to the cutting device and forcing the same past the said separating means.

7. In a machine of the character described, the combination, with a sewing mechanism for making a double row of stitching, of a pivoted cutting device supported upon the bed-plate of the machine in a position to act upon the work between the two rows of stitching as it is fed from the sewing mechanism, actuating means for said cutting device comprising a connection extending through the said bed-plate, and two raised flanges extending in diverging directions from a point adjacent to the rear end of the cutting device and at opposite sides of said actuating connection.

8. In a machine of the character described, the combination, with a sewing mechanism for making a double row of stitching, of a cutting device located in the path of the work as it is fed from the sewing mechanism, two raised flanges extending in diverging directions from a point adjacent to the rear end of the cutting device and in line therewith, and means for automatically feeding the work to the cutter and forcing the same past the said diverging flanges, for the purpose set forth.

9. In a machine of the character described, the combination, with a sewing mechanism, of a guide for the work arranged below the same and having an upwardly-presented edge and a guide above the work having a downwardly-presented edge in line with the edge of the lower guide, said guides being arranged to act on the work in advance of the presser-foot and direct the same in a flat condition, and a cutting device, substantially as set forth.

10. In a machine of the character described, the combination of a sewing mechanism, two coöperating guides arranged to engage with the work at the upper and under sides thereof in advance of the presser-foot, the presser-foot, the presser-bar with which the upper of said guides is connected movably on a horizontal pivot allowing its outer end a vertical oscillation relative to the lower guide, and a cutting device, substantially as set forth.

11. In a machine of the character described, the combination, with a presser-foot and a sewing mechanism, of two coöperating guides located in advance of said presser-foot and being arranged to coöperate with the work at the upper and under sides thereof, the upper guides being pivoted to the presser, a spring for normally holding said upper guide in operative position and a cutting mechanism situated at the rear of the presser-foot and having its cutting-line coinciding with the line of said guides.

12. In a sewing-machine of the character described, the combination of stitching mechanism comprising two needles, feeding devices, a cutter at the rear of the needles operating to sever the stitched work between the two rows of stitches, and means adjacent to the cutter for deflecting both of the stitched edges evenly in opposite directions away from the cutting-line, whereby the work is stretched at the point of cutting.

13. In a machine of the character described, the combination of a bed-plate, stitching mechanism comprising two needles, a power-shaft above the bed-plate for operating said needles, two rotary shafts beneath the bed-plate parallel with and operated by said power-shaft, two loopers one for each needle turning on an axis transverse to said rotary shafts and actuated by the latter, a rock-shaft arranged transversely to said two rotary shafts and actuated by one of them, a feeding device connected with said rock-shaft and actuated in directions transverse to the same, and a cutter also actuated by said rock-shaft and acting on a line between the needles and parallel with the said power-shaft.

14. In a machine of the character described, the combination of a bed-plate, a main shaft arranged longitudinally of the machine, stitching mechanism comprising two needles arranged one at each side of the longitudinal line of the machine, two rotary shafts also arranged one at each side of said line and beneath the bed-plate, two loopers one for each needle turning in planes longitudinal of the machine and actuated respectively by said rotary shafts, a transverse rock-shaft beneath the bed-plate actuated by one of said rotary shafts, a feeding device acting longitudinally of the machine and operated by said rock-shaft, and a cutter acting on the longitudinal line of the machine and operated by said rock-shaft.

812,410. ROTARY LOOP-TAKER FOR SEWING-MACHINES. GEORGE H. DIMOND and WILBUR F. DIAL, Bridgeport, Conn., assignors to Wheeler & Wilson Manufacturing Company, Bridgeport, Conn., a Corporation of Connecticut. Filed Feb. 6, 1903. Serial No. 92,866.

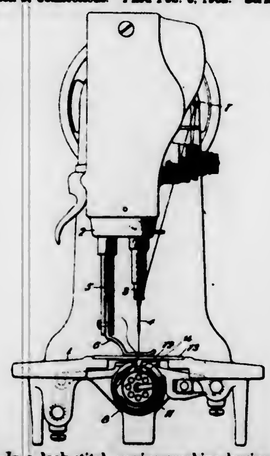

Claim.—In a lock-stitch sewing-machine having a bed-plate, the combination of an independent take-up, a reciprocating eye-pointed needle arranged above the bed-plate, a bobbin, a bobbin-case, a rotary loop-taker arranged below the bed-plate and containing the bobbin-case, a needle loop-seizing point on said loop-taker, an adjacent guard extending in front of said point and overlapping it and adapted to prevent fouling of the needle and bobbin threads and loop-taker, and a needle loop-controller finger projecting rearwardly toward the said point to catch the loop of needle-thread as it draws off the point and carry it into the line of descent of the needle whence it slips off and is drawn up by the take-up to finish the stitch.

812,411. GAGE-READING DEVICE. GEORGE P. DOERR, Chicago, Ill. Filed Nov. 21, 1904. Serial No. 233,694.

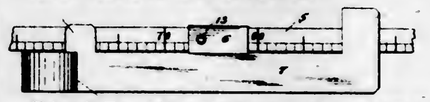

Claim.—1. The combination with a gage-rod, of a reading device adjustably secured to said rod and having a lateral hook or the like for engagement with the inner side of the barrel at the center of the bung-hole transversely to the length of the barrel when said rod is inserted diagonally in a barrel or cask.

2. The combination with a gage-rod having a scale thereon, of a gage-reading device adjustably secured to said rod, said reading device having a lateral hook or the like extending across the side of said rod having the scale thereon and adapted to engage with the inner side of the barrel at the center of the bung-hole.

3. A gage-reading device comprising a sleeve or ferrule adapted to engage with a rod, a spring-strip connected with said sleeve, a lateral hook at one end of said spring-strip, a lateral catch or extension from said spring on the opposite side of said sleeve from said hook, and a ring or the like at the end of said spring for engagement with the finger.

4. A gage-reading device comprising a sleeve adapted to slidably engage with a gage-rod, a spring-strip secured to one side of said sleeve and having one end bent up and terminating in a lateral hook, said hook being adapted to engage with the upper edge of the rod and also with the inner side of the barrel to be gaged, the other end of said spring being provided with an extension or catch also adapted to engage with the upper edge of the rod, the end of said spring being bent for engagement with the finger.

5. In a gage-reading device for casks or barrels, the combination with a gage-rod, of a lateral scale-reading member adapted to engage laterally with the inner surface of a barrel at the center of the bung-hole when the rod is inserted in diagonal position, and means for adjustably securing said reading member on said rod, the arrangement being such that the gage-rod may be accurately read while it is inserted in the barrel, or the rod may be removed for reading without disturbing the gage-reading member.

6. A gage-reading device comprising a strip of suitable resilient material having a hook thereon, and means for adjustably securing said strip to a gage-rod.

812,412. DEVICE FOR COUPLING WIRE AND MANILA ROPE. HUGH DOWNS, Pittsburg, and WILLIAM C. WALLY, Etna, Pa. Filed June 21, 1905. Serial No. 266,251.

Claim.—In a device of the character described, a socket formed in two sections, one threaded within the other, one of said sections being provided with an eye, said socket being adapted to receive the end of a cable, means passing through the contacting portions of the sections and the cable to hold the sections against displacement one from the other, and to hold the cable within the socket, a second socket adapted to receive the end of a cable and a link connection between the sockets.

812,413. WIRE-ROPE PROTECTOR. HUGH DOWNS, Pittsburg, and WILLIAM C. WALLY, Etna, Pa. Filed June 27, 1905. Serial No. 267,186.

Claim.—1. In a wire-rope protector of the character described, a body portion having a double-tapered slot extending the full length thereof and adapted to fit over the cable; a double-tapered wedge to conform to the tapered slot adapted to fit in the latter, and means for locking said wedge in its seat; as, and for, the purpose set forth.

thereto, and a post rising from the base through the open foot of the board, adapted to support accessory devices within said transparent hollow board.

6. An educational device for teaching spherics, comprising a transparent, hollow, spherical board, having an open foot by which it is supported; a base with means for detachably connecting the board thereto; a post rising from the base through the open foot of the board, and a center sight having a stem removably fitted to said post.

7. An educational device for teaching spherics, comprising a transparent, hollow spherical board, having an open foot by which it is supported; a base with means for detachably connecting the board thereto; a post rising from the base through the open foot of the board, and a figure form having a stem removably fitted to the post whereby said form is supported within said transparent hollow board.

8. In an educational device for teaching spherics, the combination of a transparent, hollow, spherical board, with a figure form removably fitted in its cavity in such relation to its wall as to be capable of being traced upon the surface of the board.

9. In an educational device for teaching spherics, and in combination with a spherical board, a spherical protractor adjustably fitted thereto and comprising a great-circle band, and suitable half-circle bands secured thereto.

10. In an educational device for teaching spherics, and in combination with a spherical board, a spherical protractor adjustably fitted thereto and comprising a great-circle band, and suitable half-circle bands secured thereto, said bands having scales and reading-arms for measuring angles and arcs.

11. In an educational device for teaching spherics, the combination of a transparent spherical board with a spherical protractor adjustably fitted to its surface and comprising a great-circle band and suitable half-circle bands secured thereto, said bands having scales and reading-arms for measuring angles and arcs.

12. In an educational device for teaching spherics, the combination of a transparent spherical board having a center sight, and a spherical protractor adjustably fitted to the surface of said board and comprising a great-circle band and suitable half-circle bands secured thereto, said bands having scales and reading-arms for measuring angles and arcs.

13. In an educational device for teaching spherics, the combination of a transparent spherical board, and a concave transfer-plate adapted to be fitted to and to slide over the surface of said board.

14. In an educational device for teaching spherics, the combination of a transparent spherical board, and a concave transfer-plate adapted to be fitted to and to slide over the surface of said board, said transfer-plate being made of transparent material.

812,409. **SEWING AND CUTTING MACHINE.** JACOB DIEHL, Cleveland, Ohio, assignor to Standard Sewing Machine Company, Cleveland, Ohio, a Corporation of Ohio. Filed Nov. 21, 1899. Serial No. 737,728.

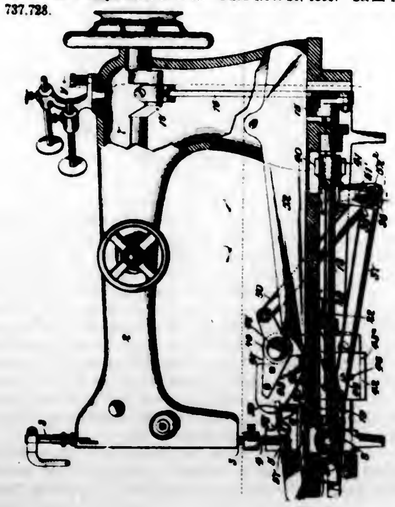

Claim.—1. In a machine of the character described, the combination, with a sewing mechanism for making a double row of stitching, and a supporting-frame arm 2, of a feeding device arranged to feed toward the base of said arm, a cutting device independent of the sewing mechanism located in the path of the work as it is fed from said sewing mechanism and in position to cut or split the same between the two rows of stitching so that the two parts of the work may pass one at each side of said arm, and means for actuating said feeding and cutting devices and causing them to alternately act upon the work.

2. In a machine of the character described, the combination, with a sewing mechanism for making a double row of stitching, and a supporting-frame arm 2, of a feeding device arranged to feed toward the base of said arm, a pivoted cutting device located between the sewing-point and the base of said arm in the path of the work as it is fed from the sewing mechanism and in position to cut or split the same between the two rows of stitching, and means for actuating said feeding and cutting devices and causing them to alternately act upon the work.

3. In a machine of the character described, the combination, with a sewing mechanism for making a double row of stitching, and a supporting-frame arm 2, of a feeding device arranged to feed toward the base of said arm, a pivoted cutting device supported upon the bed-plate of the machine in a position to cut or split the work between the two rows of stitching as it is fed from the sewing mechanism on a line extending from the stitching-point to the base of said arm, and means for actuating said feeding and cutting devices and causing them to alternately act upon the work.

4. In a machine of the character described, the combination, with a sewing mechanism for making a double row of stitching, of a feeding device, a cutting device independent of the sewing mechanism located in the path of the work as it is fed from said sewing mechanism and in a position to cut or split the same between the two rows of stitching, means for actuating said feeding and cutting devices and causing them to alternately act upon the work, comprising a transverse rock-shaft 34, and separate adjustable connections from said rock-shaft to the feeding and cutting devices, substantially as set forth.

5. In a machine of the character described, the combination, with a sewing mechanism for making a double row of stitching comprising a needle-actuating shaft and an overhanging support carrying the same, of a feeding device for feeding the material parallel with the said needle-shaft and support, a pivoted cutting device located in position to cut or split the work between the rows of stitching in a line parallel with the said needle-shaft support as the work is fed from the sewing mechanism, and a rock-shaft arranged transversely to said needle-actuating shaft and supported on the under side of the bed-plate of the machine, said rock-shaft having operative connections with the said feeding and cutting devices for actuating the same, substantially as set forth.

6. In a machine of the character described, the combination, with a sewing mechanism for making a double row of stitching, of a cutting device located in the path of the work as it is fed from the sewing mechanism and in position to cut or split the same between the two rows of stitching, means located at the rear of the cutting device at each side of the line of cut for spreading apart the severed portions of the work, and stretching the material evenly at the point of cutting and means for automatically feeding the work to the cutting device and forcing the same past the said separating means.

7. In a machine of the character described, the combination, with a sewing mechanism for making a double row of stitching, of a pivoted cutting device supported upon the bed-plate of the machine in a position to act upon the work between the two rows of stitching as it is fed from the sewing mechanism, actuating means for said cutting device comprising a connection extending through the said bed-plate, and two raised flanges extending in diverging directions from a point adjacent to the rear end of the cutting device and at opposite sides of said actuating connection.

8. In a machine of the character described, the combination, with a sewing mechanism for making a double row of stitching, of a cutting device located in the path of the work as it is fed from the sewing mechanism, two raised flanges extending in diverging directions from a point adjacent to the rear end of the cutting device and in line therewith, and means for automatically feeding the work to the cutter and forcing the same past the said diverging flanges, for the purpose set forth.

9. In a machine of the character described, the combination, with a sewing mechanism, of a guide for the work arranged below the same and having an upwardly-presented edge and a guide above the work having a downwardly-presented edge in line with the edge

of the lower guide, said guides being arranged to act on the work in advance of the presser-foot and direct the same in a flat condition, and a cutting device, substantially as set forth.

10. In a machine of the character described, the combination of a sewing mechanism, two coöperating guides arranged to engage with the work at the upper and under sides thereof in advance of the presser-foot, the presser-foot, the presser-bar with which the upper of said guides is connected movably on a horizontal pivot allowing its outer end a vertical oscillation relative to the lower guide, and a cutting device, substantially as set forth.

11. In a machine of the character described, the combination, with a presser-foot and a sewing mechanism, of two coöperating guides located in advance of said presser-foot and being arranged to coöperate with the work at the upper and under sides thereof, the upper guides being pivoted to the presser, a spring for normally holding said upper guide in operative position and a cutting mechanism situated at the rear of the presser-foot and having its cutting-line coinciding with the line of said guides.

12. In a sewing-machine of the character described, the combination of stitching mechanism comprising two needles, feeding devices, a cutter at the rear of the needles operating to sever the stitched work between the two rows of stitches, and means adjacent to the cutter for deflecting both of the stitched edges evenly in opposite directions away from the cutting-line, whereby the work is stretched at the point of cutting.

13. In a machine of the character described, the combination of a bed-plate, stitching mechanism comprising two needles, a power-shaft above the bed-plate for operating said needles, two rotary shafts beneath the bed-plate parallel with and operated by said power-shaft, two loopers one for each needle turning on an axis transverse to said rotary shafts and actuated by the latter, a rock-shaft arranged transversely to said two rotary shafts and actuated by one of them, a feeding device connected with said rock-shaft and actuated in directions transverse to the same, and a cutter also actuated by said rock-shaft and acting on a line between the needles and parallel with the said power-shaft.

14. In a machine of the character described, the combination of a bed-plate, a main shaft arranged longitudinally of the machine, stitching mechanism comprising two needles arranged one at each side of the longitudinal line of the machine, two rotary shafts also arranged one at each side of said line and beneath the bed-plate, two loopers one for each needle turning in planes longitudinal of the machine and actuated respectively by said rotary shafts, a transverse rock-shaft beneath the bed-plate actuated by one of said rotary shafts, a feeding device acting longitudinally of the machine and operated by said rock-shaft, and a cutter acting on the longitudinal line of the machine and operated by said rock-shaft.

812,410. **ROTARY LOOP-TAKER FOR SEWING-MACHINES.** GEORGE H. DIMOND and WILBUR F. DIAL, Bridgeport, Conn., assignors to Wheeler & Wilson Manufacturing Company, Bridgeport, Conn., a Corporation of Connecticut. Filed Feb. 6, 1903. Serial No. 92,866.

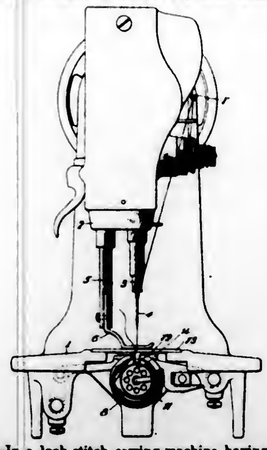

Claim.—In a lock-stitch sewing-machine having a bed-plate, the combination of an independent take-up, a reciprocating eye-pointed needle arranged above the bed-plate, a bobbin, a bobbin-case, a rotary loop-taker arranged below the bed-plate and containing the bobbin-case, a needle loop-seizing point on said loop-taker, an adjacent guard extending in front of said point and overlapping it and adapted to prevent fouling of the needle and bobbin threads and loop-taker, and a needle loop-controller finger projecting rearwardly toward the said point to catch the loop of needle-thread as it draws off the point and carry it into the line of descent of the needle whence it slips off and is drawn up by the take-up to finish the stitch.

812,411. **GAGE-READING DEVICE.** GEORGE P. DOREN, Chicago, Ill. Filed Nov. 21, 1904. Serial No. 233,684.

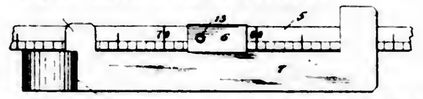

Claim.—1. The combination with a gage-rod, of a reading device adjustably secured to said rod and having a lateral hook or the like for engagement with the inner side of the barrel at the center of the bung-hole transversely to the length of the barrel when said rod is inserted diagonally in a barrel or cask.

2. The combination with a gage-rod having a scale thereon, of a gage-reading device adjustably secured to said rod, said reading device having a lateral hook or the like extending across the side of said rod having the scale thereon and adapted to engage with the inner side of the barrel at the center of the bung-hole.

3. A gage-reading device comprising a sleeve or ferrule adapted to engage with a rod, a spring-strip connected with said sleeve, a lateral hook at one end of said spring-strip, a lateral catch or extension from said spring on the opposite side of said sleeve from said hook, and a ring or the like at the end of said spring for engagement with the finger.

4. A gage-reading device comprising a sleeve adapted to slidably engage with a gage-rod, a spring-strip secured to one side of said sleeve and having one end bent up and terminating in a lateral hook, said hook being adapted to engage with the upper edge of the rod and also with the inner side of the barrel to be gaged, the other end of said spring being provided with an extension or catch also adapted to engage with the upper edge of the rod, the end of said spring being bent for engagement with the finger.

5. In a gage-reading device for casks or barrels, the combination with a gage-rod, of a lateral scale-reading member adapted to engage laterally with the inner surface of a barrel at the center of the bung-hole when the rod is inserted in diagonal position, and means for adjustably securing said reading member on said rod, the arrangement being such that the gage-rod may be accurately read while it is inserted in the barrel, or the rod may be removed for reading without disturbing the gage-reading member.

6. A gage-reading device comprising a strip of suitable resilient material having a hook thereon, and means for adjustably securing said strip to a gage-rod.

812,412. **DEVICE FOR COUPLING WIRE AND MANILA ROPE.** HUGH DOWNS, Pittsburg, and WILLIAM C. WALLY, Etna, Pa. Filed June 21, 1905. Serial No. 266,251.

Claim.—In a device of the character described, a socket formed in two sections, one threaded within the other, one of said sections being provided with an eye, said socket being adapted to receive the end of a cable, means passing through the contacting portions of the sections and the cable to hold the sections against displacement one from the other, and to hold the cable within the socket, a second socket adapted to receive the end of a cable and a link connection between the sockets.

812,413. **WIRE-ROPE PROTECTOR.** HUGH DOWNS, Pittsburg, and WILLIAM C. WALLY, Etna, Pa. Filed June 27, 1905. Serial No. 267,126.

Claim.—1. In a wire-rope protector of the character described, a body portion having a double-tapered slot extending the full length thereof and adapted to fit over the cable; a double-tapered wedge to conform to the tapered slot adapted to fit in the latter, and means for locking said wedge in its seat; as, and for, the purpose set forth.

2. In a wire-rope protector of the character described,

2. In a wire-rope protector of the character described, a body portion having a double-tapered slot extending the full length thereof, and adapted to fit over the cable; a double-tapered removable wedge to conform to the tapered slot adapted to fit in the latter; and a tapered locking-key to fit in an opening formed through the side of the body portion and through said wedge; as, and for, the purpose set forth.

3. In a wire-rope protector of the character described, a body portion having a double-tapered slot extending the full length thereof, and adapted to fit over the cable; a double-tapered removable wedge to conform to the tapered slot, adapted to fit in the latter; a tapered locking-key to fit in an opening formed through the side of the body portion and through said wedge; and means whereby the wedge may be removed; as, and for, the purpose set forth.

4. In a wire-rope protector of the character described, a body portion having a double-tapered slot extending the full length thereof, and adapted to fit over the cable; corrugations formed in the rear wall of said slot; a double-tapered removable wedge to conform to the tapered slot, adapted to fit in the latter; a groove formed in the inner edge of said wedge; a tapered locking-key to fit in an opening formed through the side of the body portion and through said wedge; and means whereby the wedge may be removed; as, and for, the purpose set forth.

5. In a device of the character described, a body portion having a groove to receive a cable, and a filler for the groove binding against the cable and means for holding the filler against displacement.

6. In a device of the character described, a body portion having a groove to receive a cable, and a filler for the groove binding against the cable and means extending transversely of the body for holding the filler against displacement.

7. In a device of the character described, a body having a wedge-slot, adapted to receive a cable and a wedge fitting within said slot and bearing against said slot and said wedge having notches on its outer surface.

8. In a device of the character described, a body having a wedge-slot adapted to receive a cable, and a wedge fitting within said slot and bearing against the cable, and an eye carried by the wedge.

812,414. **ROTARY ENGINE.** FRITZ EGERSDÖRFER. Wiesbaden, Germany, assignor of one-half to Fritz Linder, Sr., Barmen, Germany. Filed Nov. 7, 1905. Serial No. 286,305.

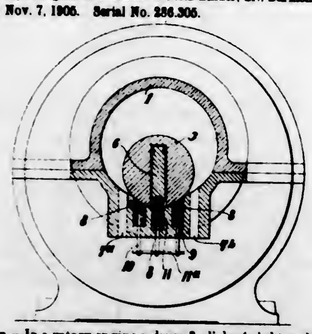

Claim.—In a rotary engine a drum 3, disks 4 right and left of the same, a cylinder 1 and covers 2 inclosing said drum and disks, shafts 5 connected to the disks 4 and journaled in said covers 2, a piston-plate 6 held radially movable in the drum 3, in combination with tightening-bars 8 embedded in corresponding grooves in the cylinder 1, pressure-bars 11 below said tightening-bars 8, bolts 10 fixed to said bars 11 and passing to the outside of the cylinder 1, springs 9 laid round said bolts and pressing the pressure-bars 11 together with the tightening-bars inwardly against the drum 3, cross-bars 11^a holding the bolts 10, and the bars 11 together, the whole as described and illustrated and for the purpose set forth.

812,415. **FRAME AND BOARD FOR DISPLAYING ADVERTISING BILLS, PICTURES, &c.** ARTHUR BRETT. Ealing, England. Filed June 19, 1905. Serial No. 265,960.

Claim.—An improved advertising-frame having in combination a wood back, two side pieces secured to the back, and two end pieces hinged to the fixed side pieces, the hinges being secured beneath the raised flush surface of the said side and end pieces at the corners of the frame, the end pieces being adapted to move upon their hinges outwardly and inwardly in relation to the back to freely admit or remove a bill or poster, and radial arms carrying elastic pads to smooth out and clamp the said bill or poster flat against the wood back, substantially as and for the purpose herein described and shown by the drawings.

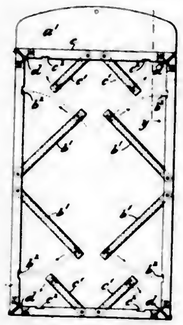

812,416. **PRESS FOR CONCRETE BUILDING-BLOCKS.** JOHN A. FERGUSON. Denver, Colo. Filed Oct. 12, 1905. Serial No. 282,406.

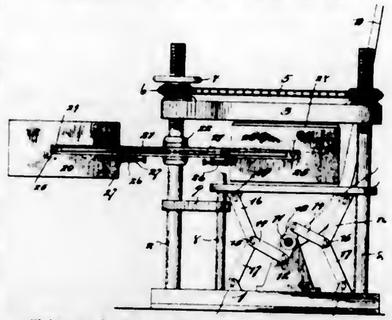

Claim.—1. In a press, the combination with the presser-plate and its actuating means, of an eccentrically-mounted mold-box and a support therefor mounted for movement above said presser-plate and to swing in a horizontal plane into and out of operative relation to said presser-plate.

2. In a press, the combination with the presser-plate and its actuating means, of a mold-box eccentrically pivoted to automatically swing through an arc of more than ninety degrees and a support therefor mounted to swing in a horizontal plane into and out of operative relation to said presser-plate, said mold-box being mounted for inversion.

3. In a press of the character described, the combination with the bed, of posts rising therefrom, an adjustable upper plate on said posts, a presser-plate guided vertically on a portion of said posts, a shorter vertical guide rising from the bed and braced from another of said posts, a mold-support mounted for rotation on said last-named post and adapted to swing above said guide and between said plates and means for raising and lowering said presser-plate.

4. A press and a mold mounted to swing horizontally into and out of the press, said mold being eccentrically pivoted to swing beyond a vertical center by gravity.

812,417. **RAILWAY-RAIL JOINT.** ELI T. FORRESTER. Denver, Colo. Filed Dec. 9, 1905. Serial No. 291,123.

Claim.—1. In a rail-joint, the rails having overlapping vertical tongues extending from their adjacent ends, each tongue being an extension of one-half of the vertical web one-half of the tread and one-half of the tie-flange of the respective rails, with the terminals of the tongues scarfed for a distance and with recesses at the inner ends of the tongues corresponding to and adapted to respectively receive the scarfed terminals of the tongues when the rails are disposed end to end, the outer ends of the recesses and the inner ends of the scarfed portions having lateral interbearing shoulders.

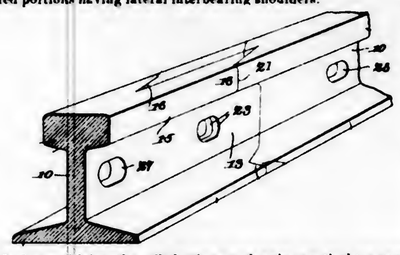

2. In a rail-joint, the rails having overlapping vertical tongues extending from their adjacent ends, each tongue being an extension of one-half of the vertical web one-half of the tread and one-half of the tie-flange of the respective rails with the terminals of the tongues scarfed for a distance and with recesses at the inner ends of the tongues corresponding to and adapted to respectively receive the scarfed terminals of the tongues when the rails are disposed end to end, the outer ends of the recesses and the inner ends of the scarfed portions having lateral interbearing shoulders and clamp-bolts uniting the overlapping tongues.

812,418. **APPARATUS FOR TREATING SLIMES, &c., FOR THE RECOVERY OF THE PRECIOUS METALS.** CHARLES GLUYAS. Johannesburg, Transvaal. Filed May 3, 1905. Serial No. 256,676.

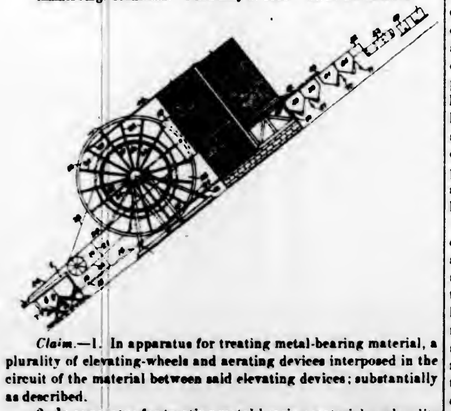

Claim.—1. In apparatus for treating metal-bearing material, a plurality of elevating-wheels and aerating devices interposed in the circuit of the material between said elevating devices; substantially as described.

2. In apparatus for treating metal-bearing material, a plurality of elevating devices, and aerating devices comprising a plurality of superposed launders interposed in the circuit of the material between said elevating devices; substantially as described.

3. In apparatus for treating metal-bearing material, a plurality of elevating devices, and aerating devices comprising a plurality of superposed helically-disposed launders interposed in the circuit of the material between said elevating devices; substantially as described.

4. In apparatus for treating metal-bearing material, a plurality of elevating-wheels arranged side by side, and aerating devices interposed in the circuit of the material between said elevating-wheels; substantially as described.

5. In apparatus for treating metal-bearing material, an elevating device comprising a wheel having a plurality of sets of elevating-buckets, means for driving said wheel, and means for conveying the material to said sets of buckets in succession; substantially as described.

6. In apparatus for treating metal-bearing material, an elevating device comprising a plurality of wheels, each provided with a plurality of sets of elevating-buckets, means for driving said wheels, and means for conveying the material in succession to said several sets of buckets; substantially as described.

7. In apparatus for treating metal-bearing material, an elevating device comprising a plurality of wheels, each provided with a plurality of sets of elevating-buckets, means for driving said wheels, means for conveying the material in succession to said several sets of buckets, and aerating devices interposed in said conveying means; substantially as described.

8. In apparatus for treating metal-bearing material, an elevating device comprising a plurality of wheels, each provided with a plurality of sets of elevating-buckets, means for driving said wheels, means for conveying the material in succession to said several sets of buckets, and aerating devices comprising superposed launders interposed in said conveying means; substantially as described.

812,419. **FILE OR HOLDER FOR PAPERS AND LEAVES.** ALFRED C. HAFELY. Brooklyn, N. Y. Filed Aug. 21, 1901. Serial No. 73,780.

Claim.—1. In a temporary binder for leaves the combination of a pair of covers the upper cover having right-angular portions located on either side thereof the lower cover also having right-angular portions on either side thereof which overlap and are located within the right-angular portions of the upper cover, the said right-angular portions of the lower cover having open slots, threaded studs supported in the overlapping portions of the upper cover and movable along the said open slots in the lower cover, nuts located on the said studs for adjusting the distance between the covers.

2. In a temporary binder for leaves the combination of a pair of covers, the upper cover having a right-angular portion located on each side and at the end of the said upper cover, the lower cover also having a right-angular portion located at each side and at the end thereof which overlaps and is located within the right-angular portion of the upper cover, the said right-angular portions of the lower cover having open slots, threaded studs supported in the overlapping portions of the upper cover and movable along the said open slots in the lower cover, nuts located on the said studs for causing the overlapping portions to frictionally engage with each other at any point along the said slots, pins carried by the upper cover and sockets supported on the lower cover for receiving the said pins whereby the leaves may be easily inserted or removed from the said holder.

3. In a temporary binder for leaves the combination of a pair of covers connected together by a flexible back, the upper cover having a right-angular portion located on each side and at the end of the said upper cover, the lower cover also having a right-angular portion located at each side and at the end thereof which overlaps and is located within the right-angular portion of the upper cover, the said right-angular portions of the lower cover having open slots, threaded studs supported in the overlapping portions of the upper cover and movable along the said open slots in the lower cover, nuts located on the said studs for causing the overlapping portions to frictionally engage with each other at any point along the said slots, pins carried by the upper cover and sockets supported on the other cover for receiving the said pins whereby the leaves may be easily inserted or removed from the said holder.

812,420. **BURGLAR-ALARM.** FREDERICK C. HARRIMAN, Yonkers, N. Y. Filed Sept. 24, 1904. Serial No. 225,739.

Claim.—1. A detonating burglar-alarm comprising a base, a hammer pivoted upon said base and having an arched back, and a spring fixed at one end upon said base in rear of said hammer and inclining upwardly thereto and resting upon said arched back; means being provided for retaining the hammer in its raised position, the hammer being releasable by downward pressure upon the spring, and the tension of the spring caused by such pressure being effective to cause the hammer to strike.

2. A detonating burglar-alarm comprising a sheet-metal base having downwardly-turned prongs and upwardly-turned ears which

said point of body connection, and a spring secured at its middle to the cross-bar of the shaft and from the ends of which the forward and

3. In a nut-tapping machine, the combination with a tap and a reciprocating nut-blank holder, of a feed-table having at the end a

3. Means to replenish the air-chamber of a pump with air comprising two chambers disposed one above the other, a partition

2. A detonating burglar-alarm comprising a sheet-metal base having downwardly-turned prongs and upwardly-turned ears which form a pocket for holding a detonator, a hammer pivoted between said ears, and a spring secured at its rear end to said base and inclining upwardly and forwardly and bearing upon said hammer; means being provided for enabling said spring to hold said hammer cocked, and the construction being such that downward flexure of the spring releases the hammer and causes it to strike.

3. A detonating burglar-alarm comprising a strip of sheet metal having at each end a pair of downwardly and forwardly turned prongs and near its forward end a pair of upwardly-turned ears which form a pocket for the reception of a detonator, an arched hammer pivoted between said ears and provided upon its tip with a boss, and a spring attached at its rear end to the rear of said strip and inclining upwardly and forwardly and having a cupped portion to fit over said boss for holding the hammer when cocked, the spring being of such a length that its tip rides down along the arched back of the hammer while the latter is striking.

4. A burglar-alarm comprising the combination of a base; a hammer pivotally mounted therein; and a spring secured at its lower end to said base and having its upper free end overlapping the upper free end of said hammer in the latter's cocked position, the upper free end of said spring being formed with a retaining-recess for holding said hammer in cocked position.

5. A burglar-alarm comprising the combination of a base provided with retaining means; a hammer pivotally mounted in said base and actuated by a flat spring; and said flat spring one end of which is secured to the base and the other end of which overlaps and retains said hammer in cocked position; said hammer being released by pressure upon said spring and driven by said spring after such release.

6. In combination, a door; a base; a hammer mounted in said base; and an inclined spring-arm the lower end of which is secured to said base and the upper end of which is formed to engage and retain in cocked position said hammer; said door and base being movable relatively to each other, and said spring-arm being in the path of travel of said door and actuated directly by the pressure of said door to release and drive said hammer against said base.

812,421. **TWO-WHEELED VEHICLE.** FRANCIS M. HARRINGTON, Peoria, Ill., assignor to The Harrington Manufacturing Company, Peoria, Ill., a Corporation of Illinois. Filed May 22, 1905. Serial No. 261,706.

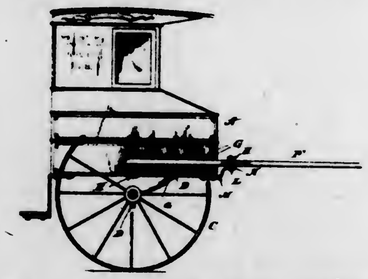

Claim.—1. In a two-wheeled cart, the shafts, a spring secured at one end to each side member thereof substantially as shown, the opposite ends of the springs secured to the cart-axle, the cart-body suspended between the said rear extremities and secured thereto, a spring secured at the middle of its length to the connecting-bar of the shafts at right angles to the said side members thereof, the free flexing ends of the spring having connection with the front of the body.

2. In a two-wheeled vehicle the body thereof, the shafts therefor having the body located therebetween, said body having attachment with the rear ends, a spring secured at one end to each shaft, the other ends of the springs having attachment with the axle, and a third spring secured at its middle to the cross-bar of the shafts forward of the body its ends having connection with said body for yieldingly supporting the forward end thereof.

3. In a two-wheeled vehicle, the shafts, the body located therebetween and secured substantially at its middle to the end of each, a spring secured to each shaft forward of the point of connection with the body, the rear ends of the springs secured to the axle beneath the said point of body connection, and a spring secured at its middle to the cross-bar of the shaft and from the ends of which the forward end of the body is hung substantially as shown.

4. In a two-wheeled vehicle the shafts, the cart-body secured to and between and balanced upon the rear ends thereof, the axle being located below the point of connection of the shafts and body, a spring secured to each shaft member forward of the axle and extending to said axle and secured thereto, and a spring on the cross-bar of the shafts forward of the body, the latter being suspended at its forward end from the free end of said spring.

5. In a two-wheeled vehicle, the shafts, the body located between the rear ends thereof and secured thereto at its center of gravity, the axle just below the point of connection, a half-spring secured at one end to each shaft member and at the other to the axle, a spring secured at its middle to the connecting-bar of the shafts forward of the body and parallel with the axle, and pivotal connection between the spring ends and the said body.

6. In a two-wheeled vehicle, the shafts, the body located therebetween, and secured substantially at its middle to the end of each, a spring secured to each shaft forward of the point of connection with the body, the rear ends of the springs secured to the axle beneath the said point of body connection, a third spring secured at its middle to the cross-bar of the shafts at right angles to the latter, members attached to the body and extending forward therefrom and having loose connection with the free flexing ends of the said third spring substantially as described.

812,422. **NUT-TAPPING MACHINE.** JESSE J. HARRIS, Berea, and ANDREW A. PRIOR, Cleveland, Ohio, assignors of one-half to Thomas Reid, Cleveland, Ohio. Filed Apr. 3, 1905. Serial No. 253,408.

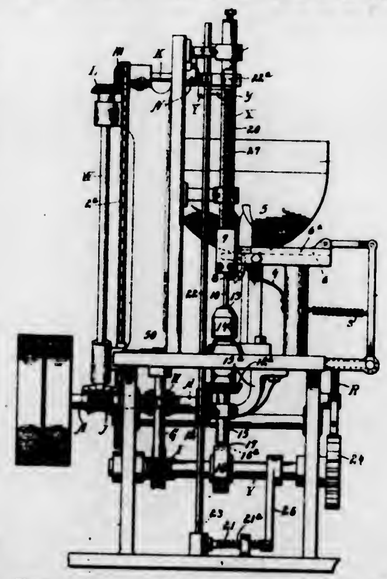

Claim.—1. In a nut-tapping machine, the combination with a tap having an extended shank to receive a plurality of nuts passed over the tap, of a chuck normally engaging the end of the shank, a shaft having a notched cam thereon, a plunger which supports the chuck and is supported on the cam and adapted to drop into the notch and release the chuck during one of a series of strokes, a reciprocating blank-holder arranged to force blanks over the tap and onto the shank, and having jaws operating to grip the tap at its front end when the chuck is released, feed mechanism to deliver blanks to the holder, and means to arrest the feed when the tap is gripped by said jaws.

2. In a nut-tapping machine, the combination with a tap and a reciprocating nut-blank holder which forces blanks upon the tap, of a feed-table, and a yielding feed-support for the blanks, attached to the table and located between the tap and holder and arranged to swing out of the way when the holder advances.

3. In a nut-tapping machine, the combination with a tap and a reciprocating nut-blank holder, of a feed-table having at the end a pivoted blank-support having a forked end projecting between the tap and the holder and in the way of the latter, and constructed to support a blank over the point of the tap and to swing out of the way of the holder as it advances.

4. In a nut-tapping machine, the combination with the tap, and the reciprocating holder arranged for forcing blanks thereon, of the feed-table having at the end a swinging blank-support projecting between the tap and holder and arranged to yield when the holder advances, and the slide upon the table, for feeding blanks onto said support.

5. In a nut-tapping machine, the combination with a tap, of a reciprocating tubular plunger having a blank-holder at the end, a block in said plunger, springs between said block and the ends of the plunger, and a crank connected to said block.

6. In a nut-tapping machine, the combination with a reciprocating blank-holder constructed to force blanks over a tap, of feed mechanism feeding blanks to the holder, means to arrest the feed during one of a series of strokes, and means to simultaneously strip the nuts from the tap.

7. In a nut-tapping machine, the combination of a tap, means to support and rotate the same, a plunger having a blank-holder constructed to force nuts onto the tap, jaws carried by the plunger and arranged to grip the tap, rods normally slidable with the plunger and having a connection with the jaws, to close the same when the movement of the rods is stopped, and means to stop the movement of the rods at predetermined times.

812,423. **MEANS TO REPLENISH THE AIR-CHAMBERS OF PUMPS WITH AIR.** HENRY T. HAZARD, Los Angeles, Cal., assignor of one-half to Albert Hobercht, Ensenada, Mexico. Filed Oct. 5, 1904. Serial No. 227,273.

Claim.—1. Means to replenish the air-chamber of a pump with air, comprising a main air-chamber and a supplementary chamber below the same, a partition therebetween, a port in said partition and a port in the bottom of the supplementary chamber and valvular means to alternately open and close said ports.

2. A pump provided with a main air-chamber and a supplementary chamber divided by a partition, a valve-controlled port in said partition for the passage therethrough of air and water, a valve-controlled port in the supplementary chamber for the passage of air and water, and valvular means to alternately open one port and close the other.

3. Means to replenish the air-chamber of a pump with air comprising two chambers disposed one above the other, a partition between said chambers, a port therein, a port in the bottom of the bottom chamber, and valves controlling said ports, the said valves being workably connected together and adapted one to be closed as the other is opened and means to open and close said valves.

4. In a pump having an air-chamber, the herein-described means to replenish the chamber with air comprising the supplementary chamber F, a partition G between the chambers, a port G' therein, a port I' in the bottom of the supplementary chamber and means to control said ports comprising the valves J and K, the valve J secured to the swinging lever M and the swinging lever M and means to swing said lever.

5. In an air-chamber for a pump provided with a supplementary chamber below, the said chambers being divided by a partition having a port therein and a port in the bottom of the supplementary chamber, the herein-described swinging lever pivotally mounted in the supplementary chamber and carrying at one end a valve adapted to control the port between the chambers and at the other end a valve adapted to control the port in the bottom of the supplementary chamber, in combination with means to operate said lever.

6. In a pump having a main air-chamber and a supplementary chamber of the character herein described, the herein-described float disposed in the main air-chamber, adapted when in its depressed position to lock the valves controlling the port in the partition between the chambers and the port in the bottom of the supplementary chamber, and prevent the operation of the valves and to unlock said valves when in its elevated position.

7. In combination a pump-cylinder, an air-chamber thereon a supplementary chamber below the air-chamber, a port between the chamber and a port in the bottom of the supplementary chamber and valvular means to control said ports in combination with means to operate said valvular means.

812,424. **COMBINED KNIFE, FORK, CAN-OPENER, AND SAW.** CHARLES HELLMUTH, New York, N. Y. Filed Aug. 26, 1905. Serial No. 275,855.

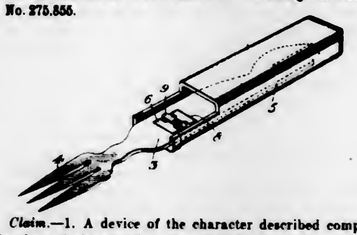

Claim.—1. A device of the character described comprising a casing formed of separable sections, blocks secured in said sections, buttons pivoted on said blocks and implements embodying plates having slots adapted to be engaged by said blocks, substantially as described.

2. A device of the character described, comprising a casing formed of separable sections having overlapping ends, blocks secured in said sections, buttons pivoted on said blocks and implements embodying plates having slots adapted to be engaged by said blocks, substantially as described.

3. A device of the character described comprising a casing formed of separable sections having overlapping ends and slots in said ends, blocks secured in said slots, buttons pivoted on said blocks, and implements having slots adapted to be engaged by said blocks, substantially as described.

4. A device of the character described comprising a casing formed of separable sections having overlapping ends and slots in said ends, blocks secured in said slots, buttons pivoted on said blocks, and implements embodying plates having slots adapted to be engaged by said blocks, and plates for securing said blocks, substantially as described.

5. A device of the character described comprising a casing formed of separable sections having overlapping ends and slots in said ends, notched blocks secured in said slots, buttons pivoted on said blocks, and implements embodying plates having slots adapted to be engaged by said blocks, substantially as described.

812,425. **BOOK AND JOB CHASE.** OSCAR HOWARD, Wheeling, W. Va., assignor of one-half to Richard Robertson, Wheeling, W. Va. Filed Apr. 8, 1905. Serial No. 254,480.

Claim.—1. In a device of the character described, a chase having a plurality of spaced recesses along the inner edges of its sides and ends, the recesses in the ends being inwardly inclined at opposite sides of a point intermediate the extremities thereof, a top stick and a foot-stick extending from one end of said chase to the other, the ends of said sticks provided with projections for interlocking engagement with said inclined recesses, end sticks extending from one side of said chase to the other and having their ends provided with projections for interlocking engagement with the recesses in said sides, spaced perforations in all of said sticks, and spaced studs carried by the engaging faces of said sticks, the studs on the end sticks being adapted for interlocking engagement with the perforations in the top stick and the foot-stick, and vice versa.

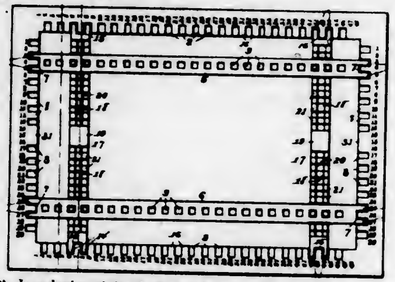

2. In a device of the character described, a chase having a plurality of spaced recesses along the inner edges thereof, a top stick, a foot-stick and end sticks, all said sticks having ends adapted for interlocking engagement with the recesses in said chase, said top stick and foot-stick each provided with a longitudinal channel in its under face, spaced perforations opening into said channels from the upper faces of said sticks, a longitudinal row of spaced vertical studs carried by each of the last-mentioned sticks at each side of the channel therein, each of said end sticks provided with a channel in its upper face, spaced perforations opening into said channels from the under faces of said end sticks, and a row of spaced vertical studs carried by each of said end sticks at each side of the channel therein, all of said sticks being adapted to be adjusted with relation to the size of the form to be embraced thereby with studs of the top stick and foot-stick in engagement with perforations in said end sticks, and vice versa.

3. In a printer's chase, the combination with a frame provided with spaced recesses in its inner edge, of a top stick, foot-stick and two end sticks having projections in their ends for engaging the recesses in the frame, said sticks provided on their opposing faces with alternating spaced recesses and studs, the recesses and studs carried by the top stick and the foot-stick being adapted for interlocking engagement respectively with the studs and recesses carried by said end sticks, and vice versa.

812,426. **PRINTING-FRAME.** ALFRED J. JARMAN, New York, N. Y., assignor to Paragon Photo-Chemical Company, New York, N. Y., a Corporation of New York. Filed June 8, 1905. Serial No. 264,284.

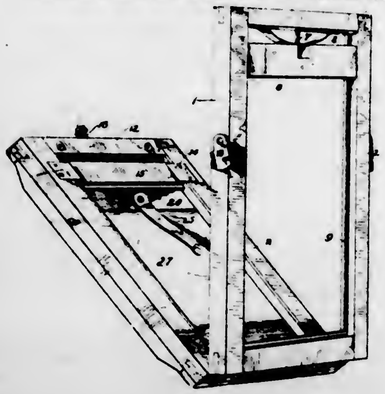

Claim.—1. In a printing-frame, the combination of a positive-plate holder and a negative-plate holder, said negative-plate holder comprising upper lower, and side bars, a spring-influenced cross-bar adapted to be reciprocated between said side bars and a removable back wall having an outwardly-extending spring upon its inner face, securable within said positive-plate holder.

2. In a printing-frame, the combination of a positive-plate holder and a negative-plate holder, said negative-plate holder comprising upper lower, and side bars, a cross-bar adapted to slide between said side bars means depending from the upper bar to limit the downward motion of said cross-bar and a removable back wall having an outwardly-extending spring upon its inner face, securable within said positive-plate holder.

3. In a printing-frame, the combination of a positive-plate holder and a negative-plate holder, said negative-plate holder comprising upper lower, and side bars, a cross-bar adapted to slide between said side bars, a spring coacting with said cross-bar and having a normal tendency to force said cross-bar downwardly and a removable back wall having an outwardly-extending spring upon its inner face, securable within said positive-plate holder.

4. In a printing-frame, the combination of a positive-plate holder and a negative-plate holder, a removable back wall securable within said positive-plate holder, and an outwardly-extending spring secured to the inner face of said back wall.

812,427. **WHEEL-TIRE FOR AUTOMOBILES.** HERMAN KERNSOOD, Baltimore, Md., and HARRY A. TAYLOR, New York, N. Y. Filed July 3, 1905. Serial No. 268,196.

Claim.—The combination with a sheet-metal rim, strips secured to the rim with washers interposed between the strips and the rim, convolute springs extending transversely of the rim and having loose sliding connection between the rims and the strips, a transversely-bent strip 5 fitted over the several springs and a rubber tire inclosing said strip and springs and secured at its edges in edges of the rim.

812,428. **LUBRICATOR.** OLE O. KITTLESON, Lee, Ill. Filed May 15, 1905. Serial No. 260,433.

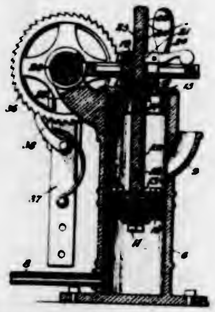

Claim.—1. The combination with a holder, of a piston operating therein, a support, a stem connected to the piston and having a threaded engagement with the support, operating means including a device rotatable about the stem, a dog for holding said device and stem against relative movement and permitting the sliding movement of the stem through the device, and means for automatically operating the dog to disengage the stem and driving device to permit the rotation of the latter with respect to the former when said stem has reached a predetermined position.

2. The combination with a holder, of a piston operating therein, a stationary support, a stem connected to the piston and having a threaded engagement with the support, an operating-wheel rotatable about the stem, a dog carried by the wheel for holding said wheel against relative rotation and permitting the sliding movement of the stem through the wheel, and means carried by the stem and engaging the dog when said stem has reached a predetermined position to unlock the wheel from the stem and permit the free rotation of said wheel.

3. The combination with a holder, of a piston slidable therein, a cap secured upon the upper end of the holder, a stem connected to the piston and having a threaded engagement with the cap, an operating-wheel mounted on the cap and rotatable upon the stem, said stem also being slidable through the wheel and being provided with a longitudinally-disposed keyway, a dog pivoted upon the wheel and normally engaged in the keyway to prohibit the relative rotation of the wheel and stem to permit the sliding movement of said stem, said stem having a shoulder located at the upper portion of the keyway and arranged to engage the inner end of the dog and move it out of said keyway when the stem moves downwardly to a predetermined position.

4. The combination with a holder, of a piston operating therein, a stationary support, a stem connected to the piston and having a threaded engagement with the support, said stem having a keyway, a wheel having a bore that slidably receives the stem, said wheel being rotatable about the stem, a worm engaging the wheel for operating the same, a dog movably mounted on the wheel and normally engaging in the keyway to prevent the rotation of said wheel about the stem, means located in the keyway for moving the dog out of the same when the stem reaches its predetermined position, said stem having a supporting-shoulder located in the keyway above said means, said dog being arranged to rest upon the shoulder in the keyway and support the wheel out of engagement with the worm, and a handle carried by the wheel.

5. The combination with a holder, of a piston operating therein, means for moving the piston including a worm-wheel, spaced journal-bearings located at one side of the wheel, a shaft passing through the bearings, means connected to the shaft for rotating the same, a worm loosely journaled on the shaft between the bearings and meshing with the worm-wheel, a clutch connection between one end of the worm and the shaft, a coiled spring bearing against the other end of the worm for yieldingly maintaining the clutch connection, said spring being mounted on the shaft and passing through the adjacent bearing, and means adjustably mounted on the shaft outside the bearing and engaging the spring to vary the tension thereof.

6. The combination with a holder, of a piston operating therein, means for moving the piston including a worm-wheel, spaced journal-bearings located at one side of the wheel, a shaft passing through the bearings, a ratchet-wheel secured to the shaft on the outer side of one of the bearings, a worm loosely journaled on the shaft between the bearings and meshing with the worm-wheel, a clutch connection between the shafts and the end of the worm that is adjacent to the ratchet-wheel, and means for yieldingly maintaining said clutch connection, said means bearing against the other end of the worm and passing through the adjacent bearing.

7. The combination with a holder, of a rotatable actuating device having an axial bore, a plunger operating in the holder and having a stem longitudinally slidable in the bore, a key movably associated with the stem and actuating device to prevent their relative rotation and permit the said sliding movement of the stem, means normally engaging the actuating device for operating the same, said device being slidable upon the stem out of operative engagement with the operating means and thus constituting means for manually operating the stem, and means carried by the stem and engaged by the key for holding the actuating device out of engagement with the operating means to permit the said manual operation of the stem.

8. The combination with a holder, of a stationary element associated therewith, a rotatable actuating-wheel having an axial bore, a plunger slidably mounted in the holder, a rotatable stem having a threaded engagement with the stationary element and having a longitudinally-sliding movement through the bore of the wheel, a key movably mounted on the wheel and having a slidable engagement with the stem to hold said stem and wheel against relative rotation, operating means engaging the wheel for rotating the same, said wheel having a handle and being movable on the stem to a position out of engagement with the operating means, and said stem having means engaged by the key to maintain said wheel out of such engagement to permit the manual rotation thereof.

812,429. **NUT-LOCK.** JAMES W. KOCH, Reynolds, Pa. Filed Aug. 16, 1904. Serial No. 220,936.

Claim.—1. A device of the character described, comprising in combination with a bolt having a threaded shank provided with a bore, a nut, said nut having a bore for coöperating with the bore in the bolt, and having grooves merging with said nut-bore at its ends, and a wire key passing through said bore and adapted to have its ends bent over into said grooves, and a ring integrally formed with said nut, said ring having a larger internal diameter than the nut axial bore and a lesser external diameter than the diameter of the nut, for the purposes described.

2. In combination with a rail and the fish-plates having alining apertures, a bolt passing therethrough, one of said fish-plates having countersunk portions at the nut-receiving end of the bolt, a nut having a threaded engagement with said bolt, a ring integrally formed with the nut projecting from the rear face thereof, the internal diameter of said ring being greater than the diameter of the threaded portion of the nut, and the external diameter of the ring being less than the diameter of the nut, said ring adapted to seat in the countersunk portion of the fish-plate, said nut and said bolt having alining apertures, the apertures of the nut extending diametrically therethrough, said nut having grooves on its opposite faces merging with the apertures of the nut and a key adapted to pass through said nut and bolt apertures and have its ends bent over into the nut-grooves to lock the nut and bolt together substantially as shown and described.

812,430. **COLLAR FOR DRAFT-ANIMALS.** FRANZ LEINEN, Königstein, Germany. Filed Mar. 16, 1904. Serial No. 198,406.

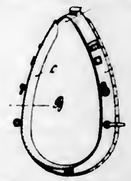

Claim.—A horse-collar composed of two sheet-metal members, one of said members being vaulted, the other thereof being flat, outturned flanges formed on said flat member, a padding adjacent said vaulted member and of less length than said members, and securing means passing through said flanges, vaulted member and padding.

812,431. **FIRING MECHANISM FOR GUNS.** JOHN F. METCS and HERMAN G. JAKOBSSON, Bethlehem, Pa., assignors to Bethlehem Steel Company, South Bethlehem, Pa., a Corporation of Pennsylvania. Filed Jan. 31, 1905. Serial No. 243,563.

Claim.—1. The combination with the mechanical firing devices including a rotatable cam at the breech of a gun, of an operating-handle at one side adjacent to the trunnion, and connections between said handle and said devices whereby said cam can be rotated in one direction only from said handle, substantially as set forth.

2. The combination with the mechanical firing devices including a rotatable cam at the breech of a gun, of an operating-handle supported on the saddle at one side adjacent to the trunnion, and connections between said handle and said devices, whereby said cam can be rotated in one direction only from said handle, substantially as set forth.

3. The combination with the mechanical firing devices at the breech of a gun, of an operating-handle at one side adjacent to the trunnion, and connections including separable toothed gears and means for rotating one of them between said handle and said devices, substantially as set forth.

4. The combination of the firing mechanism at the breech of a gun, a shaft for actuating the same provided with a toothed gear, and toothed driving-gear supported at the side of the gun engaging the gear on the shaft, the gears separable on opening the breech, substantially as set forth.

5. The combination with the firing devices of a gun and swinging carrier supporting the same, of an actuating-shaft and toothed gear, an arm at the side of the gun, a toothed gear carried by said arm adapted to engage the gear on the shaft, and means for turning the

gear on the arm from a position at the side of the gun, substantially as set forth.

and firing-pin of a gun, of a cam rotatable in one direction only for

adjustable to release the plug or both the plug and hub, substantially

hub, of a firing-head supported to slide in and turn with the block,

gear on the arm from a position at the side of the gun, substantially as set forth.

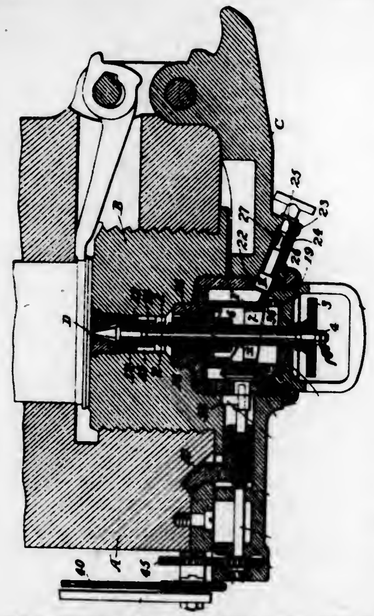

6. The combination with the firing devices, shaft and toothed gear at the breech of a gun, of an operating-handle at the side of the gun, and connections whereby the gear can be driven from said handle in one direction only, substantially as set forth.

7. The combination with the firing devices, shaft and gear at the breech of a gun, of gear engaging that on the shaft, a drive-wheel at the side of the gun connected to turn the latter gear, an operating crank-handle, a spring turning said handle freely in one direction, and means for connecting the handle with the drive-wheel to turn the latter in the opposite direction for firing, substantially as set forth.

8. The combination with the firing devices, shaft and gear at the breech of a gun, of gear engaging that on the shaft, a drive-wheel at the side of the gun connected to turn the latter gear, an operating crank-handle, a spring turning said handle freely in one direction, and a clutch movable on the handle for engaging a shoulder of the drive-wheel, substantially as set forth.

9. The combination with the firing devices, shaft and gear at the breech of a gun, of gear engaging that on the shaft, a drive-wheel at the side of the gun connected to turn the latter gear, and an operating crank-handle, said drive-wheel and handle and gear connected therewith movable longitudinally in respect to the gun, substantially as set forth.

10. The combination with the firing devices, shaft and gear at the breech of a gun, of gear engaging that on the shaft, a drive-wheel at the side of the gun connected to turn the latter gear, an operating crank-handle, said drive-wheel and handle and gear connected therewith movable longitudinally in respect to the gun, and a spring for moving said parts toward the rear, substantially as set forth.

11. The combination with the breech-block of a gun, its carrier and firing devices, of a shaft, connections for operating the firing devices on the turning of the shaft, a toothed gear and means for operating it from the side of the gun, and a toothed gear on the shaft adapted to engage with but separable from the gear connected with operating means at the side of the gun, substantially as set forth.

12. The combination with the breech-block of a gun, its carrier and firing devices, of a shaft, connections for operating the firing devices on the turning of the shaft in one direction, a toothed gear and means for turning it from the side of the gun, and a toothed gear on the shaft adapted to engage with but separable from the gear connected with the operating means at the side of the gun, substantially as set forth.

13. The combination with the swinging carrier, breech-block, and firing-pin of a gun, of a cam rotatable in one direction only for operating the pin, and means for rotating said cam in said direction after the breech is closed, substantially as set forth.

14. The combination with the swinging carrier, breech-block and firing-pin of a gun, of a cam rotatable in one direction only for operating the pin, and means for rotating said cam in said direction after the breech is closed, substantially as set forth.

15. The combination with the firing-pin of a gun, of a rotatable cam for operating the same, a shaft, and gears for rotating said cam after the breech is closed, substantially as set forth.

16. The combination with the firing-pin of a gun, of a rotatable cam for operating the same, a shaft and gears for rotating said cam after the breech is closed, and means at the side of the gun for rotating said shaft, substantially as set forth

17. The combination with the breech-block of a gun, of a firing-pin supported to slide in and turn with said block, a cam for drawing back and releasing the said pin, and means for operating said cam from the side of the gun, substantially as set forth.

18. The combination with the breech-block of a gun, of a firing-pin supported to slide in and turn with said block, a cam for drawing back and releasing said pin, and means for operating said cam from the side of the gun, the parts arranged to draw back the pin by the cam as the pin is rotated in turning the block to open the breech, substantially as set forth.

19. The combination with the breech-block of a gun, of a firing-pin supported to slide in and turn with said block, a cam for drawing back and releasing the said pin, means for operating said cam from the side of the gun, and means for preventing the rotation of the cam during the rotation of the breech-block, the parts arranged to draw back the pin by the cam as the pin is rotated in turning the block to open the breech, substantially as set forth.

20. The combination with the breech-block of a gun, of a firing-pin supported to slide in and turn with said block, a cam for drawing back and releasing the said pin, and means for operating the said cam from the side of the gun, said pin insulated and provided with means for connecting it in an electric circuit, substantially as set forth.

21. The combination of the rotatable breech-block of a gun, a carrier and hollow hub supporting the block, a cam within the hub for operating the pin, and means extending to the side of the gun for operating the cam, substantially as set forth.

22. The combination of the rotatable breech-block of a gun, a carrier and hollow hub supporting the block, an annular cam within the hub for operating the pin, a wing on the shaft of the pin engaging said cam, and means extending to the side of the gun for operating the cam, substantially as set forth.

23. The combination of the rotatable breech-block of a gun, a carrier and hollow hub supporting the block, a double cam within the hub for operating the pin, wings on the pin engaging said cam, and means extending to the side of the gun for operating the cam, substantially as set forth.

24. The combination of the rotatable breech-block of a gun, a carrier and hollow hub supporting the block, an annular cam, a wing on the shaft of the pin engaging said cam, an actuating-shaft supported by the carrier and gears whereby the cam may be rotated by the shaft, substantially as set forth.

25. The combination with the rotatable breech-block, firing-pin, cam, and shaft for actuating the cam, of means for preventing the rotation of the shaft until the breech is fully closed, substantially as set forth.

26. The combination with the rotatable breech-block, firing-pin, cam, and shaft for actuating the cam, of a lip on the shaft, and a recess in the breech-block arranged to permit the passage of the lip only when the breech-block is in firing position, substantially as set forth.

27. The combination with the carrier, hollow hub and rotatable breech-block of a gun, of a firing-pin supported to rotate with and slide longitudinally in the breech-block, a hollow cam-sleeve, and a wing on the firing-pin shaft engaging the cam of the sleeve, the latter supported to turn in bearings of the hub, substantially as set forth.

28. The combination of the rotatable breech-block of a gun, the carrier, a hollow hub supporting the block and detachable from the carrier, a cap detachable from the hub, and a locking device for holding the hub and cap in position on the carrier, substantially as set forth.

29. The combination with the breech-block, firing-pin and carrier of a gun, of a hub supporting said block, and connected detachably with the carrier, a plug detachable from the hub, and a locking device locking the plug, hub and carrier together in one position and adjustable to release the plug or both the plug and hub, substantially as set forth.

30. The combination with the breech-block, firing-pin and carrier of a gun, of a hub supporting said block, and connected detachably with the carrier, a plug detachable from the hub, and a locking-pin P sliding in the carrier and extending through the hub and engaging a recess of the plug, substantially as set forth.

31. The combination of the carrier, breech-block, firing-pin insulated from its stem, means for connecting the same in an electrical circuit, a shaft and means for operating the pin mechanically, and a locking device for locking the parts when firing electrically, substantially as set forth.

32. The combination with the carrier and firing-pin of a gun, of a breech-block, a hollow hub on the carrier supporting the block and adapted to receive the pin-actuating devices, and a detachable plug closing the end of the hollow hub, substantially as set forth.

33. The combination with the carrier and firing-pin of a gun, of a breech-block, a hollow hub on the carrier supporting the block and adapted to receive the pin-actuating devices, a shaft extending to the side of the gun, and means operated by the shaft to actuate the firing devices, substantially as set forth.

34. The combination with the carrier and firing-pin of a gun, of a breech-block, a hollow hub on the carrier supporting the block and adapted to receive the pin-actuating devices, a shaft extending from the side of the gun into the hub, and means operated by the shaft for actuating the firing devices, substantially as set forth.

35. The combination in a gun-firing mechanism, of a firing-pin having an insulated rod connected with the point, means for connecting said rod in an electric circuit, a cam, shaft and connections for operating the pin mechanically, and means for locking the shaft when firing electrically, substantially as set forth.

812,432. **FIRING MECHANISM FOR GUNS.** JOHN F. MEIGS and HERMAN G. JAKOBSSON, Bethlehem, Pa., assignors to Bethlehem Steel Company, South Bethlehem, Pa., a Corporation of Pennsylvania. Filed Feb. 6, 1905. Serial No. 244,415.

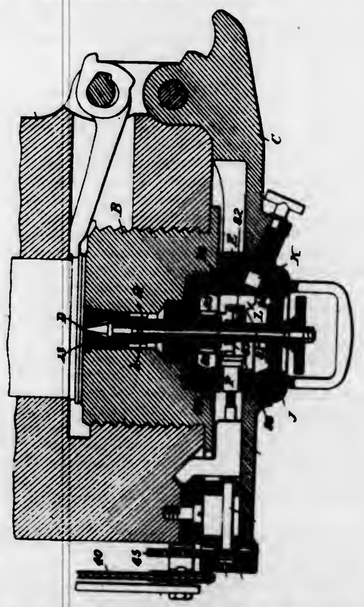

Claim.—1. The combination with the carrier, breech-block, and hollow hub, of a firing-head supported to slide in and turn with the block, a cam connected to the hub and bearing on a projection of the head to retract the firing-pin on turning the block, a sear engaging a shoulder on said head, a shaft extending to the side of the gun, and means for shifting the sear on turning the shaft, substantially as set forth.

2. The combination with the carrier, breech-block, and hollow hub, of a firing-head supported to slide in and turn with the block, a cam connected to the hub and bearing on a projection of the firing-head to retract the firing-pin on turning the block, a sear engaging a shoulder on said head, a shaft extending to the side of the gun, means for shifting the sear on turning the shaft, and means for operating the shaft from the side of the gun, substantially as set forth.

3. The combination of the carrier, breech-block, hollow hub, a cam supported immovably but detachably in said hub, and a firing-head and appliances for operating the same from said cam, substantially as set forth.

4. The combination of the carrier, breech-block, hollow hub having a removable plug, a cam supported immovably but detachably in said hub, and a firing-head provided with a wing for engaging said cam, substantially as set forth.

5. The combination of the carrier, breech-block, hollow hub, a cam supported immovably but detachably in said hub, a firing-head provided with a wing for engaging said cam, and a sear for engaging a shoulder of the firing-head, substantially as set forth.

6. The combination of the carrier, breech-block, hollow hub, a cam supported immovably but detachably in said hub, a firing-head provided with a wing for engaging said cam, a sear for engaging a shoulder of the firing-head, and a shaft extending into the hub and provided with means for shifting the sear, substantially as set forth.

7. The combination with the carrier, a block, hollow hub, sear, cam and shaft, of a firing-head having an insulated rod, and means for locking the shaft when firing electrically, substantially as set forth.

8. The combination with the carrier, block, hollow hub and firing-head, of means for retracting the head on turning the block, and a sear for engaging a shoulder on the head, said sear consisting of a frame with trunnions and a lip, said frame supported within the hub, substantially as set forth.

9. The combination with the carrier, block, hollow hub and firing-head, of a cam for retracting the head, said cam consisting of a sleeve with cam edges, and a sear having a lip to engage a shoulder on the head, and with trunnions adapted to bearings on the cam-sleeve, substantially as set forth.

812,433. **ELECTRICAL RAILWAY SIGNALING SYSTEM.** CHARLES MITCHELL and HARRY MILLINGAR, East St. Louis, Ill., assignors of one-half to Harry E. Dickinson, East St. Louis, Ill. Filed Aug. 8, 1903. Serial No. 168,761.

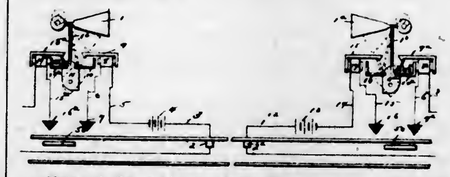

Claim.—1. In combination with a block of a railway system, of a signaling system having a semaphore mounted at each end of the block, an eccentric connected to each semaphore provided with a catch, oppositely-arranged electromagnets for moving the eccentries in opposite directions and latching the same for operating the semaphore and electrical circuits for operating said electromagnets by the train as the train enters or leaves the block.

2. In combination with a block of a railway system, of a signaling system having a semaphore mounted at each end of the block, an eccentric connected to each semaphore provided with a catch, oppositely-arranged electromagnets for moving the eccentrics in opposite directions and latching the same for operating the semaphore, electrical circuits for operating said electromagnets by the train as the train enters or leaves the block, and an electrically-operated trip for operating the air-brake system of a train operated simultaneously with any of the electrical circuits connected with the said electromagnets.

3. In combination with a block of a railway system, of a signaling system, consisting of a semaphore mounted at each end of the block, means connected to the semaphore provided with a catch, oppositely-arranged electromagnets for moving the means in opposite directions, and locking the same for controlling the semaphores, and electric circuits for operating said electromagnets connected by the train as the train enters or leaves the block.

4. In combination with a block of a railway system, of a signaling system therefor, having a semaphore mounted at each end of the block, means connected to each semaphore provided with a catch,

oppositely-arranged electromagnets for operating the said means in opposite directions and locking the same for operating the semaphores, electric circuits for operating the electromagnets connected

2. A process for helically grooving tubes, consisting in giving a plain tube a simultaneous lengthwise and rotary movement between suitable dies to force in portions thereof to form a series of helical

of plates provided with openings registering with said inlet and outlet openings respectively and holding-bolts embedded in said block

3. A butter-press comprising a casing for containing the butter in bulk, provided with forward and rearward

opositely-arranged electromagnets for operating the said means in opposite directions and locking the same for operating the semaphores, electric circuits for operating the electromagnets connected by a train as the train enters or leaves the block, and an electric trip for operating the air-brake system of a train operated simultaneously with any of the electric circuits connected with the said electromagnets.

812,434. MACHINE FOR HELICALLY GROOVING TUBES. ROBERT C. MONTGOMERIE, New York, N. Y., assignor of one-half to Emma Mann Vynne, New York, N. Y. Filed Apr. 20, 1904. Serial No. 208,491.

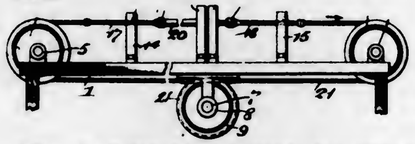

Claim.—1. A machine for helically grooving tubes, comprising a table, die-holders fixed thereon each having a central hole, dies in said holders projecting into said hole, means for drawing the tube through said dies and means for turning it during its passage, substantially as described.

2. A machine for helically grooving tubes, comprising a table, die-holders fixed thereon each having a central hole, dies adjustably held in said holders and projecting into said holes, means for drawing a tube through said dies and means for turning it during its passage, substantially as described.

3. A machine for helically grooving tubes, comprising a table, die-holders fixed thereon each having a stationary member provided with a central hole, and an oscillatory member, dies adjusted by said oscillatory member, means for drawing a tube through said dies and means for turning it during its passage, substantially as described.

4. A machine for helically grooving tubes, comprising a table, die-holders fixed thereon each having a stationary member provided with a central hole, and an oscillatory member having grooves, dies engaging said cam-grooves and adjustable thereby, means for drawing a tube through said dies and means for turning it during its passage, substantially as described.

5. A machine for helically grooving tubes, comprising a table, die-holders fixed thereon each having a stationary member provided with a central hole, a worm, and an oscillatory member having a segment of worm-gear engaged by said worm, and cam-grooves, dies engaging said grooves and adjustable thereby, means for drawing a tube through said dies and means for turning it during its passage, substantially as described.

6. In a machine for helically grooving tubes, a table, a die-holder fixed thereon having a stationary member provided with a central hole, dies in said holder projecting into said hole, an oscillatory member engaging and operating said dies, and means for moving a tube lengthwise through said hole and for turning the tube during its movement, substantially as described.

7. In a machine for helically grooving tubes, a table, a die-holder fixed thereon having a stationary member provided with a central hole and a worm, dies in said holder projecting into said hole, an oscillatory member having a segment of a worm-gear engaged by said worm and cam-grooves engaged by said dies, and means for moving a tube lengthwise through said hole and for turning the tube during its movement, substantially as described.

8. In a machine for helically grooving tubes, a table, a die-holder fixed thereon and comprising a stationary member having a central hole, dies reciprocably mounted thereon and having lugs, a worm, an adjustable stop, an oscillatory member having cam-slots engaged by the lugs of said dies, a segment of a worm-gear engaged by said worm and adjustable stops adapted to engage the stops on the stationary member, substantially as described.

812,435. PROCESS FOR HELICALLY GROOVING TUBES. ROBERT C. MONTGOMERIE, New York, N. Y., assignor of one-half to Emma Mann Vynne, New York, N. Y. Filed Apr. 20, 1904. Serial No. 208,492.

Claim.—1. A process for helically grooving tubes, consisting in giving a plain tube a simultaneous lengthwise and rotary movement between suitable dies to form a series of helical grooves in an intermediate portion and leave plain end portions and then giving this resultant product a lengthwise and rotary movement between suitable dies to reduce said plain end portions.

2. A process for helically grooving tubes, consisting in giving a plain tube a simultaneous lengthwise and rotary movement between suitable dies to force in portions thereof to form a series of helical grooves in an intermediate portion and leave plain end portions and then giving this resultant product a lengthwise and rotary movement between suitable dies to reduce said plain end portions.

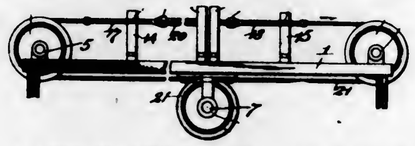

3. A process for helically grooving tubes, consisting in giving a plain tube a simultaneous lengthwise and rotary feed between dies to form a series of helical grooves therein and leave plain end portions and then reducing the end portions.

812,436. SYSTEM OF CALIBRATING RECORDING WATT-HOUR METERS. DOUGLAS P. MORRISON, Newark, N. J. Filed June 17, 1905. Serial No. 265,666.

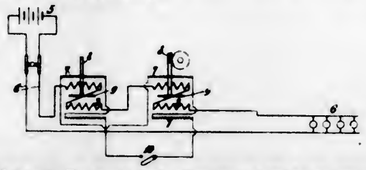

Claim.—1. The method of calibrating an unknown recording watt-hour meter, which consists in subjecting a standard meter to the same load as the unknown meter in such a manner that the current passes through the standard meter without operating the recording mechanism of the same, then starting and stopping the recording mechanism of the standard meter at will, and then comparing the observed units of the unknown meter with the recorded units of the standard meter.

2. The method of calibrating an unknown recording watt-hour meter, which consists in subjecting a standard meter to the same load as the unknown meter in such a manner that the current passes through the standard meter without operating the recording mechanism of the same, then starting and stopping the recording mechanism of the standard meter at will, and then comparing the observed units and fractions of units of the unknown meter with the recorded units and fractions of units of the standard meter.

3. The method of calibrating an unknown recording watt-hour meter which consists in subjecting a standard meter to the same load as the unknown meter in such a manner that the current passes through the standard meter without operating the recording mechanism of the same, then starting and stopping the recording mechanism of the standard meter at will, and then comparing the observed revolutions of the unknown meter with the recorded revolutions of the standard meter.

4. The method of calibrating an unknown recording watt-hour meter which consists in subjecting a standard meter to the same load as the unknown meter in such a manner that the current passes through the standard meter without operating the recording mechanism of the same, then starting and stopping the recording mechanism of the standard meter at will and then comparing the observed revolutions and fractions of revolutions of the unknown meter with the recorded revolutions and fractions of revolutions of the standard meter.

5. In a system of the character described, the combination with an unknown and a standard meter, whose field-coils are in circuit with each other and in circuit with the mains leading from the source to the load, of a potential-circuit for each meter leading to the mains, and a switch interposed in the potential-circuit of the standard meter.

812,437. FIRE-CLAY BLOCK AND ATTACHMENT. REASON R. MORRISON, Mineral City, Ohio. Filed Jan. 16, 1905. Serial No. 241,219.

Claim.—The combination with a block of refractory fire-clay, provided with a central opening and inlet and outlet circulating-openings in the wall of said central opening, of couplings for the attachment of circulating-pipes to said circulating-openings consisting

of plates provided with openings registering with said inlet and outlet openings respectively and holding-bolts embedded in said block and passing through said plates and gaskets between said plates and block, substantially as described.

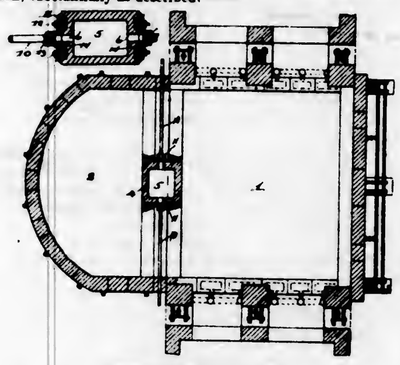

812,438. BARREL-FILTER. DE WITT C. MOSHER, Manitou, Colo. Filed Apr. 29, 1903. Serial No. 154,832.

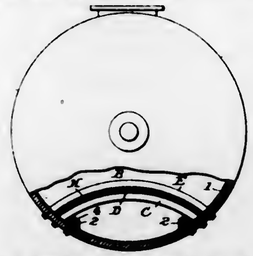

Claim.—1. A barrel-filter composed of a barrel having a lead lining, and a filter consisting of an arched bed and transverse, arched rigid cores supporting it, with surrounding lead casings made integral with the lining, substantially as specified.

2. The combination with a lead-lined barrel, of an arched filtering-bed supported upon a series of transverse, arched rigid bars abutting against the barrel at the ends and covered with lead casings integral with the lining, substantially as set forth.

3. The combination with a lead-lined barrel, of an arched filter composed of arched cores having surrounding lead casings and supporting a filtering-bed, substantially as described.

4. The combination with a lead-lined barrel, of a filter-bed, having supports with rigid cores and surrounding lead casings integral with the lining and by cross-pieces at the top of the bed also of rigid cores with lead casings integral with the lining, substantially as set forth.

812,439. BUTTER-PRESS. FRANK MURPHY, Lisbon, N. Y. Filed May 16, 1905. Serial No. 260,695.

Claim.—1. A butter-press, comprising a casing for containing the butter in bulk, provided with forward and rearward supports, the former having notches therein, said casing also having hanging portions provided with corresponding notches, a mold for receiving expressed portions of butter from the casing, projecting parallel longitudinal members, and a removable slidable tray supported thereby, upon which the mold may be placed in operation, said members having portions thereof seated in said notches of the forward supports and hanging portions.

2. A butter-press, comprising a casing for containing the butter in bulk, provided with forward and rearward supports, the former having notches therein, said casing also having hanging portions provided with corresponding notches, a mold for receiving expressed portions of butter from the casing, projecting parallel longitudinal members, and a removable slidable tray supported thereby, upon which the mold may be placed in operation, said members having portions thereof seated in said notches of the forward supports and hanging portions and said casing having a movable plunger therein.

3. A butter-press comprising a casing for containing the butter in bulk, provided with forward and rearward supports, the former having notches therein, said casing also having hanging portions provided with corresponding notches, a mold for receiving expressed portions of butter from the casing, projecting parallel longitudinal members, and a removable slidable tray supported thereby, upon which the mold may be placed in operation, said members having portions thereof seated in said notches of the forward supports and hanging portions and said casing having a movable plunger therein and provided with means for operating the plunger.

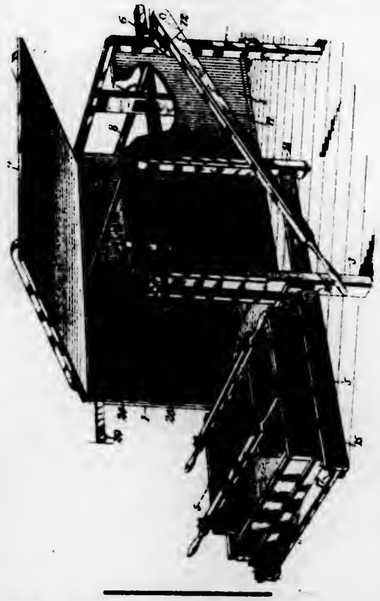

812,440. ADJUSTABLE WRENCH. GEORGE MCKERAHAN, Marshfield, Oreg. Filed Nov. 23, 1904. Serial No. 234,040.

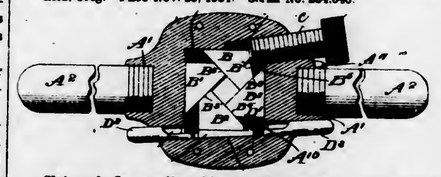

Claim.—1. In an adjustable wrench, a frame, a series of jaws disposed within the same in sliding contact with each other, means for adjusting said jaws by engagement with one thereof, a locking device inserted beneath the base of one of the jaws, and operating means therefor provided with push-pins projected beyond the frame at opposite sides of said device.

2. In an adjustable wrench, a frame, a series of jaws disposed within the same in sliding contact with each other, means for adjusting said jaws by engagement with one thereof, a locking device comprising a wedge-block inserted beneath the base of one of the jaws, and operating means disposed at the opposite ends of said block to bear thereon and having exposed ends projected through the frame.

3. In an adjustable wrench, a frame, a series of jaws disposed within the same in sliding contact with each other, means for adjusting said jaws by engagement with one thereof, a locking device comprising a wedge-block inserted beneath the base of one of the jaws, slidable operating means disposed at the opposite ends of said block to bear thereon, and means movable with the operating means to engage and shift the jaw when released.

4. In an adjustable wrench, a frame provided with a jaw-opening therein having at one side an inclined face, a series of jaws disposed within the same in sliding contact with each other, means for adjusting said jaws by engagement with one thereof, a locking device

4. In a device of the class described, the combination with a casing having an opening, a valve in the opening, an auxiliary valve

Claim.—1. An electromagnetic device, including a plurality of legs or branches each comprising a plurality of poles of unlike po-

comprising a wedge-block inserted beneath the base of one of the jaws and slidably mounted upon said inclined face, and slidable operating means for said wedge-block disposed in recesses in alinement with said inclined face and provided with push-pins projected through the frame at each end of said block.

5. In an adjustable wrench, a frame provided with a jaw-opening therein having at one side an inclined face, a wedge member disposed upon said face, a series of jaws contacting with the walls of said opening and with a face of said wedge member, slidable operating-pins for said wedge member disposed in openings in alinement with said inclined face, and enlarged contact-heads upon said pins adapted to seat in recesses at the inner end of said openings.

812,441. **WORM-WHEEL-CUTTING MACHINE.** WILLIAM B. MCLEAN, Manchester, England. Filed Apr. 29, 1905. Serial No. 258,131.

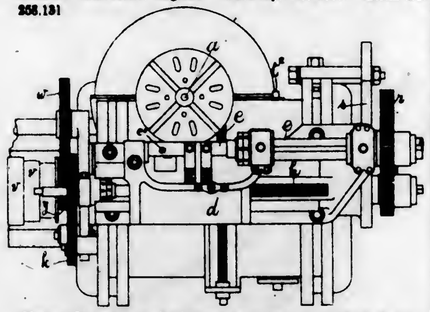

Claim.—In a worm-wheel-cutting machine, a carriage *d*, upon which the cutter-bar *c* carrying the cutter c^3 is mounted, a screw-shaft *h*, connected with said carriage, a train of gear-wheels *k* in connection with said screw-shaft, a train of gear-wheels *r*, in connection with cutter-bar *c*, a shaft *c*, connected to said train *r*, gearing *l*, *l'*, *m*, *m'*, connecting said shaft to said train of wheels *k*, a wheel-spindle *a*, and gearing *b*, *c'*, connecting said shaft *c* with said spindle *a*, for the purpose and in manner substantially as herein shown and described.

812,442. **METHOD OF HARDENING.** WILLIAM E. NICKERSON, Cambridge, Mass., assignor to Gillette Safety Razor Company, Boston, Mass., a Corporation of Maine. Filed Sept. 26, 1903. Serial No. 174,739.

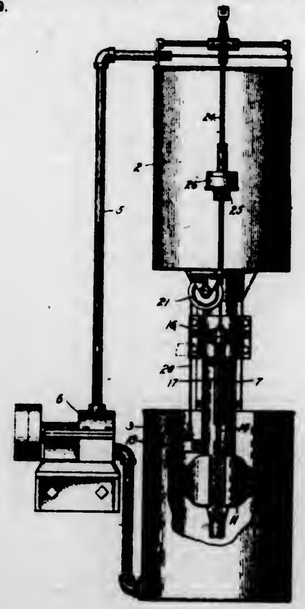

Claim.—1. The herein-described method of hardening thin steel articles which consists in interleaving said articles with sheets of metal of relatively high heat conductivity as compared with steel, confining said articles and sheets in a stack, heating said stack, and subjecting the hot stack to the action of a chilling medium, substantially as described.

2. The herein-described method of hardening thin steel articles, which consists in interleaving said articles with sheets of metal of relatively high heat conductivity, confining said articles and sheets in a stack with the edges of said sheets projecting beyond the edges of said articles, heating said stack, and subjecting the hot stack to the action of a chilling medium.

3. The herein-described method of hardening thin steel articles, which consists in interleaving said articles with sheets of metal of relatively high heat conductivity as compared with steel, confining said articles and sheets in a stack, heating said stack and subjecting the hot stack to the action of a flow of cold liquid.

4. The herein-described method of hardening thin steel articles, which consists in interleaving said articles with sheets of metal of relatively high heat conductivity, confining said articles and sheets in a stack with the edges of said sheets projecting beyond the edges of said articles, heating said stack, and subjecting the hot stack to the action of a flow of cold liquid.

812,443. **BOOT AND SHOE.** ARTHUR W. NORTH, Woodland, Cal., administrator of Samuel Wilde, deceased. Filed Sept. 21, 1904. Serial No. 225,295.

Claim.—1. In a boot or shoe, the combination of a shell having a sole portion, side portions integral therewith, the front edges of said side portions being united to form a toe portion and the rear edges being united to form a heel portion, an insole within the shell and a top having its lower edges lasted around the insole and secured between the insole and the shell, said top being secured to the shell along the upper edges of the latter, substantially as described.

2. In a boot or shoe, the combination of a shell having a sole portion, side portions integral therewith, the front edges of said side portions being united to form a toe portion and the rear edges being united to form a heel portion, an insole within the shell, a top having its lower edges lasted around the insole and secured between the insole and the shell, said top being secured to the shell along the upper edges of the latter and a protecting-strip adapted to cover the union of the toe portion of the shell, substantially as described.

812,444. **VALVE-OPERATING MEANS FOR HYDRAULIC PUMPS.** BRYAN OBEAR, St. Louis, Mo., assignor to The Montague Compressed Air Company of Missouri, St. Louis, Mo., a Corporation of Missouri. Filed Apr. 1, 1904. Serial No. 201,100.

Claim.—1. In a device of the class described, the combination with a casing having an opening at one end, a valve in the opening, a passage from the casing through the valve, a check-valve for the same passage carried by said valve and movable in a direction opposite to the opening movement of the first-named valve, a valve-actuating device carried by the first-named valve, a tension device on the first-named valve, and a piston to receive a fluid impulse when the first-named valve is unseated; substantially as described.

2. In a device of the class described, the combination with a casing having an opening at one end, a valve in the opening, a passage from the casing through the valve, a check-valve for the same passage, a spring bearing upon the first-named valve, a tube surrounding the opening and projecting into the casing to which the first-named casing is attached, a valve-actuating device in the tube and capable of moving the valve under pressure, said valve-actuating device comprising a plunger and rigid with the said valve; substantially as described.

3. A device of the class described, comprising a casing having an opening at one end, a valve in the opening, a passage from the casing through the valve, said valve having a central channel with radial ports adapted to communicate therewith, a check-valve for the same passage and for closing communication between the ports and the central channel, means for seating the first-named valve, and a plunger carried by the first-named valve for unseating it; substantially as described.

4. In a device of the class described, the combination with a casing having an opening, a valve in the opening, an auxiliary valve carried by the first-named valve and capable of opening and closing the ports therein, a spring on the first-named valve, a support above the spring, a stem carried by the support and threaded therein, means on the stem bearing against the spring, a gear carried by the stem and slidable thereon, a gear meshing with the first-named gear, and means for actuating the last-named gear to cause compression or expansion of the spring through the medium of the stem; substantially as described.

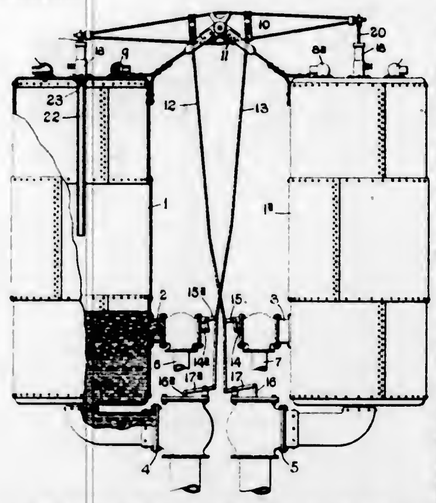

5. In a device of the class described, the combination with a casing having an opening, a ported valve in the opening, an auxiliary valve carried by the first-named valve and capable of opening and closing the ports therein, a spring on the first-named valve, a removable support above the spring, a stem carried by the support and threaded therein, a flanged disk on the stem and bearing against the spring, a gear carried by the stem and slidable thereon, a gear meshing with the first-named gear, and means for actuating the last-named gear to cause compression or expansion of the spring; substantially as described.

6. In a device of the class described, a casing having a hollow valve at one end, a cylinder surrounding the hollow valve and communicating therewith, a yielding means within the cylinder for normally retaining the valve upon its seat, a check-valve within the first-named valve and positioned above radial ports in said valve, a resilient means for normally holding the second valve seated, a depending tube adapted to communicate with the cylinder when the first-named valve is unseated, and a plunger rigid with the first-named valve and movable in said tube; substantially as described.

7. In a device of the class described, a casing having an opening at one end, a valve in the opening, a passage from the casing through the valve, a yielding means for normally retaining the valve upon its seat, a check-valve for the same passage and carried by said valve, said check-valve being within the first-named valve and positioned above radial ports therein, a tension device for the first-named valve, and means for regulating the tension device including a stem having a rotative and a reciprocatory movement; substantially as described.

812,445. **MULTIPOLAR ELECTROMAGNET.** HERMANN G. PAPE, New York, N. Y. Filed May 17, 1904. Serial No. 208,469.

Claim.—1. An electromagnetic device, including a plurality of legs or branches each comprising a plurality of poles of unlike polarity, each of said poles having paramagnetic connection with a pole of another leg or branch.

2. An electromagnetic device, including a plurality of legs or branches each comprising a pair of poles of unlike polarity and an exciting-coil, each pole having paramagnetic connection with a pole of another leg or branch of the device.

3. An electromagnetic device, including a plurality of legs or branches each having a plurality of poles and an interposed coil, and paramagnetic connectors each connecting a pole of one leg to a pole of another leg.

4. An electromagnetic device, including a plurality of legs or branches each including a plurality of poles of unlike polarity, and a plurality of paramagnetic connectors located at the same end of the device and each connecting a pole of one leg to a pole of another leg or branch.

5. An electromagnetic device, including a plurality of legs or branches each including a plurality of poles, a plurality of paramagnetic connectors located at the same end of the device and each connecting a pole of one leg to a pole of another leg or branch, and a diamagnetic connection between the connectors.

6. An electromagnetic device, including a plurality of legs or branches each including a shell, a core and an interposed coil, the shells and cores being paramagnetic, a paramagnetic connection between the cores, and a similar connection between the shells.

7. An electromagnetic device, including two magnets of approximate horseshoe form, both poles or ends of both magnets being disposed in approximately the same direction, and one or more exciting-coils common to the adjacent legs of said magnets and extended between the same.

8. An electromagnetic device, including a plurality of magnets all of whose poles are spaced apart throughout and disposed in approximately the same direction, and one or more exciting-coils common to said magnets.

9. An electromagnetic device, including a plurality of separate and distinct magnets spaced from each other, but having all of their poles disposed in approximately the same direction, and one or more exciting-coils common to the magnets and interposed at least in part between the same.

10. In an electromagnetic device, a plurality of magnets all of whose poles are disposed in approximately the same direction, and exciting-coils each of which is common to a plurality of magnets, each coil inclosing one pole and serving to excite another pole uninclosed thereby.

11. In an electromagnetic device, a plurality of magnets all of whose poles extend in approximately the same direction, and exciting-coils common to said magnets, said coils encircling the respective legs of one magnet and serving to excite another magnet the legs of which are not inclosed by the coils.

12. An electromagnetic device, comprising a plurality of legs each including unlike poles, unlike poles of different legs being paramagnetically connected.

13. An electromagnetic device comprising a plurality of legs each including unlike poles and a coil, unlike poles of different legs being paramagnetically connected.

14. An electromagnetic device, comprising a plurality of legs each having unlike poles and an interposed coil, and separated paramagnetic connectors connecting unlike poles of different legs.

15. An electromagnetic device, comprising a plurality of legs each including unlike poles and a coil, spaced paramagnetic connectors rigidly connecting unlike poles of different legs, and diamagnetic means uniting the connectors.

16. An electromagnetic device, comprising a paramagnetic plate having a plurality of openings, paramagnetic shells terminally secured therein, and concentric cores within the shells and extended beyond the connected ends thereof, a paramagnetic bar connecting the extended ends of the cores, a diamagnetic bolt rigidly connecting the bar and plate, and coils wound upon the cores.

17. An electromagnetic device, including a plurality of magnets having their unlike poles paired, one or more exciting-coils common to said magnets, and an armature.

18. An electromagnetic device, including a pair of magnets spaced apart throughout but having their unlike poles disposed in adjacent relation and extended in the same direction, exciting-coils common to both magnets and mounted on the respective legs or poles of one magnet, and an armature common to both magnets.

19. An electromagnetic device, comprising a plurality of legs each including unlike poles, unlike poles of different legs being para-

comprising a wedge-block inserted beneath the base of one of the jaws and slidably mounted upon said inclined face, and slidable operating means for said wedge-block disposed in recesses in alinement with said inclined face and provided with push-pins projected through the frame at each end of said block.

5. In an adjustable wrench, a frame provided with a jaw-opening therein having at one side an inclined face, a wedge member disposed upon said face, a series of jaws contacting with the walls of said opening and with a face of said wedge member, slidable operating-pins for said wedge member disposed in openings in alinement with said inclined face, and enlarged contact-heads upon said pins adapted to seat in recesses at the inner end of said openings.

812,441. **WORM-WHEEL-CUTTING MACHINE.** WILLIAM B. MCLEAN, Manchester, England. Filed Apr. 20, 1905. Serial No. 256,131.

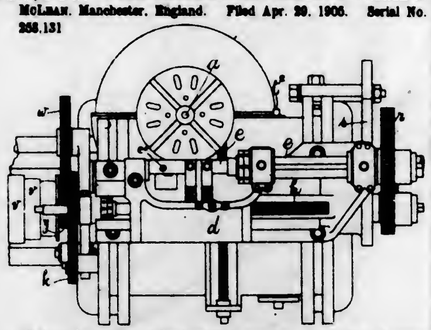

Claim.—In a worm-wheel-cutting machine, a carriage *d*, upon which the cutter-bar *e* carrying the cutter e^3 is mounted, a screw-shaft *h*, connected with said carriage, a train of gear-wheels *k* in connection with said screw-shaft, a train of gear-wheels *r*, in connection with cutter-bar *e*, a shaft *c*, connected to said train *r*, gearing *l*, *l'*, *m*, *m'*, connecting said shaft to said train of wheels *k*, a wheel-spindle *a*, and gearing *b*, *c'*, connecting said shaft *c* with said spindle *a*, for the purpose and in manner substantially as herein shown and described.

812,442. **METHOD OF HARDENING.** WILLIAM E. NICKERSON, Cambridge, Mass., assignor to Gillette Safety Razor Company, Boston, Mass., a Corporation of Maine. Filed Sept. 28, 1903. Serial No. 174,739.

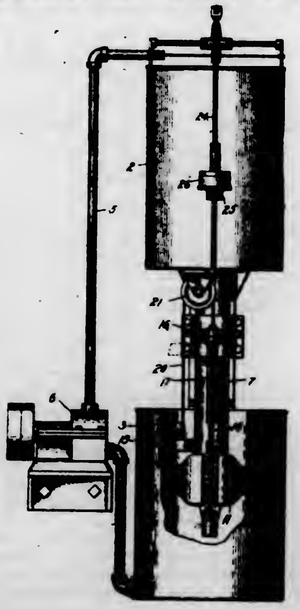

Claim.—1. The herein-described method of hardening thin steel articles which consists in interleaving said articles with sheets of metal of relatively high heat conductivity as compared with steel, confining said articles and sheets in a stack, heating said stack, and subjecting the hot stack to the action of a chilling medium, substantially as described.

2. The herein-described method of hardening thin steel articles, which consists in interleaving said articles with sheets of metal of relatively high heat conductivity, confining said articles and sheets in a stack with the edges of said sheets projecting beyond the edges of said articles, heating said stack, and subjecting the hot stack to the action of a chilling medium.

3. The herein-described method of hardening thin steel articles, which consists in interleaving said articles with sheets of metal of relatively high heat conductivity as compared with steel, confining said articles and sheets in a stack, heating said stack and subjecting the hot stack to the action of a flow of cold liquid.

4. The herein-described method of hardening thin steel articles, which consists in interleaving said articles with sheets of metal of relatively high heat conductivity, confining said articles and sheets in a stack with the edges of said sheets projecting beyond the edges of said articles, heating said stack, and subjecting the hot stack to the action of a flow of cold liquid.

812,443. **BOOT AND SHOE.** ARTHUR W. NORTH, Woodland, Cal., administrator of Samuel Wilde, deceased. Filed Sept. 21, 1904. Serial No. 225,295.

Claim.—1. In a boot or shoe, the combination of a shell having a sole portion, side portions integral therewith, the front edges of said side portions being united to form a toe portion and the rear edges being united to form a heel portion, an insole within the shell and a top having its lower edges lasted around the insole and secured between the insole and the shell, said top being secured to the shell along the upper edges of the latter, substantially as described.

2. In a boot or shoe, the combination of a shell having a sole portion, side portions integral therewith, the front edges of said side portions being united to form a toe portion and the rear edges being united to form a heel portion, an insole within the shell, a top having its lower edges lasted around the insole and secured between the insole and the shell, said top being secured to the shell along the upper edges of the latter and a protecting-strip adapted to cover the union of the toe portion of the shell, substantially as described.

812,444. **VALVE-OPERATING MEANS FOR HYDRAULIC PUMPS.** BRYAN OREAR, St. Louis, Mo., assignor to The Montague Compressed Air Company of Missouri, St. Louis, Mo., a Corporation of Missouri. Filed Apr. 1, 1904. Serial No. 201,100.

Claim.—1. In a device of the class described, the combination with a casing having an opening at one end, a valve in the opening, a passage from the casing through the valve, a check-valve for the same passage carried by said valve and movable in a direction opposite to the opening movement of the first-named valve, a valve-actuating device carried by the first-named valve, a tension device on the first-named valve, and a piston to receive a fluid impulse when the first-named valve is unseated; substantially as described.

2. In a device of the class described, the combination with a casing having an opening at one end, a valve in the opening, a passage from the casing through the valve, a check-valve for the same passage, a spring bearing upon the first-named valve, a tube surrounding the opening and projecting into the casing to which the first-named casing is attached, a valve-actuating device in the tube and capable of moving the valve under pressure, said valve-actuating device comprising a plunger and rigid with the said valve; substantially as described.

3. A device of the class described, comprising a casing having an opening at one end, a valve in the opening, a passage from the casing through the valve, said valve having a central channel with radial ports adapted to communicate therewith, a check-valve for the same passage and for closing communication bwteeen the ports and the central channel, means for seating the first-named valve, and a plunger carried by the first-named valve for unseating it; substantially as described.

4. In a device of the class described, the combination with a casing having an opening, a valve in the opening, an auxiliary valve carried by the first-named valve and capable of opening and closing the ports therein, a spring on the first-named valve, a support above the spring, a stem carried by the support and threaded therein, means on the stem bearing against the spring, a gear carried by the stem and slidable thereon, a gear meshing with the first-named gear, and means for actuating the last-named gear to cause compression or expansion of the spring through the medium of the stem; substantially as described.

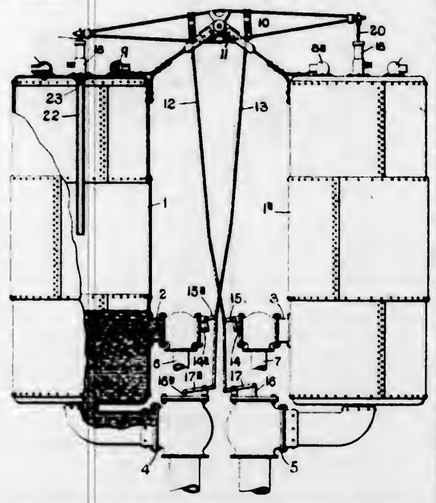

5. In a device of the class described, the combination with a casing having an opening, a ported valve in the opening, an auxiliary valve carried by the first-named valve and capable of opening and closing the ports therein, a spring on the first-named valve, a removable support above the spring, a stem carried by the support and threaded therein, a flanged disk on the stem and bearing against the spring, a gear carried by the stem and slidable thereon, a gear meshing with the first-named gear, and means for actuating the last-named gear to cause compression or expansion of the spring; substantially as described.

6. In a device of the class described, a casing having a hollow valve at one end, a cylinder surrounding the hollow valve and communicating therewith, a yielding means within the cylinder for normally retaining the valve upon its seat, a check-valve within the first-named valve and positioned above radial ports in said valve, a resilient means for normally holding the second valve seated, a depending tube adapted to communicate with the cylinder when the first-named valve is unseated, and a plunger rigid with the first-named valve and movable in said tube; substantially as described.

7. In a device of the class described, a casing having an opening at one end, a valve in the opening, a passage from the casing through the valve, a yielding means for normally retaining the valve upon its seat, a check-valve for the same passage and carried by said valve, said check-valve being within the first-named valve and positioned above radial ports therein, a tension device for the first-named valve, and means for regulating the tension device including a stem having a rotative and a reciprocatory movement; substantially as described.

812,445. **MULTIPOLAR ELECTROMAGNET.** HERMANN G. PAPE, New York, N. Y. Filed May 17, 1904. Serial No. 208,469.

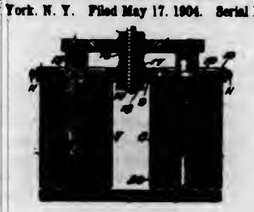

Claim.—1. An electromagnetic device, including a plurality of legs or branches each comprising a plurality of poles of unlike polarity, each of said poles having paramagnetic connection with a pole of another leg or branch.

2. An electromagnetic device, including a plurality of legs or branches each comprising a pair of poles of unlike polarity and an exciting-coil, each pole having paramagnetic connection with a pole of another leg or branch of the device.

3. An electromagnetic device, including a plurality of legs or branches each having a plurality of poles and an interposed coil, and paramagnetic connectors each connecting a pole of one leg to a pole of another leg.

4. An electromagnetic device, including a plurality of legs or branches each including a plurality of poles of unlike polarity, and a plurality of paramagnetic connectors located at the same end of the device and each connecting a pole of one leg to a pole of another leg or branch.

5. An electromagnetic device, including a plurality of legs or branches each including a plurality of poles, a plurality of paramagnetic connectors located at the same end of the device and each connecting a pole of one leg to a pole of another leg or branch, and a diamagnetic connection between the connectors.

6. An electromagnetic device, including a plurality of legs or branches each including a shell, a core and an interposed coil, the shells and cores being paramagnetic, a paramagnetic connection between the cores, and a similar connection between the shells.

7. An electromagnetic device, including two magnets of approximate horseshoe form, both poles or ends of both magnets being disposed in approximately the same direction, and one or more exciting-coils common to the adjacent legs of said magnets and extended between the same.

8. An electromagnetic device, including a plurality of magnets all of whose poles are spaced apart throughout and disposed in approximately the same direction, and one or more exciting-coils common to said magnets.

9. An electromagnetic device, including a plurality of separate and distinct magnets spaced from each other, but having all of their poles disposed in approximately the same direction, and one or more exciting-coils common to the magnets and interposed at least in part between the same.

10. In an electromagnetic device, a plurality of magnets all of whose poles are disposed in approximately the same direction, and exciting-coils each of which is common to a plurality of magnets, each coil inclosing one pole and serving to excite another pole uninclosed thereby.

11. In an electromagnetic device, a plurality of magnets all of whose poles extend in approximately the same direction, and exciting-coils common to said magnets, said coils encircling the respective legs of one magnet and serving to excite another magnet the legs of which are not inclosed by the coils.

12. An electromagnetic device, comprising a plurality of legs each including unlike poles, unlike poles of different legs being paramagnetically connected.

13. An electromagnetic device comprising a plurality of legs each including unlike poles and a coil, unlike poles of different legs being paramagnetically connected.

14. An electromagnetic device, comprising a plurality of legs each having unlike poles and an interposed coil, and separated paramagnetic connectors connecting unlike poles of different legs.

15. An electromagnetic device, comprising a plurality of legs each including unlike poles and a coil, spaced paramagnetic connectors rigidly connecting unlike poles of different legs, and diamagnetic means uniting the connectors.

16. An electromagnetic device, comprising a paramagnetic plate having a plurality of openings, paramagnetic shells terminally secured therein, and concentric cores within the shells and extended beyond the connected ends thereof, a paramagnetic bar connecting the extended ends of the cores, a diamagnetic bolt rigidly connecting the bar and plate, and coils wound upon the cores.

17. An electromagnetic device, including a plurality of magnets having their unlike poles paired, [illegible] or more exciting-coils common to said magnets, and an armature.

18. An electromagnetic device, including a pair of magnets spaced apart throughout but having their unlike poles disposed in adjacent relation and extended in the same direction, exciting-coils common to both magnets and mounted on the respective legs or poles of one magnet, and an armature common to both magnets.

19. An electromagnetic device, comprising a plurality of legs each including unlike poles, unlike poles of different legs being para-

magnetically connected, and an exciting-coil common to the unlike poles of a leg.

20. An electromagnetic device, including a plurality of magnets

drum and extending about the sheave that is mounted in the housing and attached to the sleeve.

812,449. **LEVEL.** WILLIAM POTTER, New York, N. Y. Filed Mar. 18, 1905. Serial No. 250,726.

tal threaded or grooved slidable interior shaft within the said tubular propeller-head and main shaft; revoluble propeller-blades, and a main lock and a stern-lock; said propeller-head having blade-recesses, and

magnetically connected, and an exciting-coil common to the unlike poles of a leg.

20. An electromagnetic device, including a plurality of magnets having their unlike poles paired, and one or more exciting-coils common to said magnets and extended between the same.

21. An electromagnetic device, including a plurality of magnets spaced apart and having their unlike poles paired, one or more exciting-coils common to the magnets, and diamagnetic means connecting said magnets.

812,446. **STRAW-STACK SHAPER.** THOMAS S. PEARSON, Clay township, and GEORGE B. LINDSAY, Center township, Howard county, Ind. Filed May 15, 1905. Serial No. 260,379.

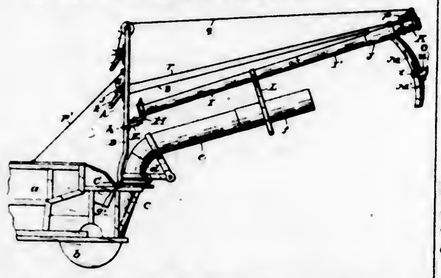

Claim.—1. A straw-stack shaper including a derrick, a movable boom, a guide-sleeve mounted slidingly on the boom, a deflector attached to the sleeve, a sheave mounted on the boom, a drum mounted on the derrick, a cable extending from the drum about the sheave to the sleeve, and a cable extending from the drum to the sleeve.

2. A straw-stack shaper including a boom, means for supporting the boom, a guide-sleeve mounted slidingly on the boom, a deflector attached to the sleeve and comprising a main part and a yielding part pivoted to the main part, and means for moving the sleeve on the boom.

3. The combination with a wind-stacker pipe, of a boom supported above the pipe, a guide-sleeve mounted movably on the boom, a dished deflector attached to the sleeve and extending opposite to the discharge-orifice of the pipe, and means for moving the deflector toward and from the end of the pipe.

4. The combination with a wind-stacker pipe, of a boom supported above the pipe, a guide-sleeve mounted movably on the boom, means for moving the sleeve, a deflector attached to the sleeve and comprising a main part, a yielding part pivoted to the main part and provided with an arm, and a spring engaging said arm and also the main part.

5. The combination with a wind-stacker pipe, of a boom supported above the pipe, a sheave mounted on the boom, a guide-sleeve mounted movably on the boom, a deflector attached to the sleeve and thereby supported opposite to the end of the pipe, a winding-drum, a cable connected to the drum and also to the sleeve, and a second cable also connected to the drum and extending about the sheave and attached to the sleeve.

6. The combination with a separator and a wind-stacker provided with a movable discharge-pipe, of a derrick mounted on the separator, a boom mounted above the discharge-pipe and having cooperative connection therewith, a guide-sleeve mounted movably on the boom, a sheave supported by the boom, a deflector attached to the sleeve and thereby supported opposite to the end of the pipe, a winding-drum mounted on the derrick, a cable connected to the drum and also to the sleeve, and a second cable also connected to the drum and extending about the sheave and attached to the sleeve.

7. The combination with a separator and a wind-stacker having a discharge-pipe, of a derrick mounted on the separator and provided with two winding-drums supported thereby one above the other and also having a sheave mounted at the top thereof, a stay connected to the separator and also to the derrick, a telescopic boom connected pivotally to the derrick and extending above the discharge-pipe, a guide-sleeve mounted movably on the boom and carrying a deflector opposite to the end of the discharge-pipe, a housing attached to the end of the boom and supporting a sheave, a cable connected to the upper one of the drums on the derrick and extending over the sheave that is supported by the derrick to the housing and secured thereto, a cable connected to the lower one of the drums and attached to the sleeve, and a second cable connected also to the lower drum and extending about the sheave that is mounted in the housing and attached to the sleeve.

812,447. **CHILD'S CARRIAGE.** MAE PIERCY and CHARLES R. PIERCY, Redoak, Iowa. Filed Aug. 31, 1905. Serial No. 276,575.

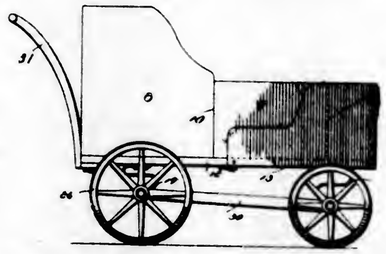

Claim.—1. In a child's carriage, the combination of a running-gear comprising separable sections, and a body removably secured to the running-gear, and comprising side walls having sections hinged to fold inwardly, and a floor having a section hinged to fold against the folded side sections, said body when folded forming a case to receive the running-gear.

2. In a child's carriage, the combination of a body, and a running-gear comprising axles having separable spindle-sections, springs carried by the axle and removably secured to the body, said body comprising sections hinged to fold and form a case to receive the running-gear.

812,448. **SUPERHEATER.** WILHELM PLATZ, Weinheim, Germany. Filed Sept. 29, 1904. Serial No. 226,560.

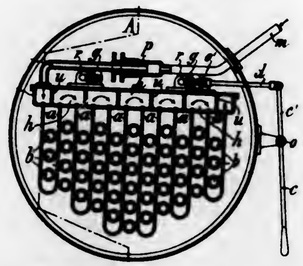

Claim.—1. In a superheater located in the smoke-box of a fire-tube boiler behind the fire-tubes, superheater-tubes arranged at right angles to the fire-tubes at the rear of the same, the diameter of said superheater-tubes being much less than the diameter of the fire-tubes and the superheater-tubes being arranged at distances so as not entirely to cover the openings in the ends of the fire-tubes and means for moving said superheater-tubes transversely of the boiler, substantially as described.

2. In a superheater of the class described, a casing, superheater-tubes connected thereto, said tubes being arranged at right angles to the fire-tubes near the ends thereof, and means for moving said superheater-tubes transversely of the boiler so as to cover and uncover the openings of the fire-tubes.

3. In a superheater of the character described, the combination of a casing, divided by longitudinal partitions into compartments separated by transverse partitions into chambers, series of U-shaped superheater-tubes connecting each two adjacent chambers of either compartment, telescopic steam inlet and outlet pipes, and means for displacing the superheater, substantially as herein set forth.

4. In a superheater of the character described, the combination of a casing, divided by longitudinal partitions into compartments separated by transverse partitions into chambers, series of U-shaped superheater-tubes connecting each two adjacent chambers of either compartment, telescopic steam inlet and outlet pipes, slotted lugs provided on the said casing, brackets extending through these slotted lugs, and an operating-lever connected with the aforesaid casing for displacing the superheater, substantially as herein set forth.

812,449. **LEVEL.** WILLIAM POTTER, New York, N. Y. Filed Mar. 18, 1905. Serial No. 250,735.

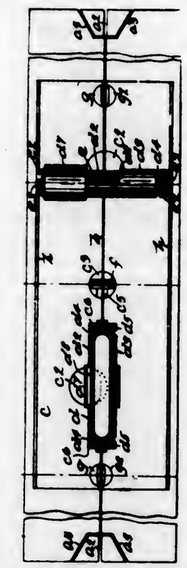

Claim.—1. An instrument of the class described, comprising a plate, a spirit-tube thereon, a straight-edge, a device arranged centrally of said plate for connecting the same to said straight-edge, a cord connected with said plate and secured to both ends of said straight-edge, said cord insuring a predetermined relation between said plate and said straight-edge, substantially as shown and described.

2. In an instrument of the class described, a straight-edge, a plate pivotally connected therewith, a spirit-tube on said plate, and a cord secured to the ends of said straight-edge and in operative connection with said plate, said cord insuring a predetermined relation between said plate and said straight-edge, substantially as shown and described.

3. In an instrument of the class described, a straight-edge, a plate thereon, and devices connecting said straight-edge and said plate, said devices including a cord secured to the ends of said straight-edge and in operative connection with said plate, substantially as shown and described.

4. In an instrument of the class described, a straight-edge, a plate detachably connected at the center thereof, a spirit-tube on said plate, a cord secured to the ends of said straight-edge, and devices on said plate in operative connection with said cord for holding said plate in a predetermined position on said straight-edge, substantially as shown and described.

5. In an instrument of the class described a straight-edge, a plate, a spirit-tube mounted thereon, said plate being provided with a central cup-shaped recess and said recess being provided with a radial slot, a screw in said straight-edge engaged in said recess, and devices connected with a cord for detachably connecting said plate with said straight-edge in a predetermined position, substantially as shown and described.

6. An instrument of the class described a straight-edge, a plate, a spirit-tube mounted thereon, a cord detachably connected with said straight-edge, devices on said plate for holding said cord comprising two segmental members at each end of said plate, the inner ends of said segmental members bearing against said cord and the outer ends of said segmental members permitting slight movement of said cord, substantially as shown and described.

812,450. **UNIVERSAL PROPELLING MECHANISM.** DANIEL W. RAFFINE, Brooklyn, N. Y. Filed Mar. 26, 1905. Serial No. 251,501.

Claim.—1. In a universal propeller, the combination of a tubular propeller-head secured to a tubular main propeller-shaft, a supplemental threaded or grooved slidable interior shaft within the said tubular propeller-head and main shaft; revoluble propeller-blades, and a main lock and a stern-lock; said propeller-head having blade-recesses, and blade-gears within the said recesses and held therein by threaded bearing-cups and bearing-cones removably secured to the propeller-head within the said recesses, the cups being held by screw-threads and by the threaded lock-rings and the said cones with screws and by a center stud therewith; said cups and cones having bearing-runways and opposing bearing-runways in the blade-gears, the said blade-gears having each a screwed center hole to receive and hold the screw-threaded center from the propeller-blades which are also fastened with bolts on the said blade-gears; said supplemental interior shaft having straight grooves which extend to become helical grooves having one direction in their certain helical tend; said main lock being tubular in form and having a helical open interior groove and secured within to the said tubular main shaft; and a pointed helical ridge secured on the said interior shaft, arranged to coact with the said open groove of the tubular main lock part, the said helical pointed ridge and said open helical groove having an opposite direction in their certain helical tend, from the aforesaid helical grooves on the said supplemental interior shaft; all the said ridge and said grooves capable of adjusting and holding the said propeller-blades and the said interior shaft as required and geared in connection with the main shaft; said supplemental shaft being connected to a swivel-rod and to a swivel therewith, said swivel preferably connected to a shifter-yoke which is secured to a longitudinal shifter-bar, connected to and shifted by a lever and the whole shifter and parts connected therewith capable of being shifted and held to effect the desired changes of the propeller-blades; said supplemental shaft having one bevel-gear slidable feathered, and operated by the aforesaid straight grooves; another bevel-gear mounted also slidable on this said supplemental shaft and having circular interior studs extending to the said grooves of the said supplemental shaft, and being operated by either the helical or straight portions of the grooves of this said interior shaft; one of the said bevel-gears in mesh with one of the said blade-gears and the other said bevel-gear in mesh with the other of the said blade-gears; said blade-gears having twice the number of teeth as the number of teeth on their said opposing bevel-gears; said bevel-gears having between them a tubular distance-piece and two threaded set-rings provided to keep them toward the said distance-piece with freedom to revolve and mesh with the said blade-gears; subjoined to the said propeller-head is the aforesaid stern-lock which consists of a tubular lock-shell with a flange thereon a stop-ring removably secured to the propeller-head, and a spring between the said flange and the said stop-ring being set therein to release and prevent the breaking of the parts and to get a quick action of the parts effecting the engagement between the said stern-lock and the said interior shaft; within the said stern-lock shell is provided an engaging member which may be a helical ridge or groove and a corresponding helical ridge or groove or an engaging member being provided on the rear end of the said interior shaft; the purpose of the stern-lock is to hold the said interior shaft from turning, while the said tubular propeller-head and main shaft may be continuously revolved, thereby developing the lateral propelling, which may be set to any direction by suitably shifting the said interior shaft, further into the helical stern-lock engagement; said stern-lock shell having a dog which coacts with a slot of a slot-pin, said slot-pin being preferably connected to a holder-post which also may be used for a rudder-post, the purpose of the said holder-post slot-pin and dog is to hold the stern-lock and parts connected therewith from turning, substantially as shown and described for purposes specified.

2. The combination in a universal propeller, a tubular propeller-head secured to a tubular main shaft, a supplemental threaded or grooved slidable interior shaft within the said tubular propeller-head and main shaft, revoluble propeller-blades and a main lock and a stern-lock; said main lock involving two opposing projecting points the sides of which incline to form a helical ridge and a helical groove and the said helical ridge coacting with the said helical groove whereby the said supplemental interior shaft may be shifted to a helical safety engagement with the said tubular main shaft and geared in connection therewith with liberty to move endwise to effect the required changes of the angle of the propeller-blades, and the said interior shaft being free to release its helical main-lock engagement and slide to receive the stern-lock engagement consisting of members for holding the said interior shaft from turning while the said tubular main shaft and propeller is revolved, thereby developing a lateral propelling, the said members involving a helical ridge or groove and a member which may be engaged to coact with the last-named helical ridge or groove to obtain the said lateral propelling in any directions preferred, and means whereby the said engagements

and the parts performing the operation may be opened and renewed to obtain a greater merit in universal propelling.

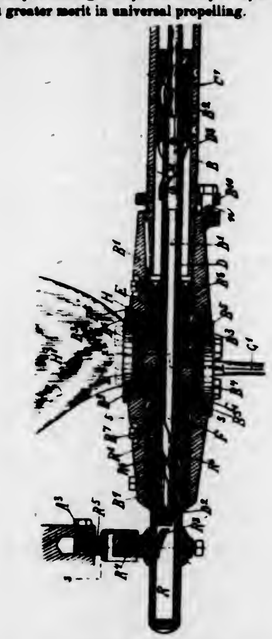

812,451. AIR-VALVE. WILLIAM J. RICE, Mason City, Iowa. Filed Nov. 7, 1904. Renewed July 23, 1905. Serial No. 270,897.

Claim.—1. In an air-valve, the combination of a float-chamber having an inlet in its lower part and a tube forming an outlet in the upper part, a float in the chamber, a rod extending from the float and loosely upward through the tube, a valve secured on the lower end of the rod, and another valve secured on the upper end of the rod to close alternately the opposite ends of the tube, the float being normally suspended from the upper valve.

2. In an air-valve, the combination of a float-chamber having an inlet in its lower part and a tube forming an outlet in the upper part, a float in the chamber, a rod extending from the float and loosely upward through the tube, a valve secured on the lower end of the rod, and another valve secured on the upper end of the rod to close alternately the opposite ends of the tube, the float being normally suspended from the upper valve, and a cap screw-threaded upon the upper end of the tube and adapted to hold the upper valve closed when so desired, said cap having apertures for the air to escape when the cap is not fully screwed down.

3. In an air-valve, the combination of a float-chamber having an inlet in its lower part and a tube forming an outlet in the upper part, a float in the chamber, a rod extending from the float and loosely upward through the tube, a valve secured on the lower end of the rod, and another valve secured on the upper end of the rod to close alternately the opposite ends of the tube, the float being normally suspended from the upper valve, said tube being adjustable up and down in the top of the chamber, and a jam-nut to hold the tube firmly at the desired elevation.

812,452. HAND-POWER SHEARS. FRANK A. RICHARDS, Philadelphia, Pa., assignor of one-half to John H. Richards, Philadelphia, Pa. Filed Nov. 3, 1905. Serial No. 285,699.

Claim.—1. In a metal-shearing machine, a standard, a slotted lever-plate and a shear-plate pivotally attached thereto, on opposite sides and at opposite ends, a link having one end attached to the lever-plate and its opposite end attached to the shear-plate and guided by a slot in the lever-plate, and a knife or cutter secured to make a circular-arc movement when cutting or shearing.

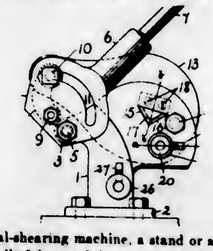

2. In a metal-shearing machine, a stand or standard, a slotted lever-plate pivotally fulcrumed thereto at one side, a shear-plate also pivotally fulcrumed to the standard at its opposite side, a link pivotally connected to the lever-plate independent of the lever-plate's pivot, and located between the lever-plate and the shear-plate, with its opposite end connected to the shear-plate and guided by the slot in the lever-plate, openings through the standard and shear-plates for the insertion of bars, rods and angles to be cut, and knifes or cutters moving in a circular arc for such cutting purposes.

3. In a metal-shearing machine, a standard, a slotted lever-plate pivotally fulcrumed thereto at one side, a shear-plate also pivotally fulcrumed to the standard at its opposite side, a link pivotally connected to the lever-plate independent of the lever-plate's pivot, and located between the lever-plate and the shear-plate, with its opposite end connected to the shear-plate and guided by the slot in the lever-plate, an angular opening through the standard, a corresponding opening through the shear-plate and a cutter therefor, a circular opening through the standard, a corresponding opening through the shear-plate, and a bushing die in each opening.

812,453. PORTABLE ICE-CRUSHER. JUSTUS A. RICKABAUGH, Altoona, Pa., assignor of one-half to William Milligan, Allegheny City, Pa. Filed Dec. 10, 1904. Serial No. 236,353.

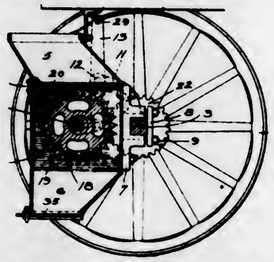

Claim.—1. The combination with a suitable vehicle, of a receiving and storage box below the bed of said vehicle and carried thereby, a shaft suspended from said vehicle passing through enlarged openings in said box, clutch mechanism between said shaft and the vehicle-wheel, means for moving said shaft to effect the engagement of said clutch mechanism, ice-crushing mechanism on said shaft and means for rotating said shaft by the movement of said vehicle.

2. The combination with a suitable vehicle, of a receiving and storage box below the bed of said vehicle and carried thereby, a shaft suspended from said vehicle and passing through enlarged openings in said box, ice-crushing mechanism within said box carried by said shaft, a gear-wheel on said shaft, a gear-wheel on the vehicle-wheel, and means for throwing said first-named gear into and out of engagement with said second gear.

3. The combination with a suitable vehicle, of a receiving and storage box below the bed of said vehicle and carried thereby, a suspended shaft extending through enlarged openings formed in said box, a toothed crushing-roll on said shaft, and projecting teeth in said box with which the teeth on said crushing-roll mesh, and means for throwing said shaft into and out of engagement with the vehicle-wheel.

4. The combination with a suitable vehicle, of a receiving and storage box below the bed of said vehicle and carried thereby, a suspended shaft passing through enlarged openings in said box, a toothed crushing-roll carried by said shaft within said box, projecting teeth in said box with which the teeth of said crushing-roll mesh, a gear-wheel on said shaft, a gear on the vehicle-wheel, a lever connected to said shaft adapted to throw said gears into and out of engagement with each other.

5. The combination with a suitable vehicle, of a receiving and storage box below the bed of said vehicle at the rear thereof and carried thereby, a suspended shaft passing through enlarged openings in said box, a toothed crushing-roll carried by said shaft, projecting teeth in said box with which the teeth of said crushing-roll mesh, clutch mechanism between said shaft and the vehicle-wheel for throwing said shaft into and out of operative engagement with said wheel, a lever at the forward end of said vehicle, and connections between said clutch mechanism and said lever.

812,454. VALVE-BAG. JOHN ROGERS, Cleveland, Ohio, assignor to Bates Valve Bag Company, Cleveland, Ohio, a Corporation of West Virginia. Filed Feb. 29, 1904. Serial No. 195,818.

Claim.—1. A valve-bag, having a diamond-folded closure, the folds being permanently secured, and a filling-opening extending through the finishing folds and in position to be closed by one of the primary folds of the closure, as set forth.

2. A valve-bag, having a diamond-folded closure at each end, the folds being permanently secured, and a filling-opening extending through the finishing folds of one closure and in position to be closed by one of the primary folds of that closure, as set forth.

3. A valve-bag having a folded closure at one end, the folds permanently secured, and a filling-opening extending through the finishing fold and in position to be closed by one of the primary folds.

4. A valve-bag having a folded closure at one end, the folds permanently secured, and a filling-opening with a valve extension extending through the fabric of the valve at or near one corner.

812,455. VALVE-BAG. JOHN ROGERS, Cleveland, Ohio, assignor to Bates Valve Bag Company, Cleveland, Ohio, a Corporation of West Virginia. Filed Feb. 29, 1904. Serial No. 195,819.

Claim.—A paper valve-bag having diamond-folded closures at each end, the folds being permanently secured, and a filling-opening in combination with a valve-like tube at or near one corner of the bag.

812,456. TEA-KETTLE. HARRY B. ROBBS, Detroit, Mich., assignor of one-half to Charles A. Gleason, Detroit, Mich. Filed Sept. 23, 1904. Serial No. 225,555.

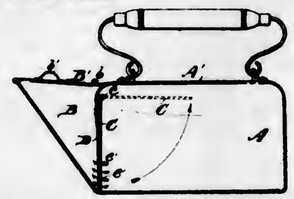

Claim.—In a tea-kettle, a body portion having a flat imperforate top adapted for the reception of a plate or other article to be warmed, a spout projecting from the side wall of the body portion and beyond the line of the bail or handle, said spout having an opening into the body portion from top to bottom, and a depending flap hinged to the wall of the kettle at the top and provided with perforations near the bottom only of the flap for the discharge of water through the spout, substantially as described.

812,457. RAKE. FRANCIS A. RUGG, Greenfield, Mass. Filed Nov. 20, 1905. Serial No. 288,169.

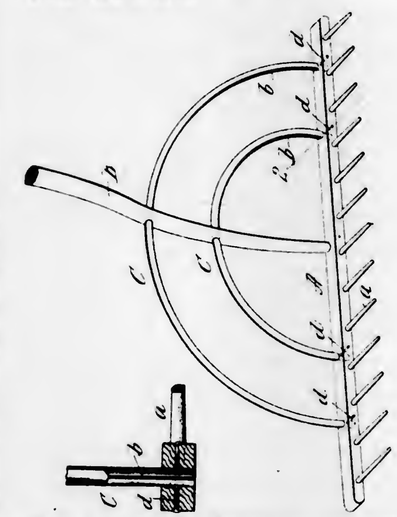

Claim.—1. As a new article of manufacture, a rake having bows intermediately engaged with the rake-handle, and by their extremities connected with the rake-head, and made of comparatively light gage metal tubing for the production of an extremely strong and more durable implement.

2. As a new article of manufacture, a rake having bows intermediately engaged with the rake-handle, and by their extremities connected with the rake-head, and composed of unseamed metal tubing, arranged with their seam-lines at the inner or concave side of the bows.

812,458. KEY-RING. ARTHUR R. SEE, Alma, Ill. Filed Jan. 14, 1905. Serial No. 241,213.

Claim.—1. A key-ring having one of its ends provided with a projection and an opening or recess, and its other end provided with

a projection constructed to enter said opening or recess, and also provided with a groove and a recess constructed to accommodate said first-mentioned projection, substantially as described.

2. A key-ring having overlapping end portions formed half round, a recess in each of said end portions, and a projection on each of said end portions arranged to enter the said recess in each overlapping portion, substantially as described.

812,459. **MOTOR FOR CHURNS, PUMPS, &c.** JOHN H. SKINNER, Angus, N. Mex. Filed Mar. 17, 1905. Serial No. 250,055.

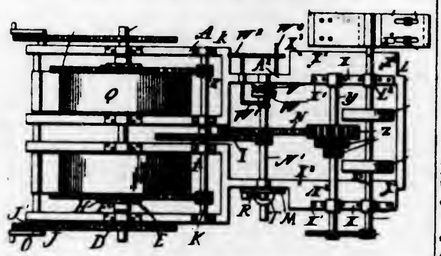

Claim.—1. A motor apparatus for operating churns, &c., comprising a series of intermeshing gear-wheels, a spring for operating the same, horizontally-adjustable bearing-plates mounted upon the frame of the apparatus, a shaft mounted in said plates, graduated gear-wheels fixed to said shaft, means for adjusting said plates, and clutch mechanism for throwing the apparatus into and out of operation, as set forth.

2. A motor apparatus for operating churns, &c., comprising a frame, a spring-power-actuated shaft, a train of intermeshing gear-wheels, a shaft mounted in suitable bearings and adapted to be connected to the handle of a churn, a clutch member splined to said shaft, an angle-bar pivotally connected to said clutch member, and a lever pivotally connected to said bar and to said frame, a fixed clutch member upon the frame adapted to be engaged by said sliding clutch, horizontally-adjustable plates mounted upon the frame of the apparatus, a shaft carried by said adjustable plates, and graduated wheels rotating with said shaft which is mounted upon the adjustable plates, as set forth.

3. A motor apparatus for operating churns, &c., comprising a train of gear-wheels, a spring-bar for actuating the same, means for throwing the device into and out of operation, horizontally-adjustable plates mounted upon the frame of the apparatus, a shaft carried by said plates, graduated gear-wheels upon said shaft, a second shaft mounted upon said plates and connections between the same and the shaft carrying said graduated wheels, said second wheel having an end projecting beyond the edges of the frame, and a longitudinally-movable bearing in which said projecting end is mounted, as set forth.

812,460. **AGITATOR FOR CYANID SOLUTIONS.** HENRY P SMITH and FRANCIS J. HOBSON, Guanajuato, Mexico. Filed Aug. 15, 1905. Serial No. 274,306.

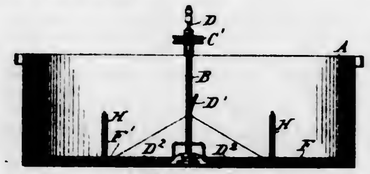

Claim.—1. In an apparatus for the treatment of ores, a tank and a shaft rotating in the tank, stirrer-arms connected to and operated by the shaft, guides upon the arms, pipes carried by the arms and movable in the guides, and a flexible hose connecting the pipes to a source of compressed air.

2. In an apparatus for the treatment of ores, a tank and a shaft rotating therein, stirrer-arms operated by the shaft, pipes carried by the stirrer-arms, and means for supplying the pipes with compressed air; such means permitting the removal of the pipes from the solution in the tank at desired times.

812,461. **MACHINE FOR SHAPING CHAIR-LEGS FOR ROCKERS.** HARRISON L. STALEY, Martinsville, Ind., assignor to The Old Hickory Chair Company, Martinsville, Ind., a Corporation of Indiana. Filed July 31, 1905. Serial No. 272,116.

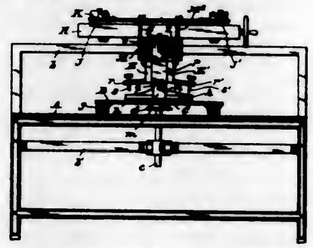

Claim.—1. A shaping-machine including a chuck comprising a body, a pair of cross-heads mounted slidingly on the body, arms pivoted on the cross-heads and having each a pair of jaws mounted thereon for holding a chair by its legs, means for controlling the cross-heads, and cutters for shaping the ends of the chair-legs.

2. A shaping-machine including a frame supporting rotative cutters, a truck mounted movably on the frame, a turn-table mounted on the truck, a carriage mounted movably on the turn-table, a chuck pivoted on the carriage and having means for holding a chair, and a gage arranged relatively to the cutters to be engaged by legs of the chair.

3. A shaping-machine including a frame supporting rotative cutters, a truck mounted movably on the frame, a turn-table mounted on the truck and having a tilting upper part, a carriage mounted movably on the tilting upper part of the turn-table, a chuck pivoted on the carriage for holding a chair, and a gage arranged with respect to the cutters to be engaged by legs of the chair.

4. A shaping-machine including a frame having a pair of track-rails mounted thereon, a truck having wheels mounted on the track-rails, a turn-table pivoted on the truck, a movable latch for holding the turn-table against rotation on the truck, a carriage mounted slidingly on the turn-table, a pair of gage-bars mounted adjustably on the turn-table, a chuck pivoted on the carriage for carrying a chair by its legs to the gage-bars, and rotative cutters for shaping the ends of the chair-legs to receive rockers.

5. A shaping-machine including a frame, a pair of track-rails mounted on the frame, a truck having wheels mounted on the track-rails, a turn-table part pivoted to the truck, a latch for the turn-table part, a pair of guide-bars connected together and pivoted on the turn-table part and comprising a tilting part of a turn-table, adjusting devices for limiting the movements of the tilting part of the turn-table, a pair of gage-bars mounted in arms that are adjustably supported by the tilting part of the turn-table, a carriage supported slidingly by the pair of guide-bars that comprise the tilting part of the turn-table, a chuck pivoted on the carriage for supporting a chair with a pair of its legs against one of the gage-bars, and rotative cutters for shaping the ends of the chair-legs.

6. A shaping-machine including a frame comprising a main part supporting a pair of track-rails and also a rear upright part extending upwardly from the main part, a rotative shaft carrying cutters and mounted on the upright part of the frame, a truck mounted upon the track-rails, a turn-table pivoted upon the truck, a latch for the turn-table, a carriage mounted movably on the turn-table, a chuck pivoted on the carriage and comprising a body part having a pair of arms mounted movably thereon and each provided with a pair of jaws supported adjustably thereby, means for operating the arms, means for equalizing the pressure between all of the jaws of the arms collectively against chair-legs to be held thereby, and a gage-bar arranged with respect to the cutters to be engaged by chair-legs to be held by the jaws.

7. A shaping-machine including a frame provided with a pair of track-rails, a rotative shaft mounted on the frame and carrying a cut-off saw and a wabble-saw, a wheeled truck mounted on the track-rails, a turn-table pivoted upon the truck, a latch for the turn-table, a carriage mounted movably on the turn-table, a chuck pivoted on the carriage and comprising a body part having a screw mounted rotatively thereon, a pair of nuts mounted on the body part and engaged by the screw, and arms pivoted on the nuts and provided each with a pair of jaws having V-shaped engagement-fronts; a pair of gage-bars for gaging the movements of the chuck with respect to the saws, and means for tilting the chuck relatively to the saws.

812,462. **HAME-FASTENER.** JACOB STEGE, Arden, Nebr. Filed July 3, 1905. Serial No. 268,094.

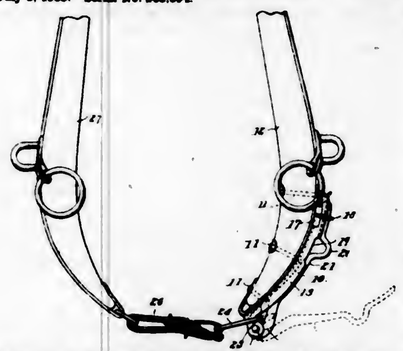

Claim.—1. A device of the class described comprising a plate having means for attachment to a hame member and with spaced longitudinal ribs forming a channel lengthwise of the plate and with spaced ears extending laterally from said ribs at one end, a lever member having a hook at one end movably connected between said ears by a pin passing through the same and also through said hook at its bend, and bearing upon said plate between said ribs, and means for detachably connecting the free end of the lever to the plate.

2. A device of the class described comprising a plate having means for attachment to a hame member and with spaced longitudinal ribs forming a channel lengthwise of the plate and with spaced ears extending laterally from said ribs at one end, and with a transverse recess in said plate opening against the hame member, a coupling element movably engaging said recess, a lever member having a hook at one end movably connected between said ears by a pin passing through the ears and also through the hook at its bend and detachably coupled to the plate at its free end by said movable coupling element.

812,463. **MANUFACTURE OF VEGETABLE STRIPS.** FERNAND STOFFEL, Paris, France. Filed Oct. 14, 1904. Serial No. 228,297. (Specimens.)

Claim.—1. The process of making a ribbon or thin flat strip from threads, which consists in interlacing a number of such threads loosely together to form a braid, mashing and spreading said threads to flatten the braid and fill the voids between the threads and cementing the whole together.

2. The process of making a ribbon or thin flat strip from threads, which consists in interlacing a number of such threads loosely together to form a braid, softening the threads, mashing and spreading the threads to flatten the braid and fill the voids between the threads and cementing the whole together.

3. A ribbon or thin flat strip formed of threads interlaced and cemented together, and spread out within the spaces between the adjacent threads, so as to fill said spaces and to make the ribbon substantially without voids in its width.

812,464. **OPTICAL INSTRUMENT.** AMBROSE SWASEY and GOTTLIEB L. FECKER, Cleveland, Ohio, assignors to The Warner & Swasey Company, Cleveland, Ohio, a Corporation of Ohio. Filed Nov. 3, 1905. Serial No. 285,685.

Claim.—1. In an optical instrument, a body portion provided with an opening and having opposite transverse walls, a holder having opposite walls arranged to engage said transverse walls, fastening means for removably securing the holder and body in a predetermined position, and optical elements carried by the holder and precisionized in the body by said fastening means.

2. In an optical instrument, a body portion provided with an opening having opposite transverse walls and also having longitudinal walls connecting the transverse walls, a holder arranged to close said opening and having its opposite end portions arranged to engage said opposite transverse walls of the opening, the holder having longitudinal edges connecting said walls on each side arranged to abut said longitudinal edges of the body portion, fastening means arranged to removably secure said holder in position with said edges in engagement, and optical elements carried by the holder and precisionized by said fastening means.

3. In an optical instrument, a tubular body portion offset to form two parts having parallel axes, the body portion being provided with an opening at the offset part having opposite transverse walls disposed parallel and also having longitudinal walls connecting the transverse walls, a holder having its opposite end portions arranged to engage said transverse walls of the body portion, and also having longitudinal edges on each side arranged to abut said longitudinal edges of the body portion, fastening means arranged to removably secure the holder with said end portions and said longitudinal edges in engagement, and optical elements carried by the holder and precisionized by said fastening means.

4. An optical instrument having a tubular body portion offset to form two parts having parallel axes, the body portion being provided with an opening at the offset part having opposite transverse walls, and a holder carrying optical elements and removably secured to the body at such opening, the holder having two faces engaging said opposite walls in the body to precisionize the optical elements in alinement with said axes respectively.

5. An optical instrument having a tubular body portion offset to form two parts having parallel axes, the body portion being provided with an opening at the offset part having opposite transverse walls disposed parallel, and a holder carrying optical elements and removably secured in the body at such opening, the holder having opposite parallel sides engaging said opposite walls in the body to precisionize the optical elements in alinement with said axes respectively.

6. In an optical instrument, a body portion provided with an opening having opposite transverse walls, a holder having a segmental portion arranged to close said opening and provided with opposite transverse walls engaging said walls of the body, a transverse wall carried by the segmental portion and extending into the body, fastening means between said engaging portions of the holder and body, and prisms carried solely by said holder portion and precisionized in the instrument by said engagement of the holder and body.

7. In an optical instrument, a body portion provided with an opening having opposite transverse walls, a holder having a segmental portion arranged to close said opening and provided with opposite transverse walls engaging said walls of the body, a transverse wall carried by the segmental portion of the holder and extending into the body, fastening means between said engaging portions of the holder and body, and prisms carried on opposite sides of said wall and precisionized in the instrument by said engagement of the holder and body.

8. In an optical instrument, a body portion provided with an

opening having opposite transverse walls, a holder having a segmental portion arranged to close said opening and provided with opposite transverse walls engaging said walls of the body, a transverse wall carried by the segmental portion of the holder and extending into the body and engaging its inner face, fastening means between said engaging portions of the segment and body, fastening means between the body and transverse wall of the holder, and prisms carried solely by said holder portions and precisionized in the instrument by said engagement of the holder and body.

9. In an optical instrument, a body portion provided with an opening having opposite transverse walls, and also having longitudinal walls connecting the transverse walls, a holder having a segmental part arranged to close said opening and having its opposite end portions arranged to engage said opposite transverse walls of the opening, the segmental part having longitudinal edges on each side arranged to abut said longitudinal edges of the body-opening, fastening means securing said holder to the body, a transverse wall on the segmental part of the holder extending into the body and having three openings therein, the wall having a recess in one face including two of such openings, a prism seated in such recessed portion, a post secured to such wall, a strip secured to such post and retaining said prism in position, a recess on the opposite face of the wall including two of said openings, a prism seated in the latter recess, and a strip having its ends secured in the segmental part and retaining the latter prism in position.

812,465. **PINKING-MACHINE.** PARKER H. SWEET, New York, N. Y., assignor to The Rotary File and Machine Company, Brooklyn, N. Y., a Corporation of New York. Filed Mar. 17, 1905. Serial No. 250,685.

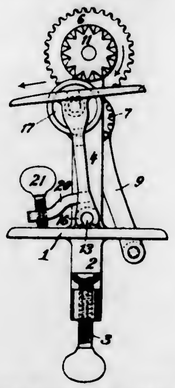

Claim.—1. In a pinking-machine the combination of a cutting-roll and an anvil having their centers vertically out of alinement and means for maintaining a relatively constant pressure therebetween.

2. In a pinking-machine the combination of a cutting-roll and an anvil-roll having their centers vertically out of alinement and means for automatically adjusting the resistance of the latter to abnormally varying pressures.

3. In a pinking-machine the combination of a cutting-roll and an anvil-roll normally contacting, the former journaled in a fixed support, and the latter in a pivotally-mounted yielding support, the two supports mounted upon a common base, said pivot being in vertical alinement with the center of said cutting-roll, the center of the said anvil-roll being in the same plane without said alinement.

4. In a pinking-machine the combination of a cutting-roll and an anvil-roll normally contacting, the former journaled in a fixed support, and the latter on a pivotally-mounted yielding support, said pivot being in vertical alinement with the center of said cutting-roll but the said anvil-roll being in the same plane but without said alinement, together with means for adjusting said anvil-roll with respect to said alinement.

5. In a pinking-machine the combination of a cutting-roll rotatably mounted upon a fixed support; an anvil-roll carried upon a slidably-inclined table, supports to said table of slightly-elastic material, an arm projecting substantially horizontally from said supports, and an adjustment-screw passing through the extremity of said arm and against the base, substantially as and for the purposes set forth.

6. In a pinking-machine the combination of the bed-plate 1, the standard 4, the clamp 2, the set-screw 3, the gear-wheel 6, meshing with the geared driving-wheel 7, the crank 9, the cutting-roll 11, attached by a left-hand thread to the shaft 26, the anvil-roll 17, mounted upon the table 14, the table-support 15 15, pivotally connected by cylindrical projections upon the said bed-plate, the adjustment-arm 20, the adjustment-screw 21, the anvil-roll support being of such length that it normally contacts with the cutting-roll at a point without the perpendicular line from the center of the cutting-wheel to the base.

7. In a pinking-machine the combination of a cutting-roll rotatably mounted upon a fixed support, a slightly-inclined hollow table attached to said support, an anvil-roll mounted upon a sliding carriage within said hollow table, screw and spring means for adjusting the position of said carriage and anvil-roll and for compensating for abnormal pressures, the said cutting and anvil rolls normally contacting at a point slightly without the perpendicular line from the center of the cutting-roll to the base, substantially as described.

812,466. **SCRUBBING-MACHINE FOR REMOVING FOREIGN MATTER FROM THE SURFACES OF GLOBULAR OBJECTS.** ALVIN TAPLIN, Forestville, Conn. Filed Aug. 23, 1904. Serial No. 221,762.

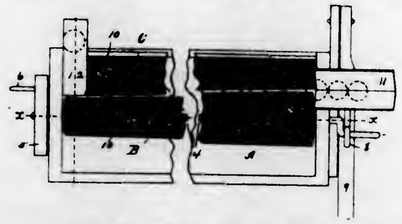

Claim.—The combination of a frame with a tapering scrubbing-roller mounted on the said frame with its axis on an incline and with its under face level, a liquid-tight vessel or trough into which the under face of the said scrubbing-roller extends, and a scrubbing-apron arranged by the side of the said roller below the summit thereof substantially as described.

812,467. **SHEET-METAL WINDOW-SASH.** JOHN W. WATKINS, Philadelphia, Pa. Filed Jan. 21, 1905. Serial No. 242,176.

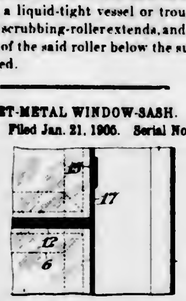

Claim.—1. In a sheet-metal window-sash, a muntin-support consisting of a flexible piece secured to the munnion (or side rail) and having its free end projected to pass under and support the muntin, substantially as set forth.

2. In a sheet-metal window-sash an adjustable muntin-support secured to the munnion (or side rail) and bent to reach the top of the pane and then bent out aong the top of the pane to afford a support for the muntin which rests on top of the pane, substantially as set forth.

3. In a sheet-metal window-sash, a muntin-support consisting of a piece of metal attached to both the munnion and the muntin, and bent so as to support the muntin at its juncture with the munnion at the proper height to accommodate the pane below it, substantially as set forth.

4. In a sheet-metal window-sash, a muntin-support consisting of a flexible strip passing through the partition between the pane-grooves of the munnion, and passing under the extremities of the muntins when they abut against the munnion on either side, substantially as set forth.

812,468. **GIVE-WAY CONNECTION FOR BOX-MOTIONS OF LOOMS.** WILLIAM WATTIE, Worcester, Mass., assignor to Crompton & Knowles Loom Works, a Corporation of Massachusetts. Filed Nov. 2, 1904. Serial No. 231,050.

Claim.—1. In a give-way connection for a box-motion of a loom, the combination with a box-operating rod having a screw-thread portion thereon, a collar loosely mounted on said rod, and adjustable thereon through nuts turning on said screw-thread portion, and said collar having a stud extending out from one side thereof, and a block mounted on said stud, and said block of non-circular shape at itscentral part, of two arms or levers pivotally connected together and yieldingly drawn toward each other, and one or both of said arms of levers having a non-circular recess or depression in its inner edge, adapted to receive and yieldingly hold the non-circular portion of said block.

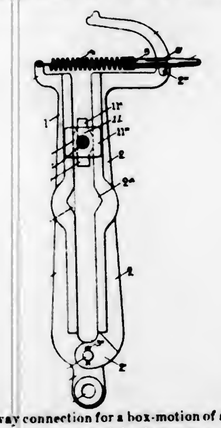

2. In a give-way connection for a box-motion of a loom, the combination with a box-operating rod having a screw-thread portion thereon, a collar loosely mounted on said rod and adjustable thereon through nuts turning on said screw-thread portion, and said collar having a stud extending out from one side thereof, and a block mounted on said stud, and said block of non-circular shape at its central part, and having its upper and lower ends of reduced diameter, and having lips or wings extending beyond the central portion, of two arms or levers pivotally connected together, and yieldingly drawn toward each other, and one or both of said arms or levers having a non-circular recess or depression in its inner edge, adapted to receive and yieldingly hold the non-circular portion of said block.

812,469. **INCANDESCENT GAS-BURNER.** ELIAS R. WILNER, New York, N. Y. Filed July 11, 1904. Serial No. 216,007.

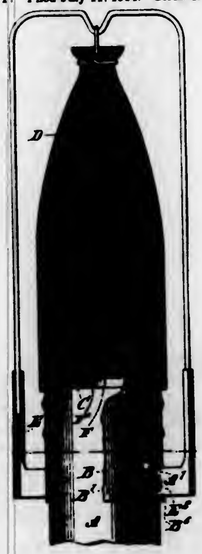

Claim.—1. In a holder for incandescent mantles, a sleeve having a longitudinal joint, sockets secured to said sleeve and adapted to receive a mantle-carrier, one of said sockets bridging the said joint of the sleeve.

2. In a holder for incandescent mantles, a sleeve having a longitudinal joint and provided with apertures at each side of said joint and in combination with a socket having lugs, the ends of which are bent through the said apertures so that said socket will contribute to join the edges of the sleeve.

3. In a holder for incandescent mantles, a sleeve having a longitudinal joint and apertures at each side of said joint, combined with a mantle-carrying socket bridging said joint and having laterally-projected lugs with ends of reduced width, the said ends being passed through the said apertures and clenched on the inside of the sleeve so as to be substantially flush therewith, while the outer surfaces of the lugs are provided with bulges or projections corresponding in shape and location to the said clenched ends.

4. In a holder for incandescent mantles, a tubular support having a screen at its outlet, in combination with a spreader secured to said screen peripherally by prongs.

5. In a holder for incandescent mantles, a sleeve having longitudinal meeting edges, and a socket adapted to receive a mantle-carrier and secured to said sleeve at each side of said meeting edges so as to bridge the joint of the sleeve.

6. In a holder for incandescent mantles, a sleeve having longitudinal meeting edges, and a socket adapted to receive a mantle-carrier and having at its lower end an attaching portion extending transversely of said meeting edges and secured to the sleeve at each side of the joint.

7. In a holder for incandescent mantles, a tubular support having a screen at its outlet, in combination with a spreader the periphery of which is secured to said screen.

8. In a holder for incandescent mantles, a sleeve having a longitudinal joint, in combination with a mantle-carrying socket, one of said parts being provided with apertures and the other of said parts having lugs passing through the said apertures and secured therein so that said socket will contribute to join the edges of the sleeve.

812,470. **FRUIT-SORTER.** THEODOR N. WOOLVERTON, Grimsby, Canada. Filed Feb. 25, 1905. Serial No. 247,231.

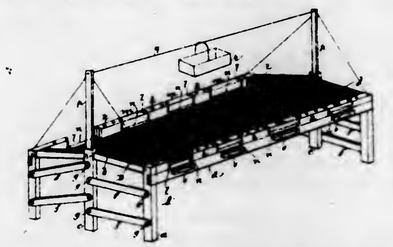

Claim.—In a fruit-sorter, a rectangular frame, supported by six legs, the legs at each end connected with pivoted braces so as to be capable of folding, a longitudinal centerpiece connecting the ends higher than the sides, a woven material covering the top of the frame, sloping to the sides and form fruit-pockets, a series of blocks secured to the sides at intervals to form raised sides for the pockets, a series of openings between said blocks, a series of removable gates to fit in said openings, a series of lips at the bottom of each gate-opening, a series of cleats secured to the sides under each gate-opening, standards affixed to the ends of the frame, a rod made to connect said standards to carry a removable fruit-receptacle, all constructed, combined and arranged substantially as and for the purpose specified.

812,471. **MAIL-BAG CATCHER AND DELIVERER.** HENRY H. AKINS, Cherryvale, Kans., assignor to Ora Bleak Akins, Cherryvale, Kans. Filed Nov. 2, 1905. Serial No. 285,633.

Claim.—1. In a mail-bag catching and delivering apparatus, a car device mounted to swing horizontally into and out of the car, a spring-actuated bag-gripping jaw upon the car device, means to hold the jaw open, means to trip the jaw, means to hold the car device in its operative position, and means controlled by the jaw-holding means for releasing the car device.

2. In a mail catching and delivering apparatus, the combina-

tion with a car, of a horizontally-swinging car device, a spring-pressed jaw carried by the device, means to hold the jaw open, means to trip the jaw-holding means, a catch carried by the car, a keeper upon the car device for engagement with the catch, means controlled by the jaw-holding means for releasing the catch from the keeper, and means to automatically swing the car device into the car when the catch is released.

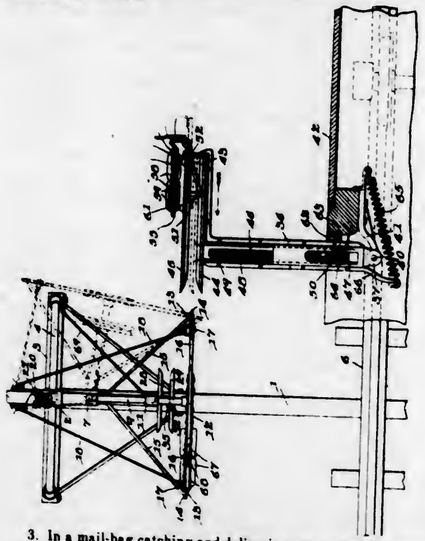

3. In a mail-bag catching and delivering apparatus, the combination with a support, of a horizontally-swinging crane having a movable jaw, a spring connected to the jaw and the crane, a lever for moving the jaw against the pressure of the spring, means for holding the jaw open, means to trip the jaw-holding means, a catch engaging the crane and the support to hold the former in its operative position and located in the path of the lever to be tripped thereby, and means to automatically swing the crane from its operative position when the catch is released.

4. In a device of the class described, the combination of a car device, a stationary device, a pair of tensioned jaws carried by one of the devices, a catch to hold the jaws open, a bag-holder carried by the other device, and a guard carried by said other device for engagement with the bag to prevent swinging thereof, a portion of the jaw-holding means being disposed in the path of the guard to be tripped thereby.

5. In a device of the class described, the combination of a stationary device, a fixed jaw and a spring-actuated jaw carried thereby, a bracket projected in advance of the movable jaw, a catch pivoted upon the bracket and capable of being engaged with the movable jaw to hold the same open, a car device, a bag-holder carried thereby, and a substantially U-shaped spring-clamp hung from the car device for embracing the bag, a portion of the catch being disposed in the path of the clamp for automatically releasing the spring-actuated jaw.

6. In an apparatus of the class described, the combination of a crane, opposite bag-holding means upon the crane and including removable elements, a counterweight, and cables connected to the counterweight and the respective removable elements to normally hold the weight elevated, said weight capable of swinging the crane to one side when either of the removable elements is removed.

7. In an apparatus of the class described, the combination with a frame, of a crane mounted upon the crane to swing upon a vertical axis, opposite bag-holding means carried by the crane, a counterweight movable vertically upon the frame, removable elements included in the bag-holding means, guides upon opposite sides of the frame, and cables connected to counterweights and running through certain of the guides to the respective removable elements.

812,472. ANIMAL-TRAP. JAMES C. ALSOBROOK, Sorrento, Fla. Filed Dec. 1, 1905. Serial No. 289,942.

Claim.—A trap comprising a receptacle closed at one end and with an aperture through the closed end, a stop spaced from the aperture, a swinging closure to said receptacle, a rod projecting through said aperture and with means at the inner end for supporting the bait, a bar disposed transversely beneath said stop and the projecting end of the bait-rod, and a trip-cord connected at one end to said bar and at the other end to the free end of said movable closure.

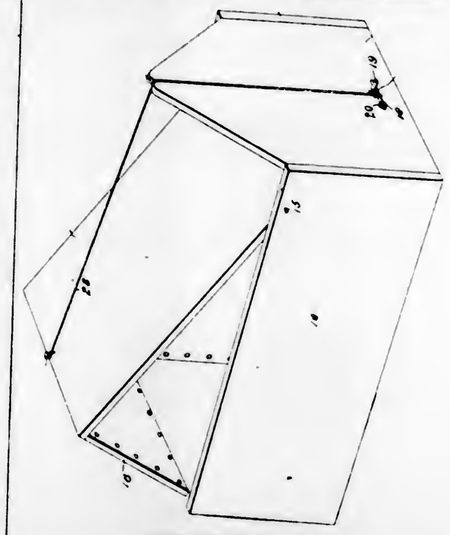

812,473. PROCESS OF TREATING ORES. ERNEST W. ARNOLD, San Francisco, Cal., assignor of one-half to Victor Seina, San Francisco, Cal. Filed Sept. 14, 1905. Serial No. 278,376.

Claim.—1. The treatment of refractory ores which comprehends the roasting of the ore to incandescence, and the direction of a blast impregnated with chlorin gas against and into the body of ore, while in an incandescent state.

2. The treatment of refractory ores which comprehends the heating of the ore to incandescence, and the direction of a blast of chlorin gas and charcoal-fumes upon and into a body of ore, while the latter is in a state of incandescence.

3. The treatment of refractory ores which comprehends heating the ore to incandescence by directing a blast of a suitable hydrocarbon thereagainst, and then impregnating the incandescent ore with chlorin gas.

4. The treatment of refractory ores which comprehends heating the ore to incandescence and while it is in motion by directing a blast of a suitable hydrocarbon into and against said ore, and then impregnating the incandescent ore with a mixture of chlorin gas and charcoal-fumes.

5. The treatment of refractory ores which comprehends the heating of a body of ore to incandescence by directing into and against the ore a blast of a suitable hydrocarbon, and impregnating the incandescent ore with a mixture of chlorin gas and charcoal-fumes, in the proportion of about two parts of chlorin to one part of charcoal-fumes.

812,474. GOLD-SAVING APPARATUS. OLIN H. BAGLEY, Deadwood, Cal. Filed June 19, 1905. Serial No. 265,912.

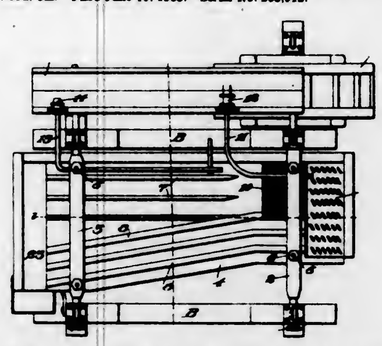

Claim.—1. A gold-washer comprising a table suitably mounted for reciprocatory movement, said table having a generally straight back portion with closed back and ends and opened at the front, the front edge of the table made divergent toward the rear of the table, whereby the latter has a generally flared appearance from front to rear, a series of riffles on the surface of the table extending approximately parallel with the front divergent edge of the table, means for delivering material onto the head or narrower end of the table, means for giving the table a longitudinal reciprocating movement, said table having its surface slightly higher at the center than at either side, and means for adjusting the transverse tilt of the table.

2. A concentrator-table, suitably mounted for reciprocatory movement and having a generally straight back portion with closed back and ends, and open at the front, the front edge of said table being divergent relative to the back whereby the table has a generally flared appearance from front to rear, riffles on one part of the table extending generally parallel with the back of the table, other riffles extending generally parallel with the flared front edge of the table, means for delivering material onto the several riffled portions of the table, and means for giving the table a reciprocatory movement in a line parallel with the back of the table.

3. A concentrator-table, having substantially a straight back edge and a longer front edge, and closed at the back and ends and open at the front, said table having its surface slightly higher at the center than at either side, riffles on the table, some of which riffles are arranged divergent with relation to the back edge, means for imparting a transverse tilt to the table, and a transversely-extending discharge-trough for the concentrates at the wider end.

4. In a gold-saving apparatus, the combination of a suspended table, means for reciprocating the same lengthwise, riffles on the table, means for tilting the table sidewise, means for delivering material and wash-water to the table, a power-shaft, a cam on said shaft, a tappet carried by the table, and means including transversely-extending screws engaging the side of the table whereby the table may be shifted laterally into and out of the range of action of the cam.

5. In a gold-saving apparatus, a table suspended for reciprocatory movement, riffles on the table, means for delivering material and wash-water thereto, a power-shaft, a cam on the power-shaft, a tappet carried by the table, means for shifting the table laterally to carry said table into or out of the path of said cam, said means including adjustable screws bearing on the side of the table and proximate to the head and rear thereof.

6. In a gold-saving apparatus, the combination of a frame, two rock-shafts journaled therein, one of which has a limited lengthwise movement, adjustable hangers carried by said rock-shafts, a table supported by said hangers, means for delivering material and wash-water to the table, means for collecting the values separate from the worthless matter, and means for shaking the table, said shaking means capable of being thrown into and out of operative relation with the table by means of said endwise-movable shaft.

7. In a gold-saving apparatus, the combination of a suitable framework, a table mounted thereon for reciprocatory movement, means for delivering material and wash-water onto the table, means for shaking the table, and means for collecting the values separate from the worthless material, said means for delivering the material onto the table including a V-shaped trough, a discharge-pipe for the material opening into the bottom of said trough, and a plate sliding in suitable guides on the inside of the trough and having a V-shaped portion corresponding to the cross-section of the V-trough to control the passage of material into said discharge-pipe.

8. In a gold-saving apparatus, the combination of a suitable framework, a table mounted thereon for reciprocatory movement, means for delivering material and wash-water onto the table, means for shaking the table, and means for collecting the values separate from the worthless material, said means for delivering the material to the table including a V-shaped trough, a discharge-pipe for the material opening into the bottom of said trough, and a plate sliding in suitable guides on the inside of the trough and having a V-shaped portion corresponding to the cross-section of the V-shaped trough to control the passage of material into said discharge-pipe, a pipe for said wash-water entering said V-shaped trough at a point above the ordinary level of the material in said trough, a suitable gate for the wash-water pipe and an overshot wheel receiving the overflow from said trough and operating said table-shaking means.

9 In a gold-saving apparatus consisting of a framework, two rock-shafts thereon, one of which is arranged to have a limited lengthwise movement, a table suspended from said rock-shafts, said table closed on one side and two ends, and open on the other side, said table being narrower at one end than at the other, a perforated feed-trough extending across the narrower end, a screen arranged beneath a portion of said feed-trough and adapted to calm the water and material passing from the feed-trough onto that portion of the table, means for delivering material and water into the feed-trough, and means for shaking the table.

10. In a gold-saving apparatus, the combination of a suitable framework, two rock-shafts mounted thereon, one of which is adapted to have a limited lengthwise movement, a table adjustably hung from said rock-shafts, said table being closed on one side and at both ends, and open at the front, said table also being narrower at one end than at the other, means for delivering material at the narrower end of the table, a water-wheel, a shaft provided with a cam, a tappet on the table to be engaged by the cam, means for shifting the table and said lengthwise-shiftable rock-shaft to carry said tappet into and out of engagement with the cam, and a V-shaped trough, carrying the material which is delivered onto the table, discharging upon said water-wheel.

812,475. BOAT-PROPELLER. CHARLES E. BARBER, Syracuse, N. Y. Filed Apr. 1, 1905. Serial No. 253,216.

Claim.—1. In a boat-propeller, the combination of a rotary shaft suitably sustained against endwise movement, a propeller-wheel comprising a hollow hub mounted on said shaft and a plurality of radially-disposed blades pivotally and detachably secured to said hub, a block sliding longitudinally on the shaft within the hub for turning the blades to either propelling or reversing positions, a longitudinally-shiftable sleeve embracing the shaft, means adjustably connecting the block to said sleeve and transmitting motion from the latter to said block, and means for shifting said sleeve as set forth.

2. In a boat-propeller, the combination of a rotary shaft suitably sustained against endwise movement, a propeller-wheel comprising a transversely-divided hollow hub having the shaft extending beyond the same and provided with radial openings at the line of division, and blades detachably and pivotally secured in said openings, the inner section of the hub being permanently secured to the shaft and the outer section removably secured thereon, a block sliding longitudinally on the shaft within the hub and provided with projections engaging the blades for turning the latter to either propelling or reversing positions, a longitudinally-shiftable sleeve embracing the shaft in front of the hub, adjustable means for transmitting motion from the sleeve to the block, and means for shifting the sleeve as set forth.

3. In a boat-propeller, the combination of a rotary longitudi-

nally-disposed shaft suitably sustained against endwise movement, a propeller-wheel comprising a hollow hub mounted on the shaft and divided transversely to form two sections and provided with a plu-

2. The combination of a door and its frame of a rack-bar secured to one of said parts, a pivot spring-pressed latch mounted upon the other part and designed to engage in the teeth of said rack-

the track-rail, and formed with a head at its upper end provided with lateral ribs or lugs adapted to engage in said opening in the main part of the hanger and lock the same in connection with the track-

21. In combination with the track rail or way, a clamping or binding device formed with an upward extension or head provided with side lugs or ribs and a horizontal extension or lug above the

sally-disposed shaft suitably sustained against endwise movement, a propeller-wheel comprising a hollow hub mounted on the shaft and divided transversely to form two sections and provided with a plurality of radial openings at the line of division, and blades pivotally and detachably secured in said openings, the inner hub-section being permanently fastened to the shaft and provided with a series of longitudinal guides, and the outer hub-section secured removably on the shaft, a block sliding longitudinally on the shaft within the hub and provided with means for turning the blades axially to either propelling or reversing positions, a longitudinally-shiftable sleeve embracing the shaft independent of the hub, and rods extending through the aforesaid guides and adjustably connecting the block to the sleeve and transmitting motion from the latter to the block, and means for shifting said sleeve as set forth

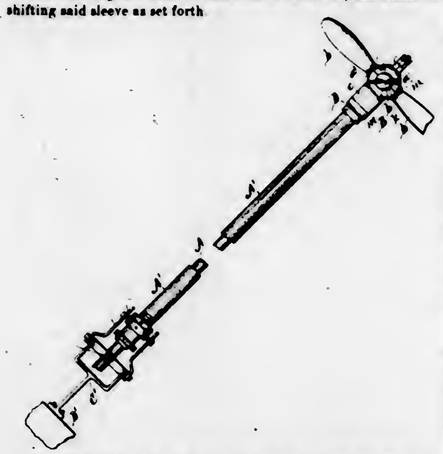

4. In a boat-propeller, the combination of a longitudinally-disposed rotary shaft suitably sustained against endwise movement and having its rear end screw-threaded, a propeller-wheel comprising a hollow hub provided with a plurality of radial openings and divided transversely on a line diametrically through the openings, the inner section being permanently secured to the shaft and the outer secured removably thereon and having the threaded portion of the shaft projecting therefrom, a nut on said shaft and sustaining the outer section in its position, and blades formed with stems by which they are pivotally and detachably secured in the aforesaid openings and provided with bearing-surfaces formed on the exterior and interior of the hub, a longitudinally-sliding block on the shaft within the hub and engaging the stems of the blades, means for adjusting the block to regulate the movement of the blades, and means for actuating said block as set forth.

5. In a boat-propeller, the combination of a rotary shaft sustained against endwise movement, a propeller-wheel comprising a hollow hub divided transversely to form inner and outer sections, the inner section being formed with a tubular portion by which it is permanently secured to the shaft, and the outer section being removably secured thereto, longitudinal guides in said tubular portion, a triangular block provided with a central aperture by which it slides longitudinally on the shaft within the hub and provided with additional apertures at the corner portions thereof, a longitudinally-shiftable sleeve embracing the shaft and formed with a collar adapted to abut against the tubular portion of the hub, rods passing through the aforesaid guides and having their rear ends screw-threaded and extending through the corner apertures of the block, nuts on said rear ends of the rods, the opposite ends of the rods being screw-threaded and fastened to the said collar, and means for shifting said sleeve as set forth.

812,476. **DOOR-HOLDER.** JOHN BECKER, Wichita, Kans. Filed Oct. 14, 1905. Serial No. 282,787.

Claim.—1. The combination with a door and its frame, of a rack-bar secured to one of said parts and a spring-pressed latch mounted upon the other of said parts and pivotally connected thereto so as to move in a plane coincident with the plane of movement of the door and designed to engage with any one of the teeth of said rack-bar whereby to hold the parts in different angular relation with respect to each other.

2. The combination of a door and its frame of a rack-bar secured to one of said parts, a pivot spring-pressed latch mounted upon the other part and designed to engage in the teeth of said rack-bar, and a detent attached to that part which carries the latch and designed to engage the latter to hold it in an inoperative position.

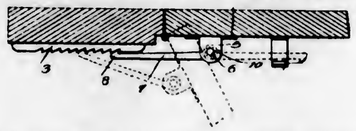

3. The combination with a door and its frame, of a rack-bar secured to one of said parts, a pivoted spring-pressed latch mounted upon the other part and designed to engage in the teeth of said rack-bar and a spring-detent attached to that part which carries the latch and provided with a hook in the path of said latch whereby the latter may be held in inoperative position.

4. The combination of a door and its frame, of a rack-bar secured to one of said parts, a bracket secured to the other of said parts and provided with spaced-apart ears, a latch pivotally mounted between said ears at one end and provided at the other end with a hook designed for engagement with said rack-bar a spring tending to spring said latch into engagement with said teeth, and a detent secured to the part that carries the latch and its bracket said detent extending outwardly from its attached part and thence downwardly and upwardly at its extremity which latter lies in the path of the latch, whereby the latter may spring underneath the extremity of the detent and be held thereby in inoperative position.

812,477. **SUSPENDED TRACK FOR ELEVATORS AND CARRIERS.** JOHN M. BOYD, Fond du Lac, Wis. Original application filed Dec. 28, 1901, Serial No. 87,089. Divided and this application filed May 23, 1903. Serial No. 158,010.

Claim.—1. In a suspended track apparatus for elevators and carriers, in combination with a suitable track rail or way, a track-hanger provided with an upper extension by which it may be suspended, and formed at its lower end to engage with the track rail or way, a separate wedge or key adapted to key the same to said track rail or way to support said rail, and separate or independent means to secure said wedge or key in place endwise, substantially as and for the purposes set forth.

2. In combination with a suitable track rail or way, a track-hanger adapted to be suspended from a rafter-bracket or other support, and formed with an opening or channel through its body at or near the lower end to receive a wedge or key, a wedge or key adapted to engage in said opening and lock the hanger to the track-rail, and means to secure said wedge in place endwise, substantially as and for the purposes set forth.

3. In combination with a suitable track rail or way, a track-hanger formed with an upper extension by which it may be suspended, and an opening, channel, or key-seat, through its body parallel with the track-rail, and a suspending and clamping device adapted to engage with the track-rail, and formed with a head, wedge, or key, at its upper end adapted to engage in said opening or key-seat in the track-hanger proper, substantially as and for the purposes set forth.

4. In combination with the track rail or way, a track-hanger adapted to be connected with a support above the rail, and formed at its lower end to engage with the rail or way, and provided with an intermediate opening or key-seat through its body parallel with the rail, and a key or wedge adapted to engage in said opening and formed with a lower part or extension adapted to support and hold the rail or way in proper position in conjunction with the lower end of the main part of said track-hanger, substantially as and for the purposes set forth.

5. A track-hanger formed with means for connecting with an overhead support, and adapted to connect with a track rail or way at its lower end, and provided with an intermediate opening or key-seat parallel with the track, and a lower part adapted to engage with the track-rail, and formed with a head at its upper end provided with lateral ribs or lugs adapted to engage in said opening in the main part of the hanger and lock the same in connection with the track-rail, substantially as and for the purposes set forth.

6. A track-hanger formed with an upper or main part adapted to be connected with an overhead support, and a lower part adapted to engage the track-rail, and means whereby said upper and lower parts may be wedged or keyed together endwise to support the rail in proper position, substantially as and for the purposes set forth.

7. A track-hanger consisting of an upper supporting part adapted to engage with the rail at its lower end, a lower part adapted to engage with said upper part above the rail through its center, and lengthwise of the track, and hold the same in locked engagement with the rail, and extraneous means to prevent the disengagement of the parts by the rattle and jar of the track while in use, substantially as and for the purposes set forth.

8. A track-hanger formed with a hooked upper end to engage with a rafter-bracket or other support, a lower end adapted to engage with the track-rail, means for connecting said lower end in locked engagement with the track-rail, and a rod or link to connect said means with said hook and lock them both in place, substantially as and for the purposes set forth.

9. A track-hanger formed with a hooked upper end, and adapted to engage with the track-rail at its lower end, and provided with an opening or channel through its body adapted to receive a wedge or key, a wedge or key adapted to engage in said opening and clamp said hanger to the rail, and a rod or link adapted to lock said wedge in said opening and connect the same with the hook, substantially as and for the purposes set forth.

10. A track-hanger formed with an upper suspending part adapted to receive and support the upper end of a lower or clamping part, a lower part adapted to clamp or wedge said upper part to the track-rail, and a rod, key, or link, adapted to hold said upper and lower parts in proper connection with each other from endwise movement.

11. A track-hanger formed with an upper or suspending part, and a lower or clamping part formed with a head to engage in an opening in the upper part, said parts being adapted to wedge together to support the track from an overhead support, and means to hold the same in proper engagement with each other.

12. A track-hanger formed with an upper hooked part, a lower clamping part, said parts being adapted to wedge together to support the track-rail, and a rod or link adapted to hold or lock the same together endwise and to close the opening in the hook.

13. A track-hanger formed with an upper hooked part, a lower clamping part adapted to engage inside said upper hooked part, said parts being adapted to slide or wedge together lengthwise with the rail, and a rod or link adapted to hold the same together against an endwise movement, and to close the opening in the hook.

14. The track-hanger *h* formed with an opening through its center, and the clamping or supporting wedge *d'*, in combination with the track-rail T, and means for holding the same together against an endwise movement along the track.

15. The combination of the track-hanger *h* formed with a central channel, the clamping and supporting wedge *d*, the rod or link *r'*, and the track-rail T, substantially as and for the purposes set forth.

16. In combination with the track rail or way, a track-hanger adapted to support the rail, and provided with a guideway, or means to guide the attachment of the stop-block of a carrier in proper place at the side or sides of said hanger, substantially as set forth.

17. In combination with the track or way, a track-hanger adapted to support the track-rail, and provided with lugs or extensions at each side above the track to support a stop or trip block of a carrier, substantially as set forth.

18. In combination with a track rail or way, a clamping device formed in separate pieces provided with ribs or lugs adapted to fit into and engage with each other at their upper edges, above the rail, and means to hold the same together, substantially as set forth.

19. In combination with a track rail or way, a clamping device formed in separate parts provided with lateral extensions or lugs at or near their upper edges adapted to engage with each other at each side of the center of the track or way, and lower extensions adapted to engage and hold the track in position, and means whereby the same may be clamped together, substantially as and for the purposes set forth.

20. In combination with the track rail or way, a clamping device formed with upward extensions provided with lateral ribs or lugs adapted to engage with each other and be clamped together at each side of the center, cross extensions at each end, and means for holding the parts in engagement with each other, substantially as and for the purposes set forth.

21. In combination with the track rail or way, a clamping or binding device formed with an upward extension or head provided with side lugs or ribs and a horizontal extension or lug above the rail, and a wedge or clamp adapted to engage underneath said horizontal extension and said side lugs or ribs and clamp the same to the rail, substantially as and for the purposes set forth.

22. In combination with a suitable track rail or way, a clamping or binding device formed with a supporting part having an upwardly-projecting extension or head provided with lateral lugs or ribs above the track, and a clamping part formed with inwardly-projecting lugs or ribs, and a loop or cross-bar at each end, and adapted to be passed down over said head, and moved horizontally along said track-rail into locking engagement with said head, substantially as and for the purposes set forth.

23. In combination with the track-rail, a clamping and supporting device provided with lateral extensions, lugs, or ribs, lengthwise of and above the rail, and formed at the lower end to engage with the rail, and means whereby the same may be clamped to the rail underneath said lateral lugs or ribs, substantially as and for the purposes set forth.

24. In combination with a track rail or way, a clamping or binding device formed with a supporting part provided with an upper extension or head formed with side extensions, ribs, or lugs, and a projection n^7, and a clamping part provided with inwardly-projecting lugs or ribs n^8, n^4, adapted to engage with said side extensions or ribs on said head, and downward extensions adapted to engage and hold the rail, substantially as and for the purposes set forth.

25. In combination with a suitable rail or way adapted for a carrier to travel thereon, an end stop for said carrier adapted to be pivotally suspended from an overhead support above the track to prevent said carrier from leaving the track at the end, substantially as set forth.

26. In combination with a suitable rail or way adapted for a carrier to travel thereon, an end stop for said carrier adapted to hook into a support above the rail and adapted to catch and stop the carrier, substantially as set forth.

27. In combination with a suitable rail or way adapted for a carrier to travel thereon, and an overhead support for said rail or way, an end stop flexibly suspended from said overhead support directly above the rail and adapted to catch and stop the carrier, substantially as and for the purposes set forth.

28. In combination with the track or way adapted for a carrier to travel thereon, an end stop for said carrier formed in the shape of a loop into which the carrier-wheels will run, said loop passing preferably underneath the track and being connected to an overhead support, substantially as and for the purposes set forth.

29. In combination with the track rail or way, the rafter-bracket *r* and the loop or end stop r^3, substantially as and for the purposes set forth.

30. In a suspended track, in combination with the rail or way provided with an upper bead, a suspending hook or hanger formed with an opening through its body parallel with the rail, whereby it may be attached to the rail, and a hooked extension at its lower end adapted to engage underneath one side of the upper bead of the rail, and a supporting wedge or clamp adapted to engage in said opening to clamp said hanger to the rail, and provided with a lower extension or hook adapted to engage underneath the opposite side of the upper bead of the rail, substantially as and for the purposes set forth.

31. In a suspended track, in combination with the rail or way, hanger-hooks whereby said rail or way may be suspended, clamps whereby different sections of said rail may be spliced or clamped together, and the end stops suspended above the track-rail at each end, substantially as and for the purposes set forth.

32. In a suspended track for elevators and carriers, the combination of the track-rails, splices or clamps to connect said rails, track-hangers whereby said rails may be suspended from an overhead support, supporting wedges or keys to connect said hooks with said rails at suitable distances, and end stops or loops supported above said rails at each end of track, the whole constituting a complete suspended or swinging track, substantially as and for the purposes set forth.

812,478. **ELEVATOR AND CONVEYER.** MORRIS B. BREWSTER, Columbus, Ohio. Filed Mar. 6, 1905. Serial No. 248,718.

Claim.—1. The combination with a locomotive, a stoker for supplying fuel thereto and a locomotive-tender, of means for conveying fuel from the tender to the stoker, the delivery end of said means lying in juxtaposition to the stoker, but movable laterally with relation thereto.

2. The combination with a locomotive, a stoker for supplying fuel thereto and a locomotive-tender, of means for conveying fuel from the tender to the stoker, said means being mounted upon the tender centrally thereof and extending longitudinally overhead from the tender toward the locomotive with its delivery end in juxtaposition to the stoker and movable laterally with relation thereto.

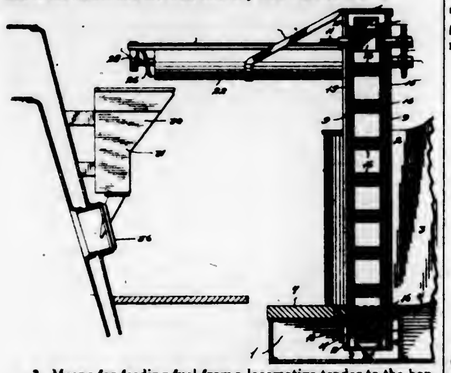

3. Means for feeding fuel from a locomotive-tender to the hopper of a mechanical stoker carried on the locomotive, comprising a device for elevating the fuel up the side of the tender, and means for conveying the fuel overhead from the said device to the hopper of the stoker.

4. In a device of the character described, the combination with a stoker and a locomotive-tender, of means for elevating fuel up one side of the tender and partly across the same overhead, and a conveyer associated with the elevator and extending overhead therefrom to convey the fuel from the elevating means to the stoker.

5. The combination with a locomotive-tender and a stoker, of a grate located in the tender, means for elevating fuel from beneath the grate up one side of the tender, and a conveyer for conveying the fuel from the elevating means to the stoker.

6. The combination with a locomotive-tender and a stoker, of an elevator for carrying fuel from the bottom of the tender up one side and overhead across to the center of the same, and a conveyer supported centrally overhead from the elevator with its outer end in juxtaposition to the stoker and adapted to convey the fuel from the elevator to the stoker.

7. The combination with a locomotive-tender and a stoker, of an overhead conveyer having its discharge end adjacent the stoker, means for automatically elevating fuel from the tender and delivering it to the conveyer, means for imparting motion to the elevating means, and means for imparting motion to the conveyer.

8. The combination with a locomotive and its tender of a stoker carried upon the locomotive, a conveyer carried by the tender and extending from said tender to said stoker in a plane above the top of the tender and means for elevating fuel from the body of the tender and delivering the same to said conveyer.

9. The combination with a locomotive and its tender, of a stoker carried upon the locomotive, a conveyer carried upon the tender and held rigidly in line therewith, said conveyer passing overhead from the tender to the stoker with its free and delivery end overhanging said stoker.

812,479. APPARATUS FOR DISCHARGING GAS-RETORTS. JOHN W. BROADHEAD and FRANCIS W. CROSSE, Hlmsd, England, assignors to Robert Dempster & Sons, Ltd., Hlmsd, England. Filed June 19, 1905. Serial No. 265,916.

Claim.—1. In a coke-drawing machine, the combination, with a supporting-carriage, of a casing-tube pivoted in the said carriage and provided with a loop, a telescopic ram carried by the said casing-tube, and an eccentric pivoted to the said carriage and engaging with the said loop and affording a means for turning the said casing-tube on its pivots.

2. In a coke-drawing machine, the combination, with a supporting-carriage, and a casing-tube supported in the said carriage and provided with a tank for cooling-water; of a telescopic ram provided with spaces for cooling-water which communicate constantly with the said tank, and driving mechanism for telescoping the said ram and causing the cooling-water to move back and forth in the said water-spaces and tank.

3. In a coke-drawing machine, the combination, with a supporting-carriage, and a casing-tube supported in the said carriage and provided with a tank for cooling-water at its rear end; of a telescopic ram provided with spaces for cooling-water which communicate constantly with the said tank, guide-sheaves carried by the said ram, guide-sheaves journaled in the said tank, flexible connections operatively connected with the said ram and passing over the said guide-sheaves, and winding mechanism supported by the said carriage and having the said flexible connections attached to it.

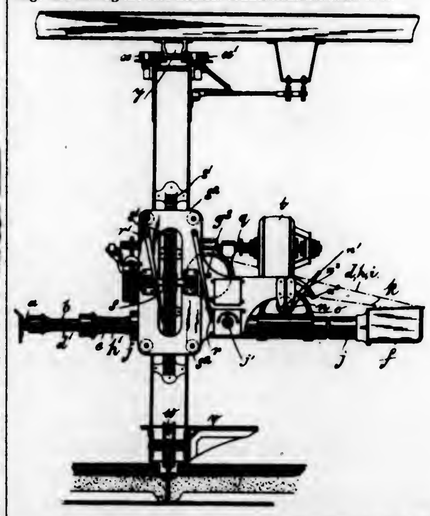

4. In a coke-drawing machine, the combination, with a single lower rail, and a single upper rail, and means for holding the said rails in position; of a carriage provided with wheels for engaging the said rails, a telescopic ram supported by the said carriage, and driving mechanism for telescoping the said ram also supported by the said carriage.

812,480. CLOSET-BOWL SEAT. JOHN M. BRYANT and JAMES B. ALLEN, Detroit, Mich. Filed Mar. 6, 1905. Serial No. 248,410.

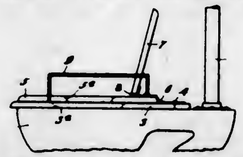

Claim.—1. The combination with a closet-bowl, of a main seat having a relatively large hole, a supplemental seat hinged thereto and having a relatively small hole, a cover hinged to said supplemental seat and adapted to be turned upward to form a seat-back, and side rails applied to said supplemental seat and movable into operative position when and only when said supplemental seat is moved into operative position, substantially as described.

2. The combination with a closet-bowl, of a main seat having a relatively large hole, a supplemental seat hinged thereto and having a relatively small hole, a cover hinged to said supplemental seat and adapted to be turned upward to form a seat-back, and folding side rails made up of sections pivotally connected with each other and pivotally attached, the one section to said supplemental seat and the other to said cover, substantially as described.

812,481. AUTOMATIC VACUUM-BRAKE. JOHN W. CLOUD, King's Cross, London, England. Filed June 21, 1905. Serial No. 266,242.

Claim.—1. In an automatic vacuum-brake apparatus for railway and like vehicles, a reservoir or receptacle normally containing air at atmospheric pressure, provided with means whereby when a sudden small increase of pressure is made in the train-pipe for applying the brakes, said reservoir or receptacle is put into communication with the brake system, so that a portion of the air contained in the reservoir or receptacle will be discharged into the brake system for the purpose of accelerating the application of the brakes.

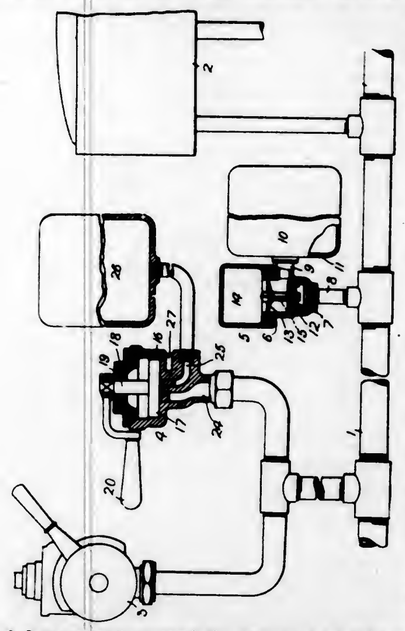

2. In an automatic vacuum-brake apparatus, a reservoir normally containing air at atmospheric pressure, and a valve device operated by a small sudden increase in train-pipe pressure for opening communication from said reservoir to the brake system for accelerating the rise in train-pipe pressure and the application of the brakes.

3. In an automatic vacuum-brake apparatus, a reservoir having a restricted orifice communicating with the atmosphere, and a valve device operated by a small sudden increase in train-pipe pressure for opening communication from the reservoir to the train-pipe.

4. In an automatic vacuum-brake apparatus, a reservoir normally containing air at atmospheric pressure, and a manually-operated valve mechanism for controlling communication from said reservoir to the train-pipe, whereby certain small sudden increases may be made in the train-pipe pressure.

5. In an automatic vacuum-brake apparatus, a reservoir, a train-pipe, and a manually-operated valve having ports for controlling communication from the atmosphere to said reservoir and from the reservoir to the train-pipe for increasing the pressure therein.

6. In an automatic vacuum-brake apparatus, a reservoir normally containing air at atmospheric pressure, and a manually-operated valve mechanism for controlling communication from said reservoir to the train-pipe, another reservoir normally containing air at atmospheric pressure, and a valve device operated by an increase in train-pipe pressure for opening communication from the second reservoir to the train-pipe for accelerating the application of the brakes.

7. In an automatic vacuum-brake apparatus, a train-pipe, a reservoir normally containing air at atmospheric pressure, an operating-chamber, and means operated by the opposing pressures of the train-pipe and the operating-chamber for controlling communication from the reservoir to the train-pipe.

8. In an automatic vacuum-brake apparatus, a train-pipe, a reservoir normally containing air at atmospheric pressure, an operating-chamber communicating with the brake-cylinder, and a valve device operated by the opposing pressures of the train-pipe and the operating-chamber for controlling communication from the reservoir to the train-pipe.

9. In an automatic vacuum-brake apparatus, a train-pipe, a reservoir normally containing air at atmospheric pressure, an operating-chamber, and a valve device operated by the opposing pressures of the train-pipe and the operating-chamber for controlling communication from the reservoir to the train-pipe and from the atmosphere to the operating-chamber.

10. In an automatic vacuum-brake apparatus, a train-pipe, a reservoir normally containing air at atmospheric pressure, an operating-chamber, a movable abutment subject to the opposing pressures of the train-pipe and the operating-chamber, a valve actuated by said abutment and adapted under a small sudden rise in train-pipe pressure to open communication from the reservoir to the train-pipe, and under a large sudden rise in train-pipe pressure to open a large port direct from the atmosphere to the train-pipe.

812,482. SYSTEM OF WATER CONTROL. ADONIRAM J. COLLAR, Yreka, Cal. Filed Nov. 4, 1903. Serial No. 179,786.

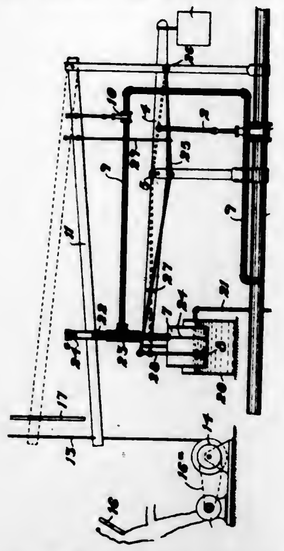

Claim.—1. The combination with a water-gate, of means for controlling said gate from a remote point, said means including an operating-lever and connections between the lever and gate, a motor, means connected with the lever and controlled by the motor to oscillate the lever, a motor-controlling circuit and a keeper in the path of the lever to limit temporarily its movement in one direction.

2. The combination with a water-gate of means for controlling said gate from a remote point, said means including an operating-lever and connections between the lever and gate, a motor, means connected with the lever and controlled by the motor to oscillate the lever, a motor-controlling circuit, and a keeper for said lever, said keeper comprising an inclined guide in the path of the lever and means to hold the lever temporarily against return in one direction.

3. The combination with a water-gate of means for operating said gate, said means including a lever counterweighted at each end, one of said counterweights being variable, a liquid bath in which the variable counterweight is submergible, and electrically-controlled means to actuate said lever.

4. The combination with a water-gate, of an operating-lever, electrically-operated mechanism for controlling the movements of said lever, and means operatable by the movements of said lever whereby the opening and closing of the gate is effected, said means including a variable copnterweight, and a liquid bath in which said variable counterweight is submergible.

5. The combination with a valve-stem and a water-gate of a lever connected therewith, a valved receptacle carried by said lever, a liquid bath into which the said receptacle is adapted to be submerged, means for discharging water into said receptacle and electrically-operated means for effecting said discharge and for operating the valve in said receptacle.

6. The combination with the valve-stem of a water-gate, of a lever connected therewith, a valved receptacle carried by said lever, a liquid bath into which the said receptacle is adapted to be submerged.

supply-pipe for said receptacle, and means operatable by said re-

ing an oil-chamber provided with circumferential and side bearing

a supply-pipe for said receptacle, and means operatable by said receptacle for controlling the discharge from said pipe.

7. The combination with a valve-stem of a water-gate of a lever connected therewith, a valved receptacle carried by said lever, means for supplying water to said receptacle, a liquid bath in the path of said receptacle to limit the rate of oscillation of the lever, an electrically-operated means for admitting water to the said receptacle and for discharging it therefrom.

8. The combination with the valve-stem of a water-gate of a lever connected therewith, a valved receptacle carried by said lever, a liquid bath into which the said receptacle is adapted to be submerged, means for admitting water to said receptacle to effect the oscillation of said lever, and means for opening and closing the valve in said receptacle coördinately with the oscillations of said lever.

9. The combination with a water-main, of a gate therein, a stem for said gate, a lever connected with the stem, means on the lever to normally close the gate, a valved receptacle carried by the lever, a pipe connected with the main and adapted to discharge into the receptacle, a valve in the pipe, a second lever connected with said valve, electrical means for operating said second lever, and connections between said second lever and the valve in said receptacle to operate the valve in the latter coördinately with the operation of the valve in the pipe which is connected with the main.

10. The combination with a main, of a gate therein, a stem for the gate, a lever connected with the stem, means acting on the lever normally to close the gate, a valved receptacle carried by the lever, valved connections between the main and said receptacle, and means for opening and closing the respective valves in said connections and receptacle coördinately to effect the proper charging and discharging of the receptacle to oscillate the lever.

11. The combination of a valve-casing, a straightway sectional expansible valve seating therein, the sections of said valve in closing a tapered chamber, a stem having a correspondingly-tapered head inclosed in said chamber and having a limited free up-and-down movement therein, and rollers carried by said head and engaging the walls of the valve-sections.

812,483. POWER-TRANSMISSION DEVICE. FRANK DE COLIGNY, Chicago, Ill. Filed Aug. 7, 1905. Serial No. 273,047.

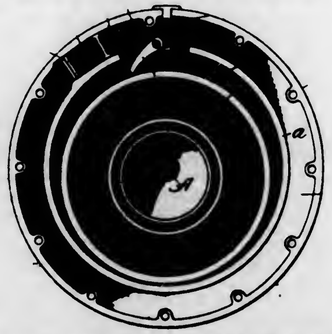

Claim.—1. In a power-transmission device, the combination with the driving and driven parts, of a cylinder on one of said parts having an inner bearing-surface surrounding an oil-chamber provided with inlet and outlet ports, and an oil-circulating conduit communicating with the ports, a wheel eccentrically mounted on the other of said parts to have independent rotation thereon in rolling contact with the said surface in the said chamber, a resilient deflector in said chamber between the said ports and bearing against the said wheel, a valve in said conduit, and operating means for said valve.

2. In a power-transmission device, the combination with the driving and driven parts, of a cylinder on one of said parts having an inner bearing-surface surrounding an oil-chamber provided with inlet and outlet ports, and an oil-circulating conduit communicating with the ports, an inner wheel eccentrically fastened to the other of said parts, an outer wheel rotating on the said inner wheel in said chamber in rolling contact with the said bearing-surface, a resilient deflector in said chamber between the said ports and bearing against the said outer wheel, a valve in said conduit, and operating means for the valve.

3. In a power-transmission device, the combination with the driving and driven parts, of a cylinder on one of said parts containing an oil-chamber provided with circumferential and side bearing-walls and provided in its circumference with inlet and outlet ports, and an oil-circulating conduit communicating with the ports, an inner wheel eccentrically fastened to the other of said parts, an outer wheel rotating on the said inner wheel in said chamber in rolling contact with the circumferential wall and in sliding contact with the said side walls, a resilient deflector in said chamber between the said ports and bearing against the said outer wheel, a valve in said conduit, and operating means for the valve.

4. In a power-transmission device, the combination with the driving and driven parts, of a cylinder on one of said parts having an outer oil-storage chamber and an inner oil-chamber provided with circumferential and side bearing-walls and provided at its circumference with inlet and outlet ports, an oil-circulating conduit extending from said outlet-port to the said outer chamber, the inlet-port being an opening between the chambers, an inner wheel eccentrically fastened to the other of said parts, an outer wheel rotating on the said inner wheel in said inner chamber in rolling contact with the circumferential wall and in sliding contact with the said side walls, a resilient deflector in said inner chamber between the said ports and bearing against the said outer wheel, a valve in said conduit, and operating means for the said valve.

5. In a power-transmission device, the combination with alined driving and driven shafts, of a cylinder on one of said shafts having an inner bearing-surface surrounding an oil-chamber provided with inlet and outlet ports, and an oil-circulating conduit communicating with the ports, the other shaft extending through a stuffing-box in one side of said chamber and into a bearing in the other side thereof and carrying an inner eccentric wheel in said chamber, an outer wheel rotating on the said inner wheel in rolling contact with said bearing-surface, and in sliding contact with the side walls of said chamber, a resilient deflector in said chamber between the said ports and bearing against said outer wheel, a valve in said conduit, and operating means for the valve.

812,484. RUBBER SHOE SOLE AND HEEL. FRANK C. CONNOR, Waco, Tex. Filed Sept. 12, 1904. Serial No. 224,075.

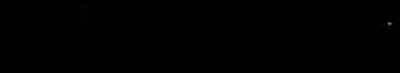

Claim.—1. As a new article, a sole composed of rubber having a tread portion at the front end and a heel-receiving portion at the rear end, an elastic heel secured upon the rear end of the heel-receiving portion, said elastic heel having an internal cavity D^3 having its upper face concaved transversely and longitudinally, the longitudinal cavity extending from the internal cavity D^3 to the front face of the heel to provide an open or valve space x between the heel and the heel-receiving portion of the sole-piece, said heel and sole being arranged that when the weight of the wearer rests upon the heel, the space x will close, and open again when the weight of the wearer is removed from the heel, substantially as shown and described.

2. The hereinbefore-described improvement in rubber soles and heels comprising in combination with a rubber sole having a heel-receiving portion, a rubber heel including an internal cavity D^3, and having its upper face concaved transversely and longitudinally, the longitudinal cavity extending from the internal cavity D^3 to the front face of the heel to provide an open space x between the heel and the heel-receiving portion of the sole, the heel and sole being arranged that when the weight of the wearer rests upon the heel, the space x will close, and will open again when the weight of the wearer is removed from the heel, substantially as shown and for the purposes described.

3. As a new article of manufacture, a rubber heel having an internal cavity D^3, and having its upper face concaved transversely and longitudinally, the longitudinal cavity extending from the internal cavity D^3 to the front face of the heel to provide an open space x between the heel and the part to which it is adapted to be secured, all being arranged substantially as shown and for the purposes described.

812,485. PICKING MECHANISM FOR LOOMS. HARRY A. DAVIS, Hopedale, Mass., assignor to Draper Company, Hopedale, Mass., a Corporation of Maine. Filed July 31, 1905. Serial No. 271,575.

Claim.—1. In picking mechanism for looms, a picking-shaft having an arm provided with a roll, a picking-cam to coöperate with the roll and rock said shaft, a revolving carrier on which said cam is pivotally mounted, and a trip to engage and rock the cam relatively to the carrier, to effect coöperation of the cam and roll and move the latter with a gradual and extended acceleration.

2. In picking mechanism for looms, a picking-shaft having an arm provided with a roll, a picking-cam to coöperate with the roll and rock said shaft, a revolving carrier on which said cam is pivotally mounted, and a trip to engage the cam and gradually throw it outward at a predetermined point in the revolution of the carrier, to cause the cam to act upon the roll by the combined substantially radial and angular movements of the cam.

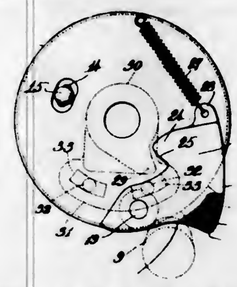

3. In picking mechanism for looms, a picking-shaft having an arm provided with a roll, a picking-cam to coöperate therewith, and means to subject the cam to combined angular and substantially radial movement at the time of engagement with the roll, to gradually accelerate the movement of the roll through the major portion of its active stroke.

4. In picking mechanism for looms, a picking-shaft having an arm provided with a roll, a revolving carrier, a picking-cam movable with and also relatively to said carrier and adapted to coöperate with the roll, and means to effect relative movement of the cam as the latter is brought into engagement with the roll.

5. In picking mechanism for looms, a picking-shaft having an arm provided with a roll, a revolving carrier, a picking-cam movable with and also relatively to said carrier and adapted to coöperate with the roll, a toe on the cam, a fixed trip to engage said toe and effect gradually-accelerated movement of the cam relative to the carrier when the cam engages the roll, and a spring to restore the cam to normal position thereafter.

6. In a picking mechanism for looms, a picking-shaft having an arm provided with a roll, a revolving carrier, a picking-cam movable with and also relatively to said carrier and adapted to coöperate with the roll, and angularly-adjustable means to effect movement of the cam relatively to the carrier when the cam engages the roll, to gradually accelerate the movement of the roll and increase the extent of such accelerated movement.

7. In picking mechanism for looms, a picking-shaft having an arm provided with a roll, a revolving, disk-like cam-carrier, a picking-cam pivotally mounted thereon and having a roll-engaging portion projecting beyond its periphery, and a fixed tripping device to engage the picking-cam and throw outward its roll-engaging portion, to effect a gradual and extended increase in the speed with which the picking-cam moves the roll.

8. In picking mechanism for looms, a picking-shaft having an arm provided with a roll, a revolving, disk-like cam-carrier, a picking-cam pivotally mounted thereon and having a roll-engaging portion, a stop on the cam, a spring to act upon the cam and normally retain the stop in engagement with the periphery of the carrier, and a fixedly-mounted trip to periodically engage the cam between its center of revolution and the roll-engaging portion and move the latter outward to gradually increase the speed of movement of the roll when engaged by the cam.

9. In picking mechanism for looms, in combination, a picking-cam, separate means to effect bodily revolution of said cam, and intermittent outward movement thereof relative to its axis of revolution, and a picking-roll with which the cam coöperates when subjected to such combined movement.

10. In picking mechanism for looms, in combination, a revolving shaft, a carrier fixedly mounted thereon, a picking-cam pivotally mounted on the carrier and having a roll-engaging portion behind its pivot, a cam-retracting spring, a fixedly-mounted trip to periodically engage the cam back of its pivot and throw its roll-engaging portion outward, and a picking-shaft provided with a roll to be intermittingly acted upon by the picking-cam.

11. In picking mechanism for looms, in combination, a picking-shaft having an arm provided with a roll, a picking-cam having a roll-engaging portion, means to bodily revolve the cam about a fixed axis, a device to swing outward said cam from its axis of revolution as it coöperates with the roll, and means to angularly adjust the said device with relation to the axis about which the cam revolves bodily.

12. In picking mechanism for looms, in combination, a revolving carrier, a picking-cam thereon having a roll-engaging portion adapted to gradually engage the roll, a picking-shaft having an arm provided with said roll, and means to move the cam relatively to its carrier to thereby cause the roll-engaging portion to gradually increase the movement of the roll due to coöperation with the cam.

13. In picking mechanism for looms, means to effect the throw of the shuttle, including a picker-stick and an operatively-connected roll, and means to coöperate with the roll and gradually accelerate the movement thereof through the major portion of its active stroke, to thereby correspondingly act upon the shuttle through the picker-stick.

812,486. SKIRT-PROTECTING GARMENT. EDWARD S. DIX, New York, N. Y., assignor to The Borated Specialty Company, Brooklyn, N. Y., a Corporation of New York. Filed Oct. 7, 1905. Serial No. 281,716.

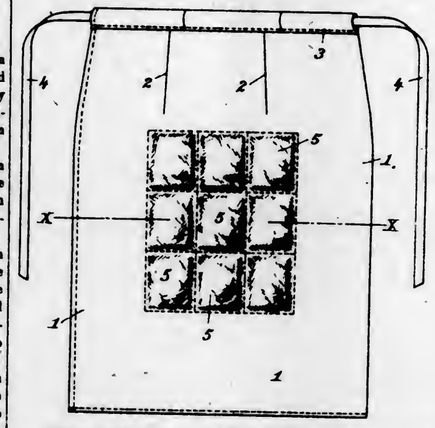

Claim.—1. As a new article of manufacture a skirt-protecting garment comprising a marginal unpadded portion, a centrally-located padded portion and means for attaching the garment about the waist of the wearer.

2. As a new article of manufacture a skirt-protecting garment comprising a marginal unpadded portion, a padded and quilted central portion of about one-fourth the area of the entire garment; a waistband with hem and draw-string, the upper portion of the garment being gored to fit about the waist.

812,487. TEMPER-SCREW. CHESTER W. FARTON, Wellsville, N. Y., assignor to The Oil Well Supply Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed May 15, 1905. Serial No. 260,501.

Claim.—1. In a temper-screw, the combination of a feed-screw, a divided nut, means for maintaining an operative engagement of the nut and feed-screw, and a yielding detent for preventing the accidental disengagement of the nut and feed-screw.

2. In a temper-screw, the combination with a feed-screw, divided nut, and clamp-screw, of a yielding detent for controlling the clamp-screw.

3. In a temper-screw, the combination of a feed-screw, a divided nut therefor, means for maintaining the operative relation of the feed-screw and nut, and a yielding detent for preventing the accidental disengagement of the nut and feed-screw, said detent being adjustable with relation to the feed-screw.

4. The combination with the temper-screw, a split nut for engaging same, a strap surrounding said split nut, and a transverse screw for causing engagement of the split nut with the temper-screw, of means for preventing the accidental loosening of said transverse screw, said means consisting of a ratchet device fixed upon said strap and a pawl carried by said transverse screw to engage said ratchet device, substantially as described.

5. The combination with the temper-screw, a split nut for engaging the same, a strap surrounding said split nut, and a trans-

verse screw operating through said strap for causing engagement of

slots, a middle piece having tongues disposed alternately on each

verse screw operating through said strap for causing engagement of the split nut with the temper-screw, of means for preventing the accidental disengagement of said transverse screw, said means consisting of a ratchet member on one side of said strap and through which said transverse screw passes, an arm fixed to said transverse screw, and a spring-pawl secured to said arm and adapted to engage said ratchet member.

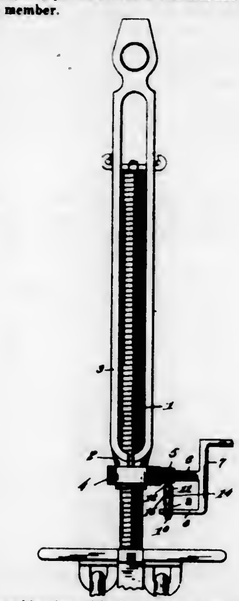

6. The combination with the temper-screw, a split nut for engaging the same, a strap surrounding said split nut, and a transverse screw operating through the strap for causing engagement of the split nut with the temper-screw, of means for preventing accidental loosening of said transverse screw, said means consisting of a ratchet-cylinder on one side of said strap and through which said transverse screw passes, an arm fixed to said transverse screw and having an angular extension projecting inward parallel to said screw, and a member adjustable upon said extension and carrying a spring-pawl to engage said ratchet-cylinder.

7. The combination with the temper-screw, a split nut for engaging same, a strap surrounding said split nut, and a transverse screw operating through the strap for causing engagement of the split nut with the temper-screw, of means for preventing accidental loosening of said transverse screw, said means consisting of a ratchet member fixed to said strap, an arm carried by said transverse screw, a spring-pawl on said arm positioned to engage said ratchet, and means for locking said pawl in inoperative position at will, substantially as described.

812,488. **SHEAVE.** WILLIAM C. PECHER, New York, N. Y., assignor to Standard Pulley Manufacturing Company, a Corporation of New York. Filed Oct. 3, 1904. Serial No. 226,947.

Claim.—1. As a new article of manufacture, a sheave formed of two side plates having flanges to form a rim, and a middle piece provided with tongues, the said side plates being provided with slots through which said tongues protrude and said tongues being bent to lock the parts together, substantially for the purposes set forth.

2. As a new article of manufacture, a sheave formed of two side plates having flanges to form a rim and a middle piece provided with a series of tongues disposed alternately on each side thereof, each of said side plates having a series of slots through which said tongues protrude and said tongues being bent against said side plates to tie the parts together, substantially for the purposes set forth.

3. As a new article of manufacture a sheave formed of two side plates having flanges to form a rim and provided with a series of slots, a middle piece having tongues disposed alternately on each side thereof to coöperate with said slots to tie the parts together, said middle piece having a central circular aperture for a hub and a cylindrical hub formed of one piece of metal having a lug thereon and integral therewith to engage a notch in said middle piece, substantially for the purposes set forth.

812,489. **KNIFE-POLISHING MACHINE.** FRANZ FRIEG, Ludwigsburg, Germany. Filed Jan. 4, 1905. Serial No. 239,668.

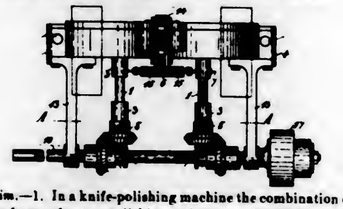

Claim.—1. In a knife-polishing machine the combination of two swinging frames for two polishing-rollers, an adjustable spring acting to automatically draw together one roller toward the other and movably-arranged motion-transferring gear-wheels, substantially as and for the purpose specified.

2. In a knife-polishing machine the combination of two swinging frames for two polishing-rollers, an adjustable spring acting to automatically draw together one roller toward the other, a driving-shaft, longitudinal grooves on said driving-shaft, shiftable motion-transferring gear-wheels the longitudinal movements of which are guided in said grooves, collars fastly connected to said gear-wheels and provided with grooves running around said collars, in which grooves the free ends of the roller-shafts carrying the coöperating gear-wheels are guided, substantially as and for the purpose set forth.

812,490. **WINDOW-SCREEN.** SAMUEL H. GARRETT, West Philadelphia, Pa. Filed Apr. 24, 1905. Serial No. 257,117.

Claim.—1. A window-screen, consisting of a series of plain bars and a series of clamp-bars, the clamps of the series of said clamp-bars adapted to be rigidly connected with their respective bars and to form projecting eyes, at both ends of the same, said eyes adapted to receive and to surround the other series of plain bars and to loosely connect the same with said clamp-bars to permit of the sliding of said clamp-bars on said plain bars to required position, means adapted to lock the clamps to said plain bars to form in conjunction with said clamp-bars a substantially rectangular and rigid frame, a flexible fabric, grooves arranged in said plain and clamp bars adapted to receive said flexible fabric and to hold the same taut thereon, and means engaging said grooves and the fabric and adapted to removably connect the same with said bars.

2. A window-screen, consisting of a series of plain bars and a series of clamp-bars, the clamps of said series of clamp-bars adapted to be rigidly connected with their respective bars and to form projecting eyes at both ends of the clamp-bars, said eyes adapted to receive and to surround the other series of plain bars to form in conjunction therewith a rectangular frame, a flexible fabric, a groove extending from end to end in each of said clamp-bars, and a groove having a rectangular extension at one end arranged in each of said plain bars and opposite the groove of the adjacent clamp-bar and an ungrooved portion at the other end, said flexible fabric adapted to be inserted in the grooves of said bars and to rest upon the ungrooved portion of said plain bars to permit of a ready engagement and removal of the fabric from said grooves, and means engaging said grooves and the fabric and adapted to removably connect the same with said bars.

812,491. **TELEPHONE-SWITCH-PLUG MECHANISM.** ADOLPH C. GELSER, Passaic, N. J., assignor to The New York Automatic Telephone Company, Paterson, N. J., a Corporation of New Jersey. Filed Nov. 25, 1904. Serial No. 234,130.

Claim.—1. In a switch-plug mechanism, a plug having a conical end, and a contact-spring having a portion disposed in the path of and constructed to engage said plug frictionally and hold said plug when the latter is moved in one direction and to act upon said conical end to complete the return movement of said plug.

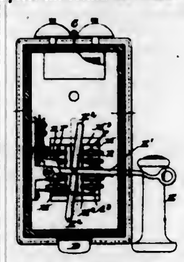

2. In a switch-plug mechanism, a plug having a conical end, a contact-spring having a portion disposed in the path of and contructed to engage said plug frictionally and hold said plug when the latter is moved in one direction and to act upon said conical end to complete the return movement of said plug, and means for initiating such return movement.

3. In a switch-plug mechanism, a plug having a conical end, a contact-spring having a portion disposed in the path of and constructed to engage said plug frictionally and hold said plug when the latter is moved in one direction and to act upon said conical end to complete the return movement of said plug, and means operated by a receiver-hook or analogous switch for initiating such return movement.

4. In a switch-plug mechanism, a plug having a cylindrical head and conical end, means for initiating the return movement of the plug, and a contact-spring having a portion disposed in the path of and constructed to engage frictionally with said head and hold said plug when the latter is moved in one direction and to act upon said conical end to complete the return movement of said plug, and means for making and breaking an electric circuit through the movements of said spring.

5. In a switch-plug mechanism, a plug having a cylindrical head and conical end, a contact-spring having a portion disposed in the path of and constructed to engage frictionally with said head and hold said plug when the latter is moved in one direction and to act upon said conical end to complete the return movement of said plug, means for initiating such return movement, and means for making and breaking an electric circuit through the movements of said spring.

6. In a switch-plug mechanism, a plug having a cylindrical head and conical end, a contact-spring having a portion disposed in the path of and constructed to engage frictionally with said head and hold said plug when the latter is moved in one direction and to act upon said conical end to complete the return movement of said plug, means operated by a receiver-hook or analogous switch for initiating such return movement, and means for making and breaking an electric circuit through the movements of said spring.

7. In a switch-plug mechanism, a plug having a cylindrical head and conical end, a contact-clip, a contact-spring having a portion disposed in the path of and constructed to engage said head frictionally and hold said plug when the latter is moved in one direction and also contact with said clip, and to act upon said conical end to complete the return movement of said plug and break such contact, and means for initiating such movement.

8. In a switch-plug mechanism, a series of plugs having each a cylindrical head and conical end, a contact-clip for each plug, a contact-spring for each plug having a portion disposed in the path of and constructed to engage said head frictionally and hold said plug when the latter is moved in one direction and also contact with its clip, and to act upon said conical end to complete the return movement of said plug and break such contact, a reset bar adapted to act on said heads to initiate such return movement, and means for actuating said reset bar.

9. In a switch-plug mechanism, a series of plugs arranged in a row, each having a cylindrical head and conical end, a corresponding series of contact-springs each bent upon itself to form an angular shoulder and a contact-point, a series of contact-clips one adjacent to each of said contact-points, the said shoulder adapted to engage the head of its plug frictionally and hold said plug when the latter is moved in one direction and with its contact-point in wiping contact with its contact-clip, and to break such contact and act upon said conical end to complete the return movement of said plug, a reset bar extending along said row of plugs and adapted to act on said heads to initiate such return movement, and means carried by the receiver-hook or analogous switch adapted to actuate said reset bar.

10. In combination with a telephone-box having a receiver-hook, a series of plugs loosely mounted in the casing of said box and extending into the interior thereof, each of said plugs having a cylindrical head and a conical end, a contact-clip for each plug, a contact-spring for each of said plugs adapted to engage said head frictionally and hold its plug when the latter is thrust toward the interior of said box and make contact with its clip, and to break such contact and act upon the conical end of its plug to complete the return movement of said plug, a reset bar arranged adjacent to said series of plugs and adapted by its movement to initiate such return movement, and a spring-arm carried by said receiver-hook and adapted to move said reset bar when said receiver-hook is depressed.

11. In combination with a telephone-box having a receiver-hook, two series of plugs loosely mounted in the casing of said box in parallel rows and extending into the interior of said box, each of said plugs having a cylindrical head and conical end, two series of contact-clips one clip for each plug, two series of contact-springs, one spring for each plug, each of said contact-springs adapted to engage the head of its plug frictionally and hold said plug when the latter is thrust toward the interior of said box and make contact with its clip, and to break such contact and act upon the conical end of its plug to complete the return movement of said plug, two reset bars, one for each series of plugs, each adapted by its movement to initiate such return movement of any plug of its series, and spring-arms carried by said receiver, adapted when said receiver-hook is raised to lie between said reset bars and to move the latter when said receiver-hook is depressed.

12. In a switch-plug mechanism, a plug arranged to be moved axially, a contact-clip, a contact-spring in the path of said plug and adapted to be moved aside by said plug into wiping contact with said clip, and means in the path of said plug and pivoted for moving said plug laterally toward said clip, whereby the extent of said wiping movement is increased.

13. In a switch-plug mechanism, a plug arranged to be moved axially, a contact-clip, a contact-spring in the path of said plug and adapted to be moved aside by said plug into wiping contact with said clip, and means for inducing a return movement of said plug and also moving said plug laterally toward said clip, whereby the extent of such wiping movement is increased.

14. In a switch-plug mechanism, a series of plugs, a contact-spring for each plug, and a contact-clip for each spring, the latter adapted to be moved into contact with its clip by an endwise movement of its plug, a reset bar common to all the plugs in said series, a receiver-hook or analogous switch, and a spring-arm carried by said hook, the construction and arrangement being such that when said hook is depressed and a plug pushed in said reset bar will be held in an inoperative position, when said hook is elevated, said bar will be released, and when said hook is again depressed, said reset bar will be moved in the direction to induce a return movement of said plug.

15. In a switch-plug mechanism, two series of plugs arranged in two parallel rows, a contact-spring for each plug and a contact-clip for each spring, the latter adapted to be moved into contact with its clip by an endwise movement of its plug, two reset bars each common to all the plugs of one series, a receiver-hook or analogous switch, and oppositely-extending spring-arms thereon, each of said arms adapted to actuate one of said reset bars.

16. In a switch-plug mechanism, a receiver-hook having a spring-arm, a plug adapted to be moved axially, a contact-clip, and a contact-spring, the said contact-spring serving to hold said plug frictionally at one end of its movement and to make contact with said clip, and to complete the return movement of said plug and to break such contact, and a reset bar actuated by said spring-arm, arranged to strike said plug and initiate such return movement by the depression of said receiver-hook.

812,492. **SUPPORTING-LUG FOR BOILERS.** CHARLES S. HOOPER, Erie, Pa. Filed Dec. 31, 1904. Serial No. 239,151.

Claim.—1. A boiler-lug constructed from a sheet of plate metal, bent into U-shaped form so as to provide a horizontal member, and vertical webs at the sides thereof, and a flange at one end of said U-shaped structure adapted to be riveted to a boiler, substantially as described.

2. A boiler-lug constructed from a sheet of plate metal, so bent as to provide a horizontal member having triangular webs at the sides thereof, an outwardly-projecting flange on said horizontal member and said vertical triangular webs at the larger end of the lug adapted to rest against and be riveted to the boiler, substantially as described.

3. A boiler-lug having a horizontal member, brace-webs at the sides thereof, and a radial flange around one end of said horizontal member and brace-webs, said flange being formed to fit the contour of the surface to which the lug is to be secured, all formed from one piece of sheet metal, substantially as set forth.

812,493. METHOD OF GRANULATING ALUMINIUM. WILLIAM HOSKINS, Lagrange, Ill. Filed Aug. 26, 1904. Serial No. 223,210.

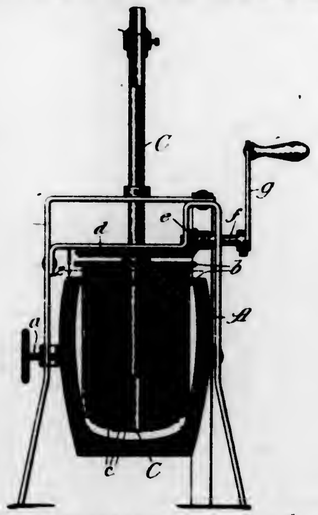

Claim.—1. The method of reducing aluminium, and other metals the oxide of which have a high melting-point, to a more or less finely-divided condition, which consists in forcing an oxidizing-gas into the molten mass to impregnate the same, at the same time agitating the mass, and continuing the agitation while the mass is cooling, thereby causing the mass in solidifying to separate into superficially-oxidized particles.

2. The method of reducing aluminium, and other metals, the oxids of which have a high melting-point, to a more or less finely-divided condition, which consists in forcing an oxidizing-gas into the molten mass, at the same time mechanically stirring the mass, and continuing the stirring while the mass is cooling, thereby causing the mass in solidifying to separate into superficially-oxidized particles.

812,494. SOLDERING COMPOUND. ALFRED R. HUSSEY, Chicago, Ill. Filed Oct. 12, 1903. Renewed June 5, 1905. Serial No. 263,870.

Claim.—1. An article of manufacture for soldering consisting of soft metals rendered finely granular and mixed with a flux-impregnated fatty substance, and made into sticks or bars.

2. An article of manufacture for soldering consisting of soft metals rendered finely granular, the same being mixed with a flux-impregnated fatty substance and made into sticks or bars, such sticks or bars being provided with a metal skin fusible at moderate temperature.

3. An article of manufacture for soldering consisting of soft metals rendered finely granular, the same being mixed with a flux-impregnated fatty substance and made into sticks or bars, such sticks or bars being inclosed in a retaining-skin of soft-metal foil.

4. An article of manufacture for soldering consisting of soft metals finely comminuted and mixed with a flux-impregnated fatty substance made into sticks or bars and provided with a tin-foil skin.

5. A soldering compound consisting of finely-granular lead and tin in the proportion of one part tin to from one to three parts lead, thoroughly mixed with a wax impregnated with chlorid of zinc.

6. A soldering compound consisting of soft soldering metals finely comminuted and thoroughly mixed with a flux-impregnated fatty substance hardened with rosin.

7. A soldering compound consisting of soft soldering metals finely comminuted and thoroughly mixed with flux-impregnated beeswax.

8. An article of manufacture for soldering consisting of soft metals intermixed with the proper flux and made into sticks or bars, in combination with a retaining-skin adapted to be fused with the substance of such sticks.

9. An article of manufacture for soldering consisting of soft metals rendered finely granular, the same being mixed with a flux-impregnated fatty substance and made into sticks or bars, in combination with a retaining-skin adapted to be fused with the substance of the sticks.

812,495. PHOTOMECHANICAL PRINTING. JOHN W. IPPERS, New York, N. Y., assignor to Albert Henry Walker, trustee, New York, N. Y. Filed June 26, 1905. Serial No. 266,382.

Claim.—The following process in photomechanical printing: making a gelatin emulsion, sensitized with bichromate of ammonia: applying that gelatin emulsion to a flat base, and drying and baking it thereon: exposing the resulting baked gelatin plate to light, through a sheet having a uniformly-translucent area, and a uniformly-opaque area: developing that exposed gelatin plate, by bathing it in water, and thereby swelling into smooth and uniform relief, that area thereof which was under the opaque area of that sheet during the exposure, while leaving in smooth and uniform depression, that area thereof which was under the translucent area of that sheet during the exposure: drying that developed gelatin plate in air: applying glycerin solution to the smooth and uniform relief area of that dried gelatin plate: applying printing-ink to the smooth and uniform depressed area of that glycerined gelatin plate: and transferring printing-ink from that smooth and uniform depressed area, to a smooth and solid surface of stone or metal; all substantially as described.

812,496. RESILIENT HEEL AND SOLE. HERBERT E. IRWIN, Galesburg, Ill. Filed Nov. 4, 1903. Serial No. 179,783.

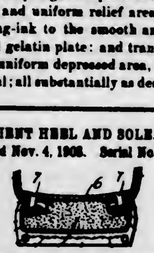

Claim.—1. A resilient heel or sole for a boot or shoe having embedded in its body woven-wire fabric and a framework consisting of larger wires or the like, said wire fabric being arranged to lie upon the said framework and means for integrally securing the wire fabric thereto, substantially as described.

2. A resilient heel or sole for a boot or shoe having embedded in its body woven-wire fabric and a framework consisting of larger wires or the like, said wire fabric being arranged to lie upon and to be integrally secured to the said framework so that the larger wires are anchored or firmly held in the heel or sole, substantially as described.

3. A resilient heel or sole for a boot or shoe consisting of two parts, the inner part being composed of a soft or sponge-like material, the outer part of a firmer rubber compound or other material, said outer part having embedded in its body woven-wire fabric and a framework of larger wires or the like, the woven-wire fabric being integrally united to the said framework, substantially as described.

4. The combination with a boot or shoe having an insole therein, of a resilient heel composed of two parts, an outer open-top rubber shell having a stiff base 13 and flexible sides 11 extending at the entire periphery of the shell into thickened flange edge 12 adapted to abut against the base of the said shoe or boot, said shell being strengthened by textile fabric embedded therein, and an inner resilient core

arranged to fit within the heel-shell and to come into contact with the said insole, said heel being secured to the boot or shoe by means penetrating the said insole and passing entirely through the thickened flange 12 and textile fabric 10, whereby the heel is secured at the entire periphery of its shell-top, substantially as described.

5. The combination with a boot or shoe, of a heel composed of a resilient core and an outer open-top shell, said shell having a stiff bottom 13 and thin flexible sides 11 extending into an enlarged flange 12 arranged to abut against the boot or shoe sole, a metallic member placed against the side of said shell-flange, and screws or the like passing through the sole and engaging said metallic member whereby the shell is held securely to the boot or shoe, substantially as described.

6. The combination with a boot or shoe, of a heel composed of a resilient core and an outer rubber shell, said shell having a stiff bottom, flexible sides and an open top and being interiorly lined with a textile fabric, the edges of the shell adjacent to the said opening being thickened, a metallic member arranged to abut against the said thickened edges and screws or the like passing through the insole and engaging the metallic member thereby clamping the heel to the boot or shoe, substantially as described.

812,497. NUT-LOCK. RUDOLPH G. JARNER, Cincinnati, Ohio, assignor of one-half to John Benshe, Cincinnati, Ohio. Filed July 19, 1905. Serial No. 270,401.

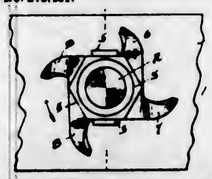

Claim.—1. In a nut-lock, a nut, a resilient washer having two of its opposite sides formed with outwardly-turned straight flanges on the edges of the washer adapted to engage the sides of the nut, there being spurs projecting from the outer edges of the washer between the flanges which are spirally inclined in the direction of rotation of tightening the nut, and the points of which are bent inward, substantially as described.

2. In a nut-lock, a nut, a resilient washer having flanges bent outwardly from opposite sides thereof, which engage against opposite sides of the nut and hold the nut between them, spurs radially extended from the edges of the washer, said spurs being projected serially longer so that their points lie in different concentric circles around the outside of the nut, the points of said spurs being spirally inclined in the direction of rotation of tightening the nut, and inwardly bent, substantially as described.

812,498. BUILDING-BLOCK. JOHN A. JOHNSON, Winamac, Ind. Filed Mar. 16, 1905. Serial No. 250,457.

Claim.—1. A building-block having vertical air-passages triangular in cross-section with a side of each passage parallel with the front face of the block, said passages being separated by walls which increase in thickness toward the back of the block.

2. A building-block of concrete or other molded material having vertical air-passages separated by walls which increase in thickness toward the back of the block, said air-passages being closer to the front than to the rear wall of the block.

812,499. DECOY. FRANK J. JOHNSTON, Sacramento, Cal. Filed Sept. 8, 1905. Serial No. 277,483.

Claim.—1. In a decoy, a profile-frame, back-frames hinged to said profile-frame and foldable upward into planes parallel with the profile-frame, and suitable flexible coverings for said frames.

2. In a decoy the combination of a profile-frame, back-frames hinged to said profile-frame and foldable upward into planes substantially parallel with the plane of the profile-frame, similarly-foldable tail-frames hinged to the back profile-frame and attached to the back-frames, and suitable coverings for said frames.

3. In a decoy the combination of a profile-frame, back-frames hinged to said profile-frame and foldable upward into planes substantially parallel with the plane of the profile-frame, similarly-foldable tail-frames hinged to the back profile-frame and attached to the back-frames, suitable coverings for said frames, the covering for the tail-frames extending beyond said frames to provide a flexible fringe in simulation of tail-feathers.

4. In a decoy the combination of a profile-frame, back-frames hinged to the front and rear of said profile-frame and foldable into planes substantially parallel with the plane of the profile-frame, a flat covering for the profile-frame, and flexible coverings attached to the back-frames and to or adjacent to the back portion of the profile-frame, said back-coverings limiting the downward movement of said back-frame.

5. In a decoy the combination of a rigid one-piece profile-frame, a covering therefor, back-frames hinged to said profile-frame, flexible coverings connected with said back-frames and said profile-frame and limiting the downward movement of said back-frames, said latter being foldable upwardly into planes approximately parallel with the plane of the profile-frame.

6. In a decoy the combination of a rigid one-piece profile-frame, a covering therefor, back-frames hinged to said profile-frame, flexible coverings connected with said back-frames and said profile-frame and limiting the downward movement of said back-frames, said latter being foldable upwardly into planes approximately parallel with the plane of the profile-frame, side body-frames hinged to the profile-frame, and a flexible waterproof covering secured to the side body-frames and to the covering of the profile-frame inclosing compartments.

7. In a decoy the combination of a rigid one-piece profile-frame, a covering therefor, back-frames hinged to said profile-frame, flexible coverings connected with said back-frames and said profile-frame and limiting the downward movement of said back-frames, said latter being foldable upwardly into planes approximately parallel with the plane of the profile-frame, side body-frames hinged to the profile-frame, a flexible waterproof covering secured to the side body-frame and to the covering of the profile-frame inclosing compartments, said side body-frames being foldable downward against the profile-frame.

8. In a decoy the combination of a profile-frame, foldable back-frames and foldable side body-frames, and a suitable covering for said frames.

9. In a decoy the combination of a profile-frame, foldable back-frames and foldable side body-frames, and a suitable covering for said frames, said back-frames being foldable independently of the side body-frames.

10. In a decoy the combination of a profile-frame, foldable back-frames and foldable side body-frames, and a suitable covering for said frames, said back-frames being foldable upwardly and said side body-frames being foldable downwardly against the profile-frame to form a flat package.

11. In a decoy the combination of a profile portion, foldable back and side body portions, said side body portions inclosing chambers, and means for locking the side body portion and back portion in operative position.

12. In a decoy the combination of a profile portion, foldable back and side body portions, said side body portions inclosing chambers, and means for locking the side body portion and back portion in operative position, said locking means comprising a hook member carried by one portion and engaging a corresponding opposed portion.

13. In a decoy the combination of a rigid profile-frame, a covering therefor, back and side body-frames hinged to said profile-frame, flexible coverings for said side body and back frames, said side body-covering inclosing compartments.

14. In a decoy the combination of a rigid profile-frame, a covering therefor, back and side body-frames hinged to said profile-frame, flexible coverings for said side body and back frames, said side body-covering inclosing compartments, said side body-frames being fold-

able downwardly, and said back-frames being foldable upwardly against the profile-frame.

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each section on the shank, and an actuating member adapted to

3. A battery element comprising perforated shells disposed one

able downwardly, and said back-frames being foldable upwardly against the profile-frame.

16. In a decoy the combination of a rigid profile-frame, a covering therefor, back and side body-frames hinged to said profile-frame, flexible coverings for said side body and back frames, said side body-covering inclosing compartments, said side body-frames being foldable downwardly, and said back-frames being foldable upwardly against the profile-frame, and means when said frames are distended to lock the back-frames to the side body-frames.

812,500. **DOOR-RELEASING MECHANISM.** EDWARD KAUFFER, Hanford, Cal. Filed Nov. 25, 1904. Serial No. 234,226.

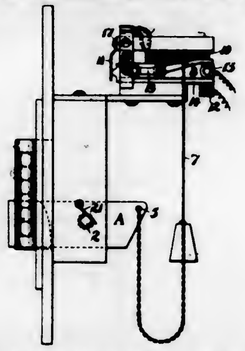

Claim.—1. In a door-releasing device, a latch pivoted and turnable upon one member of the door structure, a vertically-slotted keeper upon the other member, with which the latch may be engaged, a weight suspended from the inner end of the latch, a destructible cord connected therewith by which said weight is normally held out of action, and means controlled from a distant point for destroying the cord and thereby releasing the suspended weight to allow it to disengage the latch.

2. In a door-releasing device, a pivoted vertically-turnable latch carried upon one member of the door structure, a keeper carried upon the other member having a vertical slot and antifrictional devices within the slot with which the latch engages, a suspended weight so connected with the opposite end of the latch that when disengaged it will act to swing the latch and release the door, a destructible cord connecting with the weight and normally holding it out of action, and means controlled from a distant point for generating a destructive heat by which said cord is destroyed and the weight released.

3. In a door-releasing device, a latch and a keeper located upon the door-frame and the door, a weight connecting with the inner end of the latch, a cord by which the weight is normally suspended out of action, an electrically-heated part with which the cord is maintained in contact, means for completing an electrical circuit whereby said part is heated, the cord destroyed and the weight allowed to act to disengage the latch.

4. In a door-releasing device, a turnable latch and a keeper located upon the door and the frame thereof, a weight connected with the latch, a cord by which said weight is normally held out of action, a device by which said cord may be destroyed, said device consisting of electrical conductors capable of being heated, plates between which said conductors are carried, electrical circuits established through said conductors a spring-pressed lever over which and in contact with the parts to be heated the suspending-cord is passed, whereby the lever is held in position to form part of the electrical circuit and distant contacts by which said circuit may be closed and the cord destroyed.

5. In a door-releasing device, an antifrictional keeper located in one member of the door structure, a vertically-turnable latch, a shaft upon which said latch is centrally fixed with its ends projecting in opposite directions, a weight acting upon one end of the latch to disengage the other end from the keeper, a destructible retaining device and an electrically-actuated means controlled from a distant point for generating a destructive heat by which said device may be destroyed and the weight released.

6. In a door-releasing device, a latch and keeper located respectively in the door-casing and door, a pivot-pin to which the latch is centrally fixed, said pivot-pin having projecting ends and attachment by which it is turnable, a destructible casing inclosing said ends, a weight connecting with one end of the latch, a device by which said weight is normally suspended out of action and means by which the suspending device may be destroyed.

812,501. **DESK APPURTENANCE.** ALBERT KAYSER, Oakland, Cal. Filed Sept. 8, 1905. Serial No. 277,576.

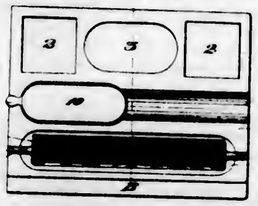

Claim.—1. A paper-weight and desk appurtenance consisting of a rectangular block having ink-wells and receptacles at the rear, said block having a compartment extending longitudinally thereof and a pencil-sharpening file turnably supported above said compartment.

2. In a paper-weight and desk appurtenance, a block having compartments formed therein, and having a chamber extending from end to end of the front, a file having pivots or journals at its end, and journal-boxes at the end of the compartment upon which the journals rest and are turnable.

3. In a paper-weight and desk appurtenance, a block having compartments formed therein, said block having, also, a depressed chamber extending from end to end and having journal-boxes or depressions upon the top at each end, and a file of less width than the chamber having journals projecting centrally from its ends, and turnable in the journal-box whereby the file may be inclined or turned with relation to the compartment.

4. A paper-weight and desk appurtenance comprising a block having compartments at the rear and a dust-collecting chamber at the front, said block having, also, a segmental depression between the front chamber and the rear compartments and extending lengthwise of the block, a turnable file journaled above the front chamber, and a removable tray in line with the intermediate depression.

5. An article of manufacture consisting of a unitary structure having compartments at the front and rear, and having an intermediate depression, a file journaled above the front compartment, and a tray removably mounted in said depression.

812,502. **TRACTION-WHEEL.** FRED H. KNIGHT, Troy, Pa. Filed May 1, 1905. Serial No. 258,231.

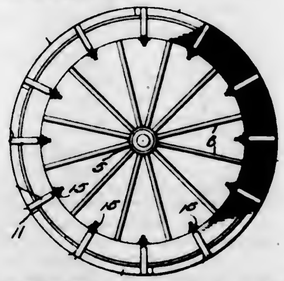

Claim.—The combination with a wheel, of a removable flange disposed against the periphery and comprising segmental sections having their mutually-adjacent ends halved and overlapped and provided with transversely-alining notches and retaining-clips having notched portions engaged in the alining notches of the segmental sections and embracing the felly of the wheel.

812,503. **PIANO-HAMMER EXTRACTOR.** CARL H. LAHR, Chicago, Ill. Filed Apr. 14, 1905. Serial No. 255,690.

Claim.—1. In an extracting-tool of the class described, the combination of a shank composed of a tubular internally-threaded fixed section, a movable section adapted to telescope in the tubular fixed section, a bifurcated pressure member extending laterally from each section on the shank, and an actuating member adapted to screw into the fixed section to engage the movable section for operating the latter.

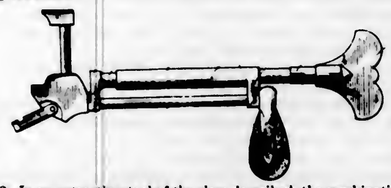

2. In an extracting-tool of the class described, the combination of a shank composed of a relatively fixed tubular section, a relatively movable section adapted to telescope in the tubular section, an independent actuating member operating in the tubular portion of the fixed section and coacting with the movable section to actuate the same, and a pressure member extending from each of the sections.

3. In an extracting-tool of the class described, the combination of a shank composed of a tubular fixed section internally threaded at a point about intermediate its ends, a movable section adapted to telescope in either end of the fixed section, a pressure member projected laterally from each section of the shank, and a threaded actuating member adapted to be screwed into the tubular portion of the fixed section from either end thereof for actuating the movable section.

812,504. **PRIMARY BATTERY.** CHARLES H. LOCKWOOD and GEORGE A. LUTZ, New York, N. Y. Filed July 18, 1904. Serial No. 217,083.

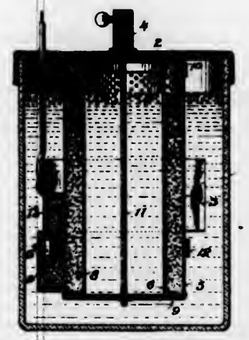

Claim.—1. A battery element comprising a perforated retainer containing a depolarizer and having a binder soluble in a battery liquid or solution for preventing such depolarizer from passing through the perforations in the retainer, substantially as described.

2. A battery element comprising perforated shells disposed one within another providing a space closed at opposite ends, a depolarizer within said space, and a binder soluble in a battery liquid or solution serving to prevent the depolarizer from passing through the perforations of the shells, substantially as described.

812,505. **PRIMARY BATTERY.** CHARLES H. LOCKWOOD and GEORGE A. LUTZ, New York, N. Y. Original application filed July 18, 1904, Serial No. 217,083. Divided and this application filed Mar. 29, 1905. Serial No. 253,783.

Claim.—1. A battery element comprising a perforated retainer containing a depolarizer and having a binder soluble in a battery liquid or solution applied to the wall of the retainer closing the perforations therein to prevent such depolarizer from passing through the perforations in the retainer, said binder being of a character to not materially affect the electrical efficiency of the battery, substantially as described.

2. A battery element comprising perforated shells disposed one within another, providing a space between the shells, a depolarizer within said space, and a binder soluble in a battery liquid or solution applied to said shells, closing the perforations therein to prevent the depolarizer from passing through the perforations of the shells, said binder being of a character to not materially affect the electrical efficiency of the battery, substantially as described.

3. A battery element comprising perforated shells disposed one within another, providing a space closed at opposite ends, a depolarizer within said space, and a binder soluble in a battery liquid or solution applied along the walls of said shells covering the perforations therein to prevent such depolarizer from passing through the perforations, said binder being of a character to not materially affect the electrical efficiency of the battery, substantially as described.

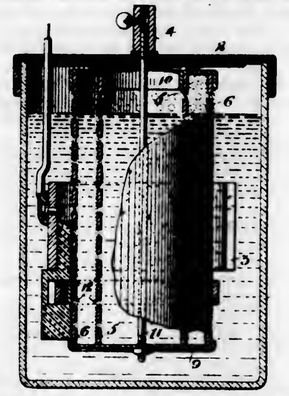

4. In a battery, the combination of a liquid-holding jar, a perforated retainer therein containing a depolarizer, a binder applied to the wall of the retainer closing the perforations therein to prevent the depolarizer from passing through the perforations in the retainer, said binder being soluble in the battery liquid or solution and of a character to not materially affect the electrical efficiency of the battery, and a negative element in the jar adjacent said retainer, substantially as described.

5. In a battery, the combination of a liquid-holding jar, a retainer therein having inner and outer perforated walls providing a space, a depolarizer in said space, a binder applied to the walls of the retainer closing the perforations therein to prevent the depolarizer from passing through the perforations in the retainer, said binder being soluble in the battery liquid or solution and of a character to not materially affect the efficiency of the battery, and a negative element in the jar adjacent said retainer, substantially as described.

6. In a battery, the combination of a liquid-holding jar, a perforated retainer therein, a depolarizer in the retainer, a zinc between the retainer and the wall of the jar, a caustic solution in the jar, and a binder applied to the wall of the retainer closing the perforations therein, said binder being soluble in said solution and of a character to not materially affect the electrical efficiency of the battery, substantially as described.

812,506. **GATE MECHANISM FOR TURBINES.** NATHANIEL LOMBARD, Worcester, Mass. Filed Apr. 3, 1905. Serial No. 253,473.

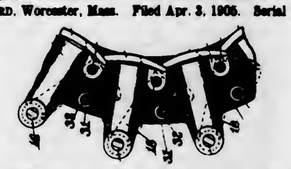

Claim.—1. The combination with a water-wheel, of a plurality of gates each of which is provided with a curved inner face constructed and arranged to form a side wall of one of the inlets to said wheel, said face being concentric to the axis of said gate and interposed between said axis and the axis of said water-wheel.

2. The combination with a water-wheel, of a plurality of pivoted gates each provided with a member at right angles to a line radial to said pivot and interposed between said pivot and the axis of said water-wheel, each member being adapted to overlap another adjacent member and having a curved inner face concentric to its pivot, said face constructed and arranged to form a side wall of one of the inlets to said gates.

3. The combination with a water-wheel, of a plurality of pivoted gates each provided with a member at right angles to a line radial to

said pivot and interposed between said pivot and the axis of said water-wheel, each member being adapted to overlap another adja-

4. In combination, a member provided with a handle, a second member slidably supported on the first member, a double crank on

13. In combination, a member provided with a handle, a rotatable shaft journaled on said member, a second member slidably con-

shaft and lay, a spring-actuated rock-lever having its arms engaged with the spring binder-arm and an operating-lever having one arm

said pivot and interposed between said pivot and the axis of said water-wheel, each member being adapted to overlap another adjacent member and having a curved inner face concentric to its pivot, said face constructed and arranged to form a side wall of one of the inlets to said gates, a rotatable member, and a link interposed between said rotatable member and each of said gates.

4. The combination with a water-wheel, of a plurality of pivoted gates provided with working faces concentric to the pivots thereof, the face of each gate being adapted in closed position to overlap the inner face of an adjacent gate, and means for moving said gates about their pivots.

5. The combination with a water-wheel, of a plurality of pivoted gates each having an inner working face concentric to its pivot adapted to serve as a side wall to direct the inflow at substantially the same point at all times.

6. The combination with a water-wheel, of a plurality of pivoted gates each having concentric to its pivot an inner working face constructed and arranged to form a side wall of the inlet to said wheel, and means for moving said gates simultaneously about said pivots.

7. The combination with a water-wheel, of two plates, studs interposed between said plates, a swinging T-shaped gate mounted upon each of said studs the cross member of which is adapted in closed position to overlap the cross member of an adjacent gate, and means for moving said gates about said studs.

8. The combination with a water-wheel, of two plates, studs interposed between said plates, a swinging T-shaped gate mounted upon each of said studs the cross member of which is adapted in closed position to overlap the cross member of an adjacent gate, means for moving said gates about said studs, a rotatable member above the top plate, and a link interposed between said rotatable member and each of said swinging gates.

9. The combination with a water-wheel, of a plurality of pivoted gates having members adapted to overlap each other when in closed position each of said members being provided with an inner working face concentric to the pivot of said gates constructed and arranged to form a side wall for an inlet to said water-wheel.

10. The combination with a water-wheel, of a plurality of gates each having a cross member interposed between its pivot and the axis of said water-wheel, said cross member being provided with an inner working face constructed and arranged to form a side wall to one of the inlets with said water-wheel, said inner face being curved on an arc which will cut a line radial to the axis of said wheel always at the same point.

11. The combination with a water-wheel, of a plurality of pivoted gates provided with overlapping members having inner faces concentric to the pivots of said gates, said concentric faces serving to direct the inflow substantially in the same direction at any opening of said gates.

812,507. **SURGICAL OPERATING-ENGINE.** WILLIAM H. LUDEWIG, Rock Island, Ill. Filed Dec. 30, 1904. Serial No. 238,947.

Claim.—1. In an engine of the character specified, the combination of a pair of relatively movable members, a crank on one member, a reciprocating rod on the other member adapted to be actuated by said crank, and means for rotating said crank.

2. In combination, a pair of relatively movable members, a double crank on one member, a pair of reciprocating rods on the other member adapted to be actuated in opposite directions by said crank; and means for rotating said crank, substantially as and for the purpose set forth.

3. In combination, a member provided with a handle, a movable member, a crank on the first member, a reciprocatory rod on the movable member actuated by the crank, and means on the movable member adapted to operate the crank, substantially as set forth.

4. In combination, a member provided with a handle, a second member slidably supported on the first member, a double crank on the first member, a pair of reciprocatory rods on the movable member, respectively actuated by one of the cranks and means on the movable member adapted to operate the crank-shaft when moved toward the latter, substantially as set forth.

5. In combination, a relatively stationary part, a relatively movable part, a crank-shaft journaled on the stationary part, a driving-shaft journaled on the movable part, means for transmitting motion from the driving to the crank shaft when the former is moved toward the latter, and a reciprocating rod attached to the movable member and operated by the crank-shaft, substantially as described.

6. In combination, a relatively stationary part provided with a handle, a relatively movable part connected with the stationary part and supported thereby, a crank-shaft journaled on the stationary part, a driving-shaft journaled on the movable part, and gearing for transmitting motion from the driving to the crank shaft when the former is moved toward the latter; with a reciprocating rod attached to the movable member and adapted to be operated by the crank-shaft, and a tool-connecting device on the rod, substantially as described.

7. In combination, a member provided with a handle, a crank-shaft journaled in said member, and a gear on said shaft; a movable member projecting from the stationary member, a driving-shaft journaled on said movable member; opposed gears on said shafts, adapted to be brought into coöperative relation by moving the movable member toward the handle, means for normally separating the gears, a reciprocatory rod mounted on the movable member and operated by the crank-shaft, and means for connecting an instrument to said rod, substantially as described.

8. In combination, a hollow stationary member provided with a handle, a shaft journaled in said member having a crank on its inner end, and a gear on its outer end; a hollow movable member supported in and projecting from the stationary member, a driving-shaft journaled in said movable member, and a gear on said shaft adapted to contact with the gear on the crank-shaft when the movable member is drawn inward, a spring for normally separating the gears, and a reciprocatory bar mounted in said movable member and engaging the crank on the crank-shaft, and means for connecting an instrument to said rod, all substantially as and for the purpose described.

9. In combination, a stationary member provided with a handle and a tubular stud, a crank-shaft journaled in said stud, and a gear on said shaft; a movable member, a finger-piece on the movable member for drawing it toward the handle, a tubular stud on said movable member, a driving-shaft journaled therein; opposed gears on said shafts, adapted to be brought into coöperative relation by moving the movable member toward the handle, means for normally separating the gears, a pair of reciprocatory rods mounted in the movable member and operated by cranks on the crank-shaft, and means for connecting an instrument to one of said rods, substantially as described.

10. In combination, a hollow stationary member provided with a handle, a tubular stud projecting from said member, a shaft journaled in said stud and having cranks on its inner end within the member, and a frictional gear on its outer end; a hollow movable member supported in and projecting from the stationary member, a finger-piece depending from said movable member, a laterally-projecting hollow stud on said member, a driving-shaft journaled in said stud, and a frictional gear on said shaft adapted to contact with the gear on the crank-shaft when the movable member is drawn inward, a spring for normally separating the gears, and a pair of reciprocatory bars mounted in said movable member and engaging the opposite cranks on the crank-shaft, and means for connecting an instrument to one of said rods, all substantially as and for the purpose described.

11. In an engine of the character specified, the combination of a tool-operating member, a driven shaft, means for operating the said member from said shaft; and a support for said parts adapted to be held in the hand; with a driving-shaft also mounted on said support, gears for transmitting motion from the driving-shaft to the driven shaft, means for holding said gears normally out of contact, and a finger-actuated device whereby the gears may be moved into operative contact, substantially as set forth.

12. In combination, a member provided with a handle, a rotatable shaft journaled on said member, a second member connected with said first member, a rotatable shaft on the second member, gears on said shafts adapted to be brought into operative contact by relative bodily movement of the members, a tool-actuating rod or shaft, and means for operating said rod from the first-mentioned shaft, substantially as and for the purpose described.

13. In combination, a member provided with a handle, a rotatable shaft journaled on said member, a second member slidably connected with said first member, a rotatable shaft on the second member, gears on said shafts adapted to be brought into operative contact by moving one member upon the other, a spring interposed between said members to keep the said gears apart, a tool-actuating rod mounted in said members, and for operating said rod from the first-mentioned shaft, substantially as and for the purpose described.

14. In combination, a member provided with a handle, a laterally-projecting shaft journaled on said member having a gear on its outer end; a second member movably mounted on the first member and having a laterally-projecting shaft, and a gear on said shaft, said gears being brought into operative relation by moving the members relatively, a spring for separating said gears, and a tool-actuating rod actuated by said first-mentioned shaft, substantially as and for the purpose described.

15. In combination, a member provided with a handle, and a laterally-projecting sleeve, a shaft journaled in said sleeve having a gear on its outer end; a second member slidably mounted upon the first member and having a depending finger-piece and a laterally-projecting sleeve, a shaft journaled in said sleeve, and a gear on said shaft, said gears being brought into operative relation by moving the latter member upon the first member, a spring for separating said gears, and a reciprocating tool-actuating rod actuated by said first-mentioned shaft, substantially as and for the purpose described.

812,508. **LOOM.** WILLIAM J. LUTTON, Paterson, N. J. Filed May 5, 1905. Serial No. 258,977.

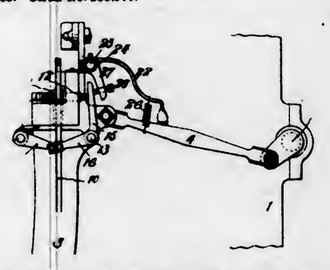

Claim.—1. In a loom, a lay, its shuttle-box, a shuttle, a drive-shaft, a pitman connecting the shaft and lay, a binder, a spring-arm carried thereby and means operated by the pitman engaging the spring-arm for causing it to clamp the shuttle within its box at predetermined points in the movement of the lay.

2. In a loom, a lay, its shuttle-box, a shuttle, a drive-shaft, a pitman connecting the shaft and lay, a binder, a spring-arm carried thereby, and an operating-lever having one arm engaged by the pitman and its other arm in position to force the spring-arm inwardly to cause the binder to yieldingly clamp the shuttle in its box at predetermined points in the movement of the lay.

3. In a loom, a lay, its shuttle-box, a shuttle, a drive-shaft, a pitman connecting the shaft and lay, a binder, a spring-arm carried thereby, a spring-actuated rock-lever having one arm engaging the spring binder-arm and an operating-lever having one arm engaged by the pitman and its other arm arranged to engage the arm of the said spring-actuated rock-lever for causing the binder to yieldingly clamp the shuttle within its box at predetermined points in the movement of the lay.

4. In a loom, a lay, its shuttle-boxes, binders therefor, a shuttle, a drive-shaft, a pitman connecting the drive-shaft and lay, a spring-actuated rock-lever having arms engaging the binders and an operating-lever having one arm engaging the pitman and another arm arranged to engage one of the arms of the rock-lever for causing either one of the binders to clamp the shuttle in the box in which it is located at predetermined points in the movement of the lay.

5. In a loom, a lay, its shuttle-boxes, their binders, spring-arms carried thereby, a shuttle, a drive-shaft, a pitman connecting the shaft and lay, a spring-actuated rock-lever having arms engaging the spring binder-arms and means operated by the pitman engaging one of the rock-lever arms for causing the rock-lever to yieldingly press the two binders into position to clamp the shuttle in the box in which it is located at predetermined points in the movement of the lay.

6. In a loom, a lay, its shuttle-boxes, binders therefor, spring-arms carried thereby, a shuttle, a drive-shaft, a pitman connecting the shaft and lay, a spring-actuated rock-lever having its arms engaged with the spring binder-arm and an operating-lever having one arm engaged by the pitman and its other arm in position to engage one of the rock-arms for causing the rock-lever to force the binders inwardly to clamp the shuttle in the box in which it is located at predetermined points in the movement of the lay.

7. In a loom, a lay, its shuttle-box, a shuttle, a drive-shaft, a pitman connecting the shaft and lay and adjustable means operated by the pitman for clamping the shuttle in its box at predetermined points in the movement of the lay.

8. In a loom, a lay, its shuttle-box, a shuttle, a drive-shaft, a pitman connecting the shaft and lay, a binder and adjustable means operated by the pitman for causing the binder to clamp the shuttle within its box at a predetermined point in the movement of the lay.

812,509. **SYSTEM AND MEANS FOR DRYING AND BURNING CLAY PRODUCTS.** ROBERT W. LYLE, New York, N. Y., assignor to William James Lyle, South River, N. J. Filed Nov. 10, 1904. Serial No. 232,672.

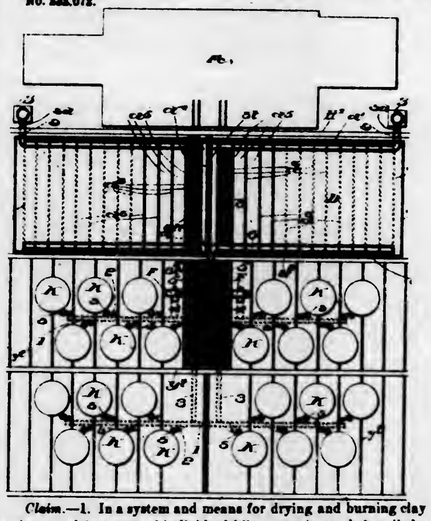

Claim.—1. In a system and means for drying and burning clay products, a drier, a set of individual kilns, a main stack for all the products of combustion of the entire set of kilns, a flue extending through the drier and connecting the kilns with said main service-stack common to the set, an adjunct or supplementary stack for each of the individual kilns, and cut-off means for isolating the respective individual kilns from the set, the kilns having no connection with the main stack except through the drier.

2. In a system and means for drying and burning clay products, a drier, a set of individual kilns, a main stack for all the products of combustion of the entire set of kilns, a flue extending through the drier and connecting the kilns with said main service-stack common to the set, an adjunct or supplementary stack for each of the individual kilns, and means for closing said supplementary stacks, the kilns having no connection with the main stack except through the drier.

3. In a system and means for drying and burning clay products, a drier, a set of individual kilns, a main stack for all the products of combustion of the entire set of kilns, a flue extending through the drier and connecting the kilns with said main service-stack common to the set, an adjunct or supplementary stack for each of the individual kilns, cut-off means for isolating the respective individual kilns from the set, and means for closing said supplementary stacks, the kilns having no connection with the main stack except through the drier.

4. In a system and means for drying and burning clay products, a drier, a kiln having a main outlet for its products of combustion, said main outlet being in connection with the drier, an adjunct or supplementary stack, and means for closing the latter, the kiln having no connection with said main outlet except through the drier.

5. In a system and means for drying and burning clay products, a drier, a kiln having a main outlet for its products of combustion, said main outlet being in connection with the drier, an adjunct or supplementary stack, and closure means at the top portion of the lat-

tor, the kiln having no connection with said main outlet except through the drier.

6. In a system and means for drying and burning clay products, a drier, a set of individual kilns, a main stack for all the products of combustion of the entire set of kilns, a flue extending through the drier and connecting the kilns with said main service-stack common to the set, an adjunct or supplementary stack for each of the individual kilns, closure means for said supplementary stacks, and closure means for the main stack.

7. In a system and means for drying and burning clay products, a drier, a set of individual kilns, a main stack for the set, a flue extending through the drier and connecting the kilns with said main service-stack common to the set, an adjunct or supplementary stack for each of the individual kilns, cut-off means for isolating the respective individual kilns from the set, closure means for said supplementary stacks, and closure means for the main stack.

8. In a system and means for drying and burning clay products, a drier, a set of individual kilns, a main products-of-combustion flue for the set, said flue being in connection with the drier, branch products-of-combustion flues extending from the individual kilns to said main flue, and means for isolating a section of the draft-channel of said branch flues and closing said isolated section at both ends while the kiln is under fire.

9. In a system and means for drying and burning clay products, a drier, a set of individual kilns, a main products-of-combustion flue for the set, said flue being in connection with the drier, branch products-of-combustion flues extending from the individual kilns to said main flue, two dampers in said branch flues, and a manhole-chamber between said dampers, for the purpose set forth.

10. In a system and means for drying and burning clay products, a kiln system, a flue for carrying all the products of combustion of the kiln system and leading to a main stack, an adjunct or supplementary stack for each kiln of the system, a drier, and heat-radiating flues communicating with said products-of-combustion flue and having a portion contained within the drier and externally closed, whereby all the products of combustion from the kiln system pass through the drier without access to its interior, the kilns having no connection with said main stack except through the drier.

11. In a system and means for drying and burning clay products, a kiln system, a main stack therefor, an adjunct or supplementary stack for each kiln of the system, a flue for carrying all the products of combustion of the kiln system extending between the latter and the stack, a drier intermediate the kiln system and its stack, and heat-radiating flues comprised in the products-of-combustion flue and having a portion contained within the drier and externally closed, the kilns having no connection with said main stack except through the drier.

12. In a system and means for drying and burning clay products, a kiln system, a main stack therefor, an adjunct or supplementary stack for each kiln of the system, a flue for carrying all the products of combustion of the kiln system extending between the latter and the stack and externally closed throughout its length, and a drier intermediate the kiln system and its stack and containing a portion of said flue, the kilns having no connection with said main stack except through the drier.

13. In a system and means for drying and burning clay products, a kiln system, a flue for carrying all the products of combustion of the kiln system and leading to a main stack, an adjunct or supplementary stack for each kiln of the system, a drier, and heat-radiating flues communicating with said products-of-combustion flue and extending longitudinally of the chambers or tunnels of the drier and externally closed within the drier, whereby all the products of combustion from the kiln system pass longitudinally through the chambers or tunnels of the drier without access to the interior thereof, the kilns having no connection with said main stack except through the drier.

14. In a system and means for drying and burning clay products, a kiln system, a main stack therefor, an adjunct or supplementary stack for each kiln of the system, a flue for carrying all the products of combustion of the kiln system, a drier, heat-radiating flues communicating with said products-of-combustion flue and extending longitudinally within the drier at the ends of the drying chambers or tunnels and externally closed, and heat-radiating flues communicating with said end flues and extending longitudinally of the chambers or tunnels of the drier and externally closed.

15. In a system and means for drying and burning clay products, a set of kilns, a flue for carrying all the products of combustion of the set of kilns, a main stack for said flue, a drier, heat-radiating flues communicating with said products-of-combustion flue and having a portion contained within the drier and externally closed, adjunct or supplementary stacks for each of the respective kilns, and means for isolating the respective kilns from the main products-of-combustion flue, the kilns having no connection with the main stack except through the drier.

16. In a system and means for drying and burning clay products, a kiln system, a main stack therefor, an adjunct or supplementary stack for each kiln of the system, a drier intermediate the kiln system and its stack, and flues for carrying all the products of combustion of the kiln system extending between the latter and its stack and passing through the drier and having the portion within the drier externally closed.

17. In a system and means for drying and burning clay products, a set of individual kilns, a products-of-combustion flue extending from said set of kilns, means for isolating the individual kilns from said flue, forced-draft means communicating with said flue, a drier, heat-radiating flues communicating with said products-of-combustion flue and having a portion contained within the drier and externally closed, a main stack communicating with said products-of-combustion flue beyond the drier, and an adjunct or supplementary stack for each kiln, the kilns having no connection with said main stack except through the drier.

18. In a system and means for drying and burning clay products, a set of individual kilns, a products-of-combustion flue extending from said set of kilns, means for isolating the individual kilns from said flue, adjunct or supplementary stacks for each of the individual kilns, means for closing said stacks, forced-draft means communicating with said products-of-combustion flue, a drier, heat-radiating flues communicating with said products-of-combustion flue and having a portion contained within the drier and externally closed, and a main stack communicating with said products-of-combustion flue beyond the drier.

19. An improved system and means for drying and burning clay products, comprising a drier, a flue extending through the drier, kilns, a main service-stack in connection with the terminal end of the drier-flue and constituting the only stack-outlet in common for the kilns, a flue extending in common from the kilns to the initial end of the drier-flue and constituting the only connection between the kilns and said main service-stack, and an individual or supplementary stack for the respective kilns whereby the kilns may be individually operated independent of said main service-stack and independent of the kilns which are collectively operating through the drier and said main service-stack.

20. An improved system and means for drying and burning clay products, comprising a drier, a flue extending through the drier and externally closed within the drier, kilns, a main service-stack in connection with the terminal end of the drier-flue and constituting the only stack-outlet in common for the kilns, a flue extending in common from the kilns to the initial end of the drier-flue and constituting the only connection between the kilns and said main service-stack, and an individual or supplementary stack for the respective kilns whereby the kilns may be individually operated independent of said main service-stack and independent of the kilns which are collectively operating through the drier and said main service-stack.

21. An improved system and means for drying and burning clay products, comprising a drier, a flue extending through the drier and terminating at the rear thereof, kilns at the front of the drier, a main service-stack at the rear of the drier and in direct connection with the terminal rear end of the drier-flue and constituting the only stack-outlet in common for the kilns, a flue extending in common from the kilns to the initial end of the drier-flue and constituting the only connection between the kilns and said main service-stack, and an individual or supplementary stack for the respective kilns whereby the kilns may be individually operated independent of said main service-stack and independent of the kilns which are collectively operating through the drier and said main service-stack.

22. An improved system and means for drying and burning clay products, comprising a drier, a flue extending through the drier, kilns, a main service-stack in connection with the terminal end of the drier-flue and constituting the only stack-outlet in common for the kilns, a flue extending in common from the kilns to the initial end of the drier-flue and constituting the only connection between the kilns and said main service-stack, an individual or supplementary stack for the respective kilns whereby the kilns may be individually operated independent of said main service-stack and independent of the kilns which are collectively operating through the drier and said main service-stack, and forced-draft means in connection with the flue constituting the main outlet in common for the kilns and intermediate between the kilns and the main service-stack.

23. An improved system and means for drying and burning clay products, comprising a drier, a flue extending through the drier, kilns, a main service-stack in connection with the terminal end of the drier-flue and constituting the only outlet in common for the kilns, a flue extending in common from the kilns to the initial end of the drier-flue and constituting the only connection between the kilns and said main service-stack, and means for independently isolating the respective kilns from the drier-flue and the main service-stack and from the kilns which are operating in connection with the drier-flue and said main service-stack and for operating said isolated kilns independent of the main service-stack and the drier and entirely independent of the system of kilns discharging through the drier and said main service-stack.

812,510. **PIANO-BRIDGE.** FRANK MEYER, Oak Park, Ill. Filed Oct. 5, 1904. Serial No. 227,230.

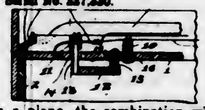

Claim.—1. In a piano, the combination with the sounding-board of two string-supporting bridges spaced apart as to their string-engaged edges but connected to the sounding-board at the same common location, or substantially so.

2. In a piano, the combination with the sounding-board and sets of bass and treble strings, of a bass-string bridge and a treble-string bridge, both of said bridges having vibration-imparting engagement with the sounding-board at substantially the same place.

3. In a piano, the combination with the sounding-board and supporting-frame therefor, of a treble bridge applied to one side of said sounding-board at a point removed from the margin of the board, a bass bridge arranged between the treble bridge and margin of the board, and supporting devices connected with said bass bridge extending through openings in the sounding-board and connected with the opposite side of the latter at a location substantially coincident with the location of engagement therewith of the treble bridge.

4. In a piano, the combination with the sounding-board and supporting-frame therefor, of a bridge applied to one side of said sounding-board and supporting one set of strings, a second bridge arranged to support a second set of strings at a location removed from said first bridge, and supporting devices connected with said second bridge extending through the sounding-board and arranged in vibration-transmitting engagement with the opposite side of the sounding-board at a location substantially coincident with the engagement therewith of the first-named bridge.

5. In a piano, the combination of a sounding-board, a marginal frame supporting said board, a string-supporting frame connected with said marginal frame, a set of treble strings connected with a part of the string-supporting frame which overhangs the sounding-board, a set of bass strings connected with the marginal portion of said string-supporting frame, a treble bridge interposed between the treble strings and sounding-board and having direct bearing with the latter, a bass bridge supporting the bass strings, and a bracket supporting said bass bridge and having its foot portion connected with the sounding-board substantially in register with the line of engagement of the treble bridge.

6. In a piano, the combination of a sounding-board, a marginal frame supporting said board, a string-supporting frame connected with said marginal frame, a set of treble strings connected with a part of the string-supporting frame which overhangs the sounding-board, a set of bass strings connected with the marginal portion of said string-supporting frame, a treble bridge interposed between the treble strings and sounding-board and having direct bearing with the latter, a bass bridge supporting the bass strings, and a bracket supporting said bass bridge and having its foot portion connected with the sounding-board substantially in register with the line of engagement of the treble bridge but at the opposite side of the board, substantially as described.

7. In a piano, the combination with a sounding-board and supporting-frame therefor, of a treble bridge applied to one side of said sounding-board at a location removed from the margin of the board, a bass bridge arranged between the treble bridge and proximate margin of the board and a supporting-frame connected with said bass bridge extending freely through the sounding-board and connected to the under side of the latter at a location removed from and inside of the bass bridge.

812,511. **ELECTROMAGNET.** ROBERT H. MILLER, Lancaster, Pa., assignor of two-thirds to John W. Holman and Charles V. Rote, Lancaster, Pa. Filed Apr. 26, 1904. Serial No. 204,662.

Claim.—1. A solenoid having two or more coils at each side of its center, similar terminals of the center coils being electrically connected and the opposite terminal of one of said center coils being electrically connected with a dissimilar terminal of an outer coil, the latter having its other terminal connected with the feed-wire.

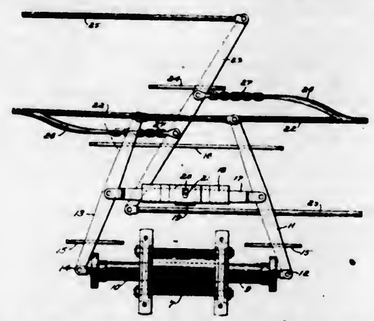

2. A solenoid having two or more coils at each side of its center with similar terminals of its center coils electrically connected, the opposite terminal of one of said center coils being electrically connected with a dissimilar terminal of an outer coil, and the latter having its other terminal connected with the feed-wire; the center and outer coil at the opposite side of the magnet also having similar terminals electrically connected.

3. A solenoid comprising a series of coils with electrical connections between similar terminals of the center coils and oppositely-movable reciprocating cores working in an opening through the centers of the coils.

4. A solenoid having a series of coils arranged in corresponding groups at each side of the center of the magnet with similar terminals of the center coils electrically connected together, and oppositely-movable reciprocating cores fitted in an opening through the centers of the coils.

5. A solenoid having a series of coils encircling a central opening, a pair of oppositely-movable reciprocating cores fitted in said opening, and electrical connections between similar terminals of successive coils for completing a circuit through the several coils.

6. A solenoid comprising a plurality of coils at each side of its center, and a core in two parts adapted to approach each other when the solenoid is energized, the center coils having similar terminals connected and an opposite terminal of one of said center coils connected with a similar terminal of one of the outer coils, dissimilar terminals of the opposite center and outer coils being connected, and the opposite terminal of the latter coil being connected with the feed-wire, substantially as described.

812,512. **GRAMOPHONE.** HERBERT S. MILLS, Chicago, Ill. Filed May 3, 1905. Serial No. 258,635.

Claim.—1. In combination with the reproducer-head of a gramophone, a clamp adapted to hold an attenuate wire forming a stylus, comprising as one member, a finger on said head, and, as the other member, a body, longitudinally channeled on its inner side, fitting about and coöperating with said finger and provided with means for fastening it thereon.

2. In combination with the reproducer-head of a gramophone, a bracket on said head, and a clamp adapted to hold an attenuate wire forming a stylus, comprising, as one member, a finger projecting from said bracket, and, as the other member, a body longitudinally channeled to coöperate with said finger and provided with eyes through which to insert said wire, and with means for fastening the two members together.

3. In combination with the reproducer-head of a gramophone, a bracket on said head, and a clamp adapted to hold an attenuate wire forming a stylus, comprising, as one member, a finger projecting from said bracket and provided on its outer end with a lip, and, as the other member, a body longitudinally channeled to coöperate with said finger and provided with lips containing eyes through which to insert said wire and with means for fastening the two members together.

4. In combination with the reproducer-head of a gramophone, a bracket on said head, and a clamp adapted to hold an attenuate wire forming a stylus, comprising, as one member, a finger projecting from said bracket and provided on its outer end with a lip, and, as the other member, a body longitudinally channeled to coöperate with said finger and provided with eyes through which to insert said wire and with a yoke forming a bearing containing a set-screw and surrounding said finger to connect therewith the channeled member.

5. In combination with the reproducer-head of a gramophone, a bracket on said head and a clamp adapted to hold an attenuate wire forming a stylus, comprising, as one member, a finger projecting from said bracket and provided with a recess near its inner end and a lip on its outer end, and, as the other member, a body longitudinally channeled to coöperate with said finger and provided with a lip near one end to enter said recess and with a lip on its opposite end to overlap the lip on said finger, the lips on said channeled member containing eyes through which to insert said wire, and means for fastening the two members together.

6. In combination with the reproducer-head of a gramophone, a bracket on said head, and a clamp adapted to hold an attenuate wire forming a stylus, comprising, as one member, a finger projecting from said bracket and provided with a recess near its inner end and a lip on its outer tapered end, and, as the other member, a body bifurcated at one end and longitudinally channeled to coöperate with said finger and provided with a lip near said end to enter said recess and with a lip on its opposite end to overlap the lip on said finger, the lips on said channeled members containing eyes through which to insert said wire, and a yoke forming a bearing containing a set-screw and surrounding said finger to connect the members together.

812,513. APPARATUS FOR BURNING GAS. LUIGI MORENO and ARMIDO D'ANTONI, Turin, Italy. Filed Feb. 27, 1905. Serial No. 247,636.

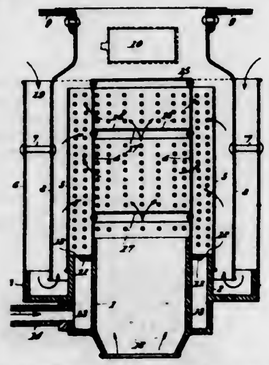

Claim.—1. In combination, a body portion open at both ends, galleries formed around the body portion and each other, a cylinder secured at one end to the outer gallery and having its opposite end open to the atmosphere, a second cylinder arranged within the first-named cylinder and supported thereby, one end of said second cylinder extending within and terminating above the bottom of the outer gallery, the opposite end of said second cylinder being in communication with a draft-pipe, a perforated cylinder secured to the inner gallery within the second cylinder, a second perforated cylinder secured at one end to the body portion and arranged within the first perforated cylinder, said second perforated cylinder having its opposite end closed, baffle-plates within the second perforated cylinder, and a supply-pipe communicating with the inner gallery.

2. In combination, a body portion open at both ends, galleries formed around the body portion and each other, a cylinder secured at one end to the outer gallery and having its opposite end open to the atmosphere, a second cylinder arranged within the first-named cylinder, and supported thereby, one end of said second cylinder being in communication with a draft-pipe, a perforated cylinder secured to the inner gallery within the second cylinder, a second perforated cylinder secured at one end to the body portion and arranged within the first perforated cylinder, said second perforated cylinder having its opposite end closed, baffle-plates within the second perforated cylinder, and a plate carried by the body portion extending toward but not contacting with the outer wall of the first gallery and a supply-pipe communicating with the first gallery.

3. In combination, a body portion open at both ends, galleries formed around the body portion and each other, a cylinder secured at one end to the outer gallery and having its opposite end open to the atmosphere, a second cylinder arranged within the first-named cylinder, and supported thereby, one end of said second cylinder being in communication with a draft-pipe, a perforated cylinder secured to the inner gallery within the second cylinder, a second perforated cylinder secured at one end to the body portion and arranged within the first perforated cylinder, said second perforated cylinder having its opposite end closed, perforated baffle-plates within the second perforated cylinder, a plate carried by the body portion extending toward but not contacting with the outer wall of the first gallery, a supply-pipe communicating with the first gallery and means for regulating the flow of fluid through the supply-pipe.

812,514. MAIL-BOX. DAVID W. MORROW, Plumville, Pa. Filed Aug. 4, 1905. Serial No. 272,666.

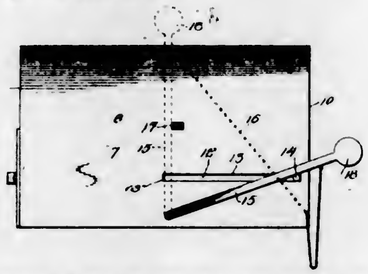

Claim.—1. A mail-box comprising a body portion, a drawer slidably disposed in the body portion, a signal pivotally connected with the body portion and means carried by the drawer for moving the signal when the drawer is moved outwardly of the body portion, said signal-moving means being also arranged to prevent entire withdrawal of the drawer from the body portion.

2. A mail-box comprising a body portion having a slotted wall, a drawer slidably disposed within the body portion, a projection carried by the drawer and extending outwardly of the slot, said projection being movable in the slot when the drawer is slid, a signal-arm movable over the slot and a signal carried by the arm, said projection being arranged for engagement with the signal to move the latter when the drawer is moved.

3. A mail-box comprising a body portion, a drawer slidably disposed within the body portion, a signal-arm pivoted to the body portion, a signal carried by the arm said signal being movable into and out of operative position, means for holding the signal yieldably in operative position and means for moving the signal into operative position when the drawer is moved outwardly of the body portion.

4. A mail-box comprising a body portion having a slot in one of its walls, a drawer slidably disposed in the body portion, a projection carried by the drawer and extending outwardly of the slot said projection being slidable in the slot when the drawer is slid, a signal-arm pivoted to the slotted wall of the body portion for movement to extend upwardly at one end of the slot or to lie across the slot in engagement with the projection, said projection being arranged to move the arm into its upwardly-extending position when the drawer is moved outwardly of the body portion, said projection being also adapted for engagement of the forward end of the slot to hold the drawer against complete withdrawal from the body portion.

5. A mail-box comprising a body portion having a horizontal slot in one wall, a drawer slidably disposed within the body portion and having a projection adjacent to its rearward end extending into the slot, an arm pivoted to the wall and lying in the path of movement of the projection, said projection being adapted for engagement of the arm to move it forwardly upon its pivot, a plate pivoted to the drawer and lying within the slot, a spring-finger secured to the plate and extending outwardly through the slot, said plate lying at times forwardly of the arm, a plate located at the forward end of the slot and extending thereover and arranged to receive the spring-finger against its inner surface to hold said finger inwardly of the plane of the arm to permit of movement of the plate and finger rearwardly independently of the arm, said arm having a groove therein arranged to receive the spring-finger in its rearward end and to move the spring-finger and the plate upwardly to direct them into the portion of the slot lying above the second-named plate and forwardly of the arm.

6. A mail-box comprising a body portion, a signal-arm pivoted to the body portion and movable into and out of operative position upon its pivot, a signal carried by the arm, a drawer slidably mounted in the body portion, means carried by the drawer for moving the arm into operative position when the drawer is moved outwardly, means carried by the drawer for moving the arms into inoperative position when the drawer is moved inwardly and means for holding the second-named means at times in inoperative position.

812,515. PICTORIAL POST-CARD. KARL MÜNSTER, Munich, Germany, assignor to The Firm of Becker & Kolbinger, Munich, Germany. Filed Oct. 26, 1905. Serial No. 284,486.

Claim.—1. A pictorial post-card comprising a slide, a strip secured thereto and adapted to receive pictures, and a cover hinged to the slide and overlying the strip, in combination with a case arranged to contain said slide.

2. A pictorial post-card comprising a slide, a strip secured thereto and adapted to receive pictures, a cover hinged to the slide and arranged to overlie the strip, and an elastic member tending to open the cover, in combination with a case arranged to contain said slide.

3. A pictorial post-card comprising a slide, a strip secured thereto and adapted to receive pictures, a cover hinged to the slide and arranged to overlie the strip, and an elastic member tending to open the cover, in combination with a case arranged to contain said slide, and a connection between the case and slide to prevent the total withdrawal of the latter.

4. A pictorial post-card comprising a slide, a strip secured upon each side of the center and adapted to receive pictures, and a two-part cover hinged to the center of said slide and arranged to overlie the two strips, in combination with a case arranged to contain the slide.

5. A pictorial post-card comprising a slide, a strip secured upon each side of the center and adapted to receive pictures, and a two-part cover hinged to the center of said slide and arranged to overlie the two strips, an elastic connecting the two parts of the hinged cover, in combination with a case arranged to contain the slide.

6. A pictorial post-card comprising a slide, a strip secured upon each side of the center and adapted to receive pictures, and a two-part cover hinged to the center of said slide and arranged to overlie the two strips, an elastic connecting the two parts of the hinged cover under tension, in combination with a case arranged to contain the slide and open at both ends, and a connection between the case and the slide arranged to limit the withdrawal of the slide to the hinged portion thereof.

7. A pictorial post-card comprising a slide, a folded strip secured thereto on each side of the center and adapted to receive pictures, a two-part cover hinged to the center of the slide and arranged to overlie the folded strips, and an elastic member connecting the two parts of the cover and tending to hold them open, in combination with a case open at both ends and arranged to contain the slide with its covers closed over the folded strips, and a flexible connection between the interior of the case and the slide of a length sufficient to limit the withdrawal of the slide to the hinged portion thereof.

812,516. SHUTTLE-CLEARING MEANS FOR FILLING-REPLENISHING LOOMS. JONAS HOCHSTADT, Hopedale, Mass., assignor to Draper Company, Hopedale, Mass., a Corporation of Maine. Filed June 8, 1905. Serial No. 264,520.

Claim.—1. In a loom, in combination, automatic filling-replenishing mechanism, and means, actuated by said mechanism upon operation thereof, to engage, draw out of the shuttle, and positively hold the old filling end as the ejected filling-carrier leaves the shuttle.

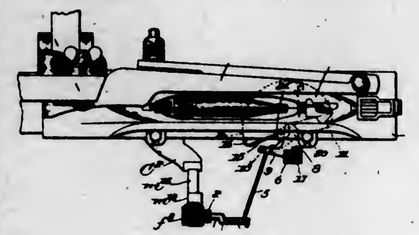

2. In a loom, in combination, automatic filling-replenishing mechanism, and means, actuated by said mechanism upon operation thereof, to engage, draw out of the shuttle, and positively hold the old filling end as the ejected filling-carrier leaves the shuttle.

3. In a loom, in combination, automatic filling-replenishing mechanism, and means actuated thereby to clear the shuttle of the old filling end, said means including a clearer member movable in a lateral path, and a fixed fulcrum on which said member is mounted.

4. In a loom, in combination, automatic filling-replenishing mechanism, and means to automatically clear the shuttle of the old filling end, said means including a clearer member angularly movable in a path below the shuttle and intersecting the path of an ejected filling-carrier, and a fixed fulcrum on which said member is mounted.

5. In a loom, in combination, automatic filling-replenishing mechanism, a normally quiescent clearer member angularly movable in a substantially horizontal plane below the shuttle and intersecting the path of an ejected filling-carrier, and operating connections between said member and the replenishing mechanism, whereby said member is caused to engage the old filling end between the ejected filling-carrier and the shuttle, upon filling replenishment, and draw such filling end out of the shuttle.

6. In a loom, in combination, automatic filling-replenishing mechanism, a bracket mounted on the loom, a clearer member fulcrumed on said bracket, and means actuated by operation of the replenishing mechanism to cause said clearer member to swing upon its fulcrum and engage the old filling end between the shuttle and the ejected filling-carrier and draw the filling end out of the shuttle.

7. In a loom, in combination, automatic filling-replenishing mechanism, and automatic means to engage, draw out of the shuttle and positively hold the old filling end as the ejected filling-carrier leaves the shuttle, said means including a fixed member, and a movable clearer member to engage the old filling end and move it against the fixed member, and hold it.

8. In a loom, in combination, automatic filling-replenishing mechanism, and automatic means to engage, draw out of the shuttle and positively hold the old filling end as the ejected filling-carrier leaves the shuttle, said means including a fixed member, and a coöperating member fulcrumed at one end thereof and movable automatically upon filling replenishment to engage and move the old filling end against the fixed member, to be held between said members.

9. In a loom provided with automatic filling-replenishing mechanism, means to clear the old filling end from the shuttle, said means including a swinging clearer member movable in a lateral path below the shuttle, a fixed fulcrum for said member, a spring to move said member into engagement with the old filling end between the shuttle and the ejected filling-carrier and draw such filling end from the shuttle, and connections between the replenishing mechanism and the clearer member to set the latter when said mechanism is operated.

10. In a loom, in combination, automatic filling-replenishing mechanism, means to part the old filling between the cloth and shuttle upon filling replenishment, a fixed support, and a clearer member fulcrumed thereon and operatively connected with the replenishing mechanism, to engage the parted filling end between the shuttle and the ejected filling-carrier and draw such filling end out of and thereby clear the shuttle.

11. In a loom provided with automatic filling-replenishing mechanism, and with means to part the old filling between the cloth and shuttle upon filling replenishment, the combination of means to clear the shuttle of the parted filling end, said means including a clearer member angularly movable in a path below the shuttle during filling replenishment, a fixed fulcrum for said member, and actuating de-

vices to swing said member into engagement with and behind the parted filling end between the shuttle and the filling-carrier from which it leads.

6. In a filter, the combination of a series of annular sheet-metal distributer-plates having corrugations running from the perimeter suitably spaced with relation thereto, the corrugations of said plates sheet-metal collector-plates arranged in alternation therewith and affording surface channels on both sides thereof, screens adjacent to

driven gears respectively, and revolved planetwise around the same with the said case; a controller for the fulcrum-gear, and means for

vices to swing said member into engagement with and behind the parted filling end between the shuttle and the filling-carrier from which it leads.

12. In a loom provided with automatic filling-replenishing mechanism, and with means to part the old filling between the cloth and shuttle upon filling replenishment, the combination of means to clear the shuttle of the parted filling end, said means including a horizontally-swinging clearer member, a fixed member, and devices to swing the clearer member into engagement with the parted filling end between the shuttle and the ejected filling-carrier during filling replenishment and carry the filling end into holding engagement with the fixed member, to cause the filling end to be drawn out of the shuttle.

13. In a loom provided with automatic filling-replenishing mechanism, and with means to part the old filling between the cloth and shuttle upon filling replenishment, the combination with a lay having a replenishing shuttle-box through which the ejected filling-carrier is discharged, of a clearer member automatically swung rearward and then forward beneath the said shuttle-box during filling replenishment, to pass behind the parted filling end above the ejected filling-carrier and then pull such filling end out of the shuttle.

14. In a loom provided with automatic filling-replenishing mechanism, and with means to part the old filling between the cloth and shuttle upon filling replenishment, the combination with a horizontally-swinging clearer member movable below the shuttle, a fixed fulcrum for said member, and a spring to effect swinging movement of the latter behind and to pull forward the parted filling end, of means to retract or set the clearer member against the action of the spring and to thereafter release it, during filling replenishment, whereby the clearer member can engage and draw from the shuttle the parted filling end.

15. In a loom, in combination, automatic filling-replenishing mechanism, a lay having a replenishing shuttle-box, and means to automatically engage and positively hold the old filling end below the shuttle-box when a filling-carrier has been discharged therethrough, to thereby draw the filling end away from and clear the shuttle.

16. In a loom, automatic filling-replenishing mechanism, including a rocking transferrer, a fixed support, a clearer member fulcrumed thereon to swing in a curved path below the shuttle during filling replenishment, to engage the old filling end between the shuttle and the ejected filling-carrier and clear such filling end from the shuttle, and a controlling connection between the clearer member and the transferrer.

17. In a loom, in combination, filling-replenishing mechanism, including an automatically-operated transferrer, a depending, fixed bracket having a lateral foot below the lay-path, a clearer member fulcrumed on the inner end of said foot, a spring to move said member across the path of a filling-carrier ejected during filling replenishment, to engage the old filling end and pinch it against the foot, and an operative connection between the transferrer and the clearer member, to position the latter and then release it during the movement of the transferrer.

18. In a loom, automatic filling-replenishing mechanism, including a rocking transferrer having a depending extension, a fixed support, a spring-operated clearer member fulcrumed thereon to swing in a substantially horizontal path below the shuttle during filling replenishment and across the path of the ejected filling-carrier, to engage the old filling end and cause its withdrawal from the shuttle, and a cam-hook on the clearer member adjacent its fulcrum, and a link connecting the hook and the transferrer extension, operation of the transferrer acting through the link to first retract or set, and then quickly release the clearer member to enable the latter to swing behind and engage the old filling end between the shuttle and the ejected filling-carrier, the cam-hook effecting the quick release of the clearer member when set.

19. In a loom provided with automatic filling-replenishing mechanism, means to cause the operation thereof prior to complete exhaustion of the running filling, and means to part the old filling between the cloth and shuttle upon filling replenishment, combined with means the operation whereof is effected by actuation of the replenishing mechanism to engage, and positively hold the parted filling end between the shuttle and the ejected filling-carrier and thereby clear such filling end from the replenished shuttle.

812,517. **FILTER.** JOHN T. H. PAUL, Chicago, Ill., assignor to B. Goldman & Company, Chicago, Ill., a Corporation of Illinois. Filed Sept. 11, 1905. Serial No. 277,906.

Claim.—1. In a filter, the combination of a plurality of corrugated sheet-metal distributer-plates and corrugated imperforate suitably spaced with relation thereto, the corrugations of said plates sheet-metal collector-plates arranged in alternation therewith and affording surface channels on both sides thereof, screens adjacent to the sides of said plates, filter material massed between the collector and distributer screens, and ingress and egress passages in communication respectively with the passages of the distributer and collector plates, for the purpose set forth.

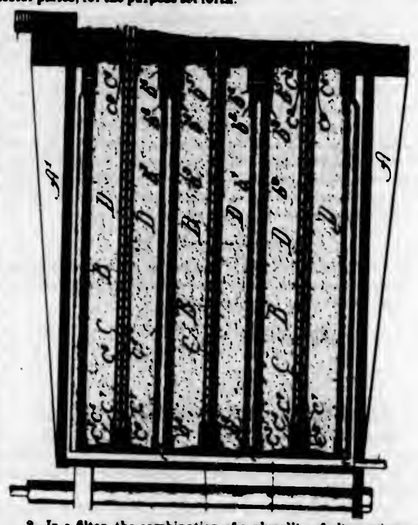

2. In a filter, the combination of a plurality of alternating corrugated sheet-metal distributer and collector plates having channels on both sides, screens protecting said channels, filter masses between the screens in the spaces between the distributer and collector plates, tube-sections forming a central conduit and connected with the distributer and collector plates, sleeves connected with the circumferential portions of one set of plates, and a casing forming an annular conduit with the cells thus constructed, the channels of the distributer-plates communicating with one conduit and the channels of the collector-plates communicating with the other conduit.

3. In a filter, the combination with a series of distributers, of a series of alternating collectors, each collector comprising an annular corrugated sheet-metal plate having circular corrugations and radial corrugations intersecting the same and running to the center, the corrugations affording channels at both sides of the plates, tube-sections flanking the inner margin of each collector-plate, sleeves provided internally medially with means attached to the circumferential portions of the collector-plates, screens flanking each collector-plate and fitting within the circumferential sleeves, filter material massed in the spaces between the distributers and the collector-plate screens, and ingress and egress conduits communicating with the distributers and collectors, respectively.

4. The combination of a series of collectors and a series of distributers alternating therewith, each distributer comprising an annular corrugated sheet-metal plate, the corrugations affording channels on both sides of the plates extending from the circumference to near the central opening, tube-sections having central external circumferential flanges secured to the inner margins of said plates, tube-sections connected with the collectors and forming with the first-named tube-sections an egress-conduit, circumferential sleeves connected with the collectors and in substantial contact with the outer margins of the distributers, and a casing forming with the cells thus constructed an annular ingress-conduit, the distributer-channels being in communication with the ingress-conduit, for the purpose set forth.

5. The combination of corrugated sheet-metal distributer-plates with channels on both sides thereof, corrugated sheet-metal collector-plates alternating therewith and having channels on both sides, relatively coarse mesh perforate sheet-metal screens flanking each distributer, perforate relatively fine mesh sheet-metal screens protecting the collector-plates, filter masses in the spaces between the screens, and a central and an annular conduit in communication, one with the channels of the distributer-plates, and the other with the channels of the collector-plates, for the purpose set forth.

6. In a filter, the combination of a series of annular sheet-metal distributer-plates having corrugations running from the perimeter toward the center, tube-sections having central external flanges connected with the inner margins of said plates, a series of annular sheet-metal collector-plates having circular corrugations intersected by relatively large radial corrugations leading to the center, sleeves having internal medial flanges connected with the outer margins of the collector-plates, screens flanking the distributer-plates, screens flanking the collector-plates, tube-sections flanking the inner margins of the collector-plates, filter masses in the spaces between the screens, and a casing forming with the cells thus formed an annular conduit, for the purpose set forth.

7. The combination of corrugated sheet-metal distributer-plates with surface channels on both sides thereof, corrugated sheet-metal collector-plates alternating therewith and having surface channels on both sides formed by the corrugations, certain of said channels of said collector-plates being substantially radial, screens flanking said plates, filter masses in the spaces between the screens, and a central and an annular conduit in communication, one with the channels of the distributer-plates and one with the channels of the collector-plates, for the purpose set forth.

812,518. **DREDGE-BUCKET COUPLING.** HARRY G. PEAKE and JAMES HENDERSON, Oroville, Cal., assignors to W. P. Hammon, Oroville, Cal. Filed May 4, 1905. Serial No. 258,853.

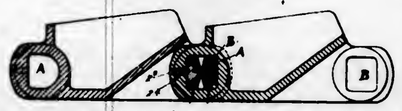

Claim.—1. An antifrictional contact-surface consisting of a block fixed in one of the connected parts and a pin fixed in the other, said block and pin having surfaces of contact adapted to rock upon each other.

2. The combination in a dredge of buckets having eyes at front and rear, pins extending through said eyes and fixed therein, said pins having rolling contact-surfaces and blocks fixed in the opposing eyes having similar surfaces upon which the pin has a bearing.

3. In a dredge, buckets having eyes at the front and rear, blocks set in the rear eye of each bucket having the front surface made higher at the center than at the edges, pins extending through the front eyes of the buckets having corresponding surfaces contacting and rolling upon the block-surfaces, and means for securing said pins in the eyes.

812,519. **POWER-TRANSMITTING MECHANISM.** JOSEPH PETRELLI, New Haven, Conn., assignor to The Snow & Petrelli Mfg. Co., New Haven, Conn., a Corporation. Filed Mar. 11, 1905. Serial No. 249,630.

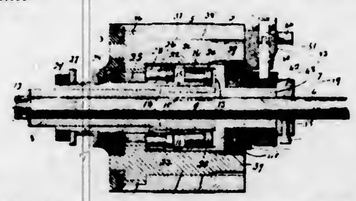

Claim.—1. In a power-transmitting mechanism, the combination with a rotatable case, of a driven shaft, a fulcrum-gear and a driven gear differentiated from each other in size and arranged concentric with the said case and shaft, a driving-pinion and a driven pinion differentiated in size, rotating together on the same axis, meshing directly into the said fulcrum and driven gears respectively and revolved planetwise around the same with the said case; a controller for the said fulcrum-gear, and means for transmitting the rotatable movement of the said case to the said shaft for the direct rotation thereof, and for transmitting the movement of the said driven gear to the said shaft for the rotation thereof by the said gear.

2. In a power-transmitting mechanism, the combination with a rotatable case, of a driven shaft, a fulcrum-gear and a driven gear differentiated from each other in size and arranged concentric with the said case and shaft, a driving-pinion and a driven pinion differentiated in size, rotating together on the same axis, meshing directly into the said fulcrum and driven gears respectively and revolved planetwise around the same with the said case; a controller for the said fulcrum-gear, and means for transmitting the rotatable movement of the said case to the said shaft for the direct rotation thereof and for transmitting the movement of the said driven gear to the said shaft for the reverse rotation thereof thereby.

3. In a power-transmitting mechanism, the combination with a rotatable case having a concentric hub, of a driven shaft, a fulcrum-gear mounted upon the said hub, a driven gear differentiated in size with respect to the said fulcrum-gear and concentric therewith, a driving-pinion and a driven pinion, differentiated in size, rotating together on the same axis, meshing directly into the fulcrum and driven gears respectively, and revolved planetwise around the same with the said case; a controller for the said fulcrum-gear, and means for transmitting the rotatable movement of the said case to the said shaft for the direct rotation thereof, and for transmitting the movement of the said driven gear to the said shaft for the rotation thereof thereby.

4. In a power-transmitting mechanism, the combination with a rotatable case, of a driven shaft, a fulcrum-gear and a driven gear differentiated from each other in size and arranged concentric with the said case and shaft, a driving-pinion and a driven pinion differentiated in size, rotating together on the same axis, meshing directly into the said fulcrum and driven gears respectively and revolved planetwise around the same with the said case; a friction-brake whereby the said fulcrum-gear is retarded or stopped, and means for transmitting the rotatable movement of the said case to the said shaft for the direct rotation thereof, and for transmitting the movement of the said driven gear to the said shaft for the rotation thereof thereby.

5. In a power-transmitting mechanism, the combination with a rotatable case having a concentric hub, of a driven shaft, a fulcrum-gear mounted upon the said hub, a relatively smaller driven gear arranged concentric therewith, a driving-pinion and a relatively larger driven pinion rotating together on the same axis, meshing directly into the said fulcrum and driven gears respectively and revolved planetwise around the same with the said case; a controller for the said fulcrum-gear, and means for transmitting the rotatable movement of the said case to the said shaft for the direct rotation thereof, and for transmitting the movement of the said driven gear to the said shaft for the reverse rotation thereof thereby.

6. In a power-transmitting mechanism, the combination with a rotatable case, of a driven shaft, a fulcrum-gear and a driven gear differentiated from each other in size and arranged concentric with the said case and shaft, a driving-pinion and a driven pinion differentiated in size, rotating together on the same axis, meshing directly into the fulcrum and driven gears respectively and revolved planetwise around the same with the said case; a controller for the said fulcrum-gear, and means for transmitting the rotatable movement of the said case to the said shaft for the direct rotation thereof, and for transmitting the movement of the said driven gear to the said shaft for the reverse rotation thereof thereby.

7. In a power-transmitting mechanism, the combination with a rotatable case, of a driven shaft, a fulcrum-gear and a driven gear differentiated from each other in size and arranged concentric with the said case and shaft, the said fulcrum-gear being formed with a hub, a driving-pinion and a driven pinion differentiated in size, rotating together on the same axis, meshing directly into the fulcrum and driven gears respectively and revolved planetwise around the same with the said case; a controller applied to the hub of the said fulcrum-gear, and means for transmitting the rotatable movement of the said case to the said shaft for the direct rotation thereof and for transmitting the movement of the said driven gear to the said shaft for the rotation thereof by the said gear.

8. In a power-transmitting mechanism, the combination with a rotatable case, of a driven shaft, a fulcrum-gear and a driven gear differentiated from each other in size and concentric with the said case and shaft, a driving-pinion and a driven pinion differentiated in size, rotating together on the same axis, meshing directly into the fulcrum and driven gears respectively and revolved planetwise around the same with the said case; a controller for the said fulcrum-gear, and clutch mechanism located between the said gears for coupling the shaft with the case and with the said driven gear.

9. In a power-transmitting mechanism, the combination with a rotatable case, of a driven shaft, a fulcrum-gear and a driven gear differentiated from each other in size and concentric with the said case and shaft, a driving-pinion and a driven pinion differentiated in size, rotating together on the same axis, meshing directly into the fulcrum and driven gears respectively and revolved planetwise around the same with the said case; a controller for the said fulcrum-

gear, and a sliding coupling-sleeve mounted upon the said shaft and carrying coupling instrumentalities whereby the sleeve, and hence the shaft, are coupled with the case for the rotation of the shaft therewith, and with the driven gear for the rotation of the shaft thereby.

10. In a power-transmitting mechanism, the combination with a rotatable case, of a driven-shaft, a fulcrum-gear and a driven gear differentiated from each other in size and concentric with the said case and shaft, a driving-pinion and a driven pinion differentiated in size, rotating together on the same axis, meshing directly into the fulcrum and driven gears respectively and revolved planetwise around the same with the said case; a controller for the said fulcrum-gear, a coupling-sleeve having sliding movement on the said shaft, a coupling-collar fixed upon the said sleeve and adapted to be coupled with the case whereby the shaft is rotated therewith, a coupling-collar combined with the said driven gear and coacting with the coupling-collar before mentioned for coupling the driven gear with the said sleeve, and means for longitudinally moving the said sleeve to couple the case with the sleeve or the sleeve with the driven gear.

11. In a power-transmitting mechanism, the combination with a rotatable case, of a driven shaft, a fulcrum-gear and a driven gear differentiated from each other in size and concentric with the said case and shaft, a driving-pinion and a driven pinion differentiated in size, rotating together on the same axis, meshing directly into the fulcrum and driven gears respectively and revolved planetwise around the same with the said case; a controller for the said fulcrum-gear, a sleeve mounted to slide on the said shaft and projecting outward through the case, coupling instrumentalities mounted upon the said sleeve for coupling the same with the case or with the driven gear as desired, and means applied to the projecting outer end of the sleeve for operating the same.

12. In a power-transmitting mechanism, the combination with a rotatable case, of a driven shaft, a fulcrum-gear arranged concentric with the said case and shaft and formed with a hub, a controller for the said gear applied to the said hub, a sleeve mounted on the shaft to slide thereupon, a relatively small driven gear mounted upon the said sleeve, a driving-pinion and a relatively large driven pinion mounted in the case, rotating together on the same axis, meshing directly into the fulcrum and driven gears respectively and revolved planetwise around the same with the said case, whereby the said driven gear is reversely rotated; coupling instrumentalities carried by the said sleeve whereby the shaft is coupled with the case or with the driven gear as desired, and means for operating the said sleeve.

13. In a power-transmitting mechanism, the combination with a rotatable case, of a driven shaft, a fulcrum-gear and a relatively small driven gear concentric with the said case, a shaft, a driving-pinion and a relatively large driven pinion rotating together on the same axis, meshing directly into the said fulcrum and driven gears respectively, and revolved planetwise around the same with the said case, whereby the driven gear is reversely rotated; a controller for the said fulcrum-gear, a sleeve mounted to slide upon the said shaft, coupling-pins carried by the said case, a coupling-collar fixed upon the said sleeve and provided with coupling-pins for coacting with the pins before mentioned, a coupling-collar rigid with the said driven gear, coupling-pins mounted therein, coupling-pins mounted in the collar on the sleeve for coaction with the coupling-pins last mentioned, and means applied to the projecting outer end of the sleeve for operating the same.

14. In a power-transmitting mechanism, the combination with a rotatable case, of a driven shaft, a fulcrum-gear and a driven gear differentiated from each other in size and arranged concentric with the said case and shaft, a driving-pinion and a driven pinion differentiated in size, rotating together on the same axis, meshing directly into the said fulcrum and driven gears respectively and revolved planetwise around the same with the said case; a controller for the said fulcrum-gear, the said controller comprising a frame-plate, a friction band or strap, a bolt, and a handle connected with the said band and bolt for the operation thereof; and means for transmitting the rotatable movement of the said case to the said shaft for the forward rotation thereof, and for transmitting the movement of the said driven gear to the said shaft for the reverse rotation thereof thereby.

812,520. ORE-CONCENTRATOR. JOSEPH W. PIERCE, San Francisco, Cal. Filed Nov. 28, 1904. Serial No. 234,223.

Claim.—1. A concentrating-pan having a concaved upper surface and mounted upon a central support, said pan being essentially involute in outline, riffles on the surface of the pan, said pan having a central discharge, means located at the widest portion of the pan for delivering material upon the pan in the field of maximum agitation and means for giving the pan an oscillatory movement.

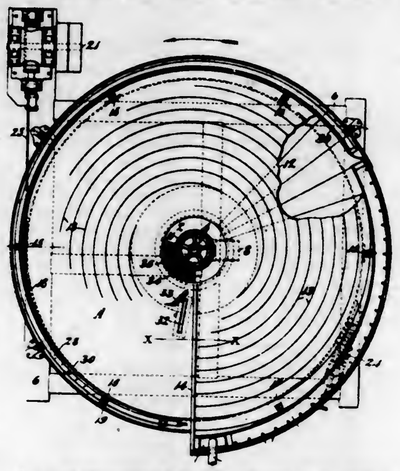

2. A concentrating-pan having a concaved upper surface and mounted on a central support, said pan being essentially involute in outline, spiral riffles on the pan and a feed-box arranged around the pan at substantially the point farthest removed from the central support, said pan having separate discharges for the values and worthless matter and means for giving the pan an oscillatory movement.

3. In a concentrator, a pan having a central discharge and a concaved riffled surface wherein the riffles commence at a common line which is radial to the pan said riffles terminating at irregular intervals around the pan, means for supporting the perimeter of the pan, means for supplying pulp to the pan at substantially the point farthest removed from the central discharge, and means for raising and lowering the center of the pan to vary its depth.

4. A concentrating-pan having a concaved upper surface essentially involute in outline, and having riffles on said surface commencing at a common line radial to the pan and terminating at irregular intervals around the pan, said pan composed of a series of sections rigidly supported at their outer ends, and flexibly supported at the center, means for raising and lowering the inner ends of said sections to vary the depth of the pan, means for delivering material upon the pan in the field of maximum agitation, and means for oscillating the pan.

5. A concentrating-pan having a concaved upper surface and a central opening, said pan having riffles on its surface commencing at a common line radial to the pan and terminating at irregular intervals around said pan, means for supporting the pan at the center and at its periphery to permit it to oscillate in a horizontal plane, said pan composed of a plurality of sectors flexibly supported at the center, means for raising the inner ends of these sectors to vary the depth of the pan, a flexible covering supported on these sectors, curved riffles supported on said covering, and means for delivering material upon the pan in the field of maximum agitation.

6. An ore-concentrating pan having a concaved upper riffled surface, with the riffles commencing at a common line which is substantially radial to the pan and terminating at irregular intervals around the pan said pan being essentially involute in outline and the surface of the pan lying in a spirally-descending plane.

7. An ore-concentrating pan having a concaved upper riffled surface, said pan being essentially involute in outline and the surface of the pan lying in a spirally-descending plane.

8. An ore-concentrating pan having a concaved upper riffled surface, said pan being essentially involute in outline and the surface of the pan lying in a spirally-descending plane, the pan having a central discharge, and means for delivering pulp at one or more points on said pan most remote from the center and in the field of maximum agitation of said pan.

9. An ore-concentrating apparatus comprising a shallow inverted conical pan having a central and movable peripheral supports, means by which said pan is abruptly oscillated about its center, means for discharging pulp and wash-water near the periphery of the pan, a series of spirally-disposed riffles fixed upon the surface of the pan, and each commencing at a common line which is substantially radial to the pan, said riffles terminating at irregular intervals around the pan, said surface declining in a curve from the commencement to the termination of the riffles, and separate discharge-openings for the concentrated mineral and the gangue.

10. An ore-concentrating apparatus comprising a shallow inverted conical pan having a central and movable peripheral supports, means by which said pan is abruptly oscillated about its center, means for discharging pulp and wash-water near the periphery of the pan in the field of maximum agitation, a series of spirally-disposed riffles fixed upon the surface of the pan, said riffles and each commencing at a common line which is substantially radial to the pan, said riffles terminating at irregular intervals around the pan, declining in a curve from the commencement to the termination of the riffles, said pan having a separate discharge for the gangue and radially-extending openings in the body of the pan in the path of the values for the separate discharge and collection of the latter.

11. In a concentrator, a shallow horizontally-supported concaved pan having a flexible bottom said pan being essentially involute in outline, vertical standards upon which the periphery of the pan is supported and movable, a central post with socket-sleeve cap and screw whereby the center of the pan may be raised or lowered, spirally-disposed riffles upon the surface of the pan, means for delivering pulp and wash-water at the outer periphery thereof in the field of maximum agitation, and mechanism by which a circular oscillatory movement of the pan is effected.

12. In an ore-concentrator, a circular pan having a concaved upper riffled surface with the riffles commencing at a common point substantially radial to the pan and terminating at irregular points around the pan, and a flexible bottom, means for supporting the outer periphery of the pan, said means including standards loosely pivoting in sockets in the bed-frame and pivotally engaging corresponding parts on the pan, springs relative to said standards and operating to hold the pan to its seat, a central support for the pan and means for raising and lowering the center of the pan to vary its depth.

13. An ore-concentrating pan having essentially the outline of an involute and arranged with its upper surface in a spirally-descending plane, a partition extending from the center of the pan outwardly at the highest point of the surface of the same, and curved riffles extending around the pan in the direction of the decline of curvature, means for delivering pulp and wash-water on the pan in substantially the field of maximum agitation and separate discharges for the gangue and values.

14. An ore-concentrating pan having essentially the outline of an involute and arranged with its upper surface in the plane of a turn of a conical helix, a radial partition extending from the center of the pan outwardly at the highest point of the surface of the same and curved riffles extending around the pan in the direction of the decline of curvature, means for delivering material onto the pan at the widest part thereof, and separate discharges for the gangue and values.

15. An ore-concentrating pan having essentially the outline of an involute and arranged with its upper surface in the plane of a turn of a conical helix, a radial partition extending from the center of the pan outwardly at the highest point of the surface of the same and curved riffles extending around the pan in the direction of the decline of curvature, a curved segmental feed-trough disposed at the outer edge of the pan at its widest part, said pan having a central discharge for the gangue and having discharge-passages intermediate of its center and periphery for the values.

16. In a concentrator, a circular concaved pan having an upper riffled surface arranged in a spirally-descending plane and a central discharge, means for delivering material upon the pan, said pan having a discharge-passage for the values intermediate of its center and periphery, said passage extending transverse to the general direction of movement of the values.

17. In a concentrator, a circular pan having a concaved upper riffled surface and a central opening, a bowl in said opening having a discharge for the gangue and a separate screen-covered receptacle for the finer slimes passing over the pan, means for supporting the bowl, means for supporting the outer periphery of the pan, means for delivering material and wash-water upon the pan, said pan having a discharge for the concentrated values intermediate of its center and periphery and means for giving the pan an oscillatory movement.

812,521. APPARATUS FOR RAISING SUBMERGED OBJECTS. CATERINA PINO, Genoa, Italy. Filed June 5, 1903. Serial No. 160,579.

Claim.—1. A float for raising submerged objects, comprising a series of flexible tubular cells, two platforms or heads to both of which each of said cells is attached, flexible connections for determining the distance between said heads when the said cells are extended, means attached to the upper head for guiding and holding the float in position and means for attaching said float to the submerged object.

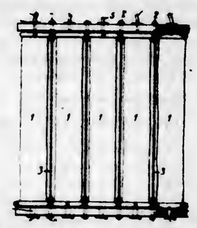

2. A float for raising submerged objects comprising a top and a bottom platform, a series of cells of waterproof flexible material arranged in series of rows between said platforms, means arranged between said rows for determining the distance between said platforms when the cells are extended and means for inflating said cells.

3. A float for raising submerged objects, comprising a series of waterproof flexible tubular cells arranged in parallel rows, platforms or heads between which said cells are secured, flexible connections located between said rows of cells for limiting the distance between said heads, when the cells are extended, each of said heads being provided with openings which communicate with the interior of said cells, the openings in the upper head being provided with means for connecting the supply-pipes and the openings in the lower heads being provided with check-valves for the discharge of water.

4. A float for raising submerged objects comprising dividing heads or platforms, means for securing a series of flexible inflatable tubular cells to said heads in parallel rows, flexible means arranged between said rows of tubular cells for limiting the separation of said heads, means for inflating said cells through openings in said heads, and a check-valve carried by said heads for allowing the water to be discharged.

5. A float for raising submerged objects, comprising heads or platforms, a plurality of flexible tubular cells of waterproof material having their open ends attached to said heads, flexible connections arranged between said heads or platforms and between said cells for limiting the said separation of the heads, means for forcing a fluid into said cells, and check-valves for allowing the escape of water from said elements.

6. A float for raising submerged objects, comprising a plurality of superposed series of parallel waterproof cells, platforms or heads between said series of cells, and to which the ends of said cells are attached, flexible connections for determining the distance between said heads when said cells are extended, means attached to the upper head for guiding and holding the float in position, and means connected to the lower head for attaching said float to a submerged object.

7. A float for raising submerged objects, comprising a plurality of superposed series of parallel waterproof cells, platforms or heads between said series of cells, and to which the ends of said cells are attached, flexible connections for determining the distance between said heads when said cells are extended, and separate air-conduits connected independently to each series of cells.

812,522. TRAP. JAMES B. PITTMAN, Goldhill, Colo. Filed Feb. 16, 1905. Renewed Dec. 26, 1905. Serial No. 293,230.

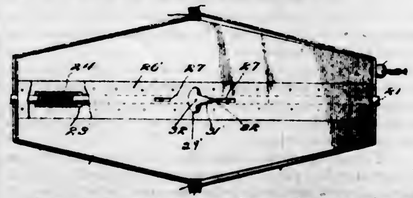

Claim.—1. A trap comprising a base, spring-actuated cooperating jaws carried by the base, a pair of bolt-bars slidably mounted in the base and movable into and out of position to engage the jaws when the latter are separated, means for holding the bolt-bars nor-

mally inactive and a trigger removably disposed between the ends of

bedded in the concrete so as to reinforce the structure about such

mally inactive and a trigger removably disposed between the ends of the bolt-bars and adapted to hold them in active positions.

2. A trap comprising a base having laterally-directed trunnions, jaws having terminal spring portions connected to the trunnions and adapted to stand yieldably in gripping relation, bolt-bars slidably mounted in the base in position to engage and hold the jaws in inactive relation, means for holding the bolt-bars yieldably in inactive positions, and a removable trigger disposed between the ends of the bolt-bars and adapted to hold them in inactive positions, such trigger being adapted for attachment of bait thereto.

812,523. **DUST-GUARD FOR JOURNAL-BOXES.** EDWARD POSSON, Chicago, Ill. Filed Aug. 18, 1905. Serial No. 274,602.

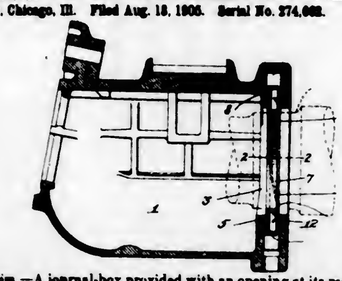

Claim.—A journal-box provided with an opening at its rear end and having a vertical recess adjacent to said opening and also having a raised smooth flat bearing, 5, in said recess and continuous around said rear opening; a dust-guard comprising a single plate perforated to receive the axle snugly and having at one side a smooth face, 8, which is broader than the said raised flat bearing on the box, and at the other side having recesses each with two parallel sides, and a spring, 15, in each of the said recesses, said spring being held in position by fitting between the two parallel sides.

812,524. **CONCRETE RAILWAY-TIE.** WILLIAM H. PRUYN, Jr., Chicago, Ill. Filed Feb. 13, 1905. Serial No. 245,263.

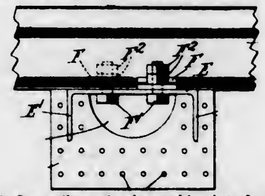

Claim.—1. In a railway-tie, the combination of a body part of concrete-like material with a rail-seating part to which the rail is secured, the body part being cut away giving access to the under side of the rail-seating part.

2. In a railway-tie, the combination of a body part of concrete-like material, with a relatively thin rail-seating part to which the rail is secured, the body part being channeled giving access to the under side of the rail-seating part.

3. In a railway-tie, the combination of a body part of concrete-like material with a rail-seating part which is relatively thin and of tougher structure, the body part being channeled in proximity to the rail-seating part.

4. In a railway-tie, the combination of a body part of concrete-like material with a seating part to which the rail is secured, the body part being channeled in proximity to the seating part, and means for securing the rail to such tie.

5. In a railway-tie, the combination of a body part of concrete-like material with a rail-seating part to which the rail is secured, the body part being channeled in proximity to such rail-seating part, perforations through such seating part, and securing devices extending through the perforations.

6. In a railway-tie, the combination of a body part of concrete-like material with a rail-seating part comprising a metallic member, a part of which is embedded in the concrete of the body, the body part of such tie being channeled beneath said seating part.

7. In a railway-tie, the combination of a body part of concrete-like material, such body part being channeled, with a rail-seating part extending over such channel comprising a metallic member embedded in the concrete so as to reinforce the structure about such channeling.

8. In a railway-tie, the combination of a body part of concrete-like material with a seating part to which the rail is secured, the body part being channeled beneath the seating part, and means for securing the rail to such tie comprising a clamping device engaging the rail-flange and a bolt to secure such clamping device to the rail-seat.

9. In a railway-tie the combination of a body part with a relatively thin rail-seating part to which the rail is secured, the seating part disposed with reference to the body part so that the under side of the seating part is readily accessible for fastening the rail.

10. In a railway-tie the combination of a body part apertured so as to form a relatively thin rail-seating part with its under side accessible, and metal reinforcements for such seating part.

11. In a railway-tie the combination of a body part apertured so as to form a relatively thin rail-seating part with its under side accessible, and metal reinforcements for such seating part embedded in the concrete forming the tie.

12. In a railway-tie the combination of a body part apertured so as to form a relatively thin rail-seating part with its under side accessible, and metal reinforcements for such seating part embedded in the concrete and extending about such aperture.

13. In a railway-tie the combination of a body part apertured so as to form a relatively thin rail-seating part with its under side accessible, and metal reinforcements for such seating part extending through the seating part and anchored in the body part at each side of the aperture.

14. In a railway-tie the combination of a body part of concrete-like material with a rail-seating part to which the rail-securing devices are fastened, and a thin reinforcing portion for the seating part entirely embedded in the concrete thereof.

812,525. **TRANSPARENT SIGN.** JOHN M. RATHMAN, St. Louis, Mo. Filed Aug. 16, 1905. Serial No. 274,452.

Claim.—1. A sign comprising a suitable background, and readable lens-shaped characters disposed in front of the same, substantially as set forth.

2. A sign comprising a suitable diaphanous background, and readable lens-shaped diaphanous characters of a contrasting color disposed in front of the same, substantially as set forth.

3. A sign comprising a suitable box, a diaphanous plate forming a wall thereof and constituting a suitable background, means for introducing artificial light behind said plate, and a series of diaphanous readable lens-shaped characters of a contrasting color disposed on the outer face of the background, substantially as set forth.

812,526. **GARMENT-SUPPORTER.** VICTOR H. RAA, Elgin, Ill. Filed Nov. 22, 1904. Serial No. 233,956.

Claim.—1. A device of the kind described, comprising the combination of supporting means provided with means for attaching the same to a garment, the said supporting means consisting of two members, one of said members provided with an aperture and a hook and the second member arranged to extend through said aperture and engage said hook with a suitably-flexible material positioned between the members, said members being otherwise unattached.

2. A garment-supporter, comprising a member provided with an aperture, and having a hook positioned near one end of said aperture, in combination with a coöperating bodily-movable member adapted to extend through said aperture and provided with a bar arranged to engage said hook to secure a part of a garment between the members, and means to support said members in said coöperating portion.

3. In a garment-supporter, a member provided with an aperture, and a hook positioned near one end of said aperture, in combination with a second member, adapted to extend through said aperture and engage said hook, to support a garment by engaging a portion thereof between said members, and means for normally loosely connecting said members together whereby they are bodily movable relative to one another.

4. In a garment-supporter, a member provided with an aperture, and having a longitudinally-extended hook positioned on its front side near its free end, in combination with a second member, normally suspended at the back of said first member and provided with a transverse bar, said members bodily movable with respect to one another being adapted to coöperate to engage a suitably-flexible material between them by positioning the second member and a portion of said material through said aperture in the first member and engaging said bar with said hook.

5. In a garment-supporter, a member provided with an aperture, and having a hook positioned near one end of said member freely movable relative to said first-mentioned member, in combination with a second member provided with a curved bar adapted to coöperate with said hook to engage a suitably-flexible material, when said second member and a portion of said material is positioned through the aperture in said first member.

6. In a fastener of the character described, coöperating engaging parts bodily movable with respect to one another, the one part comprising an open frame having a hook-shaped projection on one side thereof and the other part comprising an open frame adapted to pass through the opening of the frame of the coöperating part and engage under the hook carried thereby.

7. In a fastener of the character described, a flexible support coöperating engaging parts unconnected save by said support, the one member comprising an open frame having a hook-shaped projection on one side thereof and the other part comprising an open frame adapted to slide through the opening of the frame of the coöperating part and engage under the hook carried thereby.

812,527. **RECIPROCATING ROTARY ENGINE.** FREDERICK W. REEVES, Allegheny, Pa., assignor to The Reeves Centrifugal Engine Company, Pittsburg, Pa., a Corporation of the District of Columbia. Filed Aug. 27, 1904. Serial No. 223,378.

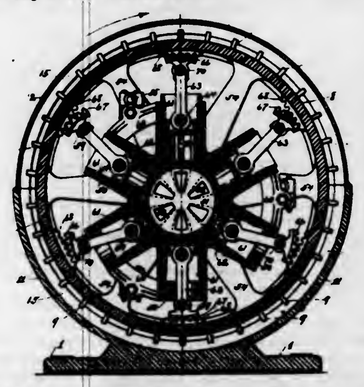

Claim.—1. In a steam-engine, a plurality of cylinders revoluble about the same axis and provided with reciprocating pistons, a rotatable wheel the axis of which is parallel with but out of line with the revoluble axis of said cylinders, members yieldingly connected to said piston and said wheel, means carried by the said wheel and outer extremities of said members and engaging one another, the point of engagement therebetween being at all times in direct line with the centers of the cylinders and the axis upon which they revolve irrespective of their positions, semicircular bearings carried by said wheel, and laterally-disposed members carried by said pitman-rods and engaging said bearings, adapted to maintain the said rods in operative engagement with said wheel.

2. In a steam-engine, a plurality of cylinders revoluble about the same axis and provided with reciprocating pistons, adapted to receive and exhaust steam at one end, a rotatable wheel the axis of which is parallel with but out of line with the revoluble axis of said cylinders, members yieldingly connected to said piston and said wheel, and means carried by the said wheel and outer extremities of said members and engaging one another, the point of engagement therebetween being at all times in direct line with the centers of the cylinders and the axis upon which they revolve irrespective of their positions.

3. In a steam-engine, a plurality of cylinders revoluble about the same axis and provided with reciprocating pistons, a rotatable wheel the axis of which is parallel with but out of line with the revoluble axis of said cylinders, members yieldingly connecting said cylinders with said wheel, members yieldingly connected to said piston and said wheel, and means carried by the said wheel and outer extremities of said members and engaging one another, the point of engagement therebetween being at all times in direct line with the centers of the cylinders and the axis upon which they revolve irrespective of their positions.

4. In a steam-engine, a plurality of cylinders revoluble about the same axis and provided with reciprocating pistons adapted to receive and exhaust steam at one end, a rotatable wheel the axis of which is parallel with but out of line with the revoluble axis of said cylinders, members yieldingly connecting said cylinders with said wheel, members yieldingly connecting to said piston and said wheel, means carried by the said wheel and outer extremities of said members and engaging one another, the point of engagement therebetween being at all times in direct line with the centers of the cylinders and the axis upon which they revolve irrespective of their positions, semicircular bearings carried by said wheel, and laterally-disposed members carried by said pitman-rods and engaging said bearings, adapted to maintain the said rods in operative engagement with said wheel.

5. In a steam-engine, a revoluble member carrying a plurality of radially-disposed cylinders each communicating with a valve-cavity located at the revoluble axis of said member, a receiving and exhaust valve mechanism located in said cavity, reciprocating pistons in cylinders, a revoluble wheel the axis of which is out of line but parallel with the revoluble axis of said cylinder member, members yieldingly connected to said piston and said wheel, means carried by the said wheel and outer extremities of said members and engaging one another, the point of engagement therebetween being at all times in direct line with the centers of the cylinders and the axis upon which they revolve irrespective of their positions, semicircular bearings carried by said wheel, and laterally-disposed members carried by said pitman-rods and engaging said bearings, adapted to main tain the said rods in operative engagement with said wheel.

6. In a steam-engine, a revoluble member carrying a plurality of radially-disposed cylinders each communicating at one end with a valve-cavity located at the revoluble axis of said member, a receiving and exhaust valve mechanism located in said cavity, reciprocating pistons in said cylinders, a revoluble wheel the axis of which is out of line but parallel with the revoluble axis of said cylinder member, members yieldingly connected to said piston and said wheel, semicircular bearings carried by said wheel, and laterally-disposed members carried by the pitman-rods and engaging said bearings, adapted to maintain the said rods in operative engagement with said wheel.

7. In a steam-engine, a revoluble member carrying a plurality of radially-disposed cylinders each communicating with a valve-cavity located at the revoluble axis of said member, a receiving and exhaust valve mechanism located in said cavity, reciprocating pistons in said cylinders, a revoluble wheel the axis of which is out of line but parallel with the revoluble axis of said cylinder member, members yieldingly connecting said cylinders with said wheel, members yieldingly connected to said piston and said wheel, semicircular bearings carried by said wheel, and laterally-disposed members carried by the pitman-rods and engaging said bearings, adapted to maintain the said rods in operative engagement with said wheel.

8. In a steam-engine, a revoluble member carrying a plurality of radially-disposed cylinders each communicating at one end with a valve-cavity located at the revoluble axis of said member, a receiving and exhaust valve mechanism located in said cavity, reciprocating pistons in said cylinders, a revoluble wheel the axis of which is out of line but parallel with the revoluble axis of said cylinder member, members yieldingly connecting said cylinders with said wheel, members yieldingly connected to said piston and said wheel, means carried by the said wheel and outer extremities of said members and engaging one another, the point of engagement therebetween being at all times in direct line with the centers of the cylinders and the axis upon which they revolve irrespective of their positions, semicircular bearings carried by said wheel, and laterally-disposed members carried by said pitman-rods and engaging said bearings, adapted to maintain the said rods in operative engagement with said wheel.

9. In a steam-engine, rotatable cylinders provided with reciprocating pistons, a rotatable wheel the axis of which is out of line but parallel with that of said cylinders, members yieldingly connecting

said wheel with said cylinders, whereby a uniform rotary motion is established, a casing inclosing said wheel, a circumferential groove formed within said casing and means connected to said wheel whereby a lubricating fluid entering said casing will be carried to said groove and distributed within said casing to the mechanism inclosed thereby.

10. In a steam-engine, rotatable cylinders provided with reciprocating pistons, a rotatable wheel the axis of which is out of line but parallel with that of said cylinders whereby a uniform rotary motion is imparted to said wheel and cylinders, a casing inclosing said wheel and cylinders, a circumferential groove formed within said casing, means connected to said wheel whereby a lubricant entering said casing will be carried to and distributed therein to the mechanism inclosed thereby by the centrifugal motion of said wheel, and a slush-box to receive the surplus lubricant and water arranged in connection with said casing, a reservoir connected to said slush-box, said reservoir being provided with an overflow or means for separating the water from the oil, and means for returning the lubricant collected therein to the casing.

11. In a steam-engine, rotatable cylinders provided with reciprocating pistons, a rotatable wheel the axis of which is out of line but parallel with that of said cylinders, a stationary valve provided with a movable governor-controlled cut-off member adapted to receive and exhaust steam therethrough and, a disk or piston connected with said valve carrying an exhaust-tube whereby compensating movement is permitted and a steam-balance is formed.

12. In a steam-engine, a valve having a movable governor-controlled cut-off member, cylinders rotating thereabout with ports leading therethrough adapted to successively receive and exhaust steam, a disk member or pitman loosely connected to said valve having an endwise movement, a steam-exhaust tube connected to said disk, a steam-inlet pipe surrounding said exhaust-tube, a non-conducting covering placed about said steam-inlet tube, and means for centrally locating said tube within said hollow shaft, whereby an air-passage is formed to keep said shaft cool.

13. In a steam-engine having a plurality of revoluble cylinders, a valve having a movable governor-controlled cut-off sector-valve operating within a recess formed within the same, a series of radially-arranged openings through the valve, said sector-valve operating to close said openings, whereby steam direct from the boiler may be cut off or supplied to said valve in radial series to the cylinders.

14. In a steam-engine having a plurality of revoluble cylinders, a valve having a movable governor-controlled sector-valve operating within a recess formed therein, means arranged to admit steam about said sector to balance the same and a series of radially-arranged openings through the valve, whereby steam direct from the boiler may be supplied to said valve and cylinders in radial series.

15. In a steam-engine, rotatable cylinders provided with reciprocating pistons adapted to receive and exhaust steam at one end thereof, a rotatable wheel the axis of which is out of line but parallel with that of said cylinders, and members yieldingly connecting said pistons and cylinders with the wheel, a valve provided with a sector operating therein and means whereby said valve and sector may be shifted and set to admit steam to the cylinders in opposite relation to reverse the rotatable motion of the engine.

16. In a steam-engine, a revoluble member carrying a plurality of radially-disposed cylinders each communicating with a valve-cavity located at the axis of said member, a stationary valve located in said cavity adapted to permit steam to enter into and exhaust from said cylinders, a governor-controlled cut-off-valve member operating in said valve, reciprocating pistons in said cylinders, a revoluble wheel the axis of which is parallel but out of line with that of said cylinder member, members yieldingly connecting said cylinders or member with said wheel, members yieldingly connected with said pistons and engaging with said wheel the points of contact with the wheel being at all times in direct line with the cylinders and the revoluble axis thereof irrespective of position, a casing inclosing said wheel and the cylinders and attending parts the periphery of which is provided with a groove, and members carried by said wheel whereby a lubricant placed therein will by the centrifugal motion of said wheel carry said lubricant about said casing and cause its distribution to the working parts inclosed by said casing.

17. In a steam-engine, a revoluble member carrying a plurality of radially-disposed cylinders each communicating with a valve-cavity located at the axis of said member, a stationary valve located in said cavity adapted to permit steam to enter into and exhaust from said cylinders, a governor-controlled cut-off-valve member operating in said valve, reciprocating pistons in said cylinders, a revoluble wheel the axis of which is parallel but out of line with that of said cylinder member, members yieldingly connecting said cylinders or members with said wheel, members yieldingly connected with said pistons and engaging with said wheel the points of contact with the wheel being at all times in direct line with the cylinders and the revoluble axis thereof irrespective of position, a casing inclosing said wheel and the cylinders and attending parts the periphery of which is provided with a groove, members carried by said wheel whereby a lubricant placed therein will by the centrifugal motion of said wheel carry said lubricant about said casing and cause its distribution to the working parts inclosed by said casing, a receptacle communicating with said casing to receive the surplus oil therefrom delivered therein by the said centrifugal motion of said wheel, and means communicating with said receptacle and casing to receive said surplus lubricant and resultant water from steam condensation and returning said lubricant to said casing.

18. In a steam-engine, a revoluble wheel, a member carrying a plurality of radially-disposed cylinders revoluble upon a hollow shaft whose center is out of line but parallel with that of said wheel which member is provided at its axis with a cavity communicating with said cylinders, a steam-supply tube extending through said shaft and communicating with said cavity, an exhaust-tube extending through said supply-tube, a valve arranged on said exhaust-tube and extending into said cavity, a governor-controlled cut-off-valve member operating in said valve, reciprocating pistons in said cylinders, members yieldingly connected with said pistons and engaging with said wheel the points of contact with the wheel being at all times in direct line with the cylinders and revoluble axis thereof irrespective of position, a casing inclosing said wheel the cylinders and attending parts the periphery of which is provided with a groove, and members carried by said wheel whereby a lubricant placed therein will by the centrifugal motion of said wheel carry said lubricant about said casing and cause its distribution to the working parts inclosed by said casing.

19. In a steam-engine, a revoluble wheel, a member carrying a plurality of radially-disposed cylinders revoluble upon a hollow shaft whose center is out of line but parallel with that of said wheel which member is provided at its axis with a cavity communicating with said cylinders, a steam-supply tube extending through said shaft and communicating with said cylinders, a steam-supply tube extending through said shaft and communicating with said cavity, an exhaust-tube extending through said supply-tube, a valve arranged on said exhaust-tube and extending into said cavity, a governor-controlled cut-off-valve member operating in said valve, reciprocating pistons in said cylinders, members yieldingly connected with said pistons and engaging with said wheel the points of contact with the wheel being at all times in direct line with the cylinders and revoluble axis thereof irrespective of position, a casing inclosing said wheel the cylinders and attending parts the periphery of which is provided with a groove, members carried by said wheel whereby a lubricant placed therein will by the centrifugal motion of said wheel carry said lubricant about said casing and cause its distribution to the working parts inclosed by said casing, a receptacle communicating with said casing to receive the surplus oil therefrom delivered therein by the centrifugal motion of said wheel, and means communicating with said receptacle and casing to receive said surplus lubricant and resultant water from steam condensation and returning said lubricant to said casing.

20. In a rotary engine of the class set forth provided with a revoluble member such as a wheel and inclosed within a casing, a peripheral groove in said casing, means carried by said revoluble member to carry the lubricant about said casing-groove, and conductors communicating with said groove and interior of the casing to convey the lubricant to the working parts inclosed by said casing.

21. In a rotary engine of the class set forth provided with a revoluble member such as a wheel and inclosed within a casing, a peripheral groove in said casing, means carried by said revoluble member to carry the lubricant about said casing-groove to permit distribution thereof to the working parts inclosed by said casing, a receptacle communicating with said casing to receive the surplus oil therefrom delivered therein by the centrifugal motion of said wheel, and means communicating with said receptacle and casing to receive said surplus lubricant and resultant water from steam condensation and returning said lubricant to said casing.

22. In an engine of the class set forth, the combination with the pitman-rods and wheel, of rockers on the outer ends of the said pitmen, and contacting members therefor carried by said wheel, semicircular bearings carried by said wheel, and laterally-disposed members carried by said pitman-rods and engaging said bearings, adapted to maintain the said rods in operative engagement with said wheel.

23. In an engine of the class set forth, the combination with the pitman-rods and wheel, of rockers on the outer ends of the said pitmen, contacting members therefor carried by said wheel, means to maintain operative contact between said pitman-rockers and wheel members, semicircular bearings carried by said wheel, and laterally-disposed members carried by said pitman-rods and engaging said bearings, adapted to maintain the said rods in operative engagement with said wheel.

812,528. **PRUNING IMPLEMENT.** JOHN S. ROHRER, Lancaster, Pa. Filed Apr. 20, 1905. Serial No. 256,044.

Claim.—1. In pruning-shears, the combination of coöperating members, each comprising a suitable handle and blade, a pivotal connection between said members admitting of relatively slidable movement thereof, and a cam projection carried by one of the members and arranged to engage the other member to impart relative sliding movement to the members as the handles are pressed together.

2. In pruning-shears, the combination of coöperating members, each comprising a suitable handle and blade, a pivotal connection between said members admitting of relatively slidable movement thereof, an integral cam projecting from one of the members and engaging the other member to impart relative slidable movement to the members as the handles are pressed together, and an obliquely-disposed link connected at its opposite ends with the said members and coacting with the cam aforesaid to effect relative longitudinal sliding movement of the members as the handles are forced together.

3. Pruning-shears comprising pivotally-connected members normally pressed apart by spring action, each of said members consisting of a handle and blade, means for holding said members closed consisting of a headed pin projecting from the handle of one of the members, and a locking-slide secured to and slidable longitudinally of the handle of the other member and provided with a slot therein to receive the pin aforesaid and engage the head thereof.

812,529. **BOILER.** WILLIAM H. RUSSELL, Laporte, Ind. Filed Oct. 23, 1905. Serial No. 283,994.

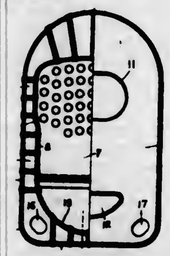

Claim.—1. In a boiler, the combination, substantially as set forth, of a barrel, a throat-sheet, an outer door-sheet, a fire-box with its sides formed continuous with its floor, and a fire-box shell having its base formed continuous with its sides, the floor of the fire-box forming a semicircular curve with its concavity upward, and the base of the fire-box shell or casing joining the sides thereof by rounded corners presenting inward concavities, cleaning-openings being formed in the throat-sheet and outer door-sheet at the forward and rear extremities of the spaces formed between the floor of the fire-box and the base-corners of its shell.

2. In a boiler of locomotive type, the combination, substantially as set forth, of a fire-box with a concave floor formed continuous with its sides, a fire-box casing having a flat floor joining the sides of the casing by circular curves, a throat-sheet having rounded base-corners fitting the fire-box casing and having cleaning-openings at said corners, and an outer door-sheet having rounded base-corners fitting the casing and having cleaning-openings at said corners.

812,530. **SIDE PLATE FOR FILTERS.** CONSTANTINE P. SCHWARZ, Elyria, Ohio. Filed Oct. 9, 1905. Serial No. 281,902.

Claim.—1. As an article of manufacture, a filter-plate consisting of a series of sills supported on corrugated uprights, said sills being formed integral with said uprights.

2. As an article of manufacture, a filter-plate consisting of a series of sills supported on corrugated uprights formed integral with said sills and the width of said sills being greater than the distance between said sills.

812,531. **FIGURED COVERING.** LUDWIG W. SEEGER, Ragubn, Germany. Filed Sept. 18, 1905. Serial No. 279,053.

Claim.—1. A composite covering for floors, walls, ceilings and the like consisting of a colored or figured base layer, and a colored or figured covering-tissue of fabric or textile material so united with the base layer that the coloring or figuring of the latter combines with that of the covering to form the complete figured or colored effect.

2. A composite covering for floors, walls, ceilings, and the like, consisting of a colored or figured base layer, and an open-mesh textile colored or figured covering tissue or fabric united to the base layer and arranged to expose therethrough the coloring or figuring of the base layer.

812,532. **AUTOMATIC AIR-PIPE COUPLING.** PIETRO SETTINO and PETER HOOVER, Steelton, Pa. Filed Oct. 31, 1905. Serial No. 285,300.

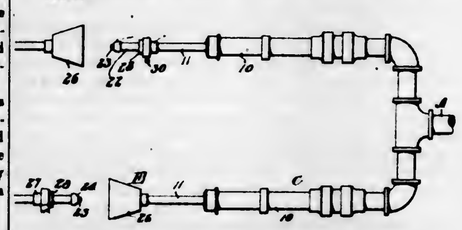

Claim.—1. In an automatic air-pipe coupling, casings arranged to be supported by the cars, each casing being provided with a valve-seat, a helical compression-spring within each casing, tubes arranged to slide within the casings, a valve carried by each tube and arranged to close against the valve-seat under the action of the spring, each tube having a lateral port through which fluid may be passed to or from the casing when the valve is unseated, a packing-ring arranged at the outer end of each casing and through which the tube slides, and mating members arranged at the outer ends of the tubes.

2. In an automatic train-pipe coupler, a coupling member including a pair of tubes having coupling-sleeves arranged to permit free play of one section of the tube, and a flexible lining within the coupling member to prevent the escape of air.

3. In an automatic train-pipe coupler, a coupling member including a pair of tubular sections having coupling-sleeves arranged to permit free movement of one section with respect to the other, an elastic sleeve arranged within the said coupling-sleeves, and a spring disposed within the elastic sleeve and tending to force the latter outward into engagement with the walls of the sleeves to prevent the escape of air.

4. In an automatic air-pipe coupler, a coupling member including a pair of alined tubes provided with interfitting sleeves, a clamping-ring for holding said sleeves together, and a lining member of flexible elastic material arranged within said sleeves.

5. In an automatic air-pipe coupler, intenengaging coupling members, one having a yieldable nipple, and the other a yieldable socket member for engagement with the nipple.

6. In an automatic train-pipe coupler, a male member having a nipple of yieldable material, and a female member having a ring or socket, also formed of yieldable material, and a guiding-funnel arranged in advance of said ring or socket.

812,533. REVERSING-GEAR. HENRY A. TUTTLE, South Norwalk, Conn., assignor to H. A. Tuttle Manufacturing Company, South Norwalk, Conn., a Corporation of Delaware. Filed Apr. 5, 1905. Serial No. 254,051.

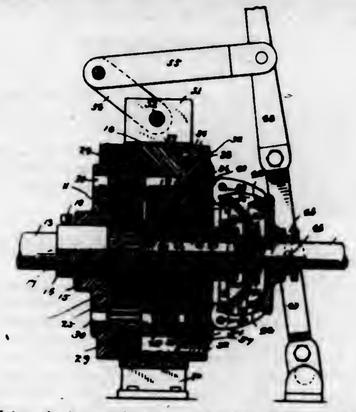

Claim.—1. A reversing-gear comprising driving and driven shafts in line with each other and spur-gears at their contiguous ends, the gear on the driven shaft having an undercut recess and an elongated hub, a case having a bearing for said hub extending into said undercut recess means for locking the case against rotation, single pinions journaled in the case and engaging the driving-shaft gear and double pinions journaled in the case and engaging the single pinions and the driven-shaft gear.

2. A reversing-gear comprising driving and driven shafts in line with each other and spur-gears at their contiguous ends, the gear on the driven shaft having an undercut recess and an elongated hub, a case having a bearing for said hub extending into said undercut recess, single pinions journaled in the case and engaging the driving-shaft gear, double pinions journaled in the case and engaging the single pinions and the driven-shaft gear, a friction-disk carrier rigidly secured to said hub, friction-disks carried thereby, washers locked to the case and means for clamping the disks and washers together and against the case to lock the driven shaft thereto.

3. A reversing-gear comprising driving and driven shafts in line with each other and spur-gears at their contiguous ends, the driven-shaft gear having an elongated hub, a rotary case having a recess in its face, single pinions journaled in the case and engaging the driving-shaft gear, double pinions journaled in the case and engaging the single pinions and the driven-shaft gear, a friction-disk carrier rigidly secured to the hub, friction-disks and washers lying in the recess in the case and means for clamping the friction-disks and washers together and against the base-wall of the recess.

4. A reversing-gear comprising driving and driven shafts in line with each other and spur-gears at their contiguous ends, the driven-shaft gear having an elongated hub, a rotary case, single pinions journaled in the case and engaging the driving-shaft gear, double pinions journaled in the case and engaging the single pinions and the driven-shaft gear, a friction-disk carrier rigidly secured to the hub, friction-disks and a pressure-disk carried by said hub, washers locked to the case, an adjustable screw-collar on the driven shaft, bell-crank levers pivoted on the pressure-disk and engaging the screw-collar and a cone sliding on the driven shaft and acting on the bell-crank levers to clamp the pressure-disk, friction-disks and washers together and against the case.

5. A reversing-gear comprising driving and driven shafts in line with each other and spur-gears at their contiguous ends, a rotary case, single pinions journaled in the case and engaging the driving-shaft gear, double pinions journaled in the case and engaging the single pinions and the driven-shaft gear, a brake-band, an arm and intermediate connections for clamping the brake-band about the case, friction-disks carried by the driven shaft, washers locked to the case, an adjustable screw-collar, bell-crank levers engaging the screw-collar and acting on the friction-disks and washers, a cone sliding on the driven shaft and acting on the bell-crank levers, an operating-lever pivoted to the case and a link connecting the operating-lever and the arm, said operating-lever at its intermediate position holding both the brake-band and the friction devices loose, at one extreme of its movement clamping the brake-band and leaving the friction devices loose and at the other extreme of its movement clamping the friction-washers and leaving the brake-band loose.

6. A reversing-gear comprising driving and driven shafts in line with each other and spur-gears at their contiguous ends, a rotary case, single pinions journaled in the case and engaging the driving-shaft gear, double pinions journaled in the case and engaging the single pinions and the driven-shaft gear, friction-disks carried by the driven shaft, washers, pins engaging the washers and the case for locking the washers against rotation and means for clamping the friction-disks and washers together and against the case to lock the case to the driven shaft.

812,534. PROPELLER ATTACHMENT FOR ROWBOATS. EDWARD G. WALLOP, Minneapolis, Minn. Filed Sept. 17, 1904. Serial No. 224,799.

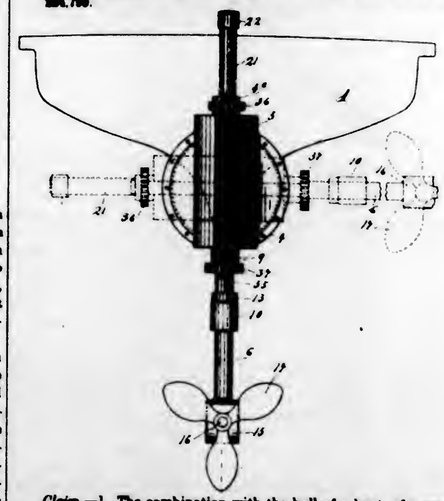

Claim.—1. The combination with the hull of a boat, of a propeller-support pivotally adjustable in an approximately vertical plane, extending transversely of the longitudinal axis of the boat and pivotally movable on an approximately vertical axis, a propeller-wheel mounted on said support, and driving connections to said propeller, operative while permitting said adjustments of said propeller-support, substantially as described.

2. The combination with the hull of a boat, of a propeller-support mounted for angular adjustments and for pivotal movements on an approximately vertical axis, a common controller or handpiece for imparting said two movements to said support, a propeller-wheel mounted on said support, and driving connections to said propeller, operative while permitting the said adjustments of said propeller-support, substantially as described.

3. The combination with the hull of a boat, of a propeller-support pivotally connected thereto for pivotal movements in an approximately vertical plane, a power-shaft extending through the pivotal connections between the said hull and the said propeller-support, an approximately vertical shaft journaled in the propeller-support, a sleeve surrounding said vertical shaft and rotatively mounted in the main body portion of said propeller-support and itself constituting a part of said propeller-support, a propeller-wheel carried by the lower end of said sleeve and geared to said vertical shaft, a handpiece or controller pivotally mounted in the upper portion of the body of said propeller-support, a counter-shaft journaled in the body of said propeller-support and provided with a pair of gears, a gear on said sleeve meshing with one of the gears of said counter-shaft, a gear connected for rotation with said handpiece or controller and meshing with the other gear of said counter-shaft, and power-transmitting connections between the said power-shaft and said vertical shaft, operative while permitting the noted adjustments of said propeller-support, substantially as described.

4. The combination with the hull of a boat, of a propeller-support having a rotary sleeve-section, a propeller having its shaft journaled in the lower portion of said sleeve-section, a power-driven shaft journaled in said sleeve-section and connected to the shaft of said propeller by a pair of intermeshing bevel-gears, a handpiece having a stem portion journaled in said propeller-support above said power-driven shaft, a counter-shaft offset from said sleeve-section and the stem of said handpiece, journaled in said propeller-support and connected both to the stem of said handpiece and to said rotary sleeve-section of said propeller-support, substantially as described.

5. The combination with the hull of a boat, of a propeller-support pivotally connected to the stern of said boat for pivotal movements in an approximately vertical plane transversely of the boat, a propeller-wheel carried by said propeller-support and movable into and out of the water by pivotal movements thereof, a drive for said propeller including a shaft extending axially through the pivotal connection between said boat and propeller-support, substantially as described.

812,535. BOX FOR HOLDING TOY GUNS AND SIMILAR TOYS. PETER R. WARREN, Brookline, Mass. Filed Jan. 5, 1905. Serial No. 239,717.

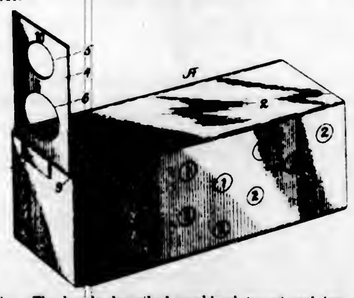

Claim.—The herein-described combined target and box comprising a tubular casing, a body adapted to slide freely within said casing and having each end formed by two parallel walls separated at their upper edges, and a target adapted to be received within the said body when not in use and to have one end inserted between the walls of either end of the box, said target having a tongue formed integral therewith and adapted to project over the outer face of the end of the box between the walls of which it is inserted, substantially as described.

812,536. COMBINED BOX AND TARGET. PETER R. WARREN, Brookline, Mass. Filed Jan. 5, 1905. Serial No. 239,718.

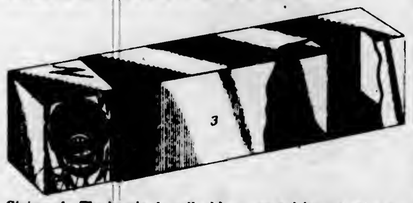

Claim.—1. The herein-described box, comprising an outer casing or shell and a body adapted to slide endwise within said casing, and having one face or side open throughout more or less of its length, an apertured section partly covering said open side of the body and having on its inner surface a flap that projects over the adjacent aperture in said section, substantially as and for the purpose described.

2. The herein-described combined box and target comprising an outer casing or shell and a body adapted to slide endwise within said casing and having one face or side open throughout the greater part of its length, a target-section extending across said open side at one end of the body of the box and having an aperture formed therein, the flap produced by forming said aperture being connected at its upper end to said target-section and extending inwardly within the body of the box, said body and casing being of such proportions that the body is adapted to lie wholly within the casing and have the target-section thereof covered and concealed by the casing.

812,537. FIRE INSULATOR AND EXTINGUISHER. ORVILLE T. WIMER, Philadelphia, Pa., assignor to Sigmund Lubin, Philadelphia, Pa. Filed Apr. 13, 1905. Serial No. 255,183.

Claim.—1. An apparatus of the class described comprising a fireproof casing, housings within said casing, a roller journaled in said housings, a second roller journaled in slots in said housings, and a lever having a movable connection with said second roller whereby the latter may be lifted into engagement with said first roller.

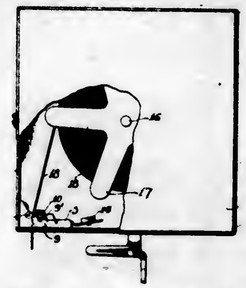

2. An apparatus of the class described comprising a fireproof casing, a reel journaled in said casing, an aperture in said casing, housings in said casing, rollers journaled in said housings, one of said rollers having spindles thereon movable in slotted supports therefor, and a broad lever extending between said housings and having inclined members for holding said rollers together.

3. An apparatus of the class described comprising a tight fireproof casing having a narrow slot therein, a pair of rollers within said casing adjacent to said slot, said slot and rollers being adapted for passing a film, a film-reel supported in said casing, and means coacting with said rollers for preventing the passage of fire to the film between said reel and rollers.

4. An apparatus of the class described comprising a tight fireproof casing having a slot therein, a pair of rollers within said casing adjacent to said slot, said slot and rollers being adapted for the passage of a film, and means coacting with said rollers for preventing the passage of fire beyond said parts into said casing, said means comprising a support having slots in which one of said rollers is adapted to reciprocate from and toward the other.

812,538. WRENCH. IGNATZ WEISNER, Mindenmines, Mo., assignor of one-fourth to Harry Evans, Burdine, Pa. Filed June 19, 1905. Serial No. 265,979.

Claim.—1. In a wrench, the combination with a stock having a jaw, of another jaw slidable on the stock, means mounted on the stock for adjusting the jaw, said means including a rack, a yoke slidably surrounding the stock and disposed transversely thereof at one end of the sliding jaw, said yoke also surrounding the rack and having an interlocking engagement therewith at one end, the other end of said yoke having a portion offset at one side of the yoke and overlying the jaw constituting an operating-head, the opposed portions of the head and jaw having seats, a spring interposed between said offset portion or head and the sliding jaw, and engaged in the seats, and inturned guide-flanges carried by the adjacent end of the sliding jaw and embracing the yoke, said yoke sliding between said flanges and the adjacent jaw.

2. In a wrench, the combination with a stock having a jaw at one end and a shank at the other end of less cross-sectional area than the stock, of another jaw slidably mounted upon the stock, a sleeve mounted on the shank and having threads on its interior face, said sleeve having a socket at one end that receives the adjacent end of the stock, a handle-grip mounted on the shank and having one end fitted in the sleeve, said grip and stock holding the sleeve against longitudinal movement on the shank, and the stock preventing the turning movement of said sleeve, an adjusting-nut threaded on the sleeve, and connections between the nut and sliding jaw.

812,539. GANG-SAW MILL. WILLIAM M. WILKIN, Erie, Pa. Filed Oct. 18, 1905. Serial No. 283,330.

Claim.—1. In a gang-saw mill, the combination of a mill-frame,

a saw-sash mounted in the upper part thereof, a crank-shaft mounted in the base of the mill-frame, a sash-operating crank in said shaft, a pitman connecting said crank with the saw-sash, a counterweight-crank in said shaft in opposition to the sash-operating crank and of less throw than the sash-operating crank, a counterweight of greater weight than the parts to be counterbalanced connected to said counterweight-crank, and a link connected to said counterweight and extending laterally therefrom to a bearing on the mill-frame, substantially as described.

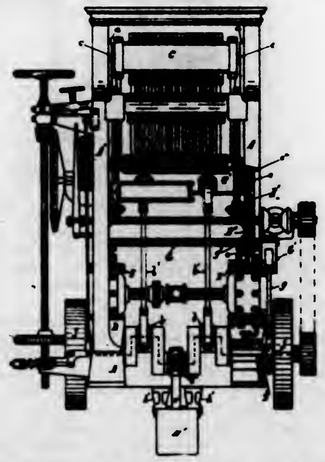

2. The combination in a gang-saw mill of, a mill-frame, a saw-sash mounted in vertical guides in the upper portion of said mill-frame, a crank-shaft mounted in the base of said frame, cranks in said shaft having a throw equal to the traverse of said saw-sash, pitmen connecting said sash and said cranks, counterweight-cranks in said shaft opposite to and having a shorter throw than said sash-cranks, counterweights on said counterweight-cranks steam-cylinders mounted above the bearings of said crank-shaft, pistons in said cylinders, piston-rods connecting said pistons and said saw-sash, valves for operating said pistons, and valve-operating mechanism adapted to operate said valves in unison, substantially as described.

3. The combination in a gang-saw mill of, a mill-frame, a saw-sash mounted on slides in vertical ways in the upper portion of said frame, a crank-shaft mounted in suitable bearings in the base of said mill-frame, one or more cranks therein adapted to be connected to said sash, and one or more opposing cranks, of less throw than the sash-cranks, adapted to operate counterweights, pitmen connecting said sash-cranks to said saw-sash, counterweights of greater weight than the parts to be balanced, rigid arms on said counterweights connecting them with the counterweight-cranks, and pulleys mounted on said crank-shaft, substantially as described.

4. The combination in a gang-saw mill, of a mill-frame, vertical ways in the upper part of said frame, a saw-sash mounted in said vertical ways, a crank-shaft mounted in the base of said frame, one or more cranks in said crank-shaft having a throw equal to the traverse of the saw-sash, and one or more cranks therein opposite to and of less throw than said sash-cranks, counterweights of greater weight than the parts to be counterbalanced secured to said counterweight-cranks by means of rigid arms, links pivoted to said counterweights and to bearings on the mill-frame, steam-cylinders mounted upon supports over the bearings of said crank-shaft, pistons in said cylinders, piston-rods connecting said pistons directly to said saw-sash, valves on said steam-cylinders for operating said pistons, stems connected to said valves, a rock-shaft mounted in said frame, levers on said rock-shaft connected to said valve-stems, a lever on said rock-shaft adapted to rock said shaft, an eccentric mounted on said crank-shaft, a collar embracing said eccentric, and an eccentric-rod connecting said collar and rock-shaft-operating lever, substantially as described.

5. In a gang-saw mill, a mill-frame, a saw-sash mounted in the upper part thereof, a crank-shaft mounted in the base of the mill-frame, sash-operating cranks in said shaft, pitmen connecting said cranks with the saw-sash, a counterweight-crank in said shaft in opposition to the sash-operating cranks, a counterweight, a rigid arm on said counterweight connecting it with the counterweight-crank, and a link pivoted to said counterweight and extending laterally therefrom to a bearing on the mill-frame, substantially as described.

812,540. **AUTOMATIC CAR-COUPLING.** DAVID M. WILSON, near Maynardville, Tenn., assignor to Kosciusko Hamilton, Washington, D. C. Filed Sept. 27, 1904. Serial No. 226,348.

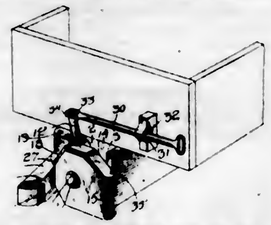

Claim.—1. A car-coupling including draw-timbers, each timber having a groove formed in its inner face for alinement one groove with the other to form a bore, means for securing the draw-timbers together, draw-bars arranged in spaced alinement in said bore, a spring disposed between the inner ends of said draw-bars, a fixed jaw secured to the outer end of one of said draw-bars, a pivoted jaw mounted upon one of said timbers adjacent said fixed jaw, and a lever for operating said jaws.

2. In a car-coupling, a car, draw-timbers secured to the bottom of the car and projecting beyond one end of the car, each timber having a longitudinal groove in its inner face for coöperation one groove with the other to form a bore, draw-bars arranged in spaced alinement in said bore, a spring arranged between the inner ends of the said draw-bars, a fixed jaw mounted upon the outer end of one of said bars, a pivoted jaw mounted adjacent said fixed jaw, and means passed through the projecting end of said timbers for operating said jaws.

812,541. **DEEP-BORING APPARATUS.** WLADYSLAW WLODARCZYK, Borislaw, Austria-Hungary. Filed May 23, 1905. Serial No. 261,703.

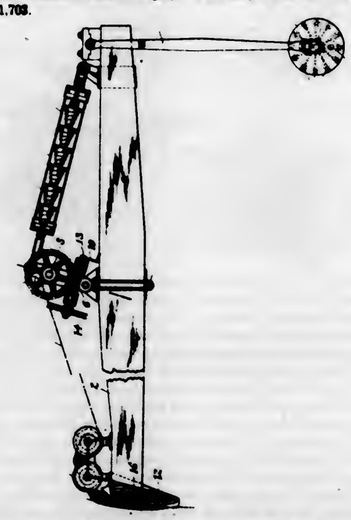

Claim.—1. A deep-boring apparatus comprising a rocking beam, a boring-tool chain, a pivoted chain-guide lever and a spring attached to the free end of the pivoted lever, substantially as described.

2. A deep-boring apparatus comprising a rocking beam, a boring-tool chain, a pivoted chain-guide lever, and a spring controlling the lever and mounted on the beam, substantially as described.

3. A deep-boring apparatus comprising a rocking beam, a boring-tool chain, a pivoted chain-guide lever mounted on the beam, and a spring controlling the lever and mounted on the beam, substantially as described.

4. A deep-boring apparatus comprising a rocking beam, a chain, a pivoted chain-guide lever, a spring controlling said lever and mounted on the beam and a chain-winch, substantially as described.

5. A deep-boring apparatus comprising a rocking beam, a chain, a winch and a chain-guiding head on the beam, said head having means for guiding the chain through itself in a sinuous path, substantially as described.

6. A deep-boring apparatus comprising a rocking beam, a chain, a chain-guide lever mounted on the beam, elastic means connecting the lever and the beam and a chain-winch mounted on the lever, substantially as described.

7. A deep-boring apparatus comprising a rocking beam, a chain, a pivoted chain-guide lever, a spring controlling said lever, and a chain-winch mounted on the lever, substantially as described.

812,542. **ATTACHMENT FOR KEYBOARD-MACHINES.** EMIL V. BEALS, Boston, Mass. Filed Sept. 25, 1901. Serial No. 76,507.

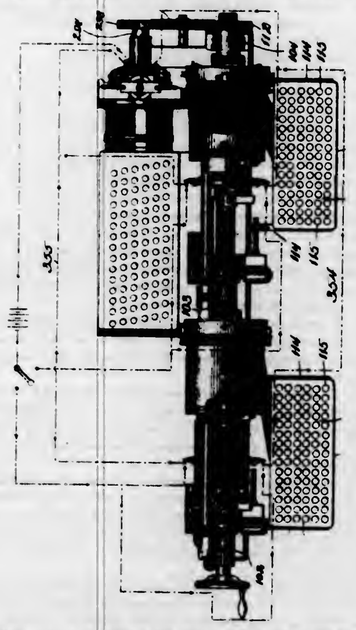

Claim.—1. A machine of the character described comprising a plurality of key-actuated composing mechanisms, and mechanism adapted to coact with any one of said composing mechanisms to operate the keys of a keyboard.

2. A machine of the character described, comprising key-actuating mechanism, a plurality of sets of actuators, selecting mechanism for each set of actuators, and means whereby each set of actuators when selected causes the actuation of said key-actuating mechanism.

3. In combination, a machine having a keyboard and a machine of the character described comprising a composing mechanism for composing a line of matter by successive selections, and mechanisms for actuating the keys of said keyboard-machine to reproduce said line of matter after said line has been completed.

4. A machine of the character described comprising mechanism for selecting a line of actuators successively, and side by side and mechanism controlled by said actuators when the line thereof is complete for actuating the keyboard of a finger-key-actuated machine.

5. A machine of the character described comprising a keyboard, a plurality of actuators successively selected by the keys on said board, means for arranging said actuators side by side and mechanism coacting with said actuators after the selection of a line is completed for operating the keys of a finger-key-actuated machine.

6. A machine of the character described comprising mechanism for actuating the keys of a keyboard, manually-selected actuators for controlling said actuating mechanism, to cause the actuation of said keys in the order of the selection of the actuators, and provisions whereby a line or group of successively-selected actuators arranged side by side is complete before the key-actuating mechanism is operated.

7. A machine of the character described comprising mechanism for actuating the keys of a keyboard, a plurality of actuators for controlling said mechanism, and means including a plurality of keys and mechanism controlled thereby for selecting and positioning said actuators side by side in a line to represent a line of printed matter.

8. A machine of the character described comprising mechanism for actuating the keys of a keyboard, and a plurality of sets of actuators, each set having an independent control over said mechanism.

9. A machine of the character described comprising mechanism for actuating the keys of a keyboard, and a plurality of independent composing mechanisms for independently coacting with said actuating mechanism to cause the actuation of said keys in predetermined order.

10. A machine of the character described comprising a plurality of composing mechanisms, each including a plurality of manually-selected actuators, and a duplicating or key-actuating mechanism adapted to coact singly with the actuators of each composing mechanism.

11. A machine of the character described comprising a plurality of independent key-actuated selectors, a series of actuators adapted to be selected by each of the selectors, and a key-actuating mechanism adapted to coact with each series of actuators independently.

12. A machine of the character described comprising a mechanical line composed of a plurality of successively-selected actuators arrangeable into side-by-side alinement in predetermined relation, and key-actuating mechanism controlled by said actuators.

13. A machine of the character described comprising a composing mechanism including a plurality of keys, and a mechanical line of actuators arrangeable successively into a line and side by side according to the order of selection of said keys, and a key-actuating mechanism controlled by said line of actuators.

14. A machine of the character described comprising a composing mechanism including a plurality of keys, and a line of actuators each of which is under the domination of all of said keys, and key-actuating mechanism whereby said actuators may select the keys of a keyboard according to their own selection and arrangement.

15. A machine of the character described comprising a composing mechanism including a plurality of keys, and a line of rotary actuators successively positioned in order to represent a line of printed matter by said keys and key-actuating mechanism by which the keys of a keyboard may be subsequently selected according to the order of selection of said actuators.

16. A machine of the character described comprising a plurality of keys, a series of rotary actuators which are adapted to be successively positioned in order in predetermined relation to a fixed line by any one of said keys, and mechanism whereby said actuators cause the actuation of other keys in a keyboard.

17. A machine of the character described comprising a line of actuators normally free to rotate on a common axis, selecting mechanism for positioning said actuators in succession; whereby when said actuators are positioned they constitute a dummy line of matter and key-actuating mechanism controlled by said line.

18. A machine of the character described comprising a mechanical line of actuators successively prearrangeable side by side according to the will of the operator to indicate or represent a line of printed matter, and automatic mechanism whereby said actuators cause the actuation of those keys of a keyboard which correspond to the characters in said line of printed matter.

19. A machine of the character described comprising a mechanical line of actuators, an electromagnetic selector for said actuators, keys and key-circuits for effecting the actuation of said selector, and means for holding said actuators in their selected positions until the selection of any predetermined number thereof is complete.

20. A machine of the character described, comprising a series of rotatable actuators, stops arranged about the axis of said actuators so as to stop said actuators at any predetermined position, a series of keys, and a selector controlled by said keys to operate any one of the stops.

21. A machine of the character described comprising a series of rotatable actuators, stops arranged to arrest said actuators at any desired position, a selector to actuate said stops and electromagnetic mechanism for controlling said selector.

23. A machine of the character described comprising a series of rality of dummies whose parts are prearrangeable, and a plurality of

52. A machine of the character described comprising a cylin- ical selector movable in a cycle into potential coacting relation with

22. A machine of the character described comprising a series of actuators in circular form, a series of stops arranged in a circle, and a key-governed selector rotatable in proximity to said stops and adapted to operate them in any predetermined order.

23. A machine of the character described comprising a series of actuators, a series of setting-stops having their ends arranged in a circle, a rotatable carrier in proximity to said stop ends, and a key-controlled selector on said carrier for said stops.

24. A machine of the character described, comprising a plurality of independent composing mechanisms each including a dummy line adapted to be set up according to the will of the operator, a single key-actuating mechanism adapted to coact with said dummy lines, and means whereby said dummy lines can be placed in operative relation to said key-actuating mechanism only one at a time.

25. A machine of the character described, comprising a single key-actuating mechanism, a plurality of composing mechanisms, and intervening mechanisms adapted to coact with said composing mechanism for effecting the actuation of the key-actuating mechanism.

26. A machine of the character described, comprising a plurality of series of actuators adapted to be set in any predetermined relation, and a key-actuating mechanism adapted to coact with and be controlled by each of said series of actuators.

27. A machine of the character described, comprising a plurality of keys adapted to be selected and actuated in succession, by an operator, a series of actuators adapted to be selected and set in succession by said keys until a line is formed, and key-actuating mechanism controlled by said actuators in succession to depress a series of keys, whereby the last-mentioned keys are automatically actuated in the same order that the first-mentioned keys were actuated.

28. An attachment for a linotype, type-setting, matrix-making or analogous keyboard-machine, having mechanism including a plurality of separate sets of actuators and separate keyboards whereby a series of operators may independently and simultaneously set up dummy lines of matter, and one at a time cause the actuation of the keys of said machine, thereby permitting several operators to be working at a single keyboard-machine.

29. A machine of the character described, comprising an electromagnetic key-actuating mechanism, in combination with a selective line of actuators, and electrical transferring mechanism coacting with said actuators and said key-actuating mechanism.

30. A machine of the character described, comprising an electromagnetic composing mechanism, including a keyboard, and electromagnetic selectors controlled thereby an electromagnetic key-actuating mechanism and electrical connections between said mechanisms.

31. A machine of the character described, comprising a composing mechanism including a selective line of actuators arranged side by side, means for successively selecting said actuators to represent a line of printed matter, and a key-duplicating mechanism including a plurality of key-operating members whose selection and operation is controlled by the said actuators.

32. A machine of the character described, comprising a composing mechanism including a selective line of actuators adapted to be arranged side by side, means for successively selecting said actuators to represent a line of printed matter, and a mechanism including a plurality of key-operating members, and a selector for selecting and operating said members controlled by the actuators.

33. A machine of the character described comprising a composing mechanism including a plurality of actuators, each having an operative member, and means for successively selecting and controlling the positions of the members in a line to represent a line of printed matter whereby each actuator represents one character according to its position, and a mechanism including a plurality of key-operating members, and intervening mechanism controlled by the operative members of said actuators for operating said last-mentioned key-actuating members.

34. A machine of the character described comprising a composing mechanism including a line of actuators and selecting means therefor, and a key-actuating mechanism including a plurality of key-operating members, a carriage movable along the line of actuators and provisions of which a part is on said carriage, for actuating said members.

35. A machine of the character described comprising a dummy having stops as described, key-actuating members, and mechanism coacting with said stops successively to actuate said members.

36. A machine of the character described comprising a dummy having stops, as described, and selecting mechanism for positioning said stops, key-actuating members, and electromagnetic selecting mechanism for said members controlled by said dummy.

37. A machine of the character described comprising a plurality of dummies whose parts are prearrangeable, and a plurality of selecting mechanisms for said dummies, in combination with a set of key-actuating members controlled by each of said dummies.

38. A machine of the character described comprising a plurality of dummies whose parts are prearrangeable, and an independent selecting mechanism for each dummy, in combination with a series of key-actuating members, and electromagnetic mechanism controlled by each dummy for actuating said members.

39. A machine of the character described comprising a plurality of selectors, a dummy whose parts are prearrangeable, a set of key-actuating members, a set of keys corresponding to said member, and provisions whereby one of the selectors controls the parts of the dummy and the other selector is controlled by the dummy to actuate the said members, said instrumentalities being arranged and related whereby the actuation of the keys in a predetermined order effects, through the said instrumentalities, the actuation of said members in the same order.

40. A machine of the character described comprising a plurality of prearrangeable parts or members and selecting mechanism therefor including a plurality of keys, a series of electric circuits one for each key, and an electromagnetic selector governed by each circuit.

41. A machine of the character described comprising a plurality of circuits, a stationary commutator whose sections are respectively arranged in said circuits, and a rotary electromagnetic clutch having a brush which contacts with said sections respectively.

42. A machine of the character described comprising a dummy consisting of a plurality of rotary members, each having a stop; a series of stop members equal in number to said keys and arranged to engage the stops on the rotary members successively, a stationary commutator whose sections are arranged in said circuits respectively, and a rotary magnetic clutch having provisions whereby a change in any one of said circuits causes said clutch to operate a corresponding stop member and position a rotary member of the dummy.

43. A machine of the character described comprising a plurality of rotary members each having an external stop, and a series of internal notches, a stationary support provided with a spline, and means for stopping said members one by one in predetermined positions and feeding them on said spline whereby they are subsequently held against rotary motion relatively thereto.

44. A machine of the character described comprising a plurality of rotary members, a plurality of selector-slides, means for actuating said slides in any predetermined order, and means for resetting said slides.

45. A machine of the character described comprising a plurality of rotary members, means for feeding said members axially with a step-by-step movement, devices for stopping said members against rotation one by one, and selector mechanism controlling said stopping devices and said feeding means.

46. A machine of the character described comprising a plurality of rotary members, means for feeding said members axially with a step-by-step movement, devices for stopping said members against rotation one by one, selector mechanism controlling said stopping devices and said feeding means, and means for returning said members to initial position.

47. A machine of the character described comprising a plurality of rotary members, devices for stopping said members one by one against rotation, means for feeding said members in one direction including a pawl and ratchet-bar, and a screw-driven carriage for feeding said members in the opposite direction.

48. A machine of the character described comprising two synchronously-moving selectors, a series of keys controlling the operation of one selector, a series of key-actuating members for operating on the keys of a keyboard and under the control of the other selector, and operative mechanism between said selectors, said instrumentalities being arranged and combined whereby the actuation of the keys effects the operation of the key-actuating members.

49. A machine of the character described comprising a line of prearrangeable actuators, a series of key-operating members, and intervening mechanism including an operative part movable longitudinally of said line of actuators.

50. A machine of the character described having a carriage, a nut on said carriage, a rotary screw-bar, and means for longitudinally reciprocating said bar, with the effect that the carriage receives an intermittent step-by-step movement.

51. A machine of the character described comprising a carriage having a nut, a rotary screw-bar engaged with said nut, a stationary cam, a coacting cam on the screw-bar, and means for rotating said screw-bar with the effect that the coaction of the cams and the rotation of the screw-bar cause the carriage to be actuated with a step-by-step movement.

52. A machine of the character described comprising a cylindrical support, a plurality of rotary members adapted to be set in order on said support, and means for rotating said support when said members are set thereon.

53. A series of elements to be actuated selectively, a selector movable in a cycle into potential coacting relation with each of said elements in succession, and electromagnetic means to cause the coaction of said selector with any of said elements when in such coacting relation.

54. A series of movable elements to be actuated selectively, a selector adapted to mechanically move said elements and movable in a cycle into potential coacting relation with each of said elements in succession, and electromagnetic means to cause the coaction of said selector with any of said elements when in such coacting relation.

55. A series of movable elements, a selector moving in potential coacting relation with said elements for effecting the actuation of said elements in any predetermined order, and electromagnetic means to cause the coaction of said selector with any of said members.

56. A series of members, a selector movable into coacting relation with each of said members in succession, and electromagnetic mechanism including a clutch adapted to produce the coacting relation of said selector with any of said members.

57. A circularly-disposed series of members to be actuated selectively, a selector mounted to revolve into potential coacting relation with each of said elements in succession, and means to cause the coaction of said selector with any of said elements when in such coacting relation.

58. A circularly-disposed series of selective elements, a selector revoluble into potential coacting relation with said elements in succession, an electromagnetic clutch revoluble with said selector to cause the actuation thereof and the consequent operation of an element, an electric circuit for said clutch, and a circuit-controller.

59. A circularly-disposed series of selective elements, a selector revoluble into potential coacting relation with said elements successively and also rotatable into coaction with said elements, and means for causing the rotation of said selector into such coaction with any of said elements.

60. A circularly-disposed series of selective elements, a selector revoluble into potential coacting relation with said elements successively and also rotatable into coaction with said elements, a rotatable revoluble clutch normally disconnected from said selector, and means whereby said clutch causes the rotation of said selector into coaction with any of said elements.

61. A circularly-disposed series of selective elements, a concentric gear, a pinion mounted to revolve and rotate in mesh with said gear, a selector mounted to revolve with said pinion into potential coacting relation with each of said elements, and means for clutching said selector with said pinion to cause said selector to rotate with said pinion and actuate an element.

62. A circularly-disposed series of selective elements, a concentric gear, a pinion mounted to revolve and rotate in mesh with said gear, a selector mounted to revolve with said pinion into potential coacting relation with each of said elements, and electromagnetic mechanism including an electromagnetic clutch for clutching said selector to said pinion at will.

63. A series of selective elements, a selector movable in a cycle into potential coacting relation with said elements in succession, a series of controlled electric circuits for effecting the coaction of the selector, with any of said elements, a circuit-controller synchronized with said selector for rendering each of said circuits in succession, and means for operating said circuits.

64. A series of selective elements, a selector movable in a cycle into potential coacting relation with said elements in succession, a series of controlled electric circuits for effecting the coaction of the selector, with any of said elements, means for operating the circuits, and a controller comprising a fixed commutator whose segments are included in the respective circuits, and revolving brush synchronized with the selector and adapted to render each of said circuits operative in succession.

65. A series of selective elements, a selector movable in a cycle into potential coacting relation with said elements in succession, a series of controlled electric circuits for effecting the coaction of the selector, with any of said elements, means for operating the circuits, and a controller comprising a fixed commutator whose segments are included in the respective circuits, a revolving brush for rendering said circuits successively operative, and gearing for effecting a synchronous revolution of the selector and the brush.

66. A series of elements to be actuated selectively, a mechanical selector movable in a cycle into potential coacting relation with said elements in succession, electromagnetic means to produce the coaction of said selector with any of the elements, a series of circuits for operating said means, and a controller for said circuits synchronized with the selector by a positive mechanical connection.

67. A circularly-disposed series of elements to be actuated selectively, a selector mounted to revolve concentrically therewith and to rotate into coaction with any of said elements, clutch parts adapted to have a frictional engagement and a relative sliding movement when frictionally engaged, one of said parts being continuously rotated, and the other connected to the selector, means to connect and disconnect said clutch parts, and an automatic stop acting to position the selector while the clutch parts are engaged.

68. A circularly-disposed series of elements to be actuated selectively, a concentric gear, a pinion to revolve and rotate in mesh with said gear and having a clutch part, a selector mounted to revolve with said pinion into potential coacting relation with each of said elements in succession, and having a complemental clutch part, the said clutch parts when connected causing the selector to reproduce the rotary movement of the pinion, whereby the said elements are actuated, and means to connect and disconnect the clutch parts.

69. A circularly-disposed series of elements to be actuated selectively, a concentric gear, a pinion mounted to revolve and rotate in mesh with said gear and having a clutch part, a selector mounted to revolve with said pinion into potential coacting relation with each of said elements in succession, and having a complemental clutch part, the said clutch parts when connected causing the selector to reproduce the rotary movement of the pinion, whereby the said elements are actuated, means to normally disconnect the clutch parts, and an electromagnet mounted to revolve with the selector and pinion and adapted to connect the clutch parts.

70. A machine of the character referred to, comprising a mechanical line whose parts are selectively prearrangeable side by side, selecting mechanism for said line, a register controlled by said selecting mechanism for denoting aggregate thicknesses of the characters represented by the parts in said line, and means for effecting a variable movement of said register.

71. A machine of the character referred to, comprising a mechanical line of selective rotary members, and an indicator for automatically indicating the presence of said members as they are added to the line.

72. A machine of the character referred to comprising a mechanical line of selective members representing the characters in a font of type, means for selecting and placing said members side by side in a line, and an indicator mechanism controlled by said selector and including a scale and means for indicating on said scale the width of each character as the member corresponding thereto is added to the line.

73. A machine of the character referred to comprising a mechanical line of selective members representing the characters in a font of type, means for selecting and placing said members in a line, an indicator, and a plurality of devices controlled by said selecting means and each adapted to operate said indicator.

74. A machine of the character referred to comprising a mechanical line of selective members representing the characters in a font of type, means for selecting and placing said members in a line, an indicator, a plurality of devices corresponding to the characters of different widths, and means for actuating said devices and thereby operating said indicator, as the said members are selected and added to the line.

75. A machine of the character referred to comprising a mechanical line of selective members representing the characters in a font of type, means for selecting said members, means for placing said members side by side in a line, and a line-indicator controlled by said selecting means and operated by said placing means.

76. A machine of the character referred to comprising a mechanical line of selective members representing the characters in a font of type, means for selecting and placing said members in a line, an indicator, a plurality of independent cam-couplers for operating said indicator, and means for actuating said cam-couplers as said members are added to the line.

77. A machine of the character described comprising a mechanical line of selective elements adapted to be placed one by one into set position side by side in a single row, selector mechanism for said elements, and an escapement mechanism for said elements controlled by said selector mechanism.

78. A machine of the character described comprising a mechanical line of selective rotary elements, selector mechanism and an electromagnetic mechanism for feeding said element into set position.

79. A machine of the character described comprising a mechanical line of selective elements, selector mechanism and an escapement mechanism for locating said elements in the selected positions.

80. A machine of the character described comprising a mechanical line of rotary selective elements, selector mechanism for selecting the positions of said elements, and escapement mechanism including an electromagnetically-controlled clutch.

81. A machine of the character described comprising a support, a series of selective elements on said support, a selector mechanism for said elements, including a rotary member, an operating member, and means for permitting said operating member to rotate with said rotary member upon the operation of the selector mechanism.

82. A machine of the character described comprising a support, a series of selective elements on said support, a selector mechanism for said elements, and an escapement mechanism for feeding said elements, including a cam, a wheel frictionally clutched thereto, and an electromagnetic stop for said cam controlled by the selector mechanism.

83. A machine of the character described comprising a series of rotary selective elements, electromagnetic selector mechanism for selecting the position of each element, and mechanism for feeding said elements when selected, including an escapement, an electromagnetic stop under control of the selector mechanism for controlling said escapement, and means whereby said escapement mechanism is operated after the element is selected.

84. A machine of the character described comprising a cam, a rotary member clutched thereto, and an electromagnetic stop for said cam, said stop including a compound electromagnet having its armatures operatively connected together.

85. A machine of the character described having an escapement including an electromagnetic stop consisting of oppositely-arranged magnets of different strengths, armatures connected together to be attracted in opposite directions, means for temporarily closing the circuit through the stronger magnet, and means for mechanically moving the armature of said weaker magnet to operative position.

86. A machine of the character described comprising a series of rotary selective elements, adapted to be set in a line, an escapement therefor including a rotary member, an electromagnetic stop, and a plurality of key-controlled circuits each of which controls said electromagnetic stop.

87. A plurality of rotary members prearrangeable selectively, a cylindrical support on which said members are rotatively mounted, and an inner cylinder on which said support is longitudinally movable, said inner cylinder having means for holding said members against independent rotation.

88. A plurality of rotary members prearrangeable selectively, a cylindrical support on which said members are free to rotate, an inner cylinder on which said support is longitudinally movable, said cylinder having means for holding said members against independent rotation, means for feeding said support, and means for rotating said cylinder and support.

89. A plurality of rotary members prearrangeable selectively, a cylindrical support on which said members are free to rotate, an inner cylinder on which said support is longitudinally movable, said cylinder having means for holding said members against independent rotation, a rotary shift on which said cylinder is mounted, and a clutch between said shift and said cylinder.

90. A plurality of selectively prearrangeable rotary members, each having a stop, a series of slides arranged in a cycle, a selector movable in potential coacting relation with said slides in succession, and means for effecting the coaction of said selector with any one of slides to cause it to engage the stop of a rotary member to position the latter.

91. A plurality of selectively prearrangeable rotary members, each having a stop, a series of slides arranged in a cycle, a selector movable in potential coacting relation with said slides in succession, means for effecting the coaction of said selector with any one of slides to cause it to engage the stop of a rotary member to position the latter, and means for resetting said slides.

92. The combination with a support, of a selector-slide having a shoulder resting on one wall of said support, and a spring bearing against another wall of said support, whereby a longitudinal movement of said slide disengages said shoulder and permits the spring to act.

93. A selective element adapted to form a part of a variable mechanical line and consisting of a ring having a disappearing or movable stop.

94. A selective element adapted to form a part of a variable mechanical line and consisting of a ring having a spring-pressed stop which may be depressed substantially flush with the periphery of said ring.

812,543. **FLOOR-FLANGE FOR WATER-CLOSET BOWLS.** ARCHIBALD BUCHANAN, Jr., New York, N. Y. Filed Apr. 19, 1905. Serial No. 256,376.

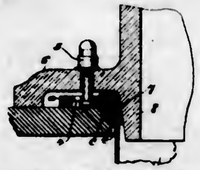

Claim.—1. A water-closet floor-flange having a dishing collar, the lower portion of whose inner surface is offset or depressed and into which the upper end of the soil-pipe is to be received and bent over and then secured by solder.

2. A floor-flange for soil-pipe connections for water-closet bowls, having a central depending collar provided at its inner lower edge with a cut-away portion.

3. A floor-flange for soil-pipe connections for water-closet bowls having a central integral depending collar whose inner surface is concave and provided at its inner lower edge with a cut-away portion.

4. A floor-flange for soil-pipe connections for water-closet bowls provided with series of slots for connections respectively to the slab and closet-bowl and having a central integral depending collar whose inner surface is concave and provided at its inner lower edge with a peripheral cut-away portion.

5. A floor-flange for soil-pipe connections for water-closet bowls, having a central integral depending collar whose inner surface is concave and provided at its inner lower edge with a peripheral cut-away portion adapted to receive the upper end of the soil-pipe in such a manner that the gasket employed to form the joint between the floor-flange and the closet-flanges will completely cover the joint between the floor-flange and the soil-pipe and extend between the same and the said closet-flanges.

6. A water-closet floor-flange having a central dishing collar, the inner surface of which inclines downward and upon the lower portion of which surface the outwardly-bent-over upper end of the soil-pipe is received and secured by solder which also overlies sufficient of the surface of the collar and pipe as to make a continuous surface upon which surface and over which union the gasket extends.

812,544. **CENTRIFUGAL LIQUID-SEPARATOR.** ALGOT L. CHRISTENSON, Stockholm, Sweden. Filed Nov. 3, 1904. Serial No. 231,306.

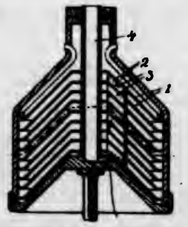

Claim.—1. The combination with a centrifugal separating-bowl and a liner therein consisting of conical plates superposed on one another, of walls extending axially through the bowl and being placed obliquely in relation to a radius, and means for introducing the full-milk in front of the said walls in relation to the direction of rotation of the bowl, substantially as and for the purpose set forth.

2. The combination with a centrifugal separating-bowl and a liner therein consisting of conical plates superposed on one another, of imperforate walls extending axially through the bowl and intersecting the liner at the inner part of the same and being placed obliquely in relation to a radius, and means for introducing the full-milk in front of the said walls in relation to the direction of rotation of the bowl, substantially as and for the purpose set forth.

3. The combination with a centrifugal separating-bowl and a liner therein consisting of conical plates superposed on one another the said plates having notches at their inner parts forming axially-running distributing-channels, of imperforate walls limiting the rear sides of the said channels in relation to the direction of rotation of the bowl, the said walls being placed obliquely in relation to a radius, and means for introducing the full-milk in front of the said walls in relation to the direction of rotation of the bowl, substantially as and for the purpose set forth.

4. The combination with a centrifugal separating-bowl and a liner therein consisting of conical plates superposed on one another, the said plates having notches at their inner parts forming together axially-running distributing-channels, of imperforate ribs on said plates placed at the rear sides of said notches in relation to the direction of rotation of the bowl and in alinement with each other so as to form together with the intermediate edges of the plates walls extending axially through the bowl, and means for introducing the full-milk in front of the said walls in relation to the direction of rotation of the bowl, substantially as and for the purpose set forth.

5. The combination with a centrifugal separating-bowl and a liner therein consisting of conical plates superposed on one another, of a central inlet-pipe having longitudinal wings, imperforate walls intersecting the liner at the inner part of the same and extending outward from the outer edges of the said wings obliquely to a radius, and means for introducing the full-milk in front of the said walls in relation to the direction of rotation of the bowl, substantially as and for the purpose set forth.

812,545. **PRINTING-PRESS.** THOMAS G. CLARIDGE and THOMAS A. RANDALL, Plainfield, N. J., assignors to Aluminum Press Company, New York, N. Y., a Corporation of New York. Filed June 25, 1903. Renewed Sept. 6, 1905. Serial No. 277,257.

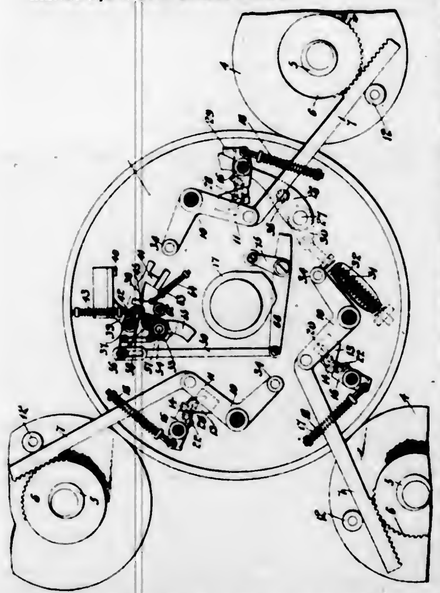

Claim.—1. In a printing-press, the combination of the form and impression cylinders, and means for relatively shifting said cylinders into and out of printing position, with a shiftable revolving cam member adapted to actuate said cylinder-shifting means, and a device interposed in the path of said cam member adapted to shift it toward and away from its axis of revolution, substantially as and for the purpose set forth.

2. In a printing-press, the combination of the form and impression cylinders, and means for shifting one of said cylinders toward and away from the other, with a shiftable cam member mounted upon and revolving with one of said cylinders and adapted to actuate said cylinder-shifting means, and a shiftable device interposed in the path of the cam member and adapted to shift it toward and away from its axis of revolution, substantially as and for the purpose set forth.

3. In a printing-press, the combination of the form and impression cylinders, and means for shifting one of said cylinders toward and away from the other, with a cam member mounted upon one of said cylinders and adapted to be shifted toward and away from its axis of revolution, manually-controlled means interposed in the path of the cam member for shifting its position, and means for retaining the cam member in either shifted position, substantially as set forth.

4. In a printing-press, the combination of the form and impression cylinders, and means for shifting one of said cylinders toward and away from the other, with a cam member mounted upon one of said cylinders and adapted to be shifted toward and away from its axis of revolution, manually-controlled means interposed in the path of the cam member for shifting its position, and means for retaining the cam member in either shifted position, substantially as set forth.

5. In a printing-press, the combination of the form and impression cylinders, and means for shifting one of said cylinders toward and away from the other, with a shiftable cam member mounted upon and revolving with one of said cylinders and adapted to actuate said cylinder-shifting means, a shiftable device interposed in the path of said cam member and adapted to shift it toward and away from its axis of revolution, means for retaining said device in either of its shifted positions, and manually-operated means for shifting said device, substantially as set forth.

6. In a printing-press, the combination of the form and impression cylinders, and means for shifting one of said cylinders toward and away from the other, with a shiftable cam member mounted upon and revolving with one of said cylinders and adapted to actuate said cylinder-shifting means, means for retaining the cam member in either of its shifted positions, a shiftable device interposed in the path of said cam member and adapted to shift it toward and away from its axis of revolution, means for retaining said device in either of its shifted positions, and manually-operated means for shifting said device, substantially as set forth.

7. In a printing-press, the combination of the form and impression cylinders, a revolving cam member, mechanisms operatively controlled by the cam member to move the form-cylinders into and out of printing position, means for changing the operative position of the cam member with relation to the form-cylinder-moving mechanisms, and automatic means for locking the form-cylinder-moving mechanisms when the form-cylinders are moved into printing position.

8. In a printing-press, the combination of the form and impression cylinders, means for moving said form-cylinders into and out of printing position, means for locking said mechanisms when the form-cylinders are in the printing position, and operating means carried by the impression-cylinder adapted to first release the said locking means and then actuate the form-cylinder-moving mechanisms, as set forth.

9. In a printing-press, the combination of the form and impression cylinders, means for moving said form-cylinders into and out of printing position, automatic hooks for locking said mechanisms when the form-cylinders are in their printing position, and means carried by the impression-cylinder for releasing said hooks and operating the means for moving the form-cylinders, substantially as set forth.

10. In a printing-press, the combination of the form and impression cylinders, devices for moving said form-cylinders into and out of printing position, spring-actuated means for locking said devices when the form-cylinders are in printing position, a cam member on the impression-cylinder adapted to release said locking means, and a governing device interposed in the path of the cam member to shift said cam member to operatively control the form-cylinder-moving devices and the means for locking said devices.

11. In a printing-press, the combination of the form and impression cylinders, means for moving said form-cylinders into and out of printing position, a cam member on the impression-cylinder, a governing-shoe interposed in the path of the cam member, means for shifting said governing-shoe to control the operative relation of the cam member with the cylinder-moving means, and means for rendering inoperative the means controlling the governing-shoe when the cam member closely approaches the governing-shoe.

12. In a printing-press, the combination of the impression-cylinder, a cam member carried thereon, a device interposed in the path of said cam for shifting said cam member toward and away from its axis of revolution, means controlling the said device, and means for momentarily rendering inoperative the means for controlling said device, when the cam member on the cylinder closely approaches said device.

13. In a printing-press, the combination of an impression-cylinder and a plurality of form-cylinders, means operatively engaging

said form-cylinders to move them into and out of printing position, a cam member on the impression-cylinder, a governing device adapted to shift the operative position of said cam member, and oscillating devices connected to the means for moving the form-cylinders said oscillating devices being controlled by the cam member.

14. In a printing-press, the combination of the form and impression cylinders, two independent throw-out mechanisms operating upon the opposite ends of one of said cylinders, controlling cam members at each end of said cylinder operatively connected, and means for operatively controlling said cam members to operate the throw-out mechanisms.

15. In a printing-press, the combination of an impression-cylinder, a plurality of form-cylinders, independent throw-out mechanisms for said form-cylinders, a common controlling-cam effecting the operation of said throw-out mechanisms, and a governing device adapted to change the operative position of said cam with relation to the throw-out mechanisms as set forth.

16. In a printing-press, the combination of the form and impression cylinders, independent throw-out mechanisms operating at opposite ends of the impression-cylinder, and a common controlling mechanism adapted to operate the independent throw-out mechanisms and cause them to be simultaneously operated at both ends of the impression-cylinder as set forth.

17. In a printing-press, the combination of the form and impression cylinders, means for moving said form-cylinders into and out of printing position, actuating-levers included in said cylinder-moving means, a shiftable cam member mounted upon and rotating with the impression-cylinder and formed with inner and outer working cam-faces which are adapted to engage and operate said levers, one of said cam-faces being active in each of the shifted positions of the cam member, and means for shifting said cam member toward and away from its axis of revolution, substantially as set forth.

18. In a printing-press, the combination of the form and impression cylinder, cylinder-moving mechanisms operating upon the form-cylinders and including pivotally-mounted actuating-levers, automatic hooks adapted to engage said levers for locking them against movement when the form-cylinders are in printing position, and a shiftable cam member provided with a part which is adapted to disengage said hooks from said levers and with cam-faces which are adapted to engage and actuate said levers after they are released from said hooks, substantially as set forth.

19. In a printing-press, the combination of the form and impression cylinders, means for moving the form-cylinders into and out of printing position, actuating-levers included in said cylinder-moving means, automatic hooks adapted to engage said levers, and lock them against movement when the cylinders are in printing position, a spring-sustained tripper on each of said locking-hooks arranged to move the hook when pressure is applied to it in one direction and to yield without affecting the hook when pressure is applied to it in the opposite direction, and a shiftable cam member mounted upon and revolving with the impression-cylinder and adapted to operate upon said hook-trippers and upon said levers of the cylinder-moving means, substantially as set forth.

20. In a printing-press, the combination of the form and impression cylinders, means for moving the form-cylinders into and out of printing position, actuating-levers included in said cylinder-moving means, spring-actuated hooks, shoulders upon said levers engaged by said hooks, a tripper pivotally mounted on each of said hooks, a stop-lug upon each hook supporting the tripper against movement in the one direction, a spring acting upon said tripper to hold it in engagement with said stop-lug, and a revolving cam member operating upon said tripper and upon said lever, substantially as set forth.

21. In a printing-press, the combination of the form and impression cylinders, means for moving the form-cylinders into and out of printing-position, and a shiftable cam member adapted to actuate said cylinder-moving means, with a shiftable governing-shoe mounted in the path of the cam member and formed with two cam-surfaces, one of which is adapted to engage a part of the cam member for actuating it in each of the shifted positions of the governing-shoe, and means for shifting the position of said shoe, substantially as set forth.

22. In a printing-press, the combination of the form and impression cylinders, means for moving said form-cylinders into and out of printing position, a movable cam member adapted to actuate said cylinder-moving means, with a shiftable governing-shoe supported in the path of the cam member and adapted to shift its position, and manually-operated controlling means so constructed and arranged that its successive operating strokes will move the governing-shoe alternately into its different shifted positions, substantially as set forth.

23. In a printing-press, the combination of the form and impression cylinders, means for moving said form-cylinders into and out of printing position, a movable cam member adapted to actuate said cylinder-moving means, with a shiftable governing-shoe supported in the path of the cam member and adapted to shift its position, a spring tending to throw said governing-shoe into one position, a latch adapted to retain said governing-shoe in its opposite shifted position against the tendency of said spring, and manually-operated controlling means suitably connected with said shoe and said latch, substantially as set forth.

24. In a printing-press, the combination of the form and impression cylinders, means for moving said form-cylinders into and out of printing position, a movable cam member adapted to actuate said cylinder-moving means, with a shiftable governing-shoe supported in the path of the cam member and adapted to shift its position, a spring tending to hold said shoe in one position, manually-operated controlling means adapted to move the shoe into its opposite position, a latch adapted to retain the shoe in said opposite position, a controlling-cam provided with a ratchet-wheel, a part on said latch engaging said cam, and an oscillating pawl engaging said ratchet-wheel and suitably connected with the manually-operated controlling means, substantially as set forth.

25. In a printing-press, the combination of the form and impression cylinders, means for moving said form-cylinders into and out of printing position, a movable cam member adapted to actuate said cylinder-moving means, with a shiftable governing-shoe supported in the path of the cam member and adapted to shift its position, manually-operated controlling means suitably connected with said controlling-shoe for shifting its position, and a cam rotating with the impression-cylinder and adapted to engage a part upon the manually-operated controlling means to prevent the operation of the controlling means during a certain period of the operation of the machine, substantially as and for the purpose set forth.

812,546. POT-RACK. ELLIS B. CLOSINGER. Hughes Springs, Tex. Filed May 20, 1905. Serial No. 261,366.

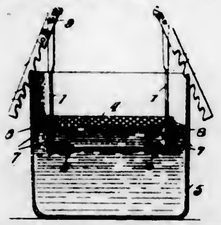

Claim.—1. In a supporting device of the class described, the combination of a supporting-arm adapted to be attached to a crate or like, a bar pivoted between its ends to said supporting-arm, and a handle at the upper end of the bar, the lower portion of the bar being notched longitudinally thereof.

2. In a device of the character described the combination of a supporting member having its lower end bent at an angle thereto and provided with a perforation for the reception of a bolt or rivet and having a series of similar perforations above the bent portion for attaching it to the various depths of scalding-crates or cooking-pans, and a bar pivoted to the upper end of the supporting-arm and provided with a plurality of notches.

3. In a device of the character described the combination of a pair of supporting members having attaching means at their base, a transverse rod connecting their upper ends, and a bar pivoted on the transverse rod and provided with a plurality of notches.

4. In a device of the character described the combination of a pair of supporting members having attaching means at their base, a transverse rod connecting their upper ends, a pair of bars pivoted thereon having two of their corresponding ends connected by a handle and provided longitudinally with a plurality of notches.

5. In a supporting device in the class described, the combination of supports adapted to be arranged at opposite sides in a vessel, each support embodying an arm adapted to be attached at its lower end portion to a crate or the like, and a bar movably secured to the upper portion of each arm and having its lower portion notched longitudinally thereof, the notched portion of the bar being adapted to engage the sides of the vessel as specified.

812,547. BICYCLE-SUPPORT. GEORGE F. COOK, East Washington, N. H. Filed May 31, 1905. Serial No. 263,107.

Claim.—1. In a bicycle-support, a frame, a clamp secured to the frame and provided with an ear having a rectangular-shaped opening, a pin having an intermediate rectangular portion for engagement in said opening to prevent rotation of the pin, a disk mounted upon each end of the pin adjacent the said ear, each disk having a circular opening for engagement with a circular portion of said pin to permit of rotation of the disks, a leg connected to each disk for engagement with the ground to support the bicycle, and means for holding the free ends of the said legs out of contact with the ground.

2. In a bicycle-support, a frame, a clamp secured to the frame and provided with an ear having a rectangular-shaped opening therein, a pin having a rectangular intermediate portion for engagement in said opening to prevent rotation of said pin, a disk mounted for rotation upon the pin adjacent each side of the said ear, each disk having ears secured upon its outer face, a supporting-leg secured to the ears of each disk, said supporting-legs each being of sections hingedly connected together, and means upon the frame for receiving the free ends of the supporting-legs when not in supporting position.

812,548. RAIL-TIE AND RAIL-JOINT COMBINED. RUSSELL P. COOK, St. Augustine, Fla. Filed Nov. 4, 1905. Serial No. 285,812.

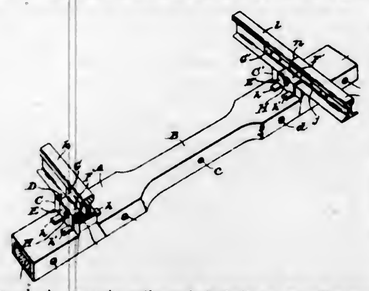

Claim.—1. A composite railway-tie including a metallic main part comprising sides and a top and provided with elevated hollow rail-chairs having bolt-holes therein, a concrete body in the main part extending into the hollow rail-chairs, bolts fitting in the bolt-holes, and pairs of clips having bolt-holes therein to receive the bolts.

2. A composite railway-tie including a metallic main part comprising sides and a top and provided with elevated hollow rail-chairs having bolt-holes therein, a plurality of stay-rods extending from side to side of the main part and secured thereto, a concrete body in the main part extending about the stay-rods and into the hollow chairs, bolts fitting in the bolt-holes, and pairs of clips having bolt-holes therein to receive the bolts.

3. A railway-tie and rail-joint combined comprising a metallic main part provided with elevated rail-chairs for supporting abutting rail ends and having horizontal bolt-holes therein, rail-fastening clips for holding the rail ends on the chairs and provided with perforated splice-bars for holding the rail ends together, the clips having bolt-holes therein, bolts fitting in the bolt-holes of the chairs and the clips, and a concrete body in the main part and extending into the rail-chairs.

4. A railway-tie including a metallic main part provided with elevated hollow rail-chairs having gage-ears at the tops thereof, a concrete body in the main part extending into the rail-chairs, clips for holding rails on the chairs, and bolts for securing the clips to the sides of the chairs.

5. A composite railway-tie including a metallic main part comprising a top provided with integral gage-ears and sides attached to the top, a concrete body in the main part, and pairs of rail-clips attachable to the top of the main part.

6. A railway-tie and rail-joint combined comprising a main part having bolt-holes therein, rail-fastening clips for holding the rail ends on the main part and provided with perforated splice-bars for holding the rail ends together, the clips having bolt-holes therein, and bolts fitting in the bolt-holes of the main part and the clips.

812,549. EXTENSION GAS-CHANDELIER. WILLIAM E. COTTON and LEVI C. MOOR, Kansas City, Mo. Filed Sept. 21, 1904. Serial No. 225,384.

Claim.—1. In an extension gas-chandelier, the combination of an outer fixed pipe having an internal annular shoulder near its lower end, an inner pipe slidably fitted in the outer pipe and having an external annular shoulder extending to the wall of the outer pipe, a cushion on the internal annular shoulder of the inner pipe arranged to receive the impact of the external shoulder on the inner pipe, a longitudinally-movable cup mounted on the end of the outer pipe and encircling the inner pipe, means for moving said cup longitudinally of the pipes, and an elastic ring inclosed within said cup bearing against the end of the outer pipe and arranged to frictionally embrace the inner pipe and hold the two pipes in their relative adjustment.

2. A pair of pipes fitting telescopically together, a cup fitting upon and having a sliding relation with the inner one and longitudinally adjustable on one end of the outer one, a combined gasket and clamp-ring fitting between the cup and the outer pipe and externally embracing the inner pipe, a lever suitably supported to prevent downward movement of the cup, and means for imparting vertical movement to said lever to press the cup upward or leave it free to move downward.

3. An extension gas-chandelier, comprising a pair of pipes fitting telescopically together, a cup adjustable longitudinally of the outer pipe, a combined gasket and clamp-ring fitting between the cup and the outer pipe and externally embracing the inner pipe, a lever supported from the outer pipe and pivotally movable only and having one end underlying the cup and its opposite end provided with a threaded passage, a rod having threads engaging said threaded passage, and means rigid with said outer pipe affording a bearing for the upper end of said rod.

812,550. COMBING AND DRAWING MACHINE. EDOUARD CREPY and LOUIS FRENAUX, Brussels, Belgium. Filed June 14, 1902. Serial No. 111,618.

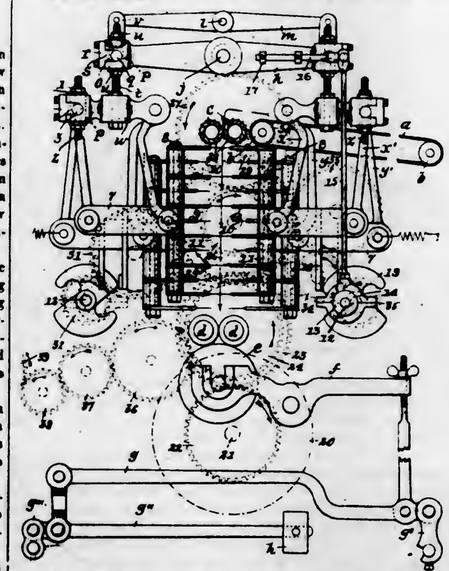

Claim.—The combination of comb structures, means for maintaining the material to be combed in operative contiguity to the combs and extended vertically, a rocking structure, means for rocking said rocking structure, links pivotally suspending said comb

structures from said rocking structure, and means for moving said comb structures to and from the material, substantially as described.

812,551. WRENCH. NAPOLEON DELISLE, St. Tite, Canada. Filed June 1, 1905. Serial No. 263,372.

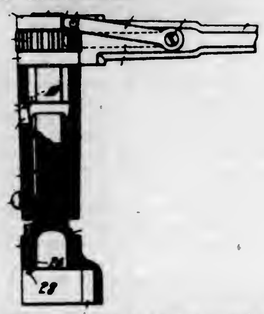

Claim.—1. In a wrench, a shank terminating in a bifurcated head portion, a rotatable stem mounted in perforations in said head, there being a recess in one end of said stem, a spring-catch secured adjacent said recess, a ratchet-wheel on said stem within said bifurcated head, pawls adapted to engage said ratchet, a removable extension having a non-circular opening longitudinally thereof, a slidable non-circular stem secured therein, a spring-catch on said non-circular stem, and a nut-socket adapted to interlock with said catch.

2. In a wrench, a shank terminating in a bifurcated head portion, a rotatable stem mounted in perforations in said head, there being a recess in one end of said stem, a spring-catch secured adjacent said recess, a ratchet-wheel on said stem within said bifurcated head, pawls adapted to engage said ratchet, a removable extension having a non-circular opening longitudinally thereof, a slidable non-circular stem secured therein, there being a channel in said stem, a set-screw in said extension adapted to bear in said channel, a spring-catch on said non-circular stem, and a removable nut-socket adapted to interlock with said catch.

812,552. AXLE-LUBRICATOR. CHARLES H. DRIVER, Tarpon Springs, Fla., assignor of one-half to William W. K. Decker, John K. Chaney, and Hayes Bigelow, Tarpon Springs, Fla. Filed Nov. 23, 1904. Serial No. 234,526.

Claim.—1. In a device of the class described, the combination of an axle having a spindle and provided with a short lubricant-passage extending from the body of the axle at a point beyond the spindle through the inner portion of the latter and terminating at the bottom thereof and at a point between the ends of the same, a stationary axle-skein rigidly secured on the spindle, one of the said parts being provided with an annular recess forming an interior chamber and communicating with the said lubricant-passage to receive the lubricant, and a sleeve of absorbent material arranged within the said chamber for controlling the flow of lubricant.

2. In a device of the class described, the combination with a rotary axle-box, of an axle provided with a spindle having an annular groove at an intermediate point to form a lubricant-chamber, said axle being also provided with a lubricant-passage extending from the said chamber through the inner portion of the spindle to a point beyond the latter, and a stationary axle-skein fitting within and having an exterior bearing-surface to receive the rotary axle-box, said axle-skein being rigidly secured on the spindle and provided at intervals with openings communicating with the said chamber.

3. In a device of the class described, the combination with a rotary axle-box, of an axle provided with a spindle having an annular groove at an intermediate point to form a lubricant-chamber, said axle being also provided with a lubricant-passage extending from the said chamber through the inner portion of the spindle to a point beyond the latter, a stationary axle-skein fitting within and having an exterior bearing-surface to receive the rotary axle-box, said axle-skein being rigidly secured on the spindle and provided at intervals with openings communicating with the said chamber, and a lubricant-receptacle mounted on the body of the axle and communicating with the lubricant-passage.

4. In a device of the class described, the combination of an axle having a spindle and provided with a lubricant-passage extending through the inner portion of the spindle to a point beyond the same and terminating at the top of the axle, a stationary axle-skein fitted on the spindle and having its inner end detachably interlocked with the body portion of the axle, said skein being provided at intervals with openings, and one of the said parts having an annular groove forming an interior annular chamber communicating with the said lubricant-passage, and an axle-nut mounted on the spindle and engaging the outer end of the skein to retain the latter in its interlocked relation with the axle.

5. In a device of the class described, the combination of an axle having a spindle provided with an annular groove located at an intermediate point on the spindle and forming a lubricant-chamber, said axle being also provided with a lubricant-passage extending through the inner portion of the spindle to a point beyond the same and communicating with the said chamber, a stationary axle-skein detachably interlocked with the body portion of the axle and provided with openings, a sleeve of absorbent material arranged within the said chamber, and an axle-nut engaging the skein and retaining the same in its interlocked relation with the axle.

6. In a device of the class described, the combination of an axle having a lubricant-passage extending from the spindle to a point beyond the same, and a stationary axle-skein arranged on the spindle and provided with openings for the discharge of the lubricant, said skein being provided at opposite sides of the openings with short grooves disposed transversely of the skein.

812,553. TYMPAN-OFFSET PAPER FOR PRINTING-PRESSES. ALFRED B. DUREY, New York, N. Y. Filed Mar. 8, 1905. Serial No. 249,055.

Claim.—1. An offset tympan paper or sheet for a printing-press, having one of its faces rendered relatively non-absorbent and its other face relatively absorbent, and having said absorbent face treated with a mineral oil.

2. An offset tympan paper or sheet for a printing-press, having a back ply of strong, hard-sized paper, and a face ply of thinner, slack-sized paper, the two plies being united and the front ply treated with a mineral oil.

3. An offset tympan paper or sheet for a printing-press, consisting of two plies felted together in their manufacture, one of said plies being of strong and relatively non-absorbent paper, and the other ply being of relatively soft, absorbent paper treated with a mineral oil.

812,554. ALKAMIN ESTERS OF PARA-AMINOBENZOIC ACID. ALFRED EINHORN, Munich, Germany, assignor to Farbwerke vorm. Meister Lucius & Brüning, Höchst-on-the-Main, Germany, a Corporation of Germany. Filed Nov. 8, 1905. Serial No. 286,360.

Claim.—1. As new products, the alkamin esters of para-aminobenzoic acid, being colorless compounds, little soluble in water, but readily soluble in alcohol, ether and benzene, of alkaline reaction on litmus, decomposed when heated with acids or alkalies with formation of para-aminobenzoic acid and an alkamin, forming salts soluble in water to a neutral solution which produces local anæsthesia without causing any irritation.

2. As a new product, the alkamin ester para-aminobenzoyl-diethylaminoethanol being a colorless compound very little soluble in water, very readily soluble in alcohol, ether and benzene, solidifying in the cold and of alkaline reaction on litmus, decomposed, when heated with hydrochloric acid or soda-lye, into para-aminobenzoic acid and diethylaminoethanol, forming a salt with one equivalent of hydrochloric acid which crystallizes from absolute alcohol in needles melting at 156° centigrade the solution of which is of anæsthetic action without causing irritation.

812,555. RAILWAY-SIGNAL. NICHOLAS EMONDS, Hilton, S. D. Filed May 5, 1905. Serial No. 258,013.

Claim.—In a railroad-signal apparatus, main rails and crossing-rails, a rock-shaft disposed between the main rails upon opposite sides of the crossing-rails, each shaft including a projection, a pivoted shaft arranged between one of the rock-shafts and the crossing, the pivoted shaft having an arm secured thereto, a vertical shaft arranged adjacent the main and crossing rails, a flexible connection between the aforesaid arm and the vertical shaft, signaling elements associated with the vertical shaft, and means constructed and arranged to operate said signaling elements when either of the rock-shafts is rocked.

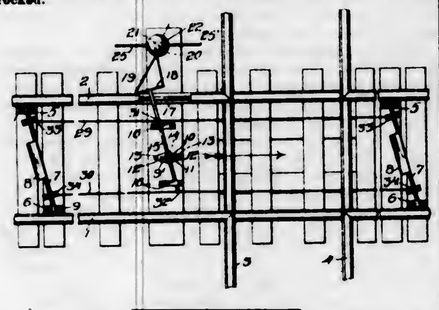

812,556. TRANSPLANTER. WILLIAM FETNER, Middletown, Ohio. Filed Sept. 5, 1905. Serial No. 277,479.

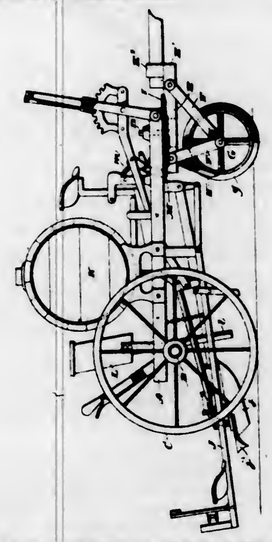

Claim.—1. In combination, a furrow-opener, and means positioned in advance of the furrow-opener for forming a groove in the ground and packing the earth at each side thereof to facilitate the formation of the furrow.

2. In combination, a furrow-opener and a flanged wheel positioned in advance of said furrow-opener.

3. In combination, a furrow-opener, and a flanged caster-wheel positioned in advance of said furrow-opener.

4. In combination, a furrow-opener, and a wheel positioned in advance thereof, said wheel having a centrally-disposed flange and flat bearing-surfaces at each side thereof.

5. In combination, a furrow-opener, means positioned in advance of the furrow-opener for forming a groove in the ground, and a fertilizer-distributer arranged to discharge into said groove.

6. In combination, a furrow-opener, a flanged wheel positioned in advance of the furrow-opener, and a fertilizer-distributer positioned in advance of the furrow-opener and arranged to discharge into the groove formed by the flanged wheel.

7. In combination, a furrow-opener, a wheel arranged in advance of said furrow-opener, said wheel being provided with a centrally-disposed flange and flat bearing-surfaces at each side thereof, and a fertilizer-distributer adapted to discharge into the groove formed by the flange of said wheel.

8. In combination, a furrow-opener, a flanged caster-wheel positioned in advance of said furrow-opener, and a fertilizer-distributer adapted to discharge into the groove formed by the flanged caster-wheel.

9. In combination, a furrow-opener, means positioned in advance of said furrow-opener for forming a groove in the ground, a fertilizer-distributer adapted to discharge into said groove, and covering means positioned in rear of said furrow-opener.

10. In combination, a furrow-opener, a flanged wheel positioned in advance of said furrow-opener, a fertilizer-distributer adapted to discharge into the groove formed by the flanged wheel, and covering-plates positioned in rear of said furrow-opener.

812,557. METHOD OF RECEIVING TELEGRAPHIC SIGNALS. STEPHEN D. FIELD, Stockbridge, Mass. Filed June 10, 1905. Serial No. 264,676.

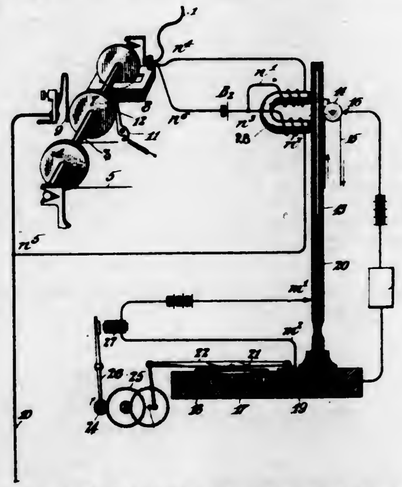

Claim.—1. The method of detecting vibratory currents of a constant periodicity which consists in subjecting a vibratory body to the influence of said currents and simultaneously gradually altering the periodicity of said body until it is in tune with that of said currents.

2. The method of signaling which consists in subjecting a vibratory body to successive impulses, and simultaneously gradually changing the periodicity of the vibratory body until its periodicity corresponds to that of the impulses.

3. The method of bringing a vibratory body into synchronism with impulses of a constant periodicity, which consists in subjecting it to the influence of said impulses, and simultaneously continuously changing the periodicity of said body from minimum to a maximum or vice versa, until its periodicity corresponds to that of the vibratory impulses, and finally automatically stopping said changes when such correspondence is obtained.

4. The method of signaling which consists in transmitting electric impulses of a fixed periodicity, receiving such impulses in a coherer which forms part of a local circuit including a magnet, and subjecting a vibratory body to the influence of said magnet and gradually changing the periodicity of said body.

5. The method of signaling which consists in receiving impulses in a coherer which forms part of a local circuit including a battery and a magnet, subjecting a vibratory body to the influence of said magnet, gradually changing the periodicity of said body and finally closing a local circuit by means of said body.

6. The method of signaling which consists of receiving impulses in a coherer, each impulse being composed of periodic currents of high frequency, establishing a local circuit through the coherer by means of said periodic currents whereby the periodic currents are transformed into simple impulses in the local circuit, and subjecting a me-

chanical vibrator having a continuously-changing periodicity to said local impulses.

7. The method of signaling which consists in initially tuning a

recesses, adjusting means coöperating with the bridge-bar, springs carried in the recesses and coacting with the bridge-bar, and folding

surrounding the same and fixed thereto, and a bulb-sheath extend-

or stud on the front end of the said lever, a lug on the said stud to en-

chanical vibrator having a continuously-changing periodicity to said local impulses.

7. The method of signaling which consists in initially transmitting high frequency waves, divided into separate impulses to a coherer, establishing a circuit including a local battery through the coherer by means of said periodic currents whereby the periodic currents are transformed into single impulses in the local circuit, subjecting a mechanical vibrator having a gradually-changing periodicity to said impulses and finally fixing the periodicity of said vibrator.

8. The method of detecting vibratory currents which consists in subjecting a vibratory body to the influence of said currents and continuously changing the periodicity of the body until it is attuned to said vibratory currents and then finally fixing the periodicity of said vibratory body.

9. The method of signaling which consists in transmitting high-frequency waves divided into impulses, transforming said waves into simple impulse-currents, transforming said currents into pulsating magnetic force of corresponding periodicity; subjecting a mechanical vibrator having a gradually-changing periodicity to said magnetic force, and finally transforming the vibrations of said mechanical vibrator into sound.

10. The method of signaling which consists in transforming electric emanations or waves separated into groups of a certain periodicity into simple impulse-currents, transforming said impulse-currents into pulsating magnetic force, subjecting a mechanical vibrator having a changing periodicity to said pulsating magnetic force, and finally fixing the periodicity of the mechanical vibrator when it is attuned to said magnetic force.

11. The method of signaling which consists in transforming electric emanations or waves into simple impulse-currents, transforming said impulse-currents into pulsating magnetic force, subjecting a mechanical vibrator having a changing periodicity to said magnetic force and finally automatically fixing the periodicity of said vibrator when it is attuned to the magnetic impulses.

812,558. **TUCK-GUIDE FOR SEWING-MACHINES.** SAMUEL FRIEDMAN, New York, N. Y. Filed Oct. 27, 1904. Serial No. 230,169.

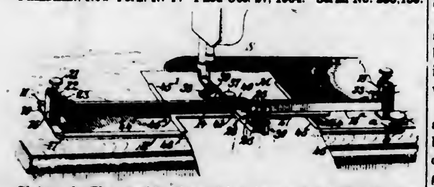

Claim.—1. The combination with a base, of a bridge-bar extending above the base, an arm projecting from the bridge-bar, a block movable upon the arm, a folding-blade carried by the block, and a folding member with which the blade coacts.

2. The combination with a base, of a bridge-bar extending above the base, an arm projecting from the bridge-bar, a block movable upon the arm, a folding-blade movable upon the block, and a folding member with which the blade coacts.

3. The combination with the base of a bridge-bar extending above the base and longitudinally thereof, a folding member mounted upon the base, a folding-blade mounted upon the bridge-bar and a retaining member attached to the bridge-bar and adjustable with respect to the folding member.

4. The combination with a base of a bridge-bar extending above the base and longitudinally thereof, an arm projecting from the bridge-bar, a folding-blade movably mounted upon the arm, a folding member attached to the base, and coacting with the folding-blade, and a retaining member movably mounted upon the arm and adjustable with respect to the folding-blade.

5. The combination with a base, of a bridge-bar extending longitudinally above the base, plates overlapping one another upon the bridge-bar to which they are secured and having guide portions, and folding members situated between the guide portions.

6. The combination with a base, of a bridge-bar extending longitudinally above the base, plates overlapping one another and being provided with slots extending longitudinally of the bridge-bar, a securing device extending through the slots and engaging the bridge-bar, guides carried by the plates, and folding members situated between the guides.

7. The combination with a base, of standards rising therefrom and having recesses, a bridge-bar extending between the standard-recesses, adjusting means cooperating with the bridge-bar, springs carried in the recesses and coacting with the bridge-bar, and folding members mounted upon the base and bridge-bar.

8. The combination with a base, of standards rising therefrom, a bridge-bar extending between the standards, locking members mounted upon the bridge-bar, means for forcing the locking members into contact with the bridge-bar and standards, and folding members mounted upon the base and bridge-bar.

9. The combination with a folding member, of a reversible supporting member having faces lying at different angles with respect to the folding member, and a folding-blade which may be mounted upon said faces of the supporting member.

10. The combination with a base, of a bridge-bar extending above the base, a folding member mounted upon the base, a block carried by the bridge-bar and having one end parallel to the folding member and one end inclined thereto, and a folding-blade attachable to either end of the block.

11. A tucking device comprising a base, coacting folding members mounted thereon, and converging guide members situated at opposite sides of said coacting folding members and adapted for contact with the edges of the work.

12. The combination with a base provided with a way, of a plate movable in the way and having spaces at its ends, a folding member carried by the plate, standards rising from the base through the plate-spaces, a bridge-bar extending between the standards, and a folding-plate mounted upon the bridge-bar.

13. The combination with a base provided with a way, of a plate movable in the way, a folding member carried by the plate, standards rising from the base, a bridge-bar extending between the standards, a folding-plate mounted upon the bridge-bar, and guides supported beneath the bridge-bar at each side of the folding elements.

14. The combination with a base provided with a way, of a plate movable in the way, a folding member carried by the plate, standards rising from the base, a bridge-bar extending between the standards, a folding-plate mounted upon the bridge-bar, guides supported beneath the bridge-bar at each side of the folding elements, and a screw extending through the bridge-bar and engaging the guides.

15. The combination with a base, of a bridge-bar extending above the base, folding members mounted upon the base and bridge-bar, and guides carried by the bridge-bar at opposite sides of the folding members, one of said guides being provided with a slot through which its companion extends.

16. The combination with a base, of a bridge-bar extending above the base, folding members mounted upon the base and bridge-bar, independently-adjustable guides carried by the bridge-bar at opposite sides of the folding members, each of said guides having a groove to receive the work, and means common to both guides for fixing their position.

17. The combination with a base, of a folding member mounted thereon, a bridge-bar extending above the base, an arm extending upon opposite sides of the bridge-bar, a folding-blade carried by the arm at one side of the bridge-bar, and a retaining member carried by the arm at the opposite side of the bar.

18. The combination with a base, of a bridge-bar supported thereon, coacting folding members, one of which is mounted on the bridge-bar, and independently-movable guide members situated at opposite sides of the folding members and having engagement with one another.

19. The combination with a base, of a bridge-bar supported thereon, coacting folding members, one of which is mounted on the bridge-bar, independently-movable guide members situated at opposite sides of the folding members, and means common to both guide members for fixing them in position.

20. The combination with a base, of coacting folding members mounted for movement along said base, and guide members situated at opposite sides of the folding members and having projections extending over the sides of the base.

812,559. **CLINICAL THERMOMETER.** WILLIAM F. FRUEHAUF, Plainfield, N. J. Filed Apr. 1, 1905. Serial No. 253,356.

Claim.—1. A clinical thermometer having a sleeve affixed thereto by means of cement, and a bulb-sheath extending beneath said sleeve into said cement.

2. The combination, with a clinical thermometer, of a sleeve surrounding the same and fixed thereto, and a bulb-sheath extending at its open end beneath said sleeve, said end being flared.

3. The combination, with a clinical thermometer, of a sleeve surrounding the same, cement interposed between said sleeve and said thermometer, and a sheath inclosing the bulb of the thermometer, and provided with a flared end disposed beneath said sleeve and embedded in said cement.

4. The combination, with a clinical thermometer, of a sleeve fixed to the same, by means of cement, at the junction of the bulb and tube portions, and provided at the end near the latter with screw-threads, a bulb-sheath extending beneath said sleeve and retained by said cement, and a tube-sheath having screw-threads engaging those of said sleeve.

5. The combination, with a clinical thermometer, of a tube-protecting sheath, a bulb-protecting sheath, a sleeve fixed to the thermometer and retaining said sheaths, and a cap attached to the tube-sheath and inclosing the bulb-sheath.

812,560. **CLINICAL THERMOMETER.** WILLIAM F. FRUEHAUF, Plainfield, N. J. Filed Apr. 1, 1905. Serial No. 253,356.

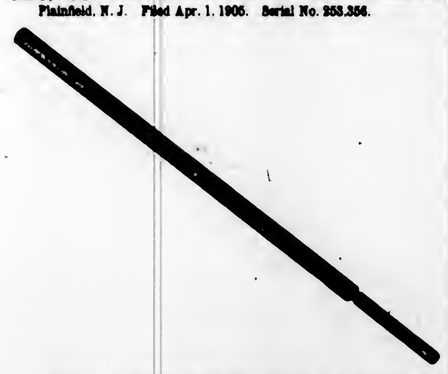

Claim.—1. A clinical thermometer having in the bulb thereof a helical partition of a width corresponding to the inner diameter of said bulb.

2. A clinical thermometer having a helical partition extending between diametrically opposite points in the side wall of the bulb.

3. In a clinical thermometer, a helically-twisted plate or partition welded at both side edges to the inner surface of the bulb.

4. In a clinical thermometer, a helically-twisted partition extending longitudinally of the bulb and welded throughout the length of both side edges to the side wall of the same.

5. A clinical thermometer having a partition attached at both side edges to the side wall of the bulb and spaced from the ends thereof.

6. A clinical thermometer having a helical partition in the bulb thereof attached at both side edges to the side wall of the same and spaced from the ends thereof.

812,561. **OVERHEAD LINE.** EMILE GIRAUD, Paris, France. Filed Oct. 31, 1903. Serial No. 179,376.

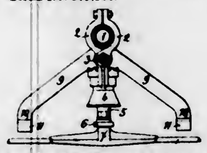

Claim.—1. In overhead trolley construction, in combination, a support, an insulating-bell carried therebelow, a line-wire, a lever pivoted at said bell moving in a horizontal plane, a pivotal connection between said line-wire and said lever, said lever having a rear extension beyond said bell, and discharge-arms carried rigidly by said support and lying in the path of said extension to be struck thereby.

2. In an insulator for high-tension lines the combination of an insulating-bell, a vertical pivot or stud fixed underneath the bell, a two-arm horizontal lever pivoted on the said stud, a vertical pivot or stud on the front end of the said lever, a lug on the said stud to receive a wire, and a V-shaped relieving-piece secured outside the bell and having laterally and downwardly extending arms and forwardly-extending and downwardly-bent parts so arranged as to be touched by the rear end of the aforesaid lever.

812,562. **BRONZING-MACHINE.** LOUIS HAENLEIN, East Rutherford, N. J., assignor to The Fuchs & Lang Manufacturing Co., New York, N. Y., a Corporation of New York. Filed Sept. 7, 1905. Serial No. 277,403.

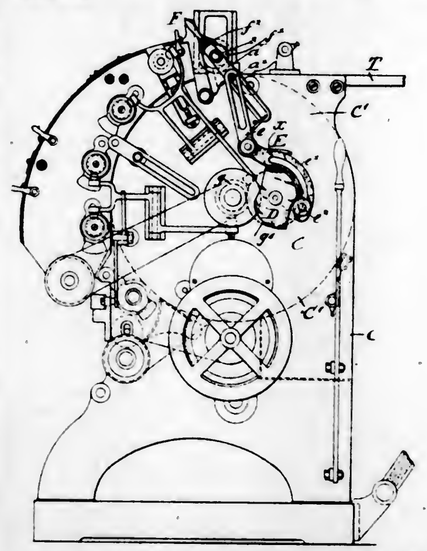

Claim.—1. In a bronzing-machine, the combination, with the shaft of the sheet-carrying cylinder, of a double cam rotated by the same, a fulcrumed lever provided with a curved slotted and graduated arm, an adjustable antifriction-roller on said arm, means for permanently maintaining said roller against said cam, an oscillating lever mounted on the shaft of the supply-roller, means for connecting the oscillating lever with the upper arm of the fulcrumed lever, and a pawl-and-ratchet mechanism operated by the oscillating lever for transmitting the proper motion to the supply-roller.

2. In a bronzing-machine, the combination, with the shaft of the sheet-carrying cylinder, of a double cam rotated by the same, a fulcrumed lever adjacent to said cam and provided with a lower curved slotted and graduated arm, an antifriction-roller adjustable in the slot of the curved lower arm, means for maintaining said antifriction-roller in permanent engagement with said cam, a supply-roller for the bronze-fountain, an oscillating lever placed on the shaft of said supply-fountain, means for connecting the lower end of the oscillating lever with the upper end of the fulcrumed lever, and a pawl-and-ratchet-wheel mechanism between the oscillating lever and the shaft of the supply-roller.

812,563. **VEHICLE-WHEEL.** MAURICE G. HEITZ-BOYER, Paris, France. Filed July 25, 1905. Serial No. 271,213.

Claim.—1. In a vehicle-wheel, the combination, with a rim, of a plurality of blocks bearing against the same, toggle-links connecting certain of said blocks at either side thereof, and spokes forming in connection with said links a plurality of toggle-joints.

2. In a vehicle-wheel, in combination, with the rim, a plurality of blocks bearing against the same, toggle-links connecting certain of said blocks, and spokes directly connected with the joints of said toggle-links.

3. The combination, with the rim and the spokes, of shoes or blocks movable longitudinally to the former and disposed toward and between the latter, and toggle-links connecting adjacent shoes and having their intermediate joints connected to the spokes.

4. In a vehicle-wheel, the combination of a rim *g*, shoes *i* bearing

against the same between the spokes, carriages or slides 6 movable longitudinally to said shoes, leaf-springs *f* connecting adjacent

2. The combination with a suitable vessel, of a lid adapted to

a predetermined elevation, and to cause said lock to automatically

Claim.—A churn-cover comprising a top having a central open-

against the same between the spokes, carriages or slides 6 movable longitudinally to said shoes, leaf-springs *f* connecting adjacent carriages, toggle-links connecting said shoes, and spokes attached to said leaf-springs intermediately between the same and to the intermediate joints of said toggle-links.

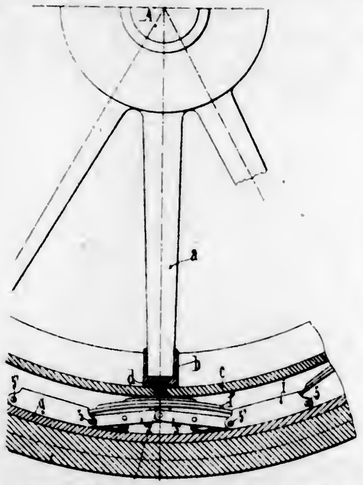

5. In a vehicle-wheel, the combination, with the inner and outer rims, of shoes disposed between said rims and bearing against the outer rim, toggle-links connecting adjacent shoes, slides movable longitudinally to said shoes, springs connecting adjacent slides, and spokes protruding into the space between said rims and bearing against the intermediate joints of said toggle-links.

6. In a vehicle-wheel, the combination with a rim having side portions, of a plurality of blocks or shoes movable longitudinally thereto and each divided longitudinally into sections, toggle-links connecting certain of said blocks or shoes, spokes forming in connection with said links a plurality of toggle-joints, and means governed by the movement of said links for laterally separating said block-sections and forcing the same against the sides of said rim.

7. In a vehicle-wheel, the combination with a rim having side walls, of a plurality of blocks or shoes bearing against said rim at the face thereof which is disposed toward the hub, each of said blocks being divided longitudinally into sections, toggle-links connecting certain of said blocks, being attached to the corresponding sections thereof, spokes forming in connection with said toggle-links a plurality of toggle-joints, transverse sleeves carried by each of said block-sections, the sleeves of the sections of the same block having coöperating cam-faces, and springs acting on the sleeve of one block-section of each block for limiting the angular movement thereof.

812,564. COOKER. WILLIAM G. HENDERSON and JOSEPH W. WEBB, Oil City, Pa. Filed July 3, 1905. Serial No. 268,200.

Claim.—1. In a cooking utensil of the character described, the combination with a vessel, of a lid adapted to fit upon said vessel, said lid having diametrically-opposed open-ended slots formed therein, a handle carried by said lid, a perforated receptacle adapted to be supported within said vessel, upwardly-extending rods carried by said receptacle, prongs carried by said rods and adapted to engage upon the sides of said slots, substantially as described.

2. The combination with a suitable vessel, of a lid adapted to fit upon said vessel, said lid having open-ended slots formed therein, a perforated receptacle adapted to be suspended within said vessel, two vertically-disposed resilient handles, one connected to said receptacle at each side thereof, said handle being formed each with a plurality of integral laterally-extending prongs engaging the lid of the vessel to adjustably suspend said receptacle within said vessel, substantially as described.

812,565. SAFETY LOCKING DEVICE FOR CRANES. CHARLES R. HINCHMAN, Cleveland, Ohio. Filed Oct. 20, 1905. Serial No. 283,646.

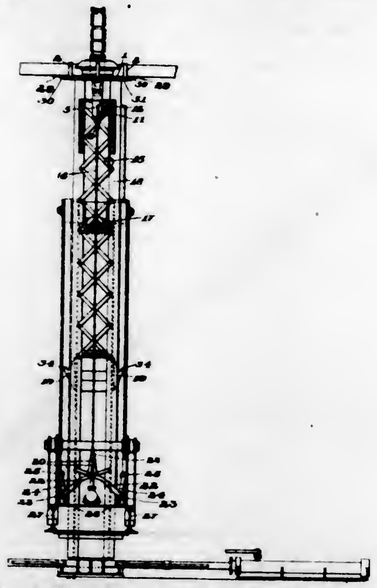

Claim.—1. The combination with a crane-mast and a vertically-movable crane-jib, of a lock for locking the crane-jib and preventing downward movement thereof, and means for automatically moving the lock into and out of its locking position.

2. The combination with a crane-mast and a vertically-movable crane-jib, of a lock for locking the crane-jib and preventing downward movement thereof, and means, actuated by the rotation of the crane, for automatically moving the lock into and out of its locking position.

3. The combination with a rotary crane-mast and a vertically-movable crane-jib, of a lock on the crane for locking the crane-jib at predetermined positions and preventing its downward movement, and means for automatically moving the lock into and out of its locking position.

4. The combination with a rotary crane having a mast and a vertically-movable jib, means for rotating the crane, and means for raising and lowering the jib, of a lock adapted to lock the jib on the mast and prevent its downward movement, means on the mast for operating the lock, means for normally automatically holding the lock in its inoperative position, and a stop adapted to contact with the lock-operating mechanism and automatically hold the lock in its operative position.

5. The combination with a crane and vertically-movable crane-jib, of a lock on the crane-jib, a stop on the crane-mast to be engaged by said lock, automatic devices on the crane-mast to operate said lock and to cause the same to automatically engage said stop and prevent the downward movement of the crane-jib, and to cause said lock to become automatically disengaged from said stop and be held in its inoperative position.

6. The combination with a crane-mast and a vertically-movable crane-jib, of a lock on the crane-jib, a stop on the crane-mast, for engagement with said lock, automatic mechanism on the crane-mast to operate said lock and to cause the same at predetermined positions of the crane-jib to automatically engage the stop and hold the jib at a predetermined elevation, and to cause said lock to automatically disengage from said stop and permit the normal movement of the crane-jib.

7. The combination with a crane-mast and a vertically-movable crane-jib, means for rotating the crane and raising and lowering the jib, of a roller or the like affixed, by means of suitable connections, to the crane-mast, a track intermittently contacting with said roller and when so contacting exerting downward pressure thereon, a guide-bar connected to said roller, a lever connected to said guide-bar, said lever engaging with a cable connected to and operating safety locking devices for locking the crane-jib at a predetermined position, and means for automatically unlocking and permitting the normal movement of the same.

8. The combination with a crane-mast and a vertically-movable crane-jib, of a bearing device connected by suitable means to the crane-mast, a track intermittently contacting with said bearing device, for operating, through intermediate connections, safety locking mechanism for locking the crane-jib to the crane-mast at a predetermined elevation and position of the crane-jib, and means for automatically unlocking the same and permitting its normal movement and operation.

9. The combination with a crane-mast and a vertically-movable crane-jib, of brackets on the crane-mast, levers connected to bars having latch-pins, the same constituting a locking mechanism and flexibly connected by a cable to automatic lock-operating devices on the crane-mast, whereby the crane-jib is held securely at a predetermined elevation when occupying certain positions in its circular travel, and means for automatically releasing the locking mechanism and permitting the normal operation of the crane.

10. In combination with a crane-mast and vertically-movable crane-jib, stops on the crane-mast, arranged to be engaged by latches on the crane-jib, means for automatically inwardly and outwardly moving said latches at predetermined times at a predetermined elevation of the crane-jib, to cause the engagement and disengagement of said stops and latches.

11. In combination with a crane-mast and vertically-movable crane-jib, stops on the crane-mast, latches on the crane-jib adapted to engage and disengage said stops and means for causing said latches to automatically engage and disengage said stops at predetermined times in the operation of the crane and at predetermined elevations and positions of the crane-jib.

12. In combination with a crane-mast and vertically-movable crane-jib, a bearing device having connection with and adapted to follow on a concentric path the circular movements of the crane-mast, a track traveled by said device and exerting downward pressure thereon when in certain arcs of its circular travel thereby through intermediate connections, causing latches on the crane-jib to automatically engage with stops located on the crane-mast when the crane-jib assumes certain positions and causing the said latches to automatically disengage said stops when out of such positions.

13. In combination with a crane-mast and a vertically-movable crane-jib, a bearing device having intermediate connection with the crane-mast, tracks traveled by the bearing device and so arranged and at such different elevations that one part of the under surfaces of said tracks shall, at certain times in the rotary movement of the crane-mast and circular travel of the roller, be in contact with the bearing device exerting downward pressure thereon, and at other times in said movement shall be out of contact therewith, a guide-bar connected to said bearing device, a lever connected to said guide-bar, said lever engaging a cable connected to and operating safety locking devices located on the crane-jib and crane-mast for holding the crane-jib at predetermined times at certain predetermined elevations.

14. In combination with a rotary crane-mast and vertically-movable crane-jib, a roller connected by suitable means to the crane-mast and following its rotary movement, said roller traveling on the under surfaces of tracks located above the roller, portions of said track-surfaces being arranged at different elevations so as to contact intermittently with said roller, a guide-bar connected to the roller and also to a lever which is adapted to engage with a counter-weighted cable, engaging links pivotally connected to levers mounted on the crane-jib which are keyed to shafts operating eyebars having latch-pins at their upper portions adapted to engage stops mounted on the crane-mast for automatically holding the crane-jib while in certain arcs of its circular travel, at a predetermined elevation, and for automatically releasing it from such engagement and permitting its normal movement and operation.

812,566. CHURN-COVER. JAMES C. HOGUE, Whitesid, Tex. Filed July 15, 1905. Serial No. 269,834.

Claim.—A churn-cover comprising a top having a central opening for the dasher-rod, the wall of the opening being extended to form a handle and an annular side depending integrally from the said top and forming, with the latter, an exterior annular shoulder for stacking purposes.

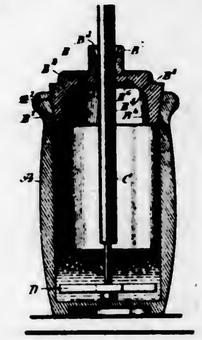

812,567. DENTAL-INSTRUMENT HOLDER. JAMES W. IVORY, Philadelphia, Pa. Filed Sept. 27, 1905. Serial No. 280,333.

Claim.—1. In an instrument-holder of the character stated, a handle, a stationary jaw thereon, a rotary shaft mounted in said handle and having a shoulder on its end, a jaw, a movable carrier therefor, said shoulder and shaft having a threaded bore with which engages a threaded portion of said carrier, means for rotating said shaft and a bearing in the handle on which said shoulder is swiveled.

2. In an instrument-holder of the character stated, a handle, a rotary shaft which is mounted in said handle, a sleeve, a neck connecting said sleeve with said handle, a jaw on said sleeve, a movable shank in said sleeve having a threaded connection with said shaft, a jaw on said shank opposite to that on said sleeve and a shoulder on said shaft, said shoulder having a bearing on said neck.

3. In a holder of the character stated, a jaw adapted to clamp an implement or instrument, a shank carrying said jaw and an eye on said shank, said eye extending entirely through said shank to receive said implement or instrument and having a wall forming a continuity of the back of said jaw.

4. In an instrument-holder of the character stated, a jaw provided with an opening which is partly right-lined and partly round to interlock the implement or instrument applied to said jaw and prevent lateral movement thereof.

5. In an implement or instrument holder of the character stated, a jaw, a shank carrying the same, a longitudinally-extending recess in the face of said jaw and an eye on said shank back of said recess.

6. In an implement or instrument holder of the character stated, a jaw, a shank carrying the same, a longitudinally-extending recess in the face of said jaw, an eye on said shank back of said recess and serrations extending laterally in opposite directions from the walls of said recess.

812,568. RAZOR-STROP. FREDERICK KAMPFE, New York, N. Y. Filed Aug. 14, 1905. Serial No. 274,057.

Claim.—1. In a razor-strop, the combination with the leather portion of the strop having opposite edges notches near one end, of a longitudinally-split tube having end notches, a cord, the free ends of which are passed into and securely held by said split tube, with the

parts of the cord passing through the end notches and also through the notches formed in the edges of the leather of the strop at opposite

said support, a catch on the rod for engaging the support, and means for

ating from a central aperture, die-carriers in said guideways, dies attached to the inner ends of said carriers, a die-head, a pipe-brace

ed to be engaged by the said brace to hold the bottom in a folded po-

parts of the cord passing through the end notches and also through the notches formed in the edges of the leather of the strop at opposite places, said tube passing through the turned-over end of the strop and means for securing the said turned-over end to the main body of the strop.

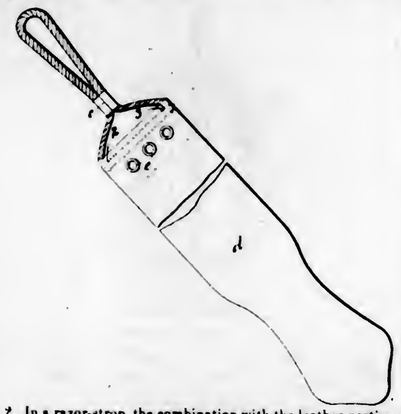

2. In a razor-strop, the combination with the leather portion of the strop having opposite edge notches near one end, of a longitudinally-split tube in width agreeing with the leather portion and having end notches at the opposite side to the split or division, a cord, the free ends of which are passed into and securely held by said split tube, the parts of the cord passing through the end notches of the tube and also through the notches formed in the edges of the leather of the strop, said tube passing through the turned-over end of the strop, and a clip passing around and drawing together the parts of the cord slightly beyond the strop so as to form a closed loop at one end.

812,569. **TRIP CASING-SPEAR.** WILLIAM H. KESSELMAN, Parkersburg, W. Va. Filed Oct. 19, 1905. Serial No. 283,433.

Claim.—1. A casing-spear comprising a rod, movable jaws connected therewith, a catch on the rod for holding the jaws, and means for engaging the casing to retard the upward motion of the jaws when the rod is raised and to release them from the influence of said catch.

2. A casing-spear comprising a rod, movable jaws connected therewith, a catch on the rod for holding the jaws, and means for engaging the casing to retard the upward motion of the jaws when the rod is raised, and to release them from the influence of said catch, said means comprising a spring connected with the jaws and adapted to bear on the wall of the casing.

3. A casing-spear comprising a rod, a support mounted thereon, jaws connected with said support, a catch on the rod for engaging the support, and means for engaging the casing, said means being connected with said jaws.

4. A casing-spear comprising a rod having a conical surface tapering upwardly, a support mounted thereon, jaws connected with said support, a catch on the rod for engaging the support, and means for engaging the casing to retard the upward motion of the jaws when the rod is raised and release them from the influence of said catch.

5. A casing-spear comprising a rod having a conical surface tapering upwardly, a support mounted thereon, jaws connected with said support, a catch on the rod for engaging the support, and means for engaging the casing to retard the upward motion of the jaws when the rod is raised and release them from the influence of said catch; said means comprising a spring connected with the support and adapted to bear on the wall of the casing.

6. In a casing-support, the combination of a rod having a tapering surface on the lower part thereof, a catch on said rod, a ring adapted to be held in elevated position on the rod by said catch, links pivotally connected with the ring, jaws connected with said links and located in a position to be engaged by said conical surface when the rod is raised with respect to the ring, and springs mounted on said ring and adapted to bear on the wall of a well-casing, said springs having inwardly-projecting ends.

7. A casing-spear comprising a rod having a conical surface thereon tapering upwardly, a spring-catch on the rod having a shoulder thereon, a support movably mounted on the rod and adapted to be held in an elevated position by said catch, links pivotally connected with said support, jaws connected with said links and adapted to be engaged by said conical surface, and means for normally preventing the support from moving above said shoulder.

8. A trip casing-spear having a rod, a spring provided with a convex portion and a shoulder above the convex portion, a jaw-support adapted to be held by the convex portion of the spring, and means for preventing the support from moving above the shoulder.

9. A trip casing-spear having a rod, a spring provided with a convex portion and a shoulder above the convex portion, a jaw-support adapted to be held by the convex portion of the spring, and means for preventing the support from moving above the shoulder; said means comprising a movable dog adapted to engage the support, and means for moving the dog out of engagement with the support when the latter is moved downwardly with respect to the rod.

10. A casing-spear, comprising a rod, a movable jaw-support thereon, means for holding the support in a certain position on the rod, a pivoted dog bearing on the support when held in said position, and a counterweight for moving the dog out of engagement with the support when the latter is lowered from said position

11. A casing-spear comprising a rod, a spring-catch on the rod having a shoulder, a support movably mounted on the rod and adapted to be held in an elevated position by said catch, jaws movably connected with said support, and means for preventing the support from moving above said shoulder.

812,570. **APPARATUS FOR SHARPENING ROCK-DRILLING-MACHINE BITS.** JOSEPH A. G. KIRSTEN, Randfontein, Transvaal. Filed Mar. 15, 1905. Serial No. 250,151.

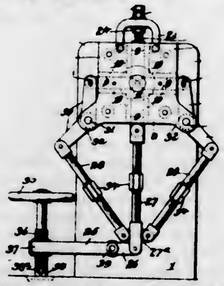

Claim.—1. In apparatus for sharpening rock-drilling bits, a main vertical plate, a second vertical plate fixed thereto and having a central aperture and vertical and horizontal guideways radiating from said aperture, die-carriers in said guideways, dies attached to said carriers, a device for adjustably supporting the top vertical die, levers pivoted to the second plate and connected to the horizontal die-carriers, a lever pivoted to the main plate and yieldingly connected with the bottom vertical die-carrier and with the levers operating the horizontal die-carriers, and means for operating the lever pivoted to the main plate.

2. In apparatus for sharpening rock-drilling bits, in combination, an upright plate having vertical and horizontal guideways radiating from a central aperture, die-carriers in said guideways, dies attached to the inner ends of said carriers, means for supporting the top vertical die-carrier in position, and means for moving the lower vertical die-carrier and the horizontal die-carrier toward and away from the central aperture, a dolly projected between the several dies and adapted to reciprocate between the same, means for supporting said dolly in position between the dies, and means for supporting the drill and taking the impact of the dolly on the drill.

812,571. **CAR-FENDER.** JOHN LANDAU, Jr., New York, N. Y. Filed June 24, 1905. Serial No. 266,784.

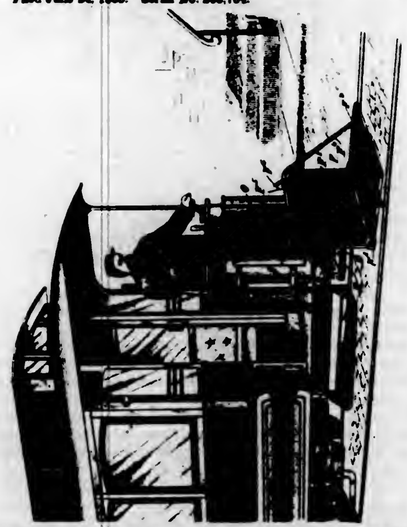

Claim.—1. A car-fender comprising a lever-frame fulcrumed on the car-body, a basket removably connected with the said lever-frame, spring-pressed rods pivotally connected with the said lever-frame, and a manually-controlled device for imparting a swinging motion to the said lever-frame and basket to bring the forward end of the basket the desired distance relative to the track.

2. A car-fender comprising a spring-pressed lever-frame fulcrumed on the car-body, a basket having its frame removably hung on the said lever-frame, means for locking the said basket-frame to the said lever-frame, and means for swinging the lever-frame and basket to move the forward end of the basket to and from the track.

3. A car-fender provided with a basket comprising a back, a bottom pivotally connected with the said back, and a brace pivotally connected with the said bottom and removably connected with the said back.

4. A car-fender provided with a basket comprising a back, a bottom pivotally connected with the said back, a brace made U shape and pivotally connected at its side arms with the sides of the said bottom, the middle portion of the brace being adapted to engage bearings on the said back, and means for locking the middle portion to the bearings.

5. A car-fender comprising a lever-frame on the car, a basket having a back, the side members of which are formed with hooks adapted to hook onto pins on the said lever-frame, and locking-pins engaging registering apertures in the said lever-frame and the said side members.

6. A car-fender provided with a basket comprising a back having side members provided with notches near the upper end, a bottom pivotally connected with the lower end of the said back, and a U-shaped brace having its side arms pivotally connected with the sides of the said bottom, the middle portion of the said brace being adapted to engage the said notches.

7. A car-fender provided with a basket comprising a back having side members provided with notches near the upper end, a bottom pivotally connected with the lower end of the said back, a U-shaped brace having its side arms pivotally connected with the sides of the said bottom, the middle portion of the said brace being adapted to engage the said notches, and a hook fixed on the car and adapted to be engaged by the said brace to hold the bottom in a folded position.

8. A car-fender provided with a basket comprising a back having side members provided with notches near the upper end, a bottom pivotally connected with the lower end of the said back, a U-shaped brace having its side arms pivotally connected with the sides of the said bottom, the middle portion of the said brace being adapted to engage the said notches, and hooks hinged on the said side arms and adapted to hook onto the middle portion of the said brace to lock the latter in place.

812,572. **SAFETY SYSTEM FOR RAILWAYS.** GEORGE LAURENSO, Visalia, Cal. Filed May 9, 1905. Serial No. 259,550.

Claim.—1. The combination, in a safety system for railways, of a pivoted L-shaped crank, set up by the track, one at each end of a block or section of the road and turning on a pin through the angle of said crank and through brackets fastened to the railway-ties; a sprocket or pulley fastened to each crank and turning on said pin, each made to turn in opposite directions by a crossed continuous cable or like means with chain passing around said sprockets, or belt passing around and secured to said pulleys; a rigid pin on a locomotive or train to engage one arm of an L-shaped crank, and turn it down, so turning the other arm up, and by means of said cable turning the arms of the crank at the other end of the block or section, for the purpose of operating signals set up by the track, all substantially as set forth.

2. The combination, in a safety system for railways, of a pivoted L-shaped crank, set up by the track, one at each end of a block or section of the road and turning on a pin through the angle of said crank and through brackets fastened to the railway-ties; a sprocket or pulley fastened to each crank and turning on said pin, each made to turn in opposite directions by a crossed continuous cable or like means with chain passing around said sprockets, or belt passing around and secured to said pulleys; a pivoted extension to one arm of each crank, a spring or weight to hold said extension in line with the arm carrying it when said arm stands upright; a lever on a locomotive to engage said extension so that when said locomotive passes out of the block or section the said extension will yield and allow said lever to pass by unaffected, but should the locomotive enter the block or section when said block or section is not clear, the said extension, being rigid from the outside, will turn down the engaging lever on the locomotive, for the purpose of stopping a train when entering a block or section not clear, all substantially as described.

3. The combination, in a safety system for railways, of a pivoted L-shaped crank, set up by the track, one on each end of a trestle or bridge, and at a convenient distance therefrom, said crank turning on a pin through its angle and through brackets fastened to the railway-ties; a sprocket or pulley fastened to each crank and turning on said pin, each made to turn in opposite directions by a crossed continuous cable or like means with chain passing around said sprockets, or belt passing around and secured to said pulleys; a pivoted extension to one arm of each crank, a spring or weight to hold said extension in line with the arm carrying it when said arm stands upright; an incombustible weight or weights setting on or under said trestle or bridge, and hanging on said continuous cable, which is suitably supported; a lever on a locomotive to engage said extension, so that should the trestle or bridge be destroyed, as by wind or fire, the weight by falling would pull said cable and so raise said extension of each L-shaped crank, and should a locomotive enter the block or section of track when said extension is raised the said lever on the locomotive would be turned back for the purpose of stopping the train, substantially as set forth.

4. The combination, in a safety system for railways, of a pivoted arm or L-shaped crank, set up by the track at a convenient distance from a switch, and turning on a pin through brackets fastened to the railway-ties; a wedge in a suitable slot at the switch, a cable or like means connecting the lower end of said arm or crank with said wedge; a rigid arm on a locomotive or train to engage the upper end of said pivoted arm or crank, and turn it down, for the purpose of closing the switch, if said switch is left open, all substantially as set forth.

812,573. **AUTOMOBILE.** HERMANN LEMP, Lynn, Mass., assignor to General Electric Company, a Corporation of New York. Filed June 9, 1904. Serial No. 211,731.

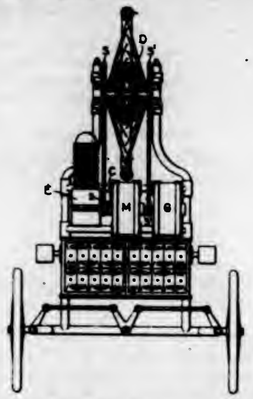

Claim.—1. In combination, a prime mover, a differential gear, a dynamo-electric machine connected thereto through said gear, and a magnetic clutch in circuit with said machine and adapted to clutch said prime mover to said gear.

2. In combination, a prime mover, differential gearing connecting said prime mover to the load, dynamo-electric machines controlling said gearing, and a magnetic clutch in circuit with said machines and arranged when deenergized to disconnect said prime mover from said gearing.

3. In combination, a differential gear, a prime mover connected to one member thereof, a dynamo-electric machine connected to a second member thereof, a second dynamo-electric machine connected to said prime mover, and a magnetic clutch in circuit with said machines and arranged when deenergized to disconnect said prime mover from said differential gear.

4. In combination, a differential gear, a prime mover connected to one member thereof, a dynamo-electric machine connected to a second member thereof, a second dynamo-electric machine connected to the prime mover, and in circuit with the first machine, means for varying the relative field strengths of said machines, and a magnetic clutch in circuit with said machines and arranged when deenergized to disconnect said prime mover from said differential gear.

5. In a self-propelled vehicle, a differential gear, a driving-wheel of the vehicle connected to one member of said gear, a prime mover connected to a second member of said gear, a dynamo-electric machine connected to the third member of said gear, a second dynamo-electric machine connected to said prime mover, and a magnetic clutch in circuit with said machines and arranged when deenergized to disconnect said prime mover from said gear.

6. In combination, an internal-combustion engine, a vehicle to be driven thereby, electrically-controlled speed-changing gearing between said engine and the driving-wheels of said vehicle, and means for disconnecting said engine from said gearing at starting and for automatically connecting said engine to said gearing when the controlling-circuit of said gearing is closed after the engine is started.

7. In combination, an internal-combustion engine, a vehicle to be driven thereby, speed-changing gearing between said engine and the driving-wheels of said vehicle, dynamo-electric machines controlling said gearing, and a magnetic clutch in circuit with said machines and arranged when demergized to disconnect said engine from said gearing.

812,574. **SAW-GAGE.** JOHN S. LEETON, New York, N. Y. Filed Sept. 9, 1905. Serial No. 277,686.

Claim.—1. In a saw-gage, a body having an end beveled, a guide-bar adapted for sliding movement upon a saw-table, means for adjustably and pivotally connecting the body to said guide-bar, and guide-arms longitudinally and transversely adjustable upon the body.

2. In a saw-gage, a body-block substantially L-shaped in cross-section and beveled at one end, a guide-bar adjustably and pivotally connected with the base member of the body-block, guide-arms transversely and longitudinally adjustable upon the body-block, said guide-bar and guide-arms being located at the under surface of the body-block, and means for locking said guide-bar and guide-arms in adjusted position.

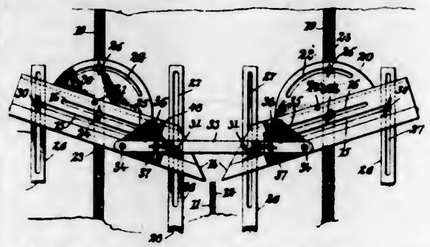

3. In a saw-gage, a body-bar, substantially L-shaped in cross-section, comprising an upright and a horizontal base member, a guide-bar pivotally and adjustably connected with the under face of the said body-block, guide-arms mounted for longitudinal and transverse adjustment on the under surface of the base member of the body-block, an adjusting member pivotally located at the working surface of the vertical member of the body-block, which member of the body-block is recessed to receive the said adjusting member, and means for moving the free end of the adjusting member to and from the body-block.

4. In a saw-gage, the combination with a substantially L-shaped body comprising a vertical member and a horizontal base member, a guide-bar pivotally and adjustably attached to the under portion of the base member of the body-block, guide-arms also located at the under face of the base member of the body-block, means for imparting transverse and longitudinal adjustment to the said guide-arms, an adjusting-arm hinged at one end to the end portion of a recess produced in the working face of the vertical member of the body-block, means for moving the free end of the said adjusting member outward and inward, and a slide mounted upon the said adjusting member.

5. In a saw-gage, two body-blocks of like construction, beveled at their inner ends, an adjustable connection between the beveled end portions of the body-blocks, each body-block being substantially L-shaped in cross-section and comprising a vertical and a horizontal base member, a guide-bar adjustably and pivotally connected with the base member of each body-block, guide-arms mounted upon the base member of each body-block, means for adjusting the said guide-arms longitudinally and transversely of the body-blocks, a hinged adjusting member located at the working face of the vertical member of each body-block, the said members of the said body-blocks being recessed to receive the said adjusting members, adjusting means for the adjusting members, and a slide for each adjusting member.

812,575. **CORN-HARVESTER.** DAVID T. LOWE, Pana, Ill. Filed May 4, 1905. Serial No. 258,849.

Claim.—1. In a corn-harvesting machine of the character described, the combination with the wheeled frame; the receiver R; the lower throats or stalk-passages and the cutter devices that operate over the lower throats or passages, said cutter devices being driven from the drive-wheels; of the upper throat or stalk-guides each including an outer downwardly and forwardly inclined side guide, and an inner inclined guide, the latter being mounted on the frame-platform and adjustable laterally to or from their opposing fixed guides and a means for moving the said adjustable side guides to or from the fixed guides in unison, whereby to increase or diminish the exit ends of the upper-throats or stalk-passages as set forth.

2. The combination in a corn-harvesting machine, of the wheeled supporting-frame which includes a front or platform section and rearwardly-projecting sides, a supporting-wheel journaled in each of the rearwardly-projecting sides, a receiver mounted on the frame between the wheels, consisting of swinging sides, bottom members hinged to the lower ends of the sides, cutter mechanism for severing the stalks, means for turning the cut stalks down into the receiver, the crank-lever 60, the eye A^4 on the platform and the hangers that pass through the eye A^4 connected at the upper end to the lever and at their lower ends with the two bottom sections of the receiver, as set forth.

3. In a corn-harvesting machine, a wheel-supporting frame having a throat or guideway at each side; a cutter device operating over each of the said guideways or throats; a connection for each cutter device with its respective drive-wheel; a supporting means for the upper ends of the stalks, comprising a fixedly-held side guide, a sweep mounted in each of the fixedly-held side guides having fingers for engaging and turning the head ends of the stalks down through the exit ends of the stalk-passages, a receiver for said cut stalks the movable side guides and a means for adjusting the movable side guides for the stalk-passages operable from the driver's seat as set forth.

4. In a corn-harvesting machine of the character described; the combination with the wheeled frame, the receiver mounted between the wheels, a cutter device for each side and a means for guiding the stalks into engagement with the cutter devices; comprising the inclined guide members 9 and 9ª fixedly mounted on the frame, other side guides that coact with the guide members 9 and 9ª, said other guides being pivotally secured to the frame to swing toward and from their opposing guide members, a shaft journaled in each of the fixedly-held side guides geared with and driven by the cutter-actuating means, said shafts having each a crank member, a reciprocating finger or sweep-bar connected to said crank member having a guide portion slidable in a bearing in the fixedly-held member and a means for dumping the receiver as set forth.

5. The combination with a wheeled supporting-frame, comprising a front platform and rearwardly-extended side portions, in each of which a drive-wheel is journaled, a receiver suspended between the said rearwardly-extending side portions of the frame, said receiver consisting of swinging side members, and bottom sections hinged to the lower ends of the side members and adapted to drop by gravity and to be closed up to a horizontal position, the cutter devices one at each side of the platform, means for guiding the stalks to the said cutter devices; the driver-seat, the bell-crank lever pivotally mounted adjacent the driver's seat, a pair of pendent rods secured to the inner end of the lever, an eyepiece on the frame through which the pendent rods pass, said pendent rods being secured to the opposite bottom pieces of the receiver, guides for leading the upper or head end of the cut stalks into the receiver, said guides including the bars 10 pivotally secured to the platform, telescopically connected with each other and the bow-spring 13 connected with the said lever 60, all being arranged substantially as shown and for the purposes specified.

812,576. **PUNCH OR SHEARS.** CHARLES B. MACBETH, Hamilton, Ohio, assignor to The Long & Allstatter Co., Hamilton, Ohio. Filed Oct. 23, 1905. Serial No. 284,694.

Claim.—In a punch or shear machine, the combination, substantially as set forth, of a body provided with jaws forming a ram-guide between them, a face-plate rigidly secured to the faces of the jaws and forming the front wall of the ram-guide and provided with a bearing, a cam-shaft crossing the ram-guide and journaled in said bearing and in a bearing in the body to the rear of the ram-guide, an eccentric upon the cam-shaft between the front and rear walls of the ram-guide, a ram fitting the ram-guide and having a rearwardly-open recess surrounding the eccentric and having a slot in the front wall of the recess where said wall is traversed by the cam-shaft, and a pitman disposed within said recess and loosely confined between the wall of the recess and the rear wall of the ram-guide and having articulate connection with the ram and eccentric.

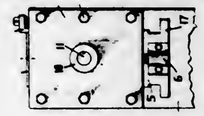

812,577. **AMUSEMENT DEVICE.** PHILIP M. MALONEY, Philadelphia, Pa. Filed Sept. 26, 1904. Serial No. 226,881.

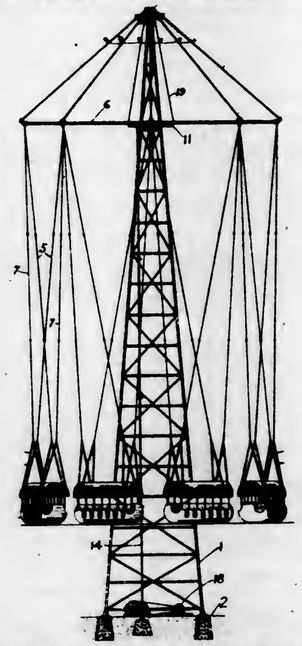

Claim.—1. In an amusement apparatus, cars or vehicles adapted to carry passengers, a rotatable frame, divergent suspension means for said cars comprising connections which extend from points above the ends of said cars slantwise to points adjacent the opposite ends of said cars, thereby crossing above said cars, connections extending directly from said points above said cars to points adjacent the ends of said cars directly below, and loops for said suspensions, a pair of loops being located at each end of the car and having their lower ends attached to the opposite sides and on the outside of said cars and having their upper ends attached to a pair of diverging suspensions.

2. In an amusement apparatus, a supporting-tower provided with a convex bearing-block at its apex, a rotatable frame having a convex bearing-block at its upper end, a double concave pivot-block interposed between the bearing-blocks of the tower and frame, and vehicles adapted to carry passengers suspended from said frame.

3. In an amusement apparatus, a supporting-tower, a rotatable frame suspended from the top of said tower, said rotatable frame comprising an upper member pivotally mounted on the upper end of said tower, radial arms attached to means adapted to engage the body of said tower to hold the frame in position laterally, supporting members extending from said upper member to the outer ends of said arms, and to said means for holding the frame against lateral move-

ment, and vehicles adapted to carry passengers suspended from said

ard, a pawl pivoted to the lever, a pawl pivoted to the standard, a

812,582. **CLOTHES LINE SUPPORT.** CHARLES F. MITCHELL and

ment, and vehicles adapted to carry passengers suspended from said arm.

4. In an amusement apparatus, a supporting-tower, a rotatable frame suspended from the top of said tower, comprising an upper member pivotally mounted on the upper end of said tower, supports depending from said upper member, a guide-ring surrounding said tower, provided with arms, said supports being connected with said ring and said arms, vehicles adapted to carry passengers suspended from said arms, and a motor and a gearing between said motor and said ring for rotating said frame.

5. In an amusement apparatus, a supporting-tower, a rotatable frame suspended from the top of said tower, and comprising an upper member from which depend supporting-rods, a guide-ring having an interior rack surrounding said tower, antifriction devices upon said tower engaging a smooth portion of said ring, an outwardly-extending flange upon said ring, arms attached to said flange, said supporting-rods being attached to said arms and said flange, vehicles adapted to carry passengers suspended from said arm, and means for rotating said frame.

6. In an amusement apparatus, a supporting-tower, a rotatable frame suspended from the top of said tower, and comprising an upper member from which depend supports, a guide-ring having a rack surrounding said tower, a smooth track between said ring and said tower, antifriction devices also between said ring and said tower engaging said track, arms attached to said guide-ring, said supports being attached to said arms and said ring, vehicles adapted to carry passengers suspended from said arms, and means for rotating said frame.

812,578. LUBRICATOR. JOHN MALOY and ARCHIE WHITE, Dunbar, Pa. Filed Oct. 12, 1905. Serial No. 282,446.

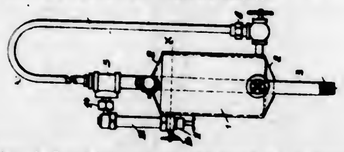

Claim.—1. In a lubricator the combination of a cylindrical receptacle, a steam-pipe passing centrally through said receptacle, an inverted-U-shaped pipe connected to the upper end of said steam-pipe, one leg of said U-shaped pipe extending downwardly alongside said receptacle, a globe-valve connected to the lower end of said leg, said globe-valve being connected with said receptacle, a needle-valve carried by said receptacle, a sight-glass carried by the receptacle and provided with a drainage-passage, a valve-stem controlling said drainage-passage, said sight-glass being in communication with said U-shaped pipe above the upper end of said steam-pipe.

2. In a lubricator the combination with a cylindrical receptacle, of a steam-pipe passing centrally through said receptacle, said receptacle being provided with a radially-disposed enlargement on its bottom, said enlargement having a bore communicating with said steam-pipe and with the interior of the receptacle, a valve-stem adapted to control the passage through said bore, a pipe leading from the upper end of said steam-pipe to the lower end of the receptacle, a globe-valve on said pipe, a needle-valve mounted on the receptacle, and a sight-glass mounted on said receptacle and communicating with the last-named pipe.

3. In a sight-feed lubricator the combination with a receptacle and a pipe passing therethrough, of a U-shaped pipe connected to the first-named pipe above the top of the receptacle, one end of said U-shaped pipe extending downwardly to and communicating with the lower end of the receptacle, a needle-valve carried by the receptacle and a sight-glass mounted on said receptacle and communicating with said U-shaped pipe.

812,579. SPEED-REGULATING DEVICE. THOMAS L. MARSFIELD, Washington, Pa. Filed Jan. 23, 1905. Serial No. 242,054.

Claim.—1. In a device of the type set forth, the combination with a suitable frame, a shaft mounted in said frame, revoluble disks mounted on said shaft, rotatable pivotally-mounted shafts carried by said frame, wheels slidably mounted upon said last-named shafts, and adapted to engage said disks, means carried by said frame to adjust said wheels upon said shafts, and means carried by said frame and operable by said adjusting means to disengage said wheels from said disks, substantially as described.

2. In a device of the type described, the combination with a suitable frame, a shaft mounted on said frame, disks carried on the opposite ends of said shaft, of rotatable pivotally-mounted shafts carried by said frame, means carried by said last-named shafts to engage said disks, and impart a rotary motion to said shafts, means to adjust the first-named means and simultaneously disengage the first-named means from said disk, substantially as described.

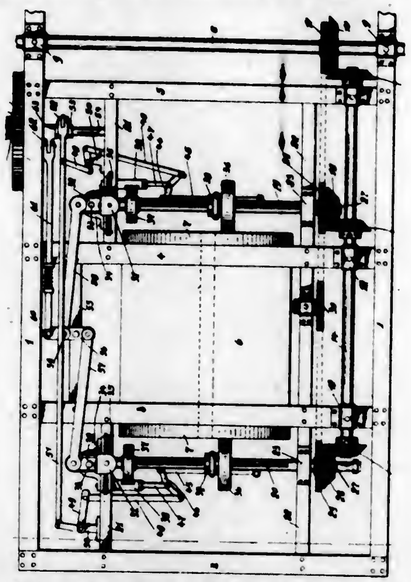

3. In a device of the type described, the combination with a suitable frame, a shaft mounted in said frame and disks carried by said shaft, of rotatable shafts pivotally mounted upon said frame, wheels slidably mounted upon said last-named shafts and adapted to engage said disks, means to adjust said wheels upon said shafts, means to disengage said wheels from said disks, brake-wheels carried by said shafts and stationary brake-shoes adapted to coact with said brake-wheels and to retard the movement of said shafts when disengaged from said disks, substantially as described.

812,580. LIFTING-JACK. HUGH M. MARSH, Chicago, Ill. Filed Oct. 4, 1905. Serial No. 281,306.

Claim.—1. In a lifting-jack, in combination, a standard, a lever pivoted to the standard, a ratchet-bar in sliding engagement with the standard, a pawl pivoted to the lever, a pawl pivoted to the standard, a spring connecting the pawls, and means carried by one of the named movable parts for shifting the spring.

2. In a lifting-jack, in combination, a standard, a lever pivoted to the standard, a ratchet-bar in sliding engagement with the standard, a pawl pivoted to the lever, a pawl pivoted to the standard, a spring having one end attached to each pawl, and means for shifting the point of attachment of the spring on one of the pawls.

3. In a lifting-jack, in combination, a standard, a lever pivoted to the standard, a ratchet-bar in sliding engagement with the standard, a pawl pivoted to the lever, a pawl pivoted to the standard, a pivot-block in sliding engagement with one of the pawls, a spring pivotally attached to the block and to the other pawl, and means for securing the block in an adjusted position on the pawl.

4. In a lifting-jack, in combination, a standard, a lever pivoted to the standard, a ratchet-bar in sliding engagement with the standard, a pawl pivoted to the lever, a pawl pivoted to the standard, a pivot-block in sliding engagement with the last-named pawl, a spring pivotally attached to the block and to the other pawl, and means for securing the block in an adjusted position on the pawl.

5. In a lifting-jack, in combination, a standard, a lever pivoted to the standard, a ratchet-bar in sliding engagement with the standard, a pawl pivoted to the lever, a pawl pivoted to the standard, a pivot-block in sliding engagement with one of the pawls, a turn-button pivoted to the pawl, a link connecting the turn-button and the block, and a spring pivotally attached to the block and to the other pawl.

6. In a lifting-jack, in combination, a standard, a ratchet reciprocating in the standard, a pair of pawls, a lever carrying one of the pawls, and a spring reacting between the two pawls and arranged to reverse its action as the lever approaches the limits of its movement.

812,581. SWITCH-THROWING MECHANISM. HENRY O. MARQUIS, Superior, Pa. Filed Nov. 21, 1905. Serial No. 288,431.

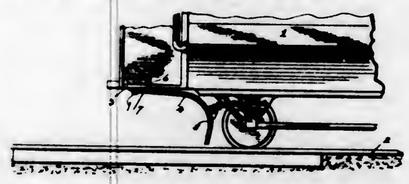

Claim.—1. In a switch-throwing device, the combination with a car, a track, a switch-tongue, and a spring-retained hook-shaped bar carried by said car and actuated by the operator of said car, of a casing mounted in said track and having recesses formed in its upper face, eccentrics mounted within said casing adjacent to said recesses and adapted to protrude therein, a block pivotally mounted in said casing and connected with said switch-tongue, means actuated by the bar of said car to move said switch-tongue, substantially as described.

2. The combination with a car, a track and a switch-tongue, of a spring-held hook-shaped bar carried by said car and actuated by the operator thereof, a casing mounted in said track and having recesses formed therein, eccentrics mounted in said casing and protruding into said recesses, a block pivotally mounted in said casing and connected to said switch-tongue and links connecting the opposite ends of said block with said eccentrics, said block being actuated by said bar contacting with said eccentrics to move said switch-tongue, substantially as described.

812,582. PAINT-REMOVER. GUSTAVUS MICHAELIS, Albany, N. Y. Filed Apr. 26, 1905. Serial No. 257,260.

Claim.—1. A composition for removing varnish and paint, comprising benzol; a monohydric alcohol; and a water and alcohol soluble soap dissolved with the aid of heat, substantially as described.

2. A composition for removing paint and varnish having for dissolving agents a hydrocarbon and a monohydric alcohol, with a water and alcohol soluble soap dissolved therein, substantially as described.

3. A composition for removing paint and varnish, consisting of a hydrocarbon and an alcohol, of at least 97° strength: and a water and alcohol soluble soap dissolved therein with the aid of heat, substantially as described.

4. A composition for removing paint and varnish, consisting of a water and alcohol soluble soap; and dissolving agents, consisting of a hydrocarbon and ordinary alcohol of at least 97° strength, substantially as described.

812,583. CLOTHES-LINE SUPPORT. CHARLES F. MEYERS and FRANK J. MACH, New York, N. Y. Filed July 30, 1904. Serial No. 218,338.

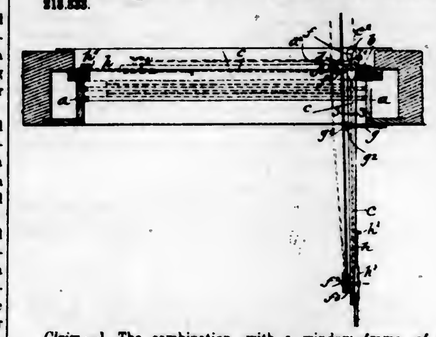

Claim.—1. The combination, with a window-frame, of a bracket attached to one side thereof and provided with a stop, a supporting-arm pivoted horizontally to said bracket and provided at its outer end portion with a guiding means, and a guide-arm also pivoted to said bracket and abutting against said supporting-arm so as to swing therewith, said guide-arm being adapted to abut against said stop.

2. The combination, with a window-frame provided at one side with a suitable keeper, of an arm pivoted to the opposite side of said frame, a guide-pulley at the outer end portion of said arm, means in proximity to the pivot of said arm coöperating with said pulley, and an extensible slide-piece provided with a slot engaging the shaft of said guide-pulley, said slide-piece being adapted to engage said keeper.

812,584. STARTING MECHANISM FOR GAS-ENGINES. VERNON B. MILLER, Philadelphia, Pa. Filed Feb. 28, 1905. Serial No. 247,671.

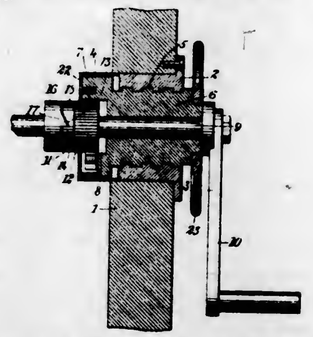

Claim.—1. In a starting mechanism of the class described, in combination, a crank-spindle, a starting-spindle adapted to engage the same, a sleeve in which said starting-spindle is rotatably mounted, said sleeve having a thread of high pitch, a one-way clutch connection between said starting-spindle and said sleeve, and a member having a threaded bore receiving said sleeve.

2. In a starting mechanism of the class described, in combination, a crank-spindle having a collar with teeth, a starting-spindle, a ratchet-wheel carried thereby and also having recesses coöperating with said teeth, a sleeve in which said starting-spindle is rotatably mounted, and pawls carried by said sleeve and engaging said ratchet-wheel, said sleeve having a thread and a threaded bush receiving said sleeve.

3. In a starting mechanism of the class described, in combination, a member presenting a threaded bore, a sleeve having a thread engaging the same and rotatably mounted in said bore, said sleeve having a recess in the inner extremity thereof, a starting-spindle rotatably mounted in said sleeve, a ratchet-wheel rigidly carried by said starting-spindle and normally lying in said recess, pawls carried by said sleeve and engaging the teeth of said ratchet-wheel, a hand-wheel attached to said sleeve for adjusting the same, a crank-

spindle, and means carried by said crank-spindle for engaging said ratchet-wheel.

4. In a starting mechanism of the class described, in combination, a sleeve having an external thread and a bore, a starting-spindle rotatably mounted in said bore and adapted to slide longitudinally therein, a ratchet-wheel attached to said starting-spindle, said sleeve having a plurality of pockets disposed circumferentially about said ratchet-wheel, a plurality of pawls carried respectively in said pockets and engaging said ratchet-wheel, a crank-spindle aligning with said starting-spindle, a head carried by said crank-spindle, said head and said ratchet-wheel having means for engagement, and a threaded bush receiving said sleeve.

812,585. **TYPOGRAPHIC MACHINE.** CARL MUHLEISEN, Berlin, Germany, assignor to Mergenthaler Linotype Company, a Corporation of New York. Filed Oct. 30, 1905. Serial No. 285,608.

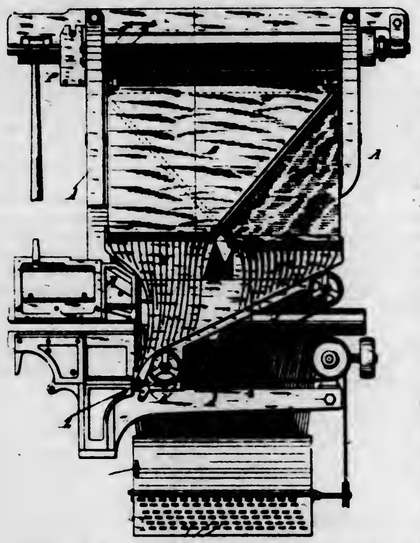

Claim.—1. In a typographic machine, two magazines overlapped at the receiving end and diverging toward the delivery end, substantially as shown and described.

2. In a typographic machine, two trapezoidal magazines, having their receiving ends overlapped and their delivery ends separated laterally, substantially as shown.

3. In a typographic machine, two magazines, overlapped at the receiving end but laterally separated at the delivery end, in combination with a single mechanism for assembling the matrices from the two magazines.

4. The two trapezoidal magazines, overlapped at the receiving end and laterally separated at the delivery end, in combination with two series of receiving-channels and a common assembling mechanism.

5. In combination with the two parallel distributers, the two magazines having wide upper ends in receiving relation to the respective distributers, and contracted lower ends deflected respectively to the right and left.

6. In a typographic machine, the combination of the following elements: two magazines having overlapped receiving ends of equal width and delivery ends separated laterally, a single assembling mechanism receiving the matrices from both magazines, parallel distributers overlying the respective magazines, and a single feed mechanism delivering matrices to the respective distributers.

7. In a typographic machine and in combination with two magazines, having overlapped upper ends of equal width and contracted lower ends laterally separated, escapement devices at the ends of the magazines, a centrally-located keyboard, and tension-wires deflected right and left from the escapements of the respective magazines to the keyboard.

8. In combination with the magazine and its escapements, tension-wires extending downward from the escapements, levers and springs connected with said wires and maintaining the same under tension, a keyboard mechanism acting to relieve the wires from tension, and springs acting to reverse the position of the escapements when the wires are relieved.

9. The rocking escapements, the spring acting thereon, the levers engaging the escapements, the tension-wires extending thence downward, the spring-actuated levers at the lower ends of the wires, and keyboard mechanism acting upon said levers.

10. In a typographic machine, two magazines having their lower ends laterally separated and arranged at different levels, escapements at their ends, a single centrally-located keyboard, laterally-deflected connections extending from the respective escapements to the keyboard, and a shifting connection whereby the keyboard may be caused to operate the connections for one magazine or the other, at will.

11. In a typographic machine, the combination of two parallel distributers, means for delivering the line of matrices directly to one distributer, and means for moving the individual matrices belonging to the second distributer, edgewise thereto.

12. In combination with the distributer-bar N, and means for urging the composed lines of matrices directly toward the same, the second and parallel distributer N', and a laterally-acting carrier, whereby matrices belonging to the second distributer are carried edgewise thereto away from the matrices proceeding to the first distributer.

13. In a linotype-machine, the combination of two distributers, means for presenting a composed line of matrices, and a rotary carrier for delivering matrices edgewise, one at a time to the second distributer.

14. In a linotype-machine, matrices of two forms, two distributers, means for presenting a composed line of matrices, and a carrier-belt arranged to deliver matrices of one form to the second distributer and permitting those of the other form to pass to the first distributer.

15. In a linotype-machine and in combination with the distributer, an endless belt traveling in a vertical plane and adapted to carry the matrices edgewise successively toward the distributer.

812,586. **LINOTYPE-MACHINE.** CARL MUHLEISEN, Berlin, Germany, assignor to Mergenthaler Linotype Company, a Corporation of New York. Filed Oct. 30, 1905. Serial No. 285,609.

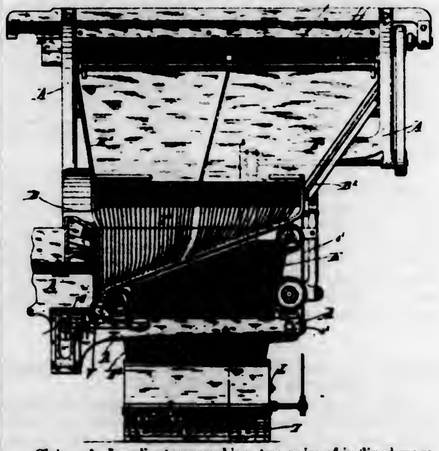

Claim.—1. In a linotype-machine, two pairs of inclined magazines, arranged side by side, each pair comprising an upper and a lower magazine, in combination with a series of escapements for each magazine, a single keyboard and means whereby the keyboard may be connected at will with the escapements of either pair of magazines, and means for preventing at will the delivery of matrices from either magazine of said pair.

2. In combination, two lower magazines arranged side by side, two upper magazines thereover, means for locking the escapements of the upper or the lower magazines at will, a single keyboard and means substantially as shown for connecting the keyboard at will with the escapements of the two left-hand magazines or with the escapements of the two right-hand magazines, whereby the matrices may be delivered from any one of the magazines at will.

3. In combination with two upper magazines and two lower magazines, each provided with a series of escapements, the connected devices for locking the upper and lower escapements respectively, a single keyboard mechanism, reeds extending thence right and left to the respective magazines, and shifting connections whereby the keyboard may be caused to actuate one set of reeds or the other.

4. In a linotype-machine, two magazines arranged side by side, and two overlying magazines arranged in like manner, a single assembler-belt and a series of channels T, constructed and arranged to deliver matrices from all the magazines to the one belt.

5. In a linotype-machine, two pairs of inclined magazines, arranged side by side, in combination with a single keyboard, means coöperating with the keyboard to cause the discharge of matrices from any one of the magazines at will, and means to prevent the discharge of matrices from the other magazines.

812,587. **MERIDIAN-TRANSFER APPARATUS.** GEORGE C. McFARLANE, Bay City, Mich. Filed Oct. 17, 1903. Serial No. 177,504.

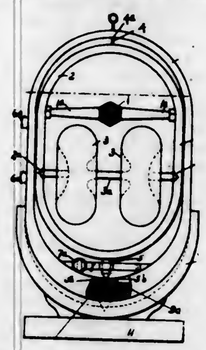

Claim.—1. In a device of the class described a pivotally-mounted sighting device, and a revolving disk operating in conjunction with said sighting device, said disk being adapted by its inertia to preserve parallelism of the sighting device the axes of the sighting device and of the disk being parallel.

2. The combination with a support, of a frame pivotally mounted on the support to rotate freely upon an axis normally perpendicular to the horizon, a sighting device pivotally mounted in said frame, a rotatable disk also mounted in said frame, the disk adapted by reason of its inertia to preserve the parallelism of the sighting device.

3. A frame revolubly mounted on vertical pivots only, a telescope carried by said frame and having its axis in a line intersected by the line of said pivots, and a disk revolubly mounted in said frame the axes of the disk and telescope being parallel.

4. The combination with an outer stationary frame, of an inner frame, a sighting device and a movable inertia member pivotally mounted in said inner frame, a pivot-support directly connecting the inner and outer frames and permitting movement of the inner frame only in a vertical plane and means for locking the frames together against relative movement.

5. The combination in a meridian-transferring mechanism provided with a pivotally-supported member, of means for counteracting the rotative tendency of the member, comprising a movable bearing on which the pivoted member is supported and means for imparting oscillatory movement to the bearing.

6. The combination in a device of the character set forth, of a pivoted member, rotary means carried by the member and tending to rotate the latter, a movable bearing in which the pivoted member is supported and means for constantly and automatically imparting an oscillatory movement to the bearing.

7. The combination in a device of the character set forth, with a pivoted member and movable means tending to rotate the member, of means for counteracting said tendency, comprising a movable bearing on which the member is pivotally supported, the bearing provided with a slot, an eccentric crank received in the slot, and means for imparting rotary movement to the crank.

812,588. **ROTARY ENGINE.** ROBERT C. McLEAN, Cleveland, Ohio. Filed Sept. 29, 1905. Serial No. 280,668.

Claim.—1. In a rotary engine, in combination, a casing presenting a substantially cylindrical body, a drum rotatably mounted within said body, a plurality of pistons projecting radially from said drum and normally engaging the inner face of said body, said body having abutments projecting inwardly and substantially abutting the cylindrical face of said drum, said casing further having exhaust-ports near said abutments, said abutments presenting inclined forward faces along which said pistons pass and auxiliary ports in said inclined faces.

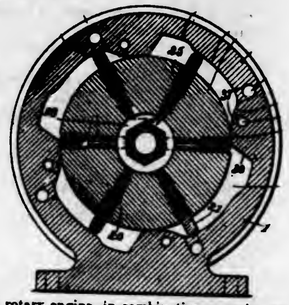

2. In a rotary engine, in combination, a casing presenting a substantially cylindrical body, a drum rotatably mounted within said body, said casing having a plurality of abutments projecting toward said drum and substantially abutting the outer surface thereof whereby a plurality of expansion-chambers are formed between said abutments, said abutments having inclined faces disposed forwardly with respect to the direction of rotation of said drum, means for admitting steam to the interior of said drum, said drum having steam-spaces, a plurality of pistons guided in said drum and backed by said steam-spaces whereby the steam operates to maintain said pistons in engagement with the said casing, said casing having exhaust-ports adjacent to said abutments adapted to be uncovered by the advance movement of said pistons, and further having auxiliary exhaust-ports opening on said inclined faces, said auxiliary exhaust-ports affording escape for steam held before said pistons after passing said first exhaust-ports.

812,589. **TARGET.** THOMAS J. McNELLY, New York, N. Y. Filed Aug. 25, 1905. Serial No. 275,766.

Claim.—1. In a target the combination of a main casing having an opening therein, a movable bull's-eye mounted behind said opening, a spring connected with the casing and supporting said bull's-eye, said spring being provided with a hook, a guideway on the casing, a slide mounted to reciprocate in said guideway and having a hook adapted to engage the first-mentioned hook, said slide having a guard located adjacent to the hook and slide, an indicator mounted on the slide, a spring secured to the casing and engaging said guard, said spring normally tending to force the indicator into an exposed position, the last-named spring also being provided with a bell-clapper and a bell mounted on the casing in the path of the movement of said clapper.

2. In a target, the combination of a target-casing having a central opening therein, a bull's-eye in said opening, a spring secured to the rear side of the target-casing and also secured to said bull's-eye, whereby the bull's-eye is adapted to yield when hit, a hook connected with said spring, a guideway on the casing, a slide reciprocably mounted in said guideway and having a hook provided with a straight rear surface adapted to engage the first-mentioned hook, a guard on said slide, an indicator also mounted on the slide, a spring for moving the slide secured to the casing and engaging said guard on the slide, said spring also having a bell-clapper, and a bell mounted in the path of movement of said clapper.

3. In a target, the combination of a movable bull's-eye, a registering device, means connected with the bull's-eye for operating the registering device, a roll of paper mounted upon the main target, said paper having a plurality of targets thereon, a straight edge movably mounted on the target-case, and resilient means for holding the straight edge against the targets.

4. A target having means for holding a roll of paper thereon, resilient means for securing said paper to the face of the target, and a carbon-paper mounted between the face of the target and the paper.

5. A target having a main casing, means for holding a roll of paper, a bar having a straight edge pivotally mounted upon the casing, and a spring engaging said bar and holding it in close contact with the front surface of the casing.

812,590. CULINARY VESSEL. AUGUST W. OBERMANN, Newcastle, Pa. Filed May 17, 1904. Serial No. 208,336.

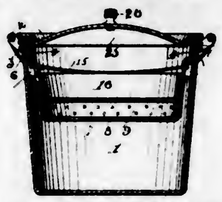

Claim.—The combination of a receptacle having brackets upon its inner sides, a steamer provided with a flange having yokes thereon, a boiler having a flange with recesses for the reception of said yokes and a cover for the receptacle.

812,591. NUT-LOCK. MATHEW OMALIA, Scranton, Pa., assignor of one-fifth to John F. Durkan, one-fifth to Martin B. Casey, and one-fifth to A. J. Casey and P. J. Casey, copartners trading as Casey Bros., Scranton, Pa. Filed Sept. 13, 1905. Serial No. 278,258.

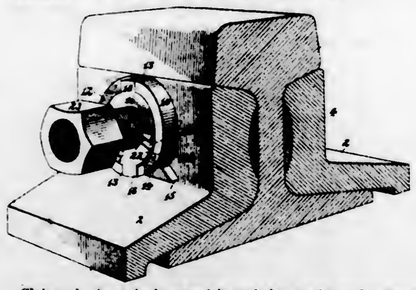

Claim.—1. A nut-lock comprising a bolt, a main washer thereon adapted for contact with a part of the structure to be bolted, and having means for preventing the same from turning about the bolt in either direction, a supplementary washer also on the bolt, and a nut, the two said washers having reverse engagement with each other on opposite sides of both a vertical plane and a horizontal plane passing through the axis of the bolt, and said supplementary washer having a spring member formed with a chisel edge for engaging with the nut.

2. A nut-lock, comprising a bolt, a nut, a main washer having means for preventing it from turning on the bolt, and provided with oppositely-arranged inclines forming shoulders, and a supplementary washer provided with lugs engaging the shoulders of the main washer and with an outwardly-projecting spring member having a chisel edge for engaging the nut.

3. A nut-lock comprising a bolt, a main washer thereon adapted for contact with a part of the structure to be bolted, and having means for preventing the same from turning about the bolt in either direction, a split supplementary washer also on the bolt, and a nut, the two said washers having reverse engagement with each other on opposite sides of both a vertical plane and a horizontal plane passing through the axis of the bolt, and said supplementary washer having a terminal thereof sprung outwardly and formed with a chisel edge for engaging with the nut on reverse turning thereof.

4. A nut-lock comprising a bolt, a main washer thereon adapted for contact with a part of the structure to be bolted, and having a straight lower edge and lateral extensions for preventing the same from turning about the bolt in either direction, a split supplementary washer also on the bolt, and a nut, the two said washers having reverse engagement with each other on opposite sides of both a vertical plane and a horizontal plane passing through the axis of the bolt and said supplementary washer having a terminal thereof sprung outwardly and formed with a chisel edge for engaging with the nut on reverse turning of the latter.

5. A nut-lock comprising a bolt, a main washer thereon adapted for contact with a part of the structure to be bolted, and having means for preventing the same from turning about the bolt in either direction, a split supplementary washer also on the bolt, and a nut, the said main washer having reversely-disposed inclined planes on its outer face, forming shoulders located on opposite sides of both a vertical plane and a horizontal plane passing through the axis of the bolt, and said supplementary washer having diametrically-disposed projections engaging with said shoulders, and also having means for engaging with the nut on reverse turning of the latter.

6. A nut-lock comprising a bolt, a main washer thereon adapted for contact with a part of the structure to be bolted, and having means for preventing the same from turning about the bolt in either direction, a split supplementary washer also on the bolt, and a nut, the said main washer having reversely-disposed inclined planes on its outer face, forming shoulders located on opposite sides of both a vertical plane and a horizontal plane passing through the axis of the bolt, and said supplementary washer having a terminal thereof sprung outwardly and formed with a chisel edge for engaging with the nut on reverse turning of the latter.

812,592. CHURN. WILLIAM L. POOL, Aztec, N. Mex. Filed June 30, 1904. Serial No. 213,211.

Claim.—A rotary churn-dasher including two sets of dasher-blades, the members of each set being in substantial parallelism at an angle to the path of rotation different from the angular disposition of the other set of blades, the space between each set of blades and the axis of rotation being unobstructed.

812,593. PROCESS FOR TARRING ROADS. LOUIS PRAUBERT and GASTON A. THURÉ, Nantes, France. Filed May 5, 1905. Serial No. 259,033.

Claim.—1. The process herein described of making a product adapted for use for tarring or asphalting roads and public or private thoroughfares, the said process consisting in making a solution of casein in water in the presence of an alkali, adding thereto bitumen, asphalt, tar or other bituminous body previously softened by heat, and diluting the mixture with an appropriate quantity of water.

2. The new product herein described for tarring roads composed of a mixture of a solution of casein in water, and a bituminous body liquefied by heat.

3. The new product herein described for tarring roads composed of a mixture of a solution of casein in water in presence of an alkali, a bituminous body liquefied by heat, and water.

4. The new product herein described for tarring roads composed of a mixture of a solution of casein in alkaline water, a bituminous body liquefied by heat, a fatty substance, and water.

812,594. RAIL-JOINT. CHARLES M. RHODES, Steubenville, Ohio. Filed May 4, 1905. Serial No. 258,818.

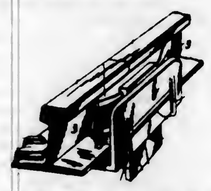

Claim.—1. The combination with two rail-sections adapted to be joined together, of a base-plate, said base-plate having an overlying flange, an angularly-disposed wall carried by one edge of said base-plate, said base-plate having a slot formed therein adjacent to said wall, lugs carried by said base-plate and adapted to engage the bases of said rails, a fish-bar interposed between the web portions of said rails and said angularly-disposed wall, a wedging member mounted between said fish-bar and said wall, the lower end of said member having a plurality of apertures formed therein, and a split key adapted to be inserted in one of said apertures, substantially as described.

2. The combination with two rail-sections, of a base-plate adapted to support said rails, an angularly-disposed wall carried by said base-plate, a fish-bar interposed between the web portions of said rail and said wall, a wedging member mounted between said fish-bar and said wall, the lower end of said wedging member extending beneath said base-plate and having a plurality of apertures formed therein, means to retain the one edge of said base-plate in engagement with the bases of said rails, and means to retain said wedging member in engagement with said bar and said wall, substantially as described.

3. In a rail-joint, a rail-chair comprising a base-plate, having one end bent upward and inwardly to form an overlying flange extending in a plane parallel with the base-plate, a wall carried by the opposite side edge of said base-plate and extending upwardly therefrom at an acute angle, a fish-bar adapted to be placed between the rails received in said chair and said angularly-disposed wall, and having a recessed outer face, and a wedge-plate fitting in said recessed outer face and extending through an opening provided therefor in the base-plate, substantially as described.

4. In a rail-joint, the combination with the chair receiving the rails, and having an angularly-disposed wall along one side edge, of a fish-bar engaging the rail-webs and fitting between the tread and base of said rail and having a recessed outer face, and a wedge-bar fitting in said recessed face between the fish-bar and the angularly-disposed wall and extending through an opening in the base of said chair substantially as described.

812,595. AMUSEMENT APPARATUS. OTIS ROBERTS, Winfield, Kans. Filed Nov. 1, 1905. Serial No. 285,473.

Claim.—1. An amusement apparatus, comprising an ascending spiral section of trackway for a vehicle, and a descending section of trackway merging therewith at the upper end thereof, the descending section being provided with a rise adjacent to its junction with the spiral section.

2. An amusement apparatus, comprising an ascending spiral section of trackway for a vehicle, and a descending section of trackway merging therewith at the upper end thereof, each section referred to having side guards for the wheel of the vehicle, the descending section being provided with a rise adjacent to its junction with the spiral section.

3. An amusement apparatus, comprising duplicate arched frame members, an ascending spiral section of trackway for a vehicle, disposed about upwardly-diposed portions of said frame, and a descending section of trackway merging with the said first-named section at the upper end thereof.

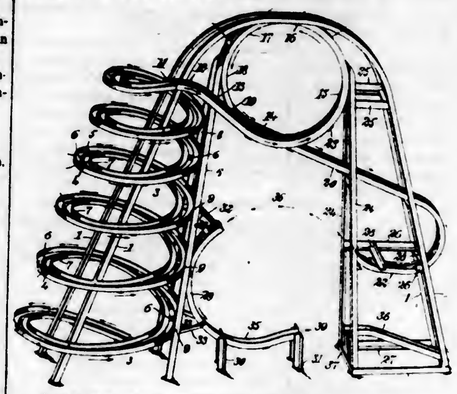

4. An amusement apparatus, comprising an ascending section of trackway for a vehicle, a descending section of trackway having a rise merging therewith, at the upper end thereof, an ascending semicircular section into which the lower end of the descending section merges, and a descending semicircular section merging at its upper end, into the corresponding end of said ascending semicircular section.

5. An amusement apparatus, comprising an ascending section of trackway for a vehicle, a descending section of trackway having a rise merging with said spiral section at the upper end thereof, an ascending semicircular section into which the lower end of the descending section merges, a descending semicircular section merging at its upper end into the corresponding end of said ascending semicircular section, a downwardly-inclined section leading from the lower end of the descending semicircular section, and terminating in a down curve and a return-section, a receiving-section between the upper end of which and said return-section there is a gap, and a final downwardly-inclined section disposed beyond the lower end of said receiving-section to provide another gap.

6. An amusement apparatus, comprising an ascending section of trackway for a vehicle, a descending section of trackway having a rise merging with said spiral section at the upper end thereof, an ascending semicircular section into which the lower end of the descending section merges, a descending semicircular section merging at its upper end into the corresponding end of said ascending semicircular section, a downwardly-inclined section leading from the lower end of the descending semicircular section, and terminating in a down curve and a return-section, a receiving-section between the upper end of which and said return-section there is a gap, and a final downwardly-inclined section disposed beyond the lower end of said receiving-section to provide another gap, all the sections referred to, excepting the spiral section, the receiving-section and final section; being constructed with rails for the side wheels of the vehicle, and with guard-rails for supporting the auxiliary wheels on the vehicle, in the inverted position of the latter, said first-named rails also having outer guards.

812,596. WOVEN PILE FABRIC. ANDREW G. ROBERTSON, Philadelphia, Pa., assignor to Thomas L. Leedom Company, Bristol, Pa., a Corporation of Pennsylvania. Filed Apr. 29, 1905. Serial No. 258,080.

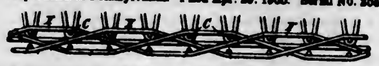

Claim.—1. In a woven pile fabric the combination of upper and lower filling-threads, pile-threads, a binder warp-thread passing over a pair of said upper filling-threads, a second binder warp-thread passing over the next succeeding pair of upper filling-threads and a third binder warp-thread passing over the next succeeding pair of filling-threads and said binder warp-threads then passing under successive pairs of said lower filling-threads, substantially as described.

2. In a woven pile fabric the combination of upper and lower filling-threads, pile-threads, binder warp-threads, one of said binder warp-threads adapted to pass over a pair of said upper filling-threads, two others of said binder warp-threads adapted to cross below the

said pair of upper filling-threads and engage the lower filling-threads and said binder warp-threads alternately engaging successive upper and lower pairs of filling-threads in like manner throughout the fabric, substantially as described.

3. In a woven pile fabric the combination of upper and lower filling-threads, pile-threads, binder warp-threads passing over successive pairs of upper filling-threads and under successive pairs of lower filling-threads, said binder warp-threads so arranged as to form a flat surface over a pair of upper filling-threads and to cross directly opposite said flat surface on the other side of said fabric, said binder warp-threads then engaging successive pairs of upper and lower filling-threads in like manner throughout the fabric, substantially as described.

812,597. **RAILWAY-TRAFFIC-CONTROL SYSTEM.** WILLIAM ROWE, Marrickville, near Sydney, New South Wales, Australia, assignor to Rowe's Patent Lock and Block Limited, Sydney, New South Wales, Australia. Filed Feb. 23, 1905. Serial No. 246,575.

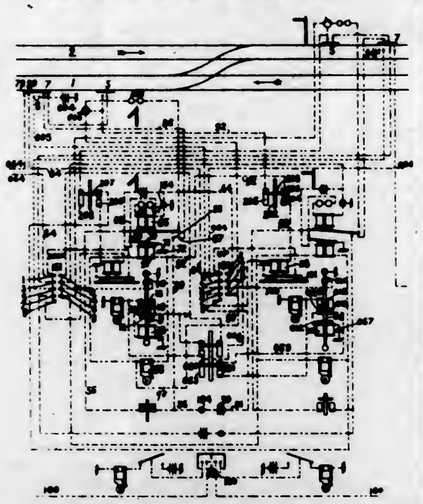

Claim.—1. In positive lock-and-block railway-control systems the prevention of the cutting out or exclusion of an intermediate cabin and its block-instrument and signal connections and the prevention of the cutting in or inclusion of the same until the rear block-section of said cabin is clear of vehicles and conflicting points and the like substantially as described.

2. In positive lock-and-block railway-control systems the operation of the electrically-controlled outdoor semaphore-signal when electrically cut out by means of supplementary mechanical devices from any desired point as and for the purposes set forth substantially as described.

3. In positive lock-and-block railway-control systems the prevention of the concurrent working of the outdoor semaphore-signal by devices connected to the intermediate or excludable cabin and by supplementary mechanical devices at any desired point as and for the purposes set forth substantially as described.

4. In positive lock-and-block railway-control systems the prevention of the manipulation of the cutting-out or switching-in devices of the block instrument in an intermediate or excludable cabin while in the block-sections of such cabin conflicting points are set or outdoor signals indicate the line as foul as and for the purposes set forth substantially as described.

5. In positive lock-and-block railway-control systems the prevention of the transmission by the block instrument of a message "line clear" until all points and signals within the block-section are in normal safety position as and for the purposes set forth substantially as described.

6. In positive lock-and-block railway-control systems the prevention of the manipulation of the operative devices of points and outdoor signals of a block-section after the transmission of "line clear" to the rear cabin until the train has arrived at a protecting-signal as and for the purposes set forth substantially as described.

7. In positive lock-and-block railway-control systems the combination with the block instrument of switching through-contacts having a key-lock and a check-bar operated (as also the said switching through-contacts) by the key of said lock and adapted to hold and retain the slide-bar of said block instrument against manipulation while said block instrument is cut out of the system in the uniting of two block-sections into one continuous section as and for the purposes set forth substantially as herein described and explained.

8. In positive lock-and-block railway-control systems the combination with a block instrument having an electromechanical lock and switching through-contacts of a check-bar adapted to engage the slide-bar of said instrument and operative only when said slide-bar is released by its electromechanical lock and when the train has passed out of the section as and for the purposes set forth substantially as herein described and explained.

9. In positive lock-and-block railway-control systems the combination with a block instrument having an electromechanical lock and switching through-contacts of a check-bar adapted to engage the slide-bar of said instrument and having an electromechanical lock thereon adapted to prevent its withdrawal from its retaining position on the slide-bar of the block instrument until the closing of an electric circuit by a train on the permanent way and by a mechanically-operative switch in the cabin as and for the purposes set forth substantially as herein described and explained.

10. In positive lock-and-block railway-control systems the combination with the block instrument having an electromechanical lock and switching through-contacts with a key-lock and a check-bar adapted to cross the slide-bar a rail-contact protecting points in the block-section a supplementary electromechanical lock on the slide-bar of the instrument (preferably bifurcated for the purpose) with the electromagnet of said supplementary lock in a battery-circuit including said rail-contact (normally open) a check-bar or retaining-bolt under the armature-catch of said supplementary electromechanical lock, a locking-pin for the operative devices of said points and a handle or device for concurrently operating said last-mentioned check-bar of the supplementary electromechanical lock arresting said other check-bar of the key-lock and releasing said locking-pin as and for the purposes set forth substantially as herein described and explained.

11. In positive lock-and-block railway-control systems the combination with operating devices of a key-lock of a key non-withdrawable except when the block instrument is cut out or excluded from the system and adapted to operate the key-lock of manually-operative devices or an outdoor semaphore-signal and to be non-withdrawable from said latter key-lock unless said devices are locked in normal danger position as and for the purposes set forth substantially as herein described and explained.

12. In positive lock-and-block railway systems the combination with the slide-bar of a block instrument and revolving switching through-contacts having a rack 103 and a pinion 104 of a check-bolt 101 adapted to take across a stop on said slide-bar and to be prevented from so taking across until an armature-catch on said slide-bar is lifted on the joining up of an electric circuit substantially as herein described and explained and as illustrated in the drawings.

13. In positive lock-and-block railway systems the combination with the slide-bar of a block instrument and revolving switching through-contacts whose movement actuated a check-bolt 101 and said check-bolt of a stop 111 a permanent magnet 112 an electric magnet 113 and an armature-catch 114 substantially as herein described and explained and as illustrated in the drawings.

14. In positive lock-and-block railway systems the combination and arrangement with the slide-bar of a block instrument and revolving switching through-contacts actuating a check-bar 101 of a supplemental or divisional slide-bar 121 an electromagnet 120 a stop 123 and an armature-catch 124 substantially as herein described and explained and as illustrated in the drawings.

15. In positive lock-and-block railway systems the combination and arrangement of a block instrument one limb having check-bars 101 of additional or supplemental check-bolts 125 and 126 a locking-pin 127 and draw-bars and operating-levers and mechanism of points substantially as herein described and explained and as illustrated in the drawings.

16. In positive lock-and-block railway systems the combination with the slide-bar of the block instrument and rail-contacts as set forth of an outdoor signal-semaphore having levers 142, 143 and 144 a flange or lip on one of them 145 a connecting-rod 140 having an elongated eye 141 and hauling-cords, reverser-magnet and arm substantially as herein described and explained and as illustrated in the drawings.

812,598. **PROCESS OF CHLORINATING INDIGO.** ALBRECHT SCHMIDT and ERICH KNOWLES, Höchst-on-the-Main, Germany, assignors to Farbwerke vorm. Meister Lucius & Brüning, Höchst-on-the-Main, Germany, a Corporation of Germany. Filed Feb. 26, 1905. Serial No. 247,775.

Claim.—The process herein described for the manufacture of chlorinated indigo dyestuffs, which consists in treating an indigo body with sulfurylchlorid.

812,599. **YELLOW-GREEN ANTHRAQUINONE DYE.** ROBERT E. SCHMIDT and KARL THUN, Elberfeld, Germany, assignors to Farbenfabriken of Elberfeld Co., New York, N. Y., a Corporation of New York. Filed Sept. 8, 1905. Serial No. 277,596.

Claim.—1. The herein-described dyestuffs of the anthracene series, being 1-4-diaryldiamido-8-oxyanthraquinone sulfonic acids containing the sulfonic group in the anthraquinone nucleus, obtainable by condensing with primary aromatic amins 1-4-8-trioxyanthraquinone sulfonic acid which is prepared by treating 1-4-8-trioxyanthraquinone with sulfonating agents and boric acid, which dyestuffs are in the shape of their alkaline salts dark-green powders soluble in hot water with a green color and when the dyestuffs dissolved in acetic acid are treated with a solution of stannous chlorid in hydrochloric acid they are decomposed under the formation of a leuco compound of the 1-4-8-trioxyanthraquinone sulfonic acid; and dyeing unmordanted and chrome-mordanted wool green shades, substantially as hereinbefore described.

2. The herein-described new dyestuff of the anthracene series, being 1-4-diparatolyldiamido-8-oxyanthraquinone sulfonic acid containing the sulfonic group in the anthraquinone nucleus, obtainable by condensing with paratoluidin the 1-4-8-trioxyanthraquinone sulfonic acid which is prepared by treating 1-4-8-trioxyanthraquinone with sulfonating agents and boric acid, which dyestuff is in the shape of its sodium salt a dark-green powder soluble in concentrated sulfuric acid with a violet-blue color and when the dyestuff dissolved in acetic acid is treated with a solution of stannous chlorid in hydrochloric acid it is decomposed under the formation of a leuco compound of the 1-4-8-trioxyanthraquinone sulfonic acid, and dyeing unmordanted and chrome-mordanted wool yellowish-green shades, substantially as hereinbefore described.

812,600. **WHEEL FOR PLOW-LOCOMOTIVES.** HEINRICH SCHNELL, Cologne, Germany. Filed Mar. 29, 1905. Serial No. 252,662.

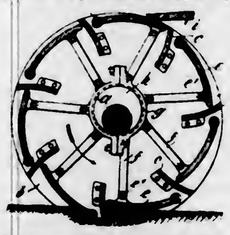

Claim.—1. In a device of the character described, side bearings, transverse connections between said bearings forming box-like cavities, automatically-movable plungers suitably arranged for ejecting the earth from the cavities and thereby cleaning the same and means for positively actuating said plungers in both directions.

2. In a device of the character described, side bearings, transverse connections for said side bearings, means pivotally mounted between said connections adapted to be moved inwardly and outwardly and means embodying an eccentric about the axle connected with said first-mentioned means for positively actuating the same.

3. In a device of the character described, side bearings, connections between the same, a shaft on which said bearings are mounted, an eccentric mounted on said shaft, displaceable pivotally-mounted plungers and means actuated by said eccentric for moving said plungers inwardly and outwardly.

812,601. **POCKET-KNIFE.** GEORGE SCHRADE, Walden, N. Y. Filed Jan. 7, 1906. Serial No. 295,902.

Claim.—1. In a pocket-knife provided with automatic blade-opening mechanism operated by a push-button, a safety locking device comprising a forked detent housed between the lining and covering of the knife and adapted to embrace the shank of the push-button under its head, substantially as shown and described.

2. In a pocket-knife, the blades of which are automatically opened, substantially as described, a sliding plate housed between the lining and cover and adapted to engage the push-button and prevent its operation, substantially as shown and described.

3. In a pocket-knife, the blades of which are automatically opened, substantially as described, by a spring carrying a stud adapted to socket in holes in the shank of the blade, means for securing said stud-carrying spring to lining of the knife, comprising a washer formed to rest at end on the lining, and at the other end on the spring and a rivet securing said washer to the lining, said rivet passing through a hole in the spring greater in diameter than the rivet, substantially as shown and described.

4. In a pocket-knife the blade of which is automatically opened, substantially as described, a spring carrying a stud adapted to socket in holes in the shank of the blade, means for securing said stud-carrying spring to the lining of the knife, whereby the spring is allowed a lateral play substantially as shown and described.

5. In a pocket-knife, the blades of which are automatically opened, substantially as described, a blade-opening spring secured at the center by a rivet and resting on contiguous projections formed on the interior of the knife-back.

812,602. **LOOSE-LEAF BOOK-BACK.** WILLIAM J. SCHULTZ, Cincinnati, Ohio, and HERBERT GREBURE, Newport, Ky., assignors to The Tenacity Loose-Leaf Metal Company, Cincinnati, Ohio, a Corporation of Ohio. Filed Aug. 10, 1905. Serial No. 273,630.

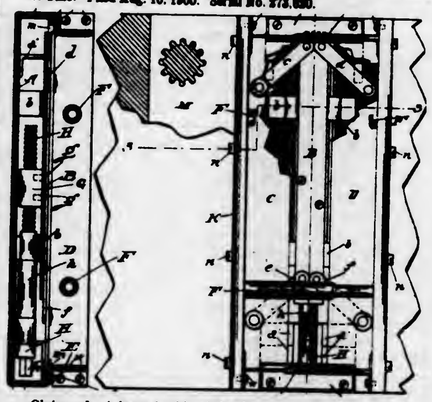

Claim.—1. A loose-leaf book-back, comprising an outside casing, a sectional casing provided with rods, the outside casing formed to provide a shoulder for supporting the sectional casing, a plate or bar, links pivotally connected with said plate or bar and the sectional casing, and a screw-rod having controlling connection with said plate or bar whereby upon its operation the plate is moved and the sectional casing expanded or contracted.

2. A loose-leaf book-back comprising an outside casing having it ends provided with shoulders or rests, a sectional casing having its support on said shoulders, a plate or bar intermediate of the outside casing and sectional casing and having pivotal connection with the latter, a rotative rod having operative connection with said plate or bar, and means whereby said rod may be rotated from the outside of the casing.

3. A loose-leaf book-back comprising an outside casing whose ends are bent upon themselves to form shoulders, a sectional casing adapted to rest on said shoulders, the sectional casing being provided with attaching tubes or rods, a connecting plate or bar, links having pivotal connection with the sectional casing and the connecting-plate, a rotative rod having its bearing in the outside casing and controllingly connected with said connecting-plate, whereby, upon the rotation of said rod, the sectional casing will be expanded or contracted through the medium of the connecting plate or links.

4. A loose-leaf book-back comprising an outside casing provided with shoulders near its ends, a sectional casing adapted to rest

on said shoulders, a plate having controlling connection with the sectional casing, a riding-block secured to said plate, a rotative rod having its bearing in the outside casing and taking through the riding-block, means whereby the rod may be rotated from the outside, and reinforcing-plates secured to the ends of the outside casing and taking over the ends of the sectional casing.

5. A loose-leaf book-back comprising an outside casing whose ends are bent back upon themselves to form shoulders, one of said ends provided with a key-opening, a sectional casing having its bearings on the shoulders, a connecting-plate, links having pivotal connection with the plate and the sectional casing, a rotative rod having operative connection with said plate, and reinforcing-plates secured on the outside casing ends and taking over the ends of the sectional casing.

6. A loose-leaf book-back comprising an outside casing whose ends are bent upwardly upon itself, one of said ends provided with a keyhole, bridges or rests secured within said casing, a sectional casing adapted to rest on the bent-up ends of the outside casing, a connecting-plate having its bearings on said bridges or rests, links having pivotal connection with the connecting-plate and the sectional casing, a rotative rod having controlling connection with the connecting-plate, whereby upon its rotation the connecting-plate is moved and the sectional casing expanded or contracted.

7. A loose-leaf book-back comprising an outside casing, bridges or rests secured on said casing, said bridges or rests formed to provide guide or slide ways, a sectional casing provided with attaching-rods, said sectional casing adapted to rest on the outside casing, a plate intermediate of the outside casing and sectional casing and having pivotal connection with the sectional casing and adapted to slide in the guide or slide ways of said bridges or rests, a screw-rod in operative connection with said plate whereby the sectional casing may be expanded or contracted.

8. A loose-leaf book-back comprising an outside casing provided with transversely-extending bridges or rests, said bridges or rests being depressed at their centers to form guideways, a sectional casing, a connecting-plate adapted to slide in the guideways in said bridges or rests, links pivotally connected with the sectional casing and connecting-plate, a screw-rod having controlling connection with said connecting-plate, and means whereby the screw-rod may be turned and the sectional casing expanded or contracted.

9. In a loose-leaf book-back, comprising an outside casing, a sectional casing slidably mounted thereon, a screw-rod, a plate having operative connection with the sectional casing and adapted to be acted upon by said screw-rod, the combination with back members having portions bent out in opposite direction to that of the immediate surface, cover members having slots adapted to receive the bent-out portions of the back members, the edges of the cover members being curled or bent upon themselves, and a pin adapted to take through said portions of the back members and the cover members to form a hinge.

10. In a loose-leaf book-back, an outside casing, a sectional casing, a connecting-plate, links pivotally secured to the connecting-plate and sectional casing, a screw-rod in operative connection with said connecting-plate, back members secured to the sectional casing and having portions bent in an opposite direction to the contour of said members, cover members whose edges have slots to receive the bent portions of the back members and are curled upon themselves, and a pin adapted to pass through said portions of the back and cover members to form a hinge.

11. A loose-leaf book-back comprising an outside casing having bent-up ends, a sectional casing adapted to rest on said ends, a plate having controlling connection with the sectional casing, a screw-rod operatively connected with said plate, back members adapted to be secured to the sides of the sectional casing, said members provided with portions bent outwardly, a cover having a metallic member whose edge is curled upon itself and is provided with slots to receive the outwardly-bent portions of the cover members, and a pin adapted to pass through said curled edges and the outwardly-beat portions of the back members to form a hinge.

12. In a loose-leaf book-back, a hinge comprising a back member having adjacent slots extending transversely, the portions intermediate of the slots being bent outwardly, a cover member whose edge is curled or bent upon itself and cut away in places to receive the outwardly-bent portions of the back member, and a pin adapted to extend through the curled edge of the cover member and bent-out portions of the back member.

812,608. **CUFF-FASTENING.** HARRY C. SHEPHERD, Crete, Nebr. Filed June 17, 1905. Serial No. 265,768.

Claim.—1. A cuff-fastener comprising inner and outer portions, each having divergent clamping members, and means for tightening the clamping members on a cuff by causing a lengthwise-sliding movement of one member relatively to the other.

2. A cuff-fastener comprising an outer clamp having divergent members, an inner member having a bridge-piece provided with a tapped opening, clamping members divergent from said bridge-piece, and a screw engaging in said tapped hole and passing loosely through the outer jaw at the bend.

3. A cuff-fastener comprising an outer portion having divergent clamping members, provided with teeth at the inner side, an inner portion having a threaded perforated bridge, and divergent connecting members extended from the bridge, the said members having teeth on their outer sides, and a clamping-screw engaging in said tapped hole and passing loosely through the outer jaw portion.

812,604. **MARINE VESSEL.** JOHN J. STEELE, New York, N. Y. Filed Apr. 14, 1905. Serial No. 255,493.

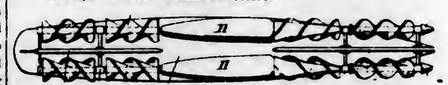

Claim.—1. A marine vessel having a hull with a pocket projecting downward from its bottom below the floor-line of the hull, said pocket being adapted to carry the engine crank-shaft, two propelling-screws projecting fore and aft and extending respectively from the ends of the pocket to the bow and stern, said screws having shafts projecting into the pocket and the shaft of the forward propeller being tapered from the pocket forward, for the purpose specified, means in the pocket for connecting the shafts with the crank-shaft, a conical head at the forward end of the forward screw and means for revolubly mounting the screws, said means for mounting the screws comprising bearings at the bow and stern and an additional bearing for each shaft located intermediate the pocket and the bow and stern bearings respectively.

2. A marine vessel having a hull with two pockets intermediate the length of the hull said pockets being spaced from each other and projecting below the floor-line of the hull and each being adapted to carry the engine crank-shafts, propelling-screws projecting fore and aft from each pocket, the screws having shafts extending into the pockets and the shafts of the forward screws tapering from the pockets forward, for the purpose specified, means in the pockets connecting the propeller-shafts with the crank-shafts, means for revolubly mounting the screws and keels located between the members of the forward and after pairs of screws.

812,605. **RUBBER-TIRE GUARD.** LEWIS SLAMA, Humboldt, Nebr. Filed July 6, 1905. Serial No. 268,907.

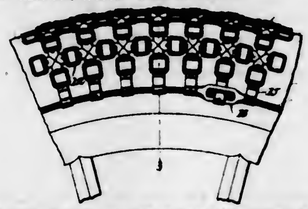

Claim.—1. A rubber-tire guard, comprising a network of alternating cruciform links and ring-like links, and means for securing the guard to a tire.

2. A rubber-tire guard, comprising a network of alternating cruciform links and ring-like links, the arms or members of the cruciform links being extended through the ring-like links and folded upon themselves.

3. A rubber-tire guard, comprising a network of alternating cruciform links and ring-like links, the arms or members of the cruciform links being extended through the ring-like links and folded upon themselves, and rivets extending through the cruciform links and engaging with the folded ends of the arms.

4. A rubber-tire guard, comprising a network of alternating cruciform links and ring-like links, wires for securing the guard to a tire, and tightening devices on said wires.

5. A rubber-tire guard, comprising a network of alternating cruciform links and ring-like links, the arms or members of the cruciform links being extended through the ring-like links and folded upon themselves, supplemental links connected to the side links of the guard, wires extended through said supplemental links, and turnbuckles for tightening said wires.

812,606. **CORE-MAKING MACHINE.** CHARLES A. SMITH, Chicago, Ill. Filed Nov. 20, 1905. Serial No. 288,294.

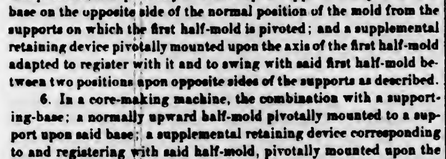

Claim.—1. In a core-making machine in combination with suitable supports two separable half-molds normally registering with each other, means for moving one of said half-molds out of engagement with and away from the other, a retaining device corresponding to the form of the half-mold just removed and means, for moving said retaining device into engagement with the second half-mold, for then moving the two parts to a position in which the molded core rests in the retaining device and for then removing the second half-mold away from the retaining device back to normal position.

2. In a core-making machine, in combination with a suitable support, two separable half-molds normally registering with each other, means for moving one of said half-molds out of engagement with and away from the other, a pivoted mounting on which the second half-mold is adapted to swing and a supplemental retaining device of the general form of the half-mold pivotally mounted upon the same axis as said second half-mold and adapted to register and rotate with said half-mold as described.

3. In a core-making machine, in combination with a suitable support, two half-molds normally in register with each other, pivotally mounted upon opposite sides of said normal position, and a supplemental retaining device of the general form of a half-mold pivotally mounted upon the same axis as one of said half-molds and adapted to register and rotate with said half-mold.

4. In a core-making machine, in combination with a suitable support, a mold made in two parts normally registering together, each pivotally mounted upon opposite sides of the mold, when the parts are together; and a supplemental retaining device of the form of a half-mold having openings in it in portions in which a half-mold is inclosed, pivotally mounted upon the same axis as one of said half-molds and registering with it and adapted to swing with it to each of two different positions.

5. In a core-making machine, the combination of a suitable base; a half-mold normally in upright position with reference to said base pivotally mounted upon suitable supports rising from the base; another half-mold adapted to cover said first half-mold when in normal position, also pivotally mounted upon supports rising from said base on the opposite side of the normal position of the mold from the supports on which the first half-mold is pivoted; and a supplemental retaining device pivotally mounted upon the axis of the first half-mold adapted to register with it and to swing with said first half-mold between two positions upon opposite sides of the supports as described.

6. In a core-making machine, the combination with a supporting-base; a normally upward half-mold pivotally mounted to a support upon said base; a supplemental retaining device corresponding to and registering with said half-mold, pivotally mounted upon the same axis as said half-mold and adapted to swing with it about its pivotal axis between positions upon opposite sides of the supports; other supports rising from said base on the opposite side of the normal position of said first half-mold; a second half-mold adapted to normally register with and cover said first half-mold, mounted upon pivots connected to the said second supports; and mechanism for permitting said second half-mold to move up and down through a short vertical distance with reference to said first half-mold as described.

812,607. **INDUCTION-COIL.** JOHN SPLITDORF, New York, N. Y. Filed Nov. 15, 1904. Serial No. 233,890.

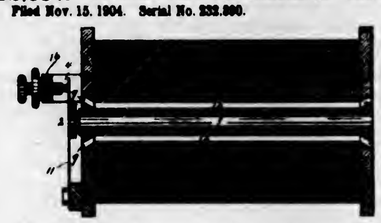

Claim.—1. A casing or retainer for an induction-coil, having apertures through its walls extending from an air-space about the iron core to the outer atmosphere.

2. In an induction-coil inclosed in a casing or container, whose iron core is separated from the primary winding by an air-space, the iron core projecting beyond the walls of the container and the apertures 9 extending through the container from the air-space 12.

3. In an induction-coil, the combination with the primary and secondary windings, of a ventilated iron core, consisting of an open space around the core, and one or more apertures extending through the core; substantially as described.

4. In an electromagnet, means for ventilating the iron core, consisting of an open space around the core, and one or more apertures extending through the core; substantially as described.

812,608. **PROCESS OF MAKING A FORMIC-ALDEHYDE COMPOUND.** ALFRED STEPHAN, Gross-Lichterfelde, near Berlin, Germany. Filed Dec. 6, 1904. Serial No. 235,759.

Claim.—Process of producing a compound of phenol and formic aldehyde, consisting in heating phenol and a larger quantity of a solution of formic aldehyde of forty per cent. with an addition of lye, as a condensing medium and dissolvent, until a red-brown liquid is produced out of which acids precipitate a deposit, substantially as and for the purpose set forth.

812,609. **ELECTRIC HEATER FOR LIQUIDS.** GEORGE E. STEVENS, Lynn, Mass., assignor to General Electric Company, a Corporation of New York. Filed July 19, 1904. Serial No. 217,319.

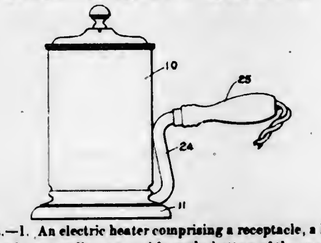

Claim.—1. An electric heater comprising a receptacle, a hollow heating member extending upward from the bottom of the receptacle and open to the exterior of the receptacle at its lower end, an electric heating unit adapted to be inserted in and withdrawn from said member and having its resistance element in intimate thermal relation to the walls of said member, a lead extending from the upper end of the unit down through its center, and a second lead secured to the lower end of said unit.

2. An electric heater comprising a receptacle adapted to contain a liquid to be heated, a closed reentrant metallic tube extending upward from the bottom of said receptacle, a resistance unit mounted in said tube in good heat-conductive relation to the walls thereof, the resistance being provided with a joint within the tube below the normal liquid level to prevent burning out.

3. In an electric heater, a hollow heating member adapted to extend into the liquid to be heated, an edgewise-wound resistance unit located therein in heat-conductive relation to the walls thereof, comprising a central insulating-tube provided with a flange at one end upon which said resistance-winding is seated, a conducting-disk connected to the opposite end of said winding and resting upon the opposite end of said tube, a lead secured to said disk and extending through said tube, and a second lead secured to the outer end of the resistance unit.

4. An electric heater comprising a receptacle, a hollow tubular member within the receptacle extending upward through its bottom and closed at its upper end, an electric heating unit therein, comprising a heating-coil in close heat-conductive relation therewith, and means for removably holding said unit within said member.

5. An electric heater comprising a receptacle, a hollow tubular member within the receptacle extending upward through its bottom and closed at its upper end, an electric heating unit therein, comprising a coil corresponding in shape with said tubular member and in close heat-conductive relation therewith, means for removably holding said unit within said member, said means comprising a cap, a duct engaging therewith and communicating with the interior thereof, and a retaining member engaging the base of said receptacle and secured to said duct.

6. An electric heater comprising a receptacle, a hollow tubular member within the same extending upward through its bottom and closed at its upper end, a removable electric heating unit therein, a cap for closing the lower end of said member, a duct communicating with the interior of said cap and extending outward to form a handle for said receptacle, and means for securing said cap and said duct in removable relation with said receptacle.

7. An electric heater comprising a receptacle, a hollow tubular member within the same extending upward through its bottom and closed at its upper end, a removable electric heating unit therein, a flange forming the base of the receptacle, a cap for closing the lower end of said member, a duct engaging said cap and communicating with the interior thereof and extending outward to form a handle, and means for securing said cap and said duct in removable relation with said receptacle comprising a retaining member engaging said flanged base and secured to said duct.

812,610. CHIMNEY FOR INCANDESCENT GAS-BURNERS. LOUIS STOBBE, Posnig, Germany. Filed Sept. 8, 1903. Serial No. 172,266.

Claim.—In a lamp-chimney a lower portion, adapted to be supported by the gallery of a lamp and comprising an upper and a lower cylindrical neck of comparatively the same diameter, a globular or or other shaped enlargement between said necks, and openings in said enlargement for the admission of air, in combination with an upper portion comprising a globular or other shaped top and a rim fitting the upper neck of said lower portion, substantially as and for the purposes set forth.

812,611. RHEOSTAT. FRED L. STONE, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed July 25, 1904. Serial No. 218,031.

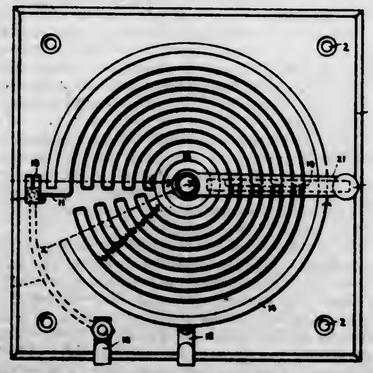

Claim.—1. In a rheostat, the combination of a resistance-conductor comprising a series of parallel strips or bars alternately connected in sets of two, and a movable member provided with a series of bridging-contacts each adapted to serially connect two adjacent sets of strips or bars.

2. In a rheostat, the combination of an insulating-base, a resistance-conductor comprising a series of circular parallel strips or bars mounted upon said base and alternately connected in sets of two, and a concentrically-pivoted member extending over said strips or bars and provided with a series of spring-contacts each adapted to serially connect two sets of strips or bars.

3. In a rheostat, the combination of an insulating-base, a resistance-conductor comprising one or more pairs of parallel circular bars or strips mounted on said base, a concentric inner contact-ring connected to one end of said resistance member, an outer concentric contact-ring and a concentrically-pivoted member having one or more bridging-contacts each adapted to engage a pair of strips or bars, and a contact rod or plate adapted to engage said inner and outer concentric rings.

812,612. BACK-PROTECTION GARMENT. SAMUEL F. SWANTERS, Itasca, Ill. Filed Mar. 22, 1905. Serial No. 251,408.

Claim.—1. An undergarment adapted to cover the back and having an inner reinforcement covering the entire back thereof, said reinforcement being of relatively soft material, and means for separating the reinforcement from the main part of the back to provide an air-space.

2. An undergarment adapted to cover the back and having a reinforcement composed of an outer layer of woolen material covering the entire back portion, an inner layer of relatively soft material, and an intermediate layer of loose-meshed fabric, the last two layers also covering the entire back portion of the garment.

812,613. TOY PISTOL. CASSIUS TAFT, St. Joseph, Mo. Filed Jan. 24, 1905. Serial No. 242,560.

Claim.—In a toy pistol, a barrel provided with an annular recess at the muzzle, a transverse guide-web having a central aperture and spaced inwardly from the muzzle, a supporting-web between the guide-web and muzzle and of less thickness than the guide-web, whereby an annular recess is formed between the webs, a spring-actuated plunger operating through the guide-web, and resilient members connected at their outer ends in the annular muzzle-recess and converging toward and extending over the supporting-web and secured at the inner ends in the annular recess.

812,614. STOVE. CARL T. TAYLOR and GEORGE L. CLARK, Mount Sterling, Ill. Filed June 19, 1905. Serial No. 265,986.

Claim.—1. A stove having a vertically-elongated body, a substantially conical reflector supported in the upper portion of said body, an air-ring disposed in the upper portion of said body and beneath the edge of said reflector, an inlet-pipe at the side of said body and leading air to said ring, and an outlet-pipe adapted to conduct air from said ring.

2. A stove having a substantially cylindrical body including a cover, a substantially conical reflector supported from said cover, an air-ring disposed within said body beneath the edge of said reflector, an inlet-pipe leading at the side of said body from a point near the floor and communicating with said air-ring, and an outlet-pipe leading from said air-ring and passing upwardly within said body and through said cover.

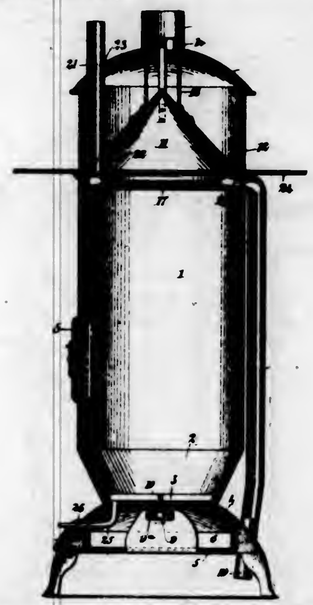

3. A stove having a substantially cylindrical body surmounted by a cover having a centrally-disposed opening therein, a collar projecting upwardly at said opening, a plurality of hangers attached to said collar and depending into the interior of said body, a substantially conical reflector attached to said hangers and supported thereby, an air-ring disposed under said reflector, an inlet-pipe leading to said air-ring, and an outlet-pipe leading therefrom.

812,615. CEMENT-BLOCK-MOLDING MACHINE. RITCHIE H. TEETS, Toledo, Ohio. Filed May 18, 1905. Serial No. 260,885.

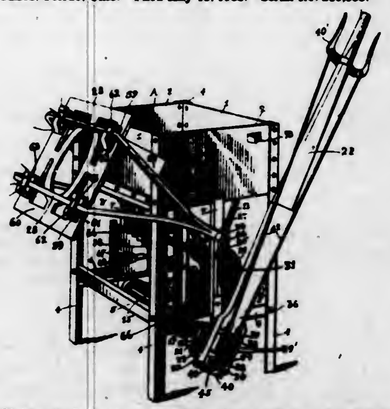

Claim.—1. In a cement-block-molding machine, the combination with the mold-box A, of the bottom frame 10, a bottom mold plate or plates mounted on the bottom frame, the tubular rock-shaft 15 having the rock-plate 16 and the rock-arms 17, means connected to the rock-arms 17 and to the bottom frame adapted to move the bottom frame upward and downward through the box, as the shaft is rocked, the rock-shaft 20 within the tubular shaft having end portions extending beyond the ends of the tubular shaft provided with the rock-plates 21 and 21', the tamping-frame 28, adapted to be moved vertically and to swing laterally from and to a position over the mold-box, slide-bars pivotally connected to the tamping-frame, and movable in vertical guides, link-bars connecting the slide-bars to the rock-plates of the shaft 20, a clutch-lever loosely mounted on the shaft 20 beside the rock-plates 21 and 16, means to engage the lever with the rock-plate of either shaft, a tamping-plate, and means to secure the tamping-plate to the tamping-frame in position to enter the top of the mold-box, substantially as set forth.

2. In a cement-block-molding machine, the combination with a mold-box A, of a bottom frame 10, mounted on a lifting-bar, and movable upward and downward through the box by the lifting-bar, means comprising a rock-shaft, rock-arms on the shaft, and connecting-rods connecting the rock-arms with the lifting-bar, to raise and lower the lifting-bar, and stepped stop-plates, beneath the lifting-bar, and adjustable to limit the downward movement of the bottom frame to different distances above the bottom edges of the mold-box, substantially as set forth.

812,616. WEED-EXTERMINATOR. HERMAN TROHSL, Spokane, Wash., assignor of one-half to Albert J. Burt, Spokane, Wash. Filed Sept. 27, 1905. Serial No. 280,268.

Claim.—1. In a device of the class described, a tubular reservoir having a discharge-passage, a pointed penetrator at the lower end of the tube and having a longitudinal passage communicating with the discharge-passage and terminating at the point of the penetrator, and a valve controlling the discharge-passage.

2. In a device of the class described, a tubular reservoir having a discharge-passage, a conical-pointed penetrator at the lower end of the reservoir and having a longitudinal channel communicating with the discharge-passage and terminating at the point of the penetrator, a valve controlling the discharge-passage and provided with a finger-pull, and a spring for closing the valve.

3. In a device of the class described, a reservoir consisting of a tube adapted to contain a vegetation-destroying liquid and having a discharge-passage, a tapered penetrating-point secured to the lower end of the tube and having a longitudinal channel the upper end of which is in communication with the discharge-passage, a conical valve adapted to open and close the passage and having a stem provided at its upper end with a pull, a shoulder on the stem, a guide for the stem fixed to the tube, and a coil-spring reacting between the guide and the shoulder to maintain the valve in its closing position.

4. In a device of the class described, the combination with a tubular reservoir having a valve-controlled discharge-passage, of a pointed penetrator fixed to the tube and having a passage terminating at the penetrator-point for conducting the contents of the reservoir to the plant or weed into which the penetrator-point is inserted.

812,617. GRAB. JOHN A. THOMPSON, Morgan City, La. Filed Feb. 26, 1904. Serial No. 196,877.

Claim.—1. The combination with a pivot-shaft, of oppositely-disposed series of connected grab-fingers, reinforcing-plates connected to the fingers, a second pivot-shaft, operating-bars connected thereto and to the reinforcing-plates, and means for raising and lowering the shafts independently of each other.

2. The combination with a pivot-shaft having sleeves removably mounted thereon; of oppositely-arranged series of curved grab-

fingers extending from the sleeves, reinforcing-plates upon said fingers, connecting-rods secured to the fingers of each series, sheaves connected to the pivot-shaft, a second pivot-shaft, sheaves connected thereto, operating-bars connected to the shaft and to the reinforcing-plates, hoisting-cables arranged upon the sheaves, and hoisting-cables connected to the second pivot-shaft.

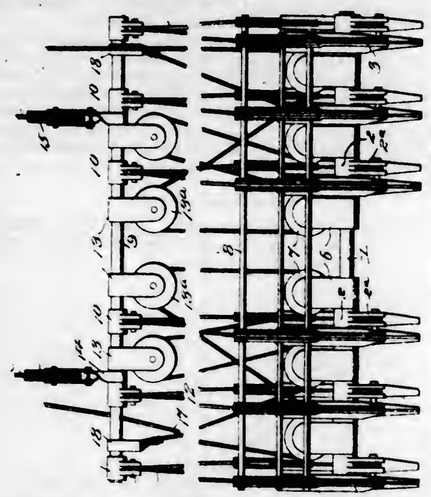

3. In a device of the character described, the combination with a pivot-shaft having sleeves removably mounted thereon; of oppositely-arranged series of grab-fingers extending from the sleeves, a second pivot-shaft, operating-bars connected thereto and to the grab-fingers, sheaves connected to the pivot-shafts, and means for drawing the sheaves simultaneously toward each other.

4. In a grapple the combination of oppositely-disposed claw members, spaced plates secured to said claw members, links or bars pivoted between said plates, elevating means connected to the links, and operating means for opening and closing the claws interposed between the links and claws.

5. In a grapple, a series of tongs, a corresponding series of links pivoted to the members of the tongs, rods or bars connecting the tongs and links in series, elevating means applied to the rod connecting the links, and operating means having running connection with both of said rods to effect an opening and closing of the tongs.

6. In a grapple, a series of tongs, a corresponding series of links pivoted to the members of the tongs, rods or bars connecting the tongs and links in series, sheave-pulleys applied to said rods or bars and a rope connected to the device and passed around said sheave-pulleys and adapted to be manipulated to effect an opening and a closing of the tongs.

812,618. **COTTON-HANDLING APPARATUS.** ALBERT F. TIDWELL, Colina, Tex. Filed Apr. 4, 1905. Serial No. 253,886.

Claim.—1. In a cotton-handling apparatus, a casing, a pneumatic conveyer opening into the casing, a suction-flue, and a discharge-chute for cleaned cotton, leading from the casing, a screen between the conveyer and the suction-flue, a cleaning-screen between the suction-flue and the discharge-chute, for screening the cotton before it reaches said chute, and a force-feeder in the casing to positively move the cotton from the conveyer to the cleaning-screen and operable solely by the blast of air entering the casing from said pneumatic conveyer.

2. In a cotton-handling apparatus, a casing, a pneumatic conveyer opening into the casing, a suction-flue, and a discharge-chute for cleaned cotton, leading from the casing, a screen between the conveyer and the suction-flue, a cleaning-screen between the suction-flue and the discharge-chute, for screening the cotton before it reaches said chute, and a force-feeder in the casing, arranged to be operated solely by the blast of air entering the casing from said pneumatic conveyer and comprising a plurality of blades.

3. In a cotton-handling apparatus, a casing, a pneumatic conveyer opening into the casing, a suction-flue, and a discharge-chute for cleaned cotton, leading from the casing, a screen between the conveyer and the suction-flue, a cleaning-screen between the suction-flue and the discharge-chute, for screening cotton before it reaches said chute, a force-feeder in the casing, arranged for operation solely by the air-blast entering the casing from said pneumatic conveyer, said force-feeder involving a plurality of blades provided with flexible strips at their outer edges, and curved members in the casing, arranged to be traversed by said flexible strips, the extent of each curved member being such that at least one flexible strip will be always in contact with one of them.

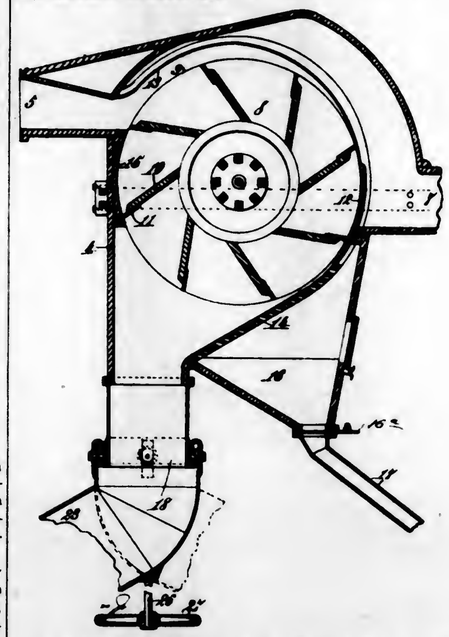

4. In a cotton-handling apparatus, a casing, a fan in the casing having blades, means in the casing to be traversed by the blades and coöperative with the latter to divide the casing into independent chambers, a screen in one of the chambers, and means for drawing air through the screen-chamber and through the screen to effect the cleaning of cotton, and to also turn the fan.

5. In a cotton-handling apparatus, a casing, a fan in the casing having blades, means in the casing to be traversed by the blades and coöperative with the latter to divide the casing into independent chambers, a screen in one of the chambers, means for drawing air through the screen-chamber and through the screen to effect the cleaning of cotton, and to also turn the fan, and a screen in the other chamber of the casing, said blades serving to carry the cotton in succession against the screens.

6. In a cotton-handling apparatus, the combination of a cotton-cleaning casing, a force-feeder for the cotton in the casing, and a suction-pipe communicating with the casing, the suction through the pipe serving as the sole means for rotating the said force-feeder.

7. A cotton-handling apparatus having a storage-house, cotton-cleaning mechanism, a plurality of bins arranged in annular order in the storage-house, there being an open space surrounded by the bins, a discharge-chute leading from the cotton-cleaning mechanism and mounted for revolving movement to deliver cleaned cotton in any one of said bins, a passage-way between two of the bins leading into said open space, and means situated in said open space for revolving said discharge-chute.

812,619. **METHOD OF PRESERVING THE INNER WALLS OF FURNACES.** FRIEDRICH C. W. TIEM, Hamburg, Germany. Filed Apr. 21, 1905. Serial No. 256,223.

Claim.—1. A method of preserving inner walls of shaft-furnaces, which consists in building up against the inner wall of said furnace during the charge thereof, a gravity-movable casing, and then piercing said casing in front of the twyers as the said casing lowers so that

means to sustain combustion can pass through the openings into the interior of the casing.

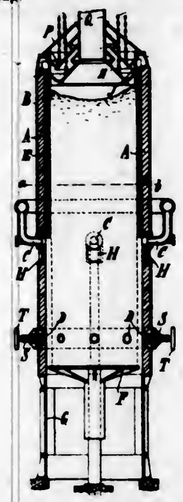

2. A method of preserving inner walls of shaft-furnaces which consists in building up against the inner wall of the furnace during the charge thereof, a gravity-movable lining, piercing said lining as the said lining lowers so that means to sustain combustion can pass into the interior of the furnace and adding to the lining at the top thereof when the lining lowers.

812,620. **ATTACHMENT FOR LADDERS.** FRANK VAN ALSTINE, Sacramento, Cal. Filed May 23, 1905. Serial No. 261,777.

Claim.—1. An attachment for ladders, comprising means adapted to be suspended from a step of the ladder, a table having connections therewith, movable outwardly and inwardly with reference thereto, and braces for the table in its outward position, movable inwardly and outwardly therewith.

2. An attachment for ladders, comprising means adapted to be suspended from a step of the ladder, a table having connections therewith and movable outwardly and inwardly with respect thereto, and having parallel side members formed with corresponding segmental slots, said means having inwardly-projecting devices working in said slots, braces adapted to move outwardly and inwardly with the table, having movable connections with the forward ends of the said side members of the table, and also having adjustable connections with parallel members of the means referred to.

3. An attachment for ladders, comprising hangers adapted to be suspended from a step of the ladder, a table having connections therewith and movable outwardly and inwardly with respect thereto, and also having parallel side members formed with corresponding segmental slots, the lower edges of said side members being curved in correspondence with the edges of the slots, said hangers having inwardly-projecting devices working in the slots, and similar projections on which ride the lower edges of the said side members, braces for the table, movable outwardly and inwardly with respect to the hangers, and having connections with the forward ends of the said side members of the table, together with adjustable connections with parallel members of the said hangers.

812,621. **TAKE-UP DEVICE FOR OVERHEAD-CABLE RAILWAYS.** JOHN G. WAILS, Delta, Pa. Filed Aug. 31, 1905. Serial No. 276,005.

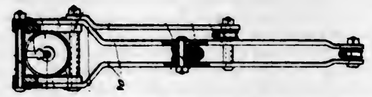

Claim.—1. In a conveying apparatus, a supporting-cable, a carriage mounted for travel on said cable and provided with a hoisting-pulley, an endless cable connected to the carriage for actuating the same, an auxiliary cable disposed above the endless cable and provided with a plurality of stop-buttons, a roller journaled on the carriage for engagement with the button-cable, a hoisting-cable passing over the hoisting-pulley and having a receptacle attached thereto, a plurality of carriers for supporting the several cables and adapted to engage said stop-buttons, and a tension device for the auxiliary cable.

2. In a conveying apparatus, a head-tower and a tail-tower, a supporting-cable connecting the two, a pulley journaled on one of said towers, a plurality of pulleys rotatably mounted on the opposite tower, a carriage mounted for travel on the supporting-cable, an endless belt connected to the carriage and passing over a pulley on one of the towers and engaging a pair of pulleys on the opposite tower, an auxiliary cable connected to the tail-tower and passing over one of the pulleys on the head-tower, said auxiliary cable being provided with a terminal weight and having a plurality of spaced stop-buttons secured thereto, a hoisting-cable engaging a fourth pulley and connected to the carriage, and a plurality of carriers for supporting said cables and adapted to engage said stop-buttons.

3. In a conveying apparatus, a cable-carrier comprising a pair of spaced side members having their upper ends offset and connected by transverse bolts, said side members being provided with wear-plates.

4. In a conveying apparatus, a cable-carrier comprising a pair of spaced side members having their upper ends offset and connected by transverse bolts, wear-plates engaging the side members, and sleeves carried by the transverse bolts and engaging the wear-plates.

5. In a conveying apparatus, a cable-carrier comprising a pair of spaced side members having their upper ends offset and connected by transverse bolts, wear-plates carried by the side members and retained in position by the transverse bolts, pulleys journaled between said side members, a plate secured to the offset portion of the carrier and spaced from the adjacent side member, and a pulley journaled between said plate and side member.

6. In a conveying apparatus, a cable-carrier comprising a pair of spaced side members having their upper ends offset and connected by transverse bolts, wear-plates engaging the side members, sleeves mounted on the bolts and engaging the wear-plates, pulleys journaled between the side members, a plate spaced from one of the side members and secured to the offset portion of the carrier by one of the transverse bolts, and a pulley journaled between said plate and the adjacent side member.

812,622. **ELECTRICAL IGNITER FOR INTERNAL-COMBUSTION ENGINES.** WILLIAM H. WALTER, New York, N. Y. Filed Mar. 24, 1903. Renewed Apr. 16, 1903. Serial No. 152,962.

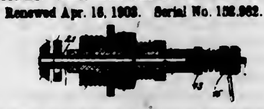

Claim.—1. In an electrical igniter, the combination of a hollow plug provided near its inner end with openings or slots and with a ring-like terminal, said openings or slots lying inside of the ring-terminal and the latter presenting a continuous active edge of thin section, and a beveled disk-like terminal having an active edge of thin section disposed in parallel and opposing relation to the corresponding edge of the ring-like terminal and forming therewith an intermediate sparking gap of uniform width, said ring-like terminal being presented edgewise to the disk-like terminal.

2. An electrical igniter, comprising a bushing having an annular terminal of thin cross-section joined thereto by intervening ligaments, and a solid circular terminal having an edge of thin section, said annular terminal and the thin edge of the solid terminal being separated by an intervening sparking gap.

3. An electrical igniter having a solid disk-like terminal pro-

vided with a beveled periphery forming an edge of thin section, and an annular terminal having a thin active edge, both terminals presenting edges of thin sections in opposing and parallel relation, the thin edge of each terminal being continuous and lying in one plane.

4. A non-clogging electrical igniter, comprising a bushing provided with spaced webs or ligaments, and with an annular terminal having an edge of thin section, said terminal being separated from the bushing by slots or spaces formed by and between the webs or ligaments, and a solid terminal having a beveled periphery forming an edge of thin section, which is presented in a concentric and opposing relation to the corresponding edge of the annular terminal.

5. An ignition device of the jump-spark class including a relatively stationary body portion, an annular terminal spaced apart therefrom but connected thereto leaving air-passages between said terminal and said body portion, a second terminal situated adjacent to the annular terminal and being spaced away from the same at all times.

812,623. **UNLOADING MECHANISM.** GEORGE WARD, Homestead, Pa., assignor of one-fourth to Bernhard Hoppe, Homestead, Pa. Filed Aug. 31, 1905. Serial No. 276,516.

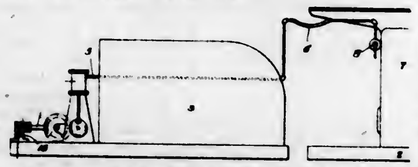

Claim.—1. Unloading apparatus comprising in combination with the tender and boiler of a railway-locomotive, an independent engine mounted on the tender provided with a driving-shaft, means for coupling said driving-shaft to an adjacent shaft located upon a car adapted to be coupled with the tender, a steam-supply pipe connecting the locomotive-boiler with said engine, and a valve-controlled connection interposed in said supply-pipe, substantially as set forth.

2. Unloading apparatus comprising in combination with the tender and boiler of a railway-locomotive, an independent engine mounted on the tender provided with a driving-shaft, a longitudinally-shifting coupling for said shaft and actuating mechanism therefor, and a car adapted to be coupled with the tender and provided with a centrally-located door-operating shaft arranged on the same level with said shifting coupling and adapted to be connected therewith, substantially as set forth.

3. Unloading apparatus comprising in combination with the tender and boiler of a railway-locomotive, an independent engine mounted on the tender provided with a driving-shaft, a longitudinally-shifting coupling for said shaft and actuating mechanism therefor, and a car adapted to be coupled with the tender and provided with opening and closing doors and a centrally-located door-operating shaft arranged on the same level with said shifting coupling and adapted to be connected therewith, the shaft of said car being provided with means connected with said opening and closing doors of the car, substantially as set forth.

4. In a car, the combination with opening and closing gates thereof, of a central longitudinally-arranged shaft connected with said gates, said shaft being provided at one end with a surrounding internally-squared sliding clutch and at the other end with a squared terminal arranged to be engaged by a similar sliding clutch of an adjacent car, substantially as set forth.

5. In a car, the combination with opening and closing gates thereof, of a central longitudinally-arranged shaft connected with said gates, said shaft being provided at one end with a surrounding internally-squared sliding clutch and at the other end with a squared terminal arranged to be engaged by a similar sliding clutch of an adjacent car, with means for shifting said clutch and for locking the shaft against rotation, substantially as set forth.

6. The combination with a dumping-car having opening and closing gates, of a longitudinally-arranged shaft connected with said gates by flexible devices, said shaft having at one end a slidingly-mounted clutch provided with peripheral rack-teeth and an interior shaft-engaging cavity, a pinion engaging said teeth and provided with an operating-shaft, a toothed locking-wheel secured to the shaft, and a locking-bar provided with corresponding teeth, said longitudinal shaft being provided at its other end with a terminal arranged to be engaged by a similar shifting clutch, substantially as set forth.

812,624. **APPARATUS FOR DELIVERING OR COUNTING COINS AND THE LIKE.** LEO WEINERS and LAZAR A. RABINOWITCH, Vienna, Austria-Hungary; said Weinrib assignor to said Rabinowitch. Filed July 13, 1904. Serial No. 216,943.

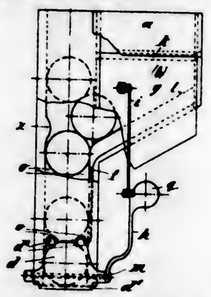

Claim.—1. In apparatus for delivering and counting coins, counters, tokens and other like objects, the combination of a reservoir, a selection-chamber below said reservoir, a vertically-reciprocatory slide the upper edge of which is adapted to force its way into said reservoir and thereby stir the objects lying in disorder therein thereby causing part of them to fall into said selection-chamber corresponding to their thickness, means for actuating said slide and means for withdrawing said objects from the selection-chamber.

2. In apparatus for delivering and counting coins, counters, tokens and other like objects, the combination of a reservoir, a selection-chamber below same, a chute, and a slide having an inclined strip thereon, the latter constituting the bottom or floor of the selection-chamber and adapted to assist in stirring or unwedging the objects therein so that part of them may slide down into the chute.

3. In apparatus for delivering and counting coins, counters, tokens and other like objects, the combination of a reservoir, a selection-chamber below same, a chute and a projection fixed so as to project sufficiently over the entrance of the chute to serve as a stop for the object immediately against it, thereby compelling the objects which may have become wedged together in the selection-chamber to change their positions.

4. In an apparatus such as described, an upright coin-chute having horizontally-spaced openings in one face, and a member provided with points movable through said openings.

5. In an apparatus such as described, a coin-chute having openings in one face, a member provided with spaced points movable through said openings, and means operable by said member for opening or closing the lower end of said chute.

6. The combination, with the coin-chute c having the superposed openings o in one face, of the lever d adapted to extend at its end d' over the lower end of said chute, the spring p for normally maintaining said lever in the aforesaid position, and the superposed pushes q having points d^3 movable in said openings o into the path of the coins, said pushes abutting against said lever and serving when pushed inwardly to move the end d' away from the end of said chute.

7. In an apparatus such as described, in combination, a coin-chute provided in one face with superposed rows of horizontally-spaced openings, push members each having points movable through the openings in each row, and a lever pivoted upon one face of the chute, normally closing the lower end thereof, and abutting against said push members.

812,625. **HOSE AND HYDRANT CONNECTION.** LEROY A. WESTON, Adams, Mass. Filed Apr. 20, 1904. Renewed Aug. 8, 1905. Serial No. 273,323.

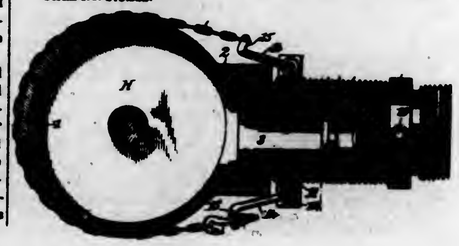

Claim.—1. A hose and hydrant connection, comprising a tubular member adapted at one end for engagement with the coupling member of a hose-section, and having at the other end a smooth-bored socket to receive the threaded thimble of a hydrant, and means carried by said tubular member for securing it in position upon a hydrant.

2. A hose and hydrant connection, comprising a tubular member threaded at one end for engagement with a coupling member carried by a hose-section and having a smooth-bored socket at the other end to receive the thimble of a hydrant, and means carried by said tubular member for securing it in position upon a hydrant.

3. A hose and hydrant connection, comprising an externally-threaded tubular member adapted at one end for engagement with a coupling member carried by a hose-section, and having at the other end a socket adapted to receive the thimble of a hydrant, a collar threaded upon the outer surface of said tubular member, and means carried by said collar for securing the tubular member in position upon a hydrant.

4. A hose and hydrant connection, comprising a tubular member having a socket adapted to receive the thimble of a hydrant, and flexible means carried by said tubular member to encircle the hydrant, and means also carried by said tubular member for placing said flexible means under tension.

5. A hose and hydrant connection, comprising a tubular member having a smooth-bored socket adapted to receive the thimble of a hydrant, a collar adjustable on said tubular member, flexible means carried by said collar to encircle a hydrant, and means carried by said collar for tightening said flexible means.

6. A hose and hydrant connection, comprising a tubular member adapted to receive the thimble of a hydrant, a collar adjustably mounted on said tubular member, pivoted arms carried by said collar, a flexible member connecting said arms, and means for drawing said flexible member taut.

7. A hose and hydrant connection, comprising an externally-threaded tubular member having a smooth-bored socket in one end thereof to receive a hydrant-thimble, a collar threaded upon said tubular member, flexible means carried by said collar to encircle the hydrant, and means provided on said tubular member for rotating the said tubular member within said collar.

8. The combination in a hose and hydrant connection, of a tubular member having a smooth-bored socket in one end thereof and having the other end threaded for engagement with a coupling member carried by a hose-section, a collar threaded upon the end of the tubular member having the socket therein, a pair of pivoted arms carried by said collar, a flexible member attached to one of said arms, a hook carried by the other of said arms and adapted to engage the flexible member, and means for adjusting said hook in the pivoted member to apply tension to said flexible member.

9. A hose and hydrant connection comprising a tubular member having a socket adapted to receive the thimble of a hydrant, a collar adjustable on said tubular member, pivoted arms carried by said collar, and a flexible member connecting said arms.

10. A hose and hydrant connection comprising a tubular member having a socket adapted to receive the thimble of a hydrant, a collar adjustably mounted on said tubular member, pivoted arms carried by said collar, a flexible member attached to one of said arms, and a hook adjustable in the other arm and adapted to engage the flexible member.

11. A hose and hydrant connection comprising a tubular member having a socket adaptde to receive the thimble of a hydrant, a collar threaded upon said tubular member flexible means carried by said collar to encircle the hydrant, means carried by said collar for tightening said flexible means, and means on said tubular member for engagement by a spanner to rotate the tubular member within said collar.

12. A hose and hydrant connection comprising an externally-threaded tubular member provided at one end with a reduced threaded portion for engagement with a coupling member, and having at the other end a socket adapted to receive the thimble of a hydrant, flexible means carried by said tubular member to encircle the hydrant, and means also carried by said tubular member for placing said flexible means under tension.

812,626. **POWER-TRANSMITTING APPARATUS.** WILLIAM L. WILSON, Tilden, Ill. Filed Dec. 13, 1904. Serial No. 236,708.

Claim.—A power-transmitting mechanism comprising a reciprocating element, a slotted cross-head connected therewith, a lever extending through the slotted cross-head and being pivotally connected therewith about midway between the center and the upper end of the lever, the pivoted portion of the lever being in the center of the slot of the cross-head and said slot being of a length to give a clearance to the opposite edges of the lever during oscillating movement of the latter, said lever having a slot at its lower end, a connecting-rod pivotally attached to the upper end of the lever, a shaft having a crank-arm secured to the connecting-rod, the movable fulcrum and the clearance of the intermediate pivoted portion of the lever serving to operate conjointly during oscillation of the lever, substantially as specified.

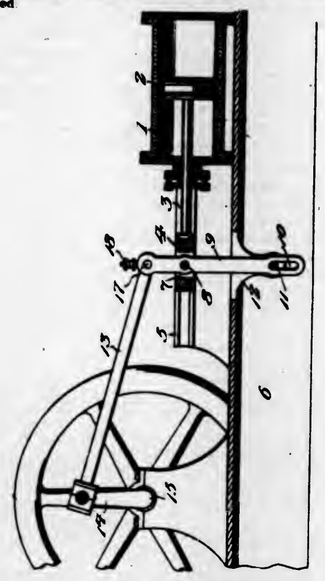

812,627. **GAS-REGULATING DEVICE.** CHARLES E. WIRTH and WILLIAM W. BRADLEY, Waterbury, Conn., assignors to The Plume and Atwood Mfg. Co., Waterbury, Conn., a Corporation of Connecticut. Filed Nov. 23, 1904. Serial No. 234,465.

Claim.—1. In a gas-regulating device, a nipple or member adapted to be connected in a fixed relation to a gas tube or pipe and a revoluble cap closely surrounding the same, said parts being each provided in the adjacent top portions with a single opening or gas-passage of appreciable area at one side of the axial center and one wall of each of which openings agrees with the axial center of the nipple for regulating the supply of gas by the eccentric relation of one opening to the other.

2. In a gas-regulating device, a nipple or member adapted to be connected in a fixed relation to a gas tube or pipe and a revoluble cap closely surrounding the same, said parts being each provided in the adjacent top portions with a single opening or gas-passage of appreciable area at one side of the axial center and one wall of each of

which openings agrees with the axial center of the nipple for regulating the supply of gas by the eccentric relation of one opening to the

of which is made eccentric to the axial center of the Bunsen tube, cap and nipple.

pressing the collar, and a connection between the collar and the valve-

primary hub between the heads, a secondary hub mounted loosely

which openings agree with the axial center of the nipple for regulating the supply of gas by the eccentric relation of one opening to the other and means for connecting the nipple and revoluble cap to permit a revoluble movement but prevent accidental separation longitudinally.

3. In a gas-regulating device, a nipple or member adapted to be connected in a fixed relation to a gas tube or pipe and a cap surrounding the same, said parts being provided with openings or gas-passages in the top of the nipple and top of the cap that are made eccentric to the axial center of the said nipple and cap, the nipple being provided near its upper end with a circumferential groove and the cap fitting over the same provided with a circumferential groove in the onter surface and consequent rib on the inner surface fitting into the groove of the nipple and so connecting the parts to prevent longitudinal separation but providing for a revoluble movement of the cap upon the nipple and a gas-tight joint, and means adapted to form a frictional contact of the cap upon the nipple, permitting the revoluble movement but preventing accidental shifting of the parts.

4. In a gas-regulating device, a nipple or member adapted to be connected in a fixed relation to a gas tube or pipe and a cap surrounding the same, said parts being provided with openings or gas-passages in the top of the nipple and top of the cap that are made eccentric to the axial center of the said nipple and cap, the nipple being provided near its upper end with a circumferential groove and the cap fitting over the same provided with a circumferential groove in the outer surface and consequent rib on the inner surface fitting into the groove of the nipple and so connecting the parts to prevent longitudinal separation but providing for a revoluble movement of the capupon the nipple and a gas-tight joint, and one or more tongues provided in the cap by slotting the same so that the tongues bear frictionally against the surface of the nipple.

5. In a gas-regulating device, a nipple or member adapted to be connected in a fixed relation to a gas tube or pipe and a cap surrounding the same, said parts being provided with openings or gas-passages in the top of the nipple and top of the cap, the nipple being provided near its upper end with a circumferential groove and the cap fitting over the same provided with a circumferential groove in the outer surface and consequent rib on the inner surface fitting into the groove of the nipple and so connecting the parts to prevent longitudinal separation but providing for a revoluble movement of the cap upon the nipple and a gas-tight joint.

6. In a gas-regulating device, a nipple or member adapted to be connected in a fixed relation to a gas tube or pipe and a cap surrounding the same, said parts being provided with openings or gas-passages in the top of the nipple and top of the cap, the nipple being provided near its upper end with a circumferential groove and the cap fitting over the same provided with a circumferential groove in the outer surface and consequent rib on the inner surface fitting into the groove of the nipple and so connecting the parts to prevent longitudinal separation but providing for a revoluble movement of the cap upon the nipple and a gas-tight joint, and means adapted to form a frictional contact of the cap upon the nipple, permitting the revoluble movement but preventing accidental shifting of the parts.

7. In a gas-regulating device, a nipple or member adapted to be connected in a fixed relation to a gas tube or pipe and a revoluble cap closely surrounding the same, said parts being provided in the top portions with openings of appreciable area, one of said openings being at one side of the axial center, for regulating the supply of gas by the eccentric relation of one opening to the other, and means for connecting the nipple and revoluble cap to permit a revoluble movement but prevent accidental separation longitudinally.

8. In a gas-regulating device, a nipple or member adapted to be connected in a fixed relation to a gas tube or pipe and a cap surrounding the same, said parts being provided with openings in the top portions, one of said openings being eccentric to the axial center of the said nipple and cap, the nipple being provided near its upper end with a circumferential groove and the cap fitting over the same provided with a circumferential groove in the outer surface and consequent rib on the inner surface fitting into the groove of the nipple and so connecting the parts to prevent longitudinal separation but providing for a revoluble movement of the cap upon the nipple and a gas-tight joint.

9. A gas-regulating device comprising a Bunsen tube, a hood, an air-distributer and a cap connected together and forming a unitary revoluble member, a nipple or member received at one end within the cap and at its other end interiorly threaded and adapted to be screwed upon the upper end of a gas tube or pipe into a fixed relation therewith, said nipple being closed at its upper end adjacent to the top of the cap, said nipple and said cap being provided with openings one of which is made eccentric to the axial center of the Bunsen tube, cap and nipple.

10. A gas-regulating device, comprising a Bunsen tube a hood, an air-distributer and a cap connected together and forming a unitary revoluble member, a nipple or member received at one end within the cap and at its other end interiorly threaded and adapted to be screwed upon the upper end of a gas tube or pipe into a fixed relation therewith, said nipple being closed at its upper end adjacent to the top of the cap, said nipple and said cap being provided with openings one of which is made eccentric to the axial center of the Bunsen tube, cap and nipple, and means for connecting the cap and nipple so as to provide a gas-tight joint to prevent longitudinal movement but provide for the revoluble movement.

812,628. **HYDRAULIC DISTRIBUTING-VALVE.** WILLIAM H. WOOD, Media, Pa. Filed Mar. 15, 1905. Serial No. 250,281.

Claim.—1. In a device of the character described, a casing having three peripheral delivery-ports and an inlet, a hollow rotary valve seated in said casing, between said ports and inlet, said valve being provided with a plurality of ports arranged to register simultaneously with the ports in the casing and other ports arranged to register singly with said ports in the casing, the valve and ports being constructed and arranged to enable any one, any two or three of the delivery-ports to be employed, and means for manually actuating the valve.

2. In a device of the character described, a casing having three peripheral delivery-ports and an inlet, a hollow rotary valve seated in said casing, between said ports and inlet, and having a central tubular extension bearing in said casing and communicating with said inlet, said valve being provided with a plurality of ports arranged to register simultaneously with the ports in the casing and other ports arranged to register singly with said ports in the casing, the valve and ports being constructed and arranged to enable any one, two or three of the delivery-ports to be employed, and means for manually actuating the valve.

3. In a device of the character described, a casing having three peripheral delivery-ports and an inlet, a hollow rotary valve seated in said casing, between said ports and inlet, said valve being provided with a plurality of ports arranged to register simultaneously with the ports in the casing and other ports arranged to register singly with said ports in the casing, the valve and ports being constructed and arranged to enable any one, two or three of the delivery-ports to be employed, means for accordingly moving or actuating said valve, and means for the retention of said valve at the requisite points of adjustment in its movement.

812,629. **VEHICLE-WHEEL.** MANUEL G. BARIO, New York, N. Y. Filed Aug. 31, 1905. Serial No. 276,562.

Claim.—1 In vehicle-wheels, the combination with a primary and a secondary hub, one loosely mounted relatively to the other, chain connections between the hubs, limiting their movement in opposite directions, a pneumatic tube located between the two hubs, being sustained by the outer hub and provided with an inner annular flange, and a check or guiding collar loosly mounted on the inner hub, having annular offsets between which the flange of the pneumatic tube is received.

2. In vehicle-wheels a primary hub having inner and outer heads, as described, a check or guiding collar loosely mounted on the primary hub between the heads, a secondary hub mounted loosely between the heads and having movement to and from the said collar around which it extends, a pneumatic tube secured by inflation within the secondary hub in connection with the annular grooves therein, and means carried by the said collar for gripping the said tube, the latter being provided with an integral boss around the opening adapted for the stem of an inflating-valve, and being also provided with an integral rim at the central inner portion.

3. In vehicle-wheels, a primary hub as described, heads for the same, a check-collar loosely mounted on the primary hub between the heads, having movement in direction of the heads, a secondary hub provided with an inner chamber, which secondary hub extends between the heads of the primary hub, having play between said heads corresponding to the lateral play of the said collar, the said chamber being provided with a segmental peripheral wall and straight side walls, a pneumatic tube located within the chamber of the secondary hub, the chamber of which tube in the cross-section of the tube is eccentric to its outside circular surface and the upper side portions of the tube being closely fitted to the corresponding walls of the chamber in the secondary hub, and extensions from the said collar, which extensions receive between them a portion of the said pneumatic tube, a space for play being provided between such portions of the pneumatic tube and the collar.

4. In vehicle-wheels, the combination of a primary hub and a secondary hub, both directly connected by members denominated a check-collar and a circular pneumatic tube intervening between said hubs, heads attached to the primary hub, the said heads connecting with chains leading directly to the secondary hub and connected thereto, the check-collar being capable of slight movement in the direction of the heads, or said collar being in contact with the heads and in this case being without said movement, an annular rib exteriorly located on the collar at each side of its center, the secondary hub being mounted to move freely eccentrically and laterally at the same time between the heads, the eccentric movement being limited by the pneumatic tube and the lateral movement limited by said heads, and at the same time the said hub being capable of circular movement to one side or the other, this movement being limited by the chains connecting the hubs, the inner edge of the secondary hub being normally spaced from the said collar, said secondary hub being provided with a chamber in its inner face having its peripheral wall concaved, its side walls straight and the upper portions of the side walls provided with annular grooves, and the pneumatic tube fitted to the concaved wall of said chamber of the secondary hub and the grooved portions of the side walls of said chamber, said tube being thickest at its inner portion and provided at its inner portion with an annular rim or flange which enters the space between the ribs of said collar, an annular space intervening between the said rim and the opposing surface of the collar, and another annular space being made to intervene between the sides of the inner portion of said pneumatic tube and the corresponding opposite surface of the collar, for the purpose specified.

812,630. **GOVERNOR MECHANISM.** HERVEY T. BALLARD, Youngstown, Ohio. Filed Sept. 26, 1905. Serial No. 280,164.

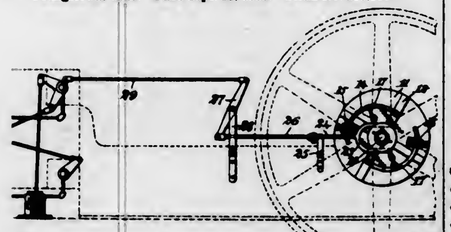

Claim.—1. The combination with a Corliss engine, of a governor-disk having ribs extending along one side of the face thereof, governor-arms mounted on the disk and arranged to slide against the ribs, weights attached to the governor-arms and located between the ribs, a spring actuating the governor-arms in one direction, an elbow-lever fulcrumed on the disk at the side bearing the arm, one arm of the elbow-lever projecting through the disk, a link connecting one arm of the elbow-lever with the governor-arm, a rod in connection with the other arm of the elbow-lever, and projecting through the disk, a collar loose on the shaft and rotated by the arm, a spring pressing the collar, and a connection between the collar and the valve-gear of the engine.

2. The combination with a Corliss engine, of a governor-disk mounted on the shaft of the engine, a governor-arm mounted to swing on the disk, a spring actuating the arm in one direction, an elbow-lever fulcrumed on the disk at the side bearing the arm, one arm of the elbow-lever projecting through the disk, a link connecting said arm of the elbow-lever with the governor-arm, a rod in connection with the other arm of the elbow-lever and projecting through the disk, a collar loose on the shaft and engaged by the arm, a spring pressing the collar, and means engaged with the collar for transmitting the movement thereof.

3. The combination with a Corliss engine, of a governor-disk mounted on the shaft of the engine, a governor-arm mounted to swing on the disk, a spring actuating the arm in one direction, an elbow-lever fulcrumed on the disk at the side bearing the arm, one arm of the elbow-lever projecting through the disk, a link connecting said arm of the elbow-lever with the governor-arm, a rod in connection with the other arm of the elbow-lever and projecting through the disk, a collar loose on the shaft and engaged by the arm, a spring pressing the collar, and means engaged with the collar for transmitting the movement thereof, said disk having ribs on the side bearing the governor-arms, and the governor-arms engaging the ribs.

4. A governor comprising a wheel or disk having ribs extending along one side face thereof, governor-arms mounted on the wheel and arranged to slide against said ribs, weights attached to the governor-arms and located between the ribs, and means for transmitting the movement of the governor-arms.

812,631. **ETHER MIXTURE FOR DISINFECTING.** TOMÁS BARCIELA, JOSÉ P. MIELOWSKY, ALFREDO CARICCHIA, and LOUIS E. ODIO, Buenos Ayres, Argentina. Filed Jan. 20, 1904. Serial No. 189,876. (Specimens.)

Claim.—1. The aromatic and disinfecting compound of ethers and by-products, consisting of the distilled product of a mixture of eucalyptus-leaves and camphor in ethylic, methylic and amylic alcohol, hydrochloric acid, sea-salt, sulfuric acid and acetate of ammonia in or about the proportions described.

2. The aromatic and disinfecting compound of ethers and by-products, consisting of the distilled product of a mixture of eucalyptus-leaves and camphor in ethylic, methylic and amylic alcohol, hydrochloric acid, sea-salt, sulfuric acid, acetate of ammonia and binoxid of nitrogen, in or about the proportions described.

812,632. **TWO-REVOLUTION CYLINDER PRINTING-PRESS.** BENJAMIN F. BERRY, St. Louis, Mo., assignor to United Printing Machinery Company, Boston, Mass., a Corporation. Filed Dec. 17, 1904. Serial No. 237,194.

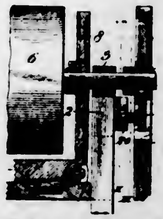

Claim.—1. In a cylinder printing-press, the combination of a cylinder, a bed adapted to move into driving connection with said cylinder, a driving member loosely associated with a spindle of said cylinder, a member fixed to said spindle and loosely fitted to said driving member, locking means adapted to connect said driving member and the member fixed to said spindle, and means for alternately shifting said locking means into and out of action, substantially as set forth.

2. In a cylinder printing-press, the combination of a cylinder, a bed adapted to move into driving connection with said cylinder, a driving member loosely associated with a spindle of said cylinder, a member fixed to said spindle and loosely fitted to said driving member, locking means adapted to connect said driving member and the member fixed to said spindle, and a cam with which said locking means engages to cause it to be shifted into locking action, substantially as set forth.

3. In a cylinder printing-press, the combination of a cylinder, a

bed adapted to move into driving connection with said cylinder, a driving member loosely associated with a spindle of said cylinder, a member fixed to said spindle and loosely fitted to said driving member, spring-controlled locking means adapted to connect said driving member and the member fixed to said spindle, and means whereby said locking means is shifted against the action of the springs controlling it, substantially as set forth.

4. In a cylinder printing-press, the combination of a cylinder, a bed adapted to move into driving connection with said cylinder, a driving member loosely associated with a spindle of said cylinder, a member fixed to said spindle and loosely fitted to said driving member, locking means adapted to connect said driving member and the member fixed to said spindle, and cams arranged to shift said locking means into locking action and out of locking action, substantially as set forth.

5. In a cylinder printing-press, the combination of a cylinder, a bed adapted to move into driving connection with said cylinder, a crank-arm fixed to a spindle of said cylinder, a loosely-mounted gear-wheel to which said crank-arm is loosely fitted, a locking member carried by said gear-wheel and adapted to engage said crank-arm to hold said crank-arm and gear-wheel rigidly united, and means for moving said locking member to free said gear-wheel from said crank-arm, substantially as set forth.

6. In a cylinder printing-press, the combination of a cylinder, a bed adapted to move into driving connection with said cylinder, a crank-arm fixed to a spindle of said cylinder, a loosely-mounted gear-wheel associated with said spindle and provided with an aperture adapted to receive said crank-arm, a locking member carried by said gear-wheel and adapted to engage said crank-arm, and means for moving said locking member to and away from said crank-arm, substantially as set forth.

7. In a cylinder printing-press, the combination of a cylinder, a bed adapted to move into driving connection with said cylinder, a crank-arm fixed to a spindle of said cylinder, a loosely-mounted gear-wheel associated with said spindle and provided with an aperture adapted to receive said crank-arm, a locking member carried by said gear-wheel and adapted to engage said crank-arm, and cams arranged to receive the engagement of said locking member to move it to and away from said crank-arm, substantially as set forth.

8. In a cylinder printing-press, the combination of a cylinder, a bed adapted to move into driving connection with said cylinder, a crank-arm fixed to a spindle of said cylinder and provided with a finger, a gear-wheel loosely associated with said spindle and provided with an aperture to receive said crank-arm finger that is of greater dimensions than said finger to permit freedom of movement of the finger therein, a spring-controlled locking member movably fitted to said gear-wheel and arranged for engagement with said crank-arm finger, and a cam located adjacent to said locking member arranged to be engaged by said locking member to move said member to said crank-arm finger, substantially as set forth.

812,683. SHIPPING-TAG. CALEB D. BRADHAM, Newbern, N. C. Filed June 20, 1905. Serial No. 267,691.

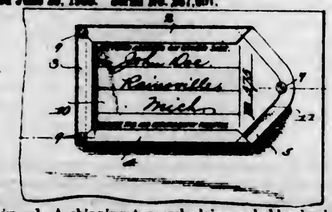

Claim.—1. A shipping-tag embodying a holder having marginal guides and an extension at one end provided with an orifice, and a tag adapted to engage the guides and provided at one end with an extension terminating in a notch in alinement with the orifice.

2. The combination with a receptacle of a holder provided with marginal guides and having at one end an extension provided with an orifice, an attaching device engaging the orifice, and a tag adapted to engage the guides and having one end provided with an extension having a notch to engage the attaching device.

3. The combination with a receptacle, of a holder having the name of the sender stamped thereon and provided with marginal guides and with a terminal extension having an orifice, an attaching device engaging the orifice, and a tag adapted to engage the guides and provided at one end with a reduced extension having a notch to engage the attaching device.

812,684. LABEL-HOLDER. DE WITT C. BROWN, American Falls, Idaho. Filed July 26, 1905. Serial No. 271,294.

Claim.—1. A label-holder formed of an integral length of wire, having a back composed of two runs of wire, an end wall or member composed of a U-shaped section of the wire, connecting the two parts of the back, and an opposite end wall or member formed of the extremities of said length of wire and projecting at an angle from the runs forming the back.

2. A label-holder having a concave-curved back and two end members projecting laterally from the concave side of the back and respectively adapted to engage and hold the ends of the labels, one of the end members extending at an acute angle to the back and being longer than the other whereby to feather out the labels at said end.

3. A label-holder having a concave-curved back and two end members projecting laterally from the concave side of the back and respectively adapted to engage and hold the ends of the labels, one of the end members extending at an acute angle to the back and being longer than the other whereby to feather out the labels at said ends, and said longer end member having means forming a shoulder at its inner side adapted to be engaged by the ends of the labels for the purpose specified.

812,685. MECHANICAL STOKER. JOHN A. CALDWELL, Montclair, N. J. Filed Feb. 15, 1905. Serial No. 245,667.

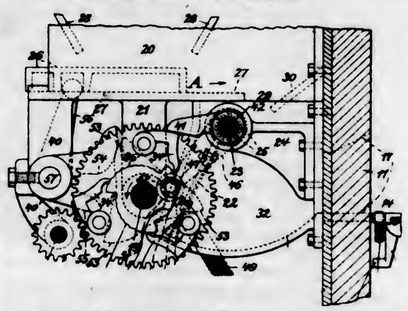

Claim.—1. In a mechanical stoker, the combination with a shovel, of a cam, a cam-tappet adapted to engage with said cam, mechanism interposed between said cam-tappet and the shovel for actuating said shovel, and differential means for producing movement of said cam-tappet with reference to the cam.

2. In a mechanical stoker, the combination with a shovel, of a cam, a cam-tappet, adapted to engage with said cam, mechanism interposed between said cam-tappet and the shovel for actuating said shovel, and differential means embodying a detachable gear-wheel for producing relative movements between said cam and said tappet.

3. In a mechanical stoker, the combination with a shovel, of a shaft, a gear-wheel mounted on said shaft, a cam-tappet adjusted to revolve with said gear-wheel, a second gear-wheel mounted on said shaft, a cam adjusted to revolve with said second gear-wheel and adapted to engage with said cam-tappet, means interposed between said gear-wheels for imparting differential movement from the first to the second wheel, one of said gear-wheels being fixedly and the other being revolubly mounted upon said shaft, and means for imparting movement from said tappet to said shovel.

4. In a mechanical stoker, the combination with a shovel, of mechanism comprising a cam and a shovel-tappet and a shaft upon which said tappet and said shovel are mounted, and means for actuating said cam for imparting movement to said shovel-tappet, said tappet being constructed in sections adjustable in their relative positions.

5. In a mechanical stoker, the combination with a shovel, of mechanism comprising a cam, a shaft, and a shovel-tappet mounted upon said shaft and adapted to receive movement from such cam for actuating said shovel, said tappet being constructed in sections provided with serrated surfaces engaging with each other, and means for varying the relative positions of said serrated surfaces.

6. The combination with a furnace, of an oscillating shovel, means for actuating said shovel, the free edge of the shovel being provided with teeth extending at different angles with respect to the face of the shovel.

812,686. VARIABLE-STROKE CRANK. JOHN G. CALLAN, Lynn, Mass., assignor to General Electric Company, a Corporation of New York. Filed July 11, 1904. Serial No. 215,991.

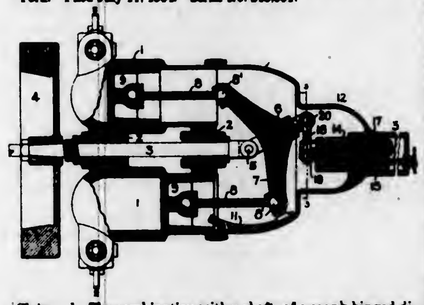

Claim.—1. The combination with a shaft, of a crank hinged directly thereto, means for actuating said crank, and means for bodily moving the shaft to vary the angle between the said crank and the axis of the shaft.

2. The combination of two rotating shafts, a third shaft hinged to one of them and imparting rotation thereto, and a connecting member hinged to the other rotating shaft and the third shaft, the axes of the hinged connections between the several parts being transverse to the axis of rotation of the shafts.

3. The combination with a crank-shaft, of a crank hinged thereto, means for actuating said crank comprising a member rotating in a given plane, a rotating shaft hinged thereto and axially alining with the crank-shaft, and means for moving said crank-shaft longitudinally, in a line perpendicular to said plane.

4. The combination with a rotating shaft, of a crank hinged thereto, a member connected with said crank and rotating in a plane perpendicular to the axis of the shaft, a slide in which said crank-shaft is journaled, a bearing for the slide and shaft, and means for reciprocating said slide in the bearing to move the shaft longitudinally.

5. The combination in an engine comprising a wabbler, of a crank-shaft, a slide in which said shaft is journaled, and with which the latter is longitudinally movable, and a crank hinged to said shaft and connected with the wabbler.

6. The combination in an engine comprising a wabbler, of a shaft journaled in the hub of the wabbler, and relatively rotatable therein, a crank-shaft, a slide in which said crank-shaft is journaled, and a crank hinged directly to the crank-shaft and to the wabbler-shaft.

7. The combination of two rotating and axially-alining shafts, a third shaft hinged to one of them and adapted to drive the same, a crank hinged to the other rotating shaft and to the third shaft, and a means for adjusting the relative position of the rotating shafts to change the relation between the crank and the third shaft.

812,687. PRISON-DOOR-LOCKING MECHANISM. GEORGE J. CARTER, Kenton, Ohio. Filed July 27, 1904. Serial No. 218,261.

Claim.—1. The combination of a cell-door having locking mechanism, a vertical bar adapted to engage with said locking mechanism, a cross-pin on said bar with a bell-crank lever having one arm vertically slotted to engage said cross-pin and a master-bar for a series of doors connected to the other arm of the lever, substantially as described.

2. The combination of a cell-door having rigid latch-hooks, a jamb-box apertured for the reception of said hooks, a vertically-movable lock-bar located in said jamb-box and having apertures adapted to engage the latch-hooks the upper end of the bar extending out of the jamb-box, a cross-pin on the upper end of the bar and a bell-crank lever having one arm vertically slotted to engage said cross-pin, a master-bar connected to the other arm of the bell-crank, with a key-lock on the jamb-box having a rotatable barrel with a toothed segment and a rack on the lock-bar engaged by said segment, substantially as described.

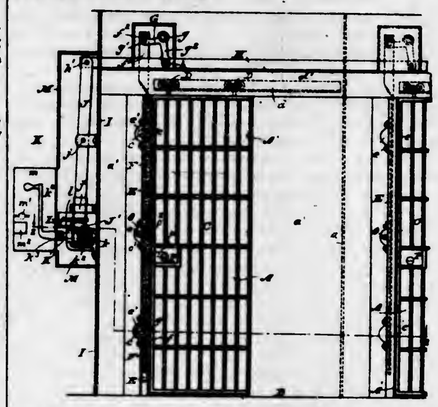

3. The combination of a cell-door having rigid latch-hooks, a jamb-box apertured for the reception of said hooks, a vertically-movable bar in the jamb-box apertured to engage said hooks, a dead-lock on the door having a hooked latch adapted to engage an aperture in the jamb-box and a slot in the lock-bar of such length that the movement of the bar will not actuate the hooked latch of the dead-lock, substantially as described.

812,688. TRANSFERRING APPARATUS. ALBERT M. CATHEY, Davidson, N. C. Filed Dec. 12, 1905. Serial No. 291,457.

Claim.—1. In an apparatus of the class described, a carriage, rollers for supporting the carriage and free thereof combined with mechanism for transferring rollers from one point to another.

2. In an apparatus of the class described, a carriage, rollers for supporting the carriage and free thereof combined with mechanism for transferring the rollers from one end of the carriage to the other end thereof.

3. In an apparatus of the class described, a runway, rollers on the runway, a carriage supported by and free of the rollers, and mechanism for transferring the rollers from one point on the runway to another point.

4. In an apparatus of the class described, a carriage, rollers for supporting the carriage and free thereof, parallel grooved rails to receive the rollers, and mechanism for lifting the rollers from off the rails when the carriage has passed from off the same and for returning the rollers to a point in front of the carriage.

5. In an apparatus of the class described, a carriage, rollers for supporting and free of the carriage, and mechanism for elevating the rollers when the carriage has passed from off the same and returning the rollers to a point in front of the carriage.

6. In an apparatus of the class described, a carriage having parallel grooved stringers, parallel grooved rails, rollers movable freely in the grooves of the respective parts, and means for lifting the rollers from off the rails when the carriage has passed thereover and for returning said rollers to a point in front of the carriage.

7. In an apparatus of the class described, a carriage, rollers for supporting the carriage and free thereof, means for lifting the rollers when the carriage has passed from off the same, and an inclined way onto which the rollers are delivered by the elevating means, for conducting said rollers to the front of the carriage.

8. In an apparatus of the class described, a carriage, rollers for supporting and free of the carriage, elevating means at the opposite ends of the carriage for lifting the rollers from their normal level, members along which the rollers travel when under the action of the elevating means, and a tiltable member adapted to assume opposite inclinations and to coöperate alternately with said members, whereby rollers received from the latter can gravitate therealong.

812,639. **PROCESS OF MAKING STIFFENING MATERIAL.** CHARLES H. CHESEMAN, Burlington, N. J. Filed May 17, 1905. Serial No. 260,579.

Claim.—1. The herein-described process of making stiffening material which consists in heating water to the boiling-point, then adding dextrine, then adding glue, cooling the mixture and then adding water thereto.

2. The herein-described process of making stiffening material which consists in heating water to the boiling-point, then adding dextrine and allowing the mixture to cook until the dextrine is dissolved, then adding glue, cooling the mixture, then reheating the mixture and then adding water to thin the mixture.

3. The herein-described process of making stiffening material consisting of heating water to the boiling-point, then adding dextrine and allowing the mixture to cook until the dextrine is dissolved, then adding ground glue and heating the mixture until it comes to a boil, while the mixture is boiling add alum, then allowing the mixture to cool, then reheating the mixture until it is in a condition to flow and then adding water to thin the mixture.

4. A new process of making stiffening material, which consists in heating water to the boiling-point, then adding dextrine, then adding glue and then allowing the mixture to cool.

5. As steps in a process of making stiffening material, heating water to the boiling-point, adding dextrine, adding glue, adding alum, and allowing the mixture to cool.

6. A new process of making stiffening material, which consists in heating water to the boiling-point, adding dextrine, and then adding glue.

812,640. **RAILWAY SWITCH AND CROSSING FROG.** JOHN B. COURLEY, Arcola, Ill. Filed Aug. 24, 1905. Serial No. 275,383.

Claim.—1. A railway frog having means to support the tread of the wheel throughout the entire distance and to engage the rim of the wheel tread to guide and confine it to position, substantially as described.

2. The combination with the rail point 7 and the straddling rails 8 and 9, of the spliced guard rails 12 provided with a head and arranged to engage the rim or tread of the wheel to confine it to position, substantially as described.

3. In a railway frog, the combination with the rails 8, 9, flared and having their heads cut off beyond the frog point, of the guard rails 12 having the flanges cut off beyond the frog point and spliced to the first mentioned rails, as, and for the purpose described.

4. In a railway crossing, the combination with the spliced point 7 of the meeting rails 5, 6, of the straddling rails 8, 9, having their heads cut off beyond said point, and the guard rails 12 having their flanges cut off and spliced upon the said straddling rails, whereby the said guide rail heads directly join the heads of the supporting rails 8, 9, substantially as described.

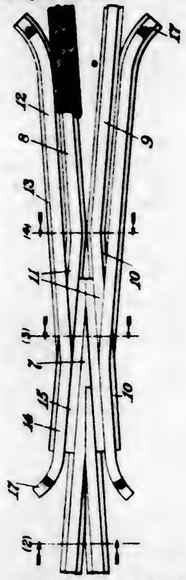

5. In a railway crossing, the combination with the meeting rails and the straddling rails 8 and 9 flared and enveloping the same, and spliced upon the narrow straddling portions to a supplementary rail 12 continuing as guard rails beyond the meeting point, substantially as described.

6. In a railway frog, the combination with a supporting rail having its head removed where it laps over the frog point, of a guard rail having its flange removed in part and spliced on the said supporting rail beyond said frog point, substantially as described.

812,641. **SEWING-MACHINE.** GEORGE L. CONCORAN and GEORGE A. DOSTER, St. Louis, Mo., assignors to Champion Shoe Machinery Company, St. Louis, Mo., a Corporation of Missouri. Filed Aug. 11, 1905. Serial No. 273,773.

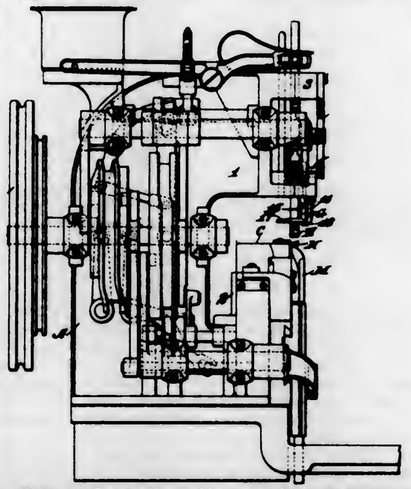

Claim.—1. In a sewing-machine, a shuttle in combination with a loop-opener, a loop-spreader having its end normally adjacent the end of the loop-opener, means for causing said opener and spreader to move into position to engage a strand of thread and thereafter recede from such position, and means for moving said loop-opener in a vertical plane relatively to the loop-opener for carrying it out of the path of movement of the shuttle; substantially as described.

2. In a sewing-machine, a shuttle in combination with a loop-opener, a loop-spreader, means for causing said opener and spreader to penetrate a loop formed in a strand of thread, means for thereafter moving the spreader relatively to the opener for spreading the loop, and means for moving said spreader in a vertical plane relatively to the opener to carry it out of the path of movement of the shuttle; substantially as described.

3. In a sewing-machine, a shuttle, a frame carrying a loop-opener, a support movably mounted on said frame, a loop-spreader oscillatingly mounted on said support and normally occupying a position with its end engaging the end of the loop-opener, means for moving said frame to cause said loop-opener and loop-spreader to enter a loop formed in a strand of thread, means for actuating said support to cause the spreader to spread said loop, and means for oscillating said spreader relatively to the loop-opener for carrying it out of the path of movement of the shuttle; substantially as described.

4. In a sewing-machine, a frame carrying a loop-opener, a slide mounted in said frame and having a loop-spreader pivotally connected thereto, an enlarged head on said loop-spreader, offsets formed in said frame, means for moving said frame laterally, and means for reciprocating said slide relatively to said frame whereby said offsets coöperate with the head on the loop-spreader for moving the same; substantially as described.

5. In a sewing-machine, a shuttle, a needle for forming a loop in a strand of thread, a loop-opener having a passage-way adapted to be entered by the barbed end of said needle, a loop-spreader, means for actuating said opener and said spreader to cause them to enter said loop, means for actuating said spreader to spread the loop, means for moving said spreader in a vertical plane relatively to the opener to carry it out of the path of movement of the shuttle, and means for actuating said shuttle to cause its point to enter said loop and carry the thread away from the needle to complete the formation of the stitch; substantially as described.

6. In a sewing-machine, a shuttle in combination with a loop-opener, a spreader, means for causing said parts to move forwardly into a loop formed in a strand of thread, means for causing said spreader to move in an upward direction out of the path of movement of the shuttle and thence in a direction away from the loop-opener to spread the loop, and then in a direction toward the loop-opener to carry it back to normal position; substantially as described.

7. In a sewing-machine, the combination with complementary mechanism including shafts, of a slidable support carrying a movable loop-spreader, a lever operatively connected to said support, a second lever connected to said first-mentioned lever, means for operating the second-mentioned lever to impart movement to said support, means for returning said second-mentioned lever to normal position, a guide in which said slidable support is adapted to move, a loop-opener carried by said guide, and offsets in said guide to contact with said loop-spreader to tilt the same at an angle to its sliding movement; substantially as described.

8. In a sewing-machine, the combination with a needle having a barb, of pivotally-supported thread-engaging members for laying the thread in engagement with said barb, rock-plates provided with slots having cam projections on the edges thereof, said cam projections on one plate being differently arranged from those on the other plate, connections between said rock-plates and said tread-engaging members, a movable actuating member having means that enter the slots in both of said plates whereby they are operated for causing the thread to be laid in engagement with the barb of the needle without pulling it, a loop-opener and a loop-spreader adapted to enter a loop in the thread, means for actuating said opener and spreader to spread the loop for the entrance of a shuttle, and means for oscillating the loop-spreader to carry it out of the path of the shuttle; substantially as described.

812,642. **UNION-COUPLING.** HERBERT S. CROSBIE, Woburn, Mass. Filed Oct. 6, 1904. Serial No. 227,479.

Claim.—1. A pipe-coupling comprising two opposing members, one of which is provided with an annular packing seat or chamber formed in the end thereof adjacent to said other member and opening into the interior bore thereof, said chamber having at the bottom thereof an annular wedge-shaped rib, a metal packing-ring located in said chamber, its inner periphery forming a portion of the interior bore of said coupling, and means for coupling said members together, whereby said packing-ring is forced into said chamber and against said rib.

2. A pipe-coupling comprising two opposing members, and means for coupling said members together, whereby they are permitted to move independently of each other in the arc of a circle, one of said members provided with an annular packing seat or chamber formed in the end thereof adjacent to said other member and opening into the interior bore thereof, said chamber having at the bottom thereof an annular wedge-shaped rib, a metal packing-ring located in said chamber, its inner periphery forming a portion of the interior bore of said coupling, and means for coupling said members together, whereby said packing-ring is forced into said chamber and against said rib.

3. A pipe-coupling comprising two opposing members, one of which is provided with an annular seat or chamber formed in the end thereof adjacent to said other member and opening into the interior bore thereof, said chamber having at the bottom thereof an annular wedge-shaped rib, having a sharp cutting edge, a packing-ring formed of softer metal than said rib, located in said chamber, its periphery forming a portion of the interior bore of said coupling, and means for coupling said members together, whereby said packing-ring is forced into said chamber and said rib is forced into said packing-ring.

812,643. **BREECH MECHANISM OF ORDNANCE.** ARTHUR T. DAWSON and GEORGE T. BUCKHAM, Westminster, London, England, assignors to Vickers Sons & Maxim Limited, Westminster, England. Filed Sept. 30, 1904. Serial No. 226,691.

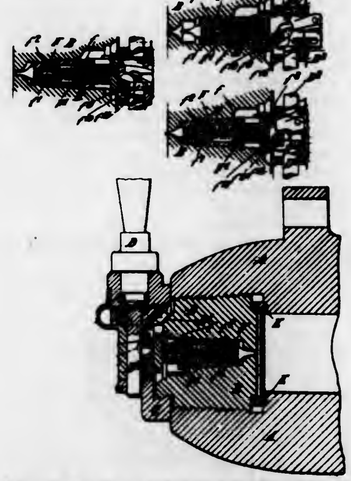

Claim.—1. In firing-gear for breech-loading guns, the combination with the spring-controlled striker, of means for imparting additional compression to the striker-spring beyond that which it receives by the retraction of the striker during cocking, means for enabling said additional compression to react after firing and retract said striker into its safety position, and means for temporarily locking said striker in this position during the traveling of the gun substantially as described.

2. In firing-gear for breech-loading guns, the combination with the spring-controlled striker, of a hinged slip-block thereon, an

actuating-shaft situated transversely with respect to the axis of said striker, a projection on said shaft coöperating with the slip-block for cocking and releasing the striker, a movable spring-case at the rear of the striker, a cam on said shaft coöperating with said spring-case for imparting additional compression to the striker-spring during retraction of the striker, and means for enabling said additional compression to react after firing and retract said striker into its safety position substantially as described.

3. In firing-gear for breech-loading guns, the combination with the spring-controlled striker, of a rearward extension thereon, a spring-controlled hinged slip-block on said extension, means for limiting the downward movement of said slip-block, an actuating-shaft situated transversely with respect to the axis of said striker, a projection on said shaft coöperating with the slip-block for cocking and releasing the striker, a movable spring-case at the rear of the striker, a cam on said shaft coöperating with said spring-case for imparting additional compression to the striker-spring during retraction of the striker, a loose block adjacent to said rearward extension of the striker, a pin thereon engaging with a slot in said rearward extension, and a cam-surface on said loose block with which when the actuating-shaft is released the cam on the actuating-shaft engages by the reaction of the compressed striker-spring and thereby shifts the loose block rearwardly and retracts the striker into its safety position, substantially as described.

4. In firing-gear for breech-loading guns, the combination with the spring-controlled striker, its slip-block and the actuating-shaft; of a firing-lever for operating said shaft, a firing-handle pivoted to the guard-plate of the gun-carriage and adapted to move in a plane parallel to the plane of movement of the striker for operating said firing-lever, and a spring for normally keeping said firing-handle in its inoperative position substantially as described.

5. In firing-gear for breech-loading guns, the combination with the spring-controlled striker, its slip-block and the actuating-shaft; of a firing-lever engaging with an arm on the actuating-shaft under the influence of a spring, a shaft situated parallel to the actuating-shaft and carrying said firing-lever and means for operating said firing-lever substantially as described.

6. In firing-gear for breech-loading guns, the combination with the spring-controlled striker, its slip-block and the actuating-shaft; of a firing-lever engaging with an arm on the actuating-shaft under the influence of a spring a shaft situated parallel to the actuating-shaft and carrying said firing-lever, a firing-handle pivoted to the guard-plate of the gun-carriage and adapted to move in a plane parallel to the plane of movement of the striker for operating said firing-lever, a spring for keeping said firing-handle in its inoperative position, and stops for limiting the extent of the movement of said firing-handle in either direction substantially as described.

7. In firing-gear for breech-loading guns, the combination with the spring-controlled striker and means for retracting the same; of a hinged catch angularly displaceable in a plane at right angles to the plane of movement of the striker, an eccentric projection on said catch adapted to be set into a position of engagement with or disengagement from a recess in the striker, and means for restraining said catch in either of its extreme positions substantially as and for the purpose specified.

812,644. **LUBRICATOR.** HENRY H. DOBBS, Buffalo, N. Y. Filed May 29, 1905. Serial No. 262,763.

Claim.—1. In a lubricating device, the combination of a plug having an oil-passage adapted to be connected at one end with a steam-chest and at its other end with an oil-supply pipe which is under boiler-pressure, and a check-valve in said passage arranged to open toward the steam-chest and incapable of closing in that direction, whereby oil is permitted to flow into the chest when the pressure is cut off from the same, said valve being constructed to completely cut off communication between said passage and the oil-supply pipe, when closed, substantially as set forth.

2. In a lubricating device, the combination of a plug having an oil-passage adapted to be connected at one end with a steam-chest and at its other end with an oil-supply pipe which is under boiler-pressure, a valve-case arranged in said passage and having a lateral port connecting the passage with the oil-pipe and a bottom port communicating with said passage, and a check-valve in said case arranged to close said lateral port under the back pressure in the steam-chest, said valve being incapable of closing toward the steam-chest and constructed to positively prevent the passage of steam from the chest to said supply-pipe, when closed, substantially as set forth.

3. In a lubricating device, the combination of a plug having an oil-passage adapted to be connected at one end with a steam-chest and at its other end with an oil-supply pipe which is under boiler-pressure, a valve-case arranged in said passage and having a lateral port connecting the passage with the oil-pipe and lateral guide-slots, and a check-valve in said case controlling said port and having a tailpiece which engages said slots and is exposed to the pressure in said passage, the valve being incapable of closing toward the chest and constructed to completely cut off communication between the chest and the oil-pipe, when closed, substantially as set forth.

4. A device of the character described, comprising a plug having an oil-passage adapted to be connected with an oil-supply conduit, a tube arranged in said passage, and a check-valve applied to the lower end of said tube and arranged to close toward the same, said valve being constructed to completely cut of communication between the lubricated part and said supply-conduit, when closed, substantially as set forth.

5. A device of the character described, comprising a plug having an oil-passage adapted to be connected with an oil-supply conduit, a combining-tube arranged in said passage and having a downwardly-tapering bore, and a check-valve applied to the lower end of said combining-tube and arranged to close toward the same, said valve being constructed to completely cut off communication between the lubricated part and said supply-conduit, when closed, substantially as set forth.

6. A device of the character described, comprising a plug having an oil-passage adapted to be connected with an oil-supply conduit, a combining-tube arranged in an enlargement of said passage and having a downwardly-tapering bore, a valve-case depending from said tube and provided adjacent thereto with a lateral port or ports connecting said tube with said passage, and a check-valve arranged in said case and controlling said ports and having its lower end exposed to the steam-pressure in said passage, said valve being constructed to completely cut off communication between the lubricated part and said supply-conduit, when closed, substantially as set forth.

812,645. **COMBINED PUNCH AND SHEARS.** EDMUND E. GARDNER, Hamler, Ohio. Filed June 13, 1905. Serial No. 265,061.

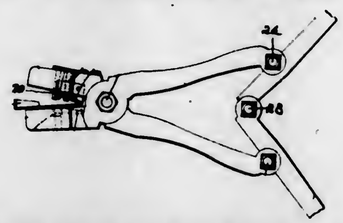

Claim.—In an implement of the class described, a jaw member having a die with a shear-face leading therefrom and continuing the same, an opposing jaw member having a punch for operating in said die and with a shear member for operating over said shear-face, pins operating loosely through said opposing jaw, a spring-plate attached to said opposing jaw and bearing upon said pins, and means for operating said jaws.

812,646. **CHEMICAL FIRE-PAIL.** CHARLES C. GILLESPIE, Chicago, Ill. Filed May 23, 1904. Serial No. 209,634.

Claim.—1. A device of the character described, comprising a primary receptacle provided with grooved means, an auxiliary receptacle provided with tenons engaging the grooved means of said primary receptacle, a weighted handle carried by said primary receptacle and provided with a rearward extension, said auxiliary receptacle provided with a hinged bottom, the extension of said handle adapted to engage said bottom and hold the same in a closed position.

2. A device of the character described, comprising a primary receptacle, a weighted handle provided with a rearward extension pivotally mounted upon said receptacle, a removable, auxiliary receptacle provided with a hinged bottom, carried by said primary receptacle, the rearward extension of said handle adapted to engage the horizontal bottom of said auxiliary receptacle for normally retaining the same in a closed position.

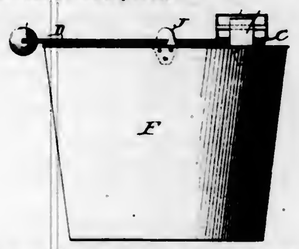

3. A device of the character described, comprising a primary receptacle, vertical, segmental members carried by said primary receptacle, each of said segmental members provided with a groove, a handle pivotally mounted upon said primary receptacle, a weight, constituting a grip, carried by said handle, said handle provided with a rearward extension, an auxiliary receptacle provided with a hinged top and bottom, tongues carried by the ends of said auxiliary receptacle, the tongues adapted to be positioned within the grooves of said segmental members for securing said auxiliary receptacle upon the primary receptacle, and the rearward extension of said handle adapted to normally hold the hinged bottom of said auxiliary receptacle in a closed position.

4. A device of the character described, comprising a primary receptacle, an auxiliary receptacle carried by said primary receptacle, said auxiliary receptacle provided with a hinged portion, and a handle carried by said primary receptacle adapted to engage said hinged portion for normally securing it in a closed position, said handle comprising a main body provided with integral, substantially parallel extensions, and a weight constituting a grip carried by said body.

5. A device of the character described, comprising a primary receptacle, a handle secured to said receptacle and by which the same is adapted to be handled, said handle provided with a rearward extension, an auxiliary receptacle supported upon said primary receptacle, and a hinged member carried by said auxiliary receptacle, the rearward extension of said handle adapted to normally hold said hinged member in a fixed position.

6. A device of the character described, comprising a primary receptacle, a handle secured to opposite sides of said receptacle, said handle provided with an extension, an auxiliary receptacle provided with a movable bottom carried by said auxiliary receptacle, said bottom adapted to be normally retained in its closed position by means of said extension of the handle.

7. A device of the character described, comprising a primary receptacle, a bail-handle provided with an extension carried by said primary receptacle, an auxiliary receptacle carried by said primary receptacle, and a movable closing member carried by said auxiliary receptacle, the extension of said handle adapted to engage said movable, closing member and normally hold the same in a closed position.

812,647. **RESERVOIR-PEN.** ROBERT T. GILLESPIE, Lisbon, Ohio. Filed Feb. 16, 1905. Renewed Oct. 21, 1905. Serial No. 283,807.

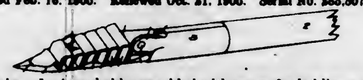

Claim.—1. A penholder provided with means for holding a pen-point, a pivoted lid provided on its under side with a series of cross doubled walls, intervening spaces adapted to hold the ink by capillary attraction and to form with the pen an ink-holding cavity, and a spring mounted in the interior of the holder adapted to exert pressure against the rear portion of the lid to hold it in a raised or lowered position, substantially as set forth.

2. A penholder provided with means for holding a pen-point, a pivoted lid provided on its under side with a series of cross doubled walls, intervening spaces adapted to hold the ink by capillary attraction and to form with the pen an ink-holding cavity, with a terminal tip having a feeding-groove on its under side, and a spring mounted in the interior of the holder adapted to exert pressure against the rear portion of the lid to hold it in a raised or lowered position, substantially as set forth.

3. A penholder provided with means for holding a pen-point, a pivoted lid provided on its under side with a series of cross doubled walls, a longitudinal channel formed by cutting through said walls transversely, intervening spaces adapted to hold the ink by capillary attraction and to form with the pen an ink-holding cavity, and a spring mounted in the interior of the holder adapted to exert pressure against the rear portion of the lid to hold it in a raised or lowered position, substantially as set forth.

4. The combination with a ferrule, of a pivoted lid formed of a sheet-metal blank doubled to provide a series of cross-walls and intervening apertures, substantially as set forth.

5. The combination with a ferrule, of a pivoted lid formed of a sheet-metal blank doubled to provide a series of cross-walls and intervening apertures, with a terminal grooved tip, substantially as set forth.

6. The combination with a ferrule, of a pivoted lid formed of a sheet-metal blank doubled to provide a series of cross-walls and intervening apertures, a longitudinal channel formed by cutting through said cross-walls, with a terminal grooved tip, substantially as set forth.

7. The combination with a ferrule, of a pivoted lid formed of a sheet-metal blank doubled to provide a series of cross-walls and intervening apertures, a longitudinal channel formed by cutting through said cross-walls, and a terminal grooved tip, with a spring mounted in the ferrule adapted to bear against the rear end of the lid to hold it in a raised or lowered position, substantially as set forth.

8. The combination with a ferrule, of a pivoted lid formed of a sheet-metal blank doubled to provide a series of cross-walls and intervening apertures, a longitudinal channel formed by cutting through said cross-walls, and a terminal grooved tip, and provided with a projecting lifting finger-piece, substantially as set forth.

9. A ferrule consisting of a sheet-metal blank bent into cylindrical form, provided with lateral inwardly-turned wings at its front portion adapted to form an interior ferrule with an intervening pen-holding space, and doubled lid-pivoting cheeks projecting from said front portion, substantially as set forth.

10. A ferrule consisting of a sheet-metal blank bent into cylindrical form, provided with lateral inwardly-turned wings at its front portion providing an interior ferrule with an intervening pen-holding space, and providing inner and outer extremities, one of which projects beyond the other, with doubled lid-pivoting cheeks, substantially as set forth.

812,648. **APPARATUS FOR CLOSING BOTTLES BY MEANS OF METAL CAPSULES.** EWALD GOLDSTEIN, Cologne, Germany. Filed May 23, 1904. Serial No. 209,404.

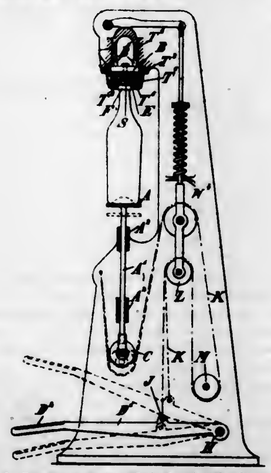

Claim.—1. In an apparatus of closing bottles by means of metal capsules and washers, the combination of a vertically-movable bottle-holding means, a fixed stamp or abutment against which the capsule and washer are placed, a compressible elastic element disposed

around the lower portion of the fixed stamp or abutment, a displaceable crosch movable over and around the stamp or abutment and compressing said elastic element, substantially as described.

2. In combination, in a metal-frame screen, corner-pieces, metal rails overlapping and secured to the corner-pieces, said rails and corner-pieces having inwardly-projecting flanges, and a wire-cloth panel secured between said flanges, substantially as described.

3. In combination, in a metal-frame screen, corner-pieces, metal rails overlapping and secured to the corner-pieces, said rails and corner-pieces having inwardly-projecting flanges, and a wire-cloth panel secured between said flanges, the top flange having a centrally-located opening, substantially as described.

4. In combination, in a metal-frame screen, corner-pieces, metal rails overlapping and secured to the corner-pieces, said rails and corner-pieces having inwardly-projecting flanges, and a wire-cloth panel secured between said flanges, the top flange having a centrally-located opening, and a hook-shaped hanger secured to the top rail and projecting through said opening, substantially as described.

5. In combination, in a metal-frame screen, corner-pieces, metal rails overlapping and secured to the corner-pieces, said rails and corner-pieces having inwardly-projecting flanges, and a wire-cloth panel secured between said flanges, the top flange having a centrally-located opening, and a hook-shaped hanger secured to the top rail and projecting through said opening, the hanger having a loop at its upper end, substantially as described.

6. In combination, in a metal-frame screen, corner-pieces, metal rails overlapping and secured to the corner-pieces, said rails and corner-pieces having inwardly-projecting flanges, and a wire-cloth panel secured between said flanges, the top flange having a centrally-located opening, and a hook-shaped hanger secured to the top rail and projecting through said opening, the hanger having a loop at its upper end, and a hook-shaped hanger-bracket secured to the top rail and projecting through said opening, substantially as described.

7. In combination, in a metal-frame screen, corner-pieces, metal rails overlapping and secured to the corner-pieces, said rails and corner-pieces having inwardly-projecting flanges, and a wire-cloth panel secured between said flanges, the top flange having a centrally-located opening, and a hook-shaped hanger secured to the top rail and projecting through said opening, the hanger having a loop at its upper end, and a hook-shaped hanger-bracket secured to the top rail and projecting through said opening, the hanger-bracket having a loop at its upper end, substantially as described.

8. In combination, in a metal-frame screen, corner-pieces, metal rails overlapping and secured to the corner-pieces, said rails and corner-pieces having inwardly-projecting flanges, and a wire-cloth panel secured between said flanges, the top flange having a centrally-located opening, and a hook-shaped hanger secured to the top rail and projecting through said opening, the hanger having a loop at its upper end, and a hook-shaped hanger-bracket secured to the top rail and projecting through said opening, the hanger-bracket having a loop at its upper end, and a hook-shaped hanger-bracket secured to the top rail and projecting through said opening, substantially as described.

9. In combination, in a metal-frame screen, corner-pieces, metal rails overlapping and secured to the corner-pieces, said rails and corner-pieces having inwardly-projecting flanges, and a wire-cloth panel secured between said flanges, the top flange having a centrally-located opening, and a hook-shaped hanger secured to the top rail and projecting through said opening, the hanger having a loop at its upper end, and a hook-shaped hanger-bracket secured to the top rail and projecting through said opening, the hanger-bracket having a loop at its upper end, and a hook-shaped hanger-bracket secured to the top rail and projecting through said opening, the hanger-bracket having a loop at its upper end, substantially as described.

10. In combination, in a metal-frame screen, corner-pieces, metal rails overlapping and secured to the corner-pieces, said rails and corner-pieces having inwardly-projecting flanges, and a wire-cloth panel secured between said flanges, the top flange having a centrally-located opening, and a hook-shaped hanger secured to the top rail and projecting through said opening, the hanger having a loop at its upper end, and a hook-shaped hanger-bracket secured to the top rail and projecting through said opening, the hanger-bracket having a loop at its upper end, and a hook-shaped hanger-bracket secured to the top rail and projecting through said opening, the hanger-bracket having a loop at its upper end, and a hook-shaped hanger-bracket secured to the top rail and projecting through said opening, substantially as described.

around the lower portion of the fixed stamp or abutment, a displaceable punch movable over and around the stamp or abutment and engaging the compressible element, a lever for operating both the bottle-holding means and the displaceable punch, a flexible connection and pulleys interposed between the lever and the bottle-holding means and punch, and means for preventing a premature operation of the punch.

2. In an apparatus for closing bottles by means of metal capsules and disks, the combination of a vertically-movable bottle-holding means, a fixed stamp or abutment against which the capsule and washer are placed, a compressible elastic element having a portion thereof below the stamp or abutment and exerting an inward pressure when operated against the capsule-rim, a displaceable punch movable over the stamp and abutment and in engagement with the compressible element, and mechanism for operating the bottle-holding means and displaceable punch in timed relation.

812,649. **HAME-FASTENER.** GLENN G. GREENE, Warren, Pa. Filed Sept. 20, 1905. Serial No. 279,055.

Claim.—A hame-fastener comprising a lever formed with spaced sides, a link pivoted at one end to one end of said lever and foldable between the spaced sides of the same, an arm formed with spaced sides and pivoted at one end to the spaced sides of said lever, and a flexible element and a hook movably coupled respectively to said link and to said arm, and a hook adjustably connected to said flexible element.

812,650. **APPARATUS FOR MAKING ARTIFICIAL SAND.** GEORGE K. HANFELDT, Munhall, and DAVID CURRAGH, Swissvale, Pa. Filed Nov. 11, 1904. Serial No. 232,311.

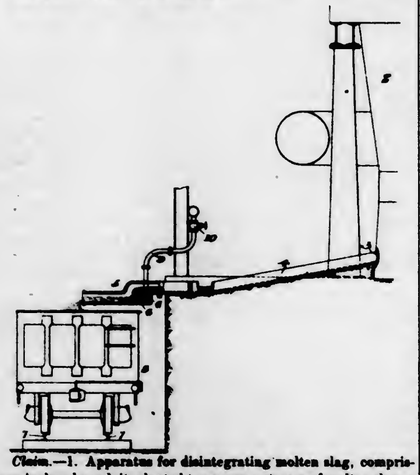

Claim.—1. Apparatus for disintegrating molten slag, comprising an inclosed conduit adapted to convey a stream of molten slag, a water-supply, and means for directing a stream of water into contact with the slag within said conduit, the walls of the conduit being arranged to receive the impact of the slag when thrown laterally outward; substantially as described.

2. Apparatus for disintegrating molten slag, comprising an inclosed conduit adapted to convey a stream of molten slag, a water-supply, and means for directing a stream of water toward the outlet of said conduit and into contact with the slag within said conduit, the walls of the conduit being arranged to receive the impact of the slag when thrown laterally outward; substantially as described.

3. Apparatus for disintegrating molten slag, comprising an inclosed conduit for the slag, a water-supply, and means for directing an annular stream of water into contact with the slag within said conduit, the walls of the conduit being arranged to receive the impact of the slag when thrown laterally outward; substantially as described.

4. Apparatus for disintegrating molten slag, comprising an inclosed conduit adapted to convey a stream of molten slag, a water-supply, and means carried by the walls for directing a stream of water into contact with the slag within said conduit, the walls of the conduit being arranged to receive the impact of the slag when thrown laterally outward; substantially as described.

5. Apparatus for disintegrating molten slag, comprising an inclosed conduit for the slag, a water-supply, and means for directing a stream of water into contact with the slag within said conduit, the walls of the conduit being arranged to receive the impact of the slag when thrown laterally outward, the end of the conduit being arranged to discharge the disintegrated slag into a car, substantially as described.

812,651. **TOY OR DISPLAY DEVICE.** ROBERT H. HARTLEY, Pittsburg, Pa. Filed Jan. 21, 1905. Serial No. 242,080.

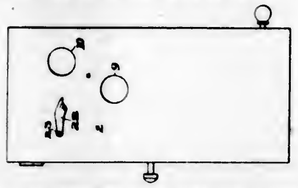

Claim.—1. An amusement device, comprising a casing having a question-opening and an answer-opening, a shutter closing at least one of said openings, a coin-receiver connected to the shutter device and arranged to tilt it to a lower position when the coin is inserted, and means coöperating with the receiver in its lower position to hold the coin; substantially as described.

2. An amusement device comprising a casing for a question-opening and an answer-opening, a web of flexible material having suitable questions and answers thereon arranged to register with said openings, a shutter device arranged to alternately open said apertures, means for holding the shutter device in one position, and means for tilting it in another position when a coin or weight is inserted; substantially as described.

3. In an amusement device a casing for question and answer openings, a pair of shutters arranged to alternately close said openings, a weight arranged to normally hold the shutters in one position, and a coin or weight receiver arranged to tilt the shutters to another position when the coin or weight is inserted; substantially as described.

4. In an amusement device a casing for question and answer openings, a pair of shutters arranged to alternately close said openings, a weight arranged to normally hold the shutters in one position, a coin or weight receiver arranged to tilt the shutters to a lower position when the coin or weight is inserted, and a hand-operated device arranged to coact with the receiver when in lower tilted position to hold the coin; substantially as described.

5. An amusement device comprising a casing having question and answer openings, means for alternately opening and closing said openings, and a pointer or hand device arranged to automatically tilt toward the opening which is opened; substantially as described.

6. An amusement device comprising a casing having question and answer openings, a tilting shutter device having doors arranged to close said apertures alternately, a weight or its equivalent arranged to normally hold the shutter device in one position, and a coin-receiver connected to the shutter device and arranged to tilt it when the coin or weight is inserted.

7. An amusement device comprising a casing having question and answer openings, a tilting shutter device having doors arranged to close one aperture when the other is open, a weight or its equivalent arranged to normally hold the shutter device in one position, a coin-receiver connected to the shutter device and arranged to tilt it to a lower position when the coin or weight is inserted, and a yieldingly-pressed hand-operated holder arranged to coöperate with the coin-receiver for retaining the coin in its lower position; substantially as described.

812,652. **SPOUT FOR GATHERING TURPENTINE.** JAMES I. HATFIELD, Douglas, Ga. Filed Nov. 10, 1905. Serial No. 286,707.

Claim.—A spout for gathering turpentine made up from a single piece of sheet metal, which is shaped to provide a top kerf-flange and converging side flanges, the top flange having a centrally-located dividing-slit which extends into the upper portion of the front of the spout, whereby the blank may be bent to provide an angularly-disposed kerf-flange and a curved part below the flange which terminates in an outward-extending discharge portion, substantially as shown.

812,653. **LETTER-FILE.** CLARA C. HEID, Juneau, Alaska. Filed Apr. 14, 1905. Serial No. 255,668.

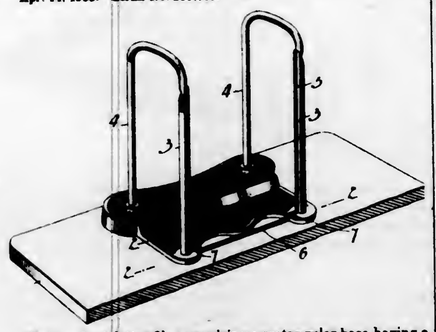

Claim.—1. A letter-file comprising a rectangular base having a transverse slot extending through the same, a plate fastened on the base at the one end thereof and having circular openings and slots extending from said openings in vertical alinement with the base-slot, and vertical tubular pins secured in said openings and each having in its inner side a vertical slot in alinement with the base and plate-slots.

2. A letter-file comprising a rectangular base having a transverse slot extending through the same, a plate fastened on the base at one end thereof and having circular openings and slots extending from said openings in vertical alinement with the base-slot, vertical tubular pins secured in said openings and each having in its inner side a vertical slot in alinement with the base and plate slots, and transfer-wires coöperating with said pins.

812,654. **WINDOW-SCREEN.** CHARLES C. HIRSCH, Tripp, S. D. Filed Oct. 27, 1905. Serial No. 284,660.

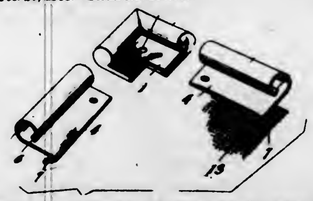

Claim.—1. In combination, sheet-metal rails, means securing the meeting ends of the rails together, each rail having a netting-securing flange bent down to secure the netting, a sheet of netting having its edges bent under and gripped to the rails by said flanges, and a cross-bar between opposite rails having its ends bent to fit said flanges and bent down with the same.

2. In combination, in a metal-frame screen, corner-pieces, metal rails overlapping and secured to the corner-pieces, said rails formed of overlapping sections provided along their inner edges with longitudinal netting-securing flanges, netting extending over the outer faces of said flanges and having inturned edges extending along the inner faces of said flanges, said flanges being bent down tightly to the rails to grip said edges of the netting between the faces of the rails and the flanges and thereby tightly secure and stretch the netting across the opening of the completed frame, the flanges of the sections of each rail longitudinally overlapping, whereby the sections of a rail are rigidly locked together by closing down said flanges to stretch and fasten the netting substantially as described.

3. In combination, in a metal-frame screen, corner-pieces, metal rails overlapping and secured to the corner-pieces, said rails comprising longitudinally-overlapping sections provided along their inner edges with means for securing the netting thereto, and a cross-bar between opposite rails and secured to the inner edges thereof and formed of longitudinally-overlapping sections, substantially as described.

4. In combination, in a metal-frame screen, sheet-metal rails, means securing the same together at the corners of the frame, each rail along its inner edge having throughout the length thereof a longitudinal netting-securing flange extending back over the side face of the rail, and the netting having its edges doubled or bent back to form flanges to engage the inner surfaces of said netting-securing flanges, the netting extending over the outer faces of said flanges with said edges extending across the inner faces of said flanges, said flanges then being closed down to the side faces of the rails to stretch the netting and tightly grip said edges thereof between the rail-faces and said flanges, substantially as described.

5. As a new article of manufacture, a metal frame for screens adapted to be adjusted to the required dimensions before the netting is applied and fastened thereto, comprising rails each consisting of sheet-metal sections longitudinally and slidably overlapping, each section having a longitudinal bead or roll along the outer edge and a longitudinal netting-securing flange along the inner edge, said flange extending back at an angle over the side face of the section, said flanges of the sections of a rail overlapping and adapted to be closed down tightly over the faces of the sections to tightly lock the sections together and grip the edges of the netting between the flanges and the said faces of the sections, substantially as described.

6. A screen comprising a metal frame comprising longitudinally overlapping and telescoping sections having flanges along the inner edges thereof and pressed down to the faces thereof, and a netting stretched over the flanges and having its edges gripped beneath said flanges, said flanges locking said frame-sections rigidly together in the desired adjustment.

7. An adjustable metal frame for window-screens and the like, comprising similar telescoping sections along their inner edges having overlapping netting-gripping flanges adapted to be closed down on the body portion of the sections for clamping the netting to the frame and locking the sections together, substantially as described.

8. As a new article of manufacture, a metal frame for screens comprising rails formed of longitudinally and slidably overlapping sections, each section formed of sheet metal with a flat body portion along the inner edge having a netting-securing flange and along the outer edge having a hollow roll longitudinally open along the side face of the body portion, whereby the rolls of the sections longitudinally telescope and the body portions and flanges longitudinally overlap, substantially as described.

9. A metal frame for screens comprising corner-pieces each consisting of a plate having a bead along its outer edges, sheet-metal longitudinally overlapping and slidable sections each having a flat body portion with a netting-securing flange and a hollow roll, said sections longitudinally overlapping along their body portions with their rolls telescoping one within the other, the body portions of the end sections overlapping said corner-plates with the beads thereof extending longitudinally into the rolls of said sections, substantially as described.

812,655. **ROLLER-CHAIN FOR CONVEYERS.** ADOLPH JOHNSON, Battlecreek, Mich. Filed July 3, 1903. Renewed Dec. 22, 1905. Serial No. 293,967.

Claim.—In a roller-chain, the combination of a series of links each comprising two legs joined together at one end by an end piece provided with a transverse bore, the said legs being arranged side by side, the remaining ends of the legs having orifices and being separated and adapted to receive between them the end piece of another link, a pin passing through the said orifices in the legs of one link and

through the end piece of the next link disposed between those legs as

812,660. **ADJUSTABLE MIRROR-SUPPORT.** THOMAS G. LOVE-

ally mounted in said box and operating by gravity to close said slot

through the end piece of the next link disposed between those legs as described, means for securing the pin, one leg of each link having projecting lugs, and the other leg having a projecting spindle, and rollers revolubly upon the said spindles, each link having one of said rollers, as set forth.

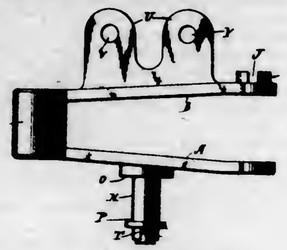

812,656. CONSTRUCTION OF SHIP'S HULLS. JEAN B. I. A. JULHE, St. Mandé, France. Filed Feb. 7, 1905. Serial No. 244,607.

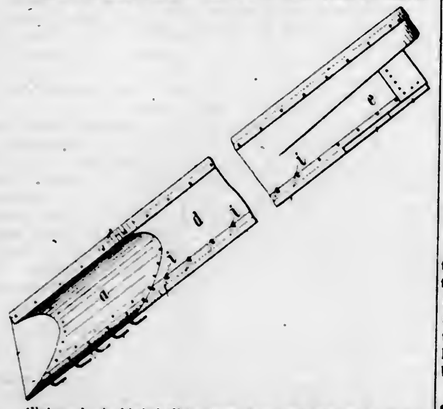

Claim.—1. A ship's hull having a bow in the form of a double moldboard of a width corresponding to that of the hull.

2. A ship's hull having a flat bottom provided with a plurality of keels, a platform extending across the front of said keels, and air-injectors carried by said platform.

3. A ship's hull having a flat bottom provided with a plurality of keels, a platform extending across the front ends of said keels, and rearwardly-disposed air-injecting tubes extending downwardly from said platform below said keels and directed rearwardly in line with the spaces or compartments between the latter.

812,657. ELECTRIC COIL. ISIDOR KITSEE, Philadelphia, Pa. Filed Sept. 10, 1904. Serial No. 224,008.

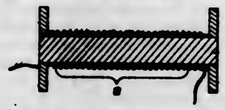

Claim.—1. The method of forming a coil useful for electric purposes which consists in forming out of uninsulated or bare wire a series of layers, each consisting of a series of convolutions, spacing the convolutions in a manner so as to prevent contact between the same, and insulating the different layers from each other through the interposition of layers of unvulcanized rubber or caoutchouc provided with the necessary vulcanizing material and then uniting the different layers through the process of vulcanization.

2. In the manufacture of coils useful for electric purposes, the process which consists in separating the different layers of wire, as they are produced, by layers of unvulcanized rubber containing its vulcanizing material, and then subjecting said layers of rubber and wire to the process of vulcanization, thereby uniting the rubber and wire to the process of vulcanization, thereby uniting the rubber and embedding therein the wire.

3. In the manufacture of electric coils wherein bare wire is employed to form said coil, the following steps, to wit: first, providing a support out of a layer of unvulcanized rubber; second, winding thereon uninsulated wire so as to produce a layer, the individual convolutions of which are separated by a space; third, covering said layer of wire with a layer of unvulcanized rubber, and multiplying said steps so as to produce a coil of required size, and finally subjecting the whole to a vulcanizing process whereby the different layers of unvulcanized rubber are united and form a substantial covering for the bare wire and whereby the former soft and unvulcanized rubber is converted into a hard rubber.

4. As a new article of manufacture, a block of vulcanized rubber provided with a series of spiral-like channels and a series of layers of metallic wires, each consisting of a series of convolutions incased in said channels.

5. As a new article of manufacture, a block of hard rubber having incased therein a series of layers of wire, each consisting of a series of convolutions, the layers and convolutions insulated from each other by parts of said hard rubber.

812,658. HOLDER FOR SALES-PADS. ASA E. LANDON, Canton, Pa., assignor to American Sales Book Company, Elmira, N. Y. Filed Nov. 8, 1905. Serial No. 286,415.

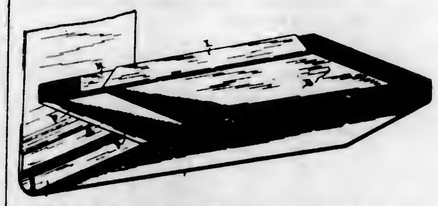

Claim.—1. The combination, with a pad of leaves having a fastening-strip at the back attached thereto in proximity to one edge of the pad, of a holder therefor comprising a back leaf having a turned-up portion along one edge, and a second leaf hinged to said back leaf and adapted to fold down upon it with one edge spaced from the turned-up portion, whereby, when the fastening-strip of the pad is hooked over said edge, the corresponding edge of the pad will be brought into engagement with said turned-up portion.

2. The combination, with a pad of leaves and a fastening-strip stapled together in proximity to one edge of the pad, of a holder therefor comprising a back leaf having a turned-up portion along one edge, and a second leaf hinged to said back leaf at right angles to the turned-up portion, the edge of the second leaf adjacent the turned-up portion being spaced therefrom for the purpose set forth.

812,659. HAT. GIDEON D. LORSCH, New York, N. Y., assignor to Standard Oiled Clothing Company. Filed Aug. 5, 1905. Serial No. 272,894.

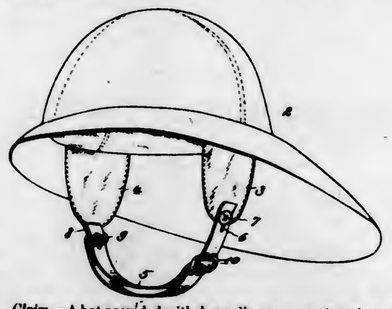

Claim.—A hat provided with depending ear-covering pieces, one of which has a button, the other being doubled on itself to produce a loop, a metallic loop connected with the other loop, a chin-strip having a buttonhole at one end to receive said button, and extended through said metallic loop, a slide provided with a cross-bar to which that end of the strip opposite the one having the buttonhole is permanently connected, the strip being extended between its ends through said slide

812,660. ADJUSTABLE MIRROR-SUPPORT. THOMAS O. LOVEGROVE, Philadelphia, Pa., assignor to Marshall A. Wood, Philadelphia, Pa. Filed June 1, 1905. Serial No. 263,286.

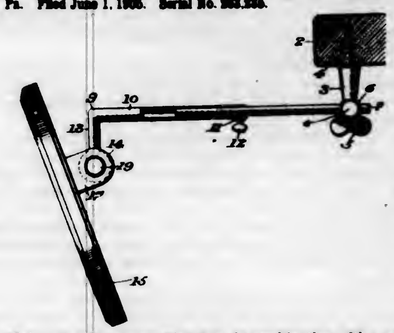

Claim.—A mirror-supporting arm, in combination with a post formed with a screw-stem, a boss, and a thumb-piece, said boss being provided with an opening therethrough, and a binding-screw at a right angle to said opening.

812,661. CARRIAGE-CURTAIN FASTENER. LAWRENCE J. LUCKHAUPT, St. Louis, Mo. Filed Feb. 6, 1905. Serial No. 244,483.

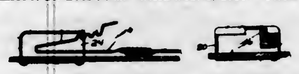

Claim.—In an improved carriage-curtain fastener, the combination with a curtain-frame member comprising a housing having an elongated opening in one end, and a lip extending downwardly from the top of the housing over said opening, of a narrow spring-tongue bent double and secured at one end to the curtain, and the free end of which tongue is provided with a series of transverse bends to form teeth for engaging the lip of the housing; substantially as specified.

812,662. MAIL-BOX. EDWIN T. MARSH, Rochester, N. Y. Filed Sept. 21, 1905. Serial No. 279,497.

Claim.—1. A mail-box having a semicylindrical top in which is formed a normally closed mail-receiving slot, a combined segmental mail-receptacle and slot-closing device pivotally mounted in said top, said receptacle having formed therein a receiving-opening, hand-knobs connected to said receptacle whereby the same may be operated by hand to open said slot, and an operating-rod connected to said receptacle and extending downwardly in position to be engaged by the knee to open said slot, substantially as described.

2. A mail-box having a normally closed mail-receiving slot, a combined segmental mail-receptacle and slot-closing device pivotally mounted in said box and operating by gravity to close said slot, said receptacle having formed therein, a mail-receiving opening, hand-knobs secured to the pivots of said receptacle whereby the same may be operated, an operating-rod connected thereto and extending through the bottom of the box and a knob or head formed on the lower projecting end of said operating-rod, substantially as described.

3. A mail-box having a normally closed mail-receiving slot, a combined segmental mail-receptacle and slot-closing device pivotally mounted in said box and operating by gravity to close said slot, said receptacle having formed therein a mail-receiving opening, an inwardly-projecting stop-flange formed on the lower edge of said slot to limit the movement of said receptacle, means arranged on the top of the receptacle to receive the flanged lower edge of said slot, thereby forming, a water-tight closure for the same when the receptacle is in a lowered position, means whereby said receptacle is operated by hand, and means whereby the same is operated by the knee, substantially as described.

4. A mail-box having a normally closed mail-receiving slot, a combined segmental mail-receptacle and slot-closing device pivotally mounted in said box and operating by gravity to close said slot, said receptacle having formed therein a mail-receiving opening, an inwardly-projecting stop-flange or lip formed on the lower edge of said slot to limit the movement of said receptacle, protecting-strips arranged at the ends of said slot to cover the space between the ends of said receptacle and the ends of the box, a segmental plate secured to and at its outer edge spaced from the segmental top of said receptacle, a laterally-projecting strip arranged between the spaced edge of said plate and the segmental top of the receptacle, thereby forming a channel to receive the lower flanged edge of the mail-receiving slot in said box, hand-operating knobs connected with said receptacle, an operating-rod connected thereto and projecting through the bottom of the box, whereby the same may be operated by the knee, and a door to remove the mail from said box, substantially as described.

812,663. KEY-LOCK. ALFRED N. MASSIE, Belleville, Ill. Filed Mar. 3, 1905. Serial No. 248,126.

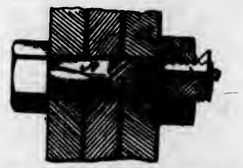

Claim.—1. In a nut-lock the combination with a bolt having a slot in the threaded end thereof, and a nut operating upon the bolt, of a locking member arranged within the slot and engaging the nut, and a split key having an angle portion that engages the inner end of the locking member.

2. In a nut-lock, the combination with a bolt having a slot in its threaded end, and a nut operating thereon, of a locking member arranged within the slot and having one face corrugated to fit the threads of the nut, said locking member having a head at one end which engages the face of the nut, and a split key which holds the locking member into engagement with the nut, said key having one end that engages the inner end of the locking member, for the purpose specified.

3. In a nut-lock, the combination with a bolt having a slot in its threaded end, and a nut operating upon said end, of a locking member adapted to be arranged within the slot and having a corrugated surface to fit the threads of the nut, one end of the said locking member having a head, and its opposite end beveled, and a split key having one end extending past its opposite end, and at an angle to the body portion for engagement with the bevel end of the locking member, for the purpose specified.

4. In a nut-lock, the combination with a bolt having a slot in the threaded end thereof, and a nut operating upon the bolt, of a locking member arranged within the slot and engaging the bolt, and a split key having an angle portion at one end that engages the inner end of the locking member, and an eye at its opposite end that engages the outer end of the said locking member.

812,664. TRANSMISSION-GEAR FOR MOTOR-VEHICLES. THEODORE P. MEINHARD, St. Louis, Mo., assignor to St. Louis Car Company, St. Louis, Mo., a Corporation. Filed Aug. 7, 1903. Serial No. 273,189.

Claim.—1. In a transmission-gear, the combination of a shaft, a gear member slidably mounted upon said shaft, a slide-rod extending through said shaft and having engagement with said gear member, and a rock-shaft having connection with said slide-rod, substantially as set forth.

2. In a transmission-gear, the combination of a shaft, a gear member slidably mounted upon said shaft, a slide-rod extending through said shaft and having engagement with said gear member,

a rock-shaft having connection with said slide-rod, and means carried by said rock-shaft for holding it in adjusted positions, substantially as set forth.

4. A feeding device comprising a trough, a horizontally-hinged panel associated with the trough and flexible members connecting

Claim.—1. A building-block comprising two approximate parallel members having mortar-grooves formed on the inside of the end

6. The combination with a combustion-chamber having a closed top, of a fuel-chute leading through the top and arranged to discharge fuel to the central portion of the combustion-chamber, a

a rock-shaft having connection with said slide-rod, and means carried by said rock-shaft for holding it in adjusted positions, substantially as set forth.

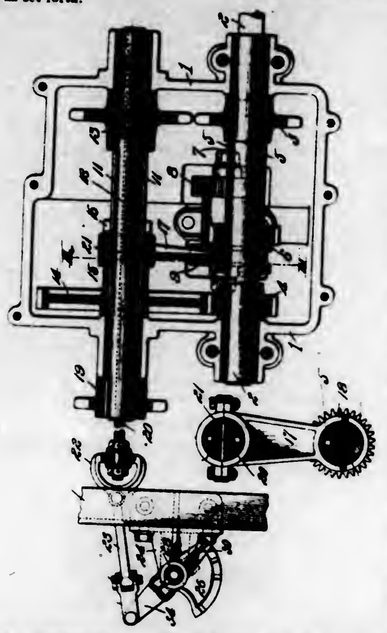

3. In a transmission-gear, the combination of a shaft, a gear member slidably mounted upon said shaft, a slide-rod extending through said shaft and having connection with said gear member, a rock-shaft connected to said slide-rod, an arm carried by said rock-shaft for restraining it from rotation, and a spring for yieldingly holding said rock-shaft from longitudinal movement, substantially as set forth.

4. In a transmission-gear, the combination of a shaft, a gear member slidably mounted upon said shaft and a slide extending through said shaft and having connection with said gear member, a bracket, a rock-shaft connected to said slide-rod and mounted in said bracket, and an arm carried by said rock-shaft; said bracket being provided with a notched head to receive said arm and restrain said rock-shaft from rotation, substantially as set forth.

812,665. **FEEDING DEVICE.** JACOB C. MILLER, Greenwood, Ind. Filed Oct. 2, 1905. Serial No. 280,954.

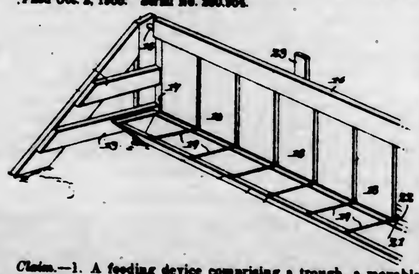

Claim.—1. A feeding device comprising a trough, a movable panel associated with the trough and flexible members connecting the trough and panel.

2. A feeding device comprising a trough, a panel movable transversely of the trough and flexible members connecting the trough and panel.

3. A feeding device comprising a trough, a hinged panel associated with the trough and flexible members connecting the trough and panel.

4. A feeding device comprising a trough, a horizontally-hinged panel associated with the trough and flexible members connecting the trough and panel.

5. A feeding device comprising a trough, a horizontally-hinged panel movable transversely of the trough and flexible members connecting the trough and panel.

6. A feeding device comprising a fixed trough, a movable panel associated with the trough and flexible members connecting the trough and panel and arranged to limit the movement of the latter and to divide the trough into feeding-sections.

7. A feeding device comprising a fixed trough, a hinged panel movable transversely of the trough and flexible members connecting the trough and panel and extending transversely across and to divide the trough into feeding-sections and to limit the movement of the panel.

8. A feeding device comprising a fixed trough, a panel hinged above and movable transversely of the trough, and flexible members extending transversely across the trough and connecting the trough and panel.

9. A feeding device comprising a trough, a panel movable transversely of the trough, flexible members connecting the trough and panel, and means to secure the panel from inward movement over the trough.

10. A feeding device comprising a fixed trough, a panel hinged above and movable transversely of the trough, flexible members connecting the trough and panel, and a latch carried by the panel and movable into engagement with either side of the trough to prevent the panel swinging inward.

812,666. **CHECK-ROW CORN-PLANTER.** JOHN L. MILLER, Wood River, Nebr. Filed Dec. 4, 1905. Serial No. 290,267.

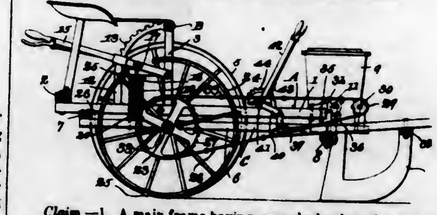

Claim.—1. A main frame having an arched axle and transporting-wheels upon the latter, uprights supported upon the side members of the frame and having rack-segments connected with the axle, levers pivoted upon the side members of the axle-arch and having stop members engaging the rack-segments, an auxiliary frame having an earth-engaging operating-wheel, and means including links connecting said auxiliary frame with the levers.

2. In a corn-planter, a main-wheel frame having an arched axle, an auxiliary frame, an axle supported for rotation in the auxiliary frame and having a ground-engaging operating-wheel, uprights supported in the side members of the main frame and having terminal segment-racks connected with the axle-arch, levers pivoted upon the side members of the latter and having stop members engaging the racks, links pivoted upon the levers and having plates at their free ends, springs coiled upon said levers and supported upon said plates, and means connected with the side members of the auxiliary frame and supported upon said springs.

3. In a corn-planter, a main frame having supporting-wheels, an auxiliary frame, an axle journaled in the auxiliary frame and having a ground-engaging wheel, hoppers and runners supported at the front end of the auxiliary frame, brackets connected with the main frame, an operating-shaft journaled in said brackets and extended into the hoppers, brackets connected with the auxiliary frame and having bearings for the operating-shaft, a tongue connected with the auxiliary frame, a rock-shaft supported upon the main frame and having an operating-lever and an arm, a link connecting said arm with the rear end of the tongue, means for securing the rock-shaft at various adjustments, independent means for effecting vertical adjustment of the rear end of the auxiliary frame including spring means for pressing the free end of said frame in a downward direction, and means for transmitting motion from the axle of the auxiliary frame to the operating-shaft.

812,667. **BUILDING-BLOCK.** WILLIAM D. MOORE, Creston, Iowa. Filed Dec. 9, 1904. Serial No. 236,903.

Claim.—1. A building-block comprising two approximate parallel members having mortar-grooves formed on the inside of the end portions thereof, and an oblique member connecting said parallel members.

2. An N-shaped building-block, having the notches thereof extending more than one-half the length of the block and being formed interiorly with undercut mortar-grooves.

3. A wall constructed of N-shaped blocks and corner-blocks, having notches adapted to register with the notches of the adjacent N-shaped blocks.

4. An N-shaped building-block having the extremities thereof decreasing in width toward their ends.

812,668. **POWER PLANT.** ROBERT MORAN, Seattle, Wash. Filed Feb. 18, 1905. Serial No. 246,241.

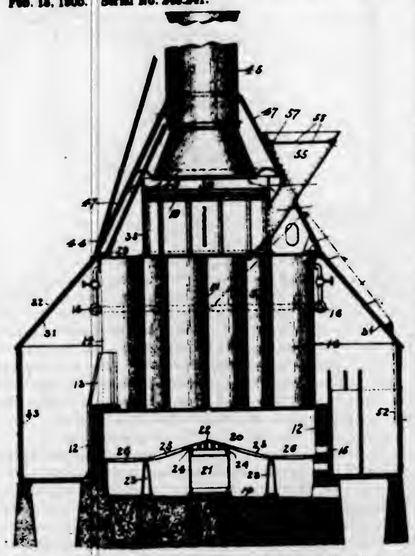

Claim.—1. The combination with a combustion-chamber, of a battery of boilers arranged closely together and forming an inclosing wall therefor, and a continuous fuel-supporting surface under all of the boilers.

2. The combination with a combustion-chamber, of a grate forming the bottom of the combustion-chamber, a battery of boilers arranged closely together and forming an inclosing wall for said chamber, and means for supporting the boilers above the level of the outer portion of the grate.

3. The combination with a combustion-chamber, of a grate forming the lower wall of the combustion-chamber, and inclining downward from a central point to the outer edge, a battery of boilers arranged closely together and forming the vertical wall of the combustion-chamber, and means for supporting the boilers above the grate.

4. The combination with a combustion-chamber having a closed top, of a grate forming the bottom of the combustion-chamber, a battery of upright tubular boilers having their lower ends supported above the grate, an annular casing having a closed top forming a closure for the top of the combustion-chamber, and a stack with which the upper ends of said boilers communicate.

5. The combination with a combustion-chamber having a closed top, of a chute for discharging fuel to the central portion of the chamber, a grate forming the bottom of the combustion-chamber and having a raised central portion onto which the fuel falls and from whence it is deflected outward, and a battery of boilers arranged closely together and forming the outer wall of the combustion-chamber.

6. The combination with a combustion-chamber having a closed top, of a fuel-chute leading through the top and arranged to discharge fuel to the central portion of the combustion-chamber, a grate having a raised central portion on which the fuel falls, a battery of tubular boilers having their lower ends above the grate-surfaces, a closure for the top of the central portion of the combustion-chamber, and a stack with which the upper ends of the boilers communicate.

7. In a boiler plant, a vertical wall surrounding the ash-pit and lower portion of the combustion-chamber, a grate, a battery of boilers supported by said wall and forming the upper part of the wall of the combustion-chamber, a connected series of plates secured to the tops of the boilers, a vertical partition extended upward from the inner edges of the series of plates, a water-tank carried by said vertical partition, inclined struts extending upward from the outer line of the boilers, a stack supported by the struts at a point above the tank, and a casing, including a deflecting-hood, for directing the products of combustion over the edge of the tank, substantially as specified.

812,669. **FURNACE DRAFT-CONTROLLER.** WILLIAM MCCLAVE, Scranton, Pa., assignor to McClave-Brooks Company, a Corporation of Pennsylvania. Filed Nov. 3, 1904. Serial No. 231,261.

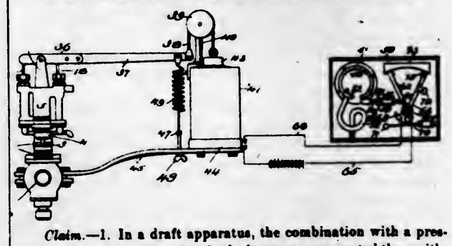

Claim.—1. In a draft apparatus, the combination with a pressure-gage and an electric circuit-closing means connected therewith, of an electric circuit including a magnet and a source of electrical energy, a lever adapted to be actuated by said magnet, a draft-controlling valve, a piston connected therewith for operating the same, a cylinder inclosing said piston, admission and exhaust valves for said cylinder and yieldable connections between said lever and said admission and exhaust valves.

2. In a draft apparatus, the combination with a draft-controlling valve, a piston connected therewith, a cylinder inclosing said piston, intake and exhaust valves for said cylinder, a lever for actuating said intake and exhaust valves, an electromagnet adapted to operate said lever, an electrical circuit including a source of electrical energy and said magnet, pivotally-mounted arms interposed in said circuit and adapted to be brought into contact for closing the circuit, one of said arms being formed with a segment at its lower end below the point of its pivot, a flat spring fixed in a substantially horizontal plane in position for having its flat face engage the periphery of said segment, and a pressure-gage adapted to swing the other arm into contact with the arm provided with a segment.

3. In a draft-controlling apparatus, the combination with means for governing the draft and electrical means for actuating said governing means, of a pivotally-mounted arm interposed in the circuit of said electrical means, a gage, and cushioning means connecting the gage with said arm for imparting movement from the gage to the arm for effecting a closure of said circuit upon a given movement of the arm.

4. In a draft-controlling apparatus, the combination with means for governing the draft and electrical means for actuating said governing means, of a pivotally-mounted arm interposed in the circuit of said electrical means, a gage spaced from said arm, a bar connected with said arm a bar engaging said gage, a sleeve inclosing the ends of said bars, a spring within said sleeve interposed between said bars for receiving the pressure from one of the bars for actuating the other for moving said arm in position for closing said circuit.

5. In a draft-controlling apparatus, the combination with means for governing the draft and electrical means for actuating said governing means, of a pivotally-mounted arm interposed in the circuit of said electrical means, a gage spaced from said arm, a bar pivotally connected with said gage, a bar pivotally connected with said arm, a sleeve surrounding the free ends of said bars, a plunger carried by one of said bars, an insulating-block carried by the other of said bars, said sleeve being slotted longitudinally, a pin extending from said plunger through said slot, and a spring interposed between said

plunger and insulating-block, whereby movement may be imparted from said gage to said arm for swinging the same into position for closing the said circuit.

6. In a draft-controlling apparatus, the combination with means for governing the draft and electrical means for actuating the same, of a pair of pivotally-mounted arms interposed in said circuit, a segment carried by one of said arms, a spring engaging the said segment for frictionally supporting the arm carrying the segment in any given adjusted position, a gage, and means connecting the same with the other of said arms for swinging the last-mentioned arm into contact with the segment-carrying arm for closing said circuit.

7. In a draft apparatus, the combination with a pressure-gage and an electric circuit-closing means connected therewith, of an electric circuit, adapted to be closed by said gage, including an electromagnet and a source of electrical energy, a draft-controlling valve, a piston connected therewith, a cylinder inclosing said piston, intake and exhaust valves for said cylinder, spring-arms connected with said valves, and means adapted to be actuated by said electromagnet for moving said arms for operating said intake and exhaust valves.

8. In a draft apparatus, the combination with a gage and an electric circuit-closing means connected therewith, of an electric circuit connected with said closing means, including a source of electrical energy and an electromagnet, a draft-controlling valve, a piston connected with said valve, a cylinder inclosing said piston, intake and exhaust valves for said cylinder and yielding operating means for said intake and exhaust valves adapted to be actuated by said magnet.

9. In a draft apparatus, the combination with a pressure-gage and an electric circuit-closing means, of an electric circuit connected with said closing means including an electromagnet and a source of electrical energy, a pivoted lever adapted to be actuated by said magnet and bifurcated at the point of its pivot, a draft-controlling valve, a piston connected therewith for operating the same, a cylinder inclosing said piston, intake and exhaust valves for said cylinder, and spring-arms carried within the bifurcation of said lever and connected to the lever and to said intake and exhaust valves for transmitting a cushioned movement from the lever to the valves.

10. In a draft apparatus, the combination with a draft-controlling valve, pressure-actuating means for operating the same, admission and exhaust valves for said pressure-actuating means, a lever for operating said admission and exhaust valves, an electromagnet adapted to operate said lever and an electrical circuit including said magnet and a source of electrical energy, a pair of arms pivotally mounted and interposed in said circuit, means frictionally resisting pivotal movement of one of said arms and a pressure-gage connected with the other of said arms for swinging the same into contact with the first-mentioned arm.

11. In a draft apparatus, the combination with a draft-controlling valve, a piston connected therewith, a cylinder inclosing said piston, intake and exhaust valves for said cylinder, a lever for actuating said intake and exhaust valves, an electromagnet adapted to actuate said lever, an electrical circuit including a source of electrical energy and said magnet, pivotally-mounted arms interposed in said circuit and adapted to be brought into contact for closing the circuit, one of said arms being formed with a segment, a spring-drag engaging the periphery of said segment for frictionally resisting pivotal movements of said arm and a pressure-gage adapted to swing the other arm into contact with the first-mentioned arm

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812,670. SPOOL-HOLDER. LEMUEL W. NEAR, Muskegon, Mich. Filed Apr. 14, 1905. Serial No. 255,574.

Claim.—1. An attachment to a spool-holder for sewing-machines, the same consisting of a hollow post adapted to be inserted over the spool-spindle, a vertical guard adapted to close the side opening of the spool and means for carrying the guard upon the post and for adjusting the guard to proper relation to the spool.

2. An attachment to a spool-holder for sewing-machines, the same consisting of a hollow post adapted to be inserted over the spool-spindle, a horizontal arm upon the hollow post and a depending guard carrying the thread-guide, and means for laterally adjusting the depending guard upon the horizontal arm.

812,671. WINDMILL-REGULATING MECHANISM. MELCHOR S. NEWCOMER, Polo, Ill. Filed July 6, 1904. Serial No. 215,544.

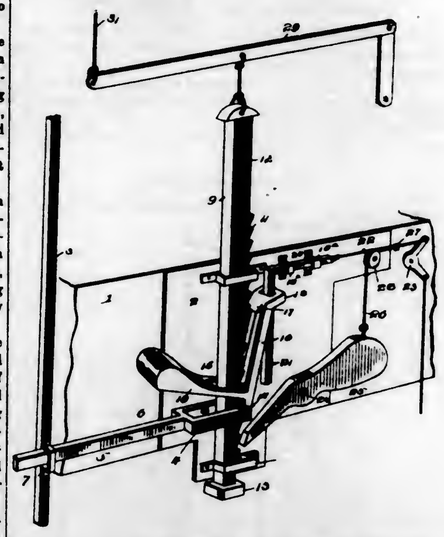

Claim.—1. A mechanism of the class described, comprising a lever, gripping means carried by said lever, a bar carrying a stop coacting with said gripping means, said bar being provided with a toothed portion extending approximately the entire length thereof, said toothed portion tapering from one end uniformly to its opposite end, locking means assembled with said lever and ratchet-bar, and means for controlling movement of said locking means.

2. A mechanism of the class described, comprising a support, a bifurcated lever pivoted to said support, a slotted pawl pivotally mounted upon said lever, a ratchet-bar movably mounted within said slotted pawl and bifurcated portion of said lever, locking means mounted upon said support and normally engaging said ratchet-bar, and means for causing movement of said locking means and pawl.

3. A mechanism of the class described, comprising a support, a lever pivotally mounted upon said support, a weighted pawl pivotally mounted upon said lever, a tapered ratchet-bar movably mounted upon said support and normally in engagement with said pawl, a lower weighted locking-pawl mounted upon said support, and means for synchronously causing movement of said pawls.

4. In a device of the character described, the combination with a support, of a plate secured thereto, an oscillatory lever secured to said plate, a weighted pawl pivotally mounted upon said lever, a ratchet-bar provided with a portion having teeth, mounted upon said support and normally in engagement with said lever and pawl, said toothed portion tapered throughout its length, locking means for said ratchet-bar, and means for controlling movement of said locking means and pawl.

5. A device of the character described, comprising a bifurcated oscillatory lever, a weighted pawl pivotally mounted upon said lever, a ratchet-bar provided with a reduced portion mounted upon said support within the bifurcated end of said lever, a weighted pawl pivotally mounted upon said support, guiding means secured to said support and normally in engagement with said pawl carried by the lever, and means connecting said guiding means with said pawl pivotally mounted upon said support.

6. In a device of the character described, the combination with a support, of an oscillatory lever pivotally mounted upon said support, said lever provided with a bifurcated end, a pawl pivotally mounted upon said bifurcated end, comprising a slotted body portion having a weighted extension and an apertured angular extension formed thereon, a ratchet-bar movably mounted within said slotted body portion of said pawl and within the bifurcated end of said lever, said ratchet-bar comprising a body portion provided with upper, flattened sides, a pivoted locking-pawl journaled upon said support and coacting with said ratchet-bar, movable guiding means mounted upon said support and engaging the apertured portion of said pawl mounted upon the lever, and means for moving said guiding means and locking-pawl.

7. In a device of the character described, the combination with a suitable support, of a lever pivotally mounted upon said support, said lever connected with a plunger, a weighted pawl mounted upon said lever, said pawl provided with an apertured extension formed at an angle to the body portion thereof, a ratchet-bar mounted upon said support and normally in engagement with said pawl, said ratchet-bar provided with a ratchet-surface formed upon one side thereof and with a smooth surface upon the upper portion of said bar, the lower portion of said bar reduced throughout its length, a slidable member provided with a right-angled extension projecting through said apertured portion of the pawl, a locking-pawl mounted upon said support and normally in engagement with said ratchet-bar, and means for causing movement of said locking-pawl and slidable member.

8. In a device of the character described, the combination with a support, of a bifurcated oscillatory lever mounted upon said support, a primary pawl pivotally mounted on the bifurcated portion of said lever, said primary pawl comprising a slotted portion having a right-angled weighted, slotted extension and an angular apertured extension, a guiding member movably mounted upon said support and normally engaging the apertured portion of said primary pawl, a ratchet-bar movably mounted upon said support and normally engaging said primary pawl and bifurcated lever, vane-connecting means secured to said ratchet-bar, and locking means for said ratchet-bar movably mounted upon said support.

9. In a device of the character described, the combination with a support, of a lever pivotally mounted upon said support, a pawl pivotally mounted upon said lever, weighted means secured to said pawl, tapered ratchet means movably mounted upon said support normally engaging the lever and pivoted pawl, a weighted pawl pivotally mounted upon said support near the lower reduced portion of the ratchet means, and means connected to said pawls and with a float for causing movement thereof.

10. A mechanism of the class described, comprising a support, a lever provided with a bifurcated end portion pivotally mounted upon said support, vane-connecting means secured to said support, gripping means pivotally mounted upon the bifurcated end of said lever and inclosing a portion of said vane-connecting means, guiding means coacting with said gripping means, locking means positioned upon said support for retaining said vane-connecting means in a fixed position, and means for controlling movement of said guiding and locking means.

11. A mechanism of the class described, comprising a support, a lever mounted upon said support, said lever comprising an approximately straight body portion provided at one end with parallel, integral extensions forming a bifurcated portion upon the lever, gripping means pivotally mounted upon the parallel extensions of said lever, vane-connecting means movably positioned within said gripping means, and locking means coacting with said gripping and vane-connecting means.

12. A mechanism of the class described, comprising a lever, a pawl pivotally mounted upon said lever, longitudinal movable guiding means connected with said pawl, vane-connecting means coacting with said pawl, locking means assembled with said lever and coacting with said vane-connecting means and pawl, and means for controlling movement of said guiding means, pawl, and locking means.

13. A mechanism of the class described, comprising a support, a lever mounted upon said support, said lever comprising a body portion provided with parallel, integral extensions, gripping means pivotally mounted upon the parallel extensions of the lever, vane-connecting means comprising a body, said body tapered uniformly throughout its length, said vane-connecting means removably positioned within said gripping means, and means for securing said vane-connecting means in an adjusted position.

14. A regulating mechanism of the class described, comprising an oscillatory member, a pawl movably mounted upon said member, movable guiding means connected with said pawl, vane-connecting means coacting with said pawl, locking means assembled with said member and coacting with said vane-connecting means for securing the same in an adjusted position, and means for governing movement of said guiding means, pawl, and locking means.

812,672. MACHINE FOR MEASURING AND CUTTING OFF LENGTHS OF FABRIC. JOSEPH B. O'BRYAN, Jr., and OTTO H. RUDOLPH, Nashville, Tenn. Filed Oct. 16, 1905. Serial No. 282,976.

Claim.—1. In a machine of the character described, the combination with an adjustable feed and guide, of a vertically-reciprocating rotary knife, and means for operating the same, substantially as described.

2. In a machine of the character described, the combination with an adjustable feed and guide, and an ejector therefor, of a vertically-reciprocating rotary knife and means for operating the same, substantially as described.

3. In a machine of the character described, the combination with an adjustable feed and guide, an ejector therefor, and an oscillating frame, of a vertically-reciprocating rotary knife, and means for operating the same, substantially as described.

4. In a machine of the character described, the combination with the feed-guideway, the feed-wheels operating therein, and an ejector, of an oscillating frame carrying a vertically-reciprocating rotary knife provided with means for giving the same a quick upward motion, and a downward slow motion, and means for operating the same, substantially as described.

5. In a machine of the character described, the combination with the feed mechanism, comprising a guideway having a flaring open mouth at each end, one or more feed-wheels slightly projecting above th bottom of said guideway, and an oscillating ejector adapted to project into the guideway, of a vertically-reciprocating rotary knife journaled in the open head of an oscillating frame, and means for operating said feed mechanism and the rotary knife, substantially as described.

6. In a machine of the character described, the combination with the feed mechanism, of an oscillating ejector having one end provided with a curved picker-finger, and the opposite end with a crank communicating with a similar crank on the end of the feed-mechanism shaft, by means of a connecting-rod, and means for operating said feed-mechanism shaft, substantially as described.

7. In a machine of the character described, an oscillating counterbalanced frame, having a centrally-located shaft provided with a pulley near its rear end, and with a bevel-gear at its opposite end adapted to mesh with a similar gear upon a shaft journaled in the head of the oscillating frame; said shaft carrying a vertically-reciprocating rotary knife upon its outer end, and said oscillating frame having an extension upon its forward end adapted to move in a slotted guideway, in combination with means for operating said oscillating frame and its rotary knife, substantially as described.

8. In a machine of the character described, the combination with the feed mechanism, the oscillating ejector and the vertically-reciprocating frame carrying the rotary knife, of the shafts arranged in line horizontally beneath the feed mechanism, and means for operating said shafts, substantially as described.

9. A machine of the character described, comprising a feed mechanism, a guideway and ejector operating in connection therewith, and a vertically-reciprocating rotary knife adapted to operate

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in unison with the feed mechanism and ejector, and means for operating the several parts, substantially as described.

frame and arranged in direct longitudinal alinement with said rod.

slides mounted in said guide-brackets, links connecting said slides and said levers, springs for actuating said movable jaws in one di-

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812,679. SURGICAL APPLIANCE. MATHIAS REHMANN, Valkenburg, Netherlands. Filed Feb. 5, 1904. Serial No. 192,944.

in unison with the feed mechanism and ejector, and means for operating the several parts, substantially as described.

812,673. POTATO-DIGGER. THOMAS N. OTUM, Lisbon, N. D. Filed June 20, 1905. Serial No. 265,638.

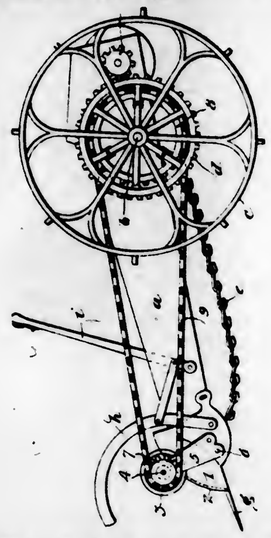

Claim.—1. A potato-digging-machine plow, having guard and cutter plates on opposite sides thereof, revolving colters coacting with said guard and cutter plates, and means to revolve the colters.

2. In combination with the plow of a potato-digging machine, fixed guard and cutter plates at the side thereof, brackets secured to the sides of the plow, a shaft having its bearings in said brackets, colters on said shaft, coacting with the fixed guard and cutter plates, and means to revolve said shaft and colters.

3. In combination with a potato-digging-machine plow, guard and cutting plates on opposite sides thereof, each provided with a sharpened front cutting edge extending upwardly from the plow and with a lateral flange extending under and bolted to the plow, brackets secured to the sides of the plow and extending above the guard and cutting plates, and revolving colters, coacting with the guard and cutting plates and mounted on said brackets.

812,674. MEASURING INSTRUMENT. VIVIAN OSBORNE, London, England, assignor of two-thirds to John Joseph Connolly and Samuel Frederick Connolly, London, England. Filed Oct. 31, 1904. Serial No. 230,906.

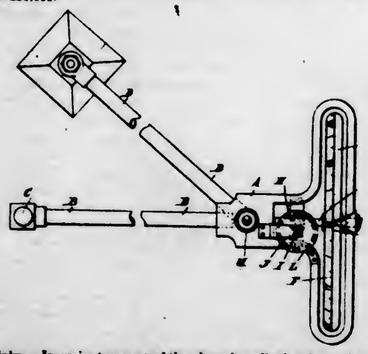

Claim.—In an instrument of the class described, a frame having pointers, a rod fixedly secured to said frame, a tracer connected to the free end of said rod, a worm-threaded axle mounted within the frame and arranged in direct longitudinal alinement with said rod, a graduated wheel fixed to said axle, a graduated disk actuated by said worm-thread for recording the rotation of the wheel, a weight, and a rod pivotally connected to the latter, and to the frame at a point intermediate the graduated wheel and the tracer.

812,675. SPADE AND SIMILAR HANDLE. FRANK PARKES, Birmingham, England. Filed Aug. 26, 1905. Serial No. 275,205.

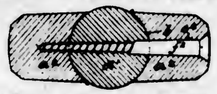

Claim.—A handle for spades and similar tools and implements comprising an integral structure having a bifurcation forming contractible side sections, a circular shaft on the upper end of which the handle is applied, said side sections provided with recesses conforming to the shape of the shaft and adapted to surround a greater portion of the shaft when in position to prevent lateral displacement, and screw fastenings for securing the side sections to the shaft.

812,676. CARD GAME. IRVING C. PAUL, Cincinnati, Ohio, assignor, by mesne assignments, to The Paul Pattern Company, Cincinnati, Ohio, a Corporation of Ohio. Filed Sept. 26, 1904. Serial No. 226,360.

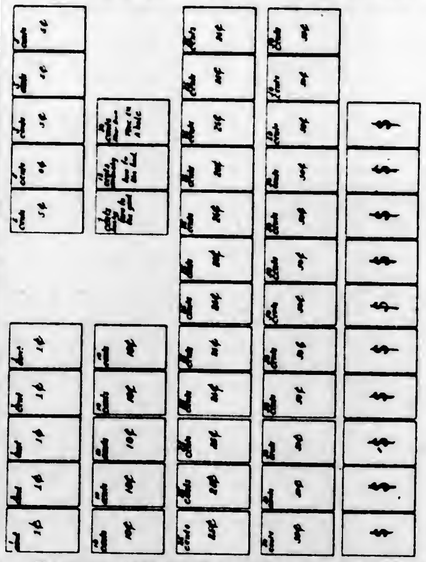

Claim.—An arithmetic card game consisting of regular playing-cards divided into groups of increasing value, the cards of each group having a common numerical value and the numerals of the higher values being divisible by each of the lower values, and two irregular cards whose values differ from the regular cards and whose total value is divisible by the cards of lower value, those irregular cards serving respectively as reward and penalty cards, the total of all the cards being an even number, so that the entire deck shall be required to build up a predetermined number of tricks, substantially as and for the purpose set forth.

812,677. FISH-NET-LIFTING MACHINE. KNUT PAULSON, Manistique, Mich. Filed July 3, 1905. Serial No. 268,096.

Claim.—1. A fish-net-lifting machine comprising a rotary head, guide-brackets thereon, levers, movable jaws carried by said levers, stationary jaws upon said head, slides mounted in said guide-brackets and adapted to actuate said levers, and a cam for operating said slides.

2. A fish-net-lifting machine comprising a rotary head, guide-brackets thereon, levers mounted in said brackets, movable clamping-jaws upon said levers, stationary clamping-jaws upon said head, slides mounted in said guide-brackets, links connecting said slides and said levers, springs for actuating said movable jaws in one direction, and a cam coacting with said slides to move said movable jaws in the opposite direction.

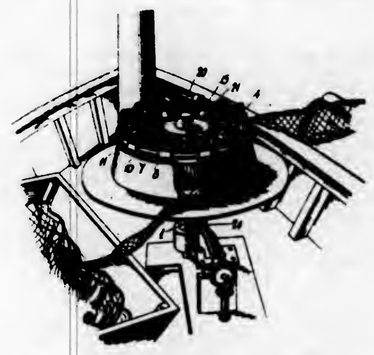

3. A fish-net-lifting machine, comprising a stationary shaft, a head rotatably mounted upon said shaft, radially-disposed guide-brackets upon said head, levers pivotally mounted in said guide-brackets, movable jaws upon said levers, stationary jaws upon said head, operating-slides in said guide-brackets, connections between said slides and said levers, and a cam upon said shaft to actuate said slides, substantially as described.

4. A fish-net-lifting machine comprising a stationary shaft, a sleeve mounted to rotate thereon, means for rotating said sleeve, a circular head secured upon said sleeve, radially-disposed guide-brackets upon said head, levers pivotally mounted in said guide-brackets, stationary clamping-jaws upon said head and formed with guide-openings, movable clamping-jaws pivotally mounted upon said levers and adapted to slide in the guide-openings in said stationary jaws, slides mounted in said guide-brackets, links connecting said slides and said levers, friction-rollers upon said slides, and a cam fixed upon said shaft and adapted to engage said friction-rollers.

812,678. CULTIVATOR. CASWELL PRESSLER, Pleasantgrove, Miss. Filed July 13, 1905. Serial No. 269,517.

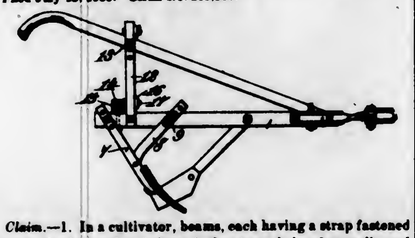

Claim.—1. In a cultivator, beams, each having a strap fastened thereto at the forward end thereof, the straps being forwardly and inwardly curved and one overlapping the other, a pivot-bolt to extend through the overlapped portions of the straps, whereby the beams can be adjusted toward and from each other, and means for maintaining the adjustment of the beams.

2. In a cultivator, the combination of two beams converging toward straps fastened to the forward ends of the beams and overlapping each other at a point beyond the forward ends of the beam, a pivot-bolt extending through the overlapped portions of the straps to provide for adjustment of the beams toward and from each other, uprights rigidly fastened to and rising from the beams, handles supported for rocking motion by the beams, bolts to connect the uprights with the respective handles, each upright having several superposed perforations to receive the bolts, a brace situated above the handles and having perforations at its opposite ends, bolts supported by the uprights and adapted to extend through the last-mentioned perforations to adjustably connect said brace with the uprights, a second brace having perforations at its opposite ends, and a second pair of bolts to extend through the last-mentioned perforations to adjustably connect the last-mentioned brace with the uprights.

812,679. SURGICAL APPLIANCE. MATHIAS REINANNS, Valkenburg, Netherlands. Filed Feb. 5, 1904. Serial No. 192,944.

Claim.—As an improved article of manufacture, the herein-described surgical appliance, consisting of a head with rounded entering end, a relatively slender stem extending from the opposite end of said head, an enlargement at the opposite end of said stem of greater diameter than the said head, a flat shield at the base of said enlargement, and a ring attached to said shield and disposed upon the side opposite said enlargement, the whole adapted for use substantially as described.

812,680. BACK-SPACING ATTACHMENT TO TYPE-WRITING MACHINES. GEORGE A. RISE, Williamsport, Pa. Filed June 20, 1904. Serial No. 213,308.

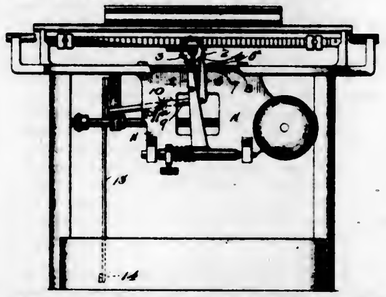

Claim.—In a type-writing machine, the combination of a frame, the shaft of a rack-and-pinion mechanism, an escapement-wheel loose on said shaft, a disk fast on the shaft and arranged to coöperate in the ordinary manner with the escapement-wheel; said disk having ratchet-teeth, a lever fulcrumed at an intermediate point of its length in the frame, a back-space key connected with one arm of said lever, a spring-pressed pawl carried by the other arm of the lever and arranged to turn the disk through the teeth thereof, means for guiding said pawl in its vertical movements, and a spring arranged to move the last-mentioned arm of the lever downwardly subsequent to upward movement of said arm.

812,681. WATER-TUBE LOCOMOTIVE-BOILER. JACQUES ROBERT, Algiers, Algeria. Filed May 4, 1905. Serial No. 258,857.

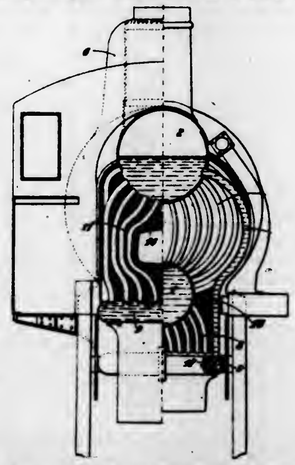

Claim.—1. An internally-fired water-tube locomotive-boiler having an upper barrel or cylindrical body, a lower barrel or cylindrical body, vertical connection-tubes vaporizing curved tubes ar-

ranged in transverse rows, which are sufficiently spaced for allowing

the inlet into the chamber and having a face to contact with the seat-

in front of the piston in position to be forced out of the nozzle by an

ranged in transverse rows, which are sufficiently spaced for allowing of hand-sweeping, connecting said barrels or cylindrical bodies, lateral doors for the sweeping, a rectangular hollow foundation-ring forming the base of the fire-box and means for connecting by vaporizing and return water-tubes said hollow foundation-ring to the upper and lower barrels or cylindrical bodies while protecting the return water-tubes from the direct heat of the fire, substantially as described.

2. In a boiler of the character referred to having upper and lower barrels or cylindrical bodies and a hollow foundation-ring at the base of the rear thereof, return water-tubes connecting the lower barrel or cylindrical body and fore part of hollow foundation-ring, and forming the fore side of the fire-box, return water-tubes connecting the upper barrel or cylindrical body and the rear part of the hollow foundation-ring, and forming the rear side of the fire-box, lining of refractory materials protecting said tubes against the injurious action of the fire, vaporizing-tubes forming the sides of the fire-box and connecting the hollow foundation-ring and the upper barrel or cylindrical body, substantially as described.

3. A boiler having upper and lower barrels, a hollow foundation-ring forming the base of the fire-box and circular in cross-section, the ring being provided with manholes, return water-tubes between the lower barrel and fore part of the ring and between the rear of the latter and upper barrel, and other tubular means connecting the barrels.

4. A water-tube locomotive-boiler of the class specified, having upper and lower barrels with an intermediate space, inner connecting-tubes between the barrels, outer curved vaporizing-tube clusters arranged in transverse rows and also connecting the barrels, and perforated steam-pipes extending longitudinally through the space between the barrels and interiorly with relation to the tube clusters, the said perforated pipes permitting steam to be thrown outwardly therefrom for cleaning the tube clusters from the interior of the boiler.

5. A water-tube locomotive-boiler of the class specified, having upper and lower barrels with an intermediate space between them, inner connecting tubes between the barrels, outer vaporizing-tube clusters arranged in transverse rows, and upper and lower perforated steam-pipes extending longitudinally through the intermediate spaces between the said tube clusters and also between the upper and lower barrels, the one perforated pipe being arranged to have the steam therefrom sweep the tube clusters in an oblique direction, and the other perforated pipe disposed to cause the steam therefrom to sweep the tubes along the spaces between their transverse rows.

812,682. **SLACK-ADJUSTER FOR DRAW-BARS.** EDWARD RYAN, Clinton, Iowa. Filed July 17, 1905. Serial No. 270,088.

Claim.—1. A slack-adjuster of the character described, comprising a pair of levers, offset apertured lugs formed on said levers near one end thereof, a link pivotally connected at its opposite ends to said lugs, and means to yieldingly connect the opposite ends of said link to the longer ends of said lever, substantially as described.

2. A slack-adjuster of the character described, comprising a pair of levers, offset apertured lugs formed on said levers near one end thereof, a link pivotally connected to said lugs, tension-rods arranged on the pivoted ends of said link, and means whereby the longer ends of said levers are yieldingly connected to said rods, substantially as described.

3. A slack-adjuster of the character described, comprising a pair of levers, offset apertured lugs formed on said levers near one end thereof, a link pivotally connected to said lugs, tension-rods arranged on the pivoted ends of said link and adapted to project through apertures in the longer end of said levers, and means whereby said ends of the levers are yieldingly and adjustably connected to said tension-rods, substantially as described.

4. A slack-adjuster of the character described, comprising a pair of levers, offset apertured lugs formed on said levers near one end thereof, a link pivotally connected to said lugs, threaded tension-rods formed on the ends of said link-bar and adapted to project through apertures in the longer ends of said levers, adjusting-nuts arranged on said rod between the link and said lugs on the levers, adjusting-nuts arranged on the outer end of said rods, and a coiled spring arranged between said latter nuts and said ends of the levers, substantially as described.

5. A slack-adjuster of the character described, comprising a pair of levers, offset apertured lugs formed on said levers near one end thereof, a link pivotally connected to said lugs, and adapted to project through apertures in the longer end of said levers, means whereby said ends of the levers are yieldingly and adjustably connected to said tension-rods, a slotted draw-bar, and connecting-rods to pivotally connect the shorter ends of said rods with said slotted draw-bar and with the draw-bar on the opposite end of the tender, substantially as described.

812,683. **VALVE FOR GAS-GENERATORS.** RUDOLPH SCHENCK, Chicago, Ill., assignor to John Williamson, Chicago, Ill. Filed Feb. 23, 1904. Serial No. 194,915.

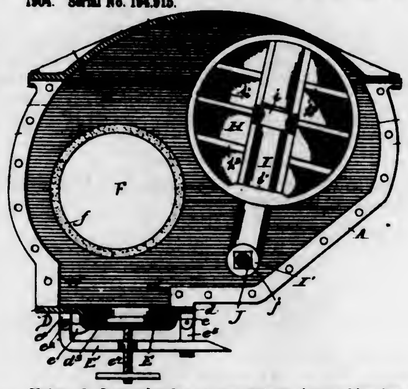

Claim.—1. In a valve for gas-generators, the combination of a shell or casing having a chamber with an inlet thereinto and having a seating-face for a valve around the inlet, a valve-disk having a face to coact with the seating-face around the inlet, a swinging arm within the chamber of the shell or casing and on which the valve-disk is loosely suspended and carried, and swung on the arc of a circle into its closed and opened positions, and a bearing contacting the fixed end of the arm for furnishing a counter-pressure to the acting face of the valve-disk in seating the disk, substantially as described.

2. In a valve for gas-generators, the combination of a shell or casing having a chamber with an inlet thereinto and having a seating-face for a valve around the inlet, a valve-disk having a face to coact with the seating-face around the inlet, a swinging arm within the chamber of the shell or casing and on which the valve-disk is loosely suspended and carried, and swung on the arc of a circle to its closed and opened positions, a rocking support on which the swinging arm is socketed, and a stuffing-box having a bearing end entering into the shell of the casing and engaging with the socket of the arm for giving a counter-pressure on the valve-disk in seating the disk, substantially as described.

3. In a valve for gas-generators, the combination of a shell or casing having a chamber with an inlet and an outlet and having a valve-seat around the inlet into the chamber, a valve-disk controlling

the inlet into the chamber and having a face to contact with the seating-face around the inlet, and having on its rear face in the center a socket and having near its periphery a loop and an arm entered through the loop and into the socket on which the valve-disk is loosely mounted and supported, permitting the valve-disk to be seated when swung on the arc of a circle to its closed position, substantially as described.

812,684. **GREEN ANTHRAQUINONE DYE.** ROBERT E. SCHMIDT, Elberfeld, Germany, assignor to Farbenfabriken of Elberfeld Co., New York, N. Y., a Corporation of New York. Filed Sept. 8, 1905. Serial No. 277,586.

Claim.—1. The herein-described new dyestuff sulfonic acids obtainable by sulfonating 1-4-diaryldiamido-8-oxyanthraquinone sulfonic acids containing the one sulfonic group probably in the anthraquinone nucleus and the other in the aryl nucleus, which dyestuffs are, in the shape of their alkaline salts, green powders easily soluble in water with a green color and on heating in a solution of stannous chlorid in hydrochloric acid they are decomposed under the formation of the 1-4-8-trioxyanthraquinone sulfonic acid and dyeing wool green shades, substantially as described.

2. The herein-described new dyestuff sulfonic acid, obtainable by sulfonating 1-4-diparatolyldiamido-8-oxyanthraquinone sulfonic acid containing the one sulfonic group probably in the anthraquinone nucleus and the other in the benzol nucleus of the tolyl radical, which dyestuff is in the shape of its sodium salt a green powder soluble in water with a green color; being dissolved by concentrated sulfuric acid of 66° Baumé with a bluish-green color and on heating in a solution of stannous chlorid in hydrochloric acid it is decomposed under the formation of the 1-4-8-trioxyanthraquinone sulfonic acid; and dyeing wool yellowish-green shades, substantially as described.

812,685. **STEAM-BOILER.** JOHN C. SCHNEIDER, Winona, Minn. Filed July 28, 1905. Serial No. 271,665.

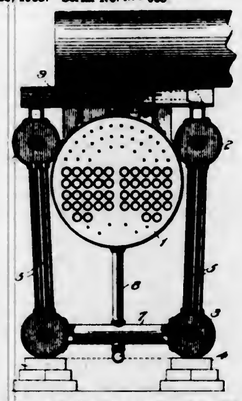

Claim.—In a steam-boiler, the combination of the boiler proper, of side walls therefor each consisting of a lower mud-drum, an upper steam-drum in substantially vertical alinement with the mud-drum, and a plurality of substantially vertically disposed tubes connecting the steam and mud drums throughout the lengths of the latter, a transversely-disposed tube connecting the steam-drums and in communication intermediately with the upper portion of the boiler, and a transversely-disposed tube connecting the mud-drums and in communication intermediately with the lower portion of the boiler.

812,686. **SYRINGE.** HENRY T. SCHORK and FREDERICK A. STAHL, New York, N. Y. Filed July 13, 1905. Serial No. 269,468.

Claim.—In a syringe, the combination with a hollow cylindrical barrel, the upper end of said barrel being open and the lower end reduced to provide a nozzle having a small opening, of a hollow cylindrical piston reciprocally located within said barrel and spaced therefrom, the upper end of said piston being open, a stopper for said open end of the piston, the lower end of said piston reduced to provide a small opening and a circumferential groove, said piston being adapted to contain a liquid medicant which upon outward reciprocation of the piston, the stopper being removed, flows into the barrel in front of the piston in position to be forced out of the nozzle by an inward reciprocation of the piston, a thin flexible resilient packing-ring seated in said groove and spacing the piston from the barrel, said ring having convex upper and lower faces and a sharp circumferential edge, one of said faces adapted to bear against the exterior surface of the piston and the other face against the interior surface of the barrel when the piston is reciprocated inwardly, substantially as described.

812,687. **CONTINUOUS-RAIL FROG AND SWITCH.** FRANKLIN H. SHAKESPEARE, East Orange, N. J. Filed Aug. 5, 1905. Serial No. 272,882.

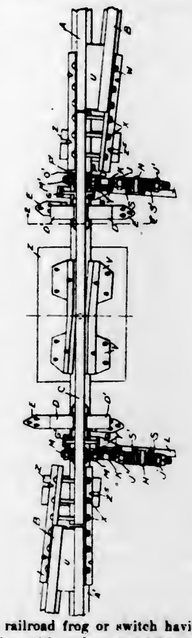

Claim.—1. A railroad frog or switch having a movable rail, means connected therewith at the point of divergence of the rails for moving the rail so as to form a continuous line of rails at such point, said means connected to the switch-operated mechanism at one end, a sleeve attached to the other end, and a bolt passing through said sleeve and rail, in combination with means to lock said rail in alined position.

2. A railroad frog or switch having a movable rail, means connected therewith for moving said rail so as to form a continuous line of rails for the wheels of the car at the point of divergence of the rails, a sleeve on said means, a bolt passing loosely through said sleeve and movable rail, and springs on said bolt separated by said sleeve.

3. A railroad frog or switch having a movable rail at the point of divergence of the rails, means connected thereto for moving the rail so as to form a continuous line of rails at such point, said means consisting of a rod, a sleeve on said rod, a bolt having parts of different diameter passing through said sleeve and through the movable rail, nuts on said bolt, and a wedge-shaped piece secured to the mov-

able rail against which one of said nuts abuts when in alined position.

section adapted to move about a central point between the terminals of the intersecting rails, and pivoted locking-braces connected with

rel, both of said end covers communicating with both inlet and outlet passages.

edge of which is formed with upwardly and obliquely extending screw-holes adapted to receive screws for securing the same to the

able rail against which one of said nuts abuts when in alined position.

4. A railroad frog or switch having a movable rail, means connected thereto for moving the rail so as to form a continuous rail-bearing for the wheels of the car at the point of divergence of the rails, a sleeve on said means, a bolt passing through said sleeve, means for securing the bolt to the rail, and means between said securing means and the rail against which one of the said nuts abuts when the rail is in alined position.

5. A railroad frog or switch having a movable rail at the point of divergence of the rails, means connected thereto for moving the rail so as to form a continuous line of rails at such point, said means consisting of a rod, means for moving said rod, a plate secured to the rod, and means on said rail engaged by said plate for moving the rail from one position to another, after the plate has started to move.

6. A railroad frog or switch having a movable rail at the point of divergence of the rails, means connected thereto for moving the rail so as to form a continuous line of rails at such point, a plate secured to said means, and means on the rail adapted to engage said means for moving the rail from one position to another.

7. A railroad frog or switch having a movable rail at the point of divergence of the rails, means connected thereto for moving the rail so as to form a continuous line of rails at such point, said means consisting of a rod, a plate secured thereto, holes in said plate and means on the rail for engaging the holes in the plate for moving the rail after the said plate is moved.

8. A railroad frog or switch having a movable rail at the point of divergence of the rails, means connected thereto for moving the rail so as to form a continuous line of rails at such point, said means consisting of a rod, a plate thereon, and means engaged thereby for moving said rail, in combination with a locking device on the movable rail for holding said rail in alined position.

9. A railroad frog or switch having a movable rail at the point of divergence of the rails, means connected thereto for moving the rail so as to form a continuous line of rails at such point, said means comprising a rod, a plate thereon, and means on the rail engaged thereby for moving said rail, in combination with a locking device comprising a bracing-block secured to the ties of the track, and means connected to the movable rail for engaging the same.

10. A railroad frog or switch having a movable rail at the point of divergence of the rails, means connected thereto for moving the rail so as to form a continuous line of rails at such point, in combination with a locking device for holding the rail when in alined position, said locking device comprising blocks secured to the ties of the track and pivoted braces for engaging said blocks when in alined position.

11. A railroad frog or switch comprising stationary rails of the main track and side track, a movable rail of the track at the point of divergence of the rails, means connected with said movable rail for moving the same so as to form a continuous line of rails at said point, a plate secured to said movable rail operated by said means, and a locking device on the movable rail for holding said rail when in alined position.

12. A railroad frog or switch comprising stationary rails of the main track and side track, a movable rail of the track at the point of divergence of the rails, means for moving said rail so as to form a continuous line of rails at said point, and a plate secured to said moving means, in combination with levers secured to the rail, engaged by said plate, a bar connected with said levers and locking means operated by said bar for holding the rail in alined position.

13. A railroad frog or switch comprising stationary rails of the main track and side track, a movable rail of the track at the point of divergence of the rails, means for moving said rail so as to form a continuous line of rails at such point, and a plate secured to said means in combination with a locking device, said device comprising a bar mounted in bearings secured to said movable rail, levers on said bar adapted to be engaged by said plate, brace-bars on said bar, and blocks secured to the ties of the track against which said brace-bars abut.

14. A railroad frog or switch having a movable rail at the point of divergence of the rails, means connected thereto for moving the rail so as to form a continuous line of rails at such point, in combination with means to guide and limit the movement of the rail, said means comprising ordinary fish plates extending beyond the ends of the stationary rails, and a plurality of curved bolts connecting said extending fish-plates and passing through holes in said movable rail.

15. A railroad-switch having movable rails near the point of divergence of the tracks to form a continuous line of rails at such point, in combination with a movable-rail frog consisting of a rail-section adapted to move about a central point between the terminals of the intersecting rails, and pivoted locking-braces connected with the movable rail of said frog and the movable rail of said switch for locking said rails in alined position, and means for operating said frog-rail and switch-rails simultaneously.

16. A railroad-switch having means connected to the approaching rails near the point of divergence of the tracks for moving the rails so as to form a continuous line of rail at such point, in combination with a movable-rail frog consisting of a rail-section adapted to move about a central point between the terminals of the intersecting rails so as to form a continuous line of rail at such point, said rail-section having pivoted locking-braces connected therewith for locking the same in alined position and means for operating said movable frog-rail on movement of the switch-rails.

17. A railroad-switch having means connected to the approaching rails of the main track near the point of divergence of the side track for moving the rails so as to form a continuous line of rails at such point, and means consisting of a rod passing beneath the rails, sleeves on said rod, and bolts passing through said sleeves and secured to the movable rails, in combination with a movable-rail frog and means for operating said frog simultaneously with said switch.

18. A railroad-frog comprising stationary rails and a movable rail and means for moving the latter, in combination with means for limiting the movement of said rail, comprising ordinary fish-plates extending beyond the ends of said stationary rails, a wedge-shaped filler-block between the rails, and bolts connecting said rails, which pass through said filler-block.

19. A railroad-frog having a movable rail at the point of intersection of the main trauk and side track so as to form a continuous line of rails at such point, said movable rail having a central pivot-point about which it turns, said pivot having parts of different diameter, the large part mounted in said movable rail.

20. A railroad-frog having a movable rail at the point of intersection of the main track and side track so as to form a continuous line of rails at such point, said movable rail having a central pivot-point about which it turns, said pivot-point mounted in the base of said movable rail and having holes on each side of the web of the rail whereby said pivot may be oiled.

21. A railroad-frog having a movable rail at the point of intersection of the main track and side tracks so as to form a continuous line of rails at such point, a pivot removably mounted in the under side of said movable rail, and a plate beneath the frog having a hole therein in which said pivot bears.

22. A railroad-frog having a movable rail at the point of intersection of the main track and side track so as to form a continuous line of rails at such point, said movable rail having a pivot removably mounted in the under side thereof about which it turns, a plate beneath the frog and ordinary fish-plates for holding the pivoted rail against lateral displacement.

23. A railroad-frog having a movable rail at the point of intersection of the main track and side track so as to form a continuous line of rails at such point, said rail having means to prevent longitudinal motion and locking means to prevent lateral motion, said latter means comprising a pivoted brace-bar on each side of the rail, and a block against which said brace-bar abuts.

812,688. **ROTARY EXHAUSTER.** John Sharp, Glasgow, Scotland. Filed Mar. 10, 1905. Serial No. 249,425.

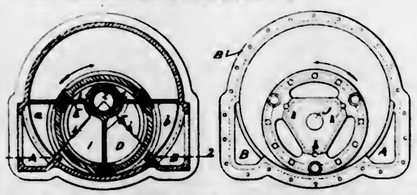

Claim.—1. A rotary exhauster, or the like, comprising an outer casing, a revolving barrel therein, blades in said barrel, and inlet and outlet passages to said casing, in combination with covers at opposite ends of said casing, both said end covers having passages therein opening to the interior of the barrel, and both inlet and outlet passages communicating with both end cover passages.

2. A rotary exhauster, or the like, comprising an outer casing, a revolving barrel with blades therein, and inlet and outlet passages to said casing, in combination with end covers for said casing, passages therein with ports, corresponding ports in the driving end of the barrel, both of said end covers communicating with both inlet and outlet passages.

3. A rotary exhauster, or the like, comprising an outer casing, a revolving barrel with blades therein and having longitudinally-slotted rollers in its circumference, said blades passing through said rollers and having recessed portions on the eyes thereof, in combination with inlet and outlet passages to said casing and revolving barrel.

812,689. **LOG-CARRIER.** William H. Sinclair, Mobile, Ala. Filed May 11, 1905. Serial No. 260,026.

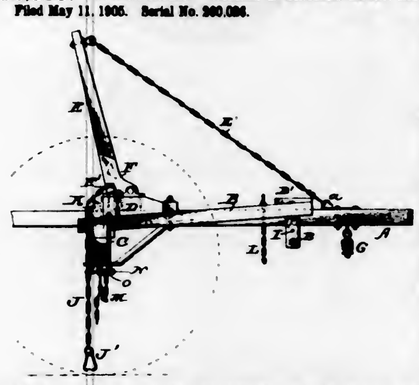

Claim.—1. In a log-carrier, the combination, with an axle and hounds provided with guides, of a slidable tongue, log-lifting chains, a pivoted lever, and a chain connecting it with the aforesaid tongue, and bearings for the tongue consisting of two antifriction-rollers arranged respectively below and above the tongue in a front attachment of the hounds, and a rear antifriction-roller arranged adjacent to the axle and beneath the tongue, substantially as described.

2. In a log-carrier, the combination of the axle, the hounds, a block connecting the front ends of the hounds, and parallel bars pendent therefrom and provided with two antifriction-rollers arranged transversely and spaced apart, one above the other, and a rear guide for the tongue, substantially as described.

812,690. **GATE FOR WIRE FENCES.** Roy H. Singer, Uniontown, Md. Filed Nov. 21, 1905. Serial No. 288,343.

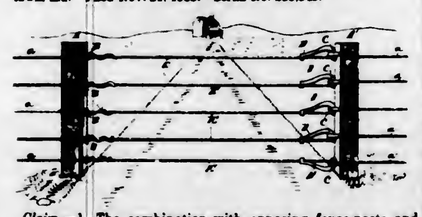

Claim.—1. The combination, with opposing fence-posts and screw-eyes set therein, of wires attached to one set of the screw-eyes and lever-clamps secured to the other ends of the wires and consisting of curved bars having their free ends provided with lateral claws for engaging the wires and their opposite ends with openings for attachment of the wires, and with a contiguous hook or notch, the same being located out of lateral alinement with the opening and claw as shown and described.

2. The improved closure for passage-ways in fences comprising a series of wires, a series of screw-eyes to which the series are permanently attached at one end, lever-clamps secured to the other ends of the wires and having a hook and an end claw which are disalined with the point of attachment of the wire as described, and another series of screw-eyes adapted for engagement with the clamps in the manner described.

812,691. **ROTARY HOOK-SUPPORT FOR GARMENTS AND THE LIKE.** James C. Smith, San Francisco, Cal. Filed May 10, 1905. Serial No. 260,660.

Claim.—1. A rotary hook-support comprising a body the upper edge of which is formed with upwardly and obliquely extending screw-holes adapted to receive screws for securing the same to the under side of a shelf or other support, a hook-carrier, a bolt passed through said hook-carrier axially thereof and also through said body centrally in respect to said flange, nuts on the end of said bolt, and hooks secured to the periphery of said carrier, substantially as described.

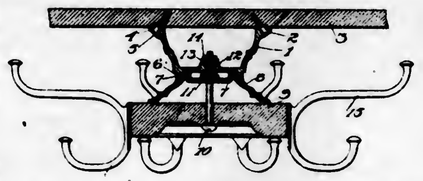

2. A rotary hook-carrier comprising a hollow stationary member having a flange provided with means for securing the same to a shelf or other support, a hollow revoluble member, a cylindrical hook-carrier, a bolt passed centrally through said hook-carrier and revoluble and stationary members, a nut firmly clamping the revoluble member to the hook-carrier, a nut on the bolt attaching said revoluble member and hook-carrier to the stationary member, and hooks carried by said hook-carrier, substantially as described.

812,692. **TIME-INDICATOR FOR LETTER-BOXES.** James C. Smith and John S. Davis, Montgomery, Ala. Filed Oct. 13, 1905. Serial No. 282,571.

Claim.—1. The combination with a suitable box having a hinged door constructed with a suitable window, of drums spacedly supported on the inner side of the door, an endless band on the drums having indicating characters thereon, adapted for display through said window, a ratchet-wheel on one of the drums, and a dog secured to the inner side wall of the box, the dog being adapted for engagement with the ratchet-wheel teeth, and for rotation of the adjacent drum upon closure of the box-door, substantially as described.

2. The combination with a letter-box having a hinged door, and the latter provided with a suitable window, of indicating mechanism consisting of a drum supported by brackets fixedly located on the rear side of the box-door, a similar drum supported in brackets adjustably secured to the same side of the box-door, a pawl on the latter brackets, rack-teeth on the door, the same being located for engagement by the pawl, a ratchet-wheel on one of said drums, and a dog on the inner side of the box, the same being arranged for engaging the ratchet-wheel teeth, substantially as described.

3. The combination of a letter-box door having a suitable window, of indicating mechanism employing a fixedly-located drum, an adjustable similar drum, a pawl in connection with the latter drum, and rack-teeth on the door, whereby to secure the second drum as adjusted, an endless band on said drums, the band consisting of a series of connected plates having time characters marked thereon, a ratchet-wheel on one of said drums, and a dog on the letter-box, the same being arranged for engaging the ratchet-wheel teeth upon closure of the box-door, substantially as described.

812,693. **STEAM-TURBINE.** Norman R. Smith, Seattle, Wash. Filed June 8, 1905. Serial No. 264,354.

Claim.—1. A steam-turbine comprising two opposed disks having a plurality of series of spirally-disposed cups or buckets formed in their opposed faces, and means for discharging steam into the inner cup of each series.

812,694. **CLUTCH.** Israel H. Spencer, St. Louis, Mo. Filed Feb. 20, 1904. Serial No. 194,912.

chute, a slide having connection with said rock-shaft, a driven shaft having a finger arranged for engagement with said slide, and a retractile spring connected to said rock-shaft for returning it to normal position after it has been oscillated by said slide, substantially as set parts and to the lever for rocking the aforesaid shaft to store up power by means of which said mechanism is actuated, and means also operated by the reciprocating parts for setting said power-storing device into action for actuating said mechanisms.

ing a plurality of series of spirally-disposed cups or buckets formed in their opposed faces, and means for discharging steam into the inner cup of each series.

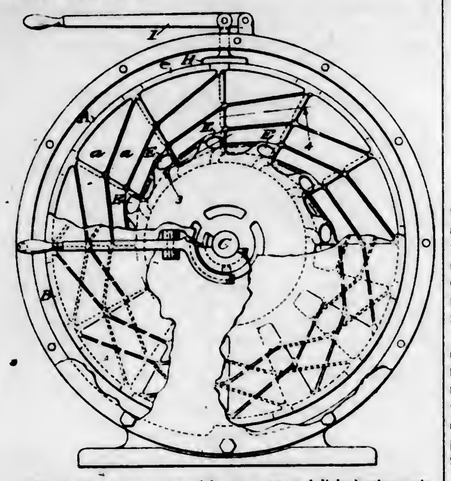

2. A steam-turbine comprising two opposed disks having a plurality of series of spirally-disposed cups or buckets formed in their opposed faces, means for discharging steam into the inner cup of each series, and means for securing either disk to the shaft and for holding the other disk against turning.

3. A reversible steam-turbine comprising two disks mounted upon a common axis with faces in contact, said contacting faces having cups formed therein and disposed in a plurality of spirally-disposed series and means for injecting steam to the innermost of these cups, said cups being formed to deflect the steam in a direction which is a combination of a tangential and an axial direction and into a cup upon the other disk.

4. A reversible steam-turbine comprising two disks mounted upon a common axis with faces in contact, said contacting faces having cups formed therein and disposed in a plurality of layers the successive cups of any series being at an increased distance from the center and means for injecting steam to the innermost cups of each series, said cups being formed to deflect the steam in a direction which is a combination of a tangential and an axial direction and into a cup upon the other disk, and means for clamping said disks to their shaft and for holding them against turning, operated in alternate and opposite relation.

5. A steam-turbine disk having cups in the face thereof arranged in a plurality of series the cups of each series being spirally disposed.

6. A steam-turbine disk having cups in its face, said cups having a major axis and an inner surface, sloping from the surface of the disk at one end of the major axis inward to a maximum depth at or near the other end of its major axis, said major axis extending substantially in a direction which is tangential from the deeper end of the cup.

7. A steam-turbine disk having cups in its face having their major axes substantially tangential and deepest at the inner ends of said axes and sloping thence to the surface at the outer ends of said axes.

8. A steam-turbine disk having cups in its face arranged in a plurality of spirally-disposed series, said cups being deepest at their ends toward the center in the direction of the spirals.

9. A steam-turbine comprising two disks mounted to turn with their faces in contact, each disk having cups in its contact-face arranged in a plurality of spirally-disposed series, said cups being deepest at their ends toward the center in the direction of its spiral and the spirals of the two disks extending respectively in opposite directions.

10. A steam-turbine comprising two disks mounted to turn with their faces in contact, each disk having cups in its contact-face arranged in a plurality of spirally-disposed series, said cups being deepest at their ends toward the center in the direction of the spiral, the spirals of the two disks extending respectively in opposite directions, and means for discharging jets of steam into the innermost cups of said series.

812,694. CLUTCH. ISRAEL H. SPENCER, St. Louis, Mo. Filed Feb. 20, 1904. Serial No. 196,912.

Claim.—1. In a clutch, the combination of a shaft, a hub fixed to said shaft and having tapering runways, a drive-wheel hub having a head fitting over said shaft-carried hub, clutch-balls in said runways, and means for retaining said clutch-balls at the deepest ends of said runways; said means consisting of a rocking shift-plate, pins carried by said shift-plate extending into said runways, and a throw-plate having connection with said shift-plate, substantially as set forth.

2. In a clutch, the combination of a shaft, a hub fixed to said shaft and having tapering runways, a drive-wheel hub having a head fitting over said shaft-carried hub, clutch-balls in said runways, and means for retaining said clutch-balls at the deepest ends of said runways; said means consisting of a rocking shift-plate, pins carried by said shift-plate extending into said runways, and a rocking throw-plate having connection with said shift-plate, substantially as set forth.

812,695. POTATO-PLANTER. HENRY J. SPRINGER, Edwardsville, Ill., assignor to Springer Bros. Manufacturing Company, Edwardsville, Ill., a Corporation. Filed Sept. 9, 1905. Serial No. 277,758.

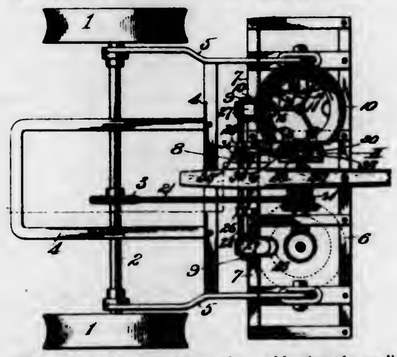

Claim.—1. In a potato-planter, the combination of a seedbox, means in said seedbox for delivering seed therefrom, a chute into which the seed is delivered, a driven shaft for operating said seed-delivering means, a rock-shaft, a valve carried by said rock-shaft and arranged to operate in said chute, and means actuated by said driven shaft connected to said rock-shaft to impart oscillation thereto, substantially as set forth.

2. In a potato-planter, the combination of a seedbox, means for delivering seed therefrom, a chute into which the seed is delivered, a driven shaft provided with a finger and arranged to operate said seed-delivering means, a rock-shaft, a valve carried by said rock-shaft and arranged to operate in said chute, and a slide connected to said rock-shaft and arranged to be engaged by the finger of said driven shaft, substantially as set forth.

3. In a potato-planter, the combination of a chute, a rock-shaft, a valve carried by said rock-shaft and arranged to operate in said chute, a slide having connection with said rock-shaft, and a driven shaft having a finger arranged for engagement with said slide, substantially as set forth.

4. In a potato-planter, the combination of a chute, a rock-shaft, a valve carried by said rock-shaft and arranged to operate in said chute, a slide having connection with said rock-shaft, a driven shaft having a finger arranged for engagement with said slide, and a guide in which said slide operates, substantially as set forth.

5. In a potato-planter, the combination of a chute, a rock-shaft, a valve carried by said rock-shaft and arranged to operate in said chute, a slide having connection with said rock-shaft, a driven shaft having a finger arranged for engagement with said slide, and a retractile spring connected to said rock-shaft for returning it to normal position after it has been oscillated by said slide, substantially as set forth.

6. In a potato-planter, the combination of a chute, a rock-shaft, a valve carried by said rock-shaft, and arranged to operate in said chute, a slide having connection with said rock-shaft, a driven shaft, and a finger-wheel carried by said driven shaft and arranged for engagement with said slide, substantially as set forth.

7. In a potato-planter, the combination of a seedbox having a main bottom and an apertured rotatable false bottom, swinging wings carried by said false bottom at the location of the apertures therein, and adjustable wings opposing said swinging wings, substantially as set forth.

8. In a potato-planter, the combination of a seedbox having a main bottom and an apertured false bottom, swinging wings carried by said false bottom at the location of the apertures therein, adjustable wings opposing said swinging wings, and means for securing said adjustable wings to said false bottom in fixed positions, substantially as set forth.

812,696. BALING-PRESS. DORO D. STANERO, Lamar, Mo. Filed May 13, 1905. Serial No. 260,204.

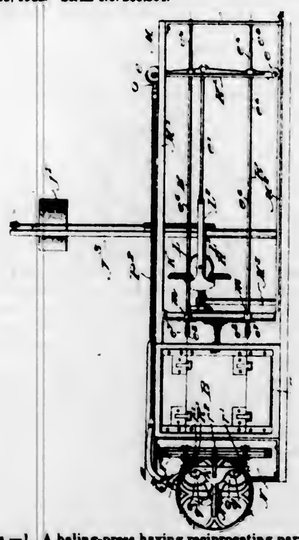

Claim.—1. A baling-press having reciprocating parts, mechanism for feeding wire to said press, mechanism for cutting the wire, mechanism for joining the ends of the cut-off portion of the wire, and means operated by said reciprocating parts for storing up power to actuate said mechanisms.

2. A baling-press having a reciprocating plunger and pitman, mechanism for feeding wire to said press, mechanism for cutting off a portion of the wire, mechanism for joining the ends of the cut-off portion of the wire, means operated by one of said reciprocating parts for storing up power to actuate said mechanisms, and a tripping device adapted to be disconnected by the movement of said plunger to render said stored power active.

3. A baling-press having a reciprocating plunger and pitman, combined with a head-block, mechanism for feeding wire to said press mechanism for cutting off a portion of the wire, mechanism for joining the ends of said cut-off portion of the wire, means operated by one of said reciprocating parts for storing up power to actuate said feeding, cutting and joining mechanisms, and a tripping device adapted to be engaged by said head-block for releasing said stored power.

4. A baling-press having reciprocating parts, combined with mechanism for feeding wire to said press mechanism for cutting off a portion of the wire, mechanism for joining the ends of said cut-off portion of wire, a rock-shaft, a lever loose on said shaft, a ratchet device between said lever and shaft, a power-storing device operated to store up power by the shaft, means connected to said reciprocating parts and to the lever for rocking the aforesaid shaft to store up power by means of which said mechanism is actuated, and means also operated by the reciprocating parts for setting said power-storing device into action for actuating said mechanisms.

5. A baling-press having reciprocating parts, mechanism for feeding wire to said press, mechanism for cutting off a portion of the wire, mechanism for joining the ends of said cut-off portions of wire, a rock-shaft, a lever loose on said shaft, a ratchet connection between said lever and shaft, a tripping device adapted to engage said ratchet connection, a power-storing device actuated to store up power by the shaft and release for the utilization of said power by the movement of said reciprocating parts, and a rope or its equivalent connected to said reciprocating parts and to the lever for rocking said shaft to operate said power-storing device to store up power for actuating said mechanisms.

6. A baling-press having reciprocating compressing parts, combined with wire feeding, cutting and joining mechanisms operated by stored power, a rock-shaft, a lever adapted to rock said shaft in one direction, means for storing power attached to said shaft, and a rope or its equivalent connected to said reciprocating parts and to the lever for rocking said shaft to store power by means of which said mechanism is actuated.

7. A baling-press having reciprocating parts including a plunger, sets of wire feeding, cutting and joining devices adapted to be operated by stored power, a rock-shaft, a lever adapted to rock said shaft in one direction, power-storing means attached to said shaft and operatively connected with said wire feeding, cutting and joining devices, a rope or its equivalent connected to said reciprocating parts and to the lever for rocking said shaft to actuate said power-storing means for storing up power, and a tripping device for holding said power-storing device inactive and adapted to be released by the action of the plunger.

8. A baling-press having bale-compressing mechanism, devices for applying and fastening wire about a compressed bale, mechanism for operating said devices, means operated by the bale-compressing mechanism for storing power, and a trip actuated by said bale-compressing mechanism to release said stored power and drive said wire-fastening devices.

9. Combined in a bale-wiring mechanism, a fixed knife and wire-clamp, a movable knife and wire-clamp, a wire-twisting head, and a shield to protect said twisting-head by partly surrounding it.

10. Combined in a bale-wiring mechanism, a wire-twisting head, a wire-holding hook adapted to slide longitudinally into and out of said twisting-head, and a wheel having cams thereon for causing the hook to slide, and also means for rotating the twisting-heads.

11. Combined in a bale-wiring mechanism, wire-twisting heads, wire-holding hooks adapted to slide into and out of said twisting-heads, an intermittently-rotatable wheel having a series of cams on one edge, and teeth on its periphery and carrying a gear-ring, means operated by the cams for sliding the hook, gearing turned by the gear-ring for rotating said twisting-head, and a rocking lever adapted to engage said peripheral teeth and turn the wheel.

12. A baling-press having reciprocating parts, wire feeding, cutting and fastening devices, a head-block moved by said reciprocating parts, means operated by said reciprocating parts for storing power to be used in driving said wire feeding, cutting and fastening devices, and a tripping device actuated by said head-block for rendering said stored power active.

13. Combined in a bale-wiring mechanism, wire cutting and clamping devices, wire-twisting devices, wire-feeding needles, a carriage carrying said needles, mechanism for reciprocating said carriage and needles, and means operated by the travel of said carriage to actuate the devices for cutting, clamping and twisting the wires.

14. Combined in a bale-wiring mechanism, tubular wire-feeding needles, a carriage carrying said needles, a supporting-frame for the carriage and needles, and hollow wire-guides attached to said frame and extending into said needles.

15. Combined in a bale-wiring mechanism having devices for feeding, cutting and clamping wires and twisting the ends thereof, a shaft, a lever thereon and connected thereto by a ratchet device, a bale-compressing mechanism adapted to move the lever and rotate the shaft in one direction, means for storing power attached to said shaft to turn it in opposite direction, a gear-wheel connected by a clutch to said shaft when turned by said stored power, and mechanism for operating said feeding, cutting, clamping and twisting devices, when said gear-wheel is turned.

16. A head-block for a baling-press or the like, composed of separable parts, connected by movable dogs and having baling wire or strand openings extending therethrough, the dogs being opera-

tive to release the parts by the bale-securing wires or strands moving outwardly from the block.

train-line, an egress-passage whereby the train-line may be charged

wound springs interposed, within said chamber, between said tread

versely thereto, and means for mechanically moving said locking

tive to release the parts by the bale-securing wires or strands moving outwardly from the block.

17. A head-block for a baling-press or the like, composed of separable sections having bale-securing wire or strand openings extending therethrough, with outlets at opposite sides of the block, and means for holding the parts of the block in assembled relation.

18. A head-block for a baling-press or the like, composed of separable parts and having openings extending therethrough from end to end for the reception of bale-securing wires or strands, the said openings having outlets at opposite sides and the walls thereof inclining outwardly toward the joints between the parts.

19. A head-block for baling-presses and the like, composed of a series of separable sections having bale-securing wire or strand openings extending therethrough from end to end, and gravitating securing devices for normally holding the sections of the block in connected relation.

812,697. **AIR-BRAKE APPARATUS.** AUGUSTUS A. ST. CLAIR, Indianapolis, Ind. Filed Aug. 13, 1905. Serial No. 273,571.

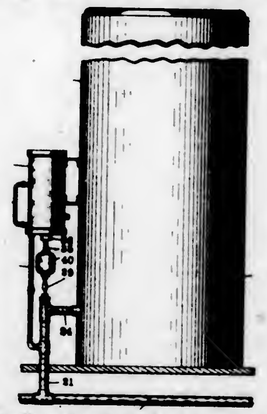

Claim.—1. The combination, with an air-brake system embodying the usual train-line and individual air-brakes for the cars of the train, of a supplemental reservoir at the rear end of the train, connections between said reservoir and said train-line, and means controlled by the train-line pressure for releasing the air in said reservoir and discharging the same into the train-line, thereby producing the usual effect of increased train-line pressure upon the brakes on the cars connected to said train-line when it is desired to release the brakes.

2. The combination, with a railway-train, of the usual air-brake apparatus, a supplemental reservoir at the rear of the train, a branch between the train-line of said apparatus and said reservoir containing a check-valve, another branch leading from said reservoir to said train-line containing a valve, and a piston-valve operated by the train-line pressure for operating said last-mentioned valve, whereby the air stored in said reservoir may be released for the purpose of releasing the brakes.

3. The combination, in an air-brake system, of the train-line, a supplemental reservoir at the rear end of the train, connections between said reservoir and said train-line, a valve in the egress connection, and a piston-valve operated by the train-line pressure for controlling the same.

4. The combination, in an air-brake system, of the train-line, a supplemental air-reservoir, valves for controlling the ingress and egress of air from said reservoir, and a piston-valve for controlling the egress-valve, the cylinder whereof is provided with a by-pass and with an air-escape orifice both of which are arranged to be controlled by the movement of the piston of said valve.

5. The combination, in an air-brake system, of the train-line, a supplemental reservoir connected to the rear portion of said train-line, air ingress and egress passages connecting said reservoir and said train-line, a valve in said passages, and means controlled by a reversal of conditions in the train-line whereby the valve in the egress-passage is actuated.

6. The combination, in an air-brake system, of the train-line, a supplemental reservoir connected to the rear portion of said train-line, an ingress-passage whereby said reservoir is charged from said train-line, an egress-passage whereby the train-line may be charged from the reservoir when the pressure in the train-line has been reduced, a valve for controlling said last-named passage, a piston-valve for controlling said last-named valve, and a supplemental reservoir connected to the opposite end of the piston-valve from said egress-passage valve.

7. The combination, in an air-brake system, of the train-line, a supplemental reservoir connected to said train-line, a valve in the egress-passage from the reservoir to the train-line, a piston-valve whereby said last-named valve may be controlled, the valve-stem of said piston-valve being provided with stops whereby its movement is limited, and the cylinder of said piston-valve being provided with a by-pass and an escape-orifice controlled by the positioning of said piston-valve.

8. The combination, in an air-brake system, of the train-line, a supplemental reservoir connected to said train-line, a valve in the egress connection between said reservoir and said train-line, and a piston-valve for controlling said last-named valve, the valve-stem of said piston-valve being weighted and the friction of said piston-valve thereby overcome in operation.

9. The combination, in an air-brake system, of the train-line, a supplemental reservoir connected to said train-line, a valve in the egress connection between said reservoir and said train-line, and a piston-valve for controlling said last-named valve the area of which is greater than that of the piston in the triple valve controlling the inlet to the auxiliary reservoir.

812,698. **ELASTIC TIRE FOR VEHICLE-WHEELS.** THEODORE STERNE, Paris, France. Filed June 23, 1905. Serial No. 266,657.

Claim.—1. The combination with a wheel, of a resilient tread member therefor, cylindrical cushioning means interposed between the felly of the wheel and said tread member, and rigid means engaging said cushioning member on opposite sides thereof at points intermediate of the felly of the wheel and said tread member, substantially as described.

2. The combination with a wheel, of a resilient tread member therefor, cylindrical cushioning means interposed between the wheel-felly and said tread member, and means for preventing the lateral expansion of said cushioning member substantially on the horizontal axis thereof, substantially as described.

3. The combination with a wheel provided with a peripheral channel having rigid side walls, of a resilient cover or tread member for said channel, and a series of spirally-wound springs interposed, within said channel, between said tread member and the felly of the wheel and tangentially engaging said side walls, substantially as described.

4. The combination with a wheel provided with an annular peripheral channel having rigid side walls, of a resilient tread member covering said channel, and a series of spirally-wound springs interposed, within said channel, between said tread member and the felly of the wheel and contacting said rigid side walls, substantially as described.

5. The combination with a wheel, of annularly-disposed rigid plates projecting peripherally of the felly of said wheel and forming an annular chamber thereabout, a resilient tread member connecting the ends of said plates, and a series of spirally-wound springs interposed, within said chamber, between said tread member and felly and contacting said rigid plates, substantially as described.

6. The combination with a wheel of peripherally-disposed rigid plates forming an annular chamber thereabout, said plates being provided with interlocking socket-flanges at their ends, a resilient tread member provided with heels adapted to fit within said socket-flanges, and a series of spirally-wound springs interposed between said plates, tread member, and the felly of the wheel and contacting said rigid plates, substantially as described.

7. The combination with a wheel, of peripherally-extending rigid plates forming an annular chamber thereabout, hooked flanged sockets extending around the outer edge of said plates, a flexible tread member provided with wheels adapted to engage said sockets, means for securing same therein, and a series of spirally-wound springs interposed, within said chamber, between said tread member and the felly of the wheel and contacting said rigid plates, substantially as described.

8. The combination with a wheel, of a pair of peripherally-disposed rigid plates provided with socketed ends and forming an annular chamber around said wheel, a resilient tread member having heels thereon adapted to fit within said sockets and provided with an air-chamber, means for inflating said air-chambers for interlocking said tread member with said plates, and spirally-wound springs interposed, within said annular chamber, between said tread member and wheel-felly and contacting said rigid plates, substantially as described.

812,699. **CLAMP.** JOHN J. STEVENS, Dallas, Tex., assignor of one-half to Theodore A. Lampton, Dallas, Tex. Filed Aug. 1, 1905. Serial No. 273,571.

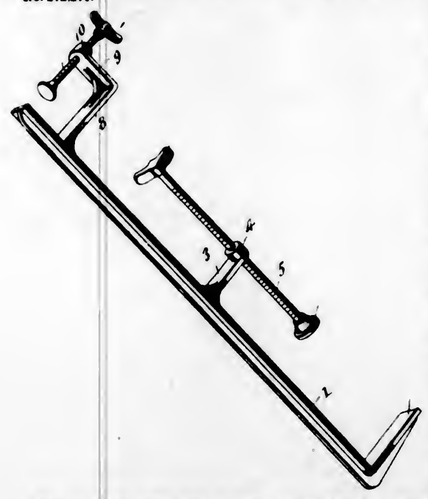

Claim.—A clamp comprising an integral body including a main rail terminally bent to provide a foot, an arm projecting from the rail in spaced parallel relation with the foot and on the same side of the rail as the foot, a clamp-screw having threaded connection with the terminal of the arm and coöperating with the foot, a second arm projecting from the rail at the end opposite the foot, and extending from the rail in a direction opposite to that of the foot, the terminal of the arm being bent into spaced parallel relation with the rail, and a clamp-screw having threaded connection with the terminal of the second arm and coöperating with the rail.

812,700. **RHEOSTAT.** GEORGE E. STEVENS, Lynn, Mass., assignor to General Electric Company, a Corporation of New York. Filed Oct. 12, 1904. Serial No. 228,133.

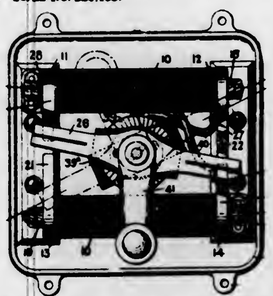

Claim.—1. A rheostat comprising a fixed resistance element, a coöperating movable contact, a spring for returning the parts to off position, a fixed locking member, a yieldingly-mounted coöperating locking member carried by the movable contact and movable transversely thereto, and means for mechanically moving said locking members into engagement.

2. A rheostat comprising a fixed resistance element, a coöperating movable contact, a spring for returning the parts to off position, a fixed locking-magnet, an armature therefor carried by the movable contact and movable transversely to the said contact, and means for moving said armature transversely into operative relation to said magnet.

3. A rheostat comprising a fixed resistance element, a coöperating movable contact, a spring for returning the parts to off position, a fixed locking-magnet, a yieldingly-mounted armature therefor carried by the movable contact and movable transversely to the said contact, and means for moving said armature transversely into operative relation to said magnet.

4. A rheostat comprising a base, a fixed resistance element secured thereto, a coöperating movable element, a spring for returning the parts to off position, an electromagnet mounted on said base, a yieldingly-mounted armature on the movable element of the rheostat normally held away from said magnet, and means for mechanically moving said armature and magnet into operative relation whereby the movable element will be held against the tension of the spring.

5. In a rheostat, the combination with a fixed resistance element and a base therefor, of a pivot-post secured to said base, a magnet located at the foot of said post, a rotary armature supported on said post and movable longitudinally thereof, a yielding laterally-extending contact secured to said armature and adapted to engage the fixed element of the rheostat and to be put under strain by the downward movement of said armature, and means for mechanically forcing said armature downward into operative engagement with said magnet.

6. A rheostat comprising a fixed resistance element, a coöperating movable contact, a fixed locking member, a coöperating movable locking member carried by said movable contact, an operating-handle, and means whereby the movement of said handle will move said contact to its limiting position and a further movement will bring said locking members into engagement.

7. A rheostat comprising a fixed resistance element, a coöperating movable contact, a fixed locking member, a coöperating movable locking member carried by said movable contact, an operating-handle, frictional connecting means between said handle and contact whereby the movement of the former is transmitted to the latter, a stop for limiting the movement of the contact, a cam connection between the locking member and the handle whereby upon a further movement of the latter the locking members will be moved into engagement.

8. In a rheostat, the combination with a fixed resistance element and a base therefor, of a pivot-post secured to said base, a magnet located at the foot of said post, a rotary armature supported on said post and movable longitudinally thereof, an operating-lever mounted on said post above said armature, a yielding laterally-extending contact secured to said armature and adapted to engage the fixed element of the rheostat and to hold the armature and operating-lever in close engagement, a stop for limiting the movement of said contact, and coöperating cam-surfaces on said armature and lever whereby the rotation of said lever is transmitted to said contact to carry it against said stop and its further movement forces the armature downward against the magnet.

812,701. **TACK-PULLER.** JAMES H. STINER, Gowen, Pa. Filed July 11, 1905. Serial No. 269,230.

Claim.—A tool of the class described comprising a head having an angular socket formed in one end thereof and having its opposite

812,702. **PIANO-ACTION.** WILLIS S. WOOD and ELMER E. [illegible]

end reduced and provided with a V-shaped notch forming a gripping claw, said head being provided with a transverse recess communicating with the socket and having one wall thereof formed with a plurality of openings and the adjacent wall curved laterally to form a fulcrum, an arm projecting laterally from the head at said socket, an operating-handle seated in the socket, and fastening devices passing through the openings and engaging the adjacent end of the operating-handle.

812,702. **CORE-CUTTER FOR CEMENT-BLOCK MACHINES.** JAMES W. STUART, Paris, Ill. Filed Apr. 14, 1905. Serial No. 255,553.

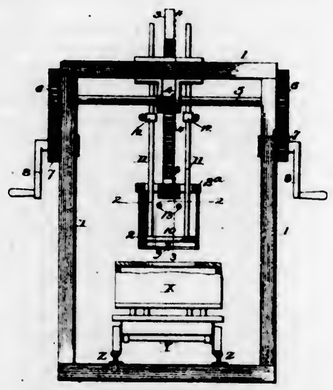

Claim.—1. The combination, with a frame, and a core-cutter for plastic material, and means for raising and lowering it, of a cross-bar arranged transversely within the cutter and near its lower edge, and means for ejecting the core cut out and taken up by the cutter, substantially as described.

2. In a machine of the class indicated, the combination, with the core-cutter a transverse bar connecting the sides of the cutter at a point adjacent to its lower edge, of an ejector consisting of a plate arranged within the cutter and having vertical guides provided with stops, the said ejector resting normally upon the cross-bar within the cutter, and being arrested by the stops when the cutter is moved upward beyond a certain point, substantially as described.

3. In a machine for the purpose specified, the combination, with a frame, a core-cutter, and means for raising and lowering it of an ejector arranged within the cutter, vertical guide-bars attached to said ejector and extending up through the top portion of the frame stops applied to said guide-bars and made adjustable thereon so that they may be set at different distances from the ejector come in contact with the latter when the cutter is raised, and a stop arranged within the cutter for supporting the ejector when the cutter is empty, substantially as described.

4. The combination, with a frame, horizontal guide-rails, a truck adapted to run thereon, and a mold-box supported upon said truck and provided with a top having an opening, of a vertically-movable core-cutter adapted to enter the mold-box, means for raising and lowering the said cutter, an ejector contained within the cutter, and adapted to arrest the core and force the same out when the cutter is raised to a sufficient height, substantially as described.

812,703. **BELT-GEARING FOR EXTRACTORS.** JOHN T. TRUITT, St. Louis, Mo. Filed Feb. 12, 1903. Serial No. 143,091.

Claim.—A belt-gearing for extractors comprising a driving-shaft, a peripheral pulley therewith, a counter-shaft, a fast and a loose pulley thereon, said shaft being also provided with a fast and a loose grooved pulley, a support having a two-part frame provided with a single shaft having thereon a pair of pulleys separately mounted in each part of the frame, a yoke pivoted to the ends of the single shaft and arranged in front of the pulleys on the single shaft, a pulley rotatably mounted in a depending weighted hanger, a driving-band mounted respectively on the pulley of the driving-shaft, the pulleys of the two-part frame, the depending pulley, and also on the grooved pulleys on the counter-shaft, substantially as specified.

812,703.

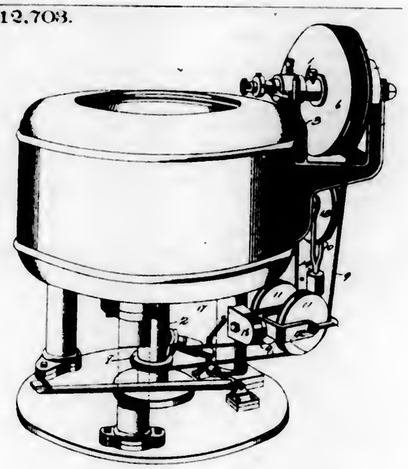

812,704. **MACHINE FOR MAKING FLAT MACARONIS.** ANGELO DE VITO, New York, N. Y. Filed May 4, 1905. Serial No. 258,905.

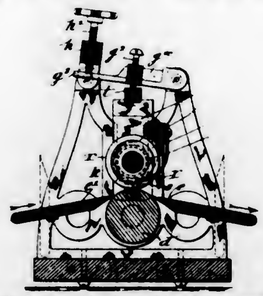

Claim.—1. In a machine for making flat macaronis, the combination, with supporting side frames, of a lower roll, an upper roll, detachable journal-blocks for supporting the upper roll, a guard-plate supported on the journal-blocks alongside of the upper roll, a pivoted locking-frame for the journal-blocks of the upper roll and a pivoted locking-bail for the locking-frame.

2. In a machine for making flat macaronis, the combination, with supporting side frames, of a lower rotating roll, detachable journal-blocks supported in guide-recesses of the side frames, an upper roll supported in bearings of said journal-blocks, fulcrumed guide-boards arranged at each side of the lower roll, a guard-plate supported alongside of the upper roll, a locking-frame pivoted to the upper end of the side frames on one side of the blocks and provided with a central heel and a locking-frame pivoted at the opposite side of the journal-blocks and provided with a central set-screw for engaging the heel of the locking-frame.

3. In a machine for making flat macaronis, the combination, with supporting side frames, of a lower roll supported in journal-bearings of the same, journal-blocks supported between guide-rails of the side frames, a cutting-roll supported in bearings of the journal-blocks, inclined guide-boards fulcrumed at each side of the lower roll, a guard-plate arranged alongside the cutting-roll on the journal-blocks and provided with recesses for the disk-shaped knives of the cutting-roll and means for locking the journal-blocks of the cutting-roll in position.

4. In a machine for making flat macaronis, the combination, with supporting side frames, of a lower rotating roll supported in journal-bearings of the same, journal-blocks supported in guide-rails of the side frames, a cutting-roll supported in bearings of the journal-blocks, inclined guide-boards fulcrumed at each side of the lower roll, a transverse spring-bar extending between the upper faces of the journal-blocks, a locking-frame applied to said spring-bar, and a locking-bail applied to the locking-frame.

812,705. **PIANO-ACTION.** WILLIAM C. VOGEL and HARRY K. SHELL, Newcastle, Ind. Filed July 11, 1904. Serial No. 216,026.

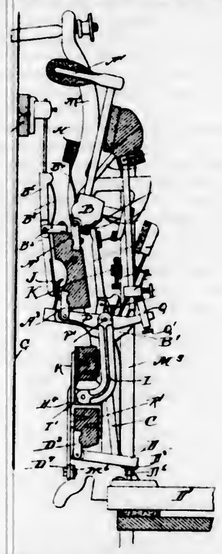

Claim.—1. In a piano-action, a vertical main action-bracket having upper and lower lugs extending laterally from its rear edge, a block carried by said upper lugs, a guide-bracket connected at its upper end to the block and at its lower end to the lower lugs, and a lever-rail adapted to move vertically between the bracket and the guide, as and for the purpose set forth.

2. A piano-action comprising a main action-bracket, a block carried by the rear edge of the bracket, lugs extending from the bracket below the block, a guide-bracket having an upper offset portion secured to the block, lugs formed on the lower end of the guide-bracket adapted to aline with and be secured to the lugs of the action-bracket, and a lever-rail adapted to move vertically between the action and the guide brackets.

3. The combination with a lever-rail movable vertically, of a movable hammer-rest rail, a soft-pedal rod adapted to lift the hammer-rest rail upwardly and rearwardly, a depending rod pivotally connected to the hammer-rest rail, a block adjustably secured upon said rod, a main action-rail, a lost-motion lever pivotally hung from said main rail at its rear end, a block pivotally supported from the adjustable block and cut out to receive the forward end of the lost-motion lever, an elbow adjustably pivoted to the lost-motion lever intermediate its ends, a hanger secured to the lever-rail and pivotally connected to the lower end of the elbow, a lever pivotally supported at its rear end from the lever-rail, and a key in constant engagement with the forward end portion of the lever.

4. A piano-action comprising a main action-rail, a hammer, a hammer-rest rail, a vertical main action-bracket, a vertically-movable lever-rail, a lost-motion lever pivotally connected to the main action-rail, a block secured to the hammer-rest rail, a depending rod pivoted at its upper end to the said block, a block adjustably secured on said rod, a block pivotally connected to the adjustable block and cut out to receive the forward end of the lost-motion lever, the said lever being provided with a plurality of perforations, an elbow adjustably pivoted at its upper end to the lost-motion lever, and a hanger pivotally connected to the elbow and also connected to the lever-rail.

5. A piano-action comprising a vertical main action-bracket, a guide-bracket, a lever-rail movable vertically between the main action-bracket and the guide-bracket and cut away along its lower edges, a block fitted to the said lever-rail to form a rectangular edge, a buckskin covering inclosing the said lever-rail between the main action-bracket and the guide-bracket, and a strip of buckskin interposed between the said covering and the remaining cut-out edge of the lever-rail.

812,706. **RESPIRATOR.** JOSEPH WARBASSE, Newton, N. J. Filed Aug. 3, 1904. Serial No. 219,317.

Claim.—A respirator comprising a nose-mask, the inner edge of the lower wall being curved and provided with a downwardly-extended flange, the said mask having inlet and outlet openings, valves for said openings, a hood over the outlet-opening and open at the bottom the said hood being inclined downward and outward and fully inclosing the valve, a short tube communicating with the inlet, and a flexible tube extending from said short tube.

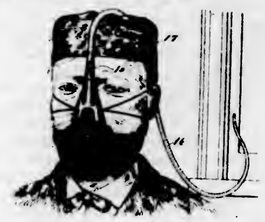

812,707. **CHECK PRINTER AND PROTECTOR.** ALFRED J. WARE and WILLIAM ZOLLER, Seattle, Wash. Filed Mar. 7, 1905. Serial No. 248,879.

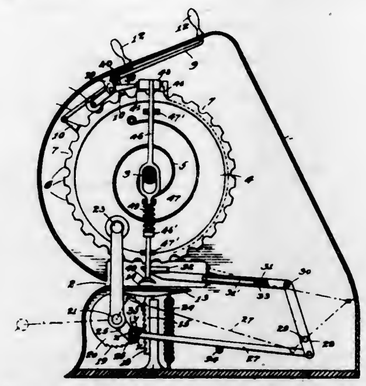

Claim.—1. In apparatus of the class described, the combination with the containing-case and a plurality of wheels provided with peripherally-disposed type characters, of means to move the wheels into predetermined printing positions, means to automatically lock the wheels in such set positions, devices for supporting the article to be printed, type-inking devices, means to successively actuate said inking devices and impinge the article against the type, and spring-actuated means for automatically releasing the locking devices from the wheels during the downward movement of said supporting devices.

2. In apparatus of the class described, the combination with the containing-case, a plurality of adjustable type-wheels, and bars connected with said wheels and extending exteriorly through the case for individually setting said wheels, of inking devices for the wheels, a vertically-movable platen for holding the article to be marked, means for successively actuating the inking devices and elevating the platen to impinge articles against the type-wheels, means for locking the type-wheels in set position during the printing operation, and means for automatically releasing the wheels when the printing operation is completed.

3. In apparatus of the class described, the combination with the case, a shaft fixedly connected thereto, a plurality of type-wheels rotatively mounted on said shaft and spring connections between said wheels and shaft acting to rotate the wheels back to their initial positions, of means to adjustably move the wheels into printing positions, means to lock wheels in their adjusted positions, a platen, an inking mechanism and a common means acting to successively actuate the inking mechanism, elevate the platen to bring the article to be printed against the type and to release the locking mechanism of the type-wheels.

4. In apparatus of the class described, the combination with the containing-case the type-wheels, the means for individually setting the wheels against the action of springs, said springs, brake devices for locking the wheels in their adjusted positions, the platen, means

to raise the platen against the actions of springs, last-named springs,

on the carrier so that it will grip or release an end of metal inserted

formed therein, a valve arranged in said valve-body, a rod extending

to raise the platen against the actions of springs, last-named springs, spring-pressed means for retaining the article to be marked upon the platen, said last-named means carrying devices for disengaging the brake devices from the type-wheels to allow the latter to return to their initial positions.

5. In an apparatus of the class described, in combination, marking mechanism including type-wheels and inking devices for said type-wheels, a movable platen for supporting the article to be marked, spring-pressed devices for holding the article upon the platen, locking devices for the type-wheels, and means for successively operating the inking mechanism, and elevating the platen, and means automatically operating to release the type-wheels when the printing operation is completed, substantially as described.

6. In apparatus of the class described, the combination of the marking mechanism, the platen, the brake devices for locking the wheels of said marking mechanism in their adjusted positions, and means for elevating the platen into marking position and devices coacting with the platen and adapted to disengage said brake devices.

7. In a check-printer, a plurality of type-wheels mounted to be rotated, and means for individually moving said wheels, inking devices for said wheels a platen on which the article to be printed is supported, means for successively actuating the inking devices and the platen, means for locking said type-wheels in the set position comprising spring-pressed brake-wheels normally held in engagement with the type-wheels, substantially as described.

8. In a check-printer, a plurality of type-wheels mounted to be rotated, and means for individually moving said wheels, inking devices for said wheels, a platen on which the article to be printed is supported, means for successively actuating the inking devices and the platen, means for locking said type-wheels in the set position comprising spring-pressed brake-wheels normally held in engagement with the type-wheels, and means operating automatically with the return movement of the platen to release said brake-wheels, substantially as described.

9. In a check-protector, a plurality of type-wheels, means for individually setting the wheels in marking position, a vertically-movable platen, means for actuating said platen to elevate the article being marked into engagement with the type-wheels, spring-pressed brake-wheels engaging the type-wheels to hold the same in the set position, means operating automatically with the return of the platen to its normal position to release said brake-wheels and means for returning the type-wheels to their normal position when the brake-wheels are released, substantially as described.

812,708. MACHINE FOR MANUFACTURING PRINTERS' LEADS. CYRUS C. WEBSTER, Minneapolis, Minn. Filed Oct. 22, 1904. Serial No. 229,583.

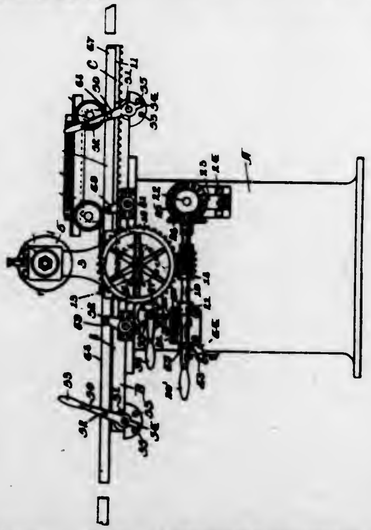

Claim.—1. A machine of the class set forth, consisting of a suitable bed, a carriage, a series of parallel clamps, equally spaced apart, for holding strips of material across said carriage, a gang of cutters, means for effecting relative sliding motion between said cutters and carriage, for the purpose of causing said cutters to enter between said clamps and cut said strips into pieces, and a tenon-and-mortise connection between each clamp and the carriage, to enable lifting the clamps off of the carriage.

2. A machine for cutting printers' leads, consisting of a series of parallel clamps, spaced apart, for holding strips of material, a carriage below said clamps, a gang of cutters, a suitable bed, means for permitting said carriage to move upon said bed and cause said cutters to enter between said clamps and cut said strips into pieces, and means for attaching said clamps to, and permitting them to be detached from, said carriage, for the purposes specified.

3. A machine for cutting printers' leads, consisting of a carriage, a suitable bed below said carriage, a series of clamps, for holding strips of material, mortised in said carriage and adapted to be removed vertically therefrom, a plurality of cutters by which the strips held by said clamps are cut into equal lengths, and means for permitting said cutters and carriage to pass one another.

4. A machine for cutting printers' leads, consisting of a plurality of parallel clamps, equally spaced apart, a suitable carriage for supporting said clamps, a tenon on each clamp, a mortise in said carriage for receiving each tenon, a supporting-bed, a sliding connection between said bed and carriage, and a gang of cutters adapted to enter between said clamps, for the purposes specified.

5. A machine of the class set forth, consisting of a bed having a pair of parallel guides, a sectional track, means for raising and lowering sections of said track, a gang of cutters, a carriage slidably mounted upon said guides, feed mechanism for said carriage, a truck adapted to run upon said track, means for locking said truck on said carriage when the sections of said track are lowered, and actuating mechanism for driving said parts.

6. A machine for cutting printers' leads, consisting of a bed, a carriage in sliding connection with said bed, a gang of cutters, a truck adapted to move above said bed, and means for locking said truck on said carriage.

7. A machine of the class set forth, consisting of a bed having parallel guides, a track, cutting mechanism, a carriage in sliding connection with said guides, means for moving said carriage on said guides, a truck adapted to run upon said track, means for moving said track to permit said truck to rest upon said carriage, means for locking said truck on said carriage, and actuating mechanism.

8. A machine of the class set forth, consisting of a bed, having parallel guides, a track, means for raising and lowering said track, a carriage on said guides to receive a truck off of said track, a detachable stop on said carriage against which said truck is adapted to impinge, a lock on said carriage for holding said truck against said stop, feed mechanism for moving said carriage on said guides, and actuating mechanism.

812,709. DRUM FOR COILING METAL. WILLIAM R. WEBSTER, Bridgeport, Conn. Filed Apr. 27, 1905. Serial No. 257,060.

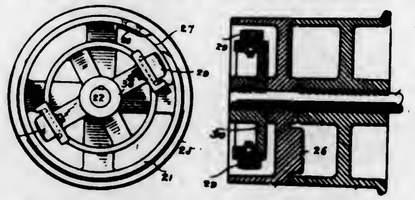

Claim.—1. A coiling-drum comprising a loose drum having a peripheral opening and a locking-surface and a rotating carrier within the drum, said parts being so constructed that the insertion of the end of a piece of metal between them will connect them together and the drum will be rotated by the carrier and the metal coiled thereon.

2. A coiling-drum consisting of a loose drum having a peripheral opening and forward of said opening a locking-surface, and a rotating carrier having a coacting locking-block adapted to grip an end of metal between itself and the locking-surface on the drum so that said end of metal will serve as a connection between the carrier and the drum and the drum will be carried forward by the carrier and the metal coiled thereon.

3. A coiling-drum comprising a loose drum having a peripheral opening and a locking-surface, a rotatable carrier having a pivoted coacting locking-block and means for oscillating the locking-block on the carrier so that it will grip or release an end of metal inserted in the opening.

4. A coiling-drum comprising a loose drum having a peripheral opening and a locking-surface, a rotatable carrier having a pivoted coacting locking-block, an arm extending therefrom, an oscillatory sleeve having an arm extending therefrom, and a link connecting the arm extending from the sleeve with the arm extending from the locking-block on the carrier, substantially as described, for the purpose specified.

5. In a device of the character described the combination with a hollow shaft having a longitudinal slot, a carrier rigidly secured thereto and a sleeve loose thereon and having extending arms and a spiral slot, of a drum loosely mounted on the sleeve and having a peripheral opening and a locking-surface, locking-blocks pivoted on the carrier and having arms extending therefrom, links connecting said arms with the arms extending from the sleeve, and a rod within the shaft having a pin engaging the slot therein and the spiral slot in the sleeve so that longitudinal movement of the rod will oscillate the sleeve and the locking-blocks upon the carrier and cause them to grip or release an end of metal passed through the opening in the drum.

6. The combination with a shaft, a drum fixed thereto and a drum loose thereon and having a peripheral opening and a locking-surface, of a rotating carrier fixed to the shaft and lying within the loose drum and a locking-block on the carrier adapted to grip an end of metal between itself and the locking-surface on the loose drum, said end of metal serving as a connection between the loose drum and the carrier, shaft and fixed drum, so that all of the parts will rotate together.

812,710. PORTABLE ELECTRIC-LAMP OUTFIT. ARTHUR WILSON, Berlin, Wis. Filed Mar. 28, 1905. Serial No. 253,582.

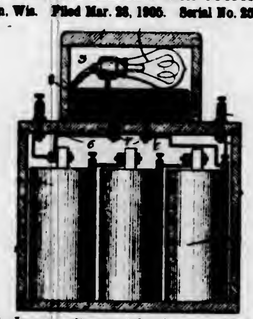

Claim.—1. In an appliance of the character described, the combination with a portable receptacle, of batteries therein, a second receptacle, of less width than said first receptacle, superposed upon the first receptacle, an electric lamp, flexible electric connections between said batteries and lamp extending through the upper receptacle and adapted to be stowed, together with said lamp, in said upper receptacle, and means of electric connection with said batteries arranged without said upper receptacle.

2. In an appliance of the character described, the combination with a portable receptacle, of batteries therein, said receptacle provided with openings in its top at each side to receive binding-posts having electric connections with said batteries, a second receptacle, of less width than the first receptacle, superposed upon said first receptacle intermediate of said openings, an electric lamp, and flexible electric connections between said batteries and lamp extending through the upper receptacle and adapted to be stowed, together with said lamp, in said upper receptacle.

812,711. DEVICE FOR OIL-WELLS. HENRY WILSON, Emlenton, Pa. Filed Feb. 21, 1905. Serial No. 246,776.

Claim.—1. In a device for oil-wells, the combination with a working barrel and a standing valve, of a working valve, a rod passing through the standing valve and connected to the working valve and agitating means carried by said rod, said working barrel being perforated above said agitating means.

2. In a device for oil-wells, the combination with a working barrel constructed in three sections, the intermediate section being perforated, of a plurality of working valves, a standing valve located below the lower of said working valves, a standing-valve body located between said working valves, said valve-body having a seat formed therein, a valve arranged in said valve-body, a rod extending through said valve-body and through the valve arranged therein and connected to said working valves and agitating means carried by said rod between the lowermost working valve and the said valve-body, and adjacent to the perforated section of the working barrel.

3. In a device for oil-wells, the combination with working barrels and working valves arranged in said barrels, of a section of perforated pipe interposed between said barrels, a valve-body mounted between said working valves, a rod extending through said valve-body and connecting with said working valves, a valve carried by said rod and adapted to seat in said valve-body, and agitating means carried by said rod, substantially as described.

812,712. HYDROCARBON-BURNER. FRED J. WOODHEAD, Bakersfield, Cal. Filed Oct. 23, 1903. Serial No. 178,274.

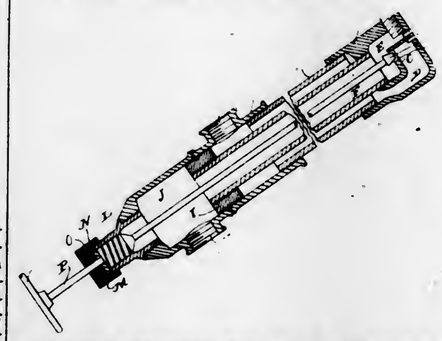

Claim.—1. A hydrocarbon-burner comprising a steam-chamber; a burner-tip on the outer end thereof, said burner-tip having two chambers therein separated by a partition; ports in the chambers of said burner-tip one directly above and the other directly below the front end of the partition; an oil-chamber within said steam-chamber and communicating with the upper chamber of the burner-tip; a port in the partition between the chambers of the burner-tip disposed therein opposite the center of the oil-supply chamber; a valve-stopper adapted to control the port in said partition, said valve-stopper having a stem extending rearwardly through the oil-chamber and having means to give said stem a longitudinal movement in said chamber.

2. A hydrocarbon-burner comprising an oil and a steam chamber each having an independent outlet-port, said chambers being in communication with each other near the outlet-ports; means to control said communication, means to create a back pressure by steam in the oil-chamber near the outlet thereof.

3. An atomizing oil-burner, having walls forming passages respectively for the oil and atomizing fluid, said passages having separate outlets, and one of the walls having an orifice therein leading from the fluid-passage to the oil-passage to communicate the pressure of the fluid to the oil-passage, whereby automatically to regulate the oil-discharge.

4. An atomizing oil-burner, having walls forming passages re-

provided with a fixed jaw located at one side of the central aperture;

coils, a transmitter and a common vibratory diaphragm, a trans-

spectively for the oil and atomizing fluid, said passages having separate outlets, and one of the walls having an orifice therein leading from the fluid-passage to the oil-passage to communicate the pressure of the fluid to the oil-passage, whereby automatically to regulate the oil-discharge, and means for regulating the area of the oil discharge or outlet

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812,713. SHOW-CASE. ANDREW W. ZEIGLER, Ellwood City, Pa. Filed Oct. 16, 1905. Serial No. 283,966.

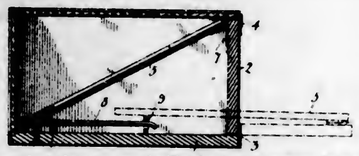

Claim.—1. A show-case or the like, having a downwardly-opening swinging door, a false bottom or goods-support mounted to slide on the bottom of the case and loosely connected to the door at an elevated point to cause said false bottom to be moved into the case and disposed in an inclined position by the closing of the door, and to be moved outwardly from the case and disposed in a horizontal position by the opening of the door.

2. The combination with a show-case or the like having a swinging door, of a false bottom or goods-support, a hinged connection between said door and said bottom or support, guide-rods upon the bottom of said case, and antifriction devices upon said bottom or support and engaged with said guide-rods, substantially as described.

812,714. MATCH-BOX. WILLIAM ALPERT, Richardton, N. D. Filed Sept. 30, 1905. Serial No. 280,906.

Claim.—1. In a device of the class described, a box having a hinged cover, a delivery member journaled at the front of the box and provided with a match-receiving recess, and a tension element terminally engaged respectively with the cover and delivery member.

2. In a device of the class described, a box including rear and end walls, a cover hinged to the box, a delivery member rotatively journaled at the front of the latter and provided with a match-receiving recess, and an elastic element terminally engaged with the cover and delivery member, said element being confined between its ends at a point adjacent the juncture of the rear wall and bottom of the box.

3. In a device of the class described, a box including rear and end walls, a cover having laterally-extending portions, a pintle extended through the box and engaged with said portions for hinging the cover to the box, a delivery member rotatively journaled at the front of the latter and provided with a match-receiving recess, and an elastic element engaged between its ends with a pivoting-rod and terminally engaged with the cover and delivery member.

812,715. CUT-OFF VALVE FOR GAS OR OIL BURNERS. ALONZO ASHCRAFT, Fort Smith, Ark. Filed July 7, 1905. Serial No. 268,669.

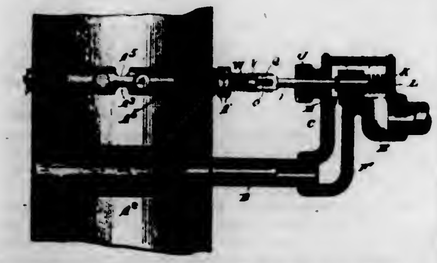

Claim.—1. The combination with a fluid-fuel burner, of a reciprocating valve, a tubular thermal member, means connecting the thermal member with the valve, and means whereby the thermal member and valve connecting means may be secured, said securing means being adapted to release the valve upon expansive action of the thermal member, substantially as described.

2. The combination with a fluid-fuel burner, of a reciprocating valve, a tubular thermal member, means connecting the valve with the thermal member, means whereby the valve is released, means whereby the valve is adjusted to cutting-off position, and means adapted to be set gaging operative action of the expansive member, substantially as described.

3. The combination with a fluid-fuel burner, of a tubular thermal member, a casing having a chamber and passage-ways leading to the burner, a reciprocating valve in the casing-chamber, having adjustment to open and cutting-off position, a stem extending from the valve, means extending from the valve-stem to the thermal member, means whereby the valve may be secured to open adjustment, the valve-securing means being adapted to be automatically released, upon expansive action of the thermal member, and means operating to adjust the valve to cutting-off position upon release of its securing means, substantially as described.

4. The combination with a fluid-fuel burner, of a thermal member, a casing having a chamber and passage-ways leading to the burner, a valve in said chamber, having a projecting stem, a spring adapted for forcing the valve to cutting-off position, a lever having suitable pivotal support at one end, and attachment to the valve-stem, a rod having connection with the lever, at a point between its pivotal support and the point of the valve-stem connection, the rod being extended suitable for operative connection with the thermal member, and an arm supported on the free end of the lever, having an upturned hooked end, with the latter adapted for connection with a fixed device on the valve-casing, whereby the valve may be secured at open adjustment, and the hooked end of the arm be automatically disengaged, upon expansive action of the thermal member and operation of the intermediate devices, substantially as described.

5. The combination with a fluid-fuel burner, and a cut-off valve in its fluid-fuel-supply passage-way, having a suitable stem, the valve being yieldingly retained at cutting-off position, of a tubular thermal member supported to receive heat from the burner, a lever having pivotal support at one end, and near the other end, attachment with the valve-stem, a reciprocal rod having one end attached to the lever, between the points of its pivotal support and connection therewith of said valve-stem, and a collar on the reciprocal rod, the free end of said rod being extended into the adjacent open end of the tubular thermal member, substantially as described.

6. The combination with a fluid-fuel burner, and a cut-off valve in its fluid-fuel-supply passage-way, having a suitable stem, the valve being yieldingly retained at cutting-off position, of a tubular thermal member supported adapted for receiving heat from the burner, and having its body suitably perforated, a lever having pivotal support at one end, and near the other end, attachment with the valve-stem, a reciprocal rod having one end attached to the lever, between the points of its pivotal support and connection therewith of said valve-stem, and jam-nuts on the reciprocal rod, the free end of said rod being extended into the adjacent open end of the tubular thermal member, substantially as described.

7. The combination with a fluid-fuel burner and a yielding valve in the fuel-supply passage-way, of a thermal member, consisting of a tubular body, means connecting the thermal member with the valve, means for holding the valve open, adapted for automatic release thereof, and an adjustable device interposed between the thermal member and valve devices, whereby to time and gage action of the valve, substantially as described.

812,716. PUMP SPRING ATTACHMENT. JAMES O. BAIN, Wasca, Minn. Filed June 30, 1905. Serial No. 267,837.

Claim.—1. In pump spring attachments, a base-plate having a central aperture and a series of spring-receiving apertures around it; a top plate having a central aperture and spring-receiving apertures to correspond with those of the base-plate: the said top plate being provided with a fixed jaw located at one side of the central aperture; the said fixed jaw having the described rectangular-cornered notch in its face and a plane surface at each side of the notch; the said fixed jaw further having shouldered recesses to hold bolts by their heads; a movable jaw having a plane face and a rectangular notch therein at one side and a curved notch at the other side, and having bolt-holes, one at each side of the said notches, and screw-bolts fitted to engage the said recesses and to draw the movable jaw toward the fixed jaw.

2. In pump spring attachments, a lower plate having a central aperture, and holes around it to receive springs; an upper plate having a central aperture and holes around it to receive springs, and further having a fixed jaw with a rectangular-cornered notch in one face, also having shouldered recesses for bolt-heads; and a movable jaw having a rectangular-cornered notch in one side and a curved notch at the other side, also having bolt-holes through it; the two plates and the movable jaw each having the sides of its apertures substantially parallel, as and for the purpose specified.

812,717. RAILWAY-RAIL JOINT. HOMER F. BARBER, Salem, Ohio. Filed Oct. 10, 1905. Serial No. 282,511.

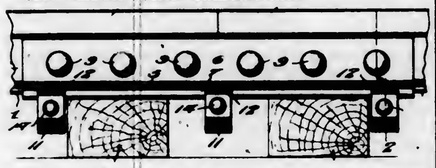

Claim.—1. In a device of the character described, the combination of the meeting ends of two railway-rails, joint members, and a clamp comprising members, each having its inner opposing end inclined upwardly in a reverse direction.

2. In a device of the character described, the combination of the meeting ends of two railway-rails, joint members having their vertically-disposed portions bowed, and clamps comprising members, each having its inner opposing end inclined upwardly in a reverse direction, substantially as shown and described.

812,718. TELEPHONIC REPEATING SYSTEM. ADOLPH J. P. BERTSCHY, Woodstock, Ill., assignor of one-fourth to Charles H. Donnelly, Woodstock, Ill. Filed June 4, 1904. Serial No. 211,147.

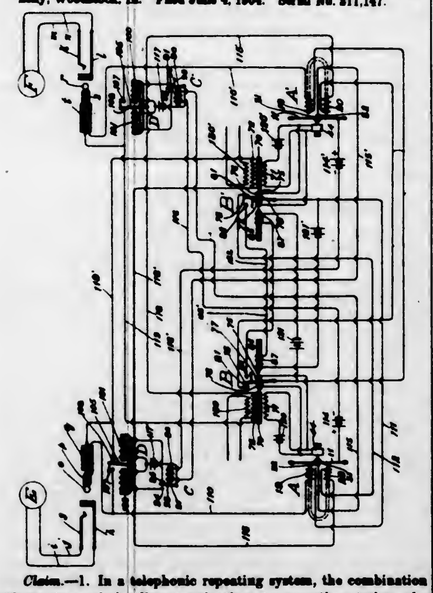

Claim.—1. In a telephonic repeating system, the combination with two transmission-lines terminating at a repeating-station, of a repeating-relay for each line, each comprising suitable receiving-coils, a transmitter and a common vibratory diaphragm, a transformer associated with each repeating-relay, the primary circuit of each transformer being controlled by the transmitter of the associated repeating-relay, an electromagnetic switching device for each repeating-relay, each having an actuating-winding connected in shunt of the transmitter thereof, each of said switching devices serving normally to maintain the closure of a break in the circuit of the receiving-coils of the other repeating-relay but when actuated due to the actuation of the associated transmitter to open the break in said receiver-circuit, each of said switching devices serving also when actuated to close a local circuit through an electromagnetic safety device associated with the other switching device, thereby insuring the maintenance of its normal circuit connections, and an auxiliary switching device associated with the diaphragm of each repeating-relay and each maintaining normally a closed circuit through associated electromagnetic switching mechanism, said electromagnetic switching mechanism serving normally to maintain an electrical connection between the receiving-coils of the other repeating-relay and its transmission-line and to maintain a break in an otherwise completed circuit containing this other transmission-line and the secondary coil of the transformer associated with that relay which controls the given switching mechanism, but serving when deënergized due to the opening of the circuit at said auxiliary switching mechanism upon the vibration of the associated relay-diaphragm to close the circuit connection between said transmission-line and the secondary coil of said transformer and to open the circuit connection between the same transmission-line and the receiving-coils of its repeating-relay.

2. In a telephone repeating system, the combination with an electromagnet connected in a receiving-circuit, of a transmitter for controlling currents in the sending-circuit, a vibratory diaphragm common to said electromagnet and said transmitter, and an auxiliary switching device controlled by said diaphragm to cause the closure of a break in the sending-circuit.

3. In a telephonic repeating system, the combination with an electromagnet connected in a receiving-circuit, of a transmitter for controlling currents in the sending-circuit, a vibratory diaphragm common to said electromagnet and said transmitter, normally closed switch-contacts associated with said diaphragm, an electromagnetic switching device controlled by said switch-contacts, and means whereby the vibration of said diaphragm causes a break in the connection between said switch-contacts to deënergize said electromagnetic switching device, said switching device serving normally to maintain a break in the sending-circuit but upon deënergization to cause the closure of said break in the sending-circuit.

4. In a telephone repeating system, the combination with electromagnetic receiving-coils connected in a receiving-circuit, of a transmitter for controlling currents in the sending-circuit, a vibratory diaphragm common to said electromagnetic receiving-coils and said transmitter, a relay having one electromagnet adapted upon energization to cause the associated armature to assume one of its alternative positions, and a second electromagnet adapted upon energization to cause the armature to assume the other of its alternative positions, the armature remaining in the position which it has assumed due to the energization of either electromagnet until the other electromagnet is energized, a second relay adapted upon energization to cause a closure of the circuit through the first electromagnet of the first said relay, and upon deënergization to cause the closure of a local circuit through the second electromagnet of the first said relay, and auxiliary switch-contacts associated with said diaphragm, said switch-contacts serving normally to maintain the closure of a circuit through the second said relay, but upon the vibration of said diaphragm to interrupt the circuit through said relay, the energization of the second electromagnet of the first said relay serving to close a break in the continuity of the sending-circuit.

5. In a telephone repeating system, the combination with electromagnetic receiving-coils connected in a receiving-circuit, of a transmitter for controlling currents in the sending-circuit, a vibratory diaphragm common to said electromagnetic receiving-coils and said transmitter, a relay having one electromagnet adapted upon energization to cause the associated armature to assume one of its alternative positions, and a second electromagnet adapted upon energization to cause the armature to assume the other of its alternative positions, a second relay adapted upon energization to cause a closure of the circuit through the first electromagnet of the first said relay and upon deënergization to cause the closure of a local circuit through the second electromagnet of the first said relay, and auxiliary switch-contacts associated with said diaphragm, said switch-contacts serving normally to maintain the closure of a circuit through the second said relay but upon the vibration of said diaphragm to in-

terrupt the circuit through said relay, the energization of the second electromagnet of the first said relay serving to close a break in the continuity of the sending-circuit.

by the receiving and transmitting parts whereby the actuation of one of said relays serves to open a circuit through the receiver-coils of the other relay

operating the parts in synchronism and in timed relation with each other.

terrupt the circuit through said relay, the energization of the second electromagnet of the first said relay serving to close a break in the continuity of the sending-circuit.

6. In a telephonic repeating system, the combination with two transmission-lines leading to a repeating-station, of a repeating-relay for each line, each relay having its receiving-coils normally connected with one line and its transmitter adapted for the control of voice-currents in the other line, and electromagnetic switching mechanism controlled by said repeating-relays, whereby the actuation of one of said relays serves to open the circuit through the receiving-coils of the other relay.

7. In a telephonic repeating-station, the combination with two transmission-lines leading to a repeating-station, of a repeating-relay for each line, each relay having its receiving-coils normally connected with one line and its transmitter adapted for the control of voice-currents in the other line, and electromagnetic switching mechanism controlled by said repeating-relays, whereby the actuation of one of said relays serves to open the circuit through the receiving-coils of the other relay and to close the transmitting-circuit of the first-named relay.

8. In a telephonic repeating system, the combination with two transmission-lines leading to a repeating-station, of a repeating-relay for each line, each relay having its receiving-coils normally connected with its line and its transmitter adapted for the control of voice-currents in the other line, and switching mechanism controlled by said repeating-relays, whereby the actuation of one of said relays serves to cause a plurality of breaks in the circuit through the receiving-coils of the other relay.

9. In a telephonic repeating system, the combination with two transmission-lines leading to a repeating-station, of a repeating-relay for each line, each relay having its receiving-coils normally connected with its line and its transmitter adapted for the control of voice-currents in the other line, and switching mechanism controlled by said repeating-relays, whereby the actuation of one of said relays serves to cause a plurality of breaks in the circuit through the receiving-coils of the other relay and to close the transmitting-circuit of the first-named relay.

10. In a telephonic repeating system, the combination with two transmission-lines leading to a repeating-station, of a repeating-relay for each line, each relay having its receiving-coils connected with its line and its transmitter adapted to control inductively the currents in the other line, and an electromagnetic switching device connected in shunt of said transmitter and serving upon partial deënergization due to a decrease in resistance in the transmitter to break the circuit through the receiving-coils of the other relay.

11. In a telephonic repeating system, the combination with two transmission-lines leading to a repeating-station, of a repeating-relay for each line, each relay having its receiving-coils connected with its line and its transmitter adapted to control inductively the currents in the other line, an electromagnetic switching device connected in shunt of said transmitter and serving upon partial deënergization due to a decrease in resistance in the transmitter to break the circuit through the receiving-coils of the other relay, and auxiliary switch-contacts controlled by the vibration of the diaphragm of each repeating-relay, said switch-contacts serving to control the transmitting-circuit of the first-named relay.

12. In a telephonic repeating system, the combination with a pair of transmission-lines terminating at a repeating-station, of a repeating-relay for each line, an induction-coil for each repeating-relay, the circuit for the primary coil of each induction-coil being controlled by the transmitter of one of said repeating-relays and the secondary coil of each induction-coil being adapted for connection with one of said transmission-lines but normally disconnected therefrom, and means whereby the passage of telephonic voice-currents from one line to its repeating-relay causes a connection of the secondary coil of the associated induction-coil with the other transmission-line.

13. In a telephonic repeating system, the combination with a pair of transmission-lines terminating at a repeating-station, of a repeating-relay for each line, an induction-coil for each repeating-relay, the circuit for the primary coil of each induction-coil being controlled by the transmitter of one of said repeating-relays, the secondary coil of each induction-coil being adapted for connection with one of said transmission-lines but normally disconnected therefrom, and means whereby the passage of telephonic voice-currents from one line to its repeating-relay causes a connection of the secondary coil of the associated induction-coil with the other transmission-line and causes a break in the connection between this other transmission-line and the receiving-coils of its repeating-relay.

14. In a telephonic repeating system, the combination with a pair of transmission-lines terminating at a repeating-station, of a repeating-relay for each line, an induction-coil for each repeating-relay, the circuit for the primary coil of each induction-coil being controlled by the transmitter of one of said repeating-relays, the secondary coil of each induction-coil being adapted for connection with one of said transmission-lines but normally disconnected therefrom, and means whereby the passage of telephonic voice-currents from one line to its repeating-relay causes a connection of the secondary coil of the associated induction-coil with the other transmission-line, and causes a double break in the circuit of the receiving-coils associated with this other transmission-line.

15. In a telephonic repeating system, the combination with a pair of repeating-relays each consisting of a receiver and a transmitter part, of means jointly controlled by said receiver and transmitter part for causing the actuation of one relay to render the other relay inoperative.

16. In a telephonic repeating system, the combination with a pair of repeating-relays, each comprising a transmitter portion and a receiver portion and a vibratory member common to both, of switching means associated with said vibratory member, and an electrical circuit controlled by said switching means, whereby the vibration of the vibratory member of one repeating-relay renders the other relay inoperative.

17. In a telephonic repeating system, the combination with a pair of repeating-relays, each comprising a transmitter portion and a receiver portion and a vibratory member common to both, of normally closed switch-contacts associated with said vibratory member, and means whereby the vibration of said vibratory member due to voice-currents traversing the associated receiver portion causes the actuation of said switch-contacts to cause a break in the receiver-circuit of the other repeating-relay.

18. In a telephonic repeating system, the combination with a pair of repeating-relays, each comprising a transmitter portion and a receiver portion and a vibratory member common to both, of normally closed switch-contacts associated with said vibratory members and means whereby the vibration of said vibratory member due to currents traversing the associated receiver portion causes an actuation of said switch-contacts to close the transmission-circuit for the associated transmitter.

19. In a telephonic repeating system, the combination with a pair of repeating-relays, each comprising a transmitter portion and a receiver portion and a vibratory member common to both, of normally closed switch-contacts associated with said vibratory member, and means whereby the vibration of said vibratory member due to currents traversing the associated receiver portion causes an actuation of said switch-contacts to close the transmission-circuit for the associated transmitter and to cause a break in the receiver-circuit of the other repeating-relay.

20. In a telephonic repeating system, the combination with two telephone transmission-circuits, of a repeating-relay for each circuit adapted to repeat into the other circuit, each relay consisting of a receiver and a transmitter part, and electromagnetic means jointly controlled by the receiver and transmitter parts whereby the actuation of one repeater destroys the connection between the other repeater and its transmission-circuit.

21. In a telephone repeating system, the combination with a pair of transmission-lines terminating at a repeating-station, of a repeating-relay for each line consisting of a receiver and a transmitter part and having its receiving-coils normally connected in circuit with its line, and electromagnetic means jointly controlled by the receiving and transmitting parts whereby the passage of voice-currents through the receiving-coils of one repeating-relay causes a disconnection of the receiving-coils of the other repeating-relay from its transmission-line.

22. In a telephone repeating system, the combination with a pair of transmission-lines terminating at a repeating-station, of a repeating-relay for each line consisting of a receiver and a transmitter part and having its receiving-coils normally connected in circuit with its line, and electromagnetic means jointly controlled by the receiving and transmitting parts whereby the passage of voice-currents through the receiving-coils of one repeating-relay causes a disconnection of the receiving-coils of the other repeating-relay from its transmission-line and causes a connection of the transmitting-circuit of the first said relay with the transmission-line from which the receiving-coils of the other relay are disconnected.

23. In a telephonic repeating system, the combination with two transmission-lines leading to a repeating-station, of a repeating-relay for each line, each relay consisting of a receiving and a transmitting part and having its receiver-coils normally connected with its line, and electromagnetic switching mechanism jointly controlled by the receiving and transmitting parts whereby the actuation of one of said relays serves to open a circuit through the receiver-coils of the other relay.

24. In a telephonic repeating system, the combination with a pair of transmission-lines terminating at a repeating-station, of a repeating-relay for each line, transformer means for inductively transferring telephonic voice-currents from one line to the other, the primary currents through said transformer means being controlled by said repeating-relays, the secondary windings of said transformer means being adapted for connection with said transmission-lines but normally disconnected therefrom, and means whereby the passage of telephonic voice-currents from one line to its repeating-relay causes the closure of a telephonic circuit including said transformer means from the transmitter portion of said repeating-relay to the other transmission-line.

25. In a telephonic repeating system, the combination with a pair of transmission-lines terminating at a repeating-station, of a repeating-relay for each line, transformer means for inductively transferring telephonic voice-currents from one line to the other, the primary currents through said transformer means being controlled by said repeating-relays, the secondary windings of said transformer means being adapted for connection with said transmission-lines but normally disconnected therefrom, and means whereby the passage of telephonic voice-currents from one line to its repeating-relay causes the closure of a telephonic circuit including said transformer means from the transmitter portion of said repeating-relay to the other transmission-line and causes a break in the connection between this other transmission-line and the receiving-coils of its repeating-relay.

26. In a telephonic repeating system, the combination with a pair of transmission-lines terminating at a repeating-station, of a repeating-relay for each line, transformer means for inductively transmitting telephonic voice-currents from one line to the other, the primary currents through said transformer means being controlled by said repeating-relays, the secondary windings of said transformer means being adapted for connection with said transmission-lines but normally disconnected therefrom, and means whereby the passage of telephonic voice-currents from either line to its repeating-relay causes the closure of a circuit from the secondary windings of said transformer means to the other transmission-line.

27. In a telephonic repeating system, the combination with a pair of transmission-lines terminating at a repeating-station, of a repeating-relay for each line, transformer means for inductively transmitting telephonic voice-currents from one line to the other, the primary currents through said transformer means being controlled by said repeating-relays, the secondary windings of said transformer means being adapted for connection with said transmission-lines but normally disconnected therefrom, and means whereby the passage of telephonic voice-currents from either line to its repeating-relay causes the closure of a circuit from the secondary windings of said transformer means to the other transmission-line and causes a break in the connection between this other transmission-line and the receiving-coils of its repeating-relay.

812,719. THRESHING-MACHINE. WILEY BRENTON, Carlisle, Ind. Filed June 20, 1905. Serial No. 266,101.

Claim.—1. In a threshing-machine, the combination of a frame, a cylinder journaled in the frame, a concave supported below the cylinder, an endless apron supported behind and beneath the cylinder and inclined upwardly with respect thereto, means for moving the apron, a plurality of toothed cylinders journaled in the frame above the apron and coöperating with the upper run thereof, means for adjusting the cylinders to and from the apron, means for rotating the cylinders in the same direction at the upper run of the apron and at a higher rate of speed, a second endless apron supported beneath the first apron, and spaced apart longitudinally therefrom, a grain-board beneath the apron, means for moving the apron, a toothed cylinder journaled above the second apron and coöperating with the upper run thereof, means for adjusting the cylinder to and from the apron, means for rotating the cylinder in a direction opposite to the movement of the upper run of the apron, and at a higher rate of speed, a plurality of toothed cylinders journaled behind the first cylinder and coöperating with the upper run of the apron, means for rotating the cylinders in the same direction as the upper run of the apron, and at a higher rate of speed, means for adjusting the cylinders to and from the apron, a riddle beneath the adjacent ends of the aprons, a grain-board secured to the forward end of the riddle, a shoe beneath the riddle, means for vibrating the shoe, and means for operating the parts in synchronism and in timed relation with each other.

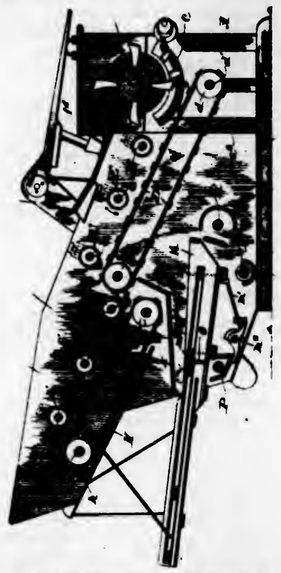

2. In a threshing-machine, the combination of a frame, a cylinder journaled in the frame, an endless apron supported below the cylinder and inclined with respect thereto, means for moving the apron, a plurality of toothed cylinders coöperating with the upper run of the apron, means for rotating the cylinders in the same direction as the movement of the upper run of the apron and at a higher rate of speed, a second endless apron supported beneath the first apron and spaced apart longitudinally therefrom, a grain-board beneath the apron, means for moving the second apron, a toothed cylinder supported above the second apron and coöperating with the upper run thereof, means for rotating the cylinder in a direction opposite to the movement of the upper run of the apron, and at a higher rate of speed, a second cylinder behind the first cylinder and coöperating with the upper run of the apron, means for rotating the second cylinder in the direction of movement of the upper run of the apron, and at a higher rate of speed, a vibrating shoe below the apron, means for vibrating the shoe, and means for actuating the parts in timed relation with respect to each other.

812,720. CENTER-STEM GUIDE FOR CAR-BODIES. BENJAMIN S. BROWN, Altoona, Pa. Filed July 20, 1905. Serial No. 270,480.

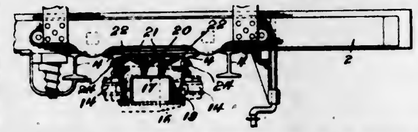

Claim.—1. In a car-body, the combination with the base-frame and the platform-extension beams, of a center-stem guide consisting of a single casting supporting the carrier-iron and provided with an integral top-fastening piece secured to the platform-sill, and with flat end bracket extensions secured to the sides of adjacent platform-extension beams.

2. In a car-body, the combination with the base-frame and the platform extension having I-beams, and the center stem, of a center-stem guide consisting of a single casting fastened to the platform-sill and also to the adjacent I-beams.

3. In a car-body, the combination with the base-frame and platform extension having I girders or beams, and the center stem, of a center-stem guide consisting of a single casting supporting the carry-iron and provided with a top-fastening base secured to the platform-sill and with end bracket extensions secured to adjacent I girders or beams.

4. In a car-body, the combination with the base-frame and platform extension having I-girders, and the center stem, of a center-stem guide consisting of a single casting supporting the carry-iron and provided with a top-fastening base secured to the platform-sill, and with tapering end bracket projections having vertical flat attaching-bases, said bracket extensions registering in and secured to the sides of adjacent I-girders.

5. In a car-body, the combination with the base-frame and platform extension having I-girders, and the center stem, of a center-stem guide consisting of a single casting supporting at the bottom the carry-iron for the center stem, said center-stem guide consisting of flanged and webbed casting provided at the top with a fastening-base secured to the platform-sill, with end tapering bracket projections registering in and secured to adjacent I-girders, and terminal flanged hanger-legs for the carry-iron.

812,721. **DRAFT-RIGGING MECHANISM FOR CARS.** BENJAMIN S. BROWN, Altoona, Pa. Filed Nov. 14, 1905. Serial No. 287,305.

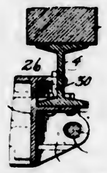

Claim.—1. In a car-body, a base-frame having girders, a center stem carrying a pivotal coupling-head, side centering-stems connected with the coupling-head, and a side-stem-centering bracket associated with each stem and having integral therewith a hanger-saddle embracing a girder of the frame, and a perforated abutment-lug for the stem and the spring thereof.

2. In a car-body, the base-frame having I-girders, the center stem carrying a pivotal coupling-head, the side centering-stems connected with the coupling-head, and a side-stem-centering bracket associated with each stem and consisting of a single casting having a socketed hanger-saddle fitting and secured to an I-girder, and a perforated abutment-lug for the stem and the spring thereof.

3. In a car-body, the combination with the base-frame having I-girders, a center stem carrying the pivotal coupling-head, and the side centering-stems connected with the coupling-head, of a side-stem-centering bracket associated with each stem consisting of a single casting having a perforated abutment-lug for the stem and its spring, said casting being also provided with a web-attaching flange to be secured to the web of an I-girder, and a horizontal fastening-base secured to the base-flange of the same girder.

4. In a car-body, the combination with the base-frame having I-girders, the center stem carrying the coupling-head, and the side stems connected with said head, of a side-stem-centering bracket associated with each stem and consisting of a single casting having a vertically-arranged body-plate provided at one side with a plurality of integrated reinforcing-webs, and at the top with a socketed hanger-saddle fitting over and fastened to an I-girder, said body-flange being further provided with a perforated abutment-lug for the stem and its spring.

812,722. **ROLLING DOOR OR SHUTTER AND MEANS FOR OPERATING THE SAME.** JOHN CAHILL, Norfolk, Va. Filed May 29, 1905. Serial No. 262,236.

Claim.—1. A vertically-disposed flexible door or shutter consisting of a series of horizontal wooden slats and interposed heavy metallic slats loosely threaded on tapes, whereby a tight joint between the slats below the metallic slats will be at all times maintained.

2. A vertically-disposed flexible shutter or door consisting of a series of wooden slats, a heavy metallic slat mounted on top of said wooden slats, a smaller series of wooden slats mounted on top of the aforesaid metallic slat, another heavy metallic slat surmounting the last-mentioned metallic slat, and a top bar, all threaded on tapes, the wooden and metallic slats being loosely threaded thereon and the said top bar and tapes adapted to be secured to a rotary shaft.

3. In a device of the class described, a flexible door or shutter adapted to close an opening in a wall, a shaft to which said door or shutter is secured, supports for said shaft, and means for causing the shaft to move transversely toward the wall as the door or shutter uncoils, and away from the wall as it is coiled.

4. In a device of the class described, a flexible door or shutter adapted to close an opening in a wall, a shaft to which the upper end of the door or shutter is secured, supports for said shaft, means for causing the shaft to move transversely toward the wall with respect to its supports as the door or shutter is uncoiled, and away from the wall as it is coiled and means attached to one end of the shaft for causing rotation of the same.

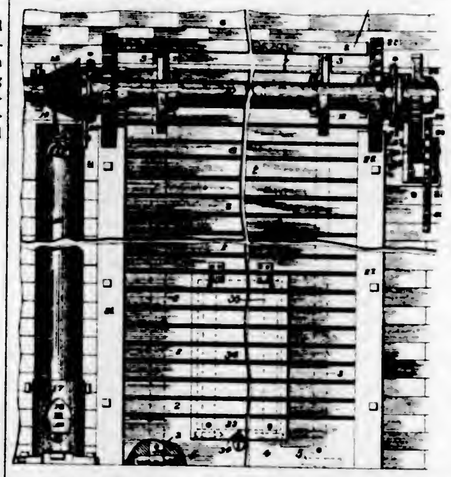

5. In a device of the class described, a flexible door or shutter adapted to close an opening in a wall, a shaft to which said door or shutter is secured, supports for said shaft, cams mounted on said shaft adjacent to its supports, and coöperating means on said support for engaging said cams to cause the shaft to move transversely with respect to its supports, away from the wall when the flexible door is coiled and toward the wall as it is uncoiled.

6. In a device of the class described, a flexible door or shutter adapted to close an opening in a wall, a shaft to which said door or shutter is secured, supports for said shaft, spiral cams rigidly secured to said shaft adjacent to its supports, and projections on said supports engaging the spiral cams and coöperating therewith to cause the shaft to move transversely with respect to its supports, away from the wall as the door or shutter is coiled and toward the wall as it is uncoiled.

7. In a device of the class described, a flexible door or shutter adapted to close an opening in a wall, a shaft to which said door or shutter is secured, supports for said shaft, a spirally-grooved cone-pulley secured to one end of said shaft, an expansion-spring anchored at one end and a flexible connection between the cone-pulley and the free end of the expansion-spring, the shaft to revolve and move transversely on its supports toward the wall as the door or shutter uncoils, and away from the wall as it is coiled.

8. In a device of the class described, a flexible door or shutter, a shaft to which said door or shutter is secured, supports or brackets for said shaft, a spirally-grooved cone-pulley secured to one end of said shaft, an expansion-spring suitably anchored at one end, a flexible connection between the cone-pulley and the free end of the expansion-spring, and means for regulating the tension of the spring.

9. In a device of the class described, a flexible door or shutter adapted to close an opening in a wall, a shaft rotatably mounted in suitable supports, drums rigidly secured to said shaft, said door or shutter rigidly secured at its upper end to said drums, and means for causing the shaft to rotate and move transversely on its supports, away from the wall as said door or shutter is coiled and toward the wall as it is uncoiled.

10. In a device of the class described, a flexible door or shutter consisting of a series of slats threaded on tapes, and a top bar secured to the upper ends of the tapes, leaving a space between the main body of the door or shutter and its top bar, a shaft to which said top bar is rigidly secured, supports or brackets for said shaft, said shaft being rotatably mounted in said supports, and adapted to move transversely in said supports when the door or shutter is coiled and uncoiled.

11. In a device of the class described, a flexible door or shutter, a shaft, supports or brackets for said shaft, drums rigidly secured to said shaft, said door or shutter rigidly secured at its upper end to the said drums, spiral-groove cams secured to said shaft adjacent to said supports or brackets, projections on said supports or brackets engaging the spiral-groove cams, a spirally-threaded cone-pulley secured to one end of said shaft, an expansion-spring vertically disposed and suitably anchored at its lower end, a flexible connection secured at one end to the upper end of the expansion-spring and at its other end to the spirally-grooved cone-pulley, and means for rotating said shaft, whereby the said shaft will be caused to rotate and move transversely in its supports or brackets, when the door or shutter is coiled and uncoiled.

812,723. **CLOTHES-MARKING APPARATUS.** JOHN D. CALDWELL and NELS A. SORENSON, Seattle, Wash., assignors to Caldwell-Sorenson Linnograph Co., Seattle, Wash., a Corporation of Washington. Filed June 27, 1904. Serial No. 214,267.

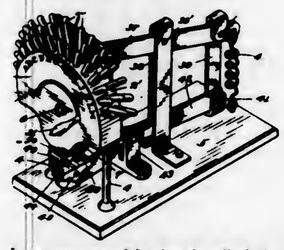

Claim.—1. In an apparatus of the class described, the combination with movable marking mechanism, of a platen, means for simultaneously moving the platen and marking mechanism in the same direction but at different rates of speed, whereby they will ultimately come into contact.

2. In apparatus of the class described, the combination with marking mechanism, of a platen movable simultaneously with the marking mechanism and in the same direction but at a slower rate of speed and coöperating therewith against the action of a retracting-spring tending to separate them.

3. In an apparatus of the class described, the combination with movable marking mechanism and the inking mechanism therefor, of a platen, a pivoted lever on which said platen is mounted, a pivoted lever connected to the marking mechanism and adapted to move the same, and connections between said two levers, the said levers being so constructed and fulcrumed that the movement of the platen will impart movement in the same direction but at a greater rate of speed to the marking mechanism,

4. In apparatus of the class described, the combination with rotatable disks provided with peripheral type, means for revolubly moving said type individually and predeterminately into printing positions, and a platen, of mechanical connections between the disks and the platen whereby a downward movement of the platen will impart an accelerated printing movement in the same direction to the disks.

5. In apparatus of the class described, the combination of type-disks rotatably mounted in a movable head, a toothed wheel integral with each disk, a segmental gear severally provided with an arm for each toothed wheel, an arc member for each said arm and carrying hook devices for engaging and retaining the respective arms against the action of springs, said springs, a series of keys for each disk said keys being provided with means coacting with the arc members for disengaging the respective said arms from said hook devices, said arms also being adapted when depressed to limit the setting movement of and engage the arms whereby the type corresponding with a depressed key will be stopped in its revolution and retained in printing position, and means for disengaging the arms from the engaged keys.

812,724. **NON-REFILLABLE BOTTLE.** CHARLES E. CARROLL, Newport, Ark. Filed Jan. 23, 1905. Serial No. 242,413.

Claim.—1. In combination, a bottle having a conical neck provided with an inverted cone-shaped longitudinal opening therethrough and a circumferential rectangular groove, a cone-shaped valve resting in the opening and provided with a longitudinal perforation, a coil-spring resting on the valve, a cylinder resting upon the spring and the free edges of the neck, and provided with a spirally-arranged opening connecting its upper and lower surfaces, a cylindrical casing encircling the cylinder and neck, and having an internal circumferential groove registering with the groove of the neck, and a spring-keeper within the registering grooves, and provided with teeth, the alternate teeth bent inwardly and comprising three similar series each composed of teeth gradually decreasing in length.

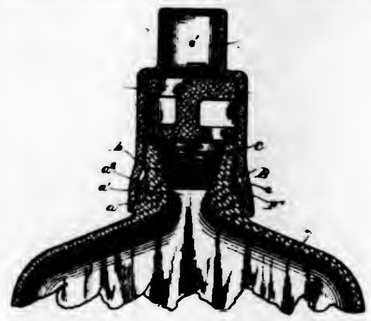

2. In combination, a bottle having a conical neck provided with a circumferential groove, means within the neck for permitting the outward passage and preventing the inward passage of liquid, a cylinder resting upon the free edge of the neck and provided with a spiral groove connecting its upper and lower surfaces, a casing encircling the cylinder and neck and provided with a circumferential groove registering with the groove in the neck, and a spring-keeper engaging the registering grooves, the said keeper provided with teeth for engaging the registering grooves, the alternate teeth bent inward and comprising three similar series of teeth gradually decreasing in length.

3. In combination a bottle having a neck provided with a circumferential groove, means within the neck for permitting the outward passage and for preventing the inward passage of liquid, a casing inclosing said means and encircling the neck and provided with a groove registering with the groove of the neck, a spring-keeper within the registering grooves, and comprising a ring with depending teeth, the alternate teeth bent inward, and comprising a plurality of similar series of teeth of gradually-decreasing length.

4. In combination a bottle having a neck provided with a circumferential groove, means within the neck for permitting the outward passage and for preventing the inward passage of liquid, a casing inclosing said means and encircling the neck and provided with a groove registering with the groove of the neck, and means within the registering grooves for securing the casing to the neck, comprising a ring, and means connected with the ring for engaging the groove in the casing at different elevations with respect to the groove of the neck.

5. In combination, a bottle having a neck, means within the neck for permitting the outward passage and for preventing the inward passage of liquid, a casing inclosing the said means and encircling the neck, and means between the neck and the casing, for securing the latter to the former, comprising a ring engaging the neck, and means whereby said ring may engage the casing at different elevations with respect to the neck.

6. In combination a bottle having a neck, means within the neck for permitting the outward passage and for preventing the inward passage of liquid, means for retaining said means within the neck, comprising a casing inclosing the neck, means between the casing and the neck for retaining the former upon the latter, comprising a means engaging the neck and means connected therewith for engaging the casing at different elevations with respect to the neck.

812,725. **SURFACE-CONTACT SYSTEM.** FRANK H. CASE, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed July 22, 1904. Serial No. 217,600.

Claim.—1. In an electric-railway system, a feeder, a pick-up switch, a dynamo-electric machine for closing said switch, and means operative upon the closing of said switch to stop said machine.

2. In an electric-railway system, a feeder, a pick-up switch, a current-generator for closing said switch, means for driving said generator, and means operable upon the closing of the switch to stop the generator.

3. In an electric-railway system, a feeder, a generator, two circuits therefrom, a pick-up switch operated by current in one of said circuits, means operable upon the closing of said switch to stop the

generator, and means for rendering said latter means inoperative

stop the generator and to again start it when the first circuit is in-

tor-circuit to start the generator provided the motor-controller is in

812,728. **KILN-DOOR.** NELSON R. DEPPE, Deppe, N. C. Filed

generator, and means for rendering said latter means inoperative while the second circuit remains closed.

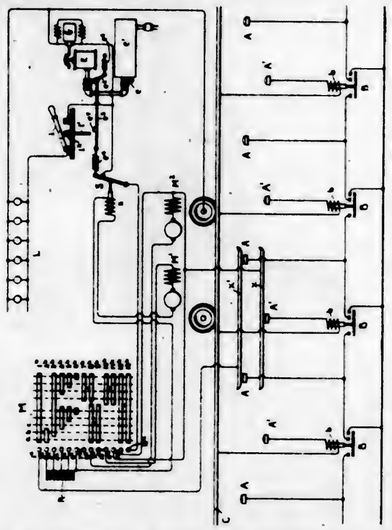

4. In an electric-railway system, a feeder, a generator, a circuit therefrom, a pick-up switch closed by current in said circuit, means for driving said generator, and means operable upon the closing of said switch to interrupt the circuit and to stop the generator.

5. In combination, a generator, an engine for driving it, a valve for controlling the admission of compressed fluid to said engine, a generator-circuit, a switch in said circuit, and means controlled by said switch for locking said valve in its open position.

6. In an electric system, a motor, a source of current-supply, a generator, means for driving said generator, a switch for connecting said motor to said source of supply and operated by current from the generator, together with means operable upon the closing of the motor-circuit to stop the generator.

7. In an electric system, a motor and a source of current-supply therefor, a dynamo-electric machine, a switch for connecting said motor to said source of supply and operated by current from the machine, together with means operable upon the closing of the motor-circuit to stop the machine.

8. In an electric-railway system, a feeder, a pick-up contact, a dynamo-electric generator for supplying current to operate said contact, an automatically-operated switch for interrupting the current, and means operatively related to said switch for stopping the generator.

9. In an electric-railway system, a feeder, a pick-up contact, a generator for supplying current to operate said contact, a switch for interrupting the current, a second circuit from the generator having a second switch, and means operatively related to the first switch for stopping the generator when the second switch is open.

10. In combination, an electric circuit including a source of current-supply, a generator, means for driving said generator, means operated by current from said generator for completing said electric circuit, and means operable upon the completion of said circuit to stop the generator.

11. In combination, an electric circuit including a source of current-supply, a dynamo-electric generator, means operated by current from said generator for completing said electric circuit, and means operable upon the completion of said circuit to stop the generator.

12. In combination, an electric circuit including a source of current-supply, a dynamo-electric generator, means operated by current from said generator for completing said electric circuit, and means operable upon the completion of said circuit to break the generator-circuit and to stop the generator.

13. In combination, an electric circuit including a source of current-supply, a generator, means for driving said generator, means operated by current from said generator for completing said electric circuit, and means operable upon the completion of said circuit to stop the generator and to again start it when the first circuit is interrupted.

14. In combination, an electric circuit including a source of current-supply, a dynamo-electric generator, means operated by current from said generator for completing said electric circuit, and means operable upon the completion of said circuit to stop the generator until said circuit is again interrupted.

15. In combination, an electric circuit including a source of current-supply, a dynamo-electric generator, means operated by current from said generator for completing said electric circuit, and means operable upon the completion of said circuit to interrupt the generator-circuit and stop the generator while said first circuit remains closed.

16. In combination, an electric circuit including a source of current-supply, a generator, means operated by current from said generator for completing said electric circuit and means operable upon the completion of said circuit to interrupt the generator-circuit and also to stop the generator, an auxiliary circuit from said generator, and means for preventing the stopping of the generator while said auxiliary circuit remains closed.

17. In combination, an electric generator and its engine, a valve for controlling the admission of compressed fluid to the engine, a generator-circuit and a switch therein, an operative connection between said valve and said switch, an auxiliary generator-circuit provided with a circuit-closing device, and interlocking means between the valve and said circuit-closing device for holding the valve against movement in one of its positions.

18. In combination, an electric generator and its engine, a valve for controlling the admission of compressed fluid to the engine, a generator-circuit and a switch therein, an operative connection between said valve and said switch, an auxiliary generator-circuit provided with a switch, and interlocking means between the latter switch and the valve whereby the valve is at times held against movement during the operation of the first switch.

19. In combination, an electric generator and its engine, a valve for controlling the admission of compressed fluid to the engine, a generator-circuit and a switch therein, an operative connection between the valve and the switch whereby the opening of the switch causes the valve to be opened, a second generator-circuit provided with a switch, and interlocking means between said latter switch and said valve, whereby the valve is prevented from being opened upon the opening of the first switch while second switch remains closed.

20. In an electric system, an electric generator, two circuits therefor, a switch in each circuit, means connected with one of said switches for stopping the generator when the switch is opened, and an interlock which prevents such stopping of the generator while the other switch remains closed.

21. In an electric system, an electric generator and its engine, a valve for controlling the admission of compressed fluid to said engine, a generator-circuit and a switch therein, a yielding connection between the valve and switch whereby the opening of the switch closes the valve, and means for locking the valve against being closed by the switch.

22. In an electric system, an electric generator and its engine, a valve for controlling the admission of compressed fluid to the engine, two generator-circuits, a switch in each circuit, an operative connection between one of said switches and said valve whereby the switch and valve may move in unison, and means controlled by the other switch for rendering said connection inoperative.

23. In an electric system, an electric generator and its engine, a valve for controlling the admission of compressed fluid to the engine, two generator-circuits, a switch in each circuit, an operative connection between one of the switches and the valve, and interlocking means between the valve and the other switch.

24. In an electric system, an electric generator and its engine, a valve for controlling the admission of compressed fluid to the engine, two generator-circuits, a resilient connection between one of said switches and the valve, and interlocking means between the valve and the other switch.

25. In an electric system, an electric circuit including a source of current-supply, a generator, means operated by current from the generator to close said circuit, and means operable upon the closing of the current to stop the generator and upon the interruption of the circuit for starting the generator.

26. In a control system, a motor-circuit including a source of current-supply, a generator, means operated by current from the generator for closing the motor-circuit, a motor-controller in the generator-circuit, and means operable upon the closing of the motor-circuit to stop the generator and upon the interruption of the motor-circuit to start the generator provided the motor-controller is in one of its running positions.

812,726. LOCKING DEVICE FOR AUTOMOBILES. ALEXANDER CHURCHWARD, New York, N. Y., assignor to General Electric Company, a Corporation of New York. Filed June 30, 1904. Serial No. 214,713.

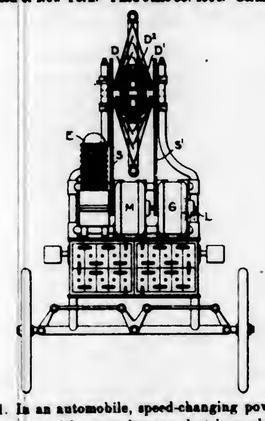

Claim.—1. In an automobile, speed-changing power-transmitting mechanism comprising two dynamo-electric machines electrically and mechanically connected, and means for locking the field and armature of one of said machines together.

2. In an automobile, speed-changing power-transmitting mechanism comprising two mechanically-connected dynamo-electric machines, one of said machines being arranged to act as a slipping clutch and to supply current generated by said slipping to the second machine, and means for locking the field and armature of the first machine together.

3. In an automobile, a prime mover, a differential gear having one member connected to said prime mover and a second to the load, a dynamo-electric machine connected to the third member of said gear, and means for locking the field and armature of said machine together.

4. In an automobile, a prime mover, a differential gear having one member connected to said prime mover and a second member to the load, a dynamo-electric machine connected to one of said members, a second dynamo-electric machine connected to the third member of said gear, and means for locking the field and armature of the latter machine together.

812,727. BUILDING CONSTRUCTION. JOHN S. CULLEY, Louisville, Ky. Filed Apr. 27, 1905. Serial No. 257,651.

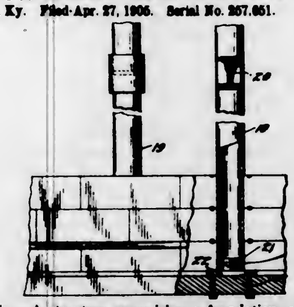

Claim.—A structure comprising a foundation, a plate bolted thereto and having an upwardly-extending stud, a wall on said foundation composed of inner and outer courses of blocks recessed on their inner sides to form a vertical passage coincident with and extending above said plate, and a tubular stud or frame-piece in and filling said passage and bearing on the said plate, the stud of the latter entering the lower end of said tubular frame-piece, said blocks having communicating grooves in their opposing sides extending around the said tubular stud or frame-piece and mortar in said grooves forming the bonds which connect the said blocks together.

812,728. KILN-DOOR. NELSON R. DEPPE, Deppe, N. C. Filed July 28, 1904. Renewed Jan. 15, 1906. Serial No. 296,734.

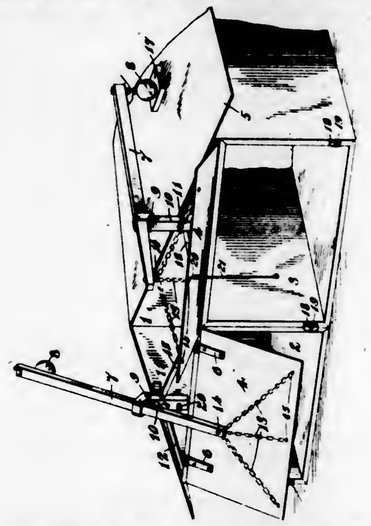

Claim.—A kiln or the like having a door-opening and a vertically-disposed post above said opening, a door for said opening hingedly mounted upon said structure to swing upwardly and outwardly, at the bottom, a lever fulcrumed intermediate its ends upon said post, chain connections between one end of said lever and said door, a counterbalance-weight upon the other end of said lever, a protecting-block upon said kiln for said weight, and a fastening device for securing said door in its closed position, substantially as described.

812,729. VARIABLE-SPEED DEVICE. JOHN A. DE VITO, Roxbury, Mass. Filed May 3, 1905. Serial No. 258,671.

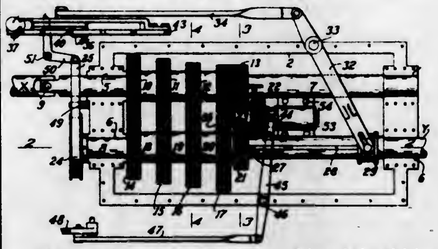

Claim.—1. In a variable-speed device, a driven shaft; a driving-shaft; a plurality of gears rigidly mounted upon one of said shafts; and an equal number of gears rotatably mounted on the other of said shafts, each of said rotatable gears meshing with a rigid gear; in combination with means for successively causing each pair of meshing gears to rotate the driven shaft, and a brake mechanism coöperative with said means, substantially as set forth.

2. In a variable-speed device, a driven shaft; a driving-shaft; a plurality of gears rigidly mounted upon one of said shafts, one of said gears having an extra wide face; an equal number of gears rotatably mounted upon the other of said shafts, each of said rotatable gears being in mesh with a different rigid gear; a single gear rigidly mounted upon the shaft containing the rotatable gears; an auxiliary shaft, an auxiliary idler-gear slidably and rotatably mounted upon the auxiliary shaft in position to readily engage the rigid gear upon the shaft containing the rotatable gears and the rigid gear with the extra wide face simultaneously; in combination with means for causing each pair of meshing gears, and an auxiliary gear with its two rigid gears to successively impart motion to the driven shaft, substantially as set forth.

3. In a variable-speed device, a rotatable shaft; a plurality of gears rotatably mounted upon said shaft; a key member slidably

mounted upon said shaft and adapted to successively lock each of

back and to said housing, a second clamping-section hingedly mount-

mounted upon said shaft and adapted to successively lock each of said gears upon said shaft; a brake mechanism for controlling the motion of the latter and means for causing the key to engage successively the different gears, and for actuating the brake mechanism, substantially as set forth.

4. In a variable-speed device, a rotatable shaft, having a longitudinal keyway; a plurality of gears rotatably mounted upon said shaft and each provided with a keyway; a shift-collar slidably mounted upon said shaft; a spring-pressed, jointed key rigidly attached to said collar and adapted to move in the keyway upon said shaft and successively engage the keyways in each of said gears; in combination with means for causing the successive engagement of said key with said keyways in the gears, and mechanism coöperative with said means, for controlling the motion of the rotatable shaft, substantially as set forth.

5. In a variable-speed device, a rotatable shaft provided with a longitudinal keyway; a plurality of gears rotatably mounted upon said shaft, each provided with a keyway; a shift-collar slidably mounted upon said shaft; a spring-pressed, jointed key rigidly attached to said collar and adapted to slide in the keyway on said shaft and successively engage the keyways in said gears; in combination with a shift-lever; and a brake mechanism on said shaft adapted for operation by said shift-lever, substantially as set forth.

812,730. **GAS-CONTROLLING DEVICE.** WILLIAM T. DONNELLY, New York, N. Y., assignor to General Gas Appliance Company, New York, N. Y., a Corporation of New Jersey. Filed Dec. 20, 1904. Serial No. 237,233.

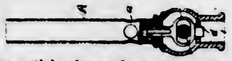

Claim.—As an article of manufacture, a gas-controlling device comprising among its members, a hollow body provided with a gas-inlet, a gas-outlet and opposite bearing-apertures of different diameters, a longitudinally-movable needle-valve mounted within said hollow body, and adapted to engage the gas-outlet to regulate and close the same, a tapered plug fitting said bearing-apertures gas-tight and extending through said hollow body, said hollow body and tapered plug being constructed to provide a space to permit the passage of gas past said plug, said plug having a hand-operating device outside of said hollow body, and operative connections between said plug and the needle-valve, for operating said valve, substantially as described.

812,731. **BINDER.** CHARLES L. DONOHOE, Santa Barbara, Cal. Filed Dec. 31, 1904. Serial No. 239,133.

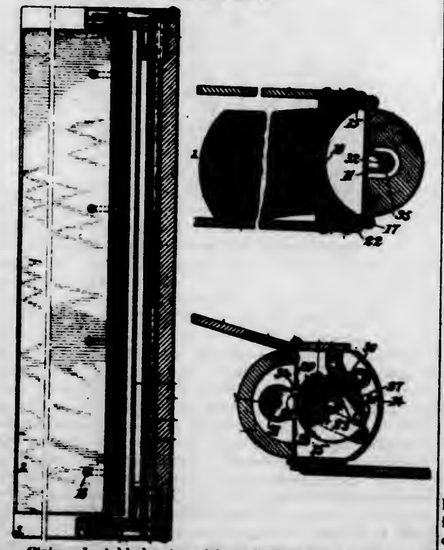

Claim.—1. A binder comprising a back, a housing at one end thereof, a stationary clamping-section secured to one edge of the back and to said housing, a second clamping-section hingedly mounted on the other edge of the back, and means in said housing for locking the hinged clamping-section.

2. A binder comprising a back, a housing at one end thereof, a stationary clamping-section secured to one edge of the back and to said housing, a second clamping-section hingedly mounted on the other edge of the back, means in said housing for locking the hinged clamping-section, and a filling-pin attached to said hinged clamping-section.

3. A binder comprising a back, a housing at each end thereof, a clamping-section movably mounted at one edge of the back, a device in each housing, having connection with said clamping-section to lock the same, and an operating-shaft extending longitudinally through the back and connected with the said devices.

4. A binder comprising a back or main portion, a clamping-section movable thereon, a rocker, a connection between the rocker and clamping-section, a spring, a dog carried by the spring and coacting with the rocker, and a movably-mounted member carried by the back for flexing the spring to retract the dog.

5. A binder comprising a back or main portion, a movable clamping-section, a rocker, a connection between the rocker and clamping-section, a forked spring, means for securing the ends of the fork of the spring, a dog carried by the free portion of the spring and adapted to engage the rocker, and means coacting with the free portion of the spring to retract the dog.

6. A binder comprising a back or main portion, a movable clamping-section, a rocker, a connection between the clamping-section and rocker, a dog coacting with the rocker, a spring carrying the dog, and a cam coacting with the spring.

7. A binder comprising a back, a housing at each end thereof, a clamping-section movably mounted at one edge of the back, a device in each housing having connection with the clamping-section to lock the same, and an operating member extended longitudinally of the back and connected with both of said devices.

8. A binder comprising a back or main portion, a movable clamping-section, a rocker, a connection between the clamping-section and rocker, a dog coacting with the rocker, and a cam adapted to move the dog into inactive position.

9. A binder comprising a back or main portion, a movable clamping-section, a rocking disk, a connection between the rocking disk and the clamping-section, said disk having shoulders on its periphery, a stop lying between the shoulders to limit the rocking movement of the disk, and means for releasably locking the disk against movement.

10. A binder comprising a back or main portion, a movable clamping-section, a rocking disk, a connection between the rocking disk and the clamping-section, said disk having shoulders on its periphery, a stop lying between the shoulders to limit the rocking movement of the disk, means for releasably locking the disk against movement, said means comprising a dog adapted to engage the disk, a spring carrying the dog, and means coacting with the spring to move the dog into inactive position.

11. A binder comprising a back, a housing at one end thereof, a movable clamping-section carried by the back, a rocker mounted within the housing, a connection between the movable clamping-section and the rocker, means for releasably holding the rocker against movement, said means comprising a dog adapted to engage the rocker, a spring carrying the dog, and means coacting with the spring to move the dog into inactive position.

812,732. **FIREPROOF SASH STRUCTURE.** FRANK DUTCHER, Philadelphia, Pa. Filed July 14, 1905. Serial No. 269,701.

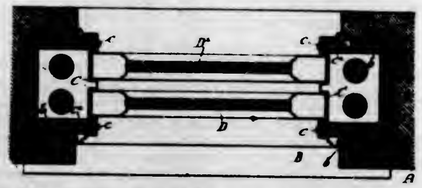

Claim.—1. The combination with a wall, of a window-frame having a body portion of non-metallic, fireproof material embedded in said wall, the side members of said body portion being hollow and open along their inner or opposing faces, a metallic jamb portion for the frame removably attached to said body portion and closing the open faces of the side members thereof, sashes for the frame, and weights for said sashes operative in said hollow body portions, substantially as described.

2. A frame consisting of top and bottom sills, and box-like side members open on their inner or opposing faces, said parts all made of fireproof, non-metallic material, with a removable metallic covering for said inner or opposing faces of said non-metallic parts, a metallic sash or sashes for the frame, and counterbalance-weights for said sash or sashes, operative in the box-like side members, substantially as described.

812,733. **POLICE SIGNALING APPARATUS.** CHARLES L. FOSTER and PETER K. HIGGINS, Los Angeles, Cal. Filed July 14, 1904. Serial No. 216,605.

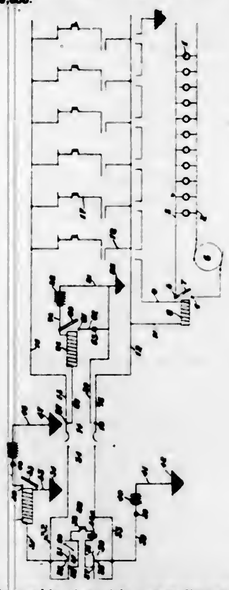

Claim.—1. In combination with a normally open signal-circuit having signals therein: a controlling-circuit patrol-boxes through which said controlling-circuit passes; a central station; a relay in said controlling-circuit having one side thereof connected in series through each patrol-box to ground and the other side connected to line leading into said central station; an armature for said relay, said armature being connected in said signal-circuit and adapted to close said circuit when said relay is energized; and means at said central station to energize said relay, whereby said signals are rendered operative.

2. In combination a normally open signal-circuit having signals therein; a central station; a normally open telephone-circuit extending from said central station; a controlling-circuit patrol-boxes through which said telephone and controlling circuits pass; a relay in said controlling-circuit having one side thereof connected in series through each patrol to ground and the other side connected to said telephone-circuit; an armature for said relay, said armature being connected in said signal-circuit and adapted to close said signal-circuit when said relay is energized; and means at said central station to energize said relay, whereby said signals are rendered operative.

3. In a signal apparatus, the combination of a central station and outlying substations at distant points; an electric controlling-circuit passing through said stations, a signal-circuit having signals therein; a complete central energy telephone-circuit passing through said substations; an automatic controlling-switch at each substation adapted to close one of the circuits passing therethrough and open the other; a relay in said controlling-circuit having one side thereof connected in series through each substation to ground and the other side connected to said telephone-circuit; an armature for said relay, said armature being connected in said signal-circuit and adapted to close said circuit when said relay is energized; and means at said central station to energize said relay whereby said signals are rendered operative.

4. In a signal system, the combination of an electric circuit having signals therein, and a central energy telephone system, comprising controlling and telephone circuits, patrol-boxes through which said circuits pass, means in said boxes to open the circuits having the signals therein, and to close the circuits of the telephone system when the door of the patrol-box is opened, an auxiliary circuit having a relay therein connected to said telephone-circuit, a battery in said auxiliary circuit, a pivoted armature for said relay, said armature being connected in said auxiliary circuit at one side of said battery, a contact connected by a branch line having a signal therein on the other side of said battery, whereby when said relay in said circuit is energized its armature engages said contact and operates said signal.

812,734. **DUMPING-WAGON.** HARRY J. FRANK, Philadelphia, Pa. Filed June 5, 1903. Renewed July 20, 1905. Serial No. 270,588.

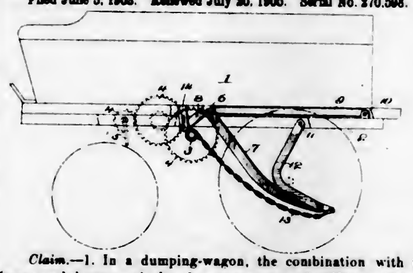

Claim.—1. In a dumping-wagon, the combination with the frame, and the wagon-body, of a common means for lifting said body from said frame and for simultaneously tilting said body to a predetermined angle of inclination during its upward movement.

2. In a dumping-wagon, the combination with the frame, and the wagon-body, of a pair of levers for lifting said body having a fixed point of connection therewith and also a variable point of connection therewith, whereby the ultimate angle of inclination of said body may be varied.

3. In a dumping-wagon, the combination with the frame, and the wagon-body, of a pair of bell-crank levers for lifting said body having a fixed point of connection therewith at the intersection of the two arms composing the same, and means for variably connecting one pair of arms of said bell-crank levers with said body, whereby the ultimate angle of inclination of said body may be determined.

4. In a dumping-wagon, the combination with the frame, and the wagon-body, of a pair of bell-crank levers for lifting said body and pivoted thereto at the intersection of the two arms comprising the same, said pivot-points being to the rear of the longitudinal center of said body, one arm of each of said levers extending rearward of said pivot-point and adapted to have the lifting power applied thereto, the other arm extending forwardly and adapted to be variably connected to said body forward of the longitudinal center of the same, whereby said body, when lifted, will assume a predetermined but variable angle of inclination to the rear.

5. In a dumping-wagon, the combination with the frame, and the wagon-body, of a pair of bell-crank levers for lifting said body and pivoted thereto at the intersection of the two arms comprising the same, said pivot-points being to the rear of the longitudinal center of said body, one arm of each of said levers extending rearward of said pivot-point and adapted to have the lifting power applied thereto while the other arm extends forwardly therefrom, and an arm or arms extending downwardly from said body in proximity to the free end of one or both of said forwardly-extending arms and adapted to be variably connected therewith, whereby said body, when lifted, will assume a predetermined but variable angle of inclination to the rear.

6. In a dumping-wagon, the combination with the frame, and the wagon-body, of a pair of bell-crank levers pivoted to said body for lifting the same, means for causing said body to assume a predetermined angle to the rear when lifted, and levers pivoted to said frame to the rear and to said body at the pivot-points of said bell-crank levers for guiding said body with respect to said frame during its lifting and returning movement.

7. In a dumping-wagon, the combination with the frame, and the wagon-body, of a pair of bell-crank levers pivoted to the body for lifting the same, each having a downwardly-extending arm to which the lifting power is applied, and an arm for each lever pivoted at one end to the frame and at its other end to the end of said bell-crank-lever arm for guiding the latter in its movement.

8. In a dumping-wagon, the combination with the frame, and

a pair of pivoted arms in which the ends of said feed-rollers are jour-

8. In a dumping-wagon, the combination with the frame, and the wagon-body, of a pair of bell-crank levers pivoted to the body for lifting the same, each having a downwardly and rearwardly extending arm to which the lifting power is applied, said arm being curved upwardly at its lower end, and a curved arm for each lever pivoted at one end to the frame and at its other end to the end of its said bell-crank-lever arm, whereby the latter is guided in its movement to the inactive position to a position wherein its lower curved end is substantially horizontal and raised from the ground.

812,735. **FEEDING MECHANISM FOR PRINTING-MACHINES.** HARRY C. GARNETSR, Cleveland, Ohio, assignor to The American Multigraph Company, Cleveland, Ohio, a Corporation of Ohio. Original application filed Mar. 7, 1903. Serial No. 146,051. Divided and this application filed Mar. 3, 1904. Serial No. 196,388.

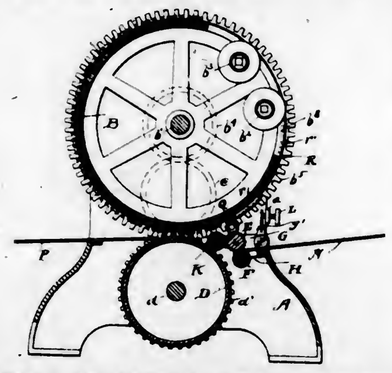

Claim.—1. The combination of a printing-drum, an impression-platen therefor, a feed-initiating device adjustably mounted on the drum, feeding mechanism including a roller mounted on pivoted arms and adapted to be controlled by said device, and a spring constraining one of said arms, substantially as described.

2. The combination of a printing-drum, an impression-platen therefor, a segment carried by the drum, feeding mechanism including a roller mounted on pivoted arms, a spring constraining said arms, and a pinion carried by one of the arms and geared with said roller and adapted to be engaged by said segment, substantially as described.

3. The combination of a printing-drum, an impression-platen therefor, rollers for feeding paper between the printing-drum and platen, a band passing around the periphery of said drum, a member carried by said band for initiating the operation of the feed, and means for adjusting said band throughout a greater distance than the length of the member carried by it, whereby the time of beginning the feed may be regulated within a wide range.

4. In a printing-machine, the combination of a printing-drum, an impression-platen, feed-rollers adapted to convey paper thereto, arms carrying said feed-rollers, a spring tending to swing said arms to cause one of the feed-rollers to bear on the impression-platen, means for adjusting said spring, a gear connected with one of said rollers, and a rack adjustably carried by the printing-drum for engaging said gear, substantially as described.

5. In a printing-machine, the combination of a printing-drum, an impression-platen, a pair of arms pivoted to the frame of the machine, springs carried by said arms, screws carried by the frame and adjustably bearing against said springs, a roller carried by said arms and forced by said springs against the impression-platen, and other rollers carried by said arms for feeding the paper to the space between the roller first mentioned and the impression-platen, substantially as described.

6. In a printing-machine, the combination of a printing-drum, an impression-platen, a feed-roller cooperating with the platen, a pair of arms carrying said feed-roller, another feed-roller journaled in said arms, a gear on said last-mentioned feed-roller, a rack on the printing-drum adapted to drive said gear, and the third feed-roller carried by said arms and spring-pressed toward the feed-roller which carries the gear, substantially as described.

7. In a printing-machine, the combination of a printing-drum, an impression-platen, a feed-roller adapted to bear upon said platen, a pair of pivoted arms in which the ends of said feed-rollers are journaled, a second feed-roller journaled in said arms, slotted extensions carried by said arms adjacent to the second feed-roller, a third feed-roller having gudgeons taking into such slots, springs bearing on said gudgeons to force the said third feed-roller toward the second feed-roller, and springs bearing on said arms to force the first feed-roller toward the platen, substantially as described.

8. In a printing-machine, the combination of a printing-drum, an impression-platen, a feed-roller adapted to bear upon said platen, a pair of arms in which the ends of said feed-roller are journaled, a second feed-roller journaled in said arms, slotted extensions carried by said arms adjacent to the second feed-roller, a third feed-roller taking into such slots, and a rack adjustably carried by the printing-drum and adapted to engage gearing connected with said second feed-roller, substantially as described.

9. In a printing-machine, the combination of a printing-drum, an impression-platen, a feed-roller cooperating with the impression-platen, a pair of feed-rollers in advance thereof, means for driving one of the feed-rollers of this pair, and a table adjacent to this pair and having the plane of its upper surface substantially passing between the rollers of this pair and striking the impression-platen adjacent to the roller first mentioned, substantially as described.

812,736. **CORN HARVESTER AND HUSKER.** THEODORE GLADDEN, Petersburg, Ind. Filed June 21, 1905. Serial No. 266,308.

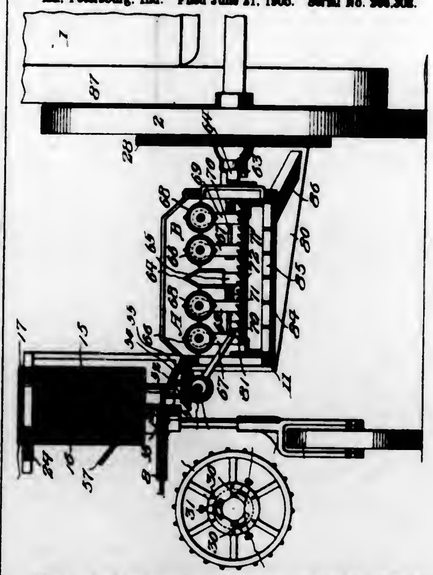

Claim.—1. A combined corn harvester and husker comprising a frame, husking-rolls carried by the frame, snapping-rolls also carried by the frame and arranged at one side and above the plane of the husking-rolls, gathering mechanism including a gathering-chain provided with fingers for conducting the stalks to the snapping-rolls, means for operating the rolls and chain, and a delivery-board comprising stationary and yielding sections adapted to convey the ears of corn from the gathering-chain on which they fall from the snapping rolls to the husking-rolls, said yielding section being adapted to support the fingers of the chain, substantially as described.

2. A combined corn harvester and husker comprising a supporting-frame, husking-rolls carried by said frame, snapping-rolls also carried by the frame and arranged at one side and above the plane of the husking-rolls, gathering mechanism for conveying the stalks to the rolls including a chain provided with gathering-fingers, means for operating the rolls and chain, said fingers being adapted to receive the ears of corn separated from the stalks by the snapping-rolls, and a delivery-board for conveying the ears from the chain to the husking-rolls, said board comprising a stationary section and a spring-actuated yielding section adapted to support the chain-fingers adjacent to the snapping-rolls.

3. A combined corn harvester and husker comprising a supporting-frame, husking-rolls carried by said frame, snapping-rolls also carried by the frame and arranged at one side of and above the plane of the husking-rolls, gathering means including a gathering-chain provided with fingers for conveying the stalks to the snapping-rolls, means for operating the rolls and chain, the fingers of the chain being adapted to receive and support the ears of corn detached by the snapping-rolls, and a delivery device adapted to conduct the ears from the chain to the husking-rolls, said delivery device comprising a stationary section, and a movable section in sliding contact therewith, said movable section supporting the fingers of the chain adjacent to the snapping-rolls and having a depending portion, and spring-pressure means acting on said depending portion to maintain the movable section beneath the chain-fingers and to adapt the same to yield for the passage of stalks of different sizes.

4. A combined corn harvester and husker comprising a supporting-frame, husking-rolls horizontally mounted upon the frame, snapping-rolls vertically mounted upon the frame at one side of and above the plane of the husking-rolls, gathering mechanism including a gathering-chain provided with fingers for feeding the corn to the snapping-rolls, said chain being disposed below said rolls with its fingers arranged to catch and support the detached ears, means for operating the rolls and chain, a stationary fender arranged to conduct the ears to the fingers of the chain, and a delivery-board for conducting the ears from said fingers to the husking-rolls, said board having a yielding portion to support the fingers adjacent to the snapping-rolls.

5. A combined corn harvester and husker comprising a supporting-frame having a guide-passage, horizontal husking-rolls arranged upon one side of said passage, vertically-arranged snapping-rolls disposed in line with the passage above the plane of the husking-rolls, gathering mechanism including a gathering-chain provided with gathering-fingers for conducting the corn along said passage to the snapping-rolls, said chain having a working stretch movable along said passage, spring-bearings for movably mounting one of the snapping-rolls, a guiding element for the working stretch of the chain connected to and movable with the movable snapping-rolls and adapted to adjust the working stretch of the chain therewith, means for operating the rolls and chain, the fingers of the chain being arranged to receive the ears detached by the snapping-rolls, and a delivery device supporting said fingers adjacent to the snapping-rolls and adapted to convey the detached ears therefrom to the husking-rolls.

6. A combined corn harvester and husker comprising a supporting-frame having a guide-passage, horizontal husking-rolls arranged upon one side of said passage, vertically-arranged snapping-rolls disposed in line with the passage above the plane of the husking-rolls, gathering mechanism including a gathering-chain provided with gathering-fingers for conducting the corn along said passage to the snapping-rolls, said chain having a working stretch movable along said passage, spring-bearings for movably mounting one of the snapping-rolls, a guiding element for the working stretch of the chain connected to and movable with the movable snapping-roll and adapted to adjust the working stretch of the chain therewith, means for operating the rolls and chain, the fingers of the chain being adapted to catch and support the ears detached by the snapping-rolls, and a delivery-board for conveying the detached ears from the fingers to the husking-rolls, said board having a spring-pressed yielding section to support the fingers adjacent to the snapping-rolls and to regulate the width of the passage adjacent to the snapping-rolls.

7. In a combined corn harvester and husker, a guideway having a flaring entrance, snapping-rolls vertically arranged at the rear end of the guideway, one of said rolls being movably mounted in spring-bearings, a short gathering-chain disposed on one side of the flaring entrance of the guideway, a second gathering-chain having a working stretch extending along the other flaring side of the guideway and continuously along said guideway to the snapping-rolls and connected for operation with the movable snapping-roll, and means for operating said gathering-chains and snapping-rolls.

8. In a corn-harvester, a main frame, a guideway disposed at one side thereof, snapping-rolls arranged at the rear end of the guideway, gathering mechanism for feeding the stalks along the guideway to the snapping-rolls, said mechanism including a chain having a working stretch extending along the guideway and provided with gathering-fingers, said fingers being adapted to receive and support the ears detached by the snapping-rolls, and a delivery-board having a yielding section supporting the fingers and arranged to convey the detached ears therefrom to the main frame.

9. In a corn-harvester, a main frame, a guideway arranged at one side thereof, snapping-rolls arranged at the rear end of the guideway, one of said rolls being yieldably mounted, gathering mechanism including a gathering-chain having a working stretch movable along the guideway and provided with fingers, said chain being connected with and driven from the movable roll with its fingers arranged to catch and support ears detached by the rolls, a guiding element for said working stretch of the chain movable with the movable snapping-roll, and a delivery-board for conveying the detached ears from the chain to the main frame, said board having a yielding section disposed in the guideway and arranged to support the fingers adjacent to the snapping-roll.

10. In a combined corn harvesting and husking apparatus the combination with a wagon having a driving-wheel, of a frame arranged alongside said wheel and supporting gathering and husking mechanism, means for operating said husking and gathering mechanism from the driving-wheel, connections between said frame and the wagon-body, and a detachable connection between the frame and the cap-nut of the axle of the driving-wheel.

11. In a combined corn harvester and husker, the combination of a main frame, husking-rolls mounted therein, snapping-rolls mounted at one side of said main frame, gathering mechanism for conveying the corn to the snapping-rolls, said mechanism including a chain provided with fingers adapted to support the ears detached by the snapping-rolls, drive-gearing, a shaft extending beneath the snapping-rolls and operated by said gearing, said shaft being operatively connected with the rolls and gathering mechanism, a delivery device arranged to support the ear-holding fingers of the chain and convey the ears therefrom to the husking-rolls, a shaking-separator in the main frame below the husking-rolls, and means for operating said separator from the said shaft.

812,737. **GRINDING-MILL.** WILLARD HALSTEAD, Syracuse, N. Y., assignor to The Engelberg Huller Company, Syracuse, N. Y., a Corporation of West Virginia. Filed Feb. 1, 1905. Serial No. 243,647.

Claim.—A grinding-mill comprising a casing having a circular opening on one side, rotating grinding-heads within the casing, shafts extending into the casing to which the grinding-heads are secured, a feed-spout entering an opening in the side of the casing and having a semicircular discharge-mouth partially embracing the driving-shaft of one of the grinding-heads, a segmental plate attached to the side of the case and partially filling the opening therein and a flange on one of the grinding-heads extending through the annular opening in the casing and closely surrounding the mouth of the spout and the segmental plate.

812,738. **COTTON-CHOPPING MACHINE.** JAMES A. HARDEN, Andalusia, Ala. Filed Nov. 15, 1905. Serial No. 287,510.

Claim.—1. In a cotton-chopping machine, the combination of the beam, its supporting-wheel, a longitudinally-reciprocating bar arranged transversely of and projecting to one side of the beam, a

hoe attached to said bar, and means for actuating said bar by and from said wheel, substantially as described.

2. In a cotton-chopping machine, the combination of the beam, the supporting-wheel, a longitudinally-reciprocating bar arranged transversely of and projecting to one side of the beam, a hoe attached to the outer end of the bar, and a bell-crank lever and connecting-rod for actuating said bar from said wheel, substantially as described.

3. In a cotton-chopper, the combination of a wheel, a transversely-arranged longitudinally-reciprocating bar supported in rear of the wheel and projecting to one side of the beam, a bell-crank lever connected to said bar, and a rod connecting said lever with the wheel, a guide for said bar, and a hoe attached to the outer end of said bar, substantially as described.

4. In a cotton-chopper, the combination of a beam, a tracking-wheel, a longitudinally-reciprocating bar supported in rear of the wheel and lying transversely of the beam, a bell-crank lever connected to said bar, and a rod connected to said lever and having an adjustable connection to the wheel, a guide for said bar, and a hoe attached to the outer end of said bar, substantially as described.

5. In a cotton-chopper, the combination of the beam, a wheel attached to the forward part thereof, a transversely-arranged longitudinally-reciprocating hoe-carrying bar attached to the beam in rear of the wheel, a bell-crank lever pivoted to the beam and having one arm pivotally connected with said bar, a connecting-rod connected to the wheel and to the bell-crank lever, and a hoe removably attached to the outer end of said bar, substantiilly as described

6. In a cotton-chopper, the combination of the beam, a wheel on the forward part thereof, a transversely-arranged longitudinally-reciprocating bar attached to the beam in rear of the wheel, a guide for said bar, a bell-crank lever pivoted to the beam, and having one arm pivotally connected with said bar, a rod connected to an adjustable wrist-pin on the wheel, and pivotally connected to the bell-crank lever, and a hoe attached to the outer end of said bar, substantially as described.

7. In a cotton-chopper, the combination of a longitudinally-reciprocating hoe-bar, means for reciprocating the bar, and means for causing the rising and falling of the hoe as the bar reciprocates, substantially as described.

8. In a cotton-chopper, the combination of the beam, a reciprocating hoe-bar, a hoe thereon, means for reciprocating the bar longitudinally, and means for causing the rising and falling of the hoe end of bar as it reciprocates, substantially as described.

9. In a cotton-chopper, the combination of a wheel, a transversely-arranged hoe-bar, projecting to one side of the wheel and having a double-inclined bearing portion, a guide for the bar engaging said bearing portion, a hoe attached to the outer end of said bar, and means for actuating the bar from the wheel, substantially as described.

10. In a cotton-chopper, the combination of a beam, a wheel thereon, a reciprocating bar projecting to one side of the wheel and having a double-inclined bearing portion, a guide for the bar engaging said guide bearing portion whereby the bar is caused to rise and fall as it reciprocates, a hoe attached to the outer end of said bar, and a lever and connecting-rod for actuating the bar from the wheel, substantially as described.

11. In a cotton-chopper, the combination of the beam, the wheel supporting the forward end thereof, a reciprocating bar arranged transversely of the beam and a guide for the beam, a hoe attached to the outer end of said beam; means for reciprocating said bar longitudinally, and means for causing a rising-and-falling movement of the hoe as it is reciprocated, substantially as described.

12. In a cotton-chopper, the combination of the beam, the handles at rear end thereof, the wheel supporting the forward end thereof, a reciprocating bar arranged transversely of the beam and projecting to one side thereof, a guide for the beam, a hoe detachably attached to the outer end of said beam, a bell-crank lever and connecting-rod for reciprocating said bar, and means for causing a rising-and-falling movement of the hoe as it is reciprocated, substantially as described.

13. In a cotton-chopper, the combination of the wheel, a transversely-arranged reciprocating bar in rear of the wheel projecting to one side, a guide for said bar, means to cause a rising-and-falling motion of the bar as it reciprocates, a bell-crank lever connected with said bar, a rod pivoted to said bell-crank lever and connected to the wheel, and spring-teeth in rear of the hoe, substantially as described.

14. In a cotton-chopper, the combination of the beam, a wheel supporting the forward end thereof, a transversely-arranged reciprocating bar in rear of the wheel projecting to one side of the beam, a guide for said bar; means to cause a rising-and-falling motion of the bar as it reciprocates, a bell-crank lever connected with said bar, a rod pivoted to said bell-crank lever and connected to an adjustable wrist-pin on the wheel, handles for the rear end of the beam, and spring-teeth attached to the beam in rear of the hoe, substantially as described.

812,739. **DUMPING-WAGON.** Martin Harles, St. Louis, Mo. Filed Sept. 18, 1905. Serial No. 278,868.

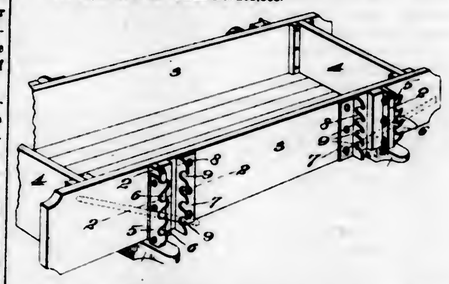

Claim.—1. The combination with a wagon, of notched plates secured to the bolster-standards, and notched plates secured to the side-boards; substantially as specified.

2. In a dumping-wagon, lever-engaging members secured to the bolster-standards, and lever-engaging members secured to the side-boards of the wagon; substantially as specified.

3. In a dumping-wagon, the combination with the bolster-standards, of notched plates secured thereto, and notched plates secured to the side-boards of the wagon; substantially as specified.

4. In a dumping-wagon, the combination with the usual bolster-standards and side-boards, of notched plates detachably secured to said standards, and notched plates detachably secured to the side-boards adjacent the standards; substantially as specified.

812,740. **HANDY DEVICE FOR PAPER-HANGERS.** Arthur C. Harris, Lagrande, and Edward C. Jarman, Haines, Oreg. Filed June 3, 1905. Serial No. 263,681.

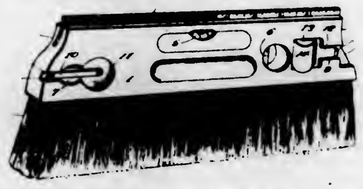

Claim.—In a device of the class described, the combination of a handle, brush-bristles projected from the handle, a rule or measure at one edge of the handle, a roller carried by the handle, a cutter mounted on said handle, and levels arranged upon the handle.

812,741. **HAIR-PIN.** James M. Hartley, Washington, D. C. Filed Oct. 27, 1905. Serial No. 284,657.

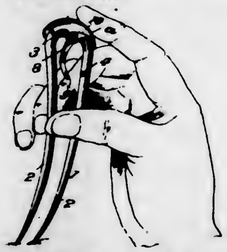

Claim.—1. In combination, a hair-pin having prongs and a connecting-bar, a seat formed on the inside of one of the prongs, a finger-piece straddling the connecting-bar and pivotally mounted thereon, a locking device depending from the finger-piece between the prongs, the end of the locking device engaging the seat, and a spring for holding the locking device in the seat.

2. In combination, a hair-pin having prongs and a cross-bar, a seat formed in one of the prongs, a pivoted locking device mounted on the cross-bar and extending between the prongs and twisted to make its lower end parallel with the prongs to engage the seat, and a spring to retain the lock in its seat.

812,742. **TROUSERS-PRESS.** Jeremiah L. Hattery, San Bernardino, Cal. Filed June 22, 1905. Serial No. 266,390.

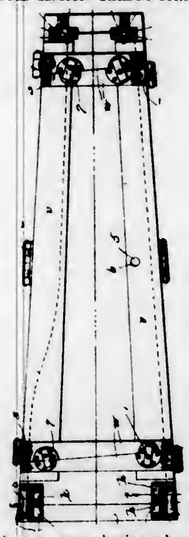

Claim.—1. A trousers-press, having a base-board provided at one end with transverse presser-feet, at the other end with longitudinal spring-catches, and between the ends with pressure-bars having transverse interlocking levers, substantially as specified.

2. A trousers-press having a base-board and at each end thereof lateral presser-feet and between the ends longitudinal pressure-bars having interlocking levers, substantially as specified.

3. A trousers-press having a base-board, and at each end thereof lateral presser-feet, a flat pressure-spring at the middle of the front edge of said board, and between the ends longitudinal pressure-bars, and means for securing the latter in pressed-down position, substantially as specified.

4. In a trousers-press, the combination with a base-board, and its transverse under cleats, of the longitudinal pressure-bars, their interlocking levers, and the curved-end clamping-hinges, substantially as specified.

5. In a trousers-press, the combination with a base-board and the lateral pressure-feet at its ends, of longitudinal pressure-bars, their interlocking levers, and the clamping-hinges, substantially as specified.

6. A trousers-press having a base-board, screw-operated pressure-feet at one end thereof, spring-actuated pressure-foot at the other end thereof, between the ends longitudinal pressure-bars hinged to said base-board, the levers of said pressure-bars, and means for locking the same, substantially as specified.

812,743. **APPARATUS FOR FIRING INCANDESCENT MANTLES.** Hugo Heidgen, Hamburg, Germany. Filed Sept. 20, 1904. Serial No. 224,869.

Claim.—Apparatus for firing incandescent mantles composed of a standard with a hook for suspending the mantles, of a burner centrally movable in a direction toward the suspension-hook, of a tube guiding said burner within and having a longitudinal guide-rib on the outer surface, of a ring *k* guided on said rib and carrying a smoothing-body adapted to be pushed into the mantle, of a second ring *f* guided on said rib, and of pins *c* secured in the ring *f*, the rings *k* and *f* being provided with means to move them axially and concentrically to the burner.

812,743.

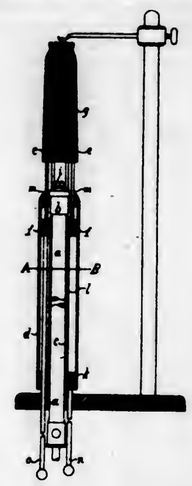

812,744. **POST-HOLE AUGER.** Fred G. Hertig, New Philadelphia, Ohio. Filed July 9, 1904. Serial No. 215,941.

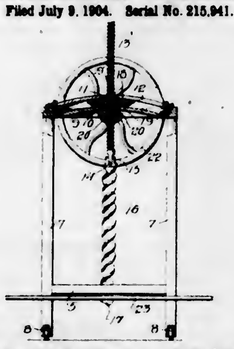

Claim.—An earth-auger comprising a frame including uprights and connecting cross-pieces, vertically-spaced upwardly-arched plates mounted in the upper portion of the frame, said plates having alining threaded perforations through their central portions, a screw fitted in said perforations and extending above and below the plates and having a longitudinal groove, a bevel-gear having a central perforation in which the screw is slidably received, said gear being rotatable between and in contact with the spaced plates and having a lug slidably engaging the groove of the screw, an auger connected to the lower end of the screw, a second bevel-gear meshing with the first-named bevel-gear, and means for rotating the second bevel-gear in either direction, whereby the screw and bit may be raised or lowered.

812,745. **CROSS-HEAD AND CROSS-HEAD GUIDE.** James E. Hooley, Littlefalls, N. Y. Filed Apr. 3, 1905. Serial No. 253,567.

Claim.—1. In a steam-engine, the combination with a reciprocatory cross-head, of a plurality of diamond-shaped guide-rods mounted in opposite pairs, upon which said cross-head is slidably mounted, the cross-head having openings conforming to the guide-rod for passage of said guide-rods.

2. In a steam-engine, the combination with a reciprocatory cross-head, of a plurality of diamond-shaped guide-rods mounted in opposite pairs and forming a diamond-shaped frame, said cross-head having arms slidably mounted upon said guide-rods.

3. In a steam-engine, the combination with a steam-cylinder, a piston-rod actuated by a piston within said cylinder and passing through both ends of the cylinder, a diamond-shaped guide-frame at either end of the cylinder, said frames comprising a supporting-plate connected to the cylinder-head by a plurality of diamond-shaped

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bars oppositely disposed, a four-armed cross-head secured to either end of the piston-rod, and adapted to reciprocate upon the said bars.

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and products of combustion, a plate within the upper of said ovens having its side edges spaced from the side walls thereof, means for introducing fresh air around said fire-pot to said heating-chamber for

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with the films of the two parts of the compound photograph separated by an effective distance; all substantially as described.

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tool-supporting extension projecting rearwardly therefrom parallel with the handle and having a bore extending therethrough, a re-

bars oppositely disposed, a four-armed cross-head secured to either end of the piston-rod, and adapted to reciprocate upon the said bars.

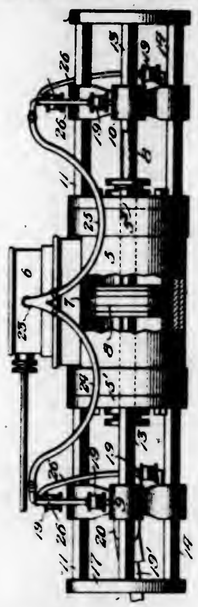

812,746. COOKING-RANGE. ARTHUR R. HUBBARD, Bermondsey, and ROBERT FLAY, county of Middlesex, England. Filed Nov. 23, 1905. Serial No. 288,747.

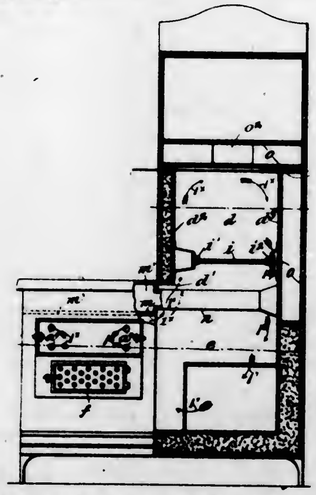

Claim.—1. A cooking-range provided with a fire-pot, a heating-chamber adjacent thereto, and a plurality of superposed ovens communicating with said heating-chamber, in combination with means for introducing fresh air around said fire-pot to said heating-chamber for highly heating said air and circulating same through said ovens, and means for conveying said air after its passage through said ovens to the interior of the fire-pot, substantially as described.

2. A cooking-range provided with a fire-pot, a heating-chamber adjacent thereto, and a pair of superposed ovens communicating with each other and with said heating-chamber, in combination with a flue, passing between said ovens for carrying off the heated gases and products of combustion, a plate within the upper of said ovens having its side edges spaced from the side walls thereof, means for introducing fresh air around said fire-pot to said heating-chamber for highly heating said air and causing it to circulate through said ovens, and means for conveying said air after circulation through said ovens to the interior of the fire-pot, substantially as described.

812,747. FIRE-POT AND GRATE THEREFOR. ARTHUR R. HUBBARD, Bermondsey, and ROBERT FLAY, county of Middlesex, England. Filed Dec. 7, 1905. Serial No. 290,769.

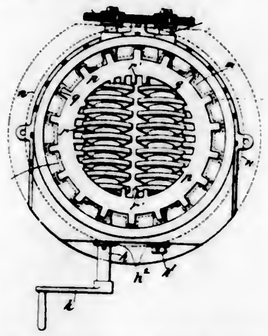

Claim.—The combination of a fire-pot provided with vertical grooves, a ring fitting the interior of said fire-pot and provided with outwardly-extending teeth guided by said grooves, and rotary grate-bars situated beneath said ring and provided with cams adapted to raise said ring when said bars are rotated, substantially as described.

812,748. PHOTOGRAPHY. JOHN W. IPPERS, New York, N. Y., assignor to Albert Henry Walker, trustee, New York, N. Y. Filed Sept. 9, 1905. Serial No. 277,659.

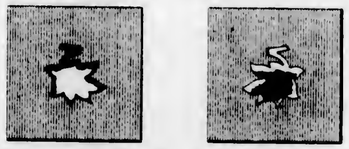

Claim.—1. The following process in photography: making a thin photograph, having a tinted area and a clear area: making a counterpart dense photograph, having a clear area and an opaque area: uniting those photographs into one structure, with their films separated by an effective distance, and with the clear area of its thin part, opposite to the opaque area of its dense part: placing and holding that compound photograph before a camera, with its thin side nearest the camera, and with its dense side exposed to moderate light, but shielded from direct sunlight and from excessive light: exposing a photographic plate in the camera, to subdued light coming from that compound photograph: developing that exposed plate into an intaglio photograph: and making a relief photograph from that developed intaglio photograph; all substantially as described.

2. The following process in photography: making a thin photograph, having a tinted area and a clear area: making a counterpart dense photograph, having a clear area and an opaque area: uniting those photographs into one structure, with their films separated by an effective distance, and with the clear area of its thin part opposite to the opaque area of its dense part: placing and holding that compound photograph before a camera, with its thin side nearest the camera, and with its dense side exposed to moderate light, but shielded from direct sunlight and from excessive light: exposing a photographic plate in the camera, to subdued light coming from that compound photograph; and developing that exposed plate into an intaglio photograph; all substantially as described.

3. A compound photograph: composed of a thin photograph having a tinted area and a clear area, and of a counterpart dense photograph, having a clear area and an opaque area; the two photographs being placed flatwise together, with the clear area of the thin photograph opposite to the opaque area of the dense photograph, and

with the films of the two parts of the compound photograph separated by an effective distance; all substantially as described.

812,749. COMMINUTING-MACHINE. ALBERT B. IVESON, Golborough, and ARCHIBALD R. WILSON, Brighton, England; said Wilson assignor to said Iveson. Filed Oct. 20, 1904. Serial No. 229,340.

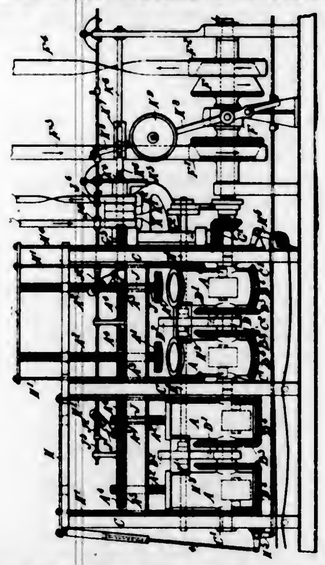

Claim.—1. In a comminuting-machine, the combination of a series of compression-cylinders open at the top, a perforated bottom-plate on each of said cylinders, means for alternately and automatically tilting said cylinders at any desired angle, means for returning said cylinders to their upright position, a series of plungers adapted to fit into and be entirely withdrawn from the open end of their corresponding cylinders, and cutting means adapted to move in contact with the outside face of each of said perforated bottom-plates, substantially as shown and described.

2. In a comminuting-machine, the combination of tilting compression-cylinders, plungers, means for tilting said cylinders, means for returning said cylinders to their upright position, screw-threaded piston-rods, internally-threaded sleeves in which said piston-rods work, auxiliary means for reversing the machine, a double-slotted link, an automatic clutch-lever working in said double-slotted link, a double-headed coned clutch on the main shaft, operated by said clutch-lever, oppositely-moving pulleys on said main shaft adapted to be engaged by said clutch-lever, and a series of gear-wheels connecting the reversing and operating parts of the mechanism, substantially as shown and described.

3. In a comminuting-machine, the combination of a series of compression-cylinders, open at the top, a perforated bottom-plate attached to each cylinder, plungers for corresponding cylinders, means for tilting and means for returning said cylinders to an upright position, rotary cutting means, gear-wheels, an automatic clutch-lever, a double-slotted link, a double-headed coned clutch, a main shaft and oppositely-moving pulleys on said main shaft, substantially as shown and described.

812,750. FARRIER'S TOOL. JOHANN KAS, Asch, Austria-Hungary. Filed June 21, 1904. Serial No. 213,581.

Claim.—1. A tool of the character described, comprising handles pivotally connected at one end, one of said handles being formed at its opposite end with an extension projecting inwardly between the handles and having a bore extending therethrough, a reversible implement provided with a stem adapted to be fitted into the bore from either end thereof, and means upon said extension for engaging the stem and securing the implement in either of its adjusted positions, substantially as described.

2. In a horseshoer's tool, a handle provided at one end with a tool-supporting extension projecting rearwardly therefrom parallel with the handle and having a bore extending therethrough, a reversible implement provided with a stem adapted to be fitted into the bore from either end thereof, and means upon said extension for engaging the stem and securing the implement in either of its adjusted positions, substantially as described.

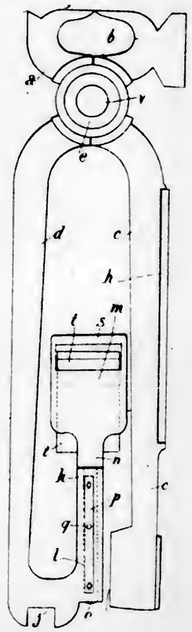

812,751. NON-REFILLABLE BOTTLE. WILLIAM B. KNOLLENBERG and JACOB A. FREY, St. Louis, Mo. Filed July 14, 1905. Serial No. 269,674.

Claim.—The combination with a bottle, provided with an interior shoulder at the point where the neck joins the body of the bottle, of a disk valve arranged to seat upon said shoulder, valve-stems integral with and projecting upwardly and downwardly from the center of the disk valve, and a solid cylinder of non-corrosive material seated in the neck of the bottle above the shoulder, which cylinder is provided in its under side with a recess to receive the upper valve-stem, there being a plurality of grooves formed in the surface of the cylinder, the central portions of which grooves are formed in oppositely-disposed U-shaped loops and which grooves extend to the

top and bottom of the cylinder, and the ends of said grooves being widened; substantially as specified.

812,732. **DISTRIBUTING-VALVE FOR AIR-BRAKES.** GEORG KNORR, Britz, near Berlin, Germany. Filed July 11, 1904. Serial No. 216,171.

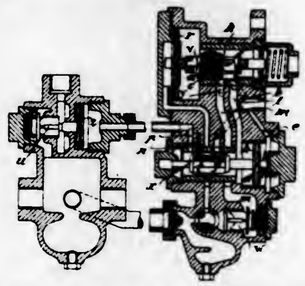

Claim.—1. In a device for simultaneously applying all the brakes of a train uniformly and with equal pressures in cases of emergency, the combination with the piston *k*, the cylinder of the same and the main distributing-valve, of means for connecting the front side of said piston with the compressed-air conduit, and a spring *i*, adapted to displace the piston until the pressure of the air at both sides of the piston is the same, an air-escape valve consisting of a forcing-valve *u*, and a spring pressing open said valve, a piston *z* connected with said valve and adapted to be displaced by the conduit-air in cases of emergency, substantially and for the purpose as described.

2. In a device for simultaneously applying all the brakes of a train in cases of emergency, the combination with the piston *k*, the cylinder of the same and the main distributing-valve, of means for connecting the front side of said piston with the compressed-air conduit, and a spring *i*, adapted to displace the piston until the pressure of the air at both sides of the piston is the same, an air-exit channel *p* terminating into the open air and an auxiliary slide *t* adapted to act upon said channel, substantially and for the purpose as described.

812,733. **CARBURETER FOR HYDROCARBON-ENGINES.** WESLEY KOUNS, Salina, Kans., assignor of one-half to Frederick H. Quincy, Salina, Kans. Filed Oct. 20, 1904. Serial No. 229,363.

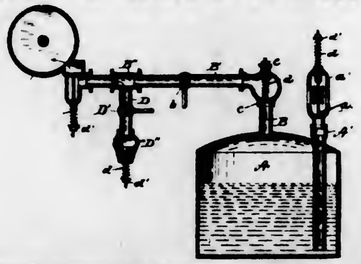

Claim.—In an autoregulated carbureter, the combination with the cylinder of an engine, and a supply-pipe B', provided with the globe-valve *b*, automatic check-valves *c c'*, and auxiliary air-pipe D, having automatic air-inlet valve D'', and globe-valve D', of a gasolene tank A, having outlet-pipe E, connecting with supply-pipe B', and being provided with air-inlet pipe A', the lower end of which extends nearly to the bottom of said tank and its upper end having attached thereto an air-valve *a* and its frame *a'*, substantially as described.

812,734. **WIRE-FINISHING TOOL.** EDWARD M. LANE, Jr., Portland, Me. Filed May 23, 1904. Serial No. 209,645.

Claim.—1. In a wire-finishing machine, the combination with a support, of a reducing-roll mounted thereon, a rotary adjustable shaft carried by said support, means for locking same in its adjusted position, a pintle eccentrically disposed on the end of said shaft beside said roll, and a second roll mounted on said pintle.

2. In a wire-finishing machine, the combination with a support, of a parallel pair of rotary adjustable shafts carried thereby with means for locking said shafts in a fixed position, eccentrically-disposed pintles on the ends of said shaft, and reducing-rolls on said pintles disposed in the same plane.

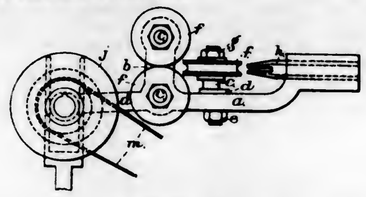

812,755. **CORN-PLANTER.** COLONEL W. LANHAM, Stanford, Ky. Filed Sept. 30, 1905. Serial No. 280,833.

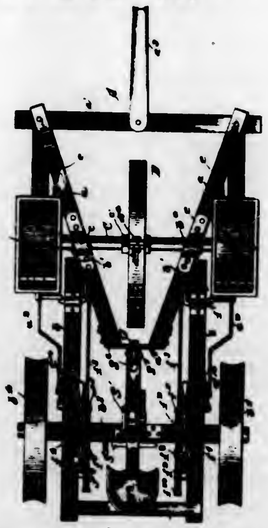

Claim.—1. A corn-planter comprising a frame, composed of front and rear sections, the front section being substantially triangular in shape and comprising side bars and a cross-bar, the rear section being substantially rectangular in shape and comprising side bars hinged at their front ends to the side bars of the front section, a cross-bar connecting the rear ends of the side bars, an axle secured to the rear section intermediate the ends of the side bars, wheels on the axle, a shaft journaled on the side bars of the front section, a power-wheel secured to the shaft intermediate the side bars, and comprising a plurality of semicircular segments, outwardly-projecting lugs on the ends of the segments, bolts traversing openings in the lugs for securing the segments together, brackets on the front sections, hoppers supported by the brackets and having openings to receive the power-wheel shaft, dropping-wheels having spaced openings on their peripheral surface, corresponding to the position of the lugs on the power-wheel and secured to the ends of the power-wheel shaft within the hoppers, shoes arranged below the hoppers, means for raising and lowering the shoes, and means for raising and lowering the power-wheel with respect to the rear section.

2. A corn-planter comprising a frame, composed of front and rear sections, the front section being substantially triangular in shape, and comprising side bars and a cross-bar, the rear section being substantially rectangular in shape and comprising side bars hinged at their front ends to the side bars of the front section, a cross-bar connecting the rear ends of the side bars, an axle secured to the rear section intermediate the ends of the side bars, wheels on the axle, a shaft journaled on the side bars of the front section, a power-wheel secured to the shaft intermediate the side bars, and comprising a plurality of semicircular segments, outwardly-projecting lugs on the ends of the segments, bolts traversing openings in the lugs for securing the segments together, brackets on the front sections, hoppers supported by the brackets and having openings to receive the power-wheel shaft, dropping-wheels having spaced openings on their peripheral surface secured to the power-shaft within the hoppers, shoes supported below the hoppers, means for raising and lowering the shoes, and means for raising and lowering the power-shaft with respect to the rear section.

3. A corn-planter comprising a frame, composed of front and rear sections, the front section being substantially triangular in shape, and comprising side bars and a cross-bar, the rear section being substantially rectangular in shape and comprising side bars hinged at their front ends to the side bars of the front section, a cross-bar connecting the rear ends of the side bars, an axle secured to the rear section intermediate the ends of the side bars, wheels on the axle, a shaft journaled on the side bars of the front section, a power-wheel secured to the shaft intermediate the side bars, and comprising a plurality of semicircular segments, outwardly-projecting lugs on the ends of the segments, bolts traversing openings in the lugs for securing the segments together, brackets on the front sections, hoppers supported upon the front section, dropping-wheels having spaced openings on their peripheral surface secured to the power-shaft within the hoppers, shoes supported below the hoppers, means for raising and lowering the same, and means for raising and lowering the power-wheel with respect to the rear section.

4. A corn-planter comprising a frame composed of front and rear sections, the front section comprising side bars and a cross-bar, and the rear section being substantially rectangular in shape and comprising side bars hinged at their front ends to the side bars of the front section, a cross-bar connecting the rear ends of the side bars, wheels for supporting the rear section, a power-wheel journaled in the front section, and having oppositely-disposed lugs on the peripheral surface thereof, dropping-wheels having spaced openings on their peripheral surface corresponding to the position of the lugs on the power-wheel and connected directly therewith, hoppers inclosing the dropping-wheels, shoes supported below the hoppers, means for raising and lowering the shoes, and means for raising and lowering the power-wheel with respect to the rear section.

5. A corn-planter, comprising a frame composed of front and rear sections hinged together, wheels for supporting the rear section, a power-wheel journaled on the front section, oppositely-disposed lugs on the peripheral surface of the power-wheel, dropping-wheels having spaced openings on their peripheral surface corresponding to the position of the lugs on the power-wheel and directly connected therewith, hoppers inclosing the dropping-wheels, shoes supported below the hoppers, means for raising and lowering the shoes, and means for raising and lowering the power-wheel with respect to the rear section.

6. A corn-planter comprising a frame, composed of front and rear sections hinged together, wheels for supporting the rear section, a shaft journaled on the side bars of the front section, a power-wheel secured to the shaft intermediate the side bars and comprising a plurality of semicircular segments, outwardly-projecting lugs on the ends of the segments, bolts traversing openings in the lugs for securing the segments together, dropping-wheels having spaced openings on their peripheral surface corresponding to the position of the lugs on the power-wheel and secured to the ends of the power-shaft, hoppers inclosing the dropping-wheels, shoes supported below the hoppers, means for raising and lowering the shoes, and means for raising and lowering the power-wheel with respect to the rear section.

7. A corn-planter comprising a frame composed of front and rear sections hinged together, wheels for supporting the rear section, a power-wheel journaled in the front section, oppositely-disposed lugs on the peripheral surface of the power-wheel, brackets on the front section, hoppers supported by the brackets, dropping-wheels having spaced openings on their peripheral surface corresponding to the position of the lugs on the power-wheel and directly connected thereto, arranged within the hopper, shoes supported below the hoppers, means for raising and lowering the shoes and means for raising and lowering the power-wheel with respect to the rear section.

8. A corn-planter comprising a frame composed of front and rear sections, means for supporting the rear section, means for tilting the front section with respect to the rear section, a shaft on the front section, a power-wheel on the shaft, dropping-wheels on the shaft on either side of the power-wheel, hoppers inclosing the dropping-wheels, shoes supported below the hoppers, and means on the rear section for adjusting the shoes.

9. A corn-planter, comprising a frame, composed of hinged front and rear sections, means for supporting the rear section, means for tilting the front section with respect to the rear section, a power-wheel journaled in the front section, dropping-wheels connected directly with the power-wheel, hoppers inclosing the power-wheel, and shoes below the hoppers, and means on the rear section whereby to adjust the shoes

10. A corn-planter comprising a frame, means for supporting one end of the frame, a power-wheel for supporting the opposite end of the frame, dropping-wheels connected directly with the power-wheel, shoes below the dropping-wheels, and means whereby to adjust the shoes to and from the dropping-wheels.

812,756. **BEARING.** EDWARD S. LEA and JULIUS DEGEN, Trenton, N. J., assignors, by mesne assignments, to Lea-Degen Pump Company, Trenton, N. J., a Corporation of New Jersey. Filed May 6, 1905. Serial No. 259,151.

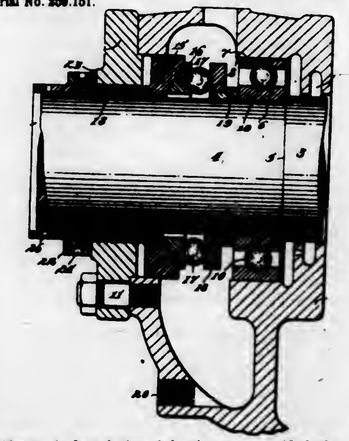

Claim.—1. In a device of the character specified, the combination with a frame, of an abutment on a shaft moving in said frame, a ball-bearing race adapted to bear against said abutment, another ball-bearing race corresponding to the first-mentioned race, balls running therein a member abutting one of the first-named races, a race carried thereby, a race corresponding thereto, balls running therein, means to shift the ball-races laterally, and thereby the shaft, and means to hold the shifting means in fixed position.

2. In a device of the character specified, the combination with a frame, of a sleeve fixed to a shaft moving axially in said frame, a ball-bearing race adapted to bear against said sleeve, another ball-bearing race corresponding to the first-mentioned race, balls running therein, a member abutting one of the first-named races, a race carried thereby, a race corresponding thereto, balls running therein, a screw-threaded collar secured to said frame, means to shift the second ball-bearing race relatively to the frame and movable in said collar, and means to maintain a fixed position, at will, of the parts.

3. In a device of the character specified, the combination with a frame, of a shaft movable therein in two opposite directions, a collar fixed on said shaft, ball-races, one of which impinges said collar, balls in said race, an additional ball-race adapted to impinge the first races, a race corresponding with it, balls running therein, a sleeve surrounding the shaft and adapted for lateral impingement against one of the races, said sleeve having screw-threads on the outer side thereof, a collar internally screw-threaded, and carried by the frame, and in which the sleeve moves axially, a jam-nut carried by the sleeve, and lubricating means in said frame.

812,757. **CONVEYER.** CHRISTOPHER W. LEVALLEY, Milwaukee, Wis. Filed Apr. 12, 1905. Serial No. 255,117.

Claim.—1. In a conveyer, the combination of two parallel lines of chains, certain of the links whereof are provided with bearings extending across the links from side bar to side bar and arranged intermediate the joints of articulation of those links, pins mounted in the said bearings and projecting inward from the sides of the chains, and separable connecting-rods between the chains secured at their ends to the said inward-projecting pins, substantially as set forth.

2. In a conveyer, the combination of a pair of parallel chains, pins mounted in the side bars of certain of the links of the chains and disposed intermediate the joints of articulation of those links and

having their free ends extending inward beyond the sides of the chains, supporting-rollers mounted upon the said pins, and separable connecting-bars between the chains secured at their ends to the said pins, substantially as set forth.

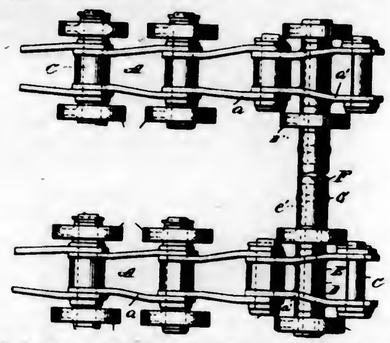

3. In a conveyer, the combination of two parallel lines of chains, certain of the links of which chains are provided with bearings D, disposed intermediate the joints of articulation of those links, pins E mounted in the said bearings, wheels B', B', mounted upon the said pins E, the inner ends of the pins extending beyond the inner wheels B', and the hollow connecting shafts or rods F arranged between the lines of chains and fitting over the projecting ends of the pins E, and means for uniting the shafts with the ends of the pins, substantially as set forth.

4. In a chain conveyer, the combination of a chain having supporting wheels or rollers, the wheels being arranged in pairs on a common axis coincident with the axis at a joint connection of the links and upon opposite sides of the chain, pins mounted in certain of the links at points intermediate the joint connections of such links with other links of the chain, the ends of such pins extending beyond the side bars of the links, separable bars arranged to support material to be transported secured to the projecting ends of the said pins and supporting wheels or rollers mounted upon the said projecting pins between the side bars of the links and the ends of the separable bars that are secured to the pins, substantially as set forth.

5. In a chain conveyer, the combination of a chain comprising articulated links, supporting-rollers for the chain mounted in pairs on the axes of the joints of the connected links and disposed on the opposite sides of the chain, pins mounted in certain of the links at points intermediate the joint connections of such links with other links of the chain, supporting-rollers mounted upon the said pins, the ends of the pins projecting beyond the said rollers, and separable bars secured to the projecting ends of the said pins and arranged to support the material to be transported by the conveyer, substantially as set forth.

812,758. **BRAKE.** SAM H. LIBBY, East Orange, N. J., assignor to Sprague Electric Company, a Corporation of New Jersey. Filed Sept. 16, 1904. Serial No. 224,044.

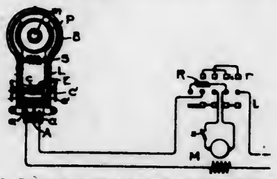

Claim.—1. In a motor-operated hoist, a manually-operated motor-controller, a magnet-winding in the motor-circuit, a member controlled by said magnet-winding, a brake, and operative connections from said brake both to said controller and to said member adapted to release said brake only upon the simultaneous movement of said controller to a running position and the energizing of said winding.

2. In a motor-operated hoist, a motor-controller, a brake, and means for releasing the brake comprising a cam operated by the controller, and an electromagnet in circuit with the motor.

3. In a motor-operated hoist, a motor-controller, a magnet-winding in the motor-circuit, a brake, a member pivotally supported on said brake, means operatively connected to said controller arranged to exert a pressure at one point on said member when said controller is moved to a running position, and means controlled by said magnet-winding for exerting a pressure at another point on said member.

4. In a motor-operated hoist, a motor-controller, a magnet-winding in the motor-circuit, a brake, a lever adapted by its movement to release said brake, means operatively connected to said controller arranged to exert a pressure at one point on said lever when said controller is moved to a running position, and means controlled by said magnet-winding for exerting a pressure at another point on said lever.

5. In a motor-operated hoist, a brake-wheel, two pivoted brake-arms, a spring normally pressing said arms toward each other and into engagement with said brake-wheel, two levers pivoted at one of their ends near the extremities of said brake-arms, a motor-controller, a cam on the controller-shaft, adapted to engage said levers intermediate their ends and to press said levers apart when said controller is moved to a running position, and a magnet-winding connected in the motor-circuit and adapted to draw the loose ends of said levers together.

6. In a motor-operated hoist, a motor-controller, a brake, a lever adapted by its movement to release said brake, means operatively connected to said controller for exerting a pressure on said lever when said controller is moved to a running position, and a magnet-winding connected in the motor-circuit and controlling the fulcrum of said lever.

812,759. **WHEEL-TIRE.** WILLIAM A. LOUDON, Chicago, Ill. Filed May 1, 1903. Renewed Jan. 16, 1905. Serial No. 241,368.

Claim.—1. In a wheel-tire the combination of a metallic band; a plurality of circumferential rows of wooden blocks and means for securing said blocks in position, said means comprising side flanges and clamps capable of radial adjustment between said rows of blocks.

2. In a wheel-tire the combination of a plurality of circumferential rows of wooden blocks; a clamping-ring on one side of said rows, segmental clamping-plates on the opposite side of said rows, circumferential clamping-rings between said rows, and screw-bolts connecting said clamping-rings and clamping-plates.

3. In a wheel-tire the combination of a plurality of circumferential rows of wooden blocks; a clamping-ring integral with a metallic band; segmental clamping-plates provided with a recess to receive the edge of said band; clamping-rings provided with lateral-extending circumferential flanges, between the said rows; and clamping-bolts substantially as specified.

4. In a wheel-tire the combination of a band, a plurality of circumferential rows of blocks and means for securing said blocks in position, said means comprising side flanges and clamps capable of lateral adjustment between said blocks.

5. In a wheel-tire the combination of a plurality of circumferential rows of blocks, a clamping-ring on one side of said rows, a clamping-ring on the other side of said rows, clamping means between said rows, and screw-bolts connecting said two clamping-rings.

6. In a wheel-tire the combination of a plurality of circumferential rows of blocks, a clamping-ring integral with a band on one side of said blocks, a clamping-ring on the other side of said blocks, clamping-plates between said rows of blocks and clamping-bolts connecting said two clamping-rings.

7. A wheel-tire comprising a plurality of circumferential rows of blocks resting on a circumferential band and circumferential plate capable of lateral adjustment on said band between said rows of blocks and means for securing said blocks, band and plates together.

8. A wheel-tire comprising a plurality of circumferential rows of blocks resting against a band, a plurality of fastening-pieces capable of lateral adjustment to said band located between said rows of blocks for securing said blocks in position and means for clamping said blocks to said band.

9. If a wheel-tire a plurality of circumferential rows of blocks resting on a band and annular bands capable of lateral adjustment on said band between said rows of blocks and means for clamping said rows of blocks together laterally.

10. In a wheel-tire, a plurality of circumferential rows of blocks resting against a band, a plurality of fastening-pieces capable of lateral adjustment to said band located between said rows of blocks, and means for clamping said rows of blocks together laterally.

11. In a wheel-tire the combination of a band, a plurality of circumferential rows of blocks and means for securing said blocks in position on said band, said means comprising side flanges, metallic pieces secured against radial displacement between said blocks and clamping-bolts.

12. In a wheel-tire the combination of a plurality of circumferential rows of blocks, clamping-rings on either side of said rows, washers provided with lateral extensions between said rows and screw-bolts connecting said two clamping-rings.

812,760. **ELECTRICAL ROSETTE.** JAMES A. MEBANE, South Boston, Va. Filed Apr. 30, 1904. Serial No. 206,730.

Claim.—1. In an electrical rosette, the combination, with the cap, and a metal wire connection formed of spring sheet metal and having its end portions constructed in S shape and provided with notches, of wires which pass up through the cap proper and between the convolutions of the said connections and through the notches of the same, whereby they are duly held, substantially as described.

2. The rosette-cap provided with a recess and a wire connection whose body portion is secured in said recess and whose end portions are folded or bent upon each other in S shape and constructed with notches as and for the purpose specified.

812,761. **ROACH-TRAP.** JULIUS W. MEIER, New York, N. Y. Filed July 12, 1905. Serial No. 269,253.

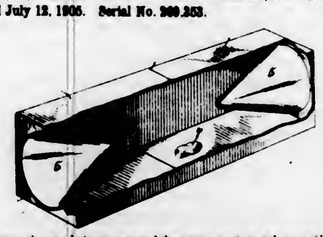

Claim.—A roach-trap comprising two rectangular sections, one of said sections being cut away interiorly and the other of said sections being cut away exteriorly to form a flush overlapping joint, each of said sections having a closed end formed with a circular opening, and a funnel-shaped entrance-chute fitted into said opening.

812,762. **MACHINE FOR MAKING SAFETY-PINS.** WILLIAM D. MIDDLEBROOK, Waterbury, Conn., assignor to Oakville Company, Waterbury, Conn., a Corporation of Connecticut. Filed Mar. 25, 1905. Serial No. 251,073.

Claim.—1. In a safety-pin machine, the combination of mechanism for bending a wire to form the legs of a safety-pin, mechanism for securing a cap or guard to one end of said wire, and means for closing the pin, substantially as described.

2. In a safety-pin machine the combination of mechanism for securing a cap or guard to one leg of a safety-pin, mechanism for feeding caps or guards to said capping mechanism, and means for closing the pin, substantially as described.

3. In a safety-pin machine, the combination of mechanism for bending a wire to form the legs of a safety-pin, mechanism for securing a cap or guard to one of said legs, and means for transferring the bent wire from the bending mechanism to the capping mechanism, substantially as described.

4. In a safety-pin machine, the combination of mechanism for bending a wire to form the legs of the pin, mechanism for securing a cap or guard to one leg of the pin, a holder for presenting the bent wire to the capping mechanism, and a conveyer for transferring the bent wire from the bending devices to the holder, substantially as described.

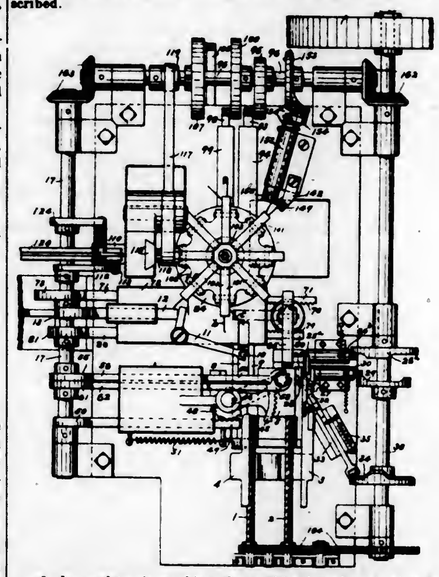

5. In a safety-pin machine, the combination of mechanism for bending a wire to form the legs of the pin, mechanism for securing a cap or guard to one leg of the pin, a holder for presenting the bent wire to the capping mechanism, a conveyer for transferring the bent wire from the bending mechanism to the holder, and means for closing the pin, substantially as described.

6. In a safety-pin machine, the combination of a mechanism for securing a cap or guard to one of the legs of a safety-pin, a holder for presenting the bent wire to the capping mechanism, and means for closing the pin, substantially as described.

7. In a safety-pin machine, the combination of mechanism for bending a wire to form the legs of a safety-pin, a holder, means for transferring the bent wire to the holder, a reciprocating die for carrying the cap over the end of the wire, and a coöperating die for bending the cap about the wire, substantially as described.

8. In a safety-pin machine, the combination of mechanism for bending a wire to form the legs of a safety-pin, mechanism for securing a cap or guard to one of said legs, a stationary holder for presenting a bent wire to the capping mechanism, and an oscillating carrier for transferring the bent wire to the holder, substantially as described.

9. In a safety-pin machine, the combination of mechanism for bending a wire to form the legs of a safety-pin, mechanism for securing a cap or guard to one of said legs, a stationary holder for presenting the bent wire to the capping mechanism, an oscillating carrier for transferring the bent wire to the holder, and means for closing the pin, substantially as described.

10. In a safety-pin machine, the combination of mechanism for bending the wire to form the legs of a safety-pin, mechanism for securing a cap or guard to one of said legs, and mechanism for arranging the caps in the same relative relation and feeding them to the capping mechanism, substantially as described.

11. In a safety-pin machine, the combination of mechanism for bending a wire to form the legs of a safety-pin, mechanism for securing a cap or guard to one of said legs, mechanism for arranging the caps in the same relative relation, and feeding said caps to the capping mechanism, and means for closing the pin, substantially as described.

12. The combination with mechanism for securing a cap or guard to a wire, of means for arranging the caps in the same relative relation, and means for feeding said caps to the capping mechanism, substantially as described.

13. The combination with a male die, of a female die, a magazine for supplying caps to said female die, means for moving the female die from the magazine to the male die, and means for feeding

the caps from the magazine to the female die, substantially as described

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812,764. **METHOD OF TREATING FLOUR.** JOHN B. MUSSEL

6. Apparatus for sterilizing liquids under pressure, comprising

with hole-forming pins operative in connection with said mold-bod

the caps from the magazine to the female die, substantially as described.

14. The combination of means for holding a safety-pin, a pivoted closer for engaging the pointed leg of the pin, and carrying the point into the guard or catch, substantially as described.

15. The combination of means for holding a safety-pin, a shoulder for engaging the back of the pin, and means for engaging the pointed leg of the pin and carrying the point into the guard or catch, substantially as described.

16. The combination of a plate onto which the wire is delivered, reciprocating fingers for moving said wire over said plate, mechanism for bending said wire to form the legs of a safety-pin, a pivoted guide at one side of said plate, a bender-slide for bending the end of one of said legs, and a cam on said slide for lifting said guide, substantially as described.

17. The combination of a plate onto which the wire is delivered, reciprocating fingers for moving said wire over said plate, a vertically-reciprocating block, a clamping-jaw coöperating with the edge of said block, to clamp the end of the wire and a bender for bending the end of the wire, substantially as described.

18. The combination of a plane traveling surface for freely supporting the articles to be acted upon, a guide arranged at an inclination to the direction of travel of the supporting-surface and extending to within a distance from the edge of the supporting-surface less than the width of the articles, substantially as described.

19. The combination of a plane traveling surface for freely supporting the articles, a stationary guide arranged at an inclination to the direction of travel of the supporting-surface, and extending to within a distance of the edge of the supporting-surface less than the width of the articles and stationary guides beyond the end of said former guide, substantially as described.

20. The combination of a traveling surface for supporting the articles to be acted upon, a guide arranged at an inclination to the direction of travel of said surface, and extending to within a distance from the edge of said surface less than the width of the articles, and one or more notches in said guide, substantially as described.

21. The combination of a rotary disk having a plane upper surface, a guide extending toward the edge of said disk, and to within a distance from the edge of said disk less than the width of the articles to be acted upon, substantially as described.

22. The combination of a rotary disk, a guide extending toward the edge of said disk, and to within a distance from the edge of said disk less than the width of the article to be acted upon, and one or more notches in said guide, substantially as described.

23. The combination of a rotary disk, a guide extending toward the edge of said disk and to within a distance from the edge of said disk less than the width of the articles to be acted upon, a second guide beyond said former guide extending toward the center of said disk, and a third guide extending to the edge of said disk, substantially as described.

24. The combination of a rotary disk, a guide extending toward the edge of said disk, and to within a distance from the edge of said disk less the width of the articles to be acted upon, a second guide extending toward the center of said disk, a third guide extending to the edge of said disk, and a chute into which the articles are directed by said third guide, substantially as described.

25. The combination of a plane traveling surface, for freely supporting the articles to be acted upon, a guide arranged at an inclination to the direction of travel of said surface, and extending to within a distance from the edge of said surface less than the width of said articles, a chute for delivering the articles upon said surface in front of said guide, and means for agitating said chute, substantially as described.

812,763. PENCIL AND PEN HOLDER. LORENZO MILLIRON, Pinedrove, S. D. Filed Apr. 8, 1905. Serial No. 254,542.

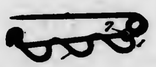

Claim.—A pencil and pen holding device comprising a shank having one end portion thereof bent to form a catch, the portion of the shank formed into the catch being refolded and thence extended longitudinally of the shank and formed into a plurality of article-holding loops at one side of the shank, the terminal of the bent end portion of the shank remote from the catch being bent into an eye receiving the shank at the end remote from that provided with said catch, and a pin for attaching the shank to the garment.

812,764. METHOD OF TREATING FLOUR. JOHN B. MITCHELL, St. Louis, Mo., assignor to Alsop Process Company, St. Louis, Mo., a Corporation of Missouri. Filed Sept. 24, 1904. Serial No. 226,849.

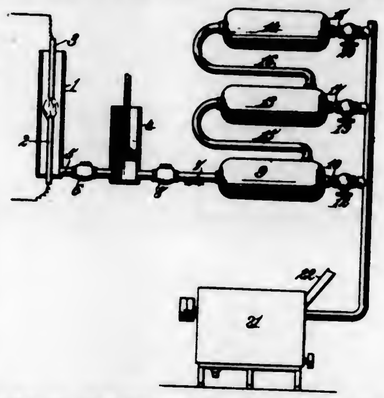

Claim.—1. The method of treating flour, which consists in subjecting air to the action of the flaming electric discharge, retarding the passage of the modified air to the flour for an appreciable length of time, and then conducting the modified air into the presence of the flour.

2. The method of treating flour, which consists in subjecting air to the action of the flaming electric discharge, storing the modified air for an appreciable length of time, and then conducting the same into the presence of the flour.

3. The method of treating flour, which consists in subjecting air to the action of the flaming electric discharge, passing the air as thus modified into an inclosed space and delaying its passage therethrough until the desired cooling and interdiffusion of the constituent gases have occurred, and finally subjecting to its action the flour to be treated.

4. The process of treating flour, which consists in producing a gaseous mixture containing oxids of nitrogen, delaying the passage of said gaseous mixture to the flour for an appreciable length of time, and then subjecting the flour to the action of the resultant gas or gases.

5. The process of treating flour, which consists in producing synthetically gaseous oxids of nitrogen, delaying the passage of the gaseous medium to the flour for an appreciable length of time and then subjecting the flour to the action thereof.

812,765. APPARATUS FOR STERILIZING LIQUID BY HEAT UNDER PRESSURE. CHARLES F. V. MOREL, Paris, France. Filed May 9, 1904. Serial No. 207,187.

Claim.—1. Apparatus for sterilizing liquids under heat, comprising an envelop, an ascending pipe therein, a boiler at the bottom of said envelop, and a pulsating device communicating with said ascending pipe for regulating the discharge of the sterilized liquid.

2. Apparatus for sterilizing liquids under heat, comprising an envelop having a trough, an ascending pipe in said envelop, and a boiler at the bottom of said envelop, the ascending pipe having baffles descending into the trough in the envelop to form a seal for the steam.

3. Apparatus for sterilizing liquids under pressure by heat, comprising an envelop, means to introduce the liquid to be sterilized, a boiler at the bottom part of the envelop, a bell having several vertical concentric baffles, corresponding compartments on the bottom of said boiler to receive said baffles, an ascending tube communicating with the center of said bell, and an outlet-valve for the sterilized liquid.

4. Apparatus for sterilizing liquids under heat, comprising an envelop, an ascending pipe, a boiler with a passage connecting said envelop and the ascending pipe, in combination with wings on the outside of the ascending pipe for retarding the descending liquid.

5. Apparatus for sterilizing liquids under heat, comprising an envelop, an ascending pipe, a boiler and a passage connecting said envelop and ascending pipe in said boiler, in combination with an outlet-chamber having a valve-seat and an elastic chamber carrying a valve adapted to seat therein, said elastic chamber being in the upper part of the ascending pipe.

6. Apparatus for sterilizing liquids under pressure, comprising an envelop, a boiler therein, an ascending pipe therefrom, means for directing steam from the boiler to the pipe, means for obstructing the circulation within the envelop, a passage of enlarged area above the ascending pipe and a valve to its outlet adapted to be operated by pressure within the pipe.

7. Apparatus for sterilizing liquids under pressure, comprising an envelop, a boiler, and a trough above the bottom of the boiler, an ascending pipe having depending plates in said trough, wings on the outside of the pipe, an enlarged passage for the liquid above the pipe, and a valve controlled by pressure within the boxes to the outlet therefrom.

812,766. COMBINED HAIR-BRUSH AND COMB. ALPINE MCKINNEY, Evangeline, La. Filed Sept. 2, 1905. Serial No. 276,866.

Claim.—A device of the character set forth, comprising a brush having the head thereof provided with a horizontally-extending recess, the entrance of said recess being located in one of the side edges of the head of the brush and reduced to provide shoulders, a comb mounted within the recess and having the back portion thereof provided with lateral offsets, a leaf-spring secured to the rear wall of the recess and having its free ends engaging the longitudinal edge of the back of the comb, said spring serving to automatically project and retain the comb projected laterally from the head of the brush, and means mounted within the recess and adapted to engage the comb to retain the same drawn within the recess.

812,767. MACHINE FOR MOLDING CEMENT FENCE-POSTS. BENNETT H. MCMILLAN, WILLIAM C. JOHNSON, and FRANK M. COLLORD, Danville, Ill. Filed Mar. 28, 1905. Serial No. 251,475.

Claim.—1. A machine of the character described, employing a mold-bed, a compression member coactive therewith, a core member arranged in said mold-bed; a hole-forming pin effective to sustain said core member within said mold-bed and means equipped with said pin.

2. A machine of the character described, employing a mold-bed, a compression member coactive therewith, a core member arranged within said mold-bed a follower bearing a hole-forming pin effective to sustain said core member centrally in position, and means for actuating said follower.

3. A machine of the character described, employing a mold-bed, a core member, a follower arranged below the latter and provided with hole-forming pins operative in connection with said mold-bed and effective to sustain said core member centrally and out of contact with said mold-bed, and means for actuating said follower.

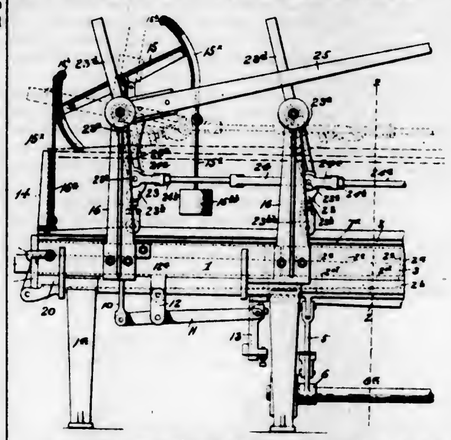

4. A machine of the character described, employing a mold-bed, a compression member coactive therewith, and means for suspending said member in position comprising counterbalanced quadrant-levers, and connections between said levers and member.

5. A machine of the character described, employing a mold-bed, a compression member coactive therewith, means for suspending said compression member comprising counterbalanced quadrant-levers, and means for applying pressure to said member comprising toggle-lever mechanism connected up with said member.

6. A machine of the character described, employing a mold-bed, a compression member coactive therewith, means for suspending in position said member comprising counterbalanced quadrant-levers and connections between said member and said levers, and toggle-lever mechanism for applying pressure to said member.

7. A machine of the character described, employing a mold-bed, a compression member coactive therewith, quadrant-lever mechanism, a connection between said member and levers, and toggle-lever mechanism connected up with said member, and means for actuating said toggle-lever mechanism.

8. A machine of the character described, comprising a mold-bed, a compression or mold member coactive therewith, means for applying pressure to said mold member, lateral mold members coactive with both said mold-bed and compression member, a core for said mold-bed, and a follower equipped with a hole-forming pin effective to sustain said core member in position in said mold-bed and means for actuating said lateral mold members.

9. A machine of the character described, employing a mold-bed, a compression or mold member coactive with said mold-bed, and means for suspending in position said compression member, lever mechanism consisting of a centrally-pivoted lever provided with quadrants at its ends, connection being effected between one quadrant and said compression member, and a counterbalance suspended from the other of said quadrants.

10. A machine of the character described, employing a mold-bed, a core for said mold-bed, a follower equipped with hole-forming pins working in said mold-bed, and having shoulders thereon for supporting said core, or mandrel centrally within said mold-bed, and means for actuating said follower.

11. A machine of the character described, employing a mold bed or body, a core member arranged within the latter, a follower arranged in said mold-bed and equipped with pins effective to support said core member centrally within and out of contact with said mold-bed, counterbalanced foot-levers fulcrumed upon a pivot-rod, and links connected to said foot-levers and said follower.

12. A machine of the character described, employing a semicylindric mold bed or body, an arcuate compression or mold member, guides secured upon said body for said member and lateral mold members fitting upon said mold-bed and having lateral extensions overlying lateral upstanding extensions of said mold-bed, and means for imparting movement to said compression member.

13. A machine of the character described, employing a mold bed or body, and lateral mold members having outward-extending

lateral flanges overhanging lateral upstanding extensions of said bed or body.

14. A machine of the character described, employing a mold bed or body, lateral mold members having outward-extended lateral flanges, and a compression or mold member having its outer lateral portions equipped with stop-nuts adapted to engage said lateral flanges to limit or control the movement of said compression member in one direction.

15. A machine of the character described, employing a mold bed or body, an auxiliary bottom member therefor, an end movable member coactive with said mold-bed and adapted to aid the production of the post formation, lateral mold members resting upon the upper lateral edges of said auxiliary bottom, and a compression member superposing said lateral mold members.

16. A machine of the character described, employing a mold bed or body, a core or mandrel member, means sustaining the latter centrally within the former, comprising a follower having upward-extending pins provided with shoulders upon which rests said core or mandrel, and a collar suitably held in one end of said mold-bed and slipped upon that end of said core or mandrel.

812,768. **MEDICATED TAMPON.** EDMUND M. POND, Rutland, Vt. Filed July 24, 1903. Renewed May 26, 1905. Serial No. 262,461.

Claim.—1. A medicated tampon consisting of a soluble gelatinous capsule having an open inner end, an expansible absorbent material compressed within the capsule, and a medicated soluble gelatinous plug seated in and extending from the open end of the capsule.

2. A medicated tampon consisting of a soluble gelatinous capsule having an open inner end and the other end perforated to permit the passage of a cord, an expansible absorbent filling compressed within the capsule, a cord connected to the filling and extending out through the aperture in the capsule, and a medicated soluble conical plug having its base seated in the open end of the capsule and its body projecting therefrom.

812,769. **MEDICATED TAMPON.** EDMUND M. POND, Rutland, Vt. Filed July 19, 1904. Serial No. 217,272.

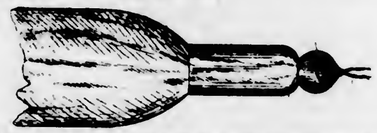

Claim.—1. In a medicated tampon the combination of a soluble casing, a body of medicated material carried thereby, and an expansible fibrous filling for the casing, a portion of the filling protruding from one end of the casing.

2. In a medicated tampon the combination of a soluble casing, a body of medicated material carried thereby in the shape of a plug inserted in one end of the casing, and an expansible fibrous filling for the casing, a portion of the filling protruding from the other end of the casing.

3. In a medicated tampon the combination of a soluble casing, a body of medicated material carried thereby, and expansible fibrous filling for the casing composed of a body of material doubled back upon itself to form a looped portion at one end, said looped portion protruding from one end of the casing, with a withdrawal-string attached to said protruding looped portion.

4. In a medicated tampon the combination of a soluble casing, a plug of soluble medicated material inserted in and filling one end of the casing and protruding therefrom, and a film of cementing material overlapping the adjacent portions of the plug and casing.

5. In a medicated tampon, the combination of a hollow casing of soluble material, entirely open at one end and having a contracted opening at the other end, a body of soluble medicated material adapted to be inserted in and fill the open end of the casing and protrude therefrom, and a fibrous expansible material located in the casing and protruding through the contracted opening at the other end.

6. In a medicated tampon the combination of a soluble casing, a plug of soluble medicated material inserted in and filling one end of the casing and protruding therefrom, and a film of moisture-proof cementing material inclosing the plug and overlapping the adjacent portions of the plug and casing.

7. In a medicated tampon the combination of a soluble casing, a body of medicated material carried thereby in the shape of a plug inserted in one end of the casing, and an expansible fibrous filling for the casing, together with a film of moisture-proof material located between the opposite surfaces of the plug and casing.

812,770. **MEDICATED TAMPON.** EDMUND M. POND, Rutland, Vt. Filed Sept. 12, 1904. Serial No. 224,131.

Claim.—1. A tampon comprising a piece of woven fabric doubled upon itself in folds extending transversely of the axis of the tampon and a body of soluble medicated material together with a casing of soluble material containing said woven fabric and medicated material.

2. A tampon comprising a piece of woven fabric doubled upon itself in folds extending transversely of the axis of the tampon and a body of soluble medicated material together with a casing of soluble material containing said woven fabric and medicated material and a removable cap at one end of the casing.

3. A medicated tampon comprising a closed casing of soluble material consisting of a soluble shell closed at one end and provided with a cap fitting over the other end, a body of medicated material located in one end of said casing in immediate contact with the walls thereof, and a packing of fibrous material occupying the remaining space of such casing.

812,771. **FORK.** WILLIAM A. REDDOCK, Niles, Mich. Filed Apr. 25, 1905. Serial No. 257,238.

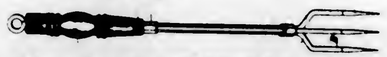

Claim.—1. In a fork the combination of a wire doubled upon itself to form a handle and two tines, an intermediate wire provided with a tine, arranged between and upon the parallel wires, and of greater length than the doubled portion, a ferrule binding the wires at the branching of the tines, a second ferrule binding the wires near the opposite end of the doubled portion, a grip encircling the doubled portion and resting on the ferrule, and a ring bent in the extended portion of the intermediate wire for securing the grip in place.

2. In a fork the combination of a wire doubled upon itself to form a handle and two tines, an intermediate wire having a tine arranged between the parallel wires, and extending beyond the doubled portion, means for securing the wires together, a grip encircling the wires, and a ring in the extended portion of the intermediate wire for retaining the grip upon the wires.

3. In a fork the combination of a wire doubled upon itself to form a handle and two tines, an intermediate wire provided with a tine, arranged between the parallel wires and extending beyond the doubled portion, means for securing the wires together, and a ring in the extended portion of the intermediate wire.

4. In a fork the combination of a wire doubled upon itself to form a handle and two tines, an intermediate wire provided with a tine arranged between the parallel wires and extending beyond the doubled portion, a grip on the handle, and a ring integral with the intermediate wire and beyond the handle.

5. In a fork, the combination of a wire doubled upon itself to form a handle, and two tines, an intermediate wire provided with a tine and arranged between the parallel wires of the doubled portion, means for securing the wires together, a grip mounted on the handle and a ring integral with one of the wires for retaining the grip on the handle.

6. In a fork, the combination of a plurality of wires, each provided with a tine, and uniting to form a handle, a grip on the handle, and a ring integral with one of the wires for retaining the grip on the handle.

7. A fork comprising a plurality of wires, each provided with a tine, a grip mounted around the wires, and a ring integral with one of the wires for retaining the grip upon the wires.

8. A fork comprising a longitudinally-perforated grip, a plurality of wires, each provided with a tine, and passing through the

grip and a ring formed from one of the wires, beyond the grip, to retain said grip in place upon the wires.

9. The combination of a tubular handle, a rod or tang passed through said handle and bent at the upper end of the latter and exterior thereto into ring form, substantially as set forth.

812,772. **WASHING-MACHINE.** STANLEY K. RICE, Concord, Nebr., assignor of one-half to Miner Coats, Concord, Nebr. Filed May 21, 1904. Serial No. 209,004.

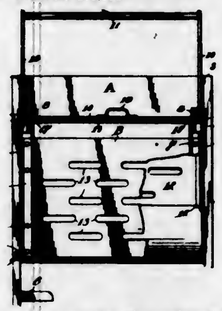

Claim.—In a washing-machine, the combination with a receptacle, of trunnions mounted therein, bearings mounted upon said trunnions, angle-irons secured to said bearings, a rubber supported by and held between the angle-irons, of arms extending upwardly from said bearings and connected together by means of a cross-piece, and of presser-boards secured to the interior of said receptacle.

812,773. **TELEGRAPH INSTRUMENT.** CARL J. SCHWARZE, Adrian, Mich., assignor to Schwarze Electric Company, Adrian, Mich., a Corporation of Michigan. Filed May 21, 1904. Serial No. 210,476.

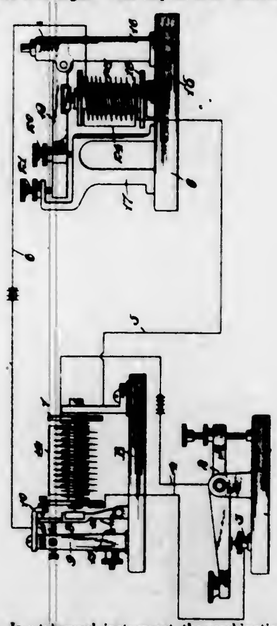

Claim.—1. In a telegraph instrument, the combination of an armature-actuating energizing-coil, and a closed secondary inductively related to said energizing-coil.

2. A telegraph instrument provided with an induction device on the armature-actuating electromagnet of the instrument so that changes in the magnetic intensity of said magnet have an inductive effect on said inductive device, substantially as described.

3. A telegraph instrument having an electromagnet and armature actuated thereby and also having a closed induction-coil inductively related to said electromagnet, substantially as described.

4. A telegraph instrument having an electromagnet provided with a closed induction-conductor in combination with an armature actuated by said magnet, substantially as described.

5. A telegraph instrument comprising an electromagnet, a vibratory armature therefor, spring means controlling said armature and holding the same normally retracted, a stop against which said armature is normally held, and a closed induction-coil on said electromagnet, substantially as described.

6. A telegraph instrument having its armature-actuating electromagnets provided with closed induction-coils, substantially as described.

812,774. **ROCK-DRILL.** CLARK J. SMITH, Ottumwa, Iowa, assignor to The Hardscog Wonder Drill Company, Ottumwa, Iowa. Original application filed Aug. 12, 1905, Serial No. 273,930. Divided and this application filed Sept. 2, 1905. Serial No. 276,576.

Claim.—1. In an apparatus of the class described, the combination with a drill-casing and a drill carried thereby, of a clamp for receiving said drill-casing, said clamp including means whereby the drill-casing can be swung clear of the drill and back again without changing the alinement of the drill-casing substantially as shown and described.

2. An apparatus of the class described, comprising in combination with a drilling-engine and a drill detachably held therein, of a support for said engine comprising a hinged clamp member whereby the drilling-engine can be swung clear of the drill, substantially as shown and described.

3. A holder for rock-drills and the like comprising a receiving-clamp, a bearing member for receiving said clamp, and means carried by the clamp for engaging the bearing member to prevent the clamp being swung out of alinement with the drilled aperture in one direction.

4. An apparatus of the class described, comprising in combination with a rock-drilling mechanism, of a supporting-clamp adjustably secured thereto, a bearing member to which said clamp is pivotally connected to be swung on its pivot-axis in one direction substantially as shown and described.

5. An apparatus of the class described, the combination with the drilling mechanism, of a clamp for receiving the same, said clamp having a wing provided with a heel, a bearing member for receiving said wing to which it is pivotally secured, a double clamp for receiving said bearing member, a supporting-rod for receiving said double clamp, a second clamp on said supporting-rod and a second supporting-rod for receiving said second clamp substantially as shown and described.

6. An apparatus of the class described, comprising in combination with a drilling mechanism, of a clamp for receiving the same, said clamp having a wing provided with a heel, a bearing member for receiving said wing to which it is pivotally secured.

7. An apparatus of the class described, comprising in combination with a drilling mechanism, and a drill carried thereby, of a supporting member therefor, said supporting member comprising a body portion having a pair of parallel ears and a stud portion, a clamp having a heeled wing held between the ears of the body portion, and pivotally connected thereto with its heel adapted to engage the body portion, said clamp adapted to receive the drilling mechanism substantially as shown and for the purposes described.

8. An apparatus of the class described, comprising a rock-drill, a clamp for mounting said rock-drill in alinement with the aperture to be drilled, said clamp having means whereby said rock-drill may be swung in a direction at right angles to its longitudinal axis to

move the same out of alinement with the drilled aperture, substan-

transverse grooves adapted to form continuations of the annular

3. That improvement in the art of treating cereals which con-

por with air, passing the mixture over heated copper oxid, and sub-

move the same out of alinement with the drilled aperture, substantially as shown and described.

9. A supporting mechanism for rock-drills comprising in combination with a supporting-arm, and a double clamp member secured thereto, of a supplemental supporting member held by said double clamp member and consisting of a clamp-engaging portion and a drilling-machine-receiving portion pivotally connected together, the drilling-machine-receiving portion adapted to be swung on its pivot-axis, and means for limiting said movement, substantially as shown and described.

812,775. VEHICLE HUB AND SPINDLE. SAMUEL STERLING, Chickasawba, Ark., assignor of one-half to D. D. Hodges, Paragould, Ark. Filed May 26, 1905. Serial No. 263,485.

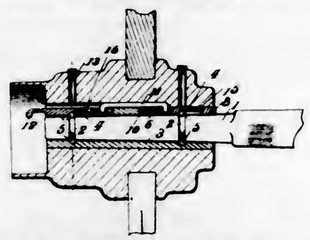

Claim.—1. In combination, a spindle having an annular groove, an axle-box provided with a mating annular groove, balls fitted into the space formed by means of the mating grooves to reduce friction and form interlocking means to retain the parts in coöperative position, and a slide provided with an opening for the entrance and the exit of the balls and adapted to confine said balls.

2. In a device of the character described, the combination of a spindle having an annular groove therein, an axle-box having a corresponding annular groove in its inner surface and having a slot extending inward from an end part past the annular groove, balls in the spaces formed by the two grooves, and a slide operating in said slot and having a transverse groove adapted to form a continuation of the annular groove in the axle-box and also having an opening for the insertion of balls when the slide is so placed that the opening therein is opposite the annular groove in the spindle.

3. In a device of the character described, the combination of a spindle having an annular groove therein, an axle-box having a corresponding groove in its inner surface and having a slot extending inward from an end and past the annular groove, balls in the spaces formed by the two grooves, a slide operating in said slot and having a transverse groove adapted to form a continuation of the annular groove in the axle-box, and also having an opening for the insertion of the ball when the slide is so placed that said opening is opposite the annular groove in the spindle, and a hub having an opening therein to coöperate with the opening in the side for the removal and insertion of the balls.

4. In a device of the character described, the combination of a spindle having an annular groove therein, an axle-box having a corresponding annular groove in its inner surface and having a slot extending inward from an end part past the annular groove, balls in the spaces formed by the two grooves, and a slide operating in said slot and having a transverse groove adapted to form a continuation of the annular groove in the axle-box and having an opening for the insertion of the balls when the slide is so placed that said opening is opposite the annular groove in the spindle, and also having a handle attached thereto for convenience of operation.

5. In a device of the character described, the combination of a spindle having a plurality of annular grooves therein, an axle-box having corresponding annular grooves in its inner surface and having a slot extending inward from each end, balls in the spaces formed by the grooves, slides operating in said slots and having transverse grooves adapted to form continuations of the annular grooves in the axle-boxes and also having openings for the insertion of the balls when the slides are so placed that said openings are opposite the annular grooves in the spindle, and means for connecting the slides so that they can be operated in unison.

6. In a device of the character described, the combination of a spindle having a plurality of annular grooves therein, an axle-box having corresponding annular grooves in its inner surface and having a slot extending inward from each end, balls in the spaces formed by the grooves, slides operating in said slots and having transverse grooves adapted to form continuations of the annular grooves in the axle-boxes and also having openings for the insertion of the balls when the slides are so placed that said openings are opposite the annular grooves in the spindle, and a rod connecting the two slides so that they can be operated in unison.

7. In a device of the character described, the combination of a spindle having a plurality of annular grooves therein, an axle-box having corresponding annular grooves in its inner surface and having a slot extending inward from each end, balls in the spaces formed by the grooves, slides operating in said slots and having transverse grooves adapted to form continuations of the annular grooves in the axle-boxes and also having openings for the insertion of the balls when the slides are so placed that said openings are opposite the annular grooves in the spindle, means for connecting the slides so that they can be operated in unison, and a hub having openings therein to coöperate with the openings in the slides for the removal and insertion of the balls.

812,776. AUTOMATIC FIRE-ALARM. ALFRED TAYLOR, Victoria, Canada, assignor of one-half to Thomas Henderson Horne, Victoria, Canada. Filed May 13, 1905. Serial No. 260,327.

Claim.—1. In an automatic fire-alarm; the combination with the terminals of an electric-bell circuit, of means for establishing a connection between the terminals and closing a circuit such means comprising, a shallow hermetically-sealed chamber having ends which are edge-bound and normally inwardly convex but susceptible of being outwardly bulged by pressure within the chamber, means for supporting such chamber adjacent to the terminals so that when one or other or both of the ends are outwardly bulged the adjacent end will electrically connect the terminals, and means for positively and normally holding such connecting means off both of the terminals.

2. In an automatic fire-alarm; the combination with the terminals of an electric-bell circuit, of a non-conducting base through which the terminals outwardly and fixedly project, of an open casing adjustably secured to the base, of a shallow hermetically-sealed chamber between the base and the end of the casing, the ends of which chamber are edge-bound and normally inwardly convex, but outwardly extensible under internal pressure to contact with and bridge between the terminals and close the bell-circuit, and means for normally holding such bridging means off the terminals.

3. In an automatic fire-alarm; the combination with the terminals of an electric-bell circuit, of a base of non-conducting material through which the terminals are carried, such base having a screw-thread receiving a casing designed to retain between the end of the casing and the terminals a shallow hermetically-sealed chamber the ends of which are edge-bound and normally inwardly convex, but susceptible of being outwardly bulged to contact with the exposed terminals of the circuit, of means for normally holding the adjacent end of the chamber off the terminals and means for securing the casing in any desired position of adjustment from the non-conducting base.

4. In an automatic fire-alarm, the combination with an insulating-base having screw-receiving apertures to secure the same to a support and having a central countersunk portion, of an open frame connected with said base and supported thereby, an expandible sealed vessel held within said open frame below the base, a coil-spring seated in said countersunk portion of the base for engaging the sealed vessel, a pair of electric terminals carried by said base, said spring serving to normally hold said sealed vessel out of contact with said terminals and a push-button carried by the open frame and in engagement with said vessel by means of which the vessel can be pushed up into engagement with the electric terminals, substantially as shown and described.

812,777. ART OF TREATING FLOUR. ERNEST R. WHEELER, Indianapolis, Ind. Filed Apr. 20, 1905. Serial No. 256,586.

Claim.—1. That improvement in the art of treating cereals which consists in subjecting the same to the action of the gas resulting from the decomposition of ammonia in the presence of oxygen.

2. That improvement in the art of treating cereals which consists in subjecting the same to the action of the gas resulting from the decomposition of ammonia in the presence of an oxidizing agent.

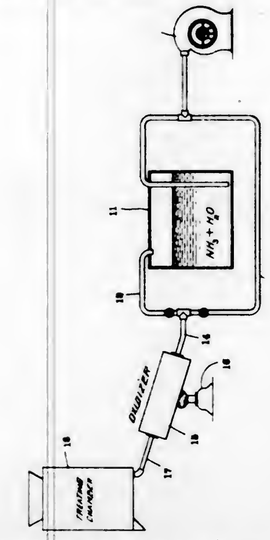

3. That improvement in the art of treating cereals which consists in passing ammonia over a heated metallic substance capable of yielding oxygen, and subjecting the cereal to the action of the resulting gas.

4. That improvement in the art of treating cereals which consists in passing ammonia over a heated metallic oxid and subjecting the cereal to the action of the resulting gas.

5. That improvement in the art of treating cereals which consists in subjecting the same to the action of the gas resulting from passing ammonia over a heated metallic oxid.

6. That improvement in the art of treating cereals which consists in subjecting the same to the action of the gas resulting from passing ammonia over a heated metallic substance capable of yielding oxygen.

7. That improvement in the art of treating cereals which consists in subjecting the same to the action of the gas resulting from passing ammonia over a heated substance capable of yielding oxygen.

8. That improvement in the art of treating cereals which consists in subjecting the same to the action of the gas resulting from passing ammonia over heated copper oxid.

9. That improvement in the art of treating cereals which consists in passing ammonia over heated copper oxid and subjecting the cereal to the resultant gas.

10. That improvement in the art of treating cereals which consists in subjecting the same to the gas resulting from the mixture of air and the gas resulting from the passage of an air-current laden with vapor of aqua-ammonia over a heated metallic oxid.

11. That improvement in the art of treating cereals which consists in subjecting the same to the gas resulting from the mixture of air and the gas resulting from the passage of an air-current laden with vapor of aqua-ammonia over a metallic substance capable of yielding oxygen.

12. That improvement in the art of treating cereals which consists in forcing air through aqua-ammonia, mixing the resultant vapor with air, passing the mixture over a heated metallic oxid and subjecting the cereal to the action of the resultant gas.

13. That improvement in the art of treating cereals which consists in forcing air through aqua-ammonia, mixing the resultant vapor with air, passing the mixture over a heated metallic substance capable of yielding oxygen, and subjecting the cereal to the action of the resultant gas.

14. That improvement in the art of treating cereals which consists in forcing air through aqua-ammonia, mixing the resulting vapor with air, passing the mixture over heated copper oxid, and subjecting the cereal to the action of the resulting gas.

15. That improvement in the art of treating cereals which consists in subjecting the same to the action of the gas resulting in passing ammonia over a substance capable of yielding oxygen thereto in condition to react thereon.

16. That improvement in the art of treating cereals which consists in subjecting the same to the gas resulting from the mixture of air and the gas resulting from the passage of an air-current laden with gaseous ammonia over a substance capable of yielding oxygen thereto in condition to react thereon.

812,778. AUTOMATIC VENDING-MACHINE. ALBERT E. WYATT, Hoboken, N. J., assignor to The Great American Automatic Vending Machine Company, Hoboken, N. J., a Corporation of New Jersey. Filed June 17, 1905. Serial No. 265,868.

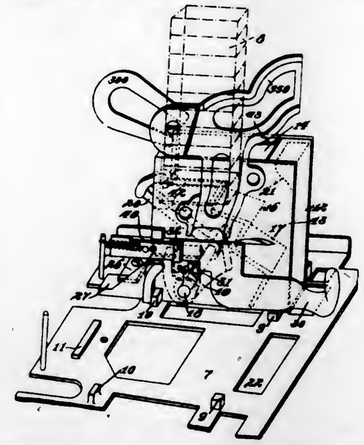

Claim.—In a coin-controlled apparatus, the combination with a pull-bar having a lug provided with a forwardly-facing abutment, of a shaft, an ejector mounted thereon, a plate mounted on the shaft carrying a rearwardly-facing abutment the space between said oppositely-facing abutments being normally wider than the diameter of the coin which it is intended the apparatus shall be operated with, means for retracting the pull-bar, an abutment on the said plate located at the rear of said lug on the pull-bar for retracting the ejector, a lug for limiting the rearward position of the rearwardly-facing abutment on said plate and for supporting a coin between said coin-engaging abutments and for engaging and ejecting the coin upon the retraction of the parts.

812,779. WIRE-BENDING MACHINE. RAYMOND B. ACKLEY, Rockford, Ill., assignor of one-half to Albert B. Hix, Kingston, Ill. Filed Aug. 12, 1905. Serial No. 273,894.

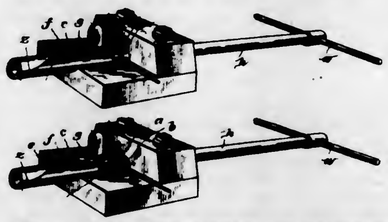

Claim.—1. In mechanism for bending wire, the combination with a rod having a mandrel extension from an annular shoulder, of a gage, and a tubular guide having an axial extension provided with a longitudinal opening having a cam-margin and terminating in a discharge-slot, substantially as specified.

2. In mechanism for bending wire, the combination with a rod having a mandrel extension from a shoulder, and means for making

an initial bend in the wire, of a gage or stop, and a tubular guide hav-

3. In a rail-joint, the rail splice-bar having a longitudinal groove

an initial bend in the wire, of a gage or stop, and a tubular guide having a cam extension terminating in a discharge-slot, substantially as specified.

3. In mechanism for bending wire, the combination with a rod having a mandrel extension and means for making an initial bend in the wire, of a gage or stop, a tubular guide having a cam extension terminating in a discharge-slot, and means for giving motion of reciprocation, substantially as specified.

4. In mechanism for bending wire, the combination with a rod having a mandrel extension provided with a flattened cam extension, of a gage or stop, and a tubular guide having a longitudinal opening provided with a cam-margin and terminating in a discharge-slot, substantially as specified.

812,780. **FEED MECHANISM FOR STAMP-CANCELING AND POSTMARKING MACHINES.** FREDRIK BJURSTRÖM, New York, N. Y. Original application filed July 8, 1904, Serial No. 215,834. Divided and this application filed Jan. 19, 1905. Serial No. 241,736.

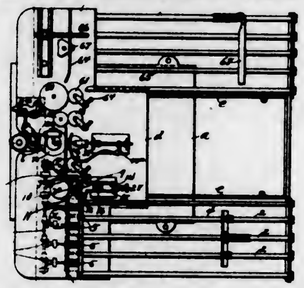

Claim.—1. The combination with upright canceling and stamping rolls, of upright side feedway-rolls, horizontal edge feeding-rolls, reversely-operating retarding side roll, controlling-stop, pusher adapted for releasing the letters singly from said stop, and means for operating said rolls and pusher.

2. The combination with canceling and stamping rolls, feed-rolls thereto and discharge-rolls therefrom, of the reversely-operating retarding-roll of the feed-train, means for automatic adjustment of said retarding-roll relatively to its companion roll, and means for operating the several rolls, a controlling-stop, and a pusher.

3. In a system of letter-feeding rolls, the combination with the feedway for the letters in mass, and with the canceling and marking dies, of a pair of rolls comprising a direct-acting, and a reversely-acting roll, and means for driving said rolls, of a controlling-stop, pusher for releasing the letters from said stop and means for operating said pusher through the instrumentality of the roll-driving means.

4. In a system of letter-feeding rolls, the combination with the feedway for the letters in mass and with the canceling and marking dies, of a pair of rolls comprising a direct-acting and a reversely-acting roll, of a controlling-stop, pusher for releasing the letters from said stop, and means for operating said pusher consisting of the pusher-carrying slide, roll-carrying shaft and the crank-pin of said shaft operating the pusher.

5. In a system of letter-feeding rolls, the combination with the feedway and the canceling and marking dies, of a pair of rolls, an adjustable bearing for one of said rolls, and adjustable support for said bearing, spring for closing said rolls, and a temper-screw for regulating such closure.

812,781. **ELECTRICALLY-CONDUCTIVE RAIL-JOINT AND BOND THEREFOR.** BANCROFT G. BRAHER, New York, N. Y., assignor, by mesne assignments, to The Rail Joint Company, a Corporation of New York. Filed Apr. 11, 1904. Serial No. 202,511.

Claim.—1. The combination with the rails and splice-bar, the latter having grooves with opposite undercut walls, of conductive plates inserted in said grooves, and projecting at their opposite edges against the undercut side walls, substantially as set forth.

2. The combination with the grooved rails and grooved splice-bars, the grooves of the rails and connecting-plates having convex bottoms and undercut side walls, of plates arranged in said grooves and facing one another, the said plates when pressed into place being thin at the centers of the convexities and thicker at the side walls, substantially as set forth.

3. In a rail-joint, the rail splice-bar having a longitudinal groove therein which has a convex bottom and undercut side walls, substantially as set forth.

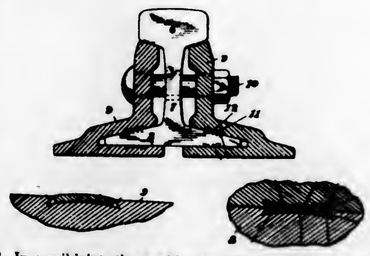

4. In a rail-joint, the combination with a rail having a base-flange, of splice-bars having bearings against said flange, said splice-bars having grooves which are provided with centrally-convex bottoms and undercut side walls, and electrically-conductive plates arranged in said grooves and extending over the said convex bottoms from one undercut side wall to the opposite undercut side wall.

5. In a rail-joint the combination with a rail having a base-flange, of splice-bars having bearings against said base-flange, said splice-bars having a longitudinal groove which is provided with undercut side walls adapted to receive and hold projecting electrically conductive plates.

812,782. **TYPE-WRITING MACHINE.** BYRON A. BROOKS, Brooklyn, N. Y., assignor to Union Typewriter Company, Jersey City, N. J., a Corporation of New Jersey. Original application filed Jan. 28, 1899, Serial No. 703,642. Divided and this application filed Feb. 20, 1900. Serial No. 5,901.

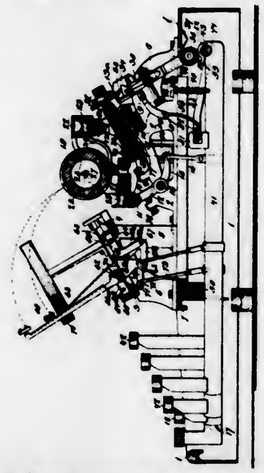

Claim.—1. The combination of an endwise-movable carriage, a platen mounted thereon, and movable transversely to the line of travel and obliquely to the horizontal plane of the machine, means for at will so moving the platen transversely, a series of pivoted horizontally-disposed key-levers extending under the carriage and to the front of the machine, a series of type-bars pivoted in front of the platen below the horizontal plane thereof and each of which swings on a single pivotal center, and normally inclined away from the platen toward the front of the machine, a segment arranged obliquely to a horizontal plane and on which said type-bars are pivoted, two or more characters rigidly secured to each type-bar and operative connections between each type-bar and its corresponding key-lever.

2. The combination of a platen, movable endwise and transversely in a plane oblique to the horizontal plane of the machine, means for at will moving the platen obliquely, transversely, a series of type-bars pivoted in front of the platen and each swinging on a

single pivotal center and having more than one character thereon, a segment arranged obliquely to a horizontal plane and on which said type-bars are pivoted, a series of horizontally-disposed key-levers pivoted at the rear of the machine and extending forward under the platen and type-bars, and operative connections between each key-lever and its corresponding type-bar.

3. In a type-writing machine, the combination of type-bars each provided with a plurality of type projecting rearwardly when the type-bar is in the normal position, said type-bars being pivoted in an arc oblique to the horizontal and each type-bar swinging on a single pivotal center and striking rearwardly and downwardly, a platen arranged with its printing-point between the top and the front thereof, and a platen-carriage arranged to vibrate in a line parallel with the type on the type-bars at the point of impression.

4. In a type-writing machine, the combination of a platen-carriage, a guide-rail upon which said platen-carriage is hinged; a second rail upon which said carriage is independently hinged, said carriage being constructed and arranged to travel along upon said rails, links or arms connected to said rails and pivoted upon the frame of the machine, a shifting key-lever, and a connection between said lever and said rails for vibrating the latter to shift the platen in a line with the types at the point of impression, at any portion of the endwise travel of the carriage along said rails.

5. In a type-writing machine, the combination of a platen, type-bars provided with a plurality of type and pivoted in front of and below the level of the printing-point at the upper front side of the platen and the plane of the type-faces on a type-bar when the type are at the impression-point being oblique to the horizontal, parallel guide or track rails for the platen-carrier arranged in a plane oblique to the horizontal, rock-shafts and arms supporting said track-rails, said rock-shafts being arranged in a plane oblique to the horizontal and all said planes being parallel or substantially parallel to each other, and means for rocking one of said rock-shafts to vibrate the platen into positions for coaction with said type upon the type-bars.

6. In a type-writing machine, the combination of a front guide-rail at one level, a rear guide-rail at a higher level, a platen having the printing-point at its upper front side, a platen-carriage traveling on said guide-rails, type-bars provided with a plurality of type and pivoted in an arc or arcs parallel or substantially parallel with the plane of said guide-rails and striking rearwardly and downwardly, and mechanism for shifting said carriage-guide rails and platen-carriage in or substantially in the direction of the plane of said type when they are at the impression-point.

7. In a type-writing machine, the combination of type-bars provided with a plurality of type and pivoted in an arc or arcs oblique to the horizontal and striking rearwardly and downwardly, a platen arranged with its printing-point between the top and the front thereof, a power-driven platen-carriage arranged to vibrate in a line parallel or substantially parallel with the plane of the type on the type-bars when at the point of impression, a rack-bar connected with the carriage and having its plane at right angles to the direction of shift of said carriage, an oblique shaft on the main frame, a pinion on said shaft engaging with said rack-bar, an escapement for controlling said shaft, finger-keys, and connections between said keys and type-bars and said escapement.

8. In a type-writing machine, the combination of a platen arranged with its printing-point between the top and the front thereof, a power-driven platen-carriage arranged to vibrate in a direction oblique to the horizontal, a rack-bar connected with said platen-carriage and having its plane at or substantially at right angles to the direction of vibration of said carriage, a shaft journaled in the main framework and having a gear-wheel engaging with said rack, an escapement for controlling said shaft, and key-operated type mechanism having type adapted to coact with the platen in the normal and the shifted positions thereof.

9. In a type-writing machine, the combination of a horizontally-traveling platen-carriage, parallel front and rear guide-rails therefor, two pairs of obliquely-arranged arms connected to said guide-rails, at their upper ends and pivotally mounted at their lower ends, means for swinging said pairs of arms and said guide-rails, and thus shifting the carriage and platen, and type-bars provided each with a plurality of types and pivotally mounted so as to strike the platen at a common center at a point between its frontmost side and its topmost side.

10. In a type-writing machine, the combination of a platen, a series of pivoted type-bars each provided with a plurality of types rigidly secured thereto, said type-bars being pivoted in an arc which lies in an oblique plane, and being constructed and arranged to strike between the top and front of the platen, a shift-key, and connections between said shift-key and said platen constructed and arranged to enable the platen to shift obliquely and in a plane coincident with or parallel to the oblique plane in which the type-bar pivots are situated.

11. The combination of the platen movable endwise and also transversely in a plane oblique to the horizontal plane of the machine, means for at will moving the platen transversely, a series of type-bars pivoted in front of the platen, the pivots of the type-bars being situated in one or more planes oblique to a horizontal plane and each type-bar having more than one character thereon, a series of horizontally-disposed key-levers pivoted at the rear of the machine and extending forward under the platen and type-bars, and a series of angular levers or bell-cranks pivoted below the type-bars and each operatively connecting a key-lever with its corresponding type-bar.

12. The combination of an endwise-movable carriage, a platen mounted thereon and movable transversely to the line of travel and in a direction inclined to a horizontal plane, means for at will so moving the platen transversely, a series of pivoted horizontally-disposed key-levers extending under the carriage and to the front of the machine, a series of type-bars pivoted in front of the platen below the horizontal plane thereof and each of which swings on a single pivotal center, and normally inclined away from the platen toward the front of the machine, a segment arranged obliquely to a horizontal plane and on which said type-bars are pivoted, two or more characters rigidly secured to each type-bar and operative connections between each type-bar and its corresponding key-lever.

13. The combination of a platen traveling endwise and movable upon pivoted parallel link connections upwardly and rearwardly in a plane oblique to the horizontal plane of the machine, means for at will so moving the platen obliquely and permitting its return by gravity, a series of type-bars pivoted in front of and normally inclined away from the platen, a series of key-levers pivoted in rear of and extending forward under the type-bar pivots, and operative connections between the key-levers and type-bars.

14. The combination of an endwise-movable platen mounted to be shifted transversely in a plane oplique to the horizontal plane of the machine, a series of pivoted type-bars each having more than one character thereon, in front of the platen and normally lying inclined toward the front of the machine and arranged to strike downwardly upon the upper front quarter of the platen, a series of key-levers pivoted in rear of the type-bar pivots, a series of levers interposed between the type-bars and key-levers and operative connections between the interposed levers, key-levers and type-bars.

15. In a type-writing machine, the combination of a platen, a series of pivoted type-bars each provided with a plurality of types rigidly secured thereto, said type-bars being pivoted in an arc on a support which lies in an oblique plane, and being constructed and arranged to strike between the top and front of the platen, a shift-key and connections between said shift-key and one of said platen and type-bar support members constructed and arranged to shift such member obliquely and in a plane coincident with or parallel to the oblique plane in which the type-bar pivots are situated.

16. The combination of an endwise-movable carriage, a platen mounted thereon, and movable transversely to the line of travel and obliquely to the horizontal plane of the machine, means for at will so moving the platen transversely, a series of pivoted horizontally-disposed key-levers extending under the carriage and to the front of the machine, a series of type-bars pivoted in front of the platen below the horizontal plane thereof and each of which swings on a single pivotal center, and normally inclined away from the platen toward the front of the machine, a support arranged obliquely to a horizontal plane and on which said type-bars are pivoted, two or more characters rigidly secured to each type-bar and operative connections between each type-bar and its corresponding key-lever.

17. The combination of an endwise-movable carriage, a platen mounted thereon and movable transversely to the line of travel and in a direction inclined to a horizontal plane, means for at will so moving the platen transversely, a series of pivoted horizontally-disposed key-levers extending under the carriage and to the front of the machine, a series of type-bars pivoted in front of the platen below the horizontal plane thereof and each of which swings on a single pivotal center, and normally inclined away from the platen toward the front of the machine, a support arranged obliquely to a horizontal plane and on which said type-bars are pivoted, two or more characters rigidly secured to each type-bar and operative connections between each type-bar and its corresponding key-lever.

18. In a type-writing machine, the combination of a platen, a series of pivoted type-bars each provided with a plurality of types

rigidly secured thereto, said type-bars pivoted in an arc which lies

connected at one end to said crank-arm; a pin-and-slot connection

rigidly secured thereto, said type-bars pivoted in an arc which lies in a plane oblique to the horizontal plane of the machine, and being constructed and arranged to strike between the top and front of the platen, a shift-key, and connections between said shift-key and said platen constructed and arranged to enable the platen to shift obliquely and in a plane parallel to the oblique plane in which the type-bar pivots are situated.

812,783. CAR-DOOR-OPERATING MECHANISM. ARGYLE CAMPBELL, Chicago, Ill., assignor to The Enterprise Railway Equipment Company, Chicago, Ill., a Corporation of Illinois. Filed Dec. 2, 1905. Serial No. 290,096.

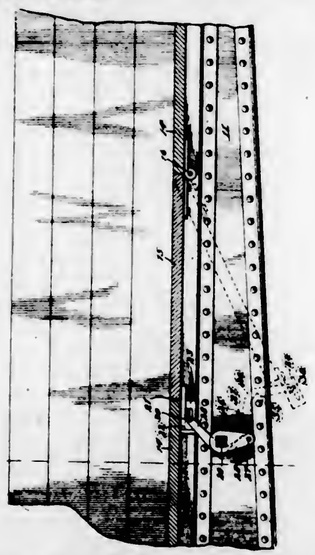

Claim.—1. In mechanism of the class described, in combination with a suitable supporting-frame; a hinged car-door to be moved between closed and open positions; a shaft pivotally mounted adjacent to, but clear of, the line of travel of the front edge of the door; a crank-arm on said shaft and a connecting-rod of greater length than the crank-arm connected at one end to the crank-arm and at the other end to the door; and a pin or roller carried by one of the members of the mechanism sliding in a slot in an adjacent member of the mechanism, whereby the shaft may be rotated between two different positions to open and close the door, as described.

2. In mechanism of the class described, in combination with a suitable supporting-frame; a hinged car-door to be moved between closed and open positions; a shaft pivotally mounted adjacent to, but clear of, the line of travel of the front edge of the door; a crank-arm on said shaft and a connecting-rod of greater length than the crank-arm connected at one end to the crank-arm and at the other end to the door; a pin or roller carried by one of the members of the mechanism sliding in a slot in an adjacent member of the mechanism, whereby the shaft may be rotated between two different positions to open and close the door; means for rotating said shaft; and means for locking the same in closed position.

3. In mechanism of the class described, in combination with suitable supporting mechanism, and a hinged car-door to be opened and closed; a shaft mounted approximately parallel to the axis of the hinge of the door adjacent to, and clear of, the swinging front edge of the door; a crank-arm upon said shaft; a connecting-rod pivotally connected at one end to said crank-arm, and a pin-and-slot connection between the opposite end of the crank-arm and the door, whereby the shaft may be rotated between two different positions to open and close the door.

4. In mechanism of the class described, in combination with suitable supporting mechanism, and a hinged car-door to be opened and closed; a shaft mounted approximately parallel to the axis of the hinge of the door, adjacent to and clear of the swinging front edge of the door; a crank-arm upon said shaft; a connecting-rod pivotally connected at one end to said crank-arm; a pin-and-slot connection between the opposite end of the crank-arm and the door, whereby the shaft may be rotated between two different positions to open and close the door; and mechanism for operating the shaft and for locking the shaft with the door in closed position.

5. In mechanism of the class described, in combination with a suitable supporting-frame and a hinged door to be opened and closed; a shaft parallel to the axis of the hinge of the door mounted clear of but adjacent to the path of travel of the front edge of the door and in a line approximately perpendicular to the plane of the door when the door is closed; a crank-arm on said shaft normally extending away from the door, a connecting-rod having one end pivotally mounted on said crank-arm, extending toward the door past the shaft on its side away from the hinge of the door, and a pin-and-slot connection between the second end of the connecting-rod and the door.

6. In mechanism of the class described, in combination with a suitable supporting-frame and a hinged door to be opened and closed; a shaft parallel to the axis of the hinge of the door, mounted clear of but adjacent to the path of travel of the front edge of the door; mechanism for rotating the shaft and for locking it in desired position; a crank-arm on said shaft normally extending away from the door; a connecting-rod having one end pivotally mounted on said crank-arm, extending toward the door past the shaft on its side away from the hinge of the door to a point in which its second end of the connecting-rod is in approximately the same plane perpendicular to the door as the crank-pin on its lower end, and a pin-and-slot connection between the second end of the connecting-rod and the door, whereby as said shaft is rotated said door is opened and closed, as described.

7. In a car, in combination with the underframe and a normally level pivoted floor-door, adapted to be opened and closed to discharge the load, a shaft mounted below the floor of the car adjacent to the path of travel of the edge of the floor-door for rotating said shaft; means for locking said shaft in a desired position; a normally downwardly-extending crank-arm on said shaft; and a connecting-rod of greater length than said crank-arm pivotally mounted at one end upon said crank-arm, extending toward the door on the side of the shaft away from the hinge of the door, and having its opposite end pivotally connected to the door, there being a slidable connection between two adjacent members of the mechanism whereby rotating the shaft between two different positions opens and closes the door, as described.

8. In a car, in combination with a suitable underframe, and a car-floor having doors therein adapted to swing down to discharge load; a shaft journaled below the floor of the car adjacent to the swinging edge of the door; a crank-arm normally depending from said shaft; a connecting-rod of greater length than the crank-arm pivotally connected to the crank-arm, extending past the shaft on the side away from the hinge of the door toward the door to a position in which the upper end of the crank-arm and the pivot on its lower end are normally in approximately a vertical line; a pin upon the upper end of said crank-arm adapted to travel in slot upon the floor-door; and mechanism for rotating said shaft and for locking it in the desired position.

9. In mechanism of the class described, in combination with a suitable supporting-frame and a door to be opened and closed; a crank-arm pivoted adjacent to the path of travel of the edge of the door; means for rotating said crank-arm and for securing it in desired position; a connecting-rod pivotally connected to the crank-arm and connected by pin-and-slot connection to the door, the whole being so arranged that by rotating the shaft to one position the door may be closed, and that by rotating the shaft to another position the door swings past the pivot of the crank-arm and is given a wide opening due to the connecting-rod and crank-arm being in approximately a straight line, as described.

812,784. BAND-CUTTER. HARRY C. CLAY and MARSHAL T. REEVES, Columbus, Ind., assignors to Reeves & Company, Columbus, Ind., a Corporation of Indiana. Filed Jan. 5, 1905. Serial No. 239,826.

Claim.—1. The combination, with a shaft and spacing-sleeves carried thereby, of a boss carried by one of said sleeves and extending axially into a socket formed in the adjacent sleeve, the said boss having one transverse dimension of less magnitude than a parallel dimension at greater distance from the axis, a knife having an open notch formed in one edge thereof and fitting said boss, the said open socket being of less width at its open end than the width farther in, whereby the knife when applied to the boss may not be transversely withdrawn, and means for clamping the sleeves together upon the knife.

2. The combination, with a shaft, of a knife having an open notch formed in one edge, said notch having a transverse dimension near its open end less than a parallel dimension near the inner end of the notch, means carried by the shaft for entering and fitting said notch, spacing-sleeves mounted on the shaft, and means for clamping the sleeves together upon the knife.

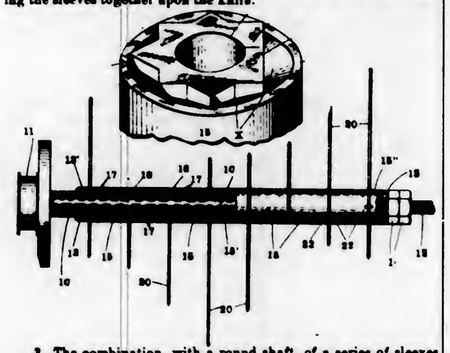

3. The combination, with a round shaft, of a series of sleeves freely rotatably thereon, each sleeve being provided at one end with a non-cylindrical boss and at the other end with a socket adapted to receive the boss of the adjacent sleeve, a collar secured to the shaft and adapted to coact with the adjacent sleeve, the said sleeves being provided on their adjacent ends with annular clamping-surfaces between which knives may be clamped, a series of knives each provided in its back edge with an open notch adapted to receive the boss of a sleeve, said notch and boss fitting and the notch having a transverse dimension near its open end less than a parallel dimension near the inner end, thus being of such character as to prevent transverse withdrawal of the knife when in position, and means for clamping the several sleeves together on the shaft.

4. In a cutter structure, a knife-holding sleeve consisting of a bored main body having a boss at one end and at the other end a corresponding socket adapted to receive the boss of an adjacent sleeve, said sleeve being provided at each end with a trued annular surface at an angle to the axis of the sleeve, and a cutter-blade clamped between the trued surfaces of adjacent sleeves so as to rotate therewith.

5. In a cutter structure, a knife-holding sleeve consisting of a bored main body having a boss at one end and at the other end a corresponding socket adapted to receive the boss of an adjacent sleeve, said sleeve being provided at each end with a trued annular surface at an angle to the axis of the sleeve, and having a cupped portion between said trued annulus and the boss, and a cutter-blade clamped between the trued surfaces of adjacent sleeves so as to rotate therewith.

6. In a cutter structure, a knife-holding sleeve consisting of a bored main body having at one end a non-cylindrical boss and at the other end a corresponding socket adapted to receive the boss of an adjacent sleeve, said sleeve being provided with an external marking means to indicate its proper relationship to the adjacent sleeves.

7. A knife for a cutter structure having a notch cut in its rear edge, the open end of said notch being of less width than other portions of the notch.

8. A knife for a cutter structure having a notch cut in its rear edge, the open end of said notch being of less width than other portions of the notch and both the tip and the heel of the cutter adjacent the notch being sharpened.

812,785. PROCESS OF SMELTING AND CONVERTING ORES. ARTHUR M. DAY, Butte, Mont. Original application filed Oct. 20, 1904, Serial No. 229,068. Divided and this application filed Apr. 19, 1905. Serial No. 256,494.

Claim.—1. The process of smelting ore consisting in covering a charge of the ore with a molten substance containing sufficient heat to start fusion of the charge, and supplying air to the charge at or near the varying melting-level as fusion progresses downward, substantially as described.

2. The process of smelting ore consisting in covering a charge of the ore with a molten substance containing sufficient heat to start fusion of the ore, and injecting fuel in a fluent form with air into the charge at or near the melting zone or level below the molten covering as fusion progresses downward, substantially as described.

3. The process of smelting ore consisting in applying heat to the top of the charge, forcing air into the charge and simultaneously injecting into the charge at or near the melting-level as fusion progresses downward, fluent material with an auxiliary air-blast separate from the main air-blast, substantially as described.

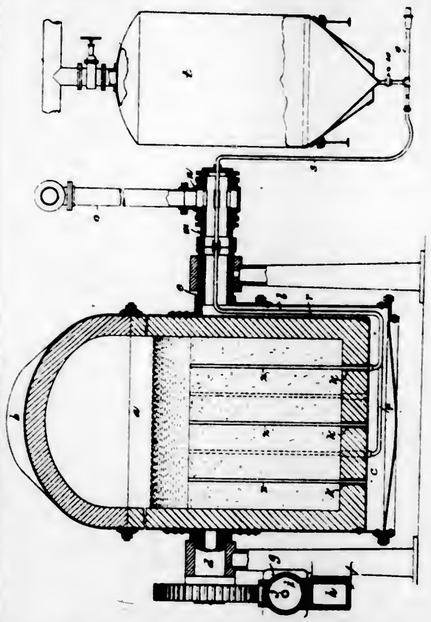

4. The process of smelting ore or matte consisting in injecting into the charge of ore or matte at the melting-level fuel in fluent from with a blast of air separate and distinct from the main air-blast, substantially as described.

5. The process of smelting or converting ore or matte consisting in forcing air into the charge and injecting fuel in fluent form with an air-blast separate and distinct from the main air-blast, substantially as described.

6. The process of smelting ore consisting in applying heat to the top of the charge, forcing air into the charge and simultaneously injecting into the charge at or near the melting-level as fusion progresses downward, independently-regulated supplies of different kinds of material with auxiliary air-blasts separate from the main air-blast, substantially as described.

7. The process of smelting ore and converting matte which consists in forcing air into the charge of ore or matte and injecting into the charge independently-regulated supplies of fuel and silicious material in a fluent form with air-blasts separate from the main air-blast, substantially as described.

8. The process of smelting ore consisting in covering a charge of the ore with a molten substance containing sufficient heat to start fusion of the charge, supplying air to the top of the charge below the molten substance as fusion progresses downward, and injecting a flux and fuel in a fluent form with air into the charge at or near the melting zone or level as it progresses downward, substantially as described.

9. The process of smelting ore consisting in covering a charge of the ore with a molten substance containing sufficient heat to start fusion of the charge, supplying air under pressure to the top of the charge below the molten covering and injecting with separate and distinct air-blasts, fuel and silicious material delivered at or near the melting-level as it progresses downward, substantially as described.

10. The process of smelting ore consisting in drying the top of the charge, covering it with a molten substance containing sufficient heat to start fusion of the charge, and supplying air under pressure to the charge at or near the melting-level as fusion progresses downward, substantially as described.

11. The process of smelting ore consisting in covering a charge

of the ore with a molten substance containing sufficient heat to start fusion of the charge, supplying air under pressure to the top of the charge below the molten covering and drawing off from time to time

ing for the upper end of the kiln, a chimney-stack removing waste gases from the housing, an auxiliary flue also connected to the housing for abstracting a portion of the waste gases therefrom, a suction-

gaging with the riveter and with the support to move the riveter to inoperative position, a rock-shaft carrying an operating-lever and a pinion, a supplementary lever on said operating-lever, a rack on the

arch, an air-tube at the rear side of said depending plate and provided with air-jet orifices, and provided with one or more branches extending up through and within the shell and communicating with

of the ore with a molten substance containing sufficient heat to start fusion of the charge, supplying air under pressure to the top of the charge below the molten covering and drawing off from time to time the slag accumulating at the surface as fusion progresses downward, substantially as described.

12. The process of smelting crude ore containing or mixed with a combustible substance such as sulfur, consisting in covering a charge of the ore with a molten substance containing sufficient heat to start fusion of the charge, supplying air under pressure to the top of the charge below the molten covering as fusion progresses downward, and injecting fuel, flux and silicious material in a fluent form, with air-blasts delivered at or near the melting-level, substantially as described.

13. The process of smelting ore or matte consisting in the application of heat and a blast of air to the charge and in forcing fuel in a fluent form into the charge with an air-blast separate from the main air-blast, substantially as described.

812,786. **HEAT-RECUPERATOR FOR CEMENT-KILNS.** CARLETON ELLIS, New York, N. Y., assignor to Combustion Utilities Company, New York, N. Y., a Corporation of New York. Original application filed Apr. 18, 1905. Serial No. 256,946. Divided and this application filed Aug. 11, 1905. Serial No. 273,845.

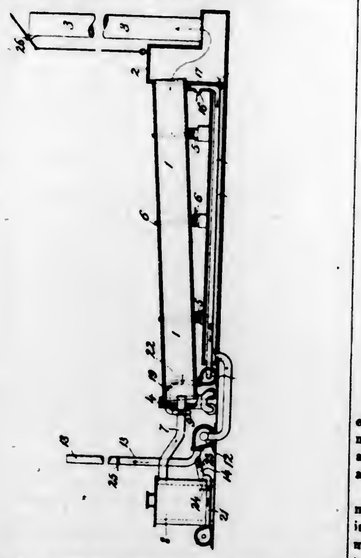

Claim.—1. In a cement-making apparatus, the combination of a kiln, a fuel-burner for one end of the kiln, a dust-collecting housing for the other end of the kiln, a chimney-stack connected to and removing waste gases from the housing, an auxiliary flue also connected to the housing and abstracting a portion of waste gases therefrom and delivering the same adjacent the other end of the kiln, a surface air-heater contained in the auxiliary flue and delivering heated air to the fuel-burner, and power-driven means for inducing and controlling the flow of the abstracted waste gases through said flue in a direction contrary to the direction of the normal flow of the main body of waste gases through the housing and stack, whereby a quieting and dust-settling zone is created between the two lines of flow.

2. In a cement-making apparatus, a gas-fired kiln, a gas-producer supplying gas thereto, a housing for the upper end of the kiln, a chimney-stack removing waste gases from the housing, an auxiliary flue also connected to the housing for abstracting a portion of waste gases therefrom, a surface air-heater contained in the flue, power-driven means for inducing and controlling a flow of waste gases through the flue and thereby regulating the heating of the air, a pipe connection from the heater delivering heated air into the gas-fired end of the kiln, and a pipe connection delivering cooled waste gases from the flue into the gas-producer.

3. In a cement-making apparatus, an inclined rotary gas-fired kiln, a gas-producer supplying gas to the kiln, a dust-collecting housing for the upper end of the kiln, a chimney-stack removing waste gases from the housing, an auxiliary flue also connected to the housing for abstracting a portion of the waste gases therefrom, a surface air-heater contained in the flue, power-driven means for inducing and controlling a flow of waste gases through the flue and thereby regulating the heating of the air, a pipe connection between the heater and the gas-burner of the kiln, and a pipe connection abstracting a portion of the cooled waste gases from the flue and delivering the same into the gas-producer.

812,787. **PNEUMATIC RIVETING-MACHINE.** JOHN R. FRENCH, Los Angeles, Cal. Filed Feb. 1, 1904. Serial No. 191,443.

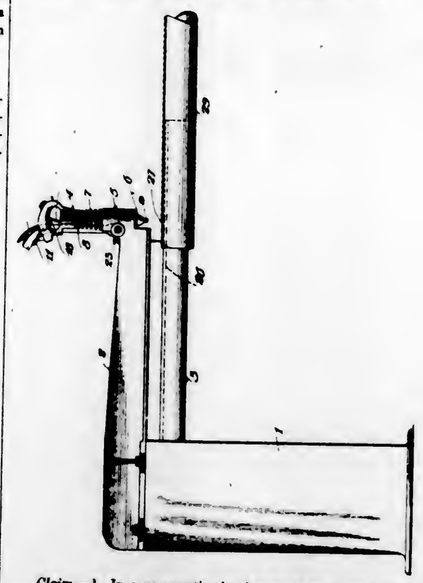

Claim.—1. In a pneumatic riveting-machine, a support, a riveter movably mounted therein and provided with valve mechanism, means for moving the riveter, and a connector from the valve mechanism to said means so arranged as to be operable to control the valve at any position of the riveter.

2. In a pneumatic riveting-machine, a support, a longitudinally-movable riveter mounted therein and provided with valve mechanism, a lever for moving the riveter, and a connector longitudinally movable from the valve mechanism to the lever so arranged as to control the valve at any position of the lever and riveter.

3. In a pneumatic riveting-machine, a support, a riveter movable thereon and having a controlling-valve, a handle connected to the riveter to move it on its support, and controlling means on said handle connected to said valve.

4. In a pneumatic riveting-machine, a support, a riveter movable thereon, a pivoted hand-lever connected to move the riveter, a controlling-valve for the riveter, a member pivoted concentrically with the said hand-lever and connected to said controlling-valve, and operating means on the hand-lever connected to said member.

5. In a pneumatic riveting-machine, a support, a riveter movable thereon, and provided with a controlling-valve, a pivoted hand-lever connected to move the riveter, a rocking member connected to the controlling-valve and a supplementary lever on the hand-lever connected to said rocking member.

6. In a pneumatic riveting-machine, a work-holder, a support, a riveter mounted to move vertically on said support, a rock-shaft pivoted on said support, an operating-handle on said rock-shaft, a pinion in said rock-shaft, a rack on the riveter engaged by said pinion, a rocking member loose on said rock-shaft, a supplementary lever on the aforesaid handle, a controlling-valve for the riveter, and connections from said rocking member to said supplementary lever and to said valve.

7. In a pneumatic riveting-machine, a support, a riveter sliding in said support and provided with a controlling-valve, a spring engaging with the riveter and with the support to move the riveter to inoperative position, a rock-shaft carrying an operating-lever and a pinion, a supplementary lever on said operating-lever, a rack on the riveter engaged by said pinion, a ring mounted to turn on said rock-shaft, and members connecting said ring with said supplementary lever and said valve.

8. In a pneumatic riveting-machine, a support, a longitudinally-movable riveter mounted therein and provided with valve mechanism, means for moving the riveter, a longitudinally-movable connector from the valve mechanism to said means, means for moving the connector longitudinally without operating the valve mechanism as the riveter is moved longitudinally, and means for moving the connector at any time to operate the valve mechanism.

9. In a pneumatic riveting-machine, a longitudinally-movable riveter provided with a valve, a lever for operating the valve, a handle provided with means for moving the riveter longitudinally, a lever on said handle, a longitudinally-movable flexible connector from the valve-lever to the lever on the handle, and means for taking up the slack of said connector as the riveter is moved longitudinally in its support.

812,788. **TERRY-LOOM.** HORACE S. GRIFFITH, Glen Riddle, Pa. Filed Mar. 27, 1905. Serial No. 252,314.

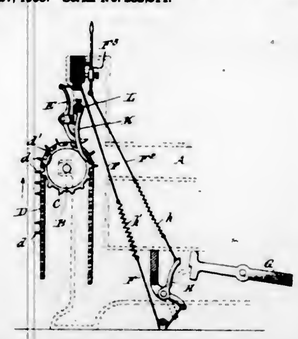

Claim.—In a loom provided with a terry-motion, the combination with the lever which puts on and off the terry-motion, of an automatic shifting mechanism for operating said lever to throw on and off said motion, consisting of the sand-roller, a sprocket-wheel attached to said roller, a pattern-chain meshing with said wheel provided with projecting pins, a lever pivotally suspended above said chain having its lower end in the path of said pins, a chain F connected to the upper end of said suspended lever, a spring-held locking-pawl attached to said chain F and adapted to engage the notched end of said lever which puts on and off the terry-motion.

812,789. **FURNACE.** WELLESLEY R. HAMPDEN, Kansas City, Mo., assignor, by direct and mesne assignments, to The Fuel Saver Heating Company, a Corporation of Missouri. Filed July 23, 1905. Serial No. 270,708.

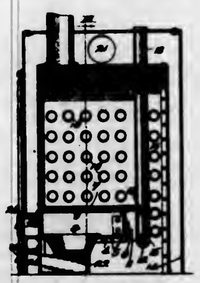

Claim.—1. A furnace, comprising a shell or body, a fire-pot therein, a wall rising upwardly rearward of the fire-pot, an arch over said fire-pot and said wall and projecting rearwardly beyond the latter, a plate disposed between and out of contact with said upwardly-projecting wall and the rear wall of the shell and depending from the arch, an air-tube at the rear side of said depending plate and provided with air-jet orifices, and provided with one or more branches extending up through and within the shell and communicating with the atmosphere, and a combustion-flue communicating with the upper portion of the shell.

2. In a furnace, the combination of a shell or body, a fire-pot therein, a wall rising upwardly rearward of the fire-pot, an arch over said fire-pot and said wall and projecting rearward beyond the latter, a plate disposed between and out of contact with said wall and the rear wall of the shell and depending from the arch, an air-tube at the rear side of said depending plate and provided with air-jet orifices and one or more branches extending up through and within the shell and communicating with the atmosphere, a combustion-flue communicating with the upper portion of the shell, and a series of tubes within the shell between the air-tube and the combustion-flue.

3. In a furnace, the combination of the shell, a substantially horizontal plate connecting the sides and front wall of the shell and terminating short of the rear wall thereof, a fire-pot disposed below said plate and communicating with the space above the same, an ash-pit below the fire-pot, an arch above the fire-pot and said plate and projecting rearwardly beyond the latter, a wall projecting from said plate rearward of the fire-pot and terminating short of the top of the arch and extending from side wall to side wall of the latter, a plate depending from the rear end of the arch to a point below the top of the wall below the arch, a transverse perforated pipe disposed contiguous to the lower end of the passage between the wall below the arch and the wall depending from the rear end of the arch and communicating at its ends with the atmosphere, and a combustion-flue communicating with the upper part of the shell.

4. In a furnace the combination of a shell, a substantially horizontal plate connecting the sides and front wall of the shell and terminating short of the rear wall thereof, a fire-pot disposed below said plate and communicating with the space above the same, an ash-pit below the fire-pot, an arch above the fire-pot and said plate and projecting rearwardly beyond the latter, a wall projecting from said plate rearward of the fire-pot and terminating short of the top of the arch and extending from side wall to side wall of the latter, a plate depending from the rear end of the arch to a point below the top of the wall below the arch, a transverse perforated pipe disposed contiguous to the lower end of the passage between the wall below the arch and the wall depending from the rear end of the arch and communicating at its ends with the atmosphere, a combustion-flue communicating with the upper part of the shell, tubes extending completely through the shell in a plane above the arch of the fire-pot, a casing fitting over the shell and partitioned into two portions one of which communicates with one end of the series of tubes and the other with the other end of the series of tubes, a cold-air-supply tube communicating with one of the partitioned portions of the casing, and discharge-tubes communicating with the other partitioned portion of the casing above said tubes.

812,790. **ELECTRIC-RAILWAY SYSTEM.** WILLIAM N. HARING, Nyack, N. Y. Continuation of abandoned application Serial No. 107,822, filed May 17, 1902. This application filed Oct. 31, 1903. Serial No. 179,379.

Claim.—1. In an electrical-railway system, a conduit constructed with walls provided with projections, a hollow body in said conduit and provided with flanges adapted to engage said projections to support the body, means to engage the flanges and projections to secure the body in applied position, a terminal contact mounted in said body, a feed-wire having connection with said contact, a contact movable in said body to engage said first-named contact, conductors carried by the last-named contact, and means to maintain said contacts normally separated.

2. In an electric-railway system, the combination of a conduit constructed with flanged walls, one of which is formed with a channel containing a feed-wire, a hollow body in the conduit provided with projecting portions seated upon the flanges of the walls, a contact in the hollow body connected to the feed-wire, a contact movable to engage said first-named contact and supporting a conductor, and means in the hollow body to hold the contacts normally separated.

3. In an electric-railway system, the combination of a rail having a channel therein and a flange, a feed-wire in the channel, hollow bodies provided with projecting portions seated upon said flange, a contact-terminal in said body connected to the feed-wire, a movable contact adapted to engage said contact-terminal, a conducting mem-

ber supported by the movable contact and means to maintain said contacts normally separated.

separated from the first-named contact by said block, and a conductor carried by the movable contacts.

11. In an electric-railway system, a conduit, hollow bodies ar-

electromagnet, said switch adapted to be held in position to close said circuit by said terminal valve, whereby said throttle-valve is held open by said electromagnet.

vided with an inlet and an outlet orifice, a terminal valve adapted to close said despatch-tube outlet-orifice, an ejector provided with an

ber supported by the movable contact and means to maintain said contacts normally separated.

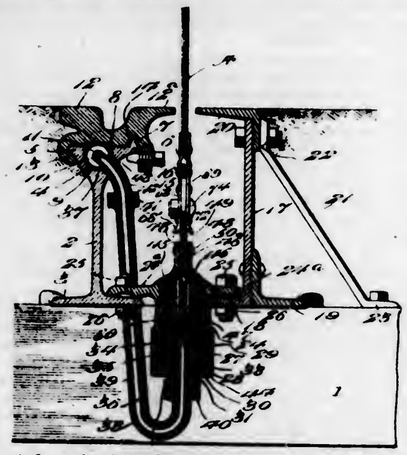

4. In an electrical-railway system, a conduit constructed with walls provided with projections, a hollow body in said conduit and provided with flanges adapted to engage said projections to support the body, means to engage the flange and projections to secure the body in applied position, a resilient block arranged in the body and reduced intermediate its ends, a terminal contact carried by the body and projecting into an opening in the resilient block, a contact movable in said opening and adapted to be normally separated from the first-named contact by the resilient block, and a conductor carried by the last-named contact.

5. In an electric-railway system, the combination with a conduit, of hollow bodies arranged therein, a resilient block in each body reduced intermediate its ends, a cap-piece on the bottom of each hollow body, a terminal between the cap-piece and body and provided with a shank which projects into an opening in the resilient block, a vertically-moving contact projecting through the upper end portion of the block and carrying a conductor-rail and adapted to be moved into engagement with said shank.

6. In an electric-railway system, the combination with resilient supports of a sectional conductor, comprising a core provided with means to attach it to the supports and a conducting-jacket on the core.

7. In an electric-railway system, the combination with supports of a conductor, comprising a rigid core, provided with means to attach it to the supports, and a conducting-jacket on the core.

8. In an electric-railway system, the combination with supports of a rigid core-piece formed with depending portions engaging the supports and secured thereto, and a conducting-jacket on the core.

9. In an electric-railway system, the combination of a conduit, one wall of which is a traction-rail, having a channel and a detachable tread to close the channel, a feed-wire in said channel, hollow bodies supported in the conduit carrying contacts connected to the feed-wire, movable contacts carrying a conductor-rail, and adapted to be brought into engagement with the first-named contact, and means to hold said contacts normally separated.

10. In an electrical-railway system, a conduit constructed with walls provided with projections, one of said walls being formed with a channel containing a feed-wire, and a screw-threaded opening communicating with said channel, a hollow body in said conduit and provided with flanges to engage said projections, said body also having a screw-threaded portion, a cap-piece adjusted to engage the threaded portion of the body and provided with a depending exteriorly-threaded nipple, a resilient block arranged in the body and reduced intermediate its ends, a terminal plate arranged between the body cap-piece and provided with a contact extending into an opening in the resilient block, means for insulating the terminal plate and its contact, a pipe-section secured in said threaded opening and provided with a coupling, a coupling secured to said nipple, a pipe secured to said pipe-section and nipple by means of the coupling, a connecting-wire adapted to convey the current from the feed-wire to said contact and arranged in said pipe and pipe-section, a contact movable in the opening of the resilient block and adapted to be normally separated from the first-named contact by said block, and a conductor carried by the movable contacts.

11. In an electric-railway system, a conduit, hollow bodies arranged therein, a resilient block having a central opening throughout its entire length and mounted in each hollow body and reduced intermediate its ends, a contact projecting into the lower portion of the resilient block, a movable contact projecting into the upper portion of the resilient block and adapted to engage the first-named contact, said movable contact being normally held out of engagement with the first-named contact by the resiliency of the block and permitted to be brought into contact therewith by the resiliency of said block, and conductors carried by the said movable contacts.

812,791. **MOTOR-CONTROLLER.** WILEY H. HOUSTON, Santa Ana, Cal. Filed June 14, 1905. Serial No. 265,275.

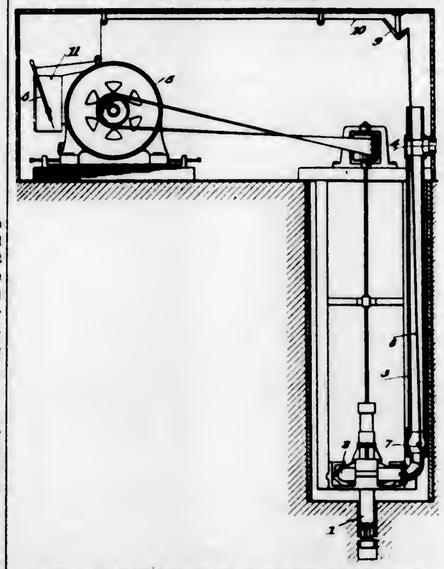

Claim.—1. In combination an electric motor; a pump having a delivery-pipe; a valve in the delivery-pipe adapted to check the downward flow of water therein; means for controlling the flow of the current to the motor: and means connecting said valve with said controlling means, whereby when the upward flow of the water in the delivery-pipe is stopped the valve closes and the current-controlling means cuts off the current to the motor.

2. In combination an electric motor; means for controlling the flow of the current to the motor; a pump having a delivery-pipe; a valve in the delivery-pipe adapted to check the downward flow of water therein; a bell-crank lever above the top of said delivery-pipe; a connecting-rod connecting one arm of said bell-crank lever to said valve: and a connection between the other arm of said bell-crank lever and the means controlling the flow of current to the motor whereby when the upward flow of the water in the delivery-pipe is stopped the valve closes and the current is cut off the motor.

812,792. **PNEUMATIC-DESPATCH-TUBE SYSTEM.** JOHN S. JACQUES, Dorchester, Mass. Original application filed May 24, 1905, Serial No. 262,263. Divided and this application filed Dec. 23, 1905. Serial No. 293,093.

Claim.—1. In a pneumatic-despatch-tube system, an ejector provided with an inlet and an outlet orifice, a despatch-tube provided with an inlet and an outlet orifice connected to said ejector intermediate said ejector inlet and outlet orifices, a terminal valve adapted to close said despatch-tube outlet-orifice, a receptacle adapted to contain steam, air or the like under pressure connected to the inlet-orifice of said ejector, a throttle-valve interposed between said ejector and receptacle and adapted to open or close communication therebetween, an electromagnet having an armature operatively connected to open or close said throttle-valve, a switch in electric circuit with said electromagnet, said switch adapted to be held in position to close said circuit by said terminal valve, whereby said throttle-valve is held open by said electromagnet, and means to operate said switch to break said circuit when said switch is released by said terminal valve, whereby said throttle-valve is released and allowed to close.

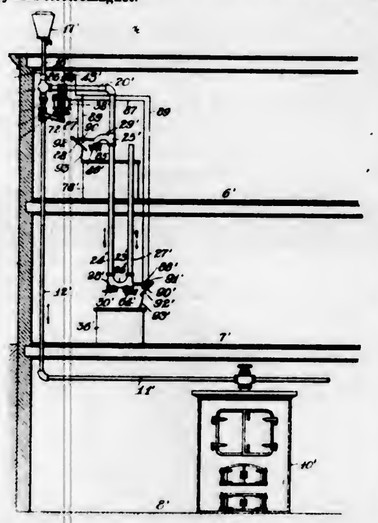

2. In a pneumatic-despatch-tube system, an ejector provided with an inlet and an outlet orifice, a despatch-tube provided with an inlet and an outlet orifice connected to said ejector intermediate said ejector inlet and outlet orifices, a terminal valve adapted to close said despatch-tube outlet-orifice, a receptacle adapted to contain steam, air or the like under pressure connected to the inlet-orifice of said ejector, a throttle-valve interposed between said ejector and receptacle and adapted to open or close communication therebetween, an electromagnet having an armature operatively connected to open or close said throttle-valve, a switch in electric circuit with said electromagnet, said switch adapted to be held in position to close said circuit by said terminal valve, whereby said throttle-valve is held open by said electromagnet, and means to operate said switch to break said circuit when said switch is released by said terminal valve, whereby said throttle-valve is released and allowed to close.

3. In a pneumatic-despatch-tube system, an ejector provided with an inlet and an outlet orifice, a despatch-tube provided with an inlet and an outlet orifice connected to said ejector intermediate said ejector inlet and outlet orifices, a terminal valve adapted to close said despatch-tube outlet-orifice, a receptacle adapted to contain steam, air or the like under pressure connected to the inlet-orifice of said ejector, a throttle-valve interposed between said ejector and receptacle and adapted to open or close communication therebetween, an electromagnet having an armature operatively connected to open or close said throttle-valve, and a switch in electric circuit with said electromagnet, said switch operatively connected to said terminal valve, whereby when said terminal valve is opened, said switch is operated to break said circuit and said throttle-valve closed.

4. In a pneumatic-despatch-tube system, a despatch-tube provided with an inlet and an outlet orifice, a terminal valve adapted to close said despatch-tube outlet-orifice an ejector provided with an inlet-orifice, an outlet-orifice and an intermediate orifice, said despatch-tube connected to said intermediate orifice, a receptacle for fluid under pressure connected to said ejector inlet-orifice, a shut-off valve interposed between said ejector and receptacle, and means to open and close said shut-off valve, said means controlled by said terminal valve.

5. In a pneumatic-despatch-tube system, a despatch-tube provided with an inlet and an outlet orifice, a terminal valve adapted to close said despatch-tube outlet-orifice, an ejector provided with an inlet-orifice, an outlet-orifice and an intermediate orifice, said despatch-tube connected to said intermediate orifice, a receptacle for fluid under pressure connected to said ejector inlet-orifice, a shut-off valve interposed between said ejector and receptacle, and electrically-operated means to open said shut-off valve, said means controlled by said terminal valve.

6. In a pneumatic-despatch-tube system, a despatch-tube provided with an inlet and an outlet orifice, a terminal valve adapted to close said despatch-tube outlet-orifice, an ejector provided with an inlet-orifice, an outlet-orifice and an intermediate orifice, said despatch-tube connected to said intermediate orifice, a receptacle for fluid under pressure connected to said ejector inlet-orifice, a shut-off valve interposed between said ejector and receptacle, electrically-operated means to open said shut-off valve, said means controlled by said terminal valve, and a spring adapted to close said shut-off valve.

7. In a pneumatic-despatch-tube system, an ejector provided with an inlet and an outlet orifice, a transmission and a return tube, each of said tubes provided with an inlet and an outlet orifice, respectively, said tubes connected to said ejector intermediate said ejector inlet and outlet orifices, a terminal valve adapted to close each of said despatch-tube outlet-orifices, respectively, a connecting-tube joining said transmission and return tubes together, and means controlled by said terminal valves for causing a vacuum in said tubes.

8. In a pneumatic-despatch-tube system, an ejector provided with an inlet and an outlet orifice, a transmission and a return tube, each of said tubes provided with an inlet and an outlet orifice, respectively, one of said tubes connected to said ejector intermediate said ejector inlet and outlet orifices, a terminal valve adapted to close each of said despatch-tube outlet-orifices, respectively, a connecting-tube joining said transmission and return tubes together, a receptacle for fluid under pressure connected to said ejector inlet-orifice, an electromagnet, a shut-off valve interposed between said ejector and receptacle, and adapted to be operated by said electromagnet, and means controlled by each of said outlet terminal valves, respectively, to break the electric circuit of said magnet.

812,793. **HAY-LOADER.** EDWARD A. JOHNSTON, Sterling, Ill. Filed July 29, 1905. Serial No. 271,832.

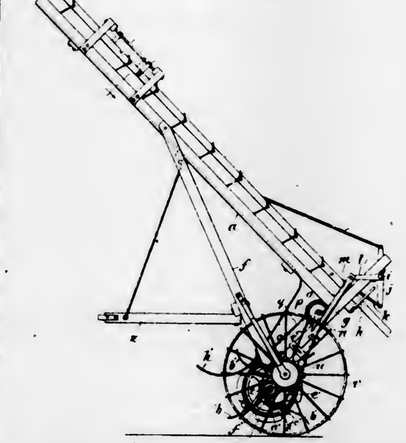

Claim.—1. In a hay-loader, an inclined deck, oppositely-reciprocating rakes operating over said deck, a rotary gathering-cylinder having rake-teeth moving in a forward direction over the ground for taking the hay from the ground, and a conveyer between the deck and gathering-cylinder for delivering the hay to the rakes.

2. In a hay-loader, an inclined deck, oppositely-reciprocating rakes operating over said deck, a rotary gathering-cylinder having rake-teeth moving in a forward direction over the ground for taking the hay from the ground, a conveyer between the deck and the gathering-cylinder for delivering the hay to the rakes, and means operated by the traction-wheels for driving the gathering-cylinder, the conveyer and the rakes.

3. In a hay-loader, an inclined deck, oppositely-reciprocating rakes operating over said deck, a rotary gathering-cylinder for taking the hay from the ground, having a series of horizontal rake-heads provided with spring rake-teeth, the said teeth moving in a forward direction over the ground and a conveyer between the deck and the gathering-cylinder for delivering the hay to the rakes.

4. In a hay-loader, an inclined deck, oppositely-reciprocating rakes operating over said deck, a rotary gathering-cylinder for taking the hay from the ground, having a series of horizontal rake-heads provided with spring rake-teeth, crank-shafts upon which said rake-heads are hung, a cam for rocking said shafts to vary the inclination of the spring-teeth as the cylinder revolves, and a conveyer between the deck and the gathering-cylinder for delivering the hay to the rakes.

5. In a hay-loader, an inclined deck, oppositely-reciprocating rakes operating over said deck, a rotary gathering-cylinder for taking the hay from the ground, having a series of horizontal rake-heads provided with spring rake-teeth, crank-shafts upon which said rake-heads are hung, a cam for rocking said shafts to vary the inclination of the spring-teeth as the cylinder revolves, an endless conveyer having strand-wires passing over the gathering-cylinder between the spring-teeth, and cross-slats secured to said strand-wires, said conveyer serving to transfer the hay from the teeth of the gathering-cylinder to the rakes on the deck.

6. In a hay-loader, an inclined deck, oppositely-reciprocating rakes operating over said deck, and a gathering-cylinder for taking the hay from the ground comprising rotary heads, crank-shafts between said heads, horizontal rake-heads on said shafts and having spring-teeth and a stationary cam coöperating with said shafts to rock the latter and thereby vary the inclination of the spring-teeth.

7. In a hay-loader, an inclined deck, oppositely-reciprocating rakes operating over said deck, a gathering-cylinder for taking the hay from the ground comprising rotary heads on said shafts and crank-shafts between said heads, horizontal rake-heads having spring-teeth and a stationary cam coöperating with said shafts to rock the latter and thereby vary the inclination of the spring-teeth, and a conveyer for delivering the hay from the gathering-cylinder to the rakes on the deck, said conveyer comprising sprocket-chains engaging the heads of the gatherer-cylinder, an idler-reel coöperating with said chains, strand-wires engaging the gatherer-cylinder and the idler-reel, and cross-slats attached to said strand-wires and the sprocket-chains.

8. In a hay-loader, an inclined deck, oppositely-reciprocating rakes operating over said deck, a gathering-cylinder for taking the hay from the ground comprising rotary heads on said shafts and crank-shafts between said heads, horizontal rake-heads having spring-teeth, and a stationary cam coöperating with said shafts to rock the latter and thereby vary the inclination of the spring-teeth, a conveyer for delivering the hay from the gathering-cylinder to the rakes on the deck, said conveyer comprising sprocket-chains engaging the heads of the gatherer-cylinder, an idler-reel coöperating with said chains, strand-wires engaging the gatherer-cylinder and the idler-reel, and cross-slats attached to said strand-wires and sprocket-chains, gearing connecting the traction-wheels with the gathering-cylinder for driving the latter and the conveyer, and means connecting the idler-reel with the rakes on the deck for reciprocating the latter.

812,794. **MOVABLE-POINT RAILWAY-CROSSING.** FRANK L. KEIM, Philadelphia, Pa., assignor to William Wharton, Jr., & Company, Incorporated, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Nov. 10, 1905. Serial No. 286,710.

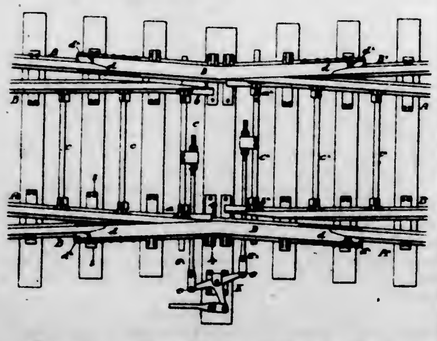

Claim.—1. A movable-point railway-crossing having a stock-rail with an extension at each end forming a recess at each end for the reception of the respective adjoining track-rails, substantially as described.

2. A movable-point railway-crossing having a stock-rail with a wide head and with an extension at each end forming a recess at each end for the reception of the respective adjoining track-rails, substantially as described.

3. A movable-point railway-crossing having a stock-rail made of hard metal with an extension at each end forming a recess at each end for the reception of the respective adjoining track-rails, substantially as described.

4. The combination in a movable-point railway-crossing, of hard-metal stock-rails shaped to the angle desired and recessed at the ends so as to be coupled in line with the adjoining rails of the track, with movable-point rails, and means for shifting said point-rails to and from the stock-rails, substantially as described.

5. The combination in a movable-point railway-crossing, of the track-rails, stock-rails one at each side of the track arranged to aline with the track-rails and shaped to the angle desired, movable-point rails, and means for shifting the said point-rails to and from the stock-rails, the said stock-rails having an extension at each end forming a recess at each end for the reception of the respective adjoining track-rails, the ends of said extensions being beveled, substantially as described.

812,795. **BUCKET FOR TURBINES.** HULDREICH KELLER, Berlin, Germany, assignor to General Electric Company, a Corporation of New York. Filed Nov. 16, 1904. Serial No. 232,960.

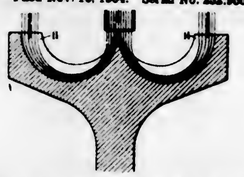

Claim.—1. An element for an elastic-fluid turbine containing a plurality of buckets and passages, each passage being substantially U-shaped in form and narrow at the inlet end with respect to the fluid stream, and wider at the discharge end than the fluid stream.

2. In a turbine, the combination of a nozzle, a bucket-carrying element arranged to receive fluid from the nozzle, the width of the wall on the inlet side of each bucket being less than on the discharge side, and pockets between the buckets which are substantially U-shaped in form and increase in width toward the discharge end.

3. In an elastic-fluid turbine, the combination of fluid-discharging means, an element situated in front of the said means which is provided with a double row of buckets and substantially U-shaped passages between the buckets, the walls forming said passages increasing in width from the inlet to the exhaust.

812,796. **HORSE-BLANKET.** ARTHUR H. KINDER, Boston, Mass., assignor to L. C. Chase & Company, Boston, Mass. Filed Nov. 19, 1904. Serial No. 233,406.

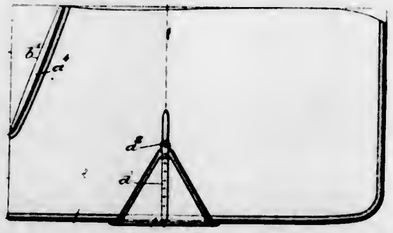

Claim.—1. The herein-described horse-blanket composed of blanket material, having a neck-opening and permanently closed below such opening to cover and protect the breast, one half of said blanket having permanently secured to it at its lower edge an overlapping piece, the free end of said piece being provided at a point beyond the edge of the blanket with a fastening, and a strap united at one end to the exterior of the other half of said blanket at a distance back from its edge, said strap engaging said fastening and holding the overlapping piece in position to overlap the lower edge of that half of the blanket to which said strap is attached and bring the edges of the blanket toward each other.

2. A horse-blanket composed of blanket material having permanently secured to one of its lower edges an overlapping piece of fibrous material triangular in shape, the free end of said overlapping piece being provided at a point beyond the edge of the blanket with a fastening, and a strap united at one end to the exterior of the other half of the said blanket at a distance back from its edge, said strap engaging said fastening and holding the overlapping piece in position to cross under the body of the horse, the end of the overlapping piece having the fastening overlapping the edge and part of the blanket to which the strap is attached, the strap in engagement with the fastening holding the edges of the blanket closed under the body of the horse and retaining the blanket in position.

812,797. **INSULATING ATTACHMENT FOR ELECTRIC FIXTURES.** ADOLPHUS A. KNUDSON, New York, N. Y., assignor of one-half to Frank H. Clark, Brooklyn, N. Y. Filed Mar. 8, 1905. Serial No. 249,110.

Claim.—An insulating-cover for a lamp-socket, consisting of a section of material substantially rectangular in form, said cover being adapted to be wrapped around the lamp-socket and to receive the key thereof between the adjacent edges of the cover, and means secured adjacent the edges of said cover at points above and below the key for drawing said cover taut about the socket, the upper end of said cover being gathered in to engage the small upper end of the socket.

812,798. **FOLDER AND BINDING.** EDWARD J. MEISENHEIMER, Milwaukee, Wis., assignor to Meisenheimer Printing Company, Milwaukee, Wis., a Corporation of Wisconsin. Filed Jan. 9, 1905. Serial No. 240,346.

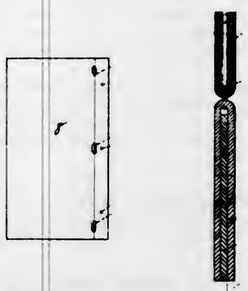

Claim.—1. As an article of manufacture, a folder, and a folded binding-strip flexibly attached to the folder, the folds being integrally united to each other.

2. As an article of manufacture, a folder, a folded binding-strip, and a filler, the folds being integrally united to each other through the filler.

812,799. **APPARATUS FOR CLEANING GRAINS.** HARVEY C. MILLER, Philadelphia, Pa. Original application filed June 18, 1904, Serial No. 213,114. Divided and this application filed Sept. 27, 1904. Serial No. 226,107.

Claim.—1. In an apparatus of the character and for the purpose described, in combination, a shaft, inclined shelves projecting from opposite sides thereof, a roughened plate adapted to overlie its corresponding shelf, said plate being supported so as to be movable to and from its corresponding shelf, and means to produce a current of air from the bottom to the top of said shaft.

2. In an apparatus of the character and for the purpose described, in combination, a shaft, inclined shelves projecting from opposite sides thereof, a roughened plate corresponding to one or more of said shelves, said plate being pivotally supported and adapted to rest upon and be moved away from its corresponding shelf, and means to produce a current of air from the bottom to top of said shaft.

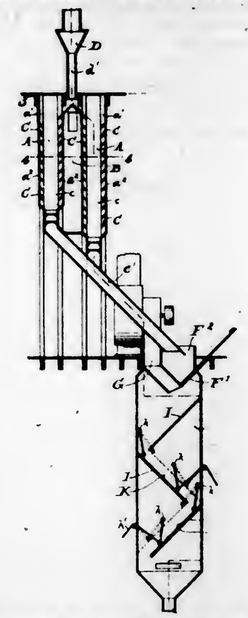

3. In an apparatus of the character and for the purpose described, in combination, a shaft, inclined shelves projecting from opposite sides thereof, a roughened plate corresponding to one or more of said shelves, said plate being pivotally supported and adapted to rest upon and be moved away from its corresponding shelf, a device connected to said plate and passing through said shaft to manipulate said plate, and means to produce a current of air from the bottom to the top of said shaft.

4. In an apparatus of the character and for the purpose described, in combination, a shaft, inclined shelves projecting from opposite sides thereof, the lower end of the shelves projecting from one side being in line with the upper end of the shelf projecting from the opposite side, a roughened plate corresponding to one or more of said shelves, said plate being pivotally supported and adapted to rest upon and be moved away from its corresponding shelf, and means to produce a current of air from the bottom to the top of said shaft.

5. In an apparatus of the character and for the purpose described, in combination, a shaft, inclined shelves projecting from opposite sides thereof, the lower end of the shelves projecting from one side being in line with the upper end of the shelves projecting from the opposite side, a roughened plate corresponding to one or more of said shelves, said plate being pivotally supported and adapted to rest upon and be moved away from its corresponding shelf, a device connected to said plate and passing through the wall of said shaft to manipulate said plate, and means to produce a current of air from the bottom to top of said shaft.

6. In an apparatus of the character and for the purpose described, in combination, a shaft, inclined shelves projecting from opposite sides thereof, a roughened plate adapted to overlie its corresponding shelf, said plate being supported so as to be movable to and from its corresponding shelf, a device, exterior to the shaft, and connection between said device and the plate, whereby the plate may be moved from the exterior of the shaft to and from the shelf.

7. In an apparatus of the character and for the purpose described, in combination, a chamber having two opposite perforated walls, inclined shelves projecting at like angles from points on the opposite perforated sides at the same horizontal plane and terminating in the same horizontal plane, there being a space between the inner ends of corresponding shelves on opposite sides and means

to carry air through said chamber from side to side through said per-

to carry air through said chamber from side to side through said perforated walls.

8. In an apparatus of the character and for the purpose described, an apparatus comprising two chambers separated by a space, the longitudinal walls of each chamber being perforated, inclined shelves in each chamber projecting at like angles from points on the opposite perforated sides at the same horizontal plane and terminating in the same horizontal plane, there being a space between the inner ends of corresponding shelves on opposite sides, and a pressure or exhaust chamber intermediate of said two chambers.

812,800. **PAPER-CLIP.** JOHN MCLEAN, Newark, N. J. Filed Feb 16, 1905. Serial No. 245,895.

Claim.—1. A paper-clip comprising a disk having a marginal flange projecting from one side, and a tongue attached at one end to the disk within said flange, portions of the tongue projecting beyond the flanged side of the disk.

2. A paper-clasp comprising a circular disk having a marginal flange projecting from one side and a tongue projecting from the same side within the flange and free at the end.

3. A paper-clasp comprising a circular metal disk having an opening therethrough, a second disk united to the margin and covering one side of the first-named disk and its opening, and a tongue united to the first-named disk at one end of the opening and projecting from the opposite or back side of the first-named disk.

4. A paper-clasp comprising a metal disk having a marginal flange projecting from one side, and a tongue projecting from the same side as the flange, said tongue being stamped from the portion of the disk within the flange and forming an opening, and a celluloid or equivalent disk at the opposite side of the first-named disk and having its marginal edges united to said flange.

5. A clasp of the character described, consisting of a thin circular disk of spring metal having a portion thereof cut and pressed beyond one of its opposite faces for forming a spring-tongue which is free at one end and united at its opposite end to the main body of the disk, a second disk applied to the opposite face of the spring-metal disk and covering the opening formed by the stamping out of the tongue, and a third disk of celluloid or equivalent material applied to the outer face of the second disk and having its marginal edge crimped or turned over the marginal edges of said second-named disk and against the rear face of the spring-metal disk.

812,801. **ELECTRIC FURNACE.** JULIUS E. OBER, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed July 15, 1904. Serial No. 216,675.

Claim.—1. In an electric furnace, a carbon tube, and a coating therefor formed of titanium carbid.

2. An electric furnace comprising a carbon tube heated by the passage of current through its wall, and a protective shell formed of titanium carbid.

3. In an electric furnace, a carbon tube, a layer of titanium carbid surrounding the tube, and a packing of coke surrounding the titanium carbid.

4. In an electric furnace, a tubular member formed of conducting material comprising two cylindrical end portions, and intermediate portions of reduced diameter.

5. In an electric furnace, a tubular member comprising two end portions and an intermediate portion of reduced diameter, and a protective sheath surrounding said reduced portion.

6. In an electric furnace, a tubular member comprising two end portions and an intermediate portion of reduced diameter, and a protective sheath surrounding said reduced portion, said protective sheath being formed of titanium carbid.

7. In an electric furnace, a tubular member comprising two end portions, and a reduced intermediate connecting portion, a packing of refractory non-oxidizable material formed with a passage in it of a diameter substantially the same as that of the end portions, and a mass of protective material located in the space between said refractory material and the reduced intermediate portion of the tubular member.

8. In an electric furnace, a tubular heating member, a sheath therefor of titanium carbid, and a packing of finely-divided, heat-resisting material surrounding said sheath.

9. In an electric furnace, a tubular heating member of carbon, and a sheath therefor consisting of a sintered mass of finely-divided titanium carbid.

10. In an electric furnace comprising a carbon tube heated by the passage of current through it, a protective sheath for the tube formed of titanium carbid, and a mass of coke surrounding said sheath and the carbon tube inclosed thereby.

11. In an electric furnace, a carbon-tube heating member comprising end portions and an intermediate portion of reduced diameter, and a sheath for the reduced portion formed by wrapping paper about the heating member and then filling the space left between the paper and the reduced portion of the heating member with titanium carbid.

12. In an electric furnace, a heating member, and a protective sheath or coating therefor formed of non-hygroscopic carbid.

13. In an electric furnace, a heating member, and a protective sheath or coating therefor formed of a non-hygroscopic refractory carbid.

812,802. **SEAM FOR SEWED ARTICLES.** JAMES L. PATTERSON, Chicago, Ill., assignor to The Union Special Sewing Machine Company, Chicago, Ill., a Corporation of Illinois. Filed July 23, 1902. Serial No. 116,635.

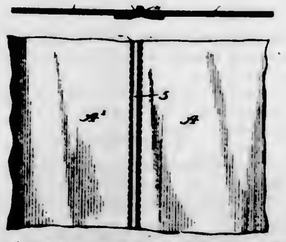

Claim.—A seam composed of two fabrics having abutted folded edges, with a line of stitching uniting the same at the fold, one of said fabrics being provided with a rib or ridge, pressed up out of the body of the fabric, and lines of stitching passed down upon the opposite sides of said rib or ridge, with locking-threads for securing the lines of stitching together on the under side, thus permanently fixing said rib or ridge; substantially as described.

REISSUES.

12,450. **RIM FOR RUBBER-TIRED WHEELS.** ORSON L. PICKARD, Toledo, Ohio. Filed Nov. 25, 1905. Serial No. 289,354. Original No. 771,445, dated Oct. 4, 1904.

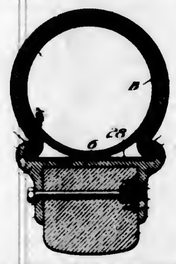

Claim.—1. In a vehicle-wheel, a rim having a body portion divided circumferentially into two parallel abutting sections which interlock in the direction of rotation, and means for preventing independent rotation of said rim-sections, substantially as described.

2. In a vehicle-wheel, a rim having a body portion divided circumferentially into two sections provided respectively with recesses and engaging plates which interlock in the direction of rotation, and means for preventing independent rotation of said rim-sections, substantially as described.

3. In a vehicle-wheel, a rim having a body portion divided circumferentially into two parallel abutting sections which interlock in the direction of rotation, of opposing side tire-retaining flanges integral with said rim-sections, and means for preventing independent rotation of the rim-sections, substantially as described.

4. In a vehicle-wheel, a rim having a body portion divided circumferentially into two parallel abutting sections which interlock and are drawn together by relative rotation, and means for preventing independent rotation of said rim-sections, substantially as described.

5. In a vehicle-wheel, a rim having a body portion divided circumferentially into two parallel abutting sections which interlock and are drawn together by relative rotation, and a bolt for preventing independent rotation of said rim-sections, substantially as described.

6. In a vehicle-wheel, the combination with a felly, of a rim having a body portion divided circumferentially into two sections provided respectively with recesses and projecting plates which interlock and are drawn together by relative rotation, and a bolt for preventing independent rotation of said rim-sections, substantially as described.

7. In a vehicle-wheel, the combination with a felly, of a rim having a body portion divided circumferentially into two sections which interlock and are drawn together by relative rotation, side flanges upon said sections for embracing the felly, and a through-bolt for preventing independent rotation of said flanges and felly, substantially as described.

8. In a vehicle-wheel, the combination with a felly, of a rim divided circumferentially into two sections provided respectively with recesses and projecting plates which interlock in the direction of rotation said plates having inclined engaging surfaces for drawing said sections together, and means for preventing independent rotation of said rim-sections, substantially as described.

9. In a vehicle-wheel, the combination with a felly, of a rim divided circumferentially into two sections one fixed and the other removable with relation to the felly, cooperating recesses and projecting plates upon said rim-sections which interlock in the direction of rotation, a bolt for preventing independent rotation of said rim-sections and felly, and a socket-plate recessed into the felly and forming a bushing for the said locking-bolt, substantially as described.

10. In a vehicle-wheel, the combination with a felly and tire, of a rim divided circumferentially into two sections which interlock in the direction of rotation, a bolt for preventing independent rotation of said rim-sections, and a tire-protecting ring surrounding said rim-sections, substantially as described.

12,451. **GARMENT-HOOK.** RUTHERFORD C. HAVEN, Trenton, N. J., assignee of William H. Hippisley, deceased. Filed July 31, 1905. Serial No. 270,734. Original No. 774,426, dated Nov. 8, 1904.

Claim.—1. A hook of the character described, comprising side arms, each carrying at one end an eye and spread apart or diverged at their opposite ends to form a receiving-space and terminating in a bill lying parallel with said side arms, and a tongue lying between said arms and having a hump intermediate its ends projecting toward said bill and formed with an angular attaching-eye which lies in said receiving-space between and approximately within the plane of said divergent or spread-apart ends of the arms, substantially as described.

2. A hook of the character described, comprising side arms, each carrying at one end an eye, and spread apart or diverged at their opposite ends, forming a receiving-space and terminating in a bill lying parallel with said side arms, and a tongue lying between said arms and formed with an attaching-eye, which lies in said receiving-space between and approximately within the plane of said divergent or spread-apart ends of the arms.

3. A hook of the character described, formed from a single piece of wire and comprising side arms, the wire from each of the arms formed at one end with an eye, said arms being spread apart or diverged at their opposite ends, forming a receiving-space and terminating in a bill, and said wire extending from the portion forming one of said eyes into a tongue lying between said arms, said tongue ending in an attaching-eye which lies in said receiving-space between and approximately within the plane of said divergent or spread-apart ends of the arms.

4. A garment-hook having means of attachment at one end, arms bent upon themselves for forming a bill, the bend being at the other end of the hook and the arms at and adjacent to the bend being bent laterally and spread apart forming a space, and means of attachment in the said space.

5. A garment-hook having an eye at one end, arms bent upon themselves for forming a bill, the bend being at the other end of the hook, and the arms at and adjacent to the bend being laterally divergent and spread apart forming a space, and an eye in the said space.

6. A garment-hook having eyes at one end, side arms laterally spread apart or diverged at the other end of the hook forming a receiving-space, said arms terminating in a bill, and a tongue lying between said arms and formed with an attaching-eye normally lying in said receiving-space between and approximately within the plane of said divergent or spread-apart ends of the arms.

12,452. **COOKING UTENSIL.** JAMES F. FERRY, Leadville, Colo. Filed June 30, 1904. Serial No. 214,770. Original No. 711,841, dated Oct. 21, 1902.

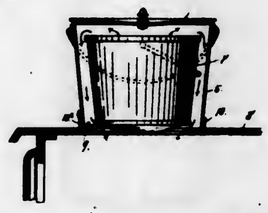

Claim.—1. In a cooking utensil, a casing adapted to receive a cooking vessel, a cover for said casing and entirely closing the top thereof, the casing being open at the bottom, and lugs extended inward at the bottom and secured to the outer side of the casing, the lower surfaces of said lugs being on a plane with the bottom edge of the casing, substantially as specified.

2. In a cooking utensil, a casing adapted to receive a cooking vessel, a cover for said casing, the casing being open at the bottom and lugs extended inwardly from the casing at the bottom, the lower surfaces of said lugs being in a plane with the bottom edge of the casing.

3. In a cooking utensil, a casing adapted to receive a

3. In a cooking utensil, a casing adapted to receive the cooking vessel, said casing being open at the bottom, a cover for the casing, a ring secured to the outer side of the casing at the bottom, and lugs extended inwardly from said ring, the bottom of the casing being provided with recesses to receive said lugs.

DESIGNS.

37,817. BADGE. RICHARD A. PORTER, Patchogue, N. Y. Filed Aug. 9, 1905. Serial No. 273,484. Term of patent 3½ years.

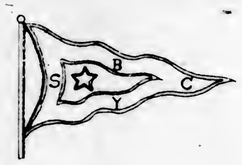

Claim.—The ornamental design for a badge, as shown.

37,818. BRACELET. JOHN BENNETT, Attleboro, Mass., assignor to Electric Chain Company, a Corporation of Maine. Filed Dec. 20, 1905. Serial No. 292,673. Term of patent 3½ years.

Claim.—The ornamental design for a bracelet, as shown.

37,819. TOILET-POWDER RECEPTACLE. WILLIAM A. BRADLEY, New York, N. Y. Filed Dec. 29, 1905. Serial No. 293,865. Term of patent 7 years.

Claim.—The ornamental design for a toilet-powder receptacle as shown.

37,820. BOTTLE. MAURICE CHASTENET, Bordeaux, France, assignor to Chastenet Frères, Bordeaux, France. Filed Oct. 11, 1905. Serial No. 282,345. Term of patent 14 years.

Claim.—The ornamental design for a bottle, as shown.

37,821. GLASS DISH. JOSEPH M. MCMAHON, Brackenridge, Pa., assignor to Tarentum Glass Company, Tarentum, Pa., a Corporation of Pennsylvania. Filed Oct. 30, 1905. Serial No. 285,191. Term of patent 3½ years.

Claim.—The ornamental design for a glass dish, as shown.

37,822. PREMIUM-STAMP. JOSEPH ALBERT JOSEPHA, Flushing, N. Y. Filed Apr. 22, 1905. Serial No. 257,094. Term of patent 7 years

37,822.

Claim.—The ornamental design for a premium-stamp, as shown.

37,823. ILLUMINATED CHANDELIER-SIGN. JOHN L. DAWES, Pittsburg, Pa. Filed Dec. 18, 1905. Serial No. 292,384. Term of patent 3½ years.

Claim.—The ornamental design for an illuminated chandelier-sign, as shown.

37,824. ILLUMINATOR. OTIS A. MYGATT, New York, N. Y. Filed July 14, 1905. Serial No. 269,733. Term of patent 14 years.

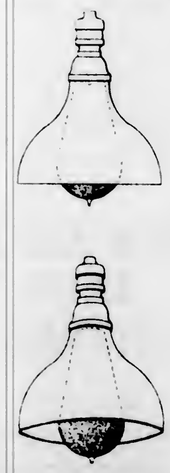

Claim.—The ornamental design for an illuminator as shown and described.

37,825. ILLUMINATOR. OTIS A. MYGATT, New York, N. Y. Filed July 14, 1905. Serial No. 269,735. Term of patent 14 years.

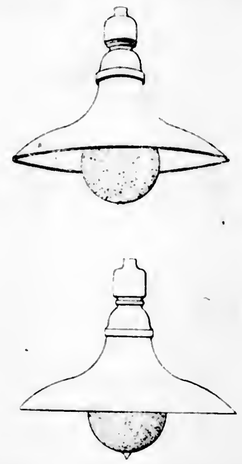

Claim.—The ornamental design for an illuminator, as shown and described.

37,826. CUTTER-LEVER HANDLE. HENRY K. PORTER, Chelsea, Mass. Filed Sept. 14, 1905. Serial No. 278,594. Term of patent 14 years.

Claim.—The ornamental design for a cutter-lever handle, as shown.

87,827. FRAME OF RADIATORS FOR AUTOMOBILES. LINDLEY D. HUSSELL, Hartford, Conn. Filed July 24, 1905. Serial No. 271,111. Term of patent 14 years.

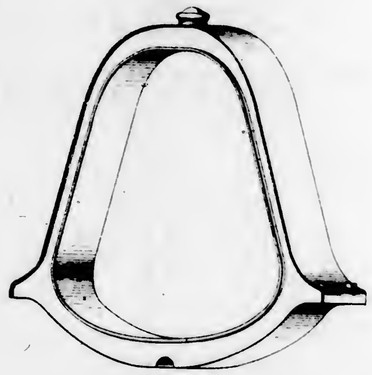

Claim.—The ornamental design for a frame of a radiator for automobiles as shown.

87,828. RUG. FRANK A. HAAS, New York, N. Y., assignor to Matthew J. Whittall, Worcester, Mass. Filed Dec. 27, 1905. Serial No. 293,530. Term of patent 3½ years.

Claim.—The ornamental design for a rug as shown.

TRADE-MARKS

PUBLISHED FEBRUARY 13, 1906.

The following trade-marks have been adjudged entitled to registration under the act of February 20, 1905, and are published in compliance with section 6 of said act. Said section provides:

"Any person who believes he would be damaged by the registration of a mark may oppose the same by filing notice of opposition, stating the grounds therefor, in the Patent Office within thirty days after the publication of the mark sought to be registered, which said notice of opposition shall be verified by the person filing the same before one of the officers mentioned in section two of this act. If no notice of opposition is filed within said time the Commissioner shall issue a certificate of registration therefor, as hereinafter provided for."

Marks which are stated to have been "Used ten years" are registrable under the last proviso of section 5 of said act, which is as follows:

"And provided further, That nothing herein shall prevent the registration of any mark used by the applicant or his predecessors, or by those from whom title to the mark is derived, in commerce with foreign nations or among the several States, or with Indian tribes, which was in actual and exclusive use as a trade-mark of the applicant or his predecessors from whom he derived title for ten years next preceding the passage of this act."

Section 14 of said act provides for the following fee:

"On filing notice of opposition to the registration of a trade-mark, ten dollars."

SER. No. 249. WHISKY. W. H. JONES AND CO., Boston, Mass. Filed Apr. 3, 1905.

ELM HILL

The words "ELM HILL."

SER. No. 689. ANTIFOULING COMPOSITIONS FOR THE BOTTOMS OF STEEL AND IRON SHIPS. GEORGE H. GARDINER & SON, New York, N. Y. Filed Apr. 6, 1905. Used ten years.

AMERICAN McINNES ANTI-FOULING COMPOSITION.

The words "AMERICAN MC INNES ANTI-FOULING COMPOSITION."

SER. No. 731. CANDIES, CHOCOLATES, AND BONBONS. D. AUERBACH & SONS, New York, N. Y. Filed Apr. 7, 1905.

SER. No. 731.

The words "RED BAND" arranged on a band of red, and below these is another band or stripe of red color. Between the two red bands or stripes is the representation of a number of men dressed in red garments and preceded by a drum-major and playing musical band instruments and followed by a negro carrying a bucket in one hand.

SER. No. 795. TEA. WILLIAM H. SIBLEY, Freeport, Ill. Filed Apr. 8, 1905.

EMPEROR

The word "EMPEROR."

SER. No. 861. CHILDREN'S UNDERWAISTS. NAZARETH WAIST CO., Reading, Pa. Filed Apr. 8, 1905.

SER. No. 861.

SER. No. 2,003. MEN'S COATS, TROUSERS, AND VESTS. JOSEPH

SER. No. 861.

A keystone with the outlines of a waist therein and the word "NAZARETH" printed or woven over the waist within the keystone.

SER. No. 1,213. ANTICORROSIVE COMPOSITION FOR APPLICATION TO THE BOTTOMS OF STEEL AND IRON SHIPS. GEORGE N. GARDINER & SON. New York, N. Y. Filed Apr. 13, 1905. Used ten years.

AMERICAN McINNES ANTI-CORROSIVE COMPOSITION.

The words "AMERICAN MCINNES ANTI-CORROSIVE COMPOSITION."

SER. No. 1,354. GLOVES AND MITTENS. THE JOSEPH N. EISENDRATH COMPANY. Chicago, Ill. Filed Apr. 13, 1905.

ASBESTOL

The word "ASBESTOL," which is inclosed in a diamond-shaped frame.

SER. No. 1,671. VARNISHES, FINISHES, OIL-FINISHES, JAPANS, AND FILLERS. CHAS. H. GILLESPIE & SONS, Jersey City, N. J. Filed Apr. 15, 1905.

MONARCH

The word "MONARCH."

SER. No 1,898. WHISKY. PHILIP FREILER, Elgin, Ill. Filed Apr. 17, 1905. Used ten years.

DR. SCHENCK'S

The name "DR. SCHENCK'S."

SER. No. 2,003. MEN'S COATS, TROUSERS, AND VESTS. JOSEPH YESKA, New York, N.Y. Filed Apr. 17, 1905. Used ten years.

Monograms representing the letters "J" and "Y," between which appear the representations of the obverse and reverse sides of a medal, one slightly overlapping the other. On the obverse side is the representation of a seated female figure holding a wreath and on the reverse side the words "PRIZE MEDAL," arranged around a circle that is crossed by lines radiating from the center of the medal.

SER. No. 2,059. LADIES' SHIRT-WAISTS AND SHIRT-WAIST SUITS. D. LEVY & SONS CO., Baltimore, Md. Filed Apr. 17, 1905.

The words "ALBION BRAND" and a monogram of the letters and character "D L & S," the monogram being inclosed within a curved figure formed by an irregular outline.

SER. No. 2,124. THA. B. DESENBERG & CO., Kalamazoo, Mich. Filed Apr. 18, 1905.

The word "SWING," associated with the representation of a tree and with a swing suspended from one of its branches with a Japanese maiden sitting in the swing and others standing by. A child is in the branches of the tree, and on the trunk of the tree are the letters and character "B. D & Co."

SER. No. 2,219. SOAP IN FORM OF CAKES OR BARS. CHAS. W. YOUNG & CO., Philadelphia, Pa. Filed Apr. 18, 1905.

The words "CYGNET SOAP" and the facsimile signature of the firm of "CHAS. W YOUNG & CO.," associated with the representation of two cygnets floating upon the water with pond-lilies in the foreground.

SER. No. 2,355. POWDERED ACID PHOSPHATE OF LIME. PROVIDENT CHEMICAL WORKS, St. Louis, Mo. Filed Apr. 20, 1905. Used ten years.

B.C.T.

The letters "B. C. T."

SER. No. 2,371. CHEWING-GUM. FRANK H. FLEER & COMPANY, Philadelphia, Pa. Filed Apr. 20, 1905.

The word "CHICLETS" and the representation of a circular seal having serrated edges upon which appears the representation of a sunburst inclosing a circular panel having thereon the representation of a small sunburst.

SER. No. 2,984. OLIVE-OIL. LOS ANGELES OLIVE GROWERS ASSOCIATION, Los Angeles, Cal. Filed Apr. 25, 1905.

SYLMAR

The word "SYLMAR."

SER. No. 2,999. REMEDY FOR THE TREATMENT OF ASTHMA, PHTHISIC, HAY-FEVER, BRONCHITIS, AND CATARRH. R. SCHIFFMANN COMPANY, St. Paul, Minn. Filed Apr. 25, 1905. Used ten years.

DR. R. SCHIFFMANN'S GERMAN ASTHMA CURE

The words "DR. R. SCHIFFMANN'S GERMAN ASTHMA CURE."

SER. No. 3,041. CANNED FRUITS AND VEGETABLES. THE WEIDEMAN COMPANY, Cleveland, Ohio, Chicago, Ill., and New York, N. Y. Filed Apr. 26, 1905.

SER. No. 3,041.

The word "COMMODORE," partly inclosed in an ornamental scroll, and the representation of the monument of Commodore Oliver Hazard Perry, erected in the city of Cleveland, State of Ohio.

SER. No. 3,042. CANNED FRUITS AND VEGETABLES. THE WEIDEMAN CO., Cleveland, Ohio, Chicago, Ill., and New York, N. Y. Filed Apr. 26, 1905. Used ten years.

The representation of a corner building having a tower thereon and the number "1861" placed over the building, the tower dividing the number, "18" being on the left and "61" on the right side. The tower is provided with clock-dials and a flagstaff from which floats a pennant. In front of the building is a street scene showing drays filled with goods. Below the picture are two curvilinear panels with pointed ends, and on each side is an ornamental border.

SER. No. 3,058. BAKING-POWDER. CRESCENT MANUFACTURING CO., Seattle, Wash. Filed Apr. 26, 1905.

CRESCENT

The word "CRESCENT," associated with the representation of a crescent.

SER. No. 3,170. COTTON DUCK. WILLIAM B. HOOPER & SONS CO. OF BALTIMORE CITY, Baltimore, Md. Filed Apr. 26, 1905.

HOOPERWOOD

The arbitrary word-symbol "HOOPERWOOD."

SER. No. 3,176. FOUNTAIN-PENS. THE CENTURY PEN COMPANY, Whitewater, Wis. Filed Apr. 26, 1905.

THE CENTURY PEN

The words "THE CENTURY PEN" inclosed in a circle with rays radiating therefrom.

SER. No. 3,393. ROUND, PEARL-SHAPED, OR GLOBULAR GELATIN CAPSULES FILLED. JOHN RUTGERT PLANTEN, New York, N. Y. Filed Apr. 26, 1905. Used ten years.

PERLOIDS

The word "PERLOIDS."

SER. No. 3,395. FILLED GELATIN CAPSULES. JOHN RUTGERT PLANTEN, New York, N. Y. Filed Apr. 26, 1905. Used ten years.

The words and character "PLANTEN'S C & C OR BLACK CAPSULES."

SER. No. 3,464. PIPE-CUTTERS, PIPE-VISES, PIPE-THREADING MACHINES, AND STOCKS AND DIES. THE ARMSTRONG MFG. CO., Bridgeport, Conn. Filed Apr. 26, 1905.

The monogram of the letters "F A" upon the representation of a shield.

SER. No. 3,811. WHISKY. MARTIN J. BLIGH, Logansport, Ind. Filed May 1, 1905.

DAN DALTON

The words "DAN DALTON."

SER. No. 4,067. WHISKY. JAS R ROSS & CO., Indianapolis, Ind. Filed May 3, 1905. Used ten years.

Marion Club

The representation of a rectangular field provided with screw-heads, having a panel extending across the same upon which appear the words "MARION CLUB."

SER. No. 4,074. WHISKY. JOHN H. BEAM, Early Times, Ky. Filed May 3, 1905. Used ten years.

EARLY TIMES

The words "EARLY TIMES," associated with the representation of a seal upon which appears the picture of an ox team and cart, together with the words "EARLY TIMES" inclosed in concentric circles.

SER. No. 4,158. REMEDY FOR MALARIA AND CHILLS AND FEVER. FRANCIS S. OTT, Sacramento, Cal. Filed May 3, 1905. Used ten years.

3 DAY MALARIA CURE

The numeral "3" with the words "DAY MALARIA CURE" arranged within the arms of the said numeral and inclosed in quotation-marks.

SER. No. 4,283. CORSETS. ARTISTS' MODEL CORSET CO., Cleveland, Ohio. Filed May 4, 1905.

ARTISTS' MODEL

The words "ARTISTS' MODEL" arranged with two parallel lines under all except the first and last letters of said words.

SER. No. 4,542. BITTERS. JOHN BARDENHEIER WINE & LIQUOR CO., St. Louis, Mo. Filed May 6, 1905. Used ten years.

DR VAN DER BILT'S

The words "DR. VAN DER BILT'S" and the representation of the fanciful portrait of the head of a man with long hair, mustache, and goatee and wearing a broad-brimmed hat, associated with a monogram of the letters "J B."

SER. No. 4,584. KNIT UNDERWEAR. ABRAHAM & STRAUS, Brooklyn, N. Y. Filed May 4, 1905.

ABRAST

The word "ABRAST" arranged on the representation of a belt.

SER. No. 4,673. REMEDY FOR CATARRH, HAY-FEVER, AND COLD IN THE HEAD. THE HOSIE REMEDY CO., South Haven, Mich. Filed May 8, 1905.

FORMALDE-BALM

The compound word "FORMALDE-BALM" arranged upon a rectangular panel of a solid color surrounded by a rectangular border.

SER. No. 4,718. WHISKY. WICHMAN, LUYENS & CO., San Francisco, Cal. Filed May 5, 1905.

OLD GILT EDGE

The word-symbol "OLD GILT EDGE."

SER. No. 4,827. VEGETABLE GERMICIDES. J. HUBBARD & CO., Boston, Mass. Filed May 6, 1905.

DR HUBBARD'S VEGETABLE DISINFECTANT & GERMICIDE.

The representation of a siphon having a spray projected from its nozzle, in connection with the words "DR. HUBBARD'S VEGETABLE DISINFECTANT & GERMICIDE."

SER. No. 4,845. SHEETINGS AND DRILLS. LORAY MILLS, Gastonia, N. C. Filed May 10, 1905.

An Indian and an Indian pony, the Indian having in one hand an arrow and in the other a bow.

SER. No. 5,400. BELT-DRESSINGS. BLACK DIAMOND MANUFACTURING COMPANY, Cincinnati, Ohio. Filed May 13, 1905.

The symbol or representation of a diamond-shaped figure in solid black.

SER. No. 5,401. BELT-DRESSINGS. BLACK DIAMOND MANUFACTURING COMPANY, Cincinnati, Ohio. Filed May 13, 1905.

BLACK DIAMOND

The words "BLACK DIAMOND."

SER. No. 5,971. WEIGHING-MACHINES AND PARTS THEREOF. E. AND T. FAIRBANKS AND COMPANY, St. Johnsbury, Vt. Filed May 16, 1905.

The representation of a globe or sphere upon which meridians and parallels are delineated, the Western Hemisphere being shown on said representation and there being applied in the proper places the words "ATLANTIC OCEAN" and "SOUTH PACIFIC OCEAN."

SER. No. 6,063. BELT-DRESSING. STEPHENSON MFG. CO., Albany, N. Y. Filed May 19, 1905.

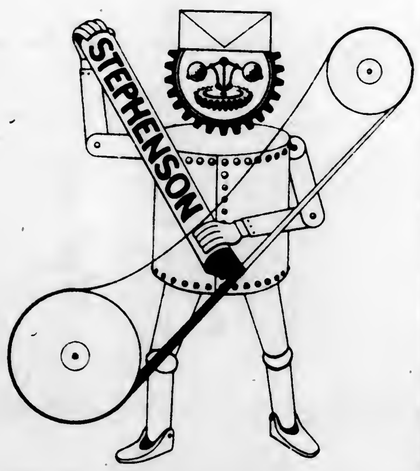

A figure made up of wheels, governor, boiler-jacket, and links placed together to represent the caricature of a man in whose hands is placed a stick of belt-dressing upon which is the name "STEPHENSON," which is held by the man in contact with a belt, which passes over pulleys at the top and bottom of the picture.

SER. No. 6,132. METAL BEARINGS, BUSHINGS, AND JOURNALS. NORTH AMERICAN METALINE CO., Long Island City, N. Y. Filed May 20, 1905. Used ten years.

METALINE

The word "METALINE."

SER. No. 6,138. SKIN-LOTIONS USED AS A CURE FOR CHAPPED HANDS, FACE, OR LIPS, ALSO SUNBURN, TAN, AND ROUGHNESS OF THE SKIN. FRANK S. WILLIAMS & CO., Washington, D. C. Filed May 20, 1905.

SER. No. 6,138.

HANDOLINE

The word "HANDOLINE."

SER. No. 6,144. WHISKY. WHITE, HENTS & CO., Philadelphia, Pa. Filed May 20, 1905. Used ten years.

TRIMBLE

The word "TRIMBLE."

SER. No. 6,192. GIN. SIGMUND HOCHSTADTER, New York, N. Y. Filed May 20, 1905.

The representation of a bottle having displayed thereon the representation of a seal bearing a spray of juniper in its mouth and the word "SEAL" extending across its body portion. Above said representation are displayed the words "HOCHSTADTER'S CELEBRATED BLUE" and below said representation the word "GIN," arranged upon a band or ribbon above which is shown a spray of juniper. Below said band or ribbon is displayed a shield of ornamental outline having an elliptical central panel or field and below said shield the signature "THE HOCHSTADTER CO." Upon the top of the bottle is shown a circular seal bearing the words "THE HOCHSTADTER CO. BLUE SEAL GIN."

SER. No. 6,197. CORDIALS. SIGMUND HOCHSTADTER, New York, N. Y. Filed May 20, 1905.

A representation of a banner inclosed in an ornamental circle, associated with the words "LIQUEUR DE ST. VINCENT C. SPILTOIR."

SER. No. 6,247. MEN'S COATS, VESTS, AND PANTS. ADOLPH LEVY, New York, N. Y. Filed May 23, 1905.

OUTLET SYSTEM
CORRECT CLOTHING

The two words "OUTLET SYSTEM," the letters of said words being broken to form an open space extending continuously throughout the two words, and the words "CORRECT CLOTHING" located within said space, and thus included within the letterilg of the two words "OUTLET SYSTEM."

SER. No. 6,254. WHISKY. FRED RODDEWIG SONS, Davenport, Iowa. Filed May 23, 1905.

UNEEDA

The word "UNEEDA."

SER. No. 6,348. PENCILS. HANDELSHOF CIE, C. WM. BOCK, Schweinau, near Nuremburg, Germany. Filed May 20, 1905. Used ten years.

The representation of an open hand projecting from a cuff.

SER. No. 6,383. MEDICINES FOR THE CURE OF FEMALE DISORDERS. LORINDA E. TRUMAN, Springfield, Mo. Filed May 23, 1905.

SANATIA

The word "SANATIA."

SER. No. 6,536. WHISKY. H. A. ROSENHAM CO., Cincinnati, Ohio. Filed May 24, 1905. Used ten years.

The representation of the bust of an old man with smooth face and long hair, associated or in combination with the words "OLD QUAKER CLUB" arranged in an arc over the head of bust.

SER. No. 6,602. WHISKY. LOUISA NELSON, Nashville, Tenn. Filed May 25, 1905.

SER. No. 6,602.

Belle Meade

The words "BELLE MEADE."

SER. No. 6,734. WHEAT-FLOUR. THE ANSTED & BURK CO., Springfield, Ohio. Filed May 26, 1905.

YOU-KNEAD-IT.

The word "YOU-KNEAD-IT."

SER. No. 6,744. IRON BARS, RODS, SHEETS, PLATES, HOOPING, AND TIRES. LOW MOOR COMPANY, LIMITED, Low Moor, near Bradford, England. Filed May 26, 1905. Used ten years.

LOWMOOR

The word "LOWMOOR."

SER. No. 6,873. ALCOHOLIC PUNCH. C. H. GRAVES & SONS, Boston, Mass. Filed May 29, 1905. Used ten years.

HUB PUNCH

The words "HUB PUNCH."

SER. No. 7,075. POWDERED NERVE AND MUSCLE TONIC. ED T. RICHARDS, Chicago, Ill. Filed May 31, 1905.

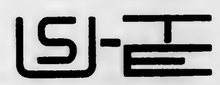

The representation of an "S" within the loop of the letter "U" and a "T" over an "E," the vertical height of the letters "T" and "E" combined being equal to the vertical height of the letter "U" and the letters "T" and "E" being separated from the letters "S" and "U" by a hyphen.

SER. No. 7,261. PLAIN BRAIDS. A. H. RICE & CO., Pittsfield, Mass. Filed June 2, 1905.

The representation of a Maltese cross, a circle upon the cross, and a square within the circle.

SER. No. 7,243. CORN BRANDY. CHARLES JACQUIN ET CIE INC., New York, N. Y. Filed June 2, 1905.

A shield-shaped device of irregular outline having imposed thereon near its center an ermine bearing the inscription "FEINSTE QUALITÄT" and surmounted by a crown. Below said ermine appears the title "KORNBRANNTWEIN" and the signature "CHARLES JACQUIN ET CIE" and below the signature the abbreviation "INCORP."

SER. No. 7,247. DRY GIN. CHARLES JACQUIN ET CIE INC., New York, N. Y. Filed June 2, 1905.

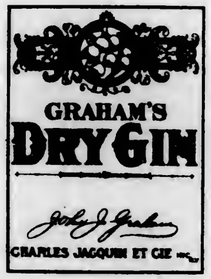

The representation of a circular panel imposed upon an ornamental band. In said panel is shown a spray of foliage with berries. Below said panel and band appears the title inscription "GRAHAM'S DRY GIN," below said inscription the signature "JOHN J. GRAHAM," and below said signature the name and description "CHARLES JACQUIN ET CIE INC. N. Y.," and the entire device inclosed by a plain border.

SER. No. 7,267. LIQUID RHEUMATIC REMEDY. MICHAEL W. MONAGHAN, Woodhaven, Long Island, N. Y. Filed June 3, 1905.

The letters "M R R" interwoven to form a monogram and in which the letter "M" is shaded with horizontal lines, one letter "R" being black with a thin white border and the remaining letter "R" being in outline.

SER. No. 7,279. LUBRICATING-OIL FOR WATCHES AND CLOCKS. JOHN WIRZ, New Bedford, Mass. Filed June 2, 1905.

SER. No. 7,279.

The name "EZRA KELLEY," a monogram of the letters "E K," and a facsimile signature of Ezra Kelley, deceased.

SER. No. 7,343. WRITING-PAPER. CHAPIN & GOULD PAPER CO., Springfield, Mass. Filed June 3, 1905. Used ten years.

The words "CRESCENT MILLS" and the representation of a crescent.

SER. No. 7,427. HORSE-NAILS. THE CAPEWELL HORSE NAIL COMPANY, Hartford, Conn. Filed June 5, 1905. Used ten years.

CAPEWELL

The word "CAPEWELL."

SER. No. 7,454. LEATHER BOOTS AND SHOES. BENTLEY & OLMSTED COMPANY, Des Moines, Iowa. Filed June 5, 1905.

BUFFALO CALF

The representation of a buffalo charging through high grass, associated with the words "BUFFALO CALF."

SER. No. 7,480. MEDICAL PREPARATIONS FOR COUGHS AND FOR THE CURE OF THROAT AND LUNG DISEASES. BLACK DIAMOND MEDICINE COMPANY, Cowlesville, N. Y. Filed June 5, 1905.

SER. No. 7,480.

The words "BLACK DIAMOND," associated with the portrait of Eugene Austin inclosed in a diamond-shaped figure.

SER. No. 7,484. BEER. J. L. HOERBER BREWING CO., Chicago, Ill. Filed June 5, 1905.

The letter "H," on the uprights of which appear, respectively, the words "CREAM" and "OF MALT," associated with the representation of a gnome occupying the space between the uprights and holding a mug elevated in one hand. Below the letter is a representation of a hop-bud, and above and to the sides are representations of sprays of barley.

SER. No. 7,490. SOLID SALTS FOR MAKING BEVERAGES. JOSEPH PERSONENI, New York, N. Y. Filed June 5, 1905.

The word "IMPERIALE," associated with the word "EFFERVESCENTE," the two words being arranged in a curved panel, below which is an ornamental scroll. Below the panel and scroll appears a shield having in its center a crown and at each side thereof the initials "J" and "P," respectively. A scroll protrudes from each side of the shield, and twigs of laurel and palm are represented as projecting at opposite corners of the shield.

SER. No. 7,566. CROUSTADES. FERDINAND BEAUMONT, New York, N. Y. Filed June 7, 1905.

F. B.

The letters "F. B."

SER. No. 7,677. SASH-PULLEYS. PETER DOSCH, Bridgeport, Conn. Filed June 8, 1905.

TRIPLE

The word "TRIPLE."

SER. No. 7,710. WHISKY. GEORGE COHN, Louisville, Ky. Filed June 8, 1905.

LONE OAK

The words "LONE OAK."

SER. No. 7,964. IRON OXID. THE CONNELLY IRON SPONGE AND GOVERNOR COMPANY, New York, N. Y. Filed June 12, 1905.

IRON SPONGE.

The words "IRON SPONGE."

SER. No. 7,979. LIQUID PREPARATION FOR THE TREATMENT OF HEADACHES AND SIMILAR AFFECTIONS. CALEB D. BRADHAM, Newbern, N. C. Filed June 12, 1905.

Koladine

The word ""KOLADINE."

SER. No. 8,111. SOFT AND STIFF FUR-FELT HATS, STRAW AND SILK HATS, CAPS FOR MEN AND BOYS' WEAR, AND LADIES' HATS. FRANK SCHOBLE & CO., Philadelphia, Pa. Filed June 14, 1905.

Dunny

The arbitrary word "DUNNY" in script letters slanting from left to right with a paraph extending from the last letter "Y."

SER. No. 8,201. LEATHER SHOES. CHARLES K. SEARSON, St. Paul, Minn. Filed June 15, 1905.

The letters "RE-Z" arranged on a shaded background.

SER. No. 8,235. WHISKY. CHARLES DENNERY & COMPANY, Chicago, Ill. Filed June 15, 1905. Used ten years.

CLEAR SPRING

The words "CLEAR SPRING."

SER. No. 8,296. BICYCLES. HENRY KEIDEL, Baltimore, Md. Filed June 15, 1905.

The arbitrary and fanciful word "ARDMORE" on a circular band surrounding the representation of the head of a horse.

SER. No. 8,325. TOILET SOAP. CHAS. W. YOUNG & Co., Philadelphia, Pa. Filed June 16, 1905.

CYGNET

The word "CYGNET."

SER. No. 8,343. LIQUID PREPARATION OF SODIUM PHOSPHATE. VOIET & Co., Chattanooga, Tenn. Filed June 16, 1905.

SODAMEL

The word "SODAMEL."

SER. No. 8,345. AROMATIC SYRUP FOR DISGUISING QUININE. VOIET & Co., Chattanooga, Tenn. Filed June 16, 1905. Used ten years.

SER. No. 8,345.

SYRUPUS JUVANS.

The words "SYRUPUS JUVANS."

SER. No. 8,346. REMEDY FOR INDIGESTION. VOIET & Co., Chattanooga, Tenn. Filed June 16, 1905. Used ten years.

PEPTICINE

The word "PEPTICINE."

SER. No. 8,347. TONIC CORDIAL CONTAINING COD-LIVER OIL AND HYPOPHOSPHITES. VOIET & Co., Chattanooga, Tenn. Filed June 16, 1905. Used ten years.

Gadine

The word "GADINE."

SER. No. 8,426. REMEDIES FOR SKIN AND SCALP DISEASES. OTTO J. HARTWIG, Chicago, Ill. Filed June 17, 1905.

SKIN-A-FIRE

The hyphenated word "SKIN-A-FIRE."

SER. No. 8,429. AUTOMOBILES. THOMAS B. JEFFERY & Co., Kenosha, Wis. Filed June 17, 1905.

Rambler

The word "RAMBLER."

SER. No. 8,474. TOPICAL REMEDIES FOR SKIN DISEASES, INFLAMMATIONS AND ERUPTIONS. JAMES F. BALLARD, St. Louis, Mo. Filed June 19, 1905.

Scrofonol

The word "SCROFONOL."

SER. No. 8,855. TOILET SOAP. FARDRIDGE & BLACKWELL, Detroit, Mich. Filed June 23, 1905.

A heart-shaped figure with a building shown thereon, and the words "THE HEART OF DETROIT" also thereon.

SER. No. 8,856. CORSET-COVERS AND CORSET-WAISTS. CHAS. A. POWELL, Whitesboro, N. Y. Filed June 23, 1905.

Alliance Cut

The words "ALLIANCE CUT."

SER. No. 9,608. TIN AND TERNE PLATES. FOLLANSBEE BROTHERS COMPANY, Pittsburg, Pa. Filed July 3, 1905. Used ten years.

TRIUMPH
OLD METHOD

The words "TRIUMPH OLD METHOD."

SER. No. 9,612. TIN AND TERNE PLATES. FOLLANSBEE BROTHERS COMPANY, Pittsburg, Pa. Filed July 3, 1905.

EMBLEM
OLD STYLE

The words "EMBLEM OLD STYLE."

SER. No. 9,613. TIN AND TERNE PLATES. FOLLANSBEE BROTHERS COMPANY, Pittsburg, Pa. Filed July 3, 1905. Used ten years.

LIONEL
OLD STYLE

The words "LIONEL OLD STYLE."

SER. No. 9,614. TIN AND TERNE PLATES. FOLLANSBEE BROTHERS COMPANY, Pittsburg, Pa. Filed July 3, 1905. Used ten years.

ORBIT
RE-DIPPED
OLD STYLE

The words "ORBIT RE-DIPPED OLD STYLE."

SER. No. 9,617. TIN AND TERNE PLATES. FOLLANSBEE BROTHERS COMPANY, Pittsburg, Pa. Filed July 3, 1905. Used ten years.

RAYMOND

The word "RAYMOND."

SER. No. 9,618. TIN AND TERNE PLATES. FOLLANSBEE BROTHERS COMPANY, Pittsburg, Pa. Filed July 3, 1905. Used ten years.

ALLEGHENY

The word "ALLEGHENY."

SER. No. 9,619. TIN AND TERNE PLATES. FOLLANSBEE BROTHERS COMPANY, Pittsburg, Pa. Filed July 3, 1905. Used ten years.

OAKMONT

The word "OAKMONT."

SER. No. 9,621. TIN AND TERNE PLATES. FOLLANSBEE BROTHERS COMPANY, Pittsburg, Pa. Filed July 3, 1905. Used ten years.

SHERWOOD

The word "SHERWOOD."

SER. No. 9,622. TIN AND TERNE PLATES. FOLLANSBEE BROTHERS COMPANY, Pittsburg, Pa. Filed July 3, 1905. Used ten years.

KENTON

The word "KENTON."

SER. No. 9,623. TIN AND TERNE PLATES. FOLLANSBEE BROTHERS COMPANY, Pittsburg, Pa. Filed July 3, 1905.

FAVORITE

The word "FAVORITE."

SER. No. 9,624. TIN AND TERNE PLATES. FOLLANSBEE BROTHERS COMPANY, Pittsburg, Pa. Filed July 3, 1905.

DAISY

The word "DAISY."

SER. No. 9,631. TIN AND TERNE PLATES. FOLLANSBEE BROTHERS COMPANY, Pittsburg, Pa. Filed July 3, 1905. Used ten years.

CLIFTON

The word "CLIFTON."

SER. No. 9,634. TIN AND TERNE PLATES. FOLLANSBEE BROTHERS COMPANY, Pittsburg, Pa. Filed July 3, 1905.

LITHO

The word "LITHO."

SER. No. 9,727. RYE WHISKY. GILLIAMS, JONES & CO., Philadelphia, Pa. Filed July 3, 1905. Used ten years.

INSLEE

The word "INSLEE" displayed in the field of a broken line or ornamental oblong panel.

SER. No. 9,735. GINGER-ALE, SARSAPARILLA, AND OTHER SWEETENED AND FLAVORED NON-ALCOHOLIC CARBONATED BEVERAGES. FRANK M. FINLEY, Washington, D. C. Filed July 3, 1905.

F

The letter "F" in a parallelogram or outline figure of a diamond.

SER. No. 9,857. MATTRESSES. JOHN L. RADERMACHER, New York, N. Y. Filed July 6, 1905.

A representation of a shield having a scroll-like border inclosing three spiral springs, with a scroll beneath on which appear the words "RADERMACHER'S SOMNLASTIQUE" inclosed in quotations and associated with the name "JOHN L. RADERMACHER" above the shield.

SER. No. 9,884. CIGARS. B. H. GATO CIGAR COMPANY, Key West, Fla. Filed July 7, 1905.

The representation of the top part of a geographical globe showing North and Central America and the upper part of South America, the Atlantic and Pacific Oceans, Philippine and Sandwich Islands, and the West Indies. Resting on that part of the picture representing the United States is the picture of an eagle with outstretched wings standing erect. Immediately above the same and arranged in a curved line are the words "EMPERADOR DEL MUNDO" in capital block-faced letters.

SER. No. 10,158. VERMOUTH. CHARLES JACQUIN ET CIE INC., New York, N. Y. Filed July 13, 1905.

The representation of an ermine bearing the inscription "VERMOUTH DI PIETRO RICCA, DA TORINO." and a crown surmounting said ermine. At the sides of said ermine are shown griffins, and below said ermine are three circular panels, the center of which bears a castle and the adjoining side panels the heads of griffins or eagles. Above said ermine are shown flags having shields superimposed thereon, and adjoining the upper ends of said flags are circular fields, each bearing a castle. Below the ermine and griffins is a substantially elliptical panel inclosing a group of houses and a body of water with ships thereon. At each side of said panel is arranged an irregular panel, one of which bears the inscription "VINO VERMOUTH" and the other the name "PIETRO RICCA." Below said elliptical panel appears the signature "PIETRO RICCA," together with the phrase "NONE GENUINE WITHOUT SIGNATURE OF," the whole device being inclosed by a plain rectangular border and the space intermediate the same and the parts above described filled in with scrollwork, grapes, and grape-leaves.

SER. No. 10,185. BUTTER. BEYER BROS. CO., Rochester, Ind. Filed July 13, 1905. Used ten years.

B.B.

The letters "B. B." inclosed by curved lines arranged in the shape of an ellipse.

SER. No. 10,296. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio. Filed July 14, 1905.

The conventional representation of a king riding on a bicycle.

SER. No. 10,436. COTTON SHEETINGS AND DRILLS. KENSO IWAHARA, New York, N. Y. Filed July 17, 1905.

The representation of a tigress and cub near a low-spreading pine-tree.

SER. No. 10,517. SEWING-MACHINES AND SEWING-MACHINE PARTS. HOUSEHOLD SEWING MACHINE CO., Providence, R. I. Filed July 18, 1905.

Adelaide

The word "ADELAIDE."

SER. No. 10,619. BELT-CEMENT. NEW YORK LEATHER BELTING CO., New York, N. Y. Filed July 20, 1905.

Victor

The word "VICTOR."

SER. No. 10,774. SPUN SILK. INDUSTRIE-GESELLSCHAFT FÜR SCHAPPE, Basel, Switzerland. Filed July 25, 1905.

A monogram of the letters "I S P L S" upon an ornamental square figure, each side of which has a semicircle.

SER. No. 10,850. OBTUNDENT OR LOCAL ANESTHETIC. EUREKA CHEMICAL CO., Omaha, Nebr. Filed July 26, 1905.

The letters "N A" and a conventional three-leaf figure comprising a central pendent leaf and side leaves, the letters being arranged in the spaces between said central leaf and the side leaves.

SER. No. 10,868. WHITE LEAD. NATIONAL LEAD COMPANY, Jersey City, N. J., and New York, N. Y. Filed July 27, 1905. Used ten years.

MISSOURI COMPANY ST. LOUIS

The words "MISSOURI COMPANY ST. LOUIS."

SER. No. 10,961. VARNISHES. THE DAVID B. CROCKETT COMPANY, Bridgeport, Conn. Filed July 28, 1905. Used ten years.

NEW WATERPROOF
FLOOR FINISH

The words "New Waterproof Floor Finish."

Ser. No. 10,869. WHITE LEAD. National Lead Company, Jersey City, N. J., and New York, N. Y. Filed July 27, 1905. Used ten years.

D. B. SHIPMAN CHICAGO.

The letters and words "D. B. Shipman, Chicago."

Ser. No. 10,877. COTTON SHEETINGS AND DRILLS. Kenso Iwahara, New York, N. Y. Filed July 27, 1905.

The representation of two cows drinking water from a tub.

Ser. No. 11,017. STIFF-FELT, SOFT-FELT, AND STRAW HATS. Dreier, Goodhart & Schreur, New York, N. Y. Filed July 29, 1905. Used ten years.

The word "Gotham" surmounted by an eagle with a scroll in its talons on which appear the words "Fide Cum Industria," and with the words "Superior Make" below the word "Gotham."

Ser. No. 11,018. STIFF-FELT, SOFT-FELT, AND STRAW HATS. Dreier, Goodhart & Schreur, New York, N. Y. Filed July 29, 1905. Used ten years.

The words "The Empire City Hat Quality Guaranteed" and the representation of a shield bearing a figure of a woman with a smaller shield by its side, on which appears a monogram of the letters "D G S" inclosed in concentric circles with the word "Excelsior" between the circles.

Ser. No. 11,207. SHOVELS, SCOOPS, AND SPADES. Hayden Automatic & Equipment Company, New York, N. Y. Filed Aug. 2, 1905.

NEVERFAIL

The word "Neverfail."

Ser. No. 11,217. TOOTH-PASTE. J. M. Grosvenor & Co., Boston, Mass. Filed Aug. 3, 1905. Used ten years.

KREMLIN

The word "Kremlin."

Ser. No. 11,240. TOOTH-SOAP. K. K. Landespriv. Milly-Kerzen-, Seifen-und Glycerin-Fabrik, von F. A. Sarg's Sohn & Co., IV, Vienna and Lissing, near Vienna, Lower Austria, Austria-Hungary. Filed Aug. 4, 1905. Used ten years.

KALODONT

The word "Kalodont."

Ser. No. 11,289. PORTLAND CEMENT. The Glens Falls Portland Cement Co., Glens Falls, N. Y. Filed Aug. 5, 1905.

IRON CLAD

The words "Iron Clad."

Ser. No. 11,295. TONICS. B. J. Hart & Co., Limited, New Orleans, La. Filed Aug. 5, 1905.

Morrhuvin

The word "Morrhuvin."

Ser. No. 11,375. STRINGS FOR VIOLINS. Lyon & Healy, Chicago, Ill. Filed Aug. 7, 1905.

The representation of a goat's head.

Ser. No. 11,423. HAVANA CIGARS. Havana Commercial Company, Jersey City, N. J., and New York, N. Y. Filed Aug. 8, 1905. Used ten years.

The words "La Carolina" arranged within the upper half of the border of a double ellipse, a monogram of the letters "D E," and words and abbreviation "Bances Y Suarez" arranged within the inner ellipse and the word "Habana" within the lower half of the border.

Ser. No. 11,526. MATERIALS, SOLID OR LIQUID, WHICH WHEN INTRODUCED INTO A BATH WILL EFFERVESCE AND GENERATE GAS THEREIN. The Kny-Scheerer Company, Brooklyn, N. Y. Filed July 22, 1905.

ZEOTOO

The word "Zeotoo."

Ser. No. 11,574. BAKING-POWDER. Price Baking Powder Company, Chicago, Ill. Filed Aug. 12, 1905. Used ten years.

CREAM

The word "Cream."

Ser. No. 11,590. COATING FOR WALLS, &c., CONSISTING OF A CHEMICAL COMPOUND IN DRY POWDER FORM. Toch Brothers, New York, N. Y. Filed Aug. 12, 1905.

PLASTERTOX

The word "Plastertox."

Ser. No. 11,690. BAKING-POWDER. J. D. & R. S. Christian Co., Richmond, Va. Filed Aug. 16, 1905.

The word "Rex" and the pictorial representation of a spoon and of a page or child carrying a pan of cakes. Above the representation of the spoon are the words "One Spoon," and below are the words "Baking Powder."

Ser. No. 11,767. RANGES, COOKING-STOVES, AND HEATING-STOVES. Kalamazoo Stove Co., Kalamazoo, Mich. Filed Aug. 18, 1905.

"A KALAMAZOO DIRECT TO YOU"

The words "A Kalamazoo Direct to You" inclosed in quotation-marks.

Ser. No. 11,785. MONTHLY PUBLICATION. Wells Goodhue, Chicago, Ill. Filed Aug. 18, 1905.

National Finance

The words "National Finance."

Ser. No. 11,810. WHITE LEAD. National Lead Company, Jersey City, N. J., and New York, N. Y. Filed Aug. 19, 1905.

The words "THE UNION WHITE LEAD MANUFACTURING COMPANY."

SER. No. 11,814. WHITE LEAD AND OXIDS OF LEAD. NATIONAL LEAD COMPANY, Jersey City, N. J., and New York, N. Y. Filed Aug. 19, 1905. Used ten years.

JEWETT & SONS

The words "JEWETT & SONS."

SER. No. 11,834. COFFEE. SCHWABACHER BROS & CO INC., Seattle, Wash. Filed Aug. 21, 1905.

The representation of a gold shield hung by a chain from a gold rod. Above the shield is printed the words "GOLD SHIELD." Back of the shield is the representation of a red-brick wall from which the rod bearing the gold shield extends out.

SER. No. 11,867. TARRED ROOFING-FELT. W. H. RANKIN COMPANY, Elizabeth, N. J. Filed Aug. 21, 1905. Used ten years.

VIGILANT

The word "VIGILANT," associated with the representation of the racing-yacht *Vigilant*.

SER. No. 11,947. PRESS-BOARD OR PRESS-PAPER. THE ROGERS PAPER MFG. CO., INC'D, Manchester, Conn. Filed Aug. 23, 1905.

The conventional fleur-de-lis figure arranged within a rectangular field, the latter having at each upper corner thereof the figure of a shield, upon which appears the letter "R," and the figures "1832" arranged within the upper part of the field and divided by the central leaf of the fleur-de-lis figure.

SER. No. 12,129. REMEDY FOR SKIN DISEASES. GEORGIE A. COLEMAN, Washington, D. C. Filed Aug. 31, 1905.

A portrait of Zella Shell showing lilies at each of her shoulders and the word "LIBERTY" on a panel arranged on her breast.

SER. No. 12,174. REMEDIES FOR THE RELIEF AND CURE OF ASTHMA, CONSUMPTION, AND PULMONARY DISEASES. BENNETT C. SILVER, New York, N. Y. Filed Sept. 2, 1905.

SACCO

The word "Sacco."

SER. No. 12,309. HAIR-TONICS. HENRY H. JOHNSON, East Orange, N. J. Filed Sept. 7, 1905.

A representation of the head of Frances M. Palmer, wife of Frank Palmer, of East Orange, N. J.

SER. No. 12,442. WHITE LEAD. NATIONAL LEAD COMPANY, Jersey City, N. J., and New York, N. Y. Filed Sept. 11, 1905. Used ten years.

SER. No. 12,442.

THE ULSTER LEAD Co.

The words and abbreviation "THE ULSTER LEAD CO."

SER. No. 12,443. WHITE LEAD. NATIONAL LEAD COMPANY, Jersey City, N. J., and New York, N. Y. Filed Sept. 11, 1905. Used ten years.

J. H. MORLEY & CO. CLEVELAND.

The words and abbreviations "J. H. MORLEY & CO. CLEVELAND."

SER. No. 12,473. MEDICINE FOR DISEASES PECULIAR TO FEMALES. ALEXANDER O. SCHMIDT, San Francisco, Cal. Filed Sept. 11, 1905.

ANTEVITA

The word "ANTEVITA."

SER. No. 12,517. HAVANA CIGARS. HAVANA COMMERCIAL COMPANY, Jersey City, N. J., and New York, N. Y. Filed Sept. 13, 1905. Used ten years.

The words "LA COMERCIAL" arranged within the upper half of the border of a double ellipse and the words "DE BENGOCHEA Y FERNANDEZ" arranged at the center of the mark. The word "HABANA" has also been arranged within the lower half of the border.

SER. No. 12,655. LIQUID WAX USED IN SHOEMAKING. CROWN OIL & WAX COMPANY, Wilmington, Del., and Baltimore, Md. Filed Sept. 15, 1905.

The representation of a crown.

SER. No. 12,745. REMEDIES FOR CONSUMPTION. U. S CHEMICAL CO., Tampa, Fla. Filed Sept. 18, 1905.

The letter "U" crossed by two connected letters "C" facing in opposite directions, forming combinedly the letter "S," the letter "o" adjacent to the head of one "C" and a period adjacent to the head of the opposing "C."

SER. No. 12,979. CANNED SALMON. FIDALGO ISLAND PACKING CO., Anacortes, Wash. Filed Sept. 25, 1905.

ORCHID BRAND

The representation of an orchid flower and leaf, associated with the words "ORCHID BRAND."

SER. No. 12,982. CANNED SALMON. FIDALGO ISLAND PACKING CO., Anacortes, Wash. Filed Sept. 25, 1905.

CORN FLOWER BRAND

The representation of a bunch of corn-flowers, associated with the words "CORN FLOWER BRAND."

SER. No. 12,988. CANNED SALMON. FIDALGO ISLAND PACKING CO., Anacortes, Wash. Filed Sept. 26, 1905.

SER. No. 12,988.

SER. No. 13,425. ROD-PACKING. MULCONROY CO., INC., Philadelphia, Pa. Filed Oct. 9, 1905.

the words "RED RIBBON," are the letters and words "O. W.

SER. No. 13,902. HAMS, SHOULDERS, AND BACON. THE J. & F.

SER. No. 12,988.

LAUREL WREATH BRAND

The representation of a circular wreath of laurel leaves and berries containing two branches with crossed stems, associated with the words "LAUREL WREATH BRAND."

SER. No. 13,107. BUTTER. THE B. O. WHITFORD COMPANY, Washington, D. C. Filed Sept. 28, 1905.

THE BUTTER THAT BETTERS THE BREAD

The representation of a clover blossom and leaf arranged within the center of a circular figure, the words "RED CLOVER" printed within a transverse band extending across the circular figure beneath the representation of the clover blossom and leaf, and the alliteral phrase "THE BUTTER THAT BETTERS THE BREAD" arranged outside of and beneath said circular figure.

SER. No. 13,171. FABRICS MADE UP OF THE COMBINATION OF SILK AND WOOL, SILK AND COTTON, OR SILK AND LINEN. FRED S. BUSSEE, Benton Harbor, Mich. Filed Sept. 30, 1905.

SILKDOWN

The word "SILKDOWN."

SER. No. 13,302. FLAVORING EXTRACTS. THE LION EXTRACT CO., Winnsboro, S. C. Filed Oct. 5, 1905.

RED LION

The words "RED LION," associated with the heraldic figure of a red lion rampant.

SER. No. 13,425. ROD-PACKING. MULCONROY CO., INC., Philadelphia, Pa. Filed Oct. 9, 1905.

THOROBRED

The word "THOROBRED" upon a scroll-like design upon which is the representation of a horse's head, a horseshoe, and a sectional view of the packing inclosed in a horseshoe.

SER. No. 13,683. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill. Filed Oct. 17, 1905. Used ten years.

FAIRBANK'S

The word "FAIRBANK'S."

SER. No. 13,702. CONDENSED MILK AND EVAPORATED CREAM. BORDEN'S CONDENSED MILK CO., Jersey City, N. J., and New York, N. Y. Filed Oct. 17, 1905.

GILT EDGE

The words "GILT EDGE."

SER. No. 13,789. WHEAT-FLOUR. O. W. PEIRCE COMPANY, Lafayette, Ind. Filed Oct. 30, 1905.

O. W. PEIRCE CO. RED RIBBON HIGH PATENT FLOUR

The words "RED RIBBON" inclosed in a circle having an ornamental border and the figure of a ribbon placed under said words, the ribbon having a bowknot arranged midway of its length and crossing the horizontal diameter of said circle, its ends projecting at each side. Arranged within the upper arc of the circle, above the words "RED RIBBON," are the letters and words "O. W. PEIRCE CO.," and in the lower arc of the circle, below the figure of the ribbon, occur the words "HIGH PATENT FLOUR." Between the ribbon and these words is arranged an ornamental spacing mark.

SER. No. 13,790. FOLDING CANVAS BOATS. GEORGE H. WIRAMS, Kalamazoo, Mich. Filed Oct. 20, 1905.

KING

The word "KING."

SER. No. 13,827. AXES AND HATCHETS. SUPPLEE HARDWARE COMPANY, Philadelphia, Pa. Filed Oct. 21, 1905.

BLUE JEANS

The words "BLUE JEANS" and a scroll-shaped bar inclosing the same and having inturned ends.

SER. No. 13,863. LEATHER BOOTS AND SHOES. BION F. REYNOLDS, Brockton, Mass. Filed Oct. 28, 1905. Used ten years.

THE Bion SHOE

The words "THE BION SHOE."

SER. No. 13,866. CHIPPED SOAP. CHAS. W. YOUNG & CO., Philadelphia, Pa. Filed Oct. 28, 1905.

CHAS. W. YOUNG & CO. CHIPPED PEARL BORAX SOAP PHILADA. & NEW YORK

The word "PEARL," associated with the words and abbreviations "CHIPPED BORAX SOAP CHAS. W. YOUNG & CO. PHILADA. & NEW YORK," all of which is inclosed within a broken circle.

SER. No. 13,902. HAMS, SHOULDERS, AND BACON. THE J. & F. SCHMOTH PACK. CO., Cincinnati, Ohio. Filed Oct. 24, 1905.

FOUNTAIN

The word "FOUNTAIN" and a pictorial representation of a fountain comprising a statue supported upon a central column surrounded at the base by statues rising from a basin from which water discharges in streams into a larger basin or tank having statues located on the rim.

SER. No. 13,867. LAUNDRY AND POWDERED SOAP. CHAS. W. YOUNG & CO., Philadelphia, Pa. Filed Oct. 23, 1905.

PEARL BORAX SOAP

The words "PEARL BORAX SOAP."

SER. No. 13,938. CIGARETTE-PAPER. CHRISTIAN SCHÜTZ, Vienna, Austria-Hungary. Filed Oct. 25, 1905.

LA COCARDE

A cockade and the words "LA COCARDE."

SER. No. 14,042. LEATHER BOOTS AND SHOES. A. W. TEDCASTLE & CO., Boston, Mass. Filed Oct. 30, 1905.

Everlasting

The word "EVERLASTING."

SER. No. 14,328. POLISHES IN POWDER AND LIQUID FORM FOR USE IN CLEANING METAL AND GLASS WARE. J. A. WRIGHT & CO., Keene, N. H. Filed Nov. 4, 1905.

SILVER CREAM

The words "SILVER CREAM."

SER. No. 14,338. SILVER-PLATED HOLLOW WARE. INTERNATIONAL SILVER COMPANY, Meriden, Conn. Filed Nov. 4, 1905. Used ten years.

The representation of a figure resembling a fleur-de-lis inclosing a monogram of the letters and character "A Y & Co."

SER. No. 14,721.

SER. No. 15,224. PIANOS. LYON & HEALY, Chicago, Ill. Filed Jan. 15, 1906. Used ten years.

SER. No. 14,338. SILVER-PLATED HOLLOW WARE. INTERNATIONAL SILVER COMPANY, Meriden, Conn. Filed Nov. 4, 1905. Used ten years.

The words "GUARANTEED BY ROGERS, SMITH & co MERIDEN, CT" inclosed within a shield.

SER. No. 14,368. ADZES, HATCHETS, AND AXES. SUPPLEE HARDWARE CO., Philadelphia, Pa. Filed Nov. 6, 1905.

The word "GLADIATOR" and the representation of an annulus and a bar-shaped figure on which said word appears, said figure being projected through said annulus and having pointed ends.

SER. No. 14,373. WINES. JOHN S. DRAPER, Cincinnati, Ohio. Filed Nov. 6, 1905. Used ten years.

El Capitan.

The words "EL CAPITAN."

SER. No. 14,431. CRACKERS, CAKES, AND BREAD. AUSTIN, YOUNG & Co., Chelsea, Mass. Filed Nov. 6, 1905.

The representation of a figure resembling a fleur-de-lis inclosing a monogram of the letters and character "A Y & Co."

SER. No. 14,452. RIBBONS. PASSAVANT & Co., New York, N. Y. Filed Nov. 9, 1905. Used ten years.

VELOURS ENVERS SATIN
Pat. 2020

The words "VELOURS ENVERS SATIN," the abbreviation "PAT.," and the number "2020."

SER. No. 14,506. PEN AND PENCIL HOLDERS, PENHOLDERS, PENCIL-HOLDERS, AND POINT-PROTECTORS. EBERHARD FABER, New York, N. Y. Filed Nov. 11, 1905.

A circumferential band of yellow or gold color contrasting with a darker color on each side thereof and produced upon metallic holders.

SER. No. 14,562. BEER. THE CHRISTIAN MOERLEIN BREWING CO., Cincinnati, Ohio. Filed Nov. 13, 1905.

Moerlein's

The word "MOERLEIN'S," beneath which is a paraph.

SER. No. 14,653. SHERRY. LUTTERS BROTHERS, New York, N. Y. Filed Nov. 15, 1905.

Conocedor

The word "CONOCEDOR."

SER. No. 14,721. CHAMPAGNE. THOMAS MARTINDALE & Co., Philadelphia, Pa. Filed Nov. 16, 1905.

SER. No. 14,721.

SILVER KING

The phrase "SILVER KING."

SER. No. 15,084. CEREAL COFFEE. BUFFALO PURE FOOD COMPANY, Buffalo, N. Y. Filed Nov. 20, 1905.

UZABEST

The word "UZABEST."

SER. No. 15,119. LADIES' SHIRT-WAISTS AND SHIRT-WAIST SUITS. GOLDSCHMIDT & Co., New York, N. Y. Filed Dec. 1, 1905.

Monogram G

The word "MONOGRAM," associated with a monogram composed of the letters "G C O."

SER. No. 15,149. BITTERS. JOSEPH FÖGER, New York, N. Y. Filed Dec. 3, 1905.

The representation of an air-ship inclosed in an oval border and used in connection with the words "ABOVE ALL."

SER. No. 15,206. REMEDIES FOR ASTHMA. GEORGE RICHARDSON, Grayslake, Ill. Filed Dec. 5, 1905.

RAS

The letters "R. A. S." inclosed in an ellipse.

SER. No. 15,210. RIVETS. LOW MOOR COMPANY, LIMITED, Low Moor, near Bradford, England. Filed Dec. 5, 1905.

LOWMOOR

The word "LOWMOOR."

SER. No. 15,224. PIANOS. LYON & HEALY, Chicago, Ill. Filed Jan. 15, 1906. Used ten years.

Washburn

The word "WASHBURN."

SER. No. 15,239. IRON TONICS. DR. ERNST BISCHOFF, New York, N. Y. Filed Dec. 6, 1905.

Vioferrose

The word "VIOFERROSE."

SER. No. 15,290. RUBBER HOSE. MULCONROY CO., INC., Philadelphia, Pa. Filed Dec. 9, 1905.

DYNAMITE

The word "DYNAMITE."

SER. No. 15,291. RUBBER HOSE. MULCONROY CO., INC., Philadelphia, Pa. Filed Dec. 9, 1905.

PORTAL

The word "PORTAL."

SER. No. 15,294. HOOKS AND EYES. THE DE LONG HOOK & EYE COMPANY, Philadelphia, Pa. Filed Dec. 9, 1905. Used ten years.

DE LONG.

The word "DE LONG."

SER. No. 15,295. HOOKS AND EYES. THE DE LONG HOOK & EYE COMPANY, Philadelphia, Pa. Filed Dec. 9, 1905. Used ten years.

DE LONG HOOK AND EYE

The words "DE LONG HOOK AND EYE."

SER. No. 15,301. METALLIC AND ROOFING PAINT. ALBERT EDWARD CORE, Wilkinsburg, Pa. Filed Dec. 9, 1905.

SER. No. 15,301.

A scene in a rubber-tree grove with men in the act of gathering the sap from rubber-trees, there being a background of water. In one corner of the scene is the representation of the roofs of buildings with a man upon the roof of one building in the act of painting. A streamer is arranged in the foreground of the picture.

SER. No. 15,480. NERVE AND NUTRITIVE TONIC. GEO. A. NEWMAN CO., Louisville, Ky. Filed Dec. 18, 1905.

The words "GLYCO PHOSPHO CALISO" and the word "(NEWMANS)" in parentheses.

SER. No. 15,582. SHEETINGS AND DRILLINGS. EXPOSITION COTTON MILLS, Atlanta, Ga. Filed Dec. 22, 1905. Used ten years.

ALL RIGHT

The words "ALL RIGHT."

SER. No. 15,587. SHEETINGS AND DRILLINGS. EXPOSITION COTTON MILLS, Atlanta, Ga. Filed Dec. 22, 1905.

CHAMPION

The word "CHAMPION."

SER. No. 15,599. INSECTICIDES. C. B. LACEY & CO., Aberdeen, S. D. Filed Dec. 23, 1905.

SWEETREPOSE

The word "SWEETREPOSE."

SER. No. 15,600. MEDICATED SALVES FOR THE CURE OF WOUNDS AND SORES. THE WARD SALVE CO., Washington, D. C. Filed Dec. 22, 1905.

PUTON

The word "PUTON."

SER. No. 15,619. PREPARATION OF GINGER. FREDERICK BROWN COMPANY, Philadelphia, Pa. Filed Dec. 23, 1905. Used ten years.

BROWN'S
Essence of Jamaica Ginger.

The words "BROWN'S ESSENCE OF JAMAICA GINGER."

SER. No. 15,680. SHEETINGS AND DRILLINGS. EXPOSITION COTTON MILLS, Atlanta, Ga. Filed Dec. 26, 1905.

SOUTHERN STANDARD

A representation of a boy sitting astride a wall and blowing a trumpet, associated with the words "SOUTHERN STANDARD."

SER. No. 15,631. SHEETINGS AND DRILLINGS. EXPOSITION COTTON MILLS, Atlanta, Ga. Filed Dec. 26, 1905.

PEACHTREE

The word "PEACHTREE."

SER. No. 15,652. REMEDIES FOR THE CURE OF RHEUMATISM. JOHANNA W. VAN LISSEL, Pella, Iowa. Filed Dec. 26, 1905.

VANLISSELINE

The word "VANLISSELINE."

SER. No. 15,687. PULPBOARD CONTAINING MORE OR LESS GROUND LEATHER. ALFRED WELLS CASE, Manchester, Conn. Filed Dec. 27, 1905.

BULLSIDE

The word "BULLSIDE."

SER. No. 15,727. MEDICINE FOR THE PURIFICATION OF THE BLOOD AND DISEASES OF THE LIVER, KIDNEYS, AND STOMACH. W. W. GAVITT MEDICAL CO., Topeka, Kans. Filed Dec. 28, 1905.

GAVITT'S

The outlined letters composing the word "GAVITT'S," the central "VIT" being shorter than the others, and in the space thus provided is a portrait of W. W. Gavitt.

SER. No. 15,786. REMEDY FOR KIDNEY, LIVER, STOMACH, BLADDER, URINARY, AND NERVOUS DISEASES, BRIGHT'S DISEASE, DROPSY, PAIN IN THE BACK, LOINS, OR BONES, RHEUMATISM, SKIN DISEASES, AND BLOOD DISORDERS. REX CHEMICAL CO., Toledo, Ohio. Filed Dec. 30, 1905.

SER. No. 15,786.

KIDNOL

The word "KIDNOL" and the representation of a piece of sculptured statuary showing a reclining female figure upon the back of a griffin, the figure holding a branch of leaves in its uplifted hand.

SER. No. 16,040. WHIPS. ARTHUR J. COOK, Westfield, Mass. Filed Jan. 8, 1906.

A pictorial bust of William Penn and the words "WILLIAM PENN."

SER. No. 16,097. BRONZE-GREEN PAINTS. JOHN BRIGGS & CO., Boston, Mass. Filed Jan. 10, 1906.

BRONZENE

The arbitrary word "BRONZENE" and the representation of a griffin rampant within a circular border.

SER. No 16,133. BONE RINGS. THE ROGERS & HUBBARD CO., Middletown, Conn. Filed Jan. 11, 1906. Used ten years.

"SITKA IVORY"

The words "SITKA IVORY" appearing between quotation-marks.

SER. No. 16,290. CAKES. JACOB HOCHBAUM, Little Rock, Ark. Filed Jan. 18, 1906.

SER. No. 16,415. CARD-HOLDER. GERTRUDE FOSTER WEDDERBURN, Cherry Grove, Md. Filed Jan. 22, 1906.

SER. NO. 16,290. CAKES. JACOB HOCHSTADT, Little Rock, Ark. Filed Jan. 18, 1906.

PRINCESS

The word "PRINCESS."

SER. NO. 16,415. CARD-HOLDER. GERTRUDE FOSTER WEDDERBURN, Chevy Chase, Md. Filed Jan. 23, 1906.

DOUBLE-DUMMY

The words "DOUBLE-DUMMY."

PRINTED LITHOGRAPHED BY
SACKETT & WILHELMS
LITHOGRAPHING & PRINTING CO.
NEW YORK

TRADE-MARKS

REGISTERED FEBRUARY 13, 1906.

49,559. PILLS. ALLCOCK MANUFACTURING CO., New York, N. Y.

The representation of a band composed of a border of many fine lines symmetrically arranged printed on a background made up of the words "BENJAMIN BRANDRETH'S PILLS" in very fine type, at one end of which are two seals or devices composed of fine lines symmetrically arranged and the words "BRANDRETH'S V. U. PILLS." Used ten years.

Filed June 27, 1905. Serial No. 9,255. PUBLISHED DECEMBER 19, 1905.

49,560. TOILET POWDER. BYRON C. GOULD, INC., New York, N. Y.

The representation of a feminine head surrounded by the petals of a flower, the supporting-stem, and leaves.

Filed June 27, 1905. Serial No. 9,139. PUBLISHED DECEMBER 19, 1905.

49,561. LIQUID PURGATIVE COMPOUNDS. CALIFORNIA FIG SYRUP CO., San Francisco, Cal.

The word-symbol "CALIFIG."

Filed May 25, 1905. Serial No. 6,624. PUBLISHED DECEMBER 19, 1905.

49,562. REMEDY FOR CERTAIN NAMED DISEASES, CUSHMAN DRUG CO., Vincennes, Ind.

The words "CUSHMAN'S MENTHOL INHALER," associated with the pictorial representation of a woman holding a cylindrical pocket-inhaler, upon which are displayed the words "CUSHMAN'S MENTHOL INHALER." Used ten years.

Filed May 9, 1905. Serial No. 4,829. PUBLISHED DECEMBER 19, 1905.

49,563. TOILET CREAM. J. M. GROSVENOR & CO., Boston, Mass.

The word "ZAZA."

Filed August 3, 1905. Serial No. 11,216. PUBLISHED DECEMBER 19, 1905.

49,564. MEDICAL COMPOUND. SARAH HOLDEN EVERETT HAYDEN, Bedford, Mass.

The words "HAYDEN'S URIC SOLVENT."

Filed June 17, 1905. Serial No. 8,413. PUBLISHED DECEMBER 19, 1905.

49,565. ANTISEPTIC LIQUID. HUDSON & CO. INC., New York, N. Y.

The word "LYTHOL."

Filed May 15, 1905. Serial No. 5,632. PUBLISHED DECEMBER 19, 1905.

49,566. ANTISEPTIC AND DETERGENT WASHES. HYJEN CHEMICAL CO., Chicago, Ill.

The hyphenated word "ALKA-SEPTOL."

Filed May 1, 1905. Serial No. 3,728. PUBLISHED OCTOBER 31, 1905.

49,567. ALTERATIVES. INLAND CHEMICAL CO., Indianapolis, Ind.

The words "PRIMA PURIFICANS."

Filed July 1, 1905. Serial No. 9,663. PUBLISHED DECEMBER 19, 1905.

49,568. TONICS. SAMUEL ISEMAN, Baltimore, Md.

The word "TIPPLE" in a scroll and the illustration of a monkey mounted on a hobby-horse, the monkey holding in his right paw a bottle and grasping his tail with the left paw. On the head of the monkey is a cap.

Filed June 15, 1905. Serial No. 8,257. PUBLISHED DECEMBER 19, 1905.

49,569. PREPARATION FOR THE TREATMENT OF CERTAIN NAMED DISEASES. LAMAR & RANKIN DRUG CO., Atlanta, Ga.

The words "PITTS' CARMINATIVE" and the representation of an infant suspended from a flowering branch of a growing plant. Used ten years.

Filed May 20, 1905. Serial No. 6,159. PUBLISHED DECEMBER 19, 1905.

49,570. SUGAR-COATED PILLS. LANMAN & KEMP, New York, N. Y.

The bust-portrait of Dr. C. C. Bristol, deceased, upon an ornamental medallion, which portrait and medallion appear upon a panel having a scroll ornamentation at its corners, and the words "BRISTOL'S PILLS" above the portrait and the words "SUGAR COATED" below said portrait, all of said words being produced upon the panel.

Filed May 5, 1905. Serial No. 4,374. PUBLISHED DECEMBER 19, 1905.

49,571. EXTERNAL REMEDY. CORA T. MACKENZIE, Baltimore, Md.

The word "FEMINOL."

Filed July 14, 1905. Serial No. 10,319. PUBLISHED DECEMBER 19, 1905.

49,572. PREPARATION OF BROMIDS. PEACOCK CHEMICAL CO., St. Louis, Mo.

The representation of a peacock standing upright upon a shield with its tail spread, the shield being surmounted by a scroll bearing the word "PURITY" and there being a scroll beneath the shield bearing the words "THE BEST IS THE CHEAPEST."

Filed May 22, 1905. Serial No. 6,310. PUBLISHED DECEMBER 19, 1905.

49,573. OINTMENT. POTTER DRUG & CHEMICAL CORPORATION, Boston, Mass.

The words, character, abbreviation, and letters "THE GREAT SKIN CURE CUTICURA PREPARED BY POTTER DRUG & CHEMICAL CORP. BOSTON, MASSACHUSETTS, U. S. A." and the monogram of the letters "P D & C CORP" inclosed in the outline of a heart, the abbreviation "CORP." appearing in an elongated hexagonal figure placed across the letter "P," ornamental scrolls appearing on either side of the heart, the whole inclosed by two concentric circles and appearing in red upon a black circular background. Used ten years.

Filed May 12, 1905. Serial No. 5,319. PUBLISHED DECEMBER 19, 1905.

49,574. COMBS. SCHRADER & EHLERS, New York, N. Y.

The word "REFORM."

Filed August 15, 1905. Serial No. 11,680. PUBLISHED NOVEMBER 28, 1905.

49,575. PROPRIETARY MEDICINE FOR WOMEN'S DISEASES. WILLIAM A. TALBOTT, Warren, Pa.

The facsimile signature of the firm, "MICAJAH & CO."

Filed May 1, 1905. Serial No. 3,929. PUBLISHED DECEMBER 19, 1905.

49,576. TOOTH-POWDER. THE AMERICAN PEROXIDE AND CHEMICAL COMPANY, New York, N. Y.

The word "ASEPTIKON."

Filed June 14, 1905. Serial No. 8,104. PUBLISHED DECEMBER 19, 1905.

49,577. MEDICINE FOR CERTAIN NAMED DISEASES. THE BUKER PILL CO., Bangor, Me.

The portrait of Dr. E. C. Buker, deceased, and a facsimile signature containing the words "DR. E. C. BUKER." Associated

with the portrait and facsimile signature are the words "DR. BUKER'S KIDNEY PILLS."

Filed June 19, 1905. Serial No. 8,477. PUBLISHED DECEMBER 19, 1905.

Filed October 25, 1905. Serial No. 13,931. PUBLISHED DECEMBER 19, 1905.

49,618. GUN AND PISTOL CARTRIDGES AND PARTS THEREOF. THE UNION METALLIC CARTRIDGE COMPANY

with the portrait and facsimile signature are the words "DR. BUKER'S KIDNEY PILLS."

Filed May 29, 1905. Serial No. 7,034. PUBLISHED DECEMBER 19, 1905.

49,578. PREPARATION OF HYPOPHOSPHITES. THE FELLOWS MEDICAL M'F'G CO., LIMITED, New York, N. Y.

The words "FELLOWS' COMPOUND SYRUP OF HYPOPHOSPHITES." Used ten years.

Filed April 10, 1905. Serial No. 1,047. PUBLISHED DECEMBER 19, 1905.

49,579. REMEDY FOR CERTAIN DISEASES. THE PORTER MEDICINE COMPANY, Paris, Tenn.

The compound word "GRIP-IT."

Filed May 31, 1905. Serial No. 7,074. PUBLISHED DECEMBER 19, 1905.

49,580. REMEDY FOR CERTAIN NAMED DISEASES. THEODORE P. VAN NESS, Newark, N. J.

The representation of a hand holding in the palm a number of coins and bills.

Filed July 7, 1905. Serial No. 9,895. PUBLISHED DECEMBER 19, 1905.

49,581. WORM-SYRUP. DR. C. A. VOORHEES ESTATE, Philadelphia, Pa.

The word "BUMSTEAD'S." Used ten years.

Filed May 10, 1905. Serial No. 4,920. PUBLISHED DECEMBER 19, 1905.

49,582. LINIMENT. WORLD'S DISPENSARY MEDICAL ASSOCIATION, Buffalo, N. Y.

The hyphenated word "ELECTRO-MAGNETINE," having radiating therefrom in all directions zigzag lines representing electric sparks appearing upon a black oval background.

Filed July 6, 1905. Serial No. 10,412. PUBLISHED DECEMBER 19, 1905.

49,583. WIRE NAILS. CHARLES F. BAKER & CO., Boston, Mass.

The words "HOLD FAST." Used ten years.

Filed May 24, 1905. Serial No. 6,454. PUBLISHED DECEMBER 19, 1905.

49,584. TOILET POWDER. BYRON C. GOULD, INC., New York, N. Y.

The representation of a feminine head surrounded by the petals of a flower, the supporting-stem, and leaves and inclosed in a border, having silhouette representations of a feminine head and of a baby's head within the border.

Filed June 27, 1905. Serial No. 9,140. PUBLISHED DECEMBER 19, 1905.

49,585. FARM-TRUCKS OR LOW-WHEEL WAGONS. DEERE & WEBBER CO., Minneapolis, Minn.

The word "CYCLONE."

Filed September 25, 1905. Serial No. 13,012. PUBLISHED DECEMBER 19, 1905.

49,586. LIGHTNING-RODS. DODD & STRUTHERS, Des Moines, Iowa.

The letters "D" and "S," with the character "&" between them.

Filed May 9, 1905. Serial No. 4,837. PUBLISHED DECEMBER 19, 1905.

49,587. ALLOY FOR BEARING METAL. FRICTIONLESS METAL COMPANY, Richmond, Va.

The word "FRICTIONLESS."

Filed May 10, 1905. Serial No. 4,904. PUBLISHED SEPTEMBER 12, 1905.

49,588. TONICS. F. AUGUST LUYTIES, St. Louis, Mo.

The word "MANOLA."

Filed April 1, 1905. Serial No. 189. PUBLISHED JUNE 6, 1905.

49,589. CREAM OINTMENTS. NATIONAL TOILET COMPANY, Paris, Tenn.

A rectangular panel upon which appears the representation of the bust of a woman opening a box, rows of boxes being shown in the background.

Filed October 10, 1905. Serial No. 13,473. PUBLISHED DECEMBER 19, 1905.

49,590. HAMMERS. ARTHUR R. ROBERTSON, Boston, Mass.

The representation of a horseshoe-magnet and its armature.

Filed June 19, 1905. Serial No. 8,477. PUBLISHED DECEMBER 19, 1905.

49,591. HORSE-NAILS. STANDARD HORSE NAIL COMPANY, New Brighton, Pa.

The word "SECURE."

Filed June 15, 1905. Serial No. 8,208. PUBLISHED DECEMBER 19, 1905.

49,592. HORSE-NAILS. STANDARD HORSE NAIL COMPANY New Brighton, Pa.

The arbitrarily-selected character "B" inclosed in quotation-marks.

Filed June 15, 1905. Serial No. 8,216. PUBLISHED DECEMBER 19, 1905.

49,593. SHOVELS, SPADES, AND SCOOPS. SUPPLEE HARDWARE COMPANY, Philadelphia, Pa.

The fanciful title "CHARTER OAK" and a representation of an oak-tree.

Filed October 21, 1905. Serial No. 13,828. PUBLISHED DECEMBER 19, 1905.

49,594. TACK AND NAIL PULLERS. THE GENERAL SPECIALTY COMPANY, Philadelphia, Pa.

The compound word "BI-PED."

Filed May 19, 1905. Serial No. 6,113. PUBLISHED DECEMBER 19, 1905.

49,595. METAL-TURNING LATHES. THE LODGE & SHIPLEY MACHINE TOOL CO., Cincinnati, Ohio.

A barred shield having a panel, at the upper portion of which appear the words "LATHES GOOD LATHES ONLY." Perched upon the upper edge of the shield is the representation of an eagle with outstretched wings.

Filed May 24, 1905. Serial No. 6,439. PUBLISHED DECEMBER 19, 1905.

49,596. SEEDING-MACHINES. THE MONITOR DRILL CO., St. Louis Park and Minneapolis, Minn.

The word "MONITOR."

Filed April 25, 1905. Serial No. 3,005. PUBLISHED DECEMBER 19, 1905.

49,597. LATHES. THE NATIONAL-ACME MANUFACTURING COMPANY, Cleveland, Ohio.

The compound word "ACME-AUTOMAT."

Filed July 12, 1905. Serial No. 10,192. PUBLISHED DECEMBER 19, 1905.

49,598. ROCK-CRUSHERS. THE SAMSON MANUFACTURING COMPANY, Denver, Colo.

The word "SAMSON."

Filed June 17, 1905. Serial No. 8,424. PUBLISHED DECEMBER 19, 1905.

49,599. SEWING-MACHINES. THE SINGER MANUFACTURING COMPANY, New York, N. Y.

The word "SINGER." Used ten years.

Filed October 25, 1905. Serial No. 13,923. PUBLISHED DECEMBER 19, 1905.

49,600. SEWING-MACHINES. THE SINGER MANUFACTURING COMPANY, New York, N. Y.

The word "SINGER." Used ten years.

Filed October 25, 1905. Serial No. 13,924. PUBLISHED DECEMBER 19, 1905.

49,601. SEWING-MACHINE STANDS AND THEIR PARTS AND ATTACHMENTS. THE SINGER MANUFACTURING COMPANY, New York, N. Y.

The word "SINGER." Used ten years.

Filed October 25, 1905. Serial No. 13,925. PUBLISHED DECEMBER 19, 1905.

49,602. SEWING-MACHINES. THE SINGER MANUFACTURING COMPANY, New York, N. Y.

The word "SINGER." Used ten years.

Filed October 25, 1905. Serial No. 13,926. PUBLISHED DECEMBER 19, 1905.

49,603. SEWING-MACHINES. THE SINGER MANUFACTURING COMPANY, New York, N. Y.

The words "SINGER CO." Used ten years.

Filed October 25, 1905. Serial No. 13,930. PUBLISHED DECEMBER 19, 1905.

49,604. SEWING-MACHINES. THE SINGER MANUFACTURING CO., New York, N. Y.

The words "SINGER MANUFACTURING CO." Used ten years.

Filed October 25, 1905. Serial No. 13,931. PUBLISHED DECEMBER 19, 1905.

49,605. SEWING-MACHINES. THE SINGER MANUFACTURING COMPANY, New York, N. Y.

The words "SINGER SEWING MACHINE CO." Used ten years.

Filed October 25, 1905. Serial No. 13,932. PUBLISHED DECEMBER 19, 1905.

49,606. CARTRIDGES AND CARTRIDGE-SHELLS. THE UNION METALLIC CARTRIDGE COMPANY, Bridgeport, Conn., and New York, N. Y.

The words "NITRO CLUB."

Filed June 19, 1905. Serial No. 8,527. PUBLISHED DECEMBER 19, 1905.

49,607. CARTRIDGES AND CARTRIDGE-SHELLS. THE UNION METALLIC CARTRIDGE COMPANY, Bridgeport, Conn.

The word "TRAP." Used ten years.

Filed July 26, 1905. Serial No. 10,825. PUBLISHED DECEMBER 19, 1905.

49,608. PLOWS, CULTIVATORS, ROLLERS, AND HARROWS. WIARD PLOW CO., Batavia, N. Y.

The representation of a circle inclosed by four incomplete circles arranged about the circumference thereof.

Filed May 24, 1905. Serial No. 6,541. PUBLISHED DECEMBER 19, 1905.

49,609. TOILET-PINS. THE STAR PIN COMPANY, Shelton, Conn.

The words "HER MAJESTY."

Filed October 2, 1905. Serial No. 13,205. PUBLISHED DECEMBER 19, 1905.

49,610. CARTRIDGES AND CARTRIDGE-SHELLS. THE UNION METALLIC CARTRIDGE COMPANY, Bridgeport, Conn., and New York, N. Y.

The words "NEW CLUB."

Filed June 19, 1905. Serial No. 8,528. PUBLISHED DECEMBER 19, 1905.

49,611. CARTRIDGES AND METAL AND PAPER CARTRIDGE-SHELLS. THE UNION METALLIC CARTRIDGE COMPANY, Bridgeport, Conn.

The word "CLUB." Used ten years.

Filed July 26, 1905. Serial No. 10,807. PUBLISHED DECEMBER 19, 1905.

49,612. GUN AND PISTOL CARTRIDGES AND PARTS THEREOF. THE UNION METALLIC CARTRIDGE COMPANY, Bridgeport, Conn.

The words "NEW CENTURY."

Filed July 26, 1905. Serial No. 10,809. PUBLISHED DECEMBER 19, 1905.

49,613. GUN AND PISTOL CARTRIDGES AND PARTS THEREOF. THE UNION METALLIC CARTRIDGE COMPANY, Bridgeport, Conn.

The letters or characters and abbreviated word "U. M. C. CO." Used ten years.

Filed July 26, 1905. Serial No. 10,810. PUBLISHED DECEMBER 19, 1905.

49,614. CARTRIDGES AND CARTRIDGE-SHELLS. THE UNION METALLIC CARTRIDGE COMPANY, Bridgeport, Conn.

The word "ARROW."

Filed July 26, 1905. Serial No. 10,812. PUBLISHED DECEMBER 19, 1905.

49,615. CARTRIDGES. THE UNION METALLIC CARTRIDGE COMPANY, Bridgeport, Conn.

The words "INSIDE LUBRICATED." Used ten years.

Filed July 26, 1905. Serial No. 10,813. PUBLISHED DECEMBER 19, 1905.

49,616. GUN AND PISTOL CARTRIDGES AND PARTS THEREOF. THE UNION METALLIC CARTRIDGE COMPANY, Bridgeport, Conn.

The letters or characters "U. M. C." Used ten years.

Filed July 26, 1905. Serial No. 10,814. PUBLISHED DECEMBER 19, 1905.

49,617. GUN AND PISTOL CARTRIDGES AND PARTS THEREOF. THE UNION METALLIC CARTRIDGE COMPANY, Bridgeport, Conn.

The letter "U" surrounded by a circle. Used ten years.

Filed July 26, 1905. Serial No. 10,815. PUBLISHED DECEMBER 19, 1905.

49,618. GUN AND PISTOL CARTRIDGES AND PARTS THEREOF. THE UNION METALLIC CARTRIDGE COMPANY, Bridgeport, Conn.

The words and abbreviated word "UNION METALLIC CARTRIDGE CO." Used ten years.

Filed July 26, 1905. Serial No. 10,816. PUBLISHED DECEMBER 19, 1905.

49,619. GUN AND PISTOL CARTRIDGES AND PARTS THEREOF. THE UNION METALLIC CARTRIDGE COMPANY, Bridgeport, Conn.

The letters "U. M. C." surrounded by an elliptical border. Used ten years.

Filed July 26, 1905. Serial No. 10,818. PUBLISHED DECEMBER 19, 1905.

49,620. CARTRIDGES AND CARTRIDGE-SHELLS. THE UNION METALLIC CARTRIDGE COMPANY, Bridgeport, Conn.

The word "MAGIC."

Filed July 26, 1905. Serial No. 10,821. PUBLISHED DECEMBER 19, 1905.

49,621. CARTRIDGES AND CARTRIDGE-SHELLS. THE UNION METALLIC CARTRIDGE COMPANY, Bridgeport, Conn.

The word "MONARCH."

Filed July 26, 1905. Serial No. 10,822. PUBLISHED DECEMBER 19, 1905.

49,622. CARTRIDGES AND CARTRIDGE-SHELLS. THE UNION METALLIC CARTRIDGE COMPANY, Bridgeport, Conn.

The word "ACME."

Filed July 26, 1905. Serial No. 10,824. PUBLISHED DECEMBER 19, 1905.

49,623. CARTRIDGES AND CARTRIDGE-SHELLS. THE UNION METALLIC CARTRIDGE COMPANY, Bridgeport, Conn.

The word "EXPERT."

Filed July 26, 1905. Serial No. 10,827. PUBLISHED DECEMBER 19, 1905.

49,624. CARTRIDGES AND CARTRIDGE-SHELLS. THE UNION METALLIC CARTRIDGE COMPANY, Bridgeport, Conn.

The word "MAJESTIC."

Filed July 26, 1905. Serial No. 10,828. PUBLISHED DECEMBER 19, 1905.

49,625. WRENCHES. THE WHITMAN & BARNES MANUFACTURING COMPANY, Akron, Ohio.

A diamond-shaped figure with the initial letters and character "W & B" inclosed therein.

Filed November 14, 1905. Serial No. 14,590. PUBLISHED DECEMBER 19, 1905.

49,626. WHISKY. LOUIS J. ADLER & CO., Pittsburg, Pa.

The word "HYROLER."

Filed May 22, 1905. Serial No. 6,301. PUBLISHED DECEMBER 19, 1905.

49,627. SULFUR SOAP. ASCHENBACH & MILLER, Philadelphia, Pa., assignors to Aschenbach & Miller, Incorporated, a Corporation of Pennsylvania.

A monogram of the letters "J M V D," the representation of a pitted field on which said monogram appears, and the representation of oval-shaped medallions, one within the other, surrounding said field, the inner medallion being representations of beads.

Filed July 8, 1905. Serial No. 9,934. PUBLISHED DECEMBER 19, 1905.

49,628. SCOURING-SOAP. BON AMI COMPANY, New York, N. Y.

The word "CAPITOL," associated with the representation of a dome rising from the center of a roof formed by the junction of two gables.

Filed November 7, 1905. Serial No. 14,397. PUBLISHED DECEMBER 19, 1905.

49,629. CANNED FRUITS AND VEGETABLES. MARY J. BOYER, Baltimore, Md.

The words "BOYER'S BRAND." Used ten years.

Filed October 11, 1905. Serial No. 13,501. PUBLISHED DECEMBER 19, 1905.

49,630. LUBRICATING-GREASE. AUGUSTUS C. BUZBY, Philadelphia, Pa.

The representation of a keystone, across which is printed the word "LUBRICANT."

Filed May 29, 1905. Serial No. 7,044. PUBLISHED DECEMBER 19, 1905.

49,631. LIQUID BLACKING. C. L. HAUTHAWAY & SONS, INCORPORATED, Portland, Me., and Boston, Mass.
The word "CROXINE."
Filed July 20, 1905. Serial No. 10,590. PUBLISHED DECEMBER 19, 1905.

49,632. LEATHER-CEMENT. C. L. HAUTHAWAY & SONS, INCORPORATED, Portland, Me., and Boston, Mass.
The word "KROMEFOLD."
Filed July 20, 1905. Serial No. 10,591. PUBLISHED DECEMBER 19, 1905.

49,633. CHANNEL-CEMENT. C. L. HAUTHAWAY & SONS, INCORPORATED, Portland, Me., and Boston, Mass.
The word "FLINTSTONE." Used ten years.
Filed July 20, 1905. Serial No. 10,592. PUBLISHED DECEMBER 19, 1905.

49,634. MINERAL PAINT. CHATTANOOGA PAINT CO., Chattanooga, Tenn.
The word "LOWE'S" and the representation of a Maltese cross printed in red.
Filed June 6, 1905. Serial No. 7,527. PUBLISHED DECEMBER 19, 1905.

49,635. POLISH FOR METALS. COSSEBOOM, PEARCE & CO., Aspen, Colo.
The word "VALVELINE."
Filed November 1, 1905. Serial No. 14,157. PUBLISHED DECEMBER 19, 1905.

49,636. LUBRICATING-GREASE. ADAM COOK'S SONS, New York, N. Y.
The representation of a plank set on an incline and supported at its lower end by a barrel or cask lying on bilge and adjacent to another cask standing on its head or end and bearing a number indicating its weight, and pyramids of cans of varying sizes arranged one pyramid behind the other, the cans forming the front pyramid bearing numbers indicative of the weight of the material therein, with a man or boy sliding down the said plank, in one of his hands holding a can and in the other a shovel or dipping-stick, and at the side of the said plank the characters "O EZR IC" appear, together with a ribbon bearing the words "ALBANY LUBRICATING COMPOUND," all inclosed by a circle or border.
Filed May 4, 1905. Serial No. 4,252. PUBLISHED DECEMBER 19, 1905.

49,637. TOILET AND BATH SOAP. ALLEN CONKLING, South Chicago, Ill.
The representation of an ornamental closed scroll of oval form having a pendent portion and inclosing a field of contrasting shade or color. On this appear the words "BITTER SWEET."
Filed May 3, 1905. Serial No. 4,216. PUBLISHED DECEMBER 19, 1905.

49,638. LAUNDRY SOAP. ALLEN CONKLING, South Chicago, Ill.
The words "RED HEART BRAND" displayed upon the representation of a conventional heart pierced by an arrow.
Filed May 3, 1905. Serial No. 4,217. PUBLISHED DECEMBER 19, 1905.

49,639. CERTAIN NAMED POLISH. CROSBY & CO., Detroit, Mich.
The hyphenated numerals "6-5-4" and the representation of a triangle.
Filed November 1, 1905. Serial No. 14,169. PUBLISHED DECEMBER 19, 1905.

49,640. CATTLE-FEED CONSISTING OF GROUND CORN AND OATS. DOCK & COAL CO., Plattsburg, N. Y.
The word "DANDY."
Filed April 4, 1905. Serial No. 354. PUBLISHED DECEMBER 19, 1905.

49,641. BAKING-SODA, CREAM OF TARTAR, AND BAKING-POWDER. E. R. DURKEE & CO., New York, N. Y.
The word "CHALLENGE."
Filed October 16, 1905. Serial No. 13,639. PUBLISHED DECEMBER 19, 1905.

49,642. BAKING-SODA, CREAM OF TARTAR, AND BAKING-POWDER. E. R. DURKEE & CO., New York, N. Y.
The letter "X."
Filed October 16, 1905. Serial No. 13,640. PUBLISHED DECEMBER 19, 1905.

49,643. BAKING-SODA, CREAM OF TARTAR, AND BAKING-POWDER. E. R. DURKEE & CO., New York, N. Y.
The letters "XX."
Filed October 16, 1905. Serial No. 13,641. PUBLISHED DECEMBER 19, 1905.

49,644. BAKING-SODA, CREAM OF TARTAR, AND BAKING-POWDER, E. R. DURKEE & CO., New York, N. Y.
The letters "XXX."
Filed October 16, 1905. Serial No. 13,642. PUBLISHED DECEMBER 19, 1905.

49,645. SEALS. E. J. BROOKS & COMPANY, New York, N. Y., and Newark, N. J.
The words "TIN BUTTON." Used ten years.
Filed July 29, 1905. Serial No. 11,013. PUBLISHED DECEMBER 19, 1905.

49,646. CLEANSING OR SCOURING COMPOUND. ENOCH MORGAN'S SONS COMPANY, New York, N. Y.
The coined word "SAPOLIO." Used ten years.
Filed November 7, 1905. Serial No. 14,390. PUBLISHED DECEMBER 19, 1905.

49,647. STOGIES OR TOBIES. S. EWART & CO., Pittsburg, Pa.
The words "FATHER PITT" surrounded by the ornamental scroll of interlooping curved lines.
Filed July 27, 1905. Serial No. 10,882. PUBLISHED DECEMBER 19, 1905.

49,648. STOGIES AND TOBIES. S. EWART & CO., Pittsburg, Pa.
The words "GOLD STANDARD," accompanied by the word "TOBIES," in uniform type, inclosed within a rectangular border with a background of light frosting.
Filed July 27, 1905. Serial No. 10,883. PUBLISHED DECEMBER 19, 1905.

49,649. MINERAL WATERS. MARY A. FERRIS, Plainville, Ohio.
The words "CRYSTAL FOUNTAIN SPRINGS" and the representation of a fountain-basin containing water and having curved walls. At the center of the basin appear rocks having a nozzle projecting therefrom and represented as discharging a spray of water, the entire fountain being surrounded by an ornamental border.
Filed May 18, 1905. Serial No. 6,037. PUBLISHED DECEMBER 19, 1905.

49,650. CANNED FRUITS AND VEGETABLES. FRANK C. WEBER AND CO., Chicago, Ill.
The word "JEWEL."
Filed April 22, 1905. Serial No. 2,679. PUBLISHED DECEMBER 19, 1905.

49,651. CANNED FRUITS AND VEGETABLES. FRANK C. WEBER AND CO., Chicago, Ill.
A cushion with a cut diamond resting thereon and rays radiating therefrom.
Filed April 22, 1905. Serial No. 2,680. PUBLISHED DECEMBER 19 1905.

49,652. PIANOS. EMIL E. GABLER, New York, N. Y.
The representation of a flying griffin, associated with the words "GABLER" and "NEW YORK."
Filed August 7, 1905. Serial No. 11,386. PUBLISHED DECEMBER 19, 1905.

49,653. TOILET AND LAUNDRY SOAP. HASKINS BROS. & CO., Sioux City, Iowa, and Omaha, Nebr.
The words "OMAHA FAMILY." Used ten years.
Filed June 23, 1905. Serial No. 8,849. PUBLISHED DECEMBER 19, 1905.

49,654. SAWS. HENRY DISSTON & SONS, INCORPORATED, Philadelphia, Pa.
The word "NOVO."
Filed October 31, 1905. Serial No. 14,113. PUBLISHED DECEMBER 19, 1905.

49,655. SOAP. HOFFHEIMER SOAP CO., Chicago, Ill.
The words "20TH CENTURY."
Filed August 7, 1905. Serial No. 11,332. PUBLISHED DECEMBER 19, 1905.

49,656. RUSKS. HOLLAND RUSK CO., Holland, Mich.
The word "HOLLAND." Used ten years.
Filed November 24, 1905. Serial No. 14,955. PUBLISHED DECEMBER 19, 1905.

49,657. PREPARED SPICES. JABURG BROS., New York, N. Y.
The word "SPIMENTO."
Filed October 11, 1905. Serial No. 13,483. PUBLISHED DECEMBER 19, 1905.

49,658. BITTERS. LOUIS E. JUNG, New Orleans, La.
The word "COLUMBO" above a fanciful picture of a winged cupid resting his right foot on a winged wheel and holding aloft in his left hand wires giving light radiations, his right hand at his side and producing like results. In the background appear clouds and a pole supporting the wires.
Filed May 3, 1905. Serial No. 4,134. PUBLISHED DECEMBER 19, 1905.

49,659. WHISKY. KAUFMANN BROS. & CO., Toledo, Ohio.
The words "FORT INDUSTRY."
Filed June 24, 1905. Serial No. 8,953. PUBLISHED DECEMBER 19, 1905.

49,660. COFFEE. GEORGE J. KELLER, Newark, N. J.
The pictorial representation of head and shoulders of a typical Arab shepherd dressed, with the head turbaned and right hand grasping a shepherd's crook, in combination with the hyphenated word "AR-A-BA" arranged diagonally beneath the bust, the letters of said word being of a fancy block-letter type, the individual strokes of which mutually cross each other.
Filed June 14, 1905. Serial No. 8,124. PUBLISHED DECEMBER 19, 1905.

49,661. WHISKY. MORRIS LANGE, Cincinnati, Ohio.
The words "OLD CHATFIELD" printed in script above the representation of a shield, upon which is shown a monogram consisting of the abbreviation, letters, and character "M L & Co," the shield being surmounted by a helmet and surrounded by a fanciful scroll design.
Filed June 16, 1905. Serial No. 8,314. PUBLISHED DECEMBER 19, 1905.

49,662. CIGARS AND CHEROOTS. DAVID H. LEVY, New York, N. Y.
The representation of a female figure floating in the air with flowing draperies, in the flowing hair of which figure is a star and in the right hand of said figure an electric incandescent bulb from which fall two wires leading to telegraph-poles, together with a landscape consisting of a representation of New York harbor, wheat-fields, two railroad-trains, a prairie scene with buffaloes and Indians, and in the central foreground a train of settlers. In the background are hills and mountains, together with the word "ONWARD." Used ten years.
Filed November 6, 1905. Serial No. 14,360. PUBLISHED DECEMBER 19, 1905.

49,663. OLIVES AND PICKLED OLIVES. LOS ANGELES OLIVE GROWERS' ASS'N, Los Angeles, Cal.
The word "SYLMAR."
Filed October 14, 1905. Serial No. 13,601. PUBLISHED DECEMBER 19, 1905.

49,664. WITHDRAWN.

49,665. WHITE LEAD. NATIONAL LEAD COMPANY, Jersey City, N. J., and New York, N. Y.
The words and abbreviations "MARYLAND WHITE LEAD CO., BALTO." Used ten years.
Filed November 8, 1905. Serial No. 14,416. PUBLISHED DECEMBER 19, 1905.

49,666. FILES AND RASPS. NICHOLSON FILE COMPANY, Providence, R. I.
The words "THE J. BARTON SMITH CO.," together with a scroll panel. Used ten years.
Filed June 12, 1905. Serial No. 7,903. PUBLISHED DECEMBER 19, 1905.

49,667. STARCH AND DEXTRIN. NORDDEUTSCHE KARTOFFELMEHL-FABRIK MIT BESCHRÄNKTER HAFTUNG, Cüstrin, Germany.
The representation of a unicorn's head and the word "UNICORN."
Filed May 26, 1905. Serial No. 6,731. PUBLISHED DECEMBER 19, 1905.

49,668. COFFEE PREPARATION. PFEIFFER & DILLER, Horchheim, near Worms, Germany.
The representation of an elderly man with a spoon in one hand and a box in the other, a cup and a coffee-pot, the two latter being evidently placed on a table on which the elbows of the man are rested.
Filed June 7, 1905. Serial No. 7,611. PUBLISHED DECEMBER 19, 1905.

49,669. SHARPENING-STONES. PIKE MANUFACTURING COMPANY, Pike, Littleton, and Lisbon, N. H.; Hot Springs, Ark.; Orleans, Ind.; Evansville, Vt., and New York, N. Y.
The word "CHOCOLATE." Used ten years.
Filed November 1, 1905. Serial No. 14,166. PUBLISHED DECEMBER 19, 1905.

49,670. CANNED FRUITS AND VEGETABLES. PORTLAND PACKING COMPANY, Portland, Me.
The word or word-symbol "SUNNYSIDE." Used ten years.
Filed June 27, 1905. Serial No. 9,194. PUBLISHED DECEMBER 19, 1905.

49,671. CANNED FRUITS AND VEGETABLES. PORTLAND PACKING COMPANY, Portland, Me.
The word or word-symbol "BUTTERCUP." Used ten years.
Filed June 27, 1905. Serial No. 9,195. PUBLISHED DECEMBER 19, 1905.

49,672. CANNED FRUITS AND VEGETABLES. PORTLAND PACKING COMPANY, Portland, Me.
The words or word-symbol "QUEEN BEE." Used ten years.
Filed June 27, 1905. Serial No. 9,196. PUBLISHED DECEMBER 19, 1905.

49,673. CANNED FRUITS AND VEGETABLES. PORTLAND PACKING COMPANY, Portland, Me.
The word or word-symbol "TALLY-HO."
Filed June 27, 1905. Serial No. 9,198. PUBLISHED DECEMBER 19, 1905.

49,674. COFFEE. THE PORTO RICO CO., San Francisco, Cal.
The name "PONCE DE LEON."
Filed June 13, 1905. Serial No. 8,039. PUBLISHED DECEMBER 19, 1905.

49,675. MEDICATED AND PERFUMED SOAP. POTTER DRUG & CHEMICAL CORPORATION, Boston, Mass.
The representation of three rectangular panels. The first contains the words "THIS SOAP CONTAINS IN A MODIFIED FORM THE MEDICINAL PROPERTIES OF CUTICURA, THE GREAT SKIN CURE," printer's ornamentation appearing before and after the word "CUTICURA." The second panel contains the words "CUTICURA SOAP, MEDICINAL AND TOILET, PRICE 25 CENTS," ornamentation appearing before and after the word "SOAP" and below the word "TOILET." The third panel contains the words "HEALING, SOOTHING & CLEANSING, FRAGRANT & REFRESHING, FOR ALL CUTANEOUS AFFECTIONS, THE TOILET, BATH AND NURSERY, FOR SHAVING AND SHAMPOOING." Above and below the middle panel and to the right of the third panel is placed the monogram composed of the letters "P D & C CORP" inclosed in the outline of a heart, the abbreviation "CORP" appearing in an elongated hexagon figure placed across the letter "P." At the right of the third panel and below the heart-shaped figure appear the words, character, and abbreviations "PREPARED BY POTTER DRUG & CHEMICAL CORP., BOSTON, MASSACHUSETTS, U. S. A.," the whole appearing in red upon a black rectangular background. Used ten years.
Filed May 12, 1905. Serial No. 5,320. PUBLISHED DECEMBER 19, 1905.

49,676. CANNED AND BOTTLED FRUITS AND VEGETABLES. S. HAMILL COMPANY, Keokuk, Iowa.
The words "PALM BRAND," associated with the representation of a palm-tree standing in an oasis in the desert, a caravan approaching the oasis, pyramids being shown in the background, and groups of foliage shown on either side of the palm-tree.
Filed April 1, 1905. Serial No. 77. PUBLISHED MAY 16, 1905.

49,677. CIGARS AND CHEROOTS. S. LICHTENSTEIN CO., New York, N. Y.
The representation of the head of an elk, associated with the word "ELK." Used ten years.
Filed June 27, 1905. Serial No. 9,245. PUBLISHED DECEMBER 19, 1905.

49,678. WHISKY. SCHUCKMANN & SELIGMANN COMPANY, Milwaukee, Wis.
The word "EBEMITE" printed in script. Used ten years.
Filed July 28, 1905. Serial No. 10,955. PUBLISHED DECEMBER 19, 1905.

49,679. VINEGAR. SIEGEL, COOPER & CO., Chicago, Ill.
The word "HAZEL," associated with a design showing hazel leaves and nuts.
Filed October 30, 1905. Serial No. 14,092. PUBLISHED DECEMBER 19, 1905.

49,680. WASHING-MACHINES. SPOTLESS COMPANY, INCORPORATED, Richmond, Va.
The word "SPOTLESS."
Filed November 18, 1905. Serial No. 14,794. PUBLISHED DECEMBER 19, 1905.

49,681. HORSE-NAILS. STANDARD HORSE NAIL COMPANY, New Brighton, Pa.
The word "STABLE."
Filed June 15, 1905. Serial No. 8,206. PUBLISHED DECEMBER 19, 1905.

49,682. HORSE-NAILS. STANDARD HORSE NAIL COMPANY, New Brighton, Pa.
The word "STEADFAST."
Filed June 15, 1905. Serial No. 8,209. PUBLISHED DECEMBER 19, 1905.

49,683. HORSE-NAILS. STANDARD HORSE NAIL COMPANY, New Brighton, Pa.
The representation of a circle, associated with the letter "S" bearing the word "FORGED" and the representation of a horse-nail bearing the word "STANDARD." Used ten years.
Filed June 15, 1905. Serial No. 8,210. PUBLISHED DECEMBER 19, 1905.

49,684. WHISKY. STRAUS, GUNST & CO., Richmond, Va.
The words "FULL DRESS" and the representation of a man clad in a full-dress suit and holding a glass in one hand, inclosed in an oval frame.
Filed May 12, 1905. Serial No. 5,297. PUBLISHED DECEMBER 19, 1905.

49,685. FOODS FOR INVALIDS AND INFANTS. SUNBRIGHTS CALIFORNIA FOOD CO., Los Angeles, Cal.
The word "SUNBRIGHTS," associated with the representation of the bust of an infant surrounded by concentric circles, from which extend radial or divergent lines representing the rays of the sun.
Filed July 13, 1905. Serial No. 10,237. PUBLISHED AUGUST 15, 1905.

49,686. TURPENTINE. THE BALL CHEMICAL CO., Allegheny, Pa.
The letter "N" inclosed in a triangular-shaped figure.
Filed November 6, 1905. Serial No. 14,358. PUBLISHED DECEMBER 19, 1905.

49,687. SOAP. THE CHARLES N. CRITTENTON COMPANY, New York, N. Y.
The words "GLENN'S SULPHUR SOAP." Used ten years.
Filed October 14, 1905. Serial No. 13,605. PUBLISHED DECEMBER 19, 1905.

49,688. LAUNDRY STARCH. THE CELLULOID STARCH COMPANY, New York, N. Y.
The word "CELLULOID."
Filed April 24, 1905. Serial No. 2,879. PUBLISHED DECEMBER 19, 1905.

49,689. LAUNDRY STARCH. THE CELLULOID STARCH COMPANY, New York, N. Y.
A representation of two crossed collars inclosed by a cuff.
Filed April 24, 1905. Serial No. 2,880. PUBLISHED DECEMBER 19, 1905.

49,690. FORGES. THE CHAMPION BLOWER & FORGE COMPANY, Lancaster, Pa.
The symbol "No. 150."
Filed July 8, 1905. Serial No. 9,909. PUBLISHED DECEMBER 19, 1905.

49,691. TWYERS. THE CHAMPION BLOWER & FORGE COMPANY, Lancaster, Pa.
The word-symbol "WHIRLWIND."
Filed July 8, 1905. Serial No. 9,910. PUBLISHED DECEMBER 19, 1905.

49,692. CYLINDER-LUBRICANTS AND LUBRICANT STOCK. THE CONEWANGO REFINING CO., Warren, Pa.
The letters "L M."
Filed November 4, 1905. Serial No. 14,315. PUBLISHED DECEMBER 19, 1905.

49,693. BUTTER-CUTTERS. THE KUTTOWAIT BUTTER CUTTER COMPANY, Chicago, Ill.
The word "KUTTOWAIT."
Filed November 23, 1905. Serial No. 14,922. PUBLISHED DECEMBER 19, 1905.

49,694. LARD AND LARD COMPOUND. THE N. K. FAIRBANK COMPANY, Chicago, Ill.
The word "FAIRBANK'S." Used ten years.
Filed October 17, 1905. Serial No. 13,682. PUBLISHED DECEMBER 19, 1905.

49,695. SHARPENING-STONES. THE PIKE MANUFACTURING COMPANY, Pike, Littleton, and Lisbon, N. H.; Hot Springs, Ark.; Orleans, Ind.; Evansville, Vt., and New York, N. Y.
The word "FASTCUT."
Filed October 20, 1905. Serial No. 13,794. PUBLISHED DECEMBER 19, 1905.

49,696. PAINTS AND INSULATING COMPOUNDS. THE STANDARD PAINT COMPANY, New York, N. Y.
The representation of a peacock with its tail spread out within a circle in which also appear the letters "S P C." This is surrounded by a black ring on which appear at the top the words "PEACOCK BRAND."
Filed September 22, 1905. Serial No. 12,903. PUBLISHED DECEMBER 19, 1905.

49,697. BREAD AND CRACKERS. GEORGE S. WARD, Pittsburg, Pa.
The arbitrary words "TIP TOP."
Filed April 7, 1905. Serial No. 727. PUBLISHED DECEMBER 19, 1905.

49,698. LEATHER-POLISH. WHITTEMORE BROS. AND CO., Cambridge, Mass.
The word "SUPERB" in quotation-marks.
Filed May 1, 1905. Serial No. 3,948. PUBLISHED DECEMBER 19, 1905.

49,699. GUN-GREASE. WINCHESTER REPEATING ARMS CO., New Haven, Conn.
The word "WINCHESTER." Used ten years.
Filed July 3, 1905. Serial No. 9,667. PUBLISHED DECEMBER 19, 1905.

49,700. OILED CLOTHING. A. J. TOWER COMPANY, Boston, Mass.
The word "PELICAN" within a circular wreath. A small star is placed at the beginning and end of the word "PELICAN."
Filed July 13, 1905. Serial No. 10,259. PUBLISHED DECEMBER 19, 1905.

49,701. GLOVES. ABRAHAM & STRAUS, New York, N. Y.
The word "ODETTE."
Filed April 18, 1905. Serial No. 2,187. PUBLISHED NOVEMBER 21, 1905.

49,702. CORSETS. BIRDSEY & SOMERS, New York, N. Y.
The word "VERYSMART."
Filed September 18, 1905. Serial No. 12,757. PUBLISHED DECEMBER 19, 1905.

49,703. CORSETS. BIRDSEY & SOMERS, New York, N. Y.
The word "VERONIQUE."
Filed September 18, 1905. Serial No. 12,758. PUBLISHED DECEMBER 19, 1905.

49,704. WINE. CALIFORNIA WINE ASSOCIATION, San Francisco, Cal.
The words "LA LOMA," associated with the monogram "C C Co" in a circular design and a design of grape-vines with leaves and bunches of grapes ornamented with scrollwork.
Filed October 30, 1905. Serial No. 14,037. PUBLISHED DECEMBER 19, 1905.

49,705. WINE. CALIFORNIA WINE ASSOCIATION, San Francisco, Cal.
The words "CHATEAU HILLCREST," associated with a picture of the Chateau Hillcrest and surrounding scenery, including trees, shrubbery, and mountains, all inclosed in a rectangular outline with curved corners.
Filed October 30, 1905. Serial No. 14,039. PUBLISHED DECEMBER 19, 1905.

49,706. FILES. CARVER FILE COMPANY, Philadelphia, Pa.
A wreath containing the words "FILES OF QUALITY."
Filed November 6, 1905. Serial No. 14,375. PUBLISHED DECEMBER 19, 1905.

49,707. REFRIGERATORS. D. EDDY & SONS CO., Boston, Mass.
The word "GLOBE." Used ten years.
Filed June 5, 1905. Serial No. 7,439. PUBLISHED DECEMBER 19, 1905.

49,708. REGULATING-VALVES FOR FLUIDS. THOMAS P. FORD, New York, N. Y.
The letter and numeral "D 4" arranged in the form of a monogram.
Filed April 12, 1905. Serial No. 1,309. PUBLISHED DECEMBER 19, 1905.

49,709. CHOCOLATE-CREAMS. CYPRIEN GOUSSET, New York, N. Y.
The letter "X."
Filed October 30, 1905. Serial No. 14,077. PUBLISHED DECEMBER 19, 1905.

49,710. HACKSAWS AND HACKSAW-BLADES. G. W. GRIFFIN & CO., Franklin Falls, N. H.
The word "GRIFFIN." Used ten years.
Filed November 11, 1905. Serial No. 14,513. PUBLISHED DECEMBER 19, 1905.

49,711. SAW-SWAGES. HENRY DISSTON & SONS, INCORPORATED, Philadelphia, Pa.
The word "CONQUEROR."
Filed October 31, 1905. Serial No. 14,121. PUBLISHED DECEMBER 19, 1905.

49,712. DRESS, BOSOM, AND NEGLIGÉE SHIRTS. HOWE & HOWE, Boston, Mass.
The word "HUB."
Filed April 3, 1905. Serial No. 330. PUBLISHED DECEMBER 19, 1905.

49,713. RIFLES, SHOTGUNS, AND REVOLVERS. HENRY KEIDEL, Baltimore, Md.
The designation "COLUMBIA ARMS CO." Used ten years.
Filed June 15, 1905. Serial No. 8,295. PUBLISHED DECEMBER 19, 1905.

49,714. CHOCOLATE AND COCOA. KNICKERBOCKER CHOCOLATE COMPANY, New York, N. Y.
The words "BLUE RIBBON BRAND."
Filed October 19, 1905. Serial No. 13,759. PUBLISHED DECEMBER 19, 1905.

49,715. FOUNTAIN-PENS. L. E. WATERMAN COMPANY, New York, N. Y.
The word "IDEAL."
Filed May 5, 1905. Serial No. 4,349. PUBLISHED DECEMBER 19, 1905.

49,716. WHISKY. ADOLPH LOKE, Cincinnati, Ohio.
The word "JUSTICE" between two parallel lines.
Filed June 24, 1905. Serial No. 8,964. PUBLISHED DECEMBER 19, 1905.

49,717. STOVES, RANGES, FURNACES, HEATERS, AND PARTS THEREOF. MAGEE FURNACE CO., Boston, Mass.
The word "MAGEE." Used ten years.
Filed June 20, 1905. Serial No. 8,623. PUBLISHED DECEMBER 19, 1905.

49,718. COTTON PIECE GOODS. MASSACHUSETTS COTTON MILLS, Lowell, Mass.
The word "MEDFORD." Used ten years.
Filed May 10, 1905. Serial No. 4,976. PUBLISHED DECEMBER 19, 1905.

49,719. COTTON PIECE GOODS. MASSACHUSETTS COTTON MILLS, Lowell, Mass.
The word "FALMOUTH." Used ten years.
Filed May 10, 1905. Serial No. 4,985. PUBLISHED DECEMBER 19, 1905.

49,720. COTTON PIECE GOODS. MASSACHUSETTS COTTON MILLS, Lowell, Mass.
The word "BUCKINGHAM." Used ten years.
Filed May 10, 1905. Serial No. 4,989. PUBLISHED DECEMBER 19, 1905.

49,721. CORDIALS. WILLIAM F. MITCHELL, Philadelphia, Pa.
The word "TEUTONIA."
Filed June 19, 1905. Serial No. 8,558. PUBLISHED DECEMBER 19, 1905.

49,722. CANVAS, HOSE-DUCK, AWNING-STRIPES, AND SAIL-DUCK. MOUNT VERNON-WOODBERRY COTTON DUCK COMPANY, Baltimore, Md.
The word "VIGILANT."
Filed July 26, 1905. Serial No. 10,837. PUBLISHED DECEMBER 19, 1905.

49,723. LAMP-CHIMNEYS AND LAMP-GLOBES. LEO H. PELTASON, St. Louis, Mo.
The words "CRACKER JACK" and the pictorial representation of a boy riding a donkey.
Filed November 6, 1905. Serial No. 14,377. PUBLISHED DECEMBER 19 1905.

49,724. MEDICINE FOR INTERNAL USE. POTTER DRUG & CHEMICAL CORPORATION, Boston, Mass.
The words, character, abbreviation, and letters "CUTICURA RESOLVENT, PREPARED BY POTTER DRUG & CHEMICAL CORP., BOSTON, MASSACHUSETTS, U. S. A.," and the monogram of the letters "P D & C CORP" inclosed in the outline of a heart, the abbreviation "CORP" appearing in an elongated hexagonal figure placed across the letter "P" and the whole inclosed by a border-line and appearing in red upon a black rectangular background. Used ten years.
Filed May 12, 1905. Serial No. 5,318. PUBLISHED DECEMBER 19, 1905.

49,725. TANNED SHEEPSKINS. RICHARD YOUNG COMPANY, New York, N. Y.
The words "NO SLIP."
Filed July 21, 1905. Serial No. 10,682. PUBLISHED DECEMBER 19, 1905.

49,726. DRESS-SHIRTS. RICHARDSON ROBERTS DRY GOODS CO., St. Joseph, Mo.
The word "HUNTER."
Filed May 25, 1905. Serial No. 6,665. PUBLISHED DECEMBER 19, 1905.

49,727. LAGER-BEER. JACOB RUPPERT, New York, N. Y.
The word "RUPPINER."
Filed May 18, 1905. Serial No. 5,959. PUBLISHED DECEMBER 19, 1905.

49,728. CIGARS. SANCHEZ & HAYA CO., Tampa, Fla.
The words "LA ROMANA" and the representation of a richly-clad young woman with long flowing hair in the act of culling flowers from plants before her, in the foreground of a rural scene comprising a stream and rustic bridge, trees, and foliage, and a castle in the distance.
Filed May 29, 1905. Serial No. 6,923. PUBLISHED AUGUST 15, 1905.

49,729. WHISKY. SCHUCKMANN & SELIGMANN COMPANY, Milwaukee, Wis.
The words "PRINCE WILLIAM," the word "PRINCE" being printed in a curved line above the word "WILLIAM," which is printed in a straight line.
Filed July 28, 1905. Serial No. 10,956. PUBLISHED DECEMBER 19, 1905.

49,730. HATS AND CAPS. MOSES SONNEBORN, Wheeling, W. Va.
The word "HUBHAT" mounted upon an irregular and fancifully-shaped panel, through which are extended diagonally-crossed lines and which is partially inclosed by fanciful scrolls, a shield also partially inclosed by scrolls above said panel, and a ribbon or scroll below said panel.
Filed July 29, 1905. Serial No. 11,006. PUBLISHED DECEMBER 19, 1905.

49,731. CLOCKS. THE ANSONIA CLOCK COMPANY, Ansonia, Conn., and New York, N. Y.
The name "THE ANSONIA CLOCK COMPANY." Used ten years.
Filed November 17, 1905. Serial No. 14,756. PUBLISHED DECEMBER 19, 1905.

49,732. CLOCKS. THE ANSONIA CLOCK COMPANY, Ansonia, Conn., and New York, N. Y.
The words "ANSONIA LEVER." Used ten years.
Filed November 17, 1905. Serial No. 14,757. PUBLISHED DECEMBER 19, 1905.

49,733. MINERAL WATER. THE BERRY HILL MINERAL SPRING CO. OF VA., Washington, D. C.
The words "BERRY HILL."
Filed May 29, 1905. Serial No. 6,929. PUBLISHED DECEMBER 19, 1905.

49,734. KNIT UNDERWEAR. THE DIRECT SUPPLY CO., Martinsburg, W. Va., and New York, N. Y.
The representation of an Indian standing on the edge of a precipice or rocky elevation having discharged an arrow from a bow held in the left hand, the arrow in front of the bow having its shaft extending lengthwise through the word "DIRECT."

Filed June 7, 1905. Serial No. 7,612. PUBLISHED DECEMBER 19 1905.

49,735. KNIT UNDERWEAR. THE DIRECT SUPPLY CO., Martinsburg, W. Va., and New York, N. Y.

The representation of an arrow extending lengthwise through the word "DIRECT."

Filed August 23, 1905. Serial No. 11,930. PUBLISHED DECEMBER 19, 1905.

49,736. DYED AND PRINTED COTTON DRAPERY AND UPHOLSTERY GOODS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa.

The word "MAJESTIC," associated with the representation of a crown and the word "TWILLS."

Filed September 27, 1905. Serial No. 13,069. PUBLISHED DECEMBER 19, 1905.

49,737. CHAMPAGNE. THE GINTER GROCERY COMPANY, Boston, Mass.

The words "THE DUCHESS."

Filed October 30, 1905. Serial No. 14,052. PUBLISHED DECEMBER 19, 1905.

49,738. LEATHER. THE JOSEPH N. EISENDRATH COMPANY, Chicago, Ill.

The word "ASBESTOL."

Filed June 5, 1905. Serial No. 7,461. PUBLISHED DECEMBER 19, 1905.

49,739. LEATHER. THE JOSEPH N. EISENDRATH COMPANY, Chicago, Ill.

The word "ASBESTOL," which is inclosed in a lozenge or diamond shaped frame.

Filed June 5, 1905. Serial No. 7,462. PUBLISHED DECEMBER 19, 1905.

49,740. FASTENERS. THE PATENT BUTTON CO., Waterbury, Conn.

The word "SNAPFAST."

Filed July 18, 1905. Serial No. 10,537. PUBLISHED DECEMBER 19, 1905.

49,741. GLASS ELECTRIC GLOBES AND GLASS SHADES. THE PHOENIX GLASS CO., Pittsburg, Pa.

The word "PHOENIX" on a panel appearing across the representation of a phenix.

Filed April 28, 1905. Serial No. 3,472. PUBLISHED DECEMBER 19, 1905.

49,742. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.

The word "TRITON." Used ten years.

Filed May 5, 1905. Serial No. 4,326. PUBLISHED DECEMBER 19, 1905.

49,743. RUGS. THE READ CARPET COMPANY, Bridgeport, Conn.

The word "ARDAHAN."

Filed September 13, 1905. Serial No. 12,511. PUBLISHED DECEMBER 19, 1905.

49,744. HOOKS AND EYES. THE STAR PIN COMPANY, Shelton, Conn.

The word "CORONATION."

Filed August 3, 1905. Serial No. 11,227. PUBLISHED DECEMBER 19, 1905.

49,745. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio.

The word "MODEL."

Filed April 15, 1905. Serial No. 1,576. PUBLISHED DECEMBER 19, 1905.

49,746. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio.

The word "MOTOR."

Filed April 15, 1905. Serial No. 1,581. PUBLISHED DECEMBER 19, 1905.

49,747. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio.

The word "EXPERT."

Filed April 15, 1905. Serial No. 1,597. PUBLISHED DECEMBER 19, 1905.

49,748. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio.

The abbreviation, numerals, and word "No. 88 BRIDGE."

Filed November 20, 1905. Serial No. 14,842. PUBLISHED DECEMBER 19, 1905.

49,749. LEATHER BOOTS AND SHOES. THOMAS G. PLANT COMPANY, Boston, Mass.

The words "QUEEN QUALITY" inclosed in a wreath.

Filed May 8, 1905. Serial No. 4,622. PUBLISHED DECEMBER 19, 1905.

49,750. COTTON PIECE GOODS. TREMONT & SUFFOLK MILLS, Lowell, Mass.

The word "SHAWMUT." Used ten years.

Filed May 10, 1905. Serial No. 4,969. PUBLISHED DECEMBER 19, 1905.

49,751. SELF-LIGHTING INCANDESCENT GAS-MANTLES. USONA LIGHT CO., New York, N. Y.

The word "IGOTIT."

Filed November 14, 1905. Serial No. 14,634. PUBLISHED DECEMBER 19, 1905.

49,752. ALE. ALONZO G. VAN NOSTRAND, Boston, Mass.

The hyphenated word "OWL-MUSTY," associated with the pictorial representation of an owl.

Filed April 28, 1905. Serial No. 3,463. PUBLISHED DECEMBER 19, 1905.

49,753. WINE. WM. HOELSCHER AND CO., INC., San Francisco, Cal.

The word "POMINO" inclosed in quotation-marks and a circular design at either side of said word and bearing a monogram composed of the letters, character, and abbreviation "W H & Co," all inclosed within a fanciful-shaped double-line border.

Filed May 22, 1905. Serial No. 6,303. PUBLISHED DECEMBER 19, 1905.

49,754. LAGER-BEER. ZELTNER BREWING CO., New York, N. Y.

The words "ZELTNER BREWING CO'S OLD FASHIONED BEER." Used ten years.

Filed May 16, 1905. Serial No. 6,209. PUBLISHED DECEMBER 19, 1905.

49,755. LEATHER BOOTS AND SHOES. A. H. BERRY SHOE COMPANY, Portland, Me.

The words "CRUMBS OF COMFORT," associated with the representation of an old lady sitting in a chair knitting.

Filed May 20, 1905. Serial No. 6,172. PUBLISHED DECEMBER 19, 1905.

49,756. OILED CLOTHING OF ALL KINDS. A. J. TOWER COMPANY, Boston, Mass., and Portland, Me.

The picture of a fisherman fishing from a boat and the words "LONE FISHERMAN" within a circle-bounded border about the picture.

Filed June 12, 1905. Serial No. 7,936. PUBLISHED DECEMBER 19, 1905.

49,757. RAILROAD LAMPS AND LANTERNS. ARMSPEAR MANUFACTURING COMPANY, New York, N. Y.

The representation of an arm holding aloft a spear.

Filed June 8, 1905. Serial No. 7,659. PUBLISHED DECEMBER 19, 1905.

49,758. RAILROAD LAMPS AND LANTERNS. ARMSPEAR MANUFACTURING COMPANY, New York, N. Y.

The representation of a human arm bent at the elbow and holding a spear clenched in the hand and the word "ARMSPEAR," the letters whereof are arranged on a curve in the angle of the arm and have scrollwork above and below them.

Filed June 8, 1905. Serial No. 7,660. PUBLISHED DECEMBER 19, 1905.

49,759. WHISKY. BIGBIE BROS. & CO., Lynchburg, Va.

The representation of a bee surrounded by concentric circles.

Filed October 7, 1905. Serial No. 13,399. PUBLISHED DECEMBER 19, 1905.

49,760. DRESS-SHIRTS, COLLARS, AND CUFFS. BLOCH & NEUBURGER, Mobile, Ala.

The words "LIVE OAK."

Filed May 1, 1905. Serial No. 3,922. PUBLISHED AUGUST 8, 1905.

49,761. BUTTERIN. BRAUN & FITTS, INC., Chicago, Ill.

A red seal or disk having thereon the words "THE ONLY HIGH GRADE." Used ten years.

Filed April 13, 1905. Serial No. 1,340. PUBLISHED DECEMBER 19, 1905

49,762. WITHDRAWN.

49,763. STOCKINGS. COLUMBIA HOSIERY CO., New York, N. Y.

The words "WINONA MILLS," associated with the representation of a ram's head in a disk, with the ends of a crescent projecting from behind the disk. Used ten years.

Filed August 30, 1905. Serial No. 12,094. PUBLISHED DECEMBER 19, 1905.

49,764. TRADE NEWSPAPER. DAVID WILLIAMS COMPANY, New York, N. Y.

The words "CARPENTRY AND BUILDING WITH WHICH IS INCORPORATED THE BUILDERS' EXCHANGE."

Filed June 28, 1905. Serial No. 9,332. PUBLISHED DECEMBER 19, 1905.

49,765. WITHDRAWN.

49,766. LEATHER BOOTS, SHOES, AND SLIPPERS, AND LEATHER THEREFOR. FRED F. FIELD, Brockton, Mass.

The word "WALKABOUT."

Filed May 27, 1905. Serial No. 6,818. PUBLISHED DECEMBER 19, 1905.

49,767. LEATHER BOOTS, SHOES, AND SLIPPERS. FRED F. FIELD COMPANY, Brockton, Mass.

The word "TECHNIQUE."

Filed August 26, 1905. Serial No. 12,016. PUBLISHED DECEMBER 19, 1905.

49,768. KNITTED UNDERWEAR. GLASTONBURY KNITTING COMPANY, Addison, Conn.

The word "GLASTENBURY." Used ten years.

Filed October 24, 1905. Serial No. 13,892. PUBLISHED DECEMBER 19, 1905.

49,769. SILVER-PLATED HOLLOW WARE. INTERNATIONAL SILVER COMPANY, Meriden, Conn.

The words "FORBES SILVER CO. QUADRUPLE" disposed within a circular band surrounding the fanciful representation of the head of a bird. Used ten years.

Filed November 4, 1905. Serial No. 14,337. PUBLISHED DECEMBER 19, 1905.

49,770. COLLAR-BUTTONS. KREMENTZ & CO., Newark, N. J.

The word "KREMENTZ." Used ten years.

Filed November 14, 1905. Serial No. 14,610. PUBLISHED DECEMBER 19, 1905.

49,771. WHISKY. LAZARUS AND NASSAUER, Cairo, Ill.

The words "JOSH QUINCY." Used ten years.

Filed April 10, 1905. Serial No. 931. PUBLISHED DECEMBER 19, 1905.

49,772. LEATHER BOOTS AND SHOES. MARKS ROTHENBERG & CO., Meridian, Miss.

The word "ARUNDELL."

Filed May 16, 1905. Serial No. 5,804. PUBLISHED DECEMBER 19, 1905.

49,773. COTTON PIECE GOODS. MASSACHUSETTS COTTON MILLS, Lowell, Mass.

The word "BANGOR." Used ten years.

Filed May 10, 1905. Serial No. 4,986. PUBLISHED DECEMBER 19, 1905.

49,774. COTTON DUCK. MOUNT VERNON-WOODBERRY COTTON DUCK COMPANY, Baltimore, Md.

The word "COLUMBIA." Used ten years.

Filed September 22, 1905. Serial No. 12,923. PUBLISHED DECEMBER 19, 1905.

49,775. WHISKY. LOUISA NELSON, Nashville, Tenn.

The words "GREEN BRIER" inclosed in quotation-marks, associated with the words "TENNESSEE HAND MADE SOUR MASH WHISKEY" and the name and address "CHAS. NELSON, NASHVILLE." The word "TENNESSEE" appears on a panel-shaped figure enlarged at the beginning into a circular form and ornamented with a spray of green-brier vine, the whole inclosed in a rectangular outline. Used ten years.

Filed May 25, 1905. Serial No. 6,603. PUBLISHED DECEMBER 19, 1905.

49,776. STEEL PENS. PERRY & COMPANY LIMITED, Birmingham, England.

The words "PERRY & CO'S UNIVERSAL SCHOOL PENS."

Filed August 2, 190 . Serial No. 11,170. PUBLISHED DECEMBER 19, 1905.

49,777. CERTAIN NAMED WOODEN RECEPTACLES. PREWITT-SPURR MFG. CO., Nashville, Tenn.

The word "TENNESSEE" inclosed in a diamond-shaped figure.

Filed April 29, 1905. Serial No 3,609. PUBLISHED SEPTEMBER 12, 1905.

49,778. WHISKY. THE DONOGHUE IMPORTING COMPANY, Rochester, N. Y.

The word "GLENFESK" printed in partly-shaded type.

Filed May 5, 1905. Serial No. 4,418. PUBLISHED DECEMBER 19, 1905.

49,779. BRACELETS. THE F. H. SADLER CO., Attleboro, Mass.

The word "NORMA."

Filed November 11, 1905. Serial No. 14,507. PUBLISHED DECEMBER 19, 1905.

49,780. PACKING FOR VALVE-JOINTS. THE FAIRBANKS CO., New York, N. Y.

The letter "F" inclosed in a double broken triangle, with a star in each corner of the triangle and with the words "TRIANGLE," "FAIRBANKS," and "PACKING" inclosed in the border of the representation of said triangle.

Filed April 17, 1905. Serial No. 1,969. PUBLISHED DECEMBER 19, 1905.

49,781. PRINTED PUBLICATIONS. THE FRUIT-GROWER COMPANY, St. Joseph, Mo.

The representation of an apple, upon which is a human face and below which are the abbreviation and word "BRO. JONATHAN."

Filed July 29, 1905. Serial No. 10,998. PUBLISHED DECEMBER 5, 1905.

49,782. WHISKY. THE HOFFHEIMER BROS. CO., Cincinnati, Ohio.

The name "HOFFHEIMER BROS." Used ten years.

Filed May 11, 1905. Serial No. 5,142. PUBLISHED DECEMBER 19, 1905.

49,783. HATS AND CAPS. THE KNOX HAT MANUFACTURING CO., New York, N. Y.

The word "BEACON" upon an ornamental panel surmounted by the representation of two eagles rampant against a shield. The lower part of the shield is striped perpendicularly, and the upper part has on it a device in the semblance of a rising sun with rays projecting therefrom. Above the shield is a scroll, and below the ornamental panel is another scroll.

Filed May 29, 1905. Serial No. 6,955. PUBLISHED NOVEMBER 21, 1905.

49,784. HATS AND CAPS. THE KNOX HAT MANUFACTURING CO., New York, N. Y.

The word "ROXFORD," associated with the representation of a lioness and a stag rampant against a heraldic device inclosing a representation of the globe. Below the heraldic device is a scroll with the words "MOVEO ET PROFICIO" thereon. Above the globe is the representation of a crown. Arranged above the crown is a second scroll.

Filed May 29, 1905. Serial No. 6,956. PUBLISHED NOVEMBER 21, 1905.

49,785. PASTE. THE PRESERVALINE MFG. CO., New York, N. Y.

The representation of a bishop's crown and the word "CROWN," the latter extending across the representation of the crown.

Filed May 11, 1905. Serial No. 5,204. PUBLISHED DECEMBER 19, 1905.

49,786. HOOKS AND EYES. THE UNIQUE MANUFACTURING COMPANY, Shelton, Conn.

The word "DAINTE."

Filed August 9, 1905. Serial No. 11,463. PUBLISHED DECEMBER 19, 1905.

49,787. HOOKS AND EYES. THE UNIQUE MANUFACTURING COMPANY, Shelton, Conn.

The word "UNIQUE." Used ten years.

Filed August 9, 1905. Serial No. 11,464. PUBLISHED DECEMBER 19, 1905.

49,788. LEATHER BOOTS AND SHOES. THOMAS G. PLANT COMPANY, Boston, Mass.

A full-length representation of Queen Louise descending a flight of steps.

Filed May 8, 1905. Serial No. 4,620. PUBLISHED DECEMBER 19, 1905.

49,789. GRASS-SEED. HORACE E. CONKLIN, Binghamton, N. Y.

The word "CROWN."

Filed April 15, 1905. Serial No. 1,630. PUBLISHED JULY 11, 1905.

LABELS

REGISTERED FEBRUARY 13, 1906.

12,657.—*Title:* "BLUE RIBBON." (For Baking-Powder.) THE WABASH CHEMICAL & BAKING POWDER CO., Wabash, Ind. Filed January 18, 1906.

12,658.—*Title:* "LA CHAPINA." (For Flour.) ISIDOR RICH, New Orleans, La. Filed January 16, 1906.

12,659.—*Title:* "THE HARVARD EYE REMEDY." (For Eye Medicine.) GEORGE S. RUBIN, Boston, Mass. Filed January 17, 1906.

12,660.—*Title:* "HILLS HONEY & TAR." (For Medicine.) INDIANA DRUG CONCERN, St. Louis, Mo. Filed January 8, 1906.

12,661.—*Title:* "HILLS DI-COL-Q." (For Medicine.) INDIANA DRUG CONCERN, St. Louis, Mo. Filed January 8, 1906.

12,662.—*Title:* "PILLOLE ANTIMALARICHE LIVER PILLS." (For Liver-Pills.) RIZZO GIOVANNI, Philadelphia, Pa. Filed January 16, 1906.

12,663.—*Title:* "GLYCERO-MEDICATED-PLASTER." (For Medicated Plasters.) THE PHYSICIANS CHEMICAL & DRUG COMPANY, Denver, Colo. Filed January 17, 1906.

12,664.—*Title:* "REST—A HIGH GRADE WASHING POWDER." (For Washing-Powder.) THE SOAP PRODUCTS COMPANY, INC., Norfolk, Va. Filed January 16, 1906.

12,665.—*Title:* "SPEED—PULVERIZED SCOURING SOAP." (For Scouring-Soap.) THE SOAP PRODUCTS COMPANY, INC., Norfolk, Va. Filed January 16, 1906.

12,666.—*Title:* "FIL GIRE, NOIR SUBLIME." (For Linen Thread.) SOCIÉTÉ ANME. FILATURE & FILTERIES RÉUNIES, Alost, Belgium. Filed October 16, 1905.

12,667.—*Title:* "AU MARCHAND CHINOIS." (For Linen Thread.) SOCIÉTÉ ANONME FILATURE & FILTERIES RÉUNIES, Alost, Belgium. Filed October 16, 1905.

PRINTS

REGISTERED FEBRUARY 13, 1906.

(None.)

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

EX PARTE CALDWELL AND BARR.

Decided December 21, 1905.

1. ALTERNATIVE CLAIMS.

A claim should not be drawn in an alternative form even where the alternative elements are equivalents, but should use some broad term of description which will include both forms.

2. SAME—INDEFINITE CLAIM.

A claim including a description of an element as "brick or the like" is alternative in form and is indefinite, since the word "like" fails to identify the characteristics of the substance.

ON PETITION.

GRAIN-BLEACHER.

Messrs. Raymond & Barnett for the applicants.

ALLEN, *Commissioner:*

This is a petition from the action of the Primary Examiner objecting to claims 2 and 3 as alternative in form.

Claim 2 includes "a mixing-compartment containing a quantity of coke or the like," and claim 3 includes "a casing containing a mass of coke, brick, or like material." The Examiner regards the terms "coke or the like" and "coke, brick, or like material" as alternative rather than generic and has required amendment.

In his brief counsel for the petitioner states that the terms were used in the effort to define a material which—

for the purposes of applicants' structure and operation, possesses the same qualities as coke, broken brick, "and the like," *i. e.*, broken, irregular, absorbent, and more or less refractory material, which will readily retain moisture, allow the free passage of moisture and of gases through a body of such material, and afford a large surface exposure.

It is always objectionable to use in the claim words of description which are alternative in form, and this is true even where it appears from consideration of the whole case that the words are not intended to convey alternative or inconsistent ideas. Where possible, some terms of description should be used which are generic, so defining the field sought to be covered as to include all of the specific forms coming within it without specifically mentioning the various forms sought to be included.

Specific mention of the various alternative elements is objectionable, and the mention of one coupled with the words "or the like" is also objectionable for the same reasons. The words "brick or the like" do not in and of themselves convey any definite idea of the field sought to be covered. Broken brick may be like coke for some purposes; but it is clear that it is not like coke for all purposes. If it can be described as "like" for some particular purpose, it must be because of certain common characteristics. The applicants must know what those common characteristics are and must state them in the application; otherwise they furnish no guide for determining what is meant by the term "like." There seems to be no good reason, therefore, why the applicants should not in their claims identify the substance used by a statement of the characteristics necessary. The words "brick or the like" are not a broad statement of the characteristics, but are alternative in form and indefinite in substance.

The petition is denied.

THE BUCHANAN-ANDERSON-NELSON COMPANY *v.* BREEN & KENNEDY.

Decided December 21, 1905.

TRADE-MARK OPPOSITION—"HENDERSON" NOT REFUSED ON "ANDERSON."

A trade-mark including the word "Henderson" is not to be refused registration because an entirely different mark including the word "Anderson" had been used previously by another upon the same class of goods.

APPEAL from Examiner of Interferences.

TRADE-MARK FOR WHISKY.

Mr. Jas. L. Hopkins and *Mr. John S. Barker* for the Buchanan-Anderson-Nelson Company.

Mr. Arthur E. Wallace for Breen & Kennedy.

ALLEN, *Commissioner:*

This is an appeal by Buchanan-Anderson-Nelson Company from the decision of the Examiner of Interferences dismissing its notice of opposition to the registration of a trade-mark by Breen & Kennedy.

The applicants' mark is used on whisky and is described as follows:

The word "Henderson" on a ribbon design, beneath which is a shield upon which is the monogram "B & K."

The Buchanan-Anderson-Nelson Company opposed registration on the ground that the mark so nearly resembles a mark owned and used by it upon the same class of goods as to cause confusion and mislead purchasers. Its mark is described in the notice of opposition as follows:

The trade-mark consists of the representation of a Maltese or Templar cross and a panel below the same bearing the word "Anderson" in white letters, the cross and panel appearing in red and each having a border in gold, as shown in the accompanying facsimile. This may be arranged in connection with any suitable descriptive matter without materially altering the character of the trade-mark, the essential feature of which is the representation of a Maltese or Templar cross and a panel below the same and bearing the word "Anderson" in white letters, the cross and panel appearing in red and each having a border in gold.

This mark was registered December 29, 1896, No. 29,373. It appears from consideration of the marks themselves and from the argument made by the appellant that the only possible question as to confusion between the

marks arises from the use of the names "Anderson" and "Henderson." All other features of the marks are so entirely dissimilar as to furnish no possible basis for confusion. In its brief before the Examiner the appellant said:

The solitary question presented upon this point is whether or not the resemblance between the two words "Henderson" and "Anderson" is calculated to deceive and to mislead the public into purchasing and consuming Breen & Kennedy's whisky under the false belief that it is the whisky of the Buchanan-Anderson-Nelson Company.

A mere inspection of the applicants' mark shows that there was no effort to copy or simulate the appellant's mark, since, as above stated, there is not even an allegation of similarity except as to the names Anderson and Henderson. Those names are both well known, and it is believed that there is no likelihood that purchasers will assume that the word "Anderson" indicates the same party or owner as the word "Henderson." On the contrary, it is believed that they will know at once that the parties are different.

The decision of the Examiner of Interferences dismissing the notice of opposition is affirmed.

WINAND v. THE P. J. DRURY COMPANY.

Decided December 22, 1905.

1. TRADE-MARK—OPPOSITION FILED TOO LATE—OFFICE WITHOUT JURISDICTION.

This Office has no authority to entertain a notice of opposition to the registration of a trade-mark filed more than thirty days after the publication of the mark.

2. SAME—OPPOSITION TO REGISTERED MARK—MOOT QUESTION.

Where opposition is made to the registration of a mark and it appears that the mark has been registered, the opposition will be dismissed as raising a moot question.

ON APPEAL.

TRADE-MARK FOR WHISKY.

Mr. Arthur E. Wallace for Winand.

Mr. J. Nota McGill for The P. J. Drury Company.

ALLEN, *Commissioner:*

This is an appeal by J. P. Winand from the decision of the Examiner of Interferences dismissing his notice of opposition to the registration of a trade-mark by The P. J. Drury Company.

It appears that the applicant's trade-mark was published in the OFFICIAL GAZETTE of May 16, 1905, and that no notice of opposition was filed within thirty days thereafter, as provided in section 6 of the Trade-Mark Act; but on July 6 J. P. Winand filed the notice of opposition which is here under consideration. At the time the notice was received the application had been passed to issue and was in the hands of the printer. On July 11, 1905, the mark was actually registered.

It appears that this Office did not notice that the mark was registered, and the applicant did not call attention to the fact, and therefore on August 8 the applicant was called upon to file an answer to the notice of opposition. Such answer was filed on September 8, and thereafter times were set for taking testimony. The present attorney for The P. J. Drury Company was then appointed and took charge of the prosecution of the case, and on October 11 he filed a motion to dismiss the opposition. That motion was granted, and thereupon this appeal was filed.

It is to be noted that section 6 of the Trade-Mark Act providing for opposition distinctly says that if no opposition is filed within the thirty days allowed registration shall be granted to the applicant. The statute gives this Office no authority to extend the time fixed for opposition and therefore it is without jurisdiction to conduct proceedings on an opposition filed after that date. The Examiner was therefore right in dismissing the opposition upon this ground. In the present case, furthermore, since the trade-mark has been registered by the applicant, proceedings in opposition to that registration are clearly of no effect and useless. The sole purpose of the opposition was to prevent registration, and it is very clear that such result cannot be effected now even if it should be concluded that the mark should not have been registered.

The decision of the Examiner of Interferences is affirmed.

AUTENRIETH AND KANE v. SORENSEN.

Decided December 22, 1905.

APPEAL AFTER EXPIRATION OF LIMIT OF APPEAL—VERIFIED SHOWING.

A petition to extend the limit of appeal to include an appeal filed after the expiration thereof must be supported by a verified showing in excuse for the delay. (*Ex parte Kletzker and Goesel* v. *Dodson*, 109 O. G., 1336.)

ON PETITION.

SNAP-SWITCH.

Mr. Vernon E. Hodges for Autenrieth and Kane.

Messrs. Townsend & Decker and *Mr. J. R. Edson* for Sorensen.

ALLEN, *Commissioner:*

This is a petition by Autenrieth and Kane that the limit of appeal to the Examiners-in-Chief which expired on November 4, 1905, be extended to include an appeal filed November 6, 1905.

Since the showing made in support of the petition is not verified, as required by the practice indicated in the case of *Kletzker and Goesel* v. *Dodson* (109 O. G., 1336) and other decisions, the petition is dismissed.

EX PARTE JANSSON.

Decided December 22, 1905.

1. DESCRIPTION — REFERENCE TO MODIFICATIONS — CANCELLATION NOT REQUIRED.

Where the applicant states in his specification that he does not regard his invention as limited to the exact details of construction and it appears that his claims are not so limited, *Held* that he should not be required to cancel the statement as superfluous. (*Ex parte Champ*, 114 O. G., 1827, distinguished.)

2. SAME—SCOPE OF CLAIMS—INTENT OF APPLICANT MATERIAL.

In a case of doubt the intent of the applicant in using a term in a claim and the understanding of the Office in allowing the claim have a material bearing upon its meaning and scope, and therefore the applicant should not be required to cancel statements where such cancellation may result in a more limited construction of the claim than is necessary.

ON PETITION.

AUTOMATIC STOP MOTION APPARATUS.

Messrs. Brown, Darby & Hopkins and *Mr. Chas. M. Nissen* for the applicant.

ALLEN, *Commissioner:*

This is a petition from the action of the Primary Examiner requiring the cancellation of the following statement in the specification on the ground that it is superfluous:

I wish it to be understood that I do not desire to be limited to the exact details of construction shown and described, for obvious modifications will occur to a person skilled in the art.

It does not appear from the Examiner's statement that the claims are, in fact, limited to the exact details of con-

struction shown and described, and therefore no question as to the accuracy of the above-quoted statement has been raised. The sole objection is that the statement is unnecessary and serves no useful purpose in the application.

While it is true that it may be determined without reference to the above-quoted statement whether or not the claims are limited to the exact details of construction, it is also true that the meaning to be given to terms used in the claims is often controlled by the proceedings in this Office which show the intent. In case of doubt as to the meaning of any term, the intent of the applicant in using the term and the understanding of this Office in allowing the claim become material. The intention of the parties is just as important in construing a patent as in construing any other legal instrument, and for that reason the courts give great weight to the proceedings in this Office leading to the grant.

In the present case the paragraph to which objection has been made was clearly inserted to show that the applicant used the terms found in the claims in their broad and not their restricted sense. To cancel that paragraph upon the requirement of this Office might lead to the conclusion that the applicant acquiesces in a ruling by this Office that the terms of the claims are to be understood in a restricted sence. While it was not necessary to include the statement, it does not tend to mislead or confuse the public as to the meaning of the patent, but, on the contrary, tends to make clear the meaning. It is not mere surplusage, since it discloses the intent, which has a material bearing upon the meaning of the claims.

This case is to be distinguished from that considered in *ex parte Champ*, (114 O. G., 1827.) In that case the applicant merely stated well-known principles of law applicable to his case, as well as to all other cases, and included nothing of value in determining the scope and meaning of the patent. There is no limit to the propositions of law which might be stated in patents, and since their inclusion is useless it was pointed out in *ex parte Champ* that they should be excluded.

The petition is granted.

KINSMAN v. STROHM.

Decided January 3, 1906.

ABANDONMENT OF APPLICATION—REVIEW OF FORMER COMMISSIONER'S DECISION—ALLEGATION OF FRAUD BY APPLICANT.

The question of abandonment of an application decided by a former Commissioner will not be reviewed except upon a clear and satisfactory showing that the Commissioner was misled by the applicant as to the facts, and mere *ex parte* affidavits cannot be regarded as such showing.

ON PETITION.

RAILWAY SIGNALING.

Mr. Charles S. Champion for Kinsman.

Messrs. Connolly Bros. for Strohm.

ALLEN, *Commissioner:*

This is a petition by Kinsman referring to a motion for dissolution and a motion to shift the burden of proof made by him and asking for a review and reversal of a ruling made in 1899 to the effect that Strohm's application was not abandoned for lack of prosecution.

It appears that more than two years elapsed without action by the applicant in Strohm's case, and therefore it was *prima facie* abandoned. The applicant, however, filed affidavits tending to show poverty and illness on the part of the applicant such as made the delay unavoidable. In view thereof Commissioner Duell granted a petition asking for a review of the facts and an adjudication that the case was not abandoned.

The present petitioner alleges that there was no foundation in fact for the allegations upon which the petition was granted and that this Office was misled by the applicant Strohm.

The action of my predecessor upon the question of abandonment will not be reviewed except upon a clear showing that he was misled as to the facts by the affidavits filed. The *ex parte* affidavits now filed cannot be accepted as such showing. They are opposed by the affidavits originally filed on behalf of Strohm, and there is no reason for accepting them as having greater force.

The present petition must be denied; but it may be said that if the evidence taken in the interference, where Strohm has the right of cross-examination, shows that the allegations made in the affidavits which lead to the holding that the case was not abandoned were contrary to the facts the matter may be reconsidered.

The petition is denied.

EX PARTE SCHRADER.

Decided January 9, 1906.

FINAL REJECTION—AMENDMENT AFTER—SHOWING REQUIRED.

The statement of the attorney that the subject-matter of a proposed amendment filed after final rejection was not earlier called to his attention by the inventor is not a sufficient showing upon which to admit the amendment.

ON PETITION.

STOPPERS FOR WATER-BAGS.

Messrs. Arthur C. Fraser & Co. for the applicant.

ALLEN, *Commissioner:*

This is a petition requesting that the above-entitled case be reopened for the admission of an amendment erasing all the claims and substituting a new one in place thereof.

It appears that all the claims in the case were finally rejected by the Examiner and that such rejection was affirmed upon appeals to the Examiners-in-Chief and to myself. The only showing made why the amendment was not earlier presented is the statement of the attorneys that the subject-matter of the new claim was not called to their attention by the inventor, who was in Europe at the time the application was prepared. The showing is insufficient.

The petition is denied.

DECISIONS OF THE U. S. COURTS.

Court of Appeals of the District of Columbia.

PODLESAK AND PODLESAK v. MCINNERNEY.

Decided January 4, 1906.

1. INTERFERENCE—UNSUPPORTED TESTIMONY OF JOINT INVENTORS.

Where the only testimony taken by joint inventors upon the question of the date of their invention is their own depositions, *Held* that the depositions of parties to interference upon this point, unless corroborated by independent circumstances established by the evidence, are clearly insufficient to prove conception of the invention. (*Garrells* v. *Freeman*, 21 App. D. C., 207.)

2. SAME—ORIGINALITY.

Where a party contended that he communicated the invention to his opponent, but did not claim to have made complete

12. SAME—CASE REMANDED UNDECIDED—FURTHER CONSIDERATION BY COURT.

In remanding the interference to the Patent Office undecided

Under this authority the Primary Examiner considered the right of McInnerney to make the claims constituting

would not have been delivered until October 30, 1899, for the 29th was Sunday. We think the proof offered is not

2. SAME—ORIGINALITY.

Where a party contended that he communicated the invention to his opponent, but did not claim to have made complete disclosure, and the circumstances did not support the theory of derivation, *Held* that the rule of *Winslow* v. *Austin* (14 App. D. C., 137) that the failure of a party to rebut the sworn statement of his adversary that he had fully disclosed the invention to him furnished strong evidence that the latter was not the prior inventor did not apply.

3. SAME—PRIORITY.

Held that the Commissioner of Patents having found there was an interference in fact and that McInnerney had the right to make the claim could come to no other conclusion upon the proofs and the law applicable thereto than the one he did, and consequently his award of priority is correct if the remaining questions be decided in McInnerney's favor.

4. SAME—RIGHT TO MAKE CLAIMS AND INTERFERENCE IN FACT—CONCURRENT DECISIONS IN PATENT OFFICE ORDINARILY CONCLUSIVE.

Where a question of interference in fact or right to make claims has been fully considered by the Primary Examiner, the Examiners-in-Chief, and the Commissioner and all have concurred in finding that a party to an interference has the right to make a claim which is the same as the count of the issue of an interference, *Held* that these conclusions will ordinarily be considered by the court as conclusive.

5. SAME—RIGHT TO CLAIM—EFFECT OF INCORRECT DECISION.

If it be incorrectly held that a party to an interference has a right to make a claim in issue, an award of priority to him is made possible. His adversary would thereby be deprived of a substantial right in that he would be refused a claim where he was necessarily the prior inventor, his adversary never having made the invention.

6. SAME—SAME—DECISION OF PRIMARY EXAMINER NOT FINAL—CONSIDERATION BY COURT OF APPEALS.

In view of the possible effect upon the determination of priority of an error in a decision holding that a party has a right to make a claim, *Held* that the latter question should not be finally determined by the Primary Examiner who originally declared the interference and that the court would therefore take jurisdiction to determine that question as ancillary to that of priority.

7. SAME—SAME LANGUAGE AND DIFFERENT INVENTIONS.

General terms may be used which apply equally to two structures which are not the same, as may be shown when those terms are read and construed in the light of the specifications behind them; but in most cases where two structures are not specifically the same and the art does not warrant a generic claim the language of the claims can be made precise and to fittingly describe each structure so that the use of identical language be avoided.

8. SAME—SAME—AMENDMENT NECESSARY.

Where the claim read in the light of the specification of one party means one thing and the same claim read in the light of the specification of another party means another thing, *Held* that the same phraseology should not be employed.

9. SAME—INTERPRETATION OF ISSUE.

The meaning given to the counts of an interference must be that intended by the party to the interference first making the claim. (*Tracy* v. *Leslie*, 14 App. D. C., 126; *Ruete* v. *Elwell*, 15 App. D. C., 21.)

10. SAME—CONSTRUED ISSUE—INAPPLICABLE TO CASES OF BOTH PARTIES—CASE REFERRED TO PATENT OFFICE UNDECIDED.

Where the issue if broadly construed read upon the devices of both parties, but consisted of a claim which had been allowed over a reference only upon a narrow construction inapplicable to the devices of one party, and it appeared that such construction of the claims was necessary in order to sustain the same, *Held* that, in the opinion of the court, an error had been committed and that the case should be remanded undecided to the Patent Office for further consideration as to identity of invention.

11. SAME—NO INTERFERENCE IN FACT—RE-FORMATION OF CLAIMS IN ISSUE.

Held that apparently neither party is entitled to a claim for the feature in controversy which should dominate the other and that apparently the claims presented by both and made the issue should be so re-formed that each should have a specific claim, provided each could draw one to avoid the reference.

12. SAME—CASE REMANDED UNDECIDED—FURTHER CONSIDERATION BY COURT.

In remanding the interference to the Patent Office undecided for further consideration of the question of identity of invention, *Held* that if after such consideration the Office adheres to the opinion that there is an interference in fact the present interference record with any additions will be further considered by the court.

Mr. C. Le Roy Parker for the appellants.

Mr. J. C. Pennie and *Mr. Jas. T. Williamson* for the appellee.

DUELL, *J.*:

This appeal is taken from the decision of the Commissioner of Patents awarding priority of invention to McInnerney.

Appellants assign as errors the findings of the Commissioner that McInnerney was the prior inventor; that there is an interference in fact between the inventions of the interferants; and that McInnerney has a right to make the claim which constitutes count 2 of the issue.

The record discloses that when the interference was declared there were three counts. After the testimony had been taken the case was remanded to the Primary Examiner to consider McInnerney's right to make the claim constituting the third count of the issue. It was decided that he had no right to make the claim. This left the interference with two counts. Thereafter at the request of the Primary Examiner the interference proceedings were again suspended and the papers transmitted to the Primary Examiner to consider a newly-discovered reference. The Examiner decided that the claims constituting the remaining counts were anticipated by a patent to one Tirrell, No. 230,589, July 27, 1880. From this decision an appeal was taken to the Examiners-in-Chief, who held that when the claims were "construed by the specification behind them they were patentable over the reference" and accordingly they reversed the Examiner. Judgment of priority was then rendered in favor of McInnerney by the Examiner of Interferences. Upon appeal the Examiners-in-Chief held that count 1 of the issue was limited to the inclusion of a plurality of springs, and that such limitation rendered the issue inapplicable to McInnerney's construction. In accordance with the rule they called the attention of the Commissioner to the fact that in their opinion McInnerney had no right to make the claim which corresponded to the first count of the issue. They found that he had the right to make the claim constituting the second count of the issue and as to that issue they awarded priority to McInnerney, and to that extent affirmed the decision of the Examiner of Interferences. An appeal was taken by Podlesak and Podlesak to the Commissioner, who, without deciding the question of priority, remanded the interference to the Primary Examiner to consider McInnerney's right to claim the first issue and directed him to consider the right of McInnerney to claim the second count, saying:

> Without expressing any opinion upon the question of the right of McInnerney to make a claim corresponding to count 2, it is believed that the conditions of this case are such as to warrant jurisdiction being given the Examiner to consider the right of McInnerney to make a claim corresponding to count 2 when the interference comes before him to consider the question to which attention has been called by the Examiners-in-Chief.
>
> This interference is therefore remanded to the Primary Examiner to consider the matters to which attention has been called by the Examiners-in-Chief and jurisdiction is also given to the Examiner to consider at the same time the right of McInnerney to make a claim corresponding to count 2.
>
> The decision on priority of invention is reserved pending the determination of the question of the dissolution of this interference.

Under this authority the Primary Examiner considered the right of McInnerney to make the claims constituting counts 1 and 2 of the issue. He filed a written decision to the effect that McInnerney had no right to make the first claim, but that the second claim could be equally well read upon the structure of both applicants and that therefore McInnerney had the right to make the claim constituting the second issue. From this decision no appeal was taken by McInnerney, and therefore the interference was continued with but one issue. The Commissioner when the matter next came before him awarded priority of invention of the second and sole remaining count to McInnerney.

The issue in question is:

> 2. The combination, in electrically operated or actuated sparking devices for gas or vapor ignition, of an electromagnet and its movable armature, with a movable electrode; a means of imparting a separating and a contacting blow, successively, from and through the movement of said armature to said movable electrode; an insulated electrode; an electric circuit supplying current to the energizing-coils of said electromagnet and to said electrodes, substantially as and for the purposes set forth.

McInnerney is the senior party having filed his application November 21, 1899. The Podlesaks filed their application April 2, 1900. The only testimony taken by them upon the question of the date of their invention is their own depositions. The depositions of parties to interferences upon this point, unless corroborated by "independent circumstances established by the evidence" are clearly insufficient to prove conception of an invention. (*Garrells* v. *Freeman*, 21 App. D. C., 207.)

It is insisted however by appellants that H. J. Podlesak communicated the invention to McInnerney, and that that fact is proven because not denied by the latter. In *Winslow* v. *Austin* (14 App. D. C., 137) this court held that the failure of a party to an interference to rebut the sworn statement of his adversary that he had fully disclosed the invention to him furnished strong evidence that the latter was not the prior inventor. We think the evidence disclosed by the record is not sufficient to warrant the application of that rule in this case. H. J. Podlesak does not claim to have made a complete disclosure to McInnerney. He claims to have made such partial discovery on October 27, 1899. It appears that Foster and Freeman on October 30, 1899, received from McInnerney a letter bearing date October 25, 1899, and a type-written description of his invention which is involved in this interference bearing date October 24, 1899, and also a drawing in pencil. It is insisted on the part of appellants that this latter statement and drawing were prepared after the alleged disclosure to McInnerney and that the papers were antedated. They seek to prove this by showing that a letter mailed in time to be forwarded on a train leaving Omaha (McInnerney's place of residence) at 3.30 p. m. of one day would in the ordinary course reach Washington the early morning of the second day thereafter. It is claimed by McInnerney that these papers were mailed on October 25, 1899, but it is not shown that they were mailed in time for the train leaving Omaha at 3.30 p. m. of that day. The probability would favor the supposition that they were mailed at a later hour. No facts are given relative to the time when other through mail-trains leave Omaha for the east. If the papers left on the same train on the following day they would not have arrived in Washington, if on time, until the morning of Saturday the 28th of October. It further appears that the mails are sometimes delayed twelve or thirteen hours, and if it happened in this instance, the papers would not have been delivered until October 30, 1899, for the 29th was Sunday. We think the proof offered is not sufficient to warrant a finding that the papers were prepared and mailed after the alleged disclosure by H. J. Podlesak.

The appellants being entitled to no earlier date of conception than that of the filing of their application they cannot prevail, if McInnerney is held to be properly a party to the interference, for their application was filed several months after that of McInnerney, the senior party. The Commissioner of Patents having found there was an interference in fact, and that McInnerney had the right to make the claim, could come to no other conclusion upon the proofs, and the law applicable thereto than the one he did and consequently his award of priority is correct if the remaining questions be decided in McInnerney's favor.

This brings us to the only serious questions in the case. They are those set out in the second and third assignments of errors and respectively present for consideration appellants' contention that there is no interference in fact between the inventions of the interferants; and that the appellee has not the right to make the claim which is the subject-matter of the issue.

Considering these assignments of error in the reverse order in which they are set forth we find that the question of appellee's right to make the claim has received the consideration of the Primary Examiner, of the Examiners-in-Chief and of the Commissioner. Where a question such as this has been fully considered by them, and all have concurred in finding a party to an interference has the right to make a claim which is the same as the count of the issue of an interference, their concurrent finding should not be lightly disturbed and will be ordinarily considered by this court as conclusive. In an *ex parte* case the decision of the Primary Examiner that a party has a right to make a claim is final unless for good cause shown the Commissioner, under his supervisory powers, takes jurisdiction to review the question. It is generally left to courts in a suit brought after the issue of the patent, for infringement of a claim thus allowed to determine whether the patentee ever had a right to make the claim. If however an interference, involving such claim, be instituted the rules of the Patent Office provide for an examination by the Primary Examiner of the question of the right of either party to make the claim. If his decision be in the affirmative the rules do not provide for an appeal to the Examiners-in-Chief. In *Allen* v. *United States ex rel. Lowry* (116 O. G., 2252) this court held that where such a decision was rendered by the Primary Examiner on a motion to dissolve no appeal would lie. It was there said that the court had reviewed other ancillary questions when they properly came before it on appeal from final judgments awarding priority of invention. The question of the right of a party to make a claim goes to the very foundation of an interference for if the party has not such right the interference falls. If it be incorrectly held that such party has a right to make the claim priority may be awarded to him and his adversary be deprived of a substantial right in that he is not given a claim where he necessarily is the prior inventor, his adversary never having made the invention. Manifestly that question should not be finally determined by the Primary Examiner who originally declared the interference. We therefore take jurisdiction to determine

that question in this case as an ancillary question to be considered in awarding priority of invention. Where however three tribunals of the Patent Office have concurred in answering the question in the affirmative, as they have in this case, we shall follow them unless a manifest error has been committed. Is there such error in this case? Appellants in their appeal from the decision of the Examiner of Interferences raised the question of appellee's right to make the claim. The Examiners-in-Chief considered the question and after describing the construction and operation of appellee's device reached the following conclusion:

> We do not find, however, that Podlesak & Podlesak should be sustained in their contention that McInnerney is not entitled to make a claim in conformity with count 2 of the issue. The point that the joint interferants raise in respect to this count has already been referred to herein. McInnerney's construction includes all of the elements of count 2, and considering the slight * * * separation which takes place between the movable and the stationary electrodes, it is apparent that the single spring which actuates the pivoted armature must cause said armature to deliver to the arm of the pivoted electrode a blow which will be effective to some extent in displacing carbon between the two electrodes *at the moment* of contact.

In view of the fact that the Examiners-in-Chief held that appellee did not have the right to make another claim the Commissioner as we have said withheld his decision on the question of priority and remanded the case to the Primary Examiner to consider the right of appellee to make either or both of the claims. The Examiner held "that McInnerney is entitled to make the claim forming count 2. Every element called for by this claim appears in Figure 3 of McInnerney's structure." This conclusion was accepted by the Commissioner. We have examined Fig. 3 of the drawing referred to and are of the opinion that the figure discloses a device which may be described in the terms of the now sole issue of the interference. We are not however satisfied that the claim means the same when applied to the devices of the respective parties. We now only say that we think this claim when broadly considered can be read on the drawing of McInnerney's application. It does not however follow that because the same words may describe two structures that differ materially in construction and in operation that the structures are the same. General terms may be used which apply equally to two structures which are not the same, as may be shown when those terms are read and construed in the light of the specifications behind them. In most cases, however, where two structures are not specifically the same, and the art does not warrant a generic claim, the language of the claims can be made precise and to fittingly describe each structure so that the use of identical language be avoided. We conclude, though not without some doubt, that McInnerney has the right to make the claim which is the issue of the interference, if that claim be broadly construed.

The last assigned error—no interference in fact—raises the question of identity of the two inventions as summed up in the issue. While as we have said the same language may be applied to two structures that are not the same the employment of such identical language does not necessarily prove that there is an interference in fact. (*Edgecomb* v. *Eastman* v. *Houston*, 89 O. G., 707; *Goss* v. *Scott*, 96 O. G., 843.)

We are much impressed with appellants' contention that there is no interference in fact because the two devices are obviously different in structure and operation, and that consequently the terms of the issue when applied to the two devices do not mean the same thing. It will be remembered that the Primary Examiner held the issue to be unpatentable; that the Examiners-in-Chief reversed him upon the ground that this issue when construed in the light of the specification required that the "blow" referred to in the claim must be a "contacting blow," and that the device of the reference brought the electrodes into contact without any blow by the armature. It was upon such a narrow construction that the claim was held patentable over the reference. It is the "contacting blow" which apparently gives novelty to the issue. What this "contacting blow" is must be determined by a reference to the appellants' specification for the issue is a claim first made by them and suggested to the appellee. The meaning given to the counts of an interference must be that intended by the party to the interference first making the claim. (*Tracy* v. *Leslie*, 14 App. D. C., 126; *Ruete* v. *Elwell*, 15 App. D. C., 21.)

The "contacting blow" is referred to in appellants' specification as the blow which—

> causes the contact-points to come together, driving out from between them any soot or dirt that may have accumulated from the explosion of the charge in the engine-cylinder.

When so construed we do not think that the term "contacting blow" as employed by the parties means the same thing in the two claims. It would seem that the Examiner when he considered the question of interference in fact, as he did, though as the Commissioner said without authority, must have lost sight of the ground on which the Examiners-in-Chief predicated patentability over the Tirrell patent, and of their statement relative to the difference between the device of that patent and the device of the appellants, of which they said:

> The difference in the action of the two devices is material, as the present device has superior utility because of the blow given by the armature after the spring has brought the electrodes into more or less feeble contact.

He doubtless did not examine the brief of McInnerney stated to have been filed before the Examiners-in-Chief when that tribunal was considering the question of patentability. That brief is referred to in appellants' brief but as it is not in the record we cannot consider it. It seems to us that the Examiners-in-Chief in holding the claims to be patentable must have construed them in the light of the Podlesaks specification rather than with McInnerney's specification before them.

We do not think the contacting blow of the McInnerney device, if it can be said to have anything more than an impulse, is the "contacting blow" of the Podlesak and Podlesak device.

This court has held that in extreme cases where palpable error has been committed the decision of the Patent Office holding identity of invention between the devices of parties to an interference may be reversed. (*Swihert* v. *Mauldin*, 19 App. D. C., 570, 573; *Seeberger* v. *Dodge*, 24 App. D. C., 476, 481.) Nevertheless while we consider that an error has been committed in this case we hesitate, at least until the Patent Office has further opportunity to consider this question to hold there is no interference in fact. As the case is now presented we are unwilling to award priority of invention to appellee. We think neither party is entitled to a claim, for the feature here in controversy, which shall dominate the other. It would seem that the claims presented by both, and made the issue of this interference, should be so re-formed that each should have a specific claim provided each can draw a claim that avoids the reference. We do not mean to hold that appellants' claim, which has been held patentable, is not patentable as read in the light of their specification. If, as we think, the claim read in the light of their specification means one thing, and the same claim read in the light of appellee's specification means another the same phraseology should not be employed.

We feel constrained to remand the case to the Commissioner of Patents for further consideration as to identity of invention. If after such consideration the Patent Office adheres to the opinion that there is an interference in fact herein the present interference record, with any additions to it will be further considered by us.

The opinion and the proceedings in the case will be certified by the clerk to the Commissioner of Patents, according to law.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

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Interference Notice.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., February 7, 1906.

John H. Thompson & Company, their assigns or legal representatives, take notice:

An interference having been declared by this Office between the application of Charles H. Montanye, of New York, N. Y., for registration of a trade-mark and a trade-mark registered to John H. Thompson & Company, of Detroit, Mich., and the notice of said declaration mailed by the Patent Office in the usual manner to the said John H. Thompson & Company having been returned undelivered, notice is hereby given to the said John H. Thompson & Company, their assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents, in order that the notices of declaration heretofore sent by and returned to the Office may be forwarded to them.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN,
Commissioner.

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business February 13, 1906.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
	In arrears—Under fifteen days.			
226	XV. Bread, Pastry, and Confections, Making, Coating, Laminated Sheets and Fabrics, Fuel, Glass, Hydraulic Lime and Cement, Paper-Making, Paving, and Plastics.	Feb. 5	Dec. 12	233
128	II. Bee-Culture, Dairy, Label-Affixers, Paper Files and Binders, Presses, Store-Service, Tobacco, etc.	Feb. 1	Nov. 18	217
148	XXXII. Carbonating Beverages, Dispensing Beverages, Dispensing-Cans, Metallic Shipping and Storing Vessels, Packaging Liquids, Paper Receptacles, Refrigeration, Wooden Receptacles.	Feb. 1	Sept. 29	588
226	XL. Boot and Shoe Making, Boots, Shoes, and Leggings, Button, Eyelet, and Rivet Setting, Leather Manufacturing, Nailing and Stapling, Check-Controlled Apparatus, Whips and Whip Apparatus.	Feb. 1	Aug. 30	342
222	XXXVI. Curtains, Shades, and Screens, Drafting, Driers, Measuring Instruments, and Wind-Wheels.	Jan. 31	Jan. 17	233
276	XXXVIII. Artesian and Oil Wells, Bottles and Jars, Care of Live Stock, Fishing and Trapping, Stationery, Stone-Working.	Jan. 31	Jan. 2	297
321	I. Tillage, etc., Fences, and Railway Draft Appliances.	Jan. 30	Jan. 10	193
244	XXXV. Baggage, Buckles, Buttons, and Clasps, Card, Picture, and Sign Exhibiting, Deposit and Collection Receptacles, Package and Article Carriers, Packing and Storing Vessels, Photography.	Jan. 30	Dec. 12	472
368	XVII. Linotyping, Printing, Matrix-Making, Nut and Bolt Locks.	Jan. 30	Nov. 23	335
144	XXIV. Apparel, Apparel Apparatus, Sewing-Machines, Surgery, Toilet.	Jan. 30	Oct. 23	462
379	XXIII. Acoustics, Coin-Handling, Horology, Recorders, Registers, Optics, Signals, Time Controlling Mechanism.	Jan. 30	Sept. 30	552
	Under one month.			
175	III. Annealing and Tempering, Coating with Metal, Electrochemistry, Metal-Founding, Metallurgy, Shaping Fluid Metal.	Jan. 27	Dec. 26	283
304	XXXIV. Railways, Railway-Brakes, Rolling-Stock.	Jan. 24	Oct. 27	325
133	XXII. Air-Guns, Ammunition and Explosive Devices, Boats and Buoys, Catapults and Targets, Firearms, Marine Propulsion, Ordnance, Ships.	Jan. 24	Oct. 19	258
179	XX. Artificial Limbs, Builders' Hardware, Dentistry, Locks and Latches, Safes, Undertaking.	Jan. 24	July 7	373
152	XXX. Fluid-Pressure Regulators, Lamps and Gas-Fittings, Type-Writing Machines.	Jan. 23	May 18	675
107	XXXVII. Electricity, Conductors, Lighting, Special Apparatus.	Jan. 22	June 14	722
332	X. Carriages and Wagons	Jan. 20	Sept. 26	333
318	VI. Bleaching and Dyeing, Chemicals, Explosives, Fertilizers, Medicines, Preserving, Sugar and Salt.	Jan. 19	Nov. 21	372
122	XIX. Stoves and Furnaces and Steam-Boiler Furnaces.	Jan. 19	Aug. 14	620
105	XXVI. Electricity, Generation, Electric Heaters, Electric Railways, Motive Power.	Jan. 18	Aug. 7	714
224	XII. Elevators, Journal-Boxes, Lubricators, Machine Elements, Pulleys and Shafting.	Jan. 17	Nov. 29	294

Applications Under Examination—Continued.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
232	IV. Bridges, Conveyers, Cranes and Derricks, Excavating, Hoisting, Hydraulic Engineering, Loading and Unloading, and Towers.	Jan. 15	Jan. 16	288
167	V. Fine Arts, Bookbinding, Harvesters, Jewelry, and Music.	Jan. 15	Dec. 7	364
172	XXXI. Alcohol, Charcoal and Coke, Distillation, Gas, Heating and Illuminating, Hides, Skins, and Leather, Liquid Coating Compositions, Oils, Fats, and Glue, Water Purification.	Jan. 13	Dec. 29	227
112	XXI. Textiles, Carding, Knitting, Spinning, Weaving, etc.	Jan. 13	Aug. 3	538
	Between one and two months.			
327	XVIII. Steam-Engineering, etc	Jan. 10	Nov. 2	499
164	XXXIII. Canes, Canopies, Cutlery, Domestic Cooking Vessels, Electricity, Medical and Surgical, Electric Signaling, Fireproof Buildings, Harness, Masonry, Tents, and Umbrellas.	Jan. 10	Sept. 1	738
137	VIII. Beds, Chairs, Furniture, Kitchen and Table Articles, Store Furniture.	Jan. 9	Oct. 9	554
307	XIV. Cutting and Punching Sheets and Bars, Farriery, Metal-Bending, Metal-Ornamenting, Metal Personal Wear, Making, Sheet-Metal Ware, Making, Tools, Wire-Working.	Jan. 9	Sept. 21	278
312	VII. Velocipedes, Clutches, Fire-Escapes, Games and Toys, Ladders, Mechanical Motors, and Paper Manufactures.	Jan. 6	Nov. 1	431
147	XXIX. Coopering, Roofs, Wheelwright-Machines, Wooden Buildings, Wood-Sawing, Wood-Turning, Woodworking-Tools.	Jan. 3	Oct. 18	364
109	XVI. Telegraphy and Telephony	Dec. 23	Dec. 9	269
375	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, Washing Apparatus.	Dec. 22	Aug. 23	683
382	XXVIII. Air and Gas Engines, Air and Gas Pumps, Pneumatics.	Dec. 19	June 1	945
	Between two and three months.			
330	XIII. Arms, Projectiles, and Explosive Charges, Making, Metal-Working, Needle and Pin Making.	Dec. 8	Sept. 6	579
142	IX. Baths and Closets, Fire-Extinguishers, Hydraulic Motors, Pumps, Sewerage, and Water Distribution.	Dec. 7	June 19	1069
	Between three and four months.			
315	XXV. Butchering, Mills, Threshing, and Vegetable Cutters and Crushers.	Nov. 6	Aug. 18	532

Total number of applications awaiting action 18,007

159	TRADE-MARKS, DESIGNS, LABELS AND PRINTS.			
	Between one and two months.			
	Trade-Marks	Jan. 4	Jan. 2	2924
	Under fifteen days.			
	Designs	Feb. 9	Jan. 3	49
	Labels and Prints	Feb. 12	Feb. 3	33

Examiners' Letters and Amendments.

Examiners are directed to recite in each letter in an application the date of the action by the applicant to which it is a reply, and applicants are requested to indicate in their actions on an application the date of the last Office letter.

PATENTS

GRANTED FEBRUARY 20, 1906.

812,803. **TOOL FOR BONDING RAILS.** FRED C. ARNY, Chicago Heights, Ill. Filed Aug. 15, 1905. Serial No. 269,882.

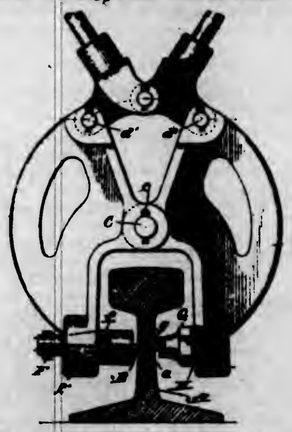

Claim.—1. In a portable tool for bonding railroad-rails by axially compressing the bonding-wire, the combination with a pair of relatively movable jaws spaced apart to straddle the head of the rail and extend downwardly opposite a given point in the rail-web, toggle-links operatively connected to said jaws, means for operating said toggle-links and thereby relatively moving the free ends of said jaws toward the rail-web, and means carried by said jaws for rigidly engaging the wire at predetermined points.

2. In a device for bonding railroad-rails, the combination with a pair of pivotally-united jaws spaced apart to straddle the head of the rail and extend downwardly opposite a given point in the rail-web, of a pair of toggle-links interposed between and operatively connected to said jaws, means for operating said toggle-links to move the free ends of the jaws toward a common point in the rail-web, and means carried by the free ends of said jaws for rigidly engaging a wire at predetermined points.

3. In a device for bonding railroad-rails, the combination with a pair of pivotally-united jaws spaced apart to straddle the head of the rail and extend downwardly opposite a given point in the rail-web, of a pair of toggle-links interposed between and operatively connected to said jaws, means for operating said toggle-links, a clamp carried by one jaw adapted to rigidly engage a wire, and means carried by the second jaw to rigidly engage the wire at a predetermined distance from said clamp.

4. In a device of the character described, the combination with a pair of pivotally-united jaws spaced apart to straddle the head of a rail and extend downwardly on opposite sides of the web thereof, of a pair of toggle-links interposed between and operatively connected to said jaws, means for operating said toggle-links, a clamp carried by one jaw adapted to rigidly engage a wire at a predetermined distance from its end, and a die carried by the second jaw adapted to engage the end of the wire.

5. In a device of the character described, the combination with a pair of pivotally-united jaws, of a pair of toggle-links interposed between and operatively connected to said jaws, means for operating said toggle-links, a two-part clamp loosely extending through a tapered opening in the lower end of one jaw adapted to grip the wire at a predetermined distance from its end, and a die carried by the other jaw adapted to engage the end of the wire.

6. In a device of the character described, the combination with a pair of pivotally-united jaws, of a pair of toggle-links interposed between and operatively connected to said jaws, means for operating said toggle-links, a two-part clamp loosely extending through a tapered opening in the lower end of one jaw having grooves between which a portion of the wire is gripped, a spring interposed between the two parts of said clamp, and a die carried by the second jaw adapted to engage the end of the wire.

812,804. **NON-REFILLABLE BOTTLE.** ALEXANDER BENNETT, Buffalo, N. Y. Filed May 15, 1905. Serial No. 260,486.

Claim.—The combination with the receptacle having a neck provided internally with a depression, of a hollow stopper having a groove arranged lengthwise thereof, a spring having a curved center portion lying in contact with the inner wall of said groove and its upper end engaging the upper wall of said depression in the neck, and an outwardly-opening valve in said stopper.

812,805. **PADDLE-WHEEL.** JOHN BEST, Jeannette, Pa. Filed Apr. 17, 1905. Serial No. 256,006.

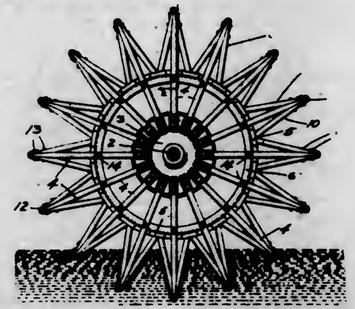

Claim.—1. A paddle-wheel comprising a shaft, spokes radiating from said shaft, a drum beyond which said spokes extend, and a series of paddles whose faces slope in opposite directions from said spokes to said drum.

2. A paddle-wheel comprising a shaft, spokes radiating therefrom, a drum, a series of V-shaped paddles secured to said spokes and to said drum.

812,806. **METAL WINDOW-BOX FOR FLOWERS.** EMMA B. BUTLER, Boston, Pa. Filed Aug. 10, 1905. Serial No. 273,868.

Claim.—1. A device of the class described, comprising a metallic box designed to be placed on a window-sill and provided at its outer portion with supporting-legs, and a drain-pipe or tube located at the outer portion of the box and having its bottom located in a plane above the lower ends of the legs, whereby it is maintained out of contact with the window-sill.

2. A device of the class described, comprising a plant-box provided at its outer portion with supporting-legs, said box being also

provided at intervals with drain-apertures, and a drain pipe or tube secured to the bottom of the box beneath the drain-apertures.

3. A device of the class described, comprising a window-box provided at its outer portion with legs and having a drain pipe or tube, and a drip-pan receiving the drain pipe or tube and detachably supported by the said box, the bottom of the drip-pan being arranged in a plane above the lower ends of the legs.

4. A device of the class described, comprising a plant-box provided at its outer portion with legs and having drain-apertures, a tapering drain pipe or tube secured to the bottom of the box and having an inclined bottom, and a drip-pan removably suspended from the bottom of the box and receiving one end of the drain pipe or tube.

5. A device of the class described, comprising a plant-box provided with a drain pipe or tube and having a drain-aperture communicating with the same, a drip-pan provided at one side with an opening arranged to receive one end of the drain pipe or tube, said drip-pan being also provided with opposite supporting-flanges, guides or ways receiving the supporting-flanges, the drip-pan being of a width less than the space between the guides or ways, whereby it is capable of lateral movement to engage and disengage the drain pipe or tube.

6. A device of the class described, comprising a plant-box provided with a drain pipe or tube and having a drain-aperture communicating with the same, a drip-pan provided at one side with an opening arranged to receive one end of the drain pipe or tube, said drip-pan being also provided with opposite supporting-flanges, guides or ways receiving the supporting-flanges, the drip-pan being of a width less than the space between the guides or ways, whereby it is capable of lateral movement to engage and disengage the drain pipe or tube, the distance between each side wall of the drip-pan and the outer edge of the flange of the opposite wall being greater than the width of the space between the guides or ways to prevent the drip-pan from becoming disengaged by the said lateral movement.

812,807. **RAILWAY-TIE.** ZACHARY T. BOOTH and JAMES F. BUTLER, Brunswick, Md., assignors of one-third to Christian Smith, Brunswick, Md. Filed Nov. 17, 1905. Serial No. 287,704.

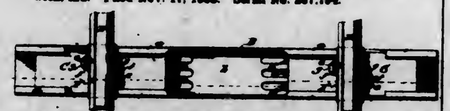

Claim.—1. A metal railroad-tie comprising a bottom and side walls integral with each other, blocks located between the side walls and a plurality of fenders integral with the bottom of the tie and extending up vertically to hold the ballast in place within the tie when either block is removed, substantially as and for the purpose described.

2. A metal railroad-tie comprising a bottom and side walls integral with each other, blocks located between the side walls, vertically-extending fenders abutting against the inner ends of the blocks, and clamping-supports having downwardly-extending ends to embrace the side walls of the tie and having lugs with elongated openings therein for suitable spikes or like fastening means to hold the rails on the supports, substantially as and for the purpose set forth.

812,808. **WINDOW-SASH ADJUSTER.** HARVEY BOWERS, Wichita, Kans. Filed Apr. 5, 1904. Serial No. 201,703.

Claim.—In a window-sash adjuster, a plate secured to a lower sash, said plate having top and side flanges, said top flange being provided with an aperture, gripping-dogs pivoted to the plate and depending one toward the other, but not contacting, serrations on the opposed faces, lugs formed on the outer face of one of the dogs, and at right angles thereto, a longitudinal extension on the opposite dog and on the outer face thereof, said extension bridging the space between the opposing faces of the dogs and loosely fitting between the lugs, a depending arm formed on one of the dogs and terminating in an eye, a spring interposed between the depending arm and one of the side flanges of the plate, a pulley on the window-frame, a flexible connection secured at one end to the top sash and passing over the pulley and through the aperture in the top flange of the plate between the opposing faces of the dogs and adapted to be engaged thereby, and through the eye on the depending arm, the extension on the dog acting as a guide for said flexible connection.

812,809. **CORN-SHOCKER.** OLIVER BOYER, Conneat, Ohio. Filed July 5, 1904. Serial No. 215,277.

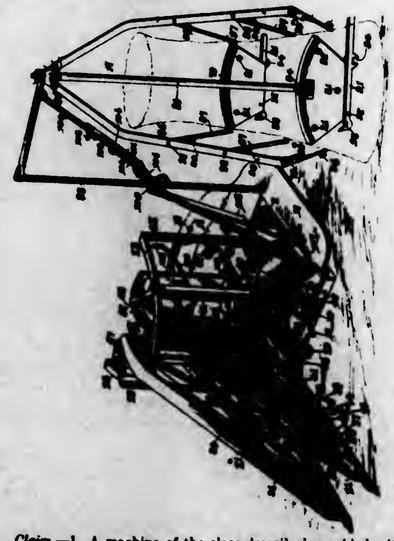

Claim.—1. A machine of the class described provided with a shock former and carrier movable toward and from the machine for depositing the shock upon the ground, said shock former and carrier being provided with supporting sides movable outwardly to facilitate the discharge of the shock.

2. A machine of the class described provided with a shock former and carrier movable toward and from the machine for depositing the shock upon the ground, said shock former and carrier being provided with hinged supporting sides arranged to swing outwardly to facilitate the discharge of the shock.

3. A machine of the class described provided with a shock former and carrier movable toward and from the machine for depositing the shock upon the ground, said shock former and carrier having a sectional bottom and provided with hinged sides arranged to swing outwardly.

4. A machine of the class described provided with a shock former and carrier having sides and provided with a sectional bottom carried by and hinged to the sides, and automatic means mounted on the sides and connected with the sections of the bottom for returning the same to a horizontal position.

5. A machine of the class described provided with a shock former and carrier having sides and provided with a sectional bottom carried by and hinged to the sides, and springs connected with the sides and with the sections of the bottom for returning the latter to a horizontal position.

6. A machine of the class described provided with a shock former and carrier composed of upwardly-extending side bars movably connected at the top, and a sectional bottom, the sections of the bottom being connected with the side bars and carried by the same.

7. A machine of the class described provided with a shock former and carrier, comprising upwardly-extending sides pivotally connected at the top, and a bottom composed of sections hinged to the lower ends of the side bars and adapted to swing downward for discharging a shock.

8. A machine of the class described povided with a shock former and carrier having a sectional bottom and provided with movable sides opening outwardly to facilitate the discharge of the shock, and stays dividing the shock former and carrier into separate spaces or compartments and connected at their outer ends to the sides and carried by the same.

9. A machine of the class described provided with a shock former and carrier having a sectional bottom and provided with movable sides opening outwardly to facilitate the discharge of the shock, and stays dividing the shock former and carrier into separate spaces or compartments and hinged at their outer ends to the sides and adapted to swing downwardly.

10. A machine of the class described provided with a shock former and carrier movable toward and from the machine for depositing the shock upon the ground, said shock former and carrier being provided with a sectional bottom and having supporting sides movable outwardly to facilitate the discharge of the shock, each side carrying a section of the bottom.

11. A machine of the class described provided with a shock former and carrier movable toward and from the machine for depositing the shock upon the ground, said shock former and carrier being provided with supporting sides movable outwardly to facilitate the discharge of the shock, and stays dividing the shock former and carrier into separate spaces or compartments and connected at their outer ends to the sides and carried by the same.

12. A machine of the class described provided with a collapsible shock former and carrier, comprising upwardly-converged side bars, a head to which the upper ends of the bars are pivoted, a bottom composed of sections hinged to the lower ends of the bars, and radial stays also pivoted to the bars.

13. A machine of the class described provided with a shock former and carrier having a bottom composed of sections, and a horizontally-swinging locking-lever detachably connecting the sections.

14. A machine of the class described provided with a shock former and carrier having a bottom composed of sections, a locking-lever pivotally mounted on one of the sections and arranged to swing horizontally, and means carried by the adjacent section for engagement with the locking-lever.

15. A machine of the class described provided with a shock former and carrier having a bottom composed of three or more sections, a locking-lever pivoted to one of the sections and provided at opposite sides of the pivot with engaging portions, and studs mounted on the adjacent sections for engagement with the lever.

16. A machine of the class described provided with a shock former and carrier having a bottom composed of three or more sections, locking-levers mounted on the bottom and provided with notches, and headed studs carried by the sections for engagement with the notches of the levers.

17. A machine of the class described provided with a shock former and carrier having a bottom composed of substantially quadrant-shaped sections, and locking-levers fulcrumed on opposite sections and each interlocked with the adjacent sections.

18. A machine of the class described provided with a shock former and carrier having a bottom composed of substantially quadrant-shaped sections, and a pair of locking-levers pivoted between their ends on two opposite sections and each provided at opposite sides of its pivot with means for engaging the two other sections of the bottom.

19. In a machine of the class described, the combination of a shock former and carrier, and a crane comprising a rotary standard, an arm extending from the standard and movable upwardly and downwardly and connected with the former and carrier, an extensible brace composed of sections or members slidable on each other and connected with the arm, means for extending the sections, and locking mechanism for securing the same in their adjustment.

20. In a machine of the class described, the combination of a main frame, a rotary support, a shock former and carrier interlocked with the support, a crane mounted on the main frame adjacent to the support and having a standard and provided with an arm connected with the shock former and carrier, an extensible brace composed of sections slidable on each other and connected respectively with the standard and with the arm, one of the sections being provided with ratchet-teeth, a pawl mounted on the other section for engaging the ratchet-teeth, and hoisting mechanism for extending the sections.

21. In a machine of the class described, the combination of a rotary support having a projecting polygonal portion, and a shock former and carrier provided at its bottom with an opening receiving the said polygonal portion, whereby the shock former and carrier is interlocked with the support.

22. In a machine of the class described, the combination of a rotary support having a projecting portion, and a shock former and carrier provided with a bottom composed of separable truncated sections forming an opening to receive the projections.

23. In a machine of the class described, the combination of a rotary support having a polygonal portion and provided with projections, and a shock former and carrier provided with a bottom composed of truncated sections forming an opening to receive the polygonal portion and having perforations for the reception of the said projections.

24. In a machine of the class described, the combination of a rotary shock-former, means movable in one direction for rotating the shock-former, mechanism for throwing the said means in the opposite direction, gearing for actuating the said means, and means for throwing the gearing out of operation.

25. In a machine of the class described, the combination of a rotary shock-former, a ratchet-wheel connected therewith, means for rotating the ratchet-wheel, gearing for actuating the said means, and means for throwing the gearing into and out of operation.

26. In a machine of the class described, the combination of a rotary shock-former, a ratchet-wheel connected with the former, means embodying a pawl for rotating the ratchet-wheel, gearing for moving the said means in one direction, and a spring for returning the said means to its initial position.

27. In a machine of the class described, the combination of a rotary shock-former, a ratchet-wheel connected therewith, an oscillatory member having a pawl for engaging the ratchet-wheel, gearing for moving the oscillatory member in one direction, and a spring for returning the oscillatory member to its initial position.

28. In a machine of the class described, the combination of a rotary shock-former, a ratchet-wheel, a movable member provided with means for rotating the ratchet-wheel, gearing for actuating the said member, and a trip for throwing the gearing out of operation.

29. In a machine of the class described, the combination of a rotary shock-former, a ratchet-wheel connected therewith, a movable member having means for engaging the ratchet-wheel to rotate the same, gearing embodying a sprocket-chain connected with the said member for actuating the same, and means for throwing the gearing into and out of operation.

30. In a machine of the class described, the combination of a rotary shock-former, a ratchet-wheel connected therewith, means for engaging the ratchet-wheel to rotate the same, gearing embodying a sprocket-chain and a clutch, a reciprocating member connected with the sprocket-chain and with the said means, and a trip arranged in the path of the reciprocating member for operating the clutch to throw the gearing out of operation.

31. In a machine of the class described, the combination of a rotary shock-former, a ratchet-wheel connected therewith, gearing embodying a sprocket-chain and having a clutch, a movable member having means for actuating the ratchet-wheel, a reciprocating bar connected with the movable member and with the sprocket-chain, a trip arranged in the path of the reciprocating bar for operating the clutch to throw the gearing out of operation, and a spring connected with the reciprocating bar for returning the parts to their initial position.

32. In a machine of the class described, the combination of a rotary shock-former, a ratchet-wheel connected therewith, gearing embodying a sprocket-chain and having a clutch, means connected with the sprocket-chain for actuating the ratchet-wheel, a trip arranged in the path of the said means for operating the clutch to throw the gearing out of operation, and a spring connected with the said means for returning the same to its initial position.

33. In a machine of the class described, the combination of a rotary shock-former, a ratchet-wheel connected therewith, gearing embodying a sprocket-chain, means movable in one direction by the sprocket-chain for actuating the sprocket-wheel, a spring for moving the said means in the opposite direction, and means for throwing the gearing into and out of operation.

34. In a machine of the class described, the combination of a rotary shock-former, a ratchet-wheel connected therewith, gearing embodying a clutch and a sprocket-chain, means movable in one di-

rection by the sprocket-chain for rotating the ratchet-wheel, a spring for moving the said means in the opposite direction, a trip arranged in the path of the said means for operating the clutch to throw the vertical shaft, a stowing device pivoted by the vertical shaft, feeding mechanism mounted on the stowing device and carried by the same in the movement thereof and also oscillating independently of the

Claim.—1. As a new article of manufacture, a manganese-steel rail of regulation size and form produced by casting it in the form in cooling process at a predetermined point above normal atmospheric temperature thereby to retain therein a certain part of its original

rection by the sprocket-chain for rotating the ratchet-wheel, a spring for moving the said means in the opposite direction, a trip arranged in the path of the said means for operating the clutch to throw the gearing out of operation, and shifting mechanism for operating the clutch to throw the gearing into operation.

35. In a machine of the class described, the combination of a rotary shock-former, feeding mechanism, a ratchet-wheel connected with the shock-former, gearing embodying a sprocket-chain and provided with a clutch, means movable in one direction by the sprocket-chain for actuating the ratchet-wheel, a trip arranged in the path of the means for operating the clutch to throw the gearing out of operation, and shifting mechanism operable by the feeding mechanism for throwing the gearing into operation.

36. In a machine of the class described, the combination of a rotary shock-former, means movable in one direction for rotating the shock-former, gearing for actuating the said means, and a trip arranged in the path of the said means for throwing the gearing out of operation.

37. In a machine of the class described, the combination of a rotary shock-former, means movable in one direction for rotating the shock-former, gearing for actuating the said means, a trip arranged in the path of the said means for throwing the gearing out of operation, and a spring for moving the said means in the opposite direction.

38. In a machine of the class described, the combination of a shock-former, and opposite stowing devices having curved guiding portions, and feeding mechanism carried by the stowing devices and movable inwardly and outwardly through slots in the guiding portions.

39. In a machine of the class described, the combination of a rotary shock-former, a stowing device movable into and out of the shock-former and arranged to be moved outward automatically by the material accumulating within the said shock-former, and means operable automatically by the stowing device for rotating the shock-former when the stowing device reaches the limit of its outward movement.

40. In a machine of the class described, the combination of a rotary shock-former, a stowing device movable into and out of the shock-former, and arranged to be moved outward automatically by the material accumulating within the shock-former, gearing for rotating the shock-former, and means carried by the stowing device for automatically throwing the gearing into operation.

41. In a machine of the class described, the combination of a rotary shock-former, a stowing device movable into and out of the shock-former and arranged to be moved outward automatically by the material accumulating within the shock-former, gearing for rotating the shock-former, and a trip for automatically throwing the gearing out of operation when the shock-former has moved a predetermined distance.

42. In a machine of the class described, the combination of a shock-former, a cutting apparatus, means for feeding the plants to the cutting apparatus, a movable stowing device located between the cutting apparatus and the shock-former, a feeding-arm carried by the stowing device, and crank mechanism connected with the feeding-arm for actuating the same independently of the stowing device.

43. In a machine of the class described, the combination of a shock-former, a cutting apparatus, means for feeding the plants to the cutting apparatus, a movable stowing device located between the cutting apparatus and the shock-former, a lever carried by and movable independently of the stowing device, and crank mechanism connected with the lever at a point between the ends thereof for actuating the same.

44. In a machine of the class described, the combination of a shock-former, a cutting apparatus, means for feeding the plants to the cutting apparatus, a movable stowing device located between the cutting apparatus and the shock-former, a feeding-lever carried by and movable independently of the stowing device, a link connected with one end of the feeding-lever, and a crank element connected with the feeding-lever between the ends thereof.

45. In a machine of the class described, the combination of a shock-former, a cutting apparatus, means for feeding the plants to the cutting apparatus, a pivotally-mounted stowing device, feeding-levers mounted on and movable independently of the stowing device, and a shaft having crank-heads connected with the feeding-levers.

46. In a machine of the class described, the combination of a pivotally-mounted stowing device provided with slots, feeding-levers extending through the slots, and a crank-shaft connected with the feeding-levers.

47. In a machine of the class described, the combination of a vertical shaft, a stowing device pivoted by the vertical shaft, feeding mechanism mounted on the stowing device and carried by the same in the movement thereof and also oscillating independently of the said stowing device, and gearing carried by the stowing device and operable by the said vertical shaft for actuating the feeding mechanism.

48. In a machine of the class described, the combination of a vertical shaft, a pivoted stowing device mounted on the shaft, a crank-shaft carried by the stowing device, and feeding-levers connected with the crank-shaft and carried by the stowing device in the movement thereof and also capable of an independent oscillatory movement, and gearing connecting the shafts.

49. In a machine of the class described, the combination of a rotary shock-former having separate spaces or compartments, and stowing means movable into and out of the spaces or compartments and arranged to be forced outwardly by the material accumulating within the shock-former.

50. In a machine of the class described, the combination of a rotary shock-former having separate spaces or compartments, stowing means movable into and out of the spaces or compartments and arranged to be forced outwardly by the material accumulating within the shock-former, and means operable by the said stowing means at the limit of the outward movement thereof for rotating the shock-former.

51. In a machine of the class described, the combination with a shock-former having compartments or spaces, and stowing means movable into and out of the compartments or spaces and arranged to be forced outward automatically by the material accumulating within the shock-former, said stowing means being also arranged to be moved inward automatically into an empty space or compartment by the material.

52. In a machine of the class described, the combination with a shock-former having compartments or spaces, stowing means movable into and out of the compartments or spaces and arranged to be forced outward automatically by the material accumulating within the shock-former, said stowing means being also arranged to be moved inward automatically into an empty space or compartment by the material, and means operable by the said stowing means at the limit of its outward movement for partially rotating the shock-former to present the spaces or compartments successively for filling.

53. In a machine of the class described, the combination of a shock-former, stowing means movable into and out of the shock-former and arranged to be forced outwardly by the material accumulating within the shock-former, and feeding means carried by the stowing means in the movement thereof and movable independently of the same.

54. In a machine of the class described, the combination with a shock-former, of a horizontally-swinging stowing device movable into and out of the shock-former and arranged to be forced outward automatically by the material accumulating within the shock-former, and feeding devices carried by the stowing devices in the inward and outward movements thereof and movable independently of the same, whereby the material is forced inwardly as the packers move outwardly.

55. In a machine of the class described, the combination with a shock-former, of a stowing device movable toward and from the shock-former and arranged to be forced outwardly by the material accumulating within the machine, and oscillatory feeding means carried by the stowing device and movable independently thereof, whereby it is adapted to force the material inwardly as the stowing device moves outwardly.

56. In a machine of the class described, the combination with a shock-former, of a stowing device movable into and out of the same and arranged to be forced outwardly by the material accumulating within the shock-former, and feeding means carried by the stowing device and movable independently thereof, whereby it is adapted to force the material inwardly as the stowing device moves outwardly.

57. In a machine of the class described, the combination with a shock-former having sector-shaped spaces or compartments, of oppositely-disposed horisontally-swinging stowing devices movable into and out of the compartments of the shock-former and arranged to be forced outwardly by the material accumulating within the same, said stowing devices being provided with curved guiding portions for engaging the material, and means mounted on the stowing devices for moving the material inwardly as the stowing devices move outwardly.

812,810. **CAST MANGANESE-STEEL RAIL.** WALTER BRINTON, High Bridge, N. J., assignor to Taylor Iron and Steel Company, a Corporation of New Jersey. Filed May 4, 1904. Serial No. 206,269.

Claim.—1. As a new article of manufacture, a manganese-steel rail of regulation size and form produced by casting it in the form in which it is to be used as a completed rail, and then toughening such rail.

2. As a new article of manufacture, a manganese-steel rail produced by casting it in the form in which it is to be used as a completed rail and thereupon toughening the rail by heating it and then cooling it.

3. As a new article of manufacture, a manganese-steel rail produced by casting it in substantially the form in which it is to be used; thereupon arresting the cooling of the rail after solidification; then toughening the rail by heating it rapidly up to a predetermined temperature, and then cooling it rapidly.

4. As a new article of manufacture, a manganese-steel rail produced by casting it in substantially the form in which it is to be used; thereupon arresting the cooling of the rail after solidification, thereupon placing the rail in a furnace having a temperature substantially corresponding to the then temperature of the rail and rapidly heating the rail in such furnace up to a predetermined temperature and thereupon immersing the rail in a cooling-bath.

5. As a new article of manufacture, a manganese-steel rail produced by casting it in substantially the form in which it is to be used; thereupon arresting the cooling of the rail after solidification; and then toughening the rail by heating it and then cooling it.

6. As a new article of manufacture, a manganese-steel rail produced by casting it in substantially the form in which it is to be used as a completed rail, then checking the cooling of the rail after solidification and before such rail reaches a period of rest from absence of heat, and then heating such rail beginning with the furnace in a heated state and applying the heat until the rail has reached a predetermined temperature, and then plunging the rail in cold water.

7. As a new article of manufacture, a manganese-steel rail produced by casting it in substantially the form in which it is to be used as a completed rail, then checking the cooling of the rail after solidification at a predetermined point above normal atmospheric temperature, then heating such rail beginning with the furnace in a heated state substantially corresponding to the temperature of the rail when the cooling thereof is checked, and then finally cooling the rail.

812,811. **PROCESS OF TREATING MANGANESE STEEL.** WALTER BRINTON, High Bridge, N. J., assignor to Taylor Iron and Steel Company, a Corporation of New Jersey. Filed May 5, 1904. Serial No. 206,523.

Claim.—1. The process herein described of toughening manganese-steel castings, consisting in heating a heated casting beginning with the furnace in a heated state, applying the heat until the casting has reached a predetermined temperature, and finally plunging the casting in cold water.

2. The process herein described of toughening manganese-steel castings, consisting in retaining in the casting a portion of its original casting heat, then heating such casting beginning with the furnace in a heated state, and applying the heat rapidly until the casting has reached a predetermined high temperature, and then finally plunging the casting in cold water.

3. The process herein described of toughening manganese-steel castings, consisting in checking the cooling of and retaining in the casting a portion of its original casting heat, then heating such casting beginning with the furnace in a heated state substantially corresponding to the temperature of the casting when the cooling thereof is checked, and then finally cooling the casting.

4. The process herein described of toughening manganese-steel castings, consisting in checking the cooling of and retaining in the casting a portion of its original casting heat, then rapidly heating such casting beginning with the furnace in a heated state substantially corresponding to the temperature of the casting when the cooling thereof is checked, and then finally plunging the casting in cold water.

5. The process herein described of toughening manganese-steel castings, consisting in heating them beginning with the furnace in a heated state and with the casting in a heated state, then heating such casting up to a predetermined point, and then finally cooling it.

6. The method of treating manganese steel which consists in maintaining in the steel a part of its formative heat by checking the cooling process at a predetermined point above normal atmospheric temperature thereby to retain therein a certain part of its original high heat determined by the size and design of the article, then heating such article up to a predetermined high temperature, and then rapidly cooling the same.

7. The method of toughening manganese steel which consists in checking the cooling of and maintaining in the article after it is cast, forged or rolled into its final finished shape for use as a manufactured article of commerce a predetermined amount of its casting, rolling or forging heat less than that originally present in the article and varying according to the size, character and design of the article, then heating such article from or substantially from the point where the cooling was checked up to a predetermined point, and then rapidly cooling the same.

8. The method of toughening manganese steel which consists in checking the cooling of and maintaining in the article after it is cast, forged or rolled into its final finished shape for use as a manufactured article of commerce a predetermined amount of its casting, forging or rolling heat less than that originally present in the article and varying according to the size, character and design of the article, then rapidly heating such article from or substantially from the point where the cooling was checked up to a predetermined point, and then rapidly cooling the same.

9. The method of treating steel having therein a predetermined percentage of manganese which consists in retaining therein a part of its original formative heat by checking the cooling of the steel before it reaches normal atmospheric temperature, then heating said steel up to a predetermined temperature substantially above a forging temperature, and then quickly cooling it.

10. The method of treating steel having therein a predetermined percentage of manganese which consists in retaining therein a part of its original formative heat by checking the cooling of the steel at a point above normal atmospheric temperature, then placing it in a heated furnace and rapidly heating it up to a predetermined temperature and then cooling it.

11. The method of treating steel having therein a predetermined percentage of manganese, which consists in maintaining in the article after it is cast or formed a certain amount of its casting or formative heat less than that originally present and ranging from a point above normal atmospheric temperature to a point about 1,000° Fahrenheit according to the size and design of the article, then placing the same in a heated furnace, then rapidly heating the article up to a predetermined high temperature, and then rapidly cooling it.

12. The method of toughening manganese steel, which consists in maintaining in the article after it is cast or formed a certain amount of its casting or formative heat less than that originally present in the article and ranging from about 150° Fahrenheit upward according to the size, character and design of the article, then placing the same in a heated furnace, then heating said article up to a predetermined temperature above a forging temperature and then quickly cooling the article.

13. The method of toughening manganese steel, which consists in first casting the steel into its final finished shape, then permitting the same to solidify to a point where it can be handled, then treating the article by covering it with sand to check the cooling thereof and maintain therein a part of its original temperature, determined by the size, character and design of the article and ranging above normal atmospheric temperature and below substantially 1,000° Fahrenheit, then placing the article in a furnace heated to a temperature substantially corresponding to the temperature remaining in the article and heating the same rapidly up to a predetermined high heat, and then immersing the article in water.

812,812. **SHOE.** FRANCOIS X. BROSSEUR, Lynn, Mass., assignor of one-half to Edward W. Mullins, Lynn, Mass. Filed Apr. 14, 1904. Serial No. 203,095.

Claim.—1. A shoe having an exposed counter, a lining, and top or quarter, the lower edge of the latter being overlapped by the upper edge of the counter, uniting-stitches passing through the said overlapped edges and the lining.

2. A shoe comprising a vamp, a top or quarter, an exposed counter having a skived upper edge and overlapping the said top or quarter, a lining and stitches passing through the said parts of the shoe to secure the lower edge of the top or quarter between the counter and the lining.

3. A shoe having an exposed molded counter, a lining, and top or quarter, the lower edge of the latter being overlapped by the upper edge of the counter, uniting-stitches passing through the said overlapped edges and the lining.

812,813. **WINDOW-SCREEN.** EDWARD T. BROWN, Owosso, Mich., assignor to Owosso Manufacturing Company, Owosso, Mich., a Corporation of Michigan. Filed July 20, 1903. Serial No. 166,236.

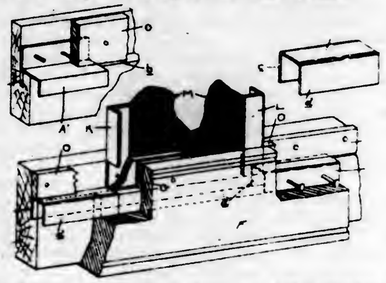

Claim.—1. In an extensible screen, two frames arranged to overlap and having oppositely-disposed channeled portions, the screen fabrics, and sliding connections between said frames including a plurality of coupling members substantially U-shaped in cross-section, one secured against longitudinal movement in the channeled portion of one of the frames and slidably engaging the channeled portion of the opposite frame, in combination with a retaining means in each of the channeled portions of the frames for the coupling members and screen fabrics.

2. In an extensible screen, two frames arranged to overlap and having oppositely-disposed channeled portions, the screen fabrics, and sliding connections between said frames including a plurality of coupling members substantially U-shaped in cross-section, one secured against movement in the channeled portion of one of the frames and slidably engaging the channeled portion of the opposite frame, in combination with retaining-strips in the channeled portions of the frames for the coupling members.

3. In an extensible screen, two frames arranged to overlap and having oppositely-disposed channeled portions including grooves in the frames, the screen fabrics, and sliding connections between the frames including a plurality of coupling members substantially U-shaped in cross-section, one secured against longitudinal movement in the channeled portion of one of the frames and slidably engaging the groove in the channeled portion of the opposite frame, in combination with retaining means in the channeled portions of the frames for the coupling members and screen fabrics.

4. In an extensible screen, two frames arranged to overlap and having oppositely-disposed channeled portions including grooves in the frames, the screen fabrics, and sliding connections between said frames including a plurality of coupling members substantially U-shaped in cross-section, one secured against movement in the channeled portion of one of the frames and slidably engaging the groove in the channeled portion of the opposite frame, in combination with retaining-strips in the channeled portions of the frames for the coupling members.

5. In a two-part screen, the combination of end rails, top and bottom rails, having recesses, and longitudinal vertical slots, extending from the rear and bottom of said recesses into the body of the rails, wire gauze or netting having its horizontal edges received and secured in said recesses, channel or U shaped clips, one for each rail, each clip having one leg secured in the slot, of one rail, and its other leg engaging and adapted to slide back and forth in the slot, of the adjoining-rail, and covering-strips, fitted and secured in the recesses, with their inner edges at such distance from the bottoms of the recesses as to permit the passage of the horizontal portion of the clips connecting the vertical legs of the latter, substantially as described.

812,814. **SHAFT-GATE.** GEORGE BROWN and GEORGE TAYLOR, Ladd, Ill. Filed Mar. 6, 1905. Serial No. 248,488.

Claim.—The combination with an elevator-shaft, of posts arranged at the landing and having a series of steps, a series of bars slidably mounted on the posts and extending across the entrance to the shaft, and constructed to be lifted by the elevator-cage, and which drop respectively upon the successive steps when the cage drops.

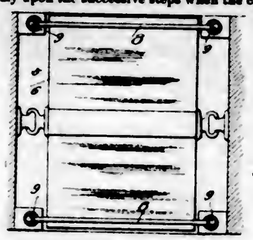

812,815. **LIFE-BOAT.** ROBERT A. BROWN, Chicago, Ill. Filed Apr. 6, 1905. Serial No. 254,094.

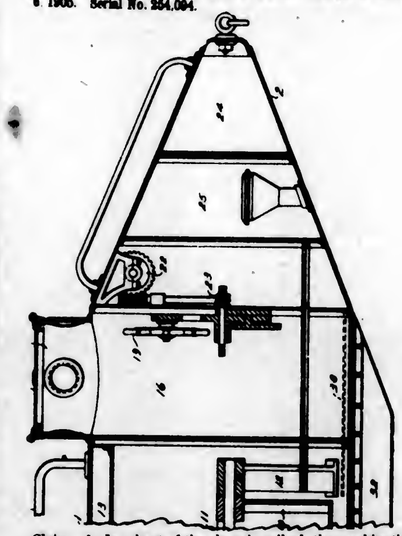

Claim.—1. In a boat of the class described, the combination of a hull, a propeller mounted at the stern of said hull, side fins hinged to the hull near its forward end, on horizontal axes, and stops to brace said fins against swinging below a substantially horizontal position, said fins being arranged to swing upward and being adapted to normally assume said horizontal position and resist the lifting of the bow of a hull when struck by a wave.

2. In a boat of the class described, the combination of a hull, twin propellers mounted at the stern of said hull, side fins hinged to the hull near its forward end, on horizontal axes, and stops to brace said fins against swinging below a substantially horizontal position, said fins being arranged to swing upward and being adapted to normally assume said horizontal position and resist the lifting of the bow of the hull when struck by a wave.

3. A boat having an overhanging end and having a pair of horizontally-disposed side fins hinged at opposite sides of the hull and near said end, said fins being free to fold upwardly against the hull, and stops for limiting the extended position of said fins when submerged, whereby said fins will act to check the lifting of said end of the boat when struck by a wave.

4. In a boat of the class described, the combination of an outer hull, an inner car journaled on a longitudinal axis within said hull and adapted to remain in equilibrium during the rolling of said outer hull, said hull being arranged to float in a normally upright position and having an air-tight compartment along its upper part adapted to cause said hull to assume an upright position when said hull is partly filled with water, the bottom of said air-tight compartment being of flatter curvature than that of an imaginary cylinder having its center coincident with the axis of said car and lying wholly outside of the circular path of rotation of said inner car.

5. In a boat of the class described, the combination of a hull, a car suspended within said hull and adapted to swing about a longitudinal axis and remain in equilibrium regardless of the rolling of said hull, a propeller mounted at the stern of said hull, side fins hinged to the hull near the forward end, on horizontal axes, and stops to brace said fins against swinging below a substantially horizontal position, said fins being arranged to swing upwardly and being adapted to normally assume said horizontal position and resist the lifting of the bow of the hull when struck by a wave

6. In a boat of the class described, the combination of a hull ovate in transverse section for the greater part of its length intermediate of its ends; said transverse section having an inner contour which is substantially semicircular in its lower part and which has side and top portions of flatter curvature than that of said lower part but lying wholly outside of a continuation of the circle of said lower part, and a car suspended within said hull and rotatable about a longitudinal axis which is below the center of said lower semicircular part of the hull.

812,816. **PHOTOGRAPHIC-PRINTING DEVICE.** WILLIAM H. BROWN, Lockhart, Tex. Filed May 15, 1905. Serial No. 260,580.

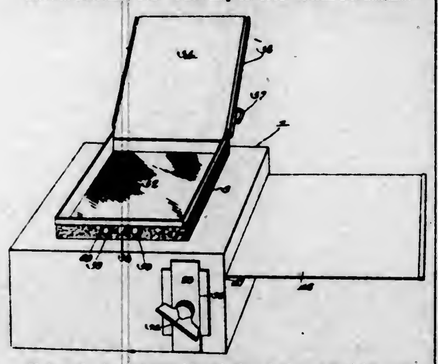

Claim.—1. A photographic-printing device comprising a case having an exposure-opening, a print-paper carrier mounted within the case, means mounted upon one end of the carrier for the rotatable support of a paper-holding spool, a paper-receiving spool mounted upon the other end of the carrier, means to rotate the receiving-spool to feed print-paper across the exposure-opening to the receiving-spool, and means to adjust the carrier toward and away from the exposure-opening.

2. A photographic-printing device comprising a case having an exposure-opening, a print-paper carrier mounted in the case and adjustable toward and away from the exposure-opening, and means upon the carrier for feeding print-paper across the exposure-opening to permit of successive exposures upon a continuous strip of print-paper.

3. A photographic-printing device comprising a case having an exposure-opening, a print-paper carrier mounted in the case and adjustable toward and away from the exposure-opening, means for feeding print-paper across the exposure-opening consisting of a receiving-spool mounted upon the carrier, means located upon the exterior of the case for rotating the feeding-spool, the case being provided with a slot to accommodate said operating means, and a closure-slide for the slot carried by the operating means.

4. A photographic-printing apparatus comprising a case having an exposure-opening, guideways leading toward the exposure-opening within the case, a print-paper carrier within the case and slidably engaging the guideways for adjustment toward and away from the exposure-opening, and means mounted upon the carrier for supporting and feeding print-paper across the exposure-opening.

5. In a photographic-printing device, the combination of a case having an exposure-opening, a print-paper carrier comprising a paper-supporting table having opposite side members, a cross-bar connecting the side members and projected beyond the same, guideways upon the case with the ends of the cross-bar working therein, means for supporting a roll of print-paper upon one end of the carrier, a paper-receiving spool mounted upon the other end of the carrier, and means piercing the case and connected to the cross-bar for adjusting the carrier toward and away from the exposure-opening.

6. A photographic-printing device comprising a case having an exposure-opening, a print-paper carrier mounted within the case, and carrier-adjusting means piercing that side of the case which is opposite the exposure-opening and accessible at the exterior of the case for adjusting the carrier toward and away from the exposure-opening.

7. A photographic-printing device comprising a case having an exposure-opening, a print-paper carrier mounted within the case, and an adjusting-screw piercing that side of the case which is opposite the exposure-opening connected to the carrier for adjusting the latter toward and away from the exposure-opening.

8. In a photographic-printing device, the combination of a case having an exposure-opening, guideways within the case leading toward the exposure-opening, a print-paper carrier comprising a table having opposite side members, a cross-bar connecting the side members and projected beyond the same with its ends working in the guideways, an adjusting-screw piercing that side of the case which is opposite the exposure-opening and connected with the cross-bar for adjusting the carrier toward and away from the exposure-opening, means for rotatively supporting a spool of print-paper between the sides of the carrier at one end thereof, a paper-receiving spool mounted between the sides of the carrier at the opposite end thereof, and means for rotating the receiving-spool to feed print-paper across the table to the receiving-spool.

9. A photographic-printing device comprising a case having an exposure-opening, a print-paper carrier within the case, said case being provided with an opening to give access to the carrier, a closure-slide for the opening, said slide being provided with a sight-opening, and a transparent cover for the opening which is capable of excluding actinic rays of light.

10. A photographic-printing device comprising a case having an exposure-opening in one side and a pair of openings in the opposite side thereof and located at opposite sides of the middle of the case, a print-paper carrier within the case and provided opposite the openings with roll-holding means, closure-slides for the openings, one of the slides being provided with a sight-opening, and a transparent cover for the sight-opening which is capable of excluding actinic rays of light.

11. In a photographic-printing device comprising a case having an exposure-opening surrounded by an outwardly-directed flange, a light-excluding lining for the flange, and a negative-holder capable of being detachably received within the lined flange.

12. In a photographic-printing device, the combination of a case having an exposure-opening in the top thereof, a print-paper carrier within the case, a negative-holder capable of detachable application to the exposure-opening, a cut-off slide working through one side of the case between the paper-carrier and the exposure-opening, and the bottom of the case being provided with a slide-covered opening to give access to the paper-carrier.

812,817. **CLUTCH MECHANISM.** JOHN H. B. BRYAN, Buffalo, N. Y., assignor to Niles-Bement-Pond Company, Jersey City, N. J. Filed Jan. 21, 1904. Serial No. 190,042.

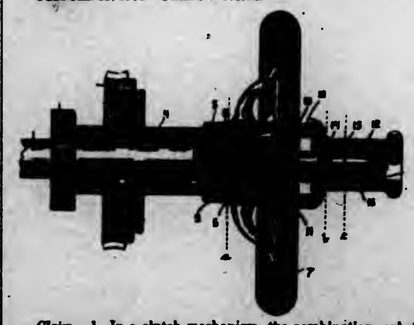

Claim.—1. In a clutch mechanism, the combination, substantially as set forth, of a shaft, a power-transmitting member loose thereon, a friction-clutch for coupling said loose member to the shaft, a nut threaded upon the shaft for setting the friction-clutch to active condition, a hand-wheel mounted on the nut, and a clutch serving to lock the hand-wheel directly to the shaft, whereby the hand-wheel may serve for turning the shaft within the loose power-transmitting member by hand and also for operating the friction-clutch to lock the power-transmitting member to the shaft.

2. In a clutch mechanism, the combination, substantially as set forth, of a shaft, a power-transmitting member loose thereon, a friction-clutch for coupling said member to the shaft, a nut for setting the friction-clutch to active condition, a hand-wheel for turning the nut and mounted for rotation on the nut, coöperating lugs upon the nut and hand-wheel to serve in limiting their relative rotation, and a clutch to serve in connecting the hand-wheel directly with the shaft.

3. In a clutch mechanism, the combination, substantially as set forth, of a shaft, a power-transmitting member loose thereon, a friction-clutch for coupling said member to the shaft, a nut threaded on the shaft and provided with a lug, a hand-wheel for turning the nut and journaled loosely on the nut and provided with a lug to coöperate with the first-mentioned lug in limiting the relative rotation of the hand-wheel and the nut, said hand-wheel being provided also with a clutch member, a sleeve arranged for endwise adjustment on the shaft and provided with a clutch member to engage the clutch member of the hand-wheel, and a lug to prevent rotation of the sleeve upon the shaft when the sleeve is clutched to the hand-wheel.

4. In a clutch mechanism, the combination, substantially as set forth, of a shaft, a power-transmitting member loose thereon, a friction-clutch for coupling said member to the shaft, a nut threaded on the shaft and provided with a lug, a hand-wheel for turning the nut and journaled loosely on the nut and provided with a lug to coöperate with the first-mentioned lug in limiting the relative rotation of the hand-wheel and the nut, said hand-wheel being provided also with a clutch member on its outer face, a sleeve mounted for endwise and radial motion on the shaft outwardly beyond the hand-wheel and provided on its inner face with a clutch member to coöperate with the clutch member on the hand-wheel, said sleeve being provided also with an inwardly-facing notch, a lug projecting from the shaft and engaging an inner portion of the sleeve and preventing its inward movement except when coinciding with said notch, and a spring arranged to urge the sleeve toward the hand-wheel when said lug coincides with said notch.

5. In a clutch mechanism, the combination, substantially as set forth, of a shaft, two coöperating friction-clutch members thereon to engage by relative endwise movement of said members, a nut threaded on the shaft for producing such endwise movement, a hand-wheel for turning said nut and arranged for limited rotary motion relative thereto, and a pair of coöperating clutch members arranged to clutch the hand-wheel directly to the shaft when the first-mentioned clutch members are disengaged, whereby the hand-wheel may serve, alternatively, in actuating the first-mentioned clutch or in actuating the shaft directly.

812,818. **DRIVING MECHANISM FOR PROFILING-MACHINES.** ERWIN W. BULLARD, Springfield, Mass. Filed May 26, 1904. Serial No. 209,994.

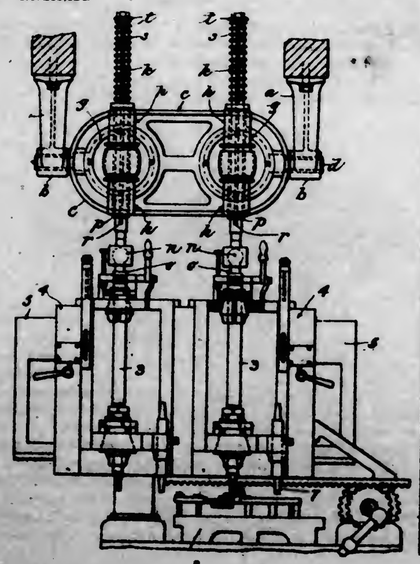

Claim.—1. In a driving mechanism for cutters of profiling-machines or the like, the combination of a one-piece spindle and a universal joint secured to one end thereof; a bearing for said spindle rotatable in one vertical plane, a support for said bearing rotatable in another vertical plane at right angles to the first, a pulley on the spindle located at the intersection of said two planes, the spindle being endwise movable in its bearings.

2. In a driving mechanism for cutters of profiling-machines or the like, the combination of a one-piece spindle and a universal joint secured to one end thereof; a bearing for said spindle rotatable in one vertical plane, a support for said bearing rotatable in another vertical plane at right angles to the first, a pulley on the spindle located at the intersection of said two planes, the spindle being endwise movable in its bearings, together with a counterbalancing device for the spindle.

812,819. **CHURN-OPERATING MECHANISM.** HORACE L. BUSCH, De Queen, Ark. Filed Dec. 1, 1905. Serial No. 289,995.

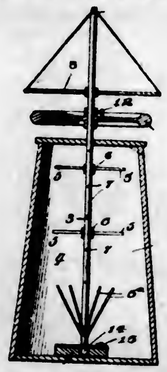

Claim.—1. The combination of a churn, a dasher therefor consisting of a rotatable dasher-rod means for rotating said rod, a bearing for the lower end of the dasher-rod comprising a block removable from the churn, and a latch for detachably connecting the block with the dasher-rod.

2. In combination, a churn, a dasher comprising a dasher-rod provided at intervals in its length with recesses, a plurality of agitating-arms projecting from the dasher-rod, rings affixed to the dasher-rod and carrying the arms aforesaid, and set-screws passing through the rings and adapted to have the inner ends thereof received in the recesses on the dasher-rod.

812,820. **MOLDING-MACHINE.** CHARLES J. CALEY, New Britain, Conn., assignor to The Russell & Erwin Manufacturing Company, New Britain, Conn., a Corporation of Connecticut. Filed Mar. 14, 1905. Serial No. 251,223.

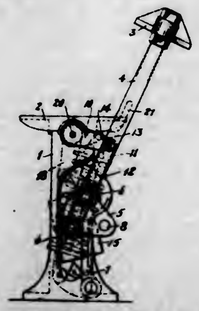

Claim.—1. In a molding-machine, a table, a rammer, a pair of side arms carrying said rammer, a pivoted shaft, an arm-and-link connection from said shaft to said side arms, a curved guide, means carried by the lower end of said side arms for coöperating with said guide, means for operating said side arms, and means comprising

coöperating projecting and grooved parts for holding and guiding the upper portions of said side arms in a straight line without vibration when said side arms are brought into a vertical position.

2. In a molding-machine, an oscillating yoke, means for moving it downward and forward, an interlocking rectilinear guide for said yoke consisting of a projecting male and an open-ended female part, one stationary and the other carried by the oscillating yoke, by which the yoke is guided rigidly during the effective part of its operating stroke.

3. In a molding-machine, the combination of a frame, a table, a pair of curved guides carried by said frame, a yoke, rollers carried by the lower ends of the arms thereof, coöperating with said guides, means for operating said yoke, and an interlocking rectilinear guide for said yoke comprising a projecting member and a grooved part adjacent the central portion of said yoke and brought into operation to prevent vibration during the effective portion of the ramming stroke.

4. In a molding-machine, a stationary frame, projections at the opposite sides thereof, an oscillating yoke, means for operating the same, the arms of said yoke having guideways 21 opening laterally for coöperating with said projections for the purpose specified.

5. In a molding-machine of the oscillating-yoke type, an interlocking rectilinear guide consisting of a projecting male and an open-ended female part, the one on the oscillating yoke, the other on the stationary or non-oscillating part of the machine, by which the ramming-yoke is guided rigidly during ramming.

812,821. **LOCK MECHANISM.** CHARLES J. CALEY and HENRY G. VOIGHT, New Britain, Conn., assignors to Russell & Erwin Manufacturing Company, New Britain, Conn., a Corporation of Connecticut. Filed May 25, 1905. Serial No. 262,173.

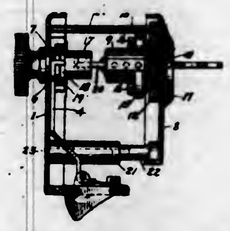

Claim.—1. A lock mechanism, comprising inner and outer frame-plates adapted to be secured to the opposite sides of a door, latch-operating mechanism carried by one of said frame-plates, including two roll-backs, and a thumb-piece connected to one roll-back a cylinder-lock mechanism carried by the opposite frame-plate, means of connection between said cylinder-lock mechanism and the other roll-back and a guard-plate on the exterior of said last-mentioned frame-plate and having an opening with walls converging concentrically to the plug of said cylinder-lock.

2. In a lock mechanism, the combination of an inner frame-plate, latch-operating mechanism carried thereby, an outer frame-plate, a cylinder-lock body having a screw-threaded portion, a plug, means of connection between said plug and said latch-operating mechanism a member mounted in said outer frame-plate having a screw-threaded portion engaging with the screw-threaded portion of said cylinder-body, means for preventing rotation of said member in said outer frame-plate, and means for clamping said cylinder-body and member in place in said outer frame-plate.

3. In a lock mechanism, the combination of inner and outer frame-plates, an operating-slide for the latch-bolt carried by the inner frame-plate, a thumb-piece mounted in said inner frame-plate and having a roll-back for coöperation with said slide, a cylinder-lock carried by said outer frame-plate in line with said thumb-piece, a shank and roll-back in line therewith adapted to coact with said slide, a spindle connection between said cylinder-lock and said shank, and means for aligning and positioning said inner and outer frame-plates.

4. In a lock mechanism, inner and outer frame-plates adapted to the opposite sides of a door, an end plate carried by one of said frame-plates, a latch-bolt operable therethrough, a slide carried by one of said frame-plates, a thumb-piece and roll-back for coöperating therewith, a cylinder-lock carried by the outer frame-plate, a spindle projecting therefrom in line with said thumb-piece, a roll-back controlled thereby independent of said first-mentioned roll-back and for coöperating with said latch-slide, and means for clamping said frame-plates in place.

5. In a lock mechanism, the combination of inner and outer frame-plates, a latch-bolt and operating-slide carried by one of said frame-plates, a thumb-piece carried by said inner frame-plate for operating said latch-slide, a cylinder-lock mechanism carried by the outer frame-plate with connections for operating said latch-slide, tubular members projecting from said inner frame-plate near the edge thereof, posts corresponding thereto and projecting from the outer frame-plate, screws coöperating therewith for drawing said frame-plates together, and an independent screw for drawing said frame-plates together and located at the rear of said thumb-piece and cylinder-lock.

812,822. **NECK-YOKE.** WILLIAM M. CARRIKER, Irving, Ill. Filed Jan. 14, 1905. Serial No. 241,027.

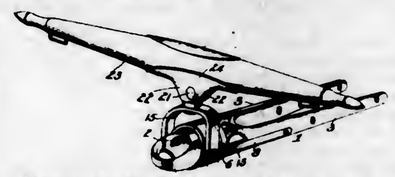

Claim.—1. In a device of the class described, the combination of a neck-yoke provided with a ring having an interior groove, a pole-tip receiving the ring, the latter being adapted for rotary movement on the former, and a catch carried by the pole-tip for engaging the annular groove of the ring.

2. In a device of the class described, the combination of a neck-yoke, a neck-yoke ring, an arched coupling member pivoted at opposite sides to the ring, and an upper coupling member pivoted to the top of the arched coupling member to permit the neck-yoke to swing horizontally, and also pivoted to the neck-yoke for enabling the same to swing transversely of the pole.

3. In a device of the class described, the combination with a neck-yoke, of a pole-receiving neck-yoke ring, an arched member pivotally connected to the ring at opposite sides thereof and arranged to swing longitudinally of the pole, and an upper coupling member mounted for rotation on the arched coupling member to permit the neck-yoke to swing horizontally, said upper coupling member being also pivoted to the neck-yoke, the pivot being arranged to permit the neck-yoke to swing laterally of the pole.

4. In a device of the class described, the combination of a pole-tip having an annular shoulder and provided with a longitudinal groove extending beneath the shoulder, said tip being also provided at the front end of the groove with a recess, and a catch operating in the recess and having a spring arranged in the groove and extending beneath the shoulder, and having its outward movement limited by the same.

5. In a device of the class described, the combination of a tip provided with an annular rib and having a longitudinal groove extending beneath the rib, said tip being also provided at the front end of the groove with a recess and having a socket in the front wall thereof, a spring arranged in the groove and extending into the socket, and a head mounted on the spring and spaced from the rib the latter being arranged to form a stop for limiting the outward movement of the spring.

6. In a device of the class described, the combination of a tip having an annular rib, catches located in advance of and spaced from the rib and provided with springs extending beneath and having their outward movement limited by the same, said catches being beveled at the front, and a neck-yoke having a ring arranged on the tip and engaged by the catches.

7. In a device of the class described, the combination of a neck-yoke having a ring provided with an interior groove, and means designed to be mounted on a pole and engaging the groove, said means permitting the ring to have a rotary movement on the pole and retaining the former on the latter throughout the entire rotary movement of the said ring.

8. In a device of the class described, the combination of a neck-yoke having a ring provided with an interior annular groove, and a catch extending into the groove for detachably retaining the ring on a pole, said catch permitting the ring to have a rotary movement on the pole.

9. In a device of the class described, the combination of a neck-yoke provided with a ring pivoted at its outer face at diametrically

opposite points and provided with an interior groove, and a catch designed to be mounted on a pole and engaging the groove of the ring and permitting it to have a rotary movement thereon and retaining the ring on the pole throughout the entire rotary movement of the former.

812,823. SAWMILL FEED-DRIVE. HARRY C. CLAY, Columbus, Ind., assignor to Reeves & Company, Columbus, Ind., a Corporation of Indiana. Filed Nov. 13, 1905. Serial No. 287,063.

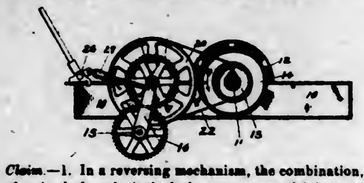

Claim.—1. In a reversing mechanism, the combination, with a pair of main shafts, of a jack-shaft, a permanent driving connection between the first main shaft and the jack-shaft, and a belt-driving connection between the second main shaft and the jack-shaft, a frictional driving connection between the jack-shaft and the said second main shaft, and means for shifting the jack-shaft without destroying the driving connection between the same and the first main shaft to bring either the belt-drive or the friction-drive into action.

2. In a reversing mechanism, the combination, with a pair of main shafts, of a jack-shaft, a permanent driving connection between the first main shaft and the jack-shaft, and a belt-driving connection between the second main shaft and the jack-shaft, a frictional driving connection between the jack-shaft and the said second main shaft, means for shifting the jack-shaft without destroying the driving connection between the same and the first main shaft to bring either the belt-drive or the friction-drive into action, and means for normally holding the jack-shaft in a medial position.

3. In a reversing mechanism, the combination, with a pair of shafts, of a jack-shaft journaled in bearings pivoted upon the first of said shafts, a pair of meshing gears one carried by said first shaft and the other carried by the jack-shaft, a pair of friction elements one carried by the jack-shaft and the other by the second shaft, a belt-driving connection between the jack-shaft and said second shaft, and means for swinging the jack-shaft to bring either the friction-drive or the belt-drive into action.

4. In a reversing mechanism, the combination, with a pair of shafts, of a jack-shaft journaled in bearings pivoted upon the first of said shafts, a pair of meshing gears one carried by said first shaft and the other carried by the jack-shaft, a pair of friction elements one carried by the jack-shaft and the other by the second shaft, a belt-driving connection between the jack-shaft and said second shaft, means for swinging the jack-shaft to bring either the friction-drive or the belt-drive into action, and a yielding means for normally holding the jack-shaft in medial position.

812,824. WOOD-VENEERED METAL OBJECT. LEMUEL COBURN, Holyoke, Mass. Filed June 23, 1905. Serial No. 266,516.

Claim.—1. A new article of manufacture consisting of a metal body with a surface finish of wood veneer applied thereto, and a binding element of practically non-absorbent material located between the metal and the veneer and adherent to both.

2. A structural material consisting of a metal body, a coating of wood veneer for the body, and a layer of non-absorbent flexible material interposed between the metal and the veneer and to which both metal and veneer are adherent.

3. A structural material consisting of a metal body, a coating of wood veneer therefor, and a layer of non-absorbent paper interposed between the metal and the veneer, and to which both metal and veneer are adherent.

812,825. RAILWAY-SWITCH-OPERATING APPARATUS. OTTO J. CHAMBAT, Roseburg, N. J., assignor of one-half to Sidney Arendale, New York, N. Y. Filed Feb. 4, 1905. Serial No. 244,333.

Claim.—1. The combination of a railway-track switch, caloric motive apparatus in actuative coöperation therewith, and electrocaloric-energy-transmuting apparatus arranged to supply caloric energy to the caloric motive apparatus.

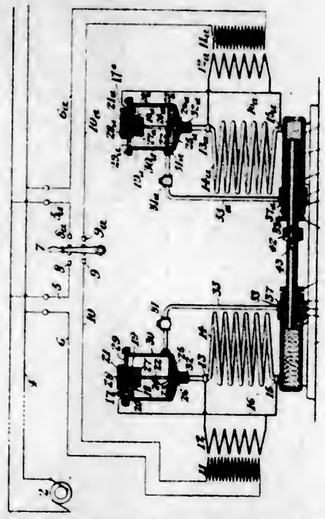

2. The combination of a railway-track switch and electrocaloric fluid-pressure motive apparatus in actuative coöperation with the switch and including electrocaloric-energy-transmuting means arranged to heat the motive fluid of the motive apparatus.

3. The combination of a railway-track switch and electrocaloric motive apparatus in actuative coöperation with the switch and including an electric conductor adapted to be heated by electric current and to thereby develop caloric energy for operating the caloric motive apparatus.

4. Railway-track-switching means comprising, in combination, a track-switch, caloric fluid-pressure motive apparatus in actuative coöperation therewith, and an electric conductor arranged to be heated by electric current and to supply heat to the motive fluid of the motive apparatus.

5. The combination, with a railway-track switch, of electrocaloric fluid-pressure motive apparatus arranged to actuate the switch and comprising an electrical conductor provided with a receiving-space for the motive fluid of the motive apparatus and adapted to be heated by electric current and to transmit heat to the motive fluid.

6. The combination, with a railway-track switch, of caloric fluid-pressure motive apparatus arranged to operate the switch, and a tubular electrical conductor adapted to receive the motive fluid of the motive apparatus and to transmit to such motive fluid the heat generated in the tubular conductor by flow of electricity therein.

7. Railway-switch-operating apparatus comprising fluid-pressure motive apparatus in actuative coöperation with a track-switch and including an expansible motive chamber and a tubular electric conductor in fluid communication with the motive chamber and arranged to receive motive fluid and to heat and expand the same by caloric energy generated by passage of an electric current in the tubular conductor.

8. Railway-switch-operating means comprising caloric fluid-pressure motive apparatus in actuative control of a track-switch and including a motive chamber expansible by pressure of motive fluid and provided with a relief-passage, electrocaloric-energy-transmuting means arranged to heat and expand the motive fluid of the motive apparatus so as to effect a motive expansion of the motive chamber, and means for opening the relief-passage from such motive chamber after occurrence of its motive expansion.

9. Railway-switch-operating means comprising caloric fluid-pressure motive apparatus in actuative coöperation with a railway-track switch and including a motive chamber expansible by pressure of motive fluid and a relief-passage for such motive chamber, electrocaloric-energy-transmuting means arranged to supply caloric energy for effecting a motive expansion of the motive fluid and of the motive chamber, and means for maintaining closure of the relief-passage during a given motive expansion of the chamber.

10. Railway-switch-operating means comprising caloric fluid-pressure motive apparatus in actuative coöperation with a railway-track switch and including a motive chamber expansible by pressure of motive fluid and provided with a relief-passage, electrocaloric heating means arranged to heat the motive fluid of the motive apparatus so as to expand such motive fluid and thereby effect a motive expansion of the motive chamber, and means for maintaining the relief-passage in closed condition during the motive expansion of the chamber and for opening such relief-passage after such motive expansion.

11. Railway-switch-operating means comprising fluid-pressure motive apparatus including a fluid-pressure motive chamber expansible by pressure of the motive fluid of the motive apparatus and arranged in actuative coöperation with a track-switch and such motive apparatus including also an electrically-controllable relief-passage in communication with the motive chamber, electrothermal heating means arranged to heat and expand the motive fluid of the motive apparatus and thereby effect a motive expansion of the motive chamber, and a common source of electricity arranged to supply electrical energy both for the electrothermal heating means and for control of the electrically-controllable relief-passage.

12. Railway-switch-operating means comprising caloric fluid-pressure motive apparatus including a motive expansion-chamber operatable by pressure of the motive fluid of the motive apparatus and arranged in actuative control of a track-switch, in combination with an electrically-controllable relief-passage communicating with the motive chamber, a relief-controlling electric circuit for the relief-passage and arranged to maintain closure of such relief-passage by flow of current in such relief-controlling circuit, electrothermal heat-producing means arranged to heat and expand the motive fluid and thereby actuate the motive chamber and operate the track-switch, and a common source of electricity arranged to supply electric current simultaneously to the electrothermal heating means and to the relief-controlling circuit.

13. A railway-switch-controlling system including, in combination, a railway-track switch, caloric motive apparatus in actuative coöperation with the track-switch, and an electric circuit in controlling relation to the caloric motive apparatus.

14. A railway-switch-controlling system comprising a railway-track switch, caloric motive apparatus in actuative coöperation therewith, electrocaloric-energy-transmuting means arranged to supply caloric energy to the caloric motive apparatus, and an electric circuit arranged both to supply electrical energy for the electrocaloric-energy-transmuting means and to control actuation of the track-switch by the caloric motive apparatus.

15. A railway-switch-controlling system comprising a railway-track switch, caloric fluid-pressure motive apparatus in actuative coöperation with the track-switch, electrocaloric heating means arranged to heat the motive fluid of the fluid-pressure motive apparatus, and an electric circuit arranged to supply electrical energy to the electrocaloric heating means and also arranged to control actuation of the track-switch by the caloric fluid-pressure motive apparatus.

16. Railway-switch-operating means comprising a fluid-pressure motive chamber expansible by pressure of motive fluid and arranged to actuate a track-switch by its motive expansion, an electrically-conductive fluid-heating tube having fluid communication with the motive chamber and adapted to expand the motive fluid by heat of an electric current so as to effect a motive expansion of the motive chamber, a fluid-relief passage leading from the heating-tube, and means for maintaining closure of the relief-passage during the motive expansion of the motive chamber.

17. Railway-switch-operating means comprising fluid-pressure motive apparatus including a motive chamber expansible by pressure of motive fluid and arranged to actuate a track-switch by its motive expansion and such motive apparatus including also a reservoir and a relief-passage leading from the motive chamber to the reservoir, electrocaloric-energy-transmuting means arranged to supply caloric energy to the motive fluid of the fluid-pressure motive apparatus to effect motive expansion of its motive chamber, and means for maintaining closure of the relief-passage during such motive expansion of the motive chamber.

18. Railway-switch-operating means including a fluid-pressure motive expansion-chamber, a leakage-fluid-receiving chamber, a power-transmitting rod passing through the leakage-fluid-receiving chamber and into the motive expansion-chamber, a tight sliding joint through which the rod enters the leakage-fluid-receiving chamber, a second tight sliding joint through which the rod passes from the leakage-fluid-receiving chamber into the motive expansion-chamber, a conduit connecting the leakage-fluid-receiving chamber with a receiving-reservoir, a relief-passage affording fluid communication between the motive expansion-chamber and the reservoir, means for increasing the pressure of the motive fluid in the motive expansion-chamber whereby to move the power-transmitting rod, means for maintaining closure of the relief-passage during such movement of the rod, and means for transmitting the movement of the power-transmitting rod to a track-switch.

19. Railway-switch-operating means comprising fluid-pressure motive apparatus in actuative connection with a railway-track switch and including a fluid-pressure motive expansion-chamber arranged to move the track-switch by its motive expansion, an electroconductive fluid-heating tube in fluid communication with the motive expansion-chamber, a fluid-reservoir, a controllable relief-passage affording controllable fluid communication between the electroconductive fluid-heating tube and the relief-reservoir, means for passing an electric current through the electroconductive fluid-heating tube whereby to heat the tube and the motive fluid contained therein and effect a motive expansion of such fluid and of the motive chamber, and means for maintaining closure of the relief-passage during the motive expansion of the motive chamber.

20. Railway-switch-operating means comprising fluid-pressure motive apparatus in actuative connection with a railway-track switch and including, in a closed motive-fluid-containing system, a fluid-pressure motive expansion-chamber arranged to move the track-switch by its motive expansion, an electroconductive fluid-heating tube in fluid communication with the motive expansion-chamber, a fluid-reservoir permanently closed against communication with the outer atmosphere, a controllable relief-passage affording controllable fluid communication between the electroconductive fluid-heating tube and the closed relief-reservoir, means for passing an electric current through the electroconductive fluid-heating tube whereby to heat the tube and the motive fluid contained therein and effect a motive expansion of such fluid and of the motive chamber, and means for maintaining closure of the relief-passage during the motive expansion of the motive chamber.

21. Railway-switch-operating means comprising caloric fluid-pressure motive apparatus in actuative connection with a track-switch and including a motive expansion-chamber operatable by pressure of the motive fluid of the apparatus to actuate the track-switch, and a tubular electric conductor of helical form in fluid communication with the motive expansion-chamber and adapted to be heated by an electric current and to heat and expand the motive fluid of the motive apparatus so as to effect a motive expansion of the motive chamber and thus actuate the track-switch.

22. Railway-switch-operating means comprising a fluid-pressure motive expansion-chamber, means for transmitting the power of a motive expansion of the motive chamber to a track-switch, an electroconductive fluid-heating tube of helical form in fluid communication with the motive chamber and adapted to be heated by electric current and to heat the motive fluid of the motive apparatus and effect a motive expansion of such fluid and of the motive chamber, a controllable relief-passage leading from the heating-tube, and means for maintaining closure of the relief-passage during the motive expansion of the motive chamber.

23. Railway-switching means comprising a railway-track switch, caloric fluid-pressure motive apparatus arranged in actuative relation thereto and including a motive-fluid-containing system closed from communication with the outer atmosphere, and electrocaloric-energy-transmuting means arranged to supply caloric energy to the motive fluid of the caloric fluid-pressure motive apparatus.

24. Railway-switch-operating means comprising switch-actuating motive apparatus operatable by caloric energy and including an electrical heating-conductor adapted to be heated by electric current and to supply the caloric energy for operating the motive apparatus, in combination with a transformer arranged to deliver its secondary current to the heating-conductor, and a current-transmitting circuit arranged to deliver primary current to the transformer.

25. Railway-switch-operating means comprising caloric fluid-pressure motive apparatus in actuative connection with a track-switch and including a motive chamber expansible by pressure of the motive fluid of the motive apparatus and arranged to move the track-switch in one direction by its motive expansion, electrocaloric heating means arranged to heat the motive fluid of the motive apparatus so as to increase its pressure and effect a motive expansion of the motive chamber, and means for returning the motive chamber and the track-switch to initial condition and position after the motive expansion of the motive chamber.

26. Railway-switch-operating means comprising caloric fluid-pressure motive apparatus in actuative connection with a track-switch and including two motive expansion-chambers arranged to move the track-switch into opposite positions by their respective mo-

tive expansions and each motive chamber being also arranged to restore the other motive chamber to its normal or unexpanded condition, and the caloric fluid-pressure motive apparatus also including

pipe 13 communicating with both said compartments and leading into chamber B, waste-pipe 10 open to chamber B above the level of

3. In a lock and latch mechanism the combination of the casing having a front plate and side plates, a latch-slide and separate latch-

tive expansions and each motive chamber being also arranged to restore the other motive chamber to its normal or unexpanded condition, and the caloric fluid-pressure motive apparatus also including separate motive-fluid-containing systems for the motive fluids of the separate motive expansion-chambers, and means for independently heating and expanding the motive fluids of the independent containing systems.

27. Railway-switch-operating means comprising caloric fluid-pressure motive apparatus in actuative connection with a track-switch and including two motive expansion-chambers arranged to move the track-switch into opposite positions by their respective motive expansions and each motive chamber being also arranged to restore the other motive chamber to its normal or unexpanded condition, and the caloric fluid-pressure motive apparatus also including separate motive-fluid-containing systems for the motive fluids of the separate motive expansion-chambers, and independent electrocaloric-energy transmuters arranged to heat and expand the motive fluids of the independent motive-fluid-containing systems.

28. Railway-switch-operating means comprising caloric fluid-pressure motive apparatus arranged to actuate a track-switch by motive expansion of the motive fluid of the motive apparatus, electrocaloric-energy-transmuting means arranged to supply caloric energy to the motive fluid to effect motive expansion of the same, and cooling means arranged to dissipate the caloric energy of the motive fluid.

29. Railway-switch-operating means comprising caloric fluid-pressure motive apparatus arranged to actuate a track-switch by motive expansion of its motive fluid, an electrocaloric-energy transmuter, and cooling means, the electrocaloric-energy transmuter and the cooling means being arranged to alternately supply and dissipate caloric energy to and from the motive fluid of the motive apparatus to effect motive expansion of the motive fluid and to permit a contraction of such motive fluid between successive motive expansions thereof.

30. Railway-switch-operating means comprising caloric fluid-pressure motive apparatus arranged to actuate a track-switch by motive expansion of its motive fluid and including an electric heating-conductor provided with a motive-fluid-receiving space arranged to contain motive fluid of the motive apparatus and such conductor being adapted to heat the motive fluid by caloric energy of an electric current flowing through the conductor and also to cool the motive fluid by absorption of heat therefrom.

31. Railway-switch-operating means comprising caloric fluid-pressure motive apparatus arranged to actuate a track-switch by motive expansion of its motive fluid and having a motive-fluid-containing system including a tubular electric conductor arranged to be heated and to heat the motive fluid by passage of an electric current whereby effect motive expansion of the motive fluid and also arranged to absorb and dissipate heat of the motive fluid so as to permit a contraction thereof subsequent to its motive expansion.

32. Railway-switch-operating means comprising caloric fluid-pressure motive apparatus in actuative coöperation with a track-switch and including a motive expansion-chamber arranged to actuate the track-switch by motive expansion of the motive fluid of the apparatus, and a helical electroconductive tube in fluid communication with the motive chamber and arranged to contain motive fluid and to heat and expand the same by caloric energy of an electric current passing through such electroconductive tube, and such tube being also arranged to absorb and dissipate the heat of the motive fluid.

33. Railway-switch-operating means comprising caloric fluid-pressure motive apparatus arranged to move a track-switch into a given position by motive expansion of the motive fluid of the apparatus, electrocaloric-energy-transmuting means arranged to supply caloric energy to the motive fluid of the caloric fluid-pressure motive apparatus, an electric circuit arranged to supply electrical energy to the electrocaloric-energy-transmuting means and also arranged to control actuation of the track-switch by the motive apparatus, a second caloric fluid-pressure motive apparatus arranged to move the track-switch into another position by motive expansion of the motive fluid of such second motive apparatus, a second electrocaloric-energy-transmuting means arranged to supply caloric energy to the motive fluid of the second motive apparatus, and a second electric circuit arranged to supply electrical energy to the second electrocaloric-energy-transmuting means and also arranged to control actuation of the track-switch by the second motive apparatus.

34. Railway-switch-operating means comprising switch-actuating caloric motive apparatus, electrocaloric-energy-transmuting means arranged to supply caloric energy to the caloric motive apparatus, an electric-current transformer arranged to deliver its secondary current to the electrocaloric-energy-transmuting means, and an electric transmission-circuit arranged to deliver primary current to the transformer.

35. Railway-switch-operating means comprising fluid-pressure motive apparatus arranged to actuate a track-switch by motive expansion of its motive fluid and including electroconductive motive fluid expansible by passage of an electric current through it, and means for conducting electricity through the motive fluid of the motive apparatus so as to effect a motive expansion thereof.

36. Railway-switch-operating means comprising fluid-pressure motive apparatus arranged to actuate a track-switch by pressure variation in its motive fluid and including a liquid motive fluid adapted for conversion into gaseous form by passage of electricity through such liquid, and means for passing electricity through the liquid so as to convert the same to gaseous form and thereby vary its pressure to actuate the track-switch.

37. Railway-switch-operating means comprising fluid-pressure motive apparatus arranged to actuate a track-switch by motive expansion of its motive fluid and including a motive fluid expansible by passage of electricity through it, and means for passing electricity through the motive fluid of the motive apparatus to effect a motive expansion thereof and actuate the track-switch.

812,826. **TUB.** PATRICK CONNOLLY, Brooklyn, N. Y., assignor to Frank B. Connolly, Brooklyn, N. Y. Filed June 15, 1904. Renewed July 7, 1905. Serial No. 268,728.

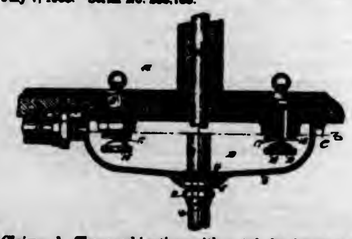

Claim.—1. The combination with a tub having two or more compartments, of a chamber beneath the tub formed by detachably securing a casing *b* to the under side of the tub, outlets leading from said compartments to said chamber, and a waste-pipe leading from said chamber, substantially as described.

2. The combination with a tub having two or more compartments, of a chamber beneath the tub formed by detachably securing a casing *b* to the under side of the tub, outlets leading from said compartments to said chamber, check-valves on said outlets to prevent backflow, and a waste-pipe leading from said chamber, substantially as described.

3. The combination with a tub having two or more compartments, of a chamber beneath the tub formed by detachably securing a casing *b* to the under side of the tub, outlets leading from said compartments to said chamber, and a waste-pipe leading from said chamber at a higher level than the openings of said outlets into the chamber, substantially as described.

4. The combination with a tub having two or more compartments, of a chamber beneath the tub formed by detachably securing a casing *b* to the under side of the tub, outlets leading from said compartments to said chamber, check-valves on said outlets to prevent backflow, and a waste-pipe open to said chamber at a higher level than the openings of said outlets into the chamber, substantially as described.

5. In combination with a tub, of a chamber beneath the tub formed by detachably securing a casing *b* to the under side of the tub, an outlet leading from the tub to the chamber, a check-valve on said outlet to prevent backflow, and a waste-pipe open to the chamber at a higher level than the opening of said outlet into the chamber, substantially as described.

6. The combination with a tub having two or more compartments, of a chamber B formed by detachably securing a casing *b* to the under side of the tub, outlet-pipes 11 and 12 leading from said compartments into said chamber, overflow-pipe 13 communicating with both compartments and leading into said chamber, and waste-pipe 10 open to said chamber above the level of the openings of pipes 11, 12 and 13, substantially as described.

7. The combination with the tub A having compartments *a* and *a'*, of chamber B formed by securing a casing *b* to the under side of the tub A, outlet-pipes 11 and 12 leading from said compartments into chamber B, check-valves 15 and 16 carried by rods 17, overflow-pipe 13 communicating with both said compartments and leading into chamber B, waste-pipe 10 open to chamber B above the level of the openings of pipes 11, 12 and 13, and a vent-pipe leading from said chamber, substantially as described.

812,827. **BRAKE-BAND.** HARRY H. COVELL, New York, N. Y., assignor to Lidgerwood Manufacturing Company, a Corporation of New York. Filed July 28, 1904. Serial No. 217,051.

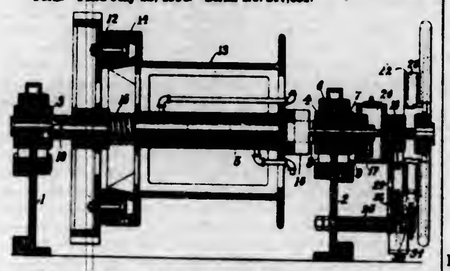

Claim.—1. The combination with friction clutch members of a device for setting said members in driving contact and means independent of the setting mechanism automatically operating to retain said device and clutch members in driving contact.

2. The combination with friction clutch members of a device for setting said members in driving contact, means independent of the setting mechanism automatically operating to hold said device and clutch members in set position, and means whereby said device may be released to permit the unsetting of said clutch members.

3. The combination with friction clutch members, of a device for setting said members in driving contact, and a brake-band whereby said device is free to turn in one direction and held from turning in the opposite direction.

4. In combination with friction clutch members, a wheel for setting said members in driving contact, a brake-band thereon permitting the turning of said wheel to set said members and automatically operating to restrain said wheel from turning in the reverse direction.

5. The combination with friction clutch members, of a device free to turn to set said members in driving contact, a brake-band whereby said device is restrained from turning in the reverse direction and means whereby said brake-band may release said device to turn in the opposite direction.

6. The combination with friction clutch members of a device for setting said members in driving contact, a brake-band thereon normally holding said members in set position and means whereby said brake-band may release said device and permit the unsetting of said members.

7. The combination with friction clutch members, of a device for setting said members in driving contact, a brake-band thereon normally holding said device from backward turning, and a treadle for releasing said brake-band thereby permitting the turning of said device in reverse direction.

8. The combination with friction clutch members, of a device for setting said members in driving contact, and a brake-band thereon, the ends of said brake-band being attached to a lever, said brake-band normally holding said device in set position until released by action upon said lever.

812,828. **LOCK AND LATCH MECHANISM.** NATHAN W. CRANDALL, New Britain, Conn., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn., a Corporation of Connecticut. Filed June 10, 1904. Serial No. 211,893.

Claim.—1. In a lock and latch mechanism the combination of a case having two side plates of sheet metal with flanges, a boss and a seat carried by one of said side plates, a screw for coöperating with said seat and connecting said plates, an integral lug stamped from one of said side plates, a latch-slide guided between one of said flanges at one edge and said boss and said lug at the other edge.

2. In a lock and latch mechanism the combination of a casing formed of sheet metal, an integral lug stamped from the metal of one of the side plates, a latch-slide guided in said case, said lug acting as a stop to limit the outward movement of said slide and being reinforced by its connection with said plate opposite the engaging edge.

3. In a lock and latch mechanism the combination of the casing having a front plate and side plates, a latch-slide and separate latch-bolt adapted to be retracted by said slide, said bolt being also movable independently of said slide, a spring for normally holding said latch-bolt in its extended position, said casing having a recess in one of its side plates affording a guide for said latch-bolt, the rear end of said recess forming a shoulder limiting the inward movement of said latch-bolt.

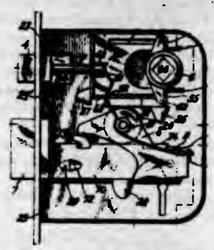

4. In a lock and latch mechanism the combination of a casing having one side formed of sheet metal, a latch-bolt, a slide, means for operating the same, an integral lug stamped from the metal of one side plate and forming a lateral guide for the shank of said latch-bolt.

5. In a lock and latch mechanism the combination of a casing, a latch-bolt, a slide, guiding means for said slide, and integral tracks stamped from the metal of said slide to coöperate with one of the said plates of said case.

6. In a lock and latch mechanism the combination of a casing, a latch-bolt and slide, a roll-back, flanges integral with said slide with which said roll-back coöperates and integral reinforcing-lugs for said flanges which also coöperate with said case.

7. In a lock and latch mechanism, the combination of a face-plate and side plates having flanges, one of said side plates being formed of sheet metal and having reinforcing and stiffening lugs at two corners uniting the side plate and the adjacent flange and secured to said face-plate.

8. In a lock and latch mechanism, the combination of a face-plate and side plates having coöperating flanges, one of the said side plates being formed of sheet metal and having lugs secured to the back of said face-plate and integral with said side plate and at right angles to its flange for the purpose specified, the other side plate also being formed of sheet metal, said lugs coacting with and inclosing its flanges to seat the same and means for securing the side plates together.

9. In a lock and latch mechanism, the combination of a case, a locking-bolt having a shank formed of sheet metal, guides therefor, an integral lug stamped from the metal of said shank and sliding on one of said side plates and stops to limit the movement of said bolt.

10. In a lock and latch mechanism the combination of a casing having one side formed of sheet metal, a locking-bolt, guides therefor, and integral lugs formed by stamping up the metal of said side plate and a corresponding lug formed by indenting the metal of said bolt-shank to operate as a stop.

11. In a lock and latch mechanism the combination of a casing formed with two side plates, a boss and seat carried by one of said side plates, a screw for coöperating with said seat and holding said side plates together, a locking-bolt, a lug formed by stamping up the metal of one of said side plates, said bolt being guided between said boss and said lug.

12. In a lock and latch mechanism the combination of a casing formed with two side plates, a boss carried by one of said plates, a locking-bolt, a tumbler mounted on said boss, a spring therefor and a lug integral with said tumbler and coacting with one of said side plates, said spring coöperating with said lug.

13. In a lock and latch mechanism the combination of the casing having a front plate and side plates, a boss and a post carried by one of said plates, a tumbler pivotally mounted on said post and positioned by said boss, a locking-bolt, shoulders formed in the shank of said locking-bolt in front of and to the rear of said post, lugs projecting from said tumbler, adapted to coact with said shoulders, and a spring for normally holding said tumbler with one of its lugs engaging the rear shoulder of said bolt when the same is extended, said casing having a keyhole opening beneath said tumbler and beneath said bolt, all for the purpose specified.

14. In a lock and latch mechanism the combination of a case, a latch-bolt, a slide separate therefrom, a locking-bolt, a tumbler therefor and a single spring coöperating with said latch-bolt and said tumbler to hold them in their proper positions and adapted to coöperate with said latch-slide when the same is retracted and to

812,830. **WEIGHING DEVICE.** HENRY E. DAHLMAN, Burlington, Wis. Filed Aug. 26, 1905. Serial No. 275,022.

3. The combination with a casing having at its lower portion a liquid-inlet [illegible] operating seat located therein for controlling the discharge of such

said tumbler to hold them in their proper positions and adapted to cooperate with said latch-slide when the same is retracted and to throw the same outward independent of said latch-bolt.

15. In a lock and latch mechanism the combination of a case, a latch-slide, means for retracting the same, a latch-bolt adapted to be retracted by said latch-slide but having an independent movement with relation thereto and a single spring having a long arm adapted to engage said latch-bolt and a shorter arm adapted to engage said latch-slide whereby the same spring affords less resistance to the retraction of said latch-bolt than to the retraction of said latch-slide.

16. In a lock and latch mechanism the combination of a case, a latch-bolt, a slide having an upturned flange engaged by the shank of said latch-bolt, and a lug integral with said latch-slide reinforcing said flange and a spring for coacting with said lug to operate said latch-slide.

17. In a lock mechanism the combination of a case formed in two parts, a raised boss, a seat projecting beyond said boss but secured to one part of said case, a screw for taking into said seat and securing the parts of said case together, a locking-bolt, and a tumbler pivoted on said seat and positioned by said boss.

812,829. **DOOR CHECK AND CLOSER.** NATHAN W. CRANDALL, New Britain, Conn., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn., a Corporation of Connecticut. Filed Oct. 5, 1904. Serial No. 227,196.

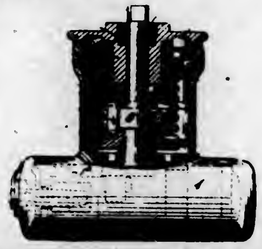

Claim.—1. In a liquid door check and closer, a case including a piston-chamber and a spring-chamber, checking mechanism including a piston, and closer mechanism including a spring, all contained within said case, a spindle connected to both said piston and said spring, a removable lower spindle-bearing between the spring-chamber and piston-chamber, a communicating passage between said chambers, a removable upper spindle-bearing projecting downwardly into the spring-chamber, a spring-controlled dog rotatably mounted upon said upper spindle-bearing, an air-chamber formed between said upper dog and said upper bearing, and backflow-ports connecting said space with the interior of said spring-chamber.

2. In a device of the character described, a spindle, a double-acting spring, independently-movable dogs indirectly connecting the spring with said spindle, one of said dogs being formed of two members one adjustable relatively to the other, said spring being connected directly with the adjustable member of said dog and a rotatable adjusting device comprising a snail carried by one of said members and coacting with the other.

3. In a device of the character described, a spindle, a spring, independently-movable dogs indirectly connecting the spring with said spindle, one of said dogs being formed of two members one adjustable relatively to the other, said spring being connected directly with the adjustable member of said dog, and a self-locking adjusting device carried by one of said members and engaging the other.

4. In a device of the character described, a spring, a spring tension-adjusting device comprising a rotatable member, a dog, a sleeve mounted thereon and rotatable relatively thereto, a projection or lug on said sleeve arranged to be directly connected with said spring, a toothed flange on said sleeve, a snail carried by said dog and engaging said toothed flange whereby the rotation of the snail will shift the angular position of said sleeve relatively to its support.

5. In a device of the character described, a casing forming a spring-chamber, a spindle-bearing in the lower part thereof, another spindle-bearing in the upper part thereof, a spindle supported by said bearings, a dog fixed on said spindle, two movable dogs carried by said spindle, and coöperating with the fixed dog, a spring directly connected with one of said movable dogs and adjustably and indirectly connected with the other of said movable dogs and means within said casing for varying the adjustment of said spring with the last mentioned dog.

812,830. **WEIGHING DEVICE.** HENRY B. DAHLMAN, Burlington, Wis. Filed Aug. 28, 1905. Serial No. 276,023.

Claim.—1. A weighing device, comprising a casing provided with exterior index-slides; elbow-levers within the casing, each having one arm operatively connected with one of the index-slides; a weight-supporting bail extending through the casing and loosely connected with the other arms of the elbow-levers, and a tension device operatively connected with the elbow-levers and adapted to pull thereon in opposition to the pull of the bail.

2. In a device of the described class, the combination of a casing; an elbow-lever pivotally mounted therein; an index-slide normally mounted on the exterior surface of the casing and operatively connected with one arm of the elbow-lever; a bail connected with the other arm of said lever; and a tension device operatively connected with the lever to act in opposition to the pull exerted by the bail.

3. In a device of the described class, the combination of a casing; a set of elbow-levers pivotally mounted in the casing and provided with inwardly and upwardly projecting arms extended through slots in the casing; index-slides movably mounted on the exterior surface of the casing and operatively connected with said projecting arms; a spring connecting said arms within the casing; and a weight-supporting bail extending through said casing longitudinally and loosely connected with the other arms of the respective elbow-levers; said levers being positioned to receive a pull upon the bail in opposition to the tension of said spring.

812,831. **OIL AND FEED-WATER SEPARATOR.** GEORGE R. DAVIDSON, Lenox, Mich. Filed Mar. 9, 1905. Serial No. 249,292.

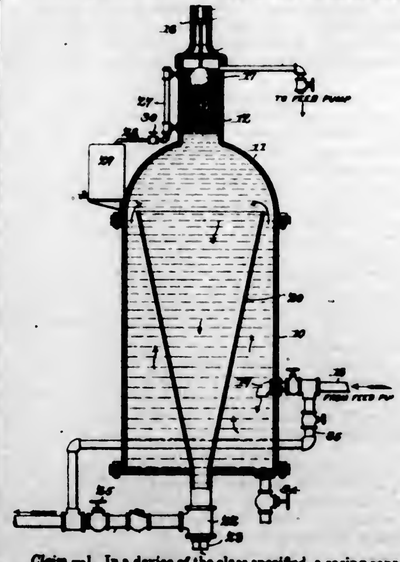

Claim.—1. In a device of the class specified, a casing connected between the feed-pump and the boiler, a submerged deflector by which the water is directed toward the upper end of the casing in a thin annular stream, a water-outlet at or near the bottom of the casing, and means at the top of the casing for drawing off the accumulated oil.

2. In a device of the class specified, a casing having an inlet at its lower portion for the liquid to be separated, a submerged conical deflector arranged within the casing and over the upper wider edge of which the liquid must pass, and a water-outlet leading from the lower portion of said deflector, and means at the top of the casing for drawing off accumulated oil.

3. The combination with a casing having at its lower portion a liquid-inlet, a submerged funnel-shaped deflector arranged within the casing and forcing the volume of fluid to travel in a thin annular stream between the upper wider mouth of the deflector and the inner wall of the casing, a water-outlet near the lower end of the deflector, an oil-chamber forming an extension of the main casing and to which the oil flows by gravity, and means for drawing off the oil from said chamber.

4. The combination with a casing having near its lower end an inlet for the liquid to be separated, said inlet having a downwardly-turned discharge-mouth, a submerged funnel-shaped deflector arranged within the casing and having its widened inlet-mouth near the upper portion of said casing, a water-discharge near the lower end of said deflector, an upper oil-chamber forming an extension of the main casing, and to which the oil flows by gravity, a sight-glass for determining the quantity of oil in said chamber, and means for drawing off said oil.

5. In a device of the class specified, a casing having at its upper end an air-vent, a float-valve for closing said air-vent, an inlet arranged near the lower portion of the casing for the entrance of the liquid to be separated, a submerged deflector having a widened entrance-mouth and a contracted discharge-opening, an oil-chamber arranged at the upper portion of the casing and through which the oil flows by gravity, and means for drawing off the oil from said chamber.

812,832. **LAVATORY-FIXTURE.** ELIPHALET DE CAMP and FRANK P. CAUFIELD, Newark, N. J., executors of Allen P. Croque, deceased. Filed Apr. 26, 1905. Serial No. 257,533.

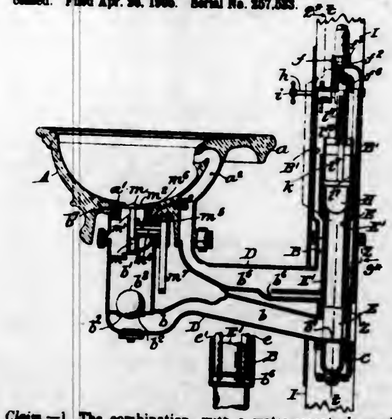

Claim.—1. The combination, with a water-receptacle, and a vessel connected therewith, to which the water in being supplied to the receptacle also flows, of a trap through which the water supplied to the receptacle and vessel is discharged, and separate means for controlling the discharge of the water from such receptacle and from such vessel, substantially as described.

2. The combination, with a water-receptacle, and a vessel from which it is supported and to which the water in being supplied to the receptacle also flows, of a trap through which the water supplied to the receptacle and vessel may be discharged, and valves m and E and coöperating valve-seats by which the discharge of the water from the receptacle and vessel into the trap is controlled, substantially as described.

3. The combination, with a water-receptacle, and a vessel provided with a bracket-arm upon which the water-receptacle is mounted, of tubular connections between the receptacle and vessel through which water supplied to the one may flow to the other, a trap to which the receptacle and vessel are connected, and valves m and E and coöperating valve-seats through which the discharge of the contents of the receptacle and vessel into the trap may be controlled, substantially as described.

4. The combination, with a water-receptacle, and a vessel adapted to be firmly secured in the walls of a room or apartment and provided with a bracket-arm upon which the receptacle is mounted, of a tubular connection between the receptacle and vessel through which water supplied to the one may flow to the other, a trap, connection between the receptacle and trap through which the contents of the receptacle may be discharged into the trap, a valve E and coöperating seat located therein for controlling the discharge of such contents thereinto, and a second valve and seat, which, while permitting of the free flow of the contents from the receptacle, prevents the emptying of the trap by siphonic action when such contents is discharged, substantially as described.

5. The combination, with a water-receptacle, and a trap, of a chamber into which the contents of the receptacle are discharged provided with a valve-seat, a pipe leading from this valve-seat to the trap, a buoyant valve located within the chamber for coöperation with the valve-seat to prevent the emptying of the trap by siphonic action, and a second valve and seat for controlling the flow of the contents of the receptacle therefrom, substantially as described.

6. The combination, with a water-receptacle, and a trap, of a chamber into which the contents of the receptacle are discharged provided with a valve-seat in its bottom, a connection between this valve-seat and the trap for conducting the contents of the receptacle to the trap, a buoyant valve located within the chamber for coöperation with the valve-seat, and a valve and seat located within the connection between the chamber and the trap for controlling the retention and discharge of the contents of the receptacle within and from the same, substantially as described.

7. The combination, with a water-receptacle provided with a discharge-orifice, a vessel, a tubular connection between the receptacle and vessel through which water supplied to the one may flow to the other, and a trap to which the tubular lower end of the vessel is connected, of tubular connections between the discharge-orifice of the receptacle and the lower tubular portion of the vessel, a valve-seat located in the lower end of the tubular vessel below the entrance of the tubular connection leading from the discharge-orifice of the receptacle thereto, a tubular valve for coöperating with such seat, means by which this tubular valve may be raised from and closed upon its seat and means by which the orifice through the tubular valve may be opened and closed, substantially as described.

8. The combination, with a water-receptacle provided with a discharge-orifice, a closed vessel with which the receptacle is connected and to which the water is being supplied to the receptacle also flows, and a trap through which the contents of the receptacle and vessel may be discharged, of a tubular connection leading from the discharge-orifice of the receptacle to the trap, a valve-seat b^4 located in this tubular connection, a tubular valve E for coöperation with such valve-seat and itself provided with a valve-seat e, means by which this tubular valve may be operated, a tubular guide in which such tubular valve is fitted to slide, a valve H for coöperation with the valve-seat o, and means by which this valve H may be operated, substantially as described.

9. The combination with a water-receptacle provided with a discharge-orifice, a vessel with which the receptacle is connected and to which the water is being supplied to the receptacle also flows, a passage-way through which the contents of the receptacle and vessel may be discharged, a valve-seat b^4 arranged in connection therewith, a tubular valve for coöperating with this valve-seat, a tubular guide in which this last-mentioned valve is fitted to slide, means by which the orifice through such tubular valve may be opened and closed, and a dam arranged in connection with the tubular guide, whereby when the contents of the receptacle and vessel rises to a predetermined height it will flow over said dam and pass downward through the tubular valve to the place of discharge and thereby prevent the overflow of the receptacle, substantially as described.

10. The combination, with a water-receptacle provided with a discharge-orifice, a vessel with which the receptacle is connected and to which the water in being supplied to the receptacle also flows, a passage-way through which the contents of the receptacle and vessel may be discharged, a valve-seat b^4 arranged in connection therewith, a tubular valve for coöperating with this valve-seat, a tubular guide in which this last-mentioned valve is fitted to slide, means by which the orifice through such tubular valve may be opened and closed, and a tubular dam adjustably secured to the tubular guide, whereby the height in which the contents of the receptacle and vessel may rise may be controlled and regulated, substantially as described.

11. The combination with a water-receptacle, a vessel provided with an outwardly-extending bracket-arm upon which the receptacle is mounted, means by which this vessel may be firmly secured to the walls of a room or apartment, and a pipe b^5 between the vessel and the receptacle through which water delivered to the one will flow to the other, hot and cold water supply pipes through which hot and cold water may be supplied to the receptacle and vessel through the pipe b^5, and valve located in each inlet supply-pipe, whereby the flow of water through them to the receptacle and vessel may be controlled, substantially as described.

12. The combination, with a receptacle or bowl provided with a discharge-orifice, a vessel to which the receptacle or bowl is operatively connected, and a trap, of a chamber located beneath the bowl with a valve-seat m^3 in the under side of its upper end, a valve m for coöperating with such valve-seat, a pipe leading from the lower end of such chamber to the lower end of the vessel, a valve-seat b^4 formed in the lower end of the vessel beneath the entrance of the pipe which leads from the lower end of the chamber thereto, a tubular valve for coöperation with the valve-seat b^4 and provided in its upper end with a valve-seat o, a valve H for coöperating with this valve-seat o, and mechanism by which the valve H and the valve m in the said chamber may be moved from and toward their respective seats in unison, substantially as described.

13. The combination, with a water-receptacle or bowl, and a vessel from which it is supported and to which the water in being supplied to the receptacle and bowl also flows, a trap through which the water supplied to the receptacle or vessel may be discharged, a valve-seat b^4 located in the lower portion of the vessel, a tubular valve E for coöperating with such seat and provided with a valve-seat o at its upper end, a valve H for coöperating with the seat o, hot and cold water inlet pipes for supplying hot and cold water to the receptacle or bowl and vessel, valves arranged in such pipes for controlling the flow of the water therethrough, and means by which the valves in the inlet-pipe and the valve H in the upper end of the tubular valve may be operated, and the raising of the valve H from its seat in the upper end of the tubular valve positively insured whenever the valves in the inlet-pipes are opened, substantially as described.

14. The combination with a lavatory-fixture, of a metal frame adapted to be secured within the walls of the room or apartment, and means by which the fixture may be fixedly secured within the metal frame, substantially as described.

812,833. **FEED ATTACHMENT.** JAMES A. DORAN and JAMES C. DORAN, Providence, R. I. Filed Oct. 19, 1905. Serial No. 283,206.

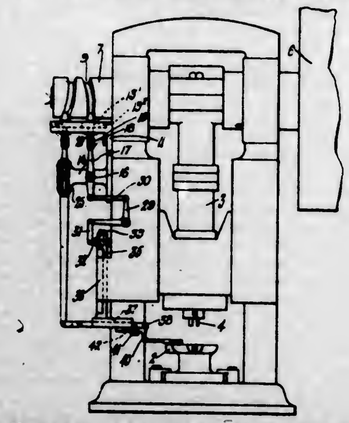

Claim.—1. In a device of the character described, the combination with a horizontally-movable slide, of a feed-finger fixed to the slide, a vertically-reciprocating guide-block in which the slide is supported, means for reciprocating the slide, and means for actuating the guide-block.

2. In combination with the frame, die, and driving-shaft of a press, of a cam upon the driving-shaft, two bars engaging the cam, a slide upon the frame, a block upon the slide, a slide in the block, a feed-finger on the second slide, pivotal connections between one cam-bar, and the second slide, and pivotal connections between the other cam-bar and the first slide.

3. In combination with the frame, die, and driving-shaft of a press, of a cam provided with two irregular channels mounted upon the driving-shaft, a bracket upon the frame, two slidable blocks in the bracket, a bar in each slide registering in each cam-channel, an arm upon the frame provided with a slot, an adjustable fulcrum-pin in the slot, a lever pivotally connected with one cam-bar and provided with a slot for receiving the fulcrum-pin, a link pivoted to the lever, a slide pivoted to the link, a feed-finger upon the slide, a second lever pivoted to the arm and pivotally connected with the second cam-bar, a bell-crank lever, a link connecting the second lever with the bell-crank lever, a second slide mounted in the frame, a link connecting the bell-crank lever with the second slide, and a block upon the second slide which supports the first slide.

812,834. **OSCILLATING CEMENT-KILN.** BYRON H. ELLERD, Brooxville, N. Y., assignor to Combustion Utilities Company, New York, N. Y., a Corporation of New York. Filed Jan. 23, 1905. Serial No. 242,220.

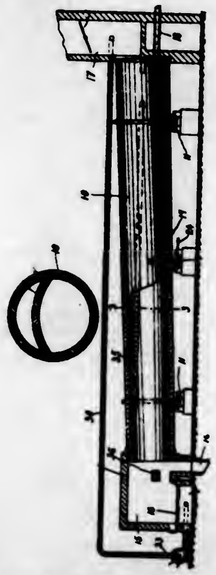

Claim.—1. A cement-kiln having an inclined barrel provided with flame-producing means at its lower end, and at its higher end a stack and material-supplying means, said barrel having refractory interior walls forming a combustion-chamber of flattened internal cross-section tapering from a larger vertical diameter at the lower end to a smaller vertical diameter at the stack end, and means for automatically rocking said kiln.

2. A cement-kiln comprising a prone combustion-chamber whose interior tapers from a larger diameter at one end to a smaller diameter at the other end, flame-producing means at the larger end, an outlet at the smaller end for products of combustion, means to supply cement-forming material to the smaller end, and a double roof for said kiln, including a dead-air space.

3. A cement-kiln comprising an inclined oscillatory barrel having a refractory floor curved to a relatively short radius and a refractory roof curved to a longer radius, whereby the lateral diameter exceeds the vertical diameter, means to supply cement-forming material at the higher end, means to automatically rock said barrel, and flame-producing means at the lower end.

4. A cement-kiln comprising an inclined oscillatory barrel having a refractory floor curved to a relatively short radius and a refractory roof curved to a longer radius, whereby the lateral diameter exceeds the vertical diameter, said floor and roof approaching each other in the direction of the higher end, means for passing a stream of material through said barrel from the higher to the lower end, and means for passing a flame through said barrel in the opposite direction.

5. A cement-kiln comprising an inclined oscillatory barrel of cylindrical exterior form, and a flattened refractory wall crossing the intermediate portion of the interior of said barrel and forming the roof of the combustion-chamber.

6. A cement-kiln comprising an inclined oscillatory barrel having a combustion-chamber tapering toward the higher end of the barrel, a stack at the higher end, a seat of combustion at the lower end, and means for supplying through said seat a draft-current of air and neutral products of combustion in predetermined proportion.

7. A cement-kiln comprising an inclined barrel having refractory inner walls forming a combustion-chamber of larger lateral than vertical diameter and tapering from the lower toward the higher end of the barrel, a stack and material-supplying means at the higher end, a clinker-outlet at the lower end, an exterior furnace at the lower end having grate, ash-pit below the grate and fire-chamber above opening into the barrel, a return-conduit for products of combustion connecting the stack with the ash-pit, a fan-blower in said conduit, an air-inlet to said conduit on the suction side of the fan, and means for regulating the relative quantities of air and products of combustion in the draft-current supplied to the ash-pit.

8. A cement-kiln comprising an inclined rotatory barrel, a refractory floor for feeding the material, curved on a circle concentric with the axis of rotation, a low refractory roof lying within the circle if completed, and means to automatically impart oscillatory movement to said barrel to feed the material.

9. A cement-kiln comprising an inclined barrel having combustion-chamber with refractory walls and of greater lateral width than vertical height, means to supply cement-forming material at the higher end, means to project a flame from the lower end, and means to automatically rock said barrel.

812,835. **MAIL-BAG CATCHER.** JOSIAH C. ELLIFF, Wills Point, Tex. Filed June 30, 1905. Serial No. 267,759.

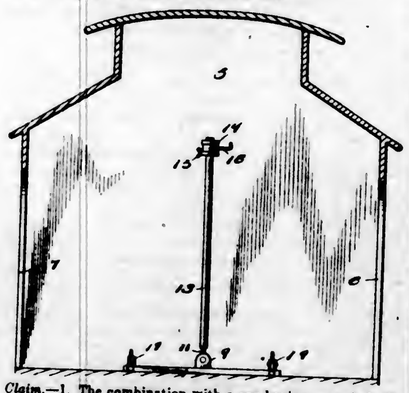

Claim.—1. The combination with a car having oppositely-disposed doors, of an arm pivoted within the car for movement to extend outwardly through either of the doors, means for holding the arm yieldably within the car, means for holding the arm in its outwardly-projected position and a bag-receiving device carried by the outer end of the arm.

2. The combination with a car having oppositely-disposed doors, of an arm pivoted within the car for movement into position to project outwardly through either of the doors, means for holding the arm yieldably within the car, means for holding the arm in its outwardly-projected position and a bag-receiving hook carried by the arm, said hook extending radially of the arm and being movable to extend in different directions, said hook being also adjustable longitudinally of the arm and being movable to change the angle of its bill to the arm.

3. A mail-catcher comprising an attaching-plate, spaced ears carried by the attaching-plate, a rod engaged in the ears, a helical spring engaged with the rod and secured at one end to the plate, an arm carried by the other end of the spring, said spring being movable to hold the arm extending upwardly from the plate, a trigger carried by the plate, said arm being movable downwardly against the action of the spring for engagement with the trigger, said spring being arranged to hold the arm in frictional engagement with the trigger to hold the latter in operative position, a weight carried by the trigger and arranged to move the latter into inoperative position when said friction is removed and a bag-receiving device carried by the arm.

4. In a mail-catcher the combination with an arm movable to extend in different directions, of a collar slidably engaged with the arm and having a circumscribing peripheral groove, a band revolubly mounted in the groove, a set-screw engaged in the collar and adapted to impinge against the arm to hold the collar against movement thereupon and a bag-receiving hook swiveled in the band.

5. In a mail-bag catcher the combination with a plate, of a bag-receiving arm pivoted to the plate for movement to extend in opposite directions parallel to the plate or to extend upwardly from the plate, means for holding the arm yieldably in its upwardly-extending position and latches carried by the plate at opposite sides of the arm and arranged for engagement with the arm to hold the latter parallel with the plate.

6. In a mail-bag catcher the combination with a plate, of an arm pivoted upon the plate for movement to extend in opposite directions laterally or to extend upwardly from the plate, means for holding the arm yieldably in its upwardly-extending position and means for holding the rod in its laterally-extending positions against the action of the first-named holding means, said arm being adapted for frictional engagement of the second-named holding means to hold said holding means in operative position and being adapted for movement under pressure applied to its outer end to permit of movement of the second-named holding means into inoperative position.

812,836. **DOP.** PHILIP H. FARRELL, Flushing, N. Y. Filed Aug. 30, 1904. Serial No. 223,767.

Claim.—1. In a dop the combination of an adjustable support for a stone, a pair of jaws pinned in a slot in the dop, a hook extending from one end of each jaw, a lug extending from the opposite end of each jaw, means connected with the lugs to move the jaws and an independent removable jaw in the dop arranged to coact with the other jaws.

2. In a dop the combination of an adjustable support, a pair of jaws pinned in a slot in the dop, a hook end extending from one end of each jaw, a lug extending from the opposite end of each jaw, means connected with the lugs to move the jaws in position, an independent removable jaw having a slot, a pin in the dop supporting the latter jaw by engaging with its slot, a screw passing through one end of the latter jaw, and bearing against a wall of the dop to secure the jaw in place.

3. In a dop the combination of a threaded stem supported in the dop, a cup-shaped support on the end of the stem, a screw in the dop at right angles to said stem, a washer between the end of the screw and the said stem, the end face of the washer threaded to fit the threads of said stem a detachable jaw pinned in the dop, a hooked end extending from the jaw to clamp a stone on the support, a screw in the other end of the jaw and arranged to bear against a wall of the dop to secure the said jaw in place.

4. In a dop the combination of a stem, a cup-shaped support for a stone on the end of the stem, means to secure the stem in position, a pair of jaws pinned in a slot in the dop, a hook extending from one end of each jaw, a lug extending from the opposite end of each jaw, threaded thimbles in a cylindrical opening in the dop, the said opening connecting with the said slot, a screw having a right-handed and a left-handed thread connecting the thimbles, means to turn the screw, prongs extending from each thimble and embracing the lugs of the jaws, a stem in the dop engaging the screw to maintain it in place, an opening in the dop for a supporting-stem parallel to the stem of the support and a second opening for the supporting-stem inclined to the first opening.

812,837. **PROCESS OF WATERPROOFING TWINE.** HARRY FISHER, New York, N. Y. Filed Aug. 26, 1903. Serial No. 170,800.

Claim.—The process of waterproofing twine consisting in treating a strip of material with casein and subsequently, after twisting the strip into a twine, treating the twisted twine with formaldehyde.

812,838. **GRAIN-DOOR FOR CARS.** JOHN FROCHT, Brainerd, Minn. Filed Apr. 27, 1905. Serial No. 257,696.

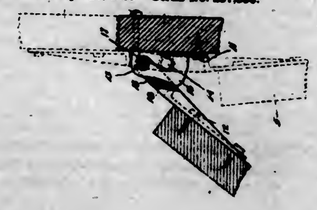

Claim.—The combination with the door-sections 4 and 5, of the hinge member 7 secured to said door-section 4 and having a bearing-shoulder 15, and an approximately vertical seat 14, having an outwardly-projecting seat 13, and the hinge member 6 secured to said sections 5 and provided with the ears 16, tie-bar 17 and bearing-shoulder 18, said shoulders 15 and 18 being held in engagement when said tie-bar 17 is engaged with said seat 13 to support the door-section 5 in an outwardly-inclined position, substantially as described.

812,889. GRAIN-DOOR LOCK. JOHN PRUCHT, Brainerd, Minn. Filed Apr. 27, 1905. Serial No. 257,220.

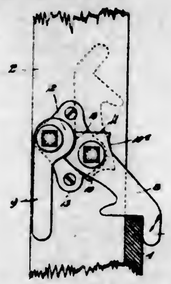

Claim.—1. A lock of the character described comprising a pivoted dog and a lever, said dog having a stub-arm formed between concave cylindrical cam-seats, and said lever having an eccentric cam engageable with said stub-arm and fitting in said seats, to lock said dog in either of two positions, substantially as described.

2. The combination with a grain-door, of a lock therefor comprising a pivoted dog 8 and a coöperating lever 9, said dog 8 having the hooked end 8ª for action on the door, and having a stub-arm 11 formed between cylindrical cam-seats 10-10ª, and said lever 9 having an eccentric cam 12 engageable at will with said seats 10 and 10ª to lock said dog respectively in operative and in inoperative positions, and operative on said stub-arm 11 to impart pivotal door-clamping movements to said dog, substantially as described.

812,840. REVERSING-VALVE. WILLIAM A. FIELD, EUGENE B. CLARK, 2nd, and FRED WILSON, Chicago, Ill., assignors to Wellman, Seaver, Morgan Company, Cleveland, Ohio, a Corporation of Ohio. Filed June 10, 1904. Serial No. 211,968.

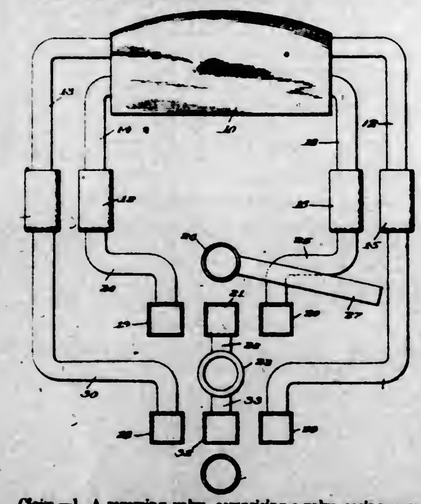

Claim.—1. A reversing-valve, comprising a valve-casing, a reversing-bonnet, mechanism for moving said bonnet, mechanism for raising said bonnet from one position and carrying it over and depositing it in another position, and fluid-pressure mechanism for automatically applying greater power to said bonnet during the lifting movement thereof and less power during the descending movement thereof, substantially as described.

2. A reversing-valve, comprising a valve-casing, a reversing-bonnet, mechanism for moving said bonnet, mechanism for raising said bonnet from one position and carrying it over and depositing it in another position, and means for applying greater power to said bonnet during the lifting movement thereof and less power during the descending movement thereof and for automatically increasing the speed thereof during the intermediate portion of its movement, substantially as described.

3. A reversing-valve, comprising a valve-casing, a reversing-bonnet therein, fluid-pressure mechanism for operating said bonnet, said operating mechanism having fluid-pressure-actuated means for applying greater power initially to said bonnet and afterward reducing the power applied thereto, substantially as described.

4. A reversing-valve, comprising a valve-casing, a reversing-bonnet therein, mechanism for operating said bonnet, said operating mechanism having means for applying greater power initially to said bonnet and afterward reducing the power applied thereto, and means for automatically increasing the speed of said bonnet during the intermediate portion of its movement, substantially as described.

5. A reversing-valve, comprising a valve-casing, a reversing-bonnet therein, mechanism for operating said bonnet, said operating mechanism having means for applying greater power initially to said bonnet, means for automatically increasing the speed of said bonnet during the intermediate portion of its movement, and means for reducing the speed of said bonnet toward the end of its movement, substantially as described.

6. A reversing-valve, comprising a valve-casing, a reversing-bonnet therein, guides for said bonnet having their end portions downwardly inclined and their intermediate portions substantially horizontal, mechanism for operating said bonnet, said operating mechanism having means for applying greater power to the bonnet when moving up said inclined portions of said guides and for reducing the speed thereof when descending said inclines, and means for increasing the speed of said bonnet when moving over the horizontal portions of said guides, substantially as described.

812,841. TELEPHONE MEMORANDUM ATTACHMENT. FRANK B. GILBERT, Minneapolis, Minn. Filed Jan. 16, 1906. Serial No. 241,223.

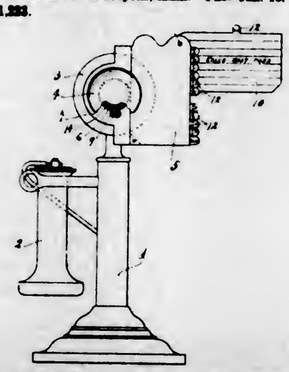

Claim.—A telephone attachment comprising a case 5, having the clamping-ring 6 and coöperating perforated web 7, the perforation 8 of said web being alined with said clamping-ring, and adapted to fit the threaded shank of a telephone-mouthpiece, and which clamping-ring is adapted to embrace said mouthpiece, a nutted bolt applied to the ends of said clamping-ring, and memorandum-cards applied within said case, substantially as described.

812,842. MILKING APPARATUS. ERRA B. GOSS, Waterloo, Iowa, assignor to The Sanitary Cow Milking Company, Minneapolis, Minn., a Corporation of Iowa. Filed June 19, 1903. Serial No. 161,574.

Claim.—1. In a milking apparatus, a device for producing pulsations comprising a weighted, normally seated valve, having an axial port and radial branch ports, which branch ports are normally closed, but which ports are in constant communication with the atmosphere, substantially as described.

2. In a milking apparatus, the combination with one of the air-pipes having a depending section 4ª, of a plug 14 in the lower end of said section 4ª, a weighted valve 15 having a tapered seat in said plug 14, said valve having the axial port 16 and flaring radial port 17, which ports 17 are normally closed and which ports 16 and 17 are in constant communication with the atmosphere, substantially as described.

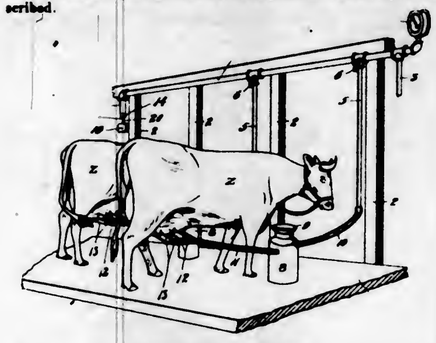

812,843. SHIFTING THILL. THOMAS GRANT, Kalamazoo, Mich., assignor of one-half to The Michigan Buggy Company, Kalamazoo, Mich. Filed Mar. 13, 1905. Serial No. 249,845.

Claim.—1. The combination of a relatively stationary draft-bar having a pair of draft-rods arranged on the front thereof and parallel thereto; a shifting bar; connecting-clips for said bars, having holes therein adapted to receive the said draft-rods of said draw-bar, rigidly secured to said shifting bar, said clips being conformed to engage the forward face and under side of said draft-bar; hooks on said shifting bar; a forwardly-projecting spring on said draw-bar; a lever pivoted thereto; a loop on said lever adapted to engage said hooks on said shifting bar, said loop being pivoted to said lever at a point so related to its pivotal point as to lock the parts when the lever is in its rearward position, for the purpose specified.

2. The combination of a relatively stationary draft-bar; a shifting bar; connecting-clips for said bars; hooks on one of said shifting bars; a spring on the other bar; a lever pivoted to said spring; a loop on said lever adapted to engage said hooks, said loop being pivoted to said lever at a point so related to its pivotal point as to lock the parts when the lever is in its rearward position, for the purpose specified.

3. The combination of a relatively stationary draft-bar; a shifting-bar; connecting-clips for said bars; hooks on one of said bars; a spring carried by the other of said bars; and means for engaging said hooks carried by said spring, for the purpose specified.

4. The combination of a relatively stationary bar; a shifting bar; connecting-clips for said bars; a spring carried by one of said bars; and means for engaging the other bar carried by said spring, whereby said bars are locked together under spring tension, for the purpose specified.

5. The combination of a fixed bar; a shifting bar; forwardly-projecting clips secured to said fixed bar on which said shifting bar is mounted; a spring carried by one of said bars; and means for engaging the other bar carried by said spring, whereby said shifting bar is locked in its adjusted position under spring tension, for the purpose specified.

812,844. BOILER. SAMUEL HALLADEN, Vancouver, Canada. Filed Oct. 10, 1905. Serial No. 282,888.

Claim.—1. In a boiler of the class described; the combination with two base-pipes situated one on each side of the furnace, of a steam-drum above such base-pipes, stay-rods passing through said drum, a series of loosely-fitting partitions within said steam-drum and supported by said stay-rods, down-pipes exterior to the furnace-chamber connecting the base-pipes to the steam-drum, a series of steam-generating pipes between the base-pipes and the steam-drum such generating-pipes extending vertically upward from the base-pipe a short distance and thereafter passing back and forth across the furnace, each series of pipes from each base-pipe being connected to the same side of the steam-drum on which the base-pipe is to which they are connected, a foundation-frame in which the base-pipes rest supporting the bars of the furnace, and a casing inclosing the steam-generating pipes and that portion of the base-pipes and steam-drum to which they are connected.

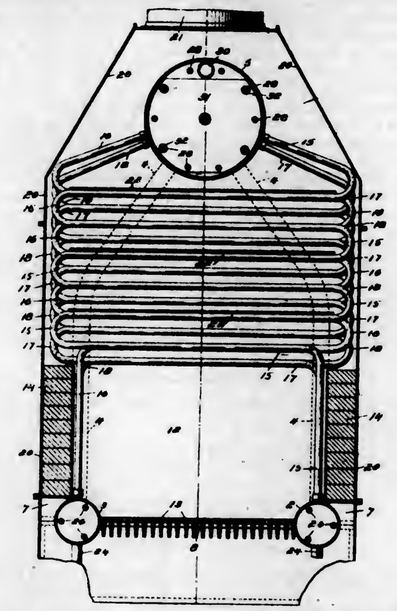

2. In a boiler of the class described; the combination with two base-pipes extending along each side of the furnace and having their ends projecting beyond the furnace-casing, of a steam-drum in the middle line of the boiler above the base-pipes and similarly extending beyond the casing of the flue-space, stay-rods passing through said drum, a series of partition-plates loosely fitted on said stay-rods within said drum to extend across the drum, down-pipes from the under side of the ends of the drum exterior to the flue-casing to the similarly-projecting ends of the base-pipes, means for supporting the base-pipes and retaining them in position, a front plate provided with a furnace-doorway and a back end plate, such front and back plates being connected to the base-frame, furnace-bars suitably supported between the base-pipes, a series of steam-generating pipes inserted into the upper side of the base-pipes and extending upward a sufficient distance to clear the furnace and thereafter bent backward and forward across the furnace between it and the steam-drum each series of pipes being inserted into the steam-drum in the same side as the base-pipe is to which they are secured at the lower end, the apertures in the drum to which the steam-generating pipes are connected being pitched zigzag and the pipes to the upper line of apertures being so bent that the horizontal portion of them will in cross-section of the boiler be pitched between the horizontal portion of the pipes which are connected to the lower line of the apertures in the drum, and a casing inclosing the furnace and flue-space and extending upward to include the steam-drum.

3. In a boiler of the class described; the combination with two base-pipes and a steam-drum above them, of a series of steam-generating pipes connecting the base-pipes and drum, which generating-pipes are bent back and forth across the furnace, down-pipes exterior to the furnace and flue-spaces connecting the base-pipes to the steam-drum, a series of baffles among the cross-pipes extending alternately from the front plate to a short distance from the back plate and from the back plate to a short distance from the front plate, such baffles being placed in the open loops of the pipes of each side so that any one pipe may be removed without disturbing the other pipes or the baffles.

4. In a boiler of the class described; the combination with base-pipes on each side of the furnace, of a steam-drum in the middle line

above said base-pipes, a series of stay-rods running from end to end within the drum, loosely-fitting partition-plates held on said stay-rods and arranged across the steam-drum, down-pipes external to the furnace or flue-space connecting the steam-drum to the ends of the base-pipes and cross-pipes within the furnace connecting the drum with the base-pipes substantially as shown and described.

5. In a boiler of the class described; the combination with a side casing 30 forming the side wall of a furnace and having a non-conducting lining, of the end plates 9 and 10 inclosing the ends of the furnace, the casing 6 inclosing the ends of the flue-space, the smoke-stack 21, the base-pipes 2 and 3 the ends of which project beyond the end walls of the furnace-chamber, the steam-drum 5 within the upper part of the flue-space and having ends projecting beyond the ends thereof, the down-pipes 4 from the outer ends of the steam-drum to the outer ends of each base-pipe, the steam-generating pipes 15, 16, 17 and 18 from the base-pipes to the steam-drum, the baffles 22 extending alternately from the front plate to a short distance from the back plate and from the back plate to a short distance from the front plate, and the partition-plates 31 secured within the steam-drum.

6. In a boiler of the class described; the combination with base-pipes on each side of the furnace, of a steam-drum in the middle line above said base-pipes, a series of stay-rods running from end to end within the drum, loosely-fitting partition-plates held on said stay-rods and arranged across the steam-drum, down-pipes external to the furnace or flue-space connecting the steam-drum to the ends of the base-pipes, a plurality of cross-pipes connecting the steam-drum with the base-pipes, and a series of baffles among the cross-pipes.

812,845. **KINEMATOGRAPHIC CAMERA.** MAX HANSEN, Berlin, Germany. Filed Apr. 7, 1905. Serial No. 254,396.

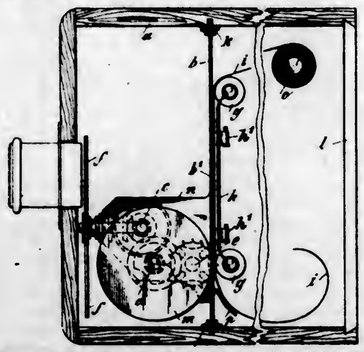

Claim.—1. In a kinematographic camera, in combination, a camera-body, a perforated support in the body of the camera, actuating mechanism presenting feed-drums mounted entirely on the front of the support, film-guiding means and film-pressing means carried on the back thereof, and a film-band located on the rear side of the support and fed by the said drums and constantly forced against them by the said pressing means and running with unconstrained motion, as differentiated from those devices provided with positive winding means, substantially as described.

2. In a kinematographic camera, in combination, a camera-body, a removable perforated support fitting into the camera-body, actuating mechanism mounted entirely on the front side of the support, film-guiding means carried on the back thereof, and a film-band located on the rear side of the support and fed by the said actuating mechanism and running with unconstrained motion, as differentiated from those devices provided with positive winding means, substantially as described.

3. In a kinematographic camera, in combination, a camera-body, a removable perforated support fitting into the camera-body, actuating mechanism mounted entirely on the front side of the support, and film-guiding means carried on the back thereof, substantially as described.

4. In a kinematographic camera, in combination, a camera-body, a removable perforated support fitting into the camera-body and dividing it into a front and a rear chamber, actuating mechanism mounted on the front side of the support, and film-guiding means carried on the back thereof, substantially as described.

5. In combination, a camera-body having a removable back, a removable perforated support in the camera-body, actuating mechanism mounted on the front side of the support, film-guiding means carried on the back thereof, and a film-band located on the rear side of the support and fed by the said actuating mechanism and running with unconstrained motion, as differentiated from those devices provided with positive winding means, substantially as described.

812,846. **LIQUID-WEIGHING MACHINE.** CHRISTIAN J. HEDEMANN, Honolulu, Hawaii. Filed Apr. 15, 1905. Serial No. 255,794.

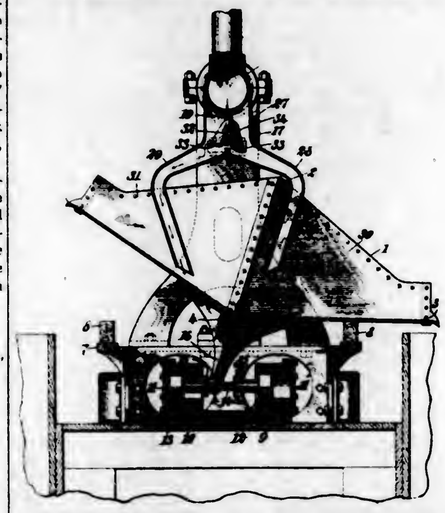

Claim.—1. A weighing-machine comprising a tilting or rocking tray divided into two compartments, a feed-pipe over the tray, a casing attached to the feed-pipe, tubes leading from said casing to the compartments of the tray, and a rocking deflector arranged in the casing and operated by movements of the tray.

2. A weighing-machine comprising a tilting or rocking tray divided into two compartments, a feed-pipe over the tray, a casing attached to the feed-pipe, tubes leading from said casing to the compartments of the tray, a rocking deflector arranged in the casing and operated by movements of the tray, and a shifting weight supported on the tray.

3. A liquid-weighing machine comprising a tray divided into two compartments having outlets at their outer ends, trunnions on which said tray is mounted, a feed-pipe arranged above the tray, a casing attached to the feed-pipe, pipes leading from the casing to the compartments of the tray, a substantially V-shaped deflector arranged in the casing, a rock-shaft on which the deflector is mounted, an arm attached to one end of said rock-shaft, a lever having connection with said arm, a retarding-spring for the lever, rollers mounted on the lever, spring-pressed tappets carried by one of the trunnions and adapted for engagement with said rollers, and means for adjusting said tappets toward and from each other.

812,847. **TROLLEY-WHEEL.** JOHN HEMSLEY, Huntington, Ind. Filed Nov. 6, 1905. Serial No. 286,079.

Claim.—1. A trolley-wheel, comprising a hub having a lubricant-cavity therein and a circular opening in communication with the cavity in the hub, a shaft passing through the ends of the hub and having a circumferential groove therein in communication with the circular opening in the hub, and said shaft having a lubricant-channel passing longitudinally through the shaft from one end and having its inner end in communication with said circumferential groove in the shaft.

2. A trolley-wheel, comprising a hub having a lubricant-cavity extending around within the same, said hub having a circular opening in communication with the cavity, and said hub also having an opening extending longitudinally of the hub and in communication with the cavity and through which the lubricant is fed to the shaft, a shaft passing through the hub and having a circumferential groove therein in communication with the circular opening in the hub, and said shaft having a lubricant-channel passing longitudinally through the shaft from one end and having its inner end in communication with said circumferential groove in the shaft.

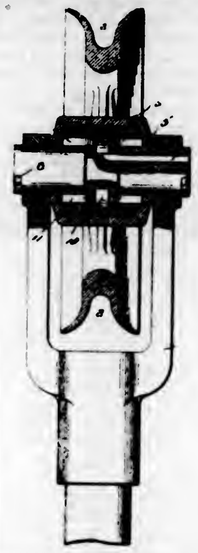

812,848. **AMUSEMENT DEVICE.** TIMOTHY C. HURST, New York, N. Y. Filed May 11, 1905. Serial No. 260,033.

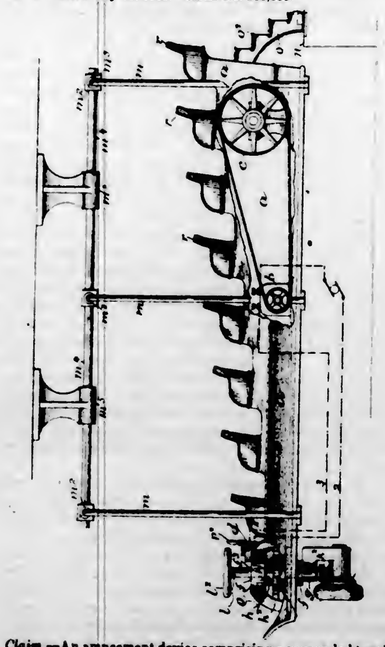

Claim.—An amusement device comprising a suspended touring-car, vertically-arranged shaft journaled in a sleeve in the floor of said car, a wheel at the upper end and a beveled gear at the lower end of said shaft, a bearing on said shaft between the beveled gear and sleeve, provided with an elbow, a wheel journaled in the lower part of said elbow and provided with a beveled gear meshing with the first-mentioned beveled gear, a thrust-block surrounding said shaft above said sleeve, a threaded sleeve between said thrust-block and said first-mentioned sleeve, and a spider nut on said threaded sleeve, and an unbalanced wheel mounted within the car.

812,849. **MIXING-MACHINE.** CHARLES JAQUET, Strassburg-Königshofen, Germany. Filed Jan. 3, 1905. Serial No. 239,501.

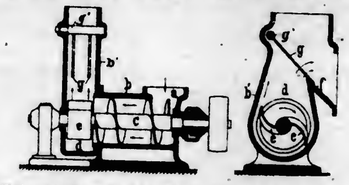

Claim.—1. In a machine of the type set forth, a main casing horizontally disposed, a second casing vertically disposed and mounted on one end of said main casing and having its lower end projecting below the bottom of said main casing, a shaft arranged in both of said casings, a screw on said shaft extending the length of said main casing, a beater on the opposite end of said shaft, the diameter thereof being substantially the same as that of the screw.

2. In a mixing-machine, a main casing provided with an inlet, a vertical casing formed with an inclined outlet disposed transverse to said main casing, a shaft extending through both of said casings, a screw arranged on said shaft within and extending throughout said main casing, a beater arranged on said shaft and occupying the space of said vertical casing and comprising curved blades, said vertical casing extending below said main casing, the diameter of said beater being substantially the same as that of said screw, regulating-forks pivoted in the outlet end of said vertical casing, and a pivot for said forks extending parallel with said shaft.

812,850. **WINDOW-SCREEN.** DANIEL W. KEITH, Keithville, La. Filed Sept. 6, 1905. Serial No. 277,169.

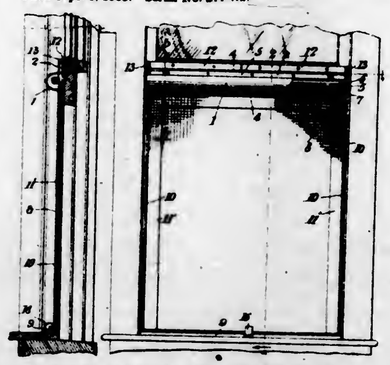

Claim.—1. A screen-casing having an attaching-flange at one edge and a slot at the opposite edge, a roller supported for rotation in said casing and having spur-wheels at the ends thereof, a flexible screen upon the roller, a cleat at the free edge of the screen, and rack-bars connected with said cleat and extending through the screen-casing in engagement with the spur-wheels.

2. A screen-casing having a slot, a roller supported for rotation in said casing and provided with spur-wheels, a screen connected with the roller and extending through the slot, a cleat at the free edge of the screen, rack-bars connected with the cleat and projecting through the casing in engagement with the spur-wheels, and fenders connected with the casing beneath the rack-bars.

3. The combination with a window-sash, of a screen-casing connected therewith having a slot, a roller supported for rotation in said casing and having spur-wheels, a screen connected with the roller and extending through the slot in the casing, a cleat connected with the free edge of the screen, rack-bars connected with the cleat and projecting through the casing in engagement with the spur-wheels,

and means for detachably connecting the cleat with the window-

for reciprocating said bar and table toward and from a fixed

and means for detachably connecting the cleat with the window-casing.

4. The combination with a window-sash, of a screen-casing connected therewith and having a slot, a roller supported for rotation in said casing and having spur-wheels, a flexible screen connected with the roller and extending through the slot in the casing, a cleat connected with the free edge of the screen, rack-bars connected with the cleat and projecting through the casing in engagement with the spur-wheels, fender-strips connected with the cleat and extending beneath the rack-bars and between the screen-casing and the sash-rail upon which the latter is mounted, and auxiliary overlapping fender members having upturned ends engaging the fender-strips and the rack-bars.

5. The combination with a window-sash, a casing connected therewith, a screen-carrying roller in said casing, a cleat at the free edge of the screen, and spur-wheels upon the screen-carrying roller; of rack-bars connected with the cleat and projecting through the casing in engagement with the spur-wheels, and loops or guards for the reception of the free ends of the rack-bars upon the rail of the sash opposite to that with which the screen-casing is connected.

812,851. TROLLEY FOR ELECTRIC CARS. JOHN H. KIEFER, Indiana, Pa. Filed Aug. 5, 1904. Serial No. 219,063.

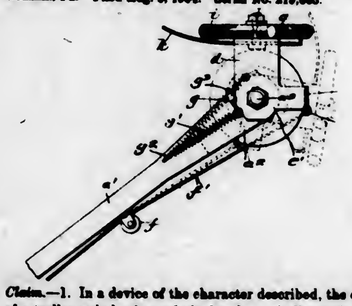

Claim.—1. In a device of the character described, the combination of a trolley-pole having a forked end, a spindle carried by said forked end, a trolley-wheel journaled thereon, a clip pivotally mounted upon said spindle, an upwardly-projecting extension integral with said clip, a turnstile carried by said clip, and means to hold said clip in an erect position.

2. In a device of the class described, the same comprising the usual trolley-pole having forked end, a spindle carried by said forked end, a trolley-wheel journaled thereon, a clip pivotally mounted upon said spindle, an upward extension integral with said clip, a turnstile carried by said clip, and having radially-extending curved arms, means to protect said turnstile, and means to hold said clip in an erect position.

812,852. MACHINE FOR FORMING SAND CORES. CLARENCE C. KERR, Johnstown, Pa., assignor to The Lorain Steel Company, a Corporation of Pennsylvania. Filed July 21, 1903. Serial No. 166,469.

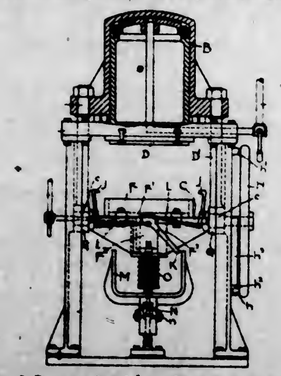

Claim.—1. In a core-forming machine, the combination of an invertible table, a core-box mounted thereon, power-operated means for reciprocating said box and table toward and from a fixed platen, a power-operated ejector carried by the said table, means for inverting said table and for retaining the core therein during inversion, and a movable core-receiving support below the said table.

2. In a core-forming machine, the combination of a fixed platen, an invertible table mounted below said platen to reciprocate toward and away from the same, a core-box mounted on said table, a power-operated ejector carried by said table, and a support for receiving the inverted ejected core.

3. In a core-forming machine, the combination with a fixed platen, of vertical guides below the same, a core-box-supporting table pivotally carried in boxes which are arranged to reciprocate in said guides, and stop devices for preventing the inversion of the table on its pivots except at a certain position.

812,853. SAW-DRIVE. WILFRED LEWIS, Philadelphia, Pa. Filed Dec. 17, 1904. Serial No. 237,231.

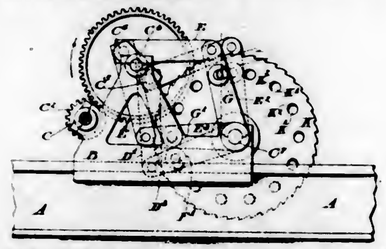

Claim.—1. Driving mechanism for rotary-saw blades having in combination an oscillating arm swinging on the axis of the saw, means for oscillating said arm and a clutch on said arm arranged to engage the saw-blade near but within its periphery when the arm moves in one direction and to disengage the saw-blade when the arm moves in the other direction.

2. Driving mechanism for rotary-saw blades having in combination a plurality of oscillating arms swinging on the axis of the saw, means for oscillating said arms, as described and so that they move in the same direction at different times, and a clutch on each said arm arranged to engage the saw-blade near but within its periphery when the arm moves in one direction and to disengage the saw-blade when the arm moves in the other direction.

3. Driving mechanism for rotary-saw blades having in combination an oscillating arm swinging on the axis of the saw, means for oscillating said arm, and a clutch on said arm arranged to engage the saw-blade without lateral thrust and near but within its periphery when the arm moves in one direction and to disengage the saw-blade when the arm moves in the other direction.

4. Driving mechanism for rotary-saw blades having in combination a saw-blade having near its periphery an annular series of transverse perforations, an oscillating arm swinging on the axis of the saw-blades, means for oscillating said arm and a spring-latch H, carried by the arm in position to register with and engage the perforations in the saw-blade as described.

5. Driving mechanism for rotary-saw blades having in combination a saw-blade having near its periphery an annular series of transverse perforations, a plurality of oscillating arms swinging on the axis of the saw-blade, one or more of said arms being situated on one side of the saw and one or more on the other side, means for oscillating said arms and a spring-latch H, carried by each arm in position to register with and engage the perforations in the saw-blade as described.

6. Driving mechanism for rotary-saw blades having in combination two oscillating arms pivoted on the axis of the saw-blade on each side thereof, a driving-shaft having two oppositely-extending cranks, two connecting-rods extending in different directions from each crank and connecting with the oscillating arms as described so as to move the two arms on the same side of the blade at different times in the same direction, and a clutch on each swinging arm arranged to engage and drive the saw-blade when moved in one direction and to disengage the blade when moved in the opposite direction.

812,854. VENEER-BENDING MACHINE. HERBERT O. LITTLE, Ingersoll, Canada, assignor to The Ontario Fruit Package Company, (Limited,) Ingersoll, Canada, a Corporation of Canada. Filed June 21, 1905. Serial No. 266,271.

Claim.—1. A machine for bending sheets of veneer comprising a form having edges about which the blanks are to be bent, moistening devices in line with said edges and arranged to engage opposite sides of a blank being fed to the form and moisten the same only on the lines of bend, bending-leaves supported to move in curved paths about the edges, and mechanism for operating said bending-leaves.

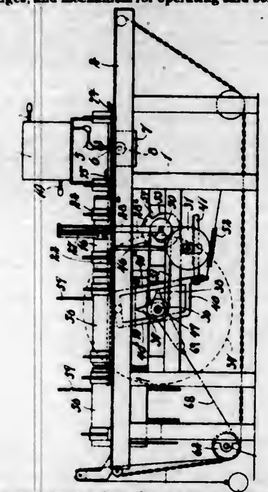

2. A machine for bending sheets of veneer comprising a form having edges about which the blanks are to be bent, a table in front of said form arranged to hold a sheet in position to be fed to the form, moistening devices set into the table approximately flush with the supporting-surface thereof and in line with the edges of the form for engaging and moistening the under side of the sheet on the lines of bend as the sheet is fed to the form, moistening devices above the table for wetting the upper side of the sheet on the same lines, bending-leaves supported to move in curved paths about the edges, and mechanism for operating said bending-leaves.

3. A bending-machine comprising a moistening device, a form, a bender arranged to carry a portion of a sheet of stock about the form, a clamp movable toward and from the side of the form, mechanism for moving the clamp toward the form after the bending operation to engage the bent portion of the stock and hold the same beside the form, and drying means adjacent the form constructed to closely confine and hold the stock in the shape given it by the form and to dry the stock while so holding it.

4. A bending-machine comprising a moistening device, a bending-form, a bender arranged to carry a portion of a sheet of stock about the form, a clamp adjacent the form, mechanism for moving said clamp toward the form to engage the bent portion of the stock and hold the same beside the form, a drying-form in line with the bending-form of a shape similar thereto with means for confining and holding the stock in the shape given it by the bending-form, and provisions for heating said drying-form.

5. A veneer-bending machine comprising a fixed form, having a flat surface and an edge, a bending member movable in a curved path about said edge, mechanism for oscillating said bending member in such path to engage and carry a portion of a sheet of veneer about said edge and then release the sheet, a clamp movable toward and from the form, and mechanism for moving said clamp toward the form to hold the bent portion beside the form as the same is released by the bending member.

6. A bending-machine comprising a form having edges, bending members supported and guided to move substantially concentrically about such edges, and means for simultaneously oscillating said bending members in opposite directions comprising an endless flexible driving element arranged with two stretches moving oppositely, each stretch being connected with one of the benders and means for moving said driving element first in one, and then in the opposite direction.

7. In a machine of the character described having bending members, means for operating said members, comprising an oscillatory shaft bearing wheels, and an endless flexible driving element passing over said wheels and guided in parallel stretches in the directions of movement of said members, one stretch being crossed over the other, whereby rotation of the shaft causes the stretches of said element to be moved oppositely, and each stretch being connected to one of the bending members.

8. In a machine of the character described having bending members, means for operating said members, comprising a main driving-shaft movable in one direction, an oscillatory shaft, reciprocatory driving connections between said main and oscillatory shafts for moving the latter first in one and then in the opposite direction, and an endless flexible driving element passing over said wheels and guided in parallel stretches in the directions of movement of said members, one stretch being crossed over the other, whereby rotation of the shaft causes the stretches of said element to be moved oppositely, and each stretch being connected to one of the bending members.

9. In a machine of the character described, a pair of bending members, an endless flexible cord or belt doubled to form two parallel lengths forming loops at their ends passing across the machine, one length being connected to each bending member, a shaft approximately in the same plane with the cord, and pulleys carried by said shaft, one of the loops formed in the cord being opened and passed over one of said pulleys, and the other being crossed and passed over the other pulley, whereby movement of both pulleys in one direction drives the lengths of said cord, and thereby the bending members in opposite directions.

10. A bending-machine comprising bending instrumentalities, a continuous intermittently-movable element constructed to feed stock to said instrumentalities, a shaft engaged with said element for moving the same, a ratchet-wheel fast on said shaft, a drum loose on the shaft, a pawl carried by the drum adapted to engage the ratchet when moved in one direction, a continuously-moving main shaft having a crank, a line connected to the crank passing about the drum, and yielding means for holding said line under tension, and connections from the main shaft arranged to operate said bending instrumentalities.

11. A bending-machine comprising a form, means for bending a blank about the same, a clamp pivoted adjacent a side of the form and movable toward and away from the same, a cam arranged to act on the clamp and move the same into contact with a portion of the blank after it has been bent, and automatic mechanism for operating said cam.

12. A bending-machine comprising a bending-form, having an edge for shaping a blank to be bent, a moistening device in line with said edge, means adjacent the bending-form for bending the blank about the edge of the form, a heated drying-form in line with the bending-form constructed to hold the blank in the shape given it by the bending means, and a continuous element extending by the moistening device and the bending and drying forms for feeding the blank past the moistening device, whereby the blank is moistened on the line of bending, to the bending means and form, and thence to the drying-form.

13. In a machine of the character specified, a drive-shaft, cam members thereon arranged in different planes, a pivoted frame having sides in different planes, each side being arranged to be operated by one only of the cam members, veneer-bending mechanism and connections from said frame for operating said mechanism.

14. A machine for bending veneer comprising a form having edges, guide-plates fixed adjacent the ends of the form and having grooves curved concentrically about said edges, bending members, plates connected to the ends and projecting beyond the sides of said members having ribs extending into said grooves and supporting the bending members, means for moving said members whereby they are carried about the edges of the form and caused to bear upon and bend about such edges the projecting ends of a sheet of veneer laid on the form, and flexible sheets connected at their edges to the bending members and a fixed abutment adjacent the form, one of such connections being yielding.

15. A machine for bending veneer comprising a form having a supporting-surface and sides angularly disposed thereto, divided therefrom by abrupt edges, fixed supports adjacent the supporting-surface of the form, guide-plates connected to the supports and having cam-grooves concentric with the edges of the form, benders having projections extending into said grooves and wholly supported thereby, means for moving the benders, whereby they are caused by said grooves to travel around the edges of the form and to carry thereabout the projecting ends of a sheet of veneer laid on the supporting-surface of the form, flexible sheets secured to the supports and carried around portions of the benders, and a plurality of springs connected to the outer edge of each sheet and fixed to the benders.

16. A machine for bending veneer, comprising a form having flat surfaces and dividing edges intermediate the surfaces, bending members movable concentrically about said edges and arranged to engage portions of a blank of veneer and fold the same about the form, holders for engaging and retaining the ends of the blank adjacent the sides of the form while the benders are returned, and automatic mechanism for first operating the benders and then moving the holders toward the sides of the form.

17. A machine for bending veneer, comprising a form having flat surfaces and dividing edges intermediate the surfaces, bending members movable concentrically about said edges and arranged to engage portions of a blank of veneer and fold the same about the form, holders for engaging and retaining the ends of the blank adjacent the sides of the form while the benders are returned, a second form shaped similarly to the first and in alinement therewith, reversely-shaped holders adjacent the second form and separated therefrom by a space of a width and shape substantially identical with that of a bent blank, and provisions for heating said second form and holders.

18. A machine for bending veneer comprising a form having an upper flat supporting-surface, substantially perpendicular sides and dividing edges, supports above the form having under surfaces parallel with the upper surface of the form and extending to the edges thereof, benders normally held by said supports adjacent the outer sides thereof, being greater in an up-and-down direction than laterally and formed with narrow under surfaces extending outward in the same plane with the under surfaces of the supports and with upwardly-extending outer surfaces, flexible metal sheets each secured at one edge to one of said supports and wrapped about the lower and outer sides of one of the benders, springs yieldingly connecting the outer edges of the sheets to the benders, and mechanism for oscillating the benders about the edges of the form to carry the under surfaces of the benders into parallelism with the sides of the form and back to normal position.

19. A machine for bending veneer comprising a form having an upper flat supporting-surface, substantially perpendicular sides and dividing edges, supports above the form having under surfaces parallel with the upper surface of the form and extending to the edges thereof, guide-plates fixed to said supports having grooves curved concentrically with said edges, bending members normally located beside the supports, elongated curved ribs fitting in said grooves and rigedly connected to the ends of said members, constituting the sole supporting means for the benders and causing the same when moved to travel in paths corresponding to said grooves, and means for oscillating said bending members.

20. In a veneer-bending machine, a shaping-form having edges to shape the bends in a sheet of veneer, bending members movable about said edges to carry portions of a sheet of veneer thereabout, holders movable toward and from the sides of the form to engage and hold the ends of the bent sheet, a second form in line with the shaping-form, an endless feeding element extending longitudinally of the machine, a main drive-shaft and connections therefrom for operating the bending members, the holders and the feeding element, arranged to first carry the bending members about the form, then advance the holders toward the form, retract the bending means, and actuate the feeding element to carry the bent sheet from the shaping-form to the second form and to feed a fresh blank to the shaping-form.

21. In a veneer-bending machine, a shaping-form having edges to shape the bends in a sheet of veneer, bending members movable about said edges to carry portions of a sheet of veneer thereabout, holders movable toward and from the sides of the form to engage and hold the ends of the bent sheet, a second form in line with the shaping-form, an endless feeding element extending longitudinally of the machine, a flexible driving element having oppositely-moving portions connected to the respective bending members, a main drive-shaft, cam members rotated by the shaft for moving said driving element back and forth, cams operated by the driving-shaft for moving the holders toward and from the shaping-form, and intermittent mechanism operated by the driving-shaft for moving said feeding element.

812,855. MILKING-MACHINE. FREDRIK LJUNGSTRÖM, Stockholm, Sweden, assignor to Aktiebolaget Separator, Stockholm, Sweden. Filed Nov. 11, 1905. Serial No. 286,807.

Claim.—1. In a device of the character specified, the combination with a feed-tube and a delivery-tube, of a vessel interposed between said tubes and adapted to impart a centrifugal movement to liquid supplied thereto, and means to vent from the vessel air separated from the liquid therein by the centrifugal movement thereof.

2. In a device of the character specified, the combination with a feed-tube and a delivery-tube, of a vessel interposed between said tubes adapted to impart a centrifugal movement to liquid supplied thereto, and a conduit in said vessel to convey therefrom the air separated from the liquid by the centrifugal movement of the latter.

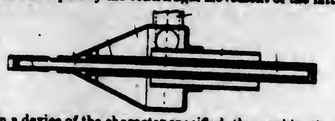

3. In a device of the character specified, the combination with a feed-tube and a delivery-tube, of a vessel interposed between said tubes and adapted to impart a centrifugal movement to liquid supplied thereto, an air-chamber in the vessel above said tubes, and a conduit to establish communication between the chamber and atmosphere.

4. In a device of the character specified, the combination with a feed-tube and a delivery-tube, of a vessel interposed between the tubes and adapted to impart a centrifugal movement to liquid supplied thereto, a tube in the vessel to convey air from the latter, and a valve on said tube operable by the air therein.

5. In a device of the character specified, the combination with a feed-tube and a delivery-tube, of a vessel interposed between the tubes and adapted to impart a centrifugal movement to liquid supplied thereto, an air-chamber in the vessel, an air-conduit leading from near the top of the chamber down into the vessel and communicating with the atmosphere, and a valve on the conduit operable by the air therein.

6. A device of the character specified comprising a vessel having an air-chamber in its top, a tube opening tangentially into the vessel, a tube axially mounted in the latter, a conduit within the latter tube extending through the top of the vessel and a conduit closed at one end opening into the air-chamber and surrounding the aforesaid conduit.

7. A device of the character specified comprising a cylindrical vessel having a conical chamber mounted thereon, a tube opening tangentially into the vessel, a tube axially mounted in the latter, a tube mounted concentrically within the latter tube extending out through the conical chamber, a valve on the outer end of said tube, a tube inclosing the latter tube closed at its bottom and extending to near the top of the conical chamber, for the purpose set forth.

812,856. METHOD OF UPSETTING METAL. HENRIK V. LOSS, Philadelphia, Pa. Filed Dec. 6, 1903. Renewed Jan. 10, 1906. Serial No. 295,461.

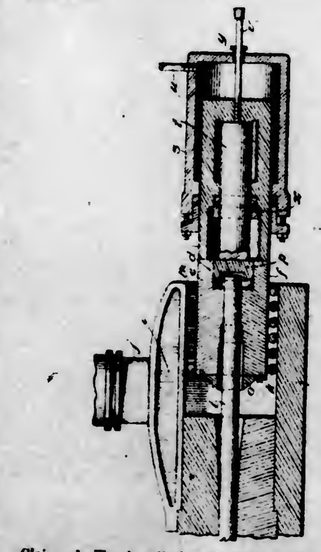

Claim.—1. The described method of upsetting a bar or billet which consists in first inclosing the bar or billet in dies longitudinally separable, causing said dies to approach one another and simultaneously applying end pressure to the bar to cause the metal to move with the dies thus swelling the metal within and between them, continuing the approachment of and completing the upsetting of the metal within and between the dies, and finally upsetting the end of the bar while held within the said dies.

2. The described method for upsetting a bar or billet, which consists in first inclosing the bar or billet in dies longitudinally separable; secondly, moving said dies toward one another and causing the metal to move with said dies in order to upset the metal within and between them, and finally upsetting the end of the bar while held within said dies.

812,857. AUTOMATIC SQUARE-CAN HEADING AND CRIMPING MACHINE. AUGUSTUS LOSS, San Francisco, Cal., assignor to American Can Company, Jersey City, N. J., a Corporation of New Jersey. Filed Mar. 19, 1904. Serial No. 198,891.

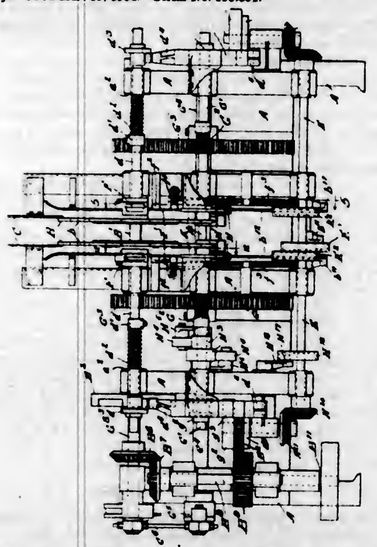

Claim.—1. In a square-can heading and crimping machine, the combination with an intermittently-rotating can-body carrier or feed wheel furnished with pockets to receive the can-bodies, and with opening and closing spring-actuated can-body clamps, of a can-body feed device or chute, can-head chutes, oscillating can-head feed-escapements for the can-head chutes, can-head guides at the base of the can-head chutes, reciprocating can-heading plungers for pushing the can-heads onto the can-bodies, reciprocating and rotating crimper-chucks, crimping-rolls mounted on oscillating arms, pattern-cams on the crimping-chuck shafts, oscillating arms having rollers engaging the pattern-cams, mechanism connecting the crimping-roller arms with the pattern-cam-roller arms, and an operating-cam for the crimping-rollers, substantially as specified.

2. In a square-can heading and crimping machine, the combination with an intermittently-rotating can-body feed-wheel having pockets to receive the can-bodies and opening and closing can-body clamps, can-head feed-chutes, can-head feed devices, reciprocating can-heading plungers, reciprocating and rotating crimping-chucks, crimping-rollers, and mechanism for operating the crimping-rollers, means for automatically and positively opening the can-body clamps substantially as specified.

3. In a square-can heading and crimping machine, the combination with an intermittently-rotating can-body feed-wheel having pockets to receive the can-bodies, opening and closing can-body clamps, can-head chutes, can-head feeders, reciprocating heading-plungers, reciprocating and rotating crimping-chucks, pattern-cams, crimping-rollers, connecting mechanism between the crimping-rollers and pattern-cams, and a pressure-cam for operating the crimping-rollers, substantially as specified.

4. The combination with can-head chutes and heading-plungers, of an intermittently-revolving can-body feed-wheel, having pockets to receive the can-bodies, and opening and closing can-body clamps, and springs for yieldingly closing the clamps, means for automatically and positively opening the can-body clamps substantially as specified.

5. The combination with can-head chutes and heading-plungers, of an intermittently-revolving can-body feed-wheel, having pockets to receive the can-bodies, and opening and closing can-body clamps, and springs for yieldingly closing the clamps, and a stationary cam for positively holding the clamps closed in the heading position, substantially as specified.

6. The combination with can-head chutes and heading-plungers, of an intermittently-revolving can-body feed-wheel having pockets to receive the can-bodies, and opening and closing can-body clamps, a spring for yieldingly closing the clamps, a stationary cam for positively holding the clamps closed in the heading position, and a movable device for positively opening the clamps, substantially as specified.

7. The combination with can-head chutes and heading-plungers, of an intermittently-revolving can-body feed-wheel having pockets to receive the can-bodies, and opening and closing can-body clamps, a spring for yieldingly closing the clamps, a stationary cam for positively holding the clamps closed in the heading position, reciprocating and rotating crimping-chucks, crimping-rollers and a movable lever for positively opening the can-body clamps at the crimping position, substantially as specified.

8. The combination with can-head chutes and heading-plungers, of an intermittently-revolving can-body feed-wheel having pockets to receive the can-bodies, and opening and closing can-body clamps, a spring for yieldingly closing the clamps, a stationary cam for positively holding the clamps closed in the heading position, reciprocating and rotating crimping-chucks, crimping-rollers and a movable lever for positively opening the can-body clamps at the crimping position, and a stationary cam for positively opening the can-body clamps at the discharge position, substantially as specified.

9. In a square-can heading and crimping machine, the combination with can-head chutes, of reciprocating heading-plungers, an intermittently-revolving can-body feed-wheel having pockets therein to receive the can-bodies, and automatically opening and closing can-body clamps, reciprocating and rotating crimping-shafts and crimping-rollers, and means for positively opening the can-body clamps at the crimping position substantially as specified.

10. In a square-can heading and crimping machine, the combination with can-head chutes, of reciprocating heading-plungers, an intermittently-revolving can-body feed-wheel having pockets therein to receive the can-bodies, and opening and closing can-body clamps, reciprocating and rotating crimping-shafts, pattern-cams and crimping-rollers, connecting mechanism between the pattern-cams and the crimping-rollers, and means for operating the crimping-rollers, substantially as specified.

11. In a square-can heading and crimping machine, a can-body feed-wheel having pockets therein to receive the can-bodies, opening and closing can-body clamps, and springs for closing said clamps, and a movable positively-operated device for opening the clamps at the crimping position substantially as specified.

12. In a square-can heading and crimping machine, a can-body feed-wheel having pockets therein to receive the can-bodies and opening and closing can-body clamps, springs for closing said clamps, in combination with a positively-operated device for automatically opening said clamps at the crimping position, substantially as specified.

13. In a square-can heading and crimping machine, a can-body feed-wheel having pockets therein to receive the can-bodies and automatically opening and closing can-body clamps, springs for closing said clamps, in combination with a stationary cam for positively closing and holding closed the clamps at the heading position, and means for automatically opening the clamps at the crimping position, substantially as specified.

14. In a square-can heading and crimping machine, a can-body feed-wheel having pockets therein to receive the can-bodies, and opening and closing can-body clamps, springs for closing said clamps, in combination with a stationary cam for positively closing and holding closed the clamps, and a movable positively-operated device for opening the clamps, substantially as specified.

812,858. AUTOMATIC ROUND-CAN HEADING AND CRIMPING MACHINE. AUGUSTUS LOSS, San Francisco, Cal., assignor to American Can Company, Jersey City, N. J., a Corporation of New Jersey. Filed Mar. 19, 1904. Serial No. 198,893.

Claim.—1. In a machine for crimping and heading filled cans, the combination with a turret or carrier for the cans, of a plurality of lower or heading plungers, a plurality of upper or crimping plungers, a plurality of can-receiving pockets, of a plurality of pairs of plungers, a plurality of sets of opening and closing jaws having crimping-faces, a

3. In a machine for embossing card-mounts, a cylindrical rotatable die and a cylindrical rotatable matrix, combined with feed and means for effecting a simultaneous but differential adjustment

Claim.—1. In a machine for crimping and heading filled cans, the combination with a turret or carrier for the cans, of a plurality of lower or heading plungers, a plurality of upper or crimping plungers, a plurality of sets of segmental opening and closing heading-jaws, furnished with bevel-faces for guiding the can-bodies into the can-heads, and with bevel-shoulders for crimping the flanges of the heads on the headed cans, means for feeding or delivering the can-bodies onto the carrier, and means for feeding or delivering the can heads or covers into the heading-jaws, means for discharging a cover when no can-body is present in the carrier to receive it, and means for continuously driving the can-carrier shaft at a lower speed while receiving the can-bodies, and at a high speed at other times, substantially as specified.

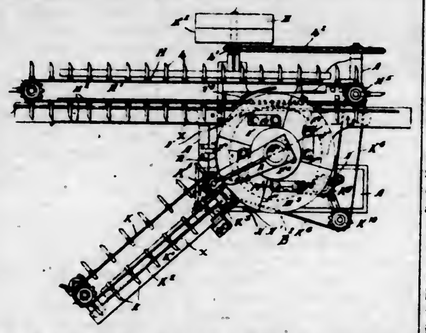

2. In a can heading and crimping machine, the combination with a pair of opposing or upper and lower movable plungers, of opening and closing segmental combined heading and crimping jaws, the upper plunger first seating the can-head in said jaws, the lower plunger then forcing the can-body through the heading-jaws into the can-head, and the upper plunger then forcing the headed can against the crimping-shoulder of said jaws and crimping the can and discharging it from said jaws, substantially as specified.

3. The combination with a pair of opposing or upper and lower movable plungers, of opening and closing jaws having bevel-faces for guiding the end of the can-body into the cover, and bevel-shoulders for crimping the cover on the can after it is headed, the upper plunger first seating the can-head in said jaws, the lower plunger then forcing the can-body through the heading-jaws into the can-head, and the upper plunger then forcing the headed can against the crimping-shoulder of said jaws and crimping the can and discharging it from said jaws, substantially as specified.

4. The combination with a can-body carrier having a plurality of can-receiving pockets, of a plurality of pairs of opposing or upper and lower movable plungers, and a plurality of sets of opening and closing jaws having inclined or flaring can-heading faces and inclined or flaring crimping-faces, the upper plunger of each pair first seating the can-head in the heading and crimping jaws, the lower plunger of each pair then forcing the can-body through the crimping-jaws into the can-head, and the upper plunger of each pair then forcing the headed can past the crimping-shoulder of the heading-jaws and out of said jaws, substantially as specified.

5. The combination with a can-body carrier having a plurality of can-receiving pockets, of a plurality of pairs of opposing or upper and lower movable plungers, a plurality of sets of opening and closing jaws having inclined heading-faces and inclined crimping-faces, and a can-body feeder, the upper plunger of each pair first seating the can-head in the heading and crimping jaws, the lower plunger of each pair then forcing the can-body through the crimping-jaws into the can-head, and the upper plunger of each pair then forcing the headed can past the crimping-shoulder of the heading-jaws and out of said jaws, substantially as specified.

6. The combination with a can-body carrier having a plurality of can-receiving pockets, of a plurality of pairs of opposing or upper and lower movable plungers, a plurality of sets of opening and closing jaws having crimping-faces, a can-body feeder, and a can head or cover feeder, the upper plunger of each pair first seating the can-head in the heading and crimping jaws, the lower plunger of each pair then forcing the can-body through the crimping-jaws into the can-head, and the upper plunger of each pair then forcing the headed can past the crimping-shoulder of the heading-jaws and out of said jaws, substantially as specified.

7. The combination with a can-body carrier having a plurality of can-receiving pockets, of a plurality of pairs of plungers, a plurality of sets of opening and closing jaws having crimping-faces, a can-body feeder, and a can head or cover feeder, said can-head feeder having a can head or cover discharge trap, substantially as specified.

8. The combination with a can-body carrier having a plurality of can-receiving pockets, of a plurality of pairs of plungers, a plurality of sets of opening and closing jaws having crimping-faces, a can-body feeder, a can head or cover feeder, said can-head feeder having a can head or cover discharge trap, said can-body carrier having a device actuated by the presence or absence of the can therein to control the operation of said can-head trap, substantially as specified.

9. The combination with a can-body carrier having a plurality of can-receiving pockets, of a plurality of pairs of plungers, a plurality of sets of opening and closing jaws having crimping-faces, a can-body feeder, a can head or cover feeder, and mechanism for continuously rotating said can-body carrier at different speeds during the can-receiving and can heading and crimping operations, substantially as specified.

10. The combination with a can-body carrier having a plurality of can-receiving pockets, of a plurality of pairs of plungers, a plurality of sets of opening and closing jaws having heading-faces and crimping-faces, a can-body feeder, a can head or cover feeder, mechanism for rotating said can-body carrier, and means for retarding the movement of said carrier while passing the can-body feeder substantially as specified.

11. In a can-heading machine, the combination with a can carrier or turret, opening and closing heading-jaws carried thereby, heading-plungers, a can-body feeder, a can-head runway furnished with a trap for discharging a can head or cover in case no can-body is present on the carrier to receive it, and means for opening said trap to discharge a cover when no can-body is present, substantially as specified.

12. In a can-heading machine, the combination with a can carrier or turret, opening and closing heading-jaws carried thereby, heading-plungers, a can-body feeder, a can-head runway furnished with a trap for discharging a can head or cover in case no can-body is present on the carrier to receive it, and means for opening said trap to discharge a cover when no can-body is present, said means comprising a movable device N on the carrier, a can-body-operated lever N^2 on the carrier for actuating said device, and a trigger R projecting in the path of said movable device N on the carrier and connected with said trap, substantially as specified.

812,859. **EMBOSSING-MACHINE.** JAMES F. LOWENHAUPT, Woodhaven, N. Y. Filed May 26, 1905. Serial No. 262,133.

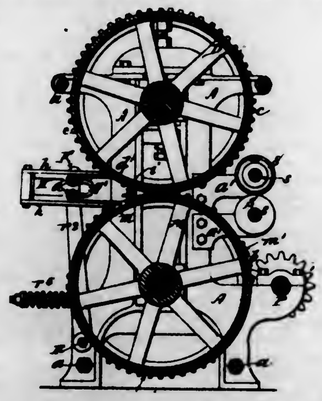

Claim.—1. In a machine for embossing, in combination with a cylindrical rotatable die and a cylindrical rotatable matrix, the cam E, rock-shaft R, levers r^2, cross-head F, rock-shafts G, grippers g', and slides H, for the purpose set forth.

2. In a machine for embossing, in combination with a cylindrical rotatable die and a cylindrical rotatable matrix, the cam E, springs r^3, rock-shaft R, levers r^2, cross-head F, rock-shafts G, grippers g', and slides H, for the purpose set forth.

3. In a machine for embossing card-mounts, a cylindrical rotatable die and a cylindrical rotatable matrix, combined with feed mechanism adapted to forward the cardboard, means coöperative with a portion of said feed mechanism for returning the grippers thereof to their normal position, a registering shoulder, and means, operable prior to the forward movement of the grippers, for tripping said shoulder to permit of the feeding of the edge of the card to the dies.

4. In a machine for embossing card-mounts, a cylindrical rotatable die and a cylindrical rotatable matrix, combined with feed mechanism adapted to forward the cardboard, means coöperative with a portion of said feed mechanism for returning the grippers thereof to their normal position, a registering shoulder, means, operable prior to the forward movement of the grippers, for tripping said shoulder to permit of the feeding of the edge of the card to the dies, a rock-shaft carrying said shoulder and having a projection, and a roller carried by the die for coöperation with said projection.

812,860. **HYDROCARBON-MOTOR.** ABBOT A. LOW, Horseshoe, N. Y. Filed Dec. 19, 1904. Serial No. 237,268.

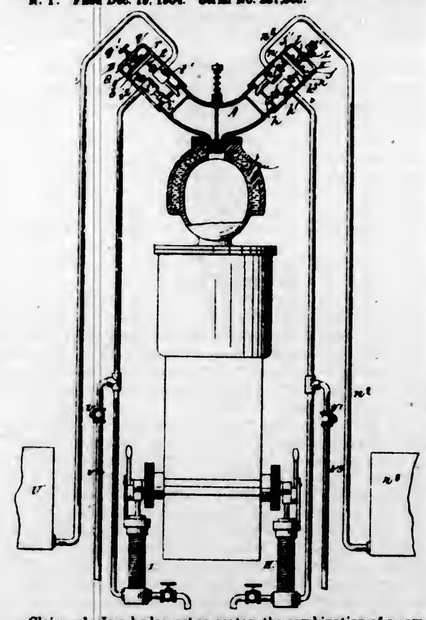

Claim.—1. In a hydrocarbon-motor, the combination of a combustion-chamber, a mixing-chamber, an inlet-valve interposed between said combustion-chamber and mixing-chamber, an intersticed screen in said mixing-chamber, means for injecting a jet of hydrocarbon fuel against said screen, means for injecting a jet of compressed air against said screen, and means for effecting a simultaneous but differential adjustment of the quantity of fuel and compressed air injected against said screen in the mixing-chamber, for the purpose described.

2. In a hydrocarbon-motor, the combination of a combustion-chamber, a mixing-chamber, an inlet-valve interposed between said combustion-chamber and mixing-chamber, an intersticed screen in said mixing-chamber, means for injecting a jet of hydrocarbon fuel against said screen, means for injecting a jet of compressed air against said screen, and means for simultaneously increasing or diminishing the quantity of fuel and compressed air injected against said screen in the mixing-chamber, for the purpose described.

3. In a hydrocarbon-motor, the combination of a combustion-chamber, a mixing-chamber, an inlet-valve interposed between said combustion-chamber and mixing-chamber, an intersticed screen in said mixing-chamber, means for injecting a jet of compressed air against said screen, the injectors being arranged convergently with relation to each other so that the jets of hydrocarbon and compressed air impinge against each other at or near the center of said screen, and means for effecting a simultaneous but differential adjustment of the quantity of fuel and compressed air injected against said screen in the mixing-chamber, for the purpose described.

4. In a hydrocarbon-motor, the combination with a mixing-chamber communicating with the combustion-chamber, of means for simultaneously supplying alcohol, and hydrocarbon to said mixing-chamber, and means for varying and adjusting the supply of compressed air thereto in a differential but prescribed proportion, for the purpose set forth.

812,861. **PENDENT OR TROLLEY-CARRIER MEAT-HOOK.** GEORGE W. MARTIN, Chicago, Ill., assignor of two-thirds to James S. Agar and David C. Roach, both of Chicago, Ill. Filed June 20, 1905. Serial No. 265,499.

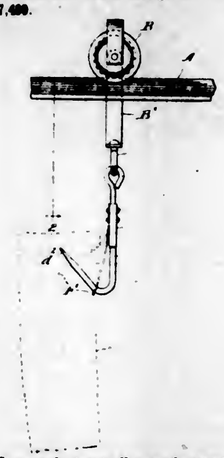

Claim.—1. In a pendent or trolley-carrier meat-hook, the combination with the trolley, of a meat-hook having a pivotal and swivel connection with the pendent arm of the trolley, and having its shank furnished with a spring-supporting block, and a hook-freeing flat curved spring secured at its upper end to the spring-supporting block on the hook-shank and extending across the mouth of the hook, and having a slot in its free end to receive the hook-prong and permit flexure of the spring, substantially as specified.

2. A pendent meat-hook having a hook-freeing spring secured to the shank portion of the hook, and projecting across the mouth of the hook to withdraw or free the hook-prong from the article suspended therefrom when it is lifted, substantially as specified.

3. A pendent meat-hook furnished with a spring to free or withdraw the same from the article suspended on the hook when it is lifted, substantially as specified.

4. A pendent meat-hook having a hook-freeing spring secured to the shank portion of the hook, and projecting across the mouth of the hook to withdraw or free the hook-prong from the article suspended therefrom when it is lifted, said hook-freeing spring having a slot at its free end to receive and accommodate the prong of the hook, substantially as specified.

812,862. **BUCKLE.** ALVIN S. MERRILL and HENRY M. HOWARD, Beulah, Mich. Filed Sept. 6, 1905. Serial No. 277,196.

Claim.—1. A buckle comprising oppositely-disposed bowed members having overlapping ends, a cross-bar integral with one of the members and extending therefrom at a point equidistant from the ends of said member, one of the ends of the cross-bar projecting into the other member at a point equidistant from the ends of said member, and constituting a pivot therefor, and a line-engaging lug extending from said bar.

2. A buckle comprising oppositely-disposed bowed members.

one of said members having its ends beveled on both sides, and the other member having each end beveled on one side, the ends of the two members being adapted to overlap, a cross-bar integral with one of the members and extending therefrom at a point equidistant from its ends, one end of said cross-bar projecting into the other member at a point equidistant from the ends thereof, and constituting a pivot for said member, and a line-engaging lug extending from the center of said bar

812,863. **FEEDING MECHANISM FOR CARDING-MACHINES.** PATRICK L. MCBRIDE, Lowell, Mass., assignor to Thomas Kennedy Miller, Crafton, Pa. Filed Apr. 24, 1905. Serial No. 257,045.

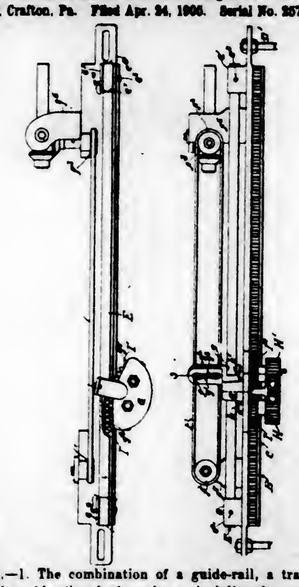

Claim.—1. The combination of a guide-rail, a traveler-body supported by said rail and adapted to swivel directly on said rail, a traveling belt or chain arranged at the rear of said guide-rail and engaging said traveler-body, a pair of gears carried by said traveler-body and engaging each other, a pair of feed-rolls, each rotary with one of said gears, and a rack normally engaging the following one of said gears.

2. The combination of a guide-rail having a flat upper surface, a traveler-body having a lateral opening, the upper surface of which is flat and rests upon the upper surface of said rail, a traveling belt or chain arranged at the rear of said rail and engaging said traveler, a pair of gears carried by said traveler and engaging each other, a pair of feed-rolls each rotary with one of said gears, and a rack to engage the following one of said gears.

3. The combination of a guide-rail having a flat upper surface, a traveler-body having an opening from side to side across the back thereof; adapted to receive said guide-rail, means for closing said opening back of said rail, said traveler-body being adapted to swivel on said rail, a traveling belt or chain arranged at the rear of said rail and engaging said traveler, a pair of gears carried by said traveler and engaging each other, a pair of feed-rolls each rotary with one of said gears, and a rack to engage the following one of said gears.

4. The combination of a guide-rail having a flat upper surface, a traveler-body having an opening from side to side across the back thereof, adapted to receive said guide-rail, a pin passing down through said traveler and opening back of said rail to retain said traveler on said rail, said traveler being adapted to swivel on said rail, a traveling belt or chain arranged at the rear of said rail and engaging said traveler, a pair of gears carried by said traveler and engaging each other, a pair of feed-rolls each rotary with one of said gears, and a rack to engage the following one of said gears.

5. The combination of a guide-rail having a flat upper surface, a traveler-body having an opening from side to side across the back thereof adapted to receive said guide-rail, said traveler being adapted to swivel on said rail, pins passing down through said traveler and opening in front of and back of said rail and having flattened surfaces to bear against said rail, said pins being free to turn in said traveler when said traveler swivels and to bear upon the front and rear of said rail when said traveler is in either of its operative positions, a traveling belt or chain arranged at the rear of said rail and engaging said traveler, a pair of gears carried by said traveler and engaging each other, a pair of feed-rolls, each rotary with one of said gears, and a rack to engage the following one of said gears.

6. The combination of a guide-rail, a traveler provided with a slot having enlarged upper and lower ends and a gradually-contracted portion midway between the ends, a traveling belt or chain having a pin to engage said slot, a pair of gears carried by said traveler and engaging each other, a rack adapted to engage the following one of said gears and feed-rolls each rotary with one of said gears.

7. The combination of a supporting-bar, provided with a longitudinal T-slot, a bolt having a head arranged in said slot and laterally movable therein, a roll-stand having a transverse rib or projection to rest on said supporting-bar and having a hole to surround said bolt and a nut to engage said bolt and to clamp said stand against said bar.

8. The combination of guide-rail stands, a guide-rail, a traveler supported on and turning with said rail, said rail being adapted to turn in said stands but provided with means for preventing its longitudinal movement therein.

812,864. **GAME-RECORDING DEVICE.** AARON S. NICHOLS, Boston, Mass. Filed Apr. 22, 1904. Serial No. 204,337.

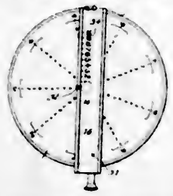

Claim.—1. The apparatus for recording game-scores consisting of a holder, a score-card adjustable in said holder for the different innings but otherwise stationary therein, and means upon the holder adapted to make a separate record upon the cord of each of a plurality of plays or strokes in each inning.

2. The apparatus for recording game-scores consisting of a holder, a score-card adjustably positioned in the holder for the different innings but otherwise stationary therein, means carried by the holder and adapted to make a separate record upon the card of each of a plurality of plays or strokes in each inning, and a device movable by the player and serving to actuate said recording means.

3. The apparatus for recording game-scores consisting of a circular holder, a circular score-card adjustably positioned in said holder for the different innings, but otherwise stationary therein, and means upon the holder adapted to make a separate record of each of a plurality of plays or strokes in each inning.

4. The apparatus for recording game-scores consisting of a holder, a score-card having separate spaces for the different innings and adjustably held in the holder, and means for making a separate record of each stroke or play occurring in an inning in the proper inning-space and adapted to make a plurality of such records depending upon the number of strokes in the inning.

5. The apparatus for recording game-scores consisting of a holder, a score-card which is both adjustable in and removable from the holder and which is divided into inning-spaces, and means carried by the holder for making a separate record of each of a plurality of strokes occurring in an inning.

6. The apparatus for recording game-scores consisting of a holder, a score-card which is both adjustable in and removable from the holder, a series of devices stationarily located in the holder and each adapted to record a separate stroke, and a device movable by the player and serving to actuate all or any portion of such devices necessary to record a plurality of plays occurring in an inning.

7. The apparatus for recording game-scores consisting of a circular holder, a circular score-card which is both adjustable in and removable from the holder, and which is divided into inning-spaces, and a series of recording devices each adapted to record a separate play and the series being adapted to record a plurality of plays in each inning-space.

8. The apparatus for recording game-scores consisting of a score-card, a holder for such card, means for recording upon the card, and devices for actuating the recording means, said recording means consisting of a series of spring puncturing-points, arranged in a straight line.

9. The apparatus for recording game-scores consisting of a stationary score-card, a holder for such card, means for recording upon the card, and devices for actuating the recording means, said recording means consisting of spring puncturing-points, arranged in a straight line adapted to be operated successively by the actuating devices.

10. The apparatus for recording game-scores consisting of a stationary score-card, a holder for such card, means for recording upon the card, and devices for actuating the recording means, said recording means consisting of spring puncturing-points arranged in a straight line, and said actuating devices being adapted to operate the points in successive order.

11. The combination in a portable game-recorder, of a holder, a series of recording devices, for recording the separate plays occurring in an inning, means for actuating the said recording devices in the order in which the plays occur, and a score-card adapted to be adjustably positioned in said holder for the different innings and having inning-spaces, each of such spaces being provided with numbers for indicating the several plays occurring in the inning, and the recording devices being adapted to make their records adjacent to such numbers.

12. The combination in a portable game-recorder, of a suitable holder, a series of recording devices for recording the plays, means for actuating said recording devices and a score-card having inning-spaces which are provided with numbers arranged in radial lines, the card being adapted to be adjusted for the different innings.

13. The combination in a portable game-recorder, of a suitable holder, a series of recording devices for recording the plays, means for actuating said recording devices successively in the order of the plays, and a score-card having inning-spaces which are provided with numbers arranged in radial lines, the card being adjustable for the different innings.

14. The combination in a portable game-recorder of a suitable holder, a score-card adjustable in the holder and having inning-spaces provided with numbers or characters in radial lines for indicating the different plays, a series of recording devices also arranged in radial lines and means for actuating said recording devices successively.

15. The combination in a portable game-recorder of a suitable holder, a circular score-card adjustable around its axis in the holder and having inning-spaces provided with numbers or characters in radial lines for indicating the different plays, a series of recording devices also arranged in radial lines and means for actuating said recording devices successively.

16. The game-recorder having a stationary circular score-card divided into radial inning-spaces, a holder therefor, a series of play-recording devices arranged radially of the card, and means for actuating said devices in successive order whereby a record may be made of all the plays occurring in an inning in a radial line upon the card.

17. The game-recorder having a stationary score-card, a holder therefor, a series of play-recording devices adapted to make records in a straight line and in successive order upon the card, and means adapted to actuate said recording devices one by one.

18. The game-recorder having a stationary score-card, a holder therefor, a series of play-recording devices arranged in a straight line across the card and adapted to print in the same straight line, a slide moving in line with the recording devices and actuating the same in successive order, and means for operating said slide.

19. The game-recorder having a score-card, a holder therefor, and a series of play-recording devices, a slide for actuating the recording devices and means for imparting a step-by-step movement to said slide.

20. A game-recorder having means for making a permanent and separate serial record upon a card of the plays occurring in each of a plurality of innings, each inning-record forming a separate series upon the card, and an indicator actuated by and moving with the recording means and adapted to show at any stage of the game the number of plays made in any inning while the inning is being played.

812,865. **COTTON-PICKING MACHINE.** JOSEPH NESBIT, Argo, Miss. Filed June 24, 1905. Serial No. 266,526.

Claim.—1. In a cotton-picking machine, the combination of a suction-tube, a casing at the end thereof with an opening at the mouth of said tube, and shears with their cutting edges near the mouth of said tube and the opening of said casing.

2. In a cotton-picking machine, the combination of a suction-tube having a mouth for receiving cotton from the boll, and shears located adjacent to said mouth for assisting in separating the cotton from the plant.

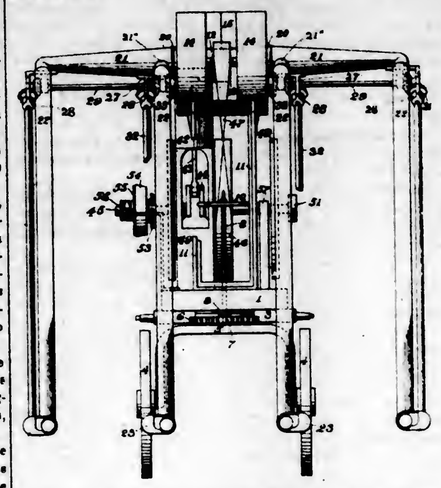

3. In a cotton-picking machine, the combination of a suction-tube having a mouth for receiving cotton from the boll, shears located adjacent to said mouth for assisting in separating the cotton from the plant, and means for continuously operating said shears.

4. In a cotton-picking machine, the combination of a suction-tube having a mouth for receiving cotton from the boll, shears located adjacent to said mouth for assisting in separating the cotton from the plant, an engine for driving the machine, and mechanism connected up between the machine and the movable blade of the shears.

5. In a cotton-picking machine, the combination of a suction-tube, a casing at the end thereof with an opening at the mouth of said tube, and shears with their cutting edges near the mouth of said tube and the opening of said casing, one blade of the shears being movable relatively to the casing and the cutting edge of the other blade being formed upon said casing.

6. In a cotton-picking machine, the combination of a suction-tube having a mouth for receiving cotton from the boll, shears located adjacent to said mouth for assisting in separating the cotton from the plant, an engine for driving the machine, and mechanism connected up between the machine and the movable blade of the shears, said mechanism consisting of gearing, a flexible shaft connecting said gearing and one of the blades of said shears, and a driving connection between said engine and said gearing.

7. In a cotton-picking machine, the combination of a suction-tube having a mouth for receiving cotton from the boll, shears located adjacent to said mouth for assisting in separating the cotton from the plant, an engine for driving the machine, mechanism connected up between the machine and the movable blade of the shears, said mechanism consisting of gearing, a flexible shaft connecting said gearing and one of the blades of said shears, a driving connection between said engine and said gearing, a fan-casing, a pipe extending therefrom, and brackets attached to said pipe and supporting said gearing, said pipe communicating with said suction-tube.

8. In a cotton-picking machine, the combination of a pneumatic tube, a casing at the end thereof, with an opening at the mouth of said tube, and shears with their cutting edges near the mouth of said tube and the opening of said casing.

812,866. **MEANS FOR PREVENTING THEFT OF BRASSES FROM RAILWAY JOURNAL-BOXES.** EDWARD J. NOELETT, Chicago, Ill. Filed July 20, 1904. Serial No. 216,867.

Claim.—1. The combination with a journal-box, having oppositely-disposed seats on the inner faces of the side walls thereof of a retractable bolt engaged at its end in said seats.

2. The combination with a car journal-box, its journal and brasses of longitudinally-extensible means adapted to engage in

seats in the side walls of the box and acting to prevent removal of the

front and rear stops, tandem-arranged springs, front and rear followers said intermediate followers and the front and rear followers respec- ing frame pivotally connected at its rear end to said main frame, a

seats in the side walls of the box and acting to prevent removal of the brasses.

3. The combination with a car journal-box of locking mechanism therein engaging the inner face of each side wall and adapted to retain the brass therein.

4. The combination with a car journal-box having inwardly-opening seats in the side walls thereof of an expansible locking-bolt adapted to engage at its ends in said seats and means for decreasing the length of the bolt to permit its removal.

5. The combination with a journal-box provided with inwardly-opening seats in the side walls thereof of an extensible locking-bolt engaged at its ends therein beyond and extending below the bearing and means for retracting one end of the bolt from its seat.

6. In a car journal-box having inwardly-opening seats in the opposite sides thereof beyond the end of and adjacent the upper side of the journal of a longitudinally-retractable locking-bolt adapted to fit in said seats and acting to prevent the removal of the brasses.

7. The combination with a journal and the brass therefor of a journal-box having an inwardly-opening seat in each side thereof, a spring locking-bolt adapted to be secured at its end in said seats adjacent the ends of the brass, and key-operated means adapted to retract one end of the bolt from its seat.

8. In a journal-box, an expansible locking mechanism adapted to engage the inner surface of the sidewalls of the box and means for withdrawing one end of the same from such engagement.

9. In a device of the class described, the combination with a journal-box of a detachable lock comprising a sheet-metal casing and a key-operated spring-bolt slidably secured therein and adapted to engage in the sides of said journal-box.

10. The combination with a journal-box of a lock comprising a strong sheet-metal casing, a rigid bolt in one end thereof, a slidable spring-controlled bolt in the other, the inner ends of said bolts overlapping said slidable bolt adapted to be retracted by a key.

812,867. TANDEM-SPRING DRAFT-RIGGING FOR RAILWAY-CARS. JOHN F. O'CONNOR, Chicago, Ill., assignor to W. H. Miner Company, Chicago, Ill., a Corporation of Illinois. Filed Sept. 5, 1905. Serial No. 276,923.

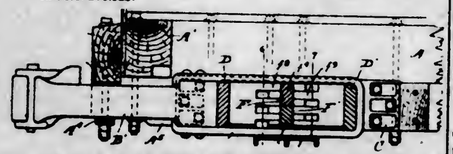

Claim.—1. In a tandem-spring draft-rigging, the combination with the draw-bar and draw-bar strap, of side plates or stop-castings having front and rear stops, tandem-arranged springs, a front follower bearing against the front end of the front spring, a rear follower bearing against the rear end of the rear spring and two intermeshing, flush-fitting, telescoping skeleton intermediate followers, one integral with the front follower and the other integral with the rear follower, the two intermediate, flush-fitting followers both engaging the adjacent ends of each spring when the springs are not compressed, and sliding or telescoping in respect to each other to compress the springs, and integral interfitting longitudinally-extending tongues connecting said intermediate followers and the front and rear followers respectively substantially as specified.

2. In a tandem-spring draft-rigging, the combination with the draw-bar and draw-bar strap, of side plates or stop-castings having front and rear stops, tandem-arranged springs, front and rear followers, and two intermeshing skeleton intermediate followers adapted to shut together when the springs are not compressed and to telescope or slide apart when the springs are compressed, and integral interfitting longitudinally-extending tongues connecting said intermediate followers and the front and rear followers respectively substantially as specified.

3. In a tandem-spring draft-rigging, the combination with the draw-bar and draw-bar strap, of side plates or stop-castings having front and rear stops, tandem-arranged springs, front and rear followers, and two intermeshing skeleton intermediate followers adapted to shut together when the springs are not compressed and to telescope or slide apart when the springs are compressed, and two interfitting sets of integral tongues, one set integral with one of said intermediate followers for connecting it with the front follower, and the other set integral with the other intermediate follower for connecting it with the rear follower, substantially as specified.

4. In a tandem-spring draft-rigging, the combination with the draw-bar and draw-bar strap, of side plates or stop-castings having front and rear stops, tandem-arranged springs, front and rear followers, and two intermeshing skeleton intermediate followers adapted to shut together when the springs are not compressed and to telescope or slide apart when the springs are compressed, said intermeshing skeleton intermediate followers being integral one with the front follower, and the other with the rear follower, and integral interfitting longitudinally-extending tongues connecting said intermediate followers and the front and rear followers respectively substantially as specified.

5. In a tandem-spring draft-rigging, the combination with the draw-bar and draw-bar strap, of side plates or stop-castings having front and rear stops, tandem-arranged springs, front and rear followers, and two intermeshing skeleton intermediate followers adapted to shut together when the springs are not compressed and to telescope or slide apart when the springs are compressed, said intermeshing skeleton intermediate followers having each an H-shaped continuous cross-bar and a slotted cross-bar, substantially as specified.

6. In a tandem-spring draft-rigging, the combination with tandem-arranged springs, of front and rear followers, and two complementing or intermeshing skeleton intermediate followers adapted to shut together when the springs are not compressed and to telescope or slide apart to compress the springs, whereby the adjacent ends of the two tandem springs are adapted to be brought close together or be separated a distance only equal to the necessary thickness of one follower, and integral interfitting longitudinally-extending tongues connecting said intermediate followers and the front and rear followers respectively substantially as specified.

7. In a tandem-spring draft-rigging, the combination with tandem springs, front and rear followers, and two complementing or intermeshing skeleton intermediate followers, one of said intermediate skeleton followers being integral with the front follower and the other with the rear follower, and integral interfitting longitudinally-extending tongues connecting said intermediate followers and the front and rear followers respectively substantially as specified.

8. In a tandem-spring draft-rigging, the combination with tandem springs, front and rear followers, and two complementing or intermeshing skeleton intermediate followers, one of said intermediate skeleton followers being integral with the front follower and the other with the rear follower, one of said intermediate followers having extension-legs to limit the follower movement and the compression of the springs, substantially as specified.

9. In a tandem-spring draft-rigging, the combination with tandem springs, front and rear followers, and two complementing or intermeshing skeleton intermediate followers, one of said intermediate skeleton followers being integral with the front follower and the other with the rear follower, said intermediate followers having interfitting extension-legs engaging shoulders on the front and rear followers to limit the movement and the compression of the springs, substantially as specified.

10. In a tandem-spring draft-rigging, the combination with the draw-bar and draw-bar strap, of side plates or stop-castings having front and rear stops, tandem-arranged springs, front and rear followers, and two intermeshing skeleton intermediate followers adapted to shut together when the springs are not compressed and to telescope or slide apart when the springs are compressed, a plurality of integral tongue connections between one of said intermediate followers and the front follower and a plurality of integral tongue connections between the other intermediate follower and the rear follower, said tongue connections of the one intermediate follower interfitting and alternating with those of the other intermediate follower substantially as specified.

11. In a tandem-spring draft-rigging, the combination with tandem-arranged springs, of a front follower having an integral bottom plate or web, a rear follower having an integral bottom plate or web and two complementing or intermeshing skeleton intermediate followers adapted to shut together when the springs are not compressed, and to telescope or slide apart to compress the springs, and integral interfitting longitudinally-extending tongues connecting said intermediate followers and the front and rear followers respectively substantially as specified.

12. In a tandem-spring draft-rigging, the combination with tandem-arranged springs, of a front follower having in integral bottom plate or web, a rear follower having an integral bottom plate or web and two complementing or intermeshing skeleton intermediate followers adapted to shut together when the springs are not compressed, and to telescope or slide apart to compress the springs, the ends of said integral bottom plates or webs on the front and rear followers abutting together to limit the compression of the springs, substantially as specified.

13. In a tandem-spring draft-rigging, the combination with tandem springs, front and rear followers having integral bottom plates or webs and integral side walls, and two complementing or intermeshing skeleton intermediate followers integral one with the front follower and the other with the rear follower, and integral interfitting longitudinally-extending tongues connecting said intermediate followers with the front and rear followers, respectively, substantially as specified.

14. In a tandem-spring draft-rigging, the combination with tandem springs, front and rear followers having integral bottom plates or webs and integral side walls, and two complementing or intermeshing skeleton intermediate followers integral one with the front follower and the other with the rear follower, and integral interfitting longitudinally-extending tongues connecting said intermediate followers with the front and rear followers respectively, said intermediate followers having interfitting extension-legs, substantially as specified.

15. In a tandem-spring draft-rigging, the combination with tandem-arranged springs, front and rear followers, and two interfitting telescoping H-shaped and slotted cross-bar intermediate followers, substantially as specified.

16. In a tandem-spring draft-rigging, the combination with tandem-arranged springs, front and rear followers, and two interfitting telescoping H-shaped and slotted cross-bar intermediate followers, one of said intermediate followers being integral with the front follower and the other with the rear follower, substantially as specified.

812,868. DRAFT APPLIANCE FOR RAILWAY-CARS. JOHN F. O'CONNOR, Chicago, Ill., assignor to W. H. Miner Company, Chicago, Ill., a Corporation of Illinois. Filed Oct. 23, 1905. Serial No. 284,789.

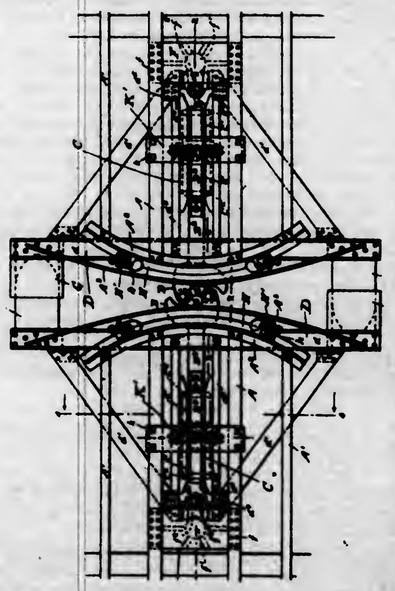

Claim.—1. In a railway-car coupling and draft appliance, the combination with the main frame of the car, of a supplemental swinging frame pivotally connected at its rear end to said main frame, a coupler and draft-rigging mechanism mounted upon and carried by said supplemental swinging frame and a socket and plunger at the opposite sides of the swinging frame adapted to engage the coöperating plunger and socket of the swinging frame of the adjacent car to turn the two swinging frames into parallelism and the couplers and draw-bars into alinement with each other as the cars approach, substantially as specified.

2. In a railway-car coupling and draft appliance, the combination with the main frame of the car, of a supplemental swinging frame pivotally connected at its rear end to said main frame, a coupler and draft-rigging mechanism mounted upon and carried by said supplemental swinging frame, a curved track and hangers for supporting the front end of said supplemental swinging frame, and a socket and plunger at the opposite sides of the swinging frame adapted to engage the coöperating plunger and socket of the swinging frame of the adjacent car to turn the two swinging frames into parallelism and the couplers and draw-bars into alinement with each other as the cars approach, substantially as specified.

3. In a railway-car coupling and draft appliance, the combination with the main frame of the car, of a supplemental swinging frame pivotally connected at its rear end to said main frame, a coupler and draft-rigging mechanism mounted upon and carried by said supplemental swinging frame, means for centering said supplemental swinging frame with the main frame, and a socket and plunger at the opposite sides of the swinging frame adapted to engage the coöperating plunger and socket of the swinging frame of the adjacent car to turn the two swinging frames into parallelism and the couplers and draw-bars into alinement with each other as the cars approach, substantially as specified.

4. In a railway-car coupling and draft appliance, the combination with the main frame of the car, of a supplemental swinging frame pivotally connected at its rear end to said main frame, a coupler draft-rigging mechanism mounted upon and carried by said supplemental swinging frame, a curved track and hangers for supporting the front end of said supplemental swinging frame, and means for centering said supplemental swinging frame with the main frame, and a socket and plunger at the opposite sides of the swinging frame adapted to engage the coöperating plunger and socket of the swinging frame of the adjacent car to turn the two swinging frames into parallelism and the couplers and draw-bars into alinement with each other as the cars approach, substantially as specified.

5. The combination with a car-frame, of a supplemental draw-bar and draft-rigging carrying frame pivotally connected to the main frame, and a coupler draw-bar and cushioning device mounted upon and carried by said supplemental frame, said supplemental frame having socket and plunger devices adapted to engage similar devices on the adjacent car to turn said supplemental frame on its pivot so as to bring the draw-bar carried thereby into alinement with the draw-bar of the adjacent car, substantially as specified.

6. The combination with a car-frame, of a supplemental draw-bar and draft-rigging carrying frame pivotally connected to the main frame, and a coupler draw-bar and cushioning device mounted upon and carried by said supplemental frame, and means for centering said supplemental frame with the car-frame, said supplemental frame having socket and plunger devices adapted to engage similar devices on the adjacent car to turn said supplemental frame on its pivot so as to bring the draw-bar carried thereby into alinement with the draw-bar of the adjacent car, substantially as specified.

7. The combination with the car-frame, of a supplemental triangular frame pivotally connected to the main frame and provided with parallel bars, side plates or stop-castings secured to said parallel bars, followers, a cushioning device and a draw-bar mounted upon and carried by said supplemental frame, substantially as specified.

8. The combination with the car-frame, of a supplemental triangular frame pivotally connected to the main frame and provided with parallel bars, side plates or stop-castings secured to said parallel bars, followers, a cushioning device, a draw-bar mounted upon and carried by said supplemental frame, and a centering device for said supplemental frame, substantially as specified.

9. The combination with the car-frame, of a supplemental triangular frame pivotally connected to the main frame and provided with parallel bars, side plates or stop-castings secured to said parallel bars, followers, a cushioning device, a draw-bar mounted upon and carried by said supplemental frame, a centering device for said supplemental frame, and means for turning said supplemental frame on its pivot to bring the draw-bar carried thereby into alinement with the draw-bar of the adjacent cars the cars approach each other for coupling on a curve, substantially as specified.

812,869. HEATER. ANNA O'HARE and CHARLES B. WESTON, Brooklyn, N. Y. Filed July 28, 1905. Serial No. 271,578.

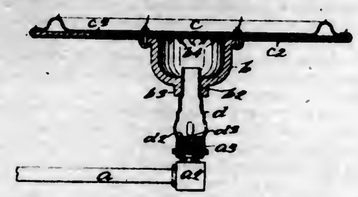

Claim.—1. A gas-heater comprising a cup-shaped member having a horizontal cap member secured to the top thereof, said cup-shaped member being provided at the top thereof and beneath the cap member with a plurality of recesses forming ports or passages, and said cup-shaped member being also provided in the bottom thereof with an opening and a Bunsen-burner tube adapted to be inserted into said opening, substantially as shown and described.

2. A gas-heater comprising a cup-shaped member having a horizontal cap member secured to the top thereof, said cup-shaped member being provided at the top thereof and beneath the cap member with a plurality of recesses forming ports or passages, and said cup-shaped member being also provided in the bottom thereof with an opening and Bunsen-burner tube adapted to be inserted into said opening, the cap member being also composed of a bottom part of asbestos and a top part of metal, substantially as shown and described.

812,870. DIE-STOCK. HERMAN W. OSTER, Cleveland, Ohio, assignor to The Oster Manufacturing Company, Cleveland, Ohio, a Corporation of Ohio. Filed Feb. 6, 1905. Serial No. 244,265.

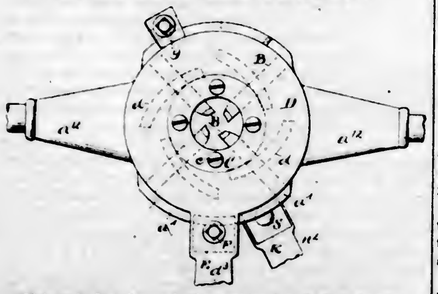

Claim.—1. In a die-stock, the combination of a body having an outwardly-projecting flange, adjustable dies in said body, a plate having means thereon for adjusting said dies and a portion extending over said flange, a clamp beneath such portion of the plate, said clamp having an outer end engaging said plate, an intermediate portion for the reception of a bolt, and an inner end portion adapted to engage said flange, and a bolt extending through the portion of the plate adjacent to said flange and threaded into the intermediate portion of said clamp, substantially as specified.

2. In a die-stock, the combination of the body having a pair of flanges thereon, said flanges projecting outwardly from opposite portions of said body, adjustable dies within said body, a plate rotatably fitted on said body and having means for adjusting said dies, said plate having a handle extending over one of said flanges, a clamp carried by said handle for engaging the proximate flange, a projection from said plate above the other flange, and an adjustable stop member carried by the last-mentioned flange for engagement by said projection, substantially as specified.

812,871. LOCK AND LATCH. PAUL PAPENFOTH, New Britain, Conn., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn., a Corporation of Connecticut. Filed Feb. 13, 1905. Serial No. 245,817.

Claim.—1. In a device of the character described, a movable bolt, an independently-movable piece carried thereby, a dogging device carried by said bolt and operable by said independently-movable piece, a manually-operative device, a connection between the same and said bolt, said connection also operating said dogging device.

2. In a device of the character described, a movable bolt, a dogging device carried thereby, an independently-movable member carried by said bolt and engaging said dogging device to operate the same, and a latch-slide operatively connected with said dogging device and said bolt.

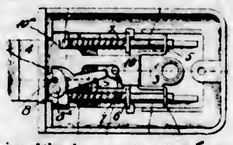

3. In a device of the character described, a movable bolt, a dogging device carried thereby, an independently-movable member carried by said bolt and engaging said dogging device to operate the same, a latch-slide operatively connected with said dogging device and said bolt, and means to cause said latch-slide to operate said dogging device in advance of said bolt.

4. In a device of the character described, a movable bolt, an independently-movable piece carried at the end thereof, and normally spaced apart slightly therefrom, a dogging device connected to said independently-movable piece, a manually-controllable operating device, a connection between said operating device and said bolt and dogging device, whereby said dogging device may be released and the bolt retracted.

5. In a device of the character described, a movable bolt, an end piece carried thereby, a dogging device carried by said bolt, a connection between said dogging device and said end piece, means for normally moving the end piece in a direction to set the dogging device, a manually-controllable slide operatively connected with both the bolt and said dogging device whereby the latter may be released and the former retracted.

812,872. INCANDESCENT ELECTRIC LAMP. HERSCHEL C. PARKER, New York, N. Y., assignor to Parker-Clark Electric Company, Jersey City, N. J., a Corporation of New Jersey. Filed Apr. 8, 1905. Serial No. 254,587.

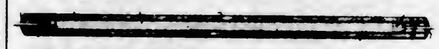

Claim.—1. An incandescent electric lamp, comprising a tube of highly-refractory material which is permeable to light, a highly-refractory conductive film on the inner surface of the tube, and connections at the tube ends for the said conductive film.

2. An electric incandescent lamp, comprising a highly-refractory light-permeable tube, a highly-refractory conductive film on the inner surface of the tube, a non-conducting packing for the tube, and electrical connections at the tube ends.

3. An electric incandescent lamp, comprising a tube of highly-refractory material which is permeable to light, a conducting-film on the inner surface of the tube said film extending the whole length of the tube, a non-conducting packing for the tube, and electrical connections at the tube ends.

4. An electric incandescent lamp, comprising a tube of highly-refractory light-permeable material, a conducting-film covering the inner surface of the tube, a packing for the tube, the said packing being essentially of the same coefficient of expansion as the tube, and electrical connections at the tube ends.

5. An electric incandescent lamp, comprising a tube of highly-refractory material which is permeable to light, a conducting-film on the inner surface of the tube, a non-conducting packing filling the tube except at points near the ends, a packing of a relatively good conductor at the tube ends, leading-in wires connecting with the conductive packing, and a seal for the tube ends.

6. An incandescent electric lamp, comprising a hollow member of highly-refractory material which is permeable to light, a highly-refractory conductive lining for the member, and electrical connections at the ends of the member.

7. An incandescent electric lamp, comprising a tube of highly-refractory material which is permeable to light, a refractory conductive lining for the tube, a non-conductive core filling the bore of the tube, and electrical connections at the tube ends.

8. An incandescent lamp comprising a body portion of highly-refractory light-permeable material, and a film of iridium on the said body.

812,873. ICE-CUTTER FOR SURFACE RAILWAYS. WILLIAM H. PERRY, Concord, N. H. Filed Oct. 6, 1905. Serial No. 281,433.

Claim.—1. In a machine of the class described, the combination with a truck-frame, and a driving element associated therewith, of a rotary drum carried by said frame, gearing interposed between the driving element and said drum for rotating the latter, and cutters carried by said drum and arranged thereon at points to attack the ice and snow at both sides of the track-rails.

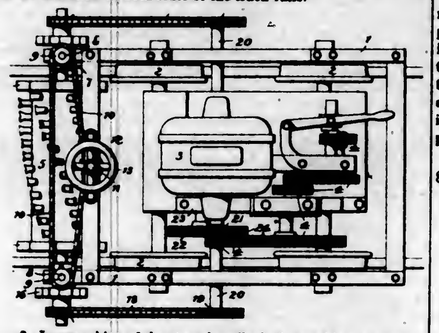

2. In a machine of the class described, the combination with a truck-frame, and a driving element associated therewith, of a rotary drum carried by said frame, gearing interposed between the driving element and said drum for rotating the latter, cutters carried by said drum and arranged thereon at points to attack the ice and snow at both sides of the track-rails, and means for adjusting the position of the drum and cutters in relation to the track-bed.

3. In a machine of the class described, the combination with a truck-frame, and a driving element associated therewith, of a rotary drum journaled upon said frame, gearing interposed between the driving element and said drum for rotating the latter, cutting elements arranged in spiral relation upon said drum and extending from end to end thereof, and cutting-disks also carried by the drum and arranged in such relation to the track-rails as to attack the ice and snow at both sides of the latter.

4. In a machine of the class described, the combination with a truck-frame, and a driving element associated therewith, of a rotary drum journaled upon said frame, gearing interposed between the driving element and said drum for rotating the latter, cutting elements arranged in spiral relation upon said drum and extending from end to end thereof, cutting-disks also carried by the drum and arranged in such relation to the track-rails as to attack the ice and snow at both sides of the latter, and means for adjusting the position of the drum and cutters in relation to the track-bed.

5. In a machine of the class described, the combination with a truck-frame, and a driving element associated therewith, of a drum journaled upon said frame, a series of cutting elements arranged in spiral relation upon said drum and extending from end to end thereof, cutting-disks also carried by said drum and arranged at points to attack the ice and snow at both sides of the track-rails, a shaft journaled upon the truck-frame and geared to the driving element, and gearing interposed between said shaft and said drum for rotating the latter.

812,874. GARMENT-DESIGNING CURVE-RULE. ERNEST L. PHELPS, Toronto, Canada. Filed Nov. 10, 1904. Serial No. 232,152.

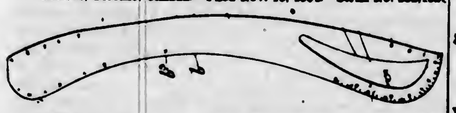

Claim.—1. A curve-rule having one edge formed with an outward bend made up from end to end of two flat compound curves and the opposite edge formed at one end with a straight portion and a continuing comparatively quick curve and the opposite end of a comparatively quick curve, both of which curves are joined by a comparatively flat curve having an inward bend as and for the purpose specified.

2. A curve-rule having one edge formed with an outward-curved bend made up from end to end of two flat compound curves and the opposite edge formed at one end with a straight portion and a continuing comparatively quick curve and the opposite end of a comparatively quick curve, both of which curves are joined by a comparatively flat curve having an inward bend, both edges being provided with indexing-points at and toward each end at desired distances apart on both sides of the rule and intermediate indexing-points, one near each edge and on both sides of the rule as and for the purpose specified.

3. A curve-rule having one edge formed with an outward bend made up from end to end of two flat compound curves and the opposite edge formed at one end with a straight portion and a continuing comparatively quick curve and the opposite end of a comparatively quick curve, both of which curves are joined by a comparatively flat curve having an inward bend and an opening at the larger end of the rule formed of two simple curves meeting at the outer end in a point and having the opposite end rounded as and for the purpose specified.

812,875. TOP-ROLL SADDLE. GEORGE L. PERRIN, Manchester, N. H., assignor to The Whitin Machine Works, Whitinsville, Mass., a Corporation of Massachusetts. Filed Apr. 14, 1905. Serial No. 256,233.

Claim.—1. In a top-roll saddle of the character described, an upper member, a spring secured at one end to the top of said member and provided with suitable perforations, a weight-stirrup embracing or surrounding said member and spring by means of a suitable opening in the stirrup, and resting directly on the saddle, and a pin or projection adapted to extend down from the stirrup into one of the perforations in the spring and be released therefrom by pressing said spring out of engagement therewith.

2. In a top-roll saddle of the character described, an upper member, a spring secured at one end to the top of said member and formed up centrally into a portion which is normally raised above the top of the member, a weight-stirrup embracing or surrounding said member and resting directly on the saddle, and means for engaging said weight-stirrup with the spring, disengagement being produced by pressing on said spring.

3. In a top-roll saddle of the character described, an upper member provided with the curved head *k* formed on its surface with the longitudinal guiding-groove *k'*, a spring secured at its rear end to said member, formed up centrally into a normally raised portion provided with suitable perforations and with its forward end resting in said groove, and a weight-stirrup embracing said member and spring by means of a suitable opening and provided with an engaging pin *v* adapted to extend down into one of said perforations and to be released therefrom by pressure on the raised portion of the spring.

4. In a top-roll saddle of the character described, an upper member, a spring secured at one end to the top of said member and provided with the normally raised portion *n'* having perforations *p*, and the weight-stirrup provided with the opening *s* narrowed at its lower end whereby shoulders *t* are produced and at its upper end whereby shoulders *t'* are produced, the upper end of said opening being provided with the downwardly-extending pin *v* adapted to engage the spring by means of one of its perforations.

812,876. COLLAR-FOUNDATION. DAVID POTTS, Three Oaks, Mich., assignor to Warren Featherbone Company, Three Oaks, Mich., a Corporation of Illinois. Filed Feb. 15, 1905. Serial No. 245,944.

Claim.—1. A collar-foundation comprising a series of upwardly-extending stiffening-strips spaced apart from each other and attached at the top to a downwardly-extending flexible flap, substantially as described.

2. A collar-foundation comprising a series of upwardly-extending stiffening-strips spaced apart from each other and attached at the top to a downwardly-extending flexible flap of textile fabric, substantially as described.

3. A collar-foundation comprising a bottom band, a series of upwardly-extending stiffening-strips fastened thereto and attached at the top to a downwardly-extending flexible flap, substantially as described.

4. A collar-foundation comprising a bottom band of stiffening material, a series of upwardly-extending stiffening-strips fastened

thereto and attached at the top to a downwardly-extending flexible flap, substantially as described.

5. A collar-foundation comprising a series of upwardly-extending stiffening-strips, a top band to which the upper ends of the stiffening-strips are fastened and a downwardly-extending flexible flap attached at its top to said top band, substantially as described.

6. A collar-foundation comprising a series of upwardly-extending stiffening-strips, a top band of stiffening material to which the upper ends of the stiffening-strips are fastened and a downwardly-extending flexible flap attached at its top to said top band, substantially as described.

7. A collar-foundation comprising a bottom band, a series of upwardly-extending stiffening-strips fastened thereto, a top band and a downwardly-extending flexible flap, the flap and the upwardly-extending stiffening-strips being attached to the top band, substantially as described.

8. A collar-foundation comprising a bottom band, a series of upwardly-extending stiffening-strips fastened thereto, a top band of stiffening material and a downwardly-extending flexible flap, the flap and the upwardly-extending stiffening-strips being attached to the top band, substantially as described.

9. A collar-foundation comprising a bottom band of stiffening material, upwardly-extending stiffening-strips attached thereto, a top band of stiffening material to which the upper ends of said stiffening-strips are attached and a downwardly-extending flexible flap fastened at its top edge to the top band of stiffening material, substantially as described.

812,877. **RAILWAY-FROG FOR TURN-INS AND TURNOUTS.** REUBEN M. RANKIN, Los Angeles, Cal. Filed Aug. 24, 1905. Serial No. 275,611.

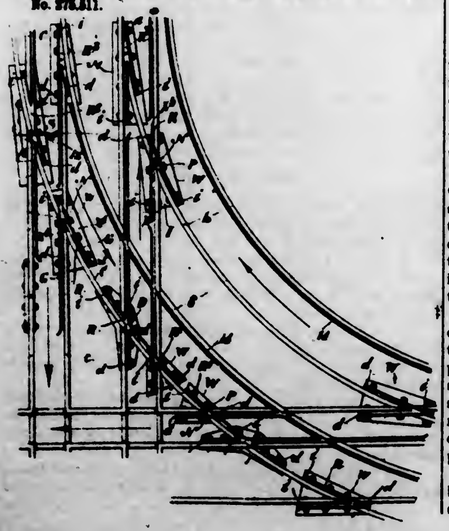

Claim.—1. A railway-frog provided with a foundation, a filler and a riser, and with rivet-holes therethrough, and rivets in said holes detachably fastening the parts together.

2. A railway-frog comprising rail-junctions and rail ends, risers adapted to protect said junctions and ends fastened to the inside of the rails, and an auxiliary riser fastened to the outside of the rails at the junction or ends.

3. A railway-frog comprising two intersecting rails, a riser secured at said intersection on the inside of said rails, an auxiliary riser on the outside of said rails at the intersection thereof, a clearance-space being in one of said rails, and an outside riser secured at said clearance-space.

812,878. **TURBINE-DRIVEN MACHINERY.** AUGUSTE C. H. RATEAU and GASTON SAUTTER, Paris, France, assignors to Rateau Turbine Company, Chicago, Ill., a Corporation of West Virginia. Filed Aug. 17, 1903. Serial No. 169,674.

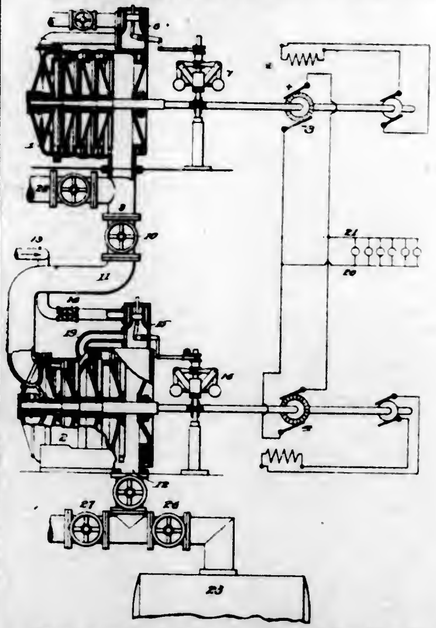

Claim.—1. The combination with a plurality of turbines connected in series with respect to the passage of steam, of a corresponding number of power-absorbing machines driven by said turbines, a connection between said driven machines to maintain approximately a fixed relative speed thereof, and a governor mechanism responsive to changes in speed of the system controlling the admission of steam to the first turbine of the series.

2. The combination with a plurality of turbines and means for conveying motive fluid through said turbines in series to operate the same as a unit of motive power, of a corresponding number of power-transforming machines each driven by one of said turbines, said machines being connected in parallel with respect to the delivery of their output, and a single governor-mechanism responsive to changes in the speed of the system controlling the admission of motive fluid to the first turbine of the series.

3. The combination with two or more turbines and means for conveying motive fluid through said turbines in sequence to operate the same as a unit of motive power, of a corresponding number of power-absorbing machines driven each by a corresponding one of said turbines, a regulator mechanism responsive to slight changes in speed of one of said turbines and arranged to control the admission of motive fluid to said series of turbines, and means for causing said driven machines to react mutually to distribute the total load in proportion to the power developed by the respective turbines.

4. The combination with high-pressure and low-pressure turbines, and means for passing motive fluid through said turbines in series to operate the same as a unit of motive power, of dynamo-electric generators driven each by a corresponding one of said turbines, and a main circuit to which said generators are connected in parallel, whereby the load upon said circuit at any instant is distributed between said generators in proportion to the power developed by their respective driving-turbines.

5. The combination with high-pressure and low-pressure turbines, and means for passing motive fluid through said turbines in series, of electric generators driven each by a corresponding turbine, a main circuit fed with current from said generators, and connections between said generators adapted to distribute the total load of said main circuit between said generators proportionately to the power developed by their corresponding driving-turbines.

6. The combination with electric generators connected in parallel to a main circuit, of high-pressure and low-pressure turbines each driving a corresponding generator, means for causing motive fluid to pass through said turbines in series to operate the same as a unit, an obturator controlling the supply of motive fluid to the first turbine of the series, and a governor for operating said obturator, responsive to changes in the total load on said main circuit.

7. The combination with a plurality of turbines connected in series with respect to the passage of motive fluid therethrough, of a corresponding number of power-absorbing machines driven by said turbines, a connection between said driven machines, means for admitting additional motive fluid to an intermediate point in the turbine system, and a governor mechanism responsive to an abnormal fall of speed, arranged to control the admission of such additional motive fluid.

8. The combination with a plurality of turbines connected in series, of a corresponding number of power-transforming machines driven by said turbines, a connection between said driven machines whereby they are caused to maintain approximately a fixed relative speed, a governor mechanism responsive to changes of speed of the system arranged to control the admission of motive fluid to the first turbine of the series, means for admitting additional motive fluid to an intermediate point in the turbine system, and a second governor mechanism responsive to an abnormal fall of speed consequent upon overload, arranged to control the admission of such additional motive fluid.

9. The combination with a plurality of turbines and means for passing steam through said turbines in series, of electric generators driven one by each turbine, said generators being connected in parallel, a governor mechanism responsive to changes in speed of one of said turbines, controlling the passage of steam to the first turbine of the series, means for supplying additional steam at an intermediate point in the turbine series, and a second governor mechanism responsive to an abnormal fall of speed consequent upon overload, arranged to control such additional steam-supply.

812,879. **FASTENING-HOOK.** CHARLES DE LOS RIOS, Hartford, Conn., assignor to Underwood Typewriter Company, New York, N. Y., a Corporation of New Jersey. Filed Aug. 26, 1905. Serial No. 275,940.

Claim.—1. A hook having a shank, and a bolt fitted around the shank and adapted to engage the point of the hook, said bolt constructed to slide onto or off from said shank.

2. A hook having a shank, and a bolt fitted around the shank and adapted to engage the point of the hook, said bolt constructed to slide onto or off from said shank, and the latter having an eye in its end, so that a screw or device upon which the hook is hung by means of said eye, may serve as a lock to prevent the bolt from becoming detached.

3. A flat hook struck up from sheet metal and having a shank formed with an eye in its end, the shank being as broad throughout as at the eye portion, and a flat sheet-metal bolt having members to clasp said shank, and constructed to slide upon the shank to close and open the hook.

4. A flat hook struck up from sheet metal and having a shank formed with an eye in its end, the shank being as broad throughout as at the eye portion, and a flat sheet-metal bolt having members to clasp said shank, and constructed to slide upon the shank to close and open the hook; said bolt constructed to slide past the point of the hook and to be sprung laterally thereby, so as to lock the hook closed.

812,880. **SWITCH OR CIRCUIT-BREAKER FOR HIGH-POTENTIAL CIRCUITS.** BROWN W. RICE, Jr., Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Dec. 30, 1899. Serial No. 742,134.

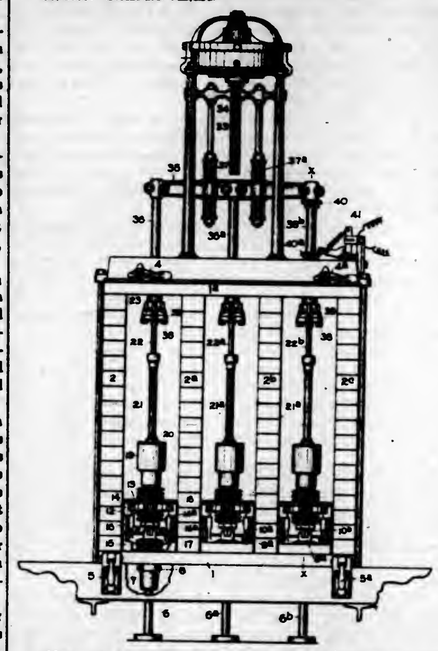

Claim.—1. Means for rupturing a high-potential current, comprising contacts, an inclosure around the points of contact adapted to store high pressure upon the separation of said contacts, a body of insulating liquid submerging the contacts, and quick-acting means for separating the contacts with a quick break and a long motion whereby the arc products are squeezed into small cross-section and the arc is stretched until ruptured.

2. Means for rupturing a high-potential current, comprising contacts, an inclosure around the points of contact adapted to store high pressure upon the separation of said contacts, a body of insulating liquid submerging the contacts, and quick-acting means for separating the contacts with a quick break and withdrawing one of them out of said liquid whereby the arc products are squeezed into small cross-section and the arc is stretched until ruptured.

3. Means for rupturing a high-potential current, comprising contacts, a metallic inclosure around the points of contact adapted to store high pressure upon the separation of said contacts, a body of insulating liquid submerging the contacts, a lining of insulating material for the inclosure extending above the level of the liquid to prevent jumping of an arc, and quick-acting means for quickly separating said contacts and withdrawing one of them from the liquid whereby the arc products are squeezed into small cross-section and the arc is stretched until ruptured.

4. Means for rupturing a high-potential current, comprising separable contacts, a small inclosure for the break-points of the contacts for confining the pressure produced by the arc so as to compress the arc into small cross-section as the contacts separate, an insulating liquid within said inclosure submerging said contacts, and means for separating said contacts with a quick break.

5. Means for rupturing a high-potential current, comprising contacts, a small vessel adapted to withstand great pressure containing an inelastic fluid insulator submerging the contacts, means for cushioning the pressure, and means for separating the contacts rapidly by a long movement whereby the arc is squeezed into a small cross-section of high resistance when the contacts are rapidly separated.

6. Means for rupturing a high-potential current, comprising contacts, a small oil vessel, a bath therein submerging said contacts when the circuit is closed, and power-driven means for rapidly sep-

arating the contacts with a long range of movement whereby the increase of pressure and wide quick separation of the contacts extinguish the arc.

7. A circuit-breaker or switch for opening circuits of high potential and large amperage comprising contacts, an oil-bath submerging the contacts, a small vessel containing said bath adapted to store high pressure, and an air-pocket in said vessel, small relatively to the volume of oil, whereby a sudden rise of pressure under heat of the arc compresses the arc into small cross-section and thereby admits of its easy extinguishment.

8. Means for rupturing a high-potential current, comprising separable contacts, an inclosure around the points of contact, a body of insulating liquid in said inclosure filling the greater portion thereof and leaving an air-space small relative to the volume of oil, and means for separating the contacts in oil and drawing one of them into the air within said inclosure.

9. Means for rupturing a high-potential current, comprising an inclosure, a body of insulating liquid contained therein, an apertured insulator for supporting said inclosure, a terminal extending through the aperture in said insulator into said inclosure, a contact in circuit therewith, a coöperating movable contact arranged to break therewith under the insulating liquid, and a support for said insulator embracing the exterior of the same.

10. An electric switch comprising two fixed contacts, two mechanically and electrically connected movable contacts adapted to be moved into and out of engagement with said fixed contacts, a separate inclosure for each break-point, a cover for each inclosure for rendering the same capable of withstanding high pressure and an insulating liquid in each of said inclosures submerging said break-points.

11. An electric switch comprising two fixed contacts, two mechanically and electrically connected movable contacts adapted to be moved into and out of engagement with said contacts, a separate inclosure for each break-point, a cover for each inclosure for rendering the same capable of withstanding high pressure, an insulating fluid in each of said inclosures submerging said break-points, and means for separating said contacts with a quick break.

12. Means for rupturing a high-potential current, comprising separable contacts, an inclosure about said contacts containing a liquid insulator, means for separating the contacts in said inclosure, means for contracting the arc in cross-section after a definite range of movement and means for preventing the expulsion of the liquid from the inclosure.

13. Means for rupturing a high-potential current comprising separable contacts, an inclosure about said separable contacts, a tube communicating with the chamber, and means for separating the contacts in said chamber and drawing one of them into said tube.

14. Means for rupturing a high-potential current comprising separable contacts, an oil-chamber about said separable contacts, a tube communicating with the chamber, and means for separating the contacts under oil and withdrawing one of them into said tube.

15. Means for rupturing a high-potential current, comprising separable contacts, an oil-chamber about said separable contacts, a tube communicating with the chamber, and means for withdrawing a contact from the oil into the tube when the circuit is opened.

16. Means for rupturing a high-potential current, comprising separable contacts, an oil-chamber about said separable contacts, a tubular extension closely embracing the movable terminal, and means for withdrawing said terminal from the oil into the extension when the circuit is opened.

17. Means for rupturing a high-potential current, comprising a chamber containing an insulating liquid, separable contacts submerged in said liquid when the circuit is closed, a tubular extension in which the movable contact is mounted above the liquid-line, and means for withdrawing the movable contact from the liquid.

18. Means for rupturing a high-potential current, comprising a metallic closed chamber about a single pair of separable contacts, an insulating-lining for said chamber, a movable contact, a narrow tubular connection into which the movable contact may recede, and means for producing a long movement of said contact in said tubular connection to rupture the circuit.

19. Means for rupturing a high-potential current, comprising a closed chamber about a single pair of separable contacts, an insulating-lining for the chamber, a movable contact, a tubular extension of the chamber of insulating material closely fitting the movable contact, and means for withdrawing the contact from the chamber into the tube.

20. Means for rupturing a high-potential current, comprising an inclosure about the separable contacts, a tubular extension communicating with said inclosure and closely fitting the movable contact adjacent to its connection with the inclosure, and means for separating the contacts in said chamber and drawing one of them into said tube.

21. A switch or circuit-breaker for high-potential currents, comprising multipolar separable contacts, independent substantially air-tight inclosures having solid insulating-walls for the several contacts, and quick-acting means for separating all poles simultaneously with a quick break.

22. A switch or circuit-breaker for high-potential currents, comprising multipolar separable contacts, an independent oil-chamber about each pair of contacts, said oil-chambers being so arranged as to prevent the arc from holding over between the different sets of multipolar contacts, and quick-acting means for separating all poles simultaneously with a quick break.

23. A switch or circuit-breaker for high-potential currents, comprising multipolar separable contacts, an independent closed oil-chamber around each pair of contacts, and quick-acting means for separating all poles simultaneously with a quick break.

24. A high-potential switch or circuit-breaker comprising circuit-terminals, a plurality of closed oil-pots containing an oil-bath for the circuit-terminals, and quick-acting means for moving a plurality of the circuit-terminals simultaneously to form a plurality of quick breaks under the oil.

25. A multiphase electric switch comprising a plurality of pairs of separable contacts, an independent inclosure for each pair, insulating liquid in each inclosure, and quick-acting means for simultaneously separating all the contacts with a quick break.

26. A multiphase electric switch comprising a plurality of pairs of separable contacts, an independent inclosure for each pair, insulating liquid in each inclosure, and insulating-partitions for separating the inclosures of the different phases.

27. A multiphase electric switch comprising a plurality of pairs of separable contacts, an independent inclosure for each pair, insulating liquid in each inclosure, and insulating-walls for completely inclosing the inclosure of each phase.

28. A high-potential switch comprising an insulating-support, polyphase terminals mounted in a plurality of separate insulated closed cells, one for each phase, an operating-motor, and a control-circuit governing the motor leading a distance from the switch.

29. A high-potential switch comprising multipolar break-points housed in oil-baths in separate insulated closed cells, an operating connection on the outside, a motor connected therewith, and a control-circuit governed from a distant point for operating the motor.

30. A switch or circuit-breaker for high-potential currents, comprising separable contacts, a highly-insulated inclosure around the rupture-points of said contacts, a motive device for moving said contacts, and means operated at a distance for controlling said motive device.

31. A switch or circuit-breaker for high-potential currents, comprising a plurality of sets of separable contacts, a highly-insulated inclosure around the rupture-points of each of said sets of contacts, a motive device for moving said contacts, and an independent control-circuit for controlling said motive device.

32. A switch or circuit-breaker for high-potential currents, comprising a highly-insulated oil-receptacle for the separable contacts in which the circuit is made and broken under oil, a motive device for establishing and breaking the contact, and an independent low-voltage control-circuit operated at a distance from the switch for controlling the motor to close or open the contacts.

33. A switch or circuit-breaker for high-potential currents, comprising separable contacts, a highly-insulated oil-receptacle therefor, electrically-operated means for closing or separating the contacts, and a control-circuit including a circuit-controller at a distance from the switch for effecting the closure and separation.

34. A switch or circuit-breaker for high-potential currents comprising multipolar separable contacts, substantially air-tight inclosures for the several contacts, and means controlled from a distant point for separating all poles simultaneously.

35. A switch or circuit-breaker for high-potential currents, comprising a plurality of pairs of separable contacts, an inclosure for each pair of contacts, and remotely-controlled means for separating all poles simultaneously.

36. A switch or circuit-breaker for high-potential currents, comprising separable contacts, an inclosure therefor, a body of insulating liquid submerging the contacts, means for giving a long range of motion to the contacts, a motor device for establishing and separating the contacts, an independent low-voltage control-circuit for operating the motor device including a hand-operated circuit-controller located at a distance from the switch, a circuit-changing device at or near the switch for automatically cutting in or out of service the motor after it has acted, and connections for setting the control-circuit for the subsequent switch operation.

37. A high-potential switch or circuit-breaker, having a plurality of independent closed chambers containing oil, multiple contacts within the several chambers submerged in oil, a motor geared to the movable contacts, a spring between the motor and the movable contacts to effect quick separation, and a controlling device distant from the switch for operating the motor.

38. A high-potential switch or circuit-breaker comprising contact-terminals, a small closed chamber inclosing said terminals, and insulating refractory walls housing said chamber on all sides.

39. A high-potential switch or circuit-breaker comprising multiple separable terminals, each pair of terminals being independently inclosed in a small chamber housed within an insulating fireproof inclosure on all sides.

40. A high-potential switch or circuit-breaker, having its contacts submerged in oil, an oil-chamber therefor, and a fireproof insulating-cell around the oil-chamber, the walls of the cell and the oil-chamber being separated by an air-space.

41. A contact for a switch or circuit-breaker, comprising a plurality of segmental rings each composed of a plurality of independent separate parts held together by an annular helical spring.

42. An electric switch or circuit-breaker having a plug-contact and an annular contact to embrace the plug, comprising a plurality of yieldingly-expansible rings independently connected with a circuit-terminal.

43. An electric switch or circuit-breaker having a plug-contact and an annular contact to receive the plug composed of laterally-sliding elastically-yielding independent segments.

44. A contact for a switch comprising a segmental ring composed of a plurality of independent laterally-sliding segments and means for forcing said segments together.

45. An electric switch or circuit-breaker, comprising a fixed terminal, a socket therein, a cup-contact loosely seated in the socket, a movable terminal, and means for guiding them in alinement.

46. An electric switch or circuit-breaker, comprising a fixed terminal, a socket therein, a loosely-fitting cup-contact in the socket, means for locking the cup removably in the socket, and a movable terminal adapted to enter the cup.

812,881. HANGER OR BAR FOR OVERHEAD ELECTRIC TROLLEY-WIRES. ABRAHAM RICHARDSON, Blackpool, England, assignor of seven-eighths to Joseph Heap, Henry Heap, James Bailey, Thomas Brierley, Robert Billington, James Haydock, and Thomas Smith Jones, Blackpool, England. Filed Feb. 6, 1905. Serial No. 244,375.

Claim.—1. An ear or hanger for supporting or holding up electric conductor-wires constructed with two jaws to grip the wires upwardly-extending tapered shanks to said jaws an internally-screwed socket between the said shanks to receive the end of the insulator-bolt, a taper-collar provided with an inwardly-projecting annular flange placed over the shanks of the jaws, the insulator-bolt inserted in the socket and a shoulder thereon to engage the flange on the collar and force it over the tapered shank, substantially as described.

2. In an ear or hanger for supporting electric conductor-wires, the combination with two jaws of upwardly-extending divided shanks, such shanks being tapered and furnished with an internally-screw-threaded socket one part in each shank to receive the screwed end of the insulator-bolt a collar with inwardly-projecting annular flange placed over the tapered shanks of the jaws an insulating and supporting screw inserted in the socket and a shoulder on the said insulator-bolt to engage the annular flange and force the collar over the shank substantially as described.

812,882. ANIMAL-GUARD. ST. ELMO ROBINSON, Arlington, Oreg. Filed Aug. 25, 1904. Serial No. 222,173.

Claim.—In a device of the character described, the combination with a spring-handle, of blades having extensions which lie in said handle, slotted adjusting-wedges lying between the handle and said extensions of the blades, and fastening devices passing through said extensions and the handle and through the slotted portions of the wedges.

812,883. DOOR-OPERATED AIR-PUMP FOR ATOMIZERS. WILLIAM H. ROSS, Baltimore, Md. Filed Oct. 30, 1905. Serial No. 285,080.

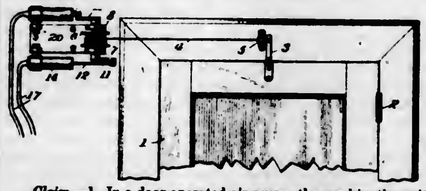

Claim.—1. In a door-operated air-pump, the combination with a door, of a spring-drum, a pump connected with said drum and operated thereby, a cord upon the drum, and means for connecting the cord to the door.

2. In a door-operated air-pump, the combination with a door and means for connecting a cord thereto in any desired relation to the hinge of the door, of a base-plate, a crank-shaft mounted in bearings on said plate, a pump operated from said crank-shaft, a spring-drum connected with said shaft, and a cord connecting said drum with said door.

3. In a door-operated air-pump, the combination with a bracket on the door and a pulley on the door-frame, of a spring-drum, a cord extending from said drum around said pulley to the bracket, and an air-pump operated by said drum.

4. In a door-operated air-pump, the combination with a door and means for connecting the cord thereto, of a base-plate, a plurality of pump-cylinders pivotally connected to said plate, a crank-shaft mounted on said plate and having cranks for operating the pumps, a spring-drum connected with said crank-shaft, and a cord connecting said drum with the door.

812,884. CLOTHES-DRAINER. FRANKLIN P. SAGER, Maplewood, Ohio. Filed Jan. 27, 1904. Serial No. 190,797.

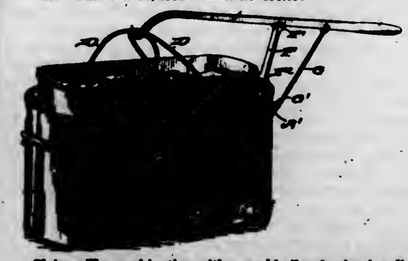

Claim.—The combination with a washboiler, having handles at its ends, of a perforated receptacle within the boiler, provided with

bails, a lever having a hook at one end for engaging the bails of the receptacle, a fulcrum-bar pivoted to the lever intermediate of its ends, said bar having a fork end formed of three members for engaging the upper edge of the boiler, and a rod pivoted to the lever at one side of the fulcrum-bar, and having a hook at its end adapted to one of the handles of the boiler, substantially as shown and described.

812,885. CHECK-VALVE. MOSES L. SANBORN, Boston, Mass. Filed Feb. 10, 1905. Serial No. 245,006.

Claim.—1. A check-valve for dispensing apparatus comprising a coupling consisting of an upright stem having a passage enlarged at its upper part, a horizontal stem at the lower end of the upright stem, a horizontal stem connected at the upper part of the upright stem at right angles to both stems, a passage extending diagonally downward from the enlarged passage in the upright stem into the upper horizontal stem, a supplemental pipe connected with the lower horizontal stem, a delivery-pipe connected with the upper horizontal stem, a stem-plug screwed into the upright stem having a passage through it so that pressure from the supplemental pipe to the delivery-pipe must first pass through the stem-plug and a spring-seated lined cap for the top of the stem-plug for normally closing the stem-plug and preventing the flow of liquid into the supplemental pipe, substantially as shown and described.

2. A check-valve for dispensing apparatus comprising an upright stem, a horizontal stem at the lower end of the upright stem, a horizontal stem connected to the upper part of the upright stem at right angles to both stems, a passage extending from the lower horizontal stem through the upright stem and enlarged at its upper part, a stem-plug inserted in the passage and having a passage extending through it, the upper portion of the passage being of less diameter than the lower portion, so that any substance passing from the lower horizontal stem to the other horizontal stem must first pass through the plug, a spring-operated cap for normally closing the plug, and a passage extending from the passage in the upright stem and at a point lower than the cap, diagonally downward into the other horizontal stem, substantially as shown and described.

812,886. VARIABLE-SPEED GEARING. WILLARD T. SEARS, Philadelphia, Pa., assignor to Niles-Bement-Pond Company, Jersey City, N. J. Filed Apr. 24, 1905. Serial No. 257,149.

Claim.—1. In variable-speed gearing, the combination of three driven gears turning together, a cage mounted for rotation upon an axis coinciding with that of said gears, planet-shafts carried by said cage parallel with the axis of said gears, planet-gears on said shafts one engaging each of the first-mentioned gears, internal gears one engaging each of said planet-gears, means for holding said internal gears alternately against rotation, a second set of three driven gears turning with said cage, a second cage provided with planet-shafts and planet-gears coöperating with the second set of driven gears, internal gears coöperating with the gears of the second cage, and means for holding the last-mentioned internal gears alternatively against rotation, whereby a number of different speeds in excess of the number of gear ratios provided may be imparted the final driven member of the gearing.

2. In variable-speed gearing, the combination of a driving member, a driven member, and a plurality of sets of planetary gears arranged in a plurality of groups intermediate said members; whereby a number of different relative speeds of said members in excess of the number of said sets of planetary gears may be obtained.

3. The combination of a primary driving-shaft, a primary driven member, and a plurality of sets of planetary gears for imparting to said primary driven member a corresponding number of speeds relative to that of said primary driving member; a final driven member, and a plurality of sets of planetary gears intermediate said driven members, the whole serving to impart to said final driven member a number of speeds relative to that of the primary driving member in excess of the total number of said sets of planetary gears.

4. The combination of a driving member, a primary driven member, three sets of planetary gears intermediate said members, a final driven member, three sets of planetary gears intermediate said driven members, and means for bringing said sets of gears into action selectively, as desired, whereby a number of speeds in excess of the number of said sets of gears may be imparted to said final driven member.

812,887. LUBRICATING-WHEEL. OTIS O. SELLERS, Wellston, Ohio. Filed July 3, 1905. Serial No. 268,127.

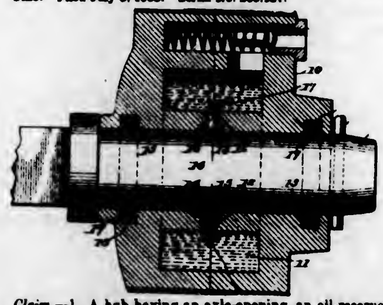

Claim.—1. A hub having an axle-opening, an oil-reservoir adjacent to and communicating with the axle-opening by a dovetailed aperture, a closure for the aperture conforming to the interior of and proportioned to be inserted through the axle-opening, and a fibrous material filling the aperture between the closure and reservoir.

2. A hub having an axle-opening, an oil-reservoir adjacent to and communicating with the axle-opening, by a dovetailed aperture with its larger end opening into the axle-opening, a correspondingly-shaped casing adapted to engage the aperture and having a perforate end closing the opening and curved to form a continuation of the adjacent curved walls of the axle-opening, and a fibrous material filling the casing between the perforate closure and the reservoir.

3. A hub having an axle-opening, an oil-reservoir surrounding the axle-opening and substantially concentric therewith and with a tapered aperture connecting the axle-opening and reservoir with its larger end opening into the axle-opening, a casing proportioned to be inserted through the axle-opening into and to fit the aperture and having a perforate end closing the aperture and coinciding substantially with the interior curvature of the axle-opening, a wick engaged within the casing and having one end in contact with the perforate closure and the other end extending into the reservoir, a charging-chamber provided with a charging-opening and communicating with the reservoir, and a valve for the opening.

812,888. SPEED-CHANGING MECHANISM. PETER SHANNON, Chicago, Ill. Filed July 5, 1904. Serial No. 215,502.

Claim.—1. In a speed-changing mechanism, the combination of a driving-shaft, a driven shaft in parallel relation thereto, gear-wheels carried by said shafts, a carrying-head capable of circular adjustment with relation to the axis of the driving-shaft, and a series of trains of variable-speed gears carried by said head and comprising a series of outer gear-wheels having variable diameters, intermediate idler-gear wheels operatively connecting said outer gear-wheels with the gear-wheel of the driving-shaft, and a series of outer gears of uniform diameter moving in unison with the series of outer variable gears aforesaid, and adapted to be successively brought into operative engagement with the gear-wheel of the driven shaft, substantially as set forth.

2. In a speed-changing mechanism, the combination of a driving-shaft, a driven shaft in parallel relation thereto, gear-wheels carried by said shafts, a carrying-head capable of circular adjustment with relation to the axis of the driving-shaft, and a series of trains of variable-speed gears carried by said head and comprising a series of outer gear-wheels having variable diameters and arranged in alternated relation to each other, a series of idler-gear wheels each of which operatively connect a pair of said outer gear-wheels with the gear-wheel of the driving-shaft, and a series of outer gears of uniform diameter moving in unison with the series of outer variable gears aforesaid and adapted to be successively brought into operative engagement with the gear-wheel of the driven shaft, substantially as set forth.

3. In a speed-changing mechanism, the combination of a driving-shaft, a driven shaft in parallel relation thereto, gear-wheels carried by said shafts, a carrying-head capable of circular adjustment with relation to the axis of the driving-shaft, and a series of trains of variable-speed gears carried by said head and comprising a series of outer gear-wheels having variable diameters and arranged in alternated relation to each other, a series of idler-gear wheels each of which operatively connect a pair of said outer gear-wheels with the gear-wheel of the driving-shaft and a series of outer gear-wheels of uniform diameter and arranged in alternated relation, said series of gears having movement in unison with the series of outer variable gears aforesaid and adapted to be successively brought into operative engagement with the gear-wheel of the driven shaft, substantially as set forth.

812,889. HOT-WATER HEATING SYSTEM. WILLIAM J. SHERTZ, Washington, D. C., assignor of one-half to Henry M. Baker, Washington, D. C. Filed Mar. 15, 1904. Serial No. 198,314.

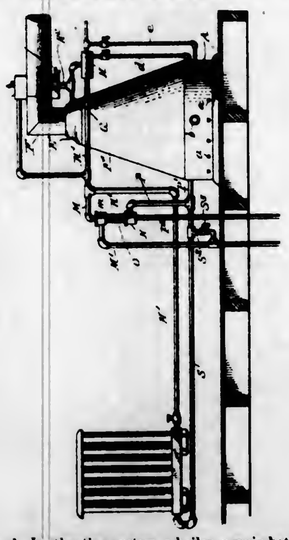

Claim.—1. In a heating system, a boiler, a main hot-water pipe and a return-pipe connected with said boiler, a feed-pipe, a waste-pipe, and a steam-operated safety device connecting the main hot-water pipe and the waste-pipe and controlling the supply of cold water to the boiler during its operation.

2. In a heating system a boiler, a feed-pipe, a main hot-water pipe leading to the radiator, a waste-pipe, and a safety device arranged between the feed and waste pipes and connected to the hot-water pipe, said device comprising two valves adapted to be operated in unison to control the flow of water to the feed-pipe and the flow from the waste or discharge pipe.

3. In a heating system, a boiler, an expansion-chamber connected therewith, a main hot-water pipe leading to the radiator, a return-pipe from the radiator to the boiler, a waste-pipe from said hot-water pipe, a feed-pipe, a burner connected with the gas-supply, thermostat arranged in the hot-water pipe and controlling the flow of gas to the burner, a safety device arranged between the hot-water pipe and the feed-pipe and controlling the inlet of water to the boiler and the outflow from the hot-water pipe, and a pilot-burner connected to the gas-supply.

812,890. BOILER. WILLIAM J. SHERTZ, Washington, D. C., assignor of one-half to Henry M. Baker, Washington, D. C. Filed July 6, 1904. Serial No. 215,553.

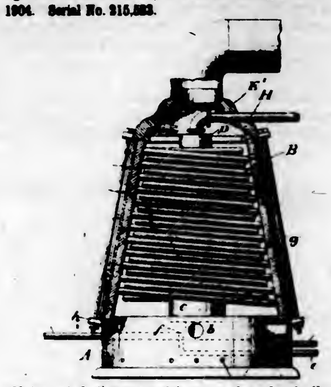

Claim.—A boiler comprising a series of spirally-coiled tubes forming truncated cones, said coiled tubes being arranged one within the folds or convolutions of the other so that they break joint with each other, a manifold or drum arranged within and filling the space of the top coil of the inner coiled tube, a manifold or drum within the lower or bottom coil, each of said series of tubes being connected to said manifolds, and an escape-pipe entering the top manifold or drum.

812,891. INTERCONNECTED SUSPENSION MEANS FOR GEARLESS MOTORS. ROBERT SIEGFRIED, Pittsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed June 13, 1905. Serial No. 264,913.

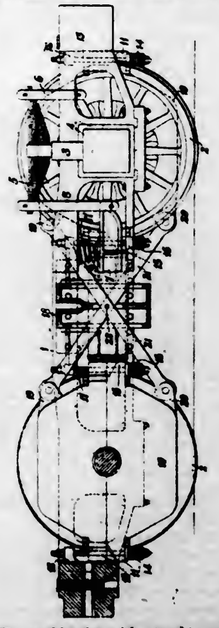

Claim.—1. The combination with a truck, a pair of electric motors and supporting connections between the same and the truck, of balancing-links the opposite ends of which are connected respec-

tively to the upper and lower parts of said motors and the middle points of which are connected together.

2. The combination with a truck, a pair of electric motors and supporting connections between the motors and the trucks, of a pair of balancing-links each of which connects the upper side of the one motor with the lower side of the other.

3. The combination with a truck, a pair of electric motors and supporting connections between the motors and the trucks, of a pair of links the ends of which are pivotally attached to opposite sides of opposite motors and the middle points of which are connected together.

4. The combination with a truck, a pair of electric motors and supporting connections between the motors and the trucks, of a pair of links the ends of which are pivotally attached to opposite sides of opposite motors.

812,892. **BURGLAR-ALARM.** JACOB H. SNOW, Indianapolis, Ind. Filed July 28, 1905. Serial No. 271,697.

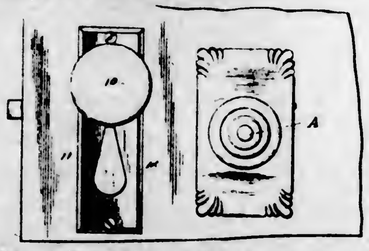

Claim.—1. The combination with the frame of a bell, a bell-hammer shank, and a spring-actuated slide-rod having an enlargement thereon resting normally in the path of said shank, an arm secured to the rod, the frame of the bell having a recess therein for the reception of the arm, of a door-knob, and means secured to the knob and arm for operating the alarm.

2. The combination with the frame of a bell, a bell-hammer shank, and a spring-actuated slide-rod having an enlargement thereon in the path of the shank, an arm secured to the shank, the frame of the bell having a recess therein for the reception of the arm, of a door-knob, and means connecting the knob and arm together, whereby the arm is caused to ride up the sides of the recess by the turning of the knob and sound the alarm.

3. The combination of a bell-hammer shank, a spring-actuated slide-rod for controlling the latter an arm on the rod having a V-shaped enlargement on one face thereof, the arm of the bell having a V-shaped recess or socket in which the enlargement normally rests, a push-button in position to actuate the rod, a door-knob, and means extending from the knob to the arm.

4. The combination with a door bell, knob and lock having the usual keyhole, of an outer knob-shank, a keyhole-plate rigidly secured to the outer knob-shank, and normally closing the keyhole, an inner knob-shank and means extending from the inner knob-shank to the bell whereby to cause the sounding of the latter with the turning of the knob or the moving the keyhole-plate.

5. The combination of a bell-hammer shank, and a spring-actuated slide-rod for controlling the latter, said rod having an enlargement thereon, which normally rests in the path of the vibratory shaft of the hammer-shank whereby to prevent the latter from striking the bell when it is in its normal position, an arm secured to the rod, a push-button for forcing the rod endwise to release the bell-hammer, means for normally holding the arm in position, a rod extending from the knob to the arm whereby the arm is rocked with the turning of the knob, to move the rod endwise and release the bell-hammer.

812,893. **WHEEL-TIRE.** EUGENE F. SCHMIZ, Bethlehem, Pa. Filed Sept. 10, 1903. Serial No. 172,173.

Claim.—1. The combination with a vehicle-wheel of two or more annular members movably disposed relative to the felly portion of the same and with the opposite edges overhanging, annular clamp-plates bearing against the sides of the wheel and with their inner faces overhanging, means for securing said clamp-plates to the wheel, and elastic tire members encircling the wheel between said annular members and said clamp-plates and with the side faces projecting beneath the overhanging portions of the clamp-plates and annular members.

2. The combination with a vehicle-wheel of a band encircling the felly portion of the same, means for detachably securing said band to the felly, two or more annular members movably bearing upon said band and with the sides overhanging laterally, annular clamp-plates bearing upon the edges of said band and with their inner faces overhanging the band, means for securing said clamp-plates to the band, and elastic tire members bearing upon the band between said annular members and the clamp-plates and formed with the side faces projecting beneath the overhanging portions of said annular members and clamp-plates.

3. The combination with a vehicle-wheel of a band encircling the felly and with an annular rib integral therewith and with side faces overhanging the band, annular clamp-plates bearing against the sides of the wheel and with their inner faces overhanging the band and elastic tire members encircling the wheel between said annular rib and annular clamp-plates and bearing upon said band and with the side faces of the tire members projecting beneath the overhanging portions of the clamp-plates and ribs.

812,894. **MANUFACTURE OF GLASS.** JAMES R. SPEER, Pittsburg, and GEORGE H. HARVEY, Glenfield, Pa., assignors to Brownsville Glass Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed Apr. 1, 1905. Serial No. 253,253.

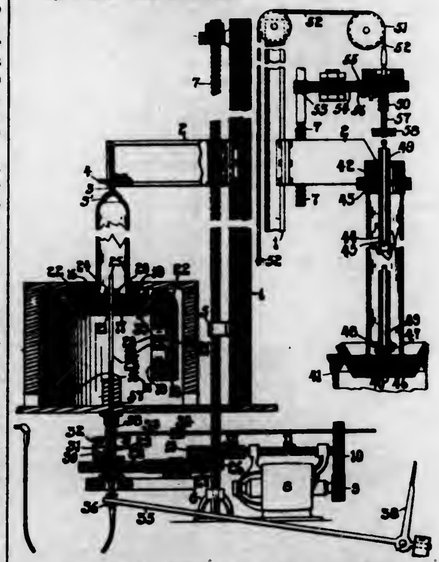

Claim.—1. In the manufacture of hollow glassware, means independent of the molten glass for cooling the glass in the neighborhood of the drawing zone, and means for lowering the cooling means in unison with the lowering of the molten glass in the receptacle therefor during the drawing operation.

2. In the manufacture of hollow glassware, means for delivering a gaseous fluid within the hollow ware in the neighborhood of the drawing zone and means for lowering the delivering means during the drawing operation.

3. In the manufacture of hollow glass, means within the hollow glass for cooling the glass in the neighborhood of the drawing zone, and means for producing a relative movement of the glass-container and the cooling means during the drawing operation.

4. In the manufacture of hollow glass articles, means for supplying a gaseous pressure within the article during the drawing operation and means for simultaneously lowering the said supplying means.

5. In the manufacture of hollow glass articles, means for drawing the glass, means for supplying a gaseous pressure within the article during the drawing operation, means for lowering the said supplying means at a desired rate relative to the rate of travel of the drawing means.

6. In the manufacture of glass, a swinging pot, having an opening and means for admitting a fluid through said opening but out of contact with the molten glass and means for swinging the pot so that its mouth will be sufficiently low to drain the same.

7. In the manufacture of glass, a swinging pot having an opening, means for admitting a fluid through said opening and means for removing said first means.

8. In the manufacture of hollow glass articles a pipe to conduct fluid to the interior thereof, means for lowering the pipe, said means including a detachable connection, and means for withdrawing the detachable connection.

9. In the manufacture of hollow glass articles, a pipe to conduct fluid to the interior thereof, means for lowering the pipe, said means including a detachable connection, means for withdrawing the detachable connection and a second means for lowering the said pipe.

10. Steps in the process of drawing hollow glassware, which consist in drawing vertically a hollow body directly from the molten glass, causing the level of the glass to change as the drawing progresses and supplying a cooling medium within the hollow ware at a substantially fixed distance from the drawing zone.

11. Steps in the process of drawing hollow glass which consist in drawing vertically a hollow body directly from the molten glass, causing a gaseous fluid to be delivered within and against the same at a substantially fixed distance from the drawing zone.

12. Steps in the process of drawing hollow glass articles which consist in drawing vertically a hollow body directly from the molten glass, supplying a gas in the neighborhood of the drawing zone, within the hollow glass and simultaneously lowering the supplying means.

812,895. **CUTTER FOR CUTTING TOOTHPICKS FROM VENEER STRIPS.** GEORGE P. STANLEY, Dixfield, Me., assignor to Cesar H. Harvey, trustee, Portland, Me. Filed Jan. 15, 1906. Serial No. 296,071.

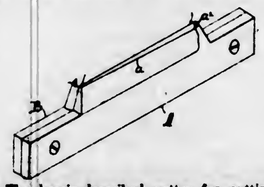

Claim.—The herein-described cutter for cutting toothpicks from veneer strips consisting of a main knife and an auxiliary knife secured together each having a straight cutting edge the two edges being separated by a slightly-tapering recess for forming the toothpicks, said main knife having a curved lateral wing its one end forming the wide rounded end of said recess and at the other end a short lateral wing forming the narrow end of said recess, the said auxiliary knife having like lateral wings projecting away from said recess and located on opposite ends from the wing on the main knife all of said wings being formed integral with their respective knives.

812,896. **REIN-SUPPORTER.** ALVARO B. STOCKBRIDGE, Washington Court-House, and THOMAS B. LAWHEAD, Greenfield, Ohio. Filed July 13, 1904. Serial No. 216,443.

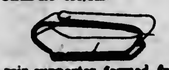

Claim.—1. A rein-supporter formed from a single piece of metal having an enlarged intermediate portion and elongated tapering fingers, the intermediate portion being bent upon itself and the fingers being bent back upon the intermediate portion and in engagement with each other.

2. A rein-supporter formed from a single piece of metal and comprising an enlarged intermediate portion and elongated tapering fingers secured to opposite edges of the intermediate portion, the said intermediate portion having one edge provided with barbs, the barbed edge of the intermediate portion being bent at an angle to the latter and in engagement with the opposite edge of the intermediate portion, the bent portions of the intermediate portion being spaced apart, whereby it may be secured to harness, the said fingers being bent back into engagement with each other above the bent intermediate portion for the support of a rein.

3. A rein-supporter comprising an intermediate portion, and oppositely-disposed fingers, the intermediate portion being bent back upon itself and provided with barbs whereby it may be secured to harness, the said fingers being bent into engagement with each other above the bent intermediate portion to form a guide.

812,897. **HAY-RAKE ATTACHMENT.** JESSE H. SUTHERLAND Dawkins, Colo. Filed Dec. 12, 1904. Serial No. 236,690.

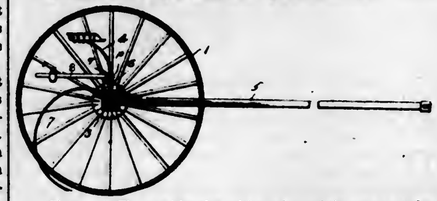

Claim.—1. The combination with a rake and the seat-post thereof, of a member connected to said post, and adjustable means connected to said member for obstructing the lift of the rake.

2. The combination with a rake and supporting-frame therefor, of a bar connected adjustably to said frame, and adjustable means connected with said bar for limiting the lift of the rake.

3. The combination with a rake and its supporting-frame, of a bar connected to said frame located above the rake, and means thereon for limiting the lift of the rake.

4. The combination with a rake and its supporting-frame, of a bar adjustably connected to said frame located above the rake, and said bar provided with means for limiting the lift of the rake.

5. The combination with a rake having a suitable supporting-frame of a bar adjustably connected to said frame and located above said rake, having adjustable means for limiting the lift of said rake.

6. The combination with a rake and supporting-frame, of a bar clamped to said frame, and a cross-bar secured on the first bar and located in the path of the lift of the rake.

7. In a rake, the combination with the seat-post, of a bar having means for attachment thereto, a cross-bar fastened to said first-mentioned bar and located in the path of the lift of the rake.

8. The combination with a rake, of a seat-post, a slotted bar having means for attachment thereto, and a cross-bar adjustably connected to said slotted bar and located in the path of the lift of the rake.

9. In a rake, the combination with the seat-post thereof, of a slotted bar having means for attachment to said post, a bar arranged at right angles to said slotted bar and located in the path of the lift of the rake, and a bolt and nut for clamping said bars together.

812,898. **FEED MECHANISM.** JOHN J. TEAGHER, Attleboro, Mass., assignor to Brown and Sharpe Manufacturing Company, Providence, R. I., a Corporation of Rhode Island. Filed Feb. 13, 1906. Serial No. 300,467.

Claim.—1. The combination of a power feed mechanism, a part operated thereby, and mechanism for manually accelerating the movement of the part during the operation of the power-feed.

2. The combination of a power feed mechanism, a part operated thereby, and mechanism for manually accelerating or retarding the movement of the part during the operation of the power-feed.

3. The combination of a power-feed, a carriage operated thereby, mechanism for manually accelerating the movement of the carriage during the operation of the power-feed.

4. The combination of a work-support, a grinding-wheel support, power mechanism for feeding one of said supports, and mechanism for manually varying the feed during the operation of the power feeding mechanism.

5. The combination of a carriage, a power-driven member, gearing through which motion is transmitted to said carriage, and mech-

anism for manually operating said gearing while in operation to vary the movement of said carriage by the power-driven member.

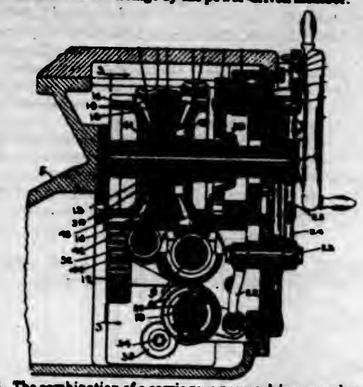

6. The combination of a carriage, a power-driven member, gearing through which motion is transmitted to said carriage, and mechanism for manually moving said gearing about the axis of the driving member to vary the movement of the carriage by the driving member

7. The combination of a carriage, of a driven member connected with the carriage, a driving member, intermediate gearing, power mechanism for operating the driving member, and mechanism for manually turning the intermediate gearing about the axis of the driving and driven members.

8. The combination with a carriage of a power-driven feed mechanism therefor, and a manual feed therefor unaffected by the power-feed when operatively connected with the carriage.

9. The combination with a carriage of a power-driven feed mechanism therefor, intermediate gearing in said mechanism, means for holding said intermediate gearing in position during the operation of the feed mechanism, and mechanism for manually shifting said gearing to effect the manual feed of the carriage.

10. The combination with a driven gear and a part operated therefrom, of a driving-gear, power mechanism for operating said driving-gear, intermediate gearing between said driving and driven gears, a frame carrying said intermediate gearing, and mechanism for manually operating said frame.

11. The combination with a driven gear and a part operated therefrom, of a driving-gear, power mechanism for operating said driving-gear, intermediate gearing between said driving and driven gears, a frame carrying said intermediate gearing, means for locking said frame in position and means for manually operating said frame.

12. The combination with a driven gear and a part operated therefrom, of a driving-gear, a worm-wheel connected with said driving-gear, a worm engaging said worm-wheel, a power mechanism for operating said worm, intermediate gearing between the driving and driven gears, a frame carrying said intermediate gearing, a worm-wheel connected with the frame, a worm engaging the worm-wheel, and mechanism for manually operating said worm.

13. The combination of a work-support, a tool-support, a driven gear connected to feed one of said supports, a driving-gear, power mechanism for operating said driving-gear, intermediate gearing between the driving and driven gears, means for holding said intermediate gearing in position, and means for manually shifting said intermediate gearing to impart movement to the connected support.

14. The combination of a work-support, a tool-support, a driven gear connected to feed one of said supports, a driving-gear, power mechanism for operating said driving-gear, mechanism for reversing said power mechanism, intermediate gearing between said driving and driven gears, and mechanism for manually shifting said gearing to impart movement to the connected support.

15. The combination of a work-support, a tool-support, a power-driven feed mechanism connected with one of said supports, a hand-operated device, and gearing between said device and the movable support for transmitting motion from the device to said support and preventing movement of said device by the power-driven mechanism.

16. The combination of a work-support, a tool-support, a reversing mechanism, gearing intermediate said reversing mechanism and one of said supports for feeding it in either direction, and manually-operated mechanism for effecting a relative movement between parts of said gearing to transmit motion to the connected support.

17. The combination of a work-support, a grinding-wheel support, a reversing-mechanism gearing intermediate said mechanism and one of said supports for feeding it in either direction, a hand device, and connections between said device and said gearing for shifting a part of said gearing to transmit motion from said device to the connected support.

812,899. BELT-TIGHTENER. JOHN J. TRACHER, Attleboro, Mass., assignor to Brown and Sharpe Manufacturing Company, Providence, R. I., a Corporation of Rhode Island. Filed July 3, 1905. Serial No. 268,620.

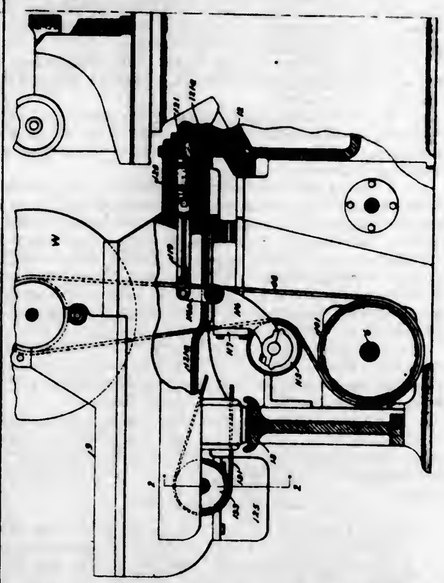

Claim.—1. A belt-tightening mechanism comprising a belt, a belt-engaging device, a piston connected with said device, devices for maintaining a fluid-pressure on said piston, and driving mechanism for the belt and connection for driving the pressure-maintaining devices from said driving mechanism, substantially as described.

2. A belt-tightening mechanism comprising a belt, a belt-engaging device, a piston connected with said device, and devices for maintaining a fluid-pressure on said piston driven from the driving mechanism for the belt.

3. A belt-tightening mechanism comprising a belt-engaging device, and means for forcing the device against the belt by fluid under pressure, which are rendered inoperative upon the stopping of the belt.

4. A belt-tightening mechanism comprising a belt-engaging device, a piston connected with the device, and a pump for maintaining fluid-pressure on the piston and a common driving mechanism for the pump and belt.

812,900. RAIL-BOND. EDWARD G. TRUMAN, Cambridge, Mass. Filed Dec. 24, 1902. Serial No. 136,402.

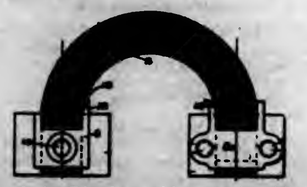

Claim.—1. A rail-bond comprising a number of flexible strips provided with an attaching-surface intersecting the intended path of the electric current conveyed by the bond and formed by the collective exposed surfaces of the strips on one side of the bond, and also having a transversely-extending recess opposite said attaching-surface, in combination with a binding-plate located in said recess.

2. A rail-bond comprising a number of flexible strips, and an attaching-strip secured to the collective exposed surfaces of said flexible strips on one side of the bond, and extending beyond the edges of said collective surfaces in the same plane therewith, said bond being also provided with a transversely-extending recess opposite said attaching-strip, in combination with a binding-plate located in said recess.

3. A rail-bond comprising a number of flexible strips provided with an attaching-surface formed by the collective exposed surfaces of the strips on one side of the bond, in combination with a U-shaped binding-plate having its middle portion placed against said strips opposite said attaching-surface and having its ends arranged to confine said strips against lateral separation.

4. A rail-bond comprising a number of flexible strips provided with an attaching-surface formed by the collective exposed surfaces of the strips on one side of the bond and also having a transversely-extending recess opposite said attaching-surface, in combination with a U-shaped binding-plate embracing said strips and having its central portion located in said recess.

5. A rail-bond comprising a number of flexible strips and an attaching-strip secured to the collective exposed surfaces of said flexible strips on one side of the bond, said bond being also provided with a transversely-extending recess opposite said attaching-strip, in combination with a U-shaped binding-plate embracing said strips and having its central portion located in said recess.

6. A rail-bond comprising a number of flexible strips provided with an attaching-surface formed by the collective exposed surfaces of the strips on one side of the bond, and also having a transversely-extending recess opposite said attaching-surface, in combination with a U-shaped perforated binding-plate having its central portion located in said recess.

7. A rail-bond comprising a number of flexible strips and an attaching-strip secured to the collective exposed surfaces of said flexible strips on one side of the bond, said bond being also provided with a transversely-extending recess opposite said attaching-strip, in combination with a U-shaped perforated binding-plate having its central portion located in said recess.

8. A rail-bond comprising a number of flexible strips provided with an attaching-surface formed by the collective exposed surfaces of the strips on one side of the bond, and having a transversely-extending recess opposite said attaching-surface, said attaching-surface intersecting the intended path of the electric current conveyed by said bond, in combination with a binding-plate located in said recess, and means for preventing the lateral separation of said strips.

9. A rail-bond comprising a number of flexible strips and an attaching-strip secured to the collective exposed surfaces of said flexible strips on one side of the bond, and extending beyond the edges of said collective surfaces in the same plane therewith, said bond being also provided with a transversely-extending recess opposite said attaching-strip, in combination with a binding-plate located in said recess, and means for preventing the lateral separation of said flexible strips.

10. A rail-bond comprising a number of flexible strips provided with an attaching-surface formed by the collective exposed surfaces of the strips on one side of the bond, and also having a transversely-extending recess opposite said attaching-surface, said attaching-surface intersecting the intended path of the electric current conveyed by said bond, the bottom of said recess forming an acute angle with said attaching-surface, in combination with a binding-plate located in said recess.

11. A rail-bond comprising a number of flexible strips and an attaching-strip secured to the collective exposed surfaces of said flexible strips on one side of the bond, and extending beyond the edges of said collective surfaces in the same plane therewith, said bond being provided with a transversely-extending recess located opposite said attaching-strip and having its bottom forming an acute angle with said attaching-strip, in combination with a binding-plate located in said recess.

12. A rail-bond comprising a number of flexible strips provided with an attaching-surface formed by the collective exposed surfaces of the strips on one side of the bond, and also having a transversely-extending recess opposite said attaching-surface, the bottom of said recess making an acute angle with said attaching-surface, in combination with a U-shaped binding-plate having its central portion located in said recess.

13. A rail-bond comprising a number of flexible strips and an attaching-strip secured to the collective exposed surfaces of said flexible strips on one side of the bond, said bond being also provided with a transversely-extending recess, the bottom of which forms an acute angle with said attaching-strip, in combination with a U-shaped binding-plate having its central portion located in said recess.

14. A rail-bond comprising a number of flexible strips provided with an attaching-surface formed by the collective exposed surfaces of the strips on one side of the bond, in combination with a U-shaped binding-plate embracing said strips opposite said attaching-surface, the ends of said binding-plate being formed to extend laterally beyond the central portion thereof, in a direction parallel with the length of the strips, for the purpose set forth.

15. A rail-bond comprising a number of flexible strips and an attaching-strip secured to the collective exposed surfaces of said strips on one side of the bond, in combination with a U-shaped binding-plate embracing said flexible strips opposite said attaching-strip, the ends of the binding-plate being extended laterally beyond the central portion thereof, in a direction parallel with the length of the strips, for the purpose set forth.

16. A rail-bond comprising a number of flexible strips provided with an attaching-surface formed by the collective exposed surfaces of the strips on one side of the bond, and also having a transversely extending recess opposite said attaching-surface, said attaching-surface intersecting the intended path of the electric current conveyed by said bond, in combination with a binding-plate having its central portion located in said recess and having its ends extended beyond said central portion, toward the flexible portion of the bond.

17. A rail-bond comprising a number of flexible strips and an attaching-strip secured to the collective exposed surfaces of said flexible strips on one side of the bond, and extending beyond the edges of said collective surfaces in the same plane therewith, said bond being also provided with a transversely-extending recess opposite said attaching-strip, in combination with a binding-plate having its central portion located in the said recess and having its ends extended beyond said central portion, toward the flexible portion of the bond.

18. A rail-bond comprising a number of flexible strips provided with an attaching-surface formed by the collective exposed surfaces of the strips on one side of the bond, in combination with a U-shaped binding-plate embracing said strips opposite said attaching-surface and having an extended end provided with a rounded inner surface adjacent to the flexible portion of the bond, for the purpose set forth.

19. A rail-bond comprising a number of flexible strips and an attaching-strip secured to the collective exposed surfaces of said flexible strips on one side of the bond, in combination with a U-shaped binding-plate embracing said strips opposite said attaching-surface and having an extended end provided with a rounded inner surface adjacent to the flexible portion of the bond, for the purpose set forth.

20. A rail-bond comprising a number of flexible strips provided with an attaching-surface formed by the collective exposed surfaces of the strips on one side of the bond, and also having a transversely-extending recess opposite said attaching-surface, in combination with a binding-plate located in said recess and having an extended end provided with a rounded inner surface adjacent to the flexible portion of the bond and normally out of contact therewith, for the purpose set forth.

21. A rail-bond comprising a number of flexible strips and an attaching-strip secured to the collective exposed surfaces of said flexible strips on one side of the bond, said bond being also provided with a transversely-extending recess opposite said attaching-strip, in combination with a binding-plate located in said recess, and having an extended end provided with a rounded inner surface adjacent to the flexible portion of the bond and normally out of contact therewith, for the purpose set forth.

22. A rail-bond comprising a number of flexible strips provided with an attaching-surface formed by the collective exposed surfaces of the strips on one side of the bond, in combination with a binding-plate placed against said strips opposite said attaching-surface, said binding-plate being provided with two perforations located adjacent to the edges of the bond, and the direction of said perforations being perpendicular to said collective exposed surfaces of the flexible strips.

23. A rail-bond comprising a number of flexible strips provided with an attaching-surface formed by the collective exposed surfaces of the strips on one side of the bond, in combination with a U-shaped binding-plate embracing said strips opposite said attaching-surface, said binding-plate being provided with two perforations located adjacent to the edges of the bond, and the direction of said perforations

being perpendicular to said collective exposed surfaces of the flexible strips.

24. A rail-bond comprising a number of flexible strips and an attaching-strip secured to the collective exposed surfaces of said strips on one side of the bond, in combination with a binding-plate placed against said flexible strips opposite said attaching-strip, and provided with two perforations located adjacent to the edges of the bond, the direction of said perforations being perpendicular to said collective exposed surfaces of the flexible strips.

25. A rail-bond comprising a number of flexible strips and an attaching-strip secured to the collective exposed surfaces of said flexible strips on one side of the bond, in combination with a U-shaped binding-plate embracing said flexible strips opposite said attaching-strips and provided with two perforations located adjacent to the edges of the bond, the direction of said perforations being perpendicular to said collective exposed surfaces of the flexible strips.

26. A rail-bond comprising a number of flexible strips provided with an attaching-surface formed by the collective exposed surfaces of the strips on one side of the bond, and also having a transversely-extending recess opposite said attaching-surface, in combination with a binding-plate having its central portion located in said recess and also having two perforations located adjacent to the edges of the bond.

27. A rail-bond comprising a number of flexible strips and an attaching-strip secured to the collective exposed surfaces of said flexible strips on one side of the bond, said bond being also provided with a transversely-extending recess opposite said attaching-strip, in combination with a binding-plate having its central portion located in said recess and also having two perforations located adjacent to the edges of the bond.

28. A binding-plate for rail-bonds provided with two perforated lugs and also having its end portions extended beyond one edge of its central portion, transversely to the direction of the perforations in said lugs.

29. A U-shaped binding-plate for rail-bonds having its end portions extended laterally beyond one edge of its central portion, and also having two perforated lugs located on opposite sides of said central portion.

30. A rail-bond comprising a number of flexible strips having superimposed flat attaching portions the corresponding edges of which extend laterally beyond the flexible portion of the bond, said extending edges providing collectively an attaching-surface at one side of the bond.

31. A rail-bond comprising a number of flexible strips having superimposed flat attaching portions the corresponding edges of which extend laterally beyond the flexible portion of the bond, said extending edges providing collectively an attaching-surface at one side of the bond, in combination with means for clamping said attaching-surface against a rail.

32. A rail-bond comprising a number of flexible strips having superimposed flat attaching portions the corresponding edges of which extend laterally beyond the flexible portion of the bond, said extending edges providing collectively an attaching-surface at one side of the bond, in combination with a binding-plate embracing said strips opposite said attaching-surface.

33. A rail-bond comprising a number of flexible strips having superimposed flat attaching portions the corresponding edges of which extend laterally beyond the flexible portion of the bond, said extending edges providing collectively an attaching-surface at one side of the bond, in combination with a binding-plate applied to said strips opposite said attaching-surface and perforated to receive an attaching bolt or rivet.

34. A rail-bond comprising a number of flexible strips having superimposed flat attaching portions the corresponding edges of which extend laterally beyond the flexible portion of the bond, said extending edges providing collectively an attaching-surface at one side of the bond, in combination with means for confining the attaching portions of said strips in superimposed relation.

812,901. AUTOMATIC SHEET-ADJUSTING DEVICE FOR PRINTING-PRESSES. FRED H. TRESSEL, Columbus, Ohio. Filed May 26, 1905. Serial No. 262,260.

Claim.—1. In an automatic sheet-adjuster, the combination with the platen and gripper-bar, of a printing-press of a bracket secured to the platen, a slide-bar mounted to slide longitudinally on the bracket, means having connection with the slide-bar and the gripper-bar for imparting motion to said slide-bar, an adjusting-bar movable at right angles to the slide-bar, crossed links having connection with the adjusting-bar, the slide-bar and the bracket for moving the adjusting-bar laterally, and a pusher-piece mounted on the adjusting-bar.

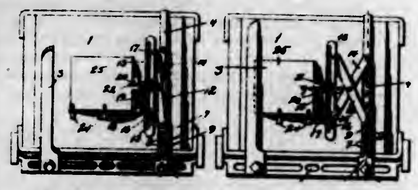

2. In an automatic sheet-adjuster, the combination with the platen and gripper-bar, of a printing-press of a bracket secured to the platen, a slide-bar mounted to slide longitudinally on the bracket, means having connection with the slide-bar and the gripper-bar for imparting motion to said slide-bar, an adjusting-bar movable at right angles to the slide-bar, crossed links having connection with the adjusting-bar, the slide-bar and the bracket for moving the adjusting-bar laterally, and a pusher-piece adjustable on the adjusting-bar in directions at substantially right angles to each other.

3. In an automatic sheet-adjuster, the combination with the platen and the gripper-bar of a printing-press, a support arranged on the platen, sheet-adjusting parts, crossed links interposed between the sheet-adjusting parts and the support for laterally and downwardly moving said parts, and means operating on the support having connection with the gripper-bar and the crossed links for imparting motion to the latter.

812,902. FRICTION DRAFT-RIGGING FOR RAILWAY-CARS. FREDERICK B. TOWNSEND, Chicago, Ill., assignor to W. H. Miner Company, Chicago, Ill., a Corporation of Illinois. Filed Oct. 28, 1904. Serial No. 230,315.

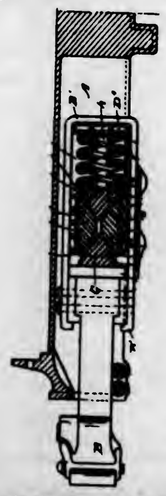

Claim.—1. In a friction draft-rigging, the combination with a draw-bar and a draw-bar strap or yoke, of a sliding friction shell or casing having a friction-chamber and interior friction-faces parallel with the draw-bar, and a spring-chamber of larger size or diameter than the friction-chamber, sliding friction-blocks within the friction-chamber of said shell or casing having exterior friction-faces parallel to and in sliding frictional engagement with said interior friction-faces of said shell or casing, a wedge or device for spreading said blocks and a spring in the spring-chamber of said shell or casing, said friction shell or chamber having an opening in one of its sides for insertion and removal of the spring, the walls of said friction-chamber being thicker and stronger than the walls of said spring-chamber, substantially as specified.

2. In a friction draft-rigging, the combination with a draw-bar and a draw-bar strap or yoke, of a sliding friction shell or casing having a friction-chamber and interior friction-faces parallel with the draw-bar, and a spring-chamber of larger size or diameter than the friction-chamber, sliding friction-blocks within the friction-chamber of said shell or casing having exterior friction-faces parallel to and in sliding frictional engagement with said interior friction-faces of said shell or casing, a wedge or device for spreading said blocks and a spring in the spring-chamber of said shell or casing, said spring being of larger size or diameter than the friction-chamber, said friction shell or casing having an opening in one of its sides for insertion and removal of the spring, the walls of said friction-chamber being thicker and stronger than the walls of said spring-chamber, substantially as specified.

3. In a friction draft-rigging, the combination with a car-frame furnished with front and rear stops, of a draw-bar and draw-bar yoke or extension, a follower abutting against one of said stops on the car-frame, a sliding friction shell or casing abutting at one end against the other stop on the car-frame, and having a friction-chamber, and a spring-chamber of larger size than the friction-chamber, said sliding friction-shell having interior friction-faces parallel to the draw-bar, and said friction-blocks having exterior friction-faces parallel to and in frictional engagement with said interior friction-faces of said friction shell or casing, sliding friction-blocks in said friction-chamber, a wedge for spreading said blocks and a spring, said friction shell or casing having a lateral opening for insertion and removal of the spring, the walls of said friction-chamber being thicker and stronger than the walls of said spring-chamber, substantially as specified.

4. In a friction draft-rigging, the combination with a car-frame furnished with front and rear stops, of a draw-bar and draw-bar yoke or extension, a follower abutting against one of said stops on the car-frame, a sliding friction shell or casing abutting at one end against the other stop on the car-frame, and having a friction-chamber, and a spring-chamber of larger size than the friction-chamber, sliding friction-blocks in said friction-chamber, said sliding friction-shell having interior friction-faces parallel to the draw-bar, and said friction-blocks having exterior friction-faces parallel to and in frictional engagement with said interior friction-faces of said friction shell or casing, a pair of wedges for spreading said blocks and a spring, said sliding friction shell or casing having a lateral opening through one of its sides for insertion and removal of the spring, the walls of said friction-chamber being thicker and stronger than the walls of said spring-chamber, substantially as specified.

5. In a friction draft-rigging, the combination with a draw-bar and a draw-bar strap or yoke, of a sliding friction shell or casing having a friction-chamber and a spring-chamber and furnished with a lateral opening into the spring-chamber for insertion and removal of the spring, sliding friction-blocks in the friction-chamber, said sliding friction-shell having interior friction-faces parallel to the draw-bar, and said friction-blocks having exterior friction-faces parallel to and in frictional engagement with said interior friction-faces of said friction shell or casing, and a spring in the spring-chamber, the walls of said friction-chamber being thicker and stronger than the walls of said spring-chamber, substantially as specified.

812,903. GEARING. BERNHARD TROPP, New York, N. Y., assignor to William Henry Laird, New York, N. Y. Filed Sept. 17, 1904. Serial No. 224,882.

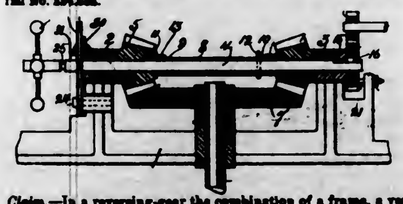

Claim.—In a reversing-gear the combination of a frame, a vertical and a pair of horizontal bearings extending from the frame, a main shaft located in the vertical bearing, a bevel-gear fastened to the main shaft, a second shaft supported in the horizontal bearings and having a pair of grooves, a pair of bevel-pinions supported on the second shaft, a sleeve on the second shaft separating the bevel-pinions, pins extending from the second shaft, pins extending from the bevel-pinions, the second shaft arranged to slide in its bearings so that one of the pins thereon may be engaged with a pin of the bevel-pinions in one position thereof, and the other pin of the second shaft arranged to be engaged with the pin of the other bevel-pinion after the second shaft has been moved to another position, a lever having a hook extending therefrom fulcrumed on the frame and arranged to engage one of the two grooves on the second shaft, a spring between the hook of the lever and the frame to hold the lever in engagement with one of the grooves on the second shaft, a lug extending from the frame, and means to lock the said lever with said lug.

812,904. LOCK AND LATCH MECHANISM. HENRY G. VOGHT, New Britain, Conn., assignor to The Russell & Erwin Manufacturing Company, New Britain, Conn., a Corporation of Connecticut. Filed Mar. 18, 1905. Serial No. 250,726.

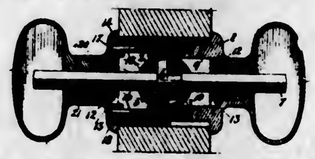

Claim.—1. In a lock and latch mechanism, a lock-case adapted to be inserted in the edge of a door and surrounded by the material thereof on both sides, a bolt, slide and roll-back guided and supported in said case, inner and outer bearing-plates connected to said case, telescopic means of connection for permitting the adjustment of said bearing-plates to and fro for doors of different thicknesses, and yet maintaining their alinement relative to each other and to said operating mechanism, and actuating knobs or members mounted in each of said plates.

2. In a lock and latch mechanism, the combination of a case adapted to be supported in a hole in the edge of a door, a bolt and operating mechanism supported therein, said case having grooves at the top and bottom, bearing-plates for the actuating members, and projecting members carried thereby coöperating with said grooves and with each other for permitting adjustment to and fro and maintaining proper alinement.

3. In a lock and latch mechanism, the combination of a case adapted to be supported in a hole in the edge of a door, a bolt and operating mechanism supported therein, said case having a transverse groove and a passage for the actuating-spindle, bearing-plates, a projection from one of said plates fitting said groove, means of connection between the other plate and said first plate and said case whereby said plates may be adjusted to and fro and held in alinement, and actuating-knobs carried by said plates.

4. In a lock and latch mechanism, a bearing-plate having a longitudinal passage with a shoulder at the inner end, a knob-shank fitting said passage and having an annular recess at its inner end, a plurality of segmental pieces fitting said recess and grooved in their outer surfaces, and a split spring-ring fitting the grooves and holding said pieces in place to prevent the withdrawal of said shank member, substantially as described.

5. In a lock and latch mechanism, the combination of two rose-plates adapted to the opposite sides of the door, operating-knobs having bearings therein, and coöperating telescopic means projecting from said plates with screws for attaching one to the other.

812,905. LOCK AND LATCH MECHANISM. HENRY G. VOGHT, New Britain, Conn., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn., a Corporation of Connecticut. Filed June 6, 1905. Serial No. 263,917.

Claim.—1. In a lock and latch mechanism, the combination of a latch-slide, inner and outer knobs, operative means of connection between said knobs and said slide, means for dogging the operative connection between one of said knobs and said latch-slide, and means for permitting the connection to be broken when the knob is forcibly rotated before the dogging connection is dislocated.

2. In a lock and latch mechanism, the combination of a latch-bolt, inner and outer knobs, means of operative connection between said knobs and said latch-bolt, means for dogging the operative connection between one of said knobs and said latch-bolt, a lock carried by said knob, a spindle connection therefrom to the other knob, and means for preventing the retraction of said bolt when the operative connection between said outer knob and said dogging device is broken.

3. In a lock and latch mechanism, the combination of a latch-bolt, inner and outer knobs, independent roll-backs therefor with operative means of connection to said latch-bolt, means for dogging one of said roll-backs, and breakable means of connection between said roll-back and its knob.

4. In a lock and latch mechanism, the combination of a latch-bolt, inner and outer knobs, independent roll-backs therefor with operative means of connection to said latch-bolt, means for dogging one of said roll-backs, breakable means of connection between said roll-back and its knob, and means for stopping the rotation of said outer knob when said connection is broken.

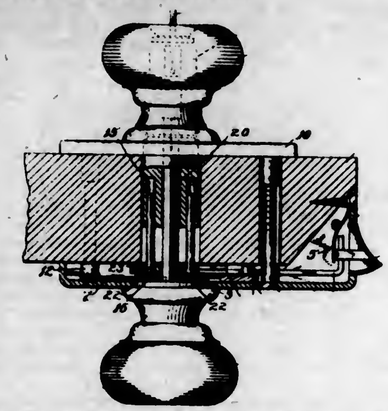

5. In a lock and latch mechanism, the combination of a latch-bolt, inner and outer knobs, operative means of connection between said knobs and said latch-bolt, a lock carried by one of said knobs, means for dogging the operation of said knob, means of connection between said lock and said latch-bolt for retracting said latch-bolt when said knob is dogged, means for permitting the connection between said knob and said latch-bolt to be broken when said dogging device is in operation, and means for preventing the retraction of said bolt by the continued rotation of said knob and lock connection.

6. In a lock and latch mechanism, the combination of a latch-bolt, inner and outer knobs, operative means of connection between said knobs and said latch-bolt, a lock carried by one of said knobs, means for dogging the operation of said knob, means of connection between said lock and said latch-bolt for retracting said latch-bolt when said knob is dogged, means for permitting the connection between said knob and said latch-bolt to be broken when said dogging device is in operation, and means for preventing the retraction of said bolt by the continued rotation of said knob and lock connection comprising a plate having two arms rotatable with said knob, stationary stops for said arms, and a projection normally retractable with said latch-bolt, but prevented from movement by one of said arms.

7. In a lock and latch mechanism, the combination of a latch-slide, inner and outer knobs, roll-backs therefor, a lock carried by one of said knobs having means of connection with the roll-back of the other knob, a plate rotatable with said lock-carrying knob, means of connection between said plate and the roll-back of said knob, means for dogging said roll-back, said knob and plate being rotatable independently of said roll-back by the application of considerable force when said roll-back is dogged.

8. In a lock and latch mechanism, the combination of a latch-slide, inner and outer knobs, roll-backs therefor, a lock carried by one of said knobs having means of connection with the roll-back of the other knob, a plate rotatable with said lock-carrying knob, means of connection between said plate and the roll-back of said knob, means for dogging said roll-back, said knob and plate being rotatable independently of said roll-back by the application of considerable force when said roll-back is dogged, and means for preventing the retraction of said slide by the continued rotation of said knob and lock connection.

812,906. **HOLDER FOR SHAVING-STICKS.** ROBERT L. WARREN, Boston Center, Mass. Filed Jan. 31, 1905. Serial No. 243,607.

Claim.—1. A shaving-stick holder consisting of a tubular case having a fixed partition within said case dividing the same into two compartments of different lengths, the shorter compartment being of less diameter than the longer compartment, the longer compartment adapted to receive and firmly hold a cylindrical stick of shaving-soap when inclosed in its paper wrapper, the shorter compartment adapted to receive and firmly hold the stick after the wrapper has been removed, and the fixed partition provided with a central aperture extending through it from side to side, substantially as shown and described.

2. A shaving-stick holder consisting of a hollow cylindrical shell having on its inner side a fixed partition dividing the same into two compartments of unequal length, a rim within the shorter compartment extending from the partition to the outer edge of the case, said shorter compartment adapted to receive and firmly retain a cylindrical piece of slippery shaving-soap which would be freely movable in the longer compartment, and the fixed partition provided with a central circular aperture extending from one compartment to the other, substantially as shown and described.

812,907. **DEVICE FOR HANGING REVOLVING-DOOR WINGS.** JULIUS WIESELER, Berlin, Germany. Filed Feb. 15, 1905. Serial No. 245,796.

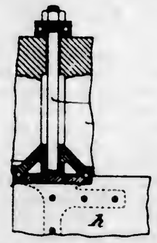

Claim.—1. A device for hanging revolving-door wings, comprising a vertical flanged pin turning in the roof of the door-chamber and holding the wing, to which it is secured, to the roof, a ball-bearing on which the top of the pin turns on the roof, and a second ball-bearing between the roof and the pin-flange, substantially as described.

2. A device for hanging revolving-door wings, comprising a vertical pin turning in the roof of the door-chamber and holding the wing, to which it is secured, to the roof, a ball-bearing on which the top of the pin turns on the roof, and two superposed ball-bearings for the pin, located in the roof, substantially as described.

812,908. **STEAM-BOILER.** DAVID WISHART, Greenbush, Ill. Filed Mar. 22, 1905. Serial No. 251,482.

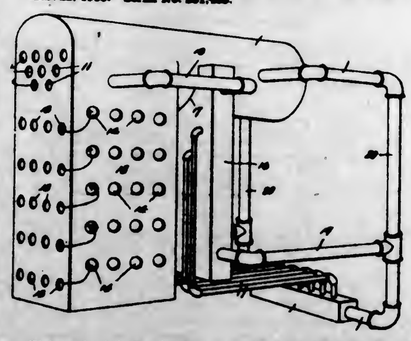

Claim.—1. A boiler having an approximately vertical portion provided with a series of sets of flues extending therethrough, each set comprising two rows of flues, one disposed above the other, and at a right angle thereto, all of the flues of one row of each set communicating with the combustion-chamber and arranged for the direct passage of the products of combustion, and flue members or partitions for directing the products of combustion from one row of each set to the second row of each set of flues.

2. The combination with a boiler, of an auxiliary water-heating chamber having a circulating connection with the boiler, said auxiliary chamber forming the rear wall of the fire-box and spaced from the front face of the main boiler to form a vertical passage or combustion-chamber through which the products of combustion must pass to the main boiler-flue.

3. The combination with a steam-boiler, of an auxiliary chamber arranged in front of the main boiler and forming the rear wall of the fire-box, a water-box arranged at the front of the boiler and having a circulating connection therewith, and a water-grate formed of tubes connected at their front edge to the water-box, the rear ends of said tubes extending upward within the combustion-space formed between the auxiliary chamber and the main boiler, and their upper ends being connected to said auxiliary chamber.

812,909. **TRACE-CARRIER.** JAMES H. WILSON, Denver, Colo. Filed Aug. 28, 1905. Serial No. 276,142.

Claim.—1. In a harness, the combination with a breeching, and a breeching-strap comprising lower and upper sections and a buckle connecting said sections and having a tongue; of a trace-carrier having an apertured body portion and an arm extending downwardly from the upper wall of the aperture in the body portion and terminating in an inwardly-directed hook, and also having an upper portion disposed obliquely to the body portion, and having an eye receiving the lower portion of the upper section of the breeching-strap, and an open lug extending inwardly from the upper wall of the eye and receiving the tongue of the buckle comprised in the breeching-strap.

2. As an article of manufacture, a trace-carrier comprising an apertured body portion, an arm extending downwardly from the upper wall of the aperture in the body portion and terminating in an inwardly-directed hook, an eye disposed above the apertured body portion, and an open lug extending inwardly at an angle from the upper wall of the eye.

812,910. **INVOICING-MACHINE.** JACOB G. WEBER, Joplin, Mo. Filed Aug. 15, 1905. Serial No. 274,271.

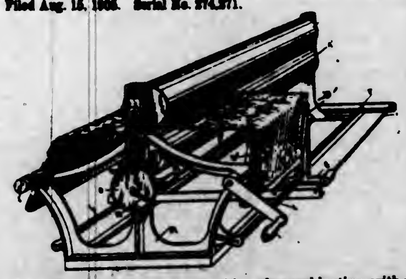

Claim.—In a cloth-measuring machine, the combination, with a fixed frame and two rolls journaled therein one over the other, of two sets of rotatable clamps arranged on opposite sides of said frame for holding belt-bands, the bearing and support of one of the clamps of each set being spring-actuated and adjustable toward and from the other, and the bearing of one of the clamps of each of the sets comprising, in addition to the clamp proper, the rotatable screw-threaded shaft *d* having a friction-head *e* that works in contact with a portion B of said frame, and a nut *c* and spring *g* applied to said shaft and arranged in a socket in the part B, for regulating friction and thereby the tension of the fabric while being unwound, as shown and described.

812,911. **BARREL-HEADING PRESS.** CHESS J. WYMAN, Medina, and CHARLES DUMBERRY and COURTLAND C. TERRILL, Akron, N. Y. Filed July 20, 1905. Serial No. 270,076.

Claim.—1. A barrel-heading press comprising a cross-bar having terminal upright guides, side bars slidable through the guides with their lower ends terminating in hooks and their upper ends provided with teeth, means extending between the cross-bar and the side bars to move the cross-bar upon the side bars, and connected pawls mounted upon the cross-bar for simultaneous engagement with the teeth of the side bars.

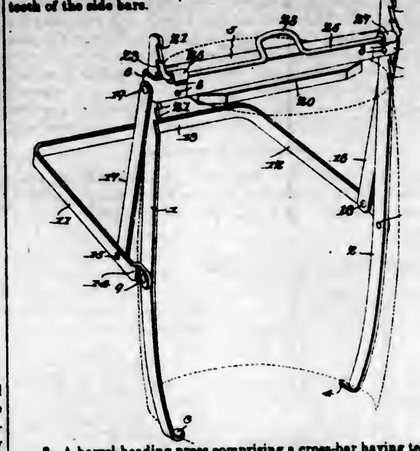

2. A barrel-heading press comprising a cross-bar having terminal guides, side bars slidable through the guides with their lower ends terminating in hooks and their upper ends provided with teeth, means for moving the cross-bar and carrying terminal pawls for simultaneous engagement with the teeth of the side bars.

3. A barrel-heading press comprising a cross-bar provided with terminal guides, side bars slidable through the guides with their lower ends terminating in hooks and their upper ends provided with teeth, means to move the cross-bar upon the side bars, and a rock-bar journaled upon the cross-bar, an intermediate portion of the rock-bar being bent into a crank-handle, and the terminals of the bar being bent to form pawls for simultaneous engagement with the teeth of the side bar.

4. A barrel-heading press comprising a cross-bar, substantially U-shaped clips embracing the ends of the bar and projecting beyond the same to form guide-openings, said clips being provided with bearing-eyes alined longitudinally of the cross-bar, side bars slidable through the guide-clips with their lower ends terminating in hooks and their upper ends provided with teeth, means for moving the cross-bar upon the side bars, and a rock-bar journaled in the eyes and provided with pawls engaging the teeth of the side bars.

5. A barrel-heading press comprising a cross-bar having terminal guides, side bars slidable through the guides with their lower ends terminating in hooks and their upper ends provided with teeth, means for moving the cross-bar upon the side bars, and a rock-bar journaled upon the cross-bar and provided with a handle and pawls lying upon the same side of the bar, the pawls being disposed for simultaneous engagement with the teeth of the side bars, and the handle constituting a weight to yieldably maintain the pawls in engagement with the teeth.

6. A barrel-heading press comprising a cross-bar, substantially U-shaped clips embracing the ends of the cross-bar and projecting beyond the latter to form guide-openings, said clips being provided with alined bearing-eyes at one side of the cross-bar, side bars slidable through the guide-openings with their lower ends terminating in hooks and their upper ends provided with teeth, means for moving the cross-bar upon the side bar, and a rock-bar journaled in the bearing-eyes, the terminals of the bar being bent into pawls for simultaneous engagement with the teeth of the side bars, and an intermediate portion of the rock-bar being bent into a handle lying upon the same side of the rock-bar as the pawls.

7. A barrel-heading press comprising a cross-bar proportioned to bear upon the head of a barrel and provided with clips at its extremities, upright side bars slidably embraced by and extending above the clips and provided with ratchet-teeth at their upper extremities, hooks formed upon the lower ends of the side bars to engage beneath a barrel, a U-shaped lever having its arms pivoted by their extremities to the side bars, links pivotally connecting the arms of the lever and the cross-bar to move the cross-bar vertically upon

the side bars, and connected pawls carried upon the cross-bar to simultaneously engage the ratchet-teeth of both side bars.

8. In a barrel-heading press, side bars arranged to engage beneath the bottom chime of and extend at opposite sides above the barrel and having ratchet-notches formed adjacent their upper ends, a cross-bar provided at each end with a clip loosely embracing the side bars, a substantially U-shaped lever with each free end pivoted to one of the side bars intermediate its ends and proportioned to pivotally swing above the upper ends of the side bars and the cross-bar, a link connecting each end of the cross-bar with the lever adjacent its pivoted ends, and connected pawls pivotally mounted upon the cross-bar and arranged to engage the ratchet-notches of the side bars.

812,912. **WRAPPING-MACHINE.** MILTON H. BALLARD, Lynn, Mass., assignor to Tripp Fruit Wrapping Machine Company, a Corporation of Maine. Filed Feb. 13, 1904. Serial No. 193,262.

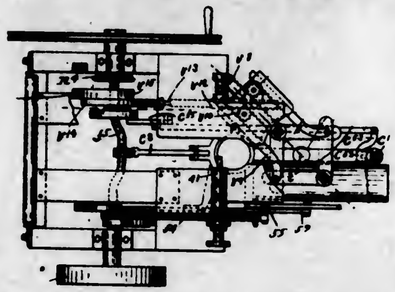

Claim.—1. In a wrapping-machine, a hopper having a narrow exit, two agitators therein located at opposite sides of said exit, pivoted operating-levers connected to said agitators, a pivoted lever connected to one of said operating-levers, a rotating cam for operating it, and a sliding bar connected to the other operating-lever, and a rotating cam for operating it, substantially as described.

2. In a wrapping-machine, a trough for the articles having a shoulder at the end, a lifting-lever, and a lifter, for bodily lifting the article next said shoulder, pivotally connected to said lever, and means for operating said lifting-lever, substantially as described.

3. In a wrapping-machine, a trough for the article having a shoulder at the end and having an opening in its bottom next said shoulder, a pivoted lifting-lever, and a lifter contained in said opening, pivotally connected to said lever and means for guiding said lifter in a straight line as the lifting-lever moves on its pivot, substantially as described.

4. In a wrapping-machine, a trough for the article having a shoulder at the end, a lifting-lever, a support pivotally connected thereto, and a lifting-plate for lifting the article next said shoulder, pivotally connected to said support, and means for operating said lever, substantially as described.

5. In a wrapping-machine, a trough for the article having a shoulder at the end, and having an opening in its bottom next said shoulder, a pivoted lifting-lever, a support pivotally connected to said lever, a lifting-plate contained in said opening for lifting the article next said shoulder, pivotally connected to said support and having arms extending downwardly from its under side, and means for operating said lifting-lever, substantially as described.

6. In a wrapping-machine, the combination of wrapping devices, means for operating them, means for delivering the articles to said wrapping devices, means for feeding severed wrappers to said wrapping devices, a stop-motion for the machine having a controlling member normally located in the path of progress of the articles, a starting-lever for moving said member to abnormal position when starting the machine to place it under the control of the articles, the presence or absence of which thereafter determines the position of said member, substantially as described.

7. In a wrapping-machine, the combination of wrapping devices, means for operating them, means for delivering the articles to said wrapping devices, means for feeding severed wrappers to said wrapping devices, a stop-motion for the machine having a controlling member normally located in the path of progress of the articles, a starting-lever for moving said member to abnormal position when starting the machine, means for holding said member in abnormal position and for releasing it at predetermined intervals, to place it under the control of the articles, the presence or absence of which at such time determining the position of said member, substantially as described.

8. In a wrapping-machine, the combination of wrapping devices, means for operating them, means for delivering the articles to said wrapping devices, means for feeding severed wrappers to said wrapping devices, a stop-motion for the machine having its controlling member normally located in the path of progress of the articles, means for moving said member out of such path when starting the machine, a rotating cam for holding said member out of such path and for placing it under the control of the articles, at predetermined times, permitting its return in case the article is absent, substantially as described.

9. In a wrapping-machine, the combination of wrapping devices, means for operating them, means for delivering the articles to said wrapping devices, means for feeding severed wrappers to said wrapping devices, a clutch mechanism secured to the main shaft for engaging the driving-wheel, a pivoted arm controlling the operation of said clutch mechanism which is normally located in the path of progress of the articles, a starting-lever for moving said arm out of such path and for releasing the clutch mechanism, means for thereafter holding said arm out of such path and for placing it under the control of the articles, at predetermined times, permitting its return in case the article is absent, substantially as described.

10. In a wrapping-machine, the combination of wrapping-devices, means for operating them, means for delivering the articles to said wrapping devices, means for feeding severed wrappers to said wrapping devices, a stop-motion for the machine comprising a clutch mechanism and having a controlling member normally located in the path of progress of the articles, a starting-lever for releasing said clutch mechanism and for moving said member to abnormal position when starting the machine to place it under the control of the articles and a controlling device permitting the controlling member to act only at predetermined times, substantially as described.

11. In a wrapping-machine, the combination of wrapping devices, means for operating them, means for delivering the articles to said wrapping devices, means for feeding severed wrappers to said wrapping devices, a clutch mechanism secured to the main shaft for engaging the driving-wheel, having an outwardly-projecting arm, means for restraining said arm, a wedge-block controlling said means, a pivoted arm, for moving said wedge-block, which is normally located in the path of progress of the articles, means for moving said wedge-block to raise the arm out of such path and also release the clutch mechanism, means for holding said arm in its elevated position, and for placing it under the control of the articles at predetermined times, permitting its return in case the article is absent, substantially as described.

12. In a wrapping-machine, the combination of wrapping devices, means for operating them, means for delivering the articles to said wrapping devices, means for feeding severed wrappers to said wrapping devices, a clutch mechanism secured to the main shaft for engaging the driving-wheel, a pivoted arm controlling the operation of said clutch mechanism which is normally located in the path of progress of the articles, means for moving said arm out of such path and for releasing the clutch mechanism, a rotating cam for holding said arm out of such path and for placing it under the control of the article at predetermined times, permitting its return in case the article is absent, substantially as described.

13. In a wrapping-machine, the combination of wrapping devices, means for operating them, means for delivering the articles to said wrapping devices, means for feeding severed wrappers to said wrapping devices, a clutch mechanism secured to the main shaft for engaging the driving-wheel, a pivoted arm controlling the operation of said clutch mechanism, which is normally located in the path of progress of the articles, a cam having a handpiece attached to it for moving said arm out of such path and for releasing the clutch mechanism, and means for holding said arm out of such path, and for placing it under the control of the article at predetermined times, permitting its return in case the article is absent, substantially as described.

14. In a wrapping-machine, the combination of wrapping devices, means for operating them, means for delivering the articles to said wrapping devices, means for feeding severed wrappers to said wrapping devices, a clutch mechanism secured to the main shaft for engaging the driving-wheel, having an outwardly-projecting arm, means for restraining said arm, a wedge-block controlling said means, a pivoted arm, for moving said wedge-block, which is normally located in the path of progress of the articles, a cam having a handpiece attached to it located beside the wedge-block-carrying bar which is adapted to engage said bar, or block thereon, and move said arm out of such path, and also release the clutch mechanism,

and means for holding said arm out of such path and for placing it under the control of the article at predetermined times, permitting its return in case the article is absent, substantially as described.

15. In a wrapping-machine, a set of jamming or pinching jaws, means for moving them toward and from each other, and means for disengaging the jammed or pinched wrapper from said jaws as they recede, substantially as described.

16. In a wrapping-machine, a rest for holding the orange with its wrapper partially enveloping it, a set of jaws for gathering in the edges of the wrapper and for jamming or pinching said edges together, means for moving said jaws toward and from each other, and means for disengaging the jammed or pinched wrapper from the jaws as they recede and while the orange is supported by said rest, substantially as described.

17. In a wrapping-machine, a rest for holding the orange with its wrapper partially enveloping it, a set of jaws for gathering in the edges of the wrapper and for jamming or pinching said edges together, means for moving said jaws toward and from each other, means for disengaging the jammed or pinched wrapper from the jaws as they recede and while the orange is supported by said rest, and means for removing the wrapped orange from the rest after the wrapper has been disengaged from the jaws, substantially as described.

18. In a wrapping-machine, a set of jamming or pinching jaws for the wrapper, means for moving them toward and from each other, and disengaging devices for the wrappers located in proximity to said jaws, substantially as described.

19. In a wrapping-machine, a set of jamming or pinching jaws for the wrapper, means for moving them toward and from each other, a yielding plate normally projecting from the inner edge of each jaw, which acts to disengage the wrapper therefrom, substantially as described.

20. In a wrapping-machine, the combination with paper feeding and severing devices, and means for adjusting said feeding devices, of a set of jamming or pinching jaws, means for moving them toward and from each other, and a limiting-stop for regulating the distance apart said jaws shall move, substantially as described.

21. In a wrapping-machine, the combination with wrapping devices, and means for operating them, a wrapper-support and means for feeding a wrapper thereto, a rest located beneath said wrapper-support, a plunger-rod, means for moving said rod vertically, a pin projecting from said rod, a swinging bracket having a vertical groove for said pin, and means for swinging said bracket on its vertical axis to thereby correspondingly turn the plunger-rod, substantially as described.

22. In a wrapping-machine, a plunger, means for operating it, a rest for the article supported by a rod having ratchet-teeth, a spring for lifting said rest, a locking device for said rest consisting of a spring-held pawl which engages the ratchet-teeth, a cam on the plunger-rod for disengaging said pawl to release the rest, a latch for holding said pawl disengaged, and a pin on the plunger-rod for releasing said latch, substantially as described.

23. In a wrapping-machine, a rest upon which the wrapped article is deposited, means for moving it vertically, a horizontally-swinging ejector-arm, an operating-bar connected to it and a rotating cam into engagement with which said bar is held pressed by a spring, substantially as described.

24. In a wrapping-machine, a rest upon which the wrapped article is deposited, means for moving it vertically, a horizontally-swinging ejector-arm, an operating-bar connected to it, a cam for operating said bar and a power-driven shaft bearing said cam, substantially as described.

812,913. **HARNESS.** GRANT B. BENNETT, Cleveland, Ohio. Filed Dec. 27, 1904. Serial No. 238,306.

Claim.—1. The combination in a harness of both a hame-collar and a breast-collar with the hame-collar depressed or built in at the place where it engages the breast-collar, whereby the hame-collar has no draft-bearing below the upper line of the breast-collar and having two short tugs connecting with an equaliser to which the trace is attached.

2. The combination in a harness of both a breast and a hame collar with the hame-collar built in to take no draft-bearing below the upper line of the breast-collar and having the breast-collar suspended from the hame or hame-collar by adjustable straps and with two short tugs connecting with an equaliser to which the trace is attached.

3. The combination in a harness of both a breast-collar and a hame-collar with the hame-collar depressed or built in below the upper line of the breast-collar and with two short tugs connecting with the trace by means of a combined equaliser and buckle as set forth.

4. The combination in a harness of both a hame-collar and a breast-collar and having the hame-collar built in or depressed below the line where it engages the breast-collar and having the breast-collar suspended from the hame or hame-collar by adjustable straps and having two short tugs connecting with the trace (or tug) by a combined equaliser and buckle (buckle-trace) substantially as set forth.

812,914. **BED-LOCK FOR INK-TABLE DISTRIBUTION-PRESSES.** JOHN C. BERNINGHAM, Kansas City, Mo. Filed May 15, 1905. Serial No. 260,666.

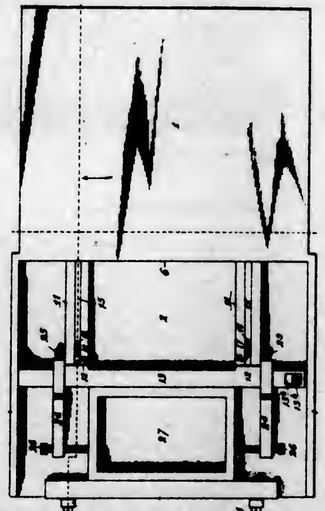

Claim.—1. In an apparatus of the character described, the combination with a type-bed and a chase, of an ink-distribution table having pockets provided with ratchet-teeth, extension-bars slidably arranged in the pockets adapted to be slid into contact with the chase, and means carried by the extension-bars for automatically engaging the ratchet-teeth to prevent accidental backward movement of said extension-bars.

2. In an apparatus of the character described, the combination with a type-bed and a chase, of an ink-distribution table having pockets provided with ratchet-teeth, extension-bars slidably arranged in the pockets adapted to be slid into contact with the chase, ratchet-teeth-engaging devices carried by the extension-bars, and means for releasing said engaging devices.

3. In an apparatus of the character described, the combination with a type-bed and a chase, of an ink-distribution table having pockets provided with ratchet-teeth, extension-bars slidably arranged in the pockets adapted to be slid into contact with the chase, pawls pivotally secured to said extension-bars for engaging the ratchet-teeth, and means for releasing said pawls.

4. In an apparatus of the character described, the combination with a type-bed and a chase, of an ink-distribution table having pockets provided with ratchet-teeth, extension-bars slidably ar-

ranged in the pockets adapted to be slid into contact with the chase,

gage said segments and determine the space between the main and

ranged in the pockets adapted to be slid into contact with the chase, ratchet-tooth-engaging devices carried by said extension-bars, and means for releasing said engaging devices from the ratchet-teeth.

5. In an apparatus of the character described, the combination with a type-bed and a chase, of an ink-distribution table having pockets provided with ratchet-teeth, extension-bars slidably arranged in the pockets adapted to be slid into contact with the chase and provided with dovetail grooves, sliding bars snugly fitting in said grooves, ears on the rear ends of the extension-bars, and gravity-pawls engaged by the sliding bars provided with trunnions pivoted in the ears.

6. In an apparatus of the character described, the combination with a type-bed and a chase, of an ink-distribution table having pockets, extension-bars slidably arranged in the pockets, means for preventing accidental backward movement of said extension-bars, and a transverse bar formed integral with the extension-bars adapted to be drawn into contact with the chase.

7. In an apparatus of the character described, the combination with a type-bed and a chase, of an ink-distribution table having pockets, extension-bars slidably arranged in the pockets, means for preventing accidental backward movement of said extension-bars, a transverse bar formed integral with the extension-bars adapted to be drawn into contact with the chase, and side lock-clamps adjustably and detachably mounted upon said transverse bar.

812,915. JOURNAL-LUBRICATOR. AUSTIN BEMAY, Ottawa, Canada. Filed Dec. 27, 1904. Serial No. 238,000.

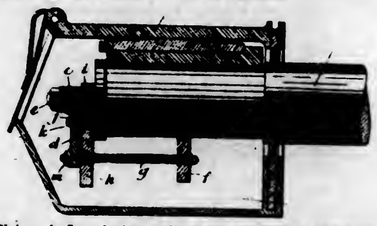

Claim.—1. In a device of the class described the combination with the journal-box, and the journal, of a pin integral and axial with the end of the journal a lubricating device and means wholly out of contact with the journal-box for supporting said lubricating device from said axial pin substantially as described.

2. In a device of the class described the combination with the journal of a pin axial and integral with the end thereof a downwardly-extending arm loosely supported by the said pin, a lubricating-wheel supported by the said arm, means independent of the arm for transmitting the motion of the journal to the said wheel substantially as described.

3. In a device of the class described the combination with the journal of a pin integral with the end thereof, a downwardly-extending arm loosely supported by the same, a shaft supported by the arm, a sleeve supported by the said shaft, a gear-wheel fixed to the said sleeve, gearing for transmitting the motion of the journal to the said gear-wheel and means on the sleeve for bringing and applying the lubricant to the under side of the journal.

4. In a device of the class described the combination with the journal of a pin integral with the end thereof, a downwardly-extending arm loosely supported by the same, a shaft supported by the arm, a sleeve supported by the said shaft, a gear-wheel fixed to the said sleeve, gearing for transmitting the motion of the journal to the said gear-wheel and a lubricating-wheel on the said sleeve adapted to bring and apply the lubricant to the under side of the journal.

5. In combination in a device of the class described, an axle or journal having an axial pin extending therefrom, an arm loosely supported on the said pin, a shaft supported on the arm, a sleeve on the said shaft, a lubricating-wheel carried by the sleeve and gearing between the said sleeve and the axial pin of the journal, substantially as described.

812,916. ADJUSTABLE FACE-PLATE. FRANK A. DENEF, South Bend, Ind., assignor to Mast Concrete Machinery Company, South Bend, Ind., a Corporation of Indiana. Filed Oct. 21, 1905. Serial No. 283,749.

Claim.—1. A face-plate for block-molds, comprising a main plate, an auxiliary plate at one end of the same and having depending toothed segments, and screws carried by said main plate to engage said segments and determine the angle between the main and auxiliary plates.

2. A face-plate for block-molds comprising a main plate, an auxiliary plate at one end of the same, and means mounted on said plates to position the same at a predetermined angle to each other.

3. A face-plate for building-block molds, comprising a main plate having an opening at one end of the same, an auxiliary plate at one end of the same and having depending toothed segments extending through said opening, screws engaging said segments and said main plate to hold the auxiliary plate in position, lugs carried by the main plate, and screws in said lugs engaging the inner and outer edges of the auxiliary plate for the purpose of adjusting the same.

812,917. INDIVIDUAL SAFETY GARMENT-RACK. HERMAN J. BOURALL, Cleveland, Ohio, assignor of one-half to A. B. Honsaker, Cleveland, Ohio. Filed July 10, 1905. Serial No. 269,099.

Claim.—1. In individual safety garment-racks, a rear part and a door hinged thereon at one end and adapted to swing horizontally, a hat-support fixed on the said rear part and overhanging the space between said parts, and a projection on the inside of said door adapted to press the brim of the hat against said rear part and secure it against removal.

2. In individual safety garment-racks, a back part and a front part hinged thereon at one end and adapted to swing horizontally on its hinges, and means on said parts to lock them together comprising a spring-catch 3 on the rear part, a fixed headed bolt on the door adapted to engage in said catch, and a key having a tapered head adapted to spread said catch and release the bolt.

3. In individual safety garment-racks, the rear part and the door hinged thereon, in combination with a double-sided spring-catch 3 fixed in said rear part, a headed bolt on the door adapted to engage with said catch, a key having a tapered head adapted to spread said catch and release the bolt, and provided with an annular channel at the base of said head, and a stop in the door to engage in said channel and prevent the key from being removed when the door is open.

4. In individual safety garment-racks, the back part and the door, in combination with a bolt on the door and a spring-catch on the back part to engage the same, a key constructed to spread said catch and release the bolt, a plate adapted to engage said key when the door is open and prevent the withdrawal thereof and a projection on said rear part to raise said plate from the key and allow the key to be removed when the door is closed.

812,918. DUMPING-WAGON. JAMES H. BRIGGS, Waterloo, Iowa. Filed Dec. 15, 1904. Serial No. 236,982.

Claim.—1. In a dumping-wagon, the combination with the wheeled axles, of a frame mounted thereon, a box fulcrumed within the frame for vertical rocking movement, means for releasably fastening down the front end of said box, a foot-actuated lever for detaching said fastening means, a spring connected between said foot-actuated lever and the frame, and a tilting end-gate pivoted to the upper part of the rear end of said box and adapted to be automatically closed and held under spring tension when said box is shifted to its normal position.

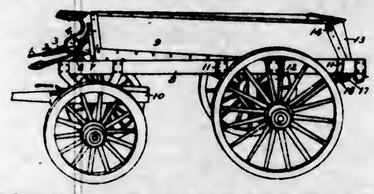

2. In a dumping-wagon, the combination with wheeled front and rear axles, of a frame supported thereon, a box fulcrumed at a point a short distance in front of its center of gravity within said frame, contact-pieces on the front of said box, a clutch pivoted to said frame and adapted to releasably engage said contact-pieces, a foot-actuated lever connected to said clutch, a tilting end-gate pivoted to said box adapted to automatically tilt into an inclined position away from said box upon the rocking of the box a transverse rod carried by the frame, spring members carried by the end-gate adapted to engage said rod when the box is shifted to its normal position, an adjusting-bar attached to said end-gate, and means for linking said adjusting-bar to said box to retain said end-gate when tilted within the desired limit of opening.

3. In a dumping-wagon, the combination with wheeled front and rear axles, of a frame supported thereon, a box fulcrumed within the frame for vertical rocking movement, contact-pieces on the front of said box, a clutch pivoted to said frame and adapted to releasably engage said contact-pieces, a foot-actuated lever connected to said clutch, a spring connected between said foot-actuated lever and said frame, a tilting end-gate pivoted to said box adapted to automatically tilt into an inclined position away from said box upon the rocking of the box, means for holding said end-gate closed under spring tension when the box is in its normal position, an adjusting-bar attached to said end-gate, means for linking said adjusting-bar to said box to retain said end-gate when tilted within the desired limit of opening, and means for preventing the closing of said end-gate when tilted into any desired open position.

4. In a dumping-wagon, the combination with a frame, of a box fulcrumed therein, said box gradually increasing in width from front to rear, a tilting end-gate pivoted to said box, a transverse rod carried by the frame, spring members carried by the end-gate adapted to engage said rod when the box is in its normal position, means for linking the lower part of said end-gate to said box to adjust in a desired degree the width of opening thereof, and means for preventing the closing of said end-gate when once opened to any desired degree of adjustment.

5. In a dumping-wagon, the combination with wheeled front and rear axles, of a frame mounted upon said axles, a box pivoted for rocking movement in said frame, lugs carried by the front end of said box, a yoke pivoted for rocking movement upon the front axle and adapted to engage said lugs, a foot-lever for actuating said yoke, a spring which normally holds said yoke in engagement with the lugs, a swinging end-gate pivoted to the wagon-body and means for holding said end-gate closed under spring tension when the box is in its normal position.

812,919. TENSION DEVICE FOR SPINNING-FRAMES. ROBERT G. CARLE, Blackstone, Mass. Filed May 23, 1905. Serial No. 261,261.

Claim.—1. In a spindle-driving device, the combination with a driving-drum, spindles, a driving-band, of a double pulley carried by the frame, a pivoted arm carrying a single pulley, the driving-band passing once around said single pulley and twice over the double pulley, and a spring exerting tension on the pivoted arm, substantially as described.

2. The combination with the frame and the drum, spindles journaled therein, of a double pulley suitably carried by the frame at one end, a single pulley carried by the frame at the other end, an arm pivotally connected to the frame and carrying a single pulley at its outer end, a driving-band passing around the drum and spindles, and also passing twice around the double pulley and once around the single pulley and having a looped portion extending from the double pulley to the pulley on the pivoted arm, and a spring exerting tension on said pivoted arm, substantially as described.

3. In a device of the character described, the combination with the spindle-driving band, of a bracket having a recess, an arm having a hinge-pin projecting into said recess, an oil-duct in said bracket leading to said recess, and a retaining device covering said oil-duct and engaging the flange on the end of the arm, substantially as described.

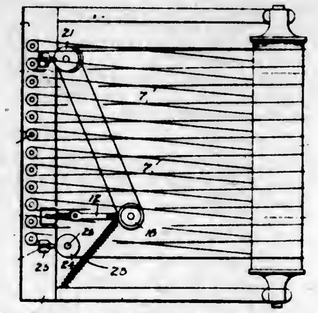

4. In a device of the class described, the combination with the driving-band, of a supporting-bracket having a recess therein, an idle pulley having an axle-pin journaled in said recess and a retaining-plate engaging the flange of the pulley for holding the pin in the recess, substantially as described.

812,920. ANATOMICAL FOOTWEAR. HARLAN P. COLE, Hartford, Conn., assignor to Nettie D. Cole, Hartford, Conn. Filed Feb. 16, 1904. Serial No. 193,802.

Claim.—1. Footwear having a sole laterally extended on one side, and a heel also laterally extended on one side to conform to the extension of the sole, said heel being forwardly extended on one side beneath the shank, whereby the weight of the body is thrown within the space occupied by the lateral extension of the sole and the forward and lateral extension of the heel, and turning of the ankle is prevented.

2. Footwear having a heel extended laterally beyond the normal sole to sustain the foot and extended forwardly on the inner side over the shank, whereby the line of weight of the body is thrown within the space occupied by said heel, and rocking of the foot on its longitudinal axis is prevented.

812,921. BASE-BALL GLOVE. EARLE H. DECKER, Keokuk, Iowa, assignor of one-half to George J. Stilley, Joliet, Ill. Filed Nov. 15, 1904. Serial No. 232,902.

Claim.—1. A glove comprising an inflatable cushion, impact-deadening material arranged on one face thereof, and a cover inclosing the same.

2. In a glove, a pneumatic cushion, impact-deadening material arranged on its front and rear faces, a covering for said cushion and impact-deadening material, and means whereby the glove is secured in position.

3. A glove comprising two sections arranged one on the other, a cover for one section, a flap carried thereby and overlapping the

other section, means whereby said last-named section is secured to the flap, a pneumatic cushion arranged in the first-named section, an air-tube therefor projecting through the other section, and a flap normally covering the free end of said tube.

4. In a glove, an inflatable cushion formed with a recess, and a pad arranged in said recess.

5. A glove comprising front and back hinged sections, finger-stalls on said back section, an inflatable cushion between said sections, and an inflating-tube therefor, said tube extending through said back section at a point intermediate two of said finger-stalls.

6. In a glove, an inflatable cushion having its peripheral edge of increased thickness, formed with a core connecting and spacing the front and back faces of said cushion.

812,922. **APPARATUS FOR SMOKING AND CURING MEAT PRODUCTS.** WILLIAM EPPINGER, New York, N. Y. Filed Nov. 2, 1904. Serial No. 231,088.

Claim.—1. An apparatus for curing meat products, consisting of a closed compartment having a door and also an outlet, a valved gas-pipe extending within said compartment and provided with a series of burners near the floor of the compartment, through which gas issues unmixed with air, said compartment being provided with an air-inlet restricted in size relatively to the capacity of the burners and the pressure of gas so that only sufficient air is admitted to support combustion, whereby smoky flames are produced at the burners for the purposes set forth.

2. An apparatus for curing meat products, consisting of a closed compartment provided with a door and also an outlet, a gas-pipe extending across the front of the compartment near the door and the floor, a branch pipe connected to said pipe at a point within the compartment and extending rearward into the compartment near the floor, said branch pipe being provided with burners and being adapted to swing upward and forwardly to near the door-opening, for the purposes set forth.

3. An apparatus for curing meat products consisting of a closed compartment having a door, a gas-pipe connected to the bottom of said compartment, and a looped pipe pivoted thereto and having a series of burners from which the gas issues unmixed with air.

4. An apparatus for curing meat products consisting of a closed compartment provided with a door and an outlet and also with a restricted air-inlet, a number of gas-burners in the bottom thereof, from which the gas issues unmixed with air, an escape-flue extending therefrom, and an automatic damper in the escape-flue, whereby the gas is consumed with an unsatisfied combustion and the meat products are cured by the products of combustion.

5. An apparatus for curing meat products consisting of a closed compartment provided with a door and an outlet and also with a restricted air-inlet, a number of gas-burners in the bottom of the compartment from which the gas issues unmixed with air, a perforated draft-tube extending across the top of the compartment, and an escape-pipe connected with the draft-tube, whereby the gas is consumed with an unsatisfied combustion and the meat products are cured by the products of combustion.

6. An apparatus for curing meat products consisting of a closed compartment having means for holding meat products therein, said compartment being provided with a door and an outlet and also with a restricted air-inlet a number of gas-burners in the bottom of said compartment from which the gas issues unmixed with air, a perforated draft-tube extending across the top of said compartment, an escape-pipe connected with said draft-tube, and an automatic damper in said escape-pipe, whereby the gas is consumed with an unsatisfied combustion and the meat products are cured by the products of combustion.

812,928. **DELIVERY APPARATUS FOR PRINTING-PRESSES.** SAMUEL C. GOSS, Chicago, Ill., assignor to Goss Printing Press Company, Chicago, Ill., a Corporation of Illinois. Filed Feb. 10, 1900. Serial No. 4,762.

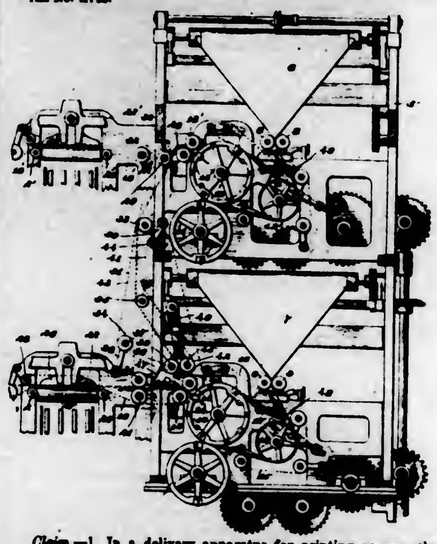

Claim.—1. In a delivery apparatus for printing-presses, the combination with a plurality of longitudinal folders arranged one above another of a plurality of transverse-folding devices, and means for assembling sheets from said folding devices after they have been folded transversely, substantially as described.

2. In a delivery apparatus for printing-presses, the combination with a plurality of longitudinal folders arranged one above another of a plurality of transverse-folding devices, means for assembling sheets from said folding devices after they have been folded transversely, and means for imparting an additional fold to said assembled sheets, substantially as described.

3. In a delivery apparatus for printing-presses, the combination of a plurality of longitudinal folders arranged one above another, transverse-folding mechanism, means for either assembling sheets from said transverse-folding mechanism after they have been folded transversely, or for assembling longitudinally-folded webs before folding them transversely, substantially as described.

4. In a delivery apparatus for printing-presses, the combination of a plurality of sets of printing mechanism, a set of delivery apparatus for each of said sets of printing mechanism, each of said sets of delivery apparatus being adapted to separately deliver the products of the set of printing mechanism with which it is connected each of said sets of delivery apparatus comprising transverse cutting and folding mechanism, a second folding device cooperating with each of said sets of delivery apparatus for folding the sheets again after they have received the first transverse fold, and means for assembling sheets from said sets of delivery apparatus before receiving the second fold and after they have received the first transverse fold, substantially as described.

5. In a delivery apparatus for printing-presses, the combination of a plurality of sets of printing mechanism arranged one above another, means for connecting and disconnecting said sets of printing mechanism so that they may be run together or independently, a set of delivery apparatus for each of said sets of printing mechanism, each of said sets of delivery apparatus comprising mechanism for severing the web transversely and for imparting the first transverse fold thereto, and means for associating the sheets from one of said sets of delivery apparatus with those of another of said sets of delivery apparatus after they have received a transverse fold, substantially as described.

6. In a printing-press, the combination of a plurality of sets of printing mechanism arranged one above another, means for running said sets of printing mechanism separately or together, means for folding the webs of said printing mechanisms longitudinally, transverse-folding mechanism for each set of printing mechanism, means for associating transversely-folded sheets from one of said transverse-folding mechanisms with those of another of said transverse-folding mechanisms, and means for conducting a web from one of said sets of printing mechanism and associating it with the web of another of said sets of printing mechanism, means for cutting the associated webs into sheets and folding said sheets transversely.

7. In a printing-press, the combination of a plurality of sets of printing mechanism, a set of delivery apparatus for each of said sets of printing mechanism, each set of delivery apparatus having transverse-folding mechanism, means for running said sets of printing mechanism together or separately, means for delivering the product of each of said sets of printing mechanism independently, and means for conducting sheets, after folding them transversely, from one of said sets of delivery apparatus to the other, substantially as described.

8. In a printing-press, the combination of a plurality of sets of printing mechanism arranged one above another, means for driving said sets of printing mechanism synchronously, a set of delivery apparatus connected with each of said sets of printing mechanism, means for delivering the product of each of said sets of printing mechanism independently of the other, mechanism for conducting the product of one of said sets of delivery apparatus to another set of delivery apparatus after it has received a transverse fold, and a switch for controlling the operation of said delivery apparatus, substantially as described.

9. In a printing-press, the combination of a plurality of sets of printing mechanism, means for driving said sets of printing mechanism independently or together, a set of delivery apparatus for each of said sets of printing mechanism, and associating mechanism arranged to be operated to associate the products of said sets of printing mechanism either before or after they receive the first transverse fold, substantially as described.

10. In a printing-press, the combination of a plurality of sets of printing mechanism arranged one above another, means for driving said sets of printing mechanism separately or together, a set of delivery apparatus connected with each of said sets of printing mechanism, means for either conducting the web from one of said sets of printing mechanism to and associating it with the web of another of said sets of printing mechanism and afterward cutting the associated webs into sheets, or for associating separate sheets from one of said sets of printing mechanism with those of another of said sets of printing mechanism, substantially as described.

11. The combination with printing mechanism, of a plurality of delivery mechanisms arranged one above another, each of said delivery mechanisms having transverse-folding devices, and means operating in connection therewith for delivering sheets therefrom, means for assembling sheets from said folding devices after they have been folded transversely, and means for imparting an additional fold to the assembled sheets, substantially as described.

12. In a delivery apparatus for printing-presses, the combination of a plurality of longitudinal folders, a plurality of transverse-folding mechanisms, and means for either assembling sheets from said transverse-folding mechanisms after they have been folded transversely, or for assembling longitudinally-folded webs before folding them transversely, substantially as described.

13. In a delivery apparatus, the combination of a plurality of folding devices for imparting the first fold to sheets after they have been severed from the web, means for supplying sheets to said folding devices, and means for conducting folded sheets from one of said folding devices to and associating them with folded sheets from the other folding device, and then again folding the associated sheets, substantially as described.

14. The combination with a plurality of sets of printing mechanism arranged one above another, of a plurality of transverse-folding devices, separate means operating in connection with each of said transverse-folding devices for delivering sheets therefrom, means for assembling sheets from said folding devices after they have been folded transversely, and means for imparting an additional fold to the assembled sheets, substantially as described.

15. In a printing-press, the combination of a plurality of sets of printing mechanism, mechanism operating in connection with each of said sets of printing mechanism for folding sheets after they have been severed from the web, and means for conducting folded sheets from one of said folding mechanisms to the other folding mechanism and there imparting to them an additional fold, substantially as described.

16. In a printing-press, the combination of a plurality of sets of printing mechanism, mechanism operating in connection with each of said sets of printing mechanism for folding sheets after they have

been severed from the web, and means for conducting folded sheets from one of said folding mechanisms to the other folding mechanism, and there folding them with sheets from the other set of printing mechanism, substantially as described.

17. In a delivery apparatus, the combination of a plurality of folding devices for imparting the first fold to sheets after they have been severed from the web, means for driving said folding devices separately or together, and means operating in connection with each of said folding devices for separately delivering sheets or for assembling and folding together sheets from said folding devices, substantially as described.

18. In a printing-press, the combination of a plurality of sets of printing mechanism, means for running said sets of printing mechanism separately or together, transverse-folding mechanism for each set of printing mechanism, means for associating transversely-folded sheets from one of said transverse-folding mechanisms with those of another of said transverse-folding mechanisms, and means for conducting a web from one of said sets of printing mechanism to and associating it with the web of another of said sets of printing mechanism, substantially as described.

19. In a printing-press, the combination of a plurality of sets of printing mechanism, means for running said sets of printing mechanism separately or together, means for folding the webs of said printing mechanisms longitudinally, transverse-folding mechanism for each set of printing mechanism, means for associating transversely-folded sheets from one of said transverse-folding mechanisms with those of another of said transverse-folding mechanisms, and means for conducting a web from one of said sets of printing mechanism, after it has been folded longitudinally, to and associating the same with the web of another of said sets of printing mechanism, means for cutting the associated webs into sheets and folding said sheets transversely.

20. In a printing-press, the combination of a plurality of sets of printing mechanism, means for driving said sets of printing mechanism separately or together, a plurality of sets of delivery apparatus, each having transverse-folding mechanism, means for conducting a web from one of said sets of printing mechanism to and associating the same with the web of another of said sets of printing mechanism or for conducting the webs from the different sets of printing mechanism to different sets of delivery apparatus and separately severing them into sheets and folding the sheets transversely, and afterward associating transversely-folded sheets from said sets of delivery apparatus, substantially as described.

21. In a delivery apparatus for printing-presses, the combination of a plurality of longitudinal folders, a plurality of transverse-folding mechanisms, and means for either assembling folded sheets from said transverse-folding mechanisms after they have been folded transversely or for assembling longitudinally-folded webs, substantially as described.

22. In a delivery apparatus for printing-presses, the combination of a plurality of sets of printing mechanism, means for connecting and disconnecting said sets of printing mechanism so that they may be run together or independently, a set of delivery apparatus for each of said sets of printing mechanism, each of said sets of delivery apparatus comprising mechanism for severing the web transversely and for imparting the first transverse fold thereto, and means for associating the sheets from one of said sets of delivery apparatus with those of another of said sets of delivery apparatus after they have received the first transverse fold, substantially as described.

23. In a printing-press, the combination of a plurality of sets of printing mechanism, means for driving said sets of printing mechanism synchronously, a set of delivery apparatus connected with each of said sets of printing mechanism, means for delivering the product of each of said sets of printing mechanism independently of the other, mechanism for conducting the product of one of said sets of delivery apparatus to another set of delivery apparatus after they have received the first transverse fold, and a switch for controlling the operation of said delivery apparatus, substantially as described.

24. In a printing-press, the combination of a plurality of sets of printing mechanism, means for driving said sets of printing mechanism separately or together, a set of delivery apparatus connected with each of said sets of printing mechanism, means for either conducting the web from one of said sets of printing mechanism to and associating it with the web of another of said sets of printing mechanism and afterward cutting the associated webs into sheets, or for associating separate sheets from one of said sets of printing mechanism with those of another of said sets of printing mechanism, substantially as described.

25. In a printing-press, the combination of printing mechanism

arranged to print a plurality of products, a plurality of sets of delivery apparatus, and associating mechanism arranged to be operated to associate said products either before or after they receive the first transverse fold, substantially as described.

812,924. **STEREOTYPING APPARATUS.** SAMUEL G. GOSS, Chicago, Ill., assignor to Goss Printing Press Company, Chicago, Ill., a Corporation of Illinois. Filed Feb. 21, 1903. Serial No. 144,569.

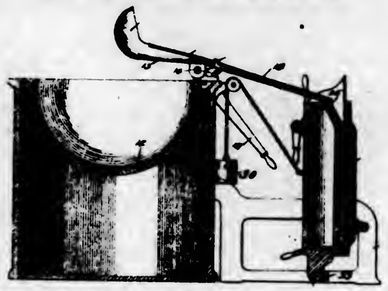

Claim.—1. In a casting apparatus, the combination of a pivotally-mounted casting-box, means for maintaining a supply of molten metal, a pivoted ladling apparatus for transferring molten metal from said source of supply to the casting-box, and means operatively connecting said casting-box and ladling apparatus so that when said casting-box is raised into position to receive a charge said ladling apparatus is actuated to take up a supply of molten metal, substantially as described.

2. In a casting apparatus, the combination of a casting-box movable into and out of position to receive a charge, means for maintaining a supply of molten metal, and means operated by the movement of the casting-box into position to receive a charge, for elevating molten metal into position to be supplied thereto, substantially as described.

3. In a casting apparatus, the combination of a casting-box movable into and out of position to receive a charge, means for maintaining a supply of molten metal, and ladling mechanism operated by the movement of the casting-box into position to receive a charge, for elevating molten metal into position to be supplied thereto, and means for simultaneously actuating said ladling apparatus and casting-box to deliver molten metal to said casting-box substantially as described.

4. In a casting apparatus, the combination of a pivotally-mounted casting-box, means for maintaining a supply of molten metal, and means operated by the movement of the casting-box into position to receive a charge, for elevating molten metal into position to be supplied thereto, substantially as described.

5. In a casting apparatus, the combination of a casting-box, a swinging ladle, and separate means intermediately disposed between the casting-box and the ladle for conducting molten metal from said ladle to the casting-box, substantially as described.

6. In a casting apparatus, the combination of a casting-box, means for maintaining a supply of molten metal, a pivotally-mounted ladle, and separate means between the casting-box and the ladle for conducting molten metal from said ladle to the casting-box, substantially as described.

7. In a casting apparatus, the combination of a casting-box, means for maintaining a supply of molten metal, a ladle having a tubular stem, means for tilting said ladle to discharge the contents thereof through said stem, and separate means between the casting-box and the ladle for conducting the molten metal from said ladle to the casting-box, substantially as described.

8. In a casting apparatus, the combination of a casting-box, means for maintaining a supply of molten metal, a ladle having a tubular stem, means for tilting said ladle to discharge the contents thereof through said stem, and a separate pivotally-mounted spout for conducting the molten metal from said ladle to the casting-box, substantially as described.

9. In a casting apparatus, the combination of a casting-box, means for maintaining a supply of molten metal, a ladle having a tubular stem, and means operated by the movement of the casting-box into position to receive a charge, for tilting said ladle, substantially as described.

10. In a casting apparatus, the combination of a casting-box, means for maintaining a supply of molten metal, a ladle having a tubular stem, means operated by the movement of the casting-box into position to receive a charge, for tilting said ladle, and means for conducting the molten metal from said ladle to the casting-box, substantially as described.

11. In a casting apparatus, the combination of a casting-box, means for maintaining a supply of molten metal, a ladle having a tubular stem pivotally mounted adjacent to the source of supply of molten metal, and a spout adapted to receive molten metal from the stem of said ladle and discharge it into the casting-box, said spout and ladle being angularly adjustable, substantially as described.

12. In a casting apparatus, the combination of a casting-box, means for maintaining a supply of molten metal, a ladle having a tubular stem pivotally mounted adjacent to the source of supply of molten metal, a spout adapted to receive molten metal from the stem of said ladle and discharge it into the casting-box, said spout and ladle being angularly adjustable, means for moving said spout into operative position, and means for tilting said ladle after said spout is in its operative position, substantially as described.

13. In a casting apparatus, the combination of a casting-box, a metal-holding receptacle, a pivoted ladle having a tubular stem, a separate spout adapted to conduct molten metal from said stem to the casting-box, and means for moving said ladle and spout into and out of operative position, substantially as described.

14. In a casting apparatus, the combination of a casting-box, a metal-holding receptacle, a pivoted ladle, a spout adapted to conduct molten metal from said ladle to the casting-box, means for moving said ladle and spout into and out of operative position, and means for tilting said ladle to discharge its contents into said spout, substantially as described.

15. In a casting apparatus, the combination of a casting-box, a receptacle for molten metal, a shaft, a crank for rocking said shaft, said crank being adapted to rock slightly independently of said shaft, means operated by the movement of the casting-box into position to receive a charge, for operating said crank to rock said shaft, a spout loosely mounted on said shaft and rigidly connected with said crank, a ladle mounted on and keyed to said shaft, said ladle being adapted to discharge into said spout, and means independent of said crank for rocking said shaft, substantially as described.

16. In a casting apparatus, the combination of a pivoted casting-box, a crank connected therewith, a receptacle for molten metal, a shaft arranged adjacent thereto, a crank loosely mounted on said shaft, a collar fixedly secured on said shaft, said collar having a recess, a lug carried by the latter crank and projecting into said recess, a spout loosely mounted on said shaft and rigidly connected with the latter crank, a ladle mounted on and keyed to said shaft and adapted to dip into said molten-metal receptacle, said ladle being adapted to discharge into said spout, a lever for rocking said shaft, and a connecting-rod connecting said cranks, substantially as described.

17. In a casting apparatus, the combination of a casting-box, means for maintaining a supply of molten metal, a ladle, and means, operated by the movement of the casting-box into position to receive a charge, for tilting said ladle, substantially as described.

18. In a casting apparatus, the combination of a casting-box, means for maintaining a supply of molten metal, a ladle, means, operated by the movement of the casting-box into position to receive a charge, for tilting said ladle, and means for conducting the molten metal from said ladle to the casting-box, substantially as described.

812,925. **PLANTER.** WILLIAM S. GRAHAM, Canton, Ill., assignor to Parlin & Orendorff Company, Canton, Ill., a Corporation of Illinois. Filed Nov. 6, 1905. Serial No. 286,114.

Claim.—1. In a planter the combination with the frame and carrying-wheels, of a tongue, a draft-beam pivotally connected with the tongue at its forward end, a furrow-former secured to the rear end of the draft-beam, means for raising and lowering the rear end of the tongue at a certain speed and to a certain extent, and means for simultaneously raising and lowering the rear end of the draft-beam at a slower speed and to a less extent.

2. In a planter, the combination with the frame and carrying-wheels, of a tongue, a draft-beam pivotally connected to the tongue at its forward end, a standard stiffly secured to the draft-beam, a furrow-former on the standard, a lever to raise and lower the rear end of the tongue to a certain extent, and a shorter lever for simultaneously raising and lowering the rear end of the draft-beam to a less extent.

3. In a planter the combination with the frame and carrying-wheels, of a tongue, a draft-beam pivotally connected at its front end to the under side of the tongue, a standard stiffly attached to the draft-beam, a team-hitch at the forward end of the draft-beam, a furrow-former secured on the standard, a lever to move the rear end of the tongue to a certain extent and a shorter lever for simultaneously moving the rear end of the draft-beam to a less extent.

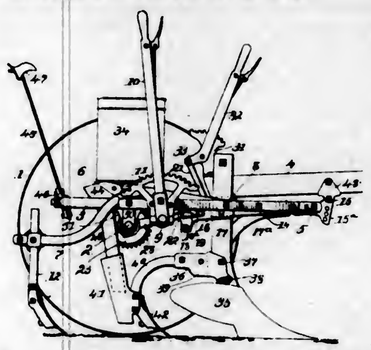

4. In a planter, the combination with the frame and the carrying-wheels, of a tongue, a draft-beam pivotally connected at its front end to the under side of the tongue in front of the rear end thereof, a standard stiffly attached to the draft-beam, a furrow-former secured to the draft-beam, a team-hitch at the front end of the draft-beam and a lever having a longer extension connected with the rear end of the tongue and a shorter extension connected with the rear end of the draft-beam.

5. In a planter, the combination of an axle-shaft, carrying-wheels on the axle-shaft, a tongue, a draft-beam pivotally connected at its front end to the under side of the tongue in front of the rear end thereof, a frame carried on the axle-shaft and pivotally connected with the draft-beam near the front end thereof, a cross-shaft journaled in the frame, a lock-lever for the cross-shaft, a shorter lever extension on the cross-shaft engaging the rear end of the draft-beam, a longer lever extension on the cross-shaft engaging the rear end of the tongue and a furrow-former attached to the draft-beam.

6. In a planter, the combination of an axle-shaft, carrying-wheels on the axle-shaft, a tongue, a draft-beam forked at its rear end and pivotally connected at its front end to the under side of the tongue in front of the rear end thereof, a frame carried on the axle-shaft and pivotally connected with the draft-beam near the front end thereof, a cross-shaft journaled in the frame, a lock-lever for the cross-shaft, a lever-frame on the cross-shaft having side extensions engaging the forked end of the draft-beam and a longer central extension connected with the rear end of the tongue, and a furrow-former attached to the draft-beam.

7. In a planter, the combination of an axle-shaft, carrying-wheels on the axle-shaft, a tongue, a draft-beam pivotally connected at its front end to the under side of the tongue in front of the rear end thereof, a frame carried on the axle-shaft and pivotally connected with the draft-beam near the front end thereof, diverging arms forming rearward extensions of the draft-beam, said arms having longitudinal grooves, a cross-shaft journaled in the frame, a lock-lever for the cross-shaft, a lever-frame on the cross-shaft having side extensions that engage the grooves of the arms of the draft-beam and a longer central extension, a stiff link pivotally connecting the central extension of the lever-frame with the rear end of the tongue and a furrow-former attached to the draft-beam.

8. In a planter, the combination with the frame, the axle-shaft and the carrying-wheels, of a draft-beam pivotally connected near its front end to the front end of the frame, a tongue pivotally connected to the front end of the draft-beam and extended rearward beyond such connection, a cross-shaft in the frame, a lever extension on the cross-shaft engaging the rear end of the draft-beam, a longer lever extension on the cross-shaft engaging the tongue, arms on the cross-shaft, and rails for covering-shovels pivoted to the frame at their front ends and sustained intermediately on the arms of the cross-shaft.

9. In a planter the combination of an axle-shaft, carrying-wheels on the axle-shaft, a tongue, a draft-beam pivotally connected at its front end to the under side of the tongue in front of the rear end thereof, a frame carried on the axle-shaft and pivotally connected with the draft-beam near the front end thereof, a cross-shaft journaled in the frame, a lock-lever for the cross-shaft, a shorter lever extension on the cross-shaft engaging the rear end of the draft-beam, a longer lever extension on the cross-shaft engaging the rear end of the tongue, a stiff link pivotally connecting the lock-lever on the tongue with the longer lever extension of the cross-shaft, and a furrow-former secured to the draft-beam.

10. In a planter, the combination with the carrying-wheels, the axle-shaft, the frame, the tongue, the draft-beam pivotally connected with the tongue, the furrow-former secured to the draft-beam, the drop-actuating drive-wheel and the clutch connecting the dropping-wheel with the axle-shaft; of the cross-shaft, the lock-lever for the cross-shaft, the lever extension on the cross-shaft connecting with the draft-beam, the longer lever extension on the cross-shaft connecting with the tongue, the clutch-shifting lever having a fulcrum on the cross-shaft, a cam extension on the clutch-shifting lever and a flange on the cross-shaft adapted to force the cam sidewise as the cross-shaft is rocked to raise the furrow-former.

11. In a planter, the combination with the carrying-wheels, the axle-shaft, the frame, the tongue, the draft-beam pivotally connected with the tongue and with the frame, the furrow-former secured to the draft-beam, the rails for the covering-shovels pivotally connected with the frame, the drop-actuating drive-wheel and the clutch connecting the dropping-wheel with the axle-shaft; of the cross-shaft, the lock-lever for the cross-shaft, the lever extension of the cross-shaft connecting with the draft-beam, the longer extension connecting with the tongue, the arms on the cross-shaft extending under the rails for the covering-shovels, the clutch-shifting lever having a fulcrum on the cross-shaft, a cam extension on the clutch-shifting lever and a flange on the cross-shaft adapted to engage the cam.

812,926. **LOW-PRESSURE HEATING SYSTEM.** AMOS HARRISON, Chicago, Ill., assignor of one-fourth to Robert H. Walch, Chicago, Ill. Filed Aug. 25, 1904. Serial No. 223,197.

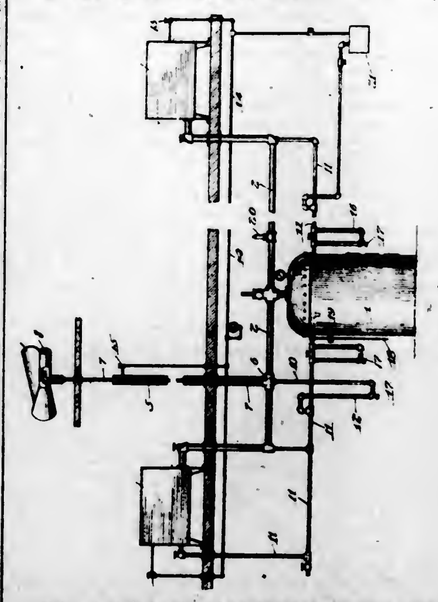

Claim.—1. A device of the kind described, comprising radiators, conducting-pipes, and a generator for producing a heating medium, in combination with an automatic pressure-reducer and discharge-pipe, consisting of a tube open at one end, means for heating said tube by said heating medium, and means connecting various parts of the system to the other end of said tube to induce a flow of the heating medium to those parts.

2. A device of the kind described, comprising radiators, conducting-pipes, and a generator for producing a heating medium, in combination with an automatic pressure-reducer and discharge-pipe consisting of a substantially vertical tube open at its upper end to the atmosphere means for heating said vertical tube by means of

said heating medium and induction-pipes connecting the lower end of said vertical tube with various parts of the system to induce a flow of the heating medium to those parts.

3. A device of the kind described, comprising radiators, conducting-pipes, and a generator for producing a heating medium, in combination with an automatic pressure-reducer and discharge-pipe consisting of a substantially vertical tube open at its upper end positioned partly within a casing connected to said conducting-pipes, whereby said vertical tube is heated by said heating medium, and induction-pipes connecting the lower end of said vertical tube with various parts of the system to induce a flow of the heating medium to those parts.

4. A device of the kind described, comprising radiators, conducting-pipes, and a generator for producing a heating medium, in combination with an automatic pressure-reducer and discharge-pipe consisting of a substantially vertical tube open at its upper end and provided with a suitable ejector-cowl, means for heating said vertical tube by means of said heating medium and means connecting various parts of the system to the lower part of said vertical tube to induce a flow of the heating medium to those parts.

5. A device of the kind described, comprising radiators, conducting-pipes, and a generator for producing a heating medium, in combination with an automatic pressure-reducer and discharge-pipe consisting of a substantially vertical tube open at its upper end and provided with a suitable ejector-cowl, means for heating said vertical tube by means of said heating medium, and induction-pipes connecting the lower end of said vertical tube with various parts of the system to induce a flow of the heating medium to those parts.

6. A device of the kind described, comprising radiators, conducting-pipes, and controlling means and a generator for producing a heating medium, in combination with an automatic pressure-reducer consisting of a substantially vertical tube open at its upper end and provided with a suitable ejector-cowl, said vertical tube being positioned partly within a casing connected to said conducting-pipes, whereby said vertical tube is heated by said heating medium, and induction-pipes connecting the lower end of said vertical tube with various parts of the system to induce a flow of the heating medium to those parts.

7. An automatic pressure-reducer, comprising a tube adapted to be placed in a substantially vertical position, an air-tight casing inclosing a part of the length of said tube, means for connecting said casing to a conducting-pipe whereby a heating medium is admitted to said casing to heat said tube and means for connecting induction-pipes to the lower end of said tube.

8. An automatic pressure-reducer, comprising a tube adapted to be placed in a substantially vertical position provided with an ejector-cowl at its upper end, a casing inclosing a part of the length of said tube, means for connecting said casing to a conducting-pipe, whereby a heating medium is admitted to said casing to heat said tube, and means for connecting induction-pipes to the lower end of said tube.

812,927. CAR-COUPLING. GUSTAF A. HERMANSON, Chicago, Ill., assignor to James Hunter, Maywood, Ill. Filed Oct. 30, 1905. Serial No. 284,927.

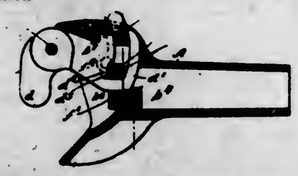

Claim.—1. In a car-coupler, the combination with a forked draw-head, of a knuckle having a transversely-extending curved slot in its rear arm or tail and provided with a knuckle-throwing cam or incline, and a vertically-movable lock having a knuckle-throwing leg fitting in said transverse slot of the knuckle-tail and furnished with a foot or projection engaging said cam or incline to throw the knuckle open, substantially as specified.

2. In a car-coupler, the combination with the draw-head, of a knuckle having a rear arm or tail furnished with a transversely-extending slot, and provided with a knuckle-throwing cam or incline, and a lock having a lock-set leg and a knuckle-throwing leg fitting within a portion of the knuckle-tail, said knuckle-throwing leg fitting in said slot of the knuckle-tail and provided with a foot or projection engaging said cam or incline on the knuckle-tail to throw the knuckle open, said knuckle-throwing leg passing through the knuckle-tail serving also as a means for connecting the knuckle with the draw-head, substantially as specified.

3. In a car-coupler, the combination with the draw-head having a rear arm or tail furnished with a transversely-extending slot and with a cam or incline, and a lock having a leg fitting in said slot of the knuckle-tail and furnished with a foot or projection engaging said cam or incline on the knuckle-tail to throw the knuckle open when the lock is lifted, the lower end of said lock-set leg being also adapted to engage the lower web or floor of the draw-head to set or hold the lock in position for uncoupling, substantially as specified.

4. In a car-coupler, the combination with the draw-head having a rear arm or tail furnished with a transversely-extending slot and with a cam or incline, and a lock having a leg fitting in said slot of the knuckle-tail and furnished with a foot or projection engaging said cam or incline on the knuckle-tail to throw the knuckle open when the lock is lifted, said lock having also a lock-set leg furnished with a ledge or shoulder adapted to engage the lower web or floor of the draw-head to hold the lock in position for uncoupling, substantially as specified.

5. In a car-coupler, the combination with the draw-head having a rear arm or tail furnished with a transversely-extending slot and with a cam or incline, and a lock having a leg fitting in said slot of the knuckle-tail and furnished with a foot or projection engaging said cam or incline on the knuckle-tail to throw the knuckle open when the lock is lifted, said lock having also a lock-set leg furnished with a ledge or shoulder adapted to engage the lower web or floor of the draw-head to hold the lock in position for uncoupling, and the lower end of said knuckle-throwing leg of the lock being also adapted to engage the lower web or floor of the draw-head for holding the lock in position for uncoupling, substantially as specified.

6. In a car-coupler, the combination with the draw-head having a rear arm or tail furnished with a transversely-extending slot and with a cam or incline, and a lock having a leg fitting in said slot of the knuckle-tail and furnished with a foot or projection engaging said cam or incline on the knuckle-tail to throw the knuckle open when the lock is lifted, said lock having a ledge or shoulder adapted to rest upon the knuckle-tail and support the lock when the knuckle begins to swing open, substantially as specified.

7. In a car-coupler, the combination with the draw-head having a rear arm or tail furnished with a transversely-extending slot and with a cam or incline, and a lock having a leg fitting in said slot of the knuckle-tail and furnished with a foot or projection engaging said cam or incline on the knuckle-tail to throw the knuckle open when the lock is lifted, said knuckle-tail being provided with a ledge or shelf adapted to engage the lower end of said knuckle-thrower leg to support the lock in its raised position when the knuckle is completely open, substantially as specified.

8. In a car-coupler, the combination with the draw-head having a rear arm or tail furnished with a transversely-extending slot and with a cam or incline, and a lock having a leg fitting in said slot of the knuckle-tail and furnished with a foot or projection engaging said cam or incline on the knuckle-tail to throw the knuckle open when the lock is lifted, said knuckle-tail being provided with a ledge or shelf adapted to engage the lower end of said knuckle-thrower leg to support the lock in its raised position when the knuckle is completely open, and said ledge or shelf having an inclined upper face to adapt it to slip under the lower end of said knuckle-thrower leg as the knuckle swings open, substantially as specified.

9. In a car-coupler, the combination with the draw-head having a rear arm or tail furnished with a transversely-extending slot and with a cam or incline, and a lock having a leg fitting in said slot of the knuckle-tail and furnished with a foot or projection engaging said cam or incline on the knuckle-tail to throw the knuckle open when the lock is lifted, said knuckle-tail being provided with a ledge or shelf adapted to engage the lower end of said knuckle-thrower leg to support the lock in its raised position when the knuckle is completely open, said ledge or shelf having an inclined upper face to adapt it to slip under the lower end of said knuckle-thrower leg as the knuckle swings open, and the lower end of said knuckle-thrower leg being furnished with an inclined face, substantially as specified.

10. In a car-coupler, the combination with a forked draw-head, of a pivoted knuckle having a rear arm furnished with a slot, of a lock having a leg fitting in the slot in the rear arm of the knuckle, said rear arm of the knuckle and said leg of the lock having interengaging integral devices for throwing the knuckle open as the lock is lifted, and said rear arm of the knuckle having a shelf or device for supporting the lock by engagement with said leg when the knuckle is fully open, and said leg of the lock and the draw-head having interengaging parts to support the lock in position for uncoupling, substantially as specified.

11. In a car-coupler, the combination with a forked draw-head, of a pivoted knuckle having a slotted rear arm or tail, of a lock having two legs, one of which passes through the slot in the knuckle-tail, substantially as specified.

12. In a car-coupler, the combination with a forked draw-head, of a pivoted knuckle having a slotted rear arm or tail, of a lock having two legs, one of which passes through the slot in the knuckle-tail, said lock and knuckle-tail having interengaging devices for throwing the knuckle open as the lock is lifted, substantially as specified.

13. In a car-coupler, the combination with a forked draw-head, of a pivoted knuckle having a slotted rear arm or tail, of a lock having two legs, one of which passes through the slot in the knuckle-tail, said knuckle-tail having a cam or incline, and the leg of the lock passing through the knuckle-tail having a foot or projection engaging said cam or incline to throw the knuckle open, said foot or projection also serving to prevent the lock being removed or lifted too high, substantially as specified.

14. In a car-coupler, the combination with a forked draw-head, of a pivoted knuckle having a slotted rear arm or tail, of a lock having two legs, one of which passes through the slot in the knuckle-tail, said knuckle-tail having a cam or incline, and the leg of the lock passing through the knuckle-tail having a foot or projection engaging said cam or incline to throw the knuckle open, said foot or projection also serving to prevent the lock being removed or lifted too high, said leg of the lock passing through the knuckle-tail also serving to connect the knuckle to the draw-head, substantially as specified.

812,928. WIRE LOCK. ALANSON M. KENNEY, Ann Arbor, Mich. Filed Apr. 17, 1905. Serial No. 256,000.

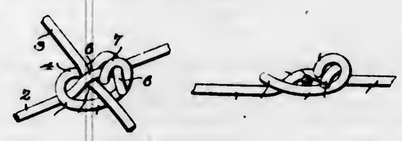

Claim.—1. The combination with crossed wires, of a substantially U-shaped lock straddling one of the wires and passing across the opposite side of the other wire, one end portion of the lock being passed across the first-mentioned wire, and the other extremity of the lock being hooked over the first-mentioned end of the lock.

2. The combination with crossed wires, of a substantially U-shaped lock straddling one of the wires and passing across the opposite side of the other wire, one end of the lock being passed across the first-mentioned wire and engaged with the opposite side of the lock, said opposite side of the lock lying wholly at one side of said other wire and being bent back across the first-mentioned end of the lock.

812,929. TONGS. GUSTAV KERSTEN, Crandon, Wis. Filed Dec. 14, 1905. Serial No. 291,677.

Claim.—1. The combination of a casing provided with side apertures, a pair of grippers that extend through said apertures of the casing and have spur-toothed sector ends eccentric on pivots within the casing, and a sliding draft-bar guided in said casing and having a tapered inner end provided with rack-teeth engaging the teeth of the sector ends of the grippers, the whole constituting tongs.

2. The combination of a separable casing provided with side apertures and having the sections thereof connected by bolts, a pair of grippers that extend through said apertures of the casing and have spur-toothed sector ends eccentric on said bolts, and a sliding draft-bar guided in said casing and having a tapered inner end provided with rack-teeth engaging the teeth of the sector ends of the grippers, the whole constituting tongs.

3. The combination with a casing provided with side apertures and a central inner groove longitudinally thereof, a pair of grippers that extend through said apertures of the casing and have spur-toothed sector ends eccentric on pivots within the casing, a sliding draft-bar having a tapered inner end provided with rack-teeth engaging the teeth of the sector ends of the grippers, and a rib on a side of the bar engaging the groove in the aforesaid casing, the whole constituting tongs.

812,929.

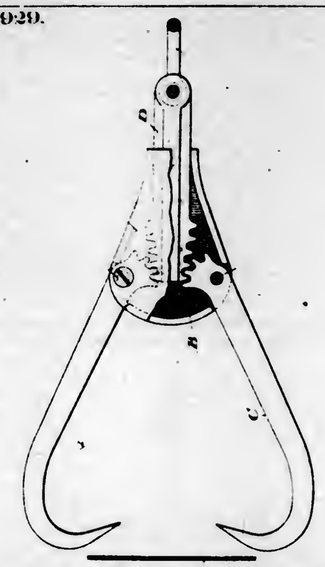

812,930. WIND-SHIELD FOR VEHICLES. GEORGE W. KIRK, Springfield, Mass. Filed Mar. 1, 1905. Serial No. 247,221.

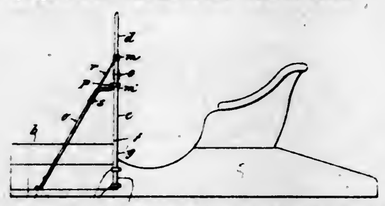

Claim.—1. A wind-shield for vehicles comprising a lower part supported on the vehicle, a brace therefor extending from the upper part thereof to the vehicle, an upper part arranged to swing relatively to said lower part, and a brace pivotally secured to the upper part and having a sliding connection with the brace for the lower part.

2. A wind-shield for vehicles comprising a lower part supported on the vehicle, a brace therefor connected at its upper end to the top of the lower part and at its lower end to the vehicle, an upper part arranged to swing relatively to said lower part, and a brace connected at one end to the upper part and having its other end connected to the brace of the lower part.

3. A wind-shield for vehicles comprising a base-board secured to the vehicle, a lower shield part secured to said base-board, a brace for said lower part extending from the upper end thereof to the vehicle, an upper shield part arranged to swing relatively to said lower part, and a brace pivotally secured to the upper shield part and having a sliding connection with the brace for the lower shield part.

4. A wind-shield for vehicles comprising a base-board secured to the vehicle in a substantially vertical plane, a lower shield part resting upon the upper edge of said base-board, a brace for said lower shield part extending from near the upper end thereof to the vehicle, an upper shield part hinged to the upper edge of the lower shield part, and a brace pivotally secured at one end to the upper shield part and adjustably connected at its other end to the brace for the lower shield part, whereby the upper shield part may be swung toward and from a position of alinement with said lower shield part.

5. A two-part wind-shield for vehicles comprising a lower part supported on the vehicle in a substantially vertical plane, a brace therefor extending from the upper part thereof to the vehicle, an upper part hinged to the upper edge of said lower part to swing toward and from a position of alinement with said lower part and above the latter, a brace pivotally secured by one end to the swinging part of the shield, and having a sliding connection with the brace of said lower part and means to secure the braces together.

6. A two-part wind-shield for vehicles comprising a base-board rigidly secured to the vehicle in a substantially vertical plane, a lower shield part fixedly secured to the upper edge of said base-board, and an upper shield part movable relative to said lower part to a position above the latter and constituting an extension thereof, and means to secure said upper part in its adjusted position.

7. A wind-shield for vehicles comprising a base-board secured to the vehicle in a substantially vertical plane, a lower shield part resting upon the upper edge of said base-board, a rod extending along the opposite side edges of the base-board and lower shield part, a clip straddling the rod and the edge of the upper shield part to hold the rod against the edge of said part, a brace secured at one end to said clip and at its other end to the vehicle, an upper shield part arranged to swing relatively to said lower shield part, and means to brace and adjust said upper shield part, substantially as specified.

812,981. FILTERING APPARATUS. KARL KIEFER, Cincinnati, Ohio. Filed Mar. 6, 1903. Serial No. 146,596.

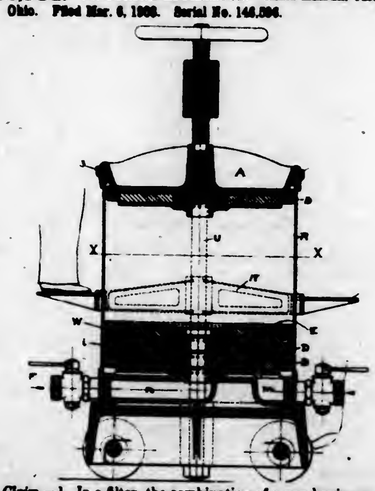

Claim.—1. In a filter, the combination of a pan having a plane imperforate bottom, of a single woven mat in contact on one side with said bottom, on the other side in contact with the filtering layer of compressed pulp.

2. In a filter, the combination with a pan having a plane imperforate bottom, of a single woven fiber-retaining mat, in contact on one side with said bottom, on the other side with the filtering layer of compressed pulp.

3. In a filter, in combination, a filter layer of compressed pulp contained within a circular pan, having ring-shaped surfaces protruding into said filter layer of a width at least equal to the thickness of the filter layer at the edge, said ring-shaped surfaces tightly connected to the inner side of the pan next to the clear-liquid conduit.

4. In a filter, a filtering layer within a pan, in combination only with a single woven fiber-retaining wire mat between filter layer and pan, with means of supplying cloudy liquid to the filtering layer.

5. In a filter, the combination of a filter layer within a circular pan, said pan having tightly connected to its inside ring-shaped surfaces higher than the bottom and projecting into the filter layers, in combination with means for supplying unfiltered liquid to the filter layers, said surfaces of a width at least equal to the thickness of the filter layer at the edge and conducting the filtered liquid away.

6. In a filter, the combination with a single woven mat in contact with a filtering layer on one side, on the other side with a plane imperforate surface, of means for circulating liquid through filter layer and mat.

7. In a filter, the combination with a single woven fiber-retaining mat in contact with a filtering layer on one side, on the other side a plane imperforate surface, of means for circulating liquid through filter layer and mat.

8. In a filter, the combination of a filtering layer of compressed pulp within a circular pan having ring-shaped surfaces higher than the bottom, and projecting into the filtering layers, in combination with a woven mat between filtering layer and bottom of pan, with means of supplying unfiltered liquid to the filter layer.

9. In a filter, the combination of a filtering layer of compressed pulp within a circular pan, the pan-like part of an equal thickness throughout except the central part, having ring-shaped surfaces higher than the bottom, and projecting into the filtering layers, in combination with a woven mat between filtering layer and bottom of pan, with means of supplying unfiltered liquid to the filter layers.

10. In a filter, the combination of a filtering layer of compressed pulp within a circular pan, the pan-like part of an equal thickness throughout, except the central part, horizontal ring-shaped surfaces projecting into the filtering layers, in combination with a woven mat between filtering layer and bottom of pan, with means of supplying unfiltered liquid to the filter layers.

11. In a filter, the combination of a filtering layer of compressed pulp within a circular pan, the pan-like part of an equal thickness throughout, except the central part, having an upturned edge and a metal hub and ring-shaped surfaces higher than the bottom and projecting into the filtering layers, in combination with a woven mat between filtering layer and bottom of pan, with means for supplying unfiltered liquid to the filtering layer.

12. In a filter, the combination of a filtering layer of compressed pulp within a circular pan having an upturned edge and cylindrical hub in center, smooth bottom and ring-shaped surfaces higher than the bottom and projecting into the filtering layers, in combination with a woven fiber-retaining mat between filtering layer and bottom of pan, with means of supplying unfiltered liquid to the filter layers.

13. In a filter, the combination of a filtering layer of compressed pulp, with a circular sheet-metal pan having an upturned edge and smooth bottom, and ring-shaped surfaces higher than the bottom and projecting into the filtering layers, in combination with a woven mat between filtering layer and bottom of pan, with means of supplying unfiltered liquid to the filter layer.

14. In a filter, the combination with a series of circular filter elements, of an external drum and of a cover partly projecting into the drum, said cover having a cylindrical part smaller than the drum and guided by the drum, and said cylindrical part of cover being of sufficient height to allow the use of the cover as means of compressing the filter elements.

15. The combination with a disk-shaped filtering layer of compressed pulp contained within a pan having a clear-liquid way in its bottom, of a smooth surface tightly attached to the pan outside of said clear-liquid way and in intimate contact with the edge of said filtering layer and parallel thereto, said smooth surface of a width at least equal to the thickness of the filter layer at the edge.

16. In a filter, the combination of a base with two uprights, of a sheet-metal drum with a cover, of a projecting-ring of greater strength than the sheet-metal drum and higher than the base, and adapted to protect the sheet-metal bottom from injury substantially as described.

17. In a filter, the combination of a base with two uprights, of a sheet-metal drum with a cover, of a protecting projection of greater strength than the sheet-metal drum and higher than the base, and adapted to protect the sheet-metal bottom from injury substantially as described.

18. In a filter, the combination of a base with two uprights, of a sheet-metal drum with a cover, of a protecting-ring of greater strength than the sheet-metal drum rigidly fastened to the uprights, higher than the base, and adapted to protect the sheet-metal body from injury.

19. In a filter, in combination, a filter layer of compressed pulp contained within a circular pan having ring-shaped surfaces in intimate contact with the edges of the filtering layer, said ring-shaped surfaces parallel to the filtering layer and of a width at least as wide as the thickness of the filtering layer at its edge.

20. The combination with a disk-shaped filtering layer of compressed pulp, of an imperforate metal surface separating it entirely from the neighboring filtering layer, of surfaces of intimate contact along the edges of said filtering layer between the filter layer and imperforate surfaces, said edges of contact of a width at least equal to the thickness of the filtering-surface at the point of contact and tightly attached to the said imperforate separating-surface.

21. The combination in a filter, of a pan having a vertical peripheral border, next to this border and tightly connected therewith a smooth ring-shaped surface at least as wide as the thickness of the filtering layer, a filter layer of compressed pulp within the pan in contact with said peripheral ring-shaped edge, but spaced apart elsewhere from the pan by means constituting a liquid-way, and of means to supply the liquid-way with liquid.

22. The combination in a filter, of a pan having a vertical central border, next to this border and tightly connected therewith a smooth ring-shaped surface at least as wide as the thickness of the filtering layer, a filter layer of compressed pulp within the pan in contact with said central ring-shaped edge, but spaced apart elsewhere from the pan by means constituting a liquid-way, and of means to supply the liquid-way with liquid.

23. The combination in a filter, of a pan having a vertical peripheral border, and next to this border and tightly connected therewith, and parallel to the bottom of the pan, smooth ring-shaped surfaces of a width at least equal to the thickness of the filter layer at its edge, a filter layer of compressed pulp within the pan in contact with said ring-shaped edge, but spaced apart elsewhere from the pan by means of a liquid-conductor, of means pressing said filter layer at all times against smooth ring-shaped surfaces.

24. The combination in a filter, of a pan having a vertical peripheral border, and next to this border and tightly connected therewith, and parallel to the bottom of the pan, smooth ring-shaped surfaces of a width at least equal to the thickness of the filter layer at its edge, a filter layer of compressed pulp within the pan in contact with said ring-shaped edge, but spaced apart elsewhere from the pan by means of a wire-screen liquid-conductor, of means pressing said filter layer at all times against smooth ring-shaped surfaces.

25. The combination in a filter, of a pan having a vertical peripheral border, and next to this border and tightly connected therewith, and parallel to the bottom of the pan, smooth ring-shaped surfaces of a width at least equal to the thickness of the filter layer at its edge, a filter layer of compressed pulp within the pan in contact with said ring-shaped edge, but spaced apart elsewhere from the pan by means of an open-work liquid-conductor, of means pressing said filter layer at all times against said smooth ring-shaped surfaces.

26. The combination in a filter, of a pan having a vertical peripheral border, and next to this border and tightly connected therewith, and parallel to the bottom of the pan, smooth ring-shaped surfaces of a width at least equal to the thickness of the filter layer at its edge, a filter layer of compressed pulp within the pan in contact with said ring-shaped edge, but spaced apart elsewhere from the pan by means of an open-work liquid-conductor, of means pressing said filter layer at all times against said smooth ring-shaped surfaces consisting of wire screen pressed against by the neighboring filter element.

812,982. FILTERING ELEMENT. KARL KIEFER, Cincinnati, Ohio. Filed Apr. 7, 1904. Serial No. 202,105.

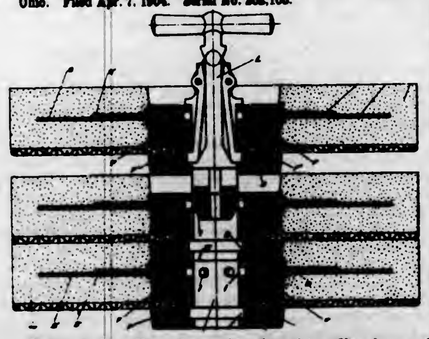

Claim.—1. In a filter, the combination of two filter layers of compressed pulp, interposed between them a circular inlet liquid-way with a central ring-shaped compression body having two horizontal compression-surfaces, whereby the filter layers where in contact therewith are more compressed than elsewhere, means for supplying unfiltered liquid to the inlet liquid-way and draining the filtered liquid from the filter layers.

2. In a filter a portable filter element consisting of a supporting circular inlet liquid-conductor having a central hub with central hole for the clear liquid, in combination with two filter layers of compressed fibrous pulp drained by a circular flat outlet liquid-conductor, said filter layers and liquid-conductor having central openings registering with the central hole of the supporting inlet liquid-conductor, and admitting of the introduction of means for taking hold of the supporting liquid-conductor.

3. In a filter an inlet liquid-conductor consisting of a single circular and stiff manufacture adapted to conduct liquid radially to two filter layers of compressed fibrous pulp in contact on both sides of said disk, and having a central compression body with impervious ring-shaped surfaces compressing the filter layers at their point of contact with said surfaces more densely than the rest of said filter layers.

4. In a filter, the combination of two filter layers of compressed pulp, interposed between them a circular inlet liquid-way with a central ring-shaped compression body having two horizontal compression-surfaces, whereby the filter layers where in contact therewith are practically compressed to non-porosity, means for supplying unfiltered liquid to the inlet liquid-way and draining the filtered liquid from the filter layers.

5. In a filter an inlet liquid-conductor supplying two filter layers and consisting of a single open-work disk with a ring-shaped compression body in its center, said compression body having horizontal ring-shaped faces, and vertical annulus, forming when superposed with the neighboring liquid-conductors, an intercommunicating opening for the clear liquid, in combination with filter layers of compressed fibrous pulp supplied by said inlet liquid-conductors, and with outlet liquid-conductors draining said filter layers from the clear liquid.

6. In a filter a portable filter element consisting of, two filter layers of fibrous compressed pulp, of an outlet liquid-conductor draining two filter layers, of an inlet liquid-conductor supporting the two filter layers and outlet liquid-conductor and being adapted to be taken hold of centrally for the purpose of inserting the whole element into the filter or extricating it therefrom, and of means to take hold of said liquid-conductor.

7. In a filter the combination with an inlet liquid-conductor supplying two filter layers, having a central compression body and a vertical central annulus, of filter layers of compressed fibrous pulp having depressions to correspond with the compression body mentioned, of an outlet liquid-conductor between two filter layers with a central opening to correspond and to center itself with the vertical annulus of the inlet liquid-conductor, and of means for supplying the inlet liquid-conductors with cloudy liquid and draining the outlet liquid-conductors.

8. In a filter the combination of a series of filter elements each consisting, of an inlet liquid-conductor (supplying two filter layers) of coarse-wire screen having a central compression body considerably thicker than said liquid-conductor and having a central opening for the clear liquid in said compression-body, of a pair of filter layers, the lower of which having a circular depression to correspond with the upper half of the compression body of the supporting inlet liquid-conductor, the upper filter layer having a similar depression to correspond with the lower half of the compression body of the neighboring inlet liquid-conductor, of an outlet liquid-conductor between the two filter layers with outlet facilities between two compression bodies of neighboring inlet liquid-conductors and connecting with the central intercommunicating opening formed by all compression bodies, and with means for supplying the inlet liquid-conductors with cloudy liquid and draining the outlet liquid-conductors.

9. In a filter the combination of a series of filter elements each consisting, of an inlet liquid-conductor (supplying two filter layers) of a single open-work manufacture having a central compression body with a central opening for the clear liquid, of a pair of filter layers, the lower of which having a circular depression to correspond with the upper half of the compression body of the supporting inlet liquid-conductor, the upper filter layer having a similar depression to correspond with the lower half of the compression body of the neighboring inlet liquid-conductor, of an outlet liquid-conductor between the two filter layers with outlet facilities between two compression bodies of neighboring inlet liquid-conductors and connecting with the central intercommunicating openings formed by all compression bodies, and with means for supplying the inlet liquid-conductors with cloudy liquid and draining the outlet liquid-conductors.

10. In a filter, the combination of two filter layers of compressed pulp, a circular inlet liquid-way interposed between them with an annular ring-shaped compression body having two compression-surfaces, whereby the filter layers where in contact therewith are more compressed than elsewhere, means for supplying unfiltered liquid to the inlet liquid-way and draining the filtered liquid from the filter layers.

11. In a filter, the combination of two filter layers of compressed fibrous pulp, of a circular inlet liquid-conductor, of rigid manufacture, interposed between and supplying them, a central compression body with impervious ring-shaped surfaces connected with said liquid-conductor and serving to compress the filter layers at their point of contact with said surfaces more densely than elsewhere.

12. In a filter, the combination with an inlet liquid-conductor, supplying two filter layers, a central compression body and vertical central annulus, of filter layers of compressed fibrous pulp, parts of which filter layers are in intimate contact with the compression body mentioned, of an outlet liquid-conductor, between and draining two filter layers, said liquid-conductor having a central opening to correspond and to center itself with the vertical annulus of the inlet liquid-conductor, and of means for supplying the inlet liquid-conductors with cloudy liquid and draining the outlet liquid-conductors.

812,933. FILTER. KARL KIEFER, Cincinnati, Ohio. Filed June 30, 1904. Serial No. 214,728.

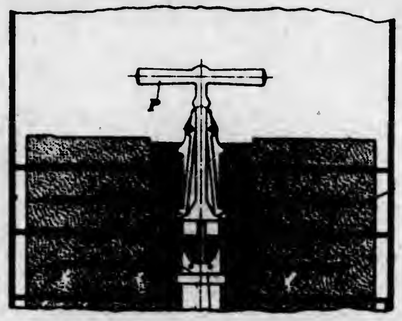

Claim.—1. In a filter, the combination of a base, a drum rigidly connected to said base, of upright posts fastened onto said base and carrying a packing arrangement and a closing arrangement for the drum, each arrangement adapted to swing out of the way of the other during its use.

2. In a filter, the combination of filter elements built up in the filter, forming a continuous filter layer, means for forming said filter layers and means for removing said filter layers in pairs.

3. In a filter, the combination of an external drum, a series of filter elements connected with each other so as to form one continuous filter mass, and more compressed in the center, with inlet and outlet liquid-conductors.

4. In a filter, the combination of a drum and two upright posts connected to said drum, of a yoke for the purpose of holding down the cover, hinged to one post and locking into the other one, of a press arrangement for the pressing of the filter layer, hinged to the latter post and locking into the previous post, each, yoke and press arrangement, adapted to swing aside during the use of the other one.

5. In a filter, the combination of a drum, of a press arrangement for the purpose of producing a series of filter elements, constituting one continuous filter layer, with a central space-former of a height only part of that of the drum and adapted to be raised as the filter elements are built up and finally extricated.

6. In a filter, the combination of a rigid base, two posts fastened onto such base, a drum mounted upon the base, of a yoke and cover arrangement hinged vertically to one post and locking into the other one, of a press arrangement hinged vertically to the latter post and locking into the previous post, each arrangement adapted to swing aside during the use of the other one.

7. In a filter, the combination of a series of filter layers, interleased in annular areas and separated outside of each area by liquid-conductors consisting each of one coarse screen and one fine screen, said coarse screen in contact with the lower filter layer, and means for supplying and draining said liquid-conductors.

8. In a filter, the combination of a casing, a series of filter elements interleased among each other in annular areas, and separated outside of such area by inlet and outlet liquid-conductors, one of the series of conductors communicating with the central opening formed by the said filter layers, and adapted to be gripped by a lifting instrument from above.

9. In a filter, the combination of two filter layers interleased in an annular area and separated outside of such area by a liquid-conductor, consisting of a metal non-fiber-retaining open-work flat disk and a single metal fiber-retaining screen, the latter in contact with the upper filter layer and the former in contact with the lower filter layer, both metal constructions touching each other, with means of supplying and draining said filter layers.

812,934. FILTER. KARL KIEFER, Cincinnati, Ohio. Filed Nov. 21, 1904. Serial No. 233,067.

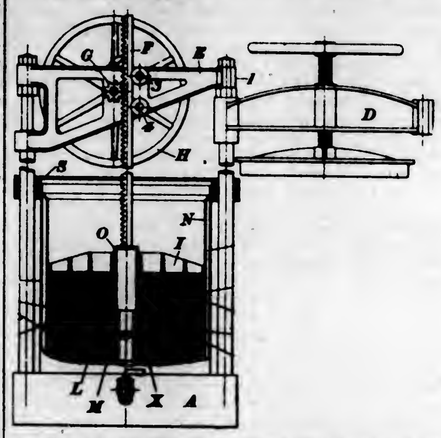

Claim.—1. In a filter, the combination of a series of filter layers interposed between which are liquid-conductors consisting of woven screens having a wire edge soldered on them.

2. In a filter of the class described, a liquid-conductor consisting of woven-wire screens and having a meander-wire edge.

3. In a filter, the combination of a series of filter layers, interposed between them liquid-conductors, consisting of woven screens, having a wire band at their edge to protect them, and spacing the filter layers apart at their edge, at the same time admitting liquid to the liquid-conductors.

4. In a filter, the combination of a series of filter layers of compressed pulp, an exterior drum, a base and two columns, a pressing device consisting of a single hollow tube in the center, attached to which is a rack, in combination with a gear and hand-wheel.

5. In a filter, the combination of a disk-shaped filter layer of compressed fibrous pulp, the center of which contains more fibers compressed to the same thickness as the rest of the disk, with means for supplying and draining said filter layer.

6. In a filter, the combination of a disk-shaped filter layer of compressed fibrous pulp, the center part of which is under greater compression and contains proportionately more filter mass than the rest of the disk, with means for supplying and draining said filter layer.

7. In a filter the combination of a drum or casing, of a series of filter elements contained within said drum, of a press arrangement for producing the filter elements within said casing, and of means attached to said press arrangement for extracting the filter layers after use.

8. In a filter, in combination with filter layers, a wire screen having a meander-wire edge.

812,935. MOLD FOR CASTING CENTER-HUNG SASH-WEIGHTS. LOUIS H. KNAPP, Parkersburg, W. Va. Filed Mar. 26, 1905. Serial No. 252,695.

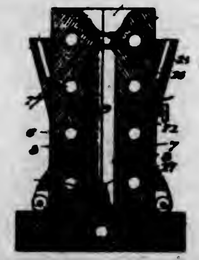

Claim.—In a mold, a stationary mold-section provided with a vertically-disposed eye-forming core and defining a smooth unobstructed bearing-surface on each side of the core, a pair of movable mold-sections slidably mounted on the bearing-surface of the stationary section and each provided with a vertical recess adapted to register with the recess in the adjacent section when said sections are in closed position, said stationary mold-section being of sufficient width to form a support for the movable sections when in both open and closed positions, a core projecting inwardly from one of the movable sections for engagement with the eye-forming core, longitudinally-disposed lugs formed integral with the movable sections and provided with inclined recesses adapted to receive an operating-tool for adjusting the movable sections to open and closed positions, spaced ears projecting laterally from the base of each movable section and disposed in alinement with the lugs, rollers journaled in said ears and adapted to engage the smooth bearing-surface of the stationary mold-section, and means for clamping the mold-sections in closed position, there being a passage formed in the stationary section beneath the eye-forming core to permit the circulation of a cooling medium and a plurality of passages formed in the movable sections and opening at each end through the side walls of said sections.

812,936. LABELING-MACHINE. DANIEL W. KNEELY, Dayton, Ohio, assignor, by direct and mesne assignments, to The Drury-Kneely Manufacturing Company, Dayton, Ohio, a Corporation of Ohio. Filed Sept. 2, 1904. Serial No. 223,166.

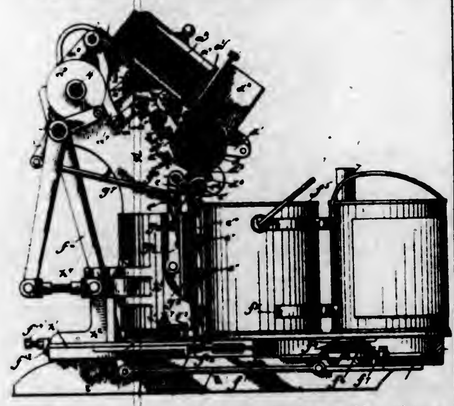

Claim.—1. The combination, in a labeling-machine, of means for supporting labels, devices for feeding same, supporting devices for the article to be labeled, means for giving a partial attachment of the label to the article to be labeled, and additional devices, shaped to conform to the contour of said article, to engage said label at or near the point of first attachment and stretch same about said article and then apply pressure to substantially all parts of said label, substantially as and for the purpose specified.

2. In a labeling-machine, the combination of feeding devices for labels and pasting devices therefor, means for holding the labels in proper position for applying same to the article to be labeled, and, while said label is being held in proper position, means for finishing the application of said label to the article to be labeled, and means for throwing out of operative position the holding devices for said label simultaneously with the final applying of the label to the article.

3. The combination, in a labeling-machine, of means for supporting labels, devices for feeding same, supporting devices for the article to be labeled, means for giving a partial attachment of the label to the article to be labeled, and devices adapted for stretching said label and at the end of its movement for pressing all parts of said label to said article, substantially as specified.

4. The combination, in a labeling-machine, of means for supporting labels, devices for feeding same, supporting devices for the article to be labeled, means for giving a partial attachment of the center of the label to the article to be labeled, and a pivoted device on each side of the center of said label shaped to conform to the contour of said article adapted to stretch and apply the free ends of said label to said article, substantially as specified.

5. In a labeling-machine, a supporting device for the labels, a buckling device, means for operating each of said devices, means for causing the supporting device to have two complete operations during the time said buckling device is given one complete operation, and pasting and applying devices, for the purpose specified.

6. In a labeling-machine, the combination of a main operating device, a movable support for the labels, a support for the articles to be labeled, a device coöperating with said label-support to effect the disengagement of one of the labels from said support by the movement of said support, feeding devices normally out of engaging position, and means for throwing said feeding devices into position for engaging the end of said labels, substantially as specified.

7. The combination of a supporting device with a buckling device, a main operating device for both of said devices, feeding-rolls located in proximity to said buckling device, one of said rolls being normally out of engaging position, a ratchet-and-pawl connection between said last-mentioned feeding-roll and the main operating device, and controlling means for connecting said ratchet-and-pawl connection for throwing the feeding-roll into engaging position, and means for pasting and applying the label after same has been fed by said feeding-rolls.

8. The combination of a supporting device, a buckling device, and a main operating device for each of said devices, feeding-rolls, one out of engaging position, a ratchet-and-pawl connection between said last-mentioned feeding-roll and said main operating device, a plurality of springs connected with said pawl, and a controlling device adapted to contact against one of said springs for disconnecting said pawl-and-ratchet mechanism, and pasting and applying devices for said labels after same have been fed by said feeding-rolls.

9. The combination of a supporting device, a buckling device, feed-rolls, a main operating device for said devices, a pasting-roll, additional feeding devices consisting of grooved rolls and rotating disks, and applying mechanism, for the purpose specified.

10. The combination of a supporting device, a buckling device, feeding-rolls, a main operating device for said devices, a pasting-roll, a plurality of fingers located in proximity to said paste-roll, two of said fingers having their ends approaching each other, and applying devices, for the purpose specified.

11. The combination of feeding devices, pasting devices, additional feeding devices comprising an endless band and a plurality of movable rolls, and means for limiting the pressure with which said rolls bear against said band, and applying devices, for the purpose specified.

12. The combination of feeding devices, pasting devices, additional feeding devices comprising an endless band and a plurality of spring-pressed movable rolls, and means for limiting the pressure with which said rolls bear against said band, and applying devices, for the purpose specified.

13. The combination of feeding devices for labels, supplemental feeding devices, applying devices consisting of a bar covered with resilient material, and a plurality of wings also covered with resilient material one located on each side of said bar, and means for operating said applying devices, for the purpose specified.

14. The combination of means for feeding labels, means for feeding the articles to be labeled to applying position, means for yieldingly pressing one part of said label to the article, and means for stretching the ends of said label and simultaneously pressing the entire label to said article.

15. In a labeling-machine, the combination of feeding devices for the labels and pasting devices therefor, means for holding the label in its proper position for applying same to the article to be labeled and means for pressing the ends of said label against the article to be labeled, and spring-pressed brake devices for regulating the pressure against the labels, substantially as specified.

16. In a labeling-machine, a revoluble article-carrying table, movable label-support, label-pasting devices, label-pressing devices, a label-buckling device, and intermittent impinging label-feeding rolls, substantially as specified.

17. In a labeling-machine, an article-carrying table, label-pasting devices, label-pressing devices, a movable label-support, a buckling device coöperating with said movable support to buckle the lowermost label, and label-feeding rolls, substantially as specified.

18. In a labeling-machine, an article-supporting table, label-pasting devices, label-pressing devices, means for supporting the supply of labels at two opposite sides, means for disengaging the lowermost label at its forward side, and label-feeding rolls, substantially as specified.

19. In a labeling-machine, article-feeding means, label-feeding devices, label-pasting devices, label stretching and pressing devices, means for actuating said devices comprising a cam-shaft and a series of cams thereon, driving mechanism, means for engaging said driving mechanism and cam-shaft and means for automatically discon-

gaging said driving mechanism and cam-shaft at the completion of the operation, substantially as specified.

20. In a labeling-machine, article-feeding mechanism, label-pasting mechanism, label-pressing mechanism, a label-support, means for withdrawing the forward edge of the lowermost label from said support, feed-rolls, and means for retaining the pasted label in an upright position until applied to the article, substantially as specified.

21. In a machine as described, the combination with label-feeding devices, label-applying devices, of a supporting-frame, a roller mounted in said frame, actuating means for said roller, a paste-inclosure surmounting said roller, and adjusting means for varying the relation of said inclosure and roller, whereby the thickness of the film of paste carried by said roller from said inclosure may be regulated, substantially as specified.

22. In a machine as described, the combination with label-feeding devices, article-supporting devices, and label-applying devices, of a paste-inclosure, a movable bottom for said paste-inclosure, and means for adjusting the relation of said inclosure and movable bottom, whereby the thickness of the film of paste discharged from said inclosure may be regulated, substantially as specified.

23. In a machine as described, article-supporting devices, label-feeding devices, and label-applying devices, label-pasting devices, feeding devices for the pasted labels comprising a roll having a series of offsets thereon, a shaft carrying a series of disks registering with the offsets of said roll, endless carrier-belts, supporting-rolls coöperating therewith, substantially as and for the purpose specified.

24. In a machine as described, article-supporting devices, label-feeding devices, label pasting and applying devices, means for advancing the pasted label comprising an endless belt, rollers of comparatively narrow face coöperating with said belt, an adjustable stop for the pasted label, and means for moving said rollers from contact with the pasted label, substantially as specified.

25. In a machine as described, article-supporting devices, label-feeding devices, label-pasting and label-applying devices, advancing mechanism for the pasted label comprising endless belts engaging the face of said label, a series of rollers engaging the pasted side of said label, a supporting-frame for said rollers, an adjustable stop for said pasted label, and means for releasing the pasted label from said belts and rollers, substantially as specified.

26. In a machine as described, the combination with label-feeding, article-supporting, label-pasting and label-applying devices, of feed-rolls for the pasted labels comprising a roller having a series of offsets thereon and a roller composed of a series of comparatively narrow-faced members registering with the offsets of the first-named roller, substantially as specified.

27. In a machine as described, the combination with label-feeding, article-supporting, label-pasting and label-applying devices, of advancing devices for the pasted label comprising an endless belt, a series of rollers normally in contact with said belt, a hinged supporting-frame for said rollers, an adjustable stop for the pasted label, and means to move said supporting-frame on its hinged connection, substantially as specified.

28. In a machine as described, article-supporting, label-feeding, and label-pasting devices, of a preliminary pressure member, a reciprocating member, hinged wing members on said reciprocating member adapted to be moved about their hinged connection by contact with the article to be labeled, and tenacious material on said wing members, substantially as specified.

29. In a machine as described, article-supporting mechanism, label-feeding and label-pasting devices, a preliminary pressure member, a reciprocating member, hinged wing members on said reciprocating member, means for pressing said wing members into contact with the article to be labeled, means for turning said hinged wing members toward each other upon the retraction of said reciprocating member, substantially as specified.

30. In a machine as described, article-supporting mechanism, label feeding and pasting devices, label stretching and pressure devices comprising a reciprocating member, wing members hinged thereto whose forward edges are normally separated by a distance less than the cord of the surface-segment to which the label is applied, but whose forward edges are adapted to be spread by contact with the article to be labeled, the inner surface of said wing members being so shaped as to conform to the surface of the article to be labeled, and at the forward limit of their stroke to simultaneously press all parts of said label, substantially as specified.

31. In a machine as described, article-supporting, label-feeding, and label-pasting devices, a pivoted spring-pressed pressure member, a reciprocating member, wing members carried thereby and so shaped as to conform to the segment of the article to be labeled, means for operating said reciprocating member to simultaneously press all parts of the label after same has been preliminarily applied by said pressure member.

32. In a machine as described, article-supporting, label-feeding, and label-pasting devices, a preliminary pressure member, a reciprocating member, engaging surfaces on said reciprocating member, means for moving said surfaces laterally for the purpose of stretching the label at the end of the movement of the reciprocating member, said engaging surfaces being so shaped as to conform to the surface-segment of the article to be labeled at the limit of their movement for the purpose specified.

33. In a machine as described, movable article-supporting, label-feeding, and label-pasting devices, a reciprocating member, a lock for said article-supporting devices, and means for releasing said lock by the reciprocating member, for the purpose specified.

812,937. TACHOMETER OR SPEED-INDICATOR. VINZENZ KOSLITSCH, Salmthal, Austria-Hungary. Filed June 14, 1904. Serial No. 213,510.

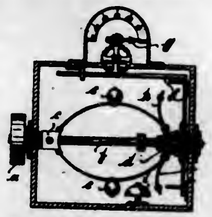

Claim.—In a speed-indicator, in combination, a rotatable shaft, a stationary sleeve secured to it, and a second sleeve sliding on it, bowed springs carrying centrifugal weights uniting the two sleeves, an angular rack carried by the sliding sleeve, indicating mechanism actuated by the said rack, clappers projecting from the sliding sleeve, and a gong rotated within range of the same, substantially as described.

812,938. VOTING-MACHINE. STEPHEN D. LATTON, Westport, Ind. Filed Nov. 14, 1903. Serial No. 181,236.

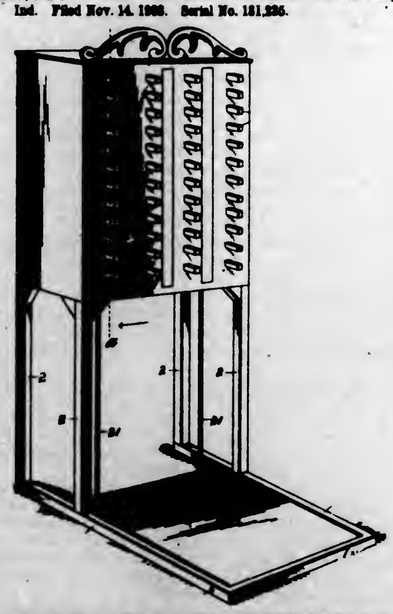

Claim 1. The combination with straight-ticket and individual keys arranged in rows, and registering mechanism, of a frame comprising a plurality of imperforate strips corresponding in number

to the rows of keys, and a member connected rigidly to the end of the strips, disposed in the path of the straight-ticket keys and provided with openings, each of which is normally disposed to one side of one straight-ticket key, said straight-ticket keys being adapted to pass through said openings to move the frame and engage the registering mechanism.

2. The combination with the keys arranged in rows and provided with notches, of a frame comprising strips corresponding in number to the rows and each carrying a plurality of springs, a platform, connections between the platform and the frame for moving the frame into a position that when the keys are pressed the springs will enter the locking-notches.

3. The combination with a plurality of rows of keys, each key being provided with notches, V-shaped springs bearing between adjacent keys of adjacent rows, a lateral projection on each key for engagement with one leaf of a spring, while the other leaf engages in one of the notches in the same key and the point of the spring fits in an adjacent key of an adjacent row.

4. The combination with the keys, of a frame, independently-movable spring-locks for the keys mounted on the frame, and mechanism for moving the frame to move the spring-locks to and from a position where they will be engaged by the keys.

812,939. BED-SPRING. BENJAMIN F. LUDLOW, Mansfield, Ohio. Filed Jan. 19, 1905. Serial No. 241,774.

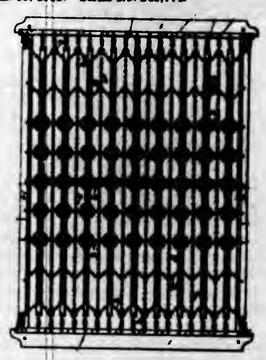

Claim.—1. In a bed-spring the combination of a frame having a series of bars suspended from end pieces, a series of conical springs mounted on said bars, coil-springs securely attached to the end pieces, chains connected to said springs substantially as and for the purpose described.

2. In a bed-spring composed of a frame having suitable bars suspended therefrom, a series of coiled springs attached to said frame, chains attached to said coiled springs through the medium of suitable rings a series of short sections of chain connecting the top of the conical springs at points diametrically opposed to each other with the ends of said sections secured to suitable side bars.

3. The combination of a frame having depending tubular side rails, with end pieces having their corners notched and adapted to fit the end and side rails of the bed, side bars connected to the end pieces under tension through the medium of coiled springs.

4. In a bed-spring composed of a frame having suitable bars attached thereto and projecting inwardly with apertures provided therein and adapted to receive the looped end of the coiled springs, rings attached to the opposite looped ends of the coiled springs, chains connected thereto and adapted to form part of the surface of the bed-springs, said chains and springs being adapted to maintain a predetermined weight, a series of bars suspended from the end pieces and supported by coiled springs attached thereto, a series of conical springs adapted to be supported vertically from said bars whereby additional weight is sustained without affecting the elasticity of the bed-spring.

5. In a bed-spring the combination of a frame having a series of coiled springs attached horizontally to the end pieces thereof, said springs supporting a series of bars, a series of conical springs mounted thereon, a linked brace connecting said bars together whereby said springs are kept in proper alinement permitting independent movement substantially as and for the purpose described.

6. In a bed-spring the combination of a frame having a series of horizontal coiled springs attached thereto, a series of bars suspended from said frame, chains supported by said coiled springs, a series of conical springs supported by said bars, side bars attached to the end piece of the frame under tension and adapted to prevent lateral motion, chains attached to alternate coiled springs forming a part of the surface of the bed-spring.

7. In a bed-spring the combination of a frame having a series of coiled springs attached thereto, a series of bars suspended therefrom, conical springs supported by said bars, chains secured to said coiled springs, side bars secured to sections of said chains in such a manner as to give free and independent movement to all parts substantially as and for the purpose described.

812,940. BOTTLE-RINSER. CHARLES H. LOEW, Lakewood, Ohio. Filed Mar. 17, 1904. Serial No. 198,613.

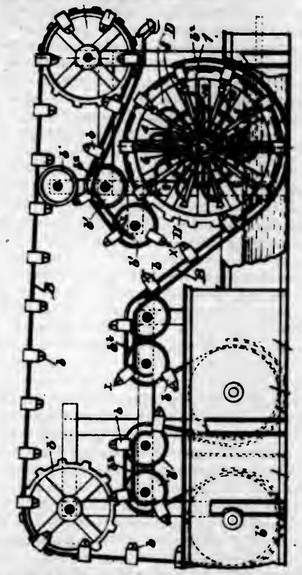

Claim.—1. A bottle-rinsing mechanism comprising a reciprocatory fluid-discharge stem, and means whereby said stem is advanced and retracted by the pressure of the rinsing fluid.

2. A bottle-cleaning apparatus comprising fluid-supply means and a bottle-holder, one of which is rotatable relatively to the other, a tube, a fluid-discharge stem mounted in said tube and having means by which it is reciprocated by the pressure of the fluid and means by which the supply of said fluid to said tube is controlled by the rotation of the rotatable part.

3. A bottle-cleaning apparatus comprising fluid-supply means and a bottle-holder one of which is movable relatively to the other, a discharge-stem having a head and means by which the fluid is conducted alternately to opposite sides of said head at predetermined places in the movement of the movable part, said stem being arranged in a portion of the conducting means.

4. A bottle-rinsing mechanism comprising supply and drainage means for the rinsing fluid, a reciprocatory discharge-stem having a head or piston, a tube in which the same reciprocates and means for establishing communication of the portion of the tube at one side of the piston with said supply means and of the portion thereof at the other side of said piston with the drainage means, to thereby force the piston and stem in one direction, and for reversing said communication, to cause the rinsing fluid to reverse the direction of movement of said piston and stem.

5. A bottle-rinsing mechanism comprising a fluid-supply pipe having a discharge-aperture, bottle-carrying means movable relatively to said aperture, a tube movable with said carrying means, a fluid-discharge stem reciprocatorily mounted in said tube and provided with a head or piston, and means through which said tube has communication with said aperture alternately above and below said piston.

6. A bottle-rinsing mechanism comprising a fluid-supply pipe

812,941. RAILWAY-SIGNAL. [illegible] Lone South Omaha

6. A bottle-rinsing mechanism comprising a fluid-supply pipe having a discharge-aperture and drainage-groove, bottle-carrying means movable relatively to said pipe, a tube movable with said carrying means and provided with a reciprocatory piston and means through which the portions of said tube, above and below said piston, each alternately communicates with said discharge-aperture and drainage-groove.

7. A bottle-rinsing mechanism comprising a fluid-supply pipe having a discharge-aperture and a drainage-groove and a rinsing-wheel mounted to rotate around said pipe with the bottles being rinsed, and comprising a fluid-discharge stem provided with a head or piston, a tube in which said stem and head or piston reciprocate, and means through which the portions of said tube above and below said piston each alternately communicate with said discharge-aperture and drainage-groove.

8. A bottle-rinsing mechanism comprising a fluid-supply pipe having a discharge-aperture and a drainage-groove, and a rinsing-wheel mounted to rotate around said pipe with the bottles being rinsed, and comprising a fluid-discharge stem provided with a head or piston, a tube in which said stem and head or piston reciprocate, said tube having an open lower end alternately communicating with said discharge-aperture and drainage-groove and a separate tube entering the first-mentioned tube above said piston or head and having an open lower end alternately communicating with said discharge-aperture and drainage-groove.

9. A bottle-rinsing mechanism, comprising a fluid-supply pipe having a discharge-aperture and a drainage-groove and a rinsing-wheel mounted to rotate around said pipe and comprising a hub having a series of pairs of apertures, each of which apertures alternately registers with said discharge-aperture and drainage-groove, a plurality of tubes radiating from said hub and provided with open lower ends communicating with one of said apertures of the respective pairs and having at the outer end cups to engage the bottle-necks, a fluid-discharge stem mounted to reciprocate in each of said tubes and provided with a head or piston, and a plurality of tubes carried by said hub and extending from the other apertures of the respective pairs and each opening into one of said first-mentioned tubes above said piston.

10. A bottle-cleaning means, comprising a reciprocatory fluid-discharge stem, means for causing said stem to be advanced and retracted by the pressure of the rinsing fluid, and means for causing said stem to rotate during its reciprocation.

11. A bottle-cleansing means comprising a fluid-discharge stem having a head or piston, means in which the same is reciprocatorily mounted, a brush carried by said stem, means for admitting the rinsing fluid under pressure to the interior of the first-mentioned means alternately at the upper and lower side of said piston and means for causing said stem to rotate during its reciprocations.

12. A bottle-cleansing means comprising a hollow fluid-discharge stem, having a piston or head, a tube in which the same is mounted, said tube having a cup to engage the bottle-neck, and means for admitting fluid under pressure to said tube alternately at opposite sides of said piston to thereby reciprocate said stem.

13. A bottle-cleansing means comprising a hollow fluid-discharge stem having a piston or head, a tube in which the same is mounted, said tube having a cup to engage the bottle-neck, means for admitting fluid under pressure to said tube alternately at opposite sides of said piston to thereby reciprocate said stem and means for causing said stem to rotate during its reciprocations.

14. A bottle-cleansing means comprising a hollow fluid-discharge stem having a piston or head, a tube in which the same is mounted, said tube having a cup to engage the bottle-neck, means for admitting fluid under pressure to said tube alternately at opposite sides of said piston to thereby reciprocate said stem, and brushing means carried by said stem.

15. A bottle-cleansing means comprising a hollow fluid-discharge stem having a piston or head, a tube in which the same is mounted, said tube having a cup to engage the bottle-neck, means for admitting fluid under pressure to said tube alternately at opposite sides of said piston, to thereby reciprocate said stem, brushing means carried by said stem, and means for causing said stem to rotate during its reciprocations.

16. A bottle-rinsing mechanism, comprising a fluid-supply pipe having a discharge-aperture, and means revolubly mounted on said pipe, said revolubly-mounted means being provided with a fluid-discharge stem having a head or piston, a tube in which said stem works, means through which communication of the said aperture with the interior of said tube and below said piston or head is alternately established, and means for turning said stem in said tube during its reciprocations.

812,941. RAILWAY-SIGNAL. WESLEY LOCK, South Omaha, Nebr., assignor, by direct and mesne assignments, of one-half to Emanuel V. Lorig and one-fourth to William C. Lambert, all of South Omaha, Nebr. Filed Apr. 7, 1905. Serial No. 254,300.

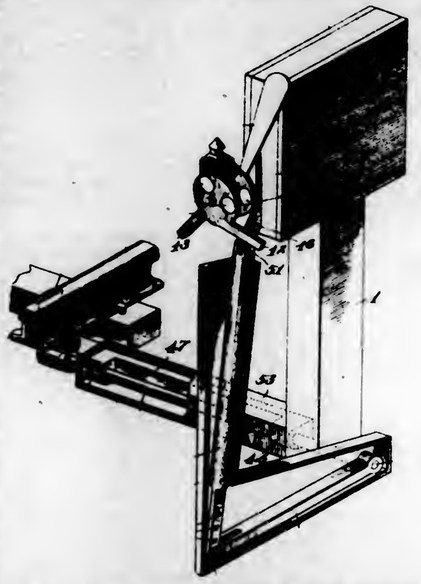

Claim.—1. In a signal-operating mechanism, in combination, a pivotally-mounted signal-arm; and means for pivotally moving said signal-arm comprising a pivoted operating-arm, a pivoted arm adapted to be moved upon the passage of a car, and a weighted connecting-rod extending between said last-mentioned arm and said operating-arm.

2. In a signal-operating mechanism, in combination, a pivotally-mounted signal-arm; two fingers fixed with relation to said signal-arm; a pivoted lever adapted to engage said fingers for moving said arm; a car-operated device for moving said lever in one direction; and a weight adapted to move said lever in the opposite direction.

3. In a signal-operating mechanism, in combination, a pivotally-mounted signal-arm; two fingers fixed with relation to said signal-arm and spaced apart; a pivoted lever extending between said fingers for moving said arm; means for moving said lever in one direction; and means for moving said lever in the opposite direction.

4. In a signal-operating mechanism, in combination, a pivotally-mounted signal-arm; means for pivotally moving said signal-arm comprising a pivoted operating-arm, a pivoted arm adapted to be moved upon the passage of a car, and a weighted connecting-rod extending between said last-mentioned arm and said operating-arm; and an escapement for controlling the gravity movement of said weighted rod.

5. In a signal-operating mechanism, in combination, a pivotally-mounted signal-arm; two fingers fixed with relation to said signal-arm; a pivoted lever adapted to engage said fingers for moving said arm; a car-operated device for moving said lever in one direction; a weight adapted to move said lever in the opposite direction; and an escapement for controlling the gravity movement of said weight.

6. In a signal-operating mechanism, in combination, a pivotally-mounted signal-arm; two fingers fixed with relation to said signal-arm and spaced apart; a pivoted lever extending between said fingers for moving said arm; car-operated means for moving said lever in one direction; a weight for moving said lever in the opposite direction; and an escapement for controlling the gravity movement of said weight.

812,942. PLANT-SUPPORT. CHRISTIAN LUND, Wausau, Wis. Filed June 17, 1905. Serial No. 265,730.

Claim.—1. In a plant-support, the combination of a stake formed of a single piece of wire having offsets at spaced intervals, and having a base formed by bending its lower end upwardly, thence transversely, thence downwardly, the upright portions of said stake having an offset to receive the transverse portion of the base thereof; and a plant-engaging loop formed of a single piece of wire having a free outturned end and a stake-engaging arm with bends therein spaced to correspond with said offsets in said stake, for the purpose specified.

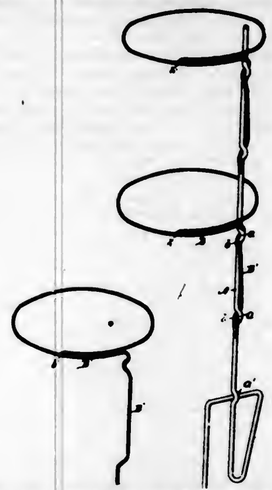

2. In a plant-support, the combination of a stake formed of a single piece of wire having offsets at spaced intervals, and having a base formed by bending its lower end upwardly, thence transversely, thence downward, and a plant-engaging loop formed of a single piece of wire having a free outturned end and a stake-engaging arm with bends therein spaced to correspond with said offsets in said stake, for the purpose specified.

3. In a plant-support, the combination of a stake formed of a single piece of wire having offsets at spaced intervals, and having a base formed by bending its lower end upwardly, thence transversely, thence downwardly, the upright portions of said stake having an offset to receive the transverse portion of the base thereof; and a plant-engaging loop formed of a single piece of wire having a stake-engaging arm with bends therein spaced to correspond with said offsets in said stake, for the purpose specified.

4. In a plant-support, the combination of a stake formed of a single piece of wire having offsets at spaced intervals, and having a base formed by bending its lower end upwardly, thence transversely, thence downwardly, and a plant-engaging loop formed of a single piece of wire having a stake-engaging arm with bends therein spaced to correspond with said offsets in said stake, for the purpose specified.

5. In a plant-support, the combination of a stake formed of wire having offsets at spaced intervals; and a plant-engaging loop formed of a single piece of wire having a free end and a stake-engaging arm with bends therein, spaced to correspond with said offsets in said stake, for the purpose specified.

6. In a plant-support, the combination of a stake formed of wire having offsets at spaced intervals; and a plant-engaging loop formed of a single piece of wire having a stake-engaging arm with bends therein spaced to correspond with said offsets in said stake, for the purpose specified.

7. A plant-supporting stake formed of a single piece of wire, having a base formed by bending its lower end upwardly, thence transversely, thence downwardly, the upright portions of said stake having an offset to receive the transverse portion of the base thereof, as specified.

8. A plant-supporting stake formed of a single piece of wire, having a base formed by bending its lower end upwardly, thence transversely, thence downwardly, as specified.

812,943. ANNEALING-BOX. JOHN J. MARENY, Anderson, Ind. Filed Oct. 23, 1903. Serial No. 178,033.

Claim.—1. An annealing-box provided with an arch in the interior thereof, supports for the arch, and a box-top on the arch unattached thereto and attached to the body of the box.

2. An annealing-box including sides and ends, and a crowning or arched top part on the sides and ends attached thereto and provided with a tie-rod attached to the top part and also to the sides.

3. An annealing-box having a top provided with a supporting-arch unattached thereto and free to expand longitudinally in the box, the arch being normally in contact with the box-top, a tie-rod attached to the sides of the box and extending across the interior of the box at the upper portion thereof, and supports for the arch.

4. An annealing-box having a top provided with a supporting-arch unattached thereto and comprising a main member and also a pair of side members secured to the main member and having each a lateral flange, supports for the arch, and a tie-rod extending across the interior of the box and having the ends thereof welded to the sides of the box.

5. An annealing-box having a crowning-top and provided with a pair of posts in the interior thereof, means for connecting the posts with the sides of the box, a tie-rod extending across the interior of the box and welded to the sides thereof, and an arch resting upon the pair of posts and normally in contact with the top of the box but unattached thereto.

6. An annealing-box having a crowning-top and provided with a pair of posts in the interior thereof, means for connecting the posts with the sides of the box, a tie-rod extending across the interior of the box and attached to the sides thereof, the tie-rod having heads hidden in the side walls, an arch resting on the pair of posts and normally in contact with the top of the box but unattached thereto, and a tie-bar attached to the ends of the arch.

7. An annealing-box including sides and ends, a tie-rod welded to the sides of the box, and a top part on the sides and ends of the box and having flanges welded to the tie-rod.

8. In an annealing-box, the combination with the sides thereof having a frame connected to the bottom thereof, and with angle-irons secured to the inner sides of the box sides, of a pair of posts extending substantially from the frame between pairs of the angle-irons and secured thereto, the tops of the posts being below the plane of the tops of the angle-irons, an arch resting upon the tops of the posts between angle-irons, and a tie-rod attached to the sides of the box, the box having a top supported by the arch but unattached thereto.

9. In an annealing-box, the combination with the sides and the top thereof, of posts supported in the box against the sides thereof, an arch mounted on the posts and extending under the top of the box but unattached thereto, and guide-studs attached to the top of the box and projecting at opposite sides of the arch.

10. In an annealing-box, the combination of two side parts and a crowning or arched top part and also a tie-rod therefor, all welded together, an arch for supporting the top part, supports for the arch connected with the side parts, and end parts attached to the side parts and the top part.

11. In an annealing-box, the combination of two side parts and connected end parts, a tie-rod extending through the side parts, a crowning or arched top part on the side parts and end parts, and having flanges extending over the ends of the tie-rods, an arch for supporting the top part, supports for the arch, and lateral supports for the arch.

812,944. FEED-WATER HEATER. HENRY G. MILLER, Cleveland, Ohio, assignor to The Low Supply & Manufacturing Company, Concord, N. J., a Corporation of New Jersey. Filed May 24, 1905. Serial No. 262,609.

Claim.—1. An apparatus of the kind described, comprising a chamber, tubes arranged in said chamber and open to permit of the

6. A bottle-rinsing mechanism comprising a fluid-supply pipe having a discharge-aperture and drainage-groove, bottle-carrying means movable relatively to said pipe, a tube movable with said carrying means and provided with a reciprocatory piston and means through which the portions of said tube, above and below said piston, each alternately communicates with said discharge-aperture and drainage-groove.

7. A bottle-rinsing mechanism comprising a fluid-supply pipe having a discharge-aperture and a drainage-groove and a rinsing-wheel mounted to rotate around said pipe with the bottles being rinsed, and comprising a fluid-discharge stem provided with a head or piston, a tube in which said stem and head or piston reciprocate, and means through which the portions of said tube above and below said piston each alternately communicate with said discharge-aperture and drainage-groove.

8. A bottle-rinsing mechanism comprising a fluid-supply pipe having a discharge-aperture and a drainage-groove, and a rinsing-wheel mounted to rotate around said pipe with the bottles being rinsed, and comprising a fluid-discharge stem provided with a head or piston, a tube in which said stem and head or piston reciprocate, said tube having an open lower end alternately communicating with said discharge-aperture and drainage-groove and a separate tube entering the first-mentioned tube above said piston or head and having an open lower end alternately communicating with said discharge-aperture and drainage-groove.

9. A bottle-rinsing mechanism, comprising a fluid-supply pipe having a discharge-aperture and a drainage-groove and a rinsing-wheel mounted to rotate around said pipe and comprising a hub having a series of pairs of apertures, each of which apertures alternately registers with said discharge-aperture and drainage-groove, a plurality of tubes radiating from said hub and provided with open lower ends communicating with one of said apertures of the respective pairs and having at the outer end cups to engage the bottle-necks, a fluid-discharge stem mounted to reciprocate in each of said tubes and provided with a head or piston, and a plurality of tubes carried by said hub and extending from the other apertures of the respective pairs and each opening into one of said first-mentioned tubes above said piston.

10. A bottle-cleaning means, comprising a reciprocatory fluid-discharge stem, means for causing said stem to be advanced and retracted by the pressure of the rinsing fluid, and means for causing said stem to rotate during its reciprocation.

11. A bottle-cleansing means comprising a fluid-discharge stem having a head or piston, means in which the same is reciprocatorily mounted, a brush carried by said stem, means for admitting the rinsing fluid under pressure to the interior of the first-mentioned means alternately at the upper and lower side of said piston and means for causing said stem to rotate during its reciprocations.

12. A bottle-cleansing means comprising a hollow fluid-discharge stem, having a piston or head, a tube in which the same is mounted, said tube having a cup to engage the bottle-neck, and means for admitting fluid under pressure to said tube alternately at opposite sides of said piston to thereby reciprocate said stem.

13. A bottle-cleansing means comprising a hollow fluid-discharge stem having a piston or head, a tube in which the same is mounted, said tube having a cup to engage the bottle-neck, means for admitting fluid under pressure to said tube alternately at opposite sides of said piston to thereby reciprocate said stem and means for causing said stem to rotate during its reciprocations.

14. A bottle-cleansing means comprising a hollow fluid-discharge stem having a piston or head, a tube in which the same is mounted, said tube having a cup to engage the bottle-neck, means for admitting fluid under pressure to said tube alternately at opposite sides of said piston to thereby reciprocate said stem, and brushing means carried by said stem.

15. A bottle-cleansing means comprising a hollow fluid-discharge stem having a piston or head, a tube in which the same is mounted, said tube having a cup to engage the bottle-neck, means for admitting fluid under pressure to said tube alternately at opposite sides of said piston, to thereby reciprocate said stem, brushing means carried by said stem, and means for causing said stem to rotate during its reciprocations.

16. A bottle-rinsing mechanism, comprising a fluid-supply pipe having a discharge-aperture, and means revolubly mounted on said pipe, said revolubly-mounted means being provided with a fluid-discharge stem having a head or piston, a tube in which said stem works, means through which communication of the said aperture with the interior of said tube and below said piston or head is alternately established, and means for turning said stem in said tube during its reciprocations.

812,941. RAILWAY-SIGNAL. WESLEY LOCK, South Omaha, Nebr., assignor, by direct and mesne assignments, of one-half to Emanuel V. Lorig and one-fourth to William C. Lambert, all of South Omaha, Nebr. Filed Apr. 7, 1905. Serial No. 254,220.

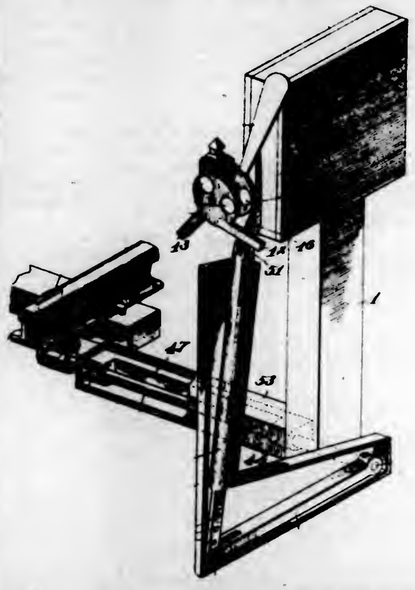

Claim.—1. In a signal-operating mechanism, in combination, a pivotally-mounted signal-arm; and means for pivotally moving said signal-arm comprising a pivoted operating-arm, a pivoted arm adapted to be moved upon the passage of a car, and a weighted connecting-rod extending between said last-mentioned arm and said operating-arm.

2. In a signal-operating mechanism, in combination, a pivotally-mounted signal-arm; two fingers fixed with relation to said signal-arm; a pivoted lever adapted to engage said fingers for moving said arm; a car-operated device for moving said lever in one direction; and a weight adapted to move said lever in the opposite direction.

3. In a signal-operating mechanism, in combination, a pivotally-mounted signal-arm; two fingers fixed with relation to said signal-arm and spaced apart; a pivoted lever extending between said fingers for moving said arm; means for moving said lever in one direction; and means for moving said lever in the opposite direction.

4. In a signal-operating mechanism, in combination, a pivotally-mounted signal-arm; means for pivotally moving said signal-arm comprising a pivoted operating-arm, a pivoted arm adapted to be moved upon the passage of a car, and a weighted connecting-rod extending between said last-mentioned arm and said operating-arm; and an escapement for controlling the gravity movement of said weighted rod.

5. In a signal-operating mechanism, in combination, a pivotally-mounted signal-arm; two fingers fixed with relation to said signal-arm; a pivoted lever adapted to engage said fingers for moving said arm; a car-operated device for moving said lever in one direction; a weight adapted to move said lever in the opposite direction; and an escapement for controlling the gravity movement of said weight.

6. In a signal-operating mechanism, in combination, a pivotally-mounted signal-arm; two fingers fixed with relation to said signal-arm and spaced apart; a pivoted lever extending between said fingers for moving said arm; car-operated means for moving said lever in one direction; a weight for moving said lever in the opposite direction; and an escapement for controlling the gravity movement of said weight.

812,942. PLANT-SUPPORT. CHRISTIAN LUND, Weimar, Wis. Filed June 17, 1905. Serial No. 265,736.

Claim.—1. In a plant-support, the combination of a stake formed of a single piece of wire having offsets at spaced intervals, and having a base formed by bending its lower end upwardly, thence transversely, thence downwardly, the upright portions of said stake having an offset to receive the transverse portion of the base thereof; and a plant-engaging loop formed of a single piece of wire having a free outturned end and a stake-engaging arm with bends therein spaced to correspond with said offsets in said stake, for the purpose specified.

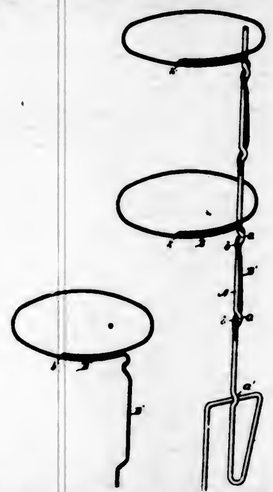

2. In a plant-support, the combination of a stake formed of a single piece of wire having offsets at spaced intervals, and having a base formed by bending its lower end upwardly, thence transversely, thence downward; and a plant-engaging loop formed of a single piece of wire having a free outturned end and a stake-engaging arm with bends therein spaced to correspond with said offsets in said stake, for the purpose specified.

3. In a plant-support, the combination of a stake formed of a single piece of wire having offsets at spaced intervals, and having a base formed by bending its lower end upwardly, thence transversely, thence downwardly, the upright portions of said stake having an offset to receive the transverse portion of the base thereof; and a plant-engaging loop formed of a single piece of wire having a stake-engaging arm with bends therein spaced to correspond with said offsets in said stake, for the purpose specified.

4. In a plant-support, the combination of a stake formed of a single piece of wire having offsets at spaced intervals, and having a base formed by bending its lower end upwardly, thence transversely, thence downwardly; and a plant-engaging loop formed of a single piece of wire having a stake-engaging arm with bends therein spaced to correspond with said offsets in said stake, for the purpose specified.

5. In a plant-support, the combination of a stake formed of wire having offsets at spaced intervals; and a plant-engaging loop formed of a single piece of wire having a free end and a stake-engaging arm with bends therein, spaced to correspond with said offsets in said stake, for the purpose specified.

6. In a plant-support, the combination of a stake formed of wire having offsets at spaced intervals; and a plant-engaging loop formed of a single piece of wire having a stake-engaging arm with bends therein spaced to correspond with said offsets in said stake, for the purpose specified.

7. A plant-supporting stake formed of a single piece of wire, having a base formed by bending its lower end upwardly, thence transversely, thence downwardly, the upright portions of said stake having an offset to receive the transverse portion of the base thereof, as specified.

8. A plant-supporting stake formed of a single piece of wire, having a base formed by bending its lower end upwardly, thence transversely, thence downwardly, as specified.

812,943. ANNEALING-BOX. JOHN J. MARSHY, Anderson, Ind. Filed Oct. 23, 1905. Serial No. 284,020.

Claim.—1. An annealing-box provided with an arch in the interior thereof, supports for the arch, and a box-top on the arch unattached thereto and attached to the body of the box.

2. An annealing-box including sides and ends, and a crowning or arched top part on the sides and ends attached thereto and provided with a tie-rod attached to the top part and also to the sides.

3. An annealing-box having a top provided with a supporting-arch unattached thereto and free to expand longitudinally in the box, the arch being normally in contact with the box-top, a tie-rod attached to the sides of the box and extending across the interior of the box at the upper portion thereof, and supports for the arch.

4. An annealing-box having a top provided with a supporting-arch unattached thereto and comprising a main member and also a pair of side members secured to the main member and having each a lateral flange, supports for the arch, and a tie-rod extending across the interior of the box and having the ends thereof welded to the sides of the box.

5. An annealing-box having a crowning-top and provided with a pair of posts in the interior thereof, means for connecting the posts with the sides of the box, a tie-rod extending across the interior of the box and welded to the sides thereof, and an arch resting upon the pair of posts and normally in contact with the top of the box but unattached thereto.

6. An annealing-box having a crowning-top and provided with a pair of posts in the interior thereof, means for connecting the posts with the sides of the box, a tie-rod extending across the interior of the box and attached to the sides thereof, the tie-rod having heads hidden in the side walls, an arch resting on the pair of posts and normally in contact with the top of the box but unattached thereto, and a tie-bar attached to the ends of the arch.

7. An annealing-box including sides and ends, a tie-rod welded to the sides of the box, and a top part on the sides and ends of the box and having flanges welded to the tie-rod.

8. In an annealing-box, the combination with the sides thereof having a frame connected to the bottom thereof, and with angle-irons secured to the inner sides of the box sides, of a pair of posts extending substantially from the frame between pairs of the angle-irons and secured thereto, the tops of the posts being below the plane of the tops of the angle-irons, an arch resting upon the tops of the posts between angle-irons, and a tie-rod attached to the sides of the box, the box having a top supported by the arch but unattached thereto.

9. In an annealing-box, the combination with the sides and the top thereof, of posts supported in the box against the sides thereof, an arch mounted on the posts and extending under the top of the box but unattached thereto, and guide-studs attached to the top of the box and projecting at opposite sides of the arch.

10. In an annealing-box, the combination of two side parts and a crowning or arched top part and also a tie-rod therefor, all welded together, an arch for supporting the top part, supports for the arch connected with the side parts, and end parts attached to the side parts and the top part.

11. In an annealing-box, the combination of two side parts and connected end parts, a tie-rod extending through the side parts, a crowning or arched top part on the side parts and end parts, and having flanges extending over the ends of the tie-rods, an arch for supporting the top part, supports for the arch, and lateral supports for the arch.

812,944. FEED-WATER HEATER. HENRY G. MILLER, Cleveland, Ohio, assignor to The Low Supply & Manufacturing Company, Orange, N. J., a Corporation of New Jersey. Filed May 24, 1905. Serial No. 262,020.

Claim.—1. An apparatus of the kind described, comprising a chamber, tubes arranged in said chamber and open to permit of the

free passage of steam therethrough, a sprinkling-pipe for supplying with water the space in said chamber containing said tubes, and means for the inlet of steam into said space and also into the interiors of said tubes.

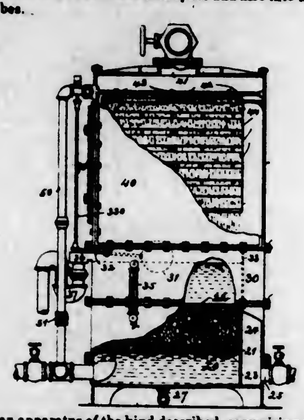

2. In an apparatus of the kind described, comprising a chamber having a steam-space therein: tubes each arranged in said steam-space and open at each end to permit the free passage of steam therethrough, whereby said tubes are heated by steam within and around the same, diaphragms arranged in said space and connecting the tubes with each other, and a water-sprinkling pipe arranged above the uppermost tube

3. In an apparatus of the kind described, comprising a chamber adapted to receive steam, tubes, each arranged in substantially horizontal position and open at each end to permit the free passage of the steam, such tubes being arranged in vertical series, each tube connected to its neighbor above and below by a diaphragm in combination with a water-sprinkling pipe arranged above the uppermost tube and a shallow sediment-receptacle beneath the lowermost tube.

4. In an apparatus of the kind described, a steam and water chamber, tubes, each made of heat-conducting material and arranged in a substantially horizontal position and open at each end to permit of the free passage of steam therethrough, said tubes being arranged in vertical series, diaphragms exposed to the steam and water in said chamber and connecting each tube with its neighbors above and below, means through which water is supplied to the space in said chamber around said tubes and a steam-inlet means having communication with said space and also with the interiors of said tubes.

5. In an apparatus of the kind described, comprising a chamber adapted to receive steam, tubes, each made of heat-conducting material and arranged in a substantially horizontal position and open at each end to permit of the free passage of the steam, such tubes being arranged in vertical series, each tube connected to its neighbor above and below by a conducting-diaphragm in combination with a water-sprinkling pipe arranged above the uppermost tube, and a shallow sediment-receptacle beneath the lowermost tube.

6. In an apparatus of the kind described, comprising a chamber having a steam and water space therein, a plurality of tubes arranged in vertical series in said space, each tube being substantially horizontal in position and open at each end to permit of the free passage of steam through it, and each connected to its neighbor above and below by a diaphragm, the tubes in adjacent series being staggered.

7. In an apparatus of the kind described, comprising a chamber having a steam-space therein, a plurality of tubes arranged in vertical series in said space, each tube being substantially horizontal in position and open at each end to permit of the free passage of steam through it, and each connected to its neighbor above and below by a diaphragm, the tubes in adjacent series being staggered, in combination with a water-sprinkling mechanism arranged above the tubes and supplying said space with water.

8. In an apparatus of the kind described, comprising a chamber having a steam and water space therein, a plurality of tubes arranged in vertical series in said space, each tube being substantially horizontal in position and open at each end to permit of the free passage of steam through it, and each connected to its neighbor above and below by a diaphragm, the tubes in adjacent series being staggered, and so arranged that each tube has a portion of its surface vertically beneath the surface of its nearest neighbor above it in each adjacent series.

9. In an apparatus of the kind described, comprising a chamber having a steam-space therein, a plurality of tubes arranged in vertical series in said space, each tube being substantially horizontal in position and open at each end to permit of the free passage of steam through it, and each connected to its neighbor above and below by a diaphragm, the tubes in adjacent series being staggered, and so arranged that each tube has a portion of its surface vertically beneath the surface of its nearest neighbor above it in each adjacent series, in combination with a water-sprinkling mechanism arranged above the tubes.

10. In an apparatus of the kind described, comprising a chamber adapted to receive steam, a plurality of tubes arranged in vertical series, each tube being substantially horizontal in position and open at each end to permit of the free passage of steam, and each connected to its neighbor above and below by a diaphragm, the tubes in adjacent series being staggered, and a shallow sediment-receptacle beneath the lowermost tube in each series.

11. In an apparatus of the kind described, comprising a chamber adapted to receive steam, a plurality of tubes arranged in vertical series, each tube being substantially horizontal in position and open at each end to permit of the free passage of steam, and each connected to its neighbor above and below by a diaphragm, the tubes in adjacent series being staggered, and a shallow sediment-receptacle beneath the lowermost tube in each series, in combination with a water-sprinkling mechanism arranged above the tubes.

12. In an apparatus of the kind described, comprising a chamber adapted to receive steam, a plurality of tubes arranged in vertical series, each tube being substanially horizontal in position and open at each end to permit of the free passage of steam and each connected to its neighbor above and below by a diaphragm, the tubes in adjacent series being staggered, and so arranged that each tube has a portion of its surface vertically beneath the surface of its nearest neighbor above it in each adjacent series, and a shallow sediment-receptacle beneath the lowermost tube in each series.

13. In an apparatus of the kind described, comprising a chamber: a plurality of series of heat-radiating tubes arranged in said chamber, said tubes being open to permit the free passage of steam through the same and having external diaphragms which connect with each other the tubes of each series, said tubes and diaphragms being arranged to provide a steam and water passage-way between the two series, means through which said passage-way is supplied with water and means through which said passage-way and the interiors of said tube are supplied with steam.

14. In an apparatus of the class described, comprising a chamber: a plurality of heat-radiating tubes arranged in a vertical series in said chamber, said tubes being open to permit the free passage of the steam through the same, a diaphragm connecting each of said tubes with its neighbors above and below it, a second vertical series of heat-radiating tubes, arranged to alternate with the tubes of the first series, a diaphragm connecting each tube of said second series with its neighbors above and below, and means for supplying the interiors of said tubes and the passage-ways between the two series of tubes and diaphragms with steam and water respectively.

15. In an apparatus of the kind described, comprising a chamber: a plurality of series of tubes arranged in said chamber, said tubes being open to permit the free passage of steam through the same and having external diaphragms which connect with each other the tubes of each series, and said plurality of series of tubes and diaphragms being so related that the intermediate tubes of each will confront the diaphragms and be between the contiguous tubes of its companion series, whereby there is formed a circuitous passage-way between the two series, means through which said passage-way is supplied with water and means through which said passage-way and the interiors of said tubes are supplied with steam.

16. An apparatus of the kind described, comprising a chamber having a steam-conduit at one side and having its interior in communication with said conduit, a series of open tubes arranged in said chamber and having communication with said conduit, whereby the steam enters the interior of the chamber and also flows through said tubes, diaphragms connecting said tubes in series, and a sprinkling-pipe for supplying said chamber with water which commingles with the steam in the chamber and is further heated by the radiant heat of the tubes and diaphragms.

17. In an apparatus of the kind described, comprising a chamber adapted to receive steam, a plurality of tubes arranged in vertical series, each tube being substantially horizontal in position and open at each end to permit of the free passage of steam, and each connected to its neighbor above and below by a diaphragm, the tubes in adjacent series being staggered, and so arranged that each tube has a portion of its surface vertically beneath the surface of its nearest neighbor above it in each adjacent series, in combination with a water-sprinkling mechanism arranged above the tubes, and a water-receiving chamber comprising a filter arranged below the series of tubes.

18. In an apparatus of the kind described, comprising a steam-chamber provided with inlet and outlet steam-conduits, a plurality of tubes arranged in vertical series, each tube being substantially horizontal in position and open at each end to permit of the free passage of steam through the same, and each connected to its neighbor by a diaphragm, the tubes in adjacent series being staggered and so arranged that each tube has a portion of its surface vertically beneath the surface of its nearest neighbor above it in each adjacent series, in combination with a water-sprinkling mechanism arranged above the tubes, a water-receiving chamber comprising a filter arranged below the tubes and doors in the wall of the steam-chamber giving access to the tubes.

19. An apparatus of the kind described, comprising a steam-chamber provided with a conduit through which the same is supplied with steam and having a water-receiving chamber at one end portion, tubes arranged in series in the steam-space of said chamber and in advance of said water-receiving chamber, said tubes being open for the passage of steam through the same and having communication with said conduit, diaphragms connecting with each other the tubes of each series, and a water-supplying means arranged in advance of said series of tubes, for supplying with water the steam-containing passage-way between the series of tubes.

20. An apparatus of the kind described, comprising a chamber provided with a conduit through which the same is supplied with steam and having a water-receiving portion at one end, tubes arranged in series in the steam-space of said chamber and in advance of said water-receiving chamber, said tubes being open for the passage of steam through the same and having communication with said conduit, and the tubes of one series alternating in position with those of the next series, diaphragms connecting with each other the tubes of each series, and a water-supplying means arranged in advance of said series of tubes for supplying with water the steam-containing circuitous passage-way between the series of tubes.

812,945. BURIAL-CASKET. JOSEPH H. KYLE, Richmond, Ind., assignor to Richmond Casket Company, Richmond, Ind., a Corporation of Indiana. Filed Nov. 17, 1905. Serial No. 287,780.

Claim.—1. A burial-casket comprising in combination the body and the top, the former having an angular rabbet formed in its upper portion and the latter having a flange to rest in said rabbet when the top is in place in either its normal or its inverted position, and means for detachably securing the top to the body automatically in both positions, all substantially as set forth.

2. A burial-casket having in combination a body and a top therefor, the body having a rabbet formed in its upper inner edge and the top having an outer flange portion adapted to enter and rest in said rabbet when the top is in place in either its normal or its inverted position, means whereby the top may be lifted independent of the body, and means for detachably securing the top to the body when the top is in either its normal or its inverted position, all substantially as set forth.

3. In combination with a casket having a removable top, means for detachably securing the top which means consists of vertically-disposed perforated spring-tongues secured at their lower ends in channels therefor in the center of each end of the casket, pins extending out from each end of the top and adapted to register with and enter the perforations in the spring-tongues when the lid is in either its normal or inverted position, means whereby said spring-tongues may be released from the pins, and lifting-hooks secured to each end of the lid, all substantially as shown and described.

812,946. CULTIVATOR ATTACHMENT. WADE H. MITCHELL, Rugby, Tex. Filed June 5, 1905. Serial No. 263,893.

Claim.—1. In a combined cultivator and planter, the combination of a guide-arm depending from the draft-tongue of the cultivator, said guide-arm consisting of two spaced bars, one of which has an extended angularly-bent portion formed with a hook, a planter-frame supported upon the cultivator-frame, a guide-bar having a forked end pivotally connected to the frame of said planter, and a forwardly-extending portion projecting between the spaced bars of the guide-arm and movable vertically therebetween, an adjustable clip upon the planter-frame, a link or strap connecting said clip and said guide-bar, a pulley upon said hook, and a flexible operating connection passed around said pulley and connected to said guide-bar for raising the planter-frame, substantially as described.

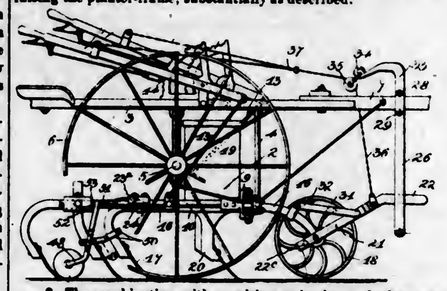

2. The combination with a cultivator having a draft-tongue, swinging shovel-beams and levers for operating the latter, and a planter having shovel-beams and a forwardly-projecting guide-bar, of means for connecting the beams of said cultivator and planter, a guide-arm depending from said tongue and consisting of spaced bars, one of which has an extended upper end formed with a hook, the guide upon said planter being adapted to project between said spaced bars, a pulley upon said hook, adjustable clips upon said levers, and a flexible operating connection passed around said pulley and having one of its ends attached to said guide-bar upon the planter and its other end forked and secured to said clips upon said levers, substantially as described.

3. The combination with a cultivator having shovel-beams, and a planter having shovel-beams, of a connecting cross-bar having at its end, socket portions to receive said cultivator shovel-beams, U-shaped bolts for clamping the latter in said socket portions, clips upon said planter shovel-beams, eyebolts adjustably secured in longitudinal slots formed in said cross-bar, and bolts passed through said clips and the eyes of said eyebolts, to connect the planter shovel-beams to said cross-bar, substantially as described.

4. The combination with a cultivator having shovel-beams, and a planter having shovel-beams, of a cross-bar connecting the beams of said planter and cultivator, spaced bars upon the beams of said planter, hangers adjustably pivoted between said spaced bars, gage-wheels upon the lower ends of said hangers, and adjustable spring connections between the upper ends of said hangers and said cross-bars for yieldably holding said hangers in an adjusted position, substantially as described.

812,947. COMBINATION-TOOL OF THE HAMMER TYPE. HERMAN B. B. MOLKENTHIN, Coeur d'Alene, Idaho. Filed May 18, 1904. Serial No. 208,543.

Claim.—1. A tool having a hammer-head 12 and a pointed nail-setting head 14 disposed side by side with their adjacent faces in substantially parallel relation and provided with the undercut apertures 16 on opposite sides of the body for the purpose set forth.

2. In a tool of the class described, the combination with a handle and a body transverse thereto, of a nail-driving head and a nail-extracting claw on one side of the handle and substantially parallel to each other, a nail-setting head, and an apertured head also substantially parallel and extending on the opposite side of the handle, said nail-setting head being longer and extending beyond said apertured head, said aperture in said apertured head adapted to receive the point of a nail.

812,948. WICKET. WILLIAM F. OLIVER, Oakland, Cal. Filed July 28, 1905. Serial No. 271,689.

magnet, a plurality of pivoted armature-arms opposite to the electro-magnet, one or more thereof having lateral projections attached thereto, and a rotative shaft having a crank or lever device attached

revoluble about said pivot center, said lever-arm having attached

of supports at either end of the places to be connected and intermediate supports, duplicate rope-drums with ropes on all supports,

812,948. **WICKET.** WILLIAM F. OLIVER, Oakland, Cal. Filed July 28, 1905. Serial No. 271,689.

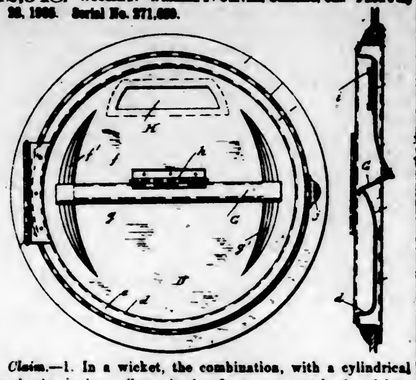

Claim.—1. In a wicket, the combination, with a cylindrical frame having an inwardly-projecting flange at one end, of a wicket-panel hinged to the said frame and provided with a cylindrical rim arranged inside the said frame and provided at its outer end with a flange which overlaps the said flange of the frame.

2. In a wicket, the combination, with a frame, of a wicket-panel hinged to the said frame and provided with a slot which extends across its middle part, the panel being bent outwardly above the said slot and being bent inwardly below the said slot.

3. In a wicket, the combination, with a frame, of a wicket-panel hinged to the said frame and provided with a slot which extends across its middle part, the panel being bent outwardly above the said slot and being bent inwardly below the said slot, and a cover-plate hinged to the upper edge of the said slot and normally resting on its lower edge and being arranged to open upward.

4. In a wicket, the combination, with a frame having an inwardly-projecting flange, and means for securing the said frame in position, of a wicket-panel hinged to the said frame and provided with a rim which is arranged inside the said frame, said panel being also provided with an outwardly-projecting flange which overlaps the aforesaid flange on the frame.

812,949. **ELECTROMAGNETIC POWER-GENERATOR.** JOSEPH L. POTTER, Indianapolis, Ind. Filed May 26, 1905. Serial No. 262,349.

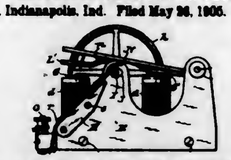

Claim.—1. A power-generator including a plurality of vibrating arms, means for actuating the arms, and a rotative shaft having a device carried thereby intermittently engaged by the arms and actuated directly thereby.

2. An electromagnetic power-generator including a rotative shaft having a crank or lever device attached thereto, an electromagnetic core, and a movable armature mounted opposite to the core and also opposite to the crank or lever device and intermittently engaging the crank or lever device.

3. An electromagnetic power-generator including a rotative shaft having a crank or lever device attached thereto, an electromagnet, and a plurality of armatures mounted movably oppositely to the electromagnet and having intermittent contact with the crank or lever device and also intermittently disconnected therefrom.

4. An electromagnetic power-generator including an electromagnet, a plurality of armatures mounted movably at the electromagnet, and a rotative shaft having a crank or lever device attached thereto and movable into and out of contact with the armatures and coöperating therewith.

5. An electromagnetic power-generator including an electromagnet, a plurality of pivoted armature-arms opposite to the electromagnet, one or more thereof having lateral deflections formed therein, and a rotative shaft having a crank or lever device attached thereto and movable into and out of contact with the deflections of the armature-arms and coöperating therewith.

6. An electromagnetic power-generator including an electromagnet, a plurality of pivoted armature-arms opposite to the electromagnet, one or more thereof having lateral projections attached thereto, and a rotative shaft having a crank or lever device attached thereto and movable into and out of contact with the projections of the armature-arms and coöperating therewith.

7. An electromagnetic power-generator including an electromagnet having a pair of cores, a plurality of pivoted armature-arms extending periodically parallel to the ends of the magnet-cores and periodically moving with parts thereof toward one of the cores in advance of other parts thereof toward the other core, and a rotative shaft having a crank or lever device attached thereto and periodically directly contacting and moving the armature-arms successively away from the cores.

8. An electromagnetic power-generator including a frame, an electromagnet attached to the frame, a brush-holder mounted on the frame, a pivot-rod mounted on the frame, a plurality of armature-arms pivotally mounted on the pivot-rod and extending opposite to the electromagnet, a rotative shaft mounted on the frame and having a crank or lever device attached thereto and directly coöperating intermittently with the plurality of armature-arms, a cam attached to the rotative shaft, a brush mounted on the brush-holder and having intermittent contact with the cam, a circuit-wire connected with the winding-wire of the electromagnet and also with the frame, a battery-wire connected with the winding-wire of the electromagnet, and a battery-wire connected with the brush.

812,950. **FIRE-ESCAPE APPARATUS.** GEORGE B. PRICE, Colorado Springs, Colo. Filed Mar. 23, 1905. Serial No. 251,580.

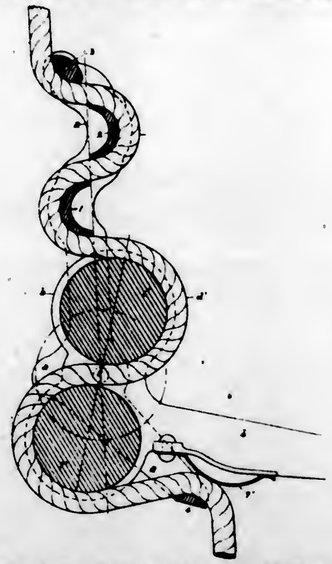

Claim.—1. In a fire-escape apparatus a slidable carrier, designed to engage a rope or cable, consisting essentially of a rigid frame having three or more frictional arcs fixed superior to, and one frictional arc fixed inferior to a pivot center in said frame; a rotatable member having two fixed frictional spools revoluble about said pivot center; together with a suspension member attached to said rigid frame member; substantially as shown.

2. In a fire-escape apparatus a slidable carrier having a rigid frame with three or more frictional arcs fixed superior to, and one frictional arc fixed inferior to a pivot center in said frame; an auxiliary rotatable member, held by said pivot center, consisting of two opposite spools fixed to one plane, and a rigid lever-arm extending therefrom designed to engage the said spools against an inclosed rope or cable; substantially as shown.

3. In a fire-escape apparatus a slidable carrier, designed to inclose a rope or cable, having a rigid frame with three or more fixed frictional arcs positioned superior to; and one fixed frictional arc positioned inferior to a pivot center in said frame; a rotatable member having two fixed frictional spools and a projecting lever-arm revoluble about said pivot center, said lever-arm having attached thereto a compression-spring adapted to engage the inclosed rope against the said inferior arc within said frame; substantially as shown.

4. The combination, in a fire-escape apparatus, of a slidable carrier consisting of a non-flexible frame having three or more frictional arcs fixed superior to, and one frictional arc fixed inferior to a pivot center; an auxiliary rotatable member having two fixed spools and a lever-arm pivoted within said frame to said pivot center; a suspension member attached to said frame; and a rope or cable adapted to be engaged by the said frictional arcs and spool; substantially as described.

5. In a fire-escape apparatus the combination of a rope or cable and a slidable carriage or carrier consisting of a non-flexible frame with fixed frictional arcs; a suspension member attached to said frame; a rotatable member having frictional spools and a lever-arm with an attached spring pivoted within said frame, said spring being adapted to engage said rope or cable against a frictional arc of said frame; substantially as shown.

812,951. **SHINGLE-EDGING MACHINE.** CAMILLE PROVOST, Jeanerette, La., assignor of one-half to Alfred B. McGowen, Jeanerette, La. Filed Mar. 18, 1905. Serial No. 250,851.

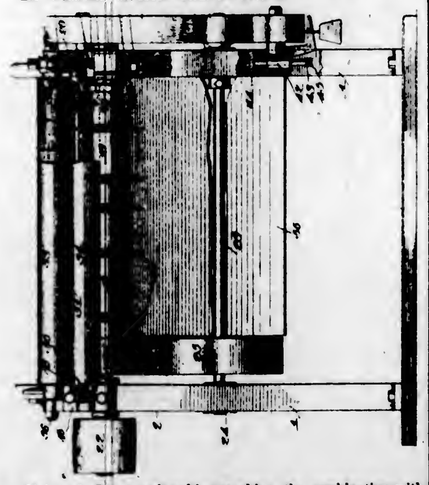

Claim.—1. In a woodworking-machine, the combination with opposite frame members having corresponding inner flanges, of a saw-table supported upon the flanges and provided with socket and projection detachable connections with the flanges.

2. In a woodworking-machine, the combination with opposite frame members having corresponding inner horizontal flanges provided upon their edges with outwardly-directed upstanding projections, of a saw-table removably supported upon the flanges and having edge notches receiving the projections.

3. In a woodworking-machine, the combination with opposite frame members having corresponding inner horizontal flanges provided at their edges with upstanding projections, of a saw-table supported upon the flanges and removable vertically therefrom, the opposite ends of the table having notches receiving the projections, and said saw-table being provided with a saw-receiving slot.

812,952. **BRIDGING HORIZONTAL AND VERTICAL SPACES.** ROBERT C. SAYER, Bristol, England. Filed Dec. 28, 1903. Serial No. 186,294.

Claim.—1. In bridging horizontal and vertical spaces, the combination of a support at either end of the places to be connected, a rope-drum with ropes on each support, a rope-carriage connected to the adjacent ends of the ropes, a car-body, slides on the car-body adapted to receive and retain the rope-carriage, and a means for operating the drum to pay out one rope while the other is being hauled in.

2. In bridging horizontal and vertical spaces, the combination of supports at either end of the places to be connected and intermediate supports, duplicate rope-drums with ropes on all supports, rope-carriages connected to the adjacent ends of each pair of ropes between two supports, car-bodies, slides on the car-bodies adapted to receive and retain rope-carriages, a transfer-platform on the intermediate supports and similar slides to the car-bodies, a means for pulling the rope-carriages from the car-body to the platform, a means for traversing the car-bodies on the platform when the rope-carriages are removed so that the carriages of two meeting cars can be transposed, and a means for operating the connected rope-drums in unison.

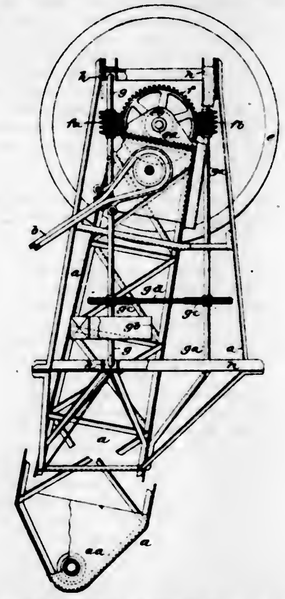

3. In bridging horizontal and vertical spaces, the combination of a car or body suspended by one rope on each side wound round and secured to a drum, means to keep the drums from rotating, and the same means to rotate the drums when actuated by a motor to let out either rope more or less and traverse the car horizontally or vertically substantially as described.

4. In bridging horizontal and vertical spaces, the combination of a car or body suspended by more than one diagonal rope on each side, each being wound round and secured to a drum that is able to swivel, means to keep the drums from rotating, and the same means to rotate the drums when actuated by a motor to let out either rope more or less and traverse the car longitudinally, vertically and laterally, substantially as described.

5. In bridging horizontal and vertical spaces, the combination of, at places to be connected, a drum carried upon an axle to rotate in bearings upon a support, gear able to hold the drum from rotating or rotate it when driven by a motor, ropes wound upon and secured to the drums at one end the other end hinged to a car or body, a pair of fluid-pressure cylinders hinged to the carriage or car by means of their pistons and to the ropes by means of a quadrant connected to them to level the car, arranging the ropes between the supports and car in straight or diagonal lines, attaching them to the car at one or more points, electric or other means of communication from a generator to the drums, ropes, car-hinges, and a motor to vary the speeds of the drums to let out more or less rope and allow the car to travel in a horizontal, vertical, and lateral direction, terminal stopping-places for the cars at the supports and intermediately, intermediate supports and stopping-places for the car between the terminal supports, the means described or others applicable to change the ropes at the intermediate supports from a car or body going in one direction to a car going in the opposite direction, surplus rope on the drums, letting out the surplus ropes after a car is landed to sink in water it has crossed and allow a vessel to float over it substantially as described.

812,953. MIXING-TILE. GUSTAV R. SCHNEIDER, Detroit, Mich. Filed Aug. 24, 1905. Serial No. 275,542.

Claim.—1. In an ointment or pill slab, the combination with the slab, of a paper-clamping device comprising a cord looped around the slab and engaging therewith upon two opposite ends and a clamping-lever on the under side of the slab and arranged to engage with a bight in the cord and tighten the loop.

2. In an ointment or pill slab, the combination with the slab having the reinforced ends forming a recess in the under side of the slab, of a cord looped around the slab and engaging on the reinforced ends of the slab, and a clamping-lever fulcrumed in the recess on the under side of the slab and adapted to engage with a bight of the cord and tighten the loop.

3. In an ointment or pill slab, the combination of a slab having reinforced ends provided with grooves, a cord or band looped around the slab and engaging into said grooves and a clamping-lever fulcrumed upon the under side of the slab and provided with a series of notches adapted to engage with a bight in the loop of the cord.

4. In an ointment or pill slab, the combination of a slab having reinforced ends forming between them a recess on the under side of the slab and provided with grooves in said ends below the plane of the bottom of the recess, and a self-locking clamping-lever fulcrumed in the recess and provided with a series of notches adapted to variably engage with a bight in the loop of the cord for tightening the same.

5. In an ointment or pill slab, the combination of a slab having reinforced ends forming between them a recess on the under side of the slab and provided with grooves in said ends and with depending lugs in the recess, a cord or band looped around said slab and engaging into said grooves and a clamping-lever provided with a fulcrum-pin adapted to fulcrum said lever upon the depending lugs and lock the same in position, said lever provided with a series of notches for engagement with a bight in the loop of the cord.

812,954. ANNUNCIATOR-DROP. CHARLES H. SCRIBNER, Jericho, Vt., assignor to Western Electric Company, Chicago, Ill., a Corporation of Illinois. Filed June 24, 1905. Serial No. 266,729.

Claim.—1. In an annunciator, the combination with the indicator thereof, of a pair of electromagnets and biased armatures therefor polarized to respond to direct current of opposite polarity, and catches controlled by said armatures, one of said catches normally engaging the indicator to conceal the same and the other being normally disengaged therefrom, said magnets, upon the passage of alternating current therethrough, rapidly vibrating said catches out of step or phase and maintaining the indicator concealed, while upon the passage of direct current of proper sign through said magnets the first-mentioned catch is operated and the other catch remains inert, thereby displaying said indicator.

2. In an annunciator the combination with the indicator thereof, of a pair of electromagnets and armatures therefor polarized to respond to direct current of opposite polarity, said armatures being biased by means of adjustable springs, catches controlled by said armatures, one of said catches normally engaging the indicator to conceal the same, and the other being normally disengaged therefrom, said armatures having their springs adjusted so that upon the passage of alternating current through the magnets their catches are vibrated out of step or phase and maintain the indicator concealed, while upon the passage of direct current of proper sign through said magnets the first-mentioned catch is operated and the other catch remains inert, thereby displaying said indicator.

812,955. APPARATUS FOR FORMING AND SOLDERING CAN-BODIES. LEE C. SHARP, Omaha, Nebr., assignor to American Can Company, New York, N. Y., a Corporation of New Jersey. Filed Jan. 7, 1903. Serial No. 68,773.

Claim.—1. A can-forming machine having a carrier with means for bending the blank to form the can, said carrier being mounted to move uninterruptedly throughout the operation of the machine, blank-holding devices past which the carrier moves to take the blank means for automatically feeding the blanks to the blank-holder, soldering devices past which the carrier moves, an ejector mounted independently of the carrier, and gearing for driving the ejector faster than the carrier and in the direction of movement thereof to throw the can off the carrier.

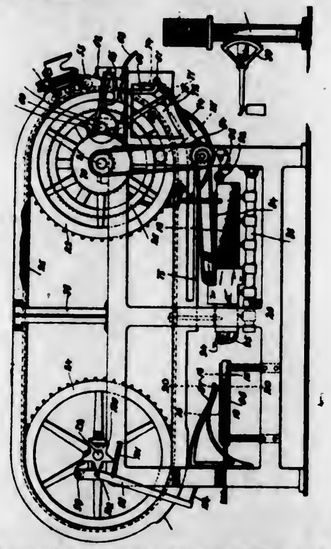

2. In a can-forming machine, the carrier having a back or body wall in position to be engaged by the can-blank, a mandrel carried rigidly thereby, and folding wings mounted to move over the mandrel.

3. In a can-forming machine, the carrier having a back or body wall, a mandrel carried thereby, folding wings mounted to move over the mandrel, a longitudinally-extending bar fastened to the back plate, and means projecting from the bar, on which means and the back plate the wings are pivoted.

4. The combination of the chain and carrier, the carrier being fastened to the chain, a wheel mounted on the carrier, a second wheel, a shaft on which the second wheel is carried, and a stub-shaft carrying the other shaft and mounted to turn in the carrier.

5. The combination of the chain and carrier, the carrier being fastened to the chain, a wheel mounted on the carrier, a second wheel, a shaft on which the second wheel is carried, and a stub-shaft carrying the other shaft and mounted to turn in the carrier, the stub-shaft extending longitudinally of the chain.

6. In a can-forming machine, the combination with the automatic feed, of the holder receiving the blank tin from the feed, and including tapering pins between which the tin is moved to justify it.

7. In a can-forming machine, the combination with the automatic feed, of the stops between which the feed passes and against which the blank tin is moved, and the outwardly and downwardly curved justifying-arms leading to the stops and notched at points adjacent thereto, for the purpose specified.

8. In a can-forming machine, the solder device, comprising a relatively narrow solder-duct lying longitudinally in the path of the can-carrier, means for supplying solder to the duct, and a metallic strip lying loosely and freely movable in the duct, and floated by the solder therein for the purpose specified.

9. In a can-forming machine, the combination with the automatic feed, of stops between which the feed moves and against which the blank tin is placed, and a clamp working with each stop to clamp the tin thereon.

10. The combination, with a carrier mounted to move through the machine, and comprising folding wings adapted to bend and form the blank, and also comprising means for releasably holding the wings either in open or closed position, of stationary tracks past which the carrier runs to open and close the wings, the tracks for opening the wings being divergent and having their near edges adapted to enter between the contiguous ends of the wings so that the wings will ride along said divergent tracks to spread the wings apart and means for driving the carrier.

11. The combination of moving carrier having wings for bending the blank and also having means for releasably holding the wings either in open or closed position, converging rails along which the wings move to close them, diverging rails along which the wings move to open them, the divergent rails having their near edges adapted to enter between the contiguous ends of the wings so that as the wings ride on said rails the wings are spread apart and means for driving the carrier.

12. In can-forming machine, the combination of the carrier comprising the body part, the mandrel carried thereby, the wings arranged to fold over the mandrel, a gripper coacting with the mandrel, a lever adapted to be actuated to release the gripper, and a spring pressing on the lever to hold the gripper normally in active position, means for moving the carrier through the machine, and means for operating said lever.

13. In a can-forming machine, the carrier comprising the combination with the body part, the mandrel carried thereby and the wings arranged to fold over the mandrel, of a gripper coacting with the mandrel, a lever adapted to be actuated to release the gripper, a spring pressing on the lever to hold the gripper normally in active position, and a roller carried on an axis transverse to the length of the lever, for imparting movement to the lever contrary to the spring.

14. In a can-forming machine, the carrier having the body portion, the mandrel, the wings arranged to fold over the mandrel, said wings having eccentric projections adjacent to their pivoted ends, and a spring bearing on said eccentric projections and serving to hold the wings releasably either in open or closed position.

15. The combination of the chain and carrier, the carrier being fastened to the chain, two members carried by the carrier and adapted to run on a guiding-track, and means for mounting one of said members to swing around an axis essentially longitudinal of the chain, said means comprising a shaft transverse to the chain and a stub-shaft carrying the first-named shaft and mounted to turn in the carrier longitudinally of the chain.

16. In a can-forming machine, the combination with the means for forming and soldering the can, of the automatic feeding device comprising a swinging arm, a suction-head carried thereby for grasping the blank tin, a pump, an operating connection between the swinging arm and the pump to operate the latter, and gearing connecting the swinging arm with the means for forming and soldering the can.

17. The combination of a swinging arm, a suction-head carried thereby, a pump-cylinder having connection with the suction-head, a pump-piston, an operating connection between the swinging arm and the pump-piston, and means for driving the swinging arm.

18. The combination of a suction-head, means for movably mounting the same, a pump, a pneumatic connection between the pump and suction-head, a mechanical connection between the suction-head and pump to operate the two in unison, and means for driving said parts.

19. In a can-forming machine, the combination with the automatic feed, of the stops between which the feed passes and against which the blank tin is moved, and the outwardly and downwardly curved justifying-arms leading to the stops.

20. In a can-forming machine, the soldering device comprising means forming a solder-duct adapted to have the can moved over it to supply solder to the seams, and a metallic strip placed loosely and freely movable in said duct whereby to be floated by the solder therein, for the purpose specified.

21. In a can-forming machine, the combination of a moving carrier adapted to form the can, stationary means for holding the blanks in the path of the carrier so that the carrier may engage the blanks, an operative member movable to and from said holding means, automatically to deposit the blanks in the said holding means, and gearing for driving the carrier and the said operative member continuously and in unison.

22. In a can-forming machine, the combination of a moving carrier adapted to form the can, stationary means for holding the blanks in position to be engaged by the carrier, a swinging arm having a gripping device to engage the blanks, said arm swinging to said means for holding the blanks and serving to move the blanks into the said means, and gearing for driving the carrier and arm continuously and in unison.

23. In a can-forming machine, the combination of a carrier adapted to fold the blank to form the can, means for holding the blank in the path of the carrier, a swinging arm arranged to feed the blanks to said holding means, a curved justifying-arm along which the blank is moved in its passage to said blank-holding means, and gearing for operating the said arm and carrier continuously and in unison.

24. In a can-forming machine, the combination of a moving carrier adapted to fold the blank to form the can, means for holding a stack of blanks, means for holding a blank in the path of the carrier to permit the carrier to engage the blank, an operative member movable between the means for holding the pile of blanks and the means for holding the blank in the path of the carrier and serving individually to transfer the blanks from the stack to the means for holding the blanks in the path of the carrier, and gearing for driving the carrier and said operative member continuously and in unison.

25. In a can-forming machine, the combination with the carrier for holding the blank to form the can, of means for feeding the blanks, a blank-holder receiving the blanks from the feeder, said blank-holder including an operating-gripper, and gearing for driving the carrier, the feeding means and the said gripper, continuously and in unison.

26. In a can-forming machine, the combination with the mechanical feeding means, of stops between which the feed moves and against which the blank tin is placed, a clamping or gripping device working against the stops, and means for operating said clamping or gripping device and the feeding means continuously and in unison with each other.

27. In a can-forming machine, the combination of a swinging arm having a gripping device at its free end to engage the blank tin, a stationary blank-holder, and a stationary justifying-arm projecting outward from the stationary blank-holder and following the arc of movement of the swinging arm, whereby to have the edge of the blank move along the justifying-arm as the blank is advanced to the holder, for the purpose specified.

28. In a can-forming machine, the combination of a swinging arm having a gripping device at its free end to engage the blank tin, a blank-holder, and a justifying-arm projecting from the blank-holder and adapted to have the edge of the blank move along the same as it advances to the holder, for the purpose specified, and the said justifying-arm being curved in an arc slightly eccentric to the center of the swinging movement of the arm.

29. In a can-forming machine, the combination with the carrier having the means for shaping the blank to form the can, of a blank-holder adapted to hold the blank in the path of the carrier to be engaged thereby, said blank-holder including a magnet to attract the tin.

30. In a can-forming machine, the combination with the carrier having the means for shaping the can-body, of a blank-holder adapted to receive the blank and hold the same in the path of the carrier, said holder including tapered pins between which the tin is moved to justify it.

31. In a can-soldering machine, the combination of a carrier, comprising the mandrel and the folding wings, the latter having their opposite edges separated to expose the seam in the can, a soldering device over which the carrier runs, said device comprising ribs forming a duct adapted to be received between the said opposite edges of the carrier folding wings, and means for supplying said duct with molten solder.

32. In a can-soldering machine, the combination of a carrier, comprising the mandrel and the folding wings, the latter having their opposite edges separated to expose the seam in the can, a soldering device over which the carrier runs, said device comprising ribs forming a duct adapted to be received between the said opposite edges of the carrier folding wings, and means for supplying said duct with molten solder, said duct having a continuous opening or slot in its upper portion through which the solder passes.

33. In a can-soldering machine, the combination of a carrier, comprising the mandrel and the folding wings, the latter having their opposite edges separated to expose the seam in the can, a soldering device over which the carrier runs, said device comprising ribs forming a duct adapted to be received between the said opposite edges of the carrier folding wings, means for supplying said duct with molten solder, and a metallic strip placed loosely and freely movable within the duct and adapted to be floated by the solder therein, whereby said strip bears upon the seam, for the purpose specified.

34. In a can-forming machine, the combination with the soldering means of the carrier mounted to move past the soldering means and comprising a mandrel and means for folding the can-blank over the mandrel, said mandrel having a groove formed therein and the groove being positioned to lie directly adjacent to the seam in the

can whereby to provide an air-space back of the seam to permit rapid

spring-held bar A^5, and the said submarine also having sling-receiv-

can whereby to provide an air-space back of the seam to permit rapid cooling of the solder.

35. In a can-forming machine, the carrier comprising a mandrel and means for folding the can-blank over the mandrel, said mandrel having a groove formed therein and the groove being positioned to lie under the seam in the can, whereby to provide an air-space back of the seam to permit the rapid cooling of the solder, and a supporting-strip extending longitudinally through the said groove, and adapted to engage the seamed part of the can to support the same against external pressure.

36. In a can-forming machine, the carrier, comprising the body portion, the mandrel supported thereon, the means for folding the blank over the mandrel, a gripper working against the mandrel to hold the blank, an intermediately-fulcrumed lever with which one end of the gripper is pivotally connected, and means working with the other end of the lever automatically to operate the same.

37. In a can-forming machine, the moving carrier comprising a body, a mandrel supported thereon, means mounted on the body for folding the blank over the mandrel, a gripper coacting with the mandrel, for the purpose specified, means having coar action with the gripper to mount the same, a spring pressing the gripper into action, a laterally-projecting part connected with the gripper and an inclined track adapted to be engaged by said part to release the gripper.

38. In a can-forming machine, the carrier comprising the body portion, the mandrel, the folding wings, and a spring coacting with the wings and serving yieldingly to hold the wings either in open or closed position.

39. In a can-forming machine, the carrier comprising the body portion, the mandrel, the folding wings coacting with the mandrel and having extensions projected from the pivoted portions of the wings, and a spring fastened to the body intermediate its ends and having its ends respectively bearing against the said projections, for the purpose specified.

40. In a can-forming machine, the combination of the carrier comprising the folding wings, means for mounting the carrier to move through the machine, converging rails adapted to be engaged by the wings, whereby to close the wings, the said wings having their opposing ends spaced apart, and diverging rails adapted to be entered between said ends of the wings, whereby to throw the wings into open position.

41. In a can-forming machine, the combination with the carrier moving continuously and uninterruptedly throughout the operation of the machine, of a lever mounted independently of the carrier and past which the carrier moves, a dog on the lever, to engage the can and throw it off of the carrier, and means for operating the lever, said lever moving in the same direction that the carrier moves, but faster than the movement of the carrier, whereby to overtake and eject the can.

42. The combination of a swinging arm, a suction-head carried thereby, a pump, a pneumatic connection between the pump and suction-head, a slotted arm connected with the swinging arm, a link having connection with the pump-piston, and with the slotted arm, and means for imparting a swinging movement to the slotted arm.

43. In a can-forming machine, the combination of the chain, the carrier attached thereto, and the endless guides or tracks on which the carrier is adapted to run, the carrier having two members running on said guides or tracks to mount the carrier, and the carrier also having means for mounting one of said members to swing or rock on the carrier around an axis essentially longitudinal of the chain and central with respect to the carrier.

44. In a can-forming machine, the combination of a chain, a carrier attached thereto and the endless guides or tracks on which the carrier is adapted to run, the carrier having two members running on said guides or tracks to mount the carrier, and the carrier also having means for mounting one of said members to swing on the carrier around an axis essentially longitudinal of the chain.

812,956. SUBMARINE VESSEL AND MECHANISM CONNECTED THEREWITH. GEORGE GARNER, Harbor Harbor, N. Y. Filed Jan. 16, 1905. Serial No. 241,541.

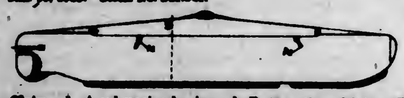

Claim.—1. A submarine having a hull strengthened internally by transverse partitions A^5 and longitudinal partitions A^7 in the submerging water-tanks and externally by longitudinal plates A^4 forming an open-faced keel and inclosing between them a projecting spring-held bar A^8, and the said submarine also having sling-receiving devices of sufficient strength to support the submarine in air attached to the submarine's hull above the center of gravity, torpedo-discharging and propeller-operating mechanism being carried by said hull, substantially as described.

2. A submarine having each of the following features, namely: vertical rudder and horizontal rudder, a hull devoid of external steering devices except said rudders and provided with an overhang above a rudder and propeller space, which hull is wider at both ends at the mid-height of said overhang than at the corresponding distance below the center of gravity and is strengthened internally by transverse partitions A^5 and longitudinal partitions A^7 in the submerging water-tanks and externally by longitudinal plates A^4 forming an open-faced keel, sling-receiving devices of sufficient strength to support the submarine in air attached to said hull at about the level of said mid-height, a projecting spring-held bar A^8 between said keel-plates A^4, and an internally-located pump with vertical discharge for regulating the position of the submarine relatively to the plane of the horizon, substantially as described.

812,957. DUMPING MECHANISM. FLAVIUS J. SLEEPER, Newark, Ill. Filed Oct. 12, 1905. Serial No. 282,478.

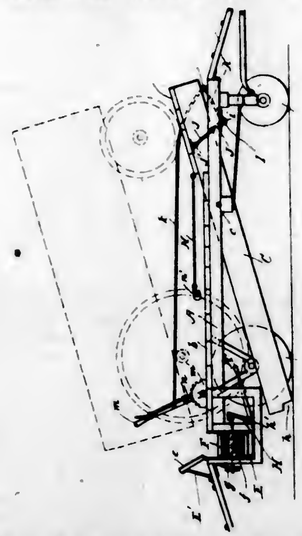

Claim.—1. In dumping mechanism, the combination, with a platform provided with longitudinal apertures and cross-pieces forming a flooring between said apertures at its middle and rear parts, of tilting beams pivoted in the said apertures, and cross-pieces secured to the upper front end portions of the said beams and normally completing the flooring of the platform when the said beams are level with it.

2. In dumping mechanism, the combination, with a platform provided with longitudinal apertures, of tilting beams pivoted in the said apertures and provided with a cross-piece at their front ends, a shaft provided with a crank and journaled under the front end portion of the said platform, a connecting-rod pivoted to the said crank and cross-piece, an arm secured on one end of the said shaft, an operating-lever pivoted at the rear end of the said platform and provided with a retaining-catch, and a rod connecting the said operating-lever and arm.

812,958. EXPLOSIVE. FIN SPARRE, Wilmington, Del., assignor to The E. I. Du Pont de Nemours Powder Company, Wilmington, Del., a Corporation of New Jersey. Filed Mar. 17, 1905. Serial No. 250,202.

Claim.—1. An ammonium-nitrate metallic explosive containing ungelatinized nitrocellulose.

2. An ammonium-nitrate metallic explosive containing ungelatinized nitrocellulose and a liquid hydrocarbon.

3. An ammonium-nitrate metallic explosive containing ungelatinized nitrocellulose and kerosene.

4. An ammonium-nitrate metallic explosive containing ungelatinized nitrocellulose, in compressed form.

5. An ammonium-nitrate metallic explosive containing ungelatinized nitrocellulose and a liquid hydrocarbon, in compressed form.

6. An ammonium-nitrate metallic explosive containing ungelatinized nitrocellulose and kerosene, in compressed form.

7. An ammonium-nitrate metallic explosive containing ungelatinized nitrocellulose, the last-named ingredient comprising between five and twenty-five per cent. of the composition.

8. An ammonium-nitrate metallic explosive containing ungelatinized nitrocellulose and kerosene, the nitrocellulose comprising between five and twenty-five per cent. of the composition and the kerosene ten per cent. or less.

9. An explosive composition containing of ammonium nitrate fifty to eighty per cent. of a metallic ingredient five to twenty-five per cent., and of nitrocellulose five to twenty-five per cent.

10. An explosive composition containing of ammonium nitrate fifty to eighty per cent., of a metallic ingredient five to twenty-five per cent., of nitrocellulose five to twenty-five per cent. and of kerosene ten per cent. or less.

11. An explosive composition containing ammonium nitrate, ferrosilicon and nitrocellulose.

812,959. EXPLOSIVE. FIN SPARRE, Wilmington, Del., assignor to The E. I. Du Pont de Nemours Powder Company, Wilmington, Del., a Corporation of New Jersey. Filed May 6, 1905. Serial No. 259,230.

Claim.—1. An explosive composition containing an oxygen-carrier, ferrosilicon and nitroglycerin.

2. An explosive composition containing nitrate of ammonia, ferrosilicon and nitroglycerin

3. An explosive composition containing an oxygen-carrier, a metallic ingredient, a liquid hydrocarbon, and nitroglycerin.

4. An explosive composition containing an oxygen-carrier, ferrosilicon, kerosene and nitroglycerin.

5. An explosive composition containing nitrate of ammonia, ferrosilicon, kerosene and nitroglycerin.

6. An explosive composition containing nitrate of ammonia, ferrosilicon, kerosene, nitrate of sodium and nitroglycerin.

7. A nitrogleceria explosive composed of nitroglycerin and a base containing of an oxygen-carrier sixty-five to eighty-five per cent. and of a metallic ingredient ten to twenty per cent.

8. A nitroglycerin explosive composed of nitroglycerin and a base containing of an oxygen-carrier sixty-five to eighty-five per cent. and of a metallic ingredient ten to twenty per cent., and of a liquid hydrocarbon less than ten per cent.

9. A nitroglycerin explosive composed of nitroglycerin and a base containing of nitrate of ammonia sixty-five to eighty-five per cent., of ferrosilicon ten to twenty per cent., and of kerosene less than ten per cent.

10. An explosive composition containing of an oxygen-carrier fifty to seventy-five per cent., of a metallic ingredient five to twenty per cent., and of nitroglycerin five to twenty-five per cent.

11. An explosive composition containing of nitrate of ammonia fifty to seventy-five per cent., of ferrosilicon five to twenty per cent., of nitroglycerin five to twenty-five per cent., and of kerosene less than ten per cent.

12. An explosive composition containing an oxygen-carrier, a metallic ingredient, a liquid hydrocarbon, nitroglycerin, and charcoal.

13. An explosive composition containing nitrate of ammonia, ferrosilicon, kerosene, nitroglycerin, and charcoal.

812,960. WORK-HOLDER. JAMES W. SPENCE, Racine, Wis. Filed Sept. 29, 1905. Serial No. 280,614.

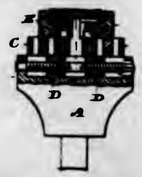

Claim.—1. A work-holder consisting of a pair of chucks attachable to the adjustable jaws of an engraver's block, and a split-spring bushing constituting a circumferentially-compressible work-support in engagement with the chucks.

2. A work-holder consisting of a pair of chucks attachable to the adjustable jaws of an engraver's block, and a split-spring bushing having an inner upper lip and which constitutes a compressible work-support in engagement with the chucks.

3. A work-holder consisting of a pair of chucks each provided with a depending pin and an under side groove approximately in line one with the other, the pin being for engagement of a recess in one of the adjustable jaws of an engraver's block and the groove for engagement of a pin projecting from the other of said jaws; and a split-spring bushing constituting a compressible work-support in engagement with the chucks.

4. A work-holder consisting of a pair of chucks attachable to the adjustable jaws of an engraver's block and each having a countersunk upper shoulder of segmental contour, and a split-spring bushing constituting a work-support on the shoulders of said chucks.

5. A work-holder consisting of a pair of chucks each provided with a depending pin and an under side groove approximately in line one with the other, the pin being for engagement of a recess in one of the adjustable jaws of an engraver's block and the groove for engagement of a pin projecting from the other of said jaws.

812,961. INVERTED INCANDESCENT GAS-LAMP. THERESE STEINICKE, Berlin, Germany. Filed Nov. 29, 1904. Serial No. 234,793.

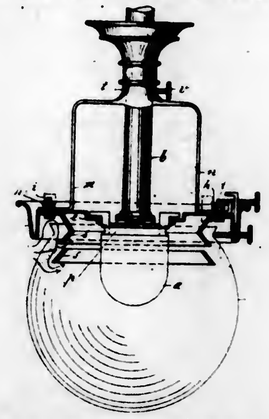

Claim.—1. In a lamp of the class described, the combination with a burner-tube, a frame supported thereby, a globe carried by the frame, a socket connected to the frame having openings therein, a mantle carried by said socket and an annular shield extending downwardly from the socket into the globe, said shield surrounding the mantle, substantially as described.

2. In a lamp of the class described, the combination with a burner-tube, a frame supported thereby, a globe carried by the frame, a socket connected to the frame having openings therein, a mantle carried by said socket, an annular shield extending downwardly from the socket into the globe, said shield surrounding the mantle, and means for lowering the frame with relation to tube, substantially as described.

812,962. FILE-CABINET. FREDERICK L. G. STRAUBEL, Green Bay, Wis. Filed Apr. 7, 1905. Serial No. 254,260.

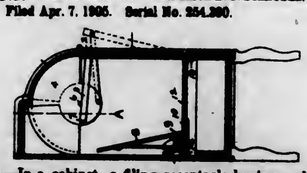

Claim.—In a cabinet, a filing-receptacle having a sliding follower, a front hinged at its lower edge to the cabinet, members attached to the cover and pivotally connected to the ends of the cabinet, and links pivotally connecting said members and the front, whereby the

cover is adapted to swing inward to the rear portion of the cabinet and the front to simultaneously swing outward to an [illegible]

lever pivoted to swing vertically adjacent to said post and provided

2. In an electrical heater, an open-ended, perforated casing of

3. A trunk having lid-operated tray-lifting devices including

cover is adapted to swing inward to the rear portion of the cabinet and the front to simultaneously swing outward to an inclined position.

812,963. STEM-WINDING MECHANISM FOR TIMEPIECES. CHARLES R. STUDEY, La Chaux-de-Fonds, Switzerland. Filed May 24, 1905. Serial No. 262,054.

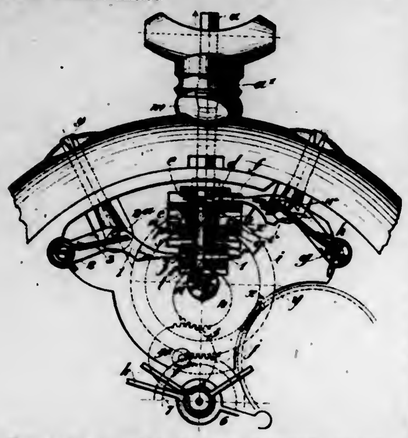

Claim.—A clock winding and setting mechanism comprising a longitudinally-movable spindle, a winding-stem slidably and non-rotatively connected with said spindle, a winding-pinion rotatively mounted on said spindle and held in a position to mesh with winding mechanism and provided on one side with a clutch member, a setting-pinion non-rotatively mounted on said spindle and provided with a clutch member, means for engaging the clutch members of said pinions and whereby mesh engagement may be effected between said pinion and time-setting mechanism, an alarm-pinion rotatively and slidably mounted on said spindle, and means whereby mesh engagement may be effected between said alarm-pinion and alarm-setting mechanism.

812,964. GATE. GEORGE W. THOMPSON, Canton, Ill. Filed Nov. 20, 1905. Serial No. 288,266.

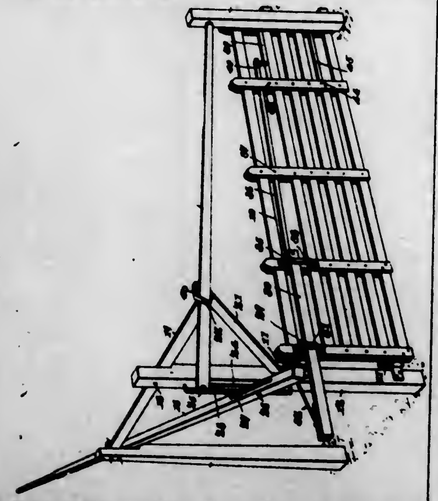

Claim.—1. The combination with a post, of a gate hinged to swing therefrom, a lever-arm pivoted to said gate and extending rearwardly of the hinge end of the same, a latch mechanism connected for operation to the inner end of said lever-arm, an operating-lever pivoted to swing vertically adjacent to said post and provided with a longitudinal slot, a rod connecting the inner end of said operating-lever with the protruding end of said lever-arm, and a guide member connected to said post and extending through said longitudinal slot.

2. The combination with a post, of a gate hinged to swing therefrom, a lever-arm pivoted to said gate and extending rearwardly of the hinge end of the same, a latch mechanism connected for operation to the inner end of said lever-arm, a primary lever swinging vertically and extended in one direction from said post and provided with a longitudinal slot, a secondary lever swinging vertically and extending in the opposite direction from said primary lever, a link pivoted at one end in said slot and pivoted at the other end to said secondary lever, a rod connecting said primary lever and said lever-arm, and a guide member connected to said post and extending through said slot.

3. The combination of a post having a gate hinged to swing therefrom, a post spaced from said hinge-post, a brace member extending transversely of said hinge-post and secured at one end to said spaced post, an operating-lever pivoted to said spaced post adjacent to said transverse brace member and provided with a longitudinal slot, a keeper connected to said spaced post and extending over said transverse brace member and engaging the pivot of said lever, a lever-arm pivoted to said gate and extending beyond the hinge end of the same, a latch mechanism connected for operation to said lever-arm, a rod connecting the inner end of said operating-lever with the protruding end of said lever-arm, and a guide member connected to said hinge-post and extending through said slot.

4. The combination of a post having a gate hinged to swing therefrom, a post spaced from said hinge-post, a brace member extending transversely of said hinge-post and secured at one end to said spaced post, a diagonal brace connected at one end by a bolt to the other end of said transverse brace and with its other end connected to the hinge-post, a primary operating-lever pivoted to said spaced post adjacent to said transverse brace member and provided with a longitudinal slot, a keeper connected to said spaced post and extending over said transverse brace member and engaging the pivot of said primary lever, a secondary operating-lever pivoted to the bolt which unites said transverse and diagonal braces, a clip-bearing over said braces and secondary lever and coupled thereto by said uniting-bolt, a link connecting the adjacent ends of said operating-levers, a lever-arm pivoted to said gate and extending beyond the hinge end of the same, a latch mechanism operative by the action of said lever-arm, a rod connecting the inner end of said primary operating-lever with the protruding end of said lever-arm, and a guide member connected to said hinge-post and extending through said slot.

5. The combination with a post of a gate hinged to swing therefrom, an operating-lever pivoted to swing vertically adjacent to said post, a lever-arm pivoted to said gate and with one end extending rearwardly of the same and with the other end provided with a laterally-extending clip, a rod connecting the adjacent ends of said operating-lever and lever-arm, a latch-lever pivoted to said gate and with one end protruding for engagement with a socket on the latch-post, and an intermediate lever pivoted to the gate with one end extending beneath said laterally-extending clip of the lever-arm and a link coupling the other end of the intermediate lever to the latch-lever.

812,965. ELECTRICAL HEATER. EMMA L. VAUGHN, San Francisco, Cal., assignor to G. X. Wendling, San Francisco, Cal. Filed Oct. 14, 1905. Serial No. 282,706.

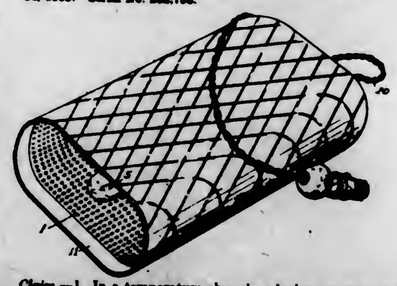

Claim.—1. In a temperature-changing device, an open-ended, perforated casing, a partition therein nearer one end than the other, and an electrical translating device connected with said partition.

2. In an electrical heater, an open-ended, perforated casing of substantially the same cross-section throughout its length, a partition therein nearer one end than the other, and an electrical translating device connected with said partition.

3. In an electrical heater, an open-ended, perforated casing of substantially the same elongated, elliptical cross-section throughout its length, a partition therein nearer one end than the other, and an electrical translating device connected with said partition.

4. In an electrical heater, an open-ended, perforated casing, a partition therein nearer one end than the other, a layer of asbestos on the casing, a textile covering over the asbestos, the ends of which are folded in over the ends of the casing and secured therein, and an electrical translating device secured to the partition.

5. In an electrical heater, an open-ended casing, a partition therein nearer one end than the other, said partition being provided with an opening and having a flange around its edge and also around said opening, a lamp-support through said opening, and means for connecting said support with a source of electrical energy.

6. In an electrical heater, an open-ended casing, a partition therein nearer one end than the other, a switch-socket through the partition provided with a key on the side of the partition closest to the end of the casing, and means for connecting the socket with a source of electrical energy.

812,966. CALK FOR HORSESHOES. LEWIS A. WHYBURN, Rockford, Ill. Filed Dec. 13, 1905. Serial No. 291,636.

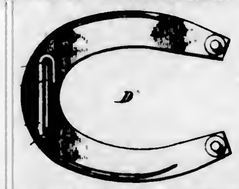

Claim.—1. A toe-calk for horseshoes, comprising a tubular soft-metal casing elongated O-shaped in cross-section, a flat rectangular hard-metal center included in, and preferably projecting edgewise from the outer end of, the casing and metal attaching-pintles inserted between the ends of the center and of the aperture in the casing.

2. A toe-calk for horseshoes, comprising a tubular soft-metal casing elongated O-shaped in cross-section and tapering at its outer end, a flat rectangular hard-metal center included in, and projecting edgewise from the tapering end of, the casing and hard-metal attaching-pintles inserted between the ends of the center and of the opening in the casing.

812,967. TRUNK. CHARLES C. WIGHTON, Morristown, Tenn. Filed Sept. 20, 1905. Serial No. 279,208.

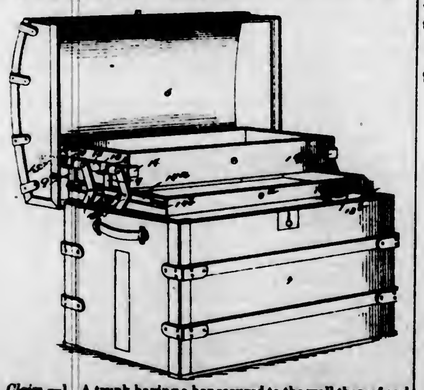

Claim.—1. A trunk having a bar secured to the wall thereof and flanged at the upper edge to rest on the top of the said wall, and tray-supporting means attached to said bar.

2. A trunk having a bar secured inside to the wall thereof, with a flange at its upper edge resting on top of said wall and an offset at its end secured to another wall and forming a corner-piece.

3. A trunk having lid-operated tray-lifting devices including notched bars, and tray-hangers having hooks which engage over said bars, and pins extending across the hooks, which pins rest in the notches and form pivots on which the tray may be swung up and down.

4. A trunk having a plurality of trays, and lid-operated tray-lifting devices comprising bars secured to the end walls of the trunk and having flanges resting on the upper edges thereof, bent links pivoted to the bars, upper tray-supporting bars pivoted to the upper ends of the links, and lower tray-supporting bars pivoted to the links at about the elbows thereof.

812,968. VACUUM-SEALING PRESERVING-CAN. HARRY B. WILLIAMS, Brooklyn, N. Y., assignor to American Can Company, New York, N. Y., a Corporation of New Jersey. Filed July 12, 1905. Serial No. 269,268.
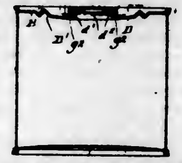
Claim.—1. In a vacuum-sealing can, a cap or cover closing the filling-opening in the can, and provided with a raised hub or boss furnished with perforations for escape of air in vacuumizing the can, and a band-valve surrounding said perforated hub or boss to close the perforations therein and thus vacuum-seal the can, substantially as specified.

2. In a vacuum-sealing can, a cap or cover closing the filling-opening in the can, and provided with a raised hub or boss furnished with perforations for escape of air in vacuumizing the can, and a band-valve surrounding said perforated hub or boss to close the perforations therein and vacuum-seal the can, and a protecting-cap surrounding and covering said perforated hub or boss and its band-valve, substantially as specified.

3. In a vacuum-sealing can, a cap or cover closing the filling-opening in the can, and provided with a raised hub or boss furnished with perforations for escape of air in vacuumizing the can, and a band-valve surrounding said perforated hub or boss to close the perforations therein and vacuum-seal the can, and a protecting-cap surrounding and covering said perforated hub or boss and its band-valve, and having a soldering-flange soldered to said cap or cover, substantially as specified.

4. A vacuum-sealing vessel having a cap or cover furnished with a perforated boss or hub, and provided with a band-valve fitting thereon, substantially as specified.

5. A vacuum-sealing vessel having a cap or cover furnished with a perforated boss or hub, and provided with a band-valve fitting thereon, and a protection-cap, substantially as specified.

812,969. ELECTRIC WELDING-MACHINE. WILLIAM C. WINFIELD, Warren, Ohio, assignor to The Winfield Manufacturing Company, Warren, Ohio, a Corporation. Filed Jan. 9, 1905. Serial No. 240,216.

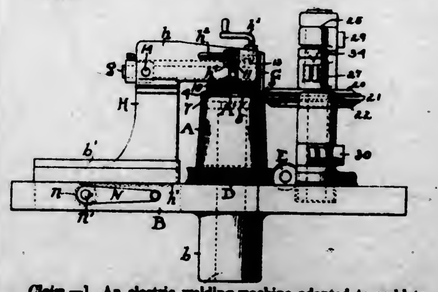

Claim.—1. An electric welding-machine adapted to weld together two circular members having matching edges, said machine comprising a pair of electric conductors arranged in an electric circuit with said members and adapted to bear against the same on ep-

posite sides of the said matching edges and upon the outside thereof, rotatable devices to press the edges of said sections together, and means to impart rotation to said devices and thereby

race, the latter provided with a shuttle-exit and a stationary magazine to and from which the lay is adapted to move; of a gate normally

means operated by the movement of the lay to the magazine to forcibly move a shuttle therefrom between and through the aforesaid

ing-current is directed into the current which is delivered by the circulating-fan, and means for feeding the material to be separated to

posite sides of the said matching edges and upon the outside thereof, rotatable devices to press the edges of said sections together, and means to impart rotation to said devices and thereby rotate said members.

2. An electric welding-machine adapted to unite two circular members of the same cross-section together, the same comprising a set of electric conductors arranged to make contact with the said members on opposite sides of their meeting edges, a rotatable support for one of said members, and rotatable means bearing on said other member and adapted to hold said members in edgewise relation between said conductors.

3. A machine adapted to electrically weld two sections of a containing vessel together, said machine having a pair of electric conducting devices, in combination with means to hold said vessel rotatably to a common center in contact with said devices.

4. In a machine for electrically welding together two parts of a vessel having a bottom, a pair of electric conducting devices, and means to hold the said parts of the vessel with their meeting edges midway between said conducting devices and in contact therewith, and means to rotate said vessel having direct operative engagement with one of said sections.

5. In electric welding, a pair of rotating conductors having alined axes, in combination with means to hold separate sections of a containing vessel edge to edge against said conductors and with the said edges between the conductors.

6. In electric welding, a pair of electric conductors, in combination with means to hold two sections of a vessel having a bottom in one section in contact with the said conductors, said means comprising an actuating member in one of said sections and a pressure device on the other.

7. In electric welding, a machine comprising a pair of conductors horizontally disposed with a space between them, in combination with a rotatable support for a vessel-body adapted to engage the vessel inside and means outside to hold the bottom section in welding relation to said body-section.

8. In electric welding, a machine adapted to weld together two sections of a vessel, said machine having a rotating member adapted to engage within one section of the vessel and another rotating member adapted to engage upon the other section of the vessel, and means to electrically weld said sections together.

9. A machine adapted to weld two sections of a vessel together comprising a rotatable device to engage one of said vessel-sections on its inside, and a device to engage the other section on its outside, said devices constructed to center said sections in respect to each other and means to electrically weld said sections together consisting of two conductors in contact with different sections of said vessel.

10. In electric welding, a pair of rotatable conductors, in combination with means to hold two sections of a containing vessel in welding relation thereto, said means comprising a rotatable centering device for one of said sections, a pressure device to bear upon the other section and a roller over the place of contact of said conductors adapted to bear upon the edge of the upper of said sections.

11. In electric welding, means to hold two sections of a vessel edge to edge to be welded, the same comprising a rotatable central guide and support for the lower section of the vessel and a rotatable device to bear upon and center the opposite section, a rolling pressure device to press upon the edge of the vessel and a pair of rotatable electric conductors engaging the side of the vessel above and below the welding-line.

12. In electric welding, means to support two sections of a vessel edgewise together to be welded, consisting of rotatable devices to carry one section of the vessel and pressure and centering devices for the other section of the vessel, and a movable support for said pressure and centering devices.

13. An electric welding-machine for containing vessels comprising a centering and base support for one of said sections, a movable arm over said parts and centering and pressure devices thereon to engage upon the other of said sections.

14. In electric welding-machines, a rotatable base and centering device for a section of a vessel to be welded, and a movable arm and pressure and centering mechanism thereon for another section of a vessel, said parts severally being constructed and arranged to bring said vessel-sections together edge to edge, and a pair of horizontally-arranged electric conductors connecting with different sections of said vessel.

812,970. WEFT-REPLENISHING MECHANISM FOR LOOMS. HERMANN ROSSEY, Schwandingi, Switzerland. Filed Dec. 2, 1904. Serial No. 235,177.

Claim.—1. In a loom, the combination with the lay and shuttle-race and a shuttle-magazine stationary relatively to the lay, the latter having motion to and from said magazine and said race provided with shuttle-exit and a gate normally closing said exit; of means controlled by the thread-break indicator of the loom to open said gate when the weft-thread is absent, means operated by the gate to direct the shuttle into the aforesaid exit and means operated by the movement of the lay to the magazine to feed a fresh shuttle therefrom onto the race.

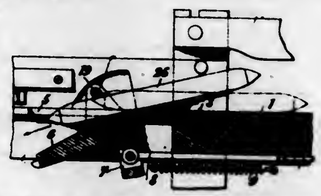

2. In a loom, the combination with the lay and shuttle-race and a shuttle-magazine stationary relatively to the lay, the latter having motion to and from said magazine and said race provided with shuttle-exit and a gate normally closing said exit; of means controlled by the thread-break indicator of the loom to open said gate when the weft-thread is absent, means operated by the gate to direct the shuttle into the aforesaid exit and means operated by the movement of the lay to the magazine to feed a fresh shuttle therefrom onto the race.

3. In a loom, the combination with the lay and shuttle-race and a magazine stationary relatively to the lay, which latter has motion to and from the magazine, and said race provided with a shuttle-exit; of a gate normally closing said exit, a shuttle-guide operated by the gate, an arm on the latter, means connected to said arm and adapted to be operated by the thread-break indicator of the loom to open the gate and move the shuttle-guide into the path of the shuttle to guide it to the shuttle-exit, and mechanism adapted to feed a shuttle from the magazine to the race and actuated by the aforesaid gate-arm when the lay moves to the magazine.

4. In a loom, the combination with the lay and shuttle-race and a shuttle-magazine stationary relatively to the lay, the latter having motion to and from the magazine and said shuttle-race provided with a shuttle-exit; of a bell-crank lever, one arm of which serves as a gate for the shuttle-exit and normally closes the same, a shuttle-guide adapted to be moved by the gate into the path of a shuttle in the race and guide it into its exit, means adapted to be operated by the thread-break indicator of the loom and acting on the other arm of the bell-crank lever to tilt the same to open the gate and move the shuttle-guide into the path of a shuttle in the race, and means operated by the movement of the lay to the magazine to feed a fresh shuttle therefrom to the race.

5. In a loom, the combination with the lay and shuttle-race and a shuttle-magazine stationary relatively to the lay, said race provided with a shuttle-exit, a gate normally closing the shuttle-exit, and a shuttle-guide carried by the gate and held normally out of the path of the shuttle; of means operating automatically, when the weft-thread is absent to open the gate and thereby move the shuttle-guide into the path of the shuttle in the race and guide it to its exit, and means operated by the movement of the lay to the magazine to feed a fresh shuttle therefrom to the race.

6. In a loom, the combination with the lay and shuttle-race provided with a shuttle-exit, a shuttle-magazine stationary relatively to the lay, a shuttle-ejector adapted to eject one shuttle at a time from the magazine, and a spring-retracted actuating-lever for said ejector, provided at its free end with a pin; of a gate normally closing the shuttle-exit and having a depending arm adapted to be moved in line with the aforesaid pin on the ejector-lever, a shuttle-guide operated by the gate and means to automatically open said gate when the shuttle-thread is absent and thereby move the shuttle-guide into the path of a shuttle in the race and guide it to its exit, and simultaneously move the depending arm on the gate in line with the ejector-lever pin, whereby when the lay moves to the magazine said arm actuates the lever to eject a shuttle from the magazine onto the race.

7. In a loom, the combination with the lay and shuttle-race, the latter provided with a shuttle-exit, a shuttle-magazine stationary relatively to the lay and having a shuttle-outlet in line with the race, and two yielding bars between the race and magazine having flaring lips facing the said shuttle-outlet; of a gate normally closing the shuttle-exit in the race, means to guide a shuttle to said exit when the gate is opened, means to automatically open the gate when the weft-thread is absent and guide the shuttle in the race to its exit, and means operated by the movement of the lay to the magazine to forcibly move a shuttle therefrom between and through the aforesaid yielding bars onto the race.

812,971. PROCESS OF TREATING RAISINS TO REMOVE THE CAP-STEMS. FRANK C. ADAMS, Fresno, Cal., assignor of one-half to John M. Scrapian and George M. Scrapian, Fresno, Cal. Filed Apr. 20, 1903. Serial No. 153,406.

Claim.—The improvement in the art of treating raisins to remove the cap-stems, which consists in subjecting the raisins to a low temperature (approximately 10° to 20° Fahrenheit) and then immediately removing the cap-stems while the raisins are in a cooled condition, substantially as described.

812,972. SEPARATING-MACHINE. HOMER BALDWIN, Youngstown, Ohio. Filed May 16, 1905. Serial No. 260,961.

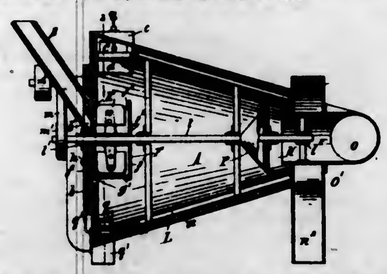

Claim.—1. In a machine for separating a mixture of solid particles of different size or weight, the combination of an imperforate tapering separating-chamber having near its small end an outlet for the light or fine articles and near its large end an outlet for the heavy or coarse particles, a circulating-fan arranged outside said chamber and having its blast-orifice arranged to deliver the air-current into said chamber near the large end and produce a whirling air-current therein, means for conducting the air-current from the interior of the separating-chamber to the circulating-fan, a fan for feeding the material to be separated into the air-current delivered into the separating-chamber by the circulating-fan, the case of the feeding-fan having a peripheral wall by which the feeding-current is confined and which is provided with a blast-orifice by which the feeding-current is directed into the current which is delivered by the circulating-fan, and means for feeding the material to be separated to said feeding-fan, substantially as set forth.

2. The combination of an imperforate, tapering separating-chamber having near its ends outlets for the separated materials, a circulating-fan arranged outside said chamber and having its blast-orifice connected with the large end thereof to produce a whirling air-current therein, means for conducting the air-current from the interior of the separating-chamber to the circulating-fan, a feeding-fan arranged at the large end of said chamber and having the peripheral wall of its case provided with a blast-orifice from which the air-current laden with the material to be separated is delivered into the whirling air-current, and means for feeding the material to be separated to said feeding-fan, substantially as set forth.

3. The combination of an imperforate, tapering separating-chamber having near its ends outlets for the separated materials, a circulating-fan arranged outside said chamber and having its blast-orifice connected with the large end thereof to produce a whirling air-current therein, means for conducting the air-current from the interior of the separating-chamber to the circulating-fan, a feeding-fan arranged within said chamber at the large end thereof and having its case provided with a peripheral blast-orifice, means for adjusting said blast-orifice circumferentially, and means for feeding the material to be separated to said feeding-fan, substantially as set forth.

4. The combination of an imperforate, tapering separating-chamber having near its ends outlets for the separated materials, a circulating-fan arranged outside said chamber and having its blast-orifice connected with the large end thereof to produce a whirling air-current therein, means for conducting the air-current from the interior of the separating-chamber to the circulating-fan, a feeding-fan arranged within said chamber at the large end thereof and having a circumferentially-movable case provided with a blast-orifice, means for adjusting said case circumferentially, and means for feeding the material to be separated to said feeding-fan, substantially as set forth.

5. The combination of an imperforate, tapering separating-chamber having near its ends outlets for the separated materials, a circulating-fan arranged outside said chamber and having its blast-orifice connected with the large end thereof to produce a whirling air-current therein, means for conducting the air-current from the interior of the separating-chamber to the circulating-fan, a feeding-fan arranged within said chamber and having a circumferentially-movable case provided with a blast-orifice, a support secured to said chamber in which said case rests movably, frictional means for holding said case in position while permitting said case to be adjusted in said support, and means for feeding the material to be separated to said feeding-fan, substantially as set forth.

812,973. BRICK-CUTTING MACHINE. HARRY L. BARR and FREDERICK GAMBERT, Mansfield, Ohio. Filed Aug. 3, 1905. Serial No. 272,577.

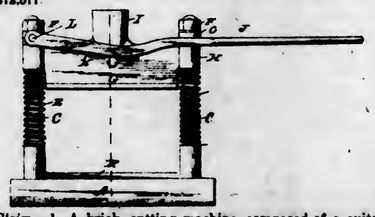

Claim.—1. A brick-cutting machine, composed of a suitable metal base, posts, secured in said base, one upon each side of the center, a lateral steel cutter secured in said base on a line with the center of the posts, an upper adjustable cutter, provided at each end with a hollow sleeve said cutter adapted to have a vertical sliding movement upon the vertical posts, and supported upon suitable coil-springs surrounding said posts the said posts threaded at their upper ends and provided with adjusting-nuts, a lever journaled upon each side of a loose sleeve placed upon the vertical post between the upper cutter and adjusting-nut.

2. In a brick-cutting machine, the combination with a suitable metal base, and vertical guiding-posts, a cutter mounted in said base laterally and in line with the center of the vertical posts, an upper adjustable cutter, adapted to have a vertical sliding movement upon said posts, the upper cutter, supported upon suitable springs, surrounding said posts, a sleeve mounted on one of the posts and a lever journaled to said sleeve and adapted to operate the movable cutter.

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rounding said posts, a sleeve mounted on one of the posts and a lever journaled to said sleeve and adapted to operate the movable cutter.

812,974. APPARATUS FOR STERILIZING AND CLEANSING BOTTLES. THEODORE G. BATES, Worcester, Mass. Filed Oct. 16, 1903. Serial No. 177,370.

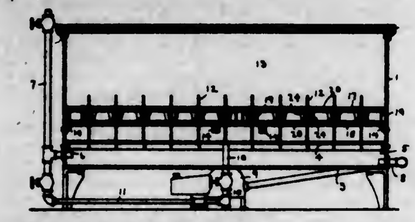

Claim.—1. In a bottle-cleansing apparatus, the combination of a chamber having an open top, a cover for hermetically sealing said top, a false bottom dividing said chamber and forming a steam-chest, means for admitting steam under pressure to said steam-chest, a series of open pipes extending upwardly from said false bottom and communicating with said steam-chest, a frame vertically removable through the open top of said chamber and comprising a series of cages in alinement with said open steam-pipes, said cages having openings at their top to support the body of the bottle and an opening at the bottom to receive the neck of the bottle and hold the bottle in an inverted upright position, and means for supporting said frame above said false bottom.

2. In a bottle-cleansing apparatus, the combination of a chamber having an open top, a cover for hermetically sealing said top, a false bottom dividing said chamber and forming a steam-chest, means for admitting steam under pressure to said steam-chest, a series of open pipes extending upwardly from said false bottom and communicating with said steam-chest, and a bottle-supporting frame vertically removable through the open top of said chamber.

3. In an apparatus for cleansing bottles, a basket for holding the bottles to be cleansed, consisting of a series of interlaced wires in an upper and a lower plane, wire cages held by said interlaced wires having openings at their top to support the body of the bottle and an opening at the bottom to receive the neck of the bottle and hold the bottle in an inverted position.

812,975. GAS-BURNER. SAMUEL BERGHEIM, New York, N. Y. Filed May 16, 1905. Serial No. 260,622.

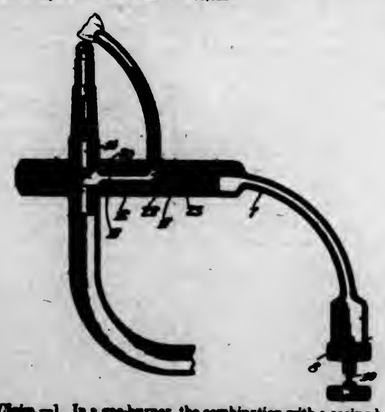

Claim.—1. In a gas-burner, the combination with a casing having a bore, a port leading therefrom to the burner, a port leading from said bore to the service-pipe, an igniter-pipe, a port leading thereto from said bore, a tube one end leading from said bore, and a piston in the other end of said tube, of a reciprocal valve located in the bore of the casing and having ports adapted when the valve is moved in one direction to simultaneously establish communication between the ports leading to the igniter-tube and the port leading from the service-pipe and interrupt communication between the port leading to the burner and the port leading from the service-pipe and when moved in the opposite direction to simultaneously interrupt communication between the port leading to the igniter-tube and the port leading from the service-pipe and establish communication between the port leading to the burner and the port leading from the service-pipe, and means for preventing rotary movement of said valve and limiting its longitudinal movement, substantially as described.

2. In a gas-burner, a casing having a bore, a burner communicating therewith, a service-pipe communicating with said bore and an igniter-pipe communicating with said bore, of a reciprocal valve located in said bore, means for preventing rotary movement of said valve and limiting its longitudinal movement and means for reciprocating said valve to simultaneously establish communication between the burner and service-pipe and interrupt communication between the igniter-pipe and service-pipe or vice versa, substantially as described.

3. In a gas-burner, a casing having a bore, a port leading therefrom to the burner, a port leading from said bore to the service-pipe, an igniter-pipe, a port leading thereto from said bore, a reciprocal valve located in the bore of the casing and having an interior bore, an opening or port leading from said bore and connecting it in constant registry with the port from the service-pipe, an opening or port leading from said bore and adapted to be moved into and out of registry with the port to the burner and a port or opening leading from said bore and adapted to be moved into and out of registry with the port to the igniter-pipe and means for reciprocating said valve, substantially as described.

812,976. DENTAL TOOL FOR REMOVING CROWN-PINS. GEORGE T. CARPENTER, Chicago, Ill. Filed June 22, 1905. Serial No. 266,468.

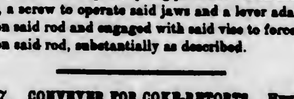

Claim.—1. In a dental tool, the combination with a rod or post, of a vise having formed therethrough a vertically-disposed passage whereby the same is engaged with said post, said vise having its upper end cut away and recessed, and a lever adapted to be engaged with the upper end of said rod and with the recess in said vise whereby the latter is forced outwardly on said rod, substantially as described.

2. In a dental tool, the combination with a rod or post, of a vise having formed therein a vertically-disposed passage whereby the same is engaged with said post, spring-jaws formed on the inner end of said vise, a screw to operate said jaws and a lever adapted to be fulcrumed on said rod and engaged with said vise to force the latter outwardly on said rod, substantially as described.

812,977. CONVEYER FOR COKE-RETORTS. HENRY A. CARPENTER, Swissvale, Pa., assignor to Ritter-Conley Manufacturing Company, Jersey City, N. J., a Corporation of New Jersey. Filed Feb. 24, 1903. Serial No. 144,764.

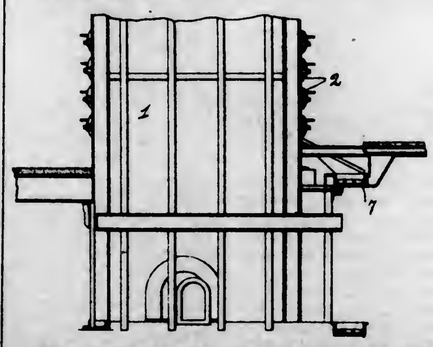

Claim.—1. The combination with a bench of gas-retorts and the furnace therefor, said retorts and said furnace having independent means for discharge, of an endless conveyor having one stretch thereof positioned adjacent the discharge of the coke product and the other stretch thereof positioned adjacent the discharge of the waste products, said stretches of the conveyor being adapted to simultaneously convey away and dump in opposite directions from the places of discharge of the coke product and the waste products.

2. The combination with a bench of gas-retorts and the furnace therefor, said retorts and said furnace having independent means for discharge of their products, of a conveyer comprising a single endless carrier having one stretch thereof positioned adjacent the discharge of the coke product, and the other stretch thereof positioned adjacent the discharge of the waste products, and troughs in which the respective stretches of the endless conveyer travel, said stretches of the conveyer being adapted to simultaneously convey away and dump in opposite directions from the places of discharge of the coke product and the waste products by the utilization of the uppermost parts of said stretches.

812,978. WALL-PLASTER. JAMES W. CRAIG, Buffalo, N. Y. Filed May 26, 1905. Serial No. 262,492.

Claim.—A wall-plaster composed of the following ingredients, viz: calcined gypsum, Portland cement, acetic acid, sand and palmetto-root fiber, in the proportions specified.

812,979. MOLDING-MACHINE. ARTHUR CROCKNER, Holyoke, Mass. Filed July 13, 1904. Serial No. 217,044.

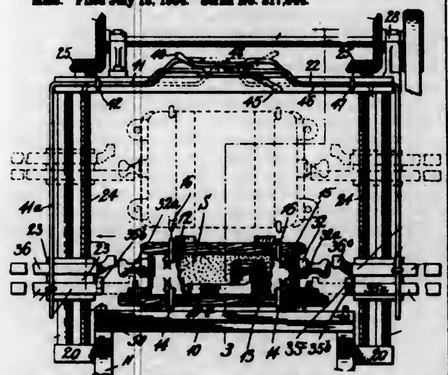

Claim.—1. The combination, with a table and a flask, having trunnions, of heads having grooves, and mounted for vertical movement relative to said table, and devices movable in said grooves, and for raising said flask bodily.

2. The combination, with a table and a flask, having trunnions, of heads mounted for vertical movement relative to said table, and devices carried by said heads, and means for moving said devices toward and away from each other.

3. The combination, with a table, and a flask having trunnions, of devices for raising said flask bodily, comprising a pair of heads arranged for vertical movements relatively to said table, a pair of vertically-arranged screws in threaded engagement with said heads, and having bevel-gears at their ends, a horizontally-mounted shaft having bevel gear-wheels in mesh with the gears on the vertical screws, and means for rotating said horizontal shaft.

4. The combination, with a table and a flask, having trunnions, of guide-rods, heads movable on said rods, devices carried by said heads, and for raising said flask bodily, relative to said table, means for moving said devices toward and away from each other, and a pair of screws in threaded engagement with said heads.

812,980. SELF-SOLDERING HEAT-CARTRIDGE AND PROTECTIVE APPARATUS. FRANK B. COOK, Chicago, Ill. Filed Nov. 26, 1904. Serial No. 234,269.

Claim.—1. In a device of the character described, an inclosing shell, suitable conducting end caps therefor and secured thereto, and a heat-producing member extending completely through the said shell and end caps and projecting from at least one end of the device.

2. In a heat-cartridge of the character described, a heat-producing member extending completely through and projecting at one end of the cartridge, whereby when operated, the cartridge is conditioned for another operation in a reversed position.

3. A thermal protector having a heat-producing, circuit-controlling member extending completely therethrough and projecting from at least one end thereof, the operation of which places the device in condition for another operation in a reversed position.

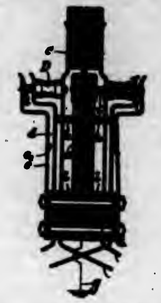

4. In a heat-cartridge, suitable terminals for connecting the cartridge in a circuit which it is to protect, a circuit-controlling operating member normally extending completely through the cartridge and in electrical connection with the said terminals, and means for operating the said circuit-controlling member to control a circuit and condition the cartridge for another operation in a reversed position.

5. In a device of the character described, an incased resistance member normally extending completely through the casing and operable longitudinally in either direction under abnormal current conditions, a support for the device, and means for operating the said resistance member and insulated therefrom, the said resistance member and casing constituting a device detachable from its support for reversal after each operation for a repetition thereof.

6. A thermal protector comprising a sleeve, supporting means therefor, a heat-producing pin extending completely through the sleeve, heat-susceptible material normally holding the pin in operative position, and suitable means for operating the pin to control a circuit and condition the device for another operation in a reversed position.

7. A thermal protector comprising a sleeve, end caps therefor, a heat-producing pin extending completely through the sleeve and end caps and projecting from at least one end cap, and heat-susceptible material normally securing the said pin to the said end caps.

8. In a thermal protector of the character described, the combination of an insulating-sleeve, end caps therefor, and a spring-pressed resistance member normally extending completely through the sleeve and end caps, being normally secured to the latter by heat-susceptible material, and operable longitudinally in either direction, relatively to the remainder of the protector, to control a circuit, when the heat-susceptible material is softened.

9. The combination with an electric circuit including at least one spring-support, of an incased resistance member supported by said spring-support, normally extending completely through its casing and operable in either direction under abnormal current conditions, heat-susceptible material normally holding the resistance member against operation, and a spring member for operating the said resistance member but insulated therefrom, the said incased resistance member constituting a detachable device capable of reversal after each operation for a repetition thereof.

10. In a thermal protector of the class specified, an insulating-casing, a conducting end cap for each end thereof and secured thereto, a pin of resistance material extending completely through said casing and end caps, a metallic plating for each end of said pin, and heat-susceptible material normally securing the said plated portions of said pin to the respective end caps.

11. In a thermal protector of the character described, an insulating-sleeve, a conducting end cap for each end thereof and secured thereto, a resistance member extending completely through the sleeve and end caps, arranged to generate heat under abnormal current conditions to operate the device, and operable longitudinally in either direction to render the device reversible, under abnormal conditions, and heat-susceptible material normally securing the said resistance member to the end caps.

12. A heat-cartridge of the character described, comprising a shell, a piece of homogeneous resistance material extending completely through the cartridge and operable in either direction under abnormal conditions, and heat-susceptible material normally holding the said piece of resistance material against operation.

18. A heat-cartridge of the character described comprising a shell, a piece of graphite normally extending completely through the shell and operable in either direction under abnormal current conditions to control a circuit and to render the device reversible for another operation, and heat-susceptible material normally holding the said graphite against operation.

14. In a heat-cartridge of the character described, a heat-producing pin extending completely through the cartridge and operable endwise, and heat-susceptible material normally securing the pin in a fixed position.

15. In apparatus of the class specified, a ground-plate, a pair of springs mounted thereon, a heat-producing member electrically connected in circuit with the said springs and adapted to engage the ground-plate when the device operates, and means for operating the heat-producing member to bring same in contact with the ground-plate without opening the said circuit between the said springs.

16. In apparatus of the class specified, a ground-plate, a pair of springs mounted thereon, a heat-producing member electrically connected between the pair of springs, an alarm-spring mounted outside of the pair of springs and adapted to operate the heat-producing member under abnormal conditions and cause same to contact the ground-plate to ground the circuit, and a contact on the alarm-spring adapted to contact one of the pair of springs to close an alarm-circuit upon the operation of the device.

17. In apparatus of the class specified, a ground-plate, a pair of springs for each side of the ground-plate and suitably mounted thereon, a heat-cartridge for each pair of springs, comprising a heat-producing pin extending completely through the cartridge and electrically in circuit with the pair of springs, an alarm-spring for each side of the ground-plate and mounted outside of the pair of springs, said alarm-spring being insulated from said pin and provided with a contact adapted to engage one of the pair of springs when the device operates, and lightning-arresters inserted between the respective inner springs of the pairs and the ground-plate, abnormal current conditions in either heat-cartridge causing its corresponding alarm-spring to bring the heat-producing pin in contact with the ground-plate to ground the line-circuit, the said alarm-spring also closing the alarm-circuit, the heat-cartridge being reversible after operation for another operation thereof.

812,981. **WIRE-STRETCHER.** KENNETH CUNNINGHAM, Cheyenne, Okla. Filed Dec. 2, 1905. Serial No. 289,963.

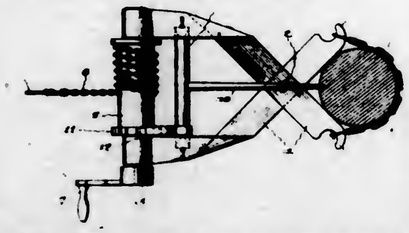

Claim.—1. In a fence-wire stretcher, crossed bars adapted to be secured to a post, and a roller journaled in said bars, substantially as shown and described.

2. In a fence-wire stretcher, crossed bars having hooks at one end, a flexible element adapted to engage said hooks, and a roller journaled in said bars, substantially as shown and described.

3. In a fence-wire stretcher, in combination with a fence post and wire, crossed bars having hooks at one end, a flexible element secured to said hooks and adapted to encircle the post, a roller journaled in said arms, a flexible element secured to said roller and adapted to be secured to the fence-wire, a bar secured to said crossed bar, and pointed bars secured to said bar and adapted to engage the post, substantially as shown and described.

4. In a fence-wire stretcher, in combination with a fence post and wire, crossed bars having hooks at one end, a flexible element secured to said hooks and adapted to encircle the post, a roller journaled in said arms, a crank-lever to actuate said roller, said roller being provided with ratchet-teeth, a flexible element secured to said roller and adapted to be secured to the fence-wire, a bar secured to said crossed bar, pointed bars secured to said bar and adapted to engage the post, and a gravity-pawl pivotally secured to said bar and adapted to engage the ratchet-teeth in the roller, substantially as shown and described.

812,982. **HEADLIGHT-COVER.** HARVEY M. DAVENPORT, Sheridan, Wyo. Filed Mar. 3, 1905. Serial No. 248,513.

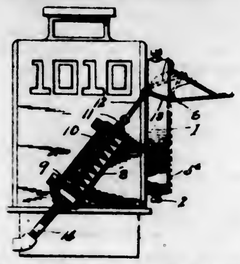

Claim.—1. In a device of the character described, a band adapted to embrace and be secured about the bezel of a locomotive-headlight glass, a segmental cover permanently secured thereto, a movable cover hinged to the segmental cover and normally open, a cylinder, a piston disposed within the cylinder, a lever rigidly connected to the hinged cover, a link pivoted to the said lever and to the piston, a source of fluid-pressure, and means for admitting the fluid-pressure to the cylinder to close the said hinged cover.

2. In a device of the class described, the combination of a headlight, a source of fluid-pressure, a hinged cover adapted and arranged to be removably secured to the bezel of a headlight, and to be swung upward to uncover the light, a brace adapted to limit said upward movement, a cylinder attached to the headlight-body, a piston slidably mounted within the cylinder, a pivoted link connecting the piston and a rigid arm carried by the cover whereby the reciprocation of the piston opens and closes the cover, a spring mounted within the cylinder and disposed to hold the piston at the extreme of its movement, pipes connecting the cylinder and source of fluid-pressure, a valve disposed to admit fluid under pressure to the cylinder to move the piston and close the cover, and means to permit the escape of the air from the cylinder to permit the spring to act.

3. The combination with a headlight of a removable cover consisting of a band and means for securing said band to the bezel of said headlight, a cover hinged to the band and an arm to limit the swing of said cover, a cylinder and motive-fluid inlet thereto, a spring-pressed piston within the cylinder, a lever-arm attached to the hinged cover, and a link connecting said arm and the piston-stem.

4. The combination with a headlight of a removable band and screws for securing said band to the bezel of the headlight, a cover over the band having a hinged portion, an arm projecting from the cover to limit the movement of the hinged portion, a cylinder secured to the headlight and connected with an air-drum, means for admitting air to said cylinder, a piston within the cylinder, a lever-arm attached to the hinged cover, and a link connecting said arm and the piston-stem.

5. The combination with a locomotive-headlight of a band and means for securing the same to the bezel of the light, a cover over the band having a stationary and a hinged portion, means for opening the hinged portion upward away from the light, and perforations in the stationary portion of the cover identifying the locomotive.

812,983. **COMBINED CORN-PLANTER AND FERTILIZER-DISTRIBUTER.** JOSEPH D. DAVIS, Pendleton, N. C., assignor of one-half to James H. Davis, Pendleton, N. C. Filed July 24, 1905. Serial No. 271,048.

Claim.—1. In a machine of the class described, the frame, a seed-hopper having a bottom seed-opening and a slide-receiving base, the latter having a spout connection therewith, a self-adjusting cut-off and feeder having a shoe portion lying partly within the opening in the bottom of the seed-hopper, a fertilizer-hopper having a delivery-spout connection therewith, and a suitably-reciprocated feeding-slide having dropping members coöperating with the fertilizer-hopper and a single dropping member operating in the slide-receiving base of the seed-hopper beneath the said cut-off and feeder.

2. In a machine of the class described, the frame, a seed-hopper having a bottom seed-feed opening and a slide-receiving base having a spout connection therewith, a self-adjusting weighted cut-off and feeder having a shoe loosely arranged within said base and provided with a nose portion disposed within the seed-feed opening of the hopper, and a suitably-operated feeding-slide working in said slide-receiving base and having a seed-carrying pocket.

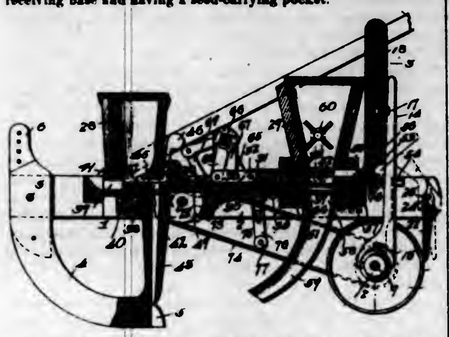

3. In a machine of the class described, the frame, a seed-hopper provided with a bottom seed-opening and a slide-receiving base having a spout connection therewith, a self-adjusting cut-off and feeder having a horizontal shoe portion loosely arranged within the slide-receiving base and an upright exterior weighted lever-arm rigid with said shoe portion, the latter being provided with a nose enlargement within the seed-feed opening of the hopper, and a suitably-operated feeding-slide working in said slide-receiving base and having a seed-carrying pocket.

4. In a machine of the class described, the frame, a seed-hopper mounted in the frame and provided with a slide-receiving base having a spout connection therewith, a fertilizer-hopper arranged in rear of the seed-hopper and provided with a horizontally-partitioned bottom feed-box provided with upper and lower slide-openings, the partition of said box being provided with a feed-opening and an adjustable regulating-gate having an exterior adjustment connection, and a suitably-operated reciprocating feed-slide having a perforated member working in the slide-receiving base of the seed-hopper, and a forked member consisting of an upper cut-off plate and a lower discharging-plate operating respectively in said upper and lower slide-openings of the feed-box, said lower discharging-plate being of greater length than the cut-off plate and having a dropping pocket or opening within the vertical plane of said cut-off plate.

5. In a machine of the class described, the frame, a seed-hopper and a fertilizer-hopper arranged one in advance of the other, a reciprocating feed-slide common to both of said hoppers and coöperating with the dropping means therefor, a rocking agitator arranged within the fertilizing-hopper, a rock-shaft having a rock-arm connection with the feed-slide and a similar connection with said rocking agitator, an operating-shaft journaled in the frame and carrying a crank-arm having a link-and-crank connection with said rock-shaft and carrying the belt-wheel, a drive-shaft carrying a fixed belt-wheel having a clutch member, a driving connection between the two belt-wheels, and a shiftable ground-wheel loosely mounted on the drive-shaft and having a clutch member for engagement with the complemental member of said driving-belt wheel.

812,984. **CATTLE-GUARD.** WALLACE B. DEMENT, Blaine, Wash. Filed Oct. 12, 1905. Serial No. 282,467.

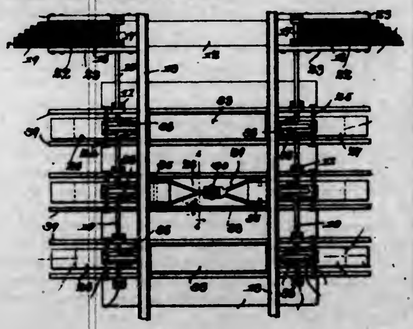

Claim.—1. In a cattle-guard, an arm pivoted to swing into vertical position, a plurality of secondary arms pivoted at one end to said primary arm near the pivot of the same, a flexible element coupling the free ends of all of said arms, and means for operating said primary arm to carry said secondary arms over the center for projection by gravity into active position.

2. In a cattle-guard, an arm pivoted to swing into vertical position, a plurality of secondary arms pivoted at one end to said primary arm near the pivot of the same, a flexible element coupling the free ends of all of said arms, a vertically-movable trip-platform, and means whereby the motion of said platform is communicated to said primary arm.

3. In a cattle-guard, a rock-shaft, a primary arm connected to said shaft and movable therewith, a plurality of secondary arms pivoted to said primary arm near said shaft, a flexible element coupling the free ends of all of said arms, means for operating said shaft to carry said primary arm into vertical position and carry said secondary arms over the center for projection into active position.

4. In a cattle-guard, a rock-shaft, a primary arm connected to said shaft and movable therewith, a plurality of secondary arms pivoted to said primary arm near said shaft, a flexible element coupling the free ends of all of said arms, a vertically-movable trip-platform, and means whereby the motion of said platform is communicated to said shaft.

5. In a cattle-guard, a rock-shaft, a support disposed adjacent to said shaft, a primary arm connected to said shaft and movable therewith and a plurality of secondary arms pivoted to said primary arm near said shaft and bearing upon said support when in open position, an arm swinging loosely upon said shaft, a flexible element connected at one end to said support and coupled consecutively to the free ends of said loosely-swinging arm, primary arm and secondary arms, and means for rotating said shaft to carry said primary arm into vertical position and carry said loosely-swinging arm and secondary arms into active position.

6. In a cattle-guard, a rock-shaft having one or more cranks, a primary arm connected to said shaft and movable therewith, a plurality of secondary arms pivoted to said primary arm near said shaft, a flexible element connecting the free ends of all of said arms, one or more vertically-movable trip-platforms disposed in the path of the approaching animal, and coupling means between said platforms and cranks, whereby the depression of the platforms will actuate the shaft and move the arms into active position.

7. In a cattle-guard, parallel shafts mounted for rotation and provided with spaced cranks, a primary arm connected to each of said shafts, a plurality of secondary arms swinging from each of said primary arms, flexible elements coupling all the arms of each of said shafts, levers disposed in pairs and pivoted intermediately and extending beneath said shafts, coupling means between each pair of said levers, platforms movably connected to each coupled pair of said levers, counterweights at the outer ends of said levers, and slotted members upon said levers and engaging said cranks.

812,985. **CLAW-HAMMER AND SPIKE-PULLER.** CHARLES P. FITCH, Boulder, Colo. Filed July 14, 1905. Serial No. 269,521.

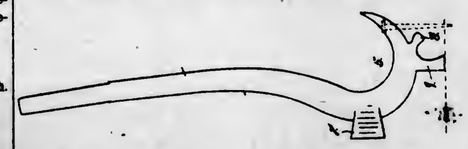

Claim.—1. A tool provided with a handle merging into a curve of comparatively small radius, the curved part having a claw at one end and a hammer head or face at the other end, and a projection extending outwardly from the convex side of the curve and located between the claw and the hammer-head, the said projection consisting of two suitably separated members, the handle of the tool extending parallel or nearly so with the direction of the free end of the curved part.

2. A tool provided with a handle having a curved part at one end, the curved part having a claw at its free extremity, a hammer-face at its opposite extremity, and two projections differing in length and extending outwardly from the convex side of the curve, the two projections being located between the hammer-face and the claw and being suitably separated, the handle of the tool extending parallel or nearly so with the direction of the claw.

812,986. **DISPLAY-RACK.** CHARLES A. BELL, Wilkes-Barre, Pa. Filed Dec. 2, 1905. Serial No. 290,000.

Claim.—1. In a display-rack, the combination with a base, of a standard pivoted thereto, a plurality of arms pivoted to said standard, a plurality of rods pivoted to said arms, and a plurality of hooks pivoted to said rods, substantially as described.

2. In a display-rack, the combination with a base, of a standard pivoted thereto, a plurality of arms pivoted to said standard, a plurality of rods pivoted to said arms, a plurality of hooks pivoted to said rods, and a plurality of stops on said rods, substantially as described.

3. In a display-rack, the combination with a base, of a standard pivoted thereto, a plurality of arms pivoted to said standard, a plurality of rods pivoted to said arms, a plurality of hooks pivoted to said rods, and a plurality of stops on said rods, said stops being adapted to limit the movement of said hooks, substantially as described.

4. In a display-rack, the combination with a base, of a standard pivoted thereto, a plurality of arms pivoted to said standard, a plurality of rods pivoted to said arms, a plurality of hooks pivoted to said rods, and a plurality of stops on said rods, said stops being adapted to limit the movement of said hooks, and said hooks being adapted to engage said stops, substantially as described.

812,987. **CAR-COUPLING.** ALEXANDER BOYD, Pittsburg, Pa. Filed Aug. 28, 1905. Serial No. 276,102.

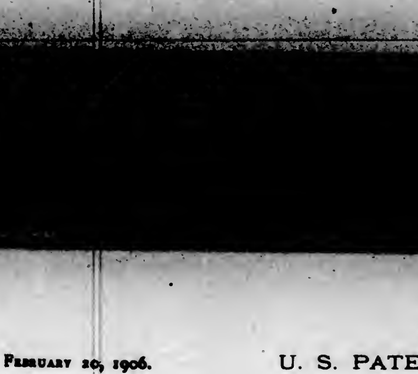

Claim.—1. In a car-coupling, the combination with a knuckle, of a lever pivoted thereto, a pin carried by said lever, a lug on said knuckle, and a link connecting said pin and lug, substantially as described.

2. In a car-coupling, the combination with a knuckle, of a lever pivoted thereto, a pin carried by said lever, a lug on said knuckle, a link connecting said pin and lug, and a guard-arm on said lever, substantially as described.

3. In a car-coupling, the combination with a knuckle, of a lever pivoted thereto, a pin carried by said lever, a lug on said knuckle, a link connecting said pin and lug, and a guard-arm on said lever, said guard-arm being adapted to engage the knuckle-lug, substantially as described.

4. In a car-coupling, the combination with a knuckle, of a lever pivoted thereto, a pin carried by said lever, a lug on said knuckle, a link connecting said pin and lug, and a guard-arm on said lever, said guard-arm being adapted to engage the knuckle-lug, and said lever being adapted to engage the knuckle-tail, substantially as described.

812,988. **CAR-COUPLING.** ALEXANDER BOYD, Pittsburg, Pa. Filed Aug. 28, 1905. Serial No. 276,103.

Claim.—1. In a car-coupling, the combination with a knuckle, of a lever pivoted thereto, a pin carried by said lever, a lug on said knuckle, and a link connecting said pin and lug, substantially as described.

2. In a car-coupling, the combination with a knuckle, of a lever pivoted thereto, a pin carried by said lever, a lug on said knuckle, a link connecting said pin and lug, and a guard-arm on said lever, substantially as described.

3. In a car-coupling, the combination with a knuckle, of a lever pivoted thereto, a pin carried by said lever, a lug on said knuckle, a link connecting said pin and lug, and a guard-arm on said lever, said guard-arm being adapted to engage the knuckle-lug, substantially as described.

4. In a car-coupling, the combination with a knuckle, of a lever pivoted thereto, a pin carried by said lever, a lug on said knuckle, a link connecting said pin and lug, and a guard-arm on said lever, said guard-arm being adapted to engage the knuckle-lug, and said lever being adapted to engage the knuckle-tail, substantially as described.

812,989. **CAR-COUPLING.** ALEXANDER BOYD, Pittsburg, Pa. Filed Aug. 28, 1905. Serial No. 276,104.

Claim.—1. In a car-coupling, the combination with a knuckle, of a lever pivoted thereto, a pin carried by said lever, a lug on said knuckle, and a link connecting said pin and lug, substantially as described.

2. In a car-coupling, the combination with a knuckle, of a lever pivoted thereto, a pin carried by said lever, a lug on said knuckle, a link connecting said pin and lug, and a guard-arm on said lever, substantially as described.

3. In a car-coupling, the combination with a knuckle, of a lever pivoted thereto, a pin carried by said lever, a lug on said knuckle, a link connecting said pin and lug, and a guard-arm on said lever, said guard-arm being adapted to engage the knuckle-lug, substantially as described.

4. In a car-coupling, the combination with a knuckle, of a lever pivoted thereto, a pin carried by said lever, a lug on said knuckle, a link connecting said pin and lug, and a guard-arm on said lever, said guard-arm being adapted to engage the knuckle-lug, and said lever being adapted to engage the knuckle-tail, substantially as described.

812,990. **CAR-COUPLING.** ALEXANDER BOYD, Pittsburg, Pa. Filed Aug. 28, 1905. Serial No. 276,105.

Claim.—1. In a car-coupling, the combination with a knuckle, of a lever pivoted thereto, a pin carried by said lever, a lug on said knuckle, and a link connecting said pin and lug, substantially as described.

2. In a car-coupling, the combination with a knuckle, of a lever pivoted thereto, a pin carried by said lever, a lug on said knuckle, a link connecting said pin and lug, and a guard-arm on said lever, substantially as described.

3. In a car-coupling, the combination with a knuckle, of a lever pivoted thereto, a pin carried by said lever, a lug on said knuckle, a link connecting said pin and lug, and a guard-arm on said lever, said guard-arm being adapted to engage the knuckle-lug, substantially as described.

4. In a car-coupling, the combination with a knuckle, of a lever pivoted thereto, a pin carried by said lever, a lug on said knuckle, a link connecting said pin and lug, and a guard-arm on said lever, said guard-arm being adapted to engage the knuckle-lug, and said lever being adapted to engage the knuckle-tail, substantially as described.

812,991. **CAR-COUPLING.** ALEXANDER BOYD, Pittsburg, Pa. Filed Aug. 28, 1905. Serial No. 276,106.

Claim.—1. In a car-coupling, the combination with a knuckle, of a lever pivoted thereto, a pin carried by said lever, a lug on said knuckle, and a link connecting said pin and lug, substantially as described.

2. In a car-coupling, the combination with a knuckle, of a lever pivoted thereto, a pin carried by said lever, a lug on said knuckle, a link connecting said pin and lug, and a guard-arm on said lever, substantially as described.

3. In a car-coupling, the combination with a knuckle, of a lever pivoted thereto, a pin carried by said lever, a lug on said knuckle, a link connecting said pin and lug, and a guard-arm on said lever, said guard-arm being adapted to engage the knuckle-lug, substantially as described.

4. In a car-coupling, the combination with a knuckle, of a lever pivoted thereto, a pin carried by said lever, a lug on said knuckle, a link connecting said pin and lug, and a guard-arm on said lever, said guard-arm being adapted to engage the knuckle-lug, and said lever being adapted to engage the knuckle-tail, substantially as described.

812,992. **CAR-COUPLING.** ALEXANDER BOYD, Pittsburg, Pa. Filed Aug. 28, 1905. Serial No. 276,107.

Claim.—1. In a car-coupling, the combination with a knuckle, of a lever pivoted thereto, a pin carried by said lever, a lug on said knuckle, and a link connecting said pin and lug, substantially as described.

2. In a car-coupling, the combination with a knuckle, of a lever pivoted thereto, a pin carried by said lever, a lug on said knuckle, a link connecting said pin and lug, and a guard-arm on said lever, substantially as described.

3. In a car-coupling, the combination with a knuckle, of a lever pivoted thereto, a pin carried by said lever, a lug on said knuckle, a link connecting said pin and lug, and a guard-arm on said lever, said guard-arm being adapted to engage the knuckle-lug, substantially as described.

4. In a car-coupling, the combination with a knuckle, of a lever pivoted thereto, a pin carried by said lever, a lug on said knuckle, a link connecting said pin and lug, and a guard-arm on said lever, said guard-arm being adapted to engage the knuckle-lug, and said lever being adapted to engage the knuckle-tail, substantially as described.

812,993. **CAR-COUPLING.** ALEXANDER BOYD, Pittsburg, Pa. Filed Aug. 28, 1905. Serial No. 276,108.

Claim.—1. In a car-coupling, the combination with a knuckle, of a lever pivoted thereto, a pin carried by said lever, a lug on said knuckle, and a link connecting said pin and lug, substantially as described.

2. In a car-coupling, the combination with a knuckle, of a lever pivoted thereto, a pin carried by said lever, a lug on said knuckle, a link connecting said pin and lug, and a guard-arm on said lever, substantially as described.

3. In a car-coupling, the combination with a knuckle, of a lever pivoted thereto, a pin carried by said lever, a lug on said knuckle, a link connecting said pin and lug, and a guard-arm on said lever, said guard-arm being adapted to engage the knuckle-lug, substantially as described.

4. In a car-coupling, the combination with a knuckle, of a lever pivoted thereto, a pin carried by said lever, a lug on said knuckle, a link connecting said pin and lug, and a guard-arm on said lever, said guard-arm being adapted to engage the knuckle-lug, and said lever being adapted to engage the knuckle-tail, substantially as described.

812,994. **CAR-COUPLING.** ALEXANDER BOYD, Pittsburg, Pa. Filed Aug. 28, 1905. Serial No. 276,109.

Claim.—1. In a car-coupling, the combination with a knuckle, of a lever pivoted thereto, a pin carried by said lever, a lug on said knuckle, and a link connecting said pin and lug, substantially as described.

2. In a car-coupling, the combination with a knuckle, of a lever pivoted thereto, a pin carried by said lever, a lug on said knuckle, a link connecting said pin and lug, and a guard-arm on said lever, substantially as described.

3. In a car-coupling, the combination with a knuckle, of a lever pivoted thereto, a pin carried by said lever, a lug on said knuckle, a link connecting said pin and lug, and a guard-arm on said lever, said guard-arm being adapted to engage the knuckle-lug, substantially as described.

4. In a car-coupling, the combination with a knuckle, of a lever pivoted thereto, a pin carried by said lever, a lug on said knuckle, a link connecting said pin and lug, and a guard-arm on said lever, said guard-arm being adapted to engage the knuckle-lug, and said lever being adapted to engage the knuckle-tail, substantially as described.

812,986. DISPLAY-FORM. GEORGE GALLAND, Wilkes-Barre, Pa., assignor to Minnie S. Galland, Wilkes-Barre, Pa. Filed May 15, 1905. Serial No. 260,470.

Claim.—The herein-described display-form comprising the flat figure representing the face and having side lines forming the outlines of the head, neck, shoulders, upper portions of the arms, bust and hips of a human figure, said side lines corresponding in size and shape and being equidistant from the vertical center of the form, and the flat flap on the rear side of the form, hinged to the center thereof, and having its outer edge corresponding to the side lines thereof.

812,987. RESAWING ATTACHMENT FOR BAND-SAWS. MICHAEL GARLAND, Bay City, Mich., assignor to The M. Garland Company, Bay City, Mich. Filed Jan. 28, 1904. Serial No. 190,962.

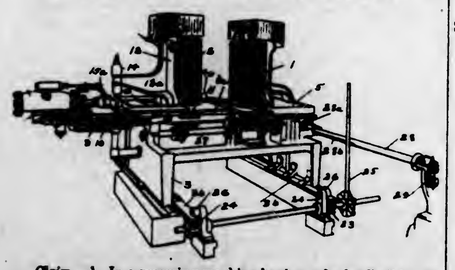

Claim.—1. In a resaw-machine having a feed-roll slide, capable of angular variations, the combination with the piston-rod pivotally connected to said slide; of a pivotally-mounted cylinder, and a piston therein, fixed to said rod, for the purposes set forth.

2. In combination with the sliding carriage and pressure-roll of a resaw-machine, a bracket mounted on said carriage and pivotally connected thereto near the bottom of said roll; a rearwardly-extending arm on said bracket; fixed cushions above and below said arm and adapted to limit its vertical movement; a cylinder having a fluid-actuated reciprocating piston, and means connecting said piston with said sliding carriage.

3. In combination with the movable pressure-roll carriage of a band-saw machine, a longitudinally-immovable cylinder having a fluid-actuated reciprocating piston, a piston-rod connecting said piston with said carriage; a two-part cross-head on said rod, the rear part of said cross-head being fixed to the rod and the forward part of said cross-head being slidably mounted on said rod; together with a cushion inserted between the parts of said cross-head, for the purposes set forth.

4. In a resaw-machine, the combination with the roll-carrying carriage capable of limited lateral movement at its rear end; of a pivotally-mounted cylinder having a fluid-actuated reciprocating piston; and a piston-rod fixed at one end to said piston and pivotally connected at its other end to the rear end of said carriage.

5. In a resaw-machine having a movable carriage and gage-rollers mounted thereon; a bar fixed at one end to said carriage and having a rack near its other end; a gear-wheel engaging said rack and adapted to actuate it back and forth; a lever adapted to rotate said gear-wheel; a quadrant; means for engaging the lever at different distances along the quadrant; and means for adjusting the quadrant lengthwise, for the purposes set forth.

6. In a resaw-machine, the combination of a frame carrying adjustable pressure-rolls and a fluid-actuated engine for moving said rolls back and forth, and gage-rolls and means for operating them back and forth; together with tracks carrying said frame; racks on said frame, pinions engaging said racks and adapted to move said frame back and forth along the tracks, for the purpose set forth.

7. In a resaw-machine the combination with tracks of a frame movably mounted thereon, means for moving said frame, a carriage movable on said frame, a bracket pivoted to said carriage, pressure-rollers carried by said bracket, an arm on said bracket and cushions engaging said arm, a fluid-operated engine carried by the frame and connected to the carriage to actuate it back and forth; a second carriage movable on said frame; a bracket fixed to said carriage; gage-rollers carried by said bracket, a bar fixed to said carriage and having a rack; a gear mounted in said frame and engaging said rack, a lever for actuating said gear, a quadrant to engage said lever, means for securing said quadrant to said lever, and means for adjusting said quadrant lengthwise; all arranged substantially as and for the purposes set forth.

8. In a sawing mechanism, the combination with suitable ways, of a carriage loosely mounted thereon, rolls secured to the carriage and adapted to engage the work, the rolls being spaced apart from each other, and means interposed between the carriage and the ways to provide points of contact with the ways which guide the line of travel of the carriage while permitting it to slew on the ways to cause the equal engagement of the rolls with the work.

9. In a resawing-machine, the combination with a suitable frame and a saw, of a carriage, rolls supported by the carriage and engaging the material to be sawed, and gibs secured to the carriage and comprising rocker members adapted to engage the frame to permit a lateral movement of the carriage for the purpose of causing the rollers to squarely engage and accommodate themselves to the surface of the material.

812,988. RAILROAD-RAIL. EMILE C. GENEUX, Jeanerette, La. Filed Nov. 25, 1905. Serial No. 289,074.

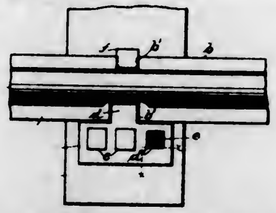

Claim.—A track-rail having base-flanges, a recess in a flange about the middle part of said rail, a cross-tie beneath said recess, an anchor-plate on said cross-tie at a side of said flange, a projection on said plate to engage said recess in said flange and holes in said plate through which spikes may be driven into said cross-tie, for the purpose specified.

812,989. POWER-BRAKE MECHANISM. CURTIS B. GOODE, Boston, Mass. Filed Jan. 4, 1905. Renewed Nov. 11, 1905. Serial No. 286,526.

Claim.—1. The combination with a vehicle provided with a rotatable shaft, of an air-compressor carried by said vehicle and provided with an air-inlet port and with an exhaust-port independent of said air-inlet port, a piston in said compressor, a reservoir communicating with said exhaust-port, a valve controlling said air inlet and exhaust ports, mechanism for operating said piston from said shaft, mechanism for operating said valve from said shaft to admit compressed air from said reservoir into said compressor to obtain an initial rise in pressure within said compressor, which is increased by the movement of said piston in said compressor, and a valve to control the exhaust from said reservoir, for the purpose specified.

2. The combination with a vehicle, of a fluid-compressor carried thereby and driven from a moving member or part of said vehicle, a reservoir communicating with said compressor, a valve controlling communication between said reservoir and said compressor and operated from said driven member or part of said vehicle, to admit compressed fluid from said reservoir into said compressor to obtain an initial rise in pressure within said compressor, and means to control the exhaust of compressed fluid from said reservoir, substantially as described.

3. The combination with a movable member, of a fluid-compressor driven from said movable member, a reservoir communicating with said compressor, a valve controlling communication between said reservoir and said compressor and operated from said movable member to admit compressed fluid from said reservoir into said compressor to obtain an initial rise in pressure within said compressor, and means to control the exhaust of compressed fluid from said reservoir, substantially as described.

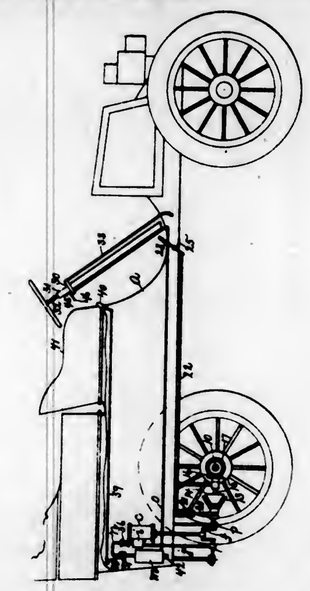

812,990. WHEELBARROW. WILLIAM GOSSETT, Falls City, Nebr. Filed Mar. 2, 1905. Serial No. 248,108.

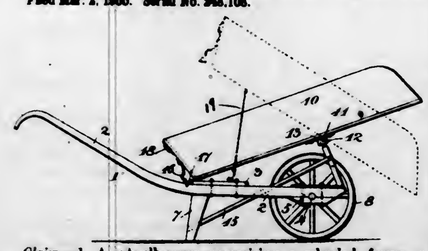

Claim.—1. A wheelbarrow comprising a wheeled frame, a bracket upon said frame extending vertically above the wheel, a body, and a ball-and-socket connection between the body and the said bracket, at a point directly over the wheel, pivotally connecting the body to the bracket for universal angular movement to enable the body to be supported normally in an inclined position with one end resting on the frame or to be turned and tilted to any desired angle.

2. A wheelbarrow comprising a wheeled frame, a bracket upon said frame having a bearing ball or head disposed directly over said wheel, a body, a bearing-socket upon the bottom of said body and adapted to receive said bearing-ball, said socket being nearer to one end of said body than to its other end whereby one end of said body will be overbalanced.

812,991. RAILROAD-TIE. SAMUEL N. GRIFFITH, Chicago, Ill. Filed May 14, 1904. Serial No. 207,913.

Claim.—1. A railroad-tie comprising a metallic trough, and a pair of metal-bound blocks seated in said trough and adapted to receive the spikes employed in securing the rails in place, each block and its metal binding being removable as a unit from the balance of the structure.

2. A railroad-tie comprising a longitudinal member, and metal-bound blocks secured to the opposite end portions of the said member, said blocks being adapted to receive the spikes employed in securing the rails in place, each block and its metal binding being removable as a unit from the balance of the structure.

3. A railroad-tie comprising a metal trough, metal-bound blocks of wood seated in the opposite end portions of said trough and bolts extending through the trough and blocks to hold the latter in place, each block and its metal binding being removable as a unit from the balance of the structure.

4. A railroad-tie comprising a metal trough, metal bands seated in said trough, blocks of wood inclosed by said bands, said blocks being in a position to receive the rails, and bolts extending through the trough, bands and blocks, to hold the latter in place.

5. A railroad-tie comprising a metal trough having its sides provided with ears, blocks seated in the trough between said ears, said blocks extending a suitable distance above the ears, and bolts extending through the ears and blocks to hold the latter in place.

812,992. FLUSHING APPARATUS FOR WATER-CLOSETS. WILLIAM U. GRIFFITHS, Philadelphia, Pa. Filed Nov. 25, 1904. Serial No. 234,145.

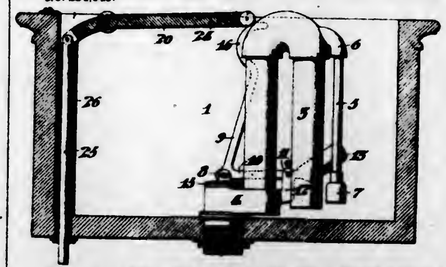

Claim.—1. A flush tank provided with a port, a siphon located in the said tank, and means for opening and closing the said port, the said means comprising a pivoted lever which is provided with a cam projection, a valve secured to the said lever and being movable with the said lever to open and close the said port, and a lever adapted to contact with and travel over the said cam projection.

2. A flush tank provided with a port, an angular lever located in the said tank, one portion of which lever is pivotally secured to a suitable support and the other portion of which is provided with a cam projection, a valve secured to the said lever and adapted to close the said port, and a pivoted lever having one of its ends adapted to contact with and to travel over the said cam projection.

3. A flush tank provided with a port, a lever comprising two arms arranged at an angle to each other, one of the said arms being pivotally secured upon a suitable support within the said tank and the other of said arms extending upwardly toward the top of said tank and being provided at its upper end with a cam projection, a valve secured to the said lever, and a pivoted lever having one of its ends adapted to contact with and travel over the said cam projection.

4. A flush tank provided with a port, a lever consisting of two parts arranged at an angle to each other, one of which is pivotally secured upon a suitable support within the said tank and which part has a weight at its extreme end to counterbalance the weight of the said lever, and the other of which parts is provided with a cam projection, a valve secured to the said lever, and a movable lever having one of its ends adapted to contact with and travel over the said cam projection.

5. A flush tank provided with a port, a lever consisting of two arms arranged at an angle to each other, one of the said arms occupying a substantially horizontal position within the said tank and being pivotally secured upon a suitable support, and the said arm being extended beyond its point of support and provided with a weight, the other of the said arms extending upwardly toward the top of the

tank and being provided with a cam projection, a valve supported upon the said lever and adapted to close the said port, and a movable lever having one end adapted to contact with and travel over the said cam projection.

6. In an apparatus of the character described, a flush tank having a port, a siphon having communication with the flush pipe leading from the tank, a supporting arm secured to the said siphon, a lever comprising two arms arranged at an angle to each other, one of the said arms being pivotally secured upon the supporting arm and extended beyond its pivoted point, the extended portion thereof being provided with a weight, and the other arm of the said lever extending upwardly toward the top of the flush tank and being provided with a cam, a valve pivotally secured upon the said lever and adapted to close the said port, and a pivoted lever having one end adapted to contact with and travel over the said cam.

7. An apparatus of the character described, a flush tank provided with a port, and a siphon secured within the said tank and being in communication with a flush pipe, a siphon breaking device connected to the said siphon, a lever comprising two arms arranged at an angle to each other, one of the said arms being pivotally secured upon a suitable support within the said tank, and the other of said arms extending upwardly toward the top of the said tank and being provided with a cam, a valve secured to the said lever and being adapted to close the said port, and a pivoted lever having one end adapted to contact with and to travel over the said cam projection.

812,993. CARD-MOUNTING. CHRISTOPHER C. HARPER, Audubon, Iowa. Filed Jan. 5, 1905. Serial No. 239,736.

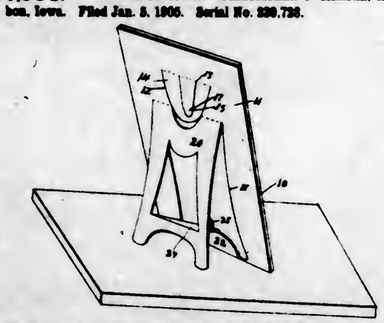

Claim.—In a card-mounting, a face-card, a flexible back-card having a leg formed therein by cutting through the card, said leg extending from a point near the top to a point near the bottom of the back-card and its lower end capable of swinging outwardly away from the face-card, said leg provided with a brace formed by cutting through the leg, said brace extending from a point near the bottom of the leg to a point near its top, the brace being capable of folding inwardly on a line near its lower end to position approaching a right angle relative to the leg, said brace formed with a tongue at its free end and said tongue formed with a handle, the part comprising said tongue and handle provided with a hinge connection with the brace, said back-card also formed with a locking-lug near its lower end extended upwardly from the bottom of the back-card at the central portion thereof, said locking-lug parallel with and free from the face-card to permit the introduction of the said tongue between it and the face-card and to retain it therein against displacement by pressure tending to move the leg and face-card away from each other, the margins of said front and back cards secured together.

812,994. APPARATUS FOR MAKING WIRE-GLASS. JOSEPH HEIDENKAMP, Springdale, Pa. Filed May 5, 1905. Serial No. 260,957.

Claim.—1. In apparatus for making wire-glass, the combination of a casting-table and roller coöperating therewith, and securing means for the wire mesh at each side of said table and extending transversely to the roller-axis, one at least of said securing means being movable toward and from the edge of the table thereby to tighten the mesh.

2. In apparatus for making wire-glass, the combination of a casting-table and roller coöperating therewith, and securing means for the wire mesh at each side of said table and extending transversely to the roller-axis, the securing means at one side at least being rotatable thereby to tighten said mesh.

3. In apparatus for making wire-glass, the combination of a casting-table and a roller coöperating therewith, securing means for the wire meshing at each side of said table and extending transversely to the roller-axis, the securing means at one side at least being a rotatable shaft, a worm-wheel on said shaft, and a driven worm-wheel meshing with said worm-wheel.

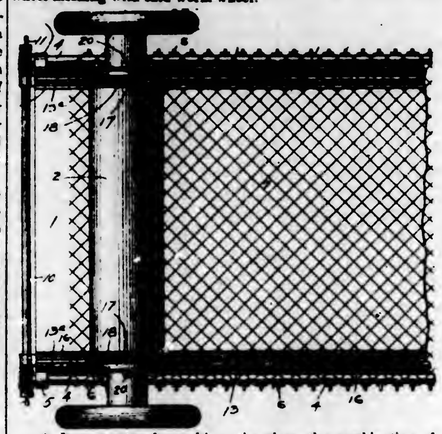

4. In apparatus for making wire-glass, the combination of a casting-table and roller coöperating therewith, securing means for the wire mesh at each side of said table and extending transversely to the roller-axis, and means connecting said securing means and arranged to move the same simultaneously away from the table thereby to tighten the mesh.

5. In apparatus for making wire-glass, the combination of a casting-table and roller coöperating therewith, a series of studs or hooks extending transversely to the roller-axis at each side of the table for the attachment of the wire mesh, and a movable bar to which at least one series of said studs is attached thereby to tighten said mesh.

6. In apparatus for making wire-glass, the combination of a casting-table and roller coöperating therewith, a series of studs or hooks extending transversely to the roller-axis at each side of the table for the attachment of the wire mesh, and a rotatable shaft by which at least one series of said studs is carried.

7. In apparatus for making wire-glass, the combination of a casting-table and roller coöperating therewith, a rotary shaft at one side of said table and extending transversely to the roller-axis, means for the attachment of the mesh to said shaft, and means for holding the opposite edge of said wire mesh.

8. In apparatus for making wire-glass, the combination of a casting-table and roller coöperating therewith, a rotatable shaft at each side of the table and extending transversely to the roller-axis, means connecting said shafts and arranged to rotate the same simultaneously in opposite directions, and means for attaching wire mesh to said shafts.

9. In apparatus for making wire-glass, the combination of a casting-table and roller coöperating therewith, a rotatable shaft at each side of the table and extending transversely to the roller-axis, a driving-shaft geared to both of said side shafts and arranged to rotate the same in opposite directions, and means for attaching wire mesh to said side shafts.

10. In apparatus for making wire-glass, the combination of a casting-table provided with a groove near each side edge, holding means for wire mesh located at each side of the table outside of said grooves, bars adapted to be placed over said grooves and above the mesh, and a roller coöperating with the table and bearing on said bars.

11. In apparatus for making wire-glass, the combination of a casting-table provided with a groove near each side edge, securing means for the wire mesh located outside of said grooves, bars adapted to be placed over said grooves and above the mesh, and a roller coöperating with the table and provided with bearing-grooves traveling on said bars whereby to stretch the wire mesh and hold the roller squarely across the table.

12. In apparatus for making wire-glass, the combination of a casting-table provided with a groove near each side edge, means for securing wire mesh along one edge of the table outside the groove, a rotatable shaft on the opposite edge of the table outside the groove,

means for securing the wire mesh to said rotatable shaft, bars adapted to be placed over said grooves and above said mesh, and a roller coöperating with the table and bearing on said bars.

13. In apparatus for making wire-glass, the combination of a casting-table, cutting-shoulders on said table along both sides, securing means for the wire mesh located outside of said cutting-shoulders, a roller coöperating with said table, and cutting-disks on said roller coöperating with the cutting-shoulders on the table.

14. In apparatus for making wire-glass, the combination of a casting-table and coöperating roller, bars provided with cutting-shoulders placed along the edges of the table, securing means for wire mesh located outside of said bars, and cutting-disks on said roller coöperating with the shoulders on said bars.

15. In apparatus for making wire-glass, the combination of a casting-table provided with a groove near each side edge, changeable bars located inside of said grooves and adapted to support the wire-mesh and forming cutting-shoulders, securing means for the wire mesh located outside of said grooves, changeable bars adapted to be placed over said grooves and on top of the mesh, and a roller coöperating with the table and bearing on the last-named bars and having cutting-disks coöperating with the shoulders on the cutting-bars.

16. In apparatus for making wire-glass, the combination of a casting-table provided with a groove near each side edge, changeable bars located inside of said grooves and adapted to support the wire mesh securing means for the wire mesh located outside of said grooves, changeable bars adapted to be placed over said grooves and on top of the mesh, and a roller coöperating with the table and bearing on the last-named bars.

812,995. FOOT-RELEASE VALVE FOR PNEUMATIC ACTIONS FOR ORGANS AND PIANOS. OSCAR HERRMANN, Brown Station, N. Y. Filed Oct. 13, 1905. Serial No. 283,313.

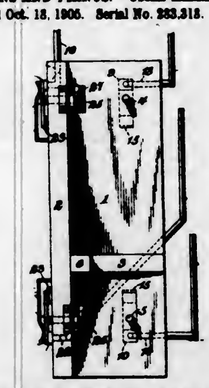

Claim.—1. In a device of the class described, the combination of a foot-piece having a foot-receiving fulcrum and provided at opposite sides of the same with valves, and valve-actuating mechanism projecting from the foot-piece and arranged to be operated by the foot.

2. In a device of the class described, the combination of a foot-piece having a foot-receiving fulcrum and provided at opposite sides of the same with valves, and valve-actuating mechanism projecting from the foot-piece and embodying a reciprocatable plunger.

3. In a device of the class described, the combination of a foot-piece having a fulcrum, front and rear valves, and vertically-reciprocatable plungers mounted on the foot-piece and arranged to engage the valves.

4. In a device of the class described, the combination of a foot-piece having an upright fulcrum, and valve-operating mechanism arranged to be actuated by horizontal oscillatory movement of the foot and embodying horizontally-reciprocatable plungers.

5. In a device of the class described, the combination of a foot-piece having a foot-receiving fulcrum and provided at opposite sides of the same with valves, and valve-actuating mechanism projecting from the foot-piece and embodying a reciprocatable plunger, and a movable plate or member arranged to be engaged by the foot for actuating the plunger.

6. In a device of the class described, the combination of a foot-piece having a foot-receiving fulcrum and provided at opposite sides of the same with valves, and valve-actuating mechanism projecting from the foot-piece and embodying a reciprocatable plunger, and a plate or member hinged to the foot-piece and projecting therefrom at an angle.

7. In a device of the class described, the combination of a foot-piece having a fulcrum and provided in advance and in rear of the same with upright and horizontal foot-receiving fulcrums, valves arranged in pairs, and valve-operating mechanisms embodying vertically and horizontally reciprocatable plungers.

8. In a device of the class described, the combination of a foot-piece provided with valves, a vertically-reciprocatable plunger engaging one of the valves and arranged to be directly operated by the foot, a horizontally-reciprocatable plunger engaging the other valve, and a movable plate or member arranged to be engaged by the foot for actuating the horizontally-reciprocatable plunger.

9. In a device of the class described, the combination of a foot-piece having horizontal and upright fulcrums, valves arranged in pairs, vertically and horizontally reciprocatable plungers arranged to engage the valves, the vertically-reciprocatable plunger being arranged to be directly engaged by the foot, and movable plates or members arranged to be engaged by the foot for actuating the horizontally-reciprocatable plungers.

10. In a device of the class described, the combination of a foot-piece having an upright supporting portion, a transverse fulcrum mounted on the foot-piece, an upright fulcrum arranged at the upright supporting portion, front and rear valves arranged in pairs, the members of each pair being located beneath the foot-piece and at the outer face of the upright supporting portion respectively, vertically-movable plungers guided on the foot-piece and engaging the valves beneath the same and arranged to be directly operated by the foot, horizontally-movable plungers engaging the valves of the upright supporting portion, and plates or members movably connected with the supporting portion and arranged to be engaged by the foot for actuating the horizontally-movable plungers.

812,996. GIANT SWING. THOMAS G. HILL, Portland, Oreg. Filed Nov. 10, 1904. Serial No. 232,061.

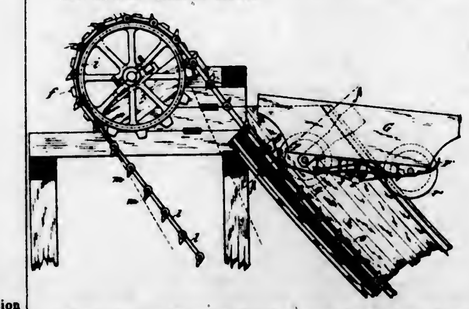

Claim.—1. A pleasure-railway comprising two tangential incline frames facing each other and having two continuous rail-tracks on their upper surfaces connected at the lower ends, one track of narrower gage being placed between the rails of the other, the ascending grade of one track increasing over that of the other such a percentage on each incline as will retain the car G in horizontal position to all places; below the track on each incline the motive mechanism consisting of the sprocket-wheels *f f'* and *g g'* suitably mounted, endless sprocket-chains *h h'* of suitable length, adapted to pass through the slotted grooves *o o'* the links *l l* being formed with the gripping-teeth *m m* passing through the slots and having friction-rollers *n n'*; a tripping-block E with sloping surface near the upper end of each incline, adapted to raise the grip-lever F of the car in gripping engagement; a car G having wheels gaged to run on the respective tracks and beneath it secured thereto, pivotally mounted automatic grip-levers F F' adapted to engage the teeth of the sprocket-chains and be raised by the tripping-block E, also having suitable means to catch and release the levers, also to retain them from dropping; and suitable motive mechanism with means to transmit the power, all substantially as described.

2. In a pleasure-railway the combination of two oppositely-placed tangential incline frames having continuous and connected tracks upon them, suitably arranged to retain the car G in horizontal position at all places; on each incline endless sprocket-chains suitably

mounted and arranged, having gripping-teeth m m, adapted to engage the grip-levers F F' of a car; motive mechanism and means of transmitting the power to the sprocket-chains; a lever-tripping block H on each incline; and a car G having wheels gaged to run on the respective tracks and also having beneath it secured thereto, pivotally-mounted, automatic grip-levers F F' adapted to engage the teeth of the sprocket-chains and be raised by the tripping-block H and suitable latching, holding and releasing means for the levers, all substantially as described.

812,997. MOTOR-CHAIR. JOHN A. HIBBURD, Troy, Ala. Filed June 15, 1905. Serial No. 265,457.

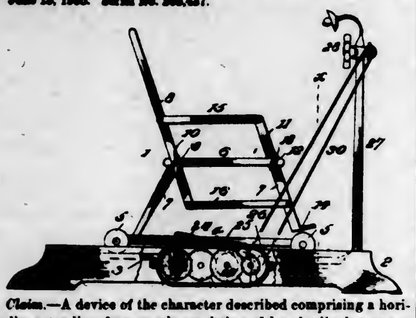

Claim.—A device of the character described comprising a horizontally-extending framework consisting of longitudinal runners, an intermediate longitudinal runner or bar and cross-bars connecting the same, longitudinally-extending rails carried by the two outside longitudinal runners or bars, a chair provided with a bottom frame 4 having supporting-rollers at its ends mounted on said rails, a motor, a casing for said motor, said casing being secured to and carried by the intermediate longitudinal bar, a train of gearing mounted in said casing and operatively connected with the shaft of said motor, bracket-lugs 26 projecting downwardly from the bottom frame of the chair, a pitman connected at one end to said lugs, and a crank operatively connecting said pitman with the said train of gearing, as and for the purpose set forth.

812,998. PLOW FOR BOOKBINDERS. JOHANNES HINKLEIN, Frankfort-on-the-Main, Germany, assignor to The Firm of Maschinenhandlung von Max Stern & Co., Frankfort-on-the-Main, Bockenheim, Germany. Filed May 11, 1904. Serial No. 207,486.

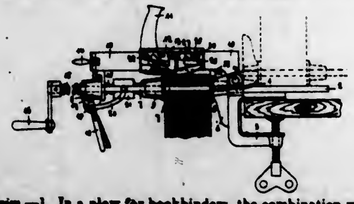

Claim.—1. In a plow for bookbinders, the combination with a stationary and a movable cheek adapted to clamp in the folded and collected sheets of paper; means for holding said cheeks; a slide adapted to be moved above the back of the paper and across to the same; a laterally-displaceable guide for said slide; a knife-holder attached to said slide, and an exchangeable knife attached to said holder; a pivot upon which the said holder may turn; a recess in the holder having upwardly-extending elongations of different heights; a horizontally-displaceable pin located in the slide and adapted to take in any of said elongations; and a spring adapted to keep the holder and knife in working position, substantially and for the purpose as described.

2. In a plow for bookbinders, the combination with a stationary and a movable cheek adapted to clamp in the folded and collected sheets of paper; means for holding said cheeks; a slide adapted to be moved above the back of the paper and across to the same; a handle fixed to said slide; a laterally-displaceable guide for said slide; a vertically-adjustable knife attached to the said slide, an abutment fixed to the guide and adapted to retain the paper at the place where the knife is pushed through the same, substantially and for the purpose as described.

812,999. DISPLAY-TRAY. JACOB J. HOFFMANN, Jersey City, N. J. Filed Dec. 7, 1905. Serial No. 290,969.

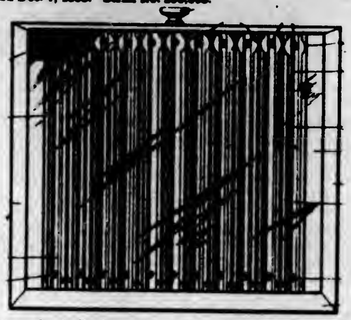

Claim.—1. A display-support for collar-buttons or the like comprising a base, a plurality of channel-guides arranged in parallel relation upon said base and having their side edges bent upwardly and inwardly to overhang their bottoms, said side edges being bent downwardly to close one end of said guide and having formed in them at opposite points, at the other end of said guide, recesses to permit of the insertion and removal of buttons or the like to and from said guide, and means for securing said guides upon said base.

2. A display-support for collar-buttons or the like comprising a box or casing having a transparent cover, a sliding drawer or tray in said casing, and a plurality of channel-supporting guides for collar-buttons or the like secured in parallel relation upon the upper face of said tray.

3. A display-support for collar-buttons or the like comprising a box or casing having a transparent cover, a sliding drawer or tray in said casing, and a channel-supporting guide for collar-buttons or the like secured upon the upper face of said tray and having its side edges bent upwardly and inwardly to overhang its bottom, said side edges being pressed downwardly at one end of the guide to close the same and being formed at the opposite end of the guide with recesses to permit of the insertion and removal of buttons to and from said guide, substantially as shown and described.

813,000. BAND-CUTTER AND FEEDER. LARS N. HOLM, Bryant, S. D. Filed Apr. 26, 1904. Serial No. 204,726.

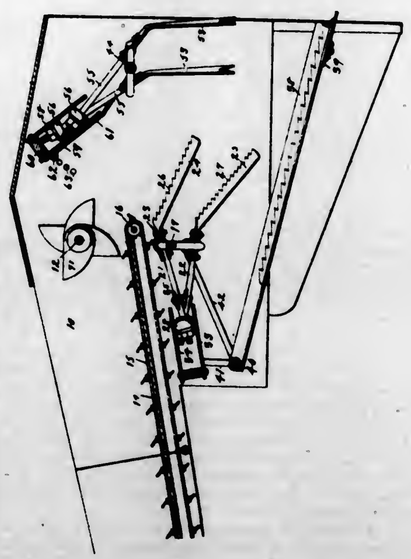

Claim.—1. In a feeder, the combination of a frame, a shaft rotatably mounted in the frame and having a crank-arm arranged at an acute angle relative to the shaft, means for rotating the shaft and a distributing-arm mounted on the crank-arm.

2. In a feeder, the combination of a machine-frame, a rotatable shaft mounted therein and having a crank-arm arranged at an acute angle relative to the shaft, means for rotating the shaft, a distributing-arm mounted on the crank-arm and an adjustable guide for the distributing-arm.

3. In a feeder, the combination of a frame, a rotatable shaft mounted in the frame and having a crank-arm arranged at an acute angle relative to the shaft, means for rotating the shaft, a distributing-arm on the crank-arm, a roller on the distributing-arm and a guide for the roller.

4. In a feeder, the combination of a frame, a rotatable shaft mounted in the frame having a crank-arm arranged at an acute angle relative to the shaft, means for rotating the shaft, a number of distributing-arms mounted on the crank-arm and a guide for said distributing-arms.

5. In a feeder, the combination of a frame, a rotatable shaft mounted in the frame having a crank-arm arranged at an acute angle relative to the shaft, means for rotating the shaft, a number of distributing-arms mounted on said crank-arm, an adjustable guide for said distributing-arms and means for connecting the distributing-arms with each other.

6. In a feeder, the combination of a frame, a rotatable shaft mounted in the frame having a crank-arm arranged at an acute angle relative to the shaft, means for rotating the shaft, two distributing-arms mounted on the crank-arm, means for holding two adjacent ends of said distributing-arms spaced apart and a guide for said arms.

7. In a feeder, the combination of a frame, a shaft rotatably mounted in the frame having a crank-arm arranged at an acute angle relative to the shaft, means for rotating the shaft, two distributing-arms mounted on the shaft and a coupling-rod pivotally connected with both distributing-arms.

8. In a feeder, the combination of a machine-frame having a crank-arm arranged at an acute angle relative to the shaft, means for rotating the shaft, two distributing-arms mounted on the shaft and a coupling-rod connected to both of said arms and capable of universal movement relative to each arm.

9. In a feeder, the combination of a frame, a shaft rotatably mounted in the frame having a crank-arm arranged at an acute angle relative to the shaft, means for rotating the shaft, a number of distributing-arms pivoted to the crank-arm, means for connecting said distributing-arms with each other and an adjustable guide for said distributing-arms.

10. In a feeder, the combination of a machine-frame, a shaft rotatably mounted in the machine-frame and having a crank-arm arranged at an acute angle relative to the shaft, means for rotating the shaft, a number of distributing-arms mounted on the crank-arm, means for connecting the adjacent ends of said distributing-arms, a roller on each distributing-arm and a guide to receive said rollers.

11. In a feeder, the combination of a frame, a shaft rotatably mounted in the frame having a crank-arm arranged at an acute angle relative to the shaft, means for rotating the shaft, two distributing-arms mounted on the crank-arm, a roller on each distributing-arm and a guide comprising two plates supported by the frame and spaced apart to receive said rollers between them.

12. In a feeder, the combination of a frame, a shaft rotatably mounted in the frame and having a crank-arm arranged at an acute angle relative to the shaft, means for rotating the shaft, two distributing-arms mounted upon the crank-arm, a ball-bearing roller on each distributing-arm and a guide comprising two plates spaced apart supported by the frame and having said ball-bearing rollers inserted between them.

13. In a feeder, the combination of a frame, means supported by the frame for advancing a layer of stock, a rotatable shaft mounted in the frame having a crank-arm arranged at an acute angle relative to the shaft, means for rotating the shaft, two distributing-arms mounted upon said crank-arm beneath the stock-advancing means one end of each distributing-arm inclined downwardly and toward the delivery end of the frame and having its top edge serrated, the other end of each arm projected in opposite directions and a guide for the latter ends of the distributing-arms.

14. In a feeder, the combination of a frame, a rotatable shaft mounted in the frame having a crank-arm arranged at an acute angle relative to the shaft, means for rotating the shaft, two distributing-arms mounted on the crank-arm, each having one end projected downwardly and forked and each also having its other end projecting upwardly and rearwardly, and a guide for the upper end of said distributing-arms.

15. In a feeder, the combination of a frame, a shaft rotatably mounted in the frame having a crank-arm arranged at an acute angle relative to the shaft, means for rotating the shaft, a distributing-arm mounted on the crank-arm having one end extended downwardly and forked and its other end extended upwardly and rearwardly, and a guide supported by the frame arranged parallel with the shaft and receiving the upper end of the distributing-arm.

16. In a feeder, the combination of a frame, means supported by the frame for advancing a layer of stock, means for operating said stock-advancing means, a rotatable shaft supported by the frame beneath the stock-advancing means, means for rotating said shaft, a number of crank-arms formed on said shaft each arranged at an acute angle relative to the shaft, two distributing-arms mounted on each of said crank-arms, each distributing-arm having one end inclining downwardly and toward the delivery end of the machine and positioned to engage the under surface of a layer of stock discharged from the stock-advancing means and each having its other end extended in an opposite direction in a substantially horizontal plane, a guide substantially parallel with the shaft to receive the latter-mentioned ends of the distributing-arms, a second shaft rotatably mounted in the frame above the stock-advancing means and having a number of crank-arms arranged at acute angles relative thereto, means for rotating said shaft, two distributing-arms mounted on each of said crank-arms, each distributing-arm having one end inclined downwardly toward the stock-advancing means and the other end inclined upwardly and away from the delivery end of the machine, and a guide substantially parallel with said shaft for receiving the upwardly-extending ends of said distributing-arms, said latter set of arms arranged to engage the top of a layer of stock on the stock-advancing means.

17. In a feeder, the combination of a frame, means supported by the frame for advancing bundles of stock, a shaft mounted in the frame above the bundle-advancing means, means for rotating said shaft, and a knife fixed to the shaft and comprising a body portion formed with two loops arranged at divergent angles relative to each other, a blade portion formed with projections to enter said loops and a lock for securing the blade portion to the body portion.

18. In a feeder, the combination of a frame, means supported by the frame for advancing bundles of stock, a shaft mounted in the frame above the bundle-advancing means, means for rotating said shaft, a knife fixed to said shaft comprising a body portion formed with two loops arranged nearly at right angles to each other, a blade portion having projections arranged nearly at right angles to each other to enter said loops and a lock for securing the blade to the body portion.

19. In a feeder, the combination of a frame, means supported by the frame for advancing bundles of stock, a shaft mounted in the frame above the bundle-advancing means, means for rotating said shaft, a knife fixed to said shaft and comprising, a body portion formed with two loops and a hook, a blade portion formed with two projections to enter said loops and formed with an opening to receive said hook, and a lock on the body portion to engage the blade portion and hold it against the hook.

20. In a feeder, the combination of a frame, means supported by the frame for advancing bundles of stock, a shaft mounted in the frame above the bundle-advancing means, means for rotating said shaft, a knife on the shaft comprising a body portion formed with two loops and a hook, a blade portion formed with projections to enter the loops and also formed with an opening to receive the hook, and a lock pivoted to the body portion projected through a slot in the body portion and shaped to engage a part of the blade portion and hold it against said hook.

21. In a feeder, the combination of a frame, means supported by the frame for advancing bundles of stock, a shaft mounted in the frame above the bundle-advancing means, means for rotating said shaft, a knife fixed to the shaft comprising a body portion formed complete of a single piece of sheet metal and having two loops arranged nearly at right angles to each other and also having a hook, a blade portion formed complete of a single piece of sheet metal having two projections nearly at right angles to each other to enter said loops and also having an opening to receive said hook, and a lock attached to the body portion to engage one edge of the blade portion and hold it firmly against said hook.

22. In a feeder, the combination of a frame, means supported by the frame for advancing bundles of stock, a shaft mounted in the frame above the bundle-advancing means, means for rotating said

shaft, a knife fixed to the shaft comprising a body portion formed complete of a single piece of sheet metal and having one straight edge provided with a loop near one corner, a loop near the center of said straight edge nearly at right angles to the first and a hook near the other end of said straight edge extended inwardly toward the center of the body portion, a blade portion formed complete of a single piece of sheet metal having near one edge a rounded projection to enter the first loop, a second projection to enter the second of said loops, an opening to receive the said hook, and a lock pivoted to one surface of the body portion extended upwardly through a slot in the body portion and having its free end projected in a direction toward the hook.

813,001. SHOE-RACK TAG. CHARLES H. HOLT, Brockton, Mass. Filed Mar. 2, 1905. Serial No. 248,151.

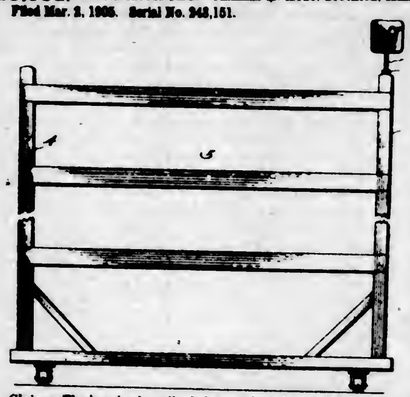

Claim.—The herein-described shoe-rack and marking-tag therefor, consisting of a rack having upwardly-projecting corner-posts, a socket formed in said corner-posts, and a metal tube fitted therein, and a marking-tag consisting of a supporting-rod having a flattened upper portion, a sheet-metal tag-plate riveted to said flattened upper portion, a sheet-metal tag-plate riveted to said flattened upper portion of said rod and provided with a designating mark or number, the lower end of said rod being round and blunt or unpointed, and adapted to be placed in the metal tube in the corner-post, essentially as described.

813,002. GAGE FOR IVORY-NUT SAWS. JOHN HORNBY, New York, N. Y. Filed May 12, 1905. Serial No. 260,108.

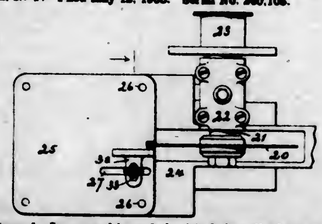

Claim.—1. In a machine of the kind described, a gage for an ivory-nut saw provided with two edges in a plane parallel to the cutting-plane of the saw and having between them a recess.

2. In a machine of the kind described, a gage for an ivory-nut saw provided with two edges in a plane parallel to the cutting-plane, having between them a recess, and provided with means for varying the distance between the edges.

3. In a machine of the kind described, a gage for an ivory-nut saw provided with two edges in a plane parallel to the cutting-plane, having between them a recess, and provided with means for varying the distance between the plane of said edges and the said cutting-plane.

4. In a machine of the kind described, a gage for an ivory-nut saw, said gage being constructed to provide for two edges in a plane parallel to the cutting-plane, having between them a recess, and comprising a base member having one of said edges, an upper member having the other of said edges and adjusting means connecting said members with each other.

5. In a machine of the kind described, a gage for an ivory-nut saw provided with two edges in a plane parallel to the cutting-plane, having between them a recess, and provided with means for varying the distance between the plane of said edges and the said cutting-plane, comprising a transverse slot in the base of the gage and a bolt adapted to pass through the slot to secure the gage in position.

6. In a machine of the kind described, a gage for an ivory-nut saw provided with two edges in a plane parallel to the cutting-plane of the saw and having between them a recess, in combination with a base-plate in a plane at an angle to the cutting-plane.

7. In a machine of the kind described, a gage for an ivory-nut saw provided with two edges in a plane parallel to the cutting-plane of the saw and having between them a recess, in combination with a base-plate in a plane at an angle to the cutting-plane, and means for varying the distance between the said edges.

8. In a machine of the kind described, a gage for an ivory-nut saw provided with two edges in a plane parallel to the cutting-plane of the saw and having between them a recess, in combination with a base-plate in a plane at an angle to the cutting-plane, provision being made for varying the distance between the said edges, one edge being carried by a separable upper member connected to the base of the gage by screws or bolts.

9. In a machine of the kind described, a gage for an ivory-nut saw provided with two edges in a plane parallel to the cutting-plane of the saw and having between them a recess, in combination with a base-plate in a plane at an angle to the cutting-plane and provided with means for varying the distance between the plane of said edges and the said cutting-plane.

10. In a machine of the kind described, a gage for an ivory-nut saw provided with two edges in a plane parallel to the cutting-plane of the saw and having between them a recess, in combination with a base-plate in a plane at an angle to the cutting-plane and provided with means for varying the distance between the plane of said edges and the said cutting-plane, comprising a slot in the base-plate connected to the supporting means for the gage by screws or bolts.

11. In a machine of the kind described, a gage for an ivory-nut saw provided with two guiding edges in the same vertical plane and recessed between them away from the plane of the saw.

813,008. APPARATUS FOR ASCERTAINING ERRORS IN THE ALINEMENT OF SHAFTING AND FOR LIKE PURPOSES. ARTHUR B. HORSFALL, Halifax, England. Filed Aug. 14, 1905. Serial No. 274,130.

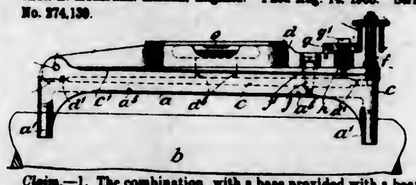

Claim.—1. The combination, with a base provided with a bearing-surface on its under side, of a bar arranged above the said base and provided with a sharp edge at one end which rests pivotally on the upper surface of the base, a loose connection which permits the said bar to slide to a limited extent upon the base, a level carried by the said bar, and a screw which adjusts the other end portion of the said bar vertically with relation to the said base.

2. The combination, with a base provided with a bearing-surface on its under side, of a bar supported by the said base and provided with a level, an indicating-screw which moves one end portion of the said bar vertically, a toothed indicating-disk journaled adjacent to the said screw, and a projection carried by the said screw and engaging with the said disk.

3. The combination, with a base provided with a bearing-surface on its under side, of a bar supported by the said base and provided with a level, an indicating-screw which moves one end portion of the said bar vertically, a toothed indicating-disk journaled adjacent to the said screw, a friction brake device which prevents the said disk from being revolved accidentally, and a projection carried by the said screw and engaging with the said disk.

813,004. FOLDING BED. FREDERICK J. HUBBARD, Detroit, Mich., assignor to William B. Partridge and Henry Blackwell, Detroit, Mich. Filed Apr. 10, 1905. Serial No. 254,704.

Claim.—1. In a folding bed, the combination with relatively movable front and rear frames connected by lazy-tongs, of a vertically-swinging mattress-support having end bars shiftingly fulcrumed on the said rear frame, and links connecting the said end bars pivotally with the said front frame.

2. In a folding bed, the combination with relatively movable front and rear frames connected by lazy-tongs, of a vertically-swinging mattress-support having end bars shiftingly fulcrumed near their transverse centers on the said rear frame, links connecting the said end bars pivotally with the said front frame, catch mechanism operating automatically to lock the mattress-support, when in its horizontal position, against closing movement, and catch-releasing means.

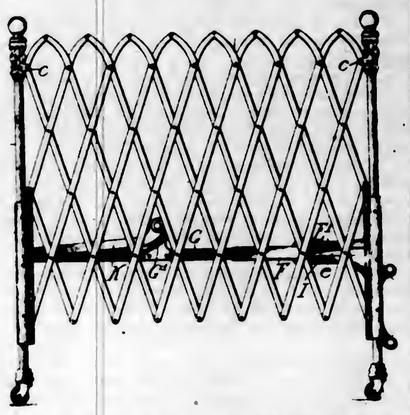

3. In a folding bed having frames which slide toward and away from each other in the folding and unfolding operations, a vertically-swinging mattress-support having parallel bars slidably fulcrumed near their transverse centers on sliding bearing-supports on one of the said frames.

4. In a folding bed, the combination with relatively movable front and rear frames connected by lazy-tongs, of a vertically-swinging mattress-support having end bars slidably fulcrumed near their transverse centers on sliding bearing-supports on the said rear frame.

5. In a folding bed, the combination with relatively movable front and rear frames connected by lazy-tongs, of a vertically-swinging mattress-support having end bars connected by swinging links with the front frame and shiftingly fulcrumed near their transverse centers on the rear frame.

6. In a folding bed, the combination with relatively movable front and rear frames connected by lazy-tongs, of a vertically-swinging mattress-support having end bars connected by swinging links with the front frame and slidably fulcrumed near their transverse center on sliding bearings on the rear frame.

7. In a folding bed, the combination with relatively movable front and rear frames, of a vertically-swinging mattress-support having end bars connected by swinging links toward opposite sides with the front and rear frames, and slidably fulcrumed near their transverse centers on sliding bearing-supports on the said rear frame.

8. In a folding bed, the combination with relatively sliding front and rear head-posts connected by lazy-tongs and relatively sliding front and rear foot-posts similarly connected, of a swinging mattress-support having end bars shiftingly fulcrumed near their transverse centers on the said rear posts and swinging link connections between the said bars and the said front posts.

9. In a folding bed, the combination with relatively sliding front and rear head-posts connected by lazy-tongs and relatively sliding front and rear foot-posts similarly connected, of a swinging mattress-support having end bars shiftingly fulcrumed near their transverse centers on the said rear posts, and swinging link connections between the said bars and the said front and rear posts at opposite sides of the end-bar fulcrums.

10. In a folding bed, the combination with relatively sliding front and rear head-posts connected by lazy-tongs and relatively sliding front and rear foot-posts similarly connected, of forward-extending arms upon the said posts, and a vertically-swinging mattress-support having end bars slidably fulcrumed near their transverse centers upon the said arms.

11. In a folding bed, the combination with relatively sliding front and rear head-posts connected by lazy-tongs, and relatively sliding front and rear foot-posts similarly connected, of forward-extending arms upon the said rear posts, sliding bearing extensions on the said arms, and a vertically-swinging mattress-support having end bars fulcrumed near their transverse centers upon said bearing extensions.

12. In a folding bed, the combination with relatively sliding front and rear head-posts connected by lazy-tongs, and relatively sliding front and rear foot-posts similarly connected, of forward-extending arms upon the rear posts, sliding bearing extensions on the said arms, and a vertically-swinging mattress-support having end bars slidably fulcrumed near their transverse centers upon said bearing extensions.

13. In a folding bed, the combination with relatively sliding front and rear head-posts connected by lazy-tongs, and relatively sliding front and rear foot-posts similarly connected, of forward-extending arms upon the rear posts, a vertically-swinging mattress-support having end bars fulcrumed near their transverse centers upon said arms, and link connections between the said end bars and the front and rear posts.

14. In a folding bed, the combination with relatively sliding front and rear head-posts connected by lazy-tongs, and relatively sliding front and rear foot-posts similarly connected, of forward-extending arms upon the rear posts, sliding bearing extensions on the said arms, a vertically-swinging mattress-support having end bars fulcrumed near their transverse centers upon said bearing extensions, and link connections between the said end bars and the said front and rear posts.

15. In a folding bed, the combination with relatively sliding front and rear head-posts connected by lazy-tongs, and relatively sliding front and rear foot-posts similarly connected, of forward-extending arms upon the rear posts, sliding bearing extensions on said arms, a vertically-swinging mattress-support having end bars slidably fulcrumed near their transverse centers upon said bearing extensions, links pivotally connecting the end bars in rear of their fulcrums with the said rear posts, and links pivotally connecting the forward end portions of said end bars with the said front posts.

16. In a folding bed, the combination with relatively sliding front and rear head-posts connected by lazy-tongs, and relatively sliding front and rear foot-posts similarly connected, of slotted guide-sleeves on the rear posts for the lazy-tongs, forward-extending arms on the said sleeves, and a vertically-swinging mattress-support having end bars fulcrumed near their transverse centers upon the said arms.

17. In a folding bed, the combination with relatively sliding front and rear head-posts connected by lazy-tongs and relatively sliding rear and front foot-posts similarly connected, of slotted guide-sleeves on all of said posts for the lazy-tongs, forward-extending arms upon the rear-post sleeves, and a vertically-swinging mattress-support having end bars fulcrumed near their transverse centers upon said arms, links connecting the said end bars in front of their fulcrums with the said front-post sleeves, and links connecting the said end bars in rear of their fulcrums with the said rear-post sleeves.

813,005. PAPER-PRESSING ATTACHMENT FOR RECORDING INSTRUMENTS. CHARLES HULT, Minneapolis, Minn. Filed Dec. 31, 1903. Serial No. 187,288.

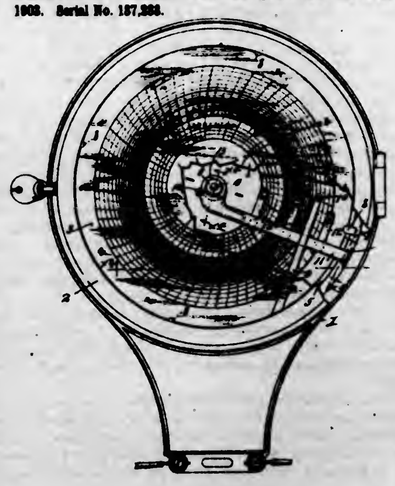

Claim.—In an instrument of the character described, the case 1 having the retaining-lug 14, the rotating stem 4 screw-threaded at its outer end and having a nut 6 with groove 17, the record-carrying disk 5 clamped to said stem 4, by said nut 6, and the automatically-vibrated arm 9 having the pen or stylus 10, in combination with the detachable bar 11 interlocking at its free end with said lug 14 and provided at its inner end with the hub 13 and spring 15, said hub fitting over said nut 6 and said spring engaging with said groove 17 thereof, and the plurality of spring-fingers 12 on said bar 11, for pressing a paper recording-chart against the said rotary carrying-disk, substantially as described.

818,006. **RAILROAD-TIE.** JOHN B. JOHNSON, Mount Vernon, S. D. Filed Nov. 2, 1905. Serial No. 285,697.

Claim.—1. The combination of a railroad-tie, sockets embedded therein and provided with projecting teeth or arms, and rail-clamping members fitting within the sockets.

2. The combination of a railroad-tie, interiorly-threaded sockets embedded therein and provided with externally-projecting arms or teeth, and a rail-clamping bolt fitting within the socket.

3. The combination of a railroad-tie formed of plastic material, sockets embedded therein and provided with externally-projecting arms or teeth, and rail-clamping members fitting within the sockets.

4. The combination of a railroad-tie formed of plastic material, internally-threaded sockets embedded therein, angular teeth projecting from the exterior of the sockets, and rail-clamping bolts fitting within the sockets.

5. The combination of a railroad-tie formed of plastic material, internally-threaded sockets embedded therein and extending entirely through the tie and having their lower ends closed, angular teeth projecting from the exterior of the sockets, and rail-clamping bolts fitting within the sockets, the heads of said bolts having their upper portions faceted while their base is provided with an annular flange.

818,007. **VOTING-MACHINE.** CHARLES E. KNEBOUGH, Logansport, Ind. Filed May 9, 1905. Serial No. 259,865.
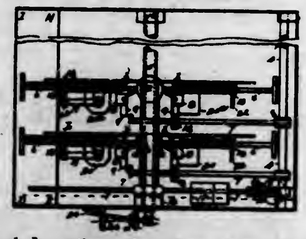
Claim.—1. In a voting-machine, the combination of a wheel, a hollow shaft concentric with the hub of said wheel, plungers correspondingly arranged with relation to said shaft and hub of the wheel and which shaft is common to all of said plungers, and means for moving the said shaft endwise to prevent rotation of the wheel to lock and release and control said wheel, as set forth.

2. In a voting-machine, a wheel with a hub with openings, a hollow shaft with an opening, plungers movable radially of said wheel for cooperating with said shaft and hub, said openings being in position to receive the plungers and registering devices operatively connected with said plungers.

3. In a voting-machine, a wheel with a hub with openings, a hollow shaft with an opening, plungers movable radially on the wheel, said openings being in position to receive said plungers and means for automatically locking the plungers in their depressed position.

4. In a voting-machine, the combination of a wheel having a hub with openings, a hollow shaft with an opening, plungers movable radially on said wheel, said openings being in position to receive said plungers, means for automatically locking the plungers in their depressed position, and means for releasing said plungers.

5. In a voting-machine, the combination of a wheel, an endwise-movable hollow shaft concentric therewith a plunger movable radially thereon, means for automatically locking the plunger in its depressed position, means for releasing the plunger, and means for locking the machine against actuation.

6. In a voting-machine, a hollow rocking shaft, means for rotating said shaft and for moving it endwise a wheel carried thereon, and means coöperating with said shaft for controlling the kind of ticket voted.

7. In a voting-machine, plungers, a wheel, an endwise-movable shaft with which said plungers coöperate, and counting mechanism actuated by said plungers.

8. In a voting-machine, mechanism representing the different candidates for the different offices separate and distinct from each other, a series of plungers, a series of wheels, and a hollow shaft, said shaft and the wheel-hubs constructed for locking out some of said plungers by direct coöperation therewith.

9. In a voting-machine, a wheel, plungers thereon, an endwise-movable hollow shaft concentric with the hub of said wheel and common to all of the plungers and constructed for locking out some of the latter mechanism for voting the different tickets and counting mechanism representing the different candidates entirely separate and distinct.

10. In a voting-machine, a wheel, an endwise-movable shaft carrying the wheel, plungers movable radially on said wheel, means for automatically locking the plungers in their depressed position, and means for moving the shaft endwise to prevent actuation of said wheel.

11. In a voting-machine, an endwise and rotatably movable shaft, a plurality of wheels carried thereby, means for moving the shaft about its axis, and means for moving the shaft endwise to prevent rotation of the wheels.

12. In a voting-machine, a wheel, an endwise-movable shaft, plungers and registering mechanism for each plunger, said shaft being common to all of the plungers, means for locking out some of the plungers and means common to said shaft and wheel for locking the plungers in their depressed position.

13. In a voting-machine, a wheel, plungers movable thereon, registering devices for each plunger, directly connected therewith and operated thereby, means for locking the wheel against rotation, and means for moving the shaft of the wheel endwise with relation to the hub of the wheel.

14. In a voting-machine, a wheel and simultaneously-operated plunger and registering mechanisms for polling a vote and counting the same, an endwise-movable hollow shaft on which said wheel is mounted, means for locking out some of said plungers when said shaft has been shifted, and means for locking the machine against operation.

818,008. **PUMPING APPARATUS.** HUGH W. KIMM, Dayton, Ohio, assignor to Valle & Kimm, Dayton, Ohio, a Firm. Filed Oct. 9, 1905. Serial No. 282,602.

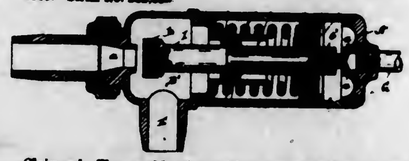

Claim.—1. The combination with a motor-fluid chest and a pump-chamber of a valve-casing, provided with a motor-fluid inlet and outlet, and a valve mounted upon a differential piston-rod journaled in said casing, a differential piston mounted on said rod, differential cylinders for said pistons, the larger piston area having pressure connections with the pump-chamber, and the smaller piston having fluid connections with the motor-fluid chest and supply-main, and a valve-seat in the casing in line with said valve, substantially as described.

2. The combination with a motor-fluid chest and a pump-chamber of a valve-casing, provided with a motor-fluid inlet and outlet, and a valve mounted upon a differential piston-rod journaled in said casing, a differential piston mounted on said rod, differential cylinders for said pistons, the larger piston area having pressure connections with the pump-chamber, and the smaller piston having fluid connections with the motor-fluid chest and supply-main, a valve-seat in the casing in line with said valve, and a compression-spring applied to the larger piston and tending to open the valve, substantially as described.

818,009. **KNIFE.** RICHARD KEY, Brooklyn, N. Y. Filed July 20, 1905. Serial No. 271,728.

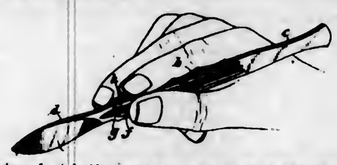

Claim.—1. A knife comprising a blade and handle formed of a single piece of metal, the handle having a central longitudinal rib projected out of the general plane of the metal on one side, and two outer longitudinal ribs on the opposite side.

2. A knife comprising a blade and handle formed of a single piece of metal of substantially regular thickness, the blade at the back being substantially of the thickness of the original metal, and the handle joining the blade and formed with alternating oppositely-faced longitudinal corrugations.

3. A surgeon's knife comprising a blade and handle formed of a single piece of metal, the handle comprising a portion next to the blade provided with alternating, oppositely-faced, longitudinal corrugations, and a flat portion beyond the corrugated portion.

818,010. **ROAD-GRADER.** JOHN W. LANGFITT, Adel, Iowa. Filed Nov. 6, 1905. Serial No. 286,126.

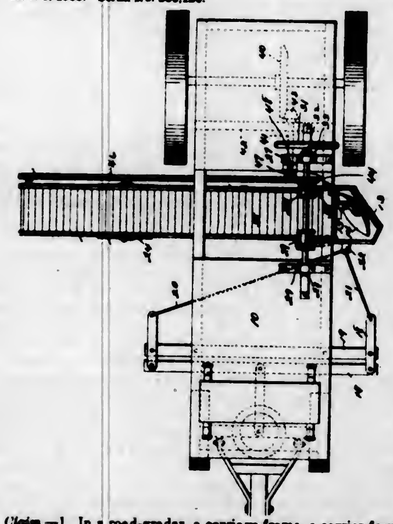

Claim.—1. In a road-grader, a carriage-frame, a carrier-frame flexibly and adjustably connected with the carriage-frame and a frame fixed to the lower end of the carrier-frame to support a colter-plow in the manner set forth.

2. In a road-grader, a carriage-frame, a carrier-frame composed of two parallel sides rigidly connected, an auxiliary frame fixed to its lower end and a colter-plow rotatably connected with the auxiliary frame, combined as set forth.

3. In a road-grader, a carriage-frame, a carrier-frame flexibly connected with the carriage-frame, to project upward laterally relative to the carriage-frame, and a rotatable plow carried at the lower end of the carrier-frame to operate as set forth.

4. In a road-grader, a carriage-frame, a carrier-frame extended upward and laterally at the central portion of the carriage-frame, a frame fixed to the lower end of the carrier-frame to support a colter-plow in an inclined position and means to flexibly connect the carrier-frame with the carriage-frame.

5. In a road-grader, a carriage-frame, a carrier-frame extended upward and laterally at the central portion of the carriage-frame, a frame fixed to the lower end of the carrier-frame and a colter-plow mounted therein and means to flexibly connect the lower end of the carrier-frame with the front portion of the carriage-frame.

6. In a road-grader, a carriage-frame, a carrier-frame extended upward and laterally at the central portion of the carriage-frame, a frame fixed to one of the sides of the carriage-frame, to support the carrier-frame and frames fixed to the front end portions of the parallel sides of the carriage-frame, a cross-bar fixed to said frames, levers pivoted to the ends of the cross-bar and pivotally connected by a rigid bar and the free ends of the levers pivotally connected with the lower end portion of the carrier-frame by rods as required to flexibly connect the lower end of the carrier-frame with the front portion of the carriage-frame.

7. In a road-grader, a carriage-frame, a carrier-frame extended upward and laterally at the central portion of the carriage-frame, a frame fixed to one of the sides of the carriage-frame, to support the carrier-frame and frames fixed to the front end portions of the parallel sides of the carriage-frame, a cross-bar fixed to said frames, levers pivoted to the ends of the cross-bars and pivotally connected by a rigid bar and the free ends of the levers pivotally connected with the lower end portion of the carrier-frame by rods as required to flexibly connect the lower end of the carrier-frame with the front portion of the carriage-frame, a plow on the lower end of the carrier-frame, an endless carrier-frame and means to raise and lower the carrier-frame.

8. In a road-grader, a carriage-frame, a carrier-frame extended upward and laterally at the central portion of the carriage-frame, a frame fixed to one of the sides of the carriage-frame to support the carrier-frame and frames fixed to the front end portions of the parallel sides of the carriage-frame, a cross-bar fixed to said frames, levers pivoted to the ends of the cross-bars and pivotally connected by a rigid bar and the free ends of the levers pivotally connected with the lower end portion of the carrier-frame by rods as required to flexibly connect the lower end of the carrier-frame with the front portion of the carriage-frame, a plow of the lower end of the carrier-frame, an endless carrier-frame and uprights fixed on top of the carriage-frame, a rotatable shaft mounted on the uprights, drums fixed on the shaft and chains fixed to the drums and to the lower portion of the carrier-frame.

9. In a road-grader, a carriage-frame, a carrier-frame extended upward and laterally at the central portion of the carriage-frame, a frame fixed to one of the sides of the carriage-frame to support the carrier-frame and frames fixed to the front end portions of the parallel sides of the carriage-frame, a cross-bar fixed to said frames, levers pivoted to the ends of the cross-bars and pivotally connected by a rigid bar and the free ends of the levers pivotally connected with the lower end of the carrier-frame by rods as required to flexibly connect the lower end of the carrier-frame with the front portion of the carriage-frame, a plow on the lower end of the carrier-frame, an endless carrier-frame and uprights fixed on top of the carriage-frame, a rotatable shaft mounted on the uprights, drums fixed on the shaft, chains fixed to the drums and to the lower end portion of the carrier-frame and means to rotate the shaft and also to retain it stationary.

10. In a road-grader, a carriage-frame, a carrier-frame extended upward and laterally at the central portion of the carriage-frame, a frame fixed to one of the sides of the carriage-frame to support the carrier-frame and frames fixed to the front end portions of the parallel sides of the carriage-frame, a cross-bar fixed to said frames, levers pivoted to the ends of the cross-bars and pivotally connected by a rigid bar and the free ends of the levers pivotally connected with the lower end of the carrier-frame by rods as required to flexibly connect the lower end portion of the carrier-frame with the front portion of the carriage-frame, a plow on the lower end of the carrier-frame, an endless carrier-frame, a rotatable shaft mounted on the uprights, drums fixed on the shaft, chains fixed to the drums and to the lower end portion of the carrier-frame means to rotate the shaft and also to retain it stationary and gearing connected with the carriage to actuate the endless carrier in the carrier-frame.

11. In a road-grader, a jointed carrier-frame, hinge members having stops extending downward and hinge members having braces extending toward the stops and bifurcated at their ends to engage the stops fixed to the sides of the frame, to operate as set forth.

12. In a road-grader, an elevator-frame flexibly connected with the carriage-frame, angle-irons fixed to the inside faces of the parallel sides, slats having double bends at their end portions, links fixed to the end portions of the slats, rotatable shafts in the ends of the frame and spur-wheels on the shafts to engage the links, to operate as set forth.

13. In a road-grader, an elevator-frame flexibly connected with the carriage-frame, angle-irons fixed to the inside faces of the parallel sides, slats having double bends at their end portions, links fixed to the end portions of the slats, rotatable shafts in the ends of

the frame, spur-wheels on the shafts to engage the links and a fender fixed to the lower end of the frame, to operate as set forth.

charge devices arranged in the path traversed by the same in their movement with said carrier.

brought into communication with the discharge-aperture in said

leading to the end of the sweep, a ratchet located in a recess of the

the frame, spur-wheels on the shafts to engage the links and a fender fixed to the lower end of the frame, to operate as set forth.

14. In a road-grader, a frame for an endless carrier, an auxiliary frame fixed to the lower end of the carrier-frame, a concave-convex rotary plow mounted in the auxiliary frame and a scraper fixed to the journal of the plow, to operate as set forth.

813,011. **AIR-VALVE FOR RADIATORS.** FRED W. LEUTHESSER, Chicago, Ill., assignor to Monash-Younker Company, Chicago, Ill., a Corporation of Illinois. Filed Mar. 18, 1904. Serial No. 198,720.

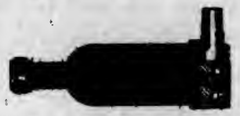

Claim.—1. In an air-valve for radiators, the combination of a shell or casing inclosing a chamber having leading therefrom at its upper end a valve-controlled vent-passage, a base or cup into which is entered the lower end of the shell or casing, a central wall depending from the base or cup, a nipple projecting in line with the wall and furnishing an attachment for the valve to the radiator, the nipple having a passage in communication with the chamber of the shell or casing and the wall having a longitudinal passage with the port at the inner end thereof in communication with the passage of the nipple, and a movable stem operating in the passage of the wall and having an acting end controlling the port between the passage of the wall and nipple, substantially as described.

2. In an air-valve for radiators, the combination of a shell or casing inclosing a chamber having leading therefrom at its upper end a valve-controlled vent-passage, a base or cup into which is entered the lower end of the shell or casing, a central wall depending from the base or cup, a nipple projecting in line with the wall and furnishing an attachment for the valve to the radiator, the nipple having a passage in communication with the chamber of the shell or casing and the wall having a longitudinal passage with a port at the inner end thereof in communication with the passage of the nipple and a port opening therefrom adjacent to its inner end, and a movable stem operating in the passage of the wall and having an acting end controlling the port between the passage of the wall and nipple, substantially as described.

3. In an air-valve for radiators, the combination of a shell or casing inclosing a chamber having leading therefrom at its upper end a vent-passage, a float located in the chamber and provided with a valve-stem controlling the vent-passage leading from the upper end of the chamber, an expansible stem on which the float is mounted, a base or cup into which is entered the lower end of the shell or casing, a central wall depending from the base or cup, a nipple projected in line with the wall and furnishing an attachment for the valve to the radiator, the nipple having a passage in communication with the chamber of the shell or casing, and the wall having a longitudinal passage with a port at the inner end thereof in communication with the passage of the nipple, and a movable stem operating in the passage of the wall and having an acting end controlling the port between the passages of the wall and nipple, substantially as described.

4. In an air-valve for radiators, the combination of a shell or casing inclosing a chamber having leading therefrom at its upper end a vent-passage, a float located in the chamber and provided with a valve-stem controlling the vent-passage leading from the upper end of the chamber, an expansible stem on which the float is mounted, a base or cup into which is entered the lower end of the shell or casing, a central wall depending from the base or cup, a nipple projected in line with the wall and furnishing an attachment for the valve to the radiator, the nipple having a passage in communication with the chamber of the shell or casing, and the wall having a longitudinal passage with a threaded section and with a port at the inner end thereof in communication with the passage of the nipple, and a stem having a threaded body operating in the threaded section of the passage in the wall and having an acting end controlling the port between the passages of the wall and nipple, substantially as described.

813,012. **MACHINE FOR CLEANING BOTTLES.** CHARLES H. LOEW, Lakewood, Ohio. Filed Apr. 7, 1903. Serial No. 151,457.

Claim.—1. A bottle-rinsing mechanism, comprising a movable bottle-carrier, reciprocatorily-mounted fluid-discharge devices which partake of the movement of said carrier and are adapted to be projected into the bottles thereon, and retracting means for said discharge devices arranged in the path traversed by the same in their movement with said carrier.

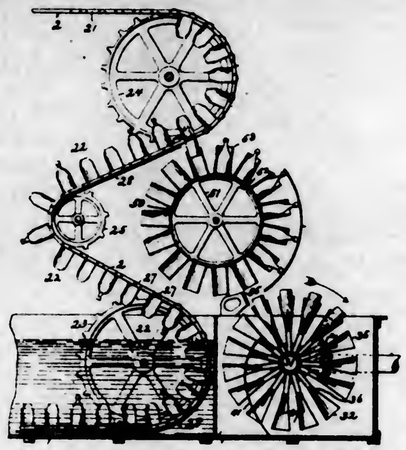

2. A bottle-rinsing mechanism comprising a rotating wheel having bottle-receptacles, hollow reciprocatory fluid-discharge stems carried by said wheel and adapted to be projected into the bottles in said receptacles, means for supplying said stems with bottle-rinsing fluid, and means arranged in the path of movement of said stems for automatically retracting the same when they reach a predetermined place in the travel of the wheel.

3. A bottle-rinsing mechanism comprising a rotative wheel adapted to carry the bottles to be rinsed, hollow reciprocatory fluid-discharge stems carried by said wheel, means by which said stems are projected into the interiors of bottles by the pressure of rinsing fluid, and a cam-plate arranged to retract said stems when they reach a predetermined place in the travel of said wheel.

4. A bottle-rinsing mechanism comprising a rotative wheel having bottle-receptacles provided with side apertures, a cam-plate projecting into said apertures, reciprocative fluid-discharge means engaged by said cam-plates and moved thereby in one direction of their reciprocation, and means through which said fluid-discharge means are supplied with rinsing fluid.

5. A bottle-rinsing mechanism comprising a rotative wheel having bottle-receptacles, hollow fluid-discharge stems carried by said wheel and mounted to have movement therein, said stems having pistons, means for supplying rinsing fluid under pressure to the interior of said discharge-stems and to said pistons at a predetermined place in the travel of said wheel, whereby the stems are advanced to within the interiors of the bottles being rinsed, and relatively stationary means operating to retract said stems at a predetermined place in the travel of said wheel.

6. A bottle-rinsing mechanism comprising a rotative wheel having bottle-receptacles provided with side apertures, hollow fluid-discharge stems carried by said wheel and mounted to have movement therein and arranged in line with said receptacles, said stems having pistons, means for supplying rinsing fluid under pressure to the interior of said discharge-stems and to said pistons at a predetermined place in the travel of said wheel, and a cam-plate adapted to project into said apertures and to engage the ends of the discharge-stems and to retract said stems at a predetermined place in the travel of the wheel.

7. In a machine of the class described, a sprinkling-wheel comprising means for receiving the bottles mouth downward, means for introducing into the interior of the bottles jets of water, comprising a hollow hub supplied with water under pressure, hollow sprinkling-stems radiating therefrom and communicating therewith, said stems having plungers adapted to be forced forward by the pressure of the water to thereby project the stems into the bottles, and means for pushing the stems and plungers into place after use comprising a retracting cam-plate substantially as described.

8. In a machine of the class described, a hollow shaft adapted to be connected with a source of supply of rinsing fluid under pressure and having an aperture for the discharge of the fluid therefrom, a rinsing-wheel mounted to rotate on said shaft and provided with bottle-receptacles and with hollow spokes which are successively

brought into communication with the discharge-aperture in said shaft, hollow fluid-discharge stems mounted in said spokes and adapted to be advanced therefrom and into the bottles under the control of the water in said spokes, and stationary retracting means engaged with said stems at a predetermined place in the travel of said wheel.

9. In a machine of the class described, a hollow shaft adapted to be connected with a source of supply of rinsing fluid under pressure and having an aperture for the discharge of the fluid therefrom, a rinsing-wheel mounted to rotate on said shaft and comprising hollow spokes which are successively brought into communication with the discharge-apertures in said shaft and are provided with bottle-receptacles, hollow fluid-discharge stems mounted in said spokes and adapted to be advanced therefrom and into the bottles by the pressure of the water in said spokes, and a stationary cam-plate arranged to retract said stems at a predetermined place in the travel of said wheel.

10. A traveling bottle carrying and rinsing means comprising fluid-discharge devices which are movable toward and from the bottles being carried, and stationary means for automatically retracting said discharge devices at a predetermined place in the travel of the carrier.

11. A bottle-rinsing apparatus comprising a traveling bottle-carrier having fluid-discharge devices provided with means whereby they are advanced toward the bottles by the pressure of the rinsing fluid, means by which the supply of said fluid is automatically controlled by the movement of the bottle-carrying means, and stationary means for automatically retracting said discharge devices at a predetermined place in the travel of said carrying means.

12. A bottle-washing device comprising a rotative bottle-carrying means, fluid-discharge devices carried thereby and mounted to reciprocate to and from the bottles, and means whereby said fluid-discharge devices are reciprocated, comprising stationary retracting devices engaged with said discharge devices at a predetermined place in the rotation of said carrying means.

13. In a bottle-washing apparatus, the combination with bottle-soaking means having a traveling carrier provided with bottle-holders, a bottle-rinsing means comprising a wheel having bottle-receptacles, fluid-discharge devices carried by said wheel and movable toward and from the bottles in said receptacles, means by which said discharge devices are advanced toward the bottles at a predetermined place in the travel of said carrier by the pressure of the rinsing fluid, stationary means by which said discharge devices are automatically retracted from said bottles at a predetermined place in the travel of said carrier, and means for delivering the bottles automatically neck downward into the receptacles of the rinsing apparatus from the carrier of the soaking means.

813,013. **HAY-PRESS.** ALEXANDER LORENZ, San Antonio, Tex., assignor of one-half to William J. Illg, San Antonio, Tex. Filed Dec. 14, 1904. Serial No. 236,881.

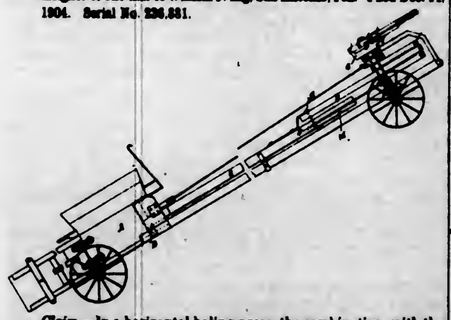

Claim.—In a horizontal baling-press, the combination, with the case and base-piece extending forwardly therefrom, of the power-frame mounted on the forward end of the base-piece, a crank-shaft journaled at its lower end in the base-piece and at its upper end in the power-frame and projecting above it, the plunger-pole mounted in guides on the base-piece, a retractile spring connected thereto and to the power-frame, a pitman pivoted to the upper side of the said pole and to the crank of the crank-shaft, a collar on the crank-shaft above the crank, a stay connected to said collar and to the press-case, a sweep-socket mounted idly on the upper end of the crank-shaft and having an arm extending therefrom for the attachment of a stay leading to the end of the sweep, a ratchet located in a recess of the sweep-socket and fixed to the crank-shaft, a looped pawl hinged to the sweep-socket, and a spring for holding the pawl in engagement with the ratchet, for the purpose set forth.

813,014. **CONTAINER FOR FILTER-PRESSES.** CHARLES W. MERRILL, Lead, S. D. Filed May 3, 1905. Serial No. 258,050.

Claim.—1. In a filter-press, a container provided with a wedge-shaped element along its inner surface.

2. In a filter-press, a container having an inner surface in the form of a keystone, with the large end extending outward into the interior substantially as described.

3. In a filter-press, a container provided with a keystone-rib along the entire inner surface of said container.

4. In a filter-press, a container provided with a series of keystone-shaped ribs along the entire inner surface of said container.

5. In a filter-press, a container provided with a keystone-shaped rib along a portion of the inner surface of said container.

6. In a filter-press, a container provided with a series of keystone-shaped ribs, along a portion of the inner surface of said container.

7. In a filter-press, a container provided with a series of keystone-shaped ribs along a portion of the inner surface, and a single keystone-shaped rib along the remainder of the inner surface.

8. In a filter-press, a container provided with a certain number of keystone-shaped ribs along a portion of the inner surface, and a varying number of similar ribs along the remainder of the inner surface.

813,015. **GEARING FOR WASHING-MACHINES.** HUGH H. MURSON, Truro, Iowa. Filed Nov. 26, 1904. Serial No. 234,354.

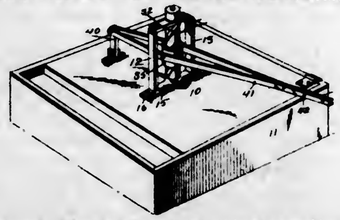

Claim.—1. A frame having openings in its upper and lower portions, a shaft extending through the openings in the frame, a ball-bearing mounted near the upper end of the shaft and at the upper portion of the frame, a worm-gear detachably secured to the shaft and between the upper and lower portions of the frame, a collar surrounding the worm-gear, rollers on the inside of the collar designed to enter the worm-gear, and means for moving the collar vertically.

2. A frame having openings in its upper and lower portions, a shaft extending through the openings in the frame, a ball-bearing mounted near the upper end of the shaft and at the upper portion of the frame, a worm-gear detachably secured to the shaft and between the upper and lower portions of the frame, a collar surrounding the worm-gear, rollers on the inside of the collar designed to enter the worm-gear, a pivotally-mounted link, and a lever pivoted to the link and to the collar, for the purposes stated.

3. In a gearing for washing-machines, a shaft, a worm-gear detachably secured to the shaft, a collar capable of vertical movement along the worm-gear, rollers secured to the collar designed to enter the worm-gear, means for moving the collar vertically to oscillate the shaft, a ball-bearing for supporting the upper end of the shaft, and a frame for supporting the ball-bearing.

4. A substantially rectangular frame provided with a ring at its upper portion, a support therefor, a shaft extending vertically of the frame, a ball-bearing mounted in the ring in the upper portion of the frame for rotatably supporting the shaft, a worm-gear secured to the shaft inside of the frame, a collar encircling the worm-gear and capable of vertical movement, rollers on the inside of the collar entering the worm-gear, and a lever pivoted to the collar and to the top of said

support with which the collar may be moved vertically for rotating the shaft.

9. A substantially rectangular frame provided with a ring at its upper portion, a support therefor, a shaft extending vertically of the frame, a ball-bearing mounted in the ring in the upper portion of the frame for rotatably supporting the shaft, a worm-gear detachably secured to the shaft inside of the frame, a collar encircling the worm-gear and capable of vertical movement, rollers on the inside of the collar entering the worm-gear, a lever pivoted to the collar and to the top of said support, with which the collar may be moved vertically for rotating the shaft, and means for securing the frame to the top of a washing-machine.

813,016. DRAIN-TILE PROTECTOR. WILLIAM J. MCHUGH, Dana, Iowa. Filed Aug. 12, 1905. Serial No. 273,965.

Claim.—1. A protector for tile comprising a body portion having an opening through it, a network in the opening, means for securing the protector in position relative to the end of the tile.

2. In a protector for tile, a body portion having an opening extending through it, a network in the opening, lugs extending outwardly from the body portion, and means connected with the lugs for maintaining the protector in position relative to the end of a tile.

3. In a protector for tile, an inner portion, a collar secured to the inner portion, designed to encircle the end of a tile, an outer portion, means for securing the outer portion to the inner portion, a series of rods forming a network secured between the inner and outer portions and in an opening which extends through the inner and outer portions.

4. In a protector for tile, an inner portion, a collar secured to the inner portion, designed to encircle the end of a tile, an outer portion, means for securing the outer portion to the inner portion, a series of rods forming a network secured between the inner and outer portions and in an opening which extends through the inner and outer portions, and means for securing the protector in position relative to the end of a tile.

5. In a protector for tile, an inner portion having an opening extended through it, a collar integral with the inner portion, designed to encircle the end of the tile, said inner portion having a series of grooves extending vertically of it, a rod in each of said grooves, a hooked portion in the rod designed to maintain the rod against downward movement, an outer portion having an opening extending through it in line with the opening in the inner portion and having a series of horizontal channels extending across its inner surface, a series of rods in said channels designed to engage the rods in the inner portion, and means for securing the inner and outer portions together.

6. In a protector for tile, an inner portion having an opening extending through it, a collar integral with the inner portion, designed to encircle the end of the tile, said inner portion having a series of grooves extending vertically of it, a rod in each of said grooves, a hooked portion in the rod designed to maintain the rod against downward movement, an outer portion having an opening extending through it in line with the opening in the inner portion and having a series of horizontal channels extending across its inner surface, a series of rods in said channels designed to engage the rods in the inner portion, means for securing the inner and outer portions together, and means for securing the protector in position relative to the end of the tile.

7. In a protector for tile, an inner portion having an opening extended through it, a collar integral with the inner portion, designed to encircle the end of the tile, said inner portion having a series of grooves extending vertically of it, a rod in each of said grooves, a hooked portion in the rod designed to maintain the rod against downward movement, an outer portion having an opening extending through it in line with the opening in the inner portion and having a series of horizontal channels extending across its inner surface, a series of rods in said channels designed to engage the rods in the inner portion, means for securing the inner and outer portions together, lugs having openings in them secured to the outer surface of the outer portion, and rods entering the openings in the lugs and designed to be driven into the ground for securing the protector in position relative to the end of the tile.

813,017. FARE-RECORDER. JOHN F. OHMER, Dayton, Ohio, assignor to Ohmer Fare Register Co., Rochester, N. Y. Filed Aug. 26, 1905. Serial No. 275,719.

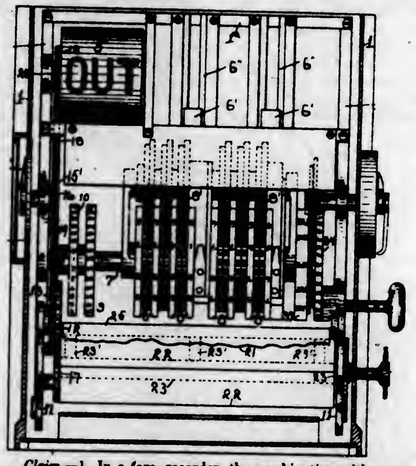

Claim.—1. In a fare-recorder, the combination with a set of printing-counters denoting the number of fares recorded, of a type-wheel denoting the direction, impression devices for taking statements or records from said printing-counters and said type-wheel, and means connecting the direction type-wheel and the impression devices by which said drection type-wheel is moved each time an impression is taken.

2. In a fare-recorder, the combination with a set of printing-counters denoting the number of fares recorded, of a type-wheel denoting the direction, a tablet or dial for indicating the direction, impression devices for taking statements from said printing-counters and type-wheel, and means for simultaneously moving the direction-indicator, the type-wheel denoting the direction, and the said impression devices.

3. In a fare-recorder, the combination with printing-counters assembled in groups and each group denoting a specific class of fares, an indicator denoting the directions, type letters or characters corresponding to the direction-indicators and moving simultaneously therewith, impression devices, the movement of which, actuates the direction-indicator and its corresponding type letters or characters.

4. In a fare-recorder, the combination with groups of printing-counters denoting the specific classes of fares, a direction-printer located in a plane with said printing-counters, a direction-indicator, impression devices, and means interposed between said impression devices, said direction-printer, and said direction-indicator for simultaneously actuating said direction-printer and direction-indicator upon each operation of the impression devices.

5. In a fare-recorder, the combination with a plurality of groups of printing-counters denoting specific classes of fares, a similar number of specific-fare indicators, and means for simultaneously actuating the fare-printing counters and the fare-indicators, of a direction-indicator, a direction-printer, impression devices, and means interposed between said impression devices and the direction-indicator and direction-printer for simultaneously moving said direction-indicator and said direction-printer from each movement of the impression devices.

6. In a fare-recorder, the combination with printing-counters denoting the fares registered, of a direction-printer mounted in line with said fare-printing counters, a direction-indicator, a platen or impression-bar, and connections between said impression-bar or platen, and the direction-printer and the direction-indicator, whereby upon each operation of taking a statement or record from the printing-counters and the direction-printer, the direction-printer and the direction-indicator are simultaneously set.

7. In a fare-recorder, the combination with groups of printing-counters, each group denoting a specific class of fares, an indicator to exhibit separately the fares of each class, month and date printers, a direction-printer, a direction-indicator, and connections between the direction-indicator, the direction-printer and the actuating member of the printing devices, whereby, in each printing operation, the direction-indicator and the direction-printer are simultaneously set.

8. In a fare-recorder, a plurality of groups of printing-counters denoting the different classes of fares, a stationary dial indicating the directions, a pointer on said dial, a rotating member also indicating the directions, a direction-printer, and means interposed between said pointer, said direction-printer, and said rotating direction-indicator for simultaneously actuating said rotating direction-indicator, and the direction-printer in setting the pointer to indicate the directions.

9. In a fare-recorder, the combination with printing-counters denoting different classes of fares, and printing or impression devices, of a direction-indicator, a direction-printer, and means connecting said direction-indicator, said direction-printer and the actuating member of the printing or impression devices, whereby upon each operation of taking a statement or record, the direction-indicator and the direction-printer are simultaneously operated.

10. In a fare-recorder, the combination with a plurality of fare-indicators, of a direction-indicator, a direction-printer, impression devices, and means interposed between said impression devices and the direction-indicator and said direction-printer to move said direction-indicator and said direction-printer with each movement of the impression devices.

11. A direction-printer, an indicator, means for taking a print or impression from said direction-printer, said means controlling the positions of the direction-printer and the indicator.

12. A fare-printing counter, a direction-printer, and means for taking a print or impression from said fare-printing counter and direction-printer, said means controlling the position of the direction-printer.

13. A fare-printing counter, a direction-printer, means for taking prints or impressions from said fare-printing counter and said direction-printer, and means connecting said direction-printer with said means for taking said prints or impressions, whereby the direction-printer is controlled by said means for taking the prints or impressions.

14. A fare-printing counter, a direction-printer, an indicator, and means for taking an impression from said printing-counter and controlling the shifting operation of the direction-printer and the indicator.

15. A fare-printing counter, a direction-printer, a direction-indicator, and means for taking impressions from said fare-printing counter and said direction-printer, said means controlling the shifting operation of the direction-printer and the direction-indicator.

16. A direction-printer, a direction-indicator and an auxiliary indicator connected to said direction-printer and direction-indicator and adapted to shift said direction-printer and said direction-indicator in the movements by which said auxiliary indicator is made to exhibit the indications thereon.

17. A direction-printer, a direction-indicator connected to said direction-printer, and an auxiliary stationary indicator having a pointer, said pointer being connected to the direction-printer and the direction-indicator and adapted to shift the direction-printer and the direction-indicator to operative positions upon each movement of said pointer to indicate upon the auxiliary dial.

18. A direction-printer, a direction-indicator and an auxiliary direction-indicator having a pointer connected to the direction-printer and the first-named direction-indicator, said pointer being adapted to shift the direction-printer and the first-named direction-indicator upon each movement of said pointer to positions to indicate on the auxiliary direction-indicator.

19. A direction-printer, a direction-indicator, an auxiliary direction-indicator connected with said direction-printer and the first-named direction-indicator, and means for taking an impression from said direction-printer and for controlling the shifting operation of said direction-printer and said direction-indicators.

20. A fare-printing counter, a direction-printer, a direction-indicator, an auxiliary direction-indicator, and means for taking an impression from said printing-counter and said direction-printer and for controlling the shifting operations of said direction-printer and said direction-indicators.

21. A direction-printer, a direction-indicator and an auxiliary direction-indicator, the latter being fixed as to rotation, a pointer movable to the indications on said auxiliary indicator, said pointer being geared to the direction-printer and the first-named direction-indicator and adapted to move the same concurrently to operative positions in the movements which indicate upon the auxiliary indicator.

813,018. ROTARY ENGINE AND MOTOR. MORRIS S. OKUN, New York, N. Y. Filed Apr. 25, 1902. Serial No. 104,686.

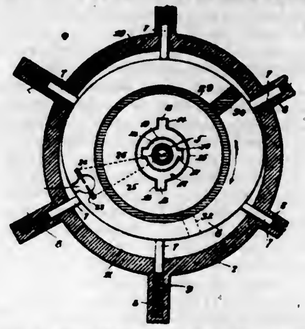

Claim.—1. A rotary engine, motor or the like, comprising the combination of a casing and a piston or movable element therein, which snugly fits the sides of the casing, a shaft connected with said movable element or piston, and means for permitting a relative lateral movement between the shaft and the movable element or piston, substantially as and for the purpose set forth.

2. A rotary engine, motor or the like, compriaing the combination of a casing and a piston or movable element therein, which snugly fits the sides of the casing, a shaft connected with said movable element or piston, and means for permitting a relative lateral angular movement between the shaft and the movable element or piston, substantially as and for the purpose set forth.

3. A rotary engine, motor or the like, comprising the combination of a casing and a movable element or piston, which snugly fits the sides of the casing, a shaft connected with said movable element or piston by the means of a laterally-yielding joint consisting of a projection or projections carried by one part and a bearing or bearings or cavities for the projections carried by the other part, substantially as and for the purpose set forth.

4. A rotary explosive-engine comprising the combination of two elements having relative rotary movement and having different forms so as to provide a suitable working space between said elements, and the said elements fitting snugly to each other at certain points to prevent the leakage of fluid, a set of partitions adapted to be projected and retracted during the relative rotary movement and dividing the said working space into separate sections, which sections constitute, respectively, chambers wherein the explosive mixture is introduced and in succession compressed, ignited and expanded and finally exhausted therefrom, said cycle of actions being completed at every revolution in each section, substantially as and for the purpose set forth.

5. A rotary explosive-engine comprising the combination of two elements, of which one fits snugly to the sides of the other and having a relative rotary movement, one of said elements being of an oval form for providing between the two a compression, explosion and expansion chamber, and means operated and controlled by each complete revolution of the movable element for successively drawing into the said chamber the explosive mixture, compressing the same, igniting, exploding and exhausting it, substantially as and for the purpose set forth.

6. A rotary explosive-engine comprising the combination of two elements having relative rotary movement, a suitable working space being provided between said elements and the said elements fitting snugly to each other at certain points to prevent the leakage of fluid, a set of partitions adapted to be projected and retracted during the relative rotary movement and dividing the said working space into separate sections, which sections constitute, respectively, chambers wherein the explosive mixture is introduced and in succession compressed, ignited, and expanded and finally exhausted therefrom, such successive actions taking place in each of the said sections during one revolution, each section of such space formed between two adjacent partitions being twice reduced and enlarged in its volume during each revolution of the said movable element, said cycle of ac-

tions being completed at every revolution in each section substan-

and a universal joint between said shaft and movable element, sub-

813,020. GUNPOWDER AND PROCESS OF MAKING SAME.

tions being completed at every revolution in each section substantially as and for the purpose set forth.

7. A rotary explosive-engine comprising the combination of a casing and a movable element or piston which fits snugly to the sides of the casing, one of said elements being of an oval form for providing between the two a space divided into compartments, each of which is twice alternately reduced and increased in its capacity or area during one revolution of the piston, and means operated and controlled by each complete revolution of the movable element for successively drawing into the said chamber the explosive mixture, compressing the same, igniting, exploding and exhausting it, substantially as and for the purpose set forth.

8. The combination of a casing and a body or piston mounted therein and provided with a shaft, the said body or piston and casing having a relative rotary movement and each fitting against the sides of the other, a yoke fixed upon the shaft and provided with opposite projections forming bearings for a main yoke, a main yoke mounted upon said fixed yoke and provided with opposite projections constituting bearings for the piston, said piston being mounted upon said main yoke, whereby the piston and its shaft have a lateral yielding movement relative to each other, substantially as and for the purpose set forth.

9. The combination of a casing, a piston mounted within said casing and having a relative rotary movement, the periphery of the piston and the interior of the casing being so related as to provide two crescent-shaped spaces at diametrically opposite points and such spaces serving as the compression and expansion chambers respectively a series of movable vanes normally closing across each of said spaces, an inlet-pipe for supplying the explosive mixture to the compression-chamber and an exhaust-pipe connected with the expansion-chamber, and an igniting device for exploding the mixture when the same is compressed, substantially as and for the purpose set forth.

10. The combination of a casing, a piston 6 mounted within said casing and having a relative rotary movement, the periphery of the piston and the interior of the casing being so related as to provide two crescent-shaped spaces 10 and 11, respectively, at diametrically opposite points and such spaces serving as the compression and expansion chambers respectively, a series of movable vanes 7 normally closing across each of said spaces, an inlet-pipe for supplying the explosive mixture to the compression-chamber and an exhaust-pipe connected with the expansion-chamber, and an igniting device for exploding the mixture when the same is compressed, substantially as and for the purpose set forth.

11. The combination of a casing and a body or piston mounted therein and provided with a shaft, the said body or piston and casing having a relative rotary movement and each fitting snugly against the sides of the other, and the said body or piston and its shaft having a universal joint between them to permit relative lateral yielding and at the same time cause them to rotate in response to each other, substantially as and for the purpose set forth.

12. A rotary engine, pump or the like, comprising the combination of a casing and a movable element fitting snugly therein to the sides of the casing, a shaft connected with said movable element and actuated thereby, said shaft and movable element having a relative oscillatory or pivotal motion, substantially as and for the purpose set forth.

13. A rotary engine, pump or the like, comprising the combination of a stationary and a movable element fitting snugly to each other, a space between the two said elements and into which the gas or fluid is introduced, the two said elements fitting snugly against each other in order to prevent the escape of the said gas or fluid from the said space, a shaft on which the movable element is mounted, and said shaft and movable element having a relative lateral motion, substantially as and for the purpose set forth.

14. A rotary engine, pump or the like, comprising the combination of a stationary and a movable element fitting snugly to each other, a space between the two said elements and into which the gas or fluid is introduced, the two said elements fitting snugly against each other in order to prevent the escape of the said gas or fluid from the said space, a shaft on which the movable element is mounted, and said shaft and movable element having a relative oscillatory or pivotal motion, substantially as and for the purpose set forth.

15. A rotary engine, pump or the like, comprising the combination of a stationary and a movable element fitting snugly to each other, a space between the two said elements and into which the gas or fluid is introduced, the two said elements fitting snugly against each other in order to prevent the escape of the said gas or fluid from the said space, a shaft on which said movable element is mounted and a universal joint between said shaft and movable element, substantially as and for the purpose set forth.

16. A rotary engine, pump or the like, comprising the combination of a stationary and a movable element fitting snugly to each other, a space between the two said elements and into which the gas or fluid is introduced, the two said elements fitting snugly against each other in order to prevent the escape of the said gas or fluid from the said space, a shaft on which said movable element is mounted, the joint between said shaft and movable element comprising one or more projections carried by one part and fitting in bearings or cavities carried by the other part, substantially as and for the purpose set forth.

17. A rotary explosive or like engine comprising the combination of a suitable casing and a rotary piston mounted therein and fitting snugly to the sides of the casing, a suitable space between the piston and casing varying in its distance between the two so as to make such space of a gradually-increasing size from one point to another, the said space being contracted at two places and enlarged at two places intermediate between the contracted ones, a set of partitions dividing said space into separate sections and said partitions being projected and retracted as the piston rotates, an inlet-pipe for supplying the explosive mixture to the interior of the casing and an exhaust-pipe leading from said casing, and an igniting device, the said explosive mixture being introduced into each of said sections once during each complete revolution of the piston and being compressed, ignited and expanded in and exhausted from each of said sections once during each revolution, substantially as and for the purpose set forth.

18. A rotary explosive-engine comprising the combination of two elements having relative rotary movement, a suitable working space being provided between said elements and the said elements fitting snugly to each other at certain points to prevent the leakage of fluids, a set of partitions adapted to be projected and retracted during the relative rotary movement and dividing the said working space into separate sections, which sections constitute, respectively, chambers wherein the explosive mixture is introduced and in succession compressed, ignited and expanded and finally exhausted therefrom, said cycle of actions being completed at every revolution in each section, and means for effecting said ignition comprising an igniting-chamber in direct and constant communication with said working space between the two said elements, substantially as and for the purpose set forth.

813,019. CROWN-PROTECTOR FOR HATS. MOSES OLDORT, New York, N. Y. Filed Jan. 31, 1905. Serial No. 243,551.

Claim.—1. A crown-protector for hats, comprising an open-work frame composed of spring material and shaped to fit the interior of the crown, the lower portion or base of the said protector being so shaped as to fit between the sweat-band and the crown of the hat, and removably secure the protector in position within the hat, substantially as described.

2. The herein-described form-retainer and crown-protector for hats, comprising an open-work frame composed of spring material and so shaped as to fit the interior of the crown, said frame being adapted to be inserted into the crown of the hat and secured therein, and the size of the bottom portion of the frame being adjustable, substantially as shown and described.

3. A crown-protector for hats, comprising an open-work frame of spring material shaped to fit the interior of the crown, the base being composed of a flat strip adapted to be placed between the sweat-band and the hat, and removably secure the protector in place, substantially as described.

4. The combination with the crown of the hat of a form retainer and protector, comprising an open-work frame composed of spring material and so shaped as to fit the interior of the crown, said frame being inserted into the crown and secured therein, and the size of the bottom portion of the frame being adjustable, substantially as shown and described.

813,020. GUNPOWDER AND PROCESS OF MAKING SAME. FRANCIS I. DU PONT, Wilmington, Del. Filed Aug. 3, 1904. Serial No. 219,358.

Claim.—1. The hereinbefore-described process of making gunpowder, adapted to be molded into grains or other desired forms, which consists in forming a gunpowder, containing starch, mixing water therewith, then subjecting the admixture to the action of heat sufficient to swell the starch-granules, and then forming the powder into grains or other desired forms.

2. The hereinbefore-described process of making gunpowder, adapted to be molded into grains or other desired forms, which consists in forming a powder, containing starch, in the proportion of seven to eight per cent. of the total ingredients, then adding an amount of water from five to fifteen per cent. and mixing the same, then subjecting the mixture to the action of heat sufficient to swell the starch-granules, then pressing the material into grains or other desired forms.

3. A new gunpowder containing starch and water, the starch-granules being swelled by heat.

4. The hereinbefore-described process of making gunpowder, containing starch, which consists in subjecting said powder, with the starch in a moist condition, to the action of heat sufficient to swell the starch-granules.

813,021. METHOD OF CHARGING RETORTS, MUFFLES, FURNACES, AND THE LIKE. AUGUSTIN L. J. QUENEAU, South Bethlehem, Pa. Filed Jan. 16, 1905. Serial No. 241,272.

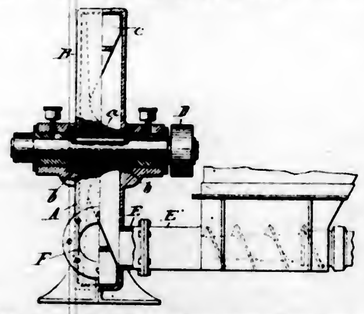

Claim.—1. The method of supplying retorts, muffles, furnaces, and the like, with finely-divided solid ingredients, which consists in projecting the same, by impact blows, in a continuous and homogeneous stream, into the retort, muffle, or furnace; substantially as described.

2. The method of supplying retorts, muffles, and the like, with a charge of associated ingredients, which consists in projecting the charge, by impact blows, in a continuous and homogeneous stream into the retort or muffle to be charged, said impact blows being of a character to further comminute and intermingle the ingredients; substantially as described.

3. The method of supplying retorts, muffles, furnaces, and the like, with finely-divided ingredients, which consists in projecting the same in a continuous and homogeneous stream into the retort, muffle, or furnace, avoiding subsequent scattering of the stream by practically excluding air from it during its formation, and consolidating said stream into a substantially cylindrical column after it has received its initial momentum and is under way; substantially as described.

4. The method of supplying retorts, muffles, furnaces and the like, with finely-divided solid ingredients, which consists in projecting the same, by impact blows, in a continuous and homogeneous stream, into the retort, muffle, or furnace, and practically excluding air from said stream; substantially as described.

813,022. CHARGING-MACHINE. AUGUSTIN L. J. QUENEAU, South Bethlehem, Pa. Filed Jan. 16, 1905. Serial No. 241,273.

Claim.—1. A charging-machine, comprising an inclosing casing, a rotary shaft, a series of impact-blades, an inlet for feeding the material to be charged into the path of movement of the outer ends of the blades, feeding mechanism arranged in the inlet and terminating in advance of its discharge-mouth, thereby serving as a seal against the admission of air with the charging material, and a tangential outlet; substantially as described.

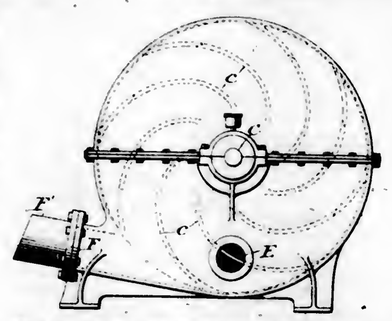

2. A charging-machine, comprising an inclosing casing, a rotary shaft, a series of impact-blades, a tangential outlet, and an inlet adjacent to the outer ends of the blades, said inlet entering the side of the casing transversely to the plane of revolution of the blades and immediately in advance of the outlet; substantially as described.

3. A charging-machine, comprising an inclosing casing, a rotary shaft, a series of impact-blades, an inlet entering the side of the casing transversely to the path of movement of the blades, and a tangential outlet, said tangential outlet having a tubular continuation forming a directing-spout; substantially as described.

4. A charging-machine, comprising an inclosing casing, a rotary shaft, an impeller-disk provided on its face with a series of impact-blades, an inlet entering the side of the casing transversely to the path of movement of the blades, and a tangential outlet; substantially as described.

5. A charging-machine, comprising an inclosing casing, a rotary shaft, a series of impact-blades, an inlet for feeding the material to be charged into the path of movement of the outer ends of the blades, a tangential outlet, and a forced feed for the inlet, said forced feed terminating in advance of the discharge-mouth of the inlet, thereby leaving an intervening portion which serves as a seal against the admission of air with the charging material; substantially as described.

6. A charging-machine, comprising an inclosing casing, a rotary shaft, a series of impact-blades whose outer ends are curved in the form of involutes, an inlet for feeding the material to be charged into the path of movement of said outer ends, and a tangential outlet; substantially as described.

7. A charging-machine, comprising an inclosing casing, a rotary shaft, an impeller-disk provided on its face with a series of curved blades of substantially the width of the casing at their outer ends and decreasing in width inwardly, an inlet adjacent to the outer ends of the blades, and a tangential outlet; substantially as described.

8. A charging-machine, comprising an inclosing casing, a rotary shaft, an impeller-disk provided on its face with a series of curved blades of substantially the width of the casing at their outer ends and decreasing in width inwardly, an inlet adjacent to the outer ends of the blades, a forced feed for said inlet, and a tangential outlet; substantially as described.

9. A charging-machine, comprising an inclosing casing, a rotary shaft, an impeller-disk provided on its face with a series of curved blades of substantially the width of the casing at their outer ends and decreasing in width inwardly, an inlet adjacent to the outer ends of the blades, a forced feed for said inlet, and a tangential outlet, said tangential outlet having a continuation forming a direction-spout; substantially as described.

10. A charging-machine, comprising an inclosing casing, a rotary shaft, a series of impact-blades, an inlet for feeding the material through the side of the casing into the path of movement of the outer ends of the blades, and a feed conveyer separated from the discharge-mouth of the inlet by an intervening sealing-space; substantially as described.

813,028. APPARATUS FOR CHARGING RETORT-BENCHES. AUGUSTIN L. J. QUENEAU, South Bethlehem, Pa. Filed Jan. 16, 1905. Serial No. 241,274.

Claim.—1. An apparatus for charging retorts, comprising a charging-machine having impact-blades, a delivery-spout, and a

forced feed, and means for independently operating the blades and forced feed; substantially as described.

813,025. ICE-VELOCIPEDE. HENRY SCHENCKLOTH, Holstein, Iowa. Filed Oct. 17, 1904. Serial No. 228,606.

Claim.—1. A crown-protector for hats, comprising an open-work frame composed of spring material and shaped to fit the interior of the crown, the lower portion or base of the said protector being so shaped as to fit between the sweat-band and the crown of the hat, and removably secure the protector in position within the hat, substantially as described.

2. The herein-described form-retainer and crown-protector for hats, comprising an open-work frame composed of spring material and so shaped as to fit the interior of the crown, said frame being adapted to be inserted into the crown of the hat and secured therein, and the size of the bottom portion of the frame being adjustable, substantially as shown and described.

3. A crown-protector for hats, comprising an open-work frame of spring material shaped to fit the interior of the crown, the base being composed of a flat strip adapted to be placed between the sweat-band and the hat, and removably secure the protector in place, substantially as described.

4. The combination with the crown of the hat of a form retainer and protector, comprising an open-work frame composed of spring material and so shaped as to fit the interior of the crown, said frame being inserted into the crown and secured therein, and the size of the bottom portion of the frame being adjustable, substantially as shown and described.

ends and arms connected to the outer ends of the lazy-tongs-lever members.

8. In a propeller, two vertical shafts, arms fixed to the shafts

nected to the carrier, slot-and-pin connections between the lever and valve-plate, and a plurality of springs between the valve-plate and the carrier.

forced feed, and means for independently operating the blades and forced feed; substantially as described.

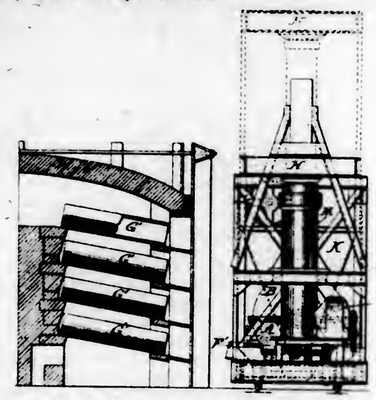

2. An apparatus for charging a bench of retorts, comprising a charging-machine having impact-blades and a delivery-spout for impelling and directing the charge, a hopper, a feed-screw located at the bottom of the hopper and communicating with the inlet-opening of the charging-machine and means for operating the charging-machine independently of the feed-screw; substantially as described.

3. An apparatus for charging a bench of retorts, comprising a charging-machine having impact-blades and a delivery-spout for impelling and directing the charge, a hopper, and a feed-screw located at the bottom of the hopper and communicating with the inlet-opening of the charging-machine, means for operating the charging-machine independently of the feed-screw a platform carrying the charging-machine, feed-screw and hopper, and hydraulic cylinders for raising and lowering the platform; substantially as described.

813,024. **ROTARY ENGINE.** JACOB H. RENNER, Canal Dover, Ohio. Filed Feb. 23, 1905. Serial No. 247,080.

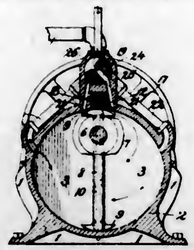

Claim.—1. The combination, in a rotary engine, of a rotary eccentric piston, comprising a revoluble slotted drum and sliding piston, the cylinder and cylinder-heads thereof, with the shiftable shaft-bearing bushings, and piston-rings having the circular elastic-metal followers, substantially as shown and described.

2. In a rotary engine, the combination of the shiftable shaft-bearing bushings and the piston-drum having the circular elastic-metal followers and piston-rings, substantially as set forth.

3. In a rotary engine, the semicircular flanges cast on cylinder at head ends flush with outer edge of bearing-sleeves and brackets, substantially as shown and described.

4. In a rotary engine, the combination of the cylinder, the revoluble piston-drum and sliding piston, with the projecting winged side contact-bars, the spurs on them, and the corresponding slots in piston-plate, substantially as set forth.

5. In a rotary engine, the combination of the projecting winged side contact-bars, the spurs on them and the corresponding slots in the piston-plate, substantially as described.

6. In a rotary engine, a cylinder with the upper extension, comprising a taper valve-bore, with inlets and outlets, the taper valve-core, with inlet and outlet slot, the threaded valve-stem, washer and nut, the operating-handle and notched guide below it, substantially as shown and described.

813,025. **ICE-VELOCIPEDE.** HENRY SCHNECKLOTH, Holstein, Iowa. Filed Oct. 17, 1904. Serial No. 228,606.

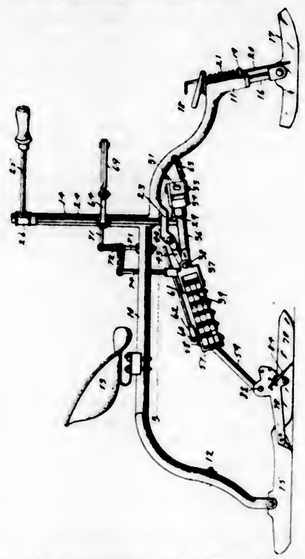

Claim.—1. The combination of a vehicle-frame, two shafts mounted in the vehicle-frame, means for jointly rocking said shafts, arms on the shafts, a lazy-tongs lever pivoted at one end of the machine-frame, means for connecting said arms with the lazy-tongs lever to extend and to fold the lazy-tongs lever when the shafts are rocked.

2. A vehicle-frame, two shafts mounted in the frame, pinions on the shafts in mesh with each other, operating-handles on the shafts, arms on the shafts projected laterally in opposite directions, rods pivoted to said arms, a lazy-tongs lever pivotally supported at one end on the vehicle-frame and having said rods pivoted thereto.

3. A vehicle-frame, two upright shafts in the frame, means for jointly rocking the shafts, arms projecting outwardly from the shafts in opposite directions, rods connected with said arms to permit limited, universal movement of the rods relative to the arms, a lazy-tongs lever pivoted at one end of the vehicle-frame and having said rods pivoted to the opposite ends of the lazy-tongs-lever members adjacent to the pivoted end thereof.

4. An ice-velocipede comprising an arched frame member, a rear fork, runners pivoted to the rear fork, a seat carried by the arched frame member, a steering-head at the front of the arched member, a rod mounted in the steering-head, a runner pivoted to the lower end of said rod, a steering foot-rest at the top of said rod, handle-levers supported between the foot-rest and seat and a propelling device operated by the handle-levers.

5. An ice-velocipede comprising an arched frame member, a rear fork, runners pivoted to the rear fork, a seat carried by the arched frame member, a steering-head at the front of the arched member, a rod mounted in the steering-head, a runner pivoted to the lower end of said rod, a steering foot-rest at the top of said rod, handle-levers supported between the foot-rest and seat and a propelling device operated by the handle-levers, a brake-rod mounted on the steering-head susceptible of being pushed downwardly by the operator's foot to engage the surface on which the vehicle is resting and a spring for elevating it.

6. In a propelling device, a lazy-tongs lever having the lever members at one end pivoted together only at their ends, a pivoted arm connected to said lever members to pivotally support the lazy-tongs lever, arms pivoted to the outer ends of the lazy-tongs-lever members at the pivotally-supported end of the lazy-tongs lever and a sharpened projection carried by the other end of the lazy-tongs lever.

7. In a propeller, a lazy-tongs lever, the two members at one end thereof inclined toward each other and away from the adjacent members to greater degrees than the other lever members are inclined relative to each other, said end members pivotally supported at their ends and arms connected to the outer ends of the lazy-tongs-lever members.

8. In a propeller, two vertical shafts, arms fixed to the shafts and projected laterally in opposite directions, rods connected to said arms and capable of limited universal movement relative thereto, yokes pivoted to the other ends of said rods, a lazy-tongs lever having the lever members at one end pivoted in said yokes, lever members connected with said yokes extended forwardly with their ends adjacent to each other, an arm having said lever members pivoted thereto and means for pivotally supporting said arm to swing vertically.

9. In a lazy-tongs lever, the combination of a lazy-tongs member, a disk thereon having a central opening and a ball-groove on one surface, a second lever member having a disk thereon provided with a central opening and ball-grooves on both surfaces, a third disk having a central opening and a ball-groove on one surface, a bolt passed through the said central openings and bearing-balls in said grooves.

10. The combination of a runner, an arm pivoted to the runner, a pointed projection carried by the arm, said arm formed with a slot concentric to its pivot-point, a reciprocating rod connected to the arm above its pivot-point, limiting-pins fixed to the arm and a short shaft mounted in the runner projected through the slot of the arm, a lever fixed to said shaft one end of a length to project below the runner and when swung to a rearward inclined position elevating the arm by engaging the limiting-pin and when swung to its other position lowering the rear end of the arm by engaging the other limiting-pin.

813,026. **PEANUT-VENDER.** JOHN C. SHERRING, Baltimore, Md. Filed Mar. 27, 1905. Serial No. 252,193.

Claim.—1. In a peanut-vender, a hopper having a discharge-opening, and a table situated below the said hopper, combined with a carriage adapted to have a sliding movement on the table toward and from the said opening in the hopper, and means to sweep the contents of the carriage from the carriage to a discharge-aperture in the table at each outward movement of the carriage, substantially as specified.

2. In a peanut-vender, a hopper having a discharge-opening, combined with a table situated under the said hopper, the said table having a discharge-aperture therein, combined with a carriage adapted to have a sliding movement on the table, toward and from the said opening, means whereby the said carriage may be drawn forward and so disclose the discharge-aperture, and a device to sweep the contents of the carriage over the edge of the same and into the discharge-aperture, substantially as specified.

813,027. **DISPENSING APPARATUS.** BENNETT TALBERT, Fresno, Cal. Filed July 13, 1904. Serial No. 216,327.

Claim.—1. In a dispensing apparatus the combination with a plurality of compartments, a delivery-chute for each compartment, a valve device for each delivery-chute comprising a valve-plate, and a cup or receptacle for each delivery-chute provided with an opening, which opening is controlled by the valve-plate.

2. In a dispensing apparatus the combination of a receptacle, a delivery-orifice for said receptacle, an auxiliary receptacle, a delivery-orifice for said auxiliary receptacle, and a valve adapted to control both of said orifices.

3. In a dispensing apparatus the combination of a receptacle, a delivery-chute for said receptacle, a valve-plate engaging the end of the chute, a carrier, a lever pivoted on the chute and pivotally connected to the carrier, slot-and-pin connections between the lever and valve-plate, and a plurality of springs between the valve-plate and the carrier.

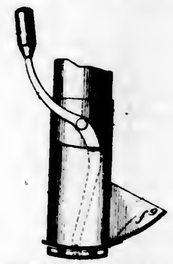

4. In a dispensing apparatus the combination of a main receptacle having a delivery-orifice, an auxiliary receptacle having a delivery-orifice adjacent to but independent of that of the main receptacle, and a spring-seated valve-plate for controlling the discharge from both orifices.

813,028. **SEWER-CLEANER.** JOHN M. THOMPSON, Buffalo, N. Y., assignor of one-half to Thomas W. Kennedy and one-fourth to William N. La Tour, Buffalo, N. Y. Filed Aug. 7, 1905. Serial No. 273,147.

Claim.—1. In a sewer-cleaning device, the combination of a shell or cylinder provided with a cutting edge, and a second cutting edge arranged in advance of the former and disposed inwardly therefrom, substantially as set forth.

2. In a sewer-cleaning device, the combination of inner and outer connected shells or cylinders having cutting end edges, substantially as set forth.

3. In a sewer-cleaning device, the combination of inner and outer spaced shells or cylinders having cutting end edges, and means between the shells or cylinders for preventing the passage of material therethrough, substantially as set forth.

4. In a sewer-cleaning device, the combination of inner and outer spaced shells or cylinders having cutting end edges, and imperforate annular walls or webs connecting such shells or cylinders, substantially as set forth.

5. In a sewer-cleaning device, the combination of inner and outer connected shells or cylinders having cutting end edges, said inner shell or cylinder being of greater length than said outer shell or cylinder, substantially as set forth.

6. In a sewer-cleaning device, the combination of inner and outer connected shells or cylinders having serrated cutting end edges, the cutting edge of the inner cylinder being arranged in advance of the cutting edge of the outer cylinder, substantially as set forth.

7. In a sewer-cleaning device, the combination of a shell or cylinder having a cutting edge, longitudinal shoes on the cylinder extending beyond the ends thereof, and an attaching device for draft means connected to the cylinder, substantially as set forth.

813,029. **APPARATUS FOR REMOVING ARTICLES FROM SHELVES.** GEORGE WARD, Roma, Queensland, Australia. Filed Oct. 31, 1905. Serial No. 285,247.

Claim.—1. A carriage traveling on an overhead rail having loosely suspended therefrom by one end a flat bar carrying on it a saddle capable of being moved up and down on the bar by means of a cord and sheaves, said saddle having on it a fixed arm and a movable arm, the latter being operated by a cord and sheaves and a spring.

2. A carriage traveling on an overhead rail having loosely suspended therefrom by one end a flat bar carrying on it a saddle capable of being moved up and down on the bar by means of a cord and sheaves, said saddle having a fixed arm and a movable arm, the latter being operated by a cord and sheaves and a spring; a net on a frame pivoted on the fixed arm and kept in its normal position by a spring

said net-frame being steadied when in motion by a rod loosely suspended from the carriage passing through a hole in the frame, a roller being also provided for passing obstacles.

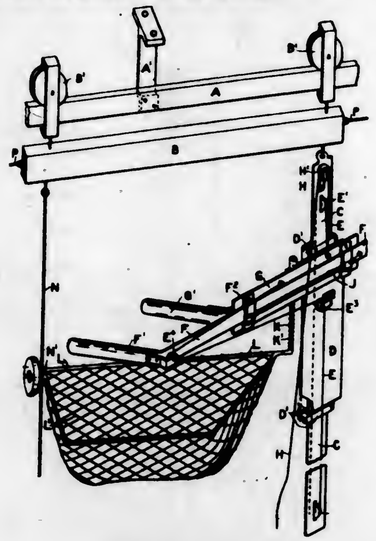

813,080. EYEGLASSES. JOEL C. WELLS, Southbridge, Mass. Filed Apr. 16, 1903. Serial No. 152,837.

Claim.—1. In eyeglass-mountings, the combination with the nose-bridge, the nose-guards pivotally supported at the ends of the nose-bridge, and screws or rivets for pivotally supporting the nose-guards, of a coil-spring for each nose-guard, having the coiled part in line with, and extending in the same vertical plane as said screws or rivets, and supported independently of the support of the nose-guard, and held at one end, and engaging the nose-guard at its other end, substantially as shown and described.

2. In eyeglasses, the combination with the lens straps, or frames, a nose-bridge secured thereto and having its ends carved or bent, and the extreme ends bent to extend at right angles to the plane of the lenses, and nose-guards having a supporting-arm pivotally attached to said ends by screws or rivets, of a spring for each nose-guard, independent of the pivot screw or rivet of the nose-guard, and comprising one or more coils, a projecting end to be secured to the lens strap or frame, and an end to engage the nose-guard or its supporting-arm, substantially as shown and described.

3. In eyeglasses, the combination with the lens straps or frames, a nose-bridge secured thereto, and nose-guards having a supporting-arm pivotally attached by a screw or rivet, and an engaging and extending beyond said screw or rivet, of a spring for each nose-guard, independent of said screw or rivet and located at one end thereof, and having the coiled part in line with, and extending in the same vertical plane as said screw or rivet, and having projecting ends, one secured to the lens strap or frame, and the other engaging the nose-guard-supporting arm, substantially as shown and described.

813,081. NUT-LOCK. AARON B. ALLEN, Pueblo, Colo. Filed Mar. 21, 1905. Serial No. 251,204.

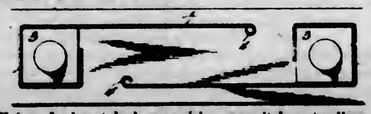

Claim.—1. A nut-lock comprising oppositely-extending rods having overlapping hooked ends slidably connecting each other, and angular extensions formed by the rods and adapted to receive nuts therein.

2. A nut-lock comprising oppositely-disposed, similar hooked rods overlapping and slidably connected, each of said rods having an angular extension adapted to receive and fit snugly upon a nut.

813,082. LOAD-BINDER. CHARLES W. BAKER, Paw Paw, Mich. Filed Nov. 4, 1904. Serial No. 231,430.

Claim.—1. In a load-binder, the combination of the binding-ropes adapted to be secured to the wagon body or rack; a binding-board; brackets at each end thereof; rollers carried by said brackets over which said binding-ropes are arranged; truss-rods for said binding-board arranged through said brackets; pulley-blocks having tapered side plates and sheaves of varying diameters; hooks for said blocks adapted to receive said binding-ropes; and a fall or tackle rope rove first over the inner and thence over the outer sheaves, whereby said fall may be secured in its adjusted position by looping the hauling end thereof under one of the inner reaches thereof and drawing against one of the inner sheaves, for the purpose specified.

2. In a load-binder, the combination of the binding-ropes adapted to be secured to the wagon body or rack; a binding-board; brackets at each end thereof; rollers carried by said brackets over which said binding-ropes are arranged; pulley-blocks having tapered side plates and sheaves of varying diameters; hooks for said blocks adapted to receive said binding-ropes; and a fall or tackle rope rove first over the inner and thence over the outer sheaves, whereby said fall may be secured in its adjusted position by looping the hauling end thereof under one of the inner reaches thereof and drawing against one of the inner sheaves, for the purpose specified.

3. In a load-binder, the combination of the binding-ropes adapted to be secured to the wagon body or rack; a binding-board; brackets at each end thereof; rollers carried by said brackets over which said binding-ropes are arranged; truss-rods for said binding-board arranged through said brackets; and a tackle arranged on said binding-board between said rollers, for the purpose specified.

4. In a load-binder, the combination of the binding-ropes adapted to be secured to the wagon body or rack; a binding-board; brackets at each end thereof; rollers carried by said brackets over which said binding-ropes are arranged; and a tackle arranged on said binding-board between said rollers, for the purpose specified.

5. In a load-binder, the combination of the binding-ropes adapted to be secured to the wagon body or rack; a binding-board; rollers carried by said binding-board over which said binding-ropes are arranged; pulley-blocks having tapered side plates and sheaves of varying diameters; hooks for said blocks adapted to receive said binding-ropes; and a fall or tackle rope rove first over the inner and thence over the outer sheaves, whereby said fall may be secured in its adjusted position by looping the hauling end thereof under one of the inner reaches thereof and drawing against one of the inner sheaves, for the purpose specified.

6. In a load-binder, the combination of the binding-ropes adapted to be secured to the wagon body or rack; a binding-board; rollers carried by said binding-board over which said binding-ropes are arranged; and a tackle arranged on said binding-board between said rollers, for the purpose specified.

813,083. TUBE-CLIP. FREDERICK A. BELLAMY, London, England. Filed May 16, 1905. Serial No. 260,716.

Claim.—1. A flat metallic strip having a widened portion near one end and a short aperture in said widened portion, said strip being formed into a constrictive clamp by passing one end of the strip through said aperture and coiling the strip so that one portion of the coil lies outside an inner portion thereof.

2. A flat metallic strip having a widened portion near one end and a short aperture in said widened portion, said strip being formed into a constrictive clamp by passing one end of the strip through said aperture and coiling the strip so that one portion of the coil lies outside an inner portion thereof, and also having a short part of each end of said strip turned out at a right angle to the rest of the clip and perforated to accommodate a bolt for tightening the clip by means of a nut or the like.

3. A tube-clip consisting of a coiled metallic strip so formed that a single coil of uniform width encircles the tube to be clamped and a portion of said strip passes through an aperture thereof and encircles the first coil mentioned, and having bent portions of said strip adapted to receive a locking device such as a bolt and nut.

4. A tube-clip consisting of a coiled metallic strip, so formed that a single coil encircles the tube to be clamped and a portion of said strip passes through an aperture thereof and encircles the first coil mentioned, and having bent portions of said strip adapted to receive a locking device such as a bolt and nut.

5. A tube-clip consisting of a coiled metallic strip so formed that a single coil encircles and contacts with the tube to be clamped and a portion of said strip passes through an aperture therein and encircles the coil first mentioned.

813,084. SEAMING-MACHINE. OTTO S. BEYER, East Rutherford, N. J., assignor to H. W. Bliss Company, a Corporation of West Virginia. Filed May 6, 1904. Serial No. 206,618.

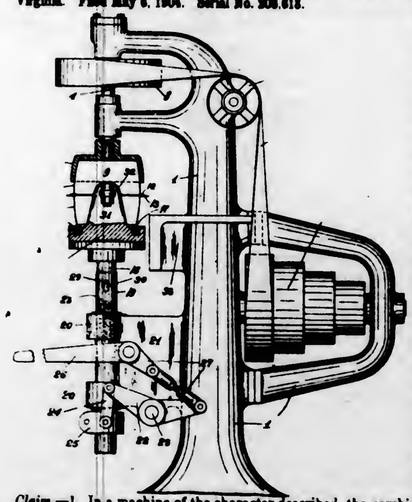

Claim.—1. In a machine of the character described, the combination of a rotating clamp, a vertically-movable work-supporter, bearings for slidably supporting the said work-supporter, a bell-crank, links connecting said bell-crank to the work-supporter, a pivoted operating-lever, and toggles connecting the said operating-lever and bell-crank.

2. In a machine of the character set forth, the combination of a rotating clamp, a work-supporter, a vertically-movable sleeve, bearings slidably supporting said sleeve, a spindle carrying the work-supporter mounted in the sleeve, a spring-cushion in the said sleeve on which the said spindle rests, a bell-crank, links connecting said bell-crank to the sleeve, a pivoted operating-lever, and toggles connecting the said operating-lever and bell-crank.

3. The combination with a non-rotating work-supporter on which the work is adapted to rotate, of a bracket on the framework, seaming members located on one side of the said work-supporter, and means on the opposite side of the said work-supporter for imparting the thrust to the said bracket.

4. The combination with a non-rotating work-supporter on which the work is adapted to rotate, of a bracket on the framework, seaming members located on one side of the said work-supporter, and shoulders on the work-supporter and on the bracket in apposition to each other located on the side opposite to that of the seaming members for imparting the thrust to the said bracket.

5. The combination with a non-rotating work-supporter on which the work is adapted to rotate, of a bracket on the framework, seaming members located on one side of the said work-supporter, a shoulder on the bracket located on the opposite side of the work-supporter, and shoulders on the work-supporter in apposition to the shoulder on the bracket for imparting the thrust to the said bracket.

6. The combination with a non-rotating work-supporter on which the work is adapted to rotate, of a bracket on the framework, seaming members located on one side of the said work-supporter, a shoulder on the bracket located on the opposite side of the said work-supporter, a shoulder on the work-supporter in apposition to the shoulder on the bracket for imparting the direct thrust of the seaming members to the said bracket, and a second shoulder on the said work-supporter also in apposition to the shoulder on the bracket for imparting the torsional thrust due to rotation to the bracket.

7. The combination with a non-rotating work-supporter on which the work is adapted to rotate, of a gooseneck stationary on the work-supporter and carrying a truck-roller adapted to contact with the inside of the can, a bracket on the framework, seaming members located on one side of the said work-supporter and adjacent to the truck-roller on the gooseneck, and means on the opposite side of the said work-supporter for imparting the thrust to the bracket.

8. The combination with a non-rotating work-supporter on which the work is adapted to rotate, of a gooseneck stationary on the work-supporter and carrying a truck-roller adapted to contact with the inside of the can, a bracket on the framework, seaming members located on one side of the said work-supporter, and shoulders on the work-supporter and on the bracket in apposition to each other located on the side opposite to that of the seaming members for imparting the thrust to the said bracket.

9. The combination with a non-rotating work-supporter on which the work is adapted to rotate, of a gooseneck stationary on the work-supporter and carrying a truck-roller adapted to contact with the inside of the can, a bracket on the framework, seaming members located on one side of the said work-supporter and adjacent to the truck-roller on the gooseneck, a shoulder on the bracket located on the opposite side of the said work-supporter, and shoulders on the work-supporter in apposition to the shoulder on the bracket for imparting the thrust to the bracket.

10. The combination with a non-rotating work-supporter on which the work is adapted to rotate, of a gooseneck stationary on the work-supporter and carrying a truck-roller adapted to contact with the inside of the can, a bracket on the framework, seaming members located on one side of the said work-supporter and adjacent to the truck-roller on the gooseneck, a shoulder on the bracket located on the opposite side of the said work-supporter, a shoulder on the work-supporter in apposition to the shoulder on the bracket for imparting the direct thrust of the seaming members to the said bracket, and a second shoulder on the said work-supporter also in apposition to the shoulder on the bracket for imparting the torsional thrust due to rotation to the bracket.

11. The combination with a non-rotating work-supporter on which the work is adapted to rotate, of a bracket on the framework, angular plates adjustably secured to the bracket on either side of the said work-supporter, seaming members on one of said angular plates, a shoulder on the other of said angular plates, a shoulder on the work-supporter for imparting the direct thrust of the seaming members to the bracket and a second shoulder on the work-supporter adapted to impart the torsional thrust to the said angular plate.

12. The combination with a non-rotating work-supporter on which the work is adapted to rotate, of a gooseneck stationary on the work-supporter and carrying a truck-roller adapted to contact with the inside of the can, a bracket on the framework, angular plates adjustably secured to the bracket on either side of the said work-supporter, seaming members on one of said angular plates, a shoulder on the other of said angular plates, a shoulder on the work-supporter for imparting the direct thrust of the seaming members to the bracket, and a second shoulder on the work-supporter adapted to impart the torsional thrust to the said angular plate.

813,085. SPRING-WHEEL. FRANK A. BORN, Grover, S. D. Filed May 17, 1905. Serial No. 260,874.

Claim.—1. The combination with a wheel including inner and outer spaced rims, pairs of brackets carried by the outer rim, a rod slidably engaged in each pair of brackets, plungers having passages therein in which the rods are engaged between the brackets, said plunger being slidably engaged in the inner rim, helical springs engaged with the rods between the plungers and the brackets, helical springs engaged with the rods outwardly of the brackets, washers engaged with the rods outwardly of the last-named helical springs and cotter-pins engaged in the rods beyond the washers, and means for holding the outer rim yieldably against movement toward the inner rim.

2. The combination with a wheel including inner and outer spaced rims, pairs of brackets carried by the outer rim, a rod slidably engaged in each pair of brackets, plungers having passages therein in which the rods are engaged between the brackets, said plunger being slidably engaged in the inner rim, helical springs engaged with the rods between the plungers and the brackets, helical springs engaged with the rods outwardly of the brackets, washers engaged with the rods outwardly of the last-named helical springs and cotter-pins engaged in the rods beyond the washers, and means for holding the outer rim yieldably against movement toward the inner rim, said means comprising a bell-crank lever pivoted to the inner rim, a link connecting the bell-crank lever to the outer rim, and a spring connected to the bell-crank lever.

813,086. CAN-OPENER. ALBERT E. BOSWORTH, Chicago, Ill. Filed Aug. 15, 1904. Serial No. 220,966.

Claim.—1. A can-opener comprising a handle, a jaw pivoted thereto, a cutting-wheel carried by said jaw, a second jaw pivoted to the handle, a cutting-wheel carried by said second jaw, and a spring connected to the handle and to the first-named jaw, substantially as described.

2. A can-opener comprising a handle, a jaw pivoted thereto, a cutting-wheel carried by said jaw, a second jaw pivoted to the handle, a cutting-wheel carried by said second jaw, a spring connected to the handle and to the first-named jaw, and a stop on the handle for limiting the movement of the first-named jaw, substantially as described.

3. A can-opener comprising a handle, a jaw pivoted thereto, a cutting-wheel carried by said jaw, a second jaw pivoted to the handle, a cutting-wheel carried by said second jaw, a spring connected to the handle and to the first-named jaw, and a stop on the handle for limiting the movement of the first-named jaw, said stop being adjustable, substantially as described.

4. A can-opener comprising a handle, a jaw pivoted thereto, a cutting-wheel carried by said jaw, a second jaw pivoted to the handle, a cutting-wheel carried by said second jaw, a spring connected to the handle and to the first-named jaw, and a stop on the handle for limiting the movement of the first-named jaw, said stop being adjustable and comprising a screw, substantially as described.

813,087. CAN-OPENER. ALBERT E. BOSWORTH, Chicago, Ill. Filed Aug. 15, 1904. Serial No. 220,967.

Claim.—1. A can-opener comprising a handle, a jaw pivoted thereto, a cutting-wheel carried by said jaw, a second jaw pivoted to the handle, a cutting-wheel carried by said second jaw, and a spring connected to the handle and to the first-named jaw, substantially as described.

2. A can-opener comprising a handle, a jaw pivoted thereto, a cutting-wheel carried by said jaw, a second jaw pivoted to the handle, a cutting-wheel carried by said second jaw, a spring connected to the handle and to the first-named jaw, and a stop on the handle for limiting the movement of the first-named jaw, substantially as described.

3. A can-opener comprising a handle, a jaw pivoted thereto, a cutting-wheel carried by said jaw, a second jaw pivoted to the handle, a cutting-wheel carried by said second jaw, a spring connected to the handle and to the first-named jaw, and a stop on the handle for limiting the movement of the first-named jaw, said stop being adjustable, substantially as described.

4. A can-opener comprising a handle, a jaw pivoted thereto, a cutting-wheel carried by said jaw, a second jaw pivoted to the handle, a cutting-wheel carried by said second jaw, a spring connected to the handle and to the first-named jaw, and a stop on the handle for limiting the movement of the first-named jaw, said stop being adjustable and comprising a screw, substantially as described.

813,088. CAN-OPENER. ALBERT E. BOSWORTH, Chicago, Ill. Filed Aug. 15, 1904. Serial No. 220,968.

Claim.—1. A can-opener comprising a handle, a jaw pivoted thereto, a cutting-wheel carried by said jaw, a second jaw pivoted to the handle, a cutting-wheel carried by said second jaw, and a spring connected to the handle and to the first-named jaw, substantially as described.

2. A can-opener comprising a handle, a jaw pivoted thereto, a cutting-wheel carried by said jaw, a second jaw pivoted to the handle, a cutting-wheel carried by said second jaw, a spring connected to the handle and to the first-named jaw, and a stop on the handle for limiting the movement of the first-named jaw, substantially as described.

3. A can-opener comprising a handle, a jaw pivoted thereto, a cutting-wheel carried by said jaw, a second jaw pivoted to the handle, a cutting-wheel carried by said second jaw, a spring connected to the handle and to the first-named jaw, and a stop on the handle for limiting the movement of the first-named jaw, said stop being adjustable, substantially as described.

4. A can-opener comprising a handle, a jaw pivoted thereto, a cutting-wheel carried by said jaw, a second jaw pivoted to the handle, a cutting-wheel carried by said second jaw, a spring connected to the handle and to the first-named jaw, and a stop on the handle for limiting the movement of the first-named jaw, said stop being adjustable and comprising a screw, substantially as described.

813,089. CAN-OPENER. ALBERT E. BOSWORTH, Chicago, Ill. Filed Aug. 15, 1904. Serial No. 220,969.

Claim.—1. A can-opener comprising a handle, a jaw pivoted thereto, a cutting-wheel carried by said jaw, a second jaw pivoted to the handle, a cutting-wheel carried by said second jaw, and a spring connected to the handle and to the first-named jaw, substantially as described.

2. A can-opener comprising a handle, a jaw pivoted thereto, a cutting-wheel carried by said jaw, a second jaw pivoted to the handle, a cutting-wheel carried by said second jaw, a spring connected to the handle and to the first-named jaw, and a stop on the handle for limiting the movement of the first-named jaw, substantially as described.

3. A can-opener comprising a handle, a jaw pivoted thereto, a cutting-wheel carried by said jaw, a second jaw pivoted to the handle, a cutting-wheel carried by said second jaw, a spring connected to the handle and to the first-named jaw, and a stop on the handle for limiting the movement of the first-named jaw, said stop being adjustable, substantially as described.

4. A can-opener comprising a handle, a jaw pivoted thereto, a cutting-wheel carried by said jaw, a second jaw pivoted to the handle, a cutting-wheel carried by said second jaw, a spring connected to the handle and to the first-named jaw, and a stop on the handle for limiting the movement of the first-named jaw, said stop being adjustable and comprising a screw, substantially as described.

2. The combination with a wheel including inner and outer spaced rims, pairs of brackets carried by the outer rim, a rod slidably engaged in each pair of brackets, said inner rim having openings formed therein, a bushing in each of said openings, a housing located above each of said bushings and communicating therewith, a plunger slidably engaged in each of said bushings and said housings and with the said rod intermediate between the said brackets, a helical spring engaged with the said plunger between said inner rim and said rod, helical springs engaged with the rods between the plungers and the brackets, helical springs engaged with the rods outwardly of the brackets, washers engaged with the rods outwardly of the last-named helical springs and cotter-pins engaged in the rods beyond the washers.

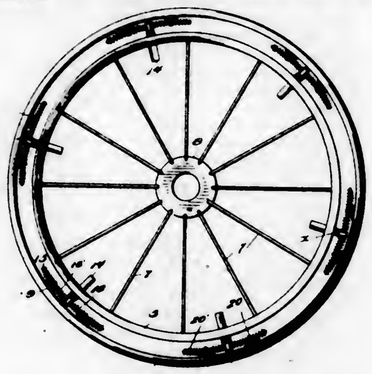

813,036. **SAW-CLAMP.** CHARLES W. CARDWELL, Jamaica, N. Y. Filed Apr. 13, 1905. Serial No. 255,211.

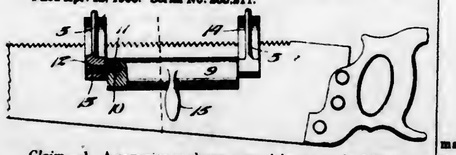

Claim.—1. A saw vise or clamp comprising an arched frame, an elongated jaw disposed at the base of the arch and fixed to one of the sides of the frame, an elongated clamping bar or roll eccentrically mounted upon the opposite side of the frame and coextensive in length with and disposed opposite said fixed jaw, and an operating-handle projecting from the outer side of the roll, substantially as described.

2. A saw vise or clamp comprising spaced brackets, each formed of inner and outer arms joined at their upper ends by a short arched portion, the inner arm being provided at its lower end with means for attaching the bracket to a support, an elongated jaw disposed at the base of the arch and fixedly attached to the inner arms, an elongated clamping bar or roll eccentrically mounted upon the outer arms of the brackets and coextensive in length with and disposed opposite the fixed jaw, and an operating-handle projecting from the outer side of the roll, substantially as described.

3. A saw vise or clamp comprising a frame provided with an elongated fixed jaw, an elongated clamping-roll eccentrically mounted upon the frame opposite said fixed jaw and coextensive in length therewith, said roll having a covering of resilient, non-resonant material completely enveloping the periphery thereof to prevent the emission of sound-vibrations from the saw and sympathetic vibrations from any portion of the roll, and an operating-handle applied to the roll.

4. A saw clamp or vise comprising an arched frame, an elongated clamping-jaw disposed at the base of the arch and fixed to one of the sides of the frame, a clamping bar or roll disposed opposite said fixed jaw and coextensive in length therewith, and connections pivotally mounting the roll eccentrically upon the outer side of the frame, each connection comprising a stem having a screw-threaded portion attached to one of the parts and a journal portion engaging the other part, one of said portions being set eccentric to the other portion.

5. A saw clamp or vise comprising an arched frame, an elongated jaw disposed at the base of the arch and fixed to the inner side of the frame, a clamping bar or roll disposed opposite said fixed jaw and coextensive in length therewith, and connections pivotally mounting the roll upon the outer side of the frame, each of said connections comprising a threaded stem fixedly engaging the bar or roll and an eccentric journal revolubly mounted in the frame.

813,037. **THROTTLING-GOVERNOR.** HARRY C. CLAY, Columbus, Ind., assignor to Reeves & Company, Columbus, Ind., a Corporation of Indiana. Filed Aug. 26, 1905. Serial No. 275,734.

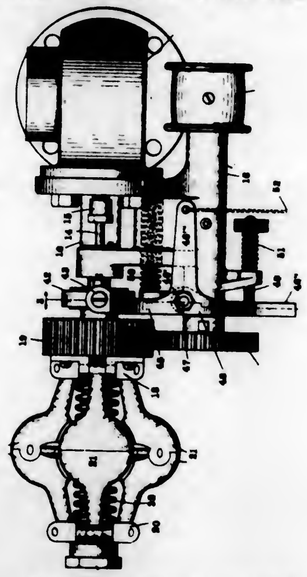

Claim.—1. In a throttling-governor, the combination, with the main body, and its valve-seats, a valve mounted therein in conjunction with said seats, a valve-stem carrying said valve, a rotatable ball-head engaging said stem, means for rotating said ball-head, whereby variation in speed of rotation thereof will cause movement of the valve, and means for adjusting said ball-head bodily whereby the normal position of the valve relative to its seats may be varied.

2. In a throttling-governor, the combination, with the main body, and the valve and its stem, of a hollow spindle carried by said main body through which the valve-stem passes, a ball-head journaled on said spindle and bodily axially movable thereon, means for rotating the ball-head, and means for adjusting the ball-head bodily longitudinally on the spindle whereby the valve may be adjusted within the governor-body.

3. In a throttling-governor, the combination, with the main body, and the valve and its stem, of a hollow spindle carried by said main body through which the valve-stem passes, a ball-head journaled on said spindle and bodily axially movable thereon, means for rotating the ball-head, means for adjusting the ball-head bodily longitudinally on the spindle whereby the valve may be adjusted within the governor-body, and means for preventing rotative movement of the valve-stem.

4. In a throttling-governor, the combination, with the main body, and its valve-seats, a valve mounted therein in conjunction with said seats, a valve-stem carrying said valve, a rotatable ball-head engaging said stem, means for rotating said ball-head, whereby variation in speed of rotation thereof will cause movement of the valve, means for adjusting said ball-head bodily whereby the normal position of the valve relative to its seats may be varied, a special spring yieldingly holding the valve-stem in engagement with the ball-head, and attached at one end to the governor-body and at the other end to the valve-stem to prevent rotation of the valve.

5. In a throttling-governor, the combination, with the main body, and the valve and its stem, of a hollow spindle carried by said main body through which the valve-stem passes, a ball-head journaled on said spindle and bodily axially movable thereon, means for rotating the ball-head, means for adjusting the ball-head bodily longitudinally on the spindle whereby the valve may be adjusted within the governor-body, a sawyer's lever, intermediate connections between said lever and ball-head, adjustable means for holding said lever in one direction, and yielding means for holding said lever in the opposite direction.

6. In a throttling-governor, the combination, with the main body, and the valve and its stem, of a hollow spindle carried by said main body through which the valve-stem passes, a ball-head journaled on said spindle and bodily axially movable thereon, means for rotating the ball-head, a sawyer's lever, intermediate connections between said lever and ball-head, adjustable means for holding said lever in one direction, and yielding means for holding said lever in the opposite direction.

7. In a throttling-governor, the combination, with the main body, and the valve and its stem, of a hollow spindle carried by said main body through which the valve-stem passes, a ball-head journaled on said spindle and bodily axially movable thereon, means for rotating the ball-head, a sawyer's lever, a split collar having rotatable engagement with the inner member of the ball-head, a pair of pivot-pins carried by the sawyer's lever and engaging the members of the split collar to hold them in position, adjustable means for holding the sawyer's lever in one direction, and yielding means for holding said lever in the opposite direction.

8. In a throttling-governor, the combination, with the main body and the valve and its stem, of a hollow spindle carried by said main body through which the valve-stem passes, a pair of ball-spiders journaled on said spindle and axially movable thereon, a spur-gear carried by one of said spiders, a driving-gear meshing with said spur-gear, ball members connecting said spindles, a spring acting on said spiders, and means for adjusting the spiders axially on the spindle.

9. In a throttling-governor, the combination, with the main body and the valve and its stem, of a hollow spindle carried by said main body through which the valve-stem passes, a pair of ball-spiders journaled on said spindle and axially movable thereon, a spur-gear carried by one of said spiders, a driving-gear meshing with said spur-gear, ball members connecting said spiders, a spring acting on said spiders, a sawyer's lever, intermediate connections between said lever and ball-head, adjustable means for holding said lever in one direction, and yielding means for holding said lever in the opposite direction.

10. In a throttling-governor, the combination, with the main body and the valve and its stem, of a hollow spindle carried by said main body through which the valve-stem passes, a pair of ball-spiders journaled on said spindle and axially movable thereon, a spur-gear carried by one of said spiders, a driving-gear meshing with said spur-gear, ball members connecting said spiders, a spring acting on said spiders, a sawyer's lever, a split collar having rotatable engagement with the inner member of the ball-head, a pair of pivot-pins carried by the sawyer's lever and engaging the members of the split collar to hold them in position, adjustable means for holding the sawyer's lever in one direction, and yielding means for holding said lever in the opposite direction.

813,038. **NON-REFILLABLE BOTTLE.** MORTON CONNER, Rushville, Ind. Filed Aug. 31, 1905. Serial No. 276,113.

Claim.—1. In a device of the character described, the combination with the bottle-neck provided with an internally-formed annular recess, a spool to snugly fit the internal wall of the bottle-neck and provided with a longitudinal aperture, and also provided with a plurality of circumferentially-disposed channels, shoulders formed centrally of said spool and between said circumferentially-disposed channels, the combined length of said shoulders being less than the circumference of the spool to provide the transverse passage-ways between them, said shoulders being provided also with grooves that communicate with the peripheral surface of said shoulders, locking means engaging the annular recess in the bottle-neck and the grooves in the shoulders, the longitudinal ways extending from the top of the spool to the first circumferentially-disposed channel arranged so as to stand out of alinement of the transverse passage-ways that divide the shoulders, while the lower channel of the spool communicates with the longitudinal aperture in the spool by means of a horizontal aperture which is in alinement with the longitudinal ways in the upper end of the spool but out of alinement with the transverse passage-ways between the shoulders, a valve in the longitudinal aperture in the spool-body, and a separable seat for the valve.

2. In a device of the character described, the combination with the bottle provided with an interaally-formed recess in the bottle-neck, a spool provided with outlet-apertures to be inserted into the neck of the bottle, locking means engaging both the recess in the bottle-neck and the spool, a valve for regulating the flow of liquid, and a separable base for the spool to form the seat for the valve.

813,039. **DOUBLETREE-HITCH.** JOHN H. COOK, Irving, Ill., assignor of one-half to Arthur Kinkead, Irving, Ill. Filed Apr. 5, 1905. Serial No. 253,973.

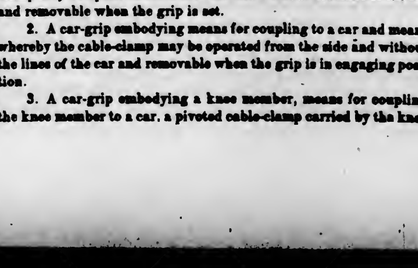

Claim.—In a device of the character set forth, an oblong casing closed at one end and open at the opposite end and provided with outwardly-extended terminal attaching extensions projecting below the lower side thereof to elevate the said casing and provide a space between it and the part to which the said casing may be secured, said casing having vertical and horizontal intersecting longitudinal slots and having inner flanges bordering upon the longitudinal slots, a yoke insertible in the casing through the open end thereof and prevented from lateral displacement by said inner longitudinal flanges, a doubletree freely movable in the horizontal slot and preventing outward displacement of the yoke, a pin connecting the doubletree with the yoke and having its end portions freely movable in the said vertical slot, securing means applied to the lower end of the pin and accessible through the space below the casing, and a spring arranged within the casing and confined between the closed end thereof and the yoke and normally exerting a pressure upon the yoke to hold it at the limit of its rearward movement.

813,040. **CABLE-GRIP FOR CARS.** JAMES L. DAVIS, Bramwell, Pa., assignor of one-fourth to Walter B. Chalfant, Bramwell, Pa. Filed Aug. 3, 1905. Serial No. 272,584.

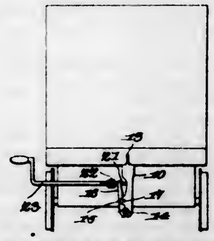

Claim.—1. A car-grip embodying means whereby the cable-clamp may be operated from the side and without the lines of the car and removable when the grip is set.

2. A car-grip embodying means for coupling to a car and means whereby the cable-clamp may be operated from the side and without the lines of the car and removable when the grip is in engaging position.

3. A car-grip embodying a knee member, means for coupling the knee member to a car, a pivoted cable-clamp carried by the knee

member, and means for operating the clamp carried by the clamp member and exerting pressure against the knee member.

between said throttle-wheels and valve-stems, substantially as described.

gallery; of an annular shoulder on the tube, and upright ribs also on the tube adjacent to and tapering away from said shoulder and adapt-

view of retaining the same in alinement with each other, a pilot-wheel carried by the forward frame-section, a motor carried by the

member, and means for operating the clamp carried by the clamp member and exerting pressure against the knee member.

4. A car-grip embodying a knee member, means for coupling the knee member to a car, a pivoted cable-clamp carried by the knee member, and means whereby the clamp may be operated from the side and without the lines of the car and removable when the grip is in clamping position.

5. A car-grip embodying a knee member, means for coupling the knee member to a car, a cable-clamp pivotally mounted on the knee member and on a pivot longitudinal of the car and means carried by the clamp member and exerting pressure against the knee member and whereby the clamp may be operated from the side and without the lines of the car.

6. A car-grip embodying a knee member, means for coupling the knee member to a car, a cable-clamp pivotally mounted on the knee member and on a pivot longitudinally of the car, a screw mounted in the clamp member and engaging the knee member and an angular head on the screw and accessible from the side of the car.

7. A car-grip embodying a knee member carrying a pin for coupling with the draw-head of a car and having a groove at its lower extremity longitudinal of the car, a cable-grip member pivoted to the side of the knee member and having a groove in opposed relation to the groove of the knee member and a lever extending opposite and above the pivot, and a screw piercing the lever and bearing against the side of the knee member and having an angular head accessible from the side of the car.

813,041. **ROCK-DRILL.** DAVID C. DEMAREST, Angels Camp, Cal. Filed May 4, 1905. Serial No. 258,845.

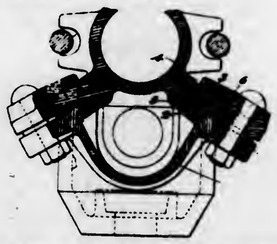

Claim.—1. In a rock-drilling machine the combination of a shell and a cylinder supported thereon one of said parts having lugs and the other part having seats for said lugs, and means to clamp the cylinder to the shell said means including bolts passing through the caps and shell said shell having counterbores and said caps having bosses fitting said counterbores.

2. In a rock-drilling machine, the combination of a cylinder having lateral inclined lugs, a shell having correspondingly-inclined seats for said lugs, removable caps for the lugs, said caps having bosses on their under side and said shell having counterbores adapted to receive said bosses, and means to secure the caps to the shell.

813,042. **INVERTED INCANDESCENT GAS-BURNER.** HENRY FARNOFF, Buffalo, N. Y. Filed Aug. 2, 1905. Serial No. 272,200.

Claim.—1. In an inverted incandescent gas-burner, the combination with the Bunsen tube having air-inlets, and the mantle; of a valve-chamber screwed into said tube, a removable tapered tip for said chamber within the tube and extending past said inlets, the end of the tip having a plurality of orifices, a large one in the center and smaller ones at the sides, a gas-feed pipe tapped into the side of the chamber, a needle-valve threaded axially through the top of the chamber and having its point directed into the central of said orifices, a head at its upper end, and a coiled expansive spring upon its stem between said head and the chamber.

2. In an incandescent gas-burner, the combination with the Bunsen tube, and the globe; of a gallery for the globe, an annular shoulder on the tube, and ribs at right angles to and tapering away from said shoulder and adapted to receive the gallery.

3. In an inverted incandescent gas-burner, the combination with the Bunsen tube, the mantle at its lower end, a globe around the latter, a gallery for the globe, and a deflector standing above said gallery; of an annular shoulder on the tube, and upright ribs also on the tube adjacent to and tapering away from said shoulder and adapted to frictionally receive the hubs of the gallery and deflector.

4. In an inverted incandescent gas-burner, the combination with the air and the gas inlets, and the mantle; of a Bunsen tube having its bore tapered downward from the air-inlet for part of its length, a cylindrical nozzle, and an interior annular shoulder between said tapered bore and nozzle and facing toward the latter.

5. An inverted Bunsen burner having its bore tapered downward from the air-inlet for part of its length, and cylindrical for the remainder of its length in a plurality of sizes separated from each other and from the tapered portion by angular annular shoulders facing toward the nozzle.

6. In an inverted incandescent gas-burner, a Bunsen tube having a downwardly-tapering mixing-chamber, a cylindrical nozzle, a cylindrical bore between them, and an interior annular shoulder next the mixing-chamber and facing toward the nozzle.

7. In an inverted incandescent gas-burner, a substantially vertical Bunsen tube whose bore comprises two cylindrical portions of different diameter and a mixing-chamber tapered downward toward the nozzle, all separated from each other by angular annular shoulders.

8. In an incandescent gas-burner, the combination with the nozzle having two exterior annular shoulders with a groove between, the shoulder near the end being cut away at intervals, and a pin movable through the other shoulder opposite one of said intervals; of the mantle, a ring fast therein, and inturned tangs within the ring adapted to said intervals.

9. In an inverted incandescent gas-burner, the combination with the nozzle having exterior annular shoulders with a groove between the lower shoulder being cut away at intervals, a headed pin movable through a hole in the upper shoulder opposite one of said intervals, and another pin fixedly connecting the shoulders; of the mantle, a ring fast therein, and inturned tangs within the ring adapted to pass through said intervals.

10. In an inverted incandescent gas-burner, the combination with the nozzle having exterior shoulders with a groove between, the lower shoulder being cut away at intervals and the upper shoulder having a radial projection above one interval pierced with an upright hole, a pin mounted loosely in said hole and hanging normally across said groove, heads at the extremities of the pin, and a fixed stop between the shoulders at another point; of the mantle, a ring fast therein, and inturned tangs within the ring spaced to enter the intervals and adapted to the height of the groove.

11. In an inverted incandescent gas-burner, the combination with the nozzle having exterior shoulders with a groove between, the lower shoulder being cut away at intervals, a gravity-lock supported by the upper shoulder above one interval and hanging normally across said groove, and a fixed stop between the shoulders at another point; of the mantle, a metallic ring fast therein, inturned tangs at its upper end spaced to enter the intervals and one of them adapted to raise said lock as the ring is applied, and upturned inner extremities on said tangs adapted to fill the height of said groove.

12. In an inverted incandescent gas-burner, the combination with a Bunsen tube having a mixing-chamber tapering downward toward the nozzle and an interior shoulder; of the gas-supply tip having a plurality of orifices, and a needle-valve regulator for one of them.

13. In an inverted incandescent gas-burner, the combination with a Bunsen tube having a mixing-chamber tapering downward toward the nozzle, a cylindrical nozzle and an interior shoulder between them; of the gas-supply tip, and a needle-valve regulator therefor.

14. In an inverted incandescent gas-burner, the combination with a substantially vertical Bunsen tube having downwardly-facing right-angular annular shoulders in its bore, and the air-inlets at its upper end; of the gas-supply tip directed into said upper end, and a needle-valve regulator therefor.

813,043. **VALVE-CONTROLLING MECHANISM FOR EXPLOSIVE-ENGINES.** DAVID F. GRAHAM and FRANK A. FOX, Stamford, Conn., assignors, by mesne assignments, to The Bissonbuth Horseless Vehicle Company, Middletown, Conn., a Corporation of Maine. Filed Mar. 11, 1903. Serial No. 147,236.

Claim.—1. In a controlling device for inlet-valves of explosive-engines, the combination with a vapor-pipe having a plurality of inlet-openings and valve-seats for said inlet-openings, of inlet-valves for controlling said openings, throttle-wheels, a connection between said wheels for causing them to operate in unison and connections between said throttle-wheels and valve-stems, substantially as described.

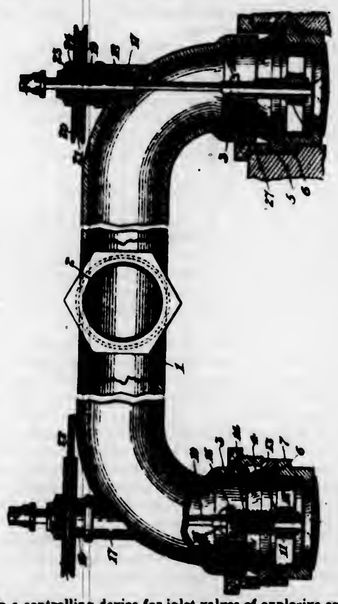

2. In a controlling device for inlet-valves of explosive-engines, the combination with a vapor-pipe having a plurality of inlet-openings and valve-seats for said inlet-openings, of inlet-valves for controlling said openings, throttle-wheels, a connection between said throttle-wheels for causing them to operate in unison, and adjustable connections between said throttle-wheels and valve-stems for adjusting said throttle-wheels to limit the withdrawal of the valves from the seats of said openings.

3. In a controlling device for inlet-valves of explosive-engines, the combination with a vapor-pipe having a plurality of inlet-openings and valve-seats for said inlet-openings, of inlet-valves for controlling said openings, throttle-wheels, an endless cable connecting said throttle-wheels for causing them to operate in unison, connections between said throttle-wheels and valve-stems for adjusting said throttle-wheels to limit the withdrawel of the valves from the seats of said openings, subtantially as described.

4. The combination with the vapor-pipe of an explosive-engine, of a union-coupling secured to the end of said pipe and provided with an annular flange having an annular recess in its under side, a valve-seat provided with an annular flange having an annular projection engaging said recess, a cylinder provided with an annular shoulder to receive the flange of the valve-seat and an upwardly-extending annular flange having interior threads, a valve for said seat, and a clamping nut or ring arranged to bear down on the flange of said coupling and clamp it and the flange of the valve-seat to the cylinder thereby holding the valve-seat in place.

5. In an explosive-engine, the combination with a vapor-pipe, and a plurality of valve-seats and valves for said seats, of externally-threaded bushings mounted in said pipe, stems connected to said valves and mounted to slide in said bushings and provided above said bushings with stops to limit their downward movement, throttle-wheels mounted to screw on said bushings and adapted to be raised or lowered thereon and to be engaged by said stops, and means for turning said wheels in unison, as set forth.

813,044. **MOTOR-VEHICLE.** PETER E. HANSON, Galveston, Tex. Filed June 24, 1905. Serial No. 266,782.

Claim.—1. A self-propelled, dumping-dray comprising an axle provided with and supported by traveling wheels, a main frame having a rear section connected with and arranged to swing vertically on the axle, and also having a forward section hinged to the rear section at a point in advance of the axle, whereby the frame is adapted to flex, means detachably connecting the said frame-sections with a view of retaining the same in alinement with each other, a pilot-wheel carried by the forward frame-section, a motor carried by the rear frame-section, and a driving connection intermediate said motor and the axle.

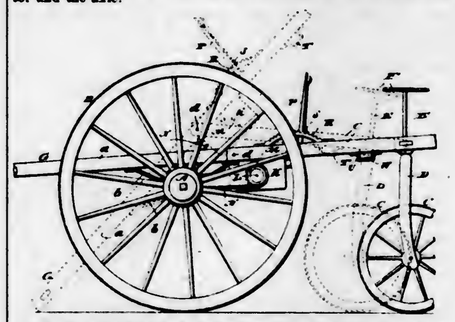

2. In a self-propelled, dumping-dray, the combination of an axle provided with and supported by traveling wheels, a main frame comprising a rear section connected with and arranged to swing vertically on the axle and having a transverse loop on its forward portion, and a forward section hinged to and lapping the forward portion of the rear section and having a transverse loop arranged to register with that of said rear section, a removable bar occupying said loops of the frame-sections, a hanger having an upwardly-extending shaft journaled in the forward frame-section and provided with a handle, a pilot-wheel carried by said hanger, a motor carried by the rear frame-section and connected with the axle, and means on said rear frame-section for controlling the motor.

813,045. **HITCHING DEVICE.** GEORGE W. HAZLEWOOD and HENRY C. ROBINSON, Mineral Wells, Tex. Filed Nov. 26, 1904. Serial No. 234,436.

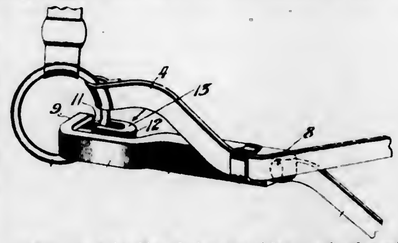

Claim.—1. A hitching device comprising a pair of members pivoted for relative swinging movement, one of the members being provided with an open recess for the reception of a bit-ring, and the other with a portion for normally closing said opening.

2. A hitching device comprising a pair of members pivotally connected for relative movement, one of the members being provided with an outwardly-opening recess designed for the reception of a bit-ring and the other with a portion for normally closing said recess, and means for maintaining the members in closed position.

3. A hitching device comprising a pair of members pivotally connected for relative swinging movement, one of the members being provided with an outwardly-opening recess for the reception of a bit-ring and the other with a portion for normally closing said recess, and a spring-engaging member carried by one of the members and adapted for engagement with the other to maintain the members in normally closed position, the engaging member being designed for engagement by a rein to permit movement of the members to releasing position.

4. In a device of the class described, a hitching-strap, a hitching device carried thereby and adapted for engagement with a bit-ring, and a movable member operable by a rein for releasing the device from the bit-ring.

813,046. **WHARF OR LANDING-STAGE.** ANTOINE JANSSENS, St. Nicolas, Belgium. Filed Oct. 26, 1905. Serial No. 284,458.

Claim.—1. In a wharf the combination of a float or pontoon,

means for permitting said float to be automatically displaced in a horizontal and vertical direction by the action of the variations of the water-level, and means for giving access to the float in its differ-

Claim.—1. In a device of the class described, the combination with a core, of a removable metal portion constructed to fit onto and surround said core and means for retaining said metal portion there-

Claim.—1. In a machine of the character set forth, the combination with an advance-feed mechanism, and a transverse-feed mechanism, of means for operating the said feed mechanisms periodically

periodically and alternately of each other, and means for operating the advance feed independently.

14. In a machine of the character set forth, the combination

means for permitting said float to be automatically displaced in a horizontal and vertical direction by the action of the variations of the water-level, and means for giving access to the float in its different positions substantially as described.

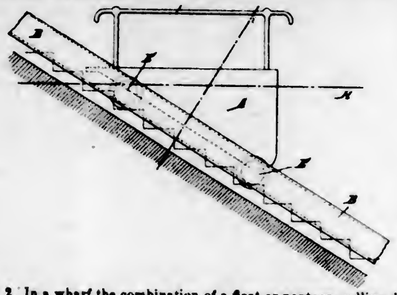

2. In a wharf the combination of a float or pontoon, rolling devices carried by said float, inclined paths for said rolling devices between which the float is automatically displaced in a horizontal and vertical direction and means between the roller-paths for giving access to the float, substantially as described.

813,047. **HOLDER.** LOUIS A. KING and CLARENCE PLOSS, Salem, Mass. Filed Feb. 7, 1905. Serial No. 244,563.

Claim.—1. A holder comprising a spring-wire clamp consisting of convolutions of the wire, the central portion of said wire bent forming a closed handle fulcrum-loop overhanging the convoluted clamp.

2. A holder comprising a single piece of spring-wire bent centrally between its ends forming a closed loop, the ends of said loop extended and forming depending arms, and the ends of the wire beyond said arms bent forming convolute clamping-jaws under the closed loop.

3. A holder comprising a piece of wire having its end portions bent forming convolute clamping-jaws, and having its central portion bent forming a closed fulcrum-loop over the clamping-jaws, said loop inclined upwardly at an obtuse angle to the horizontal plane of the clamping-jaws.

4. A holder, comprising a single spring-wire, bent between its ends forming a handle fulcrum-loop, and the ends bent forming angular clamping convolutions with bowed clamping members and flared entrance-guiding tongues at their outer ends.

5. A holder, comprising a block, a single spring-wire bent forming a spring-clamp secured to said block, and a fulcrum-loop above the clamp and secured to the block.

6. A holder, comprising a handle fulcrum-loop, and a spring-clamp below the same, each member of said clamp consisting of a plurality of convolutions and arms integral with said loop and clamp and connecting them.

7. In a holder, the combination with a block or support, of a wire bent centrally between its ends forming an outwardly-projecting loop, the wire below the loop projected downwardly and forming an eye under the loop, a fastening device passing through said eye and into the block or support, said wires depending from said eye and having their end portions bent forming convolute clamping-jaws, and fastening devices securing the extremities of the wire to the block or support.

813,048. **ANODE.** LOUIS LEVERT, New York, N. Y. Filed May 9, 1905. Serial No. 259,821.

Claim.—1. In a device of the class described, the combination with a core, of a removable metal portion constructed to fit onto and surround said core and means for retaining said metal portion thereon, substantially as described.

2. In a device of the class described, the combination with a core, of a metal portion constructed to fit onto and surround said core, means for retaining said metal portion thereon and insulating material covering the exposed portions of said core, substantially as described.

3. In a device of the class described, the combination with a core provided at its lower end with an enlarged portion, of a metal portion constructed to fit onto and surround said core, said metal portion being supported by said enlarged portion of said core, substantially as described.

4. In a device of the class described, the combination with a core provided at its lower end with an enlarged portion, of a metal portion constructed to fit onto and surround said core, said metal portion being supported by said enlarged portion of said core and insulating material covering the exposed portions of said core, substantially as described

5. In a device of the class described, the combination with a core provided at its lower end with an enlarged portion, of a metal portion constructed to fit onto and surround said core, said metal portion being tapered upwardly, the thickened end thereof resting upon the enlarged portion of said core, substantially as described.

6. In a device of the class described, the combination with a carbon plate provided at one end with ears and at its other end with an enlarged portion, of a metal portion constructed to fit onto and surround said carbon plate, said metal portion being tapered upwardly, the thickened end thereof resting upon the enlarged portion of said core, and insulating material covering the exposed portions of said carbon plate, substantially as described.

813,049. **PERFORATING-MACHINE.** BROR J. LINDGREN, New York, N. Y., assignor to B. W. Bliss Company, a Corporation of West Virginia. Filed June 17, 1904. Serial No. 213,948.

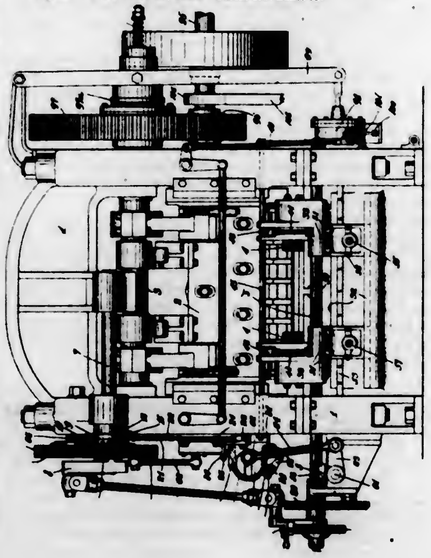

Claim.—1. In a machine of the character set forth, the combination with an advance-feed mechanism, and a transverse-feed mechanism, of means for operating the said feed mechanisms periodically or semiperiodically at will.

2. In a machine of the character set forth, the combination with an advance-feed mechanism, and a transverse-feed mechanism, of means for operating each of the said feed mechanisms periodically or semiperiodically at will independently one of the other.

3. In a machine of the character set forth, the combination with an advance-feed mechanism, and a transverse-feed mechanism, of means for operating the said feed mechanisms semiperiodically and alternately of each other.

4. In a machine of the character set forth, the combination with a pair of feed-rollers, of an advance-feed mechanism for rotating the rollers periodically or semiperiodically at will, and a transverse-feed mechanism for moving the feed-rollers transversely periodically or semiperiodically at will.

5. In a machine of the character set forth, the combination with a pair of feed-rollers, of an advance-feed mechanism adjustable to rotate the rollers periodically or semiperiodically at will, and a transverse-feed mechanism adjustable to move the feed-rollers transversely periodically or semiperiodically at will, each feed mechanism being adjustable one independently of the other.

6. In a machine of the character set forth, the combination with a pair of feed-rollers, of an advance-feed mechanism for rotating the rollers semiperiodically, and a transverse-feed mechanism for moving the rollers transversely semiperiodically, the said feed mechanisms acting alternately.

7. In a machine of the character set forth, the combination with a transversely-movable feed-roller frame, of a pair of feed-rollers carried by the same, an advance-feed shaft, means for rotating the said shaft intermittently, a train of gears, for imparting the motion of the advance-feed shaft to the feed-rollers, transversely movable with the feed-roller frame, a transverse-feed shaft attached to the feed-roller frame, and means for reciprocating the said transverse-feed shaft intermittently.

8. In a machine of the character set forth, the combination with a transversely-movable feed-roller frame, of a pair of feed-rollers carried by the same, an advance-feed shaft, means for rotating the said shaft intermittently and periodically or semiperiodically at will, a train of gears for imparting the motion of the advance-feed shaft to the feed-rollers, transversely movable with the feed-roller frame, a transverse-feed shaft attached to the feed-roller frame, and means for reciprocating the said transverse-feed shaft intermittently and periodically or semiperiodically at will.

9. In a machine of the character set forth, the combination with a transversely-movable feed-roller frame, of a pair of feed-rollers carried by the same, an advance-feed shaft, means for rotating the said shaft intermittently and adjustable to operate periodically or semiperiodically at will, a train of gears, for imparting the motion of the advance-feed shaft to the feed-rollers, transversely movable with the feed-roller frame, a transverse-feed shaft attached to the feed-roller frame, and means for reciprocating the said transverse-feed shaft intermittently and adjustable to operate periodically or semiperiodically at will, each means for operating the two feed-shafts being adjustable one independently of the other.

10. In a machine of the character set forth, the combination with a transversely-movable feed-roller frame, of a pair of feed-rollers carried by the same, an advance-feed shaft, means for rotating the said shaft intermittently and semiperiodically, a train of gears, for imparting the motion of the advance-feed shaft to the feed-rollers, transversely movable with the feed-roller frame, a transverse-feed shaft attached to the feed-roller frame, means for reciprocating the transverse-feed shaft semiperiodically, the means for operating the advance and transverse feed shafts acting alternately.

11. In a machine of the character set forth, the combination with an advance-feed mechanism, and a transverse-feed mechanism, of means for operating the said feed mechanisms in unison periodically or semiperiodically at will, and means for operating the advance feed independently.

12. In a machine of the character set forth, the combination with an advance-feed mechanism, and a transverse-feed mechanism, of means for operating the said feed mechanisms in unison each one independently adjustable of the other to operate periodically or semiperiodically at will, and means for operating the advance feed independently.

13. In a machine of the character set forth, the combination with an advance-feed mechanism, and a transverse-feed mechanism, of means for operating the said feed mechanisms in unison semiperiodically and alternately of each other, and means for operating the advance feed independently.

14. In a machine of the character set forth, the combination with a pair of feed-rollers, of an advance-feed mechanism for rotating the rollers periodically or semiperiodically at will, and a transverse-feed mechanism for moving the feed-rollers transversely periodically or semiperiodically at will in unison with the advance-feed mechanism, and means for operating the advance-feed mechanism independently.

15. In a machine of the character set forth, the combination with a pair of feed-rollers, of an advance-feed mechanism for rotating the rollers, a transverse-feed mechanism for moving the feed-rollers transversely in unison with the advance-feed mechanism, independently-adjustable means on the advance-feed mechanism and transverse-feed mechanism for causing each feed mechanism to operate periodically or semiperiodically at will, and means for operating the advance-feed mechanism independently.

16. In a machine of the character set forth, the combination with a pair of feed-rollers, of an advance-feed mechanism for rotating the rollers semiperiodically, and a transverse-feed mechanism for moving the rollers transversely semiperiodically, the said feed mechanisms acting in unison and alternately, and means for operating the advance-feed mechanism independently.

17. In a machine of the character set forth, the combination with a transversely-movable feed-roller frame, of a pair of feed-rollers carried by the same, an advance-feed shaft, a train of gears, for imparting the motion of the advance-feed shaft to the feed-rollers, transversely movable with the feed-roller frame, a transverse-feed shaft attached to the feed-roller frame, and means for rotating the advance-feed shaft and for reciprocating the said transverse-feed shaft intermittently and in unison, and means for operating the advance-feed shaft independently.

18. In a machine of the character set forth, the combination with a transversely-movable feed-roller frame, a pair of feed-rollers carried by the same, an advance-feed shaft, a train of gears for imparting the motion of the advance-feed shaft to the feed-rollers, transversely movable with the feed-roller frame, a transverse-feed shaft attached to the feed-roller frame, and means for rotating the advance-feed shaft and reciprocating the said transverse-feed shaft intermittently in unison and periodically or semiperiodically at will, and means for operating the advance-feed shaft independently.

19. In a machine of the character set forth, the combination with a transversely-movable feed-roller frame, of a pair of feed-rollers carried by the same, an advance-feed shaft, a train of gears, for imparting the motion of the advance-feed shaft to the feed-rollers, transversely movable with the feed-roller frame, a transverse-feed shaft attached to the feed-roller frame, and means for rotating the advance-feed shaft and reciprocating the said transverse-feed shaft intermittently and in unison, independently adjustable to operate periodically or semiperiodically at will, and means for operating the advance-feed shaft independently.

20. In a machine of the character set forth, the combination with a transversely-movable feed-roller frame, of a pair of feed-rollers carried by the same, an advance-feed shaft, a train of gears, for imparting the motion of the advance-feed shaft to the feed-rollers, transversely movable with the feed-roller frame, a transverse-feed shaft attached to the feed-roller frame, means for rotating the advance-feed shaft and reciprocating the transverse-feed shaft in unison semiperiodically and alternately.

21. In a machine of the character set forth, the combination with a transversely-movable feed-roller frame, of a pair of feed-rollers carried by the same, an advance-feed shaft, means for rotating the said shaft intermittently, a train of gears, for imparting the motion of the advance-feed shaft to the feed-rollers, transversely movable with the feed-roller frame, a transverse-feed shaft attached to the feed-roller frame, means for reciprocating the said transverse-feed shaft intermittently, and means for adjusting the feed-roller frame transversely.

22. In a machine of the character set forth, the combination with a transversely-movable feed-roller frame, of a pair of feed-rollers carried by the same, an advance-feed shaft, means for rotating the said shaft intermittently and periodically or semiperiodically at will, a train of gears for imparting the motion of the advance-feed shaft to the feed-rollers, transversely movable with the feed-roller frame, a transverse-feed shaft attached to the feed-roller frame, means for reciprocating the said transverse-feed shaft intermittently and periodically or semiperiodically at will, and means for adjusting the feed-roller frame transversely.

23. In a machine of the character set forth, the combination

with a transversely-movable feed-roller frame, of a pair of feed-rollers carried by the same, an advance-feed shaft, means for rotating the said shaft intermittently and adjustable to operate periodically or semiperiodically at will, a train of gears, for imparting the motion of the advance-feed shaft to the feed-rollers, transversely movable with the feed-roller frame, a transverse-feed shaft attached to the feed-roller frame, means for reciprocating the said transverse-feed shaft intermittently and adjustable to operate periodically or semiperiodically at will, each means for operating the two feed-shafts being adjustable one independently of the other, and means for adjusting the feed-roller frame transversely.

24. In a machine of the character set forth, the combination with a transversely-movable feed-roller frame, of a pair of feed-rollers carried by the same, an advance-feed shaft, means for rotating the said shaft intermittently and semiperiodically, a train of gears, for imparting the motion of the advance-feed shaft to the feed-rollers, transversely movable with the feed-roller frame, a transverse-feed shaft attached to the feed-roller frame, means for reciprocating the transverse-feed shaft semiperiodically, the means for operating the advance and transverse feed shafts acting alternately, and means for adjusting the feed-roller frame transversely.

25. In a machine of the character set forth, the combination with a transversely-movable feed-roller frame, of a pair of feed-rollers carried by the same, an advance-feed shaft, a train of gears, for imparting the motion of the advance-feed shaft to the feed-rollers, transversely movable with the feed-roller frame, a transverse-feed shaft attached to the feed-roller frame, means for rotating the advance-feed shaft and for reciprocating the said transverse-feed shaft intermittently and in unison, means for operating the advance-feed shaft independently, and means for adjusting the feed-roller frame transversely.

26. In a machine of the character set forth, the combination with a transversely-movable feed-roller frame, a pair of feed-rollers carried by the same, an advance-feed shaft, a train of gears for imparting the motion of the advance-feed shaft to the feed-rollers, transversely movable with the feed-roller frame, a tranverse-feed shaft attached to the feed-roller frame, means for rotating the advance-feed shaft and reciprocating the said transverse-feed shaft intermittently in unison and periodically or semiperiodically at will, means for operating the advance-feed shaft independently, and means for adjusting the feed-roller frame transversely.

27. In a machine of the character set forth, the combination with a transversely-movable feed-roller frame, of a pair of feed-rollers carried by the same, an advance-feed shaft, a train of gears for imparting the motion of the advance-feed shaft to the feed-rollers, transversely movable with the feed-roller frame, a transverse-feed shaft attached to the feed-roller frame, and means, independently adjustable to operate periodically or semiperiodically at will, for rotating the advance-feed shaft and reciprocating the said transverse-feed shaft intermittently and in unison, means for operating the advance-feed shaft independently, and means for adjusting the feed-roller frame transversely.

28. In a machine of the character set forth, the combination with a transversely-movable feed-roller frame, of a pair of feed-rollers carried by the same, an advance-feed shaft, a train of gears, for imparting the motion of the advance-feed shaft to the feed-rollers, transversely movable with the feed-roller frame, a transverse-feed shaft attached to the feed-roller frame, means for rotating the advance-feed shaft and reciprocating the transverse-feed shaft in unison semiperiodically, and means for adjusting the feed-roller frame transversely.

29. In a machine of the character set forth, the combination of two feed-roller frames spaced a distance apart, a pair of feed-rollers carried by each frame for seizing the side edges of the sheet, and means for adjusting the said feed-roller frames transversely to suit different widths of sheets.

30. In a machine of the character set forth, the combination of two feed-roller frames spaced a distance apart, a pair of feed-rollers carried by each frame for seizing the side edges of the sheet, means for adjusting the said feed-roller frames transversely to suit different widths of sheets, and means for lifting the upper roller of each pair out of contact with the lower roller.

31. In a machine of the character set forth, the combination of a transversely-movable feed-roller frame, two housings carried by the said feed-roller frame, two superposed feed-rollers mounted in said housings, an advance-feed shaft extending through the said feed-roller frame, a gear slidingly mounted on the said advance-feed shaft and located intermediate the said two housings, and a train of gears imparting motion from the said gear on the advance-feed shaft to the feed-rollers, all movable with the said feed-roller frame.

32. In a machine of the character set forth, the combination of a transversely-movable feed-roller frame, two housings carried by the said feed-roller frame, two superposed feed-rollers slidingly mounted in said housings, an advance-feed shaft extending through the said feed-roller frame, a gear slidingly mounted on the said advance-feed shaft and located intermediate the said two housings, a train of gears imparting motion from the said gear on the advance-feed shaft to the feed-rollers, all movable with the said feed-roller frame, and means for lifting the upper feed-roll out of contact with the lower one.

33. In a machine of the character set forth, the combination of a shaft, a crank and a collar mounted fast on the same, a pinion interposed between the two and turning loosely on the shaft, a pin for connecting the collar and pinion, a pivoted latch, for preventing the pin from uniting the pinion and collar, a cam for automatically moving the latch out of the pin semiperiodically, and means for moving the latch out of the pin whereby the collar and pinion are constantly connected, and the crank operates periodically.

34. In a machine of the character set forth, the combination of a reciprocating transverse-feed shaft, a rock-shaft for reciprocating the said transverse-feed shaft, an intermittently-rotatable shaft, connections between the latter and the rock-shaft, and means for operating the rotatable shaft periodically or semiperiodically at will.

35. In a machine of the character set forth, the combination of a reciprocating transverse-feed shaft, a rock-shaft for reciprocating the said transverse-feed shaft, an intermittently-rotatable shaft, connections between the latter and the rock-shaft, and means for operating the rotatable shaft periodically or semiperiodically at will, comprising: a ratchet having two teeth fast on the said shaft, a removable ratchet loose on the said shaft having two teeth, one of which is of a lesser depth than the teeth on the fast ratchet, and a pawl for engaging with the fast and loose ratchet or fast ratchet only.

36. In a machine of the character set forth, the combination of a shaft, a pinion mounted loosely on the said shaft, a ratchet fast on the said shaft, a pawl for imparting the motion of the pinion to the ratchet, a head on one end of the shaft, a cam moving with the pawl a stop-dog normally out of contact with the head, connections between the stop-dog and the cam moving with the pawl for causing the said stop-dog to engage with a notch in the said head after each feeding motion of the shaft.

37. In a machine of the character set forth, the combination of a shaft, a pinion mounted loosely on the said shaft, a ratchet fast on the said shaft, a pawl for imparting the motion of the pinion to the ratchet, a head on one end of the shaft, a cam moving with the pawl, a stop-dog normally in contact with the head, connections between the stop-dog and the cam moving with the pawl for causing the said stop-dog to move out of engagement with the notch in the said head at the beginning of the feeding motion of the shaft, and a check-dog for engaging with the head to prevent the shaft from returning with the ratchet when the latter is on the return stroke.

38. In a machine of the character set forth, the combination with a punching mechanism, an advance-feed mechanism, and a transverse-feed mechanism, of means for operating said feed mechanisms so that the punching mechanism will operate to cut blanks in the same longitudinal row twice in succession.

39. In a machine of the character set forth, the combination with a punching mechanism, an advance-feed mechanism, and a transverse-feed mechanism, of means for operating said feed mechanisms, and means for adjusting the same so that the punching mechanism will operate to cut blanks once or twice in succession in the same longitudinal row.

40. In a machine of the character set forth, the combination with a punching mechanism, an advance-feed mechanism, and a transverse-feed mechanism, of means for operating said feed mechanisms, and means for adjusting the same so that the punching mechanism will operate to cut blanks once or several times in succession in the same longitudinal row.

813,050. **SNOW-REMOVING APPARATUS.** HIRAM MAINE, Indianapolis, Ind. Filed Dec. 16, 1905. Serial No. 292,223.

Claim.—1. A snow-remover including a conveyer for gathering and hauling snow and provided with an unloader movable therein.

2. A snow-remover including a conveyer for gathering and hauling snow and provided with an unloader movable to draw the snow therefrom, and draft appliances attached to the conveyer-body and to the unloader part thereof.

3. A snow-remover including a sliding conveyer provided with draft appliances, and a guard for manholes of sewers provided with a plurality of guide-bars insertible into a manhole and having an upright deflector.

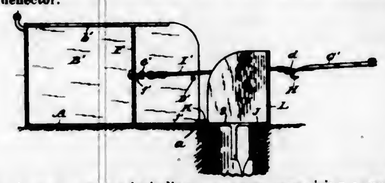

4. A snow-remover including a conveyer comprising a main part having a bottom, sides provided with guides, a tail end, a handle at the tail end, and draft-lugs at the forward ends of the sides; an unloader comprising a tail-board movable on the bottom of the main part in connection with the guides, and draft appliances having coupling-irons attachable to the draft-lugs and provided with links connected with the tail-board.

813,051. **PUMP.** PATRICK H. LYNCH, New York, N. Y. Filed Feb. 20, 1905. Serial No. 246,470.

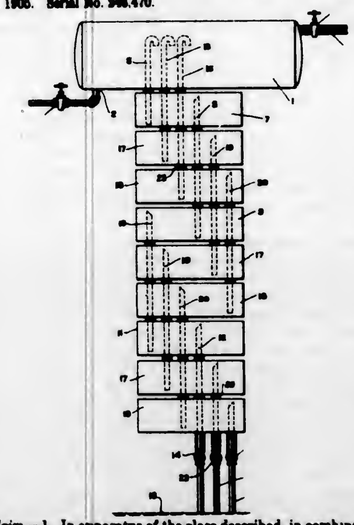

Claim.—1. In apparatus of the class described, in combination, a series of receptacles, a connection between each of said receptacles and the receptacle above the same, said connections projecting within and above the lowermost portions of said receptacles, a connecting-pipe between the lowermost receptacle and a source of supply, and means adapted to conduct steam to the uppermost of said receptacles.

2. In apparatus of the class described, in combination, a series of receptacles, pipes connecting each of said receptacles with a lower receptacle and means adapted to produce a vacuum within said receptacles, said pipes projecting within the said receptacles and terminating intermediate the upper and lower walls thereof.

3. In apparatus of the class described, in combination, a series of receptacles, pipes connecting each of said receptacles with a receptacle below the same, each of said pipes projecting within one of said lower receptacles and terminating within the lower portion thereof, a source of supply, a pipe connecting the lowermost receptacle with the source of supply, and means for conducting steam to said receptacles.

4. In apparatus of the class described, in combination, a series of tanks, suction-pipes connecting each of said tanks with a tank below the same in said series and ending intermediate the upper and lower walls of said tanks, and means adapted to cause a substantially simultaneous pumping of said tanks from those next below in the series through said suction-pipes.

5. In apparatus of the class described, in combination, a source of supply, a reservoir, and two series of receptacles interposed between the same, each of said receptacles being connected with one below the same, connections between the uppermost receptacles and said reservoir and connections between the lowermost receptacles and said source of supply, the receptacles of one of said series alternating in position with the receptacles of the other thereof and being adjacent thereto.

6. In apparatus of the class described, in combination, a source of supply, a reservoir, a plurality of series of receptacles interposed between said source of supply and said reservoir, a connection between the uppermost receptacle of each series and said reservoir, a connection between the lowermost receptacle of each series and said source of supply, intermediate connections between said receptacles of each series, and means adapted to reduce the pressure in said receptacles, the receptacles of each series alternating in position with receptacles of all of the other series.

7. In apparatus of the class described, in combination, a source of supply, a reservoir, a plurality of series of receptacles interposed between said source of supply and said reservoir, a connection between the uppermost receptacle of each series and said reservoir, a connection between the lowermost receptacle of each series and said source of supply, intermediate connections between said receptacles of each series, and means adapted to reduce the pressure in said receptacles, the receptacles of each series alternating in position with receptacles of all of the other series and having their walls substantially in contact with the walls of the receptacles adjacent thereto.

8. In apparatus of the class described, in combination, a reservoir, a source of supply, a plurality of series of receptacles interposed between said reservoir and said source of supply, connections between the uppermost receptacle of each series and said reservoir, connections between the lowermost receptacle of each of said series and said source of supply, connections between said receptacles each receptacle of each of said series alternating in position with receptacles of all of the other series and having their walls substantially in contact with the walls of the contiguous receptacles and means adapted to cause each of said receptacles to draw water from that immediately below the same in said series.

9. In apparatus of the class described, in combination, a reservoir, a source of supply, a plurality of series of receptacles interposed between said reservoir and said source of supply, connections between the uppermost receptacles of each of said series and said reservoir, connections between the lowermost receptacles of each of said series and said source of supply, intermediate connections between the receptacles of each of said series, the connection from each of said receptacles to that next below terminating at the lower portion of the lower receptacle, and means for conducting steam to said reservoir, each of said receptacles alternating in position with receptacles of all of the other series and having its walls substantially in contact with the walls of the contiguous receptacles.

10. In apparatus of the class described, in combination, a series of receptacles, pipes connecting each of said receptacles with a receptacle below the same, said first-mentioned pipes projecting within said receptacles and terminating intermediate the upper and lower portions thereof, a source of supply, a pipe connecting the lowermost receptacle with the source of supply, and means for forcing air from said receptacles.

11. In apparatus of the class described, in combination, a series of receptacles, pipes connecting each of said receptacles with a receptacle below the same, said pipes projecting within and terminating intermediate the upper and lower portions thereof, a source of supply, a pipe connecting the lowermost receptacle with the source of supply and means for forcing air from one of said receptacles.

12. In apparatus of the class described, in combination, a reservoir, a source of supply, a plurality of series of receptacles interposed between said reservoir and said source of supply, connections between the uppermost receptacle of each series and said reservoir, connections between the lowermost receptacle of each of said series and said source of supply, and means adapted to force air from said reservoir, each receptacle of each of said series alternating in position with receptacles of all of the other series, and having their walls substantially in contact with the walls of the contiguous receptacles.

813,052. **ELECTRIC BRAKE FOR VEHICLES.** JOSEPH H. MAHONEY, Astoria, N. Y., assignor, by mesne assignments, to American Electric Brake Company, a Corporation of New Jersey. Filed Nov. 8, 1901. Serial No. 81,804.

Claim.—1. The combination with an electric braking system, of an automatically-acting controller mounted on the vehicle and operating to control or vary the braking-current within appropriate limits in relation to the speed of the vehicle to thereby vary the pres-

sure between the braking-surfaces and increase the efficiency of the braking operation.

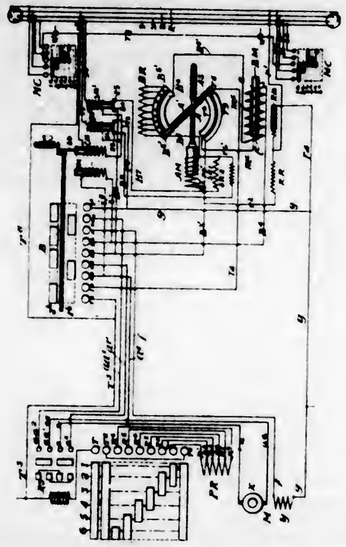

2. The combination with an electric braking system comprising a brake-magnet having two windings acting to produce pressure between braking-surfaces, of an automatic controller acting to regulate or control the braking-current within appropriate limits relatively to the speed of the vehicle in one of said windings

3. The combination with an electric braking system comprising a brake-magnet having two windings acting to produce pressure between braking-surfaces, of an automatic controller acting to control the braking-current in one of said windings.

4. An electric braking system comprising a brake-magnet having two windings of different resistance both fed from the vehicle-motor running as a generator, an automatically-acting controller regulating the current within appropriate limits relative to the speed of the vehicle in the winding of lower resistance, the circuit of the other winding being of constant resistance and the current therein varying according to the speed of the vehicle.

5. An electric braking system comprising a brake-magnet having two windings of different resistance both fed from the vehicle-motor running as a generator, an automatically-acting controller for controlling the current in the winding of lower resistance, the circuit of the other winding being of constant resistance and the current therein varying according to the speed of the vehicle.

6. In an electric braking system, a brake-winding acting to produce pressure between braking-surfaces and fed through two circuits one of which is of constant resistance, and means for varying the resistance of the other relatively to the speed of the vehicle.

7. An electric braking system comprising opposed braking-surfaces and means for controlling the pressure between them by two currents one of which varies relatively to the speed of the car and the other of which is appropriately controlled, whereby the pressure between the braking-surfaces is varied in relation to the speed of the vehicle and the efficiency of the braking operation increased.

8. In an electric braking system, a brake-operating apparatus comprising two independent circuits of different resistance both fed by the vehicle-motor running as a generator, one of the circuits being of constant resistance and causing a braking action substantially proportional to the speed of the vehicle, and means for automatically varying the resistance of the other circuit within appropriate limits relative to the speed of the car.

9. In an electric braking system, a braking apparatus comprising two independent circuits one of constant resistance which is fed at one time from the main source for propelling the vehicle and at another time from the vehicle-motor running as a generator, and means for varying the current in the other circuit, which is fed from the vehicle-motor, within appropriate limits relatively to the speed of the vehicle.

10. In an electric braking system, a braking apparatus comprising two independent circuits one of constant resistance which is fed at one time from the main source for propelling the vehicle and at another time from the vehicle-motor running as a generator, and means for varying the resistance of the other circuit, which is fed from the vehicle-motor.

11. The combination with an electric braking system, of an electromagnetic automatic controller mounted on the vehicle and operating to control or vary the braking-current within appropriate limits in relation to the speed of the vehicle to thereby vary the pressure between the braking-surfaces whereby increased efficiency of the braking operation is attained and means under the control of the motorman for varying at will the effective current in the winding of the electromagnetic controller.

12. The combination with an electric braking system, of an automatic electromagnetic controller mounted on the vehicle and operating to control resistance in the braking-circuit to thereby vary the pressure between the braking-surfaces in relation to the speed of the vehicle whereby increased efficiency of the braking operation is attained, and means under the control of the motorman for varying the effective current in the winding of the electromagnetic controller.

13. The combination with an electric braking system comprising a brake-magnet having two windings acting to produce pressure between braking-surfaces, of an electromagnetic automatic controller acting to regulate or control the braking-current within appropriate limits relatively to the speed of the vehicle in one of said windings.

14. The combination with an electric braking system comprising a brake-magnet having two windings acting to produce pressure between braking-surfaces, of an electromagnetic automatic controller acting to regulate or control the braking-current within appropriate limits relatively to the speed of the vehicle in one of said windings, and means under the control of the moforman for varying at will the effective current in the winding of the electromagnetic controller.

15. The combination with an electric braking system comprising a brake-magnet having two windings acting to produce pressure between braking-surfaces, of an electromagnetic automatic controller acting to control the braking-current in one of said windings.

16. The combination with an electric braking system comprising a brake-magnet having two windings acting to produce pressure between braking-surfaces, of an electromagnetic automatic controller acting to control the braking-current in one of said windings, and means under the control of the motorman for varying at will the effective current in the winding of the electromagnetic controller.

17. An electric braking system comprising a brake-magnet having two windings of different resistance both fed from the vehicle-motor running as a generator, an electromagnetic automatically-acting controller regulating the current within appropriate limits relative to the speed of the vehicle in the winding of lower resistance, the circuit of the other winding being of constant resistance and the current therein varying according to the speed of the vehicle.

18. An electric braking system comprising a brake-magnet having two windings of different resistance both fed from the vehicle-motor running as a generator, an electromagnetic automatically-acting controller regulating the current within appropriate limits relative to the speed of the vehicle in the winding of lower resistance, the circuit of the other winding being of constant resistance and the current therein varying according to the speed of the vehicle and means under the control of the motorman for varying at will the effective current in the winding of the electromagnetic controller.

19. An electric braking system comprising a brake-magnet having two windings of different resistance both fed from the vehicle-motor running as a generator, an electromagnetic automatically-acting controller for controlling the current in the winding of lower resistance, the circuit of the other winding being of constant resistance and the current therein varying according to the speed of the vehicle and means under the control of the motorman for varying at will the effective current in the winding of the electromagnetic controller.

20. An electric braking system comprising a brake-magnet having two windings of different resistance both fed from the vehicle-motor running as a generator, an electromagnetic automatically-acting controller for controlling the current in the winding of lower resistance, the circuit of the other winding being of constant resistance and the current therein varying according to the speed of the vehicle.

21. The combination with an electric braking system comprising a brake-magnet having two windings acting to produce pressure between braking-surfaces, of an automatic controller acting to regulate or control the braking-current within appropriate limits relatively to the speed of the vehicle in one of said windings and means whereby the motorman may at will control within limits the action of the automatic controller.

22. The combination with an electric braking system comprising a brake-magnet having two windings acting to produce pressure between braking-surfaces, of an automatic controller acting to control the braking-current in one of said windings and means whereby the motorman may at will control within limits the action of the automatic controller.

23. An electric braking system comprising a brake-magnet having two windings of different resistance both fed from the vehicle-motor running as a generator, an automatically-acting controller regulating the current within appropriate limits relative to the speed of the vehicle in the winding of lower resistance, the circuit of the other winding being of constant resistance and the current therein varying according to the speed of the vehicle and means whereby the motorman may at will control within limits the action of the automatic controller.

24. An electric braking system comprising a brake-magnet having two windings of different resistance both fed from the vehicle-motor running as a generator, an automatically-acting controller for controlling the current in the winding of lower resistance, the circuit of the other winding being of constant resistance and the current therein varying according to the speed of the vehicle and means whereby the motorman may at will control within limits the action of the automatic controller.

25. In an electric braking system, a brake-winding acting to produce pressure between braking-surfaces and fed through two circuits one of which is of constant resistance, and means for varying the current in the other circuit, within appropriate limits, relatively to the speed of the vehicle.

26. In an electric braking system, a brake-winding acting to produce pressure between braking-surfaces and fed through two circuits one of which is of constant resistance and an automatic electromagnetic controller for varying the current in the other circuit, within appropriate limits, relatively to the speed of the vehicle.

27. The combination with an electric braking system comprising a brake-winding acting to produce pressure between braking-surfaces and fed through two circuits one of which in the initiation of the braking operation is included in the circuit of the line or main source, the other of which forms part of the motor-circuit running as a generator, and means whereby the first-named circuit may be connected to the motor running as a generator.

28. The combination with an electric braking system comprising a brake-winding acting to produce pressure between braking-surfaces and fed through two circuits one of which in the initiation of the braking operation is included in the circuit of the line or main source, the other of which forms part of the motor-circuit running as a generator and means whereby the first-named circuit may be connected to the motor, running as a generator, and parallel with the other circuit.

29. The combination with an electric braking system comprising a brake-winding acting to produce pressure between braking-surfaces and fed through two circuits of different resistance, means whereby, on the initiation of the braking operation, the circuit of higher resistance is connected with the line or main source, means whereby the circuit of lower resistance is connected with the motor running as a generator and means for connecting the circuit of higher resistance to the motor running as a generator.

30. The combination with an electric braking system comprising a brake-winding acting to produce pressure between braking-surfaces and fed through two circuits of different resistance, means whereby, on the initiation of the braking operation, the circuit of higher resistance is connected with the line or main source, means whereby the circuit of lower resistance is connected with the motor running as a generator, means for connecting the circuit of higher resistance to the motor running as a generator, and means for automatically controlling or varying the current in said circuit of lower resistance within appropriate limits relatively to the speed of the vehicle.

31. The combination with an electric braking system comprising a brake-winding acting to produce pressure between braking-surfaces and fed through two circuits of different resistance, means whereby, on the initiation of the braking operation, the circuit of higher resistance is connected with the line or main source, means whereby the circuit of lower resistance is connected with the motor running as a generator, means for connecting the circuit of higher resistance to the motor running as a generator, and means for varying the resistance of said circuit of lower resistance within appropriate limits relatively to the speed of the vehicle.

32. In an electric braking system for electrically-propelled vehicles, a motor for propelling the vehicle, circuit connections for supplying it with current from a suitable source, an electromagnetic brake apparatus having two windings, one adapted to the line-current and the other to the current developed by the motor when run as a generator, means for cutting off current from said source to the motor and including one of said windings in the circuit of said source, a braking-circuit including the other of said windings and in which the motor, then running as a generator, may be included, and means for removing the first-named winding from the circuit of said source and including it in said braking-circuit.

33. In an electric braking system for electrically-propelled vehicles, a motor for propelling the vehicle, circuit connections for supplying it with current from a suitable source, an electromagnetic brake apparatus having two windings, means for cutting off current from said source to the motor, and including one of said windings in the circuit of said source, a braking-circuit including the other of said windings and in which the motor, then running as a generator, may be included, and means for removing the first-named winding from the circuit of said source, and including it in said braking-circuit in parallel with the other winding.

34. In an electric braking system for electrically-propelled vehicles, a motor for propelling the vehicle, circuit connections for supplying it with current from a suitable source, an electromagnetic brake apparatus having two windings, means for cutting off current from said source to the motor, and including one of said windings in the circuit of said source, a braking-circuit including the other of said windings and in which the motor, then running as a generator, may be included, and an electromagnetic controller included in the braking-circuit and actuated by the current therein to transfer said first-named winding to the braking-circuit and to regulate the braking effect relatively to the speed of the vehicle.

35. In an electric braking system for electrically-propelled vehicles, a motor for propelling the vehicle, circuit connections for supplying it with current from a suitable source, an electromagnetic brake apparatus having two windings, means for cutting off current from said source from the motor, and including one of said windings in the circuit of said source, a braking-circuit including the other of said windings and in which the motor, then running as a generator, may be included, and an electromagnetic controller included in the braking-circuit and actuated by the current therein to transfer said first-named winding to the braking-circuit and to regulate the braking effect relatively to the speed of the vehicle.

36. In an electric braking system for electrically-propelled vehicles, a motor for propelling the vehicle, circuit connections for supplying it with current from a suitable source, an electromagnetic brake apparatus having two windings, means for cutting off current from said source from the motor, and including one of said windings in the circuit of said source, a braking-circuit including the other of said windings and in which the motor, then running as a generator, may be included, and an electromagnetic controller included in the braking-circuit and actuated by the current therein to transfer said first-named winding to the braking-circuit in parallel with the other winding and to regulate the braking effect relatively to the speed of the vehicle.

37. In an electric braking system for electrically-propelled vehicles, a motor for propelling the vehicle, circuit connections for supplying it with current from a suitable source, an electromagnetic brake apparatus having two windings, means for cutting off current from said source from the motor, and including one of said windings in the circuit of said source, a braking-circuit including the other of said windings and in which the motor, then running as a generator, may be included, and an electromagnetic controller included in the braking-circuit and actuated by the current therein to transfer said first-named winding to the braking-circuit in parallel with its own winding and to regulate the braking action relatively to the speed of the vehicle.

38. In an electric braking system, an electromagnetic controller placed in the braking-circuit and actuated by the current therein to automatically control the braking effect relatively to the speed of the vehicle and means for at will regulating the amount of current of the braking-circuit effective in the winding of the electromagnetic controller to thereby regulate the action of the electromagnetic controller.

39. In an electric braking system for electrically-propelled vehicles, the combination of the vehicle-propelling motor, a braking-circuit in which the motor may be connected to run as a generator, and in said circuit an electromagnetic brake-winding, an electromagnetic controller actuated by current in said circuit to automat-

ically regulate the braking action of said winding relatively to the

brake apparatus having two windings, means for cutting off current

ically regulate the braking action of said winding relatively to the speed of the vehicle, and means for at will regulating the amount of current of the braking-circuit effective in the winding of the electromagnetic controller to thereby regulate the action of the electromagnetic controller.

40. In an electric braking system for electrically-propelled vehicles, the combination of the vehicle-propelling motor, a braking-circuit in which the motor may be connected to run as a generator and in said circuit an electromagnetic brake-winding, an electromagnetic controller comprising a variable resistance, a means for including more or less of said resistance in the circuit, and, acting on said means, an electromagnet and a reactionary device acting in opposition to the magnet, whereby the current in the brake-winding is controlled relatively to the speed of the car, and means for at will regulating the amount of current of the braking-circuit effective in the winding of the electromagnetic controller to thereby regulate the action of the electromagnetic controller.

41. In an electric braking system for electrically-propelled vehicles, a motor for propelling the vehicle, circuit connections for supplying it with current from a suitable source, an electromagnetic brake apparatus having two windings, means for cutting off current from said source from the motor, and including one of said windings in the circuit of said source, a braking-circuit including the other of said windings and in which the motor, then running as a generator, may be included, an electromagnetic controller included in the braking-circuit and actuated by the current therein to transfer said first-named winding to the braking-circuit and to regulate the braking action relatively to the speed of the vehicle, and means for at will regulating the amount of current of the braking-circuit effective in the winding of the electromagnetic controller to thereby regulate the action of the electromagnetic controller.

42. In an electric braking system for electrically-propelled vehicles, a motor for propelling the vehicle, circuit connections for supplying it with current from a suitable source, an electromagnetic brake apparatus having two windings, means for cutting off current from said source to the motor, and including one of said windings in the circuit of said source, a braking-circuit including the other of said windings and in which the motor, then running as a generator, may be included, an electromagnetic controller included in the braking-circuit and actuated by the current therein to transfer said first-named winding to the braking-circuit in parallel with the other winding and to regulate the braking action relatively to the speed of the vehicle, and means for at will regulating the amount of current of the braking-circuit effective in the winding of the electromagnetic controller to thereby regulate the action of the electromagnetic controller.

43. In an electric braking system for electrically-propelled vehicles, the combination of the vehicle-propelling motor, means for supplying it with current from a suitable source, a braking-circuit in which the motor may be connected to run as a generator, means for cutting off current to the motor from said source, passing current therefrom through the field of the motor to excite it, an electromagnetic brake apparatus having a winding included in said braking-circuit, and an electromagnetic controller also in said circuit and actuated by the current therein to automatically regulate the braking action of said winding relatively to the speed of the vehicle.

44. In an electric braking system for electrically-propelled vehicles, a motor for propelling the vehicle, circuit connections for supplying it with current from a suitable source, an electromagnetic brake apparatus having two windings, means for cutting off current from said source to the motor, directing current therefrom through the field of the motor, and including one of said windings in the circuit of said source, a braking-circuit including the other of said windings and in which the motor then running as a generator may be included, and means for removing the first-named winding from the circuit of said source and including it in the said braking-circuit.

45. In an electric braking system for electrically-propelled vehicles, a motor for propelling the vehicle, circuit connections for supplying it with current from a suitable source, an electromagnetic brake apparatus having two windings, means for cutting off current from said source to the motor, directing current therefrom through the field of the motor, and including one of said windings in the circuit of said source in series with the motor-field, a braking-circuit including the other of said windings and in which the motor then running as a generator may be included, and means for removing the first-named winding from the circuit of said source and including it in the said braking-circuit.

46. In an electric braking system for electrically-propelled vehicles, a motor for propelling the vehicle, circuit connections for supplying it with current from a suitable source, an electromagnetic brake apparatus having two windings, means for cutting off current from said source to the motor, directing current therefrom through the field of the motor, and including one of said windings in the circuit of said source, a braking-circuit including the other of said windings and in which the motor, then running as a generator, may be included, and means for removing the first-named winding from the circuit of said source and including it in said braking-circuit in parallel with the other winding.

47. In an electric braking system for electrically-propelled vehicles, a motor for propelling the vehicle, circuit connections for supplying it with current from a suitable source, an electromagnetic brake apparatus having two windings, means for cutting off current from said source to the motor, directing current therefrom through the field of the motor, and including one of said windings in the circuit of said source, a braking-circuit including the other of said windings and in which the motor, then running as a generator, may be included, and an electromagnetic controller included in the braking-circuit and actuated by the current therein to transfer said first-named winding to the braking-circuit and to regulate the braking action relatively to the speed of the vehicle.

48. In an electric braking system for electrically-propelled vehicles, a motor for propelling the vehicle, circuit connections for supplying it with current from a suitable source, an electromagnetic brake apparatus having two windings, means for cutting off current from said source to the motor, directing current therefrom through the field of the motor, and including one of said windings in the circuit of said source, a braking-circuit including the other of said windings and in which the motor, then running as a generator, may be included, and an electromagnetic controller included in the braking-circuit and actuated by the current therein to transfer said first-named winding to the braking-circuit in parallel with the other winding and to regulate the braking action relatively to the speed of the vehicle.

49. In an electric braking system for electrically-propelled vehicles, a motor for propelling the vehicle, circuit connections for supplying it with current from a suitable source, an electromagnetic brake apparatus having two windings, means for cutting off current from said source to the motor, directing current therefrom through the field of the motor, and including one of said windings in the circuit of said source, a braking-circuit including the other of said windings and in which the motor, then running as a generator, may be included, an electromagnetic controller included in the braking-circuit and actuated by the current therein to transfer said first-named winding to the braking-circuit and to regulate the braking action relatively to the speed of the vehicle, and means for at will regulating the amount of current of the braking-circuit effective in the winding of the electromagnetic controller to thereby regulate the action of the electromagnetic controller.

50. In an electric braking system for electrically-propelled vehicles, a motor for propelling the vehicle, circuit connections for supplying it with current from a suitable source, an electromagnetic brake apparatus having two windings, means for cutting off current from said source to the motor, directing current therefrom through the field of the motor, and including one of said windings in the circuit of said source, a braking-circuit including the other of said windings and in which the motor, then running as a generator, may be included, and an electromagnetic controller included in the braking-circuit and actuated by the current therein to transfer said first-named winding to the braking-circuit in parallel with the other winding, and to regulate the braking action relatively to the speed of the vehicle.

51. In an electric braking system for electrically-propelled vehicles, the combination of the motor, contacts and circuit connections for supplying it with variable current from a suitable source, a brake-controller on the actuation of which current is cut off from the motor, a master-controller and means interposed between it and the brake-controller for actuating the latter on the movement of the former, a braking-circuit including the motor established on the actuation of the brake-controller, and the winding of an electromagnetic brake apparatus included in the brake-circuit.

52. In an electric braking system for electrically-propelled vehicles, the combination of the motor, contacts and circuit connections for supplying it with variable current from a suitable source, a brake-controller on the actuation of which current is cut off from the motor and directed through its field, a master-controller, and means interposed between it and the brake-controller for actuating the latter on the movement of the former, a braking-circuit including the motor established on the actuation of the brake-controller, the winding of an electromagnetic brake apparatus included in the brake-circuit, and an electromagnetic controller also included in the braking-circuit and actuated by current therein to control the braking action relatively to the speed of the vehicle.

53. In an electric braking system for electrically-propelled vehicles, the combination of the motor, contacts and circuit connections for supplying it with variable current from a suitable source, a brake-controller on the actuation of which current is cut off from the motor and directed through its field, a master-controller, and means interposed between it and the brake-controller for actuating the latter on the movement of the former, a braking-circuit including the motor established on the actuation of the brake-controller, the winding of an electromagnetic brake apparatus included in the brake-circuit, and an electromagnetic controller also included in the braking-circuit and actuated by current therein to control the braking action relatively to the speed of the vehicle.

54. In an electric braking system for electrically-propelled vehicles, the combination of the motor, contacts and circuit connections for supplying it with variable current from a suitable source, a brake-controller on the actuation of which current is cut off from the motor, a master-controller and means interposed between it and the brake-controller for actuating the latter on the movement of the former, a braking-circuit including the motor established on the actuation of the brake-controller, the winding of an electromagnetic brake apparatus included in the brake-circuit, and an electromagnetic controller also included in the braking-circuit and actuated by current therein to control the braking action relatively to the speed of the vehicle.

55. In an electric braking system for electrically-propelled vehicles, the combination of the motor, contacts and circuit-connections for supplying it with variable current from a suitable source, a brake-controller on the actuation of which current is cut off from the motor, a master-controller and means interposed between it and the brake-controller for actuating the latter on the movement of the former, a braking-circuit including the motor established on the actuation of the brake-controller, an electromagnetic brake apparatus having two windings, one of which is then included in the circuit of said source and the other in said braking-circuit, and means for transferring the first-mentioned winding to the braking-circuit.

56. In an electric braking system for electrically-propelled vehicles, the combination of the motor, contacts and circuit connections for supplying it with variable current from a suitable source, a brake-controller on the actuation of which current is cut off from the motor, a master-controller and means interposed between it and the brake-controller for actuating the latter on the movement of the former, a braking-circuit including the motor established on the actuation of the brake-controller, an electromagnetic brake apparatus having two windings, one of which is then included in the circuit of said source and the other in the braking-circuit, and means for transferring the first-mentioned winding to the braking-circuit in parallel with the second-named winding.

57. In an electric braking system for electrically-propelled vehicles, the combination of the motor, contacts and circuit connections for supplying it with variable current from a suitable source, a brake-controller on the actuation of which current is cut off from the motor, a master-controller and means interposed between it and the brake-controller for actuating the latter on the movement of the former, a braking-circuit including the motor established on the actuation of the brake-controller, an electromagnetic brake apparatus having two windings, one of which is then included in the circuit of said source and the other in the braking-circuit, and an electromagnetic braking-current controller included in the braking-circuit and actuated by the current therein to transfer said first-named winding to the braking-circuit and to control the braking action relatively to the speed of the vehicle.

58. In an electric braking system for electrically-propelled vehicles, the combination of the motor, contacts and circuit connections for supplying it with variable current from a suitable source, a brake-controller on the actuation of which current is cut off from the motor, a master-controller and means interposed between it and the brake-controller for actuating the latter on the movement of the former, a braking-circuit including the motor established on the actuation of the brake-controller, an electromagnetic brake apparatus having two windings, one of which is then included in the circuit of said source and the other in the braking-circuit, and an electromagnetic braking-current controller also included in the braking-circuit and actuated by the current therein to transfer said first-named winding to the braking-circuit in parallel with the other winding, and to control the braking action relatively to the speed of the vehicle.

59. In an electric braking system for electrically-propelled vehicles, the combination of the motor, contacts and circuit connections for supplying it with variable current from a suitable source, a brake-controller on the actuation of which current is cut off from the motor, a master-controller and means interposed between it and the brake-controller for actuating the latter on the movement of the former, a braking-circuit including the motor established on the actuation of the brake-controller, the winding of an electromagnetic brake apparatus also included in the brake-circuit, and means for varying the amount of current in the braking-circuit effective in the coil of said electromagnetic controller to vary its control of the braking operation.

60. In an electric braking system for electrically-propelled vehicles, the combination of the motor, contacts and circuit connections for supplying it with variable current from a suitable source, a brake-controller on the actuation of which current is cut off from the motor and current from said source directed through the field of the motor, a master-controller and means interposed between it and the brake-controller for actuating the latter on the movement of the former, a braking-circuit including the motor established on the actuation of the brake-controller, the winding of an electromagnetic brake apparatus also included in the brake-circuit, an electromagnetic controller also included in the braking-circuit and actuated by current therein to control the braking action relatively to the speed of the vehicle, and means for varying the amount of current in the braking-circuit effective in the winding of said electromagnetic controller to vary its control of the braking operation.

61. In an electric braking system for electrically-propelled vehicles, the combination of the motor, contacts and circuit connections for supplying it with variable current from a suitable source, a brake-controller on the actuation of which current is cut off from the motor, a master-controller and means interposed between it and the brake-controller for actuating the latter on the movement of the former, a braking-circuit including the motor established on the actuation of the brake-controller, an electromagnetic brake apparatus having two windings, one of which is then included in the circuit of said source and the other in the braking-circuit, an electromagnetic braking-current controller also included in the braking-circuit and actuated by the current therein to transfer said first-named winding to the braking-circuit and to control the braking action relatively to the speed of the vehicle, and means for varying the amount of current in the braking-circuit effective in the coil of said electromagnetic controller to vary its control of the braking operation.

62. An electric braking system comprising an automatic controller included in a braking-circuit with a motor operating as a generator, a brake-winding m c included in the circuit with the automatic controller and another brake-winding also included in said circuit in shunt to the automatic controller and the coil m c.

63. An electric braking system comprising a braking-circuit, a motor running as a generator therein, an automatic controller in said circuit and two brake-windings one in series with the automatic controller and the other in shunt thereto.

64. An electric braking system comprising a braking-circuit, a motor running as a generator, an automatic controller connected in said circuit, a coarse-wire brake-winding connected in series with the automatic controller and a fine-wire brake-winding adapted to be connected either in the braking-circuit or in circuit with main source of energy.

65. In an electric braking system, the combination of two or more vehicles or units coupled to travel together, a train-cable on each unit for electrically connecting them, a braking-circuit on each unit comprising a source of energy, electromagnetic brake-winding and an automatic controller acting to control the braking action relatively to the speed of the vehicle, and contacts and circuit connections by which the braking operation on each unit may be controlled from a single point on either of them.

66. In an electric braking system, two or more vehicles or units connected to travel together, a train-cable on each unit for electrically controlling a braking system on each unit comprising a braking-circuit containing the vehicle-motor then adapted to run as a generator, a brake-winding and an automatic controller, and a second brake-winding adapted to be connected either in circuit with the line or main source of energy or in said braking-circuit, and contacts and circuit connections for controlling the braking operation on each unit from a single point on either of them.

67. In an electric braking system, the combination of two or more vehicles or units coupled to travel together, a train-cable on each unit for electrically connecting them, and an electromagnetic brake-winding on the several units adapted to be connected in cir-

cuit with the line or source of energy, devices for varying the braking action of said winding, and contacts and circuit connections for initiating the braking operation and varying the braking action from a single point on either unit.

68. In an electric braking system, the combination of two or more vehicles or units coupled to travel together, an electromagnetic braking system on each unit, electromagnetic devices on each unit for throwing its electromagnetic braking system into operation, a train-cable with which said electromagnetic devices are connected and a brake master-controller on each unit connected with the train-cable for operating said electromagnetic devices.

69. In an electric braking system, the combination of two or more vehicles or units coupled to travel together, an electromagnetic braking system on each unit comprising a winding adapted to receive current from the line or main source, electromagnetic devices on each unit for throwing its electromagnetic braking system into operation, a train-cable with which said electromagnetic devices are connected and a brake master-controller on each unit connected with the train-cable for operating said electromagnetic devices.

70. In an electric braking system, the combination of two or more vehicles or units coupled to travel together, an electromagnetic braking system on each unit comprising a winding adapted to the current generated by the motor when running as a generator in the brake-circuit, electromagnetic devices on each unit for throwing its braking system into operation, a train-cable with which said electromagnetic devices are connected and a brake master-controller on each unit connected with the train-cable for operating said electromagnetic devices.

71. In an electric braking system, the combination of two or more vehicles or units coupled to travel together, an electromagnetic braking system on each unit comprising a winding adapted to receive current from the line or main source and a winding adapted to the current generated by the motor when running as a generator in the brake-circuit, electromagnetic devices on each unit for throwing its braking system into operation, a train-cable with which said electromagnetic devices are connected and a brake master-controller on each unit connected with the train-cable for operating said electromagnetic devices.

72. In an electric braking system, the combination of two or more vehicles or units coupled to travel together, an electromagnetic braking system, a brake-controller therefor and a power-controller on each unit, a train-cable electrically connecting the units, a brake master-controller and a power master-controller on each unit connected with the train-cable and on each unit an interlock electromagnet that holds the brake-controller in braking position until the connection from the line or source through the power-controller to the motor is open.

73. In an electric braking system, the combination of two or more vehicles or units coupled to run together, a braking system on each unit comprising a winding adapted to currents from the line or source and a winding adapted to currents from the motor when run as a generator and means on each unit whereby the braking system may be controlled to first include the first-named winding in circuit with the line and then the second-named winding in circuit with the motor running as a generator.

74. In an electric braking system, the combination of two or more vehicles or units coupled to run together, a braking system on each unit comprising a winding adapted to currents from the line or source and a winding adapted to currents from the motor when run as a generator and means on each unit whereby the braking system may be controlled to first include the first-named winding in circuit with the line and then the second-named winding and the first-named winding in circuit with the motor running as a generator.

75. In an electric braking system, the combination of two or more vehicles or units coupled to travel together, an independent braking system on each unit comprising an automatic controller for regulating the braking action relatively to the speed of the unit and means for controlling the respective braking systems of the several units from a single point on either of them.

76. A car-brake having an actuating power-generator driven by momentum of the car and adapted to furnish power diminishing in intensity as the speed of the car diminishes and automatic means for controlling the brake-pressure throughout the period of a braking operation, in relation to the speed of the car, to thereby increase the efficiency of the braking operation.

77. A car-brake having an actuating power-generator driven by momentum of the car and adapted to furnish power diminishing in intensity as the speed of the car diminishes, automatic means for varying the braking-pressure throughout the period of a braking operation, in relation to the speed of the car to thereby increase the efficiency of the braking operation, and means, under the control of the motorman, by which he may, at will, maintain a maximum or some lesser rate of retardation.

78. The combination with a car-brake and a generator adapted to supply power for operating the brake, whose force is greatest when the speed of the car-wheels is greatest, of automatic means for retarding diminution of said power in intensity in relation to the speed of the car throughout the braking operation.

79. A car-brake-actuating mechanism arranged to apply brakes with a pressure which is greatest when the speed of the car-wheels is greatest, and is reduced when such speed is reduced, in combination with means for causing such pressure to decrease in relation to the reduction in speed, but at a less rate.

80. The combination with brake-actuating mechanism, of means for supplying power thereto arranged to supply the greatest pressure when the speed of the car-wheels is greatest, and to diminish the pressure when the speed of the wheels is reduced, and automatic means arranged to cause the brake-pressure to diminish in relation to the reduction in speed but at a less rate.

81. A car-brake, having an actuating power-generator driven by the movement of the car, and adapted thereby to furnish power diminishing in intensity as the speed of the car-wheel diminishes, and automatic means for, throughout the period of a braking operation, retarding the rate of diminution of the brake-pressure, whereby when the wheels cease to rotate some pressure will still be applied upon the brake.

82. An electric braking system comprising the combination of the propelling-motor driven as a generator by momentum of the vehicle, an electromagnetic brake apparatus in the circuit from the generator, and an automatic electromagnetic controller also in the circuit from the generator acting to control the current therein in relation to the speed of the vehicle and negative torque of the generator whereby the pressure of the braking surfaces is varied to thereby increase the efficiency of the braking operation.

83. In an electric braking system, a brake-operating apparatus comprising two independent circuits of different resistance both fed by the vehicle-motor running as a generator, one of the circuits being of constant resistance and causing a braking action substantially proportional to the speed of the vehicle, and means for automatically varying the resistance of the other circuit within appropriate limits relative to the speed of the car and negative torque of the generator.

84. A car-brake having an actuating power-generator driven by momentum of the car and adapted to furnish power diminishing in intensity as the speed of the car diminishes and automatic means for controlling the brake-pressure in relation to the speed of the car and the negative torque of the generator whereby the efficiency of the braking operation is increased.

85. An electric braking system comprising a motor driven as a generator by momentum of the vehicle, an electromagnetic brake apparatus having two circuits, an automatically-acting electromagnetic controller included in one of said circuits and acting to vary the current therein in relation to the speed of the vehicle and negative torque of the generator.

86. An electric braking system comprising a motor driven as a generator by momentum of the vehicle, an electromagnetic brake apparatus having two circuits one of which is of constant and the other of variable resistance and an automatically-acting electromagnetic controller in the latter circuit acting to vary the current therein in relation to the speed of the vehicle and negative torque of the generator.

818,058. SHOE. JOHN G. MARCHAND, Buffalo, N. Y. Filed July 1, 1905. Serial No. 267,890.

Claim.—1. In a shoe, the combination of an insole, a cushion arranged on the insole, a metallic strip arranged lengthwise of the edges of the insole and cushion and across the joint between the same, and a covering extending over said insole, cushion and strip, substantially as set forth.

2. In a shoe, the combination of an insole, a cushion arranged on the insole, a metallic strip arranged lengthwise of the edges of the insole and cushion and across the joint between the same, and a covering extending over said insole, cushion and strip, and having perforations above said strip, substantially as set forth.

3. In a shoe, the combination of an insole, a cushion arranged on the insole, strips of copper and zinc arranged along opposite edges of the insole and cushion across the joint between the same and overlapping each other at two of their respective ends while their opposite ends are out of contact with each other, and a covering extending over said insole, cushion and strips and having perforations above the strips substantially as set forth.

818,054. ADJUSTABLE FEED FOR GRAIN-DRILLS. ADELBERT F. MILLS, Shortsville, N. Y., assignor to American Seeding Machine Company, Jersey City, N. J., a Corporation of New Jersey. Filed Aug. 19, 1905. Serial No. 274,230.

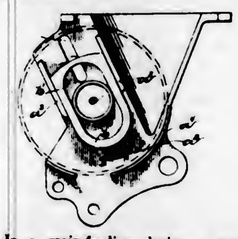

Claim.—1. In a grain-feeding device, a grain-cup having straight converging sides, a distributer-wheel, a cut-off device, the working edge of which is parallel with the inner face of the flange of the distributer-wheel, and the contour of which is such as to form in combination with said flange a gradually-contracting measuring-channel, and means connected to said cut-off device above the driving-shaft of the distributer-wheel for moving said device to vary the area of the measuring-channel, substantially as specified.

2. In a grain-feeding device, a distributer-wheel, a grain-cup having straight converging sides, a sliding member within the periphery of the distributer-wheel and operated from above the axis thereof, forming with the flange of said distributer-wheel a rhomboidal-shaped measuring-channel parallel guides for said sliding member arranged at an inclination to the vertical, and means for moving said sliding member to vary the size of said measuring-channel while maintaining the rhomboidal form of said channel, substantially as specified.

3. In a grain-feeding device, a grain-cup having straight converging sides, a recessed distributer-wheel, a discharge-conduit leading from said grain-cup, a sliding member forming an adjustable wall of said conduit, parallel guides for said sliding member arranged at an inclination to the vertical, a rock-shaft, a connection from said rock-shaft to said movable member at a point above the axis of the distributer-wheel, whereby the area of the discharge-conduit may be regulated by the oscillation of said rock-shaft, substantially as specified.

4. In a grain-feeding device, a grain-cup, a recessed distributer-wheel, an adjustable gate forming with the flange of said distributer-wheel a measuring-channel, means for moving said adjustable gate, and a connection between said actuating means and said gate at a point above the axis of the distributer-wheel, substantially as and for the purpose specified.

818,055. ROAD-GRADER. CHRISTIAN MORKING, Plummer, Minn. Filed May 13, 1905. Serial No. 260,260.

Claim.—1. A road-grader, including scraping members having shoes, and a roller secured at the rear ends of the scraping members.

2. A road-grader comprising scraping members converging rearwardly, and a roller mounted between the convergent end thereof.

3. A road-grader, comprising scraping members converging rearwardly toward each other, a shaft mounted in the rear ends of the scraping members, a roller mounted upon the shaft, metallic rods crossing each other and connected at their opposite ends to the scraping members to brace the latter, other braces associated with the scraping members, a tongue pivoted to said other braces, a flexible connection between the tongue and scraping members, and a seat upon the body of the scraper.

818,055.

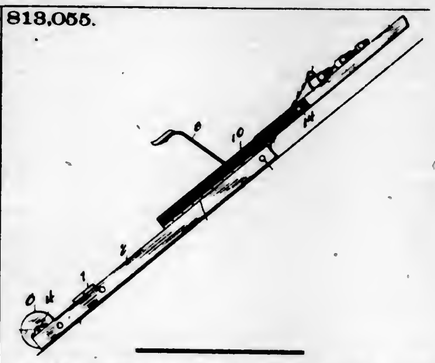

818,056. COMBINATION MACHINE-TOOL. JAMES W. MYERS, Chicago, Ill., assignor to The Myers Manufacturing Company, Chicago, Ill., a Corporation of Illinois. Filed Jan. 30, 1905. Serial No. 243,340.

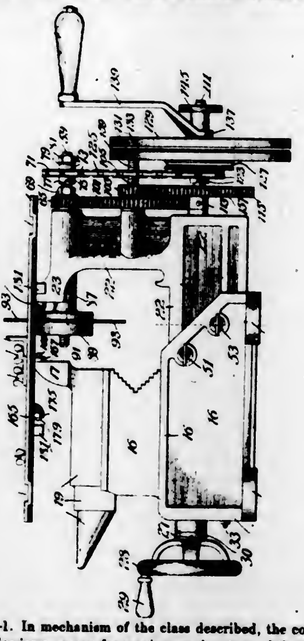

Claim.—1. In mechanism of the class described, the combination of two vise-jaws, means for moving one jaw toward the other, a rotatable working spindle mounted adjacent to one of said jaws, a saw or other cutting disk mounted on said spindle between the jaws of the vise, means for rotating said spindle, and a table above the vise adapted to be supported thereby there being an opening in the table through which said cutting saw or disk passes to reach work upon the table.

2. In mechanism of the class described, the combination of two vise-jaws, means for moving one jaw toward the other, a rotatable shaft or spindle mounted in one of said jaws, a tool-arbor mounted upon said spindle between said open jaws, means for rotating said shaft or spindle and a reversible table detachably mounted between the jaws of the vise and above the vise, there being two slots in said table, one for a broad disk, the other for a narrow disk, and lugs upon the under side of the table adapted to be clamped between the jaws of the vise, said lugs being so located with reference to the slots in the table that by turning the table end for end in the vise it may be used in connection with either a broad disk or a narrow disk mounted in the said tool-arbor upon said spindle, substantially as described, for the purpose set forth.

3. In mechanism of the class described, the combination of two it with a loosely-running fly-wheel on the second shaft whereby

2. In a bin-bottom, the combination with the bin of flexible sup- *Claim.*—1. A lifter for hollow articles, comprising an elongated

3. In mechanism of the class described, the combination of two vise-jaws, one stationary and the other adapted to be moved horizontally with reference thereto, means for moving the second jaw with reference to the first, a working table having lugs thereon adapted to be clamped between the jaws of the vise, supplemental lugs adapted to accurately position said first lugs with reference to the vise-jaws and mechanism in the operating connection between said jaws for adjusting said movable jaw at right angles to its line of motion with reference to the fixed jaw, whereby said movable jaw is adjusted with reference to the fixed jaw and the table, substantially as described.

4. In mechanism of the class described, the combination of two vise-jaws, means for moving one jaw toward the other, a rotatable spindle mounted in one of said jaws having a portion projecting between said jaws, means for rotating said spindle, a table above the vise having lugs on the under side thereof adapted to be detachably clamped between the jaws of the vise, lugs 181 upon the under side of the table, and lugs 149 extending horizontally from the first-mentioned lugs adapted to engage corresponding openings in the faces of the vise-jaws for insuring the same positioning of the parts, there being an opening in said table through which the grinding-wheel or saw upon the spindle passes to reach work upon the table.

5. In mechanism of the class described, the combination of two vise-jaws, means for moving one jaw toward the other, a rotatable shaft or spindle mounted in one of said jaws, means for rotating said spindle, a tool-arbor on said spindle between the jaws of the vise, and a reversible table above the vise having lugs on the under side thereof adapted to be detachably clamped between the jaws of the vise, guiding means on the table, lugs and vise for insuring the same positioning of the parts, there being two openings in said table through which a narrow saw or a wide wheel mounted in the same position in the tool-arbor on the working spindle are respectively adapted to pass to reach work upon the table when the table is turned end for end and clamped in the jaws of the vise.

6. In mechanism of the class described, the combination of a stationary jaw-frame carrying a stationary vise-jaw and having a recess therein extending along the base in the direction of the jaw, a movable jaw having a frame on which there is a right-angled extension extending into said recess in the stationary jaw-frame, means for moving said movable jaw-frame extension backward and forward inside said recess in the stationary frame, set-screws on opposite sides of the stationary frame engaging the sides of the extension of the movable frame within the stationary frame, whereby by changing the positions of said set-screws the movable frame may be adjusted laterally within the stationary frame, thereby ultimately adjusting the movable jaw of the vise with reference to the stationary jaw, and a working table having lugs thereon adapted to be clamped between the jaws of the vise and supplemental lugs upon said first lugs adapted to accurately position them with reference to the vise-jaws when the movable jaw is adjusted laterally as described.

7. In mechanism of the class described, the combination of a stationary jaw-frame carrying a stationary vise-jaw and having a recess therein extending along the base in the direction of the jaw, a movable jaw having a frame on which there is a right-angled extension extending into said recess in the stationary jaw-frame, means for moving said movable jaw-frame extension backward and forward inside said recess in the stationary frame, set-screws on opposite sides of the stationary frame engaging the sides of the extension of the movable frame within the stationary frame, whereby, by changing the positions of said set-screws the movable frame may be adjusted laterally within the stationary frame, thereby ultimately adjusting the movable jaw of the vise with reference to the stationary jaw, horizontal ridges extending along the movable frame adjacent to said set-screws adapted to assist in causing the movable frame to move in a straight line with reference to the stationary frame, and a working table having lugs thereon adapted to be clamped between the jaws of the vise and supplemental lugs upon said first lugs adapted to accurately position them with reference to the vise-jaws when the movable jaw is adjusted laterally as described.

8. In mechanism of the class described, in combination with a suitable support and a work-table secured thereto, there being an opening in the table through which a rotating saw or other disk is adapted to pass to reach work from the table; a shaft journaled in said support, a saw or disk attached to said shaft in such a position that a portion of it passes through said opening in the table, another shaft mounted in the support below said first shaft and table gearing adapted to communicate power from said second shaft to said first shaft, other power-transmitting means on said first shaft connecting it with a loosely-running fly-wheel on the second shaft whereby power is communicated from said first shaft to the fly-wheel, and means for rotating said second shaft.

9. In mechanism of the class described, the combination with a suitable support, a working table above it, there being a slot in the table through which a saw or other cutting-disk is adapted to pass; a shaft journaled in the support adjacent to the table, a saw or cutting-disk secured to said shaft extending through said slot in the table, a pinion rigidly secured to the other end of said shaft, a sprocket-wheel also rigidly secured to the same end of said shaft, an intermediate shaft mounted in the support below said first shaft, a gear mounted on said intermediate shaft, said gear meshing with the pinion on the first shaft, a pinion on the intermediate shaft, a third or driving shaft journaled in the frame at a distance from said first two shafts, a gear rigidly secured to said driving-shaft meshing with the pinion on the intermediate shaft, a fly-wheel loosely journaled upon said driving-shaft, a sprocket-wheel secured to said fly-wheel, also loosely journaled upon said driving-shaft in line with the first sprocket-wheels above mentioned, a sprocket-chain over said sprocket-wheel and a crank-handle detachably secured to said driving-shaft outside the driving-wheel, whereby rotating the crank-handle communicates power to the driving-shaft, to the intermediate shaft, to the first-mentioned shaft and saw or operating-tool, thence back through said sprocket-wheel and chain to the idle running fly-wheel, substantially as described.

813,057. **RAILROAD-JOINT.** GEORGE M. MCCLURE, Sterling, Kans. Filed June 10, 1905. Serial No. 264,630.

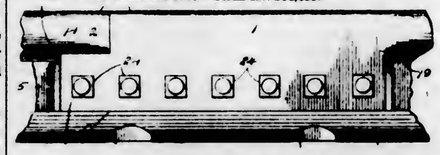

Claim.—A rail-joint comprising abutting rail-sections each including a tread, a web and a flange, the sections being halved and having their halved portions lapping, the web of each halved portion being extended laterally to the width of the tread at its opposite side from the cut-away portion excepting at its extreme end where it is further cut away, said other cut-away portion having the tread omitted and being engaged beneath the tread of the opposite section, and securing means engaged through the overlapped portions of the rail-sections.

813,058. **AUTOMOBILE.** WILLIAM T. PENROSE, Spokane, Wash. Filed June 26, 1905. Serial No. 266,994.

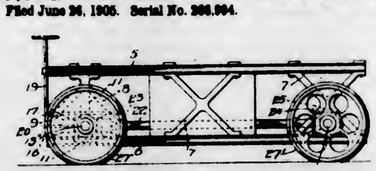

Claim.—In a vehicle, the combination with upper and lower horizontally-disposed frames, of depending brackets carried by the upper frame, longitudinally-extending arcuate plates carried by the brackets, longitudinally-extending arcuate plates carried by the lower frame in vertical alinement with the first-named plates and spaced therefrom, a plate carried by the lower frame, a vertical shaft pivotally mounted upon the plate and in the upper frame, a live axle journaled horizontally in the vertical shaft and extending between the spaced plates, rollers carried by the axle and engaging the plates, wheels carried by the axle, a bevel-gear journaled upon the vertical shaft, a bevel-gear carried by the axle and meshing with the first-named bevel-gear, and means for driving the first-named bevel-gear.

813,059. **BIN.** HUMPHREY M. PRAED, Riverside, Cal.; W. B. Pedley administrator of said Humphrey M. Praed, deceased. Filed Sept. 12, 1904. Serial No. 224,857.

Claim.—1. A bin having a yieldingly-supported bottom and counterbalancing means connected to said bottom to allow the same to yield in proportion to the weight resting thereon.

2. In a bin-bottom, the combination with the bin of flexible supports for said bottom and counterbalancing means connected to said flexible supports.

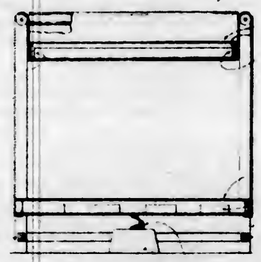

3. In a bin, the combination with the bin-bottom of flexible members forming the sides of the bin and supporting the bottom, and rollers supporting said flexible members.

4. In a bin, the combination of a frame carrying rollers, flexible strip members forming the sides of the bin, and passing over said rollers, a bin-bottom connected to the one end of said strips and counterbalancing means connected to the other end of said strips.

5. A bin having a yieldingly-supported bottom and a plurality of counterbalancing means brought successively in connection with the bottom to increase the supporting effect thereon as the bottom is lowered.

6. A frame, rollers journaled thereon, flexible strips passing over said rollers and forming the sides of said bin, a bin-bottom connected to one end of each strip and a counterbalancing-frame extending under the bin-bottom and connected to the other end of each strip.

7. A frame, rollers journaled thereon, flexible strips passing over said rollers and forming the sides of said bin, a bin-bottom connected to one end of each strip, a counterbalancing-frame extending under the bin-bottom and connected to the other end of each strip, and a supplementary weight suspended from the counterbalancing-frame.

8. A bin having flexible sides and bottom, and comprising a bottom frame over which the flexible bottom is stretched said bottom frame having chamfered upper edges.

813,060. **LIFTER FOR LIFTING HOLLOW BLOCKS.** GUILFORD D. ROWELL, Appleton, Wis., assignor of one-half to Dudley G. Rowell, Appleton, Wis. Filed Sept. 27, 1905. Serial No. 280,367.

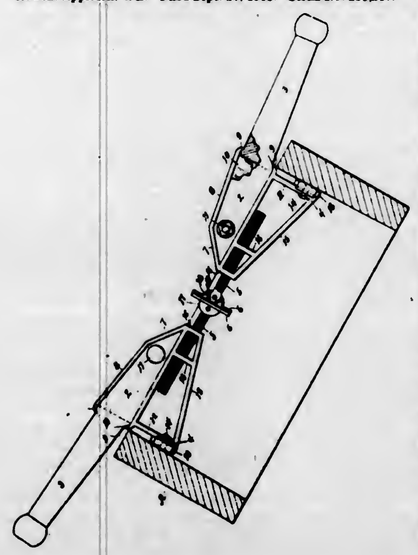

Claim.—1. A lifter for hollow articles, comprising an elongated and laterally-expanded body with a handle extending therefrom in the direction of its length and with a shoulder at its rear end presenting a bearing rearwardly, and a head mounted on the body adjustable in the direction of its length toward and from the plane of bearing of the shoulder.

2. A lifter for hollow blocks, comprising a body, a handle projecting from the body at its rear end in the direction of its length, a laterally-extending shoulder on the body near its rear end, a head mounted on a screw-threaded neck adjustable by its thread in the body from and toward the shoulder.

3. In a lifter for hollow blocks, a wood handle, a metal-frame body fitted on and secured to the wood handle and having a laterally-projecting shoulder and screw-bearings for a neck, a screw-threaded neck turning into the bearings in the frame, and a head mounted tiltably on the front end of the screw.

4. In combination with the body of a lifter having a shoulder, a screw-threaded neck adjustable endwise in the front end of the body, a plate-head fitted on the front end of the neck rotatable with the neck, and means on the neck and head preventing more than limited oscillation of the head on the neck.

5. As a part of a lifter for hollow articles, a metal frame comprising a generally U-shaped marginal elongated bar, a medial and connecting web, a laterally-projecting shoulder, a leg connecting the outer end of the shoulder and the distant front end of the U-shaped bar, a screw-threaded neck turning into the frame, and a head on the front end of the neck.

813,061. **AUTOMATIC SPRINKLER.** ELVIDO V. SMITH, Philadelphia, Pa. Filed May 19, 1905. Serial No. 261,127.

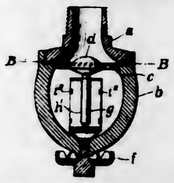

Claim.—1. A fusible valve-supporting strut for automatic sprinklers, consisting of a vertically-slotted member the lower end of which constitutes one strut end, and a post supported at one of its ends only in the inner end of the slot of the other member and the upper free end forming the other strut end, said post being unsupported by the slotted member adjacent to its strut end, and said parts being fusibly united, whereby on the fusing of the connection the movement of said slotted member will lower the point of support between the inner end of its slot and the post, and result in allowing the post to drop.

2. A fusible valve-supporting strut for automatic sprinklers, consisting of a vertically-slotted member the lower end of which constitutes one strut end, and a post supported at one of its ends only in the inner end of the slot of the other member, and the other free end being unsupported and forming the other strut end of the device, and an outer shield-plate located over the face of said slotted member and the body of the post, said shield and slotted member being fusibly united together at their adjacent faces.

3. A fusible valve-supporting strut for automatic sprinklers, consisting of a vertically-slotted member the lower end of which constitutes one strut end, and a post supported at one of its ends only in the inner end of the slot of the other member, and the other free end being unsupported and forming the other strut end of the device, and outer shield-plates arranged over the faces of the slotted member and post and fusibly united to them.

4. A fusible valve-supporting strut for automatic sprinklers, consisting of the longitudinally-slotted plate *h*, the post *g* positively supported at one end only in the inner end of said slot the other end constituting one strut end and being unsupported, and the shield-plates *i* and *j* arranged one on each face of the plate *h* and covering the body of the post *g*, said plates *h*, *i*, *j* being fusibly united together and to the post *g* at their adjacent faces.

5. A fusible valve-supporting strut for automatic sprinklers, consisting of the longitudinally-slotted plate *h* having the hooked portion h^5 at the upper end of the slot, the post *g* positively supported at one end only at the inner end of said slot, the other end constituting one strut end and being unsupported by said slotted member, and the shield-plate *j* arranged over one face of the plate *h* and post

g and having its upper edge engaged by the hooked portion h^3, said plates being fixibly united together and to the post *g*.

813,062. HALTER. MILES M. STOKES, Nashville, Tenn. Filed Sept. 7, 1905. Serial No. 277,665.

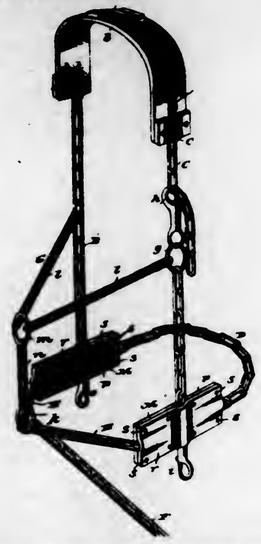

Claim.—1. A halter comprising a headstall of chain, a cheek-piece of chain depending from the headstall and terminating at its lower end in a snap-hook permanently connected thereto, a second cheek-piece depending from the headstall and having a lower portion of chain terminating at its lower end in a snap-hook permanently connected thereto and also having an upper portion of chain and a snap-hook permanently connected to one of said portions and engaged with the other, jaw-pieces of chain permanently connected to the cheek-pieces, a throat-latch of chain permanently connected to the cheek-pieces and jaw-pieces, a nose-piece of chain permanently connected to the cheek-pieces, a pad of leather arranged at the inner side of the chain headstall, loops riveted to said pad and extending over the headstall, and pads having inner layers of leather arranged at the inner sides of the cheek, nose and jaw pieces at the points of intersection thereof and also having outer layers of leather arranged at the outer sides of said pieces and riveted to the inner layers.

2. In a halter, the combination of cheek-pieces, a nose-piece and jaw-pieces; said pieces being formed of chain and being permanently connected together, and pads having inner layers of leather arranged at the inner sides of the cheek, nose and jaw pieces at the points of intersection thereof and also having outer layers of leather arranged at the outer sides of said pieces and riveted to the inner layers.

813,068. PROCESS OF SEPARATING SUBSTANCES OF DIFFERENT DIELECTRIC CAPACITIES. HENRY M. SUTTON, WALTER L. STEELE, and ERWIN G. STEELE, Dallas, Tex. Filed Apr. 13, 1903. Serial No. 152,393.

Claim.—1. In a process of separating the particles of a mass or the components of a mixture, developing in said particles or components dielectric hysteretic impedance, and separately collecting the particles.

2. In a process of separation, subjecting a mass or mixture to the action of a varied static charge to establish dielectric hysteretic impedance, and separately collecting the components.

3. In a process of separation, subjecting material to be separated to the action of alternating and varied electrostatic charges to establish dielectric hysteretic impedance, and separately collecting the separated components of the material.

4. In a process of separation, subjecting material to alternating electrostatic charges of unequal periodicity to establish dielectric hysteretic impedance, and separately collecting the separated components.

5. In a process of separation, subjecting material to the action of electrostatic charges in periods adapted in rapidity to establish dielectric hysteretic impedance in any particular material being separated, and separately collecting the separated components.

6. In a process of separation, subjecting material to the action of electrostatic charges varied in periods, potential and in polarity in accordance with the preference of the material being separated to establish dielectric hysteretic impedance, and separately collecting the separated components.

7. In a process of separation, subjecting material to the action of alternating electrostatic charges varied in potential to establish dielectric hysteretic impedance, and separately collecting the separated components.

8. In a process of separation, subjecting material to the action of electrostatic charges varied in the potential of their opposite signs to establish dielectric hysteretic impedance, and separately collecting the separated components.

9. In a process of separation, subjecting material to the action of electrostatic charges varying in the duration of their opposite signs to establish dielectric hysteretic impedance, and separately collecting the separated components.

10. In a process of separation, subjecting material to the action of electrostatic charges varying in the duration and potential of their opposite signs to establish dielectric hysteretic impedance, and separately collecting the separated components.

11. In a process of separation, subjecting particles of a mass or components of a mixture to the action of an alternating electrostatic charge to establish dielectric hysteretic impedance, and separately collecting the separated components.

12. In a process of separating particles of a mass or components of a mixture, developing in said particles or components dielectric hysteretic impedance and simultaneously exposing them to the inductive action of a polarized terminal, and separately collecting the separated particles or components.

13. In a process of separation, passing material through a field having at one point an alternating static charge and at an opposite point a constant static charge to establish dielectric hysteretic impedance, and separately collecting the separated components.

14. The process of separation which consists in subjecting material to the action of an alternating varied electric field of force capable of maintaining a difference of potential between the particles of the mass and a supporting device for said material to establish dielectric hysteretic impedance, and separately collecting the separated components.

15. The process of separation which consists in subjecting material to an electrostatic field of alternating and of variable intensity to establish dielectric hysteretic impedance, removing from the said field by an auxiliary force such particles as are electrified, and separately collecting the separated components.

16. The process of separation which consists in constantly charging a mass or mixture to be separated with a varied and alternating potential to establish dielectric hysteretic impedance, feeding the mass into a dielectric medium and removing therefrom such particles as differ in their electrical relation thereto, and separately collecting the separated components.

17. The process of separating particles of a mass or components of a mixture which consists in charging the same with an electrostatic current of varied potential to establish dielectric hysteretic impedance, simultaneously exposing the same to the inductive action of a polarized terminal, and collecting separately the particles which are sufficiently responsive.

18. In a process of separating the particles of a mass or the components of a mixture producing therein a lag of charge on said particles or components, and separately collecting the separated particles or components.

19. The process of subjecting the particles of a mass or the components of a mixture to the action of an electrostatic current of varying potential so as to cause and maintain a difference of potential between the particles, simultaneously exposing the same to the inductive action of a polarized terminal, and separately collecting the particles that are sufficiently responsive.

20. In a process of separation, subjecting a mass or mixture to the action of a varied static charge regulated to effect a separation by its action upon the dielectric capacity of the particles and separately collecting the components.

813,064. CONTROLLING MECHANISM FOR BLOWING-ENGINES. JOHNSON V. STEVENS, Johnstown, Pa. Filed May 16, 1905. Serial No. 260,996.

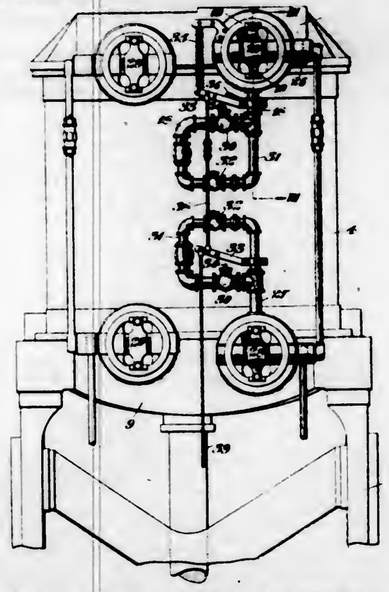

Claim.—1. A blowing-engine having an air-cylinder, a valve therefor, and means, actuated by the retrograde movement of the engine for preventing the opening of said valve.

2. In a blowing-engine, the combination with the air-cylinder, of an outlet-valve therefor, actuating means for said valve and means operated by the engine for rendering said actuating means inoperative upon the retrograde movement of the engine.

3. In a blowing-engine, the combination with the air-cylinder, of an outlet-valve therefor, actuating means for said valve adapted to be operated by air-pressure and means for cutting off the supply of air from said actuating means when the engine is driven in a reverse direction to that of its normal movement.

4. In a blowing-engine, the combination with the air-cylinder, of outlet-valves therefor, actuating means for said valves adapted to be operated by air-pressure from the cylinder, and means for cutting off the supply of air for said actuating means when the engine is driven in a reverse direction to that of its normal movement.

5. In a blowing-engine, the combination with the air-cylinder, of an outlet-valve therefor, an actuating-cylinder for said valve, a passage-way connecting said actuating-cylinder with the air-cylinder, a controlling-valve in said passage-way and means for closing said controlling-valve when the engine is driven backward.

6. In a blowing-engine, the combination with the air-cylinder and the main shaft, of an outlet-valve for the air-cylinder, an actuating-cylinder for said valve, a controlling-valve for said actuating-cylinder and means connected with the main shaft adapted to close said controlling-valve when the engine is driven backward.

7. In a blowing-engine, the combination with the air-cylinder and the main shaft of an outlet-valve for the air-cylinder, an actuating-cylinder for said valve, a controlling-valve for said actuating-cylinder, a clutch on the main shaft and means connected with said clutch to close said controlling-valve when the engine is driven backward.

8. In a blowing-engine, the combination with the air-cylinder and the main shaft, of an outlet-valve for the air-cylinder, an actuating-cylinder for said valve, a controlling-valve for said actuating-cylinder, a ratchet-clutch on the main shaft operative only when the engine is run backward, a rocker-arm connected with said clutch and with said controlling-valve and a friction-clutch interposed between said rocker-arm and said ratchet-clutch.

9. In a blowing-engine, the combination with the air-cylinder and the main shaft, of an outlet-valve for the air-cylinder, an actuating-cylinder for said valve, a passage-way connecting said actuating-cylinder with the air-cylinder, a controlling-valve in said passage-way, a by-pass for said controlling-valve, a check-valve in said by-pass, a lever for closing said controlling-valve; a ratchet-clutch on the main shaft operative only when the engine is run backward, a rock-shaft connected with said clutch, a rocker-arm on said rock-shaft, a friction-clutch interposed between said rocker-arm and said rock-shaft, a connection between said rocker-arm and said lever and means for returning said lever and its operating mechanism to their normal position when inoperative.

813,065. SOD-TURNER FOR DISK PLOWS. JOHN J. TRAVIS, Cascade, Mont. Filed May 10, 1905. Serial No. 259,687.

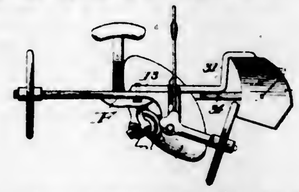

Claim.—In a plow of the character described, the combination with the framework, the disk, and the bearing therefor; of a sod-turner consisting of a curved plate, and a plurality of brackets secured at one end to the outer side of said plate and at the other end to the framework to hold the plate in position, as and for the purpose set forth.

813,066. AIR AND LIQUID COOLING APPARATUS. GARDNER T. VOORHEES, Boston, Mass. Filed June 5, 1903. Serial No. 160,153.

Claim.—1. A tier of horizontal liquid-channels formed of boards, and angle-irons which support the boards; the angle-irons extending the entire length of the liquid-channels in two tiers, the vertical legs of the angle-irons forming sides for the liquid-channels, while the horizontal legs form supports for the ends of the boards; upright supports for the angle-irons; a liquid-inlet to the upper liquid-channel and a liquid-outlet from the lower liquid-channel; liquid-outlets for the intermediate liquid-channels; a casing inclosing the liquid-channels, the two sides of the said casing being at a distance from the liquid-channels; an air-inlet to, and an air-outlet from, the casing; air-channels being thus formed by the liquid-channels and these two sides of the casing; all being so combined that liquid flowing through the liquid-channels will exchange heat with the air flowing through the air-channels.

2. A tier of horizontal liquid-channels formed of boards, whose edges abut, and angle-irons which support the boards; the angle-irons extending the entire length of the liquid-channels in two tiers, the vertical legs of the angle-irons forming sides for the liquid-channels, while the horizontal legs form supports for the ends of the boards; upright supports for the angle-irons; a liquid-inlet to the upper liquid-channel, and a liquid-outlet from the lower liquid-channel; dams at the ends of the liquid-channels; liquid-outlets for the intermediate liquid-channels; a casing inclosing the liquid-channels, the two sides of said casing being at a distance from the liquid-channels; an air-inlet to, and an air-outlet from, the casing;

air-channels being thus formed by the liquid-channels and these two sides of the casing; all being so combined that the liquid flowing

carried by the door members and in engagement therewith and serving to prevent the passage of air-currents.

Claim.—1. The combination with the jaw-clamping sleeve of a

3. A machine for cutting or shearing metal sheets or plates,

air-channels being thus formed by the liquid-channels and these two sides of the casing; all being so combined that the liquid flowing through the liquid-channels will exchange heat with the air flowing through the air-channels.

3. A tier of horizontal liquid-channels formed of boards, whose edges abut, and angle-irons which support the boards; the angle-irons extending the entire length of the liquid-channels in two tiers, the vertical legs of the angle-irons forming sides for the liquid-channels, while the horizontal legs form supports for the ends of the boards; upright supports for the angle-irons; a liquid-inlet to the upper liquid-channel, and a liquid-outlet from the lower liquid-channel; dams at the ends of the liquid-channels; liquid-outlets for the intermediate liquid-channels; a casing inclosing the liquid-channels, the two sides of said casing being at a distance from the liquid-channels; an air-inlet to, and an air-outlet from, the casing; air-channels being thus formed by the liquid-channels, and these two sides of the casing; dampers in the air-channels so arranged that air may be caused to flow through the air-channels either in series or in parallel; all being so combined that the liquid flowing through the liquid-channels will exchange heat with the air flowing through the air-channels.

813,067. **MINE-SHAFT DOOR.** ISAAC WHITNEY, Oskaloosa, Iowa; Henry D. Lane administrator of said Isaac Whitney, deceased. Filed June 30, 1904. Serial No. 214,527.

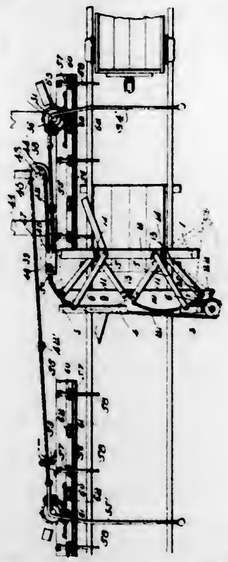

Claim.—1. The combination with a door, of a plurality of door-operating devices extending across a pathway or road leading to the door, and in a position to be successively engaged by an animal or object traveling over the track, each of said door-operating devices serving when operated to effect the complete opening movement of the door, and all acting as they are successively engaged to retain the door in full-open position.

2. The combination with a door, of a door-operating lever extending across a pathway or road leading to the door and being in a position to be engaged by an animal, and a plurality of levers also connected to the door and projecting partly across the roadway in position to be successively engaged by a car or other object following the animal.

3. In mine-doors, a pair of pivotally-mounted door members having upper and lower pivotal supports, the lower pivot being in the form of a bracket having portions extending both above and below the track, the lower portion being pivoted to a support below the track, and the upper portion being connected to the bottom of the door.

4. In mine-shaft doors, a pair of pivotally-mounted door members having arcuate faces and arranged to swing into recesses in the entry, a door-frame having battens, and projecting battens or ribs carried by the door members and in engagement therewith and serving to prevent the passage of air-currents.

5. In mine-doors, a pair of pivotally-mounted door members each including upper and lower segments, radiating braces connecting the upper segments to the pivot-point, and door supporting and bracing members arranged at the lower ends of the doors and each provided with an arm extending downward and inward under the track or road-bed.

6. In mine-doors, a pair of pivotally-mounted door members having arcuate faces arranged to swing into recesses in the entry, a door-frame having battens, springs projecting from the said battens and projecting battens carried by the doors and adapted to engage the springs to thereby lessen the shock of closing movement of the doors.

7. In mine-shaft doors, a pair of pivotally-mounted door members having arcuate faces, a door-frame having battens lined with a flexible material, and battens or bars carried by the doors and also faced with flexible material.

8. The combination with a pivotally-mounted entry-door, of a pivoted door-operating lever, a flexible connection between the free end of the lever and door, a pair of levers extending across the entry, a flexible connecting means between one of the levers and the door-operating lever, a flexible connection between the second lever and the door-operating lever, and a guiding means for the second of such flexible connection.

9. The combination with a pivotally-mounted door, of a pair of shafts, bell-crank levers vertically adjustable on said shafts, a pivoted door-operating lever having flexible connection with the door, and flexible connections between such levers and the adjustable bell-crank lever.

813,068. **EXPLOSIVE-ENGINE-STARTING MECHANISM.** HENRY J. WIEGAND, Milwaukee, Wis. Filed May 21, 1904. Serial No. 209,018.

Claim.—The combination with an explosive-engine shaft, a starting-crank therefor, a catch for locking the crank to the shaft, a cam-lever for controlling the catch, a pawl for controlling the movement of the lever and a stationary part arranged to move the pawl to disengage the catch when the shaft is moved in a reverse direction.

813,069. **LEVEE.** FRANK V. WRIGHT, San Francisco, Cal. Filed Sept. 12, 1905. Serial No. 278,140.

Claim.—1. A levee comprising a previously-established bank, side barriers extending along the top edges of said bank and consisting of horizontally-laid willow bundles, and earthy material on the bank between said barriers and permeating their interstices.

2. A levee comprising a previously-established bank, side barriers extending along the top edges of said bank and consisting of horizontally-laid willow bundles, together with their growing roots and branches, and earthy material on the bank between said barriers and permeating their interstices.

3. A levee comprising a previously-established bank, side barriers extending along the top edges of said bank, and consisting of horizontally-laid willow bundles, willow stakes holding said bundles in position, and earthy material on the bank between said barriers and permeating their interstices.

4. A levee comprising a previously-established bank, side barriers extending along the top edges of said bank and consisting of horizontally-laid willow bundles, together with their growing roots and branches, willow stakes holding said bundles in position, and earthy material on the bank between said barriers and permeating their interstices.

813,070. **ATTACHMENT FOR WOOD-BORING BRACES.** DAVID B. YOUNG, Guthrie, Okla. Filed July 18, 1905. Serial No. 270,174.

Claim.—1. The combination with the jaw-clamping sleeve of a boring-brace, said sleeve being threaded externally and driven by the ordinary rotation of the brace, of an internally-threaded member working on said sleeve, and a clamping-chain, the ends of which are carried by the aforesaid member.

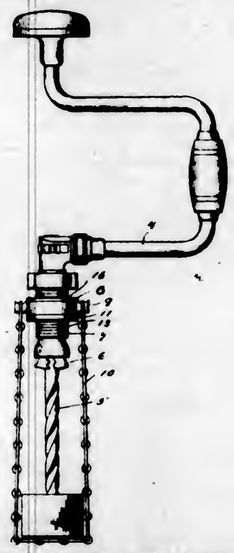

2. The combination with the jaw-clamping sleeve of a boring-brace, said sleeve being threaded externally and rotated by the ordinary rotation of the brace, of an internally-threaded member working on said sleeve, a rotatable ring carried by the aforesaid member, and a clamping-chain, the ends of which are secured to the ring.

3. The combination with a boring-brace having a jaw-clamping sleeve rotatable with the spindle of the brace, said sleeve being threaded exteriorly, of an internally-threaded inner ring on said sleeve, the threads being arranged to cause the ring to travel inwardly when the brace is turned to drive the bit or drill, an outer ring rotatably mounted on said ring and having a clamping-chain attached thereto, and antifriction-bearings between the rings constructed to give less friction therebetween than between the sleeve and the inner ring, so that normally the sleeve and the inner ring turn together.

813,071. **METAL-CUTTING MACHINE.** JAMES ABBOTT, Newport, England. Filed Oct. 11, 1904. Serial No. 228,068.

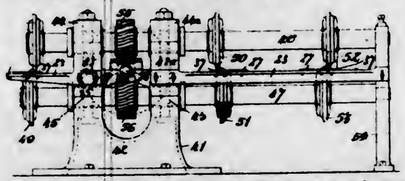

Claim.—1. A machine for cutting or shearing metal sheets or plates comprising a standard, a pair of shafts borne thereby, said shafts projecting on either side of said standard and on one side each shaft carrying a single circular knife or cutter and on the other side a plurality of circular knives or cutters with means for rotating said shafts substantially as described.

2. A machine for cutting or shearing metal sheets or plates, comprising fixed and loose standards, a pair of shafts borne thereby and projecting unequal distances on either side of said fixed standard, the shorter projecting portions of said shafts respectively carrying a single circular knife or cutter and the longer portions of said shafts respectively carrying a plurality of circular knives or cutters, with suitable gearing in connection with said shaft substantially as described.

3. A machine for cutting or shearing metal sheets or plates, comprising fixed and loose standards, a pair of shafts borne thereby and projecting unequal distances on either side of said fixed standard, the shorter projecting portions of said shafts respectively carrying a single circular knife or cutter and the longer portions of said shafts respectively carrying a plurality of circular knives or cutters, with suitable gearing in connection with said shafts and means for supporting and guiding the sheets or plates and regulating the amount of scrap to be cut off substantially as described.

4. A machine for cutting or shearing metal sheets or plates comprising a standard, a pair of shafts borne thereby said shafts projecting on either side of said standard, and on both sides each shaft carrying a single circular knife or cutter, with suitable gearing in connection with said shafts, and means for supporting and guiding the sheets or plates, and regulating the amount of scrap to be cut off substantially as described.

5. A machine for cutting or shearing metal sheets or plates comprising fixed and loose standards, a pair of shafts borne thereby, said shafts projecting on either side of said fixed standard, and on both sides each shaft carrying a plurality of circular knives or cutters, with suitable gearing in connection with said shafts, and means for supporting and guiding the sheets or plates and regulating the amount of scrap to be cut off substantially as described.

6. In means for cutting or shearing metal sheets or plates, the combination therewith of supporting guiding and regulating mechanism for the sheets or plates consisting of brackets adapted to be adjustably connected to the standards and support adjacent to each pair of cutters, a platform and guide, each of said platforms having adjustably fixed thereto at its forward end a slotted arm carrying a marking-disk, substantially as described.

7. In means for cutting or shearing metal sheets or plates the combination therewith of supporting guiding and regulating mechanism for the sheets or plates consisting of brackets adapted to be adjustably connected to the standards and support adjacent to each pair of cutters, a platform, angle-iron guide, and a spring-controlled arm carrying a guide-roller, each of said platforms having adjustably fixed at its forward end a slotted arm carrying a marking-disk, substantially as described.

8. In means for cutting or shearing metal sheets or plates, the combination therewith of supporting, guiding and regulating mechanism for the sheets or plates consisting of brackets adapted to be adjustably connected to the standards and support adjacent to each pair of cutters, a platform, angle-iron guide and a spring-controlled arm carrying a guide-roller each of said platforms having adjustably fixed at its forward end a slotted arm carrying a marking-disk, said forward end of each platform (for adjusting this to the condition of the plates) also having pivoted thereto a link provided with a series of holes adapted for adjustable connection by a pin or bolt to a member having a like series of holes, said member being connected to the foundation or other support of the machine substantially as described.

813,072. **SHOE AND SLIPPER HANGER.** CHARLES ACKROYD, Paterson, N. J. Filed July 21, 1904. Serial No. 217,547.

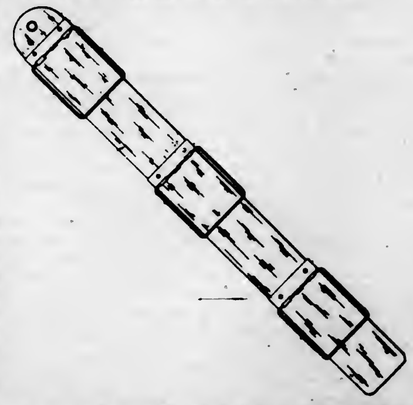

Claim.—A display-rack consisting of a support, a base-plate secured to said support, a retaining-frame hinged on said plate and a

hook projecting at right angles from said frame, said hook and frame formed from a single piece of wire.

813,073. PNEUMATIC GRAIN-ELEVATOR. WILLIAM C. ALLEN, Gurley, Ala. Filed May 10, 1905. Serial No. 259,744.

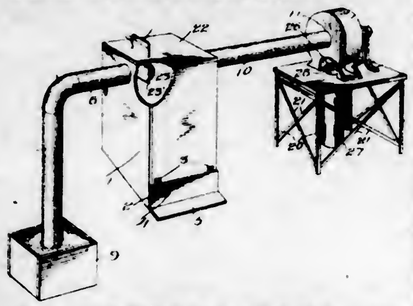

Claim.—1. In an apparatus of the class described, a vacuum-chamber, a feed-tubing connected therewith, a rotary fan, connections between the fan and the vacuum-chamber, means for rotating the fan, a discharge-tube arranged beneath the fan, and a flexible baffle-plate adjustably mounted in the upper end of the vacuum-chamber.

2. In an apparatus of the class described, a vacuum-chamber, a rotary fan, connections between the fan and the vacuum-chamber, means for rotating the fan, a discharge-tube arranged beneath the fan, a baffle-plate composed of spring metal and secured to the top of the vacuum-chamber, and spaced arms connected at the top by a cross-piece and at the bottom to the lower edge of baffle-plate to adjust the said baffle-plate.

813,074. BOAT-PROPELLER. CHARLES B. BARBER, Syracuse, N. Y. Filed Apr. 13, 1905. Serial No. 255,366.

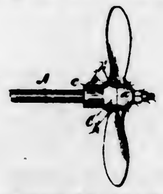

Claim.—1. In a boat-propeller of the class described, the combination of a rotary shaft, a wheel mounted on said shaft and comprising a set of radially-disposed pivoted blades, a member operative for axially turning said blades to regulate the pitch thereof, and a manually-operated revoluble sleeve mounted on the shaft and actuating said member as set forth.

2. In a boat-propeller of the class described, the combination of a rotary shaft, a wheel mounted on said shaft and comprising a hollow hub and a set of radially-disposed blades pivoted to the hub, a member disposed within the hub operative for axially turning the blades to regulate the pitch thereof, a manually-operated sleeve movable on the shaft and extending into the hub for actuating said member, and clamping means engaging the sleeve for retaining the blades in their adjusted positions as set forth.

3. In a boat-propeller of the class described, the combination of a rotary shaft, a wheel mounted on said shaft and comprising a hub having a hollow portion and a set of radially-disposed blades pivoted thereto, an exteriorly-screw-threaded sleeve revolubly embracing the shaft and extending into the hub, means for sustaining the sleeve against endwise movement, and a nut mounted on the sleeve within the hub and engaging the blades and operative for turning the latter axially to regulate the pitch thereof.

4. In a boat-propeller of the class described, the combination of a rotary shaft provided with a screw-thread at its rear end portion, a wheel comprising a hub having a hollow transversely-divided spherical portion, the inner section being rigidly secured to the shaft, and the outer section removable, and provided with an axial opening through which the shaft protrudes, the said hub formed with radially-disposed openings at the line of division, blades pivoted in said openings and provided with slotted portions at their pivoted ends within the hub, an exteriorly-screw-threaded sleeve mounted revolubly on the shaft and extending through the aforesaid axial opening and provided with a head abutting against the exterior of the hub to prevent inward movement of the sleeve, and by which the sleeve turned, a nut mounted on the sleeve within the hub and provided with studs engaging the slotted portions of the blades, whereby the rotation of the sleeve shifts the nut longitudinally to turn the blades axially to regulate the pitch of the latter, and a jam-nut mounted on the shaft serving to sustain the sleeve against outward movement and to lock the blades in their adjusted positions as set forth.

5. In a boat-propeller of the class described, the combination of a rotary shaft, a wheel mounted thereon and comprising a hollow hub and radially-disposed blades pivoted thereto and provided with transversely-slotted collars within the hub, an exteriorly-screw-threaded sleeve mounted revolubly on the shaft and extending into the hub, means for sustaining the sleeve against endwise movement, means for revolving the sleeve, a nut mounted on the sleeve within the hub and provided with studs on its edges engaging the slotted collars, whereby the blades are turned axially to regulate the pitch of said blades, and means for locking the blades in their adjusted positions as set forth.

813,075. GENERATOR OF FLUID-PRESSURE. ADRIEN BAUDIN, Paris, France. Filed Aug. 5, 1905. Serial No. 268,325.

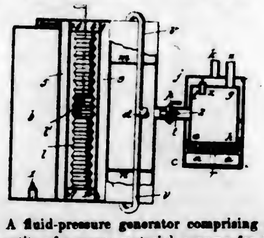

Claim.—1. A fluid-pressure generator comprising a chamber containing a quantity of aqueous material, a pump for drawing air through said material, a chamber into which the cooled and moistened air is delivered, and means for heating said last-named chamber.

2. A fluid-pressure generator, comprising a chamber containing means for cooling and moistening air, a pump for drawing air through said chamber, a tank for receiving the cold damp air from said pump, and a heating-chamber communicating with said tank.

3. In a fluid-pressure generator, a chamber containing cold aqueous material, an inlet-pipe having a check-valve and opening near the bottom of said chamber, an air-pump taking air from said chamber, a pressure-tank receiving air from said pump, and a heating-chamber connected with said tank.

4. A fluid-pressure generator, comprising a chamber containing cold water, an inlet-pipe for said chamber having an inwardly-opening check-valve, a compartment communicating with said chamber, an air-pump connected with said compartment, a tank receiving the cold damp air drawn by said pump from the chamber, means for keeping the air in said tank under pressure, a heating-chamber, a pipe connecting said chamber with the tank, and a stop-cock in said pipe.

5. A fluid-pressure generator, comprising a chamber for cold water, an air-pump connected with said chamber and drawing air through the water, a tank into which said pump delivers the cold damp air, floating pistons in the ends of said tank, means for maintaining fluid-pressure behind said pistons, a furnace, a heating-chamber in said furnace, and a pipe connecting said heating-chamber with the tank and provided with a stop-cock and a check-valve.

813,076. DRUM-MILL. RICHARD BEHRER, Bromberg, Germany. Filed Jan. 18, 1905. Serial No. 241,607.

Claim.—1. In a drum-mill having a casing at the drum end, communicating with the outer shell of the drum, and presenting blades running from the periphery toward the center; in combination, a central boss for the drum-shaft, having a perforated rim, communicating peripherally with the casing and laterally with the grinding-drum; spirally-curved vanes in the interior of the boss, rotating against the direction of fall of material through the perforated rim, located one below each aperture in the latter; a perforated partition dividing the hopper from the boss; and means for preventing the

hopper charge from passing through the perforated boss-rim, substantially as described.

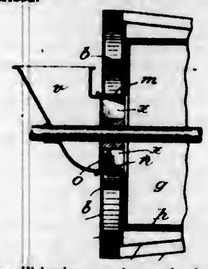

2. In a drum-mill having a casing at the drum end, communicating with the outer shell of the drum, and presenting blades running from the periphery toward the center; in combination, a central boss for the drum-shaft, having a perforated rim, communicating peripherally with the casing and laterally with the grinding-drum; spirally-curved vanes in the interior of the boss, rotating against the direction of fall of material through the perforated rim, located one below each aperture in the latter; a perforated partition dividing the hopper from the boss; and scoop-shaped members located between the said vanes, for preventing the hopper charge from passing through the perforated boss-rim, substantially as described.

813,077. AUTOMATIC FLASH-LIGHT APPARATUS. STANISLAUS BERENS, La Grange, and ABRAHAM N. GATHERT, Chicago, Ill. Filed June 23, 1905. Serial No. 266,405.

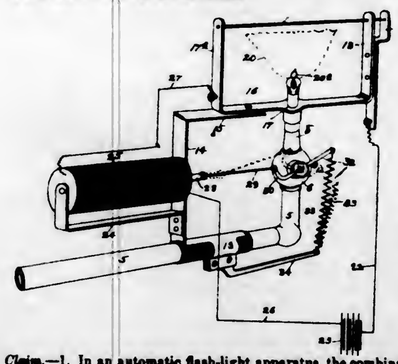

Claim.—1. In an automatic flash-light apparatus, the combination with a gas-fixture, of a gas-regulating valve mounted thereon, an expansible piece mounted above the fixture in the path of the heat of the flame therefrom, an electromagnet in circuit with the expansible piece, means connecting the valve and said magnet whereby the valve will be turned when the circuit is completed so as to decrease the flow of gas, and a spring connected to the valve to turn the same when the circuit is broken so as to increase the flow of gas, substantially as described.

2. In an automatic flash-light apparatus, the combination with a gas-fixture, of a regulating-valve for controlling the flow of gas mounted thereon and having a projecting stem, oppositely-extending levers or arms on said stem, a yoke mounted on the burner of the fixture, an expansible piece carried by the yoke, a contact-strip secured to the yoke but insulated therefrom, a battery and a hollow electromagnet electrically connected together, a conductor connecting the magnet and yoke and a conductor connecting the contact-strip and battery, a plunger movably located in the hollow of the magnet and loosely connected to one of the arms on the valve-stem, and a spring connected at one of its ends to the other of said arms and suitably secured at its other end, substantially as described.

813,078. POTASH LEACHING APPARATUS. ERNST F. BERNHARDT, Leipsig, Germany. Filed June 4, 1904. Serial No. 211,866.

Claim.—1. A potash leaching apparatus for raw wool consisting of a reservoir, a channel having a perforated bottom located over said reservoir, rakes for feeding the wool in said channel, pressing-rollers placed at the end of the channel and means for sprinkling the wool as it passes along the channel, said means taking its supply from the reservoir.

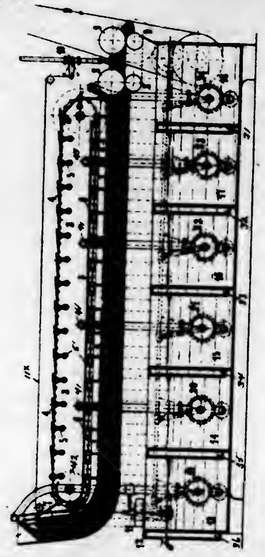

2. A potash leaching apparatus consisting of a channel having a perforated bottom, reservoirs placed under the channel, sprinkler-pipes arranged over the channel, means for raising the liquid from the reservoirs to said pipes said reservoirs having communicating openings through which the liquid flows from one to the other, said flow being controlled by the inflow of water to the last compartment, and a float regulating the height of liquid in said last compartment.

3. A potash leaching apparatus comprising a series of reservoirs having communicating openings, a perforated channel placed above the same, a series of sprinkler-tubes placed over the channel and pumps for raising the water from the reservoirs to the sprinkler-tubes, said tubes being so placed that the water raised from each reservoir will be returned to the same.

4. A potash leaching apparatus consisting of a series of reservoirs having communicating openings, a perforated channel placed above the reservoirs, rakes for feeding the wool through the channel, sprinkler-tubes placed over the channel, pumps for raising the liquid from the reservoirs to the tubes, said tubes being so placed that the liquid will be returned to the reservoir from which it was raised and pressing-rollers placed at the end of the channel and adapted to receive the wool therefrom.

813,079. SEAL-PRESS. EDWARD J. BROOKS, East Orange, N. J. Filed Dec. 26, 1902. Serial No. 136,731.

Claim.—1. A seal-press having a movable die, means for reciprocating the same, and a ratchet device, for insuring complete movements of said die, comprising a pawl carried by said die and a ratchet-bar fixedly held in the body of the press and arranged to intermesh with said pawl during each pressing movement.

2. A seal-press having a movable die, means for reciprocating the same, and a ratchet device, for insuring complete movements of said die, comprising a spring-pressed pawl and a pivotal support

therefor carried by said die and a ratchet-bar fixedly held in the body of the press and arranged to intermesh with said pawl during each pressing movement.

tween said sides and partitions, and a blade pivoted between said partitions, and means for clamping said sides and partitions on said blades.

said magnetized shaft, a permanent magnet or magnets supported by

which is declined inwardly throughout the thickness thereof, and a

therefor carried by said die and a ratchet-bar fixedly held in the body of the press and arranged to intermesh with said pawl during each pressing movement.

3. A seal-press having a movable die, means for reciprocating the same, and a ratchet device, for insuring complete movements of said die, comprising a spring-pressed pawl and a pivotal support therefor carried by said die and a ratchet-bar constructed with a pair of reversing-notches and with ratchet-teeth between said notches arranged to intermesh with said pawl during each pressing movement.

4. A seal-press comprising a recessed body part, a spring-retracted movable die within said body part, a handle part pivoted to said body part and adapted to impart the pressing movements to said die, a spring-pressed pawl and a pivot therefor carried by said die, and a ratchet-bar fixedly held within said body part and arranged to intermesh with said pawl throughout each pressing movement.

5. A seal-press comprising a body part having a cylindrical recess parallel with and in communication with the customary die-guiding recess, a spring-retracted movable die within the recess last named, a handle part pivoted to said body part and adapted to impart the pressing movements to said die, a spring-pressed pawl and a pivot therefor carried by said die, and a cylindrical ratchet-bar fastened within said cylindrical recess and arranged to intermesh with said pawl throughout each pressing movement, substantially as hereinbefore specified.

813,080. **VETERINARY SURGICAL INSTRUMENT.** WELDON B. COMPTON, Limmas, Mont. Filed Mar. 8, 1905. Serial No. 249,053.

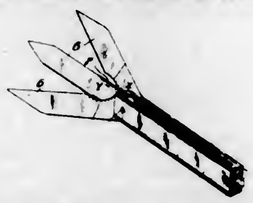

Claim.—1. A knife-blade having a dull serrated portion and a sharpened edge merging directly into and forming an uninterrupted and even continuation of said serrated edge, said serrated portion and sharpened edge extending in the same general direction.

2. A knife-blade having a concaved or depressed dull serrated portion and a sharpened edge merging directly into and forming an uninterrupted and even continuation of said serrated edge, said serrated portion and sharpened edge extending in the same general direction.

3. A knife-blade having both edges sharpened and a dull toothed portion forming a continuation of each edge.

4. In a device of the class described, the combination with a sheath having an aperture, of a knife-body adapted to be contained in said sheath, and means integral with said body adapted to engage the edge on the sheath formed by the aperture whereby the body is locked in the sheath.

5. In a device of the class described, the combination with a sheath having an aperture, of a knife-body adapted to be contained therein, and a catch integral with one end of the body but centrally out of line with the said aperture, said catch adapted to engage the edge on the sheath formed by the aperture whereby the body is locked in the sheath.

6. In a device of the class described, the combination with a sheath having an aperture, of a knife-body, and a catch carried by said knife-body adapted to spring into said aperture and engage the edge formed thereby.

7. In a device of the class described, the combination with a sheath having a central aperture, of a knife-body adapted to loosely fit said sheath at one end, and means eccentrically mounted on the one end of the knife-body adapted to engage the edge formed by the aperture when the body is forced in the sheath.

8. In a device of the class described, the combination with a sheath, of a knife-body adapted to fit the sheath closely at one end and loosely at the opposite end, and means carried by the body at the loose end adapted to lock with the sheath.

9. In a device of the class described, the combination with a knife-body comprising sides, of blades pivoted between said sides, and means for compressing said sides.

10. In a device of the class described, the combination with a knife-body comprising sides and partitions, of blades pivoted between said sides and partitions, and a blade pivoted between said partitions, and means for clamping said sides and partitions on said blades.

11. In a device of the class described, the combination with a knife-body comprising sides, of blades loosely pivoted between said sides, and a sheath adapted to fit over said body and clamp said sides on said blades.

12. In a device of the class described, the combination with a knife-body comprising sides and partitions, of blades loosely mounted between said sides and partitions, a blade loosely mounted between said partitions, and a sheath adapted to fit over said body and clamp said sides and partitions on the said blades.

13. In a device of the class described, the combination with a knife-body comprising sides, of blades loosely pivoted between said sides, means for clamping said sides on said blades, and means for locking said body to said clamping means.

14. In a device of the class described, the combination with a knife-body comprising sides, of blades loosely pivoted between said sides, a sheath adapted to fit over said body and clamp said sides to the blades, and means carried by the body adapted to engage said sheath to lock the body and sheath together, said means facilitating the removal of the body from the sheath.

813,081. **SPARKING IGNITER FOR EXPLOSIVE-ENGINES.** GEORGE CORMACK, Jr., and FREDERICK C. SUNDAHL, Rockford, Ill. Filed Feb. 5, 1904. Serial No. 192,105.

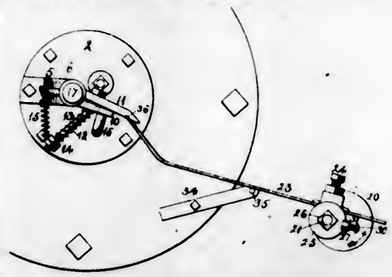

Claim.—1. An igniter for gasolene-engines, comprising two points, one being movable, an arm having a connection with the movable point, and an operating-bar having one end provided with a notch forming two sections, said bar being movable transverse to its length to bring either section of the end under the arm, in order that the time of ignition may be changed.

2. An igniter for gasolene-engines, comprising two points, one being movable, an arm having a connection with the movable point, a rotary crank-pin, a collar supported by the crank-pin and having a movement in the lengthwise direction of the crank-pin, means for holding the collar in its adjusted positions, and an operating-bar supported by the collar having a notch in one end capable of engaging the arm, in order that the time of ignition may be changed.

3. An igniter for gasolene-engines, comprising two points, one being movable, an arm having a connection with the movable point, a rotating crank-pin, a collar supported by the pin and having a movement in the lengthwise direction of the crank-pin, a disk supported by the crank-pin, a spring-actuated latch provided with a series of notches capable of receiving the edge of the disk and a bar supported by a collar having a notch in one end capable of engagement with the arm.

813,082. **MECHANICAL AND MAGNETIC TOY.** HERBERT CORTRELL, Newark, N. J. Filed Feb. 27, 1903. Serial No. 6,709.

Claim.—1. A mechanical and magnetic toy, comprising a frame, a central spindle having bearings in said frame, and carrying a non-magnetic table-plate having an iron rim upon its periphery, a magnetic shaft having a balance-wheel fixed thereon, and having its upper end in contact with the iron rim, bearings in the frame for the said magnetized shaft, a permanent magnet or magnets supported by the frame beneath the table-plate, and magnetized objects on top of said table-plate, substantially as shown and described.

2. A mechanical and magnetic toy, comprising a main frame having bearings to support a shaft carrying a balance-wheel, a table-plate fixed upon a spindle held in bearings in said frame, adapted to be rotated by motion imparted by said balance-wheel; in combination with a magnet or magnets so disposed and held, that movable permanently-magnetized objects placed upon the said table-plate may be alternately attracted and repelled by the said magnet or magnets, substantially as described.

3. A mechanical and magnetic toy, comprising a rotatable non-magnetic table or carrier, having an iron peripheral rim; a rotatable magnetized shaft held in a frame in bearings, and having a balance-wheel fixed thereon; the said iron peripheral rim arranged in contact with the said magnetized shaft to adapt it to be rotated by magnetic attraction, substantially as described.

813,083. **ELECTRICALLY-CONTROLLED REGULATING-VALVE FOR HUMIDIFYING AND HEATING SYSTEMS.** STUART W. CRAMER, Charlotte, N. C. Filed Dec. 29, 1904. Serial No. 238,818.

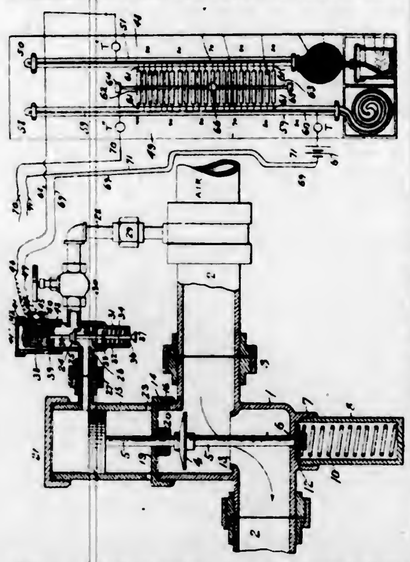

Claim.—1. A fluid-service pipe, a main valve to control the fluid therein, and a supplemental valve controlling the fluid to operate the main valve; in combination with a source of electrical energy, means for indicating temperature and means for indicating humidity, each of said means being adapted to close an electric circuit, separate electrical conductors connecting said source of electrical energy with each of said means, one of said conductors including an electromagnetic device, a plurality of electrical conductors connecting said means, and each of said latter conductors uniting selected points on the indicating means.

2. A fluid-service pipe, a main valve to control the liquid therein, and a supplemental valve controlling the fluid to operate the main valve; in combination with a source of electrical energy, a dry-bulb thermometer and a wet-bulb thermometer, each of said thermometers being adapted to close an electric circuit, separate electrical conductors connecting said source of electrical energy with each of said thermometers, one of the said conductors including an electromagnetic device, a plurality of electrical conductors connecting said thermometers, each of said latter conductors uniting selected points on the dry-bulb thermometer with selected points on the wet-bulb thermometer.

813,084. **SETTING.** GEORGE W. DOVER, Cranston, R. I. Filed Aug. 26, 1905. Serial No. 275,780.

Claim.—A gem-setting comprising a bushing the upper edge of which is declined inwardly throughout the thickness thereof, and a shell surrounding and extending above the bushing and having an interned flange at its lower end disposed immediately below the lower edge of the bushing and also having a margin a' extending upwardly from the inner edge of the said flange and arranged against the inner side of the lower portion of the bushing.

813,085. **COTTON-SCRAPER.** JAMES D. FAIRLESS, Iuka, Miss. Filed Sept. 25, 1905. Serial No. 280,011.

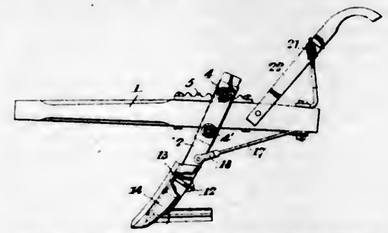

Claim.—1. In a cotton-scraper, a beam, a pair of standards connected with and spaced from the sides of the beam, downwardly and outwardly inclined foot-pieces at the lower ends of the standards, and blades supported adjustably upon the latter.

2. In a cotton-scraper, a beam, a pair of standards spaced from and connected with opposite sides of the beam, flanged foot-pieces forming runners at the lower ends of the standards, and flanged blades supported adjustably upon the standards.

3. A beam, standards disposed at opposite sides of the beam, clamping-bolts connecting said standards, bifurcated braces connected with the standards and extending rearwardly and abutting upon the under side of the beam, an upright brace supported upon the beam and having a screw-threaded upper end, a bolt extending through the upright brace, the beam, and the bifurcated braces, handles connected pivotally with the beam, a rung connecting the handles and apertured for the passage of the screw-threaded brace, and clamping-nuts upon the latter.

813,086. **PASTE-POT.** ROBERT P. FRIST, Bridgeton, N. J., assignor to S. S. Stafford, Incorporated, New York, N. Y., a Corporation of New York. Filed Nov. 17, 1905. Serial No. 287,768.

Claim.—1. In a paste-pot, the combination of an outer well having a recess in its bottom, and an inner well having an extended base fitting into said recess, the upper surface of the extended base being flush with the bottom of the outer well.

2. In a paste-pot, an inner well having a foot enlargement cut away in part to prevent rotation and an outer well having a recess shaped to receive said foot enlargement.

3. An outer and an inner well, the outer well having a recess and the inner well having an extended base fitting the recess in the outer, and a holding device therefor, for substantially the purposes set forth.

4. An outer and an inner well, the outer well having a recess and the inner well having an extended base fitting the recess in the outer, and a disk or washer overlying the extended base of the inner well.

813,087. ILLUMINATING-SIGN. ABRAHAM H. GATHERT, Chicago, and STANISLAUS BIENIEK, La Grange, Ill. Filed Apr. 26, 1905. Serial No. 257,282.

Claim.—1. The combination with a casing having an opening in one of its walls, of a sign-plate located in said opening, a rotary drum mounted in the casing and having a transparent portion, a wing hinged to the front portion of the casing at each side of the opening therein, and projecting inwardly to near the drum, and means to rotate said drum by the heat from the light-producing flame, substantially as described.

2. The combination with a casing having an opening in one of its walls, of a sign-plate located in said opening, a rotary drum mounted in the casing and having a transparent portion, a wing pivotally secured on each side of the opening in the casing and extending inwardly toward the drum, a propeller mounted on the upper end of the drum and comprising a series of radially arranged and deflected blades, a vertical shaft supporting said propeller and a vertical wing secured to said shaft, substantially as described.

3. The combination with a casing having an opening in its front wall and an opening in its rear wall, of a sign-plate located in the front opening, a shaft vertically journaled in the casing, a rotary drum mounted in the casing and having a transparent portion, a vertical wing on said shaft, and means to rotate said drum by the heat from the light-producing flame, substantially as described.

813,088. PROCESS OF REFINING TURPENTINE. GEORGE C. GILMER, New Orleans, La., assignor, by mesne assignments, to American Turpentine and Tar Company, Limited, New Orleans, La., a Corporation. Filed Jan. 24, 1903. Serial No. 140,336.

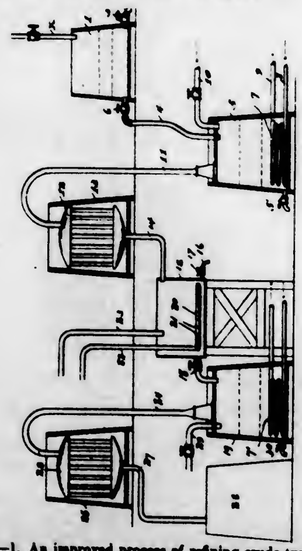

Claim.—1. An improved process of refining crude turpentine, produced by dry distillation of turpentine-bearing wood which consists in first allowing the crude distillate to settle and then separating the turpentine-oil from the liquids of greater specific gravity by decanting, next adding to the turpentine-oil a large proportion of pure water, and distilling the mixture at a temperature sufficient to vaporize both water and turpentine, condensing the vapors of distillation, and again separating the turpentine-oil from the liquids of greater specific gravity by settling and decanting, next neutralizing the acid impurities of the turpentine-oil by introducing gradually a liquid alkali and maintaining an agitation during such addition of the alkali, arresting the introduction of alkali and the agitation of the mixture when the neutralization has been completed, allowing the mixture to settle and separating again by decantation, and finally redistilling the turpentine-oil in the presence of water and condensing and separating the turpentine and water vapors.

2. The process of refining crude turpentine produced by the destructive distillation of pine which consists in first separating the turpentine from the pyroligneous acid by settling, next adding approximately fifty per cent. of pure water and distilling the mixture at a temperature above that at which the water is vaporized, condensing the vapors of distillation, and allowing the liquids to settle and separate, next decanting off the water and adding to the remaining turpentine lime-water, then subjecting the mixture of turpentine and lime-water to air and an agitating process, next decanting off the lime-water and subjecting the turpentine to a second distillation, and finally condensing the turpentine-vapor.

3. An improved process of refining turpentine, which consists in first separating the turpentine from the pyroligneous acid contained therein, next adding approximately fifty per cent. of pure water and distilling the mixture at a temperature above that at which the water is vaporized, condensing the vapors of distillation, and allowing the liquids to settle and separate, next decanting off the water and adding to the remaining turpentine lime-water, then subjecting the mixture of turpentine and lime-water to an aerating and agitating process, next decanting off the lime-water, and then distilling the turpentine at a temperature of approximately 335° Fahrenheit, by means of heat transmitted to the turpentine from a body of water upon which the turpentine is supernatent and finally condensing the turpentine-vapor.

813,089. EVAPORATING-PAN. JOHN P. GOLDEN, Columbus, Ga. Filed July 27, 1905. Serial No. 271,486.

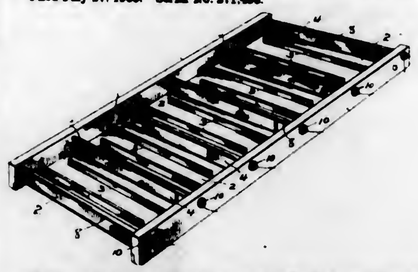

Claim.—In a device of the character described, the combination of side timbers, pan-sections, flanged edges on the pan-sections of semicylindrical form at their upper edges and having tongues at their ends located in recesses in the timbers, open coupling-cylinders on the curved adjacent flanges and brace-rods passed through all of said cylinders thus formed and through the timbers, and nuts on said rods.

813,090. AIR-BRAKE MECHANISM. ALVA L. GOODENIGHT, Council Bluffs, Iowa. Filed Sept. 6, 1905. Serial No. 277,238.

Claim.—1. In air-brake mechanism, a pair of independent valves arranged between and controlling the flow of air from the auxiliary reservoir to the brake-cylinder, and independent pistons connected to the valves, one of said valves serving also as a brake-release valve.

2. In air-brake mechanism, a pair of independent piston-connected valves both operable by variations of train-pipe pressure and both of which are movable on reduction of such pressure to permit the flow of air from the auxiliary reservoir to the brake-cylinder, one of the valves serving also to control the exhaust of air from the brake-cylinder.

3. In air-brake mechanism, a pair of independent piston-operated valves arranged in separate cylinders, both of which are exposed to train-pipe pressure, both valves being movable to control the flow of air from the auxiliary reservoir to the brake-cylinder, one of the valves serving as a brake-release and the piston of the other valve controlling the recharging of the auxiliary reservoir.

4. In air-brake mechanism, a pair of independent valves for controlling the flow of air from the auxiliary reservoir to the brake-cylinder, independent pistons connected to the valves, both of said pistons being exposed on one side to train-pipe pressure, primary and secondary auxiliary reservoirs, the pressure of the primary reservoir tending to oppose movement of one of said pistons under train-pipe pressure, the second piston being exposed to pressure from the secondary auxiliary reservoir, and means for varying the pressure in said secondary auxiliary reservoir.

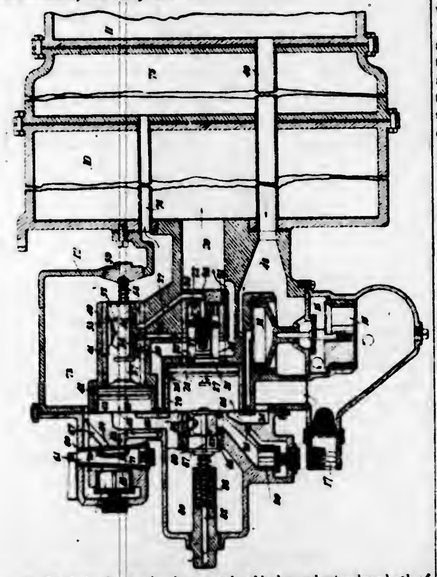

5. In air-brake mechanism, a pair of independent valves both of which are movable to control the flow of air from the auxiliary reservoir to the brake-cylinder, one of said valves constituting also a brake-release valve, independent pistons connected to said valves and exposed on one side to train-pipe pressure, primary and secondary auxiliary reservoirs, the main piston being exposed on one side to pressure from the primary auxiliary reservoir and the piston of the second or brake-release valve being exposed to pressure from the secondary auxiliary reservoir, and means for varying the pressure in said secondary auxiliary reservoir.

6. In air-brake mechanism, a pair of cylinders, service and release pistons arranged in said cylinders, independent valves connected to said pistons, primary and secondary auxiliary reservoirs, the pressure of the primary auxiliary reservoir tending to oppose movement of the service-piston under train-pipe pressure, and the pressure of the secondary auxiliary reservoir tending to oppose movement of the release-piston under train-pipe pressure, a feed-groove under the control of the service-piston and through which air passes from the train-pipe to both reservoirs, and means for controlling communication between the two reservoirs.

813,091. TRAMWAY-SWITCH. OTTO C. H. GUNDERSEN, Spokane, Wash. Filed July 12, 1905. Serial No. 269,262.

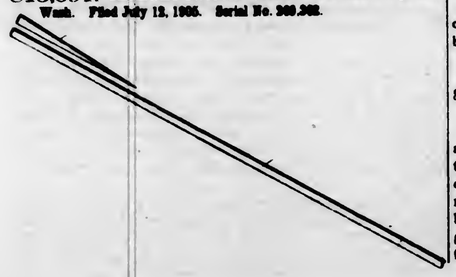

Claim.—1. In a tramway-switch, the combination of a switch-tongue, a shaft, a driving connection intermediate the shaft and the tongue for moving the latter by the former, pinions fast on the shaft, a vertically-swinging sector-gear fulcrumed in rear of the shaft and having an arc-like opening receiving one of the pinions, and also having teeth on the forward wall of said opening intermeshed with said pinion, and a vertically-swinging sector-gear fulcrumed in rear of the shaft and having an arc-like opening receiving the other pinion, and also having teeth on the rear wall of the opening intermeshed with the latter pinion.

2. In a tramway-switch, the combination of a switch-tongue, a shaft, a driving connection intermediate the shaft and the switch-tongue for moving the latter by the former, pinions fast on the shaft, a vertically-swinging gear fulcrumed in rear of the shaft and having teeth disposed in rear of and intermeshed with one pinion, and a vertically-swinging gear fulcrumed in rear of the shaft and having teeth disposed in front of and intermeshed with the other pinion.

3. In a tramway-switch, the combination of main-track rails, turnout-rails, a horizontally-swinging switch-tongue abutting at its heel against one of the main-track rails, a pit disposed between the main-track rails, a pit-cover having longitudinally-extending parallel slots, a transverse shaft journaled in suitable bearings in the pit and bearing fast pinions and a fast miter-gear, a longitudinal rock-shaft having an upwardly-extending arm for moving the switch-tongue and also having a miter-gear intermeshed with that on the first-mentioned shaft, a vertically-swinging sector-gear fulcrumed in rear of the first-mentioned shaft and having an arc-like opening receiving one of the pinions and teeth on the forward wall of said opening intermeshed with said pinion, and also having its upper portion disposed in one of the slots of the pit-cover, and a sector-gear fulcrumed in rear of the first-mentioned shaft and having an arc-like opening receiving the other pinion, and teeth on the rear wall of the opening intermeshed with the latter pinion, and also having its upper portion disposed in the other slot of the pit-cover.

4. In a tramway-switch, a car equipped with a vertically-swinging arm, parallel wheels carried by said arm, means for returning the arm to and normally retaining the same in a raised position, and means for depressing the arm; in combination with a switch-tongue, a shaft, a driving connection intermediate the shaft and the switch-tongue for moving the latter by the former, pinions fast on the shaft, a vertically-swinging gear disposed in alinement with one of the mentioned wheels of the car and fulcrumed in rear of the shaft and having teeth disposed in front of and intermeshed with one pinion, and a vertically-swinging gear disposed in alinement with the other mentioned wheel of the car and fulcrumed in rear of the shaft and having teeth disposed in rear of and intermeshed with the other pinion.

813,092. THERAPEUTIC PAD. PERIAN B. HARDY, Tecumseh, Mich. Filed Oct. 13, 1904. Serial No. 228,315.

Claim.—A pad having a filling of asbestos fiber and a covering of asbestos cloth, and sheets of asbestos paper in the body of the pad, between the face and back thereof.

813,093. BINDING-POST. EDWIN C. HERR, Cleveland, Ohio. Filed May 9, 1905. Serial No. 259,895.

Claim.—1. An element for an electric battery-cell consisting of a rod of non-metallic substance having a bore in its outer end portion, a binding-post comprising conductor-attaching means at one end, and having at its other end portion longitudinally-extending ribs, said ribbed portion of the binding-post being inserted in said bore in the rod, the bore being of a diameter less than that of the engaging portion of the binding-post, whereby the ribs will have a retaining engagement with the wall of the bore.

2. An element for an electric battery-cell consisting of a rod of non-metallic substance having a bore in its outer end portion, a binding-post having a shank provided with a collar at an intermediate portion, the post being screw-threaded from said collar to one extremity, and the other extremity of the post being of a diameter greater than that of the bore in the rod, whereby the post will have a retaining engagement with the wall of the bore.

2. The combination of a silk backing-sheet, a stencil-sheet and a narrow strip of silk adapted to be carried by the ribbon-spools, the stencil-sheet being interposed between the backing and the strip,

mal-point having a head passing through said slot into the chamber and provided therein with side bars rendering the head cylindrical, ears extending from the lower bearing-plate over the ends of said

valves located above the bellows regulating the gas-supply thereto, openings for the discharge of water of condensation formed in the bottom of the bellows-chambers, valves at said openings and means

2. An element for an electric battery-cell consisting of a rod of non-metallic substance having a bore in its outer end portion, a binding-post having a shank provided with a collar at an intermediate portion, the post being screw-threaded from said collar to one extremity of the post, a nut engaging said threaded portion, the binding-post at the other side of said collar being provided with adjacent longitudinal extending ribs, said latter portion of the binding-post being inserted into said bore with the collar engaging the rod adjacent the bore, the said bore being of a diameter less than that of its engaging portion of the post, whereby said ribs will have a retaining engagement with the walls of the bore.

3. An element for an electric battery-cell consisting of a rod of non-metallic substance having a bore in its outer end portion, a binding-post having at one end portion longitudinally-extending ribs, said ribbed portion of the binding-post being inserted in said bore in the rod, the bore being of a diameter less than that of the engaging portion of the binding-post, whereby the ribs will have a retaining engagement with the wall of the bore.

4. The combination of a rigid non-metallic body having a bore therein, a binding-post comprising conductor-attaching means at one end and having at its other end portion longitudinally-extending ribs, said ribbed portion of the post being inserted in said bore in the body, the bore being of less diameter than that of the engaging portion of the post whereby the ribs will have a retaining engagement with the wall of the bore.

5. The combination of a rigid non-metallic body having a bore therein, a binding-post having a shank provided with a collar, the post being screw-threaded from the collar to one extremity, and nut on said threaded portion, the post at the other side of the collar being provided with longitudinally-extending ribs, said ribbed portion of the post being inserted in said bore with the collar engaging the body adjacent the bore, said bore being of a diameter less than that of the engaging portion of the post whereby the ribs will have a retaining engagement with the wall of the bore.

6. A binding-post provided with conductor-attaching means, at one end, and having a cylindrical shank at the other end portion provided with a circular series of longitudinally-extending ribs, disposed parallel with the axis of the shank.

7. A binding-post provided with conductor-attaching means at one end, and having a cylindrical shank at the other end portion provided with a circular series of longitudinally-extending ribs, disposed parallel with the axis of the shank, the end portion of the shank being made tapering.

8. A binding-post comprising a shank having a flange at an intermediate portion, the post from said portion to one end being screw-threaded, a nut engaging such threaded portion, the shank of the post at the other side of the flange being substantially cylindrical and provided with a circular series of adjacent ribs extending substantially parallel with the axis of the shank.

813,094. **ATTACHMENT FOR CUTTING STENCILS.** GEORGE L. HELLEIS, Chicago, Ill., assignor to Airbo Duplicating Supply Company, Chicago, Ill., a Corporation of Illinois. Filed May 6, 1905. Serial No. 259,146.

Claim.—1. The combination of a backing-sheet, a stencil-sheet and a strip adapted to be carried by the type-writer spools against which the type strikes to make an impression on the stencil-sheet, substantially as described.

2. The combination of a silk backing-sheet, a stencil-sheet and a narrow strip of silk adapted to be carried by the ribbon-spools, the stencil-sheet being interposed between the backing and the strip, and the backing and strip being adapted to receive and remove the particles of wax on opposite sides of the stencil-sheet when the strip is struck by the type, substantially as described.

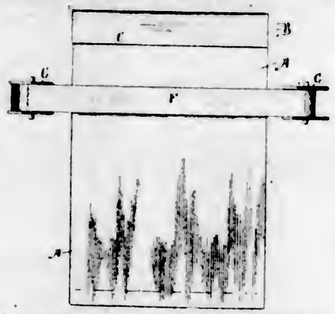

3. The combination of a stencil-sheet, a flap-mounting at the head of the sheet secured thereto, a backing-sheet loosely inserted between the flaps of the mounting, and a silk strip adapted to be secured to a type-writer ribbon and carried by the ribbon-spools, and superimposed upon the stencil-sheet and adapted in combination with the backing to receive and remove the particles of wax on opposite sides of the stencil-sheet when the silk strip is struck by the type, substantially as described.

813,095. **TRAMMEL.** JOHN F. HOFFMAN, Dubuque, Iowa. Filed Apr. 7, 1905. Serial No. 254,363.

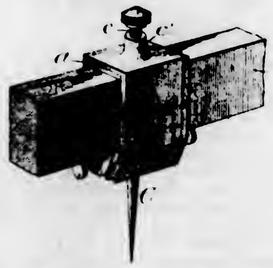

Claim.—1. In a trammel, the combination of the body, adapted to be adjustably supported on the beam, provided with a chamber and a slot communicating therewith, a trammel-point having a head passing through said slot into said chamber and snugly fitting in the latter, set-screw bearings at opposite ends of said chamber, and set-screws in said bearings between which said head is adjustably confined.

2. In a trammel, the combination of the body, adapted to be adjustably supported on the beam, having a cylindrical chamber and a rectangular slot communicating therewith, a trammel-point having a head passing through said slot into said chamber and provided therein with side bars rendering the head of cylindrical shape, and set-screws working in bearings on said body and between which said bead is adjustably confined.

3. In a trammel, the combination of a socket through which the beam passes, provided with means for fastening it in adjusted position on the beam, and having a cylindrical chamber in its base with a rectangular slot extending through said base into the chamber, a trammel-point having a head passing through said slot into said chamber and of cylindrical shape in the latter, and set-screws entering said chamber and between which said head is adjustably confined.

4. A trammel comprising, in combination, a socket containing upper and lower bearing-plates and through which the beam passes between said plates, a set-screw on the socket working against the upper plate, a cylindrical chamber in the base of the socket and a rectangular slot extending through said base into the chamber, a trammel-point having a head passing through said slot into the chamber and provided therein with side bars rendering the head cylindrical, ears extending from the lower bearing-plate over the ends of said chamber, and set-screws, between which said head is adjustably confined, working in said ears.

813,096. **LIQUID-INDICATOR.** HENRY A. HOUSE, Bridgeport, Conn. Filed May 23, 1905. Serial No. 261,573.

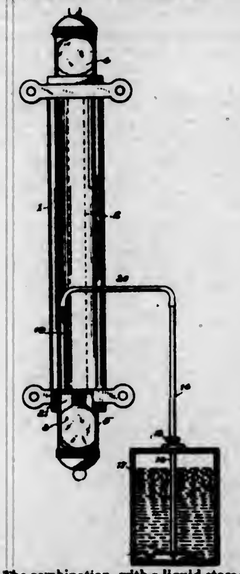

Claim.—1. The combination, with a liquid-storage tank and an indicating-gage, of a flexible air-compressor having an air-chamber, said compressor located at the bottom of the tank, a tube connecting said chamber with the gage so that, the pressure of the fluid on the compressor will force the air therefrom to the gage and give a reading thereon of the depth of liquid in the tank, for the purpose set forth.

2. The combination, with a liquid-storage tank, and an indicating-gage having an indicating glass tube, a flexible recording-liquid-holding reservoir communicating with the interior of said glass tube at the bottom, and a flexible air-reservoir at the top of said glass, said reservoirs inclosed by air-chambers, of a flexible air-compressor located at the bottom of said tank, said compressor having an air-chamber, a tube connecting said air-chamber with the air-chamber inclosing the liquid-holding reservoir of the indicator, for the purpose set forth.

3. The combination, with a liquid-storage tank, and an indicating-gage, of a flexible air-compressor having an air-chamber, said compressor located at the bottom of said tank, protective covers for said compressor, a tube connecting the air-chamber of said compressor with the indicating-gage so that, the pressure of liquid on the compressor will force the air from its chamber to said gage and cause the depth of fluid in the tank to be noted thereon, for the purpose set forth.

813,097. **GAS-METER.** KIRK B. HOWARD, Chicago, Ill. Filed June 21, 1905. Serial No. 266,514.

Claim.—1. The dry gas-meter having its valve-chamber and slide-valves located above the measuring-bellows, and also having openings in the bottom of the bellows-chambers for drawing off the water of condensation, valves controlling such openings, and means for operating said valves.

2. In a gas-meter having its valve-chamber and slide-valves located above the measuring-bellows, and also having openings in the bottom of the bellows-chambers for drawing off the water of condensation, chambers under such openings discharging into the gas-supply pipe, valves controlling such openings, and means for operating said valves.

3. The dry meter having measuring-bellows and chambers, valves located above the bellows regulating the gas-supply thereto, openings for the discharge of water of condensation formed in the bottom of the bellows-chambers, valves at said openings and means whereby the last-mentioned valves may be operated at intervals by the bellows.

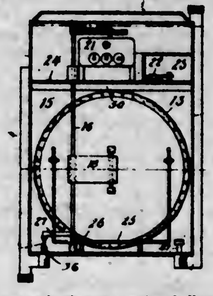

4. The dry meter having measuring-bellows and chambers, valves located above the bellows regulating the gas-supply thereto, openings for the discharge of water of condensation formed in the bottom of the bellows-chambers, valves at said openings, means whereby the last-mentioned valves may be operated at intervals by the bellows and chambers under said openings for trapping the water temporarily.

5. The dry meter having measuring-bellows and chambers, valves located above the bellows regulating the gas-supply thereto, openings for the discharge of water of condensation formed in the bottom of the bellows-chambers, valves at said openings, means whereby the last-mentioned valves may be operated at intervals by the bellows, chambers under said openings for trapping the water temporarily, and valves operated from the bellows and serving to discharge the water from said trapping-chambers.

6. The combination with a gas-meter of openings for draining off the water of condensation, valves controlling such openings, means for operating said valves and chambers under the openings for trapping the water temporarily, the discharge from such chambers being also controlled by automatic valves.

7. The combination with a gas-meter of openings for draining off the water of condensation, chambers under such openings adapted to trap the water temporarily, valves controlling said openings valves controlling the discharge from the trapping-chambers and means for operating said valves, said valves being open alternately.

8. In a gas-meter, the bellows-chamber whereof has a bottom opening for discharging water of condensation, a trapping-chamber receiving the water from said opening, a spring-operated valve at said opening, a spring operating-valve at the discharge from said trapping-chamber, and means whereby said valves are caused to open alternately.

9. In a gas-meter, the bellows-chamber whereof has a bottom opening for discharging water of condensation, a trapping-chamber receiving the water from said opening, valves controlling the entrance of the water in and its discharge from said trapping-chamber, and means whereby the valves are made to open alternately and to close alternately.

10. The combination with a dry meter and the house-supply pipe leading therefrom, of a water-passage conducting the water of condensation from said pipe to the diaphragm-chamber of the meter, and a check-valve in said passage whereby the condensation water in said pipe flows into the meter whenever an excessive amount accumulates in the former.

11. The combination with a dry meter and the house-supply pipe leading therefrom, of means for drawing off water of condensation from the diaphragm-chamber of the meter, a water-passage leading from said pipe to the diaphragm-chamber, and a check-valve in said passage adapted to yield whenever the water-pressure in the pipe becomes excessive.

813,098. **STEAM-GENERATOR.** WARREN S. JOHNSON, Milwaukee, Wis. Filed July 24, 1905. Serial No. 271,093.

Claim.—1. A vapor-generator, comprising a series of horizontally-disposed coils the convolutions of each coil extending in a direction reverse to that of the next adjacent coil, with the convolutions of one coil passing into spaces between the convolutions of the adjacent coil, the coils being connected in series.

2. A vapor-generator, comprising a series of horizontally-disposed, serially-connected coils arranged one above another, the con-

linear numerator having an operating-shaft, a vertically-self-adjusting linear disk engaging the log or like material to be sawed, a

ratchet-wheel for said shaft, a ratchet-lever having a pawl adapted

disposed slot, a rack-bar for said cubic disk, a pinion meshing with

2. A vapor-generator, comprising a series of horizontally-disposed, serially-connected coils arranged one above another, the convolutions of each coil extending in a direction reverse to those of the next adjacent coil or coils, the proximate sections of the convolutions of each of the adjacent coils being nested.

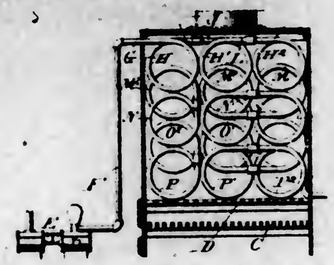

3. A vapor-generator, comprising a series of horizontally-disposed, serially-connected coils, arranged in tiers, the convolutions of the adjacent coils in each tier extending in a direction reverse to those of the next adjacent coil or coils of such tier and in a reverse direction to the convolutions of the coil immediately below or above it in the next tier, the convolutions of the coils of each tier passing in between the proximate convolutions of the coils of the next adjacent tier.

4. A vapor-generator, comprising, in combination, a series of horizontally-disposed, serially-connected coils, the convolutions of each coil extending in a direction reverse to those of the next adjacent coil or coils, the proximate sections of the convolutions of each of the adjacent coils being nested; means for forcing liquid into the uppermost coil; and a source of heat located beneath the lowermost coil.

5. A vapor-generator, comprising, in combination, a series of serially-connected coils, said coils being arranged in horizontal tiers, the convolutions of each coil in each tier extending in a direction reverse to that of the next coil in such tier, with the convolutions of the coils in the next adjacent tier arranged in a reverse direction, whereby the proximate convolutions of the coils of the adjacent tiers may nest; a pump for forcing water into the first coil of the uppermost tier; and a source of heat located below the lowermost tier of coils.

6. A vapor-generator, comprising a series of coils, the convolutions of each coil extending in a direction reverse to that of the next adjacent coil, with the convolutions of one coil passing into spaces between the convolutions of the adjacent coil, the coils being connected in series.

7. A vapor-generator, comprising a series of horizontally-disposed, serially-connected coils arranged one above another, the convolutions of each coil extending in a direction reverse to those of the next adjacent coil or coils, the proximate vertically-disposed sections of the convolutions of each of the adjacent coils being nested.

813,099. NUMERATOR FOR SAWING-MACHINES. FRANZ L. KAHN, Glauchau, Germany. Filed Mar. 9, 1904. Serial No. 197,333.

Claim.—1. A measuring device for lumber-sawing machines including a linear numerator having an operating-shaft, a vertically-self-adjusting linear disk engaging the log or like material to be sawed, a ratchet-shaft, gears connecting the operating-shaft of said numerator with said ratchet-shaft, a ratchet-wheel for said ratchet-shaft, a pivotally-mounted ratchet-lever having a pawl adapted to engage said ratchet-wheel, a pin-wheel having projecting pins engaging said ratchet-lever and imparting thereto a rocking movement, a flexible belting whereby rotative movement is transmitted from said linear disk to said pin-wheel, and a gravity-acting weighted lever engaging said ratchet-lever and normally holding the same in engagement with said pins.

2. A measuring device for lumber-sawing machines including a linear numerator having an operating-shaft, a linear disk engaging the log or like material to be sawed, a ratchet-shaft, gears connecting the operating-shaft of said numerator with said ratchet-shaft, a ratchet-wheel for said shaft, a pivotally-mounted ratchet-lever having a pawl adapted to engage said ratchet-wheel, a pin-wheel having projecting pins engaging said ratchet-lever and imparting thereto a rocking movement, means whereby rotative motion is transmitted from said linear disk to said pin-wheel, and a source of heat located beneath the lowermost coil.

5. A vapor-generator, comprising, in combination, a series of serially-connected coils, said coils being arranged in horizontal tiers, the convolutions of each coil in each tier extending in a direction reverse to that of the next coil in such tier, with the convolutions of the coils in the next adjacent tier arranged in a reverse direction, whereby the proximate convolutions of the coils of the adjacent tiers may nest; a pump for forcing water into the first coil of the uppermost tier; and a source of heat located below the lowermost tier of coils.

6. A vapor-generator, comprising a series of coils, the convolutions of each coil extending in a direction reverse to that of the next adjacent coil, with the convolutions of one coil passing into spaces between the convolutions of the adjacent coil, the coils being connected in series.

7. A vapor-generator, comprising a series of horizontally-disposed, serially-connected coils arranged one above another, the convolutions of each coil extending in a direction reverse to those of the next adjacent coil or coils, the proximate vertically-disposed sections of the convolutions of each of the adjacent coils being nested.

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Claim.—1. A measuring device for lumber-sawing machines including a linear numerator having an operating-shaft, a vertically-self-adjusting linear disk engaging the log or like material to be sawed, a ratchet-shaft, gears connecting the operating-shaft of said numerator with said ratchet-shaft, a ratchet-wheel for said shaft, a pivotally-mounted ratchet-lever having a pawl adapted to engage said ratchet-wheel, a pin-wheel having projecting pins engaging said ratchet-lever and imparting thereto a rocking movement, means whereby rotative motion is transmitted from said linear disk to said pin-wheel, and gravity-acting means engaging the log or like material to be sawed and serving to throw the linear numerator into and out of operation.

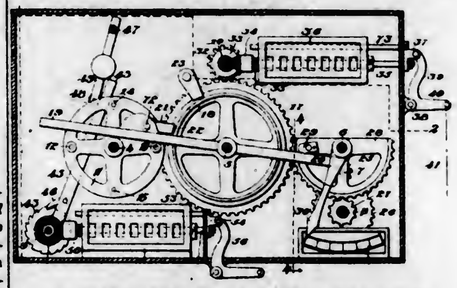

4. A measuring device for lumber-sawing machines including a linear numerator having an operating-shaft, a linear disk engaging the log or like material to be sawed, a ratchet-shaft, gears connecting the operating-shaft of said numerator with said ratchet-shaft, a ratchet-wheel for said shaft, a ratchet-lever having a pawl adapted to engage said ratchet-wheel, a pin-wheel having projecting pins engaging said ratchet-lever and imparting thereto a rocking movement, and means whereby rotative motion is transmitted from said linear disk to said pin-wheel.

5. A measuring device for lumber-sawing machines including a linear numerator having an endwise-movable operating-shaft, a vertically-self-adjusting linear disk engaging the log or like material to be sawed, a ratchet-shaft, gears connecting the operating-shaft of said numerator with said ratchet-shaft, a ratchet-wheel for said shaft, a pivotally-mounted ratchet-lever having a pawl adapted to engage said ratchet-wheel, a pin-wheel having projecting pins engaging said ratchet-lever and imparting thereto a rocking movement, a flexible belting whereby rotative movement is transmitted from said linear disk to said pin-wheel, a gravity-acting weighted lever engaging said ratchet-lever and normally holding same in engagement with said pins, a bell-crank lever connected with said operating-shaft, a weighted roller normally engaging the log or like material to be sawed, and means connected with said roller and bell-crank whereby said numerator may be automatically thrown into and out of operation.

6. A measuring device for lumber-sawing machines including a linear numerator having an operating-shaft, a linear disk engaging the log or like material to be sawed, a ratchet-shaft, gears connecting the operating-shaft of said numerator with said ratchet-shaft, a ratchet-wheel for said shaft, a pivotally-mounted ratchet-lever having a pawl adapted to engage said ratchet-wheel, a pin-wheel having projecting pins engaging said ratchet-lever and imparting thereto a rocking movement, means whereby rotative motion is transmitted from said linear disk to said pin-wheel, and gravity-acting means engaging the log or like material to be sawed and serving to throw the linear numerator into and out of operation.

7. A measuring device for lumber-sawing machines including a linear numerator having an operating-shaft, a vertically-self-adjusting linear disk engaging the log or like material to be sawed, a ratchet-shaft, gears connecting the operating-shaft of said numerator with said ratchet-shaft, a ratchet-wheel for said shaft, a pivotally-mounted ratchet-lever having a pawl adapted to engage said ratchet-wheel, a pin-wheel having projecting pins engaging said ratchet-lever and imparting thereto a rocking movement, a flexible belting whereby rotative movement is transmitted from said linear disk to said pin-wheel, means whereby said ratchet-lever is held in engagement with said pins, and gravity-acting means engaging the log or like material to be sawed and serving to throw the linear numerator into and out of operation.

8. A measuring device for lumber-sawing machines including a linear numerator having an operating-shaft, a linear disk engaging the log or like material to be sawed, a ratchet-shaft, gears connecting the operating-shaft of said numerator with said ratchet-shaft, a

ratchet-wheel for said shaft, a ratchet-lever having a pawl adapted to engage said ratchet-wheel, a pin-wheel having projecting pins engaging said ratchet-lever and imparting thereto a rocking movement, means whereby rotative motion is transmitted from said linear disk to said pin-wheel, and gravity-acting means engaging the log or like material to be sawed and serving to throw the linear numerator into and out of operation.

9. A measuring device for lumber-sawing machines including a linear numerator, a linear disk engaging the log or like material to be sawed, a rotating element operated by said linear disk, means whereby said rotating element intermittently operates said numerator, and gravity-acting means engaging the log or like material to be sawed and serving to throw the linear numerator into and out of operation.

10. A measuring device for lumber-sawing machines including a linear numerator, a linear disk engaging the log or like material to be sawed, a rotating element operated by said linear disk, means whereby motion is imparted to said numerator by said rotating element, and gravity-acting means engaging the log or like material to be sawed and serving to throw the linear numerator into and out of operation.

11. A measuring device for lumber-sawing machines including a linear numerator, means mechanically connected with said numerator and frictionally engaging the log or like material to be sawed whereby the linear contents of the same may be indicated by said numerator, and gravity-acting means engaging the log or like material to be sawed and serving to throw the linear numerator into and out of operation.

12. A measuring device for lumber-sawing machines including a linear numerator, a linear disk engaging the log or material to be sawed, a pin-wheel operated by said linear disk, said pin-wheel having projecting pins, a rocking member having oppositely-extending arms one of said arms engaging said pins, an adjustable stop engaged by the other of said arms, a frictional dog carried by the pin-engaging arm, a transmitting-wheel intermittently engaged with and rotated by said dog, a cubic numerator having an operating-shaft, gears whereby rotary motion is transmitted by said transmitting-wheel to said numerator, braking means serving to prevent movement of said numerator-shaft when engagement of the dog and transmitting-wheel is released, a cubic disk normally engaging the log or material to be sawed and adjustably mounted in a vertically-disposed slot, a rack-bar for said cubic disk, a pinion meshing with said rack-bar, a segment carrying said adjustable stop, an indicating-pointer carried by said segment, a graduated scale for said pointer, and means whereby rotary motion is transmitted from said bar-engaging pinion to said segment thereby serving to vary the movement of said rocking member.

13. A measuring device for lumber-sawing machines including a linear numerator, a linear disk engaging the log or material to be sawed, a pin-wheel rotated by said linear disk, said pin-wheel having projecting pins, a rocking member having oppositely-extending arms one of said arms engaging said pins, an adjustable stop engaged by the other of said arms, a frictional dog carried by the pin-engaging arm, a transmitting-wheel intermittently engaged with and rotated by said dog, a cubic numerator having an operating-shaft, gears whereby rotary motion is transmitted by said transmitting-wheel to said numerator, braking means serving to prevent movement of said numerator-shaft when engagement of the dog and transmitting-wheel is released, a cubic disk normally engaging the log or material to be sawed and adjustably mounted in a vertically-disposed slot, a rack-bar for said cubic disk, a pinion meshing with said rack-bar, a segment carrying said adjustable stop, an indicating-pointer carried by said segment, a graduated scale for said pointer, means whereby rotary motion is transmitted from said bar-engaging pinion to said segment thereby serving to vary the movement of said rocking member, a bell-crank connected with the operating-shaft of said cubic numerator, and a weighted roller engaging the log or like material to be sawed and connected with said bell-crank whereby the numerator may be thrown into and out of operation.

14. A measuring device for lumber-sawing machines including a rocking member, means for operating said rocking member, an adjustable stop adapted to engage said rocking member, a frictional dog carried by said member, a transmitting-wheel intermittently engaged with and rotated by said dog, a cubic numerator having an operating-shaft, gears whereby rotary motion is transmitted by said transmitting-wheel to said numerator, braking means serving to prevent movement of said numerator when engagement of the dog and transmitting-wheel is released, a cubic disk normally engaging the log or material to be sawed and adjustably mounted in a vertically-disposed slot, a rack-bar for said cubic disk, a pinion meshing with said rack-bar, a segment carrying said adjustable stop, an indicating-pointer carried by said segment, a graduated scale for said pointer, and means whereby rotary motion is transmitted from said bar-engaging pinion to said segment thereby serving to vary the movement of said rocking member.

15. A measuring device for lumber-sawing machines including a rocking member, means for operating said rocking member, an adjustable stop adapted to engage said rocking member, a frictional dog carried by said member, a transmitting-wheel intermittently engaged with and rotated by said dog, a cubic numerator having an operating-shaft, gears whereby rotary motion is transmitted by said transmitting-wheel to said numerator, braking means serving to prevent movement of said numerator when engagement of the dog and transmitting-wheel is released, a cubic disk normally engaging the log or material to be sawed, a segment carrying said adjustable stop, an indicating-pointer carried by said segment, a graduated scale for said pointer, and means whereby said cubic disk serves to operate said segment thereby serving to vary the movement of said rocking member.

16. A measuring device for lumber-sawing machines including a rocking member, means for operating said rocking member, a stop adapted to engage said rocking member, a frictional dog carried by said member, a transmitting-wheel intermittently engaged with and rotated by said dog, a cubic numerator having an operating-shaft, gears whereby rotary motion is transmitted by said transmitting-wheel to said numerator, braking means serving to prevent movement of said numerator when engagement of the dog and transmitting-wheel is released, a vertically-movable cubic disk normally engaging the log or material to be sawed, a segment carrying an adjustable stop, means whereby vertical movement of said cubic disk is transmitted to said segment, serving to vary movement of said rocking member, an indicating-pointer carried by said segment, and a graduated scale for said pointer.

17. In combination a linear numerator for sawing-machines, driving means engaging the material sawed for operating said numerator, a cubic numerator, intermediate mechanism operatively connecting said cubic numerator and driving means, and devices engaging the material sawed and said intermediate mechanism for varying the operation of said cubic numerator with respect to said linear numerator.

813,100. BOTTLE-CLEANING MACHINE. CHARLES H. LOEW, Cleveland, Ohio. Filed Mar. 23, 1903. Serial No. 149,197.

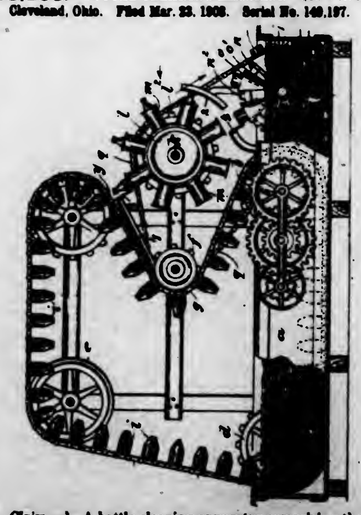

Claim.—1. A bottle-cleaning apparatus comprising the following instrumentalities: a bottle-soaking means having a conveyer which carries the bottles being soaked; a bottle-rinsing means comprising a series of bottle-receptacles and means for admitting the rinsing liquid to the interior of the bottles in said receptacles; and a series of moving receptacles arranged intermediate of the discharge-piece of said conveyer and the first-mentioned receptacles and adapt-

ed to receive the bottles from said conveyer and deliver the same to the receptacles of the rinsing means.

the soaked bottles to said receptacles, and a bottle-rinsing means comprising a revolvable series of receptacles for receiving the bottles

21. A bottle-rinsing means, comprising a rotatable bottle-carrier, a rinsing-stem partaking of the rotating movement of said carrier and means for advancing and retracting said rinsing-stem to-

by the rotation of said hub on the latter, means for carrying the bottles through said tank and conducting the same to said cups and

ed to receive the bottles from said conveyor and deliver the same to the receptacles of the rinsing means.

2. A bottle-cleansing apparatus comprising the following instrumentalities: a bottle-soaking mechanism provided with bottle-conveying means; a movable rinsing mechanism having bottle-carriers; and a movable reversing means having bottle-receptacles which in one position of the movement of said means receive the bottles from said conveying means and in another position thereof deliver the same to said rinsing mechanism.

3. A bottle-cleansing apparatus comprising the following instrumentalities: a bottle-soaking mechanism provided with an endless carrier having open pockets which receive the bottles in one place in the travel thereof and automatically discharge the same at another place in said travel; a movable reversing means having bottle-pockets which at one place in its travel receive the bottles discharged from said carrier and automatically discharge the same at another place in its travel; and a movable rinsing mechanism having bottle-carriers which receive the bottles discharged from said reversing means.

4. A bottle-cleansing apparatus comprising the following instrumentalities: a bottle-soaking mechanism provided with bottle-conveying means; a rotative bottle-rinsing mechanism having a series of bottle-receptacles and means controlled by the rotation of said mechanism for supplying water to the interior of the bottles in said receptacles; and means for delivering the bottles from the bottle-conveying means to the receptacles of the bottle-rinsing means.

5. A bottle-cleaning apparatus comprising the following instrumentalities: a bottle-soaking mechanism provided with bottle-conveying means; a rinsing mechanism, comprising a traveling bottle-carrier, fluid-discharge stems partaking of the movement of said carrier and also movable toward and from the bottles in said carrier, said stems having means subject to the pressure of the rinsing liquid, whereby they are moved relatively to said bottles, means by which the supply of said rinsing liquid is controlled by the movement of said carrier, and means for operating said stems in a direction opposite that in which they are adjusted by said liquid; and means for delivering the bottles to the rinsing means from the soaking means.

6. A bottle-cleaning apparatus, comprising the following instrumentalities: a bottle-soaking mechanism provided with bottle conveying and discharging means; a rotative rinsing mechanism comprising a bottle-carrier provided with fluid-discharge stems which are moved toward and from the bottles in said carrier automatically under the control of the pressure of the rinsing fluid, said carrier also having means by which said pressure is controlled by the rotation of the carrier; and bottle-reversing means arranged intermediate of said conveyor and carrier for delivering to the latter the bottles discharged from the former.

7. A bottle-cleaning apparatus, comprising the following instrumentalities: a bottle-soaking mechanism provided with bottle conveying and discharging means; a rotative rinsing mechanism comprising a bottle-carrier provided with fluid-discharge stems having means subject to the pressure of the rinsing liquid whereby they are moved relatively to the bottles, means by which the supply of said rinsing liquid is controlled by the rotation of said carrier and means for moving said stems in a direction opposite that in which they are moved by said liquid-pressure; and bottle-reversing means arranged intermediate of said carrier and conveyor for delivering to said carrier the bottles discharged from said conveyor.

8. A bottle soaking and rinsing machine comprising a tank for a soaking solution, means for carrying the bottles therethrough and for discharging the bottles when the same have been soaked, a traveling rinsing means comprising bottle-carriers and means for automatically controlling the supply of rinsing fluid, and means for automatically delivering the soaked bottles from the first-mentioned bottle-carrying means to the carrier of the rinsing means.

9. A bottle-cleaning machine comprising a series of bottle-receptacles adapted automatically to discharge the bottles at a predetermined place, a bottle-soaking means having devices for conveying the soaked bottles to said receptacles, and a bottle-rinsing means, comprising a revoluble series of receptacles for receiving the bottles from the first-mentioned receptacles, a stationary liquid-supply pipe having a horizontal slot for the escape of its liquid, a series of tubes movable with said receptacles and into which the liquid from said supply-pipe enters as they successively pass over said slot; pistons in said tubes having openings and provided with hollow fluid-discharge stems, and retracting means for said pistons and stems.

10. A bottle-cleaning machine comprising a series of bottle-receptacles adapted automatically to discharge the bottles at a predetermined place, a bottle-soaking means having devices for conveying the soaked bottles to said receptacles, and a bottle-rinsing means comprising a revoluble series of receptacles for receiving the bottles from the first-mentioned receptacles, a stationary liquid-supply pipe having a horizontal slot for the escape of the liquid, a series of tubes carrying said receptacles and provided with vent-openings, and having open inner ends bearing upon said supply-pipe, a plug at the opposite end of each tube, pistons in said tubes having openings and provided with hollow fluid-discharge stems which extend through said plugs, and retracting-springs for said pistons and stems.

11. A machine of the class described, comprising a bottle-carrier, a wheel having means for receiving the bottles and means through which liquid under pressure is ejected against the bottles, and a bottle transferring and reversing wheel arranged intermediate of said carrier and wheel and adapted to transfer the bottles from the carrier to said wheel.

12. A machine of the class described, comprising a bottle-carrying mechanism, a wheel having means for engaging the bottles and means through which liquid under pressure is ejected against the bottles, said carrying mechanism being adapted to discharge the bottles at a place which is higher than said wheel, a bottle transferring and reversing mechanism arranged between said discharge-place and wheel and adapted to receive the bottles from said carrying mechanism and to discharge them at a place which is higher than said wheel, and guards controlling the discharge of said bottles from said carrying and transferring and reversing mechanisms.

13. A machine of the class described, comprising a flexible bottle-carrier having pockets which open downward at one place in the travel thereof and are adapted to discharge the bottles at said place, a bottle reversing and transferring wheel which receives the bottles at said place, a wheel having means to engage the bottles and means through which fluid under pressure is ejected against the bottles, and a guard arranged between said wheels and controlling the passage of the bottles from the former and guiding them to the latter.

14. A machine of the class described comprising a bottle-soaking means having a conveyor which travels a path whereby the bottles are inverted and emptied and means whereby the bottles are retained in said conveyor until after they have been emptied, a rinsing-wheel having bottle-engaging devices, and a bottle transferring and reversing wheel arranged between said conveyor and rinsing-wheel and adapted to receive the soaked bottles from the former, reverse them and deliver them to the rinsing-wheel.

15. A bottle soaking and rinsing apparatus, comprising, in combination, bottle-soaking means, a bottle-rinsing means which comprises a series of traveling receptacles for the soaked bottles and means for ejecting rinsing fluid under pressure against the bottles in said receptacles, and means by which the soaked bottles are conducted automatically from the soaking means to the rinsing means.

16. A bottle soaking and rinsing apparatus, comprising, in combination, bottle-soaking means, a bottle-rinsing means which comprises a series of traveling receptacles for the soaked bottles and is provided with reciprocatory discharge-stems and devices adapted to cause the reciprocations of said stems to occur automatically, and means by which the soaked bottles are conducted automatically from the soaking means to the rinsing means.

17. A bottle soaking and rinsing apparatus comprising, in combination, means for soaking the bottles; a bottle-rinsing means which comprises a series of traveling receptacles for the soaked bottles, fluid-discharge stems having heads subject to the pressure of the rinsing fluid whereby they are advanced into the bottles, means for supplying said heads and the interiors of the stems with rinsing fluid under pressure at a predetermined place in the travel of the parts, and means for retracting said stems and head when the supply of rinsing fluid is cut off; and means by which the soaked bottles are conducted automatically from the soaking means to the rinsing means.

18. A traveling bottle carrying and rinsing means having fluid-discharge devices which are advanced toward the bottles by the pressure of the rinsing fluid, means by which the supply of said fluid is automatically controlled by the movement of the bottle-carrying means, and means for retracting said discharge devices automatically when the supply of rinsing fluid is cut off.

19. A bottle-rinsing means comprising devices for holding the bottles, reciprocatory fluid-discharge stems and means whereby the reciprocations of said stems toward and from the bottles are controlled by the pressure of the rinsing fluid.

20. A bottle-rinsing means comprising traveling devices for holding the bottles, fluid-discharge stems, and means controlled by the pressure of the rinsing fluid for advancing and retracting said stems toward and from the bottles at predetermined places in the travel of the bottle-holding devices.

21. A bottle-rinsing means, comprising a rotatable bottle-carrier, a rinsing-stem partaking of the rotating movement of said carrier and means for advancing and retracting said rinsing-stem toward and from the bottle at predetermined places in the travel of said carrier.

22. A bottle-rinsing means, having a rotative wheel provided with reciprocatory fluid-discharge stems and devices by which the reciprocations of said stems are controlled by the pressure of the rinsing fluid, said rinsing means also having means by which said pressure is controlled automatically by the movement of said wheel.

23. A bottle-rinsing wheel comprising means for receiving the bottles and means for introducing into the interior of the bottles jets of water, comprising a hollow hub supplied with water under pressure, fluid-discharge means radiating therefrom and communicating therewith, said fluid-discharge means having reciprocatory discharge-stems and devices by which said stems are projected into and withdrawn from the bottles.

24. A bottle-rinsing wheel comprising means for receiving the bottles, and means for introducing into the interior of the bottles jets of water, comprising a hollow hub supplied with water under pressure, fluid-discharge stems radiating therefrom and communicating therewith, pistons adapted to be forced forward by the pressure of the water for projecting the stems into the bottles and means for pushing the stems and pistons into place after use.

25. A bottle-rinsing wheel having means for receiving the necks of the bottles, and also having reciprocatory fluid-discharge stems and devices whereby the reciprocations of said stems are controlled by the movement of the wheel.

26. A bottle-rinsing wheel comprising means for receiving the bottles, fluid-discharge stems movable with said wheel and provided with heads, means controlled by the movement of the wheel for supplying rinsing fluid under pressure to said heads and the interiors of said stems, to thereby advance the same and introduce jets of water into the bottles, and means by which the heads and stems are retracted.

27. A bottle-rinsing wheel comprising means for receiving the bottles, fluid-discharge stems movable with said wheel and provided with heads, means controlled by the movement of the wheel for supplying rinsing fluid under pressure to said heads and the interiors of said stems, to thereby advance the same and introduce jets of water into the bottles, and springs for retracting said pistons and stems when the supply of said water ceases.

28. A bottle-rinsing wheel comprising means for receiving the bottles, hollow carriers for said means, hollow fluid-discharge stems mounted to reciprocate in said carriers and provided with heads having an opening to adapt the interiors of the stems to receive rinsing fluid, a pipe around which said wheel rotates, said pipe having a discharge-aperture with which the interiors of the hollow carriers successively register, and means for supplying said pipe with rinsing fluid under pressure.

29. A bottle-rinsing wheel comprising open pockets for receiving the bottles neck downward, hollow carriers for said pockets, hollow fluid-discharge stems mounted to reciprocate in said carriers and provided with heads having openings to adapt the interiors of the stems to receive rinsing fluid, a supply-pipe around which said wheel rotates, said pipe having a discharge-aperture with which the interiors of the hollow carriers successively register, and means for supplying said pipe with rinsing fluid under pressure.

30. A bottle-rinsing wheel comprising means for receiving the bottles, hollow carriers for said means, spring-pressed hollow fluid-discharge stems mounted to reciprocate in said carriers and provided with heads having openings to adapt the interiors of the stems to receive rinsing fluid, a supply-pipe around which said wheel rotates, said pipe having a discharge-aperture with which the interiors of the hollow carriers successively register, and means for supplying said pipe with rinsing fluid under pressure.

31. A bottle-rinsing means comprising a fluid-discharge pipe having an exit-aperture, a hub mounted to rotate on said pipe, and hollow stems radiating from said hub and having bottle-engaging cups at their outer ends, said stems having inlet-apertures at their inner ends and being successively brought into and out of registration with said exit-aperture of the supply-pipe by the rotation of said hub on the latter.

32. A bottle-cleaning apparatus comprising a washing-tank, a rinsing means having a fluid-discharge pipe provided with an exit-aperture and a hub mounted to rotate on said pipe and provided with hollow stems having cups at their outer ends and inlet-apertures at their inner ends, which inlet-apertures are successively carried into and out of registration with said exit-aperture of the discharge-pipe by the rotation of said hub on the latter, means for carrying the bottles through said tank and conducting the same to said cups and means for moving the parts in unison with each other.

33. A bottle-cleaning apparatus, comprising a washing-tank, means for ejecting rinsing fluid against the washed bottles, means for conveying the bottles through said washing-tank, said means being adapted to discharge the bottles at a predetermined place, and bottle transferring and reversing means traveling with said conveyer and receiving the bottles discharged by the latter and conducting the same to the rinsing means and discharging them in reverse position.

34. A bottle-cleaning apparatus, comprising a washing-tank, means for ejecting rinsing fluid against the washed bottles, means for conveying the bottles through said washing-tank, said means being adapted to discharge the bottles at a predetermined place, a rotatable bottle transferring and reversing wheel mounted between said discharge-place and rinsing means and provided with pockets to receive the bottles discharged from said conveyer, and means for rotating said wheel in unison with the travel of said conveyer.

35. A bottle-cleaning apparatus, comprising a washing-tank, means for conveying the bottles through said washing-tank, a rinsing means having a fluid-discharge pipe provided with an exit-aperture, and a hub mounted to rotate on said pipe and provided with hollow stems having cups at their outer ends and inlet-apertures at their inner ends, which inlet-apertures are successively carried into and out of registration with said exit-aperture of the discharge-pipe by the rotation of said hub agound the latter, means for conveying the bottles through said tank, adapted to discharge the same at a predetermined place, and bottle transferring and reversing means traveling with said conveyer and rinsing means for receiving the bottles discharged by the conveyer and delivering the same to the rinsing means.

36. A bottle-cleaning apparatus having a tank and means for subjecting the bottles successively to a plurality of cleaning operations, the first of said means comprising an endless flexible conveyer which travels within said tank and also outside of the same and through a path which causes the bottles to be emptied before they reach the second cleaning means, and a rotatable bottle-transferring device which is arranged entirely outside of said tank and between said conveyer and second cleaning means and is adapted to receive the bottles from the former, invert them and deliver them to said second cleaning means.

37. A bottle-cleaning apparatus having a tank and means therein for subjecting the bottles successively to a plurality of cleaning operations, the first of said means comprising an endless flexible conveyer which travels within said tank and also outside of the same and through a path which causes the bottles to be emptied before they reach the second cleaning means, and the second of said means comprising a rotatable rinsing-wheel, and a rotatable bottle-transferring device which is arranged entirely outside of said tank and between said conveyer and rinsing-wheel and is adapted to receive the bottles from the conveyer, invert them and deliver them to said rinsing-wheel.

813,101. CLOSED CONDUIT FOR ELECTRIC RAILWAYS.

AUGUSTUS W. LOHMANN, Sr., Chattanooga, Tenn., and JOHAN PEUS, Chicago, Ill. Filed Mar. 23, 1905. Serial No. 251,265.

Claim.—1. The combination with the conduit opening or slot of shutters, each thereof having sides forming an angle, the sides of which extend from one side of said slot and meet at the opposite side thereof.

2. The combination with the slot-opening to a conduit, of oppositely-disposed shutters, each said shutter having edges which form the sides of an obtuse triangle, the base of which obtuse angle rests at one edge of said opening while the apex of said angle touches the opposite side of said opening.

3. The combination with a conduit opening or slot, of pivotally-mounted shutters the edges of which meet diagonally across said slot

in zigzag order and provide inclines along which the trolley-arm is adapted to move and thereby impart a gradual opening-and-closing movement to said shutters.

4. The combination with a conduit opening or slot, of shutters having inclined meeting edges which cross the slot or opening from side to side in two intersecting vertical planes, the edges of each shutter meeting the intersecting edges of two oppositely-disposed shutters, for the purpose set forth.

5. The combination with a conduit slot or opening, of oppositely-disposed shutters, each shutter extending across the full width of said slot or opening and having oppositely-inclined edges which meet parallel edges of abutting shutters.

6. The combination with a conduit slot or opening, of oppositely-disposed shutters which meet on angular lines crossing said opening, said shutters having pivotal supports within said conduit, means tending to hold said shutters in their closed positions and means for varying the force exerted upon said shutters to hold the same in said closed positions.

7. The combination with an electric conduit, of centrally-arranged supports, curved shutter-arms E, E' mounted to swing in opposite directions upon a common axis of rotation, a feed-wire, a trolley-wire and means for making and breaking electrical connection between said feed-wire and trolley-wire by, respectively, the opening-and-closing movements of said shutter-arms.

8. The combination with a conduit having a slot or opening, of shutters arranged to swing in the arc of a circle toward and from each other, all of said shutters having substantially a common axis of rotation and having only their side edges projecting into said opening, the abutting ends of said shutters meeting diagonally across said opening when closed.

9. The combination with a conduit having an opening for the trolley pole or arm, of shutters arranged to swing in arcs of circles toward and from each other, said circles having their centers on a single axial line the abutting ends of said shutters meeting at the sides of said opening, a feed-wire, a trolley-wire mounted to swing with said shutters, and contacts electrically connected with, respectively, said feed-wire and trolley-wire, the trolley-wire contact being movable with said wire and shutters.

10. The combination with a conduit having an opening or slot for the trolley-arm, of concentrically-pivoted shutters arranged to swing toward and from each other in the arcs of circles, said shutters mounted on curved levers pivoted within said conduit, each said lever having a counterweight-arm and a counterweight slidably adjustable thereon, a feed-wire, contact-arms upon said levers, and means for making and breaking the circuit through said contact arms and feed-wire by the movements of said levers.

11. The combination with an electric conduit, of centrally-arranged supports D having openings 6 therethrough for the feed-wire, the feed-wire, counterweighted and concentrically pivoted shutter-levers E, E' and I, I', the shutters F, F', having inclined edges *f*, *f'*, mounted on said levers, the insulating-arms 28 secured to levers comprising members E' and I, the bars K also secured to said levers and supporting the trolley-wire 16, the insulating-arms 20 secured to said supports and the contacts 21 and 29 operable by the movements of said levers.

12. The combination with the concentrically-pivoted arms E, E' and shutters F, F' of the radial arms K supporting pivotally the trolley-wire sections 16, the radial arms I, I' adjustably weighted to swing arms E, E' and the shutters thereon, the oscillating contacts which move with said shutters and the stationary contacts connected to the feed-wire, and the trolley-arms H and H' and trolleys arranged as shown and described.

13. The combination with a conduit having the slot G, of the concentrically-pivoted shutters F and F', the curved arms carrying said shutters, the trolley-wire section carried by one series of said arms and movable therewith to place the trolley-wire in line with the trolley when the arm of the latter opens said slot, the weighted arms and the adjustable weights thereupon, the feed-wire, and the connections between said feed-wire and trolley-wire arranged to break the circuit therebetween when said slot is closed.

813,102. AIR-FEEDING DEVICE FOR FURNACES. MAXIMILIAN A. LUTHMER, Berlin, Germany, assignor to Firm of Gesellschaft für Industrielle Feuerungsanlagen M. B. H., Berlin, Germany. Filed Apr. 15, 1903. Serial No. 152,868.

Claim.—1. In an air-feeding device for furnaces, the combination of a wall dividing the ash-box into two compartments and provided with an opening, a tube for leading heated and compressed air into the rear one of said compartments, the area of said tube being larger than the area of the opening in the wall, and means for moistening the air, introduced through the opening of the wall, in the forward compartment, substantially as described.

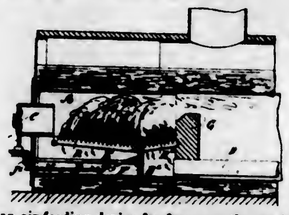

2. In an air-feeding device for furnaces, the combination of a wall dividing the ash-box into two compartments and provided with an opening, a tube for leading heated and compressed air into the rear one of the said compartments, the area of said tube being larger than the area of the opening in the wall, means for opening or closing the opening in the wall, and means for moistening the air, introduced through the opening of the wall, in the forward compartment, substantially as described.

3. In an air-feeding device for furnaces, the combination of a wall dividing the ash-box into two compartments and provided with an opening, a tube for leading heated and compressed air into the rear one of the said compartments, the area of said tube being larger than the area of the opening in the wall, means for opening or closing the opening in the wall, means for connecting the means for opening or closing the opening in the wall with the fire-door, and means for moistening the air, introduced through the opening of the wall, in the forward compartment, substantially as described.

813,103. AWNING. JOHN MALINOSKEY, Cleveland, Ohio. Filed Nov. 14, 1905. Serial No. 287,361.

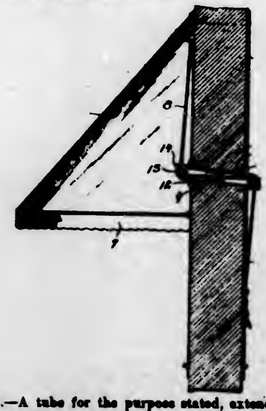

Claim.—A tube for the purpose stated, extending through a wall or window-casing and comprising two telescoping sections which fit together at their inner ends and having ring flanges thereon adapted to be secured to the sides of the wall or casing, and pulleys at their outer ends.

813,104. SPARKING DEVICE. HARRY A. MILLER, Los Angeles, Cal. Filed Jan. 14, 1905. Serial No. 241,894.

Claim.—1. An ignition device, comprising a plug, a spring-held reciprocable contact member, an oscillating contact member, a chamber communicating with the inner end of the plug, and a member contained in said chamber and exposed to the cylinder-pressure and serving to actuate said second-named contact member, for the purpose set forth.

2. An ignition device comprising a plug, an insulating-sleeve extending therethrough, a contact member extending longitudinally through said sleeve, an oscillating lever-form contact member, and a diaphragm located so as to be exposed to cylinder-pressure when in use and serving to actuate said second-named contact member, for the purpose set forth.

3. An ignition device comprising a plug, a contact member having insulated connection with said plug, an oscillating contact member, a diaphragm connected therewith and normally in position to hold said contact members out of engagement, a spring bearing against said diaphragm, and means for adjusting the tension of said spring, for the purpose set forth.

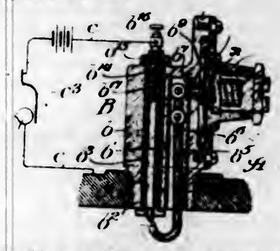

4. The combination with an engine-cylinder, of an ignition device comprising two internal relatively movable contact members, a diaphragm connected with one of said contact members, said contact members being normally separated, an electric circuit which may be completed through said contact members, and a normally open external make-and-break device interposed in said circuit, for the purpose set forth.

5. An ignition device, comprising a plug, an internal contact member connected therewith, a pivoted contact member, a diaphragm disposed at one side of said second-named contact member and connected with the same and exposed to pressure from the cylinder of the engine, and an adjustable spring bearing against said diaphragm, for the purpose set forth.

6. An ignition device, comprising a plug having a bore, an insulating-tube extending therethrough, a tube within said insulating-tube, a reciprocable contact member within said last-named tube, a chamber in said plug, a contact member pivoted in said chamber, a diaphragm disposed at one side of said last-named contact member and connected with said last-named contact member, a spring bearing on said diaphragm, means for adjusting said spring, and means for connecting the conductor of an electric circuit with said second-named tube, for the purpose set forth.

813,105. PROCESS FOR DECOMPOSING WATER BY ELECTROLYSIS. WILLIAM F. M. MCCARTY, Rocky Ridge, Md., assignor to Thomas A. Darby, trustee, New York, N. Y. Filed Nov. 3, 1904. Serial No. 231,940.

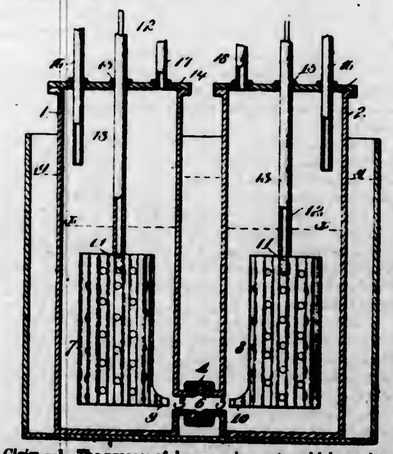

Claim.—1. The process of decomposing water which consists in adding to the water an alkali metal and then subjecting the water to the action of an electric current.

2. The process of decomposing water which consists in acidulating the water, adding thereto an alkali metal, and then subjecting the water to the action of an electric current.

3. The process of decomposing water which consists in adding to the water metallic sodium, and then subjecting the water to the action of an electric current.

4. The process of decomposing water which consists in acidulating the water, adding thereto metallic sodium, and then subjecting the water to the action of an electric current.

5. The process of decomposing water which consists in adding to the water metallic sodium, and at the moment of greatest ebullition subjecting the water to the action of a electric current.

813,106. GUN-CARRIAGE. SAMUEL N. MCCLEAN, Cleveland, Ohio. Filed Oct. 12, 1901. Serial No. 78,479.

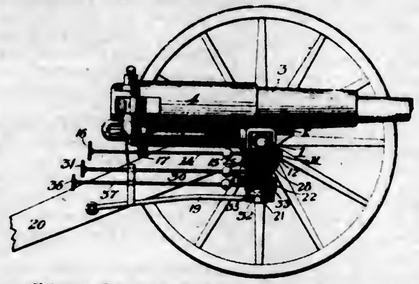

Claim.—1. In a gun-carriage, a cradle jointed to the axle to turn in a plane within which the axle lies and in a plane transverse to the axle, and means imparting said movements to the cradle.

2. In a gun-carriage, a cradle connected to the axle by a universal joint around the axle, and means imparting movements to the cradle in a plane within which the axle lies and in a plane transverse to the axle.

3. In a gun-carriage, a cradle in which the gun recoils, a recoil-check on the cradle, a universal joint around the axle and connecting the cradle thereto, and means imparting movements to the cradle in a plane within which the axle lies and in a plane transverse to the axle.

4. In a gun-carriage, a cradle in which the gun recoils, a recoil-cylinder on the cradle, a piston in the cylinder connected to the gun, a universal joint around the axle and connecting the cradle thereto, and means imparting movements to the cradle in a plane within which the axle lies and in a plane transverse to the axle.

5. In a gun-carriage, a cradle jointed to the axle to move in a plane within which the axle lies and in a plane transverse thereto, means imparting said movements to the cradle, and a locking device securing the cradle in any adjusted position.

6. In a gun-carriage, a cradle connected to the axle by a universal joint around the axle, means imparting movements to the cradle in a plane within which the axle lies and in a plane transverse to the axle, and a device locking the cradle in any adjusted position.

7. In a gun-carriage, a cradle in which the gun recoils, a recoil-check on the cradle, a universal joint around the axle and connecting the cradle thereto, means imparting movements to the cradle in a plane within which the axle lies and in a plane transverse to the axle, and a device locking the cradle in any adjusted position.

8. In a gun-carriage, a cradle jointed to the axle to move in a plane within which the axle lies and in a plane transverse to the axle, and worm-gearing imparting said movements to the cradle.

9. In a gun-carriage, a cradle jointed to the axle to turn in a plane within which the axle lies, a segmental worm-rack on the cradle, and a worm turning in bearings attached to the axle and engaging said rack to impart said movement to the cradle.

10. In a gun-carriage a cradle jointed to the axle to turn in a plane within which the axle lies, a segmental worm-rack on the cradle, a worm turning in bearings attached to the axle and engaging said rack to impart said movement to the cradle, and a locking device securing the cradle in any adjusted position.

11. In a gun-carriage, a cradle hung to turn around the axle of the carriage as an axis, a segmental worm-rack depending from the cradle below the axle, a worm engaging said rack and turning in bearings attached to the axle and means turning the cradle, in a plane within which the axle lies.

13. In a gun-carriage, a cradle hung to turn around the axle of the carriage as an axle and also in a plane within which the axle of the carriage lies, a segmental worm-rack depending from the cradle

in a substantially vertical plane, a worm turning in bearings attached

in a substantially vertical plane, a worm turning in bearings attached to the axle and engaging said rack, a second segmental worm-rack on the cradle in a substantially horizontal plane, and a worm hung in bearings turning on the axle, and engaging the said horizontal rack.

13. In a gun-carriage, a cradle hung to the axle by a universal joint, two worm-racks attached to the cradle one of which is in a substantially horizontal plane and the other of which is in a substantially vertical plane, a worm engaging the horizontal rack and turning in bearings attached to the axle so as to move in a plane transverse thereto, and a second worm engaging the vertical rack and mounted in bearings turning on a vertical axis.

14. In a gun-carriage, a cradle hung to turn around the axle of the carriage as an axis and also in a plane within which the axle of the carriage lies; a segmental worm-rack depending from the cradle in a substantially vertical plane, a worm turning in bearings attached to the axle and engaging said rack, a second segmental worm-rack on the cradle in a substantially horizontal plane, a worm hung in bearings turning on the axle, and engaging the said horizontal rack and a locking device securing the cradle in any adjusted position.

15. In a gun-carriage, a cradle hung to the axle by a universal joint, two worm-racks attached to the cradle one of which is in a substantially horizontal plane and the other of which is in a substantially vertical plane, a worm engaging the horizontal rack and turning in bearings attached to the axle so as to move in a plane transverse thereto, a second worm engaging the vertical rack and mounted in bearings turning on a vertical axis, and a locking device securing the cradle in any adjusted position.

16. In a gun-carriage, a cradle hung to turn on the axle in a substantially vertical plane and to turn on the axle in a substantially horizontal plane, means imparting said movements to the cradle, and a locking-wedge adjustable into position to secure the cradle against movement on the axle.

17. In a gun-carriage, a cradle hung to turn on the axle in a substantially vertical plane and to turn on the axle in a substantially horizontal plane, means imparting said movements to the cradle, a locking-wedge supported by the axle and adjustable into and out of position to secure the cradle against movement on the axle.

18. In a gun-carriage, a cradle hung to turn on the axle in a substantially vertical plane, a depending segmental worm-rack on the cradle, a worm operatively engaging said rack, a bracket depending from the axle, bearings for said worm on said bracket, a wheel engaging the worm-bearings and having a cam or wedge surface engaging a corresponding cam or wedge surface on the bracket, and means for turning said wheel, whereby the cradle is locked in adjusted position.

818,107. CAR-COUPLING. WILLIAM MCCONWAY, Jr., Pittsburg, Pa., assignor to The McConway & Torley Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed Aug. 3, 1905. Serial No. 272,267.

Claim.—1. In a car-coupler, the combination with a coupler-head, of a plurality of relatively movable members pivotally mounted on said head, each of said members being integral and permanently mounted upon the head and being adapted to form a coupling with a complementary member, and means for locking said pivotally-mounted members in coupled position.

2. In a car-coupler, the combination with a coupler-head, of a plurality of horizontally-movable members pivotally mounted on said head, each of said members being integral and permanently mounted upon the head and being adapted to form a coupling with a complementary member, and means for locking said pivotally-mounted members in coupled position.

3. In a car-coupler, the combination with a coupler-head, of a knuckle pivotally mounted thereon, and horizontally-rotatable means pivotally mounted on said head adapted to engage a link, said means consisting of integral devices permanently mounted on said head.

4. In a car-coupler, the combination with a coupler-head, of a knuckle pivoted thereon, and integral devices pivotally mounted on the guard-arm side of said head adapted to engage a link, said integral devices being horizontally rotatable to coupled and uncoupled positions.

5. In a car-coupler, the combination with a coupler-head, of a knuckle pivoted thereon, a link-engaging member horizontally rotatable to coupled and uncoupled positions, means for locking said link-engaging member in coupled position, and means whereby said link-engaging member may be caused to actuate said knuckle.

6. In a car-coupler, the combination with a coupler-head, of a knuckle, means for locking said knuckle in coupled position, pivotally-mounted link-engaging means adapted to be locked in coupled position by said knuckle and said locking means, and means whereby said link-engaging member may be caused to actuate said knuckle.

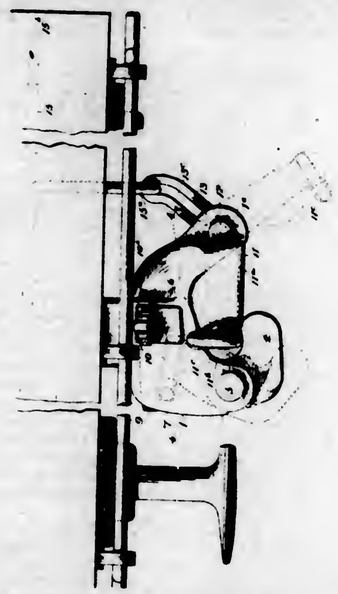

7. In a car-coupler, the combination with a coupler-head, of a knuckle, and a link-engaging member adapted to actuate said knuckle.

8. In a car-coupler, the combination with a coupler-head, of a knuckle, and a link-engaging member adapted to open said knuckle.

9. In a car-coupler, the combination with a coupler-head, of a knuckle, and a link-engaging member adapted to close said knuckle.

10. In a car-coupler, the combination with a coupler-head, of a knuckle, and a link-engaging member adapted to both open and close said knuckle.

11. In a car-coupler, the combination with a coupler-head, of a knuckle, a lock for said knuckle, means operated by the lock for opening said knuckle, and a lever system independent of the lock-actuated opening means for opening said knuckle.

12. In a car-coupler, the combination with a coupler-head, of a knuckle, a lock for said knuckle, means independent of the operation of the lock for opening said knuckle, and means for closing said knuckle.

13. In a car-coupler, the combination with a coupler-head, of a pivoted knuckle, a horizontally-rotatable member pivoted on said head, said member being rotatable to coupled and uncoupled positions and being provided with a hook integral therewith, and means for locking said horizontally-rotatable member in coupled position.

14. In a car-coupler, the combination with a coupler-head, of a pivoted knuckle, a lock for said knuckle, a movable member provided with a hook, and means whereby said knuckle and said movable member may be rotated to uncoupled position through the operation of said lock.

15. In a car-coupler, the combination with a coupler-head, of a knuckle, a pivoted link-engaging member, means for locking said link-engaging member in coupled position, and means for causing said link-engaging member to assume both a coupled and an uncoupled position.

16. In a car-coupler, the combination with a coupler-head, of a knuckle, a link-engaging member pivotally mounted on said head, means for locking said knuckle and said link-engaging member in coupled position, means for simultaneously unlocking said knuckle and said link-engaging member, and means for simultaneously rotating said knuckle and said link-engaging member to uncoupled positions.

17. A link-engaging member for a car-coupler provided with a pivoted knuckle, said member having a hook portion and a knuckle-actuating portion adapted to be interposed between the inner face of the outer end of a knuckle and the coupler-head.

18. In a car-coupler, the combination with a coupler-head, of a knuckle, a link-engaging member horizontally rotatable to coupled and uncoupled positions and having a hook portion, and means for simultaneously locking said knuckle and said link-engaging member.

19. In a car-coupler, the combination with a coupler-head, of a knuckle, a link-engaging member pivotally mounted upon the guard-arm side of said head, a member pivotally mounted in the same axis with said link-engaging member, and means for causing a pivotal movement of said last-named member, whereby said link-engaging member is actuated.

20. In a car-coupler, the combination with a coupler-head, of a knuckle, a link-engaging member pivotally mounted upon the guard-arm side of the coupler-head, a member pivotally mounted in the same axis with said link-engaging member, and a hook-coupling-operating member having a pin-and-slot connection with said last-named member.

21. In a car-coupler, the combination with a coupler-head, of a knuckle, a lock for said knuckle, a link-engaging member pivotally mounted upon said coupler-head, a lever pivotally mounted upon the coupler-head and having one arm engaging said link-engaging member and another arm engaging a hook-coupling-operating member, and a hook-coupling-operating member.

22. In a car-coupler, the combination with a coupler-head, of a knuckle, a lock for said knuckle, a link-engaging member pivotally mounted upon said coupler-head, a pivotally-mounted lever having a cam-slot, and a hook-coupling-operating member engaging the cam-slot of said lever.

23. In a car-coupler, the combination with a coupler-head, of a knuckle, a lock for said knuckle, a link-engaging member, and a telescoping connection adapted to attach said lock to an uncoupling-lever.

24. In a car-coupler, the combination with a coupler-head, of a knuckle, a lock for said knuckle, a link-engaging member adapted to close said knuckle, and means independent of the said link-engaging member for opening said knuckle.

25. In a car-coupler, the combination with a coupler-head, of a knuckle, a lock for said knuckle, a link-engaging member adapted to both open and close said knuckle, and means independent of said link-engaging member for opening said knuckle.

26. In a car-coupler, the combination with a coupler-head, of a knuckle, a lock for said knuckle, and means for opening said knuckle, the said knuckle-opening means being unaffected by the closing of said knuckle.

27. In a car-coupler, the combination with a coupler-head, of a knuckle, a link-engaging member pivotally mounted on said head, means for locking said link-engaging member, and means for maintaining said locking means in unlocked position whereby said link-engaging member may be subsequently brought to uncoupled position.

28. In a car-coupler, the combination with a coupler-head, of a knuckle, a lock for said knuckle, a link-engaging member pivotally mounted on said head, and means whereby said link-engaging member may be actuated from both sides of the car.

29. In a car-coupler, the combination with a coupler-head, of a knuckle, a pivotally-mounted link-engaging member having a columnar portion and a hook extending vertically upward therefrom, means for simultaneously locking said knuckle and said link-engaging member in coupled positions, and means for simultaneously opening said knuckle and said link-engaging members.

30. In a car-coupler, the combination with a coupler-head, of a knuckle, an integral link-engaging member pivotally mounted on said head, and means whereby said link-engaging member may be locked in coupled position while said knuckle is in coupled position, said link-engaging member being rotatable horizontally to permit the knuckle to engage a corresponding knuckle.

31. In a car-coupler, the combination with a coupler-head, of a knuckle, a lock for said knuckle, and a member pivotally mounted independent of the knuckle and adapted to both open and close said knuckle.

32. In a car-coupler, the combination with a coupler-head, of a knuckle, and a pivotally-mounted link-engaging member adapted to actuate said knuckle.

33. In a car-coupler, the combination with a coupler-head, of a knuckle, a lock for said knuckle, and a link-engaging member having a hook portion integral therewith, said link-engaging member being adapted to be engaged and locked in coupled position by the said knuckle and to be actuated by said knuckle.

818,108. PENCIL-TIP. FRANK MEISTER, New York, N. Y., assignor to Eagle Pencil Company, New York, N. Y. Filed Dec. 16, 1905. Serial No. 292,022.

Claim.—1. In a metallic tip for lead-pencils, a barrel provided with a circumferential knurl, a knurled retaining-ring fitting upon the barrel, and a band also fitting upon the barrel and held thereon between the knurl on the barrel and retaining-ring respectively, substantially as set forth.

2. A metallic tip for lead-pencils consisting of a barrel having at a point between its ends a circumferential knurl or shoulder, a knurled thimble fitted upon and secured to the forward portion of the barrel, and a ring or band also fitted upon the barrel, and held between the knurls on the barrel and thimble respectively.

818,109. PNEUMATIC HAMMER. REINHOLD A. NOELLING, Aurora, Ill., assignor to Aurora Automatic Machinery Company, Aurora, Ill., a Corporation of Illinois. Filed Feb. 17, 1905. Serial No. 246,146.

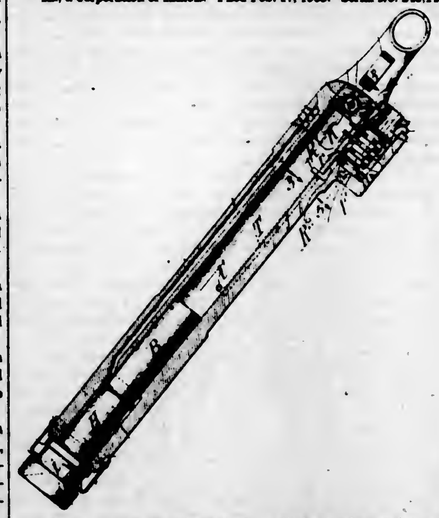

Claim.—1. The combination of a cylinder having an integral handle on its inner end and a bore which extends through its said inner end, a plunger in said cylinder, a controlling-valve casing integral with and extending laterally from the inner end of the cylinder and having a bore which is closed at one end by the integral, outer end wall of the casing and opens at its other end through the inner end of the casing, a valve-piston in the said valve-casing having its central axis parallel with the cylinder, and separate closures for the inner end of the bore of the cylinder and for the bore of the valve-casing.

2. The combination of a cylinder having an integral handle on its inner end, and a bore which extends through its said inner end, a plug inserted in the inner end of the bore of the cylinder for closing the same, a plunger in said cylinder, a controlling-valve casing integral with and extending laterally from the inner end of the cylinder, and having a bore which is closed at one end by the integral outer end wall of the casing and opens at its other end through the inner end of the casing, a valve-piston in said valve-casing having its central axis parallel with the cylinder, and a removable closure for the valve-casing inserted and secured in the inner end of the bore thereof.

3. The combination with a cylinder and a plunger therein, of a controlling-valve comprising a valve-casing formed by a lateral extension of the inner end of the cylinder, a bushing located within said casing, a valve-piston within said bushing, a disk bearing against one end of the said bushing forming the end wall of the valve-chamber, and means for holding the said disk in contact with the said bushing, embracing a split thimble having screw-threaded engagement with the valve-casing and bearing on the said disk, a sleeve

having a conical surface engaging the conical surface of said thimble and a nut having screw-threaded engagement with said sleeve.

4. The combination with a cylinder and a plunger therein, of a controlling-valve comprising a valve-chamber which is interiorly cylindric throughout the greater part of its length and provided at one end with a part of smaller diameter, and an endwise-reciprocating valve-piston provided at one end with a part of smaller diameter fitting the smaller end of said valve-chamber, said larger part of the valve-chamber being provided with an air-supply port and an admission-port for the inner end of the cylinder, laterally in line with each other, with an air-supply port and an admission-port connected with the outer end of the cylinder, also laterally in line with each other, with an exhaust-port for the inner end of the cylinder and a main exhaust-port also laterally in line with each other, and with an exhaust-port for the outer end of the cylinder and a main exhaust-port also laterally in line with each other, said valve-piston being provided with enlarged parts fitting the larger part of the valve-chamber and with intervening grooves, adapted to coöct with said several ports.

5. The combination with a cylinder and a plunger therein, of a controlling-valve chamber provided with two lateral air-supply ports and two lateral air-admission ports communicating with the inner end of the cylinder, the said air-supply and admission ports being located at corresponding distances from the end of the valve-chamber, and an endwise-sliding valve-piston provided with three enlarged parts and two intervening grooves, spaced to correspond with the distance apart of the air-supply and admission ports, and so arranged that in one position of the piston the two grooves therein will stand opposite and establish communication between the two air-supply and the two admission ports and in the other position of the piston two of the enlarged parts thereof will cover or close said air-supply and admission ports.

6. The combination with a cylinder and a plunger therein, of a controlling-valve comprising a valve-chamber provided with a lateral air-supply port, a lateral air-admission port located laterally in line with the air-supply port and communicating with the inner end of the cylinder, a second air-supply port longitudinally separated from the first-named air-supply port, a lateral air-admission port located laterally in line with the said second supply-port and communicating with the outer end of the cylinder, a lateral air-exhaust port for the outer end of the cylinder, longitudinally separated from the admission-port for the outer end of the cylinder, a lateral exhaust-port for the inner end of the cylinder, longitudinally separated from the exhaust-port for the outer end of the cylinder, a main exhaust-port, laterally in line with both said exhaust-ports for the outer and inner ends of the cylinder, and an endwise-sliding valve-piston having three enlarged parts and two intervening grooves and so arranged that in one position of said piston one of the grooves will connect with each other the first-named air-supply port and the admission-port for the inner end of the cylinder, one of said enlarged parts will cover the second air-supply port and the admission-port for the outer end of the cylinder and another of said enlarged parts will cover the exhaust-port for the inner end of the cylinder, and in the other position of the piston, one of said enlarged parts will cover the first-named air-supply port and the admission-port for the inner end of the cylinder, one of said grooves will connect with each other the second-named air-supply port and the air-admission port for the outer end of the cylinder, the other of said grooves will connect the exhaust-port for the inner end of the cylinder with the exhaust-port, and another of said enlarged parts will cover the exhaust-port for the outer end of the cylinder.

7. The combination with a cylinder and a plunger therein, of a controlling-valve comprising a valve-chamber provided with three lateral air-supply ports, with two lateral ports communicating with admission-ports at the inner end of the cylinder, with a lateral supply and exhaust port communicating with the outer end of the cylinder, with a lateral port communicating with an exhaust-port for the inner end of the cylinder, and with a lateral main exhaust-port leading to the outer air, the valve-piston being provided with four enlarged parts and intervening grooves or recesses, two of said enlarged parts coacting with two of the air-supply ports, and the two admission-ports, a third enlarged portion which coacts with the third air-supply port, and the admission-port for the outer end of the cylinder, and a fourth enlarged portion which coacts with the exhaust-port for the inner end of the cylinder, with the exhaust-port for the outer end of the cylinder and with the main exhaust-port.

8. The combination with a barrel and a plunger therein, of a controlling-valve comprising a valve-chamber having at one end a port of reduced diameter and provided with three lateral air-supply ports, with two lateral ports communicating with admission-ports at the inner end of the cylinder, with a lateral supply and exhaust port communicating with the outer end of the cylinder; with a lateral port communicating with an exhaust-port for the inner end of the cylinder, and with a lateral main exhaust-port leading to the outer air, and a valve-piston having at one end a part of smaller diameter which fits and slides in the smaller end portion of the valve-chamber and is provided with four enlarged parts and intervening grooves or recesses, two of said enlarged parts coacting with two of the air-supply ports and with the two admission-ports, a third enlarged portion which coacts with the third air-supply port, and with the admission-port for the outer end of the cylinder, and a fourth enlarged portion which coacts with the exhaust-port for the inner end of the cylinder, with the exhaust-port for the outer end of the cylinder and with the main exhaust-port, said cylinder being provided with a passage leading from a point near its outer end to the larger end of the valve-chamber, and with a passage leading from the inner end of said cylinder to the smaller end of said valve-chamber.

813,110. **THROTTLE-VALVE.** REINHOLD A. NORLING, Aurora, Ill., assignor to Aurora Automatic Machinery Company, Aurora, Ill., a Corporation of Illinois. Filed May 15, 1905. Serial No. 260,585.

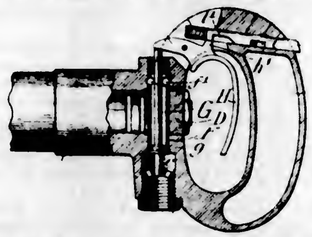

Claim.—1. The combination with a pneumatic-motor cylinder provided with a throttle-valve bore or passage which is open at both ends and with one end of which the air-supply pipe is connected, of a cylindric valve-bushing located in said bore provided at its supply end with a valve-seat and at its opposite end with an axial guide-passage and having an intermediate exit-port, an endwise-sliding valve-stem the outer end of which extends outwardly through the guide-aperture in the bushing and which is provided with a valve-disk adapted to bear against said seat, and a guide-ring for the inner end of said stem located in the supply end of said bore outside of the valve seat and disk.

2. The combination with a pneumatic-motor cylinder provided with a throttle-valve bore or passage which is open at both ends and with one end of which the air-supply pipe is connected, of a cylindric valve-bushing located in said bore provided at its supply end with a valve-seat and at its opposite end with an axial guide-passage and having an intermediate exit-port, an endwise-sliding valve-stem the outer end of which extends outwardly through the guide-aperture of the bushing and which is provided with a valve-disk adapted to bear against said seat, and a nipple inserted in the supply end of said bore outside of the valve seat and disk, said nipple being provided with a guide-ring for the inner end of the valve-stem.

3. The combination with a pneumatic-motor cylinder provided with a throttle-valve bore or passage which is open at both ends and with one end of which the air-supply pipe is connected, of a cylindric valve-bushing located in said bore provided at its supply end with a valve-seat and at its opposite end with an axial guide-passage and having an intermediate exit-port, an endwise-sliding valve-stem the outer end of which extends outwardly through the guide-aperture of the bushing, and which is provided with a valve-disk adapted to bear against said seat, a nipple inserted in the supply end of said bore outside of the valve seat and disk, said nipple being provided with a guide-ring for the inner end of the valve-stem, and a coiled actuating-spring surrounding the said valve-stem between the said guide-ring and the valve-disk.

4. The combination with a pneumatic-motor cylinder and handle thereon, of a throttle-valve embracing an endwise-movable valve-stem, a pivoted trigger having an actuating-arm which extends along the inner face of the handle, said trigger being adapted to act upon said valve-stem, a spring applied to hold the valve normally in its closed position, and a spring-actuated locking-detent for the trigger having a part which projects outwardly from the outer face of the handle at one end of the same.

5. The combination with a pneumatic-tool cylinder and a handle thereon, of a throttle-valve embracing an endwise-movable valve-stem, a pivoted trigger adapted to act upon said valve-stem, and having an actuating-arm which extends along the inner face of the handle, a spring applied to hold the valve normally in its closed position, and a locking-detent for the trigger embracing an endwise-movable spring-actuated locking-bar which protrudes from the outer face of the handle at one end of the same, said trigger being provided with a lug which projects toward said locking-bar, and the locking-bar having a notch or recess adapted to receive said lug to effect the release of the trigger when the bar is pushed inwardly by pressure of the hand thereon.

6. The combination with a cylinder and a plunger therein, of a handle made integral with the inner end of the cylinder, said cylinder being provided with a bore extending through the inner end thereof, a plug inserted in said bore for closing the inner end of the cylinder and throttle-valve embracing a valve-bushing which extends through the said plug and the surrounding part of the cylinder.

813,111. **DOOR-CHECK.** CHARLES I. PARKER and PAUL PAPENFOTH, New Britain, Conn., assignors to Russell & Erwin Manufacturing Company, New Britain, Conn., a Corporation of Connecticut. Filed Mar. 9, 1905. Serial No. 249,155.

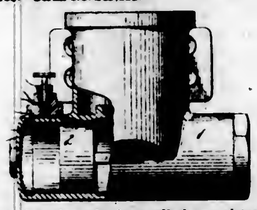

Claim.—1. In a door-check, a cylinder, a piston therein, a by-pass in the wall of said cylinder, a threaded opening intersecting said by-pass the latter entering said opening at one side and leaving the same at the other side, a plug adapted to fill said threaded opening, said opening having an imperforate bottom, one of said parts being grooved to connect the two ends of said by-pass, and a valve carried by said plug and arranged to regulate the size of said groove.

2. In a door-check, a cylinder, a piston therein, a by-pass in the wall of said cylinder, a threaded opening intersecting said by-pass the latter entering said opening at one side and leaving the same at the other side, a plug adapted to fill said threaded opening, said opening having an imperforate bottom, said plug being grooved to connect the two ends of said by-pass and a valve arranged to regulate the size of said groove.

813,112. **CEMENT-BLOCK-MAKING MACHINE.** BRITTON POULSON, Fort Wayne, Ind., assignor of one-half to Frederick Kiemendorff, Fort Wayne, Ind. Filed Oct. 2, 1905. Serial No. 280,875.

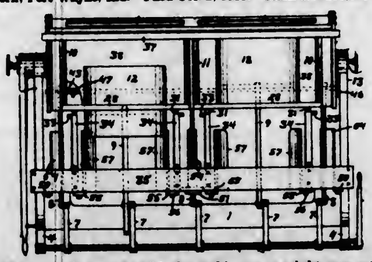

Claim.—1. In a cement-block machine, an upright supporting-frame; a block-mold pivotally mounted on the frame, adapted for a quarter-turn thereon, and having its rear face pivotally mounted and provided with proper core-openings; horizontally-movable cores mounted on the said frame in cooperative relation with the mold; means for withdrawing the end and division plates of the mold simultaneously with the cores by one operation; means for giving the mold a quarter-turn to discharge the block; and means for automatically releasing the pattern and rear plates at each forward turn of the mold.

2. In a cement-block machine an upright supporting-frame; a mold-box pivotally mounted on the said frame adapted for a quarter-turn thereon, having its rear plate pivoted at its lower edge and provided with lateral core-openings, and having its ends vertically slotted to loosely receive the removable pallet; a pivoted vertical adjustable pattern-plate arranged in said mold-box at right angles to the pallet; horizontally-movable end and division plates for the core-box; means for simultaneously withdrawing the end and division plates and the cores from the mold, and for returning the said last-named plates to the mold without moving the withdrawn cores; means for giving the mold a quarter-turn to discharge the block; and means for automatically releasing the pattern and rear plates at each forward turn of the mold.

3. In a cement-block machine a pivotally-mounted mold-box adapted for a quarter-turn having its ends vertically slotted to loosely receive the pallet, and having its rear plate pivotally mounted at its lower edge, and provided with lateral core-openings; a pattern-plate pivotally mounted in the mold-box and adapted for a vertical adjustment therein; means for automatically actuating the said plates upon their pivotal bearings when the mold-box is rotated either forward or backward.

4. In a cement-block machine, a horizontally-movable core having a longitudinally-slotted and rearwardly-projecting connecting-rod and a coöperating pivoted arm whose inner end has a slidable pivoted connection with the slot in said rod, for the purpose specified.

813,113. **ELECTRIC HEATER.** AUSTIN A. PRATT, Los Angeles, Cal. Filed June 21, 1905. Serial No. 266,313.

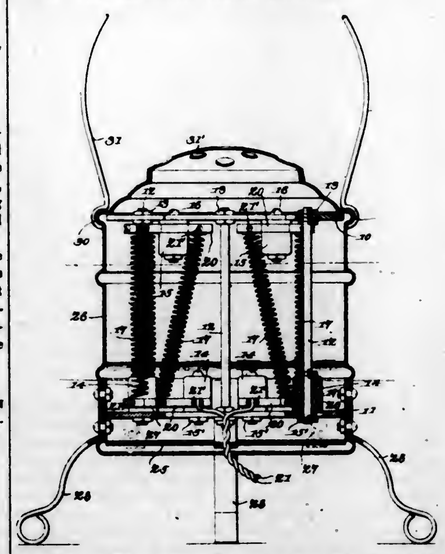

Claim.—1. In an electric heater, a casing, a pair of supporting members arranged therein, insulating-blocks carried by said members, conducting-clips supported by the blocks, and a plurality of series-connected resistance-coils extending between said clips.

2. In an electric heater, a casing, upper and lower supports disposed therein, insulating-blocks on said supports, metallic clips carried by the insulating-blocks; resistance-coils connected in a continuous series by said clips, and means for connecting the coils to the clips and for clamping the latter in position on the blocks.

3. In an electric heater, a casing, a pair of frame-rings arranged within the casing, connecting-bolts extending between the rings, insulating-blocks held in place on the lower ring by means of said bolts, a series of insulating-blocks secured to the upper ring, the blocks of the respective rings being disposed in staggered relation, current-conducting strips clamped on the blocks, and resistance-coils connected in series by said strips.

4. In an electric heater, a casing, upper and lower frame-rings arranged therein, insulating-blocks carried by the upper and lower rings, the blocks of the respective rings being disposed in staggered relation, each of said blocks having a peripheral groove, strips of

conducting material arranged within the grooves and clamped in place, and resistance-coils connected in a continuous series by said strips.

5. In an electric heater, the combination with a casing, of upper and lower rings, insulating-blocks carried by the rings and provided with grooves, insulating-strips arranged in said grooves, resistance-coils connected in a continuous series by said strips, two of the strips being extended inward over the edge of the lower ring for connection to current-conducting wires.

6. In an electric heater, a casing, upper and lower frame-rings arranged therein, connecting-bolts extending between the rings, clips secured to the lower ring, means of securing the casing to the clips, a reticulated disk supported by the clips at a point below the lower ring, and a perforated cover forming the top of the casing.

7. In an electric heater, the combination with upper and lower frame-rings, of a plurality of vertical bolts connecting the rings, insulating-blocks carried by the rings, current-conducting strips supported by the blocks, resistance-coils connected to said strips, a casing surrounding the frame and having a detachable perforated cap to permit the insertion of a vessel within the casing.

8. In a device of the class specified, the combination with a casing, of a pair of superposed and spaced supports, insulators carried thereby, and a plurality of resistance-coils extending between the insulators and arranged in a continuous annular series, forming a central passage for the air to be heated.

818,114. DEVICE FOR CUTTING SCREWS UPON LONG RODS.

PAUL PFEIFER, Berlin, Germany. Filed Mar. 10, 1905. Serial No. 249,481.

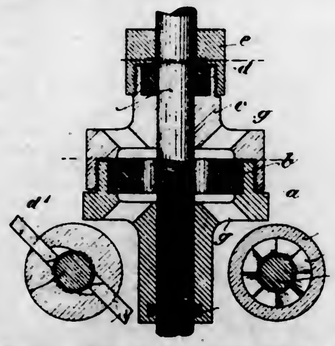

Claim.—1. In a device for cutting screws upon long rods, the combination with a sleeve *a* having a narrow portion adapted to be fixed to the rotary chuck of a suitable lathe, and a widened portion adapted to receive the threading-tool, another sleeve attached to said widened portion, and having also a narrow portion, a bore in each of the two narrow portions adapted to receive, to guide, and to keep straight the rod to be threaded, and threading-tools located within the space inclosed by the two widened portions of the sleeves, and secured to the first-mentioned sleeve, substantially and for the purpose as described.

2. In a device for cutting screws upon long rods, the combination with a sleeve *a* having a narrow portion adapted to be fixed to the rotary chuck of a suitable lathe and a widened portion adapted to receive the threading-tool, another sleeve attached to said widened portion, and having also a narrow portion, a bore in each of the two narrow portions adapted to receive, to guide, and to keep straight the rod to be threaded, threading-tools located within the space inclosed by the two widened portions of the sleeves, and secured to the first-mentioned sleeve, a rod-smoothing tool secured to the narrow portion of the other sleeve, and a nut attached to the latter and adapted to hold this tool in place, substantially and for the purpose as described.

3. In a device for cutting screws upon long rods, the combination with a sleeve *a* having a narrow portion adapted to be fixed to the rotary chuck of a suitable lathe, and a widened portion adapted to receive the threading-tool, another sleeve attached to said widened portion, and having also a narrow portion, a bore in each of the two narrow portions adapted to receive, to guide, and to keep straight the rod to be threaded, threading-tools located within the space inclosed by the two widened portions of the sleeves, and secured to the first-mentioned sleeve, and scrapers secured to the outer end of the bore of the latter, substantially and for the purpose as described.

4. In a device for cutting screws upon long rods, the combination with a sleeve *a* having a narrow portion adapted to be fixed to the rotary chuck of a suitable lathe, and a widened portion adapted to receive the threading-tool, another sleeve attached to said widened portion, and having also a narrow portion, a bore in each of the two narrow portions adapted to receive, to guide, and to keep straight the rod to be threaded, threading-tools located within the space inclosed by the two widened portions of the sleeves, and secured to the first-mentioned sleeve, a rod-smoothing tool secured to the narrow portion of the other sleeve, a nut attached to the latter, and adapted to hold this tool in place, and scrapers secured to the outer end of the first sleeve, substantially and for the purpose as described.

818,115. BROODER.

HENRY F. RAU, Tacoma, Wash. Filed Apr. 7, 1904. Serial No. 201,956.

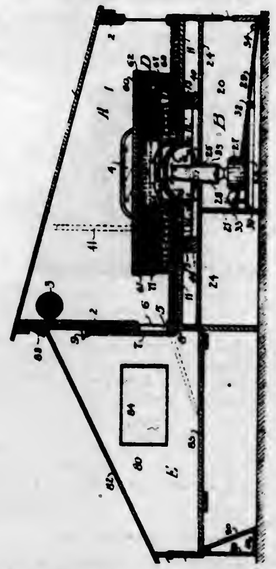

Claim.—1. In a brooder, the combination with a brooding-chamber, of a hover therein, a hover-cloth secured to said hover, a layer of feathers supported by said hover-cloth, a wire screen above said feathers and secured to said hover and adapted to keep said feathers in place, and means for conveying a supply of warm fresh air above said wire screen and to distribute it by said screen over a large surface of said layer of feathers said warm air passing downward through the feathers and the hover-cloth to the space beneath said hover.

2. In a brooder, the combination with a brooding-chamber having a floor, of a hollow cylinder supported vertically by said floor and having one or more rows of holes near its upper end and a lower row of holes therein, a hover-board secured to and supported over the floor by said cylinder, a hover-curtain depending from said hover-board, a hover-cloth secured to said hover-board and to said hollow cylinder below said upper rows of holes therein, and means for conveying a supply of warm fresh air to the inside of the hollow cylinder said warm air passing through the holes therein and downward through said hover-cloth to the space between it and said floor.

3. In a brooder, the combination with a brooding-chamber having a floor, of a hollow cylinder supported vertically by said floor and having one or more rows of holes near its upper end and a lower row of holes therein, a hover-board secured to and supported over said floor by said cylinder, a hover-curtain depending from said hover-board, a hover-cloth secured to said hover-board and to said hollow cylinder between said upper and lower rows of holes therein, and means for conveying a supply of fresh warm air to the inside of said hollow cylinder the warmer part thereof passing through the upper rows of holes therein and downward through said hover-cloth and the cooler part of the air passing through the lower holes directly under said hover-cloth.

4. In a brooder, the combination with a brooding-chamber having a floor, of a hollow cylinder supported vertically by said floor and having one or more rows of holes near its upper end and a lower row of holes therein, a hover-board secured to and supported over said floor by said cylinder, a hover-curtain depending from said hover-board, a hover-cloth secured to said hover-board and to said hollow cylinder between said upper and lower rows of holes therein, a layer of feathers supported by said hover-cloth, a wire screen above said feathers and secured to said hollow cylinder and to said hover-board and adapted to keep said feathers in place, and means for conveying a supply of fresh warm air to the inside of said hollow cylinder the warmer part thereof passing through the upper rows of holes therein and downward through said wire screen said feathers and said hover-cloth and the cooler air passing through the lower row of holes directly under said hover-cloth.

5. In a brooder, the combination with a brooding-chamber having a floor, of a hollow cylinder supported vertically by said floor and having one or more rows of holes near its upper end, and a lower row of holes therein, a hover-board secured to and supported over the floor by said cylinder, a hover-curtain depending from said hover-board, a hover-cloth secured to said hover-board and to said hollow cylinder below said upper row of holes therein, a water vessel supported in said hollow cylinder and having evaporation-holes therein, and means for conveying a supply of warm fresh air to the inside of said hollow cylinder said warm air coming in contact with said water vessel and being charged with moisture therefrom and passing through the holes in said hollow cylinder and downward through said hover-cloth to the space between it and said floor.

6. In a brooder, the combination with a brooding-chamber having a fixed floor with a central hole therein, of a removable floor fitting in said hole in said fixed floor and having a hole therein, of a hollow cylinder supported vertically by said removable floor and surrounding the hole therein and having one or more rows of holes near its upper end, and a lower row of holes therein, a hover-board secured to and supported over the floor by said hollow cylinder, a hover-curtain depending from said hover-board, a hover-cloth secured to said hover-board and to said hollow cylinder below said upper rows of holes therein, and means for conveying a supply of warm fresh air to the inside of said hollow cylinder said warm air passing through the upper holes therein and downward through the hover-cloth to the space between it and said floor the cooler portion thereof passing through the lower holes directly to the under side of the hover-cloth thereby keeping the air under the hover pure.

7. In a brooder, the combination with a brooding-chamber having a fixed floor with a central hole therein, a removable floor fitting in said hole in said fixed floor and having a hole therein, a dome secured in the hole in said removable floor and having a hole in the apex thereof, a hollow cylinder supported vertically by said removable floor and surrounding the hole therein and having one or more rows of holes near its upper end and a lower row of holes therein, a hover-board secured to and supported over the floor by said hollow cylinder, a hover-curtain depending from said hover-board, a hover-cloth secured to said hover-board and to said hollow cylinder below said upper rows of holes therein, a warmed surface within said dome, and pipes leading from the outside of the brooder to the space between said warmed surface and said dome and adapted to conduct fresh air to said warmed surface.

8. In a brooder, the combination with a brooding-chamber having a fixed floor with a central hole therein, a removable floor fitting in said hole in said fixed floor and having a hole therein, a cylindrical sleeve secured in said hole and extending above and below said floor, a dome secured to the lower end of said sleeve and having a hole in the apex thereof said dome extending above and below said floor, a hollow cylinder supported vertically by said floor and surrounding said sleeve and dome and extending upward therefrom and having one or more rows of holes near its upper end and a lower row of holes therein, a hover-board secured to and supported over the floor by said hollow cylinder, a hover-curtain depending from said hover-board, a hover-cloth secured to said hover-board and to said hollow cylinder below said upper rows of holes therein, a warmed surface within said dome, and pipes leading from the outside of the brooder to the space between said warmed surface and said dome and adapted to conduct fresh air to said warmed surface.

9. In a brooder, the combination with a brooding-chamber having a fixed floor with a central hole therein, a removable floor fitting in said hole in said fixed floor and having a hole therein, a cylindrical sleeve secured in said hole and extending above and below said floor, a dome secured to the lower end of the sleeve and having a hole in the apex thereof said dome extending above and below said floor, a water vessel supported over the hole in said dome and having evaporation-holes therein, a hollow cylinder supported vertically by said floor and surrounding said water vessel said sleeve and said dome and extending above said water vessel and having one or more rows of holes near its upper end and a lower row of holes therein, a hover-board secured to and supported over the floor by said hollow cylinder, a hover-curtain depending from said hover-board, a hover-cloth secured to said hover-board and to said hollow cylinder below said upper rows of holes therein, a warmed surface within said dome, and pipes leading from the outside of the brooder to the space between said warmed surface and said dome and adapted to conduct fresh air to said warmed surface.

10. In a brooder, the combination of a lamp-chamber below the center of the brooder, a lamp supported therein independent of the flue, a flue supported over said lamp and extending upward therefrom through a diaphragm and into a dome, a diaphragm secured in said brooder and having small holes therein near its center, a dome secured to the upper side of said diaphragm outside said small holes therein, and having its apex above the upper end of said flue, a smoke-pipe leading from the space below said diaphragm to the outside, an air-pipe leading from the outside to the space above said diaphragm, an outer dome around and above said dome and having a hole in the apex thereof, and a hover supported over and around said domes whereby the fresh warm air from the air-chamber is conveyed to the chickens thereunder.

11. In a brooder, the combination with a hover having a central hollow cylinder with holes therein for warm air to pass to the backs of the chickens thereunder, of means for conveying a supply of fresh warm air free from the products of combustion to said cylinder, and a water vessel supported in the stream of the warm air in said cylinder and adapted to allow the water to evaporate and to charge said warm air with the normal amount of moisture.

12. A brooder-chamber having a floor, the central section thereof being removable and having a hole therein through which a supply of fresh warm air may be conveyed from below said brooding-chamber.

13. In a brooder, the combination with a brooding-chamber having a fixed floor with a central hole therein, of a removable floor fitting in said hole in said fixed floor and having a hole therein, of a cylindrical sleeve secured in said hole and extending above and below said floor, a dome secured to the lower end of said sleeve and having a hole in the apex thereof said dome extending above and below said floor, a hollow cylinder supported vertically by said floor and having one or more rows of holes near its upper end, and a hover supported thereby and consisting of a horizontal board extending out from said cylinder and a hover curtain and cloth supported by said board.

14. In a brooder, the combination with a hover having a central hollow cylinder supported on the hover-floor and having holes therein for warm air to pass to the backs of the chickens thereunder, of a lamp supported centrally below the hover-floor, a diaphragm separating the space below said floor into a smoke-chamber below and a fresh-air chamber above, a closed dome extending into said fresh-air chamber and secured to the upper side of said diaphragm but communicating with said smoke-chamber by small holes through said diaphragm, a flue supported by and passing through said diaphragm over said lamp whereby the smoke and warm air are conveyed from said lamp and collected in said dome whereby the fresh air is warmed and passes into said central hollow cylinder.

818,116. VALVE-GEAR FOR EXPLOSION-ENGINES.

HANS RICHTER, Nuremberg, Germany, assignor to The Firm of Vereinigte Maschinenfabrik Augsburg und Maschinenbaugesellschaft Nurnberg A.-G., Nuremberg, Germany. Filed Aug. 23, 1904. Serial No. 221,868.

Claim.—1. In valve-motions for explosion-engines, the combination, of a passive roller-track *w* actuated by the governor and an active roller-lever *b* working upon said passive roller-track *w* and actuated by the eccentric-rod *e* with a catch *k* loosely mounted on a bolt *p* in the inner end of the active roller-lever *b* and adapted to come in engagement with a cross-piece *u* arranged in the head *v* of the valve-rod and to be brought out of engagement with said cross-piece *u* by a nose *n* fixed on the active roller-lever *b*, substantially as described.

2. In valve-motions for explosion-engines, the combination, of a passive roller-track *w* actuated by the governor and an active roller-lever *b* working upon said passive roller-track *w* and actuated by the eccentric-rod *e*, with a catch *k* loosely mounted on a bolt *p* in

the inner end of the active roller-lever *b* and adapted to come in engagement with a cross-piece *u* arranged in the head *v* of the valve-

5. In a molding-machine, the combination with a mold provided with rotatable sides and ends and a reciprocating core, of

10. In a molding-machine, a mold consisting of pivotally-movable wing-plates and an apertured bottom or tray, said support pre-

said support, a mold-bottom loosely mounted on said support, and adapted to serve as a tray for a cast, said bottom provided with core-

the inner end of the active roller-lever *b* and adapted to come in engagement with a cross-piece *u* arranged in the head *v* of the valve-rod and to be brought out of engagement with said cross-piece *u* by a nose *n* fixed on the active roller-lever *b*, the said bolt *p* being guided in slots of the head *v* of the valve-rod, substantially as described.

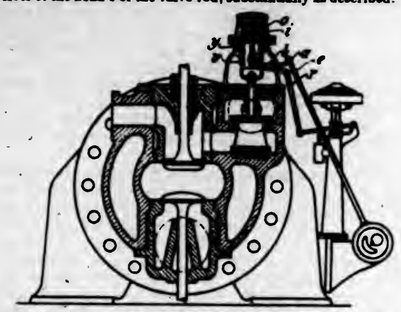

3. In valve-motions for explosion-engines, the combination, of a passive roller-track *w* actuated by the governor and an active roller-lever *b* working upon said passive roller-track *w* and actuated by the eccentric-rod *e*, with a catch *k* loosely mounted on a bolt *p* in the inner end of the active roller-lever *b* and adapted to come in engagement with a cross-piece *u* arranged in the head *v* of the valve-rod and to be brought out of engagement with said cross-piece *u* by a nose *n* fixed on the active roller-lever *b*, the said bolt *p* being guided by links *l*, substantially as described.

4. In valve-motions for explosion-engines, the combination, of a passive roller-track *w* actuated by the governor and an active roller-lever *b* working upon said passive roller-track *w* and actuated by the eccentric-rod *e*, with a catch *k* loosely mounted on a bolt *p* in the inner end of the active roller-lever *b* and adapted to come in engagement with a cross-piece *u* arranged in the head *v* of the valve-rod and to be brought out of engagement with said cross-piece *u* by a nose *n* fixed on the active roller-lever *b*, and springs *i*, *f* holding the active roller-lever *b* in contact with the passive roller-track *w*, and the catch *k* in contact with the nose *n* respectively, substantially as described.

5. In valve-motions for explosion-engines, the combination, of a passive roller-track *w* actuated by the governor and an active roller-lever *b* working upon said passive roller-track *w* and actuated by the eccentric-rod *e*, with a catch *k* loosely mounted on a bolt *p* in the inner end of the active roller-lever *b* and adapted to come in engagement with a cross-piece *u* arranged in the head *v* of the valve-rod and to be brought out of engagement with said cross-piece *u* by a nose *n* fixed on the active roller-lever *b*, a spring *i* holding the active roller-lever *b* in contact with the passive roller-track *w*, and a means for holding the catch *k* in contact with the nose *n*, substantially as described.

818,117. MOLDING-MACHINE. CLAY M. RUNYAN, Elyria, Ohio. Filed Nov. 3, 1904. Serial No. 231,301.

Claim.—1. The combination with a mold having relatively movable sides, of a mechanism for moving said sides, said mechanism including a hand-lever, and a weighted counterbalancing-lever, or several thereof, cooperating with said hand-lever to move said sides and mechanism in one direction.

2. The combination with a mold provided with relatively movable sides and an apertured bottom or tray, of a core movable into and out of said mold, an operating mechanism which includes a series of levers and lever-connecting links, which levers and links are separable to render either said sides or said core inoperative.

3. The combination with a mold provided with rotatable sides, or rotatable sides and ends, and a core movable into and out of said mold, of a mechanism for simultaneously actuating said sides, or sides and ends, and the core, a hand-lever for controlling said mechanism, and means for making said core inoperative while said mechanism is operative as to said sides, or sides and ends.

4. The combination with a mold provided with relatively movable vertical sides and a reciprocating core movable into and out of said mold, of a mechanism for simultaneously actuating said sides and core, a hand-lever for moving said mechanism, means for counteracting overbalance of weight imposed upon said lever, and means for rendering said core inactive while said mechanism moves said sides.

5. In a molding-machine, the combination with a mold provided with rotatable sides and ends and a reciprocating core, of means for simultaneously actuating said sides, ends and core, a lever for moving the operating mechanism, and means for counteracting the overbalance of weight imposed upon said lever.

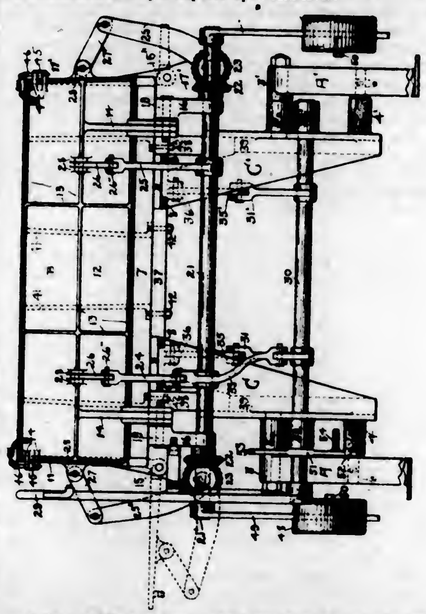

6. In a molding-machine, a mold consisting of pivotally-movable wing-plates and an off-bearing plate or tray, a support provided with pivot-bearings for said wing-plates and slideways for core-guides, a core mounted upon guides slidable in said slideways, means for adjusting the pivots of said wing-plates toward and from each other to vary the size of the mold, a hand-lever and operating mechanism controlled thereby, and means whereby one movement of said lever simultaneously lowers said wing-plates and core, said mechanism being adjustable to accommodate same to variations in the size of the mold.

7. In a molding-machine, the combination with a mold comprising pivotally-movable wing-plates and a removable tray, of a core mounted for sliding reciprocal movement, a support carrying pivot-bearings for said wing-plates and slideways or tracks for the core-table and its guides, a stationary base upon which said support is mounted for pivotal movement so that it may be adjusted, together with the mold and its actuating mechanism, into either an upright or tilted position, and an actuating mechanism having bearings carried by said support.

8. In a molding-machine, the combination with a mold comprising pivotally-movable wing-plates and a removable tray, of a core-table having slideway-guides thereon, a pivotally-movable support provided with slideways for said guides and pivot-bearings for said wing-plates, a stationary base upon which said support is mounted, a hand-lever and operating mechanism having bearings in said support, and means whereby one movement of said lever simultaneously lowers said wing-plates and core substantially below said tray, while the opposite movement of said lever returns said wing-plates and core to normal position.

9. In a molding-machine, the combination with a mold comprising pivotally-movable wing-plates and a removable tray, of a core mounted for sliding reciprocal movement, a support carrying pivot-bearings for said wing-plates and slideways or guides for said core, a stationary base upon which said support is mounted adjustably for a tilted or an upright position, a hand-lever and operating mechanism provided with bearings in said support, and means whereby one movement of said lever simultaneously lowers said wing-plates and core below the plane of the upper surface of said tray, while the opposite movement of said lever restores said wing-plates and core to normal position.

10. In a molding-machine, a mold consisting of pivotally-movable wing-plates and an apertured bottom or tray, said support provided with pivot-bearings for said wing-plates and slideways for core-guides, a core mounted upon guides slidable in said slideways, means for adjusting the pivots of said wing-plates toward and from each other to vary the size of the mold, a hand-lever and operating mechanism controlled thereby, and means whereby one movement of said lever simultaneously lowers said wing-plates and core below the normal horizontal plane of said tray, said mechanism being adjustable to accommodate same to variations in the size of the mold.

11. In a molding-machine, the combination with a mold provided with rotatable sides and ends and a reciprocating core, of means for simultaneously actuating said sides and ends and the core, means for expanding or contracting the size of said mold, a lever for moving the operating mechanism, and means for counterbalancing the weight of the actuating mechanism imposed upon said lever.

12. In a molding-machine, the combination with a mold provided with normally vertical sides pivoted for rotation above the bottom of said mold, of a core normally within said mold, means for adjusting said mold to occupy either a vertical or an inclined position, means for simultaneously tilting said sides toward the plane of the bottom of said mold and for restoring said sides to normal position, means for lowering said core synchronously with the tilting of said sides and for raising said core when said sides are restored to normal positions, means for expanding or contracting the size of said mold and for adjusting the actuating mechanism to such expansion or contraction, a lever for moving the operating mechanism, and means for counterbalancing the weight of the operating mechanism thrown upon said lever.

13. In a molding-machine, the combination with a support having pivot-bearings, of wing-plates hinged on their bottom edges to said bearings and normally forming the sides of a mold, a series of linked levers for actuating said plates and links between said levers and plates, the latter links provided with a series of spaced-apart pivot-holes, said bearings provided with a similar series of holes, whereby the hinges of said plates and the link-pivots between said levers and plates may be adjusted laterally.

14. In a molding-machine, the combination with a bed-plate having lugs projecting laterally therefrom, of a mold having wing-plates hinged on their bottom edges to said lugs and adapted to form the sides of a mold, said lugs having a series of holes spaced apart for receiving adjustably the pivots of the hinges of said plates.

15. In a molding-machine, the combination with a base consisting of leg-frames having slots therein, of supporting-brackets having bosses and rigid pins, the former pivoted to said leg-frames and the latter movable in said slots, a bed-plate mounted on said brackets, and a series of wing-plates, hinged at their bottom edges to said plate, adapted to form the sides of a mold.

16. In a molding-machine, the combination, with a base, of channel-brackets pivoted to said base and normally supported in a vertical position, a bed-plate mounted on said brackets, hinge-bearings projecting laterally from said plate, a mold having sides hinged to said bearings, a shaft journaled in said bearings, an operating-lever for rotating said shaft, and a series of levers and links between said shaft and sides for transmitting rotary movement from the former to the latter.

17. In a concrete-block machine, a stationary support, brackets having journals mounted in bearings in said support, slots in said support, pins upon said brackets movable in said slots and limited in their movements by the ends of said slots, a base-plate mounted on said brackets, a cast-tray on said plate, wing-plates, hinged at their bottom edges to said base-plate, adapted to form the sides of a mold, a horizontal shaft journaled in bearings in said brackets, a notched quadrant projecting from said bed-plate, a hand-lever provided with a latch adapted to engage said quadrant at either end of the throw of said lever, and connecting arms, levers and links between said shaft and wing-plates whereby rotary movement is transmitted from the former to the latter.

18. In a concrete-block machine, a stationary base, a mold-support pivotally mounted on said base and provided with means for locking it in a fixed position, a mold having wing-plates hinged to said support, a cast-tray loosely mounted on said support substantially between said wing-plates, said cast-tray provided with core-openings, a core-table provided with guides slidable on bearings in said support, a plurality of cores mounted on said table, a lever, and means for moving simultaneously said wing-plates and core-table.

19. In a concrete-block machine, a stationary base, a mold-support pivotally mounted on said base and provided with means for locking it in a fixed position, a mold having wing-plates hinged to said support, a mold-bottom loosely mounted on said support, and adapted to serve as a tray for a cast, said bottom provided with core-openings, a core-table provided with guides slidable on bearings in said support, a plurality of cores mounted on said table and movable through said core-openings, a series of rotary shafts mounted in bearings in said support, means for transmitting movement from one shaft to the other and to said wing-plates, arms rigidly mounted upon several of said shafts, counterweights adjustably mounted on said arms, and a lever for actuating said shafts.

20. In a molding-machine, the combination of a bed-plate, with wing-plates or mold sides; a tray, or off-bearing plate; hinge members pivoted below said tray and arranged to support said wing-plates or mold sides above said tray, said hinge members being constructed to permit the edges of said tray to extend beyond the vertical plane normally occupied by the pivots of said hinge members, and means for adjusting said pivots laterally of said plane to vary the size of the mold.

21. In a molding-machine, the combination with a mold having pivotally-movable wing-plates or sides; with a bottom, tray, or off-bearing plate; a bed-plate arranged to support said bottom below said wing-plates and above the pivots about which said wing-plates or sides are movable, and means for adjusting said wing-plates or sides toward and from each other over the face of said bottom, tray, or off-bearing plate.

22. In a molding-machine, the combination with a mold-box or mold, the sides of which are rotatively mounted on adjustable pivots to vary the size of the mold; of a bottom arranged in a plane below the plane of the lower edges of, and above the pivots for, said sides, when same are in their closed or normal position, and hinge members upon which said sides are rotatable, said hinge members being in the form of goosenecks 14 which are curved outwardly in the plane of said tray to permit the employment of a tray of greater width than the minimum distance between the pivots of said hinge members, whereby the size of the mold may be varied without disturbing said bottom.

813,118. PLOW. LOUIS N. SCHULTZ, Oakland, Miss. Filed Feb. 13, 1905. Serial No. 245,497.

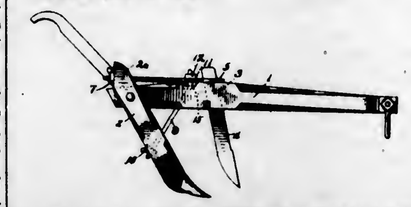

Claim.—1. In a plow, the combination of a standard, a slotted beam, a slotted binding-bar, a colter extending through the slots in said beam and bar, an adjustable brace provided with a wedge portion extending through the slot in said binding-bar and constructed to engage the rear wall of said slot for adjusting and positively locking said bar in clamping position, and a lock-nut for adjusting and locking said brace, substantially as described.

2. In a plow, the combination of a standard, a slotted beam, a slotted binding-bar, a colter extending through the slots in said beam and bar, an adjustable brace extending through the slot in said binding-bar and constructed to engage the rear wall of said slot for adjusting and positively locking said bar in clamping position, two heads carried by said brace in position to engage, respectively, said binding-bar and plow-beam, and a lock-nut for adjusting and locking said brace, substantially as described.

813,119. ELECTRIC LOCK-STRIKE. HARRY F. SMITH, Richmond, Va., assignor of one-third to J. S. Hopkins and one-third to Geo. J. Hooper, Richmond, Va. Filed Jan. 4, 1905. Serial No. 239,663.

Claim.—1. A keeper or casing to receive the lock-bolt of a lock mechanism when projected and having a movable portion for normally confining said lock-bolt, means normally tending to throw the movable part of the keeper aside to release the lock-bolt, a stop mechanism holding the movable portion projected against the action of the retracting means, and an electromagnet included in a circuit to effect release of said stop mechanism, substantially as set forth.

2. A keeper or casing for confining the lock-bolt of a lock mechanism when projected, the same having a movable portion to effect

release of said lock-bolt, an electrical circuit for effecting release of said movable part, and a switch controlled by said movable part for interrupting the aforesaid electrical circuit and closing a second electrical circuit, substantially as set forth.

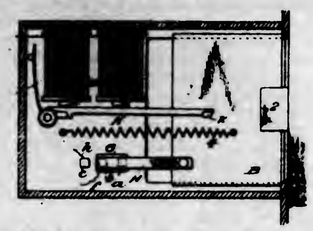

3. A series of lock-releasing devices, each comprising an electromagnet, a movable part, a group of electric contacts and a switch attached to and operating with said movable part for successively throwing the circuits into action and cutting them out of action.

4. In combination, a series of electric lock-releasing devices each included in an independent circuit and comprising a movable part, a group of electric contacts and a switch actuated by means of the movable part to successively throw the electric circuits into action and cutting them out of action, and an alarm-circuit thrown into action by the last lock-release mechanism of the series, substantially as set forth.

813,120. **STAY-BOLT.** JOHN B. TATE, Altoona, Pa., assignor to Flannery Bolt Company, Pittsburg, Pa. Filed Jan. 31, 1905. Serial No. 243,868.

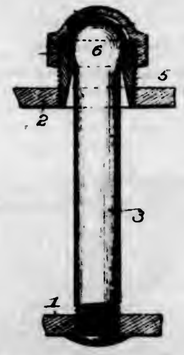

Claim.—The combination with a stay-bolt, of a sleeve or bushing having a partly-spherical socket, an enlarged substantially spherical head on the bolt to fit the socket and project outwardly beyond the same, and a cap-nut on the sleeve or bushing having a partly-spherical inner surface substantially concentric with the bolt-head and constructed to provide a chamber or clearance-space between the head of the bolt and said partly-spherical surface in the cap.

813,121. **FILTER-PRESS.** SIMON TRUSSEMENT, Louisville, Ky., assignor to Henry Vogt Machine Company, Louisville, Ky., a Corporation of Kentucky. Filed June 17, 1905. Serial No. 265,741.

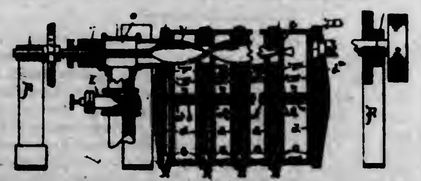

Claim.—1. In a filter-press, a series of separated filter-plates having near their tops alining apertures adapted to have the material distributed therethrough, a rotatable worm-feed passing transversely through all of the alining apertures, the filter-surfaces of the filter-plates being provided with a plurality of closely-adjoining ribs forming deep narrow channels, a filtering-screen for each of the filtering-surfaces, drains on each of the plates communicating with the channels therein and adapted to receive and discharge the liquid therefrom, means for rotating the worm-feed to clear the apertures and distribute the material, alining hubs for each of the plates, said hubs being in contact with the inner face of the filtering-screen, and abutments between the hubs, said hubs and abutments extending continuously from end to end of the filter-press and adapted to relieve the intermediate filter-plates from undue strain, substantially as described.

2. In a filter-press, a series of separated filter-plates having near their tops alining apertures adapted to have the material distributed therethrough, a rotatable worm-feed passing transversely through all of the alining apertures, the filter-surfaces of the filter-plates being provided with a plurality of closely-adjoining ribs forming deep narrow channels, a filtering-screen for each of the filtering-surfaces, drains on each of the plates communicating with the channels therein and adapted to receive and discharge the liquid therefrom, means for rotating the worm-feed to clear the apertures and distribute the material, alining hubs for each of the filter-plates outwardly extending to contact the inner face of the filtering-screen, abutments outwardly extending from the hubs and adapted to clamp the filtering-screen between the hubs and the abutments, and a bolt for each of the filter-plates passing through the hub and the clamping-abutments, the hubs and abutments extending continuously from end to end of the filter and adapted to distribute the pressure on the intermediate filter-plates to the end plates, substantially as described.

3. In a filter-press, a series of filter-plates having alining apertures adapted to receive and distribute material, a rotatable clearing-blade extending through said apertures and adapted to be rotated therein, each of the filter-plates having on its surface closely-positioned vertical ribs forming deep narrow channels between the ribs, a filtering-screen stretched over the surface of the ribs, a hub for each of the plates outwardly projecting to contact the inner face of the filtering-screen, abutments for the plates secured to the hubs and adapted to clamp the filtering-screen between the abutments and the hubs, and bolts for securing the abutments to the hubs, the abutments and the hubs being in alinement with one another and extending from end to end of the filter-press for relieving the intermediate filter-plates from undue pressure, substantially as described.

813,122. **FABRIC-MOVING MECHANISM FOR EMBROIDERING-MACHINES.** MAX TRAUTMANN, Dresden, Germany. Filed Nov. 30, 1904. Serial No. 234,944.

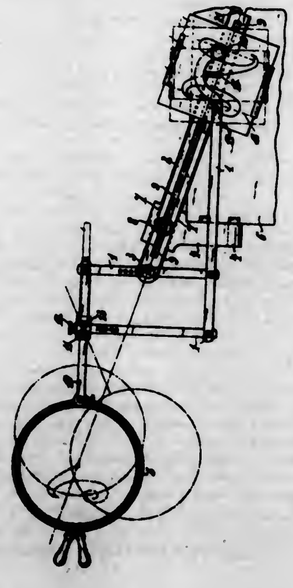

Claim.—1. A guide device for the embroidering-frame for sewing-machines, consisting of a pantograph, a sleeve swiveled to its forward upper pivot, and having its rear lower arm extended, a stylus mounted on the extended end, an embroidering-frame having a stem to slide in said sleeve and means for fixing the said stem and sleeve in any desired position, a slotted slide-bar and means for guiding the same and adjusting it in any position, a pivot at the end of said bar to carry the said pantograph and a supporting-plate for the pattern, adjustable on said slide-bar beneath the stylus substantially as described.

2. A guide device for the embroidering-frame for sewing-machines, consisting of a pantograph, an embroidering-frame adjustably mounted at its forward end, an extended rear end and a stylus mounted therein, a sliding bar having a pivot at its end to engage one of a series of holes in the pantograph-arm, means for guiding the said bar and adjusting it to any desired position, a plate mounted on said bar to support the pattern beneath the stylus and means for adjusting said plate in the manner and for the purpose, substantially as described.

3. A guide device for the embroidering-frame for sewing-machines consisting of a pantograph having a sleeve swiveled to its forward upper pivot and means for arresting the said sleeve in any desired position, an embroidering-frame having a stem to slide in said sleeve and means for adjusting the said stem therein, a sliding bar having a pivot at its forward end adapted to engage in one of a series of holes in the pantograph, a slot in said guide-bar, a plate to support the pattern, said plate having a downwardly-extending pin to engage in the slot of said guide-bar and means for clamping the said pin to the said bar, a guide for said bar and means for clamping the bar in said guide in the manner and for the purpose substantially as described.

813,123. **METHOD OF MAKING GLASS ORNAMENTS.** JACOB TRUB, Castle, N. Y. Filed Sept. 13, 1905. Serial No. 278,115.

Claim.—The herein-described improved method of making glass ornaments with marginal edges provided with innumerable angles to impart to the ornament an iridescent appearance at the edges, consisting of striking the pieces of glass with a file to produce the desired outline in the rough and subsequently filing the edges to form notches for completing the operation, the file being first dipped in water or milk.

813,124. **MULTICOLOR-PRESS.** CHARLES WILLIAMS, Spokane, Wash., assignor of fifteen-sixteenths to William H. Cowles and John F. Young, Spokane, Wash. Filed Apr. 1, 1903. Serial No. 150,563.

Claim.—1. In a multicolor-press, the combination with a plurality of type-beds, of a rotary member, a plurality of platens movably mounted on the rotary member, means for rotating the member intermittently to bring the platens successively in register with the type-beds, and means for moving the platens independently of the rotary member while the latter is at rest into contact with the type-beds.

2. In a multicolor-press, the combination with a plurality of stationary type-beds, of the plurality of coöperating platens, means for moving said platens to bring them successively in register with said type-beds, paper-feeding mechanism for automatically supplying each platen with a sheet of paper as it passes a certain point in its movement, and means for moving said platens to take an impression when they are in register with the type-beds.

3. In a multicolor-press, the combination with a plurality of type-beds, of a rotary member, a plurality of platens movably mounted on the rotary member, means for rotating the member intermittently to bring the platens successively in register with the type-beds, and means for moving the platens simultaneously and independently of the rotary member while the latter is at rest into contact with the type-beds.

4. In a multicolor-press, the combination with the framework carrying a plurality of stationary type-beds, of a rotary member carrying a plurality of pivoted platens, means for rotating said member to bring the platens successively in register with the type-beds, and means for moving the platens on their pivots to contact with the type-beds when in register therewith.

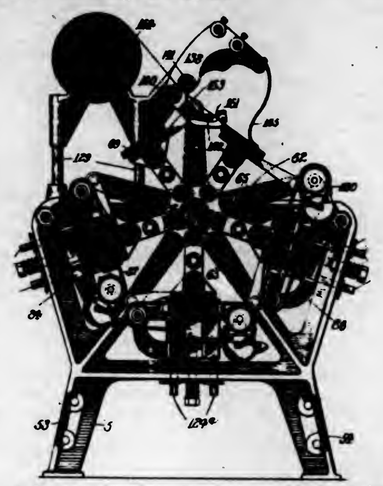

5. In a multicolor-press, the combination with the plurality of stationary type-beds, of the plurality of moving platens adapted to register successively with said type-beds, paper-feeding mechanism for feeding a sheet of paper to each platen as it passes a certain point, inking mechanism for each of the type-beds, and means for moving the platens to contact with the type-beds while the platens are in register therewith.

6. In a multicolor-press, the combination with the stationary type-beds, of the platens, means for moving the platens, to register successively with the type-beds, inking mechanism for each of said type-beds, and means for moving the platens to contact with the type-beds when they are in register therewith so that blanks carried by the platens will be printed.

7. In a multicolor-press, the combination with the stationary type-beds grouped at equal radial distances from a common center, of the shaft concentric with the general outline of said beds, the spider loosely mounted on said shaft, the platens pivoted on the spider, toggle-links between said shaft and platen, and a lock for said spider; the parts being so arranged that the movement of the shaft when the spider is locked will cause the platens to be moved to contact with the type-beds with which they are in register, and the movement of the shaft when the spider is unlocked serves to carry the spiders and platens into a new registration with the type-beds.

8. In a multicolor-press, the combination with the stationary type-beds grouped at equal radial distances from a common center, of the shaft concentric with the general outline of said type-beds, the spider loosely mounted on said shaft, means for locking said spider in certain positions of adjustment, a disk rigidly secured to said shaft, platens pivoted to the outer ends of the arms of the spider, and links connecting the disk and the platens whereby the movement of the shaft while the spider is locked serves to take the impressions, and the movement of the shaft when the spider is unlocked serves to advance it and the spider to bring the platens to a new registration.

9. In a multicolor-press, the combination with the stationary type-beds grouped at equal radial distances from a common center, of the shaft mounted concentrically with the general outline of said type-beds, the spiders loosely mounted thereon near the ends of said shaft, the platens pivoted between the opposite arms of said spiders, the disks secured upon the shafts between the spiders, means for locking said spiders from movement, and the links connecting said disks and platens so that the movement of the shaft when the spiders are locked will cause the platens to be brought into contact with the type-beds, and the movement of the shaft when the spiders are unlocked will cause the spiders and platens to be advanced to a new registration.

10. In a multicolor-press, the combination with the stationary type-beds grouped at equal radial distances from a common center,

of the shaft concentric with the general outline of said beds, the spider loosely mounted on said shaft, means for locking said spider

19. In a multicolor-press, the combination with a plurality of type-beds facing a common center, of a plurality of coöperating plat-

ply it to the surface of the inking-cylinder, and then to reverse its movements to bring it back to the inking-roller.

vanced to another new position; and fourth, to be moved outward and returned, and means for imparting such movement to the shaft.

of the shaft concentric with the general outline of said beds, the spider loosely mounted on said shaft, means for locking said spider from movement, platens pivoted to the outer ends of the arms of said spider, a disk on the shaft, and links connecting said platens and said disk, the arrangement of parts being such that when the shaft is rotated forward with the spider unlocked the spider and platens will be carried to a new registration, when a further movement of the shaft in the same direction with the spider locked will cause the platens to be moved into contact with the type-beds and retracted, when a further movement of the shaft in the same direction with the spider unlocked will cause the spider and platens to be moved to a fresh registration, and finally when the movement of the shaft is reversed and with the spider locked from movement the platens will be moved outward to contact with the type-beds.

11. In a multicolor-press, the combination with the stationary type-beds grouped at equal radial distances from a common center, of the shaft concentric with the general outline of said beds, the spider loosely mounted on said shaft, means for locking said spider from movement, platens pivoted to the outer ends of the arms of said spider, a disk on the shaft, and links connecting said platens and said disk, the arrangement of parts being such that when the shaft is rotated forward with the spider unlocked the spider and platens will be carried to a new registration, when a further movement of the shaft in the same direction with the spider locked will cause the platens to be moved into contact with the type-beds and retracted, when a further movement of the shaft in the same direction with the spider unlocked will cause the spider and platens to be moved to a fresh registration, and finally when the movement of the shaft is reversed and with the spider locked from movement the platens will be moved outward to contact with the type-beds, and means for giving said shaft a cycle of movements consisting of three forward movements and a reverse movement.

12. In a multicolor-press of the class described in which the spider is alternately locked from movement and then allowed to move, the frame, a spider mounted to rotate therein, a locking mechanism consisting of a cam-disk mounted on a shaft, a yoke on the end of each arm of the spider, and a pivoted lever extending from the cam to the yoke and adapted to be forced into engagement with said yoke by the cam when the spider is to be locked from movement.

13. In a printing-press, the combination with a movable platen, of the clamps mounted thereon and adapted to occupy clamping or non-clamping positions, springs adapted to hold said clamps yieldingly in either position, and fingers adapted to engage said clamps to move them from one to the other position as the platen moves.

14. In a printing-press, the combination with the movable platens and a type-form with which they are successively brought in register by a movement continuously forward, means for reciprocating said platens transversely to the line of movement at each registration, of the paper-clamps pivoted on the ends of said platens, and cam-fingers suitably located so that when the platen reaches its discharge position and is moved outward for the printing stroke the clamps will contact with the cam-fingers and be opened thereby.

15. In a printing-press, the combination with the moving platen occupying successive positions, and means for reciprocating it, of the clamps pivotally mounted on the ends thereof, and cam-fingers so located that when the platen is moved out and returned at the feeding position the clamps by contact with the said cam-fingers will be brought down on the platen to secure the paper in position.

16. In a printing-press, the combination with the movable platens occupying successively the discharge and feed positions, means for reciprocating said platen transversely to the line of movement at each position of the clamps pivotally mounted on the ends thereof, and duplicate cam-fingers, said fingers being adapted to be contacted by the clamps as the platens are moved outward and inward in said discharge and feed positions to respectively open the clamps and discharge the paper and to close the clamps to secure the new sheet.

17. In a printing-press, the combination with the platen, of the clamping-bars movable to and from and coöperating with the surface of said platen, the yielding rim formed on the under surface of the clamps to produce a vacuum-cavity, and the valve communicating with said cavity to permit the escape of the air therein as the clamps are brought down upon the surface of the platen.

18. In a printing-press, the combination with the platen, of the paper-clamps movably mounted thereon and adapted to coöperate therewith to hold a sheet of paper in place upon the platen, the rubber rim or boss surrounding the under surface of the clamps, the aperture through said clamps communicating with the vacuum-chamber formed by the rubber rim, and the leaf-spring valve coöperating with said aperture; substantially as and for the purpose described.

19. In a multicolor-press, the combination with a plurality of type-beds facing a common center, of a plurality of coöperating platens, means for moving said platens to bring them successively in register with said beds, and means for moving them to take an impression when they are in register.

20. In a multicolor-press, the combination with a shaft, a plurality of type-beds grouped about the shaft, a rotatable member on the shaft, a plurality of platens on the rotatable member, means for rotating the member intermittently to bring the platens successively in register with the type-beds, means for locking the rotatable member between its intermittent movements, and connections between the shaft and the platens whereby when the rotatable member is locked and the shaft turned the platens are moved to take an impression from the type-beds.

813,125. **INKING MECHANISM FOR PRESSES.** CHARLES WILLIAMS, Spokane, Wash., assignor of seven-eighths to William H. Cowles and John F. Young, Spokane, Wash. Filed Apr. 1, 1903. Serial No. 150,566.

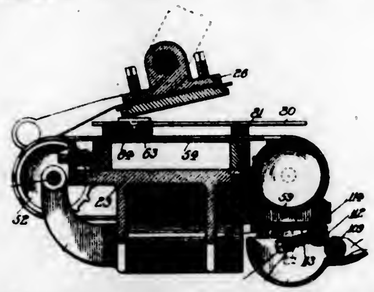

Claim.—1. In an inking mechanism, the combination with a type-bed, inking-cylinder, and means for supplying said cylinder with ink, of sprocket-wheels mounted at the sides and ends of said type-bed, a pair of sprocket-chains coöperating with said wheels and moving parallel to the type-bed and around said cylinder during a portion of their course, and inking-rollers mounted in a carriage secured at its ends to said sprocket-chains.

2. In an inking mechanism, the combination with a type-bed, inking-cylinder, and means for supplying said cylinder with ink, of sprocket-wheels mounted at the sides and ends of said type-bed, a pair of sprocket-chains coöperating with said wheels and moving parallel to the type-bed and around said cylinder during a portion of their course, inking-rollers mounted in a carriage secured at its ends to said sprocket-chains, and guides parallel to the type-bed with which the inking-roller carriage coöperates as it is reciprocating over the type-bed.

3. In an inking mechanism, the combination with a type-bed, of an inking-cylinder located adjacent one end thereof, inking-rollers adapted to reciprocate over said type-bed and around said inking-cylinder, and means for reciprocating said inking-rollers and for rotating the inking-cylinder in the opposite direction to the forward movement of the inking-rollers when in contact therewith.

4. In an inking mechanism, the combination with a type-bed, of a shaft mounted to rotate at one end thereof, a pair of sprocket-wheels secured on said shaft, an inking-cylinder shaft mounted parallel to the first-mentioned shaft at the other end of the type-bed, an inking-cylinder on said shaft, a pair of sprocket-wheels loosely mounted on the ends of the inking-cylinder shaft, a pair of sprocket-chains coöperating with said sprocket-wheels, inking-rollers mounted in a carriage secured to said sprocket-chains and reciprocated thereby over the type-bed and about the inking-cylinder, and gear mechanism between said sprocket-wheels and the inking-cylinder to cause the latter to rotate in the opposite direction to the movement of the inking-rollers when they are in contact therewith.

5. In an inking mechanism, the combination with the inking-cylinder, of the semicylindrical distributing-concave mounted parallel thereto, a shaft adapted to rock in bearings formed concentrically with the distributing-concave, a distributing-roller carried by and mounted eccentrically on said shaft, an ink-trough, an inking-roller, a ratchet secured to said inking-roller and a dog coöperating therewith to prevent its movement in but one direction, and means for rocking said shaft to cause the distributing-roller to first take ink from the inking-roller, then distribute it over the concave, finally apply it to the surface of the inking-cylinder, and then to reverse its movements to bring it back to the inking-roller.

6. In an inking mechanism, the combination with the inking-cylinder, of a pair of distributing-rollers beneath and coöperating therewith, a spring-pressed frame to hold said rollers in contact with the cylinder with a uniform pressure, and means for reciprocating the rollers longitudinally of the cylinder and independently of the frame.

7. In an inking mechanism, the combination with an inking-cylinder, of an ink-trough located beneath said cylinder and parallel thereto, a pair of distributing-rollers constantly engaging the surface of the inking-cylinder, a frame carrying said distributing-rollers, and helically-coiled expanding springs interposed between said ink-trough and said frame to hold the distributing-rollers in contact with the inking-cylinder.

8. In a device of the class described, the combination with a plurality of type-beds, of an inking mechanism for each consisting of a roller adapted to reciprocate over the bed, a reciprocating chain to which the roller is connected, a rotating shaft, and connections between said shaft; and chains for actuating the inking mechanisms simultaneously during the rotation of said shaft.

9. In a device of the class described, the combination with a plurality of type-beds, of an inking mechanism for each, a rotating shaft, and connections between said shaft and mechanism for actuating them simultaneously during the rotation of said shaft consisting of a rock-shaft connected to each inking mechanism, a link connected to each rock-shaft, and an eccentric on the rotating shaft for each link properly located so that the rock-shafts are operated simultaneously.

10. In a device of the class described, the combination with a plurality of type-beds, of an inking mechanism for each consisting of rollers adapted to reciprocate over the bed, a reciprocating chain to which the rollers are connected, a rock-shaft for each inking mechanism, connections between each rock-shaft and chain for reciprocating the chain as the shaft is rocked, a rotating shaft, and connections between said rotating shaft and the rock-shafts for actuating the inking mechanisms simultaneously during the rotation of said shaft.

11. In an inking mechanism, the combination with an inking-cylinder and means for rotating the same, of a frame carrying a pair of distributing-rollers in contact with the inking-cylinder, and means for reciprocating said rollers longitudinally of the cylinder consisting of a cam-track on the end of the cylinder, a pivoted yoke the arms of which coöperate with the said track, and arms on said yoke engaging with the ends of the distributing-rollers.

12. In an inking mechanism, the combination with an inking-cylinder and means for rotating the same, of a frame carrying a pair of distributing-rollers in contact with the inking-cylinder, and means for reciprocating said rollers longitudinally of the cylinder consisting of a cam-track on the end of the inking-cylinder, a yoke mounted to rock on a vertical axis and having arms coöperating with said cam-track, another pair of arms provided with pins projecting therefrom, and grooved disks on the ends of the distributing-rollers with which said pins coöperate so that the swinging movement of the yoke is imparted in the form of a longitudinal reciprocation to the distributing-rollers.

13. In an inking mechanism, the combination with a pair of inking-rollers, of a carriage for said rollers, and means for holding said rollers under suitable tension for engagement with the type, said means consisting of a plate secured to the carriage at each end of the rollers and having the elongated vertical bearings 68 for the ends of said rollers, the bearing-plates 72 having the bearing-surfaces engaging the tops of said roller-shafts, and the springs pulling said plates together; substantially as and for the purpose described.

813,126. **MECHANICAL MOVEMENT.** CHARLES WILLIAMS, Spokane, Wash., assignor of fifteen-sixteenths to William H. Cowles and John F. Young, Spokane, Wash. Filed Apr. 1, 1903. Renewed July 21, 1905. Serial No. 270,749.

Claim.—1. In a mechanical movement, the combination with a shaft mounted to rotate in bearings, of a frame mounted frictionally thereon, means for locking said frame at intervals to prevent its movement with the shaft, a member movably secured to said frame, a toggle-joint connection between said shaft and said member; the parts being so arranged and constructed that three forward movements of the shaft, the frame being locked from movement during the two extreme forward movements, and a reverse movement of said shaft, will cause the member first, to be advanced to a new position; second, to be moved outward and returned; third, to be advanced to another new position; and fourth, to be moved outward and returned, and means for imparting such movement to the shaft.

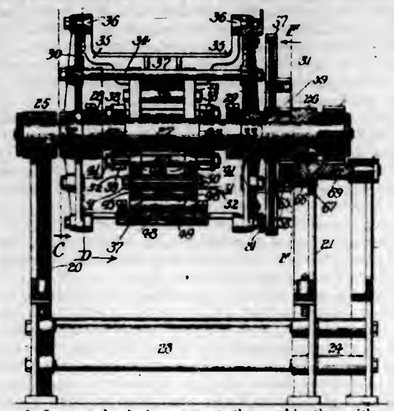

2. In a mechanical movement, the combination with a shaft mounted in suitable bearings, of a pair of arms frictionally mounted thereon, means for locking these arms from movement at each position of adjustment, a member pivotally mounted between the outer ends of these arms, and toggle-joint mechanism between said shaft and said member, the parts being arranged and constructed to operate as described.

3. In a mechanical movement, the combination with a shaft mounted in suitable bearings, of a pair of arms frictionally mounted thereon, means for locking these arms from movement at each position of adjustment, a member pivotally mounted between the outer ends of these arms, and toggle-joint mechanism between said shaft and said member, said connections consisting of a pair of disks secured on the shaft to which and to the member are pivoted a pair of links, the parts being arranged and constructed to operate as described.

4. In a mechanical movement, the combination with a shaft mounted to rotate in bearings, of arms mounted frictionally thereon, means for locking said arms at intervals to prevent their movement with the shaft, a member movably secured to the outer end of said arms, and toggle-joint connections between said shaft and said member; the parts being so arranged and constructed that three forward movements of the shaft, the arms being locked from movement during the two extreme forward movements, and a reverse movement of said shaft, will cause the member first, to be advanced to a new position; second, to be moved outward and returned, third, to be advanced to another new position; and fourth, to be moved outward and returned, and means for imparting such movement to said shaft.

5. In a mechanical movement, the combination with a shaft mounted to rotate in bearings, of arms mounted frictionally thereon, means for locking said arms at intervals to prevent their movement with the shaft, a member movably secured to the outer end of said arms, and toggle-joint connections between said shaft and said member; the parts being so arranged and constructed that three forward movements of the shaft, the arms being locked from movement during the two extreme forward movements, and a reverse movement of said shaft, will cause the member first, to be advanced to a new position; second, to be moved outward and returned; third, to be advanced to another new position; and fourth, to be moved outward and returned, and means for imparting such movement to said shaft consisting of a pinion and a gear member having three sets of teeth adapted to engage with one side of said pinion ultimately connected to said shaft and another set of teeth adapted to engage with the other side of said pinion.

6. In a mechanical movement, the combination with a shaft mounted to rotate in bearings, of arms mounted frictionally thereon, means for locking said arms at intervals to prevent their movement with the shaft, a member movably secured to the outer end of said arms, and toggle-joint connections between said shaft and said member; the parts being so arranged and constructed that three forward movements of the shaft, the arms being locked from movement during the two extreme forward movements, and a reverse movement of said shaft, will cause the member first, to be advanced to a new position; second, to be moved outward and returned; third, to be ad-

vanced to another new position; and fourth, to be moved outward and returned; and means for imparting each movement to said shaft consisting of a gear-pinion on said shaft and a short shaft having two gear-pinions thereon one of which engages with said gear-pinion on said main shaft, and the other gear-pinion, and a constantly-rotating gear-disk having three sets of teeth adapted to engage with one side of said last-mentioned pinion and a fourth set adapted to engage with the other side of said pinion.

7. In a mechanical movement, the combination with a shaft mounted to rotate in suitable bearings, of a spider frictionally mounted thereon and having a plurality of equidistant arms, members movably mounted on the outer ends of said arms, and toggle-joint connections between said members and said shaft; substantially as and for the purpose described.

8. In a mechanical movement, a shaft mounted to rotate in suitable bearings, a pair of spiders frictionally mounted thereon each provided with the same number of equidistant arms, swinging members pivotally mounted between the outer ends of the opposed arms, locking mechanism to lock said spiders from movement at any position of adjustment, and toggle mechanism between each of said members and said shaft; substantially as and for the purpose described.

9. In a mechanical movement, a shaft mounted to rotate in suitable bearings, a pair of spiders frictionally mounted thereon each provided with the same number of equidistant arms, swinging members pivotally mounted between the outer ends of the opposed arms, locking mechanism to lock said spiders from movement at any position of adjustment, and toggle mechanism between each of said members and said shaft, said toggle mechanism consisting of a pair of collars secured on said shaft, and links connecting each of said collars and said members; substantially as and for the purpose described.

10. In a mechanical movement, the combination with a shaft mounted in bearings, of a frame frictionally mounted thereon, means for locking the frame against movement at each position of adjustment, a member pivotally mounted on the frame; and a toggle-joint connection between the shaft and member, the parts being arranged and constructed to operate as described.

818,127. **PAPER-FEEDING MECHANISM.** CHARLES WILLIAMS, Spokane, Wash., assignor of fifteen-sixteenths to William H. Cowles and John F. Young, Spokane, Wash. Filed Apr. 1, 1903. Renewed July 21, 1905. Serial No. 270,741.

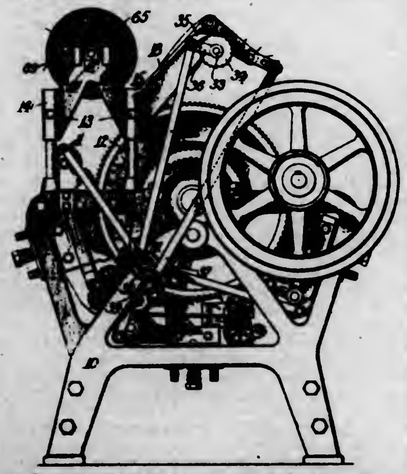

Claim.—1. In a device of the class described, the combination with the support for a roll of paper, of a stationary frame, a pair of feed-rollers mounted on the frame, a ledger-blade fixed on the frame, a swinging cutting-blade coöperating therewith, and mechanism for alternately operating the feed-rollers and the cutting-blade; substantially as and for the purpose described.

2. In a device of the class described, the combination with a paper-roll support, of a stationary frame, a pair of feed-rollers mounted in bearings on the frame, means for adjusting the amount of movement given to said rollers at each operation, a ledger-blade fixed on the frame, a swinging cutting-blade coöperating therewith, means for regulating the time and throw of said swinging blade, and means for alternately operating said feed-rollers and swinging said cutting-blade; substantially as and for the purpose described.

3. In a device of the class described, the combination with the roll-support and the feed-rollers, of a ledger-blade, a swinging and cutting blade coöperating therewith, and means for swinging said blade consisting of a continuously-rotating shaft carrying a slotted arm, a bearing-pin secured in said slotted arm, a link secured to said bearing-pin, a rock-shaft having a slotted arm to the other end of which said link is pivotally secured, another slotted arm on said rock-shaft, and a link connecting said last-mentioned slotted arm and the swinging cutting-blade.

4. In a device of the class described, the combination with the paper-roll support, of the paper-feeding rolls, the ledger-blade and the coöperating swinging cutting-blade, a continuously-rotating shaft carrying an arm slotted at both ends, and connections with one slotted end of said arm for operating the paper-feeding rolls and connections with the other slotted end of said arm for alternately operating the swinging knife.

5. In a device of the class described, the combination with the paper-roll-holding mechanism, of the framework therefor having an intermittently-rotating shaft and a rock-shaft mounted therein, a pair of feed-rolls mounted in said framework and actuated from said intermittently-rotated shaft, a fixed ledger-blade and a swinging cutting-blade coöperating therewith actuated by the rock-shaft, a continuously-rotating shaft, and connections between said continuously-rotating shaft and the intermittently-rotated shaft and the rock-shaft for alternately operating the feeding-rolls and the cutting-blade.

6. In a device of the class described, the combination with the paper-roll-holding mechanism, of the framework therefor having an intermittently-rotating shaft and a rock-shaft mounted therein, a pair of feed-rolls mounted in said framework and actuated from said intermittently-rotated shaft, a fixed ledger-blade and a swinging cutting-blade coöperating therewith actuated by the rock-shaft, a continuously-rotating shaft, and connections between said continuously-rotating shaft and the intermittently-rotated shaft and the rock-shaft for alternately operating the feeding-rolls and the cutting-blade, said connections consisting of a slotted bar on the continuously-rotating shaft having an adjustable bearing-block in one end thereof to which is pivotally secured a link pivoted to a swinging arm carrying a dog engaging a ratchet-wheel secured on said intermittently-rotated shaft and another link pivotally secured to the other end of the slotted bar at one end and at the other end to an arm secured to said rock-shaft.

7. In a device of the class described, a support for paper-rolls consisting of the shaft mounted at one end in the bearing-block 65 having the set-screw 61 secured thereto for moving the bearing longitudinally of the shaft and means for adjusting the shaft at each end transversely, said means consisting at one end of the stationary set-screw with the coöperating set-screw for engaging the two sides of said bearing and at the other end of the helically-coiled expanding-spring and the set-screw for engaging the opposite sides of said bearing; substantially as and for the purpose described.

818,128. **PAPER-FIXTURE.** HARRY J. WILLIAMS, Meriden, Conn., assignor to United States Envelope Company, Springfield, Mass., a Corporation of Maine. Filed June 19, 1903. Serial No. 162,164.

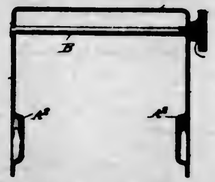

Claim.—1. A fixture of the class described comprising a metal plate having its end portions bent forward to form the side arms of the fixture, said arms having inwardly-extending projections opposite each other to form the journals for a roll of paper and an adjustable tie-bolt connecting said arms in rear of the projections, whereby the arms may be moved toward each other to press the inner faces of the arms against the sides of the roll to create friction; substantially as described.

2. A fixture of the class described comprising an integral resilient sheet-metal plate having its end portions bent forward to form side arms or brackets, said arms having integral inwardly-extended, annular, tapered projections forming journals for the roll held between the arms, and an adjustable tie-bolt connecting the arms whereby said arms may be pressed against the sides of the roll to create friction, said tie-bolt being in rear of the roll, whereby a roll may be inserted or removed without the removal of the tie; substantially as described.

3. A fixture of the class described comprising a sheet-metal plate having its end portions bent forward to form side arms between which the roll is clamped and supported, a tie having one end affixed to one of said arms near its base and passing through the opposite arm and a thumb-nut threaded on the free end of the tie outside of the arms, said tie being located in rear of the position occupied by the roll and being adapted to draw the arms together against the resiliency of the metal to clamp the roll and form a friction-brake.

818,129. **MECHANICAL MOVEMENT.** RICHARD T. WINSOR, Providence, R. I., assignor to Brown and Sharpe Manufacturing Company, Providence, R. I., a Corporation of Rhode Island. Filed Jan. 16, 1904. Serial No. 189,318.

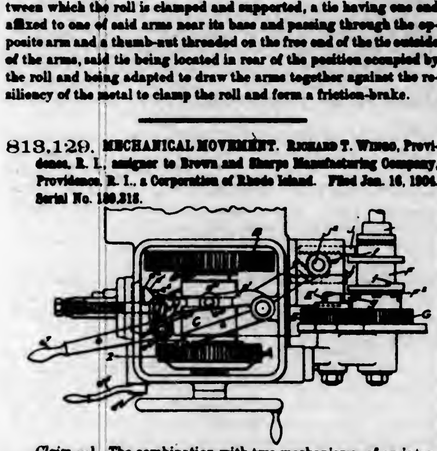

Claim.—1. The combination with two mechanisms, of an intermittently-operating mechanism, devices for throwing either of the two mechanisms into and out of operation and throwing the intermittent mechanism into operation when the throwing of either of the two mechanisms into operation follows the throwing of the other out of operation, substantially as described.

2. The combination with two mechanisms, of a clutch for throwing either mechanism into operation, and an intermittently-operating mechanism controlled through the movement of said clutch, substantially as described.

3. The combination with two mechanisms, of a clutch for throwing either mechanism into operation, an intermittently-operating clutch controlled through the movement of said former clutch, substantially as described.

4. The combination with two mechanisms, of a clutch for throwing either mechanism into operation, a second clutch, devices intermediate of the clutches for throwing said second clutch into operation when the engagement of the first clutch with either mechanism follows its disengagement from the other mechanism, substantially as described.

5. The combination of two mechanisms, a clutch for throwing either mechanism into operation, a second clutch, devices intermediate the clutches for throwing the second clutch into operation when the engagement of the first clutch with either mechanism follows its disengagement from the other mechanism and for throwing said second clutch out of operation after a half-revolution, substantially as described.

6. The combination with a mechanism, of a clutch for throwing said mechanism into and out of operation, a clutch-shifting device, a second clutch, devices for engaging and disengaging said second clutch controlled by the movement of the device for shifting the first clutch, substantially as described.

7. The combination with two mechanisms, of a clutch for throwing either mechanism into operation, a second clutch, rotary and non-rotary members coöperating to throw said second clutch out of operation, devices connected with said first clutch for withdrawing a non-rotary member from engagement with a rotary member and simultaneously moving a non-rotary member into the path of a rotary member, substantially as described.

8. The combination with a clutch, of one or more cams carried by the clutch, one or more abutments for coöperating therewith to hold the clutch out of operation, a second clutch, a device for throwing said second clutch into operation, and connections between said device and the abutment or abutments for withdrawing an abutment from engagement with a cam and simultaneously moving an abutment into the path of a cam, substantially as described.

9. The combination with two mechanisms, of a clutch for throwing either mechanism into operation, an intermittently-operating mechanism including a driven gear, a driving-gear having diametrically opposite blank spaces, a clutch for rotating said driving-gear, one or more cams carried by said clutch, one or more abutments for coöperating therewith to hold the clutch out of operation, devices connected with said first clutch for withdrawing an abutment from engagement with a cam and simultaneously moving an abutment into the path of a cam, locking-segments rotating with the driving-gear and coöperating locking-shoes rotating with the driven gear, substantially as described.

10. The combination with a driven gear, of a driving-gear having blank spaces, locking-segments corresponding with the blank spaces, pairs of locking-shoes rotating with the driven gear, each pair being separated by a clearance-space; a clutch for intermittently rotating the driving-gear, rotary and non-rotary members for throwing the clutch into and out of operation, and means for disengaging a non-rotary member from a rotary member and simultaneously moving a non-rotary member into the path of a rotary member, substantially as described.

11. The combination with a driven gear, of a driving-gear which makes the same number of revolutions and is provided with diametrically opposite blank spaces, and mechanism for intermittently rotating the driving-gear the distance between successive blank spaces, substantially as described.

12. The combination with a driven gear, of a driving-gear which makes the same number of revolutions and is provided with diametrically opposite blank spaces, a clutch for driving said gear, and devices for disengaging said clutch at each half-revolution, substantially as described.

13. The combination with a driven gear, of a driving-gear having a blank space, a locking-segment rotating with the driving-gear, coöperating locking-shoes rotating with the driven gear and separated by a clearance-space for the locking-segments, substantially as described.

14. The combination with a driven gear, of a driving-gear having diametrically opposite blank spaces, locking-segments corresponding with the blank spaces, two pairs of locking-shoes rotating with the driven gear each pair being separated by a clearance-space for the coöperating locking-segments, substantially as described.

818,130. **WOVEN PILE FABRIC.** JOHN SIEBERMAN, Philadelphia, Pa., assignor to Philadelphia Tapestry Mills, a Corporation of Pennsylvania. Filed Jan. 18, 1906. Serial No. 296,806.

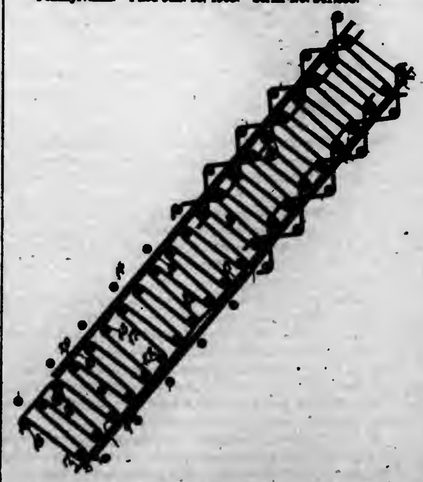

Claim.—1. In a double-pile fabric having a double upper and a double lower weft plane, a body-warp interposed between the weft-threads in each plane, a pile-warp engaging adjoining wefts of the inner rows of wefts singly and binding-warps passing alternately

over one of the weft-threads of the outer row of wefts and under two

6. In a pile fabric, inner and outer planes of wefts and a com-

6. In a device of the character described, a gage, a projecting

2. A steam-generator comprising a vertical outer casing and

over one of the weft-threads of the outer row of wefts and under two of the weft-threads of the inner row of wefts in each plane.

2. In a double-pile fabric, inner and outer rows of weft-threads, a stuffer passing between said rows, pile-warps passed around each of the inner weft-threads and binder-warps binding two inner weft-threads and one outer weft-thread in one shed, whereby the two inner weft-threads with the pile-warps lapped around them are tightly bound side by side with the outer weft-thread bound with the two inner weft-threads at the junction of the same.

3. In a double-pile fabric, weft-threads arranged in inner and outer planes, a binding-warp uniting a group of inner weft-threads in one plane to outer weft-threads, and a pile-warp uniting all of the inner weft-threads in the two inner planes with a grouping differing in number from that embraced in the inner plane by the binding-warp.

4. In a double-pile fabric, inner and outer planes of weft-threads, a binding-warp uniting a plurality of inner weft-threads to single outer weft-threads and a pile-warp passing around each of the inner weft-threads individually.

5. In a pile fabric, weft-threads in two planes, pile-warps evenly distributed between the wefts and lapped around weft-threads in one plane and warps binding wefts of the said plane to wefts in the other plane in a different grouping from that in which the pile-warps lap them.

813,131. **WOVEN PILE FABRIC.** JOHN ZIMMERMAN, Philadelphia, Pa., assignor to Philadelphia Tapestry Mills, a Corporation of Pennsylvania. Filed Jan. 18, 1905. Serial No. 241,580.

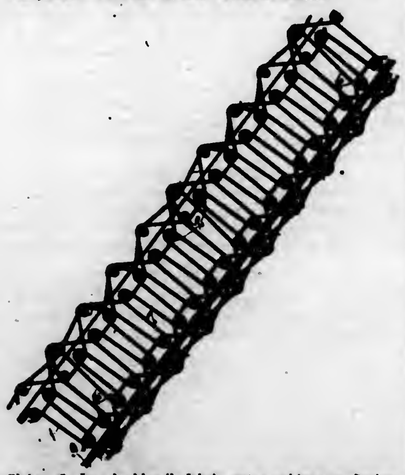

Claim.—1. In a double-pile fabric, outer and inner weft planes in each fabric and a combined pile and binding warp lying between the planes of weft-threads of one fabric in a portion only of its extent when not making pile.

2. In a double-pile fabric, a plurality of rows of weft-threads forming an upper and a lower cloth in combination with a pile-warp crossing from one cloth to the other and engaging with an inner row of wefts of the upper and lower cloth and an outer row of wefts upon one side only of one of the cloths.

3. A double-pile fabric having in each single fabric two weft planes, warp-threads passing from one fabric to the other to form the pile, and when not thus disposed passing to the back of the single fabrics where they are interwoven with the wefts of the outer plane.

4. In a double-pile fabric, upper and lower weft planes, body-warps between the wefts in said planes, and pile-warps engaging with the outer weft of one plane and the inner wefts of both planes to serve both as figure-warps and binding-warps.

5. In a double-pile fabric having in each single fabric two weft planes, a pile-warp passing alternately above and below the weft of one of the outer rows when not in the pile and when in the latter engaging with the inner rows of wefts for a predetermined number of picks, pile-warps passing alternately above and below each weft of the other outer row and binding-warps passing alternately over one of the outer rows of wefts and under two of the inner rows of wefts.

6. In a pile fabric, inner and outer planes of wefts and a combined pile and binding warp forming a plurality of double passages of pile between binding positions.

7. In a pile fabric, inner planes of weft-threads, an outer plane of weft-threads and a warp-thread alternating around wefts of opposite inner planes and also above and below successive wefts of the outer plane.

8. In a double-pile fabric a plurality of inner and outer planes of weft-threads and a warp continuously binding the threads of an outer plane of wefts together and intermittently uniting threads of opposite inner planes.

9. In a pile fabric, a plurality of planes of outer warps, a plurality of planes of inner warps each having its threads a multiple of those of the corresponding outer plane, a combined pile and binding warp making cloth with the wefts of an outer plane and a binding-warp uniting the wefts of this outer plane to the wefts of its inner plane in the multiple relation existing between the threads of the planes.

10. In a double-pile fabric, outer and inner planes of weft-threads, a combined pile and binding warp uniting the wefts of the outer plane upon one side at all times and extending through and around the inner wefts of the opposite side to form pile for a portion of the double fabric, and a combined pile and binding warp upon the opposite side uniting the wefts of the outer plane upon this opposite side and forming pile for another portion of the double fabric.

11. In a double-pile fabric, inner and outer weft-threads, a pile-warp passing around inner wefts in both planes throughout a portion of the fabric but passing at intervals outside of outer weft threads and independent binding-warps uniting inner and outer weft-threads.

12. In a double-pile fabric, inner and outer weft-threads upon each side of the fabric, a combined pile and binding warp acting as a pile throughout one portion of the fabric and as a binder upon one side of the fabric throughout a succeeding portion of the fabric and an independent binding-warp uniting the wefts upon the side of the fabric united by the combined pile and binding warp.

13. In a double-pile fabric, inner and outer weft-threads upon each side of the fabric, a combined pile and binding warp acting as a pile throughout one portion of the fabric and a binder upon one side of the fabric throughout the succeeding portion of the fabric, and an independent binding-warp uniting the wefts upon the side of the fabric united by the combined pile and binding warp and an independent binding-warp upon the opposite side of the fabric.

14. In a double-pile fabric, inner and outer weft-threads upon each side of the fabric, combined pile and binding warps binding in successive portions of the fabric and forming pile at intervals, and an independent binding-warp uniting the inner and outer weft-threads throughout the successive sections.

813,132. **PILE-GAGE.** JOHN ZIMMERMAN, Philadelphia, Pa., assignor to Philadelphia Tapestry Mills, a Corporation of Pennsylvania. Filed Jan. 18, 1905. Serial No. 241,540.

Claim.—1. In a device of the character described, a gage, an arm hinged thereto, a depending end for said arm, a lay coacting with the depending end and means whereby said arm may be raised and lowered when the shuttle passes through the shed.

2. In a device of the character described, a gage, an arm hinged thereto, means coacting with said end, whereby said arm is raised or lowered when the shuttle is passing through the shed, and means for drawing the gage out of the cloth during the process of weaving.

3. In a device of the character described, a gage, an arm hinged thereto, a lay coacting with said arm, means whereby the latter is raised and lowered when the shuttle is passed through the shed, and means for drawing the gage out of the cloth during the process of weaving.

4. In a device of the character described, a gage, an arm hinged thereto, a depending end on said arm, a lay, a strip secured thereon in the path of which said depending end passes and by means of which the movements of said gage are regulated and means for actuating said arms.

5. In a device of the character described, a gage, a swinging arm secured thereto, a depending end on said arm, an upper and a lower eye on said end, a cord secured to said upper eye and to means by which said cord is actuated, suitable means attached to said lower eye, a lay and means thereon whereby the movements of said gage are automatically regulated.

6. In a device of the character described, a gage, a projecting ring at one end thereof, an arm having an opening adapted to receive said ring which latter forms a hinge on which said arm is movable, means for raising and lowering said arm and automatic means for regulating the movement of said gage.

7. In a device of the character described, a pile-gage having a swinging arm, a depending end, a lay and a bar secured thereto which acts in conjunction with said end to regulate the movement of said gage.

8. A floating pile-gage and means for longitudinally moving the gage.

9. A floating pile-gage, a lay, and means upon the gage coöperating with said lay to cause longitudinal movement of the gage.

10. A floating pile-gage having a pivoted arm, means for maintaining suitable longitudinal position of the gage by means of the arm and means for shifting the arm vertically.

11. A floating pile-gage having a pivoted arm and means for shifting said arm vertically.

12. A floating pile-gage having a pivoted arm, a lay, a projection upon the arm engaged by movement of the lay and means for shifting the arm vertically.

13. A floating pile-gage and means for intermittently moving the gage longitudinally.

14. A floating pile-gage having a pivoted arm and means for shifting said arm to permit weaving in either of the fabrics at will.

15. A floating pile-gage having a pivoted arm, a projection upon said arm, a lay causing engagement with said projection to produce longitudinal movement of the gage intermittently and means for varying the vertical position of the arm.

16. A longitudinally-movable pile-gage.

17. A pile-gage having an arm connected therewith and means for producing vertical and longitudinal movement thereof.

18. A pile-gage and means for producing intermittent positive partial withdrawal from the pile.

813,133. **STEAM-GENERATOR.** CHARLES P. ALTHANS, Lyon, France. Filed May 9, 1905. Serial No. 259,580.

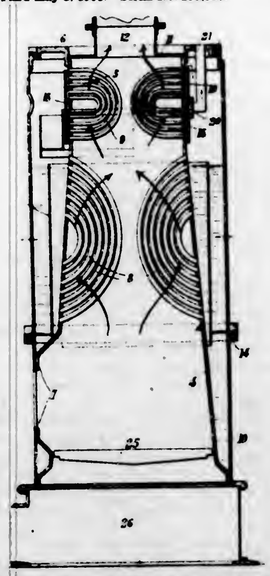

Claim.—1. A steam generator and superheater comprising a cylindro-conical furnace provided with a set of steam-superheater tubes and a set of water-evaporator tubes, all bent in curves, the steam-superheater tubes being combined with partitions so as to cause the steam to pass successively through all the rows of tubes before escaping, a feed-tank being preferably arranged in the interior of the steam-space and discharging water outside a water-circulator diaphragm arranged between the furnace-wall and the outer casing substantially as described.

2. A steam-generator comprising a vertical outer casing and inner furnace-casing, sets of curved water circulating and evaporator tubes arranged within the furnace-casing and having their ends communicating with the space between the said outer and inner casings, sets of curved superheater-tubes similarly set in the upper part of the interior of the furnace-casing, partitions such as 18, 19 around the tube ends, and a feed-water tank adjacent to the superheater steam-tubes, substantially as described.

813,134. **CONVEYER.** CHARLES H. ANDERSON, Chicago, Ill. Filed Aug. 8, 1904. Renewed Aug. 4, 1905. Serial No. 273,796.

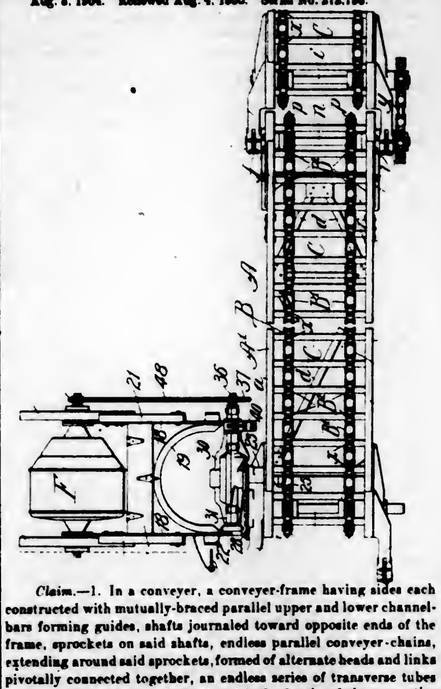

Claim.—1. In a conveyer, a conveyer-frame having sides each constructed with mutually-braced parallel upper and lower channel-bars forming guides, shafts journaled toward opposite ends of the frame, sprockets on said shafts, endless parallel conveyer-chains, extending around said sprockets, formed of alternate heads and links pivotally connected together, an endless series of transverse tubes connected toward opposite ends with the heads of the respective chains, shafts passing through and journaled in said tubes and movable at their ends in said guides, and driving means for the chains.

2. In a conveyer, a conveyer-frame having sides each constructed with mutually-braced parallel upper and lower channel-bars forming guides, shafts journaled toward opposite ends of the frame, sprockets on said shafts, endless parallel conveyer-chains, extending around said sprockets, formed of alternate heads and links pivotally connected together, an endless series of transverse tubes connected toward opposite ends with the heads of the respective chains, shafts passing through and journaled in said tubes, rollers on the ends of said shafts traveling in said guides, and driving means for the chains.

3. In a conveyer, a conveyer-frame having sides each constructed with mutually-braced parallel upper and lower channel-bars forming guides, shafts journaled toward opposite ends of the frame, sprockets on said shafts, endless parallel conveyer-chains, extending around said sprockets, formed of alternate heads and links pivotally connected together, an endless series of transverse tubes connected toward opposite ends with the heads of the respective chains, shafts passing through and journaled in said tubes provided at their ends with rollers moving in said guides, the lower said guides having extended portions to receive and direct the rollers into the lower guides, and driving means for the chains.

4. In a conveyer, an endless carrier comprising parallel chains formed with alternate links and heads, an endless series of transverse tubes connected toward opposite ends with the heads of the respective chains, and shafts extending through and beyond the ends of said tubes and journaled toward opposite ends in bearings in the tubes, the tubes forming oil-receptacles between the bearings therein.

5. In a conveyer, an endless carrier comprising parallel chains formed with alternate links and heads, an endless series of trans-

Claim.—1. In a metal-shaping machine, the combination with a suitable frame, pivoted forming-arms slidably mounted upon said

2. A water-heater comprising a vessel having an intermediate

be wound upon said roll, means to rotate said roll, and means to

5. In a conveyer, an endless carrier comprising parallel chains formed with alternate links and heads, an endless series of transverse tubes extending toward opposite ends through the heads of the respective chains, pins fastening the tubes in the heads, shafts extending through and beyond the ends of said tubes and journaled toward opposite ends in bearings in the tubes, and guides for the ends of said shafts.

6. In a conveyer, the combination with a portable conveyer-frame, an endless traveling carrier thereon, and a drive-shaft on said frame for the carrier, of operating means therefor comprising a separately-portable electric motor having a frame, and means for pivotally connecting together and disconnecting said conveyer and motor-frames, substantially as and for the purpose set forth.

7. In a conveyer, the combination with a portable conveyer-frame, an endless traveling carrier thereon, and a drive-shaft on said frame for the carrier, of operating means for the carrier comprising a separately-portable electric motor, a wheeled truck-frame on which said motor is mounted, and means for pivotally connecting together and disconnecting said conveyer-frame and truck-frame, substantially as and for the purpose set forth.

8. In a conveyer, the combination with a portable conveyer-frame, an endless traveling carrier thereon, and a drive-shaft on said frame for the carrier, of operating means for the carrier comprising a separately-portable motor, hollow trunnions on the motor-casing through one of which the armature-shaft extends, truck-wheels journaled on said trunnions, a truck-frame pivoted to said trunnions, means for pivotally connecting together and disconnecting said conveyer-frame and truck-frame, and a detachable drive-belt connecting the armature-shaft and carrier drive-shaft.

9. In a conveyer, the combination with a portable conveyer-frame, an endless traveling carrier thereon and a shaft at one end of said carrier for driving the same, of a gear on said shaft, a counter-shaft journaled on the frame and having a pinion engaging said gear, a bevel-gear on said counter-shaft, a swinging frame pivotally mounted about the counter-shaft having attaching-arms, a drive-shaft extending through one of said arms and carrying a bevel-pinion meshing with said bevel-gear, and operating means for the carrier comprising a separately-portable motor, a wheeled truck-frame on which said motor is mounted, means for pivotally connecting said truck-frame to the said arms, and a detachable driving connection between the said motor and drive shaft.

813,185. **HORSESHOE-SHAPING MACHINE.** CHARLES ARBUTHNOT, McKees Rocks, Pa. Filed Feb. 16, 1905. Serial No. 245,873.

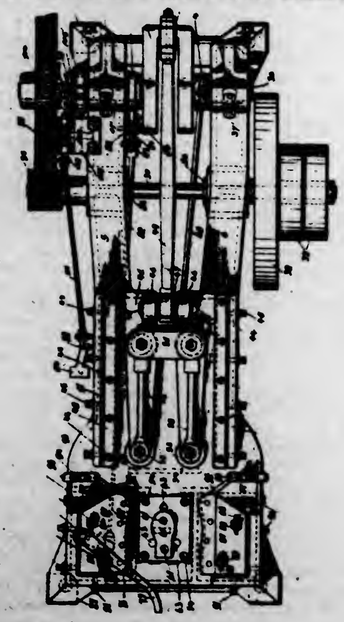

Claim.—1. In a metal-shaping machine, the combination with a suitable frame, pivoted forming-arms slidably mounted upon said frame, a detachable die, elevating mechanism mounted adjacent to said die, ejector mechanism carried by said frame, means to reciprocate said forming-arms, means to actuate said elevating mechanism, and means to operate said ejector mechanism substantially as described.

2. In a machine of the character described, the combination with a suitable frame, pivoted forming-arms slidably mounted on said frame, a stationary die and spring-pressed guiding-arms symmetrically converging toward and located adjacent to said die and adapted to guide a blank while it is being moved by the forming-arms toward the die.

3. In a machine for forming metal, the combination of reciprocating forming-arms adapted to engage a blank, a die around which said blank is adapted to be formed, vertically-movable pins to elevate said blank after it has been formed, and a horizontally-movable ejector to remove said formed blank from said die, substantially as described.

813,186. **TROPOSCOPE.** SAMUEL W. BALCH, Montclair, N. J. Filed May 11, 1905. Serial No. 260,641.

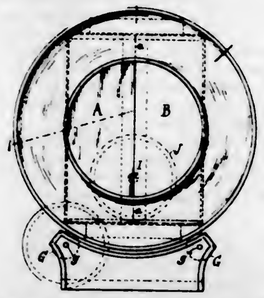

Claim.—1. The combination with a rotatably-mounted circular frame provided with an opening, of two plane mirrors set at right angles to each other with the straight edge of one of the mirrors meeting the other mirror and the meeting line of the mirrors opposite the opening in the circular frame, whereby the mirrors can be conveniently rotated about an axis perpendicular to the meeting line and the face of the frame, substantially as described.

2. The combination with a frame provided with an opening, of two plane mirrors set at right angles to each other with the straight edge of one of the mirrors meeting the other mirror and the meeting line of the mirrors opposite the opening in the frame, and a pivoted support for the frame, the axis of which is perpendicular to the meeting line of the mirrors and the face of the frame, substantially as described.

3. The combination with a circular frame provided with an opening, of two plane mirrors set at right angles to each other with the straight edge of one of the mirrors meeting the other mirror and the meeting line of the mirrors opposite the opening in the circular frame, and a pivoted support for the frame, the axis of which is perpendicular to the meeting line of the mirrors and the face of the frame, substantially as described.

4. The combination with a circular frame provided with an opening, of two plane mirrors set at right angles to each other with the straight edge of one of the mirrors meeting the other mirror and the meeting line of the mirrors opposite the opening in the circular frame, and means for rotating the mirrors about an axis perpendicular to the meeting line and face of the frame, substantially as described.

813,187. **HEATER ATTACHMENT TO STOVES.** REBIA BELL, Jacksonville, Fla., assignor of one-half to John Walker, Jacksonville, Fla. Filed May 1, 1905. Serial No. 258,220.

Claim.—1. A water-heater comprising a vessel having an intermediate vertical flue for connection at one end to the smoke-flue collar of a cook-stove and with the smoke-flue of the stove leading from the other end, the rear and end walls of the vessel extended below the bottom of the same and resting upon the stove, whereby a warming-chamber is provided between the vessel and stove and the bottom of the vessel protected from the direct radiation from the stove.

2. A water-heater comprising a vessel having an intermediate vertical flue for connection at one end to the smoke-flue collar of a cook-stove and with the smoke-flue of the stove leading from the other end, said flue being located relatively near the front of the vessel with the rear portion of the same extending rearwardly of the stove, and with the rear and end walls of the vessel extended downwardly and terminating in inwardly-extending flanges for engagement with the top of the stove, whereby a warming-chamber is provided between the vessel and stove, closed at the rear, bottom, and ends and open at the front.

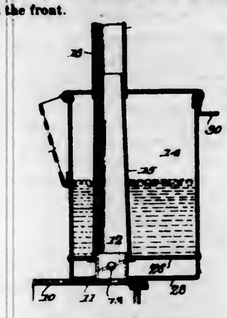

813,138. **NEEDLE-THREADER FOR SEWING-MACHINES.** SIGMUND BLUMENTHAL, New York, N. Y. Filed May 12, 1905. Serial No. 260,105.

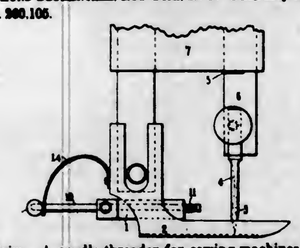

Claim.—A needle-threader for sewing-machines comprising a slightly-bent guide-tube mounted on the machine adjacent to the needle, a threader consisting of a straight, flattened wire, pointed at one end and having a substantially L-shaped opening near that end, adapted to enter and pass through the eye of the needle to engage the thread, said threader closely fitting and slidably secured in the bent guide-tube and means for indicating that the threader and eye of the needle are in operative alinement.

813,139. **FIRE-ESCAPE.** JOHN H. BROWN and CONSTANT FRANCEUS, Pittsburg, Pa. Filed Apr. 14, 1905. Serial No. 255,620.

Claim.—1. A fire-escape comprising a pivotally-mounted frame, rails slidably mounted upon said frame, secondary rails pivotally connected to the first-named rails, a roll journaled in the secondary rails, a flexible strip of material carried by said frame and adapted to be wound upon said roll, means to rotate said roll, and means to mount said fire-escape adjacent to a window, substantially as described.

2. A fire-escape comprising a plurality of frames adapted to fold upon one another, a strip of flexible material carried by said frames, means to retain said frames in extended position, and means to pivotally mount said fire-escape adjacent to a window of a compartment, substantially as described.

3. In a fire-escape, the combination with a window of a building, of a frame pivotally mounted within said building and adapted to be swung without said building, extension-frames carried by the first-named frame, a strip of flexible material carried by said frames, shields carried by said frames, a roll journaled in one of said frames and adapted to carry said material, and means to support said frames in an extended position, substantially as described.

813,140. **EYE FOR GARMENT-HOOKS.** TILLIE J. BROWNING, Philadelphia, Pa. Filed May 5, 1905. Serial No. 259,954.

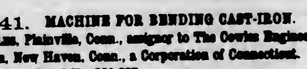

Claim.—1. An eye comprising a shank substantially straight in plan and a single loop at each end formed by an extension integral with the wire of the shank, said loops being approximately square in plan and the sides of the squares extending respectively substantially parallel with and at right angles to the direction of extension of the shank.

2. An eye formed of a continuous piece of wire formed at each end into a single loop and between its ends into a connecting-shank, each loop being composed of five bends extending, from the adjacent end of the shank, successively transversely, forwardly, transversely, backwardly and transversely, thereby forming a square-shaped loop with sides extending respectively substantially parallel with, and at right angles to, the direction of extension of the shank.

3. An eye consisting of a shank, and a single integral square-shaped loop at each end, each of which loops connects with the shank at a point substantially midway between one of the sides of the square.

4. An eye consisting of end loops connected by an integral shank, each loop extending, from its junction with the shank, successively transversely, forwardly, transversely, backwardly and transversely, the extreme end of the last or fifth bend extending in front of the shank and lying side by side with the wire at approximately the junction of the shank and loop.

818,141. **MACHINE FOR BENDING CAST-IRON.** BURTON S. COWLES, Plainville, Conn., assignor to The Cowles Engineering Corporation, New Haven, Conn., a Corporation of Connecticut. Filed Aug. 17, 1904. Serial No. 221,067.

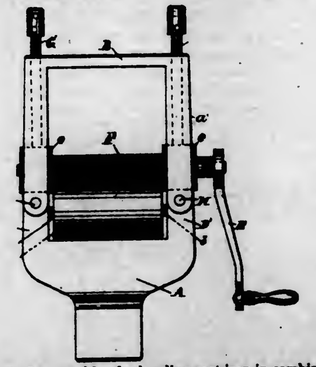

Claim.—1. In a machine for bending cast-iron in combination, a single supporting-roll and a bending-roll directly above the supporting-roll between which a rod of iron may be passed, the face of said bending-roll knurled, substantially as described.

2. In a machine for bending cast-iron in combination, a supporting-roll and a bending-roll of one-half the diameter of the supporting-roll, said bending-roll having its face knurled, substantially as described.

3. In a machine for bending cast-iron in combination, a supporting-roll, a bending-roll adjacent to the same whereby a bar of iron may be passed through and compressed between said rolls, said bending-roll of smaller diameter than the diameter of the supporting-roll and having its face knurled, substantially as described.

818,142. KNIFE-CLEANING MACHINE. CHARLES H. J. DILG, New York, N. Y. Filed Nov. 25, 1904. Serial No. 234,126.

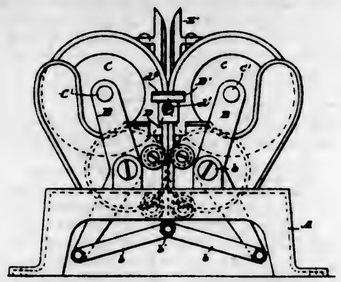

Claim.—1. In a machine of the class described, a polishing-roll, in combination with a guide having jaws or members, and means for sustaining the latter so as to move relatively laterally and to hold the article to be treated in a relatively vertical position during said lateral movement and to be moved by the said article to accommodate and adjust itself to any variation of the said roll.

2. In a machine of the character described, a polishing-roll, in combination with a guide having jaws or members, and means for sustaining the latter so as to move relatively laterally and to hold the article to be treated in a relatively vertical position during said lateral movement, the said jaws or members having a slot or recessed portion formed in each of the opposite faces of the same.

3. In a machine of the character described, a polishing-roll, in combination with a guide having jaws or members, and means for sustaining the latter so as to move relatively laterally and to hold the article to be treated in a relatively vertical position during said lateral movement, the said jaws or members having lateral arms or extensions.

4. In a machine of the character described, a polishing-roll, and means for adjusting the position of the same, in combination with a relatively laterally movable guide for the article to be treated, and with means to hold the said guide in a normal median position.

5. In a machine of the character described, a polishing-roll, and means for actuating the same, in combination with a rest rotatable for purposes of adjustment, and means for locking the same in its different adjusted positions so as to present different portions of its face to the article to be treated.

6. In a machine of the character described, a polishing-roll, and means for actuating the same, in combination with a rest and means for adjusting the same either revolubly or vertically.

7. In a machine of the character described, a rest for the article to be treated, provided with an elevation located at the edge of the said rest and lying intermediate the face of the said rest and the said article.

8. In a machine of the character described, a movable rest for an article to be treated, and a roller to guide the movement of the said rest.

9. In a machine of the character described, a polishing-roll, and means for actuating the same, in combination with a rest for an article to be treated, and a roller to guide the movement of the said rest, and means for adjusting the rest either revolubly or vertically.

10. In a machine of the character described, a cleaning device consisting of two rotatable parts, and means to rotate the same, and flexible or yielding means intermediate the rotating means and the cleaning device to permit the relative positions of the faces of the said cleaning device to be changed at will.

11. In a machine of the character described, a polishing-roll, and means to sustain the same in a rotatory relation and provided with a bearing swiveling or turning so that the said roll may be adjusted either horizontally or laterally or in a vertical direction at will.

12. In a machine of the character described, a polishing-roll, in combination with an oscillatable guide having fixed members to permit the article to be treated to pass freely between the same and to accommodate and adjust itself to any variation of the position of the said article.

13. In a machine of the character described, a polishing-roll, in combination with a guide having jaws or members, and means for sustaining the latter so as to move relatively laterally and to hold the article to be treated in a relatively vertical position during said lateral movement, the said guide having means to prevent the article to be treated from being inserted in the machine alongside or exterior of the said guide.

818,143. DOG FOR SAWMILL-CARRIAGES. MAURICE S. BEY, New Orleans, La., assignor of one-half to Albert H. Thompson, Patterson, La. Filed Aug. 10, 1904. Serial No. 220,238.

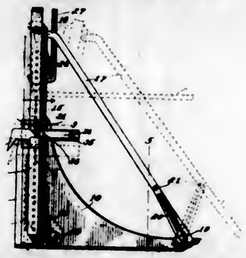

Claim.—1. In a sawmill-carriage dogging mechanism, in combination, a knee, a yieldingly-braced dogging-frame pivoted to the knee, its pivot being back of the line of its face.

2. In a sawmill-carriage dogging mechanism, in combination, a knee, a dogging-frame pivoted to the knee, a jointed brace pivoted to the knee and to the dogging-frame, such brace being stopped from bringing its joint into line with its pivots.

3. In a sawmill-carriage dogging mechanism, in combination, a knee, a dogging-frame pivoted to the knee, its pivot being back of the line of its face, a jointed brace pivoted to the knee and to the dogging-frame, such brace being stopped from bringing its joint into line with its pivot.

4. In a sawmill-carriage dogging mechanism, in combination, a knee, a swinging frame pivoted to the base of the knee, its pivot being back of the line of its face, a dog-carrying bar in sliding engagement with the frame, a lever pivoted to the frame and to the bar, and a jointed brace pivoted to the frame and to the knee, such brace flexing backwardly and being stopped against bringing its joint into line with its end pivots.

5. In a sawmill-carriage dogging mechanism, in combination, a knee, a swinging frame pivoted to the base of the knee, a dog carried by the frame, and a jointed brace in the plane of the dog, pivoted to the frame and to the knee.

6. In a sawmill-carriage dogging mechanism, in combination, a knee, a dogging-frame pivoted to the side of the knee, and a yoke-strap fitting over the knee and having one end thereof secured to the dogging-frame, its free end being pivoted to the knee in line with the frame-pivot.

818,144. STREET-CAR INDICATOR. DAVID C. EVANS and OLIVER Q. PATTERSON, Uniontown, Pa. Filed Sept. 6, 1905. Serial No. 277,264.

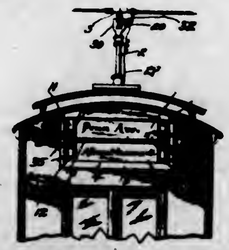

Claim.—1. In an indicator, the combination with a street-car, of a casing mounted within said car, inclined tracks carried at each end of said casing, guides mounted in said tracks, movable plates carried by said guides, toothed wheels revolubly mounted in said casing, and adapted to engage said plates, means for sustaining said plates in engagement with said toothed wheels, means for temporarily holding said plates in vertical position while engaged by the wheels, said last-named means being adapted to permit the plates to be successively released so as to turn over by gravity and reverse their position, an electromagnet mounted in said casing and adapted to actuate said wheels, means to intermittently energize said electromagnet, means for causing said plates to move into engagement with said wheels and means arranged within the casing to sound an alarm each time the indicator is actuated.

2. An indicator of the type described, comprising in combination a casing having an open front, inclined tracks mounted in said casing, guides carried by said tracks, plates movable by gravity in said guides, toothed wheels journaled in said casing and adapted to successively engage each of said plates, means to hold said plates in engagement with said wheels, means to sustain each plate temporarily in vertical position while engaged by the wheels, said last-named means being adapted to permit of the plates being successively released so as to permit them to reverse their positions by gravity while engaged by said wheels and means to actuate said wheels.

818,145. SAFETY-VALVE. CHARLES J. FANCHER, West Granby, Conn., assignor to The Simplex Manufacturing Company, New York, N. Y., a Corporation of Connecticut. Filed Mar. 9, 1905. Serial No. 249,230.

Claim.—1. A device of the class specified, consisting of a body having a through-passage therein, a valve adapted to normally close one end of said passage, a spring arranged crosswise of and in engagement with said valve and having lateral engagement with said body, said spring being adapted to normally retain the valve in its closed position, and means of connection between the spring and valve to prevent the latter from rotating or turning.

2. The combination, in a device of the class specified, with a body having a through-passage therein, of a valve, and a coiled spring provided with laterally-extending arms adapted to engage said body while the coil engages said valve to normally retain it in its closed position at one end of said passage.

3. The combination, in a device of the class specified, with a body having a through-passage therein and provided with upwardly-extending arms, of a valve, and a coiled spring having laterally-extending arms adapted to engage the arms of the body while the coil engages said valve to normally retain it in its closed position at one end of said passage.

4. The combination, in a device of the class specified, with a body having a through-passage therein, of a valve recessed at the top, and a coiled spring having laterally-extending arms adapted to engage said body while the coil is received into the recess in said valve to prevent the valve from turning and to normally retain the same in its closed position at one end of said passage.

5. The combination, in a device of the class specified, with a body having a through-passage therein and a valve-seat at each end of said passage and provided with upwardly-extending arms, of a main valve, a coiled spring having laterally-extending arms to engage the first-mentioned arms while the coil engages said valve to normally retain it on its seat, a spindle extending from the main valve through and beyond the passage, and an auxiliary valve on the inner end of said spindle, said auxiliary valve being adapted to contact with its seat only upon the abnormal release of the main valve.

6. The combination, in a device of the class specified, with a body having a through-passage therein and a valve-seat at the outer end of said passage and provided with valve-guides rising from said body around said valve-seat, of a valve operating within and guided by such guides, and a spring connected with the body to normally retain said valve on the valve-seat, said spring being arranged crosswise and in engagement with the valve and having lateral engagement with the body.

7. The combination, in a device of the class specified, of a body having a through-passage therein and provided with upwardly-extending arms, a valve for one end of said passage, and a coiled spring provided with laterally-extending arms adapted to be connected with and disconnected from the first-mentioned arms, the coil of said spring bearing against said valve which latter is normally retained in its closed position by the spring.

818,146. MODE OF PRODUCING SELF-LUBRICATING CAR-WHEELS. JAMES W. FULLER, Jr., Catasauqua, Pa. Filed Sept. 16, 1905. Serial No. 278,288.

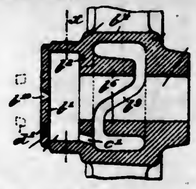

Claim.—1. The mode of forming a self-lubricating car-wheel which consists in first forming a wheel having a hollow hub portion composed of vertical and horizontal walls integral with each other and dividing the hub into two annular communicating chambers and a single chamber arranged at a right angle thereto; then forming openings in one of the outer and in the intermediate of said vertical walls of the hub so as to connect said single chamber with the outer of said annular chambers, then closing the openings formed in one of the outer walls so as to render the same liquid-proof up to a central opening cast therein, to permit of the filling of the single chamber with a lubricant up to the central opening, and of the flow of the lubricant from the single chamber into the outer annular chamber and from thence into the inner annular chamber of the hub when the wheel occupies an operative or vertical position.

2. The mode of forming a self-lubricating car-wheel, which consists in first casting a wheel having a hollow hub portion, composed of three vertical and two horizontal walls, dividing the hub into two annular chambers connected with each other by an annular opening formed in one of said horizontal walls separating said chambers from each other, and into a single chamber arranged at a right angle thereto and communicating with one end of the inner annular chamber, and with the exterior of the hub by an opening formed in one of the vertical walls and centrally to said inner annular chamber, then drilling holes through said outer perforated vertical wall and through the intermediate of said vertical walls so as to connect said outer annular chamber with said single chamber, then plugging the holes formed in the outer perforated vertical wall to close the openings drilled therein, to form a chamber capable of receiving a lubricant up to said central opening and to permit the same to flow into said outer annular chamber and from thence by said annular opening into said inner annular chamber or an axle placed therein when the wheel occupies a vertical or operative position.

818,147. METHOD OF TREATING OXIDIZED TINNED SHEETS OR SURFACES. STANLEY K. GUESS, Baltimore, Md. Filed Sept. 29, 1905. Serial No. 280,769. (Specimens.)

Claim.—The method herein described which consists in subjecting oxidized or otherwise corroded tinned sheets to the action of a bath consisting substantially of molten lead in the presence of a suitable flux.

818,148. MAGNESIUM FLASH-LAMP. EDWARD F. HARRISON, Philadelphia, Pa. Filed Nov. 23, 1905. Serial No. 288,495.

Claim.—1. A magnesium flash-lamp, comprising a holder for ignitible material, a pipe leading into said holder, a disk in contact with the inner portion of said pipe and having a stem to permit of a weight to be slid along the same, a vertically-arranged tapering device located adjacent to said holder and in communication therewith by means of pipe-sections and provided in the upper end with an oblong slit, said device adapted to permit of a thorough commingling of admitted air and ignitible material therein prior to discharge of the same through the slit of said device, burners located in proximity to said device and supported therefrom and means for presenting air under pressure to said holder.

2. A magnesium flash-lamp, comprising a holder, a pipe leading into said holder having the inner end cut away, a recessed disk with a stem mounted in said holder and spanning the end of said pipe, said stem adapted to permit of a weight sliding thereon, a device with a slitted top connected with said holder by pipe-sections, in one of which sections is provided a check-valve, said device adapted to

permit of a thorough commingling of air and ignitible material therein prior to discharge through the slitted top thereof, burners located adjacent to said device and supported therefrom, and means for presenting air under pressure to said holder.

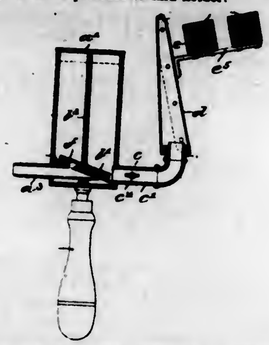

3. A magnesium flash-lamp, comprising a vertical holder, wherein air is admitted about the point of discharge of ignitible material, movable means in said holder to permit of the forcing of said ignitible material under pressure therefrom, a vertically-arranged tapering device provided with an oblong slit in the top thereof, said device supported from said holder and wherein air and ignitible material from said holder under pressure therefrom is thoroughly commingled therein prior to discharge from said device into the path of burners supported from said device, and means for presenting air to said holder.

813,149. **ICE-CRUSHER.** OTTO HARSCH, Swissvale, Pa. Filed Mar. 8, 1905. Serial No. 249,061.

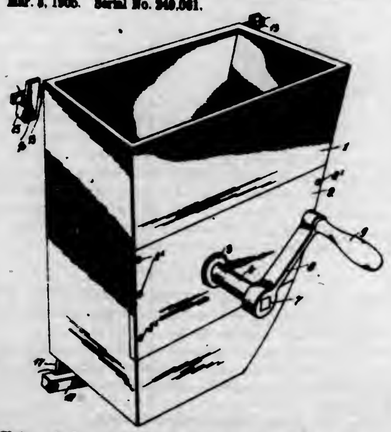

Claim.—1. In a device of the character described, the combination of a receptacle having one side prolonged below the bottom of the receptacle, and a cleat carried by the receptacle near its top edge, with a slotted bar adapted to be secured to a stationary support, said slotted bar receiving the prolonged side of said receptacle and brackets adapted to be attached to said stationary support to receive said cleat.

2. In a device of the character described, the combination with a receptacle, of a shaft mounted in bearings carried by the sides of the receptacle, tapering pointed prongs carried by said shaft, one of said prongs being of less length than all the other of said prongs and disposed in circumferential alinement with one of the longer prongs, and a crank and handle carried by said shaft, substantially as described.

813,150. **FILING-GAGE.** CHARLES O. HERSCH, Valparaiso, Ind. Filed May 31, 1904. Serial No. 210,333.

Claim.—In combination with a back piece with convexed surface, the same being in turn divided into a plurality of transversely-extending sections, a hinged piece attached to a lateral edge thereof, a bottom piece rigidly attached to the other lateral edge, end pieces rigidly attached to each terminal edge and to said bottom piece, a closure-piece secured to the free edge of said bottom piece and to the adjacent edges of said end pieces, and a post rising from a point in said bottom piece adjacent to its line of union with said closure-piece, and adapted to engage said hinged piece, substantially as described.

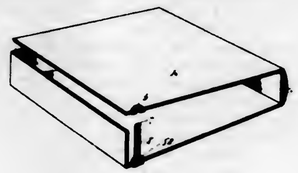

813,151. **DRILL-CHUCK.** THOMAS JAMES, Braddock, Pa. Filed Nov. 10, 1904. Serial No. 232,300.

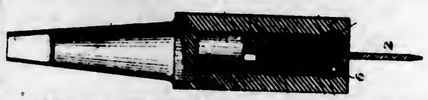

Claim.—1. A drill-chuck, comprising a socket, a removable bushing in the socket, and means in the bushing for adjusting the drill; substantially as described.

2. A drill-chuck comprising a socket, a removable bushing having oppositely-facing shoulders in said socket, means in the bushing for adjusting the drill, a transverse slot in the socket, and means extending through the slot and on both sides of the drill for holding the drill and bushing in the socket; substantially as described.

3. A drill-chuck comprising a socket, a removable bushing having oppositely-facing shoulders, in the socket, a transverse slot in the socket and means extending through the slot and on both sides of the drill for holding the drill and bushing in the socket; substantially as described.

4. A drill-chuck comprising a socket, a removable bushing having oppositely-facing shoulders in the socket, a transverse slot in the socket and a forked wedge extending through the slot and on both sides of the drill for holding the drill and bushing in the socket; substantially as described.

813,152. **DRAW-KNIFE.** ARCHER B. JENNINGS, Yalesville, Conn. Filed June 26, 1905. Serial No. 267,037.

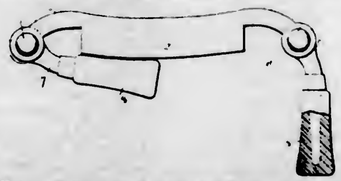

Claim.—1. The therein-described draw-knife comprising a blade, a shank at each end, said shanks terminating in flat disks in the plane of said shanks, handles comprising shanks and disks, grips secured to said shanks, angular openings in the said disks, angular clamping-bolts passing through said disks whereby they may be locked together the exterior surface of the grips curved corresponding to the curvature of the cutting edge of the blade and adapted and arranged to be turned toward the blade and locked in close relation thereto but slightly separated therefrom, substantially as described.

2. The herein-described draw-knife comprising a blade, a shank at each end, said shanks terminating in disks in the plane of said shanks, handles comprising shanks and disks, and grips secured to said shanks the exterior surface of said grips curved corresponding to the curvature of the cutting edge of the blade, said blade-disks and handle-disks formed with angular tapered holes, the holes in the handle-disks being of different pitch from the holes in the blade-disks, and bolts passing through said holes and adapted to clamp the disks together said bolts having tapered portions fitting the taper

in the said disks whereby the handles may be locked in various positions of adjustment one of which is inward toward the blade from which they are held slightly separated, substantially as described.

813,153. **FISHING-FLOAT.** LESLIE M. JOHNSON, East Providence, R. I. Filed Aug. 26, 1905. Serial No. 276,016.

Claim.—1. As an improved article of manufacture, a fishing-float comprising an ellipsoidal body member *a*, an eye or line-guide mounted in one end thereof and a peripheral spring-clip secured to said body and located substantially midway of it, the jaws or yielding sides of said clip member being parallel with the longitudinal axis of the body and extending perpendicularly above the latter, the upper portion of the clip and the outer end of the eye member being in alinement with each other and with a point in the intermediate peripheral surface of the body, substantially as shown and described.

2. The fishing-float A herein described, consisting of the ellipsoidal-shaped body member *a*, the self-closing hook or line-guide *b* rigidly secured in one end of said body, and the clip *c* having parallel yielding sides, said clip being secured to the body member and projecting radially from the surface thereof at its maximum transverse diameter, the top or free end of the clip being in alinement with said guide *b* and having that portion of the surface of the body lying between said guide and clip members substantially below a straight line passing through said members.

3. A fishing-float comprising an ellipsoidal-shaped body *a*, an eye member secured in the center of one end of the body, and a spring-clip rigidly secured to and located centrally of the length of the latter and projecting upwardly or outwardly therefrom; the length of the clip being such that its upper or free end is adapted to intersect a straight line passing through said eye and being tangent to the adjacent surface of the body, substantially as described.

813,154. **AUTOMATIC SWITCH FOR ELECTRIC RAILWAYS.** VINCENZ JOSSEK, Karlin-Prague, and JOSEF PERFIX, Prague, Austria-Hungary, assignors of one-third to Richard Butta, Prague, Austria-Hungary. Filed May 26, 1905. Serial No. 262,427.

Claim.—The combination with the main conductor, an electrically-driven vehicle, and the main contact device carried by the latter, of two other conductors 6 and 7 arranged parallel with the main conductor, a switch-actuating part, separate magneto-electric devices controlling said part, said conductors 6 and 7 being each connected with one of said magneto-electric devices, a switch on the vehicle in permanent electric connection with the main contact device, curved spring-actuated contact devices pivoted in the main contact device and engagable each in its curved portion with one of the conductors 6 and 7, and conductors connected each to one of said spring-actuated contact devices and extending into contactible proximity to said switch, substantially as described.

813,155. **RED AZO DYE AND PROCESS OF MAKING SAME.** GUSTAV KALLENBERG, Frankfort-on-the-Main, Germany, assignor to Consolidated Color Company, New York, N. Y. Filed Aug. 21, 1905. Serial No. 274,169.

Claim.—1. The process of preparing red azo dyes by combining in alkaline solution one molecule of an aromatic diazo compound with one molecule of the 5.oxynaphthe diamidobenzmidehydin.7.-sulfo-acid.

2. The coloring-matters obtained by combining in alkaline solution one molecule of an aromatic diazo compound with one molecule of the 5.oxynaphthe diamidobenzmidehydin.7.sulfo-acid, the coloring-matters being in the dry state red powders of a metallic said luster, soluble in water with a yellowish-red to bluish-red color, dissolving in concentrated sulfuric acid with a bluish-red color, substantially as described.

813,156. **RECLINING-CHAIR.** LEONARD KIPP, Waterbury, Conn., assignor to Anna Kipp, New York, N. Y. Filed Jan. 12, 1905. Serial No. 240,687.

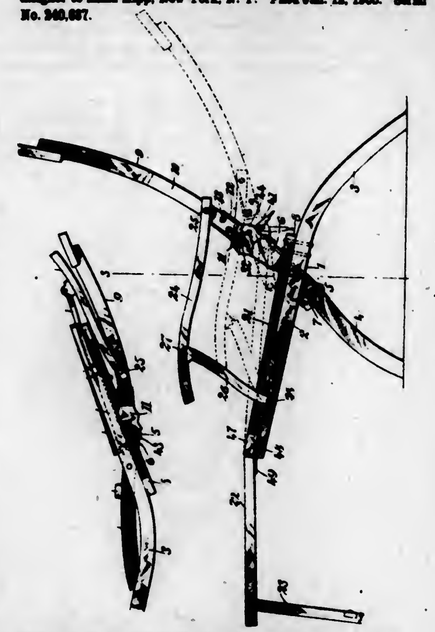

Claim.—1. In a chair of the class described, in combination, a body having side bars, the rear portions thereof constituting rear legs, forward legs making a pivotal connection with said side bars, a body making a pivotal connection with the upper extremities of said forward legs, said body having spurs projecting inwardly and moving therewith, a seat supported upon said body forwardly and supported upon said spurs toward the rear, arms pivotally attached to the sides of said back, links pivotally connecting said arms forwardly with said side bars, and means for locking said back in a plurality of positions.

2. In a chair of the class described, an adjustable connection comprising, in combination, a ratchet, a pair of pawls projecting in opposite directions and engaging the teeth of said ratchet, a connection between said pawls whereby they move simultaneously, a spring constraining said pawls to engage said ratchet, and a lever for disengaging them from said ratchet.

3. In a chair of the class described, an adjustable connection comprising, in combination, a ratchet, a pair of pawls, the bodies whereof project toward each other and the points whereof engage said ratchet, said pawls having fingers projecting therefrom, a plunger engaging said fingers, a spring constraining said plunger to maintain said pawls in engagement with said ratchet, and a member adapted to disengage said pawls.

4. In a chair of the class described, an adjustable connection comprising, in combination, a socket-head presenting a ratchet, a pair of oppositely-disposed pawls projecting toward each other and engaging the teeth of said ratchet, said pawls having adjacently-disposed fingers, a plunger disposed between said fingers and engaging same to operate said pawls, and a member adapted to move said pawls.

5. In a chair of the class described, an adjustable connection comprising, in combination, a socket-head presenting a ratchet, a pair of oppositely-disposed pawls engaging the teeth of said ratchet and projecting toward each other, said pawls having adjacently-disposed fingers with opposite recesses, a plunger having a reduced neck received in said recesses, and means for actuating said pawls.

6. In a chair of the class described, an adjustable connection comprising, in combination, a socket-head presenting a ratchet, a pair of oppositely-disposed pawls engaging the teeth of said ratchet and having adjacently-disposed fingers with recesses therein, a plunger having a reduced neck received in said recesses, a spring constraining said plunger to maintain said pawls in contact with said ratchet, and a lever adapted to actuate one of said pawls, operating through said plunger to release the other of the said pawls.

813,157. **DEVICE FOR SPLICING T-RAILS.** WILLIAM B. KNIGHT, Bellefontaine, Ohio. Filed June 3, 1905. Serial No. 263,667.

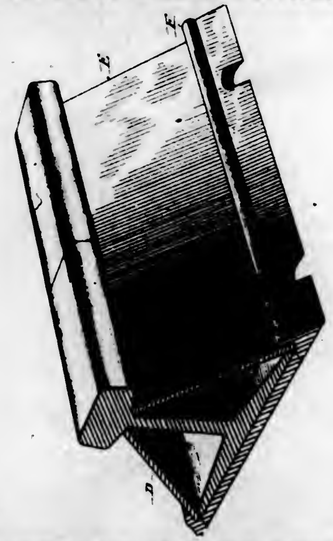

Claim.—The chair A, having seats B, C, and the wedges or side plates D, E, their upper ends bearing against the under side of the ball of the rail, and the lower ends resting on the chair, and against the outside bottom edge of the rail, as and for the purpose set forth.

813,158. **PISTON-ROD-MOVING DEVICE.** HANS LISKER, New York, N. Y. Filed Dec. 21, 1905. Serial No. 292,748.

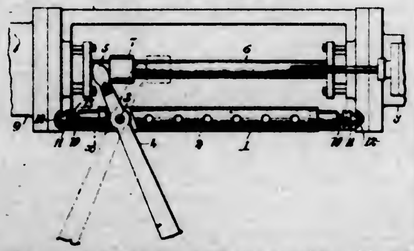

Claim.—1. A piston-rod-moving device, comprising a fulcrum-bar, an adjusting-screw at the end thereof, a fulcrum-pin adjustable along the bar, and a lever mounted to swing on said pin.

2. A piston-rod-moving device, comprising a fulcrum-bar consisting of two spaced, perforated members, a pin for engaging in opposite perforations, and a driving-lever arranged to swing on said pin.

3. A piston-rod-moving device, comprising a fulcrum-bar, adjusting screw-bolts at the ends thereof, and a lever adjustable along the bar.

4. A piston-rod-moving device, comprising a longitudinally-slotted bar having transverse perforations, pointed adjusting screw-bolts at the end of the bar, a pin for engaging in opposite perforations, and a lever arranged to swing on said pin, the said lever having a bifurcated end.

813,159. **MERRY-GO-ROUND.** TIMOTHY LONG, Cleveland, Ohio. Filed Nov. 30, 1904. Serial No. 234,898.

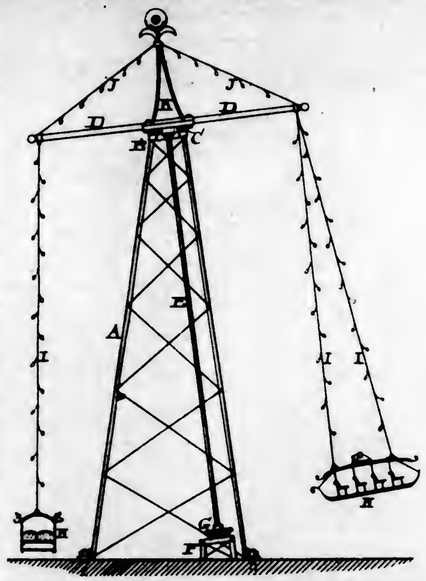

Claim.—1. In a merry-go-round, a tower formed of a plurality of legs of unequal length, an inclined table formed with a depending flange seating on the upper ends of said legs and having the flange thereof engaged by said legs, a rotatable spider on said table, and a shaft having its upper end projecting into said spider and secured thereto.

2. In a merry-go-round, a tower formed of a plurality of legs of unequal length, a table of ring-like form seating on the upper ends of said legs, a marginal depending flange carried by the table and being engaged by said legs, a rotatable spider seating on said table and having a central opening, a shaft having its upper end projecting through said table and secured in said opening of the spider.

813,160. **CARRIER.** DWIGHT G. LYMAN, Omaha, Nebr. Filed Aug. 4, 1905. Serial No. 272,694.

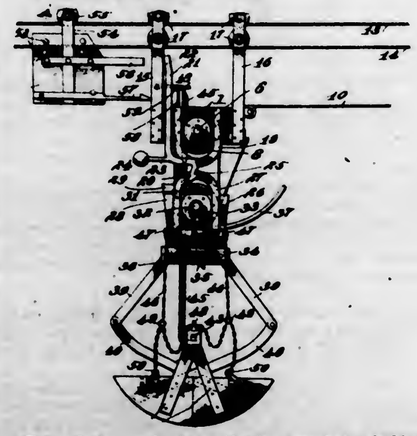

Claim.—1. In a carrier, in combination, a carriage; a locking-latch pivoted thereon; a stop-block; two projecting hooks on the stop-block adapted to be engaged by the latch; a bucket movably supported with relation to said carriage; and a releasing-rod carried by the bucket, adapted to be projected upward between said hooks to disengage said latch and hooks.

2. In a carrier, in combination, a carriage; means for locking said carriage upon a way; a hoisting-head releasably connected with said carriage; an operating-head releasably connected with said hoisting-head; a bucket connected with said hoisting-head and said operating-head; and means carried by said bucket for operating said locking means.

3. In a carrier, in combination, a carriage; a stop-latch pivoted on said carriage; a stop-block for said carriage, said block having a hook adapted to engage said latch; a hoisting-head releasably connected with said carriage; a bucket connected to said hoisting-head but arranged to have a vertical movement with relation thereto; and a releasing-rod vertically movable with said bucket, the upper portion of said rod extending through said hoisting-head into position to engage said latch for disengaging said latch and said hook.

4. In a carrier, in combination, a carriage; means for locking said carriage upon a way; a hoisting-head releasably connected with said carriage; an operating-head releasably connected with said hoisting-head; a bucket connected with said hoisting-head and said operating-head; and a releasing-rod connected to move with said bucket, said rod extending through said operating-head and hoisting-head into position to operate the carriage-locking means.

5. In a carrier, in combination, a carriage; a stop-latch pivoted on said carriage; a stop-block having a hook adapted to engage said latch; a hoisting-head suspended from said carriage; and a rod depending from said latch into position to be raised by said head for operating said latch.

813,161. **SELF-WINDING ELECTRIC CLOCK.** MAX MENKIN, New York, N. Y. Filed Mar. 30, 1904. Serial No. 200,776.

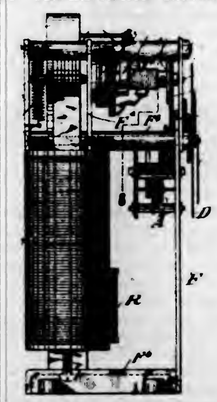

Claim.—1. A self-winding attachment for clocks, consisting of a supporting-frame formed of front and rear plates and connecting-pillars, a clock-train, a dial and hands therefor supported by one of the plates, an intermediate plate interposed between the front and rear plates and supported by said pillars, an electromagnet, an armature for the same, spring-actuated pawls on the armature, a shaft for the armature journaled in the intermediate and rear plates, an arbor journaled in the intermediate and front plates, a pinion at one end of the arbor engaging the clock-train, a plate secured to the pinion of the arbor and provided with a contact-terminal, a ratchet-wheel movable on the arbor and adapted to be engaged by the pawls of the armature, a contact-terminal supported by the ratchet-wheel, a motor-spring having its ends secured to the arbor and to the ratchet-wheel, a source of electricity, and conductors electrically connecting the electromagnet, source of electricity and contact-terminals.

2. In a self-winding attachment for clocks, the combination of a mainspring, a shaft in connection with the inner end of the mainspring, a movable member connected with and operated by the shaft, a second movable member connected with and operated by the outer end of the mainspring, a source of electricity, a contact-terminal for each member, each connected with one pole of the source of electricity, and a lintel-shaped projection on the second member in close proximity to the contact-terminal thereon, the major axis of the projection and the direction of movement of the contact-terminal of the first member being in obliquity to each other, the projection being adapted to gradually tension the contact-terminal of the first member on its approach to the contact-terminal of the second member, release the so-tensioned contact-terminal of the first member, at the end of its path thereon, so as to cause it to forcibly contact with the contact-terminal of the second member, and adapted to act as a guide and cause the contact member of the first member to be tensioned when the same passes between it and the contact-terminal of the second member.

3. A self-winding attachment for clocks, comprising a mainspring, a shaft connected with the mainspring, a movable member secured to the shaft, a second movable member connected with and operated by the outer end of the mainspring, a lintel-shaped projection on one of said members, a source of electricity, and a contact-terminal for each movable member, connected with a pole of the source of electricity, the contact-terminal on the member supporting the projection being in proximity to and conforming substantially to the contour of the projection, while the contact-terminal of the other movable member is provided with an end adapted to pass along the projection.

4. In a self-winding attachment for clocks, the combination of a mainspring, a shaft in connection with the inner end of the mainspring, a movable member connected with and operated by said shaft, a second movable member connected with and operated by the outer end of the mainspring, a lintel-shaped projection on one of said members, a source of electricity, and a contact-terminal for each member, each connected with a pole of the source of electricity, one of said contact-terminals being provided with an end conforming substantially to the contour of the lintel-shaped projection and the other of said contact-terminals being provided with an end adapted to pass along the projection, said end being at an angle to the other contact-terminal when in contact therewith.

5. In a self-winding attachment for clocks, the combination of a mainspring, a shaft in connection with the inner end of the mainspring, a movable member connected with and operated by the shaft, a second movable member connected with and operated by the outer end of the mainspring, and contact-terminals, one on each member, each connected with a pole of a source of electricity and each yieldingly supported and each adapted to be resiliently strained when in electrical connection with the other, said contact-terminals being so arranged that the contact-terminal of the first member gradually approaches the contact-terminal of the second member, until it contacts with the same, after which the contact-terminal of the second member moves away from the contact-terminal of the first member.

6. In a self-winding attachment for clocks, the combination of a fixed supporting-plate connected with one pole of a source of electricity, a plate secured to the supporting-plate but insulated therefrom, having a central opening and connected with the other pole of a source of electricity, a collar on said insulated plate, a shaft pivotally supported by the supporting-plate, passing through the central opening of the insulated plate but not in contact therewith, a contact-terminal movable with said shaft, a ratchet-wheel movable in respect to the shaft, a contact-terminal on the ratchet-wheel insulated therefrom but in electrical connection with the collar on the insulated plate, a lintel-shaped projection on the ratchet-wheel in proximity to the end of the last-named terminal, and a motor-spring connecting the shaft and the ratchet-wheel.

7. In a self-winding attachment for clocks, the combination of a mainspring, a shaft in connection with the inner end of the mainspring, a member connected with and operated by the shaft, a second member connected with and operated by the outer end of the mainspring, means adapted to periodically tension the mainspring, and means on each of said members projecting laterally therefrom, adapted when in engagement with each other, after a partial unwinding of the mainspring but with the mainspring still under tension, to limit the movement of the members so as to prevent the further unwinding of the mainspring.

8. In a self-winding attachment for clocks, the combination of supporting-plates, a shaft pivotally supported by said supporting-plates, a movable member secured to said shaft, a banking-rod on said member, a second movable member rotatable on said shaft, a banking-blade on said second member, adapted to arrest the movement of the banking-rod, a motor-spring having its ends connected with the members, and contact-terminals on each of said members.

9. In a self-winding attachment for clocks, the combination of a mainspring, a shaft carrying the inner end of the mainspring, a member connected with and operated by the shaft, a second member connected with and operated by the outer end of the mainspring, a source of electricity, contact-terminals on said members each connected with a pole of the source of electricity, a lintel-shaped projection on one of said members in proximity to the contact-terminal

thereon, a banking-rod on one member, and a banking-blade on the other adapted to arrest the movement of the banking-rod.

10. In a self-winding attachment for clocks, the combination of supporting-plates, a shaft pivotally supported by said supporting-plates, a movable member secured to said shaft, a banking-rod detachably secured to said member, a second movable member rotatable on said shaft, a banking-blade on said second member adapted to arrest the movement of the banking-rod, a motor-spring having its ends connected with the members, a contact-terminal on each of said members, a collar secured to one of said supporting-plates but insulated therefrom, a brush on the second member in electrical connection with the collar and with the contact-terminal on said member, a source of electricity, and means connecting said collar and the contact-terminal of the first member with the poles of said source of electricity.

11. In a self-winding attachment for clocks, the combination of an electromagnet, a source of electricity, an electrical connection between said magnet and said source of electricity, a plurality of supporting-plates supported by the poles of the electromagnet, an armature movable between the poles of the electromagnet, a shaft for the armature journaled in two adjacent supporting-plates, means between the two other adjacent plates adapted to close the electric circuit of the electromagnet for actuating the armature, means for returning the armature to its normal position, and means for limiting the return movement of the armature.

813,162. **NAIL AND RIVET DELIVERING MACHINE.** JOHN A. HILLIERS, New York, N. Y., assignor, by mesne assignments, to The Schoour Factory, a Corporation of New York. Filed Apr. 23, 1904. Serial No. 204,867.

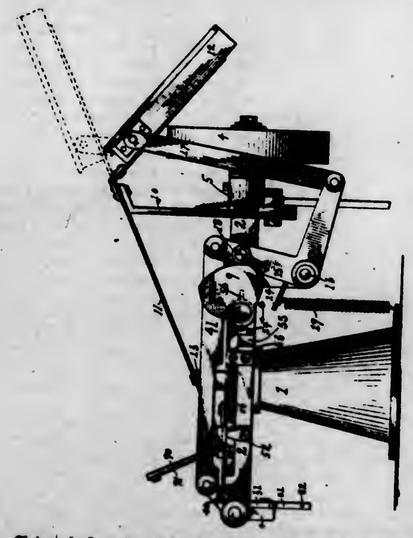

Claim.—1. In a rivet-delivering machine, the combination of a platform; a feeding device thereon; a rock-shaft on the platform; holder-jaws on said shaft; means for rocking the shaft to present the holder-jaws to the feeding device and return them to their initial position; and means for rigidly securing the rivets in the holder-jaws.

2. In a rivet-delivering machine the combination of a platform; a feeding device thereon; a slide-block on one side thereof; a rock-shaft on the platform; a driven shaft; cams on said driven shaft; holder-jaws on the rock-shaft; means actuated by one of said cams to oscillate the rock-shaft; means actuated by the other cam acting through the slide-block for opening the holder-jaws; and means for closing the holder-jaw.

3. In a rivet-delivering machine the combination of a platform; a feeding device thereon; slide-blocks on either side thereof; a rock-shaft on the platform; a driven shaft; cams on said shaft for actuating said slide-blocks and rock-shaft; holder-jaws on the rock-shaft; means actuated by one of the slide-blocks for opening the holder-jaws; means actuated by one of the cams to oscillate the rock-shaft and present the holder-jaws to the feeding device; means actuated by the other slide-block for feeding rivets to the open holder-jaws; and means for closing the holder-jaws.

4. In a rivet-delivering machine the combination of a platform; a slide-block on one side thereof; a rock-shaft on the platform; a shaft extending across the platform; cams on said shaft for actuating said slide-block and rock-shaft; holder-jaws on the rock-shaft; means actuated by one of the cams to oscillate said shaft and holder-jaws; and means actuated by the slide-block for feeding a rivet to the holder-jaws.

5. In a rivet-delivering machine the combination of a platform; slide-blocks on either side thereof; a rock-shaft mounted thereon; a driven shaft extending across the platform; cams on said shaft for actuating said slide-blocks and rock-shaft; a feed-chute on the platform; a hopper hinged at the upper end thereof; holder-jaws mounted on the rock-shaft; means actuated by one of the slide-blocks for opening the holder-jaws; means actuated by one of the cams for oscillating the rock-shaft, holder-jaws and hopper; means actuated by the other slide-block for feeding single rivets to the holder-jaws; and means for closing said jaws.

6. In a rivet-delivering machine the combination of a platform, a feeding device thereon; slide-blocks on either side thereof; a rock-shaft on said platform; cams for actuating said slide-blocks and rock-shaft, holder-jaws on the rock-shaft; means actuated by one of the slide-blocks for opening the jaws; means actuated by the other slide-block for feeding a rivet to the holder-jaws; means actuated by one of the cams for oscillating the rock-shaft and presenting the jaws to the feeding device; and means for closing the back of the holder-jaws, substantially as described.

7. A delivering-machine comprising a platform; a feed-chute thereon; slide-blocks on either side thereof; a rock-shaft on the platform; a driven shaft on the platform; cams on said shaft for actuating said slide-blocks and rock-shaft; holder-jaws on the rock-shaft; means actuated by one of said cams for oscillating said rock-shaft and jaws; a closure device at the lower end of the feed-chute operated by one of the slide-blocks; a finger operated by the other slide-block; means operated by the finger for opening the holder-jaws; and means for closing said jaws.

8. In a rivet-delivering machine the combination of a platform; a feed-chute thereon; slide-blocks on either side thereof; a rock-shaft on the platform; a driven shaft on the platform; cams on said shaft actuating said slide-blocks and rock-shaft; nicked holder-jaws on the rock-shaft; means operated by one of the cams to oscillate the rock-shaft and jaws; a closure device at the lower end of the feed-chute; a cut-off device for holding back the column of rivets in the chute, said closure and cut-off being actuated by one of the slide-blocks; a finger operated by the other slide-block; means operated by said finger for opening said jaws; and means for closing said jaws.

9. In a rivet-delivering machine, the combination of a platform; a feed-chute thereon; slide-blocks on either side thereof; a rock-shaft on the platform; a driven shaft on the platform; cams on said shaft for actuating said slide-blocks and rock-shaft; nicked holder-jaws on the rock-shaft; means operated by one of the cams to oscillate said rock-shaft and jaws; a closure device for the back of the nicked jaws; a spring-actuated closure device at the lower end of the feed-chute; a cut-off device for holding back the column of rivets in the chute; said closure and cut-off being actuated by one of the slide-blocks; means for opening the holder-jaws comprising a finger actuated by the other slide-block and engaging a pin bearing against one of the jaws; and means for closing said jaws.

10. In a holder for delivering-machines, the combination of pivoted jaws having nicks in their meeting faces; means for closing the back of said nicks; and means for removing said closing device when the jaws are in open position.

11. A holder for delivering-machines comprising a rock-shaft; two nicked jaws mounted thereon; a spring normally holding said jaws together; a spring on one jaw; a pin cooperating therewith; and extending across the back of the nicks; and means operating on the spring to withdraw the pin when the jaws are in open position.

813,163. **READY-MADE ROOFING.** WILLIAM J. MOELLER, Hartwell, Ohio, assignor to the Philip Carey Manufacturing Company, Lockland, Ohio, a Corporation of Ohio. Filed Apr. 18, 1904. Serial No. 203,703.

Claim.—A ready-made roofing consisting of a base portion, a cement body portion overlying the same, and a burlap portion partially embedded upon the top of the cement body portion, the transverse joints of said burlap portion being united by an adhesive cement strip interposed between the overlapping ends thereof, substantially as and for the purpose specified.

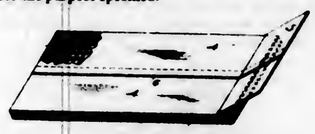

813,164. **ALARM.** WILLIAM L. MONROE, Omaha, Nebr. Filed May 26, 1904. Serial No. 209,716.

Claim.—1. The combination with a base, of a holder, an operating member mounted upon the base, a retaining projection on the base for the said operating member, and a releasing member carried by the base and having a projection which may extend over the operating member, to lock the same in an inoperative position.

2. The combination with a base, of a post extending therefrom between its ends, a hammer movable about the post, a holder and retaining projection situated at opposite ends of the base, and a releasing member for the hammer movably mounted adjacent to the retaining projection.

3. The combination with a base provided with an opening, of a tongue extending into the opening, a post situated in the opening and having a slot engaging the tongue, and a hammer movable about the post.

4. An alarm comprising a plate having flanges, a holder, a hammer pivoted upon the plate, guides situated between the flanges, and a member for coaction with the hammer mounted in the guides and having an enlargement which may contact with one of said guides.

5. An alarm comprising a plate having an opening, a holder carried by the plate, a hammer pivoted upon said plate, and a member mounted to slide upon the plate and being movable through the opening into coaction with the hammer.

6. An alarm comprising a plate, a holder carried by the plate, a hammer pivoted to said plate, and a member mounted to slide upon the opposite side of the plate from the hammer and having a projection which may contact with the outer face of the hammer.

7. An alarm comprising a plate having an opening, a holder carried by the plate, a hammer pivoted upon said plate, and a member mounted to slide upon the opposite side of the plate from the hammer and being movable through the opening into coaction with said hammer, this member having a projection which may contact with the outer face of the hammer.

8. The combination with a base having an opening at one end, of a holder, an operating member pivotally mounted upon the base, a retaining projection on the base for said operating member, and a releasing member mounted to slide upon the base and movable through the opening in the base to engage and release the operating member.

813,165. **LACE-CURTAIN-EXHIBITING APPARATUS.** JOHN F. HUNFORD, Fall River, Mass., assignor of one-half to Frederick F. Fanning, Providence, R. I. Filed June 23, 1905. Serial No. 266,551.

Claim.—1. An apparatus for exhibiting lace curtains comprising a frame, a track running lengthwise in the frame, a plurality of lace-curtain holders removably suspended from the track, each holder having clamping-bars, a shade secured to the lower clamping-bar, a hook-shaped frame pivotally secured to the upper clamping-bar, means for securing the clamping-bars together to clamp the end of a lace curtain between the same, and curtains on the frame adapted to inclose the lace-curtain holders, as described.

2. An apparatus for exhibiting lace curtains comprising a frame, a track secured at each end in the frame, a plurality of lace-curtain holders removably suspended from the track, each holder having two clamping-bars, a shade secured to the lower clamping-bar, a hook-shaped frame pivotally secured to the upper clamping-bar, a pulley rotatably secured in the hook-shaped frame, means for securing the clamping-bars together to clamp the end of a lace curtain between the bars, curtain-rods on the frame, and means for suspending top, side and end curtains from the curtain-rods and frame in a position to inclose the lace-curtain holders, as described.

3. In an apparatus for exhibiting lace curtains, the combination of a track *b* secured at each end in the apparatus and a lace-curtain holder *c* consisting of clamping-bars c' c' having at each end clamping-bolts c^3 c^3 with thumb-nuts c^3 c^3, a grooved pulley c^4, a hook-shaped frame c^5 having an L-shaped lower end c^6 pivotally secured by a loose rivet c^7 to a plate c^8 which is centrally secured to the top clamping-bar c', a shade c^9 secured at its upper end to the lower clamping-bar c', and means for rotatably securing the pulley c^4 in the hook-shaped frame c^5, whereby a lace curtain is secured to the holder *c* and the holder removably suspended from the track *b*, as described.

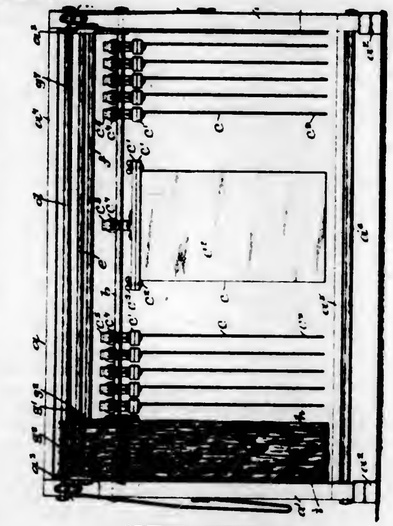

813,166. **SHOVEL.** JAMES B. NEWTON, Fall River, Mass. Filed Feb. 17, 1905. Serial No. 245,967.

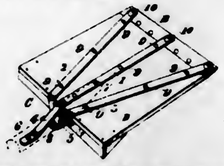

Claim.—A shovel, consisting of a handle; a working edge portion; a rod connecting said working edge portion with said handle; a second rod whose free ends are connected with said working edge portion, and whose middle portion is bent and forms a loop for the reception, and the fastening thereto, of the shank of the shovel; and a scoop.

813,167. **GRINDING APPARATUS.** LEVERETT H. OLMSTED, Hackensack, N. J. Filed July 26, 1905. Serial No. 271,621.

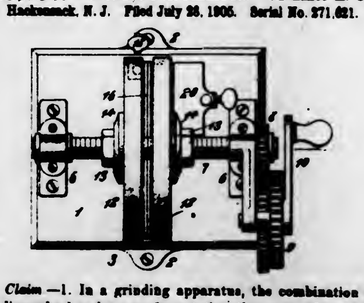

Claim.—1. In a grinding apparatus, the combination with a grinding-wheel and means for rotating the same, of an elongated rest the top whereof is arranged to engage the back of a knife-blade, preventing longitudinal rocking of the same while permitting the

blade to be moved longitudinally upon the rest, substantially as shown and described.

2. In a grinding apparatus, the combination with a pair of grinding-wheels and means for rotating the same, of an elongated rest located between the opposite vertical faces of the wheels, the seat of such rest being angular.

813,168. NUT-LOCK. JOHN PETRIE, Bothwell, Canada, assignor of two-thirds to Robert C. Russell, Arthur, Ontario, Canada. Filed June 26, 1905. Serial No. 267,401.

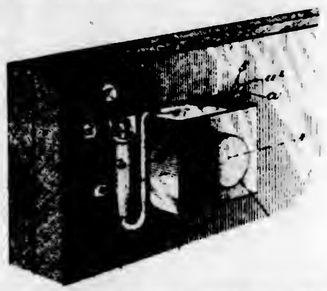

Claim.—1. A nut-lock comprising a plate having an opening to receive the bolt and having one of its ends bent laterally to form a projection, and having upon its other end a tubulation, a dog comprising an arm rotatably mounted on the tubulation and an arm for engaging the side of the nut, and a washer beneath the plate having a laterally-bent end to be engaged by the bent end of the plate.

2. A nut-lock comprising a plate having an opening to receive the bolt and having one of its ends bent laterally to form a projection for engaging the material through which the bolt is passed, whereby to prevent rotation of the plate, and having upon its other end a tubulation, and a dog comprising an arm rotatably mounted in the tubulation and an arm for engaging the side of the nut, the arm within the tubulation being provided with an ear whereby to limit the motion of the dog.

3. A nut-lock embodying an elongated washer-plate having a lateral curved portion thereon near one end, a tubulation on the opposite end of said washer-plate, a reinforcing washer-plate having a perforation between its ends and registering with a like perforation in the other washer-plate, a lateral curved portion on one end of said washer-plate and whereon the curved portion of the other plate bears, an angularly-shaped toe on the curved end of the reinforcing washer-plate, and a U-shaped locking-dog, one member of which is loosely held in the tubulation, the other spaced member thereof having a bent finger on its free end for turning said member toward or from a nut screwed upon a bolt passed through the opposite perforations in both of the washer-plates.

813,169. COMBINED IMPULSE AND REACTION TURBINE. CARL PFENNINGER, Munich, Germany, assignor to Mohns & Pfenninger Gesellschaft mit Beschränkter Haftung, Munich-Hirschau, Bavaria, Germany. Filed Dec. 7, 1905. Serial No. 290,792.

Claim.—1. In an impulse and reaction turbine, the combination of a drum of approximately equal diameter throughout its length, a stepped casing in which said drum rotates, a series of impulse-blades carried by said drum and casing, a series of reaction-blades also carried by said drum and casing and forming a continuation of the impulse-blades and a further series of reaction-blades oppositely arranged to the first series.

2. In an impulse and reaction turbine, the combination of a drum of approximately equal diameter throughout its length, a stepped casing in which said drum rotates, a series of impulse and reaction blades carried by said drum and casing, and a further series of reaction-blades at the opposite end of the drum and casing connected to the first series by a passage, whereby the steam is caused to first travel through the impulse-blades then through the first set of reaction-blades and thence backward through the passage to the second set of reaction-blades.

3. In an impulse and reaction turbine the combination of a drum of approximately equal diameter throughout its length, a casing comprising separate chambers, impulse and reaction blades carried by one chamber and impulse-blades only by the other chamber, the two sets of impulse-blades being connected by a passage capable of reversing the direction of travel of the fluid and packings formed of labyrinth flanges between the drum and casing at the points where the passage of fluid is to be checked.

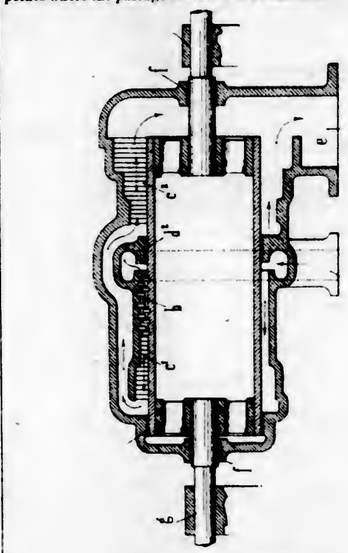

813,170. COTTON-PICKER. JAMES K. PIPER, Wilmerding, Pa. Filed July 13, 1904. Serial No. 216,418.

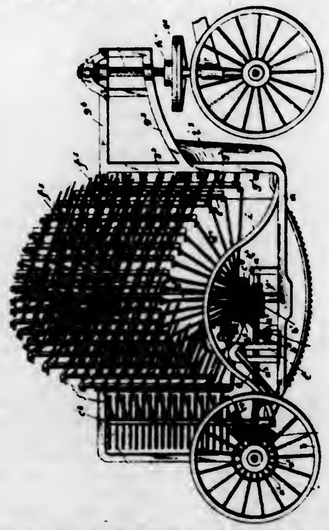

Claim.—1. In a cotton-picker a frame, vertical shafts mounted in said frame, fulcrum-disks secured to said shafts near the upper and lower ends thereof, a series of arms fulcrumed in said disks, carriers mounted in the outer ends of said arms, a series of picker-fingers journaled in each of said carriers, means engaging said arms for moving the same vertically on their pivots during their endless travel, means for imparting motion to said vertical shafts to rotate the same and move the carriers in an endless course, a stationary means connected to the frame to engage said picker-fingers and revolve the same while passing through the cotton during the endless travel of the carrier, substantially as described.

2. In a cotton-picking machine, a frame, vertical shafts journaled in said frame, fulcrum-disks formed in two parts and secured to the said shafts, carrier-arms fulcrumed in said disks, carriers loosely connected to the outer ends of the arms, rotating picker-fingers journaled upon each of said carriers, means for moving the carrier-arms vertically upon their pivots to bring the picker-fingers into position to engage the cotton, gear-wheels mounted on each of said picker-fingers, combined with racks between which the picker-fingers pass and which engage the gear-wheels thereon to rotate the fingers while passing through the cotton, and means for driving said vertical shafts, substantially as described.

3. In a cotton-picker, a frame, vertical operating-shafts mounted therein, worm-gears on said shafts, disks secured to the said shafts, carrier-arms pivoted in the said disks, guides for controlling the said arms around their pivots, carriers pivoted between the outer ends of the arms, picker-fingers journaled in the carriers at an inclination thereto and each finger provided with a wheel at its inner end to cause it to revolve, combined with racks between which the fingers are caused to pass, and which engage the wheels on the fingers to rotate the same, horizontal driving-shafts provided at one end with worm-gears to mesh with the worm-gears on the vertical shafts, the outer ends of the said arms being provided with teeth and a lug both of which are adapted to engage with teeth on the end of the carriers, substantially as described.

4. In a cotton-picker, a frame, supported upon wheels, beveled gear-wheels on the axles, horizontal shafts having gears, vertical shafts journaled in the frame, bevel-gears and combs secured to the vertical shafts, the gear-wheels on the axle meshing with the gears on the rear ends of the horizontal shafts, vertical driving-shafts having gears, the gear on the front ends of the horizontal shafts meshing with those on the lower ends of the vertical driving-shafts, combined with fulcrum-disks mounted upon said vertical driving-shafts, carrier-arms loosely connected at their ends to said fulcrum-disks, carriers loosely connected to the outer ends of said carrier-arms, means for moving said carrier-arms in vertical planes, separate means for rocking the carriers on their vertical axis, a series of picker-fingers journaled in said carriers, and means for rotating said picker-fingers during a part of the endless travel of the carrier-arms and carriers, substantially as described.

5. In a cotton-picker, a frame mounted on wheels, vertical shafts mounted in said frame, fulcrum-disks secured to said shafts near the upper and lower ends thereof, said shafts provided at their lower ends with gears, horizontal shafts provided with bevel-gears at their rear ends and worm-gears at their front ends adapted to mesh with the gears on the lower ends of the vertical shafts, combined with arms fulcrumed at their inner ends in said disks, means for moving said arms vertically, carriers pivotally connected to the outer ends of said arms, means for controlling the movement of the carriers during their travel, picker-fingers journaled in said carriers and provided with wheels at their inner ends, curved guides between which the fingers are moved, and vertical comb-shafts operated by the gears on the rear ends of the horizontal shafts and provided with combs for removing the cotton from the fingers, substantially as described.

6. In a cotton-picker the frame mounted on wheels, a rotary comb-shaft mounted therein, a vertical operating-shaft, disks secured to said shaft, carrier-arms fulcrumed at their inner ends in said disks and provided at their outer ends with segmental-shaped toothed portions, means for moving said arms vertically, carriers pivoted between the ends of the arms and provided on their ends with teeth to engage the teeth on the arms, combined with picker-fingers journaled in the carriers and provided with operating-wheels at their inner ends, and curved racks between which the fingers are moved, to engage the wheels on the picker-fingers by which they are made to revolve, substantially as described.

7. In a cotton-picker, the frame mounted upon wheels, vertical shafts journaled in said frame and provided with gears near their lower ends, horizontal shafts supported by braces connected to the frame, and provided with gears to mesh with the gears upon the vertical drive-shafts, vertical shafts carrying combs and provided with bevel-gears which mesh with bevel-gears on the rear ends of the horizontal shafts, fulcrum-disks secured to the vertical drive-shafts at both their upper and lower ends, carrier-arms loosely attached to the disks, means for moving said arms vertically, carriers pivoted between the outer ends of the arms, means connected to the arms for rocking the carriers, a series of picker-fingers journaled upon each carrier, and provided with wheels near their inner ends and projecting picking-points which extend in a line along the fingers, and curved racks between which the fingers are moved to engage the wheels on the fingers by which they are caused to revolve while passing between the guides, substantially as described.

8. In a cotton-picker the frame mounted upon wheels, vertical operating-shafts journaled in said frame and provided with gears horizontal shafts journaled in the frame and provided with gears upon their forward ends to mesh with the gears upon the lower ends of the vertical shafts, fulcrum-disks secured to the vertical operating-shafts, carrier-arms loosely connected at their inner ends to the disks on the vertical shafts, means for moving said arms vertically, carriers pivotally secured between the ends of the arms, picker-fingers journaled in an inclined position in the carriers, and provided with wheels at their inner ends, guide-racks provided with teeth with which the wheels on the fingers engage as the fingers are moved between the guide-racks, the arms provided with teeth at their outer ends, and the carriers having teeth on their ends to engage the teeth on the arms, substantially as described.

9. In a cotton-picker, a frame mounted upon wheels and provided with side and upright rails, a screw-threaded vertical shaft threaded in the front of the frame, a bevel-gear on the upper end of the shaft, a brace secured to the frame, a bevel-gear and crank-shaft supported in said brace, a bearing-block supported horizontally above the front axle to receive the lower end of said screw-threaded vertical shaft, a pair of vertical driving-shafts journaled in said frame, fulcrum-disks secured to the said shafts, a series of arms fulcrumed in said disks, carriers between the pivoted outer ends of said arms, a series of picker-fingers journaled in each of said carriers, means for moving said arms vertically on their pivots, means for operating said vertical drive-shafts, and means connected to the frame with which said picker-fingers are brought into engagement to rotate the same during the time they are in engagement with said means, substantially as described.

10. In a cotton-picker, the frame mounted upon wheels, vertical shafts journaled in said frame, combs mounted on said vertical shafts, vertical drive-shafts provided with gears at their lower ends, fulcrum-disks secured to said vertical shafts at their upper and lower ends, combined with arms loosely connected to said fulcrum-disks at their inner ends and provided with teeth and lugs at their outer ends, means for moving said arms vertically, carriers pivoted between the outer ends of the arms and provided on their ends with teeth and lugs which engage the teeth and lugs on the arms, a series of picker-fingers journaled in each carrier in an inclined position and provided with operating-wheels at their inner ends, the lugs on the arms being adapted to engage the lugs on the carriers when the teeth of the carriers and arms have passed from engagement to operate the carriers and throw the free ends of the fingers toward the vertical drive-shafts, and curved guides between which the fingers are moved for engagement of the wheels carried by the fingers with said guides to rotate the fingers, substantially as described.

11. In a cotton-picker, a frame, vertical shafts journaled in said frame, fulcrum-disks secured to the shafts at their upper and lower ends, carrier-arms loosely connected at their inner ends to said disks, and means for moving said arms vertically, combined with carriers pivoted between the outer ends of the arms, a series of picker-fingers journaled in each of said carriers and having projecting picking-points extending toward the free ends of the fingers, and means for causing the shafts to revolve and carry the carriers and picker-fingers around therewith, substantially as described.

12. In a cotton-picker, a series of carriers, a series of picker-fingers journaled in each of said carriers at an incline thereto and having projecting picking-points arranged in alinement thereon, supporting-arms for the carriers, vertical operating-shafts, fulcrum-disks secured to said vertical shafts and in which said supporting-arms are loosely mounted, means for operating said supporting-arms vertically, said vertical shafts being provided with gears at their lower ends, combined with horizontal shafts provided with worm-gears adapted to mesh with the gears on the vertical shafts, and revolving combs arranged on the rear end of the machine and operated by said horizontal shafts, substantially as described.

13. In a cotton-picker, a series of carriers, a series of arms between which the carriers are mounted, vertical shafts to which the arms are pivotally connected by horizontal pivots, and means for operating said arms vertically, combined with picker-fingers journaled in an inclined position in each of the carriers, and provided with projecting picking-points which are arranged in alinement thereon, means for turning the carriers on their axes, and means engaging the picking-fingers for causing the same to revolve while in engagement with the cotton, substantially as described.

14. In a cotton-picker, the frame supported upon driving-wheels, the beveled gearing on the axle of said wheels, horizontal

shafts journaled in the frame, and provided with gears at their ends to engage the gears on the axle, and with worm-gears at their front

dition and in the required quantity to compact the said binding material.

818,172. LAMP-BURNER. WILLIAM G. RANKIN, Coal Valley, Pa. Filed Nov. 10, 1905. Serial No. 286,733.

tractor, said center head having a slot therein, and a clamping-bolt passing through said last slot and said first slot.

shafts journaled in the frame, and provided with gears at their ends to engage the gears on the axle, and with worm-gears at their front ends, vertical shafts journaled in the frame, and provided with gears at their lower ends to engage the worm-gears on the front ends of the horizontal shafts, combined with fulcrum-disks secured to the vertical shafts and provided with radial slots, arms fulcrumed at their inner ends to said disks, carriers pivotally supported between the outer ends of said arms, means carried by said arms for rocking the carriers, a series of picker-fingers journaled in each carrier, means for revolving the fingers in unison with the rotation of the vertical shafts and carriers, a flaring U-shaped casing for guiding the cotton to the fingers, and means for elevating the carriers and arms, substantially as described.

15. In a cotton-picker, a frame, vertical shafts journaled in said frame, fulcrum-disks secured near the upper and lower ends of said vertical shafts and gears secured to their lower ends, horizontal shafts provided with gears on their front ends to engage the gears on the vertical shafts, and means for operating said horizontal shafts, combined with carrier-arms, secured to the vertical shafts, means for operating said carrier-arms vertically, a series of carriers loosely connected to said carrier-arms, a series of picker-fingers journaled in each of said carriers, each of said fingers having a wheel mounted thereon and provided with projecting points and curved racks between which the fingers are passed and which engage the wheels on the fingers to rotate the latter, substantially as described.

16. In a cotton-picker, a frame mounted upon wheels, vertical shafts journaled in said frame and means for communicating motion to said shafts from the rear axle, combined with fulcrum-disks secured to said vertical shafts, a series of arms fulcrumed at their inner ends in said disks, carriers pivotally mounted between the outer ends of said arms, means for operating said arms vertically and means carried by the arms for rocking the carriers, a series of picker-fingers journaled in each of said carriers and each of said fingers being provided with a wheel, and curved racks between which the fingers are passed and which engage said wheels for causing the picker-fingers to rotate, substantially as described.

17. In a cotton-picker, the combination of a frame mounted upon wheels, vertical shafts mounted in said frame, means for rotating said vertical shafts, fulcrum-disks secured to the vertical shafts near the upper and lower ends thereof, carrier-arms pivotally connected to said disks by horizontal pivots, carriers pivoted between the outer ends of said arms, means for operating said carrier-arms vertically, and means carried by the arms for rocking said carriers, a series of picker-fingers journaled in an inclined position in each carrier and each finger provided with projecting curved picker-points arranged in alinement and adapted to engage the cotton-bolls, means for causing said fingers to revolve while passing through the cotton, a screw-threaded vertically-arranged shaft mounted upon the front end of the frame for adjusting the height of the fingers, and a flaring U-shaped casing secured to the front end of the frame for guiding the cotton to the picker-fingers, substantially as described.

18. In a cotton-picking machine, a frame mounted on wheels, vertical shafts journaled in said frame, means for communicating a rotary motion to the shafts from the rear axle, disks secured to the shafts at their upper and lower ends, arms fulcrumed at their inner ends to the disks and provided at their outer ends with teeth and lugs, combined with carriers pivoted between the outer ends of the arms and provided with teeth upon both ends to engage with the teeth upon the arms, a series of picker-fingers journaled in each carrier at an angle thereto and provided at their inner ends with wheels, racks adapted to engage said wheels to revolve the picker-fingers, inclined sides secured to the frame and adapted to receive the arms to lift the same when the fingers are out of engagement with the cotton, combs mounted in the frame to remove the cotton from the picker-fingers, and means for causing said combs to revolve, substantially as described.

813,171. PROCESS FOR THE PRODUCTION OF ARTIFICIAL-STONE PLATES. CARL POSL, Budapest, Austria-Hungary. Filed May 2, 1905. Serial No. 258,858.

Claim.—1. Process of producing artificial-stone plates, consisting in spreading upon a layer of filamentous material binding material, as hydraulic cement in a dry state and subsequently adding water in a finely-divided condition and in the required quantity to compact the said binding material.

2. A process of producing artificial-stone plates, consisting in uniformly distributing upon a layer of dry filamentous material a binding material, as hydraulic cement mixed with sand, in a dry powdered state, and subsequently adding water in a finely-divided condition and in the required quantity to compact the said binding material and carrying the not yet hardened mass at a certain speed onto a carrier moving at a less speed, the folds caused thereby in the mass being joined and compacted by pressing and shaking the mass.

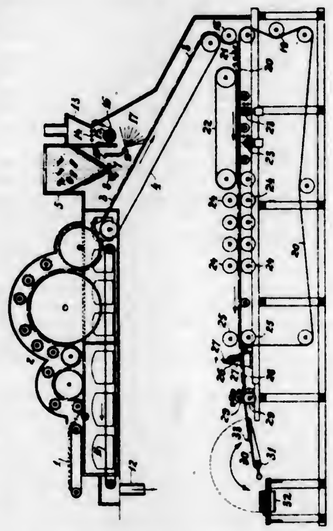

3. Process of producing artificial-stone plates, consisting in uniformly distributing over a layer of dry filamentous material a binding material in a dry powdered state, subsequently adding water in a finely-divided condition and in the required quantity to compact the said binding material and carrying the not yet hardened mass at a certain speed onto a carrier moving at a less speed, the folds caused thereby in the mass being joined and compacted by pressing and shaking the mass.

4. A process of producing artificial-stone plates, which consists in spreading hydraulic cement, mixed with sand, in a dry powdered condition upon a layer of dry filamentous material as asbestos, subsequently adding water in small quantities so as to compact the binding material and carrying the not yet hardened wet mass at a certain speed onto a carrier moving at a less speed, the folds produced thereby being compacted by shaking the carrier and passed between the carrier and an endless band, whereby the mass is made of uniform thickness.

5. A process of producing artificial-stone plates, consisting in uniformly distributing a binding material, as hydraulic cement in a dry powdered condition over a layer of dry filamentous material, subsequently adding small quantities of water to compact the said binding material and carrying the whole not yet hardened mass at a certain speed onto a carrier, moving at a less speed, folds in the mass being caused thereby, which folds are compacted by oscillating beaters shaking said carrier and an endless band pressing the mass between itself and said carrier.

6. A process of producing artificial-stone plates, consisting in spreading a binding material, as hydraulic cement, in a finely-divided dry condition upon a loose layer of dry filamentous material, subsequently adding water in a finely-divided condition to compact the said binding material and carrying the not yet dried mass at a certain speed to a carrier, moving at a less speed, folds being produced thereby in the mass, which, by shaking the carrier and by applying pressure, are caused to form into a compact layer of uniform thickness, means being provided for varying the speed of the carrier, whereby the thickness of the compacted layer can be varied.

7. A process of producing artificial-stone plates, of any desired thickness and size, consisting in spreading a binding material in a finely-divided dry condition upon a layer of dry filamentous material, subsequently adding a sufficient quantity of water to compact the said binding material and carrying the not yet hardened dried mass at a certain speed to a carrier, moving at a less speed, folds being caused thereby in the mass, which folds are compacted by shaking the said carrier and by pressure, thus forming a compact layer of uniform thickness, the mass thus compacted being cut and divided into plates of the required size, while not yet hardened.

813,172. LAMP-BURNER. WILLIAM G. RANKIN, Coal Valley, Pa. Filed Nov. 10, 1905. Serial No. 286,733.

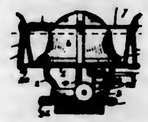

Claim.—In a lamp-burner, the combination with a collar adapted to be screwed into the oil-receptacle, of a second collar hinged to the first-named collar and provided with upwardly-extending arms, a perforated plate carried by said arms, a ring hinged to said perforated plate and spring-arms carried by said ring and adapted to embrace a lamp-chimney.

813,173. MECHANIC'S SQUARE. JOSEPH M. REALING, Daytona, Fla. Filed Oct. 28, 1905. Serial No. 284,795.

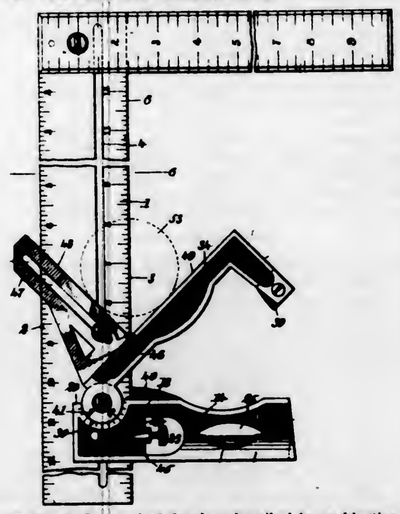

Claim.—1. In a tool of the class described in combination, a main blade having a longitudinal slot therein, a stock adapted to slide on said blade, a protractor, and a bolt pivotally attaching said protractor to said stock and passing through said slot, said bolt affording means for clamping said protractor and said stock to said blade.

2. In a tool of the class described in combination, a main blade having a longitudinal slot therein, a stock slidably mounted on said main blade, a protractor pivotally mounted on said stock, a center head attached to said protractor and having a longitudinal slot therein, and a clamping-bolt passing through said slots and affording means for adjusting said protractor and said center head in unison.

3. In a tool of the class described, a main blade, a stock slidably mounted thereupon, a protractor-bar pivotally mounted on said stock and adapted to lie upon the upper edge thereof, said stock having a tubular chamber formed therein, a spirit-vial received in said tubular chamber, a plug closing the outlet from said chamber at the extremity of said stock remote from said blade, said plug having a groove in the outer face thereof, and a feather carried by said protracter-bar and adapted to engage said groove.

4. In a tool of the class described in combination, a main blade, a pitch-blade removably attached to said main blade at one extremity thereof, said main blade having a longitudinal slot therein, a stock slidably mounted on said main blade, a clamp carried by said stock and engaging said slot for rigidly securing said stock, a protractor, a bolt securing said protractor to said stock and passing through said slot, said protractor consisting of plates lying respectively on opposite sides of said main blade and having openings therein adjacent to the inner extremity of said protractor, a center head having dowel-pins adapted to engage said openings and presenting an edge disposed substantially at right angles to the edge of said protractor, said center head having a slot therein, and a clamping-bolt passing through said last slot and said first slot.

813,174. FORGING AND WELDING MACHINE. CHARLES REINHART, St. Louis, Mo., assignor to The American Brake Company, St. Louis, Mo., a Corporation of Missouri. Filed Apr. 1, 1905. Serial No. 253,294.

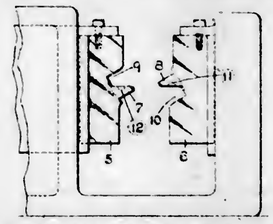

Claim.—1. The combination with oppositely-located half-dies, of mandrel projections carried by the said half-dies and out of alinement with each other, said dies when closed having recesses adjacent the mandrel projections whereby openings are left on opposite sides of the mandrel; substantially as described.

2. The combination with oppositely-located half-dies, of a diagonally-split mandrel having two parts, one of which is carried by each half-die and each of which is out of alinement with the other, said die when closed having recesses at the bases of the mandrel parts whereby openings are left on the opposite sides of the mandrel; substantially as described.

813,175. AUTOMOBILE-FRAME. ALBERT R. SCHAAF and FRANK S. DAVIS, Toledo, Ohio. Filed Aug. 27, 1904. Serial No. 223,300.

Claim.—A member for automobile-frames comprising a metallic bar bent to present an exterior bearing-surface as 4 and substantially parallel supporting members as 3, said supporting members being approximately perpendicular to the said bearing-surface and longitudinal strengthening-beads, as 6, formed upon the outer margins of the said supporting members, said strengthening-beads being formed by folding back upon themselves the margins of the supporting members 3 substantially as described.

813,176. SELF-ADJUSTING BELT FOR SUPPORTING CATAMENIAL BANDAGES. EUGENIA SCHICK, Fly Mountain, N. Y. Filed Aug. 22, 1904. Serial No. 221,063.

Claim.—1. A belt for supporting catamenial bandages, comprising side sections, each gradually increasing in width from the center to its ends, one section being formed of two members detachably secured together, substantially lozenge-shaped hanger-bands having their upper portions arranged between and spaced from the ends of the sections, one at the front and the other at the rear, and a plurality of elastic bands connecting each hanger-band with the ends of the sections, the lower free portions of said hanger-bands being of greater length than the portions between the sections and forming depending tabs for supporting a bandage.

2. A belt for supporting a catamenial bandage, comprising side sections, one section being formed of two parts detachably secured

3. In an attachment for war vessels, the combination of vertical racks, pinions to raise and lower said vertical racks, guides secured

hand-lever pivoted to said opposing intermediate side of the hollow

813,182. COMBINED ANCHOR-HOOK, GUY-CLAMP, AND GUY-STRETCHER. GEORGE F. SWEETSER, Newark, N. J. Filed

2. A belt for supporting a catamenial bandage, comprising side sections, one section being formed of two parts detachably secured together, substantially lozenge-shaped hanger-bands having their upper portions arranged between and spaced from the ends of the side sections, and a plurality of elastic bands connecting each hanger-band with the ends of the side sections, the lower portions of the hanger-bands forming depending tabs, and provided at their lower ends with elastic loops.

3. A sanitary belt comprising two side sections scalloped on their side edges and each formed of two plies of fibrous fabric stitched together at their edges, two substantially lozenge-shaped hanger-bands having their upper ends arranged between and spaced from the ends of the sections, one at the front and the other at the rear, and a plurality of elastic tapes connecting each hanger-band with the ends of the sections, said tapes being secured between the plies of the belt-sections and the upper portions of the side edges of the hanger-bands by stitching, thus producing a washable belt adapted to fit upon the person and provide suspensory tabs thereon.

813,177. **VESSEL.** SACCHEUS SCOTT, West Newton, Pa. Filed May 13, 1904. Serial No. 207,668.

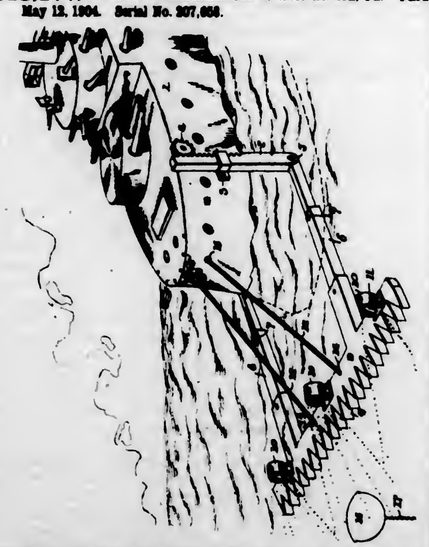

Claim.—1. The combination with a vessel, of vertically-movable rack-bars mounted on the side of the vessel adjacent the bow, gear-wheels meshing with said rack-bars, means for revolving said gear-wheels to raise and lower the rack-bars, sectional telescoping arms pivotally attached to said rack-bars, a cutter-bar rigidly connecting the outer ends of said telescoping arms, cables attached to said cutter-bar, and extending rearwardly and upwardly therefrom to the vessel, and means for exerting tension on said cables to raise said cutter-bar, and means for locking the telescoping bars in extended position.

2. In an apparatus of the character described, the combination of a vessel, vertically-movable rack-bars mounted on the vessel adjacent the bow thereof, means for raising and lowering said bars, horizontal arms pivotally secured to said vertically-movable bars, a cutter-bar carried by said horizontal arms and extending laterally beyond the said horizontal arms on each side, cables attached to said cutter-bars and extending to the vessel, and means for exerting tension on the cables to raise the cutter-bar.

3. In an attachment for war vessels, the combination of vertical racks, pinions to raise and lower said vertical racks, guides secured to the vessel embracing said racks, extensible horizontal arms pivotally secured to the lower end of said racks, a cutter-bar secured to the ends of said arms, and means attached to said cutter-bar whereby the same may be raised or lowered, substantially as described.

813,178. **SLIP-JOINT CONNECTION FOR DENTAL HAND-PIECES.** EDWARD H. SMITH and HARRY F. JOHNS, Philadelphia, Pa. Filed June 3, 1905. Serial No. 263,373.

Claim.—1. In a device of the character described, an outer casing having an aperture therethrough, an inner casing, a spring member integral therewith and having a free end and an outwardly-extending lug on said free end, the rear and side walls of which are adapted to closely engage the corresponding walls of said aperture, whereby the inner and outer casings are securely locked together and relative movement of the same is prevented.

2. In a device of the character described, an outer casing having an aperture therethrough, an inner casing, a spring member integral therewith and having a free end and an outwardly-extending lug on said free end adapted to enter said aperture and when so situated being substantially flush with the surface of the outer casing, the front wall of said lug being beveled and the rear and side walls of said lug being adapted to engage the corresponding walls of said aperture, whereby the inner and outer casings are securely locked together and relative movement of the same is prevented.

813,179. **MOP-WRINGER.** FRANK B. SMITH, Palmyra, N. Y. Filed Feb. 4, 1905. Serial No. 244,190.

Claim.—1. A mop-wringer consisting of a rectangular hollow body having three consecutive sides formed of a single integral metallic piece and open at the remaining side and at the ends, a section within said hollow body and pivoted to opposite sides thereof and above the lower end of the body, said body having projecting points folded at the lower inner edges thereof and means for swinging said pivoted section within the hollow body.

2. A mop-wringer consisting of a rectangular perforated hollow body having three sides formed of a single piece and open at the remaining side and at the upper and the lower ends, a perforated section forming a fourth side of the hollow body pivoted to said body and adapted to swing therein, a pair of draft-links joined to said pivoted fourth side and extending through openings in the back wall of the hollow body, and an operating-lever pivoted on lips projecting outward from said body and joined directly to said draft-links, to swing said pivoted side.

3. A mop-wringer consisting of a rectangular perforated hollow body having three sides formed of a single piece of metal and open at one side and at the upper and the lower ends, a perforated section forming a fourth side for the hollow body, said body provided with integral lips projecting therefrom, said section being pivoted to swing into said body, a pair of draft-links joined to said pivoted fourth side and extending through openings in the rear wall of the hollow body, and an operating-lever pivotally held in said lips on said body and joined to said draft-links to swing the pivoted side, the operating-lever being offset above the draft-links.

4. A mop-wringer consisting of a rectangular perforated hollow body having three sides formed of a single piece and open at one side and at the upper and the lower ends, a perforated part forming a fourth side for the hollow body pivoted to said hollow body and adapted to swing therein, a pair of draft-links occupying openings in said fourth side and in the opposing side of the hollow body and having their ends offset and joined by a pivot-bolt outside of said body, and a hand-lever pivoted to said opposing intermediate side of the hollow body and upon said pivot joining the draft-links, for swinging said pivoted fourth side, the two opposite sides of said body having integral points folded inward toward the third side to contact with the inner surface of a containing vessel.

5. In a mop-wringer a perforated blank sheet of metal having similar notched and angular ends and bent along two parallel lines to form three consecutive sides of a rectangular hollow body or inclosure and having projecting points folded, a fourth movable side of the hollow body held upon pivot-bearings of said body, a lever carried by said hollow body, and connectors for said lever and said movable side.

6. In a mop-wringer a perforated blank sheet of metal having similar notched and angular ends each formed with a projecting point, the sheet being bent to form three consecutive sides of a rectangular hollow body with said projecting points folded, a rectangular blank sheet of metal with projecting sides and ends the latter being folded upon the body of the sheet, and the projecting sides bent at right angles with the body of the sheet to form stiffening-flanges therefor, said sheet thus formed constituting a fourth movable side of said hollow body, and means for holding said fourth side and for moving it within the hollow body.

813,180. **QUICK-ACTING MONKEY-WRENCH.** JAMES L. SMITH, Piru, Cal. Filed Feb. 13, 1905. Serial No. 245,369.

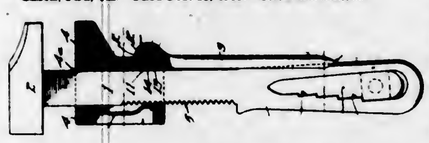

Claim.—A monkey-wrench comprising a toothed shank carrying a fixed jaw, a movable jaw member slidable on the shank and having lateral play thereon and provided with teeth for engaging the shank-teeth, a spring pressing the shank-teeth away from the teeth on the movable jaw member, a cam pivoted on the movable jaw engaging the shank to draw the teeth together, and means for adjusting the projection of said cam, consisting of a screw in the cam engaging the pivot thereof, the cam having a slot engaging its pivot to permit of such adjustment.

813,181. **FRANGIBLE CAP FOR THE CLOSURE OF BOTTLES.** SAMUEL M. STEVENS, Tampa, Fla. Filed Apr. 5, 1905. Serial No. 254,010.

Claim.—1. A frangible cap for bottle-necks, comprising a dome-shaped portion, integral limbs depending therefrom and primarily bent outward affording openings between the limbs, the limbs after heating being adapted by compression for a clasping engagement with the neck of the bottle when the cap is mounted thereon.

2. A frangible cap for a bottle-neck, comprising a dome-shaped top portion having spaced openings therein, integral limbs depending from the top portion between said openings and primarily bent outward, said limbs being adapted, after heating, by compression to clasp a bottle-neck when the cap is mounted thereon.

3. The combination with the neck of a bottle having a bead around its edge, and a cork therein, of a cap comprising a dome-shaped top portion having a plurality of spaced openings therein, a plurality of limbs depending from the top portion between said openings, the limbs diverging, but adapted by compression for closure below the bead, and thus secure the cap on the bottle-neck.

813,182. **COMBINED ANCHOR-HOOK, GUY-CLAMP, AND GUY-STRETCHER.** GEORGE F. SWORTWOOD, Hewark, N. J. Filed Aug. 1, 1905. Serial No. 272,211.

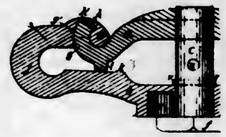

Claim.—1. The combination in a single device of means for attachment to an eyebolt, means for clamping the guy-wire, and means between the two and united therewith for winding in the end of the guy and securing it against unwinding when wound, comprising a drum to which the guy is attached, a head on the drum for the application of a wrench, a chamber in one of the plates contiguous to one of the bearings of the drum, and a roller in the chamber having contact on one side with a bearing of the drum and on its other side with an inclined part of the chamber.

2. A combination guy hook, stretcher and clamp comprising two plates adapted to interlock at one end and constituting a hook, the other ends forming a clamp secured together by bolts, the intermediate portions forming an open loop with a winding-drum therein for holding and winding in the guy through the clamps.

3. A combination guy hook, stretcher and clamp comprising two plates, one end of the plates forming a clamp to be united by bolts, the other ends of the plates interlocking and embodying a hook, the intermediate parts of the plates forming a loop with a winding-drum therein for holding and winding in the guy through the clamps, and locking means to prevent a reverse movement of the drum.

4. A combination guy lock, stretcher and clamp comprising two plates forming a clamp at one end, a loop for a guy-winding drum in the middle, and interlocking hooks for joining the plates and an anchor-hook at the other end, a guy-winding drum through the two plates, a chamber for a friction-roller on one side of one of the drum-bearings, a friction-roller in said chamber, the head on the drum serving as a surface closure of the chamber.

5. A combination guy hook, stretcher and clamp comprising two plates, the two plates forming a clamp at one end to be secured by bolts, a loop for and a guy-winding drum in the middle, with means for interlocking the plates at the other end comprising a hook on one of the plates extended into a hook with a transversely-rounded end to fit a curve in the second plate, a rounded notch back of said end to receive the correspondingly-rounded end of the second plate, and a recess at the base of said rounded notch to receive the curved projection on the end of the second plate, and a bearing-point on the second plate to retain these interlocking parts together when the clamp ends of the plates are brought together.

6. In a combined guy hook, stretcher and clamp the combination with the anchor-hook and guy-clamp of a winding-drum having bearings in the combined plates, a head or heads on the drum adapted for the use of a wrench, a hole through the drum in which to secure the guy, a chamber contiguous to one of the bearings of the drum to contain a friction-roller, and a friction-roller in said chamber adapted to engage with the bearing of the drum.

7. In a combined guy hook, stretcher and clamp the combination with the anchor-hook and guy-clamp of a winding-drum having bearings in the combined plates, a head or heads on the drum adapted for the use of a wrench, a hole through the drum in which to secure the guy, a chamber contiguous to one of the bearings of the drum to contain a friction-roller, a friction-roller in said chamber and the head of the drum adapted to cover the chamber.

8. In a combined guy hook, stretcher and clamp, as shown, the combination with the guy-winding drum of a chamber contiguous to one of the bearings of the drum to contain a friction-roller, a roller in said chamber adapted to engage with and clamp the drum-bearing, and a channel to the said chamber to give access to the roller.

9. In a combined guy hook, stretcher and clamp having multiple guy-winding drums, one of the drums provided with multiple holes for the ends of guy-strands, and multiple grooves in the clamp for securing a loop in the manner shown.

10. In a combined anchor-hook guy stretcher and clamp as shown, the combination with the guy-winding drum of one of the bearings in the plates for the drum expanded into a chamber and a roller in said chamber to engage with the drum on one of its sides and with an inclined surface on its other side.

813,183. **FIREPROOF COLUMN AND COLUMN-CAP.** JOHN J.

813,183. FIREPROOF COLUMN AND COLUMN-CAP. JOHN J. TRAUTMANN, New York, N. Y., assignor to American Column Company, Brooklyn, N. Y., a Corporation of New York. Filed Oct. 23, 1905. Serial No. 283,914.

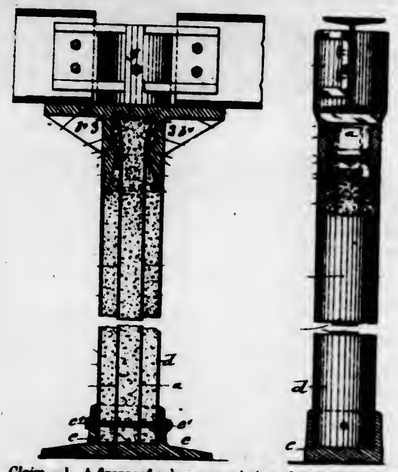

Claim.—1. A fireproof column, consisting of an interior core or pillar provided with a flattened upper end, a column-cap provided with a socket having an interior contracted portion corresponding in shape to the flattened end, an exterior shell or jacket placed over the lower part of the socket of the column-cap, means for connecting the socket, core and jacket, and a fireproof filling for the interior of the core, socket and exterior jacket or shell.

2. A fireproof column, consisting of an interior core or pillar provided with a flattened upper end, a cap provided with a socket tapering toward its lower end and provided with an interior contracted portion corresponding with the shape of the flattened end, an exterior jacket or shell placed on the socket of the column-cap, the interior core and socket being provided with alined openings, and a fireproof filling in the interior core and between the socket and exterior jacket or shell, said filling entering said openings and forming an anchor between the core and socket.

813,184. RELAY. ANGEL VERA and LUIS G. VERA, Cuerotaro, Mexico. Filed Nov. 28, 1904. Serial No. 234,333.

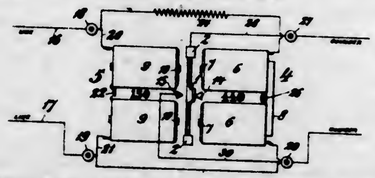

Claim.—1. The combination with an armature, of opposed electromagnets therefor, the one arranged to operate more rapidly than the other, the more rapid of said magnets actuating the armature upon closing of circuit therethrough, and the other of said magnets actuating the armature upon opening of the circuit therethrough.

2. The combination with an armature, of opposed electromagnets therefor, connected with the same source of current, the one arranged to operate more rapidly than the other, the more rapid of said magnets actuating the armature upon closing of circuit therethrough, and the other of said magnets actuating the armature upon opening of the circuit therethrough.

3. The combination with an armature, of opposed electromagnets therefor, the one having magnetically-connected cores, and the other having an unconnected core with free ends.

4. The combination with an armature, of opposed electromagnets therefor, the one having a horseshoe-core, and the other having a straight-line core.

5. The combination with an armature, of opposed electromagnets therefor, each having two coils and cores around which the said coils are wound, the cores of one electromagnet magnetically connected together, and the cores of the other electromagnet free and unconnected.

6. The combination with an armature, of opposed electromagnets therefor, arranged in multiple with each other, each having two coils arranged in series, and cores around which the said coils are wound, the cores of one electromagnet magnetically connected together, and the cores of the other electromagnet free and unconnected.

7. The combination with an armature, of opposed electromagnets therefor, the one arranged to operate more rapidly than the other, said armature arranged to rest normally in the direction of the less-rapidly-operated magnet.

8. The combination with an armature of opposed electromagnets therefor, the one arranged to operate more rapidly than the other, said armature arranged to fall by gravity in the direction of the less-rapidly-operated magnet.

9. The combination with an armature, of opposed electromagnets therefor, connected with the same source of current, the one offering a greater resistance than the other, one of said magnets actuating the armature upon closing of circuit therethrough, and the other of said magnets actuating the armature upon opening of the circuit therethrough.

10. The combination with an armature, of opposed electromagnets therefor, connected with the same source of current, and a resistance arranged between the two said magnets, one of said magnets actuating the armature upon closing of circuit therethrough, and the other of said magnets actuating the armature upon opening of the circuit therethrough.

11. The combination with an armature, of opposed electromagnets therefor, the one arranged to operate more rapidly than the other, said electromagnets connected with the same source of current, and offering the one a greater resistance than the other, one of said magnets actuating the armature upon closing of circuit therethrough, and the other of said magnets actuating the armature upon opening of the circuit therethrough.

12. The combination with an armature, of means for producing opposed magnetic fields therefor, said means simultaneously controlled, but operating the one more rapidly than the other, the more rapid of said magnetic fields actuating the armature in one direction, at substantially the moment of production thereof, and the other of said magnetic fields actuating the armature in the other direction, at substantially the moment of reduction thereof.

13. The combination with an armature, of opposed electromagnets therefor, simultaneously operated, but arranged the one for more rapid magnetization and demagnetization than the other one of said electromagnets actuating the armature in one direction upon magnetization, and the other of said electromagnets actuating the armature in the other direction, at substantially the moment of deenergization.

14. A neutral electromagnetic instrument comprising an armature, and two simultaneously-controlled electromagnets in the same circuit, one of said electromagnets attracting the armature in one direction upon closing of circuit through both the magnets, and the other of said electromagnets attracting the armature in the other direction upon opening of circuit through both the magnets.

15. The combination with an armature, of opposed electromagnets therefor connected in multiple circuit with respect to each other, and one arranged to magnetize and demagnetize more rapidly than the other.

16. The combination with an armature, of opposed electromagnets therefor connected in multiple circuit with respect to each other, and one arranged to magnetize and demagnetize more rapidly than the other, and resistance in series circuit with the less rapid of said magnets.

813,185. SPEED-INDICATOR. BERNHARD VOLKHAR, New York, N. Y., assignor, by direct and mesne assignments, to The Acme Automotor Company, New York, N. Y. Filed July 21, 1905. Serial No. 270,611.

Claim.—1. In a speed-indicator, a revolving shaft, a cone, a governor-ring having connection with a fixed point on the shaft and mounted to slide on the shaft, the said ring also having connection with said cone, and means for resisting the centrifugal force of the said ring.

2. In a speed-indicator, a drive-shaft, a governor-ring having connection with the fixed point on the shaft and mounted to slide on the shaft, and means for resisting the centrifugal force of the ring.

3. In a speed-indicator, a drive-shaft, a governor-ring mounted to turn with and have sliding movement upon the said shaft, a long tapered cone, a link connection between the cone and the governor-ring, and an opposing link connection between the governor-ring and a projection from the shaft.

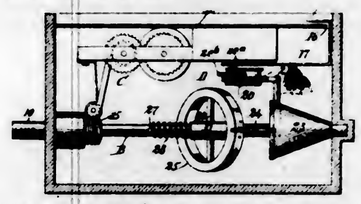

4. In a speed-indicator, a revolving shaft, a governor-ring mounted to slide on the shaft and turn therewith, a cone having link connection with the ring, a tension-stop for the ring, a train of gearing, a hand operated thereby, a segment which operates the train of gearing, and an arm from the segment which engages with the periphery of the cone.

5. In a speed-indicator, a shaft, a governor, a long tapered cone sliding upon the said shaft and connected with the governor, a train of gearing adapted to operate a hand or pointer, a segment in operative connection with the gearing, and an arm from the said segment which engages the peripheral surface of the cone.

6. In a speed-indicator, the combination with the casing, the shaft mounted to turn therein, having a longitudinal central slot, and a post extending through the shaft at one end of the slot, of a cone mounted to slide on the shaft at the opposite end of the said slot, a governor-ring through which the said shaft passes, a link connection between the ring and the cone, an opposing link connection between the said ring and the said post, a sleeve mounted to slide on the shaft within the ring, a pin extending from side to side of the governor-ring between the links, which pin passes through the said sleeve and the slot in the said shaft, having sliding movement in the said slot, a spring coiled around the said shaft, bearing against the said sleeve and the said post, a train of gearing, a hand or pointer operated thereby, a segment in operative engagement with the said train of gearing, and a roller-arm extending from the segment to an engagement with the peripheral portion of the cone.

813,186. STEERING-GEAR FOR AUTOMOBILES. JESSE WARRINGTON, Indianapolis, Ind., assignor to Nordyke & Marmon Company, Indianapolis, Ind., a Corporation of Indiana. Filed June 29, 1904. Serial No. 214,579.

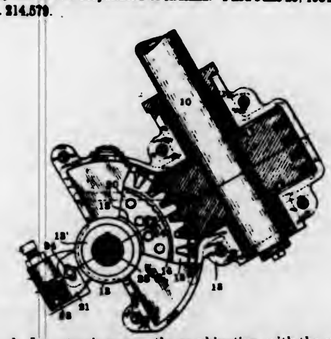

Claim.—1. In a steering-gear, the combination, with the steering-shaft and worm carried thereby, of a worm-segment meshing with said worm and consisting of a pair of mating toothed segments angularly adjustable relatively to each other, an inclosing casing for said parts, and adjustable means accessible from the exterior of said casing for yieldingly holding said mating segments in various positions of relative angular adjustment.

2. In a steering-gear, the combination, with the steering-shaft and worm carried thereby, of a second shaft, a worm-segment carried by said second shaft and meshing with said worm, said segment consisting of a pair of mating toothed members, one attached to said shaft and the other angularly adjustable about the shaft, each of said members provided with a portion projecting from the shaft opposite from the toothed portions thereof, a yielding buffer carried by one of said projections, and a coöperating part carried by the other of said projections.

3. In a steering-gear, the combination, with the steering-shaft and worm carried thereby, of a second shaft, a worm-segment carried by said second shaft and meshing with said worm, said segment consisting of a pair of mating toothed members, one attached to said shaft and the other angularly adjustable about the shaft, each of said members provided with a portion projecting from the shaft opposite from the toothed portions thereof, a yielding buffer carried by one of said projections, a coöperating part carried by the other of said projections, and an inclosing casing inclosing the worm and the segments.

4. In a steering-gear, the combination, with the steering-shaft and the worm carried thereby, of a second shaft, a toothed worm-segment attached to said second shaft and provided with an arm projecting away from the toothed portion, a second mating toothed section journaled upon the first toothed section, and also provided with an arm projecting away from the toothed portion and lying adjacent the similar arm of the first segment, an adjustable abutment carried by one of said arms, and a yielding buffer carried by the other of said arms, all substantially as and for the purpose set forth.

5. In a steering-gear, the combination, with the steering-shaft and the worm carried thereby, of a second shaft, a toothed worm-segment attached to said second shaft and provided with an arm projecting away from the toothed portion, a second mating toothed section journaled upon the first toothed section, and also provided with an arm projecting away from the toothed portion and lying adjacent the similar arm of the first segment, an adjustable abutment carried by one of said arms, a yielding buffer carried by the other of said arms, and an inclosing casing inclosing the worm and toothed portions of the worm-segment, all substantially as and for the purpose set forth.

813,187. AUTOMATIC TURNING, SHAPING, AND FINISHING MACHINE. ALBERT R. WEISS, New York, N. Y., assignor to The Matchless Cigar Lighter Manufacturing Company, New York, N. Y., a Corporation of New York. Filed July 13, 1905. Serial No. 269,472.

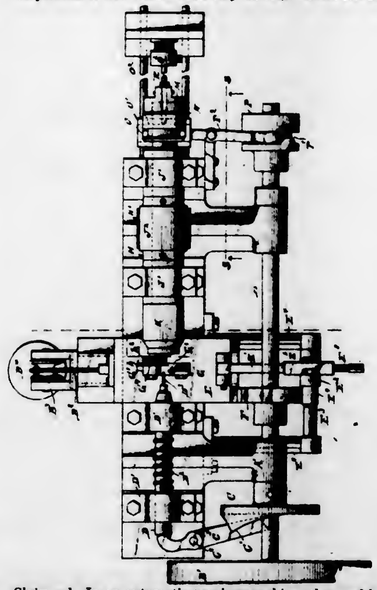

Claim.—1. In an automatic turning-machine, the combination with a rotative chuck and means for automatically opening and closing the same, of a non-rotative drill in line with said chuck, a carriage mounted to move transversely to the axis of the chuck and drill, a stop fixed on said carriage and having a recess in line with the axis of the drill, a combined parting and shaping tool on said carriage located some distance from the stop in the direction of the movement of the carriage, the stop being also located a greater dis-

tance from the chuck than is the combined parting and shaping tool, substantially as set forth.

2. In an automatic turning-machine, the combination with a

2. In a machine of the class described provided with a rotary beater, a horizontally-adjustable rotary breaker-plate, a grinding-

3. A machine or apparatus for the purpose specified, having a laterally-vibrating, inclined, covered chute, provided with a heating-

Claim.—1. A furnace of the class described having a plurality of kettles, disposed one above another and spaced apart, and means

tance from the chuck than is the combined parting and shaping tool, substantially as set forth.

2. In an automatic turning-machine, the combination with a tubular rotative clutch-body, of a longitudinally-movable clutch therein, a belt-pulley surrounding the clutch-body, two screws in said pulley at opposite ends thereof, the inner ends of which screws are made conical, the clutch-body having two inverted conical holes for receiving the conical ends of said screws, the distance between the points of the screws being less than the distance between the lowest parts of the inverted conical holes in the clutch-body, substantially as set forth.

813,188. **PIPE-DAMPER.** HUGH WHITHAM, Hamilton, Canada. Filed July 21, 1905. Serial No. 270,635.

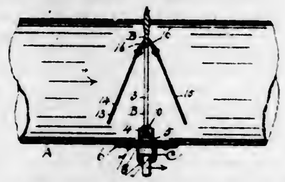

Claim.—1. In a pipe-damper, a pipe, a circular damper provided with a central opening, a vertical pin extending from the upper part of the damper and through the pipe, hubs on the lower part of the damper and diametrically opposite to the pin, a hub secured to the lower part of the pipe, an arrow-handle, a vertical stem on the handle adapted to rotate in said secured hub and secured in the hubs of the damper, means on the handle to allow one quarter-turn of the same and the damper automatic wings adapted to swing from the upper part of the damper and to retain relative position with respect to each other and one of said wings being provided with a central opening

2. In a pipe-damper, a pipe, a circular damper provided with a central opening and adapted to rotate in the pipe, a hub secured to the lower side of the pipe, and provided with a side opening, means on the upper part of the damper, and on the lower part of the damper to allow the same to rotate, an arrow-handle extending through said hub, means on the handle to engage the walls of the opening of the pipe-hub to stop at one quarter-turn, automatic side wings adapted to swing together from the upper part of the damper and independently of the damper, and one of said wings being provided with a central opening.

813,189. **GEARING.** ERNEST WIGHTON, New York, N. Y. Filed Aug. 26, 1904. Serial No. 223,111.

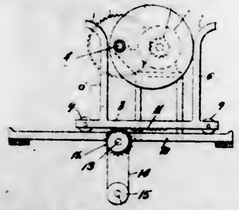

Claim.—In a device of the character described, a gear capable of an oscillatory motion, a rack having teeth for a distance less than the length of the periphery of the said gear, and means for reciprocating said rack in such a manner that a period of rest intervenes between each stroke in either direction, so as to alternately engage and disengage said gear, whereby an oscillatory motion is imparted to the said gear with periods of rest intervening between each movement in either direction.

813,190. **DISINTEGRATING-MACHINE.** MILTON F. WILLIAMS, St. Louis, Mo., assignor to Williams Patent Crusher & Pulverizer Company, St. Louis, Mo., a Corporation of Missouri. Filed Aug. 13, 1904. Serial No. 220,603.

Claim.—1. In a machine of the class described, the combination with a disintegrating-chamber, a hopper, a rotary breaker-plate and a grinding plate, of means for imparting synchronous movement to the rotary breaker-plate and grinding-plate for purposes of adjustment; substantially as described.

2. In a machine of the class described provided with a rotary beater, a horizontally-adjustable rotary breaker-plate, a grinding-plate concentrically adjustable with respect to the axis of rotation of the beater, the breaker-plate being adjacent to the entrance-opening of the machine and the grinding-plate being immediately below said breaker-plate, and means for imparting synchronous movement to the breaker-plate and grinding-plate; substantially as described.

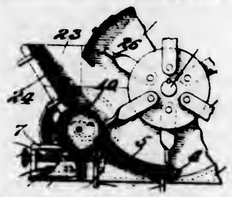

3. In a machine of the class described provided with rotary beaters, a horizontally-adjustable rotary breaker-plate, a grinding-plate concentrically adjustable with respect to the axis of rotation of the beaters, and a connecting means between the two whereby the movement of one will impart movement to the other; substantially as described.

4. In a machine of the class described provided with rotary beaters, a horizontally-adjustable rotary breaker-plate, a grinding-plate concentrically adjustable with respect to the axis of rotation of the beaters, sliding bearings supporting the breaker-plate, and rigid connections between the sliding bearings and the grinding-plate; substantially as described.

5. In a machine of the class described provided with rotary beaters, a cylindrical casing having an opening in its periphery and a horizontally-adjustable rotary breaker-plate adjacent to said opening, a grinding-plate below the breaker-plate and concentrically adjustable with respect to the axis of rotation of the beaters, sliding bearings supporting the breaker-plate, and connecting means between the sliding bearings and the grinding-plate; substantially as described.

6. In a machine of the class described provided with a pivotally-mounted beater, the combination with a cylindrical casing having an opening in its periphery, of a horizontally-adjustable rotary breaker-plate, a grinding-plate concentrically adjustable with respect to the pivot of the beater, sliding bearings supporting the breaker-plate, and a screw for imparting motion to the sliding bearings whereby the rotary breaker-plate and the grinding-plate will be synchronously moved; substantially as described.

7. In a machine of the character described, the combination with a rotary breaker-plate and a grinding-surface, of means for simultaneously adjusting the breaker-plate horizontally and the grinding-surface in a curved path; substantially as described.

8. In a machine of the character described, the combination with a roller breaker-plate, of means for adjusting the same horizontally, a grinding-surface capable of concentric movement with respect to the axis of rotation of the pivoted revolving hammers which coöperate with the breaker-plate and said grinding-surface, and a pivotal connection between said roller breaker-plate and said concentrically-movable grinding-surface; substantially as described.

9. In a machine of the character described, the combination with pivoted revolving hammers, of a roller breaker-plate, a grinding-surface concentrically movable with respect to the axis of rotation of said hammers, a link connection between said grinding-surface and said roller breaker-plate, and means for adjusting said parts simultaneously; substantially as described.

813,191. **SAND-DRIER.** SAMUEL A. WILSON and ENOS A. BROWSON, Newburgh, N. Y. Filed Nov. 23, 1905. Serial No. 288,711.

Claim.—1. A machine or apparatus for the purpose specified, having an inclined, vibrating chute for the material to be dried, heating means in said chute, and a vibrating hopper above the higher receiving end of said chute, said hopper having a plurality of pendent delivery-spouts disposed abreast and which diverge laterally, substantially as and for the purpose specified.

2. A machine or apparatus for the purpose specified, having a laterally-vibrating hopper, a covered, inclined, laterally-vibrating chute below said hopper, said chute being provided with a corrugated metal bottom, an outlet at its lower end, and a coil of pipe for steam, the pipes of the coil extending lengthwise of the chute, means for imparting lateral vibrations to said chute, and means for removing vapor from the covered chute.

3. A machine or apparatus for the purpose specified, having a laterally-vibrating, inclined, covered chute, provided with a heating-coil, the pipes of which extend lengthwise of the chute, and a corrugated sheet-metal bottom below said coil, cushioning-springs on the sides of said chute, means for varying the inclination of said chute, means for supplying the material to the upper end of the chute, and means for removing vapor from the chute.

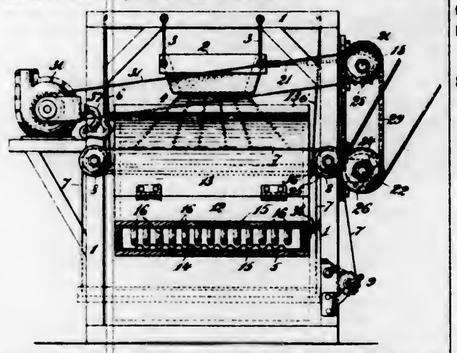

4. A machine or apparatus for the purpose specified, having a frame, a receiving-hopper suspended in the frame and provided with laterally-divergent and pendent outlets, means for imparting lateral vibrations to said hopper, an inclined chute suspended in the frame and adapted to receive the material from the hopper, said chute having a corrugated metal bottom plate, a heating-coil above said bottom plate, a cover composed of hinged flaps and the hood 13, an exhausting device for removing vapor from the chute, said device being connected with the interior of said hood, and means for imparting lateral vibrations to said chute.

5. A machine or apparatus for the purpose specified, having a frame, an inclined covered chute, in said frame, steam-pipes disposed lengthwise in the chute, means for agitating the chute, means for supplying material to be dried to the upper end of said chute, and an exhaust-fan for removing from the chute the vapors arising from the drying material.

6. A machine or apparatus for the purpose specified, having a frame, a suspended and inclined covered chute in said frame, said chute being lined with non-conducting material and having a bottom provided with channeled metal, the channels extending lengthwise of the chute, heating means comprising a plurality of steam-pipes extending along the said channels in the bottom of the chute, means for supplying material to the upper end of said chute, and means for removing the vapors arising from the drying material.

7. A machine or apparatus for the purpose specified, having a frame, a suspended and inclined chute suspended in said frame and linked to the frame at one side near its middle, means for agitating said chute, means for heating material flowing down said chute, means for supplying material to be dried to the upper end of said chute, and means for removing from said chute the vapors arising from the drying material.

813,192. **PLASTER-KETTLE.** SAMUEL W. WOMACK, Laramie, Wyo. Filed Aug. 24, 1905. Serial No. 275,625.

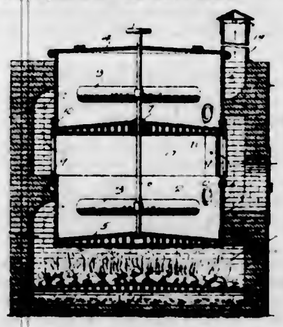

Claim.—1. A furnace of the class described having a plurality of kettles, disposed one above another and spaced apart, and means to cause the heated products of combustion to continue to pass under and through the heated kettles.

2. A furnace of the class described having a plurality of kettles, disposed one above another and spaced apart, means to cause the heated products of combustion to continue to pass under and through the heated kettles, and means to discharge the material from the upper kettle into the lower kettle.

813,193. **LOADING DEVICE FOR DIRT, MANURE, &c.** GEORGE H. YOUNG, Welcome, Wis. Filed Sept. 29, 1905. Serial No. 280,593.

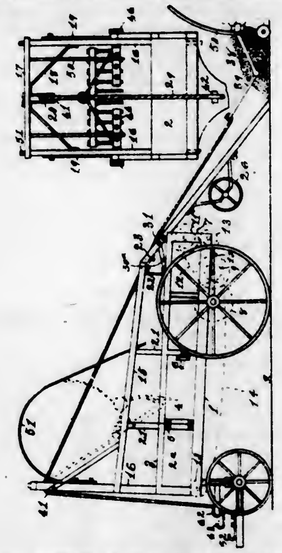

Claim.—1. A loading device for dirt, manure, &c., comprising a wagon, a wagon-box thereon, a rail at each side of the box at a distance above its side-boards and of a length nearly equal to said box, sheave-pulleys supported at the forward end of said box, one above and one below the same, an apron extending at a suitable inclination from the rear end of said rails to the ground, a carrier for gathering the material to be loaded, a roller mounted for revolution, at each side thereof and arranged for traveling along said rails, a bail pivoted to said carrier, and a rope rove over said sheave-pulleys and being connected with said bail, substantially as described.

2. A loading device for dirt, manure, &c., comprising a wagon, a wagon-box thereon, a rail at each side of the box at a distance above its side-boards and of a length nearly equal to said box, an apron detachably connected to the rear ends of said rails and extending at a suitable inclination from said rails to the ground, a carrier for gathering the material to be loaded, a roller mounted for revolution upon each side thereof and arranged for traveling along said rails, a bail pivoted to said carrier, sheave-pulleys suitably supported at the forward end of said wagon-box one above and one below the same, and a rope rove over said pulleys and being connected with said bail, substantially as set forth.

3. A loading device for dirt, manure, &c., comprising a wagon, a wagon-box thereon, a rail at each side of the box at a distance above its side-boards and of a length nearly equal to said box, an apron detachably connected to the rear end of each rail and extending at a suitable inclination from said ends to the ground, a roller mounted transversely of said apron for revolution in the side rails thereof, near the upper end of said apron, and having its upper surface slightly above the upper suface of said apron, a carrier for gathering the material to be loaded, a roller mounted for revolution at each side of said carrier and arranged for traveling along said rails, a bail pivoted to said carrier, sheave-pulleys suitably supported at the forward end of said wagon-box, one above and one below the same, and a rope rove over said pulleys and being connected with said bail, substantially as described.

4. In a loading device for dirt, manure, &c., adapted for use

4. In a loading device for dirt, manure, &c., adapted for application to a manure unloading or distributing wagon, a rail arranged above each side-board at a distance above the same and extending from their forward end to near the rear end of said box, an apron detachably connected to the rear end of each rail, a board arranged transversely of said apron near the upper end thereof and being hinged thereto for protecting the beater, or distributing-drum of said wagon from the carrier when delivering the loading material to said distributing-wagon, substantially as set forth.

5. In a carrier for a loading device for loading dirt, manure, &c., a suitable head-piece therefor, suitable handles attached thereto, means secured to said head-piece for gathering and holding the material to be loaded, spindles secured to the carrier at each side thereof at a point substantially in the horizontal plane of the free, or outer end of said carrier and perpendicularly under said carrier head-piece, a roller mounted upon each spindle, and a bail pivoted to said carrier at a point forward of said rollers and above the plane of the bottom of said carrier, substantially as described.

6. In a carrier for a loading device for loading dirt, manure, &c., a suitable head-piece therefor, suitable handles attached thereto, means secured to said head-piece for gathering and holding the material to be loaded, spindles secured to the carrier at each side thereof at a point substantially in the horizontal plane of the free, or outer end of said carrier and perpendicularly under said carrier head-piece, a roller mounted upon each spindle, a flange upon the outer end of each roller, flaring outward therefrom and of greater diameter than said roller, and a bail pivoted to said carrier at a point forward of said roller and above the bottom of said carrier, substantially as set forth.

813,194. **LEER.** WILLIAM M. ANDERSON, Pittsburg, Pa. Filed Aug. 16, 1905. Serial No. 274,377.

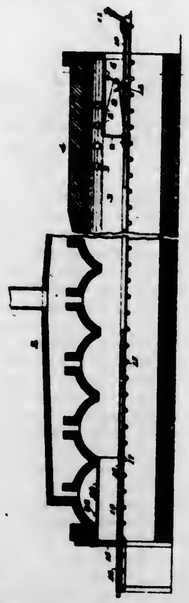

Claim.—1. In a leer, a movable casing, adapted to inclose the glass, and to be drawn outwardly with the glass, and to be pushed back into the leer, leaving the glass outside the leer, substantially as specified.

2. In a leer, a movable casing adapted to inclose the glass in the leer, having an open end to permit the passage of the glass in the leer to the interior of the casing, and having a door adapted to keep the outer end of the leer closed, said casing being adapted to be drawn outwardly with the glass and to be pushed back into the leer, leaving the glass outside the leer, the door being opened to permit the retraction of the casing; substantially as specified

3. In a leer, an inclosed entry located within the leer, a door secured to the outer end of longitudinal and pivoted arms, and devices for raising and lowering the arms; substantially as specified.

4. In a leer, a longitudinally-movable casing, supported by rollers mounted on tracks secured to the side walls of the leer, said casing being adapted to inclose the glass during its passage from the leer substantially as specified.

813,195. **REFRIGERATING MEANS.** JOHN BECK, Ashland, Wis. Filed June 4, 1904. Serial No. 211,120.

Claim.—1. A refrigerator-house having oppositely-disposed drip-collectors presenting a central opening therebetween, and side openings adjacent to the side walls of said house, said drip-collectors being inclined toward said central opening, joists disposed transversely with respect to said central opening and supported on said drip-collectors, bars constituting gratings and resting on said joists, side hoods projecting from the side walls of said house and overhanging the outer edges of said drip-collectors, a central hood disposed over said central opening and overhanging the adjacent edges of said drip-collectors, the outer edge faces of said drip-collectors inclining inwardly in an upward direction whereby they facilitate the movement of air toward said central opening and across the upper faces of said drip-collectors, the inner edge faces of said drip-collectors being inclined downward away from the central line of said house whereby they tend to direct a descending air-current laterally.

2. A refrigerator-house having oppositely-disposed drip-collectors presenting a central opening therebetween and side openings adjacent to the side walls of said house, said drip-collectors being inclined toward said central opening and having inclined edge faces at said central opening adapted to facilitate the divergence of air-currents descending at said central opening, said drip-collectors further having inclined side edges at said side openings adapted to facilitate an inward or central movement of an air-current rising at the side walls of said house, ice-gratings supported on said drip-collectors, hoods overhanging the edges of said drip-collectors at said openings, and hinge door-sections attached below said openings and facilitating the flow of air-currents therethrough.

813,196. **FLY-PAPER.** JULIUS H. BIRD, San Francisco, Cal., assignor to C. A. Maydwell, San Francisco, Cal. Filed June 19, 1905. Serial No. 265,963.

Claim.—A new article of manufacture, comprising a plate having a surrounding upturned rim, said plate made of pulp or the like, sized or otherwise rendered non-absorbent, the bottom of said plate coated with a suitable sticky mixture, the surrounding rim being left uncoated to form a barrier against the escape of the sticky mixture, and a protective sheet of substantially the same diameter as the plate, laid thereon and pressed into contact with the mixture and capable of being rolled back to expose a portion of the coated part of the plate, said protective sheet being non-absorbent, and having a rim portion which corresponds to the uncoated rim of the plate thereby enabling several plates to be piled one on the other without one plate sticking to the other.

813,197. **HOSE-SUPPORTER.** HELEN W. CARR, New York, N. Y. Filed Mar. 6, 1905. Serial No. 248,702.

Claim.—1. A hose-supporter comprising a hanger folded upon itself at the lower end and forming a bight, a clasp attached to the free end of the hanger and embracing the same for slidable adjustment thereon, a loop in the bight of the hanger, a leg-band, a strap

attached at spaced points to the leg-band and passing through the loop, and another strap attached to the hanger above the slidable clasp thereon, said last-mentioned strap being provided with a stocking-clasp.

2. A hose-supporter comprising a hanger having its lower end folded upon itself and forming a bight, a clasp slidable on the hanger for varying the operative length thereof, means at the upper part of the hanger for attaching the same to a corset, a leg-band, an elastic strap connecting the leg-band with the bight of the hanger, and another strap attached to the hanger between the clasp and the corset-attaching means.

3. A hose-supporter comprising a hanger having one end doubled upon itself and producing a bight, a clasp adjustable on the hanger for varying the operative length thereof, means for attaching the hanger to a corset, a strap fastened to the hanger between the clasp and the corset-attaching means, a leg-band, a loop in the bight of the hanger, and an elastic strap fitted in the loop and having its ends secured at separated points to the leg-band.

813,198. **BOTTLE-CLOSURE.** ARISTODEMO CELENZA and DOMENICO CELENZA, New York, N.Y. Filed Oct. 26, 1905. Serial No. 284,457.

Claim.—1. In a bottle-closure, a cork, a rod extended through the same and terminating at its outer end in a hook portion, a loop for engaging the said hook portion, a ring having swinging connection with the loop, and a locking-plate mounted to rotate on the rod below the hook.

2. In a bottle-closure, a cork, a rod extended longitudinally through the cork and terminating at its outer end in a hook portion, a locking-plate mounted to rotate on the rod below the hook portion the said plate having a notch at one side, a loop for engaging with the hook portion, and a ring having swinging connection with the loop.

3. In a bottle-closure, a cork, a rod extending longitudinally through the cork and having a head at its inner end, a plate arranged between said head and the inner end of the cork, a hook on the outer end of the rod, a locking-plate mounted to turn on the rod below the hook and having a notch at one side, a loop adapted for removable engagement with said hook when the notch portion of the plate is turned underneath the free end of the hook, and a ring having swinging connection with the loop.

813,199. **MANUFACTURE OF ENGLISH BEERS OR MALT LIQUORS.** NIELS H. CLAUSSEN, Copenhagen, Denmark. Filed May 17, 1904. Serial No. 208,464.

Claim.—1. As a step in the production of English beers, such as ale, stout and porter, the addition thereto of cultures of the brettanomyces, in order to produce the flavor and condition of English beers, substantially as set forth.

2. In the production of English beers, such as ale, stout and porter, the process which consists in adding thereto a mixture of yeast and cultures of brettanomyces, substantially as set forth.

3. In the production of English beers, such as ale, stout and porter, the addition thereto of cultures of brettanomyces to beer which has been primarily fermented in any suitable way, substantially as set forth.

4. In the production of English beers, such as ale, stout and porter, pasteurizing the beer and then adding cultures of brettanomyces to the pasteurized beer, substantially as set forth.

813,200. **ADVERTISING DEVICE.** PAULIN COUPETTE, Cologne, Germany. Filed June 13, 1904. Serial No. 213,133.

Claim.—1. An advertising device, comprising a drum constructed of duplicate rigid disks having corresponding sockets therein, rods of spring material having the ends thereof reduced and seated in the said sockets, advertising-sheets each having an edge thereof looped and slipped over one of the spring-rods, and means for imparting an intermittent rotary motion to the drum.

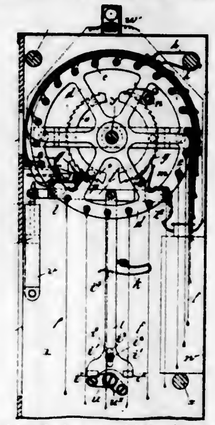

2. An advertising device comprising a drum, advertising-sheets carried by the drum, means for imparting motion to the drum and a plurality of springs having their free ends arranged one behind the other and bent or beveled, the said ends of the springs bearing on the advertising-sheets, and serving to hold and release the same.

3. An advertising device, comprising a drum, advertising-sheets supported thereon, and means for imparting an intermittent rotary motion to the drum, including a horizontal lever pivoted at one end, a rod having vertical guided movement and pivoted at its upper end to the lever, the said rod terminating at its lower end in branches each provided with a shoe, a two-armed lever mounted to oscillate, the arms of the lever being adapted to alternately engage the said shoes to reciprocate the rod, a pin projecting from said rod, a spring exerting downward pressure on said pin, a ratchet-wheel on the shaft of the drum, and an actuating-pawl therefor, carried by the said horizontal lever.

4. An advertising device, comprising a drum, advertising-sheets carried thereby, a ratchet-wheel, an actuating-pawl engaging the ratchet-wheel, means for moving the pawl for imparting intermittent rotary motion to the drum, a pawl engaging the ratchet-wheel for preventing retrograde movement of the drum, and a stop device for the drum comprising a second ratchet-wheel having its teeth disposed in an opposite direction to the teeth of the first-mentioned ratchet-wheel, and a pawl adapted to be carried into engagement with the teeth of said second ratchet-wheel on the completion of each movement imparted to the drum by the actuating-pawl.

5. An advertising device comprising a drum, advertising-sheets carried thereby, a pivoted vertically-swinging lever, a pawl carried thereby, a ratchet-wheel actuated by the pawl for imparting an intermittent rotary motion to the drum, a pawl engaging said ratchet-wheel for preventing retrograde movement of the drum, and a stop device for the drum, comprising a second ratchet-wheel having its teeth disposed in an opposite direction to the teeth of the first-mentioned ratchet-wheel, a pivoted pawl adapted to be carried into engagement with the said second ratchet-wheel by the movement of said lever, and a spring for normally holding the pawl out of such engagement.

6. An advertising device comprising a drum, advertising-sheets carried thereby, means for imparting an intermittent rotary motion to the drum including a ratchet-wheel mounted on the shaft of the drum, a swinging lever and a pawl carried by the lever and engaging the ratchet-wheel to move the same, a pawl engaging the ratchet-wheel to prevent retrograde movement of the drum, and a stop device comprising a ratchet-wheel mounted on the shaft of the drum and having its teeth disposed in a direction opposite the teeth of the first-mentioned ratchet-wheel, and a pawl normally held out of engagement with the said ratchet-wheel and adapted to be moved into engagement therewith by the movement of the actuating-lever for the drum.

813,201. **SPEED-CONTROLLING SYSTEM.**

813,201. SPEED-CONTROLLING SYSTEM. ADOLPH L. DE LEEUW, Hamilton, Ohio. Filed Aug. 7, 1905. Serial No. 273,991.

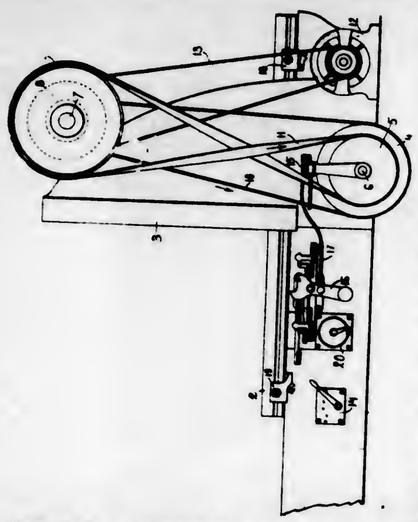

Claim.—1. In a speed-controlling system, the combination, substantially as set forth, of a machine having a part to be moved at differing rates of speed, a continuously-running motor for driving the machine part, transmitting connections between the motor and the machine part, a controller for varying the speed of the motor, and connections between the controller and a moving part of the machine for causing the movement of said part to automatically adjust the controller and effect variations in the speed of the continuously-running motor.

2. The combination, substantially as set forth, with a machine provided with automatic reversing mechanism, a motor running continuously in one direction for actuating the machine, transmitting mechanism between the motor and the machine, a controller for varying the speed of the motor, and connections between the controller and a moving part of the machine, of means for causing said connections to effect an adjustment of the controller at each reversal of the machine, whereby the speed of the continuously-running motor and the machine may differ upon the forward and backing strokes of the planer.

3. The combination, substantially as set forth, with a machine provided with automatic reversing mechanism, a motor running continuously in one direction for actuating the machine, transmitting mechanism between the motor and the machine, a controller for varying the speed of the motor, and connections between the controller and a moving part of the machine, of means for causing said connections to adjust the controller in the motor-slowing direction before and in the motor-quickening direction after each reversal whereby the continuously-running motor causes the machine to reduce its rate of motion prior to and increase its rate of motion subsequent to each reversal.

4. The combination, substantially as set forth, with a machine provided with automatic reversing mechanism, a motor running continuously in one direction for actuating the machine, transmitting mechanism between the motor and the planer, arranged to cause a given speed of the motor to give to the machine a backing speed in excess of its forward speed, a controller for varying the speed of the motor, and connections between the controller and a part of the machine, of means for causing said connections to effect an adjustment of the controller at each reversal of the machine, whereby the speed of the continuously-running motor and the machine may differ upon the forward and backing strokes.

5. The combination, substantially as set forth, with a reciprocating machine provided with an automatic reversing mechanism, a motor running continuously in one direction for actuating the planer, transmitting mechanism between the motor and the planer, a controller for varying the speed of the motor, and mechanism connected with the controller for adjusting it, of means connected with said controller-adjusting mechanism and adapted to be engaged by dogs on a reciprocating part of the machine before and after each reversal of the motion of said part.

6. The combination, substantially as set forth, with a planing-machine provided with automatic reversing mechanism, a motor running continuously in one direction for actuating the planer, transmitting mechanism between the motor and the planer, a controller for varying the speed of the motor, and connections from the controller for adjusting it, of means whereby the planer-dogs engage with and disengage from said controller-adjusting mechanism prior to the reversal of table motion, and means for causing the planer-dogs to engage with and disengage from said controller-adjusting mechanism subsequent to the reversal of table motion.

7. The combination, substantially as set forth, with a planing machine provided with automatic reversing mechanism, a motor running continuously in one direction for actuating the planer, transmitting mechanism between the motor and the planer, a controller for varying the speed of the motor, and connections from the controller for adjusting it, of means for causing the planer-dogs to engage with and disengage from said controller-adjusting mechanism prior to and again subsequent to the reversal of table motion, and means for variably adjusting the time of disengagement of the dogs from said controller-adjusting mechanism after the reversal of the table motion.

8. The combination, substantially as set forth, with a planing-machine provided with automatic reversing mechanism, a motor running continuously in one direction for actuating the planer, transmitting mechanism between the motor and the planer, a controller for varying the speed of the motor, and connections from the controller for adjusting it, of means for causing the planer-dogs to engage with and disengage from said controller-adjusting mechanism prior to and again subsequent to the reversal of table motion, and means for variably adjusting the time of disengagement of the dogs from said controller-adjusting mechanism after the reversal of the table motion, said variable adjusting means being independent as regards each dog, whereby the release of each dog from the controller-adjusting mechanism after the reversal of table motion may occur under selected conditions independent of the corresponding adjustment for the other dog.

9. The combination, substantially as set forth, with a planing-machine provided with automatic reversing mechanism, a motor running continuously in one direction for actuating the planer, transmitting mechanism between the motor and the planer, a controller for varying the speed of the motor, and connections between the controller and a part of the planer moving in unison with its table, of means incorporated in said connections whereby a planer-dog will adjust the controller to motor-slowing position, then effect the reversal of the table motion and then adjust the controller to motor-quickening position.

10. The combination, substantially as set forth, with a planing-machine provided with automatic reversing mechanism, a motor running continuously in one direction for actuating the planer, transmitting mechanism between the motor and the planer, a controller for varying the speed of the motor, and connections from the controller for adjusting it, of means whereby the planer-dogs actuate the planer-reversing tumbler and the controller-adjusting mechanism at different times whereby the controller becomes adjusted before and after the reversals of planer motion.

11. The combination, substantially as set forth, with a planing-machine provided with an automatic reversing mechanism, a motor running continuously in one direction for actuating the planer, transmitting mechanism between the motor and the planer, a controller for varying the speed of the motor, and connections between the controller and a part of the planer moving in unison with its table, of means for causing each planer-dog to adjust the controller to motor-slowing position and then to effect the reversal of table motion and then adjust the controller to motor-quickening position

12. The combination, substantially as set forth, with a planing-machine provided with an automatic reversing mechanism, a motor running continuously in one direction for actuating the planer, transmitting mechanism between the motor and the planer, a controller for varying the speed of the motor, and connections between the controller and a part of the planer moving in unison with its table, of means for causing said connections to slow the table motion before reversal thereof and to quicken the table motion after the reversal thereof, and means independent for each dog for adjusting selectively the degree of said quickening whereby the continuously-running motor moves the table at speed decreased before reversal and at speed increased after reversal and whereby the table speeds after reversal may be selectively different for the cutting and the backing stroke.

813,202. LAMP-BURNER. FREDERICK W. DARNELL, New York, N. Y., assignor to The Drumel Railway Lamp Works, New York, N. Y., a Corporation of New York. Filed Sept. 20, 1905. Serial No. 279,346.

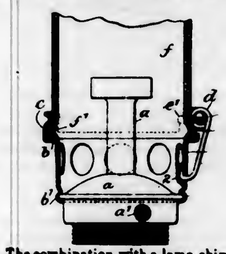

Claim.—1. The combination with a lamp-chimney ribbed at one end, of a lamp-burner and its gallery, a recessed support-arm at one side of said gallery, a wire helix at the opposite side adapted to engage the rib of said chimney and hold the same with a continuous pressure and points of support for the lower end of the chimney at opposite ends on the helix.

2. The combination with a lamp-chimney ribbed at one end, of a lamp-burner and its gallery, a recessed support-arm at one side of said gallery, a wire helix at the opposite side adapted to engage the rib of said chimney and hold the same with a continuous pressure, points of support for the lower end of the chimney at the opposite ends of the helix and a wire of curved form passing through the helix to limit its movement with the respective ends of the wire secured to said opposite places of support.

3. The combination in a lamp-burner with a gallery having an arm curved in plan conforming to the curve of the gallery, curved in vertical cross-section and located at one side of the gallery, of a double helix at the opposite side of the gallery, arms from the ends of the double helix lying side by side and passing down the gallery and at their free ends soldered thereto, a curved wire passing through the double helix, support-arms rising from the gallery at opposite sides or ends of the helix and to which the respective ends of the said wire are secured, and a lamp-chimney ribbed at its lower end and adapted to be received in the recessed arm at one side and by the helix at the other side with the lower end of the chimney resting upon the support-arms.

813,203. MUFFLER. GUSTAVE B. FRANQUIST, New York, N. Y. Filed Sept. 13, 1905. Serial No. 278,267.

Claim.—1. A muffler comprising a drum or casing having a perforated diaphragm transverse to the drum or casing and a wall whereby the same is divided into a receiving-chamber, an equalizing-chamber and an exit-chamber, and tubes for connecting the exit-chamber with the equalizing-chamber at a point in the region of the center of the latter.

2. In a muffler, a receiving-chamber having a diaphragm with a multitude of perforations therein, an equalizing-chamber in which said perforations are axially directed, said chamber having an end wall substantially opposite said perforations, and an exit-chamber in communication with the equalizing-chamber in the region of its center.

3. In a muffler, a receiving-chamber having a perforated diaphragm, an equalizing-chamber having a plurality of tubes extending into its central portion and directed toward said diaphragm, and an exit-chamber with which said tubes communicate.

4. In a muffler, a plurality of chambers separated by perforated diaphragms, the central chamber being arranged to reflect the exhaust-wave upon itself and produce wave interference, and an outlet near the central region of said chamber.

5. In a muffler, a receiving-chamber having a diaphragm with a multitude of perforations uniformly distributed over the face thereof, and formed to transmit an exhaust-wave in a forwardly-progressing plane, a wall in the path of said wave arranged to reflect the same upon itself, and a tube forming an outlet at a loop of the resulting wave interference produced.

6. In a muffler, a drum or casing having an inlet connection, a diaphragm whereby the exhaust-wave is transformed into a forwardly-progressing uniform wave, a wall in the path of said wave arranged to reflect the same upon itself, and a plurality of outlet-tubes having their inlet-orifices between the said diaphragm and wall.

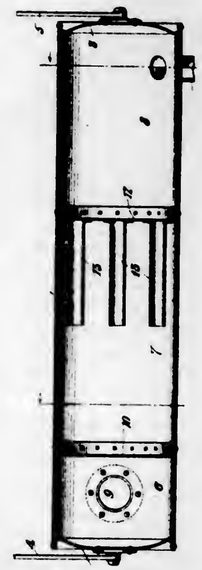

7. In a muffler, a drum or casing of substantially cylindrical form having a diaphragm near one of its ends provided with a multitude of circular perforations directed axially of the drum, an inlet connection into the chamber thus formed, a second wall having a plurality of tubes projecting toward said diaphragm and arranged at a considerable distance therefrom whereby a wave is formed which impinges against said wall, and an exit-chamber in communication with said tubes and forming the final end of said drum or casing and in communication with the atmosphere.

813,204. ENGINE-DRIVEN BLOWER FOR EXPLOSION-ENGINES. LEE A. FRAYER and WILLIAM J. MILLER, Columbus, Ohio. Filed Jan. 11, 1905. Serial No. 240,670.

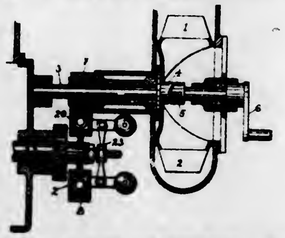

Claim.—In an air-cooled explosion-engine, a secondary starting-shaft, a blower mounted thereon, a small pinion on said shaft, a prime moving shaft, a relatively large cushioned gear-wheel thereon meshing with said pinion and adapted to form a yielding connection between said blower and said prime moving shaft, and whereby the speed of said blower is greatly accelerated.

813,205. CROSS-TIE AND MEANS FOR HOLDING TRACK-RAILS THEREON. EDWARD A. GILLCHRIST, McKeesport, Pa. Filed Aug. 17, 1905. Serial No. 274,581.

Claim.—1. The combination with a tie-body formed of concrete or the like, of two bracket-stands each comprising an anchor-plate of considerable area, a transverse web-plate erected on the anchor-plate, a base-plate on the upper end of the web-plate, an overhanging abutment-flange at one end of the base-plate, an anchor-block depending from the other end of the base-plate, and offset headed bolts

body of heated liquid, spraying said plates after emerging from said

means for gripping a portion of the bottom and withdrawing the

plate having a groove with straight and curved portions for the re-

pending from the other end of the base-plate, and offset headed bolts screwing into threaded perforations in the anchor-block.

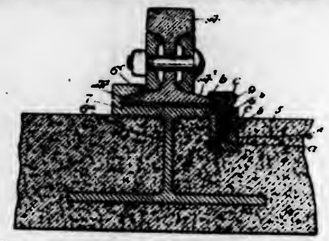

2. The combination with a tie-body formed of concrete or the like, of two metal bracket-stands, each comprising an oblong rectangular anchor-plate, a transverse web-plate erected on the anchor-plate near its center, a base-plate on the upper end of the web-plate, an overhanging abutment-flange at one end of the base-plate and spaced therefrom, an anchor-block formed transversely on the opposite end of the base-plate and depending therefrom, said block having threaded perforations therein, offset headed screw-bolts engaging the threaded perforations, said bolts having a longitudinal groove in each one, and a key engaging each groove and adapted to hold the bolt from turning.

3. The combination with a tie-body formed of concrete or the like, and with a track-rail, of a metal bracket-stand for support of the track-rail, comprising an oblong anchor-plate, a web-plate erected on the anchor-plate, a base-plate on the upper end of the web-plate, said base-plate seating on the tie-body and the web and anchor-plates embedded therein, a transverse hook-flange on one end of the base-plate, said flange hooking upon the base-flange of the track-rail along one side edge thereof, an anchor-block depending from the other end of the base-plate, keeper-bolts having offset heads and screwing into tapped perforations in the anchor-block, and keys engaging grooves in the keeper-bolts for holding said bolts from turning.

813,206. **PROCESS OF TREATING METALS.** HARRY H. GOODELL, Indiana Harbor, Ind. Filed July 7, 1905. Serial No. 268,688.

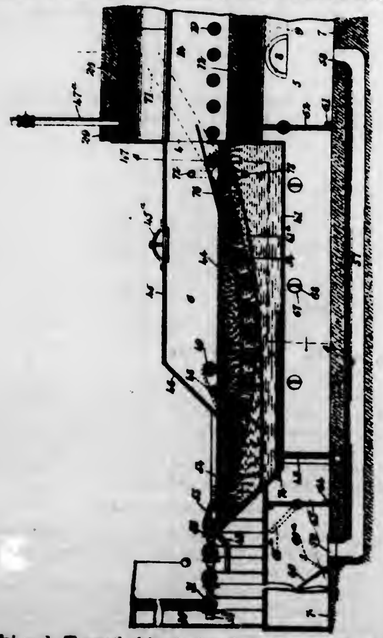

Claim.—1. The method herein described of treating plates of sheet iron and steel, which consists in passing the same through a body of heated liquid, spraying said plates after emerging from said liquid, raising the temperature of said plates while subjecting them to the vapor of said liquid so as to prevent oxidation of said plates, and finally allowing said plates to emerge into the atmosphere and gradually cool.

2. The method herein described of treating plates of sheet iron and steel, which consists in passing the same through a body of heated liquid serving as a vapor seal, subjecting said plates to the action of a vapor restrained by said vapor seal, increasing the temperature of said vapor, and thereby increasing the temperature of said plates, and finally allowing said plates to emerge into the air and to cool.

3. The method herein described of treating sheets of iron and steel, which consists in warming said plates, washing the same, subjecting said plates to the action of a body of vapor treated to different extents in different portions thereof, the lowest temperature of said vapor approximating 400° Fahrenheit and the highest temperature thereof approximating 900° to 1,200° Fahrenheit and finally allowing said plates to emerge into the open air and then to cool.

4. The method herein described of treating sheet iron and steel, which consists in passing the same slowly through a body of vapor heated unequally in different portions thereof, the iron and steel being first exposed to portions of low temperature and then to portions of successively higher temperature, and then allowing said iron and steel to emerge into the atmosphere and cool.

5. The method herein described of treating sheet iron and steel, which consists in passing the same through a volatile liquid, causing said liquid to vaporize so as to leave said iron and steel dry, gradually raising the temperature of said iron and steel by passing the same through a body of vapor heated unequally in its different portions, and finally allowing said iron and steel to cool in contact with the open air.

6. The method herein described of treating plates of metal, which consists in subjecting the same to the action of an aeriform body, of which different portions are heated unequally, said plates being first brought into contact with portions of said aeriform body having comparatively low temperatures and passed successively along to portions having higher and higher temperatures, and finally causing said plates to emerge into the open air.

813,207. **MACHINE FOR MAKING PAPER BAGS.** OTTO HESSER, Cannstatt, Germany. Filed June 24, 1904. Serial No. 214,064.

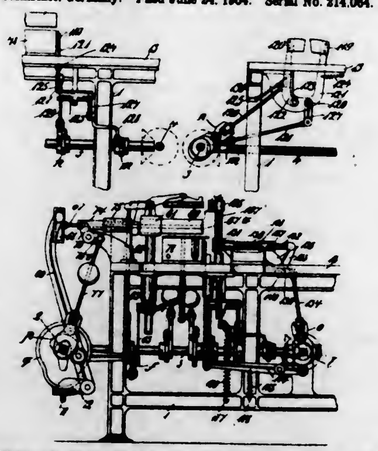

Claim.—1. In a paper-bag machine, a folding-box, a core movable thereinto, means for feeding a sheet of paper over the box, means for supplying an adhesive to the paper in advance of its arrival over the box, means for depressing the core and thus folding an intermediate portion of the sheet within the box, means for folding over the upstanding edges of the paper, means for pressing the longitudinal seam so formed, means for folding one end of the paper over the core to form a bottom, means for forcing the bag from the core, means for engaging and holding opposite sides of the bag, means for crossing the remaining sides inward, mechanism for moving the engaging and clamping means toward each other during such crossing operation to flatten all but the bottom of the bag and

means for gripping a portion of the bottom and withdrawing the same from the crossing and pressing mechanism.

2. In a machine of the class described, an adhesive-applying device including a paste-roller, a pair of stamps normally arranged in parallel relation with each other and the roller, means for moving the stamps over the roller, means for moving one of the stamps to dispose them in angular relation, and means for depressing said stamps; substantially as described.

3. In a machine of the class described, an adhesive-applying device including a paste-roller, a horizontally and vertically movable carriage, a pair of stamps arranged on the carriage in parallel relation and movable over the roller, and means for moving one of the stamps into angular relation to the other during such movement; substantially as described.

4. In a machine of the class described, an adhesive-applying device including a paste-roller, a horizontally and vertically movable carrier, a pair of stamps, one secured to the carriage and the other pivoted thereto, both of said stamps being normally disposed in parallel relation and movable over the paste-roller, an arm carried by the pivoted stamp and having a cam-slot, and a stationary pin engaging in said cam-slot to effect pivotal movement of the stamp; substantially as described.

5. In a machine of the class described, a movable paper-carriage, a paste-roller, a stamp pivoted at one side of the path of movement of the carriage, and means for swinging the stamp on its pivot between the roller and to an applying position at an angle to the path of movement of the carriage; substantially as described.

6. In a machine of the class described, the combination with a pair of pressing-plates between which the formed bag is fed, of means for engaging and clamping two opposite edges of the open end of the bag against said plates, creasing member for engaging the free sides of the bag, and means for forcing one plate toward the other to flatten the bag; substantially as described.

7. In a machine of the class described, a bag creasing and flattening means, including flattening-plates, grippers for holding two of the sides of the bag to the plate, means for creasing the two remaining sides of the bag, and means for moving said plates toward each other; substantially as described.

8. In a machine of the class described, the combination with bag creasing and flattening devices, of a feeder, a gripping-jaw carried thereby, means for actuating the jaw to engage a portion of the bottom of a bag, means for moving the feeder and gripping-jaw, and means for removing the bag from the jaw and feeder; substantially as described.

9. In a machine of the class described, the combination with an automatic bottom-gripper, of a segmental feeding-plate for removing the bag from the gripper, and a pair of flattening-rollers to which the bag is fed by said plate; substantially as described.

813,208. **CONVEYING MECHANISM FOR PAPER-BAG MACHINES.** OTTO HESSER, Cannstatt, Germany. Filed Dec. 16, 1904. Serial No. 237,139.

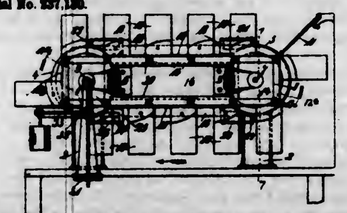

Claim.—1. In an apparatus of the class described, pivotally-connected links forming an endless conveyer, folding plates or mandrels carried thereby, pins projecting from the links, a conveyer-support, a plate having a continuous guiding-groove for said pins and means for resisting the passage of the latter in the groove.

2. In an apparatus of the class described, pivotally-connected links forming an endless conveyer, folding plates or mandrels carried thereby, pins projecting from the links, a conveyer-support, a plate having a guiding-groove with straight and curved portions for the reception of said pins, and means at the junction of the straight and curved portions of the groove for resisting the passage of the pins.

3. In an apparatus of the class described, pivotally-connected links forming an endless conveyer, folding plates or mandrels carried thereby, pins projecting from the links, a conveyer-support, a plate having a groove with straight and curved portions for the reception of said pins, and spring-pressed cam-levers at the junction of the straight and curved portions of the groove for resisting the passage of the pins.

4. In an apparatus of the class described, pivotally-connected links forming an endless conveyer, folding plates or mandrels carried thereby, pins projecting from the links, a conveyer-support, a plate having a groove with straight and curved portions, and pivotally-mounted spring-pressed levers having cam-shaped end portions for locking the pins at the junction of said straight and curved portions of the groove.

5. In an apparatus of the class described, pivotally-connected links forming an endless conveyer, folding plates or mandrels carried thereby, pins projecting from the links, a supporting-frame, a pair of shafts carried thereby, rectangular plates carried thereby and receiving the links, bell-crank levers carrying one of the shafts, and weights connected to the levers and tending to separate the shafts.

6. In a device of the class described, a link having a recessed rib, a clamp-plate, a bolt connecting the two, a detachable folding plate or mandrel having a slot for the reception of the bolt, and side strips for preventing lateral play of said plate or mandrel.

813,209. **STEAM HYDRAULIC INTENSIFIER.** THOMAS E. HOLMES, Sheffield, England, assignor of one-half to Davy Brothers Limited, Sheffield, England. Filed Mar. 8, 1905. Serial No. 248,964.

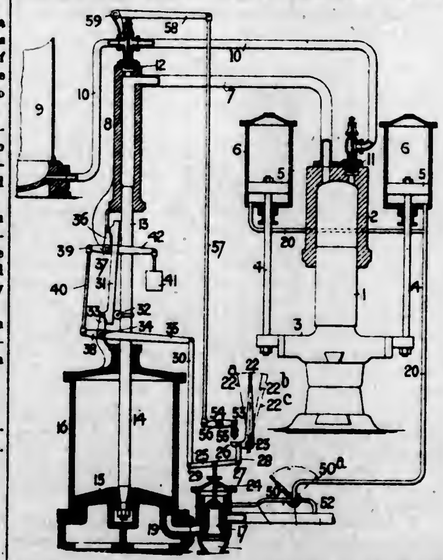

Claim.—1. In a hydraulic press working on the steam-intensifier system, the combination with the steam-piston of the intensifier, the valve for controlling the supply of steam to said piston, and a hand-lever whereby said valve is initially set, of mechanism including a movable bar, a reciprocatory device in contact therewith, and an intermediate resistance connected to said valve and hand-lever and controlled automatically by the steam-piston in such manner that the movement of said piston in performing its working stroke will cause the supply of steam to be cut off in accordance with the position to which the hand-lever has been set.

2. In a hydraulic press working on the steam-intensifier system, the combination with the steam-piston of the intensifier, the valve for controlling the supply of steam to said piston, and a hand-lever whereby said valve is initially set, of mechanism including a movable bar, a reciprocatory device in contact therewith, and an intermediate weight connected to said valve and hand-lever and controlled automatically by the steam-piston in such manner that the movement of said piston in performing its working stroke will cause the supply of steam to be cut off in accordance with the position to which the hand-lever has been set.

3. In a hydraulic press, working on a steam-intensifier system,

the combination with the steam-piston of the intensifier, of a valve for controlling the supply of steam to the piston, a hand-lever, a floating lever pivoted to the stem of the main valve and coupled by one end to the hand-lever, a movable bar connected to the other end of the floating lever, and means whereby the steam-piston may actuate the movable bar during its working stroke to close the steam-valve, substantially as described.

4. In a hydraulic press, the combination with the steam-piston of the intensifier of a so-called floating lever pivoted to the stem of the main steam-valve, and another lever to which one end of the floating lever is coupled, a movable bar connected to the other end of the floating lever, adapted to be acted upon by the steam-piston during its working stroke, to cause the main steam-valve to be closed in correspondence with the position to which the second-mentioned lever has been set, a double-acting piston coupled to said second-mentioned lever, a reciprocatory piston within the cylinder, a slide-valve adapted to admit fluid to the one side and exhaust it from the other side of said piston, alternately, a hand-lever, a coupling-rod attached to the said second-mentioned lever, and another so-called floating lever pivotally attached at its ends to the second-mentioned lever and said coupling-rod coupled at an intermediate point to the said slide-valve, to cause the piston to be arrested at that point in its travel, corresponding to the position to which the said hand-lever has been set.

813,210. DEVICE FOR DRESSING STONE. HENRY HUGHES and ROBERT HUGHES, Mount Vernon, N. Y. Filed Oct. 26, 1905. Serial No. 284,779.

Claim.—1. A stone-dressing tool, having corrugations extending across the two faces thereof, the corrugations upon one face being arranged at an angle to the corrugations on the opposite face.

2. A stone-dressing tool, having corrugations extending across the two faces thereof, the corrugations upon one face being arranged at a right angle to the corrugations on the opposite face.

3. A stone-dressing tool, having corrugations extending across the two faces thereof, the corrugations upon one face being arranged at an angle to the corrugations on the opposite face, and the tool being provided with a central hole.

4. A stone-dressing tool having parallel faces provided with corrugations, the corrugations upon one face being arranged at an angle to the corrugations on the opposite face, and the tool being provided with a central hole perpendicular to the parallel faces.

5. A stone-dressing tool having parallel faces provided with corrugations, the corrugations upon one face being arranged at an angle to the corrugations on the opposite face, and the two being provided with a central hole perpendicular with the parallel faces.

6. A stone-dressing tool having corrugations extending across the two faces thereof, the corrugations upon one face being arranged at an angle to the corrugations on the opposite face, and a holder having corrugations across one of its faces adapted to be engaged by either series of those on the tool.

7. A stone-dressing tool, having corrugations extending across the two faces thereof in directions at right angles to each other, combined with a holder for the tool, having corrugations across one of its faces, adapted to be engaged by either series of those on the tool.

8. A stone-dressing tool, having corrugations extending across the two faces thereof, the corrugations upon one face being arranged at an angle to the corrugations on the opposite face, a holder for the tool having corrugations across one of its faces adapted to be engaged by either series of those on the tool, and a clamping member for securing the tool in place, the corrugations on one of its faces adapted for engagement with either of those on the tool.

9. A stone-dressing tool, having corrugations extending across the two faces thereof in directions at right angles to each other, combined with a holder for the tool, having corrugations across one of its faces, adapted to be engaged by either series of those on the tool, and a clamp member for securing the tool in place, having corrugations on one of its faces, adapted for engagement with either series of those on the tool.

10. A rectangular stone-dressing tool having corrugations extending across the two faces thereof in directions at right angles to each other, and provided with a central hole combined with a holder for the tool, having a vertical slot therein, a bolt extending through said hole and slot, a clamp carried by the bolt, and means for securing the parts together, said holder having corrugations engaged by one series of corrugations on the tool and said clamp having corrugations on the face thereof, engaging with the other series of corrugations on the tool.

813,211. DRILLING-MACHINE. JOHN P. JACOBS, Coalinga, Cal. Filed Aug. 22, 1905. Serial No. 275,202.

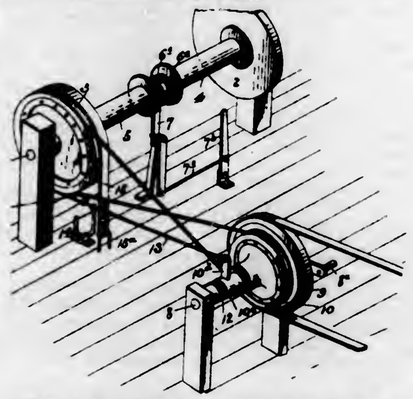

Claim.—1. A machine of the character described, comprising two loose drums, a common shaft bearing said drums, a rotary part fixed to said shaft, a clutch contrivance arranged upon said shaft, intermediately of said drums, a driving-pulley and its shaft, a frictional clutch arranged upon said driving-pulley shaft, means effective for transmitting motion from said driving-pulley to said frictional clutch, a brake-strap applicable to said rotary part and means for its actuation, a nut, a screw-threaded coupling equipped with said nut and effective for actuating said frictional clutch, and means forming connection between said nut and said brake-strap-actuating means.

2. A machine of the character described, comprising a drill-line drum, a shaft bearing said drum, a clutch contrivance for effecting connection between said drum and shaft, a band or driving wheel, a frictional clutch adapted to have contact with said wheel, a shaft loosely equipped with said frictional clutch and bearing said band or driving wheel, means effecting connection between said driving-wheel and a rotary part fixed to the drum-shaft, a screw-threaded coupling equipped with a nut and effective for action between said frictional clutch and the shaft bearing said clutch, a brake-band engaging said rotary part, and a lever-and-rod connection between said nut and said brake-strap.

3. A machine of the character described, comprising a drum-equipped shaft having a fixed wheel, a brake-strap encompassing said wheel, a band-wheel, a second shaft equipped with said band-wheel, a frictional clutch loosely arranged upon the latter shaft, and fixed to a disk or pulley, a screw-threaded coupling for said frictional clutch equipped with a nut, means of connection between said pulley and said brake-strap-encompassed wheel, an arm-and-rod connection between said nut and a lever for actuating said brake-strap.

818,212. MILL-PICK. ROBERT JOHNSON, Cole, Tenn. Filed Jan. 14, 1905. Serial No. 241,207.

Claim.—A mill-pick comprising a sectional head composed of two plates each of which is provided on their inner faces with right-angular cut-away portions which serve to form a single socket when the sections are brought together, a single cutting-blade mounted in the socket and constructed of a thickness equal to size of the socket, said blade having its rear edge in direct contact with the vertical portions of the cut-away portions of the socket, and bolts passing solely through the two sections and having nuts thereon for securing said sections together, substantially as specified.

818,213. MOTOR-PROPELLED VEHICLE. WARREN S. JOHNSON, Milwaukee, Wis. Filed Nov. 10, 1904. Serial No. 232,165.

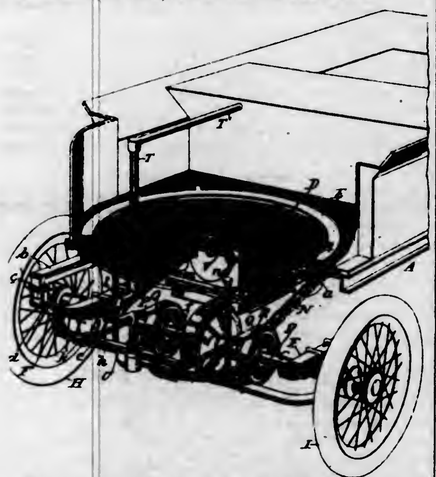

Claim.—1. In combination with the body of a vehicle, a turn-table; a divided driving-shaft carried by said turn-table; a motor for imparting rotation to said shaft; differential gear interposed between the motor and the shaft-sections; ground-wheels connected with the respective shaft-sections; and means whereby either wheel may be temporarily held against rotation while the other is left free to turn.

2. In a vehicle, the combination of a motor and a divided driving-shaft; differential gear connecting the motor with the shaft-sections; ground-wheels connected with and driven by said sections; and brake or holding devices, one for each of said wheels, each adapted to hold its wheel against rotation or to retard such rotation.

3. In combination with a vehicle, comprising a body, having rear wheels to rest normally upon the ground, and a front swiveled truck provided with a divided driving-shaft; a motor for rotating said shaft; ground-wheels connected with and rotated by the respective sections of said shaft; and means substantially such as described for holding against rotation either ground-wheel while permitting the other to rotate under the power of the motor.

4. In combination with the body of a vehicle provided with rear wheels to rest normally on the ground and support the vehicle, a turn-table mounted in and adapted to turn relatively to the vehicle-body; a divided shaft carried by said turn-table; a motor for rotating said shaft; ground-wheels connected with and adapted to be rotated by the respective sections of said shaft; brakes or holding devices serving to hold against rotation the driven ground-wheels; clamping or holding devices adapted to hold the turn-table against rotation; and intermediate connections substantially such as described, between the locking or holding devices of the turn-table and the brakes or clamping devices of the wheels, whereby when the turn-table is locked or clamped, the brakes are released, and when either brake is applied the turn-table is released.

5. In combination with a divided driving-shaft, and ground-wheels of a motor-vehicle connected with and rotated by the respective sections of said shaft, brakes or holding devices, one for each of said wheels; a motor for rotating the shaft; differential gear interposed between the motor and said shaft; an operating-lever for the brakes or holding devices; and connections between said lever and brakes or holding devices, whereby when the lever is in its medial position both brakes are made free, and whereby, when the lever is thrown in direction to apply either brake, it is precluded from also applying the other brake.

6. In combination with the body A of a vehicle, an annular support E carried thereby, a turn-table D rotatably mounted in said annular support; an axle carried by the turn-table; ground-wheels mounted upon said axle; braking or clamping shoes q carried by the turn-table and adapted to press against the support E; a lever; connections between said lever and the shoes q, whereby the latter may be forced into or withdrawn from frictional contact with the support E; a motor; and connections between the motor and the ground-wheels whereby either or both of said wheels may be positively driven by the motor.

7. In a vehicle, the combination with the body, of the turn-table D and its supporting-ring E; outwardly-movable rods o, provided with shoes q to bear against the support E; a cross-head V pivotally attached to the turn-table D; rods n connecting said cross-head with the rods o; a crank-shaft T provided with a steering handle or lever; and rods m connecting the cranked portion of said shaft with the cross-head V.

8. In combination with the body of a vehicle, a ring or annular support E carried thereby; a turn-table D rotatable in said support; a divided shaft carried by said turn-table; ground-wheels supporting said turn-table; connections between said ground-wheels and the respective shaft-sections, whereby the wheels are driven; a motor; differential gear connecting the motor with the shaft-sections; brakes or holding devices serving to hold or retard the respective ground-wheels independently; a cross-head pivotally attached to the turn-table; brake-shoes carried by the turn-table and movable into and out of contact with its annular support; connections between the cross-head and the brake-shoes; a crank-shaft provided with a cranked portion; and a connection between said cranked portion of the shaft and the cross-head pivoted to the turn-table and also between said shaft and the brake-shoes or holding devices, adapted to permit either brake to be thrown into clamping action without affecting the other brake, substantially as set forth.

9. In combination with a vehicle, front and rear ground-wheels therefor; a motor connected with and serving to positively and independently rotate the front wheels; and brakes or holding devices adapted and arranged to brake or hold either front wheel at will, whereby the other is adapted to circle about the retarded wheel by reason of the power applied to the driven wheel, and thus to turn the vehicle or change the direction of its movement.

10. In combination with a vehicle, front and rear ground-wheels therefor; a turn-table interposed between the front wheels and the vehicle-body; a motor serving to positively and independently rotate said front wheels; brakes or holding devices adapted and arranged to brake or hold either driven wheel at will; and means for locking the turn-table against turning relatively to the vehicle-body.

11. In a vehicle, the combination with a body and rear supporting-wheels, of a forward truck swiveled in or rotatable relatively to said body and provided with ground-wheels; a motor serving to positively and independently rotate the wheels of said truck; and brakes or holding devices adapted and arranged to brake or hold either of said ground-wheels at will, and permit the other to circle about it under the power of the motor.

818,214. LUBRICATOR FOR CARS. JOSEPH F. JOY, Monongahela, Pa., assignor to Joy Horn Manufacturing Company, Monongahela, Pa., a Corporation of Pennsylvania. Filed Apr. 17, 1905. Serial No. 255,982.

Claim.—1. In an apparatus of the class described, the combination with a supporting-track, and a supply-pipe, of pumps communicating with said supply-pipe, resilient frames mounted on the track at the outside of the rails thereof, nozzle-supporting members slid-

ably mounted upon said frames, nozzles carried by said members and connected to said pumps, means to simultaneously actuate said pumps, and said movable nozzle-supporting members, and means to return said nozzle-supporting members to their normal position, substantially as described.

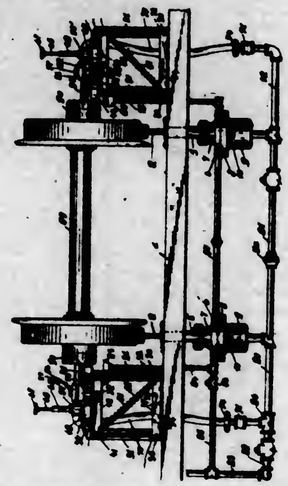

2. In an apparatus of the class described, the combination with a supporting-track, of resilient frames mounted at opposite sides of the track, nozzle-supporting members slidably mounted on said frames, nozzles carried by said members, the pumping-cylinders connected to said nozzles, means to simultaneously actuate said pumping-cylinders and said nozzle-supporting members, means for moving said resilient frames out of engagement with the actuating means, and means to return the pump-actuating means and the nozzle-supporting members to their normal position.

3. In an apparatus of the class described, the combination with a supply-pipe, a trackway and rolling-stock, of pump-cylinders connected to said supply-pipe and actuated by said rolling-stock, resilient frames mounted upon each side of said trackway, nozzles slidably mounted upon said side frames and connected to said pumping-cylinders, means actuated by said rolling-stock to force the contents of said pumping-cylinders through said nozzles, catch-basins mounted beneath said nozzles and connected to said reservoir, means actuated by said rolling-stock to return said nozzles to their normal position, substantially as described.

4. In an apparatus of the class described, the combination with a trackway, a supply-pipe and oil-cups, of rolling-stock, resilient frames mounted upon each side of said trackway, nozzles slidably mounted upon said frames and adapted to move with said rolling-stock, pumping-cylinders connected to said supply-pipe and said nozzles, means actuated by said rolling-stock to inject the contents of said pumping-cylinders through said nozzles into said oil-cups while the rolling-stock is in motion, and means to return said nozzles to their normal position, substantially as described.

5. In a lubricating apparatus of the class described, the combination with movable oil-cups or housings and a lubricant-supply pipe, of resilient frames mounted adjacent to said movable cups, movable nozzles mounted upon said frames, pumping-cylinders connected to said nozzles and said supply-pipe, means to simultaneously move said nozzles into engagement with said oil-cups and to actuate said pumping-cylinders to inject said lubricant into said cups, check-valves controlling the movement of said lubricant, adjustable pressure-valves controlling the movement of said lubricant, means to move said nozzles out of engagement with said cups, and means to return said nozzles to their normal position, substantially as described.

6. In an apparatus of the class described, the combination with a lubricant-supply pipe and movable oil-cups, of movable nozzles mounted in close proximity to said movable cups and adapted to engage said cups at predetermined times during the movement of said oil-cups, and means to inject the lubricant from the supply-pipe into said movable oil-cups, substantially as described.

7. In an apparatus of the class described, the combination with movable oil-cups or housings and a lubricant-supply, of frames mounted adjacent to said movable cups, nozzles slidably mounted upon said frames and communicating with said lubricant-supply, means to retain said nozzles in engagement with said movable cups, means to release said nozzles, and means actuated by the movement of said cups to inject lubricant from the supply through said nozzles into said cups, substantially as described.

8. In an apparatus of the class described, the combination with a lubricant-supply and movable oil-cups or housings, of resilient frames, nozzles slidably mounted upon said frames and communicating with said lubricant-supply, means to retain said nozzles in engagement with said oil-cups, means actuated by said movable oil-cups to inject a portion of the contents of said lubricant-supply through said nozzle into said oil-cups, means to regulate the last-named means, means to release said nozzles from engagement with said oil-cups, and means to return the overdischarge of said nozzles to said reservoir, substantially as described.

9. In a lubricating apparatus of the class described, the combination with movable oil-cups or housings, of nozzles, means to move said nozzles a predetermined distance with said cups, means to inject a lubricant through said nozzles into said cups during the movement of said nozzles, and means to disengage said nozzles from said cups, substantially as described.

10. In a lubricating apparatus, the combination with movable oil-cups or housings, of nozzles, means to move said nozzles a predetermined distance in unison with said movable cups, and means to inject a lubricant through said nozzles into said cups, substantially as described.

11. In a lubricating apparatus, the combination with a supporting-track, of frames mounted outside the rails of the track, nozzle-supporting members slidably mounted on said frames, nozzles carried by said members, pumping-cylinders connected to said nozzles, pistons in said cylinders actuated by a car moving on said rails, means for actuating said nozzle-supporting members, and means to return the pistons and nozzle-supporting members to their normal positions.

813,215. STAPLING-MACHINE. CHARLES A. JUENGST, Croton Falls, N. Y. Filed Apr. 20, 1904. Serial No. 205,648.

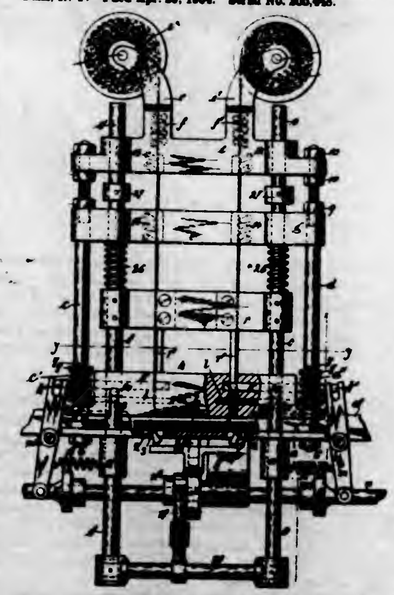

Claim.—1. In a stapling-machine, the combination with a platform upon which the signatures or sheets to be connected rest, of means for progressively feeding the wire, a presser-bar adapted to come down on the signatures or sheets to hold the same in position, means for cutting the wire to form a staple and for simultaneously bending one end thereof, means for forcing the staple-wire through the signatures or sheets, and means for bending the wire on the under side of the signatures or sheets to complete the staple and hold the signatures or sheets together.

2. In a stapling-machine, the combination with a platform upon which the signatures or sheets to be connected rest, of means for progressively feeding the wire, a presser-bar adapted to come down on the signatures or sheets to hold the same in position, die-blocks and means for pivoting the same to the presser-bar, means for cutting the wire against the die-blocks to form a staple, and for simultaneously bending one end thereof, means for holding the die-blocks while the wire is cut, means for forcing the staple-wire through the signatures or sheets, and means for bending the wire on the under side of the signatures or sheets to complete the staple and hold the signatures or sheets together.

3. In a stapling-machine, the combination with a platform upon which the signatures or sheets to be connected rest, and means for progressively feeding the wire, of a presser-bar adapted to rest upon the pile of signatures or sheets and having vertical grooves for the wires, cutter-bars horizontally movable through apertures in said presser-bar, and means for actuating the same for cutting off lengths of the wire and simultaneously bending over adjacent ends equal in length to the width of the cutter-bars.

4. In a stapling-machine the combination with a platform upon which the signatures or sheets to be connected rest and means for progressively feeding the wire, of a presser-bar adapted to rest upon the pile of signatures or sheets and having vertical grooves for the wires, cutter-bars horizontally movable through apertures in said presser-bar, means for actuating the same for cutting off lengths of the wire and simultaneously bending over adjacent ends equal in length to the width of the cutter-bars, pivoted yielding die-blocks with parts normally below the cutter-bars and against which similar ends of staples are turned over, locking-bars for holding the yielding die-blocks while the cutting and bending acts are performed, the aforesaid means for actuating the cutter-bars also serving for the simultaneous movement with the cutter-bars of the locking-bars.

5. In a stapling-machine, the combination with a platform upon which the signatures or sheets to be connected rest, and means for progressively feeding the wire, of a presser-bar adapted to come down on the signatures or sheets to hold the same in position, said presser-bar having vertical apertures for the wire and adjacent larger vertical apertures, said presser-bar also having longitudinal apertures in pairs from opposite ends and slotted transversely in part, a cross-head, plungers connected to the cross-head and adapted to enter the larger vertical apertures parallel with the wires which enter the smaller vertical apertures, cutter-bars and locking-bars in pairs adapted to enter the horizontal apertures from opposite ends, and die-blocks pivotally connected to the presser-bar and adapted to pass through the transverse apertures.

6. In a stapling-machine, the combination with a platform upon which the signatures or sheets to be connected rest and means for progressively feeding the wire, of a presser-bar adapted to come down on the signatures or sheets to hold the same in position, said presser-bar having vertical apertures for the wire and adjacent larger vertical apertures, said presser-bar also having longitudinal apertures in pairs from opposite ends and slotted transversely in part, a cross-head, plungers connected to the cross-head and adapted to enter the larger vertical apertures parallel with the wires which enter the smaller vertical apertures, cutter-bars and locking-bars in pairs adapted to enter the horizontal apertures from opposite ends, die-blocks pivotally connected to the presser-bar and adapted to pass through the transverse apertures, means for actuating the cross-head and plunger, means for simultaneously actuating the pairs of cutter-bars and locking-bars, the locking-bars momentarily holding the die-blocks in position while the cutter-bars cut the wire and bend similar ends of the same over the upper surface of the die-blocks.

7. In a stapling-machine, the combination with a platform upon which the signatures or sheets to be connected rest and means for progressively feeding the wire, of a presser-bar adapted to come down on the signatures or sheets to hold the same in position, said presser-bar having vertical apertures for the wire and adjacent larger vertical apertures, said presser-bar also having longitudinal apertures in pairs from opposite ends and slotted transversely in part, a cross-head, plungers connected to the cross-head and adapted to enter the larger vertical apertures parallel with the wires which enter the smaller vertical apertures, cutter-bars and locking-bars in pairs adapted to enter the horizontal apertures from opposite ends, die-blocks pivotally connected to the presser-bar and adapted to pass through the transverse apertures, means for actuating the cross-head and plunger, means for simultaneously actuating the pairs of cutter-bars and locking-bars the locking-bars momentarily holding the die-blocks in position while the cutter-bars cut the wire and bend similar ends of the same over the upper surfaces of the die-blocks, dogs pivoted in apertures in the platform beneath the pile of signatures or sheets, and means for raising the same for completing the form of staples for connecting the signatures or sheets.

8. In a stapling-machine, the combination with a platform upon which the signatures or sheets to be connected rest and means for progressively feeding the wire, of a presser-bar adapted to come down on the signatures or sheets to hold the same in position, said presser-bar having vertical apertures for the wire and adjacent larger vertical apertures, said presser-bar also having longitudinal apertures in pairs from opposite ends and slotted transversely in part, a cross-head, plungers connected to the cross-head and adapted to enter the larger vertical apertures parallel with the wires which enter the smaller vertical apertures, cutter-bars and locking-bars in pairs adapted to enter the horizontal apertures from opposite ends, die-blocks pivotally connected to the presser-bar and adapted to pass through the transverse apertures, means for actuating the cross-head and plunger, dogs pivoted in apertures in the platform beneath the pile of signatures or sheets, means for raising the same for completing the form of staples for connecting the signatures or sheets, a power-shaft, cams on the power-shaft, rock-shafts actuated by the cams for simultaneously moving the pairs of cutter-bars and locking-bars, the locking-bars momentarily holding the die-blocks in position while the cutter-bars cut the wire and bend similar ends of the same over the upper surfaces of the die-blocks, a crank device on the rock-shaft, devices connected to the crank device for effecting the movement of the wire-feed devices and the cross-head and plungers and permitting the presser-bar to come down upon the signatures or sheets, and a device actuated by the cam device for moving the aforesaid dogs to complete the bend of the staples.

813,216. BOOK-STRAP. MABEL H. KARIBO, San Luis Obispo, Cal. Filed May 10, 1905. Serial No. 259,765.

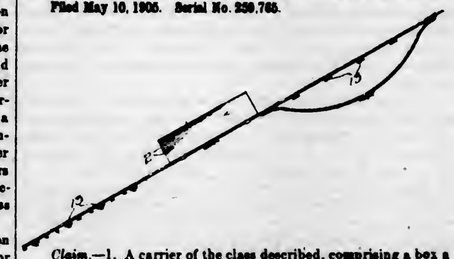

Claim.—1. A carrier of the class described, comprising a box a series of main straps arranged in alinement and slidably engaged with the bottom of the box, one end of each said straps having a series of buttons and the other end having a loop for engagement interchangeably with said buttons, cross-straps connecting said series of straps, shoulder-straps connected with the outermost main straps upon one side of the box, and another strap detachably associated with the last-named straps.

2. A carrier of the class described, a holder, straps slidably associated therewith, one end of each strap having a series of buttons and the opposite end thereof having a loop, cross-straps engaging the first straps, shoulder-straps engaged with the outermost of said first straps upon one side of the holder, and another strap engaging the shoulder-straps.

813,217. AIR-PURIFYING APPARATUS. JOHN H. KENEALY, Pergamo, Mo. Filed Mar. 17, 1905. Serial No. 250,054.

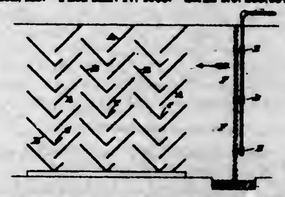

Claim.—1. In an air-purifying apparatus, an air-washer, and a water-eliminator consisting of deflecting-plates for alternately deflecting the air downward and upward, said deflecting-plates being

slightly inclined to the horizontal in the direction of their length, and the plates for deflecting the air upward being provided at their lower

tongue of relatively large extent formed upwardly from the sub-

slightly inclined to the horizontal in the direction of their length, and the plates for deflecting the air upward being povided at their lower edges with gutters to carry away the water, substantially as described.

2. In an air-purifying apparatus, an air-washer consisting of a thoroughfare for the air and a transverse wall of vertically-dropping water in a sprayed or finely-divided condition, and a water-eliminator consisting of deflecting-plates for alternately deflecting the air downward and upward, said deflecting-plates being slightly inclined to the horizontal in the direction of their length, and the plates for deflecting the air upward being provided with gutters at their lower edges to carry away the water, substantially as described.

3. In an air-purifying apparatus, an air-washer, and a water-eliminator consisting of deflecting-plates for alternately deflecting the air downward and upward, said deflecting-plates being slightly inclined to the horizontal in the direction of their length, and the plates for deflecting the air upward being corrugated in the direction of their length and provided at their lower edges with gutters to carry away the water, substantially as described.

4. In an air-purifying apparatus, an air-washer consisting of a thoroughfare for the air and a transverse wall of downward-falling water in a sprayed or finely-divided condition, and a water-eliminator consisting of deflecting-plates for alternately deflecting the air downward and upward, said deflecting-plates being slightly inclined to the horizontal in the direction of their length, and the plates for deflecting the air upward being corrugated in the direction of their length and provided at their lower edges with gutters to carry away the water, substantially as described.

5. In an air-purifying apparatus, an air-washer consisting of a thoroughfare for the air and a transverse wall of downward-falling water in a sprayed or finely-divided condition, and a water-eliminator consisting of deflecting-plates for alternately deflecting the air downward and upward, said deflecting-plates being slightly inclined to the horizontal in the direction of their length, the plates for deflecting the air upward being corrugated in the direction of their length and provided at their lower edges with gutters to carry away the water, and means for carrying from the eliminator the water flowing from the gutters of said upward-deflecting plates, substantially as described.

6. In an air-purifying apparatus, a thoroughfare for the air, a spray-box arranged transversely to the thoroughfare at the top thereof, a pipe for supplying water to the spray-box, deflecting-plates for alternately deflecting the air downward and upward, said deflecting-plates being slightly inclined to the horizontal in the direction of their length, the plates for deflecting the air upward being corrugated in the direction of their length and provided at their lower edges with gutters to carry away the water, and means for carrying from the eliminator the water flowing from the gutters of said upward-deflecting plates, substantially as described.

7. In an air-purifying apparatus, a thoroughfare for the air, a spray-box arranged transversely to the thoroughfare at the top thereof, a pipe for supplying water to said spray-box, deflecting-plates for alternately deflecting the air downward and upward, said deflecting-plates being slightly inclined to the horizontal in the direction of their length, the plates for deflecting the air upward being provided at their lower edges with gutters to carry away the water, and means for carrying from the eliminator the water flowing from the gutters of said upward-deflecting plates, substantially as described.

813,218. PROCESS FOR RENDERING MATERIALS OR ARTICLES RESISTANT TO WATER AND CHEMICALS. CARL KOCHMANN and JULIUS KAUFMANN, Berlin, Germany. Filed Sept. 7, 1905. Serial No. 277,472.

Claim.—1. The process of rendering materials or articles resistant to water and chemicals, which consists in treating the materials or articles with a solution of alum, and melted carnauba-wax.

2. The process of rendering materials or articles resistant to water and chemicals, which consists in first saturating the material or article with a solution of alum, and then subsequently treating same with melted carnauba-wax; substantially as set forth.

813,219. SELF-LOCKING SEAL. FRANK LAPORTE, St. Louis, Mo. Filed May 18, 1905. Serial No. 260,973.

Claim.—1. A sealing-strip having one of its ends provided with a plurality of transverse slots and the other end laterally extended and provided with a single transverse slot adjacent to the junction of the strip with its laterally-extended end, a projecting embossed surface beyond the single slot and between the lateral extensions, a tongue of relatively large extent formed upwardly from the substance of the strip, and having its attached end adjacent to the single transverse slot, and a tongue of relatively small extent formed downwardly from the substance of the first tongue, and having its attached end adjacent to the free end of the first tongue.

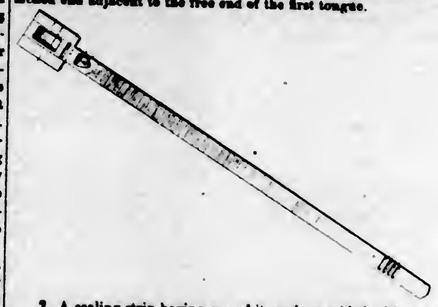

2. A sealing-strip having one of its ends provided with a plurality of transverse slots, and the other end provided with a single transverse slot, a tongue of relatively large extent formed upwardly from the substance of the strip and having its attached end adjacent to the single transverse slot, a tongue of relatively small extent formed downwardly from the substance of the first tongue and having its attached end adjacent to the free end of the first tongue, and means on one of the ends of the strip for inclosing the overlapping ends.

3. A sealing-strip, having one of its ends provided with a plurality of transverse slots and the other end provided with a single transverse slot, a tongue of relatively large extent formed from the substance of the strip and engaging one of the slots to prevent longitudinal movement of the ends of the strip from each other in one direction, a tongue formed from the substance of the strip for preventing longitudinal movement of the ends of the strip upon each other in the opposite direction, and means connected with one of the ends of the strip for inclosing the overlapping ends.

4. A sealing-strip, provided at one end with a plurality of transverse slots, a tongue at the other end of the strip engaging one of the slots to prevent movement of the ends of the strip upon each other in one direction, means on the tongue for engaging an adjacent slot to prevent movement of the ends of the strip upon each other in the opposite direction, and means connected with the strip for retaining the ends in contact with each other.

813,220. RAILWAY STOCK-GUARD. LOUIS LEBMANN, Dixon, Mo., assignor of one-fifth to Fred Welsh and one-fifth to W. F. Carter, Dixon, Mo. Filed Mar. 20, 1905. Serial No. 250,709.

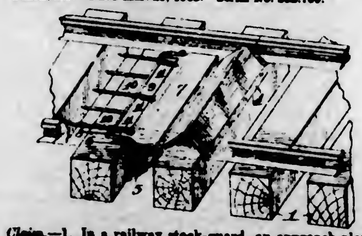

Claim.—1. In a railway stock-guard, an approach-plate, having two inclined faces, a downwardly-curved plate integral with one of the edges of the approach-plate, and a guard pivotally mounted at a point above the curved plate; substantially as specified.

2. In a railway stock-guard, an approach-plate having two inclined faces, a plate hinged at one edge and overhanging one side of the approach-plate, and a guard mounted to swing on one edge of the pivoted plate; substantially as specified.

3. In a railway stock-guard, an approach-plate having two inclined faces, a curved plate integral with one edge of the approach-plate, a plate hinged at one edge above the lower end of the curved plate, and a yielding guard pivotally secured to one edge of the hinged plate; substantially as specified.

4. In a railway stock-guard, an approach-plate having two inclined faces, a plate hinged at one edge and overhanging one side of the approach-plate, a rod pivotally secured to one side of the hinged plate, rods projecting laterally from the pivotally-mounted rod, and retractile coil-springs arranged between the pivoted rod and the edge of the hinged plate; substantially as specified.

813,221. CATAMENIAL SACK. WALLACE M. LONGSTRETH, Tuts Alta, W. Va. Filed Apr. 5, 1905. Serial No. 253,263.

Claim.—1. A catamenial sack comprising a receptacle for absorbent material formed from a single length of wire bent to form two parallel side bars, two parallel bottom bars, and a catch at the junction of said side bars with said bottom bars, a retainer for said absorbent material formed of a U-shaped length of wire pivoted at the ends of its arms to the side bars of the said receptacle and having its cross-bar adapted to engage with the above-mentioned catch, and means to attach said receptacle to the person.

2. A catamenial sack comprising an elongated curved receptacle for absorbent material, the same comprising parallel longitudinal side bars and bottom bars, means to hold said bars in their parallel relation, a catch at one end of said receptacle and a bail hinged to the other end thereof and adapted to engage said catch to secure said material in the receptacle.

3. In a catamenial sack, an elongated curved, open-work receptacle formed from a single length of wire bent to form the parallel side bars, the bottom bars connected together at their rear ends by an integral cross-bar and connected at their front ends to the front ends of the side bars by integral cross-pieces having catch-forming bends, and a U-shaped retainer pivoted at its rear ends to the side bars and at its front closed and adapted to snap under said catch.

813,222. DREDGE. JAMES F. LOREMAN, Crisfield, Md. Filed Aug. 9, 1905. Serial No. 273,433.

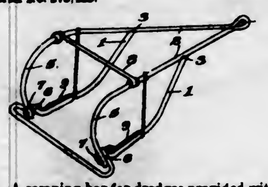

Claim.—1. A scraping-bar for dredges provided with an extension which projects beyond the side of the dredge and tends to prevent same from turning over.

2. A scraping-bar for dredges provided with extensions which project beyond the sides of the dredge and are formed by bending the ends of the scraping-bar back upon themselves before securing same to the framework, said extensions tending to prevent the dredge from turning upon its side.

3. A scraping-bar for dredges formed with extensions which project beyond the sides of the dredge and are formed by bending the ends of the bar back upon themselves and then turning the extremities up for engagement with the frame, said extensions tending to prevent the dredge from turning upon its side.

813,223. SPIKE-PULLER. JAMES F. LOREMAN, Crisfield, Md. Filed Aug. 9, 1905. Serial No. 273,434.

Claim.—A spike-puller comprising the stock 1 embodying the spaced sides 1°, the laterally-extending feet 2 integrally formed with the stock at the lower extremities of the sides 1° aforesaid, the side of the stock opposite that from which the feet 2 projects, being provided at the lower end thereof with a head-receiving socket 9 contracted at its lower portion as shown at 9°, the lever 3 pivoted at 4 between the sides 1° of the stock, the jaw member 5 comprising the body 5° pivoted at 6 between the sides 1° of the stock and arranged below the lower end of the lever 3, the jaw 7 projecting downwardly from the jaw member 5 and provided with a recess 8 on its inner side, the toe extension 11 formed at the lower extremity of the lever 3, the body 5° on the member 5 having the recess 12 to receive the toe extension 11, the said body 5° being also formed with a cam-surface 14 at its inner side, and a cam extension 13 projecting downwardly from the lower extremity of the lever 3 and adapted to engage the cam-surface 14 on the member 5, as specified.

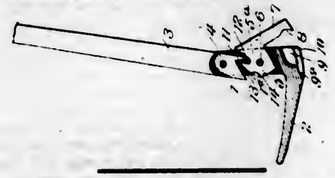

813,224. RAIL-JOINT. THOMAS W. MAYO, Redding, Cal. Filed Nov. 28, 1905. Serial No. 289,496.

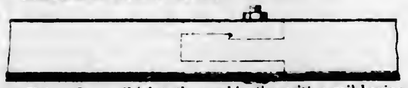

Claim.—In a rail-joint, the combination with a rail having its web thickened to the width of the tread and having its lower face recessed and having a vertical slot formed therethrough and opening through its extremity, said slot at its inner end being broadened in one direction and having its outer vertical wall 14 cut under, of a second rail having its end portion reduced transversely to engage the slot of the first-named rail, the free end portion of the reduced end of the second rail being broadened in one direction and having the inner vertical wall of the broadened portion cut under to correspond to and fit against the cut-under wall 8 of the broadened portion of the slot of the first-named rail, the second rail having the end portion of its flange reduced vertically and fit in the cut-away portion of the bottom of the first-named rail.

813,225. WHEEL. CHARLES P. MELVIN, Monongahela, Pa. Filed May 13, 1905. Serial No. 260,234.

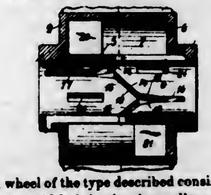

Claim.—1. A wheel of the type described consisting of a flanged rim, spokes and hub, said hub having inwardly-extending annular shells, there being an annular compartment formed by said shells, the confronting edges of said shells providing a sinuous passage, said shells having slots formed therein intercepting said passage, there being a plurality of radially-disposed ribs staggeredly arranged within said compartment, said hub having openings formed therein communicating with said slots, substantially as described.

2. In a wheel of the type described, the combination with a flanged rim and spokes, of a hub supported by said spokes, said hub having an annular compartment formed therein, said compartment having a plurality of radially-disposed ribs staggeredly arranged therein, said hub having openings formed therein communicating with said compartment, said hub having a sinuous passage-way formed therein, substantially as described.

3. The combination with an axle, of a wheel having a hub, said hub having a central bore formed therein, said hub having a compartment formed therein surrounding said bore, said compartment having a plurality of radially-disposed ribs formed therein extending each part way of the length of the compartment and alternately from opposite ends thereof, means to convey the contents of said compartment to said bore, and means whereby access may be had to said compartment, substantially as described.

4. In a wheel of the character described, the combination with a hub having a central bore, of a compartment surrounding said bore, the inner wall of said compartment providing inwardly-extending shells, the confronting edges of said shell providing a sinuous passage-way, said shells having slots formed therein communi-

a roof formed by upper and lower layers with intervening air-passages communicating with the atmosphere, air-ports leading downwardly from said roof-passages to a hot-air flue, a series of heated-air flues leading upwardly to a combustion-chamber, and a series of intervening gas-ports also leading upwardly to said combustion-chamber

back support movably secured to the arch on either side of the loop on the arch, and provided with an upward extension for engaging the loop on the arch, to limit the angular opening of the arch-support.

link members with the exterior link members, said members detachably connected one to another, and retaining-pins journaled within said interior link members, said retaining-pins being formed with

4. In a wheel of the character described, the combination with a hub having a central bore, of a compartment surrounding said bore, the inner wall of said compartment providing inwardly-extending shells, the confronting edges of said shell providing a sinuous passage-way, said shells having slots formed therein communicating with said passage, substantially as described.

5. In a wheel, the combination with a hub having a central bore formed therein, of a compartment surrounding said bore, the inner wall of said compartment providing confronting shells having slots formed therein affording communication between said compartment and the said bore, means whereby access may be had to said compartment, substantially as described.

6. In a wheel, the combination with a hub, of confronting shells carried by said hub, and forming a central bore, and a compartment surrounding the bore, said shells having a plurality of slots formed therein communicating with one another and extending through the shells, means whereby access may be had to said compartment.

7. In a wheel, the combination with a hub, of confronting shells carried by said hub, said shells having a plurality of slots formed therein communicating with one another, said hub having an annular compartment formed therein adapted to contain a lubricant and communicating with the bore of the hub through said slots, and means to elevate said lubricant within said compartment.

8. In a wheel, the combination with a hub having a central bore, of an annular compartment surrounding said bore, the sides of said bore having a sinuous slot formed therein communicating with said compartment, means to agitate the contents of said compartment.

9. In a wheel, the combination of a hub, said hub being formed of confronting shells providing a circuitous sinuous passage-way, the wall of said bore having slots formed therein communicating with said passage-way, a compartment communicating with said slots and said passage-way, means whereby access may be had to said compartment from the exterior of said hub, substantially as described.

10. In a wheel, the combination of a hub having a central bore, there being a lubricant-compartment surrounding said bore, the walls of said bore having a circuitous passage-way formed therein, adapted to convey the contents of said compartment to said bore, substantially as described.

813,226. FURNACE. JAMES C. MILLER, Pittsburg, Pa., assignor to Porter Miller Engineering Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed Mar. 7, 1905. Serial No. 248,896.

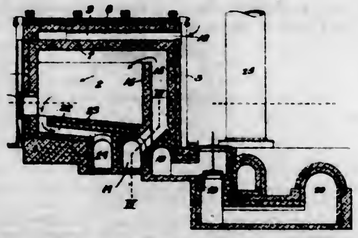

Claim.—1. A furnace provided with a bridge-wall, a series of air-ports traversing the roof and walls of the furnace and finally leading upwardly terminating below the top of the bridge-wall, a series of gas-ports traversing the walls of the furnace structure also leading upwardly and terminating below the top of the bridge-wall, whereby the heated air and gas are caused to commingle and flow in the same direction, with an outlet-flue for the products of combustion opening into the furnace-chamber at the opposite lower portion thereof, whereby the gases circulate diagonally across the furnace area, substantially as set forth.

2. A furnace provided with a bridge-wall, a series of air-ports traversing the roof and walls of the furnace and finally leading upwardly terminating below the top of the bridge-wall, a series of gas-ports traversing the walls of the furnace structure also leading upwardly and terminating below the top of the bridge-wall, whereby the heated air and gas are caused to commingle and flow in the same direction, an outlet-flue for the products of combustion opening into the furnace-chamber at the opposite lower portion thereof, and a series of return-ports communicating with said opening leading underneath the furnace-floor and communicating with an outlet-conveyor for the waste products, substantially as set forth.

3. In a heating-furnace, the combination of inclosing walls and a roof formed by upper and lower layers with intervening air-passages communicating with the atmosphere, air-ports leading downwardly from said roof-passages to a hot-air flue, a series of heated-air flues leading upwardly to a combustion-chamber, and a series of intervening gas-ports also leading upwardly to said combustion-chamber, with a series of outlet-ports communicating with an escape-flue and opening into the furnace-chamber at the opposite lower portion thereof, substantially as set forth.

4. In a heating-furnace, the combination of inclosing walls and a roof formed by upper and lower layers with intervening air-passages communicating with the atmosphere, air-ports leading downwardly from said roof-passages to a hot-air flue, a series of heated-air flues leading upwardly to a combustion-chamber, and a series of intervening gas-ports also leading upwardly to said combustion-chamber, with a series of outlet-ports communicating with an escape-flue and opening into the furnace-chamber at the opposite lower portion thereof, and an intervening bridge-wall extending upwardly beyond the combustion-chamber, substantially as set forth.

5. In a heating-furnace, the combination with a chamber inclosed within the walls of the furnace structure having a roof provided with upper and lower portions, of return-air passages incorporated between the upper and lower portions of the roof structure communicating with the atmosphere, with communicating downwardly and upwardly leading air-ports, and a series of gas-supply ports, terminating in a common combustion-chamber; with a series of return-ports leading underneath the furnace-floor and opening into the furnace-chamber at its lower portion opposite the combustion-chamber, whereby the products of combustion are caused to traverse the furnace-chamber, substantially as set forth.

813,227. BOOK-HOLDER. JAMES H. MILLER, Ashland, Oreg. Filed May 27, 1905. Serial No. 262,626.

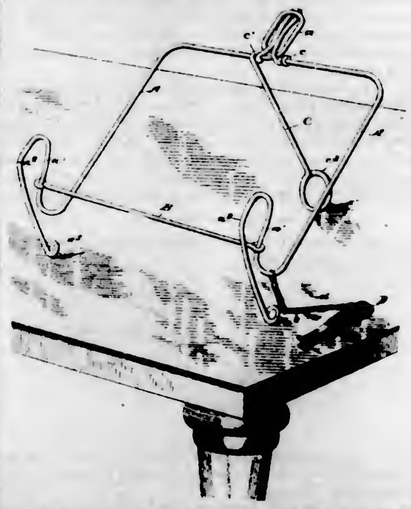

Claim.—1. A book-holder comprising a flexible strand bent to form an arched back support having a loop at the top of the arch, the ends of the flexible strand bent upwardly to form edge supports, and downwardly upon themselves to a point beneath the edge supports, and turned into rings for supporting the holder, a cross flexible strand connecting the loops formed by the junction of the edge supports and the holder-supports, a movable rear holder-support, comprising a third flexible strand lapping the flexible strand of the arch on either side of the inner end of the loop, and having a portion intermediate the laps bent up to form a loop for engaging the loop on the arch to limit the movement of the holder-support with respect to the holder, a chain connected to one end of the edge supports and a spring book-leaf clamp attached to the chain.

2. A book-holder comprising a flexible strand bent to form an arched back support having a loop at the top of the arch, the ends of the flexible strand bent upwardly to form edge supports, and downwardly to a point beneath the edge supports to form front holder-supports, a cross flexible strand connecting the edge supports, and a back support movably secured to the arch on either side of the loop on the arch, and provided with an upward extension for engaging the loop on the arch, to limit the angular opening of the arch-support.

3. A book-holder comprising a flexible strand bent to form an arched back support having a loop at the top of the arch, the ends of the flexible strand bent upwardly to form edge supports, and downwardly to a point beneath the edge supports to form front holder-supports, means connecting the edge supports, a back support movably connected to the arch on each side of the loop, and means on the back support engaging the loop to limit the outward movement of the arch-support.

4. A book-holder comprising a flexible strand bent to form arched back supports having a loop at the top of the arch, the ends of the flexible strand bent upwardly to form edge supports, and downwardly to a point beneath the edge supports to form front holder-supports, means connecting the edge supports, means movably connected to the arch for supporting the rear of the holder, and means engaging the loop for limiting the outward movement of the said supporting means.

813,228. AUTOMATIC DAMPER. WILLIAM H. H. MORELOCK, Jonesboro, Ark. Filed Feb. 3, 1904. Serial No. 191,880.

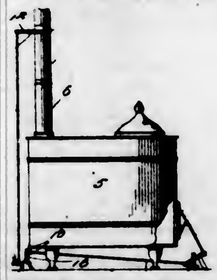

Claim.—As an article of manufacture, an automatic damper-moving mechanism comprising a split collar adapted for engagement with the smoke-pipe of a stove, a clamping-bolt engaged in the collar, an ear carried by the collar, a rod engaged in the ear, a supporting-block, a lever pivoted in the supporting-block for movement in a vertical plane and having series of perforations therein at opposite sides of its pivot-point, said rod having an angular end arranged for interchangeable engagement in the perforations at one side of the pivot-point, a second supporting-block, a lever pivoted in the second supporting-block for movement in a vertical plane, said second lever having series of perforations therein at opposite sides of its pivot-point, a rod having angular ends, one engaged in one of the perforations at the opposite side of the pivot-point of the first-named lever from the first-named rod and being adapted for interchangeable engagement in these perforations, the other angular end of the second-named rod being engaged in one of the perforations of the second-named lever and being adapted for engagement in the several perforations of the same series interchangeably, the other series of perforations of the second lever being adapted to receive an attaching device for connection of said lever with the damper mechanism of a stove.

813,229. DETACHABLE-LINK CHAIN. ARCHIBALD D. MORRIS, New York, N. Y. Filed Nov. 19, 1904. Serial No. 233,436.

Claim.—1. In a detachable-link chain, the combination of the interior link members with the exterior link members, pins connecting said exterior and interior members, and rotatable retaining-pins formed with flanges overlapping the exterior link members, said flanges normally retaining the members in operative relation.

2. In a detachable-link chain the combination of the interior link members with the exterior link members, said members being detachably connected one to another, and retaining-pins journaled within said interior link members, said retaining-pins controlling the assembling and disassembling of the chain.

3. In a detachable-link chain the combination of the interior link members with the exterior link members, said members detachably connected one to another, and retaining-pins journaled within said interior link members, said retaining-pins being formed with flanges normally overlapping said exterior link members for holding the link members in proper operative relation.

4. In a detachable-link chain the combination of the interior link members with the exterior link members said members being detachably connected one to another, pins journaled centrally within said interior link members having disks rigidly connected thereto, and locking-dogs connected to said disks for preventing the disassembling of the link members.

5. In a detachable-link chain, the combination of the exterior link members with the interior link members, and means for detachably connecting said members together, said means comprising retaining-pins journaled centrally within the interior link members, said retaining-pins having overlapping ends having portions thereof cut away to conform to the periphery of the extremities of the exterior link members, said retaining-pins connecting the members and normally holding them in operative relation.

6. In a detachable-link chain, the combination of the exterior link members with the interior link members, said members being detachably connected one to another, retaining-pins journaled centrally within said interior link members, said pins having disks partially cut away and which normally overlap said exterior link members, and dogs detachably connected to said disks for preventing the disassembling of the link members.

7. In a detachable-link chain the combination of the exterior link members with the interior link members, means for detachably connecting said exterior and interior link members, said means comprising spindles rotatably mounted within the extremities of the interior link members and being keyed in the exterior link members, and pins rotatably mounted centrally within the said interior link members, having disks partially cut away for connecting and normally holding the members in operative relation.

8. In a detachable-link chain, a plurality of link members, some of said link members being interjacent of the other of said link members, and retaining means comprising disks, connected to the interjacent members for connecting the members and for controlling the assembling and disassembling of the link members.

9. In a detachable-link chain, the combination of a plurality of link members, some of said link members being interjacent of the other of said link members, pins connected to said interjacent members, said pins having connected at their extremities disks partially cut away, said disks normally holding the members in operative relation and controlling the disassembling of the said link members.

10. In a detachable-link chain the combination of the exterior link members, interior link members having eyes or openings adjacent to their ends, pins engaging both members for connecting them, and adjustable retaining means comprising disks, connected to the interior link members for controlling the assembling and disassembling of the link members.

813,230. SERVICE-METER FOR TELEPHONE-EXCHANGES. FRANK R. MCBERTY, Evanston, and HOWARD B. CRAFT, Chicago, Ill., assignors to Western Electric Company, Chicago, Ill., a Corporation of Illinois. Filed June 10, 1905. Serial No. 264,966.

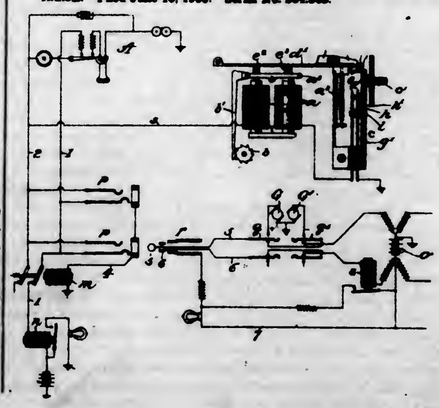

Claim.—1. The combination with an electromagnet, of a tilting armature therefor, a circuit for said magnet, a switch controlling said circuit, a catch adapted to lock said switch in its open position, a

9. In a service-meter, the combination with an electromagnet, of a tilting armature therefor, switch-springs controlling the circuit

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813,233. COMBINED DAVENPORT AND BED. ARTHUR M. PARSONS, Lead, S. D. Filed July 26, 1905. Serial No. 271,294.

wedge member, and a spring housed in a corresponding part of the frame meeting with the follower to move the wedge to expand the

Claim.—1. The combination with an electromagnet, of a tilting armature therefor, a circuit for said magnet, a switch controlling said circuit, a catch adapted to lock said switch in its actuated position, a registering-train operated in the movement of the armature in one direction, said catch being operated in such movement of the armature to release the switch, the armature being adapted when moved in the opposite direction to operate said catch and release the switch without effecting a registration, and means for applying current in the circuit of said magnet to effect the movement of said armature in either direction.

2. In a service-meter, the combination with a tilting lever, of electromagnetic mechanism for moving said lever in either direction, a switch controlling the circuit connections of said mechanism, a catch adapted to lock said switch in its actuated position, and a registering-train operated in the movement of said lever in one direction, said lever being adapted in such movement to operate said catch to release the switch, said lever when moved in the opposite direction releasing said switch without effecting a registration.

3. In a service-meter, the combination with an electromagnet, of a centrally-pivoted armature therefor, switch-springs controlling the circuit connections of said magnet, a pivoted arm, a catch carried thereby adapted to lock said switch-springs in their actuated position, and a registering-train operated by said armature when moved in one direction, said armature when so moved operating said pivoted arm to withdraw the catch and release said switch-springs, said armature when moved in the opposite direction moving said arm to release the switch-springs without effecting a registration.

4. In a service-meter the combination with a polarized electromagnet, of a centrally-pivoted armature therefor, switch-springs controlling the circuit connections of said magnet, a pivoted arm carrying a hook at its outer end adapted to engage the ends of said springs when the same are operated to lock them in such position, studs upon said armature on either side of the pivot thereof, a spring normally holding said pivoted arm adjacent to said studs, a registering-train, a pawl carried by said armature adapted when said armature is tilted in one direction to operate said train, one of said studs in such movement of the armature moving said pivoted arm to withdraw the hook thereof and release said switch-springs, said armature when tilted in the opposite direction acting through the agency of the other stud to move said arm and release the switch-springs without affecting the registering-train.

5. In a service-meter, the combination with an electromagnet, of an armature therefor, a registering-train controlled by said armature in its movement, a switch controlling the circuit connections of said magnet, a catch, means for closing said switch and effecting the locking thereof by said catch, and means for preventing actuation of the switch after the same is closed and while locked, said armature being adapted when moved to operate said catch and release the switch.

6. In a service-meter, the combination with an electromagnet, of an armature therefor, a registering-train controlled by said armature in its movement, a switch controlling the circuit connections of said magnet, a catch, a device for moving said switch until locked by said catch, said switch closing upon the withdrawal of said device, and a guard for preventing subsequent movement of said switch by said device while the switch is locked, said armature being adapted when moved to operate said catch and release the switch.

7. In a service-meter, the combination with an electromagnet, of a tilting armature therefor, a switch controlling the circuit connections of said magnet, a pivoted arm, a catch carried thereby, a device for moving said switch until locked by said catch, said switch closing upon the withdrawal of said device, a guard for preventing subsequent actuation of the switch by said device while the same is locked, and a registering-train operated by said armature when moved in one direction, the armature when so moved operating the pivoted arm to release said switch, the armature when moved in the opposite direction moving said arm to release the switch without effecting a registration.

8. In a service-meter, the combination with an electromagnet, of an armature therefor, a registering-train controlled by said armature in its movement, switch-springs controlling the circuit connections of said magnet, a tension member adapted when operated to move said springs, a catch adapted to hold said member in such position, a device for operating said tension member, an insulating-spacer adapted to be engaged by said device to hold said springs apart as the same are moved by said tension member, said spacer upon the withdrawal of said device moving to permit the springs to close, and means for preventing subsequent actuation of said springs by said device while the switch is locked, said armature being adapted when moved to operate said catch and release the switch-springs.

9. In a service-meter, the combination with an electromagnet, of a tilting armature therefor, switch-springs controlling the circuit connections of said magnet, an idler-spring carrying an insulating-button adapted upon the operation of said spring to move said switch-springs, a pivoted arm, a catch carried thereby adapted to lock said idler-spring in its operated position, a device for moving said spring, an insulating-spacer engaged by said device when moved adapted to maintain said switch-springs apart, said spacer upon the withdrawal of the device moving to permit said switch-springs to close, a lip carried by said idler-spring, a spring-actuated stop-lever normally resting against said lip, said lever upon the movement of the idler-spring being interposed between said spring and the operating device to prevent subsequent actuation of the switch-springs by said device, and a registering-train operated by said armature when moved in one direction, said armature when so moved operating the said pivoted arm to release the switch-springs, said armature when tilted in the opposite direction moving said arm to release the catch without operating the registering-train, as described.

813,231. SNOW-SHOE FOR WHEELS. FRANK W. NIGHTINGALE, Quincy, Mass. Filed Apr. 23, 1905. Serial No. 256,941.

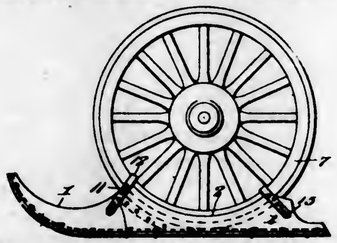

Claim.—1. A runner for use with wheeled vehicles comprising side plates bent inward at their lower edges to provide flanges to receive and support the wheel, a shoe secured to the lower side of said flanges, and a filler-block secured between the side plates.

2. A runner for use with vehicles comprising side plates bent inward at their lower edges to provide flanges with which the wheel is adapted to contact, a shoe secured to the lower surface of said flanges, a filler-block comprising a curved plate having depending side flanges, the flanges of said block being secured to the side plates of the runner.

3. In combination with the wheel of a vehicle, of a runner comprising side plates having inwardly-projecting flanges at their lower edges adapted to receive and support the wheel, a shoe secured to said flanges, and a filler-block secured between the side plates and being curved in longitudinal section to conform to the curvature of the wheel.

813,232. RAZOR. JOHN W. OFFUTT, Ellwood City, Pa., assignor of one-half to R. T. Brown, Ellwood City, Pa. Filed July 26, 1905. Serial No. 271,274.

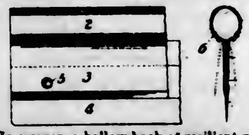

Claim.—1. In a razor, a hollow back of resilient material, having extended clamping-plates arranged to hold a removable blade by spring-pressure, said back being open at the end and above the blade to receive a spreading or releasing key above the blade; substantially as described.

2. In a razor, a hollow back of resilient material, having extended substantially parallel clamping-plates, and a removable blade held between the said plates, said blades and plates having coacting projections and recesses, and the back being open to receive a spreading-tool above the blade; substantially as described.

3. In a razor, a hollow back of spring material forming a substantially complete ellipse, and having its free edges extended to form clamping-plates for holding a removable blade, said back having a shank extension; substantially as described.

4. In a razor, a tubular back of elliptical form having clamping-plates arranged to hold the blade by spring-pressure, and a turning-key arranged to spread the blades; substantially as described.

813,233. COMBINED DAVENPORT AND BED. ARTHUR H. PADDOCK, Lead, S. D. Filed July 26, 1905. Serial No. 271,334.

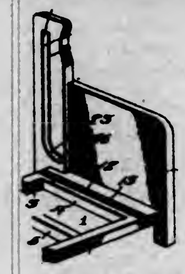

Claim.—1. A combined davenport or bed comprising a main frame provided with side pieces and rear standards, said frame being provided adjacent to said side pieces with guide-grooves and the standard with guide-grooves having forwardly-curved lower ends, a head-piece extending between and secured to the standards, seat and back sections comprising upholstered frames hingedly connected, the seat-frame being provided with runners movable in the guide-ways in the seat-frame and the back-frame, rollers to traverse the guides in the standards whereby the seat and back portions may be adjusted in unison to extend the seat portion beyond the main frame and to bring the back portion to the position normally occupied by said seat portion, and a strip upon the front edge of the seat portion to conceal the joint between the same and the main frame when the parts are in normal position.

2. A combined davenport and bed comprising a main frame composed of a bottom, side pieces, rear standards, and a head-piece extending between the standards, the bottom portion of the frame being provided adjacent to the side pieces and standards with guide-grooves having channeled wear-strips inserted therein, and the standards with vertical grooves having forwardly-projecting lower terminals, the top and bottom walls of said grooves forming stops, seat and back frames hingedly connected at their meeting edges, the seat-frame being provided at its ends with runners movable in the channeled guide-pieces and the back-frame upon the normally upper portions of its ends with rollers to travel in the guide-grooves in the standards and engage said stops, a strip secured to the front portion of the seat-frame to cover the joint between the same and main frame when the parts are in normal position, and a leg pivoted to the forward portion of the main frame and adapted to fold behind said strip.

3. A sofa of the character described comprising a main frame provided at the front thereof with a receiving-recess and horizontal and vertical guideways, hingedly-connected seat and back portions provided with guide members to respectively travel in said horizontal and vertical guideways, the said seat portions being extendible beyond the frame and the back portion adjustable to the position normally occupied by the seat portion, a hinged supporting-leg upon the front rail of the seat portion adapted to be turned to an inactive position and to occupy said receiving-recess when the seat and back portions are restored to their normal positions, said leg having a lug, a strip upon the front rail of the seat portion to conceal the joint between the same and main frame and conceal the leg when the seat portion occupies its normal position, and a keeper-pin upon the rear side of said strip adapted to be engaged by the lug to hold the leg in folded position.

813,234. WINDOW-SCREEN FRAME. HUBERT B. PALLADY, Sebastopol, Cal. Filed Sept. 22, 1905. Serial No. 279,585.

Claim.—1. A screen or like frame having a light-aperture of fixed size, one of the side rails of the frame being divided diagonally into two sections, one of the sections being slidable lengthwise on and relative to the other to contract or to expand the frame transversely.

2. A screen or like frame having rigidly-connected top, bottom and side rails, one of said side rails being divided diagonally into two sections, one of said sections being movable lengthwise on the other to contract or expand the frame, and spring-actuated means carried by the sections operating to hold the sections normally in expanded position.

3. A screen or like frame comprising rigidly-connected top, bottom and side rail portions, one of said side-rail portions being provided with a lengthwise-movable wedge member, a follower on said wedge member, and a spring housed in a corresponding part of the frame coacting with the follower to move the wedge to expand the frame.

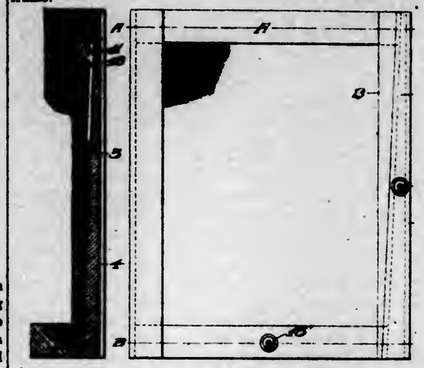

4. A screen or like frame having a side rail divided longitudinally into two wedge-shaped sections, the outer section movable lengthwise on the other to expand or contract the frame, a spring carried by one section, and a follower carried by the other section and coacting with the spring to hold the sections normally in expanded position.

5. A screen or like frame having top, bottom and side rails, one of said side rails divided diagonally into two sections, the outer section forming a wedge member movable lengthwise on the other section to expand or contract the frame, the inner edge of the outer section being longitudinally grooved, and the top and bottom rails of the frame having tenon portions projecting into said groove, and means for holding said sections together.

6. A screen or like frame having top, bottom and side rails, one of said side rails divided diagonally into two sections, the outer section forming a wedge member movable lengthwise on the other section to expand or contract the frame the inner edge of the outer section being longitudinally grooved and the top and bottom rails of the frame having tenon portions projecting into said groove, a spring housed in a slotted part in one of said sections, and a follower carried by the other section coöperating with the spring to hold the sections in normally expanded position.

7. The combination with a window-casing having vertical guides, of a screen or like frame slidably mounted in said guides, said frame having one of its sides diagonally divided into two sections, the outer of said sections forming a wedge with its widest end downward, said wedge movable lengthwise on the inside section to contract or expand the frame, and said sections coöperating to lock the frame at any desired point in the casing.

813,235. STEAM-PIPE COUPLING. WILLIAM J. PIER, Chicago, Ill., and LEE P. HYDE, Laporte, Ind. Filed Feb. 10, 1905. Serial No. 245,105.

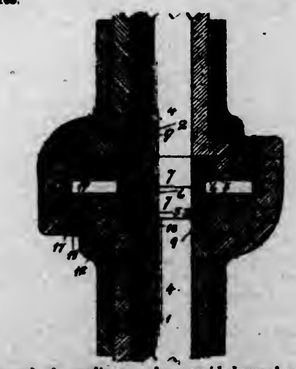

Claim.—1. A coupling member provided round a portion of its engaging edge with a flange leaving an open space at one end and

being tapered or thickened away from the opening, a projecting wall having an inner diameter sufficient to embrace the tapered flange of a companion section and provided at its outer edge with an overhanging flange adapted to engage the tapered flange of the companion section, the flanges being beveled to interlock with one another and form a dovetail joint, and said walls adapted to be arranged opposite each other when the coupling is effected, substantially as described.

2. A coupling consisting of two companion sections each consisting of a circular coupling-sleeve having formed integrally around a portion of its periphery a flange terminating in an open space and thickened or tapered away from the open space, and terminating in a projecting wall formed integrally with the coupling-head having an inner curvature sufficient to embrace the tapered flange of the companion section and arranged so that the projecting walls will be opposite each other when the coupling is effected, and an inwardly-projecting engaging flange on each of the projecting walls adapted to engage a tapered flange of a companion section, all of the flanges being beveled to interlock with one another and form a dovetail joint, each of the coupling-sleeves having within it a tubular member having at its engaging end a rubber gasket, the two gaskets being adapted to contact with one another when the coupling is locked, substantially as described.

3. A coupling consisting of two companion sections each consisting of an inner tubular shank having an enlarged head, companion gaskets within the enlarged heads, coupling-sleeves surrounding the tubular shanks and each provided around a portion of its edge with a tapered flange formed integrally therewith, leaving an opening at its thinnest point, each of the flanges terminating in a projecting wall, adapted to be arranged opposite each other when the coupling is effected, said walls being formed integrally with the coupling-sleeve, and each having around its edge an inwardly-projecting flange adapted to engage the tapered flange of the companion section, all of the flanges being beveled to interlock with one another, substantially as described.

4. A coupling consisting of two companion sections each consisting of a coupling-sleeve provided around a portion of its rim with a retaining-flange formed integrally therewith leaving an opening at one end, and each of the sleeves being further provided with a forwardly-projecting wall formed integrally therewith, said walls adapted to be arranged opposite each other when the coupling is effected and each having an interior diameter sufficient to embrace the retaining-flange of the companion section, and having an inwardly-projecting engaging flange integrally formed with the coupling-sleeve and adapted to coact with the retaining-flange of the companion section, one of the flanges being inclined to lock with its companion flange after a predetermined degree of revolution of the two sections, and all of the flanges being beveled to interlock with one another and form a dovetail joint, substantially as described.

5. A coupler consisting of two companion sections each consisting of a coupling-sleeve provided around a portion of its rim with a retaining-flange formed integrally therewith, leaving an opening at one end, and each of the sleeves being further provided with a forwardly-projecting wall formed integrally therewith said walls adapted to be arranged opposite each other when the coupling is effected, and each having an interior diameter sufficient to embrace the retaining-flange of the companion section, and having an inwardly-projecting engaging flange adapted to coact with the retaining-flange of the companion section, one of the flanges being inclined to lock with its companion flange after a predetermined degree of revolution of the two sections, all of the flanges being beveled to interlock with one another and form a dovetail joint, and a tubular shank passing through each of the coupling-sleeves, and having a counterbore on its inner face, companion gaskets fitted into and outwardly projecting from the counterbores, substantially as described.

6. A coupler consisting of two companion sections each consisting of a coupling-sleeve provided around a portion of its rim with a retaining-flange formed integrally therewith, leaving an opening at one end, and each of the sleeves being further provided with a forwardly-projecting wall formed integrally therewith said walls adapted to be arranged opposite one another when the coupling is effected and each having an interior diameter sufficient to embrace the retaining-flange on the companion section, and having an inwardly-projecting engaging flange adapted to coact with the retaining-flange of the companion section, one of the flanges being inclined to lock with its companion flange after a predetermined degree of revolution of the two sections, all of the flanges being beveled to interlock with one another and form a dovetail joint, and a tubular shank passing through each of the coupling-sleeves, and having a counterbore on its inner face, companion gaskets fitted into and outwardly projecting from the counterbores, and a split ring for each section entered into a recess in the counterbore for holding each of the gaskets in place, substantially as described.

813,286. APPARATUS FOR SUPPLYING LIQUID FUEL TO BURNERS OF LAMPS AND LANTERNS. THOMAS C. PURDY, Paris, France. Filed June 16, 1905. Serial No. 265,610.

Claim.—1. In an apparatus of the character described, the combination of a cylinder, a piston located therein, a supply-pipe, a valve automatically operated to prevent the return of fluid through said pipe, and a main open to the cylinder.

2. In an apparatus of the character described, the combination of a hollow stationary piston, a supply-pipe communicating therewith, a weighted cylinder working on the piston, a valve in the head of the piston adapted to be automatically closed by the pressure in the cylinder, and a main mounted in the piston-head open to the cylinder.

813,287. ATTACHMENT FOR COFFEE-POTS. ROBERT F. RANDALL and HARRY V. PEIRSON, Newark, N. Y., assignors of two-thirds to said Peirson and one-third to said Randall. Filed Mar. 20, 1905. Serial No. 251,733.

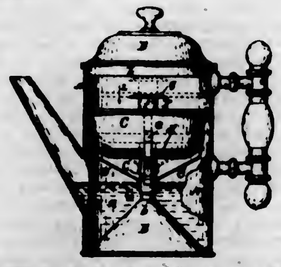

Claim.—1 The herein-described coffee-pot, comprising a body, a removable attachment within said body and comprising an inverted funnel resting directly on the bottom of said body, a rigid central vertical tube piercing the apex of said funnel and extended downwardly into the said funnel and terminating at a distance from the bottom, the upper end of said tube having an annular enlargement, a tube sleeved upon said tube and over said enlargement, a percolator carried by said tube and having a bottom of fine-mesh material, a perforated plate within said percolator, a thimble rigid with said plate at the center thereof and sleeved upon the outer tube, and a spreader carried by the upper end of the said thimble.

2. The coffee-pot attachment described comprising an inverted funnel, a central vertical tube rigid therewith, a portion extended above the apex of the funnel and a portion extending well into the funnel and terminating above the bottom thereof, a tube telescopically engaged over said tube, braces extending from said tube, a percolator rigid with said tube and its braces and having reticulated bottom, a removable perforated spreader having a rigid tubular part telescopically engaged over the last-named tube, and a flange movable with said spreader and rigid with its tubular part.

813,288. DEVICE FOR PREVENTING THE SHAFTS OR ARBORS OF SAW-BLADES FROM SAGGING. THOMAS B. REED, Jr., Philadelphia, Pa. Filed June 3, 1904. Serial No. 210,942.

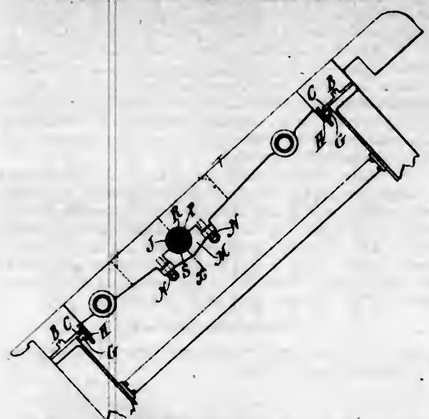

Claim.—1. A saw-carrying shaft, a cross-head, a support for the latter, said head having its body longitudinally divided forming separate side members and blocks connected with the under portions of said members, said body and blocks forming a plurality of bearings for said shaft and firmly sustaining the same respectively on opposite sides of the saw.

2. A shaft, a saw longitudinally movable thereon, a cross-head, a support for the latter, said head having its body longitudinally divided forming separate side members, blocks connected with the under portions of said members and means on said head and support, whereby said head is laterally movable on said support, said body and blocks forming a plurality of bearings for said shaft and firmly sustaining the same respectively on opposite sides of the saw.

3. A frame, a track thereon, a member projecting inwardly from said frame and overhanging the inner side thereof, a saw-carrying shaft, a cross-head forming the bearing for said shaft and being movably supported on said track and a piece projecting outwardly from said cross-head and freely engaging said overhanging member of the frame from below.

4. A frame, a track thereon, a member projecting inwardly from said frame and overhanging the inner side thereof, a saw-carrying shaft, a cross-head forming the bearing for said shaft, and being movably supported on said track, a piece projecting outwardly from said cross-head and freely engaging said overhanging member of the frame from below, and means for vertically adjusting said piece on said cross-head.

813,289. TROUSERS-RACK. MAX ROSENBERG, Philadelphia, Pa. Filed Aug. 4, 1905. Serial No. 272,788.

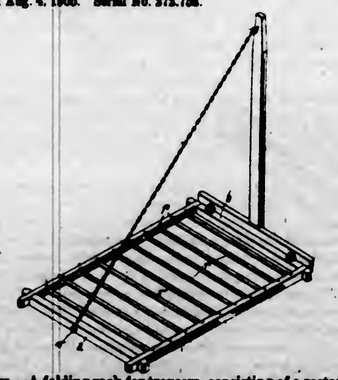

Claim.—A folding rack for trousers, consisting of a rectangular rack-frame having notched side bars, and removable rack-bars, and hinged thereto, a L-form wall-frame having a central upright bar longer than the rack-frame and provided with a rearward-projecting fastening-eye near its lower end and a forward-projecting hook at its upper end, and an adjusting-chain connected to the end of the rack-frame and having engagement with said hook, substantially as specified.

813,240. STOP-MOTION FOR KNITTING-MACHINES. GEORGE W. REVE, York, Pa., assignor to Ruth Machine Company, a Corporation of Pennsylvania. Filed Jan. 18, 1905. Serial No. 241,522.

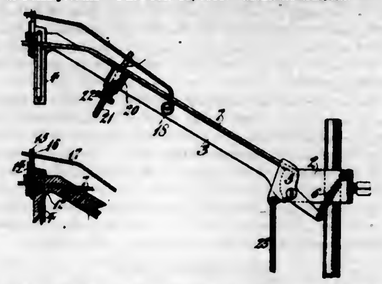

Claim.—1. In a device of the character described, supporting means for carrying the yarn, means connected with said supporting means for operating a stop-motion, holding means for said supporting means, spring means extending substantially lengthwise of and connected with said holding means, and means at an angle to said spring means for adjusting the tension of the latter.

2. In a device of the character described, yarn-supporting means pivotally mounted, means connected with said supporting means for operating a suitable stop-motion, means engageable with said supporting means for holding same in operative position, springs suitably connected with and extending substantially lengthwise of said holding means and means at right angles to the length of said springs for adjusting the tension of the latter.

3. In a device of the character described, hooks for supporting the yarn, dogs engaging with said hooks for holding the same in operative position, spring-arms extending in the direction of the length of the hook-supporting means engaging with and carrying said dogs for normally depressing same and means at right angles to the length of said spring-arms for independently adjusting the tension of said spring-arms for varying the pressure on said dogs.

4. In a device of the character described, hooks pivotally supported, dogs adapted to engage with said hooks for holding the same in operative position, rods movably connected with said hooks, plates connected with said rods, springs extending in the direction of the length of the hook-supporting means for operating said plates, spring-arms supporting and contacting with said dogs for normally depressing the same, pins disposed at right angles to the length of said springs and engaging with said spring-arms and means for adjusting said pins whereby the tension on said dogs may be varied.

5. In a device of the character described, a head, plates pivotally attached thereto, springs having one end attached to said head and the other end to said plates, rods projecting from said plates, a block carried by said head, said rods moving in slots in said block, hooks pivoted to said block and having slots in their body portion in which said rods are adapted to move, depressions in said hooks, dogs carried by said block adapted to engage in said depressions, spring-arms suitably supported parallel with the length of said rods and in engagement with said dogs, pins at right angles to and having portions loosely engaging with said spring-arms and independent means for adjusting said pins for varying the tension of said spring-arms on said dogs.

6. In a device of the character described, a stationary slotted guard formed of a plate and a finger having a lateral arm coacting with the slot of said guard and adapted to be sustained by the yarn, said finger being provided with a lug, a spring-actuated lever having a head to engage said lug, and a dog having a nose in the path of said lever.

7. In a device of the character described, a stationary slotted guard formed of a plate and a finger having a lateral arm coacting with the slot of said guard and adapted to be sustained by the yarn, said finger being provided with a lug, a spring-actuated lever having a head to engage said lug, and a dog having a nose in the path of said lever and a tip in the path of said lug.

8. In a device of the character described, a support, slotted

hooks pivotally mounted thereon and having depressions adjacent their pivots, spring-held means adapted to engage said depressions, spring-arms extending lengthwise of said support and carrying said means for normally depressing same and means at right angles to the length of said spring-arms for independently adjusting the tension of said spring-arms for varying the pressure on said means.

7. In a power plate-printing press, an automatically-reciprocable polisher comprising a plurality of rotatable members having pol-

tongues formed by pressing said side flanges inwardly, blocks adapted to slide longitudinally into the space between said flanges, said

Claim.—1. A hexagonal packing-case provided with series of diagonally-arranged partitions located on different levels, substan-

hooks pivotally mounted thereon and having depressions adjacent their pivots, spring-held means adapted to engage said depressions springs extending lengthwise of said support and carrying said means and means movable in guides on said support and in slots of said hooks, and means for adjusting the said springs to vary their tension.

9. In a device of the character described, a support, hooks pivotally mounted thereon and having longitudinal slots, holding means for normally holding said hooks in a horizontal position, vertical guides on said support, pivotally-mounted plates, rods carried thereby with their free ends engaged in the slots of said hooks and in the guides of said support, springs having one end fixed relatively to said rods and disposed lengthwise thereof and operatively engaged with said holding means.

10. In a device of the character described, a support, hooks pivotally mounted thereon and having longitudinal slots, spring-held means for normally holding said hooks in a horizontal position, vertical guides on said support, pivotally-mounted plates, rods carried thereby with their free ends engaged in the slots of said hooks and in the guides of said support, springs having one end fixed relatively to said rods and disposed lengthwise thereof and operatively engaged with said holding means, and means at right angles to said rods and operatively connected with said springs to vary their tension.

818,241. **POWER PLATE-PRINTING PRESS.** HERMAN J. SCHMIDT, Brooklyn, N. Y. Filed June 8, 1905. Serial No. 264,369.

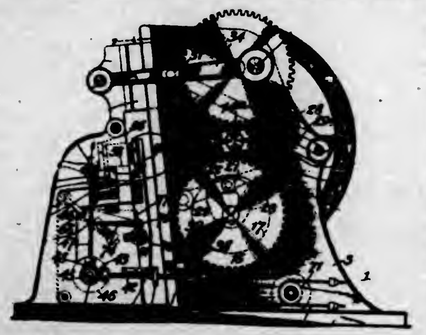

Claim.—1. In a power plate-printing press, a reciprocal plank adapted to carry a plate, an automatically-reciprocal polisher comprising a plurality of concurrently-rotatable disks having their polishing-surfaces flush, automatically-reciprocal cleaning means and inking means, substantially as described.

2. In a power plate-printing press, a reciprocal plank adapted to carry a plate, an automatically-reciprocal polisher, comprising a plurality of concurrently-rotatable disks having their polishing-surfaces flush, automatically-reciprocal dusting means, automatically-reciprocal cleaning means and inking means, substantially as described.

3. In a power plate-printing press, a reciprocal plank adapted to carry a plate, reciprocal blocks, an automatically-reciprocal polisher carried by one of said blocks and comprising a plurality of rotatable disks having their polishing-surfaces flush, automatically-reciprocal cleaning means carried by the other of said blocks, and means connecting said blocks for concurrent simultaneous reciprocal movement, substantially as described.

4. In a power plate-printing press, a reciprocal plank adapted to carry a plate, an automatically-reciprocal polisher, comprising a plurality of rotatable disks having their polishing-surfaces flush, means for causing concurrent rotary movement of said disks, and cleaning means comprising an automatically-reciprocal block and a strip of fabric adapted to be moved automatically across the face of said block, substantially as described.

5. In a power plate-printing press, a reciprocal plank adapted to carry a plate, a polisher comprising an automatically-reciprocal block, rotatable shafts therein and polishers on said shafts, and cleaning means comprising an automatically-reciprocal block and a strip of fabric adapted to be moved automatically across the face of said block, substantially as described.

6. In a power plate-printing press, an automatically-reciprocable polisher comprising a plurality of concurrently-rotatable disks having their polishing-surfaces flush, substantially as described.

7. In a power plate-printing press, an automatically-reciprocable polisher comprising a plurality of rotatable members having polishing-surfaces, dusting means adapted to be automatically reciprocated across the faces of the polisher, automatically-reciprocable cleaning means, and inking means, substantially as described.

8. In a power plate-printing press, a reciprocable plank adapted to carry a plate, a reciprocable block having concurrently-rotatable polishers comprising disks having their polishing-surfaces flush, a reciprocable block located below the first-mentioned block and having wiping means, means connecting said blocks for simultaneous concurrent reciprocable movement and means for reciprocating said blocks, substantially as described.

9. In a power plate-printing press, a reciprocal plank, adapted to carry a plate, a reciprocable block having rotatable shafts provided with polishers, gearing connecting said shafts for simultaneous rotation, a reciprocable block located below the first-mentioned block and having wiping means, means connecting said blocks for simultaneous reciprocable movement, means for reciprocating said blocks and dusting means adapted to be automatically reciprocated across the faces of said polishers, substantially as described.

818,242. **NUT-LOCK.** HENRY SIMMER, Morley, Iowa. Filed Sept. 30, 1904. Serial No. 228,666.

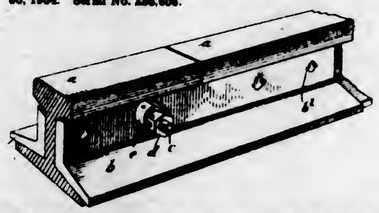

Claim.—The combination of a bolt, a collar on the bolt and provided with lugs on its inner face for entering cavities in a part through which the bolt passes, a nut on the bolt and provided in the exterior of its body with a plurality of notches, said notches extending out through the inner end of the nut and having their bottom walls beveled downwardly and inwardly, and a dog pivoted to the washer and having its under face at the outer end beveled upwardly and outwardly, said dog being adapted to enter one of the recesses of the nut to lock the same, substantially as herein shown and described.

818,243. **RAILROAD-TIE.** CHARLES R. SHANNON, Marble City, Ind. Ter. Filed June 2, 1905. Serial No. 263,371.

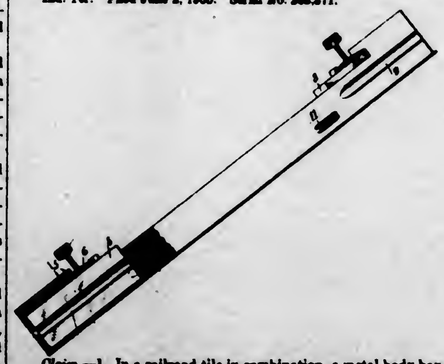

Claim.—1. In a railroad-tie in combination, a metal body having side flanges projecting upwardly, said side flanges having extensions at the extremities of said body, said extensions having recesses formed thereunder adapted to receive the outer edges of the rail-flanges, blocks disposed between said first flanges and adapted to support the rails, and fastening devices for securing the inner edges of the rails to said blocks, said flanges having longitudinally-disposed steps formed in a depressed position on the inner faces of said flanges, said steps abutting the inner faces of said blocks to fix the same against inward movement.

2. In a railroad-tie in combination, a metal body having side flanges projecting upwardly and having longitudinally-disposed tongues formed by pressing said side flanges inwardly, blocks adapted to slide longitudinally into the space between said flanges, said blocks having longitudinal grooves in the side faces thereof adapted to receive said tongues, stops formed by pressing said flanges inwardly and engaging the inner ends of said blocks to lock the same against inward movement, and means for fastening the rails to said blocks.

818,244. **CUSHION-SPRING.** WATSON R. SMITH, Jackson, Mich. Filed Nov. 19, 1904. Serial No. 233,546.

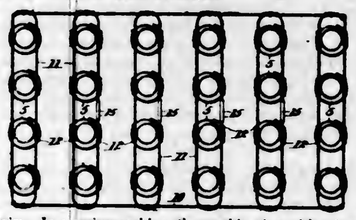

Claim.—In a spring-cushion, the combination with a frame, of support-wires arranged in pairs therein, springs mounted upon corresponding pairs of support-wires, means for securing the springs to the support-wires, a border-wire disposed above and in alinement with the outer edge of the aforesaid frame, and a pressure-distributing element comprising a single piece of material, bent to form parallel side members for engagement with opposite sides of the tops of alining-springs, the ends of the said element being forced against the under face of each side of the border-wire by said springs, and means engaging the said ends of said element and the sides of the border-wire to hold them together.

818,245. **HEADER CONNECTION.** JAMES P. SHEDDON, Barberton, Ohio, assignor to The Stirling Consolidated Boiler Company, New York, N. Y., a Corporation of New Jersey. Filed Nov. 11, 1904. Serial No. 232,333.

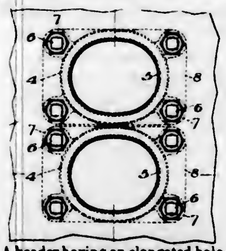

Claim.—1. A header having an elongated hole at its end, a drum having a corresponding elongated hole and having an integral flange provided with inclined inner faces and a coned nipple engaging said inclined faces; substantially as described.

2. A header having an elongated hole at its end, and a drum having a similar elongated hole in alinement therewith, said holes having inclined inner faces, and a double-coned nipple engaging said inclined faces; substantially as described.

3. A header having an elliptical hole at its end, a drum having a corresponding elliptical hole having an outwardly-flaring flange secured in registry therewith, and a nipple fitting in the registering holes, and means for drawing the parts together; substantially as described.

4. The combination with a drum having elongated holes arranged side by side with their minor axes substantially in line and having outwardly-flaring flanges, of headers having correspondingly-elongated holes registering with the holes in the drum, and nipples having inclined sides fitting in the registering holes; substantially as described.

5. A header having an elongated hole at its end, a drum having a similarly-shaped hole secured in registry therewith, a double-coned nipple fitting in the registering holes, and connections for drawing the parts together; substantially as described.

818,246. **PARTITIONED PACKING-CASE.** ARTHUR R. SPEER, Pittsburg, Pa. Filed Apr. 1, 1905. Serial No. 253,256.

Claim.—1. A hexagonal packing-case provided with series of diagonally-arranged partitions located on different levels, substantially as set forth.

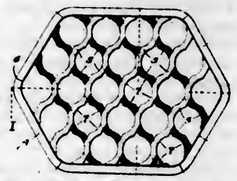

2. A hexagonal packing-case provided with diagonally-arranged partitions, provided with alternately-arranged recesses, substantially as set forth.

3. A hexagonal packing-case provided with rounded corners and series of partitions arranged parallel with the ends of the case, and located at different levels, substantially as set forth.

4. A hexagonal packing-case of sheet metal provided with diagonally-arranged series of cross-partitions having concave recesses, substantially as set forth.

5. A hexagonal packing-case of sheet metal provided with diagonally-arranged series of cross-partitions formed of strips of sheet metal pressed to provide concave bottle-engaging recesses, substantially as set forth.

6. A partition member consisting of a strip of sheet metal having lateral concave recesses formed by bending the edge of the strip, substantially as set forth.

7. A partition member consisting of a strip of sheet metal having alternately-arranged lateral concave recesses formed by bending the edges of the strip, substantially as set forth.

8. A hexagonal packing-case provided with rounded corners and series of partitions arranged at different levels and parallel with the ends of the case, said series extending transversely of each other, substantially as set forth.

818,247. **MANUFACTURING GLASS.** JAMES R. SPEER, Pittsburg, Pa., assignor to Brownsville Glass Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed Apr. 1, 1905. Serial No. 253,257.

Claim.—1. In an apparatus for drawing hollow glass bodies, wherein a gaseous pressure is supplied within the body during operation, means for equalizing the pressure throughout the body.

2. In an apparatus for drawing hollow glass bodies, means for containing the glass to be drawn, a drawing-tool arranged to draw a hollow body, means for supplying gaseous fluid to the interior of said body during the drawing operation, and means for equalizing the pressure of the gaseous fluid throughout the body.

3. In an apparatus for drawing hollow glass bodies, means for containing the glass to be drawn, a drawing-tool arranged to draw a hollow body, and a plurality of ducts leading to different longitudinal portions of the interior of the glass cylinder being formed from means for supplying a gaseous fluid thereto.

4. In an apparatus for drawing hollow glass bodies,

4. In an apparatus for drawing hollow glass bodies, means for containing the glass to be drawn, a drawing-tool arranged to draw a hollow body, and a plurality of ducts leading separately from different longitudinal portions of the interior of the glass cylinder being formed to a common supply of gaseous fluid.

5. In an apparatus for drawing hollow glass bodies, means for containing the glass to be drawn, a drawing-tool arranged to draw a hollow body, a gaseous-fluid-supply pipe, and branch pipes connected thereto and leading from the exterior to different longitudinal portions of the interior of the cylinder being formed.

6. In an apparatus for drawing hollow glass bodies, means for containing the glass to be drawn, a drawing-tool arranged to draw a hollow body, a gaseous-fluid-supply pipe, and branch pipes connected thereto and leading to different longitudinal portions of the cylinder being formed.

7. A step in the process of drawing hollow glass bodies which consists in supplying gaseous fluid to the interior thereof simultaneously equalizing the pressure of the gas throughout the body.

8. A step in the process of drawing hollow glass bodies which consists in supplying gaseous fluid to the interior at two or more different points thereof simultaneously equalizing the pressure of the gas throughout the body.

813,248. GLASS-DRAWING APPARATUS. JAMES B. SPEER, Pittsburg, and GEORGE H. HARVEY, Clenfield, Pa., assignors to Brownsville Glass Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed July 26, 1905. Serial No. 271,143.

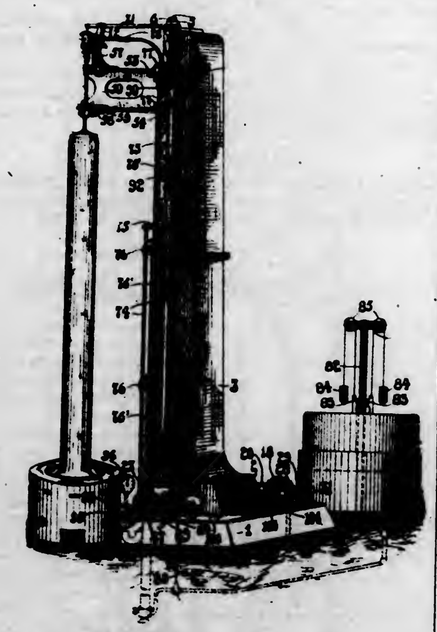

Claim.—1. In the art of drawing hollow glassware, a vertically-movable drawing-tool, and a pipe connected thereto to supply fluid-pressure to the interior of the hollow ware, said pipe including a telescopic portion extensible during the upward movement of the tool to permit the vertical movements of the drawing-tool without interrupting the fluid-supply pipe.

2. In the art of drawing hollow glassware, a drawing-tool, a vertically-movable carriage therefor, means for moving the carriage upwardly at the desired speed and a second means for moving the carriage downwardly at a greater speed.

3. In the art of drawing hollow glassware, a hollow drawing-tool, a fluid-supply pipe and a rigid detachable connector between them to hold the drawing-tool rigid.

4. In the art of drawing hollow glassware, a drawing-tool, means for supplying fluid-pressure to the interior of the glassware, and a movable member constituting a part of the fluid-supply conduit for locking the drawing-tool in operative position.

5. In the art of drawing hollow glassware, a drawing-tool, means for raising and lowering the same, a driving means, separate driving connections between the raising and lowering means and the driving means.

6. In the art of drawing hollow glassware, a drawing-tool, means for raising and lowering the same, a driving means, and separate driving connections between the raising and lowering means and the driving means, one of the connections being flexible to prevent vibration of the said means.

7. In the art of drawing hollow glassware, a drawing-tool, a screw for raising and lowering the same, two driving connections therefor, and means for making operative either connection.

8. In the art of drawing hollow glassware, a vertically-movable carriage, a fluid-supply connection carried thereby, a valve in said connection and non-traveling means for operating said valve at all positions of the carriage.

9. In the art of drawing hollow glassware, a drawing-tool, a carriage to support the same, a standard to guide the carriage, a screw for operating the carriage, and means for suspending the screw from a part relatively distant from its lower end.

10. In the art of drawing hollow glassware, a drawing-tool, a carriage to support the same having therein a socket, a standard to guide the carriage, a screw for operating the carriage, and a nut on the screw and in said socket.

11. In the art of drawing hollow glassware, a traveling drawing-tool, a pipe for supplying a fluid within the draw and a telescopic portion connected thereto extensible during the draw, whereby excess pressure of fluid within the draw is minimized by the gradual increasing area of the telescopic portions during the upward travel of the drawing-tool.

12. In the art of drawing hollow glassware, a traveling drawing-tool, means for transmitting fluid-pressure through the tool to the interior of the draw, a plurality of means for controlling the flow of the fluid to the said means, one of the controlling means traveling with the tool and means by which the latter controlling means may be operated during the entire draw.

13. In the art of drawing glassware, a drawing-tool, a carriage therefor, a screw adapted to rotate and a non-rotating nut adapted to move said carriage by the rotation of said screw.

813,249. CONVERTIBLE CAR. FRANK H. STANLEY and JOHN L. GILLMORE, Bellingham, Wash. Filed Sept. 13, 1904. Renewed Aug. 13, 1905. Serial No. 274,013.

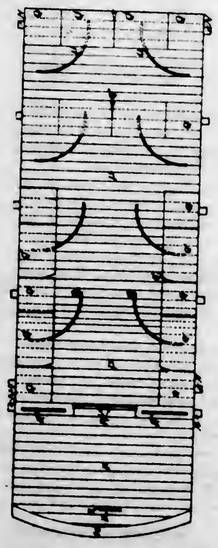

Claim.—1. In a convertible car, a plurality of movable seats, a rotary operating-shaft extending approximately the entire length of the car, and means connected with the operating-shaft for moving the seats.

2. In a convertible car, a plurality of pivotally-mounted seats, a rotary operating-shaft extending approximately the entire length of the car, and means connected with the operating-shaft for moving the seats.

3. In a convertible car, a plurality of pivotally-mounted seats, a rotatable shaft extending longitudinally of the car, and flexible elements connecting said shaft with the seats.

4. In a convertible car, a plurality of movable seats, an operating-shaft, flexible elements connecting said shaft with said seats, and strain-receiving and tightening means for said flexible elements.

5. In a convertible car, a plurality of movable seats, flexible elements for operating said seats, and strain-receiving and tightening means connected with said flexible elements.

6. In a convertible car, a plurality of movable seats, an operating-shaft, a plurality of flexible elements connecting said shaft with said seats, and a plurality of coil-springs connected with said flexible elements.

7. In a convertible car, a plurality of movable seats, a plurality of auxiliary seats adapted to coöperate therewith, and means for simultaneously moving the movable seats.

8. In a convertible car, a plurality of movable seats, a plurality of auxiliary seats adapted to coöperate therewith, means for moving the movable seats, and means for holding the auxiliary seats in elevated position, during the movement of the movable seats.

9. In a convertible car, a slotted floor, a plurality of movable foot-pieces beneath the floor, a standard on each of the foot-pieces projecting upwardly through the slotted floor, a seat on each of the standards, and means for moving the foot-pieces.

10. In a convertible car, a slotted floor, a plurality of movable foot-pieces beneath the floor, a standard on each of the foot-pieces projecting upwardly through the slotted floor, a seat on each of the standards, and means for simultaneously moving the foot-pieces.

11. In a convertible car, a slotted floor, a plurality of foot-pieces pivotally mounted beneath said floor, a seat-support connected with each foot-piece, and extending through the slotted floor, a seat on each seat-support, and means for simultaneously moving said pivotally-mounted foot-pieces.

12. In a convertible car, a plurality of pivotally-mounted foot-pieces, a seat upon each of the foot-pieces, an operating-shaft, and flexible elements connecting the operating-shaft with the foot-pieces.

13. In a convertible car, a slotted floor, a plurality of pivotally-mounted foot-pieces below said floor, a seat-support on each of said foot-pieces, a seat on each seat-support, a stationary seat-support on said floor adjacent to each foot-piece, an auxiliary seat removably mounted on each stationary seat-support, an operating-shaft extending longitudinally of the car, and a plurality of flexible elements connecting said shaft with said foot-pieces.

14. In a convertible car, a plurality or movable seats, means for moving said seats, a stationary seat-support adjacent to each movable seat, and an auxiliary seat removably connected with each of the stationary seat-supports.

15. In a convertible car, a plurality of movable seats, means for moving said seats, a seat-back coöperating with each seat, and removable brackets secured to each seat-back.

813,250. INTERNAL-COMBUSTION ENGINE. CLARENCE M. STEELE, Statesville, N. C. Filed Apr. 7, 1905. Serial No. 254,312.

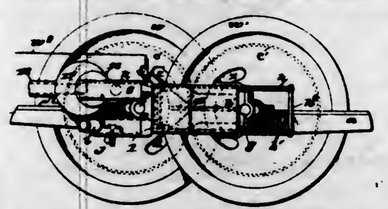

Claim.—1. An internal-combustion engine, comprising two parallel crank-shafts, a cylinder hung on one crank-shaft and a piston hung on the other crank-shaft, means for holding the same parallel, and means for maintaining the intake and exhaust connections.

2. An internal-combustion engine, comprising a pair of parallel crank-shafts, gears for connecting them to run in opposite directions and at the same speed, the combined throw of the cranks equaling the stroke of the engine, a cylinder mounted upon one crank, and a piston mounted upon the other crank, whereby the shock of the explosion is absorbed equally by the two cranks to eliminate recoil and increase the economy.

3. An internal-combustion engine, comprising two parallel crank-shafts, a cylinder mounted on one crank-shaft, a piston mounted upon the other crank-shaft and a fly-wheel for each crank-shaft having an excess of weight on one side to balance the weight of the cylinder and the piston.

4. An internal-combustion engine, comprising two parallel crank-shafts, gears for connecting them to run in opposite directions, a cylinder hung on one crank-shaft, a piston hung upon the other crank-shaft, said cranks having together a throw equal to the stroke of the engine and the piston and cylinder having a rectilinear reciprocation to and from each other and a parallel lateral motion at right angles to the line of rectilinear reciprocation.

5. An internal-combustion engine, comprising a crank-shaft, a cylinder hung on the crank of said shaft and a fuel-supply for the cylinder consisting of a hollow crank having the same stroke as the crank on which the cylinder is hung.

6. An internal-combustion engine, comprising a crank-shaft, a cylinder hung on the crank of said shaft, and an exhaust connection for the cylinder consisting of a stationary exhaust-pipe having a terminal face-plate with the exhaust-pipe opening through the center of it, the plane of the face-plate being parallel to the longitudinal axis of the cylinder and a lateral outlet from the cylinder lying parallel to and scouring against said face-plate.

7. An internal-combustion engine, comprising a crank-shaft, a cylinder hung on the crank of said shaft and an exhaust connection for the cylinder consisting of two scouring-faces, both of said faces having openings through them and one of said faces having an extended flange to always cover the opening in the other face throughout all positions of the cylinder.

8. An internal-combustion engine, comprising a crank-shaft, a cylinder hung on the crank of said shaft, an exhaust-valve having a stem extending laterally to the cylinder and partaking of the rotary motion of the said cylinder, mechanism for opening said exhaust-valve consisting of a relatively stationary push-plate made large enough to cover the traverse of the exhaust-valve, a stationary frame supporting said push-plate and means for forcing the push-plate against the valve.

9. An internal-combustion engine, comprising a crank-shaft, a cylinder hung on the crank of said shaft, an exhaust-valve extending laterally to the cylinder and mechanism for opening said exhaust-valve consisting of a push-plate made large enough to cover the traverse of said valve, said push-plate being constructed and arranged to revolve and means for forcing it against the valve.

10. An internal-combustion engine, comprising a crank-shaft, a cylinder hung on the crank of said shaft, an exhaust-valve extending laterally to the cylinder, a push-plate for opening said exhaust-valve made large enough to cover the traverse of said valve, means for automatically operating the push-plate by the engine and means for operating the push-plate manually and at will in starting the engine.

11. An internal-combustion engine, comprising a crank-shaft, a cylinder hung on the crank of said shaft, an exhaust-valve extending laterally to the cylinder, a push-plate covering the traverse of said valve, a slide-bar attached to the push-plate, a gear-wheel having a cam on its side operating the slide-bar and another gear-wheel meshing with the first-named and fixed to the crank-shaft.

813,251. KNITTING-MACHINE. HEINRICH STOLL, Jr., Reutlingen, Germany. Filed Oct. 5, 1905. Serial No. 282,897.

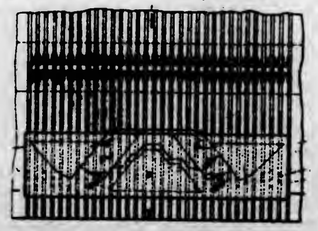

Claim.—1. In a through-and-through knitting-machine, a grooved bed, needles arranged therein, jacks for operating the nee-

dles, said jacks having feet of different height, and feet-engaging cams having actuating-surfaces of different lateral extent; substantially as described.

2. In a through-and-through knitting-machine, a grooved bed, needles arranged therein, jacks for operating said needles, said jacks having feet of different length, and cams acting on said feet to effect different lengths of needle-stroke and corresponding differences in the character of the mesh of the fabric; substantially as described.

813,252. **DREDGER.** VICTOR A. STROM, Alameda, Cal., assignor of one-half to Wm. H. Williamson, Alameda, Cal. Filed Mar. 31, 1905. Serial No. 253,694.

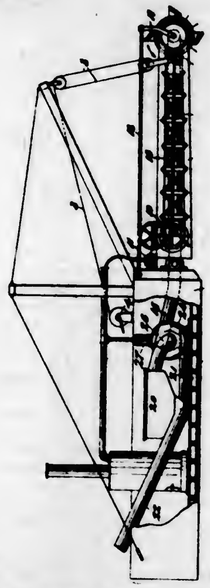

Claim.—1. In a dredger, a float, a hinged ladder projecting therefrom, with means for raising and lowering its front end, an excavator carried upon the front of said ladder, an internal receiver into which the excavator discharges, said receiver having a closed bottom and open top, means whereby the receiver may be turned axially relative to the ladder to maintain its open portion substantially uppermost during the raising or lowering of said ladder, and a suction-pipe connecting with the receiver.

2. In a dredger, a float, a ladder hinged thereto, an excavator consisting of a hollow revolvable drum, buckets carried upon the periphery of said drum, said buckets having the rear inner portions opening to the interior of the drum, a receiver consisting of a drum closed at the bottom and open at the top and having open communication through the ends of the drums, and means connecting with the second drum for turning said drum relative to the ladder whereby its open top is maintained substantially uppermost during the raising or lowering of said ladder, and a suction-pipe leading from said second drum.

3. In a dredger, a float, a ladder hinged thereto, an excavator journaled upon the front of the ladder, said excavator comprising a drum having openings in the periphery, buckets fixed to the periphery of the drum having the inner rear portions opening and coincident with the openings in the drum, a receiver consisting of a second drum located within the first one having the lower portion closed, the upper portion open and levers connecting said drum with the front of the float whereby the open portion is maintained upon the upper side during the raising or lowering of the ladder.

4. In a dredger, a float, a ladder hinged to the front thereof, mechanism by which the outer end of the ladder may be raised or depressed, a revolvable drum journaled upon the outer end of the ladder having openings in its periphery, scoop-shaped buckets fixed over said openings and adapted to discharge therethrough, an interior drum having the upper side open to receive discharged material, arms connected with said interior drum, and rods connecting said arms with the front of the dredge-boat, said arms acting to revolve the interior drum with relation to the outer one so as to present the opening upwardly at any position of the ladder.

5. In a dredger, a float, a ladder hinged thereto, means for raising and depressing the ladder, an excavating apparatus located upon the front of the ladder, a suction-pipe into which material excavated is delivered, said pipe leading along the ladder and into the float, a suction-pump, a closed casing interposed between the pump and the suction-pipe, said casing having an opening in the bottom through which heavy material will drop by gravitation and a connection with the pump in line with the main discharge-pipe.

6. In a dredge, a float, a ladder hinged thereto, means by which the ladder is raised or depressed, an excavating apparatus carried upon the front of the ladder, a suction-pipe extending from said apparatus into the float, a suction-pump, a receiver into which the suction-pipe delivers, a discharge-opening in the bottom of said receiver through which heavy material falls by gravitation, connection between the suction-pump and the receiver out of line with the main suction-pipe, a discharge-pipe connecting with the bottom of the receiver into which pipe the spoils deliver, and a jet-tube discharge from the suction-pump in line with the main discharge-pipe.

813,253. **MOLD.** JOHN H. SULLIVAN, Grand Rapids, Mich. Filed June 15, 1905. Serial No. 265,269.

Claim.—The herein-described mold, consisting of the planks 1 provided with apertures and a fastener consisting of a sheet-metal body portion 4, formed with oppositely-projecting pairs of right-angular flanges 5, said flanges having apertures 8 located to aline with the apertures in the planks 1, said fastener being secured at the meeting edges of the planks by means of tie-rods 9 passed through the alining apertures in the planks and fastener, as described.

813,254. **SPRAY.** JAMES M. SWEENEY, Anaconda, Mont., assignor of one-third to Fred M. Schwartz, Anaconda, Mont., and one-third to Hugh H. Sweeney, Seattle, Wash. Filed Apr. 27, 1905. Serial No. 257,716.

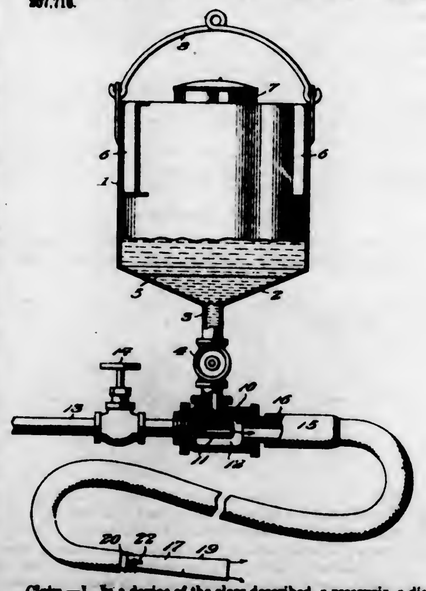

Claim.—1. In a device of the class described, a reservoir, a discharge-duct communicating therewith and a spraying-nozzle carried by the duct, said nozzle comprising a pair of relatively movable sections comprising said portions and overlapping edge flanges, and means for securing the sections in relatively adjusted positions.

2. In a device of the class described, a spraying-nozzle comprising a tubular portion, a pair of relatively movable sections pivoted at one end to said portion, said sections having overlapping edge flanges and being adjustable for varying the size of the discharge end of the nozzle, and a clamping-screw carried by one of the flanges and coöperating with the companion flange for fixing the sections in adjusted positions.

813,255. **LOCOMOTIVE-TRUCK.** WILSON B. STROUD, Pittsburg, Kans. Filed July 6, 1905. Serial No. 268,377.

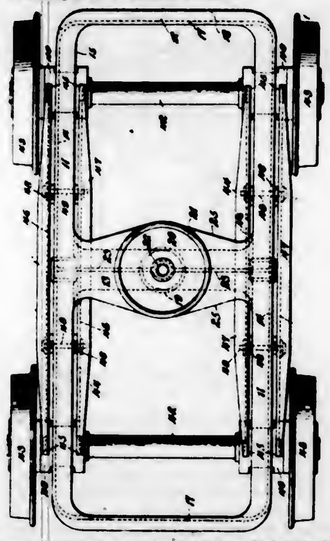

Claim.—1. In a truck of the character described, a single-piece main frame comprising channel side beams composed of upright webs having longitudinally-disposed upper and lower substantially horizontal marginal flanges, and substantially L-shaped cross-bars, each consisting of an upright web and a single longitudinally-disposed substantially horizontal marginal flange.

2. In a truck of the character described, a single-piece main frame comprising channel side beams composed of upright webs having longitudinally-disposed upper and lower substantially horizontal and inwardly-extending marginal flanges leaving substantially smooth outer sides to the beams, and cross-bars connecting the side beams, each of said cross-bars being substantially L-shaped in cross-section and comprising an upright bar and a single horizontally-disposed substantially horizontal outstanding marginal flange.

3. In a truck of the character described, the combination with a main frame including a side beam having an inwardly-extending longitudinal flange, of a pedestal fitted against the under side of the beam, and fastening means for the pedestal passing therethrough and through the said inwardly-extending longitudinal flange.

4. In a truck of the character described, the combination with a main frame including a side beam having an inwardly-extending longitudinal flange, said flange having an integral pedestal depending therefrom, of detachable pedestals coöperating with the integral pedestal and fitted against the under side of the flange, and fastening-bolts for the detachable pedestals, said bolts passing through the said inwardly-extending longitudinal flange.

5. In a truck of the character described, the combination with a main frame including a side beam provided with an offset flange along its lower margin, of a pedestal fitted against the flange, and bolts engaging the pedestal and passing through the flanges for securing the pedestal to the beam.

6. In a truck of the character described, the combination with a main frame including a side beam provided with an offset flange along its lower margin, of an integral pedestal depending from the beam, another separate pedestal fitted against the flange and coöperating with the integral pedestal, and bolts engaging the latter pedestal and passing through the flange for securing said pedestal to the beam in coöperative relation to the integral pedestal.

7. In a truck of the character described, the combination with a main frame including a side channel-beam composed of an upright web and inset upper and lower flanges, of depending integral pedestals carried by the side beam, detachable pedestals located outside and coöperating with the integral pedestals, said detachable pedestals bearing against the lower side of the side beam, and means for securing the detachable pedestals to the side beam.

8. In a truck of the character described, the combination with a main frame comprising side beams provided with upper and lower inset flanges and integral end bars connecting the ends of said side beams, of depending inner pedestals carried by the side beams, detachable outer pedestals coöperating with the integral pedestals and fitted against the lower flanges of the side beams, bolts connecting the detachable pedestals and the flanges, and binders connecting the associated integral and detachable pedestals.

9. In a truck of the character described a main frame including side beams and end bars connecting the ends of the side beams and being substantially inverted-L-shaped in cross-section.

10. In a truck of the character described a single-piece main frame comprising side channel-beams and substantially L-shaped end bars connecting the same and integral therewith.

11. In a truck of the character described, a single-piece main frame comprising side beams of upright webs and offset upper and lower flanges, substantially L-shaped end bars connecting the ends of the side beams and formed integral therewith, and depending integral pedestals carried by the lower flanges of the side beams, in combination with detachable pedestals fitted against said lower flanges and coöperating respectively with said integral pedestals, and bolts for securing said pedestals and lower flanges of the side beams together.

12. In a truck of the character described, a main frame including side beams and a transom extending between the side beams, said transom comprising an upright web having offset longitudinally-disposed marginal flanges.

13. In a truck of the character described, a main frame including side beams, and a transom extending between the same, said transom comprising an upright central web, and oppositely-projecting longitudinally-disposed marginal flanges located on opposite sides of the web.

14. In a truck of the character described, a main frame including side beams and a transom extending between the same, said transom having a central bearing or female casting, upright webs located on opposite sides of the bearing or female casting and connecting the same with the side beams, said webs being provided with oppositely-projecting longitudinally-disposed marginal flanges.

15. In a truck of the character described, a main frame including channel side beams and a transom connecting the intermediate portions of the side beams and made integral therewith, said transom having a central bearing or female casting, upright webs connecting the bearing or female casting and side beams, and oppositely-projecting longitudinally-disposed upper and lower flanges located along the margins of the webs.

16. In a truck of the character described, a main frame comprising side beams, each of said side beams consisting of an upright web and inwardly-extending upper and lower marginal flanges, end bars made integral with the side beams and connecting the ends of the same, said bars consisting of angularly-disposed flanges, and a transom also integral with the side beams and located between the end bars, said transom having a central bearing, upright webs between the bearing and the side beams, and marginal flanges carried by the upper and lower portions of the webs and connecting the central bearing and said side beams.

17. In a truck of the character described, the combination with a single-piece main frame comprising side beams, end bars, and a transom, each of said elements having an upright web and offset marginal flanges, of depending pedestals carried by the side beams, certain of said pedestals being integral therewith, others being separate therefrom, bolts securing the separate pedestals to the side beams, binders connecting the lower ends of coöperating pedestals, and journal-boxes located between the pedestals.

18. In a truck of the character described, the combination with a main frame including side channel-beams, of journal-boxes mounted on the side beams, channel equalizer-bars located on opposite sides of the side beams and supported at their ends on the journal-boxes, and springs connected to the equalizer-bars and side beams.

19. In a truck of the character described, the combination with a main frame including side beams composed of upright webs and marginal flanges, of journal-boxes mounted on the side beams, equal-

inor-bars located on opposite sides of the side beams and supported at their ends on the journal-boxes, said bars also comprising upright webs and marginal flanges, spring-hangers suspended from the equalizer-bars and located between the same, and springs supported on said hangers and engaging the side beams.

20. In a truck of the character described, the combination with a single-piece main frame including channel side beams having depending integral and detachable pedestals, of journal-boxes mounted between the pedestals on the side beams, bowed equaliser channel-bars located on opposite sides of the side beams and supported at their ends on the journal-boxes, and springs associated with the equalizer-bars and side beams.

21. In a truck of the character described, the combination with a main frame including side beams, of journal-boxes mounted on the side beams, equaliser channel-bars located on opposite sides of the side beams and supported at their ends on the journal-boxes, and springs interposed between the equalizer-bars and side beams.

22. In a truck of the character described, the combination with a main frame, of journal-boxes mounted thereon, and an equalizer-bar comprising a web and offset longitudinal flanges, said bar having downturned terminals seated on the journal-boxes, and said flanges having their terminal portions tapered and terminating at the downturned ends of the bar.

23. In a truck of the character described, the combination with a main frame including a side beam, of journal-boxes mounted thereon and projecting on opposite sides of the same, and equalizer-bars located on opposite sides of the side beam and bearing on the boxes, said bars having the faces that are opposed to the beam substantially flat and having outstanding flanges on their opposite faces, which flanges taper toward their ends.

24. In a truck of the character described, an equalizer-bar tapering toward its ends and comprising a web having offset flanges.

25. In a truck of the character described, a bowed equalizer-bar having downturned ends, said bar comprising a web having upper and lower offset marginal flanges.

26. In a truck of the character described, the combination with a main frame including side beams, of pedestals carried by the side beams and having recesses in their upper portions below the side beams, shoes fitted upon the pedestals and having lugs that engage in the recesses, and binders connecting the lower ends of the pedestals and engaging the lower ends of the shoes.

27. In a truck of the character described, the combination with a main frame including a side beam, said side beam being provided with an integral pedestal depending therefrom and said pedestal having a recess in its upper portion below the side beam, of a detachable pedestal secured to the side beam and coacting with the integral pedestal, said detachable pedestal also having a recess in its upper portion, shoes fitted upon the inner opposing sides of the pedestals and having portions engaged in the recesses thereof, and a binder connecting the lower ends of the pedestals and engaging the lower ends of the shoes to retain the said portions of the shoes in the recesses.

813,256. PIPETTE. SEIJI-ICHI TAKAKI, New York, N. Y. Filed Apr. 15, 1905. Serial No. 255,723.

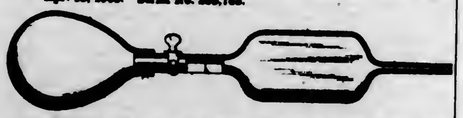

Claim.—A pipette comprising a bulb or chamber having constricted openings at its upper and lower ends, an elongated restricted inlet and discharge tube communicating with the lower end of the chamber, a relatively shorter neck of greater diameter communicating with the upper end of the chamber and provided at its lower end with a gage-mark, intermediately with seats and at its upper end with exterior retaining means, a rotary valve mounted in said seats, and a compressible bulb having a nipple fitted upon the upper end of the neck and held by the said retaining means, substantially as described.

813,257. KNOCKDOWN IRONING-BOARD. ELMER E. TAHL, Mount Vernon, Ohio. Filed Feb. 23, 1905. Serial No. 246,949.

Claim.—1. A knockdown ironing-board comprising a pair of ironing-arms, a coupling-post having end flanges, each of said flanges having a pair of slots of unequal depth through the edge thereof, and screw-studs upon which the flanges are adapted to be slid under suitable nuts on the studs.

2. A knockdown ironing-board comprising a pair of ironing-arms having countersunk screw-threaded apertures, a coupling-post having a handle portion, flanges formed on the ends of the post having short and long slots to register with the apertures, the thumb-nuts, and the screw-studs fixed in the apertures and adapted to enter the slots without removing the thumb-nuts.

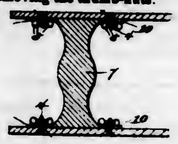

813,258. WARDROBE-RACK. GEORGE R. THEIS, Minneapolis, Minn. Filed Dec. 10, 1904. Serial No. 236,251.

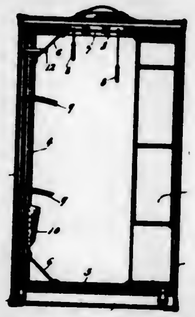

Claim.—A wardrobe-rack made up of upper and lower rectangular head-frames 3 and corner-posts 4 rigidly connecting said head-frames at their rear portions only leaving the sides and front portions of said rack between said head-frames free from obstruction, and a box removably fitting between the front portions of said head-frames and when positioned serving to prevent the forward portion of the upper head from sagging downward under the weight of the load supported by said upper head, substantially as described.

813,259. BAND-CUTTER AND FEEDER. ROBERT H. VAN COURT, Boston, Iowa. Filed June 26, 1904. Serial No. 213,707.

Claim.—In a band-cutter and feeder the combination of an upwardly-extending frame expanded at its lower end to form a flared hopper, the sides of said frame being slotted adjacent to the upper ends thereof, vertical shafts journaled on said sides adjacent to said slots and having oppositely-extending arms which are adapted to project through the slots to act as bundle-straighteners, an endless conveyer mounted in said frame and band-cutting and bundle-straightening means mounted in said frame.

813,260. VISE. THOMAS W. VARE, Philadelphia, Pa. Filed Aug. 12, 1905. Serial No. 273,698.

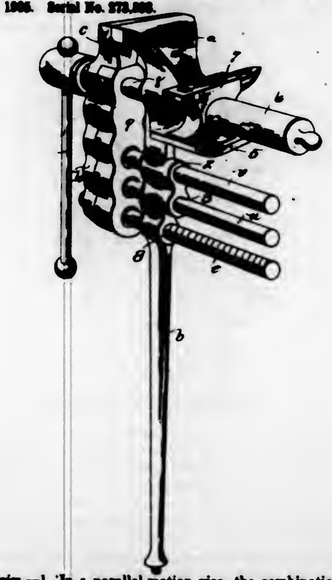

Claim.—1. In a parallel-motion vise, the combination with a fixed jaw and its downward extension having upper and lower threaded bearings, and intermediate guide-bearings in the same vertical plane, of a movable jaw having a downward extension, of upper and lower parallel screws pivoted in the extension of the movable jaw, a train of gear-wheels in connection with said screws, and upper and lower guide-bars between and parallel to said screws and forming journals of gear-wheels of said train, substantially as specified.

2. In a parallel-motion double-screw vise, a movable jaw having a downward extension, upper and lower parallel screws journaled in said extension, an upper cylindrical guide-bar and a lower cylindrical guide-bar between and in the plane of said screws, a train of gear-wheels connecting said screws and a detachable protecting-casing for said gear-wheels, substantially as specified.

3. A parallel-motion double-screw vise, having between and in the plane of its screws an upper cylindrical guide-bar and a lower cylindrical guide-bar and a train of gear-wheels connecting said screws and mounted on said guide-bars, substantially as specified.

813,261. MEANS FOR PRODUCING FOLDING MATRICES. GEORGE H. VINING, Kansas City, Mo., assignor to Vining's News Bureau, Kansas City, Mo., a Corporation of Missouri. Filed Dec. 9, 1904. Serial No. 236,904.

Claim.—1. The combination with a form of type, of a member arranged in said form, and a series of ribs on said member for rendering matrices foldable.

2. The combination with a form of type, of a plurality of members suitably arranged in said form, and means on said members arranged parallel to each other for rendering matrices foldable.

3. The combination with a form of type, of a member arranged transversely therein, and longitudinal ribs on the upper central surface of said member, for rendering matrices foldable.

4. The combination with a form of type, of a member arranged transversely therein, a longitudinal rib on the upper surface of said member, a second member arranged in said form, a longitudinal rib on the upper surface of said second member abutting at one end against one side of the rib on the first-mentioned member, a third member arranged in the form in alinement with the second member, and a pair of longitudinal ribs on the upper surface of said third member abutting at their inner ends against one side of the rib on the first-mentioned member.

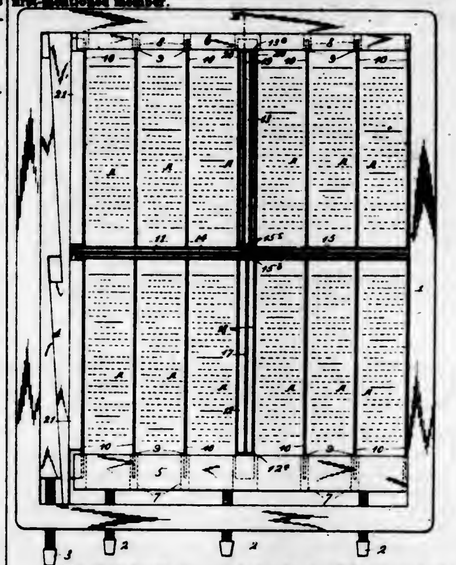

5. The combination with a form of type, of a member arranged transversely therein, parallel ribs on the upper surface of said member, a second member arranged in the form, abutting at one end against one side of the first-mentioned member, parallel ribs on the upper surface of said second member, a third member arranged in the form in alinement with the second member abutting at its inner end against one side of the first-mentioned member, and a plurality of parallel ribs on the upper surface of said third member.

6. The combination with a form of type, of a member arranged in said form, and a rib on said member more than type-high for rendering matrices foldable.

7. The combination with a form of type, of a grooved head-bar interposed between the type and the chase of said form, of members arranged in the form of a cross one of said members having a reduced end loosely fitting into one of the grooves of the head-bar, and ribs on the upper surfaces of said members.

8. The combination with a form of type, and an adjustable foot-bar located at one end of the form and provided with transverse grooves, a head-bar located at the opposite end of the form and provided with transverse grooves, a transverse member arranged in the form, means on said member for rendering matrices foldable, and column-rules arranged with their adjacent ends abutting against the transverse member and their opposite ends in the grooves of the foot-bar and the head-bar.

9. The combination with a form of type and a quoin located at one side thereof, of a transverse member arranged in the form, means on said member for rendering matrices foldable, and filling-strips terminating at opposite sides of the transverse member and interposed between the type and the quoin so that the latter cannot contact with the adjacent end of the transverse member.

813,262. AUTOMATIC STARTING DEVICE. HERBERT A. WARREN, FREDERICK MANER, and WILLIAM H. DENKER, Newburgh, N. Y. Filed June 20, 1905. Serial No. 266,346.

Claim.—1. In a device of the character described, the combination with a rheostat including a movable switch element, of a screw, shaft adapted to be operated from a motor, a nut adapted to traverse said shaft and to impart motion to said switch element, means for maintaining the nut in engagement with the shaft during its forward motion, means for releasing it therefrom at the end of such motion, and means for restoring the parts to their normal position.

2. In a device of the character described, the combination with a rheostat including a movable switch element, of a screw-shaft adapted to be operated from a motor, a nut adapted to traverse said

shaft, a pitman connecting the nut with the switch element, means for maintaining the nut in engagement with the shaft during its forward motion, means for releasing it therefrom at the end of such motion, and means for restoring the parts to their normal position.

3. In a device of the character described, the combination with a rheostat including a movable switch element, of a screw-shaft adapted to be operated from a motor, a nut adapted to traverse said shaft, a pitman connecting the nut with the switch element, means for maintaining the nut in engagement with the shaft during its forward motion, means for releasing it therefrom at the end of such motion, means for restoring the parts to their normal position, and means for preventing the nut from engaging the shaft during its return motion.

4. In a device of the character described, the combination with a rheostat including a movable switch element, of a screw-shaft adapted to be operated from a motor, a nut adapted to traverse said shaft, a pitman connecting the nut with the switch element, means for maintaining the nut in engagement with the shaft during its forward motion, means for releasing it therefrom at the end of such motion, means for restoring the parts to their normal position, and means for preventing the nut from engaging the shaft during its return motion, said means comprising a fly-felt.

5. In a device of the character described, the combination with a rheostat including a movable switch element, of a screw-shaft adapted to be operated from a motor, a nut adapted to traverse said shaft, a pitman connecting the nut with the switch element, means for maintaining the nut in engagement with the shaft during its forward motion, means for releasing it therefrom at the end of such motion, means for restoring the parts to their normal position, and means for preventing the nut from engaging the shaft during its return motion, said means comprising a fly-felt and a sleeve.

6. In a device of the character described, the combination with a rheostat including a movable switch element, of a screw-shaft adapted to be operated from a motor, a nut adapted to traverse said shaft, a pitman connecting the nut with the switch element, means for maintaining the nut in engagement with the shaft during its forward motion, means for releasing it therefrom at the end of such motion, means for restoring the parts to their normal position, and means for preventing the nut from engaging the shaft during its return motion, said means comprising a fly-felt and a sleeve, an annular strip against which the said fly-felt contacts when in raised position at which time said fly-felt contacts with said sleeve, an annular

and supported between the posts, the edges of said trays and the posts forming vertical passages in open communication with the tray-interspaces, means for circulating a heating and cooling medium through said tray-interspaces, and means for connecting said mechanism with both inlet and outlet ends of the tray-interspaces, independent heating and cooling devices located in

shaft, a pitman connecting the nut with the switch element, means for maintaining the nut in engagement with the shaft during its forward motion, means for releasing it therefrom at the end of such motion, and means for restoring the parts to their normal position.

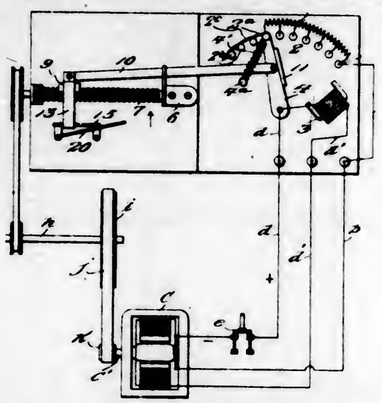

3. In a device of the character described, the combination with a rheostat including a movable switch element, of a screw-shaft adapted to be operated from a motor, a nut adapted to traverse said shaft and impart forward movement to said switch element, means for holding the nut in engagement with the shaft during its forward movement and maintaining the same out of engagement therewith during its rearward movement, means for throwing the nut out of engagement with the shaft at the limit of its forward movement, and means for retracting or restoring the parts to their normal position.

4. In a device of the character described, the combination with a rheostat including a movable switch element, of a screw-shaft adapted to be operated from a motor, a nut adapted to traverse said shaft and impart forward movement to said switch element, a shoe connected with the nut, a retaining and guiding member having opposite surfaces adapted to be traversed by said shoe to hold the nut in engagement with the shaft during its forward movement and out of engagement therewith during its rearward movement, means for shifting the shoe from the former to the latter named surface, and means for restoring the parts to their normal positions.

5. In a device of the character described, the combination with a rheostat including a movable switch element, of a screw-shaft adapted to be operated from a motor, a nut adapted to traverse said shaft and impart forward movement to said switch element, a shoe connected with the nut, a guiding and retaining member having opposite surfaces adapted to be traversed by said shoe to hold the nut in engagement therewith during its forward movement and out of engagement therewith during its rearward movement, a spring for shifting the shoe from the former to the latter named surface, and means for restoring the parts to their normal position.

813,268. **PIANO-ACTION.** EMIL WIRSUM, Philadelphia, Pa., assignor of one-third to Gustave A. Walther, Philadelphia, Pa., and one-third to Charles Schwerdfeger, Lansdale, Pa. Filed Jan. 30, 1905. Serial No. 242,188.

Claim.—1. In a device of the character described, a butt pivotally supported, a fly, a hammer-catch secured to said butt, the inner surface of which is concentric with the pivot of said butt, a strip 35 secured to said butt and having a laterally-extending portion and an upwardly-extending portion, a strip 36 extending outwardly from the upwardly-extending portion of said strip 35 and against which the top of the fly contacts during the operation, an angular piece engaging said strips, and a sleeve closely engaging said catch, said sleeve being retained thereon by the contact therewith of said catch and of the angular piece between said strips.

2. In a device of the character described, a butt pivotally supported, a catch secured thereto, the inner surface of which is concentric with the pivot of said butt, a sleeve adapted to closely engage said catch, a fly, a felt secured to the back of said fly near the upper end thereof, a strip secured to said butt and having a laterally-extending portion and an upwardly-extending portion, a strip extending outwardly from the upwardly-extending portion of said first strip and against which the said fly-felt contacts when in raised position at which time said fly-felt contacts with said sleeve, an angular piece engaging said strips and a stop-felt secured to said butt beneath said first strip.

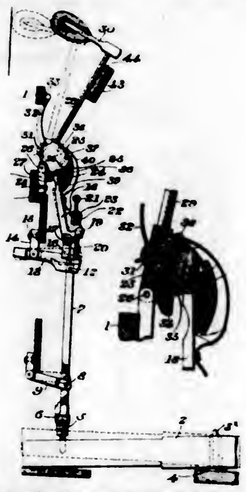

3. In a device of the character described, a pivot, a butt pivotally supported thereon, a catch secured thereto, the inner surface of which is concentric with said pivot, a fly, a fly-felt near the outer end thereof, and a strip extending from said butt in a plane above the point at which said fly normally contacts, and which engages with said catch and against which the top of said fly contacts only when in raised position.

4. In a piano-action, a fly, a pivot, a butt pivotally supported thereon, a catch secured to said butt the inner surface of which is concentric with said pivot, a bridle-strip secured to said butt and adjustably attached to said fly, a hammer, means interposed between said butt and said catch against which the top of said fly contacts in raised position, and a felt on said fly, the outer surface of which is concentric with said pivot when said fly contacts with said catch whereby said hammer is frictionally held away from the string when the key is depressed.

813,264. **APPARATUS FOR DRY-CURING FISH.** VICTOR WEITMAN, San Francisco, Cal., assignor to Alaska Codfish Co., San Francisco, Cal., a Corporation. Filed Mar. 15, 1905. Serial No. 250,201.

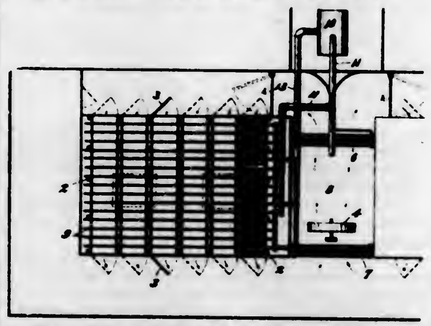

Claim.—1. An apparatus for curing fish comprising superposed trays forming intermediate horizontal spaces for the passage of air, said trays being disposed in series side by side and having vertical ventilating-passages between the series, and means for passing alternate hot and cold currents of air intermittently through the horizontal passages.

2. In an apparatus for curing fish, vertical posts in parallel lines, parallel series of trays superposed to form horizontal passages and supported between the posts, the edges of said trays and the posts forming vertical passages in open communication with the horizontal passages, doors by which the opposite ends of the horizontal passages are controlled, an air-forcing mechanism and connection between said mechanism and the controlled passages.

3. In an apparatus for curing fish, vertically-disposed supports, trays slidable thereon and forming horizontal passages between the superposed series of trays, doors adjustable at the ends of the spaces between the trays, conduits connecting with each end of the tray series, an air-forcing mechanism, a heating-coil through which the air passes therefrom before being admitted to the drying-chambers, connections between the escape-passage and the air-forcing mechanism whereby the air may be continuously circulated through the drying-chambers, and vertical passages connecting with the interspaces between the trays.

4. In an apparatus for curing fish, horizontally-movable superposed trays forming a series of horizontal interspaces, doors located at opposite ends of these spaces and adjustable to regulate the movement of air therethrough, an air-forcing mechanism, a heating-coil through which the air is passed from said mechanism, a conduit through which the heated air is delivered to the inlet ends of the spaces between the trays, a second conduit into which the air is delivered after passing through the tray-interspaces said chamber connecting with the air-forcing mechanism, a cooling-coil so located that said air passes through the coil before again entering the air-forcing mechanism, and controlling means by which the air is intermittently subjected to a heating and a cooling process.

5. In a fish-curing apparatus, chambers consisting of a series of supports, and trays superposed thereon to form horizontal passages between the trays, controlling and regulating doors at each end of said chambers, an air-forcing mechanism, a heating-coil through which the air is passed, a conduit conducting the air to the inlet ends of the curing-chambers, a receiving-conduit at the opposite end of said chambers, said conduit connecting with the air-forcing mechanism, a cooling-coil located anterior to the air-forcing mechanism and vertically-disposed ventilating-passages between the parallel and successive series of trays and their supports whereby both a horizontal and vertical circulation of air may be effected.

6. In a fish-curing apparatus, a chamber having successive series of horizontally-disposed trays superposed to form horizontal passages, means for heating and circulating air through said passages, an independent series of heating-pipes passing through the space between the trays and operating in conjunction with the air-currents, a boiler, pipes leading therefrom to supply the circulating system, and other pipes with which said system connects and by which the heating medium is returned to the boiler.

7. In a fish-curing apparatus, a plurality of chambers, each composed of vertically-disposed studding with rails upon each side, trays adapted to contain fish, and fitting and slidable upon said rails so as to form substantially independent superposed series of air-spaces upon each side of the vertical posts, vertically-disposed ventilating-openings between said posts connecting with each of the horizontal air-passages, heating-pipes extending transversely through one horizontal passage, and returning through the next contiguous one, connections by which a heating medium is supplied from and returned to a heater, an air-forcing mechanism, a heating-coil through which the air is passed from said mechanism, a conduit extending from said coil and connecting with each of the successive series of horizontal passages, doors at opposite ends of the passages, whereby the inlet and outlet of the air and its horizontal and vertical circulation may be controlled, a conduit into which the air discharged from between the horizontal trays is admitted, said conduit connecting with the inlet side of the air-forcing mechanism, and a refrigerating-coil, through which the air passes before reaching the said mechanism.

8. An apparatus having in circuit a drying-chamber consisting of superposed trays forming horizontal passages between them, means to discharge the heated air vertically from the spaces between the trays, means to alternately circulate bodies of cool and heated air horizontally through said spaces, and means to regulate the air-supply passing between the trays.

9. An apparatus for curing fish, having in circuit superposed series of trays forming horizontal passages between them, an air-forcing mechanism and conduits connecting said mechanism with both inlet and outlet ends of the passages, independent heating and cooling devices located in the circuit, and means for controlling the alternate flow of heated and cooled air through the apparatus.

10. An apparatus for curing fish, having in circuit a plurality of parallel and superposed series of trays forming horizontal passages between each series of trays, an air-forcing mechanism and conduits connecting said mechanism with both inlet and outlet ends of the tray-interspaces, independent heating and cooling devices located in the circuit, means for controlling the flow of air through the apparatus, and vertical conduits between the superposed series with open communication with the tray-interspaces.

11. An apparatus for curing fish having a plurality of vertical independent circuits each including parallel and superposed series of trays forming horizontal interspaces, an air-forcing mechanism, and independent heating and cooling devices located in that portion of the circuit common to both series of trays, conduits and gates whereby the flow from the air-forcing mechanism may be diverted to one series and cut off from the other, and means for regulating the flow through either series.

12. An apparatus for curing fish having in circuit parallel and superposed series of trays forming horizontal passages between the superposed trays, an air-forcing mechanism and conduits connecting said mechanism with both inlet and outlet ends of the tray-interspaces, independent heating and cooling devices located in the circuit with means for controlling the flow through the apparatus, independent heating-pipes located in the tray-interspaces and vertical conduits connecting with said interspaces.

813,265. **PROCESS OF DRY-CURING FISH.** VICTOR WEITMAN, San Francisco, Cal., assignor to Alaska Codfish Company, San Francisco, Cal., a Corporation. Filed Mar. 15, 1905. Serial No. 250,202.

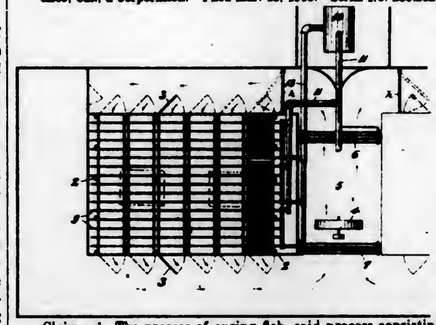

Claim.—1. The process of curing fish, said process consisting in first applying radiant heat between separated layers of fish, and subsequently subjecting the fish to alternate hot and cool air-currents by circulating alternately cooled and heated air through the interspaces between the supported fish.

2. The process of curing fish, said process consisting in first warming the fish by radiant heat between the fish, then allowing the warm air to escape and subjecting the fish to alternate hot and cool air-currents by circulating currents of alternately cooled and heated air above and below the superposed fish-supports.

3. The process of curing fish, said process consisting in first warming the fish by radiant heat applied between superposed and separated layers thereof, withdrawing the body of warm air and then circulating a current of heated air between the fish-trays, cooling the air, and again circulating said cooled air between the layers of fish.

4. The process of curing fish, said process consisting in first warming the fish by radiant heat applied between separated trays of fish, then circulating a body of air through the spaces between the fish, and subjecting the fish to alternate hot and cool air-currents by heating said air, and then cooling it between the periods of heating.

813,266. **BAG-FASTENER.** JOHN S. WILLIAMSON, Elizabethtown, N. C. Filed Aug. 4, 1905. Serial No. 272,717.

Claim.—1. A bag-fastener comprising a wire having a pointed end and having its opposite end portion bent to form a portion extending at an acute angle to the main portion, the free end of this said angular portion being bent inwardly at an acute angle to the remainder of said angular portion and having its free extremity sharpened.

2. The combination with a bag, of a fastener therefor comprising a wire engaged through the sides of the bag and then over the free edges thereof and then through the bag throughout the entire width of the latter, the end portions of the wire being bent toward each other at opposite sides of the bag and then being passed through

the bag, the extremities of said end portions being bent away from each other against the bag and lying at opposite sides thereof.

3. In combination with a door and frame therefor, a casing upon the door, a weather-strip within said casing, angled levers pivotally mounted within the casing, pivotal link connections between

813,269. **GALVANOMETER.** PHILIP H. WYNNE, Boston, Mass., assignor, by direct and mesne assignments, of one-half to Agnes Wynne and one-half to J. H. Pratt, Assignee, Somerville, Mass. Filed Dec. 15, 1904. Serial No. 236,997.

magnet sustained between said supports, a coil suspended in the field of the magnet, brackets carried by the supports, rods adjustably

the bag, the extremities of said end portions being bent away from each other against the bag and lying at opposite sides thereof.

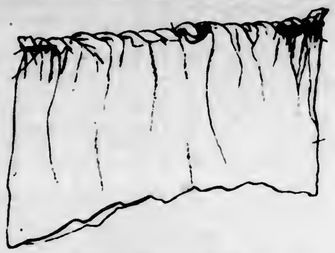

813,267. REVERSIBLE CAR-SEAT. HUBERT WITTE, St. Louis, Mo., assignor to St. Louis Car Company, St. Louis, Mo., a Corporation. Filed July 7, 1905. Serial No. 268,028.

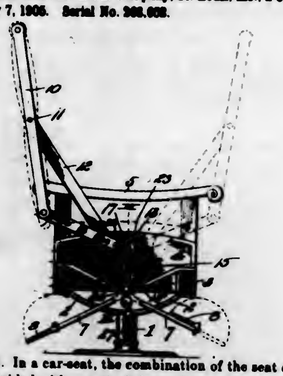

Claim.—1. In a car-seat, the combination of the seat ends, one of which is provided with a vertical slot; a dog positioned in said slot and pivoted to said seat end and having a finger at its upper end and a weighted lower end; a pair of back-supporting arms rockingly supported by said seat ends and one of which is provided with a stud adapted to engage the finger of said dog, and a back supported by said arms, substantially as set forth.

2. In a car-seat, the combination of the seat ends provided with studs, a pair of back-supporting arms rockingly supported by said seat ends and provided with slots to receive said studs, a back supported by said arms, and restraining-links pivoted to said arms intermediate of their ends and provided at their inner ends with T-shaped slots to receive the studs of said seat ends and having their outer ends loosely connected to said back, substantially as set forth.

813,268. WEATHER-STRIP. LEWIS W. WOODBURN, Charleston, Ill. Filed July 31, 1905. Serial No. 272,066.

Claim.—1. In combination with a door and frame therefor, a casing upon the door, a weather-strip within said casing, angled levers pivotally mounted within the casing, pivotal link connections between said angled levers and weather-strip, a bar connecting said angled levers, a knob-shaft, means actuated thereby for tilting one of said angled levers, a spring-actuated angled lever coöperating with the mechanism actuated by the knob-shaft for partially counterbalancing the weather-strip, means for holding the weather-strip in a raised position, said spring-actuated lever adapted to release the weather-strip-holding means as the door is closed, as set forth.

2. In combination with a door and frame therefor, a casing upon the door, a weather-strip within said casing, angled levers pivotally mounted within the casing, pivotal link connections between said angled levers and weather-strip, a bar connecting said angled levers, a yoke, a knob-shaft and means actuated thereby for raising said yoke, a rod connecting said yoke with one of said angled levers, a spring bearing yieldingly against said yoke, a spring-actuated angled lever coöperating with said rod to partially counterbalance said weather-strip, means for holding the weather-strip in a raised position, and mechanism for operating said spring-actuated lever, whereby the latter may cause said holding means to be released to allow the weather-strip to fall as the door is closed, as set forth.

3. In combination with a door and frame therefor, a casing upon the door, a weather-strip within said casing, angled levers pivotally mounted within the casing, pivotal link connections between said angled levers and weather-strip, a bar connecting said angled levers, a knob-shaft, a yoke, means carried by said shaft for raising said yoke, a casing in which said yoke is mounted, a spring bearing between said casing and the yoke, a rod passing through the yoke and connected to one of said angled levers, a pivotal spring-actuated angled lever adapted to coöperate with said rod to partially counterbalance the weather-strip, a lug upon one of said angled levers, spring-actuated means for engagement with said lug whereby the weather-strip may be held in a raised position, and a rod for operating said spring-actuated angle-lever, whereby the latter may cause said holding means to be released to allow the weather-strip to fall as the door is closed, as set forth.

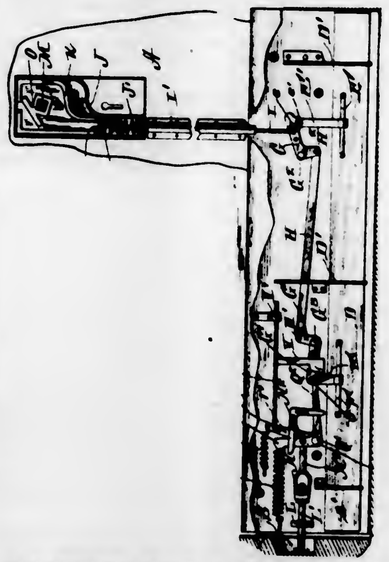

4. In combination with a door and frame therefor, a casing upon the door, a weather-strip within said casing, angled levers pivotally mounted within the casing, pivotal link connections between said angled levers and weather-strip, a bar connecting said angled levers, a knob-shaft, a yoke, means carried by said shaft for raising said yoke, a casing in which said yoke is mounted, a spring bearing between said casing and the yoke, a rod passing through the yoke, and connected to one of said angled levers, a spring-actuated angled lever mounted in the casing, coöperating with said rod to partially counterbalance said weather-strip a lug *g* upon one of said angled levers adapted to be engaged by an arm of said spring-actuated lever, a lug G^4 upon one of said angled levers, a longitudinally-movable rod W, a depending angled arm thereon adapted to engage said lug G^4, a spring-actuated pivotal lever T connected to said rod W, and a lug *t* upon said lever T, and against which the spring-actuated angled lever is adapted to contact, whereby the rod W may be moved longitudinally and the depending angled arm thereof released from the lug upon the angled lever as the door is closed, as set forth.

5. In combination with a door and frame therefor, a casing upon the door, a weather-strip within said casing, angled levers pivotally mounted within the casing, pivotal link connections between said angled levers and weather-strip, a bar connecting said angled levers, a lug upon one of said angled levers, a longitudinally-movable rod, an angled arm thereon adapted to engage said lug, a spring-actuated lever connected to said rod, a lug upon said spring-actuated lever, a pivotal spring-actuated angled lever, knob-actuating mechanism coöperating with the latter to partially counterbalance said weather-strip, a bolt secured to said spring-actuated angled lever, and a plate against which the end of the bolt is adapted to contact as the door is closed, whereby the bolt may be moved longitudinally and said angled arm released from the lug upon the angled lever, to allow the weather-strip to fall, as set forth.

813,269. GALVANOMETER. PHILIP H. WYNNE, Boston, Mass., assignor, by direct and mesne assignments, of one-half to Agnes Wynne and one-half to L. H. Knott Apparatus Company, Boston, Mass., a Corporation of Massachusetts. Filed July 14, 1905. Serial No. 269,940.

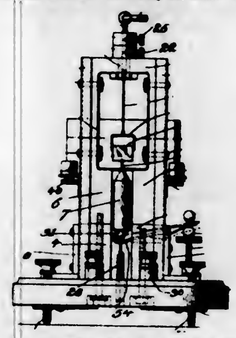

Claim.—1. In a galvanometer, an inverted horseshoe-magnet, stilts or struts of non-magnetic material on which said magnet is supported, and a coil suspended between the poles of the magnet to swing about a vertical axis.

2. In a galvanometer, a base or table, stilts of non-magnetic material rising therefrom, a horseshoe-magnet with parallel pole-pieces resting on said stilts, and a vertical coil suspended between said parallel pole-pieces.

3. In a galvanometer, a base, stilts of non-magnetic material rising therefrom, a horseshoe-magnet resting on said stilts, a coil suspended between the poles of said magnet, and transparent plates resting against the magnet and forming with the magnet an inclosing case for the coil

4. In a galvanometer, a base, non-magnetic stilts rising therefrom, a horseshoe-magnet arranged with its pole-pieces resting on said stilts, a coil suspended between said pole-pieces, and supports secured to the base and the sides of the magnet for holding the magnet in position.

5. In a galvanometer, a base, non-magnetic stilts rising therefrom, a horseshoe-magnet arranged with its pole-pieces resting on said stilts, a coil suspended between said pole-pieces, and channel-shaped supports rigid with the base and embracing the sides of the magnet and holding the latter in position.

6. In a galvanometer, a base, non-magnetic stilts rising therefrom, a horseshoe-magnet arranged with its pole-pieces resting on said stilts, a coil suspended between said pole-pieces, channel-shaped supports rigid with the base and embracing the sides of the magnet and holding the latter in position, and transparent plates overlying the magnet and clamped thereto by the channel-shaped supports.

7. In a galvanometer, a base, channel-shaped supports rising from the base, an inverted horseshoe-magnet between said supports and sustained thereby, and a suspended coil in the field of the magnet.

8. In a galvanometer, a base, supports rising therefrom, an inverted horseshoe-magnet between said supports and sustained thereby, a non-magnetic distance-piece between the magnet and base, and a coil suspended in the field of the magnet.

9. In a galvanometer, a base, channel-shaped supports rising therefrom, an inverted horseshoe-magnet between said supports and sustained thereby, and transparent plates overlying the magnet and clamped thereto by the channel-shaped supports.

10. In a galvanometer, a base, supports rising therefrom, a magnet held in position by said supports, a suspended coil between the pole-pieces of the magnet, brackets secured to said supports, and a reading device adjustably mounted on said brackets.

11. In a galvanometer, a base, supports rising therefrom, a magnet held in position between said supports, a suspended coil between the pole-pieces of the magnet, brackets sustained by the supports, and a reading device adjustably mounted on the brackets for movement transversely of the magnet.

12. In a galvanometer, a base, supports rising therefrom, a magnet between said supports and held in position thereby, a coil suspended between the pole-pieces of the magnet, brackets extending from the supports, a supporting-rod adjustably clamped to each bracket, and plates carrying a scale and a fiducial mark respectively, sustained by said supporting-rods.

13. In a galvanometer, a base, supports rising therefrom, a magnet sustained between said supports, a coil suspended in the field of the magnet, brackets carried by the supports, rods adjustably clamped to the bracket and capable of a lateral swinging and a longitudinal movement, and plates carrying a scale and a fiducial mark respectively, sustained by said rods.

14. In a galvanometer, a base, supports rising therefrom, a magnet sustained by said supports, a coil suspended in the field of the magnet, brackets carried by the supports, a slotted clamping-screw carried by each bracket, a rod passing through the slot of each clamping-screw, and plates carrying a scale and fiducial mark respectively sustained by said rods.

15. In a galvanometer, a pair of supports, a magnet sustained thereby, a bracket carried by each support, a horizontal rod adjustably clamped to each bracket, and plates carrying a scale and fiducial mark respectively, pivotally connected to the rods at their ends.

16. In a galvanometer, a base, supports rising therefrom, a magnet arranged between and sustained by said supports, a coil suspended between the poles of the magnet, and a clamping-lever pivoted to one of the supports and adapted to engage the coil to clamp it in inoperative position.

17. In a galvanometer, a base, supports rising therefrom, an inverted magnet between said supports and sustained thereby, a coil suspended between the pole-pieces of the magnet, a protecting-shell inclosing the coil, and means to immovably clamp said shell in inoperative position.

18. In a galvanometer, a base, a magnet supported thereby, a coil operated by the magnet, leveling-screws screw-threaded through the base, and friction members separate from the base and through which the leveling-screws pass, said friction members being adjustable with relation to the base, thereby to take up lost motion.

813,270. BALING-PRESS. THOMAS ABBOT and HARRY B. ABBOT, Terrell, Tex. Filed Oct. 30, 1899. Renewed Apr. 9, 1903. Serial No. 151,919.

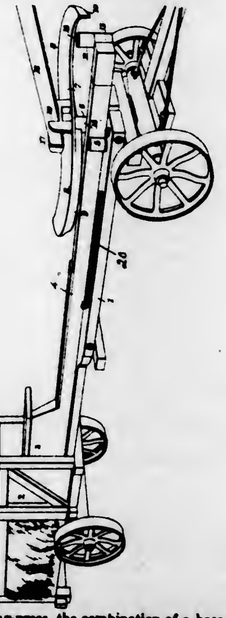

Claim.—In a baling-press, the combination of a base, a baling box or chamber fixed thereon, a plunger movable in said box or chamber and having a beam, a tractile spring connected at its rear end to the plunger-beam, and at its forward end to the base at one side of the beam, an antifriction-roller mounted on the base at the same side of the beam and arranged to be engaged by said beam, an antifriction-roller carried by the beam and located above the beam and at the forward corner thereof remote from the spring and the first-mentioned antifriction-roller, a journal rising from the base at the opposite side of the beam, with reference to the spring and the

first-mentioned antifriction-roller, a rotary casting mounted on said journal and having depending cam-flanges arranged to engage the impulses, and the other roll having opposed to and coacting with the spirally-ridged part of the first roll, a periphery unbroken by

813,275. RADIATOR. ISAAC BROOKE, Pottstown, Pa., assignor to The Floyd-Wells Company, Royersford, Pa., a Corporation of Penn-

the top of the jar, and gaskets arranged between said plate and jar and between said thumb-screw and plate, substantially as described.

first-mentioned antifriction-roller, a rotary casting mounted on said journal and having depending cam-flanges arranged to engage the antifriction-roller on the beam, and a sweep for rotating the said casting.

813,271. COMBINED STORM AND SCREEN DOOR. JOHN ARMIN, Joliet, Ill. Filed May 14, 1904. Serial No. 207,995.

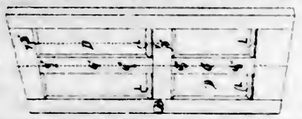

Claim.—1. In a combined storm and screen door, in combination, a frame having openings with moldings at top and bottom thereof, interchangeable panels adapted to fit said openings, and mullions detached from frame and panels adapted to fit the moldings at the top and bottom of said openings and to secure said panels in said openings, substantially as described.

2. In a combined storm and screen door, in combination, a frame having panel-openings, interchangeable panels adapted to fill said openings, a molding L^1 on said panels and moldings E, E' on said frame providing a weather-tight joint between the bottom of said panels and said frame, and means J whereby said panels are secured in said openings, substantially as described.

3. In a combination storm and screen door, a frame composed of stiles, rails and base only, having openings D, in combination with panels F, detached mullions G, and bolts J passing through said mullions and said panels and adapted to secure both mullions and panels in said frame, substantially as described.

4. In a combination storm and screen door, in combination, a frame, interchangeable panels, a molding E, E', on the top of each rail of said frame, a molding L on the bottom of each of said panels adapted to closely engage said moldings E, E', substantially as described.

813,272. PROCESS OF MAKING SILK FIBROIN PEPTONE. JULIUS ALTSCHUL, Berlin, Germany, assignor to Action-Gesellschaft für Anilin Fabrikation, Berlin, Germany. Filed Oct. 14, 1905. Serial No. 283,047.

Claim.—1. A process for the manufacture of silk fibroin peptone which consists in treating silk fibroin with a mineral acid which forms insoluble salts with alkaline-earth metals until addition of alcohol to a sample causes only a slight precipitate, neutralizing the acid by converting it into an insoluble alkaline-earth salt, filtering and evaporating the filtrate to dryness.

2. A process for the manufacture of silk fibroin peptone which consists in treating silk fibroin with strong sulfuric acid until addition of alcohol to a sample causes only a slight precipitate, neutralizing the acid by converting it into an alkaline-earth salt, filtering and evaporating the filtrate to dryness.

3. A process for the manufacture of silk fibroin peptone which consists in introducing silk fibroin into several times its weight of sulfuric acid of eighty per cent. strength, allowing the mixture to remain at a temperature between 0° centigrade and 25° centigrade until the addition of alcohol to a sample causes only a slight precipitate, adding an alkaline-earth carbonate in quantity sufficient to neutralize the acid, filtering and evaporating the filtrate to dryness at a low temperature.

4. A process for the manufacture of silk fibroin peptone which consists in introducing silk fibroin into several times its weight of sulfuric acid of eighty per cent. strength, allowing the mixture to remain at a temperature between 0° and 25° centigrade until the addition of alcohol to a sample causes only a slight precipitate, adding an alkaline-earth carbonate in quantity sufficient to neutralize the acid, filtering and evaporating the filtrate to dryness at a low temperature, redissolving the residue in a solvent that does not dissolve the inorganic salts, filtering the solution, and evaporating it to dryness at a low temperature.

813,273. BRICK-CLAY-CRUSHER ROLLS. JULIUS H. BACH, Chicago, Ill. Filed Feb. 6, 1903. Serial No. 142,181.

Claim.—1. An apparatus for crushing clay and removing the stones therefrom, comprising a supporting-frame; a pair of coacting crusher-rolls, one of same having a ridge extending spirally around and along its periphery, the width of the space between adjacent spires of said ridge being considerably greater than the height of the ridge, whereby said ridge is adapted to eject stones by discontinuous impulses, and the other roll having opposed to and coacting with the spirally-ridged part of the first roll, a periphery unbroken by ridges or depressions; and means for simultaneously revolving said rolls; one of said rolls being geared to revolve at different peripheral speeds than the other, substantially as described.

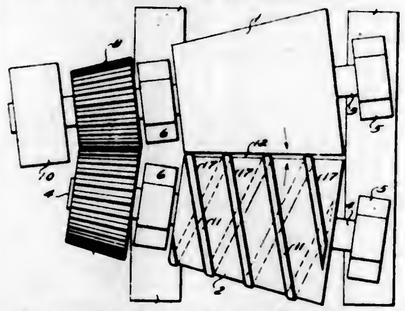

2. An apparatus for crushing clay and removing the stones therefrom, comprising a supporting-frame; a pair of coacting crusher-rolls, one of same having a ridge extending spirally around and along its periphery, the width of the space betwen adjacent spires of said ridge being considerably greater than the height of the ridge, whereby said ridge is adapted to eject stones by discontinuous impulses, and the other roll having opposed to and coacting with the spirally-ridged part of the first roll, a periphery unbroken by ridges or depressions; and means for simultaneously revolving said rolls; one of said rolls being conical and geared to revolve at different peripheral speeds than the other, substantially as described.

3. An apparatus for crushing clay and removing the stones therefrom, comprising a supporting-frame; a pair of conical coacting crusher-rolls, one of same having a ridge extending spirally around and along its periphery, the width of the space between adjacent spires of said ridge being considerably greater than the height of the ridge, whereby said ridge is adapted to eject stones by discontinuous impulses, and the other roll having opposed to and coacting with the spirally-ridged part of the first roll, a periphery unbroken by ridges or depressions; and means for simultaneously revolving said rolls, one of said rolls being geared to revolve at different peripheral speeds than the other, substantially as described.

813,274. ROASTING APPARATUS FOR COFFEE, MALT, &c. MICHEL BOOP, Strassburg, Germany. Filed May 31, 1905. Serial No. 263,189.

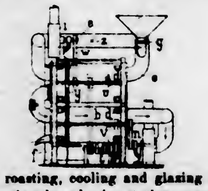

Claim.—1. A roasting, cooling and glazing apparatus, comprising a rotary roasting-drum having stationary ends, a rotary cooling and glazing drum located below said roasting-drum and having stationary ends, means for heating the said roasting-drum connected by piping with both ends of the latter, a ventilator communicating with the piping, dampers controlling the passage of air and hot gases through said piping, a pipe, presenting a perforated portion, connecting the one end of each of the two drums, and an exhauster communicating with the other end of said glazing-drum, substantially as set forth.

2. A roasting, cooling and glazing apparatus, comprising a roasting-drum and a cooling and glazing drum located below said roasting-drum, each drum having stationary ends and a rotary body, means to revolve said drums, means for heating said roasting-drum, connected by piping with both ends of the said roasting-drum, a ventilator communicating with the said piping, dampers controlling the passage of air and hot gases through said piping, a pipe presenting a perforated portion, connecting the one end of each of the two drums, an exhauster communicating with the other end of said glazing-drum, and means for driving the two said drums both in conjunction or independently of each other, substantially as set forth.

813,275. RADIATOR. ISAAC BROOKE, Pottstown, Pa., assignor to The Floyd-Wells Company, Royersford, Pa., a Corporation of Pennsylvania. Filed Mar. 31, 1905. Serial No. 253,083.

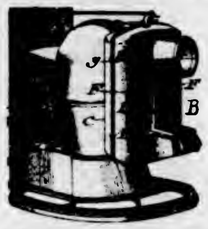

Claim.—1. A radiator attachment for a furnace formed of a body of separate chambered sections, the latter being provided with inturned walls on the interior thereof, the inner terminals of said walls being closely in contact forming side and central flues which are in communication at the lower end of said body, the latter having an inlet in communication with the side flues and an outlet in communication with the central flue.

2. A radiator attachment for a furnace composed of a body formed of separate chambered sections, the latter being provided with inturned walls on the interior thereof, the inner ends of said walls being closely in contact forming side and central flues, an inlet on said body in communication with the side flues, an outlet on said body in communication with the central flue, the top of the central flue having means for partially closing the same, and a damper above said means intermediate of said inlet and outlet.

3. A radiator attachment for a furnace composed of a body formed of chambered sections and having an inlet and outlet, said sections being provided with inturned walls on the interior thereof, the inner sides of said walls being closely in contact forming central and side flues in said body, the side flues being in communication at their tops with said inlet and at the bottom thereof with the central flue and the terminal of the latter-named flue being in communication with said outlet.

4. A radiator composed of a body formed of sections, the interior of the sections having inturned walls, the same being in contact forming central and side flues and an inlet and outlet on said body, the side flues being in communication at their tops with said inlet and at the bottom thereof with the central flue and the terminal of the latter-named flue being in communication with said outlet.

813,276. JAR-CLOSURE. FRANKLIN G. BURLEY, Boston, Mass. Filed May 5, 1905. Serial No. 258,940.

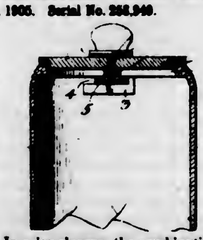

Claim.—1. In a jar-closure, the combination with the body of the jar having an inwardly-projecting annular flange formed around the mouth of the same, radially-disposed brackets arranged on the inner wall of said body below said flange, a spider frame supported on said brackets and adapted to engage beneath said flange, a flanged cover-plate arranged on said jar, and means to connect said plate and spider and to clamp said cover-plate into air-tight engagement with the top of the jar, substantially as described.

2. In a jar-closure, the combination with the body of the jar having an inwardly-projecting annular flange formed around the mouth of the same, radially-disposed brackets arranged on the inner wall of said jar, a spider frame the arms of which are adapted to engage said brackets beneath said annular flange, a concentrically-disposed, hollow, interiorly-threaded boss formed on said spider, a flanged cover-plate arranged on said jar, said plate being provided with a concentrically-disposed opening, a thumb-screw adapted to be passed through said opening and screwed into said threaded boss thereby clamping said cover-plate into air-tight engagement with the top of the jar, and gaskets arranged between said plate and jar and between said thumb-screw and plate, substantially as described.

813,277. CHAIN SLING AND TRIP. WILLIAM E. CAGE, Hobson Solms, La. Filed Aug. 17, 1905. Serial No. 274,530.

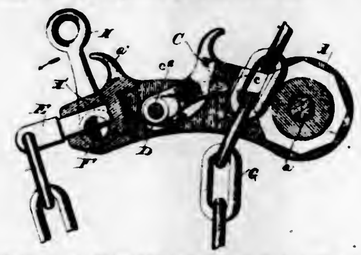

Claim.—1. A sling and trip comprising a frame having a socket in one end, a longitudinally-movable locking-bolt having a notched end fitting in said socket, a transverse and rotary adjustable locking-pin having its middle portion formed to enter or withdraw from the notch by a rotary action, a flexible connection secured to the locking-bolt, and a take-up grab at the other end of the frame for the other end of the flexible connection.

2. A chain sling and trip comprising a frame having a socket in one end, a longitudinally-moving locking-bolt having a notched end fitting in said socket, a transverse and rotary adjustable locking-pin having its middle portion formed to enter or withdraw from the notch by a rotary action, a chain secured to the locking-bolt, and a chain-grab at the other end of the frame consisting of a wheel with two polygonal flanges with a groove between them and a pivoted detent having two jaws at its free end bearing against the polygonal faces of the wheel and lying upon opposite sides of the groove of said wheel.

3. A chain sling and trip, comprising a two-sided frame, a wheel pivoted between the sides and having two polygonal flanges with a groove between them, a detent pivoted between the two sides of the frame and having two jaws resting upon the polygonal faces of the wheel-flanges and a locking and tripping device at the other end of the frame.

4. A chain sling and trip, comprising a two-sided frame, a wheel pivoted between the sides and having two polygonal flanges with a groove between them, a detent pivoted between the sides of the frame and having two jaws resting upon the polygonal faces of the wheel-flanges, a spring arranged in the frame and bearing against the detent to hold it upon the wheel and a locking and tripping device at the other end of the frame.

5. A chain sling and trip, comprising a two-sided frame, a chain-grab device arranged between the two sides of the frame at one end, a chain, a longitudinally-sliding locking-bolt attached to said chain and entering the end of the frame, a transverse locking-pin for the bolt and a trip-arm on the end of the locking-pin.

6. A chain sling and trip, comprising a frame bifurcated at one end and made integral at the other end with an end socket, a grooved and polygonal flanged wheel and a pivoted and double-jawed detent arranged between the sides of the bifurcated frame, a spring for the detent, a longitudinally-sliding and notched locking-bolt fitting the end socket of the frame, a transverse locking-pin with trip-arm on its end and a chain connected to the locking-bolt and adjustably secured by the detent and wheel.

813,278. PROCESS OF COMBINING TITANIUM WITH OTHER METALS. FERDINAND B. CANDA, New York, N. Y., assignor to Chrome Steel Works, Chrome, N. J., a Corporation of New Jersey. Filed Jan. 26, 1905. Serial No. 243,680.

Claim.—1. The herein-described process of combining titanium with other metals, which consists in melting separately titanium-bearing material and the metal to which the same is to be added, and then uniting the two molten substances.

2. The herein-described process of combining titanium with iron or steel, which consists in melting separately ferrotitanium and the iron or steel, and then uniting the two bodies of molten metal.

3. The herein-described process of combining titanium with iron or steel, which consists in melting a titanium-bearing material by the action of an electric current and then adding such molten material to a mass of separately-melted iron or steel.

4. The herein-described process of combining titanium with iron or steel, which consists in melting ferrotitanium by the action of an electric current and then adding such molten material to a mass of separately-melted iron or steel.

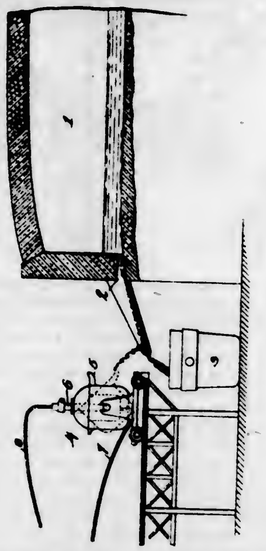

5. The herein-described process of combining titanium with iron or steel, which consists in melting separately the titanium-bearing material and the metal to which the same is to be added, and then pouring the molten substances simultaneously into a suitable receptacle.

6. The herein-described process of combining titanium with iron or steel, which consists in melting separately the titanium-bearing material and the metal to which the same is to be added, and then pouring the molten substances simultaneously into a suitable receptacle and causing the streams of the two molten substances to join.

818,279. PRINTING-PRESS ATTACHMENT. CHARLES R. CLARK, Homestead, Pa. Filed Feb. 1, 1904. Serial No. 191,612.

Claim.—1. In a printing and crimping machine, the combination with a printing-drum, and a fly, of a crimping device interposed between the fly and drum adapted to crimp the material previously acted upon by the drum as it passes from the drum to the fly.

2. In a printing and crimping machine, the combination with a printing-drum, of a crimping device adjacent thereto adapted to directly receive the material as it passes from the drum.

3. In a printing and crimping machine, the combination with a printing-drum, of a crimping device arranged adjacent thereto adapted to directly receive the material as it passes from the drum, and means for conveying away the material after it is acted upon by the crimping device.

4. In a printing and crimping machine, the combination with a printing-drum, of a crimping device arranged adjacent to said printing-drum adapted to directly receive the material acted upon by the drum and crimp it, a conveyer adapted to carry the crimped material from the crimping device, and a fly adapted to receive the material from the conveyer.

5. In a printing and crimping machine, the combination with a printing-drum, a crimping device arranged adjacent to said drum, and means permitting the material acted upon by the drum to pass thereround and then direct said material to the crimping device.

818,280. PAPER-BAG MACHINE. EDWARD E. CLAFLIN, Hartford, Conn., assignor to Union Paper Bag Machine Company, Philadelphia, Pa. Filed May 20, 1905. Serial No. 261,202.

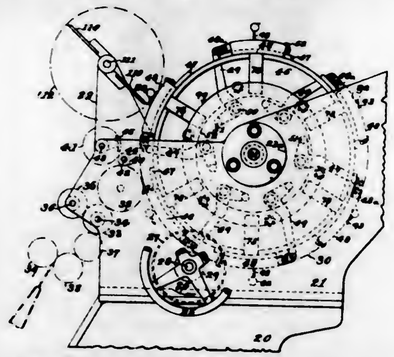

Claim.—1. In combination the cylinder, the carriage mounted on the cylinder, means for reciprocating the carriage in and against the direction of the rotation of the cylinder, and means for clamping the lower ply of a bag-blank to the carriage substantially as described and set forth.

2. In combination the continuous revolving cylinder, the carriage mounted on the cylinder, means for reciprocating the carriage in the direction of the rotation of the cylinder, the side clips and the front clip mounted on the carriage substantially as described.

3. In combination the continuous revolving cylinder, the annular segmental-shaped carriage, means for reciprocating the carriage, the annular segmental-shaped guides on the circumference of the cylinder, the side clips and the front clip mounted on the carriage, all substantially as described for the purpose set forth.

4. In a paper-bag machine the combination of the cylinder, the carriage mounted on the cylinder, means for reciprocating the carriage on the cylinder, means for clamping the lower ply of the tube to the carriage, means for clamping the upper ply of the tube and means for tucking under a portion of the upper ply, all substantially as described.

5. In a paper-bag machine the combination of the revolving cylinder, the carriage mounted on the cylinder, the cam 52 and the intermediate mechanism for reciprocating the carriage in the direction of the rotation of the cylinder, means for holding the lower ply of the tube to the carriage, consisting of the front clip and the oppositely-disposed bevel-edged side clips, the oppositely-disposed tuck-blades, side nippers for holding the upper ply of the tube to the tuck-blades, all combined and operating to unfold the tube while the cylinder revolves and the carriage is oscillated forward in the direction of the rotation of the cylinder.

6. In a paper-bag machine the combination of the revolving cylinder, the carriage mounted on the cylinder, the cam 52 and intermediate mechanism for reciprocating the carriage, the front clip and the oppositely-disposed bevel-edged side clips, means for opening and closing the front clip and the side clips at predetermined positions, the oppositely-disposed tuck-blades, side nippers for holding the upper ply of the tube to the tuck-blades, all mounted on the cylinder and revolving therewith to unfold the paper tube and tuck under a portion of the upper ply and collapse the same into the diamond form while the cylinder revolves and the carriage is oscillated forward in the direction of the rotation of the cylinder.

7. In a paper-bag machine the combination of the revolving cylinder, the carriage mounted on the cylinder, the cam 52 and the intermediate mechanism for reciprocating the carriage, means for holding the lower ply of the tube to the carriage, consisting of the front clip and the oppositely-disposed bevel-edged side clips, the oppositely-disposed tuck-blades, means for moving the tuck-blades into and out of operating positions, side nippers for holding the upper ply of the tube to the tuck-blades, all combined and operating to unfold the tube and tuck under a portion of the upper ply and collapse the same into the diamond form while the cylinder revolves and the carriage is oscillated forward in the direction of the rotation of the cylinder.

8. In a paper-bag machine the combination of the revolving cylinder, the carriage mounted on the cylinder, the cam 52 and the intermediate mechanism for reciprocating the carriage, means for

holding the lower ply of the tube to the carriage, consisting of the front clip and the two side clips, the oppositely-disposed tuck-blades, means for moving the tuck-blades into and out of operating positions, means for raising and lowering the tuck-blades away from and toward the top surface of the carriage, side nippers for holding the upper ply of the tube to the tuck-blades, all combined and operating to unfold the tube and tuck under a portion of the upper ply and collapse the same into the diamond form while the cylinder revolves and the carriage is oscillated forward in the direction of the rotation of the cylinder.

9. In a paper-bag machine the combination of the revolving cylinder, the carriage mounted on the cylinder, the cam 52 and the intermediate mechanism for reciprocating the carriage, means for holding the lower ply of the tube to the carriage, consisting of the front clip and the two side clips, the oppositely-disposed tuck-blades, means for moving the tuck-blades into and out of operating positions, means for raising and lowering the tuck-blades away from and toward the top surface of the carriage, means for oscillating the tuck-blades about their shafts, side nippers for holding the upper ply of the tube to the tuck-blades, all combined and operating to unfold the tube and tuck under a portion of the upper ply and collapse the same into the diamond form, while the cylinder revolves and the carriage is oscillated forward in the direction of the rotation of the cylinder.

10. In a paper-bag machine the combination of a revolving cylinder, the carriage mounted on the cylinder, the cam 52 and the intermediate mechanism for reciprocating the carriage, means for holding the lower ply of the tube to the carriage, consisting of the front clip and the two side clips, the oppositely-disposed tuck-blades, means for moving the tuck-blades into and out of operating positions, means for raising and lowering the tuck-blades away from and toward the top surface of the carriage, means for oscillating the tuck-blades about their shafts, side nippers for holding the upper ply of the tube to the tuck-blades, means for opening and closing the side nippers, all combined and operating substantially as described.

11. In a paper-bag machine the combination of the revolving cylinder, the carriage mounted on the cylinder, the cam 52 and the intermediate mechanism for reciprocating the carriage, means for holding the lower ply of the tube to the carriage, the compression-plate 110, oppositely-disposed tuck-blades and means for oscillating the tuck-blades substantially as described.

12. In a paper-bag machine the combination of the revolving cylinder, the carriage mounted on the cylinder, the cam 52 and the intermediate mechanism for reciprocating the carriage, means for holding the lower ply of the tube to the carriage, the compression-plate 110, means for rotating the compression-plate, oppositely-disposed tuck-blades and means for oscillating the tuck-blades over the top surface of the carriage.

13. In a paper-bag machine the combination of the revolving cylinder, the carriage mounted on the cylinder, the cam 52 and the intermediate mechanism for reciprocating the carriage, the front clip 53 mounted on the carriage, the lever 59 and its hook-shaped ends, means for oscillating the lever 59, all combined and operating that the front clip is opened and closed at each forward and rearward position of the carriage substantially as described.

14. In a paper-bag machine the combination of the revolving cylinder, the carriage mounted on the cylinder, the cam 52 and the intermediate mechanism for reciprocating the carriage, the oppositely-disposed bevel-edged side clips 54 and 55 mounted on the carriage, the levers 67 and 68, each lever having hook-shaped ends and means for oscillating the same all combined and operating that the bevel-edged side clips are opened and closed at each forward and rearward position of the carriage substantially as described.

15. In a paper-bag machine the combination of the revolving cylinder, the carriage mounted on the cylinder, the cam 52 and the intermediate mechanism for reciprocating the carriage, the shafts 92, the tuck-blades mounted on the shafts, means for raising and lowering the tuck-blades away from and toward the top surface of the carriage, means for oscillating the tuck-blades about their shafts all combined and operating that the edges of the tuck-blades follow a predetermined line of the carriage as the same is oscillated forward substantially as described.

818,281. MECHANICAL CALCULATOR AND RECORDER. LUCIUS S. CRANDALL, Brooklyn, N. Y., assignor to Crandall Construction Co., Brooklyn, N. Y., a Corporation of Arizona. Filed Feb. 10, 1904. Serial No. 192,861.

Claim.—1. In a machine of the character described, the combination with a record-printing platen, of means for moving said platen variable longitudinal distances to right or left of a constant normal position to predetermined positions.

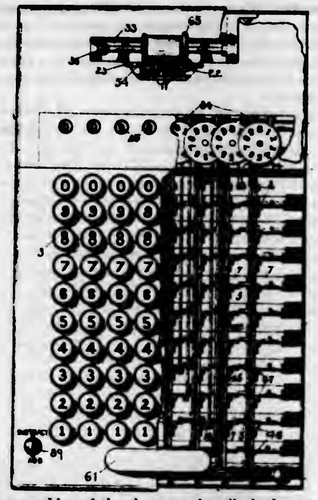

2. In a machine of the character described, the combination with a movable record-printing platen, of means for moving said platen variable longitudinal distances to predetermined positions, and means for automatically returning the platen to its initial position.

3. In a machine of the character described, the combination with the key mechanism, the register mechanism actuated thereby, and a series of type-carriers actuated by said key mechanism, of a record-printing platen adjustable on either side of a central normal position, and cam means for throwing said platen to its adjusted position.

4. In a machine of the character described, the combination with the key mechanism, the register mechanism actuated thereby and the type-carriers actuated thereby, of an adjustable platen resting normally in a central position, cam means for adjusting said platen to either the right or left of said normal position, and means for returning said platen to its normal position.

5. In a machine of the character described, the combination with the key mechanism, the register mechanism actuated thereby and the type-carriers actuated thereby, of an adjustable platen resting normally in a central position, an adjustable shuttle-bar, suitable lever connection between the shuttle-bar and the platen, and cam means actuated by the key mechanism for adjusting said shuttle-bar.

6. In a machine of the character described, the combination with the key mechanism and the register mechanism actuated thereby, of a platen-carriage frame, the platen-carriage slidably mounted thereon, a lever connected to said carriage, an adjustable shuttle-bar connected to said lever, means actuated by the key mechanism for adjusting said shuttle-bar to selected positions, and spring-pressed arms bearing against said lever and adapted to hold the same normally in central position.

7. In a machine of the character described, the combination with the key mechanism and the register mechanism actuated thereby, of a jointed platen-carriage frame, a hinged platen-carriage slidably mounted thereon, means for holding said carriage in a central normal position, and means actuated by said key mechanism for adjusting said carriage to either right or left of said central normal position to determine the denominational value of characters printed thereon.

8. In a machine of the character described, the combination with the key mechanism, the register mechanism actuated thereby, an adjustable platen, means for holding said platen normally in central position, a shuttle-bar, lever means connecting said platen and shuttle-bar, a series of shuttle-bars operatively connected to the key mechanism having cam-faces adapted to engage the first-mentioned shuttle-bar to force the platen to either right or left of its central position.

9. In a machine of the character described, the combination

with longitudinal rows of keys, the register mechanism actuated thereby, and a platen adjustable to either right or left of a central normal position, of a shuttle-bar for each longitudinal row of keys, suitable cam connection between the longitudinal rows of keys and their respective shuttle-bars, and suitable connection between the shuttle-bars and the platen to adjust the latter to a position either right or left of its central normal position depending upon the shuttle-bar actuated.

10. In a machine of the character described, the combination with a series of longitudinal rows of keys having different denominational values, an adjustable platen held normally in a central position, of a series of shuttle-bars of different denominational values one for each longitudinal row of keys, suitable cam connection between the rows of keys and their respective shuttle-bars, a laterally-adjustable shuttle-bar having projections thereon mounted in the path of the cam-faces of the said series of shuttle-bars, and suitable connection between the said lateral shuttle-bar and the said platen to communicate motion to the latter upon actuation of the former by any one of the series of denominational shuttle-bars.

11. In a machine of the character described, the combination with the key mechanism, of a register-dial, a transmitting-wheel geared to said dial, reversed ratchet-wheels operatively connected to said transmitting-wheel, an adding-pawl adapted to engage one of said ratchet-wheels, a subtracting-pawl adapted to engage the other of said ratchet-wheels, shuttle-bars actuated by the key mechanism for actuating said pawls upon actuation of the key mechanism, and a governor adapted to guide either one or the other of said pawls into engagement with its respective ratchet-wheel.

12. In a machine of the character described, the combination with the key mechanism, of a register-dial, a transmitting-wheel geared to said dial and suitably mounted in the machine-casing, an adding ratchet-wheel connected to said transmitting-wheel, a subtracting ratchet-wheel also connected to said transmitting-wheel, pawls for engaging the respective ratchet-wheels, suitable connection between the key mechanism and said pawls to actuate the latter simultaneously with the former, and a governor adapted to guide either of the pawls into engagement or hold both out of the path of engagement.

13. In a machine of the character described, the combination with the key mechanism, of the register-dials, the transmitting-wheels geared thereto and having cam projections, the ratchet-wheels operatively connected to each of the transmitting-wheels, the pawls adapted to be projected into the path of their respective ratchet-wheels, the connection between the key mechanism and the said pawls, the antifriction-wheel in the path of and adapted to engage the cam projections on a transmitting-wheel of lower denomination, the connection between the antifriction-wheel and the pawls of the transmitting-wheel of next higher denomination, and the means for throwing either of the said pawls into the path of engagement with their respective ratchet-wheels.

14. In a machine of the character described, the combination with the dial, the transmitting-wheel geared thereto, the shuttle-bar adapted to be actuated by depression of the keys, pawl-and-ratchet connection between said transmitting-wheel and said shuttle-bar, the projections on the transmitting-wheel, the stop-plate adapted to be thrown into the path of said projections, and the means independent of the keys for throwing said stop-plates into the path of the projections and actuating said shuttle-bar.

15. In a machine of the character described, the combination with the dial, the transmitting-wheel geared thereto and having projections thereon, the longitudinal row of keys having graduated cam-faces, the shuttle-bar engaging and adapted to be actuated by said cam-faces, pawl-and-ratchet mechanism adapted to actuate the transmitting-wheel and connected to said shuttle-bar, the stop-plate adapted to be thrown into the path of the projections on the transmitting-wheel, means independent of the keys for actuating said shuttle-bar, and a flexible connection between said independent actuating means and said stop-plate and shuttle-bar.

16. In a machine of the character described, the combination with the key mechanism, the register mechanism actuated thereby, of a record-printing platen adjustable to either side of a normal central position, means for adjusting said platen by direct action of said key mechanism, and means for printing a record upon said platen.

17. In a machine of the character described, the combination with the key mechanism, the register mechanism, the record-printing mechanism comprising the record-printing platen, and the platen-shift mechanism, of intermediate mechanism actuated directly by the action of the key mechanism to actuate said register, printing and platen shift mechanisms simultaneously with the actuation of said key mechanism.

18. In a machine of the character described, the combination with the key mechanism, the register mechanism, the record-printing mechanism comprising the record-printing platen, and the platen-shift mechanism, of intermediate mechanism actuated directly by the action of the key mechanism to actuate said register, printing and platen shift mechanisms actuated simultaneously, and at one operation with the actuation of said key mechanism.

19. In a machine of the character described, the combination with the key mechanism and the indicators, of a pair of pawls for each of said indicators operated by said key mechanism to operate said indicators in either direction and means for moving either of said pawls into operative engagement, or for holding both of said pawls out of operative engagement.

20. In a machine of the character described, the combination with the key mechanism and the indicators, of a pair of pawls for each of said indicators operated by said key mechanism to operate said indicators in either direction, shuttle-bars actuated by said key mechanism for operating said pawls and means for moving either of said pawls into operative engagement.

21. In a machine of the character described, the combination with the key mechanism and the indicators, of a rock-arm for each of said indicators, duplicate pawls mounted on each of said rock-arms, shuttle-bars actuated by said key mechanism for operating said rock-arms and means for moving either of said duplicate pawls into operative engagement to determine the direction of movement of an indicator.

22. In a machine of the character described, the combination with the key mechanism and the indicators, of addition and subtraction pawls for operating said indicators, shuttle-bars for operating said pawls and operated by said key mechanism and means for moving either the addition or the subtraction pawl into or out of operative engagement.

23. In a machine of the character described, the combination with the key mechanism and the indicators, of addition and subtraction pawls for operating each of said indicators, shuttle-bars for operating said pawls and operated by said key mechanism, means for moving either the addition or the subtraction pawl into or out of operative engagement, and carrying mechanism for transferring items from one indicator to the indicator of next higher denomination.

24. In a machine of the character described, the combination with the key mechanism and the indicators, of transmitting-wheels for operating said indicators, a pair of pawls for each of said wheels for operating each of said wheels in either direction and operated by said key mechanism, and a series of devices independent of said key mechanism operated by transmitting-wheels of lower denomination for operating the pawls of transmitting-wheels of next higher denomination.

25. In a machine of the character described, the combination with the key mechanism and the indicators, of transmitting-wheels for operating said indicators, a pair of pawls for each of said indicators for operating each of said indicators in either of two directions and operated by said key mechanism, a series of devices independent of said key mechanism operated by transmitting-wheels of lower denomination for operating pawls of next higher denomination, and means for moving either pawl of the respective pairs of pawls into or out of operative engagement.

26. In a machine of the character described, the combination with indicators and transmitting-wheels for driving said indicators, of pawls for driving said transmitting-wheels and key mechanism for operating said pawls, and means independent of said key mechanism operated periodically by transmitting-wheels of lower denomination for operating the key-actuated pawls of indicators of the next higher denomination.

27. In a machine of the character described, the combination with the key mechanism and the indicators, of key-operated pawls for driving said indicators and means independent of said key mechanism for operating key-actuated pawl of higher denomination at definite periods in the movement of indicators of lower denomination.

28. In a machine of the character described, the combination with the key mechanism and the indicators, of key-operated pawls for driving said indicators, means independent of said key mechanism for operating a pawl of higher denomination at definite periods in the movement of an indicator of next lower denomination, and means for moving said pawls into or out of operative engagement.

29. In a machine of the character described, the combination with the key mechanism and the indicators, of transmitting-wheels for driving said indicators, of addition and subtraction pawls for driving each of said transmitting-wheels and operated by said key mechanism, and means for moving either of said pawls into or out of operative engagement or holding both of said pawls out of operative engagement.

30. In a machine of the character described, the combination with an adjustable record-printing platen and record-printing devices, of means for moving said platen from a normal position for a printing impression, means for automatically returning said platen to normal position after said impression, a ratchet-wheel on said platen, a pawl for actuating said ratchet and a key-actuated lever for actuating said pawl.

31. In a machine of the character described, the combination with an adjustable record-printing platen and record-printing devices, of means for moving said platen longitudinally from a normal position for a printing impression, means for automatically returning said platen to normal position after said impression and key-actuated line-spacing mechanism.

32. In a machine of the character described, the combination with a record-printing platen, of means for moving said platen variable longitudinal distances to right or left of a constant normal position for a printing impression, means for printing a record upon said platen and means for automatically returning said platen to normal position after the printing impression.

33. In a machine of the character described, the combination with the key and register mechanism, of a platen, means for variably adjusting the platen to predetermined printing positions and means for automatically returning said platen to normal position after each printing impression.

34. In a machine of the character described, the combination with the key mechanism and the indicators, of transmitting-wheels for actuating said indicators, a pawl for each of said wheels for actuating the same, means operated by the key mechanism for operating said pawls, projections in zero positions on said wheels, stop devices adapted to be thrown into the path of said projections, flexible means for operating said pawls simultaneously to variable extents to throw the projections against the stop devices and means for throwing the stop devices into the paths of the projections.

35. In a machine of the character described, the combination with the key mechanism and an indicator, a pair of ratchet-wheels for operating said indicator, a pair of pawls operated by said key mechanism one for actuating each ratchet wheel and engaging diametrically opposite points of said wheels, flexible means for drawing said pawls toward each other and a forked rocking governor adapted when in central position to hold both of the pawls out of operative engagement and when in either of its extreme positions to hold but one of said pawls out of operative position.

818,282. **CENTRIFUGAL MACHINE.** EDWARD H. DUTCHER, Siegfried, Pa., assignor, by direct and mesne assignments, to Lehigh Oil and Waste Saving Company, Camden, N. J., a Corporation of New Jersey. Filed July 3, 1905. Serial No. 268,105.

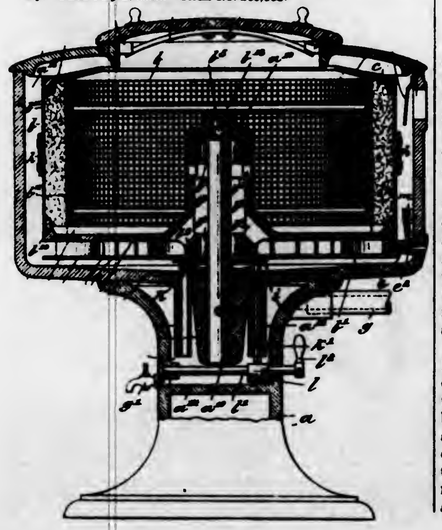

Claim.—1. In a centrifugal oil extracting and filtering machine, a housing and a receptacle for an oil-containing material having a bottom plate with a fixed outer wall and an expansible and contractible inner wall, said inner and outer walls forming a chamber, wherein filter material is adapted to be placed, spring-acting means adapted to hold said inner wall in required varying positions with respect to said filter material and the latter with said outer wall, and means for rotating said receptacle.

2. In a centrifugal oil extracting and filtering machine, a stationary housing and a receptacle for an oil-containing material having a bottom plate with a fixed perforated outer wall and a movable perforated inner wall, said inner and outer walls forming a chamber, wherein filter material is adapted to be placed, springs adapted to engage said inner wall so as to force the wall against said filter material and the latter against the outer wall and means for rotating said receptacle.

818,283. **SPEED-CONTROLLING MECHANISM FOR CENTRIFUGAL MACHINES.** EDWARD H. DUTCHER, Siegfried, Pa., assignor, by direct and mesne assignments, to Lehigh Oil and Waste Saving Company, Camden, N. J. Original application filed July 3, 1905, Serial No. 268,105. Divided and this application filed Oct. 7, 1905. Serial No. 281,741.

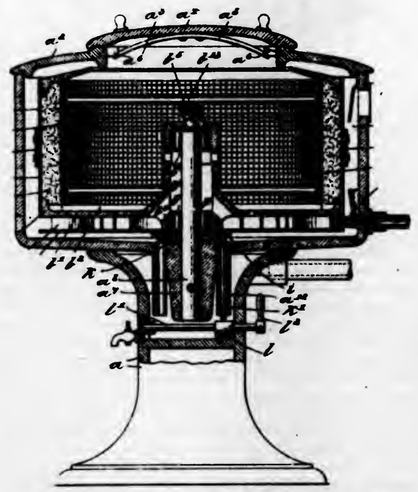

Claim.—1. In a speed-controlling mechanism for centrifugal oil extracting and filtering machines, a stationary housing having a basket for oil-containing material rotatably arranged therein, wings held in alinement and connected with said basket and adapted to be moved radially thereto by centrifugal force and by air acting upon a portion thereof, to automatically retard excessive speed of rotation of said basket by exposing the entire surface to the resistance of the air.

2. In a speed-controlling mechanism for centrifugal oil extracting and filtering machines, a stationary housing having a basket for oil-containing material rotatably arranged therein, wings held in alinement and connected with said basket and adapted to be moved radially thereto by centrifugal force and by air acting upon a portion thereof, to automatically retard excessive speed of rotation of said basket by exposing the entire surface to the resistance of the air, and means supported by said housing and adapted, when manually actuated, to engage said basket to retard and stop rotation thereof.

3. In a speed-controlling mechanism for centrifugal oil extracting and filtering machines, a stationary housing having a basket for oil-containing material, means connected with said basket adapted to actuate the same, wings held in alinement and connected with said basket and adapted to be moved radially thereto by centrifugal force and by air acting upon a portion thereof, to automatically retard excessive speed of rotation of said basket by exposing the entire surface to the resistance of the air, a ring arranged below the actuating means for said basket having an extension and a cam adapted, when actuated, to raise said ring by engaging said extension, to force the

same against the actuating means of said basket to retard and stop rotation thereof.

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2. In a wagon-gear and in combination with the front gear-hounds, tongue-hounds having their rear portion elevated and their upright lugs on the tongue-hounds, and a draw-bolt extending through said lugs and connecting said hounds together on an axis

same against the actuating means of said basket to retard and stop rotation thereof.

813,284. ROTARY ENGINE. GEORGE H. BOELER, Akron, Ohio. Filed Jan. 3, 1905. Serial No. 239,464.

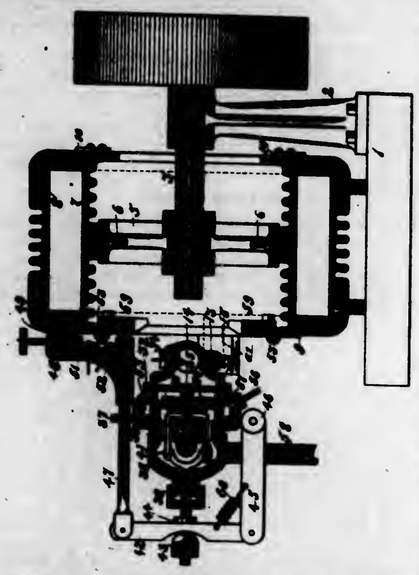

Claim.—1. The combination in an engine of the class described, of an outer inclosing cylinder having inturned annularly-formed heads, each provided with an opening therein, said openings being in longitudinal alinement with each other, a longitudinally-split cylindrically-formed piston arranged in said openings, whereby an annular space will exist between said cylinder and the outer periphery of said piston, means to retain said piston in said openings, means to constantly force the portions of said piston against the walls of said openings in said cylindrical heads, a plurality of blades in said annular space a portion of which are hinged to the piston and the balance to the inside of said cylinder, said blades arranged to pass each other during the rotation of said piston, means to hold the blades hinged on said cylinder against said piston, and means to hold the blades mounted on said piston against the inside surface of said cylinder.

2. The combination in an engine of the class described, of an outer inclosing cylinder having inturned annularly-formed heads, each provided with an opening therein, a piston arranged in said openings, whereby an annular space will exist between said cylinder and the outer periphery of said piston, means to retain said piston in said openings, means movable in said annular space and attached pivotally to said piston to receive the impact of a propelling fluid introduced to said annular space, means to convey a propelling fluid to said annular space at diametrically opposite points thereof, an explosion-chamber arranged in connection with said induction means, an igniting device placed in said explosion-chamber, a carriage mounted on said cylinder radially adjustable in position with respect thereto, a circuit-breaker mounted on said carriage and suitably connected with said igniting device, and means on said piston to close said circuit-breaker.

3. The combination in an engine of the class described, of an outer inclosing cylinder having inturned annularly-formed heads, each provided with an opening therein, said openings being in longitudinal alinement with each other, a piston arranged in said openings, whereby an annular space will exist between said cylinder and the outer periphery of said piston, means to retain said piston in said openings, means movable in said annular space and attached pivotally to said piston to receive the impact of a propelling fluid introduced to said annular space, means to introduce a propelling fluid to said annular space at opposite points thereof, an explosion-chamber arranged in connection with said induction means, an igniting device in said explosion-chamber, a carriage mounted on said cylinder and adjustable in position with respect to the position of said induction means, a circuit-breaker on said carriage suitably connected with said igniting device, means on said piston to close said circuit-breaker, and means to close the inlet of fluid to said explosion-chamber.

4. The combination in an engine of the class described, of an outer inclosing cylinder having inturned annularly-formed heads, each provided with an opening therein, said openings being in longitudinal alinement with each other, a piston arranged in said openings, whereby an annular space will exist between said cylinder and the outer periphery of said piston, means to retain said piston in said openings, means movable in said annular space and attached pivotally to said piston to receive the impact of a propelling fluid introduced to said annular space, means to introduce a propelling fluid to said annular space at opposite points thereof, an explosion-chamber in said induction means, an igniting device in said explosion-chamber, a circuit-breaker suitably mounted and connected with said igniting device, means on said piston to close said circuit-breaker, and means to change the position of said circuit-breaker with respect to the position of said induction means.

5. The combination in an engine of the class described, of an outer inclosing cylinder provided with oppositely-disposed exhaust-ports, a piston arranged to rotate within said cylinder and separated therefrom to form an air-space, means to introduce to said air-space a propelling fluid equally at diametrically opposite points, an explosion-chamber mounted in said induction means, a valve to control the inlet of the propelling fluid to said explosive-chamber, a carriage mounted on said cylinder and adjustable in position with respect to the exhaust-ports of said cylinder, means mounted in said carriage to operate said valve, and means mounted on said piston to operate said last-named means and close said valve substantially as shown and described.

6. The combination in an engine of the class described, of an outer inclosing cylinder provided with oppositely-disposed exhaust-ports, a piston arranged to rotate within said cylinder and separated therefrom to form an air-space, means to introduce to said air-space a propelling fluid, an explosive-chamber in said induction means, a valve to control the entrance of the propelling fluid to said explosive-chamber, a carriage mounted on said cylinder and adjustable in position with respect to the position of the exhaust-ports of said cylinder, means on said carriage to operate said valve, means on said piston to operate said last-named means, a circuit-breaker mounted on said carriage, and means on said piston to close said circuit-breaker substantially as shown and described.

813,285. WAGON-GEAR. EMIL EINFELDT, Davenport, Iowa, assignor to Bettendorf Metal Wheel Company, a Corporation of Iowa. Filed Aug. 1, 1905. Serial No. 272,148.

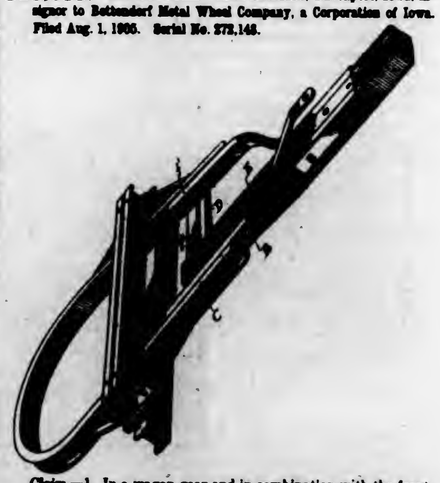

Claim.—1. In a wagon-gear and in combination with the front gear-hounds, tongue-hounds, a draft connection between said hounds, and a tongue sustained by the tongue-hounds with its axis in an unchanging plane relative to the gear-hounds with its upper surface, at the point where the doubletree is applied, extending at a lower level than that of the axis of the draft connection when the tongue is in a horizontal position.

2. In a wagon-gear and in combination with the front gear-hounds, tongue-hounds having their rear portion elevated and their forward portion depressed and in a different plane, a draw-bolt connecting the elevated portion of the tongue-hounds with the gear hounds, and a tongue connected with the depressed portion of the tongue-hounds at a point in front of the draw-bolt and extending rearwardly beneath said draw-bolt.

3. In a wagon-gear and in combination with the front gear, tongue-hounds connected with said gear and extending forwardly and downwardly below the connection, a tongue connected with the downwardly-extending portion of the tongue-hounds, and having its upper surface at a lower level than said connection when the tongue is in a horizontal position, and a doubletree applied to the upper side of the tongue.

4. In a wagon-gear and in combination with the front gear-hounds, tongue-hounds extending for a portion of their length along the gear-hounds and then extending beyond said gear-hounds downwardly, a connection between the gear-hounds and the tongue-hounds, and a tongue fixed to the downwardly-extending portions of the gear-hounds.

5. In a wagon-gear and in combination with the front gear-hounds, tongue-hounds extending downwardly at their forward ends, a draw-bolt connecting the tongue-hounds, in rear of their downwardly-extending portions, with the gear-hounds, a tongue fixed to the downwardly-extending portions of the gear-hounds, and extending rearwardly beneath the draw-bolt, and a connection between the tongue and tongue-hounds in rear of their downwardly-extending portions.

6. In a wagon-gear and in combination with the front gear-hounds, tongue-hounds connected therewith and extending forwardly and downwardly with the forward portion of the hounds in a different plane from the rear portions, and a tongue connected with the downwardly-extended portion of the tongue-hounds.

7. In a wagon-gear and in combination with the front gear-hounds, a tongue, tongue-hounds connected with the tongue and bent upwardly and extending rearwardly in a plane above a plane of the tongue, and a pivotal connection between the elevated portion of the tongue-hounds and the gear-hounds.

813,286. WAGON-GEAR. EMIL EINFELDT, Davenport, Iowa, assignor to Bettendorf Metal Wheel Company, a Corporation of Iowa. Filed Aug. 8, 1905. Serial No. 273,944.

Claim.—1. In a wagon-gear the combination of the front gear-hounds, a tongue, tongue-hounds applied to the tongue, and a connection between the gear-hounds and tongue-hounds said connection having its axis constantly in an unchanging plane relative to the gear-hounds disposed above the general plane of said hounds when the tongue is in a horizontal position, substantially as described.

2. In a wagon-gear, the combination of the front gear-hounds, the tongue, tongue-hounds applied to the tongue, upright projections on said hounds, and a connection between said projections having its axis extending in an unchanging plane relative to the gear-hounds.

3. In a wagon-gear, the combination of the front gear-hounds, upright lugs thereon, a tongue, tongue-hounds applied to the tongue, upright lugs on the tongue-hounds, and a draw-bolt extending through said lugs and connecting said hounds together on an axis disposed in a single unchanging plane relative to the gear-hounds, substantially as described.

813,287. ELECTRIC-TRACTION SYSTEM. JAMES P. GORMAN, Jr., New York, N. Y. Filed Mar. 31, 1905. Serial No. 253,180.

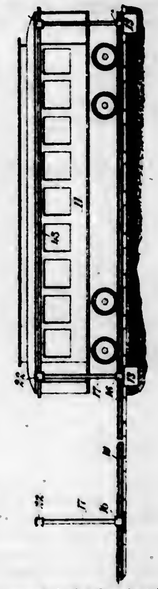

Claim.—1 A contact device for electric-traction systems comprising a pole, a conductor extending through the pole and having its upper end threaded, a contact-block surrounding the conductor, and a nut operating upon the conductor-thread above the contact-block.

2. A contact device for electric-traction systems comprising a pole, an insulating-plate carried upon the top of the pole, a contact-block situated above the insulating-plate, a second insulating-plate coöperating with the contact-block, and a conductor extending through the pole, block and plates.

3. A contact device for electric-traction systems comprising a pole, an insulating-plate carried upon the top of the pole, a contact-block situated above the insulating-plate, a second insulating-plate coöperating with the contact-block, bearing-plates lying between the contact-block and insulating-plate, and a conductor extending through the pole, block and plates.

4. In an electric-traction system, a contact device comprising a pole, conductors extending through the pole, opposite contact-blocks movable upon the conductors above the pole, and a yieldable insulating-block situated between the contact-blocks.

5. In an electric-traction system, a contact device comprising a pole, conductors extending through the pole, opposite contact-blocks movable upon the conductors above the pole, securing means upon the conductors for retaining the contact-blocks in place, and an insulating member lying above the blocks and securing means.

6. In an electric-traction system, the combination with a conduit, of a junction-box included therein, a cover for the box provided with a socket, a pole having a contact member and entering the socket, screws threaded through the socket and engaging the pole, and conductors extending through the conduit and pole to the contact member.

7. In an electric-traction system, the combination with a conduit, of a junction-box included therein, a cover for the box provided with a socket, a pole having a contact member and entering the socket, a fluid insulating-filling within the junction-box, screws threaded through the socket and engaging the pole, and conductors extending through the conduit and pole to the contact-member.

8. In an electric-traction system, the combination with a con-

duit, of a junction-box included therein,

duit, of a junction-box included therein, a cover for the box provided with a socket, a pole having a contact member and entering the socket, a fluid insulating-filling within the junction-box and into which the lower end of the pole extends, screws threaded through the socket and engaging the pole, and conductors extending through the conduit and pole to the contact member.

813,288. **FELT-REGULATING DEVICE FOR PAPER-MACHINES.** THOMAS HANCOCK, Holyoke, Mass. Filed July 3, 1905. Serial No. 268,223.

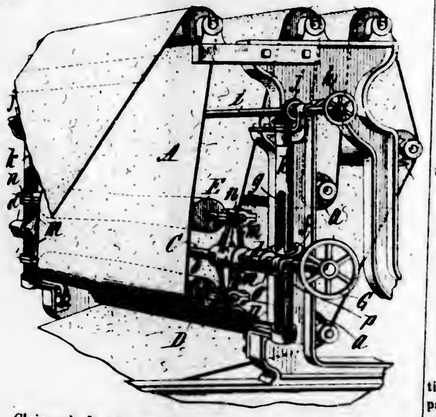

Claim.—1. In a paper-machine, the combination with the press-felt, of a pair of axially-parallel guide-rolls, around which the felt runs, one of said rolls tapering from its middle portion outwardly, and the other roll tapering from its opposite ends toward its middle, and a support, on which said pair of rolls are mounted for rotation, and which support is movably mounted for reversed presentations of said pair of rolls in relation to the felt.

2. In a paper-machine, the combination with the press-felt, of a shaft or bar transversely and horizontally mounted and rotatably adjustable in the frame of the machine, and having at the opposite end portions thereof rigid arms, a pair of separated axially-parallel felt guide-rolls, one tapering from its middle portion outwardly and the other tapered from its opposite ends toward its middle, and journaled for rotation in the arms carried by said shaft, and means for confining said rotatably-adjustable shaft in any given adjustment.

3. In a paper-machine, the combination with the felt, of a pair of axially-parallel guide-rolls, around which the felt runs, one of said rolls tapering from its middle portion outwardly, and the other roll tapering from its opposite ends toward its middle, and a support, on which said pair of rolls are mounted for rotation, said support being mounted for roll-positioning adjustment about a horizontal axis transverse of the machine, and said support being also adjustably movable in the line of the run of the felt, for the purposes set forth.

4. In a paper-machine, the combination with the felt, of a shaft or bar transversely and horizontally mounted and rotatably adjustable in the frame of the machine, and bodily adjustable in a line at right angles to its axis, and having at the opposite end portions thereof rigid arms, a pair of separated axially-parallel felt guide-rolls, one tapering from its middle portion outwardly and the other tapered from its opposite ends toward its middle, and journaled for rotation in the arms carried by said shaft, and respective means for bodily adjusting said shaft, for rotationally adjusting it, and for confining it in its respectively adjusted positions.

813,289. **GLASS-BLOWING MACHINE.** NOBLE W. HARTMAN, Toledo, Ohio, assignor of one-half to George W. Burthart, Detroit, Mich. Filed June 6, 1904. Serial No. 211,313.

Claim.—1. In a glass-blowing machine, a series of mold-holders, sectional molds mounted on said holders, means for revolving said series horizontally, a detached vessel which forms a bath for the molds, means for opening and closing the molds successively at fixed points in their rotation, and means for passing the opened molds endwise through said bath.

2. In a glass-blowing machine, a series of mold-holders, shafts upon one end of which the holders are rigidly mounted and which form pivotal supports for the mold-holders, crank-arms rigidly connected with the other end of said shafts, rollers on the crank-arms, a fixed segmental track for said rollers, means for revolving horizontally the series of mold-holders and their shafts and cranks, and a mold-cooling vessel which coincides with the cut-away portion of the segmental track.

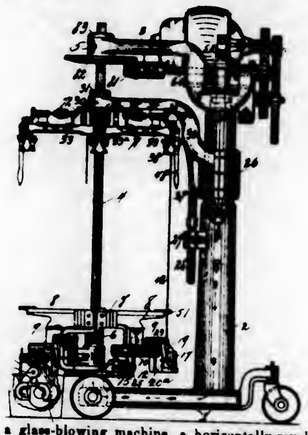

3. In a glass-blowing machine, a horizontally-revoluble sectional mold composed of two pivotally-connected parts, a shaft, a pair of arms secured to said shaft, a pair of rods swiveled at one end to the mold parts and adjustably connected at the other end to said arms, a crank on the shaft, a roller on the crank, and a segmental track for the roller.

4. In a glass-blowing machine, a shaft having its bearings in a horizontally-revoluble sleeve, a mold-carrier secured to the shaft, a crank-arm secured to the shaft, a roller on the crank-arm, a mold comprising two pivotally-connected sections mounted upon the mold-carrier, another shaft, two arms secured to said other shaft and pivotally connected with said mold-sections, a crank-arm secured to said other shaft, a roller on said latter crank-arm, and a fixed mutilated disk upon which said two rollers travel in segmental paths, the path of the first-mentioned roller forming a greater arc than the path of the other roller.

5. In a glass-blowing machine, a base, an upright column thereon, an arm secured to the top of the column, a vertical shaft revoluble in bearings on the base and at the end of said arm, said shaft being vertically movable in said bearings, means for revolving the shaft, a sleeve slidable on the column, an arm projecting from the sleeve, means on said latter arm for the support of the shaft, means for the vertical adjustment of the sleeve, and a series of molds and a corresponding series of blowing mechanisms connected with and driven by the shaft.

6. In a glass-blowing machine, a series of horizontally-revoluble mold-carrying arms, molds thereon, a corresponding series of hollow blowing-arms carried above the molds, a hollow shaft concentric with and which drive said two series of arms in unison, the hollow of the upper arms being in communication with the hollow of the shaft, a normally closed air-valve in each of said upper arms, means for successively opening and closing said valves, means for supplying air through the hollow of the shaft, and means for conducting air from the extremities of the upper arms to the molds.

7. In a glass-blowing machine, a shaft, an arm secured to and revoluble with the shaft and having a longitudinal air-passage connected with a source of compressed air, a normally closed valve in the air-passage of the arm, a lever fulcrumed on the arm, connections between the lever and the valve, a roller on the lever, a track on which the roller travels, and means for the adjustment of the track.

8. In a glass-blowing machine, a vertical shaft, a horizontal arm secured to and revoluble with the shaft and having therethrough a longitudinal air-passage connected with an air-supply, a valve in the air-passage of the arm, and means for automatically controlling the flow of air through the valve, comprising a lever fulcrumed on the arm and connected with the valve, a roller on the lever, a flat segmental ring which forms a track for the roller, a stationary member, and adjusting-screws engaged with the stationary member and with the ring-segment.

9. In a glass-blowing machine, a main shaft, an arm secured to and revoluble with the shaft and having a longitudinal air-passage connected with a source of compressed air, a short shaft journaled in the end of the arm and having air-passages in communication with the air-passage in the arm, a blow-iron holder upon one end of the short shaft, a fixed mutilated friction-disk, a friction-wheel mounted on the arm and adapted to engage the friction-disk during a part of the revolution of the main shaft, driving connections between the friction-wheel and the short shaft, and means for revolving the main shaft.

10. In a glass-blowing machine, a base, a hollow upright column, an air-pump in the column, an arm on the column, a shaft journaled in the arm, a series of molds and a corresponding series of blowing mechanisms revoluble with the shaft, connections between the hollow of the column and said blowing mechanisms, and means for revolving the shaft and for actuating the air-pump.

11. A glass-blowing machine comprising a hollow base, a hollow column thereon having an arm at its top, a vertical hollow shaft journaled and longitudinally movable in said arm and in bearings on the base, the hollows of the base column and shaft being connected, a series of horizontal arms revolubly connected with the shaft by spline and feather, a series of molds supported by said arms, means for opening and closing and dipping the molds successively at each revolution of the shaft, a vertically-movable collar on the column, means for securing the collar in adjusted position, an arm on the collar, bearings on the latter arm which carry the shaft, a series of hollow arms, corresponding with the first-mentioned series of arms, secured to the shaft and having their hollows in communication with the hollow of the shaft, holders on the first-mentioned arms for the lower part of blow-irons, holders for such blow-irons at the extremities of the hollow arms, the latter holders being adapted to place the hollows of the arms and of such blow-irons in operative connection, an air-pump in the column, a motor on the column geared to drive the air-pump and the shaft, and means for admitting air from the hollow arms to the blow-irons and for revolving the blow-irons during a limited part of the rotation of the shaft.

813,290. **GLASS-DRAWING MACHINE.** GEORGE H. HARVEY, Glenfield, Pa., assignor, by mesne assignments, to Brownsville Glass Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed Mar. 3, 1904. Serial No. 196,254.

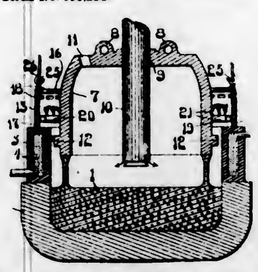

Claim.—1. In the manufacture of glass, a gatherer adapted to draw glass from a receptacle, a burner encircling the gatherer, said burner in part being composed of pipes hinged together and a heat-retainer encircling said gatherer and made in pivoted sections.

2. In the manufacture of glass, a gatherer adapted to draw glass from a receptacle, a circular rib on the gatherer, a burner composed of pipes pivoted together, and a heat-retaining device surrounding said burner and also composed of pivoted sections, said rib located so as to pick up said burner and heat-retaining device after the gatherer has ascended to bring the lower end of the gatherer within the zone of heat.

813,291. **GLASS-DRAWING MACHINE.** GEORGE H. HARVEY, Glenfield, Pa., assignor, by mesne assignments, to Brownsville Glass Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed Apr. 13, 1903. Serial No. 152,308.

Claim.—1. In the art of manufacturing glass, a receptacle adapted to contain glass in a liquid or semiliquid state, a refining-ring supported thereon, and means of communication between said receptacle and the interior of said refining-ring above the level of the glass.

2. In the art of manufacturing glass, a receptacle containing glass in a liquid or semiliquid form, a refining-ring supported thereon, an orifice in said refining-ring, and means in the ring for reducing the temperature of said orifice.

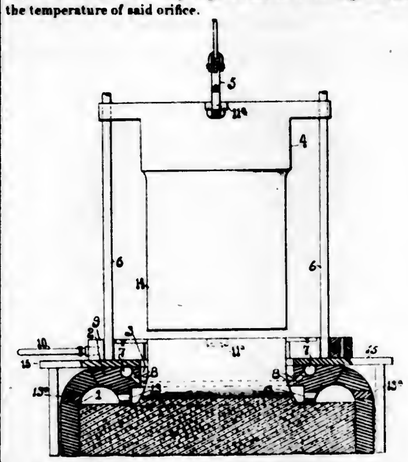

3. In the art of manufacturing glass, a receptacle adapted to contain glass in a liquid or semiliquid form, a refining-ring supported thereon, means of communication between said receptacle and the interior of the refining-ring above the level of the glass, and means for reducing the temperature in the orifice of said refining-ring.

813,292. **PRESS-OPERATING DEVICE.** JOSEPH L. HAVERFIELD, Mayfield, Ky., assignor to Mayfield Mfg. Co., Mayfield, Ky. Filed Mar. 11, 1905. Serial No. 249,609.

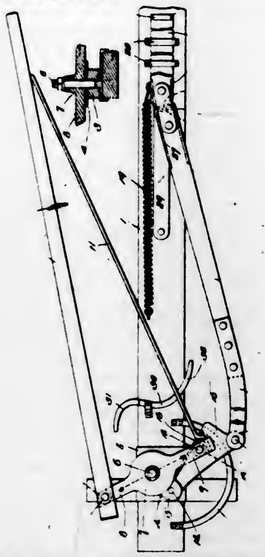

Claim.—In a device of the class described, a head supported for rotation and having radially-extending arms provided with downward-extending cam-engaging members, a cam-plate fulcrumed eccentrically to the rotary head and having an upstanding flange disposed in the path of the cam-engaging members, a reciprocatory plunger, a pitman having one end connected with said plunger and its other end with the free end of the cam-plate, and a cam-lever pivotally supported adjacent to the rotary head; said cam-lever having a curved arm offset upwardly and disposed in the path of the cam-

engaging members, and an oppositely-extending curved arm dis-

ing the front and rear walls of its opening flared inward and forward, said plates being equal in thickness to the diameter of the

engaging members, and an oppositely-extending curved arm disposed in the path of one of the plates connecting the pitman with the cam-plate.

813,293. SKIN-STRETCHING MACHINE. ALBERT A. HELLWIG, Gloversville, N. Y. Filed May 2, 1905. Serial No. 258,491.

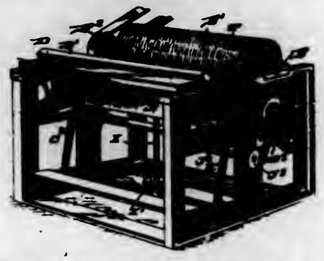

Claim.—1. In a machine of the kind described, the combination with a cylinder, of oppositely-moving belts, a sliding table carrying a pressure-roller and a pressure-plate which are adapted for coöperation with the said cylinder and belts respectively.

2. In a machine of the kind described, the combination with a cylinder, of oppositely-moving belts, a sliding table, a pressure-roller and a pressure-plate carried by the table and adapted for coöperation with the roller and belts respectively, and a stretching-frame connected to and adapted to be thrown into operation by the table, all substantially as specified.

3. In a machine of the kind described, the combination with an abrasion-cylinder, of oppositely-moving stretching-belts, a stretching-frame, and means for operating the frame.

4. In a machine of the kind described, the combination with an abrasion-cylinder, and a pressure-roller, of a stretching-frame for drawing a skin through the abrasion-cylinder and roller against the rotation of the said cylinder, oppositely-moving belts, and a pressure-plate for holding a skin against the belts.

5. In a machine of the kind described, the combination with an abrasion-cylinder, of a stretching-frame, means for operating the frame, a sliding table operatively connected to the frame for throwing the said frame into engagement with the operating means.

6. In a machine of the kind described, the combination with an abrasion-cylinder, of a stretching-frame, oppositely-moving belts, a sliding table carrying a pressure roller and plate, and operatively connected with the stretching-frame.

7. In a machine of the kind described, the combination with an abrasion-cylinder, of a stretching-frame, means for operating the frame, of a sliding table connected with the frame and adapted for moving the latter into engagement with the operating means, a pressure roller and plate carried by the table, oppositely-moving belts, means for operating the belts, and means for operating the table, substantially as specified.

8. In a machine of the kind described, the combination with an abrasion-cylinder, of a stretching-frame, a sliding table connected to the frame, oppositely-moving belts, a corrugated bar arranged above the belts, a pressure roller and plate carried by the sliding table for operation with the abrasion-cylinder and belts respectively, and an angle-plate for operation with the corrugated bar.

9. In a machine of the kind described, the combination with an abrasion-cylinder, of a stretching-frame, comprising the slotted rack-arms and a cross-bar, a sliding table having a pressure-roller journaled therein, the shaft of said roller extending through the slots in the rack-arms, gears for engagement with the rack-arms, and by which the frame is operated when the table is moved toward the abrasion-cylinder, and means for operating the table.

10. In a machine of the kind described, the combination with a frame, having an abrasion-cylinder mounted thereon, of a stretching-frame, said frame comprising the slotted rack-arms, and cross-bar connecting the arms, a sliding table connected to the stretching-frame, a shaft having pinions for engagement with the rack-arms when the table is moved toward the abrasion-cylinder, oppositely-moving belts operating within the frame, a corrugated bar arranged within the frame, a pressure roller and plate carried by the table and adapted for operation with the abrasion-cylinder and belts respectively, an angle-plate carried by the table for operation with the corrugated bar, an intermeshing gear and pinions for operating the belts, and a drive-pinion for operating the gear

11. In a machine of the kind described, the combination with a frame, of an abrasion-cylinder journaled thereon, a sliding table operating upon the frame, a pressure-roller journaled in the forward end of the table, a stretching-frame movably positioned upon the frame and connected with the sliding table, a corrugated bar arranged within the frame, adjacent the abrasion-cylinder, oppositely-moving belts arranged within the frame and directly below the corrugated bar, an angle-plate and pressure-plate carried by the table, a treadle for operating the table, and means for operating the stretching frame and belt respectively.

12. In a machine of the kind described, the combination with a frame, of an abrasion-cylinder journaled thereon, a sliding table operating upon the frame, a pressure-roller journaled in the end of the table, the shaft of the roller projecting beyond the edge of the table, a stretching-frame having slotted rack-arms through which the ends of the shaft of the pressure-roller project, a shaft journaled in the frame, and having pinions for engagement with the slotted rack-arms of the stretching-frame, shafts vertically journaled in the frame and having pulleys at their upper ends, pulleys journaled to the sides of the frame, belts operating upon the pulleys, a short shaft journaled in the frame and having a beveled pinion for engagement with a beveled pinion carried by one of the vertically-journaled shafts, an intermeshing gear and pinions for imparting motion to the short shaft, intermeshing pinions carried by the vertical shafts, and an angle and pressure plate carried by the sliding table, all substantially for the purposes set forth.

13. In a machine of the kind described, the combination with an abrasion-cylinder, of oppositely-moving stretching-belts, a stretching-frame, means for operating the frame, and an operating-table connected to the said frame and adapted to move the frame into and out of engagement with the said operating means.

14. In a skin-stretching machine, the combination with an abrasion-cylinder, of oppositely-moving belts, a sliding table, means carried by the table for holding a skin into engagement with the cylinder, and belts, and also means for drawing the skin through the machine.

15. In a skin-stretching machine, the combination with an abrasion-cylinder, of oppositely-moving belts, a corrugated bar arranged adjacent the cylinder, a sliding table carrying a pressure-roller and pressure-plates, which are adapted for pressing a skin into engagement with the cylinder, belts, and bar, and means for drawing the skin through the machine.

16. In a machine of the kind described, the combination with an abrasion-cylinder, of oppositely-moving belts, a bar arranged adjacent the cylinder, a sliding table carrying a pressure-roller, an adjustable plate, and stationary plates connected to the table, means for operating the table, and also means for operating the frame when the table is moved forwardly.

17. In a machine of the kind described, the combination with a frame, of an abrasion-cylinder, oppositely-moving belts, a corrugated bar, a sliding table carrying a pressure-roller and pressure-plates, a movable stretcher-frame, and means for operating the frame said frame being connected to the table and adapted to be thrown into engagement with the said operating means.

18. In a machine of the kind described, the combination with a frame, of an abrasion-cylinder journaled in the frame, stretching-belts, a sliding table, a stretcher-frame connected to the table, and continuously-operating means adapted for engagement by the frame when the table is moved forwardly and disengaged when the table is moved rearwardly, as specified.

19. In a machine of the kind described, the combination with a frame, of an abrasion-cylinder journaled therein, continuously-operating stretching-belts, a sliding table, a continuously-operating shaft journaled in the frame, and having pinions fastened thereto, and a stretcher-frame hold upon the frame of the machine and connected to the said table, said frame having rack-sections which are adapted for engagement with the pinions when the table is moved forwardly and disengaged when the position of the table is reversed.

20. In a machine of the kind described, the combination with an abrasion-cylinder, of oppositely-moving belts, a corrugated bar, a sliding table carrying a pressure-roller, a horizontally-disposed adjustable pressure-plate connected to the table, vertically-disposed stationary plates connected to the table, and a stretcher-frame connected to and adapted to be thrown into operative position by the table.

813,294. HAME. WILLIAM H. HILL, Calhoun, Ky. Filed Aug. 8, 1903. Serial No. 272,266.

Claim.—1. A hame member equipped with a frame-casting having the front and rear walls of its opening flared inward and forward and rearward, respectively, said frame-casting also having upon its outer surface, at the forward edge, apertured outstanding studs, the aperture of one stud being tapered or oblong, a trace or tug hook having an inner bifurcated end, with its thus-formed branches provided also with tapered apertures adapted to register with the aforesaid apertures, said hook also having upon its inner or rear surface a forward and rearward flared cleat let in said opening and adapted to engage the corresponding surfaces or walls thereof, and a pinion equipped with a number of lateral pins or projections having a corresponding outline with said tapered apertures, said pintle being adapted after insertion through said apertured studs and the apertured branches of said hook, to be adjusted or axially manipulated to cause its pins or projections to point in a direction oppositely to that in which initial connection is effected between said frame-casting and said pintle.

2. A frame-casting adapted to be attached to a hame member and having the front and rear walls of its opening flared inward and forward and rearward, respectively, said frame-casting also having upon its outer surface, at the forward edge, apertured outstanding studs, the aperture of one stud being tapered or oblong, a trace or tug hook having an inner bifurcated end with its thus-formed branches provided also with tapered apertures, said hook also having upon its inner or rear surface a forward and rearward flared cleat let into said frame-casting opening and engaging the corresponding walls of the latter, and a pintle equipped with a number of lateral pins or projections of corresponding outline with the apertures of said studs and of said tug-hook branches, and engaging said apertures.

3. A hame member equipped with a frame-casting having the front and rear walls of its opening flared inward and forward and rearward, respectively, said frame-casting also having, upon its outer surface, at its forward edge, outstanding apertured studs, the aperture of one stud being tapered or oblong, a trace or tug hook having, upon its inner or under side, a forward and rearward flared cleat or extension, let into the opening of said frame-casting and engaging the corresponding walls of said opening, said trace-hook having inner or forward end branches provided with tapered apertures and standing outward therefrom, for reception between said studs, and a pintle equipped with a number of lateral tapered pins or projections, said pintle being insertible through the frame-casting studs and the branches of said trace or tug hook, together with its pins or projections, and adjustable or movable so that the latter may point oppositely to the direction in which connection is initially effected between said pintle and said frame-casting studs.

813,295. ADJUSTABLE TRACK OR TROLLEY-WIRE. WALLIS HILLS, Kansas City, Kans. Filed May 6, 1905. Serial No. 259,097.

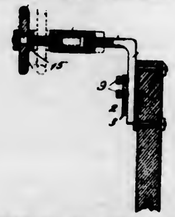

Claim.—1. An adjustable track consisting of two wires one arranged vertically above the other, and means for adjusting said track both vertically and laterally, substantially as described.

2. An adjustable track consisting of two wires one arranged vertically above the other, rectangular division-plates arranged between said tracks and permanently secured thereto, and means for adjusting said rectangular plates both vertically and laterally, substantially as described.

3. An adjustable track consisting of two wires one arranged vertically above the other, rectangular division-plates each of which has two marginal grooves in which said wires are permanently secured, said plates being equal in thickness to the diameter of the wires, and adjustably-supported means to which said division-plates are detachably secured.

4. An adjustable track consisting of two wires one arranged vertically above the other, rectangular division-plates each of which has two marginal grooves in which said wires are permanently secured and a centrally-disposed rectangular opening, a threaded rod having an intermediate rectangular portion to snugly fit the opening and prevent said rod from turning in the division-plate, and means engaging the threaded rod for adjusting the same laterally.

5. The combination with an adjustable track, of a plurality of right-angular members consisting of horizontal portions to which the track is suitably secured and vertical shank portions, and sockets in which said shank portions are adjustably secured.

6. An adjustable track consisting of two wires, rectangular division-plates arranged between and permanently secured to said wires, threaded rods to which said plates are detachably secured, right-angular members having horizontal threaded portions and vertical shanks, turnbuckles engaging said threaded portions and the threaded rods for adjusting the latter laterally, and sockets in which the shanks are adjustably secured.

813,296. SUSPENDER-END. WILLIAM W. HOOPES, Philadelphia, Pa. Filed Mar. 29, 1905. Serial No. 253,610.

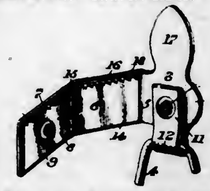

Claim.—1. In a device of the character described, a side-opening buckle, a flap therefor, and a tab and loop secured to the flap.

2. In a device of the character described, a side-opening buckle, means for maintaining it in closed position and side-opening jaws secured within the buckle.

3. In a device of the character described, a buckle, a combined cover and closing mechanism therefor and a loop depending from the cover.

4. In a device of the character described, a buckle, rigid jaws within the buckle, a flexible inclosing medium and separable means for securing the latter in inclosing position.

5. In a device of the character described, a web, a surrounding flexible cover separably attached at its free ends, and gripping-jaws connected with said flexible member and engaging the web upon opposite sides thereof.

6. In a device of the character described, a web, a side opening surrounding cover and substantially parallel means attached to said cover engaging the web upon opposite sides thereof.

7. In a device of the character described, a pair of hinged jaws, a surrounding flexible buckle and a flap securing the buckle in closed position.

8. In a device of the character described, rigid gripping means, a surrounding flexible cover and a flap securing the cover in position to maintain the hold of the gripping means.

813,297. ELECTRICAL SAFETY DEVICE. ELWOOD B. HOSMER and WILLIAM N. DIETRICH, Montreal, Canada. Filed June 30, 1905. Serial No. 268,668.

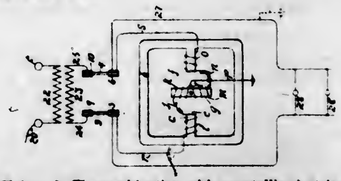

Claim.—1. The combination with a metallic electric circuit to be protected including a switch and means for releasing said switch, and an additional circuit permanently in shunt with said metallic circuit and having a permanent ground connection, said additional circuit including an electromagnet and an armature within the mag-

netic field of said magnet, of mechanical means acted upon by said armature and acting directly upon said means for releasing said switch and opening the circuit to be protected, for the purpose set forth.

2. The combination with an electric circuit to be protected, of an electric safety device comprising an additional circuit in shunt with said circuit, said additional circuit including two electromagnets the relative positions whereof are changeable, means coacting with said electromagnets and actuated upon the said change of position, for opening the said circuit to be protected and a permanent ground connection connected to said shunt-circuit, for the purpose set forth.

3. The combination with an electric circuit to be protected and means for opening said circuit, of an electric safety device comprising a pair of oppositely-wound electromagnets a short distance apart and in line with one another, an oscillatory armature pivotally mounted between the adjacent poles of said electromagnets and having coils wound oppositely to one another upon the ends thereof, a wire connecting the outer terminal of one of the coils of said pair of electromagnets to one terminal of the circuit to be protected, a slack wire connecting the opposite terminal of said last-mentioned coil to the outer terminal of the coil wound oppositely thereto upon one end of the armature, a wire connecting the opposite terminal of the last-mentioned coil to the adjacent terminal of the coil upon the other end of said armature, a slack wire connecting the opposite terminal of the last-mentioned coil to one terminal of the other coil of said pair of electromagnets, a wire connecting the opposite terminal of said last-mentioned coil to the other terminal of the circuit, and means whereby the oscillation of said armature will cause the circuit-opening means to open the circuit, substantially as described and for the purpose set forth.

4. The combination with an electric circuit to be protected and means for opening said circuit, of an electric safety device comprising a pair of oppositely-wound electromagnets a short distance apart and in line with one another, an oscillatory armature pivotally mounted between the adjacent poles of said electromagnets and having coils wound oppositely to one another upon the ends thereof, a wire connecting the outer terminal of one of the coils of said pair of electromagnets to one terminal of the circuit to be protected, a slack wire connecting the opposite terminal of said last-mentioned coil to the outer terminal of the coil wound oppositely thereto upon one end of the armature, a wire connecting the opposite terminal of the last-mentioned coil to the adjacent terminal of the coil upon the other end of said armature, a grounded wire connected to this last-mentioned wire midway of its length, a slack wire connecting the opposite terminal of the last-mentioned coil to one terminal of the other coil of said pair of electromagnets, a wire connecting the opposite terminal of said last-mentioned coil to the terminal of the circuit, and means whereby the oscillation of said armature will cause the circuit-opening means to open the circuit, substantially as described and for the purpose set forth.

5. The combination with an electric circuit and the switch-arm of a spring-actuated multipolar switch included in said circuit, of a latch having a lateral projection, said latch being pivotally connected to the frame of the switch and adapted to engage the switch-arm and retain same in its closed position, a spring tending to disengage said latch from the switch-arm, a detent in the form of a lever fulcrumed near one end to the frame of the switch, the end of the short arm of said lever being concentric to its fulcrum-point and engaging said lateral projection when the long arm of said lever is raised and retaining same, against said last-mentioned spring, in engagement with the switch-arm, a support for retaining said long arm in its raised position, and electrical means for displacing said support and operated, upon emergency, by the current traversing said circuit, substantially as described and for the purpose set forth.

813,298. **HOOP-TRIMMER.** LOUIS J. HEGMAN, Geddes, S. D. Filed Oct. 2, 1905. Serial No. 281,081.

Claim.—1. A device of the character described comprising a base-plate, standards on said base-plate, a rod connecting said standards, a yoke having hooked ends to engage said rod, a knife on said yoke, and means for adjusting said knife.

2. A device of the character described comprising a base-plate, standards carried by said base-plate, a rod connecting said standards, a yoke having hooked ends to engage said rod, a knife on said yoke, and means for adjusting said knife.

813,299. **WATER-WHEEL.** DANIEL HUG, Denver, Colo., assignor to John T. Lund, Denver, Colo. Filed Mar. 29, 1902. Serial No. 100,643. (Model.)

Claim.—A bucket for impact water-wheels comprising side cavities and a central frog, the upper edges of the frog being overhung and the front edge or apex thereof being straight, rising from about the middle of the floor of the bucket, and being inclined slightly backward, the floor of the bucket inclining upwardly and forwardly from the bottom point of the frog to a horizontal straight lip, said upwardly-inclining portion being bounded by the side walls of the bucket, the side walls extending backwardly from the lip each in reverse curves and merging with the frog, the upper surfaces of the frog and side walls and the lip being in the same plane.

813,300. **DISINTEGRATING-MACHINE.** JOHN W. HYATT, Newark, N. J., assignor to Frank S. Warmoth, Lawrence, La. Filed May 3, 1905. Serial No. 258,701.

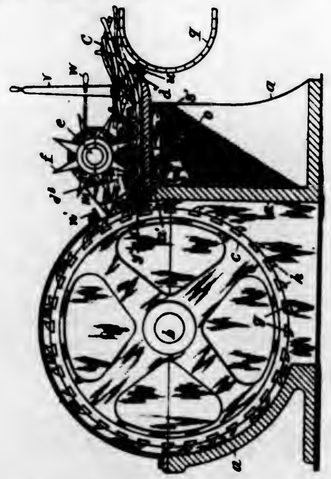

Claim.—1. In a disintegrating-machine, the combination, with the cutter-drum having teeth projected therefrom, of the feeding-table *d*, the shaft *s* over said table with feed-wheels *f* thereon, and dogs *m* operating as strippers for the teeth of the feed-wheels and thickened at their forward ends to form a continuous presser on the surface of the cane, and the drum having the cover *s* with opening into which the thickened edges of the dogs extend close to the path of the cutter-teeth.

2. In a disintegrating-machine, the combination, with the cutter-drum having teeth projected therefrom, of a feeding-table, the shaft *s* over said table with feed-wheels *f* thereon, and dogs *m* journaled upon the said shaft between the teeth of the feed-wheels, and operating as strippers for said teeth, the dogs being projected beyond the ends of the feeding-teeth and thickened to contact with one another to form a continuous presser on the surface of the cane, and the drum having the cover *s* with opening into which the thickened edges of the dogs extend close to the path of the cutter-teeth.

3. In a disintegrating-machine, the combination, with the cutter-drum having teeth projected therefrom, of the stationary feeding-table *d* inclined toward the drum and having its outer edge elevated and its inner edge provided on the under side with an inclined adjustable plate to compensate for wear, whereby the juice expressed from the cane is prevented from escape and is mingled with the disintegrated material, substantially as herein set forth.

4. In a disintegrating-machine, the combination, with the cutter-drum having teeth projected therefrom, of the feeding-table *d* inclined toward the drum and having its forward edge beveled upon its under side, and the plate *p* fitted to such bevel and supported adjustably to sustain the material adjacent to the cutters, with a longitudinal packing between the plate and the under side of the table to prevent the escape of the juice discharged from the material backwardly along such plate.

5. In a disintegrating-machine, the combination, with a cutter-drum having teeth projected therefrom, of a feeding-table adjacent to the edge of the drum, and having its outer edge curved upwardly as set forth, a carrier for delivering the material to the outer edge of the table, a movable stop to close the space between the carrier and such edge of the table, and means for supporting the stop when in operation and for withdrawing it to clear such space when it becomes clogged.

6. In a disintegrating-machine, the combination, with a cutter-drum having teeth projected therefrom, of a feeding-table adjacent to the edge of the drum with a shaft supported above the table and a series of star feed-wheels attached to such shaft, a series of weighted dogs journaled loosely to the shaft between the said wheels and extended to the forward edge of the table, and a stop above the forward ends of the dogs to limit their upward movement, the whole arranged and operated as and for the purpose set forth.

813,301. **STEAM-ENGINE.** FRANK S. HYDE, Riverside, Cal. Filed Sept. 9, 1903. Renewed July 13, 1905. Serial No. 269,571.

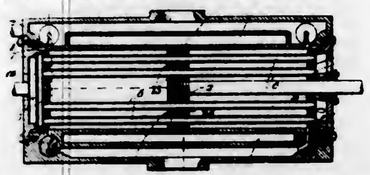

Claim.—1. In combination with a chamber for confining an expansive fluid, and a movable wall therein, of means for passing a temperature-influencing agent in segregated paths traversing the chamber.

2. In combination with a chamber for confining an expansive fluid, and a movable wall therein, of means for passing a temperature-influencing agent in segregated paths traversing the chamber and through the walls of the chamber.

3. In combination with a chamber for confining an expansive fluid, and a movable wall therein, of a stationary tube extending through the chamber and the movable wall exteriorly of the piston-rod for conveying a temperature-influencing agent.

4. In combination with a chamber for confining an expansive fluid, and a movable wall therein, of means for conveying a temperature-influencing agent in segregated paths traversing the chamber, and means for causing a circulation of the said agent through the conveying means.

5. In combination with a chamber for confining an expansive fluid, and a movable wall therein, of a series of tubes extending through the chamber, and means for introducing a temperature-influencing agent to the tubes.

6. In combination with a chamber for confining an expansive fluid, and a movable wall therein, of a series of tubes extending through the chamber and through the movable wall, and means for introducing a temperature-influencing agent to the tubes.

7. A cylinder, a piston therein with its piston-rod, and a stationary tube lying in the cylinder exteriorly of the piston-rod.

8. A cylinder, a piston therein, and a series of tubes extending through the cylinder and piston, exteriorly of the piston-rod.

9. A cylinder, a piston therein, and a series of tubes extending through the cylinder and piston and suitable packing around the tubes where they pass through the piston.

10. A cylinder, a piston therein, a series of tubes extending through the cylinder and piston, the cylinder-wall having a chamber communicating with the tubes, and means for circulating a temperature-influencing agent through the tubes and chamber.

11. A cylinder, a piston therein, heads in the ends of the cylinder having tapered holes, and a series of tubes with tapered ends supported by the heads.

12. A cylinder, a piston therein, detachable heads in the ends of the cylinder having tapered holes, and a series of tubes with tapered ends supported by the heads.

13. A cylinder, a piston therein, an end of the cylinder having a chamber, a series of tubes extending through the cylinder and piston and communicating with the chamber, a supply-passage for said chamber, and a screen between the supply-passage and the ends of the tubes.

14. A cylinder, a piston therein, a series of tubes extending through the cylinder and piston, said piston being perforated to receive the tubes and having annular recesses around the perforations on each side of the piston, annular packing-rings nested in the recesses, and plates secured to the piston and confining the packing-rings.

15. A cylinder, a piston therein, a series of tubes extending through the cylinder and piston, said piston being perforated to receive the tubes and having annular recesses around the perforations on each side of the piston, annular packing-rings nested in the recesses, plates secured to the piston and confining the packing-rings, the recesses being larger than the packing-rings to allow side movement of the same.

16. A cylinder the head end of which has a chamber, an inlet-pipe for said chamber, a piston in the cylinder, a series of tubes extending through the cylinder and piston, the cylinder having a chamber in the crank end, the tubes communicating with both said chambers, the cylinder having an annular chamber which communicates with the chamber in the crank end, and an outlet-pipe in the head end of the cylinder communicating with the annular chamber.

17. In combination, a chamber for confining an expansive fluid, a movable wall therein, means for conveying a temperature-influencing agent through the chamber, means for supplying a temperature-influencing agent connected with the said conveying means, and means for circulating said temperature-influencing agent.

18. In combination, a chamber for confining an expansive fluid, a movable wall therein, means for conveying a temperature-influencing agent through the chamber, means for supplying a temperature-influencing agent connected with the said conveying means, means for circulating said temperature-influencing agent, and means for increasing or decreasing the temperature of the said agent.

19. In combination, a cylinder, a piston therein, a series of tubes extending through the cylinder and piston, a water-heater, and piping connecting the water-heater and tubes.

20. In combination, a cylinder, a piston therein, a series of tubes extending through the cylinder and piston, a water-heater, piping connecting the water-heater and tubes, and a circulator connected between the water-heater and tubes.

21. In combination, a cylinder, a piston therein, a series of tubes extending through the cylinder and piston, a water-heater, piping connecting the water-heater and tubes, and a circulator connected between the water-heater and tubes comprising a chamber, and a propeller in the chamber.

22. In combination, a cylinder, a piston therein, a series of tubes extending through the cylinder and piston, a water-heater, piping connecting the water-heater and tubes, a circulator connected between the water-heater and tubes, and a superheater intermediate the water-heater and tubes.

23. In combination, a cylinder and its piston, means for conveying a temperature-influencing agent in definite paths through the space in the cylinder at either side of the piston for promoting uniformity of temperature.

24. In combination, a cylinder and its piston, a series of tubes traversing the space in the cylinder at either side of the piston.

25. A working cylinder, a piston therein, tubes fixed to the cylinder and extending therethrough and through the piston, and means for moving heat-conducting fluid through said tubes.

813,302. **APPARATUS FOR DISTILLING WOOD AND OBTAINING THEREFROM THE DIFFERENT BY-PRODUCTS.** WALTER W. JAMES and THOMAS L. JAMES, Rawlins Springs, Miss. Filed July 6, 1905. Serial No. 268,220.

Claim.—1. An apparatus of the character described, comprising an angular box-like retort mounted at diagonally opposite corners in a horizontal plane, and steam-coils supported by the sides of the retort, a steam-supply pipe in communication with said retort, the upper and lower diagonally opposite corners having charging and discharging openings respectively.

2. An apparatus of the character described, comprising a rectangular retort having its diagonally opposite corners mounted in standards in a horizontal plane, steam-coils vertically disposed within

the retort, adjacent the vertically-disposed sides and forming a central space between the same for the reception of the wood to be distilled, a charging-opening adjacent the upper corner, and a discharging-opening carried by the lower diagonally opposite corners and doors for closing said openings.

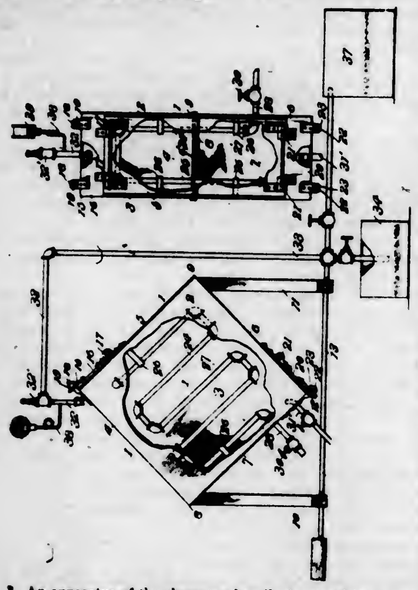

3. An apparatus of the character described, comprising a rectangular retort having its diagonally opposite corners mounted in standards in a horizontal plane, steam-coils vertically disposed within the retort adjacent the vertically-disposed sides and forming a central space between the same for the reception of the wood to be distilled, a steam-supply pipe in direct communication with said retort, a discharge-pipe in communication with the upper end of said retort, a puppet-valve within said pipe, and charging and discharging doors carried by the diagonally opposite upper and lower corners.

813,803. REINFORCING-TRUSS FOR CONCRETE. EDGAR B. JARVIS, Toronto, Canada. Filed Jan. 13, 1905. Serial No. 240,983.

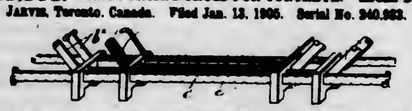

Claim.—1. In a truss for concrete beams and the like, the combination with the central bar provided with obliquely-set ends, of the side bars provided with obliquely-set ends and located on each side and extending beyond each end of the central bar, perforated clamps permanently carried by the bars and through which the bars extend for holding the bars separated and from lateral and longitudinal displacement as and for the purpose specified.

2. In a truss for concrete beams and the like, the combination with the central bar provided with obliquely-set ends, of the side bars provided with obliquely-set ends and located on each side and extending beyond the central bar, and clamps molded onto the bars and designed to hold them separated and from lateral and longitudinal displacement said molded clamps extending transversely of the side bars and central bar and forming the sole connection between them as and for the purpose specified.

3. In a truss for concrete beams and the like, the combination with the central bar provided with obliquely-set ends, of the side bars provided with obliquely-set ends and located on each side and extending beyond each end of the central bar, and clamps molded onto the bars and obliquely-shaped ends and designed to hold them separated and from lateral longitudinal displacement said molded clamps extending transversely of the side bars and central bar and forming the sole connection between them as and for the purpose specified.

4. In a truss for concrete beams and the like, the combination with the central bar provided with obliquely-set ends, of the side bars provided with obliquely-set ends and located on each side and extending beyond each end of the central bar, the said bars being provided with nicks on their edges and clamps molded onto the bars and designed to hold them separated and from lateral and longitudinal displacement said molded clamps extending transversely of the side bars and central bar and forming the sole connection between them as and for the purpose specified.

5. In a truss for concrete beams and the like, the combination with the central bar provided with obliquely-set ends, of the side bars provided with obliquely-set ends and located on each side and extending beyond each end of the central bar, clamps through which the bars extend for holding the bars separated and from lateral and longitudinal displacement, and supplemental side bars located on each side of the aforesaid bars and extending beyond the obliquely-set ends of the aforesaid bars and clamps through which the bars extend for holding the bars separated and from lateral and longitudinal displacement as and for the purpose specified.

6. In a reinforcing-truss for concrete and the like, the combination with a plurality of bars placed side by side and having nicked or roughened surfaces, of a block or clamp cast around the bars, so that the metal will flow into the nicks as and for the purpose specified.

7. In a reinforcing-truss for concrete and the like, the combination with a plurality of bars placed side by side and having nicked or roughened surfaces, of a block or clamp cast around the bars, so that the metal will flow into the nicks, and a supplemental bar extending from the cast block or clamp as and for the purpose specified.

813,804. WARP STOP-MOTION FOR LOOMS. ALLAN A. JOHNSON, Central Falls, R. I., assignor to Kip-Armstrong Company, New York, N. Y., a Corporation of New York. Filed June 10, 1905. Serial No. 264,656.

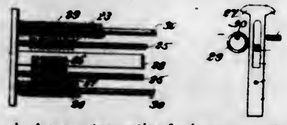

Claim.—1. A warp stop-motion for looms comprising drop devices supported in normal position by unbroken warp-threads, a normally open electric circuit adapted to be closed through its terminals by contact therewith of a fallen drop, and means to hold a drop in its fallen position when a warp-thread breaks or becomes unduly slack so as to prevent an interruption of the circuit for a definite period.

2. A warp stop-motion for looms comprising drop devices supported in normal position by unbroken warp-threads, a normally open electric circuit adapted to be closed through its terminals by contact therewith of a fallen drop, one of said terminals having means to hold a drop in its fallen position when a warp-thread breaks or becomes unduly slack.

3. A warp stop-motion for looms comprising drop devices supported in normal position by unbroken warp-threads, a normally open electric circuit adapted to be closed through its terminals by contact therewith of a fallen drop, one of said terminals having means adapted to grip a drop laterally and hold it in its fallen position when a warp-thread breaks or becomes unduly slack.

4. A warp stop-motion for looms comprising drop devices supported in normal position by unbroken warp-threads, a normally open electric circuit adapted to be closed through its terminals by contact therewith of a fallen drop, said terminals being above the plane of the warps and one of them having means to hold a drop in its fallen position when a warp-thread breaks or becomes unduly slack.

5. A warp stop-motion for looms comprising drop devices supported in normal position by unbroken warp-threads, a normally open electric circuit adapted to be closed through its terminals by contact therewith of a fallen drop, one of said terminals being formed of separable yielding sections between which the drop is adapted to be held when a warp-thread breaks or becomes unduly slack.

6. A warp stop-motion for looms comprising drop devices supported in normal position by unbroken warp-threads, a normally open electric circuit adapted to be closed through its terminals by contact therewith of a fallen drop, one of said terminals consisting of a coiled spring between the convolutions of which the drops are adapted to enter when a warp-thread breaks or becomes unduly slack.

7. A warp stop-motion for looms comprising drop devices supported in normal position by unbroken warp-threads, a normally open electric circuit adapted to be closed through its terminals by contact therewith of a fallen drop, said drop devices having slots therein through which one of said terminals is adapted to pass, the other terminal being supported outside of the drops, one of said terminals having means to hold a drop in its fallen position when a warp-thread breaks or becomes unduly slack.

8. A warp stop-motion for looms comprising drop devices supported in normal position by unbroken warp-threads, a normally open electric circuit adapted to be closed through its terminals by contact therewith of a fallen drop, a projection extending from said drops adapted to engage and be held by one of said terminals when a drop falls.

9. A warp stop-motion for looms comprising drop devices supported in normal position by unbroken warp-threads, a normally open electric circuit having terminals extending transversely of the warps, said drop devices having a projection extending from the body thereof and adapted to contact with one of said terminals which lies outside the path of descent of the body of the drop, and one of said terminals having means to hold a drop in its fallen position when a warp-thread breaks or becomes unduly slack.

10. A warp stop-motion for looms comprising drop devices supported in normal position by unbroken warp-threads, a normally open electric circuit adapted to be closed through its terminals by contact therewith of a fallen drop, said drop devices being formed of sheet metal having a longitudinally-slotted body with a contact projection extending therefrom, one of said circuit-terminals having means to hold a drop in its fallen position when a warp-thread breaks or becomes unduly slack.

11. A warp stop-motion for looms comprising drop devices supported in normal position by unbroken warp-threads, a normally open electric circuit adapted to be closed through its terminals by contact therewith of a fallen drop, said drop devices being formed of sheet metal having an elongated body provided with two slots therein one of which is open at one end and the other closed at both ends, and one of said circuit-terminals having means to hold a drop in its fallen position when a warp-thread breaks or becomes unduly slack.

12. A warp stop-motion for looms comprising drop devices supported in normal position by unbroken warp-threads, a normally open electric circuit adapted to be closed through its terminals by contact therewith of a fallen drop, said drop devices being formed of sheet metal having an elongated body provided with two slots therein one of which is open at one end and the other closed at both ends, one of said circuit-terminals passing through the closed slots and serving also as a guide for the drops, and one of the terminals having means to hold a drop in its fallen position when a warp-thread breaks or becomes unduly slack.

13. A warp stop-motion for looms comprising drop devices supported in normal position by unbroken warp-threads, a normally open electric circuit adapted to be closed through its terminals by contact therewith of a fallen drop, said drop devices being formed of sheet metal having an elongated body provided with two slots therein one of which is open at one end and the other closed at both ends, a contact projection extending from the body of the drop, one of said circuit-terminals passing through the closed slots and serving also as a guide for the drops, and the other terminal lying outside the path of descent of the body of a falling drop and adapted to receive and hold the drop by said projection when a warp-thread breaks or becomes unduly slack.

14. A warp stop-motion for looms comprising drop devices supported in normal position by unbroken warp-threads, a normally open electric circuit adapted to be closed through its terminals by contact therewith of a fallen drop, said drop devices having a projection extending from the body thereof above the warp and adapted to contact with one of the circuit-terminals, the point of contact of said terminal and projection being outside the path of descent of the body of the drop, and one of said terminals having means to hold a drop in its fallen position when a warp-thread breaks or becomes unduly slack.

15. A warp stop-motion for looms comprising drop devices supported in normal position by unbroken warp-threads, a normally open electric circuit adapted to be closed through its terminals by contact therewith of a fallen drop said circuit-terminals extending transversely of the warps, said drop devices being arranged in banks or groups between adjacent circuit-terminals and each drop having a contact projection, one of said terminals having means to hold a drop in its fallen position when a warp-thread breaks or becomes unduly slack.

16. A warp stop-motion for looms comprising drop devices supported in normal position by unbroken warp-threads, a normally open electric circuit adapted to be closed through its terminals by contact therewith of a fallen drop said circuit-terminals extending transversely of the warps and one of them arranged between adjacent banks or groups of drop devices and having means to hold a drop in its fallen position, and a projection extending from the body of the drop and adapted to contact with and be held by said terminal when a warp-thread breaks or becomes unduly slack.

17. A warp stop-motion for looms comprising drop devices supported in normal position by unbroken warp-threads, a normally open electric circuit having terminals extending transversely of the warps and lying outside the path of descent of the body of a falling drop, said drop devices having projections extending from the body thereof adapted to contact with said terminals, one of said terminals having means to hold a drop in its fallen position when a warp-thread breaks or becomes unduly slack.

813,805. SUPPLY AND EXHAUST VALVE MECHANISM FOR MOTORS. WILBUR H. JOHNSON, Cumberland, Md. Filed July 5, 1903. Serial No. 164,626.

Claim.—1. In a motor, the combination of a motor, a piston operating therein, a fluid-supply pipe, a controlling-valve in said pipe, reciprocating means governed by the piston for periodically operating said valve, an exhaust-valve in the supply-pipe controlling the exhaust of spent fluid from the motor to the atmosphere, and means of which the first-mentioned means form a part for operating the exhaust-valve alternately with the said controlling-valve.

2. In a motor, the combination of a motor-cylinder, a piston operating therein, a supply-pipe for an impelling fluid, a controlling-valve in said pipe, an exhaust-valve in the pipe operated alternately with the controlling-valve to control the supply and exhaust of the impelling medium, a reciprocating rod operatively connected with the controlling-valve, a second rod connected with the piston-rod and operating said reciprocating rod to periodically open and close said controlling-valve, and means governed by the piston for controlling the exhaust-valve, substantially as described.

3. In a motor, the combination of a motor-cylinder, a piston operating therein, a supply and exhaust pipe, a controlling-valve in said pipe governing the supply of the impelling medium to the cylinder, an exhaust-valve slidably mounted in the pipe, an arm or contact device on the piston-rod, means operated by said arm or contact device to actuate the controlling-valve, an arm connected to the stem of the exhaust-valve and slidably connected to the piston-rod, said arm being engaged by the first-named arm or contact device upon the return stroke of the piston to close the exhaust-valve, and a second contact device on the piston-rod adapted upon the outstroke of the

piston to engage said sliding arm and open the exhaust-valve, substantially as described.

4. In a motor, the combination with a motor-cylinder, and a piston operating therein, a valve controlling the inlet of a fluid-impelling agent to the cylinder, a reciprocating rod operated by the piston, a second reciprocating rod, a link connecting said second reciprocating rod with the valve, and controlling connections periodically operating under the action of the first-named reciprocating rod to successively transfer motion to the other reciprocating rod to actuate said link to open and close the valve.

5. In a motor, the combination with a motor-cylinder and a piston operating therein, of a fluid-supply valve, a reciprocating rod operatively connected to the piston, said rod being provided with spaced tappet devices, a second reciprocating rod, a link connecting said second reciprocating rod with the valve, and a throw-lever pivotally connected with the second reciprocating rod and adapted to be engaged by said tappet devices to transfer motion to said rod and link to open and close the valve.

6. In a motor, the combination with a motor-cylinder and a piston operating therein, of a supply and exhaust pipe, a rotary supply-valve in said pipe, a sliding exhaust-valve in the pipe, a reciprocating rod, an arm rigidly connecting one end of said rod with the piston-rod, the opposite end of said rod being provided with spaced striker-pins, an arm rigidly connected to the stem of the exhaust-valve and slidably connected with the piston-rod and adapted to be engaged by the arm of the reciprocating rod on the return stroke of the piston to close the valve, a projection on the piston-rod adapted to engage said sliding arm upon the outstroke of the piston to open the exhaust-valve, a second reciprocating rod, a link connecting said second reciprocating rod with the rotary supply-valve, and a pivoted throw-lever connected with the first reciprocating rod and adapted to be engaged by said spaced striker-pins on the second reciprocating rod to open and close the supply-valve alternately with the exhaust-valve on opposite strokes of the piston, substantially as described.

818,306. TOY. IRA KINMAN, Pearl City, Ill. Filed Sept. 30, 1905. Serial No. 280,805.

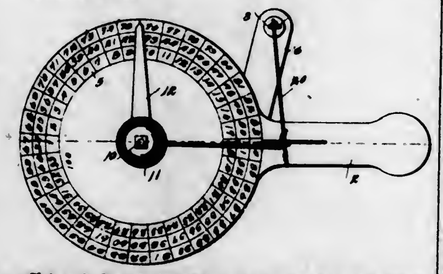

Claim.—1. In a device of the class described, a dial bearing characters on its face, a pointer rotatively mounted on the dial for travel thereover, an arm connected with the pointer, a pivoted trigger designed for engagement with the arm to hold the pointer against movement, a spring-tensioned element adapted to act upon and for imparting movement to the pointer, and means for varying the tension of the element.

2. In a device of the class described, a dial bearing characters on its face, a pointer rotatively mounted on the dial for travel thereover, an arm connected at one end with and projecting from the pointer, a trigger designed to engage the arm for holding the pointer against movement, a clamping member sustained at a point remote from the trigger and adapted for rotation, and an elastic element engaged with the clamping member and adapted for engagement with the arm.

818,307. WARP STOP-MOTION FOR LOOMS. FREDERIC H. KIP, Montclair, N. J., and FREDERIC M. ARMSTRONG, Pawtucket, R. I., assignors to Kip-Armstrong Company, New York, N. Y., a Corporation of New York. Filed Mar. 3, 1905. Serial No. 248,261.

Claim.—1. In a warp stop-motion for looms the combination of a controlling-circuit for setting in operation the stopping mechanism, a harness-frame having a series of heddles suspended therein, a switch included in said circuit and located outside of said frame, and means to close the circuit at said switch when the frame is at or near its lowermost position.

2. In a warp stop-motion for looms the combination of a controlling-circuit for setting in operation the stopping mechanism, a harness-frame having a series of heddles suspended therein, a switch included in said circuit and located outside of said frame, and means to break the circuit at said switch when the frame is at or near its uppermost position.

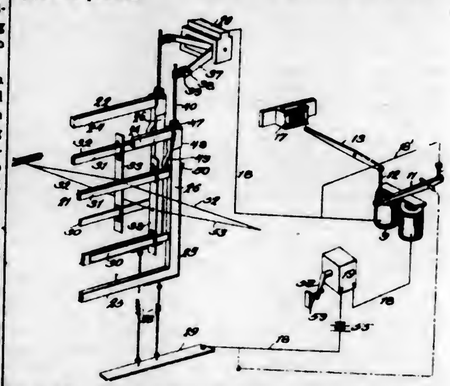

3. In a warp stop-motion for looms the combination of a controlling-circuit for setting in operation the stopping mechanism, a harness-frame having a series of heddles suspended therein, a switch included in said circuit and located outside of said frame, and means to alternately close and break the circuit at said switch as the frame is at or near its lowermost and uppermost positions respectively.

4. In a warp stop-motion for looms the combination of a controlling-circuit for setting in operation the stopping mechanism, a plurality of harness-frames each having a series of heddles suspended therein, a switch included in said circuit and electrically connected to each of the harness-frames, and means to alternately close and break the circuit at said switch for each frame as it is at or near its lowermost and uppermost positions respectively.

5. In a warp stop-motion for looms the combination of a controlling-circuit for setting in operation the stopping mechanism, a harness-frame having a series of heddles suspended therein, a switch included in said circuit and located outside of said frame, and means to operate said switch in synchronism with the movement of said frame so as to alternately close and break the circuit at said switch when the frame is at or near its lowermost and uppermost positions respectively.

6. In a warp stop-motion for looms the combination of a controlling-circuit for setting in operation the stopping mechanism, a harness-frame having a series of heddles suspended therein, a switch included in said circuit and located outside of said frame, a connection between said frame and said switch whereby the latter is controlled to alternately close and break the circuit when the frame is at or near its lowermost and uppermost positions respectively.

7. A warp stop-motion for looms comprising a controlling-circuit for setting in operation the stopping mechanism, a harness-frame having a heddle-supporting bar secured therein said bar being included in said circuit, and means comprising a gravity drop device for closing the circuit through said bar when a warp-thread breaks or becomes unduly slack.

8. A warp stop-motion for looms comprising a controlling-circuit for setting in operation the stopping mechanism, a harness-frame having a heddle-supporting bar secured therein above the warp said bar being included in said circuit, and means comprising a gravity drop device for closing the circuit through said bar when a warp-thread breaks or becomes unduly slack.

9. In a warp stop-motion for looms the combination of a controlling-circuit for setting in operation the stopping mechanism, a harness-frame carrying a fixed contact-bar said bar being included in said circuit, a series of heddles suspended on said bar, said circuit being closed through said bar by the falling of a heddle when a warp-thread breaks or becomes unduly slack to set in operation the stopping mechanism.

10. In a warp stop-motion for looms the combination of a controlling-circuit for setting in operation the stopping mechanism, a harness-frame carrying a fixed contact-bar, said bar comprising two members insulated from each other the terminals of said circuit being electrically connected respectively to said members, a series of heddles suspended on said bar, said circuit being adapted to be closed through said bar when a warp-thread breaks or becomes unduly slack to set in operation the stopping mechanism.

11. A warp stop-motion for looms comprising a controlling-circuit for setting in operation the stopping mechanism, a harness-frame having a heddle-supporting bar included in said circuit, heddles having slots through which said bar is passed, said circuit being closed through said bar by the falling of a heddle when a warp-thread breaks or becomes unduly slack to set in operation the stopping mechanism.

12. A warp stop-motion for looms comprising a controlling-circuit for setting in operation the stopping mechanism, a harness-frame having a heddle-supporting bar included in said circuit, heddles having slots through which said bar is passed, the point of suspension of said heddles being above the warp, said circuit being closed through said bar by the falling of a heddle when a warp-thread breaks or becomes unduly slack to set in operation the stopping mechanism.

13. A warp stop-motion for looms comprising a controlling-circuit for setting in operation the stopping mechanism, a harness-frame having a series of heddles therein, a supporting-bar for said heddles secured to the frame and included in said circuit, the tension of the warp-threads on the heddles during the normal operation of the loom alternately closing and breaking the circuit through said supporting-bar when the harness-frame is at or near its uppermost and lowermost positions respectively, said circuit also being closed through said bar by the falling of a heddle when a warp-thread breaks or becomes unduly slack to set in operation the stopping mechanism.

14. In a warp stop-motion for looms the combination of a controlling-circuit for setting in operation the stopping mechanism, a harness-frame to which the terminals of said circuit are electrically connected, a bar electrically connected to said frame and carried thereby, and metallic heddles suspended in said frame and adapted when fallen to contact with said bar to close the circuit.

15. In a warp stop-motion for looms the combination of a controlling-circuit for setting in operation the stopping mechanism, a harness-frame having a series of heddles suspended therein, said harness-frame being included in said circuit and means operative during the normal running of the loom to close said circuit at a point outside of said frame when said frame is at or near its lowermost position and at the same time to break the circuit through one of the heddle-supporting bars.

16. In a warp stop-motion for looms the combination of a controlling-circuit for setting in operation the stopping mechanism, a harness-frame having a series of heddles suspended therein, said harness-frame being included in said circuit and means operative during the normal running of the loom to break said circuit at a point outside of said frame when said frame is at or near its uppermost position and at the same time to close the circuit through one of the heddle-supporting bars.

17. In a warp stop-motion for looms the combination of a controlling-circuit for setting in operation the stopping mechanism, a harness-frame having a series of heddles suspended therein, said frame being included in said circuit, a switch also included in said circuit and located outside of said frame and means operative during the normal running of the loom to close the circuit at said switch when it is broken at a point within the harness-frame.

18. In a warp stop-motion for looms the combination of a controlling-circuit for setting in operation the stopping mechanism, a harness-frame carrying a fixed contact-bar, a series of heddles suspended on said bar, said heddles being controlled by the tension of the warp-threads during the normal running of the loom to close and break the circuit through said bar when the frame is at or near its uppermost and lowermost positions respectively, and means to close and break said circuit at a point outside of the frame at the time when it is broken and closed at said bar respectively.

19. In a warp stop-motion for looms the combination of a controlling-circuit for setting in operation the stopping mechanism, a harness-frame carrying a fixed contact-bar said bar being included in said circuit, a series of heddles suspended on said bar and controlled by the tension of the warp-threads to break and close the circuit when the frame is at or near its lower and upper most positions respectively, a switch located outside of said frame, and means to operate said switch in synchronism with said frame so that during the normal running of the loom the said circuit will be closed at the switch when it is broken at said terminal and broken at the switch when closed at said terminal.

20. A warp stop-motion for looms comprising a controlling-circuit for setting in operation the stopping mechanism, said circuit having two points at which it is alternately broken and closed during the normal running of the loom, one such point being within the harness-frame and the other outside thereof, and means to close the circuit at said outside point only when the frame is at or near its lower most position.

21. A warp stop-motion for looms comprising a controlling-circuit for setting in operation the stopping mechanism, a harness-frame carrying a fixed contact-bar, said bar comprising a body member and a blade insulated from said member and projecting above the same, a series of heddles suspended on said bar, said circuit being adapted to be closed through said bar when a warp-thread breaks or becomes unduly slack to set in operation the stopping mechanism.

22. A warp stop-motion for looms comprising a controlling-circuit for setting in operation the stopping mechanism, a harness-frame carrying a fixed contact-bar, said bar comprising a body member and a blade insulated from said member, a series of heddles supported on said bar, a switch located outside of said frame and means to actuate the same to establish an electrical connection between the switch and said blade when the said frame is at or near its lowermost position, whereby said circuit will be completed by a fallen heddle contacting with said blade when the frame reaches said position.

23. A warp stop-motion for looms comprising a controlling-circuit for setting in operation the stopping mechanism, a harness-frame carrying a fixed contact-bar, said bar comprising a body member and a blade insulated from said member, a series of metallic heddles suspended on said bar, a switch to which one terminal of said circuit is connected located outside of said frame, an electrical connection between said switch and said blade, a plate on said frame of conductive material to which the other terminal of said circuit and said body member are connected, the said parts being so arranged that the circuit will be closed through said switch and said bar at the same time only when the frame is at or near its lowermost position.

24. A warp stop-motion for looms comprising a controlling-circuit for setting in operation the loom-stopping mechanism, a plurality of harness-frames, a switch having a plurality of levers included in said circuit and each harness-frame having connected thereto a corresponding switch-lever and each lever having a contact and a non-conducting face, and contact-fingers to which one terminal of said circuit is connected, the parts being so arranged that the circuit will be closed through said switch for a given frame only when said frame is at or near its lowermost position.

25. In a warp stop-motion for looms the combination of a controlling-circuit for setting in operation the stopping mechanism, means for closing said circuit when a warp-thread breaks or becomes unduly slack, an electromagnet included in said circuit, a dagger connected to the armature of said magnet and means to hold said armature in its attracted position until after the loom has been knocked off.

26. In a warp stop-motion for looms the combination of a controlling-circuit for setting in operation the stopping mechanism, means for closing said circuit when a warp-thread breaks or becomes unduly slack, an electromagnet included in said circuit, a dagger connected to the armature of said magnet, and a shunt-circuit adapted to be closed by said armature to maintain the coils of the electromagnet energized until after the loom has been knocked off.

27. In a warp stop-motion for looms the combination of a controlling-circuit for setting in operation the stopping mechanism, a shipper-lever, an electromagnet and a contact-switch included in said circuit, a dagger connected to the armature of said magnet, means to hold said armature in its attracted position until after the shipper-lever has been released, and means on the shipper-lever to operate said cut-out switch to break the circuit after said lever has been released.

818,308. WARP STOP-MOTION FOR LOOMS. FREDERIC H. KIP, Montclair, N. J., and ELMER GREENWOOD, Bridgeport, Conn., assignors to Kip-Armstrong Company, New York, N. Y., a Corporation of New York. Filed Mar. 3, 1905. Serial No. 248,262.

Claim.—1. In a warp stop-motion for looms the combination of a controlling-circuit for setting in operation the stopping mechanism, a harness-frame having a series of heddles suspended therein, a switch comprising plates to which the terminals of said circuit are connected and shoes carried by the harness-frame and adapted to break and close the circuit at said plates as the frame alternately rises and falls.

2. In a warp stop-motion for looms the combination of a controlling-circuit for setting in operation the stopping mechanism, a harness-frame having a series of heddles suspended therein, a switch comprising plates to which the terminals of said circuit are connect-

ed, a slide-block having shoes connected to said frame and adapted to break and close the circuit through said plates as the frame alternately rises and falls.

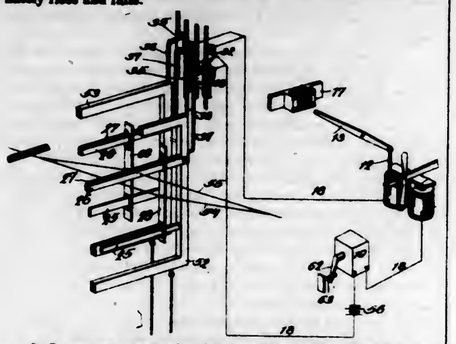

3. In a warp stop-motion for looms the combination of a controlling-circuit for setting in operation the stopping mechanism, a harness-frame having a fixed contact-bar secured thereto, a series of heddles suspended on said bar, a switch comprising plates to which the terminals of said circuit are connected and shoes carried by the harness-frame and electrically connected to said bar, said shoes being adapted to break and close the circuit through said plates as the frame alternately rises and falls.

4. In a warp stop-motion for looms the combination of a controlling-circuit for setting in operation the stopping mechanism, a harness-frame having a fixed contact-bar secured thereto, said bar comprising two members insulated from each other, a series of heddles suspended on said bar, a switch comprising plates to which the terminals of said circuit are connected, shoes carried by said frame and connected respectively to the members of said bar, said shoes being adapted to break and close the circuit through said plates as the frame alternately rises and falls.

5. In a warp stop-motion for looms the combination of a controlling-circuit for setting in operation the stopping mechanism, a harness-frame having a fixed contact-bar secured thereto, said bar comprising two members insulated from each other, a series of heddles suspended on said bar, rods of conductive material secured to the members of said bar and carrying shoes at their upper ends, contact-plates located outside of said frame and to which the circuit-wires are connected, the parts being so related to each other that during the normal running of the loom the circuit will be closed through said plates by contact of the shoes therewith only when the harness-frame is at or near its lowermost position the tension of the warp-threads at such times on the heddles serving to break the circuit at said contact-bar.

6. In a warp stop-motion for looms the combination of a controlling-circuit for setting in operation the stopping mechanism, a harness-frame having a fixed contact-bar secured thereto, said bar comprising two members insulated from each other, a series of heddles suspended on said bar, rods of conductive material secured to the members of said bar and carrying shoes at their upper ends, a support of insulating material having vertical bars, said shoes being carried by blocks supported between said guide-bars, contact-plates secured to said support and to which the circuit-wires are connected, whereby during the normal running of the loom as the frame is raised and lowered the circuit will be closed and broken alternately at said plates.

813,309. WARP STOP-MOTION FOR LOOMS. FREDERIC B. KIP, Montclair, N. J., and EDWIN C. SAYER, Central Falls, R. I., assignors to Kip-Armstrong Company, New York, N. Y., a Corporation of New York. Filed Oct. 27, 1905. Serial No. 284,662.

Claim.—1. In a warp stop-motion for looms the combination of a controlling-circuit for setting in operation the stopping mechanism, a harness-frame having a series of heddles suspended therein, a switch included in said circuit, pattern-forming mechanism, and means actuated directly by said pattern-forming mechanism for controlling the opening and closing of said switch.

2. In a warp stop-motion for looms the combination of a controlling-circuit for setting in operation the stopping mechanism, a harness-frame having a series of heddles suspended therein, a switch included in said circuit, pattern-forming mechanism, and means actuated directly by said pattern-forming mechanism to alternately close and break the circuit at said switch when the frame is at or near its lowermost and uppermost positions respectively.

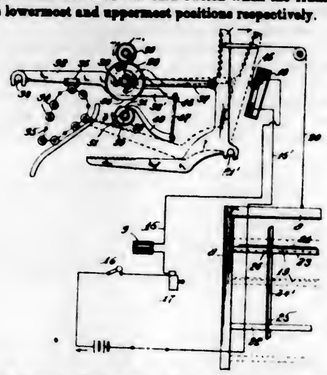

3. In a warp stop-motion for looms the combination of a controlling-circuit for setting in operation the stopping mechanism, a plurality of harness-frames each having a series of heddles therein, circuit-wires leading to each of said frames, a switch included in said circuit comprising contacts corresponding to the harness-frames, pattern-forming mechanism, and means actuated directly by said pattern-forming mechanism for closing the circuit through those contacts of which the corresponding frames are at or near their lowermost positions, and breaking the circuit through those contacts of which the corresponding frames are at or near their uppermost positions.

4. In a warp stop-motion for looms the combination of a controlling-circuit for setting in operation the stopping mechanism, a harness-frame carrying a contact-bar, said bar being included in said circuit, a series of heddles suspended on said bar and controlled by the tension of the warp-threads to break and close the circuit thereat when the frame is at or near its lowermost and uppermost positions respectively, a switch included in said circuit, and pattern-forming mechanism for directly controlling said switch so that during the normal running of the loom the circuit will be closed at the switch when it is broken at said terminal and broken at the switch when closed at said terminal.

5. In a warp stop-motion for looms the combination of a controlling-circuit for setting in operation the stopping mechanism, a harness-frame having a heddle-supporting bar included in said circuit, said circuit being closed through said bar by a fallen heddle when a warp-thread breaks or becomes unduly slack, a switch also included in said circuit, and pattern-forming mechanism for directly controlling said switch so as to close the circuit at said switch when the frame is at or near its lowermost position.

6. In a warp stop-motion for looms the combination of a controlling-circuit for setting in operation the stopping mechanism, a plurality of harness-frames, a switch included in said circuit and having contacts corresponding to the harness-frames, pattern-forming mechanism, and means actuated directly by said pattern-forming mechanism for closing the circuit of a given frame when said frame is at or near its lowermost position, and for breaking the circuit when the frame is at or near its uppermost position.

7. In a loom the combination with the pattern-forming mechanism, of mechanism for stopping the loom, a controlling-circuit for said stopping mechanism, a switch included in said circuit, said pattern-forming mechanism comprising a gear-wheel and means for imparting thereto a half-rotation to lower or raise the corresponding harness-frame, and means actuated by said gear to control the closing and opening of said switch.

8. In a loom the combination with the pattern-forming mechanism, of mechanism for stopping the loom, a controlling-circuit for said stopping mechanism, a switch included in said circuit, said pattern-forming mechanism comprising a gear-wheel and means for imparting thereto a half-rotation to lower or raise the corresponding harness-frame, a jack connected to said gear, said switch being so disposed as to be controlled by the movements of said jack so as to close and break the circuit at said switch when the corresponding harness-frame is at or near its lowermost and uppermost positions respectively.

9. In a warp stop-motion for looms the combination of a controlling-circuit for setting in operation the stopping mechanism, harness-frames each having a series of heddles suspended therein, a switch included in said circuit, jacks to which said frames are connected, means for actuating said jacks to lower and raise the frames in the formation of the shed, said switch being so disposed as to be controlled by said jacks to close and break the circuit at said switch when the corresponding frames are at their lowermost and uppermost positions respectively.

10. In a warp stop-motion for looms the combination of a controlling-circuit for setting in operation the stopping mechanism, a plurality of harness-frames, each frame having a series of heddles suspended therein, a switch included in said circuit and having contacts corresponding to the harness-frames, pattern-forming mechanism comprising gear-wheels and means for rotating the same, and means actuated by said gears to control the closing and opening of the corresponding switch-contacts.

813,310. NAIL-SUPPLYING DEVICE FOR SHOE-NAILING MACHINES. WILHELM KNECHT, Stuttgart, Germany. Filed June 30, 1905. Serial No. 267,576.

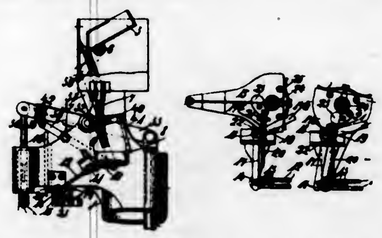

Claim.—1. In a nailing-machine, an inclined and grooved nail-guide, a pivotally-mounted recessed arm at the lower end of the guide, a stop-rod for engaging and holding the row of nails in the guide after the entrance of the lowermost nail into said recess, means for actuating the rod, and means for transmitting movement from the rod to the arm.

2. In a nailing-machine, an inclined and grooved nail-guide, a pivoted arm arranged to prevent the passage of the nails from the guide, said arm having a nail-receiving recess, a stop-rod arranged to enter to the rear of the lowermost nail, means for reciprocating the rod, and means for moving the arm to nail-discharging position.

3. In a nailing-machine, an inclined and grooved nail-guide, a pivoted arm arranged to prevent the passage of the nails from the guide, a slidable stop-rod movable across the guide, a cam for moving the rod in one direction, means for transmitting movement from the rod to the arm, and springs for returning the rod and arm to initial position.

4. In a nailing-machine, a nail-guide, a movable carrier having a pair of spring-closed recessed arms arranged to receive successive nails from the guide, a nail-driver, nail-holding jaws below the driver, means for moving the carrier between the guide and jaws, and means for opening the arms of the carrier to deliver the nail to the jaws.

5. In a nailing-machine, a nail-guide, a movable carrier having a pair of spring-closed recessed arms arranged to receive successive nails from the guide, means supported by the carrier for effecting delivery of nails from the guide, a nail-driver, nail-holding jaws below the driver, means for moving the carrier between the guide and jaws and means for opening the arms of the carrier to deliver the nail to the jaws.

6. The combination with a nail-driver, of a pair of spring-closed jaws having recesses to receive a nail-head, a spring-elevated carrying-rod for said jaws, the jaws being movable with the driver during the first portion of the downward movement of the latter, and a stationary wedge-cam arranged between and adapted to open the jaws in advance of the completion of the driving operation.

813,311. RAILWAY-CROSSING. GEORGE W. LANCASTER, Petersburg, Va. Filed July 19, 1905. Serial No. 270,269.

Claim.—1. The combination with intersecting pairs of railway-tracks, of a pair of supplemental rails parallel with one of the tracks of each pair on opposite sides of the intersecting point, automatic means for holding said supplemental rails against the adjacent tracks, signals controlled by said supplemental rails, a pair of derail-switches upon each pair of tracks, and means operable subsequent to and independent of the rails on one pair of tracks for opening the derail-switches upon the other pair of tracks.

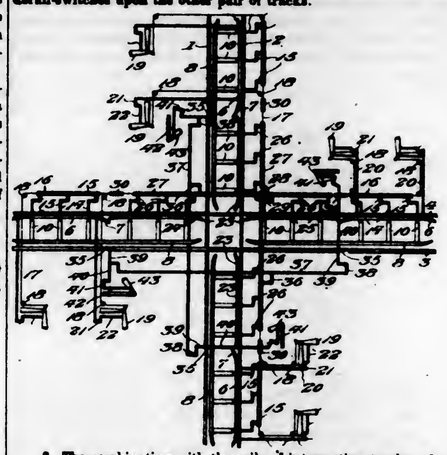

2. The combination with the rails of intersecting tracks, of a pair of supplemental rails in each track on each side of the point of crossing, automatic means for holding said rails in a prescribed position to be moved by the wheels of a car, signals controlled by one of the rails of each pair of supplemental rails, a derail-switch in each track on each side of the point of crossing, and means operated by the other rail of each pair of supplemental rails whereby the movement of the said supplemental rail on either side of the crossing in either track will open the derail-switches in the other track.

3. In a railway-crossing, the combination with the rails of intersecting tracks, of signal and switch operating rails in each track on each side of the point of crossing, derailing-switches in the tracks, the switches of one track being operatively connected with the switch-operating rails of the other track, signals alongside each track on opposite sides of the point of crossing, said signals being connected with said switch-operating rails, and means for preventing the operation of the other signals when any one signal is operated.

4. In a railway-crossing, the combination with the rails of intersecting tracks, of derail-switches in the tracks on opposite sides of the point of crossing, switch-arms associated with the tracks on opposite sides of the point of crossing, a switch and a signal operating rail in each track on each side of the crossing, automatic means for maintaining said rails in a prescribed position for operation by the wheels of a car, flexible connections between the series of signals for resisting the operation of said signals, expansible devices in said connections for permitting the operation of any one signal when the others have been operated, and connections between the switch-operating rails of one track and the derailing-switches of the other track.

5. In a signaling and derailing system for railway-crossings, the combination with the rails of intersecting tracks, of signals for said tracks, train-operated means controlling said signals, and derailing means between said signal-controlling means and crossing, for derailing a train running past a danger-set signal.

6. The combination with intersecting pairs of railway-tracks, of a pair of supplemental rails parallel with one of the tracks of each pair on opposite sides of the intersecting point, automatic means for holding said supplemental rails against the adjacent tracks, signals controlled by said supplemental rails, a pair of derail-switches upon each pair of tracks, means operable subsequent to and independent of the rails on one pair of tracks for opening the derail-switches upon the other pair of tracks, and a signal associated with each derail-switch.

813,312. DRY METER FOR GAS, AIR, AND LIKE FLUIDS. DANIEL MACVEY, Edinburgh, Scotland. Filed Jan. 6, 1903. Serial No. 138,902.

Claim.—1. The combination with an ordinary consumer's meter for the purpose of measuring gas, of an adjustable pressure governor or regulator forming an integral part of the meter and a graduated index-key extending from outside the meter to the adjustable governor.

2. The combination with an ordinary consumer's meter for the purpose of measuring gas, of a valve in the meter-way tending to close by the gas-pressure, a lever acting on the valve to open it and an adjustable weight on the lever and a graduated index-key extending from outside the meter-case and adapted to adjust the weight on the lever.

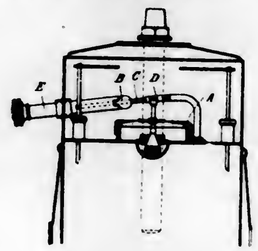

813,313. CIRCULAR KNIFE AND RETAINING-GEAR THEREFOR FOR CLOTH-CUTTING MACHINES. HENRY A. MEYER, Cincinnati, Ohio, assignor to The Wolf Electrical Promoting Company, Cincinnati, Ohio, a Corporation of Ohio. Filed Dec. 4, 1905. Serial No. 290,230.

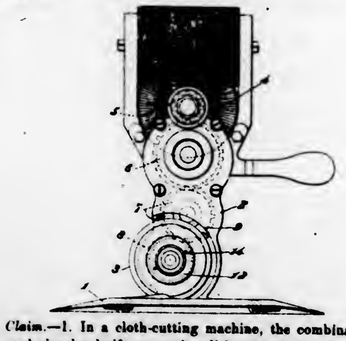

Claim.—1. In a cloth-cutting machine, the combination of a gear and circular knife or cutting-disk carried thereby, the gear-teeth having short or truncated base extensions at the outer side of the gear, and having a reduced threaded hub projecting from the same side, the knife having a central opening formed with notches fitting over said base extensions of the gear-teeth, and a collar screwed on said hub against the knife and clamping it against the gear.

2. In a cloth-cutting machine, the combination of the circular knife and retaining-gear therefor, the latter having its gear-teeth formed at one side with thin and short or truncated base extensions, the knife having a central opening formed with notches fitting over such base extensions, and means for clamping the knife in such position against the side of the gear.

3. A circular knife and retaining-gear for cloth-cutting machines, wherein the gear-teeth are formed with short or truncated thin base extensions, and the knife has a central opening formed with notches fitting over such extensions, and a collar screwed to the hub of the gear and clamping the knife against the side of the gear.

813,314. OIL-EXTRACTOR. HENRY B. MOFFAT, Woodstock, Canada. Filed Nov. 3, 1904. Serial No. 231,944.

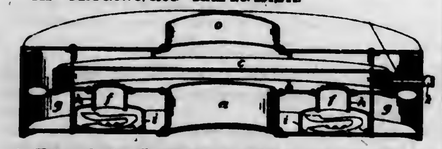

Claim.—1. An oil-extractor comprising a separating-chamber having inlet and outlet ports for the exhaust-steam, an expansion-chamber inclosing the separating-chamber and in circulation with the outlet-port of the separating-chamber and having an outlet-port for the exhaust-steam and a vacuum-breaking means for the expansion and separating chambers.

2. An oil-extractor for exhaust-steam comprising a separating-chamber having inlet and outlet ports for the exhaust-steam, an expansion-chamber inclosing the separating-chamber, oil-cups within the expansion-chamber opposed to the outlet-ports for the separating-chamber and means for breaking the vacuums in the separating and expansion chambers.

3. An oil-extractor for exhaust-steam comprising a separating-chamber having inlet and outlet ports for the exhaust-steam, an expansion-chamber inclosing the separating-chamber, oil-cups within the expansion-chamber opposed to the outlet-ports for the separating-chamber, means for breaking the vacuums in the separating and expansion chambers, and an automatically-operated controlling-valve for the vacuum-breaking means.

813,315. CANDY-MACHINE. ALBERT MOSEBACH, Philadelphia, Pa., assignor to himself, Henry Mosebach, Sr., and Henry Mosebach, Jr., copartners, trading as H. Mosebach & Sons, Philadelphia, Pa. Filed May 13, 1905. Serial No. 260,279.

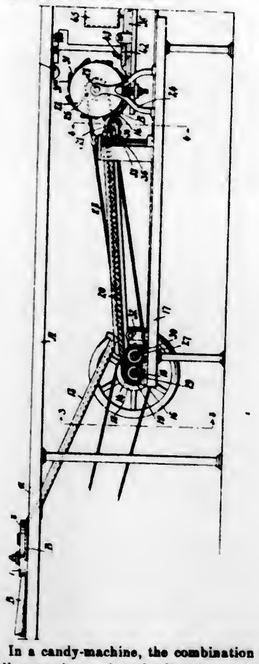

Claim.—1. In a candy-machine, the combination with a feed-table, of an endless carrier, a chute leading from said table to the carrier, means for driving said carrier, a revoluble indenting-wheel adjacent the path of said carrier, means for actuating said wheel at the same rate of speed as the carrier, whereby the material upon the carrier is indented at intervals during its traverse, means for cooling the indented material, and means for breaking said material at the indented portions.

2. In a candy-machine, the combination of an endless carrier, a trough or guide therefor, an indenting-wheel beneath which said carrier passes, and by which wheel the material upon the carrier is indented, means for vertically adjusting said trough or guide, means for cooling the indented material, and means for breaking said material at the indented portions.

3. In a candy-machine, the combination of an endless carrier, a trough or guide therefor pivoted at one end, means for vertically adjusting said trough or guide, at its opposite end, an indenting-wheel beneath which the carrier passes and by which wheel the material upon the carrier is indented, means for cooling the indented material, and means for breaking said material at the indented portions.

4. In a candy-machine, the combination of an endless carrier, an indenting-wheel beneath which said carrier passes and by which wheel the material upon the carrier is indented, a guide-roller for said carrier adjacent the indenting-wheel, means for vertically adjusting said roller, means for cooling the indented material, and means for breaking said material at the indented portions.

5. In a candy-machine, the combination of an endless carrier, a trough or guide therefor, a roller on said trough or guide, an indenting-wheel beneath which said carrier passes, and by which wheel the material upon the carrier is indented, means for vertically adjusting said trough or guide and its said roller, means for cooling the indented material, and means for breaking said material at the indented portions.

6. In a candy-machine, the combination of a carrier for receiving and transporting the strip of material to be treated, and means adjacent the path of said strip adapted to be acted upon thereby to sound an alarm when such material buckles or clogs on the carrier.

7. In a candy-machine, the combination of a carrier for receiving and transporting the strip of material to be treated, mechanism for indenting the strip during its traverse, and means adjacent said mechanism for sounding an alarm should the material become buckled or clogged on the carrier.

8. In a candy-machine, the combination of an endless carrier by means of which a strip of plastic material, indented at intervals, is transported, an air-trunk extending above and along the same and having at intervals air-nipples directed toward the upper surface of said carrier and a strip-breaker to which the indented strip is progressively conveyed by the carrier.

9. In a candy-machine, the combination of an endless carrier for receiving and transporting the strip to be treated, strip-indenting means adjacent said carrier, cooling means in the path of said carrier, and a strip-breaker adjacent to which the indented strip is conveyed by the carrier.

10. In a candy-machine, the combination of means for receiving and transporting a strip of material to be treated, means for progressively indenting said strip at intervals during its traverse, means for thereafter cooling the indented strip, and means for contacting with and breaking said strip into sections at the indented portions.

11. In a candy-machine, the combination of an endless carrier, an indenting-wheel under which said carrier passes, an air-trunk under which said carrier passes, and a vibratory strip-breaker to which said carrier leads.

12. In a candy-machine, the combination of an endless carrier for the strip of material to be treated, means for indenting said strip during its travel, an air-trunk for directing currents of air upon the traveling strip to cool the same, a member for contacting with and breaking the indented strips into lengths, and means for rapidly vibrating said member.

813,316. AUTOMATIC CUT-OFF FOR EXPLOSIVE-ENGINES. MAX MÜNZEL, Brunswick, Germany. Filed Jan. 6, 1905. Serial No. 239,918.

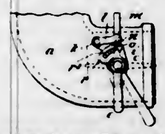

Claim.—1. An automatic cut-off for explosive-motors comprising the combination with a suction-pipe, of a valve mounted therein, means for shifting the valve to open position, means for retaining the valve in an open position, means for automatically returning the valve to closure position when released, and means for adjusting the valve after the same has been shifted to open position.

2. An automatic cut-off for explosive-motors, comprising a valve, means for shifting the valve to open position, means for retaining the valve in an open position during the operation of the motor, means for automatically returning the valve to closure position when released, and means for adjusting the valve after the same has been adjusted to open position.

3. An automatic cut-off for explosive-motors comprising the combination with a suction-pipe, of a valve mounted therein, means for opening the valve, means for retaining the valve in an open position during the operation of the motor, means operated by the governor of the motor for moving said retaining means to and from operative position during the operation of the motor, and for moving said retaining means to and holding it in inoperative position when the motor discontinues its operation, means for automatically returning the valve to closure position when said retaining means is moved to inoperative position, and means for adjusting the valve after the same has been moved to open position.

4. An automatic cut-off for explosive-engines comprising a valve, means for opening the valve, means for retaining the valve in an open position during the operation of the motor, means operated by the governor of the motor for moving said retaining means to and from operative position when the motor is started and for moving said retaining means to and holding it in inoperative position when the motor is stopped, and means for automatically returning the valve to closure position when released.

813,317. FLOOR-RACK FOR STALLS. JAMES H. MURRAY, Los Angeles, Cal. Filed Jan. 19, 1905. Serial No. 241,717.
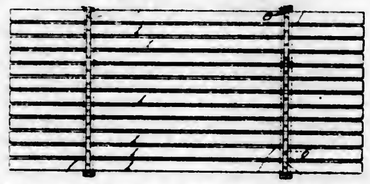
Claim.—1. A floor-rack for stalls comprising two clamping means, each consisting of a lower member having upwardly-extending spacing means, and an upper member pivoted to the lower member and swinging to closed position on said spacing means, and longitudinal rack-bars extending across between the two clamping means and secured between the lower members and the spacing means and the upper members of said clamping means.

2. A floor-rack for stalls comprising two clamping means, each consisting of a lower member having upwardly-projecting spacing means countersunk at their upper ends, and an upper member pivoted to the lower member and swinging to closed position within the countersunk portion of said spacing means, and longitudinal floor-rack bars extending across between the two clamping means and secured between the said lower members, the upwardly-projecting spacing means thereon, and the upper members of the clamping means.

3. A floor-rack for stalls comprising two clamping means, each consisting of a lower member having upwardly-projecting spacing means countersunk at their upper ends, and an upper member pivoted to the lower member and swinging to closed position within the countersunk portion of said spacing means, and longitudinal floor-rack bars extending across between the two clamping means and secured between the said lower members, the upwardly-projecting spacing means thereon and the upper members of the clamping means, said bars being countersunk to receive said upper members.

4. A floor-rack for stalls comprising longitudinal members, and clamping means comprising upper and lower clamping-bars engaging the longitudinal members to hold them in fixed relation, one of said clamp-bars having projections and the longitudinal members being provided with sockets engaging said projections.

5. A floor-rack for stalls comprising longitudinal members, and clamp means therefor comprising upper and lower bars hinged together at one end and adapted to engage above and below the longitudinal members, one of said bars being provided at the other end with a hinged retaining device engaging with the other bar.

813,318. COLUMN. THOMAS F. MCCARTHY, Waltham, Mass. Filed May 3, 1904. Serial No. 206,229.

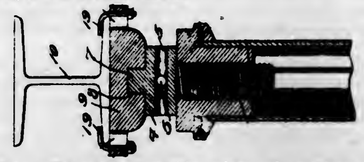

Claim.—The combination with a column, of a cap-piece seated on the upper end of the column and provided with a vertical screw-threaded passage, a jack-screw consisting of a body having upper and lower parallel faces, a depending screw-threaded stem to engage in the passage of the cap-piece, and vertical stud on its upper face, and having passages to receive a turning-lever, and a capital-piece having a socket to fit over the vertical stud on the body of the jack-screw, and vertically-slotted side ears, and bolts having turned-down upper end portions in the slotted side ears to engage the flanges of a girder.

813,319. TOOL FOR MARKING AND INCISING HUB OF BUTT. [illegible]

means for securing said gage devices to the flanged head; and means

818,319. TOOL FOR MARKING AND INCISING HINGE-BUTT RECESSES. WILLIAM J. McINTYRE, Hartford, Conn. Filed May 17, 1905. Serial No. 260,760.

Claim.—1. A tool for marking and incising the lines of hinge-leaf recesses, comprising united sides each having a cutting edge, a cross-plate connecting the sides, and also having a cutting edge; plates; gages carried by said plates; and means for securing said plates to either the inner or outer surfaces of the sides of the tool.

2. The combination, with a tool having three cutting edges, one at right angles to, and connecting, the others, of gage devices carried by the tool, and serving to locate the position thereof upon the work; and means for securing said gage devices either to the inner or outer surfaces of the side plates.

3. The combination, with a tool having sides provided with cutting edges at their lower ends, and with a sharpened plate uniting said sides, of gage devices; and means for adjustably securing said gage devices either to the inner or the outer surfaces of said sides.

4. The combination, with a tool having sides sharpened at their lower ends, and a sharpened cross-plate uniting said sides, of plates adjustably mounted on the sides; gages carried by said plates; and means for securing said plates either to the outer or inner surfaces of said sides.

5. The combination, with a box-like tool for incising material, of gage devices; and means for securing said gage devices either to the inner or outer sides of said tool.

6. The combination, with an incising-tool, of slotted plates secured to the sides of said tool, each plate having a flanged head; and gage-plates secured to the flanges of the heads.

7. The combination, with an incising-tool having three cutting edges, of plates adjustably secured to the sides of said tool; reversible gage-plates carried by said adjustable plates; screws for securing said gage-plates; and removable spacers adapted to be inserted between said gage-plates and the adjustable plates, said spacers being notched to fit over the screws.

8. The combination, with an incising-tool, of longitudinally-slotted plates secured to the sides of said tool, each plate having a flanged head; gage-plates secured to the flanges of the heads; screws for securing the gage-plates to the heads; and spacers notched to fit over the screws.

9. The combination, with a tool, and with plates secured to the sides thereof, of gage-plates; screws for securing said gage-plates to the other plates; and interchangeable spacers of different thicknesses notched to fit over said screws, and adapted to be interposed either between the heads of the screws and the gage-plates, or between the gage-plates and the other plates.

10. A universal tool for marking and incising hinge-butt recesses comprising sides having cutting edges, a third cutting edge at right angles to said sides; gage devices; and means for securing said gage devices either to the outer or the inner surfaces of said sides.

11. The combination, with an incising-tool having rows of perforations, of plates; gage devices carried by the plates, and each having a row of perforations; and securing devices adapted to enter any of the perforations of the gage devices, and to secure said devices to said plates.

12. The combination, with an incising-tool having a series of rows of screw-holes, of plates; screws for securing the plates, and adapted to be inserted in the perforations of either row; perforated gage devices; and means for securing said gage devices to the plates.

13. The combination, with an incising-tool, of plates shaped to be secured on either the inner or outer sides thereof; gages carried by the plates; and screws having ends shaped to receive different tools for securing said plates in position.

14. The combination, with an incising-tool with space-embracing sides, of gage-carrying plates adapted to be secured either to the inner or outer surfaces of the sides of said tool; and screws, having notched heads and angular ends, for securing said plates in position.

15. The combination, with an incising-tool, having separated sides, of a plate having a flanged head extended further on one side than on the other; a reversible gage device carried by the plate; means for securing said gage device to the flanged head; and means for securing said plate to either side of the tool.

16. The combination, with an incising-tool having separated sides, of plates, each having a head extending farther on one side than on the other; a gage-plate secured to each head; and means for securing each plate having a head either on one side or on the other side of said tool.

17. In an incising-tool, the combination, with a plate having a flanged head, and with means for adjustably securing said plate to said tool, of gage-plates; screws passing through perforations in the gage-plates, and threaded into the flange of the head; and interchangeable spacers of different thicknesses, and notched to receive the screws and each having a curved bottom wall, for the purpose set forth.

818,320. LATERAL PACKING FOR THE END FACES OF PAIRS OF ROLLERS. FERDINAND B. F. HUSMANN, Wandsbek, Germany, assignor to The Firm of Kalmo-Compagnie Theodor Reinhardt Gesellschaft mit Beschränkter Haftung, Wandsbek, Germany. Filed June 9, 1904. Serial No. 211,766.

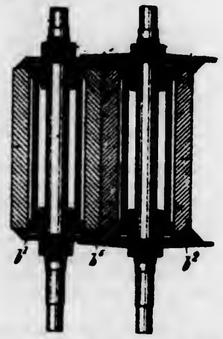

Claim.—1. The combination with a pair of rolls, of cup-shaped packing-heads rotatable with the rolls, those for one roll adapted to cover the ends of the line of contact between the rolls and to have bearing on the packing-heads for the other roll.

2. The combination with a pair of rolls, of rotatable packing-heads for one roll having the form of a hollow frustum of a cone, and rotatable packing-heads for the other roll having a circular rib adapted to cover the ends of the line of contact between the rolls and have bearing on the peripheral inclined faces of the heads for the first-named roll.

3. The combination with a pair of rolls, of packing-heads for one roll having the form of a frustum of a hollow cone, and packing-heads for the other roll provided with a circular rib and an encompassing flange, said ribs adapted to cover the ends of the line of contact between the rolls and to have bearing on the peripheral inclined faces of the heads for the first-named roll, and said flanges adapted to overlap the last-named heads.

4. The combination with a pair of rolls having their peripheral end edges beveled, of packing-heads for one roll having the form of a frustum of a hollow cone, and packing-heads for the other roll provided with a circular rib triangular in cross-section projecting into the recess formed by the beveled edges of the rolls at the opposite ends of the line of contact and with a shoulder having bearing on the end faces of the roll, said ribs having bearing also on the conical heads of the first-named roll.

5. The combination with a pair of rolls having their peripheral end edges beveled; of packing-heads for one roll having the form of a truncated hollow cone, and discoidal packing-heads for the other roll overlapping the heads for the first-named roll and provided with a circular rib triangular in cross-section bearing on the aforesaid conical heads and projecting into the recesses formed at the ends of the line of contact between the rolls by their beveled edges, said ribs also provided with a circular shoulder bearing on the end faces of their roll.

6. The combination with a pair of rolls, of cup-shaped packing-heads, those for one roll adapted to cover the ends of the line of contact between the rolls and to have bearing on the packing-heads for the other roll, and means to compensate for the wear of the contacting surfaces.

7. The combination with a pair of rolls, of packing-heads for one roll having the form of a hollow frustum of a cone, and packing-heads for the other roll having a circular rib adapted to cover the ends of the line of contact between the rolls and have bearing on the peripheral inclined faces of the heads for the first-named roll and means to compensate for the wear of the contacting surfaces.

8. The combination with a pair of rolls, of packing-heads for one roll having the form of a frustum of a hollow cone, and packing-heads for the other roll provided with a circular rib and an encompassing flange, said ribs adapted to cover the ends of the line of contact between the rolls and to have bearing on the peripheral inclined faces of the heads for the first-named roll, said flanges adapted to overlap the last-named heads and means to compensate for the wear of the contacting surfaces.

9. The combination with a pair of rolls having their peripheral end edges beveled; of packing-heads for one roll having the form of a frustum of a hollow cone, and packing-heads for the other roll provided with a circular rib triangular in cross-section projecting into the recess formed by the beveled edges of the rolls at the opposite ends of the line of contact and with a shoulder having bearing on the end faces of the roll, said ribs having bearing also on the conical heads of the first-named roll, and means to compensate for the wear of the contacting surfaces.

10. The combination with a pair of rolls having their peripheral end edges beveled; of packing-heads for one roll having the form of a truncated hollow cone, and discoidal packing-heads for the other roll overlapping the heads of the first-named roll and provided with a circular rib triangular in cross-section bearing on the aforesaid conical heads and projecting into the recesses formed at the ends of the line of contact between the rolls by their beveled edges, said ribs also provided with a circular shoulder bearing on the end faces of their roll, and means to compensate for the wear of the contacting surfaces.

11. The combination with a pair of rolls and their shafts; of cup-shaped packing-heads for each roll mounted on their respective shafts, the packing-heads for one roll adapted to cover the ends of the line of contact between the rolls and to have bearing on the packing-heads for the other roll and means to adjust the said packing-heads relatively to their rolls.

12. The combination with a pair of rolls and their shafts; of packing-heads for one roll having the form of a frustum of a hollow cone mounted on the roll-shaft, and packing-heads for the other roll likewise mounted on its shaft and having a circular rib adapted to cover the ends of the line of contact between the rolls and to have bearing on the conical heads for the first-named roll, and means to adjust the said heads relatively to the rolls.

13. The combination with a pair of rolls and their shafts; of packing-heads for one roll mounted on its shaft and having the form of a frustum of a hollow cone, and packing-heads for the other roll likewise mounted on the shaft thereof and provided with a circular rib and an encompassing flange, said rib adapted to cover the ends of the line of contact between the rolls and to have bearing on the conical heads of the first-named roll and said flanges adapted to overlap the last-named heads and means to adjust the packing-heads relatively to their rolls.

818,321. TRANSFER-TICKET. WILLIAM C. POPE, Philadelphia, Pa. Filed July 6, 1905. Serial No. 268,237.

Claim.—1. A transfer-ticket comprising a body portion having means to constitute a circular row of hour indications, said body portion further provided with means to constitute a single fraction of an hour indication, said single fraction of the hour indication surrounded at a point removed therefrom by said row of hour indications and associating with any one of said hour indications to constitute a complete hour time limit when any one of said hour indications is mutilated.

2. A transfer-ticket comprising a body portion having means to constitute a circular row of hour indications, said body portion further provided with means to constitute a single fraction of an hour indication, said single fraction of the hour indication surrounded at a point removed therefrom by said row of hour indications and associating with any one of said hour indications to constitute a complete hour time limit when any one of said hour indications is mutilated, and said body portion further provided with means to designate said row of hour indications postmeridian or antemeridian.

3. A transfer-ticket comprising a body portion having means to constitute a circular row of hour indications, said body portion further provided with means to constitute a single fraction of an hour indication, said single fraction of the hour indication surrounded at a point removed therefrom by said row of hour indications and associating with any one of said hour indications to constitute a complete hour time limit when any one of said hour indications is mutilated, and said body portion further provided with means to constitute a row of even-hour indications constituting in itself a complete time limit and independent of said fraction of the hour-indicating time limit.

4. A transfer-ticket comprising a body portion having means to constitute a circular row of hour indications, said body portion further provided with means to constitute a single fraction of an hour indication, said single fraction of the hour indication surrounded at a point removed therefrom by said row of hour indications and associating with any one of said hour indications to constitute a complete hour time limit when any one of said hour indications is mutilated, said body portion further provided with means to constitute a row of even-hour indications constituting in itself a complete time limit and independent of said fraction of the hour-indicating time limit, and said body portion further provided with means to designate said rows of hour indications postmeridian or antemeridian.

5. A transfer-ticket comprising a body portion having means to constitute a plurality of circular rows of hour indications, said body portion further provided with means to constitute a plurality of fractions of the hour indications, each of said fractions of the hour indications surrounded at a point removed therefrom by a row of hour indications and associating with any one of the hour indications of its respective row to constitute a complete hour time limit when any one of said hour indications of said row is mutilated.

6. A transfer-ticket comprising a body portion having means to constitute a plurality of circular rows of hour indications, said body portion further provided with means to constitute a plurality of fractions of the hour indications, each of said fractions of the hour indications surrounded at a point removed therefrom by a row of hour indications and associating with any one of the hour indications of its respective row to constitute a complete hour time limit when any one of said hour indications of said row is mutilated, and said body portion further provided with means to constitute said rows of hour indications postmeridian and antemeridian.

7. A transfer-ticket comprising a body portion having means to constitute a plurality of circular rows of hour indications, said body portion further provided with means to constitute a plurality of fractions of the hour indications, each of said fractions of the hour indications surrounded at a point removed therefrom by a row of hour indications and associating with any one of the hour indications of its respective row to constitute a complete hour time limit when any one of said hour indications of said row is mutilated, and said body portion further provided with means to constitute a row of even-hour indications constituting in itself a complete time limit and independent of any one of said fractions of the hour-indicating time limit.

8. A transfer-ticket comprising a body portion having means to constitute a plurality of circular rows of hour indications, said body portion further provided with means to constitute a plurality of fractions of the hour indications, each of said fractions of the hour indications surrounded at a point removed therefrom by a row of hour indications and associating with any one of the hour indications of its respective row to constitute a complete hour time limit when any one of said hour indications of said row is mutilated, said body portion further provided with means to constitute a row of even-hour indications constituting in itself a complete time limit and independent of any one of said fractions of the hour-indicating time limit, and said body portion further provided with means to designate said rows of hour indications antemeridian and postmeridian.

9. A transfer-ticket comprising a body portion having means to constitute a plurality of pairs of circular rows of hour indications, said body portion further provided with means to constitute a plurality of fractions of the hour indications, each of said fractions of the hour indications surrounded at a point removed therefrom by the inner row of a pair of rows of hour indications and associating with any one of the hour indications of either row of its respective pair of rows to constitute a complete hour time limit when any one of said hour indications of the respective pair of rows is mutilated.

10. A transfer-ticket comprising a body portion having means

to constitute a plurality of pairs of circular rows of hour indications, said body portion further provided with means to constitute a plurality of fractions of the hour indications, each of said fractions of the hour indications surrounded at a point removed therefrom by the inner row of a pair of rows of hour indications and associating with any one of the hour indications of either row of its respective pair of rows to constitute a complete hour time limit when any one of said hour indications of its respective pair of rows is mutilated, and said body portion provided with means to designate one row of each pair of rows of hour indications antemeridian and the other row of each pair of rows postmeridian.

11. A transfer-ticket comprising a body portion having means to constitute a plurality of pairs of circular rows of hour indications, said body portion further provided with means to constitute a plurality of fractions of the hour indications, each of said fractions of the hour indications surrounded at a point removed therefrom by the inner row of a pair of rows of hour indications and associating with any one of the hour indications of either row of its respective pair of rows to constitute a complete hour time limit when any one of said hour indications of its respective pair of rows is mutilated, and said body portion further provided with a row of even-hour indications constituting in itself a complete time limit and independent of said fractions of the hour-indicating time limits.

12. A transfer-ticket comprising a body portion having means to constitute a plurality of pairs of circular rows of hour indications, said body portion further provided with means to constitute a plurality of fractions of the hour indications, each of said fractions of the hour indications surrounded at a point removed therefrom by the inner row of a pair of rows of hour indications and associating with any one of the hour indications of either row of its respective pair of rows to constitute a complete hour time limit when any one of said hour indications of its respective pair of rows is mutilated, said body portion further provided with a row of even-hour indications constituting in itself a complete time limit and independent of said fractions of the hour-indicating time limit, and said body portion further provided with means to designate said rows of hour indications postmeridian and antemeridian.

813,822. DEVICE FOR RAISING LIQUIDS FROM WELLS. WILLIAM RICHARDS, Mayburg, Pa. Filed Feb. 3, 1904. Serial No. 191,841.

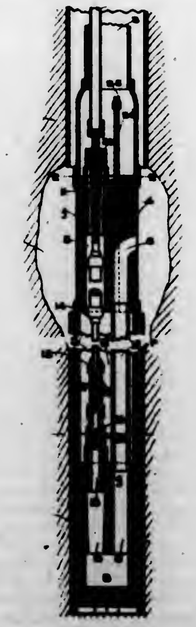

Claim.—1 In an improved device for raising liquids from wells, a reservoir located below the producing strata, a bridge located at the upper end of said reservoir, a valve located in said bridge, there being an air-passage and an oil-passage formed within the body of said valve.

2. In an improved device for raising liquids from wells, the combination of two valves connected together and adapted to seat one below the other, means in said connection adapted to automatically adjust said valves to irregularities of distance between their respective seats.

3. In an improved device for raising liquids from wells, the shot-hole in said well, in combination with a bridge located in said shot-hole, there being a fluid-inlet in said bridge, the reservoir attached to and extending below said bridge, the packing about said reservoir, substantially as and for the purpose specified.

4. In an improved device for raising liquids from wells, a bridge located in the shot-hole of the well, there being a valveless or non-closing fluid-inlet in said bridge, in combination with a fluid-receiving reservoir extending below said bridge, means of preventing the regurgitation of said fluid and means of forcing the fluid from said reservoir to the surface of the earth.

5. In an improved device for raising liquids from wells, a tubing located in the well, a bridge located in said tubing, a return-chamber located below said bridge and connected thereto by a reservoir, valve-seats in said bridge and said return-chamber, valves attached to an air-pipe and adapted to seat in said seats respectively, a slip-joint located in said pipe, adapted to secure the proper seating of said valves.

6. In an improved device for raising liquids from wells, tubing extending below the producing stratum, a bridge interposed in said tubing and located at the producing stratum, the tubing below said bridge being adapted as a receiving-reservoir, a fluid-inlet in said bridge, means of conducting the fluid entering by said inlet to said receiving-reservoir, means of preventing the regurgitation of said fluid, and means of forcing said fluid from the receiving-reservoir to the surface of the earth.

7. In an improved device for raising liquids from wells, a reservoir, a bridge located above said reservoir, a vent in said bridge adapted to the free escape of air and gas therefrom, a pipe secured in the bridge at said vent, and extending upward from said bridge, a valve attached to the upper end of said pipe, adapted to permit a normal flow of gas or air therefrom, and to be closed by an abnormal flow of gas or air, and to automatically open when said pressure or flow again becomes normal.

8. In an improved device for raising liquids from wells, a reservoir, a bridge located at the top of said reservoir, there being a longitudinal hole through said bridge and an oil-inlet in said bridge, communicating with the shot-hole, a return-chamber located at the bottom of said shot-hole and having an oil-duct therein adapted to admit oil to said reservoir, a valve seated in the duct of said return-chamber, a valve seated in the longitudinal hole of said bridge, a pipe communication between the oil-inlet in the bridge and in the return-chamber.

9. In an improved device for raising liquids from wells, tubing or pipe located in said well, a bridge in said tubing located in the shot-hole, a reservoir attached to said bridge and extending below the same, a return-chamber located in the bottom of said reservoir, means of admitting liquid to said reservoir by way of said bridge and return-chamber, an air-pipe located in said tubing, valves attached to said pipe and adapted to seat in said bridge and said return-chamber respectively, said valves being adapted to allow the liquid to pass upward therethrough and to prevent the return of same, means of admitting compressed air to said reservoir, and means of conducting oil to the surface of the ground, or to another storage-chamber above the bridge.

10. In an improved device for raising oil from wells, the combination of tubing extending from the surface down to the shot-hole or oil-producing stratum, a bridge affixed to said tubing and located in said shot-hole, there being a longitudinal hole extending through said bridge, and the upper end thereof adapted as a valve-seat, and a longitudinal hole extending from the lower end of said bridge partly through the same and having a lateral opening into the shot-hole, and adapted as an inlet for oil, tubing attached to the bottom of said bridge and extending downward therefrom below the oil-producing strata and adapted as a storage-reservoir, a return-chamber located at the bottom of said reservoir, means of conducting oil from the shot-hole into said chamber, means permitting said oil to pass into the storage-reservoir, an air-pipe extending from the surface of the ground down into the tubing, valves thereon adapted to seat in the bridge and in the return-chamber respectively and adapted to permit oil to pass upwardly through the same and to prevent the return thereof.

813,823. FUMIGATING MATERIAL AND PROCESS OF MAKING SAME. JULIAN H. RIVERS, St. Louis, Mo., assignor to Hydro-Press Manufacturing Company, St. Louis, Mo., a Corporation of Missouri. Filed Apr. 21, 1905. Serial No. 256,265.

Claim.—1. As an article of manufacture a hollow block composed of tobacco, fibrous pulp, and nitrate of potash.

2. As an article of manufacture, a hollow block composed of tobacco, fibrous pulp, and nitrate of potash, and a bonding-cover, substantially as specified.

3. The process of making fumigating material composed of tobacco, fibrous pulp and nitrate of potash, which consists in mixing the required proportions of the said substance together in water, shaping the mixture into slabs and binding the slabs together.

4. A combustible fumigating-block, comprising a plurality of slabs having beveled edges and of which the component elements are tobacco, fibrous pulp, and nitrate of potash, and a bonding-cover adapted to hold the beveled edges of the slabs together, as required to form a hollow rectangular block.

5. A combustible fumigating-block consisting of tobacco, fibrous pulp, and nitrate of potash mixed together to form slabs, and a bonding-cover to hold a plurality of slabs together.

6. A combustible fumigating-block consisting of tobacco, fibrous pulp, and nitrate of potash mixed together and shaped into elongated hollow form, and a bonding-cover inclosing the sides of the hollow block.

7. A hollow combustible object, comprising tobacco-dust, fibrous material, an oxygen-bearing element, and sulfur mixed together and solidified to form an elongated hollow block, and a bonding-cover inclosing the block.

8. As an article of manufacture, a hollow block composed of tobacco, fibrous material, an oxygen-bearing element, and a bonding-cover inclosing the block, substantially as specified.

9. A combustible fumigating-block composed of tobacco, fibrous material, and an oxygen-bearing element mixed together and compressed into slabs, a plurality of said slabs being arranged into open-ended box form, and a bonding-cover holding said slabs in box form, substantially as described.

813,824. DYNAMOMETER. WALTER H. RUDDICK, New York, N. Y., administrator of Hamilton Ruddick, deceased. Filed Sept. 6, 1905. Serial No. 277,255.

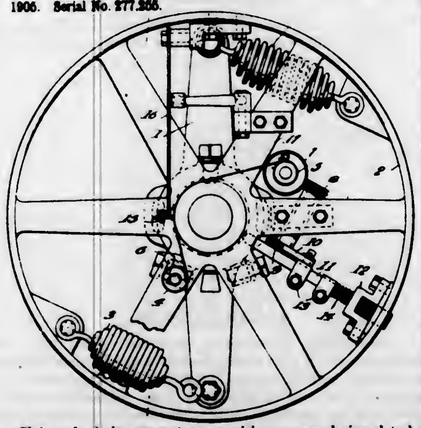

Claim.—1. A dynamometer comprising an arm designed to be secured to a shaft or the like, a pulley yieldingly connected to said arm, a stylus-holder and stylus mounted to oscillate within the pulley, a bell-crank lever carried by the pulley, links having a universal-joint connection with the arms of said lever and with said first-named arm and stylus-holder respectively, whereby the variation in the position of the first-named arm and the pulley will effect a movement of the stylus-holder, and means for feeding a record-sheet across the stylus in a direction at right angles to the line of movement of the stylus-holder.

2. A dynamometer comprising an arm designed to be secured to a shaft or the like, a pulley designed to assume different positions with relation to said arm, an oscillating stylus-holder mounted within the pulley, a bell-crank lever carried by the pulley, links connected to the arms of said lever, the first-named arm and stylus-holder respectively, whereby a change in the relative position of the pulley and the first-named arm will rock said lever and effect an oscillation of the stylus-holder, and means for intermittently feeding a record-sheet across the stylus in a direction at right angles to the line of oscillation.

3. A dynamometer comprising an arm designed to be secured to a shaft or the like, a pulley yieldingly connected to said arm, a stylus-holding bar pivotally suspended within the pulley, a bell-crank lever fulcrumed to a spoke of the pulley and provided with two angularly-projecting arms, links pivotally connecting the arms of said lever with the first-named arm and stylus-holding bar respectively, and means for feeding a record-sheet across the path of said stylus-holding bar in a direction at right angles to the line of oscillation thereof.

4. A dynamometer comprising an arm designed to be secured to a shaft or the like, a pulley encircling said arm, contractile springs yieldingly connecting the ends of said arm with the pulley at diametrically opposite points of the latter, a pivotally-suspended stylus-holding bar mounted in the pulley, a bell-crank lever fulcrumed on the pulley and having a link connection with the first-named arm and bar respectively, spools carried by the pulley at opposite sides of the hub thereof, a paper strip designed to extend from one spool to the other and bear upon the face of said hub, and means for intermittently feeding said paper over said hub, for the purpose set forth.

5. A dynamometer comprising an arm designed to be secured to a shaft or the like, a pulley yieldingly connected to said arm and designed to assume different advanced positions with relation thereto, an oscillating stylus-holding bar mounted on said pulley, a bell-crank carried by said pulley, links connecting said bell-crank with the first-named arm and stylus-holding bar respectively, spools carried by said pulley and designed to receive a record-strip, one of said spools being provided with a gear, a worm-shaft mounted in a bearing on the pulley and provided at one end with a worm meshing with said gear and at its opposite end with a ratchet, and a longitudinally-movable rod 11 mounted in bearings on the pulley with its end protruding through the rim thereof, said rod carrying a pawl 10 meshing with said ratchet, as and for the purpose set forth.

813,825. BUTTER-CHURN. CLAY M. RUNYAN, Elyria, Ohio. Filed Aug. 10, 1905. Serial No. 273,004.

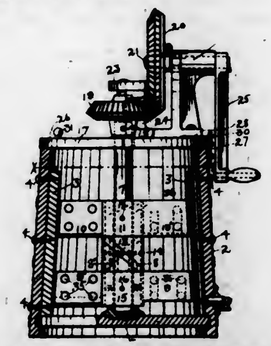

Claim.—In a churn, a dasher consisting of a rotary shaft, a series of pairs of paddles having integral hubs mounted on said shaft, each of said paddles having a face, or faces, arranged in a plane which intersects all of the planes in which the faces of the other paddles are arranged, said paddles and hubs having air passages or perforations therein, the air-passages through said hubs forming air-tubes which communicate with the air above and below said dasher.

813,826. PROTECTING-RAIL FOR BUILDING STRUCTURES, STAIRS, CORNERS, AND THE LIKE. MAX REPER, Ohligs, Germany. Filed Apr. 12, 1905. Serial No. 255,922.

Claim.—1. In an article for the purposes described, the combination of a strip having formed in one face a longitudinally-extending groove, the side walls of which are bent inwardly at a plurality of opposite points intermediate of the ends of the groove to vary the form and dimensions of the groove at said points, and a fastening member having at one end a laterally-projecting section adapted to freely enter and move in the body of the groove and to fit closely in either of the contracted portions of said groove, substantially as set forth.
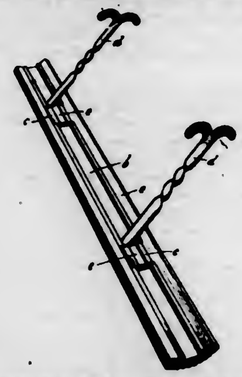
2. In an article for the purposes described, the combination of a strip provided in one face with a longitudinally-extending groove having alternately-arranged sections of different cross-sectional form, and a fastening member having one end adapted to freely enter and move in alternate sections of said groove and to fit closely in the intermediate sections of the groove, substantially as set forth.

3. In an article for the purposes described, the combination of a strip having a groove extending throughout the length of one face, the side walls of said groove being bent inwardly at a plurality of opposite points to vary the form and dimensions of the groove at said points, and fastening members each adapted to fit closely within the contracted portions of said groove and to move freely in the other sections thereof, substantially as set forth.

4. In an article for the purposes described, the combination of a strip having a groove extending throughout the length of one face, the side walls of which are bent inwardly at an intermediate point in the length of said walls, and a fastening member having at one end a laterally-projecting section adapted to freely enter and move in the body of the groove and to fit closely in the contracted portion formed by the inward bending of the side walls of said groove, substantially as set forth.

813,327. FILTER. Baldwin F. Schreiber, Cleveland, Ohio. Filed Mar. 21, 1904. Serial No. 199,179.

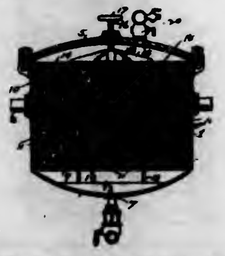

Claim.—1. A filter, comprising, in combination, a main filter-chamber, vertical partitions therein provided with longitudinal and lateral openings, a perforated plate forming the top of the chamber, a perforated plate forming the bottom of the chamber, with which top and bottom plates the partitions alternately engage, a primary filtering-chamber mounted upon the main chamber, and communicating therewith through said top perforated plate, a common casing for both chambers, an inlet-passage leading to the primary chamber, an outlet-passage leading from the main chamber and a filter in each chamber, substantially as described.

2. A filter comprising, an external casing, and upper primary and lower secondary filter-chambers therein, perforated plates forming end plates for said chambers, a perforated plate separating said chambers, a pressure device for the primary chamber, vertical partitions in said secondary chamber alternately engaging the perforated plates which inclose said chamber and provided with vertical and lateral passages, a central perforated tube, engaging the upper perforated plate of the lower chamber, loosely-packed filter mass in the primary chamber, and tightly-packed filter mass in the secondary chamber, separating the partitions from each other and from the perforated plates at alternate ends, substantially as described.

3. The combination in a filter, of a casing, a cover therefor, a bottom sloping to an outlet-passage, a perforated plate in said bottom, a tightly-packed filter mass upon said perforated bottom plate, a perforated top plate upon the filter mass, vertical partitions concentrically arranged in said filter mass and alternately engaging said top and bottom plates, the said partitions being laterally perforated, a filter mass upon the said top plate, a perforated plate thereon, and a pressure device for said last-mentioned perforated plate consisting of a pressure-plate resting thereon and a screw passing through the said cover for the casing, substantially as described.

4. The combination with a casing, and perforated top and bottom plates of a filter, of a filter mass tightly compressed between said plates, and vertical concentric partitions, in said mass, provided with vertical and lateral passages, the said partitions alternately engaging the said perforated plates, and alternately separated therefrom, substantially as described.

5. In a filter, the combination with a casing, of a filter-mass chamber therein, perforated plates forming the top and bottom thereof, and partitions therein comprising concentrically-arranged vertical plates, each partition comprising oppositely-corrugated plates in close juxtaposition, the opposing corrugations of said plates alternately touching and alternately forming vertical passages, lateral openings in both of said corrugated plates, and the said partitions so disposed alternately engaging the top and bottom plates, and alternately out of contact therewith, and a filter mass, separating said partitions from one another, and alternately separating said partitions from the top and bottom plates, substantially as described.

6. A filter, comprising in combination, a main filter-chamber, vertical partitions therein, provided with vertical and lateral openings, a perforated plate forming one end of the chamber, a perforated plate forming the other end of the chamber, with which plates the partitions alternately engage, a primary filtering-chamber mounted upon the main chamber and communicating therewith through the separating perforated plate at that end, a common casing for both chambers, an inlet-passage leading to the primary filter-chamber, an outlet-passage leading from the main chamber, filter mass filling each chamber, and a pressure device for the primary filter-chamber, substantially as described.

813,328. APPARATUS FOR MOISTENING AND WARMING ROOMS OR APARTMENTS. August Schmidt, Langenaslau, Germany. Filed May 19, 1905. Serial No. 261,273.

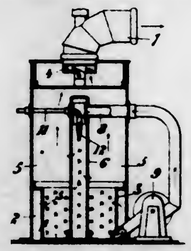

Claim.—1. An air-moistening apparatus, comprising a receptacle provided with a moistening-chamber and an air-inlet chamber, a perforated partition between the said chambers and adapted to divide the air fed from the air-chamber to the moistening-chamber in the form of jets, a perforated water-distributing pipe arranged in the moistening-chamber and adapted to cause the supplying of water to said moistening-chamber in the form of jets to intercept the jets of air thereby moistening the latter, means communicating with the moistening-chamber and with said pipe for withdrawing the surplus water from said chamber and returning the same to said pipe, and a nozzle extending in said pipe and adapted to supply steam thereto under pressure, and a suction-fan arranged in the upper end of said receptacle and in suitable relation with respect to a conducting-conduit.

2. An air-moistening apparatus, comprising a receptacle provided with a moistening-chamber, means for supplying air to said chamber in the form of jets, a perforated water-distributing pipe arranged in the moistening-chamber, adapted to cause the supply of water to said moistening-chamber in the form of jets to intercept the jets of air, thereby moistening the latter, means communicating with the moistening-chamber and with said pipe for withdrawing the surplus water from said chamber and returning the same to said pipe, and a nozzle extending in said pipe and adapted to supply steam thereto under pressure.

813,329. REIN-GUARD. William A. Scott and William S. McCall, Quincy, Fla. Filed Aug. 29, 1905. Serial No. 276,273.

Claim.—1. The combination with a doubletree having spaced swingletrees pivoted thereto, of a rod provided with terminal eyes for engagement with the pivot-bolts of said swingletrees and having its central portion bent upwardly to form an open loop, whereby the rod may be adjusted longitudinally to correspond to varying lengths of doubletrees.

2. The combination with a doubletree having spaced swingletrees pivoted thereto, of a rod provided with terminal eyes for engagement with the pivot-bolts of said swingletrees and having its opposite ends at said eyes bent upwardly to space the intermediate portion of the rod from the swingletrees, said rod being provided with a centrally-disposed open loop whereby the rod may be adjusted longitudinally to correspond to varying lengths of doubletrees.

3. A rein-guard formed of a piece of flexible material having its opposite ends provided with terminal eyes and its intermediate portion bent upwardly at said eyes and provided with a centrally-disposed open loop.

813,330. TELEPHONE SYSTEM. Ralph Sherer, Eaton, Ohio. Filed Oct. 17, 1904. Serial No. 228,785.

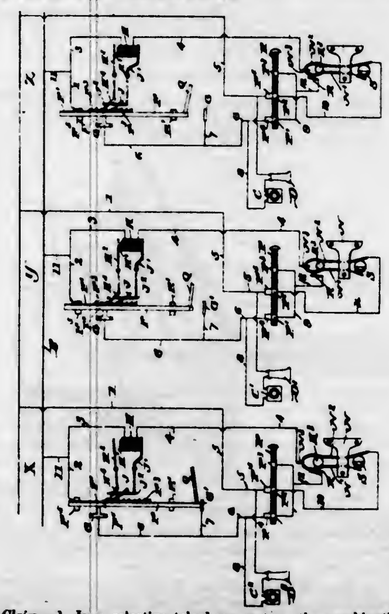

Claim.—1. In a selective telephone system, the combination with a generator-gear shaft, a movable bar having a contact-plate, means for moving the bar step by step, and means connected to the bar adapted to lock the said shaft when the bar has moved one step.

2. A selective telephone system comprising talking and ringing circuits, a plurality of movable bars having contact-plates arranged in the talking-circuit, a plurality of electromagnets arranged in the ringing-circuit, pawls actuated by said magnets adapted to lift the bars step by step, and means for cutting out the electromagnet at the calling-station.

3. A selective telephone system comprising talking and ringing circuits, a plurality of movable, toothed bars having contact-plates arranged in the talking-circuits, electromagnets arranged in the ringing-circuits, a call-bell generator, pawls adapted to engage the bar-teeth and actuated by the magnets, means for automatically cutting out the magnet at the calling-station, and means for locking the call-bell-generator shafts upon movement of the bars.

4. In a selective telephone system, a movable toothed bar, a contact upon which the bar normally rests, a contact-plate carried by the bar, a contact-plate arranged adjacent the bar adapted to be engaged by the contact-plate on the bar, the said bar forming a portion of the talking-circuit, an electromagnet in the calling-circuit, pivoted armature-levers, pawls actuated by said levers and adapted to lift the bar step by step, and means for automatically cutting the said magnet out of its own calling-circuit.

5. In a telephone system, a contact-plate, a movable bar arranged in the talking-circuit and resting on the said plate, an electromagnet, a generator-gear shaft adapted to move inward when rotated in one direction, and having an insulated conical rear end portion, spring members arranged on opposite sides of said conical end and when in contact completing the circuit through the electromagnet, pawls actuated by the magnet adapted to lift the bar, and a weight connected to the bar and adapted to be brought into alinement with the rear end of the generator-gear shaft and prevent inward movement of the same when the bar is lifted, as and for the purpose set forth.

813,331. OIL-LAMP. Thomas S. Tarling, St. Albans, England. Filed Mar. 27, 1905. Serial No. 252,373.

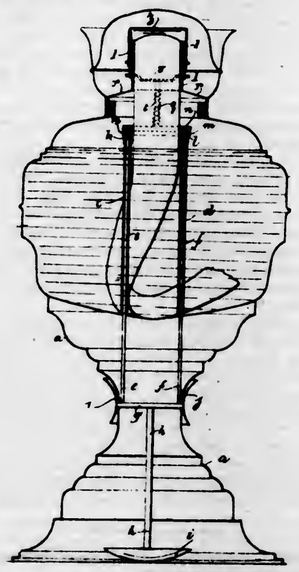

Claim.—In a lamp, the combination of the lamp-body, a burner-support secured to the top of said body, said burner-support being provided with a stationary guard-plate, spring-operated rods passing through said guard-plate, extinguishing devices carried by the upper parts of said rods, springs located beneath said guard-plate and surrounding said rods, a support for said springs, a weighted rod centrally located in said lamp and carrying a portion adapted to engage with said support, normally preventing its downward movement, and a part adapted to engage the hand of the operator and prevent the movement of said rod when the lamp is moved in the ordinary manner, substantially as described.

813,332. STEAM-TRAP. John H. Taylor, Battle Creek, Mich. Filed Aug. 5, 1905. Serial No. 272,596.

2. In an animal-trap, the combination of a frame, a platform in the bottom of the frame and hinged to the rear thereof, a pin pro-

structure extending at right angles to the rising portion thereof, a tubular metallic guard for the exposed edge thereof, anchorage

2. In combination, a bit comprising a mouthpiece, attaching members at the ends of the bit, reins connected with the lower por-

813,332. STEAM-TRAP. JOHN H. TAYLOR, Battle Creek, Mich. Filed Aug. 5, 1905. Serial No. 272,806.

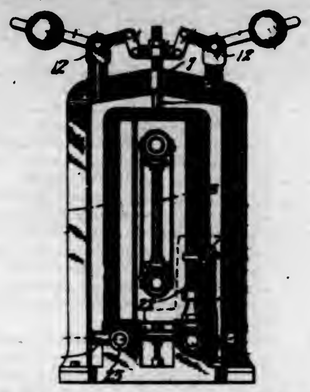

Claim.—1. In a device of the class described, a vertically-movable vessel, means for moving the same in one direction, said vessel being movable in the other direction under the weight of its contents, pressure-inlet and exhaust-inlet ducts communicating with the vessel, the latter having a vent-port, a pressure-controlling valve for closing the pressure-inlet duct, a vent-valve for closing the port, means controlled by movements of the vessel for moving the valves in relatively reverse directions, an inwardly-opening valve for closing the exhaust-inlet duct against back pressure, a return-duct leading from the vessel, and an outwardly-opening valve normally closing said return-duct.

2. In a device of the class described, a vertically-movable vessel, means for moving the same in one direction, said vessel being movable in the other direction by the weight of its contents, a pressure-inlet duct communicating with the vessel, the latter having a vent-port, a pressure-controlling valve for closing the duct, a vent-valve for closing the port, said valves being adapted for relatively reverse movement, and an operating-lever having connection with the vessel for operation thereby, and connected with and for actuating both valves.

3. In a device of the class described, a vertically-movable vessel, means for moving the same in one direction, said vessel being movable in the other direction through the weight of its contents, pressure-inlet and exhaust-inlet ducts communicating with the vessel, the latter having a vent-port, a pressure-controlling valve for closing the pressure-inlet duct, a vent-valve for closing the port, an operating-lever connected with and for moving the valves in relatively reverse directions, and operative connections between the lever and tank.

4. In a device of the class described, a vertically-movable tank, means for moving the same in one direction, said tank being movable in the other direction by the weight of its contents, a coupling member connected with the tank and having a pair of passages communicating therewith, a pair of flexible ducts coupled to the member and communicating with the tank through the respective passages, a check-valve arranged in one of the ducts, a pressure-controlling valve for closing the outer duct, said tank having a vent-port, a vent-valve for closing said port, and an operating-lever connected with the valves for moving them in relatively reverse directions, said lever being operatively connected with the tank for automatic operation thereby.

813,333. ANIMAL-TRAP. JOHN H. TRAMP, Cherokee, Kans. Filed June 8, 1905. Serial No. 264,291.

Claim.—1. In an animal-trap, the combination of a frame comprising a top and a bottom plate secured together and spaced apart by angular corner-supports, a platform in the bottom of the frame and hinged to the rear thereof, a pin projecting from the side of the platform, a plunger slidably mounted within the corner-supports and provided on its edges with depending teeth, eyes on the upper face of the plunger, a rock-shaft journaled transversely of the frame above the plunger and provided with pins for engaging the eyes thereof, a depending arm on the rock-shaft for engaging the pin on the platform to prevent rotation of the shaft, and a spring for forcibly depressing the plunger when released from the pins.

2. In an animal-trap, the combination of a frame, a platform in the bottom of the frame and hinged to the rear thereof, a pin projecting from the side of the platform, a plunger slidably mounted within the frame and provided on its edges with depending teeth, eyes on the upper face of the plunger, a rock-shaft journaled transversely of the frame and above the plunger, and provided with pins for engaging the eyes thereof, a depending arm on the rock-shaft for engaging the pin on the platform to prevent rotation of the shaft, and means for forcibly depressing the plunger when released from the spring.

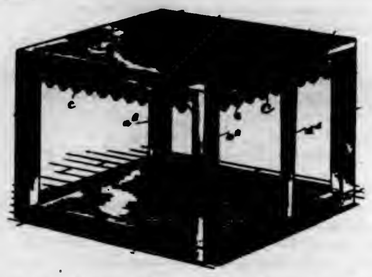

3. In an animal-trap, the combination of a frame, a spring-actuated plunger mounted within the frame and provided on its edges with depending teeth, eyes on the upper surface of the plunger, a rock-shaft journaled in the frame and provided with horizontal projecting pins for engaging the eyes to maintain the plunger in its elevated position, means for preventing rotation of the shaft, and means whereby the entrance of an animal within the frame may actuate said preventing means to release the plunger.

4. In an animal-trap, the combination of a frame, a rock-shaft journaled in the frame a platform hinged within the frame, a spring-actuated plunger mounted in the frame, means on the rock-shaft for retaining the plunger in its elevated position and means whereby the depression of the platform may release the said retaining means.

5. In an animal-trap, the combination of a frame, a rock-shaft journaled in the frame a platform hinged within the frame, a spring-actuated plunger within the frame, means on the rock-shaft for retaining the plunger in its elevated position and means connected with the platform whereby the entrance of an animal upon the platform may release the retaining means.

813,334. REINFORCED CONCRETE CURBING. AVILA THOMAS, Detroit, Mich., assignor of one-half to Eugene F. Glock, Detroit, Mich. Filed Sept. 7, 1905. Serial No. 277,494.

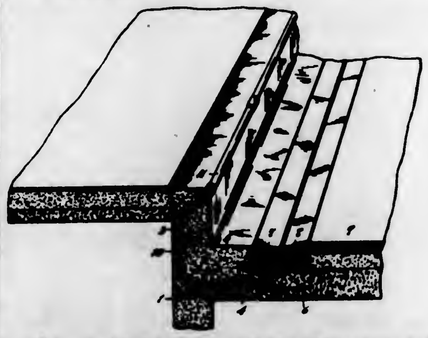

Claim.—1. A curb having in combination with a concrete body having a horizontal and a vertical portion, a guide-rail of circular cross-section for one corner of the vertical portion, and anchor-irons extending therefrom into both body portions of the curb at intervals along its length, substantially as described.

2. In combination with a concrete curb, a tubular metallic guard for the exposed edge thereof, and anchor-irons each bent at a plurality of points along its length attached at intervals along said guard and extending into the concrete mass, substantially as described.

3. In combination with a concrete curb, a branch of the curb

structure extending at right angles to the rising portion thereof, a tubular metallic guard for the exposed edge thereof, anchorage means for the same embedded in the concrete and extending into the branch portion, and paving-blocks supported by the outer end of said branch portion and forming with the remaining part of the branch portion a gutter, substantially as described.

4. A curb, having in combination with a concrete body portion with a plurality of branches, a metallic guard for the exposed edge thereof, and anchor-irons connected therewith and embedded in the concrete and extending into the other branch from that wherein said guard is located, substantially as described.

5. In combination with a concrete curb, having a tread portion branching from the rising portion, a metallic strengthening-bar therefor, and anchor-irons extending therefrom into the branch of the curb not occupied by said bar, substantially as described.

6. In combination with a concrete curb, a longitudinal guide-bar therefor, and angled anchor-irons each extending from said bar into the remote portion of the section of the curb at an angle with the portion of itself immediately adjacent to the bar, substantially as described.

7. A curb, having in combination a body portion of T-shaped cross-section, the stem portion thereof being adapted to lie horizontally, a tabular guard-iron for the exposed edge of the upwardly-extending branch, and anchor-irons extending therefrom into the body of the curb and terminating in said horizontal stem portion, substantially as described.

813,335. DRILLING-MACHINE. ALEXANDER WALKER, What Cheer, Iowa, assignor to What Cheer Tool Company, What Cheer, Iowa, a Corporation of Iowa. Filed Oct. 14, 1905. Serial No. 282,636.

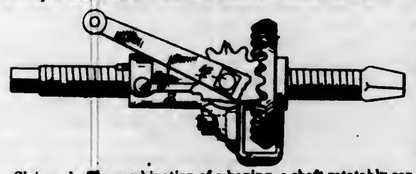

Claim.—1. The combination of a boxing, a shaft rotatably connected with the boxing, the latter having an apertured projection, a gear for turning the shaft, a second gear in mesh with the first gear, a yoke to receive and to hold the second gear in mesh with the first gear, said yoke having a lug to fit the aperture of said projection, and a screw extending from said lug, the projection being perforated to receive the screw, and a nut upon the screw to jam the yoke against the projection.

2. The combination of a boxing, a shaft rotatably connected with the boxing, the latter having a projection, a gear for turning the shaft, a second gear in mesh with the first gear, a yoke to receive and to hold the second gear in mesh with the first gear, said yoke having a lug to engage against said projection, and a screw extending from the lug, the projection being perforated to receive the screw, and a nut upon the screw to jam the yoke against the projection.

813,336. SHEET ROOFING MATERIAL. HENRY R. WARRELL, Ardmore, Pa., assignor to The Barber Asphalt Paving Company, Philadelphia, Pa., a Corporation of West Virginia. Filed Aug. 7, 1905. Serial No. 273,037.

Claim.—A composite roofing sheet comprising a woven fabric and a felted fabric, both saturated with bituminous material, placed in juxtaposition and united together to form a composite sheet; and independent layers of bituminous material on both outer surfaces of the composite sheet, completely incasing the same and protecting it from atmospheric influences, substantially as set forth.

813,337. BRIDLE-BIT AND ATTACHING MEANS THEREFOR. FRANKLIN WHITMORE, Findlay, Ill. Filed May 19, 1905. Serial No. 261,226.

Claim.—1. In combination, a bit comprising a mouthpiece, attaching members at the ends of the bit, reins connected with the lower portion of the attaching members, and a yoke to embrace the neck of the animal connected with the upper portion of the attaching members, and a check-strap connected with the rear portion of the yoke.

3. In combination, a bit comprising a mouthpiece, rings at the end portions of the mouthpiece, loops extended from the upper and lower portions of the rings aforesaid, reins connected with the lower loops of the rings, a rigid yoke to receive the neck of the animal connected with the upper loops of the rings, and a check-strap connected with the rear portion of the yoke.

4. In combination, a bit comprising a mouthpiece, a rigid yoke adapted to receive the neck of the animal, connections between the yoke and the mouthpiece, and means for connecting the yoke with the harness.

5. In combination, harness embodying a check-hook, a bit comprising a mouthpiece, a yoke adapted to receive the neck of the animal, connections between the sides of the yoke and opposite ends of the mouthpiece, and connecting means between the said yoke and the check-hook.

6. In combination, harness embodying a check-hook, a bit comprising a mouthpiece, a yoke adapted to receive the neck of an animal, adjustable connections between the sides of the yoke and opposite ends of the mouthpiece, and adjustable connecting means between said yoke and the check-hook.

813,338. POST. WILLIAM W. WILCOX, Spencerport, N. Y., assignor of one-eighth to Theodore S. Dean and one-eighth to Henry B. McArthur, Brockport, N. Y. Filed Oct. 27, 1905. Serial No. 284,396.

Claim.—1. As a reinforcement for a post, a series of three or more bars longitudinally disposed near and within the sides of the post and a series of tie-rods secured together at intervals longitudinally of the post at points therein lying practically in the center between such bars and by connections preventing a movement of one of such tie-rods upon the other at such connections, such tie-rods radiating obliquely upward and downward in practically straight lines from such common connections to such bars and secured thereto at two or more points longitudinally thereof, whereby each of such bars is connected to the others by tie-rods extending to such common connections in the center between all such bars.

2. As a reinforcement for a post, a series of three or more bars longitudinally disposed near and within the sides of the post and a series of tie-rods secured together at intervals longitudinally of the post at points therein lying practically in the center between such bars and by connections preventing a movement of one of such tie-rods upon the other at such connections, such tie-rods radiating obliquely upward and downward in practically straight lines from such common connections to such bars and secured thereto at two or more points longitudinally thereof by connections preventing motion of such tie-rods and bars upon each other at such connections, whereby each of such bars is connected to the others by tie-rods extending to such common connections in the center between all such bars.

3. As a reinforcement for a post, a series of three or more bars longitudinally disposed near and within the sides of the post and a series of tie-rods twisted together at intervals longitudinally of the post at points therein lying practically in the center between such bars and radiating obliquely upward and downward in practically straight lines from such twisted connections to such bars and inter-

twisted therewith at two or more points longitudinally thereof, whereby each of such bars is connected to the others by tie-rods extending to such twisted connections in the center between all such bars.

4. As a reinforcement for a post, a series of three or more bars longitudinally disposed near and within the sides of the post and a series of tie-rods secured together at intervals longitudinally of the post at points therein lying practically in the center between such bars and by connections preventing a movement of one of such tie-rods upon the other at such connections, such tie-rods radiating obliquely upward and downward in practically straight lines from such common connections to such bars and secured thereto at two or more points longitudinally thereof, whereby each of such bars is connected to the others by tie-rods extending to such common connections in the center between all such bars, and mortises extending transversely through such posts between and encircled by such tie-rods.

5. As a reinforcement for a post, a series of three or more bars longitudinally disposed near and within the sides of the post and a series of tie-rods secured together at intervals longitudinally of the post at points therein lying practically in the center between such bars and by connections preventing a movement of one of such tie-rods upon the other at such connections, such tie-rods radiating obliquely upward and downward in practically straight lines from such common connections to such bars and secured thereto at two or more points longitudinally thereof by connections preventing motion of such tie-rods and bars upon each other at such connections, whereby each of such bars is connected to the others by tie-rods extending to such common connections in the center between all such bars, and mortises extending transversely through such posts between and encircled by such tie-rods.

6. As a reinforcement for a post, a series of three or more bars longitudinally disposed near and within the sides of the post and a series of tie-rods twisted together at intervals longitudinally of the post at points therein lying practically in the center between such bars and radiating obliquely upward and downward in practically straight lines from such twisted connections to such bars and intertwisted therewith at two or more points longitudinally thereof, whereby each of such bars is connected to the others by tie-rods extending to such twisted connections in the center between all such bars, and mortises extending transversely through such posts between and encircled by such tie-rods.

813,339. **HOUSEHOLD-CLEANER.** JULIE WOLFF, New York, N. Y. Filed Jan. 19, 1905. Serial No. 241,777.

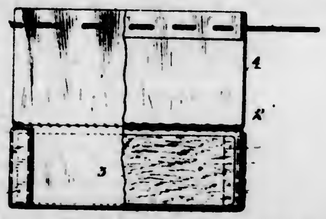

Claim.—A cleaner for household purposes comprising a bag for cleaning compound, the bag having a bottom made of tough, flexible material, having corner-stripe turned up and secured to the bag, the bottom having apertures therein and a flap for closing the said bag.

813,340. **SODA-WATER-BOTTLING MACHINE.** WILLIAM C. WOOD, Baltimore, Md., assignor to The Crown Cork and Seal Company, Baltimore, Md., a Corporation of Maryland. Filed Oct. 21, 1904. Serial No. 229,414.

Claim.—1. In a soda-water-bottling machine, the combination with the filling-head restricted to the passage of gaseous liquids, of a pendent syrup-tube, and a flaring annular guide carried at the one side by the head, encircling the tube, extending below its end and affording an annular space ample for the free reception and passage of a bottle-head and its neck, while inclosing the tube, substantially as described.

2. In a soda-water-bottling machine, the combination of a pendent open-mouthed syrup-tube, and a flaring annular guide carried in appropriate relation to the mouth of the tube, adapted to freely receive the head and neck of a bottle, and to guide the head into line with and thereby cause a bottle to inclose said tube, and enable syrup to be directly and freely delivered into the body of the bottle, substantially as described.

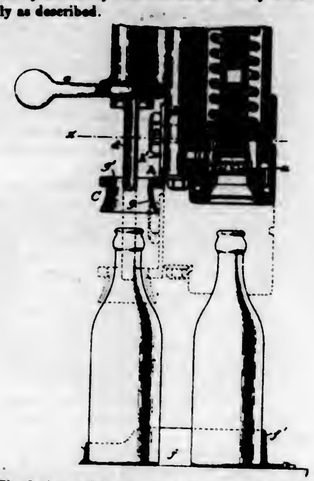

3. The flaring annular bottle-guide adapted to cooperate with a syrup-tube in a soda-bottling machine of the class indicated, by allowing the free passage of the heads of bottles guided by it, and provided with a lateral arm terminating in a hanger-plate rectangular to the arm and provided with an accurately-located aperture substantially as described, whereby without any special preparation therefor, the guide may be readily mounted in appropriate relation to the syrup-tube but wholly free therefrom, said aperture then being occupied by a bolt already in the head of the machine, and locked for service by the nut already on said bolt.

813,341. **REVERSING MECHANISM.** IRVIN G. YOCUM, Washington, Pa., assignor of five-eighths to William F. Borchers, Washington, Pa. Filed Feb. 25, 1905. Serial No. 247,287.

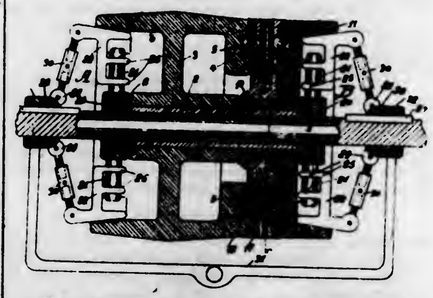

Claim.—In reversing mechanism, the combination with a shaft, a pulley loosely mounted on said shaft and having a laterally-extending rim at one side and circularly-disposed teeth on the other side, a clutch-wheel loosely mounted on said shaft and having a laterally-extending rim at one side and having circularly-disposed teeth on the other side, of a spider arranged between said pulley and said clutch-wheel, said spider being mounted upon a collar carried by said clutch-wheel, and pinions carried by said spider and engaging the teeth on the pulley and the teeth on the clutch-wheel, collars mounted on the shaft adjacent the pulley and the clutch-wheel, radially-disposed posts carried by said collars, clutch members slidably mounted on said posts, collars slidably mounted on the shaft and connected together so as to move simultaneously, and turnbuckles connected to said collars and connected to said clutch members.

813,342. **COMBINATION-TOOL.** JEFFERSON D. BARRY, Waco, Tex., assignor of one-fourth to Daniel Winn, one-fourth to Frederick D. Dahn, and one-fourth to Mortimer L. Crossland, Waco, Tex. Filed Sept. 9, 1905. Serial No. 277,742.

Claim.—1. In a combination-tool, the combination of a socket-piece, a handle, and a perforated arm, extending at right angles to said socket-piece, and a sharpening-disk adjustably mounted in said socket-piece, said socket-piece being provided with a notch, one of the walls of which is radial, and the other wall inclined to a radius, substantially as described.

2. In a combination-tool, the combination of a socket-piece, a handle, and an adjustably-mounted sharpening-disk in said socket-piece, said socket-piece being provided with notches, the walls of one of which are parallel, and the walls of another of which are inclined to each other outwardly, substantially as described.

813,343. **SHUTTER-FASTENER.** ALBERT D. BARTLETT, Hampton, Va. Filed Aug. 19, 1905. Serial No. 274,888.

Claim.—1. A shutter-fastener comprising a combined retaining and releasing lever having both of its ends free and secured intermediate its ends to the shutter and having one of its ends provided with a curvilinear hook, combined with a keeper adapted to be engaged by said hook for retaining the shutter in a closed position, an abutment to arrest the movement of the shutter when opening the same, and a spring-catch pivotally connected to the abutment and adapted to engage the shutter for retaining it in an open position, said spring-catch associating with said abutment to prevent the actuating of the shutter when retained in an open position by the catch, and said hooked end of the lever adapted to engage the catch when the lever is operated to release the shutter, thereby permitting of the closing of the shutter.

2. A shutter-fastener comprising a combined retaining and releasing lever, said lever having one end formed with a curvilinear hook and the other end formed with a handle, combined with a keeper adapted to be engaged by said hook for retaining the shutter in a closed position, and a spring-catch adapted to engage the shutter for retaining it in an open position, said hook of said lever adapted to engage and lower the catch when the lever is operated to release the shutter, thereby permitting of the closing of the shutter.

813,344. **INHALER.** CHARLES S. BEIT, Birmingham, England, assignor, by mesne assignments, to E. De Trey & Sons, a Limited Copartnership of Pennsylvania. Filed June 4, 1904. Serial No. 211,169.

Claim.—1. The combination in an inhaler having a tubular branch portion, of an anesthetic-containing tube, means for gripping and removably holding said tube in said branch portion, and means carried by the inhaler for opening said tube to permit liquid to be delivered to the inhaler from said tube, substantially as described.

2. The combination with an inhaler of a device having resilient portions for holding a tube, means for removably retaining said device in position to permit the tube to communicate with the inhaler, and means for opening the tube to permit flow of liquid therefrom into the inhaler, substantially as described.

3. The combination with an inhaler including a main tubular portion having an opening, of means for retaining an anesthetic-containing vessel in a portion projecting adjacent to said opening, and a device rotatable on its axis substantially at right angles to the line of said latter portion of the inhaler for engaging and breaking a portion of the said anesthetic-containing vessel at will, substantially as described.

4. The combination of an inhaler including a tubular structure constructed to receive and hold an anesthetic-containing tube and a spindle having a device constructed to engage the pointed portion of an anesthetic-containing tube and be rotatable on an axis substantially at right angles to the line of said tubular structure, said spindle extending outside of the tubular structure and being provided with a head, substantially as described.

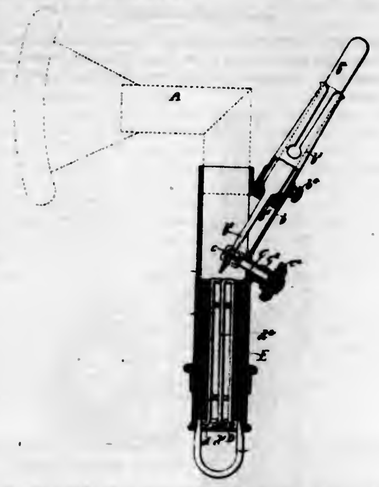

5. The combination of an inhaler including a tubular structure having a branch portion, means for holding an anesthetic-containing tube in said branch portion, a spindle having an eyelet projecting into the branch portion in line with such tube, means for turning the spindle and a spring for holding the spindle in a definite position, substantially as described.

6. The combination in an inhaler of a tubular section having a branch portion, a tubular holding device in said branch portion a device for breaking an anesthetic-tube carried in the holding device and packing in said holding device for making a tight joint between the same and the anesthetic-containing tube, substantially as described.

7. A tube having in one end a series of longitudinal slots and a body of packing in the opposite end, portions of the slotted end of the tube being resilient and serving to hold a liquid-containing tube against said packing, in combination with an inhaler, substantially as described.

8. An inhaler including a tubular portion, with a removable frame and absorbent material supported on said frame in such manner as to leave a free passage for air, substantially as described.

9. An inhaler including a tubular portion open at one end, an elongated frame removably held in said end, and a body of absorbent material on the frame so disposed as to permit an unobstructed flow of air into the inhaler, with an anesthetic-containing vessel and means within the inhaler for opening said vessel to permit the delivery of an anesthetic to said absorbent material, substantially as described.

10. The combination in an inhaler of a casing having an opening, a ring having a frame removably held in said opening, with a body of absorbent material on said frame, an anesthetic-containing tube, and a device within the casing for opening the tube to permit flow of liquid therefrom to said body of absorbent material, substantially as described.

11. The combination in an inhaler of a tubular structure having an opening, a ring carrying a substantially cylindrical frame and movably held in said opening, and a body of absorbent material upon the cylindrical surface of said frame, an anesthetic-containing tube and a device within the structure and operative from without the same for opening the tube to permit liquid to flow therefrom to said absorbent material, substantially as described.

12. The combination with an inhaler of a casing having an opening, a gauze-covered frame removably held in said opening, an elongated frame carried by said first frame, a body of absorbent material on said frame, an anesthetic-containing vessel, and a device within the casing for opening said vessel to permit of flow of liquid therefrom to said absorbent material, substantially as described.

13. The combination in an inhaler of a casing having an opening for air, a frame adjacent to said opening, and a body of absorbent material upon said frame so disposed as to permit the free flow of air into the inhaler, an anesthetic-containing vessel, and a device within the casing and operative from without the same for breaking

said tube to permit flow of liquid therefrom to the absorbent material, substantially as described.

813,845. TYPE-WRITING MACHINE. ARTHUR J. BASSE, Syracuse, N. Y., assignor to The Smith Premier Typewriter Company, Syracuse, N. Y., a Corporation of New York. Filed July 13, 1904. Serial No. 216,989.

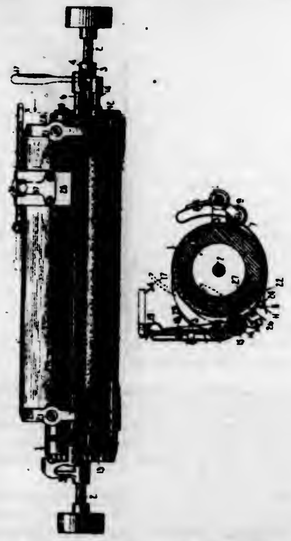

Claim.—1. In a type-writing machine, the combination of a platen, a feed-roll, a paper-stop, and means for moving the paper-stop and feed-roll, the feed-roll being revoluble about the axis on which the paper-stop is mounted.

2. In a type-writing machine, the combination of a platen, a feed-roll, a paper-stop, and means for moving the paper-stop and feed-roll, the feed-roll and the paper-stop both being revoluble about the same axis, said feed-roll normally being in contact with the platen, and said paper-stop normally being out of contact with the platen.

3. In a type-writing machine, the combination of a platen, a feed-roll, a paper-stop, and means for moving the paper-stop and feed-roll, the feed-roll and the paper-stop both being revoluble about the same axis, said feed-roll normally being in contact with the platen, and said paper-stop normally being out of contact with the platen, said means first moving the paper-stop into contact with the platen, and afterward moving the paper-feed roll out of contact with the platen.

4. In a type-writing machine, the combination of a platen, a feed-roll, a paper-stop, a finger-piece and means actuated by the finger-piece for moving the paper-stop and the feed-roll, the feed-roll and the paper-stop both being revoluble about the same axis, the feed-roll normally being in contact with the platen and the paper-stop normally being out of contact with the platen, the said moving means first moving the paper-stop into contact with the platen and afterward moving the feed-roll out of contact with the platen, both movements being caused during the travel of the said finger-piece in one direction.

5. In a type-writing machine, the combination of a platen, a feed-roll, a paper-stop, a finger-piece, and means actuated by the finger-piece for moving the paper-stop and feed-roll, the feed-roll and the paper-stop both being revoluble about the same axis, the said means being adapted to move the feed-roll against the sheet so as to frictionally control it and afterward to move the paper-stop out of the path of the leading edge of the sheet, both movements being caused during the travel of the said finger-piece in return direction.

6. In a type-writing machine, the combination of a platen, a feed-roll, a paper-stop, a finger-piece, and means controlled by the finger-piece for moving the paper-stop and the feed-roll, the said finger-piece being movable from normal position in one direction to move the feed-roll out of contact with the platen and movable in another direction to throw the said paper-stop into operative position and to move the said feed-roll out of contact with the platen.

7. In a type-writing machine, the combination of the platen, a feed-roll, a guide-plate, a paper-stop, a finger-piece, means actuated by the finger-piece for moving the paper-stop, the guide-plate and the feed-roll, the said finger-piece being movable from normal position in one direction to move the feed-roll and the guide-plate out of contact with the platen, and movable in another direction to throw the said paper-stop into contact with the platen and then to move the said feed-roll out of contact with the platen.

8. In a type-writing machine, the combination of a platen, a feed-roll, and a paper-guide plate extending longitudinally of the platen and revoluble about a central longitudinal axis, one edge of the guide-plate being provided with a paper-stop and the opposite edge serving to press the paper against the platen.

9. In a type-writing machine, the combination of a platen, a feed-roll, and a paper-guide plate extending longitudinally of the platen, said guide-plate being revoluble about a central longitudinal axial support, both the guide-plate and its axial support being movable bodily to and from the platen, and said feed-roll being also revoluble about the axial support of said guide-plate.

10. In a type-writing machine, the combination of a platen, a feed-roll, a paper-guide plate extending longitudinally of the platen, and revoluble about a central longitudinal axis, the rear portion of said guide-plate serving as a regulator to position and straighten the paper, and being normally out of contact with the platen.

11. In a type-writing machine, the combination of a platen, a revoluble and adjustable side gage or margin regulator serving to position the paper longitudinally of the platen, and a paper-guide plate extending longitudinally of the platen, the rear portion of said guide-plate serving as a regulating-stop to position and straighten the paper along its leading edge or top.

12. In a type-writing machine, the combination of a platen, a pivoted paper-guiding plate having its rear portion, or that part in rear of its pivot, bent outward to form a paper-stop and having its edge forward of the pivot-spring pressed toward the platen, and means for moving said rear portion against the platen.

13. In a type-writing machine, the combination of a platen, a platen-frame, links pivotally connected with said frame, a shaft mounted in said links, a paper-guiding plate pivoted on said shaft and having a portion thereof adapted to operate as a paper-stop, links on said shaft, said links having a rod or shaft mounted in their ends, a pressure-roller mounted on said second shaft, a finger-lever on said second shaft, and means for normally keeping the forward edge of said plate and said roller in contact with the platen.

14. In a type-writing machine, the combination of a platen-frame, a platen, links mounted on said frame, a shaft mounted on said links, links fast on said shaft and extending toward the axis of motion of the first-mentioned links, a shaft fast to the second-mentioned links, a pressure-roller journaled on said last-mentioned shaft, a finger-lever fast to said shaft, a paper-guiding plate journaled on the first-mentioned shaft and having its rear edge formed to operate as a paper-stop, and springs for normally keeping said roller and the forward edge of said plate in contact with the platen.

15. In a type-writing machine, the combination of a platen-frame, a platen, links pivotally connected with the platen-frame, a shaft borne by said links, a paper-guiding plate pivotally mounted on said shaft and provided with a paper-stop, a spring acting to press the forward edge of said plate against the platen, and a lever for moving said links and shaft toward and from said platen.

16. In a type-writing machine, the combination of a platen frame, a platen, a pivoted paper-guiding plate coacting with said platen and provided with a paper-stop at its rear, a spring for keeping the forward edge of said plate normally in contact with said platen, and mechanism for moving said plate bodily into contact with said platen.

17. In a type-writing machine, the combination of a platen-frame, a platen, an adjustable support on said frame, a bent rod slidable in bearings on said support and forming a margin-regulator, and a paper-guide plate extending longitudinally of the platen, the rear portion of said guide-plate serving as a regulating-stop to position and straighten the paper along its leading edge or top.

18. In a type-writing machine, the combination of a platen-frame, a platen, a support slidably connected with a rod of said platen-frame, a bent rod slidable in bearings on said support and forming a margin-regulator, and a paper-guide plate extending longitudinally of the platen, the rear portion of said guide-plate serving as a regulating-stop to position and straighten the paper along its leading edge or top.

19. In a type-writing machine, the combination of a platen-

frame, a platen, a support connected with said frame, a bent rod slidably and revolubly connected with said support and forming a margin-regulator, and adapted to be turned out of working position, and a paper-guide plate extending longitudinally of the platen, the rear portion of said guide-plate serving as a regulating-stop to position and straighten the paper along its leading edge or top.

20. In a type-writing machine, the combination of a platen-frame, a platen, a support adjustably connected with said frame, a bent rod slidably and revolubly connected with said support and forming a margin-regulator, and adapted to be turned out of working position, and a spring bearing on said rod and controlling the same.

21. In a type-writing machine, the combination of a platen; a feed-roll; a paper-stop; a finger-piece; and means controlled by the finger-piece for moving the feed-roll out of contact with the platen without bringing the paper-stop into operation, or for moving the feed-roll out of contact with the platen and bringing the paper-stop into operation, as may be desired.

22. In a type-writing machine, the combination of a platen, a side gage or margin-regulator to position the paper longitudinally of the platen, and a paper-guide plate extending longitudinally of the platen, the rear portion of said guide-plate serving as a regulating-stop to position and straighten the paper along its leading edge or top.

813,846. ADJUSTABLE BRAKE-HANGER. GEORGE M. BRILL, Philadelphia, Pa., assignor to John A. Brill, Philadelphia, Pa. Filed May 1, 1905. Serial No. 258,154.

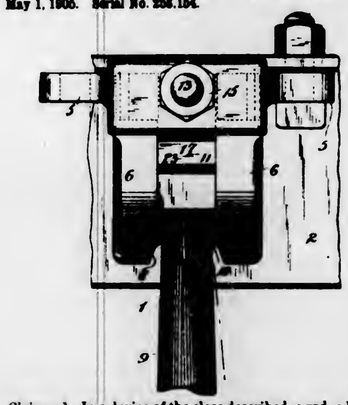

Claim.—1. In a device of the class described, a rod, a ball at the end of said rod, a casing and an adjustable socket resting in said casing and surrounding said ball.

2. In a device of the class described, a rod with a ball at one end, a casing, an adjustable socket mounted in said casing and means for causing said socket to engage said ball.

3. In a device of the class described, a rod with a ball at one end, a casing, an adjustable socket mounted in said casing, a wedge engaging a part of said socket and means for causing said wedge to force the ball and socket together.

4. In a device of the class described, a rod with a ball, a casing, an adjustable socket mounted in said casing and surrounding said ball, one part of said socket having an inclined face, a wedge engaging said inclined face, and springs resting in said wedge and against said casing.

5. In a device of the class described, a rod with a ball, a casing, an adjustable socket resting in said casing, and provided with a plurality of parts, one of said parts having a lip which overlaps a portion of another part, and means for causing the parts of the socket to rest snug against the ball.

6. In a device of the class described, a rod having a ball at one end, a casing, a socket composed of a plurality of parts which are adapted to be forced into an engagement with said ball, a wedge adapted to engage one of said parts, a cap engaging a portion of said casing and a bolt connecting said wedge and cap, whereby the parts of the socket may be forced into engagement with the ball.

7. In a device of the class described, a rod with a ball at one end, a casing, an adjustable socket mounted in said casing, and fitting said ball, said socket being divided into upper and lower sections, the lower section being formed with a plurality of interchangeable parts.

8. In a device of the class described, a rod having a ball at one end, a casing having an elongated slot at its lower portion extending on each side of said rod, an adjustable socket composed of upper and lower sections embracing said ball, a cap and means for connecting said cap and socket, whereby the parts of the socket may be forced into engagement with said ball.

9. In a device of the class described, a rod with a ball at one end, a casing, with adjustable socket mounted in said casing and surrounding said ball, and slot in said casing through which said rod protrudes, means for causing the portions of the socket to engage the ball and covers fixed to said rod and adapted to conceal said slot.

10. The combination with a brake-shoe head, a hanger for supporting or suspending the same, furnished with a ball-and-socket joint to give the head a free and unrestricted motion in all directions and to permit the brake-shoe to properly fit and bear against the wheel at all times when applied thereto and compensate for wear or lack of proper adjustment of parts.

11. In a device of the class described, a hanger for suspending or supporting a brake-beam, provided with a ball-and-socket connection between said hanger and brake-beam and a ball-and-socket connection at the upper end of said hanger between the same and the truck-frame, each of said ball-and-socket connections comprising a ball and a two-part socket surrounding the ball.

813,847. FOLDING BOX. EDWARD G. BROWN, Glendale, Cal. Filed Apr. 27, 1905. Serial No. 257,738.

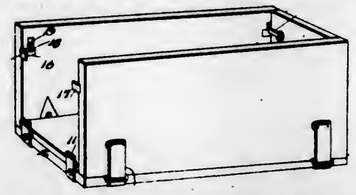

Claim.—1. A collapsible crate comprising a bottom and side and end walls, vertically-uprising connecting members carried by the bottom and having inturned engaging flanges, the walls of the crate being provided with sockets to receive said engaging flanges, slotted guide members carried by the walls and slidably disposed upon the connecting members, and means for securing the walls in non-collapsed position.

2. A collapsible crate comprising a bottom and a foldable wall, the latter being provided with a socket, a connecting member carried by the bottom and having an inturned flange designed to enter said socket, a slotted guide member carried by the wall and slidably engaged with the connecting member, and means for securing the wall in non-folded position.

813,848. GRINDING STONE AND DISK EMPLOYED IN MECHANICAL AND OPERATIVE DENTISTRY. HARRY SANFORD-BURTON, Oxford, England. Filed July 31, 1905. Serial No. 271,967.

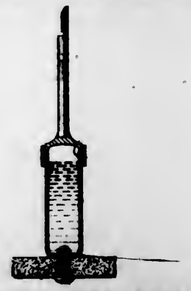

Claim.—1. A spindle having a hollow enlarged end forming a closed water-reservoir, and a grinding-stone secured to the outer extremity of said spindle, said reservoir provided with openings forming communications with the stone for supplying water thereto.

2. A spindle having a hollow end forming a closed reservoir and provided with an inlet-port for supplying water thereto, a grinding-stone secured to the said spindle, said hollow end provided with openings forming conduits for supplying water to the stone, and an annular ring slidable on the spindle for closing the inlet-port.

813,349. PLATFORM-ADJUSTING MEANS FOR SEED-HARVESTERS. THOMAS J. CAMPBELL, Lathrop, Mo. Original application filed June 20, 1904. Serial No. 213,269. Divided and this application filed July 19, 1904. Serial No. 217,214.

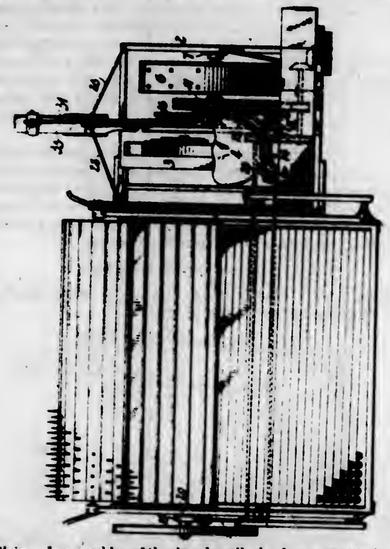

Claim.—In a machine of the class described, a frame, supporting-wheels at the sides of the frame, means for vertically adjusting the frame at one side, consisting of a curved rack on the frame, a gear-wheel loose on the supporting-wheel axle and meshing with said rack, a sheave rotatable with said gear-wheel, a shaft having means for rotating it, a drum fixed on said shaft, a cable partly wound at its ends respectively on said drum and on said sheave, means for simultaneously vertically adjusting the frame at its other side, consisting of a second drum on said shaft, vertical parallel guides on the frame, a bracket movable in said guides and carrying the axle for the other supporting-wheel, a sheave on the bracket above said axle, idler-sheaves on the frame, a cable attached at its ends respectively to the frame and last-named drum and intermediately passed around the bracket-sheave and idler-sheaves, and means independent of the aforesaid means for vertically adjusting the frame at its front.

813,350. DRY-PIPE VALVE FOR AUTOMATIC SPRINKLER SYSTEMS. ELMER S. CLAYTON, Newark, N. J. Filed Mar. 18, 1905. Serial No. 250,233.

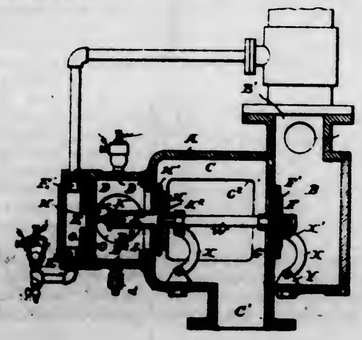

Claim.—1. In an apparatus of the character described, a casing containing four chambers, two in communication with distributing-pipes and both containing air under pressure, one in communication with a source of water-supply under pressure, and the other under atmospheric pressure, a valve closing the communication between the water-supply chamber and that under atmospheric pressure, and arranged to seat under the water-pressure, a second valve fitted to a port of less diameter than the first seating against the water-pressure and closing the communication between the water-chamber and one of those under air-pressure, and means whereby a reduction of pressure in the air-pressure chambers causes said valves to be opened, substantially as set forth.

2. In an apparatus of the character described, the combination with a casing having two chambers communicating independently with distributing-pipes normally containing air under pressure, a water-chamber communicating with a source of water-supply under pressure, a chamber under atmospheric pressure, a port between the latter chamber and the water-chamber, a port of less diameter between the water-chamber and one of the air-pressure chambers, connected valves fitted to said ports, the smaller closing under air-pressure against the water-pressure, and the larger under the water-pressure, and means for equalizing the water-pressure on both sides of the larger valve on the reduction of pressure in the distributing-pipes and air-pressure chambers, substantially as set forth.

3. In an apparatus of the character described, the combination with a valve-casing having four chambers, one of the chambers being connected to be normally under water-pressure, of passages connecting said chamber to two other chambers, one under atmospheric pressure and the other under air-pressure in excess of atmospheric pressure, a diaphragm interposed between the air-pressure and atmospheric-pressure chambers, a valve-stem supporting valves controlling the passage between the water, air and atmospheric chambers, and a valve controlling the passages between the water and atmospheric chambers and seated under air-pressure, substantially as set forth.

4. In an apparatus of the character described, the combination with a valve-casing having a chamber connected to be normally under water-pressure, a riser-chamber normally under air-pressure, and an auxiliary chamber under atmospheric pressure, of passages between the water-chamber and both the riser and auxiliary chambers, a valve having gates closing both said passages under water-pressure, and a third valve seated against the water-pressure by air-pressure, substantially as described.

5. In an apparatus of the character described, the combination with a valve-casing having a chamber connected to be normally under water-pressure, a riser-chamber normally under air-pressure, and an auxiliary chamber under atmospheric pressure, of passages between the water-chamber and both the riser and auxiliary chambers, a valve having gates closing both said passages under water-pressure, a third valve, and diaphragm connected therewith whereby to seat said valve by air-pressure against the water-pressure, substantially as described.

6. The combination with the valve F controlling the port between the air and water chambers of an automatic fire-extinguisher, and seated under air-pressure, of a connected valve H seated under water-pressure to hold the air-pressure valve to its seat, and means whereby to admit the water-pressure to both sides of the valve H on a reduction of the air-pressure, substantially as set forth.

7. The combination of the casing having a chamber communicating with a water-supply, a chamber under air-pressure, and one under atmospheric pressure, with a port between the water-chamber and each of the other chambers, a valve having two connected heads closing said ports under water-pressure, a second port between the chamber under atmospheric pressure and the water-chamber, a valve closing said port, and a diaphragm maintained on said latter valve by air-pressure, substantially as set forth.

8. In an apparatus of the character described, the combination with a valve having a water-chamber connected to be normally under water-pressure, an auxiliary chamber under atmospheric pressure, and a diaphragm-chamber under air-pressure, of a valve having a tubular extension, a gate for the passage between the water-chamber and auxiliary chamber, and a movable gate controlling the opening of the tubular extension and controlled by the diaphragm, substantially as described.

9. In an apparatus of the character described, the combination with a valve-casing having a chamber, of a gate closing the chamber at one side, a tubular extension through the gate, a diaphragm closing the chamber at the other side, and an independent loose gate normally closing the tubular extension under the influence of the diaphragm and supported to fall from normal position when the diaphragm is moved, substantially as described.

10. In an apparatus of the character described, the combination with a valve having a water-chamber connected to be normally under water-pressure, a riser-chamber under air-pressure, an auxiliary chamber under atmospheric pressure, a diaphragm-chamber under air-pressure, and a diaphragm between the diaphragm-chamber and auxiliary chamber, of a triple-seated valve having gates controlling the passages between the water-chamber and riser-chamber and water-chamber and auxiliary chamber and a tubular extension into the auxiliary chamber, and an independent gate controlling said tubular extension and controlled by the diaphragm, substantially as described.

813,351. DRILLING-MACHINE. FRANCIS W. CLOUGH, Springfield, Mass., assignor to Nelson C. Newell, Springfield, Mass. Filed Sept. 27, 1904. Serial No. 226,147.

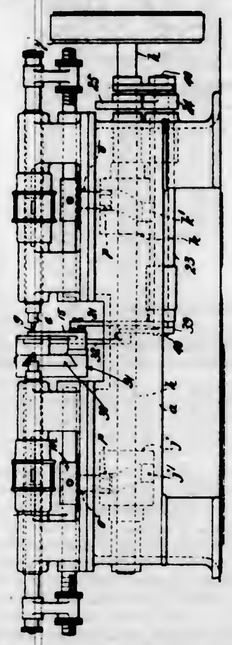

Claim.—1. In a button-drilling machine, a drill and a router in axial alinement, a work-holder arranged between said tools, and transversely movable from one position to another, means for intermittently advancing the drill and retracting the same, means for advancing and retracting the router, in unison with the drill, and for maintaining it in partially-advanced position while the drill is retracted, then again advancing the router in unison with the drill and retracting it to its full extent, and suitable driving mechanism for the drill and router.

2. In a button-drilling machine, two drills in axial alinement and movable toward and from each other, a work-holder, drill-controlling mechanism comprising means for causing both drills to first move toward each other in the operation of forming each eye in the button and then causing one drill to advance and the other retire in the operation of completing each eye, and means for effecting an automatic movement of the work-holder transversely of the axis of the drills while one of the same is in its retired position and the other partly advanced within the plane of the button said movement serving to rout out a channel between the eyes by the latter drill.

3. In a machine of the character described, a spindle, suitable bearings therefor, sleeves in said bearings extending one toward the other, a pulley mounted on said sleeves between the bearings, and a pin extending transversely of the pulley through a longitudinally-disposed slot in said spindle, whereby the latter may move endwise through the pulley and be rotated thereby.

813,352. LOG-DERRICK. HARRY COMBS, Upson, Wis. Filed Sept. 15, 1905. Serial No. 278,280.

Claim.—A derrick comprising a base-frame, a rectangular mast-frame connected to the base-frame by a horizontal axis, a vertically-pivoted mast carried by the mast-frame, a boom-arm hinged to the mast, a guy-cable connecting the outer end of the boom to the upper end of the frame, inclined and detachable strut-braces arranged between the base-frame and the mast-frame, guy-cables connecting the top of the mast-frame to the base-frame and turnbuckles in said cables for tightening up the same and holding the mast-frame against the inclined braces.

813,353. INSULATOR. HUNTINGTON B. CROUSE, Syracuse, N. Y. Filed Apr. 18, 1904. Serial No. 203,738.

Claim.—1. The combination with a base of insulating material, of a cup-shape insulator resting on the base and provided with a central aperture in its bottom, a metal socket loosely fitted in the insulator and a pair of terminals, one of which is electrically connected to the metal socket and the other bearing on the base and extending outside of the insulator and provided with a contact-piece projecting through the central aperture in the insulator and a screw passing through the base and connecting said terminal and said contact-piece.

2. The combination with a base of insulating material, a cup-shape insulator having its bottom resting upon the base and provided with a central aperture and an annular flange surrounding said aperture, an electric contact-piece secured to the base and projecting through said aperture, a metal socket loosely fitted in the insulator and removable therefrom, and a terminal in electrical contact with the socket and secured to the base said terminal having forked ends fitting around said flange.

3. A cup-shape insulator having an end wall or bottom provided with a central opening surrounded by an annular flange in combination with a metal socket having bottom flanges resting upon the bottom of the insulator at opposite sides of the flange.

4. An insulator for receiving metal sockets for fuse-plugs and similar devices, said insulator consisting of a cylindrical shell of insulating material having an end wall provided with a central open-

ing, and a recess in its end face extending laterally from the opening through the side of the shell, said bottom being also provided with an annular flange surrounding the opening.

5. An insulator consisting of a cylindrical shell of insulating material having a transverse wall, with a central opening therethrough and with a recess in one of its end faces extending laterally through one side of the shell, and having an annular flange surrounding the central opening, in combination with a socket loosely fitted in the insulator, and formed with bottom flanges, a terminal having a bifurcated end embracing said flange of the insulator and resting on the flanges of the socket, a second terminal extending under the insulator, a base on which the insulator is mounted, a screw extending through said base and through said second terminal and a contact-block arranged in the central opening of the insulator, said screw screwing into said contact-block, substantially as described.

6. An insulator for the purpose described, consisting of a cylindrical shell of insulating material having a transverse wall provided with a central opening therethrough and with a recess in one of its end faces extending laterally through one side of the shell, said shell being also provided with an additional opening at one side of the central opening and extending through the adjacent side of the shell, and an annular flange surrounding the central opening and separating it from the additional opening.

813,354. ADVERTISING DEVICE. ELMETTA C. CROW, Allegheny, Pa., assignor of one-half to Alonzo B. McClure, Allegheny, Pa. Filed June 1, 1905. Serial No. 263,233.

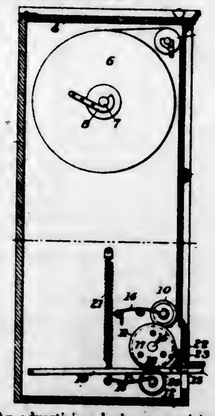

Claim.—1. An advertising device, comprising a case having a transparent panel, a roll of paper having advertisements thereon and supported in said case at one side of the panel, the case having a discharge-opening at the opposite side of the panel, and means whereby successive portions of the paper, each of a determinate length and each bearing a definite positional relation to the said panel may be drawn off from the roll by a free edge protruding through the discharge-opening; substantially as described.

2. An advertising device comprising a case having a transparent panel, a roll of paper having advertisements thereon, and supported in said case at one side of the panel, the case having a discharge-opening for the free edge of the paper at the opposite side of the panel, a feed-roller adjacent to the discharge-opening, and pawl-and-ratchet means in connection with the feed-roller for definitely limiting the length of paper which can be drawn over the feed-roller; and also for causing each such length to bear a definite positional relation to the said panel substantially as described.

3. In an advertising device, a casing having a display-opening, and a discharge-opening, a paper-supply roll, carrying paper having advertisements thereon and arranged to be drawn out through the discharge-opening, and means whereby each drawing operation is limited to a definite length of paper bearing a definite positional relation to the display-opening; substantially as described.

813,355. SELF-PLAYING PIANO. JOHN W. DARLEY, Jr., Baltimore, Md., assignor to William Knabe & Company Manufacturing Company, Baltimore, Md., a Corporation of Maryland. Filed Sept. 26, 1905. Serial No. 280,224.

Claim.—1. In a self-playing piano, the combination of keys, a gravity-operated locking-bar for said keys, means for holding said locking-bar out of engagement with said keys, and mechanism for withdrawing said means operated by the movement of the pedal-board, substantially as described.

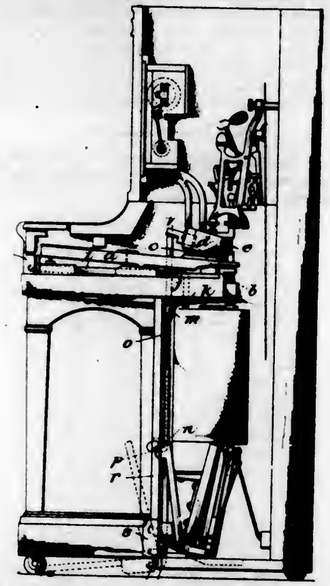

2. In a self-playing piano, the combination of keys, a locking-bar for said keys, means for holding said locking-bar out of engagement with said keys, and connections for withdrawing said holding means by the operation of the pedal-board, substantially as described.

3. In a self-playing piano, the combination of keys, a locking-bar for said keys, means for holding said locking-bar out of engagement with said keys, a pedal-board, and means for locking and unlocking said pedal-board, substantially as described.

4. In a self-playing piano, the combination of keys, a gravity-operated locking-bar for said keys, a pivoted pedal-board, means operated by said pedal-board for holding said bar out of engagement with said keys, and means for locking and unlocking said pedal-board, including a pivoted key-slip and connections between said key-slip and said pedal-board, substantially as described.

5. In a self-playing piano, the combination of keys, a locking-bar for said keys, a pivoted pedal-board, a push-rod connected to said pedal-board, and holding said locking-bar out of contact with said keys when the pedal-board is folded up, means for locking said pedal-board, including a hooked rod, a pivoted key-slip, and a rod operated by said key-slip for moving said rod, substantially as described.

6. In a self-playing piano, the combination of a pivoted pedal-board provided with a catch, a rod provided with a hooked end, a spring bearing against said rod, a pivoted key-slip, and a bent rod attached thereto and carrying a pin, said pin being adapted to strike said rod and unlock said pedal-board when said key-slip is folded down, substantially as described.

813,356. SELF-PLAYING PIANO ATTACHMENT. JOHN W. DARLEY, Jr., Baltimore, Md., assignor to William Knabe & Company Manufacturing Company, Baltimore, Md., a Corporation of Maryland. Filed Sept. 26, 1905. Serial No. 280,225.

Claim.—1. In a self-playing piano attachment, the combination of keys, means for locking said keys, and a movable lid, said lid being adapted to engage with said means to throw it out of operation when desired, substantially as described.

2. In a self-playing piano attachment, the combination of keys, means for locking said keys, a lid composed of parts hinged together and adapted to be slid backward to strike a part of said locking means and thereby disengage them from said keys, substantially as described.

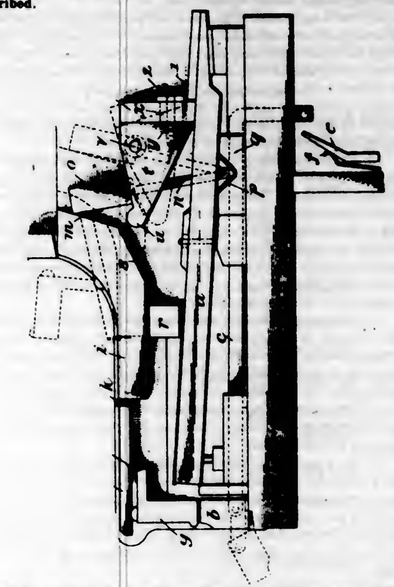

3. In a self-playing piano attachment, the combination of pivoted keys, a bar supported on pivoted brackets for locking said keys, and a movable lid, the parts being so arranged that the lid when slid backward strikes said brackets and prevents said bar from locking said keys, substantially as described.

4. In a self-playing piano attachment, the combination of keys, a lid composed of parts hinged together and having a beveled portion and adapted to be slid backward into the piano, a pivoted bracket located on each side of said piano, and a locking-bar adjustably secured to said brackets, said brackets being so arranged that the beveled portion of the lid as it is slid backward strikes said brackets and lifts said bar out of contact with said keys, substantially as described.

5. In a self-playing piano attachment, the combination of a lid composed of three parts hinged together, the rear part having a beveled portion, said lid being adapted to slide backward into said piano, a lever hinged to the rear part of said lid, keys, a bracket pivoted to each side of the piano, and a locking-bar for said keys adjustably connected to said brackets, the parts being so arranged that the beveled portion of the lid will strike said brackets when it is slid backward and lift said locking-bar out of contact with said keys, substantially as described.

6. In a self-playing piano attachment, the combination of means for unlocking the self-playing piano part, and means for locking said keys against movement or unlocking them at the will of the operator, substantially as described.

7. In a self-playing piano attachment, the combination of means for unlocking the self-playing portion, keys, pivoted brackets carrying a locking-bar for said keys, and a sliding lid adapted when slid backward to strike said brackets and lift said bar out of contact with said keys, substantially as described.

8. In a self-playing piano attachment, the combination of a key-slip and a bar operated thereby to release the self-playing portion of the piano, keys, a locking-bar for said keys, brackets pivoted to the sides of the piano supporting said bar, and a hinged and sliding lid adapted, when slid back, to strike said brackets and lift said bar out of engagement with said keys, substantially as described.

813,357. GAS-LIGHT SWITCH. THOMAS A. DAVIS, Findlay, Ill. Filed May 17, 1905. Serial No. 260,897.

Claim.—1. The plunger-cylinder, provided with a port at each end and one at the center, a gas-pipe communicating with each port, combined with a rod equipped with a valve having a small hole through it from side to side, which valve is adapted to be moved from side to side of the central port, and supports and stops for the rod in the cylinder.

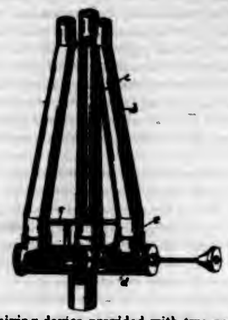

2. A gas-receiving device provided with two ports at opposite points and a central port and pipes communicating with said ports, combined with a valve consisting of a flexible disk on the said rod having a gas-tight fit on the inside of the cylinder and backed upon both sides by metallic disks smaller in diameter than said valve movable from side to side of the central port, and means for moving said valve.

3. A gas-receiving device consisting of a horizontal cylinder with two ports at opposite points and a central port and pipes communicating with said ports, combined with short tubes extending inward a short distance from each end of the cylinder, a plunger-rod adapted to move longitudinally in said cylinder and pipes, a valve on said rod to control the said ports, and to be stopped by abutting against the inner ends of said tubes.

813,358. DRYING APPARATUS. CLARENCE M. DAVISON, Newburgh, N. Y. Filed Mar. 7, 1905. Serial No. 248,888.

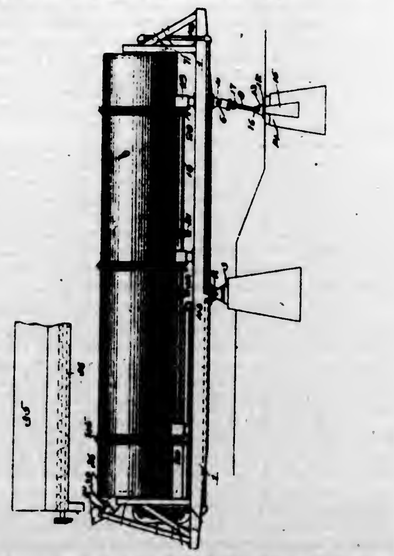

Claim.—1. In an apparatus of the class described, the combination of a pivotally-mounted frame, adjusting means for said frame, said adjusting means comprising a movable hollow member secured to said frame, a revoluble, threaded bolt positioned within said hollow member, a threaded, apertured member, said revoluble bolt positioned within said apertured member, and sand-drying means carried by said frame.

2. In a drying apparatus, the combination with a support, a revoluble cylinder journaled upon said support, of removable heads carried by said support and closing the ends of said cylinder, a valved hopper secured to one of said heads, a weighted door secured

to the other head, a steam-pipe positioned within said cylinder, and means for driving said cylinder.

3. In a drying apparatus, the combination of an adjustable frame, a revolvable cylinder journaled upon said frame, longitudinal ledges secured within said cylinder, a single tubing coiled around said cylinder and partly surrounding said ledges, removable means closing the ends of said cylinder, a vacuum-pump connected to one end of said cylinder, inlet and outlet tubings connected to said coiled tubing positioned within the cylinder, a valved hopper carried by the means closing one of the ends of said cylinder, and means for driving said cylinder.

4. In a drying apparatus, the combination of an adjustable frame, a cylinder carried by said frame, removable heads carried by said frame and closing the ends of said cylinder, a steam-pipe secured within said cylinder, inlet and outlet tubings secured upon said frame, coupling devices connecting said tubings and steam-pipe, valved inlet and outlet means formed upon said heads, and means for imparting movement to said cylinder.

5. In a drying apparatus, the combination with a support, of a frame movably mounted off center upon said support, adjusting means for said frame, said adjusting means comprising a revolvable member, supporting means for said member, means connecting said member to said frame, parallel shafts journaled upon said frame, grooved bearings secured to said shaft, a cylinder, annular members substantially V-shaped in cross-section secured to the outer surface of said cylinder, said annular members resting within the grooved portions of said bearings, means for driving said shafts and imparting rotary movement to said cylinder, removable heads secured within the ends of said cylinder, one of said heads provided with a valved hopper, the other head provided with a weighted door, longitudinal ledges secured within said cylinder, a continuous tubing positioned between said ledges, stationary inlet and outlet tubings secured to said frame, and an adjustable coupling connecting said stationary tubings and the tubing secured within said cylinder.

6. In an apparatus of the character described, the combination with a support, of a pivotally-mounted frame carried by said support, adjusting means for said frame, said adjusting means comprising a pivotally-mounted cup-shaped member, a bolt provided with a head, the headed portion of said bolt being positioned within said cup-shaped member, an annular member positioned upon said bolt and secured to said cup-shaped member, a supporting member provided with parallel extensions carried by said support, a threaded block movably mounted upon the parallel extensions of said supporting member, said bolt threaded into said block, and drying means carried by said frame.

7. In an apparatus of the class described, the combination with a support, of a movable frame carried by said support, an adjusting device for said frame, said adjusting device comprising a hollow member pivoted at one end to said frame, a revolvable member having one end positioned within said hollow member, an annular member positioned upon said revolvable member and fixedly secured to said hollow member, a pivotally-mounted member carried by said support, said revolvable member threaded into said pivotally-mounted member, and drying means carried by said movable frame.

8. In an apparatus of the character described, the combination with a support, of a frame pivotally mounted upon said support, an adjusting device for said frame, said device comprising a movable, substantially cup-shaped member pivotally secured to the bottom of said frame, a revolvable member, means connecting said revolvable member to said support, and drying means carried by said frame.

9. In an apparatus of the character described, the combination with a support, of a revolvable cylinder carried by said support, stationary pipes carried by said support, a pipe positioned within said cylinder, coupling devices connecting the ends of said pipe within said cylinder with the stationary pipes, each of said coupling devices comprising a primary member provided with a threaded end and an integral, internal, depending portion, a slidable, auxiliary member positioned within said primary member, said auxiliary member provided with an annular extension formed upon one end thereof, the annular extension positioned between the internal, depending portion and the threaded portion of the primary member, a ring positioned within and engaging the threaded portion of said primary member, and a gland positioned upon said auxiliary member and secured to said primary member.

10. In an apparatus of the character described, the combination with a support, of a movably-mounted frame carried by said support, an adjusting device for said frame, said adjusting device comprising a rotatable member pivotally mounted upon said frame, a movable member carried by said support, the lower portion of said revolvable member threaded into said movable member carried by the support, and drying means carried by said frame.

11. In an apparatus of the character described, the combination with a support, of a movable frame carried by said support, an adjusting device for said frame, said adjusting device comprising a hollow member provided with an open bottom and a closed top, pivotally secured to the bottom of said frame, a movable member carried by said support, and vertically-adjustable means supported by said movable member and having its upper portion positioned within said member, and drying means carried by said frame.

12. In an apparatus of the character described, the combination with a support, of a movable frame carried by said support, an adjusting device for said frame, said adjusting device comprising an inverted, substantially cup-shaped member pivoted to said frame, revolvable means carried by said support and positioned within said substantially cup-shaped member, parallel shafts carried by said frame, bearings fixedly secured to said shafts, a cylinder carried entirely and driven by said bearings, and drying means carried by said frame and positioned within said cylinder.

13. In an apparatus of the character described, the combination with a support, of a movable frame carried by said support, parallel, horizontal shafts positioned upon said frame, bearings fixedly secured to each of said shafts, a cylinder carried entirely and driven by said bearings, drying means positioned within said cylinder, an adjusting device for said frame comprising an inverted, receiving member, and revolvable means seated within said receiving member and connected to said support.

14. In an apparatus of the character described, the combination with a pivotally-mounted frame, of an adjusting device for said frame, said adjusting device comprising a member, constituting a container, pivotally secured to said frame, and adjusting means for lifting said frame and retaining it in an adjusted position, having one end seated within said container, and drying means carried by said frame.

818,359. **HOSE-COUPLING.** EARL J. W. DE FOREST and FRED I. DE FOREST, Brainer, Okla. Filed June 27, 1905. Serial No. 267,209.

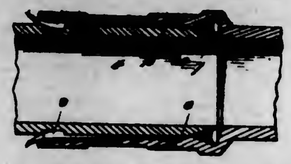

Claim.—1. In a hose-coupling, the combination of an outer ferrule or casing provided with a recess having an inclined face, an inner ferrule fitting within the outer ferrule and having an oppositely-inclined face, a gasket having an approximately triangular cross-section, two sides of which fit against the before-mentioned oppositely-inclined faces, while the third side is formed with a depression or groove so that the pressure of the water forces the sides of the groove tightly against the outer and inner ferrules respectively and forms an extremely tight joint, and means for holding the two ferrules together.

2. In a hose-coupling, the combination of an outer ferrule having an annular groove in its inner face and also a series of longitudinal grooves extending from the annular groove to the end of the ferrule, spring-catches fitting in the before-mentioned longitudinal grooves and provided at their inner ends with projections which are secured in the annular groove, and an inner ferrule fitting within the outer ferrule and having an annular groove which is engaged by the spring-catches to lock the outer and inner ferrules together.

3. In a hose-coupling, the combination of an outer ferrule having two annular grooves in its inner face and also a series of longitudinal grooves extending from the outer annular groove to the end of the ferrule, the inner annular groove having an inclined face, spring-catches fitting in the before-mentioned longitudinal grooves and having one end secured in the before-mentioned outer annular groove while the opposite end extends beyond the end of the ferrule to form a finger-piece, an inner ferrule fitting within the outer ferrule and having an inclined portion which comes opposite the inclined face of the inner annular groove and also having a recess which is engaged by the spring-catches to lock the outer and inner ferrules together, and a gasket having a wedge-shaped cross-section and fitting against the inclined face of the annular groove in the outer ferrule and the inclined portion of the inner ferrule.

4. In a hose-coupling, the combination of an outer ferrule having a series of longitudinal grooves in the inner face thereof, spring-catches operating in said longitudinal grooves, and an inner ferrule fitting within the outer ferrule and having a recess adapted to engage with the spring-catches to hold the two ferrules together.

818,360. **KEYBOARD-LOCKING MECHANISM FOR MECHANICAL CASHIERS, REGISTERS, AND RECORDERS.** ISAAC S. DENNY, East Orange, N. J., and FOURTH J. HULL, Brooklyn, N. Y., assignors, by mesne assignments, to City Trust Company of New York, trustee, a Corporation of New York. Filed Oct. 3, 1901. Serial No. 77,473.

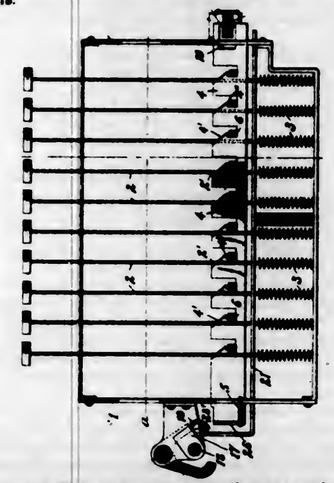

Claim.—1. A keyboard mechanism for the purposes described comprising groups of keys representing different denominations, the keys of different groups being capable of operation in a predetermined order of sequence, means actuated by any key of one group to lock the keys of groups out of said predetermined order of sequence.

2. A keyboard mechanism for the purposes described comprising normally unlocked groups of keys representing different denominations, the keys of different groups being capable of operation in a predetermined order of sequence, means actuated by any key of one group to lock the keys of the next group out of said order of sequence.

3. A keyboard mechanism comprising a plurality of groups of keys, each group representing a member of a serial order and any key in any group being capable of initial operation, in combination with locking means operative by the actuation of any key in any group to lock all the other groups except one.

4. A keyboard mechanism for the purposes described, comprising keys arranged in groups of different denominations and devices controlled by the operation of each group to lock the keys of the groups of lower denominations except the adjacent group.

5. A keyboard mechanism for the purposes described comprising groups of keys representing different denominations, the keys of different groups being capable of operation in a predetermined order of sequence, and devices controlled by the operation of each group to lock the keys of all the other groups except the one next in said predetermined order of sequence.

6. A keyboard mechanism comprising a plurality of keys arranged in groups, any key of which is capable of initial operation, an interlocking mechanism acting upon all the groups and controlling the order of their operation, said interlocking mechanism operated by any key of any group to lock all the other groups of keys except one.

7. A keyboard mechanism comprising a plurality of groups of keys any key of which is capable of initial operation, the several groups together representing a serial order, and locking means actuated by the operation of any key in any group to lock all the groups except the one next in the serial order.

8. The combination of a plurality of groups of keys and slides corresponding to and operated by the keys of each group, each slide having projecting means engaging with the keys of another group to control the operation thereof.

9. The combination of a plurality of groups of keys and slides corresponding to and operated by the keys of each group, each slide having projecting wings adapted to engage the keys of another group.

10. The combination of a plurality of groups of keys representing different denominations, the keys of the different groups being capable of operation in a predetermined order of sequence, and means controlled by the keys of each group to prevent simultaneous operation of keys of adjacent groups.

11. The combination of a plurality of groups of keys, slides operated by the respective groups, and a plurality of locking devices, each locking device engaged by one of said slides and controlled by the same, and each locking device having portions engaging the others of said slides to lock the same.

12. The combination of a plurality of groups of keys, slides operated by the respective groups, a plurality of locking devices each locking device having a portion engaged by one of the key-operated slides to control the operation of said locking device, a portion engaged by another of the key-operated slides to reset the locking device, and portions engaging other key-operated slides to lock the last-named slides.

13. A keyboard mechanism for the purposes described, comprising groups of keys and locking devices controlled by the keys of one group to lock all the other groups of keys except one, the keys of the unlocked group having connection with the locking devices whereby when one of said keys is actuated it will unlock the said locking devices.

14. A keyboard mechanism for the purposes described comprising groups of keys, locking devices controlled by the keys of one group to lock all the other groups of keys except one, means actuated by the keys of the unlocked group to release some of the locking devices, and independent means for releasing the other locking devices.

15. In a keyboard mechanism, a plurality of rows or groups of keys, interlocking mechanism coöperating with said rows or groups whereby an initial operation of a key in an intermediate row or group locks the keys of the row or group on one side thereof and leaves unlocked the keys of the adjacent group on the opposite side thereof.

16. In a keyboard mechanism, a plurality of groups of keys, the keys of any one of which are capable of initial operation, and mechanism coöperating with said groups whereby the operation of a key in one group leaves unlocked the keys of an adjacent group and the operation of a key in such adjacent group locks the keys in the first-mentioned group.

17. A keyboard mechanism for the purposes described comprising groups of keys representing different denominations, the keys of different groups being capable of operation in a predetermined order of sequence, means actuated by any key of one group to lock the keys of groups out of said predetermined order of sequence, and a locking device for all the keys and means for releasing said locking device.

18. A keyboard mechanism comprising a plurality of groups of keys, each group representing a member of a serial order and any key in any group being capable of initial operation, in combination with locking means operative by the actuation of any key in any group to lock all the other groups except one, and a universal locking device to lock all the keys, and means for releasing said locking device.

19. A keyboard mechanism comprising a plurality of groups of keys any key of which is capable of initial operation, the several groups together representing a serial order, and locking means actuated by the operation of any key in any group to lock all the groups except the one next in the serial order, and a universal locking device to lock all the keys and means for releasing said locking device.

818,361. **ADDING AND RECORDING MACHINE.** ADOLPHUS S. DENNIS, Cleveland, Ohio. Filed Feb. 20, 1905. Serial No. 246,420.

Claim.—1. In an adding and recording machine, mechanism adapted to add, combined with mechanism adapted to print, power means for automatically operating said mechanisms jointly and simultaneously, keys to throw said power means into action, carrying and feeding means for the paper printed on, and automatic power mechanism adapted to operate said carrying and feeding means.

2. In an adding and recording machine, adding mechanism and printing mechanism, and power means providing variable actuation of both said mechanisms, a movable feed-carriage for the paper and power actuating mechanism adapted to regulate the movement of said carriage in opposite directions, a series of selector-key levers for said adding and printing mechanism, and a series of selector-key levers for said carriage.

3. In an adding and recording machine, adding-wheels and printing means and mechanism to actuate the same, and a movable carriage for the paper printed on, in combination with mechanism adding and printing mechanism and said carriage-operating mechanism, and keys for throwing said means into action.

top of the supplemental pocket beneath which said supplemental pocket opens, substantially as shown and described.

the sections for moving the latter to closed position, a movable latch adapted for connecting the head and cross-piece, a track or way, a

3. In an adding and recording machine, adding-wheels and printing means and mechanism to actuate the same, and a movable carriage for the paper printed on, in combination with mechanism adapted to automatically actuate said carriage in reverse directions, and separate sets of key-levers for throwing said adding and printing mechanism and said carriage-actuating mechanism into action.

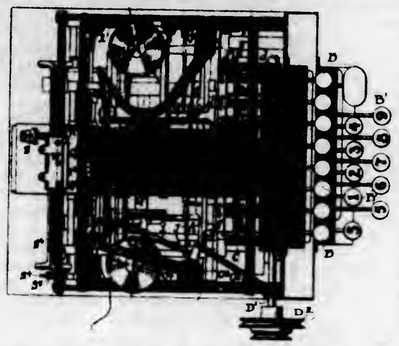

4. In an adding and recording machine, adding-wheels and printing mechanism and a movable carriage for the paper printed on, in combination with means to actuate said wheels and mechanism, mechanism adapted to automatically move said carriage in opposite directions, different sets of keys to throw said adding-wheels and printing mechanism and said carriage mechanism into action, and a power-driven shaft and clutch connections thereon operatively connected with said key-levers.

5. In an adding and recording machine, separately-mounted adding-wheels and mechanism for operating the same, a shaft and clutches thereon adapted to operate said mechanism, and a series of key-levers to throw said clutches into action, in combination with mechanism adapted to print from said wheels.

6. In an adding and recording machine, adding-wheels and actuating mechanism therefor comprising variable-throw members and cam and lever means for operating the same, a revolving shaft and key-controlled means for throwing said parts into action by means of said shaft.

7. In an adding and recording machine, adding-wheels and means to operate the same comprising rack and lever members for producing a variable throw, cams and friction-clutches to actuate said members, key-controlling means for said clutches, and a power-shaft for said clutches.

8. In an adding and recording machine, printing mechanism, a movable carriage to carry the paper for printing, automatic means for setting said carriage at predetermined places, power mechanism for throwing said means into action, and keys with which said power mechanism has mechanical connections.

9. An adding and recording machine provided with printing means, a movable carriage for the paper printed on, power means to automatically move said carriage in opposite directions, and keys for controlling the movement of said carriage in each direction.

10. In an adding and recording machine, printing and adding mechanism, and a movable carriage for the paper, in combination with a power-driven shaft, actuated means for setting said carriage at predetermined places and operating-keys for throwing said means into action, and operating-keys for said printing and adding mechanism.

11. In an adding and recording machine, adding and printing mechanism, a movable carriage for the paper and power-actuated means for setting said carriage at varying distances from the starting-point, in combination with a set of keys for controlling the setting of said carriage, and a set of keys for controlling said adding and printing mechanism.

12. In an adding and recording machine, adding and printing mechanism, a movable carriage for the paper, power-actuated means for setting said carriage at predetermined places, a set of key-levers for controlling said power-actuated means, power-driven mechanism for said adding and printing mechanism, and a set of keys for controlling the action of said power-driven mechanism.

13. In an adding and recording machine, adding and printing mechanism, a movable carriage and mechanism for operating the same, a power-shaft and means connected therewith to actuate said adding and printing mechanism and said carriage-operating mechanism, and keys for throwing said means into action.

14. In an adding and recording machine, adding-wheels and printing mechanism and a movable carriage for the paper, a train of actuating mechanism for said wheels, said printing mechanism and said carriage, a revolving shaft and friction-clutches thereon adapted to operate said train of mechanism, and a series of keys adapted to throw said clutches into action.

15. In an adding and recording machine, adding-wheels and printing mechanism and actuating means therefor comprising variable-throw members and cam and lever means for operating the same, a movable carriage for the paper and means for moving said carriage to predetermined distances, a revolving shaft, and key-controlled means for throwing said parts into action by means of said shaft.

16. In an adding and recording machine, adding-wheels and printing mechanism, rack and lever means for producing a variable movement of said wheels and printing mechanism, a carriage for the paper and means for producing a variable movement thereof, cams and friction-clutches to actuate said rack and lever means and said carriage-operating means, key-controlling means for said clutches, and power means for driving said clutches.

17. In an adding and recording machine, adding-wheels and printing mechanism, automatic means for operating said wheels and printing mechanism, and a series of keys adapted to throw said means into action, in combination with a movable carriage for the paper, automatic means for setting said carriage at predetermined places, and keys for throwing said means into action.

18. In an adding and recording machine, adding mechanism for the totals, and printing mechanism for the items, power means providing variable actuation of said mechanism, and a series of selector-keys for throwing said power means into action, in combination with a movable carriage for the paper, automatic means for setting said carriage at predetermined places, and a series of selector-keys for throwing said means into action.

19. In an adding and recording machine, adding mechanism and power means for automatically operating said mechanism, and keys to throw said power means into action, in combination with a movable carriage for the paper, means to automatically move said carriage in opposite directions, and selector-keys for determining the movement of said carriage.

20. In an adding and recording machine, adding-wheels and printing mechanism, means for operating said wheels and mechanism, and a series of selector-keys for said wheels and printing mechanism adapted to throw said means into action, in combination with a carriage for the paper, means to move said carriage, a series of selector-keys to control the movement of said carriage, and locking means for the adding-wheel and printing-mechanism keys having operative connections with said carriage.

21. In an adding and recording machine, adding-wheels and a slidable item-printing type-bar and hammers for said wheels and bar, a variable-throw mechanism for actuating said wheels and said bar varying distances, a series of levers and clutch and cam members for said variable-throw mechanism, a power-shaft to operate said clutches, and selector-keys to throw said clutches into action.

22. In an adding and recording machine, adding-wheels and a slidable item type-bar and printing-hammers opposite thereto, a variable-throw mechanism for actuating said wheels and said bar, a series of levers and clutch and cam members for said mechanism, a power-shaft to operate said clutches and selector-keys to throw said clutches, in combination with a carriage for the paper, stops to limit the movement of said carriage, means to actuate said carriage, clutch and cam members to operate said stops and said carriage-actuating means, a driven shaft for said clutches, and selector-keys to throw said clutches into action.

813,362. **SAFETY-POCKET.** MARSHALL C. DEXTER, New York, N. Y., assignor to Hiram C. Dexter, New York, N. Y. Filed Mar. 31, 1905. Serial No. 253,179.

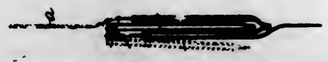

Claim.—A vest or other garment provided with a pocket, and a supplemental pocket secured therein, one side of the supplemental pocket at the opening thereinto being longer than the other, said longer side of the supplemental pocket being secured to one side of the main pocket at the opening thereinto and forming a fold at the top of the supplemental pocket beneath which said supplemental pocket opens, substantially as shown and described.

813,363. **FORMALDEHYDE-GENERATOR.** ALBERT H. DEXTER, Washington, D. C. Filed Aug. 8, 1904. Serial No. 220,001.

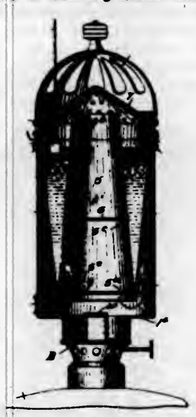

Claim.—1. A generator of the character stated, comprising a casing, a formaldehyde-chamber within said casing, a water-holding member surrounding said formaldehyde-generating chamber and contained within said casing, an air-chamber surrounding said water-containing member and connected by said casing, said air-chamber being in communication with the atmosphere, said water and air within the generator adapted to be heated by the heat evolved in the generating-chamber substantially as shown and described.

2. A formaldehyde-generator of the character stated comprising a body forming a formaldehyde-generating chamber, and a water-jacket surrounding said formaldehyde-generating chamber, a casing surrounding said water-jacket and air-chamber, the water in the water-chamber adapted to vaporize from the heat evolved in the generating-chamber.

3. A formaldehyde-generator of the character stated comprising a body forming a formaldehyde-generating chamber, and a water-jacket surrounding said formaldehyde-generating chamber, a casing surrounding said water-jacket and air-chamber, the water in the water-chamber adapted to vaporize from the heat evolved in the generating-chamber, and means for mixing said gas and vapor.

4. A means for generating formaldehyde-gas and water-vapor comprising a casing, supportable over an alcohol-burner, said casing having air-inlets and gas-outlets, a water-holder and a chimney suspended within said casing, said chimney forming a gas-generating chamber, and oxidizing-disks held within the chimney, all being arranged substantially as shown and described.

5. A formaldehyde-generator comprising an outer cylindrical casing having air-inlet apertures, a disk-carrying member and a water-containing member suspended within said outer casing, oxidizing-disks held within said disk-carrying member, an alcohol-containing means connected to the bottom of the casing, and a top for said casing, all being arranged substantially as shown and described.

813,364. **HOISTING AND CONVEYING MECHANISM.** CHRISTOPHER C. DOLAN, Lockport, N. Y. Filed June 9, 1905. Serial No. 264,497.

Claim.—1. In a device of the class described, a load-receiving device comprising a pair of relatively movable sections, a guide, a member slidably mounted upon the guide and operatively connected with the sections, a head slidably engaged with the guide, a movable latching member for connecting the head with the slidable member, a track or way, a carriage movable thereon and a hoisting-cable operatively connecting the load-receiving device with the carriage, said cable being adapted for actuating the latch to release the slidable member from the head.

2. In a device of the class described, a load-receiving device including a pair of relatively movable sections, a guide, a cross-piece slidably engaged therewith and operatively connected with the sections, a head slidable on the guide, and operatively connected with the sections for moving the latter to closed position, a movable latch adapted for connecting the head and cross-piece, a track or way, a carriage movable thereon, and a flexible hoisting element or cable operatively connecting the load-receiving device with the carriage, said cable being adapted for actuating the latch to release the cross-piece and permit movement of the sections to open position.

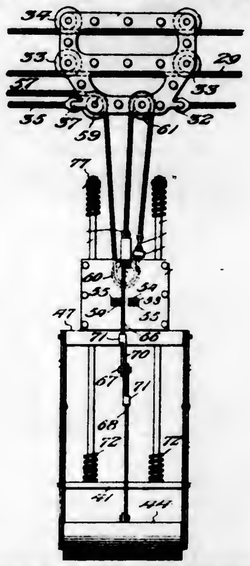

3. In a device of the class described, a load-receiving device including a pair of relatively movable sections, a guide, a member slidably engaged with the guide, and operatively connected with the sections for moving the latter to open position, a head slidably engaged with the guide and operatively connected with the sections for moving the same to closed position, a movable latch member connecting the head and slidable member, and a flexible hoisting element operatively engaged with the load-receiving device and adapted for actuating the latch to release said slidable member.

4. In a device of the class described, a load-receiving device including a pair of relatively movable sections, a guide, a member slidably engaged with the guide and operatively connected with the sections for moving the same to open position, a head slidably engaged with the guide and operatively connected with the sections for moving the same to closed position, a movable latching member adapted for connecting the slidable member and head, a flexible hoisting element operatively engaged with the load-receiving device, and a tripping member carried by said element and adapted to contact with and move the latch to releasing position.

5. In a device of the class described, a head, a load-receiving device operatively connected therewith and movable to dumping position, a guide-pulley journaled in the head, a movable latching member carried by the head a flexible operating element arranged to travel on the guide-pulley and provided with a latch-operating member, an element connected with the load-receiving device and adapted for engagement by the latching member to hold the device in non-dumping position, said latch being operable by the latch-operating member for releasing the element and springs acting on the latch to maintain the same normally in engaging position.

813,365. **CASK OR VESSEL FOR IGNITIBLE OR EXPLOSIVE LIQUIDS OR GASES.** WILHELM DEXTER, Bad Rothenfelde, Germany. Filed Aug. 10, 1905. Serial No. 273,879.

Claim.—1. A device of the class described, including a plurality of annular sections having central openings, space members interposed between said sections to form openings therebetween, a bushing having an opening corresponding to the central openings of the annular sections, and means for securing the said bushing and annular sections together.

2. In a receptacle, a bushing having an opening therethrough,

a plurality of rings having central openings corresponding to the opening in the bushing, a series of rings interposed between the first-mentioned rings for separating the same a distance from one another, and means passing through the several rings and engaging the closing device for connecting said rings to said bushing.

813,366. CIGARETTE-HOLDER. WALLACE DURAND, Newark, N. J., assignor to Durand and Co., Newark, N. J. Filed May 6, 1905. Serial No. 259,696.

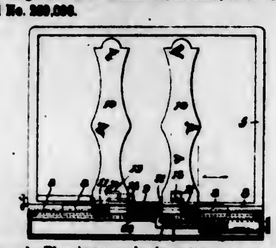

Claim.—1. The improved cigarette-case, comprising hinged sections having an interior chamber for the reception of the cigarettes, a cigarette-holding arm adapted to extend across said cigarettes and hold the same in place in said chamber, a catch for holding said arm in cigarette-holding relation and having a finger-piece at the outside of the case, springs for throwing said arm away from said cigarettes when said arm is released from said catch.

2. The improved cigarette-case, comprising chambered sections adapted each to contain a series of cigarettes, a hinge-pin joining said sections, holding-arms arranged on said hinge-pin and adapted to extend across the cigarettes to hold the same in place in said sections, catches for holding said arms across the cigarettes, said catches extending from said arms to the outside of the case where said catches may be manipulated by the fingers, and springs for throwing the arms from said cigarettes when said arms are released from said catches.

3. The improved case comprising sections, a hinge-pin joining said sections, spring-actuated holding-arms arranged on the hinge-pin of said sections, a spring for throwing said sections open, other springs independent of the case-opening spring but arranged on the same said hinge-pin therewith, for throwing the arms when released away from the contents of the case, and catches adapted to fasten the arms against the said contents to be held on closing the sections together.

4. The improved cigarette-case, comprising hinged sections, cigarette-holding arms, springs arranged and adapted to throw the said holding-arms away from the cigarettes upon said arms being released and catches adapted to fasten the arms against the cigarettes on closing the hinged sections together, substantially as set forth.

5. The improved cigarette-case, comprising sections, a hinge-pin joining said sections, cigarette-holding arms within said case, springs on said hinge-pin tending to throw said arms away from the cigarettes upon being released from the catches, catches adapted to fasten the arms against the cigarettes in closing the hinged sections together and said catches having finger-pieces outside said sections and movable in a direction parallel with the hinge-pin, said catches being released from said arms by pressure on the finger-pieces, and springs for said catches.

6. The improved cigarette-case, comprising hinged sections each on the one hinge-pin and adapted to receive or contain a series of cigarettes, arms hinged on the same hinge-pin with said sections, a spring arranged on said hinge-pin and tending to throw said sections open when the same are released, other springs arranged on the same hinge-pin and bearing on the said arms one to throw one arm away from cigarette-holding relation to one section when said arm is released and the other away from cigarette-holding relation with the other section when released, and means adapted to hold said arms in cigarette-holding relation after the sections are spread.

7. The improved cigarette-case, comprising hinged sections each on the one hinge-pin and adapted to receive or contain a series of cigarettes, arms hinged on the same hinge-pin with said sections, a spring arranged on said hinge-pin and tending to throw said sections open when the same are released, other springs arranged on the same hinge-pin and bearing on the said arms one to throw one arm away from cigarette-holding relation to one section when said arm is released and the other away from cigarette-holding relation with the other sections and catches for holding said arms closed toward the cigarettes, comprising tubular cases secured to the case-sections parallel to the hinge-pin and containing a spring, and a sliding rod, hook-shaped at its inner end to engage a coöperating catch on the arm and at its outer end having a finger-piece.

813,367. LUBRICATING DEVICE FOR CENTRIFUGAL OIL-EXTRACTING MACHINES. EDWARD H. DUTCHER, Siegfried, Pa., assignor, by direct and mesne assignments, to Lehigh Oil and Waste Saving Company, Camden, N. J. Original application filed July 3, 1905, Serial No. 268,105. Divided and this application filed Oct. 7, 1905. Serial No. 281,742.

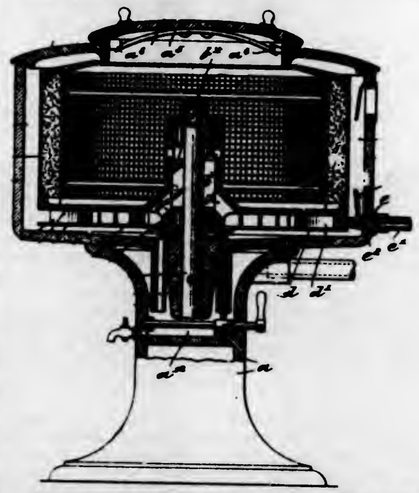

Claim.—1. In a lubricating device for oil extracting and filtering machines, a housing having a basket for oil-containing material adapted to extract oil and force the same against said housing, a shaft terminating in said basket, bearings interposed between said shaft and basket and adapted in conjunction with said shaft, to support said basket, means adapted to conduct steam into the housing to rotate said basket and means adapted to collect a portion of the extracted oil and conduct the same into the steam-inlet means to utilize the steam in conducting oil to said bearings.

2. In a lubricating device for oil extracting and filtering machines, a housing having a basket for oil-containing material provided with an extension, said basket adapted to extract oil and force the same against said housing, a disk having blades secured to said basket, a nozzle carried by said housing and adapted to introduce and direct against said blades a jet, as of steam, to rotate said basket to extract the oil therefrom, by centrifugal force, and to force the same against the interior wall of said housing, means connected with said nozzle and adapted to collect and conduct a portion of the oil in said nozzle into the steam passing therethrough so as to utilize the same in conducting the oil in the extension of said basket to lubricate the bearings therein.

3. In a lubricating device for oil extracting and filtering machines, a stationary housing having a shaft, a basket for oil-containing material having a central extension forming a chamber, bearings interposed between said shaft and extension and adapted to support said basket, a disk having blades secured to said basket, a nozzle carried by said housing and adapted to introduce and direct against said blades a jet, as of steam, to rotate said basket to extract oil therefrom, by centrifugal force, and conduct onto the interior wall of said housing, a receptacle connected with said nozzle and housing adapted to collect and conduct a portion of the oil to said nozzle into the steam passing therethrough to lubricate the bearings in the extension of said basket and force the same by conducting oil introduced into said nozzle to the same.

813,368. CENTRIFUGAL FILTER. EDWARD H. DUTCHER, Siegfried, Pa., assignor, by direct and mesne assignments, to Lehigh Oil and Waste Saving Company, Camden, N. J. Original application filed July 3, 1905, Serial No. 268,105. Divided and this application filed Oct. 7, 1905. Serial No. 281,742.

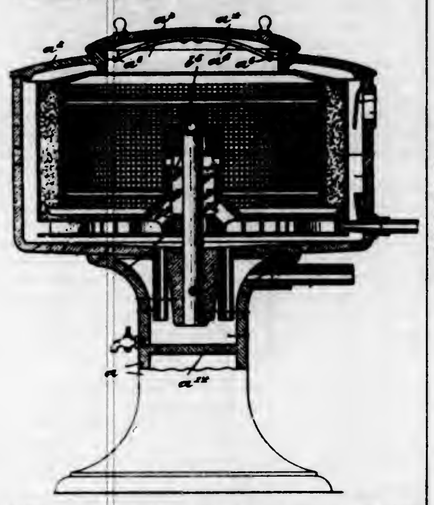

Claim.—1. A separator for centrifugal oil extracting and filtering machines, consisting of a standard having a settling-chamber, a housing carried by said standard having a bottom downwardly inclined toward its central portion, means arranged in said bottom for connecting the housing with said settling-chamber, a basket for oil-containing material having outer and inner perforated walls for permitting of the passage of oil and water therethrough into said housing and of the conducting of the oil and water by its bottom and the connecting means carried by the same into said settling-chamber, and outlets arranged at different planes in said standard for permitting the separate removal of oil and water therefrom.

2. A separator for centrifugal oil extracting and filtering machines, consisting of a standard having a settling-chamber, a housing carried by said standard having an inclined bottom, tubes arranged in said bottom extending into said settling-chamber and adapted to connect the housing with said chamber, a basket for oil-containing material having walls adapted to permit of the passage of oil and water therethrough and rotatably arranged in said housing, said housing adapted to collect oil and water from said basket and by the inclined bottom thereof to conduct the same into said tubes, an outlet for oil and an outlet for water in said standard arranged above and below the free ends of said tubes, to permit of separate removal of the oil and water from said settling-chamber.

3. A separator for centrifugal oil extracting and filtering machines, consisting of a standard having a settling-chamber, a housing carried by said standard having an inclined bottom, tubes arranged in said bottom and extending into said settling-chamber and adapted to connect said housing therewith, a basket for oil-containing material having walls to permit of the passage of oil and water therethrough and rotatably mounted in said housing, said housing adapted to collect oil and water from said basket and by the inclined bottom thereof to conduct the same into said tubes, a drain-pipe for oil and a drain-cock for water arranged above and below the free ends of said tubes, respectively, and adapted to permit of the separate removal of the oil and of the water from said settling-chamber and tubes to permit of the discharge of the oil and water at a point normally below the level of the oil, in said chamber.

813,369. CLUTCH. ARCHIBALD H. BELL and JAMES H. BELL, Philadelphia, Pa., assignors to Burnham, Williams & Company, Philadelphia, Pa., a Firm. Filed July 22, 1905. Serial No. 270,269.

Claim.—1. The combination in a clutch, of a hub, levers pivoted thereto, shoes carried by the levers, a ring with which the shoes engage, and a shifting ring connected to the levers, the said levers passing through said shifting ring, substantially as described.

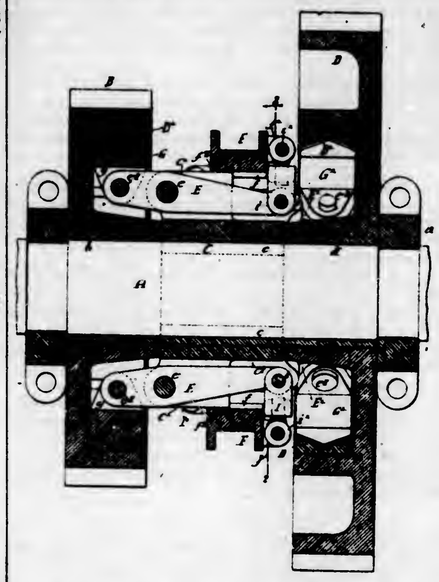

2. The combination of a shaft, a ring on said shaft, a hub also on the shaft, levers pivoted to the hub, shoes carried by the short arms of the levers and arranged to bear upon said ring, a shifting ring mounted on the hub, the levers passing through the shifting ring, and a link connecting the long arm of each lever to the said shifting ring, substantially as described.

3. The combination of a shaft, a hub thereon, two wheels mounted on the shaft, each wheel having an internal friction-surface, two sets of levers pivoted to the hub, a shoe attached to the short arm of each lever arranged to bear upon the friction-surface of the respective wheels, a shifting ring mounted on the hub, the long arm of each lever passing through the shifting ring, and links attaching the ends of each long arm to the shifting ring, substantially as described.

4. The combination of a shaft, two loose wheels mounted on the shaft, a hub fixed to the shaft and mounted between the two wheels, two sets of levers pivoted to the said hub, a shoe carried by the short arm of each lever, a shifting ring common to all the levers and connected to the long arm of each lever, one set of shoes engaging with one of the wheels, the other set of shoes engaging with the other wheel, the said levers being so arranged that they pass through the shifting ring, substantially as described.

5. The combination of a shaft, two gear-wheels mounted on the shaft, a hub secured to the shaft and mounted between the two wheels, collars on the shaft holding said wheels in position, each wheel having a V-shaped friction-surface, two sets of levers, one set being pivoted to one end of the hub, the other set being pivoted to the other end of the hub and alternating with the first set, a shifting ring arranged to slide on the hub and over the levers, a link connecting the long arm of each lever to the ring, and a shoe carried by the other arm of each lever and arranged to engage the frictional surfaces of the wheels, substantially as described.

6. The combination of a shaft, two wheels loose on the shaft, a hub mounted between the wheels and secured to the shaft, an annular friction-ring secured to each wheel and having a V-shaped friction-surface, two sets of levers, one set of levers being pivoted to one end of the hub, the other set of levers being pivoted to the other end of the hub and alternating with the first set of levers, a shifting ring arranged to slide on the hub, adjustable links connecting the shifting ring to the long arms of each lever, and a segmental shoe pivoted to the short arm of each lever and having a V-shaped surface corresponding to the friction-surface of the friction-rings, substantially as described.

813,370. WIRE FENCE. BRADEN L. BLEWELL and WILLIAM GREEN, Morton, Ill., assignors to Interlocking Fence Company, Morton, Ill., a Corporation of Illinois. Filed Apr. 4, 1904. Serial No. 201,264.

813,870. WIRE FENCE. BRADEN L. BLAWELL and WILLIAM GRIER, Morton, Ill., assignors to Interlocking Fence Company, Morton, Ill., a Corporation of Illinois. Filed Apr. 4, 1904. Serial No. 201,266.

Claim.—1. In a fence, the combination of a series of longitudinal wires, stay-wires having looped portions disposed at the intersection of the longitudinal wires, and the loops of the stays intertwisted with the longitudinal wires by a right and left intertwist, substantially as specified.

2. In a fence, the combination of a cable selvage-strands intertwisted from a series of wire strands and intermediate body-wires of a single strand, stay-wires having radially-extended looped portions disposed at the intersection of the selvage and body wires, said looped portions of the stays intertwisted with the selvage and body wires by a right and left intertwist, substantially as specified.

3. In a fence, the combination of a longitudinal wire, a stay-wire having a returned loop portion coinciding with the longitudinal wire and with portions of the stay extending at right angles and in opposite directions to the longitudinal wire, the loop portion of the stay intertwisted with the longitudinal wire in reverse directions from a point 6 in the said loop, and having the eye portion 7, substantially as shown and specified.

813,871. SAW-TOOTH. CHRISTOPHER C. FLEMING, Dallas, Tex. Filed Jan. 5, 1904. Serial No. 187,771.

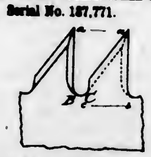

Claim.—In a saw, teeth uniform and in unbroken series, being in length equal to the length of the base, or equal to one and one-half times the length of the base, beveled forty-five to sixty degrees, the front cutting edge of the teeth being approximately straight, or at about right angle with the saw-blade, substantially as described and shown.

813,872. THREAD-WINDING MACHINE. GEORGE W. FOSTER, Pawtucket, R. I. Filed Mar. 11, 1905. Serial No. 249,606.

Claim.—1. In a winding-machine having two sets of driving-rolls with shafts provided with pulleys, and an endless belt passing over both pulleys, the combination with the said parts, of a shaft 1 having a pulley receiving one loop of the belt, a bracket supporting an adjustable stud, and a pulley turning upon said stud and receiving the other loop of the belt, substantially as set forth.

2. The combination in a winding-machine, with the two roll-shafts, pulleys and endless looped belt, of a driving-shaft supporting a pulley beneath which one loop of said belt passes, a second pulley beneath which another loop of the belt passes, and a bracket bolted to the frame of the machine and provided with an adjustable stud upon which the second pulley turns, substantially as set forth.

3. The combination with the driving-roll of a winder, of a swinging frame, a spindle carried thereby, a pivoted arm having a curved slot arranged to receive a projection of the frame, a stop device connected with the arm to shift the fulcrum of the latter and to bite the said projection in said slot and lift the frame when the stop device is moved on the breaking of a thread, substantially as set forth.

4. The combination with the swinging frame and spindle of a winding device, of a pivoted arm, a stop-motion device, means for swinging the arm from said stop-motion device to shift the fulcrum thereof when the thread breaks, and engaging means between the arm and frame arranged to permit the independent movement of the frame when the thread is unbroken, but to engage the two parts when the arm is swung on the breaking of a thread, substantially as set forth.

5. The combination with the frame D, its actuating-arm, block 40, and bar 39, of a stud 110 upon the block, substantially as and for the purpose set forth.

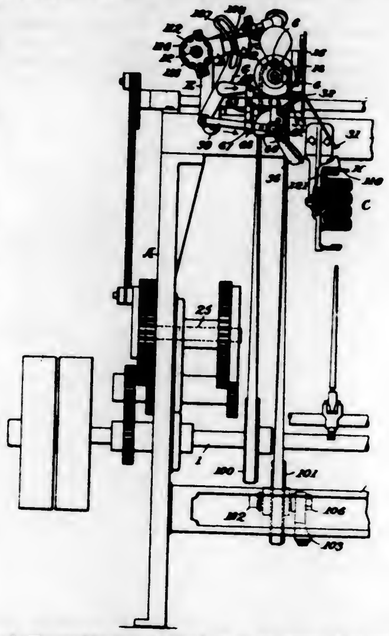

6. The combination with the frame D and support E, of coinciding inclined faces on the frame and support arranged to insure a longitudinal movement of the frame as it moves upward, substantially as described.

7. The combination with the frame D, support E and inclined faces upon the frame bearing upon part of said support to insure a longitudinal movement of the frame as it swings upward, of a spring bearing upon the frame and arranged to secure a reduced frictional resistance as the frame swings upward, substantially as set forth.

8. The combination with the drive-roll and cop-spindle of a winding-machine, of a pivoted frame carrying said spindle, and means for moving said frame longitudinally to lay each layer of thread in advance, toward one end of the cop, of the preceding layer, substantially as set forth.

9. The combination with the spindle of a winding-machine, of means for laying the thread thereon in crossed helices extending the length of the cop in each layer, and means for shifting said spindle to lay each layer of thread farther toward one end of the cop than the preceding layer, substantially as set forth.

813,873. PROCESS FOR EXTRACTING ALBUMIN FROM VEGETABLE SUBSTANCES. FREDERICK W. GAMPERER, Niagara Falls, N. Y. Filed Apr. 20, 1903. Serial No. 153,004.

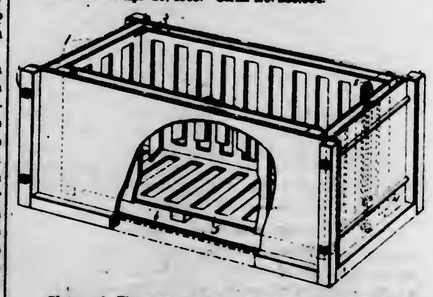

Claim.—1. The process of obtaining purified albumin from vegetable substances, which consists in mixing the vegetable substance in a finely-subdivided condition in a warm saline solution and maintaining the substance in the solution for several hours, filtering the mixture, boiling the filtrate to coagulate the albumin, filtering out and drying the albumin, then depositing the albumin in a subdivided form in a cool bath of water, containing sodium peroxid and a suitable acid, for from one hour to twelve hours, then removing and drying the albumin.

2. The process of extracting albumin from vegetable substances, which consists in reducing the vegetable substance substantially to the form of meal, mixing the same in a warm saline solution in the proportion of from seven to ten parts of the solution to one of the meal, said solution containing salt in the proportion of about five per cent. to about twelve per cent. of the amount of water in excess of about five parts of water, maintaining the mixture for several hours at a temperature of from about 30° centigrade to about 40° centigrade to dissolve out the albumin, then filtering the mixture, boiling the filtrate to coagulate the albumin, then filtering out and drying the albumin.

3. The process of extracting albumin from vegetable substances, which consists in reducing the vegetable substance to about the form of meal, mixing the meal in a warm saline solution in the proportion of about one part of meal to about ten parts of water, said solution containing salt in the proportion of about seven per cent. to the amount of water above five parts of water, maintaining the mixture at a temperature of from 30° centigrade to 40° centigrade for five hours more or less, to extract the albumin, then filtering the mixture and boiling the filtrate to coagulate the albumin, then filtering out the coagulated albumin, then drying and breaking up the albumin into suitable sizes.

4. In a process for extracting albumin from a vegetable substance, the method of purifying the albumin, which consists, in reducing the albumin to a suitable size and then depositing it in a cool bath containing peroxid of sodium and sulfuric acid, maintaining the albumin in the bath for from one to twelve hours, removing the albumin from the bath, then drying and grinding the albumin.

5. In a process for extracting albumin from vegetable substances the method of purifying and bleaching the albumin, which consists in preparing in a wooden tank a cool solution containing from one to twelve pounds of peroxid of sodium to one hundred gallons of water, sulfuric acid in the proportion of about one and one-third to one part of peroxid of sodium and a small quantity of an alkali, by first mixing the sulfuric acid with the water, adding the peroxid of sodium in small quantities and stirring it in, adding the alkali in very small quantities and stirring it in, then suspending the albumin in a subdivided form in a filter-cloth in the solution for from one to twelve hours, thoroughly mixing the albumin with the solution, then removing, rinsing and drying the albumin and then grinding it to a fine powder.

813,874. SOLDERING-IRON. PEARL GILBERT, Newport, R. I. Filed May 13, 1905. Serial No. 260,208.

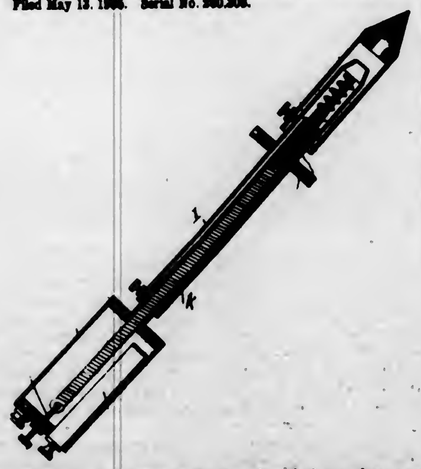

Claim.—1. In a device of the class described, a tank or reservoir, a soldering-head, a jet-nozzle within the latter, a feed-duct connecting the tank and nozzle, and a spirally-coiled feed member within the feed-duct.

2. In a device of the class described, a tank or reservoir, a jet-nozzle provided with feed and jet passages, a soldering-head disposed and sustained in the path of the jet-passage, a feed-duct connecting the tank and jet-nozzle, and a tubular spirally-coiled feed member within the feed-duct and communicating with the feed-passage.

3. In a device of the class described, a tank or reservoir, a jet-nozzle having a feed-passage, a feed-duct connecting the tank and nozzle, a spirally-coiled tubular feed member housed in the duct and communicating with the feed-passage, said nozzle being provided with a jet-opening, and a soldering-head sustained in the path of said opening.

4. In a device of the class described, a tank or reservoir, a jet-nozzle having feed and jet openings, a feed-duct connecting the tank with the nozzle and provided at the rear end of the latter with a chamber, a spirally-coiled tubular feed member housed in the duct and adapted to feed liquid fuel thereover, said member being arranged for communication at one end with the feed-passage and at its other end with the chamber and having return-coils leading from the latter, and a soldering-head sustained in the path of the jet-opening.

5. In a device of the class described, a tank or reservoir, a jet-nozzle having feed and jet openings, a duct connecting the tank with the nozzle and provided in rear of the latter with a chamber, a spirally-coiled tubular feed member arranged in the duct and having one end connected with the feed-passage and its other end communicating with the chamber, said member being adapted to feed liquid fuel through the duct to the chamber and thence through itself to the feed-passage, a vaporizing-tube connected with said passage and leading to the jet-opening, and a soldering-head sustained in the path of the latter.

813,875. ICE-CREAM MACHINE. JOHN J. GLAUBER, Pittsburg, Pa., assignor to The Edward H. Rieck Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed Feb. 25, 1905. Serial No. 247,218.

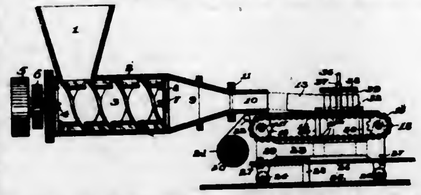

Claim.—1. In slicing mechanism, a table, an endless conveyer mounted on said table, a shearing member mounted on said table and adapted to be swung transversely thereto, means for advancing said shearing member in the line of movement of said conveyer, spring-actuated means for returning said shearing member to its normal position and an electric circuit in which said shearing member is a part, substantially as and for the purposes set forth.

2. In slicing mechanism, an endless conveyer, means for discharging the material to be sliced upon said conveyer, a frame adapted to be swung transversely to said conveyer, combined means for slicing and smoothing the sliced surface of said material said means being mounted in said frame and means for heating said slicing and smoothing means, substantially as described.

813,876. LATCH. JASPER L. GREENWOOD, Hoboken, N. J. Filed Mar. 27, 1905. Serial No. 252,315.

Claim.—1. A device of the kind described, comprising a face-plate having a casing secured thereto, each of which has slots arranged therein, a latch-bolt carried by a face-plate and casing and operating through the slots, said bolt projecting at right angle to the

longitudinal axis of the casing and having shoulders engaging the face-plate and casing, and a spring arranged within the casing and adapted for engagement with the bolt all substantially as shown and described.

3. A latch of the kind described, comprising a face-plate, a casing arranged at one end thereof, said face-plate and casing having oppositely-disposed slots, a latch-bolt projecting through the slots, said bolt having shoulders that engage the face-plate and casing, and also having a beveled nose at one end and a knob at its opposite end and a coiled spring arranged within the casing and adapted to normally force the bolt toward one end of the slots, substantially as specified.

813,377. **GARDEN RAKE AND CULTIVATOR.** BENJAMIN J. H. GUNN, Grapeland, Tex. Filed Apr. 10, 1905. Serial No. 254,838.

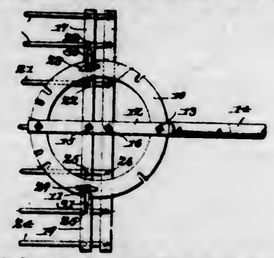

Claim.—1. In an implement of the class described, an annular supporting-frame, a draft-bar connected transversely of said frame, tooth-bars arranged in pairs and extending at the inner ends beneath said draft-bar, a central rake-tooth extending beneath the inner ends of said tooth-bars, pivot-bolts extending through said draft-bar the tooth-bars and the central tooth and movably coupling the same, rake-teeth spaced apart and pivoted to said tooth-bars, and means for adjustably coupling said tooth-bars to said annular frame.

2. In an implement of the class described, an annular supporting-frame having spaced marginal recesses, a draft-bar connected transversely of said frame, tooth-bars arranged in pairs and extending at the inner ends beneath said draft-bar and provided with longitudinal slots, pivot-bolts extending through said draft-bar and tooth-bars and movably coupling the same, rake-teeth spaced apart and pivoted to said tooth-bars, and clamp-bolts disposed in said longitudinal slots and adapted for detachable engagement with said marginal recesses.

813,378. **TEMPER-SCREW.** BARRET C. HAGAN, West Monterey, Pa., assignor of one-half to C. M. Hagan, West Monterey, Pa. Filed May 30, 1905. Serial No. 261,268.

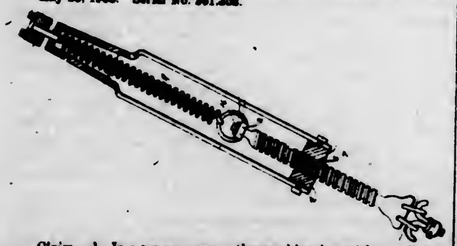

Claim.—1. In a temper-screw, the combination with a walking-beam, of a head carried by said walking-beam, depending reins carried by said head, blocks detachably connected to the lower ends of said reins, a screw operating through said blocks, a suspension-spring mounted in said head and swivelly connected to the upper end of said screw, substantially as described.

2. In a temper-screw, the combination with a walking-beam, of a head connected to said walking-beam, depending reins carried by said head, a screw operating between said reins, a spring mounted in said head and swivelly connected to said screw, substantially as described.

3. In a temper-screw, the combination with a hollow head, having depending spring-reins, screw-threaded blocks detachably connected to the lower ends of said reins, a screw arranged between said blocks, a collar carried by said screw, an annular head surrounding the screw below said collar, antifriction-balls arranged between said annular head and said collar, a ring attached to said annular head and a suspension-spring connected to said ring and to said hollow head, substantially as described.

4. In a temper-screw, the combination with a hollow head having depending reins, of a screw operating between said reins, a spring mounted between said reins and extending into the said head and connected to said screw, substantially as described.

813,379. **LOCOMOTIVE.** CHRISTIAN HAGANS, Erfurt, Germany. Filed Jan. 30, 1905. Serial No. 243,363.

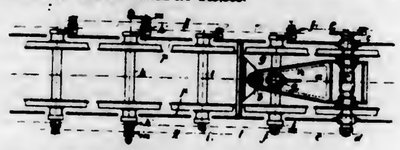

Claim.—Means for laterally adjusting a driving or driven locomotive-axle, comprising the combination with said axle, of a laterally-adjustable hollow end axle, a core-axle for said hollow axle, and means for transferring the movement of said hollow end axle to the driving or driven locomotive-axle and for driving the said core-axle.

813,380. **STEAM-BOILER FURNACE.** WELLESLEY R. HAMPDEN, Kansas City, Mo., assignor, by direct and mesne assignments, to The Fuel Saver Heating Company, a Corporation of Missouri. Filed July 22, 1905. Serial No. 270,765.

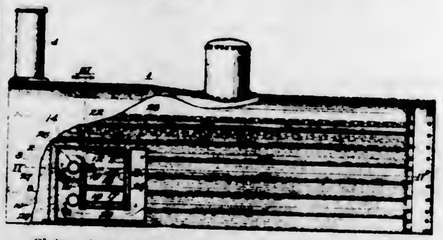

Claim.—1. A boiler-furnace, comprising a shell or body, partitions therein forming a water-chamber, a smoke-box and a smoke-chamber, at opposite sides of the water-chamber and provided with an exit for the smoke-chamber, flues extending through the water-chamber and connecting the smoke-box and smoke-chamber, a furnace within the water-chamber and enveloped on all sides by the water therein and formed with a fire-pot and with a substantially U-shaped chamber opening into the upper end of the fire-pot and enveloping the front, rear and lower sides of the same but spaced from said sides to provide an interposed water-space, flues connecting the front portion of said enveloping-chamber with the smoke-chamber, and one or more air-supply tubes extending through the rear portion of said enveloping-chamber and communicating with the atmosphere and provided with air-jet orifices opening into said enveloping-chamber.

2. A boiler-furnace, comprising a shell or body having a side opening, partitions therein forming a water-chamber, a smoke-box and a smoke-chamber, at opposite sides of the water-chamber and provided with an exit for the smoke-chamber, flues extending through the water-chamber and connecting the smoke-box and smoke-chamber, a furnace within the water-chamber and enveloped on all sides by the water therein and a side opening communicating therewith, said furnace being formed with a fire-pot and with a substantially U-shaped chamber opening into the upper end of the fire-pot and enveloping the front, rear and lower sides of the same but spaced from said sides to provide an interposed water-space, flues connecting the front portion of said enveloping-chamber with the smoke-chamber, one or more air-supply tubes extending through the rear portion of said enveloping-chamber and communicating with the atmosphere and provided with air-jet orifices opening into said enveloping-chamber, a tube connecting the side opening of the shell and fire-pot, and a door controlling said openings.

3. In a boiler-furnace, a shell or body having a water-chamber, a furnace within and enveloped on all sides by the water in said chamber, and formed with a fire-pot and with a substantially U-shaped chamber opening into the upper end of the fire-pot and enveloping the front, rear and lower sides of the same but spaced from said sides to provide an interposed water-space, and one or more air-supply tubes extending through the rear portion of said enveloping-chamber and communicating with the atmosphere and provided with air-jet orifices opening into said enveloping-chamber.

813,381. **ADJUSTABLE SUPPORT FOR METAL-WORKING TOOLS.** HENRY M. W. HANSEN, Hartford, Conn., assignor to Pratt & Whitney Company, Hartford, Conn., a Corporation of New Jersey. Original application filed July 13, 1903, Serial No. 165,327. Divided and this application filed Nov. 29, 1905. Serial No. 289,189.

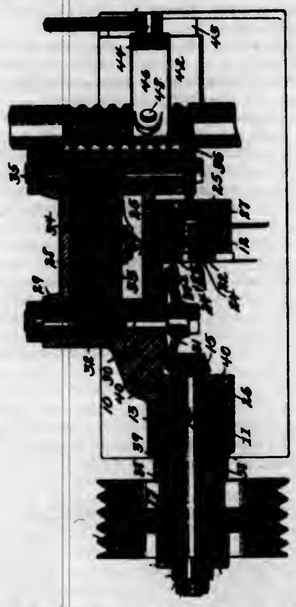

Claim.—1. The combination, with a slide having bearings, of an adjustable cutter-frame having trunnions journaled in said bearings; means for fixing the frame in position after adjustment; a pair of shafts journaled in the cutter-frame; a gear secured to each of said shafts; a gear journaled in the cutter-frame intermediate to, and in mesh with, the shaft-gears; a shaft passing through one of the trunnions and carrying a gear for driving one of the pair of shafts; and a milling-cutter secured to one of said shafts, the axis of said milling-cutter intersecting the axis of the cutter-frame, and the point of intersection being in the same horizontal plane as the work-spindle.

2. The combination, with a slide having standards, of an adjustable cutter-frame; trunnions carried by said frame and journaled in bearings of said standards, one of said trunnions being externally threaded and the other provided with a threaded bore; a nut upon the externally-threaded trunnion, and serving to draw the same within its bearing; a screw engaging the threaded bore of the other trunnion, and having a head bearing against one of the standards; a rotary cutter carried by the cutter-frame; and means for actuating said cutter.

3. In a machine of the class specified, the combination, with a tool-carriage having standards, of a cutter-frame located between said standards; trunnions fitted in bearings of the standards, one of said trunnions having a longitudinal bore; a shaft mounted in said bore; means for rotating said shaft; a gear secured to said shaft; a shaft journaled in the cutter-frame and having a pair of gears, one of which is in mesh with the gear on the shaft mounted in the bore of said trunnion; a second gear journaled in the frame and engaging the other of said pair of gears; a cutter-shaft having a gear in mesh with said second gear; and a milling-cutter secured to the cutter-shaft.

4. The combination, with a support, of a cutter-frame; trunnions projecting from said frame and entering bearings of the support, one of said trunnions having a hollow portion with an internal thread; screws for securing said internally-threaded trunnion to the support; and a screw engaging the thread of said trunnion and having a head bearing against the support.

5. The combination, with a support, having standards provided with bearings, of a chambered frame having fixed trunnions mounted in said bearings, one of said trunnions being tubular; means applied to each trunnion for securing the frame against movement; a driven shaft passing through the tubular trunnion; a bevel-pinion on the end of said driven shaft; a shaft journaled in the frame; a bevel-gear in engagement with said bevel-pinion, and carried by said shaft; gearing mounted in a chamber of the frame; a cutter-spindle driven by said gearing; and a milling-cutter secured to said cutter-spindle.

6. In a machine of the class specified, the combination, with a support having standards provided with bearings, of a frame having fixed trunnions mounted in said bearings; a nut threaded on one of said trunnions at the outer side of one of the bearings; a screw tapped into the other trunnion and having a head bearing against the inner side of the standard in the bearing of which said trunnion is mounted; a tool-spindle journaled in the frame; and means for driving said tool-spindle.

7. In a machine of the class specified, the combination, with means for supporting and rotating work, of a reciprocatory carriage; a slide transversely adjustable on said carriage, and having standards provided with bearings; a frame having fixed trunnions journaled in said bearings, one of said trunnions being tubular; means for securing the frame against the standards; a shaft journaled in the tubular trunnion; a bevel-pinion secured to said shaft; a shaft journaled in the frame; a bevel-gear on said shaft; a spur-pinion also on said shaft; a spur-wheel; a cutter-spindle carrying a spur-pinion in engagement with said spur-wheel; and a milling-cutter carried by the cutter-spindle.

813,382. **VEHICLE-WHEEL RIM.** ISAAC HODGSON, Minneapolis, Minn., assignor to The Automobile Wheel and Rim Company of New Jersey. Filed June 6, 1905. Serial No. 263,992.

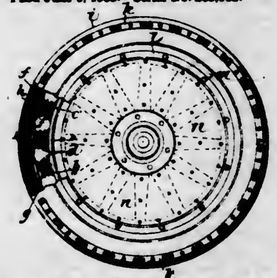

Claim.—1. An elastic rim combining a plurality of channeled plates *f* flexibly united by cables *g*, the pad *h*, springs *d*, engaging said channeled plates *f*, and the base-plates *c*, the latter being secured to the band *b*, substantially as and for the purposes set forth.

2. An elastic rim combining a suitable cover *i*, secured to the rod-plates *f*, by the bolts *j*, its open edges being secured to the band *b*, by the annular clamps *l*, substantially as shown and described.

813,383. **COMBINED HEATER AND FOLDING FURNITURE.** WILLARD C. JAMES, Cassenega, Cal. Original application filed June 17, 1901, Serial No. 64,947. Divided and this application filed Feb. 14, 1903. Serial No. 143,462.

Claim.—1. A combined folding bed and heater comprising a fixed support, an inlet and an outlet pipe therein, a perforated bed-frame pivotally mounted in the support, a heater rigidly secured in the front of the frame, means at the rear of the frame for connecting the inlet with the heater, and means for connecting the perforation with the outlet.

2. A combined folding bed and heater comprising a support, an inlet and an outlet therein, a perforated bed-frame pivotally mounted in the support, a heater rigidly secured in the forward side of said frame, a pipe at the rear of the frame from the inlet to the heater provided with a valve, a handle from the valve to the front of the frame, and a conduit from the perforation to the outlet.

3. A combined folding bed and heater, comprising fixed supporting means, a bed-frame, pivotally supported in such means, and

a heater, rigidly secured to the bed-frame, said bed-frame being provided with a recess serving as a fireplace for the heater, and a fuel-supply conduit leading through the pivotal support of the bed-frame and communicating with the heater.

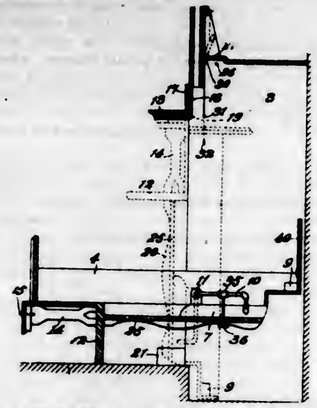

4. A combined folding bed and heater, comprising fixed supporting means, a bed-frame, trunnions whereby said bed-frame is pivotally supported in the fixed supporting means, one of said trunnions being provided with a conduit therethrough for fuel, and the other trunnion being provided with a conduit therethrough for waste gases, and a burner and fireplace on the bed-frame respectively connected to said conduits.

5. A combined folding bed and heater, comprising fixed supporting means, a bed-frame on the fixed supporting means, trunnions whereby said bed-frame is pivotally supported in the fixed supporting means, one of said trunnions being provided with a fuel-supply passage, and the other with a passage for waste products of combustion, a burner on the bed-frame connected to said passages, and fuel-supply and waste flue pipes in the fixed supporting means connected to the respective passages.

6. A combined folding bed and heater comprising a support, a bed-frame therein, hollow trunnions between the frame and the support, a heater in the forward side of the frame, a pipe from the heater to and projecting through one of the trunnions, the outer end of which is perforated, an inlet pivotally mounted on said end of the pipe and adapted to communicate with said perforation when the bed-frame is in its vertical or folded position, and a ventilator communicating with the heater and passing through the other trunnion.

7. A combined folding bed and heater comprising a fixed support, an inlet and an outlet pipe therein, a perforated bed-frame pivotally mounted in the support, a heater rigidly secured in the frame, means for connecting the inlet with the heater, and means for connecting the perforation with the outlet.

8. In an apartment construction, a bed-holding compartment, and a bed-frame pivotally supported at the front of the compartment, a heater rigidly secured to said bed, in front of and below the pivotal support thereof so as to swing back into the compartment as the bed-frame is lowered, and a fuel-supply conduit extending through the pivotal support of the bed and communicating with the heater.

813,884. **LIFTING DEVICE.** KARL KIEFER, Cincinnati, Ohio. Original application filed Nov. 21, 1904, Serial No. 233,647. Divided and this application filed Mar. 27, 1905. Serial No. 252,260.

Claim.—1. In a filter-layer-lifting device, the combination with a frame part, of a handle part, means to take hold of the frame part without changing the position of the hand on the handle part, and a plurality of lifting-hooks operated by the handle part.

2. In a filter-layer-lifting device, the combination with a frame part, of a handle part adapted to be taken hold of by means of a handle proper and to spread, when moving upward, a plurality of lifting-hooks.

3. In a filter-layer-lifting device, the combination with a frame part, of a plurality of lifting-hooks suspended normally vertically on pins around which they loosely swing and adapted to be spread by an upward movement of the part which is taken hold of when extracting the filter layer, and released by a reverse movement of the same part.

4. In a filter-layer-lifting device, the combination with a frame part having a projection to prevent overinsertion, of a plurality of lifting-hooks, a handle part for taking hold of and extracting the filter layers, and means attached to such handle part to spread and release said lifting-hooks.

5. In a filter-layer-lifting device, the combination with a frame part, of a plurality of lifting-hooks, a handle part for taking hold of and extracting the filter layer, and means attached to such handle part to spread and release said lifting-hooks.

6. In a filter-layer-lifting device, the combination with a handle part and a frame part, the handle part consisting of a vertical part centrally and longitudinally movable in the frame part, and also having a cross-bar to be taken hold of by the hand when extracting the filter layer, of means to take hold of the frame part situated immediately below said bar, and a plurality of lifting-hooks spread by the handle part when moving upward relatively to the frame part.

7. In a filter-layer-lifting device, the combination of a handle part and a frame part, the handle part consisting of a vertical part centrally and longitudinally movable in the frame part, and also having a cross-bar to be taken hold of by the hand when extracting the filter layer, means to take hold of the frame part in close vicinity of the cross-bar of the handle part, and a plurality of lifting-hooks spread by the handle part when moving upward relatively to the frame part.

813,885. **APPARATUS FOR TREATING AND ROASTING WASTE MATERIALS.** FREDERICK W. KOOKE, Philadelphia, Pa., assignor to J. Walter Douglass, trustee, Philadelphia, Pa. Filed Dec. 1, 1905. Serial No. 289,734.

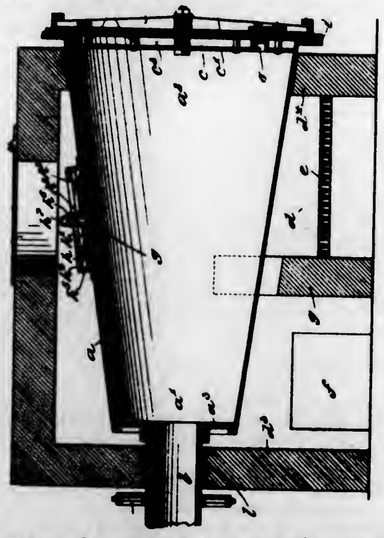

Claim.—1. In an apparatus for treating and roasting waste matter, a receptacle or drum frusto-conical in outline, means for supporting said drum so as to hold the same with its central longitudinal axis in substantially a horizontal plane, a closure for said drum engaging the end having the greatest diameter, said drum arranged when rotated and when said closure is removed, to discharge the contents unaided.

2. In an apparatus for treating and roasting waste matter, a receptacle or drum frusto-conical in outline, an outlet arranged centrally to said drum and at the end of smallest diameter, a closure arranged at the end of greatest diameter, means for rotatably supporting said drum and for holding the same so that its central longitudinal axis is in substantially a horizontal plane, said drum arranged to receive waste matter and to remove liquid matter therefrom by evaporation through said outlet and when the closure is removed, to discharge the remaining matter unaided.

3. In an apparatus for treating and roasting waste matter, a receptacle or drum frusto-conical in outline, an outlet arranged centrally to said drum and at the end of smallest diameter, a closure arranged at the end of greatest diameter, means for rotatably supporting said drum and for holding the same so that its central longitudinal axis is in substantially a horizontal plane, said drum arranged to receive waste matter and to remove liquid matter therefrom, by evaporation, through said outlet and when the closure is removed, to discharge the remaining matter unaided, and an inlet for waste matter arranged in said drum intermediate of said outlet and closure and means for closing said inlet.

4. In an apparatus for treating and roasting waste matter, a receptacle or drum frusto-conical in outline, means for supporting said drum so as to hold the same with its central longitudinal axis in a horizontal plane, a closure for said drum engaging the end having the greatest diameter, said drum arranged when rotated and when said closure is removed, to discharge the contents unaided, and means arranged in said closure for removing portions of the contents when the closure engages said drum.

5. In an apparatus for treating and roasting waste matter, a receptacle or drum having open and closed ends, a tube forming an outlet for gaseous matter and supporting said receptacle at its closed end, a closure for said receptacle or drum, means for supporting said receptacle or drum at its open end, and means for surrounding said receptacle, said surrounding means arranged so as to permit of the heating of said receptacle or drum and of the discharge of the contents thereof, without loss of heat.

6. In an apparatus for treating and roasting waste matter, a receptacle or drum having open and closed ends, a tube forming an outlet for gaseous matter and supporting said receptacle or drum at its closed end, a closure for said receptacle or drum, means for supporting said receptacle or drum at its open end, an inlet-opening arranged in the body of said receptacle or drum, means for closing said inlet and means for rotating said tube and by the same, said receptacle or drum.

7. In an apparatus for treating and roasting waste matter, a receptacle or drum having open and closed ends, a tube forming an outlet for gaseous matter and supporting said receptacle at the closed end thereof, a closure for said receptacle or drum, at its open end, means surrounding said receptacle or drum and forming a furnace for the generation of heat and arranged so as to permit of discharge of the contents of said receptacle or drum, without loss of heat or interfering with the discharge of matter therefrom, means for supporting said receptacle or drum at its open end and beyond said furnace, an inlet arranged in said receptacle or drum, means for closing said inlet, means for rotating said tube and by the same said receptacle, and means arranged in the closure for said receptacle or drum for removing portions of the contents thereof, without removing said closure.

8. In an apparatus for treating and roasting waste matter, the combination of a frusto-conical receptacle or drum having open and closed ends and mounted in a furnace having an opening in the top with a closure therefor, a grate in the bottom of said furnace and an outlet for the escape of products of combustion from said furnace, doors in the body and one end of said receptacle or drum, means for supporting said receptacle or drum at its open end and for permitting of rotation thereof in said furnace and means for holding the end door of said receptacle or drum in operative position against back pressure.

813,886. **HOOK FOR CHAINS.** FRIEDRICH KRÄMER, Grüne, near Iserlohn, Germany, assignor to The Firm of Heinrich Witte, Grüne, near Iserlohn, Germany. Filed Sept. 6, 1905. Serial No. 277,260.

Claim.—1. In a safety-hook, a shank-piece *a*, having a longitudinal recess *e* in its forward end and a spiral spring *c'* in said recess, in combination with a hook *d* pivoted to said piece *a*, a counter-hook *d'* at the free end of hook *d*, a lug or shoulder d^3 of said hook engaging spring *c'*, a rearward projection d^2 of hook *d* engaging the shank-piece *a* to prevent the hook *d* from opening more than the distance necessary to securely lock the same and means directly and detachably connecting the said counter-hook to the said shank-piece, substantially as and for the purpose set forth.

2. In a safety-hook, a shank-piece *a*, a recess *e* bored in the forward end thereof, a spring *c'* in said recess, a hook *d* pivoted to said shank-piece *a*, a counter-hook *d'* on the free end of said hook and a projection d^2 of said hook *d* bearing against said spring, in combination with a link *g* pivoted to the shank-piece *a* and adapted to engage the said counter-hook so as to lock the hook securely, substantially as set forth.

813,887. **RAIL-CROSSING.** FRIEDRICH A. LEHMANN, Berlin, Germany. Filed Nov. 10, 1903. Renewed Jan. 27, 1906. Serial No. 296,333.

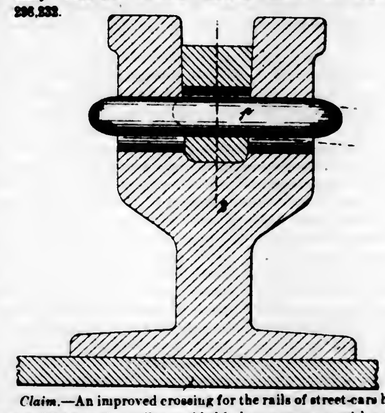

Claim.—An improved crossing for the rails of street-cars having the usual intersecting rails provided in known manner with a slot in the trough-bottom for the reception of a filling-piece of metal for the flange of the wheel to bear on, comprising in combination horizontal bolts projecting through both walls of the trough as well as the said filling-piece, and horizontal borings within the latter arranged for a small space higher than the corresponding horizontal borings within the walls of the trough, substantially as described and shown and for the purpose set forth.

813,888. **EQUALIZING DEVICE FOR VEHICLE-SPRINGS.** JOHN A. ROTH, Hannibal, Ohio. Filed Feb. 28, 1905. Serial No. 247,721.

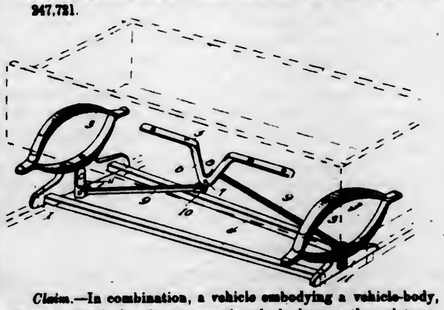

Claim.—In combination, a vehicle embodying a vehicle-body, axletrees, elliptical springs supporting the body upon the axletrees, the supporting-plate 5 secured at its ends to the under side of the body of the vehicle and having its central portion projected downwardly to form the vertical U-shaped extension 6, the lower extremity of the extension 6 being vertically widened and formed with the integral lateral pivot-stud 7, the bar 8 pivoted at a point between its ends to the pivot-stud 7 and arranged for movement in a vertical plane, the attaching-plates 11 secured to the axletrees, and the equalizing-bars pivotally attached at one end to the opposite ends of the pivot-bars 8 and having pivotal connection at the other end with the attaching-plates 11.

813,889. PROCESS FOR THE PREVENTION AND LAYING OF DUST IN ROADS, &c. WILLIAM M. SARMENT, Ashfield, Ayton, Scotland, assignor of one-half to Herbert G. McKerrow, Newton, Mass. Filed Feb. 22, 1905. Serial No. 247,232.

Claim.—1. The process herein described for laying dust, which consists in the application to the surface of roads or pavement dressing of an aqueous emulsion obtained by combining wool-fat with an alkali or alkaline salt, substantially as described.

2. The process herein described for laying dust, which consists in the application to the surface of roads or to pavement dressing of an aqueous emulsion obtained by combining wool-fat with an alkali or alkaline salt, and an oil-like substance, preferably creosote, substantially as described.

3. The herein-described process for the prevention of dust, which consists in the application to the surface of roads or to a road dressing, of a water-diluted emulsion obtained by combining wool-scouring suds with a suitable oil, or oil-like substance, preferably possessing disinfectant properties, as for example creosote, substantially as described.

4. The process of laying dust, which consists in the application to or saturation of the surface by a substance obtained by concentrating wool-scouring suds and combining with it an oil-like substance, preferably creosote, to produce a mass of semiliquid consistency, dilutable by water, for the purpose specified.

5. The process of preventing dust, which consists in the application to the surface of roads or to a road dressing of a substance obtained by concentrating wool-scouring suds, and adding to such suds as are lacking or poor in natural potash salts, a deliquescent salt, and combining with it an oil-like substance, preferably creosote, to produce a mass of semiliquid consistency dilutable by water, for the purpose specified.

6. The process of laying dust, which consists in the application to the surface of roads of an aqueous emulsion of wool-fat combined with alkali or alkaline salt preferably of a deliquescent nature, and containing in addition fine mineral matter of an absorbent and grease-retaining nature, substantially as specified.

7. The process of treating wool-scouring suds by concentrating the same and subsequently incorporating therewith an oil-like substance, preferably creosote, to produce a mass of semiliquid consistency capable of dilution by water, substantially as specified.

8. The process of treating wool-scouring suds by concentrating the same, by the adding to such concentrated suds as are lacking or poor in natural potash salts of a deliquescent salt, and by combining therewith an oil-like substance, preferably creosote, to produce a mass of semiliquid consistency dilutable by water, substantially as specified.

9. The process of treating wool-fat by adding suitable alkali or alkaline salt, preferably of a deliquescent nature and by combining therewith an oil-like substance, preferably creosote, to produce a mass of semiliquid consistency dilutable by water, substantially as specified.

10. The process herein described for laying dust, which consists in the application to the surface of roads of an aqueous emulsion obtained by combining the concentrated greases, fats or waxes recovered from trade or domestic effluents or wastes with an alkali or alkaline salt, substantially as described.

11. The process for preventing dust, which consists in the application to a surface of an aqueous emulsion of animal grease, fats or waxes combined with an alkali or alkaline salt, substantially as described.

12. The process for preventing dust, which consists in spraying a surface with a water-diluted emulsion composed of animal greases or fats, an alkali or alkaline salt, preferably of a deliquescent nature, and an oil-like substance, preferably creosote, substantially as described.

813,890. AIR-BRAKE COUPLING. HERACLITUS H. SANFORD, Burroughs Cove, Tenn. Filed June 17, 1905. Serial No. 265,861.

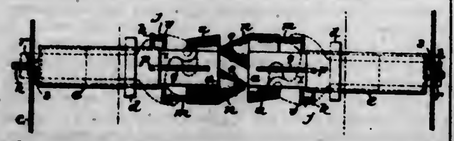

Claim.—In train-pipe couplings, the combination of square coupling members bars to receive said members and means to yieldingly fasten said bars at their rear ends to cars, means to keep said coupling-heads from coming out of said bars when cars are uncoupled, train-pipes passing through said coupling-heads and bars, valves in said pipes and independent yielding means for holding said valves in position, and means for train-pipe yielding when cars are coupled, substantially as described.

813,891. ROTARY TOY FOR BABY OR DOLL CARRIAGES. WILLIAM SAXBY, Worcester, Mass. Filed Nov. 21, 1903. Serial No. 182,167.

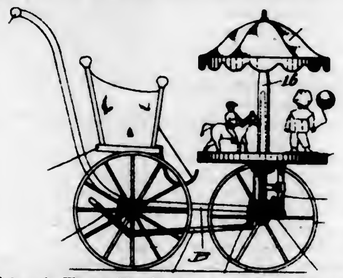

Claim.—1. The combination of a rotary platform mounted on a carriage so as to engage one of the carriage-wheels, and connections for raising the platform out of engagement with the carriage-wheel, comprising a lifting-rod, a bell-crank lever operating the lifting-rod, a foot-operated lever, and a link connecting the foot-operated lever and bell-crank lever.

2. The combination of a vertical spindle carried by a carriage, a rotary platform journaled on the spindle so as to engage one of the carriage-wheels, a canopy over the platform, and figures mounted thereon, a bearing-roll for the platform, and foot-controlled connections for lifting the platform away from the wheel when it is desired to stop the operation thereof.

3. The combination of a rotary platform mounted on a carriage so as to engage one of the carriage-wheels, and means for lifting the platform out of engagement with the wheel.

813,892. MECHANICAL MOVEMENT FOR WASHING-MACHINES. WARREN SWEET, Fort Wayne, Ind., assignor of one-half to Joseph Somers, Fort Wayne, Ind. Filed May 5, 1905. Serial No. 259,906.

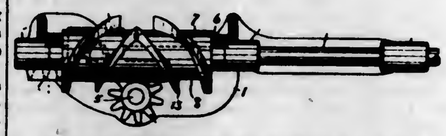

Claim.—In mechanism of the class described, a supporting-casting; a reciprocating rack and rotating actuating member mounted in connection with the casting, the actuating member having a continuous cam-groove which encircles the body of the member; a follower pivoted to the rack and ranging in the groove of the actuating member; and an antifriction-roller in connection with the follower and acting against the walls of the actuating member adjacent its groove.

813,893. EXCAVATING-MACHINE. THOMAS H. WALKER, Tumwater, Wash., assignor of one-fourth to Philip H. Corlyon, Olympia, Wash. Filed June 26, 1903. Serial No. 267,141.

Claim.—1. A machine of the character described, comprising a suitable frame, a shaft mounted thereon, a revoluble cylinder upon said shaft, a plow at one of the open ends of said cylinder, and means for directing the earth cut by the plow into said cylinder, substantially as described.

2. A machine of the character described, comprising a suitable frame, a shaft thereon, a revoluble cylinder upon said shaft, and open at its ends, a plow at one of the open ends of the cylinder, a spiral web within said cylinder, and a scoop or blade for directing the material or earth cut by said plow into said cylinder, substantially as described.

3. A machine of the character described, comprising a suitable frame, a shaft thereon, a revoluble cylinder upon the said shaft, a spiral web within said cylinder, a plow mounted at one of the open ends of said cylinder, means for adjusting said plow, a scoop or blade adapted to direct the earth cut by said plow into said cylinder, and means for adjusting said scoop or blade, substantially as described.

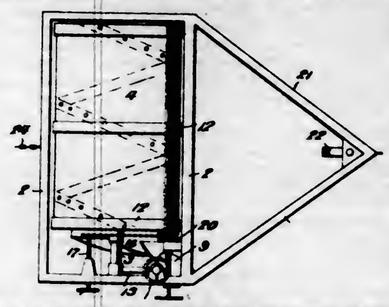

4. A machine of the character described, comprising a suitable frame, a shaft mounted thereon, a revoluble cylinder upon said shaft, a spiral web within said cylinder, a plow pivotally mounted at one of the ends of said cylinder, a screw for raising and lowering said plow, a swinging scoop or blade adapted to direct the earth cut by said plow into said cylinder, means for elevating said scoop or wing to permit the earth within said cylinder to be discharged and a caster-wheel at the front of said frame, substantially as described.

813,894. METHOD OF MAKING SAFES OR VAULTS. WALTER BARTON, High Bridge, N. J., assignor to Taylor Iron and Steel Company, a Corporation of New Jersey. Filed May 7, 1904. Serial No. 206,844.

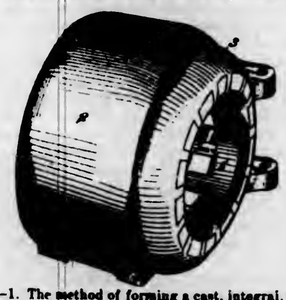

Claim.—1. The method of forming a cast, integral, toughened, unmachineable safe or vault member or body which consists in first casting the body with resisting-metal inserts located therein around the doorway thereof, then placing the member or body in a heated furnace and applying the heat until the casting has reached a predetermined temperature, and then plunging the casting in cold water.

2. The method of forming a cast, integral, toughened, unmachineable safe or vault body having a predetermined quantity of manganese therein which consists in first casting the body with resisting-metal inserts located therein around the doorway thereof, and then heating such body, beginning with the furnace in a heated state and with the casting in a heated state, up to a predetermined temperature, and then cooling it.

3. The method of forming a cast, integral, toughened, unmachineable safe or vault body which consists in casting the body with resisting-metal inserts located therein around the doorway thereof, then maintaining in the body a part of its casting heat, determined by the size and design of such body, by checking the cooling of such body at a predetermined point above normal atmospheric temperature, then rapidly heating such body up to a predetermined temperature, and then immersing it in a cooling medium.

4. The method of forming a steel safe or vault member which consists in casting the member into its final shape with resisting-metal inserts located therein along its joint surface, then maintaining therein a part of its casting heat by checking the cooling of such member at a predetermined temperature above normal atmospheric temperature, and then heating said member up to a predetermined temperature and then cooling it.

5. The method of forming a steel safe or vault member having a predetermined quantity of manganese therein which consists in casting the member into its final shape with resisting-metal inserts located therein along its joint surface, then maintaining therein a part of its casting heat by checking the cooling of such member at a predetermined point above normal atmospheric temperature, determined by the size and design of the member, then heating such member up to a predetermined temperature, and then rapidly cooling the same.

6. The method of forming a manganese-steel safe or vault member which consists in casting the same into final shape with hard-metal inserts located therein along its joint surface, then maintaining therein a part of its casting heat by checking the cooling of such member at a predetermined point above normal atmospheric temperature, determined by the size and design of the member, then rapidly heating such member up to a predetermined temperature, and then rapidly cooling the same.

7. The method of forming a cast, integral, toughened manganese-steel safe or vault body which consists in casting the body into its final shape with resisting inserts located in such body around the doorway thereof, then maintaining therein a part of its original casting heat by preventing the too rapid cooling of such body, then heating said body up to a predetermined point, and then cooling it.

8. The method of forming a cast, integral, toughened manganese-steel safe or vault body which consists in casting the body into its final shape with chrome-steel inserts located in such body around the doorway thereof, then maintaining therein a part of its original casting heat by checking the cooling of such body, then rapidly heating such body up to a predetermined high temperature, and then immersing said body into a bath to rapidly cool it.

9. The method of forming a cast, integral, toughened steel safe or vault body having a predetermined quantity of manganese therein, which consists in casting the body with a projection or flange around its doorway with resisting-metal inserts in said flange, then maintaining in such body a part of its original casting heat determined according to the size and shape of such body, by checking the cooling thereof at a point above normal atmospheric temperature, then heating the body up to a predetermined high heat, and then rapidly cooling the same.

10. The method of forming a cast, integral, toughened safe or vault body having a predetermined quantity of manganese therein, which consists in first casting the body with resisting-metal inserts located therein around the doorway, then maintaining in the body a part of its original casting heat ranging between a point above normal atmospheric temperature and 1,000° Fahrenheit, determined according to the size and shape of such body, then placing the body in a heated furnace and heating the same rapidly up to a predetermined high temperature, and then rapidly cooling the same by immersion in a cooling medium.

REISSUES.

12,453. ELECTRIC METER. THOMAS DUNCAN, La Fayette, Ind., assignor to Duncan Electric Manufacturing Co., La Fayette, Ind., a Corporation of Illinois. Filed Aug. 9, 1905. Serial No. 273,426. Original No. 796,067, dated Aug. 1, 1905.

Claim.—1. The combination with a motor-wattmeter whose shaft has a lower bearing, and an upper inverted end-thrust bearing, of a magnetic suspension device for supporting the rotating element of the meter, and mechanism for effecting adjustment of the end-thrust bearing axially of the shaft, the bearing at the upper end of the shaft serving to aline the shaft at the upper end and to prevent lateral deflection thereof mechanically, substantially as described.

2. The combination with a motor-wattmeter whose shaft has a lower side-thrust bearing, and an upper inverted end-thrust bearing, of a magnetic suspension device for supporting the rotating element of the meter, and mechanism for effecting adjustment of the end-thrust bearing axially of the shaft, the bearing at the upper end of the shaft serving to aline the shaft at the upper end and to prevent lateral deflection thereof mechanically, substantially as described.

3. The combination with a motor-wattmeter whose shaft has a lower bearing, and an upper inverted end-thrust bearing substantially confining the upper end of the motor-shaft to a single axis of rotation, of a magnetic suspension device for supporting the rotating element of the meter, and mechanism for effecting adjustment of the end-thrust bearing axially of the shaft, the bearing at the upper end of the shaft serving to aline the shaft at the upper end and to prevent lateral deflection thereof mechanically, substantially as described.

4. The combination with a motor-wattmeter whose shaft has a lower side-thrust bearing, and an upper inverted end-thrust bearing, substantially confining the upper end of the meter-shaft to a single axis of rotation, of a magnetic suspension device for supporting the rotating element of the meter, and mechanism for effecting adjustment of the end-thrust bearing axially of the shaft, the bearing at the upper end of the shaft serving to aline the shaft at the upper end and to prevent lateral deflection thereof mechanically, substantially as described.

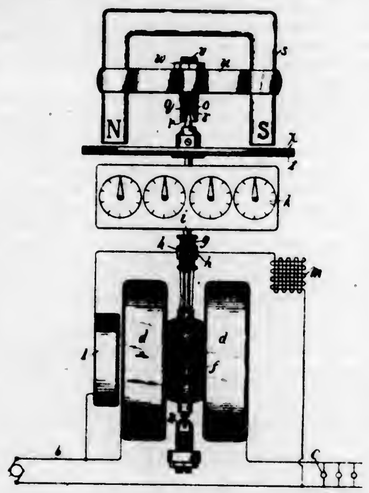

5. The combination with a motor-wattmeter whose shaft has a lower bearing, and an upper inverted end-thrust bearing, of a magnetic suspension device for supporting the rotating element of the meter, and mechanism for effecting adjustment of the end-thrust bearing axially of the shaft, said bearings substantially confining the shaft to a single axis of rotation, the bearing at the upper end of the shaft serving to aline the shaft at the upper end and to prevent lateral deflection thereof mechanically, substantially as described.

6. The combination with a motor-wattmeter whose shaft has a lower side-thrust bearing, and an upper inverted end-thrust bearing, of a magnetic suspension device for supporting the rotating element of the meter, and mechanism for effecting adjustment of the end-thrust bearing axially of the shaft, said bearings substantially confining the shaft to a single axis of rotation, the bearing at the upper end of the shaft serving to aline the shaft at the upper end and to prevent lateral deflection thereof mechanically, substantially as described.

7. The combination with a motor-wattmeter whose shaft has a lower bearing, and an upper inverted end-thrust bearing, of a magnetic suspension device for supporting the rotating element of the meter and including a body of magnetic material moving with the shaft and a stationarily-mounted magnet within whose field the said body of magnetic material is located, and mechanism for effecting adjustment of the end-thrust bearing axially of the shaft and with reference to said magnet, the bearing at the upper end of the shaft serving to aline the shaft at the upper end and to prevent lateral deflection thereof mechanically, substantially as described.

8. The combination with a motor-wattmeter whose shaft has a lower side-thrust bearing, and an upper inverted end-thrust bearing, of a magnetic suspension device for supporting the rotating element of the meter and including a body of magnetic material moving with the shaft and a stationarily-mounted magnet within whose field the said body of magnetic material is located, and mechanism for effecting adjustment of the end-thrust bearing axially of the shaft and with reference to said magnet, the bearing at the upper end of the shaft serving to aline the shaft at the upper end and to prevent lateral deflection thereof mechanically, substantially as described.

9. The combination with a motor-wattmeter whose shaft has a lower bearing, and an upper inverted end-thrust bearing substantially confining the upper end of the meter-shaft to a single axis of rotation, of a magnetic suspension device for supporting the rotating element of the meter and including a body of magnetic material moving with the shaft and a stationarily-mounted magnet within whose field the said body of magnetic material is located, and mechanism for effecting adjustment of the end-thrust bearing axially of the shaft and with reference to said magnet, the bearing at the upper end of the shaft serving to aline the shaft at the upper end and to prevent lateral deflection thereof mechanically, substantially as described.

10. The combination with a motor-wattmeter whose shaft has a lower side-thrust bearing, and an upper inverted end-thrust bearing, substantially confining the upper end of the meter-shaft to a single axis of rotation, of a magnetic suspension device for supporting the rotating element of the meter and including a body of magnetic material moving with the shaft and a stationarily-mounted magnet within whose field the said body of magnetic material is located, and mechanism for effecting adjustment of the end-thrust bearing axially of the shaft and with reference to said magnet, the bearing at the upper end of the shaft serving to aline the shaft at the upper end and to prevent lateral deflection thereof mechanically, substantially as described.

11. The combination with a motor-wattmeter whose shaft has a lower bearing, and an upper inverted end-thrust bearing, of a magnetic suspension device for supporting the rotating element of the meter and including a body of magnetic material moving with the shaft and a stationarily-mounted magnet within whose field the said body of magnetic material is located, and mechanism for effecting adjustment of the end-thrust bearing axially of the shaft and with reference to said magnet, said bearings substantially confining the shaft to a single axis of rotation, the bearing at the upper end of the shaft serving to aline the shaft at the upper end and to prevent lateral deflection thereof mechanically, substantially as described.

12. The combination with a motor-wattmeter whose shaft has a lower side-thrust bearing, and an upper inverted end-thrust bearing, of a magnetic suspension device for supporting the rotating element of the meter and including a body of magnetic material moving with the shaft and a stationarily-mounted magnet within whose field the said body of magnetic material is located, and mechanism for effecting adjustment of the end-thrust bearing axially of the shaft and with reference to said magnet, said bearings substantially confining the shaft to a single axis of rotation, the bearing at the upper end of the shaft serving to aline the shaft at the upper end and to prevent lateral deflection thereof mechanically, substantially as described.

13. The combination with a motor-wattmeter whose shaft has a lower bearing and an upper inverted end-thrust bearing, of a magnetic device including a stationarily-mounted magnet and a body of magnetic material moving with the rotating element of the meter and arranged within the field of said magnet, said end-thrust bearing being constructed to confine the upper end of the shaft to a substantially fixed axis of rotation, the bearing at the upper end of the shaft serving to aline the shaft at the upper end and to prevent lateral deflection thereof mechanically, substantially as described.

14. The combination with a motor-wattmeter whose shaft has a lower side-thrust bearing and an upper inverted end-thrust bearing, of a magnetic device including a stationarily-mounted magnet and a body of magnetic material moving with the rotating element of the meter and arranged within the field of said magnet, said bearings serving to confine the shaft to a substantially fixed axis of rotation, the bearing at the upper end of the shaft serving to aline the shaft at the upper end and to prevent lateral deflection thereof mechanically, substantially as described.

15. The combination with a motor-wattmeter whose shaft has a lower bearing and an upper inverted end-thrust bearing, of a magnetic device including a stationarily-mounted magnet and a body of magnetic material moving with the rotating element of the meter and arranged within the field of said magnet, said bearings serving to confine the shaft to a substantially fixed axis of rotation, the bearing at the upper end of the shaft serving to aline the shaft at the upper end and to prevent lateral deflection thereof mechanically, substantially as described.

16. The combination with a motor-wattmeter, of a stationarily-mounted suspending magnet and a disk of magnetic material upon the shaft and within the field of said magnet to support the rotating element of the meter, and a damping or retarding disk also subject to the influence of said magnet that thus acts also as a damping-magnet, said disks being assembled into a compound disk, the bearing at the upper end of the shaft serving to aline the shaft at the upper end and to prevent lateral deflection thereof mechanically, substantially as described.

17. The combination with a motor-wattmeter, of a stationarily-mounted suspending magnet, and a compound disk of magnetic and non-magnetic metal upon the shaft and within the field of said magnet to support and retard the rotating element of the meter, the bearing at the upper end of the shaft serving to aline the shaft at the upper end and to prevent lateral deflection thereof mechanically, substantially as described.

18. The combination with a motor-wattmeter, of a stationarily-mounted suspending magnet and a disk of magnetic material upon the shaft and within the field of said magnet to support the rotating element of the meter, and a damping or retarding disk also subject to the influence of said magnet that thus acts also as a damping-magnet, said disks being assembled into a compound disk, substantially as described.

19. The combination with a motor-watt-meter, of a stationarily-mounted suspending magnet, and a compound disk of magnetic and non-magnetic metal upon the shaft and within the field of said magnet to support and retard the rotating element of the meter, substantially as described.

20. The combination with a motor-meter, of a suspending magnet, and a compound disk of magnetic and non-magnetic metal upon the shaft and within the field of said magnet to support and retard the rotating element of the meter, substantially as described.

12,454. LUBRICATOR. CLARENCE B. HODGES and FREDERICK W. HODGES, Detroit, Mich. Filed Mar. 3, 1905. Serial No. 248,335. Original No. 752,554, dated Feb. 16, 1904.

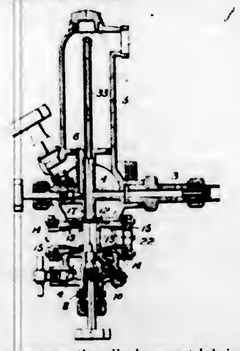

Claim.—1. In a condensation displacement lubricator, an oil-reservoir having its axis in a substantially horizontal plane and its interior braced by tubing, combined with sight-feed glasses having horizontal axes and being mounted within portions of said tubing, substantially as set forth.

2. In a lubricating apparatus, a condensing-chamber and an oil-reservoir, the latter having its axis in a substantially horizontal plane, and horizontal and vertical tubes within the reservoir for bracing the same, the whole being integral, combined with sight-feed glasses having horizontal axes and being mounted within portions of said tubular bracing, substantially as set forth.

3. In a condensation displacement lubricator, an oil-reservoir having one or more tubular braces extending from side to side of the reservoir, and oil-feed tubes extending between points in the shell of the reservoir above and below the horizontal plane in which said tubular braces lie and intersecting said braces, substantially as set forth.

4. In a lubricating apparatus, an oil-reservoir having its axis in a horizontal plane, tubular braces extending from side to side of the reservoir, and oil-feed tubes intersecting said braces and extending through said reservoir, combined with sight-feed glasses having horizontal axes and being removably mounted in pairs in said tubular braces, substantially as set forth.

5. In a lubricating apparatus, an oil-reservoir having its axis in a horizontal plane, interior tubular braces extending from side to side of the reservoir, and oil-feed tubes intersecting said braces and extending through said reservoir, the entire structure being integrally formed, combined with sight-feed glasses in pairs, each pair having a common horizontal axis and being mounted in one of said interior tubular braces, substantially as set forth.

6. In a lubricating apparatus, an oil-reservoir the side walls of which are interiorly connected and braced by tubular chambers, and provided with oil-feed tubes intersecting said chambers and extending between the walls of the reservoir, substantially as set forth.

7. In a lubricating apparatus, an oil-reservoir the side walls of which are interiorly connected and braced by a tubular chamber, and an oil-feed tube extending from said tubular chamber to the top and bottom walls of said reservoir, said reservoir, chamber, and oil-feed tubes being integral, substantially as set forth.

8. In a lubricating apparatus, an oil-reservoir the opposite sides of which are connected by a tubular brace or chamber, the said brace or chamber being intersected by an oil-feed tube combined with sight-feed glasses supported by said tubular brace or chamber, substantially as set forth.

9. In a lubricating apparatus, an oil-reservoir having its axis in a horizontal plane and being provided with a series of horizontal tubular braces or chambers connecting its interior sides, and oil-feed pipes intersecting said braces or chambers, combined with sight-feed glasses arranged in pairs, each pair having a common axis and being supported by one of said tubular braces or chambers, substantially as set forth.

10. In a lubricating apparatus, an oil-reservoir having a series of parallel tubular braces or chambers interiorly connecting its sides, and oil-feed pipes intersecting and extending from said tubular braces or chambers to the walls of said reservoir, combined with sight-feed glasses supported by each tubular brace or chamber, substantially as set forth.

11. In a lubricating apparatus, an oil-reservoir having its axis in a horizontal plane and being provided with a series of tubular braces or chambers connecting its interior sides, and oil-feed pipes intersecting such braces or chambers, combined with sight-feed glasses arranged in pairs, each pair having a common axis and being removably mounted in one of said tubular braces or chambers, substantially as set forth.

12. In a lubricating apparatus, an oil-reservoir having a series of tubular braces or chambers connecting its interior sides, and oil-pipes intersecting such braces or chambers, combined with a sight-feed glass in each end of each of said tubular braces or chambers, substantially as set forth.

13. In a lubricating apparatus, an oil-reservoir having a series of tubular braces or chambers connecting its interior sides, and oil-feed pipes intersecting said braces or chambers and extending between the walls of the reservoir, combined with sight-feed glasses arranged in pairs, each pair having a common axis and being removably mounted in one of said tubular braces or chambers within the body of said reservoir, substantially as set forth.

14. In a lubricating apparatus, an oil-reservoir having a series of tubular braces or chambers connecting its interior sides, and oil-feed pipes intersecting said braces or chambers and extending between the walls of the reservoir, combined with a sight-feed glass in each end of each of said tubular braces or chambers within the body of said reservoir, substantially as set forth.

15. In a lubricating apparatus, an oil-reservoir having a series of parallel tubular braces or chambers interiorly connecting its sides, and parallel oil-feed pipes intersecting and extending from said tubular braces at a right angle thereto to the walls of said reservoir, combined with a sight-feed glass in each end of each of said tubular braces or chambers within the body of said reservoir, substantially as set forth.

16. In a lubricator, the combination of a condensing-chamber, an oil-reservoir, and a series of sight-feed features connected thereto, each sight-feed feature comprising a sight-feed chamber, sight-feed glasses at opposite ends thereof, a single nozzle for delivering oil, and an independent equalizing-tube leading from the steam-space of the condenser, the sight-feed chambers being so arranged that three of them are visible from common points of observation on opposite sides.

17. In a condensation displacement lubricator, an oil-reservoir and a condensing-chamber, the walls of which reservoir are interiorly connected and braced by one or more tubular chambers, combined with sight-feed glasses supported in said tubular chambers, and oil-feed pipes intersecting said chambers and having at their lower ends valve-controlled passages for permitting the flow of oil from the oil-reservoir, substantially as set forth.

18. In a lubricator, the combination of a condenser and an oil-reservoir the latter having an oil-feed pipe passing vertically therethrough, a tubular chamber supported within the oil-reservoir and intersected by the oil-feed pipes, an oil-delivery nozzle entering said tubular chamber, and a sight-feed glass placed on each side of said nozzle and supported by said chamber, substantially as set forth.

19. In a lubricator, the combination of a condenser, an oil-reservoir having oil-feed pipes passing therethrough, a tubular chamber connected to each oil-feed pipe, each of said chambers extending be-

tween the opposite walls of said reservoir, a sight-feed glass in each end of each chamber, and an oil-delivery nozzle situated between each pair of sight-feed glasses, substantially as set forth.

20. In a lubricator, the combination of an oil-reservoir containing within itself an oil-feed pipe having an enlarged portion extending between and connected to the side walls of said reservoir, a glass in each end of said enlarged portion, and a nozzle arranged to deliver oil between said glasses, substantially as set forth.

21. In a lubricator, the combination of an oil-reservoir, vertical oil-feed pipes passing therethrough, each pipe having oppositely-arranged enlarged horizontal branches, and observation-glasses removably mounted in said enlarged horizontal branches within the compass of the reservoir, substantially as set forth.

22. The combination in a sight-feed lubricator, with a water-chamber and a nozzle through which the oil is delivered in drops in order to ascend through the water in said chamber, of an observation-glass or bull's-eye having a side or surface adapted to internally reflect, so as to be visible to the observer, the position and movement of the lubricant, substantially as set forth.

23. A lubricator having a sight-feed passage combined with an observation-glass so constructed as to constitute a mirror by internal reflection and adapted to reflect for observation the position and movement of liquid behind the glass, substantially as set forth.

24. The combination, in a sight-feed lubricator, with a water-chamber and a nozzle through which the oil is delivered in drops to the water in said chamber, of an observation-glass or bull's-eye having polished surfaces adapted to internally reflect, so as to be visible to the observer, when out of the direct line of sight, the position and movement of the lubricant, a casing in which said bull's-eye is retained, a packing for said bull's-eye, and a cap for the casing, substantially as set forth.

25. The combination, in a sight-feed lubricator, with a water-chamber and a nozzle through which the oil is delivered in drops in order to ascend through the water in said chamber, of an observation-glass or bull's-eye having a polished surface, or surfaces, at an angle to its longitudinal axis, a packing adapted to the shape of said surface or surfaces, a casing to receive said bull's-eye, and a retaining-cap for the casing, substantially as set forth.

26. In a lubricator, the combination with an observation-chamber through which the oil ascends in drops, of a thick observation-glass having parallel front and rear ends, and side surfaces adapted to inwardly direct rays of light in order to exhibit the position and movement of liquid behind the glass, substantially as set forth.

27. In a lubricating apparatus, an oil-reservoir having an integral horizontal tubular chamber extending therethrough and an oil-feed pipe intersecting said chamber, combined with cells adapted to be fitted within the tubular chamber, and observation-glasses mounted in said cells, substantially as set forth.

28. In a lubricating apparatus, an oil-reservoir having a horizontal tubular chamber extending therethrough and an oil-feed pipe intersecting said chamber, combined with cells adapted to be removably fitted within said tubular chamber, and observation-glasses removably mounted in said cells, substantially as set forth.

29. In a lubricating apparatus, an oil-reservoir having a tubular chamber forming a part thereof, and an oil-feed pipe intersecting said chamber, combined with observation-glasses connected so as to constitute mirrors by internal reflection, said glasses being removably mounted within said chamber, substantially as set forth.

30. In a lubricating apparatus, an oil-reservoir having a tubular chamber forming a part thereof, and an oil-feed pipe intersecting said chamber, combined with cells fitted to said tubular chamber, an observation-glass having exterior sides angular with reference to its axis, mounted within each cell, a wedge-packing for each glass, and retaining-caps, substantially as set forth.

31. In a lubricating apparatus, an oil-reservoir having a tubular chamber forming a part thereof and an intersecting oil-feed pipe, combined with observation-glasses having surfaces arranged to produce internal reflection, and means for mounting said glasses within said tubular chamber, substantially as set forth:

32. In a lubricating apparatus, an oil-reservoir having a tubular chamber forming a part thereof and an intersecting oil-feed pipe, combined with observation-glasses having exterior sides angular with respect to their axes, cells for containing the observation-glasses a packing around each glass, and means for forcing the packing into contact with the angular sides of the glass and the inner wall of its cell, substantially as set forth.

33. In a lubricator, the combination with an observation-chamber through which the oil ascends in drops, of a removable cell arranged in relation to said chamber, and a thick observation-glass removably mounted in said cell, said glass having parallel front and rear ends and side surfaces adapted to inwardly direct rays of light in order to exhibit the position and movement of liquid behind the glass, substantially as set forth.

34. In a lubricator, the combination with an observation-chamber through which the oil ascends in drops, of a thick observation-glass suitably mounted in relation to said chamber, a tapered or wedge-shaped packing surrounding said glass, and a cap for compressing the packing around the glass, substantially as set forth.

35. In a lubricator, the combination with a condensation-chamber, of an oil-reservoir, a plurality of sight-feed features comprising tubular chambers arranged horizontally adjacent to each other and having observation-glasses at opposite ends thereof so as to enable inspection from common points of observation on opposite sides of the lubricator and extending in a direction crosswise the reservoir, oil-feeds to the sight-feeds, and an independent equalizing-tube leading from the steam-space of the condenser to each sight-feed.

12,455. **FILTER-PULP-PACKING MACHINE.** KARL KIEFER, Cincinnati, Ohio. Filed Nov. 20, 1905. Serial No. 288,235. Original No. 797,122, dated Aug. 15, 1905.

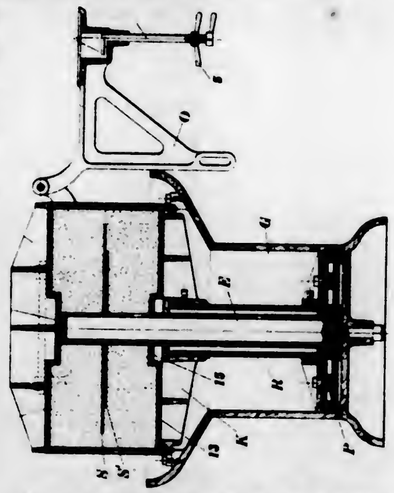

Claim.—1. In a filter-pulp-packing machine, the combination of an exterior stationary cylinder, of a stationary central cylinder, a porous bottom moving longitudinally and snugly fitting into the ring-shaped space between the two cylinders, and a removable cover.

2. In a filter-pulp-packing machine, the combination of an exterior stationary cylinder, of a stationary central cylinder, a porous bottom moving longitudinally and snugly fitting into the ring-shaped space between the two cylinders, a removable cover and a liquid-conductor between bottom and cover.

3. In a filter-pulp-packing machine, the combination of an exterior stationary cylinder, of a stationary central cylinder, a porous bottom moving longitudinally and snugly fitting into the ring-shaped space between the two cylinders, and a removable porous cover.

4. In a filter-pulp-packing machine, the combination of an exterior stationary cylinder, of a stationary central cylinder, a porous bottom moving longitudinally and snugly fitting into the ring-shaped space between the two cylinders, a removable cover and a liquid-conductor within the exterior cylinder, cover and bottom.

5. In a filter-pulp-packing machine, the combination of an exterior stationary and non-porous cylinder, a central and stationary cylinder, a framework upon which both cylinders are fastened, a hydraulic and ring-shaped piston with a central opening, carrying a filter-mass-pressing plate with a removable open-work disk, a cover removable so as to gain access to the interior of the stationary cylinder, and to insert the liquid-conductor.

6. In a filter-pulp-packing machine, the combination of an exterior cylinder, an interior cylinder much smaller in diameter, a liquid-conductor longitudinally movable on one of said cylinders and spaced apart from the other, a bottom part movable in relation to said cylinders, and a cover that can be removed to gain access into the interior of the exterior cylinder.

7. In a filter-pulp-packing machine, a filter-layer-reversing mechanism, consisting of a frame part, revolvable one hundred and eighty degrees relative to a supporting-point, a clamping mechanism adapted to take hold of the bottom press-plate of the packing-machine during the act of reversing, and release it again for the purpose of the removal of the filter layers.

8. In a filter-pulp-packing machine, the combination with a filter-layer-press mechanism proper, of a reversing mechanism having a frame part fulcrumed in a horizontal plane near the top of the machine, having a clamping arrangement adapted to take hold of the press-plate of the packing-machine, filter layer, liquid-conductor and auxiliary press-plate, and adapted to move one hundred and eighty degrees around the fulcrum of the frame.

9. In a filter-pulp-packing machine, the combination of a container, a bottom and cover to such container, at least one of them fitting snugly within the container and sliding therein, means for approaching the bottom and top part so as to express the water from the pulp, and means producing during such approach a materially stronger compression to some parts of the pulp than to others.

10. In a filter-pulp-packing machine, the combination of a container, of a plane bottom and a plane cover to such container, means of approaching both of them so as to express the liquid from the pulp within the container, of protuberances attached to the bottom and top adapted to produce a stronger compression upon the filter-pulp in contact with said protuberances than is produced upon the rest of the filter-pulp.

11. In a filter-pulp-packing machine, the combination of a container, of a plane bottom and a plane cover to such container, means of approaching both of them so as to express the liquid from the pulp within the container, of porous protuberances attached to the bottom and top, adapted to produce a stronger compression upon the filter-pulp in contact with said porous protuberances than is produced upon the rest of the filter-pulp.

12. In a filter-pulp-packing machine, the combination of an exterior cylinder, of an interior cylinder, of a bottom and top part, one of said parts snugly fitting into the ring-shaped space between the two cylinders and moving longitudinally therein, of ring-shaped protuberances attached to the moving part adapted to produce a stronger compression upon the filter mass in contact therewith than is produced upon the rest of the filter mass.

13. In a filter-pulp-packing machine, the combination of a stationary exterior cylinder, of a central stationary cylinder, a framework on which both cylinders are fastened, a porous plane bottom moving longitudinally and snugly fitting into the ring-shaped space between the two cylinders, of a removable cover, of ring-shaped protuberances adapted to produce stronger compression to the pulp and attached to the cover, of a liquid-conductor within the exterior cylinder, interior cylinder, cover and bottom.

14. In a filter-pulp-packing machine, the combination of a stationary exterior non-porous cylinder, of a central stationary interior cylinder, of a framework on which both cylinders are fastened, a porous bottom moving longitudinally and snugly fitting into the ring-shaped space between the two cylinders, of a removable cover, of ring-shaped porous protuberances between bottom and cover, of a liquid-conductor within the exterior cylinder, interior cylinder, cover and bottom.

15. In a filter-pulp-packing machine, the combination of a stationary exterior cylinder, of a central interior cylinder, of a bottom plate and a top plate, one of them fitting snugly within the ring-shaped space between the two cylinders, moving longitudinally therein, and having ring-shaped protuberances concentrically arranged, the latter adapted to more compress the filter-pulp in contact therewith than the rest of the filter-pulp.

16. A filter-layer-reversing mechanism consisting of a frame part, revolvably fulcrumed, in combination with a clamping mechanism to take hold of the filter layers between two rigid disks, whereby said filter layers may be reversed one hundred and eighty degrees.

17. A filter-layer-reversing mechanism consisting of a frame part, in combination with a clamping mechanism for compressing the filter layers between two metal plates, said frame part fulcrumed so as to be revolvable one hundred and eighty degrees.

12,456. **PAPER-SLITTING DEVICE FOR FOLDING-MACHINES.** WILLIAM A. LA ROE, Ridgway, N. J., and CHARLES M. SMITH, New York, N. Y. Filed June 16, 1905. Serial No. 265,749. Original No. 751,166, dated Feb. 2, 1904.

Claim.—1. In a paper-folding apparatus, the combination with the folding means, of slitting devices, means for operating said devices to effect the slitting, and means for moving said devices toward and away from the folding means.

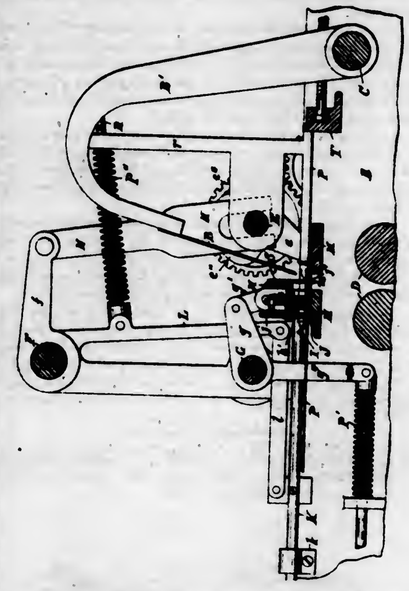

2. In a paper-folding apparatus, the combination with the folding means, of slitting devices including a slitting-blade and paper-support, means for operating said devices to effect the slitting, and means for moving the blade and support toward and away from the folding means.

3. In a paper-folding apparatus, the combination with the folding means, of slitting devices, means for operating said devices to effect the slitting, and means for giving said devices a movement toward and away from the folding means, said movement being parallel to the plane of the paper.

4. In a paper-folding apparatus, the combination with the folding means, of slitting devices including a slitting-blade and paper-support, means for operating said devices to effect the slitting, and means for moving the blade and support toward and away from the folding means, said movement being parallel to the plane of the paper.

5. In a paper-folding apparatus, the combination with a cross-head, of a slitting-blade carried thereby, a paper-support, means for moving the cross-head and support into and out of slitting position, and means for effecting a slitting movement of the blade.

6. In a paper-folding apparatus, the combination with a cross-head, of a presser-foot carried thereby, a slitting-blade mounted thereon, a paper-support, and means for moving the cross-head and support toward and away from the slitting position, and means for effecting a movement of the blade.

7. In paper-folding apparatus, the combination with the folding-blade and rollers of a series of V-shaped slitting-teeth which are elliptical in cross-section, said teeth being arranged parallel to said folding mechanism, and means for actuating the same whereby the paper is partially severed without injury to its fiber along the line of fold, substantially as set forth.

8. In paper-folding apparatus, the combination with the folding-blade and folding-rollers of a series of slitting-teeth which are elliptical in cross-section, said elliptical teeth being arranged parallel to said folding mechanism, and means for actuating the same whereby the paper is partially severed without injury to its fiber along the line of fold for the purposes set forth.

9. In paper-folding apparatus, the combination with the folding blade and rollers, of a series of V-shaped slitting-teeth elliptical in cross-section, arranged substantially parallel to said folding mech-

anism, means for actuating said V-shaped slitting-teeth, means for supporting the paper against the action of said V-shaped slitting-teeth, and means for adjusting the said V-shaped slitting-teeth with relation to said support for the paper, whereby the length of the slits formed by said V-shaped slitting-teeth may be varied, substantially as described.

10. In paper-folding apparatus, the combination with the folding blade and rollers, of slitting-teeth S, cross-head H, links g', arms g, rock-lever G, flanged heads g^4, secured thereto, the set-nuts g'' g'', on said heads g^4, and the levers g^3, and bearing-rollers g^5, together with the cams e, upon the shaft E, the whole arranged and operating substantially as and for the purpose set forth.

11. In paper-folding apparatus, the combination with the folding blade and rollers, of the cross-head H, the slitting-teeth S, the presser-plate I, springs h', rest-plate J, and means for moving the cross-head and rest-plate into and out of operative position, substantially as described.

12. In a paper-folding apparatus, the combination with the folding blade and rolls, of the cross-head H, the slitting-teeth S, the presser-plate I formed with the slots i, springs h', the rest-plate J formed with slots j'', and means for moving the cross-head and rest-plate into and out of operative position, substantially as set forth.

13. In paper-folding apparatus, the combination with the folding blade and rollers, of the cam-shaft E, and cams e, e', rock-shaft G, and arms g, g^3, links g', cross-head H, and slitting-teeth S, the links N and L, rock-shaft F, and arms f, links l, slide-rods K, cross-head H, slitting-teeth S, presser-plate I, rest-plate J, the whole arranged and operating substantially in the manner and for the purpose described.

12,457. **LEATHER-STRETCHING CLAMP.** CHARLES B. RAYBURN, Canton Junction, Mass. Filed Nov. 20, 1905. Serial No. 288,700. Original No. 796,531, dated Aug. 8, 1905.

Claim.—1. In a clasp of the class described, the combination of a main plate provided at one end with a hole, and at its other end with transverse corrugations and with a pair of ears projecting upward and forward, a relatively movable jaw-plate provided at one end with a hole, and at its other end with transverse corrugations, said plate lying between the ears and being attached to the main plate by an eyelet passed through the holes in the two plates, and a lever pivoted between the forward ends of the ears, and having its forward end when the lever is in clamping position curved forwardly and downwardly in front of the pivots and then rearwardly, whereby when the lever is swung over backwardly said curved forward end will press the movable jaw toward the main jaw.

2. In a clasp of the class described, the combination of a substantially straight main plate whose forward end is adapted to serve as a jaw and whose rear end is provided with a hole and which is provided at its edges with upturned ears, another plate of substantially the same length and width as the main plate and which is adapted to lie and work between said ears and whose rear end is bent down so as to lie upon the rear end of the main plate, this downward-bent rear portion being provided with a hole, an eyelet passed through the holes in the two plates and serving to permanently connect the plates together, and an opening and closing cam-lever mounted between said ears, substantially as set forth.

3. In a clamp or clasp, the combination of a pair of plates attached rigidly and permanently together at one end, and adapted to spring apart at their other ends, these latter ends serving as jaws, ears carried by one of the plates, and a closing and locking lever pivotally mounted between said ears, and having its forward end when the lever is in clamping position extending forward beyond the pivotal point and downwardly and rearwardly and made resilient, so that it will press and lock the two jaws together resiliently when the handle end of the lever is swung backward.

4. In combination with a pair of body-plates attached together at their rear ends and adapted to swing apart at their forward ends, one of the plates being provided with ears embracing the other plate, a lever pivotally mounted between these ears and having its forward end when in clamping position curved forward and downward and rearward and made resilient, so that it will act as a spring-cam in closing the jaws, this cam portion being provided with a lateral lug adapted to strike against the ears and limit the movement of the lever when it is thrown upward and forward to open the clamp, substantially as set forth.

5. In a clamp of the class described, the combination of a main plate adapted for attachment to a cord at its rear end and carrying a pair of side ears which extend forwardly to form an open mouth between the forward ends of the ears and the main plate, and clamping means embodying a self-locking lever pivoted between the forward ends of said ears, the forward end of this lever when in locked position being extended forwardly of the pivot and curved toward the main plate and then rearwardly to form a resilient closing-cam, whose free rearwardly-extending end affords a broad resilient clamping-bearing opposite the pivots of the lever.

6. A clamp comprising a main part adapted at its rear end for attachment to a cord and carrying clamping means at its forward end, said clamping means embodying a pair of forwardly-extending side ears and a clamping-lever, said lever being pivoted between the forward ends of said ears and having its forward end curled into a resilient cam, which cam when the lever is in clamping position has its curved nose portion lying forward of the pivots and its free resilient end portion curving backwardly to a point back of the pivots, whereby when the clamp is closed the free resilient end portion of the cam will afford a broad cam-bearing directly opposite the pivots, whereby a wide range of thicknesses of leather can be accommodated and the cam alone will lock the lever in its clamping position.

12,458. **COMBINATION-TOOL.** ROBERT A. RAGSDEY, Belton, Tex., assignor to Keller Bee Opener Company, Sedalia, Mo., a Copartnership. Filed Sept. 8, 1905. Serial No. 277,639. Original No. 736,753, dated Sept. 15, 1903.

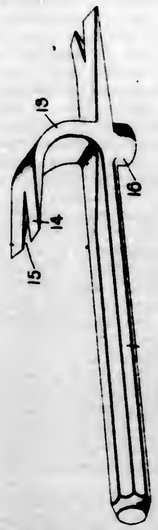

Claim.—A tool comprising a stock having a wedge-shaped end extending in longitudinal alinement therewith, a claw member composed of a flattened arm extending laterally from one of the flattened faces of said wedge-shaped stock-terminal and spaced from the end thereof, said arm being curved rearwardly at a point intermediate of its ends with the free end thereof extended in a plane parallel with the plane occupied by the stock, said claw member and wedge-shaped stock-terminal having V-shaped clefts therein opening in opposite directions; substantially as described.

DESIGNS.

37,829. **JAR.** JOHN ELLWOOD LEE, Coatesville, Pa., assignor to Johnson and Johnson, New Brunswick, N. J., a Corporation of New Jersey. Filed Dec. 11, 1905. Serial No. 291,361. Term of patent 14 years.

37,829.

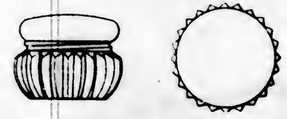

Claim.—The ornamental design for a jar, as shown.

37,830. **HAND-BAG FRAME.** WILHELM STAVENHAGEN, Weehawken, N. J. Filed Nov. 24, 1905. Serial No. 288,962. Term of patent 3½ years.

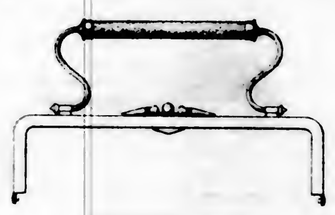

Claim.—The ornamental design for a hand-bag frame as shown.

37,831. **CASING FOR TOY SHOOTING APPARATUS.** HUGO KUNKEL, Cologne-Lindenthal, Germany. Filed Nov. 23, 1905. Serial No. 288,818. Term of patent 7 years.

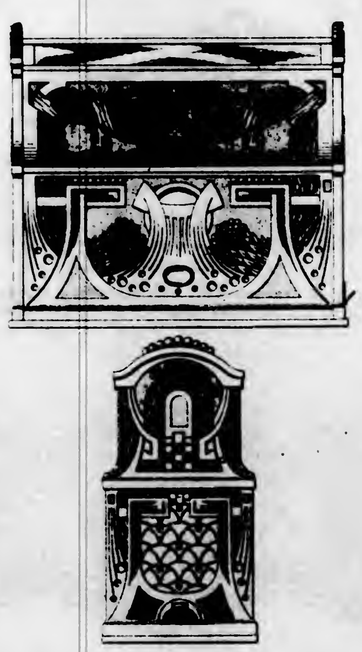

Claim.—The ornamental design for a casing for a toy shooting apparatus, as shown.

37,832. **REFLECTOR FOR INCANDESCENT ELECTRIC LAMPS.** OTIS A. MYGATT, New York, N. Y. Filed July 15, 1905. Serial No. 269,893. Term of patent 14 years.

Claim.—The ornamental design for a reflector for incandescent electric lamps, as shown.

37,833. **REFLECTOR FOR INCANDESCENT ELECTRIC LAMPS.** OTIS A. MYGATT, New York, N. Y. Filed July 17, 1905. Serial No. 270,143. Term of patent 14 years.

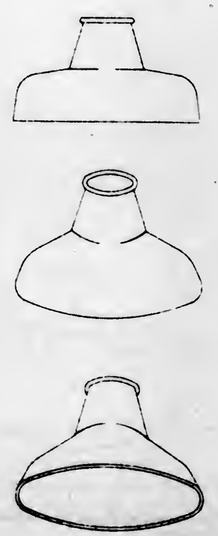

Claim.—The ornamental design for a reflector for incandescent lamps, as shown.

37,884. REFLECTOR FOR INCANDESCENT ELECTRIC LAMPS. OTIS A. MYGATT, New York, N. Y. Filed July 31, 1905. Serial No. 272,126. Term of patent 14 years.

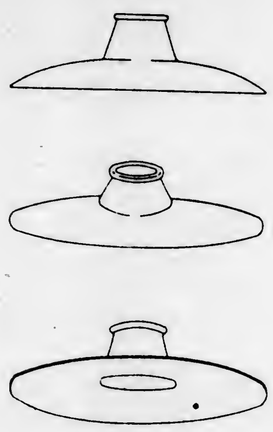

Claim.—The ornamental design for a reflector for incandescent electric lamps, as shown.

37,885. REFLECTOR FOR INCANDESCENT ELECTRIC LAMPS. OTIS A. MYGATT, New York, N. Y. Filed Aug. 1, 1905. Serial No. 272,264. Term of patent 14 years.

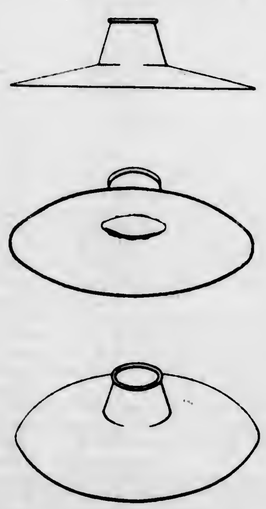

Claim.—The ornamental design for a reflector for incandescent electric lamps, as shown.

37,886. TILE. WILLIAM S. GODDARD, Brooklyn, N. Y., assignor to Mosaic Brick Co., Brooklyn, N. Y. Filed Aug. 30, 1905. Serial No. 276,469. Term of patent 14 years.

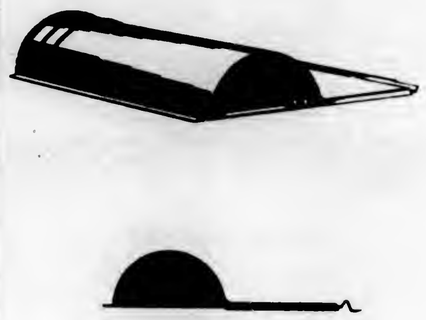

Claim.—The ornamental design for a tile, as shown.

37,887. GRAVE-COVER. WALTER J. HUBER, Dubuque, Iowa, assignor of one-half to William Imhoff, Dubuque, Iowa. Filed Oct. 5, 1905. Serial No. 277,696. Term of patent 7 years.

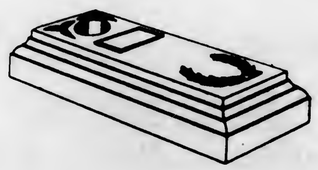

Claim.—The ornamental design for a grave-cover as shown.

37,888. LEVERS LACE. CHARLES W. BIRKIN, Nottingham, England. Filed Jan. 6, 1906. Serial No. 294,976. Term of patent 3½ years.

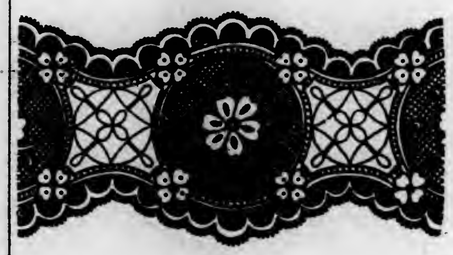

Claim.—The ornamental design for Levers lace as shown

37,839. LEVERS LACE. CHARLES W. BIRKIN, Nottingham, England. Filed Jan. 12, 1906. Serial No. 296,894. Term of patent 3½ years.

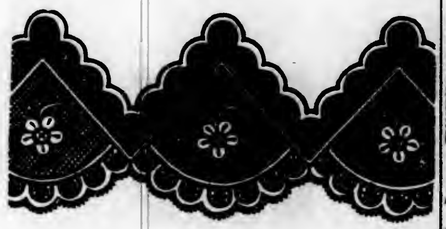

Claim.—The ornamental design for Levers lace as shown.

37,840. LEVERS LACE. CHARLES W. BIRKIN, Nottingham, England. Filed Jan. 16, 1906. Serial No. 296,427. Term of patent 3½ years.

Claim.—The ornamental design for Levers lace as shown.

37,841. LEVERS LACE. CHARLES W. BIRKIN, Nottingham, England. Filed Jan. 19, 1906. Serial No. 296,915. Term of patent 3½ years.

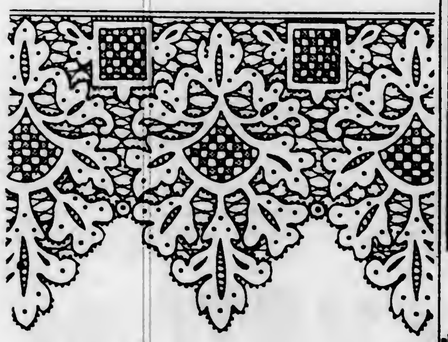

Claim.—The ornamental design for Levers lace as shown.

37,842. LEVERS LACE. CHARLES W. BIRKIN, Nottingham, England. Filed Jan. 20, 1906. Serial No. 297,079. Term of patent 3½ years.

Claim.—The ornamental design for Levers lace as shown.

37,843. PRINTED TEXTILE FABRIC. EDWARD B. VANDERGAW, Brooklyn, N. Y. Filed Dec. 26, 1905. Serial No. 292,681. Term of patent 7 years.

Claim.—The ornamental design for a printed textile fabric as shown.

37,844. PRINTED TEXTILE FABRIC. EDWARD B. VANDERGAW, Brooklyn, N. Y. Filed Dec. 26, 1905. Serial No. 292,682. Term of patent 7 years.

37,844.

37,846. RUG. ADOLPH PETZOLD, Philadelphia, Pa., assignor to John

37,844.

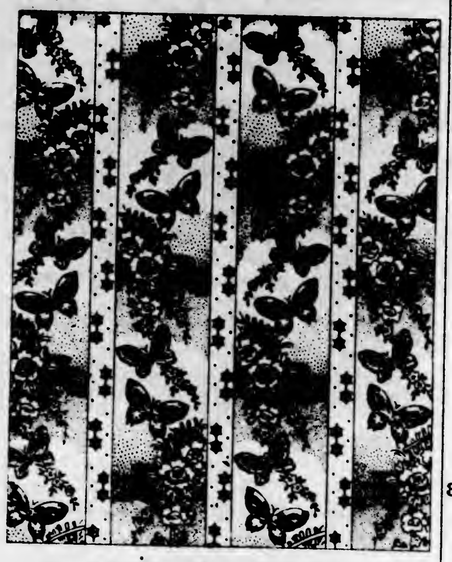

Claim.—The ornamental design for a printed textile fabric as shown.

37,845. RUG. ADOLPH PETZOLD, Philadelphia, Pa., assignor to John H. Bromley and Edward Bromley, Philadelphia, Pa., trading as John Bromley & Sons. Filed Dec. 18, 1905. Serial No. 292,880. Term of patent 3½ years.

Claim.—The ornamental design for a rug, as shown.

37,846. RUG. ADOLPH PETZOLD, Philadelphia, Pa., assignor to John H. Bromley and Edward Bromley, Philadelphia, Pa., trading as John Bromley & Sons. Filed Dec. 18, 1905. Serial No. 292,881. Term of patent 3½ years.

Claim.—The ornamental design for a rug, as shown.

37,847. RUG. ADOLPH PETZOLD, Philadelphia, Pa., assignor to John H. Bromley and Edward Bromley, Philadelphia, Pa., trading as John Bromley & Sons. Filed Dec. 18, 1905. Serial No. 292,882. Term of patent 3½ years.

Claim.—The ornamental design for a rug, as shown.

TRADE-MARKS

GRANTED FEBRUARY 20, 1906.

The following trade-marks have been adjudged entitled to registration under the act of February 20, 1905, and are published in compliance with section 6 of said act. Said section provides:

"Any person who believes he would be damaged by the registration of a mark may oppose the same by filing notice of opposition, stating the grounds therefor, in the Patent Office within thirty days after the publication of the mark sought to be registered, which said notice of opposition shall be verified by the person filing the same before one of the officers mentioned in section two of this act. If no notice of opposition is filed within said time the Commissioner shall issue a certificate of registration therefor, as hereinafter provided for."

Marks which are stated to have been "Used ten years" are registrable under the last proviso of section 5 of said act, which is as follows:

"And provided further, That nothing herein shall prevent the registration of any mark used by the applicant or his predecessors, or by those from whom title to the mark is derived, in commerce with foreign nations or among the several States, or with Indian tribes, which was in actual and exclusive use as a trade-mark of the applicant or his predecessors from whom he derived title for ten years next preceding the passage of this act."

Section 14 of said act provides for the following fee:

"On filing notice of opposition to the registration of a trade-mark, ten dollars."

SER. No. 154. WHISKY. CAHN, BELT & CO., Baltimore, Md. Filed Apr. 1, 1905.

MARYLAND CLUB

The words "MARYLAND CLUB."

SER. No. 279. SEWING-MACHINES. ALBERT G. MASON, Cleveland, Ohio. Filed Apr. 3, 1905.

NEW DEFENDER

The words "NEW DEFENDER."

SER. No. 653. STOCK-FEED. RALSTON PURINA CO., St. Louis, Mo. Filed Apr. 6, 1905.

PROTENA

The word "PROTENA."

SER. No. 724. RULES, YARDSTICKS, BOARD-MEASURES, AND LOG-MEASURES. THE CHAPIN-STEPHENS COMPANY, Pine Meadow, Conn. Filed Apr. 7, 1905.

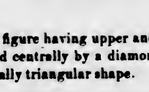

A rectangular figure having upper and lower panels, the upper panel being divided centrally by a diamond-shaped figure, and end panels of substantially triangular shape.

SER. No. 1,138. WHEAT-FLOUR, GRAHAM FLOUR, AND RYE-FLOUR. THE DIAMOND ELEVATOR & MILLING COMPANY, Minneapolis, Minn. Filed Apr. 11, 1905.

The word "CUT" appearing on a diamond-shaped figure printed in red.

SER. No. 1,176. ACID PHOSPHATE AND A SYRUP OF PHOSPHATES. THE CHAS. M. DOEBLER COMPANY, New York, N. Y.

SER. No. 1,561. PLAYING-CARDS. THE UNITED STATES PLAYING

The representation of a section of a wheel having thereupon the

SER. No. 2,441.

SER. No. 1,176. ACID PHOSPHATE AND A SYRUP OF PHOSPHATES. THE CHAS. H. PHELPS CHEMICAL CO., New York, N. Y. Filed Apr. 11, 1905. Used ten years.

A monogram containing the letters "PHILLIPS," said monogram being on a shield which is surrounded by a buckled strap.

SER. No. 1,242. GLYCERIN SOAP. MÜLHENS & KROPFF, New York, N. Y. Filed Apr. 12, 1905. Used ten years.

The representation of a cake of soap having on one face thereof two parallel bars or gutters having rounded ends.

SER. No. 1,279. PINE-WOOD OIL. SPIRITINE CHEMICAL COMPANY, Wilmington, N. C. Filed Apr. 12, 1905.

SPIRITINE

The word "SPIRITINE."

SER. No. 1,546. UPHOLSTERY TEXTILE FABRICS. ANDREW McLEAN CO., Passaic, N. J. Filed Apr. 14, 1905.

The figure of a knight on horseback waving aloft a standard, the figure resting upon an ornamental pedestal on which are inscribed the words "THE VICTOR."

SER. No. 1,561. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio. Filed Apr. 15, 1905.

The words "IVORY FINISH" and the letters and figures "No 808" arranged on an oblong panel.

SER. No. 1,589. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio. Filed Apr. 15, 1905.

AUTO

The word "AUTO."

SER. No. 1,592. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio. Filed Apr. 15, 1905.

SAFETY

The word "SAFETY."

SER. No. 1,717. LIQUID COMPOUNDS OF COD-LIVER OIL. NORWAY PHARMACAL COMPANY, New York, N. Y. Filed Apr. 15, 1905.

MORRHOLINE

The word "MORRHOLINE."

SER. No. 1,855. LEATHER AND RUBBER CEMENT. ECLIPSE CEMENT & BLACKING CO., Philadelphia, Pa. Filed Apr. 17, 1905.

The words "BULL DOG," and the representation of a bulldog in recumbent position, and an annular band, within which latter said representation is contained and on which said words are imposed.

SER. No. 1,988. GAS AND GASOLENE ENGINES. THE FAIRBANKS CO., New York, N. Y. Filed APR. 17, 1905.

The representation of a section of a wheel having thereupon the words "THE FAIRBANKS," the word "FAIRBANKS" being inclosed in quotation-marks, associated with the words and character "IMPROVED" and "GAS & GASOLENE ENGINES."

SER. No. 2,008. PACKAGE-ROLLS OF GOLD, SILVER, ALUMINUM, COMPOSITION, OR OTHER METAL LEAF. W. H. GEE MFG. CO., Providence, R. I. Filed Apr. 17, 1905. Used ten years.

The words "RIBBON LEAF."

SER. No. 2,104. BLACK PAINTS AND JAPANS. H. S. GRAVES CO., INC., Philadelphia, Pa. Filed Apr. 18, 1905. Used ten years.

OXFORD

The word "OXFORD."

SER. No. 2,294. PORTABLE BOWLING-ALLEYS. THE AMERICAN BOX BALL CO., Indianapolis, Ind. Filed Apr. 19, 1905.

THE AMERICAN BOX BALL ALLEY

The words "THE AMERICAN BOX BALL ALLEY."

SER. No. 2,416. METAL BARS, SHEETS, PLATES, HOOPS, BANDS, BILLETS, BLOOMS, SLABS, ANGLES, CHANNELS, I-BEAMS, S-BARS, TEES, INGOTS, AND PIGS. DELOREME, GILBERT & TOWER, INCORPORATED, New York, N. Y. Filed Apr. 20, 1905.

The word "DEAL" upon a square background colored red.

SER. No. 2,441. POWDERED DESSERT-JELLY PREPARATION. THE STERNS & SALADINE COMPANY, New York, N. Y. Filed Apr. 20, 1905.

BROMANGELON

The word "BROMANGELON."

SER. No. 2,480. REMEDY FOR THE CURE OR ALLEVIATION OF HEADACHES AND LIVER DISORDERS. JAMES G. BAKER, Fairfield, Ill. Filed Apr. 20, 1905.

YANKEE

The arbitrary word "YANKEE."

SER. No. 2,619. STOVES, RANGES, HEATERS, FURNACES, AND PARTS THEREOF. RICHARDSON & BOYNTON COMPANY, New York, N. Y. Filed Apr. 21, 1905. Used ten years.

PERFECT

The word "PERFECT."

SER. No. 2,630. MEN'S AND BOYS' PANTS. MALONE MANUFACTURING CO., Malone, N. Y. Filed Apr. 21, 1905.

The words "THE ADIRONDACK," associated with the representation of a mountain and lake scene, a tree having a bird upon a branch thereof being represented in the foreground and a stag standing near the base of said tree.

SER. No. 2,646. CHEWING AND SMOKING TOBACCO. ROBT. HARRIS & BRO., Reidsville, N. C. Filed Apr. 19, 1905.

The representation of a hatchet.

SER. No. 2,842. BISCUITS. F. B. WARREN & CO., Brockton, Mass. Filed Apr. 24, 1905.

SER. No. 3,842.

A representation of a tropical scene comprising more particularly a showing of cocoanut-palms and a camel with a human figure thereon in the foreground and pyramids in the background. To the right is a rectangular panel containing the representation of four open boxes, and to the right of this panel is a diamond-shaped panel or border on which appears the word "PREMIUM." The whole is inclosed in a rectangular border.

SER. No. 2,939. CIGARS. THE DIESEL-WEBNER CO., Lima, Ohio. Filed Apr. 24, 1905. Used ten years.

SAN FELICE

The words "SAN FELICE."

SER. No. 3,004. SILVER TABLEWARE, HOLLOW WARE, AND FLAT WARE. WOOSUNG STERLING COMPANY, New York, N. Y. Filed Apr. 26, 1905.

The letter "W," partially surrounded by a wreath.

SER. No. 3,191. LEATHER FOR SHOES, GLOVES, AND HARNESS. PFISTER & VOGEL LEATHER COMPANY, Milwaukee, Wis. Filed Apr. 26, 1905.

A monogram of the letters "P V" on a spray of hemlock and inclosed in a circular border.

SER. No. 3,446. RUGS, ART SQUARES, AND MATTING MADE OF GRASS TWINE. OSHKOSH GRASS MATTING CO., Oshkosh, Wis. Filed Apr. 26, 1905.

DELTOX

The word "DELTOX."

SER. No. 3,458. LIQUID PREPARATION FOR INTERNAL AND EXTERNAL APPLICATION. THE HERB MEDICINE COMPANY, Springfield, Ohio. Filed Apr. 26, 1905.

LIGHTNING
Hot Drops

The words "LIGHTNING HOT DROPS" and the pictorial representation of a harvest scene showing persons harvesting herbs upon a hillside with a pack-animal in the rear.

SER. No. 3,473. REMEDY FOR CHILLS AND FEVER AND AFFECTIONS RESULTING FROM MALARIA, LA GRIPPE, COLD, AND PNEUMONIA. THE EUCALINE MEDICINE CO., Dallas, Tex. Filed Apr. 28, 1905.

The representation of a leaf and a small portion of a branch upon which there are a flower and a seed-pod of the eucalyptus tree, the branch being within the curve of the leaf.

SER. No. 3,731. WHISKY. THE J. J. DOUGLAS CO., Louisville, Ky. Filed May 1, 1905. Used ten years.

The word "CARLTON" beneath a monogram of the letters "J J D Co" inside of a circle.

SER. No. 3,787. WHISKY. CORNING AND COMPANY, Peoria, Ill. Filed May 1, 1905. Used ten years.

SER. No. 3,787.

LEE NEWTON'S

The name "LEE NEWTON'S."

SER. No. 3,789. WHISKY. CORNING AND COMPANY, Peoria, Ill. Filed May 1, 1905. Used ten years.

Mt Pleasant

The words "MT PLEASANT."

SER. No. 3,751. SHOT GUN SHELLS. THE AUSTIN CARTRIDGE CO., Cleveland, Ohio. Filed May 1, 1905.

CRACK SHOT

The words "CRACK SHOT."

SER. No. 4,014. TURKEY-RED OIL AND SOLUBLE GREASE AS USED FOR DYEING, LUBRICATING, FINISHING, AND SOFTENING PURPOSES. THE ARABOL M'F'G CO., New York, N. Y. Filed May 2, 1906.

The pictorial representation of an Egyptian sphinx mounted on a pedestal.

SER. No. 4,016. COUGH-CANDY. DONIPHAN & CO., St. Joseph, Mo. Filed May 2, 1906.

A rectangular panel bearing a representation of the bust of a man dressed in Quaker costume and the words "QUAKER CANDY COUGH DROPS."

SER. No. 4,156. WHISKY. R. M. ROSE CO., Atlanta, Ga. Filed May 3, 1905. Used ten years.

SER. No. 4,156.

Rose's
Purity

The words "ROSE'S PURITY," the word "PURITY" being inclosed in quotation-marks.

SER. No. 4,237. PLOWS, CULTIVATORS, AND STOCK PARTS OR SHAPES THEREFOR. STAR MANUF'G CO., Carpentersville, Ill. Filed May 4, 1905.

The representation of a star.

SER. No. 4,239. PIG-IRON. CLINTON IRON AND STEEL COMPANY, Pittsburg, Pa. Filed May 4, 1905.

"HECTOR"
INSPECTED
FOUNDRY IRON.

The words "HECTOR INSPECTED FOUNDRY IRON," the word "HECTOR" being inclosed in quotation-marks, associated with a representation of a nude figure of a man wearing a helmet with a poised spear in one hand and a shield on the other arm on which appears the word "HECTOR," and the same word below such representation.

SER. No. 4,288. MARINE PAINT. HARRY LOUDERBOUGH, Jersey City, N. J. Filed May 4, 1905.

IRON CROWN PAINT

The words "IRON CROWN PAINT" and the representation of a crown supported by two men dressed as sailors.

SER. No. 4,565. METAL PIPE-FITTINGS. MALLEABLE IRON FITTINGS COMPANY, Branford, Conn. Filed May 6, 1905. Used ten years.

SER. No. 4,565.

SER. No. 4,565.

M. I. F. Co.

The letters "M. I. F. Co."

SER. No. 4,862. WASHBOARDS. THE AMERICAN WASHBOARD COMPANY, Cleveland, Ohio. Filed May 10, 1905. Used ten years.

THE UNIVERSAL

The words "THE UNIVERSAL."

SER. No. 4,994. COTTON PIECE GOODS. MASSACHUSETTS COTTON MILLS, Lowell, Mass. Filed May 10, 1905.

The representation of the head of an ox.

SER. No. 5,155. RUBBER COMBS. AMERICAN HARD RUBBER CO., New York, N. Y. Filed May 11, 1905.

Princess

The word "PRINCESS."

SER. No. 5,156. RUBBER COMBS. AMERICAN HARD RUBBER CO., New York, N. Y. Filed May 11, 1905.

Renaissance

The word-symbol "RENAISSANCE."

SER. No. 5,157. RUBBER COMBS. AMERICAN HARD RUBBER CO., New York, N. Y. Filed May 11, 1905.

IMPERIAL

The word "IMPERIAL."

SER. No. 5,221. LIVER REMEDY. A C STEDMAN JR MEDICINE CO, Sherman, Tex. Filed May 11, 1905.

The monogram "A C S JR," wherein the letter "A" is arranged within the letter "C" and both within a field covered by the letter "S," the letters "JR" being arranged within the letter "A."

SER. No. 5,311. ANTISEPTICS AND GERMICIDES. MARION WILLIS SAVAGE, Minneapolis, Minn. Filed May 12, 1905.

The word "PHENO:CHLORO," beneath which are enlarged representations of cholera and fever germs with the representations of instruments used in laboratory work.

SER. No. 5,313. POULTRY-FOOD. MARION W. SAVAGE, Minneapolis, Minn. Filed May 12, 1905. Used ten years.

The words "INTERNATIONAL POULTRY FOOD," a monogram of the letters "M W S," and at the top and bottom of the mark pictorial representations of a rural landscape with poultry in the foreground.

SER. No. 5,854. COOKING AND BAKING OILS. THE INDEPENDENT COTTON OIL CO., Chicago, Ill. Filed May 12, 1905.

Swan

A swan represented either pictorially or by word.

SER. No. 5,858. SHEETINGS AND DRILLS. RAMLEY COTTON MILLS, Ramley, S. C. Filed May 15, 1905.

The representation of a pair of kingfishers, each sitting on one foot or claw on a limb and holding in the other a fishing-line attached to a pole which rests at its base on a rock below, with pond-lilies in the background.

SER. No. 5,744. COLOGNE. FREEMAN B. SHEDD, Lowell, Mass. Filed May 15, 1905. Used ten years.

HOYT'S NICKEL 5

The words and numeral "HOYT'S 5 NICKEL," the word "NICKEL" being printed across the figure "5."

SER. No. 5,770. SPARKLING EFFERVESCENT TONIC BEVERAGES. RUMFORD CHEMICAL WORKS, Providence, R. I. Filed May 16, 1905.

PHOSA

The word "PHOSA."

SER. No. 5,864. OINTMENT FOR ALLAYING INFLAMMATION AND HEALING WOUNDS. D. RANSOM, SON AND COMPANY, Buffalo, N. Y. Filed May 16, 1905.

The words "DR. A. TRASK'S MAGNETIC OINTMENT" above the representation of an apparatus consisting of a boiler, fire-arch, chimney, gage, &c., and having a person in a partially-kneeling position engaged with a cooler in the preparation of the compound. The words "NONE GENUINE WITHOUT THE SIGNATURE OF S. BUELL" are inscribed upon the label at one side of the aforesaid words and illustration.

SER. No. 5,865. LINIMENT USED FOR THE HEALING OF SPRAINS, BRUISES, INFLAMMATION, &c. D. RANSOM, SON AND COMPANY, Buffalo, N. Y. Filed May 16, 1905.

The words "PROF. ANDERSON'S DERMADOR," the words "PROF. ANDERSON'S" being arranged in an upper panel having a straight top margin, a curved lower margin, and ornamental ends and the word "DERMADOR" in a lower panel having ornamental top corners, and an illustration between the two panels of a black horse standing upon the bank of a sheet of water and facing to the left, and two men, one of whom is on one knee applying liniment to one of the hind legs of the horse, and the other is standing at the horse's head holding the bridle.

SER. No. 5,900. STEAM AND HOT-WATER HEATERS AND PARTS THEREOF. THE HERRINGBONE MANUFACTURING CO., Geneva, N. Y. Filed May 17, 1905. Used ten years.

FURMAN

The word "FURMAN."

SER. No. 5,914. REMEDIES FOR DISEASES OF THE EYE. THE EYE-FIX REMEDY COMPANY, Detroit, Mich. Filed May 17, 1905.

SER. No. 5,914.

BYE-FIX

The hyphenated word "BYE-FIX."

SER. No. 5,988. ANTIFRICTION OR BEARING METALS. WILLIAM A. HARDY & SON'S CO., Pittsburg, Mass. Filed May 18, 1905.

CENTURY

The word "CENTURY."

SER. No. 5,984. FABRIC OF COTTON DUCK. MOUNT VERNON-WOODBERRY COTTON DUCK COMPANY, Baltimore, Md. Filed May 18, 1905. Used ten years.

COLUMBIA

The word-symbol "COLUMBIA" in the arc of a circle and in connection with an arbitrary device representing a section of the sun with peculiar rays above.

SER. No. 6,100. PLUG CHEWING-TOBACCO AND SMOKING-TOBACCO. H. N. MARTIN & Co., Louisville, Ky. Filed May 19, 1905. Used ten years.

The pictorial representation of a martin within a figure of irregular form, which is surrounded by a circle, and the name "H. N. MARTIN & Co.," which appears in a semicircle at the upper side of the main or circular figure, and the name "GREENVILLE," which appears in a separate circle at the lower side of the said main figure, the grounds upon which the figure of the martin and the said names appear having contrasting colors.

SER. No. 6,300. WHISKY. LOUIS J. ADLER, Pittsburg, Pa. Filed May 22, 1905.

RELDA

The word "RELDA," associated with the representation of a double eagle on a dark background in the form of a trefoil with radiating lines.

SER. No. 6,311. MEDICINAL PREPARATION USED AS A NERVE SEDATIVE. PEACOCK CHEMICAL CO., St. Louis, Mo. Filed May 22, 1905. Used ten years.

PEACOCK'S BROMIDES

The words "PEACOCK'S BROMIDES."

SER. No. 6,320. TONIC AND GENERAL STIMULANT. MELLIER DRUG COMPANY, St. Louis, Mo. Filed May 22, 1905.

PONCA Compound

The word-symbol "PONCA COMPOUND."

SER. No. 6,321. SPECIFIC FOR NEURALGIA AND RHEUMATISM. MELLIER DRUG COMPANY, St. Louis, Mo. Filed May 22, 1905.

Tongaline

The word-symbol "TONGALINE."

SER. No. 6,520. CLOTHING FOR WOMEN AND MISSES, CONSISTING OF WAISTS AND DRESSES AND SUITS COMPLETE. ROSENBAUM COMPANY, Pittsburg, Pa. Filed May 24, 1905.

The representation of a shield quartered, the quarters being in two contrasting colors, one quarter having a representation of a rose-tree produced thereon, another quarter a representation of a rose in full bloom, the third quarter has the letters "A R C O," and the fourth quarter the letter "R." and the abbreviation "Co."

SER. No. 6,543. CHOCOLATE, COCOA, MILK-CHOCOLATE, HAZEL-NUT CHOCOLATE, ALMOND-CHOCOLATE, AND COFFEE-CHOCOLATE IN POWDER, BLOCK, OR TABLET FORM. AKTIEN-GESELLSCHAFT VEREINIGTE BERNER & SCHWEIZER CHOCOLADE-FABRIKEN LINDT & SPRÜNGLI, Berne, Switzerland. Filed May 24, 1905.

The representation of a winged dragon with the words "CHOCOLAT LINDT" beneath the same, the dragon being perched upon the capital letters "C" and "L," there being a helmet with feathers and streamer upon it over the head of the dragon.

SER. No. 6,581. WINE. ITALIAN SWISS COLONY, San Francisco, Cal. Filed May 25, 1905.

Marsalotto

The word "MARSALOTTO."

SER. No. 6,643. GALL CURE. MARION W. SAVAGE, Minneapolis, Minn. Filed May 25, 1905.

INTERNATIONAL GALL CURE

The representation of a pair of horses in the act of pulling and the words "INTERNATIONAL GALL CURE."

SER. No. 6,657. WHISKY. A. P. HOTALING & Co., San Francisco, Cal. Filed May 25, 1905.

OLD KIRK

The words "OLD KIRK."

SER. No. 6,885. TANNING EXTRACT. THE STANFORD MFG. CO., New York, N. Y. Filed May 29, 1905.

CLIMAX

The word "CLIMAX" inclosed in a diamond-shaped figure.

SER. No. 6,886. TANNING EXTRACT. THE STANFORD MFG. CO., New York, N. Y. Filed May 29, 1905.

PARANAX

A coined word "PARANAX" inclosed in a diamond-shaped figure.

SER. No. 6,887. DYESTUFF OR COLORING MIXTURE FOR LEATHER. THE STANFORD MFG. CO., New York, N. Y. Filed May 29, 1905.

SER. No. 6,887.

REGAL

The word "REGAL."

SER. No. 7,134. BEER. STORZ BREWING CO., Omaha, Nebr. Filed June 1, 1905.

A representation of a hop-leaf bearing a picture of a fountain spouting from an Artesian well, above which appears a dove with outstretched wings. Directly back of fountain are diminutive men grouped around a kettle. Surrounding the picture is a band or circle containing the words "STORZ AGE. PURITY. STRENGTH."

SER. No. 7,144. BOYS' SUITS. HENRY A. SEINSHEIMER, Cincinnati, Ohio. Filed June 1, 1905. Used ten years.

Perfection

The word "PERFECTION," associated with the representation of a comet at the right-hand upper side of the word.

SER. No. 7,168. FACE-POWDER. FERDINAND T. HOPKINS, New York, N. Y. Filed June 1, 1905.

ORIGINAL LILY WHITE

The words "ORIGINAL LILY WHITE" in the upper part of an oval figure ornamented with scrollwork and a conventional flower center.

SER. No. 7,316. LINIMENT. JAMES F. BALLARD, St. Louis, Mo. Filed June 3, 1905. Used ten years.

SNOW

The word "SNOW."

SER. No. 7,817. NON-IRRITANT GERMICIDE AND ANTISEPTIC COMPOUND FOR INTERNAL AND EXTERNAL AND HYPODERMIC ADMINISTRATION. JAMES F. BALLARD, St. Louis, Mo. Filed June 8, 1905.

CAMPHO-PHÉNIQUE

The hyphenated word "CAMPHO-PHÉNIQUE."

SER. No. 7,864. PETTICOATS AND UNDERSKIRTS. THE STEWART, HOWE AND MAY COT., Jersey City, N. J.; New York, N. Y.; Boston, Mass.; St. Louis, Mo.; Chicago, Ill., and San Francisco, Cal. Filed June 8, 1905.

S. H. & M.

The letters and character "S. H. & M." with a dot or period following each letter.

SER. No. 7,460. CARBON COPYING-PAPER. BACON BROTHERS, Seattle, Wash. Filed June 6, 1905.

The representation of a sheet of carbon-paper held stretched out by two hands, associated with the words "ITSGOOD" and "KLEAN KARBON," the capital letters "K" and "N" being used as the first and the last letter, respectively, of each word, all inclosed in a rectangular line border.

SER. No. 7,464. SHEARS AND SCISSORS. HERMAN CLAUSS, Fremont, Ohio. Filed June 6, 1905.

Clauss

The name "CLAUSS" written in script with a paraph extending from the bottom of the letter "C" and underlining the name.

SER. No. 7,542. CANDY. SWEET CANDY CO., Salt Lake City, Utah. Filed June 6, 1905.

The word "CARNATION," associated with the representation of carnation-flowers.

SER. No. 7,646. ANTISEPTIC AND GERMICIDE PREPARATIONS. THE GOLD SPIRIT CHEMICAL CO., South Bend, Ind. Filed June 8, 1905.

Gold Spirit

The words "GOLD SPIRIT" in script type.

SER. No. 7,663. WHISKY. OSCAR TAUSSIG, New York, N. Y. Filed June 8, 1905.

SQUIRREL

The word "SQUIRREL" and a picture of a squirrel seated upon a branch within a circle.

SER. No. 7,673. UNITING AGENTS FOR COLORS. FERDINAND SICHEL, CHEMISCHE FABRIK LIEBER, Linsser, by Hannover, Germany. Filed June 8, 1905.

A sickle with its cutting edge to the right, the handle pointing downward. Below the handle is a crescent-shaped line ornament. On the blade or iron of the sickle are the words "SICHEL-GLUE:" within the lines of the crescent the words, "MY NAME IS MY FAME."

SER. No. 7,749. ENGINE-GOVERNORS. THE PICKERING GOVERNOR CO., Portland, Conn. Filed June 9, 1905.

The representation of three curved flat springs connected at each end with a hub and each spring having a ball near the middle of its length.

SER. No. 7,797. LEATHER BOOTS AND SHOES AND LEATHER USED IN THEIR MANUFACTURE. RICE & HUTCHINS, INCORPORATED, Boston, Mass., assignee to Rice and Hutchins Incorporated. Filed June 10, 1905. Used ten years.

REX CALF

The words "REX CALF."

SER. No. 7,845. LEATHER AND CANVAS BOOTS AND SHOES. GEO. E. KEITH COMPANY, Brockton, Mass. Filed June 10, 1905.

The representation of a man in evening dress walking over a shoe.

SER. No. 7,861. NATURAL AND ARTIFICIAL PORTLAND AND HYDRAULIC CEMENT. ROUND TOP CEMENT COMPANY, Bloomfield, N. J. Filed June 10, 1905.

The representation of two rugged mountains separated by a valley.

SER. No. 7,870. READY-MIXED PAINTS. WILLIAMS, MARTIN & GRAY, INC., Norfolk, Va. Filed June 10, 1905.

MONTICELLO

The word "MONTICELLO."

SER. No. 7,943. HOSIERY. ROSE, STIX DRY GOODS COMPANY, St. Louis, Mo. Filed June 12, 1905. Used ten years.

MONARCH

The word "MONARCH."

SER. No. 7,989. LAGER-BEER AND BOTTLED BEER. TERRE HAUTE BREWING CO., Terre Haute, Ind. Filed June 13, 1905.

SER. No. 7,989.

The representation of an eagle poised upon a cornucopia, the cornucopia being decorated with barley-heads and hop-blossoms. Around the eagle and cornucopia in a circle and in plain black letters the following words and abbreviations are arranged: "TERRE HAUTE BREWING CO. TERRE HAUTE, IND.," the whole being surrounded with concentric circles.

SER. No. 8,072. DIURETIC, LAXATIVE, DIAPHORETIC, AND TONIC MEDICINE. ADA B. BRADLEY, San Francisco, Cal. Filed June 14, 1905.

ROTANYA

The word "ROTANYA."

SER. No. 8,188. FOOD AND MEDICINE FOR POULTRY, USUALLY PUT UP IN POWDERED FORM. DR. HESS & CLARK, Ashland, Ohio. Filed June 15, 1905.

A rectangular figure inclosed in an ornamental border and divided into three panels, the upper panel containing the words "DR. HESS POULTRY PAN-A-CE-A," the lower panel containing the words "A POSITIVE CURE FOR GAPES CHOLERA AND ROUP

MAKES HENS LAY," and the central panel containing the representation of hens setting on a nest with eggs protruding from the nest, and a third hen standing by the nest and chickens in the foreground.

SER. No. 8,191. GALL CURE. DR. HESS & CLARK, Ashland, Ohio. Filed June 15, 1905.

The representation of a collar and hames within which is a representation of a horse's head and neck with a collar on the neck and the representation of the head and shoulders of a man in the act of placing the medicine on the horse's neck, associated with the words "CURES GALLS."

SER. No. 8,200. LEATHER BOOTS, LEATHER SHOES, AND SLIPPERS. CHARLES K. SHAROOD, St. Paul, Minn. Filed June 15, 1905.

The word "ARISTO" printed on a background in the form of an ornamental scroll. At one side of the letter "A" is a bust portrait of the applicant, Charles K. Sharood, and under the portrait is a scroll bearing the name "C. K. SHAROOD."

SER. No. 8,237. WHISKY. CHARLES DENNERY & COMPANY, Chicago, Ill. Filed June 15, 1905.

JEFFERSON CLUB

The words "JEFFERSON CLUB."

SER. No. 8,267. WHISKY. A. FRIEDMAN & Co., Denver, Colo. Filed June 16, 1905.

The words "ROYALTY CLUB."

SER. No. 8,476. HAMMERS. ARTHUR R. ROBERTSON, Boston, Mass. Filed June 19, 1905. Used ten years.

SER. No. 8,476.

HORSESHOE MAGNET

The words "HORSESHOE MAGNET."

SER. No. 8,554. WHISKY. CHARLES BRUHL, Cleveland, Ohio. Filed June 19, 1905. Used ten years.

CAMDEN

The word "CAMDEN."

SER. No. 8,565. MINERAL-SPRING WATER. THE MOUNTAIN VALLEY SPRINGS COMPANY, Mountain Valley Springs, Ark. Filed June 19, 1905. Used ten years.

MOUNTAIN VALLEY

The words "MOUNTAIN VALLEY."

SER. No. 8,632. ROCK AND RYE. P. J. BOWLIN LIQUOR CO., St. Paul, Minn. Filed June 21, 1905.

Regal

The word "REGAL" and a shield design bearing a monogram of the letters and abbreviation "P J B L Co."

SER. No. 8,695. DRESSING FOR SOFTENING AND PRESERVING LEATHER USED IN BASE-BALL MITTS AND GLOVES. A. J. REACH CO., Philadelphia, Pa. Filed June 21, 1905.

Dolcé

The word "DOLCÉ."

SER. No. 8,746. POWDER FOR KILLING VERMIN AND DISINFECTING. DR. HESS & CLARK, Ashland, Ohio. Filed June 21, 1905.

SER. No. 8,746.

A rectangular panel inclosing a picture representing a barnyard scene inclosed in a circle with a little girl in the foreground kneeling and holding a fowl by the leg and in the act of sprinkling powder thereon and associated with the words "INSTANT LOUSE KILLER KILLS LICE TICKS AND FLEAS A DEODORIZER AND DISINFECTANT. 1 LB. 25¢."

SER. No. 8,901. WHISKY. J. & A. FREIBERG, Cincinnati, Ohio. Filed June 24, 1905. Used ten years.

Broadway

The word "BROADWAY."

SER. No. 8,904. WHISKY. J. & A. FREIBERG, Cincinnati, Ohio. Filed June 24, 1905. Used ten years.

C. O. Dailey's

The name "C. O. DAILEY'S."

SER. No. 8,983. WHISKY. ADOLPH LOEB, Cincinnati, Ohio. Filed June 24, 1905. Used ten years.

Parkwood

The word "PARKWOOD."

SER. No. 8,993. OINTMENT FOR EXTERNAL APPLICATION IN THE TREATMENT OF SKIN DISEASES AND ERUPTIONS, INFLAMMATION, IRRITATION, BITES, BLISTERS, ULCERS, &c. WILLIAM T. HITT, Walnut, Kans. Filed June 24, 1905.

SER. No. 8,995.

T. T.

The letters "T. T."

SER. No. 9,006. INDIA-RUBBER BAGS AND POUCHES. CONTINENTAL CAOUTCHOUC COMPANY, New York, N. Y. Filed June 24, 1905. Used ten years.

CONTINENTAL

The word "CONTINENTAL."

SER. No. 9,069. BLACK PAINTS AND JAPANS. N. Z. GRAVES CO., INC., Philadelphia, Pa. Filed June 26, 1905.

A monogram of the letters "N Z G" and the abbreviation "Co."

SER. No. 9,077. CANNED FRUITS AND VEGETABLES. DAVIS, BAXTER & COMPANY, Portland, Me. Filed June 26, 1905. Used ten years.

HONEY DROP

The words or word-symbol "HONEY DROP."

SER. No. 9,098. WHISKY. WILMERDING-LORWE CO., San Francisco, Cal. Filed June 26, 1905.

SER. No. 9,098.

The representation of a line of prairie schooners drawn by oxen and the words and figures "DAYS OF 49," the words being upon a scroll.

SER. No. 9,173. SHEETINGS, SHIRTINGS, AND DRILLS. ROBERT A. SUFFERN, New York, N. Y. Filed June 27, 1905.

The representation of a swastika within an ornamental border.

SER. No. 9,174. SHEETINGS, SHIRTINGS, AND DRILLS. ROBERT A. SUFFERN, New York, N. Y. Filed June 27, 1905.

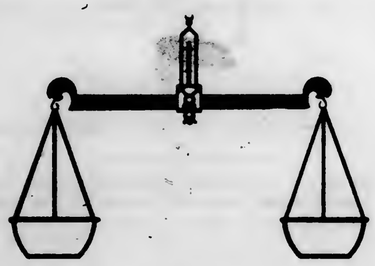

The representation of a balance-beam scale.

SER. No. 9,308. CERTAIN PROPRIETARY REMEDY FOR EXTERNAL APPLICATION TO ANIMALS. THE BRAINERD CO., Corning-on-Hudson, N. Y. Filed June 27, 1905. Used ten years.

HIPPACEA

The word-symbol "HIPPACEA."

SER. No. 9,314. BUTTER. FRANCIS H. LEGGETT & COMPANY, New York, N. Y. Filed June 28, 1905.

premier

The arbitrary word "PREMIER."

SER. No. 9,394. SHIRT-FRONTS AND FALSE SHIRT-BOSOMS. REVERSIBLE COLLAR COMPANY, Boston and Cambridge, Mass. Filed June 29, 1905.

The representation of a man clad in shirt and trousers holding in his hands a collar.

SER. No. 9,413. BOYS' AND GIRLS' LEATHER BOOTS AND SHOES. TUCKER & HAGEN, Chicago, Ill. Filed June 30, 1905.

The word "CLASSMATE," in which the word appears in script type on a rectangular panel arranged in a diagonal manner and extending across a circular panel or background.

SER. No. 9,419. CORDIALS. COLBURN, BIRES & Co., Peoria, Ill. Filed June 30, 1905. Used ten years.

CLARKE'S
ROCK CANDY

The words "CLARKE'S ROCK CANDY."

SER. No. 9,442. BISCUITS AND CAKES. HUNTLEY & PALMERS, LTD., Reading, England. Filed June 30, 1905. Used ten years.

HUNTLEY & PALMERS

The words "HUNTLEY & PALMERS."

SER. No. 9,512. RAZOR-STROPS. EDWARD B. GIBSON, Adrian, Mich. Filed June 30, 1905.

SER. No. 9,512.

The representation of a zigzag line.

SER. No. 9,518. DANDRUFF AND SKIN CURE. ALFRED J. KRAPF, St. Paul, Minn. Filed June 30, 1905.

OSIRIS

The word "OSIRIS," accompanied by a representation of one form of the god Osiris, in which the god is shown as having the head and neck of a bird on the body of a human being.

SER. No. 9,606. TIN AND TERNE PLATES. FOLLANSBEE BROTHERS COMPANY, Pittsburg, Pa. Filed July 3, 1905. Used ten years.

SCOTT'S
EXTRA COATED

The words "SCOTT'S EXTRA COATED."

SER. No. 9,609. TIN AND TERNE PLATES. FOLLANSBEE BROTHERS COMPANY, Pittsburg, Pa. Filed July 3, 1905.

PROTECTION
OLD PROCESS

The words "PROTECTION OLD PROCESS."

SER. No. 9,611. TIN AND TERNE PLATES. FOLLANSBEE BROTHERS COMPANY, Pittsburg, Pa. Filed July 3, 1905. Used ten years.

NEVILLE OLD STYLE

The words "NEVILLE OLD STYLE."

SER. No. 9,616. TIN AND TERNE PLATES. FOLLANSBEE BROTHERS COMPANY, Pittsburg, Pa. Filed July 3, 1905. Used ten years.

DUQUESNE

The word "DUQUESNE."

SER. No. 9,671. SHIPS, SHEARS, AND SCISSORS. THE INTERNATIONAL CUTLERY COMPANY, Fremont, Ohio. Filed July 3, 1905.

The word "DANDY" on a scroll-shaped figure.

SER. No. 9,682. CIGARS. S. S. PIERCE CO., Boston, Mass. Filed July 3, 1905.

The words "FLOR DE UNCLE SAM" located upon a scroll situated above a circle in which is a conventional figure of Uncle Sam seated upon a pile of cigar-boxes and holding an open box of cigars in one hand, together with the picture of an eagle standing upon bunches of tobacco. On one side of the circle is the representation of the Statue of Liberty and on the other side the representation of a lighthouse, the whole inclosed in scrollwork.

SER. No. 9,755. CHERRY RYE PHOSPHATES. COLBURN, BIRES & Co., Peoria, Ill. Filed July 3, 1905. Used ten years.

CLARKE'S

The word "CLARKE'S," under which is a representation of a bunch of cherries.

SER. No. 9,776. BEER. ANHEUSER-BUSCH BREWING ASSOCIATION, St. Louis, Mo. Filed July 3, 1905. Used ten years.

The representation of a bottle-cork and the word "ANHEUSER" appearing thereon, a wire being twisted around the head of the cork.

SER. No. 9,789. BOILERS AND RADIATORS. KELLOGG-MACKAY-CAMERON CO., Chicago, Ill. Filed July 3, 1905.

SER. No. 9,790. BOILERS AND RADIATORS. KELLOGG-MACKAY-CAMERON CO., Chicago, Ill. Filed July 3, 1905.

The representation of a bottle-cork and the word "CAMERON" appearing thereon, a wire being twisted around the head of the cork.

SER. No. 9,791. BOILERS AND RADIATORS. KELLOGG-MACKAY-CAMERON CO., Chicago, Ill. Filed July 3, 1905.

The representation of a bottle-cork and the word "MACKAY" appearing thereon, a wire being twisted around the head of the cork.

SER. No. 9,792. BOILERS AND RADIATORS. KELLOGG-MACKAY-CAMERON CO., Chicago, Ill. Filed July 3, 1905.

The representation of a bottle-cork and the word "KELLOGG" appearing thereon, a wire being twisted around the head of the cork.

SER. No. 9,793. BOILERS AND RADIATORS. KELLOGG-MACKAY-CAMERON CO., Chicago, Ill. Filed July 3, 1905.

The representation of a bottle-cork and the word "CAMERON" appearing thereon, a wire being twisted around the head of the cork.

SER. No. 9,794. BOILERS AND RADIATORS. KELLOGG-MACKAY-CAMERON CO., Chicago, Ill. Filed July 3, 1905.

The representation of a bottle-cork and the word "MACKAY" appearing thereon, a wire being twisted around the head of the cork.

SER. No. 9,795. BOILERS AND RADIATORS. KELLOGG-MACKAY-CAMERON CO., Chicago, Ill. Filed July 3, 1905.

The representation of a bottle-cork and the word "KELLOGG" appearing thereon, a wire being twisted around the head of the cork.

SER. No. 9,796. BOILERS AND RADIATORS. KELLOGG-MACKAY-CAMERON CO., Chicago, Ill. Filed July 3, 1905.

The representation of a bottle-cork and the word "MACKAY" appearing thereon, a wire being twisted around the head of the cork.

SER. No. 9,797. BOILERS AND RADIATORS. KELLOGG-MACKAY-CAMERON CO., Chicago, Ill. Filed July 3, 1905.

The representation of a bottle-cork and the word "KELLOGG" appearing thereon, a wire being twisted around the head of the cork.

SER. No. 9,798. BOILERS AND RADIATORS. KELLOGG-MACKAY-CAMERON CO., Chicago, Ill. Filed July 3, 1905.

The representation of a bottle-cork and the word "CAMERON" appearing thereon, a wire being twisted around the head of the cork.

SER. No. 9,799. BOILERS AND RADIATORS. KELLOGG-MACKAY-CAMERON CO., Chicago, Ill. Filed July 3, 1905.

The representation of a bottle-cork and the word "MACKAY" appearing thereon, a wire being twisted around the head of the cork.

SER. No. 9,800. BOILERS AND RADIATORS. KELLOGG-MACKAY-CAMERON CO., Chicago, Ill. Filed July 3, 1905.

The representation of a bottle-cork and the word "KELLOGG" appearing thereon, a wire being twisted around the head of the cork.

SER. No. 9,789.

The representation of a seal having a fringed border, concentric circles being produced upon the representation of the seal, and within the inner circle a monogram of the letters "K M C" and the abbreviation "Co" appear, the letters and the monogram appearing in fancy script type and in circular arrangement.

SER. No. 9,790. BATH-TUBS AND LAVATORIES. KELLOGG-MACKAY-CAMERON CO., Chicago, Ill. Filed July 3, 1905.

"K-M-C"

The letters "K-M-C" in quotations and separated by hyphens, the letters being in fancy script.

SER. No. 10,004. BLOOD AND LIVER PURIFIERS. ASCHENBACH & MILLER, INCORPORATED, Philadelphia, Pa., assignor to Aschenbach & Miller, a Corporation of Pennsylvania. Filed July 10, 1905. Used ten years.

MEXICAN BLOOD AND LIVER PURIFIER.

The words "MEXICAN BLOOD AND LIVER PURIFIER."

SER. No. 10,148. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y. Filed July 13, 1905.

A design suggesting Mosaic work in which a number of Maltese crosses are arranged in diagonal lines. Rows of small squares and lines cross the design horizontally and vertically.

SER. No. 10,149. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y. Filed July 13, 1905.

A rectangular design having conventional leaf-sprays at each corner. A double frame of intertwined lines surrounds the design. In the center is displayed a curved device with arches at the ends and sides. A vine-like scroll at each end and in the center completes the design.

SER. No. 10,286. MOLASSES. P. DUFF & SONS, Pittsburg, Pa. Filed July 14, 1905. Used ten years.

A figure whose outline is that of a very wide or broad keystone and having centrally therein a colored disk surrounded by circles or rings of contrasting color and having over its face a ribbon or scroll, a scroll also appearing at the bottom and at the right side, and the representation of growing sugar-cane appearing at either side inside of the outline of the figure, with the words "THE BEST FOR EVERY PURPOSE" within the figure at the top, the word "DUFF'S" across the upper edge of the disk, the word "REFINED" on the scroll across the disk, the word "MOLASSES" across the bottom of the disk and toward the right, the words "PITTSBURG, PA." on the scroll at the bottom, and the words "P. DUFF & SONS" at the bottom and to the left.

SER. No. 10,336. PIANOS. MASON & HAMLIN CO., Cambridge, Mass. Filed July 14, 1905. Used ten years.

Mason & Hamlin

The words "MASON & HAMLIN" in a type known as "Old English text."

SER. No. 10,391. SUPPOSITORIES. DR. PIERCE CHEMICAL COMPANY, Chicago, Ill. Filed July 15, 1905.

BORO-PHENO-FORM

The hyphenated word "BORO-PHENO-FORM."

SER. No. 10,400. CHEMICAL FIRE-EXTINGUISHERS. GRAAFF & Co. G. m. b. H., Berlin, Germany. Filed July 15, 1905.

Minimax

The word "MINIMAX."

SER. No. 10,408. NON-ALCOHOLIC TONIC BEVERAGE. JNO. HERVEY, Richmond, Va., assignor, by mesne assignments, to The Brasser Company, Incorporated, Richmond, Va., a Corporation of Virginia. Filed July 15, 1905.

Brassar

The word "BRASSAR."

SER. No. 10,420. PIANOS. THE WEBER PIANO COMPANY, New York, N. Y. Filed July 17, 1905. Used ten years.

Weber

The word "WEBER."

SER. No. 10,442. WASHING-BLUE. THE SAWYER CRYSTAL BLUE COMPANY, Boston, Mass. Filed July 17, 1905. Used ten years.

SAWYER'S CRYSTAL BLUE

The words "SAWYER'S CRYSTAL BLUE."

SER. No. 10,452. TAPESTRY BRUSSELS AND TAPESTRY VELVET CARPETS. ROXBURY CARPET COMPANY, Boston, Mass. Filed July 17, 1905. Used ten years.

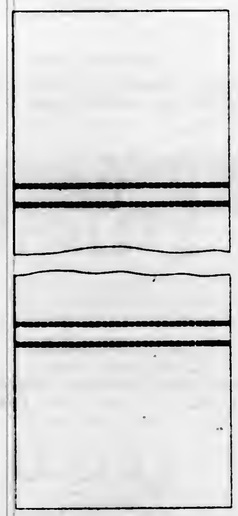

A pair of interrupted black lines situated near each edge of a carpet extending longitudinally of the fabric of the carpet from end to end upon the back of the same.

SER. No. 10,480. ANTISEPTIC FOR LOCAL AND INTERNAL USE. H. K. MULFORD COMPANY, Philadelphia, Pa. Filed July 17, 1905.

BENZO-FORMOL COMP.

The symbol-word "BENZO-FORMOL COMP."

SER. No. 10,483. ODORLESS, NEUTRAL, COLORLESS MINERAL OIL USED AS A LOCAL APPLICATION IN THROAT, NOSE, AND GYNECOLOGIC WORK. H. K. MULFORD COMPANY, Philadelphia, Pa. Filed July 17, 1905.

BLANDINE

The word "BLANDINE."

SER. No. 10,484. REMEDY FOR THE TREATMENT OF REMITTENT AND PERNICIOUS MALARIAL FEVERS. H. K. MULFORD COMPANY, Philadelphia, Pa. Filed July 17, 1905.

CHIL-CEDINE

The hyphenated word "CHIL-CEDINE."

SER. No. 10,485. MEDICINAL PREPARATION IN SUPPOSITORY OR OINTMENT FORM USED AS A LOCAL ANESTHETIC, ANTIPHLOGISTIC, ASTRINGENT, AND HEMOSTATIC. H. K. MULFORD COMPANY, Philadelphia, Pa. Filed July 17, 1905.

Tanichthol

The word "TANICHTHOL."

SER. No. 10,489. GRANULAR EFFERVESCENT SALT OF STRONTIUM AND AMMONIUM SALICYLATE, AN ANTIPYRETIC AND ANALGESIC. H. K. MULFORD COMPANY, Philadelphia, Pa. Filed July 17, 1905.

SALICYLOS

The word "SALICYLOS."

SER. No. 10,528. SOAPS. JULES FRANÇOIS GEORGES DE ROUSY DE SALES, Paris, France. Filed July 18, 1905.

BEN'SOAP

The denomination "BEN' SOAP."

SER. No. 10,531. COATS, VESTS, AND TROUSERS. JOHNS DRY GOODS CO., Kansas City, Mo. Filed July 18, 1905.

Stedwor

The word "STEDWOR."

SER. No. 10,602. LIQUID PREPARATION FOR THE CURE OF RHEUMATISM. B. T. DAVIS, Huntington, W. Va. Filed July 20, 1905.

COLCIN

The word "COLCIN."

SER. No. 10,585. CIRCULAR SAWS AND BAND-SAWS. THE TA-

SER. No. 10,585. CIRCULAR SAWS AND BAND-SAWS. THE TOLEDO SAW CO., Toledo, Ohio. Filed July 18, 1905. Used ten years.

The representation of a circular saw, a sword lying across the saw, the words "TOLEDO BLADE" upon the blade of the sword, and the following matter produced upon the face of the saw "THE TOLEDO SAW CO. TOLEDO, O."

SER. No. 10,604. PURE WHITE LEAD. THE EAGLE WHITE LEAD CO., Cincinnati, Ohio. Filed July 20, 1905.

The representation of an eagle perched on a rock.

SER. No. 10,614. LIME. THE NORRIS & CHRISTIAN STONE & LIME CO., Marion, Ohio. Filed July 20, 1905.

The letter "B" arranged within a circle, there appearing above the circle the words "BIG B LIME" inclosed in quotation-marks.

SER. No. 10,670. WOMEN'S LEATHER AND CLOTH SLIPPERS AND SHOES. CHARLES K. FOX, Haverhill, Mass. Filed July 21, 1905.

The representation of a fox surmounting a circle within which are the words "FOX IDEAL SHOES."

SER. No. 10,674. COMBS. DR. HEINRICH TRAUN & SÖHNE, Hamburg, Germany. Filed July 21, 1905.

FASCINATOR

The word "FASCINATOR."

SER. No. 10,675. COMBS. DR. HEINRICH TRAUN & SÖHNE, Hamburg, Germany. Filed July 21, 1905.

NEPTUNE

The word "NEPTUNE."

SER. No. 10,886. SHIRTS, COLLARS, AND CUFFS. NEW COLUMBIA SHIRT CO., New York, N. Y. Filed July 27, 1905. Used ten years.

Columbia

The arbitrary word "COLUMBIA" in script letters with a paraph under the word.

SER. No. 10,967. WHEAT BREAD. E. A. WILLIAMS, INCORPORATED, Newark, N. J. Filed July 26, 1905.

ADMIRAL

The word "ADMIRAL."

SER. No. 10,997. MONTHLY MAGAZINE. THE FRUIT-GROWER COMPANY, St. Joseph, Mo. Filed July 29, 1905.

The words "THE WESTERN FRUIT-GROWER," of which the word "WESTERN" is arranged upon a narrow horizontal band which intersects the top of the initial letters "T, F, and G," extends above the remaining letters, and bears the representation of leaves and fruit.

SER. No. 11,007. REMEDY FOR DISEASES OF THE LIVER AND DIGESTIVE TRACT IN LIQUID FORM. HIGHLAND DRUG COMPANY, Newburgh, N. Y. Filed July 29, 1905.

The word "MACWELL" in script, with a paraph extending from the letter "M" and having the words "LIVER REMEDY" thereon.

SER. No. 11,016. STIFF-FELT, SOFT-FELT, AND STRAW HATS. DEERER, GOODHART & SCHROER, New York, N. Y. Filed July 29, 1905. Used ten years.

The hyphenated word "NOX-ALL" surmounted by an eagle holding in its bill a scroll upon which appear the words "SUPERIOR MAKE," and the words "THE HAT" arranged at the respective ends of the word "NOX-ALL" and the letters and character "D. G. & S." appearing below said word.

SER. No. 11,059. ELECTRIC FUSES WITH OR WITHOUT CAP. STAR ELECTRIC FUSE WORKS, Wilkesbarre, Pa. Filed July 31, 1905.

A five-pointed star, the halves of the points of which are alternately dark and light.

SER. No. 11,062. CORSETS. BERSHEY & SCHIRRS, New York, N. Y. Filed July 31, 1905.

Military Form

The words "MILITARY FORM."

SER. No. 11,087. REFRIGERATORS. COOPER & MCKEE, New York, N. Y. Filed Aug. 1, 1905.

OPALITE

The word "OPALITE."

SER. No. 11,103. CONDENSED MILK. MICHIGAN CONDENSED MILK CO., New York, N. Y. Filed Aug. 1, 1905. Used ten years.

ALPINE

The word "ALPINE."

SER. No. 11,104. CONDENSED MILK. MICHIGAN CONDENSED MILK CO., New York, N. Y. Filed Aug. 1, 1905. Used ten years.

SUPERIOR

The word "SUPERIOR."

SER. No. 11,156. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill. Filed Aug. 2, 1905. Used ten years.

SER. No. 11,156.

The representation of a bull.

SER. No. 11,178. WHISKY. VAN VLEET-MANSFIELD DRUG CO., Memphis, Tenn. Filed Aug. 2, 1905.

GOOD LUCK

The word-symbol "GOOD LUCK" and the representation of a horseshoe.

SER. No. 11,210. PLOWS. PARLIN & ORENDORFF CO., Canton, Ill. Filed Aug. 3, 1905.

SUCCESS

The word "SUCCESS."

SER. No. 11,256. PERFUMERY. HUGUENE RIKKER, LIMITED, London, England. Filed Aug. 4, 1905. Used ten years.

The representation of a rose with two leaves, generally known as "heraldic rose."

SER. No. 11,349. SELF-PLAYING PIANOS WITHOUT KEYBOARD. LYON & HEALY, Chicago, Ill. Filed Aug. 7, 1905.

Majestic Jr.

The words "MAJESTIC JR."

SER. No. 11,358. STRINGS FOR VIOLINS. LYON & HEALY, Chicago, Ill. Filed Aug. 7, 1905.

SER. No. 11,358.

KOZIE FLAKI

The words "KOZIE FLAKI."

SER. No. 11,365. GUITARS AND MANDOLINS. LYON & HEALY, Chicago, Ill. Filed Aug. 7, 1905.

Regal

The word "REGAL."

SER. No. 11,367. BANJOS. LYON & HEALY, Chicago, Ill. Filed Aug. 7, 1905.

Mystic

The word "MYSTIC."

SER. No. 11,370. STRINGS FOR BANJOS, GUITARS, MANDOLINS, VIOLINS, VIOLONCELLOS, AND DOUBLE-BASS VIOLS. LYON & HEALY, Chicago, Ill. Filed Aug. 7, 1905. Used ten years.

SPECIAL
TESTED

The words "SPECIAL TESTED."

SER. No. 11,383. HEATING AND COOKING STOVES. JOLIET STOVE WORKS, Joliet, Ill. Filed Aug. 7, 1905.

The letter "M" surrounded by a wreath.

SER. No. 11,433. INTERNAL REMEDIES FOR HEADACHES. G. VAN ANTWERP & SON, Mobile, Ala. Filed Aug. 8, 1905.

The representation of an arrow with a monogram of the letters "V B" thereon, with a scroll above having the word "BROMO" thereon and a scroll below having the word "VIN" thereon.

SER. No. 11,402. CELLULOID HAIR-PINS. THOMAS J. TAYLOR COMPANY, New York, N. Y. Filed Aug. 7, 1905.

The portrait of Marie Antoinette inclosed in an ornamental frame, associated with the name "MARIE ANTOINETTE," appearing on the frame.

SER. No. 11,497. HORSE-COLLARS. WYETH HARDWARE & MANUFACTURING CO., St. Joseph, Mo. Filed Aug. 10, 1905.

The representation of the globe encircled by a horse-collar, there being on the pad at the top of the collar the numerals "666." On one side of the collar is disposed a shield with a panel running obliquely across the face thereof within which is disposed the word "WYETH," there being a star on the shield above and below said panel, said shield being pierced by an arrow.

SER. No. 11,509. LEATHER SHOES. CLARKE BROS., Scranton, Pa. Filed Aug. 10, 1905.

The name "WM. PENN," associated with the picture of Wm. Penn inclosed by a rectangular panel.

SER. No. 11,686. ANILIN DYESTUFFS. C. ROSENOW & CO., New York, N. Y. Filed Aug. 16, 1905.

CRESYL BLUE

The arbitrarily-selected words "CRESYL BLUE."

SER. No. 11,693. BUTTER. JOAQUIN MERRIMEE, New York, N. Y. Filed Aug. 16, 1905.

The representation of a carnation and several buds and leaves, associated with the word "CLAVEL."

SER. No. 11,695. PIANOS. THE CABLE COMPANY, Chicago, Ill. Filed Aug. 16, 1905.

Palmetto

The word-symbol "PALMETTO."

SER. No. 11,723. BUGGIES AND CARRIAGES. THE ROCK HILL BUGGY CO., Rock Hill, S. C. Filed Aug. 17, 1905.

An ornamental panel having circular and curved end ornaments and bearing the words "ROCK HILL BUGGY CO. ROCK HILL, S. CAROLINA.," these words being divided into two lines, and between them is a panel of solid color bearing the words "ROCK HILL GRADE" and the representation of a rocky hill.

SER. No. 11,725. BUGGIES AND CARRIAGES. THE ROCK HILL BUGGY CO., Rock Hill, S. C. Filed Aug. 17, 1905.

An ornamental panel having circular and curved end ornaments and bearing the words "ROCK HILL BUGGY CO. ROCK HILL, S. CAROLINA." The words are divided into two lines, and between them is a panel of solid color bearing the words "CAROLINA GRADE." Between these two words is the representation of a tree, and on each side of the lower portion of the tree is an ellipse.

SER. No. 11,748. WEEKLY PUBLICATION OR PAPER. TRADESMEN'S PUBLISHING COMPANY, St. Louis, Mo. Filed Aug. 18, 1905. Used ten years.

SER. No. 11,748.

The words "SHOE AND LEATHER GAZETTE" on a rectangular ornamental background.

SER. No. 11,749. WEEKLY PUBLICATION OR PAPER. TRADESMEN'S PUBLISHING COMPANY, St. Louis, Mo. Filed Aug. 18, 1905.

The
Drygoodsman
and
General Merchant

The words "THE DRYGOODSMAN AND GENERAL MERCHANT."

SER. No. 11,832. CANNED FISH. SCHWABACHER BROS. & CO. INC., Seattle, Wash. Filed Aug. 21, 1905.

HAPPY HOME

The words "HAPPY HOME."

SER. No. 11,833. CANNED FISH. SCHWABACHER BROS. & CO. INC., Seattle, Wash. Filed Aug. 21, 1905.

The representation of a bordered silver shield upon which the words "SILVER SHIELD BRAND" appear.

SER. No. 11,872. ROOFING-FELT. BARRETT MANUFACTURING COMPANY, New York, N. Y. Filed Aug. 21, 1905. Used ten years.

SER. No. 11,872.

BB

The letters "B B."

SER. No. 11,911. CIGARS. AARON STRAUS, Chicago, Ill. Filed Aug. 28, 1905.

The representation of a tobacco factory, in front of which is the representation of numerous persons walking on the street, together with several horses and wagons, and above the main entrance-door of said factory being the words "LA VENGA" and on each side of the roof of said factory the words "FABRICA DE TABACOS," the whole scene being inclosed in a fancy border consisting of medals, flowers, and leaves surmounted by an eagle with outstretched wings, associated with the words "LA VENGA."

SER. No. 11,918. HEATING AND COOKING STOVES. JOLIET STOVE WORKS, Joliet, Ill. Filed Aug. 28, 1905.

M

The letter "M."

SER. No. 11,958. CANDIES. SCHALL & Co., New York, N. Y. Filed Aug. 24, 1905.

The words "FOXY GRANDPA" and the conventional representation of Foxy Grandpa.

SER. No. 12,132. WHITE LEAD AND OXIDS OF LEAD. NATIONAL LEAD COMPANY, Jersey City, N. J. and New York, N. Y. Filed Sept. 1, 1905. Used ten years.

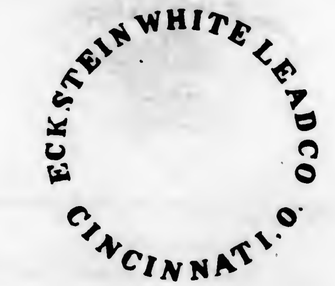

The words and abbreviations "ECKSTEIN WHITE LEAD Co. CINCINNATI, O."

SER. No. 12,133. WHITE LEAD AND OXIDS OF LEAD. NATIONAL LEAD COMPANY, Jersey City, N. J. and New York, N. Y. Filed Sept. 1, 1905. Used ten years.

The letters and words "S. G. CORNELL & SON BUFFALO, N. Y."

SER. No. 12,134. WHITE LEAD AND OXIDS OF LEAD. NATIONAL LEAD COMPANY, Jersey City, N. J. and New York, N. Y. Filed Sept. 1, 1905. Used ten years.

The letters and words "KENTUCKY COMPANY O K LOUISVILLE."

SER. No. 12,153. STOVES AND RANGES. THE LATTNER-WILLIAMS MANUFACTURING COMPANY, Columbus, Ohio. Filed Sept. 1, 1905.

The hyphenated letters "L-W," which are printed across the representation of a globe, the latter being surrounded by a circular border including ornamental designs at each side. In the upper portion of the border the words "LEADERS OF THE WORLD" are arranged.

SER. No. 12,314. NUTRITIVE TONICS AND TISSUE BUILDERS. HAREN MORSE, New Rochelle, N. Y. Filed Sept. 7, 1905.

ORIOSOL

The word "ORIOSOL."

SER. No. 12,349. RECLAIMED RUBBER IN SHEET FORM. U. S. RUBBER RECLAIMING WORKS OF NEW YORK, New York, N. Y. Filed Sept. 7, 1905.

The representation of a Maltese cross upon the leaf of an india-rubber plant, with the words "RECLAIMED VICTORIA RUBBER" upon the cross.

SER. No. 12,416. WHISKIES. MICHAEL F. BRENNAN, Washington, D. C. Filed Sept. 9, 1905.

MAJESTIC.

The word "MAJESTIC."

SER. No. 12,452. ICE-CHIPPING MACHINES, ICE-CUTTING MACHINES, ICE-SHAVING MACHINES, AND ICE-CRUSHING MACHINES. THE DAVENPORT ICE CHIPPING MACHINE Co., Davenport, Iowa. Filed Sept. 11, 1905.

LITTLE GIANT

The words "LITTLE GIANT."

SER. No. 12,471. LADIES' AND GENTLEMEN'S KID, CLOTH, AND CHAMOIS GLOVES. FRANK W. LARSH, New York, N. Y. Filed Sept. 11, 1905.

MO-CO

The arbitrarily-selected hyphenated word-symbol "Mo-Co."

SER. No. 12,479. TEA. SPRAGUE, WARNER & COMPANY, Chicago, Ill. Filed Sept. 11, 1905.

The word "RICHELIEU."

SER. No. 12,557. ANY FORM OF SMOKING OR CHEWING TOBACCO. NASHVILLE TOBACCO WORKS, Nashville, Tenn. Filed Sept. 14, 1905. Used ten years.

TYRONE

The word "TYRONE."

SER. No. 12,564. STOMACH-BITTERS. MUNYONS HOMŒOPATHIC HOME REMEDY CO., Philadelphia, Pa. Filed Sept. 14, 1905.

The representation of a pawpaw-tree and a sign-board projected across the trunk of the tree and the words "MUNYON'S PAW-PAW" on said sign.

SER. No. 12,629. WASHING FLUID. ROBERT J. WILLIAMS, West Liberty, Iowa. Filed Sept. 15, 1905.

A portrait of the registrant, Robert J. Williams, associated with his signature "BOBBY WILLIAMS."

SER. No. 12,818.

SER. No. 12,927

SER. No. 13,086. WORM-DESTROYER OR VERMIFUGE. GEORGE G. STERKEN, Grand Rapids, Mich. Filed Sept. 27, 1905.

A portrait of the registrant, Robert J. Williams, associated with his signature "BOBBY WILLIAMS."

SER. No. 12,748. ASTRINGENT REMEDIES FOR BOWEL AND SIMILAR COMPLAINTS. FOSTER MILBURN COMPANY, Buffalo, N. Y. Filed Sept. 14, 1905. Used ten years.

DR.
FOWLER'S
EXT. OF
WILD
STRAWBERRY

The words and abbreviations "DR. FOWLER'S EXT. OF WILD STRAWBERRY."

SER. No. 12,746. WHISKY. CHARLES J. GALLAGHER, Philadelphia, Pa. Filed Sept. 18, 1905.

The representation of two crossed bands, two concentric circles thereon, between which appear the words "GALLAGHER & BURTON PHILADELPHIA," within the inner circle appearing the letters and character "G. & B." and the numerals "1877."

SER. No. 12,771. CARBON PAINTS. THE PATTERSON SARGENT CO., Cleveland, Ohio. Filed Sept. 18, 1905.

NOBRAC

The word "NOBRAC."

SER. No. 12,780. WHEAT-FLOUR. THE HAYNES MILLING COMPANY, Portland, Ind. Filed Sept. 19, 1905.

OUR
PRIDE

The words "OUR PRIDE."

SER. No. 12,818. TOILET-PAPER. POND'S EXTRACT COMPANY, New York, N. Y. Filed Sept. 20, 1905. Used ten years.

SER. No. 12,818.

POND'S EXTRACT

TOILET PAPER

The words "POND'S EXTRACT TOILET PAPER."

SER. No. 12,820. WHEELBARROWS AND THE PARTS THEREOF. THE KILBOURNE & JACOBS MANUFACTURING COMPANY, Columbus, Ohio. Filed Sept. 20, 1905. Used ten years.

"SCIOTO"

The word "SCIOTO" inclosed in quotation-marks.

SER. No. 12,828. PIGMENT COLORS AND COLORED PAINTS. JOHN T. LEWIS & BROS. CO., Philadelphia, Pa. Filed Sept. 20, 1905. Used ten years.

RICHMOND

The word "RICHMOND."

SER. No. 12,830. PIGMENT COLORS AND COLORED PAINTS. JOHN T. LEWIS & BROS. CO., Philadelphia, Pa. Filed Sept. 20, 1905. Used ten years.

KENSINGTON

The word "KENSINGTON."

SER. No. 12,902. SAUSAGES. B. FRANKFELD & CO., New York, N. Y. Filed Sept. 22, 1905.

The representation of a hog carrying pigs on its back and associated with the words "SALCHICHON LOS CERDOS CONTENTOS."

SER. No. 12,927. ANTISEPTIC SOLUTION. THE MERCER CHEMICAL COMPANY, Mercer, Pa. Filed Sept. 23, 1905.

SER. No. 12,927

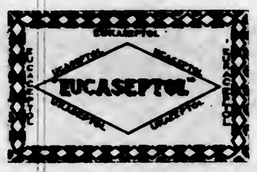

The word "EUCASEPTOL" inclosed in quotation-marks and arranged in a diamond-shaped figure, all surrounded by a rectangular ornamental border, with the words "EUKASEPTOL," "EUKACEPTOL," and "EUCACEPTOL" within the border and adjacent thereto, and the words "UCASEPTOL," "UCACEPTOL," "UKASEPTOL," and "UKACEPTOL" also within the border and adjacent to the sides of the diamond-shaped figure.

SER. No. 12,980. LEATHER BOOTS AND SHOES. CRADDOCK-TERRY COMPANY, Lynchburg, Va. Filed Sept. 23, 1905.

The representation of a bell having the words "SOUTHLAND BELLE" thereon.

SER. No. 12,984. CANNED SALMON. FIDALGO ISLAND PACKING CO., Anacortes, Wash. Filed Sept. 25, 1905.

The representation of a bunch of tulip flowers with leaf, associated with the words "TULIP BRAND."

SER. No. 13,085. EXPLOSIVES. NOBEL'S EXPLOSIVES COMPANY LIMITED, Glasgow, Scotland. Filed Sept. 26, 1905.

BALLISTITE

The word "BALLISTITE."

SER. No. 13,072. HAIR-PINS AND HAIR ORNAMENTS. FISHEL, NISSLEN & CO., New York, N. Y. Filed Sept. 27, 1905.

TORSHELL

The word "TORSHELL."

SER. No. 13,086. WORM-DESTROYER OR VERMIFUGE. GEORGE G. STEKETEE, Grand Rapids, Mich. Filed Sept. 27, 1905.

STEKETEE'S
PIN WORM
DESTROYER.

The portrait of George G. Steketee and the following words "STEKETEE'S PIN WORM DESTROYER."

SER. No. 13,087. NEURALGIA-DROPS. GEORGE G. STEKETEE, Grand Rapids, Mich. Filed Sept. 27, 1905.

STEKETEE'S
Neuralgia Drops

The portrait of George G. Steketee and the words "STEKETEE'S NEURALGIA DROPS."

SER. No. 13,101. PREPARATIONS FOR CLEANING ENAMELED AND PORCELAIN WARE. WILLIAM C. MCKINNEY, New Brighton, assignor to Porcela Company, Pittsburg, Pa. Filed Sept. 28, 1905.

The word "PORCELA," with the letters "POR" and "ELA" radiating from a common center, having the letter "C" enlarged and common to all the repeated uses of the word, the whole forming a star-like figure composed entirely of letters forming the word "PORCELA," readable vertically, horizontally, or obliquely.

SER. No. 13,106. HATS. JOSEPH B. GILLRAUSBAU, New York, N. Y. Filed Sept. 28, 1905.

REGENT

The word "REGENT."

SER. No. 13,189. COFFEE. [illegible]

SER. No. 13,189. COFFEE. ELLIS BROS., San Francisco, Cal. Filed Sept. 20, 1905.

The representation of a figure of a man drinking from a cup, the man being shown as wearing a white turban and a yellow robe, and said figure is produced in the center of a red background.

SER. No. 13,198. NEEDLES FOR HAND AND MACHINE SEWING. HENRY MILWARD & SONS, LIMITED, Redditch, England. Filed Oct. 2, 1905. Used ten years.

CALYXEYED

The arbitrary word "CALYXEYED."

SER. No. 13,224. COFFEE-MILLS. THE SUN MANUFACTURING COMPANY, Columbus, Ohio. Filed Oct. 2, 1905.

The word "SUN," formed of a capital letter "S" and the small letters "u" and "n" in the arms of the letter "S" and inclosed in concentric circles, with flaming rays radiating from the outer circle to represent the sun.

SER. No. 13,225. COFFEE-MILLS. THE SUN MANUFACTURING COMPANY, Columbus, Ohio. Filed Oct. 2, 1905.

No 1080

The word and figure "No. 1080."

SER. No. 13,269. CIGARS. OLIVA, REY & Co., West Tampa, Fla. Filed Oct. 4, 1905.

SER. No. 13,269.

A youthful female figure with low-cut vest, girdle, and skirt seated upon a bale, one arm resting upon a terrestrial globe, the other arm extended toward a box of cigars held by a child, all against a background of palm-leaves, with a harbor scene on the right and a tropical plantation scene on the left, together with four gold medals and a circular seal marked "CUESTA, REY & CO., TAMPA, FLA." at the bottom, all associated with the words "LA FAVORITA DE TAMPA."

SER. No. 13,314. WHISKY. ERUTHEN BROS. CO. LTD., New Orleans, La. Filed Oct. 5, 1905.

The words "OIL OF JOY" ornamented with a fanciful scroll-work design.

SER. No. 13,375. SMOKING-TOBACCO, CHEWING-TOBACCO, SNUFF, AND TOBACCO EXTRACTS. REPUBLIC OF FRANCE, Paris, France. Filed Oct. 6, 1905.

A cartouch having scrollwork at its ends and at its middle a rectangle, in which rectangle is the representation of a globe having on one side thereof an allegorical figure representing commerce and on the other side thereof an allegorical figure representing industry, these figures being shown with joined hands. At the top of the rectangle is the word "TABACS" and at the bottom thereof the words "REPUBLIQUE FRANÇAISE." On one side of the rectangle, within the scrollwork, is the word "MANUFACTURES," and on the other side thereof are the words "DE L' ÉTAT."

SER. No. 13,376. SMOKING-TOBACCO. REPUBLIC OF FRANCE, Paris, France. Filed Oct. 6, 1905.

SCAFERLATI

The word "SCAFERLATI."

SER. No. 13,584. LADIES' AND CHILDREN'S UNDERWAISTS. THE WARNER BROS. CO., Bridgeport, Conn. Filed Oct. 12, 1905. Used ten years.

PERFECTION

The word "PERFECTION."

SER. No. 13,545. SALVES. PEBECO PHARMACAL COMPANY, Reading, Pa. Filed Oct. 13, 1905.

The hyphenated word "HE-LIT," which appears above a medallion representation of a man holding a lighted taper and having scrollwork on either side.

SER. No. 13,593. WOOLEN DRESS GOODS. JOHN LOSER, New York, N. Y. Filed Oct. 14, 1905.

The representation of a moline cross upon a shield, over which shield the words "MOLINE CROSS BRAND" appear, and below the shield a convoluted scroll is placed bearing the motto "COMME IL FAUT," together with laurel-sprays beneath the lower side and bottom portions of the shield, the butt ends of which sprays cross at the central portion of the scroll.

SER. No. 13,654. GINGER-ALE. SIMON BROOKS, Spartanburg, S. C. Filed Oct. 16, 1905.

Colonial

The word "COLONIAL."

SER. No. 13,656. NATURAL STONE USED FOR RUBBING PURPOSES. JAMES H. ROGERS & COMPANY, Chicago, Ill. Filed Oct. 16, 1905.

GENUINE
Hoosier Rubbing Stone

A rectangular panel upon which appear the words "GENUINE HOOSIER RUBBING STONE."

SER. No. 13,735. GAMES AND TOYS. ELLA A. PEETER, Delphos, Ohio. Filed Oct. 18, 1905.

Flagsam

The word "FLAGSAM."

SER. No. 13,829. LAWN-MOWERS. SUPPLEE HARDWARE COMPANY, Philadelphia, Pa. Filed Oct. 21, 1905.

ELECTRA

The word "ELECTRA."

SER. No. 13,881. LAWN-MOWERS. SUPPLEE HARDWARE COMPANY, Philadelphia, Pa. Filed Oct. 21, 1905.

NEW DEPARTURE

The words "NEW DEPARTURE."

SER. No. 13,859. REMEDY FOR DISTEMPER. THE DAGGETT REMEDY COMPANY, Boston, Mass. Filed Oct. 23, 1905.

The letters "D D D" arranged on a red disk.

SER. No. 13,891. FLEXIBLE GAS-TUBING. NEW YORK GAS TUBING COMPANY, New York, N. Y. Filed Oct. 24, 1905.

STATITE

The word "STATITE."

SER. No. 13,951. COOKING STOVES AND RANGES, HEATING-STOVES, AND REPAIRS AND PARTS THEREFOR. BALL STOVE WORKS, Rochester, N. Y. Filed Oct. 26, 1905. Used ten years.

STERLING

The word "STERLING."

SER. No. 13,969. SPICES. LEHN & FINK, New York, N. Y. Filed Oct. 27, 1905.

The representation of a pyramid bearing the letters and character "L & F" on level ground and disposed within a circular panel surrounded by a border of two circles.

SER. No. 13,981. COTTON DUCK. LOWELL WEAVING COMPANY, Lowell and Boston, Mass. Filed Oct. 27, 1905. Used ten years.

LOWELL WEAVING CO.

The words "LOWELL WEAVING CO."

SER. No. 13,984. MEDICINAL, RESTORATIVE, AND REGULATIVE COMPOUNDS. JOSEPH H. SCHENCK, Philadelphia, Pa. Filed Oct. 30, 1905. Used ten years.

An oblong ornamental figure having displayed centrally thereon two medallions with figures therein, the one to the left representing an emaciated person and the other to the right a robust person, with escutcheons arranged above and below the medallions respectively containing the words "SCHENCK'S" and "MANDRAKE PILLS," and to the left and right, respectively, of the medallions in ornamental sunken fields the abbreviation and words "DR. SCHENCK'S FAMILY MEDICINES" and the words "PULMONIC SYRUP, AND SEA WEED TONIC."

SER. No. 14,019. COTTON DUCK. LOWELL WEAVING COMPANY, Lowell and Boston, Mass. Filed Oct. 30, 1905. Used ten years.

LOWELL

The word "LOWELL."

SER. No. 14,083. WHISKY. MAHAN SUPPLY CO., Wichita, Kans. Filed Oct. 30, 1905.

The words "BRIGHT BEGOR" and a monogram of the letters and abbreviation "M S Co" inclosed in two concentric circles on a panel background, with a spray of grain and grain-leaves at each end.

SER. No. 14,082. WHISKY. MAHAN SUPPLY CO., Wichita, Kans. Filed Oct. 30, 1905.

The words "DOWN TOWN CLUB" and the picture of a clubhouse inclosed in an ornamental scrollwork-border.

SER. No. 14,085. WHEAT-FLOUR. CHARLES KING & SON, Alexandria, Va. Filed Oct. 30, 1905.

SENATOR

The word "SENATOR."

SER. No. 14,174. GAMES COMPRISING EACH A BOARD AND MOVABLE PIECES ASSOCIATED THEREWITH. CHARLES ADAM MILLER, Buffalo, N. Y. Filed Nov. 1, 1905.

ARMY OFFICERS

The words "ARMY OFFICERS."

SER. No. 14,208. CULTIVATORS. THE MIDLAND MANUFACTURING CO., Tarkio, Mo. Filed Nov. 3, 1905.

The word "MIDLAND" on a diamond-shaped field inclosed in a diamond-shaped border.

SER. No. 14,249. HASH AND HASHED MEATS. NELSON MORRIS & COMPANY, Chicago, Ill. Filed Nov. 3, 1905.

BARBECUE

The word "BARBECUE."

SER. No. 14,258. STOCK-FOOD. SOUTH ALLIANCE REFINING COMPANY, Memphis, Tenn. Filed Nov. 3, 1905.

PROTALFA

The word "PROTALFA."

SER. No. 14,389. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y. Filed Nov. 7, 1905. Used ten years.

A device in which a human hand is represented as holding and displaying thirteen outspread playing-cards. Of these cards the ace of spades is the only one whose face is visible, the other cards being partly spread out behind the ace of spades so as to show their indices.

SER. No. 14,407. BABBITT METAL. NATIONAL LEAD COMPANY, Jersey City, N. J., and New York, N. Y. Filed Nov. 8, 1905. Used ten years.

The word "PHOENIX" and a representation of a phœnix.

SER. No. 14,434. LEATHER BOOTS AND SHOES. H. S. WOODBURY & COMPANY, Boston, Mass. Filed Nov. 9, 1905.

The word "TRIUMPH," in combination with the representation of clouds and the figure of an eagle with outstretched wings upon a background of radiating rays.

SER. No. 14,447. LOZENGES. A. SLAUSON & Co., New York, N. Y. Filed Nov. 9, 1905.

★STAR

The figure or conventional representation of a star and the word "STAR."

SER. No. 14,448. LOZENGES. A. SLAUSON & Co., New York, N. Y. Filed Nov. 9, 1905.

ROYAL

The word "ROYAL."

SER. No. 14,449. LOZENGES. A. SLAUSON & Co., New York, N. Y. Filed Nov. 9, 1905.

MEDALLION

The word "MEDALLION."

SER. No. 14,450. LOZENGES. A. SLAUSON & Co., New York, N. Y. Filed Nov. 9, 1905.

PEARL

The word "PEARL."

SER. No. 14,460. LAMP-CHIMNEYS AND LANTERN-GLOBES. R. E. TORSUE & BROS., Philadelphia, Pa. Filed Nov. 9, 1905. Used ten years.

LUSTRE

The word "LUSTRE."

SER. No. 14,475. WHEAT-FLOUR. PILLSBURY-WASHBURN FLOUR MILLS COMPANY LIMITED, Minneapolis, Minn. Filed Nov. 10, 1905.

TRY'IT

The word "TRY'IT."

SER. No. 14,510. COSMETIC HAIR AND SKIN TONICS. GEORGE V. G. HERBERTON, Philadelphia, Pa. Filed Nov. 11, 1905.

The pictorial representation of the head of Cleopatra arranged in a circle formed by lines representing the horizon and which merge into heavy and fine irregular lines to represent a desert partially compassed by the flowing hair of Cleopatra, together with a pyramid and camel, the whole being surrounded on certain sides by a frieze of the so-called sacred Egyptian "lotus flower."

Ser. No. 14,714. WRENCHES. THE WHITMAN & BARNES MANUFACTURING COMPANY, Akron, Ohio. Filed Nov. 16, 1905.

BULL DOG

The words "BULL DOG."

Ser. No. 14,795. PRESERVATIVE AND INSULATING VARNISHES. THE STANDARD PAINT COMPANY, New York, N. Y. Filed Nov. 18, 1905.

The representation of a peacock with its tail spread out within a circle in which also appear the letters "S P C." This is surrounded by a black ring on which appears at the top the word "PEACOCK."

Ser. No. 14,937. END-GATE SEEDING-MACHINES. LUTHY & Co., Peoria, Ill. Filed Nov. 23, 1905.

"MOGUL"

The word "MOGUL" inclosed in quotation-marks.

Ser. No. 14,997. COFFEE. HUGH A. CARNEY, Boston, Mass. Filed Nov. 28, 1905.

JOYCOF

The word "JOYCOF."

Ser. No. 15,050. SHIP'S LOGS. THOMAS WALKER & SON LTD., Birmingham, England. Filed Nov. 30, 1905.

EXCELSIOR

The word "EXCELSIOR."

Ser. No. 15,070. ENAMELED LEATHER. WOLFF PROCESS LEATHER COMPANY, Philadelphia, Pa. Filed Nov. 30, 1905.

CLIMAX

The word "CLIMAX."

Ser. No. 15,117. COFFEE. O. W. PEIRCE COMPANY, Lafayette, Ind. Filed Dec. 1, 1905. Used ten years.

The words "PEIRCE'S GOLDEN RIO COFFEE" printed in the order shown one above the other. Accompanying said words and entwined with the lettering thereof are the branches and leaves of a coffee-plant in bearing, having a small bird perched on one of its branches and its mate flying near by.

Ser. No. 15,160. QUILTS. MARSHALL FIELD & COMPANY, Chicago, Ill. Filed Dec. 4, 1905.

The word "CARNATION" and the representation of a number of carnations stems and buds.

Ser. No. 15,201. LOCKS. GENERAL SPECIALTY COMPANY, Philadelphia, Pa. Filed Dec. 5, 1905.

A representation of a kangaroo forming the letter "K" of the word "KANGAROO."

Ser. No. 15,213. HOSIERY. RICH. STIX DRY GOODS COMPANY, St. Louis, Mo. Filed Dec. 5, 1905.

The words "WILD BOY'S SISTER HOSE," together with the pictorial representation of a girl chasing a boy, the boy being shown in advance, the representation being shown in a panel. In the lower left-hand corner of the panel a rail-fence corner is shown and in the lower right-hand corner a bunch of grass.

Ser. No. 15,214. HOSIERY. RICH. STIX DRY GOODS COMPANY, St. Louis, Mo. Filed Dec. 5, 1905.

The words "WILD BOY," together with the pictorial representation of a boy seated upon a chair, one hand resting upon his knee, the other upon the seat of the chair, his knees protruding through his stockings.

Ser. No. 15,253. COTTON PIECE GOODS. CHICOPEE MANFG. CO., Honea Path, S. C. Filed Dec. 7, 1905.

The representation of an eagle and a hawk with outspread wings in the attitude of fighting and standing on tree-limbs.

Ser. No. 15,264. BELT-COUPLINGS. GEORGE TWISS & Co., New York, N. Y. Filed Dec. 6, 1905. Used ten years.

MORAN'S

The word "MORAN'S."

Ser. No. 15,308. LADIES' BELTS. ANNE H. TOMLINSON, New York, N. Y. Filed Dec. 9, 1905.

PRINCETTE

The word "PRINCETTE."

Ser. No. 15,366. COTTON PIECE GOODS. TREMONT & SUFFOLK MILLS, Lowell, Mass. Filed Dec. 12, 1905.

The representation of a charging bull.

Ser. No. 15,397. CUP-GREASE AND LUBRICATING-OILS. GALENA AXLE GREASE CO., Galena, Ill. Filed Oct. 26, 1905. Used ten years.

Superior

The word "SUPERIOR."

Ser. No. 15,435. LEAD-PENCILS. AMERICAN LEAD PENCIL CO., New York, N. Y. Filed Dec. 15, 1905. Used ten years.

BEATS ALL

The words "BEATS ALL."

Ser. No. 15,438. ANIMAL-MATTER FERTILIZERS. FREDERICK W. TURNELL & COMPANY, Philadelphia, Pa. Filed Dec. 16, 1905.

Ser. No. 15,560. TROUSERS. I. L. PEARL & Co., Johnson, Vt. Filed Dec. 21, 1905. Used ten years.

Ser. No. 15,583.

Ser. No. 15,602.

SER. No. 15,488. ANIMAL-MATTER FERTILIZERS. FREDERICK W. TURNELL & COMPANY, Philadelphia, Pa. Filed Dec. 15, 1905.

FERTILIZERS

The lozenge-shaped figure in red having upon the face the words "ANIMAL FERTILIZERS MATTER."

SER. No. 15,494. HOSE-SUPPORTERS. CHRISTINA J. HIGLEY, New York, N. Y. Filed Dec. 15, 1905.

HERCULES

The word "HERCULES."

SER. No. 15,509. HORSE-BLANKETS, HORSE-SHEETS, HORSE-COVERS, HORSE-NETS, SADDLE-HOUSINGS, LAP-ROBES, AND LAP-DUSTERS. WILLIAM AYRES & SONS, Philadelphia, Pa. Filed Dec. 19, 1905.

5A

The numeral "5" and the letter "A" in juxtaposition.

SER. No. 15,514. HOSIERY. RIES, STIX DRY GOODS COMPANY, St. Louis, Mo. Filed Dec. 19, 1905.

The words "AMERICAN LADY," together with a pictorial representation of a woman attired in street costume wearing a Gainsboro hat and carrying an open parasol over her right shoulder.

SER. No. 15,560. TROUSERS. I. L. FRAZE & CO., Johnson, Vt. Filed Dec. 21, 1905. Used ten years.

JOHNSON

The word "JOHNSON."

SER. No. 15,568. WHISKEY. MOSES L. BEAN, Salisbury, N. C. Filed Dec. 21, 1905.

RED BUCK

The words "RED BUCK."

SER. No. 15,579. SHEETINGS AND DRILLINGS. EXPOSITION COTTON MILLS, Atlanta, Ga. Filed Dec. 23, 1905.

ALADRA

The arbitrary word "ALADRA."

SER. No. 15,580. SHEETINGS AND DRILLINGS. EXPOSITION COTTON MILLS, Atlanta, Ga. Filed Dec. 23, 1905. Used ten years.

ARDMORE

The arbitrary word "ARDMORE."

SER. No. 15,581. SHEETINGS AND DRILLINGS. EXPOSITION COTTON MILLS, Atlanta, Ga. Filed Dec. 23, 1905.

GRANITE

The arbitrary word "GRANITE."

SER. No. 15,583. SHEETINGS AND DRILLINGS. EXPOSITION COTTON MILLS, Atlanta, Ga. Filed Dec. 23, 1905.

SER. No. 15,583.

RACKET

The arbitrary word "RACKET."

SER. No. 15,585. SHEETINGS AND DRILLINGS. EXPOSITION COTTON MILLS, Atlanta, Ga. Filed Dec. 22, 1905. Used ten years.

OUR OWN

The arbitrary words "OUR OWN."

SER. No. 15,586. SHEETINGS AND DRILLINGS. EXPOSITION COTTON MILLS, Atlanta, Ga. Filed Dec. 22, 1905.

DIXIE

The arbitrary word "DIXIE."

SER. No. 15,588. SHEETINGS AND DRILLINGS. EXPOSITION COTTON MILLS, Atlanta, Ga. Filed Dec. 23, 1905.

OUR PRIDE

The arbitrary words "OUR PRIDE."

SER. No. 15,625. SHEETINGS AND DRILLINGS. EXPOSITION COTTON MILLS, Atlanta, Ga. Filed Dec. 26, 1905.

ARCADIA

The arbitrary word "ARCADIA."

SER. No. 15,602. CEREBRIDAL MEDICINES. THE LIQUOZONE COMPANY, Chicago, Ill. Filed Dec. 22, 1905.

SER. No. 15,602.

LIQUOZONE

The word "LIQUOZONE."

SER. No. 15,626. SHEETINGS AND DRILLINGS. EXPOSITION COTTON MILLS, Atlanta, Ga. Filed Dec. 26, 1905. Used ten years.

PEORIA

The arbitrary word "PEORIA."

SER. No. 15,627. SHEETINGS AND DRILLINGS. EXPOSITION COTTON MILLS, Atlanta, Ga. Filed Dec. 26, 1905.

GATE CITY

A conventional representation of an arched city gate, associated with the arbitrary words "GATE CITY."

SER. No. 15,628. SHEETINGS AND DRILLINGS. EXPOSITION COTTON MILLS, Atlanta, Ga. Filed Dec. 26, 1905. Used ten years.

RUTLAND

The arbitrary word "RUTLAND."

SER. No. 15,629. SHEETINGS AND DRILLINGS. EXPOSITION COTTON MILLS, Atlanta, Ga. Filed Dec. 26, 1905. Used ten years.

Ser. No. 15,629.

PREMIUM

The arbitrary word "PREMIUM."

Ser. No. 15,686. POWDER REMEDY FOR CATARRH AND SIMILAR DISEASES OF THE HEAD AND NOSE. FRANCIS CLEMENTINE, Brooklyn Hills and Richmond Hills, N. Y. Filed Dec. 27, 1905.

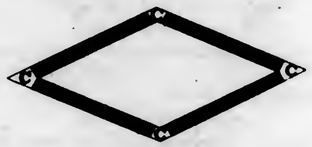

The representation of a diamond-shaped figure with the letter "C" in each corner of the figure.

Ser. No. 15,763. HOSIERY. RICH. STIX DRY GOODS COMPANY, St. Louis, Mo. Filed Dec. 29, 1905.

The word "PRINCESS," together with a fanciful representation of the bust portrait of a woman, the face being shown in profile in partial décolleté costume, the picture being partly surrounded by scrollwork.

Ser. No. 15,955. CIGARS. THOMAS J. KEMBEL, Addison, N. Y. Filed Jan. 6, 1906.

B. OF R. T.

The letters "B. OF R. T."

Ser. No. 15,969. WHISKY. Geo. Benz & Sons, St. Paul, Minn. Filed Jan. 6, 1906.

PICKWICK

The word "PICKWICK."

Ser. No. 15,977. WHISKY. Geo. Benz & Sons, St. Paul, Minn. Filed Jan. 8, 1906. Used ten years.

Pickwick Club

The words "PICKWICK CLUB."

Ser. No. 15,981. WHISKY. THE MOUNTAIN DISTG. CO., Cincinnati, Ohio. Filed Jan. 8, 1906.

KENTUCKY LILY

The words "KENTUCKY LILY."

Ser. No. 15,982. WHISKY. THE MOUNTAIN DISTG. CO., Cincinnati, Ohio. Filed Jan. 8, 1906.

The word "MILLSTONE," associated with a monogram of the letters and abbreviation "M D Co" inclosed in two concentric circles ornamented with a spray of grain.

Ser. No. 15,984. WHISKY. THE MOUNTAIN DISTG. CO., Cincinnati, Ohio. Filed Jan. 8, 1906.

GRAIN BELT

The words "GRAIN BELT."

Ser. No. 15,987. WHISKY. THE MOUNTAIN DISTG. CO., Cincinnati, Ohio. Filed Jan. 8, 1906.

GOLDEN BELL

The words "GOLDEN BELL."

Ser. No. 15,994. WHISKY. JACOBS & GARRETT, Memphis, Tenn. Filed Jan. 8, 1906.

The words "OLD CHICKASAW," associated with a design showing a horse with game on its back and a man on one side, a dog on the other side standing by a campfire.

Ser. No. 15,997. WHISKY. FERDINAND WESTHEIMER & SONS, Cincinnati, Ohio. Filed Jan. 8, 1906.

PATHFINDER

The word "PATHFINDER" and the letter "W," crossed by an arrow inclosed by a fanciful wreath.

Ser. No. 16,000. WHISKY. FERDINAND WESTHEIMER & SONS, Cincinnati, Ohio. Filed Jan. 6, 1906.

Old HORNPIPE

The words "OLD HORNPIPE."

Ser. No. 16,008. WHISKY. RAMSEYER DISTILLERY CO., St. Paul, Minn. Filed Jan. 8, 1906.

SQUARE

The word "SQUARE," associated with the picture of a distillery and distillery-warehouse in an oval design.

Ser. No. 16,004. CIGARS. A. SANTAELLA & Co., Chicago, Ill. Filed Jan. 8, 1906.

REFORMADOR

The word "REFORMADOR."

Ser. No. 16,005. CIGARS. A. SANTAELLA & Co., Chicago, Ill. Filed Jan. 8, 1906.

FLOR A MIA

The words "FLOR A MIA."

Ser. No. 16,006. CIGARS. A. SANTAELLA & Co., Chicago, Ill. Filed Jan. 8, 1906.

The word "OPTIMO" and the portrait of Antonio Santaella, associated with a plantation scene showing palm-trees and tropical shrubbery with a man on horseback at each side and also man standing at the right side. In the background of the scene appear two small buildings.

Ser. No. 16,008. WHISKY. W. H. JONES & Co., Boston, Mass. Filed Jan. 8, 1906.

BUTTERNUT

The word "BUTTERNUT."

Ser. No. 16,009. WHISKY. W. H. JONES & Co., Boston, Mass. Filed Jan. 8, 1906.

BIGWOOD

The word "BIGWOOD."

SER. No. 16,020. CIGARS. LEAVITT P. BURNELL, Suffield, Conn. Filed Jan. 6, 1906.

The words "THE STUDY," associated with the representation of the interior of a room showing a bookcase, a table on which is a lamp, a box of cigars and a hand of tobacco, an empty chair, and the representation of a man seated in another chair with one elbow on the table and holding in his hands a cigar.

SER. No. 16,021. WHISKY. RICHARD A. SPLAINE & Co., Haverhill, Mass. Filed Jan. 6, 1906.

The words "WILLIAM TELL," associated with a design showing a picture of William Tell shooting an apple from a boy's head with soldiers in the background inclosed in an oval-shaped outline.

SER. No. 16,022. WHISKY. RICHARD A. SPLAINE & Co., Haverhill, Mass. Filed Jan. 8, 1906.

PARKWOOD CLUB

The words "PARKWOOD CLUB" above a monogram composed of the letters, character, and abbreviation "R A S & Co," which is inclosed in a wreath of rye.

SER. No. 16,033. WHISKY. THE TIMBERLAKE AND SEE Co., Columbus, Ohio. Filed Jan. 8, 1906.

SER. No. 16,033.

Oldway

The word "OLDWAY."

SER. No. 16,041. WHISKY. FRIENDLY & BROWN, Baltimore, Md. Filed Jan. 8, 1906.

BALTLAND

The word "BALTLAND."

SER. No. 16,049. WHISKY. DAVID KOHN, Philadelphia, Pa. Filed Jan. 8, 1906.

Arion

The word "ARION," associated with the monogram "D K" on a circular design inclosed in a circle.

SER. No. 16,065. INVERTED INCANDESCENT MANTLES AND LAMPS AND LAMP-FITTINGS USED IN CONNECTION THEREWITH. WELSBACH LIGHT COMPANY, Gloucester City, N. J. Filed Jan. 9, 1906.

REFLEX

The word "REFLEX."

SER. No. 16,095. OVERSHIRTS. LEVI STRAUSS & COMPANY, San Francisco, Cal. Filed Jan. 10, 1906.

The word "SUBURB."

SER. No. 16,142. FLOOR-WAXING SOAP. BOURNE RENDEL, London, England. Filed Jan. 12, 1906. Used ten years.

SER. No. 16,142.

The representation of a rose with two leaves, generally known as "heralldic rose."

SER. No. 16,147. PEACH-TREES, SCIONS, CUTTINGS, GRAFTS, ROOTS, AND STOCKS. TEXAS NURSERY COMPANY, Sherman, Tex. Filed Jan. 12, 1906.

The pictorial representation of a peach on which is shown the portrait of E. W. Kirkpatrick on a dark disk, said disk being surrounded by concentric circles, between which circles appear the words "EARLY WHEELER PEACH."

SER. No. 16,156. MACHINE-BELTING. MAIN BELTING Co., Philadelphia, Pa. Filed Jan. 12, 1906.

LEVIATHAN

The word "LEVIATHAN."

SER. No. 16,192. WHISKY. ELY OPPENHEIMER, Cincinnati, Ohio. Filed Jan. 15, 1906.

CAMDEN SPRINGS

The words "CAMDEN SPRINGS."

SER. No. 16,219. SCISSORS. F. KOLLER & Co., Solingen, Germany. Filed Jan. 16, 1906.

MAGNA WEXL

The words "MAGNA WEXL."

SER. No. 16,254. DRESSING FOR BOOTS AND SHOES. F. H. YOUNG COMPANY, Boston, Mass. Filed Jan. 17, 1906.

BLACK BEAUTY

The words "BLACK BEAUTY."

SER. No. 16,283. SMOKING-TOBACCO. BRITTAIN TOBACCO WORKS, Columbia, Tenn. Filed Jan. 18, 1906.

GILT EDGE

The words "GILT EDGE."

SER. No. 16,355. LEAD-PENCILS. EDWARD G. SOLTMANN, New York, N. Y. Filed Jan. 20, 1906.

"MONARCH"

The word "MONARCH" printed with quotation-marks.

SER. No. 16,356. HOMINY FEED. AMERICAN HOMINY COMPANY, Indianapolis, Ind. Filed Jan. 20, 1906.

HOMCO

The fanciful word "HOMCO."

SER. No. 16,397. ELECTRIC GENERATORS AND MOTORS AND PARTS THEREOF. CHARLES ALGERNON PARSONS, Newcastle-on-Tyne, England. Filed Jan. 22, 1906.

The representation of two semicircular sections of turbine-blade rings, one superimposed upon the other, forming a central elliptical space bounded by turbine-blades fixed in the outer blade-rings.

Ser. No. 16,264. FLOUR MADE FROM WHEAT. SHEFFIELD-KING MILLING Co., Minneapolis, Minn. Filed Jan. 22, 1906.

MAPLE LEAF

The pictorial representation of a maple-leaf and the words MAPLE LEAF."

Ser. No. 16,463. SLEEVE-BUTTONS, LINK-BUTTONS, COLLAR-BUTTONS, SHIRT-STUDS, AND EMBLEM-BUTTONS. PHOENIX JEWELRY Co., New York, N. Y. Filed Jan. 24, 1906. Used ten years.

Ser. No. 16,468

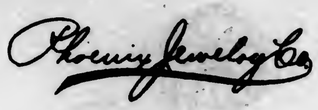

The name "PHOENIX JEWELRY Co."

Ser. No. 16,510. TYPE-WRITING MACHINES. THE SMITH PREMIER TYPEWRITER COMPANY, Syracuse, N. Y. Filed Jan. 26, 1906.

Smith Premier

The words "SMITH PREMIER."

PRINTED BY SACKETT & WILHELMS LITHOGRAPHING & PRINTING Co. NEW YORK

TRADE-MARKS

REGISTERED FEBRUARY 20, 1906.

49,790. GROUND WOOD AND WOOD-PULP FOR PAPER-STOCK. ASPEGREN & Co., New York, N. Y.
The word "APOLLO."
Filed May 10, 1905. Serial No. 4,953. PUBLISHED DECEMBER 26, 1905.

49,791. KÜMMEL. CHARLES JACQUIN ET CIE. INC., New York, N. Y.
The representation of a substantially rectangular device having a scalloped upper edge. At the opposite lower edges and sides of the device are shown ornamental columns supporting an ornamental arch. Within this central portion or panel, inclosed by said columns and arch, appears an ornamental scroll and below said scroll the title-phrase, name, and abbreviation "GETREIDE DOPPEL-KÜMMEL, CHARLES JACQUIN ET CIE., INCORP." Above the center of the arch and below center scalloped portion of the device appears an ermine bearing the name "CHARLES JACQUIN ET CIE., INC." and surmounted by a crown and palms, and at each side of said ermine, below the side scalloped portions, appear representations of the terrestrial globe, the space above the arch and surrounding the representations aforesaid being richly ornamented with conventional scrollwork and ornaments.
Filed July 12, 1905. Serial No. 10,156. PUBLISHED DECEMBER 26, 1905.

49,792. LEATHER BLANKS, SOLES, AND TAPS. DANIEL FORBES COMPANY, Chicago, Ill.
The word "KLONDIKE."
Filed October 7, 1905. Serial No. 13,412. PUBLISHED DECEMBER 26, 1905.

49,793. LEATHER BOOTS AND SHOES. LYNCHBURG SHOE Co., Lynchburg Va.
The word "MUTUAL," associated with the representation of three links of a chain, the word "MUTUAL" being located between two sections of chain, each having three links.
Filed November 13, 1905. Serial No. 14,543. PUBLISHED DECEMBER 26, 1905.

49,794. WHISKY. MILOSLAWSKY & KRAUS, Chicago, Ill.
The name "UNCLE JERRY" and a bust-picture of an old man with smooth face and neck-beard, wearing spectacles and a straw hat, a blue shirt, and a red tie, inclosed in a circle bordered by stems and heads of grain. Used ten years.
Filed July 11, 1905. Serial No. 10,070. PUBLISHED DECEMBER 26, 1905.

49,795 EMBROIDERY AND KNITTING SILK. JAMES PEARSALL & Co., London, England.
The word "ORCHID."
Filed September 11, 1905. Serial No. 12,469. PUBLISHED DECEMBER 26, 1905.

49,796. WHISKY. THE T. W. SAMUELS DISTY, Bardstown, Ky.
The name "T. W. SAMUELS" and a panel design inserted in a circular band ornamented by stems, leaves, and heads of grain and a bird. Used ten years.
Filed June 15, 1905. Serial No. 8,280. PUBLISHED DECEMBER 26, 1905.

49,797. UPPER-LEATHER FOR BOOTS AND SHOES. THAYER, FOSS & Co., Boston, Mass.
The word "AURORA."
Filed November 24, 1905. Serial No. 14,957. PUBLISHED DECEMBER 26, 1905.

49,798. LEATHER BOOTS AND SHOES AND LEATHER THEREFOR. THE AMERICAN OAK LEATHER COMPANY, Cincinnati, Ohio.
The words "ROCK OAK."
Filed April 8, 1905. Serial No. 868. PUBLISHED DECEMBER 26 1905.

49,799. STAMPED STEEL WARE. THE JACOB J. VOLLRATH MFG. Co., Sheboygan, Wis.
The word "AJAX."
Filed May 22, 1905. Serial No. 6,343. PUBLISHED DECEMBER 26, 1905.

49,800. WHISKY. THE GINTER GROCERY COMPANY, Boston, Mass.
The word "PROMENADE," beneath which is a monogram composed of the letters "G G Co" on a fanciful shield design with a fancy scroll at each side.
Filed July 11, 1905. Serial No. 10,036. PUBLISHED DECEMBER 26, 1905.

49,801. DRESS AND NEGLIGÉE SHIRTS. THE MANIFEST SHIRT Co., Philadelphia, Pa.
The word "EQUITABLE."
Filed October 18, 1905. Serial No. 13,727. PUBLISHED DECEMBER 26, 1905.

49,802. HAMES. THE TODD MANUFACTURING Co., New Albany, Ind.
An elliptical-shaped figure inclosing the representation of a horse, a pair of hames, and a wreath. Above the figure of the horse and between the neck of the hames are the words "EZ DRAFT," and above the latter is a scroll on the wreath bearing the letters and abbreviation "C. H. Co." Below the figure of the horse is the representation of several pairs of hames.
Filed September 9, 1905. Serial No. 12,420. PUBLISHED DECEMBER 26, 1905.

49,803. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio.
The word "RACER."
Filed April 15, 1905. Serial No. 1,606. PUBLISHED DECEMBER 26, 1905.

49,804. BOTTLED LAGER-BEER. VALENTIN BLATZ BREWING Co., Milwaukee, Wis.
The word "BLATZ" in heavy script.
Filed April 24, 1905. Serial No. 2,882. PUBLISHED OCTOBER 24 1905.

49,805. COLLARS AND CUFFS. WILLIAM BARKER COMPY., Watervliet, N. Y.
The representation of a dog's head holding in its mouth a shirt-collar.
Filed May 9, 1905. Serial No. 4,806. PUBLISHED DECEMBER 26, 1905.

49,806. MEDICAL OINTMENT. RALPH MATTHEW CONNABLE, Baltimore, Md.
The coined hyphenated word "SAL-IC-THOL."
Filed June 12, 1905. Serial No. 7,985. PUBLISHED DECEMBER 26, 1905.

49,807. TONIC. JOSEPH CORATO, Stockton, Cal.
The representation of a setting sun, with the word "FOEBUS" in the foreground, with the shadows of each letter of said word appearing also.
Filed May 19, 1905. Serial No. 6,092. PUBLISHED DECEMBER 26, 1905.

49,808. MACHINERY-PACKING. CHAS. A. DANIEL, Philadelphia, Pa.
The letters "P. P. P."
Filed November 17, 1905. Serial No. 14,758. PUBLISHED DECEMBER 26, 1905.

49,809. REMEDY FOR CHILDREN'S COLIC AND CHOL-

Filed April 14, 1905. Serial No. 1,494. PUBLISHED DECEM-

low the band containing "STEVENS CRAGE" and parallel there-

49,847. TELEPHONE SETS. BAIRD MANUFACTURING COM-

49,809. REMEDY FOR CHILDREN'S COLIC AND CHOLERA INFANTUM. J. C. FRANKLIN'S SONS & Co., Troy, N. Y.
The words "BABY'S TREASURE."
Filed July 12, 1905. Serial No. 10,182. PUBLISHED DECEMBER 26, 1905.

49,810. WHISKY. J. & A. FREIBERG, Cincinnati, Ohio.
The representation of a jug inclosed in a circle, which rests on a base and scroll, with double curve extending lengthwise directly under the picture of the jug, the whole being associated or in combination with the words "OLD RYE JUG," the words "OLD" and "JUG" arranged so as to intersect at the right and left of the circle around the jug and the word "RYE" arranged on the picture of the jug.
Filed May 26, 1905. Serial No. 6,722. PUBLISHED DECEMBER 26, 1905.

49,811. LEATHER AND CANVAS BOOTS AND SHOES. GEO. E. KEITH COMPANY, Brockton, Mass.
The compound word "WALK-OVER."
Filed June 10, 1905. Serial No. 7,844. PUBLISHED DECEMBER 26, 1905.

49,812. WHISKY. JOHN J. HAGERTY & Co., Dorchester, Mass.
The words "STANDISH GUARD," associated with an oval-shaped panel bearing the picture of a man in Puritan costume with a gun over his shoulder, with a landscape and men in the background.
Filed July 15, 1905. Serial No. 10,382. PUBLISHED DECEMBER 26, 1905.

49,813. WHISKY. J. A. BOKEL COMPANY OF BALTIMORE CITY, Baltimore, Md.
The capital letters "H O B" in script.
Filed September 7, 1905. Serial No. 12,316. PUBLISHED DECEMBER 26, 1905.

49,814. UTERINE TONIC AND RESTORATIVE. RIO CHEMICAL CO., New York, N. Y.
The words "ALETRIS CORDIAL." Used ten years.
Filed May 17, 1905. Serial No. 5,873. PUBLISHED DECEMBER 26, 1905.

49,815. LIQUID REMEDY. GEORGE M. SLOAT, Valdosta, Ga.
The bust-picture of Underhill H. Sloat, deceased, within an oval frame, in association with the words "SLOAT'S VEGETABLE BITTERS."
Filed July 13, 1905. Serial No. 10,251. PUBLISHED DECEMBER 26, 1905.

49,816. HEADACHE-POWDERS. RICHARD SAMUEL STARKS Midway, Ky.
The words "STARKS' HEADACHE POWDERS." Used ten years.
Filed May 24, 1905. Serial No. 6,512. PUBLISHED DECEMBER 26, 1905.

49,817. TONICS, NERVINE, AND SEDATIVES. THE DR. MILES MEDICAL CO., Elkhart, Ind.
A device representing a double profile of a human face, one side showing the brain and the nerve filaments.
Filed April 28, 1905. Serial No. 3,426. PUBLISHED DECEMBER 26, 1905.

49,818. WHISKY. THE HOFFHEIMER BROS. CO., Cincinnati, Ohio.
The words "WHITE MILLS," associated with a fanciful shield design bearing the words "WHITE MILLS" and ornamented with leaves and scrolls and inclosed in a circular band. Used ten years.
Filed May 11, 1905. Serial No. 5,146. PUBLISHED DECEMBER 26, 1905.

49,819. PURGATIVE PILLS. THE W. H. COMSTOCK COMPANY LIMITED, Morristown, N. Y.
The words "DR. MORSE'S INDIAN ROOT PILLS," a representation of an Indian on horseback with a landscape in the background inclosed by a semicircular frame, the straight portion of which is on a horizontal plane, and the facsimile signature of Wm. H. Comstock.
Filed April 26, 1905. Serial No. 3,385. PUBLISHED DECEMBER 26, 1905.

49,820. MEDICINAL PREPARATIONS. WILLIAM R. WARNER & Co., Philadelphia, Pa.
The arbitrary words "TONO SUMBUL."
Filed April 14, 1905. Serial No. 1,494. PUBLISHED DECEMBER 26, 1905.

49,821. MAGAZINES. CRITERION PUBLISHING COMPANY, Chicago, Ill.
The words "MIDA'S CRITERION" and a design showing grain, bunches of grapes, and fanciful scrollwork associated therewith. Used ten years.
Filed August 10, 1905. Serial No. 11,486. PUBLISHED DECEMBER 26, 1905.

49,822. HOSE-SUPPORTERS. CHRISTINA J. HIGLEY, New York, N. Y.
The word "PRISCILLA."
Filed July 7, 1905. Serial No. 9,871. PUBLISHED DECEMBER 26 1905.

49,823. HOSE-SUPPORTERS CHRISTINA J. HIGLEY, New York, N. Y.
The word "SAMSON."
Filed July 7, 1905. Serial No. 9,872. PUBLISHED DECEMBER 26, 1905.

49,824. MEN'S AND WOMEN'S HATS AND CAPS. ROBERT J. HUNTER, Washington, D. C.
A representation of a saddled and bridled horse standing on a panel, on which appears the name "HUNTER."
Filed October 16, 1905. Serial No. 13,659. PUBLISHED DECEMBER 26, 1905.

49,825. SILVER-PLATED HOLLOW WARE. INTERNATIONAL SILVER COMPANY, Meriden, Conn.
The words "BARBOUR SILVER CO." Used ten years.
Filed June 28, 1905. Serial No. 9,324. PUBLISHED DECEMBER 26, 1905.

49,826. SILVER-PLATED HOLLOW WARE. INTERNATIONAL SILVER COMPANY, Meriden, Conn.
The words "BARBOUR SILVER CO.," in conjunction with the words "QUADRUPLE SILVER," all inclosed in a circle. Used ten years.
Filed June 28, 1905. Serial No. 9,325. PUBLISHED DECEMBER 26, 1905.

49,827. CORSETS. KABO CORSET COMPANY, Chicago, Ill.
The arbitrarily-selected word "LALITE."
Filed July 10, 1905. Serial No. 9,968. PUBLISHED DECEMBER 26, 1905.

49,828. TRADE-JOURNAL PERIODICAL OR MAGAZINE. LORD & NAGLE COMPANY, Boston, Mass.
The words "TEXTILE WORLD RECORD."
Filed November 23, 1905. Serial No. 14,935. PUBLISHED DECEMBER 26, 1905.

49,829. COTTON PIECE GOODS. MASSACHUSETTS COTTON MILLS, Lowell, Mass.
The representation of the head of a buffalo.
Filed May 11, 1905. Serial No. 5,255. PUBLISHED DECEMBER 26, 1905.

49,830. KNITTED HOSIERY, UNDERSHIRTS, AND DRAWERS. JOHN WYCKOFF METTLER, New Brunswick, N. J.
The word "INTERWOVEN."
Filed May 4, 1905. Serial No. 4,266. PUBLISHED DECEMBER 26, 1905.

49,831. CERTAIN NAMED COTTON FABRICS. MEYER & GORTZE, New York, N. Y.
The representation of two crossed swords and the letters and character "M & G."
Filed April 27, 1905. Serial No. 3,234. PUBLISHED DECEMBER 26 1905.

49,832. COTTON FLANNEL. PEMBERTON COMPANY, Lawrence and Boston, Mass.
The word "PEMBERTON." Used ten years.
Filed July 21, 1905. Serial No. 10,665. PUBLISHED DECEMBER 26, 1905.

49,833. LINEN CRASH. STEVENS LINEN WORKS, Dudley and Boston, Mass.
A square border inclosing a circular band between concentric circles, and extending across the solid band from one corner of the square border to the opposite is a band between parallel lines and containing the words "STEVENS CRASH." Above and parallel with the band containing the said words is a narrower band inside the circular band and containing the letters "S. L. W." Below the band containing "STEVENS CRASH" and parallel therewith inside the circular band is a narrower band containing the number "1846." The upper portion of the circular band contains the words "UNEQUALLED TOWELLING," and below the central band the circular band contains the words "MADE OF PURE FLAX YARNS." Within the inner circle of the circular band is ornamental work, approximately scrollwork, and in the corners of the rectangular border is work of a somewhat similar character. Used ten years.
Filed July 21, 1905. Serial No. 10,666. PUBLISHED DECEMBER 26, 1905.

49,834. CERTAIN NAMED SEEDS. THE ALBERT DICKINSON COMPANY, Chicago, Ill.
The word "ACE."
Filed June 17, 1905. Serial No. 8,399. PUBLISHED DECEMBER 26, 1905.

49,835. CERTAIN NAMED SEEDS. THE ALBERT DICKINSON COMPANY, Chicago, Ill.
The word "QUEEN."
Filed June 17, 1905. Serial No. 8,401. PUBLISHED DECEMBER 26, 1905.

49,836. CERTAIN NAMED SEEDS. THE ALBERT DICKINSON COMPANY, Chicago, Ill.
The words "PINE TREE."
Filed June 17, 1905. Serial No. 8,403. PUBLISHED DECEMBER 26, 1905.

49,837. CERTAIN NAMED SEEDS. THE ALBERT DICKINSON COMPANY, Chicago, Ill.
The word "GLOBE."
Filed June 17, 1905. Serial No. 8,404. PUBLISHED DECEMBER 26, 1905.

49,838. CERTAIN NAMED SEEDS. THE ALBERT DICKINSON COMPANY, Chicago, Ill.
The representation of a globe.
Filed June 17, 1905. Serial No. 8,405. PUBLISHED DECEMBER 26, 1905.

49,839. DRESS AND NEGLIGÉE SHIRTS. THE MANIFEST SHIRT CO., Philadelphia, Pa.
The word "MANIFEST."
Filed October 18, 1905. Serial No. 13,728. PUBLISHED DECEMBER 26, 1905.

49,840. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.
The abbreviation and number "No. 32." Used ten years.
Filed May 5, 1905. Serial No. 4,296. PUBLISHED DECEMBER 26, 1905.

49,841. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.
The abbreviation and number "No. 53." Used ten years.
Filed May 5, 1905. Serial No. 4,315. PUBLISHED DECEMBER 26, 1905.

49,842. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.
The abbreviation and number "No. 35." Used ten years.
Filed May 5, 1905. Serial No. 4,319. PUBLISHED DECEMBER 26, 1905.

49,843. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.
The abbreviation and number "No. 319." Used ten years.
Filed May 5, 1905. Serial No. 4,321. PUBLISHED DECEMBER 26, 1905.

49,844. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio.
The word "TANGENT."
Filed April 15, 1905. Serial No. 1,503. PUBLISHED DECEMBER 26, 1905.

49,845. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio.
The numeral "2" and the word "SEAT." Used ten years.
Filed April 15, 1905. Serial No. 1,794. PUBLISHED DECEMBER 26, 1905.

49,846. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio.
The word "ACORN."
Filed April 15, 1905. Serial No. 1,797. PUBLISHED DECEMBER 26, 1905.

49,847. TELEPHONE SETS. BAIRD MANUFACTURING COMPANY, Chicago, Ill.
The word "MIDGETPHONE."
Filed November 27, 1905. Serial No. 15,009. PUBLISHED DECEMBER 26, 1905.

49,848. SHAKING-BOLTS. BARNARD & LEAS MANUFACTURING COMPANY, Moline, Ill.
The word "PLANSIFTER."
Filed June 12, 1905. Serial No. 7,969. PUBLISHED DECEMBER 26, 1905.

49,849. PULLEYS, BLOCKS, AND PARTS THEREOF. BOSTON & LOCKPORT BLOCK COMPANY, Boston, Mass.
The word "HUB."
Filed June 2, 1905. Serial No. 7,234. PUBLISHED DECEMBER 26, 1905.

49,850. REMEDY FOR RHEUMATISM. CHARLES CAROW, New York, N. Y.
The representation of a dragon and a warrior standing over the dragon with a shield on one arm and hand and a drawn sword in the other hand, together with the name "MATIS" on the breastplate and the words "RHEUMATISM CONQUERED" partly on the dragon and partly in the foreground.
Filed June 21, 1905. Serial No. 8,681. PUBLISHED DECEMBER 26, 1905.

49,851. DRUMS. DUPLEX MANUFACTURING COMPANY, St. Louis, Mo.
The word "DUPLEX" printed between two concentric circles, and two smaller circles between said concentric circles and in horizontal alinement with each other. Used ten years.
Filed August 28, 1905. Serial No. 12,060. PUBLISHED DECEMBER 26, 1905.

49,852. STOVE-POLISH. EYE SHINE POLISH COMPANY, Chicago, Ill.
The pictorial representation of a human eye, associated with the word "SHINE."
Filed July 3, 1905. Serial No. 9,750. PUBLISHED DECEMBER 26, 1905.

49,853. BLACKING AND LEATHER-DRESSING. FRANK E. FENNESSY, Boston, Mass.
The words "CIRAGE FRANÇAIS, OR FRENCH DRESSING." Used ten years.
Filed May 31, 1905. Serial No. 7,102. PUBLISHED DECEMBER 26, 1905.

49,854. ELECTRIC-LIGHT SUPPORTS. FRANK H. STEWART ELECTRIC COMPANY, Philadelphia, Pa.
The word "ADJUSTANDLE."
Filed June 1, 1905. Serial No. 7,149. PUBLISHED DECEMBER 26, 1905.

49,855. SOCKET-BUSHINGS FOR ELECTRIC FIXTURES. FRANK H. STEWART ELECTRIC COMPANY, Philadelphia, Pa.
The word "KNOSTRAIN."
Filed November 20, 1905. Serial No. 14,826. PUBLISHED DECEMBER 26, 1905.

49,856. CERTAIN NAMED PAINTS, ENAMELS, AND BRONZING LIQUIDS. GERSTENDORFER BROS., New York, N. Y.
The representation of an easel supporting a framed panel upon which appear the words "OUR FAVORITE" inclosed in quotation-marks.
Filed April 26, 1905. Serial No. 3,059. PUBLISHED DECEMBER 26, 1905.

49,857. ALCOHOL. C. H. GRAVES & SONS, Boston, Mass.
The words "ATWOOD'S PURE ALCOHOL." Used ten years.
Filed May 29, 1905. Serial No. 6,874. PUBLISHED DECEMBER 26, 1905.

49,858. HOSE-SUPPORTERS. CHRISTINA J. HIGLEY, New York, N. Y.
The word "LINDSAY." Used ten years.
Filed June 19, 1905. Serial No. 8,514. PUBLISHED DECEMBER 5, 1905.

49,859. DETERGENT PREPARATION. HOLZAPFEL'S COMPOSITIONS COMPANY, LIMITED, Newcastle-upon-Tyne, England.
The word "PINTOFF."
Filed May 11, 1905. Serial No. 5,101. PUBLISHED DECEMBER 26, 1905.

49,860. GOLD-PLATED BADGES. IRONS & RUSSELL, Providence, R. I.
a shield having thereon the figure of a lion rampant and the letters

49,860. GOLD-PLATED BADGES. IRONS & RUSSELL, Providence, R. I.
The letter "R."
Filed June 7, 1905. Serial No. 7,564. PUBLISHED DECEMBER 26, 1905.

49,861. BAKING-POWDER. J. C. GRANT CHEMICAL COMPANY, East St. Louis, Ill.
The words "RABBIT'S FOOT" and the representation of a rabbit's foot suspended from a wishbone with a four-leaf clover as a background.
Filed May 1, 1905. Serial No. 3,703. PUBLISHED DECEMBER 26, 1905.

49,862. LAUNDRY STARCH. J. C. HUBINGER BROS. CO., New Haven, Conn.
The word "ELASTIC" and the representation of a flat-iron. Used ten years.
Filed October 30, 1905. Serial No. 14,045. PUBLISHED DECEMBER 26, 1905.

49,863. PAINTING, STAINING, AND GRAINING OIL. JAMES B. SIPE & CO., Allegheny, Pa.
The words "SIPE'S JAPAN OIL." Used ten years.
Filed May 1, 1905. Serial No. 3,935. PUBLISHED DECEMBER 26, 1905.

49,864. GALVANIZED FASTENING DEVICES. KEYSTONE NAIL COMPANY, INC., Philadelphia, Pa.
The representation of a keystone upon which appears the word "GALVANIZED," and the words "KEYSTONE BRAND," the whole inclosed within the words and abbreviations "KEYSTONE NAIL COMPANY INC. PHILA. PA.," arranged in a circle.
Filed June 7, 1905. Serial No. 7,604. PUBLISHED DECEMBER 26, 1905.

49,865. EFFERVESCENT LAXATIVE FRUIT PREPARATION. H. J. MAYERS, Cleveland, Ohio.
The hyphenated word "SAL-T-NA."
Filed April 24, 1905. Serial No. 3,011. PUBLISHED DECEMBER 26, 1905.

49,866. WHITE LEAD. NATIONAL LEAD COMPANY OF MASSACHUSETTS, Boston, Mass.
The words and abbreviations "SALEM LEAD CO., SALEM, MASS." Used ten years.
Filed August 21, 1905. Serial No. 11,863. PUBLISHED DECEMBER 26, 1905.

49,867. SAUSAGE-STUFFERS AND LARD-PRESSES. NATIONAL SPECIALTY MANUFACTURING CO., Philadelphia, Pa.
The word "NATIONAL." Used ten years.
Filed July 22, 1905. Serial No. 10,718. PUBLISHED DECEMBER 26, 1905.

49,868. LOOM-PICKERS. NORFOLK LOOM PICKER CO., Norfolk, Va.
The word "ECONOMY."
Filed November 24, 1905. Serial No. 14,965. PUBLISHED DECEMBER 26, 1905.

49,869. STEEL. PARK STEEL COMPANY, Pittsburg, Pa.
The word "VICTORIA."
Filed May 13, 1905. Serial No. 5,473. PUBLISHED DECEMBER 26, 1905.

49,870. IMITATIONS OF PRECIOUS STONES FOR JEWELRY. REGNELL, BIGNEY AND CO., Attleboro, Mass.
The word "DIAMONETTE."
Filed April 26, 1905. Serial No. 3,196. PUBLISHED DECEMBER 26, 1905.

49,871. SILK PIECE GOODS HAVING A ROUGH SURFACE. ROGERS & THOMPSON, New York, N. Y.
The word "RAJAH" inclosed in an oval.
Filed June 26, 1905. Serial No. 9,212. PUBLISHED DECEMBER 26, 1905.

49,872. PHOSPHATE SOLUTIONS. RUMFORD CHEMICAL WORKS, Providence, R. I.
The words "HORSFORD'S ACID PHOSPHATE." Used ten years.
Filed May 16, 1905. Serial No. 5,769. PUBLISHED DECEMBER 26, 1905.

49,873. WINES. S. S. PIERCE CO., Boston, Mass.
The representation of a beehive and bees, a bear sitting on the ground near the same and holding in his paws an oblong panel. Associated therewith are the words and abbreviations "BEEHIVE BRAND AMERICAN, S. S. PIERCE CO., BOSTON," together with a coat of arms, including an eagle with outstretched wings carrying a shield having thereon the figure of a lion rampant and the letters and words "S. S. P. Co. PURITAS ET CURA."
Filed May 15, 1905. Serial No. 5,690. PUBLISHED DECEMBER 26, 1905.

49,874. OVERALLS. EDWARD G. SANDERS, Chattanooga, Tenn.
The words "THE TRUE BLUE."
Filed October 21, 1905. Serial No. 13,804. PUBLISHED DECEMBER 26 1905.

49,875. GLASS BOTTLES. ALBERT G. SMALLEY, Boston, Mass.
The words "WARRANTED FLASK." Used ten years.
Filed May 4, 1905. Serial No. 4,283. PUBLISHED DECEMBER 26, 1905.

49,876. INSULATING COMPOUND. STANDARD UNDERGROUND CABLE COMPANY, Pittsburg, Pa.
The words "WARING COMPOUND." Used ten years.
Filed May 3, 1905. Serial No. 4,122. PUBLISHED DECEMBER 26, 1905.

49,877. ARTIFICIAL FERTILIZERS. SPARTANBURG FERTILIZER CO., Spartanburg, S. C.
The words "BOLL BUSTER."
Filed September 30, 1905. Serial No. 13,168. PUBLISHED DECEMBER 26, 1905.

49,878. SHOVELS, SPADES, SCOOPS, AND SPADING-FORKS. SUPPLEE HARDWARE COMPANY, Philadelphia, Pa.
The fanciful title "THE SOUTHERNER."
Filed October 21, 1905. Serial No. 13,821. PUBLISHED DECEMBER 26, 1905.

49,879. METAL FORGING AND FORMING MACHINES. THE AJAX MANUFACTURING COMPANY, Cleveland, Ohio.
The word "AJAX." Used ten years.
Filed July 18, 1905. Serial No. 10,550. PUBLISHED DECEMBER 26, 1905.

49,880. COTTON SHEETINGS AND DRILLS. THE AUGUSTA FACTORY, Augusta, Ga.
The words "AUGUSTA A No. 1." Used ten years.
Filed May 16, 1905. Serial No. 5,852. PUBLISHED DECEMBER 26, 1905.

49,881. PHOSPHATIC TONIC. THE BIOS LABORATORY CO. INCORPORATED, Danbury, Conn.
The word "NEUROBION."
Filed April 20, 1905. Serial No. 2,509. PUBLISHED DECEMBER 26, 1905.

49,882. CYLINDER-LUBRICANTS AND LUBRICANT-STOCK. THE CONEWANGO REFINING CO., Warren, Pa.
The letters "H M."
Filed November 4, 1905. Serial No. 14,316. PUBLISHED DECEMBER 26, 1905.

49,883. VARNISHES. THE DAVID B. CROCKETT CO., Bridgeport, Conn.
The word "AMBERLINE." Used ten years.
Filed April 1, 1905. Serial No. 104. PUBLISHED DECEMBER 26, 1905.

49,884. FIRST COAT OR SUBSTITUTE FOR SHELLAC. THE GLIDDEN VARNISH COMPANY, Cleveland, Ohio.
The word "SURFACENE." Used ten years.
Filed November 17, 1905. Serial No. 14,803. PUBLISHED DECEMBER 26, 1905.

49,885. COATS, VESTS, TROUSERS, AND OVERCOATS. THE GOLDSMITH, JOSEPH, FEISS CO., Cleveland, Ohio.
The word "CLOTHCRAFT."
Filed October 21, 1905. Serial No. 13,803. PUBLISHED DECEMBER 26, 1905.

49,886. PORTLAND CEMENT. THE HELDERBERG CEMENT CO., Howe Cave, N. Y.
The four letters "H" arranged in relation to each other. The four letters are joined at one of their ends, respectively, to each other in such a way that there is formed a cross between the inner sides and cross-lines of the four letters at their place of union.
Filed November 20, 1905. Serial No. 14,837. PUBLISHED DECEMBER 26, 1905.

49,887. GREASE-CUPS. THE LUNKENHEIMER COMPANY, Cincinnati, Ohio.
The word "JEWEL" inclosed in quotation-marks. Used ten years.

Filed July 26, 1905. Serial No. 10,792. PUBLISHED DECEMBER 26, 1905.

49,888. EYE REMEDIES. THE MURINE EYE REMEDY COMPANY, Chicago, Ill.
The representation of a woman's face and a hand raised in the act of applying medicine to the eye, with which representation is associated the word "MURINE."
Filed May 22, 1905. Serial No. 6,340. PUBLISHED DECEMBER 26 1905.

49,889. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.
The abbreviation and number "No. 27." Used ten years.
Filed May 5, 1905. Serial No. 4,331. PUBLISHED DECEMBER 26, 1905.

49,890. PIANOS. THE STERLING COMPANY, Derby, Conn.
The word "STERLING." Used ten years.
Filed November 20, 1905. Serial No. 14,831. PUBLISHED DECEMBER 26, 1905.

49,891. PAJAMAS AND NIGHT-ROBES. THE T. J. MAXWELL CO., Peekskill, N. Y.
The word "RESTWELL."
Filed April 27, 1905. Serial No. 3,305. PUBLISHED DECEMBER 26, 1905.

49,892. PIANO-PLAYERS, COMBINATION-PIANOS, AND PARTS THEREOF. THE WILCOX & WHITE COMPANY, Meriden, Conn.
The word "THEMASTYLE."
Filed November 15, 1905. Serial No. 14,651. PUBLISHED DECEMBER 26, 1905.

49,893. BARS, INGOTS, SHEETS, OR MOLDS OF GOLD, SILVER, OR COPPER. HARRY WHITNEY TREAT, Seattle, Wash.
The representation of a shield having thereupon the word "LOYAL" and the representation of a star and crescent, with a spread-eagle perched upon the top thereof and an olive branch appearing behind the shield.
Filed April 25, 1905. Serial No. 3,026. PUBLISHED DECEMBER 26, 1905.

49,894. DYSPEPSIA TABLETS AND CAPSULES. VIG-NI MEDICINE CO., Chicago, Ill.
The hyphenated word "VIG-NI," associated with the words "DR. ROGERS."
Filed July 3, 1905. Serial No. 9,754. PUBLISHED DECEMBER 26, 1905.

49,895. AMMONIA-COMPRESSORS. VULCAN IRON WORKS, San Francisco, Cal.
The word "VULCAN."
Filed May 23, 1905. Serial No. 6,388. PUBLISHED DECEMBER 26, 1905.

49,896. METAL-POLISHES. JOHN F. WULZEN & CO., San Francisco, Cal.
The words "GOLDEN GATE" and a representation of the entrance to the bay of San Francisco, with the sun setting opposite thereto, associated with the words "METAL POLISH J. F. WULZEN & CO., SAN FRANCISCO, CAL.," all inclosed in a rectangular border having circles at each corner, in which appear, respectively, the letters "J F W Co."
Filed May 18, 1905. Serial No. 6,056. PUBLISHED DECEMBER 26, 1905.

49,897 COOK-STOVES, HEATING-STOVES, AND RANGES. A. BALDWIN & CO., LTD. New Orleans, La.
The words "SOUTHERN BELLE."
Filed April 28, 1905. Serial No. 3,509. PUBLISHED DECEMBER 26, 1905.

49,898. CANNED PEARS. RAFALA S. BESTON, New York, N. Y.
The word "DELICIOSA" imprinted on the trunk of a pear-tree, on one side of which are three pears and on the other one pear.
Filed June 14, 1905. Serial No. 8,093. PUBLISHED DECEMBER 26, 1905.

49,899. LARD. PHILIP GEORGE CROMWELL, Baltimore, Md.
The letter "G," having therein the representation of the face of a hog. Associated with the mark are the letters, names, and character "P. T. GEORGE & CO. BALTIMORE, U. S. A."
Filed November 20, 1905. Serial No. 14,833. PUBLISHED DECEMBER 26, 1905.

49,900. CHOCOLATE CANDIES. HAZEN CONFECTIONERY COMPANY, Boston, Mass.
The representation of a shield having thereon three crowns and an open book.
Filed May 22, 1905. Serial No. 6,238. PUBLISHED DECEMBER 26, 1905.

49,901. ALL KINDS OF WHISKIES. SOLOMON C. HERBST, Milwaukee, Wis.
The words "OLD FITZGERALD."
Filed April 19, 1905. Serial No. 2,262. PUBLISHED OCTOBER 17, 1905.

49,902. BAKING-POWDER. HULMAN & Co., Terre Haute, Ind.
The word "MILK" in an ornamental scroll-border design.
Filed June 21, 1905. Serial No. 8,646. PUBLISHED DECEMBER 26, 1905.

49,903. LUMP STARCH FOR LAUNDRY PURPOSES. J. C. HUBINGER BROS. CO., New Haven, Conn.
The words "TIGER BRAND" and the representation of a tiger's head inclosed within two circles.
Filed October 30, 1905. Serial No. 14,043. PUBLISHED DECEMBER 26 1905.

49,904. CORN-STARCH. J. C. HUBINGER BROS. CO., New Haven, Conn.
The word "POPCORN" and the representation of a dish of popcorn.
Filed October 30, 1905. Serial No. 14,044. PUBLISHED DECEMBER 26, 1905.

49,905. AUTOMOBILES. KNOX AUTOMOBILE COMPANY, Springfield, Mass.
A coat of arms, the crest being an automobile, under which is a spiral with two light and two dark bands. Below the spiral is a shield with an eagle on each side and the word "KNOX" extending diagonally across, the two dark quarters of the shield having winged circles. Diagonal lines are above and below the word "KNOX." In a scroll below the mark are the words "KNOX AUTOMOBILE COMPANY."
Filed November 17, 1905. Serial No. 14,778. PUBLISHED DECEMBER 26, 1905.

49,906. COFFEE SUBSTITUTES. MICHEL THEODORE LEFEBVRE, Montreal, Canada.
The word "MOKARA."
Filed May 19, 1905. Serial No. 6,351. PUBLISHED OCTOBER 10, 1905.

49,907. STOVES AND RANGES. LIBERTY STOVE COMPANY, Philadelphia, Pa.
The arbitrary words "IRON KING."
Filed April 5, 1905. Serial No. 465. PUBLISHED DECEMBER 26, 1905.

49,908. KNIT HOSIERY AND UNDERWEAR. M. & C. MAYER, New York, N. Y.
The word "WARRIOR."
Filed April 11, 1905. Serial No. 1,095. PUBLISHED AUGUST 29, 1905.

49,909. KNIT HOSIERY AND UNDERWEAR. M. & C. MAYER, New York, N. Y.
The representation of a knight in armor holding in the one hand a sword and in the other a shield, in connection with the word "WARRIOR."
Filed April 11, 1905. Serial No. 1,096. PUBLISHED AUGUST 29, 1905.

49,910. OLIVE-OIL. THOMAS MCMULLEN & Co., New York, N. Y.
The words "THE ROUTH EXTRA SUBLIME LUCCA OLIVE OIL, ITALY" and the facsimile signature "H. L. ROUTH & SONS" inclosed in an ornamental rectangular border. Used ten years.
Filed September 2, 1905. Serial No. 12,199. PUBLISHED DECEMBER 26, 1905.

49,911. POTATO-FLOUR, POTATO-STARCH, AND DEXTRIN. NORDDEUTSCHE KARTOFFELMEHL-FABRIK MIT BESCHRÄNKTER HAFTUNG, Cüstrin, Germany.
The representation of an anchor and the letters "B K M F F," the letters "B K M F" being in a line beneath the anchor and the second letter "F" being beneath the other letters.
Filed July 8, 1905. Serial No. 9,943. PUBLISHED DECEMBER 26, 1905.

49,912. WHEAT-FLOUR. PITTSBURGH MILLING CO., Pittsburg, Pa.
The word "AMBER."
Filed May 8, 1905. Serial No. 4,618. PUBLISHED JULY 4, 1905.

49,913. CANDY. POSTUM CEREAL CO., LIMITED, Battle Creek, Mich.
The representation of three superposed rectangular panels, upon the middle one of which appear the words "DEXTRO CANDY" and the facsimile signature of C. W. Post.
Filed May 3, 1905. Serial No. 4,102. PUBLISHED DECEMBER 5, 1905.

49,914. BREAD-RAISING PREPARATION. RUMFORD CHEMICAL WORKS, Providence, R. I.
The word "HORSFORD'S." Used ten years.
Filed May 16, 1905. Serial No. 5,767. PUBLISHED DECEMBER 26, 1905.

49,915. AUTOMOBILES. STUDEBAKER AUTOMOBILE COMPANY, South Bend, Ind.
The word "STUDEBAKER" arranged in the particular and distinctive form of script shown in the drawing, with a paraph extending from the final "R" back under the word.
Filed September 8, 1905. Serial No. 12,398. PUBLISHED DECEMBER 26, 1905.

49,916. AXES AND HATCHETS. SUPPLEE HARDWARE COMPANY, Philadelphia, Pa.
The words "BLACK HAWK."
Filed October 21, 1905. Serial No. 13,826. PUBLISHED DECEMBER 26, 1905.

49,917. DRIED BEANS. THE ALBERT DICKINSON COMPANY, Chicago, Ill.
The word "GLOBE."
Filed July 24, 1905. Serial No. 10,727. PUBLISHED DECEMBER 26, 1905.

49,918. MOLASSES. THE EASTERN REFINING CO., New York, N. Y.
The words, character, and abbreviations "FELICI COSTA & CO., PONCE, P. R."
Filed May 15, 1905. Serial No. 5,625. PUBLISHED DECEMBER 26, 1905.

49,919. WATCH-MOVEMENTS. THE HAMPDEN WATCH CO., Canton, Ohio.
The word "LAKESIDE." Used ten years.
Filed April 19, 1905. Serial No. 2,232. PUBLISHED DECEMBER 26, 1905.

49,920. WATCH-MOVEMENTS. THE HAMPDEN WATCH CO., Canton, Ohio.
The word "RAILWAY." Used ten years.
Filed April 19, 1905. Serial No. 2,234. PUBLISHED DECEMBER 26, 1905.

49,921. TWIST-DRILLS. THE STANDARD TOOL COMPANY, Cleveland, Ohio.
The representation of the outline of a shield, with the words "STANDARD TOOL CO." included within the outline of the shield.
Filed September 2, 1905. Serial No. 12,207. PUBLISHED DECEMBER 26, 1905.

49,922. MILLING-CUTTERS. THE STANDARD TOOL COMPANY, Cleveland, Ohio.
The representation of the outline of a shield, with the words "STANDARD TOOL CO." included within the outline of the shield.
Filed November 28, 1905. Serial No. 15,039. PUBLISHED DECEMBER 26, 1905.

49,923. WHEAT-FLOUR. THREEFOOT BROS. & CO., Meridian, Miss.
The word "DIXIE," associated with the representation of a bunch of twigs of the cotton-plant.
Filed June 19, 1905. Serial No. 8,524. PUBLISHED DECEMBER 26, 1905.

49,924. OLIVES. S. J. VALK & BRO., New York, N. Y.
The words "FALCON BRAND" and the representation of a falcon perched on a branch within a circular border formed by a belt.
Filed May 13, 1905. Serial No. 5,443. PUBLISHED DECEMBER 26, 1905.

49,925. OLIVES. S. J. VALK & BRO., New York, N. Y.
The arbitrarily-selected word "COCKTAIL" and the representation of a filled cocktail-glass.
Filed May 13, 1905. Serial No. 5,444. PUBLISHED DECEMBER 26, 1905.

49,926. COCOA. WALTER BAKER & COMPANY, LIMITED, Boston, Mass.
The representation of a pair of balance-scales containing in one pan of the balance a package and in the other a weight.
Filed May 6, 1905. Serial No. 4,539. PUBLISHED DECEMBER 26, 1905.

49,927. DEVILED ENTREMETS. WILLIAM UNDERWOOD COMPANY, Boston, Mass.
The pictorial representation of a devil, in connection with the corporate name printed as "WM. UNDERWOOD CO.," the initial "W" forming the fork of the devil's tail, and flames appearing as rising from the various letters forming the name.
Filed November 13, 1905. Serial No. 14,563. PUBLISHED DECEMBER 26, 1905.

49,928. SELF-RAISING PREPARED BUCKWHEAT-FLOUR. FRANK C. WILLIAMS, Easton, Pa.
The word "SUCCESS."
Filed October 24, 1905. Serial No. 13,883. PUBLISHED DECEMBER 26, 1905.

49,929. CRUMB-YEAST. YOST YEAST CO., Arkansas City, Kans.
The representation of a sunflower with two leaves and a portion of the stalk, associated with the words "SUNFLOWER BRAND."
Filed May 16, 1905. Serial No. 5,820. PUBLISHED DECEMBER 26, 1905.

49,930. LEATHER SHOES, BOOTS, AND SLIPPERS. J. G. BRANDT SHOE COMPANY, St. Louis, Mo.
The word "BRANDT'S."
Filed May 8, 1905. Serial No. 4,683. PUBLISHED AUGUST 8, 1905.

LABELS

REGISTERED FEBRUARY 20, 1906.

12,668.—*Title:* "HAVANA BIT." (For Cigars.) PETER WOHL & Co., Chicago, Ill. Filed January 24, 1906.

12,669.—*Title:* "61." (For Cigars.) BETHANY CIGAR COMPANY, Bethany, Mo. Filed January 24, 1906.

12,670.—*Title:* "HAZEL PATCH." (For Cigars.) OSCAR A. LEISTIKOW, Milwaukee, Wis. Filed January 25, 1906.

12,671.—*Title:* "BONNETTE." (For Coffee.) FORT SMITH COMMISSION COMPANY, Fort Smith, Ark. Filed January 20, 1906.

12,672.—*Title:* "SODA MINT WATER." (For Carbonated Water.) SODA MINT WATER CO., Chicago, Ill. Filed January 15, 1906.

12,673.—*Title:* "SYREET." (For Syrup.) CHARLES H. KEYES, Denver, Colo. Filed January 22, 1906.

12,674.—*Title:* "SPONGE-ATE THE GREATEST BAIT." (For Confectionery.) HOOK & CROWNFIELD, Baltimore, Md. Filed January 19, 1906.

12,675.—*Title:* "CALLIER'S CUT LOAF CREAM CANDY." (For Candy.) JULIAN B. CALLIER, Trenton and Atlantic City, N. J. Filed January 27, 1906.

12,676.—*Title:* "MRS. WINSLOW'S BORATED VIOLET TALCUM." (For Toilet Powder.) MORGAN CHUBB, Brooklyn, N. Y. Filed January 25, 1906.

12,677.—*Title:* "EDSTROM'S LUNG GAS." (For Medicine.) O. E. EDSTROM, Los Angeles, Cal. Filed January 25, 1906.

12,678.—*Title:* "PENN'S PLASTERS." (For Adhesive Plasters.) THE PENN CHEMICAL COMPANY, Washington, D. C., and Bellefonte, Pa. Filed January 27, 1906.

12,679.—*Title:* "PRINCE'S LINIMENT THE GREAT PANACEA." (For Liniment.) ALBERT E. LYNCH, Cambridge, Mass. Filed January 20, 1906.

12,680.—*Title:* "BONAFID." (For Toilet-Paper.) SCOTT PAPER Co., Philadelphia, Pa. Filed January 26, 1906.

12,681.—*Title:* "LITTLE NEMO'S BAREFOOT SANDALS." (For Sandals.) H. JACOBS & SONS, New York, N. Y. Filed January 22, 1906.

12,682.—*Title:* "MCCARTHY'S WINNER." (For Dry-Plates.) MCCARTHY DRY PLATE CO., St. Louis, Mo. Filed June 1, 1905.

12,683.—*Title:* "COLUMBIA PHONOGRAPH CO., COLUMBIA RECORD." (For Sound-Records.) COLUMBIA PHONOGRAPH COMPANY, Washington, D. C. Filed January 24, 1906.

PRINTS

REGISTERED FEBRUARY 20, 1906.

1,573.—*Title:* "SAUER'S FAMOUS FLAVORING EXTRACT." (For Flavoring Extracts.) THE C. F. SAUER CO. Richmond, Va. Filed January 23, 1906.

1,574.—*Title:* "THE FIRST HANDS." (For Flour.) WASHBURN CROSBY COMPANY, Minneapolis, Minn. Filed January 29, 1906.

1,575.—*Title:* "THE DELICIOUS." (For Candy.) THE ROCHESTER CANDY WORKS, Rochester, N. Y. Filed January 16, 1906.

1,576.—*Title:* "AN EASY SHAVE." (For Shaving Soap.) ORATOR F. WOODWARD, Leroy, N. Y. Filed January 10, 1906.

1,577.—*Title:* "THE NOX-ALL HAT." (For Hats.) F. ALBERT LUX, New York, N. Y. Filed January 19, 1906.

1,578.—*Title:* "FIT-EASY." (For Shoes.) A. S. BACON, San Jose, Cal. Filed January 23, 1906.

1,579.—*Title:* "MEN'S APPAREL." (For Men's Apparel.) W. C. BOTH, Chicago, Ill. Filed January 18, 1906.

1,580.—*Title:* "ADLER'S SPRING AND SUMMER CLOTHES." (For Men's Spring Apparel.) DAVID ADLER & SONS CLOTHING Co., Milwaukee, Wis. Filed January 29, 1906.

1,581.—*Title:* "HAMMER THE HAMMER." (For Revolvers.) IVER JOHNSON'S ARMS & CYCLE WORKS, Fitchburg, Mass. Filed October 12, 1905.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

EX PARTE WURTZ.

Decided December 22, 1905.

1. ASSIGNMENT—IDENTIFICATION BY DATE OF EXECUTION OF APPLICATION.

An assignment does not identify an application with certainty where it alleges that such application was executed November 9, 1904, but the notary's certificate attached to the application bears the date of November 9, 1890.

2. SAME—IDENTIFICATION OF INVENTION BY REFERENCE TO CAVEAT.

An assignment executed by an inventor transferring his entire interest in certain inventions disclosed in a caveat filed in the Patent Office, identifying such caveat by date of filing and subject-matter, and requesting that the patent upon the application "which I am about to make" issue to the assignee, identifies an application subsequently filed sufficiently to warrant its recognition by the Office where it is found that the subject-matter of the caveat corresponds to that of the application.

3. SAME—PRACTICE ANALOGOUS TO THAT APPLIED TO DIVISIONAL APPLICATIONS.

It is the uniform custom of the Office to apply to divisional applications assignments of the original cases, and no good reason is seen why the same practice should not be applied to caveats and subsequent applicatons for the same subject-matter.

4. SAME—TWO ASSIGNMENTS OF SAME INVENTOR—FIRST ASSIGNEE RECOGNIZED.

Where an inventor assigns his entire invention to another, identifying the invention by reference to a caveat filed in the Patent Office, and requests that the patent which may be issued on an application which he is "about to make" be issued to the assignee, and subsequently makes another assignment of the same invention similar to the first, except that he identifies the invention by referring to the date of execution of the application, the first assignee is entitled to prosecute the application and receive the patent, as the first assignment, as well as the second, conveys the legal title.

ON PETITION.

PROCESS OF DISTILLING COALS AND OTHER HYDROCARBONACEOUS SUBSTANCES

Mr. W. C. Dona for the applicant.

ALLEN, *Commissioner:*

This is a petition by The American Chemical Eduction Company that it be recognized as the assignee of the inventor in the above-entitled case and that it be permitted to prosecute the application as the owner.

On May 21, 1904, there was recorded in this Office (Liber K 69, p. 488) an instrument dated June 11, 1903, and signed by the applicant Wurtz, transferring to the petitioner his entire interest in certain inventions disclosed in caveats filed in this Office. The caveat was identified by date of filing, the subject-matter was stated, and it was specifically requested that the patent upon the application "which I am about to make" issue to the present petitioner as assignee.

The present application was filed November 21, 1904, and it appears that the subject-matter thereof corresponds to that of the caveat identified in the assignment. The petitioner therefore contends that it is the owner of the present application and is entitled to receive the patent.

It appears, however, from the records of this Office (Liber V 72, pp. 76–80) that the inventor Wurtz executed an assignment to one Smith on November 9, 1904. Smith assigned to Fitzgerald, and Fitzgerald to The American Eduction Company. That company opposes the present petition and alleges that it is the legal owner of the applications and inventions acquired through Smith and Fitzgerald.

The assignment to Smith, dated November 9, 1904, is substantially like that to the petitioner, dated June 11, 1903. The assignment to the petitioner identified the invention by reference to the caveat, whereas the later assignment to Smith identifies it by the date of execution of an application for patent. That date of execution is said to be November 9, 1904. It is contended in opposition to the petition that the assignment of November 9, 1904, identifies the present application and conveys legal title, whereas the assignment to the petitioner does not identify the application and conveys nothing save an equitable right. It is therefore urged that the petitioner is not the legal owner and is not entitled to receive the patent.

I am clearly of the opinion that the identification of the caveat, coupled with the statement that "I am about to make application," is a sufficient identification of the present application to warrent action by this Office. It is the uniform custom of the Office to apply to divisional applications assignments of the original cases, and no good reason is seen why the same practice should not be applied to caveats and subsequent applications for the subject-matter thereof. All that is necessary is certainty of identification.

The assignment made to this petitioner conveys the legal title, and since it was prior in point of time to any other alleged transfer by the inventor it must be recognized as giving the petitioner the right to prosecute the application and receive the patent.

While the matter of dates is controlling upon the question which assignment shall be recognized, it is to be noted that the assignment of November 9, 1904, does not identify the present application with certainty. It says the date of execution of the application is November 9, 1904, whereas the certificate of the notary attached to the application bears date "this ninth day of November, eighteen hundred and ninety."

The petition is granted.

TURNBULL v. CURTIS.

Decided December 28, 1905.

1. INTERFERENCE—EVIDENCE—TESTIMONY OF ASSIGNEE.

Where a party depends for corroboration of his claims of conception and disclosure of the invention upon the testimony of his assignee and the character for veracity and the reliability of the assignee are unimpeached and the circumstances afford no reason for disbelieving the statements in the deposition of the assignee, *Held* that the corroboration is not rendered insufficient by the fact that the witness is the party's assignee.

2. SAME—SAME—FAILURE TO CALL A WITNESS.

Where party claimed to have disclosed his invention to his solicitor, among others, and the solicitor was not put upon the stand, but it appears that the party was not certain of disclosure to the solicitor at the early date upon which disclosure was made to another witness who did testify, *Held* that the failure to call the solicitor as a witness was of no consequence.

3. SAME—SAME—NON-PRODUCTION OF SKETCHES.

Where sketches claimed to have been made by the inventor were not produced, but the inventor testified that the sketches were not made for preservation and were, in fact, not preserved, *Held* that no unfavorable inference should be drawn from their non-production.

4. SAME—PRIORITY—DILIGENCE—POVERTY—ENLISTING AID OR FILING APPLICATION.

The conceiver of an invention whose financial condition is such as to excuse him from any attempt unaided to actually reduce the invention to practice must, if he would hold the field, enlist the aid of others in actual reduction to practice or file an application for patent.

5. SAME—SAME—SAME—SAME—COMMERCIAL EXPLOITATION.

Where a party was in straitened financial condition, but his efforts during the period of delay in reducing to practice were directed toward commercial exploitation of his inventions generally, rather than toward securing the construction of the machine in issue or toward filing an application for patent thereon, *Held* that he was not reasonably diligent.

6. SAME—SAME—SAME—SAME—FILING APPLICATION.

The contention that a party could not file his application earlier than he did is rebutted by the fact that he filed or caused to be filed subsequent to his conception of the invention in issue and prior to the filing of his application in interference applications for patents upon six other inventions.

7. SAME—SAME—SAME—SAME—INVENTION AN ASSET.

It is to be presumed that an invention which is contested in interference proceedings is a valuable asset and that an inventor if without other means can ordinarily draw on this source, at least for means wherewith to file his application. If he fails to do so, he must show that the failure was unavoidable and after every reasonable effort in that direction had been exerted.

8. SAME—SAME—SAME—DELAY IN FAVOR OF RELATED INVENTION—EVIDENCE.

In order to bring his case within the doctrine of those cases where inventors were considered diligent who postponed the completion of their inventions in order to complete other devices intimately connected therewith, a party must produce evidence that his invention is not useful except in connection with the devices in whose favor the delay was made. Failing to do so, his opponent is relieved from the duty of producing evidence to the contrary, and the party cannot thereafter rely upon the absence of such evidence to the contrary to support the contention that the invention was not otherwise useful.

APPEAL from Examiners-in-Chief.

METAL CUTTING AND FORMING MACHINES.

Mr. Charles W. Hills and *Messrs. Bacon & Milans* for Turnbull.

Messrs. Munday, Evarts & Adcock and *Mr. H. N. Low* for Curtis.

ALLEN, *Commissioner:*

This is an appeal by Turnbull from that portion of the decision of the Examiners-in-Chief which affirms as to counts 2, 3, 4, and 5 the decision of the Examiner of Interferences awarding priority of invention to Curtis upon an issue expressed in the following counts:

1. In a machine of the class described, a plurality of pairs of cutting-rolls and coacting, independently-removable means on each pair of cutting-rolls adapted to slit a sheet of metal into a plurality of relatively short slits, the knives on each pair of said rolls forming slits alternating with those formed by the knives on the other pair.

2. In a machine of the class described, the combination with a frame, of a plurality of pairs of coacting rolls journaled thereon, means arranged on said rolls equidistant apart and adapted to cut a sheet of metal into a plurality of short slits arranged staggering with each other and a uniform distance apart, each of said pairs of rolls forming half of said slits.

3. The sheet-metal-slitting machine wherein are combined two pairs of slitting-rolls arranged one in advance of the other, said rolls being adapted to slit the sheet without bending the metal, and each roll being provided with a series of cutters extending the entire width of the sheet, and each pair of rolls forming slits in rows alternating with the slits formed by the cutters of the other pair.

4. The sheet-metal-slitting machine wherein are combined two pairs of slitting-rolls, one pair in advance of the other pair, and both provided with notched cutters extending the entire width of the sheet, and so arranged that the rows of slits formed by one pair alternate with the rows formed by the other pair, and so the slits in the different rows break joints, said cutters being also adapted to slit the sheet without bending the metal.

5. The sheet-metal-slitting machine wherein are combined two pairs of slitting-rolls arranged one pair in advance of the other, and both provided with notched cutters whose thickness equals the width of two strands of the slitted sheet, said cutters being arranged so the rows of slits cut by one pair of rolls alternate with the rows of slits cut by the other pair, and being adapted to cut the sheet without bending the metal.

The Examiners-in-Chief reversed the decision of the Examiner of Interferences as to count 1 and awarded priority thereon to Turnbull. They also called attention to the fact that in their opinion Curtis has no right to make a claim corresponding to this count. As Curtis has taken no appeal from the decision on priority adverse to him upon count 1, it is not necessary to consider further the question of his right to make a claim corresponding thereto.

Taking up the question of priority upon counts 2, 3, 4, and 5, it is found that Turnbull in his preliminary statement claims conception and disclosure of the invention in the year 1897. He reduced to practice constructively on February 15, 1902, by filing an application for patent, of which his application in interference is a continuation. Curtis claims conception in October of 1900, and his date of reduction to practice is September 23, 1901, also constructive through the filing of his application in interference. The Examiner of Interferences found that Turnbull's conception in 1897, or thereabout, was proved and that Curtis had proved conception in the year 1900, some time during the months of October, November, or December. He also found that Turnbull was not diligent in his reduction to practice and awarded priority of invention to Curtis. The Examiners-in-Chief expressed the same conclusion as the Examiner of Interferences on each of these points so far as counts 2, 3, 4, and 5 are concerned. No question is raised here as to the date of conception by Turnbull or of the date of reduction to practice by either party.

The questions which are raised by this appeal are two, and are, first, as to Curtis's date of conception, and, second, as to Turnbull's diligence. Turnbull contends that Curtis has failed to prove his alleged conception of the invention in October or December of 1900 or conception by him at any time prior to the filing of his application on September 23, 1901. The question of Curtis's date of conception is of consequence as marking the beginning of the period throughout which Turnbull must have been diligent if he is to prevail here. Curtis testified that he conceived the invention about October 15, 1900, and that he disclosed it verbally and by sketches to one Bradford and, he thinks, to Evarts, his patent solicitor. (C. R., p. 5, Qs. 6–8.) He identifies the invention (Qs. 13–19) and fixes the time of

invention as before a severe illness suffered during the first three months of 1901. (Qs. 10–12.) Bradford corroborates Curtis as to disclosure to him in the fall of 1900. (C. R., pp. 3 and 4, Q. 5.) I am asked to disregard this evidence on the grounds that Bradford is interested in the invention as an assignee; that Bradford does not identify the invention disclosed to him as the complete invention in issue; that the solicitor, Evarts, did not testify, and that the sketches which Curtis referred to have not been produced. The testimony of an assignee is competent. In the present case the character for veracity and the reliability of the assignee are unimpeached, and the circumstances afford no reason for disbelieving the statements in his deposition. I am of the opinion that he fully identifies the invention disclosed to him in the fall of 1900 as the invention in issue. (C. R., pp. 3 and 4, Qs. 5 to 8.) The failure to put the solicitor, Evarts, on the stand is of no consequence, as it does not appear that Curtis was certain of disclosure to him at the early date upon which disclosure was made to Bradford. As to the non-production of the sketches, Curtis testified that these were not made for preservation and were, in fact, not preserved. I do not perceive why, in view of the explanation, any unfavorable inference should be made as to Curtis's conception from their absence. Curtis seems to have been content to rest for proof of conception upon a minimum of evidence; but that minimum seems to be sufficient to satisfy the requirements of this case.

Having determined that Curtis conceived and disclosed the invention in 1900, some time between October 15 and the end of December, it becomes necessary to determine whether Turnbull at this time was exercising reasonable diligence in the reduction of the invention to practice. It appears that the preparation of drawings for Turnbull's application for patent was mentioned to the draftsman some time between May and August, 1901, but that the draftsman was told to take his time and not to hurry, as there was no prospect of money forthcoming to pay for the work. Whether this act and the subsequent acts leading to the filing of Turnbull's case amounted to reasonable diligence need not be determined, since Turnbull was not prior to this date diligently engaged in the reduction of the invention to practice.

On the question of diligence Turnbull testifies at some length to the effect that from a time previous to the conception of the present invention and to the filing of his application he was in a very straitened financial condition, a man who had been through bankruptcy, who was pressed with debts accruing from business failures and from the support of himself and family, and who was practically without income except small salaries received during portions of the time and a cash sum of $2,000 received on December 7, 1900, upon the sale of one of his inventions. He is corroborated as to debts and lack of income by his son, and other witnesses testify that he was a poor man. It may be accepted that Turnbull's financial condition was such as to excuse him from any attempt unaided to build a machine. In such a case, however, it is incumbent on the conceiver of an invention who would hold the field to enlist the aid of others in actual reduction to practice or to file an application for patent. Turnbull contends that he was too poor to file an application, but that he was endeavoring throughout the period of delay to interest others in the development of his inventions and in the protection of the same by patents. His son testifies that Turnbull frequently tried to borrow money from him in the years 1899 and 1900 wherewith to file an application upon this invention. (T. R., pp. 77 and 78, X-Qs. 4–8.) The witness Glendening testifies that Turnbull discussed with him the building of a machine embodying the present invention in July, 1900, or earlier. (T. R., pp. 85–87, Qs. 4–15.) It appears that the contract for building the machine was given to Glendening in 1901 and that the machine was actually built thereunder and successfully operated. (T. R., p. 88, Qs. 18–20.) The witness McLauchlan testifies that Turnbull's machines were seriously considered by capitalists about a year and a half after the date June 8, 1899, and that up to the time when the arrangements were made for filing the application and building the machine Turnbull continued to urge him to interest himself in the machine and was constantly talking about it and soliciting financial aid and coöperation. (T. R., p. 12, Qs. 20–23.) Correspondence is also in evidence to show that Turnbull was endeavoring to get manufacturers to take up his inventions, build his machines, and join with him in the exploitation of the product. (Turnbull's exhibits, Correspondence Bostwick Co., and Letter to Cochrane, August 24, 1900.)

The above is in substance all the evidence favorable to the contention that Turnbull was diligently seeking reduction to practice of the invention in issue prior to the year 1901. It is in my opinion overcome by evidence that Turnbull might have filed his application before Curtis entered the field and that his efforts at that time were directed rather toward the commercial exploitation of his inventions generally than toward securing the construction of the machine in issue or toward the filing of an application for patent thereon. On December 7, 1900, he sold a patent for $2,000. (T. R., pp. 48 and 49, X-Qs. 56–57.) He received this amount, and though in debt and without immediate prospects of further income it does not appear that he could not have spared enough of this money to pay for an application for patent had he cared to do so. The contention that Turnbull could not file his application earlier than he did is rebutted by the fact that he filed or caused to be filed subsequent to his conception of the present invention and prior to the filing of his application applications upon six other inventions upon which patents issued, as follows:

	Issued.	Application filed.
No. 601,620	March 29, 1898	March 1, 1897
No. 609,481	August 23, 1898	February 11, 1898
No. 628,565	July 11, 1899	August 13, 1898
No. 642,056	January 23, 1900	March 24, 1899
No. 664,193	December 18, 1900	July 23, 1900
No. 681,355	August 27, 1901	December 26, 1900

It would seem that Turnbull could have interpolated the present application in this list or could have substituted it for one of these applications, so as to have obtained a constructive reduction to practice before the entry of Curtis into the field, had he cared to do so. Statements of Turnbull on cross-examination confirm the presumption that Turnbull's failure to secure an earlier construction of his machine and his failure to file an application thereon prior to the filing of the present application was due to a desire to withhold the invention from others until the opportunity should arrive for satisfactory commercial development

thereof. The testimony referred to is as follows, (T. R., pp. 57 and 58:)

to the postponed device. The Turnbull Patent No. 664,193

The issue is defined as follows:

thereof. The testimony referred to is as follows, (T. R., pp. 57 and 58:)

X-Q. 66. Why did you delay your efforts to bring out your inventions relating to expanded metal and push those upon your other inventions instead?

A. One reason was the lack of funds. I knew that it would take considerable more money to get out patents of that size than it would on patents of minor magnitude. I believe that the inventions of making metal lath by the rolling process was a complete and wonderful revolution of the lath industry. Another reason would be that I was looking for the right man. I had been bitten several times by getting hold of the wrong man and frozen out.

X-Q. 77. You found means wherewith to pay for these six patents. Do you wish to be understood as saying that you could not find the means during the time lapsing between the conception of this invention and the 23d of September, 1901, to pay for one more application.

A. I wish to be understood, if possible, as endeavoring to get some big whole-souled, honest business man to put up enough money to float a device which would be a complete revolution of the lath industry, meaning enormous profits, at least seventy-five thousand dollars to a hundred thousand dollars profit per annum on each machine. That man I had been unable to find in the time stated.

X-Q. 88. Question repeated.

A. Not in the way I wanted it. I was trying to raise money or get money out of some of these minor patents whereby I could apply for patents on this metal-lath industry whereby I could retain the control of it. No, sir, I could not find the means if I had taken any of the parties in on the expanded-metal deal and given them a half interest ft would likely have swamped the whole thing. I was looking for a man of large caliber.

"Seeking for the right man," "some big whole-souled" man who would "put up money enough to float" the invention for "enormous profits," and endeavoring to "retain the control" himself for fear that taking others in would have "swamped the whole thing" shows that the delay was voluntary and for reasons which will not excuse the failure to make an earlier reduction. The Turnbull correspondence in evidence leads to the same conclusion.

It is to be presumed that an invention which is contested in interference proceedings represents a valuable asset. An inventor if without other means can ordinarily draw on this source, at least for means wherewith to file his application. If he fails to do so, he must show that the failure was unavoidable and after every reasonable effort in that direction had been exerted. The independent conceiver who is first to reduce to practice cannot be excluded from the right to his invention by a party who though prior in conception delays his reduction in order that he may make what he may consider the most desirable commercial arrangements regarding the invention. Turnbull's patents on other inventions, his testimony quoted herein, and his exhibits of correspondence above referred to show that he was withholding this application until he could make an advantageous disposition thereof from a business point of view. He was not diligent, and his lack of diligence is not excusable. (*Wyman* v. *Donnelly*, 104 O. G., 310; *Paul* v. *Hess*, 115 O. G., 251.)

It is urged that filing the application for Turnbull's Patent No. 664,193 on July 23, 1900, prosecution, and taking out the patent on December 18, 1900, showed diligence in the reduction to practice of the present invention or excused lack of diligence thereon under the doctrine of certain exceptional cases where an inventor was considered diligent who postponed the completion of his invention in order to complete another device intimately connected therewith. (*Christensen* v. *Ellis*, 94 O. G., 2561; *McCormick* v. *Cleal*, 83 O. G., 1514.) The circumstances of the present case do not bring it under this doctrine, but rather under that of *Stapleton* v. *Kinney*, (96 O. G., 1432,) in which the court refused to hold work upon a favored invention diligence upon a postponed invention where—

> there were other methods and devices in operation * * * which, though crude and cumbersome, had nevertheless proved sufficient to extend the use of and give commercial value—

to the postponed device. The Turnbull Patent No. 664,193, issued December 18, 1900, whose prosecution is urged in excuse of the delay in this case, discloses and claims devices for cutting sheet metal and devices for expanding the same to form the finished expanded-metal lathing shown in Turnbull's Patent No. 642,056, issued January 23, 1900. The present invention is a modification of the cutting device shown in Patent No. 664,193. If there were practicable devices or means for expanding the cut metal adapted to complete the work of the machine in issue known during the period of delay upon the present case, then, under *Stapleton* v. *Kinney*, *supra*, the prosecution of Patent No. 664,193 is no excuse for the delay in the present case. I find no satisfactory evidence that such expanding devices were not known. On the contrary, Turnbull's Patent No. 664,193 refers to prior manufacture of expanded-metal lathing. (Page 1, lines 13 to 24.) Moreover, Patent No. 671,915, of April 9, 1901, for which application was filed October 13, 1900, (referred to in Curtis's application in interference,) and Patents No. 619,340, dated February 14, 1899, to Pitkin, No. 670,606, dated March 26, 1901, (application filed October 13, 1900,) to Curtis, and No. 642,056, January 23, 1900, (application filed March 24, 1899,) to Turnbull, (Turnbull exhibits,) indicate that slitting and cutting devices were known to be useful prior to the appearance of the expanding devices disclosed in Turnbull's Patent No. 664,193. Moreover, Turnbull states in the specification of his application in interference (p. 8) that obviously while he has described the invention as adapted for use for expanded-metal machines the same may be useful and desirable for many other purposes. However this may be, it was incumbent upon the appellant to produce evidence making a *prima facie* case that the present machine was not useful except in connection with the expanding mechanism of Patent No. 664,193 if he expected to rely upon the contention now under consideration. He failed to do this, and thereby relieved his opponent from the duty of producing evidence to the contrary. He cannot now avail himself of the absence of evidence to the contrary to support the contention that the invention in issue was not useful with expanding-machines known before the expanding-machine of Patent No. 664,193 or that it was not originally useful in other relations than with expanding-machines.

The decision of the Examiners-in-Chief affirming the decision of the Examiner of Interferences awarding priority of invention to Curtis as to counts 2, 3, 4, and 5 of the issue is affirmed.

W. H. JONES & CO. *v.* CARLTON IMPORTATION COMPANY.

Decided December 29, 1905.

TRADE-MARK INTERFERENCE—"OLD JAY" AND "BLUE JAY."

There is such a close resemblance between a mark consisting of the words "Old J" or "Old Jay Rye" in connection with a representation of a blue jay and the words "Blue Jay" as to cause confusion and bring about a conflict of rights.

APPEAL on motion.

TRADE-MARK FOR WHISKY.

Mr. A. E. Wallace for Jones & Co.

Mr. Frederic B. Keefer for Carlton Importation Company.

ALLEN, *Commissioner:*

This is an appeal by Carlton Importation Company from the decision of the Examiner of Trade-Marks denying its motion for dissolution of the interference.

The issue is defined as follows:

The words "Blue Jay," or "Old Jay," for whisky.

The appellant uses the words "Old J" or "Old Jay Rye" in connection with the representation of a blue jay, whereas Jones & Co. use the words "Blue Jay." Both marks as used include other elements; but, as pointed out by the Examiner, the idea embodied in both which will attract attention is that of the bird known as a jay.

I am satisfied that there is such close resemblance between the marks as to cause confusion and bring about a conflict of rights. The Examiner was right in refusing to dissolve the interference, and his decision is affirmed.

KOLB *v.* HEMINGWAY *v.* CURTIS.

Decided January 3, 1906.

INTERFERENCE IN FACT—GENERIC ISSUE.

There maybe an interference in fact on a generic issue based on two devices which are specifically different.

APPEAL on motion.

ELASTIC-FLUID TURBINE.

Messrs. Foster, Freeman & Watson for Kolb.

Mr. Charles B. Hemingway pro se.

Messrs. Dyer & Dyer for Curtis.

ALLEN, *Commissioner:*

This is an appeal by Hemingway from a decision of the Primary Examiner holding that there is an interference in fact.

Appellant urges that in order to decide the question presented a comparison of the interfering constructions should first be made to determine whether or not they are identical, and if they are not identical, then there is no interference in fact without regard to the terms of the issue. The brief filed in support of the appeal is largely given up to a discussion of the differences between the two constructions which are not specified in the claim. This line of argument indicates a misconception by appellant of the precise nature of the question presented. It is well settled that an interference may exist on a broad issue based on structures which are specifically different. This is made clear by numerous decisions recently rendered. In this connection attention is directed to the recent decision of *Townsend* v. *Copeland* v. *Robinson*, (119 O. G., 2523,) which clearly explains what will be considered as a question of interference in fact

The only question which seems to be properly presented by this appeal is whether or not both parties have a construction responding to the words of the issue, "return bend." It is found that they have. While the respective constructions referred to by those words are specifically different, as is often the case, the functions are substantially the same, and the words are broad enough to cover both constructions in the same sense. The claims cannot be construed to mean anything except what their terms indicate. If appellant desires to limit his claims to specific details which are not found in the application of the opposing party, such claims will undoubtedly be allowed to appellant, if they are patentable over the issue, after the termination of the interference, and if appellant does not desire to contest the question of priority as to the broad subject-matter the interference may be terminated without a contest, as provided by the rules.

The decision of the Primary Examiner is affirmed.

FELSING *v.* NELSON.

Decided January 13, 1906.

PRIOR EX PARTE DECISION BY APPELLATE TRIBUNAL—NOT BINDING ON PRIMARY EXAMINER ON INTER PARTES CONSIDERATION.

An *ex parte* decision on the question of new matter in a reissue application is not absolutely binding on the Primary Examiner when the question is raised *inter partes* on a motion to dissolve; but it should be persuasive. If the *inter partes* consideration of the case does not bring out new reasons or new phases of the old reasons or such new light as would reasonably tend to change the decision by the appellate tribunal, then such decision should be followed.

ON PETITION.

PNEUMATIC STRAW-STACKER.

Messrs. Bradford & Hood and *Mr. E. W. Bradford* for Felsing.

Mr. E. G. Siggers for Nelson.

ALLEN, *Commissioner:*

This is a petition by Nelson requesting that the Primary Examiner be instructed that an *ex parte* decision of the Examiners-in-Chief on the question of new matter in a reissue application is not binding upon him when the question is presented on a motion to dissolve and that he should render an independent judgment thereon.

The application of the opposing party, Felsing, is a reissue application. Prior to the declaration of this interference the claims forming the counts of this issue were copied by Felsing from petitioner's patent, but were rejected by the Primary Examiner on the ground that they were not warranted by the original disclosure. Thereupon an appeal was taken to the Examiners-in-Chief, who reversed the decision of the Examiner, holding that such claims were warranted by the original disclosure. An interference was then declared between petitioner's patent and Felsing's reissue application.

Nelson brought a motion to dissolve, alleging irregularity in the declaration of the interference and that Felsing had no right to make the claims, because they were not warranted by his original disclosure. From the decision of the Primary Examiner rendered on this motion it appears that he felt bound by the prior *ex parte* judgment of the Examiners-in-Chief on the question presented and did not give his independent judgment thereon; hence this petition.

Practically the same state of facts here presented were present in the case of *Painter* v. *Hall*, (80 O. G., 1124; C. D., 1897, 43.) In that case certain claims had been allowed to Painter by the Examiners-in-Chief on appeal in a reissue application. An interference was afterward declared including said claims, and a motion to dissolve was brought, alleging, among other things, that Painter had no right to make said claims. The Primary Examiner held that the claims were not patentable, basing his decision on the same references over which the Examiners-in-Chief had allowed such claims on the *ex parte* appeal. It was contended by the opposing party that the previous judgment of the Examiners-in-Chief was controlling as a matter of law upon the Examiner as well as upon the parties to the interference; but it was held that the Examiner's action was proper. That decision is, in part, as follows:

> It is true that the references on which the Examiner based his decision dissolving the interference were before him and the Examiners-in-Chief in the *ex parte* treatment of Painter's case; but in an *inter partes* case the Examiner is not precluded by the decision of the Examiners-in-Chief, although said decision should be very persuasive, though not conclusive. To hold otherwise would be to deprive a party of his rights and benefits under Rule 47 (old Rule 122)—in effect, to annul said rule. This rule provides for motions to dissolve an interference on the ground of non-patentability, although this question has been favorably decided in an *ex parte* proceeding either by the Examiner or by one of the appellate tribunals. On a motion to dissolve the question is considered and decided *de novo inter partes*. If the decision of the Primary Examiner is adverse to patentability, Rule 67 provides for an appeal *inter partes*. While the question of patentability may be decided favorably when it is considered *ex parte*, yet on an *inter partes* hearing it may be shown to the satisfaction of the tribunal that the decision was erroneous, and it would be reversed.
>
> The question of patentability decided *ex parte* cannot, therefore, be said to be *res adjudicata* when raised *inter partes*. To make the matter *res adjudicata* there must be concurrence of four conditions—identity in the thing sued for, of a cause of action, of the parties to the action, and of the quality in the persons. In the matter under consideration the identity of parties is lacking.

The practice indicated in the decision from which the above language is quoted is believed to be good practice and should be followed. The Primary Examiner in considering a question *inter partes* should not feel absolutely bound by a decision of the Examiners-in-Chief rendered on an *ex parte* hearing. On the other hand, their decision is not to be ignored. It should be persuasive, but not controlling. All reasons urged before the Primary Examiner should be considered by him in connection with the decision of the Examiners-in-Chief, and if there seems to be no reasonable ground for thinking that the decision of the Examiners-in-Chief might be different on an *inter partes* appeal, then their decision should be followed. In other words, if the *inter partes* consideration of the case does not bring out new reasons or new phases of the old reasons or such new light as would reasonably tend to change the prior decision, then such prior decision of the higher tribunal should be followed. But the distinction between a refusal to consider a question because of a prior decision and the consideration of that question and the decision thereof upon reasons stated in such prior decision should be always borne in mind. There should be no refusal to consider, but a consideration should be given and the decision based upon the reasons formerly given, if it is thought that they were correct.

The Primary Examiner is therefore directed to render a supplemental decision in conformity with the views above expressed.

EX PARTE CHAPMAN.

Decided January 22, 1906.

1. CLAIMS—MULTIPLICATION OF—REQUIREMENT TO ELIMINATE APPEALABLE TO EXAMINERS-IN-CHIEF.
   The requirement to eliminate certain claims because they are substantially the same as other claims in the same case is to be regarded as a rejection and is appealable to the Examiners-in-Chief.
2. SAME—MULTIPLICATION OF CLAIMS NOT PERMITTED—EFFECT ON PATENT.
   The multiplication of claims is not to be permitted, since it tends to impose a needless burden upon the Office in the examination of the application, and a patent including them would tend to deceive and confuse the public. Moreover, it may lead to a strict construction of the patent, and it may in some cases render the patent void.
3. SAME—THE WORDS "PARTIALLY SATURATED" OBJECTIONABLE.
   A claim for "lumber partially saturated with sulfuric acid" *Held* to be objectionable, the words "partially saturated" being inapt.

ON PETITION.

WOOD PRODUCTS.

Messrs. Mason, Fenwick & Lawrence for the applicant.

ALLEN, *Commissioner:*

This is a petition from a decision of the Primary Examiner objecting to the form of certain claims and holding that the claims are unnecessarily multiplied and also asking that the Examiner be directed to forthwith give final action on the merits of the claims.

The application contains twenty-six claims. The Examiner arranged certain of these claims into six groups, each group containing from two to six claims, and required that all but one claim in each group should be canceled. As a matter of language, no two claims are the same; but the Examiner regards those in the same group as stating the same invention in different words. He finds no substantial difference between them either in subject-matter or scope. In other words, he is of the opinion that the applicant has needlessly multiplied the claims by restatements in different phraseology of the same thing. Such multiplication of claims imposes a needless burden upon this Office in the examination of the application, and to issue a patent including them would deceive and confuse the public as to the scope of the patent.

The courts have frequently condemned the practice of needlessly multiplying claims. In *The Brush Electric Company* v. *The Electrical Accumulator Company* (56 O. G., 1334) it was said:

> What he actually did is the test by which his patents must be judged. He is entitled to what he invented and only this. His patents can receive no broader construction because he described his inventions with irksome prolixity and gives to the same structure a wearisome variety of names. The nomenclaturist should not seek the reward for his labors in the Patent Office. A person is not entitled to a patent because he has invented a new word. The danger and impropriety of holding a number of claims relating to the same structure, and which can be differentiated only by the most abstruse and metaphysical distinctions, seem apparent. They are calculated to embarrass the inventor and mislead the public.

In *Thomson-Houston Electric Company* v. *Elmira and Horseheads Railway Company* (74 O. G., 144) it was said:

> * * * he has obscured his real invention in a multitude of fulginous and attenuated claims, many of which can only be distinguished when their language is subjected to the most searching analysis. He has particularly pointed out his invention in the description; but, because of this seemingly needless verbosity, he has claimed it indistinctly, to the annoyance of the public, and especially that part of the public which is called upon to construe the patent.

In *Computing Scale Company* v. *Automatic Scale Company* (119 O. G., 1586) the court of appeals of this district said:

> Claims 7 and 8 admittedly do not differ patentably from claim 6, these three claims stating in varying phraseology the same invention—one of the many examples of word-painting too often found in Letters Patent.

See also the decisions of the same court in the cases of *Carpenter* (112 O. G., 503) and *Thomson*, decided at the present term.

The applicant himself gains no advantage by a needless multiplicity of claims; but, on the contrary, it may lead to a limited and strict construction of his claims. As said in *Thomson-Houston Company* v. *Elmira Company, supra:*

> Where the patentee has taken pains to cover every shadow of a shade in his claims, the range of construction is limited and he must be held strictly to language which he has adopted with such painstaking deliberation and exactness.

Not only may a needless multiplication of claims lead to a strict construction thereof, but it may in some cases render the patent void. In *Carlton* v. *Bokee* (17 Wall., 463) the United States Supreme Court said:

> Without deciding that a repetition of substantially the same claim in different words will vitiate a patent, we hold that where a specification by ambiguity and a needless multiplication of nebulous claims is calculated to deceive and mislead the public, the patent is void.

It is clearly the duty of this Office to see that patents do not issue with claims so multiplied as to embarrass and confuse the public. It should allow sufficient claims to amply protect the real invention, but should not permit needless repetition.

While the general principles which are controlling are clear, the application of them to a particular case involves a construction of the claims and a determination of their scope and meaning. It is to be presumed that the applicant insists upon all the claims because, in his opinion, they are substantially different and are necessary to adequately protect his real invention, and therefore to require the elimination of a part of them is to compel him to relinquish what he regards as a part of the protection to which he is entitled. Under the principles announced in *U. S., ex rel. Steinmetz*, v. *Allen* (192 U. S., 543) he is entitled to a review of a decision adverse to his right by the several appellate tribunals mentioned in the statutes. The requirement for the elimination of a part of the claims because of needless duplication is to be regarded as a rejection for the same reasons that a requirement for division is a rejection. This applicant's remedy, therefore, is an appeal to the Examiners-in-Chief and not an interlocutory petition.

The claims have also been held objectionable by the Examiner because of the use therein of the words "partially saturated" in the phrase "lumber partially saturated with sulfuric acid." These words do not seem to aptly describe the condition of the finished product, and objection to them was therefore properly made. At the hearing the word "impregnated" was suggested in lieu of the words "partially saturated." Petitioner expressed willingness to adopt this suggestion, and if so adopted the objection will be overcome.

The petition also asks that the "Examiner be required to forthwith give final action on the merits of the claims." As no reason is seen why the Examiner's action should be thus controlled, this request must be refused.

To the extent above indicated the petition is granted.

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TO CITIZENS OF THE UNITED STATES.

States	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama			Nevada		
Alaska, District of			New Hampshire	1	
Arizona Territory			New Jersey	24	4
Arkansas	2		New Mexico Ter't'y		
California	23	2	New York	92	46
Colorado	6		North Carolina	3	
Connecticut	21	7	North Dakota	3	
Delaware	3		Ohio	50	14
District of Columbia	8	1	Oklahoma Territ'y	3	
Florida			Oregon	5	
Georgia	3		Pennsylvania	51	11
Hawaii Territory			Philippine Islands		
Idaho	3		Rhode Island	7	3
Illinois	67	12	South Carolina	5	
Indian Territory	3		South Dakota	1	
Indiana	16	3	Tennessee	6	4
Iowa	12		Texas	9	
Kansas	8		Utah	2	
Kentucky	5	1	Vermont		
Louisiana	2	1	Virginia	3	
Maine	2		Washington	6	3
Maryland	5	2	West Virginia	3	
Massachusetts	34	23	Wisconsin	11	1
Michigan	12	3	Wyoming		
Minnesota	10	2	U. S. Army		
Mississippi			U. S. Navy		
Missouri	24	4			
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TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina			Netherlands	2	
Austria-Hungary	2		Newfoundland		
Belgium	2		New South Wales		
Brazil			New Zealand	1	
British West Indies			Norway	1	
Canada	5		Persia		
Cape Colony			Queensland		
Chile			Roumania		
China			Russia	1	
Costa Rica			San Salvador		
Cuba			Scotland	1	
Denmark	1		South Australia	1	
Ecuador			Spain		
England	16	1	Sweden	1	
France	6		Switzerland	2	
Germany	23		Transvaal, South Africa	1	
India			Victoria		
Ireland			Western Australia		
Italy	1				
Japan	1		Total to citizens of foreign countries	68	1
Java					
Mexico					

Printed Copies of Patents.

A printed copy of the complete specification and drawings of any patent published herein can be obtained for five cents.

Trade-Marks.

The publication of trade-marks under the act of February 20, 1905, in the OFFICIAL GAZETTE, commenced May 2, 1905, and will appear in each weekly number of the GAZETTE thereafter.

Extra copies of the trade-mark portion of the GAZETTE, which will be sold separately, may be obtained single or in quantities for five cents each. Coupons will be taken in payment therefor.

Interference Notice.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., February 1, 1906.

John H. Thompson & Company, their assigns or legal representatives, take notice:

An interference having been declared by this Office between the application of Charles H. Montanye, of New York, N. Y., for registration of a trade-mark and a trade-mark registered to John H. Thompson & Company, of Detroit, Mich., and the notice of said declaration mailed by the Patent Office in the usual manner to the said John H. Thompson & Company having been returned undelivered, notice is hereby given to the said John H. Thompson & Company, their assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents, in order that the notices of declaration heretofore sent by and returned to the Office may be forwarded to them.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN,
Commissioner.

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business February 20, 1906.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
	Under fifteen days.			
308	XV. Bread, Pastry, and Confections, Making, Coating, Laminated Sheets and Fabrics, Fuel, Glass, Hydraulic Lime and Cement, Paper-Making, Paving, and Plastics.	Feb. 14	Dec. 30	350
378	XXXVIII. Artesian and Oil Wells, Bottles and Jars, Care of Live Stock, Fishing and Trapping, Stationery, Stone-Working.	Feb. 12	Jan. 2	313
128	II. Bee Culture, Dairy, Label-Affixers, Paper Files and Binders, Presses, Store-Service, Tobacco, etc.	Feb. 8	Nov. 27	224
148	XXXII. Carbonating Beverages, Dispensing Beverages, Dispensing-Cans, Metallic Shipping and Storing Vessels, Packaging Liquids, Paper Receptacles, Refrigeration, Wooden Receptacles.	Feb. 8	Oct. 7	600
154	XI. Boot and Shoe Making, Boots, Shoes, and Leggings, Button, Eyelet, and Rivet Setting, Leather Manufacturing, Nailing and Stapling, Check-Controlled Apparatus, Whips and Whip Apparatus.	Feb. 7	Aug. 30	351
322	XXXVI. Curtains, Shades, and Screens, Drafting, Driers, Measuring Instruments, and Wind-Wheels.	Feb. 6	Jan. 18	225
321	I. Tillage, etc., Fences, and Railway Draft Appliances.	Feb. 6	Jan. 15	212
304	XXXIV. Railways, Railway-Brakes, Rolling-Stock.	Feb. 6	Jan. 2	350
244	XXXV. Baggage, Buckles, Buttons, and Clasps, Card, Picture, and Sign Exhibiting, Deposit and Collection Receptacles, Package and Article Carriers, Packing and Storing Vessels, Photography.	Feb. 6	Dec. 16	456
303	XVII. Linotyping, Printing, Matrix-Making, Nut and Bolt Locks.	Feb. 6	Dec. 4	320
144	XXIV. Apparel, Apparel Apparatus, Sewing-Machines, Surgery, Toilet.	Feb. 6	Oct. 24	457
175	III. Annealing and Tempering, Coating with Metal, Electrochemistry, Metal-Founding, Metallurgy, Shaping Fluid Metal.	Feb. 5	Jan. 12	303
	Under one month.			
105	XXVI. Electricity, Generation, Electric Heaters, Electric Railways, Motive Power.	Feb. 2	Aug. 10	705
152	XXX. Fluid-Pressure Regulators, Lamps and Gas-Fittings, Type-Writing Machines.	Feb. 2	May 18	662
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370	XXIII. Acoustics, Coin-Handling, Horology, Recorders, Registers, Optics, Signals, Time Controlling Mechanism.	Jan. 30	Oct. 3	665
179	XX. Artificial Limbs, Builders' Hardware, Dentistry, Locks and Latches, Safes, Undertaking.	Jan. 29	July 10	366
107	XXXVII. Electricity, Conductors, Lighting, Special Apparatus.	Jan. 29	July 7	711
122	XIX. Stoves and Furnaces and Steam-Boiler Furnaces.	Jan. 26	Aug. 19	613
318	VI. Bleaching and Dyeing, Chemicals, Explosives, Fertilizers, Medicines, Preserving, Sugar and Salt.	Jan. 25	Nov. 27	304

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133	XXII. Air-Guns, Ammunition and Explosive Devices, Boats and Buoys, Catapults and Targets, Firearms, Marine Propulsion, Ordnance, Ships.	Jan. 24	Oct. 21	287
167	V. Fine Arts, Bookbinding, Harvesters, Jewelry, and Music.	Jan. 22	Dec. 7	401
137	VIII. Beds, Chairs, Furniture, Kitchen and Table Articles, Store Furniture.	Jan. 22	Oct. 12	555
232	IV. Bridges, Conveyers, Cranes and Derricks, Excavating, Hoisting, Hydraulic Engineering, Loading and Unloading, and Towers.	Jan. 20	Jan. 22	289
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147	XXIX. Coopering, Roofs, Wheelwright-Machines, Wooden Buildings, Wood-Sawing, Wood-Turning, Woodworking-Tools.	Jan. 19	Oct. 20	266
164	XXXIII. Canes, Canopies, Cutlery, Domestic Cooking Vessels, Electricity, Medical and Surgical, Electric Signaling, Fireproof Buildings, Harness, Masonry, Tents, and Umbrellas.	Jan. 18	Sept. 5	720
327	XVIII. Steam-Engineering, etc	Jan. 17	Nov. 4	406
307	XIV. Cutting and Punching Sheets and Bars, Farriery, Metal-Bending, Metal-Ornamenting, Metal Personal Wear, Making, Sheet-Metal Ware, Making, Tools, Wire-Working.	Jan. 11	Oct. 10	278
312	VII. Velocipedes, Clutches, Fire-Escapes, Games and Toys, Ladders, Mechanical Motors, and Paper Manufactures.	Jan. 6	Nov. 1	443
382	XXVIII. Air and Gas Engines, Air and Gas Pumps, Pneumatics.	Jan. 3	June 1	972
109	XVI. Telegraphy and Telephony	Dec. 27	Dec. 12	287
375	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, Washing Apparatus.	Dec. 27	Aug. 31	707
	Between two and three months.			
330	XIII. Arms, Projectiles, and Explosive Charges, Making, Metal-Working, Needle and Pin Making.	Dec. 13	Sept. 12	611
142	IX. Baths and Closets, Fire-Extinguishers, Hydraulic Motors, Pumps, Sewerage, and Water Distribution.	Dec. 12	June 9	05
	Between three and four months.			
315	XXV. Butchering, Mills, Threshing, and Vegetable Cutters and Crushers.	Nov. 6	Sept. 11	534

Total number of applications awaiting action 18,264

159	TRADE-MARKS, DESIGNS, LABELS AND PRINTS.			
	Between one and two months.			
	Trade-Marks	Jan. 19	Jan. 2	3076
	Under fifteen days.			
	Designs	Feb. 7	Jan. 12	61
	Labels and Prints	Feb. 17	Feb. 16	16

Notice.

Hereafter coupons unless properly filled out will not be accepted in payment for copies of publications.

PATENTS

GRANTED FEBRUARY 27, 1906.

813,395. FILTER-PLATE. WILLIAM B. ALLBRIGHT, Chicago, Ill. Filed Aug. 8, 1904. Serial No. 218,208.

Claim.—1. The plate for lard and similar filtering-presses, having the channeled center and outstanding rim, and a connecting-surface between such center and rim provided with round knobs or buttons for supporting the cloth thereover at separated points so that filtering may be effective at such surface, in combination with a filtering-cloth resting upon such supporting means.

2. The plate for lard and similar filtering-presses, having its center provided with channeled means for supporting the filtering-cloth at separated points above its plane, a forwardly-projecting rim, and a surface between and connecting said center and rim, said connecting-surface being likewise provided with round knobs or buttons for supporting the cloth at separated points above its plane, in combination with a filtering-cloth resting upon the supporting means of said connecting-surface.

813,396. FRICTION-CLUTCH. SEVERIN C. ANKER-HOLTH, River side, Ill. Filed Nov. 1, 1905. Serial No. 285,276.

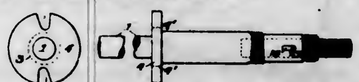

Claim.—1. In a device of the class described, in combination, a shaft, a friction-clutch mounted thereon, said clutch comprising a loosely-sleeved driving member, a member rotatively fixed to said driving-shaft but longitudinally movable thereon, and means rotatively fixed to said latter member for engaging and disengaging the two clutch members, a driving-gear loosely sleeved upon said shaft, and a ratchet connection between said gear and friction-clutch, as and for the purpose specified.

2. In a device of the class described, in combination, a shaft, a sleeve fixed to the end of said shaft and projecting outwardly therefrom, a friction-clutch mounted on said sleeve, said clutch comprising a member loosely journaled upon said sleeve, a member rotatively fixed to said sleeve but longitudinally movable thereon, and means rotatively fixed to said latter member for engaging and disengaging the two clutch members, a driving-gear loosely sleeved upon said shaft, and a friction-ratchet connection between said gear and clutch, substantially as and for the purpose specified.

3. In a device of the class described, in combination, a shaft, a sleeve provided with oppositely-disposed slots fixed to the end of said shaft and projecting outwardly therefrom, a friction-clutch mounted on said sleeve, said clutch comprising a member loosely journaled upon said sleeve, a member rotatively fixed to said sleeve but longitudinally movable thereon, and clutch-controlling means consisting of a rod having its outer end threaded and fitted within the bore of said sleeve, a pin engaging said rod, the hub of the longitudinally-movable clutch member and also the slots in said sleeve, a collar threaded to the end of the sleeve, a coil-spring interposed between said collar and the longitudinally-movable clutch member, and a hand-wheel mounted on the projecting end of said rod, a driving-gear loosely sleeved upon said shaft, and a friction-ratchet connection between said gear and friction-clutch, substantially as and for the purpose specified.

813,397. SPRING-WHEEL FOR VEHICLES. JOSÉ G. BARIO, Brooklyn, N. Y. Filed June 10, 1905. Serial No. 264,577.

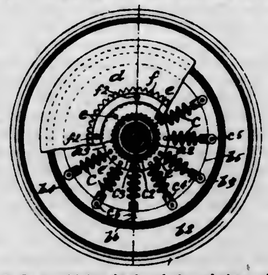

Claim.—1. In a vehicle-wheel, a hub and rim, said hub being provided with a central outwardly-directed annular web member, and said rim being provided with an inwardly-directed annular web member, spiral tensional spring-spokes connecting said web members, and annular cover-plates secured to one of said web members and inclosing the said spokes and the adjacent edge of the other web member, one of said parts, the rim of the hub being movable toward and from the other part, and the connection of the spokes with one of said web members being a radially-movable connection, substantially as shown and described.

2. In a vehicle-wheel, a hub and rim, said hub and rim being provided one with an outwardly-directed annular flange or web member having an annular head and the other with an inwardly-directed annular flange or rim having an annular head, radial spiral tensional spring-spokes connecting said annular heads, the connection of said spokes with one of said heads being radially movable, and an annular cover-plate secured to one of said annular heads and inclosing said spokes and the other annular head, substantially as shown and described.

3. A wheel for vehicles, comprising a hub having a central annular web member provided with a thickened annular head, a rim provided with a central inwardly-directed annular web having an annular thickened member inwardly from which extends an annular flange, and tensional spiral spokes connecting said annular head and said annular flange, the connection between the said spokes and said flange being radially movable, substantially as shown and described.

4. A wheel for vehicles, comprising a hub having a central annular web member provided with a thickened annular head, a rim provided with a central inwardly-directed annular web having an annular thickened member inwardly from which extends an annular flange, and tensional spiral spokes connecting said annular head and said annular flange, the connection between the said spokes and said flange being radially movable, and said spokes and their connection being inclosed by annular side plates secured to said annular head, substantially as shown and described.

5. In a vehicle-wheel, a hub and rim, said hub being provided with a central outwardly-directed annular web member and said rim being provided with an inwardly-directed annular web member, spiral tensional spring-spokes connecting said web-members, and annular cover-plates secured to one of said web members and inclosing the said spokes and the adjacent edge of the other web member, one of said parts, the rim or the hub being movable toward and from the other part, and an annular gear secured to one side of said wheel, substantially as shown and described.

813,398. LUBRICATOR FOR PISTON-RODS. JOSHUA B. BARNES, Springfield, Ill. Filed Dec. 30, 1905. Serial No. 293,994.

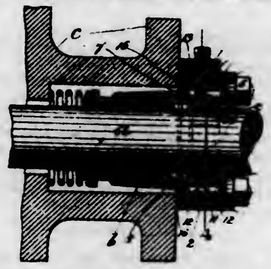

Claim.—1. In a lubricator for a piston-rod, the combination with the cylinder-head containing the packing for the said rod, of a box fixed to the cylinder-head and adapted for the free reciprocation of the piston-rod therethrough, a pocket in the outer wall of the box containing a lubricant and having a passage therefrom through the said wall into the box, and a perforated sleeve encircling the piston-rod and held in position thereon within the said box, the said sleeve being wrapped with absorbent material, substantially as described.

2. In a lubricator for a piston-rod, the combination with the cylinder-head having an opening therethrough for the said rod, of a box fixed to the cylinder-head and adapted for the free reciprocation of the piston-rod therethrough, a pocket in the outer wall of the box containing a lubricant and having a passage therefrom through the said wall into the box, and a perforated sleeve encircling the piston-rod and held in position thereon within the said box, the said sleeve being wrapped with absorbent material, substantially as described.

3. In a lubricator for a piston-rod, the combination with the cylinder-head containing the packing for the said rod, of a box fixed to the cylinder-head and having a wall at its rear side adjacent to the said head, a plate removably fixed to and adapted to close the front side of the box, the said wall and plate having an opening respectively surrounding the said rod at a suitable distance therefrom, a pocket in the outer wall of the box containing a lubricant and having a passage therefrom through the said wall into the box, and a perforated sleeve encircling the piston-rod and held in position thereon within the said box, the said sleeve being wrapped with absorbent material, substantially as described.

4. In a lubricator for a piston-rod, the combination with the cylinder-head containing the packing for the said rod, of a box fixed to the cylinder-head and adapted for the free reciprocation of the piston-rod therethrough, a pocket in the outer wall of the box containing a lubricant and having a passage therefrom through the said wall into the box, and a perforated sleeve encircling the piston-rod and held in position thereon within the said box, the said sleeve having lateral flanges, and having a wrapping of absorbent material between the said flanges, substantially as described.

813,399. DOOR-HANGER. RICHARD B. BROWNE, New York, N. Y., assignor to Risley, Browne & Donald, Brooklyn, N. Y. Filed May 14, 1904. Serial No. 208,009.

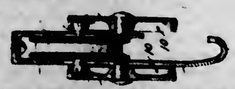

Claim.—1. In a door-hanger, the combination of a housing, a track-wheel, an elongated shaft therefor having outwardly-enlarged conical extremities, and antifriction-wheels on opposite sides of the track-wheel having bearings adapted to engage said enlarged extremities.

2. In a door-hanger, the combination with a hanger-frame of a track-wheel, a shaft therefor having projecting conical pintles, antifriction-wheels rotatively mounted on the frame on opposite sides of the track-wheel, and having annular interior conical bearings adapted to engage said conical pintles.

3. In a door-hanger, the combination with a housing and a track-wheel, of a fixed shaft on which said wheel is mounted in said housing to rotate therein, and having outwardly conical portions projecting on either side of the said housing, antifriction-wheels journaled on the outer face of the housing and having interior corresponding conical faces to respectively engage the conical portions of said shaft, substantially as set forth.

813,400. BASE-BALL BAT. CHARLES H. BUEHLER, St. Marys, Ohio. Filed July 23, 1904. Serial No. 217,236.

Claim.—1. A bat formed of longitudinal sector-shaped sections with the grain thereof disposed edgewise to the respective adjacent striking-faces of the bat.

2. A bat formed of longitudinal sector-shaped sections with the grain of some of the sections disposed edgewise to the respective adjacent striking-faces of the bat.

813,401. WHIP-OPERATING DEVICE. ALEXANDER BURROWS, Woodward, Okla. Filed July 25, 1905. Serial No. 271,541.

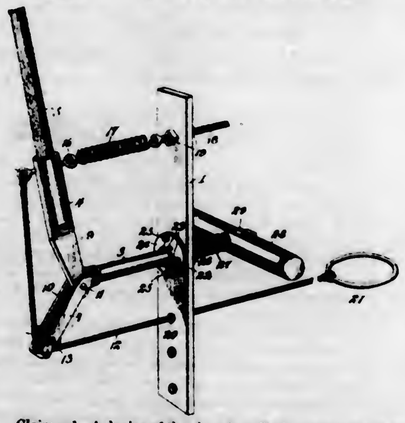

Claim.—1. A device of the class described, comprising an oscillatory whip-holder, a horizontal shaft capable of rotary movement to swing the whip-holder from one side to the other, means for locking the shaft in its adjustment, and means for oscillating the whip-holder.

2. A device of the class described, comprising a longitudinal shaft forming a rotary support, an oscillatory whip-holder mounted on the shaft and arranged to swing backward and forward, said whip-holder being carried from one side to the other by the rotary movement of the shaft, operating mechanism for oscillating the whip-holder, and means for holding the shaft in its adjustment while the whip-holder is being operated to apply the whip.

3. A device of the class described, comprising a ratchet, a shaft forming a rotary support and provided with means for engaging the ratchet, an oscillatory whip-holder mounted on the shaft, and a spring for maintaining the shaft in engagement with the ratchet.

4. A device of the class described, comprising a ratchet, a shaft capable of rotary movement and provided with means for engaging the ratchet, a coiled spring disposed on the shaft for holding the same in engagement with the ratchet, a handle connected with the shaft for operating the same, and an oscillatory whip-holder mounted on the shaft.

5. A device of the class described, comprising a ratchet having a series of notches, a rotary shaft provided with a projection for engaging the notches of the ratchet, a coiled spring disposed on the shaft in rear of the ratchet and normally maintaining the projection in engagement with the same, a whip-holder mounted on the shaft, and means for operating the whip-holder.

6. A device of the class described, comprising a shaft having an angularly-bent front portion provided with a guide, an oscillatory whip-holder mounted on the shaft in rear of the guide, a flexible connection arranged in the guide and connected with the whip-holder for moving the same in one direction, and a spring for moving the whip-holder in the opposite direction.

7. A device of the class described, comprising a bracket or bar, a shaft mounted on the bracket or bar for rotary adjustment, an oscillatory whip-holder pivoted to the shaft and carried from one side to the other by the rotary adjustment of the same, a spring connected with the bracket or bar and with the whip-holder for swinging the latter in one direction, operating mechanism connected with the whip-holder for swinging the same in the opposite direction, and means for holding the shaft in its adjustment while the whip-holder is being oscillated to apply the whip.

8. A device of the class described, comprising a horizontal shaft having an angularly-disposed slotted outer portion, a whip-holder pivoted at one end in the slot at the inner portion thereof, a guide-pulley mounted on the outer portion of the slot, a spring connected with the whip-holder for moving the same in one direction, and a flexible connection arranged on the guide-pulley and connected with the whip-holder for swinging the latter in the opposite direction.

9. A device of the class described, comprising a horizontal shaft mounted for rotary adjustment, a whip-holder pivotally mounted on the shaft, a spring connected at one end with the whip-holder, an adjusting-screw connected with the other end of the spring, and operating mechanism connected with the whip-holder.

10. A device of the class described, comprising a whip-holder, operating mechanism for oscillating the same to apply a whip, means for swinging the whip-holder from one side to the other to arrange the whip in position for striking either animal of a team, and means for retaining the whip-holder in such adjustment while the same is being operated to apply the whip.

813,402. PORTABLE MEASURING-CAN. JAMES L. CHASE, Ayer, Mass., assignor of one-half to Edward A. Turrell, Nashua, N. H. Filed Mar. 10, 1905. Serial No. 249,266.

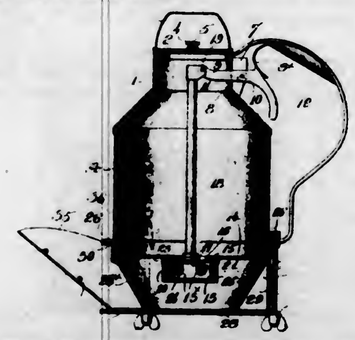

Claim.—1. In a measuring milk-can, a supply-tank having an outlet in its bottom, a controlling-valve for said outlet, means to manually operate the valve, a measuring-compartment below the tank and into which the outlet opens, and provided with an open-top discharge-spout, and level-indicators within the spout and visible through its open top to indicate the quantity of liquid in the measuring-compartment by the level of the liquid in said compartment and spout.

2. In a portable milk-can, in combination, a supply-tank having a filling-opening, and an outlet in its bottom, a controlling-valve for the outlet, a handle attached to the tank, means to manually operate the valve, including an actuator adjacent the handle, a single measuring-compartment below the tank and having an open-top discharge-spout, and means located in the spout to indicate visually different quantities of liquid admitted to the measuring-compartment from the tank.

3. In a portable milk-can, in combination, a supply-tank having a handle and an outlet in its bottom, a manually-operated controlling-valve for the outlet, a detachable strainer surrounding the outlet and valve, a detachable measuring-compartment having an open top and adapted to tightly fit the lower end of the tank, means to fixedly connect the tank and compartment, the latter having an upwardly-inclined spout, and visual means within the spout to indicate the quantity of liquid admitted to the measuring-compartment.

4. In a device of the class described, a supply-tank having a tubular outlet depending from its bottom and provided with orifices in its wall, means mounted on the outlet to vary the effective area of the orifices, a valve slidable within the tubular outlet, and manually-operated means to control the valve, combined with a measuring-compartment connected with the bottom of the tank and having a discharge-spout, and means to indicate by the level of liquid in the measuring-compartment the quantity admitted from the tank.

5. In a measuring milk-can, a supply-tank having an outlet in its bottom, a manually-operated controlling-valve therefor, a measuring-compartment below and connected with the bottom of the tank having upwardly-flared walls and a radial, upwardly-inclined spout, and means located within the spout to indicate different quantities of liquid in said compartment.

6. In a portable milk-can, in combination, a supply-tank having a filling-opening and an outlet in its bottom, a controlling-valve for the outlet having an attached, upright stem, an actuating-lever fulcrumed on the tank and extended thereinto, a pivotal, detachable connection between the valve-stem and the inner end of the lever, a spring coöperating with the latter to normally maintain the valve seated, a handle on the tank and serving also as a guard for the outer end of the lever, a measuring-compartment connected with the bottom of the tank, and means to indicate visually the quantity of liquid admitted to the compartment when the valve is manually moved to open the outlet.

7. In a device of the class described, a supply-tank having a filling-opening in its top and a closure therefor, a depending, tubular outlet in its bottom, a controlling-valve slidable in the outlet, the wall of the latter having vent-orifices, a detachable, cup-like strainer to fit over the said outlet, and manually-operated means to actuate the valve, combined with a measuring-compartment open at its top to snugly receive the bottom of the tank, detachable means to maintain the tank and compartment connected, a discharge-spout for the compartment, having an inclined bottom and an open top, and level-indicating bars on the spout-bottom to indicate the quantity of liquid in the compartment.

813,403. THERMOSTAT. ARTHUR D. COLTON, Chicago, Ill. Filed Aug. 22, 1904. Serial No. 221,785.

Claim.—1. The combination with a base-plate, 1, of a circuit-closer arranged therein and comprising a strip, 5, of expansible and contractible material and secured at its lower end to said base-plate, a supporting-lug, 7, secured to the base-plate and loosely engaging said strip, a bell-crank-shaped lever pivoted to said base-plate and having a long arm, 10, and a short arm, 13, a cap-piece or ferrule, 8, engaging the upper end of said strip and having an extension or arm, 9, engaging the short arm, 13, of the bell-crank, and electrical contacts, 15 and 16, between which said long arm, 10, is adapted to operate; substantially as described.

2. The combination with a base-plate, 1, of a circuit-closer arranged therein and comprising a strip, 5, of expansible and contractible material and secured at its lower end to said base-plate, a supporting-lug, 7, secured to the plate and loosely engaging said strip, a bell-crank-shaped lever pivoted to said base-plate and having a long depending arm, 10, and a short arm, 13, a cap-piece or ferrule, 8, engaging the upper end of said strip and having an extension or arm, 9, engaging the short arm, 13, of the bell-crank, and a coiled

spring, 14, secured at one end to the strip, against the other end of which spring the long arm, 10, is adapted to contact; substantially as described.

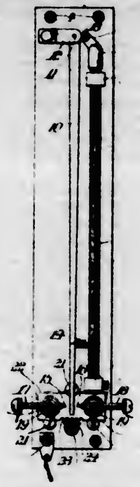

3. A thermostat comprising a base-plate, a rod of expansible and contractible material, a block mounted on the base-plate and to which one end of said rod is secured, a lug supporting the other end of said rod and through which the same is adapted to slide, a bell-crank lever fulcrumed to the base in proximity to the movable end of said rod, a connection from said end to the short arm of the lever, two electrical contacts with which the long arm of said lever is adapted alternatively to engage, a sliding plate upon which said contacts are mounted, said plate being provided with rack-teeth on one edge, a shaft carrying a segment engaging said rack-teeth, and a handle mounted on said shaft and adapted to move the same to move the plate and pointer.

4. A thermostat comprising a frame, two perforated lugs mounted thereon, a thermostatic rod with its two ends passing through said lugs, means for clamping one end of said rod to its associated lug, whereby the rod may be readily adjusted with relation to or removed from said lug, a bell-crank lever fulcrumed to the frame in proximity to the other lug, a connection between the free end of the rod and the short arm of said lever, the long arm of the lever extending parallel to said thermostatic rod, and an adjustable electrical contact with which the end of said long arm is adapted to engage.

5. A thermostat comprising a base-plate, a thermostatic rod having one end immovably and the other end slidably mounted on said base-plate, a contact-arm fulcrumed to the base-plate in proximity to the free end of said rod, a connection between said end and said contact-arm, contact-points arranged in proximity to the other end of said rod, and with which the free end of said arm is adapted to engage, a movable mounting for said contact-points, and a pointer operatively connected with said movable mounting and adapted to move therewith, said thermostatic rod, contact-arm and pointer being arranged parallel to each other and to the base, whereby a compact structure is obtained.

6. A thermostat comprising a base-plate and a face-plate, a thermostatic rod mounted on the base-plate, a contact-arm mounted on the base-plate and arranged to be moved by the expansion or contraction of said thermostatic rod, two contact-screws with the points of which said contact-arm is adapted alternatively to engage, the heads of said screws projecting beyond the frame of said thermostat, and set-screws adapted to engage said contact-screws, the heads of said screws projecting through said face-plate into an accessible position, whereby the adjustment of the thermostat may be readily varied.

818,404. PROCESS FOR REMOVING ROUGH AND IRREGULAR FOREIGN SEEDS FROM CLOVER AND OTHER SMOOTH SEEDS. DAVID S. COOK, Dana, Ohio, assignor of one-third to Joseph W. McCord and one-third to William S. Cook, Columbus, Ohio. Filed July 19, 1905. Serial No. 270,313.

Claim.—1. A process for separating irregular and other foreign seeds from clover and other smooth seeds, consisting in depositing a heavy material in the concavities of the foreign seeds, and separating the seeds containing the deposits of heavy material from the other seeds by suitable means.

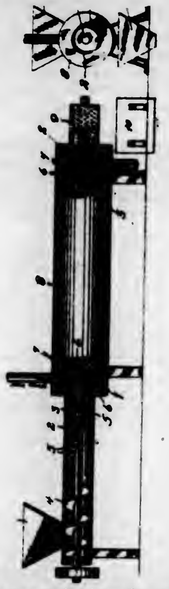

2. A process for separating irregular and other foreign seeds from clover and other smooth seeds, consisting in first mixing the seeds with an adhesive paste containing a heavy material, second, drying the mixture, third, removing the superfluous portions of the paste which has been dried without disturbing the paste deposited in the concavities of the foreign seeds, and fourth, separating the foreign seeds containing the paste deposits from the other seeds by suitable means.

3. A process for separating irregular and other foreign seeds from clover and other smooth seeds, consisting in depositing a metallic material in the concavities of the foreign seeds and then separating the foreign seeds from the other seeds by magnetic attraction.

4. A process for separating irregular and other foreign seeds from clover and other smooth seeds, consisting in first mixing the seeds with a paste having metallic properties so that the concavities of the foreign seeds are filled by the said paste, second, drying the mixture, third, removing the surplus paste which has been dried and polishing the seeds leaving the paste only in the grooves or concavities of the foreign seeds, and fourth, separating the seeds having the metallic paste deposits from the other seeds by magnetic attraction.

818,405. MOLD FOR CASTING HOLLOW WARE. FREDERICK D. COOK and GEORGE A. COMRATH, Blairsville, Pa. Filed Jan. 14, 1905. Serial No. 241,089.

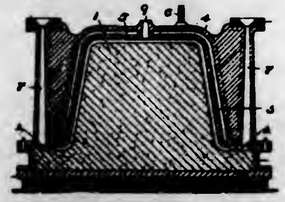

Claim.—A mold for casting hollow ware comprising a sand core and a hollow metal member, said sand core and metal member formed with a space therebetween, said metal member formed with a pouring-gate communicating with said space, said pouring-gate tapering inwardly toward the upper end thereof, and a gate-box formed in its entirety of a mass of material having straight outer walls and formed with an opening tapering inwardly toward the bottom thereof, said gate-box being arranged above said pouring-gate, substantially as described.

818,406. TABLE-LEG FASTENING. JOSEPH CORNELL, Rockville, N. Y. Filed July 14, 1905. Serial No. 269,657.

Claim.—1. The combination with a table-top having a socket in the under side thereof, of a block secured to the under side of the table across the socket and provided with a slot intersecting one edge of the block with its inner end registered with the socket, the back of the slot being laterally enlarged at opposite sides, the block being provided with a guide-shoulder extending in front of the open end of the slot in parallelism with one wall of the slot, a table-leg, a pin projecting centrally from the top of the leg and having its upper portion threaded, and a nut fitted to the threaded portion of the pin and capable of being entered into the enlarged back portion of the slot, the upper end of the pin being adapted to enter the socket in the under side of the table-top when the leg is screwed up tight against the block.

2. As a new article of manufacture, an element of a table-leg fastening consisting of a block provided with a slot intersecting one edge thereof and having its back laterally enlarged at opposite sides, that end of the block which is intersected by the slot having a shoulder projecting in front of the slot in substantial parallelism with one of the longitudinal walls thereof and intersected by the adjacent lateral enlargement of the slot.

818,407. TAG-CLASP. SIMON DANSTORM, Dayton, Ohio; Sel Finzer administrator of said Simon Danstorm, deceased. Filed Mar. 31, 1902. Serial No. 100,739.

Claim.—As an improved article of manufacture the tag-clasp comprising the central arc, the outward curves from said arc, the straight flexible arms crossing near their outer ends, and terminating in hooks bent oppositely at an acute angle to said arms, substantially as described.

818,408. CRIMPING MECHANISM FOR WIRE-FENCE MACHINES. WASHINGTON M. DILLON and PETER FRANTZ, Sterling, Ill. Filed Aug. 17, 1904. Renewed Aug. 17, 1905. Serial No. 274,965.

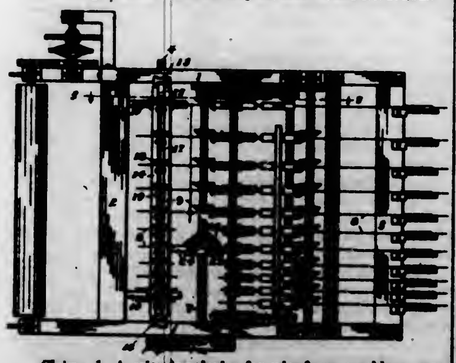

Claim.—1. A crimping device for wire-fence machines, comprising a crimping-bar, capable of vertical play in the machine; a series of stationary dies, fixed on said bar; a slide-bar, adapted to be supported in said crimping-bar, so as to oscillate therein; a series of dies, secured on said slide-bar, and adapted to be severally brought into proximity with one of said stationary dies upon the proper operation of said slide-bar, the adjacent faces of the several pairs of dies being adapted to suitably embrace the strand-wires of the fence and crimp the same on opposite sides of the stay-wire coils; a pair of parallel cross-bars, on opposite sides of the crimping-bar; means for suitably raising and lowering the crimping-bar; means for suitably oscillating said slide-bar, to bring said last-named dies into proximity with said first-named series of dies; and means for lowering said parallel bars upon the strand-wires simultaneously with the raising of said crimping-bar, substantially as shown and set forth.

2. In a crimping device for wire-fence machines, the combination, with the frame 1, of the cross-bar 14, having vertical play therein, and provided with the channel 16, the slide-bar 17, supported in the bar 14, and adapted to oscillate therein; the dies 18, fixed on the bar 14, and provided on their inner faces with ribs 27 and jaws 29; the dies 19, fixed on the slide-bar 17, and provided on their inner faces with ribs 28 and jaws 30; means for suitably raising and lowering the bar 14, and means for suitably oscillating the slide-bar 17, to bring the adjacent faces of the dies 18 and 19 into proximity, substantially as shown and described.

3. In a crimping device for wire-fence machines, the combination of the vertically-movable bar 14, suitably mounted in the machine; and provided on its upper face with a series of dies 18, the slide-bar 17, supported in the bar 14 so as to have oscillation therein, and provided on its upper face with the dies 19, the rock-shaft 39 suitably mounted on the frame 1, the series of arms 40, secured on the shaft 39 and provided with claws 41; means for suitably rocking the shaft 39; means for raising and lowering the bar 14, and means for oscillating the slide-bar 17, substantially as set forth.

4. In a crimping device for wire-fence machines, the combination of the bar 14, provided with the channel 16; the slide-bar 17, suitably mounted in the recess 16, to oscillate therein; the series of dies 18, fixed on the upper face of the bar 14; the series of dies 19, fixed on the upper face of the slide-bar 17, and adapted to be brought into proximity with the dies 18, upon the oscillation of the bar 17, the parallel bars 38, suitably supported on opposite sides of the bar 14; the arms 40, suitably mounted above the strand-wires of the fence and provided with claws 41; means for operating the arms 40, to cause the claws thereon to engage said strand-wires; means for raising the bar 14; means for simultaneously lowering the bars 38; and means for oscillating the slide-bar 17, substantially as shown and set forth.

5. In a crimping device for wire-fence machines, the combination of the oscillating bar 17, provided with a series of dies 19, the lever 20, pivoted beneath said bar 17, and connected therewith by means of the link 21, and means for operating the lever 20 to oscillate the bar 17; substantially as set forth.

6. In a crimping device for wire-fence machines, the combination of the rock-shaft 34, suitably mounted on the frame of the machine; the arms 35, fixed thereon, racks 37, supported by the arms 35; cross-bars 38, supported by the racks 37; and means for suitably operating the arms 35; substantially as shown and described.

7. In a crimping device for wire-fence machines, wherein the fence is formed with series of stay-wires in substantial alinement transversely of the fence, the combination, with series of dies adapted to form crimps in the strand-wires of the fence at the points of junction of the stay-wires therewith, of a rock-shaft, a series of arms mounted on such rock-shaft, corresponding in number and vertically in line with the strand-wires, such arms being provided with claws adapted to engage the strand-wires, and bring the several stay-wires of a series into transverse alinement thereon, and means for suitably rocking such shaft, substantially as shown.

818,409. HEAD-BLOCK FOR HAY-PRESSES. ELVIS B. DRAKE, Nashville, Tenn. Filed Oct. 6, 1905. Serial No. 281,698.

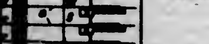

Claim.—1. A head-block provided with a wire-receiving groove, and means located within the groove for guiding a wire through the same and for yieldably holding the wire in the groove.

2. A head-block provided with a wire-receiving groove, and means for yieldably retaining the wire in the groove.

3. A head-block provided with a wire-receiving groove, and a metallic lining having resilient sides spaced from the walls of the

groove at the longitudinal mouth or opening thereof and constricting the same, said sides being adapted to expand to permit the wire to be drawn through them.

4. A head-block having a wire-receiving groove provided with outwardly-converging side walls, and a metallic lining arranged within the groove and having converging side walls, said side walls being resilient to engage the inner portions of the side walls of the groove, and the outer portions of the sides of the lining being spaced from the walls of the groove and constricting the longitudinal opening or mouth of the same.

813,410. **MOTOR CONTROL.** CHARLES A. ECK, Newark, N. J. Filed May 16, 1905. Serial No. 260,613.

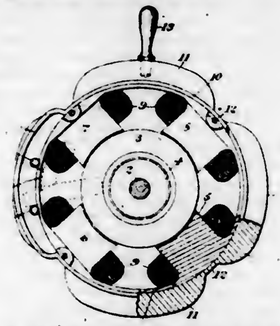

Claim.—1. The combination with a motor having poles and an armature, of a yoke having portions of varying cross-sectional area, and means for adjusting the yoke so as to cause the magnetic lines to flow through that portion of the yoke having the large cross-sectional area or through that portion of the yoke having the small cross-sectional area at will.

2. The combination with a motor having poles and an armature, of an adjustable yoke having a portion of a large cross-sectional area of a length somewhat longer than the distance between the poles and having a portion of a smaller cross-sectional area whereby the speed of the motor can be varied by causing the lines of force to run through either of the two portions.

3. The combination with a motor having poles and an armature, of an adjustable yoke-ring having a series of portions of a large cross-sectional area, each somewhat longer than the distance between the poles, and having portions of a smaller cross-sectional area connecting the portions of the large cross-sectional area.

4. The combination with a motor having a casing, poles and an armature, of a contact-plate stationary with the motor, a switch-lever adapted to be moved into contact with said plate, a yoke-ring circumferentially adjustable on the casing and having alternating portions of large and small cross-sectional area, and means on said yoke-ring for moving the switch-lever into contact with the plate.

5. The combination with a motor having a casing, poles and an armature, of a contact-plate stationary with the motor, a switch-lever adapted to be moved into contact with said plate, a yoke-ring circumferentially adjustable on the casing and having alternating portions of large and small cross-sectional area, means on the yoke-ring for moving the switch-lever into contact with the plate when turned in one direction and out of contact with the contact-plate when turned in the opposite direction, and a spring for pulling the switch-lever away from the contact-plate on a quick action.

6. In a motor, the combination with two contact-plates, a switch-lever adapted to be moved into position between the two and fitting snugly so as to maintain the said lever in the position to which it has been moved, an adjustable yoke-ring on the casing of the motor, means carried by said ring for moving the switch-lever in between the two contact-plates and back again out of engagement between the said two plates, and a spring for returning the switch-lever to its original position after it is moved out of contact between the two plates.

7. The combination with a motor having poles and an armature, of circumferentially-adjustable means for varying the cross-sectional area of the field at a point between the poles.

8. The combination with a motor having poles and an armature, of an adjustable yoke-ring having a series of portions of large cross-sectional area and having portions of a smaller cross-sectional area connecting the portions of the large cross-sectional area, whereby the magnetic lines can be caused to flow through that portion of the yoke having the large cross-sectional area or through that portion of the yoke having the smaller cross-sectional area at will.

9. The combination with a motor having poles and an armature, of adjustable means for varying the cross-sectional area of the field at a point between the poles, and a switch adapted to be operated by the adjustment of the adjustable means.

10. The combination with a motor having poles and an armature, of circumferentially-adjustable means for varying the cross-sectional area of the field at a point between the poles, and a switch adapted to be operated by the adjustment of the circumferentially-adjustable means.

11. The combination with a motor having poles and an armature, of adjustable means for varying the cross-sectional area of the field at a point between the poles, a switch adapted to be moved by the adjustable means and so arranged that when it is thrown in the motor will run at its slowest speed and will remain closed while the said adjustable means is moved to increase the speed of the motor.

12. The combination with a motor having poles and an armature, of circumferentially-adjustable means for varying the cross-sectional area of the field at a point between the poles, a switch adapted to be moved by the circumferentially-adjustable means and so arranged that when it is thrown in the motor will run at its slowest speed and will remain closed while the said adjustable means is moved to increase the speed of the motor.

813,411. **WEATHER-STRIP.** CLARENCE M. EVELETH, Plymouth, N. H. Filed Oct. 14, 1904. Serial No. 228,457.

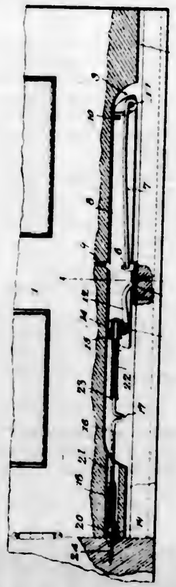

Claim.—1. A door having a weather-strip working in a slot in the bottom of the door, means housed within the back of the slot for projecting the weather-strip and including a trip-rod working through the hinge edge of the door for contact with the door-frame to project the weather-strip, said rod capable of being shifted in an endwise direction to bring its outer end within the hinge edge of the door, whereby said edge of the door may be planed without interference by the rod.

2. A door having a weather-strip working in a slot in the bottom of the door, and means housed within the back of the slot for projecting the weather-strip and including a trip-rod working through the hinge edge of the door for contact with the door-frame to project the weather-strip, said rod having a threaded adjustment for moving the same endwise to a position entirely within the door, whereby the hinge edge of the door may be planed without interference by the trip-rod.

3. The combination with a door having a slot in the lower edge thereof with the intermediate portion of the slot extended to form a recess, the door being provided with an opening intersecting its hinged edge and the recess, a weather-strip working in the slot, a spring to yieldably retract the strip, an angle-lever fulcrumed within the recess with one end portion engaging the strip, an endwise-movable threaded trip-rod working through the opening in the door and also through the opening in the lever, non-rotatable slidable nuts within the recess at opposite sides of the lever and adjustably receiving the threaded portion of the rod, and a helical spring embracing the rod and bearing against the lever and the outer nut, the outer end of the rod being provided with a screw-driver seat which is accessible through the outer end of the opening in the door to permit endwise adjustment of the rod.

813,412. **TOOL.** RAISON FRISLER, Harrisburg, Pa. Filed Oct. 22, 1904. Serial No. 229,023.

Claim.—1. As a new article of manufacture, a tool or implement comprising a pair of scissors having blades of different length, the shorter blade being provided with an acting end, the longer blade being tapered to act as a box-opener, and a stop on the longer blade whose stop-face is forward of the cutting-terminal of the shorter blade when closed, whereby the same is protected, substantially as described.

2. As a new article of manufacture, a tool or implement comprising a pair of scissors having blades of different length, the shorter blade being provided with an acting end, the longer blade being tapered to act as a box-opener, a stop on the longer blade whose stop-face is forward of the cutting-terminal of the shorter blade when closed, whereby the same is protected, and releasable means for locking the blades in closed position, substantially as described.

3. As a new article of manufacture, a tool or implement comprising a pair of scissors having blades of different length, the shorter blade being provided with an acting end, the longer blade being tapered to act as a box-opener, and a stop on the longer blade having a flat face and whose stop-face is between the ends of the blades when closed, whereby the shorter blade is protected, substantially as described.

4. As a new article of manufacture, a tool or implement comprising a pair of scissors having blades of different length, the shorter blade being provided with an acting end, the longer blade being tapered to act as a box-opener, a stop on the longer blade having a flat face and whose stop-face is between the ends of the blades when closed, whereby the shorter blade is protected, and releasable means for locking the blade in closed position, substantially as described.

5. As a new article of manufacture, a tool or implement comprising a pair of scissors having one of its blades longer than the other, the shorter blade having at its outer end a cutting edge, and means for locking the blades closed, substantially as described.

6. As a new article of manufacture, a tool or implement comprising a pair of scissors having one of its blades longer than the other, the shorter blade being sharpened, and a spring-actuated bolt arranged to lock the blades closed, substantially as described.

7. As a new article of manufacture, a tool or implement comprising a pair of scissors having one of its blades longer than the other, the shorter blade having its end sharpened, and a spring-actuated bolt for locking said blades closed, substantially as described.

8. As a new article of manufacture, a tool or implement comprising a pair of scissors with one blade longer than the other, said longer blade having a tapering end adapted to opening boxes, and the other a sharpened end adapting it to cut the labels, and means for locking the two blades closed, substantially as described.

813,413. **EXPERIMENTAL TANK FOR TESTING SHIPS' MODELS.** JOHN H. PERRY, Barrow-in-Furness, England. Filed May 31, 1905. Serial No. 263,660.

Claim.—1. An experimental tank for testing boat models, comprising a horizontal railway, a trolley thereon connected with the model, an inclined railway, and a weighted trolley thereon operatively connected with the model trolley.

2. An experimental tank comprising, in combination, a vessel, an inclined railway supported on the vessel, a weighted trolley running on the inclined railway and means for connecting the trolley to the model being experimented with.

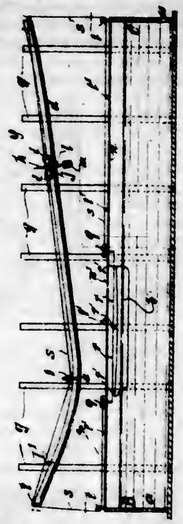

3. An experimental tank comprising, in combination, a vessel, an inclined railway supported on the vessel, a horizontal railway, a weighted trolley adapted to run on the inclined railway, a trolley adapted to run on the horizontal railway and means for connecting the trolleys together and to the model being experimented with.

4. An experimental tank comprising, in combination, a vessel, an inclined railway which is curved up at one end, a horizontal railway arranged below the inclined railway, trolleys running on both railways, and means for connecting the trolleys together and to the model being experimented with.

5. An experimental tank comprising, in combination, a vessel, an inclined railway supported on uprights fitted to the vessel, a horizontal railway arranged below the inclined railway and also supported by said uprights, a weighted trolley adapted to run on the inclined railway, two trolleys adapted to run on the horizontal railway, guide-pulleys and means for connecting the trolleys together and to the model being experimented with.

6. An experimental tank comprising, in combination, a vessel, an inclined railway which is curved upward at one end supported on uprights fitted to the vessel, a horizontal railway arranged below the inclined railway, a trolley having a pointer and also means for attaching weights, two trolleys having depending arms and adapted to run on the horizontal railway, guide-pulleys, a cord connecting the three trolleys together and running over the guide-pulleys and a separate cord connecting the two trolleys of the horizontal railway together and being also removably connected to the model being experimented with.

813,414. **BEVERAGE-CARBONATOR.** JOHN H. FOX, New York, N. Y., assignor to Mott Carbonator Company, Utica, N. Y., a Corporation of New York. Filed Apr. 20, 1903. Renewed Aug. 4, 1905. Serial No. 273,704.

Claim.—1. In a carbonator, the combination, with a shell having means therein for mingling the gas and water, a water-inlet, a gas-inlet, a water-outlet, and a removable bottom, of the flange D attached to the shell and having below its upper edge the belting-ring with annular groove D′ to sustain bolt-heads below the top of the flange D, the oblong radial bolt-holes d^3 in the belting-ring, the integral ring e closing the outer ends of the slots, and the base b having slots b' corresponding with the bolt-holes, with bolts d having nuts thereon and T-heads d' adapted to pass upwardly through the bolt-holes d^3 and turn into the groove D′, substantially as herein set forth.

2. In a carbonator, the combination, with a shell having means therein for mingling the gas and water, and having a water-inlet, and a removable bottom provided with a gas-inlet and water-outlet, of the flange D attached to the shell flush with its bottom and having below its upper edge the belting-ring with annular groove D′, to

sustain bolt-heads below the top of the flange D, the bolting-ring having the oblong radial bolt-holes d^2 intersecting the groove D' with integral ring e closing the outer ends of the bolt-holes, and the base b having slots b' corresponding to the bolt-holes, with bolts d having nuts thereon and T-heads d' adapted to pass through the bolt-holes d^2, and turn into the groove D, the whole arranged and operated substantially as herein set forth.

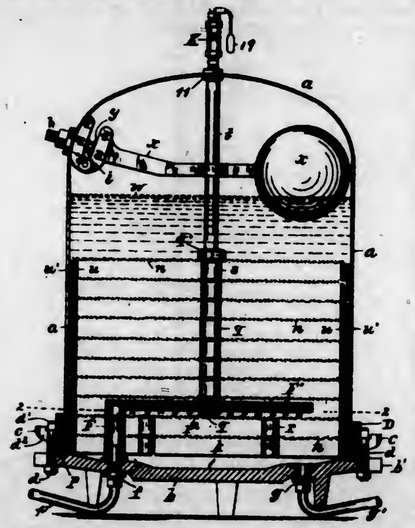

3. In a carbonator, the combination, with a shell having integral top and open bottom, and a base with bolting-flanges and bolts connecting it with the bottom of the shell, of the series of disks supported loosely upon the base, means for maintaining a water-level within the shell above the top of the disks, a central tie-bolt extended through the disks securing them together, and a central stop extended between the top of the tie-bolt and the top of the shell, and the shell entirely detachable from the disks to permit its removal by lifting therefrom when desired, substantially as herein set forth.

4. In a carbonator, the combination, with the shell and a removable bottom, of the pile of disks secured together in a movable group by a central tie-bolt and supported upon the bottom, a stop arranged centrally above the pile of disks between the top of such tie-bolt and the top of the shell, a water-inlet nozzle at the side of the shell above the pile of disks, and a valve with lever having a float upon the same diametrical line as the inlet-nozzle and the lever formed to clear the central stop, substantially as herein set forth.

5. In a carbonator, the combination, with the shell having water-inlet for supplying the shell with water and having a removable bottom provided with water-outlet *g* and gas-inlet nozzle *f* having thread upon its inner end, of a series of disks supported upon the bottom, the lower disk being detachable from the bottom and from the said series and formed with an aperture over the nozzle *f*, the distributer having shank connected detachably with the said nozzle through the said aperture, and having one or more perforated arms with holes in the lower side extended over such lower loose disk, whereby the water may be drawn from the bottom outlet *g* adjacent to the perforated arm, and the direct passage of gas from such arm to the outlet prevented by the lower loose disk.

6. In a carbonator, the combination, with the shell having water-inlet for supplying the shell with water and having a removable bottom provided with water-outlet *g* and gas-inlet nozzle *f* having thread upon its inner end, of a series of disks supported upon the bottom, the lower disk being detachable from the bottom and from the said series and formed with an aperture over the nozzle *f*, and the remainder of the series being connected by a central tie-rod, the distributer having shank F extended downwardly through such aperture and screwed detachably upon said nozzle, and having a plurality of perforated arms F' extended over such lower loose disk, whereby the water may be drawn from the water-outlet *g* adjacent to the perforated arms, and the direct passage of gas from such arms to the outlet prevented by the lower loose disk.

7. In a carbonator, the combination, with a shell having means therein for mingling gas and water, of a bottom secured removably thereto and provided with a gas-inlet and water-outlet, and a series of disks formed of pervious woven fabric provided each at the margin with two supporting-hoops *u* and *u'*, the fabric of the disk being gathered at the edges around the outer side of the hoop *u* and clamped thereon by the hoop *u'*, and the hoops being adjusted to sustain the entire series upon one another and upon the bottom *b*, substantially as herein set forth.

8. In a carbonator, the combination, with a shell having means therein for mingling the gas and water, of a bottom secured removably thereto and provided with a gas-inlet and water-outlet, and a series of disks formed of pervious woven fabric provided each at the margin with two cylindrical hoops *u* and *u'*, the fabric of the disk being gathered at the edges around the outer side of the hoop *u* and clamped thereon by the hoop *u'*, the cylindrical form of the hoops preventing them from nesting within one another and sustaining the entire series upon one another and upon the bottom *b*.

9. In a carbonator, the combination, with the shell and a removable bottom, of the pile of disks secured together in a movable group by a central tie-bolt and supported upon the bottom, a stop arranged centrally above the pile of disks between the top of such tie-bolt and the top of the shell, a water-inlet nozzle at the side of the shell above the pile of disks, and a valve with lever having a float, and the lever formed to clear the central stop, substantially as herein set forth.

10. In a carbonator, the combination, with a shell having closed top and open bottom, and a bottom attached removably to the shell, of a fixture, as the outlet-valve K, secured in the center of the shell at the top, a series of disks supported upon the bottom, the lower disk being detachable from the bottom and from the said series, a gas-distributer extended upwardly through such lower disk, the remainder of the series being connected together by a central tie-bolt, and a central stop extended between the top of the tie-bolt and the fixture secured to the top of the shell.

11. In a carbonator, the combination, with a shell having integral top and open bottom, and a base and bolting-flanges and bolts connected detachably with the bottom of the shell, of the series of disks supported loosely upon the base, means for maintaining a water-level within the shell above the top of the disks, a central tie-bolt extended through the disks securing them together, and a stop integral with the tie-bolt extended into loose contact with the top of the shell, whereby the shell may, when necessary, be lifted simultaneously from the bottom and the series of disks, and the disks then lifted from the bottom, substantially as shown and described.

818,415. TAILOR'S MEASURE. IGNATIUS GERAGI, Washington, D. C., assignor of one-half to Charles Lipkins, Washington, D. C. Filed Feb. 21, 1905. Serial No. 246,660.

Claim.—1. A tailor's measure, comprising a square having two arms, one of which is provided with a longitudinally-extending facial groove, a plate covering a part of the groove at the angle of the square, and a rule slidably mounted in said facial groove and adapted to have one end projected beyond the outer edge of the angle between the two arms of the square and also adapted to be moved back in the groove to bring its outer end substantially flush with said edge.

2. As an article of manufacture, a tailor's measure for taking short and slope measurements, comprising a square having two arms, one of which is provided with a longitudinally-extending facial groove, a plate covering a part of the groove, a rule slidably mounted in said groove and retained therein by said plate, said rule being adapted to have one end projected beyond the outer edge of the angle between the two arms and to be moved back to bring said end substantially flush with said edge, and a flexible tape-measure loosely connected at one end to said angle.

3. A tailor's measure, comprising a square having two normal arms, one of which is provided with a longitudinally-extending facial groove, a rule slidably mounted in said groove and adapted to have one end thereof projected beyond the outer edge of the angle between the two arms of the square and also adapted to be moved back in the groove to bring its outer end substantially flush with said edge, and means at opposite ends of the groove to limit the sliding movement of the rule in both directions.

4. A tailor's measure, comprising a square having two arms, one of which is provided with a facial groove extending throughout nearly its entire length, a rule of less length than said arm slidably mounted in the groove and adapted to have one end projected beyond the outer edge of the angle between the two arms of the square and also adapted to be moved back in said groove, and a flexible tape-measure loosely connected at one end to said square at a point adjacent the inner angle thereof.

5. A tailor's measure comprising a square having two arms, one of which is provided with a facial groove extending throughout nearly its entire length, a rule of less length than said arm slidably mounted in the groove and adapted to have one end projected beyond the outer edge of the angle between the two arms of the square and also adapted to be moved back in said groove, means for limiting the longitudinal movement of the rule in both directions, and a flexible tape-measure loosely connected at one end to said square at a point adjacent the inner angle thereof.

813,416. RAILWAY. LEWIS GIBSON, Colorado Springs, Colo. Filed Nov. 17, 1905. Serial No. 287,880.

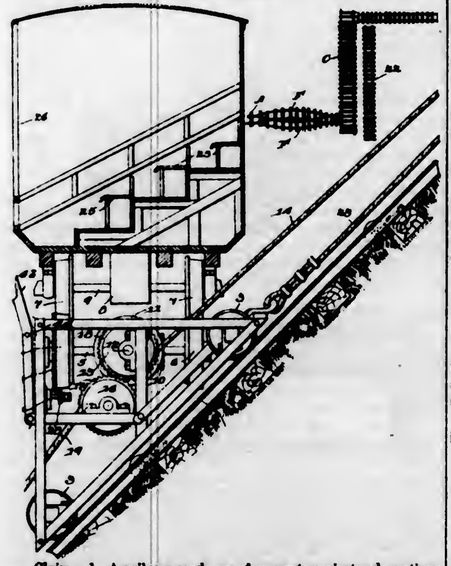

Claim.—1. A railway made up of separate main-track sections at different elevations, a supplemental inclined track section connecting main-track sections, and car-actuated means for raising and lowering cars along the inclined sections.

2. A railway made up of separate main-track sections at different elevations, a supplemental inclined track section connecting main-track sections, and car-operated means operating at the inclined section only for moving cars thereon.

3. A railway made up of separate main-track sections at different elevations, a supplemental-track section connecting main-track sections, an elevator running upon the supplemental-track section and provided with means to be actuated by the driving mechanism of the car for running the elevator.

4. A railway made up of separate main-track sections at different elevations, a supplemental-track section connecting adjacent main-track sections, a truck running upon the supplemental-track section, a hoisting-drum carried by the truck, an elevating-cable wound upon the drum and anchored independently of the truck, and drum-operating means carried by the truck and disposed for operation by the driving-wheels of a car to be elevated by the truck.

5. A railway made up of separate main-track sections at different elevations, a supplemental-track section connecting the main-track sections, truck-driving means carried by the truck, track-rails provided upon the truck, and friction-wheels mounted upon the truck in operative relation with the truck-driving means, the track-rails having spaces therein through which the friction-wheels project into position for engagement by the driving-wheels of a car upon the truck.

6. A railway made up of separate main-track sections at different elevations, a supplemental-track section connecting adjacent main-track sections, an elevator running upon the supplemental-track section and provided with means actuated by the driving mechanism of the car for running the elevator, and a clutch mechanism carried by the elevator for engagement with the car-wheels to prevent the car from running off of the elevator.

7. The combination of an inclined track, an elevator running thereon and provided with rails having corresponding portions removed, elevator-actuating mechanism carried by the elevator and provided with drive-wheels working in the space provided in the rails and exposed to the drive-wheels of a car upon the rails, and clutches carried by the elevator for engagement with the other car-wheels to prevent the car from running off of the track when the latter is in motion.

8. The combination of an elevator having a track for the support of a motor-car, elevator-actuating mechanism carried by the elevator and provided with friction-wheels exposed for engagement with the power-wheels of a car upon the track, each rail of the track being provided with a pair of transverse grooves, grooved guideways leading outwardly from the grooves of the rails, wheel-engaging clutches working in the grooves and guideways, means connecting the corresponding clutches at opposite sides of the track for simultaneous movements in opposite directions, and controlling-levers for the respective sets of clutches.

9. The combination of an inclined track, a truck running thereon, rails upon the truck, one of the rails having a vertical opening therein, and truck-operating means having a drive-wheel working in the opening of the rail and exposed through the top thereof to the driven wheel of a car supported upon the rails.

10. The combination of an inclined track, a truck running thereon and adapted to carry a car, truck-actuating means having a drive element disposed for engagement by one of the drive-wheels of a car upon the truck, and means to prevent the car from running off of the truck when the latter is in motion.

11. An elevator having track-rails, a guideway intersecting one of the rails, and a clutch working in the guideway for engagement with a car-wheel and capable of being shifted to one side of the rail to prevent the passage of car-wheels.

12. An elevator having track-rails, one of the rails having a transverse groove intersecting its tread, and a clutch shiftable into and out of the groove to engage a car-wheel and prevent movement thereof on the rail.

13. An elevator provided with means for driving the same which is controlled by a car supported upon the elevator.

813,417. LUG-STRAP ATTACHMENT. JOSEPH F. HARRINGTON, Killingly, Conn. Filed July 6, 1904. Serial No. 215,477.

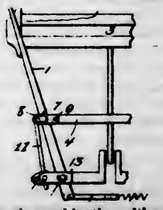

Claim.—1. In a loom, the combination with a lug-strap of flexible material and an ordinary rocker, of an arm attached to the inner end of the flexible lug-strap and extending outwardly beyond the picker-stick, and a link pivotally connected with the outer end of the arm and extending outside the picker-stick to and pivotally connected with the rocker, substantially as specified.

2. In a loom, in combination, a lug-strap of flexible material, an ordinary rocker, an arm attached to the inner end of the flexible lug-strap and extending outwardly beyond the picker-stick, and an adjustable link pivotally connected with the outer end of the arm and extending outside of the picker-stick to and pivotally connected with the rocker, substantially as specified.

3. A lug-strap support having an arm adapted to be attached to the inner end of and to extend outwardly beyond the outer end of the ordinary flexible lug-strap, an arm adapted to be connected with and to extend outwardly beyond the ordinary rocker, and a link connecting the lug-strap arm with the rocker-arm outside the picker-stick, substantially as specified.

4. A lug-strap support having an arm adapted to be attached to the inner end of and to extend outwardly beyond the outer end of the ordinary flexible lug-strap, an arm adapted to be adjustably connected with and to extend outwardly beyond the ordinary rocker, and a link connecting the lug-strap arm with the rocker-arm outside of the picker-stick, substantially as specified.

5. A lug-strap support having an arm adapted to be attached to the inner end of and to extend outwardly beyond the outer end of the ordinary flexible lug-strap, an arm adapted to be connected with and to extend outwardly beyond the ordinary rocker, and an adjustable link connecting the lug-strap arm with the rocker-arm outside of the picker-stick, substantially as specified.

6. A lug-strap support having an arm adapted to be attached to the inner end of and to extend outwardly beyond the outer end of the ordinary flexible lug-strap, an arm adapted to be connected with and to extend outwardly beyond the ordinary rocker, and a link pivoted to one arm and adjustably connected with the other arm outside of the picker-stick, substantially as specified.

7. A lug-strap support having an arm with a bolt-hole and prongs whereby it may be connected with the inner end of and may extend outwardly beyond the outer end of the ordinary flexible lug-strap, an arm with a bolt-hole whereby it may be connected with and extend outwardly beyond the ordinary rocker, and a link pivoted to one arm and adjustably connected with the other arm outside of the picker-stick, substantially as specified.

8. A lug-strap support having an arm adapted to be attached to the inner end of and to extend outwardly beyond the outer end of the ordinary flexible lug-strap, an arm adapted to be adjustably connected with and to extend outwardly beyond the ordinary rocker, and a link pivoted to one arm and adjustably connected with the other arm outside the picker-stick, substantially as specified.

9. A lug-strap support having an arm adapted to be attached to the ordinary flexible lug-strap, an arm adapted to be connected with the ordinary rocker, a lock-plate connected with one arm, a link connected with the other arm and extending through the lock-plate, the lock-plate and link having an engaging stud and teeth, and a spring for normally holding the stud engaged with the teeth, substantially as specified.

10. A lug-strap support having an arm adapted to be attached to the ordinary flexible lug-strap, an arm adapted to be connected with the pivot of the picker-staff, a lock-plate connected with the latter arm and provided with a stud and a spring, and a link pivoted to the lug-arm and extending through the lock-plate and provided with teeth that are adapted to engage the stud on the lock-plate, substantially as specified.

11. A lug-strap support having an arm adapted to be attached to the ordinary flexible lug-strap, an arm adapted to be fastened to the ordinary rocker, a lock-plate connected with one arm, a link connected with the other arm and adapted to be connected with the lock-plate, and a spring for normally holding the lock-plate and link together, substantially as specified.

12. The combination of a picker-staff, a sweep-stick, a flexible lug-strap attached to the sweep-stick and embracing the picker-staff, a rocker, an arm connected with and extending outwardly from the flexible lug-strap beyond the picker-stick, and a link pivotally connected with the outer end of the arm outside the picker-stick and adjustably connected with the rocker outside of the picker-stick, substantially as specified.

813,418. **HUB FOR CAR-WHEELS.** DODSON HAMLET, Grafton, W. Va. Filed Aug. 31, 1905. Serial No. 276,698.

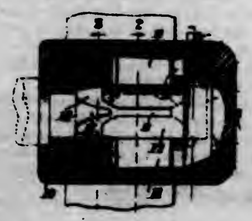

Claim.—1. A self-oiling wheel-hub provided with a plurality of oil-ducts leading radially from the spindle-bearing with the outer sides inclined toward one end of the hub, an oil-receptacle at one end of the hub and communicating with the smaller ends of said ducts, and an oil-chamber at the other end of the hub extending entirely around the spindle-bearing and communicating with the larger ends of said ducts.

2. A self-oiling wheel-hub provided with a plurality of oil-ducts leading radially from the spindle-bearing, an oil-receptacle at one end of the hub communicating with one end of said ducts, an oil-chamber at the other end of the hub communicating with the other end of said ducts, and V-shaped division-webs in said chamber disposed with their outer ends opposite said ducts and directing the oil into the same.

3. A self-oiling wheel-hub provided with a plurality of oil-ducts leading radially from the spindle-bearing and with their side walls diverging at the ends, an oil-receptacle at one end of the hub and communicating with said ducts at one end, an oil-chamber at the other end of the hub communicating with the other ends of said ducts and V-shaped division-webs in said chamber disposed with their smaller ends within the adjacent enlarged ends of said ducts.

813,419. **SELECTIVE SIGNALING SYSTEM.** CHARLES G. HAWLEY and HERBERT O. HOLDERMANN, Chicago, Ill. Filed Dec. 15, 1903. Serial No. 185,246.

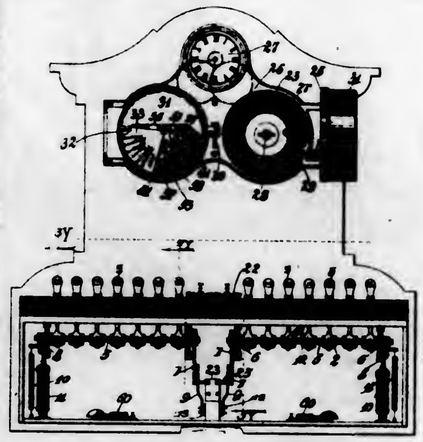

Claim.—1. In an electric signaling system, a signal-circuit and a release-circuit, in combination with signaling and releasing devices arranged in pairs at distant points or stations on said circuits, means for actuating the signaling and releasing devices of each station from the other station, and means at each station preventing the operation of its signaling and releasing means during the actuation of the corresponding device at the other station, substantially as described.

2. In an electric signaling system, a signal-circuit and a release-circuit, in combination with electric signal-display means and signal-releasing means at distant stations and connected respectively with said signal and release circuits, suitable impulse-transmitting means upon each of said circuits at each station, and means preventing the actuation of the release impulse means at one station from the other, during the transmission of impulses from the latter to the first station, substantially as described.

3. In an electric signaling system, a signaling-circuit connecting distant stations, in combination with electromagnetic signal-display means at each station, a suitable switch at each station normally connecting the signaling means thereof in circuit, a suitable source of electricity at each station and normally disconnected from said circuit, and a plurality of electric contacts connected with each source of electric energy, for engagement by the respective switch during the disconnection of the latter from its respective signal-display means, substantially as described.

4. A signal apparatus, comprising electromagnetic signal-display means, in combination with an electric switch comprising a plurality of contacts and a movable member, an electric circuit normally

including said movable member and said signal-display means, and a suitable source of electricity connected with said contacts, and means for imparting different degrees of movement to said movable member, for the transmission of electric impulses to said circuit, substantially as described.

5. In an electric signaling system, a signaling-circuit and a releasing-circuit, connecting distant stations, in combination with electromagnetic signal-display means at said stations, an electric switch at each station having a movable member normally completing the circuit of the respective signal-display means, electromagnetic signal-releasing means at each station, the movable switch member of each station normally completing the circuit of the respective release means, suitable sources of energy in said circuits, means for causing electric impulses upon said releasing-circuit, and a plurality of contacts provided in connection with each of said movable members, for cooperation therewith, to send impulses upon said signaling-circuit, substantially as described.

6. In an electric signaling system, signal and release circuits connecting distant stations, in combination with electromagnetic signal-display means normally connected with said signal-circuit at each station, signal-releasing means normally connected with said release-circuit at each station, an electric signaling-switch at each station, for transmitting impulses to the signal means at the other station, and means at each station whereby, by the actuation of the signaling means, the releasing means of the other station will be actuated in advance of the signal-display means at the latter station, substantially as described.

7. In a signaling apparatus, a suitable electric circuit containing pairs of signal-display and signal-releasing devices, in combination with a selective signaling switch or contact device for each said pair, energized branches of the circuit including said switches, a plurality of keys at each station, for operating its selective signaling-switch, and a release-circuit closer at each station, operable by any of the keys thereof, substantially as described.

8. In a signaling apparatus, an electromagnetic signal-display device, in combination with a selective impulse-switch or contact device in circuit therewith but distant therefrom, signal-releasing means, a signal-releasing key in circuit therewith but distant therefrom, a plurality of signaling-keys provided in connection with said selective signaling device, and means connected with said releasing-key for automatically releasing the distant releasing device on the operation of any one of said signaling-keys, substantially as described.

9. In an electric signaling apparatus, a movable signal-display member, in combination with a ratchet device, a lever bearing the pawl of said ratchet device, an armature-lever yieldingly connected to the pawl hereof, means limiting the movement of the pawl-lever, a contact for engagement by the armature-lever upon its separation from the pawl-lever, and an electromagnet for actuating said levers simultaneously, substantially as described.

10. In a signaling apparatus, a movable signal-display member, in combination with an electromagnetic device for actuating the same, a signal-registering mechanism having a movable member operated by and in time with said display member, and electromagnetic means for actuating said movable member after it is positioned by said display member to register the position assumed by the display member, substantially as described.

11. In a signaling apparatus, a movable display member, in combination with an electromagnetic step-by-step mechanism for operating said member, an electromagnetic punch to be energized by an extra movement of the electromagnetic mechanism, and a registering device having a member operable by said electromagnet and to which step-by-step movement is imparted by the movement of said display member, substantially as described.

12. In a signaling apparatus, a signal-display member, in combination with electromagnetic operating means therefor, capable of a normal and an extra movement, the circuit of said electromagnetic registering means, and an electromagnetic registering means included in a branch of said circuit and operable upon the extra movement of said operating means, substantially as described.

813,420. **BOB-SLEIGH.** PAUL W. RIBBARD, Jefferson, Wis. Filed June 24, 1905. Serial No. 266,769.

Claim.—In a front bob for sleighs, a metal ring secured to the cross-brace of said bob, a king-bolt supported in said cross-brace, and concentric with said ring, a tongue pivoted to said bob, and a tension-spring secured to the tongue and said metal ring, substantially as set forth.

813,420.

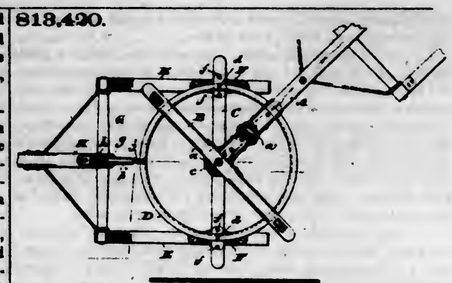

813,421. **NON-REFILLABLE BOTTLE.** WILLIAM J. HIGHAM, Denver, Colo. Filed June 19, 1905. Serial No. 265,951.

Claim.—1. In a non-refillable bottle, the combination with the bottle having a mouth, of the sleeve, secured in said mouth, having a liquid-outlet, a float arranged to control said outlet, introverted flukes in said sleeve arranged to form liquid-passages around said float, and a fluted cap having a liquid-outelt arranged in said sleeve to confine the operative movement of said float.

2. In a non-refillable bottle, the combination with the bottle, of the sleeve, the float adapted to control the outlet of the bottle, and the float-cap, having a liquid-outlet, with the conical valve, mounted on said cap, to control said liquid-outlet, a spider-cover in said sleeve over said valve arranged to control its operative movement, and means for confining said spider in said sleeve, as set forth.

3. In a non-refillable bottle, the combination of the bottle with the sleeve, the float adapted to control the outlet of the bottle, the float-cap, the conical valve, and the spider having a conical recess of greater angle, and area, than said valve, arranged to fit over said valve, with clearance-space enough to allow said valve operative movement within said spider's conical recess, arms on said spider arranged to form liquid-passages around said valve, a hub portion to said spider having a small axial aperture through it, and means including a stopper-holding cap arranged to be keyed in said bottle to confine said spider in operative relation to said valve, as set forth.

4. In a non-refillable bottle, the combination of the bottle having a neck having a mouth provided with a counterbore at its entrance, and having a circumferential keyway, with the sleeve seated in said counterbore and mouth, the float adapted to control the outlet of the bottle, the float-cap, and valve-seat, the conical valve, and the valve-cover in said sleeve, the stopper-cap, having a flange portion fitting the counterbore in said mouth, and provided with a circumferential keyway arranged to register opposite the keyway of said bottle's counterbore, the keys having spring-wings and arranged to be sprung into said keyway, as set forth.

5. In a non-refillable bottle, the combination with the bottle having a mouth, provided with a counterbore having a circumferential keyway, of a stopper-receiving cap, adapted to fit in said counterbore and containing a liquid-outlet, said stopper-cap having a circumferential keyway arranged to register with said keyway, in said counterbore, and a key having two spring-wings arranged and

adapted to be inserted in said registering keyways and lock said stopper-cap to said bottle, as set forth.

6. In a non-refillable bottle, the combination with the bottle having a mouth, provided with a counterbore having a circumferential keyway, of a stopper-receiving cap, adapted to fit in said counterbore and having a liquid-outlet, said stopper-cap having a circumferential keyway arranged to register with said keyway, in said counterbore, and a key having two spring-wings arranged and adapted to be inserted in said registering keyways and lock said stopper-cap to said bottle, said stopper-cap being provided with grooves in its peripheral edge leading into said keyways arranged and adapted to conduct a suitable cement into said keyways, as set forth.

7. In a non-refillable bottle, the combination of the bottle having a neck having a mouth provided with a counterbore, having a keyway, a stopper-cap filling said counterbore, having a keyway registering with the keyway in said counterbore, and keys, comprising crescent-shaped keys having spring-blades adapted to be compressed and placed in the keyway of said caps, while inserting said cap in said counterbore, and adapted to expand into the keyway of said counterbore when said keyways register with each other after said cap is inserted in its operative position in said counterbore, as set forth.

8. In a non-refillable bottle, the combination with a bottle provided with a neck having a mouth having a counterbore, keys in said counterbore, and a stopper-cap secured to said mouth by said keys, of a sleeve in said mouth, having a float-chamber, having a liquid-outlet aperture, a float in said float-chamber, a cap arranged to define the operative movement of said float, provided with an outlet-aperture, and a valve operatively arranged to control the outlet-aperture of said cap, substantially as described.

9. In a non-refillable bottle, the combination with the neck provided with a mouth and a counterbore at the entrance to the mouth, the sleeve, the float adapted to control the outlet of the bottle, the cap for defining the movement of said float, said sleeve and cap being provided with liquid-outlet apertures, with a conical valve seated on said float-cap, a winged-valve-holding hub arranged to confine said valve in operative relation to its seat, a stopper-cap in the mouth of said bottle, and means, including keys, for securing said stopper-cap in the mouth of said bottle, substantially as described.

10. In a non-refillable bottle, the combination with the bottle, provided with a neck and mouth and having a circumferential keyway in the entrance to its mouth, a sleeve secured in the mouth of said bottle, provided with a liquid-outlet aperture and a float-chamber in its bottom, a circumferential row of introverted flukes in said float-chamber around its periphery, a float in the center of said flukes arranged to control said liquid-outlet, a cap containing a liquid-outlet aperture seated on said flukes in said float-chamber, a circumferential row of flukes in said cap adapted to prevent said float from approaching too near said cap-outlet, and to provide passages for said liquid around said float, a conical valve seated on said cap over said liquid-outlet, a spider-block arranged over said valve containing a beveled recess defined by the inner lower edges of said spider's guard-arms, and arranged and adapted to permit operative movement of said valve on its seat, said cap being provided with a small aperture registering opposite the apex of said valve, and means, including a stopper-receiving cap, secured in the mouth of said bottle, for confining said spider in operative relation to said valve, substantially as described.

11. In a non-refillable bottle, the combination of a bottle, a sleeve having a liquid-outlet secured in the mouth of said bottle, said sleeve also having a float-chamber, a float contained therein; a cap and flukes arranged to define the movement of float, and provided with a liquid-discharge aperture, a conical valve seated on said cap to control its liquid-outlet aperture, a spider arranged to operatively confine said valve to its seat, and means, including a stopper-holding cap and a keyway formed partially in said stopper-cap and in said bottle and suitable keys, for securing said spider in operative valve-controlling relation to said valve, substantially as described.

12. In a non-refillable bottle, the combination of the bottle having a keyway with the sleeve having a liquid-outlet aperture, the float in said sleeve arranged to control said outlet-aperture, and the float-cap having a liquid-outlet aperture, with the conical valve, the valve-confining spider, and the stopper-cap, having a keyway, registering opposite the keyway in said bottle, and the spring-keys arranged and adapted to said keyways, as set forth.

818,422. SELF-PROPELLED VEHICLE. HUGH HILL, Anderson, Ind., assignor to HH Standard Manufacturing Company, Anderson, Ind., a Corporation of Indiana. Filed Mar. 20, 1905. Serial No. 251,045.

Claim.—1. In a child's cart, the combination of a longitudinal girder or frame member 11, a bearing for the driving-axle secured upon the under side of said girder, a pinion mounted on the driving-axle in said bearing, another bearing for a supplemental gear-wheel mounted above the girder, and adjacent to the first-mentioned bearing, a gear journaled in said bearing meshing with the pinion, and struts 17 rigidly connecting the two bearings to insure accurate centering of the gear and pinion, substantially as described.

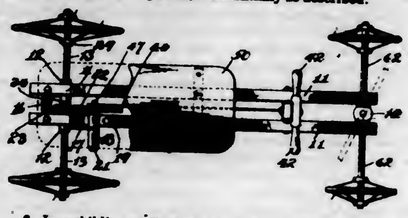

2. In a child's cart the combination of a longitudinal girder or frame member, a bearing for the driving-axle secured upon one side of said girder, a pinion mounted on the driving-axle in said bearing, another bearing for a supplemental gear-wheel mounted upon the opposite side of said girder and adjacent to the first-mentioned bearing, a gear journaled in said bearing meshing with the pinion, and a strut rigidly connecting the two bearings to insure accurate centering of the gear and pinion.

818,428. MECHANISM FOR CONNECTING VEHICLE-WHEELS TO AXLES. HUGH HILL, Anderson, Ind., assignor to HH Standard Manufacturing Company, Anderson, Ind., a Corporation of Indiana. Original application filed Mar. 20, 1905, Serial No. 251,045. Divided and this application filed Aug. 7, 1905. Serial No. 273,044.

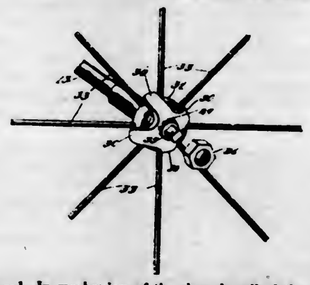

Claim.—1. In mechanism of the class described the combination of an axle, a traction-wheel mounted thereon, claw-shaped clips rigidly secured upon the axle, having their claws or fingers over the outsides of hubs of the wheel and between the spokes thereof, for the purpose of rigidly securing the wheel to the axle substantially as described.

2. In a child's vehicle the combination of, an axle, a wire-spoked traction-wheel mounted thereon, claw-shaped clips 29 rigidly secured to the axle on opposite sides of the wheel the claws or fingers of the clips being folded over the hubs of the wheel and passing between the spokes to secure the wheel in rigid position upon the axle substantially as described.

3. In a child's vehicle the combination, of an axle, a wire-spoked traction-wheel mounted thereon, claw-shaped clips 29 rigidly secured to the axle on opposite sides of the wheel, the claws or fingers of the clips being folded over the hubs of the wheel and passing between the spokes of the wheel the width of said fingers or clips being substantially the width of the spaces between successive spokes whereby the clips are adapted to secure the wheel in rigid position upon the axle substantially as described.

4. In mechanism of the class described, the combination of an axle a traction-wheel mounted thereon, a claw-shaped clip rigidly secured upon the axle having its claws or fingers over the outside of the hub of the wheel and extending between the spokes thereof.

5. As an article of manufacture for use in mechanism of the class described a clip 29 adapted to be secured to the axle having one or more fingers 30 of the form shown adapted to fit over the outside of the wheel-hub and pass between the spokes thereof.

6. In mechanism of the class described, the combination of an axle a traction-wheel mounted thereon a claw-shaped clip rigidly secured upon the axle having its claws or fingers bearing against the axle of the wheel fitting between the spokes of the wheel and occupying substantially the width of the spaces between the spokes whereby said clip is adapted to secure the wheel in rigid position upon the axle.

818,424. VEHICLE-AXLE MECHANISM. HUGH HILL, Anderson, Ind., assignor to HH Standard Manufacturing Company, Anderson, Ind., a Corporation of Indiana. Original application filed Mar. 20, 1905, Serial No. 251,045. Divided and this application filed Aug. 7, 1905. Serial No. 273,045.

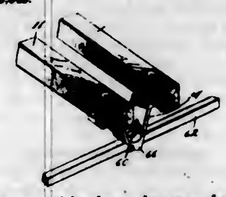

Claim.—1. As an article of manufacture, a front bolster for a child's vehicle made U-shaped as described, having one or more lugs extending downward from the bottom thereof adapted to limit the motion of the front axle of the vehicle to which the bolster is applied when said axle is pivotally attached to the bottom of the bolster.

2. As an article of manufacture, a front bolster for a child's vehicle, made U-shaped as described, having two lugs 66 extending downward from the bottom thereof, there being a space between the lugs lying in the center line of the vehicle in which the front axle of said vehicle is adapted to fit and be pivotally mounted on the bolster, substantially as described.

3. In combination, a vehicle-body and running-gear including wheels, front and rear axles and a bolster attached to the front of the vehicle-body and a pivot-pin, said bolster having depending lugs thereon forming stops for limiting the horizontal swing of the front axle, said lugs having substantially vertical acting surfaces and the acting surfaces on opposite sides of the axle-pivot being substantially parallel to each other, said front axle having a flat upper bearing-surface arranged substantially horizontal and having parallel vertical sides, and said bolster having a flat lower bearing-surface bearing directly upon the upper surface of said front axle thereby tending to maintain the axle sides vertical for squarely contacting the vertical acting surfaces of the stop-lugs, and the pivot-pin passing vertically through both bolster and axle to also assist in maintaining the axle sides vertical for squarely contacting the vertical acting surfaces of the stop-lugs.

818,425. INHALER AND EXHALER. JOHN L. HILL, Jackson, Mich., assignor to Forrest C. Bagley, Jackson, Mich. Filed June 27, 1904. Serial No. 214,204.

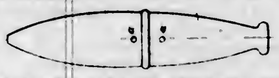

Claim.—1. In a device of the class described, the combination of a hollow inhaler member having inlet-ports in the walls thereof and internal screw-threads; a hollow exhaler member having a restricted delivery-port and internal screw-threads; a threaded coupling for said members adapted to seal their inner ends; a filling for said inhaler member adapted to receive a medicament; and a removable perforated partition for said inhaler member, for the purpose specified.

2. In a device of the class described, the combination of a hollow inhaler member having inlet-ports in the walls thereof and internal screw-threads; a hollow exhaler member having a restricted delivery-port and internal screw-threads; a threaded coupling for said members adapted to seal their inner ends; and a filling for said inhaler member adapted to receive a medicament, for the purpose specified.

3. In a device of the class described, the combination of a tubular inhaler member having a nasal tip at its outer end and inlet-ports at its inner end; a filling material therefor adapted to receive a medicament; an exhaler member having a mouthpiece at its outer end and a restricted delivery-port; and a coupling for the inner ends of said members, for the purpose specified.

4. In a device of the class described, the combination of an inhaler member having a nasal tip at its outer end and inlet-ports at its inner end, and a receptacle for medicament; an exhaler member having a mouthpiece at its outer end and a restricted delivery-port; and a coupling for the inner end of said members, for the purpose specified.

818,426. SIGNALING SYSTEM. HERBERT O. HOLDERMAN and CHARLES G. HAWLEY, Chicago, Ill., assignors, by direct and mesne assignments, to Rockable Signal Company, Chicago, Ill., a Corporation of Illinois. Filed Feb. 17, 1902. Serial No. 94,422.

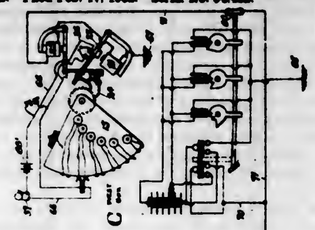

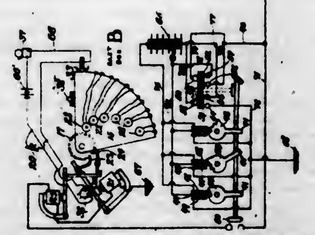

Claim.—1. In a signal system, the plurality of stations each provided with a pair of signal-boxes and the boxes of adjacent stations being electrically connected, and each said box comprising means for the display of a plurality of fixed signals, electromagnetic means for actuating the same, electromagnetic means for returning or releasing the signals, a clock-operated registering-dial; electromagnetic registering means in connection with the different display-signals, and means for transmitting electrical impulses from one box to the electromagnetic devices in the box of the adjacent station, substantially as described.

2. In a signal system, the combination of the signal-dial provided with a plurality of display-signals with an electromagnetic device for operating said dial, a concentrically-arranged registering-disk suitably operated, and electromagnetic punches operable upon said registering-disk and controlled by the signal-dial, substantially as described.

3. In a signal system, the adjacent signal-stations each provided with a signal-box containing an electrically-operable signal-dial bearing a number of fixed signals in combination with electromagnetic punches carried by said dial, a registering device whereon said punches operate, a local circuit containing a source of energy for operating said punches, said dial governing the operation of said punches, an electromagnetically-actuated circuit-closer included in said local circuit, and impulse-sending keys in each box, electrically connected for actuating the dial of the other station, substantially as described.

4. In a signal system, the combination of a signal-dial bearing a plurality of fixed signals and a plurality of electrical contacts, a registering device, a plurality of electromagnetic record-making devices electrically connected with corresponding contacts upon said dial, stationary contacts, the electromagnetic device for operating said dial, a circuit-closer provided in connection therewith, an energized local circuit including said circuit-closer and said contact, dial-returning means, a plurality of impulse-sending keys, and a reversing-switch, and a suitably-energized electric circuit connecting the switches, keys, and electromagnetic devices of adjacent boxes, substantially as described.

5. In a signal system, the combination with a plural signal device and the electromagnetic operating means therefor, with electric

Claim.—1. In a device of the character described, the combina-

the casing, an inlet and an outlet for the flow of water, a ring of

818,480. PROPELLER. WILLIAM F. HUNTER, Arvada, Col., as-

5. In a signal system, the combination with a plural signal device and the electromagnetic operating means therefor, with electromagnetic releasing means, a plurality of impulse-sending keys, a reversing-key or pole-changer, an electric battery, a main circuit having two branches, one thereof including said electromagnetic means and the other including said battery, switch, and keys, and said circuit-breaker being operable by said switch and either of said keys, substantially as described.

6. The signal-box comprising a casing having a display-opening, a signal-dial movable in said box to successively display a plurality of signals, a concentric registering-disk, electromagnetic registering means, and electromagnetic means for operating said dial and controlling said registering means, substantially as described.

7. The signal-box comprising a casing, a dial movable therein, the electromagnetic device for operating said dial, a registering-disk, a plurality of registering devices controlled by said dial, a local circuit including contacts for completing the circuits of said devices as said dial is moved, prolonged circuit-closing means provided in connection with said circuit and dial, and means for closing said local circuit to permit the operation of said devices, substantially as described.

8. In a signal system, the adjacent signal-stations each comprising a signal-box having signal display and registering devices, the connecting-circuit, and means for transmitting weak and strong impulses from one station to the other for operating the signal-display devices and the registering device respectively, substantially as described.

9. In a signal-box, the combination with the movable signal-dial, the concentric registering-disk continuously operated, electromagnetic means for operating said dial, a plurality of solenoids 28 carried by said dial each having a string-resisted core and a punch-point, a local circuit and circuit-closing means for completing said circuit through any one of said solenoids, substantially as described.

10. The signaling apparatus, comprising, in combination, a movable signal-display device, an electromagnetic motor for said device, an electric circuit containing a source of electricity, means for opening and closing said circuit to cause the operation of said device by said motor, a registering device movable with said signal device proper and made to operate upon the last movement of said motor at the end of each signaling period, substantially as described.

11. A signal system, having two stations, each equipped with a signaling apparatus comprising, in combination, a movable signal device, a single electromagnetic operator therefor, and a registering mechanism operable upon each last signaling movement of said device, electric circuits joining said stations and the impulse-keys whereby the signal-operator of each station is controlled from the other station, substantially as described.

12. In a registering device, the combination of the record-carrying mechanism with a visual movable signal, an electromagnetic operator thereof having a normally limited stroke armature, capable, however, of abnormal movement, a record-making device operated upon the abnormal movement of said armature, and electrical means for causing normal and abnormal movements of said armature, substantially as described.

813,427. RAILROAD MOTOR-CAR. CLARENCE H. HOWARD, St. Louis, Mo. Filed Dec. 1, 1905. Serial No. 289,901.

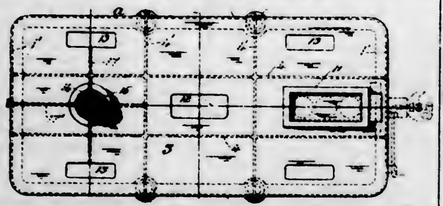

Claim.—In a motor-car of the character described, the combination with a cast-steel wheel-frame integral throughout, of a floor supported by and integral with the said frame, a pocket in the floor adapted to receive a derrick-post, and ribs integral with the floor on its under side, the said ribs being united at their ends integrally to the said frame, substantially as described.

813,428. MAGAZINE DISPLAY-BASEL. JAMES H. HOUR, St. Louis, Mo. Filed May 28, 1903. Serial No. 261,746.

Claim.—1. In a device of the character described, the combination with a magazine of a face-plate therefor, said face-plate having a slot in its lower portion, and said face-plate overlapping the upper edges of the lowest horizontal row of minor packages contained in said magazine, and a flange forming part of said face-plate projecting upwardly above the lower floor of said magazine and overlapping the lower edges of said minor packages, and means in the nature of an opening facilitating the extraction of said minor packages from the said lower horizontal row.

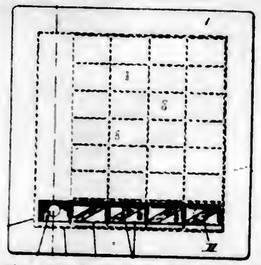

2. In a device of the character described, the combination of a magazine and a face-plate therefor, said face-plate slightly overlapping the lowest horizontal row of minor packages contained in said magazine, said magazine being provided with an opening in its rear face for the insertion of a finger or other means to aid in the withdrawal of a minor package from the lowest horizontal row of minor packages in said magazine.

3. In a device of the character described, the combination of a face-plate having a slot in its lower portion, a magazine attached to the rear of said face-plate, said magazine having an opening in its rear wall, the lower floor of said magazine being wide enough to accommodate a single row of minor packages, and said magazine throughout being wide enough to accommodate but a single row from front to back of said minor packages, but said magazine being adapted to receive a plurality of vertical and horizontal rows of said minor packages, and said face-plate overlapping the upper and lower edges of the lowest horizontal row of minor packages within said magazine contained, and said opening in the rear wall of the magazine affording access for means, coöperating with means inserted through the slot in the face-plate, whereby an individual minor package may be raised above that portion of the face-plate which overlaps the lower edge thereof, and, thereupon, withdrawn from said magazine.

4. In a device of the character described, the combination, with a front portion having a slot in its lowest portion, of a box or magazine attached to same and on the back thereof, said magazine being a major package designed to hold minor packages, the lowest part of said front portion comprising a flange turned upwardly from the floor of the magazine, and said flange and said floor being formed integral with the back of the magazine and shaped by bending same, said flange and the upper side of said slot forming means to retain said minor packages within said major package, and the rear wall of said magazine containing an opening to assist in removing said minor packages from the retention of said means.

5. In a device of the described class, the combination of a display-card, a receptacle formed on the back of the card and having its rear wall apertured near the lower end of the receptacle, said card having a slot in its front wall above the lower end of the receptacle, and folding braces adapted to hold the card and receptacle in a raised position.

813,429. FILTER. WOLCOTT A. HULL, New York, N. Y. Filed Mar. 26, 1904. Renewed Aug. 11, 1905. Serial No. 273,846.

Claim.—1. In a filter the combination of a base, forming part of a filter-casing, provided with an upwardly-extending rim, a cylindric body also forming part of the casing and provided with a flange fitting within the rim of said base, a filtering substance arranged within

the casing, an inlet and an outlet for the flow of water, a ring of easily-compressible packing material surrounding the cylindric body and resting against the upper side of its flange, a ring surrounding the cylindric body above the packing material and also extending down outside the rim of the base and provided outside said rim with means for engaging it with said rim.

2. In a filter the combination of a base, forming part of a filter-casing, provided with an upwardly-extending rim, a cylindric body also forming part of the casing and provided with a flange fitting within the rim of said base, a filtering substance arranged within the casing, an inlet and an outlet for the flow of water, a ring of easily-compressible packing material surrounding the cylindric body and resting against the upper side of its flange, a ring surrounding the cylindric body above the packing material and also extending down outside the rim of the base and provided outside said rim with a screw-thread for engaging it with said rim.

3. In a filter the combination of a base, forming part of a filter-casing, provided with an upwardly-extending rim, a cylindric body also forming part of the casing and provided with a flange fitting within the rim of said base, a filtering substance arranged within the casing, an inlet and an outlet for the flow of water, a ring of easily-compressible packing material surrounding the cylindric body and resting against the upper side of its flange, a ring surrounding the cylindric body above the packing material and also extending down alongside the rim of the base and provided alongside said rim with means for engaging it with said rim.

4. In a filter the combination of a base, forming part of a filter-casing, provided with an upwardly-extending rim, a cylindric body also forming part of the casing and provided with a flange fitting within the rim of said base, a filtering substance arranged within the casing, an inlet and an outlet for the flow of water, a ring of easily-compressible packing material surrounding the cylindric body and resting against the upper side of its flange, a ring surrounding the cylindric body, adapted to compress the packing material, and provided with means for engaging it with the rim of the base.

5. In a filter, the combination of a filter-casing comprising two separable parts coöperating with each other, a filtering substance arranged within the casing, an inlet and an outlet for the flow of water, a ring surrounding the casing and provided with means for connecting it to one of said parts of the casing, and easily-compressible packing material surrounding the casing and located between said ring and said other part of the casing.

6. In a filter the combination of a casing comprising two separable parts coöperating with each other, one part being provided with a rimmed flange and the other part with a flange adapted to fit within the rimmed flange of said first-named part, a filtering substance arranged within the casing, an inlet and an outlet for the flow of water, a ring surrounding the casing and provided with means for engaging it with the rim of said first-named part, easily-compressible packing material surrounding the casing and located between said ring and the flange of the other part of the casing.

7. In a filter, the combination of a base forming part of a casing and provided with a cavity which is wholly above the exterior bottom surface of said base and contracted so as to be smaller near the exterior surface than near the interior surface of said base, a body forming part of the casing, means for securing the base and body of the casing together, an inlet and an outlet for the flow of water, a filtering substance within the casing, a nozzle or conduit extending from the filtering substance, and packing material snugly fitting in the cavity in the base and wholly above the exterior bottom surface of the base, said packing material having the shape of a cork with a hole extending through it to snugly receive said nozzle or conduit.

8. In a filter, the combination of a base forming part of a casing and provided with a cavity which is wholly above the exterior bottom surface of said base and contracted so as to be smaller near the exterior surface than near the interior surface of said base, a body forming part of a casing, means for securing the base and body together, an inlet and an outlet for the flow of water, one of which consists of an orifice leading from said cavity, a filtering substance within the casing, a nozzle or conduit extending from the filtering substance, and a ring of packing material snugly fitting in the cavity in the base and wholly above the exterior bottom surface of the base, the hole in said ring of packing material being adapted to snugly receive said nozzle or conduit, and said ring of packing material being of such solidity and of such thickness between opposite faces that inserting the nozzle into the hole in the ring, forms a water-tight joint between the nozzle and the packing material and also operates to expand the packing material and thereby to insure a water-tight joint between it and the walls of the cavity.

813,430. PROPELLER. WILLIAM F. HOOVER, Arcata, Cal., assignor of one-half to Francis R. Herd, Arcata, Cal. Filed Apr. 14, 1905. Serial No. 255,047.

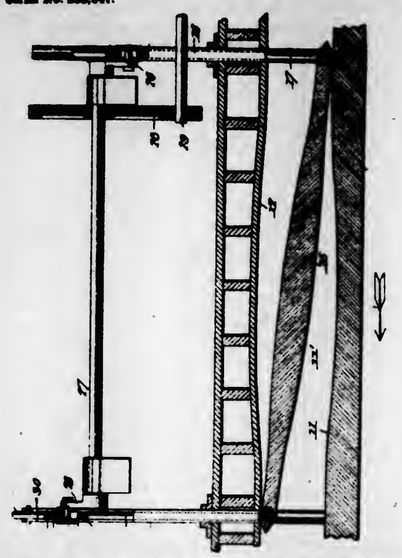

Claim.—1. The combination with a vessel having at the bottom an open-ended chamber, the upper and lower walls of which are arranged on oppositely-curved lines, respectively, a propeller-blade fitting within said chamber and having its upper and lower walls of a curvature corresponding to that of the walls of the chamber, and a propeller-operating means for moving the opposite ends of the blade alternately and for holding one end stationary, while the other end is moved to expel a volume of water from the chamber.

2. The combination with a vessel having a bottom chamber open at both ends, of a propeller-blade disposed within said chamber, vertically-disposed guides extending through the hull of the vessel and arranged to one side of the side walls of the chamber, rods extending through said guides, and connected to the propeller-blade, a crank-shaft, cranks thereon, cross-bars connecting the vertical bars in pairs and provided with dwell-faces that are engaged by said cranks, substantially as specified.

3. The combination with a vessel having a bottom chamber open at both ends, of a propeller-blade arranged within the chamber, hollow guide members extending through the hull of the vessel at points to one side of the side walls of the chamber, vertical bars mounted in said guides and connected to the propeller-blade, cross-bars connecting said vertical bars in pairs and provided with dwell-faces, a crank-shaft, cranks on said shaft, crank-pins arranged to engage the dwell-faces of the cross-bars, and adjustable antifriction-rollers carried by the cross-bars and engaging against the upper portions of the hollow guides.

813,431. DIVING APPARATUS. TAKAO IWAHASHI and MARK B. WOODWARD, Washington, D. C. Filed Oct. 11, 1905. Serial No. 282,285.

Claim.—1. In diving apparatus, a float, a diver's suit, and means contained in said float for supplying air to said suit comprising a source of air-supply independent of attendants arranged to furnish air at a pressure greater than that of the atmosphere, substantially as described.

2. In diving apparatus, a diver's suit, a float, a connection between said float and the diver's suit, and pumping means located in said float for furnishing a supply of air to the diver's suit, substantially as described.

3. In diving apparatus, a diver's suit, a float, a connection between said float and the diver's suit, and motor-driven means within said float for furnishing a supply of air to the diver's suit, substantially as described.

4. In diving apparatus, a float divided into compartments, one

compartment containing a motor-driven air-compressor and having a connection therefrom to the diver, and a connection from the other compartment to the diver whereby fresh air is delivered from one compartment to the diver and exhaled air from the diver exhausted through the other compartment, and means for permitting the escape of any water entering the float, substantially as described.

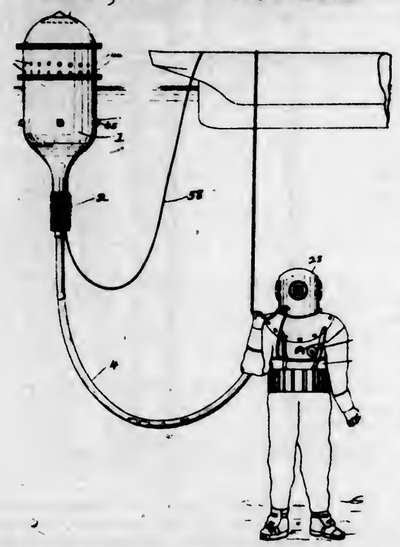

5. In diving apparatus, a float divided into compartments, one of said compartments having means for furnishing air to a diver, and another compartment near the top of the float having an opening near its top for admitting air and an opening for permitting the water to escape, and means of communication between said compartments, substantially as described.

6. In diving apparatus, a float divided into compartments, one of said compartments being located near the top of the float and having an opening to admit air and an opening near its bottom for permitting water to escape, and another of said compartments having means for supplying air to the diver and provided with a stack entering the upper compartment and having communication therein, substantially as described.

7. In diving apparatus, a float divided into compartments, one of said compartments being located near the top of the float and having an opening to admit air and an opening near its bottom for permitting water to escape, and another of said compartments having means for supplying air to the diver and provided with a stack entering the upper compartment and having communication therewith, and another compartment also connecting with the atmosphere and having the exhaust from the diver connected thereto, substantially as described.

8. In diving apparatus, a float divided into compartments, one of said compartments being located near the top of the float and having an opening to admit air and an opening near its bottom to permit water to escape, and another of said compartments having an air-compressor therein for supplying air to the diver, and an electric motor and a battery for operating said compressor, substantially as described.

9. In diving apparatus, a float for supplying air to a diver, means located within the float for supplying air to a diver, a hose connecting the float to the diver, and a universal joint between said float and said hose, substantially as described.

10. In diving apparatus, a float, a hose connecting said float with the diver's suit, and a universal joint between said float and said hose, said joint comprising a plurality of sections pivoted at right angles to each other and having a flexible covering, substantially as described.

11. In diving apparatus, means for supplying air to a diver, said means being governed by pressure of water surrounding the diver, substantially as described.

12. In diving apparatus, electrically-operated means for supplying air to the diver, and a device controlled by the pressure of water for governing said electrically-operated means, substantially as described.

13. In diving apparatus, electrically-operated means for supplying air to a diver, and a device controlled by the pressure of the water for governing said electrically-operated means, said device comprising a piston and a series of resistance-coils, substantially as described.

14. In diving apparatus, a float, a compressor located therein for supplying air to the diver, a motor for operating said compressor, and means on the diver's suit controlled by the pressure of the water for governing said motor, substantially as described.

15. In diving apparatus, a float, a compressor located therein for supplying air to the diver, a motor for operating said compressor, and means on the diver's suit controlled by the pressure of the water for governing said motor, said means comprising a piston and a series of resistance-coils, substantially as described.

16. In diving apparatus, a float, a compressor contained in said float for supplying air to a diver, said float being provided with air-inlet openings and water-exit openings, and a pump for forcing water from the float out of said exit-openings, substantially as described.

17. In diving apparatus, a diver's suit, means for supplying air thereto, means for signaling the location of the diver comprising a flexible bulb located on said diver's suit, said bulb having a normally closed opening adapted to open when pressure is applied thereto, substantially as described.

18. In diving apparatus, a float, a connection between said float and a diver's suit, and means within the float, operating independantly of the attendants, for supplying air to the diver at a pressure greater than that of the atmosphere, substantially as described.

813,432. WATCH. SALVATOR JANNER, La Chaux-de-Fonds, Switzerland. Filed Jan. 23, 1905. Serial No. 243,073.

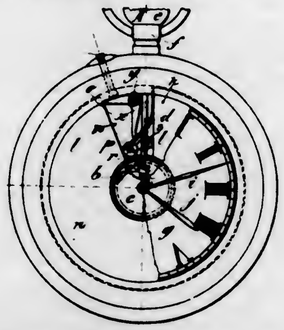

Claim.—1. A watch of the class described having a case provided with an apertured dial, a hinged back for said case, and an incandescent lamp secured to said hinged back in a manner to bring said lamp into register with the aperture of said dial when said back is closed.

2. A watch provided with a case, a dry-cell battery and an incandescent lamp located within said case, a spring-contact mounted on and connected with said battery, a reciprocating plunger, a bell-crank of insulating material whereby said spring may be engaged with the lamp to close circuit with the battery.

3. A watch of the class described having a case provided with an apertured dial of opaque material, a crystal provided with a deflecting-surface alined with said aperture, a hinged back for said case, and an incandescent lamp secured to said hinged back in a manner to bring said lamp into register with said aperture and deflecting-surface to deflect the rays of light on said dial.

4. A watch of the class described having a case provided with an apertured dial, a hinged back for said case, and light-producing means secured to said hinged back in a manner to bring said means into register with the aperture when said case is closed.

5. A watch of the class described having a case provided with an apertured dial, a removable back for said case, and light-producing means secured to said back in a manner to bring said means into register with the aperture when said case is closed.

6. A watch of the class described provided with a case and operating works, a dry-cell battery surrounding said works and provided with a recessed or cut-away portion, a lamp projecting up within said recessed portion, and switch mechanism adjacent said lamp for closing circuit with said battery.

7. A watch of the class described provided with a case and an apertured dial, a battery secured in said case, a removable back for said case, a lamp secured to said back, switch mechanism for closing circuit with said lamp and battery, one part of said mechanism being of insulated material and being secured to the back, the remainder of said mechanism being secured to the case, said insulated part and said lamp being secured to the back in a manner to bring said parts into operative relation with the case mechanism and the aperture when said back is closed.

813,433. VALVE-GEAR. FRANK G. JOHNSON, Elkader, Iowa. Filed May 26, 1905. Serial No. 262,230.

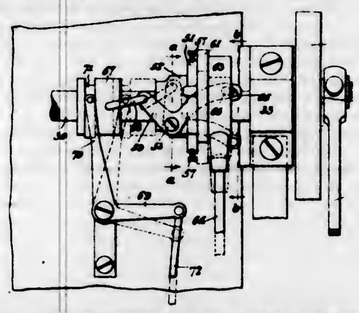

Claim.—1. The combination of a shaft, a collar fixed thereon and provided with a slot and an eccentric peripheral portion, an eccentric embracing the shaft and pivoted upon the collar opposite the eccentric portion thereof, said eccentric having a hook slidably embracing the eccentric portion of the collar, and a lever fulcrumed upon the shaft and working in the slot of the collar in connection with the eccentric to shift the latter upon its pivotal support.

2. The combination of a shaft, a collar fixed thereon and provided with a slot, an eccentric embracing the shaft and pivotally supported upon the collar, a lever working in the slot of the collar in connection with the eccentric, and a set-screw piercing one end of the slot in the collar to limit the play of the lever.

3. The combination of a shaft, a collar fixed thereon and provided with a slot, limiting-screws piercing the opposite ends of the slot, an eccentric pivoted upon the collar, and a lever working in the slot in connection with the eccentric to shift the latter upon its pivotal support, the play of the lever being limited by the screws.

4. The combination of a shaft, a collar embracing the shaft and having a hub projected at one side of the collar and fixed to the shaft, the collar being provided with a slot and an eccentric peripheral portion, a lever fulcrumed upon the hub and working through the slot, and an eccentric pivoted upon the other side of the collar in connection with the lever and provided with a hook slidably embracing the eccentric portion of the collar.

813,434. STRAINER. LLEWELLYN W. JONES, Swoyersville, Pa. Filed May 9, 1905. Serial No. 259,542.

Claim.—1. A strainer or nozzle comprising top and bottom body portions, ribs rigidly connected to said top and bottom portions, said ribs having helically-arranged grooves therein, and a helix engaging said grooves and readily removable therefrom.

2. A strainer, or nozzle, comprising a body portion, or frame, a helix engaging said frame, and a stop on said frame adapted to engage said helix.

3. A strainer, or nozzle, comprising a body portion, or frame, a helix engaging said frame, and a pin in said frame adapted to engage the upper end of said helix.

4. A strainer, or nozzle, comprising a body portion, or frame, a helix engaging said frame, and means for cleaning the spaces between said helix in removing or applying same.

5. A strainer, or nozzle, comprising a body portion, or frame, a helix engaging said frame, and a projection on said frame adapted to enter the space between said helices.

813,435. CARTRIDGE-LOADING MACHINE. SIMEON B. KINNEY, Marquette, Mich., assignor to The E. I. Du Pont de Nemours Powder Company, Wilmington, Del., a Corporation of New Jersey. Filed Oct. 15, 1904. Serial No. 228,564.

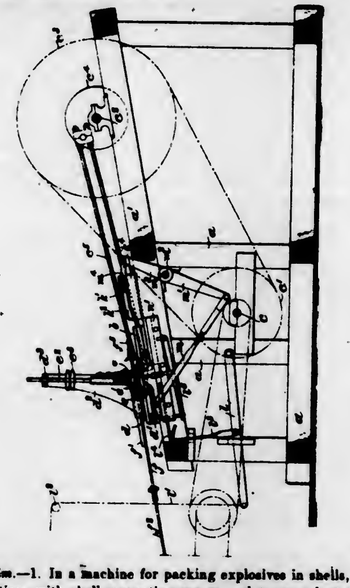

Claim.—1. In a machine for packing explosives in shells, the combination, with shell-supporting means and tamps adapted to enter the shells, of a reciprocating carriage having roller-channels, said channels being curved for at least a part of their length, weighted rollers in said channels, and means enabling the rollers to operate the tamps, the weighted rollers forcing the tamps forwardly with a yielding pressure, as the carriage moves forwardly, substantially as described.

2. In a machine for packing explosives in shells, the combination, with shell-supporting means and tamps, of a plunger connected with each tamp, a tension device for each plunger and acting at an angle thereto, a roller-case for each plunger, said roller-case having a continuous channel curved for at least a part of its length, rollers in said channel acting upon said plunger and acted upon by said tension device, and means to reciprocate the roller-cases.

3. In a machine for packing explosives in shells, the combination, with shell-supporting means and tamps, of roller-cases each having a continuous channel, a portion of which is vertical, while another portion extends at an angle to the vertical, rollers adapted to traverse the channel, presser-rods entering the vertical portions of the channels, plungers connected with the tamps, entering the other portions of the channels, each set of rollers being thus confined between a presser-rod and a plunger, and means to reciprocate the roller-cases, thereby causing the tamps to enter the shells and pack the explosive therein with a yielding pressure, substantially as described.

4. In a machine for packing explosive shells, the combination, with shell-supporting means and tamps, of a carriage, means to reciprocate the carriage, roller-cases supported on the carriage, each roller-case having a continuous channel a portion of which is vertical while another portion extends toward the shell-supporting means, rollers within the channel and adapted to move back and forth therein, presser-rods entering the vertical portions of the channels and en-

gaging the rollers therein, plungers entering the other portions of the channels and engaging the rollers therein, and rods connecting the plungers with the tamps, substantially as described.

4. In a machine for packing explosives in shells, the combination, with shell-supporting means and tamps adapted to enter the shells, of a reciprocating carriage having roller-channels, said channels being curved for at least a part of their length, weighted rollers in said channels, and means enabling the rollers to operate the tamps, the weighted rollers forcing the tamps forwardly with a yielding pressure, as the carriage moves forwardly, substantially as described.

5. In a machine for packing explosives in shells, the combination, with shell-supporting means and tamps, of a plunger connected with each tamp, a tension device for each plunger and acting at an angle thereto, a roller-case for each plunger, said roller-case having a continuous channel curved for at least a part of its length, rollers in said channel acting upon said plunger and acted upon by said tension device, and means to reciprocate the roller-cases.

6. In a machine for packing explosives in shells, the combination, with shell-supporting means and tamps, of roller-cases each having a continuous channel, a portion of which is vertical, while another portion extends at an angle to the vertical, rollers adapted to traverse the channel, presser-rods entering the vertical portions of the channels, plungers connected with the tamps, entering the other portions of the channels, each set of rollers being thus confined between a presser-rod and a plunger, and means to reciprocate the roller-cases, thereby causing the tamps to enter the shells and pack the explosive therein with a yielding pressure, substantially as described.

7. In a machine for packing explosive shells, the combination, with shell-supporting means and tamps, of a carriage, means to reciprocate the carriage, roller-cases supported on the carriage, each roller-case having a continuous channel a portion of which is vertical while another portion extends toward the shell-supporting means, rollers within the channel and adapted to move back and forth therein, presser-rods entering the vertical portions of the channels and engaging the rollers therein, plungers entering the other portions of the channels and engaging the rollers therein, and rods connecting the plungers with the tamps, substantially as described.

8. In a machine for packing explosive shells, the combination, with shell-supporting means and tamps, of a carriage, means to reciprocate the carriage, roller-cases supported on the carriage, each roller-case having a continuous channel a portion of which is vertical while another portion extends toward the shell-supporting means, rollers within the channel and adapted to move back and forth therein, presser-rods entering the vertical portions of the channels and engaging the rollers therein, plungers entering the other portions of the channels and engaging the rollers therein, rods connecting the plungers with the tamps, a lock adapted to engage each plunger when the latter is moved to its extreme retracted position after each loading action, a lock adapted to engage each plunger when the latter is moved to its extreme retracted position after each loading action, and means to operate the locks, substantially as described.

9. In a machine for packing explosive shells, the combination, with shell-supporting means and tamps, of a carriage, means to reciprocate the carriage, roller-cases supported on the carriage, each roller-case having a continuous channel a portion of which is vertical while another portion extends toward the shell-supporting means, rollers within the channel and adapted to move back and forth therein, presser-rods entering the vertical portions of the channels and engaging the rollers therein, plungers entering the other portions of the channels and engaging the rollers therein, rods connecting the plungers with the tamps, a lock adapted to engage each plunger when the latter is moved to its extreme retracted position after each loading action, a lock adapted to engage each plunger when the latter is moved to its extreme retracted position after each loading action, and means to operate the locks, said means comprising a rider adapted to engage the locks when operated to move the lock into position to unlock all the tamps, a guide in which said block slides, a pin on said block adapted to

when operated to move the lock into position to unlock all the tamps, a guide in which said block slides, a pin on said block adapted to operation is completed, said rider being adapted to disengage said

gaging the rollers therein, plungers entering the other portions of the channels and engaging the rollers therein, and rods connecting the plungers with the tamps, substantially as described.

5. In a machine for packing explosives in shells, the combination, with shell-supporting means and tamps adapted to enter the shells, of reciprocating means to project the tamps into the shells including yielding pressure devices adapted to permit the tamps to be retracted by the explosive packed thereby, and locks adapted to hold the tamps in their retracted position after each loading action of the tamps, substantially as described.

6. In a machine for packing explosives in shells, the combination with shell-supporting means and tamps adapted to enter the shells, of reciprocating means to project the tamps into the shells including yielding pressure devices adapted to permit the tamps to be retracted by the explosive packed thereby, a lock adapted to hold each tamp in its retracted position after each loading action, a lock adapted to hold each tamp out of operation after the loading of its corresponding shell is completed, and means to unlock the tamps.

7. In a machine for packing explosives in shells, the combination, with shell-supporting means and tamps adapted to enter the shells, of a carriage, yielding pressure devices supported on the carriage but capable of independent movement relative thereto, connecting means between said yielding pressure devices and the tamps, means to reciprocate the carriage thereby projecting the tamps into the shell with a yielding pressure and causing the explosive packed therein to retract the tamps relatively to the carriage, and locks adapted to hold the tamps in their retracted positions after each loading action of the tamps, substantially as described.

8. In a machine for packing explosives in shells, the combination, with shell-supporting means and tamps, of a plunger connected with each tamp, a tension device for each plunger and acting at an angle thereto, roller-cases for the plungers, said roller-cases having continuous channels curved for at least a part of their length, riders secured to and forming part of the plungers and extending within the portion of the roller-channels adjacent to the plungers, and rollers in the channels engaging said riders.

9. In a machine for packing explosives in shells, the combination, with shell-supporting means and tamps, of a plunger connected with each tamp, a tension device for each plunger and acting at an angle thereto, roller-cases for the plungers, said roller-cases having continuous channels curved for at least a part of their length, riders secured to and forming part of the plungers and extending within the portion of the roller-channels adjacent to the plungers, rollers in the channels engaging said riders, locks adapted when in operative position to engage and hold the plungers in their retracted position after each loading action of the tamps, said locks being in line of travel of said riders and adapted to be engaged by said riders when the plungers are retracted to a determinate extent and move said locks into inoperative position.

10. In a machine for packing explosives in shells, the combination, with shell-supporting means, tamps and plungers connected with the tamps, of a reciprocating carriage, yielding pressure devices supported on the carriage but capable of independent movement relative thereto and adapted to actuate the plungers as the carriage moves forwardly, a lock for each plunger adapted to hold the plunger in its retracted position after each loading action, and a lock adapted to engage each plunger when the latter is moved to its extreme retracted position after the loading of the shell is completed and hold said plunger out of operation during the subsequent reciprocations of the carriage, substantially as described.

11. In a machine for packing explosives in shells, the combination with shell-supporting means and tamps, of plungers connected with the tamps, rollers, roller-cases, each having a channel for the reception of the rollers and an orifice through which said plunger extends, said plunger also extending within the roller-channel and engaged by said rollers, tension devices engaging the rollers in the channels and causing them to press against the plungers, and means to reciprocate the roller-cases thereby causing the tamps to enter the shells and, together with the plungers, to be retracted relatively to the roller-cases, a lock adapted to hold the plungers in their retracted positions after each loading action of the tamps, and a dogging-bar adapted to engage and hold each plunger out of operation after the loading of its corresponding shell is completed, substantially as described.

12. In a machine for packing explosives in shells, the combination, with shell-supporting means, tamps and plungers connected with the tamps, of a reciprocating carriage, yielding pressure devices supported on the carriage but capable of independent movement relative thereto and adapted to actuate the plungers as the carriage moves forwardly, a lock for each plunger adapted to hold the plunger in its retracted position after each loading action, a lock adapted to engage each plunger when the latter is moved to its extreme retracted position after the loading of the shell is completed and hold said plunger out of operation during the subsequent reciprocations of the carriage, and unlocking means on each plunger adapted to disengage the first-named lock from the plunger when the plunger's engagement with the last-named lock is effected, substantially as described.

13. In a machine for packing explosives in shells, the combination, with shell-supporting means, tamps, plungers connected with the tamps, of a carriage, means to reciprocate the carriage, roller-cases supported on the carriage, each roller-case having an orifice through which the plunger extends, and also a roller-channel, rollers within the channel, tension devices engaging said rollers, a rider secured to and forming part of each plunger and extending within the roller-channel, the upper face of the plunger being transversely grooved, a latch adapted to engage each plunger and hold it from moving forwardly relative to the carriage after it is retracted at the end of each loading action, a dogging-bar adapted to engage and hold each plunger out of operation after its loading operation is completed, said rider being arranged to disengage said latch from the plunger when the latter's engagement with the dogging-bar is effected, and a spring-pressed catch adapted to hold the disengaged latch out of operation, substantially as described.

14. In a machine for packing explosives in shells, the combination, with shell-supporting means, tamps, and plungers connected with the tamps, a reciprocating carriage, yielding pressure devices on the carriage adapted to actuate the plungers as the carriage moves forwardly, a lock adapted to hold each plunger out of operation when the loading of its corresponding shell is completed, a normally stationary sliding block, connections therefrom to the lock, and means to operatively engage said block with the carriage, thereby sliding said block and operating the lock to unlock all the plungers, substantially as described.

15. In a machine for packing explosives in shells, the combination, with shell-supporting means and tamps, of a reciprocating carriage, yielding pressure devices on the carriage adapted to actuate the tamps, a lock adapted to hold each tamp out of operation when the loading of its corresponding shell is completed, a normally stationary sliding block, connections therefrom to the lock, a pin on said block adapted to engage said carriage, a spring normally holding said pin out of engagement with said carriage, and means to move the pin into engagement with the carriage, thereby causing the latter to actuate the block and operate the lock to unlock all the tamps, substantially as described.

16. In a machine for packing explosives in shells, the combination, with shell-supporting means and tamps, of a reciprocating carriage, yielding pressure devices on the carriage adapted to actuate the tamps, a lock adapted to hold each tamp out of operation when the loading of its corresponding shell is completed, a normally stationary sliding block, connections therefrom to the lock adapted when operated to move the lock into position to unlock all the tamps, a guide in which said block slides, a pin on said block adapted to engage said carriage, a spring normally holding said pin out of engagement with said carriage and into engagement with a recess in said guide, and means to move the pin out of engagement with the guide and into engagement with the carriage, thereby causing the block to move with the carriage and operating the connections to the lock, substantially as described.

17. In a machine for packing explosives in shells, the combination, with shell-supporting means and tamps, of a reciprocating carriage, yielding pressure devices on the carriage adapted to actuate the tamps, a lock adapted to hold each tamp out of operation when the loading of its corresponding shell is completed, a normally stationary sliding block, connections therefrom to the lock, a lever, means for moving the same, an arm secured to said lever, a second lever pivoted on the block and adapted to be operated by said arm when the first lever is operated, a stationary guide in which said block slides, a third lever pivoted thereon, a connection therefrom to the second lever whereby the second lever operates the third lever, and means actuated by the third lever to cause said block to engage with said carriage, whereby the carriage, through the block and connections, operates the lock to unlock all the tamps, substantially as described.

18. In a machine for packing explosives in shells, the combination, with shell-supporting means and tamps, of a reciprocating carriage, yielding pressure devices on the carriage adapted to actuate the tamps, a lock adapted to hold each tamp out of operation when the loading of its corresponding shell is completed, a normally stationary sliding block, connections therefrom to the lock adapted

when operated to move the lock into position to unlock all the tamps, a guide in which said block slides, a pin on said block adapted to engage said carriage, a spring normally holding said pin out of engagement with said carriage and into engagement with a recess in said guide, a lever, means for moving the same, an arm on said lever, a second lever pivoted to the block and adapted to be operated by said arm, a third lever pivoted on the guide, a connection from the second lever to the third lever, and a pin on the third lever adapted to engage the pin in the block and move it out of engagement with the guide and into engagement with the carriage, substantially as described.

19. In a machine for packing explosives in shells, the combination, with shell-supporting means, tamps and plungers connected with the tamps, of a reciprocating carriage, yielding pressure devices on the carriage adapted to actuate the plungers as the carriage moves forwardly, a dogging-bar adapted to engage and hold each plunger out of operation when the loading of its corresponding shell is completed, a guide along which said dogging-bar is adapted to move out of locking position, and means to move said dogging-bar along the guide, thereby unlocking all the plungers, substantially as described.

20. In a machine for packing explosives in shells, the combination, with shell-supporting means, tamps and plungers connected with the tamps, of a reciprocating carriage, yielding pressure devices on the carriage adapted to actuate the plungers as the carriage moves forwardly, and normally stationary means engaging and holding each plunger out of operation when the loading of its corresponding shell is completed and movable to unlock the plungers and return them to operative position, substantially as described.

21. In a machine for packing explosives in shells, the combination, with shell-supporting means, tamps and plungers, having hooked rear ends, connected at their forward ends with the tamps, of a reciprocating carriage, yielding pressure devices adapted to actuate the plungers as the carriage moves forwardly, a dogging-bar having a lip with which the hooked rear end of each plunger engages when the loading of its corresponding shell is completed and a rear wall, and means to move said dogging-bar forwardly and downwardly, thereby simultaneously unlocking said plungers and pushing them into their initial operative positions, substantially as described.

22. In a machine for packing explosives in shells, the combination, with shell-supporting means, tamps and plungers having hooked rear ends, connected at their forward ends with the tamps, of a reciprocating carriage, yielding pressure devices adapted to actuate the plungers as the carriage moves forwardly, a guide having grooves extending generally in the direction of extension of the plungers but whose forward end dips downwardly, a dogging-bar, rollers thereon slidable in said grooves, said dogging-bar having a lip with which the hooked rear end of each plunger engages when the loading of its corresponding shell is completed and a rear wall, and means to move said dogging-bar forwardly, thereby restoring the plungers to their operative position and unlocking them, substantially as described.

23. In a machine for packing explosives in shells, the combination, with shell-supporting means, tamps and plungers connected with the tamps, of a reciprocating carriage, yielding pressure devices supported on the carriage and adapted to actuate the plungers as the carriage moves forward, a lock for each plunger adapted to hold the plunger in its retracted position after each loading action, a lock adapted to engage each plunger when the latter is moved to its extreme retracted position after the loading of the shell is completed and hold said plunger out of operation during the subsequent reciprocation of the carriage, unlocking means to disengage the first-named lock from the plunger when the plunger's engagement with the last-named lock is effected, and means to disengage the last-named lock from, and reengage the first-named lock with, all the plungers, substantially as described.

24. In a machine for packing explosives in shells, the combination, with shell-supporting means, tamps, plungers connected with the tamps, of a carriage, means to reciprocate the carriage, roller-cases supported on the carriage, each roller-case having an orifice through which the plunger extends and also a roller-channel, rollers within the channel, tension devices engaging said rollers, a rider secured to and forming part of each plunger and extending within the roller-channel, the upper face of the plunger being transversely grooved, a latch adapted to engage each plunger and hold it from moving forwardly relative to the carriage after it is retracted at the end of each loading action, a normally stationary dogging-bar adapted to engage and hold each plunger out of operation after its loading operation is completed, said rider being adapted to disengage said latch from the plunger when the latter's engagement with the dogging-bar is effected, a catch adapted to hold the disengaged latch out of operation, means to move the dogging-bar forwardly and downwardly, thereby undogging all the plungers and restoring them to their initial operative position, and a device on each plunger adapted, in the forward movement of the plunger, to disengage the latch from the clutch, substantially as described.

25. In a machine for packing explosives in shells, the combination, with shell-supporting means and tamps adapted to enter the shells, of plungers, means to reciprocate the plungers, and intermediate rods between the plungers and tamps, each of which is movable to connect one of the tamps with one of a plurality of plungers, whereby shells of different sizes may be loaded, substantially as described.

26. In a machine for packing explosives in shells, the combination with shell-supporting means and tamps adapted to enter the shells, of a carriage and operating means therefor, yielding pressure devices supported on the carriage but capable of independent movement relative thereto, plungers actuated by the yielding pressure devices, and flexible rods each of which is adapted to connect one of the tamps with one of a plurality of plungers.

27. In a machine for packing explosives in shells, the combination of the tamps, the plungers and the flexible rods attached to the front ends of the plungers and jointed to the rear ends of the tamps, substantially as described.

28. In a machine for packing explosives in shells, the combination, with plungers, means to reciprocate the plungers, and tamp-actuating rods connected with the plungers and movable to connect with tamps more or less offset with relation to the plungers.

29. In a machine for packing explosives in shells, the combination, with plungers, means to reciprocate the plungers, and tamp-actuating rods connected with the plungers, said rods having a limited flexibility whereby they may be connected with tamps spaced at different distances apart and some or all of which are more or less offset with relation to the plungers.

30. In a machine for packing explosives in shells, the reciprocating roller-cases, each of which contains a channel having a vertical end portion, an end portion at an angle to the vertical portion and a curved portion connecting the end portions, rollers movable in the channel, weighted presser-rods inserted in the vertical portion of the channel and bearing upon the rollers, tamp-actuating plungers extending into the other end portion of the channel, and tamps connected with the plungers, whereby the tamps when in action are each at all times subjected to a uniform pressure, substantially as described.

31. In a machine for packing explosives in shells, the L-shaped dogging-bar having a lip at the forward end of one member, combined with the independently-actuated plungers having hooked rear ends, whereby the dogging-bar, when stationary, holds the plungers inoperative when the latter are retracted, means for moving the dogging-bar forwardly, thereby causing the other member of the dogging-bar to push said plungers into operative position, and a forwardly-extending guide having a downwardly-extending front end which, in its forward movement, the dogging-bar engages and which determines the direction of movement of the dogging-bar when the latter is actuated, substantially as described.

32. In a machine for packing explosives in shells, in combination, the reciprocating plungers, yielding pressure devices engaging the plungers, means for moving the yielding pressure devices forwardly thereby actuating the plungers, a latch normally adapted to engage the plunger and lock it from moving forwardly, relatively to the yielding pressure devices, a locking member on each plunger, a dogging-bar common to all the plungers and adapted to engage the locking members thereof when the same has been retracted and hold the plungers inoperative, a rider on each plunger adapted when the plunger has been retracted to disengage the latch from the plunger, and a latch-unlocking device on each plunger adapted, when the plunger is restored to its operative position, to restore the latch to its normal position.

33. In a machine for packing explosives in shells, in combination, the reciprocating plungers, a rider on each plunger, yielding pressure devices engaging the rider, means for moving the yielding pressure devices forwardly thereby through the riders actuating the plungers, a latch normally adapted to engage the plunger and lock it from moving forwardly relatively to the yielding pressure devices but adapted to be disengaged from the plunger by the rider when the plunger is retracted a determinate distance, a catch adapted to engage the disengaged latch, and an unlocking device on each

plunger adapted when the plunger is moved forwardly from its retracted position to disengage the latch from the catch.

34. In a machine for packing explosives in shells, in combination, the reciprocating plungers, a rider on each plunger, yielding pressure devices engaging the rider, means for moving the yielding pressure devices forwardly thereby through the riders actuating the plungers, a latch normally adapted to engage the plunger and lock it from moving forwardly relatively to the yielding pressure devices but adapted to be disengaged from the plunger by the rider when the plunger is retracted a determinate distance, a dogging-bar adapted to successively hold all the retracted plungers inoperative and also move them forwardly into operative position, means to actuate the dogging-bar, a catch adapted to engage the disengaged latch, and an unlocking device on each plunger adapted when the plunger is moved forwardly from its retracted position to disengage the latch from the catch.

35. In a machine for packing explosives in shells, the reciprocating carriage and plungers carried thereby, combined with a lock adapted when stationary to lock all the plungers out of action and when moved to unlock all the plungers, a sliding block normally stationary, connections from the block to the lock, and manually-controlled means to engage the block with the carriage, thereby moving the block and lock, substantially as described.

36. In a machine for packing explosives in shells, the combination with the tamps and the plungers connected thereto, of a carriage and reciprocating means therefor, independent yielding pressure devices actuating each plunger and reciprocated by the carriage, a lock holding each plunger from moving forwardly with relation to the carriage after each loading action, means to lock all the plungers from operating when moved backwardly to a determinate distance and means to restore all the plungers to their initial operative position, substantially as described.

37. In a machine for packing explosives in shells, the combination with the tamps and the plungers connected thereto, of a carriage and reciprocating means therefor, independent yielding pressure devices actuating each plunger and reciprocated by the carriage, a lock holding each plunger from moving forwardly, a dogging-bar adapted to engage and hold each plunger out of operation when said plunger is moved backwardly to a determinate distance, a sliding block normally stationary and out of engagement with the carriage and connected with the lock so as to disengage the same from the plungers when the block is operated, and manually-controlled means to engage the block with the carriage, thereby operating the block, substantially as described.

813,436. **SAFETY-CATCH.** OTTO LAMACCHIA, Bridgeport, Conn. Filed Mar. 15, 1905. Serial No. 250,304.

Claim.—In a device of the class described, the combination of a body, a casing, a catch-pin, a sliding latch-plate mounted on said casing for engaging over an end of the said catch-pin, a side of the latch-plate being cut away, and a spring having an end thereof frictionally engaging a side of the plate and adapted to enter the cut-away portion thereof at a predetermined point in its movement to prevent accidental sliding movement and disengagement of the plate from the pin.

813,437. **PIPE-COUPLING.** DEWEY LANDAU, San Francisco, Cal., assignor of one-fourth to John Kunst and one-fourth to Edward McManus, San Francisco, Cal. Filed June 27, 1905. Serial No. 267,201.

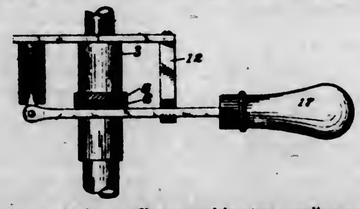

Claim.—1. A pipe-coupling comprising two coupling-sections adapted to be secured to the respective pipe ends, a yoke secured to one of said sections, a bar extending forward from one end of said yoke and having at its front end a hook or tooth, a device movably connected to the other end of said yoke, a spring for depressing said device toward said yoke, and a lever pivoted on said device and having a portion adapted to engage the other section, and having also a groove or notch adapted to be engaged by said tooth or hook, substantially as described.

2. A pipe-coupling comprising two coupling-sections adapted to be secured to the respective pipe ends, a yoke secured to one of said sections, a bar extending forward from one end of said yoke and having at its front end a hook or tooth, a device movably connected to the other end of said yoke, a spring for pressing said device toward said yoke, a lever pivoted on said device and having a portion adapted to engage the other section, and having also a groove or notch adapted to be engaged by said tooth or hook, a washer in the first coupling-section, a flanged tube in the second coupling-section, its edge resting against said gasket, and a spring for pressing said flange so that the edge of the tube rests against said gasket, substantially as described.

813,438. **STOVE-LEG CASTER.** HARRY LAUER, Richmond, Ind. Filed May 26, 1905. Serial No. 262,260.

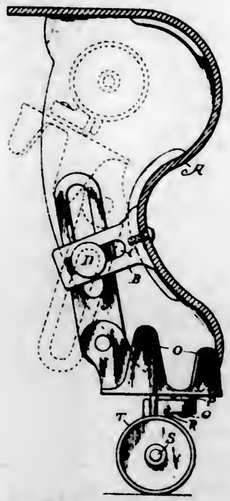

Claim.—1. In combination with a stove-leg provided with an inwardly-extending slotted bracket, the slotted link adapted to cooperate with and be secured to said slotted bracket, the leg-supporting platform pivoted to said link, said platform having ears adapted to embrace the foot of the stove-leg, the caster-frame carrying rollers and pivoted to said platform, and a roller journaled in said caster-frame and bearing against the platform.

2. In combination with a stove-leg provided with an inwardly-extending slotted bracket, the slotted link having the leg-supporting platform pivoted thereto, the screw passing through and securing said slotted link and bracket, said platform having ears adapted to embrace the foot of the stove-leg, the caster-frame carrying rollers and pivoted to said platform, and a roller journaled in said caster-frame and bearing against the platform.

3. In combination with a stove-leg provided with an inwardly-extending slotted bracket carrying a plate provided with a rib, the slotted link having teeth adapted to be engaged by said rib, the leg-supporting platform pivoted to said link, the caster-frame carrying rollers and pivoted to said platform, and a roller journaled in said caster-frame and bearing against the platform.

813,439. **MOLD.** CHARLES A. LAMSON, Findlay, Ohio, assignor to The Lamson Cement Product Company, Tiffin, Ohio. Filed Mar. 8, 1905. Serial No. 249,593.

Claim.—1. In a mold of the character described, the combination with outside walls, of separate core-walls having their adjacent ends spaced apart and beveled, the beveled faces being located in substantially the same plane, a corner-piece bridging the space between the ends of the walls and having its rear face bearing against the ends of the beveled faces, and a clamping device engaging the

corner-piece and the sides of the core-walls opposite to the beveled faces.

2. In a mold of the character described, the combination with spaced side walls, of end walls angularly disposed with respect thereto, each of said end walls being rigidly secured at one end to one of the side walls, the other end of the end walls being spaced from the adjacent end of the side wall and said adjacent ends being correspondingly beveled, corner-pieces bridging the spaces between said spaced ends and having their rear side faces bearing against the beveled faces thereof, and clamping devices engaging the corner-pieces and the sides of the core-walls opposite to the beveled faces.

3. In a mold of the character described, the combination with a bottom wall, of side walls detachably mounted thereon, upright spaced core-walls located inside the side walls and spaced therefrom, and separate bolts connecting and passing through the adjacent corresponding core and side walls to support the former with their lower edges above the bottom wall, said bolts having heads engaging the outer sides of said walls to prevent the spreading of said corresponding adjacent walls.

4. In a mold of the character described, the combination with a bottom wall, of side walls detachably mounted thereon and having reinforcing-strips, core-walls located inside the side walls and spaced therefrom, said core-walls having reinforcing-strips, bolts passing through the adjacent side and core walls and through the reinforcing-strips thereof, said bolts having heads and nuts that bear against the inner and outer sides respectively of the strips of the core and side walls, and sleeves interposed between the walls and located on the bolts.

5. In a mold of the character described, the combination with a base or bottom wall, of strips mounted thereon, means detachably connecting the base and strips to hold the latter in position on said base and permit the removal thereof, side walls mounted on the strips, and core-walls located inside the side walls and spaced therefrom, said core-walls having their lower edges spaced from the strips and from the bottom.

6. In a mold of the character described, the combination with a base or bottom wall, of strips detachably mounted upon the margins thereof, outer walls mounted on the strips and having their inner faces in substantially the same plane with the inner edges of the strips on which they rest, and core-walls located inside the outer walls and spaced therefrom, said core-walls having their lower edges in substantial alinement with the upper faces of the strips and being spaced from said strips and from the bottom.

7. In a mold of the character described, the combination with a base or bottom wall, of side and end strips located on the margins of the base or bottom walls, holding-strips arranged on certain of said strips and overlapping the others, fastening devices passing through the holding-strips, the side and end strips and engaging the base or bottom wall, outer walls located on the side and end strips, and core-walls arranged inside the outer walls in spaced relation thereto, said core-walls being also disposed in spaced relation to the strips and to the base or bottom wall.

8. In a mold of the character described, the combination with a base or bottom wall, of abutted side and end strips located on the margins of the base or bottom wall, holding-strips arranged upon the end strips and extending over the side strips, fastening devices passing through said strips and engaging the base or bottom wall, side walls located upon the side strips and having their inner faces in substantially the same plane as the inner edges of said side strips, detachable end walls fitted between the side walls and resting upon the end strips inside the holding-strips, devices for securing the end walls to the side walls, core-walls arranged inside the end and side walls, detachable connections between certain of the core-walls to permit the collapsing of the core, the lower edges of said core-walls being substantially in the same plane as the upper faces of the strips and being spaced above the bottom wall, and devices detachably connecting the side and core walls and bridging the spaces between the same.

9. In a mold of the character described, the combination with a base, of outer walls mounted thereon, a plurality of core-walls spaced from the outer walls and having their lower edges spaced from the base, and foot-strips rigidly secured to the lower inner margins of the core-walls and extending the full length along the inner sides thereof, said foot-strips being also spaced from the base and from each other leaving an open bottom to the core and furthermore having their lower edges flush with the lower edges of the core-walls carrying them.

813,440. **BAG.** THOMAS MANAHAN, New York, N. Y. Filed June 23, 1905. Serial No. 266,500.

Claim.—1. A bag-mouth fastener consisting of bars made separate from the bag and springs for the bars, said springs having their ends passed through and around the bars.

2. A bag-mouth fastener comprising a plurality of bars independent of the body of the bag, and springs extending through the bars and adapted to hold the bars together.

813,441. **MACHINE FOR CUTTING COTTON-WICKING INTO LENGTHS AND BUNDLING THE SAME.** HARRY MARSH, Hamilton, Canada. Filed Mar. 6, 1905. Serial No. 248,455.

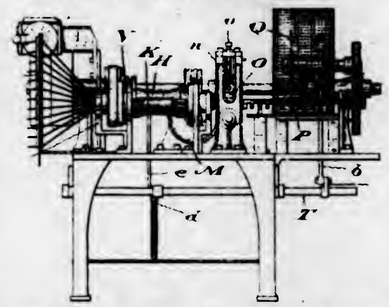

Claim.—1. In a machine of the class described, the combination of a stationary guide; a rotatable casing in line therewith; a bobbin journaled thereon, an opening being provided in the casing for the passage of thread from the bobbin; rotatable feed-rollers in line with the casing and guide; means for intermittently operating the rollers; and means for rotating the casing while the rollers are stationary, substantially as described.

2. In a machine of the class described, the combination of a stationary guide; a rotatable casing in line therewith; a bobbin journaled thereon, an opening being provided in the casing for the pas-

sage of thread from the bobbin; rotatable feed-rollers in line with the casing and guide; a suitably-operated knife; means for intermittently operating the feed-rollers; and means for bringing the knife into contact with the wicking at such times as the feed-rollers are stationary, substantially as described.

3. In a machine of the class described, the combination of a stationary guide; a rotatable casing in line therewith; a bobbin journaled thereon, an opening being provided in the casing for the passage of thread from the bobbin; rotatable feed-rollers in line with the casing and guide; a suitably-operated knife; means for intermittently operating the feed-rollers; means for bringing the knife into contact with the wicking at such times as the feed-rollers are stationary; and means for intermittently rotating the casing, substantially as described.

4. In a machine of the class described, the combination of intermittent wick-feeding means; wick-wrapping means; wick-cutting means; and means for operating the wrapping and cutting means at such times as the feeding means are stationary, substantially as described.

5. In a machine of the class described, the combination of wick-feeding means; means for intermittently operating the same; a trough for the wicking; a driving-shaft; a knife-frame journaled on the shaft; a rotary knife journaled therein; means for driving the knife from the shaft; and means for swinging the frame to bring the knife into contact with the wicking at such times as the feeding means are stationary, substantially as described.

6. In a machine of the class described, the combination of a stationary guide provided with separate openings for each one of a plurality of wicks; a stationary guide provided with a single opening for all the wicks; a rotary casing in line with the said guide; a bobbin journaled on the casing; an opening being provided in the casing for the passage of thread from the bobbin; and means for intermittently feeding the wicks through the casing, substantially as described.

7. In a machine of the class described, the combination of a stationary guide; a rotatable casing in line therewith; a driving-pulley thereon; a shaft; a pulley loose on the shaft and connected by belt with the pulley on the rotatable casing; a clutch by means of which the pulley may be given a driving connection with the shaft; rotatable feed-rollers suitably journaled in line with the guide and geared together; a shaft transverse to the main shaft and geared thereto; mutilated gearing between the transverse shaft and one of the feed-rollers whereby an intermittent motion is given the latter; and means for putting the clutch into connection with the pulley on the main shaft at such times as the feed-rollers are stationary, substantially as described.

813,442. **GAS-RELIEF VALVE FOR BLAST-FURNACES.** EUGENE L. MESSLER, Pittsburg, Pa. Filed Nov. 9, 1904. Serial No. 231,966.

Claim.—1. In combination, a bleeder-conduit leading from the upper portion of a blast-furnace, a valve-seat arranged in said conduit, and a valve adapted to move upwardly toward its seat in the direction of the pressure of the gases in the bleeder-conduit, substantially as described.

2. In combination, a bleeder-conduit leading from the upper portion of a blast-furnace, a valve-seat at the top of said conduit, a bell-valve adapted to seat upwardly against said valve-seat in the direction of the pressure of the gases in the bleeder-conduit, and an operating-lever connected to the valve, substantially as described.

3. In combination, a bleeder-conduit leading from the upper portion of a blast-furnace, a valve-seat at the top of said conduit, a bell-valve adapted to seat upwardly against said valve-seat in the direction of the pressure of the gases in the bleeder-conduit, a standard at one side of the valve, a lever pivoted to the valve and to said standard and extending beyond the valve at one end and beyond the standard at the other end, and operating-chains for opening and closing the valve connected to the ends of said lever, substantially as described.

813,443. **COMPRESSOR.** HANS MIKOREY, Schöneberg, near Berlin, Germany, assignor to The Firm of W. Graaff & Company Gesellschaft mit Beschränkter Haftung, Berlin, Germany. Filed May 10, 1905. Serial No. 259,797.

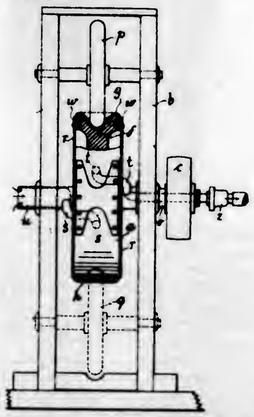

Claim.—1. A compressor comprising a wheel having a groove in its periphery, a flexible membrane covering said groove so as to form an annular chamber, means for closing said chamber at one point and a roller of less thickness than the wheel engaging the membrane so as to force said membrane against the bottom of the groove.

2. A compressor comprising a wheel having a groove on its periphery, a membrane formed of rubber stretched across said groove so as to form an annular chamber, means for holding said membrane at one point permanently pressed against the bottom of the chamber, an inlet-pipe entering said chamber on one side of said means, an outlet-pipe on the other side thereof and a roller of less thickness than the wheel engaging the membrane so as to force it against the bottom of the groove.

813,444. **PLATFORM FOR POWER-MOTORS.** ARNOLD HACKE, Philadelphia, Pa., assignor of one-half to Isidor Kitsee, Philadelphia, Pa. Filed Mar. 25, 1905. Serial No. 251,056.

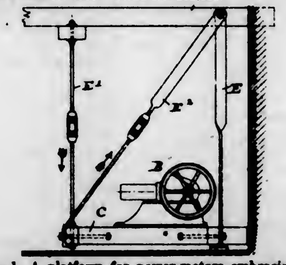

Claim.—1. A platform for power-motors embracing the base proper, uprights securing said base to the joist of the ceiling of the room in which the platform is placed, a swivel-brace forcing the platform upward and a swivel-brace forcing the platform downward, a floor and means to support part of said platform on said floor.

2. In combination with a platform on which a power-motor is placed, means to keep said platform suspended between the floor and ceiling of the space in which said platform is placed, swiveled means to force said platform upward and swiveled means to force said platform downward and means to support part of said platform on the floor of said space.

3. Means to lessen the vibration of a power-motor on the building in which it is placed, said means embracing a platform suspended from the ceiling, means to force said platform upward, means to force said platform downward, and means to support part of said platform on the floor.

4. In combination with a power-motor, a platform for said motor, uprights securing said platform to a ceiling, and in further combination with means to secure part of said platform to the floor.

5. In combination with a power-motor, a platform whereon said motor is placed, uprights securing said platform to a ceiling, and in further combination with adjustable means, one to force the platform upward and the other to force the platform downward.

813,445. **LATHE-DOG.** THOMAS C. PATTERSON, New York, N. Y. Filed Aug. 14, 1903. Serial No. 169,534.

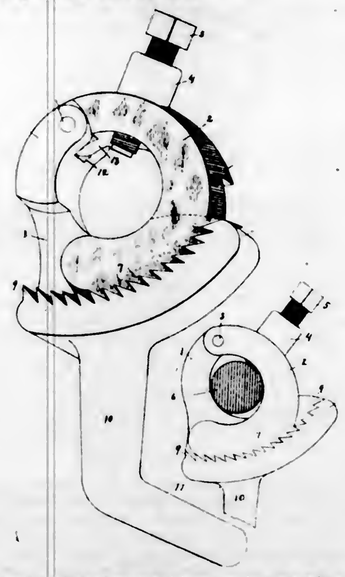

Claim.—1. A lathe-dog comprising a carrier-arm and a work-clamp, said clamp consisting of a pair of bows upon one of which said arm is formed, and each bow forming about half of an annulus, a pivot connecting said bows, a set-screw tapped into one of said bows in position to cause the work to bear against both of said bows, and coöperative ratchet-teeth upon said bows.

2. A lathe-dog comprising a carrier-arm and a work-clamp, said clamp consisting of a pair of bows upon one of which said arm is formed, and each bow forming about half of an annulus, a pivot connecting said bows, a set of internal ratchet-teeth formed upon said carrier-arm bow, a set of coöperating spur or external ratchet-teeth formed upon the other bow, and a set-screw upon one of said bows in position to clamp the work against both of said bows.

3. A lathe-dog comprising a carrier-arm and a work-clamp, said clamp consisting of a pair of bows upon one of which said arm is formed, and each bow forming about half of an annulus, a pivot connecting said bows, a set of internal ratchet-teeth formed upon said carrier-arm bow, a set of coöperating spur or external ratchet-teeth formed upon the other bow, and a set-screw tapped into the last-mentioned bow near said pivot.

4. A lathe-dog comprising a carrier-arm and a work-clamp, said clamp consisting of a pair of bows upon one of which said arm is formed, a pivot connecting said bows, a set-screw tapped into one of said bows in position to cause the work to bear against both of said bows, an internal set of teeth formed upon the free end of said carrier-arm bow, and a coöperative set of spur-teeth formed upon the free end of the other bow; said pivot having the construction of a universal joint, to permit movement of the bows in facewise direction, to enable disengagement of one from the other and relative readjustment and reëngagement.

5. A lathe-dog comprising a carrier-arm and a work-clamp, said clamp consisting of a pair of bows upon one of which said arm is formed, a pivot connecting said bows, and a set-screw tapped into one of said bows in position to cause the work to bear against both of said bows: said bow upon which said arm is formed having a depression for receiving the free end of the other bow, the latter being provided with spur-teeth, and the wall of said depression being formed with internal teeth which coöperate with said spur-teeth.

6. A lathe-dog comprising a carrier-arm and a work-clamp, said clamp consisting of a pair of bows upon one of which said arm is formed, a pivot connecting said bows, and a set-screw tapped into one of said bows in position to cause the work to bear against both of said bows; one of said bows having a depression for receiving the free end of the other bow, and the wall of said depression being formed with a set of internal teeth; and said other bow having a coöperating set of spur-teeth formed upon its free end, and having between said teeth and said pivot a thickened body for affording ample bearing-surface for the work.

7. A lathe-dog comprising a carrier-arm and a work-clamp, said clamp consisting of a pair of bows upon one of which said arm is formed, each bow forming about half of an annulus, and a pivot connecting said bows; and a set-screw tapped into the bow which is unprovided with said arm, in position to cause the work to bear against both of said bows; the bow upon which said arm is formed having a depression for receiving the free end of the other bow, and the wall of said depression being formed with a set of internal ratchet-teeth; said other bow having a coöperating set of spur ratchet-teeth formed upon its free end, and having between said teeth and said pivot a thickened body for affording ample bearing-surface for the work; said pivot having a universal-joint construction, to permit facewise movement of the bows for disengaging one set of teeth from the other.

813,446. **GANG-PLOW.** EDMUND F. PIPER, Fargo, N. D. Filed Apr. 29, 1905. Serial No. 258,006.

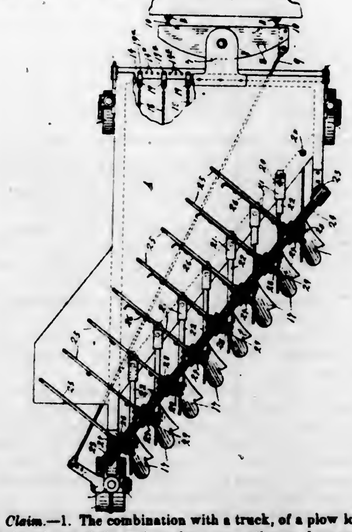

Claim.—1. The combination with a truck, of a plow loosely attached to the truck-frame by a drag connection, and a second loose connection to said plow and to said truck-frame, arranged to permit only lateral and vertical movements of the plow, but to positively hold the same always in an upright position, substantially as described.

2. The combination with a truck and a plow loosely connected thereto, of a bar or rod pivoted to the plow-beam, with freedom for

hold in position on a telephone instrument and having a central perforated section of unit area and two series of sections of substan-

6. In a loading apparatus, a skid-frame having side members, rollers journaled between the side members and projecting above the

thereon; and means movable with the drum and actuated by the cable as it is wound upon the drum to stop rotation thereof.

2. The combination with a truck and a plow loosely connected thereto, of a bar or rod pivoted to the plow-beam, with freedom for pivotal movements in the vertical plane of said beam, and a pivoted support on the truck-frame, through which the upper end of each bar works telescopically, thereby holding said plow in upright position, substantially as described.

3. The combination with a truck and a plow, of a drag connection, attaching said plow to the forward portion of the truck-frame, with freedom for vertical and lateral movements, of a device for holding said plow in an upright position, while permitting said movements, said device comprising an upright pedestal swiveled to the truck-frame, a head pivoted to said pedestal for movements in a vertical plane, and a bar or rod pivoted to the plow-beam, for movements in a vertical plane, and at its upper end working telescopically through said pivoted head, substantially as described.

4. In a gang-plow, the combination with a truck having an approximately triangular truck-frame, a transversely-extended drag-bar secured to the forward portion of the truck-frame, a plurality of plows arranged in a diagonally laterally spaced row, chains independently connecting said plows to said drag-bars, a fixed shaft on said truck-frame, overlying said plows and provided with fixed notched disks, levers mounted on said fixed shaft adjacent to said notched disks and provided with latches coöperating therewith, chains connecting said plows to the overlying lever, and independent devices applied to said plows and to the truck-frames, for positively holding said plows in upright positions and permitting only lateral and vertical movements of said plows, substantially as described.

813,447. READY-REFERENCE DEVICE. HENRY W. POPE, New York, N. Y. Filed May 4, 1904. Serial No. 206,337.

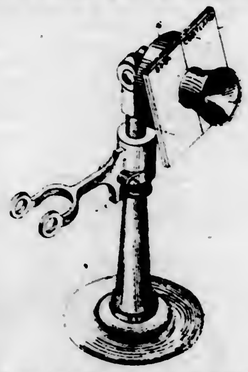

Claim.—1. The combination with a telephone instrument having a suitable mouthpiece, of a memorandum device consisting of a central section held in position by said mouthpiece and folded upon opposite sides, the free edges making contact with the exterior surface of the mouthpiece.

2. The combination with a telephone instrument having a suitable mouthpiece, of a memorandum device consisting of a central section clamped in position by said mouthpiece and folded upon opposite sides toward and into engagement with said mouthpiece.

3. The combination with a telephone instrument having a suitable mouthpiece, of a memorandum device consisting of a central section held in position by said mouthpiece and having a series of folds or connected sections normally held in detachable engagement with said mouthpiece.

4. A memorandum device consisting of a sheet adapted to be held in position on a telephone instrument and having a central perforation, a series of auxiliary perforations upon opposite sides of the central perforation and a series of flaps or folds, each flap or fold having substantially one-half the area of the central section, the auxiliary perforations arranged to form complementary perforations concentric with the first-named perforation.

5. A memorandum device consisting of a sheet adapted to be held in position on a telephone instrument and having a central perforation and a series of auxiliary perforations upon opposite sides of the central perforation, said auxiliary perforations being arranged to form complementary perforations concentric with the first-named perforation.

6. A memorandum device consisting of a sheet adapted to be held in position on a telephone instrument and having a central perforated section of unit area and two series of sections of substantially one-half the unit area adapted to be folded in alternate reversed directions onto the central section with suitable perforations on the folding-lines of said sections.

7. A memorandum device consisting of a sheet adapted to be held in position on a telephone instrument having a central perforation and a series of auxiliary perforations upon opposite sides thereof, folding-lines bisecting said auxiliary perforations and dividing the sheets into subsections to be folded toward each other in alternate reversed directions onto the central section, the perforations being concentric and superposed.

8. A memorandum device consisting of a record-sheet adapted to be held in position on a telephone instrument and having a perforated central section, flaps or folds of less area than the central section; and auxiliary perforations, equally divided by said flaps or folds, forming complementary parts concentric with the first-named perforation.

813,448. LOADING APPARATUS. HENRY T. RAINWATER, Clinton, Ark. Filed Dec. 23, 1905. Serial No. 293,103.

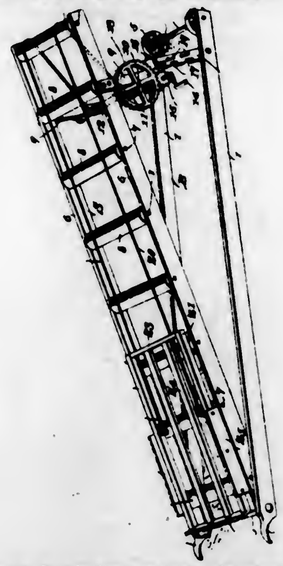

Claim.—1. In a loading apparatus, a base-frame having side members provided with handles at their front ends, supporting-wheels at the rear end of the frame, and a skid-frame pivoted between the front ends of the side members of the base-frame.

2. A base-frame having carrying-wheels at its rear end and handles at its front end, a skid-frame pivoted between the front ends of the side members of the base-frame, depending brackets secured upon the side members of the skid-frame, a cross-piece connecting said brackets, and notched arms pivoted upon the side members of the base-frame.

3. A base-frame, a skid-frame pivoted between the front ends of the side members of the base-frame, rollers journaled between the side members of the skid-frame, brackets depending upon the sides of the latter, a drum-carrying shaft journaled upon said brackets, a cross-bar connecting the brackets, notched arms pivoted upon the side members of the base-frame, flexible hoisting elements connected with the drum and guided over the rollers of the skid-frame, a carriage connected with the hoisting elements, and means for operating the drum-carrying shaft.

4. A base-frame, a skid-frame pivoted between the front ends of the side members of the base-frame, means for adjustably spacing and connecting the rear ends of the two frames, rollers journaled between the side members of the skid-frame, a carriage movable over said rollers, and means for operating the carriage.

5. A base-frame, a skid-frame pivoted between the front ends of the side members of the base-frame, and means for adjustably spacing and connecting the rear ends of the two frames.

6. In a loading apparatus, a skid-frame having side members, rollers journaled between the side members and projecting above the upper edges of the latter, a carriage-frame movable over the rollers, and flanges upon said carriage-frame engaging the ends of the rollers.

813,449. BOTTLE-STOPPER. WILLIAM H. REMINGTON, Chicago, Ill. Filed Oct. 12, 1904. Serial No. 228,105.

Claim.—1. A bottle-stopper, comprising a sheet-metal cap provided with a rim adapted to be permanently fastened to the neck of the bottle and with a perforation through its top in combination with a spout having a flange confined within the cap and a nozzle projecting above such flange through and beyond the cap.

2. A bottle-stopper, comprising a sheet-metal cap provided with a crimped edge or rim for affording a permanent attachment to the neck of the bottle in combination with a spout of non-corrosive material provided with a flange confined within the cap and a nozzle projecting from the flange through an aperture in the cap and beyond said cap.

3. As a new article of manufacture, a bottle-stopper comprising a sheet-metal cap having a depending edge or rim adapted to be crimped over the neck of the bottle to provide a permanent fastening, a spout of non-corrosive material having a flange confined within the cap and a nozzle extending through an aperture in the cap and beyond and at an inclination to the same.

813,450. SOLID-RIM WOOD COLUMN. LEE A. ROBINSON and HUDLEY BIBLE, Sherman, Tex. Filed Sept. 5, 1905. Serial No. 277,615.

Claim.—1. A hollow column made from a single piece of wood, said column having an annular groove or recess formed therein, an ornamental wooden ring or collar made in two or more complementary sections and adapted to fit in said groove and a cap and base secured to the column.

2. A hollow wooden column made from a single piece of wood and having annular channels or grooves formed in its circumference, and wooden rings or collars adapted to be secured in the annular grooves, said collars being made in two or more complementary sections.

813,451. SAFETY DEVICE FOR HOISTING MECHANISMS. JOHN M. ROHLFING and PETER D. HORTON, Alliance, Ohio. Filed July 10, 1905. Serial No. 268,994.

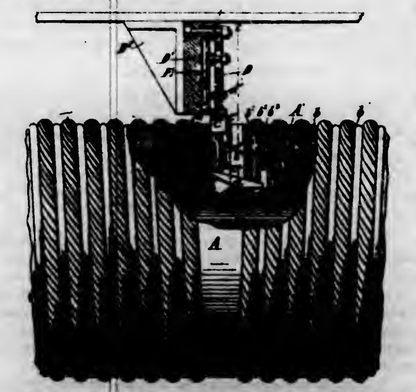

Claim.—1. In an apparatus of the character described, the combination of a hoisting-drum, the hoisting-cable adapted to be wound thereon; and means movable with the drum and actuated by the cable as it is wound upon the drum to stop rotation thereof.

2. In a hoisting apparatus, the combination of a drum, a motor for actuating said drum, the hoisting-cable adapted to be wound upon the drum, and means carried by the drum and actuated by the cable as it is wound thereon for controlling the motor.

3. In a hoisting apparatus, the combination of a drum, a motor for actuating said drum, a hoisting-cable adapted to be wound upon the drum, a controller-trip carried by the drum and movable by the hoisting-cable as the same is wound thereon, and means actuated by the controller-trip for stopping the motor.

4. In a hoisting apparatus, the combination of a winding-drum, a motor for actuating said drum, a hoisting-cable adapted to be wound upon the drum, means carried by the drum and projecting from the surface thereof and adapted to be moved by the cable as it is wound thereon, and devices actuated by said means as the drum rotates for stopping the motor.

5. In a hoisting apparatus, the combination of a winding-drum, a motor for actuating said drum, a cable adapted to be wound thereon, a controller-trip carried by said drum and comprising a trip-pawl, and means actuated by the cable as it is wound upon the drum for moving the trip-pawl, and devices disposed in the path of the trip-pawl when thus moved for stopping the motor.

6. In an apparatus of the character described, the combination of a winding-drum, an electric motor for operating said drum, an electric circuit including the motor, a limit-switch, and means carried by the drum for throwing the switch when the limit of hoist has been reached.

7. In a hoisting apparatus, the combination of a winding-drum, a cable adapted to be wound thereon, an electric motor for operating said drum, a limit-switch, and means carried by the drum and movable by the cable as it is wound upon the drum for placing said means in position to throw the switch.

8. In a hoisting apparatus, the combination of a winding-drum, a cable adapted to be wound thereon, an electric motor for operating said drum, an electric circuit, including said motor, a limit-switch controlling said circuit, a controller-trip carried by the drum, and comprising a trip-pawl, and devices movable by the cable as it is wound upon the drum to throw the trip-pawl into position to move the switch as the limit of hoist is reached.

9. In a hoisting apparatus, the combination of a winding-drum, a motor for actuating said drum, a cable adapted to be wound upon said drum, a trip-pawl carried by said drum, a trip-pin for moving said pawl outward, said trip-pin being actuated by the cable as it is wound upon the drum, and means adapted to be actuated by the trip-pawl to stop the motor as the limit of hoist is reached.

10. In a hoisting apparatus, the combination of a winding-drum, a motor, a cable adapted to be wound upon the drum, a trip-pawl and trip-pin carried by said drum, operative connections between the trip-pawl and trip-pin, said trip-pin being actuated by the cable as it is wound upon the drum, and means operated by the trip-pawl for stopping the motor when the limit of hoist has been reached.

813,452. PORTABLE WARDROBE. NORA RYAN, New York, N. Y. Filed July 26, 1905. Serial No. 271,297.

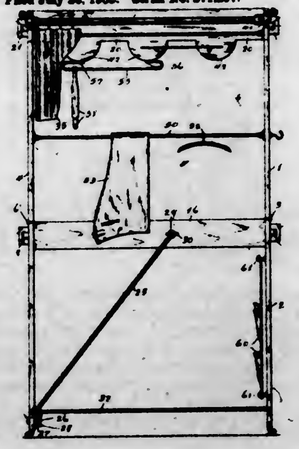

Claim.—The combination with a pair of oppositely-disposed frames composed of folding sections; of a cross-bar, means for detachably securing the ends of the cross-bar each to the upper end of one of the opposite folding sections; and a diagonal brace-rod detachably secured by thumb-nuts, one end to a folding section and the other end to said cross-bar between its ends.

813,453. FIRE-LIGHTING APPARATUS. CARL R. SALMEN, Montreal, Canada, assignor of one-fifth to John Fisher and one-fifth to Francis Sarlay, Catasauqua, Pa., one-fifth to John Mraney and one-fifth to Edward Firneau, Montreal, Canada. Filed Sept. 23, 1905. Serial No. 279,781.

Claim.—1. A device for lighting fires consisting of a composition of matter composed of, approximately, thirty per cebt. finely-divided asbestos, fifty per cent. plaster-of-paris, ten per cent. graphite, and ten per cent. charcoal-dust.

2. A device for igniting fuel which consists of a composition of matter consisting of finely-divided asbestos, plaster-of-paris, graphite, and charcoal-dust, thoroughly mixed together, molded onto a suitable handle and baked, substantially as described.

3. A composition of matter for igniting fuel which consists of approximately one-third finely-divided asbestos, one-half plaster-of-paris, one-twelfth graphite, and one-twelfth charcoal-dust.

4. A device for igniting fuel comprising a composition of matter approximately thirty per cent. of asbestos, fifty per cent. plaster-of-paris, ten per cent. graphite, and ten per cent. charcoal-dust, kneaded into a dough, molded on a suitable handle, and afterward kiln-dried and impregnated with kerosene.

813,454. COUPLING-JOINT FOR PIPE-SECTIONS. IRNEE SCHAAD, Lucerne, Switzerland. Filed Jan. 14, 1905. Serial No. 241,018.

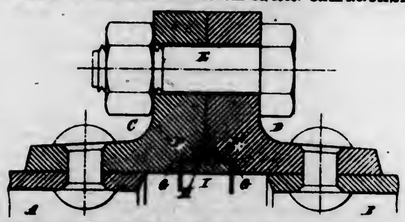

Claim.—1. The coupling for the adjacent ends of pipe-sections comprising the flanges secured to said ends and having in their inner adjoining edges the recesses F, G, combined with the packing H in the recesses F, and the metal ring I in the recesses G and engaging the inner surface of said packing, said ring not completely filling said recesses G, and said packing projecting from the recesses F into said recesses G; substantially as set forth.

2. The coupling for the adjacent ends of pipe-sections comprising the flanges secured to said ends and having in their inner adjoining edges the recesses F, G, combined with the packing H in the recesses F, and the metal ring I in the recesses G and engaging the inner surface of said packing, said recesses F when brought together forming an annular recess which is cone-shaped in cross-section; substantially as set forth.

3. The coupling for the adjacent ends of pipe-sections comprising the flanges secured to said ends and having in their inner adjoining edges the recesses F, G, combined with the packing H in the recesses F, and the metal ring I in the recesses G and engaging the inner surface of said packing, said ring I being formed of segments connected together; substantially as set forth.

4. The coupling for the adjacent ends of pipe-sections comprising the flanges secured to said ends and having in their inner adjoining edges the recesses F, G, combined with the packing H in the recesses F, and the metal ring I in the recesses G and engaging the inner surface of said packing, said ring I being composed of segments hinged together and the adjoining ends of the end segments being secured together by a plate and screws; substantially as set forth.

813,455. WINDOW. RICHARD O. SCHEEL, Philadelphia, Pa. Filed Nov. 21, 1904. Serial No. 233,735.

Claim.—1. The combination with a window and its casing, the latter having sash-guides, of vertically-movable carriers arranged in the sash-guides, a sash pivoted to one of the carriers for movement therewith, said sash being adapted to swing horizontally on its pivot to open position, a pair of reversely-movable locking members, and means for operating the members to simultaneously release the sash and lock the adjacent carrier against movement.

2. The combination with a window and its casing, the latter having sash-guides, of carrier-strips arranged for vertical movement in the sash-guides, a sash pivoted to one of the strips for movement therewith and to swing in a horizontal plane to open position, and a lock carried by the sash for securing the latter in closed position, said lock comprising a pair of reversely-movable locking-bars adapted for alternate engagement with the sash-frame, and means for operating the bars, one of the bars being designed for locking the sash in closed position and the other for securing the adjacent carrier-strip against movement in its guide.

3. The combination with a window and its casing, the latter having sash-guides, of carrier-strips arranged for vertical movement in the guides, a sash pivoted to one of the strips for movement therewith and to swing in a horizontal plane to open position, and a lock carried by the sash for securing the latter in closed position, said lock comprising a pair of reversely-movable rack-bars adapted for alternate engagement with the window-frame, and reversely-rotatable gears engaged respectively with the bars for operating the latter, one of the bars being designed for locking the sash in closed position and the other for securing the adjacent carrier-strip against movement in its guide.

813,456. INCANDESCENT IGNITER FOR USE WITH INTERNAL-COMBUSTION ENGINES. JOHN W. SEAL, London, England, assignor of two-thirds to John Bernard Langford, Chiswick, England. Filed July 25, 1904. Serial No. 218,096.

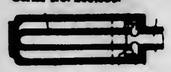

Claim.—1. In an incandescent igniter for internal-combustion engines the combination of an ignition-tube and a casing formed of a plurality of parts inclosing said tube, said casing of such form and size as to leave a space between it and the walls of the ignition-tube, the casing having a main passage adapted to direct the main volume of the gases into the ignition-tube, and having narrow side passages adapted to direct jets of burning gas against particular points upon the outer walls of the ignition-tube.

2. In an incandescent igniter for internal-combustion engines, the combination of an ignition-tube closed at one end, and a casing for said ignition-tube, said casing comprising a cap closed at one end adapted to surround the ignition-tube and to leave a space between the walls of said tube and the cap, and a plug adapted to engage the open ends of the cap and of the ignition-tube, said plug having a central bore and also side passages adapted to allow gases passing up said central bore to flow into the space between the ignition-tube and the cap and to direct said gases against particular points on the walls of the ignition-tube whereby the rapid heating of said points is insured.

813,457. GRIP FOR ROPES AND THE LIKE. GEORGE W. SEEBACH, New York, N. Y. Filed Sept. 8, 1905. Serial No. 277,630.

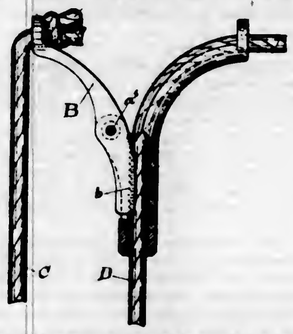

Claim.—A grip comprising a main member having at its lower end a straight tubular rope-guide that is recessed for a portion of its length and being thence curved and channeled to its opposite end and there provided with an eyehole, spaced pivot-lugs projecting from said main member, and a second clamping member pivoted between the lugs and having at its upper end a rope-attaching eye and at its lower end a gripping-jaw which coacts with the channeled portion of the main member in gripping the rope.

813,458. ADJUSTABLE BED-BOTTOM. JOHN SHEPHERD, Toledo, Ohio. Filed Sept. 28, 1905. Serial No. 280,414.

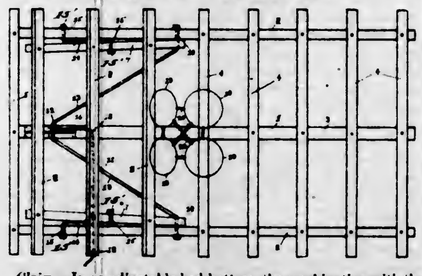

Claim.—In an adjustable bed-bottom, the combination with the frame 1, having the slotted side stringers 2, the middle stringer 3 provided with the rack 16, and the head-section 6, having the side bars 7 of the V-shaped bail 11, having the stirrup 12 at the apex adapted to engage the rack and move along the top and sides of the middle stringer as a guide, and the truss-arms 13 diverging from the stirrup and having their outer and portions 10 angled oppositely in alinement and extended through the inner end portions of the side bars of the head-section and through the slots of the side stringers at right angles to the side stringers, the angled end portions 10 forming both pivots and slides for the bail and the side bars, and the link-rods 14 having end portions 15 angled opposite, and pivotally connecting the side bars to the side stringers, substantially as and for the purpose set forth.

813,459. LENS-CUTTING MACHINE. WALTER W. SLADE, Boston, and HENRY F. BOWEN, Everett, Mass., assignors to Globe Optical Company, Boston, Mass., a Corporation of Massachusetts. Filed May 6, 1905. Serial No. 259,296.

Claim.—1. In a lens-cutting machine, the combination with a lens-bed and a shaft for rotating the same, of a centering mechanism mounted in said shaft.

2. In a lens-cutting machine, the combination with a lens-bed and a shaft for rotating the same, of a spring-controlled centering-pin mounted in said shaft.

3. In a lens-cutting machine, the combination with a lens-bed and a shaft for rotating the same, of a spring-controlled centering-pin mounted in said shaft and adapted to project through said bed.

4. In a lens-cutting machine, the combination with a tool-holder, a pattern and means for keeping said tool-holder in contact with said pattern, of a positioning device for said holder and spring-controlled mechanism for indicating the adjustment of said positioning device.

5. In a lens-cutting machine, the combination with a tool-holder, a pattern and means for keeping said tool-holder in contact with said pattern, of a positioning device for said holder; a graduated segment mounted upon said holder; and a spring-controlled pointer for indicating upon said segment the adjustment of said device.

6. In a lens-cutting machine, the combination of a tool-holder; a positioning device therefor; a spring-controlled crank-arm which follows the movements of said device; a shaft fast upon one end of which is said crank-arm and fast upon the other end of which is a pointer; said pointer; and a graduated member which coöperates with said pointer to indicate the adjustment of said device.

7. In a lens-cutting machine, the combination with a pattern; a support therefor; a driving mechanism and a shaft for said driving mechanism, of a presser-disk fast upon said shaft for holding said pattern against its said support; said shaft being lengthwise movable to raise said presser-disk and permit the removal of said pattern from its support.

8. In a lens-cutting machine, the combination with a supporting-frame and cutting mechanism mounted therein, of a device for holding the work, said device comprising a revoluble tripod mounted in said frame.

9. In a lens-cutting machine, the combination with a supporting-frame and cutting mechanism mounted therein, of a lens-bed upon which the work rests; a centering-pin beneath the work; and a revoluble tripod above the work.

10. In a lens-cutting machine, the combination of a frame; a driving-shaft mounted in said frame; a pattern-support; and a pattern; said shaft holding said pattern against its said support and being lengthwise slidable to permit the removal of said pattern from between the lower end of said shaft and said support.

11. In a lens-cutting machine, the combination of a frame; a driving-shaft mounted in said frame; a lens-support; means for transmitting the rotary motion of said shaft to said lens-support; a pattern; and a pattern-support against which said pattern is held by said shaft; said shaft being lengthwise movable in said frame to raise its lower end above said pattern-support and pattern and permit said pattern to be passed between the lower end of said shaft and said pattern-support.

12. In a lens-cutting machine, the combination with a supporting-frame and cutting mechanism mounted therein, of a spring-pressed work-holding revoluble tripod.

13. In a lens-cutting machine, the combination with a supporting-frame and a revoluble lens-bed mounted therein, of a revoluble tripod for holding the work upon said lens-bed; and means for pressing said tripod against the work with a uniform pressure.

14. In a lens-cutting machine, the combination with a lens-bed and mechanism for rotating the same, of a revoluble tripod driven by the rotation of said lens-bed.

15. In a lens-cutting machine, the combination with a lens-bed

of a centering-pin which projects upwardly therethrough and is adapted to contact with the under side of the work.

16. The combination of a pattern and means for rotating the same with a tool-holder; means for positioning said tool-holder with respect to said pattern; a graduated member and a pointer cooperating therewith to indicate the position of said tool-holder with respect to said pattern and thereby the size of the lens to be cut; said graduated member having a scale graduated to millimeters for the cutting of frameless lenses and a scale graduated in arbitrary numbers for the cutting of frame-lenses; whereby the operator is enabled to pass readily from the cutting of frameless lenses to frame-lenses of the same pattern.

17. The combination of a pattern and means for rotating the same with a tool-holder; means for positioning said tool-holder with respect to said pattern; a graduated member and a pointer cooperating therewith to indicate the position of said tool-holder with respect to said pattern and thereby the size of the lens to be cut; said graduated member having a scale graduated in millimeters for the cutting of frameless lenses, a scale graduated in arbitrary numbers for the cutting of frame-lenses and a scale with graduations for cutting full lenses, whereby the operator is enabled to pass readily from cutting one class of lens to another for the same pattern with accuracy.

18. In a lens-cutting machine, the combination with a tool-holder and mechanism for positioning the same, of complementary indicating members for indicating the position of the tool-holder and thereby the size of the lens to be cut, one of said members being movable; devices connecting said movable member with said mechanism; and means for disconnecting said movable member from said devices to permit the independent adjustment of said movable member.

19. In a lens-cutting machine, the combination with a tool-holder; a block slidably mounted therein; means controlling the position of said block; an indicating device for showing the position of said block; and means permitting the adjustment of said indicating device independent of said block.

813,460. METAL VEHICLE-BODY. HERSDALE SMITH and ARTHUR P. SMITH, Springfield, Mass. Filed May 22, 1905. Serial No. 261,767.

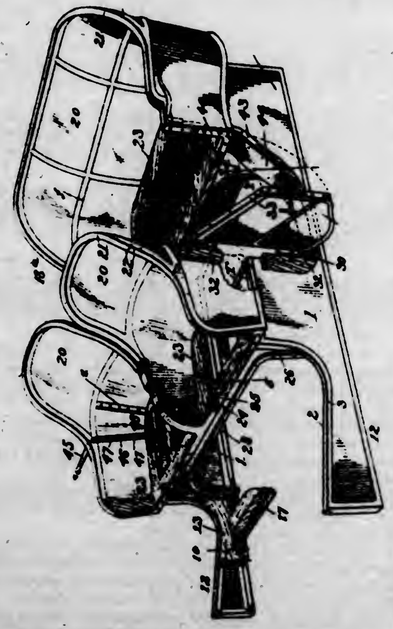

Claim.—1. A metal vehicle-body having body-forming plates provided at their marginal borders with integral stiffening-flanges and reinforce-beads contiguous to such flanges.

2. A metal vehicle-body having body-forming plates provided at their marginal borders with continuous integral inturned stiffening-flanges and outwardly-convexed reinforce-beads contiguous to and following said flanges.

3. A metal vehicle-body having body-forming plates provided at their marginal borders with continuous inturned stiffening-flanges, and concavo-convex beads formed therein in contiguous relation to said flanges.

4. A metal vehicle-body having a body proper and seats constructed of metal plates provided at their marginal borders with continuous inturned stiffening-flanges and outwardly-convexed reinforce-beads formed in the plates in contiguous relation to said flanges.

5. A metal vehicle-body having body-forming plates provided at their marginal borders with inturned stiffening-flanges and reinforce-beads disposed contiguous to and following the flanges, the body-plates and their flanges being united together and bearing an overlapping relation to the corner-joints.

6. A metal vehicle-body having body-forming plates provided at their marginal borders with inturned stiffening-flanges, said plates and their flanges being secured together and bearing an overlapping relation at the corners of the body, and a corner-reinforcing plate arranged at one side of and secured to the overlapping flanges at the corners.

7. A metal vehicle-body having body-forming plates provided at their marginal borders with inturned stiffening-flanges and with concavo-convex reinforce-beads following the said flanges in contiguous relation thereto, said plates and their flanges being secured together and bearing an overlapping relation at the corners, and an extra convexed upright finishing-strip secured along the outer side of each rear corner of the body with its rounded surface merging into the corresponding surface of the adjacent upright concavo-convex reinforce-beads to produce an exteriorly-rounded corner-joint.

8. A metal vehicle-body having body-forming plates provided at their marginal borders with inturned stiffening-flanges, and convex reinforce-beads arranged contiguous to and following said flanges, said body-plates and their flanges being secured together and bearing an overlapping relation at the corner-joints, and at such joints one of the body-plates and its flange being formed with a depressed seat or offset for the flanges of the other plate.

9. A metal vehicle-body having opposite metal side walls each provided at their marginal borders with inturned stiffening-flanges, an inner upright filling-board arranged at the inner side of the said wall and secured at its upper edge to the upper flange thereof, a lower horizontal supporting-strip arranged beneath the lower edge of the filling-board and secured to the lower flange of the side wall, said strip being of a greater width than the board to provide a ledge or shelf and the flooring arranged for support on the ledge or shelf of said strip.

10. In a vehicle-body, the combination with the body proper and the seat, of a transversely-arranged seat-support consisting of a transverse body member and a transversely-arranged metal bridge disposed beneath the frame and provided with an inturned flange at its upper edge.

11. In a vehicle-body, the combination with the body proper and the seat, of a seat-support consisting of a transverse body proper and a transversely-arranged metal bridge disposed along the front edge of the seat and provided at its upper edge with an inturned rest-flange and at its lower edge with a reinforcing-strip.

12. In a metal vehicle-body, the combination with the metal body proper and the seat or seats, of a seat-support comprising a transverse body member and a transversely-arranged metallic bridge disposed beneath the edge of the seat-frame and consisting of a metal plate having a horizontal portion and terminal end legs, the latter disposed at the inner sides of the metal body, said bridge being provided at its upper edge with an inturned rest-flange and at its lower edge with a separate reinforcing angle-iron strip.

13. In a metal vehicle-body, the combination of the body proper provided with a door-opening and formed of plates provided at their marginal borders with inturned stiffening-flanges, and a door consisting of a metal body or frame provided at the marginal borders thereof with an inturned stiffening-flange.

14. In a metal vehicle-body, the combination with the body proper having a door-opening and consisting of metal plates provided at their marginal borders with inturned stiffening-flanges, one of the flanged edges constituting a door-jamb, an angle-iron door-jamb reinforce-strip secured to the flanged edge constituting the jamb, and a flanged metal door carrying at its free edge a stop member.

15. In a metal vehicle-body, the combination of a body proper provided with a door-opening and consisting of plates provided at their marginal borders with stiffening-flanges, one of the flanged edges constituting a door-jamb, an angle-iron reinforce-strip fitted over the flanged edge constituting the door-jamb and presenting an abutment edge flush with the outer side of the plate, and a flanged metal door provided at its free edge with a T-shaped stop-strip cooperating with said angle-iron reinforce-strip of the jamb.

16. A metal vehicle-body provided with a door-opening and consisting of plates provided at their marginal borders with stiffening-flanges, one of the flanged edges constituting a door-jamb, a reinforcing angle-iron strip fitted over the said flanged edge forming the door-jamb and having a horizontal bracing extension secured to a member within the body, and a door arranged to cover said door-opening.

17. In a vehicle-body, the body proper having a door-opening and consisting of body-forming plates provided at their marginal borders with stiffening-flanges, a molding-piece extending about the edge of the door-opening at the outer side of the body, a metal threshold-strip secured to the molding-piece at the sill of the door-opening, and a metal door arranged to cover the door-opening.

18. In a vehicle-body, the combination with the metal body portion, of an angled top-supporting bracket piercing the metal body near an edge thereof and having a leg secured to the inner side of the metal body and formed at its lower end with the foot secured to a member within the body.

813,461. CHANGE-SPEED GEARING. HOWARD R. STACKER, Philadelphia, Pa., assignor to Geo. V. Cresson Co., Philadelphia, Pa. Filed Nov. 20, 1904. Serial No. 233,746.

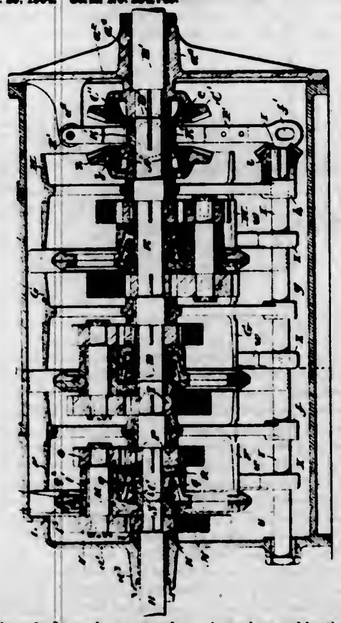

Claim.—1. In a change-speed gearing, the combination of a driving-shaft, a driven shaft, a train of gears and a reversing means, a cam-shaft, means whereby a cam on said shaft may be caused to connect said first-mentioned shafts through said train of gears or not as desired, said reversing means comprising a double reversed cone-pulley and corresponding clutch members, a lever for shifting said cone to engage either of said clutch members, said lever being provided with a slot, a hollow hand-shaft geared to said cam-shaft, and a hand-shaft concentric with said first-mentioned shaft and having an eccentric-pin to engage said slot and said lever.

2. In a change-speed gearing, the combination of a driving-shaft, a driven shaft, a series of trains of gears, and a reversing means, a cam-shaft, means whereby cams on said shaft may be caused to connect said first-mentioned shafts through either or all of said trains of gears, or not, as desired, said reversing means comprising a double reversed cone-pulley and corresponding clutch members, a lever for shifting said cone to engage either of said clutch members, said lever being provided with a slot, a hollow hand-shaft geared to said cam-shaft, and a hand-shaft concentric with said first-mentioned shaft and having an eccentric-pin to engage said slot and said lever.

3. In a change-speed gearing, the combination of a substantially cylindrical case closed by heads at the opposite ends, aligning driving and driven shafts substantially coaxial with said case, a cam-shaft parallel to said first-mentioned shafts, a series of trains of gears, means operated by the cams on said cam-shaft, whereby said driving and driven shafts may be connected or not through any one or more of said trains of gears, a reversing means interposed between said driving and driven shafts, said reversing means comprising a double reversed cone-pulley, female cone-pulleys, each of which is adapted to coact with one end of said cone-pulley, a bearing-lug formed on the adjacent head of said casing, a lever fulcrumed on said bearing-lug, shoes pivoted to said lever and engaging a neck formed on said cone-pulley, concentric hand-shafts, one of which is geared to said cam-shaft, and the other of which is provided with an eccentric-pin engaging a slot in said lever, said female cone-pulleys being provided with gear-teeth, and an idler pinion or pinions meshing with both sets of gear-teeth.

4. In a change-speed gearing, the combination of a driving-shaft, a driven shaft, gears mounted upon each of said shafts, a clutch member secured to one of said shafts, a disk concentric with said shafts and provided with a complemental clutch member and a second disk concentric with said shafts, a spindle or spindles projecting from the opposite faces of said second disk, pinions mounted upon the opposite ends of each of said spindles, which pinions mesh with said first-mentioned gears, means for holding said disks from rotation and means for causing said clutch members to be engaged.

5. In a change-speed gearing, the combination of driving and driven shafts, gears mounted upon each of said shafts, a clutch member on one of said shafts said clutch member being located between said gears, disks concentric to said shafts and located between said gears, a clutch member complemental to said first-mentioned clutch member mounted on one of said disks, pinions mounted on the other of said disks which pinions are adapted to transmit motion from one of said gears to the other thereof, means whereby said disks may be held from rotation and means for causing said clutch members to be engaged.

6. In a change-speed gearing, the combination of driving and driven shafts, gears mounted upon each of said shafts, a clutch member mounted upon one of said shafts, said clutch member being located between said gears, disks concentric to said shafts and located between said gears, a clutch member for one of said disks, said clutch member being complemental to said first clutch member, spindles journaled in the other of said disks, pinions mounted upon said spindles upon opposite faces of said disks, said pinions being adapted to transmit motion from one of said gears to the other thereof, means whereby said disks may be held from rotation, and means for causing said clutch members to be engaged.

7. In a change-speed gearing, the combination of driving and driven shafts, gears, one of which is mounted upon each of said shafts, a clutch member for each of said shafts, said clutch members being interposed between said gears, one of said clutch members being movable and having a disk formed thereon or attached thereto, a spring adapted to throw said movable clutch member into operative position, pinions carried by said disk, which pinions are adapted to transmit motion from one to the other of said gears, and means for retracting said clutch member and for holding said disks from rotation.

8. In a change-speed gearing, the combination of a driving-shaft, a driven shaft, a gear and a clutch member mounted upon each of said shafts, a disk, pinions carried by said disk, said pinions being adapted to transmit motion from one to the other of said shafts, one of said disks being provided with a projection and the other of said disks with a slot that is adapted to receive said projection, whereby relative rotary movement is prevented between said disks, means for causing said clutch members to be engaged, and means whereby said disks may be prevented from rotation.

9. In a change-speed gearing, the combination of driving and driven shafts, gears, one of which is mounted on each of said shafts, clutch members interposed between said gears, a disk secured to one of said clutch members, a second disk, pinions mounted on said second disk, said pinions being adapted to transmit motion from one to the other of said gears; one of said disks being provided with a projection and the other of said disks with a slot that is adapted to receive said projection, a spring adapted to cause engagement of

said clutch members, and means whereby said disks may be held from rotation.

10. In a change-speed gearing, the combination of driving and driven shafts, gears, one of which is mounted upon each of said shafts, a clutch member interposed between said gears, a disk secured to said clutch member for operating the latter, a second disk having beams or projections formed thereon, spindles journaled in said beams, said first-mentioned disks being provided with openings that are adapted to receive said projections, pinions mounted upon said spindles upon opposite faces of the second-mentioned disk, said pinions engaging said gears, means whereby said disks may be separated to engage said clutch members, and means whereby said disks may be drawn together and held from rotation.

11. In a change-speed gearing, the combination of driving and driven shafts, a gear mounted on each of said shafts, clutch members interposed between said gears, a disk secured to the movable clutch member for operating the latter, a second disk, pinions carried by said second disk and adapted to transmit motion from one to the other of said gears, said disks being provided with opposite conical surfaces, bands provided with V-shaped grooves that are adapted to engage said conical surfaces, and means whereby said bands may be caused to grip said surfaces.

12. In a change-speed gearing, the combination of driving and driven shafts, a gear mounted on each of said shafts, clutch members interposed between said gears, a disk secured to the movable clutch member for retracting the latter, a second disk, a spindle or spindles journaled in said second disk, pinions mounted on said spindles and adapted to transmit motion from one to the other of said gears, a spring interposed between said disks for forcing the movable member of said clutch into engagement, the edges of said disks being provided with oppositely-inclined conical surfaces, and bands having V-shaped grooves that are adapted to engage said surfaces to force said disks together and prevent their rotation.

13. In a change-speed gearing, the combination of driving and driven shafts, gearing for transmitting motion from one to the other of said shafts, said gearing comprising a disk or disks, and means for holding said disk or disks from rotation, said means comprising substantially semicircular friction-bands, one of such bands being provided with an L-shaped end, a lever pivoted to the ends of said bands, said bands being provided with opposing pins, and a spring mounted upon said pins for separating said bands

14. In a change-speed gearing, the combination of a substantially cylindrical casing, driving and driven shafts having bearings in the opposite ends of said casing, one end of said casing being removable, a series of units of change-speed gearing, each of which has connection with said shafts or with another of said units, said connections permitting disconnection simply by movement in the direction of the axes of said shafts, a cam-shaft for operating said change-speed gearing, and bearing-brackets fitting the bore of said casing and provided with lugs for engagement with said cam-shaft, whereby the necessity for fastening said bearing-bracket to said casing is avoided.

15. In a change-speed gearing, the combination of driving and driven shafts, gearing for transmitting motion from one to the other of said shafts, said gearing comprising a disk or disks, and means for holding said disk or disks from rotation, said means comprising substantially semicircular friction-bands, one of such bands being provided with an L-shaped end, a lever pivoted to the ends of said bands, said bands being provided with opposing pins, and a spring mounted upon said pins for separating said bands and a reversing-gearing.

813,463. **TURN-TABLE FOR AUTOMOBILES.** HENRY R. STONEMEY, Portland, Me. Filed Dec. 26, 1905. Serial No. 293,564.

Claim.—1. The herein-described turn-table for automobiles consisting of base having an annular track thereon, a series of rollers adapted to run on said track, an annular frame resting on said rollers, radial beams secured to the top of said frame, a central vertical pin secured to said base and forming a pivot for said frame to rotate on and a ball-bearing on the upper end of said pin for resisting the upward thrust of said frame.

2. The herein-described turn-table for automobiles consisting of a base having an annular track thereon, a series of rollers adapted to run on said track, an annular frame resting on said rollers, radial beams secured to the top of said frame, a pair of ball-bearing cups on said frame, a central vertical pin secured to said base and forming a pivot for said frame and said ball-bearing cups to rotate on and a nut on the upper end of said pin.

3. The herein-described turn-table for automobiles consisting of a base having an annular track thereon, a series of rollers adapted to run on said track, an annular frame resting on said rollers, radial beams secured to the top of said frame, a hanger secured to the frame beneath each beam, a brace-rod secured to said hanger by one end and to the outer end of said beam by the other end, a central vertical pin secured to said base and forming a pivot for said frame to rotate on and a ball-bearing on the upper end of said pin for resisting the upward thrust of said frame.

813,468. **SAWMILL.** GEORGE W. STEBBINS, Shreve, Ohio. Filed Aug. 27, 1904. Serial No. 222,573.

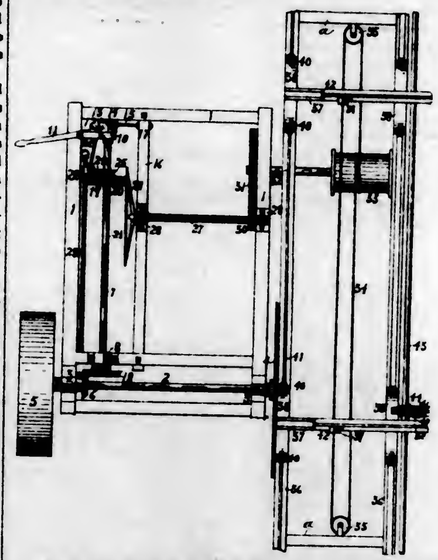

Claim.—1. A sawmill feed mechanism, consisting of a saw-shaft, a second shaft geared thereto, a slidably-mounted friction-wheel mounted on said second shaft, a third shaft mounted at right angles to said second shaft and provided with a friction-disk adapted to be engaged by said friction-wheel, a fourth shaft suitably mounted and provided with a gear-wheel meshing with a pinion mounted on said second shaft, a winding-drum mounted on said fourth shaft, a carriage-track, pulleys secured near the ends of said carriage-track, a cable wound about said winding-drum and passing over said pulleys, carriages mounted on said carriage-track and provided with means for clamping to said cable, a winding-spool mounted beneath one of said carriages and adapted to engage the ends of said cable, a guide-rod mounted adjacent to said second shaft, a shifting block mounted on said guide-rod, an eccentric block or bearing taking over the lower end of said second shaft, a depending bracket pivotally secured at its upper end and carrying in its lower end said eccentric block or bearing, an adjustable bar secured to one side of said depending bracket whereby the same may be moved laterally, an operating-lever pivotally secured to said eccentric block or bearing, and a rod connecting the lower end of said operating-lever to said shifting block.

2. In a sawmill-carriage feed mechanism, the combination with a shaft suitably mounted on the saw-frame, a friction-disk mounted upon the end of said shaft, a second shaft mounted at right angles to said shaft, a double or two-part bearing formed near the upper end of said shaft, an eccentric bearing formed at the lower end thereof, an adjustably-mounted depending bracket secured to said frame and taking over said eccentric bearing a friction-wheel slidably mounted on said second shaft, and a groove or recess formed in the hub of said friction-wheel; of a guide-rod mounted adjacent to said second shaft, a shifting block mounted thereon, arms formed with said shifting

block and adapted to take into said groove or recess formed in the hub of said friction-wheel, an adjustable bar secured to one side of said depending bracket, an operating-lever pivotally secured to said eccentric bearing, and a rod connecting the lever end of said operating-lever with said shifting block.

3. In a sawmill feed mechanism, the combination with a shaft provided at its end with a friction-disk, and a shaft mounted adjacent thereto and provided with a two-part friction-wheel adapted to be shifted on said last-mentioned shaft and thrown into and out of engagement with said friction-disk; of an eccentric block or bearing formed at the lower end of said last-mentioned shaft, a depending bracket provided at its lower end with a second block or bearing taking over said eccentric block or bearing and pivotally secured at its upper end to the saw-frame, and an adjustable bolt or bar secured to the lower side of said bracket whereby the same may be moved laterally.

4. In a sawmill feed mechanism, the combination with a shaft provided at its end with a friction-disk, a shaft suitably mounted and provided with a friction-wheel adapted to be shifted thereon and engage said friction-disk, a guide-rod mounted adjacent thereto, and a shifting block mounted on said guide-rod and adapted to engage said friction-wheel; of an eccentric block or bearing formed at the lower end of said last-mentioned shaft, a depending bracket pivotally secured at its upper end to the saw-frame, and carrying said eccentric block or bearing, an adjustable bar secured to the side of said depending bracket, an operating-lever secured to said eccentric bearing, and a rod connecting the lower end of said operating-lever to said shifting block.

813,464. **TWO-SPEED HUB.** CHARLES W. SVENSON, New Britain, Conn., assignor to The Corbin Screw Corporation, New Britain, Conn., a Corporation of Connecticut. Filed Dec. 12, 1904. Serial No. 236,484.

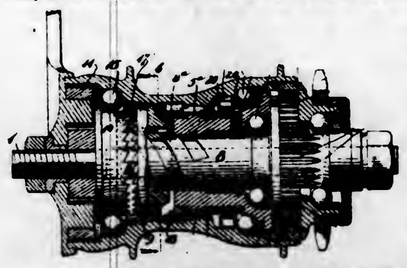

Claim.—1. In an apparatus of the character described, a hub, a driving means therefor, two independent longitudinally-movable clutches, means to move both of said clutches in the same longitudinal direction to engage the hub, and in a reverse direction to disengage the hub, said clutch-moving means operating alternately on said clutches, and means for moving said clutches, including direct engagement between said driving means and one of said clutches, and indirect gear engagement between said driving means and the other clutch.

2. In an apparatus of the character described, a hub, a driving means, two similarly-faced independent longitudinally-movable annular clutches, means of connection whereby one of said clutches is rotatable by said driving means at a corresponding speed, means of connection whereby the other clutch is rotatable by said driving means at a relatively reduced speed, means for moving said clutches alternately toward the same end of the hub to effect driving engagement with said hub.

3. In an apparatus of the character described, a hub, a driving means, a tapered annular clutch and means of connection whereby the same is rotatable by said driving means at a corresponding speed, the tapered portion of said clutch facing toward said driving means, a second tapered annular clutch, the tapered portion thereof facing toward the first-mentioned clutch, and means of connection whereby said second clutch is rotatable by said driving means at a relatively reduced speed, and means for alternately causing said clutches to shift longitudinally and engage said hub.

4. In an apparatus of the character described, a hub, a driving means, two annular clutches and means to cause the same to alternately engage the hub when either clutch is moved toward one end of the hub, and to free either clutch from said hub when moved toward the opposite end.

5. In an apparatus of the character described, a hub, two tapered clutch-surfaces formed therein and faced in the same direction, one of said clutch-surfaces being of slightly greater diameter than the other clutch-surface, independent annular clutches adapted and arranged to move longitudinally and engage alternately with said surfaces, means to move said clutches longitudinally, a driving means, and connecting means whereby the latter is connected with one of said clutches so as to rotate the same at a certain speed relatively thereto, and with the other clutch so as to rotate the same at a relatively reduced speed.

6. In an apparatus of the character described, a hub, a rotatable driving means, two annular longitudinally-movable clutches arranged to alternately engage said hub, means of connection between said driving means and each of said clutches, whereby one of the latter will be rotated at a corresponding speed to the driving means, and the other at a relatively reduced speed, and means for automatically and alternately coupling said clutches with said hub by each successive pause of said driving means.

7. In an apparatus of the character described, a hub, a driving means therefor, gears, longitudinally-movable clutches for alternately coupling said driving means with said hub directly in one instance and indirectly through the medium of said gears in the other instance, said devices including means for automatically blocking out one of said clutches from engagement with said hub on each alternate pause of said driving means.

8. In an apparatus of the character described, a hub, a driving means therefor, gears, longitudinally-movable clutches for alternately coupling said driving means with said hub directly in one instance and indirectly through the medium of said gears in the other instance, said devices including means for automatically blocking out one of said clutches to prevent its engagement with the hub on each alternate pause of the driving means, said blocking-out device including an intermittently-acting controller.

9. In an apparatus of the character described, a hub, driving means therefor including longitudinally-movable clutch mechanism, a direct drive and a gear-drive, and means operated by the movement of said hub for automatically controlling said clutch mechanism to cause the direct drive and gear-drive to alternately coöperate as a connecting medium between the hub and the driving means.

10. In an apparatus of the character described, a hub, driving means therefor including two longitudinally-movable clutches, a direct drive and a gear-drive operating through said clutches alternately, one of said clutches being of larger diameter than the other clutch, with seats within said hub adapted to receive said clutches respectively.

813,465. **TWO-SPEED HUB.** CHARLES W. SVENSON, New Britain, Conn., assignor to The Corbin Screw Corporation, New Britain, Conn., a Corporation of Connecticut. Filed May 31, 1905. Serial No. 263,206.

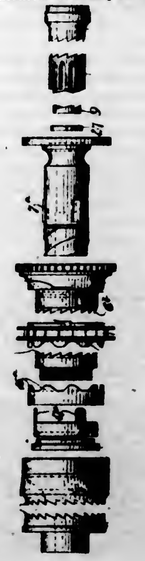

Claim.—1. In a two-speed hub mechanism, a hub, a clutch, a driving member, and means intermediate of said clutch and said high-speed member, a low-speed member, a driver directly connected with the former and indirectly with the latter, and a coupling device

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each including inner bearing-bars, outer bearing-bars, and links connecting the inner bars to the outer bars, and links for connecting

Claim.—1. In a two-speed hub mechanism, a hub, a clutch, a driving member, and means intermediate of said clutch and said driving member for coupling said parts so that they will turn in one direction at the same speed, said means transmitting power from said driving member to said clutch, and other means between the same clutch and said driving member whereby they will turn in one direction at different speeds, said means conveying power from the driving member to said clutch and means operated by a change in the relative speed of the driver and hub for effecting the change from the high-speed drive to the low-speed drive, and vice versa.

2. In a two-speed hub mechanism, a hub, a clutch, a driving member, and means intermediate of said clutch and said driving member for coupling said parts so that they will turn in one direction at the same speed, and other means between the same clutch and said driving member whereby they will turn in one direction at different speeds and means operated by a change in the relative speed of the driver and hub for effecting the change from the high-speed drive to the low-speed drive, and vice versa.

3. In a two-speed hub mechanism, a hub, a clutch, a driving member, and means intermediate of said clutch and said driving member for coupling said parts so that they will turn in one direction at the same speed, said means transmitting power from said driving member to said clutch, and other means between the same clutch and said driving member whereby they will turn in one direction at different speeds, said means conveying power from the driving member to said clutch, and means for automatically effecting the change from relatively high speed to relatively low speed between the driver and said clutch.

4. In a two-speed hub mechanism, a hub, a clutch, a driving member, and means intermediate of said clutch and said driving member for coupling said parts so that they will turn in one direction at the same speed, and other means between the same clutch and said driving member whereby they will turn in one direction at different speeds, and means for automatically effecting the change from relatively high speed to relatively low speed between the driver and said clutch.

5. In a device of the character described, a driver, a clutch, a hub, said clutch adapted to engage said hub, a spiral support for said clutch, and means intermediate said driver and said spiral for transmitting power and rotary motion at two relatively different speeds and a controller located within the hub and operable by the hub to shift the driving connection from high speed to low speed, and vice versa.

6. In a device of the character described, a driver, a clutch, a hub, said clutch adapted to engage said hub, a spiral support for said clutch, and means intermediate said driver and said spiral for transmitting power and rotary motion at two relatively different speeds, including a low-speed member and a high-speed member, a coupling for the latter and means to automatically interlock and free said coupling alternately with said high-speed member or said low-speed member.

7. In a device of the character described, a hub, a driver or sprocket, a high-speed member, a low-speed member, a clutch cooperating with both of said members alternately, a coupling device for one of said members, and means for automatically coupling and uncoupling said high-speed member with said clutch.

8. In a device of the character described, a hub, a driver or sprocket, a high-speed member, a low-speed member, a clutch cooperating with both of said members alternately, a coupling device for one of said members, and means for automatically coupling and uncoupling said high-speed member with said clutch through the medium of said low-speed member.

9. In a device of the character described, a hub, a driving member or sprocket, a high-speed member directly connected to said sprocket, a low-speed member concentric with the former, intermediate gear connections between said low-speed member and said sprocket, a clutch, said low-speed member being operatively connected therewith at all times, and means for automatically and alternately engaging and disengaging said high-speed member with said clutch.

10. In a device of the character described, a hub, a clutch, a spiral support for said clutch, a low-speed member operatively connected to said spiral at all times, planet-gears carried thereby, a sun-gear in mesh with said planetary gears, means to permit the sun-gear to turn freely in one direction and to hold it against rotation in an opposite direction, a high-speed member, a coupling device between said high-speed member and said clutch and means for engaging and disengaging said coupling member from said high-speed member.

11. In a device of the character described, a hub, a clutch, a high-speed member, a low-speed member, a driver directly connected with the former and indirectly with the latter, and a coupling device for one of said members between it and the clutch, and means for alternately and automatically engaging and disengaging said coupling member.

12. In a device of the character described, a hub, a driver, means for transmitting power from said driver to said hub at two different ratios, said means including a sun and planetary gear, said sun-gear being free to revolve when power is being transmitted through the high-speed member, and means to automatically check the rotation of said sun-gear when power is being transmitted through said planetary gears.

13. In a device of the character described, a hub, a clutch, a single driver, means for transmitting power at relatively different ratios from said single driver to said hub, a coupling device, a blocking-out member, controlling means for automatically and alternately engaging with, and disengaging said coupling from, the source of power.

14. In a device of the character described, a single clutch for transmitting power at two relatively different speeds from the driving to the driven member, an automatic controlling device for said clutch comprising a controller having a step-by-step rotary action, and a controller-actuator having a limited oscillating action.

813,466. PRINTING-PRESS. CHARLES B. SWINK, Muncie, Ind. Ter. Filed Apr. 22, 1905. Serial No. 256,268.

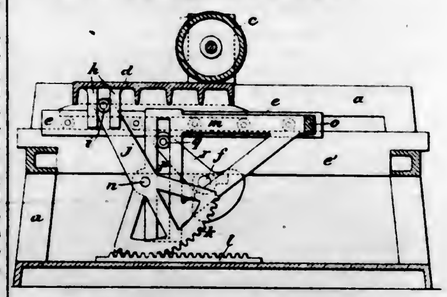

Claim.—1. In a printing-press, the combination of a bed-plate, a swinging lever, a movable slotted plate pivoted to said lever, and a rotatable crank provided with a wrist-pin engaging in the slot provided in said plate, substantially as described.

2. In a printing-press, the combination of a bed-plate, a swinging lever provided at one end with a sector engaging with a fixed rack and at its other end with a wrist-pin engaging said bed-plate, a movable extension-plate pivoted to said lever and having a slot provided therein, and a rotating crank provided with a wrist-pin engaging in said slot to reciprocate the plate and actuate said lever and bed, substantially as described.

3. In a printing-press, the combination of a bed-plate provided with a depending slotted arm rigidly secured thereto, a swinging lever provided at one end with a sector meshing with a fixed rack and at its other end with a wrist-pin engaging and movable in the slotted arm, a movable slotted plate pivoted to said swinging lever, and a rotatable crank having a wrist-pin engaging in the slot provided in said plate, substantially as described.

813,467. HEADWEAR. FRANK TAYLOR and ADDIE TAYLOR, Bay City, Mich. Filed June 14, 1905. Serial No. 265,210.

Claim.—1. A bonnet embodying a one-piece peak and a cape, the latter having combined with it an elastic drawing-string, and a visor combined with the peak and disconnected from the cape.

2. A bonnet embodying a peak and cape constructed of a single piece of relatively sleazy material and having combined with it an elastic drawing-string, and a relatively stiff visor secured to the peak and disconnected from the cape.

3. A bonnet embodying a peak, a cape and a visor combined with the peak and disconnected from the cape, and an elastic securing member disposed at the juncture of the peak and the cape.

4. A bonnet embodying a relatively limber peak and cape, and a relatively stiff visor combined with the peak and disconnected from the cape at the sides, and an elastic securing member disposed on a curve at the juncture of the peak and the cape.

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813,468. CARD OR CHECK RECEIVER. JOHN C. TUTT, Kansas City, Mo. Filed Sept. 26, 1905. Serial No. 279,263.

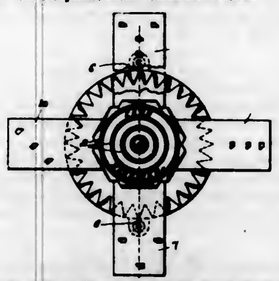

Claim.—A card or check receiver of the character described, comprising a resilient piece of metal formed with a body portion and a plurality of outwardly-extending V-shaped points, the said points curved under the body portion, substantially as described.

813,469. EMERGENCY CAR-COUPLING. NORMAN WARNER and GEORGE W. JACOBS, Glenns Ferry, Idaho. Filed Feb. 9, 1905. Serial No. 244,969.

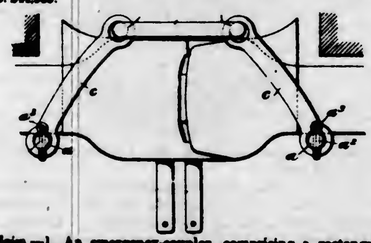

Claim.—1. An emergency-coupler, comprising a rectangular member arranged above the coupler-heads, and engaging members depending from opposite sides of the rectangular member and coacting with said heads.

2. An emergency-coupler, comprising a rectangular link designed to extend across contiguous ends of companion coupling-heads, and engaging members pivotally connected to opposite sides of said link and coacting with the heads.

3. An emergency-coupler, comprising a rectangular link, and duplicate engaging members designed to extend at angles to said link when the coupler is in operative position and designed to fold down upon the link when the coupler is out of operation.

4. An emergency-coupler, comprising duplicate engaging parts, each including inner bearing-bars, outer bearing-bars, and links connecting the inner bars to the outer bars, and links for connecting the inner bar of one engaging part to the inner bar of the companion engaging part.

5. An emergency-coupler, comprising duplicate engaging parts, each including inner bearing-bars, outer bearing-bars, and links connecting the inner bars to the outer bars, and links for connecting the inner bar of one engaging part to the inner bar of the companion engaging part, the latter links constituting integral continuations of the inner bars.

6. An emergency-coupler, comprising duplicate engaging parts, each of said parts including an inner bearing-bar, links having openings at their inner ends for said bar and openings at their opposite ends, and an outer bearing-bar removably held in the latter openings, and links for connecting the inner bearing-bars of companion engaging parts.

813,470. MATTRESS-MAKING MACHINE. CHARLES W. WHITE, Waco, Tex. Filed Oct. 14, 1904. Serial No. 228,481.

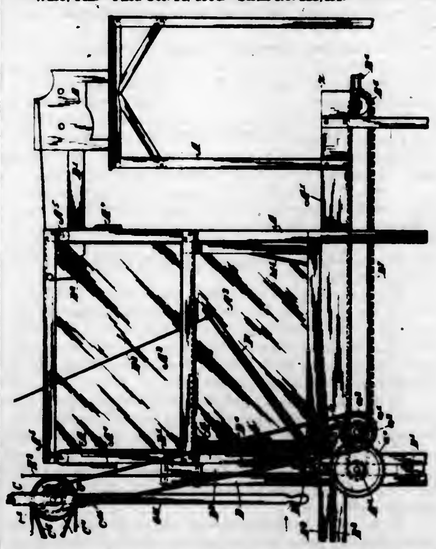

Claim.—1. In a mattress-making machine, the combination of a main frame, a slatted apron supported by said frame, a mattress-forming frame adapted to rest upon said slatted apron, rigid projections secured to the under side of the mattress-forming frame for connecting the slatted apron and said mattress-forming frame, so that by such rigid connection the angle-irons may act to move the forming-frame either forward or backward and means for moving said slatted apron in two directions for inserting and withdrawing the mattress-frame into and from the tick, said means comprising two pulleys having clutch-faces, mechanism for rotating said pulleys in opposite directions and devices for connecting one or the other of said pulleys to the apron-supporting means.

2. In a mattress-making machine, the combination of a main frame, comprising uprights, and side pieces connecting said uprights, a slatted apron disposed between the side pieces, panels disposed between the uprights of the main frame to constitute a chamber above the slatted apron, a chute for delivering materials into said chamber, a valve controlling the discharge of material from said chute into said chamber, and means for operating said valve.

3. In a mattress-making machine, the combination of a main frame provided with ways or guides, bearing-blocks adapted to move up and down in said ways or guides, a lifting-shaft journaled in said blocks, a compression-frame hinged to said vertically-movable blocks independent of the lifting-shaft, and means connecting said lifting-shaft with the free end of the compression-frame.

4. In a mattress-making machine, the combination of the main frame comprising uprights, vertical guides or ways at one end of said frame, bearing-blocks vertically movable in said guides or ways, a rack or pinion for moving said bearing-blocks, a lifting-shaft jour-

naled in said bearing-blocks, a compression-frame carried by the bearing-blocks independent of the lifting-shaft, and a flexible connection between the lifting-shaft and free end of the compression-frame, a slatted apron supported by said frame, a mattress-forming frame adapted to rest upon such slatted apron, rigid pieces secured

sliding of said parts upon each other, substantially as and for the purposes set forth.

plurality of slots formed parallel with the roter-axis, an insulated rod disposed within each of said slots and extending beyond each

naled in said bearing-blocks, a compression-frame carried by the bearing-blocks independent of the lifting-shaft, and a flexible connection between the lifting-shaft and free end of the compression-frame.

5. In a mattress-making machine, the combination of the main frame comprising uprights, vertical guides or ways at one end of said frame, bearing-blocks vertically movable in said guides or ways, a rock or pinion for moving said bearing-blocks, a lifting-shaft journaled in said bearing-blocks, a cross-piece connecting said bearing-blocks, a compression-frame hinged directly to said cross-piece independent of the lifting-shaft, and a flexible connection between the lifting-shaft and free end of the compression-frame.

6. In a mattress-making machine the combination of a main frame, a slatted apron carried by said frame, means for moving the slatted apron, first in one and then in the opposite direction, a mattress-forming frame comprising a series of slats and a plunger or ram constituting the end of the mattress-forming frame, means for adjusting the plunger or ram longitudinally of said series of slats to vary the length of mattress formed by the forming-frame, and fixed angle-irons for connecting the said mattress-forming frame to said apron.

7. In a mattress-making machine, the combination of the main frame, a slatted apron carried by said frame, a mattress-forming frame adapted to be supported upon said slatted apron, said forming-frame comprising a series of slats, a plunger or ram constituting the end of the mattress-forming frame, an adjustment-piece to which said plunger or ram is secured, and means for adjusting said adjustment-piece longitudinally of the series of slats to position the plunger for the making of mattresses of different lengths.

8. In a mattress-making machine, the combination of a main frame, a slatted apron carried thereby, a laterally-adjustable mattress-forming frame supported by said slatted apron, a plunger adjustable longitudinally of said mattress-forming frame and an adjustable deflector, adapted to engage the plunger and direct material in front of said plunger.

9. In a mattress-making machine, the combination of a main frame and a slatted apron carried thereby, a laterally-adjustable mattress-forming frame supported by said slatted apron, a plunger adjustable longitudinally of said mattress-forming frame and an adjustable deflector, having cleats, adapted to engage the plunger and direct material in front of said plunger.

10. In a mattress-making machine, the combination of a main frame, a slatted apron carried thereby, a mattress-forming frame supported on said apron, said mattress-forming frame comprising a series of slats, means for laterally adjusting said slats toward and from each other, a plunger, an adjustment-piece to which said plunger is secured, and means for securing the adjustment-piece in adjustable position.

11. In a mattress-making machine, the combination of a main frame, a slatted apron carried thereby, a mattress-forming frame supported on said apron, said mattress-forming frame comprising a series of slats, angle-irons fixedly secured to the bottoms of said slats and adapted to engage between the slats of the apron, means for laterally adjusting said slats toward and from each other, a plunger, an adjustment-piece to which said plunger is secured, and a set-screw for securing the adjustment-piece in adjusted position.

12. In a mattress-forming machine, the combination of the main frame for receiving the material to be formed into a mattress, a plunger for forcing the material into the tick, means for feeding material onto the main forming-frame, and a deflector adapted to engage the plunger and direct material in front of said plunger.

13. In a mattress-forming machine, the combination of a main frame for receiving material to be formed into a mattress, a plunger for forcing the material into the tick, and a deflector mounted to swing about its upper edge and adapted to extend in front of the plunger to direct material into the main frame and in front of the plunger.

14. In a mattress-forming machine, the combination of a main frame for receiving material to be formed into a mattress, means for feeding material onto said frame, a plunger, a deflector interposed between said feeding means and plunger to deflect material in front of the latter, and means for adjusting said deflector.

15. In a mattress-forming machine, the combination of a main frame for receiving material to be formed into a mattress, means for feeding material onto said frame, a plunger, a deflector interposed between said feeding means and plunger to deflect material in front of the latter, a rising and falling cross-piece to which the deflector is hinged, and means for adjusting the width of the deflector to the size of mattress to be made.

16. In a mattress-making machine, the combination of a main frame, a slatted apron supported by said frame, a mattress-forming frame adapted to rest upon such slatted apron, rigid pieces secured to the bottom of the frame, and adapted to extend between the slats of the slatted apron and means for moving said slatted apron forward or backward and for inserting and withdrawing a mattress-frame into and from the tick.

17. In a mattress-making machine, the combination of a main frame, a slatted apron carried by said main frame, a mattress-forming frame adapted to be carried by said slatted apron, said mattress-forming frame comprising a series of slats and a plunger or ram secured to the side pieces of the forming-frame, and means for adjusting said plunger or ram longitudinally of the slats to vary the length of the mattress formed by said frame.

813,471. **METAL BED.** CHARLES J. WIDGREN, Newark, N. J. Filed Aug. 20, 1905. Serial No. 274,192.

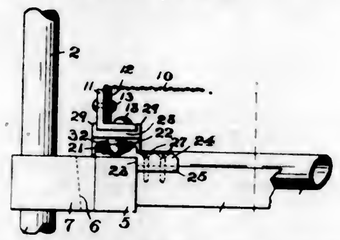

Claim.—1. In a metal bed, the combination, with the metal framework of the bedstead and a metal bar of the bed-spring, of a bearing or holding means comprising two elements connected respectively with the metal framework of the bedstead and the metal bar of the bed-springs, one of said elements being provided with a cup-shaped receiving depression, and said elements being in supporting engagement, and means connected with the other one of said elements extending into and being in oscillatory supporting engagement with said receiving depression to prevent slipping or sliding of one element upon the other, substantially as and for the purposes set forth.

2. In a metal bed, the combination, with the metal framework of the bedstead and a metal bar of the bed-spring, of a bearing or holding means comprising two elements connected respectively with the metal framework of the bedstead and the metal bar of the bed-springs, said elements being in supporting engagement, and one of said elements being provided with a cup-shaped pin or stud receiving socket, and a pointed pin or stud upon the other element, extending into and being in oscillatory supporting engagement with said socket to prevent slipping or sliding of one element upon the other, substantially as and for the purposes set forth.

3. In a metal bed, the combination, with the metal framework of the bedstead, of a metal side bar formed with an end member, an upwardly-extending bearing on said end member, a laterally-extending metal cross-bar of a bed-spring, said bearing being provided with a cup-shaped receiving depression, a bearing member on said cross-bar, and means connected with the bearing member of said cross-bar extending into and being in oscillatory supporting engagement with said receiving depression to prevent slipping or sliding of said bearing members upon each other, substantially as and for the purposes set forth.

4. In a metal bed, the combination, with the metal framework of the bedstead, of a metal side bar formed with an end member, an upwardly-extending bearing on said end member, a laterally-extending metal cross-bar of a bed-spring, a bearing member on said cross-bar, the bearing member of the metal side bar being provided with a cup-shaped pin or stud receiving socket, and a pointed pin or stud upon the bearing member of said side bar, extending into and being in oscillatory supporting engagement with said socket to prevent slipping or sliding of said bearing members upon each other, substantially as and for the purposes set forth.

5. In a metal bed, the combination, with the metal framework of the bedstead, of a metal side bar formed with an end member, an upwardly-extending bearing on said end member, a metal side rod and a laterally-extending metal cross-bar of a bed-spring, a supporting-block between said side rod and laterally-extending bar, an arm extending laterally from said block, and means on said bearing of the end member and said arm of said block to prevent slipping or

sliding of said parts upon each other, substantially as and for the purposes set forth.

6. In a metal bed, the combination, with the metal framework of the bedstead, of a metal side bar formed with an end member, an upwardly-extending bearing on said end member, a metal side rod and a laterally-extending metal cross-bar of a bed-spring, a supporting-block between said side rod and laterally-extending bar, an arm extending laterally from said block, the bearing of said end member being provided with a pin or stud receiving socket, and a pin or stud upon the arm of said block to prevent slipping or sliding of said parts upon each other, substantially as and for the purposes set forth.

7. In a metal bed, the combination, with the metal framework of the bedstead, of a metal side bar formed with an end member, an upwardly-extending bearing on said end member, a metal side rod and a laterally-extending metal cross-bar of a bed-spring, a supporting-block between said side rod and laterally-extending bar, an arm extending laterally from said block, ribs on said arm said ribs embracing portions of the laterally-extending bar of the bed-spring, and means on said bearing of the end member and said arm of said block to prevent slipping or sliding of said parts upon each other, substantially as and for the purposes set forth.

8. In a metal bed, the combination, with the metal framework of the bedstead, of a metal side bar formed with an end member, a metal side rod and a laterally-extending metal cross-bar of a bed-spring, a supporting-block between said side rod and laterally-extending bar, an arm extending laterally from said block, ribs on said arm said ribs embracing portions of the laterally-extending bar of the bed-spring, the bearing of said end member being provided with a pin or stud receiving socket, and a pin or stud upon the arm of said block to prevent slipping or sliding of said parts upon each other, substantially as and for the purposes set forth.

813,472. **ELECTRIC MACHINE.** EDWARD J. WILLIS, Richmond, Va. Filed Feb. 8, 1905. Serial No. 244,772.

Claim.—1. An element for induction electric machines, provided with a plurality of rods extending longitudinally beyond the ends of the element and a plurality of bonds consisting of naked wires spaced apart and extending entirely around said element upon said extended ends and each bond electrically connected with each rod at each contact-point.

2. An element for induction electric machines provided with a plurality of rods extending longitudinally beyond the ends of the body of the element and a bond extending continuously and spirally a plurality of times entirely around said extended ends and each coil of the spiral electrically connected with each of said extended ends adjacent to but separated from the preceding coil.

3. An element for induction electric machines provided with a plurality of slots formed parallel with the rotor-axis, an insulated rod disposed within each of said slots and extending beyond each end of the body and a bond extending continuously and spirally a plurality of times entirely around the element and each coil of the spiral electrically connected with each of the extended ends adjacent to but not touching the preceding coil.

4. An element for induction electric machines comprising a laminated body provided with a plurality of slots formed parallel with the rotor-axis, a rod disposed within each of the said slots and insulated from and extending beyond each end of the said laminated body each of said extended ends being provided with a plurality of transverse notches disposed in circumferential alinement entirely around the cage formed by said extended ends and a plurality of bonds equal in number to the number of notches in each end of each rod and extending entirely around said element and each disposed within and electrically connected at each notch of each alined series.

5. An element for induction electric machines comprising a laminated body provided with a plurality of slots formed parallel with the rotor-axis, a rod disposed within each of said slots insulated from and extending beyond each end of the said laminated body each of said extended ends being provided with a plurality of transverse notches disposed in circumferential alinement entirely around the cage formed by said extended ends, bonds at each end wound spirally about said cage and disposed within said notches and means securing said bonds within said notches and in electrical connection with said rods.

813,473. **CONVEYER-CHUTE.** FREEMAN R. WILLSON, Jr., Worthington, Ohio, assignor to Joseph A. Jeffrey, Columbus, Ohio. Filed May 23, 1903. Serial No. 158,571.

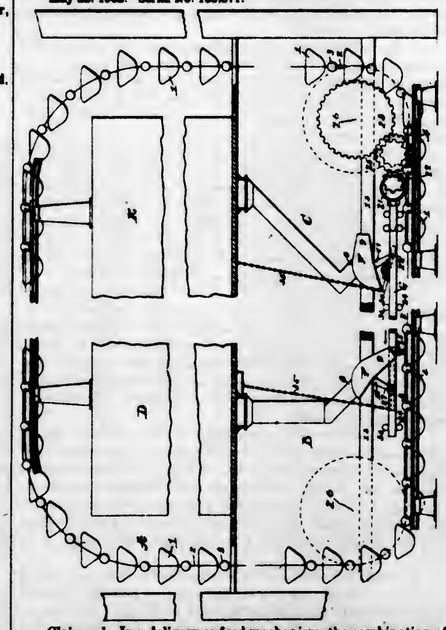

Claim.—1. In a delivery or feed mechanism, the combination of a conduit for material having a delivery-opening, a chute adapted to receive material from said opening, a longitudinally-reciprocating bar to which the chute is connected whereby said chute may be moved to deliver such received material, and a closing means for said opening operated to cut off material from the chute when the latter is moved to deliver its material.

2. In a delivery or feed mechanism, the combination of a conduit for material having a delivery-opening, a chute adapted to receive material from said opening, a longitudinally-reciprocating bar to which the chute is connected whereby said chute may be moved to deliver such received material, and a closing means for said opening carried by the chute and acting to cut off material from the chute when the latter is moved to its delivery position.

3. The combination of a series of material-conduits having delivery-openings, discharge-chutes adapted to receive material from said conduits, and to travel in a circular path to deliver said mate-

16. An oscillating chute arranged to intermittently receive and deliver material, said chute having at its delivery end a gravity-co-

of a tilting device for the buckets, and means for moving said device into and out of operation, said means adapted to arrest the move-

tively moving said member into either an operative or an inoperative position, and means for retaining said lever and feeder member in

3. The combination of a series of material-conduits having delivery-openings, discharge-chutes adapted to receive material from said openings, and to travel in a circular path to deliver said material a reciprocating bar, and means for connecting any of said chutes to the bar, substantially as set forth.

4. The combination of a tilting chute adapted to receive and deliver material, a reciprocating bar, an adjustable pitman connected with the bar, and means whereby said pitman may be connected with the chute to operate the latter.

5. The combination of a conduit for material having a delivery-opening, a tilting chute near said opening, means operated with the chute for closing said opening when the chute is moved into delivery position, a longitudinally-reciprocating bar for operating the chute and means for connecting said bar and chute.

6. The combination of a series of tilting chutes, a reciprocating bar, a series of adjustable pitmen connected with the bar and means whereby the latter may be connected with and disconnected from the chutes, substantially as set forth.

7. The combination of a conveyor, a conduit for material having a delivery-opening, a chute adapted to receive material from said opening, a longitudinally-reciprocating bar to which the chute is connected whereby said chute may be operated to deliver such received material to the conveyor, and a closing means for said opening operated with the chute to cut off material from the chute when the latter is moved into delivery position.

8. The tilting chute having at its delivery end a gravity-actuated gate adapted to retain material when the chute is in its receiving position and to swing freely relative to the said delivery end to permit free discharge of the material when the chute is in its delivery position, and having at its receiving end a cut-off plate arranged to check the flow of material to the chute when it is in its delivery position, substantially as set forth.

9. The combination of an endless bucket conveyor, driving mechanism therefor, a material-conduit having a delivery-opening, a discharge-chute adapted to receive material from said opening and to travel in a circular path to discharge it into said buckets, and means for operating said discharge-chute connected with the driving mechanism of the conveyor, substantially as set forth.

10. The combination of an endless bucket conveyor, driving mechanism therefor, the material-conduit having a delivery-opening, the discharge-chute adapted to receive material from said opening and discharge it into said buckets, closing means for said opening operating to cut off the flow of material from the said conduit to the discharge-chute while the latter is delivering its charge into a bucket, and means for operating said discharge-chute connected with the driving mechanism of the conveyor, substantially as set forth.

11. The combination of an endless bucket conveyor, driving mechanism therefor, a material-conduit having a delivery-opening, a discharge-chute receiving material from said opening, closing means for said opening adapted to intermittently cut off the flow of material from said conduit to said discharge-chute while the latter is delivering its charge into a bucket, and operating means connecting said closing means with the driving mechanism of the conveyor, substantially as set forth.

12. The combination of an endless bucket conveyor, driving mechanism therefor, the material-conduit having a delivery-opening, a discharge-chute receiving material from said opening, closing means for said opening carried by the chute and acting to intermittently cut off material from the chute when the latter is delivering its charge into a bucket, and means connecting said discharge-chute with the driving mechanism of the conveyor, substantially as set forth.

13. The combination of an endless bucket conveyor, driving mechanism therefor, material-conduits having delivery-openings, discharge-chutes adapted to receive material from said openings and to travel in a circular path to discharge said material, a reciprocating bar connected with the said driving mechanism, and means for detachably connecting any of said chutes with said bar, substantially as set forth.

14. The combination of a conveyor, a material-conduit having a delivery-opening, a tilting chute adapted to receive material from said opening and having a depending arm, a reciprocating bar, and means for detachably connecting said bar to said arm to operate the chute, substantially as set forth.

15. The combination with a material-conduit, of a chute adapted to receive material from said conduit and arranged to oscillate relative to said conduit in order to discharge material received therefrom, and having at its end adjacent to said material-conduit a cut-off wall arranged to cut off the flow of material from said conduit when said chute is in its discharge position.

16. An oscillating chute arranged to intermittently receive and deliver material, said chute having at its delivery end a gravity-actuated gate pivotally connected to it and adapted to retain material when the chute is in its receiving position and to swing freely relative to said delivery end to permit the free discharge of the material when the chute is in its delivery position.

17. The combination with a material-conduit, of an oscillating chute adapted to receive material from said conduit and having at its end adjacent to said conduit a cut-off wall arranged to cut off the flow of material to said chute when the chute is in its discharge position and having at its discharge end a gravity-actuated pivotally-mounted gate.

813,474. **CONVEYER.** FREEMAN R. WILLSON, Jr., Worthington, Ohio, assignor to Joseph A. Jeffrey, Columbus, Ohio. Filed May 23, 1903. Serial No. 158,572.

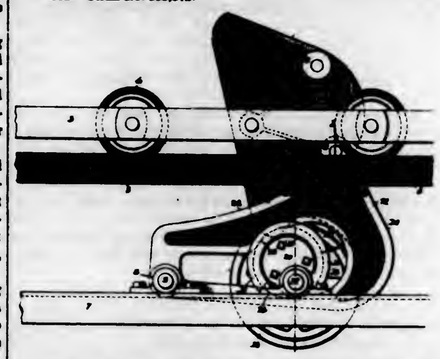

Claim.—1. The combination with an elevator having swinging buckets, of a tilting device for the buckets, provided with an aperture, and means for positively moving the tilting device into and out of operative position arranged to enter said aperture in the tilting device, substantially as set forth.

2. The combination with an elevator having swinging buckets, of a tilting device for the buckets in which is formed an open slot, an eccentric mounted in the said slot and arranged to positively move the tilting device both into and out of operative position, and means for operating the eccentric, substantially as set forth.

3. The combination with an elevator having swinging buckets, of a tilting device for the buckets and an eccentric for moving the tilting device into operative position, the tilting device being arranged to positively arrest the movement of the eccentric when it has reached the proper working position, substantially as set forth.

4. The combination with an elevator having swinging buckets, of a tilting device and an eccentric for moving the tilting device to operative position, the eccentric having lateral engagement with the tilting device whereby the latter is held in proper alinement by the eccentric, substantially as set forth.

5. The combination with an elevator having swinging buckets, of a tilting device for the buckets provided with an aperture, and an eccentric mounted in the said aperture, and provided with peripheral flanges arranged to engage with the opposite sides of the lifting device, substantially as set forth.

6. The combination with a conveyor having swinging buckets, of a tilting device therefor having an aperture and an eccentric for moving the tilting device into operative position provided with peripheral flanges adapted to engage with the opposite faces of the lifting device, the eccentric being formed of two parts each of which carries one of the flanges, substantially as set forth.

7. The combination with a conveyor, having swinging buckets, of a tilting device for the buckets, and means for moving the tilting device into and out of operative position, said means being adapted to limit the upward movement of said tilting device as it comes into working position, substantially as set forth.

8. The combination with an elevator having swinging buckets, of a tilting device for the buckets, means for vertically moving the tilting device into and out of working position, and stops for positively limiting the movement of these parts when the tilting device arrives at working position and also when it is moved out of working position, substantially as set forth.

9. The combination with a conveyor having swinging buckets, of a tilting device for the buckets, and means for moving said device into and out of operation, said means adapted to arrest the movement of said tilting device relative to it in either direction when the said tilting device is in working position.

10. The combination with a conveyor having swinging buckets, of a tilting device for the buckets mounted on a horizontal axis and means for moving said device into and out of operation about the axis, said means being adapted to arrest the movement of said device relative to it in either direction about the axis when the device is in working position.

11. The combination with a conveyor having swinging buckets, of a tilting device for the buckets having front and rear cam-surfaces, and means arranged between the said cam-surfaces for moving the said tilting device into and out of operative position, substantially as set forth.

813,475. **CAR-FENDER.** ALBERT B. WELSH, New York, N. Y., assignor of one-fourth to Joseph M. Lazar, New York, N. Y. Filed Aug. 29, 1905. Serial No. 276,198.

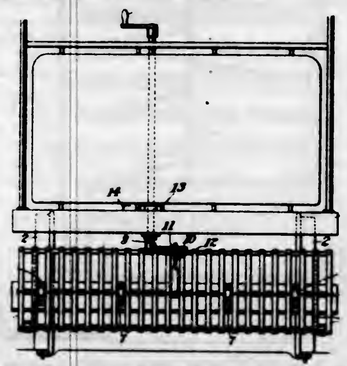

Claim.—1. In a fender for railway-cars, the combination of a wheeled truck, a fender member pivotally connected thereto, a car-body over said truck and means independent of the brake-staff on said car-body extending above the platform, adapted to be controlled by the operator and connected to the fender member for positively moving said member into operative position, substantially as described.

2. In a fender for railway-cars, the combination of a wheeled truck, a fender member pivotally connected thereto, a car-body over said truck, means independent of the brake-staff on said car-body extending above the platform, adapted to be controlled by the operator and connected to the fender member for positively moving said member into operative position, and means for retaining said member in said operative position, substantially as described.

3. In a fender for railway-cars, the combination of a wheeled truck, a fender member pivotally connected at its center thereto, a car-body above said truck and means independent of the brake-staff on said body extending above the platform, adapted to be controlled by the operator and adjustably connected to the fender member for positively moving said member into operative position, substantially as described.

4. In a fender for railway-cars, the combination of a wheeled truck, a fender member pivotally connected at its center thereto, a car-body above said truck, means independent of the brake-staff on said body extending above the platform, adapted to be controlled by the operator and adjustably connected to the fender member for positively moving said member into operative position and means for retaining said member in said operative position, substantially as described.

5. In a fender for railway-cars, the combination of a wheeled truck, a fender member pivotally connected thereto, a car-body above said truck, a rotating hand-lever on said car-body, and a rigid connecting-link between said lever and said fender member for positively moving said member into either an operative or an inoperative position, substantially as described.

6. In a fender for railway-cars, the combination of a wheeled truck, a fender member pivotally connected thereto, a car-body above said truck, a rotating hand-lever on said car-body, a rigid connecting-link between said lever and said fender member for positively moving said member into either an operative or an inoperative position, and means for retaining said lever and fender member in operative position, substantially as described.

7. In a fender for railway-cars, the combination of a wheeled truck, a fender member pivotally connected at its center to said truck, a car-body above said truck, a rotating hand-lever upon said body independent of the brake-staff and an adjustable rigid link connection between said lever and said fender for positively moving said fender into operative position, substantially as described.

8. In a fender for railway-cars, the combination of a wheeled truck, a fender member pivotally connected at its center to said truck, a car-body above said truck a rotating hand-lever upon said car-body, an adjustable rigid link connection between said lever and said fender for positively moving said member into either an operative or an inoperative position, and a pawl-and-ratchet device for retaining said lever and fender member in said operative position, substantially as described.

9. In a fender for railway-cars, the combination of a wheeled truck, a fender member connected to said truck and arranged so as to be moved into operative position upon contact with an obstacle, a car-body over said truck and independent means on said car-body controlled by the operator and rigidly connected to the fender member for positively moving said member into operative position, substantially as described.

10. In a fender for railway-cars, the combination of a wheeled truck, a fender member connected to said truck and arranged so as to be moved into operative position upon contact with an obstacle a car-body over said truck, independent means on said car-body controlled by the operator and rigidly connected to the fender-member for positively moving said member into operative position, and means for retaining said member in said operative position, substantially as described.

813,476. **BRAKE-HANGER.** OWEN W. WITTHER, Columbus, Ohio. Filed Nov. 11, 1905. Serial No. 286,900.

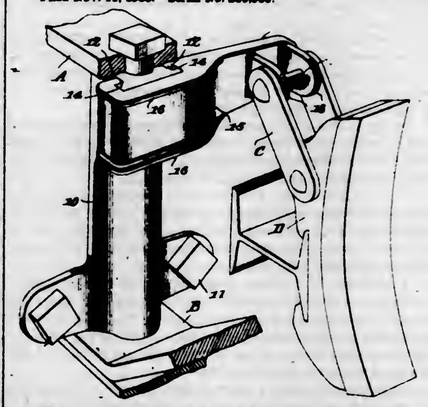

Claim.—1. In combination, a bolster-guide column having a recess, a brake-hanger including an arm arranged to fit within said recess and provided with pivot-ears for the support of the brake-hanger links, said hanger being held from upward movement by the upper arch-bar.

2. In combination, a bolster-guide column having a recess, and a brake-hanger including an arm fitting within said recess and interlocking with the walls thereof to prevent horizontal movement in any direction.

3. In combination, a bolster-guide column, the inner and outer faces of which are provided with vertical grooves, and a brake-hanger provided with a pair of spaced flanges arranged to enter said grooves.

4. In a device of the class specified, a bolster-guide column, the opposite edges of which are provided with vertical grooves open at the top, a brake-hanger having on its rear face a pair of flange members arranged to enter said grooves and confined in place by one of the upper truss-bars of the truck.

5. In a device of the class specified, a brake-hanger comprising an arm having on one face a pair of projecting flanges and provided on its opposite face with a pair of spaced pivot-ears, a bolster-guide

column provided with vertical grooves in its opposite edges, said grooves being open at the top to permit the insertion of the flanges, and means for holding the brake-hanger in position.

813,477. VEHICLE-WHEEL TIRE. CHARLES C. WESTERHOUSE, Dunellen, N. J. Filed Aug. 11, 1904. Serial No. 220,262.

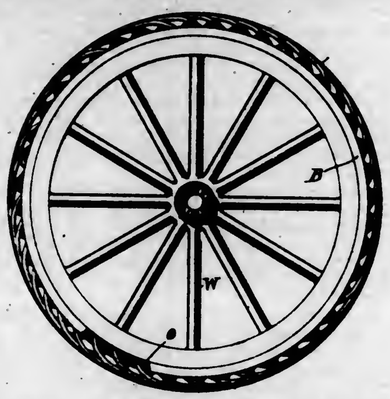

Claim.—1. A vehicle-wheel tire comprising an inner circular band adapted to be secured to the body of a wheel and a surrounding resilient outer part consisting of a plurality of arched spring-rods secured diagonally across the peripheral face of said band with the ends of their respective arches located on said band at fixed distances apart and the mid-portions thereof constituting a resilient wheel-tread.

2. In a vehicle-wheel, a rotatable inner part and a surrounding resilient outer part composed of a plurality of arched spring-rods disposed diagonally across the peripheral face of said inner part and arranged closely together for mutual reinforcement of each other against lateral or transverse pressure.

3. In a vehicle-wheel, a rotatable inner part and a surrounding resilient outer part composed of a plurality of arched spring-rods arranged side by side in contact with each other and disposed diagonally across the peripheral face of said inner part.

4. In a vehicle-wheel, a rotatable inner part and a surrounding resilient outer part composed of a plurality of arched spring-rods disposed across the peripheral face of said inner part with their opposite ends seated respectively at fixed distances apart in apertures in the opposite edges of said rotatable inner part.

5. In a vehicle-wheel tire, an under tire consisting of a circular band having its opposite edges thickened or reinforced, and a plurality of diagonal spring-rods formed as arches with their respective ends located at fixed distances apart and secured respectively to the opposite reinforced edges of said under tire, the mid-portions of said rods constituting a resilient wheel-tread.

6. In a vehicle-wheel, a rotatable inner part and a surrounding resilient outer part consisting of a plurality of spring-rods formed as arches embracing the inner part and disposed diagonally across the peripheral face thereof, the respective ends of the arches being located on the inner part at fixed distances apart and their mid-portions forming a resilient tread, in combination with bends in said arched rods arranged to distribute the strain therein.

7. In a vehicle-wheel tire, a tread-surface composed of the mid-portions of a plurality of arched spring-rods disposed in diagonal position with respect to the tread, an inner part to which the ends of said rods are secured at fixed distances apart and spring-bends in said rods.

8. In a vehicle-wheel tire, a tread-surface composed of a plurality of diagonally-disposed spring-rods and an inner part to which said rods are secured, said rods being formed as arches with their respective ends located at fixed distances apart, in combination with jogs or bends in said rods intermediate their centers and ends.

9. In a vehicle-wheel, an inner part formed with flanged edges, in combination with a plurality of diagonal spring-rods in the shape of arches secured to said flanged edges at their opposite ends.

10. In a vehicle-wheel, an inner part of thin material having flanged edges and a series of perforations in said edges, in combination with a plurality of spring-rods diagonally disposed around said inner part and formed as arches with their respective opposite ends secured in said perforations.

813,478. DYEING APPARATUS. ERNST SELLHORN, Passaic, N. J. Filed Mar. 26, 1903. Serial No. 251,991.

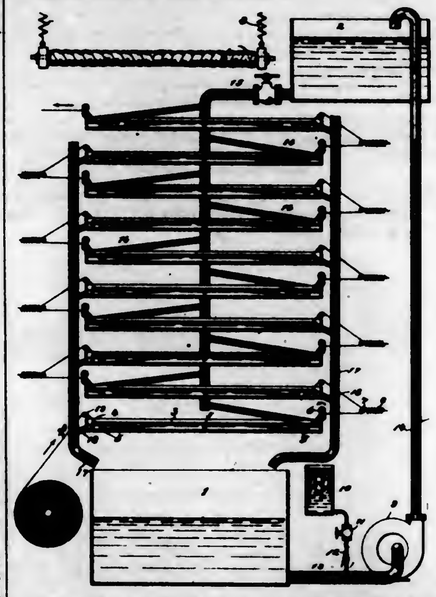

Claim.—1. Apparatus for dyeing comprising a series of relatively shallow open superposed dyeing-trays and means for passing a piece of cloth successively through the trays of the series, and means for supplying dyeing liquid to the trays.

2. Apparatus for dyeing comprising a series of open superposed dyeing-trays and means for passing a piece of cloth successively through the trays of the series, in combination with means for continuously circulating dyeing liquid through the trays.

3. Apparatus for dyeing comprising a series of open superposed dyeing-trays and means for passing a piece of cloth successively through the trays of the series, in combination with means for continuously circulating dyeing liquid through the trays and means for inserting dyestuff in the circulating dyeing liquid.

4. Apparatus for dyeing comprising a series of open superposed dyeing-trays and means for passing a piece of cloth successively through the trays of the series, means for circulating dye liquid comprising a pump, and means for inserting dyeing material comprising piping leading to the circulating system on that side of the pump from which the liquid is fed to it.

5. An apparatus for dyeing comprising a plurality of open superposed dyeing-trays, means for passing the cloth successively through said trays, and means for feeding the dyeing liquid to each tray independently of the others and an outlet from each tray.

6. Apparatus for dyeing comprising a plurality of superposed dyeing-trays, means for feeding the dyeing liquid through the trays and means for passing the cloth successively through the trays in combination with a continuous circulating system for the dye-bath.

7. Apparatus for dyeing comprising a plurality of dyeing-trays, means for passing cloth successively through said trays, and means for feeding the dyeing liquid to each tray independently of the others at the end of said trays at which the cloth emerges, and an outlet from each tray at the other end thereof, whereby the flow of said liquid through said tray is contrary to the movement of said cloth therethrough.

8. An apparatus for dyeing comprising a plurality of dyeing-trays, means for passing cloth successively through said trays, and means for feeding the dyeing liquid to each tray independently of the others, and an outlet from each tray, and one or more rollers over which said cloth passes adapted to spread said cloth.

9. An apparatus for dyeing comprising a plurality of dyeing-trays, means for passing cloth successively through said trays, and means for feeding the dyeing liquid to each tray independently of the others, and an outlet from each tray, and one or more tension-rollers over which said cloth passes adapted to spread said cloth.

10. Apparatus for dyeing comprising a plurality of superposed dyeing-trays, means for feeding the dyeing liquid through the trays, means for passing the cloth successively through the trays, and a dyestuff-container provided with valved piping leading to said feeding means.

11. Apparatus for dyeing comprising a plurality of superposed trays, a tank above them and piping from the tank to the trays, a receiving-tank, piping from the trays leading thereto, means for feeding cloth first through one tray and then another, means for feeding the liquid from the receiving-tank to the feed-tank and means for inserting dyestuff into the liquid during its feed.

12. Dyeing apparatus comprising a feed-tank, a receiving-tank, a circulating pump and piping between them, supply-piping leading from said feed-tank, a number of superposed trays, each having a spring-roller and squeezing-rollers mounted adjacent to one end and rollers within each tray adapted to support the cloth, an inlet to each tray from the supply-piping and an outlet from each tray to the receiving-tank.

13. Dyeing apparatus comprising a number of trays, and means for passing cloth through the trays successively, means for stretching the cloth lengthwise and sidewise as it is passed therethrough, in combination with means for continuously passing a dyeing liquid through said trays.

14. Dyeing apparatus comprising a number of trays, means for passing cloth through the trays successively, in combination with supply-piping and a pump for continuous circulating dyeing liquid through the trays, and means for inserting dyestuff into the liquid as it comes from the pans whereby the same dye-bath may be used indefinitely.

813,479. DYEING APPARATUS. ERNST SELLHORN, Passaic, N. J. Filed Nov. 11, 1905. Serial No. 286,836.

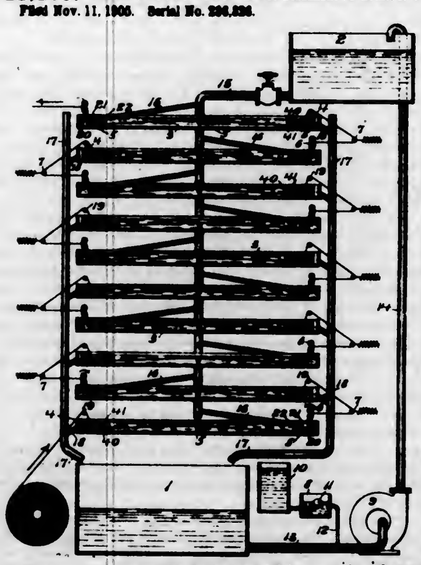

Claim.—1. Apparatus for dyeing comprising a series of open relatively shallow superposed dyeing-trays and means for passing a piece of cloth successively through the trays of the series and means for supplying dyeing liquid to the trays, comprising at least two inlet-pipes one on each side of the line of travel of cloth during operation.

2. Apparatus for dyeing comprising a series of open relatively shallow superposed dyeing-trays and means for passing a piece of cloth successively through the trays of the series and means for supplying dyeing liquid to the trays, comprising at least two inlet-pipes one on each side of the line of travel of the cloth during operation, at least one pipe extending across the tray.

3. Apparatus for dyeing comprising a series of open relatively shallow superposed dyeing-trays and means for passing a piece of cloth successively through the trays of the series and means for supplying dyeing liquid to the trays, comprising at least two inlet-pipes one on each side of the line of travel of the cloth during operation, and outlets from each tray one on one side of the line of travel of the cloth and the other on the opposite side.

4. A dyeing vessel comprising a relatively shallow horizontal open pan, means to permit the passage of cloth to be dyed therethrough, at least two pipes for admitting dyeing liquid to said pan one on each side of the line of travel of the cloth therethrough.

5. A dyeing vessel comprising a relatively shallow horizontal open pan, means to permit the passage of cloth to be dyed therethrough, at least two pipes for admitting dyeing liquid to said pan one on each side of the line of travel of the cloth therethrough at least one pipe extending across the tray.

6. A dyeing vessel comprising a relatively shallow horizontal open pan, means to permit the passage of cloth to be dyed therethrough, at least two pipes for admitting dyeing liquid to said pan one on each side of the line of travel of the cloth therethrough, and two outlet-openings one on each side of the line of travel of said cloth.

7. A dyeing vessel comprising a relatively shallow horizontal open pan, means to permit the passage of cloth to be dyed therethrough, at least two pipes for admitting dyeing liquid to said pan one on each side of the line of travel of the cloth therethrough, an outlet-opening from said vessel and a baffle-chamber adapted to connect such outlet-opening with the bottom of the pan.

8. A dyeing vessel comprising a relatively shallow horizontal open pan, means to permit the passage of cloth to be dyed therethrough, at least two pipes for admitting dyeing liquid to said pan one on each side of the line of travel of the cloth therethrough, an outlet-opening from said vessel and a baffle-chamber adapted to connect such outlet-opening with the bottom of the pan, and a second outlet-opening adapted to connect the top of pan.

9. A dyeing vessel comprising a relatively shallow horizontal open pan, means to permit the passage of cloth to be dyed therethrough, at least two pipes for admitting dyeing liquid to said pan one on each side of the line of travel of the cloth therethrough, an outlet-opening from said vessel and a baffle-chamber adapted to connect such outlet-opening with the bottom of the pan, said second opening comprising a trough across said pan.

10. Apparatus for dyeing comprising a plurality of superposed dyeing-trays, means for feeding the dyeing liquid through the trays, means for passing the cloth successively through the trays, and a dyestuff-container provided with valved piping leading to said feeding means, and means for maintaining a substantially constant head of liquid in said piping.

11. Apparatus for dyeing comprising a plurality of superposed dyeing-trays, means for feeding the dyeing liquid through the trays, means for passing the cloth successively through the trays, and a dyestuff-container provided with valved piping leading to said feeding means, an auxiliary chamber in said piping and means for maintaining a substantially constant head in said chamber.

12. Apparatus for dyeing comprising a plurality of superposed dyeing-trays, means for feeding the dyeing liquid through the trays, means for passing the cloth successively through the trays, and a dyestuff-container provided with valved piping leading to said feeding means, an auxiliary chamber and a float-valve adapted to maintain a substantially constant head in said chamber.

813,480. ACTION FOR MECHANICAL MUSICAL INSTRUMENTS. ADALBERT ZOLLINGER, Leipsic-Reudnitz, Germany, assignor to Popper & Co., Leipsic, Germany. Filed Apr. 20, 1904. Serial No. 203,503.

Claim.—1. In an action for mechanical musical instruments, the combination with a continuously-oscillating jack or hopper device, of pivoted angle levers or butts, a hammer fixed to one arm of each angle-lever, means connected with the other arm for normally holding the lever out of the path of the jack, and means for actuating each lever separately and bringing them into the path of the jack according to the note to be struck.

2. In an action for mechanical musical instruments, the combination with a continuously-oscillating jack or hopper device, of pivoted angle levers or butts, a hammer fixed to one arm of each lever, a spring connected to the other arm and adapted to withdraw it from the path of the jack, and pneumatically-controlled mechanism flexibly connected with each lever and adapted to bring the butts separately into the path of the jack according to the note to be struck.

813,480.

means for journaling a roll of paper on one side wall, in combination

chain for feeding a can-body upon the platform, means for raising

a bridge-wall separating the furnace from the oven, laterally-dis-

818,480.

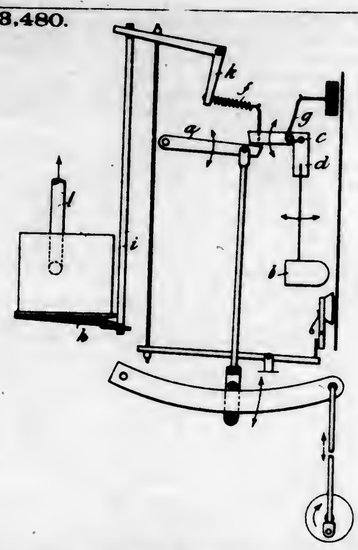

818,481. TENSION-REGULATING DEVICE FOR AUTOGRAPHIC REGISTERS. ENGLAND J. BARKER, Morgan Park, Ill. Filed Sept. 11, 1903. Serial No. 277,963.

Claim.—1. In a machine of the kind specified, a roll of paper; means for supporting said roll of paper, comprising a journaling device that is movable to and from the end of said roll; and a contrivance supported by said journaling device for equalizing the resistance to the unwinding of the paper from said roll.

2. In a machine of the kind specified, a roll of paper; means for supporting said roll of paper, comprising a pivoted journaling device that is movable to and from the end of said roll; and a contrivance supported by said journaling device for equalizing the resistance to the unwinding of the paper from said roll.

3. In a machine of the kind specified, a roll of paper; means for supporting said roll of paper, comprising a pivoted spring-actuated journaling device that is movable to and from the end of said roll; and an automatic contrivance supported by said journaling device for equalizing the resistance to the unwinding of the paper from said roll.

4. In a machine of the kind specified, a roll of paper; means for supporting said roll of paper, comprising a spring-actuated journaling device pivoted at one end and which is movable to and from the end of said roll, and an adjustable contrivance supported by said journaling device for equalizing the resistance to the unwinding of the paper from said roll.

5. In a machine of the kind specified having opposite side walls, means for journaling a roll of paper on one side wall, in combination with a pivoted arm adjacent to the opposite side wall, means connected thereto for journaling the adjacent end of said roll of paper, and devices for regulating the pressure of said arm toward said roll.

6. In a machine of the kind specified having opposite side walls, means for journaling a roll of paper on one side wall, in combination with a pivoted arm adjacent to the opposite side wall, means connected thereto for journaling the adjacent end of said roll of paper, and automatic devices for regulating the pressure of said arm toward said roll.

7. In a machine of the kind specified having opposite side walls, means for journaling a roll of paper on one side wall, in combination with a pressure-arm pivoted at one end to the opposite wall, means carried thereby for journaling the adjacent end of said roll of paper, and a lever pivoted to said arm and engaging said roll and regulates the pressure of said arm against said roll.

8. In a machine of the kind specified having opposite side walls, means for journaling a roll of paper on one side wall, in combination with an arm pivoted at one end to the opposite wall, means carried thereby for journaling the adjacent end of said roll of paper, and a lever pivoted to said arm, a spring bearing against said lever which latter engages said roll and regulates the pressure of said arm against said roll.

9. In a machine of the kind specified having opposite side walls, means for journaling a roll of paper on one side wall in combination with a pressure-arm pivoted at one end to the opposite side wall, having means for journaling the adjacent end of said roll of paper and provided with a longitudinally-elongated slot therein and a lever pivoted to said arm and extending through said slot therein and adapted to engage the circumference of said roll and regulate the pressure of said arm against the roll.

10. In a machine of the kind specified having opposite side walls, means for journaling a roll of paper on one side wall, in combination with an arm pivoted at one end to the opposite side wall, means carried by the arm for journaling the adjacent end of said roll of paper, said arm having a longitudinally-elongated slot therein, a lever pivoted to said arm and extending through said slot, and a spring engaging said lever whereby said lever is adapted to bear against the circumference of said roll and regulate the pressure of said arm as the roll diminishes in diameter.

11. In a machine of the kind specified having opposite side walls, means for journaling a roll of paper on one side wall in combination with an arm pivoted at one end to the opposite side wall, means carried by the arm for journaling the adjacent end of said roll of paper, said arm having a longitudinally-elongated slot, and a lever pivoted to said arm which extends through said slot, and a coil-spring interposed between said lever and side wall of the machine which causes said lever to engage the circumference of said roll of paper and regulate the pressure of said arm against the same.

12. In a machine of the kind specified having opposite side walls, means for journaling a roll of paper on one side wall, in combination with an arm pivoted at one end to the opposite side wall, means carried by the arm for journaling the adjacent end of said roll of paper, said arm having a longitudinally-elongated slot, and a lever pivoted to said arm which extends through said slot and a bolt pivotally connected at its inner end to said lever and extending through the side wall of the machine, and a coil-spring surrounding said bolt between the lever and the adjacent side wall.

13. In a machine of the kind specified having opposite side walls, means for journaling a roll of paper on one side wall, in combination with an arm pivoted at one end to the opposite side wall, means carried by the arm for journaling the adjacent end of said roll of paper, said arm having a longitudinally-elongated slot, and a lever pivoted to said arm which extends through said slot and a longitudinally-extensible bolt pivotally connected at its inner end to said lever and extending through the side wall of the machine, and a coil-spring surrounding said bolt between the lever and the adjacent side wall.

14. In a machine of the kind specified having opposite side walls, means for journaling a roll of paper on one side wall, in combination with an arm pivoted at one end to the opposite side wall, means carried thereby for journaling the adjacent end of said roll of paper, a lever pivoted to said arm, a bolt pivoted at its inner end to said lever and extending laterally out through a suitable opening in said side wall, and a spring surrounding said bolt between said lever and said side wall.

15. In a machine of the kind specified having opposite side walls, means for journaling a roll of paper on one side wall, in combination with an arm pivoted at one end to the opposite side wall, means carried thereby for journaling the adjacent end of said roll of paper, a lever pivoted to said arm, a longitudinally-extensible bolt pivoted at its inner end to said lever and extending laterally out through a suitable opening in said side wall, and a spring surrounding said bolt between said lever and said side wall.

818,482. CAN-HEADING MACHINE. JULIUS BIENENFELD, New York, N. Y., assignor to The Max Ams Machine Co., New York, N. Y., a Corporation of New York. Filed June 16, 1904. Serial No. 212,764.

Claim.—1. In a can-heading machine, the combination of a recessed table, with a vertically-movable platform seated therein, a chain for feeding a can-body upon the platform, means for raising and lowering the platform, a chuck above the platform, a series of seaming-rollers surrounding the chuck, and means for imparting a simultaneous rotatory and radial movement to said rollers, substantially as specified.

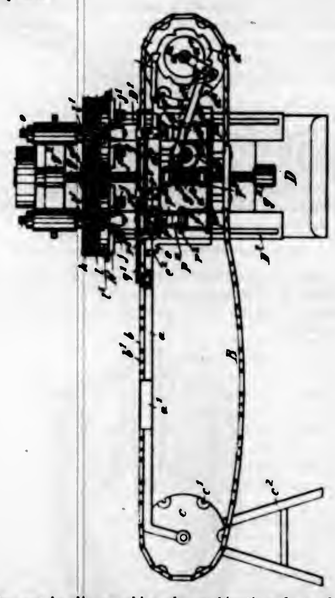

2. In a can-heading machine, the combination of a track with a feed-apron, a vertically-movable platform, a pair of guide-rails having diverging ends, a gage, and means for reciprocating said gage at right angles to the feed-apron, substantially as specified.

3. In a can-heading machine, the combination of a wheel having a cam-groove with a second wheel having radial guides, slides movable therein, seaming-rollers journaled in the slides, cam-rollers connected to the slides means for and engaging the cam-groove, and rotating the wheels at different speeds, substantially as specified.

4. In a can-heading machine, the combination of a shaft having a chuck and a collar, with a lower wheel rotatively supported on the collar and having radial guides, slides engaging said guides, seaming-rollers journaled in the slides, an upper wheel rotatively supported upon the lower wheel and having a cam-groove, cam-rollers connected to the slides and engaging said groove, and means for rotating the wheels at different speeds, substantially as specified.

5. In a can-heading machine, the combination of a wheel having a radial guide, with a slide engaging the same and composed of an upper section and a lower section, means for radially adjusting the lower section along the upper section, and a seaming-roller journaled to said lower section, substantially as specified.

6. In a can-heading machine, the combination of a track with a feed-apron, a vertically-movable platform, a chuck above the same, a lower gear-wheel rotatable above the platform, radially-movable slides engaging said wheel, seaming-rollers journaled to the slides, an upper gear-wheel having a cam-groove, cam-rollers connected to the slides and engaging said groove, and means for rotating the wheels at different speeds, substantially as specified.

813,483. ANNEALING OR MALLEABLEIZING OVEN. WILLIAM L. CASADAY and AUGUST BUSSMAN, South Bend, Ind. Filed June 23, 1904. Serial No. 213,769.

Claim.—1. In a casting-treating oven in which the castings to be treated are packed without pots, a fire-grate, a bridge-wall separating the grate from the oven, a plurality of flues extending longitudinally of the oven, a plurality of transverse flues beneath the oven and a plurality of flues leading upwardly therefrom in the side wall and opening into the upper portion of the oven.

2. A malleableizing and annealing oven comprising in combination, side and end walls, a closed roof, a furnace adjacent the oven, a bridge-wall separating the furnace from the oven, laterally-disposed down-flues opposite the bridge-wall, horizontal transverse flues below the floor and communicating with said down-flues, a longitudinal flue positioned adjacent the bridge-wall and communicating with the stack and into which the transverse flues open near each end of the oven, a bridge-wall at each end of said oven, flues built upon the floor of the oven and opening through said bridge-walls and communicating at one end with the stack and longitudinal flues communicating at their ends through said bridge-walls and opening into the stack and adapted to be supported upon and bedded in the material to be treated and a damper in each of said flues leading to the stack adapted to regulate the draft therethrough, said end walls having normally closed apertures in alinement with the flues affording means for inspection.

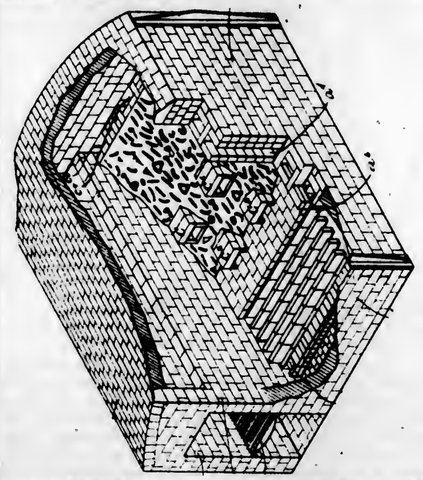

3. A malleableizing and annealing oven comprising in combination, side and end walls, a furnace therein, a bridge-wall separating the furnace from the oven, laterally-disposed down-flues opposite the bridge-walls, horizontal transverse flues communicating therein beneath the floor, a longitudinal flue positioned adjacent the bridge-wall and communicating with the transverse flues and opening from each and into the stack, a bridge-wall at each end of said oven, flues built upon the floor of the oven and opening through said bridge-walls and communicating at one end with the stack, and longitudinal flues communicating at their ends through said bridge-walls and opening into the stack and adapted to be supported upon and to be embedded in the material to be treated and a damper controlling each of said flues leading to the stack, the walls having normally closed view-apertures in alinement with each of said longitudinal flues adapted to permit inspection.

4. In an oven for treating castings, a fire-box, an inclosed oven in which the castings to be treated are packed, a bridge-wall between the fire-box and said oven adapted to direct heat over said castings, a plurality of flues opening into the side wall from the top of the oven and leading downwardly therethrough, lateral flues beneath the oven connecting therewith, longitudinal flues embedded in the packing material, a stack and flues leading from the oven to said stack.

5. In an annealing-furnace, a fire-box at one side thereof, an oven, a plurality of vertical flues at one side of the oven, a plurality of horizontal flues beneath the oven in communication with said vertical flues, a common longitudinally-disposed flue beneath the oven in communication with each of the said horizontal flues, a plurality of vertical flues at the ends of the oven, and a plurality of auxiliary flues in communication at each end with the vertical flues at the ends of the oven, substantially as specified.

6. In an annealing-furnace the combination with an oven, of a fire-box at one side thereof, a plurality of vertical flues at the opposite side of the oven, means extending beneath the oven and connected with said flues adapted to carry off the product of combustion, vertical flues at the ends of the oven, a chamber above the oven communicating with the vertical flue at the front end of the oven and a plurality of flues extending longitudinally through the oven and communicating with said front and rear vertical flues.

818,484. STONE-SAW. JOSHUA D. CLEVENGER, San Francisco, Cal., assignor of one-half to Archibald H. MacIntyre, San Francisco, Cal. Filed May 15, 1905. Serial No. 260,696.

2. In a slide-rule a straight transparent cylindrical tube, fixed and sliding scales therein and an index sliding thereon, formed of

the top thereof so the steam entering at the bottom will heat the inner wall, said inner wall having a reduced lower portion, a separator-

tube, a gas-supply cock, an inspirator-nozzle, carried thereby, a screen carried by the inspirator-nozzle, and means for adjusting the

813,484. STONE-SAW. JOSHUA D. CLEVERDON, San Francisco, Cal., assignor of one-half to Archibald H. MacNutt, San Francisco, Cal. Filed May 16, 1905. Serial No. 261,066.

Claim.—1. The combination of a stone-saw blade comprising an upper section and a lower section, said upper section being thinner throughout than the lower section, and said blade having a plurality of notches, said notches forming arches within said upper section, from the ends whereof said notches incline inwardly in said lower section and then curve outwardly to the base of said lower section, and the edges of such notches in such lower section where such outward curvature begins to the base of said blade having V-shaped depressions to convey abrasive matter to the cutting edges, substantially as described.

2. The combination of a stone-saw blade comprising an upper section and a lower section, said upper section being thinner than said lower section so as to allow the descent of abrasive matter to the lower section, and said blade having a plurality of notches extending into and from said upper section through said lower section, and such notches from the base of the upper section being arranged to allow the further descent of abrasive matter and sloping outwardly to the base of the lower section, and the edges of such notches in such lower section where such outward slope begins to the base of said blade being slotted to convey abrasive matter to the cutting edges.

3. The combination of a stone-saw blade comprising an upper section and a lower section, said upper section being thinner than said lower section and having at its base an inclined shoulder on each side thereof extending to said lower section, and said blade having a plurality of notches extending into and from said upper section through said lower section, and such notches from the base of the upper section being inclined inwardly and then sloping outwardly to the base of the lower section, and the edges of said notches in such lower section where such outward slope begins to the base of said blade having V-shaped depressions to convey abrasive matter to the cutting edges, substantially as described.

4. A stone-saw blade comprising a lower section and an upper section thinner than said lower section and having a plurality of notches therein extending from the interior of said upper section to the base of said lower section, the sides of which notches in said lower section being channeled to permit abrasive matter to descend therein.

813,485. SLIDE-RULE. BENJAMIN D. COPPAGE, Wilmington, Del. Filed Mar. 21, 1904. Serial No. 199,097.

Claim.—1. In a slide-rule, a straight transparent cylindrical tube, an interrupted cylindrical tube, with scales thereon, fixed within said transparent tube and a straight slide therein having a side, with scales thereon, equivalent in width to the chord of the missing arc of the said fixed scale-tube.

2. In a slide-rule a straight transparent cylindrical tube, fixed and sliding scales therein and an index sliding thereon, formed of transparent celluloid, secured around said tube by means of a rivet through extensions from tangential portions of said index.

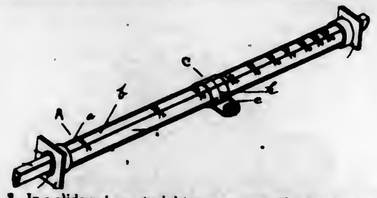

3. In a slide-rule, a straight transparent cylindrical tube, fixed and sliding scales within said tube, elastic rubber guards on each end of said tube, to protect it from shock.

813,486. STEAM-CONDENSER. JAMES A. DILLON, Chicago, Ill., assignor, by mesne assignments, of one-half to National Laundry Machinery Co., Chicago, Ill., a Corporation. Filed June 26, 1905. Serial No. 267,913.

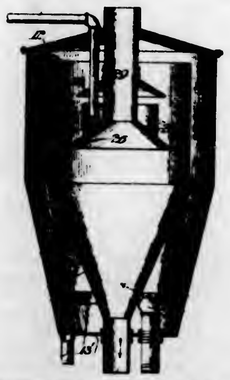

Claim.—1. In a condenser the combination of a casing having a chamber therein for the passage of steam, a steam-inlet near the bottom thereof, a wall within said chamber in which a condensing-chamber is formed, said chambers being in communication with each other near the top thereof so the steam entering at the bottom will heat the water flowing through the condensing-chamber before the steam passes into the condensing-chamber, and a pipe for conducting water to the condensing-chamber.

2. In a condenser the combination of a casing having a chamber therein for the passage of steam, a steam-inlet near the bottom thereof, a wall within said chamber in which a condensing-chamber is formed, a separator-pocket around the condensing-chambers, said chambers being in communication with each other near the top thereof so the steam entering at the bottom will heat the inner wall, and a pipe for conducting water to the condensing-chamber.

3. In a condenser the combination of a casing having a chamber therein for the passage of steam, a separator-pocket near the bottom of the casing, a wall in said chamber in which a condensing-chamber is formed, said chambers being in communication with each other near the top thereof so the steam entering at the bottom will heat the inner wall and the water therein, a pipe for conducting water to the condensing-chamber, and an oil-pipe connected to the bottom of the casing.

4. In a condenser the combination of a casing having a chamber therein for the passage of steam, a steam-inlet near the bottom thereof, a separator-pocket near the bottom of the casing, a wall in said chamber in which a condensing-chamber is formed, said chambers being in communication with each other near the top thereof so the steam entering at the bottom will heat the inner wall and the water therein, and a pipe for conducting water to the condensing-chamber.

5. In a condenser the combination of a casing having a chamber therein for the passage of steam, a steam-inlet near the bottom thereof, a wall in said chamber and in which a condensing-chamber is formed, said chambers being in communication with each other near

the top thereof so the steam entering at the bottom will heat the inner wall, said inner wall having a reduced lower portion, a separator-pocket around said reduced portion, and a pipe for conducting water to the condensing-chamber.

6. In a condenser the combination of a casing having a chamber therein for the passage of steam, a steam-inlet, a wall in said chamber in which a condensing-chamber is formed, said chambers being in communication with each other, a wall in the steam-chamber extending around the lower portion of said wall and forming a pocket around said wall, and a pipe for supplying water to the condensing-chamber.

7. In a condenser the combination of a casing having a chamber therein for the passage of steam, a steam-inlet, a wall in said chamber in which the condensing-chamber is formed, said chambers being in communication with each other, a wall extending around the lower portion of and forming a pocket around the wall of the condensing-chamber, and a channel formed at the lower edge of said pocket-wall.

8. In a condenser the combination of a casing having a chamber therein for the passage of steam, a steam-inlet, a wall in said chamber in which the condensing-chamber is formed, said chambers being in communication with each other, a wall extending around the lower portion of and forming a pocket around the wall of the condensing-chamber, a channel formed at the lower edge of said pocket-wall, and a discharge-pipe for the oil leading from said channel.

9. In a condenser the combination of a casing within which a steam-chamber is formed, an inner wall within which a condensing-chamber is formed and extending to a point near the top of the condenser, a steam-inlet near the bottom of the condenser, a water-outlet pipe connected to the bottom of the condensing-chamber, and a water-supply pipe leading to the condensing-chamber and whereby the steam in the steam-chamber will pass upwardly from the bottom around the wall of the condensing-chamber before it passes into the condensing-chamber.

10. In a condenser the combination of a casing, a pipe for supplying steam near the bottom thereof, an inner wall within which a condensing-chamber is formed and around which a steam-chamber is formed, a supply-pipe for water, and a spreader-plate in said condensing-chamber onto which the water is discharged from the supply-pipe.

11. In a condenser the combination of a casing, a pipe for admitting steam, an inner wall within which a condensing-chamber is formed and around which a steam-chamber is formed, a supply-pipe for water, and a spreader-plate in said condensing-chamber onto which the water is discharged from said supply-pipe, said spreader being provided with a perforated flange or wall.

12. In a condenser the combination of a casing, a pipe for admitting steam, an inner wall within which a condensing-chamber is formed and around which a steam-chamber is formed, a supply-pipe for water, and a spreader-plate in said condensing-chamber onto which the water is discharged from said supply-pipe, said plate being provided with an upwardly-extending wall having perforations therein and over which the water can flow.

13. In a condenser the combination of a casing having a pipe for supply-steam, an inner wall within which the condensing-chamber is formed and around which a steam-chamber is formed, a supply-pipe for water, a spreader-plate in said condensing-chamber onto which the water is discharged from the supply-pipe, and a hood above said spreader-plate.

14. In a condenser the combination of an outer wall or casing having a chamber therein for the passage of steam, a steam-inlet near the bottom thereof, a wall within said chamber in which a condensing-chamber is formed, said chambers being in communication with each other near the top thereof so the steam entering at the bottom will heat the inner wall and the water therein, a pipe for conducting water to the condensing-chamber, and a spreader-plate in the condensing-chamber for directing the water into contact with the inner wall.

813,487. GAS-LAMP. ROBERT M. DIXON, East Orange, N. J., assignor to The Safety Car Heating & Lighting Company, a Corporation of New Jersey. Filed May 6, 1905. Serial No. 259,156.

Claim.—1. In a gas-lamp, in combination, a gas-supply cock, an inspirator-nozzle carried thereby, and a screen carried by the inspirator-nozzle.

2. In a gas-lamp, in combination, an adjustable gas-supply cock, an inspirator-nozzle carried thereby, and a screen carried by the inspirator-nozzle.

3. In a device of the class described, in combination, a mixing-tube, a gas-supply cock, an inspirator-nozzle, carried thereby, a screen carried by the inspirator-nozzle, and means for adjusting the gas-supply cock in the mixing-tube.

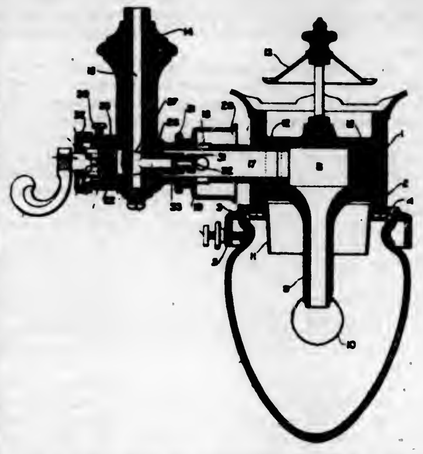

4. In a device of the class described, in combination, a mixing-tube, a gas-supply cock, a shaft extending from said gas-supply cock, and means on the shaft for adjusting the gas-supply cock in the mixing-tube.

5. In a device of the class described, in combination, a gas-supply cock, a shaft extending therefrom, said gas-supply cock being provided with a shoulder, a spring located upon the shaft, a collar also located upon the shaft and fixed against rotation, and means coacting with the collar upon the spring to regulate the tension of the same to hold the gas-supply cock in adjustment.

6. In a device of the class described, in combination, a lamp-body, an incandescent mantle arranged therein, a fixture secured to the lamp-body and adapted to provide a gas-supply for the lamp, means located in the fixture for regulating the gas-supply, an extension on the fixture, a sleeve carried by the extension, and means carried by the sleeve for holding the gas-regulating means in adjustment in the fixture.

7. In a device of the class described, in combination, a lamp-body, an incandescent mantle arranged therein, a fixture secured to the lamp-body and adapted to provide a gas-supply for the lamp, means located in the fixture for regulating the gas-supply, an extension on the fixture, a sleeve located upon the extension, and a cap carried by the sleeve and adapted to maintain the gas-regulating means on the fixture.

8. In a device of the class described, in combination, a lamp-body, an incandescent mantle arranged therein, a fixture secured to the lamp-body and adapted to provide a gas-supply to the lamp, means located in the fixture for regulating the gas-supply, an extension on the fixture, a sleeve mounted upon the extension, a cap adjusted upon the sleeve and maintaining the gas-regulating means in the adjusted position.

9. In a device of the class described, in combination, a lamp-body, an incandescent mantle arranged therein, a fixture secured to the lamp-body and adapted to provide a gas-supply to the lamp, means located in the fixture for regulating the gas-supply, an extension on the fixture, a sleeve mounted upon the extension, a cap carried by the sleeve and adapted to be initially adjusted thereto to determine the adjustment of the gas-regulating means, and means for permanently securing the cap to the sleeve.

10. In a device of the class described, in combination, a lamp-body, an incandescent mantle arranged thereon, a fixture secured to the lamp-body and adapted to provide a gas-supply to the lamp, means located in the fixture for regulating the gas-supply, an extension on the fixture, a shaft carried by the gas-regulating means, a collar slidably mounted upon said shaft, and means carried by the extension acting upon the collar located upon the shaft for holding said gas-regulating means in adjustment in the fixture.

11. In a device of the class described, in combination, a lamp-

body, an incandescent mantle arranged therein, a fixture secured to the lamp and adapted to provide a gas-supply to the lamp, means located in the fixture for regulating said gas-supply, a shaft extending from said gas-supplying means, a collar encircling said shaft, a spring also encircling said shaft, and means on the fixture and operating upon the spring through said collar to regulate the tension thereof to maintain the gas-regulating means in adjustment in the fixture.

12. In a device of the class described, in combination, a lamp-body, an incandescent mantle arranged therein, a fixture secured to the lamp-body and adapted to supply gas to the lamp, means located in the fixture for regulating said gas-supply, a shaft extending from the gas-regulating means, a spring encircling said shaft, a split ring also encircling said shaft and adapted to slide thereon and engage the spring, and means carried by the fixture and coacting with said split ring to maintain the gas-regulating means in adjustment in the fixture.

13. In a device of the class described, in combination, a lamp-body, an incandescent mantle arranged therein, a fixture secured to the lamp and adapted to supply gas to the lamp, means located in the fixture for regulating said gas-supply, a shaft extending from said gas-regulating means, a spring and a ring encircling said shaft, an extension carried by the fixture, and means mounted upon the extension and coacting with the ring to regulate the tension of the spring, thereby maintaining the gas-regulating means in adjustment in the fixture.

14. In a device of the class described, in combination, a lamp-body, an incandescent mantle arranged therein, a fixture secured to the lamp-body and adapted to provide a gas-supply for the lamp, means located in the fixture for regulating said gas-supply, a shaft extending from the gas-regulating means, a spring and a split ring encircling said shaft, an extension on the fixture, a cap carried by the extension and adapted to be initially adjusted thereon to regulate the tension of the spring through the medium of said split ring to determine the adjustment of the gas-regulating means, and means for permanently securing said cap to said sleeve.

15. In a device of the class described, in combination, a lamp-body, an incandescent mantle arranged therein, a fixture secured to the lamp-body and adapted to provide a gas-supply to the lamp, means located in the fixture for regulating said gas-supply, a shaft extending from the gas-regulating means, a spring and a split ring encircling said shaft, an extension on the fixture, a sleeve mounted upon the extension, a cap carried by the sleeve and adapted to be initially adjusted thereon to determine the tension of the spring, thereby maintaining the gas-regulating means in adjustment, means for permanently securing said cap to said sleeve after such initial adjustment, and means carried by the sleeve engaging the extension for securing all the parts in permanent adjustment.

16. In a device of the class described, in combination, a lamp-body, a mantle secured therein, gas-regulating means carried by the lamp-body, a detachable nozzle carried by the gas-regulating means and a screen carried by the detachable nozzle.

17. In a device of the class described, in combination, a lamp-body, a mantle secured therein, a fixture carried by the lamp-body and adapted to provide a gas-supply to the lamp, gas-regulating means located in the fixture, a detachable inspirator-nozzle carried by the gas-regulating means, a screen carried by the inspirator-nozzle, and means carried by the fixture for maintaining the gas-regulating means in adjustment in the fixture.

18. In a device of the class described, in combination, a lamp-body, a mantle arranged therein, a fixture secured to the lamp-body and adapted to provide a gas-supply to the lamp, gas-regulating means located in the fixture, a detachable inspirator-nozzle carried by the gas-regulating means, a screen provided in the detachable inspirator-nozzle, means for maintaining the gas-regulating means in adjustment in the fixture, and single means adapted to be operated to allow the removal of the gas-regulating means, the detachable nozzle, and the adjusting means from the fixture.

19. In a device of the class described, in combination, a lamp-body, a fixture detachably connected thereto and adapted to conduct gas therein said fixture being provided with a gas-conducting conduit extending therefrom and being also provided with a second conduit intercepting the first-mentioned conduit above the lower end thereof to form a trap thereby in the lower end of said first-mentioned conduit adapted to collect foreign matter from the gas before the same enters the lamp-body, a gas-regulating cock arranged at the intersection of said conduits, and a detachable plug for closing the trap whereby the same may be cleaned without disturbing the other parts of the fixture.

813,488. STEEL SIDE STAKE FOR CARS. DUNAN I. DOBBS, Avalon, Pa., assignor to The Pullman Company, Chicago, Ill., a Corporation of Illinois. Filed June 14, 1904. Renewed June 24, 1905. Serial No. 266,849.

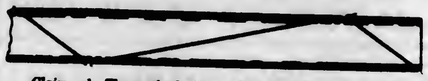

Claim.—1. The method of manufacturing side or end stakes for cars from rolled beams having flanges at their opposite sides, which consists in dividing said beams by means of cuts which intersect each other just outside the said flanges.

2. The method of manufacturing side or end stakes for cars from rolled beams having flanges at their opposite sides, which consists in dividing said beams by means of cuts which intersect each other just outside the said flanges and afterward cutting off the small segment of flange at one side.

3. A side or end stake for cars, consisting of a member having a T-shaped cross-section, the construction being such that the web flares from each end toward an intermediate point along the web and is cut parallel to the base of the T through a portion of the web.

813,489. WORK-HOLDER FOR FLAT-PLATEN TYPE-WRITERS. GEORGE W. DOBBINS, East Orange, N. J., assignor to Harry T. Ambrose, Orange, N. J. Filed Feb. 6, 1904. Serial No. 192,408.

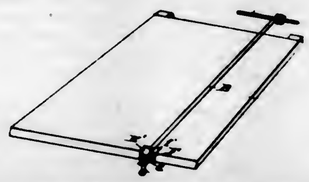

Claim.—1. In a flat-platen type-writer, the combination with the flat platen thereof; of a flexible paper-clamp adapted to be disposed across the flat platen, a holder laterally adjustable with reference to the platen, and a vertically-adjustable pin carried by the holder and carrying one end of the clamp.

2. In a flat-platen type-writer, the combination with the flat platen thereof; of a flexible paper-clamp adapted to be disposed across the flat platen, a bracket having clips permitting its lateral adjustment with reference to the platen while retaining it in one horizontal plane, and a vertically-slidable member mounted in the holder and carrying one end of the clamp.

3. The combination with the flat platen of a type-writer; of a flexible paper-clamp adapted to be disposed across the flat platen, of a clip having forwardly-projecting horizontal spaced arms constructed to embrace the edge of the platen and rearwardly-projecting horizontal spaced arms provided with upright perforations, of a pin slidable in said perforations and carrying one end of said clamp, and of means for retaining the pin at any one of a plurality of elevations.

4. In a flat-platen writing-machine, the combination with the flat platen thereof; of a tensioned paper-holding clamp adapted to be disposed across the platen, a vertically-adjustable friction-retained carrier for one end of the clamp, and a vertical bearing in which said carrier slides and is maintained at varying elevations by the tension of the clamp.

5. In a flat-platen writing-machine, the combination with the flat platen thereof; of a flexible spring-actuated paper-holding tape passing across the platen, a vertically-adjustable friction-retained carrier for one end of the tape, and a holder in which the carrier is maintained at varying elevations by the tension of the tape.

6. In a flat-platen type-writer, the combination with the flat platen thereof; of a flexible paper-clamp elastic in the direction of its length and adapted to be disposed across the flat platen, means supporting one end of the clamp, an adjustable device carrying the other end of the clamp, and an upright bearing in which said adjustable device slides.

7. In a flat-platen type-writer, the combination with the flat platen thereof, and a flexible paper-clamp elastic in the direction of its length disposed across the platen; of a member laterally adjustable with reference to the platen carrying one end of the clamp, a device adjustable up or down carrying the other end of the clamp, and an upright laterally-adjustable bearing in which said device slides.

8. In a flat-platen type-writer, the combination with the flat platen thereof, and a flexible paper-clamp elastic in the direction of its length and adapted to be disposed across the flat platen; of means supporting one end of the clamp, an adjustable device carrying the other end of the clamp, an upright bearing in which said device slides, and means for retaining said device at its several elevations.

9. In a flat-platen type-writing machine, the combination with the flat platen thereof; of a tensioned paper-holding clamp disposed across the platen, a holder having an upright bearing, and a device carrying one end of the clamp and retained by the tension thereof at varying elevations in said bearing.

10. In a flat-platen type-writing machine, the combination with the flat platen thereof, and a tensioned paper-holding clamp adapted to be disposed across the flat platen; of a holder having an upright bearing, a device carrying one end of the clamp and slidable in said bearing, and a resilient retaining member bearing against the side of said device at the several elevations thereof with sufficient force to maintain the device at each elevation.

11. In a flat-platen type-writing machine, the combination with the flat platen thereof, and a tensioned paper-holding clamp adapted to be disposed across the flat platen; of a holder having upright bearings, a device carrying one end of the clamp and slidable in said bearings, and a resilient retaining device between the bearings bearing against the side of the device at the several elevations thereof with sufficient force to maintain the device at each elevation.

12. In a flat-platen type-writing machine, the combination with the flat platen thereof, and a tensioned paper-holding clamp adapted to be disposed across the flat platen; of a holder having an upright bearing, a device carrying one end of the clamp and slidable in said bearing, and a V-shaped spring having its apex recessed and bearing against said device at the several elevations thereof with sufficient force to maintain the device at each elevation.

13. In a flat-platen type-writer, the combination with the flat platen thereof, and a flexible paper-clamp disposed across the platen; of a horizontal rod at one edge of the platen, and a spring-actuated spool thereon carrying one end of said clamp and maintaining the latter under tension; and of a device adjustable up or down carrying the other end of the clamp, and an upright bearing in which said device slides.

813,490. CEMENT-KILN. THOMAS A. EDISON, Llewellyn Park, N. J. Filed Nov. 2, 1904. Serial No. 231,005.

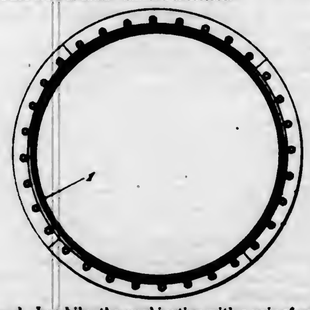

Claim.—1. In a kiln, the combination with a pair of cylindrical sections having abutting flanges, of a shoe covering said flanges and comprising a bearing-surface and a securing-flange at right angles thereto, substantially as set forth.

2. In a kiln, the combination with a pair of cylindrical sections having abutting flanges, of a shoe composed of two sets of L-shaped sections placed opposite each other and secured to said flanges, substantially as set forth.

3. In a kiln, the combination with a pair of cylindrical sections having abutting flanges, of a shoe composed of two sets of sections each of which has a bearing-surface and a securing-flange, the sections of one set being so placed that their bearing-surfaces break joints with those of the other set, substantially as set forth.

4. In a kiln, the combination with a pair of cylindrical sections having abutting flanges, of a shoe composed of two sets of L-shaped sections placed opposite each other and breaking joints, substantially as set forth.

5. In a kiln, the combination with a pair of cylindrical sections having abutting flanges, of a bearing comprising two sets of sections secured to said flanges and forming rings, the sections of one ring breaking joints with the sections of the other ring, substantially as set forth.

813,491. POCKET-FILLING MACHINE. THOMAS A. EDISON, Llewellyn Park, N. J., assignor to Edison Storage Battery Company, West Orange, N. J., a Corporation of New Jersey. Filed May 16, 1903. Serial No. 157,630.

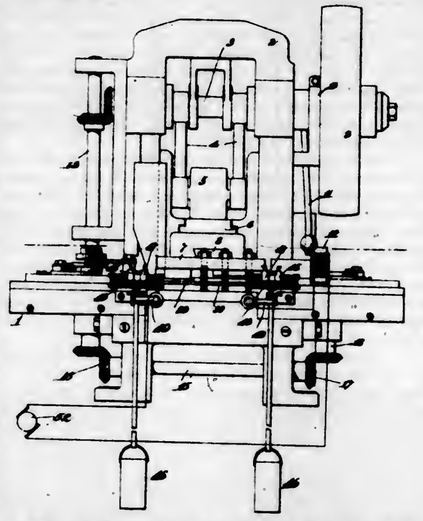

Claim.—1. In a machine of the class described, the combination of two movable carriers, arranged so that their paths of movement intersect, means for moving the carriers intermittently, means for introducing pocket-sections in the carriers, means for introducing material into one of the pocket-sections, and means for engaging the pocket-sections together at the point of intersection of the carriers, substantially as and for the purposes set forth.

2. In a machine of the class described, the combination of two rotatable carriers, arranged so that their paths of movement intersect, means for rotating the carriers intermittently, means for introducing pocket-sections in the carriers, means for introducing material into one of the pocket-sections, and means for engaging the pocket-sections together at the point of intersection of the carriers, substantially as set forth.

3. In a machine of the class described, the combination of two movable carriers, arranged so that their paths of movement intersect, means for rotating the carriers intermittently, means for introducing pocket-sections within the carriers, means for introducing material into one of the pocket-sections, means for introducing the pocket-sections together at the point of intersection, and means for applying pressure to the engaged sections to crimp the edges of one upon the other, substantially as set forth.

4. In a machine of the class described, the combination with two movable carriers, arranged so that their paths of movement intersect, means for rotating the carriers intermittently, means for introducing pocket-sections within the carriers, means for introducing material into one of the pocket-sections, means for introducing the pocket-sections together at the point of intersection, means for applying pressure to the engaged sections to crimp the edges of one upon the other and means for ejecting the finished pockets, substantially as and for the purposes set forth.

5. A machine of the class described, comprising in combination two movable carriers, arranged so that their paths of movement intersect, means for moving the carriers intermittently, means for introducing pocket-sections within the carriers, means for introducing material into one of said pocket-sections, means for tamping said material, and means for introducing one pocket-section within the other at the point of intersection of the carriers, substantially as set forth.

6. A machine of the class described, comprising in combination two movable carriers, arranged so that their paths intersect, means for moving the said carriers intermittently, means for introducing

pocket-sections within said carriers, means for introducing material within one of said pocket-sections, means for expanding or flaring the edges of the other pocket-sections, and means for introducing the filled pocket-sections within the expanded or flared pocket-sections at the point of intersection of the carriers, substantially as and for the purposes set forth.

7. A machine of the class described, comprising in combination two movable carriers, arranged so that their paths intersect, means for moving the said carriers intermittently, means for introducing pocket-sections within said carriers, means for introducing material within one of said pocket-sections, means for expanding or flaring the edges of the other pocket-sections, means for introducing the filled pocket-sections within the expanded or flared pocket-sections at the point of intersection of the carriers, and means for applying pressure to the flared sections to crimp their edges upon the filled sections, substantially as set forth.

8. A machine of the class described, comprising in combination two movable carriers, arranged so that their paths intersect, means for moving the said carriers intermittently, means for introducing pocket-sections within said carriers, means for introducing material within one of said pocket-sections, means for expanding or flaring the edges of the other pocket-sections, means for introducing the filled pocket-sections within the expanded or flared pocket-sections at the point of intersection of the carriers, means for applying pressure to the flared sections to crimp their edges upon the filled sections, and means for ejecting the finished pockets, substantially as set forth.

9. A machine of the class described, comprising in combination two rotatable carriers, arranged so that their paths of movement intersect, means for rotating the carriers intermittently, means for introducing pocket-sections within said carriers, means for introducing material in one of said pocket-sections and means for introducing the filled sections into the sections on the other carrier at the point of intersection of said carriers, substantially as set forth.

10. A machine of the class described, comprising in combination two rotatable carriers, arranged so that their paths of movement intersect, means for rotating the carriers intermittently, means for introducing pocket-sections within said carriers, means for introducing material in one of said pocket-sections, means for introducing the filled sections into the sections on the other carrier at the point of intersection of said carriers, and means for crimping the edges of the outer sections upon the inner sections to lock the sections together, substantially as set forth.

11. A machine of the class described, comprising in combination two rotatable carriers, arranged so that their paths of movement intersect, means for rotating the carriers intermittently, means for introducing pocket-sections within the carriers, means for introducing material in one of said sections, means for introducing the filled sections into the sections on the other carrier at the point of intersection of said carriers, means for crimping the edges of the outer sections upon the inner sections to lock the sections together, and means for ejecting the finished pockets, substantially as set forth.

12. In a machine of the class described, the combination with a rotatable carrier, a die for introducing pocket-sections therein, a power-shaft for operating said die, a clutch-lever controlling the application of power to said shaft, a magazine for containing the pocket-sections, a slide for moving the sections in said magazine, and means controlled by said slide to effect the operation of said clutch-lever when the magazine becomes emptied, substantially as set forth.

13. In a machine of the class described, the combination with a rotatable carrier, a die for introducing pocket-sections therein, a power-shaft for operating said die, a clutch-lever controlling the application of power to said shaft, a magazine for containing the pocket-sections, a slide for moving the sections in said magazine, a circuit-breaker actuated by said slide when the magazine becomes emptied and a magnet controlled by the circuit-breaker to effect the operation of the clutch-lever, substantially as and for the purposes set forth.

14. In a machine of the class described, the combination with a power-shaft and a clutch-lever for controlling the application of power to the same, a magazine for containing articles to be operated upon by power from the power-shaft, and an electromagnetic device controlled by the movement of the articles in the magazine for actuating the clutch-lever, substantially as set forth.

15. In a machine of the class described, the combination with a magazine, a slide movable therein, and spring-clips adapted to lock the slide in said magazine, but permitting longitudinal movement of said slide, substantially as set forth.

16. In a machine of the class described, the combination of two dials containing openings for receiving pocket-sections, gearing between said dials, a star-wheel for actuating said gearing, a driving-shaft and a pin on said shaft engaging the star-wheel, substantially as set forth.

17. In a machine of the class described, the combination with a rotatable dial, and means for intermittently moving the same, of a slide for introducing pocket-sections within the dial, an arm for moving said slide, and means for adjusting the position of said arm relative to the slide, substantially as set forth.

18. In a machine of the class described, the combination with a rotatable dial having openings for receiving pocket-sections and means for intermittently moving the same, of a punch-head carrying a series of dies coöperating with the pocket-sections in said dial, and centering-dies carried by the punch-head for engaging the dial to center the same in its position of rest, substantially as set forth.

19. In a machine of the class described, the combination with a fixed bed, a dial mounted thereon and having openings adapted to receive pocket-sections, and means for moving the dial intermittently, of a slide adapted to aline the pocket-sections with one of said openings when the dial is stationary, and a filling-die for engaging the pocket-section and introducing the same within the dial, substantially as set forth.

20. In a machine of the class described, the combination with a fixed bed, a dial mounted thereon and having openings adapted to receive pocket-sections, and means for moving the dial intermittently, of a slide adapted to aline the pocket-sections with one of said openings when the dial is stationary, and a spring-pressed filling-die, for engaging the pocket-sections and introducing the same within the dial, substantially as set forth.

21. In a machine of the class described, the combination with a dial having openings for receiving pocket-sections and means for intermittently rotating the same, of a slide for moving the pocket-sections into alinement with one of said openings, a punch 57 for forcing the pocket-sections into said opening and an upsetting-die 61 with which said punch coöperates to flare the edges of the pocket-sections, substantially as set forth.

22. In a machine of the class described, the combination with a dial having openings for receiving pocket-sections and means for intermittently rotating the same, of a slide for moving the pocket-sections into alinement with one of said openings, a punch 57 for forcing the pocket-sections into said opening, an upsetting-die 61 with which said punch coöperates to flare the edges of the pocket-sections, and means for simultaneously moving said punch and upsetting-die, substantially as set forth.

23. In a machine of the class described, the combination with a dial having openings for receiving pocket-sections and means for intermittently rotating the same, of a slide for moving the pocket-sections into alinement with one of said openings, a punch 57 for forcing the pocket-sections into said opening and an upsetting-die 61 with which said punch coöperates to flare the edges of the pocket-sections, and a spring-pressed section within the upsetting-die for separating the pocket-section from the latter, substantially as set forth.

24. In a machine of the class described, the combination with a dial having openings for receiving pocket-sections and means for intermittently rotating the same, of means for introducing pocket-sections within said dial, means for introducing material within said pocket-sections, and a tamping-die for compressing the material within the pocket-sections during the periods of rest of the dial, substantially as set forth.

25. In a machine of the class described, the combination of two dials, arranged so that their paths intersect and having openings for containing pocket-sections, means for introducing pocket-sections within said dials, means for introducing material within the pocket-sections carried by one dial and a punch 76 for introducing the filled pocket-sections of one dial into the pocket-sections of the other dial at the point of intersection of the two dials, substantially as set forth.

26. In a machine of the class described, the combination of two dials, arranged so that their paths intersect and having openings for containing pocket-sections, means for introducing pocket-sections within said dials, means for introducing material within the pocket-sections carried by one dial, a punch 76 for introducing the filled pocket-sections of one dial into the pocket-sections of the other dial at the point of intersection of the two dials, and a spring-pressed die coöperating with said punch, whereby the pocket-sections will be compressed between the punch and die, substantially as set forth.

27. In a machine of the class described, the combination of two dials, arranged so that their paths intersect and having openings for containing pocket-sections, means for introducing pocket-sections within said dials, means for introducing material within the pocket-sections carried by one dial, a punch 76 for introducing the filled pocket-sections of one dial into the pocket-sections of the other dial at the point of intersection of the two dials, a spring-pressed die coöperating with said punch, whereby the pocket-sections will be compressed between the punch and die and means for simultaneously operating the punch and die, substantially as set forth.

28. In a machine of the class described, the combination with a dial having openings for receiving telescoped pocket-sections, and means for intermittently moving the same, of a crimping-punch arranged to engage the telescoped sections within the dial, a crimping-die against which sections are forced by said punch to crimp the edges of one section upon the other, and a spring-pressed plunger coöperating with the said punch to return the pocket-sections as the punch is withdrawn, substantially as set forth.

813,492. **FISHING-ROD.** JOSEPH B. FRICHER, Chicago, Ill., assignor of one-half to Ernest A. Tesch, Chicago, Ill. Filed May 18, 1905. Serial No. 260,499.

Claim.—1. In a fishing-rod, a plurality of telescopically-mounted metal tubular sections each of uniform cross-diameter throughout its length, means for interlocking said sections consisting of a spring-sleeve arranged at one end of each section and hang the portion between its ends of greater cross-diameter than at its ends and adapted to expand against the inner walls of the outer section.

2. In a fishing-rod, a plurality of telescopically-mounted metal tubular sections, means for interlocking said sections consisting of a tubular spring-sleeve arranged at one end of each section and having slots cut longitudinally therein, the ends of said slots being closed and said sleeve adapted to expand against the inner walls of the outer section.

3. In a fishing-rod, a tubular rod of uniform cross-diameter throughout its length, a handle reversibly mounted on said rod and consisting of a grip portion and a reel-seat portion, said rod extending entirely through said handle, a thimble fixed on said rod, and a thimble removably secured to one end of said rod, said fixed and removable thimbles forming end bearings for said grip and reel-receiving portions respectively.

4. In a fishing-rod, a tubular rod of uniform cross-diameter throughout its entire length and a threaded plug inserted in one end of said rod, a hollow handle reversibly mounted on said rod and consisting of a grip portion and a reel-seat portion, said rod extending entirely through said handle, collars slidably mounted on said reel-seat portion, a thimble fixed on said rod and having its edges flared outwardly, a thimble having a threaded engagement with said plug, having its ends outwardly flared, said fixed and removable thimbles forming end bearings and means for protecting the edges of said reel and grip portions respectively.

5. In a fishing-rod, a plurality of telescopically-mounted metal tubular sections, means for interlocking said sections consisting of a spirally-slotted tubular spring-sleeve arranged at one end of each section, and adapted to expand against the inner walls of the outer section.

6. As a means for frictionally interlocking two tubular rods, a sleeve composed of spring metal having a plurality of helical slots formed therein, said slots extending for a portion only of the length of said sleeve, and the slotted portion of said sleeve being of greater cross-diameter than the unslotted portion.

7. A rod composed of a plurality of metal tubes telescopically arranged, each of uniform cross-diameter throughout its entire length, and each provided with a tubular sleeve of spring metal, and with an internal collar adapted to serve as a stop for the tube passing through said collar, said sleeve having longitudinal slots formed therein between its ends, and the slotted portion being of greater cross-diameter than the ends.

813,493. **SPARK-ARRESTER.** GEORGE FOREMAN and ALBERT R. MORROW, Brashear, Mo. Filed Sept. 14, 1905. Serial No. 278,473.

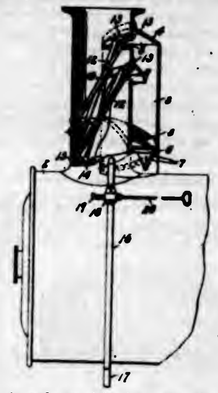

Claim.—1. A smoke-stack having a plurality of transverse slots disposed in vertical series, a receptacle adjacent to the stack and communicating therewith through the slots, a plurality of grates supported one above another in an inclined position within the stack and having their upper ends secured adjacent to the upper edges of the slots, said grates having intercurrently-disposed bars concave in their under sides, and deflecting means within the receptacle.

2. A smoke-stack, a receptacle adjacent to said smoke-stack and communicating with the latter through transverse slots, and a plurality of inclined grates disposed within the funnel and having their upper ends connected with the latter above the several slots; in combination with an apron or deflector within the receptacle, above one of the slots.

813,494. **VAPOR-BURNER.** EDWARD A. FRANKLIN, Austin, Tex. Filed June 3, 1905. Serial No. 263,605.

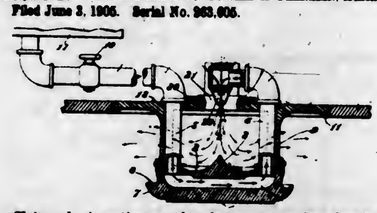

Claim.—1. A casting cored to form a generating-chamber and having on its upper side a conical projection with dished walls forming an annular channel surrounding the base of the cone, suspending means for said casting, a feed-pipe entering the generating-chamber, and a discharge-pipe connected with the generating-chamber and extending above and discharging in the direction of the cone.

2. A generator having upon its upper side a cone, and an annular channel surrounding the base of the cone; suspending means for the generator; a supply-pipe threaded into one side of the generator; an exit-pipe threaded into the opposite side of the same and having a laterally-extending terminal cap; and a nozzle or burner-tip the outer end of which forms a wrench-seat and the inner end of which is threaded into said cap and directed toward the apex of the cone.

3. A plate having an aperture, a generator suspended beneath said aperture and having upon its upper side a conical projection and a channel surrounding the base of the cone an annular overflow-gutter formed exteriorly upon the generator, a supply-pipe connected with one side of the generator, an exit-pipe connected with the opposite side of the generator and extending through the supporting-plate, a terminal cap connected with and extending laterally from the exit-pipe, and a nozzle or burner-tip threaded into said cap and directed toward the apex of the cone.

4. A burner-cap, a nozzle extending radially from said cap, a

sleeve encircling the cap and having a slot engaging the nozzle, and a deflecting member connected with said sleeve.

5. A burner-cap, a tip or nozzle radiating therefrom, a sleeve

be hitched, locks for locking and releasing said branch lines, a releasing connection for said locks extending to a distant point, guides for said branch lines located at the rear portion of the vehicle,

with said pinion for imparting motion to the pistons, substantially as specified.

2. The combination, with a bracket-arm having a recess formed in its edge, and lateral projections adjacent said recess, of a clamp

sleeve encircling the cap and having a slot engaging the nozzle, and a deflecting member connected with said sleeve.

5. A burner-cap, a tip or nozzle radiating therefrom, a sleeve encircling the cap and having a slot engaging the tip, and leaves extending in opposite directions from said sleeve and constituting respectively a deflector and a handle.

6. A burner-cap, a tip or nozzle radiating therefrom, a strip encircling the cap to form a sleeve and having a slot engaging the tip, and a clamping-bolt connecting the parts of the strip constituting the sleeve; the ends of said strip being bent in opposite directions to constitute respectively a handle and a deflector.

7. The combination with a burner-cap having a radiating tip, of a slotted strip bent upon the cap to form a sleeve and laterally-extending members constituting respectively a handle and a deflector, and connecting means for clamping the sleeve for rotation upon the cap; the slotted portion being in engagement with the tip to limit the extent of rotation of the sleeve.

813,495. METHOD OF SEPARATING BUCKHORN AND PLANTAIN SEED FROM CLOVER AND ALFALFA SEED. SAMUEL P. GLOST, Union City, Ind. Filed Sept. 21, 1905. Serial No. 279,411.

Claim.—The herein-described method of separating buckhorn-seeds and plantain-seeds from clover-seed or alfalfa-seed consisting in mixing with the clover-seed or the alfalfa-seed which contains buckhorn-seed or plantain-seed, dampened sawdust, then spreading the seed on a canvas or tight floor to partially dry, then passing the seed through a screen, then spreading the screened seed out to dry, and finally passing the screened seed through a fanning-mill.

813,496. DEVICE FOR LEADING ANIMALS FROM BURNING BUILDINGS. ELMER E. HIGGINS, St. Paul, Minn. Filed Feb. 20, 1905. Serial No. 246,262.

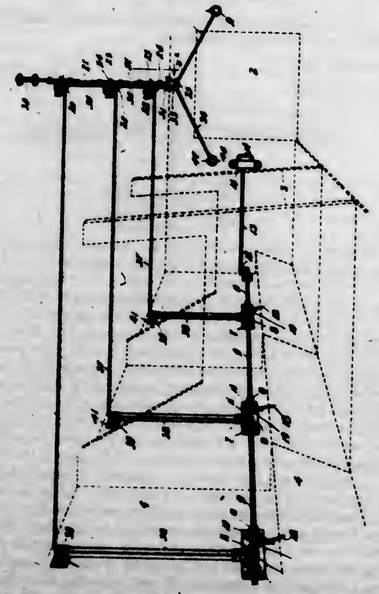

Claim.—3. In a device of the character described, the combination with a main lead-line having a plurality of branch lines extending into the stalls and provided with devices to which the horses may be hitched, locks for locking and releasing said branch lines, a releasing connection for said locks extending to a distant point, guides for said branch lines located at the rear portions of the stalls, and a connection between said lead-line and said rear guides, for releasing the latter, substantially as described.

2. In a device of the character described, the combination with a main lead-line having a plurality of branch lines extending into the several stalls and provided with devices to which the horses may be hitched, locks for locking and releasing said branch lines, means for operating said locks from a distant point to release said branch lines, guides for said branch lines in the form of rings, detaining devices normally holding said rings at the rear of the respective stalls, and connections between said main lead-line and the several detaining devices for operating the same to release the several guide-rings, under a movement of said main lead-line, substantially as described.

3. In a device of the character described, the combination with a main lead-line having a plurality of branch lines extending into the several stalls and provided with rings to which the horses may be hitched, locks normally holding said rings, means for operating said locks to release said hitching-rings, hinged sheaths normally holding said branch lines in position, themselves held in operative positions by the respective ring-holding locks and arranged to be released when said locks are actuated to release said hitching-rings, substantially as described.

4. In a device of the character described, the combination with detaining-latches located at the rear of the stalls, and guide-rings normally held thereby, of a main lead-line and branch lead-lines working through said guide-rings, said branch lines having, at their ends, hitching-rings, a rock-shaft having a plurality of hitching-hooks acting as locks, located at the front of the stalls and normally holding said hitching-rings, means for rocking said shaft to release the several hitching-rings, and a connection between said main lead-line and the several detaining-latches for releasing the several guide-rings, under a movement of said lead-line required to lead the horses from the building, substantially as described.

5. In a device of the character described, the combination with a main lead-line having a plurality of branches extending into the several stalls and provided with devices to which the horses may be hitched, of guides for the several branch lines arranged to be released by a movement of said lead-line, substantially as described.

813,497. COMBINATION CHURN AND CREAM-WHIPPER. SAMUEL S. HITCHCOCK, St. Louis, Mo. Filed June 12, 1905. Serial No. 264,869.

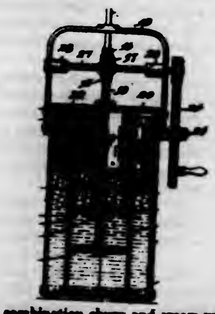

Claim.—1. A combination churn and cream-whipper comprising an outer receptacle, a perforated inner receptacle, a flange, a projecting ring formed on the bottom of the outer receptacle for retaining the inner receptacle in position, a flanged cover mounted on the outer receptacle and resting upon the inner receptacle, a yoke carried by the cover and supported to the sides thereof, a shaft supported in bearings carried by the yoke, a cam formed on said shafts, an agitator operating in the inner receptacle and raised and lowered by the cam, and gear-wheels carried by the yoke by which the agitator is operated, substantially as specified.

2. A combination churn and cream-whipper comprising an outer and inner receptacle, a cover having an outer and inner flange mounted over the said receptacles, a yoke carried by the cover and secured to the outer flange, a rod carrying a pair of pistons located within the inner receptacle, a cam-yoke formed on said rod, a shaft carried by the yoke and operating in bearings formed thereon, a cam carried by the shaft and operating in the cam-yoke, a pinion located upon said shaft, and a gear-wheel carried by the yoke and meshing with said pinion for imparting motion to the pistons, substantially as specified.

813,498. CAR-FENDER. MARTHA B. JOHN, Portsmouth, Va. Filed June 15, 1905. Serial No. 265,452.

Claim.—1. A safety-fender for cars comprising a body having a suitable base, adapted for attachment to the front of a car and provided with a chamber normally closed by spring-controlled doors arranged at an incline to the base of the fender and a cushioning device movably mounted in said chamber.

2. A safety-fender for cars comprising a body having a suitable base, adapted for attachment to the front of a car and provided with a chamber normally closed by spring-controlled doors arranged at an incline to the base of the fender and a cushioning device mounted in said chamber and movable therein longitudinally of the fender.

3. A safety-fender for cars comprising a body having a suitable base, adapted for attachment to the front of a car and provided with a chamber normally closed by spring-controlled doors arranged at an incline to the base of the fender and a cushioning device mounted in said chamber movable therein longitudinally of the fender and means for guiding said cushioning device during longitudinal movement.

813,499. WIRE BASKET. MOSES B. JOHNSON, Pittsburg, Pa. Filed Apr. 15, 1905. Serial No. 255,771.

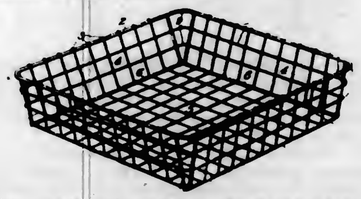

Claim.—An integral wire basket made up from a blank substantially in the form of a Maltese cross and composed of crossed fabric wires, the wings of the cross forming the sides of the basket, frame-wires running along the junction of the sides and bottom and crossing each other at the lower corners of the basket, and selvage-wires running along the top edges of the sides, the selvage and fabric wires being connected at the basket-corners by welded butt-joints.

813,500. TROLLING-SPOON. CHARLES KAUSON, Bath, N. Y. Filed Sept. 21, 1905. Serial No. 279,551.

Claim.—1. A trolling-spoon provided with a laterally-extended rib having its end portions projected, the one forming a hook and the other providing an attaching means for connection of the spoon to the line.

2. A trolling-spoon provided with a laterally-extended rib having its end portions projected, the one having an eye and the other a hook.

813,501. BRACKET. HENRY F. KEIL, Brooklyn, N. Y. Filed May 27, 1904. Serial No. 210,144.

Claim.—1. The combination, with a hollow support, having suitable spaced openings in its front wall, of a bracket-arm having shouldered projections on its rear end and an orifice between said projections, a plate of greater width than the thickness of the arm, said plate having openings therein and a screw-threaded hole between the said openings, the projections on the arm passing through the openings in the plate and support and provided with suitable heads, and a set-screw located in said orifice engaging with the screw-threaded hole in the plate and bearing on the support.

2. The combination, with a bracket-arm having a recess formed in its edge, and lateral projections adjacent said recess, of a clamp or rest adapted to be seated within said recess and movable therein to engage said projections, and having holes to receive screws or other like devices.

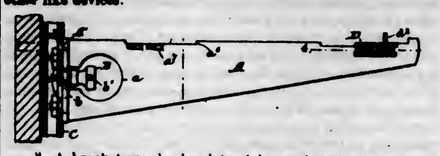

3. A bracket-arm having lateral-disposed projections formed below and near the upper edge thereof, in combination with a spring-clamp, the top portion of which lies across and in a plane with the edge of the bracket-arm, and the lower parts or jaws of which cover and inclose the said projections, the said spring-clamp having a lug or lip to serve as a separating device for two adjacent articles supported by the said bracket.

4. A bracket-arm having laterally-disposed projections formed near the edge thereof, in combination with a C-shaped spring clamp or rest, the jaws of which are constructed and arranged to engage the lower part of the said laterally-disposed projections on opposite sides of the bracket-arm, the said clamp being also formed with openings extending through the same, a part with which the said clamp or rest may be engaged, and screws to compress the body and jaws of the said clamp toward each other and thereby fasten the said part, bracket-arm and clamp or rest together.

813,502. DRAFT-EQUALIZER. ABRAHAM KRAHN, Langdon, N. D. Filed Aug. 28, 1905. Serial No. 276,105.

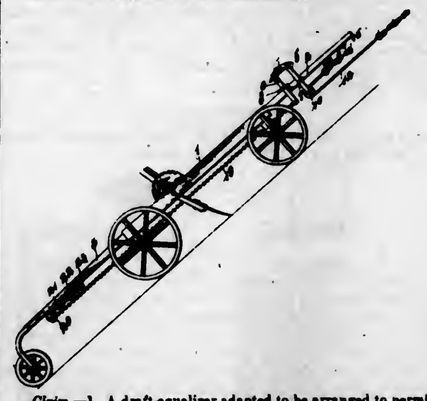

Claim.—1. A draft-equalizer adapted to be arranged to permit draft-teams to be connected to the front and rear of a vehicle or machine, and the draft evenly distributed to all the teams, substantially as described.

2. In a draft-equalizer, the combination with pivotally-mounted equalizing-levers, of a front draft-cable adapted to be slidably engaged with the end of one of said levers, draft devices connected to the ends of said cable, and means whereby draft-teams may be hitched at the rear end of the vehicle or machine and connected with the other equalizing-lever, substantially as described.

3. In a draft-equalizer, the combination with pivotally-mounted equalizing-levers of a front draft-cable adapted to be slidably engaged with the end of one of said levers, draft devices connected to the ends of said cable, draft devices arranged in the rear of said vehicle or machine and a sliding connection between said rear draft devices and the end of the other equalizing-lever, substantially as described.

4. In a draft-equalizer, the combination with a pair of equalizing-levers pivotally mounted on the front tongue or pole of the vehicle or machine, a cross-bar pivotally connecting one end of said levers, a guide-pulley journaled in the opposite end of one of said levers, a draft-cable connected with said pulley, one end of said cable extending beyond the end of said front pole or tongue, draft devices secured to the front and rear ends of said cable, and means connected

with the free end of the other equalizing-lever whereby draft-teams may be hitched thereto at the rear of said vehicle or machine, substantially as described.

6. In a draft-equalizer, the combination with a pair of equalizing-levers pivotally mounted on the front tongue or pole of the vehicle or machine, a cross-bar pivotally connecting one end of said levers, a guide-pulley journaled in the opposite end of one of said levers, a draft-cable connected with said pulley, one end of said cable extending beyond the end of said front pole or tongue, draft devices secured to the front and rear ends of said cable, a guide-pulley secured to the rear tongue or pole of the vehicle or machine, a draft-cable connected to the free end of the other equalizing-lever, said cable extending rearwardly and over the guide-pulley on said rear tongue and draft devices connected to the free end of said cable whereby draft-teams may be hitched in the rear of said vehicle or machine, substantially as described.

813,503. MATCH-BOX. HENRY H. LEMMON and HUGO J. KALLMEIN, Hartford, Conn. Filed Oct. 5, 1905. Serial No. 281,444.

Claim.—A match-box having a base supporting a receptacle and a cylinder, a gate movable vertically in the receptacle, a plunger movable vertically in the cylinder, a connection between the plunger and the gate, a spring for lifting the gate, a spring for lifting the plunger, means for depressing the plunger, and an air-valve in the cylinder whereby the plunger may be depressed quickly but is caused to rise slowly, substantially as specified.

813,504. JOURNAL-BOX LID. ARTHUR LIPSCHUTZ, St. Louis, Mo. Filed Sept. 20, 1905. Serial No. 279,219.

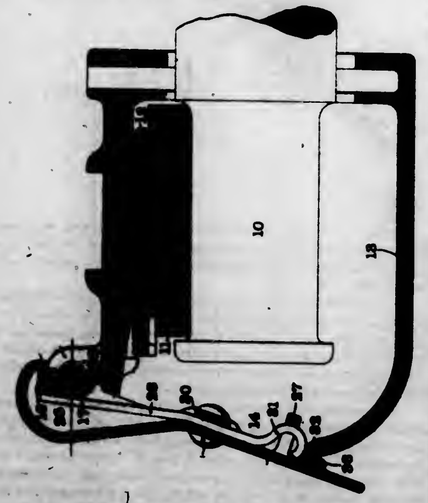

Claim.—1. The combination with a journal-box provided with an opening, of a lid for said opening, a spring carried by said lid and bearing at one end against said box, the other end of said spring engaging with said box to hold said lid in position.

2. The combination with a journal-box provided with an opening, of a lid for said opening, a spring carried by said lid and bearing at one end against said box, the other end of said spring forming a bolt engaging with said box to hold said lid in position, and a stop for said spring adjacent to said lock.

3. The combination with a journal-box provided with an opening, of a lid for said opening, a spring carried by said lid and bearing at one end against said box, means securing said spring to said lid at a point intermediate the ends of said spring, the opposite end of said spring engaging with said box adjacent to said opening to hold said lid in position.

4. The combination with a journal-box, provided with hinge-pin lugs and a flange on said box between said lugs, said flange being provided with a groove on its rear face, of a hinge-pin passing through said lugs and groove, a lid journaled on said hinge-pin and provided with a lip making contact with said flange, and a spring carried by said lid and bearing at one end against said box, the opposite end of said spring engaging with said box to hold said lid in position.

813,505. FIREPLACE AND GRATE BLOWER. WALTER F. LOWRY, McMinnville, Tenn. Filed May 24, 1905. Serial No. 262,083.

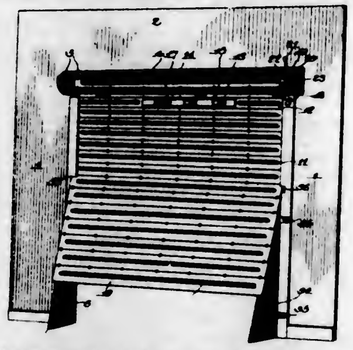

Claim.—1. A fireplace-blower consisting of a curtain composed of a plurality of flexibly-connected slats one of said slats being provided with apertures, and an apertured damper connected slidably with said slat and having a perforation in constant registry with the underlying portion of the slat.

2. A fireplace-frame having side members grooved in their inner edges and provided with slots in their front sides communicating with said grooves, a drum supported for rotation upon the frame, a curtain connected with said drum and guidable in the grooves of the side members and through the slots of the latter, and auxiliary guide members supported upon the side members of the frame.

3. A fireplace-frame, a blower-curtain guidable in grooves in the side members of the frame and through slots in the latter, and auxiliary guide members consisting of approximately triangular plates connected with the side members of the frame and terminating in acute angles adjacent to the slots in the latter.

4. A fireplace-frame, a blower-curtain guidable in grooves upon the inner sides of the side members of the frame and through slots in the latter, auxiliary triangular guide members having laterally-extending bearing-brackets, and T-shaped lugs upon said brackets adapted to engage T-shaped slots in the side members of the frame.

813,506. SWITCH. GEORGE B. LYNCH, Columbus, Ohio, assignor to Joseph A. Jeffrey, Columbus, Ohio. Filed Aug. 30, 1905. Serial No. 276,294.

Claim.—1. In combination with a main track, a branch track and a switch, of a rail system for propulsion purposes arranged adjacent to and parallel with the track-rails and comprising a movable switch member arranged to register either with the main or the branch line of the propulsion-rails, each movable switch member being supported upon a horizontal axis about which it turns in moving from one of its positions to the other, substantially as set forth.

2. In combination with a main track, a branch track and a switch, of rack-rails arranged to follow each track, and a movable rack-rail section adjacent to the switch and arranged to be brought into line with the rack-rail following either track as they diverge, the rack-rail being mounted upon a horizontal pivot that is disposed midway between the lines of rack-rails following the respective tracks, substantially as set forth.

3. In combination with a main track, a branch track and a switch, of a rack-rail following the main track, another rack-rail diverging therefrom and following the branch track, there being

breaks in the said rack-rails adjacent to the switch, and a movable rack-rail section arranged to bridge the break in one or the other of the lines of rack-rails accordingly as it is moved, such movable rack-rail section being pivotally supported and arranged to lie with one of its faces uppermost when in line with one of the rack-rails and with its other face uppermost when in line with the other rack-rail, substantially as set forth.

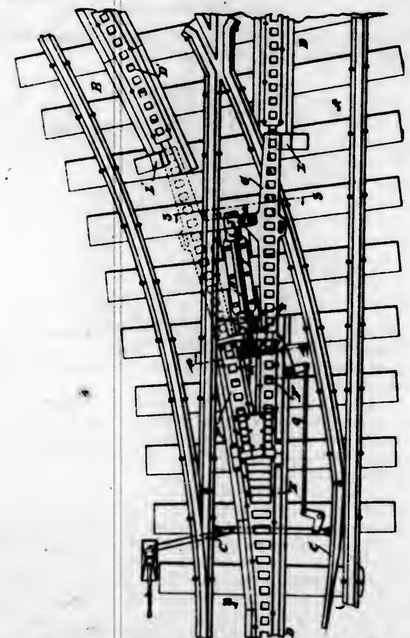

4. In combination with a main track, a branch track and a switch, of a rack-rail line following the main track, a rack-rail line following the branch track, and a movable rack-rail section arranged to register with either one or the other of the rack-rail lines accordingly as it is thrown, a horizontal shaft, and hinge-sections of unequal length connecting the said shaft with the movable rack-rail member, substantially as set forth.

5. In combination with the main track, a branch track and a switch, of a rack-rail line following the main track, a rack-rail line following the branch track, the said rack-rail lines coming together at the switch, the rack-rails being laid on a higher level than the track-rails, and there being breaks in the permanent rack-rails where they would cross the track-rails, and a pivoted rack-rail section mounted on a horizontal axis and arranged when thrown in one position to overlie a track-rail of the main track and to bridge the break between the permanent sections of the rack-rail of the branch line and when thrown into the other position to overlie a track-rail of the branch line and to bridge the break between the ends of the permanent sections of the rack-rail along the main line, substantially as set forth.

6. In combination with a main track, a branch track, and a switch, of a rack-rail following the main track, another rack-rail following the branch track, each rack-rail being broken or interrupted adjacent to the point where they come together, and a movable rack-rail section mounted upon a horizontal shaft, situated between the main and the branch tracks of the rack-rail and adjacent to the broken or interrupted portions thereof, and means for adjusting the connection of the movable rack-rail section with its shaft, whereby it may be adjusted to suit the angular divergence of the main and branch tracks, substantially as set forth.

7. In combination with a main track, a branch track and a switch, of a rack-rail line following the main track, another rack-rail line following the branch track, a movable rack-rail switch member, G, a shaft, H, horizontally disposed, and hinged pieces, J, J', uniting the movable switch member and the shaft, each hinged piece being of unequal length and one of them being provided with means for adjusting the switch member toward and from the shaft, substantially as set forth.

8. In combination with a main track, a branch track and a switch, of a rack-rail line following the main track, a rack-rail line following the branch track, a movable rack-rail switch member, G, mounted upon a horizontal shaft arranged adjacent to the point where the lines of rack-rails come together and adapted to be thrown into register with one or the other of the lines of the rack-rails, and abutments against which the movable rack-rail member bears when thrown into working positions, substantially as set forth.

9. In combination with a main track, a branch track, a switch and a means for throwing the switch, of a rack-rail following the main track, a rack-rail following the branch track, a movable rack-rail section mounted upon a horizontal shaft adjacent to the point where the two lines of rack-rails come together and arranged to be thrown into a position to register with one or the other of the rack-rails, and connections between the shaft of the movable section of the rack-rail and the mechanism for throwing the switch, substantially as set forth.

813,507. FURNACE-RADIATOR. GEORGE MAAG, Akron, Ohio, assignor to The XXth Century Heating and Ventilating Company, Akron, Ohio, a Corporation of Ohio. Filed May 26, 1905. Serial No. 262,200.

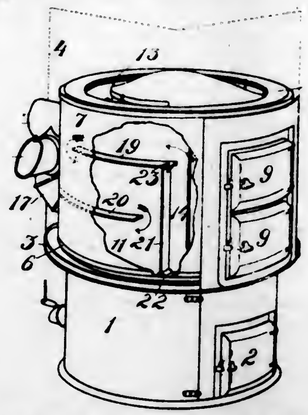

Claim.—A radiator comprising a heating-chamber adapted to be placed in communication with a heater, a second heating-chamber surrounding said first-mentioned heating-chamber and in open communication therewith, said chambers being formed by top and bottom members, each of said members being provided with an elongated aperture adapted to register each with the other, an external casing connecting said top and bottom members, a second casing connecting said top and bottom members, located adjacent to said elongated apertures and forming in connection therewith an air-heating flue through said radiator, said bottom member being provided with a second aperture to adapt the first-mentioned heating-chamber to be placed in communication with a heater, the second heating-chamber being provided with two outlets therefrom, a plurality of baffle-plates arranged in said second heating-chamber in planes parallel with said top and bottom members, one of said baffle-plates being elongated and spaced from the bottom member to form flues in communication with one of said outlets, the others of said baffle-plates being located between the top member and said elongated baffle-plate and extended over the respective ends thereof to form flues and removable baffle-plates connecting said last-mentioned baffle-plates with said bottom member.

813,508. MINING-MACHINE. EDWIN R. MENGEL, Columbus, Ohio, assignor to Joseph A. Jeffrey, Columbus, Ohio. Filed Aug. 22, 1903. Serial No. 170,009.

Claim.—1. In a mining-machine, the combination with the bed-frame, the carriage adapted to move forward and back thereon, and the cutting apparatus on the carriage, of the two rotary engines arranged side by side within the longitudinal planes of the bed-frame, and having the axes of their engine-shafts in a vertical plane trans-

verse to the said bed-frame, the vertical shaft *l*, the gearing between said shaft and each of said engine-shafts, the sprocket-wheel on said vertical shaft engaging with and driving the cutter-chain, and a train

axes of their rotary-engine shafts parallel with each other, a counter-shaft common to both of said engines, gearing similarly connecting each of said rotary-engine shafts to said counter-shaft, power-trans-

means for then moving said carriage to carry said blanks along said

guiding said pivoted bar during the travel of said carriage to control

verse to the said bed-frame, the vertical shaft *l*, the gearing between said shaft and each of said engine-shafts, the sprocket-wheel on said vertical shaft engaging with and driving the cutter-chain, and a train of power-transmitting devices interposed between said vertical shaft and the carriage-advancing mechanism on the bed-frame.

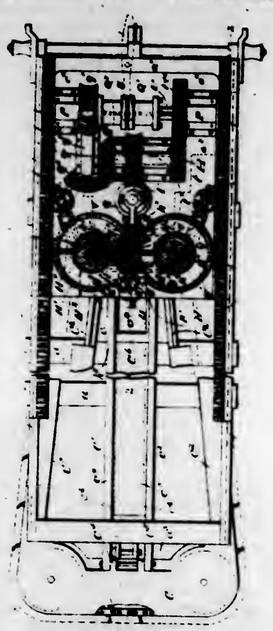

2. In a mining-machine, the combination with the bed, the carriage adapted to move relatively thereto and the cutter-chain on the carriage, of the sprocket-wheel engaging with and driving the said chain, the vertical shaft *l* to which the sprocket is secured, the worm on said shaft for transmitting power to the carriage-advancing mechanism, the gear-wheel on said shaft, and the two vertical engine-shafts having their axes of rotation in a plane transverse to the carriage-frame and in front of the said driving sprocket-wheel, the casings of said motors being arranged within the longitudinal planes of the sides of said bed-frame, the rotary pistons connected with and rotating said shafts and driving-pinions on said shafts engaging with and driving said gear-wheel *l* on the sprocket-shaft, substantially as set forth.

3. In a mining-machine, the combination of the bed-frame, a carriage-frame adapted to move forward and back thereon, an endless cutter-chain on the carriage-frame, two rotary elastic-fluid engines arranged side by side on the carriage-frame and having the axes of their rotary-engine shafts in a vertical plane transverse to the said carriage-frame, and power-transmitting mechanism interposed between said rotary-engine shafts and both the cutter-chain and the bed-frame and adapted both to actuate the said cutter-chain and to cause the carriage to move forward and back along the said bed-frame.

4. In a mining-machine, the combination with the bed-frame, the carriage-frame adapted to move forward and back thereon, and the endless cutter-carrier on the carriage-frame, of two rotary elastic-fluid engines arranged side by side on the carriage-frame and having the axes of their rotary-engine shafts in a vertical plane transverse to the said carriage-frame, a vertical counter-shaft common to both of said engine-shafts, gearing similarly connecting each of said rotary-engine shafts to said counter-shaft, power-transmitting mechanism interposed between said counter-shaft and said cutter-carrier, and power-transmitting mechanism interposed between said counter-shaft and said bed-frame adapted to cause the carriage to move forward and back along the said bed-frame.

5. In a mining-machine, the combination with a bed-frame, a carriage-frame arranged to move forward and back thereon and an endless cutter-carrier on the carriage-frame, of two rotary elastic-fluid engines arranged side by side on the carriage-frame and having the axes of their rotary-engine shafts parallel with each other, a counter-shaft common to both of said engines, gearing similarly connecting each of said rotary-engine shafts to said counter-shaft, power-transmitting mechanism interposed between said counter-shaft and said cutter-carrier, and power-transmitting mechanism interposed between said counter-shaft and said bed-frame and adapted to cause the said carriage to move forward and back along said bed-frame.

818,509. **CORN-LIFTING DEVICE.** JAMES M. MILLER, Rushville, Ind. Filed Oct. 4, 1905. Serial No. 281,340.

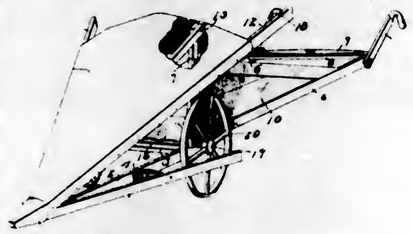

Claim.—1. A device for lifting down corn consisting of a frame including a plurality of bars meeting at a common point, a hood covering the upper portion of said frame, and a wheel-supported push-frame connected therewith.

2. A device for lifting down corn including a base-plate composed of forwardly-converging members meeting at a common point, a top frame composed of forwardly-converging members extended to the meeting-point of the members of the base-frame, and a hood covering the members of the top frame.

3. A device for lifting down corn including a wedge-shaped base-frame and an inclined wedge-shaped top frame the side members of which meet at the forward extremity of the base-frame; the rear ends of the side members of the top frame being spaced apart wider than the rear extremity of the base-frame.

4. A corn-lifting device comprising a push-frame including wheel-supported side members, and a forwardly-tapering and downwardly-inclined hood-covered lifting-frame.

5. A corn-lifting device including a hood-covered lifting-frame, and a wheel-supported push-frame connected therewith.

6. A corn-lifting device including a lifting-frame, a push-frame connected therewith, handles connected with the push-frame, and supporting-wheels.

7. A corn-lifting device including a lifting-frame, a wheel-supported push-frame connected therewith and having side members, a cross-bar connecting the side members of the push-frame, draft means connected with the cross-bar, and handles connected with the side members of the push-frame.

8. A corn-lifting device including a forwardly-pointed lifting-frame, a supporting-wheel under the forward extremity of said frame, a wheel-supported push-frame connected with the lifting-frame, and handles connected with the push-frame for manipulating the device.

818,510. **MACHINE FOR GRINDING CUTLERY-BLADES AND THE LIKE.** THOMAS R. MOORE, Walden, N. Y. Filed July 31, 1905. Serial No. 271,886.

Claim.—1. In a machine for grinding blades, a grinding-ring, a carriage for holding the blade-blank, means for holding said blank against said ring until the latter has cut into the blank to sufficient depth, and means for then moving said carriage to carry said blank along said ring, whereby the edge and face of the latter are enabled to complete the grinding operation; substantially as set forth.

2. In a machine for grinding blades, a grinding-ring, a carriage for holding the blade-blank, means for holding said blank against said ring until the latter has cut into the blank to sufficient depth, means for then moving said carriage to carry said blank along and against said ring to complete the grinding operation, and means for setting said blank during the movement of said carriage to control the taper or finish to be imparted to the blade; substantially as set forth.

3. In a machine for grinding blades, a pair of facing grinding-rings, a carriage for holding two blade-blanks and adapted to be moved between said rings, means for holding said blanks against said rings until the latter have cut into the blank to sufficient depth,

means for then moving said carriage to carry said blanks along said ring to complete the grinding, and means for setting said blanks during the movement of said carriage to control the taper or finish to be imparted to the blades; substantially as set forth.

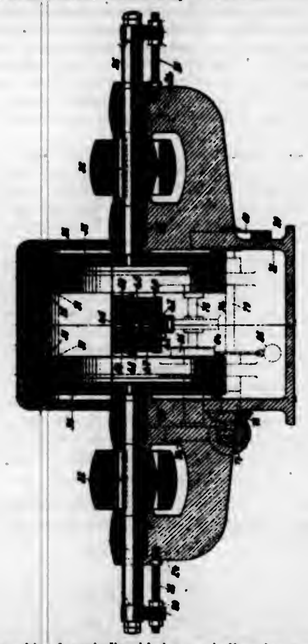

4. In a machine for grinding blades, a grinding-ring, a carriage having a holder for the blade-blank, means for yieldingly pressing said holder to hold the blank against said ring until the latter has cut into the blank to sufficient depth, and means for then moving said carriage and holder to carry said blank along said ring to complete the grinding; substantially as set forth.

5. In a machine for grinding blades, a grinding-ring, a carriage having a holder for the blade-blank, means for yieldingly pressing said holder to hold the blank against said ring until the latter has cut into the blank to sufficient depth, means for then moving said carriage and holder to carry said blank along said ring to complete the grinding, and means for setting said blank during the movement of said carriage to control the taper or finish to be imparted to the blade; substantially as set forth.

6. In a machine for grinding blades, a pair of grinding-rings, a carriage having holders for two blade-blanks, means for yieldingly pressing said holders to hold the blanks against said rings until the latter have cut into the blanks to sufficient depth, means for then moving said carriage and holders to carry said blanks along said rings to complete the grinding, and means for guiding said holders during the movement of said carriage to control the taper or finish to be imparted to the blades; substantially as set forth.

7. In a machine for grinding blades, a grinding-ring, a carriage having a pivoted bar thereon on the outer side of which is a holder for a blade-blank, a pressure-bar on the inner side of said pivoted bar, and a spring intermediate said bars, combined with means for pressing against said pressure-bar with a gradually-increasing pressure for a definite period to thereby force the blade-blank against said ring, and means for then moving said carriage, with said blank still against said ring, to carry the blank along the ring to complete the grinding; substantially as set forth.

8. In a machine for grinding blades, a grinding-ring, a carriage having a pivoted bar thereon on the outer side of which is a holder for a blade-blank, a pressure-bar on the inner side of said pivoted bar, and a spring intermediate said bars, combined with means for pressing against said pressure-bar with a gradually-increasing pressure for a definite period to thereby force the blade-blank against said ring, means for then moving said carriage, with said blank still against said ring, to carry the blank along the ring, and means for guiding said pivoted bar during the travel of said carriage to control the taper or finish to be imparted to the blade; substantially as set forth.

9. In a machine for grinding blades, a pair of grinding-rings, a carriage having holders for two blade-blanks, one of said holders having a flat face and the other a face conforming to the ground side of a blank, means for holding said blanks against said rings until the latter have cut into the blanks to a sufficient depth, and means for then moving said carriage to carry said blanks along said rings to complete the grinding; substantially as set forth.

10. In a machine for grinding blades, a pair of grinding-rings, a carriage having holders for two blade-blanks, one of said holders having a flat face and the other a face conforming to the ground side of a blank, means for holding said blanks against said rings until the latter have cut into the blanks to a sufficient depth, means for then moving said carriage to carry said blanks along said rings to complete the grinding, and means for guiding said holders during the movement of the carriage to control the taper or finish to be imparted to the blades; substantially as set forth.

11. In a machine for grinding blades, a pair of grinding-rings, a bar stationary between said rings, a carriage-bar mounted on said stationary bar, a pin and latch for locking said bars together at the initial position of said carriage-bar, and a pair of blade-blank-holding bars carried by said carriage-bar, combined with a sliding bar adapted to move between said holding-bars and during the first part of its movement press the blanks against said rings and then on its continued movement to free said latch and push said carriage-bar to carry said blanks along against said rings, and means for actuating said sliding bar; substantially as set forth.

12. In a machine for grinding blades, a pair of grinding-rings, a bar stationary between said rings, a carriage-bar mounted on said stationary bar, a pin and latch for locking said bars together at the initial position of said carriage-bar, and a pair of blade-blank-holding bars carried by said carriage-bar, combined with a sliding bar adapted to move between said holding-bars and during the first part of its movement press the blanks against said rings and then on its continued movement to free said latch and push said carriage-bar to carry said blanks along against said rings, means for effecting the forward travel of said sliding bar, and means for automatically returning said sliding bar to its initial position, leaving the carriage-bar in its forward position; substantially as set forth.

13. In a machine for grinding blades, a pair of grinding-rings, a bar stationary between said rings, a carriage-bar mounted on said stationary bar, a pin and latch for locking said bars together at the initial position of said carriage-bar, and a pair of pivoted bars mounted on said carriage-bar and having blade-blank holders on their outer sides and spring pressure-bars on their inner or facing sides, combined with a sliding bar guided in said stationary bar and having a pin extended upwardly through a slot in said carriage-bar and between said pivoted bars, and means for actuating said sliding bar, said sliding bar with its pin being adapted during the first part of its movement to engage said pressure-bars and press the blanks against said rings and then on its continued movement to free said latch and push said carriage-bar to carry said blanks along against said rings; substantially as set forth.

14. In a machine for grinding blades, a pair of grinding-rings, a bar stationary between said rings, a carriage-bar mounted on said stationary bar, a pin and latch for locking said bars together at the initial position of said carriage-bar, and a pair of pivoted bars mounted on said carriage-bar and having blade-blank holders on their outer sides and spring pressure-bars on their inner or facing sides, combined with a sliding bar guided in said stationary bar and having a pin extended upwardly through a slot in said carriage-bar and between said pivoted bars, means for effecting the forward travel of said sliding bar, and means for automatically returning said sliding bar from its forward to its initial position, leaving said carriage-bar in its forward position, said sliding bar with its pin being adapted during the first part of its movement to engage said pressure-bars and press the blanks against said rings and then on its continued movement to free said latch and push said carriage-bar to carry said blanks, along against said rings; substantially as set forth.

15. In a machine for grinding blades, a pair of grinding-rings, a carriage having a pair of pivoted bars thereon on the outer sides of which are holders for the blade-blanks, means for yieldingly pressing said pivoted bars outwardly during a stationary condition of said carriage for a definite period for enabling said rings to act against the blanks, means for then moving said carriage and bars to carry the blanks along against said rings, and adjustable formers for control-

ling the relation of the blanks to the said rings during the travel of said carriage; substantially as set forth.

16. In a machine for grinding blades, a pair of grinding-rings, a carriage having a pair of pivoted bars thereon on the outer sides of, which are holders for the blade-blanks, means for yieldingly pressing said pivoted bars outwardly during a stationary condition of said carriage for a definite period for enabling said rings to act against the blanks, means for then moving said carriage and bars to carry the blanks along against said rings, and adjustable formers for controlling the relation of the blanks to the said rings during the travel of said carriage, said formers comprising pivoted plates against which said pivoted bars are moved and adjusting-screws to set said plates and being mounted on a stationary part of the machine; substantially as set forth.

818,511. **BRAKE-OPERATING MECHANISM FOR CARS.** JOHN O. NEKERK, Chicago, Ill. Filed Aug. 5, 1905. Serial No. 272,967.

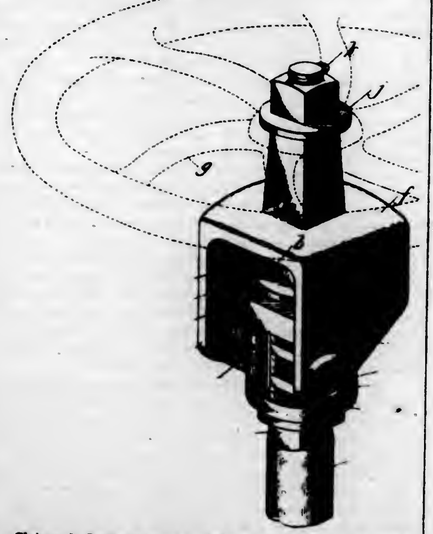

Claim.—1. In an apparatus of the class described, the combination of a brake-shaft adapted to be operatively connected with the brake mechanism of a car, a shouldered sleeve mounted upon the shaft in non-rotatable relation thereto, and shaft-operating mechanism mounted in rotatable relation to the shaft movable into and out of engagement with the shouldered sleeve and adapted to be held in non-rotatable relation to the shaft thereby.

2. In an apparatus of the class described, the combination of a brake-shaft adapted to be operatively connected with the brake mechanism of a car, a brake-shaft-operating wheel, a bracket mounted in fixed relation to such operating-wheel, a shouldered sleeve member operating shoulder mechanism upon the shaft in non-rotatable relation thereto, rotatable supporting-sleeve mechanism encircling the shouldered sleeve member and pivotally connected with such bracket adapted to permit the bracket to be moved into and out of operative engagement with the shouldered sleeve member and permit the rotation of the bracket with relation to the shaft when in lowered position.

3. In an apparatus of the class described, the combination of a brake-shaft provided with a squared end portion, a lower supporting-sleeve and an upper shouldered sleeve mounted in non-rotatable relation to such shaft, a supporting-sleeve rotatably mounted between the shouldered portion of the upper shouldered sleeve and the lower sleeve, bracket mechanism pivotally connected with such rotatable sleeve, and an operating-wheel mounted upon and movable with such bracket mechanism.

4. In an apparatus of the class described, the combination of a brake-shaft provided with a squared end portion, a sleeve provided with a lower annular portion and an upper squared or shouldered portion mounted in non-rotatable relation to the squared portion of such shaft, a sleeve rotatably mounted upon the annular portion of such shouldered sleeve, a bracket pivotally connected with such rotatable sleeve, and an operating-wheel mounted upon and movable with such bracket into and out of operative position.

5. In an apparatus of the class described, the combination of a brake-shaft provided with shoulder mechanism thereon, a supporting-sleeve rotatably mounted upon such shaft adjacent to the shoulder mechanism, a bracket pivotally connected with such rotatable sleeve and provided with side portions movable into and out of engagement with the shoulder mechanism of the shaft, and a brake-shaft-operating member mounted upon such pivoted bracket and movable therewith.

6. In an apparatus of the class described, the combination of a brake-shaft, a split sleeve rotatably mounted and provided with integral trunnions, a bracket provided with perforations for receiving such trunnions and pivotally mounted upon such split-sleeve member, operating-shoulder mechanism in fixed relation to the brake-shaft, and an operating-wheel mounted upon and movable with the bracket, such bracket being adapted to engage the operating-shoulder mechanism of the shaft when in raised position and being rotatable with relation to the shaft when in lowered position.

7. In an apparatus of the class described, the combination of a brake-shaft provided with a squared end portion and an annular supporting-shoulder portion, a shouldered operating-sleeve mounted upon and in fixed relation to such shaft and having an outer annular bearing portion, a supporting-sleeve rotatably mounted upon the annular bearing portion of such shouldered operating-sleeve, a bracket pivotally connected with the rotatable sleeve and movable into and out of engagement with the shouldered operating-sleeve, and a brake-wheel mounted upon and movable with such bracket.

818,512. **CIRCUIT-CLOSER FOR TELEGRAPH-KEYS.** HERBERT R. NEVENS, Portland, Me. Filed June 14, 1905. Serial No. 265,280.

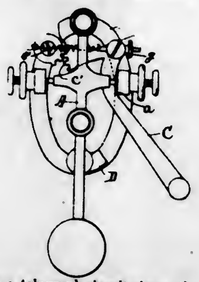

Claim.—1. In a telegraph circuit-closer, the combination of a circuit-closing lever and a spring arranged to hold said lever in its extreme open position and to close it when moved from said open position.

2. In a telegraph circuit-closer the combination of a circuit-closing lever and a spiral spring for closing said lever fixed at one end and secured to said lever at the other end, said spring located in line with the pivotal center of said lever when the same is in its extreme open position.

3. In a telegraph circuit-closer, the combination of a circuit-closing lever, a stop for limiting its opening movement and a spring arranged to hold said lever against said stop and to close it when moved from said stop.

4. In a telegraph circuit-closer, the combination of a compound circuit-closing lever composed of a larger circuit-closing lever proper and a small auxiliary lever and a spiral spring for closing said lever fixed at one end and having the other end secured to said auxiliary lever said spring located in line with the pivotal center of said small lever when the lever is in its extreme open position.

5. In a telegraph circuit-closer the combination of a circuit-closing lever proper having a segment thereon, a pinion engaging said segment and a spiral spring for closing the lever fixed at one end and having the other end secured to said pinion said spring located in line with the pivotal center of said pinion when the lever is in its extreme open position.

818,518. **SINGLE-TRIGGER MECHANISM FOR GUNS.** GARRET B. CUTHBERT, New York, N. Y. Filed Apr. 27, 1903. Serial No. 154,288.

Claim.—1. In a gun a safety device which consists of a shoulder or projection on the frame of the gun and a longitudinally-movable tripping member engaging with the sear, which is adapted to be interposed between said shoulder or projection and the end of the sear so that the sear cannot be released and means for moving said tripping member out of engagement with said shoulder or projection so that the mechanism can be fired, substantially as and for the purposes described.

2. In a gun a safety device which consists of a shoulder or projection on the frame of the gun, a sear and a longitudinally-movable tripping member and means for interposing said tripping member between such shoulder or projection and the end of the sear and means for moving said tripping member out of engagement with said shoulder or projection so that the mechanism can be fired, substantially as and for the purposes described.

3. In a safety device for double-barreled guns, the combination with a shoulder on the frame of the gun of a sear a movable tripping member engaging with the sear and automatic means for moving said tripping member into engagement with said shoulder when the firing mechanism is cocked and automatic means for moving such tripping member out of engagement with said shoulder when the other sear has been tripped, substantially as and for the purposes described.

4. In a safety device for double-barreled guns, the combination with separate firing mechanisms for each barrel, including in each mechanism a hammer, a sear and a tripping member in engagement with the sear of a shoulder on the frame of the gun, one of said tripping members being adapted to be moved into engagement with said shoulder and lock said sear so that it cannot be tripped, automatic means for moving said tripping member into engagement with said shoulder when the firing mechanism is cocked and automatic means for moving said tripping member out of engagement with said shoulder when the second sear is tripped, substantially as and for the purposes set forth.

5. In a single trigger, the combination with a plurality of firing mechanisms in which are included hammers and sears, of a single trigger, two tripping members engaging respectively with said sears and a swinging member pivoted to the frame of the gun, one of said tripping members being pivoted at its forward end to the frame of the gun and the second tripping member being pivoted at its rear end to said swinging member and means whereby the movement of the first tripping member is communicated to the swinging member and the second tripping member, and the second tripping member is shifted into engagement with the single trigger, substantially as and for the purposes described.

6. In a single trigger, the combination with a plurality of firing mechanisms in which are included hammers and sears, of a single trigger, a tripping member adapted to engage with one of said sears and pivoted at its forward end to the frame of the gun, a second tripping member engaging with the second sear and pivoted at its rear end with a swinging member pivoted to the frame of the gun and means whereby the first tripping member is depressed when the sear with which it is in engagement is tripped and the second tripping member is shifted backward into engagement with the trigger mechanism, substantially as and for the purposes described.

7. In a single trigger, the combination with a plurality of firing mechanisms in which are included hammers and sears, of a single trigger, two tripping members engaging respectively with said sears and intermediate mechanism engaging with both of said tripping members and means whereby one of the tripping members is forced downward when the sear with which it is engaged is tripped and the second tripping member is forced backward and into engagement with the trigger mechanism, substantially as and for the purposes described.

8. In a single-trigger mechanism, the combination with a plurality of firing mechanisms in which are included hammers and sears, of a single trigger, two tripping members engaging respectively with said sears and intermediate mechanism engaging with both of said tripping members and means whereby one of the tripping members is forced downward when the sear with which it is engaged is tripped and the second tripping member is forced backward and into engagement with the trigger mechanism, substantially as and for the purposes described.

9. In a single-trigger mechanism, the combination with a plurality of firing mechanisms, in which are included hammers and sears, of a single trigger, tripping members engaging respectively with said sears, one of which is pivoted at its forward end to the frame of the gun and the other at its rear end to a swinging member supported on the frame of the gun, means whereby one of the tripping members is forced downward when the sear with which it is in engagement is tripped and means whereby the second tripping member is forced backward and into engagement with the trigger mechanism when the first tripping member is forced downward, substantially as and for the purposes described.

10. In a single-trigger mechanism, the combination of a plurality of firing mechanisms, in which are included hammers and sears, of a single trigger, a tripping member adapted to engage with one of said sears and pivoted at its forward end to the frame of the gun, a second tripping member engaging with the second sear and pivoted at its rear end to a swinging angular plate pivotally mounted on the frame of the gun, means for depressing the first sear and tripping member when the first sear is tripped, and intermediate mechanism whereby the second tripping member is shifted backward and into engagement with the trigger mechanism by the downward movement of the first sear and its tripping mechanism when the first sear is tripped, substantially as and for the purposes described.

11. In a single-trigger mechanism, the combination with a sear of a tripping member engaging therewith, a second sear and a second tripping member engaging with said second sear and a member pivoted to the frame of the gun and engaging with both of said tripping members and adapted to transmit motion from the first tripping member to the second tripping member, substantially as and for the purposes described.

12. In a single-trigger mechanism, the combination with a plurality of firing mechanisms, in which are included hammers and sears, of two tripping members engaging respectively with said sears, a swinging member pivoted to the frame of the gun, one of such tripping members being pivoted at its forward end to the frame of the gun and a second tripping member being pivoted at its rear end to said swinging member and the first tripping member being also mechanically connected to said swinging member, substantially as and for the purposes set forth.

13. In a single-trigger mechanism, the combination with a plurality of firing mechanisms, in which are included hammers and sears, of two tripping members respectively engaging with said sears, a swinging member pivoted to the frame of the gun, one of said tripping members being pivoted at its forward end to the frame of the gun and the hammer of the firing mechanism with which said tripping member cooperates being so cut away that the rear of the sear is forced downward when the mechanism is fired and the second tripping member being pivoted at its rear end to said swinging member and the first tripping member being also in mechanical connection with said swinging member so that any movement of the first tripping member will impart movement to the swinging member and through it to the second tripping member, substantially as and for the purposes described.

14. In a single-trigger mechanism, the combination with a plurality of firing mechanisms in which are included hammers and sears, one of said hammers being cam-shaped so that when the hammer has fallen the rear end of the sear will be depressed, of a tripping member engaging with such sear and pivoted at its forward end to the frame of the gun, a second tripping member engaging with the second sear and pivoted at its rear end to a swinging member pivotally supported on the frame of the gun and a single trigger constituting means whereby the second tripping member is forced out of engagement with the single trigger when the firing mechanisms of both barrels are cocked and moved into engagement with the single trigger by the tripping of the first sear, substantially as and for the purposes described.

818,514. **APPARATUS FOR APPLYING PIGMENT TO ENGRAVED ENDS OF PHONOGRAPH-RECORDS.** JOHN F. OTT, Orange, N. J., assignor to New Jersey Patent Company, Orange, N. J., a Corporation of New Jersey. Filed Sept. 23, 1904. Serial No. 225,324.

Claim.—1. In a machine for applying pigment to phonograph or other sound records, the combination with means for carrying and rotating a cylindrical record, of a pigment-applying roller normally out of engagement with the record but adapted to be engaged with

the end of the same and means for applying pigment to said roller, substantially as set forth.

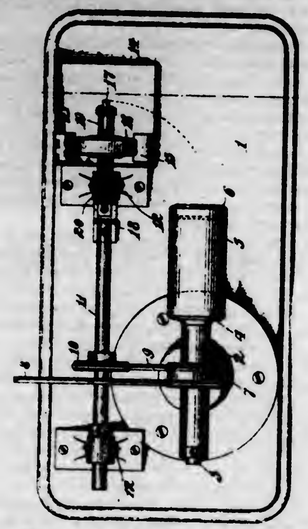

2. In a machine for applying pigment to phonograph or other sound records, the combination with a mandrel on which the record is held frictionally, of a pigment-applying roller normally held out of engagement with the record but movable into engagement with the end thereof and means for applying pigment to said roller, substantially as set forth.

3. In a machine for applying pigment to phonograph or other sound records, the combination with a mandrel carrying a phonograph-record, of a pigment-applying roller normally out of engagement with said record, but movable into engagement therewith, means for applying pigment to said roller and a wiper engaging the roller during the application of the pigment to the same, substantially as set forth.

4. In a machine for applying pigment to phonograph or other sound records, the combination of a mandrel carrying a phonograph-record, a pigment-supply roller, a pigment-tank in which said supply-roller dips, and a pigment-applying roller normally in contact with the supply-roller, but movable into engagement with the end of the record, substantially as set forth.

5. In a machine for applying pigment to phonograph or other sound records, the combination of a mandrel carrying a phonograph-record, a pigment-supply roller, a pigment-tank in which said supply-roller dips, a pigment-applying roller normally in contact with the supply-roller but movable into engagement with the record, and a wiper with which the applying-roller is normally engaged by the rotation of the supply-roller, substantially as set forth.

6. In a machine for applying pigment to phonograph or other sound records, the combination of a mandrel carrying a phonograph-record, a pivoted arm, a pigment-applying roller longitudinally adjustable on said arm and normally out of engagement with the record, but adapted to be engaged with the same, and means for applying pigment to said roller, substantially as set forth.

7. In a machine for applying pigment to phonograph or other sound records, the combination of a mandrel carrying a phonograph-record, a pivoted arm, a pigment-applying roller longitudinally adjustable on said arm and normally out of adjustment with the record, a pigment-tank, and a supply-roller for furnishing pigment to said applying-roller, substantially as set forth.

8. In a machine for applying pigment to cylindrical sound-records, the combination of a rotary record-support, a pivoted arm, a pigment-applying roller slidable on said arm, and a spring for restoring said roller to its normal position on said arm, substantially as set forth.

9. In a machine for applying pigment to cylindrical sound-records, the combination of a rotary record-support, and a support carrying a pigment-applying roller, said supports being capable of relative movement to bring the roller into and out of engagement with the end of the sound-record, substantially as set forth.

10. In a machine for applying pigment to cylindrical sound-records, the combination of a rotary record-support, a support carrying a pigment-applying roller, said supports being capable of relative movement to bring the roller into and out of engagement with the end of the sound-record, and means for adjusting said roller in the direction of its axis, substantially as set forth.

813,515. TROLLEY-SUPPORTING DEVICE. ALEXANDER PALMER, Columbus, Ohio, assignor to Joseph A. Jeffrey, Columbus, Ohio. Filed Dec. 2, 1897. Renewed Apr. 11, 1900. Serial No. 12,451.

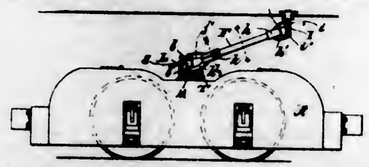

Claim.—1. The combination with a car of a current-collecting trolley adapted to bear horizontally or laterally against a conductor, a carrier for the trolley adapted to swing around a vertical axis, and to be reversed from a forward position to a rearward position, a tension-spring, permanently connected to said carrier and arranged substantially as set forth to exert uniform tension on the carrier, whether the carrier is in its forward position or in its rearward position, substantially as set forth.

2. The combination with a car, and a current-collecting trolley adapted to bear horizontally or laterally against a conductor, of a carrier for the trolley adapted to swing around a vertical axis to reverse the trolley from a forward position to a rearward position, a tension-spring having one end stationarily fixed in position and its other end adapted to apply power to and vibrate with said carrier about its axis whereby the trolley will be held with a uniform pressure against the conductor whether it is in its forward position or in its rearward position, substantially as set forth.

3. The combination with an electric car or locomotive, and a current collecting and transmitting device having a trolley adapted to bear laterally against a conductor, a carrier for said trolley arranged to vibrate horizontally and to reverse the trolley from a forward position to a rearward position, a tubular holder for said carrier supported by the car, a tension-spring connected with said carrier to hold the trolley against the conductor whether it is in its forward position or in its rearward position, and an arm movable with the carrier and adapted to limit the movement thereof in either direction, substantially as set forth.

4. The combination with a car and a current-collecting trolley adapted to bear laterally against a conductor, of a carrier for said trolley adapted to vibrate about a vertical axis to reverse the trolley from a forward position to a rearward position, a spring having its ends permanently connected, respectively, to a stationary post or lug and to an arm adapted to vibrate with the carrier, whereby said spring will hold the trolley against the conductor whether the trolley is in its forward position or in its rearward position, and means independent of the spring and conductor, for positively limiting the lateral movement of the trolley under the pull exerted by the spring, substantially as set forth.

5. The combination of a car, a trolley adapted to bear laterally against a conductor, a support for the trolley adapted to be rotated about a vertical axis to reverse the trolley from a forward position to a rearward position, and a spring arranged below the top of the car and connected with said rotary support for holding the trolley with a uniform tension against the conductor whether said trolley is in its forward position or in its rearward position, substantially as set forth.

6. The combination of a car, a carrier mounted on the car to vibrate about a vertical axis and having a short upwardly-extending standard, a trolley adapted to bear laterally against a conductor, a pole for said trolley consisting of two closely-adjacent parallel members, pivotally connected to said standard and trolley, whereby the latter will be held constantly in a horizontal position, and a spring for holding the trolley in proper vertical position, substantially as set forth.

7. The combination of a car, a trolley adapted to bear laterally against a conductor, a carrier for the trolley adapted to rotate about a vertical axis, and having a short upwardly-extending stem or standard, a pole interposed between said standard and trolley and consisting of two closely-adjacent parallel members each independently pivoted to said standard and to the trolley, a spring connected with one of said members of the trolley-pole for adjusting the trolley vertically, and a spring connected with the rotatable carrier to hold the trolley laterally against the conductor, substantially as set forth.

8. The combination with a car, and a trolley adapted to bear laterally against a conductor, of a horizontally-vibratable carrier for the trolley, a coiled spring having one end fixed in position and its other end adapted to be adjusted laterally through a path concentric with the axis of the carrier, and means permanently connected with the movable end of the spring and adapted to detachably engage with and transmit the power of the spring to said carrier, substantially as set forth.

9. The combination of an electric car or locomotive, a trolley adapted to bear laterally against an electric conductor, a rotatable support for said trolley adapted to move about a vertical axis to reverse the trolley from a forward position to a rearward position, a holder rigidly secured to the car-frame and adapted to receive said trolley-support, a coiled spring, a shaft or rod arranged at the axis of the rotatable trolley-support, and permanent connections between said shaft and the spring whereby the trolley will be held against the conductor with a uniform pressure in both its forward position and its rearward position, substantially as set forth.

10. The combination of an electric car or locomotive, a trolley adapted to bear laterally against a conductor, a horizontally-rotatable carrier for the trolley adapted to be turned to reverse the trolley from a forward position to a rearward position, a coiled spring arranged within a chamber in the car, a holder or support on the car for the trolley-carrier, a shaft or rod supported in said holder and extending into the spring-chamber, means for connecting said shaft or rod with the trolley-carrier, and means connecting said shaft or rod with the spring whereby the trolley will be held against the conductor with a uniform pressure whether the latter is in its forward position or in its rearward position, substantially as set forth.

11. The combination of an electric car or locomotive, a trolley adapted to bear laterally against a conductor, a horizontally-vibratable base for said trolley, a holder permanently fixed on the car and having at its upper end a socket adapted to receive said vibratable base, a shaft rotatably mounted in said holder and engaging with said vibratable base, a spring connected with said shaft to hold the trolley against the conductor, and a stop, as at R, mounted on said shaft and adapted to limit the lateral movement of the trolley, substantially as set forth.

12. The combination of an electric car or locomotive, a trolley adapted to bear laterally against a conductor, a horizontally-vibratable base for said trolley, a tubular holder permanently fixed on the car, and adapted to receive and support said vibratable base, a shaft rotatably mounted in said holder, a spring having one end connected with a lug projecting laterally from said shaft and acting to hold the trolley against the conductor, and a stop R secured to said shaft and projecting through a slot in the holder for limiting the lateral movement of the trolley, substantially as set forth.

13. The combination of an electric car or locomotive, a trolley adapted to bear laterally against a conductor, means for reversing said trolley from a forward position to a rearward position, a spring adapted to press the trolley laterally against the conductor whether it be in its forward position or in its rearward position, and a supplemental spring for maintaining the trolley in the horizontal planes of the conductor, substantially as set forth.

14. The combination of an electric car or locomotive, a trolley adapted to bear laterally against an electric conductor, a support for the trolley mounted on the car and having an inclined pole, said support being rotatable to reverse the pole from a forward-inclined position to a rearward-inclined position, a spring arranged to hold the trolley laterally against the conductor both when it is in its forward position, and when it is in its rearward position, a supplemental spring for adjusting the trolley vertically, and a positive stop for limiting the downward movement of the trolley, substantially as set forth.

15. The combination with a car, of a current-conducting trolley arranged to bear against the side of the conductor, a pole or carrier for the trolley comprising a pair of parallel bars arranged side by side to constitute a two-part pole F, a carrier to which the lower parts of the pole are pivoted, arranged to turn in a horizontal plane, means which tend to move the pole horizontally toward the conductor, and pivotal connecting means between the upper ends of the two parts of the trolley pole or carrier and the trolley, substantially as set forth.

16. The combination with a car, of a current-conducting trolley arranged to bear against the side of the conductor, a carrier for the trolley comprising a pair of parallel arms pivotally connected at their upper ends with the trolley, and a carrier for the trolley-pole arranged to turn in a horizontal plane, and to which the parts of the trolley-carrier are pivotally connected, the pivotal connections between the parts of the trolley pole or carrier and the trolley being parallel with the pivotal connections of the said carrier, and means which tend to move the trolley horizontally toward the conductor, substantially as set forth.

17. The combination of a trolley adapted to bear against the side of a conductor, an inclined pole or carrier for the same movable upward and downward means for maintaining the said trolley in the horizontal planes of the conductor and means for maintaining the horizontal position of said trolley during such movement of the pole or carrier.

18. The combination with a car and an electrical conductor, of a current-conducting trolley adapted to bear against the side of the conductor an inclined two-part pole or carrier for the same, the two parts of which are severally connected with the trolley and with the car and are relatively movable, as said pole rises and falls to preserve the proper relation of the trolley to the conductor and means for maintaining the said trolley in the horizontal planes of said conductor.

19. The combination with a trolley adapted to bear against the side of a conductor, of a two-part pole or carrier, the two parts of which are severally connected with the trolley and with the car and are relatively movable, and means for maintaining the trolley in the horizontal planes of the conductor, substantially as and for the purposes set forth.

20. The combination of a trolley having an upwardly and downwardly extending axis and adapted to bear laterally against a conductor, a pole or carrier for said trolley movable toward the conductor, means for maintaining the normal position of the trolley and its axis during the upward and downward movement of the carrier, and means for maintaining the said trolley in the horizontal planes of the conductor, substantially as set forth.

21. The combination of a trolley having an upwardly and downwardly extending axis, jointed supports for the trolley having a parallel movement adapted to maintain the normal position of the trolley and its axis during the elevation or depression of the trolley, means whereby said supports may turn to carry them to and from the conductor and means for maintaining the said trolley in the horizontal planes of the said conductor.

22. The combination with a trolley, of a carrier for the same having means for maintaining the parallelism of the trolley with its planes of action on the conductor during the bodily movement of the trolley across such planes, and means for maintaining the trolley in the horizontal planes of the conductor.

23. The combination with a side-running trolley, of a carrier for the same, means for maintaining the horizontal parallelism of the trolley with its planes of action on the conductor during the bodily movement of the trolley across the said planes, and means tending constantly to maintain the contact between the trolley and the conductor, substantially as set forth.

24. The combination with a laterally-acting trolley, of a carrier for the same comprising devices having a parallel movement for maintaining the horizontal position of the trolley, a spring for holding the trolley laterally against said conductor, and a spring for maintaining said trolley in the horizontal planes of said conductor.

25. The combination with an electrical conductor and an electrical contact device adapted to engage therewith, of an inclined carrier for said contact device having means for maintaining it in horizontal parallelism with its planes of action on said conductor during the bodily movement of the said contact device crosswise of such planes, a support for said carrier on which it is adapted to swing from a rearward to a forward position, and means for maintaining the said contact device in the horizontal planes of the said conductor.

26. The combination with a car and an electrical conductor, of a trolley or current-transmitter adapted to engage with said conductor, a support or bearing for said trolley arranged at one side thereof and a carrier for said bearing or support having a parallel movement for maintaining the said trolley in normal position, and means tending constantly to move said trolley into contact with said conductor.

27. The combination of a car, a trolley or current-transmitter, a support or bearing for the latter arranged at one side thereof, a trolley-support vibratable relative to the car and also relative to the said bearing to maintain the normal position of the trolley, and means tending constantly to move said trolley into contact with a conductor.

28. The combination with a car, of a current-conducting trolley

adapted to bear against the side of the conductor, a pole or carrier for the same, means tending constantly to move the pole horizontally toward the conductor, and means tending to maintain the pole normally at an inclination to the car, substantially as set forth.

29. The combination of a contact device having an upwardly and downwardly extending axis and adapted to bear laterally against a line conductor, a pole or carrier for said trolley adapted to move laterally relative to the conductor, and movable vertically on an axis transverse to the planes of engagement of said contact device with a conductor, and means tending normally to press said contact device upwardly, substantially as set forth.

30. The combination with a car and an electrical conductor, of a standard extending upwardly from said car and adapted to vibrate about both a horizontal and a vertical axis, an electrical contact device carried by said standard and adapted to engage with said conductor, a spring associated with said standard and adapted to govern its vibration in horizontal planes so as to accommodate said contact device to the lateral irregularities in said conductor, and a spring associated with said standard for controlling the vibration in vertical planes so as to accommodate said contact device to the vertical irregularities in said conductor.

31. The combination with a car of a current-conducting trolley adapted to bear against the side of a conductor, an inclined pole or carrier for the same mounted on the car to swing both vertically and horizontally, means tending constantly to move said pole horizontally toward the conductor, and means tending to control the vertical movements of said pole to maintain the trolley in the horizontal planes of the said conductor.

813,516. **FILTERING APPARATUS.** DANIEL M. PFAUTS, Germantown, Pa. Filed Dec. 27, 1904. Serial No. 238,255.

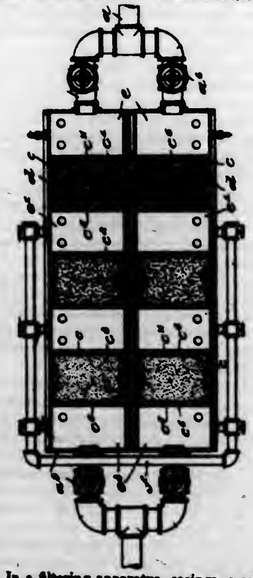

Claim.—1. In a filtering apparatus, casings, a series of filter-beds arranged in each of said casings forming chambers and having an inlet for water to be filtered and an outlet for filtered water, outlets in the bottom of each of said chambers, a pipe connecting the upper ends of certain of the chambers of both casings with each other, said pipe adapted to conduct partially or completely filtered water from certain of the chambers of one casing into certain of the chambers of the other casing and by the opening of certain of said outlets to permit the introduced water to divide to cause the same to pass through certain of said chambers and in opposite directions through contiguous filter-beds, without changing the downward flow of the same through the said casing.

2. In a filtering apparatus, casings, a series of filter-beds arranged in each of said casings forming chambers therein, an inlet for water to be filtered and an outlet for the filtered water leading into and from each casing and adapted to permit of the flow of water to be filtered in one direction therethrough, a pipe for cleansing partially surrounding both of said casings and connecting certain chambers with each other, outlets arranged in the bottom of said chambers opposite the inlets thereto from said pipe, said pipe and the outlet of one casing adapted, when opened, to permit of a flow of cleansing-water through certain of the chambers of said casing, and through contiguous filter-beds in opposite directions and in a transverse direction with respect to the flow of the water to be filtered.

3. In a filtering apparatus, casings forming receptacles for filter-beds, said filter-beds in conjunction with said casings forming chambers to permit of the separation of a portion of the impurities from the water by gravity, and free of said filter-beds, outlets arranged in the bottom of each of said chambers and adapted to form exits for impurities from the same and the filter-beds, a U-shaped pipe surrounding one end of each of said casings and connected with certain of the chambers thereof at the upper portion, said pipe adapted to permit of the introduction of partially or completely filtered water from one of the casings into the upper end or ends of one or more of certain of the chambers of the other of said casings to cause the same by the opening of certain outlets thereof to be divided, one portion flowing directly through a chamber and other portions in opposite directions through contiguous filter-beds, without changing the downward flow of the so-divided cleansing-water.

813,517. **WATER-FILTER.** DANIEL M. PFAUTS, Germantown, Pa. Filed May 13, 1905. Serial No. 260,095.

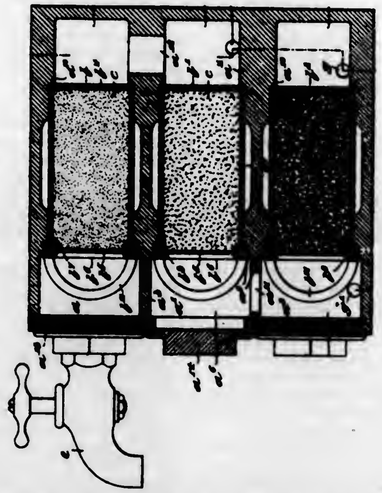

Claim.—1. In a filter, a housing divided by partition-walls into a series of superposed compartments, each divided into three chambers, a receptacle containing filtering media removably mounted in the intermediate chamber of said chambers to form a row of superposed free chambers at each end of said receptacles, an opening in each of the partition-walls opposite to each other and adapted to connect two superposed or end chambers with each other and to form a passage-way from one compartment to the other, an inlet and an outlet for water at each end of said housing and in the last chamber of the lowermost and in the first chamber of the uppermost compartment, said inlets and outlets adapted to reverse the flow of water through said filter-receptacles and the rows of superposed chambers, and said openings in said partition-walls, in conjunction with said chambers, adapted to permit of the alternate passing of water from opposite sides through said filter-receptacles within said housing.

2. In a filter, a housing divided by partition-walls into a series of superposed compartments, each divided into three chambers, receptacles containing filtering media removably mounted in the intermediate chamber of said chambers to form a row of superposed free chambers at each end of said receptacles, an opening in each of the partition-walls opposite to each other and adapted to connect two superposed or end chambers with each other to permit sediment precipitated to accumulate in one of said directly-connected chambers and to form a passage-way from one compartment to the other, an

inlet and an outlet for water at each end of said housing and in the last chamber of the lowermost and in the first chamber of the uppermost compartment, the inlet of one chamber and the outlet of the other of said chambers adapted when alternately opened to reverse the flow of water through said filter-receptacles and said chambers, and said openings in said partition-walls in conjunction with said chambers adapted to permit of the alternate passing of water from opposite sides through said filter-receptacles within said housing.

3. In a filter, a housing divided by partition-walls into a series of superposed compartments, each divided into three chambers, a receptacle containing filtering media removably mounted in the intermediate chamber of said chambers to form a row of superposed free chambers for the accumulation of sediment at each end of said receptacles, an opening in each of the partition-walls opposite to each other therein and adapted to connect two superposed or end chambers with each other to permit the sediment precipitated to accumulate in the lowermost one of said directly-connected chambers and to form a passage-way from one compartment to the other, an inlet and an outlet for water to be filtered at each end of said housing and in the last chamber of the lowermost chamber and in the first chamber of the uppermost compartment, the inlet of one chamber and outlet of the other of said chambers adapted when alternately opened to reverse the flow of water through said chambers within said housing and said openings in said partition-walls adapted to permit of the alternate passing of water from opposite sides through said filter-receptacles, and outlets for water arranged in each of the lower chambers of the connected chambers adapted to permit of the removal of the sediment therefrom.

4. In a filter, a housing divided by partition-walls into a series of superposed compartments, each divided into three chambers, tubes or cylinders closed at each end by a perforated disk holding filtering media in position therein and removably mounted in the intermediate chamber of said chambers to form a row of superposed free chambers for the accumulation of sediment at each end of said cylinders, an opening arranged in each of the partition-walls opposite each other and adapted to connect two superposed or end chambers with each other to permit the sediment precipitated therein to accumulate in the lower chamber of said directly-connected chambers and to form a passage-way from one compartment to the other, an inlet for water arranged in the last chamber of the lowermost and in the first chamber of the uppermost compartments respectively, and outlets for water arranged in each of the lower chambers of the connected chambers, said inlets and outlets for water adapted, when opened, to permit of the flow of water from opposite ends within said housing and of the removal therefrom of sediment from the lower chamber of each of the connected chambers.

5. In a filter, a housing divided by partition-walls into a series of superposed compartments, each divided into three chambers, tubes or cylinders closed at each end by a perforated disk holding filtering media in position therein and removably mounted in the intermediate chamber of said chambers to form a row of superposed free chambers for the accumulation of sediment at each end of said cylinders, an opening in each of the partition-walls opposite each other and adapted to directly connect two end chambers with each other to permit sediment precipitated to accumulate in the lower chamber of said connected chambers and to form in conjunction with said chambers a passage-way from one compartment to the other, an inlet and an outlet for water at each end of said housing and in the last chamber of the lowermost and in the first chamber of the uppermost compartments respectively, and an outlet for water in each of the lower chambers of the directly-connected superposed chambers, said inlets and outlets with the exception of the outlet of the first uppermost chamber adapted, when opened, to permit of the direct cleaning of the last of the lowermost chambers forming normally the entrance-chamber for water to be filtered containing the greatest amount of impurities and of the cleaning of the filter-beds and removal of precipitated impurities from the lower chambers of the connected superposed chambers by dividing the water entering the casing from opposite ends and flowing in opposite directions toward each other and permitting of the redivision of both portions so as to permit one portion to pass through the outlets of these chambers without passing through the filter-beds and of the other portion passing therethrough to reach said outlets.

6. A filter, consisting of a casting divided by partition-walls into a series of superposed compartments, each divided into three chambers, tubes or cylinders containing filtering media mounted in the intermediate chambers of said compartments, each of said intermediate chambers having a threaded portion at one end, a ring arranged at the threaded end of each of said cylinders having two threaded projections, the inner one adapted to receive the threaded end of a cylinder and the outer one adapted to connect the same with said intermediate chamber by engaging the threaded portion thereof.

7. A filter, consisting of a casting divided by partition-walls into a series of superposed compartments, each divided into three chambers, two of said chambers forming a shoulder between the same, tubes or cylinders containing filtering media mounted in the intermediate chambers of said compartments, each of said intermediate chambers having a threaded portion at one end, a ring arranged at the threaded end of each of said cylinders having two threaded projections forming an annular chamber and flanges projecting beyond said projections, a disk adapted to close the threaded end of a cylinder and to be held in position therein by the inner of said flanges, said inner threaded projection adapted to engage the threaded end of the cylinder and the outer threaded projection adapted to connect the cylinder with the intermediate chamber by engaging its threaded portion and the outer flange adapted to render the connection water-tight by engaging the shoulder formed between the first and intermediate chambers respectively of said compartments.

8. A filter, consisting of a casting divided by partition-walls into a series of superposed compartments, each divided into three chambers, two of said chambers forming a shoulder between the same, tubes or cylinders containing filtering media mounted in the intermediate chambers of said compartments, each of said intermediate chambers having a threaded portion at one end, a ring arranged at the threaded end of each of said cylinders having two threaded projections forming an annular chamber and flanges extending beyond said projections, a disk adapted to close the threaded end of the cylinder and to be held in position therein by the inner of said flanges, said inner threaded projection adapted to engage the threaded end of the cylinder and the outer threaded projection adapted to connect the cylinder with the intermediate chamber by engaging its threaded portion and the outer flange adapted to render this connection water-tight by engaging the shoulder formed between the first and intermediate chambers of said compartments, and a handle connected with each of said rings and adapted to permit of the disconnection of the filter-tube from its chamber to remove the same therefrom.

813,518. **WEATHER-STRIP.** JACOB H. PISOR, Electric, Mont. Filed Feb. 1, 1905. Serial No. 243,750.

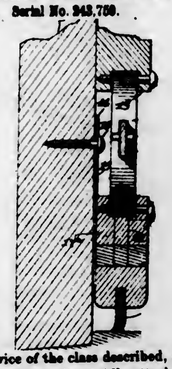

Claim.—1. A device of the class described, comprising in combination a door, a strip, means for rigidly attaching the same to the door, a plate, means for movably attaching the plate to a door, a weather-strip rigidly connected to the plate, means connecting the strip and plate whereby a closing movement of the door moves the plate and weather-strip into operative engagement, and means whereby the plate and weather-strip may be adjusted relative to the strip and door and at each end independently of the other.

2. A device of the class described, comprising a plate, a weather-strip rigidly connected to the plate, a rail connected with the plate, means whereby the rail may be adjusted at each end independently relative to the plate, a strip spaced from the rail, curved resilient members connecting the rail and strip in parallelism, and a bar connected to the middles of the resilient members and extending parallel with and somewhat beyond the rail and strip.

813,519. **AERIAL TOP.** ALBERT L. PLATT, Clinton, Ill. Filed June 20, 1905. Serial No. 266,121.

Claim.—An aerial top, comprising a tubular supporting-handle provided near its upper end with a transversely-disposed cord-holding guide-eye, and in its top edge in a higher plane than the eye with a downwardly-sloping drawing-kerf, said handle being also provided at its top edge with an enlarged housing-socket, a whirling member consisting of a spinning-stem lying within the bore of the supporting-handle, and a propeller-blade carried by said stem, and an operating-cord passing through the guide-eye and drawing-kerf and having its portion between these elements arranged about said stem in a single spiral wrap, the latter being arranged to operate in said housing-socket.

813,520. PEAT-MILL. FERDINAND A. PRITSCHAU, Toledo, Ohio, assignor to The Commercial Artificial Fuel Company, Toledo, Ohio, a Corporation of Arizona. Filed Apr. 24, 1905. Serial No. 257,065.

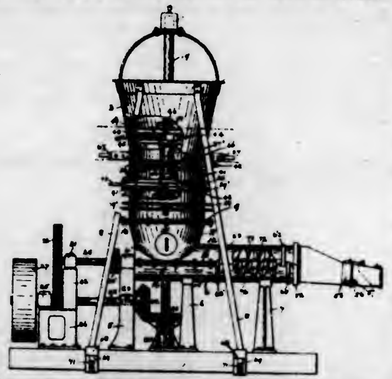

Claim.—1. In a disintegrating-mill, the combination with a hopper-casing, and a vertical shaft axial to the casing and revoluble therein, of a disintegrator comprising a stationary spider having a central journal-bearing for the shaft, and a plurality of arms extending radial from the bearing in a horizontal plane and secured by their outer ends to the wall of the casing, and a revolving spider having a central hub adapted to be fixedly mounted on the shaft, and a plurality of arms respectively extending tangential and eccentric from the hub, at intervals around the hub, in a plane parallel with the plane of the arms of the fixed spider, and, as respects direction of revolution, rearward of radial lines parallel with the arms, the arms of the spiders each having a plurality of pin-teeth at intervals of their length, the teeth of the revolving spider being located to pass through intervals between teeth of the stationary spider, and means to revolve the shaft toward the angles of the arms.

2. In a mill for reducing peat and other fibrous materials, the combination with a hopper-casing and a vertical shaft axial to the casing and revoluble therein, of knives secured at intervals to the wall of the casing, and extending inward radial to the shaft in a common plane transverse the shaft, and a shear-spider mounted on and revoluble with the shaft, said spider having a central hub portion by which it is mounted on the shaft, and a plurality of shear-blades extending at intervals tangential and eccentric from the hub in a plane parallel with the plane of the knives, adapting the edges of the shear-blades, as the shaft revolves, to progressively shear past the edges of the knives, from their outer toward their inner ends, with the edges of the blades forward as to the direction of movement, and rearward of radial lines parallel therewith.

3. In a mill for reducing peat and other fibrous earthy material, the combination with a hopper-casing and a vertical shaft axial to the casing and revoluble therein, of knives detachably secured at intervals in the wall of the casing, and having blade portions extending inward radial to the shaft in a common plane transverse the shaft, and handle portions extending outward from the casing, and a shear-spider having a central hub mounted and fixed on the shaft and a plurality of shear-blades extending at intervals tangential and eccentric from the hub in a plane parallel with the plane of the knives, with the edges of the blades forward as to the direction of movement, and rearward of radial lines parallel therewith, adapting the edges of the shear-blades to progressively shear past the edges of the knives from their outer ends toward the hub, as the shaft revolves.

4. In a mill for reducing peat and other fibrous earthy material, the combination of a hopper-casing having a cylindrical portion provided with a series of radial rectangular openings arranged in a series of horizontal planes, and, as respecting each plane, at regular intervals around the casing, and as respecting the series of planes in spiral order around the cylindrical portion, a vertical shaft axial to the cylindrical portion, knife-bars detachably secured in the openings radial to the shaft, and having inner portions provided with shearing edges, and outer handle portions by which the inner portions may be withdrawn from and inserted through the openings, and a series of shear-spiders one for each knife-plane, each having a central hub mounted and fixed on the shaft, and a plurality of bifurcated shear-blades extending at regular intervals, tangential and eccentric to the hub, with the edges forward as to the direction of revolution of the shaft and rearward of radial lines parallel therewith, and adapted as the shaft revolves to shear past the upper and lower edges of all the knife-bars extending in their plane.

5. In a mill for reducing peat and other fibrous earthy material, the combination with a hopper-casing mounted on a worm-casing, of a pair of worm-shafts revoluble in the worm-casing, and provided with intermeshing gear adapting one shaft to oppositely revolve the other at equal speed, and with complementary intersecting and co-acting worm-blades having opposite half-turn sections omitted in line with the axis of the hopper, a vertical pugging-shaft axial to the hopper and extending downward through the worm-casing between the worm-shafts in the interval of the omitted half-sections of the worm-blades, bearings for the upper and lower ends of the shaft, a gear-wheel mounted on the pugging-shaft, below the worm-casing, and a main driving-shaft having gear connection with the gear of the pugging-shaft and with one of the worm-shafts.

813,521. FOLDING COT AND CRADLE. MARTIN REILLY, Cheltenham, Pa. Filed July 22, 1905. Serial No. 270,961.

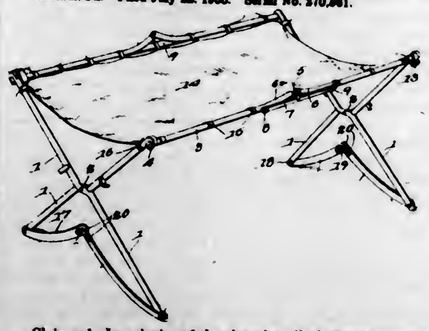

Claim.—1. In a device of the class described, the combination with the pivotally-connected leg members, of side bars, each formed of pivotally-connected sections, said side bars being pivotally connected to the legs, the meeting ends of the sections of the side bars having upturned end portions, latches connecting the side-bar sections, and a flexible cover having attaching-clips connected to the legs, the side-bar sections and the latches.

2. A device of the class described embodying crossed and pivoted leg members, centrally-hinged side bars pivoted to the upper ends of the leg members and having upward curves at each side of the hinges, and latches extending across and engaging the side bars at each side of the curves.

3. A device of the class described embodying crossed and pivoted leg members, one of which is provided with an offset portion at its upper end, centrally-hinged side bars pivoted to the upper ends of the leg members and having upturned curves at each side of the hinges, clips slidably mounted upon the side bar and arranged to engage and retain the offset portion of the leg member, and a latch extending across and engaging the side bars at each side of the curves.

4. In a device of the class described side bars pivoted intermediate their ends and having upturned curves at each side of the pivot, means extending across the curves to hold the bars rigid and means to support the bars.

5. In a device of the class described, the combination with crossed and pivotally-connected legs, of a sectional rocker formed of a pair of bars pivotally connected to the lower ends of the legs and adjustably connected to each other, said bars being adjustable to increase or decrease the distance between the lower ends of the legs when the rockers are employed as supports, and being further adjustable to act as braces when the lower ends of the legs rest directly on the floor or other supporting-surface.

813,522. PENCIL. FRANK L. ROUSSEAU, Chicago, Ill. Filed Apr. 24, 1905. Serial No. 257,080.

Claim.—A pencil comprising a casing, having a longitudinal bore, leads therein, a clutch member of soft pliable material, having an aperture intermediate thereof, adapted to be secured in the point of the casing, said aperture being of smaller diameter than the leads, thus preventing said leads from falling out of the bore of the pencil, a sleeve provided with internal screw-threads adapted to cut threads on the exterior surface of the casing when secured thereon, a thimble secured in the upper end of the said sleeve, a longitudinal extension rigidly secured to the inner end of said thimble, and when said sleeve, with the extension secured thereon, is screwed onto the casing, the extension will fit into the bore of the pencil and force the lead therein out through the clutch member in the point of the casing.

813,523. BRUSH-HOLDER FOR MOTORS OR GENERATORS. FRANK L. SIMMONS, Columbus, Ohio, assignor to Joseph A. Jeffrey, Columbus, Ohio. Filed May 20, 1903. Serial No. 157,980.

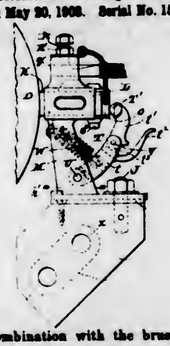

Claim.—1. The combination with the brush-holder and the brush, of the pivoted spring-held follower formed in two parts pivotally connected together on a pivot arranged transversely of said brush, the parts being provided with means for limiting the movement of one relative to the other in one direction, and the upper one being adapted to bear against the end of the brush, substantially as set forth.

2. The combination with the brush-holder, the brush, the spring-held follower pivoted below the brush-box and formed in two parts, the outer part being connected to the inner by a pivot and having its outer end adapted to move around the said pivot in one direction and locked against movement in the other direction when bearing against the brush, substantially as set forth.

3. The combination with the brush-holder and the brush, of the pivoted spring-held follower formed in two parts, the lower part being secured by a stationary pivot and having a handle, and the upper part being secured to the lower part by a pivot and locked against movement around said pivot when bearing against the brush, substantially as set forth.

4. The combination with the brush-holder, the brush, the lead-wire-binding lug adjacent to the brush, and the flexible conductor secured to the brush and to said binding-lug, substantially as set forth.

5. The combination with the brush-holder and the brush, of the lead-wire-binding lug adjacent to the brush, the intermediate flexible conductor secured to the binding-lug and secured to the brush by two-part clamp, substantially as set forth.

6. The combination with the brush-holder and the brush, of the lead-wire-binding lug integral with the brush-box, and the flexible conductor interposed between the brush and the binding-lug and bodily detachable from both, substantially as set forth.

7. The combination of the brush movable bodily toward the commutator, means for forcing the brush toward the commutator, a brush-holder formed of two parts, and a means for causing them both to tightly clamp the brush, flexible conductors, one connected with each of the clamping parts of the brush-holder, and a contact-plate to which both the said conductors are connected, substantially as set forth.

8. In a box-motor, the combination with the armature, the commutator and the inclosing field-sections having the closed end walls supporting the armature-shaft, the bearing for the shaft projecting inwardly from the closing wall, the insulator arranged to overlap the said bearing and secured from the exterior to the said closing wall, the bodily stationary brush-holder adjustably secured to the said insulator, and the spring-held follower adapted to bear against the brush in the holder, substantially as set forth.

9. The combination with the brush-holder and the brush, of the spring-held follower bearing against the brush and having at its end adjacent to the brush a cavity in which is situated an insulator held in position by the bent-in end walls of said cavity.

10. The combination with the brush-holder, the brush and the spring-held follower bearing against the brush, of the piece of insulating material T′ having the notches t^3 in its ends, the upper end of the said follower having a cavity t^4 into which the said piece of insulating material is fitted and the end walls of which are bent into the notches t^3 of said piece of insulating material to fasten it in place.

813,524. FRAME FOR WIND-SHIELDS FOR AUTOMOBILES. JAMES C. SIMS, Jr., and ANDREW P. OLSON, Chicago, Ill. Filed July 17, 1905. Serial No. 270,148.

Claim.—1. A rectangular frame for transparent wind-shields comprising interiorly-slotted metallic tubular parts and means for making one of said parts adjustable upon and detachable from its adjacent parts, in combination with grooved parts of elastic stuff fitted in the bore of the tubular parts the grooves in the elastic stuff being of less width than the slots of the tubular parts and arranged to coincide therewith and form an open, straight elastic groove around the interior of the frame, as specified.

2. A rectangular frame of the class mentioned comprising metallic tubular parts each provided with a slot along its inner side, one of said members having eyes and set-screws at its ends adapted to slide over and in line with the adjacent transverse parts, in combination with grooved parts of elastic stuff fitted in the bore of the tubular parts said groove being of less width than said slot.

3. A rectangular frame of the class mentioned comprising slotted tubular parts, one of said parts provided with eyes at its ends adapted to slide upon and in line with the adjacent transverse parts having greater length than the frame and provided with taper ends, in combination with the dashboard provided with eyes adapted to receive and hold the taper ends of said adjacent transverse parts, as specified.

4. A rectangular frame of the class mentioned comprising in combination slotted tubular parts one of said parts being provided

813,527. CLAM-SHELL BUCKET. JOHN C. SLOCUM, Columbus, Ohio, assignor to Joseph A. Jeffrey, Columbus, Ohio. Filed June 26

11. The combination of the bucket, the frame, two bucket-sup-

813,528. CLAM-SHELL BUCKET. JOHN C. SLOCUM, Columbus, Ohio, assignor to Joseph A. Jeffrey, Columbus, Ohio. Filed July 5,

4. A rectangular frame of the class mentioned comprising in combination slotted tubular parts one of said parts being provided with means whereby it is adapted to slide upon and in line with the adjacent transverse parts having greater length than the frame, grooved parts of elastic stuff fitted in the bore of the tubular parts and means for securing said sliding part in place upon said adjacent transverse parts with their ends projecting at one side of the frame to serve as a means of support therefor, as specified.

818,525. CYCLOMETER ATTACHMENT FOR TYPE-WRITING MACHINES. Gaman W. Simson, St. Louis, Mo. Filed July 17, 1905. Serial No. 270,162.

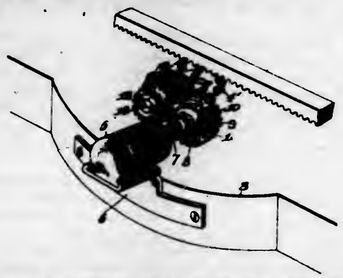

Claim.—1. A cyclometer attachment for type-writing machines comprising a cyclometer; a bracket supporting the same on the frame of the type-writer; a shaft communicating with and operating the cyclometer mechanism; an escapement mechanism of a type-writer, and means between the escapement mechanism and the cyclometer-shaft for operating the cyclometer, substantially as set forth.

2. In a cyclometer attachment for type-writers, the combination of a cyclometer provided with a shaft arranged to be operated thereby, a gear-wheel loosely mounted thereon, the escapement mechanism of the type-writer provided with a shaft and gear-wheel arranged to mesh with the loosely-mounted gear-wheel, and pawl-and-ratchet means between the loosely-mounted gear-wheel and the cyclometer-shaft, whereby the latter is operated when the escapement mechanism moves in one direction, but remains at rest when moved in the other direction.

3. A cyclometer attachment for type-writing machines comprising a cyclometer suitably supported to the frame of the type-writer; a shaft communicating with the internal mechanism of the cyclometer; a ratchet-wheel rigidly mounted upon said shaft; a gear-wheel loosely mounted upon said shaft an escapement mechanism of a type-writer, a shaft operated by the escapement mechanism provided with a gear-wheel arranged to mesh with the loosely-mounted gear-wheel, and a pawl connected to the latter arranged to operate the cyclometer-shaft in one direction.

818,526. GROUND CONNECTION FOR ELECTRIC CIRCUITS. Joseph B. Simpson, Washington, D. C., assignor of one-half to Cornelius R. Thomas, Washington, D. C. Filed Apr. 11, 1905. Serial No. 254,923.

Claim.—1. In a ground connection for electric circuits, a clamp including two metallic strips, one having an elongated slot, and the other being provided with a plurality of pairs of shoulders for engagement with the end wall of the slot, and means for clamping said strips around the pipe.

2. In a ground connection for electric circuits, a pipe-clamp including two metallic strips, one end of one of the strips having an elongated slot, and one end of the other strip being provided with a plurality of pairs of shoulders for engagement with the end wall of the slot, the opposite ends of the two strips being turned outward and bent to form reinforcing-ears, said ears being perforated, and a clamping-bolt extending through said ears and serving, also, as a binding-post for the current-conducting wire.

818,527. CLAM-SHELL BUCKET. John C. Slocum, Columbus, Ohio, assignor to Joseph A. Jeffrey, Columbus, Ohio. Filed June 20, 1903. Serial No. 162,033.

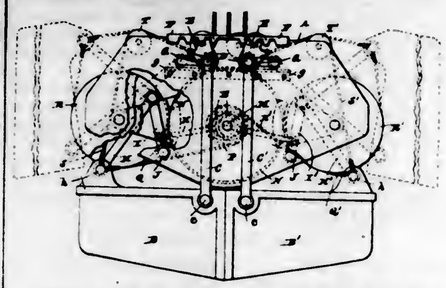

Claim.—1. The combination of the bucket, the frame, means for supporting the heel of the bucket, and the vibrating depending bucket-supporting link pivotally connected to the bucket at its front end, and having its upper end movable bodily inward and outward as the bucket moves inward and outward, respectively, substantially as set forth.

2. The combination of the bucket, the frame, means for supporting the heel of the bucket, and the depending vibratable, bucket-supporting link pivotally connected to the bucket at its front end, and means for positively moving the upper end of the link bodily inward and outward as the bucket moves inward and outward, respectively, substantially as set forth.

3. The combination of the bucket, the frame, means for supporting the heel of the bucket, and the depending vibratable bucket-supporting link pivotally connected to the bucket at its front end, and having its upper end bodily movable and supported on a roller movable relative to said frame, substantially as set forth.

4. The combination of the bucket, the non-rotary frame, means for supporting the heel of the bucket, and the depending vibratable, bucket-supporting link pivotally connected to the bucket at its front end and having its upper end bodily movable relative to said non-rotary frame and supported against friction, and means for positively moving the upper end of the link in and out relatively to said frame as the bucket moves, substantially as set forth.

5. The combination of the bucket, the non-rotary frame, the power mechanism, means for connecting the power mechanism to the heel of the bucket, and a swinging support sustaining the front end of the bucket and movable bodily relatively to the non-rotary frame, in and out, substantially as set forth.

6. The combination of the bucket, the frame, means for sustaining the heel of the bucket, the power mechanism connected to the heel of the bucket, the vertically-swinging support for the front end of the bucket, and means for positively moving the upper part of the swinging support bodily inward relative to the frame as the bucket closes, substantially as set forth.

7. The combination of a bucket, the non-rotary frame, means for supporting the heel of the bucket, the supporting-link having its lower end pivotally connected to the front end of the bucket and its upper end bodily movable inward and outward relative to the said non-rotary frame as the bucket moves, substantially as set forth.

8. The combination of the bucket, the non-rotary frame, means for supporting the front end of the bucket, heel-supporting means for the bucket, and means for moving bodily inward relatively to the said non-rotary frame both the front support for the bucket and the heel-supporting means as the bucket closes, substantially as set forth.

9. The combination of the bucket, the frame, a vertically-vibrating support for the front end of the bucket, having its upper end supported on an axis bodily movable relative to the frame, heel-supporting means for the bucket, and means for moving bodily inward relatively to the frame both the heel-supporting means and the upper end of the vertically-swinging support for the front end of the bucket, substantially as set forth.

10. The combination of the frame, the bucket, the power mechanism, means for supporting the front end of the bucket, the vertically-swinging support for the heel of the bucket, and means actuated by the power mechanism for positively drawing inward bodily relatively to the frame the axis of the heel-supporting means and the supporting means for the front end of the bucket as the bucket closes, substantially as set forth.

11. The combination of the bucket, the frame, two bucket-supporting links respectively connected pivotally to the front end and to the heel end of the bucket, and each being bodily movable at both ends, in and out as the bucket moves in and out, respectively and means for applying power for the closing of the bucket, substantially as set forth.

12. The combination of the bucket, the frame, the two bucket-supporting links respectively pivoted to the front of the bucket and to the heel of the bucket, and each link swinging vertically around an axis at its upper end, which is bodily movable in and out as the bucket moves in and out, respectively, substantially as set forth.

13. The combination of the bucket, the frame, and the bucket-supporting links respectively pivoted to the front end of the bucket and to the heel of the bucket, and each link being supported on an axis which moves inward when the bucket is closing and outward when the bucket is opening, substantially as set forth.

14. The combination of the frame, the bucket, the power mechanism, means for supporting the heel of the bucket, and the swinging arm for the front end of the bucket, and the support for the upper end of said arm interposed between it and the frame and bodily movable with the arm relatively to the frame, substantially as set forth.

15. The combination of the bucket, the frame, the support for the rear end of the bucket, the closing-rope connected to the rear end of the bucket, the wheel-like guide interposed between the bucket and the power mechanism for guiding the closing-rope, and the vertically-swinging link for the front end of the bucket having its upper end supported on an axis which moves bodily inward and outward as the bucket moves, substantially as set forth.

16. The combination of the bucket, the frame, the support for the front end of the bucket movable bodily on the frame, the support for the rear end of the bucket movable bodily relatively to the frame, the power-shaft, the closing-rope connected to the heel of the bucket, and the antifriction rope-guide disconnected from the rope and the bucket, substantially as set forth.

17. The combination of the bucket, the frame, a vertically-swinging link-like support for the heel of the bucket moving around a horizontal axis at its upper end, the power-shaft, the closing-rope connected to the power-shaft and extending therefrom to the heel of the bucket, the wheel-like guide for the closing-rope, the link supporting the front end of the bucket and having its upper end supported on the frame by a bodily-movable carrier, and means for causing the upper end of the link to move bodily inward and outward, substantially as set forth.

18. The combination of the bucket, the frame, the means for movably supporting the front end of the bucket, the two links or arms for supporting the heel of the bucket upon the frame, the power mechanism, the eccentrics and eccentric-rods connected to the two links and adapted to bodily move the axis which joins them inward and outward, substantially as set forth.

19. The combination of the bucket, the frame, the link or arm pivoted to the heel of the bucket, the link or arm pivoted to the frame and to the heel-link, the power mechanism means connecting the power mechanism with the said links to swing them outward and inward as the bucket moves, and a depending link pivotally connected to the front end of the bucket and having its upper end bodily movable inward and outward as the bucket moves, substantially as set forth.

20. The combination of the bucket, the frame, the link or arm pivoted to the heel of the bucket, the link or arm pivoted to the frame and to the heel-link, the power mechanism, means connecting the power mechanism with the said links to swing them outward and inward as the bucket moves, the closing-rope extending from the power mechanism to the heel of the bucket, and the depending link pivoted to the front of the bucket and pivotally supported from the frame, substantially as set forth.

21. The combination of the bucket, the frame, the supporting devices for the front end of the bucket, the supporting devices for the rear end of the bucket, and a rack and pinion interposed between one of said supporting devices and the frame to cause it to move bodily inward and outward as the bucket moves, substantially as set forth.

22. The combination of the bucket, the frame, the supporting devices for the front end of the bucket, the supporting devices for the rear end of the bucket, the rack and pinion interposed between one of said supporting devices and the frame to cause it to move bodily inward and outward as the bucket moves, and the power mechanism connected to the other supporting device of the bucket, substantially as set forth.

818,528. CLAM-SHELL BUCKET. John C. Slocum, Columbus, Ohio, assignor to Joseph A. Jeffrey, Columbus, Ohio. Filed July 6, 1904. Serial No. 215,548.

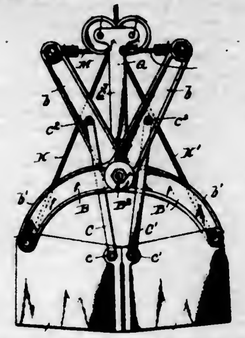

Claim.—1. In a grab-bucket the combination with two opposing bucket-sections, of the operating-levers each having its lower end pivotally connected to the rear portion of one of the bucket-sections, the levers being arranged to cross each other intermediate of their ends, the links connecting the front portions of each of said bucket-sections to the operating-lever for the opposing bucket-sections, and the ropes for closing the bucket-sections together connected to the upper end of said operating-levers and adapted to draw the said ends toward each other.

2. In a grab-bucket the combination with a pair of opposing bucket-sections, of the operating-levers each connected at its lower end to the rear portion of one of said bucket-sections, the levers for the respective sections crossing each other at points intermediate of their ends, the links connecting the front portions of each bucket-section with the operating-lever of the opposing bucket-section, the supporting-frame, the rope-guiding devices on said frame and the closing-rope connected to the upper end of each of said operating-levers and passing around said guiding devices on the frame and adapted to draw the upper ends of said levers together.

3. In a grab-bucket the combination with two opposing bucket-sections, of a transversely-arranged shaft, the operating-levers mounted on said shaft at points between their respective ends and having their lower ends connected with the said bucket-sections, the links connecting said bucket-sections with the operating-levers of the opposing bucket-sections, the frame having a bearing for said shaft, the rope-guiding devices carried by said frame and the closing-ropes for the mechanism extending around said guiding devices and connected with the upper ends of said levers.

4. In a grab-bucket the combination with two opposing bucket-sections of the operating-levers, each having its lower end connected to the rear portion of one of said bucket-sections, the said levers crossing each other at points between their respective ends, links connecting the front ends of each of said bucket-sections with the operating-lever for the opposing bucket-section, the rope-guiding devices supported between said operating-levers and the ropes each connected to the rear of one of said bucket-sections and extending around said guiding devices.

5. In a grab-bucket the combination with a pair of opposing bucket-sections, of the operating-levers pivotally connected together intermediate of their ends and each connected at its lower end to the rear of one of said bucket-sections, the links connecting the front end of each of said scoops or bucket-sections with the operating-lever for the opposing section, the rope-guiding devices secured to the upper ends of the operating-lever, the supporting-frame, the rope-guiding devices secured to said frame and the ropes associated with said guiding devices and arranged to draw the upper ends of said operating-levers toward each other.

6. In a grab-bucket the combination with the two opposing bucket-sections, of the transversely-arranged shaft, the operating-levers each connected at its lower end to the rear end of one of said bucket-sections and mounted between its ends upon said transverse shaft, the frame having a bearing for said shaft, the rope-guiding devices on said frame and the ropes having their ends secured to said frame, connected with the upper ends of said operating-levers and extending around said guiding devices.

7. In a grab-bucket the combination with a pair of opposing bucket-sections of the transverse shaft, the operating-levers mounted

on said shaft at points intermediate of their ends and having their lower ends connected with the rear ends of said bucket-sections, the links connecting the front ends of each of said bucket-sections with

ing movements of said bucket-sections, each connected to the operating-levers for one of said bucket-sections near their lower ends,

wheel-rim, a series of blocks or sections secured side by side to said band, a clamping-band encircling the blocks, the ends of both of said

stined-paper-holding spring wound around the pintle-bolt pivotally securing the members to the frame, one end of the main-

on said shaft at points intermediate of their ends and having their lower ends connected with the rear ends of said bucket-sections, the links connecting the front ends of each of said bucket-sections with the operating-lever for the opposing section, the frame having a bearing for the said shaft, the rope-guiding devices supported by each of said operating-levers near its top, the rope-guiding devices supported on said frame and the ropes extending around said guiding devices and secured to said frame.

8. In a grab-bucket the combination with two opposing bucket-sections, of a pair of levers pivotally connected together intermediate of their ends, each of said levers being connected at its lower end to the upper rear corner of one of said bucket-sections, the links of each pivotally connected at its lower end to the upper front corner of one of said bucket-sections and at its upper end to the operating-lever for the opposing bucket-section, the supporting-frame, the rope-guiding devices on said frame, the rope-guiding devices at the upper end of each of said operating-levers, and the closing-ropes, each secured at one end to the supporting-frame and extending around one of the guiding devices on the operating-levers and one of the guiding devices on said supporting-frame.

9. In a grab-bucket, the combination with two opposing bucket-sections, of means connected to the rear end of each of said bucket-sections for controlling the closing movements of said bucket-sections, and independent means also connected with the rear ends of each of said bucket-sections for controlling the opening movements thereof.

10. In a grab-bucket, the combination with two opposing bucket-sections, of means connected to the rear end of each of said bucket-sections for controlling the opening movements of the buckets, means connecting the front ends of each of said buckets with the said means for controlling the opening of the bucket-sections, and independent means for controlling the opening movements of the bucket-sections.

11. In a grab-bucket, the combination with two opposing bucket-sections, of means connected to the upper rear corners of each bucket-section for controlling the closing movements of the bucket-sections, and independent means also connected to the upper rear corners of said bucket-sections for controlling the opening movements thereof.

12. In a grab-bucket, the combination with two opposing bucket-sections, of means connected to the upper rear corners of each bucket-section for controlling the closing movements of the bucket-sections, independent means also connected to the upper rear corners of said bucket-sections for controlling the opening movements thereof, and means for controlling the front ends of each of said bucket-sections, said latter means being connected with and controlled by the means for closing the bucket-sections together.

13. In a grab-bucket, the combination with two opposing bucket-sections, of the crossed operating-levers, each connected at its lower end to the rear end of one of said bucket-sections, the links connecting the front ends of said bucket-sections with the operating-lever connected to the rear end of the opposing bucket-section, means connected with said operating-levers for controlling the opening movements of said buckets, and independent means connected with said operating-levers for controlling the closing movements of said buckets.

14. In a grab-bucket, the combination with two opposing bucket-sections, of the crossed operating-levers, each having its lower end pivotally connected to the rear end of one of said bucket-sections, the links, each connected at its lower end to the front end of one of said bucket-sections, and its upper end to the lever which controls the rear end of the opposite bucket-section, the ropes for controlling the opening movements of the bucket-sections, and the ropes connected to the upper ends of said operating-levers for controlling the closing movements of said bucket-sections.

15. In a grab-bucket, the combination with two opposing bucket-sections, of the operating-levers, each having its lower end pivotally connected to the rear portion of one of said bucket-sections, the levers being arranged to cross each other intermediate of their ends, the links connecting the front portion of each of said bucket-sections to the operating-lever for the opposing bucket-section, means for controlling the opening movements of said bucket-sections, and independent means connected with said operating-lever for controlling the closing movements of said bucket-sections.

16. In a grab-bucket, the combination with two opposing bucket-sections, of crossed operating-levers, each having its lower end pivotally connected to the rear end of one of said bucket-sections, the links, each connected at its lower end to the front end of one of said bucket-sections and at its upper end to the operating-lever for the opposing bucket-section, ropes for controlling the opening movements of said bucket-sections, each connected to the operating-levers for one of said bucket-sections near their lower ends, and means for controlling the closing movements of said bucket-sections connected with the upper end of said operating-levers.

818,529. TIRE. RUSSELL G. SMITH, Buffalo, N. Y., assignor of one-half to Auto-Car Equipment Company, Buffalo, N. Y., a Corporation of New York. Filed Jan. 14, 1905. Serial No. 241,023.

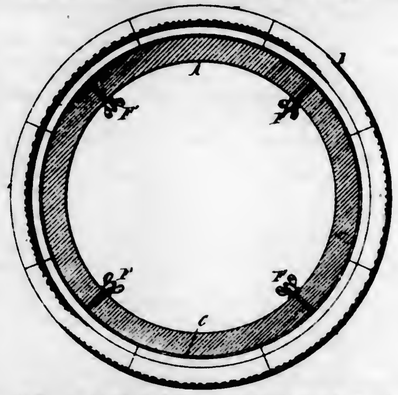

Claim.—1. An emergency-tire, comprising a flexible band adapted to encircle a wheel-rim, a series of blocks or sections secured side by side to said band by fastenings passing through the band and into the blocks, and means independent of said fastenings for securing the tire to the wheel-rim, substantially as set forth.

2. An emergency-tire, comprising a flexible band adapted to encircle a wheel-rim, a series of blocks or sections secured side by side to the band and constructed and arranged to form the tread of the tire, and a binding member engaging the blocks beyond the face of said flexible band, substantially as set forth.

3. An emergency-tire, comprising a flexible band, a series of blocks or sections secured side by side thereon, a clamping-band encircling the blocks, and means for contracting and tightening said clamping-band, substantially as set forth.

4. A tire comprising a series of blocks or sections arranged side by side and each provided in its tread-face with a longitudinal groove, a clamping-band seated in said grooves, and means for tightening said band, substantially as set forth.

5. A tire comprising a series of blocks or sections arranged side by side, one or more thereof being provided in their tread-faces with recesses, a clamping-band encircling said blocks, and fastening means for the band acting to displace portions of the same into said recesses, substantially as set forth.

6. A tire comprising a series of blocks or sections arranged side by side, one or more thereof being provided in their tread-faces with recesses, a clamping-band encircling said blocks, and fastening-bolts passing through the band and the recessed blocks in line with said recesses and having their heads countersunk in the latter, substantially as set forth.

7. A tire comprising a series of blocks or sections arranged sid by side and each provided in its tread-face with a longitudinal groove and one or more thereof having recesses located in their grooves, a clamping-band seated in said grooves, and radial fastening-bolts passing through the band and the recessed blocks in line with the recesses, substantially as set forth.

8. A tire comprising a flexible band, a series of blocks secured side by side to said band and having longitudinal grooves in their tread-faces, a clamping-band seated in said grooves, and means for fastening one or more of the blocks to a wheel-rim, substantially as set forth.

9. A tire comprising a flexible band, a series of blocks secured side by side to said band and having longitudinal grooves in their tread-faces, one or more of said blocks being provided in their grooves with recesses, a clamping-band seated in said grooves, and fastening-bolts passing through said clamping-band and the recessed blocks in line with said recesses and having their heads seated in the latter, substantially as set forth.

10. A tire comprising a flexible band adapted to encircle a wheel-rim, a series of blocks or sections secured side by side to said band, a clamping-band encircling the blocks, the ends of both of said bands being located adjacent to the same block, and means for fastening the blocks and the clamping-band in place, substantially as set forth.

818,530. APPARATUS FOR HOLDING, TURNING, THREADING, AND CUTTING PIPES. MURRAY H. SUGAR, London, England, assignor, by direct and mesne assignments, to Derrington Elliott Burrows, London, England. Filed Oct. 26, 1903. Serial No. 178,220.

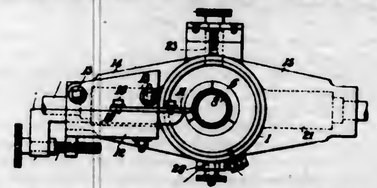

Claim.—1. In apparatus for holding, turning, threading and cutting pipes, and in combination, an outer loose sleeve carrying the tools, an inner fixed cylinder carrying the work and having an annular groove upon its outer surface, means for holding the work immovably within the apparatus, means for permitting both rotative and longitudinal motion of the loose sleeve during the turning and threading operations, and means carried by the loose sleeve comprising a slotted bar adapted to engage the groove in said fixed cylinder, guides within which said bar is longitudinally slidable and a nut and screw for tightening the bar in the guides to lock the sleeve against longitudinal motion at any desired point in its travel to permit of rotative motion only for the cutting operation.

2. In apparatus for holding, turning, threading and cutting pipes, and in combination, an outer loose sleeve carrying the tools, an inner fixed externally-grooved cylinder screw-threaded upon its outer surface carrying the work, means for holding the work immovably therein, a screw-threaded block carried by said loose sleeve, a nut and screw for lowering and raising said threaded block into and out of engagement with the threads upon the cylinder for permitting longitudinal motion of the sleeve when desired, and means carried by the sleeve comprising a slotted bar adapted to engage the groove in said fixed cylinder, guides within which said bar is longitudinally slidable and a nut and screw for tightening the bar in the guides to lock the sleeve against such longitudinal motion at any desired point of its travel to permit of rotative motion only for the cutting operation.

818,531. PHOTOGRAPHIC-PRINTING FRAME. JONATHAN R. SPENCER, Los Angeles, Cal. Filed Feb. 24, 1905. Serial No. 247,190.

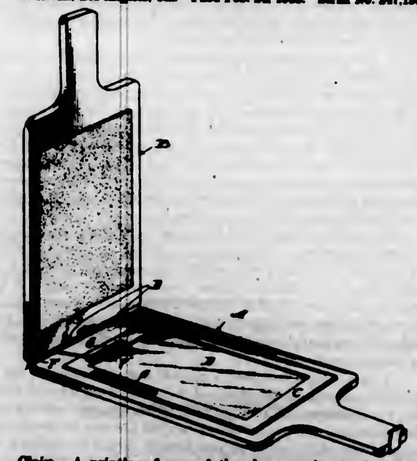

Claim.—A printing-frame of the character herein described comprising two members pivotally secured together as shown; a pintle-bolt securing the same together; in combination with a serpentined-paper-holding spring wound around the pintle-bolt pivotally securing the members to the frame, one end of the spring being rigidly secured to one member of the frame and the other end thereof adapted to project over the face of the other member when the members are in their open position.

818,532. PROCESS FOR THE ELECTROLYTIC PRODUCTION OF METALS OF THE EARTHY ALKALIES. CARL SUTER and BERTHOLD REBLING, Rathor, Germany. Filed Jan. 2, 1904. Serial No. 187,860.

Claim.—1. A process for the electrolytic production of metals of the earthy alkalies, consisting in melting the salt, effecting the electrolysis thereof, and causing the relative movement of the cathode with reference to the electrolyte substantially as described.

2. A process for the electrolytic production of metals of the earthy alkalies, consisting in melting the salt effecting the electrolysis thereof, and causing the slow movement of the cathode from the surface of the electrolyte during the electrolysis substantially as described.

3. A process for the electrolytic production of calcium consisting in the melting of a calcium salt, the electrolysis thereof, and causing the slow movement of the cathode with reference to the electrolyte during the electrolysis substantially as described.

818,533. AUTOMATIC FIRE-ALARM. WILLIS A. SUTTLE, Nimrod, Tex. Filed Aug. 10, 1905. Serial No. 273,668.

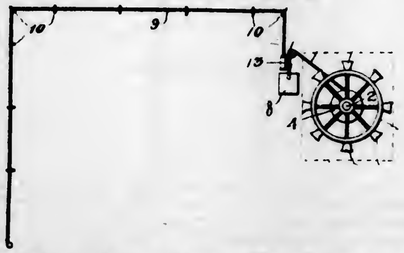

Claim.—In a fire-alarm of the character described, the combination with a revolubly-mounted wheel, of bells secured thereto, a winding drum or spool formed on the extended hub of said wheel, a cord or strap adapted to be wound on said drum or spool, a guide-pulley around which the free end of said cord is adapted to pass, a receptacle secured to said free end of the cord, a suitably-supported combustible cord adapted to be stretched around a room or building and secured at one end, a weight secured to the opposite end of said cord whereby should said cord be parted the weight will drop into the receptacle on said wound cord or strap and thereby unwind the same, thus revolving said wheel and sounding said bells, substantially as described.

818,534. FOUNTAIN-PEN. GEORGE SWANSTON, Upper Norwood, England, assignor to Thomas De La Rue and Company, Limited, London, England. Filed Sept. 18, 1905. Serial No. 278,203.

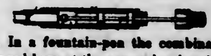

Claim.—1. In a fountain-pen the combination of a reservoir having an enlarged bore at the pen end, a longitudinal rod passing out through the rear of the reservoir and a piston fixed to the rod and lightly fitting the reservoir in the rear of the enlarged bore substantially as described.

2. In a fountain-pen the combination of a reservoir having an enlarged bore at the pen end, a longitudinal rod passing out through the rear of the reservoir, a piston fixed to the rod and lightly fitting the reservoir in the rear of the enlarged bore, a valve on the forward end of the rod and a valve-seating for the valve substantially as described.

818,535. HINGE FOR STEP-LADDERS. CHARLES TOTTENDORF, Cincinnati, Ohio. Filed Aug. 19, 1905. Serial No. 274,227.

Claim.—In a step-ladder hinge, the combination of two complementary hinge members, each comprising an attaching-flange for

spring-catch self-actuating to permit engagement of the plate and support but locking them against disengagement, means for disen-

10. In a receptacle-holder, a support having means for sustain-

allel conductor-sleeves, and an enlarged insulation-sleeve formed of

Claim.—In a step-ladder hinge, the combination of two complementary hinge members, each comprising an attaching-flange for connection to the upper ends of the ladder parts to be hinged to each other, one of these hinge members provided with a lug A, having two alined slots, each of which is laterally enlarged in the same direction, the other member having two integral elongated lugs projecting from it and fitted to occupy the slots mentioned in a manner to be free to slide therein longitudinally and also to move laterally into their enlarged parts when opposite them, the lower one of these elongated lugs projecting also above and downwardly over the lower edge of the opening which it occupies, to prevent lateral displacement of the engaged hinge members.

813,586. CYLINDER FOR INTERNAL-COMBUSTION MOTORS AND THE LIKE. MAX THUM, Erfurt, Germany. Filed Mar. 28, 1904. Serial No. 200,448.

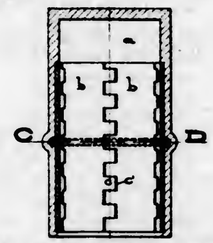

Claim.—1. In a cylinder for internal-combustion engines and the like, the combination with the body portion of the cylinder, of an interior lining consisting of a plurality of parallel parts, extending parallelly to the longitudinal axis of the cylinder and means adapted to prevent a relative displacement of one part of the lining with respect to another, for the purpose as described.

2. In a cylinder for internal-combustion engines and the like, the combination with the body portion of the cylinder, of an interior lining consisting of a plurality of parallel parts extending parallelly to the longitudinal axis of the cylinder, the longitudinal edges of each part having projections adapted to enter into corresponding recesses of the adjoining edge of the neighboring part, substantially and for the purpose as described.

3. In a cylinder for internal-combustion engines and the like, the combination with the body portion of the cylinder, of a lining consisting of a plurality of parallel parts, and means adapted to prevent a relative displacement of one part of the lining with respect to another, the thickness of each part of the lining increasing in the direction from the closed end of the cylinder to the open end, substantially and for the purpose as described.

4. In a cylinder for internal-combustion engines and the like, the combination with the body portion of the cylinder, of a lining consisting of a plurality of parallel parts, and means adapted to prevent a relative displacement of one part of the lining with respect to another, the thickness of each part of the lining increasing in the direction from the closed end of the cylinder to the open end, in such a manner, that the outer diameter of the lining increases correspondingly, the bore of the cylinder being correspondingly shaped, and means for forcing said lining into the cylinder, substantially as described.

813,587. RECEPTACLE-HOLDER. HARRY P. TOWNSEND, New Britain, Conn., assignor to The American Serial Lock Company, Hartford, Conn., a Corporation of Connecticut. Filed May 8, 1905. Serial No. 259,259.

Claim.—1. In a receptacle-holder, a support and a clamp-plate having coöperating beveled surfaces for increasing the pressure of the parts one upon the other in a longitudinal movement of a part, a spring-catch self-actuating to permit engagement of the plate and support but locking them against disengagement, means for disengaging said catch, and means for operating the spring-catch to disengage the plate and support.

2. In a receptacle-holder, a support and a clamp-plate, interengaging rigid projections from the support and plate to permit engagement and disengagement with but slight relative movement of one of the parts upon the other, a spring-catch self-actuating to permit engagement of the support and plate but locking them against disengagement, means for disengaging said catch, and means for operating the spring-catch to disengage the plate and support.

3. In a receptacle-holder, a support and a clamp-plate having projections with interengaging beveled surfaces, for increasing the pressure of the parts in a relative longitudinal movement thereof and permitting engagement and disengagement with but a slight relative movement of one of said parts on the other, a spring-catch self-actuating to permit engagement of the support and plate but holding them against disengagement, means for disengaging said catch, and means for operating the spring-catch to disengage the plate and support.

4. In a receptacle-holder, a support and a clamp-plate having interengaging beveled surfaces at one end for increasing the pressure of the parts in a relative longitudinal movement thereof and a toe engaging a socket at the opposite end, a spring-catch self-actuating to permit engagement of the plate and support but holding them against disengagement, means for disengaging said catch, and means for operating the spring-catch to disengage the plate and support.

5. In a receptacle-holder, a clamp-plate and a support provided at one end with projections permitting engagement and disengagement of the parts with but slight relative movement of one part upon the other, said projections having coöperating beveled surfaces for increasing the pressure of the parts in a relative longitudinal movement thereof to hold them in engagement, a toe engaging a socket at the opposite ends of the plate and support, a spring-catch self-actuating to permit engagement of the plate and support but locking them against disengagement, means for disengaging said catch, and means for operating the spring-catch to disengage the plate and support.

6. In a receptacle-holder, a support and a clamp-plate having interengaging rigid projections of little length as compared with the length of the parts whereby engagement and disengagement is permitted with slight relative movement of one of the parts upon the other, a spring-catch self-actuating, to permit engagement of the plate and support but locking them against disengagement, means for disengaging said catch, and means for operating the spring-catch to disengage the plate and support.

7. In a receptacle-holder, a support and a clamp-plate having interengaging projections of little length as compared with the length of the parts whereby they may be engaged and disengaged with but slight movement of one part upon the other, said projections having coöperating beveled surfaces for increasing the pressure of the parts in a relative longitudinal movement thereof to hold them in engagement, a spring-catch self-actuating to permit engagement of the plate and support but preventing disengagement thereof, means for actuating said catch, and means for operating the spring-catch to disengage the plate and support.

8. In a receptacle-holder, a support and a clamp-plate, one of which has short prongs extending upward from one end thereof, and the other of which has a coöperating short projection extending upward from the end thereof, means for engaging the bottom of the support and plate, a spring-catch self-actuating to permit engagement of the plate and support, but holding them against disengagement, and means for actuating the catch to permit disengagement of the plate and support.

9. In a receptacle-holder, a support and a clamp-plate, one of which has prongs on the upper end thereof, and the other of which has a coöperating engaging projection from the upper end thereof, said projection and prongs having beveled surfaces for forcing the support and plate tightly in engagement, means for holding the lower ends of the plate and support in engagement, a spring-catch self-actuating to permit engagement of the plate and support, but holding them against disengagement, and means for operating the spring-catch.

10. In a receptacle-holder, a support having means for sustaining it, a clamp-plate to be secured to the receptacle, means for holding said plate and support in engagement, and a spring-catch located on the clamp-plate and with one end to engage a stop on the support, and means for actuating said spring-catch to permit disengagement of the parts.

11. In a receptacle-holder, a support and a clamp-plate, one of which has prongs extending from the upper end thereof and the other of which has a projection extending between said prongs and with lateral extensions to engage therewith, means for engaging the lower ends of the plate and support, and means for preventing disengaging movement of said plate and support.

12. In a receptacle-holder, a support to be secured to an object, a receptacle, a clamp-plate secured to said receptacle, prongs extending from the support with their ends resting against the receptacle, a projection from the clamp-plate to engage said prongs, and means for holding said plate and support in engagement.

13. A support having means for sustaining it, a receptacle, a clamp-plate to be secured to the receptacle, prongs projecting from the upper end of the support with their ends resting against the receptacle, a projection from the clamp-plate to engage said prongs, said prongs and projections having interengaging beveled surfaces for forcing the parts tightly in engagement, means for holding the lower ends of the plate and support in engagement, and means for preventing disengaging movement of the plate and support.

14. In a receptacle-holder, a support and a base-plate, means for holding said plate and support in engagement, a swinging catch-lever mounted on the clamp-plate with its end to engage a stop on the support, a spring for holding said lever in position to self-engage said stop, and means for disengaging said lever from said stop.

15. In a receptacle-holder, a support and a clamp-plate having coöperating beveled surfaces for increasing the pressure of the parts in a relative longitudinal movement thereof to hold them in engagement, and means for locking said plate and support in engagement.

16. In a receptacle-holder, a support and a clamp-plate having interengaging projections to permit engagement and disengagement with but slight relative movement of one of the parts upon the other, said projections being beveled to increase the pressure of the parts in a relative longitudinal movement thereof to hold them in engagement, and means for locking said plate and support in engagement.

17. In a receptacle-holder, a support having means for sustaining it, a clamp-plate to be secured to the receptacle, means for holding said plate and support in engagement, a spring-catch located on the clamp-plate and with one end to engage a stop on the support, said clamp-plate having an opening located opposite the lever whereby the latter may be operated to be disengaged from said stop.

18. In a receptacle-holder, the receptacle, a support to be secured to an object and a clamp-plate to be secured to said receptacle, means for securing the support and plate one of which has prongs extending therefrom with their ends adapted to rest against the opposite part, and the other of which has projections to engage said prongs, and means for holding said plate and support in engagement.

19. In a receptacle-holder, a support having means for sustaining it, a clamp-plate to be secured to the receptacle, means for holding said plate and support in engagement, one of which bears a spring-actuated lever fulcrumed between its ends and the other of which has a stop to engage the end of the lever, and means for permitting access to the end of said lever to effect its disengagement from said stop.

20. In a receptacle-holder, a support having means for sustaining it, a clamp-plate to be secured to the receptacle, means for holding said plate and support in engagement, a spring-actuated lever fulcrumed between its ends on the clamp-plate and with one end to engage a stop on the support, and means to permit access to said lever to disengage it from said stop.

813,588. CONNECTOR FOR ELECTRICAL CONDUCTORS. FREDERICK J. TROLL, Baltimore, Md. Filed Apr. 3, 1905. Serial No. 253,200.

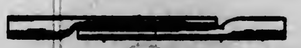

Claim.—1. In an electrical-conductor connector, a pair of connected parallel conductor-sleeves, and an enlarged insulation-sleeve at each end of the pair of conductor-sleeves.

2. In an electrical-conductor connector, a pair of connected parallel conductor-sleeves, and enlarged insulation-sleeves at opposite ends of the conductor-sleeves, said insulation-sleeves being in alinement with one another.

3. In an electrical-conductor connector, a pair of connected parallel conductor-sleeves, and an enlarged insulation-sleeve formed of soft metal, located at each end of the pair of conductor-sleeves.

4. In an electrical-conductor connector, a pair of connected parallel conductor-sleeves, and an enlarged insulation-sleeve formed of soft metal, located at each end of the pair of conductor-sleeves; said enlarged insulation-sleeves being in alinement with one another.

5. In an electrical-conductor connector, a pair of connected parallel conductor-sleeves, and a pair of insulation-sleeves, one at each end of the connector, said insulation-sleeves being disposed so that the conductor-wires lead from the connector in alinement with one another.

6. In an electrical-conductor connector, a pair of connected parallel conductor-sleeves, and a pair of insulation-sleeves one at each end of the connector, said sleeves being provided with slits.

7. In an electrical-conductor connector, a pair of connected parallel conductor-sleeves formed of soft metal to be twisted, and an enlarged insulation-sleeve at one end of the pair of conductor-sleeves.

813,589. LAWN-EDGER. GAIUS VINCENT, Minneapolis, Minn., assignor of one-half to Henry Woelfelt, Minneapolis, Minn. Filed Oct. 11, 1905. Serial No. 282,269.

Claim.—1. A lawn-edger comprising a channel-shaped cutter for cutting a groove, and provided with a guide-flange adapted to slide upon the upper surface of the adjacent edge of a sidewalk, of a handle formed with prongs at its lower end, said prongs being attached one to said guide-flange and the other to the outer side plate of said cutter, whereby a strip of sod loosened by the cutter may pass directly rearward between the prongs of said handle, substantially as described.

2. In a lawn-trimmer, the combination with a channel-shaped cutter having a guide-flange adapted to slide upon the upper surface of the adjacent edge of the sidewalk, the outer side of said side plate being curved at its rear portion, so as to turn the loosened strip of sod onto the sidewalk, of a handle having prongs at its lower end attached one to each side of said cutter, in such manner that the loosened sod may pass rearward between said prongs, substantially as described.

813,540. REINFORCED CONCRETE CONSTRUCTION. CHARLES H. BLACK, Pottsville, Ind. Filed Jan. 21, 1905. Serial No. 242,324.

Claim.—1. A concrete construction having a plurality of reinforcing-cores embedded therein, said cores being formed of a series

of separable links each provided at one end with a transverse bar and having their opposite ends provided with terminal hooks the bills of which are open and slidably engage the transverse bar of an adjacent link.

2. A concrete construction having a plurality of reinforcing-cores embedded therein, said cores being formed of a series of separable links each comprising a pair of spaced arms, the ends of which are bent laterally beyond the general plane of the links and connected by an unobstructed transverse bar, said arms terminating in rearwardly-disposed hooks the bills of which are spaced from said arms and slidably engage the connecting-bars of adjacent links.

818,541. AUTOMOBILE. FRANK M. BLAIR, Toledo, Ohio. Filed July 15, 1905. Serial No. 269,894.

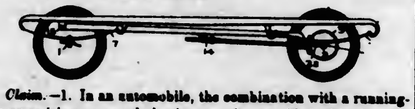

Claim.—1. In an automobile, the combination with a running-gear comprising a rear axle having a casing provided with a bearing extending forward radial to the casing, and with rotatable axles, a front axle parallel with the rear axle, a pair of springs fixedly mounted transverse each axle, and a main body-supporting frame having side bars directly mounted and supported on the springs, of a subsidiary frame having its front end portion hinged at a plurality of points to the front end portion of the main body-supporting frame between the side bars, and its rear end extended to the rear axle and rotatably mounted on the radial bearing, a motor mounted on the subsidiary frame, a shaft connected to the motor and extending in direct line from the connection through the radial bearing of the rear axle, means connected to the shaft and the inner axles adapting the shaft to rotate the axles, a sleeve mounted concentric to the shaft between the motor and the radial bearing, and fixedly supported by the subsidiary frame, a radius-head rotatably mounted on the sleeve concentric to the shaft, and radius-rods diverging from the radius-head and secured to the rear axle.

2. The combination in an automobile running-gear, of a tubular rear axle having a central gear-case provided with a tubular bearing extending forward radial to the axle, said axle being also provided with inner axles that are gear-connected within the gear-case, a front axle parallel with the rear axle, a pair of half-elliptic springs, mounted transverse each axle, a main body-supporting frame hinged and linked to and supported on the ends of the springs of the axle, as set forth, a subsidiary motor-supporting frame, having its front end portion hinged to the front end portion of the main body-supporting frame on each side of a line parallel with and central between the side bars of the main frame, and its rear ends centrally and pivotally supported by the tubular bearing on the gear-case, a motor mounted on the subsidiary frame, a differential gear mechanism mounted on the frame adapted to be operated by the motor, a sleeve secured to and supported by the motor-supporting frame in line with and between the tubular bearing of the gear-case and the differential gear mechanism, a tubular radius-head rotatably mounted on the sleeve, radius-rods diverging at equal angles from the radius-head, and secured to the rear axle, a driving-shaft adapted to be revolved by the differential gear mechanism of the motor, and extending in direct line with and through the journal-sleeve, radius-head, and the bearing of the gear-case, and a gear on the shaft within the gear-case connected with and adapted to operate the gear of the inner axles substantially as set forth.

818,542. PACKAGE AND LETTER DELIVERING AND COLLECTING SYSTEM. JOHN M. CASE, Louisville, Ky. Filed Sept. 5, 1905. Serial No. 277,873.

Claim.—1. The combination of a conduit broken away at points, a track in said conduit, a shed covering the track where the conduit is broken away, said shed being of a size to admit a person, a carrier traveling on said tracks, and a receptacle arranged below the track.

2. The combination with a track having receiving-stations at points throughout its length, of a carrier having a plurality of removable package-holders, arranged in order corresponding to the stations, and automatic means for successively removing the package-holders on the outgoing trip of the carrier, and delivering said holders to the carrier on the return trip of the carrier.

3. The combination with a track, of a carrier, means for propelling the carrier on the track, automatic means for discharging packages from the carrier on the outgoing trip and placing packages on the carrier on the return trip while the carrier is in motion, and means automatically reversing the direction of the carrier.

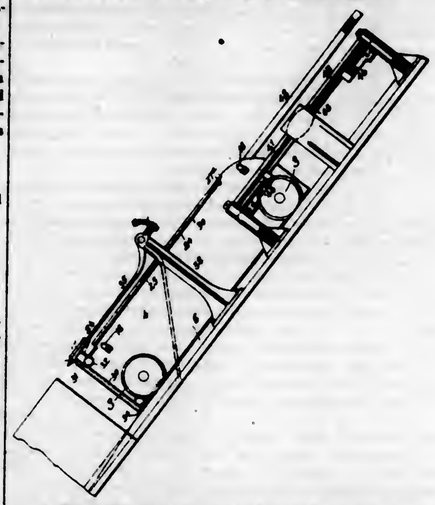

4. The combination of a conduit having receiving-stations at points throughout its length, a carrier traveling in said conduit, and having package-holders arranged thereon in order corresponding to the stations, means for automatically discharging a package at its station from the carrier, and means for automatically collecting the packages on the return trip.

5. The combination of a carrier, of a plurality of package-holders arranged in a line on said carrier and means for separately and automatically feeding said holders perpendicularly with relation to the line of holders whereby the perpendicularly-fed holder may be engaged and removed from the carrier.

6. The combination with the carrier, having package-holders arranged thereon, in a line, of means feeding said holders perpendicularly with relation to the line, and means feeding the holders to the perpendicular feeding means.

7. The combination with the track, of a carrier for travel on the track, having package-holders arranged in a line on said carrier and means for separately and automatically feeding said holders perpendicularly with relation to said line; and means arranged along the track for removing the holders from the carrier after they have been fed perpendicularly.

8. A carrier for delivery systems comprising a series of package-holders, means for elevating one of the package-holders at a time and means for moving the package-holders to the elevating means.

9. A carrier for delivery systems comprising guide-faces, holders slidable on the guide-faces, a spring-pressed follower for the holders, and means for slightly moving a holder above the remaining holders.

10. The combination with the track, of inclined planes located at a plurality of points along the track, a carrier traveling along the track and carrying a plurality of package-holders, means carried by the carrier, engaging the inclined track and causing one of the package-holders to be moved to a position to be engaged, and means along the track for engaging the holder thus moved.

11. The combination with a track, of a carrier traveling on the track and carrying a plurality of package-holders, means for singly moving the package-holders to a position to be engaged, and a swinging arm adapted to engage the moved package-holder and remove it from the carrier when the carrier is traveling in one direction, and to support a holder and deposit it on the carrier when the carrier is traveling in the other direction.

12. The combination of a traveling carrier carrying package-holders, and automatic means successively removing package-holders from the carrier when the carrier is traveling in one direction, and depositing them on the carrier when the carrier is traveling backward.

13. The combination with a track, of a carrier traveling thereon in both directions, means for automatically reversing the direction of the carrier, and means for automatically removing packages from the carrier when it travels in one direction and automatically depositing packages on the carrier when it travels in the other direction.

14. The combination with the track, of a carrier adapted for traveling in both directions thereon, an electrical conductor along the track, an electrical motor carried by the carrier and receiving current from the conductor, a switch carried by the carrier, and means automatically reversing the switch to cause a reversal of the motor.

15. The combination with the track, of a carrier adapted for travel in both directions on the track, a motor carried by the carrier, a controller for the motor carried by the carrier, and means automatically moving said controller to cause a reversal of the motor.

16. The combination with a track and a carrier, of means for automatically removing packages from the carrier, located along the track and normally positioned to remove the packages but moving under the weight of the package to discharge said package and then returning to its normal position.

17. The combination with the track and the carrier, of a spring-pressed swinging arm normally held in a position to remove a package from the carrier and moving under the weight of the package to discharge the package and then return to its normal position.

18. The combination with the track and the carrier, of means on the carrier for feeding package-holders to a position to be engaged, receptacles located at various points along the track and means adjacent the receptacles normally positioned to remove a package-holder and cause it to be deposited in the receptacle.

19. The combination with the track and the carrier, of means for removing packages from the carrier, arranged along the track, and a signal operated by the package-removing means when a package is removed.

20. The combination with the track and the carrier, of means for propelling the carrier along the track, and means arranged along the track for stopping the carrier, said means embodying an air-chamber and means permitting the air to gradually escape and permit the carrier to proceed.

21. The combination with the carrier and a track on which it travels, of a stopping or retarding means for the carrier arranged along the track and embodying means for engaging the carrier, an air-chamber acting on said means to hold it in an engaging position said means gradually permitting the escape of air from the chamber to permit the carrier to proceed.

22. The combination with the carrier and a track on which it travels, of a stopping or retarding means for the carrier arranged along the track and embodying means for engaging the carrier, an air-chamber acting on said means to hold it in an engaging position, means gradually permitting the escape of air from the chamber to permit the carrier to proceed, and a spring moving the air-chamber-engaging means in a direction to cause the air to enter the air-chamber and cause the engaging means to be projected into the path of the carrier.

23. The combination with the track, of a carrier, means for propelling the carrier along the track, and means arranged along the track for stopping the carrier, and means automatically reversing the carrier.

24. The combination with a track, of a carrier open at one end, and means for automatically removing packages from the carrier through the open end when the carrier is traveling in one direction and automatically depositing packages in the carrier through the open end when the carrier is traveling in the other direction.

25. The combination with the carrier, of holders sliding on the carrier and adapted to have packages suspended therefrom, and means for moving the holders to the rear of the carrier.

26. The combination with a track, of a carrier for travel thereon, carrying a plurality of package-holders, means along the track for causing a package-holder to be moved to a position to be engaged, and means along the track for engaging and removing a package-holder thus moved.

27. The combination with a track and a carrier movable on the track of package-holders successively arranged on said carrier, hooks suspended from the holders, and automatic means for removing from the carrier while it is in motion, a holder and a hook at various points along the track.

818,543. HARNESS. JOHN J. CRAMMER, Moline, Ill. Filed Aug. 30, 1905. Serial No. 276,422.

Claim.—1. The combination with a tree-frame provided on its inner side with reinforcing webs or flanges, and a check-hook having a shank projecting through the frame, of a nut engaging the shank of the hook and disposed between the webs or flanges and provided on its outer side with a longitudinal seat.

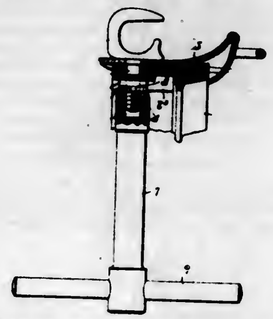

2. The combination with a tree-frame provided on its inner side with reinforcing webs or flanges, and a check-hook having a shank projecting through the frame, of a nut engaging the shank of the hook and disposed between the webs and flanges and provided on its outer side with a longitudinal seat, and a wrench provided with a longitudinal bore to receive the projecting end of the shank and a rectangular terminal to engage the walls of the seat.

818,544. STREET-SWEEPER. CHARLES M. HAVES, JOHN W. SLAVEN, and GEORGE W. WADE, Galesburg, Ill. Filed May 20, 1904. Serial No. 209,208.

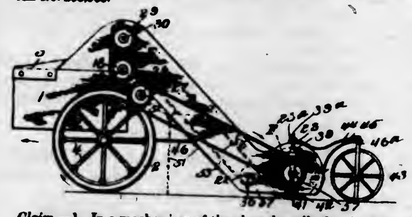

Claim.—1. In a mechanism of the class described, a framework consisting of forwardly-extended bars connected by a cross-piece, rearwardly-extended bars connected by a cross-plate, lower standards connecting the upper and lower bars of the framework, bearings in said standards for the reception of a shaft, upper standards connecting the upper and lower bars of the framework, bearings in said standards for the reception of a shaft, bearings at the rear parts of the forwardly-extended bars of the framework, for the reception of a shaft, and hangers depending from the lower bars of the framework and having bearings for the reception of another shaft, substantially as described.

2. A street-sweeper rear section comprising the casing D, the frame A having the standards B, the journal-boxes 16 therein, the journal-boxes 17, 19 fixed to the frame, the standards C, the journal-boxes 22 therein, the cross-plate 23, the adjustable hangers 39 depending therefrom, said hangers having their lower ends enlarged to form shaft-bearings, being contained within said casing, the caster-wheels 43 and means for attaching them to the rear portion of the casing.

3. In a street-sweeper and in combination with a wheel-supported forward section or dirt-receiver having a master-wheel fixed to one of the ground-wheels thereof, a rear section comprising a frame having journal-boxes 16, 17 at the forward portion thereof, journal-boxes 22 at the rear portion and journal-boxes 19 intermediate said boxes, the shaft 20 seated in the boxes 16 and carrying wheel 29, the shaft 32 seated in the boxes 17 and carrying wheels 18, 31, the sprocket-chain embracing said wheels, the shaft 26 seated in the boxes 19 and carrying wheels 25, 27, the shaft 36 seated in the bearings 22, the endless belt 38 on the shafts 20 and 26, the cross-bar 23, the adjustable hangers 39 carrying a broom-shaft 41, the sprocket-wheel 57 on said last-named shaft, the sprocket-chain 56 embracing the wheels 27 and 57, the wheel 25 meshed with the master-wheel, and caster-wheels secured to the rear portion of the frame.

818,545. VEHICLE-BRAKE. JOHN G. RECHT, Pittsburg, Pa. Filed May 18, 1905. Serial No. 261,022.

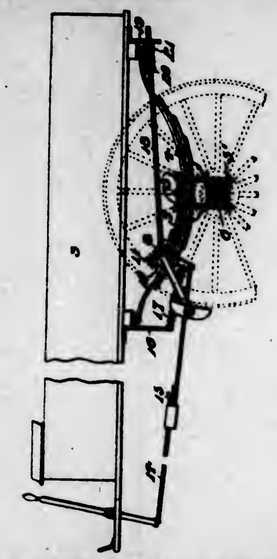

Claim.—1. The combination of a brake, an operating-rod connecting to a crank-arm of brake-shaft, brake-strap secured to spring, and means for preventing the forward thrust of vehicle-body, substantially as described.

2. The combination of a brake, an adjustable operating-rod pivotally connected to a crank-arm, said crank attached to a retracting-spring, a brake-strap normally held flat by a stirrup, substantially as described.

818,546. INCLOSED SAFETY DEVICE FOR FUSES FOR ELECTRICAL INSTALLATIONS. WILHELM FELLENBERG, Charlottenburg, Germany. Filed Apr. 26, 1904. Serial No. 205,267.

Claim.—1. A safety device for fuses consisting in combination of fuse-wires, non-conductors upon which said wires are coiled and partitions between said wire coils substantially as described.

2. A safety device for fuses consisting in combination of fuse-wires connected in parallel non-conductors upon which said fuse-wires are coiled and partitions between said coils substantially as described.

3. A safety device for fuses consisting in combination of fuse-wires connected in parallel non-conductors upon which said fuse-wires are coiled, partition between said coils and an elastic yielding inclosure for said wires substantially as described.

4. A safety device for fuses consisting in combination of fuse-wires connected in parallel non-conductors upon which said fuse-wires are coiled, partition between said coils, an elastic yielding inclosure for said wires and filling material within said inclosure, substantially as described.

5. A safety device for fuses consisting in combination of fuse-wires connected in parallel non-conductors upon which said fuse-wires are coiled, partition between said coils, and an elastic yielding inclosure for said wires, and a non-conducting casing inclosing the whole, substantially as described.

6. A safety device for fuses consisting in combination of fuse-wires connected in parallel non-conductors upon which said fuse-wires are coiled, partition between said coils, an elastic yielding inclosure for said wires, and filling material within said inclosure, and a non-conducting casing inclosing the whole, substantially as described.

7. A safety device for fuses consisting in combination of fuse-wires, non-conductors upon which said wires are coiled and partitions between said wire coils, and an armature-core within said fuse-wire coils, substantially as described.

8. A safety device for fuses consisting in combination of fuse-wires connected in parallel non-conductors upon which said fuse-wires are coiled and partitions between said coils, and an armature-core within said fuse-wire coils, substantially as described.

9. A safety device for fuses, consisting in combination of fuse-wires sparking distances produced in series with said wires, and partitions between said fuse-wires, and an armature-core upon which said fuse-wires are mounted, substantially as described.

10. A safety device for fuses consisting in combination of fuse-wires, non-conductors upon which said wires are coiled and partitions between said wire coils, an elastic yielding inclosure for said wires, and a casing inclosing the whole, substantially as described.

11. A safety-fuse consisting in combination of fuse-wires, non-conductors upon which said wires are coiled said non-conductors being of elliptical form and partitions between said fuse-wires substantially as described.

12. A safety-fuse consisting in combination of fuse-wires, non-conductors upon which said fuse-wires are coiled in series, partitions between the non-conductors conductors connecting the fuse-wires in series an inclosing casing divided longitudinally, said non-conductors being formed integral with the respective parts of said casing, bolts for connecting the respective parts of the casing together said bolts passing through said non-conductors upon which the fuse-wires are coiled and serving as armature-cores, substantially as described.

13. A safety-fuse consisting in combination of fuse-wires, non-conductors upon which said fuse-wires are coiled in series, partitions between the non-conductors, conductors connecting the fuse-wires in series an inclosing casing divided longitudinally, said non-conductors and partitions being formed integral with the respective parts of said casing, bolts for connecting the respective parts of the casing together said bolts passing through said non-conductors upon which the fuse-wires are coiled and serving as armature-cores and spaces within said casing between said partitions, yielding elastic inclosures within said spaces and filling material within said yielding elastic inclosures, substantially as described.

14. A safety-fuse consisting in combination of fuse-wires, non-conductors upon which said fuse-wires are coiled in series, partitions between the non-conductors, conductors connecting the fuse-wires in series, an inclosing casing divided longitudinally, said non-conductors and partitions being formed integral with the respective parts of said casing, partitions upon said non-conductors between which said fuse-wires are arranged in series, bolts for connecting the respective parts of the casing together said bolts passing through said non-conductors upon which the fuse-wires are coiled and serving as armature-wires, substantially as described.

15. A safety device for fuses consisting in combination of fuse-wires, non-conductors upon which said wires are coiled and partitions between said wire coils and an inclosing casing therefor and outlets therefrom, substantially as described.

818,547. NON-REFILLABLE BOTTLE. CHARLES PERSKY, St. Louis, Mo. Filed Mar. 9, 1905. Serial No. 249,210.

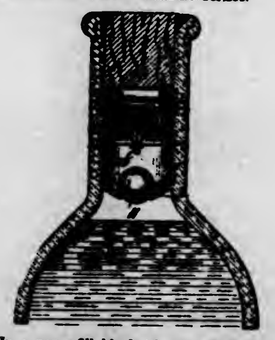

Claim.—In a non-refillable bottle, a cylindrical valve-casing adapted to be positioned in the neck of the bottle, a valve-seat formed at the lower end of the valve-casing, a ball-valve normally resting on the valve-seat, a conical valve-protector arranged within the valve-casing above the ball-valve, which protector is provided with a continuous series of vertical slots, and a pin arranged transversely in the valve-casing beneath the protector, substantially as specified.

818,548. BUILDING CONSTRUCTION. GEORGE F. FISHER, North Tonawanda, N. Y. Filed Apr. 23, 1904. Serial No. 204,513.

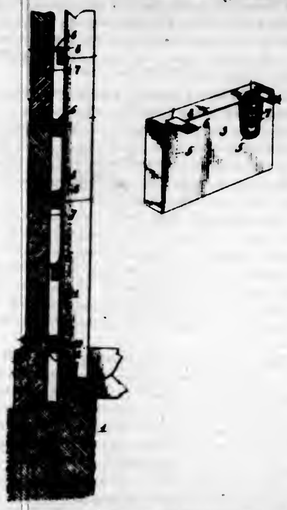

Claim.—1. A structure comprising a frame having projecting ledges separated by intervening spaces, and building-blocks having securing-irons held therein and separated from said ledges by intervening spaces to permit of setting the blocks in perfect alinement, said securing-irons having each a rearwardly-projecting securing end adapted to be secured to said ledges.

2. A structure comprising a skeleton frame having projecting ledges separated by intervening spaces, and building-blocks having securing-irons held therein, each securing-iron comprising a vertical embedded portion and a free securing end arranged at a right angle to said embedded portion, said securing ends being attached to said ledges.

3. A structure comprising uprights and horizontal ledges, building-blocks secured to said ledges and separated therefrom by intervening spaces to permit of setting the blocks in perfect alinement.

4. A structure comprising uprights, building-blocks arranged in courses and having securing-irons held therein, each iron having at least one end projecting from said block, and retainer-bars secured to the uprights, one retainer-bar being arranged beneath the projecting ends of the securing-irons of each course of blocks to permit the latter to be affixed thereto.

5. A structure comprising uprights, horizontal bars attached to said uprights and being separated by intervening spaces, building-blocks set edge upon edge and each having at least one securing-iron held therein, each securing-iron having a rearwardly-projecting free securing end adapted to be secured to the horizontal bar in rear of the block of which it forms part, said building-blocks being separated from said horizontal bars by intervening spaces to permit of setting the same in perfect alinement.

6. A building-block formed of composition material and having a securing-iron embedded therein, said securing-iron being bent at a right angle to form an embedded portion within the block and a securing portion having its outer face throughout its length flush with one edge of the block and extending beyond the rear face of the latter.

7. A building-block formed of composition material and having a securing-iron embedded therein, said securing-iron being bent at a right angle to form an embedded portion within the block and a securing portion having its outer face throughout its length flush with one edge of the block and extending beyond the rear face of the latter, said embedded portion of the securing-iron having apertures which are filled with the material forming the block.

8. A building-block formed of composition material and having a securing-iron embedded therein, said securing-iron being bent at a right angle to form an embedded portion within the block and a securing portion having its outer face throughout its length flush with one edge of the block and extending beyond the rear face of the latter, said embedded portion of the securing-iron having an embedded end portion, substantially as specified.

9. A structure comprising a frame having retainer-ledges, and building-blocks set edge upon edge and having securing-irons held therein with one end of each iron projecting beyond the rear face of the block for attachment to the retainer-ledges, one row of building-blocks being separated from its coöperating retainer-ledge to permit any other row of blocks to be set against its coöperating ledge, or to permit the same to be set farther from its coöperating ledge as may be necessary to provide a perfect alined outer surface.

818,549. REVOLVING AIR-SHIP TOWER. SAMUEL M. FRIEDE, Chicago, Ill., assignor to Revolving Air Ship Tower Company, Chicago, Ill., a Corporation of Illinois. Filed Aug. 7, 1903. Serial No. 168,584.

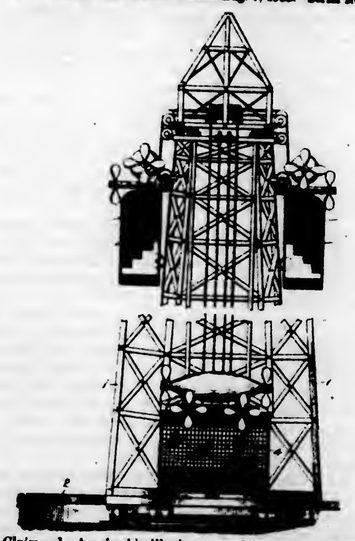

Claim.—1. An air-ship illusion comprising a tower, cars mounted to travel up and down on the exterior of the tower, and mirrors in the cars cutting off the tower from the view of the passengers within the car, substantially as described.

2. An air-ship illusion comprising a rotating tower, cars mounted to travel up and down on the exterior of the tower, and mirrors in the cars cutting off the tower from the view of the passengers within the car and reflecting to their eyes the natural landscape around the car, substantially as described.

3. An air-ship illusion comprising a tower, an elevator-car mounted to travel up and down on the tower, and an imitation-air-ship structure secured to each car and apparently supporting it, substantially as described.

4. An air-ship illusion comprising a tower, an elevator-car mounted to travel up and down on the tower, an imitation-air-ship structure secured to the car and apparently supporting it, and rotary propellers connected with the air-ship structure, substantially as described.

5. An air-ship illusion comprising a tower, cars mounted to travel up and down on the tower, means for cutting off the tower from the view of the passengers in the cars, and an imitation-air-ship structure secured to each car and apparently supporting it, substantially as described.

6. An air-ship illusion comprising a tower, elevator-cars mounted to travel up and down on the tower, means for cutting off the tower from the view of the passengers within the cars, an imitation-air-ship structure secured to each car and apparently supporting it, and rotary propellers connected with the air-ship structure and apparently driving it, substantially as described.

7. An air-ship illusion comprising a tower, cars mounted to travel up and down on the tower, means for cutting off the tower from

the view of the passengers within the cars, propellers mounted on the cars and apparently driving them, and means for rotating the propellers from the rising and falling movement of the car, substantially

a plurality of sets of two cars each, the two sets of cars being connected together to counterbalance each other, and the two cars of each set being arranged on opposite sides of the

extending from the rear of the main plate and movably connected thereto and a hooked grasping-loop extending from the front of said main plate and actuated by said lever, as and for the purposes specified.

10. In recording mechanism, means for making independent records in separate columns, and automatic mechanism for imprint-

the view of the passengers within the cars, propellers mounted on the cars and apparently driving them, and means for rotating the propellers from the rising and falling movement of the car, substantially as described.

8. An air-ship illusion comprising a tower, cars mounted to travel up and down on the exterior of the tower, means for cutting off the tower from the view of the passengers within the cars, an imitation-air-ship structure secured to each car and apparently supporting it, rotary propellers connected with the air-ship structure and apparently driving it, and means for rotating the propellers from the rising and falling movement of the cars, substantially as described.

9. An air-ship illusion comprising a tower, cars mounted to travel up and down on the tower, means for cutting off the tower from the view of the passengers within the cars, rotary propellers mounted on the cars and apparently driving them, guide-wheels on the cars rotatably engaging guides on the tower, and connections between said propellers and guide-wheels for rotating the propellers when the car is moved on the tower, substantially as described.

10. An air-ship illusion comprising a tower, cars mounted to travel up and down on the exterior of the tower, mirrors in the cars cutting off the tower from the view of the passengers within the cars, and an imitation-air-ship structure secured to each car and apparently supporting it, substantially as described.

11. An air-ship illusion comprising a tower, elevator-cars mounted to travel up and down on the exterior of the tower, mirrors in the car for cutting off the tower from the view of the passengers within the cars, an imitation-air-ship structure secured to each car and apparently supporting it, and rotary propellers connected with the air-ship structure and apparently driving it, substantially as described.

12. An air-ship illusion comprising a rotating tower having elevator-cars, a rotating platform from which the cars may be loaded and unloaded without stopping the tower, and mirrors in the cars cutting off the tower from the view of the passengers within the cars, substantially as described.

13. An air-ship illusion comprising a rotating tower, cars mounted to travel up and down on the exterior of the tower, mirrors in the cars cutting off the tower from the view of the passengers within the car, and a rotating platform from which the cars may be loaded and unloaded without stopping the tower, substantially as described.

14. An air-ship illusion comprising a rotating tower, an elevator-car, means on the tower for raising and lowering the elevator-car, and an imitation-air-ship structure secured to each car and apparently supporting it, substantially as described.

15. An air-ship illusion comprising a rotating tower, an elevator-car, means on the tower for raising and lowering the elevator-car, an imitation-air-ship structure secured to each car and apparently supporting it, and rotary propellers connected with the air-ship structure and apparently driving it, substantially as described.

16. An air-ship illusion comprising a rotary tower, an elevator-car, means on the tower for raising and lowering the elevator-car, means for cutting off the tower from the view of the passengers within the car, and an imitation-air-ship structure secured to the car and apparently supporting it, substantially as described.

17. An air-ship illusion comprising a rotary tower, an elevator-car, means on the tower for raising and lowering the elevator-car, means for cutting off the tower from the view of the passengers within the car, an imitation-air-ship structure secured to the car and apparently supporting it, and rotary propellers connected to the air-ship structure and apparently driving it, substantially as described.

18. An air-ship illusion comprising a rotary tower, an elevator-car, means on the tower for raising and lowering the elevator-car, means for cutting off the tower from the view of the passengers within the car, an imitation-air-ship structure secured to the car and apparently supporting it, and propellers mounted on the car and apparently driving it, and means for rotating the propellers from the rising and falling movement of the car, substantially as described.

19. An air-ship illusion comprising a rotating tower, an elevator-car, means for moving the car up and down on the tower, propellers mounted on the car and apparently driving it, guide-wheels on the car rotatively engaging guides on the tower, and connection between said propellers and guides for rotating the propellers when the car is moved on the tower, substantially as described.

20. The combination with a tower, of elevator-cars arranged in a plurality of sets of two cars each, the two sets of cars being connected together to counterbalance each other, and means for simultaneously raising one set of cars and lowering the other set, substantially as described.

21. The combination with a tower, of elevator-cars arranged in a plurality of sets of two cars each, the two sets of cars being connected together to counterbalance each other, and the two cars of each set being arranged on opposite sides of the tower from each other, and means for simultaneously raising one set of cars and lowering the other set, substantially as described.

22. The combination with a tower, of elevator-cars arranged in a plurality of sets of two cars each, the two sets of cars being connected together to counterbalance each other by cables which connect each car of each set with both cars of the other set, and means for simultaneously raising one set of cars and lowering the other set, substantially as described.

23. The combination with a tower, of elevator-cars arranged in a plurality of sets of two cars each, the two sets of cars being connected together to counterbalance each other by cables which connect each car of each set with both cars of the other set, the two cars of each set being arranged on opposite sides of the tower from each other, and means for simultaneously raising one set of cars and lowering the other set, substantially as described.

24. The combination with a rotating tower, of elevator-cars arranged in a plurality of sets of two cars each, the two sets of cars being connected together to counterbalance each other, and the two cars of each set being arranged on opposite sides of the tower from each other, means for simultaneously raising one set of cars and lowering the other set, and a rotating platform from which the cars may be loaded and unloaded without stopping the tower, substantially as described.

25. The combination with a rotating tower, of elevator-cars arranged in a plurality of sets of two cars each, the two sets of cars being connected together to counterbalance each other by cables which connect each set with both cars of the other set, means for simultaneously raising one set of cars and lowering the other set, and a rotating platform from which the cars may be loaded and unloaded without stopping the tower, substantially as described.

26. The combination with a rotating tower, of elevator-cars arranged in a plurality of sets of two cars each, the two sets of cars being connected together to counterbalance each other by cables which connect each car of each set with both the cars of the other set, the two cars of each set being arranged on opposite sides of the tower from each other, means for simultaneously raising one set of cars and lowering the other set, and a rotating platform from which the cars may be loaded and unloaded without stopping the tower, substantially as described.

27. The combination with a tower, of elevator-cars arranged in a plurality of sets of two cars each, the two sets of cars being connected together to counterbalance each other by cables which connect each car of each set with both cars of the other set, said cables passing over vertical sheaves at the top of the tower, and each making a quarter-turn around a horizontal sheave at the top of the tower between the vertical sheaves, and means for simultaneously raising one set of cars and lowering the other set, substantially as described.

28. In an apparatus of the class described, the combination of a rotary tower, a carriage on its exterior, means for simultaneously rotating the tower and moving the carriage up and down thereon, said carriage having its front open and its walls adapted to obscure a view by the passengers of the tower and the operating mechanism.

29. In combination, a tower, a plurality of observation-carriages mounted on the exterior of the tower, means for simultaneously rotating the tower and moving the carriages up and down the tower, said carriages having open fronts and opaque back walls, whereby the tower and the operating mechanism are obscured from the sight of the passengers, for the purpose set forth.

818,550. **COMBINED BRUSH AND HOP HOLDER.** EDWARD B. GILBERT, Galt, Canada, assignor to Arthur Frederick Hatch, Toronto, Canada. Filed July 20, 1905. Serial No. 271,694.

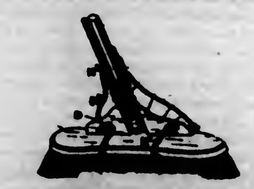

Claim.—1. In a holder of the class described, the combination with a handle having a main plate secured thereto, a lever and a spring located between the lever and main plate, of a hooked loop extending from the rear of the main plate and movably connected thereto and a hooked grasping-loop extending from the front of said main plate and actuated by said lever, as and for the purpose specified.

2. In a holder of the class described, the combination with a handle, main plate, lever and spring, of a hooked loop extending rearwardly from and pivoted to the main plate, and a hooked grasping-loop having extending arms passing through the front portion of said main plate and pivoted at their ends to the said lever, as and for the purpose specified.

818,551. **GAME-REGISTER.** GUSTAVE F. GOSS, Wallaceton, Pa., and JOHN H. PARKER, Washington, D. C.; said Parker assignor to said Goss. Filed May 27, 1904. Serial No. 210,161.

Claim.—1. In a pool-game recorder, the combination with independent receptacles in which the balls are received and retained, of an independent printing mechanism for each receptacle, and means for automatically operating said printing mechanism on the pocketing of each ball.

2. In combination with receptacles for pool-balls, of means for making a separate record of the number of balls entering and retained in each receptacle.

3. The combination with separate receptacles for the balls pocketed by different players, of means for recording the number of balls entering and removed from each receptacle, said records being printed in independent parallel columns.

4. The combination with separate receptacles for the balls of different players, of means for indicating the number of balls entering and removed from each receptacle.

5. The combination with a plurality of ball-receptacles, of independent recording means for each receptacle, and automatic mechanism for imprinting the charge for the game in the column in which the lowest number of balls is recorded.

6. The combination with a pool-table, of means for keeping a record of the balls pocketed by each player, and automatic mechanism for recording the charge for each game in the column recording the lowest number of balls.

7. The combination with a pool-table, having a plurality of receptacles for the balls pocketed by different players, of a ball-operated means for automatically recording in separate columns the number of balls pocketed by each player, and ball-operated means for recording in said columns the number of balls removed from the receptacles.

8. The combination with a pool-table, a ball-operated imprinting mechanism for keeping separate records of the balls pocketed by each player, and means for automatically imprinting the charge for each game in alinement with the record of the lowest number of balls.

9. The combination with a pool-table, of a plurality of ball-receiving compartments, and means for recording the number of balls entering and retained in each compartment.

10. In recording mechanism, means for making independent records in separate columns, and automatic mechanism for imprinting a distinguishing-mark in the column having the smallest record.

11. In recording mechanism for pool-tables, means for automatically registering in independent columns the number of balls made by the individual players, and means for automatically printing in one of the columns the amount due for each game.

12. In recording mechanisms, means for keeping independent records in different columns, a plurality of mechanisms arranged for the printing of predetermined characters, one of said printing means being located opposite each column, and means controlled by the independent recording means for automatically selecting the printing means to be operated.

13. The combination with recording means, for keeping independent records in independent columns, of an automatically-selected printing means controlled by the independent recording means for printing a predetermined character in one of them.

14. In a recorder, means for maintaining independent records in independent columns, and an adjustable imprinting means controlled by the independent recording means for printing a distinguishing character in one of such columns.

15. In combination with means for maintaining independent records in independent columns, of an adjustable means for printing a distinguishing character in one of them, and means controlled by the independent recording means for automatically determining the column in which such character is to be printed.

16. The combination with means for keeping independent records in independent columns, of a plurality of type-disks arranged one opposite each column and bearing type representing different values, and means controllable by the independent recording means for determining the operative type-disk.

17. The combination with means for keeping independent records in independent columns, of a plurality of type-disks each bearing type representing different values and a selecting means controllable by the independent recording devices for determining the operative type-disks.

18. The combination with means for maintaining independent records in independent columns, of a plurality of type-disks bearing numerals of different values, said disks being simultaneously adjustable to present any of the type to imprinting position and means controllable by the independent recording devices for determining the operative type-disk.

19. The combination with a platen, of means for printing independent records in independent columns, a plurality of type-disks bearing numerals of different values, the said disks being simultaneously adjustable to present any one set of numerals in alinement with the platen, and a selecting means controllable by the independent recording means for operating the type-disk opposite the recording mechanism which has been operated the fewest number of times.

20. The combination with means for maintaining independent records in independent columns, of a rheostat for each of such mechanisms, means controlled by said mechanisms for cutting in resistance to an extent proportionate to the number of operations of the recording mechanisms, type-disks for printing the final distinguishing character in one of the columns and an imprinting means coacting with said type and including an electromagnet and a circuit connecting such electromagnet to all of the rheostats.

21. The combination with a plurality of electromagnets arranged in independent circuits, an imprinting device for each electromagnet, a rheostat arranged in connection with each electromagnet, a contact-arm forming a part of the rheostat and operable by the electromagnet to successively cut in resistance each time the mechanism is operated, a plurality of final imprinting mechanisms, independent electromagnets for actuating them, and a circuit including the rheostats, the second set of magnets and a source of electrical energy.

22. The combination with a series of electromagnets, of an imprinting device for each electromagnet, a rheostat, a contact-arm forming a part of the rheostat, and operable by the electromagnet to successively cut in resistance in proportion to the number of times the electromagnet is energized, there being one of such imprinting mechanisms and rheostats for each of the electromagnets, a second series of electromagnets each serially connected with one of the rheostats, and an electric circuit having multiple connection with the several series circuits.

23. The combination of a plurality of independent electromagnets arranged in ball-operated circuits, of an imprinting mechanism for each electromagnet, a rheostat associated with each electromagnet, a ratchet-wheel and operating-pawl connected to the arma-

ture of the electromagnet, a rheostat contact-arm movable with the ratchet-wheel and operating to successively cut in resistance in proportion to the number of operations of the electromagnets, and means controllable by a scratch-ball for temporarily releasing the pawl and permitting reverse movement of the wheel and contact-arm.

24. The combination with a plurality of independent electromagnets arranged in ball-controlled circuits, a ball-receptacle, an imprinting mechanism operable by each of the electromagnets, a rheostat associated with each electromagnet, a rheostat contact-arm, a ratchet-wheel connected thereto, a pawl connected to the armature of the electromagnet, and engaging said ratchet-wheel, a spring tending to restore the ratchet-wheel to initial position, a second set of energized electromagnets, an imprinting mechanism for each of the second set of electromagnets, the circuits of said second set of electromagnets being controlled by balls removed from the receptacle, and means operable by said second set of electromagnets for raising the pawls and permitting reverse movement of the ratchet-wheel and contact-arms of each receptacle each time a ball is removed from said receptacle.

25. The combination with a ball-receptacle, of a plurality of independent electromagnets arranged in ball-controlled circuits, an imprinting mechanism for each electromagnet, a rheostat associated with each electromagnet, a rheostat contact-arm for successively cutting in resistance each time the electromagnet is energized, a ratchet-wheel carrying said contact-arm, a spring tending to reverse the movement of the ratchet-wheel, a pawl engaging the ratchet-wheel and connected to the armature of the electromagnet, a second set of electromagnets, independent circuits in which said electromagnets are arranged, said independent circuits being controllable by the removal of balls from the receptacle, an imprinting mechanism for each of the second set of electromagnets and an escapement mechanism controllable by said second set of electromagnets for releasing the pawl and permitting reverse movement of the ratchet-wheel and contact-arm of each receptacle each time a ball is removed from the receptacle.

26. The combination with a ball-receptacle, of a plurality of electromagnets connected in independent ball-controlled circuits, an imprinting mechanism for each electromagnet, a rheostat associated with each electromagnet, a rheostat contact-arm for successively cutting in resistance each time the electromagnet is energized, a ratchet-wheel carrying said contact-arm, a pawl engaging the ratchet-wheel and operable by the electromagnet, a second set of electromagnets, imprinting-type operable thereby for printing in a selected column a mark or symbol designating the loser of the game, said electromagnets being each connected in series with one of the rheostats, an electric circuit having a multiple connection with the series circuits, and an auxiliary circuit controlled on the final imprinting means for raising all of the pawls and permitting movement of the parts to initial position.

27. The combination with a pool-table, of a series of independent ball-receptacles, a plurality of concentric shafts, projecting arms carried by the shaft and extending into the receptacles in the path of the balls, type-disks connected one to each of the shafts and receiving movement on the entrance of each ball, and an imprinting means operable on the removal of the balls to imprint the number of balls remaining in each receptacle.

28. The combination with a pool-table, of a series of independent receptacles, a plurality of concentric shafts, radial arms extending from the shaft and projecting into the receptacles in the path of the entering balls, pinions secured to the shaft, independent gears one in mesh with each pinion, type-disks carried by the gears, a stop-wheel having a plurality of peripheral recesses, one of such stop-wheels being connected to each type-disk, springs for restoring the type-disks to initial position, pins for entering the recesses of the stop-wheels, and an elongated tooth carried by each of the stop-wheels for engaging said pin, an impression-hammer operable on the movement of the receptacle for printing a record of the position of the type-disks at the conclusion of the game, and means operable by movement of the impression-hammer for moving the pins outward from engagement with the stop-wheels.

813,552. CLOTH-FOLDING MACHINE. WILLIAM H. HASKINS, Bury, England. Filed Sept. 26, 1904. Serial No. 225,073.

Claim.—1. In a cloth-folding machine the combination of alternately-acting clamps means for operating them a table normally pressed upward against said clamps reciprocating folding-blades an oscillating carrier for said blades means for oscillating said carrier about its axis in a side arm a side arm having a rising and falling fulcrum a connecting-rod having a transverse slot a crank engaging with said slot and two parallel radius-rods suspending and supporting said connecting-rod and side arm substantially as and for the purpose set forth and shown.

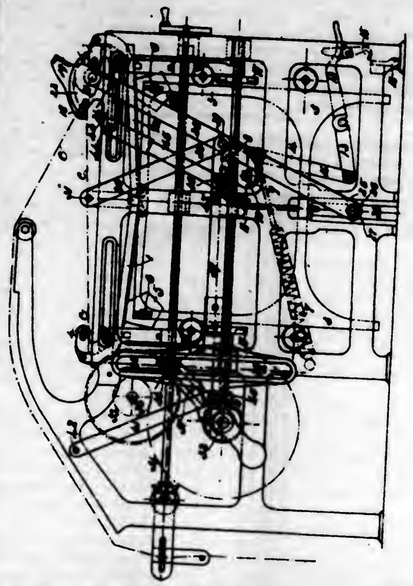

2. In a cloth-folding machine the combination of alternately-acting clamps means for operating them a table normally pressed upward against said clamps a reciprocating side arm a crank and connecting-rod for operating said side arm an oscillating blade-carrier journaled in said side arm a toothed segment concentric therewith a toothed segment eccentric thereto engaging with the concentric segment and a controlling-rod between said eccentric segment and the connecting-rod and having a variable point of attachment to the latter substantially as and for the purpose set forth and shown.

3. In a cloth-folding machine the combination of cloth-folding blades mounted in a carrier on a side arm, means for oscillating said carrier and imparting a reciprocating rectilinear motion thereto from side to side, alternately-acting clamps and means for operating them, a table having leaves hinged or so mounted that they can be raised or lowered so as to form a table of variable concavity, supports by which the leaves are maintained in their various positions of adjustment independent of the means for pressing the table upward against said clamps substantially as and for the purpose set forth.

4. In a cloth-folding machine, the combination of cloth-folding blades, mounted in a carrier on a side arm, with means for oscillating and reciprocating the said carrier, a table having leaves adapted to be independently tilted, rotatable supporting devices arranged under the said leaves individually and each having operative faces at varying radial distances from its axis, for adjusting the inclination of said leaves and holding each leaf in the position to which it is thus adjusted, clamps acting alternately on the cloth which is supported by the said table, means for actuating the said clamps and means for normally bringing the said table and clamps together substantially as set forth.

813,553. STANDARD FOR DESK-CALENDARS. FRANK A. HALE, Chicago, Ill. Filed May 24, 1905. Serial No. 262,267.

Claim.—1. In a device of the kind described, in combination, a base having a socket; an arch having one leg seated in the socket; and means bearing laterally on the other leg of the arch to cause the first-named leg to frictionally engage the walls of the socket.

2. In a device of the kind described, in combination, a base having a socket; an arch having one leg seated in the socket; and a lever bearing laterally on the other leg of the arch.

3. In a device of the kind described, in combination, a base having a pair of sockets; a pair of arches formed of a single rod, the ends of the rod forming one leg of each arch and being seated in the sockets; and a lever bearing laterally on the arch-connecting portion of the rod.

4. In a device of the kind described, in combination, a base having a pair of sockets; a pair of arches formed of a single rod, the ends of the rod forming one leg of each arch and being seated in the sockets; and a lever bearing laterally and downwardly on the arch-connecting portion of the rod.

5. In a device of the kind described, in combination, a base having a pair of sockets; a pair of arches formed of a single rod, the ends of the rod forming one leg of each arch and being seated in the sockets; and a lever bearing downwardly on the arch-connecting portion of the rod.

6. In a device of the kind described, in combination, a base having a pair of sockets; a pair of arches formed of a single rod, the ends of the rod forming one leg of each arch and being seated in the sockets; and a lever pivoted to the base and having a cam-shoulder adapted to bear laterally on the arch-connecting portion of the rod.

7. In a device of the kind described, in combination, a base having a pair of sockets; a pair of arches formed of a single rod, the ends of the rod forming one leg of each arch and being seated in the sockets; and a lever pivoted to the base and having a cam-shoulder adapted to bear laterally on the arch-connecting portion of the bar, and having a flange projecting forwardly from the shoulder to engage the top of said portion of the rod.

8. In a device of the kind described, in combination, a base having a socket; an arch having one leg seated in the socket; and means bearing laterally on the arch for causing the leg to frictionally engage the socket.

9. In a device of the kind described, a base having a socket, an arch mounted on the base and having one leg seated in the socket, the leg frictionally engaging the walls of the socket to secure the arch to the base.

813,554. SIGN. LOUIS C. HAMEL, Appleton, Wis. Filed Sept. 6, 1905. Serial No. 277,234.

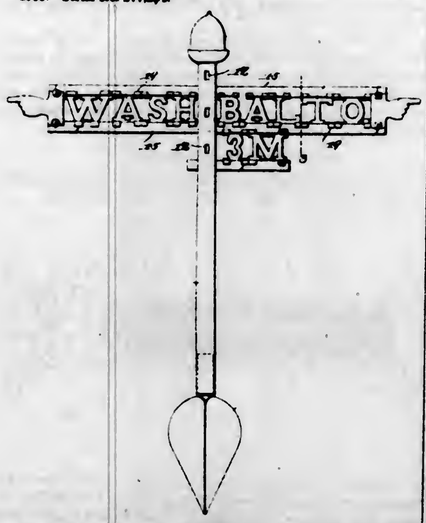

Claim.—1. In a sign, a hollow column, arms extending through and outstanding perpendicular to the column, and means internally of the column for securing the arms against displacement.

2. In a sign, a hollow column, arms extending through and outstanding from the column, and means within and longitudinally movable relative to the column for securing the arms against displacement.

3. In a sign, a hollow column, arms inserted through and extending upon opposite sides of the column, and means within the column to prevent displacement of the arms.

4. In a sign, a hollow column, arms inserted through and extending upon opposite sides of the column, binding means within the column and in engagement with the arms, and means for exerting pressure upon the binding means.

5. In a sign, a hollow column, arms inserted through and extending upon opposite sides of the column, binding means mounted and longitudinally movable within the column and in engagement with the arms, and means external of the column for exerting a pressure upon the binding means.

6. In a sign, a hollow column having openings formed therethrough, a binding member within the column and having openings registering with the openings in the column, arms inserted through the openings and means for exerting a pressure upon the upper end of the binding member.

7. In a sign, a hollow column having openings formed therethrough, a cylindrical binding member mounted and longitudinally movable within the column and having openings registering with the openings in the column arms, inserted through the openings and means for exerting pressure upon the upper end of the binding member.

8. The combination with a column having outstanding parallel arms of characters composed of sheet material and having opposite ends slitted and the lips so formed bent to opposite sides to embrace the arms.

9. The combination with a hollow column having parallel arms inserted and longitudinally movable therethrough of characters composed of sheet material equal in height to the distance between the arms and having lips upon the top and bottom formed by slits and bending the lips laterally alternately in opposite directions and terminating in portions parallel with the characters and spaced apart and embracing one edge of each arm.

813,555. SPRING-DISK VALVE. JAMES T. HAYDEN, Chicago, Ill., assignor to Crane Company, Chicago, Ill., a Corporation of Illinois. Filed Apr. 13, 1905. Serial No. 255,457.

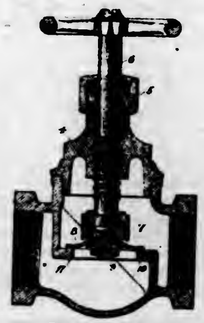

Claim.—1. In a valve the combination with a valve seat comprising a groove having a flat surface and a circumferential surface, and a valve having means to expand laterally against the circumferential surface when pressed downward upon the flat surface of the seat.

2. In a valve the combination of a spring disk valve of concaved form and made of soft metal, and a valve seat of hard metal having means to engage the edges of the disk on several surfaces thereof, whereby the downward pressure of the disk on the seat will cause it to spread radially to engage the seat in both vertical and horizontal direction, substantially as described.

3. The combination of a valve seat comprising a circumferential groove, and a valve comprising a concave disk, the stem of the valve being attached to the higher part or center of the disk, and adapted to spread the disk at its edges by downward pressure on the disk, so that it engages two surfaces of the groove.

4. In a valve the combination with a valve seat comprising a circumferential groove, and a parti-spherical valve disk of softer metal, adapted to be spread by the pressure thereon and engage the seating groove on two of its surfaces, substantially as described.

813,556. FERTILIZER-DISTRIBUTER. JOHN M. HINE, Grundy Center, Iowa. Filed July 25, 1904. Serial No. 217,893.

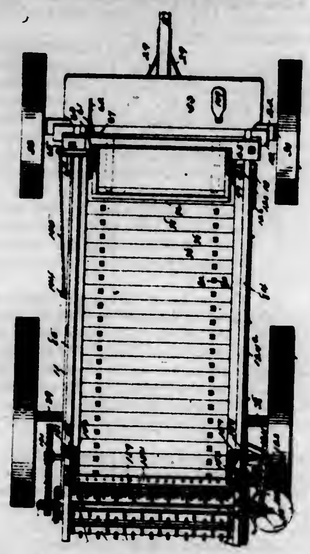

Claim.—1. A fertilizer-distributer comprising a traction-truck, a rake driven by said truck, an apron driven by said rake in one direction, yielding pressure devices for returning the apron to its initial position and mechanism operated by the apron, to suspend the operation of its driving mechanism.

2. A fertilizer-distributer comprising a traction-truck, a revolving rake, driving connections between said truck and rake, manually-operated devices for establishing said driving connections, automatically-operated devices for suspending said driving connections, an apron driven in one direction by said rake, and yielding pressure devices for returning said apron to its initial position.

3. A fertilizer-distributer comprising a traction-truck, a revolving rake, suspendable driving connections between the truck and rake, an apron mounted for travel beneath said rake, suspendable driving connections between the apron and rake, and means exerting a yielding pressure upon the apron to retard its movement from and automatically return it to its normal position.

4. A fertilizer-distributer comprising a traction-truck, a revolving rake, suspendable driving connections between said traction-truck and rake, an apron mounted for travel beneath said rake, friction-gearing connecting said rake and apron, means for suspending travel of the apron independently of the movement of the rake, and springs for reversing the travel of the apron to return it to its normal position.

5. A fertilizer-distributer, comprising a traction-truck, a revolving rake, driving connections between said truck and rake, manually-operated devices for establishing said driving connections, automatically-operated devices for suspending said driving connections, an apron mounted for travel beneath said rake, driving connections between said rake and apron, pedally-operated releasing mechanism for suspending the driving connections between the rake and apron, and yielding pressure devices for returning said apron to its initial position.

6. A fertilizer-distributer comprising a traction-truck, a rake, driving connections between the truck and rake, manually-operated devices for establishing said connections, means for automatically suspending said connections, an apron movably mounted beneath the rake, driving connections between the rake and one end of the apron, and a spring for automatically returning the apron to its initial position.

7. In a machine of the class described, an apron, a drum-shaft mounted for rotation beneath the rear end of said apron, a drum loosely mounted on said shaft, a cable connected to the forward end of said apron and adapted to be wound on said drum and clutch connections between said drum-shaft and drum.

8. In a machine of the class described, an apron, a drum-shaft mounted for rotation beneath the rear end of said apron, a drum on said shaft, a cable attached at one end to the forward end of said apron and adapted to be wound on said drum, another drum-shaft, a cable attached to the forward end of said apron and adapted to be wound on the second drum-shaft, and spring-resisted cables adapted to be wound on the second drum-shaft in opposition to the second cable.

9. In a machine of the class described, an apron, drum-shafts at either end of said apron, cables attached to the forward end of the apron and adapted to be wound on said drum-shafts oppositely, spring-returning cables adapted to be wound on one drum-shaft in opposition to the other cable wound thereon, and a cable sustaining the tail end of said apron at times.

10. In a machine of the class described, an apron, means for driving said apron in one direction, springs for returning said apron to its initial position and mechanism, operated by the apron, to suspend the driving mechanism.

11. In a machine of the class described, an apron, mechanism for driving said apron in one direction, springs for returning said apron to its initial position, and pedal-operated mechanism for suspending the driving mechanism and establishing the spring-returning function.

12. In manure-spreader, the combination of a main driving-shaft, a beater, a series of gears adapted to connect said main shaft with said beater, a conveyer, a second series of gears for connecting said beater to said conveyer, means for moving said connecting-gears, a spring adapted to be put under tension when said first-mentioned gears are thrown into mesh with the beater a holding device for holding same connected, and means connected with said conveyer for releasing said spring, for the purpose specified.

13. A fertilizer-distributer comprising a traction-truck, a revolving rake, suspendable connections between said truck and rake, an apron mounted for travel beneath, and operated in one direction by, said rake, yielding pressure devices for returning the apron to its initial position, a drum-shaft beneath said apron, gear connections between said rake and drum-shaft, and clutch mechanism on said drum-shaft for suspending the movement of the apron independent of the movement of the rake.

14. A fertilizer-distributer comprising a frame, journal-bearings on said frame, axle members mounted in said journal-bearings, traction-wheels supporting said axle members, a rake mounted on said frame, gear connections between said rake and axle members, clutch mechanism between said gear connections and axle members, an apron mounted for travel beneath, and adapted to be moved in one direction by, the rake, yielding pressure devices for returning the apron to its initial position, and a steering-truck carrying the forward end of said frame.

15. In a machine of the character described, traction mechanism, a counter-shaft, suspendable connections between the traction mechanism and counter-shaft, a rake, sprocket-and-chain connections between said counter-shaft and rake, an apron beneath, and adapted to be moved in one direction by, the rake, and yielding pressure devices for returning the apron to its initial position.

813,557. SURFACE-CLEANING MACHINE. ROBERT B. HUTCHISON, Pittsburg, Pa. Filed July 27, 1904. Serial No. 218,230.

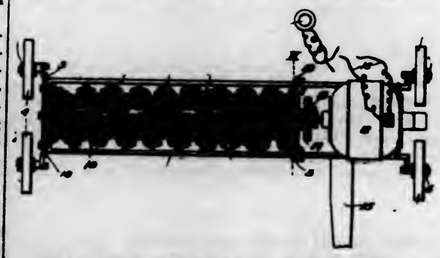

Claim.—1. In a surface-cleaning machine, the combination of a framework composed of two main bars arranged parallel to each other, cross-bars providing bearings, a rotatable brush journaled in said bearings, supplemental extensions at each end provided with vertically-adjustable supporting-wheels, a motor, connecting-gearing arranged to transmit motion from the motor to the brush, and a removable casing provided with openings arranged to engage the frame and to be vertically movable relatively thereto, said casing being adapted to normally rest upon the floor and having inwardly and upwardly turned bottom portions adapted to collect the products of the brushing operation, substantially as set forth.

2. In a surface-cleaning machine, the combination of a framework composed of two main bars arranged parallel to each other and cross-bars providing bearings, a rotatable brush journaled in said bearings, supplemental extensions at each end provided with vertically-adjustable supporting-wheels, a motor, connecting-gearing arranged to transmit motion from the motor to the brush, and a removable casing provided with openings arranged to engage the frame and to be vertically movable relatively thereto, said casing being adapted to normally rest upon the floor and having inwardly and upwardly turned bottom portions adapted to collect the products of the brushing operation, said frame being provided with plates in position to cover the openings in the casing, substantially as set forth.

3. In a surface-cleaning machine, the combination of a portable frame having adjustable supporting-wheels, a rotatable cleaning-brush mounted in said frame, a motor mounted on the frame and in driving engagement with said brush, means for supplying power to said motor, a removable casing for the brush freely mounted upon said framework adapted to rest upon the floor independent of the frame and to permit of relatively independent vertical movement of said frame, said casing being provided with clearance-openings for the frame and having inwardly and upwardly turned bottom portions comprising oppositely-arranged pans adapted to collect the products of the brushing operation, with plates engaging the brush-shaft and frame at each end overlapping the casing to close the openings therein, substantially as set forth.

4. In a surface-cleaning machine, the combination with a rotatable brush, of a beating device flexibly connected with the shaft of the brush, and an intervening resilient stiffening device, substantially as set forth.

5. In a surface-cleaning machine, the combination with a rotatable brush, of a beating device flexibly connected with the shaft of the brush, and an intervening spiral spring arranged to normally hold the beating device outwardly beyond the shaft, substantially as set forth.

813,558. AUTOMATIC WATER-SUPPLY SYSTEM. JOHN JOHNSON, Overland Park, Mo., assignor to The Country Hydrant Company, St. Louis, Mo., a Corporation of Missouri. Filed Jan. 30, 1905. Serial No. 243,220.

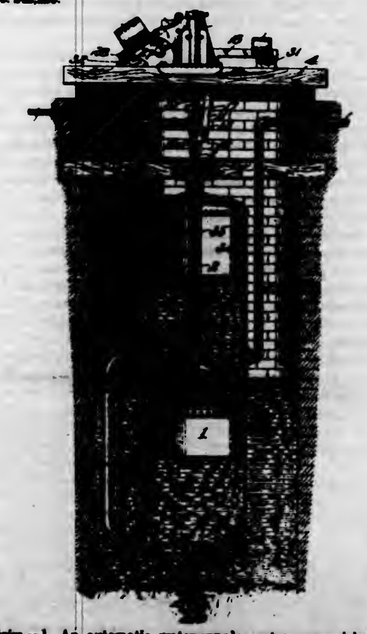

Claim.—1. An automatic water-supply system comprising a submerged tank arranged to move up and down and having means for the admission and discharge of water, an auxiliary tank arranged above said tank and having a central longitudinal opening therethrough and means for the admission and discharge of water, an air-pipe extending through said opening and communicating with said submerged tank, a cock in said air-pipe arranged to be automatically operated by the up-and-down movement of said submerged tank, means to regulate the movement of said submerged tank, and means of communication between said tanks whereby water from said submerged tank may enter said auxiliary tank and compress air trapped therein.

2. An automatic water-supply system comprising a fixed tank, a vertically-movable submerged tank, a pipe connected to said movable tank and provided with a valve, means for automatically opening said valve by the movement of said movable tank, an inlet-valve in said movable tank, means having a flexible element connecting said tanks, permitting a flow of water from said movable tank to said fixed tank and preventing a flow in the opposite direction, means for the discharge of water from said fixed tank, and means to control the movement of said movable tank comprising a frame, a rod arranged to move with said movable tank and provided with separated collars, a lever pivotally mounted on said frame and provided with a pivoted dog projecting into the path of one of said projections, said lever and said dog having interlocking means whereby said dog will move with said lever in one direction and will move with respect to said lever in the opposite direction, an adjustable poise on said lever, a lever pivoted on said frame and having a part projecting into the path of the other of said collars on said rod, and means to oppose the movement of said lever in one direction.

818,559. TAPPING-MACHINE. HENRY KOEHLER, Chicago, Ill., assignor to Crane Company, Chicago, Ill., a Corporation of Illinois. Filed Mar. 2, 1903. Serial No. 145,886.

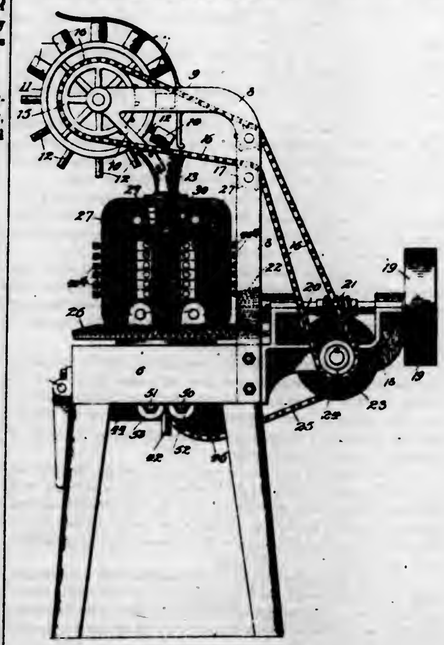

Claim.—1. A tapping machine having a stationary tapping tool, revolving means for gripping and carrying articles to be tapped along said tool, and rotary sectors adapted for alternately engaging and holding the tool and ejecting the finished article from the tool.

2. A tapping machine having a stationary tapping tool, continuous traveling mechanism for gripping and feeding the articles along the tool, and separate pairs of rotary sectors adapted for automatically holding the tool alternately at different points and for ejecting the finished article from the tool.

3. In a tapping machine in combination with a stationary tapping tool, a set of gripping and carrying blocks for engaging the articles operated upon, the same being pivoted together in a chain and being provided with means for pressing them resiliently against the article, and mounted to be driven by the motion of the article as it travels over the tapping tool, and means to revolve said carriers about the tool.

4. The combination of a resiliently mounted chain of traveling gripping and carrying blocks, positive driving means for said chain, a stationary tapping tool and means for revolving the blocks about the tool and for automatically discharging the finished article from the tapping tool.

5. In a tapping machine the combination with mechanism for revolving the articles to be operated upon, a stationary tapping tool, a pair of revoluble partially cut out rollers for alternately gripping the tool at different points of its length, and adapted to positively eject between them the finished article from the tapping tool.

6. The combination with a tapping tool having a shank of angular cross section, of two pairs of wheels grooved and partially cut away to alternately hold the tool and release and eject articles being operated upon from the tool.

7 In a tapping machine in combination with a stationary tapping tool, two pairs of revolving sectors having grooved partial circumferences adapted to hold the same alternately at different points of the shank and to positively eject articles from the tool.

8. In a tapping machine the combination with a tapping tool of two pairs of sectional revolving rollers adapted to alternately grip and release the tapping tool at different points.

9. In a tapping machine in combination with a stationary tap, a pair of revolving pivoted jaws, two sets of gripping devices mounted respectively upon said pivoted jaws, a revolving table carrying the jaws, said jaws being adapted to open to release the articles in the gripping devices.

10. The combination of a feed wheel, a vertically translating gripping device for thrusting the articles against the tapping tool, means for revolving the grippers, spring pressed rollers for insuring contact of the gripping device, a stationary tapping tool and means for holding said tapping tool in position and allowing the ejection of the articles therefrom.

11. In a tapping machine the combination with a stationary tool, of two sets of gripping blocks movable along the same and provided with resilient supporting means for holding and carrying an article over its tool, and means to revolve the holding means.

12. A tapping machine comprising the combination with a tap, of a set of revolving gripping devices movable relative thereto and provided with spring pressed means for holding the gripping devices against the articles upon the tool.

13. In a tapping machine, in combination with a stationary tap, several pairs of gripping wheels to engage said tapping tool, the same being provided with peripheries adapted to prevent the tool from turning and with open sections thereon whereby the tool is periodically released from the gripping wheels.

14. In a tapping machine the combination with a stationary tap having a shank of angular section, of several pairs of wheels placed together with angular openings between their peripheries, and being provided with cooperating open sections on the wheels, whereby the tool may be released and space allowed for discharge of the article from the tapping tool.

15. In a tapping machine the combination with a tapping tool and a stationarily mounted pair of gripping rollers therefor, said gripping rollers being partially cut out on their peripheries and mounted in shiftable bearings to engage the tool, and means for retracting the bearings together for the purpose of releasing the tool and removing it.

16. In a tapping machine the combination with a continuous chain of gripping devices, of a series of blocks provided with rollers and compression springs adapted to hold the rollers against the gripping devices and force them in contact with the articles being operated upon by the machine.

813,560. TELEPHONE SYSTEM FOR CENTRAL STATIONS. GUSTAV LAMBERT, Charlottenburg, Germany. Filed Apr. 16, 1902. Serial No. 103,128.

Claim.—1. A telephone system comprising two or more groups at the central station which the subscriber may call up directly and whenever desired, a loop-conductor connected to the telephone central station, one branch of the double conductor-line of the subscriber including an electromagnet *f* at the station, a circuit-closing piece *m* actuated by said electromagnet, so as to assume the calling or signaling position, another electromagnet *p* upon the other branch adapted to be put in connection with the said circuit-closing piece *m*, and a signal-lamp *u* the circuit of which is maintained closed by means of the connections between said electromagnet *p* and said circuit-closing piece until the call is answered from the station, the said signal-lamp being arranged in the answering group.

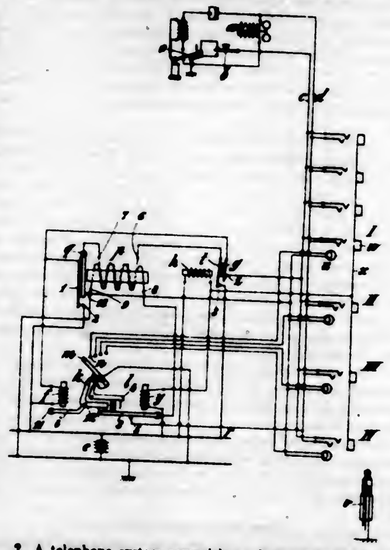

2. A telephone system comprising a loop-conductor line connected to the central station, an electromagnet *p* in one branch of said loop and an electromagnet *f* on the other branch, a selective means actuated by said electromagnet *f* and means to short-circuit the electromagnet *f* by the actuation of the electromagnet *p* until the call is answered.

3. In a telephone system, comprising a loop-conductor line connected to the central station, substantially as described, and an electromagnet *f* on one branch and an electromagnet *p*, a signal-lamp on the other branch in connection with said electromagnet *p*, an inquiry-plug *v* and two electromagnets *h* and *y* excited by inserting the said plug, the armature of the electromagnet *h* cutting out the subscriber-circuit of the electromagnets *f* and *p* from the signal-lamp, while the armature of the electromagnet *y* causes the circuit-closing piece *m* to return to its initial position and disconnecting the electromagnet *p* from the subscriber-circuit.

4. Telephone system including magnets *p*, *f* and circuit connections, substantially as described, in which the number of convolutions and the resistances of the electromagnets *f* and *p* are so calculated that the circuit generated in the subscriber-table after taking the telephone off its hook, actuates the electromagnet *p* only, but not the electromagnet *f*, and selective means operated by said electromagnets.

813,561. LEVEL. RUDOLPH LEGGHART, San Antonio, Col. Filed Oct. 4, 1905. Serial No. 281,394.

Claim.—As a new article, a plate having a transverse aperture and with a tubular member disposed transversely of said aperture

and open at one end and with a longitudinal aperture in one side opposite the aperture in the plate, said tubular member adapted to support a spirit-tube with its central portion exposed through said apertures and means for attaching said plate to a straight-edge.

813,562. BOTTLING-MACHINE. ERNEST U. MACK, Florence, S. C., assignor to The Crown Cork and Seal Company, Baltimore, Md. Filed Nov. 11, 1904. Serial No. 232,869.

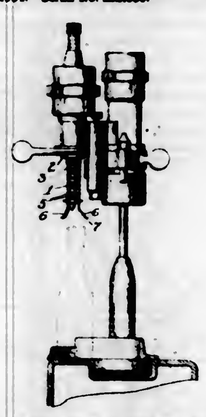

Claim.—1. In combination in a bottling-machine, a nozzle adapted to enter the bottle-mouth and resilient means for centering the bottle in relation to the nozzle, said means extending down along the nozzle and acting as the nozzle and bottle are brought together, substantially as described.

2. In combination, in a bottling-machine, a nozzle and a spring finger or fingers supported at their upper ends with their lower ends free, said fingers being associated with the nozzle for engaging the bottle and centering the same in relation to the nozzle as the nozzle and bottle are brought together, substantially as described.

3. In combination in a bottling-machine, a nozzle, a spring finger or fingers depending from an upper point or support along the nozzle and having outwardly and downwardly inclined lower free ends for engaging the bottle and centering the same in relation to the nozzle.

4. In combination in a bottling-machine, a nozzle adapted to enter the bottle, and a sliding collar on the said nozzle with a spring for pressing the said nozzle downwardly to prevent the lifting of the bottle as the nozzle is withdrawn therefrom and a plurality of spring-fingers between which the collar slides, substantially as described.

5. In combination in a bottling-machine, a nozzle, a centering finger or fingers depending below the same to contact with the bottle, a collar adapted to slide on the nozzle, a spring for pressing the collar downwardly and a stop associated with the collar and centering-finger, substantially as described.

6. In combination, the nozzle, the sliding spring-pressed collar, the centering-fingers and the sliding connection between the said fingers and the collar, substantially as described.

7. In combination, the nozzle, the centering-fingers slotted vertically, a spring-pressed collar having pins projecting from the collar through the slots in the fingers, substantially as described.

8. In combination with the nozzle, a spring-pressed collar thereon and means for limiting the downward movement of the collar consisting of the finger or arm between which and the nozzle the lip of the bottle is adapted to move, the said collar having a connection with the said arm or finger, substantially as described.

9. In combination in a bottling-machine, a nozzle adapted to enter the bottle-mouth, and means for centering the bottle in relation to the nozzle, said means being yielding laterally in relation to the nozzle, substantially as described.

10. In combination in a bottling-machine, a nozzle adapted to enter the bottle-mouth, and means for centering the bottle in relation to the nozzle, said means comprising a plurality of members individually yieldable radially in respect to the nozzle, substantially as described.

11. In combination in a bottling-machine, a nozzle adapted to enter the bottle-mouth, and a plurality of fingers depending along the nozzle and individually yieldable radially in respect to the nozzle, substantially as described.

813,563. CHURN. JOSEPH F. MARGAN, St. Paul, Minn. Filed Feb. 6, 1905. Serial No. 244,268.

Claim.—1. The combination of an earthen jar having about its top an exterior rim, a cover on the jar, the bracket 19 secured upon the cover, a curved clamp having a vertically-playing pivot-joint in the bracket and its lower end engaging the under side of the rim, and in its upper end a thumb-screw pressing upon the cover so as to force the lower end of the clamp in and upward under the rim and lock it in that position.

2. The combination of an earthen jar having about its top an exterior rim, a cover on the jar, the bracket 19 secured upon the cover, a curved clamp having a vertically-playing pivot-joint in the bracket and its lower end engaging the under side of the rim, and in its upper end a thumb-screw pressing upon the cover so as to force the lower end of the clamp in and upward under the rim and lock it in that position, and a hand-operated churning mechanism carried by said cover and operating within the jar.

813,564. MACHINE FOR COATING FABRICS WITH FINELY-COMMINUTED MATERIALS. HARRIS MARKUS, Manchester, England. Filed Oct. 5, 1905. Serial No. 281,456.

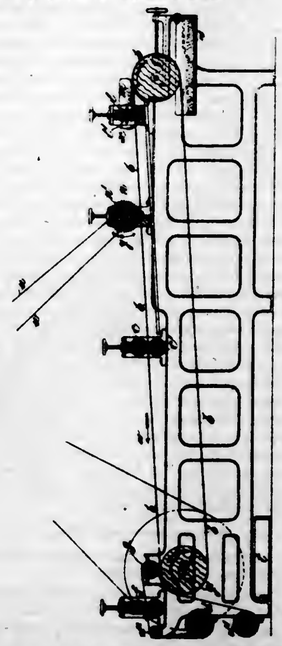

Claim.—A machine for coating fabrics with flock or the like materials having in combination a traveling temporary support *b*, a fluted roller *l*, a brush *n*, pressing-rollers *c*, *c'*, and means for spreading the adhesive material on the final support and transferring the flock from the temporary support, the whole constructed and operating substantially as hereinbefore described and shown.

813,565. WHEEL. CHARLES F. MARDEN, Milwaukee, Wis. Filed Sept. 30, 1905. Serial No. 280,231.

Claim.—1. In a wheel, the combination of a wheel-body, a box adapted to receive an axle, a pneumatic tube surrounding the box and resting against the wheel-body, an annulus, of resilient or springy material interposed between the box and the pneumatic tube, and rings of cushioning material disposed at opposite sides of the annulus and surrounding and extending radially from the box; the wheel-body and the said rings of cushioning-material being so relatively arranged that the latter do not bear on the former except when undue weight is imposed on the box.

2. A wheel comprising a body containing a case having side walls provided with central, circular openings, a box arranged in the case and having rings of resilient material extending beyond its outer side and arranged in the same planes as the side walls of the case and loosely occupying the openings in said side walls, an inflatable tube surrounding the box and arranged in and against the case, and an annulus of resilient or springy material surrounding the box and interposed between the same and the inflatable tube.

3. A wheel comprising a body containing a case having side walls in which are central, circular openings and also having a circular wall and apertures therein, a box arranged in the case and having rings of resilient material extending beyond its outer side and arranged in the same planes as the side walls of the case and loosely occupying the openings in said side walls, an inflatable tube surrounding the box and arranged in and against the case and having teats disposed in the apertures in the circular wall thereof, in combination with an axle occupying the box and having threaded portions, threaded disks mounted on the threaded portions of the axle and disposed at opposite sides of the case of the wheel, and antifriction-balls interposed between said disks and the ends of the box.

4. A wheel comprising a body containing a case, a box arranged in the case, an inflatable tube surrounding the box and arranged in and against the case, and an annulus of resilient or springy material surrounding the box and interposed between the same and the inflatable tube; in combination with an axle occupying the box, and disks fixed on the axle at opposite sides of the case of the wheel.

5. A wheel comprising a body containing a case having side walls provided with central, circular openings, a box arranged in the case and having rings of resilient material extending beyond its outer side and arranged in the same planes as the side walls of the case and loosely occupying the openings in said side walls, an inflatable tube surrounding the box and arranged in and against the case, and an annulus of resilient or springy material surrounding and held to the box and interposed between the same and the inflatable tube; in combination with an axle occupying the box, and disks fixed on the axle at opposite sides of the case of the wheel.

813,566. EXCAVATOR. WILLIAM R. MARTIN, Idaho Falls, Idaho. Filed July 20, 1905. Serial No. 271,700.

Claim.—1. In a machine of the class described, the combination with a receptacle, of a conveyer working thereacross and formed in successive sections, and means to successively dump the sections when passing across the receptacle.

2. In a machine of the class described, the combination with a receptacle, of a conveyer made up of a succession of independent sections, and a trip device located in the path of the sections when passing across the receptacle to successively dump the sections.

3. In a machine of the class described, the combination with a receptacle, of a conveyer made up of successive independent sections, each section having a hinge-joint intermediate of its ends and extending transversely thereof, and a trip disposed to successively break the joints of the conveyer-sections to dump the same when passing across the receptacle.

4. In a machine of the class described, the combination of a receptacle, a conveyer working thereacross and comprising spaced belts and a series of independent conveyer-sections carried thereby, each section having a hinge-joint intermediate of its ends and transversely thereof with the hinge-pintle projecting at opposite edges of the section, and a pair of rotatable trip members provided with cams located in the paths of the projected ends of the hinge-pintle and capable of being turned thereby to lift the pintle and break the joint of the conveyer-section to dump the contents thereof.

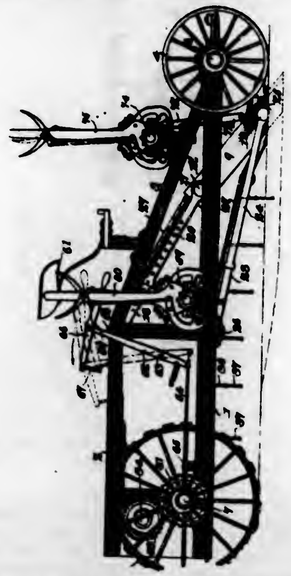

5. In a machine of the class described, the combination of a receptacle, a conveyer working across the receptacle and comprising spaced belts and a series of independent conveyer-sections pivoted therebetween, each conveyer-section having guide projections at opposite sides thereof, rails to support the conveyer-sections when passing across the receptacle, and trip members located in the paths of the projections to tilt the sections and dump the contents thereof.

6. In a machine of the class described, the combination of a receptacle, a conveyer working across the receptacle, means to cause the conveyer to dump into the receptacle, and means controlled by the accumulation of material in the receptacle to shift the position of the conveyer-dumping means to render the latter active at different successive positions.

7. In a machine of the class described, the combination of a receptacle, a conveyer working across the receptacle, a trip device for dumping the conveyer at the receptacle, and means to shift the position of the trip by the accumulation of material in the receptacle consisting of a spring-pressed element pivotally connected to the trip, and a rack and dog for said element to yieldably hold the same against the pressure of material in the receptacle, said element capable of yielding under the pressure of the collected material to disengage the dog from the rack and shift the element and the trip until the pressure is relieved and the dog reengages the rack.

8. In a machine of the class described, the combination of a receptacle, a conveyer working across the receptacle and including individual sections capable of being dumped, spaced rails extending across the receptacle, each rail being provided with a longitudinal series of openings to constitute a rack, a cross-head movably supported upon the racks, a trip carried by the cross-head and in the paths of the conveyer-sections to individually dump the same, and means to automatically shift the cross-head upon the track consisting of a plate pivotally hung from the cross-head, a spring to yieldably support the plate in a downwardly and forwardly inclined position within the receptacle, and dogs rising from the plate into cooperative relation with the respective racks, the plate capable of yielding under the pressure of the collected material within the receptacle to disengage the dogs from the racks and permit rearward movement of the cross-head with the plate under the pressure of the material, the spring serving to return the dogs into engagement with the racks when the pressure of the material is decreased.

9. In a machine of the class described, the combination of a receptacle, a conveyer leading thereto, independent vertically-tiltable bottom sections for the receptacles, controlling-cables connected to the bottom sections, guides for the cables, and a controlling-windlass around which the cables are wound.

10. In a machine of the class described, the combination with a receptacle, of an endless conveyer working across the top and bottom of the receptacle and made up of a succession of sections pivotally connected to the belts of the conveyer, means to dump the conveyer-sections when passing across the top of the receptacle, and one or more tiltable bottom sections for the receptacle to permit dumping thereof, the sections of the conveyer being unsupported and permitted to hang downwardly when passing across the bottom of the receptacle to permit downward tilting of the bottom sections of the receptacle between adjacent conveyer-sections.

11. In a machine of the class described, the combination with a wheel-supported frame, of an endless conveyer driven from one of the wheels, a clutch included in the drive connection for the conveyer, and controlling means connected to the clutch and capable of being engaged with the conveyer to automatically release the clutch and stop the conveyer.

12. In a machine of the class described, the combination with a wheel-supported frame, of an endless conveyer driven from one of the wheels, a clutch included in the drive connection for the conveyer, a lever, a connecting-rod between the lever and the clutch, and a dog pivotally carried by the lever and capable of being engaged with the conveyer to automatically move the lever and release the clutch.

13. In a machine of the class described, the combination with a wheeled frame, of a scraper, pairs of overlapped adjustably-connected bars pivotally connected to the upper portion of the scraper and to an upper portion of the frame, other pairs of overlapped adjustably-connected bars connected to the lower portion of the scraper and the lower portion of the frame, each pair of bars being inclined upwardly and rearwardly from the scraper, and means connected to the scraper for raising and lowering the same.

813,567. FOUR-HORSE EQUALIZER. CHARLES H. MATLOCK, Linden, Ill. Filed Aug. 21, 1905. Serial No. 275,143.

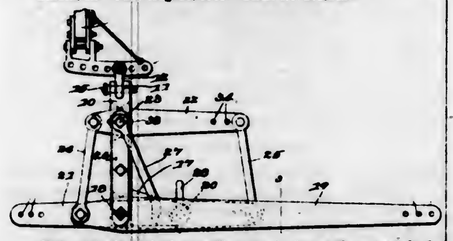

Claim.—1. In a draft-equalizer, a clevis member, two draft-beams of unequal length each pivoted near one of its ends to said clevis member, the longer arms of the beams extending, respectively, in opposite directions, an equalizer-beam pivoted near one of its ends to said clevis, a coupling member between the shorter arm of the equalizer-beam, and the shorter arm of the longer draft-beam, and a coupling member between the longer arm of the equalizer-beam and the shorter arm of the short draft-beam.

2. In a draft-equalizer, a clevis member having a laterally-extending bracket, a relatively long draft-beam pivoted near one end to said clevis, a relatively short draft-beam pivoted near one end to said bracket with the longer ends of said draft-beams extending in opposite directions, an equalizer-beam pivoted to said clevis, a coupling element between the shorter end of said equalizer-beam and the shorter end of said longer draft-beam, and a coupling element between the longer end of said equalizer-beam and the shorter end of said shorter draft-beam.

813,568. INCANDESCENT-LAMP SOCKET. ROBERT B. MILLER, Grand Rapids, Mich. Filed Jan. 3, 1905. Serial No. 239,209.

Claim.—1. In an incandescent-lamp socket, a triangular switch-lever fulcrumed at or near the center of the triangle and having upon the inner arm thereof an extension-lever, pivoted thereto and fulcrumed thereon by projections upon the switch-lever on either side thereof and spaced a little wider than the width of the extension-lever, adapted to engage a spring contact-piece to close the circuit and to quickly release the same in breaking the circuit, all substantially as described.

2. In an incandescent-lamp socket, the combination of an insulating-block L, the center contact-stud D, the contact-spring B secured to the stud by the screw C set at an angle to prevent the turning of the stud D, the nut F connected with one of the circuit-wires and adapted to complete a circuit by contact with the spring B, and the triangular switch-lever pivoted on the fulcrum E at or near the center of the triangle and adapted to engage the spring B to open or close the circuit by pressing upon the alternately-elevated outer arms of said lever, all substantially as set forth.

3. In an incandescent-lamp socket, the combination of an insulating-block M, an insulating-block N adapted to telescope thereon, the bolt O and nut P, the outer contact-screw G and nut E, the center contact-stud D, the contact-spring B secured to the stud D by the screw C set at an angle to prevent the turning of the stud, the nut F connected with a circuit-wire and adapted to complete a circuit by contact with the spring B, and the triangular switch-lever pivoted on the fulcrum E near the center of the triangle and adapted to engage the spring B to open or close the circuit by pressing upon the alternately-elevated outer arms of said lever, all substantially as set forth.

813,569. PUSH-RAKE. WILSON W. MILLER, Newton, Kans. Filed Apr. 29, 1905. Serial No. 258,086.

Claim.—1. In a rake of the class described, the combination with a fork, of an ejector operating thereover, a winding-drum, a cable connection between the drum and ejector, and means for operating the drum.

2. In a rake of the class described, the combination with a fork, of a ground-wheel for the fork, an ejector operating over the fork, a winding-drum, a cable connection between the drum and ejector, and means for connecting the ground-wheel and drum for operating the latter from the former, said means including a clutch.

3. In a rake of the class described, the combination with a fork, of an axle-shaft journaled thereon, ground-wheels carried by the shaft, an ejector operating over the fork, a winding-drum loosely journaled on the axle-shaft, a cable connection between the drum and ejector, a clutch mounted on the axle-shaft for connecting the same to the drum, and means for operating the clutch.

4. In a rake of the class described the combination with a fork of a tongue extending centrally and rearwardly thereof, a ground-wheel support for the fork, an ejector operating over the fork, an ac-

tuating-bar centrally connected to the ejector and movably connected to the tongue, and means operated by the ground-wheel support for moving the actuating-bar and thereby the ejector.

5. In a rake of the class described, the combination with a fork, of a tongue extending centrally and rearwardly thereof, a ground-wheel support for the fork, an ejector operating over the fork, an actuating-bar movable along the tongue, a pivotal connection between the bar and the central portion of the ejector, braces pivotally connecting the end portions of the ejector and the bar, and means for moving the bar to actuate the ejector.

6. In a rake of the class described, the combination with a forwardly-extending fork, of an axle-shaft, ground-wheels for supporting the fork, a rearwardly-extending tongue for the fork, an ejector-frame slidably mounted on the fork and movable thereover, an actuating-bar slidably mounted upon the tongue, a pivotal connection between the bar and the central portion of the ejector-frame, oppositely-extending brace-links pivotally connecting the bar and the end portions of the frame, a drum journaled upon the axle-shaft, a cable connection between the drum and bar, and a clutch for connecting the drum and axle-shaft.

7. In a rake of the class described, the combination with a forwardly-extending fork, of a movable ground-support for the fork, an ejector for the fork movable thereover, actuating means for moving the ejector, and a spring connection between said means and ejector.

8. In a rake of the class described, the combination with a fork, of an ejector movable thereover, actuating means for moving the ejector including a bar pivoted to said ejector, and a spring connection between the bar and the ejector.

9. In a rake of the class described, the combination with a forwardly-extending fork, of a wheeled support therefor including an axle-shaft, a rearwardly-extending tongue, an ejector-frame having a roller bearing upon the fork and movable transversely thereover, an actuating-bar pivotally connected to the frame and slidable upon the tongue, braces connecting the bar and frame and permitting the pivotal movement thereof, a spring connection between the bar and upper portion of the frame, a drum loosely journaled on the axle-shaft, a cable connection between the drum and the rear portion of the actuating-bar, a clutch for connecting the drum and axle-shaft, and means mounted on the tongue for actuating the clutch.

813,570. **TYPE-WRITING MACHINE.** JOHN H. MOLLE, Sturgeon Bay, Wis. Filed Dec. 28, 1904. Serial No. 238,575.

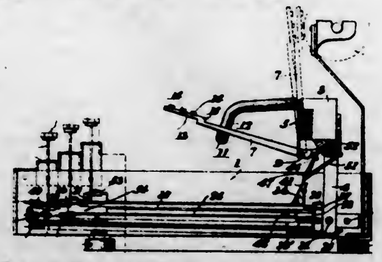

Claim.—1. The combination with a type-bar and a key, of a connecting-rod terminating at opposite ends in cranks which are respectively connected to the key and the type-bar, and a support engaging the crank-arms intermediate of their ends with the arms rotatable thereon, the connecting-bar being free to rotate upon the support for actuating the type-bar by a depression of the key and said connecting-bar also capable of being torsionally twisted when the type-bar strikes the platen to permit further depression of the key and thus cushion the action.

2. The combination with a type-bar and a key, of a torsionally-twistable rock-bar terminating at opposite ends in cranks which are respectively connected to the type-bar and the key, and a supporting-rod loosely piercing the crank-arms.

3. The combination with a type-bar and a key, of an elastic torsionally-twistable rock-bar terminating at opposite ends in cranks which are respectively connected with the type-bar and the key, a supporting-rod loosely piercing the cranks, and means carried by the rod to prevent creeping of the rock-bar under its torsional elastic action.

4. The combination with a type-bar and a key, of a torsionally-twistable elastic rock-bar terminating at opposite ends in cranks which are respectively connected with the type-bar and the key, a supporting-rod loosely piercing the cranks, and elastic sleeves frictionally embracing the rod and in engagement with the opposite ends of the bar to prevent creeping of the latter under its torsional action.

5. The combination with a type-bar and a key, of a rock-bar provided with opposite cranks which are respectively connected to the type-bar and the key, and a supporting-rod loosely piercing the cranks.

6. In a key-action for type-writing machines, the combination of a rock-bar having a crank provided with a perforation, a guard member adjacent the crank, and a key having a stem provided with a lateral pin detachably engaging the perforation in the crank and working between the latter and the guard member to prevent displacement of the stem.

7. A type-writing machine having a main frame, projections extending inwardly from the frame at one end thereof, a key-action frame removably supported at one end upon the projections, set-screws carried by the key-action frame adjacent the projections for frictional engagement with the main frame, and other set-screws piercing the other end of the main frame for detachable engagement with the key-action frame.

8. In a type-writing machine, the combination with a frame, of a type-bar support, type-bars mounted upon the support, a key-action frame having its opposite ends provided with corresponding perforations, rods having their ends supported in the perforations of the key-action frame, rock-bars mounted upon the rods and connected to the corresponding type-bars, and keys connected to the rock-bars for rocking the same upon their supporting-rods.

9. In a type-writing machine, the combination of a frame, a type-bar support carried by the frame above the rear end thereof, type-bars mounted upon the support, rods extending between the front and back of the frame, rock-bars mounted upon the rods and terminating at opposite ends in cranks, connections between the rear cranks and the type-bars, guard-bars carried by the front of the frame and extending thereacross adjacent the front cranks, and keys having stems connected with the respective front cranks and working between the latter and the adjacent guard-bars.

10. In a type-writing machine, the combination with a frame, a type-bar support, a type-bar mounted thereon, a rod having its ends supported in openings in opposite ends of the frame, a torsionally-twistable elastic rock-bar having terminal cranks pierced by the rod, an operative connection between one of the cranks and the type-bar, a key connected to the other crank, an elastic sleeve frictionally embracing the rod and bearing against one end of the rock-bar and the adjacent end of the frame, another elastic sleeve frictionally embracing the rod and bearing against the opposite end of the rock-bar, and a third elastic sleeve embracing the rod and bearing against the other end of the frame, said sleeves operating to prevent creeping of the rock-bar upon the rod and prevent accidental endwise displacement of the rod through the openings in the frame.

813,571. **TOE OR GROUTER ATTACHMENT FOR TRACTION-WHEELS.** JOHN MCDONALD, Blair township, Washington county, Nebr. Filed Oct. 7, 1905. Serial No. 281,880.

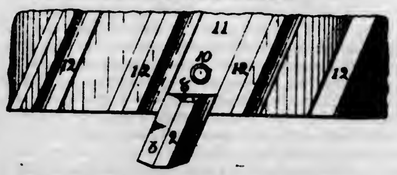

Claim.—1. A toe or grouter attachment for traction-wheels consisting of a part to project laterally to engage the road at one side of the path of the wheel and having a bifurcate base to engage the adjacent edge of the rim of the wheel and adapted to be rigidly fastened thereto.

2. A toe or grouter for the wheels of traction-engines, having a bifurcated base to engage the edge of the rim of the wheel; and the inner branch of the forked base bifurcated to engage a spoke of the wheel.

3. A detachable toe or grouter to set to one side of the tread of a traction-wheel, and having a bifurcate base to engage the edge of the rim of said traction-wheel, and one branch of said base furcation again bifurcated to engage a spoke or bolt through the said rim.

4. A detachable toe or grouter, for the drive-wheels of traction-engines, having a bifurcation to engage the rim of the wheel, the inner branch of this bifurcation bifurcated to engage a spoke of the wheel, and a bolt disposed through the inner branches against the spoke.

813,572. **MOLDING APPARATUS.** WILLIS H. MCDOWELL, Auburn, Ind. Filed May 19, 1905. Serial No. 260,113.

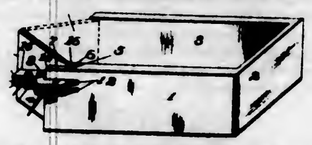

Claim.—1. A mold having one side formed with a recess, the edge of the adjacent end being beveled to loosely seat in the said recess, and means to adjust said latter end.

2. A mold having one side reduced at the end to provide a transversely-arranged shoulder, the adjacent end having one edge beveled to bear against said shoulder and means to adjust said end.

3. A mold having one side formed with a recess and provided with clamping-arms, the adjacent end of the mold being beveled to seat in said recess, and an arm projecting from said end and normally held between the clamping-arms.

4. A mold having one side formed with a recess and provided with clamping-arms, the adjacent end of the mold being beveled to seat in said recess, an arm projecting from said end and normally held between the clamping-arms, and means for adjusting said clamping-arms.

813,573. **MACHINE FOR MANUFACTURING CONCRETE BUILDING-BLOCKS.** WILLIS H. MCDOWELL, Auburn, Ind. Filed Aug. 10, 1905. Serial No. 273,660.

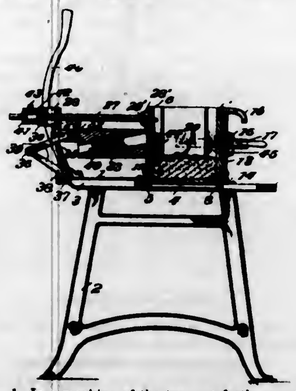

Claim.—1. In a machine of the type set forth, a mold having openings in one side thereof, rods supported solely from one of the mold sides, a cross-head comprising a bar penetrated by said rods, extensions carried by the bar and spaced from the same, and also penetrated by said rods, webs connecting the said extensions to the bar, downwardly-extending projections carried by the bar, cores having bosses, means for securing said bosses to said projections, and means for operating the cross-head.

2. In a machine of the type set forth, a core having an inclined opening extending from end to end of the same, a guide-lip carried at the front of the core and below the opening thereof, and a mold having an opening to receive said lip.

3. In combination with a mold, a core formed with an opening, an element of shovel-like form carried by the core to deposit the displaced plastic material in said opening, and means to operate the core.

813,574. **WIRE-STRETCHER.** WILLIAM MCNAMES, Aberdeen, S. D. Filed May 5, 1905. Serial No. 259,973.

Claim.—1. A wire-stretcher comprising an elongated open frame, an operating-lever pivoted at the middle thereof, two spring-pressed dogs carried by the lever, two rope-drums mounted in the frame, one near each side of the lever, ratchet-wheels on the drums operated by the dogs, stopping-pawls pivoted to the frame and engaging the ratchet-wheels, two ropes, one wound on each drum and having at their free ends means for attaching them to objects.

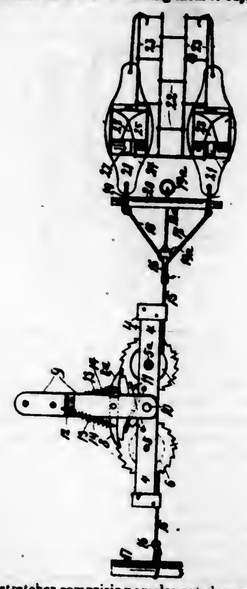

2. A wire-stretcher comprising an elongated open frame, an operating-lever pivoted at the middle thereof, two spring-pressed dogs carried by the lever, two rope-drums mounted in the frame, one near each side of the lever, ratchet-wheels on the drums operated by the dogs, stopping-pawls pivoted to the frame and engaging the ratchet-wheels, two ropes, one wound on each drum, and snap-hooks secured to the free ends of one or both of the ropes.

3. A wire-stretcher comprising an elongated open frame, an operating-lever pivoted at the middle thereof, two spring-pressed dogs carried by the lever, two rope-drums mounted in the frame, one near each side of the lever, ratchet-wheels on the drums operated by the dogs, stopping-pawls pivoted to the frame and engaging the ratchet-wheels, two ropes, one wound on each drum, a plurality of arms, 18 18ª, extending from the outer end of one of the ropes, wire-clamping devices carried by each of said arms, and means for holding the arms spread.

4. A wire-stretcher comprising an elongated open frame, an operating-lever pivoted at the middle thereof, two spring-pressed dogs carried by the lever, two rope-drums mounted in the frame, one near each side of the lever, ratchet-wheels on the drums operated by the dogs, stopping-pawls pivoted to the frame and engaging the ratchet-wheels, two ropes, one wound on each drum, a plurality of arms, 18 18ª, extending from the outer end of one of the ropes, wire-clamping devices carried by each of said arms, and means for holding the arms spread, and snap-hooks at the ends of the two ropes, substantially as and for the purposes set forth.

813,575. **EYELET.** ARTHUR C. NICHOLS, Waterbury, Conn., assignor to Scovill Manufacturing Company, Waterbury, Conn., a Corporation of Connecticut. Filed Mar. 24, 1903. Serial No. 149,200.

Claim.—1. An eyelet, having a flange flat on both sides, an integral barrel or tube, a shoulder formed in the barrel below the flange, and a coating applied to the face and rim of the flange and terminating within the shoulder, and exposing a circle of the bright metal of the barrel or tube.

2. An eyelet, having a flange flat on both sides, a barrel or tube integral with the flange, a shoulder formed in the barrel below the flat flange, and a coating of enamel applied flat to the surface of the flange and around its rim and terminating within the shoulder and exposing a circle of the bright metal of the barrel or tube.

813,576. APPARATUS FOR LIGHTING AND EXTINGUISHING GAS. RICHARD H. OAKMAN, New York, N. Y. Filed May 27, 1905. Serial No. 262,667.

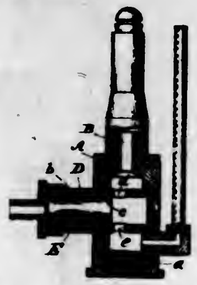

Claim.—1. In a gas lighting and extinguishing apparatus, a cylinder having a throughway for the passage of gas to a burner, and provided with a reciprocating piston, arranged to close the throughway when the body of the piston covers it, and to open the throughway, when moved in the reverse direction until the end of the piston has passed over and beyond the throughway, in combination with a burner at the end of the throughway and a duct upon the piston communicating from the rear of the cylinder to the throughway to the burner.

2. In a gas lighting and extinguishing apparatus a cylinder provided with a throughway for the passage of gas to the burner and having a reciprocating piston, to open and close the throughway of the cylinder, in combination with a burner at the end of the throughway, a duct upon the piston, communicating with the throughway to the burner, and means for preventing the piston from turning within the cylinder.

3. In a gas lighting and extinguishing apparatus a cylinder provided with a throughway for the passage of gas to the burner and having a reciprocating piston, and a burner at the upper end of the throughway in combination with a duct upon the piston, extending to its end and communicating from the rear end of the cylinder to the throughway leading to the burner, a small burner having its flame located in the path of the main burner, and a small passage-way to this burner leading from a point in the gas-conduit below the cylinder.

813,577. APPARATUS FOR CONTROLLING GAS-CONDUITS. RICHARD H. OAKMAN, New York, N. Y. Filed June 19, 1905. Serial No. 265,894.

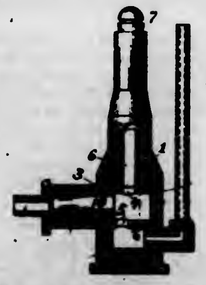

Claim.—1. In an apparatus for controlling gas-conduits, a cylinder having openings or ports, communicating with a gas-conduit, and provided with a solid reciprocating piston, to close the ports when its body covers them, and to open the ports when its end has passed beyond them, in combination with a duct leading from the rear end of the cylinder to the gas-conduit.

2. In an apparatus for controlling gas-conduits, a cylinder having openings or ports communicating with a gas-conduit, in combination with a solid reciprocating piston to open and close the ports, said cylinder provided with a slot in its upper wall, extending from its upper gas-port to the rear end of the cylinder.

813,578. ADDING-MACHINE. JOSEPH PALLWEBER, Mannheim, Germany. Filed May 13, 1904. Serial No. 207,894.

Claim.—An adding-machine comprising a set of toothed intermeshing wheels and operating means therefor comprising a lever oscillatably mounted on the shaft of one of the toothed wheels, a pawl loosely connected at one end with the lever and adapted to engage at the other end with the teeth of said gear-wheel, a slide having teeth each provided with an inclined edge, keys arranged to bear upon the inclined edges of the teeth and shift the slide when said keys are depressed, a link connected at one end with an arm of the oscillatable lever and at the other end with the slide, and a plate *q* bent as described and with which the pawl is adapted to engage in the manner and for the purpose specified.

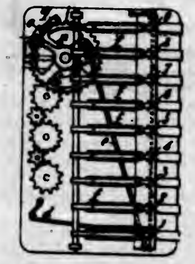

813,579. CYLINDER-TOOTH. LARS P. PEDERSEN, Westbrook, Minn. Filed July 10, 1905. Serial No. 268,944.

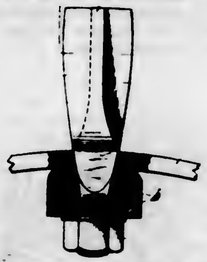

Claim.—A reversible cylinder-tooth formed with laterally-offset blade portions 1^a united by a web portion 1^b providing the blade portions of said tooth with a plurality of laterally-offset striking edges or surfaces and making the same reversible, substantially as described.

813,580. SIGN. CHARLES A. PETERSON, Salt Lake City, Utah. Filed May 29, 1905. Serial No. 262,913.

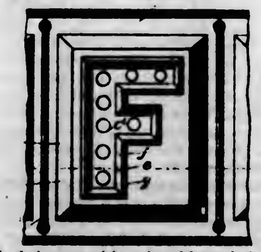

Claim.—1. A sign comprising a board for each character on the sign, a letter-base having beveled edges on each of said boards, hollow letters set up on edge on said bases; lights in said letters projecting through apertures in said bases, upwardly and outwardly inclined flanges *f* on the outer edges of said letters and outwardly and downwardly inclined flanges *g* on the outer edges of said flanges *f*, as described.

2. A sign comprising letter-bases, hollow letters set up on edge on said bases, lights in said letters projecting through apertures in said bases, upwardly and outwardly inclined flanges *f* on the outer edges of said letters and outwardly and downwardly inclined flanges on the outer edges of said flanges *f*, as herein set forth.

813,581. HAY-LOADER. SAMUEL V. PLESS, Polk, Ohio. Filed Apr. 17, 1905. Serial No. 256,041.

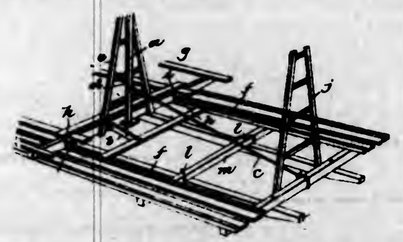

Claim.—1. An attachment for hay-loader, comprising a track independent of but adapted to be mounted upon the loader, a car removably mounted on said track so as to run back and forth thereon, a crank-shaft on the car, and a rope or cable connecting said crank-shaft with one end of the loader to adapt the car when loaded to be drawn toward said end, substantially as described.

2. An attachment for hay racks or loader, comprising a track having rails extending longitudinally of the rack and removably mounted thereon, a platform or car on wheels adapted to run along said track, an upright at one end of said car, a vertical shaft adjacent to said upright having a flexible connection with a fixed part of the rack, for drawing the car along said track, a latch carried by the car adapted to engage a fixed point and hold the car stationary, and a flexible connection between said latch and a point near the upper end of the vertical shaft, for operating said latch to release the car.

3. An attachment for hay racks or loader comprising a track having rails extending longitudinally of and removably mounted on the rack, a wheeled platform or car removably mounted on said track-rails, means carried by the car for moving it along the track and for holding it against forward movement, and means for releasing said holding means to permit the car to move forward.

4. An attachment for hay racks or loader comprising a track adapted to be mounted upon the rack and removable therefrom, a platform or car mounted on said track and adapted to run back and forth thereon, means carried by the car for engaging the track to prevent movement of the car, a vertical shaft and upright or support therefor at one end of the car, and a rope or cable connecting said shaft with a fixed part of the rack for drawing the car along said track.

5. An attachment for hay racks or loader comprising a track adapted to be mounted upon the rack and removable therefrom, a platform or car mounted on said track and adapted to run back and forth thereon, a vertical crank-shaft and an upright or support therefor at one end of the car, and a rope or cable connecting said shaft with a fixed part of the rack, for drawing the car along said track.

6. In combination with the hay-loader, a track mounted thereon and removable therefrom, a car removably mounted on and movable along said track, a vertical crank-shaft on said car, a rope or cable connecting said shaft with one end of the loader, a latch on the car adapted to engage a fixture on said track for holding the car stationary, and means adjacent to said crank-shaft for releasing said latch to permit the car to be moved forward by turning the crank, substantially as described.

7. In combination with a hay loader or frame, a track removably mounted thereon, a car mounted on and movable along said track, a vertical shaft on said car, a rope or chain extending around said shaft and secured at one end to one end of the loader or frame, and a latch and manipulating-cord extending therefrom to a point near the upper end of said shaft for holding the car stationary and releasing it at will to permit it to move forward when the shaft is turned, substantially as described.

813,582. ELECTRIC STORAGE BATTERY. HARRIS H. PORTER, Providence, R. I., assignor to Rhode Island Electrosmelting Company, Providence, R. I., a Corporation of Maine. Filed Sept. 21, 1903. Serial No. 173,327.

Claim.—1. In a storage battery, a separating device for the successive plates, consisting of a thin layer of wood having parallel rectangular vertical grooves arranged alternately on its opposite sides, and, between them, relatively wide flat spaces, each such space being directly opposite a groove on the other face of said layer, such separator being notched at one end to receive the supporting-rib in the battery-jar whereby such separator may extend below the adjacent plates, to prevent short-circuiting, substantially as set forth.

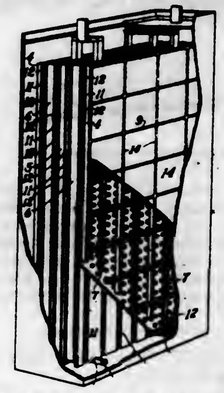

2. In a storage-battery, a separating device for the successive plates consisting of a thin layer of wood having parallel vertical grooves arranged alternately on its opposite sides, and, between them, plane surfaces substantially wider than said grooves, each such surface being directly opposite a groove on the other face of said layer.

3. In a storage battery, a separating device for the successive plates, consisting of a thin layer of wood having parallel vertical grooves arranged alternately on its opposite sides, and, between them, plane surfaces substantially wider than said grooves, each such surface being directly opposite a groove on the other face of said layer, in combination with a perforated sheet of non-conducting material, as and for the purpose set forth.

4. A porous separator for secondary-battery plates, having on its faces a series of flat surfaces and grooves, said surfaces being substantially wider than said grooves, and the surfaces on one face being opposite the grooves on the other face.

5. A porous separator for secondary batteries, having on each of its faces alternate plane surfaces and grooves, the plane surfaces being substantially wider than the grooves and the plane surfaces on one face being opposite grooves on the other.

6. The combination of a non-conducting perforated sheet adapted to hold the active material in position with a porous separator having on each of its faces alternate plane surfaces and grooves, the plane surfaces being substantially wider than the grooves.

7. The combination of a porous sheet adapted to maintain the active material in position, with a porous secondary-battery separator having on its face alternate plane surfaces and grooves, the plane surfaces being substantially wider than the grooves.

813,583. YARN AND PROCESS OF MAKING THE SAME. CLIFFORD B. POTTER, Springfield, Mass. Filed June 13, 1903. Serial No. 161,300.

Claim.—1. The method of making a cotton and wool yarn which consists in drawing the wool into a sliver, then mechanically subdividing the latter transversely into sections whose length shall equal substantially the length of the cotton fiber, then mixing the fibers and forming the yarn in the usual manner.

2. A yarn composed of cotton and wool fibers, the latter being cut from a sliver into lengths corresponding substantially to the length of the cotton fiber.

3. A yarn composed of cotton and wool fibers, the latter being cut from a sliver into lengths corresponding substantially to the length of the cotton fibers and uniformly distributed therewith throughout the yarn, said wool fibers presenting an extended area of exposed ends.

813,584. IRON RAILROAD-TIE. OTIS H. PRIBBLE, Collinwood, Ohio. Filed Nov. 8, 1905. Serial No. 286,361.

Claim.—1. The combination with a railroad-tie having a base-flange and a rail-bearing flange, of a clamping member mounted

upon said rail-bearing flange, said clamping member having a flange engaging the rail and a plurality of flanges engaging opposite sides of said rail-bearing flange, and a wedge engaging the upper face of said clamping member.

2. The combination with a railroad-tie having a base-flange and a rail-bearing flange, of a clamping member mounted upon said rail-bearing flange, said clamping member having a flange engaging the rail and a plurality of flanges engaging opposite sides of said rail-bearing flange, a wedge engaging the upper face of said clamping member, a bolt passing through said wedge, said clamping member and said rail-bearing flange and means for holding said bolt against turning.

818,585. GARMENT. WILLIAM J. REID, Dalton, Pa. Filed Dec. 27, 1904. Serial No. 238,343.

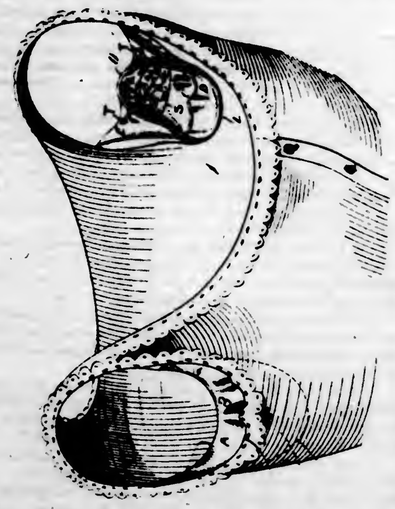

Claim.—1. The combination with a garment having an arm-opening, of a part of the garment adapted to receive and temporarily retain an independently-complete dress-shield, said part being constructed and arranged to form a pocket independently of the material of the garment-body, whereby the garment-body is undisturbed by the existence of the pocket; said pocket being permanently secured to and incorporated with the garment proper by attachment thereto at or near the arm-opening thereof, whereby are avoided all undesirable attachments to the garment-body; and said pocket having a suitable permanently-formed opening adapted for the ready insertion and removal of the independently-complete dress-shield.

2. The combination with a garment having an arm-opening, of a part of the garment adapted to receive and temporarily retain an independently-complete dress-shield, said part being constructed and arranged to form a pocket independently of the material of the garment proper, whereby the garment-body is undisturbed by the existence of the pocket; said pocket being permanently secured to and incorporated with the garment proper by the attachment of its lower or under side to the garment at or near the arm-opening, whereby are avoided all undesirable attachments to the body part of the garment-body; and said pocket having a suitable permanently-formed opening adapted for the ready insertion and removal of the independently-complete dress-shield.

3. The combination with a garment having an arm-opening, of a part of the garment adapted to receive and temporarily retain an independently-complete dress-shield, said part being constructed and arranged to form a complete pocket for the two flaps of the dress-shield, independently of the material of the garment-body, said complete pocket being permanently secured to and incorporated with the garment proper by attachment thereto at or near the arm-opening thereof, whereby are avoided all undesirable attachments to the body part of the garment proper; and said pocket having a suitable permanently-formed opening adapted for the ready insertion and removal of the independently-complete dress-shield.

4. The combination with a garment having an arm-opening, of a part of the garment adapted to receive and temporarily retain an independently-complete dress-shield, said part being constructed and arranged to form a complete pocket for the two flaps of the dress-shield, independently of the material of the garment-body; said pocket being permanently secured to and incorporated with the garment proper by the attachment thereto at or near the arm-opening thereof, of the under side of the pocket, whereby are avoided all undesirable attachments to the body part of the garment proper; said pocket having an opening permanently formed therein at a place other than at the arm-opening.

818,586. RATCHET MECHANISM FOR TOOLS. HUBERT P. RICHARDS, New Britain, Conn., assignor to Stanley Rule & Level Company, New Britain, Conn., a Corporation of Connecticut. Filed Apr. 11, 1905. Serial No. 255,054.

Claim.—1. In a ratchet mechanism for tools, a driving part, a driven part, a spindle carried by one of the parts and rotatably engaging the other part, a pawl-carrying member embracing said spindle and arranged between it and the surrounding wall of said driving part, said pawl-carrying member comprising two independent ring segments or sections, a plurality of pawl-teeth at the lower end of each of said sections, the teeth on one section being faced oppositely to the teeth on the other section, a ratchet on the driven part facing said pawl-teeth and means to retract either of said sections from engagement with said ratchet at will.

2. In a ratchet mechanism for tools, a driving part, a driven part, a spindle carried by one of the parts and rotatably engaging the other part, a pawl-carrying member embracing said spindle and arranged between it and the surrounding wall of said driven part, said pawl-carrying member comprising two independent ring segments or sections, a plurality of pawl-teeth at the lower end of each of said sections, the teeth on one section being faced oppositely to the teeth on the other section, a ratchet on the driven part facing said pawl-teeth, a lateral extension from each section of said pawl member, said extensions projecting into longitudinal grooves or recesses in the surrounding wall of the driving part, and a controlling member cooperating with said sections to retract either of the same at will.

3. In a ratchet mechanism for tools, a driving part, a driven part, a spindle carried by one of the parts and rotatably engaging the other part, a pawl-carrying member embracing said spindle and arranged between it and the surrounding wall of said driving part, said pawl-carrying member comprising two independent ring segments or sections, a plurality of pawl-teeth at the lower end of each of said sections, the teeth on one section being faced oppositely to the teeth on the other section, a ratchet on the driven part facing said pawl-teeth, a lateral extension on each section of said pawl member, said extensions projecting into longitudinal grooves or recesses in the surrounding wall of the driving part, and a controlling-sleeve cooperating with said extensions to retract either of said sections at will from engagement with said ratchet.

4. In a ratchet mechanism for tools, a driving part, a driven part, a spindle carried by one of said parts and rotatably engaging the other part, a sleeve-like extension on said driving part, slots therein, a pawl-carrying member embracing said spindle and bearing between the same and the surrounding wall of the driving part, said pawl-carrying member comprising two independent longitudinally-movable ring segments or sections, a plurality of pawl-teeth on the lower end of each of said sections, the teeth on one section being faced oppositely to the teeth on the other section, a ratchet on the driven part facing said pawl-teeth, lateral extensions on each of the sections of the pawl-carrying member, said extensions projecting through said slots in said sleeve-like extension, and an external cam surrounding said sleeve-like extension and engaging said projections.

5. In a ratchet mechanism for tools, a driving part, a driven part, a spindle on the latter rotatably engaging the former, a sleeve-like extension on the former overstanding the spindle and spaced apart therefrom, a housing, a pawl-carrying member including two independent longitudinally-movable ring segments or sections between the spindle and the inner wall of said sleeve-like extension, a plurality of teeth on the lower end of each of said sections, the teeth on one section being faced oppositely to the teeth on the other section, a ratchet on the driven part and means to cause both of said sections to normally move into engagement with said ratchet, and manually-controllable means to permit either of said sections to be retracted from operative engagement with said ratchet at will.

6. In a ratchet mechanism for tools, a driving part, a driven part, a spindle on the latter rotatably engaging the former, a sleeve-like extension on the former overstanding the spindle and spaced apart therefrom, a housing, a pawl-carrying member including two independent longitudinally-movable ring segments or sections between the spindle and the inner wall of said sleeve-like extension, a plurality of teeth on the lower end of each of said sections, the teeth on one section being faced oppositely to the teeth on the other section, a ratchet on the driven part and means to cause both of said sections to normally move into engagement with said ratchet, and manually-controllable means to permit either of said sections to be retracted from operative engagement with said ratchet at will, said means comprising a sleeve-like controlling member having a cam at its inner side, and a projection on each of said sections passing through a slot in said sleeve-like driven extension and coöperating with said cam.

818,587. BARREL-STAND. CONSTANCE A. RIEK, Hermann, Mo., assignor of one-half to Charles H. Scheuerman, Hermann, Mo. Filed May 4, 1905. Serial No. 258,758.

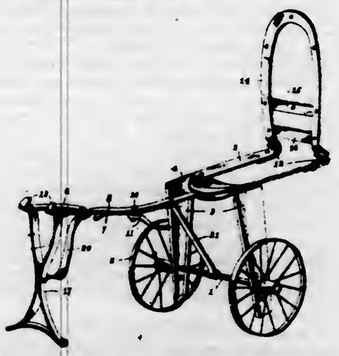

Claim.—1. A barrel-stand, having a support for a side of a barrel mounted therein, said support comprising a plurality of adjustable sections, hooks carried by the outer ends of said sections to engage the chime at the opposite ends of the barrel and means at an approximately right angle to the first-named support for engaging and supporting one end of the said barrel.

2. A barrel-stand, having a support for the side of a barrel mounted therein, comprising a plurality of U-shaped sections adjustably secured together and a U-shaped section rigidly secured to the free ends of one of the U-shaped sections, at an approximately right angle thereto.

3. A barrel-stand, having a support for the side of a barrel mounted therein and a support at right angles thereto for one end of the barrel and a wheel-supported frame adapted and arranged to be secured at the option of a user to the side support or to the end support.

4. A barrel-stand, having a support for the side of a barrel mounted therein and a support at right angles thereto for the end of a barrel, a wheel-supported frame adapted and arranged to be secured at the option of a user to the side support or to the end support and a supplemental supporting frame or brace adapted to be secured at the option of the user to one end of either the side support or the end support.

818,588. ADJUSTABLE PIPE-BRACKET. JOHN B. ROLLINS, Chicago, Ill., assignor to Crane Company, Chicago, Ill., a Corporation of Illinois. Filed Feb. 28, 1905. Serial No. 247,661.

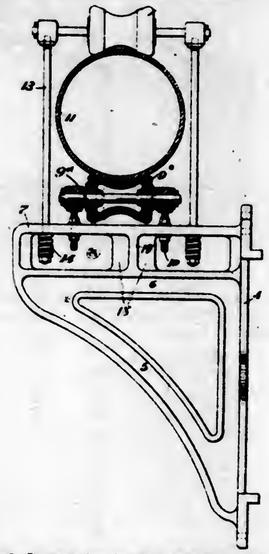

Claim.—1. In a pipe bracket the combination of a fixed horizontal bracket, and pipe holding and clamping devices mounted on said bracket, said devices including vertical adjusting screws for varying the elevation, engaging the fixed bracket adjustably in a horizontal direction, substantially as described.

2. In a pipe bracket the combination of a supporting webbed bracket having a slotted top plate, clamping devices mounted for adjustment vertically and horizontally thereon, and comprising vertical adjusting screws passing through the slot of the top plate, and the said slot being in the median line of the plate, substantially as described, whereby the pipe is supported directly over the web of the bracket.

3. In a pipe bracket, the combination with an attaching base plate 4 and a horizontal top plate 7 having open slots 7° in the median line thereof, of a web 5 and a horizontal flange attached thereto beneath the top plate and spaced apart therefrom to leave open spaces between the flange and plate, whereby attaching devices for the pipe may be passed through the slot in the top plate and their ends manipulated in the space under the top plate.

4. In a pipe bracket, the combination with adjustable pipe holders 9 and 12, bolts 10 and 13 and nuts for supporting said holders, of a bracket having a top plate with slots 7° at the median line thereof, and a web with open spaces in communication with said slots, beneath said top plate, said bolts extending through said slots and said open spaces receiving said nuts and the lower ends of said bolts.

5. The combination with a bracket having a vertical web and a centrally slotted top flange plate, and open spaces 8 in the web under said top plate, of a pipe support carried by said bracket comprising bolts 10 engaging the slots in said plate and nuts for adjusting their position therein, whereby the weight of the pipe may be supported over the median line of the bracket and the pipe support may be adjusted both vertically and laterally on the bracket.

6. A pipe bracket comprising the combination of a vertical face plate, a supporting arm and a horizontal plate above and spaced from said supporting arm, said horizontal plate being provided in its median line with slots communicating with the space beneath, bolts extending through said slots and adjustable therein vertically and laterally and adapted to carry a pipe supported at their upper ends, substantially as described.

818,589. CLOTHES-PIN. HENRY I. RUMFORD and JAMES R. DOUGLASS, Willowdale, Tex. Filed Aug. 4, 1905. Serial No. 272,786.

Claim.—1. The combination with a clothes-line, of a clothes-pin having a resilient coil encircling the line, means held in contact with

the line at opposite sides of and by the resiliency of the coil and means whereby the line may be engaged at an additional point at either side.

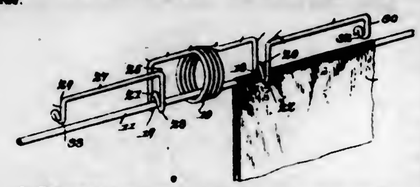

2. The combination with a clothes-line, of a clothes-pin having a resilient coil encircling the line, riders held in resilient contact upon the line at opposite sides and by the resiliency of the coil and arms carried by the riders and having terminal hooks arranged to engage under the line.

813,590. MOLD FOR MOLDING TILES AND SIMILAR ARTICLES. FRANK M. SAWYER, Charlotte, N. C. Filed Aug. 31, 1905. Serial No. 276,666.

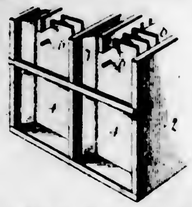

Claim.—1. A mold of the character described comprising a plurality of spaced-apart mold-sections each of which is provided with a forwardly-projecting pin or plug located near one end thereof and contacting with the rear surface of the next adjacent section, whereby said sections are properly spaced and nail-holes formed in the tiles.

2. A mold of the character described comprising a plurality of mold-sections each provided with side flanges, supporting means for engaging said flanges, and independent means carried by each section for spacing said sections and also forming a hole or opening in the article to be cast.

3. A mold of the character described comprising a plurality of mold-sections each provided with side flanges and a forwardly-projecting plug located between said flanges, and contacting with the rear surface of the next adjacent section, whereby said sections are properly spaced and nail-holes formed in the tiles, and means for securing said mold-sections in juxtaposition.

4. A mold-section of the character described comprising a flat body provided with side flanges, and a forwardly-projecting combined spacing and core plug located between said flanges near the upper end of said body.

5. In combination with a mold-box, transverse mold-pieces to lie between the side members thereof and provided with studs, said studs projecting laterally from said transverse mold-pieces and serving to space them apart.

813,591. OIL-CUP. GUSTAV C. SONNEBORN, Hartford, Conn., assignor to The Whitney Company, Hartford, Conn., a Corporation of Connecticut. Filed June 20, 1904. Serial No. 213,766.

Claim.—1. In an oil-cup, the combination of an oil-receiving body, a cover, comprising an annular head provided with a hole for filling the cup, and attached to the body by a reduced interior stem integral with the head, and a rotatable cap mounted on the cover to open and close the said hole.

2. In an oil-cup, the combination of an oil-receiving body, a cover, comprising an annular head provided with a hole for filling the cup, and attached to the body by a reduced interior stem integral with the head, a rotatable cap mounted on the cover to open and close the said hole, and a spring seated between the head and cover for retaining them in relative position.

3. A self-closing oil-cup, comprising an oil-receiving body portion, a cover comprising an annular head attached to the body by a reduced interior stem and provided with a hole for filling the cup, a rotatable cap mounted on the cover to open and close the hole, and a spring intermediate the cover and cap for yieldingly holding the cap in its closing position.

4. In an oil-cup the combination of an oil-receiving body, a cover comprising an annular head provided with an angularly-disposed filling-hole, and attached to the body by a reduced interior stem integral with the head, and a rotatable cap provided with a hole registering with that of the head in one position, and mounted upon the said head to open and close the hole in said head.

813,592. APPARATUS FOR THE PRODUCTION OF LINE DESIGNS ON BRICKS, &c. CHRISTIAN W. SØNDU, Antvorskov, near Slagelse, Denmark. Filed Apr. 24, 1905. Serial No. 257,230.

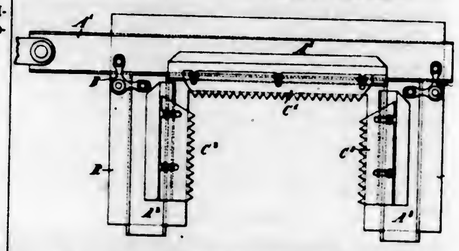

Claim.—1. Apparatus for the production of designs upon the surface of moving clay masses, comprising a marking device, means for supporting same and means for reciprocating said marking device, said marking device being in continuous contact with the moving clay mass, substantially as described.

2. Apparatus for the production of designs upon the surface of moving clay masses, comprising marking devices, means for supporting same and means for reciprocating said marking devices, said marking devices being in continuous contact with the moving clay mass, substantially as described.

3. Apparatus for the production of designs upon the surfaces of moving clay masses, comprising a frame, marking devices secured in holders adapted to slide in said frame and means for imparting motion to said holders, whereby each marking device travels longitudinally in one plane, substantially as described.

4. In an apparatus for the production of designs upon the surface of moving clay masses, the combination with a main part, of a support adapted to slide in said support and means for causing the travel of said marking device longitudinally in one plane, substantially as described.

5. In an apparatus for the production of designs upon the surfaces of moving clay masses, the combination with a frame, of a plurality of sliding supports mounted in said frame, angularly disposed to each other, marking devices mounted in said supports and means for simultaneously reciprocating said supports whereby at least two of said marking devices will move in opposite directions and score two or more surfaces, of the moving clay masses angularly disposed to each other, substantially as described.

6. In an apparatus for the production of designs upon the surfaces of moving clay masses, the combination with a frame, of sliding supports mounted in said frame and angularly disposed to each other, marking devices mounted in said supports and means for reciprocating said supports and marking devices, whereby two or more surfaces of the moving clay mass, angularly disposed to each other, are simultaneously scored, substantially as described.

7. Apparatus for the production of designs upon the surface of moving clay masses, comprising marking devices, means for supporting same in an inclined position and means for reciprocating said marking devices, substantially as described.

8. A device of the kind described, provided with marking devices producing a series of wavy parallel scores and means for operating said marking devices, substantially as described.

9. A device of the kind described provided with marking devices for producing a series of continuous wavy parallel scores and means for operating said marking devices, substantially as described.

10. In a device of the kind described, the combination with a frame, of a plurality of marking devices angularly disposed and slidably mounted therein, bell-crank levers connecting said marking devices and means for imparting motion to one of said marking devices, substantially as described.

11. Apparatus for the production of designs upon the surfaces of moving clay masses comprising a frame provided with grooves, bars adapted to slide in said grooves, a lever actuating one of said bars, a bell-crank lever and serrated plates adjustably secured to said bars, substantially as described.

813,593. PAPER-FOLDING MACHINE. ARTHUR B. SEXTON, Los Angeles, Cal. Filed Aug. 17, 1903. Serial No. 169,617.

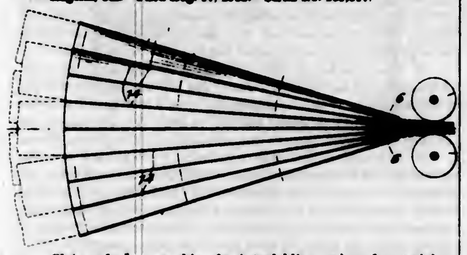

Claim.—1. In a machine for interfolding strips of material, a pair of superposed sectors, each including a body portion, and a plurality of convergent partitions of contracted width, the spaces between said partitions affording passages in which the strips may be curved transversely, and interfolded with each other without frictional contact of the partitions with the entire area of the strips, the body portions of the sectors engaging with the central portions of the strips being folded.

2. In a machine for interfolding a plurality of strips, a pair of sectors having folding and guiding devices for the outer strips, intermediate strips serving to mutually sustain each other.

3. In a paper-folding machine, a pair of sectors having strip folding and guiding members less in number than the number of strips to be folded.

4. In a paper-folding machine, a pair of sectors, and partitions carried thereby, the distance between the sectors at the entrance end being greater than the distance between each sector and the edges of the partitions of the opposite sector at the discharge end.

5. In a machine for interfolding a plurality of strips, a pair of sectors having edge plates and intermediate partitions, the edge plates being continued beyond the ends of said partitions to form a contracted discharge-mouth.

6. In a paper-folding machine a pair of sectors having paper folding and guiding partitions, one of said sectors being formed of a plurality of longitudinally-extending and transversely-separable sections.

813,594. PAPER-HOLDER. ARTHUR B. SEXTON, Los Angeles, Cal. Filed Dec. 26, 1903. Serial No. 186,726.

Claim.—1. In a holder for interfolded paper, a slotted discharge-plate having a recess forming an enlarged throat for the slot, and means for forcing the paper into contact with the inner surface of said plate.

2. In a holder for interfolded paper, a discharge-plate extending outward to form a recess into which the paper may bulge and having a discharge-slot the walls of which are extended outward to hold the sheets projected at an angle to the plate.

3. In a holder for interfolded paper, a plate having a discharge-slot, the walls of which are of greater area than the thickness of the plate and serve to hold the sheets projected at an angle to said plate, there being finger-notches formed in said walls.

4. In a holder for interfolded paper, a casing having a top discharge-slot, a paper-supporting plate, a spring exerting upward pressure on the plate, and a plurality of removable weight-plates carried by said paper-supporting plate.

5. In a holder for interfolded paper, a casing including a wall having a discharge-slot, and a pair of rollers arranged one on each side of the slot for independent engagement with the sheets of paper.

6. In a holder for interfolded paper, a casing having a discharge-slot and provided with auxiliary slots or openings on each side thereof, and auxiliary feeding-rolls having portions of their peripheries extending through the auxiliary slots and adapted for independent engagement with the sheets of paper.

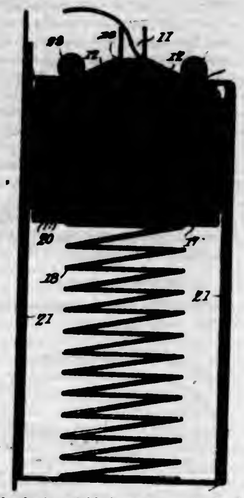

7. In a holder for interfolded paper, a casing having a discharge-slot, and a pair of rollers disposed one on each side of the slot and adapted respectively to feed the paper in opposite directions toward said slot.

8. In a holder for interfolded paper, a casing having a discharge-slot, and a pair of rollers having roughened peripheries, said rollers being disposed one at each side of, but beyond the walls of the slot, said rollers having terminal operating-knobs.

813,595. LATCH DEVICE. CALEB C. SHIVE, Frederick, Okla. Filed Mar. 1, 1905. Serial No. 247,864.

Claim.—1. In a latch device, the combination of oppositely-operated latch-bolts, an actuator comprising spaced plates, attaching members journaled between the plates, rods connected with the latch-bolts and having adjustable connection with said attaching members, and means for operating the actuator.

2. In a latch device, the combination of oppositely-operating latch-bolts, an actuator comprising spaced plates, attaching members journaled between the plates, rods connected with the latch-bolts and having adjustable connection with said attaching members, a lever for operating the actuator, and means for limiting the movement of the actuator relative to the connecting-rods aforesaid.

3. In a latch device, the combination of oppositely-operating latch-bolts provided with sockets at one end, an actuator comprising spaced plates, a journal-pin for the actuator, attaching members journaled between the spaced plates of the actuator and having transverse openings therethrough, rods having one end received in the socket of each latch-bolt, and an opposite end passed through the transverse opening in an attaching member of the actuator, a set-screw carried by the attaching members for adjusting the connection of the rods therewith, a lever extended from one of the spaced plates of the actuator for operation of the latter, and a projection carried by the lever for limiting the movement thereof.

813,596. **HORSESHOE.** JOHN H. STUPENDICHER, St. Louis, Mo. Filed Aug. 23, 1905. Serial No. 275,274.

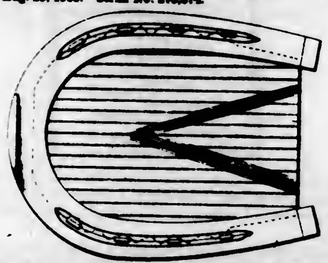

Claim.—1. A protecting-plate for a horse's hoof, consisting of a metal plate corrugated longitudinally and adapted to lie over the bottom of the hoof and cover the same and be positioned over the shoe.

2. A protecting-plate for a horse's hoof, consisting of a metal plate adapted to cover the bottom of the hoof, and corrugated longitudinally, and having notches in the side edges to straddle the shoe-nails when placed in position whereby the plate is held against longitudinal displacement.

813,597. **APPARATUS FOR ROLLING TUBES AND TUBULAR BODIES.** RALPH C. STRETCH, Elwood City, Pa., assignor to National Tube Company, New York, N. Y., a Corporation of New Jersey. Filed Feb. 27, 1904. Serial No. 195,333.

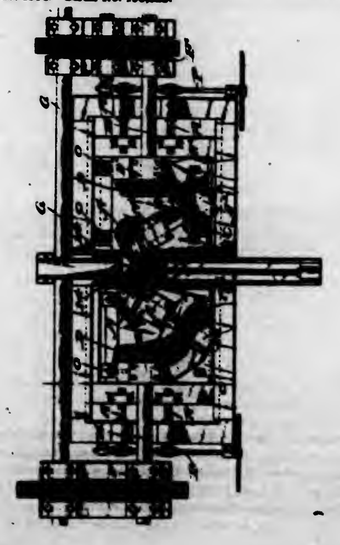

Claim.—1. In a rolling-mill, the combination of two rolls forming a converging and a diverging pass, and a piercing or expanding mandrel in the pass, the two rolls being symmetrically placed on opposite sides of the axis of said mandrel and skewed in respect thereto, and having progressively-larger diameters presented to the billet as it progresses through the pass and also having greater feeding effects at the diverging portion of the pass.

2. In a rolling-mill, rolls, roll-shafts, driving-shafts, the axes of which lie in a line perpendicular to and intersecting the pass, said roll-shafts being mounted obliquely to the said driving-shafts and having driving connections therefrom, and means for adjusting the roll-shafts about the axes of the said driving-shafts.

3. In a rolling-mill, rolls, roll-shafts, driving-shafts, the axes of which lie in a line perpendicular to and intersecting the pass, said roll-shafts being mounted obliquely to the said driving-shafts and having bevel-gear connections with the driving-shafts, and means for adjusting the roll-shafts about the said driving-shaft axes.

4. In a rolling-mill, rolls, roll-shafts, driving-shafts, the axes of which lie in a line perpendicular to and intersecting the pass, said roll-shafts being mounted obliquely to the said driving-shafts, housings mounted to rock about the driving-shaft axes as centers, and driving connections between the roll-shafts and the driving-shafts.

5. In a rolling-mill, rolls, roll-shafts, driving-shafts, the axes of which lie in a line perpendicular to and intersecting the pass, said roll-shafts being mounted obliquely to the said driving-shafts, housings in which the said roll-shafts are mounted, driving connections between the roll-shafts and the driving-shafts, and means for adjusting the housings along the axial line of the driving-shafts.

6. In a rolling-mill, rolls, roll-shafts, driving-shafts, the axes of which lie in a line perpendicular to and intersecting the pass, said roll-shafts being mounted obliquely to the said driving-shafts, housings in which the said roll-shafts are mounted, driving connections between the roll-shafts and the driving-shafts, and screw connections for adjusting said housings along the axial line of the driving-shafts

813,598. **CUTTING MECHANISM.** WILLIAM A. SYLVESTER, Reading, Mass. Filed Nov. 4, 1904. Serial No. 231,288.

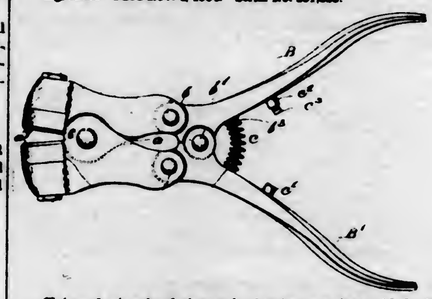

Claim.—1. A pair of nippers having jaws, each provided with a detachable cutting-bit having an arc-shaped or circular cutting edge, disposed transversely thereof.

2. In a pair of nippers, two opposed jaws, and cutting-bits having arc-shaped edges detachably secured to said jaws and incapable of adjustment thereon said arc-shaped edges being disposed transversely of the jaws.

3. In cutting-nippers, a pair of pivoted jaws each having a flat side face, a cutting-bit detachably secured to each jaw, each cutting-bit having a flat side in alinement with the flat face of the corresponding jaw, and an arc-shaped cutting edge disposed transversely of the jaw.

4. In cutting-nippers, a pair of pivoted jaws, each having a flat side face, and a cutting-bit detachably secured to each jaw but incapable of adjustment thereon, each cutting-bit having an arc-shaped cutting edge disposed transversely of the jaw, and a flat side in alinement with the flat face of the jaw.

5. In cutting-nippers, a pair of pivoted jaws, each jaw having a flat side face, and a cutting-bit detachably secured to each jaw, each cutting-bit having a flat side in alinement with the flat face of the jaw, and an arc-shaped edge extending transversely to the jaws.

6. In cutting-nippers, a pair of pivoted jaws movable toward and from each other, a cutting-bit detachably secured to the inner face of each jaw, each cutting-bit having an arc-shaped cutting edge which is transverse to the longitudinal axis of the nippers.

7. In cutting-nippers, a pair of pivoted jaws, each having a rounded end, and a cutting-bit detachably secured to the inner face of each jaw, each cutting-bit having a circular cutting-edge corresponding in contour to the rounded edge of the nipper.

813,599. **WATER-CLOSET FLUSH-TANK.** GILBERT S. THOMPSON, Cedar Rapids, Iowa. Filed June 14, 1904. Serial No. 212,861.

Claim.—1. The combination of a permanent flush-tank forming a cistern for water not under pressure, suitable feed and discharge pipes therefor, and a removable ornamental casing therefor adapted to inclose and conceal the water-tank on all sides exept the back and bottom.

2. In a flush-tank, the combination of a water-tank provided with supports for an outer casing, a removable outer casing, and cleats thereon to engage said supports.

3. In a flush-tank, the combination of a water-tank, a removable outer casing therefor, and inclined cleats to support the casing on the tank and close to the wall behind it.

4. The combination with a permanent water-tank forming a cistern for water not under pressure, suitable feed and discharge pipes therefor, a removable ornamental casing for said tank, adapted to cover and conceal the same on all sides except the back and bottom, supporting-cleats for said casing inside thereof, and engaging cleats on the tank, the feed or service pipe passing up between the tank and casing, and discharging into the tank at the top.

813,600. **GAS-PRODUCER.** EDWARD N. TRUMP, Syracuse, N. Y. Filed Nov. 21, 1904. Serial No. 233,609.

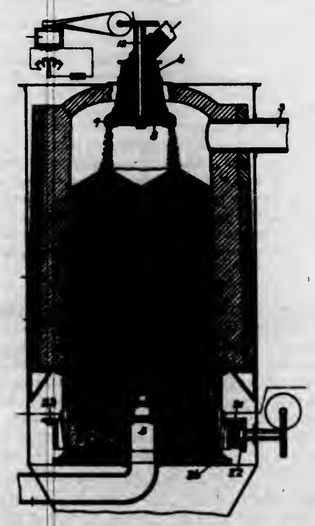

Claim.—1. The combination of a stationary receptacle comprising a cylinder having a vertical extension and a table spaced below the lower extension of the cylinder, a deflector projecting beneath the cylinder and over the table, a support for said deflector located without the receptacle, and means for causing the said support to travel around the receptacle.

2. The combination of a stationary combustion-chamber, a stationary table spaced below the lower extension thereof, a rotatable member located without the periphery of said table and combustion-chamber, means for causing the rotation of said member, and a deflector carried by said rotating member projecting over the table from the circumference toward the center thereof.

3. The combination of a combustion-chamber, a stationary table spaced below the lower extension thereof, a deflector adapted to rotate about an axis corresponding to the center of the table, a member located outside of the periphery of said table for supporting the said deflector, and means for causing the gradual rotation of said supporting member.

4. The combination of a combustion-chamber, a stationary table spaced below the lower extension thereof, a rotatable body surrounding the chamber, and a deflector supported by said rotatable body for sweeping said table being so positioned and rotated and having such curved contact-face that the angle between the tangent of the curve and the radius of its rotation shall be the same at every point of intersection of radius and curve.

5. The combination of a combustion-chamber, a stationary platform spaced below the lower extension thereof, a deflector for sweeping said table, a rotatable member surrounding said combustion-chamber for supporting said deflector at its outer extension and means for causing the gradual rotation of said supporting member.

6. The combination of a combustion-chamber, a stationary platform spaced below the lower extension thereof, a deflector for sweeping said table, a rotatable member surrounding said combustion-chamber for supporting said deflector at its outer extension and regulatable means for causing the gradual rotation of the same.

7. In a continuously-operated gas-producer, the combination with regulatable mechanism for feeding fuel thereto, a combustion-chamber, a stationary table spaced below the lower extension thereof, a deflector adapted to rotate about an axis corresponding to the center of the table, a member, located outside of said chamber for supporting the said deflector, and means for causing the gradual rotation of said supporting member.

813,601. **MECHANICAL MOVEMENT.** LOUIS R. TULLOCH, Angels Camp, Cal. Filed Mar. 11, 1904. Serial No. 197,723.

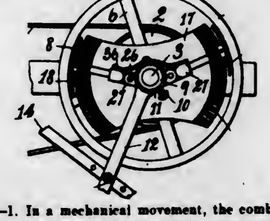

Claim.—1. In a mechanical movement, the combination of a shaft, a friction-ring secured thereon, a sleeve mounted loosely on said shaft, an extension therefrom, an arm having its inner end engaged by the outer end of said extension, said arm rocking about said outer end, a friction-shoe carried by the outer end of said arm, and arranged to engage said friction-ring, and means for rocking said sleeve to bring said shoe into and out of engagement with the friction-ring, substantially as described.

2. In a mechanical movement, the combination of a shaft, a friction-ring secured thereon, a sleeve loose on said shaft, extensions from said sleeve, arms having their inner ends engaged by the outer ends of said extensions, said arms rocking about said outer ends, friction-shoes carried by the outer ends of said arms and engaging said friction-ring, and means for rocking said sleeve, substantially as described.

3. In a mechanical movement, the combination of a shaft, a friction-ring secured thereon, a sleeve loosely mounted on said shaft, means for rocking said sleeve, segment-gears carried by said sleeve, extensions from said sleeve, arms having their inner ends engaged by the outer ends of said extensions, said arms rocking about said outer ends, stems rotatably carried by the outer ends of said arms, and threaded at their outer ends, pinions on said stems engaging said gears, nuts engaged by said threaded ends, and friction-shoes to which said nuts are pivotally attached said friction-shoes engaging said ring, substantially as described.

813,602. **METALLIC FRAME FOR REVOLVING DOORS.** THEODORUS VAN KANNEL, New York, N. Y., assignor to Van Kannel Revolving Door Company, New York, N. Y., a Corporation of West Virginia. Filed Aug. 15, 1904. Serial No. 220,844.

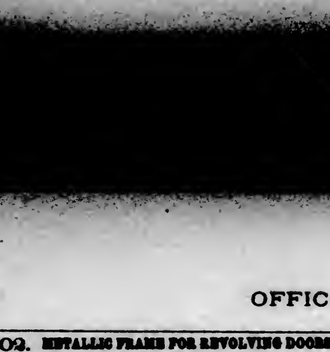

upper rail of the wing-frame, and auxiliary arms extended into the lower rails of the wing-frame, each auxiliary arms being mortised into the metallic stile and secured thereto.

rods, a centrally-disposed pivot-rod connecting said bars, a frame pivoted upon said pivot-rod, a feed box or hopper upon said pivoted

vancing the bearing-plate the length of said conical end, means for causing the rolls to move parallel to the end during said advance, and

813,602. METALLIC FRAME FOR REVOLVING DOORS. THEODORE VAN KANNEL, New York, N. Y., assignor to Van Kannel Revolving Door Company, New York, N. Y., a Corporation of West Virginia. Filed July 22, 1905. Serial No. 270,702.

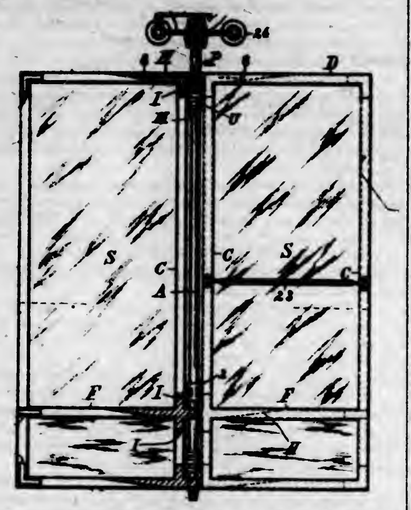

Claim.—1. In a revolving door, the combination, with the center spindle, of metallic arms attached rigidly to the spindle and projected in opposite directions from the spindle, and two opposite wing-frames mounted upon the said arms.

2. In a revolving door, the combination, with the center spindle, of arms having their butt-ends fitted respectively to opposite sides of the spindle and clamped together upon the spindle, the arms projecting in opposite directions from the spindle and having opposite wing-frames mounted thereon.

3. In a revolving door, the combination, with the center spindle, of arms having their butt-ends notched into the said spindle at opposite sides and clamped together upon the said spindle, the arms projecting in opposite directions from the spindle and having opposite wing-frames mounted thereon.

4. In a revolving door, the combination, with a center spindle and opposite wing-frames having tubular rails, of metallic arms attached rigidly to the spindle and projected in opposite directions from the spindle and fitted within the said rails.

5. In a revolving door, the combination, with the center spindle and opposite wing-frames having tubular rails, of metallic arms attached rigidly to the spindle and projected in opposite directions from the spindle into the said rails, the arms being tapered upwardly upon the under side to lighten them, substantially as herein set forth.

6. In a revolving door, the combination, with a center spindle and opposite wing-frames having tubular stiles and rails, of metallic arms attached rigidly to the spindle and projected in opposite directions from the spindle and fitted within the said rails and having tubular elbows fitted within the stiles.

7. In a revolving door having metallic wing-frames, the combination, with the center spindle, of a wing-frame carrier consisting of a metallic stile having an upper arm projected rigidly therefrom and extended within the upper rail of the door-frame, and means for mounting the said carrier upon the spindle.

8. In a revolving door having metallic wing-frames, the combination, with the center spindle and hinge-lugs thereon, of a wing-frame carrier consisting of a metallic stile hinged to the said lugs, and having an upper arm projected rigidly therefrom and extended within the upper rail of the wing-frame.

9. In a revolving door having metallic paneled tubular wing-frames, the combination, with the center spindle and hinge-lugs thereon, of a wing-frame carrier consisting of a metallic stile hinged to the said lugs and having a rigid upper arm projected within the upper rail of the wing-frame, and auxiliary arms projected into the lower panel-rails of the frame.

10. In a revolving door, the combination, with a metallic paneled wing-frame formed of metallic tubes, of a wing-frame carrier comprising a metallic stile with rigid upper arm extended into the upper rail of the wing-frame, and auxiliary arms extended into the lower rails of the wing-frame, such auxiliary arms being mortised into the metallic stile and secured rigidly therein.

11. In a revolving door, a carrier for tubular metallic wing-frames comprising the metallic stile J having the upper integral arm K fitted snugly within the frame, and lower arms composed each of a plurality of bars mortised into the stile and secured rigidly therein, to fit within the lower rails and resist lateral flexure.

12. In a revolving door having tubular metallic wing-frames, the combination, with the joints of the rails and stiles, of tubular ties secured firmly within the ends of the rails and within the breadth of the stile, substantially as herein set forth.

13. In a revolving door, the combination, with the center spindle having a hinge-sleeve with a plurality of hinge-lugs thereon, of a tubular wing-frame, and a frame-carrier having a metallic stile with arms extended into the rails of the wing-frame, and hinge-plates secured rigidly to the said stile and having hinge-lugs to engage the hinge-lugs upon the center spindle.

14. In a revolving door, the combination, with the center spindle, of the means for hinging the wing-frame thereon, consisting of the sleeve U provided with the series of collars M formed at opposite sides with hinge-lugs, and hinge-lugs N upon the door-frame adapted to engage the same.

15. In a revolving door, the combination, with a tubular center spindle and door-wings having hinge-lugs near the top and bottom, of hinge-sleeves bored to fit upon the spindle and having collars with hinge-lugs to engage the lugs upon the wings, and means for securing the hinge-sleeves upon the spindle at suitable points.

16. In a revolving door, the combination, with a tubular center spindle with door-wings carried thereby and having the slot 1 as set forth, of a handle Z with sleeve 2 fitted to slide on the spindle over the slot, the link 4 having connection to the handle through the slot, and the step-bolt B having swivel connection with the link, whereby the step-bolt may be reciprocated in the spindle, and the spindle rotated without turning the step-bolt.

17. In a revolving door having a center spindle with wings hinged thereto, the combination, with a tubular center spindle having the slot 1 as set forth, of hinge-sleeves U secured thereon at intervals and having the hinge-lug collars M, the plates 18 and 19 forming a box around such collars and having the slot 21 in line with the slot 1 upon the spindle, the handle Z extended through the slot 21 and having the sleeve 2 fitted to slide on the spindle, the link 4 movable within the spindle, the pin 3 connecting the handle with the link, the step-bolt B movable with the link, and the rod Y extended from the top of the link to actuate the locking-plate at the head of the spindle.

18. In a revolving door having a center spindle with wings carried thereby, the combination, with a tubular spindle having notches Q in its opposite sides, of arms having their butt-ends fitted to the said notches and projected in opposite directions to stiffen the wing-frames, bolts clamping the arms together upon the spindle, and the reinforcing-plug X fitted to the bore of the spindle between the notches to stiffen the same.

19. In a revolving door having tubular spindle with wings carried thereby, the combination, with the spindle having slot 1 as set forth, of a link within the spindle and a handle connected with the same through the slot 1, the bolt B having swivel connection with the link and provided in the end with the notch 10, and a step fitted to the step-bolt and having transverse pin 9 to engage the notch 10, whereby the bolt may remain stationary when the spindle and wings are revolved.

813,603. BALING-PRESS. GEORGE M. WASHINGTON, Houston, Tex. Filed Sept. 5, 1905. Serial No. 277,602.

Claim.—1. The combination of a main frame or support, a horizontally-swinging frame therein, a hopper upon said swinging frame, adjustable sides or ends in said hopper, a sliding bottom in said hopper, a bale-box mounted in the upper portion of said main frame, and a plunger mounted in the lower portion of said main frame and adapted to operate the movable bottom in said hopper to compress the contents of the latter in said bale-box, substantially as described.

2. In a baling-press, the combination of a main frame consisting of top and bottom portions, rods projecting from said portions, plates or bars connecting said rods, a pivot-rod connecting said plates and a swinging hopper-carrying frame upon said pivot-rod, substantially as described.

3. In a baling-press, the combination of a main frame comprising top and bottom portions connected at one end, rods projecting from the opposite end of said portions, parallel bars connecting said rods, a centrally-disposed pivot-rod connecting said bars, a frame pivoted upon said pivot-rod, a feed box or hopper upon said pivoted frame, a bale-box suspended from the top portion of the main frame and a plunger mounted in the bottom portion of said main frame, substantially as described:

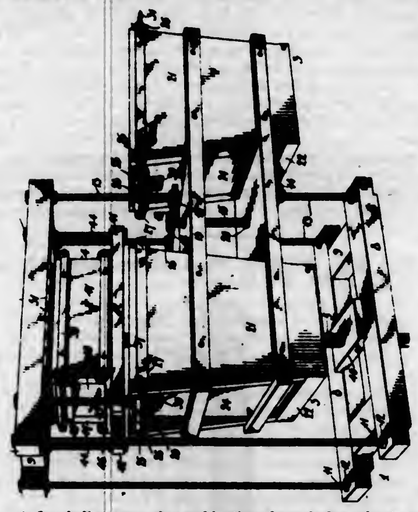

4. In a baling-press, the combination of a main frame having a base and a top, each consisting of longitudinal beams connected by cross-bars, rods connecting said longitudinal beams at one end, rods projecting from said beams at their other ends, bars connecting the last-mentioned rods, a pivot-rod connecting said bars, a horizontally-swinging frame pivoted upon said pivot-rod, feeding boxes or hoppers mounted upon said swinging frame, swinging ends in said hoppers, sliding bottom in said hoppers, a frame depending from the top of said main frame, a baling-box mounted upon said depending frame and having movable sides and ends, and a plunger mounted in the bottom of said main frame, substantially as described.

5. In a baling-press, the combination with a baling-box and a plunger, of a feeding box or hopper having a swinging wall formed with a groove, a slide in said groove, an eccentric-strap upon said slide, and an eccentric extending through said strap and journaled upon said hopper, substantially as described.

6. In a baling-press, a feeding box or hopper comprising side walls, end walls pivotally mounted between said side walls and formed with grooves, sliding blocks mounted in said grooves, eccentric-straps connected to said blocks, brackets upon said side walls, shafts journaled in said brackets, eccentrics upon said shafts and mounted in said straps, and means for rotating said shafts, substantially as described.

7. In a baling-press, a feeding box or hopper having a swinging wall, an eccentric mounted upon said hopper, and an eccentric-strap engaged with said eccentric and with said swinging wall, substantially as described.

813,604. MACHINE FOR THE MANUFACTURE OF CAPSULES FOR BOTTLES. EDUARD WATZEK, Friedberg, Austria-Hungary, assignor of one-half to Ignaz Hagy, Friedberg, Austria-Hungary. Filed Dec. 24, 1902. Serial No. 136,469.

Claim.—1. In a machine for making capsules, the combination of a rotatable spindle having a capsule-forming end portion, a plurality of stretching-rolls, a non-revolvable bearing-plate therefor, a yoke, a rod connecting said yoke and plate and a cam revolvable in said yoke, for the purpose specified.

2. In a machine for making capsules, the combination of a rotatable spindle having a capsule-forming end portion, a plurality of stretching-rolls, a non-revolvable bearing-plate therefor, a yoke, an adjustable rod connecting said yoke and plate, and a cam revolvable in said yoke, for the purpose specified.

3. In a machine for making capsules, the combination with a conical-ended rotatable spindle, of a non-revolvable bearing-plate, a plurality of stretching-rolls mounted on the latter, means for advancing the bearing-plate the length of said conical end, means for causing the rolls to move parallel to the end during said advance, and means to spread said rolls simultaneously with the return of the bearing-plate.

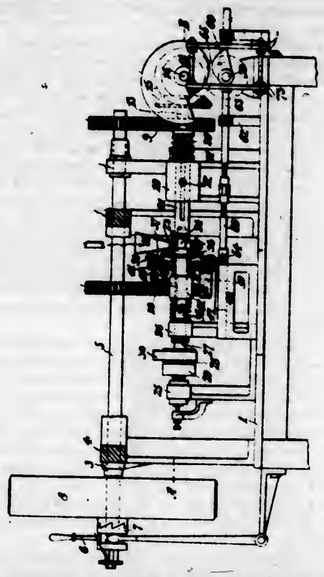

4. In a machine for making capsules, the combination with a receiving-spindle and mechanism for rotating the same, of a stretching mechanism comprising a bearing-plate having a plurality of slots and adapted to surround the spindle, means for moving the plate parallel to the axis of the spindle, a plurality of levers pivotally mounted on the plate axially of the slots, a pressure-roll mounted in each lever, a pin on the levers projecting through said slots, a disk mounted on the plate provided with slots engaging said pins, and means for rotating the disk, substantially as and for the purpose specified.

5. In a machine for making capsules, the combination with a rotatable spindle having a capsule-forming end portion, a non-revolvable bearing-plate surrounding said spindle, a plurality of stretching-rolls pivotally mounted on said bearing-plate, means for advancing the latter the length of the forming portion, and means for automatically returning the same, of a disk rotatable on the bearing-plate, mechanism connecting the rolls and disk, means for rotating the latter on the advance and on the return of the bearing-plate.

6. In a machine for making capsules, the combination with a rotatable spindle having a capsule-forming end portion, a non-revolvable bearing-plate having a central aperture surrounding the spindle, a plurality of stretching-rolls pivoted on said plate around the aperture, means for advancing said plate the length of the forming portion, and means for automatically returning the same, of a disk rotatably mounted on the plate, mechanism connecting the rolls and disk, an abutment on the disk and on the plate, a resilient connection between said abutments and means for rotating the disk on the advancement of the plate, for the purpose specified.

7. In a machine for making capsules, the combination with a rotatable spindle having a capsule-forming end portion, a bearing-plate surrounding said spindle, stretching-rolls pivotally mounted on said plate, means for advancing the latter the length of the forming portion, and means for automatically returning the same, of a disk rotatably mounted on the plate, mechanism connecting the rolls and disk, an abutment on the disk and on the plate, means for engaging the disk-abutment upon the advance of the plate, and a spring connecting said abutments adapted to exert pressure thereon during said advancement.

8. In a machine for making capsules, the combination with a rotatable spindle having a capsule-forming end portion, a bearing-plate surrounding said spindle, stretching-rolls pivotally mounted on said plate, means for advancing the latter the length of the form-

ing portion, and means for automatically returning the same, of a disk rotatably mounted on the plate adapted to control the movement of said rolls, an abutment on the disk, means to hold said abutment in its normal position and mechanism for displacing the abutment simultaneously with the advancement of the plate, for the purpose specified.

9. In a machine for making capsules, the combination with a rotatable spindle, a bearing-plate surrounding said spindle, stretching-rolls pivotally mounted on said plate, means for advancing and means for automatically returning the latter, of a disk rotatably mounted on the plate operatively connected with said rolls, means to normally hold the rolls in an inoperative position, an abutment on the disk, a movable element, and mechanism to cause said element to displace the abutment simultaneously with the advance of the plate, for the purpose specified.

10. In a machine for making capsules, the combination with a rotatable spindle, a bearing-plate surrounding said spindle, stretching-rolls pivotally mounted on the plate and means for advancing the latter, of a disk rotatably mounted on the plate operatively connected with said rolls, an abutment on the disk, a lever, mechanism to move the latter into contact with said abutment on the advance of the plate, and mechanism for holding the lever stationary during said advancement.

11. In a machine for making capsules, the combination with a rotatable spindle, a bearing-plate movable parallel to the longitudinal axis of said spindle, stretching-rolls pivotally mounted on the plate and surrounding said spindle, means for advancing the plate and means for automatically returning the same, of a disk rotatably mounted on the plate and operatively connected with said rolls, an abutment on the disk, a lever, mechanism to cause the latter to displace said abutment simultaneously with the advancement of the plate, means for holding the lever stationary during said advancement, means to hold the abutment in contact with the lever, and mechanism for returning the lever and plate simultaneously to their normal positions.

12. In a machine for making capsules, the combination with a conical-ended rotatable spindle, a bearing-plate movable parallel to the longitudinal axis of said spindle, stretching-rolls pivotally mounted on the plate and surrounding said spindle, means for advancing the plate along the conical part of the spindle and means for automatically returning the same, of a disk rotatably mounted on the plate and operatively connected with said rolls, an abutment on the disk inclined toward said axis of the spindle, a lever, mechanism to cause the latter to displace the abutment upon the advancement of the plate, means for holding said lever stationary during said advancement, and means for holding the abutment against said lever during advancement.

13. In a machine for making capsules, the combination with a conical-ended rotatable spindle, a non-revoluble bearing-plate movable parallel to the longitudinal axis of the spindle, a cam having a surface adapted to advance the plate the length of said conical end, a step in said cam to permit the sudden return of the plate, stretching-rolls pivotally mounted on the plate and surrounding the spindle, of a disk rotatably mounted on the plate and operatively connected with said rolls, an abutment on the plate, an abutment on the disk inclined toward said axis of the spindle, a spring connecting said abutments, a lever, a cam formed to move the latter into contact with the inclined abutment and to hold said lever stationary during the advancement of the plate and having a step to permit the lever to return simultaneously with the return of the plate.

14. In a machine for making capsules, a stretching mechanism comprising a slotted bearing-plate, a slotted disk rotatably mounted thereon, levers pivoted to the plate, a pin on one arm of each lever projecting through the slots in the plate and disk, and a roller secured to the free end of each lever, for the purpose specified.

15. In a machine for making capsules, a stretching mechanism comprising a bearing-plate provided with eccentric slots, a disk rotatably mounted on said plate provided with inclined slots crossing the aforesaid slots, levers pivotally mounted on the plate, a pin on one arm of each lever projecting through a slot in the plate and disk, and a roller secured to the free end of each lever.

16. In a machine for making capsules, a stretching mechanism comprising a bearing-plate having a central aperture and a plurality of eccentric slots, a disk rotatably mounted on said plate having a central aperture registering with the aforesaid aperture, and a plurality of inclined slots crossing the aforesaid slots, levers pivotally mounted on the plate, a pin one on arm of each lever projecting through a slot in the plate and in the disk, a roller mounted on the free arm of each lever, and a spring connecting the plate and disk.

813,605. METHOD OF FORMING MOLDS FOR CASTING PURPOSES. JOSEPH G. WEYER, Providence, R. I. Filed June 26, 1905. Serial No. 267,321.

Claim.—1. The method of making molds for casting purposes, consisting in mixing plaster-of-paris with water and finely-sifted coal-ashes with water, and then mixing these two substances together, forming said mixture into a mold around a suitable pattern, and finally subjecting the same to a moderate uniform heat for a period not exceeding five hours and then permitting the mold to cool.

2. The method of making molds for casting purposes, consisting in mixing equal quantities of plaster-of-paris and finely-sifted coal-ashes, said ingredients having been previously mixed with water, pouring said mixture around a pattern to form portions of the mold, which portions are allowed to set and dry without heat, removing said pattern when the mold is completed, and finally subjecting the substantially dry mold to a moderate uniform heat for a period not exceeding five hours and then permitting the mold to cool.

813,606. AIR-VALVE. THOMAS WERATLEY, Syracuse, N. Y. Filed Aug. 13, 1904. Serial No. 220,669.

Claim.—1. An air-valve for radiators comprising a shell having an inlet above the bottom forming a well, and an air-vent above the inlet, said well being divided into two chambers communicating with each other near the bottom of the well, one of the chambers being open at the top forming a float-chamber, and the other closed at the top forming an air-chamber, a float situated in the float-chamber, said float comprising a well open near its top, and an air-chamber closed at its top and communicating with the float-well near the bottom thereof, the inlet and air-vent being in free communication with the float-chamber.

2. In an air-valve for radiators, a shell comprising a well and an air-chamber communicating with each other near the bottom of the well, the air-chamber being closed at the top, said shell having an inlet and an air-vent, both in free communication with the upper end of the well above the closed top of the air-chamber, a float in the well, and a valve actuated by the float to close the air-vent.

3. In an air-valve for radiators, a shell having an inlet above its bottom communicating with the atmosphere, a float comprising a well closed at the bottom and opening near its top and an air-chamber closed at the top and communicating at its bottom with the float-well, and a valve actuated by the float to cut off communication between the inlet and atmosphere, said float-well having free communication with the inlet and with the atmosphere.

4. An air-valve for radiators comprising a shell having an inlet and an air-vent, a float in the shell having a closed bottom and an opening above the bottom whereby a well is formed to receive water of condensation, said float also having an air-chamber closed at the top and opening near its bottom into said well whereby air is trapped in said chamber by the accumulation of water in the float-well, and a valve for the air-vent actuated by the float.

5. In an air-valve for radiators, in combination, a shell having an inlet and an air-vent, a float comprising outer and inner hollow parts, one part being closed at the bottom and having an opening above the bottom whereby a well is formed, and the other part having its lower end open and dipping in the well and its upper end closed forming an air-chamber in which the air is trapped by the water in the float-well, and a valve actuated by the float to close the air-vent.

6. In an air-valve for radiators, a float comprising a well closed at its lower end and an air-chamber opening at or near its lower end into the well and closed at the top, said float having an opening in one side above the bottom to determine the depth of the well.

7. In an air-valve for radiators, a shell having an inlet above its bottom communicating with atmosphere, and forming a well, in combination with a float closed at the bottom and having an inlet above the bottom forming a well below the inlet, said float having an air-chamber opening at the bottom into the well and closed at the top, and a valve actuated by the rise of the float to cut off communication between the inlet and atmosphere.

8. In an air-valve for radiators, a shell having an inlet and a vent above the inlet, in combination with a baffle-tube surrounding the vent and extending partially across the inlet and having its lower end open to receive the escaping air, a valve for the air-vent, and a float in the open end of the baffle-tube and operable by varying temperatures and adapted to open and close said valve.

9. In an air-valve for radiators, a shell having an inlet above its bottom forming a well, and an air-vent above the inlet, said well communicating with the inlet, a baffle-tube surrounding the vent and extending partially across the inlet but having its lower end communicating with said inlet, a float in the well and baffle-tube, and a valve actuated by the float to close the vent.

10. In an air-valve for radiators, a shell having an inlet above its bottom forming a well and an air-vent above the inlet, a fixed valve between the inlet and vent, a flexible diaphragm between the fixed valve and atmosphere and provided with an air-passage having its lower end seated on the valve, said diaphragm being operable by varying pressures to seat the passage upon and to unseat it from the valve.

11. In an air-valve for radiators, a shell having an inlet above its bottom forming a well and a diaphragm above the inlet, said diaphragm having an air-passage communicating with the inlet and with the atmosphere, the interior of the shell being divided into two chambers communicating with each other near the bottom of the well, one of said chambers being open at the top forming a float-chamber and the other closed at the top forming an air-chamber, a float situated in the float-chamber and a valve actuated by the float for controlling communication between the inlet and atmosphere through the passage in the diaphragm.

12. In an air-valve for radiators, a shell comprising a well and an air-chamber, the well being open at the top and the air-chamber closed at the top and communicating near its bottom with the well, said shell having an inlet above the well and an air-vent above the inlet, a diaphragm between the inlet and atmosphere and provided with an air-passage, a fixed valve between the inlet and diaphragm and coacting with said passage to close communication between the inlet and atmosphere, a float in the well, and a valve actuated by the float to control communication between the inlet and passage in the diaphragm.

13. An air-valve for radiators comprising a shell having an inlet in one side, forming a well below and communicating with the inlet, said shell having an air-chamber closed at the top and its lower end opening into the well, a flexible diaphragm in the top of the shell having a passage therethrough communicating with the inlet and atmosphere, a valve for said passage, a float in the well, and itself having a well in its base communicating with the first-named well and with the inlet, said float having an air-chamber closed at its top and its lower end opening into the well in the float, and means brought into operation by the float to close communication between the inlet and passage in the diaphragm.

14. In combination with a radiator, a shell having an inlet therein, of a cap for the shell having an air-passage in its bottom, a diaphragm within the cap and also having an air-passage therethrough, a heat-actuated valve for the passage in the bottom of the cap, and a fixed valve for the passage in the diaphragm, said diaphragm being actuated by varying pressures to seat and unseat the fixed valve, and a float in the shell for operating the first-named valve.

15. In an air-valve for radiators, a shell having an inlet, a cap removably secured to the shell and provided with a valved passage, and a diaphragm in the cap having a valved passage the valve of the latter passage being fixed in the cap.

16. In an air-valve for radiators, a float having an inlet above its bottom forming a well in the base of the float in combination with an inclosing shell having an inlet above the float-inlet.

17. A float having an inlet above its bottom forming a well in the base of the float, said float including an air-chamber closed at the top and communicating with the well near its bottom whereby the air is trapped in said chamber by the water in the well.

18. A float comprising outer and inner tubes, the outer tube having an inlet above its bottom to form a well and the inner tube engaged with the outer tube above the inlet and having its lower end dipping in the well, the chamber above the well being closed at the top.

19. In an air-valve for radiators, a shell having a removable bottom and an inlet above the bottom, a packing between the bottom and adjacent end of the shell and having a raised center, and a float in the shell guided on said center of the packing.

20. In an air-valve for radiators, a float comprising a well and an air-chamber communicating with each other near the bottom of the well, the air-chamber being closed at the top and the well having an inlet above its bottom.

21. In an air-valve for radiators, a shell having a removable cap, said cap having an air-passage through its bottom and a diaphragm above the bottom forming a chamber between said diaphragm and the bottom of the cap, said diaphragm having an air-passage therethrough, and a valve for the passage of the diaphragm.

813,607. TAKE-UP ROLL FOR PERFORATED MUSIC-SHEETS. FREDERICK L. WOOD, Worcester, Mass., assignor to Aeolian Company, New York, N. Y., a Corporation of Connecticut. Filed June 17, 1905. Serial No. 265,609.

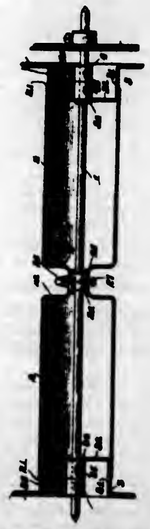

Claim.—1. A roll for music-sheets comprising a central shaft, a tubular core, the interior diameter of which is considerably greater than the diameter of said shaft so as to be spaced away therefrom, and a head at each end of said core, said core and each of said heads being mounted on said shaft for longitudinal adjustment independently of each other.

2. A roll for music-sheets comprising a central shaft, a tubular core, the interior diameter of which is considerably greater than the diameter of said shaft so as to be spaced away therefrom, a head at each end of said core, said core and each of said heads being mounted on said shaft for longitudinal adjustment independently of each other, and independent means for securing each of said last-named parts on said shaft.

3. A music-roll comprising a central shaft, a tubular core, the interior diameter of which is considerably greater than the diameter of said shaft, said core being longitudinally adjustable on said shaft, and a hollow head on said shaft, said core and said head being constructed and fitted to pass one within the other.

4. A roll for music-sheets comprising a central shaft, and a tubular core the interior diameter of which is considerably greater than the diameter of said shaft, said core being concentric with and longitudinally adjustable on said shaft, said tubular core having a reduced portion intermediate of its ends and a set-screw for engaging said shaft.

5. A roll for music-sheets comprising a central shaft, a tubular core longitudinally adjustable on said shaft, and tubular flanged heads of sheet material on said shaft entering the outer ends of said core.

6. A roll for music-sheets comprising a central shaft, a tubular core longitudinally adjustable on said shaft formed of two tubular shells having their inner ends inturned to form annular flanges, a collar to which said inner ends are secured, and means for detachably securing said collar on said shaft, and flanged heads at the outer ends of said shells.

7. A roll for music-sheets comprising a central shaft, a tubular core formed of two tubular shells having inner ends of reduced diameter, a collar to which said inner ends are secured and means for adjustably securing said collar on said shaft, and flanged heads on said shaft and entering the outer ends of said shells, said heads being longitudinally adjustable on said shaft independently of said core.

8. A roll for music-sheets comprising a central shaft, a tubular core on said shaft, a flanged head on said shaft and entering the end of said core and having frictional engagement with at least one of said parts, and means adjustably secured on said shaft for limiting the outward longitudinal movement of said head.

9. A roll for music-sheets having a central tubular portion of thin sheet material, heads of like material, each having a flange and a tubular sleeve which is adjustable within the ends of said central tubular portion, and a shaft upon which said central tubular portion is secured separately from said heads.

10. In a roll for music-sheets, a central shaft, a collar adjustably secured to said shaft, a hollow shell and roll section rigidly secured to said collar and adjustable therewith and hollow flanged sleeves at each end of said shell and adjustable on said shaft.

11. In a roll for music-sheets having a central shaft, a tubular shell of sheet material having a reduced portion for connection with the shaft and an enlarged portion extending from said reduced portion, means for centering and securing said reduced portion on the shaft and flanged heads at the ends of said tubular shell.

12. In a roll for music-sheets having a central shaft, a tubular shell of sheet material having a reduced portion for connection with the shaft and an enlarged portion extending from said reduced portion, means for centering and securing said reduced portion on the shaft, said securing means being adjustable to adjust said shell longitudinally and flanged heads at the ends of said tubular shell.

813,608. BOX-MACHINE. JACOB P. WRIGHT, New Haven, Conn., assignor to The Diamond Match Company, Chicago, Ill., a Corporation of Illinois. Filed June 20, 1902. Serial No. 112,070.

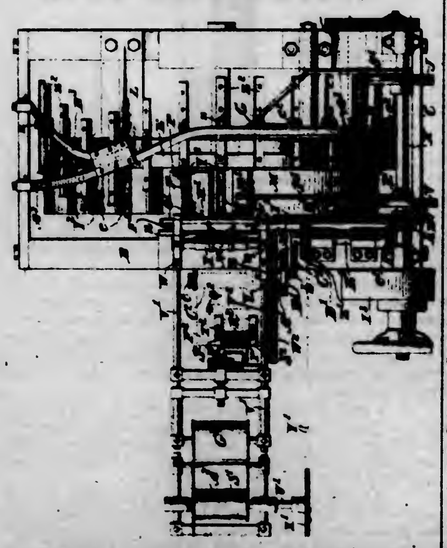

Claim.—1. In a box-machine, the combination of a movable part, having a series of cavities, a series of formers movable into and out of such cavities, a movable device mounted exteriorly of and adjacent to said movable part and adapted to be successively engaged by the formers, and means for periodically actuating said device to effect the movement thereby of said formers into the cavities, substantially as and for the purpose described.

2. In a box-machine, the combination of a movable part, having a series of cavities, a series of formers mounted upon and traveling with such part, and movable into and out of such cavities and a lever for moving said formers into the cavities, substantially as and for the purpose described.

3. In a box-machine, the combination of a rotary part, having a series of cavities, a series of formers movable into and out of such cavities, a movable device mounted exteriorly of and adjacent to said movable part and adapted to be successively engaged by the formers, and means for periodically actuating said device to effect the movement thereby of said formers into the cavities, substantially as and for the purpose described.

4. In a box-machine, the combination of a rotary part having a series of radially-extending cavities that open to the peripheries of the part, a series of formers movable into and out of the cavities, and a single lever for the series of formers for moving the same into the cavities.

5. In a box-machine, the combination of a movable part having a series of cavities, a series of formers movable into and out of such cavities, moving means to act on the formers to move them into the cavities, and a cam to act on the formers to move them out of the cavities, substantially as and for the purpose described.

6. In a box-machine adapted to operate on blanks having flaps to form two side folds and flaps to form but two end folds, the combination of a former, a traveling part having a cavity into and out of which the former is movable, means for moving the former into the cavity to fold the blank with all of said flaps projecting, means for folding one of each of the two flaps, and a stationary lap-folder for folding the remaining flaps beneath which said traveling part carries the partially-folded blank.

7. In a box-machine, the combination of means to form blanks, having two flaps to form side folds and but two flaps to form end folds, a former, a traveling part having a cavity into and out of which the former is movable, means for moving the former into the cavity to fold the blank with all of said flaps projecting, means for folding one of each of the two flaps, and a stationary lap-folder for folding the remaining flaps beneath which said traveling part carries the partially-folded blank.

8. In a box-machine adapted to operate on blanks having flaps to form two side folds and flaps to form but two end folds, the combination of a traveling part having a series of cavities, a series of formers movable into and out of such cavities, means for moving a former into its cavities to form three sides of the box, means for folding one of each of the two flaps, and a stationary lap-folder for folding the remaining two flaps.

9. In a box-machine, the combination of a wheel having a series of peripheral cavities, a series of formers movable into and out of such cavities, a fixed lap-folder comprising two plates, one extending adjacent to the circumference of the wheel, and the other adjacent the side thereof, and a movable lap-folder having parts corresponding to said plates, substantially as and for the purpose described.

10. In a box-machine, the combination of a wheel having a series of peripheral cavities, a series of formers mounted on the wheel and movable in radial lines into and out of said cavities, a lap-folder carried by an arm that is pivoted concentric with the wheel-axis, and a fixed folder-plate concentric with the wheel, substantially as and for the purpose described.

11. In a box-machine, the combination of a wheel having a series of peripheral cavities, a series of formers consisting of bars that extend parallel with the wheel-axis, slide-bars to which the formers are attached, mounted in guides on the wheel, and a lever for moving the slide-bars to carry the formers into their cavities, to which the slide-bars are moved in succession.

12. In a box-machine, the combination of a wheel having a series of peripheral cavities, a series of formers consisting of bars that extend parallel with the wheel-axis, slide-bars to which the formers are attached, mounted in guides on the wheel, a lever for moving the slide-bars in one direction, and a cam for moving them in the opposite direction, substantially as and for the purpose described.

13. In a box-machine, the combination of a wheel having a series of peripheral cavities, a series of formers consisting of bars that extend parallel with the wheel-axis, slide-bars to which the formers are attached, mounted in guides on the wheel, a lever for moving the slide-bars to carry the formers into their cavities, a cam for moving them in the opposite direction, and a curved plate concentric with and adjacent to the wheel-periphery, substantially as and for the purpose described.

14. In a box-machine, the combination of a wheel having a series of peripheral cavities, a series of formers consisting of bars that extend parallel with the wheel-axis, slide-bars to which the formers are attached, mounted in guides on the wheel, a lever for moving the slide-bars to carry the formers into their cavities, a cam for moving them outward, a lap-folder consisting of a curved plate concentric with and adjacent to the wheel-periphery, and a lap-folder consisting of a swinging plate, substantially as and for the purpose described.

15. In a box-machine, the combination of a wheel having a series of peripheral cavities, a series of formers consisting of bars that extend parallel with the wheel-axis, slide-bars to which the formers are attached, mounted in guides on the wheel, a lever for moving the slide-bars to carry the formers into their cavities, a cam for moving them outward, and lap-folders consisting, respectively, of movable and fixed plates, substantially as and for the purpose described.

16. In a box-machine, the combination of a wheel having a series of peripheral cavities, a series of formers consisting of bars, moving means for moving the bars into the cavities, means for moving said bars out of the cavities, lap-folders consisting respectively, of movable and fixed plates, and means for removing the boxes from the formers, substantially as and for the purpose described.

17. In a box-machine, the combination of a wheel having a series of peripheral cavities, a series of formers consisting of bars, means for moving the bars into and out of the cavities, lap-folders, and box-removing means comprising sliding rods guides for the rods on the wheel, box-engaging plates carried by the rods, and means for sliding the rods, substantially as and for the purpose described.

18. In a box-machine, the combination of box-forming devices comprising a series of cavities and corresponding bars that are movable into and out of the cavities, means for continuously moving the same, means for feeding stock to said box-forming devices, means for cutting a box-blank from the stock and means for so operating the cutting means with reference to the travel of the box-forming devices as to free the blank for the action of a forming device when it is in position to act on the blank, whereby movement of the cutting means along with the box-forming devices is avoided, substantially as and for the purpose described.

19. In a box-machine, the combination of box-forming devices, comprising a wheel having a series of cavities and corresponding bars movable into and out of the cavities, means for continuously revolving the wheel, means for feeding stock to the box-forming devices, means for cutting a box-blank from the stock, and means for so operating the cutting means with reference to the travel of the wheel as to free the blank for the action of a forming device when it reaches the blank, whereby movement of the cutting means along with the wheel is avoided, substantially as and for the purpose described.

20. In a box-machine, the combination of strip-feeding rolls, means for intermittently rotating them a knife mounted on a stationary support, box-forming devices comprising a wheel having a series of cavities and corresponding bars that are movable into and out of the cavities, and means for continuously revolving the wheel, substantially as and for the purpose described.

21. In a box-machine, the combination of a box-forming device comprising a traveling part having a cavity and a bar movable into and out of the cavity, and stationary and movable lap-folders, having surfaces on which the box-blank is supported preliminary to the action of the box-forming device, substantially as and for the purpose described.

22. In a box-machine, the combination of a wheel having a series of cavities, corresponding bars, movable into and out of the cavities, a stationary lap-folder overlying the wheel-circumference, and a movable lap-folder overlying the wheel-circumference, each of said lap-folders having a blank-supporting portion, substantially as and for the purpose described.

23. In a box-machine, the combination of strip-feeding rolls, means for intermittently rotating them, a wheel having a series of cavities and corresponding bars that are movable into and out of the cavities, movable and fixed lap-folding plates, having portions upon which the portion of strip to form a blank is supported, and a knife for cutting such strip, substantially as and for the purpose described.

24. In a box-machine, the combination of folding mechanism, a blank-support, and a blank-holder comprising a presser-bar yieldingly connected with a blank-engaging part of the holder, substantially as and for the purpose described.

25. In a box-machine, the combination of folding mechanism, a blank-support, and a blank-holder comprising a lever, a bar thereon having a blank-engaging finger, and a connection between said bar and lever that permits buckling of the lever without displacing said finger, substantially as and for the purpose described.

26. In a box-machine, the combination of folding mechanism, a blank-support, and a blank-holder comprising a lever having a blank-engaging finger carried by a bar that has a loose connection with the finger.

27. In a box-machine, the combination of blank-folding means a glue-wheel, and a support for box-stock opposite the glue-wheel, the stock-engaging surfaces of the support being of less area than the area of the glue-applying surfaces, substantially as and for the purpose described.

813,609. LIFE-SAVING APPLIANCE. FREDERICK W. EMSLIE, Nicola Lake, Canada. Filed Feb. 20, 1905. Serial No. 246,589.

Claim.—The herein-described safety appliance comprising a suitable casing; a reel operatively mounted therein; a cable normally wound upon said reel; a gear keyed upon the shaft carrying said reel; a controlling-gear mounted on a worm-shaft and meshing with said gear on said reel; the worm-shaft, a second shaft, a gear upon said second shaft and coöperating with said worm to control the movement of the first-mentioned gears, and a controlling-lever coöperating with said worm-shaft whereby the speed of rotation thereof may be placed under the control of the operator.

813,610. CLOCKWORK ELECTRICITY-METER. HERMANN ARON, Charlottenburg, Germany. Filed Jan. 13, 1904. Serial No. 188,880.

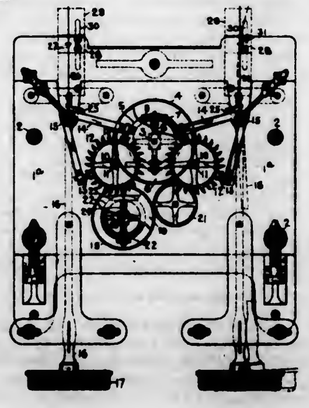

Claim.—1. In an electric meter, the combination with a clock-work mechanism comprising an escapement device and a pendulum

Claim.—In a mold-charging apparatus the combination with a hopper for sand having tracks upon two of its opposite lower edges,

Claim.—1. In an electric meter, the combination with a clockwork mechanism comprising an escapement device and a pendulum mounted upon a fixed fulcrum-bearing and free to vibrate freely thereon as a center in governing the action of said clockwork mechanism, of means additional to said fixed fulcrum-bearing and acting upon said pendulum substantially throughout its entire range of movement from neutral position with an intensity proportionate to its degree of deflection from and to restore it to said neutral position.

2. In an electric meter, the combination with a clockwork mechanism comprising an escapement device and a pendulum mounted upon a fixed fulcrum-bearing and free to vibrate freely thereon as a center in governing the action of said clockwork mechanism, of a spring secured to and carried by said pendulum adjacent its fulcrum-point and acting upon the same with an intensity proportionate to its degree of deflection from and to restore it to neutral position.

3. In an electric meter, the combination with a clockwork mechanism comprising an escapement device and a pendulum mounted upon a fixed fulcrum-bearing and free to vibrate freely thereon as a center in governing the action of said clockwork mechanism, of a spring secured to and carried by said pendulum adjacent its fulcrum-point, and means adjustable toward and from the fulcrum-point of said pendulum and adapted to engage said spring at a point removed from said fulcrum-point to confine it against bodily movement with said pendulum.

4. In an electric meter, the combination with the frame and a clockwork mechanism comprising an escapement device and a pendulum for controlling the operation of the same, of a flat spring rigidly connected with said pendulum, a guide embracing said spring a block by which said guide is carried, mounted upon said frame adjustably toward and from the axis of suspension of said pendulum.

5. In an electric meter, the combination with the frame and a clockwork mechanism comprising an escapement device and a pendulum for controlling the operation of the same, of a flat spring rigidly connected with said pendulum, a supporting-standard carried by said frame, a sliding block secured upon said standard by a pin-and-slot connection adjustably toward and from the axis of suspension of said pendulum, and a pair of spaced guide-pins carried by said sliding block and embracing the said spring.

6. In an electric meter, the combination with a clockwork mechanism comprising two connected escapement devices and two pendula therefor, each of which controls the operation of its respective escapement device, of a flat spring rigidly connected with each of said pendula and guides adjustable toward and from the axes of suspension of their respective pendula through which said springs are extended.

813,611. METALLIC RAILWAY-TIE. ALBON W. BABCOM, Spokane, Wash. Filed Nov. 27, 1905. Serial No. 289,283.

Claim.—1. A railway-tie comprising a rectangular body formed by bending the sides and ends of a sheet of metal downwardly to form a surrounding flange, a lumber cushion in said body of less thickness than its surrounding flange, metal plates upon the under side of said cushion adjacent to its ends, rail-clamping plates upon the upper face of said tie, and fastening devices passed through alining openings in said metal plates, said cushion, said tie and said clamping-plates, substantially as described.

2. A railway-tie comprising a rectangular body formed by bending the sides and ends of a sheet of metal downwardly to form a surrounding flange, a lumber cushion in said body of less thickness than its surrounding flange, metal plates upon the under side of said cushion adjacent to its ends, said plates being formed with polygonal-shaped openings, rail-clamping plates upon the top of said tie, and bolts passed through openings in said plates and alining openings in said cushion, tie and clamping-plates, said bolts having polygonal-shaped shoulders adjacent to their heads adapted to engage the similarly-shaped openings in said metal plates, substantially as described.

813,612. REINFORCED BRAKE-BEAM. CARL B. BAUER, Hammond, Ind., assignor to Simplex Railway Appliance Company, Chicago, Ill., a Corporation of Illinois. Filed June 1, 1905. Serial No. 263,336.

Claim.—1. A flanged beam, having a reinforcing sheath of metal extending for a portion of its length and adapted to stiffen the beam at the point of greatest bending moment, such sheath engaging the flange on both surfaces.

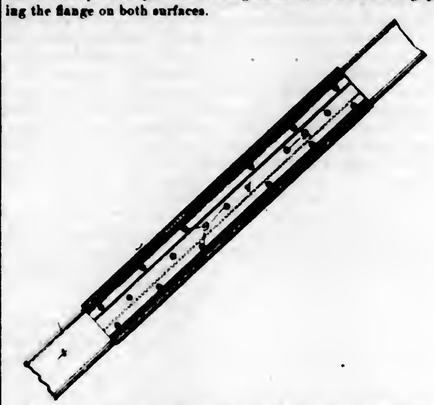

2. A brake beam having plate metal sheaths closely fitting and surrounding the flanges of the beam, and riveted to the web, said sheaths extending over the central portion of the beam.

3. The combination with an I-beam, of a reinforcing sheath enveloping each flange and having each a narrow and a wide wing, the respective wide wings projecting over each other and both riveted to the web of the beam.

4. In a brake beam a reinforcement comprising a rolled plate metal sheath extending over the central part of the beam and enveloping the flange and riveted to the web, substantially as described.

5. A brake beam having plate metal sheaths closely fitting and surrounding the flanges and web of the beam, said sheaths extending over a portion of the length of the beam.

813,613. PUMP-ROD COUPLING. JOHN R. BOALS, River Falls Wis. Filed May 3, 1905. Serial No. 258,513.

Claim.—1. A pump-rod coupling comprising a pitman having one open side, an apron pivoted in the open side and provided on its inner side with a pin normally projecting across the pitman and into the side of the pitman opposite the apron, a spring-clasp secured on the pitman and adapted to take over the edge of the apron and hold it parallel with the pitman.

2. A pump-rod coupling comprising a pitman having one open or grooved side, an apron pivoted in the open side and provided on its inner side with a pin normally projecting across the groove and into the side of the pitman opposite the apron, a spring-clasp secured on the pitman and adapted to take over the edge of the apron and hold it parallel with the pitman, and a spring-arm arranged to throw the apron outward when disengaged from the clasp.

3. A pump-rod coupling comprising a pitman having one open or grooved side, an apron pivoted in the open side and provided on its inner side with a pin normally projecting across the groove and into the side of the pitman opposite the apron, a spring-clasp secured on the pitman and adapted to take over the edge of the apron and hold it parallel with the pitman, and a spring-arm arranged to throw the apron outward when disengaged from the clasp, said clasp having an inclined operating-arm adapted to be operated by the finger in opening the apron and by the edge of the apron in closing the apron, substantially as and for the purpose set forth.

4. The combination with the pumping-rods of a windmill and a pump, of a coupling comprising a grooved member secured on one of the rods and guidingly embracing the other rod, there being a transverse hole in said other rod, said grooved member having in its groove a pivoted flap, latch or apron, a pin in said apron for engaging the hole in the rod, a spring-clasp holding the apron closed, and a spring-arm throwing the apron open when released from the clasp.

813,614. MOLD-CHARGING APPARATUS. PHILIBERT BONVILLAIN, Paris, France. Filed Apr. 24, 1905. Serial No. 257,055.

Claim.—In a mold-charging apparatus the combination with a hopper for sand having tracks upon two of its opposite lower edges, of a movable bottom under the said hopper, rollers applied upon the bottom and turning upon the said tracks, flanges fixed under the said movable bottom, a box mounted upon a fixed axis for turning under the said hopper, a stop fixed upon one of the sides of this box for engaging between the flanges on the said movable bottom of the hopper, a bottom movable in ways on the said box, and parallel flanges fixed under the last-named movable bottom for engaging with a stop arranged under the molding-machine which is being charged by the apparatus, substantially as described and for the purpose specified.

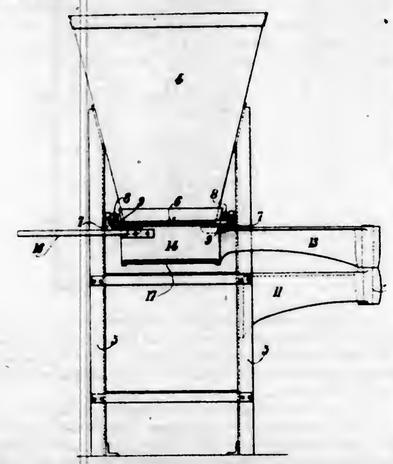

813,615. GATE. WALTER C. BOYD, Williamsburg, Iowa. Filed June 30, 1905. Serial No. 267,769.

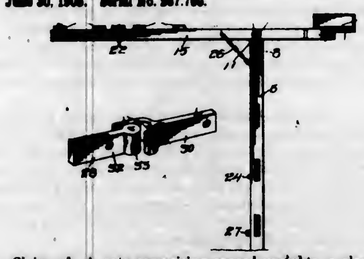

Claim.—1. A gate comprising spaced uprights, a closure for the space between the uprights, said closure being connected with one of the uprights for horizontal pivotal movement into and out of operative position, the connection of said closure with said upright being also arranged to permit of vertical pivotal movement of the closure into and out of operative position, said closure being also detachably connected with the other upright for vertical pivotal movement with respect thereto, a stop member carried by the first-named upright and a member carried by the closure and adapted for engagement of the stop member to limit the vertical pivotal movement of the closure in one direction, said stop member having a recess therein adapted for the reception of the second-named member at times for pivotal movement of the second-named member with respect thereto when the gate is moved horizontally.

2. A gate comprising spaced uprights, a horizontal shaft pivoted at one end to one of the uprights for horizontal movement and detachably connected with the other upright, a closure for the space between the uprights pivoted upon the shaft for vertical movement into and out of operative position, latch members carried by the closure and adapted to engage the uprights to limit the movement of the closure in one direction and an auxiliary stop comprising two members, one carried by the closure and the other by the upright to which the shaft is pivotally connected, the second-named member having a recess adapted for the reception of the other member for pivotal movement of said member therewithin, the closure-carried member lying against the other member when the closure is in operative position, the detachable connection of the shaft with one of the uprights being arranged for movement into at times inoperative position.

3. A gate comprising spaced uprights, a horizontal shaft connected with the uprights, a closure pivoted upon the shaft for movement into and out of position to close the space between the uprights, said closure comprising side members having openings in which the shaft is revolubly engaged, horizontal slats secured to the lower portions of the side members, an upwardly-curved top piece secured at its ends to the upright ends of the side members, a brace secured to the slats and to the top piece, a weight secured to the top piece and to the brace of sufficient heaviness to balance the portion of the closure lying below the shaft, chains secured to the uprights and to the lower portion of the closure, said chains being arranged to limit the upward movement of said lower portion of the closure and latches arranged to limit the opposite movement of the closure and to hold it against movement, said latches being arranged for movement into and out of operative position.

813,616. PAD FOR UPHOLSTERED FURNITURE. FRANCIS D. BOYLE, Toledo, Ohio. Filed Jan. 23, 1905. Serial No. 242,242.

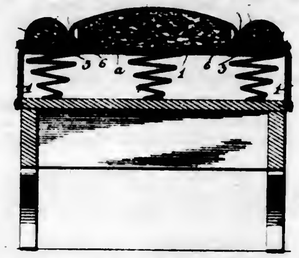

Claim.—A pad for roll-edge upholstered furniture, comprising a lining or under cover, a center piece, having its edges stitched to said lining or under cover, a welt-piece and a roll-edge piece having their edges stitched together and secured to the under cover by stitching, the stitching which secures said center piece, welt-piece, roll-edge piece and lining together, being independent of and unaffected by the devices employed to secure the pad to the furniture.

813,617. MUSIC-LEAF TURNER. WALTER L. CATWOOD and ERNEST M. STEBLE, Canon City, Colo. Filed Aug. 14, 1905. Serial No. 274,145.

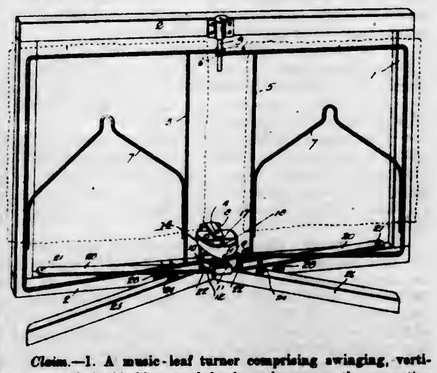

Claim.—1. A music-leaf turner comprising swinging, vertically-movable leaf-holders, each having a lower arm, the respective lower arms of the leaf-holders being one above another, a lower cam device, and an upper cam device, respectively below and above the lower arms of the leaf-holders, said cam devices being mounted for simultaneous oscillatory movement in a horizontal plane and said upper cam device being also mounted for independent vertical angular movement, and means to operate said cam devices.

2. A music-leaf turner comprising swinging, vertically-movable leaf-holders, each having a lower arm, a vertical shaft mounted for

means actuated by the passage of the train in the opposite direction for throwing said first-mentioned means out of operation, said means

railways, comprising a hammer, an anvil to receive the detonators, a

deposits from the solution, and depositing the gold, silver and other

2. A music-leaf turner comprising swinging, vertically-movable leaf-holders, each having a lower arm, a vertical shaft mounted for oscillatory movement, and to which the lower arms of the leaf-holders are connected for vertical and also for independent angular movement in horizontal planes, a lower cam device and an upper cam device respectively below and above the lower arms of the leaf-holders, said cam devices being connected to and oscillated with the said shaft, and said upper cam device being also mounted for independent angular movement in a vertical plane, and means to simultaneously turn said cam devices in either direction.

3. A music-leaf turner comprising swinging, vertically-movable leaf-holders, each having a lower arm, the respective lower arms of the leaf-holders being one above another, a lower cam device and an upper cam device respectively below and above the lower arms of the leaf-holders, said cam devices being mounted for simultaneous oscillatory movement in a horizontal plane and said upper cam device being also mounted for independent vertical angular movement, levers connected to the lower cam device, hand-levers, links connecting the hand-levers to the first-mentioned levers, and springs pressing the free ends of the hand-levers outwardly, substantially as described.

813,618. COATED STRIP AND METHOD OF MAKING THE SAME. HENRY S. CHAPMAN, Glenridge, N. J., and WILBUR M. BROWN, New York, N. Y., assignors to Arlington Company, a Corporation of New Jersey. Filed July 10, 1905. Serial No. 269,120.

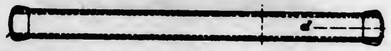

Claim.—1. A rigid strip having a seamless incasing coating of semiplastic material and a second coating of similar material on a portion thereof, said second portion forming a reinforcing-bead thereon.

2. A rigid strip having a seamless incasing coating of semiplastic material and a second coating of similar material on portions thereof, said second portions forming reinforcing-beads lengthwise thereon.

3. A strip having a seamless incasing coating of semiplastic material, a reinforcing-bead on each edge thereof and a reinforcing-cap on each end thereof, said beads and caps being of the same material as the coating.

4. A strip having a seamless incasing coating of semiplastic material, a reinforcing-bead on each edge thereof and a reinforcing-cap on each end thereof, said beads and caps being of the same material as the coating and integral therewith.

5. A strip having a covering of fabric, paper or other material and a seamless incasing coating of semiplastic material thereover and a reinforcing-cap on each end thereof of the same material as the coating.

6. A strip having a covering of fabric, paper or other material and a seamless impregnating and incasing coating of semiplastic material thereover and a reinforcing-cap on each end thereof of the same material and integral with the coating.

7. The process of coating strips, comprised in applying a solution of coating material to the strip, drying the solution on the strip, again applying a solution of the coating material to the strip, and scraping off the fluid coating from portions of the strip while allowing it to remain on other portions of the strip.

8. The process of coating strips, comprised in passing the strip through a solution of coating material, scraping off the surplus material, drying the solution on the strip, then passing the strip again through the coating material and scraping off the fluid coating from portions of the strip while allowing it to remain on other portions of said strip.

9. The process of coating strips comprised in passing the strip through a solution of coating material, scraping off the surplus material, drying the solution on the strip, then passing the strip again through the coating material, scraping off all of the fluid coating solution from the middle of the faces of the strip while allowing the coating solution to remain on the edges of the strip and on those portions of the faces of the strip contiguous to the edges.

813,619. ACOUSTIC SIGNALING APPARATUS FOR RAILWAYS. ERMINIO COSTA-CASELI, Naples, Italy. Filed Oct. 24, 1902. Serial No. 128,612.

Claim.—1. An automatic apparatus for acoustic signals on railways comprising a hammer, an anvil to receive the detonators, means actuated by the passage of the train for operating said hammer and means actuated by the passage of the train in the opposite direction for throwing said first-mentioned means out of operation, said means being used on a single track, substantially as described.

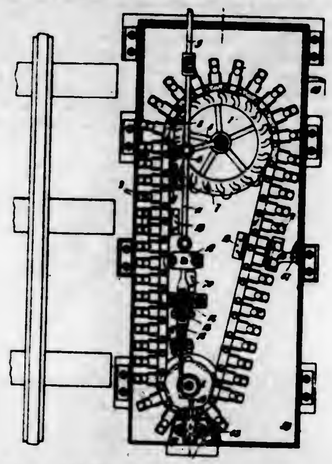

2. In an acoustic signal device, a hammer, an anvil, means for supplying detonators to the anvil, means for operating the hammer, said means being actuated by the passage of a train, and electric means for indicating when the parts are in a position of rest, substantially as described.

3. In an acoustic signal device, a detonating apparatus, a pedal, a cylinder, a piston therein, said piston supporting one end of the pedal, and means supported by said piston and connected to the said detonating apparatus for operating the same when the piston is pressed down by the train acting on the pedal, substantially as described.

4. An automatic apparatus for acoustic signals on railways comprising a pedal adapted to be operated by the passage of the train-wheels, an anvil, a hammer, means carrying the detonators operated by the lowering of said pedal, and an eccentric that in its position of rest holds the hammer at a level somewhat above the detonators and in operative position allows of the free falling of the hammer.

5. An automatic apparatus for acoustic signals on railways, comprising a hammer, an anvil to receive the detonators, a pedal in combination with a piston-rod, a pivot on said piston-rod, a lever supported by said pivot, a shaft on which said lever is mounted, a counterweight-lever on said shaft, mechanism carrying the detonators and a rod connecting said mechanism to the before-mentioned lever so that on the lowering of the pedal the parts will be put in operative position, substantially as described.

6. An automatic apparatus for acoustic signals on railways comprising a hammer, an anvil to receive the detonators, a pedal, connections from the pedal for operating the hammer, a piston-rod connected to said pedal, a piston, a pressure-chamber controlling the motion of the pedal, said chamber being partially filled with liquid and partially with compressed air, substantially as described.

7. An automatic apparatus for acoustic signals on railways, comprising a hammer, an anvil to receive the detonators, a pedal, connections from the pedal to the hammer for operating said hammer, a piston-rod connected to said pedal, a pressure-chamber filled with liquid and compressed air, and a valve opening upward when the piston lowers, said valve having a small hole therein allowing the liquid to pass slowly when the piston rises so that said piston acts as a hydropneumatic brake, substantially as described.

8. An automatic apparatus for acoustic signals on railways, comprising a hammer, an anvil to receive the detonators, a pedal, connections from the pedal to the hammer for operating the hammer, a piston-rod connected to one end of the pedal, a sliding block connected with the other end of the pedal, a shaft connected to the said block, a counterweight-lever on said shaft and transmission-wires from the visual signal or from the station for setting down the pedal out of the action of the trains or to set it up again in working position, substantially as described.

9. An automatic apparatus for acoustic signals on signal-line railways, comprising a hammer, an anvil to receive the detonators, a pedal, a piston-rod connected thereto, a sliding block also connected with the pedal, a detonator apparatus for placing the detonators on the anvil, a lever for working said apparatus, a shaft therefor, said pedal acting on the said lever, a counter-pedal placed immediately after the first pedal on the station side, a sliding block connected to said counter-lever, a piston-rod also connected to said counter-lever, an oscillating bar actuated by the piston-rods, a communicating wedge on said bar and a projecting tooth adapted to stop the shaft which bears the lever working the detonator apparatus, substantially as described.

10. In an automatic apparatus for acoustic signals on railways, a detonating apparatus acted on by the passage of the train, an anvil, an explosion-chamber above the anvil for the expansion of the gases and an oscillating plate closing at each explosion an electric circuit in order to signal the explosion at the station, substantially as described.

11. In an automatic apparatus for acoustic signals on railways, a detonating apparatus, a lever acted on by the passage of the train, a rod having a to-and-fro motion, rotary mechanism carrying the petards acted on by the movement of the said rod in one direction, an electric-alarm-operating circuit, and means for closing said circuit, said means being operated by the movement of said rod in the other direction.

12. In an apparatus for acoustic signals on railways, a detonating device, mechanism for carrying the petards to the detonating device, a contact 67, a plate tending to rest on said contact, said plate and contact being placed a short distance from the detonating device, said plate projecting over the petards and being raised above the contact by said petards so that when the exploded petards begin to pass under said plate it will be allowed to fall on the contact, a bell-operating circuit in which the said plate and contact are placed, the closing of said circuit producing a continual ringing of the bell thus announces that the petards are about to become exhausted, an interrupter, operated by the detonating device for temporarily interrupting the continual ringing of the bell.

813,620. PROCESS OF EXTRACTING GOLD, SILVER, &c. JOSEPH A. COHEN, Los Angeles, Cal. Filed Jan. 2, 1904. Serial No. 187,573.

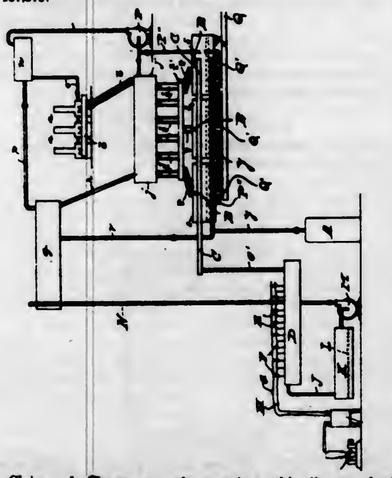

Claims.—1. The process of extracting gold, silver, and other metals from ores, consisting in subjecting the crushed ores to a solution of the cyanid of potassium, drawing off the said solution from the pulp mixed therewith, impregnating with air the said solution and sedimentary deposits suspended therein, separating the sedimentary deposits from the solution, and depositing the metals contained in the solution with electricity.

2. The process of extracting gold, silver and other metals from ores, consisting in subjecting the ores to an alkaline solution of the cyanid of potassium, drawing off the said solution from the pulp mixed therewith, impregnating with air the said solution and sedimentary deposits suspended therein, separating the sedimentary deposits from the solution, and depositing the gold, silver and other metals in the said solution by means of electricity.

3. The process of extracting gold, silver and other metals from ores, consisting in dissolving the gold, silver and other metals from the ores by means of a cyanid solution, eliminating the pulp and other foreign matters suspended in said solution, forcing compressed air through the said cyanid solution and sedimentary deposits suspended therein, separating the said sedimentary deposits from the said solution, and depositing by means of electricity the metals carried in said solution.

4. The method of extracting metals from ores consisting in treating the crushed ores with an alkaline cyanid solution, separating the said solution from the ores and other foreign substances mixed therewith, injecting compressed air into said solution, separating sedimentary substances suspended in said solution, and depositing by means of electricity the metals dissolved by the said solution.

813,621. HOSE-SUPPORTER. HENRY B. COOPER, Columbus, Ohio. Filed Nov. 18, 1904. Serial No. 233,378.

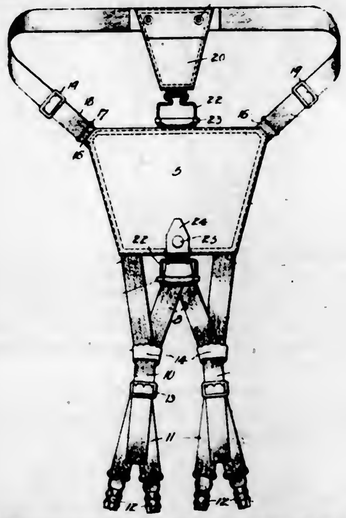

Claim.—1. In combination, a belt comprising front and back portions, metallic loops connected to the upper corners of one of said portions, side tapes threaded through said loops with means for adjusting them and having their opposite ends detachably connected to the other of said portions, a double-looped flexible member depending from the front portion, and a hose-supporting member depending from each loop and having a sliding connection therewith, substantially as described.

2. In combination, a front portion, metallic loops connected to the upper corners thereof, side tapes threaded through said loops with means for adjusting them, detachable connecting means between the other ends of said tapes, a double-looped flexible member depending from the front portion, a metallic loop carried by each loop of said double-looped member, an elastic member threaded through each of said metallic loops and having depending coextensive portions or ends, and a clip carrying hose-engaging devices adjustably connected to both said coextensive portions, substantially as described.

3. In combination, a belt comprising front and back portions, metallic loops connected to the upper corners of one of said portions, side tapes threaded through said loops with means for adjusting them and having their opposite ends detachably connected to the other of said portions, a double-looped member depending from the front portion, a metallic loop carried by each loop of said double-looped member, an elastic member threaded through each of said metallic loops, and having depending coextensive portions or ends, and a holding means carrying hose-supporting members adjustably connected to both said coextensive portions or ends, substantially as described.

4. In a hose-supporter having two looped members slidingly connected together, means for effecting such sliding connection com-

2. A music-leaf turner comprising swinging, vertically-movable leaf-holders, each having a lower arm, a vertical shaft mounted for oscillatory movement, and to which the lower arms of the leaf-holders are connected for vertical and also for independent angular movement in horizontal planes, a lower cam device and an upper cam device respectively below and above the lower arms of the leaf-holders, said cam devices being connected to and oscillated with the said shaft, and said upper cam device being also mounted for independent angular movement in a vertical plane, and means to simultaneously turn said cam devices in either direction.

3. A music-leaf turner comprising swinging, vertically-movable leaf-holders, each having a lower arm, the respective lower arms of the leaf-holders being one above another, a lower cam device and an upper cam device respectively below and above the lower arms of the leaf-holders, said cam devices being mounted for simultaneous oscillatory movement in a horizontal plane and said upper cam device being also mounted for independent vertical angular movement, levers connected to the lower cam device, hand-levers, links connecting the hand-levers to the first-mentioned levers, and springs pressing the free ends of the hand-levers outwardly, substantially as described.

813,618. COATED STRIP AND METHOD OF MAKING THE SAME. HENRY S. CHAPMAN, Glenridge, N. J., and WILBUR M. STORR, New York, N. Y., assignors to Arlington Company, a Corporation of New Jersey. Filed July 10, 1905. Serial No. 269,120.

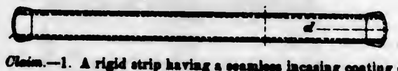

Claim.—1. A rigid strip having a seamless incasing coating of semiplastic material and a second coating of similar material on a portion thereof, said second portion forming a reinforcing-bead thereon.

2. A rigid strip having a seamless incasing coating of semiplastic material and a second coating of similar material on portions thereof, said second portions forming reinforcing-beads lengthwise thereon.

3. A strip having a seamless incasing coating of semiplastic material, a reinforcing-bead on each edge thereof and a reinforcing-cap on each end thereof, said beads and caps being of the same material as the coating.

4. A strip having a seamless incasing coating of semiplastic material, a reinforcing-bead on each edge thereof and a reinforcing-cap on each end thereof, said beads and caps being of the same material as the coating and integral therewith.

5. A strip having a covering of fabric, paper or other material and a seamless incasing coating of semiplastic material thereover and a reinforcing-cap on each end thereof of the same material as the coating.

6. A strip having a covering of fabric, paper or other material and a seamless impregnating and incasing coating of semiplastic material thereover and a reinforcing-cap on each end thereof of the same material and integral with the coating.

7. The process of coating strips, comprised in applying a solution of coating material to the strip, drying the solution on the strip, again applying a solution of the coating material to the strip, and scraping off the fluid coating from portions of the strip while allowing it to remain on other portions of the strip.

8. The process of coating strips, comprised in passing the strip through a solution of coating material, scraping off the surplus material, drying the solution on the strip, then passing the strip again through the coating material and scraping off the fluid coating from portions of the strip while allowing it to remain on other portions of said strip.

9. The process of coating strips comprised in passing the strip through a solution of coating material, scraping off the surplus material, drying the solution on the strip, then passing the strip again through the coating material, scraping off all of the fluid coating solution from the middle of the faces of the strip while allowing the coating solution to remain on the edges of the strip and on those portions of the faces of the strip contiguous to the edges.

813,619. ACOUSTIC SIGNALING APPARATUS FOR RAILWAYS. IGNAZIO CORSI-CASELI, Naples, Italy. Filed Oct. 24, 1902. Serial No. 128,613.

Claim.—1. An automatic apparatus for acoustic signals on railways comprising a hammer, an anvil to receive the detonators, means actuated by the passage of the train for operating said hammer and means actuated by the passage of the train in the opposite direction for throwing said first-mentioned means out of operation, said means being used on a single track, substantially as described.

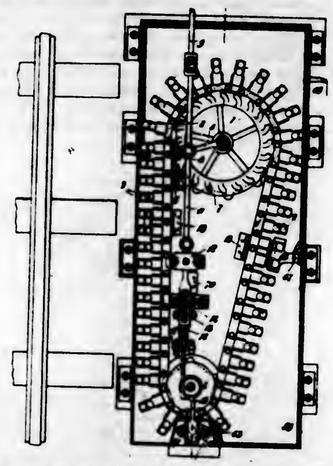

2. In an acoustic signal device, a hammer, an anvil, means for supplying detonators to the anvil, means for operating the hammer, said means being actuated by the passage of a train, and electric means for indicating when the parts are in a position of rest, substantially as described.

3. In an acoustic signal device, a detonating apparatus, a pedal, a cylinder, a piston therein, said piston supporting one end of the pedal, and means supported by said piston and connected to the said detonating apparatus for operating the same when the piston is pressed down by the train acting on the pedal, substantially as described.

4. An automatic apparatus for acoustic signals on railways comprising a pedal adapted to be operated by the passage of the train-wheels, an anvil, a hammer, means carrying the detonators operated by the lowering of said pedal, and an eccentric that in its position of rest holds the hammer at a level somewhat above the detonators and in operative position allows of the free falling of the hammer.

5. An automatic apparatus for acoustic signals on railways, comprising a hammer, an anvil to receive the detonators, a pedal in combination with a piston-rod, a pivot on said piston-rod, a lever supported by said pivot, a shaft on which said lever is mounted, a counterweight-lever on said shaft, mechanism carrying the detonators and a rod connecting said mechanism to the before-mentioned lever so that on the lowering of the pedal the parts will be put in operative position, substantially as described.

6. An automatic apparatus for acoustic signals on railways comprising a hammer, an anvil to receive the detonators, a pedal, connections from the pedal for operating the hammer, a piston-rod connected to said pedal, a piston, a pressure-chamber controlling the motion of the pedal, said chamber being partially filled with liquid and partially with compressed air, substantially as described.

7. An automatic apparatus for acoustic signals on railways, comprising a hammer, an anvil to receive the detonators, a pedal, connections from the pedal to the hammer for operating said hammer, a piston-rod connected to said pedal, a pressure-chamber filled with liquid and compressed air, and a valve opening upward when the piston lowers, said valve having a small hole therein allowing the liquid to pass slowly when the piston rises so that said piston acts as a hydropneumatic brake, substantially as described.

8. An automatic apparatus for acoustic signals on railways, comprising a hammer, an anvil to receive the detonators, a pedal, connections from the pedal to the hammer for operating the hammer, a piston-rod connected to one end of the pedal, a sliding block connected with the other end of the pedal, a shaft connected to the said block, a counterweight-lever on said shaft and transmission-wires from the visual signal or from the station for setting down the pedal out of the action of the trains or to set it up again in working position, substantially as described.

9. An automatic apparatus for acoustic signals on signal-line railways, comprising a hammer, an anvil to receive the detonators, a pedal, a piston-rod connected thereto, a sliding block also connected with the pedal, a detonator apparatus for placing the detonators on the anvil, a lever for working said apparatus, a shaft therefor, said pedal acting on the said lever, a counter-pedal placed immediately after the first pedal on the station side, a sliding block connected to said counter-lever, a piston-rod also connected to said counter-lever, an oscillating bar actuated by the piston-rods, a communicating wedge on said bar and a projecting tooth adapted to stop the shaft which bears the lever working the detonator apparatus, substantially as described.

10. In an automatic apparatus for acoustic signals on railways, a detonating apparatus acted on by the passage of the train, an anvil, an explosion-chamber above the anvil for the expansion of the gases and an oscillating plate closing at each explosion an electric circuit in order to signal the explosion at the station, substantially as described.

11. In an automatic apparatus for acoustic signals on railways, a detonating apparatus, a lever acted on by the passage of the train, a rod having a to-and-fro motion, rotary mechanism carrying the petards acted on by the movement of the said rod in one direction, an electric-alarm-operating circuit, and means for closing said circuit, said means being operated by the movement of said rod in the other direction.

12. In an apparatus for acoustic signals on railways, a detonating device, mechanism for carrying the petards to the detonating device, a contact 67, a plate tending to rest on said contact, said plate and contact being placed a short distance from the detonating device, said plate projecting over the petards and being raised above the contact by said petards so that when the exploded petards begin to pass under said plate it will be allowed to fall on the contact, a bell-operating circuit in which the said plate and contact are placed, the closing of said circuit producing a continual ringing of the bell thus announces that the petards are about to become exhausted, an interrupter, operated by the detonating device for temporarily interrupting the continual ringing of the bell.

813,620. PROCESS OF EXTRACTING GOLD, SILVER, &c. JOSEPH A. COHEN, Los Angeles, Cal. Filed Jan. 2, 1904. Serial No. 187,878.

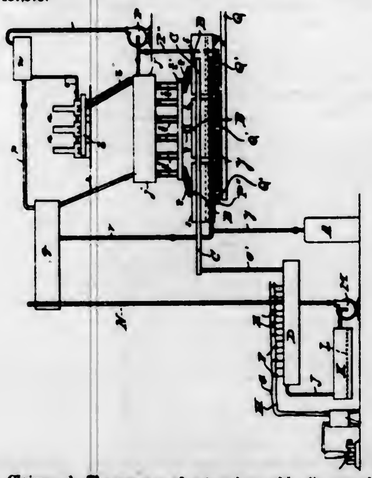

Claims.—1. The process of extracting gold, silver, and other metals from ores, consisting in subjecting the crushed ores to a solution of the cyanid of potassium, drawing off the said solution from the pulp mixed therewith, impregnating with air the said solution and sedimentary deposits suspended therein, separating the sedimentary deposits from the solution, and depositing the metals contained in the solution with electricity.

2. The process of extracting gold, silver and other metals from ores, consisting in subjecting the ores to an alkaline solution of the cyanid of potassium, drawing off the said solution from the pulp mixed therewith, impregnating with air the said solution and sedimentary deposits suspended therein, separating the sedimentary deposits from the solution, and depositing the gold, silver and other metals in the said solution by means of electricity.

3. The process of extracting gold, silver and other metals from ores, consisting in dissolving the gold, silver and other metals from the ore by means of a cyanid solution, eliminating the pulp and other foreign matters suspended in said solution, forcing compressed air through the said cyanid solution and sedimentary deposits suspended therein, separating the said sedimentary deposits from the said solution, and depositing by means of electricity the metals carried in said solution.

4. The method of extracting metals from ores consisting in treating the crushed ores with an alkaline cyanid solution, separating the said solution from the ores and other foreign substances mixed therewith, injecting compressed air into said solution, separating sedimentary substances suspended in said solution, and depositing by means of electricity the metals dissolved by the said solution.

813,621. HOSE-SUPPORTER. HENRY B. COOPER, Columbus, Ohio. Filed Nov. 18, 1904. Serial No. 233,276.

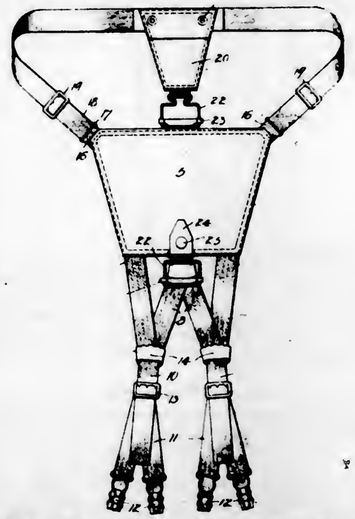

Claim.—1. In combination, a belt comprising front and back portions, metallic loops connected to the upper corners of one of said portions, side tapes threaded through said loops with means for adjusting them and having their opposite ends detachably connected to the other of said portions, a double-looped flexible member depending from the front portion, and a hose-supporting member depending from each loop and having a sliding connection therewith, substantially as described.

2. In combination, a front portion, metallic loops connected to the upper corners thereof, side tapes threaded through said loops with means for adjusting them, detachable connecting means between the other ends of said tapes, a double-looped flexible member depending from the front portion, a metallic loop carried by each loop of said double-looped member, an elastic member threaded through each of said metallic loops and having depending coextensive portions or ends, and a clip carrying hose-engaging devices adjustably connected to both said coextensive portions, substantially as described.

3. In combination, a belt comprising front and back portions, metallic loops connected to the upper corners of one of said portions, side tapes threaded through said loops with means for adjusting them and having their opposite ends detachably connected to the other of said portions, a double-looped member depending from the front portion, a metallic loop carried by each loop of said double-looped member, an elastic member threaded through each of said metallic loops, and having depending coextensive portions or ends, and a holding means carrying hose-supporting members adjustably connected to both said coextensive portions or ends, substantially as described.

4. In a hose-supporter having two looped members slidingly connected together, means for effecting such sliding connection com-

prising a metallic loop, around the lower bar of which one of such members passes, a sheet-metal casing extending to one side from said metal loop and having closed-in sides and a mouth opening away from said metal loop, said other looped member extending through said mouth and being slidingly held within the casing and inclosed on all sides thereby, substantially as described.

5. In a hose-supporter having two looped flexible members slidingly connected together, means for effecting such sliding connection comprising a metallic loop and a sheet-metal casing clamped around one bar of said loop and inclosing the other bar, and having parallel slots in its sides through which one of said members passes, substantially as described.

813,622. **HOSE-SUPPORTER.** HENRY B. COOPER, Columbus, Ohio. Filed July 17, 1905. Serial No. 270,123.

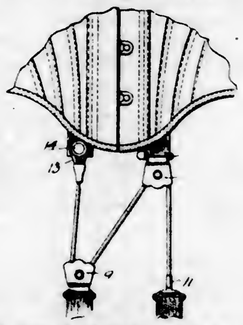

Claim.—In a stocking-supporter, the combination with a flexible cord and hose-attaching devices, of a slide for connecting the hose-attaching devices to the cord and comprising a metal loop, and a single piece of sheet metal doubled upon itself and embracing one of the bars of the loop, said doubled sheet metal having inwardly-turned and overlapping ends and a rivet extending between the sides around which the cord passes.

813,623. **ROUNDABOUT.** EDWIN DOWALDSON, New York, N. Y. Filed Mar. 9, 1905. Serial No. 249,326.

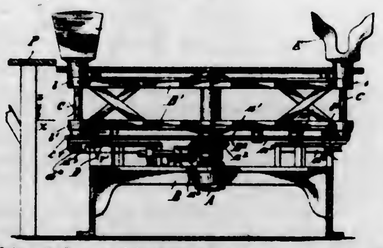

Claim.—1. In a roundabout, a car for passengers, a rotatory shaft supporting said car, a yielding connection between said car and said shaft, and means to intermittently rotate said car and shaft around the latter's axis.

2. In a roundabout, the combination of a stationary vertically-disposed axle, a rotatory frame sleeved on said axle, a car carried by said frame, an idler-shaft journaled in said frame, springs affixed to said car so as to bear yieldingly against the head of the idler-shaft, means to rotate said idler-shaft upon its own axis, and means to rotate said frame.

3. The combination of a stationary vertically-disposed axle, a rotatory frame sleeved on said axle, an independently-rotatable car supported by said frame, a vertically-disposed idler-shaft journaled in said frame, springs affixed to said car so as to bear yieldingly against the head of the idler-shaft, means to intermittently rotate said idler-shaft, and means to rotate said frame.

4. The combination of a vertically-disposed stationary axle, a rotatory frame sleeved on said axle, means to rotate said frame, an independently-rotatable car supported by an idler-shaft journaled in said frame and yieldingly coupled with said car, a pinion on said idler-shaft, a plurality of stationary segmental racks concentric with said axle to intermittently engage said pinion, stationary segmental guides also concentric with said axle intermediate said racks, and levers radially projecting from said idler-shaft to intermittently contact with said guides.

5. The combination of a vertically-disposed stationary axle, a rotatory frame sleeved on said axle, means to rotate said frame, a vertically-disposed idler-shaft journaled in said frame, a pinion on said idler-shaft, a plurality of stationary segmental racks concentric with said axle to intermittently engage said pinion, stationary segmental guides also concentric with said axle intermediate said racks, levers radially projecting from said idler-shaft to intermittently contact with said guides so as to prevent rotation of said idler-shaft until said pinion engages with said rack.

6. The combination of a stationary vertically-disposed axle, a rotatory frame sleeved on said axle, means to rotate said frame, an idler-shaft journaled in said frame, a pinion on said idler-shaft, a segmental rack concentric with said axle to engage said pinion, a lever radially projecting from said idler-shaft, and a guide contacting with said lever whereby operative presentation of said pinion to said rack is insured.

813,624. **BADGE.** JAMES A. DORAN and JAMES C. DORAN, Providence, R. I. Filed Oct. 11, 1905. Serial No. 282,235.

Claim.—1. In a badge the combination with the body provided with a depression, of a plate normally fitting in said depression, a spring-arm upon the plate, means for pivoting the arm to the body so as to swing in a plane parallel to the body, and a legend-strip in the depression intermediate the body and plate.

2. In a badge the combination with the body provided with an opening, of a marginal seat around the opening, a plate normally fitting in the seat, an arm upon the plate, means for pivoting the arm to the body so as to swing in a plane parallel to the body, and a legend-strip whose margin rests in the seat beneath the plate.

3. In a badge the combination with the body provided with an opening, of a marginal seat around the opening, a plate normally fitting in the seat, a spring-arm upon the plate, means for pivoting the arm to the body so as to swing in a plane parallel to the body, and a legend-strip resting in the seat beneath the plate.

813,625. **ASH-SIFTER.** CHARLES H. DOW, Boston, Mass. Filed Apr. 17, 1905. Serial No. 255,578.

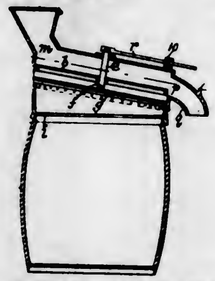

Claim.—In an ash-sifter, in combination, a circular casing open at its bottom and closed at its top and sides, said casing having an inlet-mouth and a discharge-orifice in its side opposite said inlet-mouth, a substantially flat screen of substantially the diameter of said casing and inclined from the inlet-mouth to said discharge-orifice, a substantially vertical shaft located in said casing and to which said screen is secured to rotate therewith, a support for said shaft secured to the said casing within the same, a handle located above the casing and secured to said shaft and stops on said casing between which said handle is extended, substantially as described.

813,626. **CANDY-SCREENING MACHINE.** FRANK W. DEAUDT, Zion City, Ill. Filed Apr. 6, 1905. Serial No. 254,269.

Claim.—The herein-described candy-screening machine comprising the fixed inclined cylindrical body having the longitudinal opening in its under side, the trough under said opening, the conveyer-worm in said trough, the hinged bars at the ends of the body, the shaft journaled in bearings in said hinged bars, the inner and outer screens carried and revolved by said shaft, the discharge-spouts for the respective inner and outer screens, at the lower ends thereof, the spiral blades in the inner screen, and the power connections between the shaft and the conveyer-worm whereby said worm is driven by said shaft simultaneously with the screens.

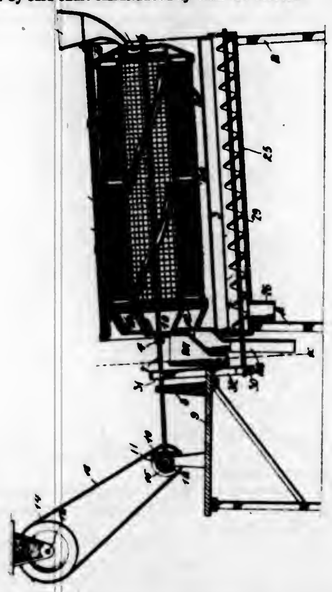

813,627. **CEMENT-BURNING PROCESS AND APPARATUS THEREFOR.** BYRON E. ELDRED, Brookline, Mass., assignor to Combustion Utilities Company, New York, N. Y., a Corporation of New York. Filed Sept. 9, 1904. Serial No. 223,579.

Claim.—1. The herein-described process which consists in passing over a body of cement-forming material in an unobstructed reverberative chamber a flame supported from an external fuel-bed and regulated by means of a gaseous diluent passed through the fuel, to a temperature suited to calcination but not to complete sintering of the material.

2. The herein-described process which consists in treating cement-forming material with a low-temperature calcining-flame supported from an external fuel-bed, and sintering the material with a local high-temperature flame.

3. Process of burning cement which consists in subjecting the material to a calcining-flame produced from an external fuel-bed with a portion of stack-gases in the supply-current of the fire, and locally intensifying a portion of said flame with a gaseous jet to produce a clinkering temperature.

4. Process of burning cement which consists in feeding a stream of the cement-forming material along the hearth of a reverberative chamber, passing thereover in an opposite direction a long slow-burning flame given off from an external fuel-bed through which is passed under forced draft air and a portion of diluent stack-gases, and locally intensifying a portion of said flame near the exit of the material by means of a transverse jet of air intercepting the flame or gas-current and directed upon the material.

5. A cement-burning apparatus comprising a reverberative hearth-chamber having provision for advancing the material, an external fire-box opening into said chamber and having means for burning a bed of fuel, means for supplying air and a neutral gas to the draft-chamber of the fire-box whereby a long slow-burning flame is projected over the material on the hearth, and means for producing a local high-temperature flame to sinter the material near the end of its travel.

6. A cement-furnace comprising a rotary inclined barrel, an external fire-box opening into said barrel and having a fuel-support, means to supply a diluent gas to said fire-box anterior to the fuel-support, a jet-nozzle commanding the outlet of said fire-box and directed onto the floor of said barrel, and a source of compressed air connected with said jet-nozzle.

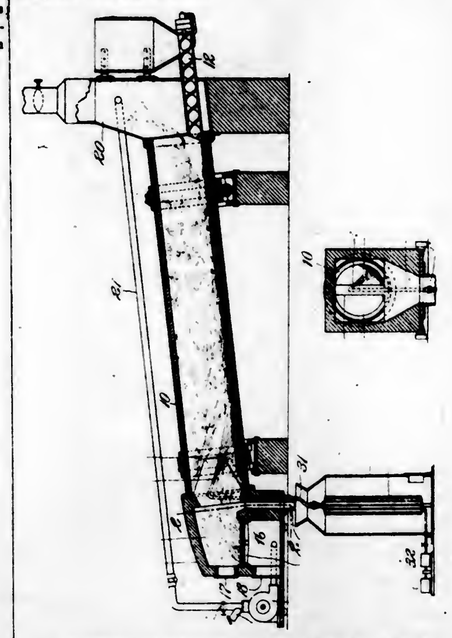

7. A cement-kiln comprising a rotary inclined barrel having a stack at one end, an external fire-box at the other end removable from the barrel and having a conduit connection between its ash-pit and the stack, and an air-jet nozzle carried by the fire-box and commanding the outlet therefrom into the barrel.

8. A cement-kiln comprising a material-treating flame-chamber, an external fire-box having a plurality of openings into said chamber, and an air-jet nozzle commanding one of said openings and arranged at an angle, to deflect the flame onto the floor of the chamber.

9. A cement-kiln comprising a reverberative chamber, an external fire-box having means for producing a slow-burning artificially-inflated flame, a partition dividing the outlet from said fire-box into a plurality of portions, and a jet-nozzle mounted on said partition and commanding one of the portions.

10. A furnace for burning cement and other materials comprising a rotary inclined barrel having means for introducing the materials at the upper end and removing them at the lower end, an external fire-box adapted to burn solid fuel and connected with one end of said barrel, means for returning a small portion of products of combustion to the draft-chamber of the fire-box for retarding the combustion, and means for regulating the quantity of said products returned.

11. A furnace for burning cement and other materials comprising a working chamber having means for advancing the material therethrough, means connected with said chamber for burning solid fuel externally thereof, means for forming separate flames at different points along said chamber from the combustion of said fuel, and means for rendering one of said flames substantially hotter than the other.

813,628. **PROCESS OF OPERATING GAS-PRODUCERS.** BYRON E. ELDRED, Brookville, N. Y., assignor to Combustion Utilities Company, New York, N. Y., a Corporation of New York. Filed Aug. 10, 1905. Serial No. 273,666.

Claim.—1. The process of operating a gas-producer which consists in inducing and controlling a draft-current of commingled air

and products of combustion into said gas-producer by means of an inductive jet of products of combustion.

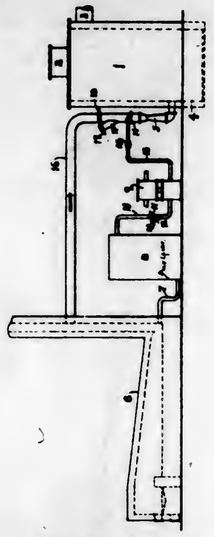

2. The process of operating a gas-producer which consists in inducing and controlling a draft-current containing regulated proportions of air and of products of combustion by means of a jet of air and products of combustion, and introducing said jet and entrained gaseous mixture into the producer.

3. The process of operating a gas-producer which consists in feeding into the same a high-pressure jet of commingled air and products of combustion through an unsealed passage-way containing a similar mixture whereby the feed will be responsive to the pressure in the producer.

4. The process of operating a gas-producer which consists in cooling, purifying and compressing products of combustion, forming the compressed gas into an inductive jet and impelling therewith an additional portion of products of combustion into a producer.

5. The process of operating a gas-producer which consists in employing an inductive jet of cooled and purified products of combustion to impel another portion of products of combustion into a producer.

813,629. GAS-PRODUCER. CARLETON ELLIS, New York, N. Y., assignor to Combustion Utilities Company, New York, N. Y., a Corporation of New York. Filed Mar. 27, 1905. Serial No. 252,627.

Claim.—1. In a gas making and using apparatus, the combination of a gas-fired furnace, a gas-producer for supplying gas thereto, means for supplying the producer with air, means for delivering products of combustion from the furnace to the producer and externally-cooled means for removing heat from said products prior to their entry into the producer.

2. In a gas-producing plant, the combination of a furnace producing products of combustion weak in carbon dioxid, a gas-producer, means for introducing a portion of said products into the producer and externally-cooled means for removing heat from the products prior to their entry into the producer.

3. In a gas-producing plant, the combination of a gas-producer, a furnace furnishing products of combustion containing an excess of oxygen and means for introducing a portion of said products into the producer, said means including a surface cooler.

4. In a gas-producing plant, the combination of a gas-producer provided with an air-feed of means for introducing controlled proportions of cold products of combustion into said air-feed.

5. In a gas-producing plant, the combination of a furnace furnishing products of combustion weak in carbon dioxid, a gas-producer, a conduit for conducting a portion of said products to the gas-producing zone of the producer, a mechanical draft-accelerator in said conduit, externally-cooled means for abstracting heat from said products forming a portion of the conduit, means for furnishing air to the producer and means for regulating the proportions of air and of products introduced.

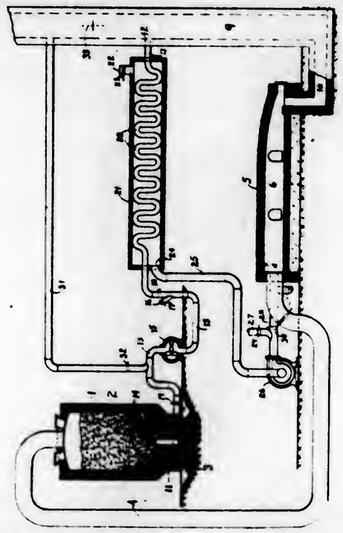

6. In a gas-producing plant, the combination of a gas-producer and means for furnishing cold products of combustion to said producer under forced draft.

7. In a gas-producing plant, the combination of a gas-producer and means for furnishing air and cold products of combustion to said producer under a forced draft.

8. In a gas-producing plant, the combination of a gas-producer, a source of products of combustion, a pipe connection between such source and the producer, and a casing for containing cooling fluid mounted on the pipe connection.

9. In a gas-producing plant, the combination of a gas-producer, a source of products of combustion, a pipe connection between such source and the producer, a casing for containing cooling fluid mounted on the pipe connection, a fan for transmitting products of combustion through the pipe connection, and an air-inlet in the suction side of the fan.

10. In a gas-producing plant, the combination of a furnace, a gas-producer, a pipe connection delivering products of combustion from the furnace into the producer, a casing mounted on the pipe connection and having an air-inlet and means for inducing an air-flow through said casing to cool the products of combustion and for delivering the air heated thereby to assist combustion in the furnace.

11. In a gas-producing plant, the combination of a furnace, a gas-producer, a pipe connection delivering products of combustion from the furnace into the producer, a pipe connection delivering gas from the producer into the furnace, a casing mounted on the first pipe connection, and means for drawing air through the casing to cool the pipe and for delivering the air to the furnace to assist in the combustion of the gas.

12. In a gas making and using plant, the combination of a gas-producer, a gas-using device fed thereby, a chimney-stack for the latter, a pipe tapping the chimney, a cooling-casing surrounding the pipe, a fan drawing products of combustion through the pipe and delivering the same into the producer and a valved air-inlet on the pipe on the suction side of the fan.

13. In a gas making and using plant, the combination of a gas-producer, a gas-using device fed thereby, a chimney-stack for the latter, a pipe tapping the chimney, a cooling-casing surrounding the pipe, a fan and pipe connections for drawing air through the casing and delivering into the furnace provided with an excess-outlet on the pipe connections on the pressure side of the fan, a fan and pipe connections for withdrawing products of combustion from the chimney through the first-mentioned pipe and delivering the same into the producer.

14. In a gas making and using plant, the combination of a gas-producer, a gas-using device fed thereby, a chimney-stack for the latter, a pipe tapping the chimney, a cooling-casing surrounding the pipe, a fan and pipe connections for drawing air through the casing and delivering into the furnace, a fan and pipe connections for withdrawing products of combustion from the chimney through the first-mentioned pipe and delivering the same into the producer, and a valved waste-outlet on the pipe connection between the producer and the fan.

813,630. HEAT-REGENERATOR FOR CEMENT-KILNS. CARLETON ELLIS, New York, N. Y., assignor to Combustion Utilities Company, New York, N. Y., a Corporation of New York. Filed Apr. 18, 1905. Serial No. 256,246.

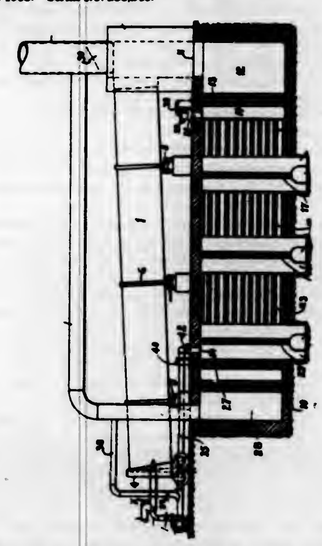

Claim.—1. A cement-making apparatus comprising a kiln and a regenerative air-heater therefor abstracting waste gases from the kiln and provided with a succession of alternating constricted and expanded passages, the latter passages being provided with dust-removing doors.

2. A cement-making apparatus comprising a kiln and a regenerative air-heater therefor abstracting waste gases from said kiln and provided with a plurality of dust-collecting chambers and a plurality of regenerative devices, successively and alternately arranged.

3. A cement-making apparatus comprising a kiln and a regenerative air-heater therefor abstracting waste gases from said kiln and provided with a plurality of dust-collecting chambers alternating with constricted passages lined with refractory materials.

4. A cement-making apparatus, comprising a kiln and a regenerative air-heater therefor abstracting waste gases from said kiln and provided with a plurality of successive regenerative devices alternating with dust settling and collecting chambers containing baffle-plates.

5. A cement-making apparatus comprising a kiln, a housing for the gas-exit end thereof, a chimney-stack connected to the housing, a regenerative air-heater also connected to the housing at a point remote from the main draft therethrough and abstracting a portion of the waste gases from said housing and means for collecting and settling dust in said regenerative air-heater.

6. In a cement-making apparatus, the combination of a kiln, air-feeding means, fuel-feeding means, a regenerative air-heater heated by waste gases from the kiln and means for withdrawing a portion of said gases after passing through the heater and adding said portion to the heated air.

7. A cement-making apparatus comprising a kiln and a regenerative air-heater therefor, said heater containing a series of tiers of heat-absorbing bodies arranged with passages therebetween and said tiers being spaced apart to form dust-settling chambers.

8. A cement-making apparatus comprising a kiln and a regenerative air-heater therefor, said heater containing a series of tiers of heat-absorbing bodies arranged with passages therebetween, said tiers being spaced apart to form dust-settling chambers, and baffle-plates in said chambers.

813,631. DOOR FOR GRAIN-CARS. VICTOR BLANCHARD, Chicago, Ill. Filed Dec. 13, 1904. Serial No. 236,544.

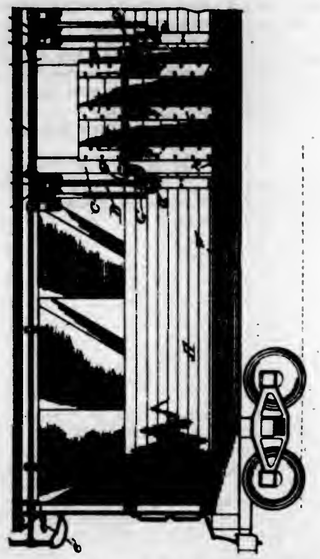

Claim.—1. The combination with a car-body having a suitable doorway in the side thereof, of a grain-door, a pintle-bolt from which said door is suspended, two revolving vertical screws arranged one on one side and the other on the other side of said doorway, internally-screw-threaded non-revolving sleeves on said screws having L-shaped projections extending above the same which are provided with horizontal bearing-bosses in which the ends of the pintle-bolt are journaled, and means engaging said screws whereby said sleeves and the parts carried thereby are raised and lowered.

2. The combination with a car-body having a suitable doorway in the side thereof, of a swinging grain-door, a pintle-bolt from which said door is suspended, an auxiliary door mounted thereon and adapted to be swung above said first-mentioned door, two revolving vertical screws arranged one on one side and the other on the other side of said doorway, internally-screw-threaded non-revolving sleeves on said screws having L-shaped projections extending above the same which are provided with horizontal bearing-bosses in which the ends of the pintle-bolt are journaled, miter-gears on the upper ends of said screws, a longitudinal shaft, miter-pinions thereon engaging said miter-gears, and a hand-wheel mounted on said shaft on the outside of said car for revolving said shaft whereby said door is raised and lowered.

3. The combination with a car-body having a suitable doorway in the side thereof, of a grain-door, a pintle-bolt from which said door is suspended, a superimposed auxiliary door pivotally connected to said pintle, two revolving vertical screws arranged one on one side and the other on the other side of said doorway and internally-screw-threaded non-revolving sleeves on said screws in which the ends of said pintle-bolt are journaled.

4. The combination with a car-body having a suitable doorway in the side thereof, of a grain-door, a pintle-bolt from which said door is suspended, a superimposed auxiliary door pivotally connected to said pintle, two revolving vertical screws arranged one on one side and the other on the other side of said doorway, internally-screw-threaded non-revolving sleeves on said screws in which the ends of said pintle-bolt are journaled and bearings in which the heels of said screws are journaled and columns supporting the same.

5. The combination with a car-body having a suitable doorway in the side thereof, of a grain-door, a pintle-bolt from which said door is suspended, a superimposed auxiliary door pivotally connected to said pintle, two revolving vertical screws arranged one on one side

and the other on the other side of said doorway, internally-screw-threaded non-revolving sleeves on said screws in which the ends of said pintle-bolt are journaled, miter-gears on the upper ends of said screws, a longitudinal shaft, miter-pinions thereon engaging said miter-gears, and a hand-wheel mounted on said shaft on the outside of said car for revolving said shaft whereby said door is raised and lowered.

6. In a car-fender, the combination with a fender-frame, of means adapted to be pivotally attached to a car to rise and fall rela-

4. In a camera obscura, the combination with a lens, of a plurality of sensitized surfaces and means for moving the surfaces into

ing either from the outside or inside through the red when located in the sash will be refracted.

and the other on the other side of said doorway, internally-screw-threaded non-revolving sleeves on said screws in which the ends of said pintle-bolt are journaled, miter-gears on the upper ends of said screws, a longitudinal shaft, and miter-pinions thereon engaging said miter-gears.

6. The combination with a car-body having a suitable doorway in the side thereof, of a grain-door, a pintle-bolt from which said door is suspended, a superimposed auxiliary door pivotally connected to said pintle, two revolving vertical screws arranged one on one side and the other on the other side of said doorway, internally-screw-threaded non-revolving sleeves on said screws in which the ends of said pintle-bolt are journaled, miter-gears on the upper ends of said screws, a longitudinal shaft, miter-pinions thereon engaging said miter-gears, and means on the outside of said car for operating said shaft.

813,632. CAR-FENDER. FRANK J. FAIRCHILD, Detroit, Mich., assignor to The Automatic Car Fender Co., Wyandotte, Mich. Filed June 21, 1905. Serial No. 266,945.

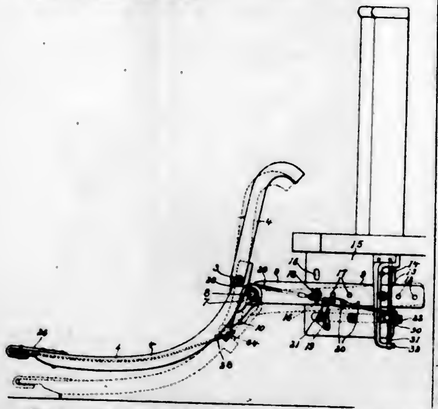

Claim.—1. In a car-fender, the combination with a suitably-curved fender-frame having pivots at its rear side, of horizontally-extending supporting-bars adapted to be secured to a car and provided with bearings for the said pivots, and downwardly-extending ends on said bars adapted to engage the lower side of the frame and support the same in its extended position in the desired position above the track.

2. In a car-fender, the combination with a fender-frame, of horizontally-extending supporting-bars forming the sole support for said frame and to the forward ends of which said frame is adapted to be attached, means for pivotally attaching said bars to the body of the car near their rear ends to permit a vertical movement of their forward ends, and means carried by the body of the car for normally supporting said forward ends of the bars in their raised position and permitting the same to fall to lower the fender-frame.

3. In a car-fender, the combination with a fender-frame, of horizontally-extending supporting-bars to the forward ends of which the frame is pivotally attached forming the sole supports for said frame, downwardly-extending ends on said bars adapted to engage beneath the frame to support the same in a position relative to the bars, and means for supporting the bars and permitting the same to fall to lower the frame.

4. In a car-fender, the combination with a fender-frame, of supporting-bars to the forward ends of which said frame is pivotally attached and adapted to be pivotally attached near their rear ends to a car, means for supporting the forward ends of said bars in their raised position, and means operated by contact with an obstacle in the path of the car for actuating said supporting means to permit the bars to drop and lower the fender-frame.

5. In a car-fender, the combination with a fender-frame, of supporting-bars adapted to be pivotally secured near their rear ends to a car to rise and fall at their forward ends and to the forward ends of which the frame is pivotally attached, means for limiting the downward movement of said bars to support the same in their lowered position, means for supporting said bars in their raised position and for releasing the same, and a cable extending across the forward side of the fender-frame for operating the supporting means.

6. In a car-fender, the combination with a fender-frame, of means adapted to be pivotally attached to a car to rise and fall relative to the car and forming the sole support for the frame, means for supporting said means in a raised position, and a cable extending across the forward side of the frame to contact obstructions in the path of the car and to be operated by such contact to release the said supporting means for the bars and permit the same to drop.

7. In a car-fender, the combination with a fender-frame, of hangers secured to the car, supporting-bars to the forward ends of which the frame is attached pivotally secured to said hangers near their rear ends, toggle-joints for supporting the forward ends of said bars in their raised positions, means for holding said toggle extended to support said bars, and a cable connected to said holding means to move the same out of the path of the toggles and extending across the front of the fender-frame at a distance in advance thereof.

8. In a car-fender, the combination with a fender-frame, of means for supporting said frame pivotally attached to a car to turn on said pivots and lower the fender-frame, supporting means to hold said means raised and to permit the same to fall, pulleys journaled on the fender-frame at the forward corners thereof, pulleys at each side of the frame near the rear thereof, a cable adapted to operate said supporting means and extending across the forward side of the frame, around said pulleys at the forward corners, rearward beneath the side bars of the frame and over the rear pulleys.

9. In a car-fender, the combination with a fender-frame of hangers secured to the car and each provided with an opening and a slot curved concentrically with said opening, supporting-bars to the forward ends of which the frame is attached, pivot-bolts for said bars extending through the openings in the hangers, guide-bolts carried by said bars engaging the slots, toggle-joints pivotally attached at one end to the hangers and at their opposite ends to the bars, and pins adapted to be projected into the path of the toggles to hold the same extended.

10. In a car-fender, the combination with a fender-frame, of hangers adapted to be secured to a car, supporting-bars to the forward ends of which the frame is attached pivotally secured near their rear ends to the said hangers, toggle-joints pivotally attached at one end to the hangers and at their opposite end to the bars, pins adapted to be projected through openings in said hangers into the path of said toggle-joints, levers pivoted intermediate their ends and attached at one end to said pins, and a cable attached to the opposite ends of said levers and extended forward and across the forward side of the fender-frame.

11. In a car-fender, the combination with a fender-frame, of hangers adapted to be secured to a car, supporting-bars to the forward ends of which the frame is attached, pivotally secured near their rear ends to the said hangers, means for supporting the forward ends of said bars, pins adapted to hold said means, levers pivoted intermediate their ends on the hangers and attached at one end to said pins, springs interposed between the opposite ends of said levers and the hangers, stops to limit the movement of the levers, and a cable secured at its ends to the ends of said levers and extended forward and across the forward side of the said frame.

12. In a car-fender, the combination with a fender-frame, of hangers adapted to be secured to a car, supporting-bars to the forward ends of which the frame is pivotally attached, pivoted near their rear ends to said hangers, toggle-joints for supporting the bars at their forward ends, pins extending through the hanger, levers pivoted upon a post on the hangers intermediate their ends and to one end of which levers the said pins are attached, a coiled spring interposed between the opposite ends of said levers and the hangers, stops on the levers to engage the hangers and limit the compression of said springs, brackets supported adjacent to the hangers, pulleys journaled on said brackets, pulleys journaled on the said fender-frame near its four corners, a cable passing over all of said pulleys and secured at its ends to the levers, and a turn-buckle in the cable.

813,633. CAMERA. HERAN A. FARRAND, New York, N. Y. Filed June 10, 1904. Serial No. 211,894.

Claim.—1. A plurality of separate sensitised surfaces forming a continuous common plane and means for moving the surfaces into and out of said plane.

2. A plurality of sensitised surfaces forming a continuous common plane and means for simultaneously bringing predetermined portions of the surfaces into an exposed position for receiving an impression thereon.

3. In a camera obscura, the combination with a lens, of a plurality of sensitized surfaces located in the focal plane of the lens.

4. In a camera obscura, the combination with a lens, of a plurality of sensitised surfaces and means for moving the surfaces into and out of the focal plane of the lens.

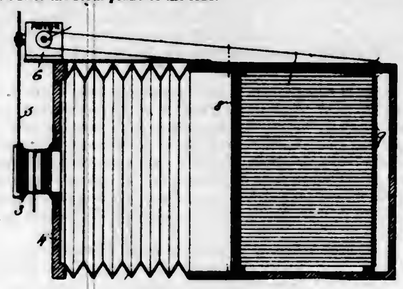

813,634. SHOW-WINDOW. SIGMUND FRIED, New York, N. Y. Filed Apr. 27, 1904. Serial No. 205,282.

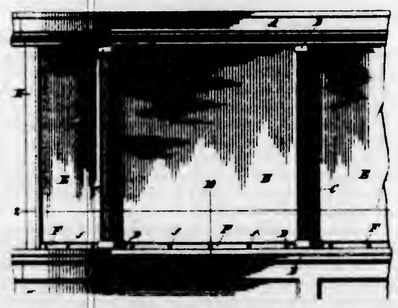

Claim.—1. In a show-window the combination with top and bottom rails and panes of glass of ordinary construction a rod made of translucent glass having a flat surface or surfaces along its length for the panes of glass to bear against and having its exposed surface cut or molded, said rod being so located in the sash that the light can pass through it from within or without the window and be refracted.

2. In a show-window the combination consisting of a shaft of translucent glass having a flat surface or surfaces along its length for the panes of glass to bear against when placed in position, two moldings following the line of the perimeter of said shaft exclusive of said bearing-surface and provided with holes for attaching devices, one molding being adapted to hold said shaft in position at one end and the other, at the other end, two shields adapted respectively to fit one upon the base-molding and the other the top molding and cover the heads of the attaching devices therein.

3. In a show-window the combination with top and bottom rails and panes of glass of ordinary construction, a window-rod made of translucent glass and having a surface or surfaces along its length for the panes of glass to bear against two moldings one partly surrounding the top and the other the bottom of the rod and each furnished with holes for attaching devices to secure the rod in position in the sash and two shields respectively fitting upon the moldings and covering the heads of the attaching devices therein.

4. In a show-window the combination of a sash-rod consisting of a shaft of translucent glass having a flat surface or surfaces along its length for the panes of glass to bear against when placed in position, two moldings following the line of the perimeter of said shaft exclusive of said bearing-surface and provided with holes for attaching devices, one molding being adapted to hold said shaft in position at one end and the other at the other end, a secondary shaft made of glass and narrower than but of equal length with the main shaft and placed longitudinally along the opposing edges of the panes of glass set between such shafts, two shields adapted respectively to fit one upon the base-molding and the other the top molding and cover the heads of the attaching devices therein.

5. A window-sash rod of translucent glass made with a flat surface or surfaces along its length for panes of glass to bear against and having its exposed surface cut or molded so that the light passing either from the outside or inside through the rod when located in the sash will be refracted.

6. A window-sash rod of translucent glass made with a flat surface or surfaces along its length for the panes of glass to bear against and having its exposed surface fluted and being adapted to be located in a sash so that the light passing through it from within or without the window will be refracted.

813,635. HAND DATING-STAMP. WILBUR I. FOLLETT, Needham, N. J., assignor to Follett Manufacturing Company, New York, N. Y., a Corporation of New York. Filed Aug. 28, 1903. Serial No. 171,141.

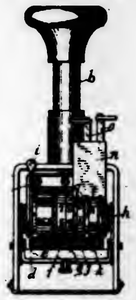

Claim.—In a hand dating-machine, the combination with the supporting-frame, a plunger reciprocating therein and the wheel-frame carried by the plunger, of a gang of dating-wheels comprising hour and minute wheels, a casing carried by the wheel-frame and having two plunger-channels and two spring-channels, a plunger mounted in each plunger-channel, a plunger-support spring-mounted in each spring-channel and appropriately connected to the casing and to its plunger, and a wheel-driving pawl pivoted in the lower end of each plunger, substantially as set forth.

813,636. PNEUMATIC-DESPATCH-TUBE APPARATUS. EDMOND A. FORDYCE, Boston, Mass., assignor to Lamson Consolidated Store Service Company, Newark, N. J., a Corporation of New Jersey. Filed Mar. 24, 1905. Serial No. 251,770.

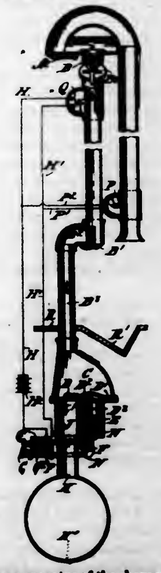

Claim.—1. In an apparatus of the character described, a transit-tube through which carriers are transmitted, an air-valve controlling

the passage of air through said tube and normally closed, an exhaust-tube, mechanism under the control of said exhaust-tube for operating said valve, an electric circuit for controlling said mechanism, and a switch in said circuit operated by the passage of a carrier through the transit-tube.

10. In an apparatus of the character described, a transit-tube through which carriers are transmitted, an air-valve controlling the

lar on the front of the hanger in register with the opening of same, a spring-controlled check-valve in the nozzle-bore having a stem pro-

and resting upon the first board and having holes in which the bottoms of the solenoids fit, a third board fitted against the tops of the

the passage of air through said tube and normally closed, an exhaust-tube, mechanism under the control of said exhaust-tube for operating said valve, an electric circuit for controlling said mechanism, and mechanism operated by the insertion of a carrier into said tube to close said circuit for opening said air-valve and allowing a passage of air through said tube for driving carriers.

2. In an apparatus of the character described, a transit-tube through which carriers are transmitted, an air-valve controlling the passage of air through said tube and normally closed, an exhaust-tube, mechanism under the control of said exhaust-tube which normally holds said air-valve closed, an electric circuit for controlling said mechanism, and mechanism operated by the insertion of a carrier into said tube to close said circuit for opening said air-valve to allow a passage of air through said transit-tube.

3. In an apparatus of the character described, a transit-tube through which carriers are transmitted, an air-valve controlling the passage of air through said tube and normally closed, an exhaust-tube, mechanism under the control of said exhaust-tube for operating said valve, an electric circuit for controlling said mechanism, and mechanism operated by the carrier upon its insertion into the transit-tube to close said circuit for opening said air-valve, and allowing the closing of said air-valve after the insertion of the carrier.

4. In an apparatus of the character described, a transit-tube through which carriers are transmitted, an air-valve for controlling the passage of air through said transit-tube and normally closed, an exhaust-tube, mechanism under the control of said exhaust-tube which normally holds said air-valve closed, an electric circuit for controlling said mechanism, and means operated by the closing of said circuit for admitting atmospheric pressure to said mechanism to open said air-valve upon the insertion of a carrier into said transit-tube to allow a passage of air through said transit-tube for the transmission of carriers.

5. In an apparatus of the character described, a transit-tube through which carriers are transmitted, an air-valve for controlling the passage of air through said transit-tube and normally closed, an exhaust-tube, mechanism under the control of said exhaust-tube which normally holds said air-valve closed, an electric circuit for controlling said mechanism, means operated by the closing of said circuit for admitting atmospheric pressure to said mechanism to open said air-valve upon the insertion of a carrier into said transit-tube to allow a passage of air through said transit-tube for the transmission of carriers, and means for regulating the closing of said air-valve.

6. In an apparatus of the character described, a transit-tube through which carriers are transmitted, an air-valve controlling the passage of air through said tube and normally closed, an exhaust-tube, mechanism under the control of said exhaust-tube for operating said valve, an electric circuit for controlling said mechanism, and mechanism operated by the carrier upon its insertion into the transit-tube to close said circuit for opening said air-valve, allowing the closing of said air-valve after the insertion of the carrier, and means for regulating the closing of said air-valve.

7. In an apparatus of the character described, transit-tubes through which carriers are transmitted in opposite directions, an air-valve controlling the passage of air through said transit-tubes and normally closed, an exhaust-tube in communication with both of said transit-tubes, mechanism under the control of said exhaust-tube which normally holds said air-valve closed, an electric circuit for controlling said mechanism, and means operated by the insertion of a carrier into said tube to close said circuit for opening said air-valve to allow a passage of air through said transit-tube.

8. In an apparatus of the character described, transit-tubes through which carriers are transmitted in opposite directions, an air-valve controlling the passage of air through said transit-tubes and normally closed, an exhaust-tube in communication with both of said transit-tubes, mechanism under the control of said exhaust-tube which normally holds said air-valve closed, an electric circuit for controlling said mechanism, and means operated by the closing of said circuit for admitting atmospheric pressure to said mechanism to open said air-valve upon the insertion of a carrier into said transit-tube to allow a passage of air through said transit-tubes for the transmission of carriers.

9. In an apparatus of the character described, a transit-tube through which carriers are transmitted, an air-valve controlling the passage of air through said tube and normally closed, an exhaust-tube, an electric circuit, and mechanism under the control of said exhaust-tube for opening said valve upon the closing of said circuit and allowing the passage of air through said transit-tube for the transmission of carriers.

10. In an apparatus of the character described, a transit-tube through which carriers are transmitted, an air-valve controlling the passage of air through said tube and normally closed, an exhaust-tube, an electric circuit, and mechanism under the control of said exhaust-tube for automatically opening said valve upon the closing of said circuit and allowing the passage of air through said transit-tube for the transmission of carriers.

11. In an apparatus of the character described, a transit-tube through which carriers are transmitted, an air-valve controlling the passage of air through said tube and normally closed, an exhaust-tube, an electric circuit, and mechanism under the control of said exhaust-tube for automatically opening said valve upon the closing of said circuit and allowing the passage of air through said transit-tube for the transmission of carriers, and for automatically allowing said air-valve to move into its closed position after the insertion of the carrier.

12. In an apparatus of the character described, a transit-tube through which carriers are transmitted, an air-valve controlling the passage of air through said tube, an exhaust-tube in communication with said transit-tube and normally closed by said air-valve, mechanism under the control of said exhaust-tube and normally holding said air-valve closed, an electric circuit, and means for admitting atmospheric pressure to said mechanism upon the closing of said circuit to open said air-valve to allow the passage of air through said transit-tube for the transmission of carriers.

13. In an apparatus of the character described, a transit-tube through which carriers are transmitted, an air-valve controlling the passage of air through said tube, an exhaust-tube in communication with said transit-tube and normally closed by said air-valve, mechanism under the control of said exhaust-tube and normally holding said air-valve closed, an electric circuit, and means operated upon the closing of said circuit for admitting atmospheric pressure to said mechanism to open said air-valve to allow the passage of air through said transit-tube for the transmission of carriers and adapted to cut off atmospheric pressure from said mechanism to allow said mechanism toclose said air-valve.

14. In an apparatus of the character described, a transit-tube through which carriers are transmitted, an air-valve controlling the passage of air through said tube, an exhaust-tube in communication with said transit-tube and normally closed by said air-valve, mechanism under the control of said exhaust-tube and normally holding said air-valve closed, an electric circuit, and means operated upon the closing of said circuit for admitting atmospheric pressure to said mechanism to open said air-valve to allow the passage of air through said transit-tube for the transmission of carriers and adapted to cut off atmospheric pressure from said mechanism to close said air-valve automatically.

15. In a pneumatic-tube system, the combination of a pneumatic tube, two or more stations thereon, a vacuum-pipe connected to said tube, an air-valve controlling said connection and normally closed, an electrically-controlled mechanism for opening said valve, a circuit-wire for said mechanism, and means at each station for opening and closing said circuit and energizing or deenergizing the valve-actuating magnet.

813,687. **TRAIN-PIPE COUPLING.** JOHN A. FRENNER, WAUSAU, WIS. Filed Dec. 14, 1905. Serial No. 291,884.

Claim.—1. The combination of a rod for suspension from a railway-car longitudinally of the same, a tilt-hanger in longitudinally-adjustable swing connection with the rod, a train-pipe section loose in an arm of the hanger and provided with a head, a spiral spring on the pipe-section under tension between the hanger-arm and pipe-head, a longitudinally-recessed nozzle extending from said pipe-head through a front opening in said hanger and provided with a forward packing-gasket surrounding its bore and projecting therefrom, a spring-controlled check-valve in the nozzle-bore having a stem provided with a head that normally projects beyond said nozzle, and grip-levers arranged in the nozzle-recesses to come in and out of engagement with a flange of a meeting nozzle similar to the one aforesaid.

2. The combination of a rod for suspension from a railway-car longitudinally of the same, a tilt-hanger in longitudinally-adjustable swing connection with the rod, a train-pipe section loose in an arm of the hanger and provided with a head, a spiral spring on the pipe-section under tension between the hanger-arm and pipe-head, a longitudinally-recessed nozzle extending from said pipe-head through a front opening in said hanger and provided with a forward packing-gasket surrounding its bore and projecting therefrom, a beveled collar on the front of the hanger in register with the opening of same, a spring-controlled check-valve in the nozzle-bore having a stem provided with a head that normally projects beyond said nozzle, and grip-levers arranged in the nozzle-recesses to come in and out of engagement with a flange of a meeting nozzle similar to the one aforesaid, the outer ends of the levers of one nozzle being caught within the confines of the beveled collar of the other nozzle.

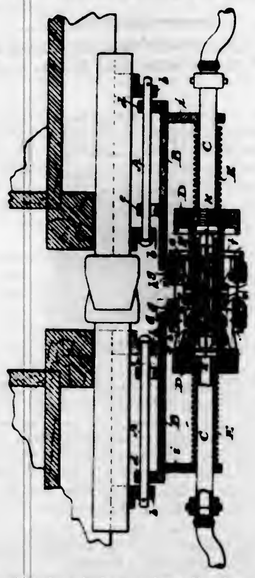

3. The combination of a hanger depending from a railway-car, a train-pipe section loose in an arm of the hanger and provided with a head, a spiral spring on the pipe-section under tension between the hanger-arm and pipe-head, a longitudinally-recessed nozzle extending from said pipe-head through a front opening in said hanger and provided with a forward packing-gasket surrounding its bore and projecting therefrom, a spring-controlled check-valve in the nozzle-bore having a stem provided with a head that normally projects beyond said nozzle, and grip-levers arranged in the nozzle-recesses to come in and out of engagement with a flange of a meeting nozzle similar to the one aforesaid, the outer ends of the levers of one nozzle being caught within the confines of the beveled collar of the other nozzle.

4. The combination of a hanger depending from a railway-car, a train-pipe section loose in an arm of the hanger and provided with a head, a spiral spring on the pipe-section under tension between the hanger-arm and pipe-head, a longitudinally-recessed nozzle extending from said pipe-head through a front opening in said hanger and provided with a forward packing-gasket surrounding its bore and projecting therefrom, a beveled collar on the front of the hanger in register with the opening of same, a spring-controlled check-valve in the nozzle-bore having a stem provided with a head that normally projects beyond said nozzle, and grip-levers arranged in the nozzle-recesses to come in and out of engagement with a flange of a meeting nozzle similar to the one aforesaid, the outer ends of the levers of one nozzle being caught within the confines of the beveled collar of the other nozzle.

813,688. **ELECTRICALLY-OPERATED CONTROLLING MECHANISM.** GEORGE H. PRENTIS, Springfield, Mass. Filed May 13, 1905. Serial No. 260,315.

Claim.—1. The combination of a switch-tongue, a casing, a pair of solenoids in said casing, a rocker provided with a knife-edge fulcrum, a V-shaped bearing in the casing for supporting said fulcrum, rods provided with knife-edges, the opposite branches of the rocker having V-shaped bearings to support said last-mentioned knife-edges, and the rods being connected with the cores of the respective solenoids, and operative connections between the rocker and the switch-tongue.

2. The combination of a casing, a board fitted in the casing, solenoids supported upon the board, a second board fitted in the casing and resting upon the first board and having holes in which the bottoms of the solenoids fit, a third board fitted against the tops of the solenoids, the latter having tubes extending upward therefrom and the third board having holes for the passage of the tubes, means for clamping the third board against the solenoids, a rocker fulcrumed between its ends in the casing, the opposite branches thereof being operatively connected with the cores of the solenoids, a switch-tongue, and operative connections between the switch-tongue and the rocker.

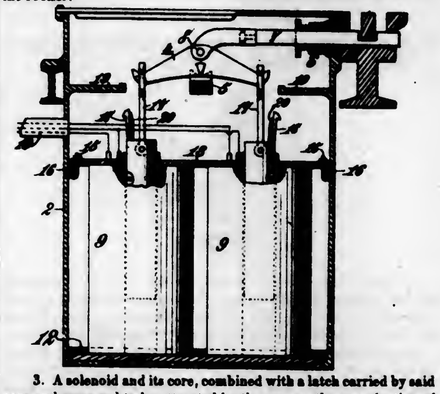

3. A solenoid and its core, combined with a latch carried by said core and arranged to be attracted by the core on the energization of said solenoid.

4. The combination of a solenoid and its core, a latch carried by the core and arranged to be attracted by the core on the energization of the solenoid, and a brass spring between the latch and the core.

5. The combination of a solenoid and its core, the latter having a channel, and a latch pivotally supported in the channel and arranged to be attracted by the core on the energization of the solenoid.

6. The combination of a pair of solenoids and their cores, latches carried by the cores and arranged to be attracted thereby on the energization of the respective solenoids, and catches arranged to be alternately engaged by the latches.

7. The combination of a pair of solenoids and their cores, latches carried by the cores and arranged to be attracted thereby on the energization of the respective solenoids, catches arranged to be alternately engaged by the latches, a switch-tongue, and connections between the solenoid-cores and switch-tongue for operating the latter.

813,689. **DRAFT ATTACHMENT FOR VEHICLES.** JOHN H. PRITZ, Ainsworth, Nebr. Filed Mar. 30, 1905. Serial No. 253,900.

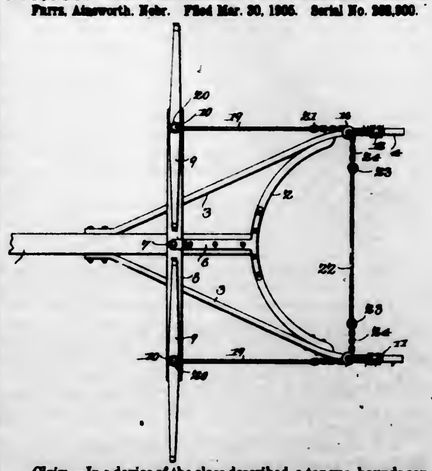

Claim.—In a device of the class described, a tongue, hounds connected therewith, brackets secured adjustably by means of clips

upon said hounds and having upwardly-extending flanges, bolts extending through apertures in said flanges and secured adjustably by means of nuts bearing against the front and rear sides of said flanges, said bolts having bifurcated heads, said heads

ular groove into a cavity in the hammer a punch extending into the said cavity in the hammer; a trigger consisting of a circular head to fit said annular groove, and an arm extending from said head at

2. A clock-movement provided with a mainspring, hands, a hammer, means for alternately operating the hands and the ham-

Claim.—In a wrench, the combination with a handle, having jaws at the end thereof, of a sleeve slidable on the handle, an adjust-

upon said bounds and having upwardly-extending flanges, bolts extending through apertures in said flanges and secured adjustably by means of nuts bearing against the front and rear sides of said flanges, said bolts having bifurcated heads, guide-pulleys supported for rotation in said bifurcated bolt-heads, a doubletree pivoted upon the tongue, swingletrees pivoted upon the doubletree, connecting-rods having eyes engaging the pivotal bolts of the swingletrees above the latter, and flexible connecting means for said rods engaging the pulleys supported upon the bounds.

813,640. **BRAKE BLOCK AND SHOE.** LLOYD G. GALLUP, Walton, N. Y. Filed July 17, 1905. Serial No. 270,081.

Claim.—The combination with a brake-beam of a head-block having a lateral lip bearing upon the beam and of uniform width throughout, a clamp-bolt extending through the block and beam and with a laterally-extended head embedded in the face of the block, a shoe uniform in width to the block and bearing over the face thereof and against the head of said bolt and provided with a lip bearing upon said block, and a bolt extending through said shoe and block and with a relatively flat head countersunk into the face of the shoe, whereby the block is protected from contact with the wheel and the shoe released when worn sufficiently to destroy the head of the shoe-holding bolt.

813,641. **AUTOMATIC PRICK-PUNCH.** GEORGE T. GILBERT, Northampton, Mass., assignor of one-third to Willis D. Hamilton, Springfield, Mass. Filed May 27, 1905. Serial No. 262,573.

Claim.—1. In an automatic prick-punch, a hammer, a hollow handle in which the hammer is slidable, a trigger located in an annular groove in the hammer, and a spring to move said trigger transversely of the axis of the hammer, a punch extending into a cavity in the hammer having a shoulder thereon with which said trigger may engage to hold the punch and hammer in separated relation, there being a shoulder on the inner wall of the handle which operates to move the trigger out of engagement with the punch at the proper time, and a suitable spring for the punch to move the latter away from the hammer.

2. In an automatic prick-punch, a hollow handle, a hammer slidable therein and having in the surface thereof an annular groove, and a longitudinally-disposed groove intercepting said annular groove, there being an opening extending from the bottom of the annular groove into a cavity in the hammer a punch extending into the said cavity in the hammer; a trigger consisting of a circular head to fit said annular groove, and an arm extending from said head at right angles thereto located in said longitudinal groove and constituting a spring for the trigger, the hollow handle having one end closed in which said hammer and punch are independently slidable, and a spring between the closed end of the handle and the end of the hammer.

813,642. **ROLLING WINDOW-SCREEN.** HOMER H. GILLAND and WILLIAM H. GILLAND, Saginaw, Mich. Filed May 11, 1905. Serial No. 260,893.

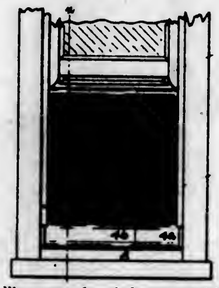

Claim.—A rolling screen for windows comprising an extensible sectional spring-actuated roller, screen members mounted on each roller-section, the adjacent edges of the screen members adapted to overlap each other, a sectional telescopic casing in which the roller is journaled, the casing adapted to receive and protect the screen members and provided with a slot through which the screen members pass, the sections of the casing each provided with integral slotted ends, a curved sectional telescoping cover for the slot, and flanges carried by the cover-sections and serving as a nailing-strip whereby to simultaneously secure the cover and the upper edges of the screen members to the sash of a window.

813,643. **ORANGE-YELLOW SULFUR DYE AND PROCESS OF MAKING SAME.** RICHARD GLEY, Berlin, Germany, assignor to Actien Gesellschaft für Anilin Fabrikation, Berlin, Germany. Filed July 1, 1905. Serial No. 268,014.

Claim.—1. The manufacture of a new sulfurized dyestuff by heating a mixture of diformylmeta-toluylenediamin and para-phenylenediamin with sulfur to above 200° centigrade.

2. The new sulfurized dyestuff obtained by the action of sulfur on a mixture of diformyl-meta-toluylenediamin and para-phenylenediamin, being, when well pulverized or ground, a brown-red powder, insoluble in water and alcohol, soluble in soda-lye with a yellow color, which solution by the addition of hydrochloric acid separates yellow-brown flakes, soluble in sodium sulfid with a yellow color, dyeing from a bath containing sodium sulfid and common salt clear orange-yellow shades of great fastness to washing and milling.

813,644. **CLOCK-MOVEMENT.** SIGMUND GOLDSMITH, New York, N. Y. Filed June 3, 1905. Serial No. 263,543.

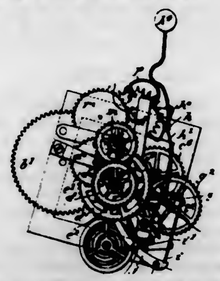

Claim.—1. A clock-movement provided with a mainspring, hands, a hammer, and means for alternately operating the hands and hammer by the same end of said spring, substantially as specified.

2. A clock-movement provided with a mainspring, hands, a hammer, means for alternately operating the hands and the hammer by said spring, and means for arresting the hands while the hammer is actuated, substantially as specified.

3. A clock-movement provided with a mainspring, hands, a hammer, a train of gearing actuated by said spring, and means operated by said train for alternately actuating the hands and the hammer, substantially as specified.

4. A clock-movement provided with a mainspring, hands, a hammer, a pinion operated by said spring, a mutilated toothed wheel engaged by the pinion and adapted to operate the hands, and a toothed sector also engaged by the pinion and controlling the hammer, substantially as specified.

5. A clock-movement provided with a mutilated toothed wheel, a pin on said wheel, a toothed sector adapted to engage said pin, and means for rotating the wheel and sector, substantially as specified.

6. A clock-movement provided with a mutilated toothed wheel, a pin on said wheel, a toothed sector adapted to engage said pin, means for changing the relative position between wheel and sector, and means for rotating the wheel and sector, substantially as specified.

7. A clock-movement provided with a mutilated toothed wheel, a pin on said wheel, a toothed sector adapted to engage said pin, a stepped disk, a lever engaged thereby and operatively connected to the sector, and means for imparting different speed to the wheel and disk, substantially as specified.

8. A clock-movement provided with an escapement, a hammer, an axially-movable shaft, a toothed wheel and a finger on said shaft adapted to engage the escapement, means on the shaft for operating the hammer, and means for axially moving the shaft, substantially as specified.

9. A clock-movement provided with an escapement, hands, a hammer, an axially-movable shaft, a toothed wheel and a finger on said shaft adapted to engage the escapement, means on the shaft for operating the hammer, a hand-operating wheel, and means controlled by said wheel for axially moving the shaft, substantially as specified.

10. A clock-movement provided with an escapement, hands, a hammer, an axially-movable shaft, a toothed wheel and a finger on said shaft adapted to engage the escapement, means on the shaft for operating the hammer, a hand-operating wheel, a shipping-lever operatively connected thereto, and means controlled by said lever for axially moving the shaft, substantially as specified.

11. A clock-movement provided with hands, a hammer, a hand-operating wheel, a shipping-lever operatively connected thereto, an axially-movable shaft operatively connected to said lever, a crank on the shaft adapted to actuate the hammer, and an elbow-lever controlled by the crank and adapted to engage the shipping-lever, substantially as specified.

12. A clock-movement provided with hands, a hammer, a hand-operating wheel, a shipping-lever operatively connected thereto, an axially-movable shaft operatively connected to said lever, a crank on the shaft adapted to actuate the hammer, an elbow-lever having an eye engaged by the crank, and a notched arm adapted to engage the shipping-lever, substantially as specified.

13. A clock-movement provided with a mainspring, hands, a striking mechanism, an alarm mechanism, and means for operating the hands, the striking mechanism and the alarm mechanism by said spring, substantially as specified.

14. A clock-movement provided with a mainspring, hands, a striking mechanism, a first toothed wheel operated by said spring and adapted to actuate the hands and striking mechanism, a second toothed wheel also operated by said spring, an alarm mechanism, and means for operating said alarm mechanism by said second toothed wheel, substantially as specified.

813,645. **PIPE-WRENCH.** WILLIAM GOEHLEY, Chicago, Ill. Filed Dec. 30, 1904. Renewed Aug. 25, 1905. Serial No. 276,945.

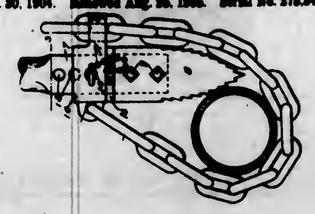

Claim.—In a wrench, the combination with a handle, having jaws at the end thereof, of a sleeve slidable on the handle, an adjusting-wedge insertible between the jaws and the sleeve, and a chain attached at both ends to the sleeve.

813,646. **FODDER-BINDER.** JOHN GAILL, Jr., Franklin township, Summit county, Ohio. Filed Oct. 9, 1905. Serial No. 282,067.

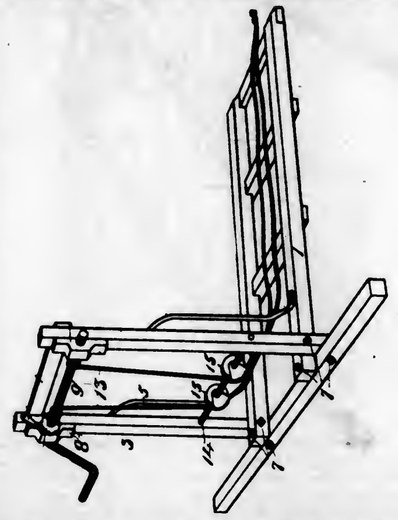

Claim.—The combination in a device of the class described, of a pair of approximately parallel side pieces suitably united by cross-beams, a cross-bar fastened to the ends of said side pieces and extending laterally therefrom to constitute a means to prevent the overturning of said device, a pair of standards mounted adjacent said bar and attached to said side pieces, a cross-brace uniting said standards at their upper ends, a revoluble shaft mounted on said standards provided with a crank-handle for operating said shaft, a pawl and ratchet arranged to prevent unintentional reverse motion of said shaft, a second shaft mounted between said standards below said revoluble shaft, a pair of pulleys slidably mounted on said second shaft, a pair of ropes wound on said revoluble shaft arranged to pass around said pulleys, and a hook to unite the ends of said ropes substantially as shown and described.

813,647. **PROCESS OF PREPARING SOLUBLE STARCH.** AUGUST F. J. S. HAAKE and HENRICH A. R. A. HAAKE, Hamburg, Germany. Filed Feb. 3, 1903. Serial No. 141,763.

Claim.—1. The herein-described process of preparing a soluble starch consisting in mixing common starch in what is commonly termed its "dry" state in which about twenty per cent. of water is contained therein with dry hypochlorite of lime, substantially as described.

2. The herein-described process of preparing a soluble starch consisting in mixing common starch and hypochlorite of lime with sodium-hydrogen carbonate, all to be mixed in a dry condition, the dryness of the starch being that commonly referred to when the starch contains approximately about twenty per cent. of water substantially as described.

813,648. **ENDLESS PROPELLER FOR BOATS.** GEORGE K. HORTON, San Diego, Cal., assignor of one-half to Edgar L. Nicholson, Seattle, Wash. Filed Apr. 12, 1905. Serial No. 255,486.

Claim.—1. In combination with a vessel, a raceway, an endless propeller arranged for travel upon the raceway, said propeller embodying a plurality of chains, rollers mounted between the chains to reduce the friction between the chains and the raceway, and paddles carried by the chains aforesaid.

2. In combination with a vessel, a raceway, an endless propeller arranged to travel upon the raceway and embodying a plurality of

chains, each chain including a plurality of links, rollers mounted in the links to reduce friction between the raceway and the propeller, and paddles carried by the chains aforesaid.

tion of a perforated cap, a cover hinged thereto and adapted to cover the perforations therein and a pad of absorbent material interposed between it and the top of the cup when the cover is closed.

the other radial guides, a train of gearing adapted to operate between said two cooperating elements for causing their relative rotation, said

wires and anchored at their lower ends to the wire which connects the eyes of the wire B, and a fabric covering for said wires with ruffles

chains, each chain including a plurality of links, rollers mounted in the links to reduce friction between the raceway and the propeller, and paddles carried by the chains aforesaid.

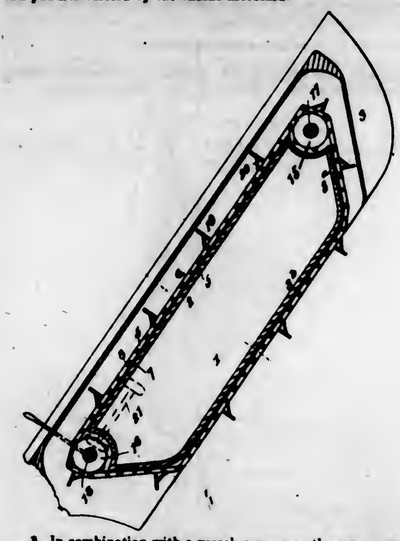

3. In combination with a vessel, a raceway thereon, an endless propeller arranged to travel upon the raceway, said propeller comprising a plurality of chains composed of links, pintle-rods connecting adjacent links of each chain and adjacent chains, paddles carried by the chains aforesaid, and rollers carried by individual links of the several chains.

4. In combination with a vessel, a raceway thereon, an endless propeller arranged to travel upon the raceway, flanges at opposite sides of the raceway, the propeller embodying a plurality of endless chains, paddles carried by the chains, antifriction-bearings between the chains and the flanges of the raceway, and antifriction-rollers supported by the propeller between the chains thereof.

5. In combination with a vessel, a raceway thereon, an endless propeller arranged to travel upon the raceway, flanges at opposite sides of the raceway, the propeller embodying a plurality of endless chains, paddles carried by the chains, antifriction-bearings between the chains and the flanges of the raceway, and other antifriction-bearings between the chains and the bed or body of the raceway.

6. In combination with a vessel, a raceway thereon, flanges at opposite sides of the raceway, an endless propeller arranged to travel upon the raceway and composed of a plurality of chains, pintle-rods connecting adjacent links of the chains and also connecting adjacent chains, antifriction-bearings carried by the pintle-rods between adjacent chains to reduce friction between the propeller and the raceway, and other antifriction-bearings between the pintle-rods and the flanges of the raceway.

7. In combination with a vessel, a raceway thereon, an endless propeller arranged to travel upon the raceway, said propeller comprising a chain, flanges at opposite sides of the raceway, and guide members carried by the chain of the propeller and engaging over the flanges of the raceway.

8. In combination with a vessel, a raceway thereon, an endless propeller arranged to travel upon the raceway, said propeller comprising a plurality of chains, flanges at opposite sides of the raceway, and guide members projected from links of the outer chains of the propeller and engaging over the flanges of the raceway.

9. In combination with a vessel, a raceway thereon, an endless propeller arranged to travel upon the raceway, said propeller comprising a plurality of chains, flanges at opposite sides of the raceway, guide members projected from links of the outer chains of the propeller and engaging over the flanges of the raceway, and roller-bearings between the guide members and the flanges.

818,649. CONTINENT-HOLDER. DORA JONES, New York, N. Y. Filed Aug. 30, 1905. Serial No. 276,324.

Claim.—1. In a holder of the character described, the combination of a perforated cap, a cover hinged thereto and adapted to cover the perforations therein and a pad of absorbent material interposed between it and the top of the cap when the cover is closed.

2. In a holder of the character described, the combination of a perforated cap, a cover hinged thereto, a pad of absorbent material detachably secured within a shouldered recess in the lower side of the cover, and a spring adapted to keep the cover normally closed over the perforations in the cap.

818,650. CAR-COUPLING. ALONZO KELLY, Harrisburg, Pa., assignor of one-fourth to Francis R. Scott, one-fourth to William H. Joyce, and one-fourth to Joseph C. Smith, Harrisburg, Pa. Filed Nov. 18, 1905. Serial No. 288,008.

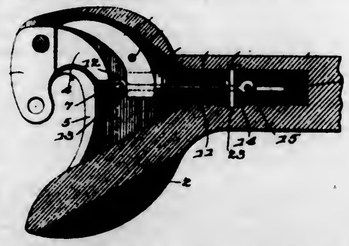

Claim.—1. A car-coupler having a pivotal knuckle provided with a tailpiece, a locking-lever engaging the free end of the tailpiece and locking the knuckle, an endwise-movable rod connected to the lever, an abutment slidably pierced by the rod, a pivotal kicker slidably pierced by the rod with its outer end in coöperative relation with the pivotal knuckle, and a spring embracing the rod and bearing against the abutment and the kicker to yieldably hold the latter in its normal position, there being a space between the lever and the kicker to permit rearward movement of the lever out of engagement with the tailpiece before engaging the kicker.

2. A car-coupler having a pivotal knuckle provided with a tailpiece, a locking-lever engaging the free end of the tailpiece or locking the knuckle, an endwise-movable rod connected to the lever, an abutment slidably pierced by the rod, a pivotal kicker slidably pierced by the rod with its outer end in coöperative relation with the pivotal knuckle, a shoulder fixed upon the rod in rear of the kicker, and a spring bearing against the abutment and the shoulder to yieldably maintain the latter against the kicker, there being a space between the lever and the kicker to permit rearward movement of the lever out of engagement with the tailpiece before engaging the kicker.

818,651. SPEED-VARYING MECHANISM. JAMES B. LAIRD, Wayne, Pa. Filed Aug. 8, 1904. Serial No. 219,894.

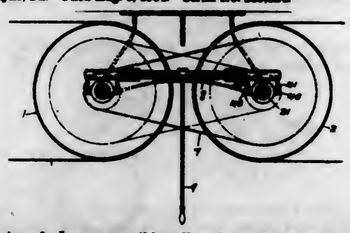

Claim.—1. In an expansible pulley, the combination of a pair of coöperating independently-rotatable elements, one having spiral and the other radial guides, a train of gearing adapted to operate between said two coöperating elements for causing their relative rotation, said gearing including means for automatically increasing the ratio between the rates of movement of said elements, and movable rim-sections having operative relationship each with a radial and a spiral guide.

2. In an expansible pulley, the combination of a pair of coöperating independently-rotatable elements, one having spiral and the other radial guides, a train of gearing adapted to operate between said two coöperating elements for causing their relative rotation, said gearing including a pair of spiral gear-wheels for increasing the ratio between the rates of movement of said elements, and movable rim-sections having operative relationship each with a radial and a spiral guide.

3. In an expansible pulley, the combination of a plurality of radially-movable face-forming sections, and means for causing the movement of the same, comprising two concentric independently-rotatable elements and a shaft for supporting the same, one element provided with spiral guides, the other with radial guides, train of gearing for actuating said elements relatively, said gear means including a pair of spiral gear-wheels for increasing the ratio between the rates of movement of said elements.

4. In an expansible pulley, the combination of a plurality of radially-movable face-forming sections, means for causing the movement of the same comprising two concentric independently-rotatable elements and a shaft for supporting the same, one element provided with spiral guides, the other with radial guides, a trian of gearing for causing the relatively independent rotation of said two elements, said gearing including a pair of spiral gears for increasing the ratio between the rates of movement of said elements.

5. In an expansible wheel or pulley, the combination of a plurality of radially-movable face-forming sections and means for causing the movement of the same, comprising two concentric independently-rotatable elements, one provided with spiral guides and the other with radial guides, a shaft for supporting said rotatable elements, a train of gearing for causing the relatively independent rotation of said elements, and manually-operative means for arbitrarily reversing the direction of said rotation, said gearing including a pair of spiral gears for increasing the ratio between the rates of movement of the scroll element and the shaft-driving the pulley.

6. In a speed-varying mechanism, a pair of expansible pulleys, each comprising a plurality of radially-movable face-forming sections, and means for causing the movement of the same, comprising two concentric independently-rotatable elements and a shaft for supporting the same, one element provided with spiral guides, the other with radial guides, a train of gearing for actuating said elements relatively, said gearing including a pair of spiral gear-wheels for increasing the ratio between the rates of movement of said elements.

7. In a speed-varying mechanism, a pair of expansible pulleys, each comprising a plurality of radially-movable face-forming sections, and means for causing the movement of the same, comprising two concentric independently-rotatable elements and a shaft for supporting the same, one element provided with spiral guides, the other with radial guides, a train of gearing for actuating said elements relatively, said gearing including a pair of spiral gear-wheels for increasing the ratio between the rates of movement of said elements, and throw-out mechanism for automatically rendering inoperative the gear-actuating means.

818,652. DRESS-FORM. CHARLES LAUFMAN, Arcanville, Ill. Filed Aug. 30, 1905. Serial No. 276,436.

Claim.—In combination, a pair of protectors each comprising a wire B of substantially inverted-U shape having eyes at its ends, an outwardly-bowed wire having eyes connected to the eyes of said wire B, a series of cross-wires having eyes which are connected to said wire B and spaced apart, said cross-wires being slightly downwardly inclined, binding-wires having eyes at their upper ends connected to the arched portion of said wire B and each twisted about said cross-wires and anchored at their lower ends to the wire which connects the eyes of the wire B, and a fabric covering for said wires with ruffles intermediate the cross-wires, and means for supporting said pair of protectors on the body of the wearer as set forth.

813,658. CARBURETER. FRED A. LAW, Hartford, Conn. Filed Apr. 10, 1905. Serial No. 254,847.

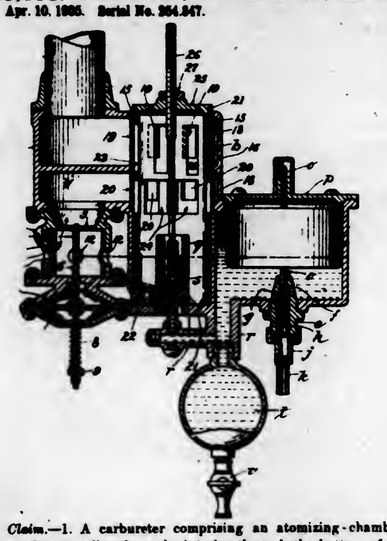

Claim.—1. A carbureter comprising an atomizing-chamber, an air-tube extending from the interior through the bottom of the chamber, a supply-tube for combustible located axially of the air-tube, a shell to fit the interior of the atomizing-chamber, endwise movable therein, there being air-ports through the wall of the chamber below the inner end of the air-tube and normally covered by said shell, the opposite end of the latter being closed: a valve for the supply-tube operable by the movement of said shell to vary the supply of combustible coincidently with the opening of said air-ports, and suitable means to move the shell endwise.

2. In a carbureter, an atomizing-chamber provided with an inlet-opening at one end and an outlet-opening at the other, there being ports in the wall of the chamber communicating with an annular space extending around the chamber in the plane of the outlet and communicating with the latter through one or more of said ports, and there being other ports extending through the wall of the chamber near said inlet-opening; atomizing devices associated with the latter, and a shell to fit the interior of the chamber to normally cover the ports near the other end thereof to register in one position with the ports in communication with the outlet-opening; a valve for the atomizing device connected with the shell, and means to move the shell rotatably to adjust the area of the ports at one end of the chamber and vertically to operate the valve and to cover and uncover the ports at the opposite end of the chamber coincidently with the actuation of the valve.

3. In a carbureter, an atomizing-chamber provided with an inlet-opening at one end and an outlet-opening at the other, atomizing devices located at the inlet-opening, the opposite end of said chamber being provided with two annular circumferentially-disposed spaces located in different planes and communicating with the interior of the chamber by suitable ports, one of said spaces through said ports being in communication with the outlet-opening, and the other of said spaces being in communication through its ports with a closed chamber; an inwardly-opening valve in said closed chamber; a rotatable and endwise-movable shell to fit the atomizing-chamber and provided with ports to register with the ports communicating with said annular spaces; a valve on said shell, and means to rotate the latter and to simultaneously impart endwise movement thereto.

4. In a carburetor, an atomizing-chamber, a second chamber communicating therewith through ports in the contiguous walls of said chambers located in different planes, said second chamber being divided into two compartments one of which has a pipe connection to extend to the motor: a valve in the other compartment opening in-

wardly; a rotatable shell in the atomizing-chamber having ports to

2. A horseshoe and a horseshoe-calk provided with alined bol-

wardly; a rotatable shell in the atomizing-chamber having ports to register with the ports through which communication is established with the connection extending to the meter; suitable atomizing devices connected with the atomizing-chamber located at the inlet-opening therein there being ports through the wall of the atomizing-chamber near the inlet-opening and normally covered by the shell; a valve connected with the shell to control the supply of combustible delivered by the atomizing devices, and means to move the shell to simultaneously vary the area of the ports leading to the motor connection, and to vary the supply of combustible delivered from the atomizing devices and to coincidently uncover the ports near said inlet-opening without varying the area of the ports communicating with the valve-containing compartment.

813,654. GILL-BOX. WILLIAM A. LEE, Jr., New York, N. Y. Filed May 3, 1905. Serial No. 258,737.

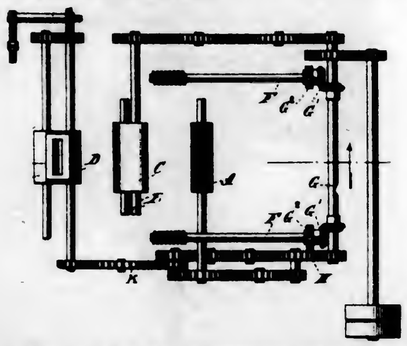

Claim.—1. In a gill-box, the combination, with the back rolls, the front rolls, and the press-rolls arranged to take up the material after its passage between the front rolls, of connections for driving the press-rolls and the back rolls, a separate connection for driving the front rolls, so that a variation in the speed of the front rolls will not affect the speed of the press-rolls, and a knock-off motion governed by the number of revolutions of the press-rolls.

2. In a gill-box, the combination, with the back rolls, the front rolls, the apron passing between the front rolls, and smooth press-rolls arranged to take up the material after its passage between the front rolls, of connections for driving the press-rolls and the back rolls, and a separate connection for driving the front rolls, so that the variation in the speed of the front rolls will not affect the speed of the press-rolls.

3. In a gill-box, the combination, with the back rolls, the front rolls, the apron passing between the front rolls, and the press-rolls arranged to take up the material after its passage between the front rolls, of connections for driving the press-rolls and the back rolls, a separate connection for driving the front rolls, so that the variation in the speed of the front rolls will not affect the speed of the press-rolls, and a knock-off motion governed by the number of revolutions of the press-rolls.

4. In a gill-box, the combination, with the back rolls, the front rolls, the apron passing between the front rolls, and the smooth press-rolls arranged to take up the material after its passage between the front rolls, of connections for driving the press-rolls and the back rolls, and a separate connection for driving the front rolls, so that a variation in the speed of the front rolls will not affect the speed of the press-rolls.

813,655. HORSESHOE-CALK AND FASTENER. WILLARD O. LOSS, Mansfield, Ohio. Filed Aug. 26, 1905. Serial No. 275,320.

Claim.—1. A horseshoe and a horseshoe-calk provided with alined bolt-apertures and a projection extending from said calk, a locking-plate bearing against said calk and provided with an intermediate bolt-aperture, the material at one side of the aperture in said plate being of greater distance than the distance between the aperture in said calk and the projection on the same, and a bolt engaging said apertures and bearing by its head against said locking-plate and bending the excess material therein against the projection, the plate being thereby caused to exert a pressure transversely of the bolt and likewise outwardly against the head of the same.

2. A horseshoe and a horseshoe-calk provided with alined bolt-apertures and a projection extending from said calk, a locking-plate bearing against said calk and provided with an intermediate bolt-aperture, the material at one side of the aperture in said plate being of greater distance than the distance between the aperture in said calk and the projection on the same, and a bolt engaging said apertures and bearing by its head against said locking-plate and bending the excess material therein against the projection, and the head further secured by bending the free end of the plate over the same.

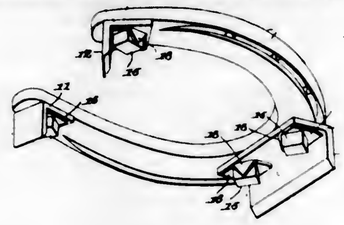

813,656. HAT-SIZING MACHINE. WILLIAM H. LYONS, West Orange, N. J. Filed July 24, 1905. Serial No. 270,968.

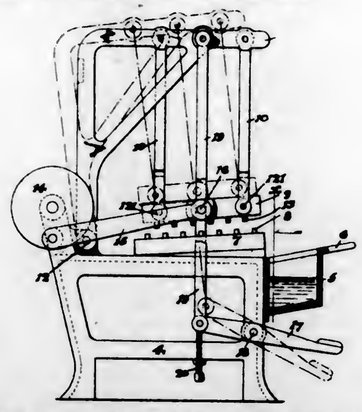

Claim.—1. In a hat-sizing machine, the combination of a tank, a rubbing-board outside of said tank, a second rubbing-board parallel with the first said rubbing-board and above the same, a suspensory frame having an extension above said rubbing-boards, parallel rods connecting the second rubbing-board to said suspensory frame, and means for reciprocating the upper rubbing-board, substantially as set forth.

2. In a hat-sizing machine, the combination of a tank, a rubbing-board rearward of said tank and above the same, a second rubbing-board above the first said rubbing-board, a pivoted suspensory frame, rods connecting the second rubbing-board to said frame, means for reciprocating the second rubbing-board, and a pedal for raising the second rubbing-board with its suspensory frame from the first, substantially as set forth.

3. The combination with the bed, having pivotal bearings near the back thereof, and a frame extending upward from the said pivotal bearings and having at the top thereof, a forwardly-projecting suspensory extension, rods pivoted upon the said forward extension, a rubbing-board carried by said rods, and a lower rubbing-board seated beneath the upper rubbing-board upon the bed, an eccentric or crank wheel, and connections of said crank-wheel with the upper rubbing-board.

4. The combination with the bed, having pivotal bearings near the back thereof, and a frame extending upward from said pivotal bearings and having at the top thereof, a forwardly-projecting suspensory extension, rods pivoted upon the said forward extension, a rubbing-board carried by said rods, and a lower rubbing-board seated beneath the upper rubbing-board upon the bed, an eccentric or crank wheel, and connections of said crank-wheel with the upper rubbing-board, a screw limiting a downward movement of the upper rubbing-board, and a pedal and connections of said pedal with the pivoted frame.

5. The improved hat-sizing machine herein described, comprising a bed having a tank at the front, and back of, and a little above said tank, having an approximately horizontal rubbing-board, a frame pivoted at the rear of said bed and extending upwardly and forwardly therefrom, a pedal and a rod connecting said pedal with the forward extension of said frame, a reciprocating rubbing-board and suspensory rods for the same, a crank-wheel and connecting-rod of said wheel and reciprocating rubbing-board, substantially as set forth.

813,657. BRIQUET-MACHINE. HOWARD B. MARSH, Los Angeles, Cal., assignor of one-half to William P. Wagy, Los Angeles, Cal. Filed Mar. 13, 1905. Serial No. 249,761.

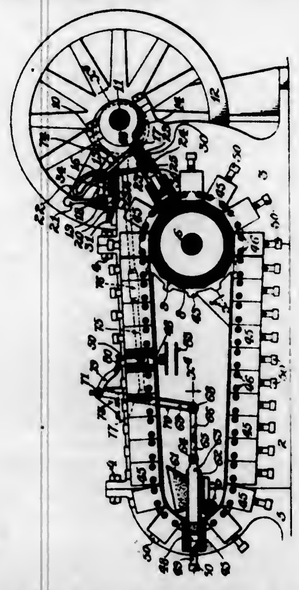

Claim.—1. In a briquet-machine comprising a series of disconnected mold-blocks, means for supporting the mold-blocks and guiding them in an orbit, the upper and lower runs of the orbit being inclined downwardly in the direction in which the blocks travel, and means for directly lifting the mold-blocks from the lower run to the upper run.

2. In a briquet-machine, a series of mold-blocks, means for feeding material to the mold-blocks, and means for compressing the material within the mold-blocks embracing a throw-out mechanism bodily movable into or out of the pressure-line.

3. In a briquet-machine, a series of disconnected mold-blocks, means for supporting the mold-blocks and guiding them downwardly through a portion of their orbit, and means for lifting the mold-blocks from the lower end to the upper end of such portion.

4. In a briquet-machine, a molding-drum, a series of mold-blocks, means for supporting and guiding said mold-blocks in an orbit over said molding-drum, means including a stop-motion cam for intermittently rotating the molding-drum and advancing the mold-blocks through the orbit.

5. In a briquet-machine, a series of mold-blocks each having a molding-cavity, a plunger in said cavity for compressing the briquet, means for coacting with the plungers consecutively and operating them and means for axially turning each plunger during its compression of the briquet.

6. In a briquet-machine, a mold-block having a molding-cavity, a plunger therein, means for imparting a combined longitudinal and axial movement to the plunger for compressing the briquet, and means for imparting a rectilineal movement only to the plunger while expelling the briquet from the mold-block.

7. In a briquet-machine, a series of mold-blocks, means for supporting and guiding the same in an orbit, a molding-drum coacting with the mold-blocks, and means for intermittently bearing directly against the molding-drum to hold the molding-drum rigid during the compression of each briquet.

8. In a briquet-machine, means provided with a face against which a briquet is pressed, a mold-block movable into conjunction with said face, and within which the briquet is formed, a plunger in the mold-block, and resilient means for operating the plunger, and means for moving the resilient means bodily out of the pressure-line.

9. In a briquet-machine, means for compressing a briquet comprising a collapsible device, the working tension of which does not exceed the pressure to be imparted to the briquet, and means for moving the collapsible device bodily out of the pressure-line.

10. In a briquet-machine, means for compressing a briquet comprising a compressible element, the resistance of said compressible element being not greater than the resistance afforded thereto by the briquet when compressed to a definite degree, and means for moving the compressible element bodily out of the pressure-line.

11. In a briquet-machine, a series of disconnected mold-blocks, means for guiding the mold-blocks downwardly through a portion of their orbit, and a molding-drum arranged to lift the blocks from the lower end to the upper end of said portion.

12. In a briquet-machine, a series of mold-blocks, means for advancing the mold-blocks step by step through an orbit, a hopper having a tubular extension, a plunger in said extension for pushing material from the hopper into a mold-block, an intermediate shaft, pendent arms on said shaft, a connection from the plunger to the pendent arms, a main shaft, an eccentric thereon, and a rod connecting the eccentric with a pendent arm.

13. In a briquet-machine, a series of mold-blocks, means for advancing the mold-blocks step by step through an orbit, a hopper having a tubular extension, a plunger in said extension for pushing material from the hopper into a mold-block, an intermediate shaft, pendent arms on said shaft, a connection from the plunger to the pendent arms, a main shaft, an eccentric thereon, a rod connecting the eccentric with a pendent arm, and means for attaching the eccentric-rod at various points on the pendent arm to adjust the stroke of said plunger.

14. In a briquet-machine, a base having side frames each of which has an ovoidal groove, the upper run of the grooves being inclined in one direction from the horizontal, and the lower run of the grooves being oppositely inclined, a series of disconnected mold-blocks, and means on the mold-blocks projecting into the grooves for supporting the mold-blocks.

15. In a briquet-machine, a base with side frames, each side frame having an ovoidal groove, the upper run of the grooves being inclined in one direction from the horizontal, and the lower run of the grooves being oppositely inclined, a series of disconnected mold-blocks between the side frames and a pair of pins on each end of each mold-block projecting into the adjacent groove.

16. In a briquet-machine, a base having side frames each of which has an ovoidal groove, the upper run of the grooves being inclined in one direction from the horizontal, and the lower run of the grooves being oppositely inclined, a series of disconnected mold-blocks, means on the mold-blocks projecting into the grooves for supporting the mold-blocks, and means for elevating the mold-blocks from the lower run to the upper run of the grooves.

17. In a briquet-machine, a base with side frames, each side frame having an ovoidal groove, the upper run of the grooves being inclined in one direction from the horizontal, and the lower run of the grooves being oppositely inclined, a series of disconnected mold-blocks between the side frames, a pair of pins on each end of each mold-block projecting into the adjacent groove, and a molding-drum having lugs for engaging said pins to lift the mold-blocks from the lower run to the upper run of said grooves.

18. In a briquet-machine, a series of mold-blocks, means for supporting and guiding the mold-blocks through an orbit, plungers in the mold-blocks having stems, a main shaft, a cam carried thereby, and a throw-out mechanism between said cam and the path of the mold-blocks.

19. In a briquet-machine, a series of mold-blocks, means for supporting and guiding the mold-blocks through an orbit, plungers in the mold-blocks having stems, a main shaft, a cam carried thereby, a throw-out mechanism between said cam and the path of the mold-blocks, the throw-out mechanism comprising a pivoted spring-buffer, a pivoted plunger-buffer, and a spring between the two buffers.

20. In a briquet-machine, a series of mold-blocks, means for supporting and guiding the mold-blocks through an orbit, plungers in the mold-blocks having stems, a main shaft, a cam carried thereby,

a throw-out mechanism between said cam and the path of the mold-blocks, the throw-out mechanism comprising a pivoted spring-buffer, by the yoke, the ends of which are guided by the slotted brackets, a spring-buffer mounted on the shaft, a plunger-buffer mounted on the

2. In a crucible-shaker, the combination with a base-plate upon od terminal, an intermediate transverse aperture and a central lon-

a throw-out mechanism between said cam and the path of the mold-blocks, the throw-out mechanism comprising a pivoted spring-buffer, a pivoted plunger-buffer, a spring between the two buffers, and a thrust-bearing carried by the plunger-buffer for working against the stem of the plunger.

21. In a briquet-machine, a series of mold-blocks movable through an orbit, a shaft, a cam on the shaft, a throw-out mechanism between the cam and path of the mold-blocks comprising a pivoted spring-buffer, a plunger-buffer pivoted concentric with the spring-buffer, a spring between the two buffers, and means for lifting said buffers.

22. A series of mold-blocks movable through an orbit, a shaft, a cam on the shaft, a throw-out mechanism between the cam and the path of the mold-blocks comprising a rock-shaft, a yoke carried by said rock-shaft, a hand-lever for operating said rock-shaft, a spring-buffer pivoted to said yoke and working against said cam, a plunger-buffer pivoted to said yoke, and a spring between the two buffers.

23. A series of mold-blocks movable through an orbit, a shaft, a cam on the shaft, a throw-out mechanism between the cam and the path of the mold-blocks comprising a rock-shaft, a yoke carried by said rock-shaft, a hand-lever for operating said rock-shaft, a spring-buffer pivoted to said yoke and working against said cam, a plunger-buffer pivoted to said yoke, a spring between the two buffers, and means for yieldingly holding said buffers in substantially constant relation to said yoke irrespective of the position of the yoke.

24. A series of mold-blocks movable through an orbit, a shaft, a cam on the shaft, a throw-out mechanism between the cam and the path of the mold-blocks comprising a rock-shaft, a yoke carried by said rock-shaft, a hand-lever for operating said rock-shaft, a spring-buffer pivoted to said yoke and working against said cam, a plunger-buffer pivoted to said yoke, a spring between the two buffers, an arm depending from said yoke and having a stud, a stud on the plunger-buffer, and a spring supported by said studs between said arm and the plunger-buffer.

25. In a briquet-machine, a base with side frames, a series of mold-blocks movable in an orbit, means on the said frames for supporting the mold-blocks, a molding-drum having working faces over which the mold-blocks pass, a slide mounted in each side frame adjacent the molding-drum, a head on each slide for pressing against the working face of the molding-drum, and means for pressing said slide toward the drum to force the heads against the working faces of the molding-drum.

26. In a briquet-machine, a base with side frames, a series of mold-blocks supported by the side frames, a molding-drum having working faces with which the mold-blocks coact, means for intermittently rotating the molding-drum and moving the mold-blocks, a slide on each side frame adjacent the molding-drum, a head on each slide, and means for forcing the slides toward the molding-drum while the latter is stationary between successive steps to force the heads against the adjacent working faces of the molding-drum.

27. In a briquet-machine, a base with side frames, a series of mold-blocks supported by the side frames, a molding-drum having working faces with which the mold-blocks coact, means for intermittently rotating the molding-drum and moving the mold-blocks, a slide on each side frame adjacent the molding-drum, a head on each slide, a main shaft carried by the side frame, cams on the shaft, a roller carried by each slide and working against its respective cam.

28. In a briquet-machine, a series of mold-blocks movable through an orbit, plungers in the mold-blocks, a rotating cam, a throw-out mechanism between the cam and a plunger for operating the same comprising a rock-shaft, a yoke on the rock-shaft, a hand-lever for operating the yoke, slotted guide-brackets, a shaft carried by the yoke, the ends of which are guided by the slotted brackets, a spring-buffer mounted on the shaft, a plunger-buffer mounted on the shaft, and a spring between the two buffers.

29. In a briquet-machine, a series of mold-blocks movable through an orbit, plungers in the mold-blocks, a rotating cam, a throw-out mechanism between the cam and a plunger for operating the same comprising a rock-shaft, a yoke on the rock-shaft, a hand-lever for operating the yoke, slotted guide-brackets, a shaft carried by the yoke, the ends of which are guided by the slotted brackets, a spring-buffer mounted on the shaft, a plunger-buffer mounted on the shaft, a spring between the two buffers, an arm carried by the yoke, a stud on the arm, a stud on the plunger-buffer, and a spring supported by said studs between said arm and the plunger-buffer.

30. In a briquet-machine, a series of mold-blocks movable through an orbit, plungers in the mold-blocks, a rotating cam, a throw-out mechanism between the cam and a plunger for operating the same comprising a rock-shaft, a yoke on the rock-shaft, a hand-lever for operating the yoke, slotted guide-brackets, a shaft carried by the yoke, the ends of which are guided by the slotted brackets, a spring-buffer mounted on the shaft, a plunger-buffer mounted on the shaft, a spring between the two buffers, an arm carried by the yoke, a stud on the arm, a stud on the plunger-buffer, a spring supported by said studs between said arm and the plunger-buffer, a head revolubly mounted on the plunger-buffer, and a series of balls between the head and buffer.

31. In a briquet-machine, a series of mold-blocks movable through an orbit, a shaft, pins on each mold-block, and means operated by the shaft and engaging the pins for imparting an intermittent movement to the same.

32. In a briquet-machine, a series of mold-blocks movable through an orbit, and having flat faces, a molding-drum provided with flat faces for coacting with the flat faces of the mold-blocks and means intermittently movable toward the molding-drum and bearing against the flat faces in consecutive order for holding the molding-drum rigidly stationary.

33. In a briquet-machine, a series of mold-blocks movable through an orbit, a shaft, pins on each mold-block, means operated by the shaft and engaging the pins for imparting an intermittent movement to the same, and means for intermittently operating the molding-drum to impart a step-by-step movement to the mold-blocks.

34. In a briquet-machine, a series of mold-blocks movable through an orbit, pins on the ends of the mold-blocks, a molding-drum having bosses for engaging said pins, and means for moving said molding-drum whereby the mold-blocks are moved by the pins coacting with the bosses.

35. In a briquet-machine, a base with side frames, each side frame having a groove, a series of mold-blocks, a pair of pins on each end of each mold-block projecting into the adjacent groove in the said frame, a molding-drum over which the mold-blocks pass and means operated by the molding-drum for causing the mold-blocks to travel along said grooves.

36. A briquet-machine comprising a series of disconnected mold-blocks, means for supporting the mold-blocks and guiding them in an orbit, said means comprising studs projecting from said mold-blocks and a slotted support in which said studs travel, the upper and lower runs of the orbit being inclined downwardly in the direction in which the blocks travel, and means for directly lifting the mold-blocks from the lower run to the upper run.

813,658. **CRUCIBLE-SHAKER.** WILLIAM S. MATHER, Newark, N. J. Filed Mar. 30, 1905. Serial No. 253,547.

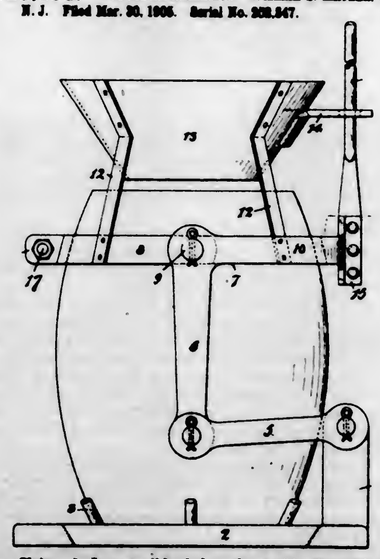

Claim.—1. In a crucible-shaker, the combination with a base-plate having standards thereon, of a ring adapted to fit over the top of a crucible, a semicircular shaking-band pivoted at its ends to said ring, downward extensions upon said ends of the shaking-band, links connecting said extensions to the standards, and a lever upon said band.

2. In a crucible-shaker, the combination with a base-plate upon which a crucible may stand, of a ring adapted to fit over the top of the crucible, a funnel supported on said shaking-ring, a semicircular shaking-band pivoted to said ring at diametrically opposite points thereof, arms extending downward from said shaking-band and being pivotally connected to the base-plate, and a lever or handle upon said shaking-band midway between its extremities and secured to said funnel.

3. In a crucible-shaker, the combination with a base-plate having at the opposite ends of its rear edge upright standards, a ring adapted to fit over the top of the crucible, a semicircular shaking-band pivoted at its ends to opposite points of said ring, an upwardly-extending lever or handle upon said band, arms extending downward from the pivotal points of said shaking-band, and substantially horizontal links connecting said arms with the said standards on the base-plate.

4. In a crucible-shaker a base-plate for a crucible to stand upon, a shaking-ring adapted to fit over the top of the crucible, a curved shaking-band pivoted at its ends to said ring, downward extensions from said ends adapted to be pivotally connected to the said base-plate, and a lever or handle upon said shaking-band.

5. In a crucible-shaker, a base-plate for a crucible to stand upon, a shaking-ring adapted to fit over the top of the crucible, a funnel supported upon said ring above the top of a crucible, and handle means pivoted to said ring, connected to the funnel and fulcrumed to the said base-plate.

6. In a crucible-shaker, supporting means for the base of a crucible, a ring adapted to fit over the top of the crucible, a curved shaking-band pivoted at its ends to opposite points of said ring and being extended beyond said points of pivoting to fulcrumally engage the said crucible-supporting means, a funnel supported upon said ring, a slotted arm upon said funnel, and a lever or handle upon said shaking-band extending through the slot of said arm.

7. In a crucible-shaker, base-supporting means for a crucible, a ring adapted to fit over the top of the crucible, a curved shaking-band pivoted at its ends to opposite points of said ring and being extended beyond said points, links connecting said extensions to the said crucible-support, a handle or lever at the upper side of the said shaking-band, and a projection 15 at the opposite side of said shaking-band from said lever or handle.

8. In a crucible-shaker, a base-support for the crucible to stand upon, a shaking-ring adapted to fit over the top of the crucible, handle means pivoted to said shaking-ring and having downward extensions, and links pivotally connecting said extensions to the base-support and normally forming with said extensions angles whereby the ring may be raised and lowered without detachment from the base-support.

9. In a crucible-shaker, a base-support for the crucible to stand upon, a shaking-ring adapted to fit over the top of the crucible, handle means pivoted to said shaking-ring, and having downward extensions and links connecting said extensions to the base-support while permitting the shaking-ring to be raised and lowered with respect thereto.

10. In a crucible-shaker, the combination of a base-support for a crucible to stand upon, a shaking-ring adapted to fit over the top of the crucible, a band connected at its ends to said ring and having downward extensions from said ends, links connecting said extensions to the base-support, and a handle.

813,659. **WHEEL-HUB.** SILAS P. MILLS, Garfield, Kans. Filed June 30, 1905. Serial No. 267,707.

Claim.—1. A wheel-hub having an axle-bearing in the inner end and an internally-threaded cavity in the outer end communicating with said bearing, an axle-spindle engaging said bearing and having a threaded terminal, an axle-nut engaging the threaded end of said spindle and bearing against the hub in the bottom of said cavity, a threaded cylindrical member closed at the outer end and engaging said cavity, a plunger operating in said cylinder, and means for moving said plunger longitudinally of said cylinder.

2. A wheel-hub having an axle-bearing in the inner end and an internally-threaded cavity in the outer end communicating with said bearing, an axle-spindle engaging said bearing and having a threaded terminal, and with an intermediate transverse aperture and a central longitudinal aperture leading inwardly from the outer end and intersecting said transverse aperture.

3. A wheel-hub having an axle-bearing in the inner end and an internally-threaded cavity in the outer end communicating with said bearing, an axle-spindle engaging said bearing and having a threaded terminal, an intermediate transverse aperture and a central longitudinal aperture leading inwardly from the outer end and intersecting the transverse aperture and a longitudinal channel connecting one of the outer ends of said transverse aperture with said cavity.

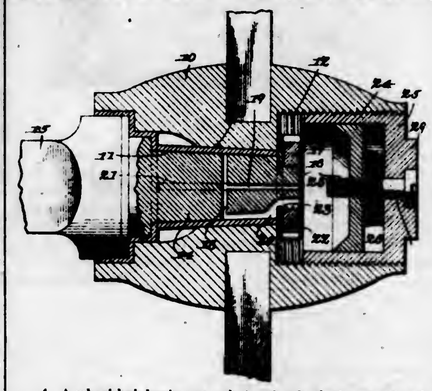

4. A wheel-hub having an axle-bearing in the inner end and an internally-threaded cavity in the outer end communicating with said bearing, an axle-spindle engaging said bearing and having a threaded terminal, an axle-nut engaging the threaded end of said spindle and bearing against the hub in the bottom of said cavity, a threaded cylindrical member closed at the outer end and engaging said cavity, a plunger operating in said cylinder, and a bolt rotative through the closed end of said cylindrical member and engaging said plunger by its threaded end.

5. A wheel-hub having an axle-bearing in the inner end and an internally-threaded cavity in the outer end communicating with said bearing, an axle-spindle engaging said bearing and having a threaded terminal, an axle-nut engaging the threaded end of said spindle and bearing against the hub in the bottom of said cavity, a threaded cylindrical member closed at the outer end and engaging said cavity, a plunger operating in said cylinder, a bolt rotative through said cylindrical member and engaging said plunger by its threaded end, and a spring between said plunger and the outer end of said cylindrical member.

813,660. **LIGHTNING-CONDUCTOR.** THOMAS H. MIMS, Wrens, Mo. Filed May 1, 1905. Serial No. 258,223.

Claim.—The combination in a lightning-conductor for buildings, of a plurality of main conducting-wires twisted together intermediate their ends and the twisted portion being located at a central point on the roof of the building and disposed vertically and provided with an attracting-point, the said main conducting-wires diverging in different directions from the said twisted portion and extending therefrom over the roof of the building and thence downwardly to the ground, and supplemental conducting-wires having their end portions intertwisted with the end portions of the main conducting-wires, from the roof of the building to the ground the intermediate portions of said supplemental conducting-wires extending from one main conducting-wire to an opposite main wire, as and for the purpose set forth

813,661. **BRIQUET-MACHINE.** THOMAS A. MATHER, Orange, N. J. Filed Mar. 30, 1905. Serial No. 253,548.

Claim.—1. The combination with a base-plate, of a ring adapted to fit over the top of a crucible, a semicircular shaking-band pivoted at its ends to said ring, downward extensions upon said ends of the shaking-band, links connecting said extensions to the base-plate, and a lever upon said band.

813,661. DRESSING-BOOTH. THOMAS A. McGUIRE, Oakland, Ill. Filed Oct. 11, 1905. Serial No. 282,255.

Claim.—1. In a dressing-booth, the combination of a support, a curtain suspended from said support and forming the inclosing walls of the booth, a floor-covering for said booth, said floor-covering being pivotally connected to the support so as to swing thereagainst, and means for swinging the floor-covering against the support.

2. In a device of the character described, the combination of a framework pivotally attached to the wall, an inclosing curtain suspended therefrom, a floor-covering pivotally mounted so as to swing up against the wall, and means whereby the framework and the floor-covering can be folded against the wall.

3. In a device of the character described, the combination of an upper framework pivotally connected to the wall, an inclosing curtain suspended therefrom, a lower framework pivotally mounted so as to swing against the wall, a floor-covering stretched across the lower framework, and means whereby the upper and lower frameworks can be folded against the wall.

4. In a device of the character described, the combination of an upper framework pivotally connected to the wall, an inclosing curtain suspended therefrom, a lower framework pivotally mounted so as to swing against the wall, a floor-covering stretched across the lower framework, connecting means between the upper framework and the lower framework to secure a simultaneous movement thereof, and means whereby the two frameworks can be folded against the wall.

5. In a device of the character described, the combination of a standard secured to the wall, an upper framework pivotally attached to the standard, an inclosing curtain suspended from the upper framework, a floor-covering pivotally connected to a lower portion of the standard, and means whereby the two frameworks can be simultaneously folded against the wall.

813,662. ELECTRICAL RAILWAY-SIGNAL. AUGUST W. NELSON, Spokane, Wash. Filed May 11, 1905. Serial No. 260,859.

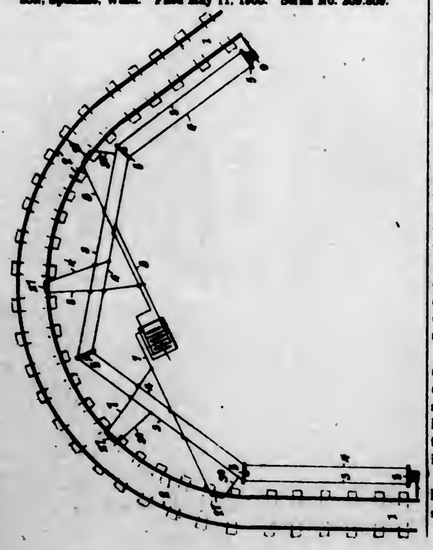

Claim.—1. The combination with an electrical signal and a circuit connected therewith standing normally open, of contacts comprising a base-piece, a yoke slidably disposed in the base-piece, a roller journaled in the yoke in the path of the wheels of a passing car, contact-pieces fixed to the base-pieces and to the yoke, and adapted to contact when the roller and the yoke are depressed.

2. The combination with an electrically-operated signal, and a circuit connected therewith and standing normally open, of contacts comprising a base-piece formed with a vertical sleeve and adapted to be secured to the bottom flange of a rail, a yoke slidably disposed in the said sleeve, a spring to lift and hold the yoke in upper position, a contact-piece secured to the yoke, and connected to the circuit, a contact-piece secured to the said sleeve, and a roller journaled in the yoke in the path of a passing car.

813,663. HOISTING AND CONVEYING APPARATUS. ALBION E. NORRIS, Cambridge, Mass. Filed Dec. 19, 1901. Serial No. 86,497.

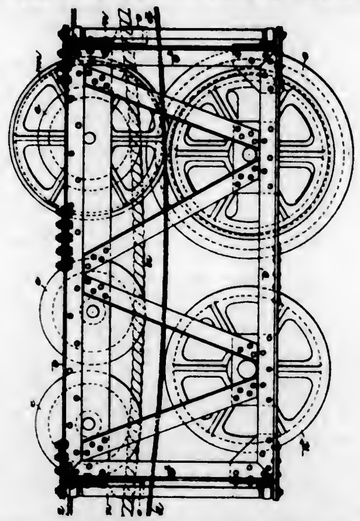

Claim.—1. In an apparatus of the class described, a track-cable a trolley thereon, an endless operating-cable connected with said trolley, the outgoing and return strands of said endless operating-cable bearing upon said trolley at opposite sides of the longitudinal center thereof, whereby said strands coöperate with said track-cable in supporting a load carried by said trolley and without tendency to swing the said trolley about said track-cable.

2. In an apparatus of the class described a track-cable, a trolley thereon, endless traverse and hoisting cables connected with said trolley, the tight strands of said traverse and hoisting cables engaging the said trolley at substantially the same distance from and at opposite sides of the longitudinal center of the said trolley and track-cable and the slack strands of said cables likewise engaging said trolley at substantially equal distance from and at opposite sides of said longitudinal center of said trolley and said track-cable, whereby to maintain said trolley always in substantial equilibrium.

3. In an apparatus of the class described, a track-cable, a trolley and its wheels traveling upon said track-cable, and endless hoisting and traverse cables engaging said trolley at opposite sides of the line of said track-cable in a manner substantially as described, to preserve the equilibrium of said trolley.

4. In a cableway apparatus a trolley, operating means at one end of said cableway, separate endless traverse and hoisting ropes each in engagement with said operating means and having each a short strand leading therefrom to said trolley and a long strand leading therefrom to the opposite side of said cableway and thence to said trolley, and slack-adjusting means in the short strand of said hoisting-rope and in the long strand of said traverse-rope.

5. In an apparatus of the class described a trolley and an endless hoist-operating cable therefor in trolley-supporting engagement with said trolley with both its outgoing and return strands.

6. In an apparatus of the class described a trolley and an endless operating-cable therefor in trolley-supporting engagement with the trolley at substantially equal distances on either side of the longitudinal center thereof.

7. In an apparatus of the class described a trolley, an endless operating-cable therefor engaging said trolley with both its outgoing and return strands, and means for balancing the effect of said cable upon said trolley to preserve the equilibrium thereof.

8. In an apparatus of the class described a trolley, an endless hoist-operating cable connected through one of its strands with said trolley to control movement of one or more of the trolley parts, and means for causing the other strand of said operating-cable to assist in supporting the trolley-weight.

9. In an apparatus of the class described a trolley, a plurality of endless operating-cables having each their tight and slack strands engaging with said trolley and means for balancing the effect upon said trolley of the tight strand of one cable by the effect of the tight strand of another cable to preserve the equilibrium thereof.

813,664. HANGER FOR TYPE-BARS. WILLIAM H. PIKE, Jr., Orange, N. J., assignor to New York Adding Typewriter Company, Orange, N. J., a Corporation of Missouri. Filed Jan. 11, 1904. Serial No. 188,536.

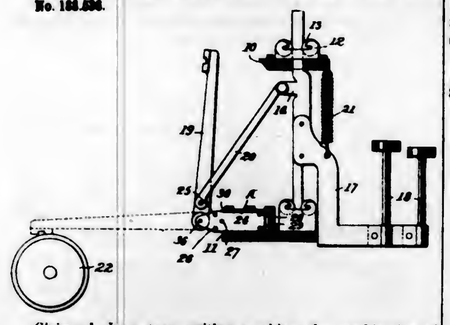

Claim.—1. In a type-writing machine, the combination of plates, a type-bar having bearings in said plates, and fastenings for securing said plates placed at different distances from said bearings, the whole being so constructed and arranged that tightening the fastening nearer the type-bar bearings operates to tighten said bearings and tightening the fastening more remote from said bearings operates to loosen the bearings, substantially as described.

2. In a type-writing machine, the combination of plates, a type-bar having bearings in said plates, and fastenings for securing said plates so arranged with relation to said bearings that when one of said fastenings is tightened the other will act as a fulcrum on which said plates rock to loosen said bearings, and when the latter fastening is tightened, the former will act as a fulcrum on which said plates rock to tighten said bearings, substantially as described.

3. In a type-writing machine, the combination of plates, a type-bar having bearings in said plates and shouldered rivets for securing said plates arranged at different distances from said bearings, substantially as described.

4. In a type-writing machine, a type-bar hanger comprising two plates and rivets having shoulders engaging the inner faces of the plates for connecting them in separated relation, said plates having tapered holes near their ends, combined with a type-bar having a hub to fit between said plates and tapered journals projecting from the sides of said hub to fit in said holes, substantially as described.

5. In a type-writing machine, the combination with a type-bar having journals projecting from the sides thereof, of a hanger having side plates provided with bearings for said journals, a pair of rivets connecting said plates adjacent the bearings for the type-bar journals, and a single rivet connecting said plates at a greater distance from the type-bar bearings and in a plane between the aforesaid rivets, substantially as described.

6. In a type-writing machine, the combination with a type-bar having journals projecting from the sides thereof, of a hanger having side plates provided with bearings for said journals, a pair of rivets connecting said plates at points in the same vertical plane, and a single rivet connecting said plates at a point in a horizontal plane between the aforesaid rivet and in a vertical plane more remote from the type-bar bearings than said pair of rivets, substantially as described.

813,665. DIVISION-BLOCK FOR HAY-BALERS. JULIAN H. PIPKIN, Chicago, Ill. Filed Oct. 28, 1905. Serial No. 284,022.

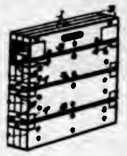

Claim.—1. A division-block for hay-balers consisting of a center board having side boards secured thereto, with transversely-extending grooves between said side boards and reinforcing-plates arranged flush with the edge of said block, said reinforcing-plates having vertically-extending grooves which receive the edges of said center board, and transversely-extending notches which register with the grooves formed between said side boards, substantially as and for the purpose specified.

2. A division-block for hay-balers provided with transversely-extending grooves and having reinforcing-plates arranged flush with the edges of said block, said reinforcing-plates having notches therein registering with the said grooves, and a recess formed above the said notches, substantially as and for the purpose specified.

813,666. DRAFT-RIGGING CARRIER AND BODY-BOLSTER. OSWALD S. PULLIAM, Pittsburg, Pa. Filed Sept. 22, 1905. Serial No. 279,069.

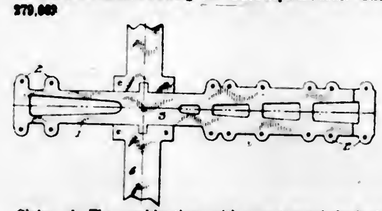

Claim.—1. The combination, with a cast-metal draft-rigging carrier, of a cast-metal body-bolster secured to the carrier, and a truck-bolster center-bearing cast integral with the body-bolster.

2. The combination, with a cast-metal draft-rigging carrier formed with a recess below its top plate, a cast-metal body-bolster secured in said recess, and a truck-bolster center-bearing formed on the body-bolster.

3. The combination, with a cast-metal draft-rigging carrier formed with a recess below its top plate and provided with lugs projecting from the top plate, a cast-metal body-bolster formed with pockets arranged to receive the lugs of the draft-rigging carrier, said body-bolster secured in the recess of the draft-rigging carrier, and a truck-bolster center-bearing formed integral with the body-bolster.

4. The combination, with a cast-metal draft-rigging carrier formed with a recess below its top plate, lugs projecting from the top plate, apertured ears below the projecting lugs, a cast-metal body-bolster formed with pockets to receive the lugs of the carrier and with ears arranged to register with the ears of the carrier, said body-bolster located in the recess of the carrier.

813,667. CAR-BODY UNDERFRAME CONSTRUCTION. OSWALD S. PULLIAM, Pittsburg, Pa. Filed Sept. 23, 1905. Serial No. 279,304.

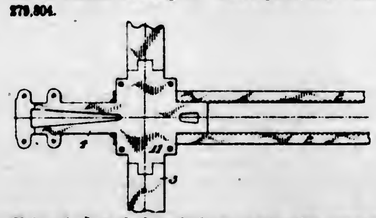

Claim.—1. A car-body underframe construction comprising a metal center sill, a metal body-bolster formed with a recess to receive the center sill, and a metal draft-rigging carrier interlocked, substantially as set forth.

2. A car-body underframe construction comprising a metal center sill, a metal body-bolster formed with a recess and with lugs arranged to engage the center sill, and a metal draft-rigging carrier, substantially as set forth.

3. A car-body underframe construction comprising a metal body-bolster formed with a recess, a metal center sill extending into the recess, and a metal draft-rigging carrier located in the recess, substantially as set forth.

4. A car-body underframe construction comprising a metal body-bolster having a central recess and provided with lugs projecting into the recess, a metal sill in the recess, a filler in the recess, said lugs extending through the sill and adapted to engage the filler, substantially as set forth.

5. A car-body underframe construction comprising a metal body-bolster formed with a recess and provided with lugs projecting into the recess, center sills in the form of channels extending into the recess, a filler in the recess located between the sills, said lugs engaging the sills, substantially as set forth.

6. A car-body underframe construction comprising a metal body-bolster formed with a recess, center sills in the form of channels extending into the recess, and a metal draft-rigging carrier located in the recess between the center sills, substantially as set forth.

7. A car-body underframe construction comprising a metal body-bolster formed with a recess, center sills extending into the recess, a metal draft-rigging carrier extending into the recess between the center sills, said bolster, sills and carrier interlocked, substantially as set forth.

813,668. METALLIC RAILWAY-TIE. OSWALD S. PULLIAM, Pittsburg, Pa. Filed Sept. 23, 1905. Serial No. 279,805.

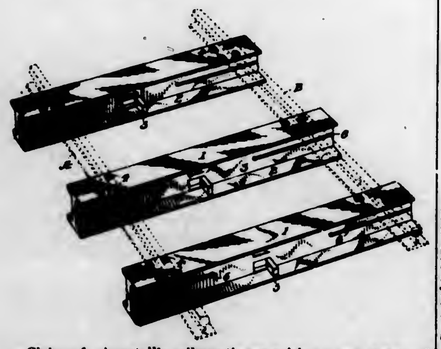

Claim.—1. A metallic railway-tie comprising a cast structural beam having a vertical web and top and bottom members, and means for giving elasticity to the tie comprising a slot formed in the web, substantially as set forth.

2. A metallic railway-tie comprising a beam having a vertical web and means for giving elasticity to the tie comprising top and bottom members, and a horizontally-disposed slot formed in the web, substantially as set forth.

3. A metallic railway-tie comprising a rolled structural beam having a vertical web and top and bottom members, and means for giving elasticity to the tie comprising a slot formed in the web at each end of the beam, substantially as set forth.

4. A metallic railway-tie comprising a beam having a vertical web and top and bottom members, and means for giving elasticity to the tie comprising a plurality of slots formed in the web, substantially as set forth.

5. A metallic railway-tie comprising a rolled structural I-beam having means for giving elasticity to the tie comprising a horizontally-disposed slot formed in the web thereof, substantially as set forth.

6. A metallic railway-tie comprising a rolled structural I-beam having means for giving elasticity to the tie comprising a horizontally-disposed slot formed in the web at each end of the beam, substantially as set forth.

7. A metallic railway-tie comprising a rolled structural I-beam having means for giving elasticity to the tie comprising a plurality of horizontally-disposed slots formed in the web of the beam, substantially as set forth.

8. A metallic railway-tie comprising a beam having a vertical web and top and bottom members, means for giving elasticity to the tie comprising horizontally-disposed slots formed in the web, and outwardly-extending projections formed integral with the web, substantially as set forth.

9. A metallic railway-tie comprising a beam having a vertical web and top and bottom members, engaging lugs formed integral with the top member, means for giving elasticity to the tie comprising horizontally-disposed slots formed in the web, and outwardly-extending projections formed integral with the web, substantially as set forth.

10. A metallic railway-tie comprising an I-beam having horizontally-disposed slots formed in its web for giving elasticity to the tie, engaging lugs formed integral with its top member, and outwardly-extending projections formed integral with the web, substantially as set forth.

11. A metallic railway-tie comprising an I-beam having a horizontally-disposed slot formed in its web at each end of the beam for giving elasticity to the tie, engaging lugs formed integral with its top member, and outwardly-extending projections formed integral with the web, substantially as set forth.

813,669. DAMPER-REGULATOR. EDWIN B. RAYNER, Piqua, Ohio, assignor to The Lagonda Manufacturing Co., Springfield, Ohio. Filed Dec. 23, 1904. Serial No. 238,164.

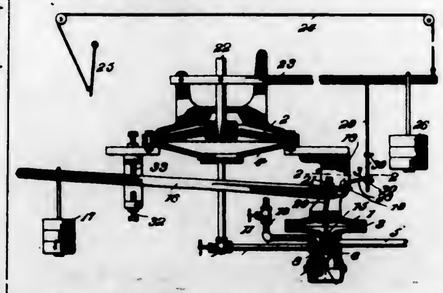

Claim.—1. In a damper-regulator, the combination of a damper, a diaphragm-motor operably connected with said damper, a fluid-pressure-supply pipe leading to the diaphragm-motor, a valve governing the passage of pressure medium through said pipe, an exhaust governed by said valve, a pressure balance-lever, spaced adjustable set-screws arranged upon opposite sides of said lever to limit the movement thereof, a rod connected at one end with the valve aforesaid and at its other end with the pressure balance-lever, a set-screw applied to the balance-lever and engaging an end of the rod aforesaid to establish an adjustable connection between said lever and the rod, and means for actuating the pressure balance-lever.

2. In a damper-regulator, the combination of a pressure diaphragm-motor, a working diaphragm-motor, a fluid-supply pipe leading to the working diaphragm-motor, a valve operated by the pressure diaphragm-motor and governing the supply of pressure medium through the supply-pipe aforesaid, a counterbalance-lever, means operably connecting the lever and the pressure diaphragm-motor, a fulcrum member on which said counterbalance-lever is fulcrumed, and means operable by the working diaphragm-motor for actuating the fulcrum member of the counterbalance-lever to shift the point of fulcrum thereof and vary the sensitiveness of said lever.

3. In a damper-regulator, the combination of damper-controlling mechanism including a diaphragm-motor, pressure balance means including a balance-lever, and means for actuating the pressure balance-lever to shift the point of fulcrum thereof and vary the sensitiveness of the regulator.

4. In a damper-regulator, the combination of damper-controlling mechanism including a diaphragm-motor, pressure balance means embodying a balance-lever, means operably connecting the lever with the diaphragm-motor, a fulcrum for said lever, and means for automatically shifting the lever to vary the leverage thereof with reference to its fulcrum.

5. In a damper-regulator, the combination of a pressure diaphragm-motor, a working diaphragm-motor, a fluid-supply pipe leading to the working diaphragm-motor, a valve operated by the pressure diaphragm-motor and governing the supply of pressure medium through the supply-pipe, a counterbalance-lever for the pressure diaphragm-motor, a fulcrum member for the counterbalance-lever, a damper-lever connecting with the working diaphragm-motor, and adjustable means connecting the fulcrum member aforesaid with the damper-lever for actuating the fulcrum member.

6. In a damper-regulator, the combination of a pressure diaphragm-motor, a working diaphragm-motor, a fluid-pressure pipe leading to the working diaphragm-motor, a valve operated by the pressure diaphragm-motor and governing the supply of pressure medium through the supply-pipe, a counterbalance-lever for the pressure diaphragm-motor, a movable fulcrum for the counterbalance-lever, a damper-lever connected with the working diaphragm-motor, and means carried by the damper-lever for shifting the fulcrum of the counterbalance-lever, as set forth.

7. In a damper-regulator, the combination of a pressure diaphragm-motor, a working diaphragm-motor, a fluid-pressure pipe leading to the working diaphragm-motor, a valve operated by the pressure diaphragm-motor, and governing the supply of pressure medium through the supply-pipe, a counterbalance-lever for the pressure diaphragm-motor, a fulcrum member for said lever, a damper-lever connected with the working diaphragm-motor, and an actuating device carried by the damper-lever and connected with the fulcrum member for shifting the latter and the counterbalance-lever, as set forth.

813,670. PHONOGRAPH. EUGENE M. ROBINSON, Chicago, Ill. Filed Mar. 22, 1905. Serial No. 251,470.

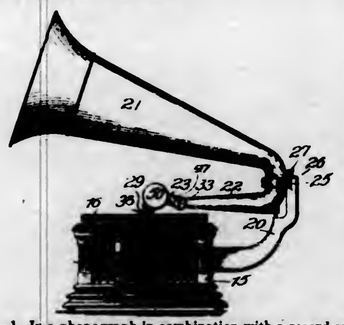

Claim.—1. In a phonograph in combination with a record and reproducer in operative connection therewith; a horn attached to said reproducer having a distinct angle in it between its ends and a valve mounted in one angular portion of the horn adjacent to said angle adapted to be moved to two different positions to close off the admission of sound-waves from one angular portion of the horn to the other portion of the horn adjacent to said angle.

2. In a phonograph in combination with a record and reproducer in operative connection therewith; a horn attached to said reproducer having a distinct angle in it between its ends and a valve mounted in one angular portion of the horn adjacent to said angle adapted to be rotated on its axis from outside of the horn to close off the admission of sound-waves from one angular portion of the horn to the other portion of the horn adjacent to said angle.

3. In a phonograph in combination with a record and reproducer in operative connection therewith; a horn attached to said reproducer having a distinct angle in it between its ends and a tubular valve mounted in one angular portion of the horn adjacent to said angle adapted to be moved to two different positions to close off the admission of sound-waves from one angular portion of the horn to the other portion of the horn adjacent to said angle.

4. In a phonograph in combination with a record and reproducer in operative connection therewith; a horn attached to said reproducer having a distinct angle in it between its ends and a tubular valve mounted in one angular portion of the horn adjacent to said angle adapted to be rotated on its axis to close off the admission of sound-waves from one angular portion of the horn to the other portion of the horn adjacent to said angle.

5. In a phonograph in combination with a record and reproducer in operative connection therewith; a horn attached to said reproducer made in two pieces joining each other at a distinct angle, one of said horn-pieces being rotatable with reference to the other at said angle-joint and a valve mounted in the joint connecting the said two portions of the horn adapted to be moved from outside of the horn to regulate the opening connecting the two portions of the horn.

6. In a phonograph in combination with a record and a reproducer in operative connection therewith; a horn attached to said reproducer made in two pieces or portions joining each other at a distinct angle one of the horn portions being rotatable with reference to the other portion and a tubular rotatable valve mounted in the joint connecting the two pieces of the horn adapted to be moved from outside the horn to regulate the opening connecting the two portions of the horn.

7. In a phonograph in combination with a record and a reproducer in operative connection therewith; a horn made in two parts, an elbow on one of said parts to which the other part of the horn is connected and a rotatable tubular valve mounted in said elbow adapted to normally allow sound-waves to pass from one portion of the horn to the other and adapted to be rotated on its axis from outside the horn to close said passage-way.

8. In a phonograph in combination with a record and a reproducer in operative connection therewith; a horn made in two parts, an elbow on one of said parts, a bearing on the end of the other part journaled in said elbow, a cap closing the end of the second horn part adjacent to said elbow, a crank-handle attached to a shaft extending through said cap and a tubular rotatable valve rigidly mounted on said shaft inside the bearing of the second portion of the horn adapted to normally allow air to pass from one portion of the horn to the other and adapted to be rotated by turning said crank-handle to close said passage-way.

9. In a phonograph in combination with a record having a reproducer in operative connection therewith a horn made in two parts, an elbow 30 on one of said parts, a bearing 31 on the other of said horn parts, journaled within said elbow 30, a shoulder 32 on the second horn portion bearing against said elbow, a cap 33 also bearing against said elbow and screws threaded into said bearing 31, a rotatable valve 40 journaled inside said bearing 31, a shaft 45 secured to said valve 40 passing through the cap 33, a crank-handle 48 connected to said shaft 45 by which said valve may be rotated, the whole being so arranged that in one position sound-waves from the reproducer may pass from one of said horn portions through the valve into the other portion of the horn and that rotating said valve 40 on its axis first reduces and finally substantially cuts off the passage of sound-waves through the horn all of the parts being shaped, arranged and disposed substantially as shown and described for the purposes set forth.

10. As an article of manufacture for use in mechanism of the class described, a short horn-section 53 having damper mechanism mounted therein, said horn-section being adapted when inserted in a break or cut in the horn to fit over one portion of the horn adjacent to said cut and inside the other horn portion adjacent to said cut as described.

813,671. APPARATUS FOR ANALYSIS OF GASES. ALFRED SCHLATTER and LUDWIG DEUTSCH, Budapest, Austria-Hungary. Filed Oct. 6, 1905. Serial No. 281,640.

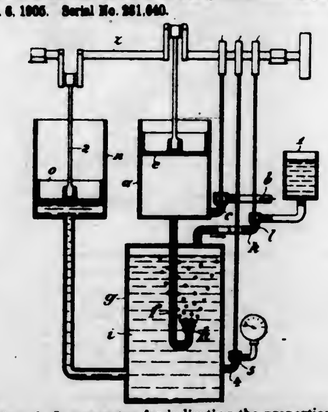

Claim.—1. In apparatus for indicating the proportion of carbonic acid contained in combustion-gases, a piston-pump of determinated stroke volume, means for continually driving the pump, an absorption vessel, means for connecting the absorption vessel with the piston-pump and means for expelling the analyzed gases out of the absorption vessel.

2. In apparatus for indicating the proportion of carbonic acid contained in combustion-gases, a piston-pump of determinated stroke volume, means for continually driving the pump, means for introducing the gases to be analyzed in the suction-pipe of the piston-pump, means for connecting the absorption vessel with the pressure-pipe of the piston-pump and means for expelling the analyzed gases out of the absorption vessel.

3. In apparatus for indicating the proportion of carbonic acid contained in combustion-gases, a piston-pump of determinated stroke volume, means for continually driving the pump, an absorption vessel, means for connecting the absorption vessel with the piston-pump and a cylinder having a piston for expelling the analyzed gases out of the absorption vessel.

4. In apparatus for indicating the proportion of carbonic acid contained in combustion-gases, a piston-pump of determinated stroke volume, means for continually driving the pump, an absorption vessel, means for connecting the absorption vessel with the piston-pump, a cylinder having a piston, means for connecting the cylinder with the liquid-space of the absorption vessel and means for indicating the stroke of the piston of the cylinder.

5. In apparatus for indicating the proportion of carbonic acid contained in combustion-gases, a piston of determinated stroke volume, means for continually driving the pump, an absorption vessel, means for connecting the absorption vessel with the piston-pump, a cylinder having a piston, means for connecting the cylinder with the liquid-space of the absorption vessel, means for indicating the stroke of the piston of the cylinder, means to brake these indicating means and means to release the indicating means at the end of the stroke of the piston.

6. In apparatus for indicating the proportion of carbonic acid contained in combustion-gases, a piston-pump of determinated stroke volume, means for continually driving the pump, an absorption vessel, means for connecting the absorption vessel with the piston-pump, means for expelling the analyzed gases out of the absorption vessel and means for replenishing the consumed absorption liquid.

813,672. **WATER-WHEEL.** JOSEPH SCHULTE, Jr., Walford, Iowa. Filed July 10, 1905. Serial No. 269,089.

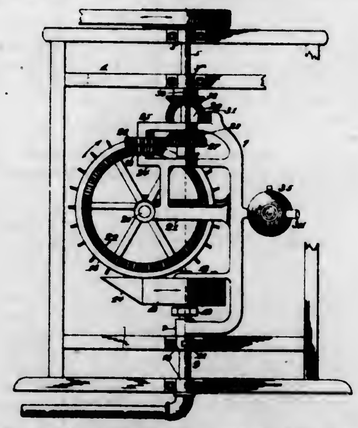

Claim.—1. The combination of a water-wheel, a sluice-gate therefor, a carrying-frame for said wheel and sluice, and gearing adapted to carry the wheel and its connections in an orbit around the axis of said frame, and transverse to the axis of said wheel.

2. The combination of a water-wheel, a sluice-gate to receive the dip of the wheel-blades, a head central to said sluice-gate, and having radial waterways therein, a central water-pipe connecting with said head, a frame on which the wheel and sluice are mounted, bearings to carry said frame and its connections revolubly about an axis central to said water-head, and gearing connecting with the water-wheel whereby said wheel is made to move in an orbit about an axis transverse to its own.

3. In combination with water-wheel mechanism, substantially as described, a cylindrical sluice-gate with a tangential outlet to take the dip of the wheel-blades, a water-head central to said sluice-gate, with radial waterways therein, a water-pipe communicating with said waterways, and mechanism adapted to rotate the sluice-gate around said water-head.

4. The combination of a main frame, an inner frame journaled to revolve inside said main frame, a pinion fixed to said main frame, a water-wheel mounted on the inner frame and adapted to revolve in a plane transversely diagonal to the axis of the frame's revolution, a sluice-gate mounted on said inner frame, and gearing connecting the fixed pinion with the water-wheel, whereby it is made to revolve in an orbit transverse to its own axis.

813,673. **RAIL FASTENING AND SUPPORT.** SAMUEL J. SCOTT, Columbus, Ohio. Filed June 17, 1905. Serial No. 265,670.

Claim.—1. The combination with a metallic railway-tie having an opening, of means for fastening and supporting a rail on the tie comprising bifurcated clamp members inserted through the opening and having their upper portions engaging with the rail, one or more devices projecting from each side of the tie about which one of the clamp members is engaged, and means for fastening the clamp members and the said projecting device together.

2. The combination with a metallic railway-tie having a transverse opening, of means for fastening and supporting a rail on the tie comprising angle-irons secured to the tie and projecting therefrom adjacent the opening thereof, bifurcated clamp members embracing the tie through its opening and having their upper ends engaged about the rail, one of said clamp members having its lower ends engaged about the angle-irons, and means for fastening the bifurcated portions of the clamp members and the angle-irons together.

3. The combination with a metallic railway-tie having a vertical web portion and laterally-extending flanges provided with an opening, of means for fastening and supporting a rail on the tie comprising bifurcated clamp members embracing the web of the tie through the opening and engaging over the lower portion of the rail at their upper ends, the said clamp members resting on the flanges of the tie beneath the rail, angle-irons secured to the web of the rail on opposite sides beneath the flanges and adjacent the openings, one of the said clamp members having its bifurcated portion engaging about the angle-irons, and means for fastening the clamp members and the angle-irons together.

813,674. **CLAMPING-SLEEVE FOR PNEUMATIC-DESPATCH TUBES.** JOHN F. SKINNOW, East Orange, N. J. Filed June 24, 1905. Serial No. 266,731.

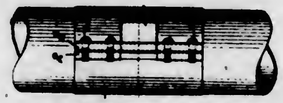

Claim.—1. A clamping-sleeve for pneumatic-despatch tubes comprising a broad sheet of thin flexible material adapted to be bent around a tube and provided at its longitudinal edges with outward-extending clamping-bars, a broad tongue formed on one longitudinal edge of said sleeve midway the ends thereof, a tongue-receiving socket being formed in the inner surface of said sleeve at the other longitudinal edge thereof and adapted to receive said tongue, whereby said tongue will bridge the joint between the longitudinal edges of the sleeve, and broad bearing and clamping surfaces will be provided on each side of the tongue and socket, and clamping-screws threaded through the clamping-bars on each side of th socket and tongue, said screws being adapted to draw together the longitudinal edges of the sleeve.

2. A clamping-sleeve for pneumatic tubes consisting of a longitudinally-split sleeve of thin resilient material adapted to be folded about the said tubes, the longitudinal edges of said sleeve being folded around longitudinal bars to form stiff clamping members, means secured to said clamping members to draw the two edges of the sleeve together, an outward-extending tongue or bridge-piece formed on one longitudinal edge of the sleeve, a socket being formed in the other edge of said sleeve on the inner side thereof to receive said tongue or bridge-piece when the two clamping members are drawn together.

813,675. **GLASS-CASTING APPARATUS.** JAMES R. SYMES, Pittsburg, and HENRY A. OTTO, Allegheny, Pa., assignors, by mesne assignments, to The Mississippi Wire Glass Company, Jersey City, N. J., a Corporation of New Jersey. Filed Apr. 9, 1903. Serial No. 151,948.

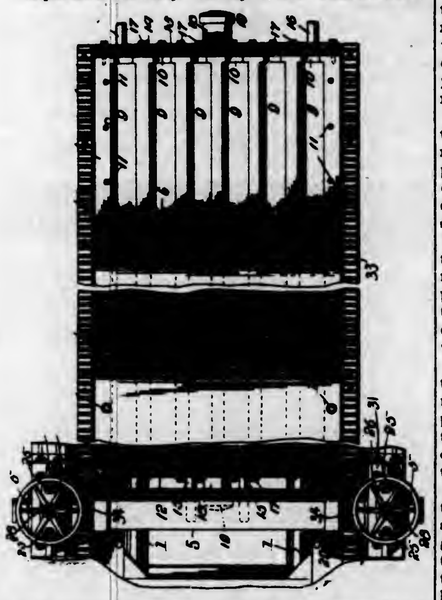

Claim.—1. A fluid-cooled casting-bed having contiguous sections so constructed that, when the sections are assembled open-ended parallel internal passages are thereby formed, channeled end sections bridging the ends of the passages, and inlet and outlet pipes connected respectively to the end sections.

2. In a glass-casting apparatus, a casting-bed having a plurality of separable external casting-surfaces, a support therefor during casting operations, and journals independent of the support, whereon the bed may after a casting operation be supported and rotated to bring a second casting-surface uppermost.

813,676. **VEHICLE-TIRE.** GEORGE M. STADELMAN, Akron, Ohio. Filed Apr. 26, 1904. Serial No. 205,016.

Claim.—1. In combination with the rim of a vehicle-wheel, a cushioning-tire upon said rim having its sides formed with circumferential retaining-band seats, retaining-bands extending about said seats, and rigid guiding means for said bands at the sides of the tire, unyieldingly supported on said rim and operating to guide said bands inwardly and downwardly against their seats and retain the tire in the rim-channel.

2. In combination with the rim of a vehicle-wheel, a cushioning-tire upon said rim, having a circumferential seat, a retaining-band extending about said seat and contacting with the yielding surface thereof, substantially throughout its circumference, and a plurality of rigid band-guides unyieldingly supported on said rim tending to maintain the engagement of said band with said seat.

3. In combination with the rim of a vehicle-wheel, a cushioning-tire upon said rim, having a circumferential seat, and a plurality of rigid band-guides unyieldingly supported on said rim and tending to maintain the engagement of said band with said seat at the points on the latter which coincide with the ends of said guides.

4. In combination with the rim of a vehicle-wheel, a cushioning-tire upon said rim, having a circumferential seat, a retaining-band extending about said seat, and a plurality of rigid band-guides unyieldingly supported on said rim, said guides terminating at their ends adjacent to the edge of the shoulder of said seat and tending to maintain the engagement of said band with said seat.

5. In combination with the rim of a vehicle-wheel, a cushioning-tire upon said rim formed with a circumferential seat about each side, retaining-bands extending around said seats and each contacting with the yielding surface of its seat substantially throughout the circumference of the latter, and a plurality of rigid band-guides unyieldingly supported on said rim and tending to maintain the engagement of said bands with said seats.

6. In combination with the rim of a vehicle-wheel, a cushioning-tire upon said rim formed with a circumferential seat about each side, retaining-bands extending around said seats, and band-guiding plates formed with end flanges, extending at intervals across the base of the tire with the flanges terminating adjacent to the edges of said seats and tending to maintain engagement of the bands with their seats.

7. In combination with the rim of a vehicle-wheel, a cushioning-tire upon said rim formed with a circumferential seat about each side, retaining-bands extending around said seats, and band-guiding plates molded at intervals into the base of the tire to extend across the same and formed with end flanges terminating adjacent to the edges of said seats and tending to maintain engagement of the bands with their seats.

8. In combination with the rim of a vehicle-wheel, a cushioning-tire upon said rim formed with a circumferential seat about each side, retaining-bands extending around said seats, and band-guiding plates molded at intervals into the base of the tire to extend across the same and formed with end flanges provided with inwardly-inclined extremities terminating adjacent to the edges of said seats and tending to maintain engagement of the bands with their seats.

9. In a vehicle-tire, the combination with a rim of an elastic tire, having a circumferentially-extending seat or shoulder at each side thereof, retaining-bands extending around said seats and band-guides comprising a base portion extending beneath the base of the tire, and side flanges terminating adjacent to the seats, and having their outer ends beveled inwardly toward the seats for causing said bands to cling to said seats.

813,677. **COMBINED BAYONET AND TELESCOPE.** FREDERICK W. STILLWELL, Scranton, Pa. Filed Mar. 17, 1905. Serial No. 250,745.

Claim.—1. A device of the class described comprising both a telescope and a bayonet, and means for adjustably securing the device alongside a gun-barrel.

2. A device of the class described comprising a tubular body portion, a removable bayonet-tip, and a magnifying-lens within the body portion.

3. A device of the class described comprising a tubular body portion, means for attaching the same to the barrel of a rifle or similar arm, magnifying-lens within the body portion, and a removable bayonet-tip for the body portion.

4. A device of the class described comprising the tubular body portion, a plurality of lenses held spaced apart within the body portion, means for securing said body portion to a rifle or similar arm,

and a removable bayonet-tip designed to be secured at the end of the tubular portion.

and for such tray extending beyond the cards on all four of their edges, grooves in each front and rear ends and a flexible cover shorter

through the hopper while the downward-moving part passes outside

said tachometer, connections between said shaft and cyclometer for

and a removable bayonet-tip designed to be secured at the end of the tubular portion.

5. A device of the class described comprising a tubular body portion, lenses arranged within the body portion, a bayonet-tip secured at one end of such body, means for detachably securing the body-tube to the barrel of a rifle or the like, and a guard having seats for both the barrel of the rifle and the tubular body.

6. A device of the class described comprising a tapering tubular body portion, a relatively large lens secured within the body portion near the large end thereof, a second lens secured within the body portion near the narrowed end thereof, a removable bayonet-tip threaded into the narrowed end of such tubular body portion, and means for detachably securing the device to a rifle.

7. The combination with a rifle or similar arm, of a combined bayonet and telescope comprising a tubular body portion, a bayonet-tip therefor, lenses arranged within the body portion, means for securing such body portion to the end of a rifle-barrel, and means for securing such body portion in a reversed position to the rifle when the tip is removed and the device is used as a telescope.

813,678. **VEHICLE-SPRING.** JOHN W. SUTTON, Collinsville, Ind. Ter. Filed Jan. 21, 1905. Serial No. 242,143.
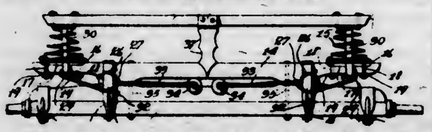
Claim.—1. In a vehicle, a spring formed of a coil of resilient wire, means for coupling said spring between the running-gear and the body of the vehicle, a relief-spring connected at one end to the running-gear, and a flexible coupling element between the free end of said relief-spring and the vehicle-body and extending through said coiled spring.

2. In a vehicle, a plate having spaced apertures and with means for coupling to the running-gear of the vehicle, a spring formed from a coil of resilient wire and connected at one end to said plate and at the other end to the body of the vehicle, a relief-spring connected at one end to the running-gear and extending at the other end beneath said plate, and flexible coupling means between said vehicle-body and the free end of said relief-spring and extending through the apertures in said plate.

3. In a vehicle, a spring formed of a coil of resilient wire, means for coupling said spring between the running-gear and the body of the vehicle, a relief-spring formed of spaced coils connected at one end by a transverse bar and with the other ends extended, said transverse connecting-bar disposed between the bolster member and axle of the vehicle, and a flexible coupling element between the free ends of said relief-spring and the vehicle-body.

813,679. **FILING-TRAY FOR CARD-INDEXES, &c.** AUGUST G. VETTER, Rochester, N. Y., assignor to Vetter Desk Works, a Corporation of New York. Filed Sept. 11, 1905. Serial No. 277,871.

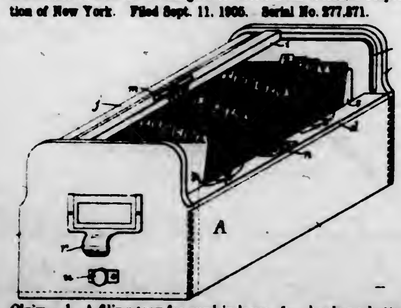

Claim.—1. A filing-tray for card-indexes, &c., having a bottom and suitable side and end pieces arranged to support the cards and expose them on one of their edges and a cover for such tray adapted in all of its positions relatively to such tray to be contained within the space between such end pieces and inclosed by lines connecting the same at any and all corresponding points on their edge peripheries.

2. A filing-tray for card-indexes, &c., having a front and a rear end for such tray extending beyond the cards on all four of their edges, grooves in such front and rear ends and a flexible cover shorter than the straightened-out length of such grooves and arranged to work therein and adapted when open to expose the cards on one edge thereof.

3. A filing-tray for card-indexes, &c., having a bottom and suitable side and end pieces arranged to support the cards and expose them on one of their edges and part way down on one of their adjacent sides and a cover for such tray adapted in all of its positions relatively to such tray to be contained within the space between such end pieces and inclosed by lines connecting the same at any and all corresponding points on their edge peripheries.

4. A filing-tray for card-indexes, &c., having a bottom and suitable side and end pieces arranged to support the cards and expose them on one of their edges and part way down on two adjacent sides and a cover for such tray adapted in all of its positions relatively to such tray to be contained within the space between such end pieces and inclosed by lines connecting the same at any and all corresponding points on their edge peripheries.

5. A filing-tray for card-indexes, &c., having a front and a rear end for such tray extending beyond the cards on all four of their edges, grooves in such front and rear ends and a flexible cover shorter than the straightened-out length of such grooves and arranged to work therein and adapted when open to expose the cards on one edge thereof and a part of an adjacent slide.

6. A filing-tray for card-indexes, &c., having a front and a rear end for such tray extending beyond the cards on all four of their edges, grooves in such front and rear ends and a flexible cover shorter than the straightened-out length of such grooves and arranged to work therein and adapted when open to expose the cards on one edge thereof and a part of two adjacent sides.

7. In a filing-tray for card-indexes, &c., adapted to support the cards and expose them on one edge and a part of an adjacent edge, a front and a rear end for such tray extending beyond the cards on all four of their edges, grooves in such front and rear ends and a flexible cover shorter than the straightened-out length of such groove and arranged to work therein, that portion of such grooves in the end pieces arranged to receive the cover when open concealed between the extreme outsides of the box and internal partitions for supporting and retaining the cards.

8. In a filing-tray for card-indexes, &c., adapted to receive and support the cards and expose them on one edge and a part of two adjacent edges, a front and rear end for such tray extending beyond the cards on all four of their edges, grooves in such front and rear ends and a flexible cover shorter than the straightened-out length of such groove and arranged to work therein, that portion of such grooves in the end pieces arranged to receive the cover when open concealed between the extreme outsides of the box and internal partitions for supporting and retaining the cards.

813,680. **SPRINKLING GRANULAR SUBSTANCES ON DOUGH IN BISCUIT-CUTTING MACHINES.** THOMAS VICARS and JOHN VICARS, the Younger, Burlestown, England. Filed Oct. 25, 1904. Serial No. 229,940.

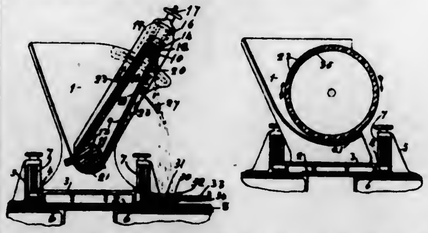

Claim.—1. In combination with biscuit-machines a hopper for containing the substance to be distributed, a conveyor having an uneven surface adapted to support a granular substance, the upward-moving part of the conveyor passing through the hopper while the downward-moving part passes outside the hopper, and mechanism for moving the conveyor to drop the granular substance on dough underneath the conveyor, substantially as described.

2. In combination with biscuit-machines a hopper for containing the granular substance to be distributed, an endless traveling sheet having an uneven surface passing round rollers at the top and bottom of the hopper the upward-moving part of the sheet passing through the hopper while the downward-moving part passes outside the hopper, a perforated plate below the conveyer, a solid plate arranged to be slid under the perforated plate, and mechanism for moving the conveyer to drop the granular substance through the perforated plate onto dough underneath such plate, substantially as described.

through the hopper while the downward-moving part passes outside the hopper, and mechanism for moving the sheet to drop the granular substance on dough underneath the sheet, substantially as described.

3. In combination with biscuit-machines a hopper for containing the granular substance to be distributed, an endless traveling sheet having an uneven surface passing round rollers at the top and bottom of the hopper the upward-moving part of the sheet passing through the hopper while the downward-moving part passes outside the hopper, the upper roller being adjustably supported on movable side plates and the back plate of the hopper being also fixed to the side plates, and mechanism for moving the sheet to drop the granular substance on dough underneath the sheet, substantially as described.

4. In combination with biscuit-machines a hopper for containing the granular substance to be distributed, an endless traveling sheet having an uneven surface passing round rollers at the top and bottom of the hopper the upward-moving part of the sheet passing through the hopper while the downward-moving part passes outside the hopper, circumferential grooves in the rollers and guiding-strips on the inner side of the traveling sheet fitting in the grooves, and mechanism for moving the sheet to drop the granular substance on dough underneath the sheet, substantially as described.

5. In combination with biscuit-machines a hopper for containing the substance to be distributed, a conveyor having an uneven surface adapted to support a granular substance the upward-moving part of the conveyor passing through the hopper while the downward-moving part passes outside the hopper, devices for varying the supporting capacity of the uneven conveyer-surface, and mechanism for moving the conveyor to drop the granular substance on dough underneath the conveyor, substantially as described.

6. In combination with biscuit-machines a hopper for containing the substance to be distributed, a conveyor having an uneven surface adapted to support a granular substance the upward-moving part of the conveyor passing through the hopper while the downward-moving part passes outside the hopper, a perforated plate below the conveyer, a solid plate arranged to be slid under the perforated plate, and mechanism for moving the conveyer to drop the granular substance through the perforated plate onto dough underneath such plate, substantially as described.

813,681. **COMBINED TACHOMETER AND CYCLOMETER.** CHARLES H. WARNER, Beloit, Wis. Filed Sept. 6, 1904. Serial No. 223,242.

Claim.—1. The combination with a shaft and means for rotating the same, of a tachometer having a hub, a sleeve connected to said hub, and a cyclometer, and means actuated by the rotations of said shaft for operating said tachometer and cyclometer, the cyclometer-actuating means being inclosed within said sleeve.

2. The combination with a casing and a sleeve or drum carried thereby, a magnetic tachometer arranged within said casing, a cyclometer supported respectively by said casing and sleeve or drum, a shaft extending through said drum or sleeve, and means operated by the rotations of said shaft for actuating both said tachometer and said cyclometer, the cyclometer-operating means being arranged within said sleeve or drum.

3. The combination with a magnetic tachometer having a rotating part, an inclosing casing therefor, a sleeve carried by said casing, a casting connected at one end to said casing and at the other end to said sleeve, a cyclometer supported by said casting, a shaft extending through said sleeve and connected to the rotating part of said tachometer, connections between said shaft and cyclometer for actuating the latter, said connections inclosed within said sleeve and means for rotating said shaft.

813,682. **THERMOPILE.** MEYER WILDERMAN and ROBERT L. MOSS, London, England. Filed Aug. 14, 1905. Serial No. 274,162.

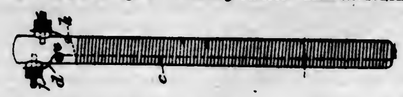

Claim.—1. A method of manufacturing thermopiles, consisting in drawing out to the desired thinness a compound wire strip or the like composed of a core and cover of different materials, removing the cover at intervals and so arranging the alternate compound and single portions that one set of corresponding ends of the various compound portions may be exposed to one temperature and the other set of corresponding ends may be exposed to another temperature, substantially as described.

2. A method of manufacturing thermopiles, consisting in drawing out to the desired thinness a compound wire strip or the like composed of a core and cover of different materials, removing the outer metal at intervals by immersing portions of the wire strip in a suitable acid or reagent and so arranging the alternate compound and single portions that one set of corresponding ends of the various compound portions may be exposed to one temperature and the other set of corresponding ends may be exposed to another temperature, substantially as described.

3. A method of manufacturing thermopiles, consisting in drawing out to the desired thinness a compound wire strip or the like composed of a core and cover of different materials, coating the compound wire strip at intervals with a substance impervious to acid or reagent and immersing the wire or strip in acid or reagent until the outer metal between such coated portions is removed and so arranging the alternate compound and single portions that one set of corresponding ends of the various compound portions may be exposed to one temperature and the other set of corresponding ends may be exposed to another temperature, substantially as described.

4. A thermopile consisting of a drawn metal or alloy wire strip or the like having at intervals in its length and in metallic contact therewith a cover of another drawn metal or alloy, the wire strip or the like being so arranged that one set of corresponding ends of the covered portions can be exposed to one temperature, and the other set to another temperature, substantially as described.

5. A thermopile consisting of a rod of insulating material upon which is wound a drawn wire around and drawn into metallic contact with which are pieces of a metal different from that of the wire, the covered portions of the wire being on one side of the rod and the uncovered portions on the other side so that one set of corresponding ends of the covering portions are on one side of the rod and the other set of corresponding ends are on the other side, substantially as and for the purpose described

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813,683. **CARBURETER.** EARL B. ADAMS, Battle Creek, Mich. Filed Apr. 10, 1905. Serial No. 254,705.

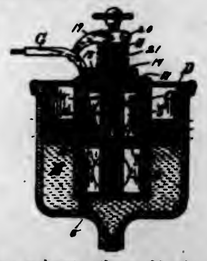

Claims.—1. In a carburetor, the combination of an encircling gasolene-reservoir, a float-controlled valve to supply said reservoir, a central chamber suspended within said reservoir, a diaphragm having an opening separating said chamber into an upper and a lower compartment, an air-valve operative on and adapted to vary the opening in said diaphragm, a spray-nozzle opening upward in close proximity to said opening in the upper compartment, an exhaust-

port to said compartment, an air-inlet to the lower compartment, and means to control said valve and spray-nozzle, substantially as set forth.

2. The combination of an annular chamber, a float-controlled valve to supply said chamber, a diaphragm having an opening separating said chamber into an upper and a lower compartment, an air-valve operative on and adapted to vary the opening in said diaphragm, a spray-nozzle opening upward in close proximity to said opening in the upper compartment, an exhaust-port to said compartment, an air-inlet to the lower compartment, and means to control said valve and spray-nozzle, substantially as set forth.

2. In a motor road-vehicle, a steering mechanism, a locking member non-rotatively connected to the vehicle, a steering-handle

3. In an electric motor, the combination with recording mechanism comprising an electromagnetically-controlled regulator, a

ism for opposing its operation under the sole action of the auxiliary shunt-coil when the main coil is inactive.

port to said compartment, an air-inlet to the lower compartment, and means to control said valve and spray-nozzle, substantially as set forth.

2. The combination of an encircling gasolene-reservoir, a float-controlled tapering valve to supply said reservoir, a central chamber suspended within said reservoir, a stand-pipe leading from said gasolene-reservoir through the center of said chamber, a diaphragm having an opening separating said chamber into an upper and a lower compartment, an air-valve operative on and adapted to vary the opening in said diaphragm, a spray-nozzle leading from said stand-pipe in close proximity to said opening in the upper compartment, an exhaust-port in said compartment, an air-inlet to the lower compartment and means to control said valve and spray-nozzle, substantially as set forth.

3. In a carbureter, the combination with an encircling gasolene-reservoir, and a float-controlled valve to supply said reservoir, of a central chamber suspended within and forming a part of said reservoir, said chamber being separated into an upper and a lower compartment by means of an apertured diaphragm, an air-inlet communicative with the lower compartment and an exhaust-port leading from said upper compartment, a valve operative on and adapted to open and close said apertured diaphragm, means to actuate said valve, a spray-nozzle communicative with said upper chamber at a point above and in close proximity to the aperture in said diaphragm, a valve to control said spray, and a lever to control said valve, for the purpose set forth.

4. In a carbureter, the combination with an air-chamber, of a vaporizing-chamber, an air-passage connecting said chambers, a valve adapted to vary the opening to said air-passage between said chambers, a stand-pipe leading through said chambers, a spray-nozzle leading from said pipe and opening above said air-passage within said vaporizing-chamber, an arm on said valve, a needle-valve in the stand-pipe to control the gas-forming fluid, a clamp carried by said needle-valve having a fixed connection to the valve controlling the opening between the vaporizing and air chambers, means located between said arm and said valve to hold the latter to its seat, a gasolene-reservoir encompassing said vaporizing and air chambers, a float carrying a tapering valve to control the feed-supply to said reservoir, said stand-pipe communicating with said reservoirs, and an inlet-pipe communicating with said valve, substantially as and for the purpose set forth.

5. In a carbureter, a gasolene-reservoir comprising an open-top cylindrical body having an indrawn bottom provided with a drainage-trap, a concentrically-disposed open-top chamber suspended within said reservoir and forming a part therewith by means of a uniting-web, an apertured diaphragm separating said chamber into an upper and a lower compartment, an exhaust-port leading through said web from said upper compartment, a waste-tube leading from said lower compartment through said reservoir, a stand-pipe communicative with said reservoir and passing through said compartments, a spray-nozzle leading from said stand-pipe and opening within said upper compartment, a valve to control said spray-nozzle, a valve operative on and adapted to vary the opening in said diaphragm, means to actuate both of said valves simultaneously, a cap to said reservoir, a float-controlled valve to supply said reservoir, and an inlet-pipe communicating with said float-valve, substantially as, and for the purpose set forth.

818,684. **MOTOR-CAR FOR PREVENTING SIDE SLIP.** THOMAS G. ALLEN, London, England. Filed Jan. 6, 1905. Serial No. 239,859.

Claim.—1. In a motor road-vehicle, a means for preventing unintentional operation of the steering-wheels during side slip, or the like, by utilising the natural grasp of the operator to lock said steering-wheels relatively to the vehicle-body, comprising a steering mechanism, a steering-handle connected thereto, said parts being normally free to operate to turn said wheels, and a member arranged in a position sufficiently close to said handle to permit both to be grasped by the same hand, said member being so mounted that it is rigidly connected to the vehicle-body when said handle and member are forcibly clasped by the hand.

2. In a motor road-vehicle, a steering mechanism, a locking member non-rotatively connected to the vehicle, a steering-handle connected to said mechanism, means for mounting said handle so that it has a definite path of movement with relation to said member, said handle and member being mounted closely adjacent to each other, and being adapted to be grasped by the hand of the operator, so as to lock said handle against movement relatively to said member.

3. For preventing side slip in motor road-vehicles the combination with the steering-handle of means fixed to the other part of the vehicle in which the handle turns, and so disposed in regard to the steering-handle that the driver may grip both the said fixed means and the steering-handle in one hand at one time and so lock the same together as and when required while the vehicle is in motion.

4. In a motor road-vehicle, a steering mechanism, a steering-wheel connected thereto, and a disk non-rotatively connected to the vehicle in substantially concentric relation to the steering-wheel, said disk and wheel being closely adjacent to each other so both may be grasped by one hand of the operator.

5. For preventing side slip in motor road-vehicles the combination of a steering-wheel, a steering-shaft operated by said wheel, a fixed part in which said steering-shaft turns, a disk fixed to the said fixed part just beneath the steering-wheel, the said disk being such that the driver can grip the same and hold the steering-wheel fast thereto or turn the steering-wheel freely as and when required while the vehicle is in motion.

6. In a motor road-vehicle, a steering mechanism, a steering-wheel, a disk mounted closely adjacent to said steering-wheel in substantially concentric relation thereto, a tube, and a post within said tube, the one being non-rotatively mounted with relation to the vehicle, and carrying said disk, and the other being connected to the steering mechanism and carrying said wheel.

813,685. **ELECTRICITY-METER.** HERMANN ARON, Charlottenburg, Germany. Filed Jan. 13, 1904. Serial No. 188,849.

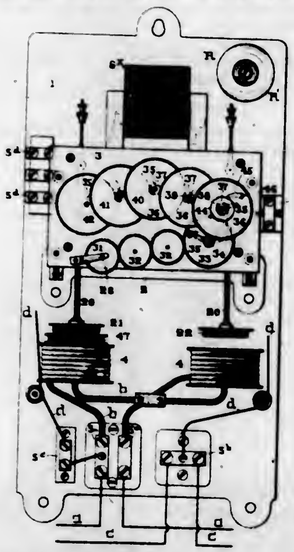

Claim.—1. In an electric meter, the combination with recording mechanism comprising a regulator electromagnetically controlled in its action by current passing through the main circuit, of means acting automatically when the flow of current through the main circuit is interrupted for inducing a retrograde movement of said recording mechanism, and means independent thereof for detaining the same against such retrograde movement.

2. In an electric meter, the combination with the recording mechanism comprising a regulator electromagnetically controlled in its action by current passing through the main circuit, of continuously-energized means for automatically assuming control of the recording mechanism when the flow of current through the main circuit is interrupted.

3. In an electric meter, the combination with recording mechanism comprising an electromagnetically-controlled regulator, a main magnet-coil connected with the main circuit from the source of current-supply and acting upon said regulator, and an auxiliary magnet-coil also acting upon said regulator and connected with a shunt-circuit from the source of current-supply.

4. In an electric meter, the combination with the recording mechanism, comprising an electromagnetically-controlled regulator, a main magnet-coil connected with the main circuit from the source of current-supply and acting upon said regulator to control the recording action of said mechanism, an auxiliary magnet-coil acting upon said regulator in opposition to said main magnet-coil, and means for locking said mechanism against retrograde motion under the action of the auxiliary magnet-coil when the flow of current is interrupted through the main magnet-coil.

5. In an electric meter, the combination with the recording mechanism, comprising a train of gearing and an electromagnetically-controlled regulator therefor, a main magnet-coil connected with the main circuit from the source of current-supply and acting upon said regulator to control the recording action of said mechanism, means applied to one of the members of the said train of recording mechanism for locking the same from retrograde movement, and means automatically brought into effective action by the interruption of the flow of current in the main circuit for bringing said locking means into operation.

6. In an electric meter, the combination with the recording mechanism, comprising a train of gearing and an electromagnetically-controlled regulator therefor, a main magnet-coil connected with the main circuit from the source of current-supply and acting upon said regulator to control the recording action of said mechanism, means for mechanically preventing the retrograde movement of said recording mechanism, and means for electrically preventing the forward movement of said recording mechanism when the flow of current in the main circuit is interrupted.

7. In an electric meter, the combination with the recording mechanism, comprising two differential trains of transmission-gearing and a common train of indicating-gearing connected therewith, regulators or escapements for each said train of differential gearing, a pair of main magnet-coils of like polarity each disposed adjacent to one of the said regulators and connected with the main circuit from the source of current-supply, magnet-coils of opposite polarity carried by said regulators, and each connected with a shunt-circuit from said source of current-supply, means applied to said train of indicating mechanism for mechanically locking the same from retrograde movement, and an auxiliary magnet-coil of opposite polarity disposed in juxtaposition to one of said main magnet-coils and also connected with the said shunt-circuit from the source of current-supply.

8. In an electric meter, the combination with a fixed main magnet-coil in the main circuit from the source of current-supply, a primary shunt magnet-coil in a shunt-circuit, a movable member carrying said shunt magnet-coil which is magnetically actuated under the influence of said main magnet-coil, and a train of clockwork recording mechanism connected with said movable member, of a fixed auxiliary shunt magnet-coil of less strength than said main coil and of opposite polarity in respect of the same, and a stop device applied to the recording mechanism for opposing its operation under the action of the auxiliary shunt magnet-coil when the flow of current in the main coil is interrupted.

9. In an electric meter, the combination with a fixed main magnet-coil in the main circuit from the source of current-supply, a primary shunt magnet-coil in a shunt-circuit, a movable member carrying said shunt magnet-coil which is magnetically actuated under the influence of said main magnet-coil, and a train of clockwork recording mechanism connected with said movable member, of a fixed auxiliary shunt-coil of less strength than said main coil and of opposite polarity, and a ratchet and pawl applied to a member of the train of recording mechanism and so disposed as to permit its operation under the influence of the main coil but to resist its reverse movement under the sole action of the auxiliary shunt magnet-coil.

10. In an electric meter, the combination with two main coils in the main circuit from the source of current-supply and two primary shunt magnet-coils, two pendula each carrying one of said shunt magnet-coils, which are each magnetically actuated under the influence of its respective main magnet-coil, and recording mechanism comprising two differentially-acting trains of mechanism each connected with and controlled by one of said pendula, of an auxiliary shunt magnet-coil adjacent one of said main magnet-coils and of opposite polarity, and a stop device applied to said recording mechanism for opposing its operation under the sole action of the auxiliary shunt-coil when the main coil is inactive.

813,686. **WRENCH.** EDWARD ATTEMS, Philadelphia, Pa. Filed Feb. 13, 1905. Serial No. 245,961.

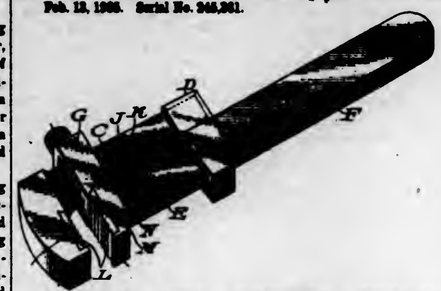

Claim.—1. In a wrench, a stationary jaw, a movable jaw, shanks for said jaws, yokes connected with respective members, the opposing shanks having opposite relative rocking movements, a single tightening device on one yoke to engage the shank carrying the other yoke to bind the parts within said yokes, and a shank-interlocking device intermediate the bearings of said shanks.

2. In a wrench, a stationary jaw having a shank, a movable jaw with a shank, a yoke rigid with each shank, each shank having a rocking fulcrum in the yoke of the other, one of said yokes having inclined walls, means between the yokes for interlocking the shanks, and means on one yoke between the other yoke and the jaw carried by its shank for engaging said shank to rock the parts on the fulcrum in the other yoke to bind the parts at each yoke and at a point between them.

3. In a wrench, a stationary jaw having a shank, a movable jaw with a shank, a yoke rigid with each shank, each shank having a rocking fulcrum in the yoke of the other, one of said yokes having inclined wall, means between the yokes for interlocking the shanks, and means on one yoke between the other yoke and the jaw carried by its shank for engaging said shank to rock the parts on the fulcrum in the other yoke to bind the parts at each yoke and at a point between them, said shank-interlocking means being normally out of engagement.

813,687. **WAGON-DUMPING APPARATUS.** DORA E. BARNES, WILLIAM O. BLACKBURN, and ALVA MILLER, Hays, Kans. Filed July 3, 1905. Serial No. 268,106.

Claim.—1. In an apparatus of the class described, the combination of inclined track-rails having vertical stops at the higher ends, a framework extending above the higher ends of said track-rails, a wagon for movement over said track-rails, tackle-blocks having means for detachably coupling to the forward axle of said wagon, tackle-blocks connected to the upper part of said upwardly-extended framework, and draw-cables extending through said tackle-blocks, whereby when power is applied to said draw-cables, the wagon will first be drawn upward upon the track-rails until the rear wheels engage the stop-blocks upon the same and then the forward end of the wagon elevated to cause the discharge of contents.

2. In an apparatus of the class described, a base-frame for movement over the ground, spaced riser members connected at one end to one end of said base-frame and inclined toward the opposite end of the same, spaced brace members connected between the said opposite end of said base-frame and the upper ends of said riser member, spaced track-rails having longitudinal flanges and connected to said base member at one end between said brace members and extending at an incline to the longitudinal plane of the base-frame and connected to said riser members intermediately thereof, stop-blocks at the higher ends of said track-rails, a wagon for movement over said track-rails, tackle-blocks having means for detachably connecting to the forward axle of said wagon, tackle-blocks connected to said riser members, and draw-cables extending through said tackle-blocks.

3. In an apparatus of the class described, the combination of spaced inclined track-rails having vertical steps at the higher ends and with trip members adjacent to said steps, riser members extending above the higher ends of said track-rails, a wagon for movement over said track-rails, tackle-blocks and draw-cables connected between the forward axle of said wagon and said riser members for moving said wagon upon said track-rails until its rear wheels engage said step-blocks and its forward end is elevated, a tail-board swinging outwardly from the body portion of said wagon and provided with laterally-extending arms and latches swinging from said wagon-body portion and detachably engaging said arms and adapted to be released by said trip members when the forward end of the wagon is elevated for discharging the contents.

813,688. APPARATUS FOR PREPARING BLEACHING LIQUOR. FREDERICK L. BARTLEY, Bristol, England. Filed Oct. 7, 1904. Serial No. 227,543.

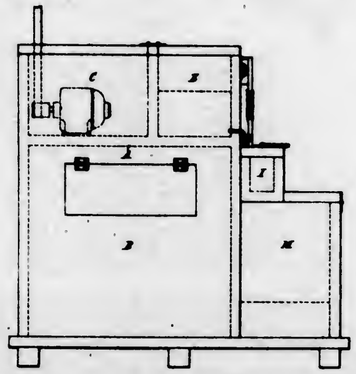

Claim.—1. An apparatus for preparing bleaching liquor, consisting of a solution-tank, an electrolyzer, and a bleaching-liquor tank, arranged at different levels, in combination with a source of electricity in circuit with the electrolyzer, a bell-circuit and an electrolyzing-circuit, a measuring device in the solution-tank, a float in the solution-tank adapted to close the bell and electrolyzing-circuits and break the main circuit under certain conditions, and outlets of various diameters from the solution-tank to the electrolyzer, all substantially as described.

2. An apparatus for preparing bleaching liquor comprising a solution-tank, a float therein, an electrolyzer at a lower level than the tank, and a bleaching-liquor tank below the electrolyzer in combination with a source of electricity in circuit with the electrolyzer, a bell-circuit and an electrolyzing-circuit including a switch adapted to be closed by the float, all substantially as described.

3. Apparatus for preparing bleaching liquor comprising a platform, a solution-tank on said platform and a source of electricity mounted on said platform, a storage-chamber situated under said platform, an electrolyzer below the level of the solution-tank, and a bleaching-liquor tank below the electrolyzer, a main circuit between the source and the electrolyzer, a switch in this circuit, a float in the solution-tank, and an electrolyzing-circuit including a switch adapted to be closed by the float, all substantially as described.

813,689. INDICATING AND RECORDING DEVICE. WILLIAM H. BRISTOL, New York, N. Y. Filed May 6, 1905. Serial No. 259,155.

Claim.—1. In an indicating and recording device, a combined indicating and recording arm, a chart backed or supported over only a portion thereof, the active or unsupported portion being left perfectly free to vibrate whereby the impact between the recording elements is gradually taken up, and means to cause transverse vibrations of one of the recording elements at said active or unsupported portion.

2. In an indicating and recording device, a combined indicating and recording arm, a chart backed or supported over only a portion thereof, the active or unsupported portion being left perfectly free to vibrate whereby the impact between the recording elements is gradually taken up, and means to periodically cause transverse vibrations of one of the recording elements at said active or unsupported portion.

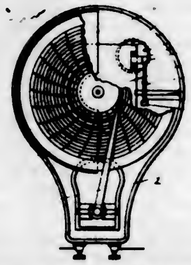

3. In an indicating and recording device, an indicating-arm, a chart backed or supported over only a portion thereof, the active or unsupported portion being left perfectly free to vibrate whereby the impact between the recording elements is gradually taken up and means to independently vibrate said chart at said active or unsupported portion.

4. In an indicating and recording device, an indicating-arm, a chart backed or supported over only a portion thereof, the active or unsupported portion being left perfectly free to vibrate whereby the impact between the recording elements is gradually taken up and means to periodically vibrate said chart at said active or unsupported portion.

5. In an indicating and recording device, an indicating-arm, a smoked chart backed or supported over only a portion thereof, the active or unsupported portion being left perfectly free to vibrate whereby the impact between the recording elements is gradually taken up and means to independently vibrate said chart at said active or unsupported portion.

6. In an indicating and recording device, a flattened indicating-arm, a revoluble chart backed or supported over only a portion thereof, the active or unsupported portion being left perfectly free to vibrate whereby the impact between the indicating elements is gradually taken up and means to independently vibrate said chart at said active or unsupported portion.

7. In an indicating and recording device, a flattened indicating-arm provided with a marking-point, a smoked revoluble chart unsupported over its active portion, clock mechanism, a bell-crank, and means in connection with said clock mechanism to vibrate said bell-crank, and means connected to the bell-crank to vibrate said active portions.

8. In an indicating and recording device, an indicating-arm, a chart backed and supported over substantially one-half its surface by a plate, the active portion being unsupported and free to vibrate, clock mechanism to revolve said chart, a bell-crank held in position by a spring, pins or blocks mounted upon a wheel of said clock mechanism and adapted to wipe one arm of said bell-crank causing it to thereby vibrate said chart.

9. In an indicating and recording device, a chart unsupported over its active portion, means to vibrate the active portion of said chart and means to limit the vibration of said active portion of the chart.

813,690. ADJUSTABLE DOOR-JAMB. JOHN R. CORBIN, New York, N. Y. Filed Mar. 17, 1905. Serial No. 250,541.

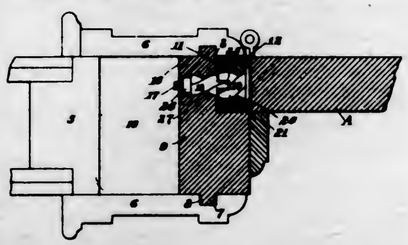

Claim.—1. The combination with a door-jamb or the like, of a movable strip therefor, and means for adjusting said strip relative to the jamb, such means comprising two members, one secured against rotation in the jamb and the other secured against rotation in the strip, said members being in alinement and having abutting end portions, and a rotating element connecting the two members.

2. The combination with a door-jamb, or the like, of a movable strip mounted in a groove cut in said jamb, said strip having a bore extending therethrough in alinement with a similar bore cut in the jamb, a sleeve member fixedly retained in each bore, and a rotatable element extending through both sleeve members whereby through the rotation of said element said strip may be tightened or loosened in the grooves of the jamb.

3. The combination with a jamb, of a strip designed to be secured thereto, and a device for permitting the adjustment of said strip relative to the jamb, comprising two sleeve portions arranged end to end, a screw-rod extending through said sleeve portions but held against longitudinal movement relative thereto, and means for locking one of said sleeve portions to the other.

4. An adjusting device for jambs and the like, comprising a strip portion, a tubular sleeve portion embedded in said strip and having a lateral slot cut transversely across the base thereof, a second sleeve portion provided with a reduced shoulder at the end thereof designed to engage said slot, and a screw-rod extending through the sleeve portions and designed to project into the jamb.

5. An adjusting device for jambs and the like, comprising a tubular sleeve portion, a second sleeve portion abutting end to end and adapted to interlock with the first sleeve portion, a screw-rod having its head countersunk in the head of the first-mentioned sleeve portion, and an inwardly-extending flange projecting over the head of the screw-rod to hold such screw-rod against longitudinal movement.

6. The combination with a jamb, of a sleeve portion arranged in a bore formed in said jamb, a second sleeve portion embedded in an adjustable strip arranged adjacent to the jamb, and held against rotation, and adapted to abut end to end with the first-mentioned sleeve portion, and a screw-rod extending through and connecting said sleeve portion substantially as set forth.

7. An adjusting device for jambs, and the like, comprising a strip, an exteriorly-threaded tubular sleeve extending through said strip, an exteriorly-threaded sleeve extending through the jamb, and a rotatable element passing through both of said sleeves.

813,691. BRAKE AND TRACK-SANDING MECHANISM. MURRY A. DE FRANCE, Newark, Ohio, assignor of one-fourth to Albert H. Simon, one-fourth to Charles H. Krebs, and one-fourth to W. Bernard Wingerter, Newark, Ohio. Filed Sept. 7, 1905. Serial No. 277,272.

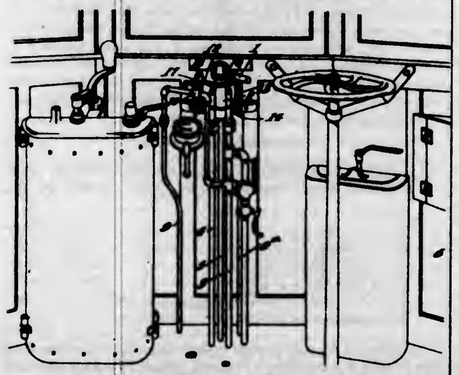

Claim.—1. The combination with track-sanding apparatus and air-brake apparatus, the latter including a brake-valve-actuating handle and the former including a fluid-pressure valve, of a lever mounted independently of said handle and extending contiguous thereto, in the "service," "running," and "on-lap" positions of said handle, in a plane parallel with the movement of said handle and so formed that the hand of the brakeman holds a constant relation to it in the arc of its movement, said lever being designed to actuate the fluid-pressure valve and being provided with a swell in the path of movement of the handle at the "emergency" position.

2. The combination with track-sanding mechanism provided with a fluid-pressure valve, and air-brake mechanism including a brake-lever and handle for actuating the same, of a lever mounted independently of said handle and extending contiguous thereto in a plane parallel with the plane of movement of said handle and through the traverse of the same, said lever being designed to actuate said valve and being provided at each end with a swell extending in the path of movement of said handle and designed to contact therewith in the emergency and release positions of the same.

3. The combination with a track-sanding apparatus including a fluid-pressure valve and an air-brake mechanism including a brake-valve and handle for actuating the same, of a bracket designed to be supported adjacent said handle and independently thereof, and a lever fulcrumed in said bracket at its end and consisting of a curved bar extending from end to end throughout the traverse of said handle and contiguous thereto and in a plane parallel to the plane of movement of said handle, said lever being provided with a projection or lug extending over said fluid-pressure valve, as and for the purpose set forth.

4. The combination with track-sanding mechanism including a fluid-pressure valve and air-brake mechanism including a brake-valve and handle for actuating the same, of a bracket mounted adjacent said handle, and a lever consisting of a curved bar detachably mounted at its ends in said bracket and extending independently of the handle contiguous thereto and in a plane parallel to the plane of movement thereof, said lever being provided at one end with a lug extending over said fluid-pressure valve and designed to actuate the same and being provided near its other end with a swell extending in the path of movement of said handle in the emergency position thereof, as and for the purpose set forth.

813,692. OPERATING HEADLIGHTS OF LOCOMOTIVES. WILLIAM H. DONALDSON, Joliet, Ill. Filed June 20, 1905. Serial No. 266,128.

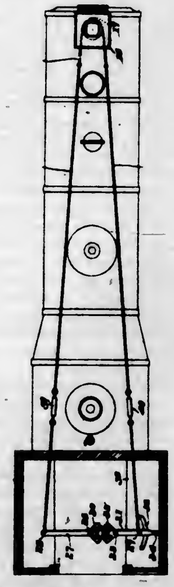

Claim.—In a device of the class described, a pivoted headlight, a primary lever pivoted intermediate its ends, rods connecting said headlight at opposite sides to the ends of the said primary lever, a gear-segment connected to said primary lever and concentric to its pivot, a secondary lever pivoted intermediate its ends, a gear-segment connected to said secondary lever and intermeshing with the gear-segment on said primary lever, a keeper extending beneath said secondary lever and supporting the same and provided with spaced teeth disposed concentric to the pivot of said secondary lever, and a pawl movably connected to said secondary lever and engaging said spaced teeth.

813,693. DOOR CHECK AND CLOSER. EDWARD L. ELLERBE, Catawba, N. Y. Filed Oct. 24, 1904. Serial No. 229,716.

Claim.—The improved door check and closer consisting of an arm rigidly sustained on the door-casing, a door-checking lever and

a door-closing lever rigidly united and fulcrumed on the aforesaid arm, said levers having their free ends adapted to engage respectively opposite sides of the door, and a spring actuating said levers and throwing the free ends thereof alternately into positions to press on the door substantially as set forth.

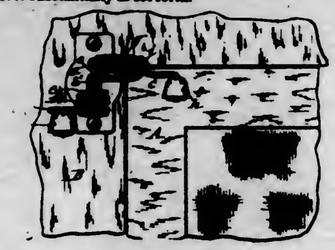

813,694. AUTOMATIC RIFLE. THEIS A. FERKLAND, Postvedt, Iveland, Norway. Filed Feb. 24, 1904. Serial No. 195,168.

Claim.—1. In an automatic rifle, the combination with the barrel and the breech-block, a pipe in communication with the barrel, a spring-pressed piston-rod therein upon which the powder-gases act, a cam on said rod, a substantially helical groove on the outer side of the breech-bock which groove said cam engages, locking-stops on the breech-block, a longitudinal guiding-passage in the frame, into which passage said stops travel during the reciprocating movement of the breech-block thereby preventing the block to be turned during such movement, an end face 45 of the helical groove against which face the cam bears during the rearward movement of the breech-block, a flat face 46 in the rear part of the helical groove against which face 46 the front end of the cam bears during the forward movement of the breech-block without causing any turning action on the same, and an inclined plane 24 provided on the frame of the rifle and located in the path of the foremost locking-stop and acting on the same at the last part of the forward movement of the breech-block, which is thereby turned sufficiently to remove the flat face 46 from the cam and enable the latter to reënter the helical groove in order to lock the breech-block.

2. In an automatic firearm, the breech-block having a substantially helical groove therein and locking-stops thereon, the pipe in communication with the barrel, a piston-rod in the pipe having a cam thereon, a passage 12 in the rear of the rifle-casing forming an extension of the pipe, said passage opening into the casing containing the breech-block, a spring in said passage acting upon the piston-rod, the said cam engaging with the slot in the breech-block when the piston-rod operates, an end face 45 of the helical groove against which face the cam bears during the rearward movement of the breech-block, a flat face 46 in the rear part of the helical groove against which face 46 the front end of the cam bears during the forward movement of the breech-block without causing any turning action on the same, and an inclined plane 24 provided on the frame of the rifle and located in the path of the foremost locking-stop and acting on the same at the last part of the forward movement of the breech-block, which is thereby turned sufficiently to remove the flat face 46 from the cam and enable the latter to reënter the helical groove in order to lock the breech-block.

3. In an automatic firearm, the breech-block having a substantially helical groove therein and locking-stops thereon, the pipe in communication with the barrel, a piston-rod in the pipe having a cam thereon, a passage 12 in the rear of the rifle-casing forming an extension of the pipe, said passage opening into the casing containing the breech-block, a spring in said passage acting upon the piston-rod, the said cam engaging with the slot in the breech-block when the piston-rod operates, an end face 45 of the helical groove against which face the cam bears during the rearward movement of the breech-block, a flat face 46 in the rear part of the helical groove against which face 46 the front end of the cam bears during the forward movement of the breech-block without causing any turning action on the same, and an inclined plane 24 provided on the frame of the rifle and located in the path of the foremost locking-stop and acting on the same at the last part of the forward movement of the breech-block, which is thereby turned sufficiently to remove the flat face 46 from the cam and enable the latter to reënter the helical groove in order to lock the breech-block, a longitudinal guiding-passage in the frame, into which passage said stops travel during the reciprocating movement of the breech-block thereby preventing the block to be turned during such movement, an end face 45 of the helical groove against which face the cam bears during the rearward movement of the breech-block, a flat face 46 in the rear part of the helical groove against which face 46 the front end of the cam bears during the forward movement of the breech-block without causing any turning action on the same, and an inclined plane 24 provided on the frame of the rifle and located in the path of the foremost locking-stop and acting on the same at the last part of the forward movement of the breech-block, which is thereby turned sufficiently to remove the flat face 46 from the cam and enable the latter to reënter the helical groove in order to lock the breech-block.

4. In an automatic firearm the breech-block having a groove therein and working in a passage forming an extension of the barrel, a pipe in communication with the barrel, a piston-rod in the pipe having a cam thereon projecting into said groove, a passage 12 in the rear of the rifle-casing forming an extension of the pipe, and a rear piece 16 screwed into the rear of the rifle-frame in order to close the end of said breech-block passage and having a nose 15 forming an extension of said rear piece and closing the rear end of said piston-rod passage 12.

5. In an automatic firearm the breech-block having a substantially helical groove therein and locking-stops thereon and working in a passage forming an extension of the barrel, the pipe in communication with the barrel, a piston-rod in the pipe having a cam thereon, a passage 12 in the rear of the rifle-casing forming an extension of the pipe, said passage 12 opening into the passage containing the breech-block, a rear piece 16 screwed into the rear of the rifle-frame in order to close the end of said breech-block passage and having a nose 15 forming an extension of said rear piece and closing the rear end of said passage 12, two removable pins, securing said rear piece 16 in position, a spring in the passage 12 acting upon the piston-rod, the said cam engaging with the slot in the breech-block when the piston-rod operates, an end face 45 of the helical groove against which face the cam bears during the rearward movement of the breech-block, a flat face 46 in the rear part of the helical groove against which face 46 the front end of the cam bears during the forward movement of the breech-block without causing any turning action on the same, and an inclined plane 24 provided on the frame of the rifle and located in the path of the foremost locking-stop and acting on the same at the last part of the forward movement of the breech-block, which is thereby turned sufficiently to remove the flat face 46 from the cam and enable the latter to reënter the helical groove in order to lock the breech-block.

6. In an automatic firearm, the barrel, the breech-block having the groove therein, the pipe in communication with the barrel, the spring-pressed piston-rod in the pipe having the cam thereon engaging with the groove, said rod also having the stud on one side thereof, a casing forming a continuation of the pipe, a slide moving longitudinally in said casing, a nose on said slide, said nose engaging with the stud on the piston-rod so that the rod will move with the slide and means for releasing said nose from the stud.

813,695. DAM, RETAINING-WALL, OR BREAKWATER. JOHN S. FERLAND, Toronto, Canada. Filed Jan. 16, 1905. Serial No. 241,245.

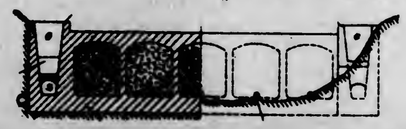

Claim.—1. An improvement in dams, retaining-walls and other like structures, comprising a base and vertical face-walls united to the base constructed of non-erosive material, a filling of inexpensive material contained between the face-walls, and abutments at the ends of the face-walls constructed of like material having therein chambers filled with an inexpensive material.

2. An improvement in dams, retaining-walls and other like structures, comprising a base and vertical face-walls united to the base constructed of non-erosive material, a filling of inexpensive material contained between the face-walls, and abutments at the ends of the face-walls having vertical chambers adjoining the reservoir fitted with sluice-gates, and water-ducts to carry away the water from the chambers to the downstream.

3. An improvement in dams, retaining-walls and other like structures, comprising a base and vertical face-walls united to the base constructed of non-erosive material, a filling of inexpensive material contained between the face-walls, abutments at the ends of the face-walls having vertical chambers adjoining the reservoir fitted with sluice-gates, water-ducts to carry away the water from the chambers to the downstream, and drains along the outer faces of the abutment-walls.

4. An improvement in dams, retaining-walls and other like structures, comprising a base and vertical face-walls united to the base constructed of non-erosive material, a filling of inexpensive material contained between the face-walls, abutments at the ends of the face-walls having vertical chambers adjoining the reservoir fitted with sluice-gates, water-ducts to carry away the water from the chambers to the downstream, and other chambers in the abutments filled with inexpensive material.

5. An improvement in dams, retaining-walls and other like structures comprising a base and vertical face-walls united to the base constructed of non-erosive material, a filling of inexpensive material contained between the face-walls, abutments at the ends of the face-walls having vertical chambers adjoining the reservoir fitted with sluice-gates, water-ducts to carry away the water from the chambers to the downstream, other chambers in the abutments filled with inexpensive material and drains along the outer faces of the abutment-walls.

6. An improvement in dams, retaining-walls and other like structures comprising a base and vertical face-walls united to the base constructed of non-erosive material, the upstream face-wall having inlet-openings through which the water from the reservoir may enter the space between the face-walls.

7. An improvement in dams, retaining-walls and other like structures, comprising a base, vertical face-walls united to the base and cross-walls bracing the face-walls intermediate their ends constructed of non-erosive material, the upstream face-wall having inlet-openings through which the water from the reservoir may enter the space between the face-walls.

813,696. STUMP-PULLER. JOHN K. FLYNN, Duluth, Minn. Filed Feb. 7, 1905. Serial No. 244,606.

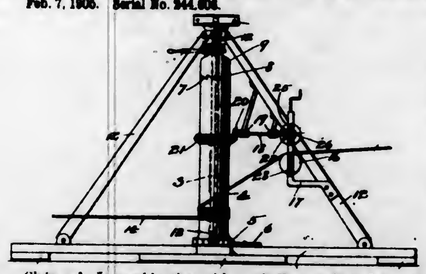

Claim.—1. In combination with a windlass, rods to brace the top of the windlass, a sheave journaled on one of said rods, said windlass and sheave geared for simultaneous operation, and another sheave adjustably mounted relative to said journaled sheave, substantially as shown and described.

2. In combination with a windlass, rods to brace the top of the windlass, an angular brace secured to one of said rods, a sheave journaled in said rod and angular brace, said sheave and windlass geared together for simultaneous operation, a U-shaped brace adjustably mounted on said angular brace, and a sheave journaled in said U-shaped brace, substantially as shown and described.

3. In combination with a windlass, rods to brace the top of the windlass, an angular brace secured to one of said rods having a slot therein, a sheave journaled on said rod and angular brace, beveled gear-faces on said windlass and sheave, a shaft having beveled gear-pinions on its ends to mesh with the respective gear-faces, a U-shaped brace having slots therein in which are mounted the ends of the axis of the sheave aforesaid, a sheave journaled in said U-shaped brace having its axis extending through the slot in the angular brace, and a set-screw secured in said U-shaped brace and bearing against the angular brace to adjust the sheave journaled in the U-shaped brace relative to the other sheave, substantially as shown and described.

813,697. BRACELET. THEODORE W. PEGRAM, Providence, R. I. Filed Dec. 6, 1905. Serial No. 290,889.

Claim.—1. In a hinged bracelet, a concealed hinge comprising a member having a solid end from which extends a rigid arm having a hook-shaped end, and a spring side arm extending from the solid end parallel with the rigid arm, and a member having a solid end from which extends a rigid arm, a pin secured transversely in the rigid arm adjacent its end and a spring side arm extending from the solid end parallel with the rigid arm, said members being provided with means for limiting the opening movement of the hinge and means for securing the members of the hinge in the bracelet.

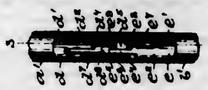

2. A concealed bracelet-hinge comprising a member *d* having a solid end *d'* from which extends a rigid portion d^3 reduced in thickness to form an arm d^4 having the hook-shaped end d^5 thickened on its inner face to form a stop-shoulder d^6, and a spring side arm d^7 extending from the solid end *d'* parallel with the rigid arm d^4 and forming a central opening d^8, and a member *e* having a solid end *e'* from which extends a rigid portion e^3 reduced in thickness to form an arm e^4 having the end e^5 thickened on its inner face to form a stop-shoulder e^6, a spring side arm e^7 extending from the solid end *e'* parallel with the rigid arm e^4 and forming a central opening e^8 and a transverse pin e^9 secured in the arm e^4 adjacent the end e^5 and across the opening e^8, and means for securing the members *d* and *e* of the hinge in a bracelet.

3. The combination with a tubular half *a* having the end *a'* and a tubular half *b* having the end *b'* of a bracelet, of a concealed hinge *c* composed of a member *d* having a solid end *d'* from which extends a rigid portion d^3 reduced in thickness to form an arm d^4 having a hook-shaped end d^5 thickened on its inner face to form a stop-shoulder d^6 and a spring side arm d^7 extending from the end *d'* parallel with the arm d^4 and forming a central opening d^8 and a member *e* having a solid end *e'* from which extends a rigid portion e^3 reduced in thickness to form an arm e^4 having the end e^5 thickened on its inner face to form a stop-shoulder e^6, a spring side arm e^7 extending from the solid end *e'* parallel with the arm e^4 and forming a central opening e^8, and a transverse pin e^9 secured in the arm e^4 adjacent the end e^5 and across the opening e^8, and means for securing the members *d* and *e* of the hinge in the ends *a'* and *b'* of the bracelet.

813,698. KNOTTER MECHANISM FOR GRAIN-BINDERS. PAUL HANSON, St. Paul, Minn. Filed Sept. 22, 1902. Serial No. 124,426.

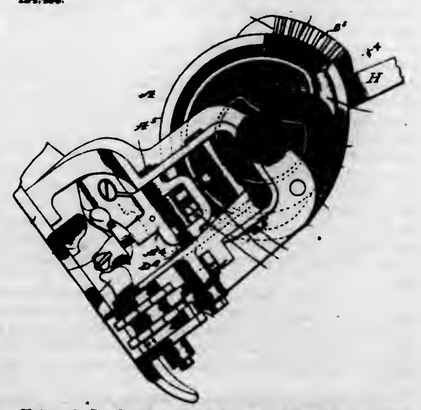

Claim.—1. In a knotter mechanism for grain-binders, a knotter-operating wheel, a knotter-bill, a frame in which said knotter-bill is mounted, a pinion for operating said knotter-bill, said frame being hinged or pivoted upon an axis, between which and said operating-wheel the pinion is located, and means for swinging said frame, as and for the purpose set forth.

2. In a knotter mechanism for grain-binders, a knotter-bill, a shaft carrying the same, a frame in which said shaft is journaled, said frame being hinged or pivoted, a pinion mounted upon said shaft, a knotter-operating wheel having gear-teeth with which said pinion cooperates to actuate said knotter-bill, said pinion being arranged between said cam-wheel and the pivotal axis of said frame; all combined and arranged as and for the purpose set forth.

3. In a knotter mechanism for grain-binders, a knotter-bill and

its supporting-shaft, a frame in which said shaft is journaled, a pinion mounted upon said shaft, a cam-wheel having gear-teeth with which said pinion coöperates, said frame being hinged or pivoted upon an axis arranged over the point of operation of said knotter-bill, said pinion being arranged between the cam-wheel and the axis upon which said frame is hinged or pivoted, said cam-wheel provided with an enlargement arranged to engage said frame to rock the same, all combined and arranged as and for the purpose set forth.

4. In a knotter mechanism for grain-binders, a knotter-bill, a shaft carrying the same, a frame in which said shaft is journaled, a pinion mounted on said shaft, a cam-wheel, and a flange formed on said frame and arranged to engage said cam-wheel, said frame being pivotally mounted upon an axis arranged to one side of said pinion, said pinion being arranged between the cam-wheel and the axis upon which said frame is pivoted, said flange being arranged above said axis; all combined and arranged as and for the purpose set forth.

5. In a knotter mechanism for grain-binders, a knotter-bill, a pivotally-mounted frame in which said knotter-bill is mounted, a pinion for operating said knotter-bill, an operating cam-wheel having a track in the face thereof, a flange carried by said frame and arranged to operate in said track, and a guiding-lug carried by said pinion and engaging the outer rim of said wheel when said frame is rocked to one limit of its swinging movement; all combined and arranged as and for the purpose set forth.

6. In a knotter mechanism for grain-binders, a knotter-bill, a shaft therefor, a pinion mounted on said shaft, a frame in which said shaft is mounted, said frame being hinged or pivoted, a cam-wheel having gear-teeth, said pinion being located between said cam-wheel and the axis upon which said frame is pivoted, a lug formed on said pinion and arranged to engage the rim of said wheel to form a guide for said pinion when said frame is rocked to one limit of its movement, a shoulder formed on said cam-wheel adjacent to the gear-teeth thereon and arranged to be engaged by the lug on said pinion to throw said pinion into mesh with the gear-teeth on said cam-wheel, said cam-wheel also operating to engage said frame to rock the same; as and for the purpose set forth.

7. In a knotter mechanism for grain-binders, a knotter-bill, a shaft, a frame in which said shaft is mounted, said frame being pivotally supported, a pinion mounted upon said shaft, an operating-wheel having gear-teeth, a flange formed on said frame, a ridge formed on said wheel adjacent to said gear-teeth, and with which said flange engages to lock said pinion and gear-teeth in mesh with each other during the rotation of said pinion, as and for the purpose set forth.

8. In a grain-binder, and in combination with a needle and packers and means for operating the same, of a knotter mechanism including a knotter-operating wheel, said wheel provided with gear-teeth for a portion of the face thereof and having a delay-surface and a trackway formed in the face thereof, said delay-surface being formed into an enlargement, a knotter-bill, a swinging frame in which said bill is mounted, a pinion for actuating said knotter-bill, and with which said rack-teeth coöperate, said pinion having a planed surface to coöperate with the delay-surface on said cam-wheel, said swinging frame having a flange arranged to operate in the trackway in the face of said cam-wheel and the planed surface on the pinion adapted to be engaged by the enlargement on the delay-surface in said cam-wheel to rock said frame, as and for the purpose set forth.

9. In a knotter mechanism for grain-binders, a knotter-bill, means for actuating the same, a swinging frame in which said knotter-bill is mounted, a cord-clamp, a swinging arm for actuating the same, a severing-cutter carried by said arm, and means for swinging said arm and frame in opposite directions, as and for the purpose set forth.

10. In a knotter mechanism for grain-binders, a knotter-bill and means for operating the same, a swinging frame in which said bill is mounted, a cord-clamping block, a severing-cutter operating past the face of said block to sever the cord or twine, and means for moving said severing-cutter in a direction opposite to that in which said knotter-bill frame swings, as and for the purpose set forth.

11. In a knotter mechanism for grain-binders, a knotter-bill and means for actuating the same, a swinging frame in which said knotter-bill is mounted, a stripper operating to strip the knot from said knotter-bill, and means for moving said stripper and swinging said frame in opposite directions, as and for the purpose set forth.

12. In a knotter mechanism for grain-binders, a knotter-bill and means for operating the same, a swinging frame in which said knotter-bill is mounted, a stripper, a swinging arm carrying said stripper, and means for swinging or operating said arm and frame coincidently and in opposite directions, as and for the purpose set forth.

13. In a knotter mechanism for grain-binders, a knotter-bill and means for operating the same, a swinging frame in which said knotter-bill is mounted, a stripper, a swinging arm carrying said stripper, means for swinging said frame into position to point the knotter-bill downwardly, and means for coincidently swinging said stripper-arm in the opposite direction to strip the knot from the bill, as and for the purpose set forth.

14. In a knotter mechanism for grain-binders, a knotter-bill and means for actuating the same, a swinging frame in which said knotter-bill is mounted, a cord-clamp block, a pivotally-mounted knife-arm, a severing-blade carried thereby and coöperating with said clamp-block to sever the cord, a stripper also mounted upon said arm, and means for moving said stripper and knife-blade and said swinging frame in opposite directions, as and for the purpose set forth.

15. In a knotter mechanism for grain-binders, the combination with a needle and its operating mechanism, a breastplate having an opening through which said needle operates, a knot-forming mechanism including a knotter-bill, a supporting-frame therefor, means for rocking said frame transversely across the slot in said breastplate, and a shoulder or projection formed on said breastplate and arranged to project toward the path of movement of said knotter-bill when said supporting-frame is rocked, said shoulder or projection operating to clear the knotter-bill of entangled twine in case of failure of the knot-forming mechanism to tie a knot, as and for the purpose set forth.

813,699. BOTTLE-CRATE. ROBERT M. HARROVER, Washington, D. C. Filed Apr. 7, 1905. Serial No. 254,342.

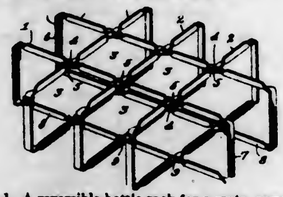

Claim.—1. A reversible bottle-rack for a crate, comprising upper and lower sets of transverse and longitudinal bars, the bars in each set crossing each other in spaced relation to provide pockets for the bottles, the bars in one set being in vertical alinement and parallel to the corresponding bars in the other set, and the ends of the bars of the upper and lower sets being connected by legs or supports whereby the said sets are maintained in spaced relation.

2. A reversible bottle-rack for a crate comprising upper and lower sets of transverse and longitudinal cross-bars, the bars in each set crossing each other in spaced parallel relation to provide pockets for the bottles, the bars in one set being in vertical alinement with and parallel to the corresponding bars in the other set, the corresponding alining bars in the upper and lower set being formed of a single band of metal bent to form said bars and vertical supports or legs connecting the ends of said bars.

3. A reversible bottle-rack of skeleton form, consisting of a plurality of endless loops each formed from a single strand of metal, said loops being arranged in spaced parallel relation and some of which are located at right angles to and overlap others, whereby to provide a plurality of cells, and the strands of said loops being rigidly connected at their points of intersection.

813,700. SIGNAL-LAMP. JOSEPH KIENNER, Topeka, Kans. Filed May 1, 1903. Serial No. 255,262.

Claim.—In a lamp of the class described, the combination of a tubular lamp-body, a separate metallic thickened strengthening-ring secured to the lower portion of the lamp-body said ring provided with an integral solid flaring annular flange on its lower edge extending below the lower edge of the lamp-body and with integral upwardly-extending perforated lugs on its upper edge, and means for securing the lugs to the lamp-body.

813,701. MACHINE FOR MAKING TUBES FROM PULP, PAPER, OR SIMILAR MATERIAL. WALTER B. HOYT, Whitington, Del., assignor to The E. I. Du Pont de Nemours Powder Company, Wilmington, Del., a Corporation of New Jersey. Filed May 19, 1905. Serial No. 261,148.

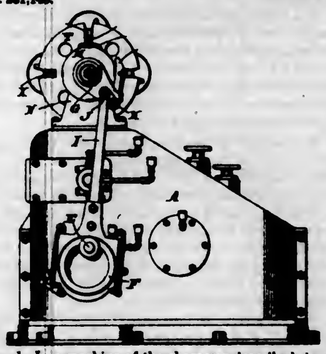

Claim.—1. In a machine of the character described, in combination, a couch-roll, a winding-roll adapted to receive the pulp or paper from the couch-roll, mechanism to move said roll away from operative relation with the couch-roll, said mechanism being normally inactive, and means whereby by reason of the winding-roll receiving a predetermined amount of pulp or paper, said mechanism becomes active.

2. In a machine of the character described, in combination, a couch-roll, a winding-roll adapted to receive the pulp or paper from the couch-roll, mechanism to move said roll away from operative relation with the couch-roll, said mechanism being normally inactive, means whereby, by reason of the winding-roll receiving a predetermined amount of pulp or paper, said mechanism becomes active, and means operated by the winding-rolls to again render said mechanism inactive.

3. In a machine of the character described, in combination, a couch-roll, a plurality of winding-rolls adapted to be moved successively in operative position with reference to the couch-roll, mechanism, normally inactive, to move said winding-rolls, means adapted to render said mechanism active by reason of the active winding-roll receiving a predetermined amount of pulp or paper.

4. In a machine of the character described, in combination, a couch-roll, a plurality of winding-rolls adapted to be moved successively in operative position with reference to the couch-roll, mechanism, normally inactive, to move said winding-rolls, means adapted to render said mechanism active by reason of the active winding-roll receiving a predetermined amount of pulp or paper, and means operated by the winding-rolls to again render said mechanism inactive.

5. In a machine of the character described, in combination, a couch-roll, a plurality of winding-rolls, means to move said winding-rolls one by one into operative position with respect to the couch-roll, and locking mechanism adapted to directly hold the operative winding-roll from movement beyond operative position with respect to the couch-roll.

6. In a machine of the character described, in combination, a couch-roll, a plurality of winding-rolls, means to move said winding-rolls one by one into operative position with respect to the couch-roll, and locking mechanism adapted to directly hold the operative winding-roll from movement in either direction from operative position with respect to the couch-roll.

7. In a machine of the character described, in combination, a couch-roll, a plurality of winding-rolls, means to move said winding-rolls one by one into operative position with respect to the couch-roll, and locking mechanism adapted to hold the operative winding-roll from movement beyond operative position with respect to the couch-roll, said winding-roll being released from said locking means by reason of a predetermined amount of pulp or paper being laid upon said roll.

8. In a machine of the character described, in combination, a couch-roll, a plurality of winding-rolls, means to move said rolls one by one into operative position with respect to said couch-roll, a locking device adjacent to said couch-roll in line of movement of the winding-rolls and adapted to yield in the movement of the winding-roll toward the operative position with respect to the couch-roll and allow said roll to pass beyond said locking device.

9. In a machine of the character described, in combination, a couch-roll, a plurality of winding-rolls, means to move said rolls one by one into operative position with respect to the couch-roll, each winding-roll being supported so as to be independently vertically movable, and a stop in line of movement of said winding-rolls in one vertical position of said rolls, and out of line at another vertical position of said rolls.

10. In a machine of the character described, in combination, a couch-roll, winding-rolls, a support or supports in which said rolls are independently secured, a shaft for operating said supports, a rack and pawl for operating said shaft, a cam adapted in one position to render said pawl inoperative, and means during the movement of said winding-rolls to move and hold said cam in said position, and means to release said cam when the operative winding-roll receives a predetermined amount of pulp or paper.

11. In a machine of the character described, in combination, a couch-roll, winding-rolls, a support or supports in which said rolls are independently secured, a shaft for operating said supports, means to operate said shaft, a device adapted to render said means inactive, means, during the movement of the winding-roll, to throw said device into action, and means to throw said device out of action when the operative winding-roll receives a predetermined amount of pulp or paper.

12. In a machine of the character described, in combination, a couch-roll, winding-rolls, a support or supports in which said rolls are independently secured, a shaft for operating said supports, a rack and pawl for operating said shaft, a cam adapted in one position to render said pawl inoperative, a spring tending to hold said cam in the other position, a lever, connected with said cam, in line of movement of the winding-rolls and adapted, when struck, to move said cam to the first-mentioned position.

13. In a machine of the character described, in combination, a couch-roll, winding-rolls, a support or supports in which said rolls are independently secured, a shaft for operating said supports, a rack and pawl for operating said shaft, a cam adapted in one position to render said pawl inoperative, a spring tending to hold said cam in the other position, a lever, connected with said cam, in line of movement of the winding-rolls and adapted, when struck, to move said cam to the first-mentioned position, and a stop, adapted to hold it in said position, controlled by the winding-roll in operative relation with the couch-roll.

14. In a machine of the character described, in combination, a couch-roll, winding-rolls, a support or supports in which said rolls are independently secured, a shaft for operating said supports, a rack and pawl for operating said shaft, a cam adapted in one position to render said pawl inoperative, a spring tending to hold said cam in the other position, a lever, connected with said cam, in line of movement of the winding-rolls and adapted, when struck, to move said cam to the first-mentioned position, a stop, adapted to hold it in said position, controlled by the winding-roll in operative relation with the couch-roll, and means to release said stop when said winding-roll receives a predetermined amount of pulp or paper.

15. In a machine of the character described, in combination, a couch-roll, winding-rolls, a support or supports in which said rolls are independently secured, a shaft for operating said supports, a rack and pawl for operating said shaft, a cam adapted in one position to render said pawl inoperative, a spring tending to hold said cam in the other position, a lever, connected with said cam, in line of movement of the winding-rolls and adapted, when struck, to move said cam to the first-mentioned position, a stop adapted to hold it in said position, said winding-rolls being supported so as to be vertically movable, said stop being controlled by the winding-roll in operative relation with the couch-roll in one vertical position and released in another vertical position.

16. In a machine of the character described, in combination, a winding-roll, supports for the opposite ends of said roll, said roll being pivotally secured in one support and adapted to move free from the other support.

17. In a machine of the character described, in combination, a winding-roll, supports for the opposite ends of said roll, said roll being pivotally secured in one support and adapted to move free from the other support, and means to normally restrain the movement of the roll at said last-mentioned end.

18. In a machine of the character described, in combination, a winding-roll, a shaft therefor projecting beyond the roll ends, a support for each end of said shaft, said shaft being pivoted in one support and adapted to move free from the other support.

19. In a machine of the character described, in combination, a winding-roll a shaft therefor projecting beyond the roll ends, a sup-

port for each end of said shaft, said shaft being pivoted in one support and adapted to move free from the other support, and means to

5. In a machine of the character described, in combination, the

suitably-supported hook-engaging pins one of said pins being adapt-

813,705. BRAKE-BEAM. CHARLES P. HUNTOON, Chicago, Ill., as-

port for each end of said shaft, said shaft being pivoted in one support and adapted to move free from the other support, and means to normally restrain the free movement of said shaft.

20. In a machine of the character described, in combination, a winding-roll, a shaft therefor, projecting beyond the ends of said roll, a frame having a slotted and cut-away portion, a block in said slotted portion, said shaft being pivotally connected to said block, a support for the opposite end of the shaft on which the shaft is free to move.

21. In a machine of the character described, in combination, a winding-roll, a shaft therefor, projecting beyond the ends of said roll, a frame having a slotted and cut-away portion, a block in said slotted portion, said shaft being pivotally connected to said block, a stop limiting the movement of said shaft on its pivot in one direction, a support for the opposite end of the shaft in which the shaft is free to move.

22. In a machine of the character described, in combination, a winding-roll, a shaft therefor, projecting beyond the ends of said roll, a frame having a slotted and cut-away portion, a block in said slotted portion, said shaft being pivotally connected to said block, a support for the opposite end of the shaft on which the shaft is free to move, and a latch for limiting the free movement of said shaft.

813,702. **PRINTING-MACHINE.** BENJAMIN B. HOUGH, Philadelphia, Pa., assignor of one-half to Andrew Forbes, Philadelphia, Pa. Filed Dec. 9, 1904. Serial No. 236,121.

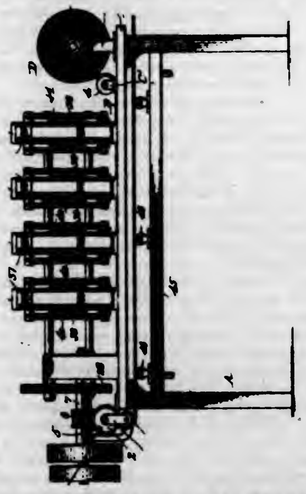

Claim.—1. In a machine of the character described, the combination with the supporting-table having paper-roll supports at one end and draw-rolls at the other end, a plurality of reciprocating plungers carrying type-forms arranged in alinement between the roll-supports and draw-rolls, inking mechanism for each plunger, a main shaft having a worm and gear wheel, parallel shafts geared directly to the main shaft and directly actuating respectively the plungers and inking devices; the actuating-roll of the draw-rolls having a worm-wheel meshing with the worm of the main shaft.

2. In a machine of the character described, in combination, a supporting-table having roll-supporting devices at one end and draw-rolls at the other end, printing mechanism located intermediate the roll-support and draw-rolls, and means beneath the table for drying the freshly-printed article after it leaves the draw-rolls.

3. In a machine of the character described, in combination, the columns arranged in pairs, crank-shafts journaled therein, plungers actuated by said shafts and provided at their lower ends with guide-grooves, an ink-well and distributing-rolls carried by the several columns, a traveling ink-roll the frame of which is provided with studs adapted to traverse the grooves of the plunger, and means for actuating said traveling ink-roll.

4. In a machine of the character described, in combination, the columns arranged in pairs, crank-shafts journaled therein, plungers actuated by said shafts, an ink-well and distributing-rolls, a traveling ink-roll, and means for actuating said traveling ink-roll from the plunger.

5. In a machine of the character described, in combination, the columns arranged in pairs, crank-shafts journaled therein, plungers actuated by said shafts, an ink-well and supply-roll, a traveling ink-roll, and means for actuating said traveling ink-roll and supply-roll from the plunger.

6. In a machine of the character described, in combination, the columns arranged in pairs, crank-shafts journaled therein, plungers actuated by said shafts and provided at their lower ends with guide-grooves, an ink-well and distributing-rolls carried by the several columns, a traveling ink-roll the frame of which is provided with studs adapted to traverse the grooves of the plunger, and means for actuating said traveling ink-roll from the plunger.

7. In a machine of the character described, in combination, the columns arranged in pairs, crank-shafts journaled therein, plungers actuated by said shafts and provided at their lower ends with guide-grooves, an ink-well and distributing-rolls carried by the several columns, a traveling ink-roll the frame of which is provided with studs adapted to traverse the grooves of the plunger, a rock-shaft journaled on the column and carrying geared segments and arms, a shaft journaled beneath the rock-shaft carrying gear-wheels and pinions, rack-bars sliding in ways on the cloumn and means carried by the plunger to actuate the rack-bar.

8. In a machine of the character described, in combination, the columns arranged in pairs, crank-shafts journaled therein, plungers actuated by said shafts and provided at their lower ends with guide-grooves, an ink-well and distributing-rolls carried by each of the several columns, a traveling ink-roll the frame of which is provided with studs adapted to traverse the grooves of the plunger, a rock-shaft journaled on the column and carrying geared segments and arms, a shaft journaled beneath the rock-shaft carrying gear-wheels and pinions, rack-bars sliding in ways on the columns, a spring-pressed bolt carried by the plunger to engage the rack-bars, a latch pivoted to the plunger and to the bolt, and a fixed stud supported by the column to engage the latch.

9. In a machine of the character described, in combination, the columns arranged in pairs, crank-shafts journaled therein, plungers actuated by said shafts and provided with guide-grooves, a traveling ink-roll the frame of which is provided with studs adapted to traverse the grooves of the plunger, an ink-well and supply-roll carried by each of the several columns and means for actuating said roll from the plungers.

10. In a machine of the character described, in combination, the columns arranged in pairs, crank-shafts journaled therein, plungers actuated by said shafts and provided with guide-grooves, a traveling ink-roll the frame of which is provided with studs adapted to traverse the grooves of the plunger, an ink-well and supply-roll carried by each of the several columns, means for actuating said roll from the plungers, a pivoted frame carrying distributing-rolls, and means for actuating the frame on its pivot.

11. In a machine of the character described, in combination, the columns arranged in pairs, crank-shafts journaled therein, plungers actuated by said shafts and provided with guide-grooves, a traveling ink-roll the frame of which is provided with studs adapted to traverse the grooves of the plunger, an ink-well and supply-roll carried by each of the several columns, means for actuating said roll from the plungers, a friction-wheel actuated from the main shaft, a pivoted frame carrying distributing-rolls one of which has an extended shaft provided with a friction-wheel, and a spring to actuate the frame on its pivot.

813,708. **SHAFT AND POLE COUPLING FOR VEHICLES.** WILLIAM HULLEMEAN, Independence, Iowa. Filed Aug. 18, 1905. Serial No. 274,787.

Claim.—1. A hound-frame including a straight front member and end members connecting said front member with and supporting it above the horizontal plane of a vehicle-axle, an auxiliary intermediate brace connecting said front member with the axle, clip-plates connected with the front member and having terminal hooks at their front ends, and a resilient lever having a terminal front hook and supporting-plate and a terminal rear hook adapted to engage the auxiliary brace.

2. A hound-frame having clip-plates provided with terminal hooks, a draft element having clip members provided with hook-engaging pins, a securing member consisting of a suitably-supported resilient lever having a pin-engaging hook, and means for securing the free end of the lever in locked position.

3. A hound-frame having clip-plates provided with terminal hooks, a locking-lever associated with said clip-plates and having a terminal front hook and a supporting-plate, a draft element having suitably-supported hook-engaging pins one of said pins being adapted for engagement with the locking-lever between the hook and the supporting-plate of the latter, and means for securing the locking-lever in operative position.

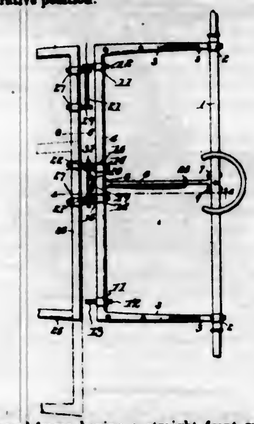

4. A hound-frame having a straight front member provided with a plurality of clip members including plates having front terminal hooks and eyes, a draft element having a plurality of supporting members, pins supported by said members and adapted for interchangeable engagement with the hooks and eyes supported by the front hound member, and means for effecting a locking engagement between said pins and hooks.

5. A hound-frame including a front member supported above and in front of a vehicle-axle, clip-plates connected with said front member and having front terminal hooks, a draft element having a supported pin for engagement with said front terminal hooks, a lever having a pin-engaging end including a hook and a supporting-plate, the latter constituting an ejector, and means for securing said lever in engaging position.

813,704. **BRAKE-BEAM.** CHARLES F. HUNTOON, Chicago, Ill., assignor to Chicago Railway Equipment Company, Chicago, Ill., a Corporation of Illinois. Filed July 13, 1905. Serial No. 270,171.

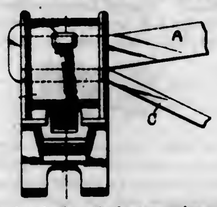

Claim.—1. The herein-described compression member for brake-beams, the same being transversely grooved at its ends to receive a locking-key for holding the brake-head in position; substantially as described.

2. The combination with a compression member having a groove in its end, of a tension member bent around the end of said compression member and forming one wall of said groove, a brake-head having openings designed to register with said groove, and a member passing through the openings in the brake-head and their alining groove; substantially as described.

3. In a trussed brake-beam, the combination of a compression member and a tension member, one of said parts having a groove, and a sleeved brake-head fitting over the ends of said compression and tension members and having openings designed to register with said groove, and a member passing through the openings in the brake-head and said alining groove; substantially as described.

4. In a trussed brake-beam, the combination of a compression member and a tension member bent around the ends of said compression member, one of said parts being formed with a groove, a brake-head having openings designed to register with said groove, and a member passing through the openings in the brake-head and said alining groove; substantially as described.

813,705. **BRAKE-BEAM.** CHARLES F. HUNTOON, Chicago, Ill., assignor to Chicago Railway Equipment Company, Chicago, Ill., a Corporation of Illinois. Filed July 13, 1905. Serial No. 270,173.

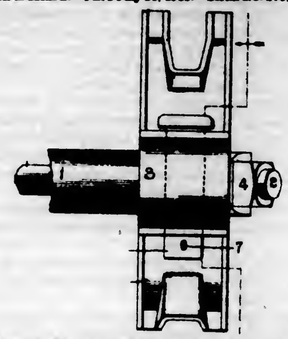

Claim.—1. In a trussed brake-beam, the combination with a thrust-block having a tapered opening, of a removable brake-head provided with registering openings, and a tapered wedge-key passing through said openings for securing said removable brake-head in position; substantially as described.

2. In a trussed brake-beam, the combination with a thrust-block having inclined faces, of a removable brake-head fitting upon said thrust-block, and a securing device which tends to more firmly seat the brake-head in position; substantially as described.

3. The herein-described thrust-block for brake-beams, the same having a tapered opening for the reception of a brake-head-securing key; substantially as described.

4. The herein-described thrust-block, the same having tapered faces adapted to be embraced by correspondingly-shaped parts on a brake-head; substantially as described.

5. The herein-described brake-head, the same being provided with rearwardly-extending flanges having tapered faces for embracing a correspondingly-shaped part on which it is seated; substantially as described.

6. The herein-described thrust-block for brake-beams, the same having a recess for a brake-hanger and an opening for the passage of securing means for the brake-head; substantially as described.

7. In a trussed brake-beam, the combination of a thrust-block and a removable brake-head, one of said parts having an opening and the other of said parts being provided with a registering opening, and a tapered wedge-key passing through said openings; substantially as described.

813,706. **BRAKE-BEAM.** CHARLES F. HUNTOON, Chicago, Ill., assignor to Chicago Railway Equipment Company, Chicago, Ill., a Corporation of Illinois. Filed July 20, 1905. Serial No. 271,862.

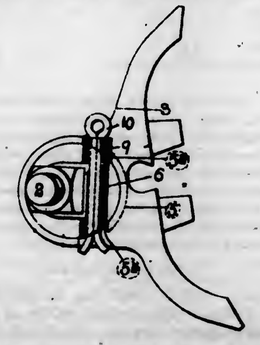

Claim.—1. In a trussed brake-beam, the combination with a thrust-block having a notched flange at its inner end and a perforated beam at its outer end, a brake-head having a projection on its inner end extending into the notch of said flange and having a perforated boss on its outer end registering with the perforated beam of

the thrust-block, and a fastening device passing through said perforated bosses; substantially as described.

3. In a trussed brake-beam, the combination with a thrust-block having a notched flange on its inner end, a brake-head having similar perforated bosses on its inner and outer ends, the boss on the inner end entering the notch in said flange, and means cooperating with the boss on the outer end of said brake-head for holding said brake-head in position; substantially as described.

3. In a trussed brake-beam, the combination with a thrust-block having a perforated boss, of a brake-head fitting on said thrust-block and provided with a registering perforated boss, the perforations in said bosses being of substantially the same size, and a fastening device passing through said perforated bosses so as to hold the parts immovably together; substantially as described.

4. The herein-described thrust-block, the same having a circumferentially-notched flange at its inner end and a perforated boss at its outer end; substantially as described.

5. The herein-described thrust-block, the same having a flange at its inner end, said flange having notches or recesses 5^a and 5^b; substantially as described.

6. The herein-described brake-head, the same having a perforated boss on both ends; substantially as described.

813,707. QUILTING-FRAME. HUGH H. JACKSON, Lebanon, Tenn. Filed May 17, 1905. Serial No. 260,817.

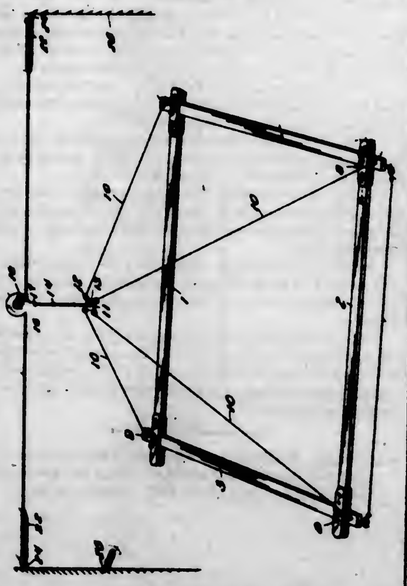

Claim.—In a quilting-frame, side bars, each having pairs of upper and lower clamping-plates secured thereto and extending over opposite ends thereof, end bars removably clamped between the said clamping-plates, a trolley-wire disposed above the frame, a traveling hanger disposed upon the said wire, a plate slidably mounted upon the hanger, a connection between the opposite ends of each end bar and the said plate, means for adjusting the plate vertically upon the hanger, and a flexible connection between the end bars and extending parallel with the corresponding side bar.

813,708. CONTRIVANCE FOR COVERING CARDBOARD, SHEET METAL, WOOD, &c., WITH PAPER, &c. FERDINAND H. JOHNSSON, Pforzheim, Germany. Filed June 20, 1905. Serial No. 265,492.

Claim.—In a cardboard-covering machine, a glue-roller, combined with a feed-roller and a guide-roller placed in proximity to the glue-roller at a distance from the feed-roller, a pressure-roller above the guide-roller, and a divided feed-table at opposite sides of the guide-roller, substantially as specified.

813,708.

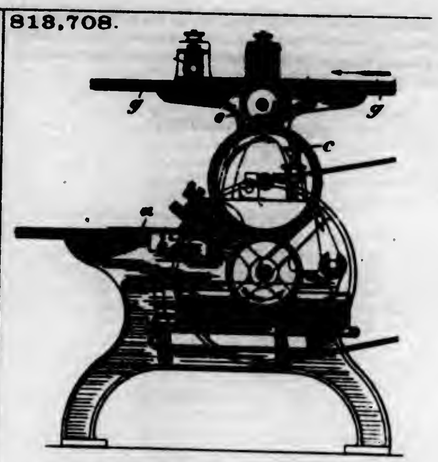

813,709. COMPOSITION FOR CLEANING LITHOGRAPHIC STONES. JOSEPH JAMES, Baltimore, Md. Filed Dec. 4, 1905. Serial No. 290,692.

Claim.—1. The herein-described composition of matter, consisting of an acid reacting compound, a solution of strontian nitrate, nitric acid and water substantially as described and for the purpose specified.

2. The herein-described composition of matter for preparing lithographic stones after having been previously used, consisting of a solution of acetic acid, thirteen ounces, a solution of strontian nitrate, seven and a half ounces, nitric acid, about five ounces, and water substantially pure, fifteen ounces, substantially as described.

3. The herein-described composition of matter for preparing lithographic stones after having been previously used, consisting of a solution of an acid reacting compound, thirteen ounces; a solution of strontian nitrate, seven and a half ounces, nitric acid, about five ounces, and water substantially pure fifteen ounces, substantially as described.

813,710. RELAY. HERMINE JOHANSSON, Stockholm, Sweden, assignor to Aktiebolaget L. M. Ericsson & Co., Stockholm, Sweden, a Corporation. Filed July 21, 1904. Serial No. 217,081.

Claim.—1. In a relay, the combination of electromagnetic coils, an insulating-block associated therewith, a contact secured at each end of said block, and an armature adapted to alternately engage the poles of the electromagnetic coils and to press the contacts together, substantially as described.

2. In a relay, the combination of electromagnetic coils, a pivoted armature, a set of contacts, and means near the center of the armature for pressing the contacts together when the armature is attracted, substantially as described.

3. In a relay, the combination of electromagnetic coils, an insulating-block arranged over the coils, a spring-contact secured to each end of said block, the free ends of said contacts overlapping, and an oscillating armature adapted to press said contacts together, substantially as described.

4. In a relay the combination of electromagnetic coils, a pivoted armature having a hook-shaped part at each end thereof and a set of contacts arranged to be pressed together when the armature is attracted, said hook-shaped parts being adapted to alternately engage the pole-pieces of the coils, substantially as described.

5. In a relay, the combination of electromagnetic coils, a double-armed armature pivoted at its center, a set of contacts, and means near the center of the armature for pressing the contacts together, substantially as described.

6. In a relay, the combination of electromagnetic coils, an armature with hook-shaped ends adapted to alternately partially encircle the pole-pieces of said coils, a set of contacts associated with the armature, means for returning the armature to its normal position and means for preventing the armature from adhering to said pole-pieces upon cessation of the flow of current, substantially as described.

7. In a relay, the combination of electromagnetic coils, an armature pivoted intermediately of the coils, a set of contacts adapted to be pressed together by the armature when the latter is attracted, and means for regulating the tension of the armature, said means comprising a slotted screw mounted in a standard, and a spring extending from said screw to a post on the armature substantially as described.

8. In a relay, the combination of electromagnetic coils, pole-pieces passing therethrough, said pole-pieces being surrounded by copper sockets, a plate mounted on said pole-pieces carrying an insulating-block, contacts on said block, an armature pivoted near its center having an insulated pin for pressing together said contacts, an adjustable screw mounted on said plate, a second plate, a second pin on the armature and a spring extending from said screw to said second pin for returning the armature to its normal position, substantially as described.

813,711. FERTILIZER-DISTRIBUTER. CHARLES JOHNSON, Cortland, N. Y., assignor to Cortland Implement Company, Cortland, N. Y., a Corporation of New York. Filed May 13, 1905. Serial No. 260,956.

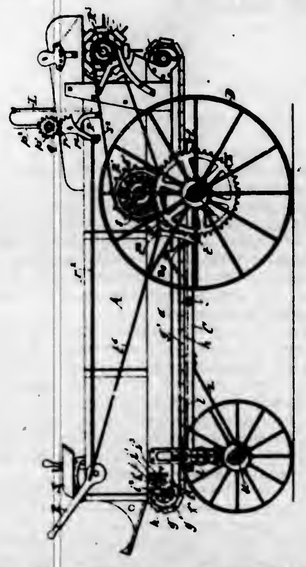

Claim.—1. The combination with the vehicle-body provided with a longitudinally-movable apron, a ratchet-wheel transmitting motion to said apron, and pawls engaging the ratchet-wheel at diametrically opposite points, of a rotary cam-plate having its cams projecting equidistant from the axis of the plate and disposed uniform distances apart, a link suspended from the body and swung by contact with the cams, a rock-arm pivoted at one end to the body, a bar pivotally connecting the opposite end of the rock-arm to the link, a collar mounted on the rock-arm movably lengthwise thereof, rods connected to said collar and transmitting motion to the pawls, and means for shifting the collar on the rock-arm as set forth.

2. The combination with the vehicle-body provided with a longitudinally-movable apron, a ratchet-wheel transmitting motion to said apron, and pawls engaging the ratchet-wheel at diametrically opposite points, of a rotary cam-plate having its cams projecting equidistant from the axis of the plate and disposed uniform distances apart, a link suspended from the body and swung by contact with the cams, a rock-arm actuated by said link, a collar mounted on the rock-arm movably lengthwise thereof, rods connected to said collar and transmitting motion to the pawls, a two-armed lever pivoted at one end to the body and at the opposite end to the movable collar, a rod connected to the central portion of the two-armed lever and extended to the front end of the body, and a hand-lever connected to the front end of said rod as set forth.

3. The combination with the vehicle-body provided with a longitudinally-movable apron, a ratchet-wheel transmitting motion to said apron and pawls engaging the ratchet-wheel at diametrically opposite points, of a rotary cam-plate having its cams projecting equidistant from the axis of the plate and disposed uniform distances apart, a link suspended from the vehicle-body and swung by contact with the cams, a rock-arm pivoted at one end to the body, a bar connecting the opposite end of the rock-arm to the link adjustably to different distances from the pivot of the link, a collar mounted on the rock-arm adjustably lengthwise thereof, rods connecting said collar to the aforesaid pawls, and means for shifting the collar on the rock-arm as and for the purpose set forth.

4. The combination with the running-gears, the reach and the traveling apron, of rollers pivoted to the reach and supporting the lower run of the apron as set forth and shown.

5. In a fertilizer-distributing machine, the vehicle formed with a bottom frame consisting of side bars mounted on the front and rear running-gears, cross-bars tying together the said side bars at the ends and center of the frame, intermediate longitudinal bars fastened to the cross-bars, longitudinal tie-rods fastened at their ends to the end cross-bars in proximity to the intermediate longitudinal bars and passing through the end portions of the central cross-bar, and transverse truss-rods tied at their ends to the side bars and passing across the bottoms of the intermediate longitudinal bars, in combination with transverse shafts supported on the ends of the aforesaid side bars and provided with sprocket-wheel engaging chains attached to the endless apron traveling over the said frame and supported thereon as set forth.

6. The combination with the running-gear, the body, and the endless apron traveling through said body, of the reach disposed beneath the lower run of said apron, and rollers pivoted to said reach and supporting said portion of the apron as set forth.

7. The combination with the vehicle-body, the traveling apron and the beater, of a gear-wheel driven by the traction-wheel, a pinion supported movably to and from engagement with the said gear-wheel, means for shifting said pinion, means for transmitting motion from the pinion to the beater, a transverse shaft mounted on the vehicle-body, standards fixed to said shaft and having their upper ends extended rearward, the tail-board suspended from said rearward extension, a pinion fastened to the transverse shaft, a segmental gear engaging the said pinion, a lever affixed to said segmental gear, a hand-lever, and two rods connecting said hand-lever respectively with the aforesaid pinion-shifting means and the lever of the segmental gear as set forth and shown.

813,712. BROOM-HOLDER. WILLIAM M. KELLOGG, Pittsfield, Mass., assignor to The Yankee Novelty Company, a Corporation of Maine. Filed June 12, 1905. Serial No. 264,821.

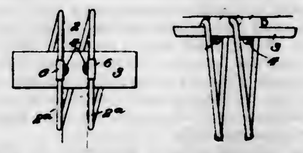

Claim.—1. In a broom-holder, the combination of a holding member composed of a length of wire bent to form spaced spring-loops, and an attaching-block engaging the central portion of the wire to secure the holding member in operative position, the extremities of the wire from which the loops are made, being freely movable toward and from each other, for the purpose specified.

2. In a broom-holder, the combination of a holding member composed of spaced expansive coils or loops formed from a single length of material, and means for attaching said holding member to a support, admitting of expansive movement of the ends of the material from which the loops are made.

3. In a broom-holder, the combination of a holding member composed of spaced spring-loops made from a single length of spring-wire, and an attaching-block for the holding member provided with spaced lugs receiving a portion of the holding member therebetween, the extremities of the spring-wire from which the holding member is made, being arranged at the outer sides of the spaced lugs and movable toward and from said lugs.

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the thrust-block, and a fastening device passing through said perforated bosses; substantially as described.

2. In a trussed brake-beam, the combination with a thrust-block having a notched flange on its inner end, a brake-head having similar perforated bosses on its inner and outer ends, the boss on the inner end entering the notch in said flange, and means cooperating with the boss on the outer end of said brake-head for holding said brake-head in position; substantially as described.

3. In a trussed brake-beam, the combination with a thrust-block having a perforated boss, of a brake-head fitting on said thrust-block and provided with a registering perforated boss, the perforations in said bosses being of substantially the same size, and a fastening device passing through said perforated bosses so as to hold the parts immovably together; substantially as described.

4. The herein-described thrust-block, the same having a circumferentially-notched flange at its inner end and a perforated boss at its outer end; substantially as described.

5. The herein-described thrust-block, the same having a flange at its inner end, said flange having notches or recesses 5^a and 5^b; substantially as described.

6. The herein-described brake-head, the same having a perforated boss on both ends; substantially as described.

818,707. QUILTING-FRAME. HUGH H. JACKSON, Lebanon, Tenn. Filed May 17, 1905. Serial No. 260,817.

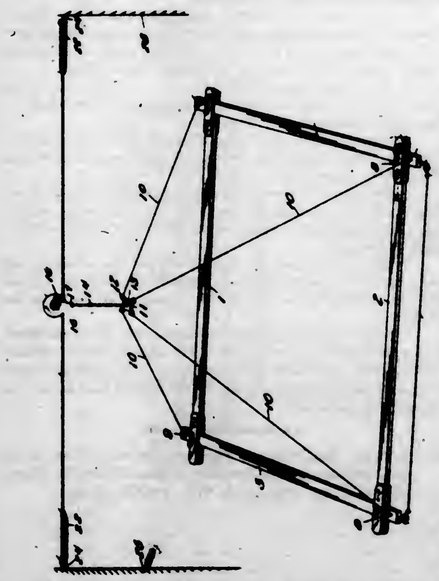

Claim.—In a quilting-frame, side bars, each having pairs of upper and lower clamping-plates secured thereto and extending over opposite ends thereof, end bars removably clamped between the said clamping-plates, a trolley-wire disposed above the frame, a traveling hanger disposed upon the said wire, a plate slidably mounted upon the hanger, a connection between the opposite ends of each end bar and the said plate, means for adjusting the plate vertically upon the hanger, and a flexible connection between the end bars and extending parallel with the corresponding side bar.

818,708. CONTRIVANCE FOR COVERING CARDBOARD, SHEET METAL, WOOD, &c., WITH PAPER, &c. FERDINAND B. JANSSENS, Düsseldorf, Germany. Filed June 20, 1905. Serial No. 265,626.

Claim.—In a cardboard-covering machine, a glue-roller, combined with a feed-roller and a guide-roller placed in proximity to the glue-roller at a distance from the feed-roller, a pressure-roller above the guide-roller, and a divided feed-table at opposite sides of the guide-roller, substantially as specified.

818,708.

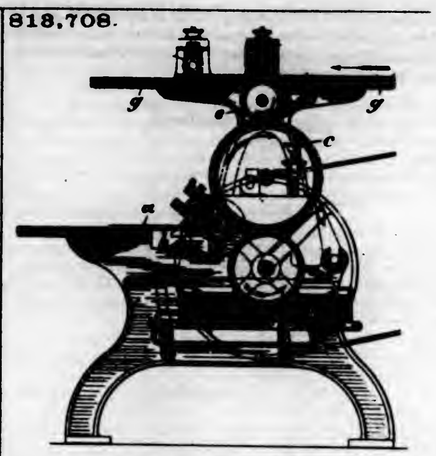

818,709. COMPOSITION FOR CLEANING LITHOGRAPHIC STONES. JOSEPH JAMES, Baltimore, Md. Filed Dec. 4, 1905. Serial No. 290,662.

Claim.—1. The herein-described composition of matter, consisting of an acid reacting compound, a solution of strontian nitrate, nitric acid and water substantially as described and for the purpose specified.

2. The herein-described composition of matter for preparing lithographic stones after having been previously used, consisting of a solution of acetic acid, thirteen ounces, a solution of strontian nitrate, seven and a half ounces, nitric acid, about five ounces, and water substantially pure, fifteen ounces, substantially as described.

3. The herein-described composition of matter for preparing lithographic stones after having been previously used, consisting of a solution of an acid reacting compound, thirteen ounces; a solution of strontian nitrate, seven and a half ounces, nitric acid, about five ounces, and water substantially pure fifteen ounces, substantially as described.

818,710. RELAY. HERMANN JOHANNSEN, Stockholm, Sweden, assignor to Aktiebolaget L. M. Ericsson & Co., Stockholm, Sweden, a Corporation. Filed July 21, 1904. Serial No. 217,261.

Claim.—1. In a relay, the combination of electromagnetic coils, an insulating-block associated therewith, a contact secured at each end of said block, and an armature adapted to alternately engage the poles of the electromagnetic coils and to press the contacts together, substantially as described.

2. In a relay, the combination of electromagnetic coils, a pivoted armature, a set of contacts, and means near the center of the armature for pressing the contacts together when the armature is attracted, substantially as described.

3. In a relay, the combination of electromagnetic coils, an insulating-block arranged over the coils, a spring-contact secured to each end of said block, the free ends of said contacts overlapping, and an oscillating armature adapted to press said contacts together, substantially as described.

4. In a relay the combination of electromagnetic coils, a pivoted armature having a hook-shaped part at each end thereof and a set of contacts arranged to be pressed together when the armature is attracted, said hook-shaped parts bing adapted to alternately engage the pole-pieces of the coils, substantially as described.

5. In a relay, the combination of electromagnetic coils, a double-armed armature pivoted at its center, a set of contacts, and means near the center of the armature for pressing the contacts together, substantially as described.

6. In a relay, the combination of electromagnetic coils, an armature with hook-shaped ends adapted to alternately partially encircle the pole-pieces of said coils, a set of contacts associated with the armature, means for returning the armature to its normal position and means for preventing the armature from adhering to said pole-pieces upon cessation of the flow of current, substantially as described.

7. In a relay, the combination of electromagnetic coils, an armature pivoted intermediately of the coils, a set of contacts adapted to be pressed together by the armature when the latter is attracted, and means for regulating the tension of the armature, said means comprising a slotted screw mounted in a standard, and a spring extending from said screw to a post on the armature substantially as described.

8. In a relay, the combination of electromagnetic coils, pole-pieces passing therethrough, said pole-pieces being surrounded by copper sockets, a plate mounted on said pole-pieces carrying an insulating-block, contacts on said block, an armature pivoted near its center having an insulated pin for pressing together said contacts, an adjustable screw mounted on said plate, a second plate, a second pin on the armature and a spring extending from said screw to said second pin for returning the armature to its normal position, substantially as described.

818,711. FERTILIZER-DISTRIBUTER. CHARLES JOHNSON, Cortland, N. Y., assignor to Cortland Implement Company, Cortland, N. Y., a Corporation of New York. Filed May 13, 1905. Serial No. 260,956.

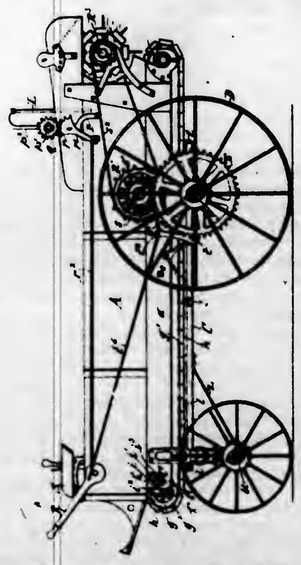

Claim.—1. The combination with the vehicle-body provided with a longitudinally-movable apron, a ratchet-wheel transmitting motion to said apron, and pawls engaging the ratchet-wheel at diametrically opposite points, of a rotary cam-plate having its cams projecting equidistant from the axis of the plate and disposed uniform distances apart, a link suspended from the body and swung by contact with the cams, a rock-arm pivoted at one end to the body, a bar pivotally connecting the opposite end of the rock-arm to the link, a collar mounted on the rock-arm movably lengthwise thereof, rods connected to said collar and transmitting motion to the pawls, and means for shifting the collar on the rock-arm as set forth.

2. The combination with the vehicle-body provided with a longitudinally-movable apron, a ratchet-wheel transmitting motion to said apron, and pawls engaging the ratchet-wheel at diametrically opposite points, of a rotary cam-plate having its cams projecting equidistant from the axis of the plate and disposed uniform distances apart, a link suspended from the body and swung by contact with the cams, a rock-arm actuated by said link, a collar mounted on the rock-arm movably lengthwise thereof, rods connected to said collar and transmitting motion to the pawls, a two-armed lever pivoted at one end to the body and at the opposite end to the movable collar, a rod connected to the central portion of the two-armed lever and extended to the front end of the body, and a hand-lever connected to the front end of said rod as set forth.

3. The combination with the vehicle-body provided with a longitudinally-movable apron, a ratchet-wheel transmitting motion to said apron and pawls engaging the ratchet-wheel at diametrically opposite points, of a rotary cam-plate having its cams projecting equidistant from the axis of the plate and disposed uniform distances apart, a link suspended from the vehicle-body and swung by contact with the cams, a rock-arm pivoted at one end to the body, a bar connecting the opposite end of the rock-arm to the link adjustably to different distances from the pivot of the link, a collar mounted on the rock-arm adjustably lengthwise thereof, rods connecting said collar to the aforesaid pawls, and means for shifting the collar on the rock-arm as and for the purpose set forth.

4. The combination with the running-gears, the reach and the traveling apron, of rollers pivoted to the reach and supporting the lower run of the apron as set forth and shown.

5. In a fertilizer-distributing machine, the vehicle formed with a bottom frame consisting of side bars mounted on the front and rear running-gears, cross-bars tying together the said side bars at the ends and center of the frame, intermediate longitudinal bars fastened to the cross-bars, longitudinal tie-rods fastened at their ends to the end cross-bars in proximity to the intermediate longitudinal bars and passing through the end portions of the central cross-bar, and transverse truss-rods tied at their ends to the side bars and passing across the bottoms of the intermediate longitudinal bars, in combination with transverse shafts supported on the ends of the aforesaid side bars and provided with sprocket-wheel engaging chains attached to the endless apron traveling over the said frame and supported thereon as set forth.

6. The combination with the running-gear, the body, and the endless apron traveling through said body, of the reach disposed beneath the lower run of said apron, and rollers pivoted to said reach and supporting said portion of the apron as set forth.

7. The combination with the vehicle-body, the traveling apron and the beater, of a gear-wheel driven by the traction-wheel, a pinion supported movably to and from engagement with the said gear-wheel, means for shifting said pinion, means for transmitting motion from the pinion to the beater, a transverse shaft mounted on the vehicle-body, standards fixed to said shaft and having their upper ends extended rearward, the tail-board suspended from said rearward extension, a pinion fastened to the transverse shaft, a segmental gear engaging the said pinion, a lever affixed to said segmental gear, a hand-lever, and two rods connecting said hand-lever respectively with the aforesaid pinion-shifting means and the lever of the segmental gear as set forth and shown.

818,712. BROOM-HOLDER. WILLIAM M. KELLOGG, Pittsfield, Mass., assignor to The Yankee Novelty Company, a Corporation of Maine. Filed June 12, 1905. Serial No. 264,921.

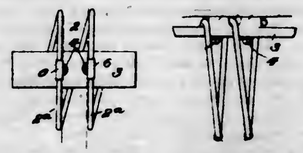

Claim.—1. In a broom-holder, the combination of a holding member composed of a length of wire bent to form spaced spring-loops, and an attaching-block engaging the central portion of the wire to secure the holding member in operative position, the extremities of the wire from which the loops are made, being freely movable toward and from each other, for the purpose specified.

2. In a broom-holder, the combination of a holding member composed of spaced expansive coils or loops formed from a single length of material, and means for attaching said holding member to a support, admitting of expansive movement of the ends of the material from which the loops are made.

3. In a broom-holder, the combination of a holding member composed of spaced spring-loops made from a single length of spring-wire, and an attaching-block for the holding member provided with spaced lugs receiving a portion of the holding member therebetween, the extremities of the spring-wire from which the holding member is made, being arranged at the outer sides of the spaced lugs and movable toward and from said lugs.

813,713. CATTLE OR STOCK GUARD. WILLIAM H. KNIGHT, Portland, Oreg. Filed June 7, 1905. Serial No. 264,867.

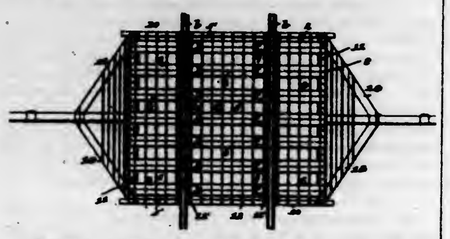

Claim.—1. A cattle or stock guard comprising a base, and a series of cross-ties extending up from said base for supporting the rails and for forming a series of pits within said guard, said pits being deeper than those formed by the ordinary cross-ties and substantially wide enough to allow the largest hoof to be inserted therein.

2. A cattle or stock guard comprising a base, and a series of cross-ties extending up from said base for supporting the rails and for forming a series of pits within said guard, said pits being deeper than those formed by the ordinary cross-ties and substantially wide enough to allow the largest hoof to be inserted therein, and means within said pits for spacing and holding said ties in position.

3. A cattle or stock guard comprising a base, a series of cross-ties extending up from said base for supporting the rails and for forming a series of pits within said guard, said pits being deeper than those formed by the ordinary cross-ties and substantially wide enough to allow the largest hoof to be inserted therein, means within said pits for spacing and holding said ties in position, and a series of barbed wires extending across the spaces between the said ties.

4. A cattle or stock guard comprising a base, a series of cross-ties extending up from said base for supporting the rails and for forming a series of pits within said guard, said pits being deeper than those formed by the ordinary cross-ties and substantially wide enough to allow the largest hoof to be inserted therein, said ties being provided with triangular upper faces thereon, means within said pits for spacing and holding said ties in position, and a series of barbed wires extending across the spaces between the ties and under the said triangular faces thereon.

813,714. BOLT-LOCKING WASHER. HENRY W. KITCHAM, Patchogue, N. Y. Filed Oct. 30, 1905. Serial No. 285,019.

Claim.—1. A bolt-lock comprising a screw-bolt, its nut, a fixed bar to be bolted, and a resilient washer of square form, arranged between the bolt-head and the fixed plate and having on each side a pair of sharp or biting ridges, these on one side at right angles to those on the other side, each radial from a corner, each of V shape in cross-section and each having a greater projection at their outer ends than at their inner ends from the surface, the ridges on one side biting into the bolt-head and the ridges on the other side biting into said fixed bar for locking thereby the bolt and its nut.

2. As an improved article of manufacture the bolt-locking washer herein described consisting of a square resilient plate having smooth parallel sides, one side having sharp ridges radial at two corners, the other side having sharp ridges radial at the other two corners, each ridge of V shape in cross-section and having greater projection from the surface at their outer than at their inner ends.

813,715. NON-REFILLABLE BOTTLE. JOHN M. KILDUFF, Boston, Mass. Filed Aug. 8, 1905. Serial No. 273,494.

Claim.—A bottle, or such like, having a valve-seat in its neck, a valve to seat on said seat and having an upward-projecting guiding-stem, a cage secured within and to the neck above said valve and its seat and having upper and lower closed ends and an open space around, and also having lateral or side ports in its upper end portion, and a vertical tube within the cage, open at its upper and lower ends and held by the lower end portion and its upper end portion opposite to said ports of the cage, and having an open space about and between it and the inner side of said upper end portion of the cage, in combination with a spiral or coiled spring adapted and arranged to act on said valve, and a tube surrounding and confining said spring, substantially as described, and for the several purposes specified.

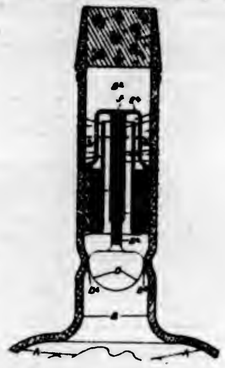

813,716. WINDOW. WILLIAM J. KLEHM, Chicago, Ill. Filed Oct. 10, 1904. Serial No. 227,827.

Claim.—1. The combination with a window-casing and inclosed sash, of rigid supporting-bars sliding vertically of the casing and between and to which the sash is pivotally hung, the pivots being rigidly attached to the supporting-bar, weather-bars interposed between said supporting-bars and the sash, counterbalancing-cords for sustaining the weight of the sash, and connections between said counterbalancing-cords and supporting-bars acting by the normal pull on the cords upon the weather-bars to press them against the sash, substantially as described.

2. The combination with a window-casing and inclosed sash, of supporting-bars sliding vertically of the casing, pivot-bolts rigidly secured to said supporting-bars and upon which the sash is pivotally hung, weather-bars interposed between the supporting-bars and sash and through which the pivot-bolts loosely pass, counterbalancing-cords for sustaining the weight of the sash, and connections between said counterbalancing-cords and supporting-bars acting by the normal pull on the cords upon the weather-bars to press them against the sash, substantially as described.

3. The combination with a window-casing and inclosed sash, of supporting-bars sliding vertically in the casing and between which the sash is pivotally hung, weather-bars interposed between said supporting-bars and the sash, counterbalancing-cords for sustaining the weight of the sash, and connections between said counterbalancing-cords and supporting-bars comprising jointed struts interposed between the counterbalancing-cords and supporting-bars and acting upon the weather-bars to press them against the sash, substantially as described.

4. The combination with a window-casing and inclosed sash, of supporting-bars sliding vertically of the casing and between which the sash is pivotally hung, weather-bars interposed between said supporting-bars and the sash, jointed struts interposed between the supporting and weather bars and engaging the supporting-bar at its upper end, and counterbalancing-cords applied to the lower end of the strut to simultaneously support the weight of the sash and force the weather-bars against the sash, substantially as described.

5. The combination with a window-casing and inclosed sash, of supporting-bars sliding vertically in grooves in the casing, weather-bars sliding vertically in the grooves in the casing and normally projecting into grooves in the sash, pivot-bolts mounted in the supporting-bars and projecting loosely through the weather-bars to pivotally support the sash, counterbalancing-cords or the like for sustaining the weight of the sash, and connections between said counterbalancing-cords and supporting-bars acting upon the weather-bars to press them against the sash, substantially as described.

6. The combination with a window-casing and inclosed sash, of

supporting-bars sliding vertically in grooves in the casing, weather-bars sliding vertically in the grooves in the casing and normally projecting into grooves in the sash, pivot-bolts mounted in the supporting-bars and projecting loosely through the weather-bars to pivotally support the sash, counterbalancing-cords or the like for sustaining the weight of the sash, and connections between said counterbalancing-cords and supporting-bars comprising jointed struts interposed between counterbalancing-cords and supporting-bars and acting upon the weather-bars to press them against the sash, substantially as described.

7. The combination with a window-casing and inclosed sash, of supporting-bars sliding vertically in grooves in the casing, weather-bars sliding vertically in the grooves in the casing and normally projecting into grooves in the sash, pivot-bolts mounted in the supporting-bars and projecting loosely through the weather-bars to pivotally support the sash, counterbalancing-cords or the like for sustaining the weight of the sash, jointed struts interposed between the supporting and weather bars and engaging the supporting-bar at its upper end, and counterbalancing-cords applied to the lower end of the strut to simultaneously support the weight of the sash and force the weather-bars against the sash, substantially as described.

8. The combination with a window-casing and inclosed sash, of supporting-bars sliding vertically in grooves in the casing, weather-bars sliding vertically in the grooves in the casing and normally projecting into grooves in the sash, pivot-bolts mounted in the supporting-bars and projecting loosely through weather-bars to pivotally support the sash, counterbalancing-cords or the like for sustaining the weight of the sash, jointed struts interposed between the supporting and weather bars and consisting of middle sections bearing against the supporting-bars and end sections of which the upper sections engage the supporting-bars while the lower sections engage counterbalancing-cords which simultaneously support the weight of the sash and force the middle section of the strut against the weather-bars and toward the sash, substantially as described.

9. In combination, a casing, supporting-bars slidable therein and each carrying a pivot, a sash swung on these pivots, sash-engaging bars, a yielding pressure device between each supporting-bar and each sash-engaging bar, this pressure device embodying a vertical flat bar bearing yieldingly against the sash-engaging bar and provided with a bolt through which the pivot passes.

10. In combination, a window-casing grooved vertically, supporting-bars slidable vertically in said grooves, a sash swung to and between said supporting-bars, sash-engaging bars, yielding devices inclosed between each sash-engaging bar and supporting-bar and supported on the latter, weight-cords, and connections between the weight-cords and said yielding devices whereby the normal pull on the cords will expand said devices and press the sash-engaging bars against the sash.

11. In combination, a casing, supporting-bars slidable therein and each carrying a pivot, a sash swung on these pivots, sash-engaging bars, a yielding pressure device between each supporting-bar and each sash-engaging bar, this pressure device embodying a vertical flat bar bearing yieldingly against the sash-engaging bar, for the purpose set forth.

813,717. PLANT-EXCAVATOR. RUDOLPH D. KLEIS, Streator, Ill. Filed Sept. 21, 1905. Serial No. 279,608.

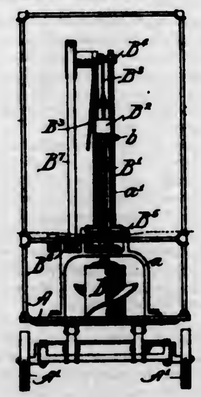

Claims.—1. In a machine of the character set forth, the combination of a vehicle, an engine thereon, a standard, an auger having a vertically-movable shaft journaled in said standard, a transverse shaft geared to said auger-shaft, an extension of said standard, a transverse shaft journaled in the upper portion thereof; transmission means between the engine and transverse shafts, a bearing for the upper end of the auger-shaft, and a cable supporting said bearing and the auger depending therefrom and passing about said second-named transverse shaft, said cable having a free end adapted to be grasped by the operator, thereby to cause the upper transverse shaft to elevate the auger.

2. The combination of a platform equipped with wheels and guiding means, an engine supported at the rear end of the platform, a standard supported on the front end of the platform, a vertically-movable auger having a shaft journaled in said standard, a transverse shaft geared to the auger-shaft and connected with the engine, a higher transverse shaft connected with the first-named transverse shaft, and auger-elevating means connecting the auger-shaft and the second-named transverse shaft.

3. The combination of a platform equipped with wheels and guiding means, an engine supported at the rear end of the platform, a standard supported on the front end of the platform, a vertically-movable auger having a shaft journaled in said standard, a transverse shaft geared to the auger-shaft and connected with the engine, a standard extension provided with a guide, a bearing supporting the auger-shaft and movable in said guide, a second transverse shaft journaled in the upper end of the standard extension and belted to the first-named transverse shaft, and a cable supporting said bearing and having a free end passed about the upper transverse shaft, for the purpose set forth.

813,718. TROLLING-SPOON. SAMUEL H. KNOWLES, San Francisco, Cal. Filed Aug. 26, 1904. Serial No. 223,344.

Claim.—1. A trolling-spoon, a fish-hook, a line connected therewith, and fastening means on the spoon for detachably fixing the hook to the spoon in a rigid position.

2. A trolling-spoon having fastening devices on its face adapted to fix a fish-hook to the spoon in a rigid position and provided with means for attaching a line, in combination with a fish-hook having a shank fitted to the fastening devices on the spoon and detachable therefrom under a strain, and means for connecting the hook with the spoon whereby the hook remains connected with the line after it becomes detached from the fastening devices.

3. The combination of a trolling-spoon, a hook, means for detachably fixing the hook on the spoon, means connecting the hook and the spoon permanently together, and means for attaching the spoon to a line.

813,719. HAY-STACKER. CASPER KOEHLER, Canyon City, Oreg. Filed Sept. 21, 1905. Serial No. 279,512.

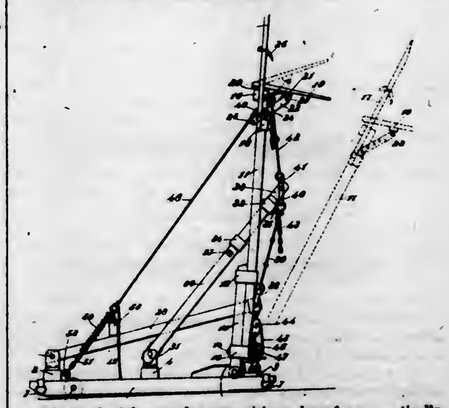

Claim.—1. A hay-stacker comprising a base-frame, vertically-swinging stacker-arms pivotally supported upon the frame, a stacker-

head carried by the free ends of the arms, a mast pivotally rising from the frame, a prop hinged to the frame and straddling the mast, a con-

4. A press having side troughs and a central trough, a mold adapted to be moved upon the troughs and means for elevating the mold

6. A frame having side pieces connected near their front and rear ends by screw-threaded rods, nuts supported adjustably upon

supplying packing liquid to the bottom of said chamber, an escape pipe or passage connected to the top of the chamber and an auto-

hand carried by the free ends of the arms, a mast pivotally rising from the frame, a prop hinged to the frame and straddling the mast, a connection between the free end of the prop and the stacker-arms, a connection between the free ends of the mast and the prop, and a block and tackle connected to the mast and the rear portion of the frame for swinging the mast and elevating the stacker-arms

2. In a hay-stacker, the combination with a base-frame, of longitudinally-extensible stacker-arms pivotally supported upon the base-frame, a stacker-head carried by the free ends of the arms, a mast pivotally supported upon the frame, a prop hinged to the base-frame and comprising spaced members embracing the mast, an extensible prop member shiftable endwise between the outer end portions of the hinged prop members, a connection between the extensible prop member and the stacker-arms, another connection between the top of the mast and the extensible prop member, and a block and tackle extending between the top of the mast and the base-frame.

3. In a hay-stacker, the combination of a base-frame made up of spaced sills, and front, intermediate and rear cross-bars connecting the same, of a rock-bar mounted upon the rear portion of the frame and projected at opposite sides thereof, stacker-arms carried by the projected ends of the rock-bar and extending in front of the base-frame, a stacker-head carried by the free ends of the stacker-arms, a mast pivotally rising from the front cross-bar, a prop pivotally supported upon the intermediate cross-bar and straddling the mast, a connection between the free ends of the stacker-arms and the free end of the prop, a connection between the free ends of the mast and the prop, and a block and tackle extending between the free end of the mast and the rear cross-bar of the base-frame.

813,720. DECORATIVE PROCESS. ADOLPH KUHLBROW, Two Rivers, Wis., assignor to Aluminum Manufacturing Company, Two Rivers, Wis. Filed Sept. 11, 1905. Serial No. 278,094.

Claim.—A process of decoration that consists in the application of paint enamel to an opaque surface, smoking the enamel, while moist, with the flame of a candle, lamp, torch or other suitable burner and finally drying the smoked enamel.

813,721. CONCRETE-BLOCK MOLD AND BLOCK. CHARLES K. LARNER, Los Angeles, Cal. Filed May 26, 1905. Serial No. 262,498.

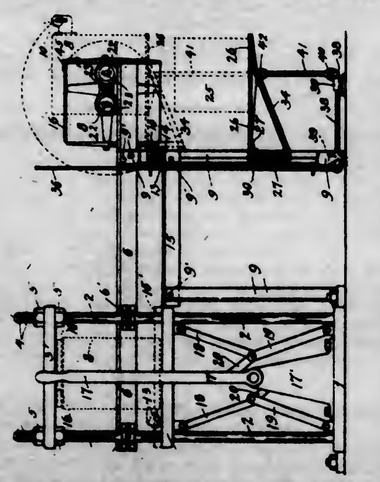

Claim.—1. A press for molding plastic material provided with side rails or tracks and a central rail or track, a mold adapted to travel upon the tracks to and from the press.

2. A press, having side rails, and a central or supplemental rail and supports for the rails, a reversible mold adapted to travel at an angle to and upon the said rails to and from the press.

3. A press provided with side and central tracks and a movable mold adapted to travel to and within the press.

4. A press having side tracks and a central track, a mold adapted to be moved upon the tracks and means for elevating the mold within the press.

5. A press provided with side and central tracks and a traveling mold adapted to be moved to and from the press at an angle to the rails.

6. A press provided with side and central tracks, a reversible mold adapted to travel upon the tracks and means for raising and lowering the mold.

7. A press provided with side tracks and a central track, a mold having wheels secured thereto and means for lowering the molds and for conveying the mold from the press.

8. A press provided with side and central tracks, a mold adapted to be moved to and from the press, means for raising and lowering the mold, a receiving-table and means for raising and lowering the table.

9. A press having tracks, a traveling reversible mold, means for raising and lowering the mold, a movable table for receiving the compressed finished block and means for raising and lowering the table.

10. A press provided with side and central tracks, a traveling reversible mold, means for raising and lowering the mold, a table and means for raising and lowering the table.

813,722. PLOW AND CULTIVATOR. SAM B. LASHLEY, Mullins, S. C. Filed Nov. 15, 1905. Serial No. 287,907.

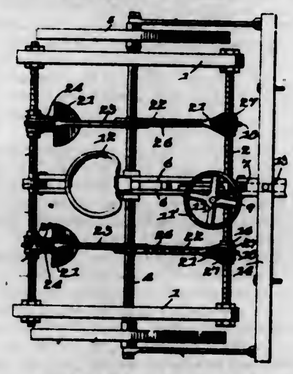

Claim.—1. A frame including side pieces connected near the front and rear ends by screw-threaded rods, a wheel-carrying axle supporting said side pieces, nuts upon the rods having annular flanges provided with spur-teeth, pawl-carrying levers fulcrumed upon said nuts, plow-carrying standards having eyes engaging the nuts upon the rear screw-threaded rod, and braces connecting said standards with the nuts upon the front screw-threaded rod.

2. A frame including side members and screw-threaded rods connecting said side members near their front and rear ends, nuts adjustable upon said rods, and blade-carrying implements connected operatively with said nuts.

3. A frame including side pieces and screw-threaded rods connecting said side pieces near their front and rear ends, nuts upon said rods having annular flanges, standards having eyes engaging the nuts upon the rear screw-threaded rod at opposite sides of the flanges of said nuts, and braces connected with said standards and having eyes engaging the nuts upon the front screw-threaded rod at opposite sides of the flanges of said nuts.

4. A frame having side pieces connected near their front and rear ends by screw-threaded rods, nuts supported adjustably upon said rods, earth-engaging implements carried by the nuts, an axle supporting the side pieces of the frame, bars engaging said axle between the side pieces of the frame, segmentally-slotted plates supported at the front and rear ends of said bars for the passage of the screw-threaded rods, a block supported loosely upon one of said rods, a nut swiveled upon one of the segment-plates, a screw extending through said nut and swiveled in the loosely-supported block, and a tongue connected with the segment-plate.

5. A frame having side pieces connected near their front and rear ends by screw-threaded rods, nuts supported adjustably upon said rods, earth-engaging implements carried by the nuts, an axle supporting the side pieces of the frame, and means for tilting the frame upon the axle and for securing it at various adjustments.

6. A frame having side pieces connected near their front and rear ends by screw-threaded rods, nuts supported adjustably upon said rods, earth-engaging implements carried by the nuts, an axle supporting the side pieces of the frame, a frame-bar engaging the axle between the side pieces, a plate supported by said frame-piece and having a segmental slot for the passage of the front screw-threaded rod, means for tilting the frame and for securing it at various adjustments with relation to the intermediate frame-bar, a tongue connected with the segment-plate, an equalizer pivoted upon the tongue, and links connecting said equalizer with the axle.

813,723. PACKING. HENRY H. LOSEWELL, Pittsburg, and FRANCIS HODGKINSON, Edgewood Park, Pa., assignors to The Westinghouse Machine Company, a Corporation of Pennsylvania. Filed Nov. 21, 1903. Renewed Nov. 23, 1904. Serial No. 234,606.

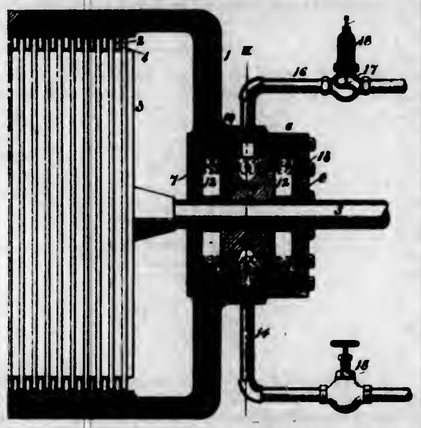

Claim.—1. The combination with a rotatable shaft having a circumferential projection, of a cylindrical chamber for said projection and a body of packing liquid partially filling said chamber and retained in the outer portion thereof by the rotation of said projection.

2. The combination with a rotatable shaft having a circumferential projection and a bearing-box having a cylindrical chamber of greater diameter than said projection and in which said projection is concentrically located and a body of packing liquid which partially fills said chamber and is retained in the outer portion thereof by the rotation of said projection.

3. The combination with a shaft and a bearing-box therefor having a cylindrical chamber, of a disk having lateral ribs or wings on one or both of its sides and rigidly supported on the shaft within said chamber and a body of packing liquid in said chamber.

4. The combination with a shaft and a disk rigidly supported thereon and provided with lateral ribs or wings, of a chamber in which said disk has clearance-space and a body of liquid in said chamber.

5. The combination with a shaft and a bearing-box having a cylindrical chamber, of a disk of less diameter than said chamber and rigidly mounted upon the shaft within the chamber, said disk having lateral ribs or wings and said chamber having a body of packing liquid.

6. The combination with a shaft having a disk rigidly mounted thereon, of a chamber in which said disk is located, a body of liquid in said chamber, an inlet-pipe and an outlet-pipe for said liquid and a relief-valve in the outlet-pipe.

7. The combination with a shaft having a disk provided with lateral ribs or wings, of a cylindrical chamber in which said disk has clearance-space, means for supplying liquid to said chamber and an escape pipe or passage having an automatic relief-valve.

8. The combination with a shaft having a circumferentially-grooved disk provided with lateral ribs or wings, of a cylindrical chamber in which said disk has clearance-space, means for supplying packing liquid to the bottom of said chamber and an escape pipe or passage having an automatic relief-valve.

9. The combination with a shaft and a circumferentially-grooved and laterally-ribbed disk rigidly mounted thereon, of a cylindrical chamber in which said disk has clearance-space, means for supplying packing liquid to the bottom of said chamber, an escape pipe or passage connected to the top of the chamber and an automatic relief-valve in said pipe or passage.

10. In a fluid-pressure turbine, the combination with the turbine-shaft and a laterally-ribbed disk rigidly mounted thereon, of a bearing-box having a cylindrical chamber in which said disk has clearance-space, means for supplying packing liquid to the bottom of said chamber, a pipe or passage leading from the top of the chamber, an automatic relief-valve in said pipe or passage and means for adjusting the closing pressure exerted upon said valve.

11. The combination with a rotatable shaft having a disk, of a bearing-box having a chamber for said disk and a body of mobile liquid partially filling said chamber and retained in the outer portion of the chamber by the rotation of the disk.

12. The combination with a shaft having a disk rigidly attached thereto, of a bearing-box having a chamber for said disk in which there are both end and peripheral clearance-spaces and a body of freely-flowing liquid which partially fills said chamber and is retained in the outer portion thereof by the rotation of the disk.

13. In a fluid-pressure turbine, the combination with a casing having a bearing-box provided with a cylindrical chamber, of a shaft having a circumferential projection of less length and diameter than said chamber and located therein and a body of liquid partially filling said chamber and retained in the outer portion thereof by the rotation of said projection.

14. In a fluid-pressure turbine, the combination with a casing having a bearing-box provided with a cylindrical chamber, of a drum-shaft having a rigidly-mounted disk located in said chamber and a body of liquid partially filling said chamber and retained in the outer portion thereof by the rotation of the disk.

15. A stuffing-box comprising an annular chamber containing a liquid and a disk, the periphery of which extends into said chamber, one of said parts being adapted to be maintained in rapid revolution, whereby the liquid is caused to rotate in said chamber to form a joint between the disk and the chamber.

16. A stuffing-box comprising an annular chamber containing a liquid and a disk, the periphery of which extends into said chamber, one of said parts being provided with projections and adapted to be maintained in rapid revolution, whereby the liquid is caused to rotate in said chamber to form a joint between the disk and the chamber.

17. A stuffing-box comprising an annular chamber containing a liquid and a disk, the periphery of which extends into said chamber, one of said parts being adapted to be maintained in rapid revolution, whereby the liquid is caused to rotate in said chamber to form a joint between the disk and the chamber and a reservoir of liquid connected with said chamber.

18. The combination of a shaft having a projecting collar, with a closure surrounding said collar and means for causing a liquid to rotate in said closure and form a seal by its centrifugal force, between the shaft and the closure-walls, for the purpose specified.

19. A stuffing-box, comprising a fixed part and a part combined with a rotating fluid rotated by said rotating part intervening and forming a joint between said parts.

20. A shaft-packing comprising a casing provided with an annular chamber for receiving a liquid surrounding said shaft, a collar secured to said shaft and extending within said chamber whereby the liquid is caused to rotate in said chamber.

21. The combination in a liquid stuffing-box of a shaft having a collar and a case having an annular recess adapted to retain a liquid under rotation surrounding said collar, with means for causing the liquid to rotate.

22. In a liquid stuffing-box, the combination of the shaft and its collar, with a case-recess inclosing said collar adapted to contain a liquid under high rotation, and projections on said collar for causing said liquid to rotate.

813,724. CAR-DOOR HANGER. EDWARD F. LUSE, Chicago, Ill., assignor to Edward F. Luse & Company, Inc., Chicago, Ill., a Corporation of Illinois. Filed May 23, 1904. Serial No. 209,403.

Claim.—1. In an apparatus of the class described, the combination of a hanger-bracket provided with horizontally-extending bearing-slots and with friction-brakes, and a hanger-wheel journaled in such slots and contacting with the friction-brake at or near the end of its movement in the slots.

2. In a door-hanger, the combination of a hanger-arm provided with horizontally-extending bearing-slots, a hanger-wheel provided with journals rotatably and reciprocatingly mounted in such bearing-

slots, and brake-shoes arranged in the path of movement of such hanger-wheel and having a friction-surface nearer the periphery of such wheel than the distance from the axis of the hanger-wheel to the

through said conduit, a cinder-receiver at the lower end of said conduit and means for collecting gas issuing from said conduit, sub-

said casing through which the gas produced may be withdrawn, substantially as described.

3. The process of testing distilled alcoholic liquor to ascertain the origin of coloring-matter possessed by it, which consists in dis-

slots, and brake-shoes arranged in the path of movement of each hanger-wheel and having a friction-surface nearer the periphery of each wheel than the distance from the end of the bearing-slots to the journals of each wheel, substantially as described.

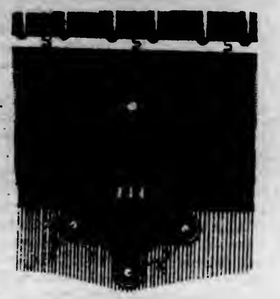

813,725. COMBINED ENVELOP AND LETTER-PAPER. ABNER B. MAGOUN, Brant Rock, Mass. Filed Sept. 13, 1905. Serial No. 278,262.

Claim.—A combined envelop and sheet of letter-paper consisting of a sheet of paper having a portion thereof cut out to form an opening, the portion of said sheet thus cut out remaining attached, at one side thereof, to said sheet and constituting a flap, said sheet first folded transversely thereacross in alinement with said attached side; second, the two sides of said sheet folded longitudinally of said sheet toward each other, at right angles to said first fold; third, said folded sheet again folded transversely thereof, parallel to said first fold, and finally said flap turned over and secured to the outer face of said sheet.

813,726. APPARATUS FOR PRODUCING GAS. GUSTAVE MARCONNET, Paris, France. Filed Dec. 3, 1904. Serial No. 235,669.

Claim.—1. In a gas-producer, a conduit, means for causing jets of flame to project into said conduit, means for causing a shower of powdered fuel to pass through said conduit, means for receiving cinders at the exit end of said conduit and means for collecting gas issuing from said conduit, substantially as described.

2. In a gas-producer, a vertically-arranged conduit, means for causing jets of flame to project into said conduit, means for causing a shower of powdered fuel to fall through said conduit, a cinder-receiver at the lower end of said conduit and means for collecting gas issuing from said conduit, substantially as described.

3. In a gas-producer, a vertically-arranged conduit, gas-openings in said conduit, means for supplying gas and air under pressure to said openings, means for causing a shower of powdered fuel to fall through said conduit, a cinder-receiver at the lower end of said conduit and means for collecting gas issuing from said conduit, substantially as described.

4. In a gas-producer, a vertically-arranged conduit of rectangular shape in cross-section and two of whose walls are pierced with numerous small holes, a gas-chamber with which the holes of one said wall communicate, an air-chamber with which the holes of the opposite wall communicate, means for supplying gas and air respectively to said chambers, means for causing a shower of powdered fuel to fall through said conduit, a cinder-receiver at the lower end of said conduit and means for collecting gas issuing from said conduit, substantially as described.

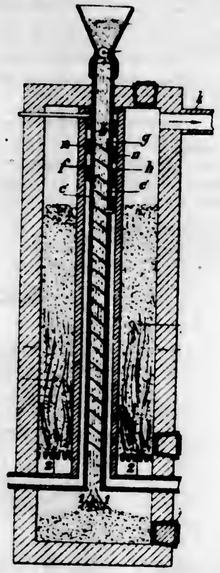

5. In a gas-producer, a vertically-arranged conduit of rectangular shape in cross-section and two of whose walls are pierced with numerous small holes, a gas-chamber with which the holes of one said wall communicate, an air-chamber with which the holes of the opposite wall communicate, means for supplying gas and air respectively to said chambers, means for heating said air and gas, means for causing a shower of powdered fuel to fall through said conduit, a cinder-receiver at the lower end of said conduit and means for collecting gas issuing from said conduit, substantially as described.

6. In a gas-producer, a vertically-arranged conduit of rectangular shape in cross-section and two of whose walls are pierced with numerous small holes, a gas-chamber with which the holes of one said wall communicate, an air-chamber with which the holes of the opposite wall communicate, means for supplying gas and air respectively to said chambers, means for heating said air and gas, means for delivering water to said conduit, means for causing a shower of powdered fuel to fall through said conduit, a cinder-receiver at the lower end of said conduit and means for collecting gas issuing from said conduit, substantially as described.

7. In a gas-producer, a vertically-arranged conduit of rectangular shape in cross-section and two of whose walls are pierced with numerous small holes, a gas-chamber with which the holes of one said wall communicate, an air-chamber with which the holes of the opposite wall communicate, means for supplying gas and air respectively to said chambers, a heating-chamber in which said conduit and said air and gas chambers are located, a fire-grate in said heating-chamber, means for causing a shower of powdered fuel to fall through said conduit, a cinder-receiver at the lower end of said conduit and means for collecting gas issuing from said conduit, substantially as described.

8. In a gas-producer a vertically-arranged outer casing, a fire-grate in said casing, a conduit centrally arranged within said casing, passing through the top thereof and extending through and slightly below said fire-grate, said conduit having its wall throughout that portion thereof within said casing above said fire-grate pierced with two series of small holes, a chamber communicating with one said series of holes, a second chamber communicating with the other said series of holes, pipes supplying air and gas respectively to said chambers, a hopper for powdered fuel at the upper end of said conduit, a device connected with said hopper adapted to allow the fuel therefrom to fall in a shower into said conduit, a door at the bottom of said casing through which cinders collecting below the open lower end of said conduit can be withdrawn, a pipe at the upper end of said casing through which the gas produced may be withdrawn, substantially as described.

9. In a gas-producer a vertically-arranged outer casing, a fire-grate in said casing, a conduit centrally arranged within said casing, passing through the top thereof and extending through and slightly below said fire-grate, said conduit having its wall throughout that portion thereof within said casing above said fire-grate pierced with two series of small holes, a chamber communicating with one said series of holes, a second chamber communicating with the other said series of holes, pipes supplying air and gas respectively to said chambers, a hopper for powdered fuel at the upper end of said conduit, a device connected with said hopper adapted to allow the fuel therefrom to fall in a shower into said conduit, a door at the bottom of said casing through which cinders collecting below the open lower end of said conduit can be withdrawn, a pipe at the upper end of said casing through which the gas produced may be withdrawn, and water-tubes located in said air and gas chambers adapted to discharge water into said conduit, substantially as described.

813,727. ADJUSTABLE FLY-SCREEN. JOHN A. MARQUARDT, Asheville, N. C. Filed June 17, 1905. Serial No. 265,788.

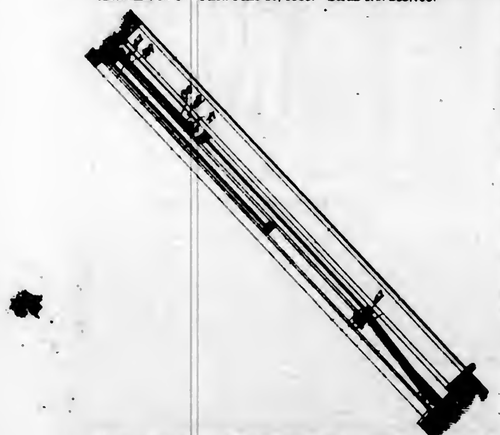

Claim.—In a device of the class described, a supporting-frame composed of side members having longitudinal rabbets to bear within the runways of one of the sashes and to extend over the parting-stope and with overlapping end members, means for clamping said end members in any required position to adapt the frame to window-openings of various widths, a screen-frame formed of overlapping sections and movably disposed within said supporting-frame and adapted to swing from one edge therein, whereby the free edge of the screen-frame may swing into the path of the other sash and support the same in partly-open position.

813,728. PROCESS FOR ASCERTAINING THE ORIGIN OF COLORING-MATTERS PRESENT IN DISTILLED LIQUORS. CLARENCE T. MASER, Cincinnati, Ohio, assignor of one-half to Louis H. Weinstein, Cincinnati, Ohio. Filed Mar. 30, 1905. Serial No. 253,503.

Claim.—1. The process of testing whisky to ascertain the origin of coloring-matter present in it which consists in distilling fusel-oil with a caustic for depriving the fusel-oil of coloring-matter and thereby forming a cleared amyl alcohol, adding water to said cleared amyl alcohol, mixing the same with the whisky to be tested, whereby the alcohols of said amyl alcohol and of said whisky are associated, then permitting the mixture to rest, whereby water is separated and thrown down under said alcohols by virtue of the higher specific gravity of said water as compared with said alcohols the said water carrying with it and being colored by artificial coloring-matter previously present in said whiskey or remaining clear in the absence of artificial coloring-matter in the said whisky being tested, substantially as described.

2. The process of testing distilled alcoholic liquor to ascertain the origin of coloring possessed by it, which consists in adding amyl alcohol and water to the distilled liquor, whereby water is separated from the alcohols of said mixture.

3. The process of testing distilled alcoholic liquor to ascertain the origin of coloring-matter possessed by it, which consists in distilling fusel-oil with a caustic for depriving the fusel-oil of coloring-matter and thereby forming a cleared amyl alcohol, adding water to said cleared amyl alcohol and mixing the same with the distilled alcoholic liquor to be tested whereby the amyl alcohol and the ethyl alcohol of said mixture are combined or associated, then permitting the mixture to rest, whereby water is separated and thrown down by virtue of its higher specific gravity as compared with the said alcohols present, with which it is immiscible.

4. The process of testing distilled alcoholic liquor to ascertain the origin of coloring-matter possessed by it which consists in distilling fusel-oil with caustic soda or caustic potash, mixing said distillate with distilled water, and mixing the composition so formed with the distilled alcoholic liquor to be tested whereby intimate union is formed between the alcohol of said distilled fusel-oil and the alcohol of said distilled alcoholic liquor, then permitting the mixture to rest for permitting said water to separate and be thrown under said alcohols, whereby coloring-matter not acquired by the distilled alcoholic liquor during and by the process of aging is separated from said alcohols and thrown down with the water which holds it in solution, all in the manner and in substantially the proportions stated, substantially as described.

5. The process of testing distilled alcoholic liquor to ascertain the origin of coloring possessed by it which consists in adding amyl alcohol and water to the distilled liquor in substantially the proportions stated and agitating said mixture and then permitting the same to rest, whereby the alcohols of said amyl alcohol and said distilled alcoholic liquor are combined and water is separated from said alcohols, the said water being thrown down and carrying with it artificial coloring-matter previously present in said distilled alcoholic liquor, substantially as described.

813,729. FIRE-LIGHTING DEVICE. MILES L. MARTIN, Thomasville, Ga. Filed May 13, 1905. Serial No. 260,204.

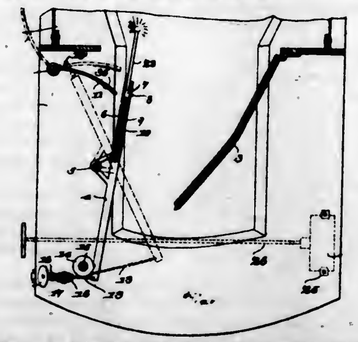

Claim.—1. A fire-lighting device having a movable match-carrying member, means for striking a match by the movement of the match-carrying member, and means to discharge a match from the match-carrying member after the match has been ignited.

2. A fire-lighting device having a swinging match-carrying arm, a striker located in the path of the fulminate head of the match carried by the swinging member, and means to eject a match from the swinging member after it has been ignited by the striker.

3. A fire-lighting device comprising a swinging match-carrying arm, means to eject a lighted match from the arm, and a striker arranged in the path of the fulminate head of a match carried by the arm and also constituting means for holding the match upon the arm against the action of the match-ejecting means, said means being active when the match escapes from the striker.

4. A fire-lighting device comprising a swinging match-carrying arm provided in one end with a longitudinal socket and having a spring-pressed match-ejecting plunger working therein, and a striker arranged in the path of the fulminate head of a match carried within the socket, said striker also constituting means to hold a match in the socket of the arm against the pressure of the plunger and the plunger being active to eject the match when the latter escapes from the striker.

5. A fire-lighting device comprising a swinging match-carrying arm, a match-receiving seat at the free end of the arm, a striker in

the path of the fulminate head of a match carried in the seat of the arm, and a tensioned match-ejector for the seat, said striker constituting means to hold a match in the seat against the tension of the

valve in the outer end of the fluid-container, substantially as described.

piston mechanism for closing the doors and automatically moving the piston mechanism to initial position during the operation of clos-

Claim.—1. In a device as described, a main shaft, a gear-disk thereon having a series of concentric sets of gear-teeth, a counter-

the path of the fulminate head of a match carried in the seat of the arm, and a tensioned match-ejector for the seat, said striker constituting means to hold a match in the seat against the tension of the ejector until the swinging arm escapes from the striker.

6. The combination with a support, of a swinging match-carrying arm mounted thereon, a striker carried by the support in coöperative relation with the arm, a guide upon the support, a flexible element engaging the guide with one end connected to the arm and the other end depending from the guide, a weight suspended by the flexible element below the support, a rod carried by the weight and working through the support, a shoulder upon the rod above the support to limit downward movement of the weight, means to support the weight in an elevated position, and means carried by the support to release the weight and permit gravitation thereof.

7. The combination with a support, of a swinging match-carrying arm thereon, a striker in coöperative relation with the arm, a guide upon the support, a flexible element engaging the guide with one end connected to the arm and the other end depending from the guide, a weight carried by the flexible element below the support, a rod rising from the weight and working through the support, a shoulder upon the rod above the support to limit downward movement of the weight, said rod being provided with another shoulder for engagement with the support to hold the weight elevated, a trip-lever fulcrumed upon the under side of the support, and trip mechanism carried by the support for engagement with the lever to swing the latter against the rod and displace the same from the support.

813,780. **STORAGE BATTERY.** ADOLPH MÜLLER, Berlin, Germany. Filed July 30, 1904. Serial No. 218,816.

Claim.—1. A battery plate-support consisting of perforated covers provided with lateral loops, and having pins inserted through the loops, the relation of the loops being such that the pins lock the covers together, substantially as described.

2. A battery plate-support consisting of perforated covers provided respectively at intervals with loops struck up in the same direction, and having pins inserted through the loops and the intervals between the loops, the relation of the loops and intervals being such that the pins lock the covers together, substantially as described.

3. A battery plate-support consisting of perforated covers provided with lateral loops and having pins inserted through them, and U-shaped strips clamping the edges of the covers and the ends of the pins, the relation of the loops being such that the pins lock the covers together, substantially as described.

4. A battery-plate consisting of cakes of active material, or material adapted to become active, a support or envelop consisting of two perforated covers provided with loops, pins engaging the loops and locking the covers together, and U-shaped marginal strips, substantially as described.

5. A battery-plate consisting of corrugated perforated cover-plates provided with laterally-extending loops, pins engaging the loops and locking the covers together, cakes of active material in the corrugations, and means for clamping the edges of the covers, substantially as described.

813,781. **AERATING DEVICE FOR MATTRESSES.** JOHN MURPHY, Cleveland, Ohio. Filed May 15, 1905. Serial No. 260,593.

Claim.—1. In a device for the purpose described, the combination with a mattress, of a tube adapted to be inserted therein for permanent use, the said tube being perforated throughout its length, a check-valve in the outer end of said tube, and means for supplying said tube with a volatile disinfectant, substantially as described.

2. The combination with a mattress of a fluid or gas container embedded therein, and adapted to contain a sterilizing fluid or gas, the said fluid-container being provided with perforations in its upper wall, means for forcing fluid therein under pressure and a check-valve in the outer end of the fluid-container, substantially as described.

813,782. **CHURNING APPARATUS.** CHRISTOPHER Y. MCCARDLE, Cameron, and SILAS H. DAVIS, Elm Grove, W. Va. Filed May 6, 1904. Serial No. 206,667.

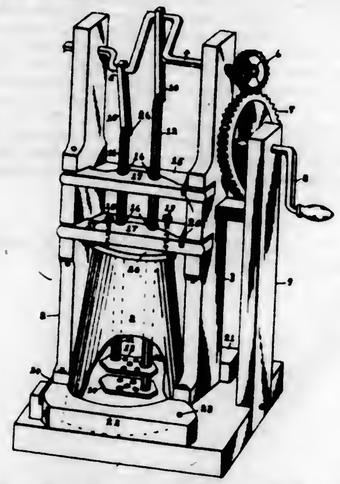

Claim.—In a device of the character described, the combination with a churn-body, of a frame, a shaft with oppositely-disposed cranks thereon mounted in said frame over the churn-body, links connected with said cranks, rods carrying dashers depending from said links within the churn-body, pivots connecting said rods with said links, said pivots being adapted for removal to admit of said churn-body and said rods being together removed from the frame, pivoted braces having semicircular recesses therein embracing said rods and holding them in vertical alinement, the lower of said braces located directly above the churn-body, set-screws extending vertically through the last-mentioned brace for impinging directly upon the churn-lid to hold it in place upon the churn-body, and gearing for driving said shaft, substantially as described.

813,783. **DUMP-CAR.** SPENCER OTIS, Chicago, Ill. Filed Oct. 20, 1904. Serial No. 229,207.

Claim.—1. In a dump-car, the combination of dumping-doors, manually-operated mechanism connected with such doors for operating them, and fluid-pressure cylinder and piston mechanism operatively connected with the doors for releasing them, substantially as described.

2. In a dump-car, the combination of dumping-doors movable to open and closed positions, manually-operated mechanism for closing the doors and supporting them in closed position, and fluid-pressure cylinder and piston mechanism connected with the manually-operated mechanism for operating it in one direction to release the doors, substantially as described.

3. In a dump-car, the combination of dumping-doors movable to open and closed positions, fluid-pressure mechanism for releasing the doors, and means operated independently of the fluid-pressure mechanism for moving the doors from open to closed position, substantially as described.

4. In a dump-car, the combination of dumping-doors movable to open and closed positions, fluid-pressure cylinder and piston mechanism for releasing the doors, and mechanism operated independently of the fluid-pressure mechanism for moving the doors to closed position and provided with means for moving the fluid-pressure-piston mechanism to initial position during the operation of closing the doors, substantially as described.

5. In a dump-car, the combination of dumping-doors movable to open and closed positions, means for supporting the doors in closed position, fluid-pressure-cylinder mechanism provided with piston mechanism connected with the doors for releasing them, and manually-operated mechanism connected with the doors and with such piston mechanism for closing the doors and automatically moving the piston mechanism to initial position during the operation of closing the doors, substantially as described.

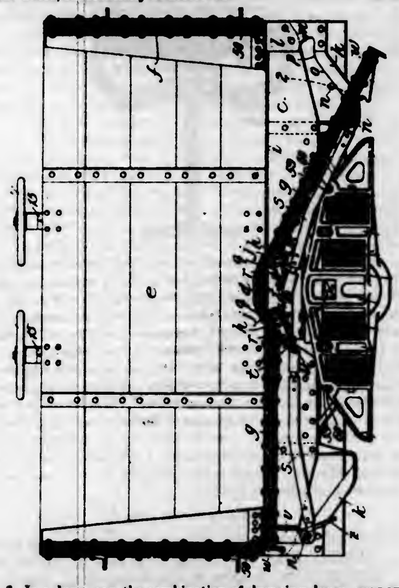

6. In a dump-car, the combination of dumping-doors, gear and lever mechanism connected with such doors for operating them, fluid-pressure cylinder and piston mechanism operatively connected with such gear and lever mechanism for operating it in one direction to release the doors, and means for moving the gear mechanism in releasing direction while the doors are stationary in closed position to permit the free movement of the doors to open position independently of such gear mechanism, substantially as described.

813,784. **SPEED DEVICE FOR SEEDING-MACHINES.** FRANK R. PACKHAM and GEORGE P. OATES, Springfield, Ohio, assignors to American Seeding Machine Company, Jersey City, N. J., a Corporation of New Jersey. Filed Oct. 23, 1905. Serial No. 283,917.

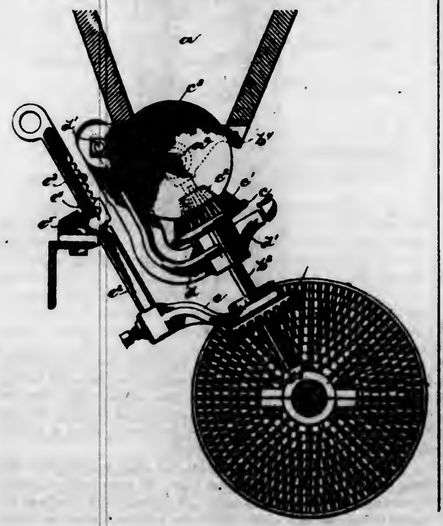

Claim.—1. In a device as described, a main shaft, a gear-disk thereon having a series of concentric sets of gear-teeth, a counter-shaft, a sliding pinion on said shaft adapted to be moved into engagement with each of the various sets of teeth on said disk, a driven shaft, a gear laterally movable on said shaft, and a stepped pinion on said counter-shaft, the respective steps of which are adapted to be engaged by said laterally-movable gear, substantially as specified.

2. In a device as described, a main shaft, a gear-disk thereon having a series of concentric teeth, a counter-shaft, a sliding pinion thereon and adapted to engage each of said sets of concentric teeth, a yoke engaging said pinion, a stem adjustably attached to said yoke having indicating characters thereon and notches in the edge thereof adapted to be engaged by a stationary projection, and a spring to hold said stem in its adjusted position, substantially as specified.

3. In a device as described, a main driving-shaft, a counter-shaft adapted to be driven at different rates of speed thereby, a stepped pinion driven by said counter-shaft to transmit the movement thereof, and a shifting bracket adapted to support said stepped pinion in different positions on said counter-shaft, said bracket being further adapted to form an adjustable and self-alining supporting-bearing for said counter-shaft substantially as specified.

4. In a device as described, a main driving-shaft, a counter-shaft driven at different rates of speed thereby, a shiftable stepped pinion mounted on and driven by said counter-shaft to transmit the movement thereof, said pinion having an extended hub about said shaft, and a shifting bracket having a bearing for said hub, adapted to shift said pinion and form an adjustable and self-alining supporting-bearing for said counter-shaft substantially as specified.

5. In a change-of-speed device, a driven shiftable stepped pinion, a shiftable gear driven by said pinion, and having a beveled face on the rim thereof adapted to alternately engage similarly-beveled faces on said pinion to lock said gear in meshing position, substantially as and for the purpose specified.

813,785. **SPRING-SCALE.** JOHN B. PAQUETTE, New Britain, Conn., assignor to Landers, Frary & Clark, New Britain, Conn., a Corporation. Filed Apr. 3, 1905. Serial No. 253,570.

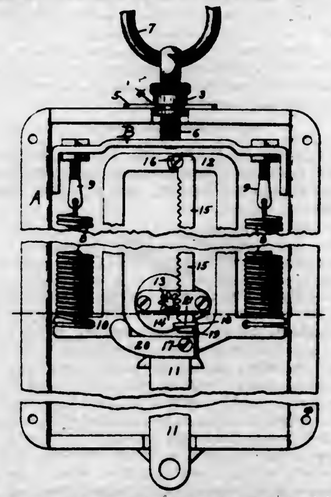

Claim.—1. In spring-scales, the combination of a pinion with a slide extending upwardly above the said pinion, a rack pivotally mounted by its upper end to the said slide, and a presser device pivotally mounted on the said slide in position for engaging the said rack, and means for forcing the said pivotally-mounted presser device against the lower end of the said rack.

2. In spring-scales, the combination of a pinion with a slide extending upwardly above the said pinion, a rack pivotally mounted by its upper end to the said slide, and an angle-lever pivoted to the said slide near the lower end of the said rack, one arm of the said lever acting as a weight and the other arm acting as a presser device for holding the said rack in engagement with the said pinion.

813,736. EXPLOSIVE-ENGINE. GUSTAV PERSELOUSKI, Groton, Conn., assignor to The Thames Motor Company, New London, Conn., a Corporation of Connecticut. Filed Aug. 31, 1904. Serial No. 222,896.

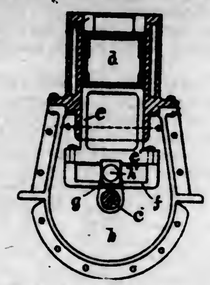

Claim.—1. In combination, a crank-chamber section, a cylinder mounted upon and depending within said section, a shaft revolubly mounted in said section, a piston in said chamber, said piston being formed with a depending plate whose opposite edges are curved to conform to and engage the bore of the cylinder, a bar secured to the lower cross portion of said plate, with a space between them, and a crank and a traveler-block movable in said space and connecting the said plate and shaft.

2. The combination with the crank-chamber section, of a cylinder detachably mounted thereon and extended therewithin, a piston movable within said cylinder, a plate depending from and in addition to said piston and movable in said cylinder, the width of said plate being the same as the diameter of the piston-head and having its edge portions formed as arcs of a circle described by the bore of the cylinder to conform to and be guided by the inner wall of said cylinder, a crank-shaft revolubly mounted in said section, and crank mechanism connecting said shaft and piston through said plate.

3. The combination with a crank-chamber section and a cylinder mounted thereon and extended into said chamber, of a piston movable in said cylinder, a plate in addition to and depending from said piston into said chamber, a cross-bar detachably secured to the lower end of said plate, a traveler-block mounted to slide between said cross-bar and the lower end of said plate, a crank-shaft revolubly mounted in said crank-chamber section and connected with said block all substantially as shown and described.

813,737. WINDOW-VENTILATOR. WILLIAM A. RALSTON, Rochester, N. Y., assignor to Caldwell Manufacturing Company, Rochester, N. Y., a Corporation of New York. Filed Feb. 2, 1904. Serial No. 191,686.

Claim.—1. A ventilator comprising two semicircular plates pivoted together, and a base to which the inner or under one of said plates is fastened; said base having an opening through it in line with the fixed semicircular plate and provided above the opening with a concave surface opposite the movable semicircular plate; whereby the air passing through the base will strike said fixed plate and concave surface and be upwardly and inwardly deflected.

2. A ventilator comprising a base provided with a semicircular opening therethrough and having a concavity *c'* thereover, a stationary semicircular concave plate secured to the base over its semicircular opening, and a movable semicircular plate pivoted to said fixed plate over the said concavity for the purpose described.

813,738. RAIL-CLIP. LOUIS B. RENDER, Chicago, Ill. Filed Nov. 17, 1905. Serial No. 287,815.

Claim.—1. In a rail-clip, the combination of two separate metal parts provided with coincident bolt-openings and each having recesses for engaging flanges of both the rail and tie, and a bolt passing through said openings with means thereon for tightening the parts in clamping engagement with the rail and tie.

2. In a rail-clip, the combination of two separate metal parts provided with coincident bolt-openings and with flaring recesses inclined one with relation to the other fitting and engaging the flanges of both the rail and tie, and a bolt passing through said openings with means thereon for tightening the parts in clamping engagement with the rail and tie.

3. In a rail-clip, the combination of two separate metal parts provided with coincident flaring bolt-openings and flaring and inclined recesses fitting and engaging flanges of both said rail and tie, and a bolt passing through said openings with means thereon for tightening the parts in clamping engagement with the rail and tie.

4. In a rail-clip, the combination of a metal part comprising a bar having an upper surface to bear against the under surface of the rail, a longitudinally-extending recess in one side to engage a flange of the tie, a boss having a recess to engage a flange of the rail and a boss provided with a bolt-opening, a separate metal part having a bolt-opening and recesses, one of which engages a flange of the tie and the other a flange of the rail, and a bolt passing through said openings with means thereon for tightening the parts in clamping engagement with the rail and tie.

813,739. DEVICE FOR CUTTING VEGETABLE AND OTHER GROWTHS FROM THE INNER SURFACES OF SEWER AND SIMILAR PIPES. CHARLES W. ROSS, Newton, Mass. Filed Mar. 3, 1905. Serial No. 248,206.

Claim.—1. A device for cutting vegetable and other growths from the inner surfaces of sewer and similar pipes, the same having a cutter presenting a series of cutting edges differentially arranged in their position with respect to the longitudinal center of said device, whereby the growth or deposit in said pipe is sliced as the device is moved or caused to operate therein.

2. A device for cutting vegetable and other growths from the inner surfaces of sewer and similar pipes, the same having a cutter presenting a series of cutting edges differentially and angularly arranged in their position with respect to the longitudinal center of said

device, whereby the growths or deposit in said pipe is sliced as the device is moved or caused to operate therein.

3. A device for cutting vegetable and other growths from the inner surfaces of sewer and similar pipes, the same having a yielding cutter presenting a series of cutting edges differentially arranged with respect to the longitudinal center of said device, whereby the growth or deposit in the pipe is sliced as the device is moved or caused to operate therein, whereby also said cutter is adapted to yield or be conformable to any obstruction in said pipe.

4. A device for cutting vegetable and other growths from the inner surfaces of sewer and similar pipes, the same having an extensible cutter presenting a series of cutting edges differentially arranged in their position with respect to the longitudinal center of said device, whereby the growth or deposit in the pipe is sliced as the device is moved or caused to operate therein, and whereby also said device is adapted to yield or be conformable to any obstruction in said pipe.

5. A device for cutting vegetable and other growths from the inner surfaces of sewer and similar pipes, the same having a cutter presenting a series of cutting edges differentially arranged in their positions with respect to the longitudinal center of said device, which cutter also is extensible, and means for limiting the extension thereof.

6. A device for cutting vegetable and other growths from the inner surfaces of sewer and similar pipes, the same having a series of cutting edges arranged in a spiral coil, tapering toward the drawing end of said device, whereby as said device is moved or caused to operate in the pipe it will slice the growth or deposit therein with a spiral drawing cut.

7. A device for cutting vegetable and other growths from the inner surfaces of sewer and similar pipes comprising a metal bar bent in the form of a tapering spiral, which spiral is provided with a cutting edge, whereby the spiral is adapted to operate with a drawing cut of varying diameter as it is drawn endwise through the pipe, whereby the growth or deposit inside the pipe is sliced away.

8. A device for cutting vegetable or other growths from the inner surfaces of sewer and similar pipes comprising a metal bar bent in the form of a spiral tapering from the middle toward either end thereof, thereby forming two sections, which spiral sections are provided with cutting edges reversely disposed, whereby the spiral is adapted to operate with a drawing cut of varying diameter as it is drawn endwise in either direction through the pipe.

9. A device for cutting vegetable and other growths from the inner surface of sewer and similar pipes comprising a metal bar bent in the form of a spiral tapering from the middle toward either end thereof, thereby forming two sections, which sections are provided with cutting edges reversely disposed, whereby the spiral is adapted to operate with a drawing cut in opposite directions as it is drawn endwise in either direction through the pipe, which device also is extensible and the cutting edges yielding, and means inside the spiral for limiting the extension of the device while under strain or draft.

813,740. ARTIFICIAL LIMB. JAMES F. ROWLEY, Chicago, Ill. Filed Apr. 14, 1905. Serial No. 255,577.

Claim.—1. In an artificial limb, the combination of a leg-section, a socket member having endwise-sliding connection with said leg-section, yielding means normally urging the extension of the joint between said socket member and leg-section, a stop limiting said extension, and means for securing said socket member against movement with respect to said leg-section.

2. In an artificial limb, the combination of a leg-section, a socket member having endwise-sliding connection with said leg-section, and coacting locking means secured respectively to said socket member and said leg-section and adapted to be adjusted either to permit or to prevent their relative sliding movement.

3. In an artificial limb, the combination of a leg-section, a socket member having endwise-sliding connection with said leg-section, yielding means normally urging the extension of the joint between said socket member and leg-section, a stop limiting said extension, and a set-screw mounted on one of said parts and adapted to have threaded engagement with the other part when the joint between said parts is in its contracted position.

4. In an artificial limb, the combination of a leg-section; a socket member having endwise-sliding connection with said leg-section; metallic side straps rigidly connected with said leg-section and disposed longitudinally thereof at each side of said socket member, each of said straps having a longitudinal groove on its inner face and said socket member having a lug slidably seated in each of said grooves; a spiral spring seated in each of said grooves, bearing between the leg-section and the corresponding lug of said socket member and normally urging the extension of the joint between said socket member and leg-section; and a stop on said side straps for limiting the extension of said joint.

5. In an artificial limb, the combination of a leg-section; a socket member having endwise-sliding connection with said leg-section; metallic side straps rigidly connected with said leg-section and disposed longitudinally thereof at each side of said socket member, each of said straps having a longitudinal groove on its inner face and said socket member having a lug slidably seated in each of said grooves; a spiral spring seated in each of said grooves, bearing between the leg-section and the corresponding lug of said socket member, and normally urging the extension of the joint between said socket member and leg-section; a stop on said side straps for limiting the extension of said joint; a set-screw mounted in each of said side straps; and said socket member having therein threaded apertures for receiving said set-screws and securing said socket member and leg-section against relative movement.

813,741. VELOCIPEDE. CLAUS A. RUDEBECK, Gibson City, Ill. Filed Feb. 1, 1905. Serial No. 243,635.

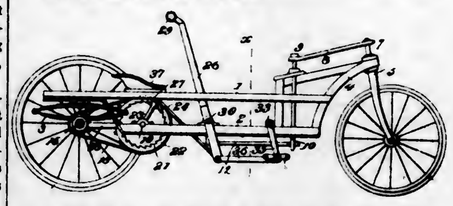

Claim.—1. In a velocipede or analogous road-machine, the combination of propelling mechanism including a pivoted frame or lever, a pilot-wheel, and a steering-post operatively connected with said pilot-wheel and mounted in said frame or lever and having a universal joint approximately in line with the fulcrum or axis of said pivoted frame or lever, substantially as and for the purpose specified.

2. In a velocipede or like road-machine, the combination of propelling mechanism including a frame or lever fulcrumed at a point between its ends, a steering-post composed of sections, one of said sections being mounted in said frame or lever and the other section mounted in the main frame of the machine, the two sections being connected by means of a universal joint approximately in line with the fulcrum or axis of the pivoted frame or lever, a pivot-wheel, and connection means between said pilot-wheel and the section of the steering-post mounted in the main frame of the machine, substantially as set forth.

3. In a velocipede or like machine, the combination of propelling mechanism including a pivoted frame or lever, a pilot-wheel, a vertical shaft having crank connection with the frame of said pilot-wheel, a sectional steering-post having one section mounted in the machine-frame and connected with the aforesaid shaft and having the other section mounted in said pivoted frame or lever, and a universal joint connecting the two sections of the steering-post and approximately in line with the fulcrum of the axis of the pivoted frame or lever.

4. In a velocipede or kindred machine, the combination of propelling mechanism including a pivoted frame or lever, a steering-fork provided with a pilot-wheel, a vertical shaft, connecting means between said shaft and the steering-fork, and a steering-post composed of sections connected by means of a universal joint, one of said sections being mounted in the pivoted frame or lever and the other section mounted in the frame of the machine parallel with the aforementioned vertical shaft and connected therewith, the parts being arranged to admit of proper steering of the machine at any position of the aforesaid frame or lever.

5. In a velocipede or analogous machine, the combination of propelling mechanism including a pivoted frame or lever comprising similar side pieces transversely spaced and connected by cross-

pieces, a steering-fork provided with a pilot-wheel, a sectional steering-post located in the space formed between the side pieces of the aforesaid pivoted frame, one of the sections being mounted in the

3. In a cloth-winding machine, the combination of the winding-mandrel and the series of pressure-rolls, with the stationary slotted disks in which the pressure-rolls are journaled, and the connected

tent, the lock also having a shoulder near its upper end engaging the inner end of the outer horizontal arm of the knuckle-thrower when

having a depending arm to engage the knuckle-tail, and an upper arm fitting outside the draw-head and resting on the top thereof and

pieces, a steering-fork provided with a pilot-wheel, a sectional steering-post located in the space formed between the side pieces of the aforesaid pivoted frame, one of the sections being mounted in the cross-pieces connecting said side pieces and the other section mounted in a part of the machine-frame having connection with said steering-fork, and a universal joint connecting the two sections of the steering-post to admit of the machine being properly guided at any position of the aforementioned pivoted frame or lever.

6. In combination, an axle provided with a drive-wheel, a shaft connected with said axle, a ratchet-wheel fast upon said shaft, a supporting-arm mounted coaxially with said shaft, a pawl loose upon said supporting-arm, a pivoted frame or lever, connecting means between said frame and pawl for positive actuation of the latter in each direction, a crank-shaft having crank-arms connected with the pivoted frame, a steering-fork provided with a pilot-wheel, a steering-post composed of sections connected by means of a universal joint, one of said sections being mounted in the pivoted frame and the other in the frame of the machine, and connecting means between the steering-fork and the section of the steering-post mounted in the frame of the machine, substantially as set forth.

813,742. VELOCIPEDE. CLAUS A. RUDEBECK, Gibson City, Ill. Filed June 23, 1905. Serial No. 266,605.

Claim.—1. In a machine of the character set forth, the combination of a sectional steering-post, a pilot-wheel, connections between the pilot-wheel and a section of the steering-post, and a clutch between the other section of the steering-post and the machine-frame.

2. In a machine of the character described, the combination of a pilot-wheel, a steering-post composed of sections having a universal-joint connection, one of said sections being mounted to turn only and having connection with the pilot-wheel and the other section mounted to have both a turning and a vibratory movement, and a clutch between the last-mentioned section and the supporting-frame therefor.

3. In a machine of the character set forth, the combination of the main frame, a pilot-wheel, a lever-frame, a sectional steering-post having its sections connected by a universal joint in transverse alinement with the fulcrum of the lever-frame, a vertical post journaled to the main frame and provided at its upper and lower ends with cross-bars, connections between the ends of the respective cross-bars and corresponding ends of similar cross-bars of the pilot-wheel and lower section of the steering-post, and a clutch between the upper section of the steering-post and the lever-frame.

4. In a machine of the character described, the combination of the main frame comprising upper and lower longitudinal bars, a pilot-wheel, a lever-frame having its side members offset and pivoted near their lower ends to the lower longitudinal bars of the frame, the upper portions of said members passing between the upper longitudinal bars, a sectional steering-post having its upper section journaled in the lever-frame and its lower section journaled to the machine-frame, a universal joint connecting the two sections and in transverse alinement with the pivot-supports of the lever-frame members, a brace connecting the members of the lever-frame, a clutch comprising a member fast with the upper section of the steering-post and a pivoted member mounted upon said brace, connecting means between the pilot-wheel and the lower section of the steering-post, and connecting means between the said lever-frame and the drive-axle.

813,743. CLOTH WINDING AND MEASURING MACHINE. JOSEPH J. SCHOLFIELD, Providence, R. I. Filed July 6, 1903. Serial No. 164,469.

Claim.—1. In a cloth-winding machine, the combination of the rotary spindle, the head jointed to the forward end of the rotary spindle, and the yielding arms connected to the said head, the said head and yielding arms forming the outer portion of a winding-mandrel, with a longitudinally-movable spindle and an inner mandrel portion having a head which engages with the end of the longitudinally-movable spindle, substantially as described.

2. In a cloth-winding machine, the combination of the revolving spindle, the winding-mandrel made in two parts, one of which is jointed to the revolving spindle, with the series of pressure-rolls, and means for imparting simultaneous movement thereto, toward or from the mandrel, substantially as described.

3. In a cloth-winding machine, the combination of the winding-mandrel and the series of pressure-rolls, with the stationary slotted disks in which the pressure-rolls are journaled, and the connected cam-disks, by means of which the pressure-rolls are adjusted, substantially as described.

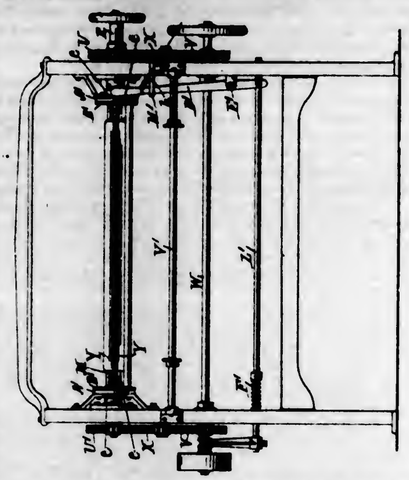

4. In a cloth winding and measuring machine, the combination of the winding-mandrel, the series of pressure-rolls adapted for movement toward and from the mandrel, with the measuring-roll, the notched disk operatively connected with the shaft of the measuring-roll, the spring-actuated disengaging-lever adapted for engagement with the notched disk, the spring-actuated catch-bolt, and the spring-actuated shipper-lever released by the movement of the disengaging-lever, substantially as described.

5. In a cloth winding and measuring machine, the combination of the winding-mandrel, the measuring-roll, the notched disk operatively connected with the shaft of the measuring-roll, the spring-actuated disengaging-lever adapted for engagement with the notched disk, the spring-actuated catch-bolt and the spring-actuated shipper-lever released by the movement of the disengaging-lever, with the rotary cutter, and means for holding the forward end of the severed web, substantially as described.

813,744. CAR-COUPLING. WILLIAM S. SCHROEDER, Chicago, Ill. Filed Nov. 27, 1903. Serial No. 182,149.

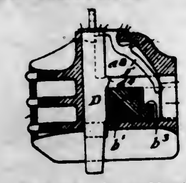

Claim.—1. In a car-coupler, the combination of a draw-head, pivotal knuckle and locking-pin, with a knuckle-thrower having a depending arm to engage the knuckle-tail to throw the knuckle open, and an upper horizontal arm fitting outside the draw-head on top thereof, the lock having a shoulder engaging the inner end of said horizontal arm of the knuckle-thrower when the lock is lifted the required extent, the lock also having a shoulder near its upper end engaging the inner end of the outer horizontal arm of the knuckle-thrower when the lock is in its lowermost position to hold the depending arm of the knuckle-thrower free from the knuckle-tail, substantially as specified.

2. In a car-coupler, the combination of a draw-head, a pivotal knuckle and locking-pin, with a knuckle-thrower having a depending arm to engage the knuckle-tail to throw the knuckle open, and an upper horizontal arm fitting outside the draw-head on top thereof, the lock having a shoulder engaging the inner end of said horizontal arm of the knuckle-thrower when the lock is lifted the required extent, the lock also having a shoulder near its upper end engaging the inner end of the outer horizontal arm of the knuckle-thrower when the lock is in its lowermost position to hold the depending arm of the knuckle-thrower free from the knuckle-tail, the knuckle-thrower having a shoulder or projection fitting under a lip of the draw-head to prevent the knuckle-thrower being removed from the draw-head unless the knuckle is first removed, substantially as specified.

3. In a car-coupler, the combination with a draw-head, of a knuckle, a lock and a knuckle-thrower having an upper arm fitting outside of and resting upon the top of the draw-head, the lock having a longitudinal notch and shoulders engaging the inner end of said upper outside arm of the knuckle-thrower, substantially as specified.

4. In a car-coupler, the combination with a draw-head, of a knuckle, a lock and a knuckle-thrower having an upper arm fitting outside of and resting upon the top of the draw-head, the lock having a longitudinal notch and shoulders engaging the inner end of said upper outside arm of the knuckle-thrower, and the knuckle-thrower having a shoulder or projection fitting under the web or lip of the draw-head to prevent the removal of the knuckle-thrower unless the knuckle is first removed, substantially as specified.

5. In a car-coupler, the combination with a draw-head, of a knuckle, a lock, a knuckle-thrower having a depending arm engaging the knuckle-tail, and an arm fitting outside the draw-head on the top thereof, the lock having a shoulder engaging the inner end of said last-mentioned arm when the lock is lifted to the required extent, the lock having also an upper shoulder engaging said inner end of said knuckle-thrower when the lock is in its lowermost position, substantially as specified.

6. In a car-coupler, the combination with a draw-head, of a knuckle, a lock, a knuckle-thrower having a depending arm engaging the knuckle-tail, and an arm fitting outside the draw-head on the top thereof, the lock having a shoulder engaging the inner end of said last-mentioned arm when the lock is lifted to the required extent, the lock also having an upper shoulder engaging said inner end of said knuckle-thrower arm when the lock is in its lowermost position, the knuckle-thrower being provided with a shoulder or projection fitting under a lip or web with which the draw-head is provided, substantially as specified.

7. In a car-coupler, the combination with a draw-head, of a knuckle, a lock, a knuckle-thrower having a depending arm engaging the knuckle-tail, and an arm fitting outside the draw-head on the top thereof, the lock having a shoulder engaging the inner end of said last-mentioned arm when the lock is lifted to the required extent, the lock also having an upper shoulder engaging said inner end of said knuckle-thrower arm when the lock is in its lowermost position, the knuckle-thrower being provided with a shoulder or projection fitting under a lip or web with which the draw-head is provided, the tail of the knuckle having a notch or recess to receive the lower end of the depending arm of the knuckle-thrower, substantially as specified.

8. In a car-coupler, the combination with a draw-head, of a knuckle, a locking-pin, having a lock-set leg and lock-set shoulder, and provided with a shoulder to engage a knuckle-thrower, of a knuckle-thrower having a depending arm to engage the knuckle-tail, and an upper arm fitting outside the draw-head and resting on the top thereof and engaged at its inner end by said knuckle-throwing shoulder on the locking-pin, substantially as specified.

9. In a car-coupler, the combination with a draw-head, of a knuckle, a locking-pin, having a lock-set leg and lock-set shoulder and a shoulder to engage a knuckle-thrower, of a knuckle-thrower having a depending arm to engage the knuckle-tail, and an upper arm fitting outside the draw-head and resting on the top thereof and engaged at its inner end by said knuckle-throwing shoulder on the locking-pin, said locking-pin having also a second shoulder to engage said upper arm of the knuckle-thrower when the knuckle is closed, substantially as specified.

10. In a car-coupler, the combination with a draw-head, of a knuckle, a locking-pin, having a lock-set leg and lock-set shoulder, and a shoulder to engage a knuckle-thrower, of a knuckle-thrower having a depending arm to engage the knuckle-tail, and an upper arm fitting outside the draw-head and resting on the top thereof and engaged at its inner end by said knuckle-throwing shoulder on the locking-pin, said locking-pin having also a second shoulder to engage said upper arm of the knuckle-thrower when the knuckle is closed, and said knuckle-thrower having a shoulder or projection fitting under a lip on the draw-head to prevent the removal of the knuckle-thrower, substantially as specified.

11. In a car-coupler, the combination with a draw-head, of a knuckle, a locking-pin, having a lock-set leg and lock-set shoulder, and a shoulder to engage a knuckle-thrower, of a knuckle-thrower having a depending arm to engage the knuckle-tail, and an upper arm fitting outside the draw-head and resting on the top thereof and engaged at its inner end by said knuckle-throwing shoulder on the locking-pin, said locking-pin having also a second shoulder to engage said upper arm of the knuckle-thrower when the knuckle is closed, said knuckle-thrower having a shoulder or projection fitting under a lip on the draw-head to prevent the removal of the knuckle-thrower, the draw-head being provided on its upper face with a horizontal guide-face for the upper arm of the knuckle-thrower to permit the upper face of said arm to fit flush with the upper face of the draw-head surrounding the locking-pin opening therein, substantially as specified.

813,745. AERIAL TRAMWAY. ROLLEY C. SELF, Norman, Okla. Filed Sept. 13, 1905. Serial No. 278,313.

Claim.—1. In an apparatus of the class described, approaches disposed at opposite sides of the chasm to be crossed and anchored to the banks of the same, inclined braces forming part of the approaches and provided with a plurality of spaced sheaves, track-cables engaging said sheaves, a car mounted for travel on the track-cables, means for adjusting the tension of the cables, and a draw-cable secured to the bottom of the car for imparting movement to the latter.

2. In an apparatus of the class described, inclined approaches disposed at opposite sides of the chasm to be crossed and anchored to the banks of the same, inclined braces forming a part of the approaches and provided with a plurality of spaced track-engaging sheaves, a guide-sheave of greater diameter than the adjacent sheaves mounted for rotation between the inclined braces of each approach, track-cables engaging the track-sheaves, a car mounted for travel on the track-cables and provided with vertical standards having corresponding sheaves journaled therein for engagement with the track-cables, means for adjusting the tension of the track-cables, and a draw-cable secured to the bottom of the car and engaging the guide-sheaves for imparting movement to the car.

3. In an apparatus of the class described, inclined platforms disposed at opposite sides of the chasm to be crossed and anchored to the banks of the same, inclined braces secured to the platforms and provided with a plurality of spaced track-engaging sheaves, vertical braces disposed on opposite sides of the platforms and provided with similar sheaves, track-cables engaging the sheaves in the inclined braces and disposed above and below the platforms for engagement with the sheaves in the vertical braces, means for regulating the tension of the cables, a car mounted for travel on the track-cables, and a draw-cable secured to the bottom of the car and engaging guide-sheaves in the inclined braces for imparting movement to said car.

813,746. EXPLOSIVE-ENGINE. HENRY K. SHARDE, Cleveland, Ohio. Filed July 20, 1905. Serial No. 270,262.

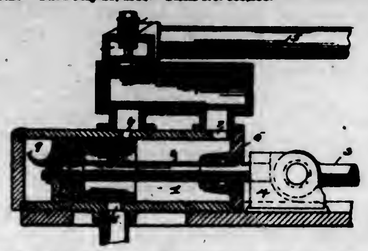

Claim.—1. In a twin-cylinder explosive-engine, the combination with the cylinders having closed ends, of duplicate compression-chambers independently mounted thereon and of predetermined less capacity than the cylinders therefor, each provided with a passage communicating with the front of its respective cylinder, an admission-port from each compression-chamber centrally placed in each cylinder between its ends, an exhaust-port for each cylinder arranged to exhaust in advance of the admission, a commingling-chamber arranged to bridge the compression-chambers, duplicate passages between the condensing-chambers and the bridge-chamber, automatic valves therein, an elongated spraying-tube entering the bridge-chamber between the compression-chambers, a valve at the outer end of the tube, air-inlets therefor, and a delivery-nozzle for the valve adapted to discharge vapor longitudinally of the tube, substantially as described.

2. In an explosive-engine, the combination with duplicate cylinders closed at both ends and duplicate pistons therein, of duplicate compression-chambers mounted thereon, of pronounced smaller capacity than the cylinders, duplicate passages at the forward ends of the cylinders connecting them with the compression-chambers, exhaust-ports arranged to exhaust in advance of the admission, admission-ports placed centrally of the cylinders communicating with the compression-chambers, duplicate deflectors curving upwardly and rearwardly from the backs of the pistons, a bridge-chamber connecting the compression-chambers, a spraying-tube inserted in said bridge-chamber, and duplicate valves and admission-ports between the bridge-chamber and compression-chambers, substantially as set forth.

3. A twin gas-engine comprising twin cylinders, pistons, duplicate independent compression-chambers mounted upon the cylinders and of pronounced smaller diameter than the cylinders, a bridge-chamber connecting the compression-chambers, automatic valves in said bridge-chamber communicating with the compression-chambers, and a horizontal spraying-tube communicating centrally with said bridge-chamber.

813,747. AUTOMATIC AIR-BRAKE COUPLING. ARTHUR H. SKILLINGS, Brooklyn, N. Y. Filed Dec. 15, 1904. Serial No. 236,894.

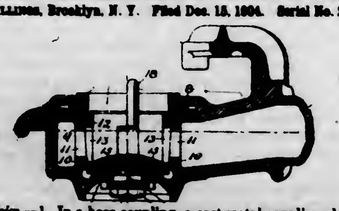

Claim.—1. In a hose-coupling, a cast-metal coupling-shell cast with an annular interior perforated partition adapted to form an annular chamber within the shell, a rotary cylinder-valve seated on the inner face of the annular partition or wall and having a taper from its end next the meeting face or front wall of the casting toward the rear wall of the shell, a stud or projection extending from said valve through an opening in the rear wall, and means cooperating with said stud to hold the valve down to its seat.

2. In a hose-coupling, the combination of rotary valve-cylinders, seated in the cooperating members of the coupling, and each provided with a stud or projection extending through the rear wall of the coupling-shell, a stop-piece secured against rotation on said stud and secured thereon outside the rear wall of the shell, and a cooperating stud formed on the outer face of said back or rear wall, as and for the purpose described.

3. In a hose-coupling, a cast-metal coupling-shell having an annular chamber formed by an interior wall or partition cast in one piece with the shell and perforated for cooperation with a valve-cylinder, said shell having a perforated back or rear wall provided with a cavity or depression on its exterior, as and for the purpose described.

813,748. BOOK-INDEX. LOUIS R. SMITH, Denver, Colo. Filed June 27, 1904. Serial No. 214,526.

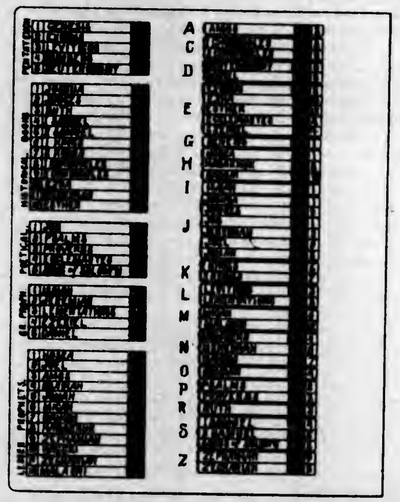

Claim.—1. A volume-index in which the names of the books composing the volume are arranged in a column and in groups, the names comprising the various groups being printed in colors, all the names of each group having the same color, and the names of the books of each group being distinguished by a different color from the names of the books of any other group, the names of the same books being alphabetically arranged in another column and the names of the books in the alphabetical columns being distinguished by the same color as in the group-column.

2. A Bible-index in which the names of the books of either Testament are arranged in a column and grouped, each group containing the names of a number of books, the names of all the books of any group having the same color, and the names of the books of any group having a different color from the names of the books of any other group, the names of the same books being alphabetically arranged in another column and the names of the books in the alphabetical columns being distinguished by the same color as in the group-column.

3. A Bible-index in which the names of the books of either Testament are arranged in a column and in groups, the names of the different groups having different colors, and all the names of any group having the same color, the names of the groups being arranged in the column in their order from the top to the bottom, the names of the group at the front of the volume being highest in the column, the names of the books next in order toward the back of the volume being next below and so on, the names of the same books being alphabetically arranged in another column and the names of the books in the alphabetical columns being distinguished by the same color as in the group-column.

4. A Bible-index in which the names of the books of either Testament are arranged in a column, and grouped, all the names of any group having the same color, and the names of any group having a different color from the names of any other group, and tabs applied to the edges of the leaves of the volume, corresponding in color and located directly opposite the names of the books in the index-column, the said index being secured to the lid of the book, substantially as shown and described.

5. A combined classification and alphabetical Bible-index comprising the names of the books of either Testament arranged in a column and in groups, all the names of any group being designated by the same color, and the names of any group having a different color from the names of any other group; the names of the same books being alphabetically arranged in another column, and the names of the books in the alphabetical column being distinguished by the same colors as in the grouped column.

6. A combined classification and alphabetical Bible-index comprising the names of the books of either Testament arranged in a column and in groups, all the names of any group being designated by the same color, and the names of any group having a different color from the names of any other group; the names of the same books being alphabetically arranged in another column, and the names of the books in the alphabetical column being distinguished by the same colors as in the grouped column, and tabs applied to the edges of the leaves of the volume to designate the different books, the said tabs being designated by colors corresponding with the colors of the index-columns and arranged directly opposite the corresponding books of the classified column.

813,749. RACK ATTACHMENT FOR STOVES. JOSHUA TERRY, Draper, Utah. Filed Apr. 13, 1905. Serial No. 255,196.

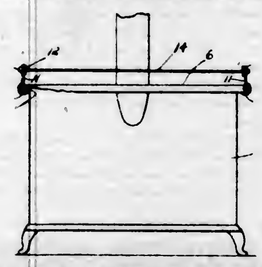

Claim.—1. A rack attachment for stoves comprising plates, depending members carried by the plates and having hooks at their lower ends adapted for engagement beneath the edge portion of a stove-top, members slidably mounted upon the first-named members above the hooks and adapted for movement into and out of position to rest against a stove-top with which the hooks are engaged to hold the latter against disengagement from the stove-top, means for holding the second-named members in operative position, and article-receiving devices carried by the plates.

2. In a rack attachment for stoves, the combination of two supporting members each consisting of a plate and a plurality of hooked members arranged at an angle to the plate, each hooked member being constructed and arranged for interlocking engagement with the rim of a stove and to bear upon the upper surface of said rim, and means for mutually connecting the supporting members and for holding said members against displacement when interlocked with the rim of a stove on opposite sides of a stove.

813,750. STEAM-DRIER. SOREN THORKELSEN, Louisville, Ky., assignor to Henry Vogt Machine Company, Louisville, Ky. Filed Nov. 15, 1905. Serial No. 287,830.

Claim.—1. In a steam-drier, a revolvable shell or casing, an intake-header provided with an inner chamber and an outer chamber, and passages connecting the inner and outer chambers, a discharge-header having an outer passage divided into sections or compartments by means of cross-walls, an inner steam-chamber, a series of hollow radial arms forming steam-passages leading from the inner steam-chamber to different sections of the outer chamber, a second series of hollow radial arms intermediate the arms of the first series and forming condensation-passages leading from the outer chamber inwardly to the center of the steam-chamber and adapted to discharge water of condensation therefrom, a steam-pipe entered into the steam-chamber, an outer circle of tubes connecting the outer chambers of the headers, an inner circle of tubes connecting the intake-header with the steam-chamber of the discharge-header, intermediate tubes leading from the intake-header to the hollow radial arms forming the steam-passages of the discharge-header, and means for imparting revolution to the headers, substantially as described.

2. In a steam-drier, an intake-header and a discharge-header having an outer passage divided into sections or compartments by means of cross-walls, a series of hollow radial arms, one for each of the compartments, forming steam-passages leading from the inner steam-chamber to the sections of the outer chamber and opening in each case near one end thereof, a second series of hollow radial arms intermediate the arms of the first series and forming condensation-passages, one for each section or compartment of the outer chamber leading inwardly from a point adjacent to the cross-wall and distant from the inlet-opening and adapted to discharge from the center of the header, an outer circle of tubes leading from the intake-header to the outer compartments of the discharge-header, an inner circle of tubes leading from the intake-header to the central steam-chamber of the discharge-header, and intermediate tubes leading from the intake-header to the arms forming the steam-passages connecting the central steam-chamber of the discharge-header with the outer sections or compartments, substantially as described.

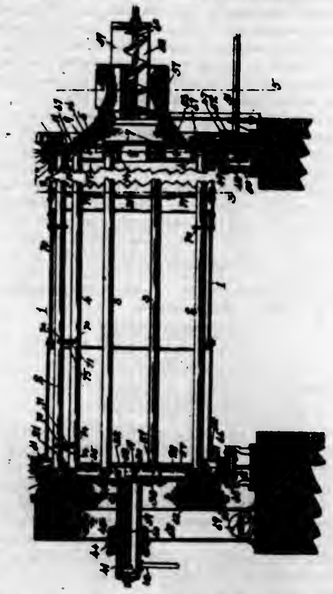

3. In a steam-drier, an intake-header and a discharge-header having an outer passage divided into sections or compartments by means of cross-walls, a series of hollow radial arms, one for each of the compartments, forming steam-passages leading from the inner steam-chamber to the sections of the outer chamber and opening in each case near one end thereof, a second series of hollow radial arms intermediate the arms of the first series and forming condensation-passages, one for each section or compartment of the outer chamber leading inwardly from a point adjacent to the cross-wall and distant from the inlet-opening and adapted to discharge from the center of the header, an outer circle of tubes leading from the intake-header to the outer compartments of the discharge-header, an inner circle of tubes leading from the intake-header to the central steam-chamber of the discharge-header, and intermediate tubes leading from the intake-header to the arms forming the steam-passages connecting the central steam-chamber of the discharge-header with the outer sections or compartments, and a rotatably-mounted peripheral ring surrounding one of the headers within which the header is slidably mounted to allow for expansion and contraction, substantially as described.

4. In a steam-drier, the combination of an intake-header provided with an outer annular chamber, an inner annular chamber and connecting-passages leaving interstices or spaces for the admission of material, a feed-hopper adjacent to the intake-header, a discharge-header provided with an outer chamber consisting of separate compartments, an inner steam-chamber and connecting steam-passages and having an intermediate series of separate inwardly-extending condensation-passages, one for each section or compartment, for discharging water of condensation near the center of the header, an outwardly-extending discharge-neck secured to the center of the discharge-header for collecting the water of condensation, a fixedly-mounted discharge-head in alignment with the revolvable neck, a ball-bearing stuffing-box between the two, a centrally-located steam-

pipe leading to the steam-chamber, a drain-pipe leading from the discharge-head, inner, intermediate and outer tubes connecting the headers, and a shell or casing surrounding the tubes, substantially as described.

5. In a steam-drier, a discharge-header consisting of an outer chamber divided by means of cross-walls into separate compartments, an inner steam-chamber, a series of radiating-passages, one for each of the compartments, leading from the inner steam-chamber to the compartment, an intermediate series of separate inwardly-extending condensation-passages, one for each of the compartments, leading therefrom at a point adjacent to the cross-wall and having discharge-openings near the center of the header, an intake-header having an inner chamber, an outer chamber and radiating hollow arms, a series of outer tubes connecting the outer passages in the headers, a series of tubes connecting the inner chambers in the headers, and a series of intermediate tubes connecting the radiating steam-passages of the discharge-header with corresponding hollow arms of the intake-header, substantially as described.

6. In a steam-drier, the combination of an intake-header, a discharge-header, an outer cylindrical shell or casing, a circle of outer tubes, an inner circle of tubes and a plurality of widely-separated intermediate tubes arranged close to tubes of the outer circle and forming in combination with each outer tube a plurality of widely-separated lodges adapted to give an irregular agitation to the material contained in the drier, the intermediate tubes being few in number as compared with the outer tubes, substantially as described.

813,751. MATCH-LIGHTER. ABSENT D. TROUPA, Sandwich, Ill. Filed Apr. 13, 1905. Serial No. 255,306.

Claim.—1. As an article of manufacture, a match-scratching device comprising a holder for sandpaper in the form of a plate having rolled flanges for engaging the margins of the paper, a flexible tongue springing from the plate, and a clasp secured to the tongue.

2. In a match-lighter, in combination, a plate having a rolled flange, a sheet of sandpaper applied to the plate and having its margin engaged by the rolled flange of the plate, a flexible tongue springing from the edge of the plate and overturned to bear upon the surface of the sandpaper, and means for securing the device to the garment of the user.

813,752. LOOSE-LEAF BINDER. HENRY A. TRUSSELL, St. Louis, Mo., assignor to Sieber & Trussell Mfg. Co., a Corporation of Missouri. Filed Dec. 5, 1904. Serial No. 235,499.

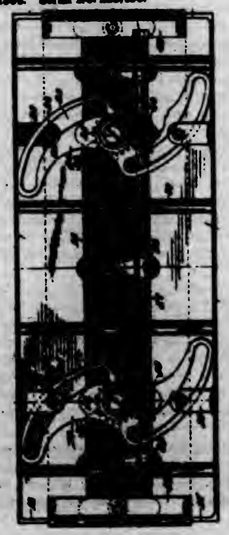

Claim.—1. An expansible binder-frame comprising a pair of side plates having instanding back leaves; an intermediate back plate in sliding engagement with such leaves; oscillating cam-plates pivoted on the intermediate back plate and having cam-slots oblique to their radii; members carried by the side plates and engaging the cam-slots; and means for oscillating the cam-plates.

2. An expansible binder-frame comprising a pair of side plates having instanding back leaves; an intermediate back plate in sliding engagement with such leaves; oscillating cam-plates pivoted on the intermediate back plate and having cam-slots oblique to their radii; members carried by the side plates and engaging the cam-slots; a worm-shaft journaled on the intermediate back plate; and worm-gears mounted with the cam-plates and meshing with the worms of the shaft.

3. An expansible binder-frame comprising a pair of side plates having instanding back leaves; an intermediate back plate in sliding engagement with such leaves; oscillating cam-plates pivoted on the intermediate back plate and having curved cam-slots oblique to their radii; members carried by the side plates and engaging the cam-slots; and means for oscillating the cam-plates.

4. An expansible binder-frame comprising a pair of side plates having instanding back leaves; an intermediate back plate in sliding engagement with such leaves; oscillating cam-plates pivoted on the intermediate back plate and having cam-slots oblique to their radii; bifurcated brackets extending inwardly from the side plates and straddling the cam-plates, and pins set through the brackets and engaging the cam-slots.

5. In a loose-leaf binder, in combination, a pair of laterally-movable compression members, and levers for actuating such members and engaging the same by a cam-action and being arranged to act with increasing power as the compression members move toward each other.

813,753. LOOSE-LEAF BINDER. HENRY A. TRUSSELL, St. Louis, Mo., assignor to Sieber & Trussell Mfg. Co., a Corporation of Missouri. Filed May 24, 1905. Serial No. 262,656.

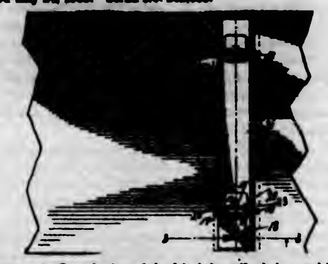

Claim.—1. In a device of the kind described, in combination, a back plate, a spring-opened arch secured thereto, and a cam acting in opposition to the spring to close the arch.

2. In a device of the kind described, in combination, a back plate, a spring-opened arch secured thereto, and a sliding cam acting in opposition to the spring to close the arch.

3. In a device of the kind described, in combination, a back plate; a spring-opened arch formed of a single rod curved to annular form and flattened to seat upon the plate and having its ends provided with interengaging faces; and a sliding cam acting on the side members of the arch to force them together.

4. In a device of the kind described, in combination, a back plate; a spring-opened arch formed of a single rod curved to annular form and flattened to seat upon the plate and having its ends provided with interengaging faces; a sliding cam acting on the side members of the arch to force them together; and a spring interposed and reacting between the side members of the arch.

5. In a device of the kind described, in combination, a back plate; a spring-opened arch having its meeting ends provided with interengaging faces; a spring for spreading the sides of the arch; a cam-plate slidingly seated on the back plate and having its edges upwardly flanged and beveled to engage the arch members to force them together.

813,754. RAILWAY-SWITCH. FREDERICK VOSS, Farmington, Ill. Filed June 12, 1905. Serial No. 264,670.

Claim.—1. In a switch mechanism the combination with main rails, siding-rails and movable points, of a shift-rod connected with the points for movement thereof into and out of position to close the siding, a cross-head carried by the switch-rod, guides for the cross-head, a lug carried by the cross-head, a plate pivoted to one of the guides and extending through the path of movement of the lug, a trip-block carried by a piece of rolling-stock and adapted for engagement of the plate to move the latter and the lug to shift the points, means for holding the plate with the points in position to close the siding, said trip-block being movable into and out of operative position and means located beyond the plate for moving the trip-block in inoperative position.

2. In a switch mechanism the combination with main-track rails, siding-rails and points movable into and out of position to close the siding, of means for moving the rails, a trip-block carried by a piece of rolling-stock and movable into and out of operative position, said trip-block when in operative position being adapted for engagement of point-moving means for operation thereof and a rail-brace located beyond the point-moving means and adapted for engagement of the trip-block after the latter has passed the point-moving means to move the trip-block into inoperative position.

3. In a switch mechanism the combination with main rails, siding-rails and points movable into and out of position to close the siding, of a shift-rod connected with the points for movement thereof and extending laterally beyond the rails, forward and rearward guides located at opposite sides of the shift-rod, a cross-head carried by the outer end of the shift-rod and slidably engaged between the guides, a segmental plate pivotally connected at its forward portion with the forward guide and extending across the shift-rod between the cross-head and the rails, a lug carried by the cross-head said plate lying in the path of movement of the lug, said plate being adapted for engagement by the lug and for movement therewith to extend toward the rails when the switch is in open position, a track instrument carried by a piece of rolling-stock and adapted for engagement of the plate when in its last-named position to move the plate and therewith the lug to close the switch and means for holding the plate with the switch in closed position.

4. The combination with a locomotive, of vertical guides carried thereon, trip-blocks slidably mounted in the guides and having spaced ears at their upper ends, a rock-shaft mounted adjacent to the guides and having cranks at its ends, said cranks being pivoted between the ears of the trip-blocks, a finger carried by the rock-shaft, an arm pivoted to the finger, an operating-lever pivoted to the arm and means for holding the lever at different points of its movement in one direction.

813,755. BRACELET. WALFRED WALLENSTEIN, Attleboro, Mass., assignor to Bates & Bacon, Attleboro, Mass., a Firm. Filed July 24, 1905. Serial No. 270,913.

Claim.—1. In a bracelet having a pivot or swing hinge, a concealed catch comprising a member having a protruding end in which is a transverse hole merging into a side opening which extends from the hole outward through the end and a member having a protruding hook-shaped end adapted to enter the side opening and the transverse hole in the first member, and means for securing the members of the catch in the bracelet, as described.

2. A concealed bracelet-catch comprising a member c having the body portion c', the end c^2 in which is the transverse hole c^3 merging into the side opening c^4 which extends from the hole c^3 outward through the end c^2, and the member f having the body portion f' and the hook-shaped end f^2 shaped to enter the transverse hole c^3 through the opening c^4, and means for securing the members c and f in a bracelet, as described.

3. The combination with a bracelet composed of two tubular halves a and b and a pivot-hinge c, the half a having the end a' for the hinge c, and the end a^2 in which is the side notch a^3, and the half b having the end b' for the hinge c and the end b^2, of a concealed catch d comprising the members c and f, the member c having the body portion c', the protruding end c^2 in which is the transverse hole c^3 merging into the side opening c^4 which extends from the hole c^3 outward through the end c^2 and the longitudinal cut-away portion c^5 which in connection with the inner wall of the end a^2 of the bracelet forms a vent c^6, the member f having the body portion f' and the protruding hook-shaped end f^2 shaped to enter the transverse hole c^3 through the notch a^3 in the end a^2 of the bracelet and the opening c^4 in the end of the member c and the longitudinal cut-away portion f^4 which in connection with the inner wall of the end b^2 of the bracelet forms a vent f^5, means for securing the member c in the end a^2 of the bracelet, and means for securing the member f in the end b^2 of the bracelet in a position to form the recess f^3 in the end b^2 for the protruding end c^2 of the member c, as described.

813,756. FOLIO-MORTISING MACHINE. FERDINAND WIEBE, Brooklyn, N. Y. Filed Jan. 14, 1905. Serial No. 241,128.

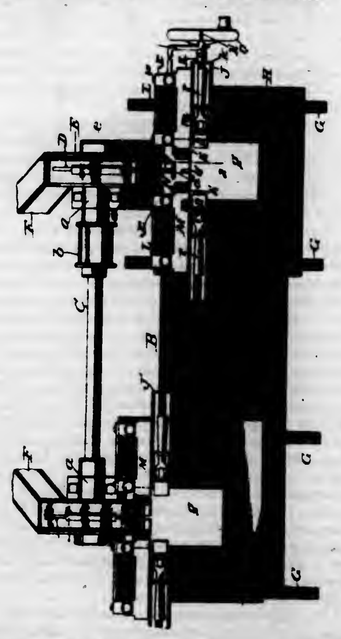

Claim.—1. In a folio-mortising machine, the combination of a vertically-movable cutter, a carriage movable horizontally toward and from the edge of the cutter and having a notch in its forward edge to receive the edge of the cutter, and a gage carried by and resting above the carriage and provided with means for determining the position of a plate relative to said notch of the carriage.

2. In a folio-mortising machine, the combination of a vertically-movable cutter, a carriage movable horizontally toward and from the edge of the cutter and having a notch in its forward edge to receive the edge of the cutter, and a gage carried by and resting above the carriage and having a graduated scale extending in the same direction as the notch in the carriage.

3. In a folio-mortising machine, the combination of a vertically-movable cutter, a carriage movable horizontally toward and from the edge of the cutter and having a notch in its forward edge to re-

ceive the edge of the cutter, and a gage carried by and resting above the carriage and having oblong openings extending parallel to the notch in its forward edge to receive the cutter and notches in its rear

813,759. SUPPORT FOR HORSES' HEADS. JOSEPH B. WILLIAMS and HERMANN C. BROWN, Somerville, Col. Filed Nov. 21, 1904.

Claim.—1. In a device of the character described, the combination with a tank or reservoir, measuring-receptacles connected the re-

ceive the edge of the cutter, and a gage carried by and resting above the carriage and having oblong openings extending parallel to the notch in the carriage and arranged at opposite sides of and equidistant from the plane of said notch and also having a graduated scale extending in the same direction as the notch in the carriage.

4. In a folio-mortising machine, the combination of a vertically-movable cutter, a carriage movable horizontally toward and from the edge of the cutter and having a notch in its forward edge to receive the edge of the cutter, a gage carried by and resting above the carriage and having a notch in its forward edge registered with the notch in the carriage and also having a slot at the rear end of its notch extending at right angles to said notch, and plate-holding means movable on the carriage at a right angle to the direction of movement of the cutter and the direction of movement of the carriage.

5. In a folio-mortising machine, the combination of a vertically-movable cutter, a carriage movable horizontally toward and from the edge of the cutter and having a notch in its forward edge to receive the edge of the cutter, a gage on the carriage provided with means for determining the position of a plate relative to said notch, plate-holding means movable on the carriage at a right angle to the direction of movement of the cutter and the direction of movement of the carriage, means for moving the plate-holding means with respect to the carriage, and means for determining the extent of movement of the plate-holding means with respect to the carriage.

6. In a folio-mortising machine, the combination of a vertically-movable cutter, a carriage movable horizontally toward and from the edge of the cutter and having a notch in its forward edge to receive the edge of the cutter, a gage on the carriage provided with means for determining the position of a plate relative to said notch, plate-holding means movable on the carriage at a right angle to the direction of movement of the cutter and the direction of movement of the carriage, and having a depending nut, a screw-bearing in the carriage and engaging the nut of the plate-holding means and having a wheel provided with a mark, and a pointer on the carriage arranged to coöperate with said mark on the wheel.

7. In a folio-mortising machine, the combination of a vertically-movable cutter, a carriage movable toward and from the cutter and having a notch in its forward edge, and plates for determining the width of the said notch; the said plates being adjustably connected to the carriage, and one of the same having an arm lapping the other at the back thereof.

8. In a folio-mortising machine, the combination of a vertically-movable cutter, a carriage movable horizontally toward and from the cutter, a plate-carrying slide movable on the carriage at a right angle to the direction of movement thereof, means for moving said slide with respect to the carriage, a bracket-arm adjustably connected to the slide, at one side of the carriage, and having a rib and also having means, at one side of the rib, for supporting a block interposed between the rib and the adjacent edge of the carriage.

9. In a folio-mortising machine, the combination of a vertically-movable cutter, a carriage movable horizontally toward and from the edge of the cutter and having a notch in its forward edge arranged to receive the edge of the cutter, a gage connected with the forward edge of the carriage and overhanging said carriage, and provided with means for determining the position of a plate relative to said notch of the carriage and plate-holding means movable on the carriage at a right angle to the direction of movement thereof.

10. In a folio-mortising machine, the combination of a cutter, a carriage movable toward and from the cutter, and having a groove extending at an angle to its direction of movement, bolts having enlargements disposed in said groove, clamps mounted on the bolts, springs supporting the clamps, and cam-levers mounted on the bolts, above the springs.

11. In a folio-mortising machine, the combination of a cutter, a carriage movable toward and from the cutter, a slide movable in the carriage at an angle to the direction of movement thereof and having a longitudinal groove, and also having a depending nut, bolts having enlargements disposed in said groove of the slide, clamps mounted on the bolts, springs supporting the clamps, cam-levers mounted on the bolts, above the springs, and a feed-screw carried by the carriage and bearing in the nut of the slide.

12. In a folio-mortising machine, the combination of a cutter, a carriage movable toward and from the cutter, plate-holding means on the carriage, and a gage carried by the carriage and having a notch in its forward edge to receive the cutter and notches in its rear edge parallel to the first-mentioned notch, and also having a longitudinal slot one longitudinal wall of which fixes the line of cut, and means whereby the depth of the cut in the plate may be determined.

13. In a folio-mortising machine, the combination of a cutter, a carriage movable toward and from the cutter, plate-holding means on the carriage, and a gage carried by the carriage and having a notch in its forward edge to receive the cutter and notches in its rear edge parallel to the first-mentioned notch and also having a longitudinal slot one wall of which fixes the line of cut, and a graduated scale parallel to one of the last-mentioned notches whereby the depth of the cut in the plate may be determined.

14. A gage for use on folio-mortising machines having a notch in its forward edge to receive a cutter, and notches in its rear edge parallel to the first-mentioned notch, and also having a slot one wall of which is to fix the line of cut, and a graduated scale parallel to the last-mentioned notches whereby the depth of the cut in a plate may be determined.

15. In a folio-mortising machine, the combination of a cutter, an abutment, a carriage movable toward and from the cutter and arranged to bring up, on its movement toward the cutter, against the abutment, and a gage carried by the carriage and having a notch to receive the cutter, and also having a longitudinal slot the rear wall of which is coincident with the line of cut, and further having means whereby the depth of the cut in a plate may be determined.

813,757. **POWER MECHANISM.** JOHN W. WIELBORG, Chicago, Ill. Filed Mar. 23, 1905. Serial No. 251,611.

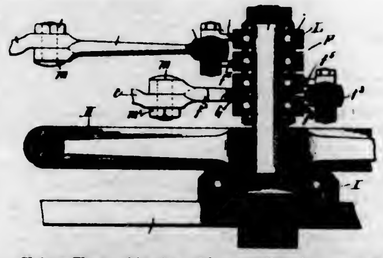

Claim.—The combination with a treadle, of a connecting-rod pivotally connected at one end thereto and shaped at the other end to form one of a pair of arms, the other arm of said pair hinged to said rod, a shaft, and clutch connections between the arms and the shaft.

813,758. **BRAKE-BEAM.** CHARLES H. WILLIAMS, Jr., Chicago, Ill., assignor to Chicago Railway Equipment Company, Chicago, Ill., a Corporation of Illinois. Filed July 21, 1905. Serial No. 270,084.

Claim.—1. In a trussed brake-beam, the combination with a thrust-block having a vertically-disposed tapered socket, the upper portion of said socket being the narrower, a removable brake-head having a tapered projection thereon for interlocking with said socket, the lower portion of said projection being the wider, a removable brake-shoe carried by said brake-head, and means on said brake-head for the connection of a brake-hanger; substantially as described.

2. In a trussed brake-beam, the combination of a thrust-block and a removable brake-head, one of said parts having a vertically-disposed tapered socket, the upper portion of which socket is the narrower, and the other of said parts having a tapered projection thereon for interlocking with said socket, the lower portion of said projection being the wider, a removable brake-shoe carried by said brake-head, and means on said brake-head for the connection of a brake-hanger, whereby, when the beam is hanging in position, the weight thereof will tend to more firmly seat the tapered wedge in its socket; substantially as described.

813,759. **SUPPORT FOR HORSES' HEADS.** JOSEPH B. WILLIAMS and EBENEZER C. BROWN, Somerville, Cal. Filed Nov. 21, 1904. Serial No. 233,776.

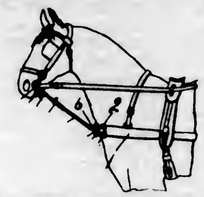

Claim.—1. A support for a horse's head comprising a part adapted to be attached to a part of the harness around the breast of the horse, a part adapted to be attached so as to rest underneath the chin of the horse, a tube attached to one of said parts, a rod attached to the other part and sliding in said tube, and a spring resisting the movement of the rod into the tube, substantially as described.

2. A support for a horse's head comprising a part adapted to be attached to the breast-strap, a part adapted to be attached so as to rest underneath the chin of the horse, a tube attached to one of said parts, a rod attached to the other part and sliding in said tube, said rod having a collar thereon, and a spring between said collar and the end of the tube, substantially as described.

3. A support for a horse's head comprising a part adapted to be attached to the breast-strap, a part adapted to be attached so as to rest underneath the chin of the horse, a tube attached to one of said parts, a rod attached to the other part and sliding in said tube, said rod having a collar thereon, and a spring between said collar and the end of the tube, the rod having a spring latch-hook secured thereto for engagement with the part to which it is attached, substantially as described.

813,760. **ROPE-RACK.** THOMAS WINTERBOTTOM, White Cloud, Kans. Filed Mar. 9, 1905. Serial No. 249,318.

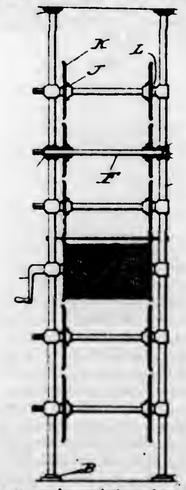

Claim.—1. A rope-rack consisting of vertical standards composed of tubular sections having threaded ends, couplings secured to said threaded ends, said couplings formed with journal-bearings, shafts mounted in said bearings, said shafts carrying reels to hold the rope and means for turning said shafts.

2. A rope-rack consisting of standards composed of tubular sections having threaded ends, couplings secured on said threaded ends, said couplings formed with bearings, shafts mounted in said bearings, and reels mounted on the shafts.

813,761. **DEVICE FOR FILLING BOTTLES.** JACOB H. WIDNER and GEORGE T. TOWNSLEY, Philadelphia, Pa. Filed Jan. 30, 1905. Serial No. 243,177.

Claim.—1. In a device of the character described, the combination with a tank or reservoir, measuring-receptacles connected therewith, and an inlet-valve and an outlet-valve in each receptacle, of independently-operated mechanisms attached to each of said receptacles, the mechanism attached to one receptacle being connected with the outlet-valve of such receptacle and with the inlet-valve of another receptacle, and adapted when said outlet-valve of one receptacle is opened to automatically cause the inlet-valve, with which it is connected, of the other receptacle to open, and which upon the closing of said outlet-valve will automatically cause the inlet-valve, with which it is connected, to close.

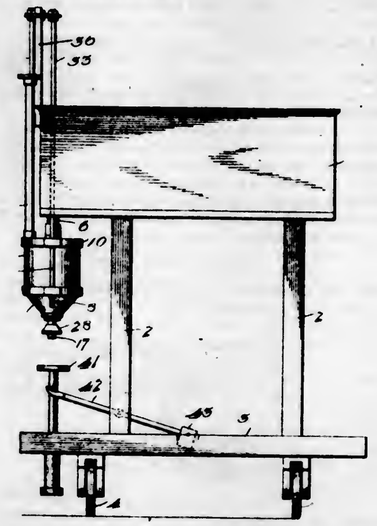

2. In a device of the character described, the combination with a tank or reservoir, and measuring-receptacles connected therewith, each of said receptacles having an air-vent and an inlet-opening in its top, and a contracted bottom terminating in a tube, a valve normally seated in the bottom over the tube, and a sliding collar on the tube of each receptacle connected with said valve, and a series of levers connecting the sliding collar of one receptacle with an air-vent and an inlet-opening of the opposite receptacle, and a weighted bottle-holder located beneath each of said tubes, whereby when a bottle is seated on said bottle-holder it will be raised automatically into contact with the sliding collar, raising the same and opening the outlet-valve of the receptacle, and at the same time, through the connecting-levers, automatically open the inlet and air-vent of the opposite receptacle.

3. In a device of the character described, the combination with a tank or reservoir, measuring-receptacles connected therewith and adapted to hold a predetermined quantity, and an inlet and outlet, and valves therefor, for each receptacle, of means adapted to be operated by the placing in position of a vessel beneath one of the receptacles to automatically open the outlet-valve of one receptacle, and mechanism connected therewith and operated thereby whereby the inlet-valve of an opposite receptacle is opened.

4. In a device of the character described, the combination with a tank or reservoir, measuring-receptacles connected therewith, an inlet and an outlet, and valves therefor, in each receptacle, of a valve opening and closing means at the lower end of each receptacle and connected with the outlet-valve thereof, and mechanism connecting said valve opening and closing means with the inlet-valve of an opposite receptacle, whereby said valve opening and closing means will, when actuated by the placing in position of a vessel beneath one of the receptacles, open the outlet-valves of such receptacle and at the same time automatically open the inlet-valve of the opposite receptacle, whereby when one receptacle is being emptied the other one is being filled.

5. In a device of the character described, the combination with a tank or reservoir, measuring-receptacles connected therewith, an inlet and an outlet, and valves therefor, and a float-valve for each

receptacle, of a valve-actuating mechanism at the lower end of each receptacle, and means connecting said valve-actuating mechanism with the inlet-valve of the opposite receptacle, whereby when the outlet-valve of one receptacle is opened by the placing in position of a vessel beneath one of the receptacles the inlet-valve of the opposite receptacle will be automatically opened thereby, to permit the filling of one receptacle while the other receptacle is being emptied.

6. In a device of the character described, the combination with a tank or reservoir, measuring-receptacles connected therewith, an inlet and an outlet, and valves therefor, and two air-vents and valves therefor for each receptacle, of a valve-actuating device at the bottom of each receptacle connected with the outlet-valve of such receptacle and also with the inlet-valve of the opposite receptacle by a series of levers, whereby when said valve-actuating device at the bottom of one receptacle is operated to open the outlet-valve of such receptacle by the placing in position of a vessel to receive the contents of such receptacle, the inlet-valve of the opposite receptacle will be automatically opened thereby.

7. In a device of the character described, the combination with a tank or reservoir, a measuring-receptacle connected therewith, an inlet and an outlet and suitable valves therefor, and two vents and a valve for each vent; of an overflow-tube over one of said vents, said tube being adapted to receive and hold the overflow from said receptacle occurring after the filling of such receptacle and before the closing of the inlet thereof.

813,762. OAR-LOCK. ANDREW ANDERSON, Mason, Wis. Filed Sept. 5, 1905. Serial No. 277,603.

Claim.—1. In an oar-lock, a socket-plate adapted for attachment to the gunwale of a boat and having an opening therein arranged to register with a bore in the gunwale, a collar formed around said opening in the socket-plate, the interior diameter of the collar being greater than that of the said opening forming an inner shoulder at the bottom of the collar, a standard-section having a bearing at its upper end, a stud extending downward from said bearing, the stud being reduced in diameter intermediate of its ends forming a shoulder adapted to rest on the upper edge of said collar, the said intermediate portion fitting loosely in the collar, the lower portion of the stud being further reduced in diameter forming a shoulder adapted to rest on the inner shoulder at the bottom portion of the collar, the lower reduced portion of the stud extending through the opening in the socket plate into the bore in the gunwale, and an oar-carrying section mounted to turn in the bearing of the standard-section, the said oar-carrying section being provided with a ring member in which the oar is adapted to turn.

2. In an oar-lock, a standard-section having a bearing at its upper end, the lower portion of the standard-section being fitted to turn in the gunwale of the boat, and an oar-carrying section consisting of a ring member having a horizontal cylindrical extension mounted to turn in the bearing of the standard-section, a split sleeve comprising two longitudinal sections secured to the oar, and passing loosely through said ring member, the split sleeve having an annular flange at one end, and a collar removably secured to the opposite end of the split sleeve, the said ring member being located between the said collar and the flange on the sleeve.

3. In an oar-lock, a standard-section having a horizontal bearing at its upper portion, a stud extending downward from the bearing and adapted to turn in the gunwale of a boat, an oar-carrying section comprising a ring member and a horizontal extension from the ring member, the said extension being mounted to turn in the bearing of the standard-section and having its outer end threaded, devices engaging the threaded end of the extension to hold the extension in position in the bearing, a bearing-sleeve secured to an oar and mounted to turn loosely in the said ring member, and means for preventing the bearing-sleeve from moving longitudinally in the ring member.

4. In an oar-lock, the combination with a socket-plate having an opening therein, a collar formed around the said opening, the interior diameter of said collar being greater than that of the said opening, of a standard-section, comprising an upper horizontal bearing, a stud extending down from the said bearing, reduced in diameter intermediate of its ends and at its lower end, forming an upper portion which rests upon the said collar and a lower portion which passes through the opening in the socket-plate, an oar-carrying section consisting of a ring member having a horizontal cylindrical extension loosely mounted in the bearing of the standard-section, devices for preventing the extension from slipping from the said bearing, a split sleeve loosely passed through the said ring member, the split sleeve having an annular flange near one end, and a collar removably located at the opposite end of the said split sleeve, being adapted for attachment thereto, the said ring member being located between the said collar on the sleeve and the flange of the sleeve.

813,763. SIFTER. ARCHIBALD O. ATKINSON, Louisville, Ky., assignor of one-half to Grace Jurt, Alexandria, Ind. Filed Jan. 23, 1905. Serial No. 242,378.

Claim.—A sifter comprising the combination with a receptacle, a screen forming the bottom therefor, said receptacle including a projecting rim at the bottom below the screen, a rod secured to said rim and passing diametrically across the receptacle, a resilient impacting member endwise movable on said rod for impacting said rim to shake or agitate the receptacle, said impacting member consisting of a coil-spring, apertured heads secured to the end of said coil-spring, said rod adapted to pass through the apertures of the heads, all being arranged substantially as shown and described.

813,764. ORDER-CARD. RALPH W. BAILEY, West Newbury, Mass., assignor of one-half to Conrad A. Stiles, Los Angeles, Cal. Filed Mar. 1, 1905. Serial No. 247,894.

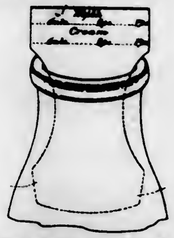

Claim.—1. An order-card of material which is stiff, elastic and capable of receiving a clear pencil-mark, formed with recesses in its opposite sides intermediate its ends adapted to be inserted in the neck of a bottle in which the width of the opening is less than tha of the card at its ends and greater than that at the recesses.

2. An order-card formed of resilient material having a contracted intermediate portion and end portions of greater width, the card being adapted for insertion into a wide-mouthed bottle, the contracted portion adapted to reside within the contracted neck and the wide portions to engage the bottle above and below the neck portion to retain the card in position.

3. An order-card of stiff, resilient paper having a body portion formed with recesses in its sides intermediate its ends and having a detachable coupon, the body portion and coupon being provided with duplicate characters and blanks for indicating the character and quantity of the materials to be ordered.

4. An order-card adapted to be inserted in the mouth of a bottle, constructed of stiff, resilient paper and formed with a contracted portion adapted to occupy the contracted neck of the bottle, shoulders above said contracted portion adapted to engage and rest upon the periphery of the bottle-mouth, and resilient projections or tongues below said contracted portion adapted to expand after insertion in the bottle and engage the sides of the bottle below the contracted neck portion thereof.

5. An order-card formed of resilient material having a contracted portion and an end portion of greater width, the card being adapted for insertion into a wide-mouthed bottle, the contracted portion adapted to reside within the contracted neck and the wide portion to engage the bottle above the neck portion to retain the card in position, the card being also provided with a locking projection.

6. An order-card consisting of a body portion having a recess in its side shaped to receive a portion of a bottle, and provided with an elastic locking projection and a supporting portion, and a detachable coupon connected to said body portion.

7. The combination with a bottle having a contracted neck, of an order-card having a narrow portion located within the mouth of the bottle, an end portion of greater width engaging and resting upon the rim of the bottle-mouth and a locking projection extending beneath a portion of the bottle for securing the card in place.

8. The combination with a bottle having a contracted neck, of an order-card constructed of material which is stiff, elastic and capable of receiving a mark, and formed with an intermediate part of less width than, and residing in, the mouth of the bottle, and end portions of greater width than said mouth and projecting laterally both above and below the contracted neck of the bottle.

813,765. WARP STOP-MOTION FOR LOOMS. HARRY G. BAKER, Worcester, Mass., assignor to Crompton & Knowles Loom Works, a Corporation of Massachusetts. Filed Sept. 26, 1905. Serial No. 280,426.

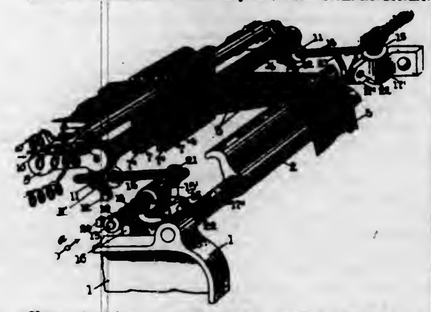

Claim.—1. A loom warp stop-motion, supported by the warp-threads, and movable up and down therewith in a vertical plane.

2. A loom warp stop-motion, supported by the warp-threads, and movable up and down therewith in a vertical plane, and adjustably connected with a stationary part of the loom.

3. A loom warp stop-motion, supported by the warp-threads, and movable up and down in a vertical plane, and adjustably connected with a stationary part of the loom, to be moved in the direction of the length of the warp-threads.

4. A loom warp stop-motion, supported by the warp-threads, and movable up and down therewith in a vertical plane, and means for lessening the weight of the warp stop-motion on the warp-threads.

5. A loom warp stop-motion, supported by the warp-threads, and movable up and down therewith in a vertical plane, and means for adjusting the weight of the warp stop-motion on the warp-threads.

6. A warp stop-motion for looms, comprising lease-rods and guide-rods for the drop devices, supported by the warp-threads to have a vertical up-and-down movement therewith, and means for connecting the lease-rods and guide-rods.

7. A loom warp stop-motion, supported by the warp-threads, and movable up and down therewith in a vertical plane, and connected with a stationary part of the loom.

8. The combination with warp-threads divided into two planes which cross each other intermediate two lease-rods, of a warp stop-motion supported by said warp-threads and having as a part thereof said lease-rods.

9. The combination with warp-threads divided into two planes which cross each other intermediate two lease-rods, of a warp stop-motion supported by said warp-threads, and comprising said lease-rods, two end frames secured to said lease-rods, guide-rods or terminals for drop devices secured to said end frames, and said drop devices, and a central bar or terminal extending between the drop devices and secured to said end frames.

10. A loom warp stop-motion, comprising lease-rods and guide-rods for the drop devices, supported by the warp-threads to have a vertical up-and-down movement therewith, and means for lessening the weight of the warp stop-motion on the warp-threads.

11. The combination with a loom warp stop-motion, comprising lease-rods and guide-rods for the drop devices, supported by the warp-threads to have a vertical up-and-down movement therewith, of means for holding the warp stop-motion in its raised position.

813,766. BUNCHING-MACHINE FOR MAKING CIGARS. BENJAMIN H. BERMAN and ABRAHAM HABER, Philadelphia, Pa. Filed Apr. 28, 1905. Serial No. 257,842.

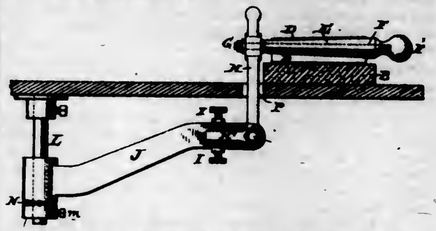

Claim.—1. In a bunching-machine, the combination of a die of yielding material, a loose apron having its ends secured adjacent to the ends of the die, a swinging arm pivoted to a support to one side of the die and having at its free end an adjustable part hinged to the arm on an axis in the plane of movement of the swinging arm and provided with a laterally-extending shaft, and a roller journaled upon said shaft and arranged between the apron and die, the construction being such that the vertical obliquity of the roller may be varied through the adjustable part on the end of the pivoted swinging arm.

2. In a bunching-machine, the combination of a die, a loose apron having its ends secured adjacent to the ends of the die, a pivoted swinging arm pivoted below the die and having an upwardly-arranged arm extending above the die and provided with a slot, a laterally-extending and overhanging transverse shaft arranged above the die and adjustably clamped in the slot of the upright arm to provide vertical adjustment, and a roller carried by the said shaft and arranged between the apron and the die.

3. In a bunching-machine, the combination of a die, a loose apron having its ends secured adjacent to the ends of the die, a pivoted swinging arm pivoted to the table below the die and having an upwardly-extending arm extending above the die, a transverse shaft arranged above the die adjustably connected to the upright arm with provision for vertical adjustment, a roller carried by the said shaft and arranged between the apron and the die, and pivoted means for adjusting the vertical obliquity of the roller relatively to the die and to the pivoted swinging arm.

4. In a bunching-machine, the combination of a die of yielding material, a loose apron having its ends secured adjacent to the ends of the die, a swinging arm consisting of a part swinging upon a fixed vertical axis and a second or upright part adjustably pivoted to the free end of the first-mentioned part on a transverse axis, means to adjust the second part in position upon the swinging arm, and a roller carried by the second part of the arm and arranged between the apron and die.

5. A bunching-machine of the character described having a die over which the bunch is rolled in a compressed form made throughout its entire length and width of rubber and having near one end a transverse depression, provided with an elastic shoulder at the juncture of said depression and the upper surface of the die over and against which the bunch may be forced and compressed under the elasticity of the said shoulder, and metallic clamping devices C C extending over the extreme ends and upper edges of the elastic die for holding it in position, and a loose apron having its ends secured to the said metallic clamps and its intermediate portion loosely supported over the die.

6. In a bunching-machine, the combination of a table, a die supported upon the table, a loose apron having its ends secured adjacent to the ends of the die, a swinging arm pivoted to a support at one side of the die and below the table and having an upright part extending upward above the table and to one side of the die, and a roller carried by the upright part and arranged between the apron and die for moving the apron and adjustably attached to vary its vertical obliquity relatively to the die.

7. In a bunching-machine the combination of a die having a groove at one end, a loose apron having its ends secured adjacent to the ends of the die, a swinging arm consisting of a part swinging

upon a fixed vertical axis and a second or upright part adjustably pivoted to the free end of the first-mentioned part on a transverse axis,

Claim.—1. In a machine of the class described, a measuring-wheel, a cam upon the axis of said wheel, a lever having an end ex-

5. The combination with the flue-sheets, of a leaky boiler-flue, of a tube within said flue for forming a chamber therein to close off the

813,770. CHANGEABLE-SPEED GEARING. ELLIS M. BURR, Champaign, Ill. Filed July 1, 1905. Serial No. 267,264.

upon a fixed vertical axis and a second or upright part adjustably pivoted to the free end of the first-mentioned part on a transverse axis, means to adjust the second part in position upon the swinging arm, and a roller carried by the second part of the arm and arranged between the apron and die.

8. In a bunching-machine, the combination of the table, a die having a groove at one end resting upon the table, a loose apron having its ends secured adjacent to the ends of the die, a swinging arm pivoted to a support at one side of the die and upon the under side of the table, an upright part adjustably connected with the free end of the arm and extending to a point above the table, a roller carried by the adjustable upright part of the arm and arranged between the apron and die, and adjustable means for connecting the roller to the upper end of the upright arm whereby it may be adjusted to or from the die as well as have its obliquity varied.

9. In a bunching-machine, the combination of a die having a groove at one end, a loose apron having its ends secured adjacent to the ends of the die, a pivoted swinging arm, a shaft adjustably clamped upon the pivoted swinging arm whereby it is adjustable obliquely to or from the die in a vertical direction, and a roller carried by the shaft and arranged between the apron and die.

10. In a bunching-machine, the combination of a die, a loose apron having its ends secured adjacent to the ends of the die, a swinging arm pivoted to a support at the side of the die, an upright part pivoted to the end of the swinging arm and adjustable laterally to or from the die, and a tapering roller carried by the upright part and arranged between the apron and die.

11. In a bunching-machine, the combination of the die, the swinging arm J having the bell-crank portion H H′ adjustably pivoted at K and held in adjusted position by adjusting-screws I I, the shaft F secured to the part H of the bell-crank portion, a roller E journaled upon the shaft F, and loose apron D extending over the roller and die and having its ends secured adjacent to the ends of the die.

12. A bunching-machine having a die made of one continuous piece of elastic or yielding material in which the transverse groove B′ is formed, combined with metallic clamping devices independent of the die and at each end for directly holding the die in position, an apron having its ends clamped to the clamping devices, and a swinging arm having a laterally-extending portion arranged between the apron and die.

13. In a bunching-machine, a die upon which the tobacco fillers are rolled consisting of a thick flat block of rubber segmental in plan and having a transverse groove formed in the upper surface of the body of the rubber near one end the said die being elastic throughout its entire length.

818,767. CLOTH MEASURING AND MARKING MACHINE. JAMES F. BOGGS, Needles, Cal. Filed Sept. 26, 1905. Serial No. 280,215.

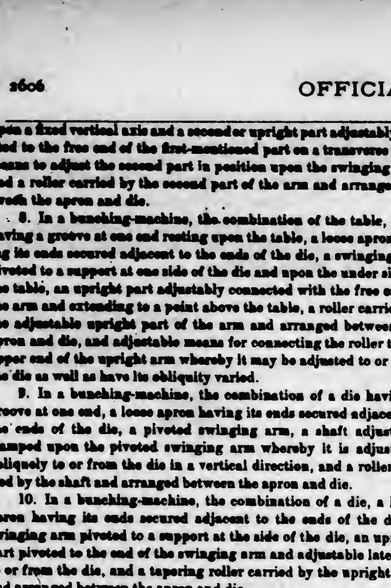

Claim.—1. In a machine of the class described, a measuring-wheel, a cam upon the axis of said wheel, a lever having an end extended into the path of said cam, a spring supporting the opposite end of the lever, a marking-wheel supported for rotation upon said lever, and a spring-pawl supported in constant engagement with notches in the said marking-wheel.

2. A measuring-wheel, a cam upon the axis of said wheel, a lever having an end extended into the path of said cam to be operated thereby, a spring supporting the lever on the opposite side of its fulcrum, a marking-wheel supported for rotation upon the spring-supported end of the lever, said wheel being provided with spaced type-carrying lugs, and a spring-pawl supported in constant engagement with the lugs and the spaces therebetween.

3. A measuring-wheel, a lever supported in the path of and adapted to be tripped by means connected with the measuring-wheel, a marking-wheel supported for rotation by the lever, means for advancing said marking-wheel one step at each operation of the lever, a platen beneath the marking-wheel, and means for advancing an adhesive-coated strip between the marking-wheel and the platen.

4. A vibratory lever, a marking-wheel supported for rotation upon the said lever, a platen beneath said marking-wheel, means for advancing the latter one step at each vibration of the supporting-lever, means for advancing an adhesive-coated strip between the platen and the marking-wheel, and cutting means connected with the lever adjacent to the marking-wheel.

5. A marking-wheel, a vibratory lever supporting said wheel, means for advancing the marking-wheel one step at each vibration of the supporting-lever, a platen supported beneath the wheel having a shoulder or offset, means for applying ink to the face of the wheel, means for advancing an adhesive-coated strip between the wheel and the platen, and a cutter connected with the lever adjacent to the wheel and coöperating with the shoulder of the platen to sever the portion of the strip advanced beyond the wheel when the latter is depressed.

6. A marking-wheel, a vibratory lever supporting said wheel, a shouldered platen beneath said wheel, means for applying ink to the face of the wheel, means for advancing an adhesive-coated strip between the wheel and the platen, a cutter connected with the lever and coöperating with the shouldered platen, and a member pivoted adjacent to the cutter and terminating at it free end in a presser-foot.

818,768. BOILER-TUBE. WILLIAM C. BRACKEN, Gallitzin, Pa. Filed Aug. 23, 1905. Serial No. 275,471.

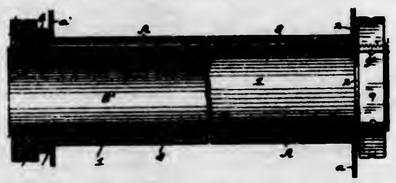

Claim.—1. The combination with the flue-sheets, of a leaky boiler-flue extending through said sheets, a tube within said flue for forming a chamber therein to close off the leak and for permitting the passage of the smoke through the same, and means fitting against said flue-sheets for forming a tight joint and for securing said tube in place.

2. The combination with the flue-sheets, of a leaky boiler-flue extending through said sheets, a tube within said flue for forming a chamber therein to close off the leak and for permitting the passage of the smoke through the same, and means on the ends of said tube and fitting against said flue-sheets for forming a tight joint and for securing the same in place.

3. The combination with the flue-sheets, of a leaky boiler-flue extending through said sheets, of a tube within said flue for forming a chamber therein to close off the leak and for permitting the passage of the smoke through the same, and nuts engaging with the ends of said tube and fitting against said flue-sheets for forming a tight joint securing the same in place.

4. The combination with the flue-sheets, of a leaky boiler-flue, of a tube within said flue for forming a chamber therein to close off the leak and for permitting the passage of the smoke through the same, washers around the ends of said tube, and nuts engaging with the ends of said tube and with said washers and pressing the same against the flue-sheets to form a tight joint and secure said tube in place.

5. The combination with the flue-sheets, of a leaky boiler-flue, of a tube within said flue for forming a chamber therein to close off the leak and for permitting the passage of the smoke through the same, yielding washers around the ends of said tube, a metal washer around one end of said tube, and nuts engaging with the ends of said tube and with said washers and pressing the same against the flue-sheets to form a tight joint and secure said tube in place.

818,769. TUNING INSTRUMENT. MILES BRYANT, Battle Creek, Mich. Filed Dec. 5, 1902. Serial No. 133,974.

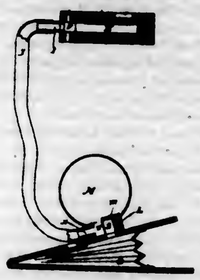

Claim.—1. In a device of the class described, the combination of a reed block or box D, having reed-chambers therein; openings G for said chambers arranged toward the rear thereof; reeds suitably supported in said chambers; a face-plate for said reed-block having air-delivery passages F opening into said reed-chambers; vent-passages E in said face-plate opening into said passages F; a bellows; an elastic storage-chamber therefor; a flexible delivery-pipe connected to said storage-chamber, having a tip adapted to be inserted into said air-delivery passages F, all coacting for the purpose specified.

2. In a device of the class described, the combination of a reed block or box D having reed-chambers therein; openings G for said chambers arranged toward the rear thereof; reeds suitably supported in said chambers; a face-plate for said reed-block having air-delivery passages F opening into said reed-chambers; vent-passages E in said face-plate opening into said passages F; a suitable air-supply; and a flexible delivery-tube adapted to be connected to the air-delivery passages of said air-chambers, all coacting for the purpose specified.

3. In a device of the class described, the combination of a reed block or box D, having reed-chambers therein; openings G for said chambers arranged toward the rear thereof; reeds suitably supported in said chambers; a face-plate for said reed-block having air delivery passages F opening into said reed-chambers; vent-passages E in said face-plate opening into said passages F; suitable means for delivering air under pressure to the said air-delivery passages of said chambers, all coacting for the purpose specified.

4. In a device of the class described, the combination of a reed block or box D having reed-chambers therein; openings G for said chambers arranged toward the rear thereof; reeds suitably supported in said chambers; a face-plate for said block having air-delivery passages F for said reed-chambers; vent-openings connected to said passages F; a bellows; an elastic storage-chamber therefor; a flexible delivery-pipe connected to said storage-chamber, having a tip adapted to be inserted into said air-delivery passages F, all coacting for the purpose specified.

5. In a device of the class described, the combination of a reed block or box D having reed-chambers therein; openings G for said chambers arranged toward the rear thereof; reeds suitably supported in said chambers; a face-plate for said reed-block having air-passages F for said reed-chambers; vent-openings connected to said passages F; an air-supply; and a flexible delivery-tube adapted to be connected to the air-delivery passages of said air-chambers, all coacting for the purpose specified.

6. In a device of the class described, the combination of a reed block or box D having reed-chambers therein; openings G for said chambers arranged toward the rear thereof; reeds suitably supported in said chambers; a face-plate for said reed-block having air-delivery passages F for said reed-chambers; vent-openings connected to said passages F; suitable means for delivering air under pressure to the said air-delivery passages of said chambers, all coacting for the purpose specified.

818,770. CHANGEABLE-SPEED GEARING. ELLIS M. BUSH, Champaign, Ill. Filed July 1, 1905. Serial No. 267,994.

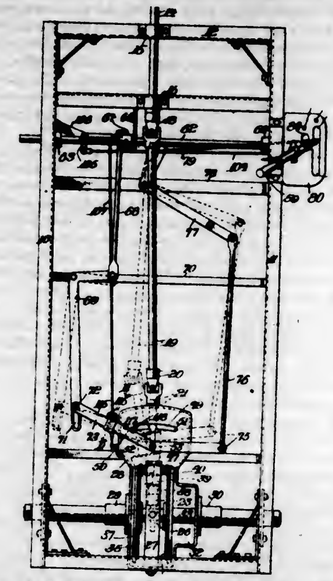

Claim.—1. In a device of the class described, the combination with the bevel gear-wheel, of a bearing-sleeve pivoted on the axis of the wheel, a shaft journaled in said sleeve, a plurality of different-sized beveled pinions secured to said shaft, and means for holding said shaft with any desired one of said pinions in engagement with the wheel.

2. In a device of the class described, the combination with a pair of inwardly-facing bevel gear-wheels, of a bearing-sleeve pivoted on the axis of and between said wheels, a shaft journaled in said sleeve, a plurality of different-sized bevel-pinions secured to said shaft, and means for holding said shaft with one of said pinions in engagement with one or the other of said wheels.

3. In a device of the class described, the combination with a pair of inwardly-facing bevel gear-wheels, of a bearing-sleeve pivoted on the axis of and between said wheels, a shaft journaled in said sleeve, a plurality of different-sized bevel-pinions secured to said shaft, and means for holding said shaft with one of said pinions in engagement with one or the other of said wheels, or with any one of said pinions in engagement with the other of said wheels.

4. In a device of the class described, the combination with the bevel gear-wheel, of a bearing-sleeve pivoted on the axis of the wheel, a shaft journaled in said sleeve, a plurality of different-sized bevel-pinions secured to said shaft, and means for holding said shaft with any desired one of said pinions in engagement with the wheel, consisting of a bearing-sleeve for the outer end of said shaft, a pin carried by said sleeve, and a slotted recessed plate with which the pin coöperates.

5. In a device of the class described, the combination with the bevel gear-wheel, of a bearing-sleeve pivoted on the axis of the wheel, a shaft journaled in said sleeve, a plurality of different-sized bevel-pinions secured to said shaft, and means for holding said shaft with any desired one of said pinions in engagement with the wheel consisting of a bearing-sleeve for the outer end of said shaft, two oppositely-extending pins carried by said bearing-sleeve, and a pair of similarly slotted and recessed plates between which the outer sleeve slides.

6. In a device of the class described, the combination with the pair of inwardly-facing bevel gear-wheels, of a bearing-sleeve pivoted between and on the axis of said wheels, a shaft journaled in said sleeve, a plurality of different-sized bevel-pinions secured to said shaft, a second bearing-sleeve for the outer end of said shaft, a pair of similarly slotted and recessed plates between which the outer sleeve slides, and a pair of oppositely-extending pins secured to the outer bearing-sleeve and extending through the slots in the plates,

all combined and operating substantially as and for the purpose described.

7. In a device of the class described, the combination with the

a shaft journaled in said sleeve, a plurality of different-sized bevel-pinions secured to said shaft, a bearing-sleeve for the outer end of

holding said shaft with any desired one of said pinions in engage-

Claim.—1. The combination with a conduit having a two-part

all combined and operating substantially as and for the purpose described.

7. In a device of the class described, the combination with the pair of inwardly-facing bevel gear-wheels, of a bearing-sleeve pivoted between and on the axis of said wheels, a shaft journaled in said sleeve, a bevel-pinion secured to said shaft, a second bearing-sleeve for the outer end of said shaft, a pair of similarly slotted and recessed plates between which the outer sleeve slides, and a pair of oppositely-extending pins secured to the outer bearing-sleeve and extending through the slots in the plates, all combined and operating substantially as and for the purpose described.

8. In a device of the class described, the combination with the bevel gear-wheel, of a bearing-sleeve pivoted on the axis of the wheel, a shaft journaled in said sleeve, a plurality of different-sized bevel-pinions secured to said shaft, means for holding said shaft with any desired one of said pinions in engagement with the wheel, and a lock for said means to prevent any possible disengagement of the pinions.

9. In a device of the class described, the combination with the bevel gear-wheel, of a bearing-sleeve pivoted on the axis of the wheel, a shaft journaled in said sleeve, a plurality of different-sized bevel-pinions secured to said shaft, a bearing-sleeve for the outer end of said shaft, a pin carried by said sleeve, a slotted recessed plate with which the pin coöperates, a member moving with said outer sleeve and having a number of recesses corresponding to the pinions, a stationary bearing through which said member moves, and a locking-bolt coöperating with said recesses.

10. In a device of the class described, the combination with the bevel gear-wheel, of a bearing-sleeve pivoted on the axis of the wheel, a shaft journaled in said sleeve, a plurality of different-sized bevel-pinions secured to said shaft, a bearing-sleeve for the outer end of said shaft, a pair of similarly-slotted and recessed plates between which the outer sleeve slides, oppositely-extending pins secured to said outer sleeve and extending through the slots in the plates, a pair of members moving with said sleeve and secured to the pins and having a plurality of recesses equal in number to the pinions, a pair of bearings through which said members move, and a locking-bolt sliding adjacent said bearings and coöperating with said recesses.

11. In a device of the class described, the combination with the bevel gear-wheel, of a bearing-sleeve pivoted on the axis of the wheel, an inner shaft-section journaled in said sleeve, a plurality of different-sized bevel-pinions secured to said shaft-section, means for holding said shaft-section with any desired one of said pinions in engagement with the wheel, the outer shaft-section journaled in stationary bearings, and the intermediate shaft-section connected by universal joints to the other shaft-sections.

12. In a device of the class described, the combination with the bevel gear wheel, of a bearing-sleeve pivoted on the axis of the wheel a shaft-section journaled in said sleeve, a bevel-pinion secured to said shaft-section, means for holding said shaft-section with the pinion in or out of engagement with the wheel, an outer shaft-section journaled in stationary bearings, and an intermediate shaft-section connected by universal joints to the other two shaft-sections.

13. In a device of the class described, the combination with the pair of inwardly-facing bevel gear-wheels, of a bearing-sleeve pivoted between the wheels on the axis thereof, a shaft-section journaled in said sleeve, a bevel-pinion secured to said shaft-section, means for holding said shaft-section with the pinion in engagement with one or the other of said wheels, an outer shaft-section journaled in stationary bearings, and an intermediate shaft-section connected by universal joints to the other shaft-sections.

14. In a device of the class described, the combination with the pair of inwardly-facing bevel gear-wheels, of a bearing-sleeve pivoted between and on the axis of the wheels, a shaft-section journaled in said sleeve, a plurality of different-sized bevel-pinions secured to said shafts, means for holding said shaft-section with one of said pinions in engagement with one of said wheels, or with any one of said pinions in engagement with the other of said wheels, an outer shaft-section journaled in stationary bearings, and an intermediate shaft-section connected by universal joints to the other sections.

15. In a device of the class described, the combination with the bevel gear-wheel, of a bearing-sleeve pivoted on the axis of the wheel, a shaft journaled in said sleeve, a plurality of different-sized bevel-pinions secured to said shaft, means for holding said shaft with any desired one of said pinions in engagement with the wheel, a shifting lever, and connections between said shaft and lever whereby any desired one of said pinions can be brought into engagement with the wheel.

16. In a device of the class described, the combination with a bevel gear-wheel, of a bearing-sleeve pivoted on the axis of the wheel, a shaft journaled in said sleeve, a plurality of different-sized bevel-pinions secured to said shaft, a bearing-sleeve for the outer end of said shaft, a pin carried by said sleeve, a slotted recessed plate with which the pin coöperates, a shifting lever, and connections between said lever and pin whereby the bearing-sleeve may be shifted to bring any desired one of said pinions in engagement with the wheel.

17. In a device of the class described, the combination with the bevel gear-wheel, of a bearing-sleeve pivoted on the axis of the wheels, a shaft journaled in said sleeve, a plurality of different-sized bevel-pinions secured to said shaft, a bearing-sleeve for the outer end of said shaft, a pin carried by said sleeve, a slotted recessed plate with which the pin coöperates, a member moving with said sleeve and having a plurality of recesses equal in number to the pinions, a stationary bearing through which said member moves, a locking-bolt coöperating with said recess, a shifting lever, and connections between said lever and bearing-sleeve whereby any desired one of said pinions may be brought in engagement with the wheel, and connections between the shifting lever and locking-bolt whereby the bolt may be operated to release the member.

18. In a device of the class described, the combination with the bevel gear-wheel, of a bearing-sleeve pivoted on the axis of the wheel, a shaft-section journaled in said sleeve, a plurality of different-sized bevel-pinions secured to said shaft-section, means for holding said shaft-section with any desired one of said pinions in engagement with the wheel, an outer shaft-section journaled in stationary bearings, an intermediate shaft-section connected by universal joints to the other sections, a shifting lever, and connections between said lever and means whereby the pinions may be engaged and disengaged as desired.

19. In a device of the class described, the combination with the bevel gear-wheel, of the bearing-sleeve pivoted on the axis of the wheel, an inner shaft-section journaled in said sleeve, a plurality of different-sized bevel-pinions secured to said shaft-section, a bearing-sleeve for the outer end of said shaft, a pin carried by said sleeve, a slotted recessed plate with which the pin coöperates, a member moving with said sleeve and having a plurality of recesses equal in number to the pinions, a bearing through which said member moves, a locking-bolt coöperating with said recesses, an outer shaft-section journaled in stationary bearings, an intermediate shaft-section connected by universal joints to the other sections, a shifting lever, connections between said lever and bearing-sleeve for the outer end of the shaft-section whereby any desired one of said pinions may be brought in engagement with the wheel, and means adjacent the lever for moving the bolt.

20. In a device of the class described, the combination with the bevel gear-wheel, of a bearing-sleeve pivoted on the axis of the wheel, a shaft journaled in said sleeve, a plurality of different-sized bevel-pinions secured to said shaft, a bearing-sleeve for the outer end of said shaft, a pin carried by said sleeve, a slotted recessed plate with which the pin coöperates, a shifting lever, connections between said lever and bearing-sleeve whereby any desired one of said pinions may be brought into engagement with the wheel, and a guiding-plate for said lever slotted similarly to the recessed plate with which the pin coöperates.

21. In a device of the class described, the combination with the bevel gear-wheel, of a bearing-sleeve pivoted on the axis of the wheel, a shaft journaled in said sleeve, a plurality of different-sized bevel-pinions secured to said shaft, a bearing-sleeve for the outer end of said shaft, a pin carried by said sleeve, a slotted recessed plate with which the pin coöperates, a shifting lever, connections between said lever and bearing-sleeve whereby any desired one of said pinions may be brought into engagement with the wheel, a guiding-plate with which the lever coöperates, slotted similarly to the recessed plate with which the pin coöperates, apertures in the guiding-plate, and a spring-pressed plunger carried by the lever coöperating with said apertures.

22. In a device of the class described, the combination with the bevel gear-wheel, of a bearing-sleeve pivoted on the axis of the wheel, a shaft journaled in said sleeve, a plurality of different-sized bevel-pinions secured to said shaft, a bearing-sleeve for the outer end of said shaft, a pin carried by said sleeve, a slotted recessed plate with which the pin coöperates, a shifting lever, connections between said lever and bearing-sleeve for bringing any desired one of said pinions into engagement with the wheel, and means for locking the lever and the bearing-sleeve each in their adjusted position.

23. In a device of the class described, the combination with the bevel gear-wheel, of a bearing-sleeve having forked ends, pivoted bearings on the axis of said wheel through which the forks of the bearing-sleeve slide, a shaft journaled in said sleeve, a plurality of different-sized bevel-pinions secured to said shaft, and means for holding said shaft with any desired one of said pinions in engagement with the wheel.

24. In a device of the class described, the combination with the bevel gear-wheel, of a bearing-sleeve pivoted on the axis of the wheel, a shaft journaled in said sleeve, a plurality of different-sized bevel-pinions secured to said shaft, a bearing-sleeve for the outer end of said shaft, a pin carried by said sleeve, a slotted recessed plate with which the pin coöperates, a member connected with said pin, a rock-shaft a lever pivoted on said rock-shaft to swing in the plane of the axis of the rock-shaft or at an angle thereto to rock said shaft, connections between said member and rock-shaft to move the member in one plane, and connections between said member and the lever to move the member in another plane.

25. In a device of the class described, the combination with the bevel gear-wheel, of a bearing-sleeve pivoted on the axis of the wheel, a shaft journaled in said sleeve, a plurality of different-sized bevel-pinions secured to said shaft, a bearing-sleeve for the outer end of said shaft, a pin carried by said sleeve, a slotted recessed plate with which the pin coöperates, a member connected with said pin, a rock-shaft a lever pivoted on said rock-shaft to swing in the plane of the axis of the rock-shaft or at an angle thereto to rock said shaft, connections between said member and rock-shaft to move the member in one plane, and connections between said member and the lever to move the member in another plane, said connections consisting of links and bell-cranks, substantially as shown and described.

26. In a device of the class described, the combination with the bevel gear-wheel, of a bearing-sleeve pivoted on the axis of the wheel, a shaft journaled in said sleeve, a plurality of different-sized bevel-pinions secured to said shaft, a bearing-sleeve for the outer end of said shaft, a pin carried by said sleeve, a slotted recessed plate with which the pin coöperates, a member connected with said bearing-sleeve, a rock-shaft a lever pivoted on said rock-shaft to swing in the plane of the axis of the rock-shaft or at an angle thereto to rock said shaft, connections between said member and rock-shaft to move the member in one plane, a bell-crank pivoted between said member and lever, a link connecting the lever and one end of said bell-crank, and a link connecting the other end of said bell-crank and said member.

27. In a device of the class described, the combination with the bevel gear-wheel, of a bearing-sleeve pivoted on the axis of the wheel, a shaft journaled in said sleeve, a plurality of different-sized bevel-pinions secured to said shaft, a bearing-sleeve for the outer end of said shaft, a pin carried by said sleeve, a slotted recessed plate with which the pin coöperates, a member connected with said bearing-sleeve, a rock-shaft a lever pivoted on said rock-shaft to swing in the plane of the axis of the rock-shaft or at an angle thereto to rock said shaft, connections between said member and the lever to move the member in one plane, and connections between said member and the rock-shaft to move the member in another plane, said connections consisting of the crank-arm carried by the rock-shaft, a link pivoted to said crank-arm, a bell-crank to one arm of which the other end of said link is pivoted, and connections between the other arm of said bell-crank and said member.

818,772. MACHINE FOR MAKING CAN-BODIES. WILLIAM CANNON, Chicago, Ill., assignor to Torris Weld, Chicago, Ill. Filed May 22, 1905. Serial No. 261,310.

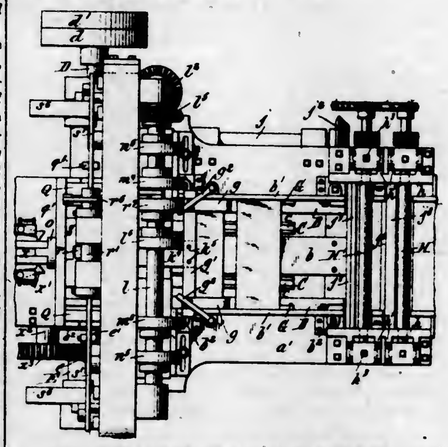

Claim.—1. The combination of an edging mechanism, a reciprocating conveyer for carrying the blanks to the edging mechanism, a feed mechanism comprising a movable gage, a cutter for dividing a sheet into blanks, feed-rolls for moving the sheet to the cutter, and feed-rolls for moving the blanks from the cutter to the reciprocating conveyer, substantially as set forth.

2. The combination of edging mechanism, a reciprocating conveyer for carrying the blanks to the edging mechanism, and a feed mechanism comprising a reciprocating gage, a reciprocating cutter for dividing a sheet into blanks, rolls for feeding the sheet to the cutter and gage, and rolls for moving the blanks to said reciprocating conveyer, substantially as set forth.

3. The combination of edging mechanism, a reciprocating conveyer for carrying the blanks to the edging mechanism, and a feed mechanism comprising a gage, a cutter for dividing a sheet into blanks, means for oppositely reciprocating said gage and cutter, a yielding roll frictionally engaging the sheet for feeding the same to the cutter and gage, and a yielding roll frictionally engaging the blanks for moving the same to said reciprocating conveyer, substantially as set forth.

4. The combination of a blank-support, an edging mechanism, a reciprocating blank-conveyer, means to engage the blanks to hold them from rearward movement, a cross-bar arranged above said conveyer, yielding fingers which are secured to said cross-bar and bear on the blanks to hold the latter down on said support and from movement in advance of the conveyer-dogs, and a weight loosely retained in position by said cross-bar for holding the blank in the edging mechanism, substantially as set forth.

5. The combination of an expansible forming-horn around which the body is formed, a horn-expanding device, and fingers for moving the body off of said forming-horn, said fingers being connected to and movable with said expanding device, substantially as set forth.

818,771. WICKET-VALVE. JAMES F. DUDE, Springfield, Mass. Filed July 1, 1904. Serial No. 215,042.

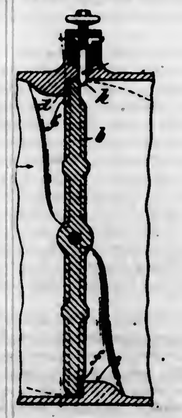

Claim.—1. The combination with a conduit having a two-part flange on the inner wall thereof located partly on one side and partly on the other side of a plane vertical to the axis of the conduit, and constituting an abutment for the edges of the opposites of the valve, a wicket-valve pivotally supported at opposite points thereon substantially in the plane of said flanges, and a screw-operated shaft having a tapered point extending through the wall of the conduit to bear against the back side of the valve to force the latter to a seat against said flanges.

2. The combination with a conduit having a two-part flange on the inner wall thereof located partly on one side and partly on the other side of a plane vertical to the axis of the conduit, and constituting an abutment for the edges of the opposites of the valve, a wicket-valve pivotally supported at opposite points thereon substantially in the plane of said flanges, a screw-operated shaft having a tapered point extending through the wall of the conduit to bear against the back side of the valve to force the latter to a seat against said flanges, and a packing-gland for said shaft.

ed to and movable with said expanding device, substantially as set forth.

6. The combination of an expansible forming-horn around which the body is formed, a reciprocating horn-expanding device, fingers connected to said expanding device for moving the body off of said forming-horn, said expanding device acting to expand the horn when said device is moved in one direction and said fingers acting to move the body when said device is moved in the opposite direction, substantially as set forth.

7. The combination of an expansible forming-horn around which the body is formed, a horn-expanding device, fingers connected to move with said expanding device to move the body off of said forming-horn, and a single device for operating said expanding device and fingers, substantially as set forth.

8. The combination of an expansible forming-horn around which the hooked body-blank is shaped, a device for expanding the horn to interlock the seam-hooks, fingers which move the body longitudinally along said horn, a movable support for a seam-closing hammer, means for operating said hammer-support, and operating means for said horn-expanding device and blank-moving fingers actuated by said hammer-support, substantially as set forth.

9. The combination of an expansible forming-horn around which the body is formed, a longitudinally-movable expanding-pin, longitudinally-arranged fingers which engage the body and move the same off of said forming-horn, a slide-head on which said expanding-pin and fingers are mounted, and means for reciprocating said slide-head, substantially as set forth.

10. The combination of an expansible forming-horn around which the body is formed, a longitudinally-movable expanding-pin, longitudinally-arranged fingers which work in grooves in said horn, means for spreading said fingers to engage the can-body to move the same off of the forming-horn, a slide-head on which said expanding-pin and fingers are mounted, and means for reciprocating said head, substantially as set forth.

11. The combination of a frame, an expansible forming-horn around which the body is formed, a reciprocating conveyer for moving the blank to said forming-horn, fingers for engaging the body to move the same off of said forming-horn, a slide carrying said fingers, said slide working in ways formed by said frame and said reciprocating conveyer, substantially as set forth.

12. The combination of a frame, a forming-horn around which the body is formed, reciprocating feed-bars for moving the blank to said horn, slides carrying said feed-bars, guides in said frame in which said slides work, fingers which engage the body to move the same off of the forming-horn, and a slide-head carrying said fingers, said slide-head working in ways formed by said frame and the slides for said reciprocating feed-bars, substantially as set forth.

13. The combination of a frame, an expansible forming-horn around which the body is formed, reciprocating feed-bars for moving the blank to said forming-horn, slides for said feed-bars which reciprocate on said frame, an expanding device, fingers which engage the body to move the same off of said forming-horn, a slide-head on which said expanding device and fingers are mounted, said slide-head working in ways formed by said frame and said slides for the reciprocating feed-bars, substantially as set forth.

14. The combination of body-forming mechanism, a drive-shaft, a clutch device for coupling said drive-shaft with said forming mechanism, and an operating device for the conveyer of the soldering mechanism which is driven by said drive-shaft, whereby said body-forming mechanism can be stopped without stopping said operating device for the conveyer of the soldering mechanism, substantially as set forth.

15. The combination of a body-forming mechanism, a drive-shaft, gearing connecting said drive-shaft and body-forming mechanism including a loose gear-wheel, a clutch device for operatively connecting said loose gear-wheel to said drive-shaft and gearing connecting said drive-shaft to the conveyer of the soldering mechanism, whereby said body-forming mechanism can be stopped while said conveyer for the soldering mechanism continues in motion, substantially as set forth.

818,778. AUTOMATIC BASKET-MACHINE. SECUNDO L. CASSERA, San Francisco, Cal., assignor of three-fourths to W. F. Burnes Commercial Company, San Francisco, Cal., a Corporation, and one-fourth to D. F. Kimball, San Francisco, Cal. Filed Jan. 6, 1905. Serial No. 239,991.

Claim.—1. A basket-forming machine consisting of mechanism by which sheets of veneer are picked transversely across each other, mechanism by which said sheets are folded to form the bottom and four sides, mechanism by which folded strips of sheet metal are placed contiguous to two opposite edges of the basket, mechanism by which said strips are bent to form angles and the other two sides and overlap at their junction, mechanism by which the overlapping ends of the strips are nested together and the strips placed upon the edges of the basket, and mechanism by which said strips are simultaneously crimped and locked upon the edge of the basket and to each other.

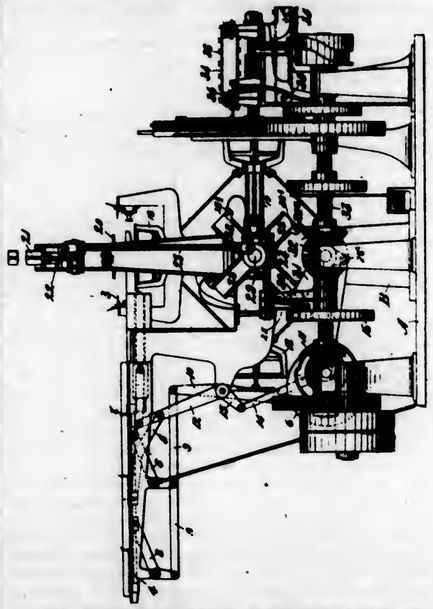

2. In a basket-making machine, tables standing at right angles and intersecting at a common center, carriers movable upon said tables and adapted to advance veneer sheets by intermittent movements, a form upon which said sheets are placed transversely, a plunger by which the sheets are forced into the form and the sides upturned and pins upon which the bottom of the sheets are impaled to lock them together.

3. In a basket-making machine, tables standing at right angles and intersecting at their inner ends, and carriers by which veneers are intermittently moved upon the tables to the point of intersection, a revoluble shaft with arms, formers carried at the ends of said arms, means for intermittently rotating the shaft and formers, means for placing two of the veneers transversely upon each former when it arrives at the plane of travel of the veneers, a plunger and means for reciprocating said plunger to fold each pair of veneers and form sides therefor, and pins adapted to pierce and secure the bottoms of the baskets.

4. In a machine for making baskets, tables intersecting each other at right angles, carriers movable upon said tables and adapted to receive veneers and carry them by intermittent movements to the point of intersection, a revoluble shaft with radial arms and rectangular forms carried at the outer ends of said arms, means for revolving said shaft and arms a quarter of a revolution at each movement, a plunger reciprocating in line with the formers after the veneers have been placed thereon whereby the edges of the veneers are turned up to form sides, carriers movable at right angles with said plunger adapted to receive folded strips of metal, mechanism by which said strips are bent to form angles and to overlap each other on two opposite sides, mechanism by which said strips are advanced and forced upon the edges of the basket, and mechanism by which the strips are crimped and interlocked with each other and the basket edges.

5. In a machine for making baskets, mechanism by which two veneers are placed transversely to each other and the sides upturned, mechanism by which the baskets are advanced and the former turned a quarter of a revolution, endless chains having notches adapted to receive folded strips of sheet metal and advance them toward the outwardly-presented edges of the basket, mechanism by which the strips are bent to form corners intermediate of the upturned sides, mechanism by which the strips are advanced, fitted upon the basket edges and crimped thereon.

6. In a basket-making machine, means for presenting and holding rectangularly-bent veneer, carriers by which folded strips of sheet metal are delivered parallel with two opposite edges of the basket, and folders by which the projecting ends of the strips are gripped and bent to register with the other edges of the basket and to overlap centrally of the sides.

7. In a basket-making machine, means for presenting and holding rectangularly-bent veneers, carriers by which folded strips of sheet metal are delivered and registered with two opposite edges of the basket, folders by which the projecting ends of said strips are gripped and bent to register with the other edges of the basket and to overlap centrally of the sides, and mechanism by which the strips are advanced to fit the edges of the basket.

8. In a basket-making machine, means for presenting and holding rectangularly-bent veneers, carriers by which folded strips of sheet metal are delivered to register with two opposite edges of the basket, folders by which the strips are gripped and bent to form corners and to register with the remaining basket edges and to overlap centrally of the sides, means by which the strips are advanced to fit the edges of the basket, and mechanism by which they are crimped upon said edges.

9. In a basket-making machine, mechanism for presenting and holding rectangularly-bent veneers, means for delivering folded sheet-metal strips to register with two opposite edges of the basket and folding devices by which the strips are gripped and bent to register with the other edges of the basket and to overlap centrally of said sides.

10. In a basket-making machine, mechanism by which rectangularly-bent veneers are presented and held, carriers by which folded sheet-metal strips are brought to register with two opposite edges of the basket, folders by which the strips are gripped and bent to overlap and register with the remaining sides, mechanism by which the strips are forced upon the edges of the basket, and oppositely-movable jaws between which the strips are compressed to form a rim for the basket.

11. In a basket-making machine, a means for securing metallic strips upon the edges of veneer baskets, said means comprising independent exterior and interior jaws corresponding with the sides of the basket, and mechanism by which said jaws are simultaneously advanced in planes one at right angles to the other to crimp the metal strips.

12. In a basket-making machine, means for securing folded metallic strips upon the edges of veneer baskets, said means comprising guided exterior and interior jaws between which the basket sides lie, and cams by which the jaws are simultaneously advanced in planes one at right angles to the other to crimp the strips upon the inclosed basket edges.

13. In a basket-making machine, mechanism by which sheets of veneer are assembled and bent to form upturned sides, mechanism to apply and crimp binding-strips upon the basket edges, an ejector for the finished basket, a carrier consisting of arms radiating from a central shaft, and mechanism by which said carrier is intermittently advanced and locked for each step of the operation.

14. In a basket-making machine, a revoluble former comprising frames upon which veneers are placed and mechanism by which it is intermittently advanced, means for placing two of the veneers transversely upon each former, a reciprocating plunger by which said veneers are bent and sides formed, and a spring-pressed slide by which the veneers are held in place until the plunger acts.

15. In a basket-making machine, a revoluble former comprising frames upon which veneers are placed, and a reciprocating plunger by which the veneers are bent into basket form within the frames, plates within the frames, and cam-actuated means for advancing the plates to eject the finished product.

16. In a basket-making machine, a revoluble former, comprising frames upon which veneers are placed, a reciprocating plunger by which the veneers are bent into basket form within the frames, plates within the frames and slidably-guided rods connected to the plates, a cam by which the plates are retained in the former during a portion of its revolution, and springs by which the plates are moved out when released by the cam and the finished product ejected.

818,774. SHIRT. ABBE F. CHASE, Lynn, Mass. Filed Sept. 1, 1905. Serial No. 277,676.

Claim.—1. A shirt provided with a bosom composed of overlapping and underlying sections, the overlapping section being provided along its edge with a flap folded back beneath the edge of the overlapping section and thence folded forward upon itself forming a pocket to receive the edge of the underlying section, substantially as described.

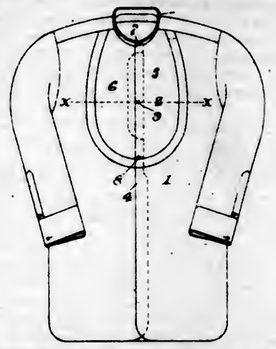

2. A shirt provided with a bosom comprising overlapping and underlying sections, the overlapping section being provided with an interfolding flap, the said flap united to the edge of the overlapping section of the bosom by a weakened folding joint and provided with an intermediate weakened folding joint, substantially as described.

3. A shirt provided with a bosom comprising overlapping and underlying sections, the overlapping section provided with an interfolding flap arranged to receive the edge of the underlying section, said flap provided with a tab, said tab engaging a button, substantially as described.

818,775. ELECTROMAGNETIC MOTOR. MURRAY CHENEVER, Boston, Mass., assignor to The E. Howard Clock Company, Boston, Mass., a Corporation of Maine. Filed Feb. 20, 1905. Serial No. 246,433.

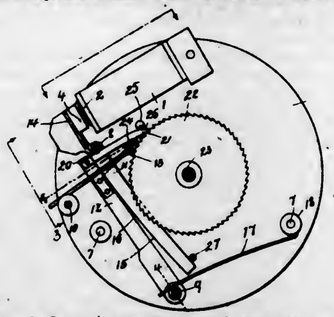

Claim.—1. In a magnetic motor, an electromagnet, an armature arranged to be moved by the attraction of the magnet, a lever connected to the armature, a member arranged for engagement and operation by said lever, said lever and member being so constructed and arranged that as the armature is moved and the force of the magnetic attraction upon it is varied, the amount of motion imparted to the said member by the lever is varied in proportion, and mechanism having connection with said member so as to be driven thereby with a step-by-step movement.

2. In a magnetic motor, an electromagnet, a lever, an armature for the magnet carried by said lever and adapted to be moved by the attraction of the magnet, a movable member adapted to be moved by said lever, the said lever and member being constructed and arranged so that the force of said lever is applied to said member at points at varying distances from the pivot of the lever as the distance between the magnet and armature is varied, mechanism movable step by step, and driving connections between said member and mechanism for intermittently operating the latter.

3. In a magnetic motor, an electromagnet, a lever, an armature for the magnet carried by said lever and adapted to be moved by the attraction of the magnet, driven mechanism movable step by step, a second lever, and intermittently-acting connections with said lever adapted to operate said mechanism, the said levers being arranged

to engage each other, and one of said levers being curved at its engaging surface to cause the point of engagement to shift as the armature is moved relatively to the magnet and the armature-carrying lever moved thereby.

818,776. AUTOMOBILE. ALEXANDER CONSTANTINESCO, Paris, France. Filed Aug. 19, 1905. Serial No. 274,722.

Claim.—1. In an automobile, the combination with the body, of a fender, a rotating shaft mounted in the rear of said body, a cable connected with said rotating shaft, and the lower end of the fender, a rotating shaft mounted in the rear of said casings, a cable connected with said rotating shaft, and the lower end of the casings and engaging the rear ends of the same, and the lower end of said fender, a rotating shaft mounted in the rear of said casings, a cable connected with said rotating shaft, and the lower end of the

frame on the carriage constituting, with a portion of the latter, a paper-clamp, and means operated by the movements of the machine to actuate said frame at the limit of the movement of the carriage in either direction.

7. In a printing-press, a reciprocating type-carriage, a bed therefor, an oscillatory roll-frame pivoted to said support having an inking-roll and an impression-roll located at opposite sides of the

to engage each other, and one of said levers being curved at its engaging surface to cause the point of engagement to shift as the armature is moved relatively to the magnet and the armature-carrying lever moved thereby.

6. In a magnetic motor, an electromagnet, a rotary driven member, a movable armature for the magnet, a lever having a reciprocating connection arranged for rotating said driven member, and a second lever connected to the armature, and arranged to engage and move said first lever, said levers being constructed and arranged so that as one is moved its point of engagement with the other is caused to shift so as to increase the amount of movement imparted to the other lever proportionately to the variations in the amount of the attraction of the magnet on the armature due to the varying distances between the magnet and armature.

5. In a magnetic motor, an electromagnet, a lever, an armature for the magnet carried by said lever and adapted to be moved by the attraction of the magnet, a rotary shaft, and a second lever having reciprocatory connections arranged to communicate rotary movement to said shaft, and being engaged with said first lever, the said first lever having its engaging side longitudinally curved so that as it is moved its point of engagement with the second lever is shifted to varying distances from its pivot to cause the force received therefrom by the second lever to vary inversely to the force of the magnetic attraction acting on the armature.

6. In a magnetic motor, an electromagnet, a lever, an armature for the magnet carried by said lever and adapted to be moved by the attraction of the magnet, a shaft, a ratchet mounted on the shaft, a second lever, and a pawl carried thereby and arranged to engage said ratchet, the second lever being engaged and operated by the first lever, and said levers being so constructed and arranged that they are caused to engage at points varying in distance from their pivots as the first lever is moved and the distance between the armature and magnet varied.

7. In a magnetic motor, an electromagnet, a lever, an armature for the magnet carried by said lever and adapted to be moved by the attraction of the magnet, a shaft, a ratchet mounted on the shaft, a second lever mounted for engagement and operation by the first-named lever, a pawl carried by said second lever and arranged to engage said ratchet intermittently, and a stationary pawl arranged to engage and hold the ratchet while the lever-carried pawl is out of engagement therewith.

8. In a magnetic motor, an electromagnet, a lever, an armature for the magnet carried by said lever and adapted to be moved by the attraction of the magnet, a shaft, a ratchet mounted on the shaft, a second lever mounted for engagement and operation by the first-named lever, a pawl carried by said second lever and arranged to engage said ratchet intermittently, a stationary pawl arranged to engage and hold the ratchet while the lever-carried pawl is out of engagement therewith, and means for engaging said pawls alternately.

9. In a magnetic motor, an electromagnet, a lever, an armature for the magnet carried by said lever and adapted to be moved by the attraction of the magnet, a shaft, a ratchet mounted on the shaft, a second lever mounted for engagement and operation by the first-named lever, a pawl carried by said second lever and arranged to engage said ratchet intermittently, and means located in the path of movement of said pawl arranged to be engaged by said pawl and to force and hold the same in positive engagement with the teeth of the ratchet when the pawl is projected.

10. In a magnetic motor, an electromagnet, a lever, an armature for the magnet carried by said lever and adapted to be moved by the attraction of the magnet, a shaft, a ratchet mounted on the shaft, a second lever mounted for engagement and operation by the first-named lever, a pawl carried by said second lever and arranged to engage said ratchet intermittently, a stationary pawl arranged to engage and hold the ratchet while the lever-carried pawl is out of engagement therewith, a device adapted to engage the lever-carried pawl to hold the same in engagement with the teeth of the ratchet when the pawl is projected, and a member rigidly supported on one of the levers and adapted to engage and hold the stationary pawl in engagement with the teeth of the ratchet.

813,776. **FENDER.** ANDREW CHUVAN and MICHAEL GEE, Allegheny, Pa. Filed Aug. 21, 1905. Serial No. 275,026.

Claim.—1. The combination of a fender having its upper and lower ends mounted in longitudinally-slotted supports, and means for reciprocating said fender, substantially as described.

2. In a device of the class described, the combination of a fender, a pair of horizontal bars engaging the lower end of said fender, hollow cylindrical casings housing said bars, springs mounted in said casings and engaging the rear ends of the same, and the lower end of said fender, a rotating shaft mounted in the rear of said casings, a cable connected with said rotating shaft, and the lower end of the said fender, a spring-actuated dog adapted to engage a notch on said rotating shaft, and means for releasing said dog, substantially as described.

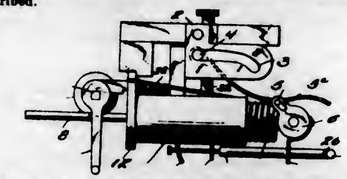

3. In a device of the class described, the combination of a fender, horizontal bars mounted in a pair of hollow cylindrical casings, and supporting the lower end of said fender, springs mounted in said casings and engaging the rear end of same, and the fender, a rotating shaft mounted in the rear of said casings and provided with a notched flange, a cable connected with said shaft and the fender, a dog adapted to engage said notched flange, a trigger adapted to release said dog, a trip-bar adapted to engage said trigger, substantially as described.

4. In a device of the class described, the combination of a fender mounted on suitable supports, a rotating shaft mounted in the rear of said fender, a flange having a notch, said flange being formed integral with said shaft, a cable connected with said rotating shaft and the fender, a dog adapted to engage said notch, trigger mechanism adapted to release said dog, means adapted to be engaged by the motorman for operating the trigger, and springs adapted to thrust the fender forward, substantially as described.

5. A fender having a rotating shaft provided with a notch, a dog adapted to engage said notch, a cable having one end secured to said shaft, and the other end secured to said fender, and means for thrusting said fender forward, substantially as described.

813,777. **HORSESHOE-CALK.** WILLIAM A. COMINS and JOSEPH CONNOR, Stafford Springs, Conn. Filed July 17, 1905. Serial No. 270,131.

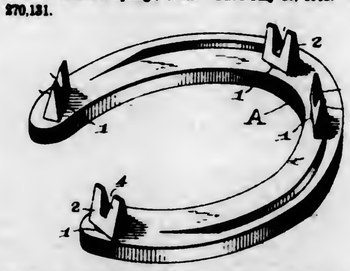

Claim.—A horseshoe-calk having a hard-metal core and a soft-metal exterior, said calk being bifurcated substantially midway of its ends, and the core being exposed in the bifurcation.

813,778. **PRINTING-PRESS.** ELISHA M. COGGIN, Hartford, Conn., assignor to Whitney Manufacturing Company, Hartford, Conn., a Corporation. Filed Oct. 2, 1905. Serial No. 280,260.

Claim.—1. In a printing-press a reciprocating type-carriage and a suitable bed therefor, a flier-frame having arms to receive the paper, said frame being pivotally supported on the carriage and constituting with a part of the latter a clamp for the paper, means operative near the end of the movement of the carriage in either direction to actuate the flier-frame to release the paper, and an ink-roll and impression-roll supported above the type-carriage, together with means operated by the movements of the carriage to alternately bring said rolls into operative relation to the type on the carriage.

2. In a printing-press, a reciprocating type-carriage, a bed therefor, an oscillatory roll-frame pivoted to said support having an inking-roll and an impression-roll located at opposite sides of the center of oscillation of the roll-frame, means operated by the movements of the carriage to tilt the frame to bring said rolls alternately into operative relation to the type, and a device to lock the roll-frame against oscillation when tilted in one direction, together with a flier-frame on the carriage constituting, with a portion of the latter, a paper-clamp, and means operated by the movements of the machine to actuate said frame at the limit of the movement of the carriage in either direction.

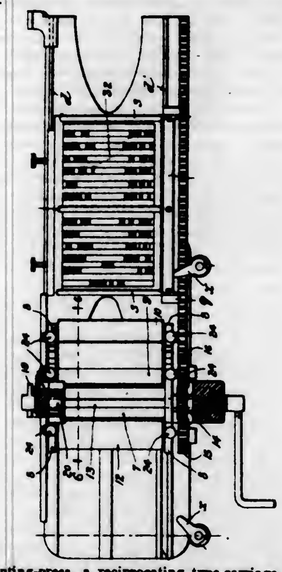

3. In a printing-press, a reciprocating type-carriage, a bed therefor, an oscillatory roll-frame pivoted to said support having an inking-roll and an impression-roll located at opposite sides of the center of oscillation of the roll-frame, means operated by the movements of the carriage to tilt the frame to bring said rolls alternately into operative relation to the type, and a device to lock the roll-frame against oscillation when tilted in one direction, together with a movable guard for the ink-roll actuated by the movements of the roll-frame to swing under the inking-roll when the impression-roll is in operative position, and vice versa.

4. In a printing-press, a reciprocating type-carriage, and a suitable bed therefor, said carriage having ribs extending longitudinally thereof between which the type may be secured, a flier-frame pivotally supported on one of said ribs and having arms thereon extending toward the opposite rib, and means operable near the limit of movement of the carriage in either direction to swing the flier-frame toward and from said rib to clamp or release the paper, in combination with an inking-roll and an impression-roll supported above the type-carriage, and actuated by the movements of the latter to bring them alternately into operative relation to the type on the carriage.

5. In a printing-press, a reciprocating type-carriage, and a suitable bed therefor, said carriage having ribs extending longitudinally thereof between which the type may be secured, a flier-frame pivotally supported on one of said ribs and having arms thereon extending toward the opposite rib, said flier-frame having projections thereon extending below the pivotal point of the latter, a finger rotatable on a vertical axis supported on the bed in position to contact with one of said projections on the flier-frame near the limit of movement of the latter in either direction, whereby the flier-frame will be oscillated in its bearings to release the paper at the proper time.

6. In a printing-press, a suitable bed having an overhanging arm, a type-carriage on the bed movable reciprocally under said arm, an oscillatory roll-frame supported on said arm, comprising a trough-shaped central portion and rectangularly-disposed end portions, an ink-roll and an impression-roll being supported in the latter on either side of the center of oscillation of the frame; a shaft extending through the end of the overhanging arm, and a short arm depending from opposite ends of the shaft, the inner arm being arranged to engage the roll-frame, the outer arm being actuated by contact with a projection on the bed whereby near the limit of movement of the carriage in one direction the roll-frame may be tilted to bring the ink-roll or the impression-roll into operative relation with the type on the carriage, together with means to adjust the ink-roll and impression-roll in their bearings.

7. In a printing-press, a reciprocating type-carriage, a bed therefor, an oscillatory roll-frame pivoted to said support having an inking-roll and an impression-roll located at opposite sides of the center of oscillation of the roll-frame, means operated by the movements of the carriage to tilt the frame to bring said rolls alternately into operative relation to the type, together with a guard for the ink-roll supported to swing on the axis of the latter, a forked member rigidly supported in proximity to the end of said roll, said guard having a pin therein to engage said fixed fork whereby the oscillatory movements of the roll will effect the swinging of said guard in and out under the roll.

813,779. **MEANS FOR FILTERING OR PURIFYING WATER.** WILLIAM COWERN, Hawera, New Zealand. Filed Apr. 29, 1905. Serial No. 257,966.

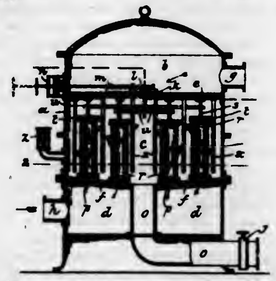

Claim.—In water-purifiers, a casing divided into three chambers by horizontal divisional plates, an inlet leading to the top chamber, an outlet leading from the bottom chamber, an aperture in the top divisional plate, a slide-valve adapted to cover and uncover such aperture and a pipe, controlled by a valve leading from the bottom of the middle chamber to outside the casing, in combination with a number of hollow pillars of porous stone arranged vertically within the middle chamber, apertures formed in the lower divisional plate, over each one of which a hollow pillar rests, and a number of perforated pipes opening from the top chamber and extending downward through the middle chamber interspersed with the hollow pillars, substantially as specified.

813,780. **AMALGAMATOR.** DAVID DRAPER and GEORGE A. HAY, Johannesburg, Transvaal. Filed Mar. 15, 1905. Serial No. 250,268.

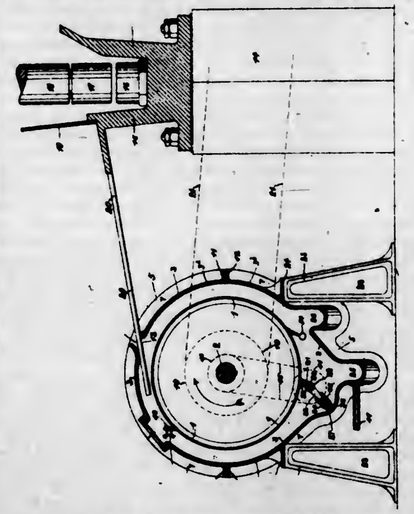

Claim.—1. An amalgamating-machine comprising a revolvable drum the periphery of which is made the amalgamated surface, a casing surrounding said drum, means for rotating the drum, means

for introducing the pulp or gold-bearing material into the casing and delivering it onto the amalgamated surface of the drum, a scraper lo-

8. In an amalgamating-machine the combination of a drum, means for rotating said drum, a casing inclosing said drum, said ca-

to the interior thereof, of a pair of frame-arms and their color-glasses, a two-part revolvable support therefor and separate and independent

smaller opening other than circular and adapted to receive a portion of said shaft having a corresponding surface configuration, and each

for introducing the pulp or gold-bearing material into the casing and delivering it onto the amalgamated surface of the drum, a scraper located in the casing and adapted to be brought into contact with the amalgamated surface to remove the amalgam, and means for traversing said scraper longitudinally of the drum.

2. An amalgamating-machine comprising a drum, the periphery of which is made the amalgamated surface, a casing completely inclosing said drum, means for rotating the drum, means for conducting the pulp into the casing and delivering it onto the amalgamated surface in a direction opposite to that of rotation of the drum, a scraper arranged in the casing and adapted to be brought into contact with the amalgamated surface to remove the amalgam, and means for traversing said scraper longitudinally of the drum.

3. An amalgamating-machine comprising a drum the periphery of which forms or is made the amalgamated surface, a casing inclosing said drum said casing being formed with a longitudinal slot forming an inlet and with a recess or sump to receive the amalgam when it is removed from the surface of the drum, an inclined plate or tray for conducting the pulp into the casing and delivering it onto the surface of the drum in a direction opposite to that of rotation of said drum, a scraper located in the casing above the recess formed in the latter, said scraper being adapted to be brought into contact with the amalgamated surface to remove the amalgam, and means for traversing said scraper longitudinally of the drum in either direction.

4. An amalgamating-machine comprising a drum the periphery of which is made the amalgamated surface, a casing completely inclosing said drum, said casing being constructed with a longitudinal inlet or slot above the drum, and with a recess or sump in the bottom to receive the concentrates removed from the surface of the drum, and with another sump or recess to receive the amalgam when it is removed from the surface of the drum, a revoluble brush arranged longitudinally of the casing for cleaning the amalgamated surface of the drum, means for rotating said brush, a scraper journaled longitudinally of the drum and adapted to be brought into contact with the amdlgamated surface, means for traversing said scraper longitudinally of the drum in either direction, and a water-spray pipe located beneath the drum for washing the concentrates off the amalgamated surface of the drum.

5. An amalgamating-machine comprising a drum, the periphery of which is made the amalgamated surface, a casing inclosing the drum said casing being constructed with a longitudinal slot forming an inlet above the drum, and with a longitudinal slot through which the amalgamated surface of the drum may be inspected, and with a recess or sump in the bottom of the casing adapted to receive the amalgam when it is removed from the surface of the drum and with a recess or sump adapted to receive the concentrates, means for removing the amalgam from the surface of the drum said means being adapted to be traversed longitudinally of the drum, means for removing the concentrates from the surface of the drum, means for conducting the material carrying the gold through the inlet in the casing and delivering it in a direction opposite to that of rotation of the drum, and an outlet in proximity to the bottom of the casing for carrying away the waste from said casing.

6. An amalgamating-machine comprising a drum the periphery of which is made the amalgamated surface, a casing surrounding said drum said casing being constructed with a longitudinal slot forming the inlet for the material containing the gold and with a longitudinal slot through which the amalgamated surface may be inspected and with two inclined recesses or sumps for receiving, the one the amalgam and the other the concentrates, means for conducting the gold-containing material through the inlet and delivering it onto the drum in a direction opposite to that of rotation of the latter, a brush for cleaning the amalgamated surface, means for rotating said brush, a scraper located in the casing for removing the amalgam from the surface of the drum and means for traversing said scraper longitudinally of the drum in either direction, means for removing the concentrates from the surface of the drum and means for conducting the waste from the casing.

7. In an amalgamating-machine, in combination, a drum the periphery of which is made the amalgamated surface, a casing inclosing said drum said casing being constructed with an inlet and with an inclined sump or recess, means for rotating said drum inside said casing, means for conducting the gold-bearing material into the casing in a direction opposite to that of rotation of the drum, a screw journaled in the ends of the casing and arranged parallel with the axis of the drum, a nut mounted on said screw, a scraper carried by said nut adapted to be brought into contact with the amalgamated surface to remove the amalgam, and means for reversing the direction of rotation of said screw to traverse the scraper longitudinally of the drum in either direction.

8. In an amalgamating-machine the combination of a drum, means for rotating said drum, a casing inclosing said drum, said casing being constructed with a longitudinal slot forming an inlet above the drum, and with an inclined recess or sump below the drum, an inclined plate or tray projected through the slot for conducting the gold-containing material into the casing and delivering it in a direction opposite to that of rotation of the drum, a screw journaled in the ends of the casing and arranged parallel with the axis of the drum, means for imparting rotary motion to said screw in either direction, a nut mounted on said screw, a scraper carried by said nut adapted to be brought into contact with the amalgamated surface, an arm or projection on said nut, a bar arranged parallel with the screw formed with a slot into which said arm projects, and means for operating said bar to throw the scraper into or out of contact with said amalgamated surface, substantially as described.

9. In an amalgamating-machine the combination of a drum fixed to a driving-shaft, a casing surrounding said drum the ends of which casing provide bearings for the driving-shaft of the drum said casing being constructed with a slot parallel with the axis of the drum and with a longitudinal slot for permitting inspection of the amalgamated surface and with two inclined sumps or recesses in the bottom, an inclined plate or tray for conducting the gold-bearing material through the inlet and delivering it onto the drum in a direction opposite to that of rotation of the latter, a brush arranged parallel with the amalgamated surface for cleaning said surface, means for driving said brush from the main driving-shaft, a screw journaled in the ends of the casing and arranged parallel with the axis of the drum, a nut on said screw formed with two arms or projections, a scraper fitted to one of said arms or projections adapted to be brought into contact with the amalgamated surface of the drum, a bar pivoted in the ends of the casing and arranged parallel with the screw and formed with a longitudinal groove into which the other arm of the nut projects, means attached to said bar outside the casing for throwing the scraper into or out of contact with the amalgamated surface and retaining it in those positions, a pipe communicating with the casing at the bottom for carrying away the waste, and a water-spray pipe for washing the concentrates off the amalgamated surface into the concentrate-sump, substantially as described.

10. An amalgamating-machine comprising in combination, a drum the periphery of which is made the amalgamated surface, a shaft to which said drum is fixed, a pulley on said driving-shaft for imparting rotary motion to the drum, a casing constructed in two parts longitudinally and formed with longitudinal ribs or flanges through which they are connected, said casing being formed with a longitudinal slot forming a inlet and with a longitudinal slot closed by means of glass for permitting inspection of the amalgamated surface and with two inclined recesses or sumps at the bottom, the ends of said casing forming bearings for the driving-shaft of the drum, standards for carrying said casing, an inclined plate for conducting the gold-bearing material through the inlet in the casing and delivering it onto the drum in a direction opposite to that of rotation of the latter, a brush journaled in the ends of the casing in contact with the amalgamated surface for cleaning the latter, a pulley fixed on the spindle of the brush outside the casing, a pulley on the main shaft and a belt for transmitting motion through said pulleys from the main shaft to the brush, a screw journaled in the ends of the casing parallel with the axis of the drum, fast and loose pulleys on each end of said screw outside the casing, a nut mounted on the screw formed with two arms or projections, a scraper fixed to one of said arms adapted to be brought into contact with the amalgamated surface of the drum, a bar pivoted in the ends of the casing formed with a longitudinal groove or recess into which the other arm of the nut projects, a lever and weight on the end of said bar outside the casing for rotating said bar in either direction to move the scraper into or out of contact with the amalgamated surface of the drum, fast and loose pulleys on the main driving-shaft at either end of the casing in line with the fast and loose pulleys on the end of the screw, a straight belt and a crossed belt on said pulleys adapted to rotate said screw in either direction from the main driving-shaft or to allow said screw to remain stationary, a water-spray pipe located below the drum for washing the concentrates into the concentrate-sump, and a pipe for carrying away the waste from the casing, substantially as described.

818,781. **SIGNAL-LANTERN.** CHARLES H. DIETERICH, New York, N. Y., assignor to The Dressel Railway Lamp Works, New York, N. Y., a Corporation of New York. Filed Sept. 30, 1905. Serial No. 280,943.

Claim.—1. In a signal-lantern, the combination with the body and lens-glass and a box-casing built on the side of the body and open to the interior thereof, of a pair of frame-arms and their color-glasses, a two-part revoluble support therefor and separate and independent means for operating the same.

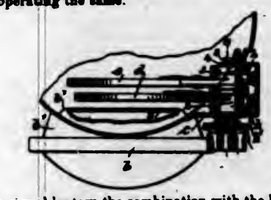

2. In a signal-lantern the combination with the body and lens-glass and a box-casing built on the side of the body and open to the interior thereof, of a pair of frame-arms and their color-glasses, a two-part revoluble support therefor, separate and independent means for operating the same, and similar separate means for maintaining the said frame-arms in their operative and inoperative positions.

3. In a signal-lantern, the combination with the body and lens-glass and the box-casing built on the side of the body and open to the interior thereof, of a pair of frame-arms and their color-glasses, a sleeve connected to one frame-arm and passing through the casing, a shaft passing through said sleeve and through the other frame-arm and having a bearing in the body of the lantern, and means for independently actuating the said frame-arms, and other means for maintaining them in their operative and inoperative positions.

4. In a signal-lantern, the combination with the body and lens-glass and the box-casing built on the side of the body and open to the interior thereof, of a pair of frame-arms and their color-glasses, a sleeve connected to one frame-arm and passing through the casing, a shaft passing through said sleeve and through the other frame-arm and having a bearing in the body of the lantern, a knurled disk on said sleeve outside the casing for turning the same and the color-glass connected therewith, a thumb-piece on the shaft outside the casing and beyond said knurled disk for turning the same and the frame-arm connected with said shaft, and means for maintaining said frame-arms in their operative and inoperative positions

5. In a signal-lantern, the combination with the body and the lens-glass and the casing built on the side of the body and open to the interior thereof, of a pair of frame-arms and their color-glasses, a sleeve connected to one frame-arm and passing through the casing, a shaft passing through said sleeve and through the other frame-arm and having a bearing in the body of the lantern, a knurled disk on said sleeve outside the casing for turning the same and the color-glass connected therewith, a thumb-piece on the shaft outside the casing and beyond said knurled disk for turning the same and the frame-arm connected with said shaft, and means for maintaining said frame-arms in their operative or inoperative positions.

6. In a signal-lantern, the combination with the body and lens-glass, of a pair of frame-arms and their color-glasses, a sleeve connected to one frame-arm and a bearing-support therefor, a shaft passing through said sleeve and through the other frame-arm and having a bearing in the body of the lantern, a knurled disk on said sleeve outside the casing for turning the same and the color-glass connected therewith, a thumb-piece on the shaft outside the casing and beyond said knurled disk for turning the same and the frame-arm connected with said shaft, and means for maintaining said frame-arms in their operative and inoperative positions.

7. In a signal-lantern, a frame-arm, a color-glass held thereby, a cam end to said frame-arm, a pivot for the frame-arm, means for operating the said arm and a double end or loop spring having a central hump and adjacent depressions adapted to engage the cam end of the frame-arm and hold the same in either its operative or inoperative position.

8. In a signal-lantern, a frame-arm and a color-glass received thereby, said frame-arm having an opening other than circular, a sleeve having a surface configuration adapted to fit said opening and constructed so as to be turned by hand, a shaft passing through said sleeve, a second frame-arm and a color-glass held thereby having a smaller opening other than circular and adapted to receive a portion of said shaft having a corresponding surface configuration, substantially as described.

9. In a signal-lantern, a frame-arm and a color-glass received thereby, said frame-arm having an opening other than circular, a sleeve having a surface configuration adapted to fit said opening and constructed so as to be turned by hand, a shaft passing through said sleeve, a second frame-arm and a color-glass held thereby having a smaller opening other than circular and adapted to receive a portion of said shaft having a corresponding surface configuration, and each arm provided adjacent to its opening, with a rounded or cam end, and springs each adapted to bear upon said cam end and having a hump coming at either one side or the other of said cam ends so as to hold said arms in their operative and inoperative positions.

818,782. **FENCE-POST.** WILLIAM J. RAGS, Dayton, Ohio. Filed Oct. 30, 1905. Serial No. 284,994.

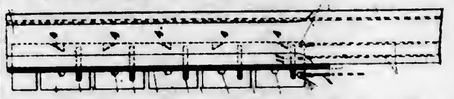

Claim.—1. A fence-post comprising a body and a longitudinal plate projecting therefrom, said plate being provided with wire-receiving grooves extending from the margin of the plate to the face of the body and having seats or recesses for the wires opening toward said body, and a locking-rod adapted to fit between the body and said recesses adjacent to the plate and prevent the wires in said recesses from entering the slots, substantially as described.

2. A fence-post comprising a body and a longitudinal plate projecting therefrom, said plate being provided with wire-receiving grooves extending from the margin of the plate to the face of the body and having seats or recesses for the wires opening toward said body, and a locking-rod adapted to fit between the body and said recesses adjacent to the plate and prevent the wires in said recesses from entering the slots, said body being provided with means for preventing lateral motion of the locking-rod away from the plate.

3. A fence-post comprising a cement body and a combined reinforcing and wire-supporting member consisting of a plate extending longitudinally of the portion of the post above ground, partly embedded therein to reinforce the same, and having its projecting part provided with wire-receiving grooves terminating in inwardly-opening recesses, pins projecting from the body along one side of the plate, and a locking-rod fitting between the pins and plate against the face of the body and adapted to close the mouths of the recesses, substantially as described.

4. A fence-post comprising a body and a longitudinal plate projecting therefrom, the projecting portion of the plate being provided with wire-receiving slots terminating in inwardly-opening recesses, and a free locking-rod adapted to fit between the recesses and the face of the body adjacent to the plate and having its upper extremity adapted to engage the plate, substantially as described.

813,783. **ALCOHOL-BURNER.** JOHN H. RENEY, Brooklyn, N. Y., assignor to Silver & Company, Brooklyn, N. Y., a Corporation of New York. Filed June 14, 1905. Serial No. 265,208.

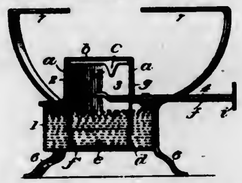

Claim.—1. The combination in an alcohol-burner, of a burner-bowl having above its body a relatively contracted neck portion provided circumferentially with jet-orifices, a perforated crown-flange fixed to the bottom of the bowl in axial alinement with the neck portion, a vertically-movable flame-regulator consisting of an open-ended cylinder guided by the neck portion and the crown-flange, and means operating at the axis of the flame-regulator for raising and lowering it.

2. The combination in an alcohol-burner, of a burner-bowl having above its body a relatively contracted neck portion provided circumferentially with jet-orifices, a perforated crown-flange fixed to the bottom of the bowl in axial alinement with the neck portion, a vertically-movable flame-regulator consisting of an open-ended cylinder guided by the neck portion and the crown-flange and having a vertical slot therein, a radial tube fixed to the top of said body portion and projecting inwardly through said neck portion and said slot to the axis of said cylinder, a crank-shaft journaled in said tube with the crank at its inner end, and a slotted cross-bar fixed diametrically

in said cylinder to interact with said crank for moving said flame-regulator.

818,786. **PROCESS OF PRODUCING METALLIC OXIDS.** LAURENT-PIERE-HUGUENOT, Paris, France. Filed Jan. 10, 1905. Serial No. 240,494.

in one of said members and having a tongue adapted to be pivoted in the recess or bifurcated end of said base, a head having a socket member at one end adapted to receive the upper end of one of said side

Claim.—1. A string-frame for pianofortes and like musical instruments, having an approximately circular opening and a sound-

in said cylinder to interact with said crank for moving said flame-regulator.

813,784. SHAPING-TOOL. CONRAD FREITAG, Goodrich, N. D. Filed June 16, 1905. Serial No. 265,717.

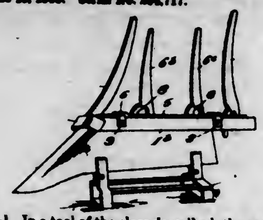

Claim.—1. In a tool of the class described, the combination of a holder embodying spaced longitudinal bars, members connecting said bars, a clamp member arranged between the longitudinal bars of the holder and mounted upon the members connecting said bars, and cam-levers arranged to coact with the clamp member to actuate the same.

2. In a tool of the class described, the combination of a holder embodying spaced longitudinal bars, members connecting said bars, a clamp member arranged between the longitudinal bars of the holder and mounted upon the members connecting said bars, levers pivoted to a side of the holder, and cams extended from said levers to engage between the clamp member and a side of the holder for actuating said clamp member.

3. In a tool of the class described, the combination of a holder embodying spaced longitudinal bars, a loop extension at one end of the holder, a clamp member mounted between the longitudinal bars of the holder, and a plurality of cam-levers mounted upon the holder and arranged to coact with the clamp member.

4. In a tool of the class described, the combination of a holder consisting of spaced longitudinal bars, members connecting said bars at intervals between the ends thereof, a clamp-bar extending longitudinally between the bars of the holders and provided with openings through which the members connecting the bars of the holder pass, levers having one end bifurcated, one of the bifurcated portions of each lever being pivotally attached to the side of the holder, the other bifurcated portion being formed into a cam extension.

813,785. APPARATUS FOR THE PREPARATION OF METALLIC OXIDS. LAURENT FIRE-HUGUENOT, Paris, France. Filed Jan. 10, 1905. Serial No. 240,483.

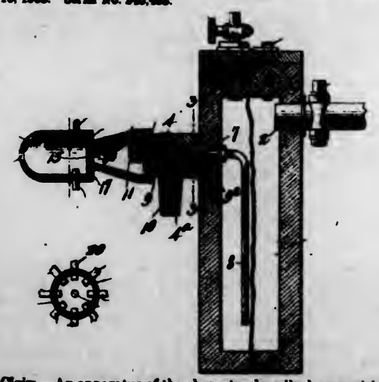

Claim.—An apparatus of the character described, comprising a container for molten metal, a discharge connection therefor formed with a conduit 7 for molten metal and conduits 9 and 10 for an elastic fluid, and an apertured, truncated cone upon the outer end of said discharge connection, into which the forward end of the conduits 7 and 9 open, radially-projecting burner-tubes 20 extending from said discharge connection, whereby when an elastic fluid is admitted into said conduit 10, a portion will enter said container to force the molten metal therein out of said conduit 7 and into said cone and the remaining portion of said fluid will enter said cone and cause a vortex stirring action in the same and expel the mixture through the aperture in said cone, substantially as described.

813,786. PROCESS OF PRODUCING METALLIC OXIDS. LAURENT FIRE-HUGUENOT, Paris, France. Filed Jan. 10, 1905. Serial No. 240,484.

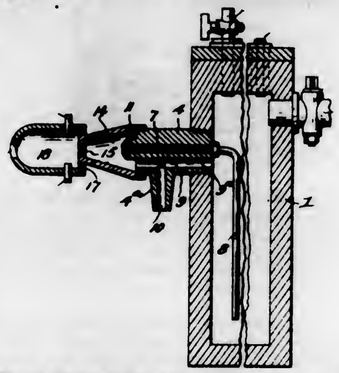

Claim.—The herein-described process of producing metallic oxids, which consists in forcing a fused metal to flow in a current under the action of a strong pressure, mingling an elastic fluid with said current, utilizing a portion of the force of the elastic fluid to create said strong pressure, confining the current to a restricted space to form a vortex jet and finally directing an oxidizing-flame against said jet, essentially as described.

813,787. HAIR-PIN. LLEWELLYN H. FLORY, Ashley, Pa. Filed Mar. 20, 1905. Serial No. 250,732.

Claim.—1. A hair-pin having a head provided with coils constituting stops, and legs having their terminals outturned and normally in engagement.

2. A hair-pin having a head provided on opposite sides with intermediate coils, with shoulders adjacent to the coils, and with crossed legs having their terminals normally in engagement.

813,788. STANCHION. JOHN FOSTER, Rochester, N. Y. Filed June 5, 1905. Serial No. 263,511.

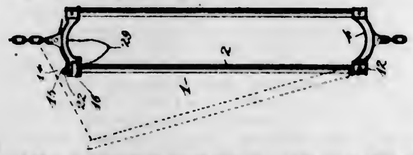

Claim.—1. A stanchion comprising a pair of bars, one of which is adapted to swing, a hook upon said swinging bar, lateral projections adjacent to said hook, a head upon the other of said bars and formed with a recess to receive said hook and with grooves to the walls of said recess to receive said projections and a swinging latch upon said head and formed with a slot to receive said hook, substantially as described.

2. A stanchion comprising a tubular side member, a base secured to one end of said member, a slotted head secured to the other end of said member, a tubular swinging side member pivotally connected to one end of said base, an outwardly-extending hook 14 upon the free end of said side member, a guide upon one end of said head, a latch pivoted within said head and formed with a slot to receive said hook 14, a spring connected to said latch and head, said latch having a finger-piece 25, a flexible connection 29 attached to said swinging side member and to said slotted head to limit the opening movement of said swinging member, and a chain for suspending said stanchion, substantially as described.

3. A stanchion comprising two tubular side members a cast base having a tubular socket at one end to receive one of said members and a slotted or bifurcated portion at its opposite end, a plug secured

in one of said members and having a tongue adapted to be pivoted in the recess or bifurcated end of said base, a head having a socket member at one end adapted to receive the upper end of one of said side members and formed at its opposite end with a guide to receive the upper end of the other of said side members, said guide comprising a slot or recess formed with grooves in its walls, a hook upon the upper end of the pivoted side member adapted to enter the slot of said guide, lugs upon said hook to enter the grooves of said guide, a latch pivoted in a slot in said head and formed with an upturned slotted end adapted to engage said hook, a finger-piece upon said latch, a spring for holding said latch normally in engagement with said hook, and a chain or other flexible connection for limiting the swinging movement of said pivoted side member.

813,789. JAR-HOLDER. ANNIE FOX, Marietta, Mich. Filed Feb. 16, 1905. Serial No. 245,969.

Claim.—A jar-holder comprising two frames each formed of a single wire and including vertically-spaced members connected at their outer ends by an upwardly-arched portion and at their lower ends by a portion having its central part displaced upwardly, upper and lower semicircular wires secured to each frame, the oppositely-lying wires of the two frames having at one end interlocking eyes and having at their opposite ends one a hook and the other an eye disposed for engagement by the hook, the upwardly-displaced portions of the frames being arranged to receive and support a jar.

813,790. FLEXIBLE ADHESIVE BRACE. ALFRED FRESCHL, Chicago, Ill. Filed Aug. 19, 1905. Serial No. 274,576.

Claim.—1. The herein-described flexible adhesive brace, comprising the body portion 2 formed of flexible material with the end portions 4 4 covered with an adhesive material and the center plain portion 5, substantially as described and for the purpose set forth.

2. The herein-described flexible adhesive brace, comprising the body portion 2 formed of flexible material with the end portions 4 4 covered with an adhesive material, the center plain portion 5, and the recess 3, substantially as described and for the purpose set forth.

813,791. PIANOFORTE. JOHN W. GALLOWAY, Linton, Ind. Filed Nov. 8, 1905. Serial No. 286,262.

Claim.—1. A string-frame for pianofortes and like musical instruments, having an approximately circular opening and a sounding-board of corresponding shape fitted in said opening.

2. A string-frame for pianofortes and like musical instruments having an opening of approximately circular outline, a sounding-board arranged within said opening, and a rim encircling the sounding-board and filling the space between it and the wall of the said circular opening of the string-frame.

3. A string-frame for pianofortes and like musical instruments having an opening of approximately circular outline, a sounding-board arranged within said opening, and a rim encircling the sounding-board and filling the space between it and the wall of the said circular opening of the string-frame, said rim being firmly attached to both the sounding-board and string-frame.

4. A string-frame for pianofortes and like musical instruments having an opening of approximately circular outline, a sounding-board arranged within said opening, and a rim encircling the sounding-board and filling the space between it and the wall of the said circular opening of the string-frame, said rim being of wood and having a circular outline.

5. A string-frame for pianofortes and like musical instruments having an opening of approximately circular outline, a sounding-board arranged within said opening, and a rim encircling the sounding-board and filling the space between it and the wall of the said circular opening of the string-frame, said rim being of wood and of a laminated structure, the layers being secured to one another and to the sounding-board and the string-frame.

6. A string-frame for pianofortes and like musical instruments provided with an opening of approximately circular outline adapted to receive a sounding-board, and strings extending across the opening of the string-frame and attached to the latter at opposite points.

7. A string-frame for pianofortes and like musical instruments having an opening of approximately circular outline, a sounding-board of corresponding shape to said opening and fitted therein and a continuous bridge attached to said sounding-board.

8. A string-frame for pianofortes and like musical instruments provided with an opening of approximately circular outline, a sounding-board of corresponding shape to the opening and fitted therein, and a rim snugly fitting within said opening of the string-frame and having its inner wall rabbeted to form a seat for reception of the sounding-board, the three parts being firmly united or bonded.

813,792. HOSE-COUPLING. SHADRACK W. GOOCH, Bridgeport, Ohio, and WILLIAM C. LEASURE, Wheeling, W. Va. Filed Mar. 6, 1905. Serial No. 248,746.

Claim.—1. The combination with coacting coupler members, of a serrated band carried interiorly by one of said members, a spring-actuated pawl carried by the second member and adapted to engage the band, radially-movable buttons carried by the second member, and pins carried by the buttons and adapted to move the said pawl.

2. The combination with coacting coupler members, one of said members having an interior band of teeth, the other member being recessed and circumferentially grooved adjacent the recesses, pawls pivotally mounted in the grooves, springs adapted to force the pawls outwardly into engagement with the teeth of the first-mentioned member, buttons movable radially in the recesses and pins carried by the buttons and in engagement with the pawls.

3. The combination with coupling members having interlocking lugs, teeth carried on the interior of one member, the other member being recessed and grooved at diametrically opposite points, pawls pivotally mounted in the grooves, springs arranged in the grooves and adapted to force the pawls outwardly, buttons movable inwardly and outwardly in the recesses, and pins carried by the buttons and secured to the pawls, as and for the purpose set forth.

813,793. HOSE-SUPPORTER. VICTOR GUIMBEAU, New York, N. Y. Filed June 9, 1905. Serial No. 264,570.

Claim.—A hose-supporter comprising a belt formed in two parts

having diagonally-cut ends secured closely together by means of a plurality of thin separated staples and by stitching which covers the staples, and hose-supporting straps each spanning the belt adjacent

electric energy and including the said roll and said insulated rolling-surface, a pair of rolls arranged in proximity to said table said rolls being insulated from one another

of an adjustably-mounted primary surface provided with a plurality of characters, a support for a secondary surface to receive impres-

face to receive impressions of the desired characters in their required relative arrangement, adjusting means detachably connected to said

having diagonally-cut ends secured closely together by means of a plurality of thin separated staples and by stitching which covers the staples, and hose-supporting straps each crossing the belt adjacent the staples and being stitched securely thereto, substantially as described.

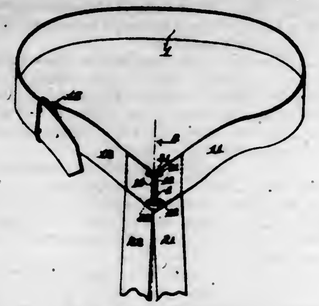

813,794. APPARATUS FOR FORMING SHEET AND PLATE GLASS. HARRY J. HAYS, Pittsburg, Pa., assignor to Edward F. Hays, trustee. Pittsburg, Pa. Filed Aug. 9, 1904. Serial No. 220,000.

Claim.—1. An apparatus of the type set forth, comprising a body of insulating material mounted upon legs, a receptacle seated in said insulating material and having a hollow interior and adapted to receive a cooling liquid and having an inlet-pipe and an outlet-pipe, the upper side of said receptacle constituting a rolling-surface, a roller mounted above said receptacle and out of contact therewith, means for transmitting a current of electricity through said receptacle and through said roller and means for moving said roller in a horizontal direction above said rolling-surface.

2. An apparatus of the character described, comprising legs, a receptacle mounted on said legs and insulated therefrom, a roller mounted above said receptacle and out of contact therewith, means for propelling said roller along said receptacle, means for passing an electric current through said receptacle and through said roller and means for varying the resistance of an electric circuit including said roller and said receptacle.

3. An apparatus of the type set forth, comprising a table having a rolling-surface, a roller adjustably mounted above and out of contact with said rolling-surface, means for propelling said roller along the table and for positively revolving the roller as it is propelled along the table, means for passing an electric current through said table and said roller and means for cooling said table.

4. An apparatus of the type set forth comprising a hollow table, having inlet and outlet ports, and an insulating-lining, means for supplying water and causing it to pass through said table, a roll adjustably mounted above said table, means for passing an electric current through said table, and said roll, and means for propelling said roll along said table.

5. In an apparatus of the character described, the combination of a table, racks carried by brackets mounted on the table, a roll, pinions carried by said roll and meshing with said racks, and means carried by the said brackets and coengaging means mounted on the table for adjusting said brackets vertically.

6. In an apparatus of the character described, the combination of a table, vertical supporting-arms mounted at each end of the table and having racks formed on their edges, pinions engaging said racks, shafts on which said pinions are mounted, connections between said shafts, means for turning the shafts, and a roll supported by said brackets.

7. In an apparatus of the character described, the combination of a table, a roll mounted above the table, an insulated rolling-surface mounted on said table, an electric circuit including a source of electric energy and including the said roll and said insulated rolling-surface, a pair of rolls arranged in proximity to said table said rolls being insulated from one another and an electric circuit including said pair of rolls, and a source of electric energy.

8. In an apparatus of the character described, the combination of a table, brackets mounted at each edge of the table, a roll having a shaft, supported by said brackets and adapted to roll on the same, and a depending arm carried by said shaft and engaging the table to steady the roll in its movement over the table.

813,795. TRANSFER-PRESS. JOHN R. HILL, Washington, D. C. Filed Jan. 26, 1905. Serial No. 242,678.

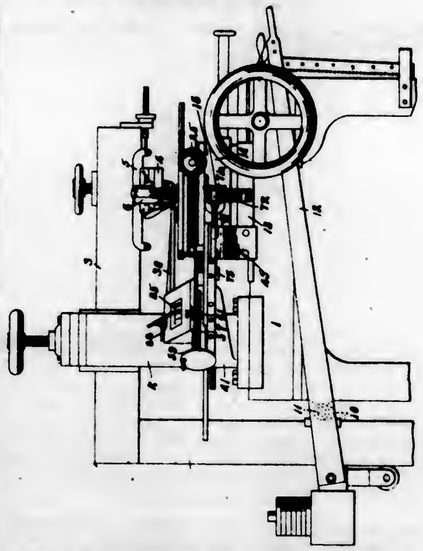

Claim.—1. In an apparatus of the character described, the combination of an adjustably-mounted primary surface provided with a plurality of characters, a support for a secondary surface to receive impressions of the desired characters in their required relative arrangement, adjusting means detachably connected to said primary surface for adjusting the latter, actuating means for said adjusting means, a proportional-spacing mechanism, a second actuating means carried by said proportional-spacing mechanism, and means constructed to independently connect either of said actuating means to said adjusting means, substantially as described.

2. In an apparatus of the character described, the combination of an adjustably-mounted primary surface provided with a plurality of characters, a support for a secondary surface to receive impressions of the desired characters in their required relative arrangement, adjusting means detachably connected to said primary surface for adjusting the latter, actuating means for said adjusting means, a proportional-spacing mechanism, a second actuating means carried by said proportional-spacing mechanism, means constructed to independently connect either of said actuating means to said adjusting means, and vernier mechanisms arranged to accurately indicate the extent of movement of said two actuating means, substantially as described.

3. In an apparatus of the character described, the combination of an adjustably-mounted primary surface provided with a plurality of characters, a support for a secondary surface to receive impressions of the desired characters in their required relative arrangement, adjusting means detachably connected to said primary surface for adjusting the latter, two actuating means for said adjusting means, and means constructed to independently connect either of said actuating means to said adjusting means, substantially as described.

4. In an apparatus of the character described, the combination of an adjustably-mounted primary surface provided with a plurality of characters, a support for a secondary surface to receive impressions of the desired characters in their required relative arrangement, adjusting means detachably connected to said primary surface for adjusting the latter, two actuating means for said adjusting means, means constructed to independently connect either of said actuating means to said adjusting means, and vernier mechanisms arranged to accurately indicate the extent of movement of said two actuating means, substantially as described.

5. In an apparatus of the character described, the combination of an adjustably-mounted primary surface provided with a plurality of characters, a support for a secondary surface to receive impressions of the desired characters in their required relative arrangement, adjusting means detachably connected to said primary surface for adjusting the latter, actuating means for said adjusting means, a proportional-spacing mechanism, a second actuating means carried by said proportional-spacing mechanism, and means constructed to independently connect either of said actuating means to said adjusting means, substantially as described.

6. In an apparatus of the character described, the combination of an adjustably-mounted primary surface provided with a plurality of characters, a support for a secondary surface to receive impressions of the desired characters in their required relative arrangement, adjusting means detachably connected to said primary surface for adjusting the latter, actuating means for said adjusting means, a proportional-spacing mechanism, a second actuating means carried by said proportional-spacing mechanism, means constructed to independently connect either of said actuating means to said adjusting means, and vernier mechanisms arranged to accurately indicate the extent of movement of said two actuating means, substantially as described.

7. In an apparatus of the character described, the combination of an adjustably-mounted primary surface provided with a plurality of characters, a support for a secondary surface to receive impressions of the desired characters in their required relative arrangement, means constructed to produce universal adjustment of said support relative to said primary surface, adjusting means detachably connected to said primary surface for adjusting the latter, and means constructed to actuate said adjusting means, substantially as described.

8. In an apparatus of the character described, the combination of an adjustably-mounted primary surface provided with a plurality of characters, a support for a secondary surface to receive impressions of the desired character in their required relative arrangement, means constructed to produce universal adjustment of said support relative to said primary surface, adjusting means detachably connected to said primary surface for adjusting the latter, two acuating means for said adjusting means, and means constructed to independently connect either of said actuating means to said adjusting means, substantially as described.

9. In an apparatus of the character described, the combination of an adjustably-mounted primary surface provided with a plurality of characters, a support for a secondary surface to receive impressions of the desired characters in their required relative arrangement, adjusting means detachably connected to said primary surface for adjusting the latter, means constructed to actuate said adjusting means, and means constructed to impress the desired characters in the secondary surface in their required relative arrangement, substantially as described.

10. In an apparatus of the character described, the combination of an adjustably-mounted primary surface provided with a plurality of characters, a support for a secondary surface to receive impressions of the desired characters in their required relative arrangement, adjusting means detachably connected to said primary surface for adjusting the latter, two actuating means for said adjusting means, means constructed to independently connect either of said actuating means to said adjusting means, and means constructed to impress the desired characters in the secondary surface in their required relative arrangement, substantially as desired.

11. In an apparatus of the character described, the combination of an adjustably-mounted primary surface provided with a plurality of characters, a support for a secondary surface to receive impressions of the desired characters in their required relative arrangement, adjusting means detachably connected to said primary surface for adjusting the latter, actuating means for said adjusting means, an adjustable proportional-spacing mechanism, means constructed to lock said adjustable spacing mechanism in its adjusted positions, a second actuating means carried by said proportional-spacing mechanism, and means constructed to independently connect either of said actuating means to said adjusting means, substantially as described.

12. In a transfer-press, the combination of a transfer-roll provided with a plurality of characters, a support for a secondary surface to receive impressions of the desired characters in their required relative arrangement, adjusting means detachably connected to said transfer-roll for adjusting the latter, and means constructed to actuate said adjusting means, substantially as described.

13. In a transfer-press, the combination of a transfer-roll provided with a plurality of characters, a support for a secondary surface to receive impressions of the desired characters in their required relative arrangement, adjusting means detachably connected to said transfer-roll for adjusting the latter, two actuating means for said adjusting means, and means constructed to independently connect either of said actuating means to said adjusting means, substantially as described.

14. In a transfer-press, the combination of an adjustable support, a transfer-roll mounted in said support and provided with a plurality of characters and corresponding index-marks, said index-marks positioned about said roll angularly to the respective corresponding character, a pointer carried by said roll-support in cooperative relation to said index-marks, and a support for a secondary surface to receive impressions of the desired characters in their required relative arrangement, substantially as described.

15. In a transfer-press, the combination of an adjustable support, a transfer-roll mounted in said support and provided with a plurality of characters and corresponding index-marks, said index-marks positioned about said roll angularly to the respective corresponding character, a pointer carried by said roll-support in cooperative relation to said index-marks, a support for a secondary surface to receive impressions of the desired characters in their required relative arrangement, adjusting means detachably connected to said transfer-roll for adjusting the latter, and means constructed to actuate said adjusting means, substantially as described.

16. In an apparatus of the character described, the combination of an adjustable support, a primary surface carried thereby provided with a plurality of characters, a support for a secondary surface to receive impressions of the desired characters, a proportional-spacing mechanism, an adjusting means carried by said proportional-spacing mechanism and arranged to detachably engage said primary-surface support, actuating means carried by said proportional-spacing mechanism for actuating said adjusting means, a second actuating means for said adjusting means, and means constructed to independently connect either of said actuating means to said adjusting means, substantially as described.

17. In an apparatus of the character described, the combination of an adjustable support, a pointer carried by said support, a transfer-roll mounted in said support and provided with a plurality of characters and corresponding index-marks, said index-marks positioned about said roll angularly to the respective corresponding characters, substantially as described.

813,796. CARBURETER. GEORGE H. HOLGATE, Philadelphia, Pa. Filed Oct. 16, 1905. Serial No. 283,976.

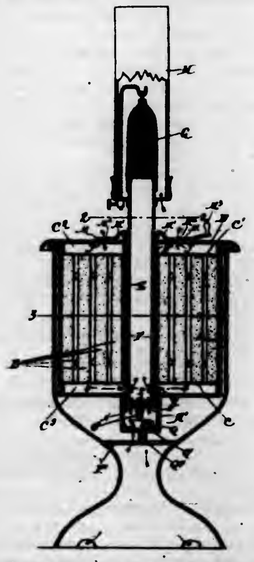

Claim.—1. A carburetor consisting of a foot or receptacle, absorbent material contained within said receptacle, said absorbent

material so arranged as to leave a space above and below the same within the receptacle, a stationary tube extending downward through the center of the receptacle open at its upper end and closed at its

3. A car-truck comprising a combined truck-bolster and spring-support, springs mounted upon said spring-support, side bearings

2. In a trussed brake-beam, the combination with a cylindrical thrust-block having a groove in its periphery, of a removable brake-

the seat so as to pivot the seat near its back to the chair-frame, means for supporting the back in one of several positions, and a foot-rest

material so arranged as to leave a space above and below the same within the receptacle, a stationary tube extending downward through the center of the receptacle open at its upper end and closed at its lower end, a central gas-tube arranged within the first-named tube, said gas-tube also closed at its lower end and open at its upper end, means for causing the central gas-tube to remain stationary, a middle tube arranged between the two aforesaid tubes and adapted to revolve around between the same, ports formed through the walls of the two stationary tubes coincident with one another within the space below the absorbent material, openings formed through the walls of the revolving tube adapted to be brought in and out of register with the ports of the stationary tube, openings formed through the top of the font, a valve connected to the revolving tube for opening and closing these ports when the tube is revolved, ports for admitting air through the lower end of the gas-tube, means for opening and closing these ports by the revolution of the revolving tube, the bottom of the font provided with an opening for admitting air to the central gas-tube, means for closing said opening when the font is to be filled with a liquid, a chimney surrounding the upper end of the gas-tube, a burner arranged over the upper end of the tube within the chimney, as and for the purpose specified.

2. In a carbureter for lamps and the like, a font or receptacle, absorbent material contained within said font or receptacle, said absorbent material so arranged within the font as to leave a space above and below the same, a removable top for closing the upper end of the font, a tube open through the top at its upper end extending downward through the absorbent material to a point near the lower end of the font, the lower end of said tube being closed, a gas-tube arranged within the other tube, said gas-tube extending above the font and open at its upper end, the lower end being closed, means for causing said gas-tube to remain stationary, a middle tube arranged between the two other tubes and adapted to revolve in close contact with both of said tubes, the two stationary tubes provided with ports coincident with one another formed through the walls of the same within the space below the absorbent material, the revolving tubes provided with openings adapted to be brought in and out of register with the ports as the tube is revolved, the top of the font provided with openings, a ring lying flat over said openings, spring-arms connecting said ring with the revolving tube so that the ring will be held in spring contact with the tube, said ring provided with openings adapted to be brought in and out of register with the openings through the tube when the tube is revolved, the lower end of the two stationary tubes being provided with ports formed through the same coincident with one another, the lower end of the revolving tube being provided with openings adapted to be brought in and out of register with said ports when the tube is revolved, means for revolving said tube, the lower end of the font being provided with an opening through which air is admitted to the lower end of the gas-tube, a hollow body in which the font is adapted to rest, a valve for controlling the opening through the lower end of the font, means for automatically opening said valve when the font is placed within the body, and means for automatically closing the valve when the font is removed, a chimney arranged around the upper end of the gas-tube, and a burner within the chimney arranged above the gas-tube, as and for the purpose specified.

3. In a carbureter, a receptacle, absorbent material arranged within the receptacle, said absorbent material formed in the shape of concentric rings nested one inside of the other and spaced a distance apart, means for holding said rings at equal distances apart, a perforated screen arranged within the receptacle a slight distance above the bottom of the same upon which the absorbent rings rest, the absorbent rings extending upward to within a short distance of the top of the receptacle so as to leave a space above the same, means for admitting air to the upper space, means for taking the mixed air and vapor from the lower space, and means for controlling these inlets from the exterior of the receptacle, as specified.

813,797. **RAILWAY-CAR TRUCK.** JAMES M. HOPKINS, Chicago, Ill. Filed June 12, 1905. Serial No. 264,768.

Claim.—1. A car-truck comprising a combined truck-bolster and spring-support formed integrally and of metal, springs mounted upon said spring-support, and a side bearing mounted upon said springs and provided in its top surface with a bearing-surface to receive the weight of the body-bolster.

2. A car-truck comprising a combined truck-bolster and spring-support formed integrally and of metal, springs mounted upon said spring-support, a side bearing mounted upon said springs and provided in its top with a grooved bearing-surface to receive the weight of the body-bolster.

3. A car-truck comprising a combined truck-bolster and spring-support, springs mounted upon said spring-support, side bearings mounted upon said springs and provided in their tops with bearing-surfaces, a body-bolster having integral bearing-surfaces extending over the bearing-surfaces of the side bearings, and bearing-balls loosely disposed between said bearing-surfaces.

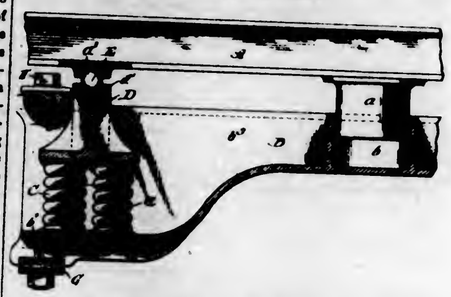

4. A car-truck comprising a combined truck-bolster and spring-support, springs mounted upon said spring-support, side bearings mounted upon said springs and provided in their tops with grooved bearing-surfaces, a body-bolster having integral grooved bearing-surfaces extending over the bearing-surfaces of the side bearings, and bearing-balls loosely disposed in the grooves in said bearing-surfaces.

5. A car-truck comprising a combined truck-bolster and spring-support, springs mounted upon said spring-support, side bearings mounted upon said springs and provided in their tops with grooved bearing-surfaces, a body-bolster having integral grooved bearing-surfaces extending over the bearing-surfaces of the side bearings, the grooves in both said surfaces being formed deeper at their centers than at their ends, and bearing-balls loosely disposed in said grooves.

6. A car-truck comprising a combined truck-bolster and spring-support formed integrally of metal and provided at its center with a socket to receive the center of the truck, springs mounted upon said spring-support, side bearings mounted upon said springs and provided in their tops with grooved bearing-surfaces, a body-bolster having integral grooved bearing-surfaces extending over the bearing-surfaces of the side bearings, the grooves in both said surfaces being formed deeper at their centers than at their ends, and bearing-balls loosely disposed in said grooves.

7. The combination with a combined truck-bolster and spring-support formed integral and of metal and provided at its ends with laterally-extended seats to receive the upper and lower truss-bars of the side frames, of bolts passing through said seats and truss-bars to retain said parts in position.

813,798. **BRAKE-BEAM.** CHARLES F. HUNTOON, Chicago, Ill., assignor to Chicago Railway Equipment Company, Chicago, Ill., a Corporation of Illinois. Filed July 18, 1905. Serial No. 270,172.

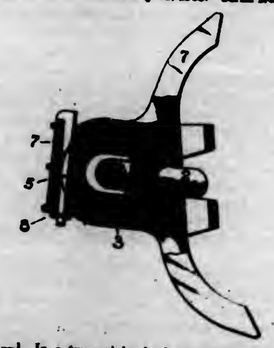

Claim.—1. In a trussed brake-beam, the combination with a thrust-block provided with a groove, of a removable brake-head, and a key or pin passing through said brake-head and through said groove in the thrust-block; substantially as described.

2. In a trussed brake-beam, the combination with a cylindrical thrust-block having a groove in its periphery, of a removable brake-head provided with an opening registering with said groove, and a key or pin passing through said opening and fitting in said groove; substantially as described.

3. In a trussed brake-beam, the combination with a cylindrical thrust-block having a groove in its periphery, of a removable brake-head provided with an opening registering with said groove, and a wedge key or pin passing through said opening and fitting in said groove, whereby said wedge-key tends to make the parts fit tight; substantially as described.

813,799. **RECLINING-CHAIR.** GEORGE HUNNEMAN, New York, N. Y. Filed July 10, 1905. Serial No. 268,913.

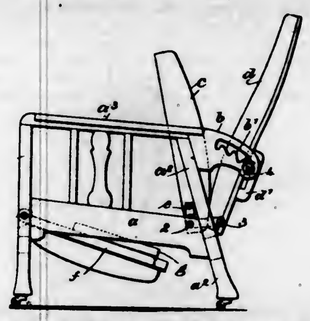

Claim.—1. In a reclining-chair, a seat, pivotal connections from the seat to the chair-frame, a back and pivotal connections at the lower end of the back to the seat and a rod and coacting devices for supporting the back in an adjustable inclined relation whereby the back has a sliding movement on the rod by and simultaneously with the movement of the seat.

2. In a reclining-chair, a seat, pivotal connections from the seat to the chair-frame, a back and pivotal connections at the lower end of the back to the seat, a rod and coacting devices for supporting the back in an adjustable inclined relation, and a foot-rest and pivots for connecting the same between the front uprights of the chair-frame, said foot-rest normally occupying a position beneath the seat and between the side members of the chair-frame, and the relation of the seat and back as specified, being such that they may be folded closely together so as to provide a space for swinging the foot-rest outward into its position for use.

3. The combination with the chair-frame of a seat, a device secured at each side and near the back of the seat, a back and pivot-pins for pivotally connecting the back near its lower end to the free ends of said devices secured upon the sides to the seat, whereby the seat and back occupy a pivotal relation to one another, pivot-pins passing through the side members of the chair-frame and through the said devices secured to the seat so as to pivot the seat near its back to the chair-frame, and means for supporting the back in one of several inclined positions and producing a sliding movement of the back on said rod with the movement of the seat.

4. The combination with the chair-frame, of a seat, devices secured at the sides and near the back of the seat, a back and pivot-pins for pivotally connecting the back near its lower end to the said devices secured to the seat whereby the seat and back occupy a pivotal relation to one another, pivot-pins passing through the side members of the chair-frame and through the said devices secured to the seat so as to pivot the seat near its back to the chair-frame, slotted brackets forming devices of the side members of the chair-frame and provided with ratchet-teeth, cleats secured to the rear surface of the back and a rod passing through said cleats and through the slots of the brackets to support the back in any one of several inclined positions and afford a sliding movement to the back on said rod, and which rod is moved thereby simply by the movement of the back when the same is raised to change its inclination.

5. The combination with the chair-frame, of a seat, devices secured at the sides and near the back of the seat, a back and pivot-pins for pivotally connecting the back near its lower end to the said devices secured to the seat whereby the seat and back occupy a pivotal relation to one another, pivot-pins passing through the side members of the chair-frame and through the said devices secured to the seat so as to pivot the seat near its back to the chair-frame, means for supporting the back in one of several positions, and a foot-rest comprising a frame and pivoted leg-frame, said frame being pivotally connected by pins 5 to and between the front uprights of the chair-frame and adapted to occupy an initial position below the seat, and when the seat and back are folded to swing outward into a horizontal position for use.

6. The combination with the chair-frame, of a seat, devices secured at the sides and near the back of the seat, a back and pivot-pins for pivotally connecting the back near its lower end to the said devices secured to the seat whereby the seat and back occupy a pivotal relation to one another, pivot-pins passing through the side members of the chair-frame and through the said devices secured to the seat so as to pivot the seat near its back to the chair-frame, and a foot-rest comprising a frame and pivoted leg-frame, said frame being pivotally connected by pins 5 to and between the front uprights of the chair-frame and adapted to occupy an initial position below the seat and when the seat and back are folded to swing outward into a horizontal position for use.

7. In a reclining-chair, the combination with the chair-frame, of a seat and back, straps *e* of L form secured to the seat near the rear portion, pivot-pins 3 connecting the free ends of said straps to the back at its lower end, and pivots 2 passing through the chair-frame and said straps into the seat for pivoting the seat to the chair-frame.

813,800. **WINDOW-CLEANER.** ANNIE M. JOHNSON and DAVID H. ROWE, Oakland, Cal. Filed Mar. 6, 1905. Serial No. 248,519.

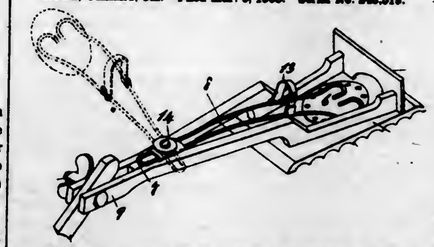

Claim.—1. A cleaner consisting of a substantially rectangular body portion transversely corrugated on its working face and provided with an angularly-disposed rigid scraper-plate on its opposite side, a handle and means for removably holding the ends of a cleaning or like fabric on the back of the body portion.

2. A cleaning device comprising a body portion transversely corrugated on one side, a handle secured to the opposite side, an angular rigid scraper-plate secured to the handle side of the body, a fabric passed over the corrugated surface of the body and over said scraper and having its ends brought together on the back of said body portion and a spring-clamp to hold the ends of said fabric, said spring-clamp being pivoted to the handle and arranged to swing laterally of said body.

3. A cleaning device comprising a body portion transversely corrugated on one side, a handle secured to the opposite side, an angular rigid scraper-plate secured to the handle side of the body, a fabric passed over the corrugated surface of the body and over said scraper and having its ends brought together on the back of said body portion, and a spring-clamp to hold the ends of said fabric.

4. A cleaning device comprising a rectangular body portion, a handle secured thereto, a spring pivoted intermediate of its ends to said handle and arranged to swing laterally of the body, and a presser-plate carried by said spring and arranged to impinge upon the back of the body.

813,801. **FIREARM.** THOMAS C. JOHNSON, New Haven, Conn., assignor to Winchester Repeating Arms Co., New Haven, Conn., a Corporation. Filed Oct. 16, 1905. Serial No. 283,009.

Claim.—1. In a firearm, the combination with the frame thereof, of a non-recoiling barrel, a balanced breech-block having a forwardly-projecting extension embracing the said barrel, a breech-block-closing spring encircling the said barrel, and a friction-brake

hounted at the forward end of the said extension and coacting directly with the non-recoiling barrel to retard the opening move-

of each are parallel to each other, the several bars being inclined from the middle portion of the main tension member.

stools, and extending around the under-arm sides and with their free

ment of said rock to open and close said doors, means to look said le-

located at the forward end of the said extension and coacting directly with the non-recoiling barrel to retard the opening movement of the breech-block and so reduce the shock of recoil.

2. In a firearm the combination with the frame thereof, of a non-recoiling barrel, a balanced breech-block having a forwardly-projecting extension turned upwardly at its forward end and formed with a conical friction-brake chamber, a breech-block-closing spring, and a sleeve-like friction-brake located in the said chamber and embracing the barrel with which it coacts to retard the opening movement of the breech-block and so reduce the shock of recoil.

3. In a firearm, the combination with the frame thereof, of a non-recoiling barrel, a balanced breech-block having a forwardly-projecting extension upturned at its forward end and formed with a friction-brake chamber, a breech-block-closing spring encircling the rear end of the said barrel, a jacket to inclose the said spring, and a friction-brake located in the said chamber and clasping the barrel upon which it is forced at the time of recoil by the walls of the said chamber, whereby during the opening movement of the block the brake is dragged over the barrel and the shock of recoil reduced.

813,802. **FIREARM.** THOMAS C. JOHNSON, New Haven, Conn., assignor to Winchester Repeating Arms Co., New Haven, Conn., a Corporation. Filed Oct. 16, 1905. Serial No. 282,863.

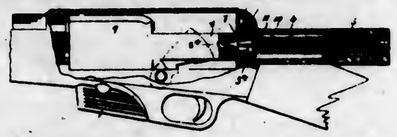

Claim.—1. In a gun, the combination with the frame thereof, of a balanced breech-block having a rearward extension containing a brake-chamber, a stationary rod supported at its rear end by the said frame, a friction-brake located in the said chamber and coacting with the said rod to retard the opening movement of the block and so reduce the shock of recoil.

2. In a gun, the combination with the frame thereof, of a balanced breech-block having a friction-brake chamber, a sleeve secured by its forward end in the rear end of the said frame and extending rearwardly therefrom, a rod mounted at its rear end in the rear end of the said cylinder, a breech-block-closing spring located in the said sleeve and encircling the said rod, and a friction-brake located in the said chamber and coacting with the said rod to retard the opening movement of the block and so reduce the shock of recoil.

3. In a gun, the combination with the frame thereof, of a balanced breech-block having a rearward extension containing a brake-chamber, a stationary rod, means carried by the gun-frame at the rear end thereof for supporting the said rod by its rear end, a breech-closing spring encircling the said rod, and a friction-brake located in the said chamber and coacting with the said rod to retard the opening movement of the block and so reduce the shock of recoil.

813,803. **COMBINED STEEL AND CONCRETE BEAM.** JULIUS KAHN, Detroit, Mich., assignor to Trussed Concrete Steel Company, Detroit, Mich., a Corporation of Michigan. Filed Oct. 7, 1904. Serial No. 227,852.

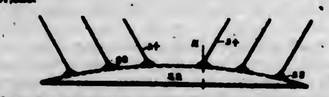

Claim.—1. A tension member for composite window and door lintels, comprising a hollow body having a convex top, and having portions thereof slitted and raised to form loops, and auxiliary tension members attached to said loops.

2. A tension member for combined concrete and metal structures, comprising a main tension member having loops struck up from the same, and substantially U-shaped auxiliary members engaging said loops.

3. A metal tension member for composite structures, comprising a main tension member having loops struck up from the same, and substantially U-shaped auxiliary members passing through said loops, their projecting portions being parallel.

4. A metal tension member for composite structures, comprising a main tension member having a series of loops struck up from the same, and flat bars engaging said loops at the middle of their length, said bars being bent upward so that the projecting portions of each are parallel to each other, the several bars being inclined from the middle portion of the main tension member.

5. In a composite structure, the combination of a tension member comprising a hollow body with a convex top, loops struck up from said top and laterally-projecting flanges, auxiliary tension members engaging said loops and projecting upward, plastic bodies laid up on said flanges to form parallel walls, and a cementitious body filling the space between said walls and molded around said auxiliary tension members.

6. A tension member for combined concrete and metal structures, comprising a main tension member having loops struck up from the body of the same, and auxiliary tension members engaging said loops.

813,804. **NON-REFILLABLE BOTTLE.** JOHN M. KILDUFF, Boston, Mass. Filed May 10, 1905. Serial No. 259,881.

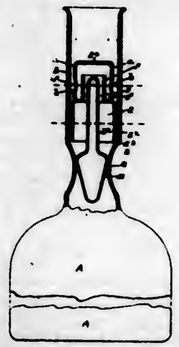

Claim.—In a non-refillable bottle, or such like, the combination with the neck provided with a valve-seat, and a valve, having a stem, operating upon said seat, of a cage secured at its inner portion within and to the neck and open at its inner and closed at its outer end, and having an open space about its unsecured portion and there provided with ports leading therefrom to the inside of the cage, and an inner tube open at both of its ends and secured to the cage opposite to said ports with an open space about it and between its open outer end and the closed end of the cage.

813,805. **APPAREL-CORSET.** DANIEL KORN, New York, N. Y. Filed Oct. 30, 1905. Serial No. 285,213.

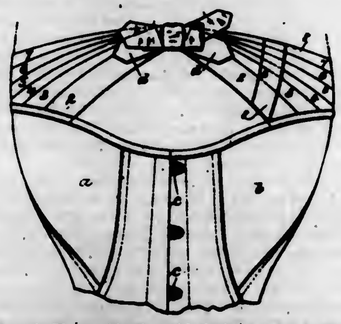

Claim.—1. The combination with the halves of an apparel-corset of ordinary construction, of shaping-supports of flexible material, each formed of a multiplicity of pieces, at one end connected by sewing to the upper edge of the corset from a short distance from the front steels, and extending around toward the under-arm sides and with their free ends overlapped and converging and connected together, and means for connecting their free ends in an adjustable relation.

2. The combination with the halves of an apparel-corset of ordinary construction, of shaping-supports of flexible material, each formed of a multiplicity of pieces, at one end connected by sewing to the upper edge of the corset from a short distance from the front

steels, and extending around the under-arm sides and with their free ends overlapped and converging, and connected together, and tying-tapes formed as prolongations of the free converging ends of the shaping-supports, and by which the shaping-supports are tied together for use in an adjustable relation.

3. The combination with the halves of an apparel-corset of ordinary construction, of shaping-supports of flexible material, each formed of a multiplicity of pieces, at one end connected by sewing to the upper edge of the corset from a short distance from the front steels, and extending around toward the under-arm sides and with their free ends converging, and connected together, and means for connecting their free ends in an adjustable relation.

4. The combination with the halves of an apparel-corset of ordinary construction, having a binding along its upper edge of shaping-supports of flexible material, each formed of a multiplicity of pieces, at one end connected together by a binding and sewed thereto, and connected by sewing to the bound upper edge of the corset from a short distance from the front steels, and extending around toward the under-arm sides, and with their free ends converging and connected together, and means for connecting together the free ends of said shaping-supports as extending toward one another over the bust and in an adjustable relation.

813,806. **NOZZLE FOR TURBINE-ENGINES.** HUGO LENTZ, Berlin, Germany. Original application filed Apr. 4, 1905, Serial No. 253,783. Divided and this application filed Oct. 17, 1905. Serial No. 283,091.

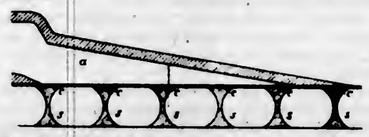

Claim.—1. In a turbine-engine, a turbine running-wheel provided with paddles, and a nozzle for delivering pressure medium thereto, said nozzle consisting of successive narrowing and broadening parts, one wall of the broadening part having an opening which runs back to the point of connection of the narrowing and broadening parts, and which opening is closed by the paddles of the running-wheel.

2. In a turbine-engine, a turbine running-wheel provided with paddles, and a nozzle for delivering pressure medium thereto, said nozzle consisting of successive narrowing and broadening parts, the said broadening part having top and side walls running forward from the point of connection of the narrowing and broadening parts, the bottom wall being entirely cut away forwardly from said point of connection, the opening thus formed being closed by the paddles of the running-wheel.

813,807. **DOOR-ACTUATING MECHANISM FOR CARS.** JOHN LEVAL, Lemont Furnace, Pa. Filed Oct. 5, 1905. Serial No. 281,513.

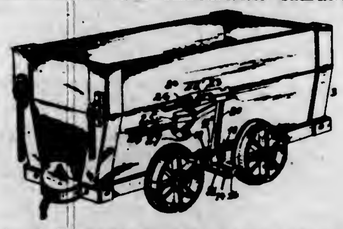

Claim.—1. The combination with a car-body having an opening formed in its bottom, of doors slidably mounted adjacent to said opening and adapted to close said opening, bell-crank levers connected to said car and to said doors, toothed sectors carried by said levers, a rack slidably mounted upon said car and engaging said toothed sectors, a lever pivotally mounted upon said car and when rocked adapted to actuate said rack, a spring-pressed pivotally-mounted retaining-arm carried by the side of said car and adapted to engage the upper end of said lever, substantially as described.

2. The combination with a car having an opening formed in its bottom, of doors slidably mounted upon the bottom of said car, and adapted to close said opening, a rack slidably mounted upon said car, a lever adapted to actuate said rack, means actuated by the movement of said rack to open and close said doors, means to lock said lever in a fixed position, substantially as described.

3. The combination with a car having sliding doors, of a lever pivotally connected to the side of said car, levers pivotally mounted on the bottom of the car and connected to said doors and actuated through the medium of said lever to open and close said doors, and means to lock said first-named lever in a fixed position, substantially as described.

813,808. **CAMERA ATTACHMENT.** MILTON I. LORTSA, Spokane, Wash. Filed Aug. 30, 1905. Serial No. 276,449.

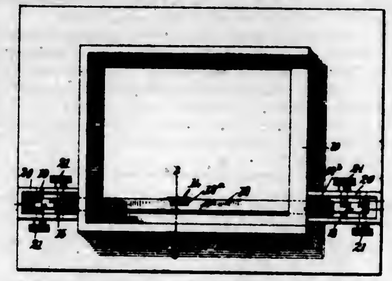

Claim.—1. A camera attachment having a plurality of transparent tapes capable of relative adjustment, for the purpose specified, the said tapes having characters thereon adapted to be exposed to the photographic plate in the camera.

2. A camera attachment having a plurality of relatively adjustable transparent tapes, each having two sets of characters thereon, and a means in which said tapes are guided and inclosed, said means having two openings respectively adapted to expose the sets of characters on the tapes.

3. A camera attachment having a plurality of relatively adjustable transparent tapes, each having two sets of characters thereon, a means in which said tapes are guided and inclosed, said means having two openings respectively adapted to expose the sets of characters on the tapes, and a shutter device for the said openings.

4. A camera attachment having a plurality of relatively adjustable transparent tapes, each having two sets of characters thereon, a means in which said tapes are guided and inclosed, said means having two openings respectively adapted to expose the sets of characters on the tapes, and a shutter-tape movable in said means for inclosing the first-mentioned tapes, the shutter-tape having opaque portions adapted to close said openings.

5. A camera attachment having a flattened tube extending across the rear of the camera, in front of the plate, said tube having an opening therein, and a transparent tape having characters thereon, the tape being inclosed in the tube, and the opening serving to expose one or more of the characters.

6. A camera attachment having a flattened tube extending across the rear of the camera in front of the plate, and a plurality of transparent tapes movable through the tube, said tube having an opening therein, and the tapes having characters thereon adapted to be exposed through the opening.

7. A camera attachment having a flattened tube extending across the rear of the camera in front of the plate, a plurality of transparent tapes movable through the tube, said tube having an opening therein, and the tapes having characters thereon adapted to be exposed through the opening, and a shutter-tape adjustable in the tube and having an opaque portion adapted to be moved opposite the opening in the tube, for the purpose specified.

8. A camera attachment having a tube extending across the rear of the camera in front of the plate position, said tube having an opening opposite the plate position and an opening at one end portion, and the openings being out of longitudinal alinement with each other, and relatively adjustable transparent tapes located in the tube and each having two sets of numbers thereon, which sets of numbers are respectively visible through the openings in the tube.

9. A camera attachment comprising a tube extending across the rear of the camera in front of the plate position, and formed with an opening therein opposite the plate position and a second opening in one end portion of the tube, and a tape adjustable in the tube and having two sets of numbers thereon, the openings in the tube being out of longitudinal alinement and serving respectively to expose the sets of numbers on the tape.

10. A camera attachment comprising a tube extending across the rear of the camera in front of the plate position, and formed with an opening therein opposite the plate position and a second opening in one end portion of the tube, a tape adjustable in the tube and having two sets of numbers thereon, the openings in the tube being out of longitudinal alinement and serving respectively to expose the sets of numbers on the tape, and a shutter-tape adjustable in the tube and having opaque portions adapted to cover said openings therein.

11. A camera attachment having a tube extending across the rear of the camera in front of the plate position, said tube having an opening therein opposite the plate position, transparent tapes having numbers thereon adapted to slide in the tube, and rolls located at the ends of the tube and having said tapes wound thereon.

12. A camera attachment having a tube extending across the rear of the camera in front of the plate position, said tube having an opening therein opposite the plate position, transparent tapes having numbers thereon adapted to slide in the tube, rolls located at the ends of the tube and having said tapes wound thereon, a box inclosing the rolls at one end of the tube, a member sliding in one wall of the box, and a shutter-tape adjustable in the tube and connected with said sliding member.

813,809. CANCELING-MACHINE. William G. Maynard, Rondout, N. Y. Filed Oct. 13, 1904. Serial No. 228,360.

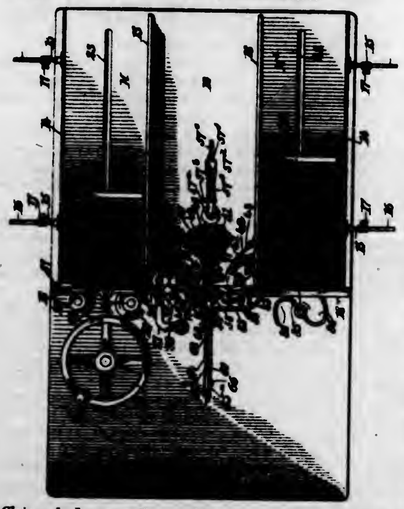

Claim.—1. In a canceling-machine, the combination with a die, of an impression member, rolls between which the matter to be canceled passes, one of the rolls being movable from its companion roll by the matter to be canceled, a lever controlled by said movable roll, a cam, a rod coacting with the cam and connected with the impression member, and a link connecting the lever and rod.

2. In a canceling-machine, the combination with a die, of an impression member, rolls between which the matter to be canceled passes, one of the rolls being movable from its companion roll by the matter to be canceled, a lever controlled by the said movable roll, a cam, a rod coacting with the cam and adjustably connected with the impression member, and a link connecting the lever and rod.

3. In a canceling-machine, the combination with a die, of an impression member, a guide-roll having a groove, a controlling member movable in the groove, and operating mechanism connected with the controlling member and with the impression member.

4. In a canceling-machine, the combination with a die, of an impression member, a guide-roll having a groove, a lever provided with a roll coacting with the groove, and operating mechanism connected with the lever and with the impression member.

5. In a canceling-machine, the combination with feed-rolls and canceling mechanism including an impression-roll, of a pivoted and spring-pressed bar, a gate consisting of a plurality of fingers projecting from the end of the bar adjacent to the impression-roll and on the delivery side, and an eccentric rotatable with the feed-rolls and engaging said bar.

6. In a canceling-machine, the combination with a canceling mechanism, of feed-rolls for feeding the articles to the canceling mechanism, feed-rolls for feeding the articles from the canceling mechanism, one of the last-named rolls being provided with an eccentric, a pivoted and spring-pressed bar engaged by the eccentric, and a gate carried by the bar and arranged between the canceling mechanism and the rolls which feed the articles to the canceling mechanism.

7. In a canceling-machine, the combination with a supply-holder and a receiving-holder spaced apart, and a canceling mechanism between the holders, of feed and guide rolls, a support for sundry of the guide and feed rolls, said support being pivotally mounted upon the said holders.

8. In a canceling-machine, the combination with a supply-holder and a receiving-holder spaced apart, and a canceling mechanism between the holders, of feed and guide rolls, a support for sundry of said rolls, links pivotally connecting the support with the holders, and springs engaging the links.

9. In a canceling-machine, the combination of a movable support, and feed and guide rolls mounted in said support, a canceling mechanism, and means carried by the canceling mechanism for engaging the support, whereby the said rolls will be made to contact with their companion rolls with increased pressure.

10. In a canceling-machine, the combination of a yieldingly-mounted support having a projection, feed and guide rolls mounted in the support, a canceling mechanism, and means carried by the die of the canceling-mechanism for engaging the projection of the support, for forcing the said rolls into engagement with their companion rolls for the purpose set forth.

11. In a canceling-machine, the combination with canceling mechanism, of coacting feed-rolls, means for forcing the feed-rolls toward one another, and means for intermittently increasing the pressure.

12. In a canceling-machine, the combination with canceling mechanism, of coacting feed-rolls, means for forcing the feed-rolls toward one another, and means carried by the canceling mechanism for intermittently increasing the pressure.

13. In a canceling-machine, the combination with a movable die, of coacting feed-rolls, and a revoluble spring movable with the die and coöperating with the feed-rolls.

14. In a canceling-machine, the combination with a movable die, of coacting feed-rolls, a revoluble spring movable with the die and coöperating with the feed-rolls, and means for adjusting the position of the spring upon the die.

15. In a canceling-machine, the combination of feed-rolls, a movable spring-pressed support for one of the feed-rolls, a movable die, and a spring carried by the die and adapted to engage the movable support of the feed-roll.

16. In a canceling-machine, the combination with a die, of a yieldingly-mounted support, an impression-roll carried by the support, means for operating the die, a cam operated by the die-operating means, and a rod pivotally connected with the said support and provided with a projection engaging the cam.

17. In a canceling-machine, the combination with a die, of a yieldingly-mounted support, an impression-roll carried by the support, means for operating the die, a cam operated by the die-operating means, a rod pivotally connected with the support and provided with a projection for engaging the cam, the projection of the rod being normally out of engagement with the cam, and means controlled by the matter to be canceled for operating the rod to bring its projection into engagement with the cam.

18. In a canceling-machine, the combination of a die, a spring-pressed frame, an impression-roll carried by the frame, an arm loosely connected with the frame, a rod pivoted to the arm and provided with a roller at its free end, a cam with which the roller of the arm engages, a lever movable by the matter to be canceled, and a connection between the free end of the lever and the rod.

19. In a canceling-machine, the combination of a die, an impression member mounted in a movable support, rolls between which the matter to be canceled passes, one of the rolls being movable from its companion roll, a lever operated by said movable roll, a cam operated by the die-operating means, a rod having one end pivotally connected with the support of the impression member and provided at the other end with a projection for engaging the cam, and a link connecting the said lever and rod.

20. In a canceling-machine, the combination of a die, means for operating the die, a spring-pressed frame, an impression-roll carried by the frame, an arm loosely connected with the frame, a rod pivoted to the arm and provided with a roller at its free end, a cam operated by the operating means and with which the projection of the rod engages, rolls between which the matter to be canceled passes, one of the rolls being movable from its companion roll, a lever operated by the movable roll, and a link connecting the lever and rod.

813,810. FEEDER. William G. Maynard, Rondout, N. Y. Filed May 22, 1905. Serial No. 261,809.

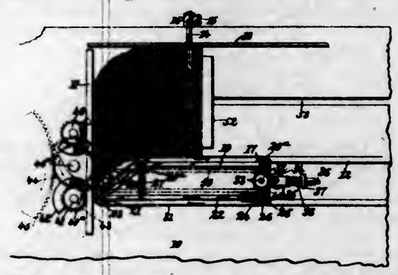

Claim.—1. A feeder, comprising a holder having an adjustable side wall, an endless belt mounted in the holder opposite the adjustable wall and forming a side wall of the holder and with the end wall of the said holder a feed-throat, and means for feeding objects through said throat.

2. A feeder, comprising a holder having one side wall terminating short of the end wall, an endless belt arranged in the space between the side and end wall and forming a continuation of said side wall and with the end wall of the holder a feed-throat, means for feeding objects through said throat, and means for imparting movement to the belt in a direction reverse of that of the objects fed from the holder.

3. A feeder comprising a holder having a side and end wall between which is a space, an endless belt arranged in said space and forming a continuation of said side wall, means for moving the belt rearwardly from the end wall, and means for feeding objects through the space.

4. A feeder comprising a holder having a side and end wall between which is a space, an endless belt extending from the side wall toward the end wall and having its inner face inclined at an angle to said walls, the inclined end of the belt being yieldingly mounted, and means for feeding objects through the space.

5. In a feeder, the combination with a holder having an end wall and an endless belt furnishing a side wall and separated from the end wall by a space, the end of the belt adjacent to the end wall being yieldingly mounted of means for feeding objects through the space.

6. In a feeder, the combination with a holder having an end wall and an endless member furnishing a side wall and separated from the end wall by a space, of means for intermittently moving the member, and means for feeding objects through the space.

7. In a feeder, the combination with a holder having an end wall and an endless belt furnishing a side wall and separated from the end wall by a space, the end of the belt adjacent to the end wall being inclined at an angle thereto, of means for yieldingly mounting the said inclined end of the belt, and means for feeding objects through the space.

8. A feeder comprising a base, a wall rising from the base, a feeding member situated adjacent to the wall, journals projecting from the base, rolls rotatable upon the journals, one of the rolls being bodily movable, and a belt operating over the rolls.

9. A feeder comprising a base, a wall rising from the base, a feeding member situated adjacent to the wall, journals projecting from the base, rolls rotatable upon the journals, an arm swinging upon a journal and extending toward the wall, a roll rotatable upon the arm, and a belt operating over the rolls.

10. A feeder comprising a base, a wall rising from the base, a feeding member situated adjacent to the wall, journals projecting from the base, rolls rotatable upon the journals, an arm swinging upon a journal and extending toward the wall, a roll rotatable upon the arm, a spring exerting its tension upon the arm, and a belt operating over the rolls.

11. A feeder comprising a base, a wall rising from the base, a feeding member situated adjacent to the wall, journals projecting from the base, rolls rotatable upon the journals, an arm swinging upon a journal and extending toward the wall, a second arm pivoted upon that first named, rolls rotatable upon the arms, and a belt operating over the rolls.

12. A feeder comprising a base, a wall rising from the base, a feeding member situated adjacent to the wall, journals projecting from the base, rolls rotatable upon the journals, an arm swinging upon a journal and extending toward the wall, a second arm pivoted upon that first named, rolls rotatable upon the arms, one of said rolls being bodily movable independently of the arms, and a belt operating over the rolls.

13. In a feeder, the combination of a holder, an endless belt forming one side of the holder and with a wall of the holder a feed-throat, means for feeding objects through the throat, and means for imparting movement to the belt in a direction the reverse of that of the objects fed from the holder.

14. In a feeder, the combination of a holder, an endless belt forming one side of the holder and with a wall of the holder a feed-throat, means for feeding objects through the throat, and means for imparting an intermittent traveling movement to the belt in a direction the reverse of that of the objects fed from the holder.

15. In a feeder, the combination of a holder, an endless belt having one end yieldingly mounted and forming one side of the holder and with a wall thereof a feed-throat, means for feeding objects through the throat, and means imparting movement to the belt in a direction the reverse of that of the objects fed from the holder.

813,811. THREAD-CUTTER FOR SEWING-MACHINES. Sophie Mendel, New York, N. Y., assignor to Benjamin Edmund David, New York, N. Y. Filed Aug. 15, 1905. Serial No. 274,258.

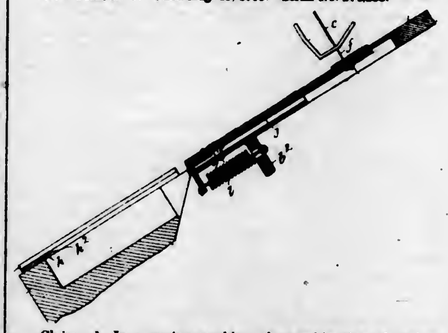

Claim.—1. In a sewing-machine, the combination of a plate having a groove, with a sharpened slotted post projecting into the groove, and a slidable hook engaging the post, substantially as specified.

2. In a sewing-machine, the combination of a plate having a groove, with a sharpened slotted post projecting into the groove, a slide, and a hook secured thereto and embraced by the post, substantially as specified.

813,812. LAST-THIMBLE. Ephraim S. Morton, Brockton, Mass. Filed Dec. 9, 1904. Serial No. 236,174.

Claim.—1. A socket-thimble for lasts comprising a tubular member adapted to be inserted in the spindle-socket of a last and formed with locking projections on its inner end, and a transverse piece having a flat upper surface and inclined sides engaged with said locking projections.

2. A socket-thimble for lasts comprising an open-ended lining-piece formed with tapered openings in opposite sides adjacent one end thereof, the sides of said openings constituting locking projections, and an end piece consisting of a flat-sided bar adapted to be inserted in said openings and engaged by the locking projections.

3. A socket-thimble for lasts comprising an open-ended tube adapted to be inserted in the spindle-socket of a last and formed with openings diametrically opposite each other in the side walls adjacent one end, and a bottom piece having a flat upper surface and inclined sides extended through the said openings.

4. A last having a spindle-socket, a tubular thimble inserted therein having an open bottom end and notches with inclined sides formed in diametrically opposite sides of the thimble at its end, the inclined sides of the notches constituting locking projections extending toward each other, and a bar having a flat upper surface and sides inclined to correspond to the inclination of the sides of the notches inserted into a transverse hole in the last and said notches, its sides engaging the locking projections and its ends extending beyond the sides of the thimble and engaging the wood of the last to lock the thimble in place.

5. A last having a spindle-socket, a tubular open-ended thimble inserted therein having dovetail-shaped notches in diametrically opposite sides at its bottom end, the openings of the notches at the end of the thimble being of less width than the interior of the notches, and a bar inserted in a transverse opening in the last intersecting the spindle, the bar having a flat upper surface and inclined sides, its shape in section corresponding to the shape of the notches, the bar being extended through the notches with its sides engaging the sides thereof and its ends projecting beyond the sides of the thimble in engagement with the wood of the last, whereby the bar constitutes a lock for holding the thimble in the last and an abutment for receiving the pressure of the jack-spindle.

6. In a last, a socket-thimble provided with a locking portion, and a socket bottom and thimble locking piece consisting of a bar having a flat upper surface and a segmental lower portion adapted to extend across the heel portion of a last and interlock with said locking portion of the socket-thimble.

7. In a last, a socket-thimble provided with a locking portion, and a socket bottom and thimble locking piece consisting of a bar having a flat upper surface and a segmental lower portion adapted to extend across the heel portion of a last and interlock with said locking portion of the socket-thimble, and being provided in its under part with serrations forming teeth.

813,813. **MUCILAGE-BOTTLE.** FREDERICK M. MUNROE, Brooklyn, N. Y. Filed Mar. 1, 1905. Serial No. 247,907.

Claim.—1. In a mucilage bottle or holder, the combination with a bibulous or absorbent cushion, and a cage for the cushion, of a mucilage-reservoir located below the cushion, said cushion extending into said reservoir and protruding above the same, and a neck or well extending above the cushion so that the cushion supports the brush in said neck or well and feeds the mucilage to the brush by capillary attraction without excess or flooding, substantially as described.

2. In a mucilage bottle or holder, the combination with a bibulous or absorbent cushion and a cage for the cushion, of a mucilage-reservoir located below said cushion, said cushion extending into said reservoir and protruding above the same, a neck or well extending above said cushion, and a vertically-movable brush and closure projecting into said neck or well and supported on said cushion, whereby the mucilage is fed to the brush by capillary attraction without flooding or excess and whereby the amount of mucilage taken up by the brush can be regulated without the necessity of wiping off any excess, substantially as described.

3. In a mucilage bottle or holder, a mucilage-reservoir, a cushion of bibulous or absorbent material, a perforated cage in which said cushion is held, a neck or well which extends above the said cushion and an offset attached to said cage to support it in the reservoir, substantially as described.

4. In a mucilage bottle or holder, a neck, a closure having a hemispherical lower surface and adapted to move up and down and wabble in said neck and a brush and handle held by said closure, substantially as described.

813,814. **FOLDING PHONOGRAPHIC HORN.** MARTIN L. MUNSON, New York, N. Y. Filed July 13, 1905. Serial No. 269,466.

Claim.—1. A horn of the class described, having a collapsible body, a plurality of stays attached to said body and extending longitudinally thereof, and jointed links connecting said stays and adapted to maintain the same apart

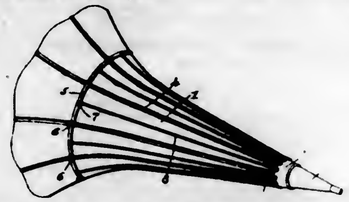

2. A horn of the class described, having a collapsible body and a mouthpiece attached thereto, a metallic frame attached to said mouthpiece and to said body, said frame comprising jointed links, a collar slidably mounted on said mouthpiece, and rods connecting said links with said collar for actuating said frame.

3. A horn of the class described, having a mouthpiece and a collapsible body, an extensible ring adapted to open said body and means for actuating said ring from a point near said mouthpiece.

4. A horn of the class described, having a mouthpiece and an expansible body, a plurality of links jointed together and pivotally supported on said body to expand the same.

5. A horn of the class described, having a collapsible body, jointed links attached to said body and forming an extensible ring, a mouthpiece attached to said body, a sliding collar on said mouthpiece and pull-rods connecting said collar with said links.

813,815. **ROTARY ENGINE.** ROSS S. MCINTOSH, Buffalo, N. Y., assignor to Liberty Manufacturing Company, Pittsburg, Pa. Filed Nov. 5, 1902. Serial No. 130,143.

Claim.—1. The combination of a casing provided with a longitudinal concentric piston chamber or bore, an inlet-passage for said chamber extending longitudinally thereof and communicating therewith by ports, an exhaust-passage also extending longitudinally of said chamber and communicating therewith, a cylindrical part fixed concentrically in said piston-chamber, and journaled at its ends, and a series of blades loosely arranged in longitudinal radial slots of said piston, said blades bearing at one edge against the fixed cylindrical part, and at the opposite edge against the wall of said chamber; substantially as described.

2. In a rotary engine, a cylinder or casing having therein a longitudinal, eccentric piston-chamber, longitudinally-extending inlet and exhaust passages in the wall of said chamber, and communicating therewith, one end of said chamber being closed by a transverse partition-wall around which the inlet-port extends, and which forms a seat for a piston-bearing, and a piston in said chamber; substantially as described.

3. In a rotary engine, a casing having a longitudinal piston-chamber therein open at one end and closed at the other by a partition-wall, a cap-ring closing the other end of the chamber around the piston, said ring having an exhaust-port therein communicating with longitudinal exhaust-passages in the wall of said chamber, and a piston in said chamber; substantially as described.

4. The combination of a casing provided with a piston-chamber, an inlet-passage communicating with said chamber and extending to one end of said casing, and an exhaust-passage communicating with said chamber and extending to the other end of said casing, a cylindrical part arranged concentrically in said piston-chamber and fixed at one end to one end of said casing, a tubular piston surrounding said fixed part, arranged eccentrically in said piston-chamber, and journaled at one end on said fixed part and at its other end on said casing, a shaft secured to one end of said piston, and blades loosely arranged in longitudinal slots in said tubular piston and bearing at their outer edges against the wall of said piston-chamber, and at their inner edges against said fixed cylindrical part, substantially as set forth.

813,816. **FENCE-POST.** JOHN C. MCVEY, Kansas City, Mo. Filed Dec. 7, 1903. Serial No. 183,743.

Claim.—1. The combination with a cementitious fence-post having a longitudinal groove in one side, the groove being dovetail shape, of a plurality of metal fence-wire-engaging devices longitudinally adjustable in said groove, each of said devices being formed of sheet metal fitting said groove and provided each with two arms extending beyond the face of the post, said arms having each in one edge beyond the face of the post a notch adapted to receive therein the fence-wire, said arms being foldable toward each other and foldable inwardly across the fence-wire embraced thereby.

2. The combination with a cementitious fence-post having in one side a longitudinal groove of dovetail shape, said groove having two longitudinal recesses disposed respectively where the side walls intersect the rear wall of the groove, of a plurality of fence-wire-engaging devices mounted in said groove, each of said devices being composed of sheet metal and provided each with a forwardly-curved rear portion adapted to be flattened and when flattened entering said recesses respectively, each device having two arms projecting beyond the face of the post, each arm having in one edge a notch adapted to receive the fence-wire, the arms of each device forward of said notches being foldable toward each other and across the fence-wire.

3. The combination with the fence-post having in one side a longitudinal groove of dovetail shape, of a wire-engaging device longitudinally adjustable in said groove and composed of sheet metal fitted to the walls of said groove, said device having two arms projecting beyond the face of the fence-post, each of said arms having in one edge beyond the face of the post a notch adapted to receive therein the fence-wire, said arms being foldable toward each other and rearwardly across the fence-wire.

4. The combination with a fence-post having on one side a dovetail groove disposed longitudinally and having two longitudinal recesses disposed respectively where the side walls intersect the rear wall of the groove, of a wire-engaging device longitudinally adjustable in said groove and composed of sheet metal, said device having a forwardly-curved rear portion adapted to be flattened and when flattened entering said recesses, said device having two arms projecting beyond the face of the post, each arm having in one edge a notch to receive the fence-wire, said arms being foldable toward each other and rearwardly across the fence-wire.

5. The combination with the fence-wire, of the post having a longitudinal dovetail-shape groove, and a wire-engaging device of sheet metal formed to fit said groove and provided with two arms projecting beyond the face of the post, each arm beyond the face of the post having a notch to receive the fence-wire, said arms being foldable toward each other and rearwardly across the fence-wire.

6. The combination with the fence-wires, of the post having a longitudinal dovetail-shape groove, and a plurality of wire-engaging devices longitudinally adjustable in said groove, each device being made of sheet metal formed to fit said groove and provided each with two arms projecting beyond the face of the post, each arm having in one edge a notch to receive the adjacent fence-wire, said arms of each device being foldable toward each other and rearwardly across the fence-wire held in the notches.

813,817. **FILE-BINDER.** CHARLES R. NELSON, Chicago, Ill., assignor to Sieber & Trumbull Manufacturing Company, a Corporation of Missouri. Filed Aug. 1, 1903. Serial No. 167,933.

Claim.—1. In a loose-leaf binder, in combination, a base-plate, a pair of posts set therein, a pressure-plate running on the posts, a binding-plate apertured to fit upon the posts and being in slidable engagement with the pressure-plate, the distance between one of the apertures and the remoter side of the other aperture differing from the distance between the posts correspondingly measured the binding-plate being elastic at one of its apertures.

2. In a loose-leaf binder, in combination, a base-plate, a plurality of posts rising therefrom, a pressure-plate running on the posts, a binding-plate in sliding engagement with the pressure-plate and apertured to fit loosely on the posts and being expansible at one of its apertures and non-expansible at the other aperture, and means for shifting the binding-plate laterally as to the posts.

3. In a loose-leaf binder, in combination, a base-plate, a plurality of posts rising therefrom, a pressure-plate running on the posts, a binding-plate in sliding engagement with the pressure-plate and having an aperture for loosely receiving each post and being expansible at one of its apertures and non-expansible at the other aperture, a block secured to the pressure-plate and having a threaded aperture, and a screw engaging each aperture and in swiveled engagement with the binding-plate.

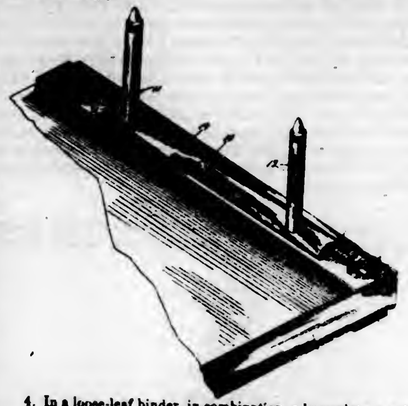

4. In a loose-leaf binder, in combination, a base-plate, a pair of posts rising therefrom, an apertured pressure-plate running on the posts, a binding-plate slidingly engaging the pressure-plate and apertured to fit loosely on the posts, the centers of its apertures being closer together than the centers of the posts, such last-named plate being split from one end to the adjacent aperture, and means for sliding such plate laterally as to the posts.

5. In a loose-leaf binder, in combination, a base-plate, a pair of posts set therein, a pressure-plate running on the posts, a binding-plate apertured to fit upon the posts and being in slidable engagement with the pressure-plate, one of the apertures in the binding-plate being of less width at one end than the diameter of the post with which it coöperates and the plate being resiliently expansible at such aperture, and means for adjustably shifting the binding-plate in one direction to engage it with both posts.

813,818. **BINDER-FILE.** CHARLES R. NELSON, Chicago, Ill., assignor to Sieber & Trumbull Manufacturing Company, a Corporation of Missouri. Filed July 21, 1905. Serial No. 270,622.

Claim.—1. In a binder, in combination, a base-plate; a pair of posts rising therefrom; a binding-plate slidable upon one of the posts when transverse to a line through the posts, and adapted to positively engage both posts when in alinement therewith.

2. In a binder-file, in combination, a base-plate; a pair of posts rising therefrom; and a flexible binding-plate for engaging the posts normally fixed in position but vertically movable on one of the posts when flexed and on the other post only when turned at an angle from its normal position.

3. In a binder, in combination, a base-plate; a pair of posts rising therefrom and having lateral notches; a spring-plate apertured to receive the posts and adapted to run on one thereof, only when transverse to a line uniting the posts, the aperture for receiving the other post being prolonged at less than the major diameter of the post, the spacing of the apertures and the posts being different.

4. In a binder, in combination, a base-plate; a pair of posts rising therefrom, one of the posts being flattened and having lateral

notches, the greater diameter of each post being in a direction transverse to a line through the posts; and a binding-plate having, adjacent one of its ends, an aperture elongated longitudinally as to the plate for receiving the flattened post and of sufficient width to receive its contracted portion by engaging the post-notch, the opposite end of the binding-plate being adapted to positively engage the other post.

5. In a binder-die, in combination, base-plate; a pair of posts rising therefrom and having lateral notches, one of the posts being flattened and having its greater diameter in a direction transverse to a line between the posts; and a spring binding-plate for engaging the posts having, adjacent one of its ends, an aperture elongated longitudinally as to the plate for receiving the flattened post and of sufficient width to receive its contracted portion by engaging the post-notch, and adjacent its opposite end an aperture for receiving the other post and prolonged by a slot of less width than the diameter of such posts, the distance between the apertures being different from that between the posts.

813,819. MULTIPLE-EXPANSION ROTARY ENGINE. ALFRED I. OSTRANDER, Yonkers, N. Y. Filed May 27, 1905. Serial No. 262,542.

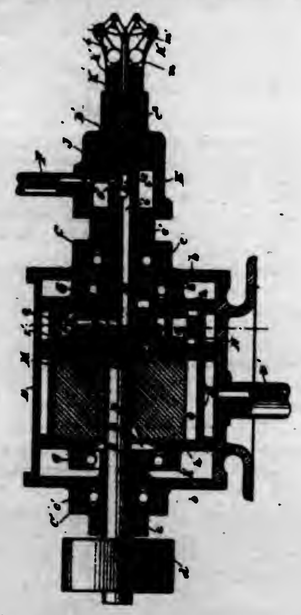

Claim.—1. In an engine, a cylinder, an eccentric piston, means for admitting fluid through said piston, and a hollow piston-shoe having arcuate faces in engagement with said piston.

2. In an engine, a rotary eccentric piston, and a radially-movable piston-shoe provided with curved bearing-surfaces which engage with, and are adapted to turn in, said piston.

3. In an engine, a cylinder, an eccentric revoluble piston carried by a shaft, a chambered piston-shoe having a radial sliding movement relative to said piston, and means for supplying motive fluid to said piston-shoe.

4. In an engine, a cylinder, an eccentric piston therein, a passage for motive fluid in said piston, and a hollow shoe fitted in said piston for radial and rocking movement therein, said shoe being adapted to lie across said passage in the piston.

5. In an engine, a cylinder, an eccentric revoluble piston carried by a shaft, a chambered piston-shoe seated in the piston to have a radial movement and a rocking movement therein, said shoe in one position being adapted to cut off the passage of motive fluid back of the same, and means for supplying a motive fluid to the chambered shoe.

6. In an engine, a cylinder, an eccentric revoluble piston carried by a shaft, a piston-shoe, one face of which is of the same radius as the cylinder and having an arcuate face or faces of a different radius, whereby the shoe is adapted to have a radial movement and a rocking play relative to the piston, and means for supplying a motive fluid to the shoe.

7. In an engine, a cylinder, a rotary eccentric piston therein, said piston having a pocket or chamber in its periphery, a passage for motive fluid in communication with said pocket or chamber, and a hollow piston-shoe occupying said pocket or chamber and adapted to turn and to slide therein.

8. In an engine, a cylinder, an eccentric revoluble piston carried by a shaft, a chambered piston-shoe having a plurality of arcuate faces and a port in one of said faces, said port being adapted to register with a port in the piston, and means for supplying motive fluid to the shoe.

9. In an engine, a piston, a piston-shoe seated in said piston on one side thereof, and a counterpoise carried by the piston on the other side.

10. In an engine, a cylinder, a piston, a piston-shoe seated in said piston on one side thereof, and a counterpoise seated in the piston on the other side, the shoe and the counterpoise being held in contact with a cylinder under centrifugal energy and movable relative to said piston.

11. In an engine, a cylinder, a piston, a piston-shoe seated in said piston on one side thereof, and a counterpoise seated in the piston on the other side, said counterpoise having traveling contact with a cylinder and arranged to permit passage of fluid within the same.

12. In an engine, a piston having pockets at opposite points, a piston-shoe in one of said pockets, and an annular counterpoise movable freely in the other pocket.

13. In an engine, a working cylinder divided into piston-chambers, a piston having members adapted to operate in said chambers, passages in the members of the piston for supplying motive fluid directly to one of the chambers and for exhausting the motive fluid into other piston-chambers, and a plurality of piston-shoes seated on the respective members of the piston for operation in the piston-chambers, each piston-shoe being arranged across one of said passages in a piston member.

14. In an engine, a working cylinder divided into piston-chambers, a piston having members adapted to operate in said chambers, passages in the members of the piston for supplying motive fluid directly to one of the chambers and for exhausting the motive fluid into other piston-chambers, and a plurality of chambered piston-shoes, one of said shoes being in one of said piston-chambers and each shoe extending across one of said passages; one of the passages and the complemental shoe in one piston member being in a different plane lengthwise of the piston from another passage and the shoe in the next piston-chamber.

15. In an engine, a working cylinder divided into piston-chambers, a piston having members adapted to operate in said chambers, passages in the piston, one of said passages opening into a high-pressure chamber, another passage extending between the adjacent chambers, and each of said passages being free and unobstructed in the body of the piston, and a plurality of piston-shoes seated in the members of the piston, each of said shoes being across the outlet of one passage where the latter discharges into one of the piston-chambers.

16. In an engine, a plurality of pressure-chambers, a piston-shaft, a plurality of piston members on said shaft and adapted to operate in the respective chambers, unobstructed fluid-passages in the body of the piston members whereby communication is established between the chambers and with a source of supply, and a plurality of hollow shoes seated on the respective piston members and each arranged across one of said passages, a single shoe being in each of the pressure-chambers.

17. In an engine, a plurality of pressure-chambers, a piston having members adapted to operate in said chambers, fluid-passages in the piston members, and a plurality of piston-shoes seated in the respective piston members and each disposed across the outlet end of one of the passages, each piston-shoe engaging with one piston member for axial and slidable movement relative thereto.

18. In an engine, a plurality of pressure-chambers, a single shaft, a piston having members adapted to operate in the chambers, a plurality of piston-shoes on the respective members of the piston, each shoe being capable of a radial movement and a rocking movement, means for supplying motive fluid to one shoe, and a passage in the piston leading from one chamber to the other piston-shoe.

19. In an engine, a plurality of pressure-chambers, a single shaft, a piston having members adapted to operate in the chambers, a plurality of piston-shoes seated on the piston members and arranged in different radial positions relative to each other, a plurality of counterpoises seated in the piston members opposite to the piston-shoes therein, and means for supplying a motive fluid to the chambers through said shoes.

20. In an engine, a piston-shaft, a pressure-chest, a live inlet to said pressure-chest, a cut-off adapted to rotate with the piston-shaft and to slide across the live inlet to the pressure-chest, and a governor operatively connected to the cut-off for giving the slidable movement thereto.

21. In an engine, a piston-shaft, a pressure-chest, a live inlet to said chest, a cut-off having a spiral operating-face, said cut-off being revoluble with the shaft and also adapted to slide thereon for moving the spiral face across the live inlet, and a governor operatively connected with the cut-off for imparting the sliding movement thereto.

22. In an engine, a cylinder, a piston rotating on an axis different from that of the cylinder, and a piston-shoe seated on said piston, said shoe having a plurality of arcuate faces, one of which is normally in engagement with the cylinder, other arcuate faces of said shoe being in engagement with the piston to have rocking play relative to the piston.

23. In an engine, a cylinder, a rotary piston, a fluid-passage therein, and a piston-shoe seated in the piston across the outlet from the passage thereof, said shoe having a plurality of arcuate faces, one of which is adapted for engagement with the cylinder and the other faces engaging with the piston to enable the shoe to turn axially therein.

24. In an engine, a piston-shaft having means for the admission of a motive fluid, a pressure-chest, a cut-off slidable relative to an inlet-port to said pressure-chest, for regulating the area of said port, a governor on the piston-shaft, and a stem slidable in the piston-shaft and connecting the governor with said cut-off.

25. In an engine, a piston-shaft having a longitudinal passage and an inlet-port, a pressure-chest, a cut-off revoluble with said shaft, and slidable relative to an inlet-port of said chest, a governor in coaxial relation to the piston-shaft and carried thereby, and a stem slidable in the piston-shaft and operatively connecting the cut-off with said governor.

26. In an engine, a casing provided at its ends with a set of externally-located bearings, a piston-shaft journaled in said bearings, bearing-sleeves rigid with the casing and located internally thereof, a revoluble cylinder provided at its ends with hollow journals which surround the bearing-sleeves, bearings engaging with the hollow journals and the bearing-sleeves, and a piston on the shaft.

27. In an engine, a piston having a pocket and a fluid-passage, and a piston-shoe seated in said pocket of the piston for axial movement relative thereto and disposed across the passage, said shoe being of greater width than the depth of the pocket.

813,820. PAPER-MACHINE. JAMES W. PACKER, Glens Falls, N. Y., assignor to The Sandy Hill Iron and Brass Works, a Corporation of New York. Filed Aug. 31, 1905. Serial No. 276,490.

Claim.—1. A shake-frame for machines of the class described consisting of two side bars and one end bar movably connected together, the side bars at one end with the ends of the end bar, respectively, the side bars being provided on their upper sides with bearings for the breast-roll opening upwardly and located forwardly of the end bar, and rear end hangers located rearwardly of the end bar, the side bars being adapted to be movably supported at their forward ends by a fixed frame, substantially as described.

2. A shake-frame for machines of the class described consisting of two side bars and one end bar movably connected together, the side bars at one end with the ends of the end bar, respectively, the side bars being provided with means for supporting the breast-roll, table-rolls and return-rolls forwardly of the end bar, with rear end hangers located rearwardly of the end bar and with means for supporting the save-alls beneath the table-rolls, and adapted to be movably supported at their forward ends by a fixed frame, substantially as described.

3. In a machine of the class described, the combination with a fixed frame; of a shake-frame consisting of two side bars and one end bar movably connected together, the side bars at one end with the ends of the end bar, respectively, the side bars having rear end hangers located rearwardly of the end bar; breast, table and return rolls supported by the side bars forwardly of the end bar; supporting-standards; pendulous connections between the end hangers and standards, respectively; means for movably supporting the forward end of the shake-frame by the fixed frame; and means for vibrating the rear end of the shake-frame, substantially as described.

4. In a machine of the class described, the combination with a fixed frame; of a shake-frame consisting of two side bars and one end bar connected together by vertical pivots, the side bars at one end with the ends of the end bar respectively, the side bars having end hangers located rearwardly of the end bar; rolls supported by the side bars for carrying the making-wire; supporting-standards located rearwardly of the shake-frame and provided with hangers vertically above the side-bar hangers on the shake-frame; and supporting-links connecting the standard-hangers with the side-bar hangers respectively; means for movably supporting the forward end of the shake-frame by the fixed frame, and means for vibrating the rear end of the shake-frame, substantially as described.

5. In a machine of the class described, the combination with a fixed frame; of a shake-frame consisting of two side bars and one end bar connected together by vertical pivots, the side bars at one end with the ends of the end bar respectively; universal-joint connections between the forward end of the shake-frame and the fixed frame; supporting-standards provided with hangers; pendulous connections between the shake-frame and hangers respectively; means for imparting vertical movements to the standard-hangers; means for securing the standard-hangers in different vertical positions; and means for communicating vibratory movements to the rear end of the shake-frame, substantially as described.

6. In a machine of the class described, the combination with a fixed frame, and supporting-standards; of a shake-frame consisting of two side bars and one end bar movably connected together the side bars at one end with the ends of the end bar, respectively, wholly supported by end connections, the forward end by the fixed frame and the rear end by the supporting-standards; and means for detachably supporting the breast-roll on the upper side of the two side bars intermediately of the end connections of the shake-frame whereby the breast-roll can be moved along the upper side of the side bars forwardly of the end bar in changing the making-wire, such end bar being located intermediately of the end connections of the shake-frame.

7. In a machine of the class described, the combination with a shake-frame having its rear end vertically adjustable and provided with a vertical slideway; of a follower adapted to move vertically in such slideway; and means for imparting approximately horizontal reciprocatory movements to the follower whereby vibratory movements in a horizontal direction may be imparted to the rear end of the shake-frame, substantially as described.

8. In a machine of the class described, the combination with a shake-frame having its rear end vertically adjustable and provided with a vertical slideway formed by adjustably securing a vertical bar to one side of the shake-frame and at a distance therefrom to permit the follower or journal-box to travel vertically between and be guided

by such bar and a guideway on the shake-frame; and means for imparting to the follower approximately horizontal reciprocating movements, substantially as described.

9. In a machine of the class described, the combination of a fixed frame; a shake-frame consisting of two side bars and one end bar connected together by vertical pivots the side bars at one end with the ends of the end bar respectively; standards; hangers vertically adjustable on the standards; pendulous connections between the rear ends of the side bars of the shake-frame and the standard-hangers respectively; universal-joint connections between the forward ends of the side bars of the shake-frame and fixed frame; a vertical slideway on one end of the end bar; a follower movable in such slideway; and means for imparting approximately horizontal reciprocatory movements to the follower, substantially as described.

10. In a machine of the class described, the combination with a fixed frame; a supporting-standard provided with hanger-supports located below the level of the breast-roll, whereby such roll can be moved upwardly and along the upper side of the side bars of the shake-frame when changing the making-wire; of a shake-frame movably connected at its forward end with the fixed frame and provided at the lower part of its rear end with hanger-supports; a pendulous connection between the hanger-supports of the shake-frame and the hanger-supports of the standard; and means for communicating shake movements to the shake-frame, substantially as described.

813,821. BALANCED SUCTION AND FORCE PUMP. PIERRE H. J. PAINDAVOINE and PIERRE A. PAINDAVOINE-DUPOUR, Les Fontenettes à la Chapelle aux Pots, France. Filed Sept. 23, 1904. Serial No. 225,022.

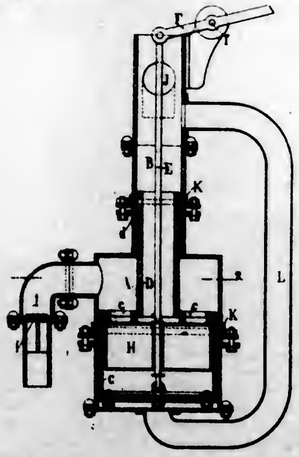

Claim.—1. A pump comprising a cylinder of relatively large diameter, and provided with an upward extension of relatively small diameter, a hollow piston within the cylinder provided with openings in its upper face, an upward extension on the piston for engaging the extension of the cylinder, a bracket on the extension of the cylinder, a handle pivoted to the bracket, a piston-rod connecting the handle with the lower face of the piston, a float-valve in the piston, and provided with an opening to engage the piston-rod, a supply-pipe communicating with the cylinder above the piston, a valve in the supply-pipe, and a tube forming a communication between the extension of the cylinder and the space below the piston.

2. A pump comprising a cylinder, a hollow piston within the cylinder, means for elevating and depressing the cylinder, a float-valve within the piston, a supply-pipe communicating with the cylinder above the piston and means acting on the bottom of the piston to assist in elevating the same.

3. A pump comprising a cylinder, a hollow piston within the cylinder, means for elevating and depressing the cylinder, a float-valve within the piston and means for equalizing the pressure on the upper and the lower faces of the cylinder comprising a tube forming a communication between the space above and the space below the piston.

4. A pump comprising a cylinder, a hollow piston within the cylinder, means for elevating and depressing the cylinder, a float-valve within the cylinder, a supply-pipe communicating with the cylinder above the piston, and means whereby the fluid above the piston may communicate with the space below the piston to equalize the pressure on the opposite faces of the piston.

5. A pump comprising a cylinder, a hollow piston within the cylinder, means for elevating and depressing the piston, a float-valve within the piston, a supply-pipe communicating with the cylinder above the piston and independent means acting on the bottom of the piston to assist in elevating the same.

6. A pump comprising a cylinder, a hollow piston within the cylinder, means for elevating and depressing the piston, a float-valve within the piston, a supply-pipe communicating with the cylinder above the piston and independent means acting beneath the piston to assist in elevating the same.

813,822. THREAD-LAYING DEVICE. CHRISTIAN PEDERSEN, St. Louis, Mo., assignor to Landis Machine Company, St. Louis, Mo., a Corporation of Missouri. Filed Aug. 14, 1905. Serial No. 274,114.

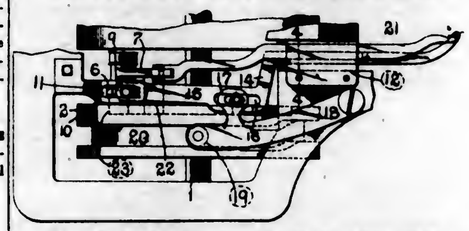

Claim.—1. In a thread-laying mechanism for sewing-machines, the combination of an oscillatory lever having a thread-eye at one end; a horizontal movable lever pivoted to the frame of the machine and connected to said first-mentioned lever, a cam for actuating said second-mentioned lever, a rocking lever connected to the frame and to the first-mentioned lever, a cam for actuating the third-mentioned lever and a sliding hooked element coöperating with the first-mentioned lever to lay the thread about the barb of the needle, substantially as described.

2. In a thread-laying mechanism for sewing-machines, an oscillatory thread-carrying lever, a pivoted element engaging said lever, a cam in engagement with said pivoted element and having a relatively straight groove, an offset groove the wall of which is offset slightly beyond the side wall of the straight groove and another offset groove the wall of which is offset slightly beyond the opposite side of said groove, and means for imparting a movement to said lever, at an angle to the movement imparted by the pivoted element and a reciprocatory hooked element for engagement with the thread and coöperating with the thread-carrying lever, substantially as described.

3. In a thread-laying mechanism for sewing-machines, the combination with a needle, a mechanism for actuating it, of a thread-laying mechanism for laying the thread about the needle comprising a thread-carrying lever, a pivoted element carried by the machine-frame and connected to said lever, said pivoted element having a movement at an angle to the axis of said lever, means for imparting movement to said lever at an angle to the movement of said pivoted element and a hooked member for engagement with the thread said hooked member having a movement at an angle to the angle of the movement of the pivoted member, substantially as described.

4. In a thread-laying mechanism for sewing-machines, an upstanding pivoted member carried by the machine-frame, a cam for actuating said pivoted member, a slide on the free end of such pivoted member, a support for said slide, a thread-carrying member connected to said slide, a lever engaging said thread-carrying member intermediate its ends, a cam for actuating said pivoted lever and a reciprocatory thread-engaging element coöperating with said thread-carrying element, substantially as described.

813,828. MACHINE FOR MAKING WIRE GOODS. JOHN C. PERRY, Clinton, Mass., assignor to Clinton Wire Cloth Company, Clinton, Mass. Filed Apr. 25, 1903. Serial No. 154,304.

Claim.—1. In combination with the coöperative elements of a wire-fabric machine, a series of stationary welding-jaws, a complemental series of yieldingly-mounted movable welding-jaws for welding strand and stay members, means for causing said jaws to grasp the parts to be welded, a series of primary circuit-closers, one for each pair or set of jaws, arranged to be operated in predetermined order, a series of primary circuit-breakers, one for each pair or set of jaws, arranged to be operated by the movable jaw of said pair or sets upon the softening of the metal to be welded.

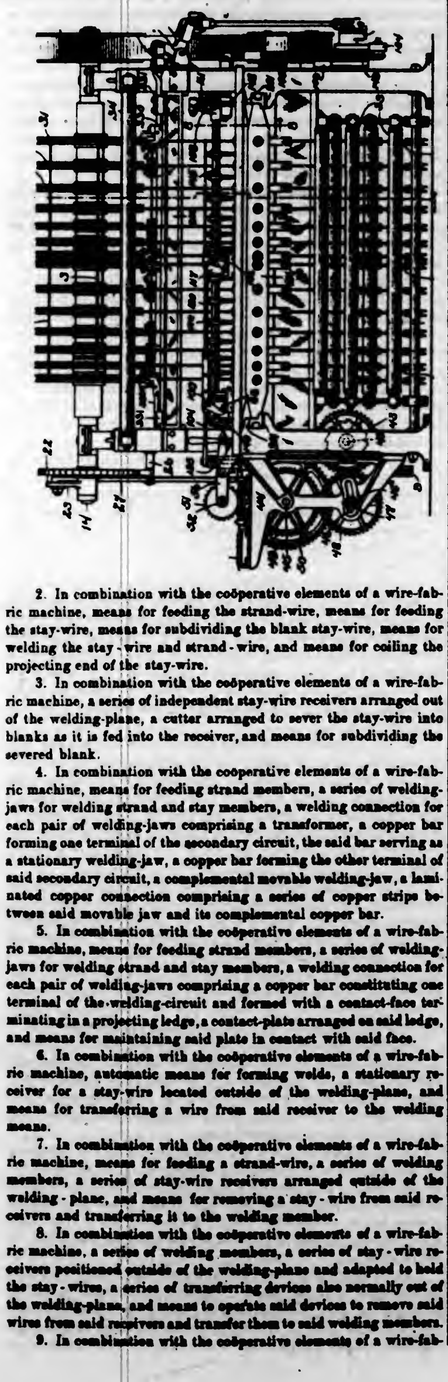

2. In combination with the coöperative elements of a wire-fabric machine, means for feeding the strand-wire, means for feeding the stay-wire, means for subdividing the blank stay-wire, means for welding the stay-wire and strand-wire, and means for coiling the projecting end of the stay-wire.

3. In combination with the coöperative elements of a wire-fabric machine, a series of independent stay-wire receivers arranged out of the welding-plane, a cutter arranged to sever the stay-wire into blanks as it is fed into the receiver, and means for subdividing the severed blank.

4. In combination with the coöperative elements of a wire-fabric machine, means for feeding strand members, a series of welding-jaws for welding strand and stay members, a welding connection for each pair of welding-jaws comprising a transformer, a copper bar forming one terminal of the secondary circuit, the said bar serving as a stationary welding-jaw, a copper bar forming the other terminal of said secondary circuit, a complemental movable welding-jaw, a laminated copper connection comprising a series of copper strips between said movable jaw and its complemental copper bar.

5. In combination with the coöperative elements of a wire-fabric machine, means for feeding strand members, a series of welding-jaws for welding strand and stay members, a welding connection for each pair of welding-jaws comprising a copper bar constituting one terminal of the welding-circuit and formed with a contact-face terminating in a projecting ledge, a contact-plate arranged on said ledge, and means for maintaining said plate in contact with said face.

6. In combination with the coöperative elements of a wire-fabric machine, automatic means for forming welds, a stationary receiver for a stay-wire located outside of the welding-plane, and means for transferring a wire from said receiver to the welding means.

7. In combination with the coöperative elements of a wire-fabric machine, means for feeding a strand-wire, a series of welding members, a series of stay-wire receivers arranged outside of the welding-plane, and means for removing a stay-wire from said receivers and transferring it to the welding member.

8. In combination with the coöperative elements of a wire-fabric machine, a series of welding members, a series of stay-wire receivers positioned outside of the welding-plane and adapted to hold the stay-wires, a series of transferring devices also normally out of the welding-plane, and means to operate said devices to remove said wires from said receivers and transfer them to said welding members.

9. In combination with the coöperative elements of a wire-fabric machine, means for feeding strand members, means for welding strand and stay members comprising a series of pairs of welding-jaws, a series of transformers for said welding-jaws, a series of primary circuits for said transformers, and means for closing said primary circuits in succession and in a predetermined selective order.

10. In combination with the coöperative elements of a wire-fabric machine, a series of stationary stay-wire receivers, a series of welding-jaws, a series of transferring-fingers, a rod upon which said fingers are mounted, and means for giving said rod a combined movement of rotation and translation to remove a wire from said receivers and transfer it to said welding-jaws.

11. In combination with the coöperative elements of a wire-fabric machine, two wire-holders each formed with a wire-passage inclosed upon one side by a yielding detent, means for severing the wire between said holders, and means for transferring the wire from said holders.

12. In combination with the coöperative elements of a wire-fabric machine, a shaft, two oppositely-arranged complemental cams on said shaft, a block loosely mounted between said cams, a pitman-strap slidingly arranged upon said block, a roller at each end of said strap arranged to be engaged by said cams, whereby a reciprocating motion is given to said pitman-strap.

13. In combination with the coöperative elements of a wire-fabric machine, means for feeding strand members, a series of welding-jaws for welding strand and stay members, a secondary or welding circuit for each pair of jaws comprising a copper bar bent twice upon itself to form two coils, with an intervening space for reception of a primary coil, a copper bar provided with a welding-jaw connected to one terminal of said coiled bar, a copper bar connected to the other terminal of said coiled bar, a movable welding-jaw, and a laminated copper yielding connection between said last-mentioned bar and said movable welding-jaw.

14. In combination with the coöperative elements of a wire-fabric machine, means for receiving and holding a cross-wire, means for removing or liberating the cross-wire from the receiver or holder previous to welding, means for transferring or guiding said wire to the welding position, and means for welding.

15. In combination with the coöperative elements of a wire-fabric machine, means for welding crossed wires, means for holding a cross-wire crosswise of the longitudinal wires, but not in position for welding, means for transferring the cross-wire from the receiver to a position to be grasped by the welding-jaws.

16. In combination with the coöperative elements of a wire-fabric machine, independent stationary receivers or holders arranged to receive a cross-wire, combined with a wire-transferring mechanism arranged to remove said wire from said receivers and transfer it to the welding position.

17. In combination with the coöperative elements of a wire-fabric machine, a transfer device arranged normally out of the welding-plane, but adapted to carry a cross-wire into position for welding and to withdraw from the welding-plane as soon as said wire is clamped by the welding-dies, and means for operating said device.

18. In combination with the coöperative elements of a wire-fabric machine, a receiver arranged out of the welding-plane to receive and hold a cross-wire, means for removing said wire to the welding members, and means for welding said cross-wire to a plurality of strand-wires.

19. In combination with the coöperative elements of a wire-fabric machine, a stay-wire carrier operated to pass one side of a pair of coacting welding-jaws in placing the stay-wire in position for welding, and to withdraw entirely from the space between said coacting welding-jaws after the said stay-wire has been clamped in the welding-jaws, and while said welding is taking place.

20. In combination with the coöperative elements of a wire-fabric machine, a warp-wire, a holder for one or more cross-wires, means for liberating or removing said wire or wires from said holder one at a time, means for receiving and holding said liberated wire in a position to be grasped by coacting welding-jaws, and means for welding said warp and cross wires together at their intersections.

21. In combination with the coöperative elements of a wire-fabric machine, a holder for a cross-wire, welding-jaws operated to engage said wire to remove it from its holder and to weld the same to the strand-wires.

22. In combination with the coöperative elements of a wire-fabric machine, a guide for conveying a cross-wire into a position to be grasped by coacting welding-jaws, stops to receive and locate said wire, said stops being constructed to allow the cross-wire to pass on with the fabric after welding.

23. In combination with the coöperative elements of a wire-fab-

ric machine, means out of the welding or strand-wire plane for supporting cross-wires, means for moving said cross-wires into a position across strand-wires to be grasped by coacting welding-electrodes.

24. In combination with the coöperative elements of a wire-fabric machine, a beam or rail, means for reciprocating said rail, plungers yieldingly mounted in said rail carrying movable welding-jaws and springs for coacting upon said plungers to effect the upsetting pressure when welding.

25. In combination with the coöperative elements of a wire-fabric machine, means for feeding strand members, means for welding strand and stay members comprising a pair of welding-jaws each provided with a contact welding-plate having a flat back or rear contact-face, beveled sides and a groove to receive the part to be welded.

26. In combination with the coöperative elements of a wire-fabric machine, an electrical welding device, a strand-wire feed, a stay-wire receiver arranged out of the plane of said welding device, a transferring device normally out of the plane of the welding device, and means for operating said transferring device to transport a stay-wire from said receiver to said welding device, and means for operating the welding devices to grasp the strand and stay wires and weld the same.

27. In combination with the coöperative elements of a wire-fabric machine, a wire-feed, a stationary knife, a movable thimble through which the wire is fed into the said machine alongside of said knife, and means for moving the thimble to draw the wire against the knife to sever said wire.

28. In combination with the coöperative elements of a wire-fabric machine, a stationary stay-wire receiver arranged out of the strand-plane, and independent means for transferring a stay-wire from the receiver to the strand-plane.

29. In combination with the coöperative elements of a wire-fabric machine, means for feeding strand-wires, means for feeding a stay-wire, means for welding said wires at points of intersection comprising a bar or head, means for reciprocating the same, a plunger yieldingly mounted in said head carrying a movable welding-jaw, and a spring coacting with said plunger to effect the upsetting pressure when welding.

30. In combination with the coöperative elements of a wire-fabric machine, means for feeding strand-wires, means for feeding a stay-wire, means for welding said wires at points of intersection, comprising a series of stay-wire receivers arranged out of the welding-plane and automatically-acting means for subdividing a blank held in said receivers.

31. In combination with the coöperative elements of a wire-fabric machine, means for feeding strand-wires, means for feeding a stay-wire, means for welding said wires at points of intersection, comprising means arranged to place a cross-wire in position to be grasped by the welding means and then to withdraw out of the strand-plane.

32. In combination with the coöperative elements of a wire-fabric machine, means for feeding strand-wires, means for feeding a stay-wire, means for welding said wires at points of intersection, comprising a cross-wire receiver, a cross-wire-transfer device arranged to place a wire in position to be grasped by the welding means, means for positioning the wire in the welding means arranged to permit the removal of the wire after the welding operation.

33. In combination with the coöperative elements of a wire-fabric machine, means for feeding strand-wires, means for feeding a stay-wire, means for welding said wires at points of intersection, comprising a stay-wire receiver arranged to permit the removal of a stay-wire therefrom, a transfer device arranged to remove a wire from said receiver and place it in a position to be grasped by the welding means and having provision to permit the releasing of said wire after it is engaged by said welding means.

34. In combination with the coöperative elements of a wire-fabric machine, means for feeding strand-wires, means for feeding a stay-wire, means for welding said wires at points of intersection, comprising a stay-wire receiver, a transfer device, comprising two wire-engaging members, one of which is movable and arranged as a finder or means for guiding the stay-wire between said members.

35. In combination with the coöperative elements of a wire-fabric machine, means for feeding strand-wires, means for feeding a stay-wire, means for positioning and welding said strand and stay wires at points of intersection, a fabric-drum, and means including an adjustable belt-tightener for driving said drum to take up the fabric.

36. In combination with the coöperative elements of a wire-fabric machine, an intermittently-operated stay-wire feed, comprising means for gripping and feeding the wire and mechanism for driving said means including a continuously-driven but intermittently-deflected pawl.

37. In combination with the coöperative elements of a wire-fabric machine, a stay-receiver, comprising a member formed with a segmental groove terminating in a wire-receiving slot and a spring-pressed finger formed with a complemental segment adapted to fit into said groove and yieldingly retain the stay-wire in said slot but to permit the removal of the wire therefrom.

38. In combination with the coöperative elements of a wire-fabric machine, means for feeding strand-wires, means for feeding a stay-wire, means for welding said wires at points of intersection, a stay-wire cutter comprising a stationary knife, a sliding thimble or member, and means for moving said member to draw the wire against the knife to sever the wire.

39. In combination with the coöperative elements of a wire-fabric machine, means for feeding strand-wires, means for feeding a stay-wire, means for receiving and holding a stay-wire, means for subdividing said wire after it is fed into the receivers, and means for welding said wires at points of intersection.

40. In combination with the coöperative elements of a wire-fabric machine, means for feeding strand-wires, means for feeding a stay-wire, means for receiving the stay-wire, means for subdividing said wire, and means for welding said wires at points of intersection.

41. In combination with the coöperative elements of a wire-fabric machine, means for feeding strand-wires, means for feeding a stay-wire, means for welding said wires at points of intersection, a stay-wire coiler, comprising a stationary pin or anvil and a reciprocating bending-pin adapted to bend the end of a stay-wire about said anvil and means for operating said pin.

42. In combination with the coöperative elements of a wire-fabric machine, means for feeding strand-wires, means for feeding a stay-wire, means for positioning and welding said wires at points of contact, and means for controlling the welding action, comprising a transformer for each pair of welding-jaws, a circuit-closer for the primary circuit of each transformer, and means for selectively operating said closers.

43. In combination with the coöperative elements of a wire-fabric machine, means for feeding strand-wires, means for feeding a stay-wire, means for positioning and welding said wires at points of intersection, said welding means including a plurality of pairs of welding-jaws and a transformer for each pair of welding-jaws, a break-switch in the primary circuit of each transformer, a movable girth arranged to close said switches as a gang, and means carried by one member of each pair of welding-jaws for independently opening its individual switch.

44. In combination with the coöperative elements of a wire-fabric machine, means for feeding strand-wires, means for feeding a stay-wire, means for positioning and welding said wires at points of intersection comprising a gang of rear stationary welding-jaws, a series of independent movable complemental front welding-jaws, means for moving the front jaws as a gang to grasp the wires, and provision whereby each front jaw moves independently to upset the weld.

45. In combination with the coöperative elements of a wire-fabric machine, means for feeding the strand-wires, means for feeding a stay-wire, means for positioning and welding said wires at points of intersection, comprising a gang of stationary welding-jaws or electrodes, a movable girth, a complemental series of independent welding-jaws yieldingly mounted in said girth, means for operating said girth to advance the movable jaws to permit the wires to be grasped between each front and rear welding-jaw, with provisions whereby each movable welding-jaw moves independently to upset the weld.

46. In combination with the coöperative elements of a wire-fabric machine, means for feeding strand-wires, means for feeding a stay-wire, means for welding said wires at points of intersection to form a fabric, said stay-wire-feeding means comprising a device to place a stay-wire in position to be grasped by the welding means and then withdraw out of the strand-plane.

47. In combination with the coöperative elements of a machine for making wire fabric, means for feeding strand-wires, means for feeding a stay-wire, means for welding said wires at points of intersection to form a fabric, said stay-wire-feeding means comprising a receiver and an independent transfer device arranged to remove the wire from said receiver and place it in position to be received by the welding means.

48. In combination with the coöperative elements of a machine for making wire fabric, means for feeding strand-wires, means for feeding a stay-wire, means for welding said wires at points of intersection to form a fabric, said stay-wire-feeding means comprising a receiver arranged to permit the removal of a stay-wire therefrom, an independent transfer device arranged to remove a wire from said receiver and position it to be grasped by the welding means, and having provision to permit the release of said wire after it is engaged by said welding means.

49. In combination with the coöperative elements of a machine for making wire fabric, means for feeding strand-wires, means for feeding a stay-wire, means for welding said wires at points of intersection to form a fabric, said stay-wire-feeding means comprising a receiver and an independent transfer device, said device being composed of two wire-engaging members, one of which is movable and arranged as a finder or means of guiding the stay-wire between said members.

50. In combination with the coöperative elements of a wire-fabric machine, a transfer device, comprising two members, one of which is movable with relation to the other and having a part for locating the stay-wire and guiding it in position to be grasped by said transfer member.

51. In combination with the coöperative elements of a wire-fabric machine, automatic welding means, means for feeding strand-wires, means for feeding a stay-wire, comprising two members, one of which is movable with relation to the other and formed with an extension or part for locating the stay-wire and guiding it in position to be grasped by said members, and a spring arranged to yieldingly maintain the movable member against its complemental member except when opened by resistance offered through the stay-wire.

52. In combination with the coöperative elements of a wire-fabric machine, a dovetailed rail, a series of arms adapted to rest on said rail, each formed with a lip to engage the under side of the rail, and clamps arranged to engage said arms on the opposite side of said rail whereby said arms may be secured in any desired position of adjustment.

53. In combination with the coöperative elements of a wire-fabric machine, a series of movable electrodes, a complemental series of break-switches, a movable rail or girth arranged to set or close said switches, and means whereby each electrode automatically breaks or opens the switch of its circuit.

54. In combination with the coöperative elements of a wire-fabric machine, means for feeding strand members, means for feeding a stay member, means for welding said members at points of intersection, comprising a pair of welding-jaws, a transformer, a copper bar connecting each jaw to a terminal of the secondary circuit of the transformer, said copper bars being secured together but insulated from each other.

55. In combination with the coöperative elements of a wire-fabric machine, means for feeding strand members, means for feeding a stay member, means for welding said members at points of intersection, comprising a series of pairs of welding-jaws, a transformer for each pair of welding-jaws, a series of primary circuit-closers, means for operating said closers selectively in advance of the welding operation, a break-switch for each pair of welding-jaws, and means controlled by the amount of upset for automatically opening each break-switch individually.

56. In combination with the coöperative elements of a wire-fabric machine, means for feeding strand members, means for feeding a stay member, means for welding said members at points of intersection, comprising a plurality of pairs of welding-jaws, a transformer for each pair of welding-jaws, a copper bar forming each terminal of the secondary circuit of each transformer, one welding-jaw of each pair being connected to one end of one of said bars, and a laminated copper connection between the complemental jaw and one end of the complemental bar.

57. In combination with the coöperative elements of a wire-fabric machine, means for feeding strand members, means for feeding a stay member, means for welding said members at points of intersection, comprising a plurality of pairs of welding-jaws each connected to a stationary copper bar, a transformer for each pair of welding-jaws, the secondary circuit of the transformer being composed of a copper bar formed in two coils with a space between the coils, one end of the coil being connected to one of the stationary bars and the other end of the coil to the other end of the other stationary bar, the primary circuit of the transformer being composed of a wire coil arranged in the space between the loops or turns of the secondary circuit.

58. In combination with the coöperative elements of a wire-fabric machine, means for feeding strand members, means for feeding a stay member, means for welding said members at points of intersection, comprising a series of pairs of welding-jaws, a transformer for each pair of welding-jaws, a primary circuit open at two points for each transformer, a series of closers, a series of break-switches, means for selectively operating the closer of each primary circuit in advance of the welding action and maintaining the circuit closed at this point during the welding action, means for closing the break-switches in advance of the welding action, and means whereby the opening of each break-switch is controlled by the amount of upset of the weld.

59. In combination with the coöperative elements of a wire-fabric machine, means for feeding strand-wires, means for feeding a stay-wire, means for welding said wires at points of intersection, comprising a plurality of stationary welding-jaws, a plurality of complemental movable welding-jaws, means for moving the movable jaws as a gang to grasp the work, and means whereby each movable jaw has an independent upsetting movement.

60. In combination with the coöperative elements of a wire-fabric machine, means for feeding strand members, means for feeding a stay member, means for welding said members at points of intersection, comprising a series of welding units, a source of power, means for selectively and independently connecting each welding unit with the source of power, an independent power-disconnecting device for each unit, and means controlled by each unit for automatically operating its power-disconnecting device upon the completion of the welding operation of that unit.

813,824. **SMELTING AND REFINING PROCESS.** ENOS C. POLLARD, Seattle, Wash. Filed May 21, 1904. Serial No. 209,201.

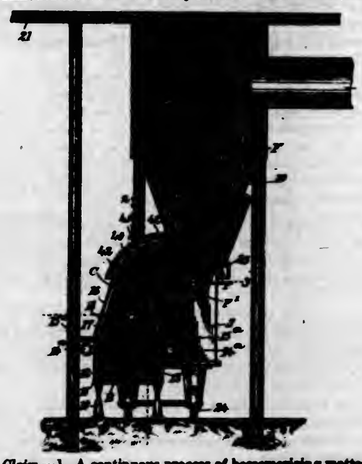

Claim.—1. A continuous process of bessemerizing matter, consisting in passing a stream of siliceous slag over the bessemerizing regions to absorb the products of bessemerizing blasts, discharging this slag from the bessemerizing region into contact with siliceous material to dissolve the silica and incorporate it in the slag, discharging a part of the slag, and returning the remainder of the slag to the bessemerizing regions while still in a molten condition.

2. A process of bessemerizing matter, consisting in passing a stream of siliceous slag over the matte in the bessemerizing regions, discharging the slag from the bessemerizing region into contact with siliceous material continuously, discharging a part of the slag, and returning the remainder thereof to the bessemerizing regions.

3. A continuous process of bessemerizing copper matter, consisting in passing a stream of siliceous slag over the bessemerizing regions, discharging the slag into contact with ferrous sulfid to reduce any copper carried by the slag to a subsulfid, discharging a part of the slag, and returning the remainder thereof together with ferrous and cuprous sulfids, to the bessemerizing regions to supply matte to the bessemerizing regions.

4. A continuous cyclical process of reducing ore containing sulfur, consisting in melting it in the presence of a flux to produce matte, separating matte and slag from the ore, passing a stream of slag over the matte, bessemerizing the matte in the presence of the slag, returning a part of the slag to the ore-melting regions to furnish a flux for additional ore, and returning the slag with new matte to the bessemerizing regions.

5. The process of bessemerizing, consisting in passing a stream of siliceous slag over the material while being subjected to bessemer-

being blasts, causing a mixture of cuprous oxid and cuprous sulfid to reast beneath a column of molten slag, thereby causing the formation of sulfur dioxid within the slag and forcing the slag by the dynamic energy due to the effervescence thus produced, together with the kinetic energy of the bessemerizing blasts, into the presence of ore being fused in a higher plane than that from which it was introduced into the converter, and thereafter causing the matte and siliceous slag to flow into the bessemerizing region by the force of gravity.

6. A process of bessemerizing consisting in passing a stream of siliceous slag over the material while being subjected to bessemerizing blasts, causing a reaction beneath a column of molten slag to produce a gas within the slag and force the latter by the dynamic energy of effervescence thus produced together with the kinetic energy of the bessemerizing blasts into the presence of ore being fused, and thereafter causing the matte and siliceous slag to flow back into the bessemerizing region by the force of gravity.

7. The process of bessemerizing matte, which consists in maintaining over the matte a layer of liquid siliceous slag obtained from fusing the ore, passing a blast of air through the matte and through said supernatant layer of slag, and in expelling the slag from the presence of the matte by the combined agency of the kinetic energy of the bessemerizing blasts and effervescence due to oxidizing the sulfur in the matte.

8. The process of bessemerizing matte, consisting in passing a stream of siliceous slag over the matte in the bessemerizing region, continuously discharging the slag from the bessemerizing region into contact with a siliceous material, and returning a part of the slag to the bessemerizing region.

9. A continuous cyclical process of reducing copper ores containing sulfur, consisting in melting them in the presence of a flux to produce matte, separating matte and slag from the ore, passing a stream of slag over the matte, bessemerizing the matte in the presence of slag, drawing off the lighter portion of the slag, returning a part of the slag to the ore-smelting regions in a higher plane than the bessemerizing regions, and returning the slag from the melting regions with new matte to the bessemerizing regions.

10. A process of refining metals, which comprises the fusing of a charge of ore containing sulfur and an excess of silica, retaining all the iron of the ore in the matte, running off and settling the resultant matte and siliceous slag, and returning portions of the slag into the presence of the ore.

11. A process of refining metals, which consists in fusing a charge of ore containing copper, iron, sulfur and an excess of silica, without oxidizing the iron and the major portion of the sulfur, running off and settling the resultant matte and slag, and returning portions of the slag into the presence of the ore.

12. A process of refining metals, comprising the fusing of ore containing sulfur, the bessemerizing of the matte produced, and the cyclical circulation of a stream of slag alternately to the fusing and bessemerizing regions.

13. A process of refining sulfid copper ores which comprises fusing the metallic contents of the ore in the presence of a flux and retaining in the matte the iron and the major portion of the sulfur contained in the ore in an unoxidized condition and bessemerizing the resulting material.

14. A process of refining metals which comprises fusing ore containing sulfur, copper and iron, bessemerizing the matte produced, continuously running off the lighter portions of the slag, and cyclically circulating a stream of richer slag alternately to the fusing and bessemerizing regions.

813,825. SMELTING AND REFINING APPARATUS. ELMER C. POLLARD, Seattle, Wash. Filed Apr. 26, 1905. Serial No. 257,206.

Claim.—1. The combination of a furnace having a boot or bowl-like portion at its lower end, a converter having a throat opening into the lower part of the furnace, a settler, and means for conducting molten materials from the boot of the furnace into the settler and from the settler into the converter.

2. The combination of a furnace having a boot or bowl-like portion at its lower end, a converter having a throat opening into the lower part of the furnace, a settler, means for conducting molten materials from the boot of the furnace into the settler and from the settler into the converter, and a receiver in communication with the converter to receive finished product therefrom.

3. The combination of a converter, a melting-furnace, means for establishing a cyclical passage of molten materials from the converter to the furnace and from the furnace to the converter, and a receiver in communication with the converter to receive finished product therefrom.

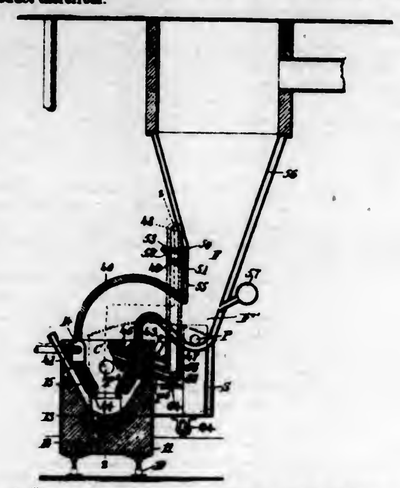

4. The combination of a converter, a melting-furnace, and means for causing molten material to flow from the converter to a point in the furnace at a higher level than the converter, discharge said materials onto the contents of the furnace, and cause a transfer of materials from the interior of the furnace into the converter.

5. The combination of a converter, a melting-furnace, means for establishing a passage of molten materials from the converter to the furnace and from the furnace to the converter, and a settler or forehearth located in and forming part of the path of the molten materials.

6. The combination of a converter, a melting-furnace, means for conducting material from the furnace to the converter, and separate means for conducting materials from the converter to the furnace.

7. The combination of a furnace having a depressed lower portion, a converter located at a lower level than the bottom of the furnace, said converter having a hood communicating with its top and with the furnace, means for conducting materials from the lower part of the furnace into the converter, and means for conducting materials from the converter into the upper part of the furnace.

8. The combination of a furnace, a converter located at a lower level than the bottom of the furnace, means for conducting material from the lower part of the furnace into the converter, and means for conducting material from the converter into the upper part of the furnace.

9. The combination of a furnace, a converter, means for conducting material from the lower part of the furnace into the converter, and means for conducting material from the converter into the upper part of the furnace.

10. The combination of a converter, a melting-furnace, means for conducting material from the furnace to the converter, and separate means for conducting materials from the converter to the furnace; said separate means comprising a conductor discharging into the furnace, and means in the conductor for forcing material therein to ascend.

11. The combination of a converter, a melting-furnace, means for conducting material from the furnace to the converter, and separate means for conducting materials from the converter to the furnace, said separate means comprising a conductor discharging into the furnace and means in the conductor for forcing material therein to ascend; said last-named means comprising an explosion-tube and means for conducting a mixture of explosive gases into said tube.

12. The combination of a converter, a melting-furnace, means for conducting material from the furnace to the converter, and separate means for conducting materials from the converter to the furnace; said separate means comprising a conductor discharging into the furnace, and means in the conductor for forcing material therein to ascend; said last-named means comprising a conical explosion-tube having an open upper end and a passage in its lower end, a valve for closing said passage, a pair of chambers normally separated from each other, said valve controlling communication between said chambers, and yielding means for normally forcing the valve to close communication between said chambers and also to close the opening in the bottom of the explosion-tube.

13. The combination of a melting-furnace, a converter located at a lower level than the melting-furnace and having a discharge-opening adapted to deliver slag by gravity from the converter, a stand-pipe communicating with the lower end of said discharge-opening and extending to a point above the bottom of the furnace, a pipe for conducting material from the stand-pipe to the furnace above the charging-line thereof, and means for causing materials in the stand-pipe to ascend therein and be discharged into the furnace.

14. The combination of a melting-furnace, a converter having a discharge-opening adapted to deliver slag from the converter, a stand-pipe communicating with said discharge-opening and extending to a point above the bottom of the furnace, a pipe for conducting material from the stand-pipe to the furnace, and means for causing material in the stand-pipe to ascend therein and be discharged into the furnace.

15. The combination of a converter, a conductor for conveying materials therefrom, and means in the conductor for forcing material therein to ascend; said last-named means comprising a conical explosion-tube having an open upper end and a passage in its lower end, a valve for closing said passage, a pair of chambers normally separated from each other, said valve controlling communication between said chambers, and yielding means for normally forcing the valve to close communication between said chambers and also to close the opening in the bottom of the explosion-tube.

16. The combination of a converter, a melting-furnace, and means for conducting material from the converter to the furnace, comprising a conductor, an explosion-tube in the conductor for forcing material therein to ascend, and means for conducting a mixture of explosive gases into said tube.

17. The combination of a furnace having a depressed lower portion, a converter located at a lower level than the bottom of the furnace, said converter having a hood communicating with its top and with the furnace, means for conducting materials from the lower part of the furnace into the converter, and means for conducting materials from the converter into the upper part of the furnace; said converter having passages in its walls constituting twyers, and opening near the bottom of the converter.

18. The combination of a converter having passages molded in its walls and opening at the bottom thereof, said passages constituting twyers, means for conducting compressed air to said passages, a melting-furnace, means for conducting molten materials from the melting-furnace to the converter, and means for conducting molten materials from the converter to the melting-furnace.

19. The combination of a converter having a molded lining, and a pipe constituting a portion of the inner wall of the lining, a passage in the lining constituting a twyer and passages for conducting air from the pipe to the twyer, and means for conducting molten material from the converter.

20. The combination of a converter, said converter being provided with inclined passages in its walls upon opposite sides thereof and converging toward the bottom of the converter, bustle-pipes also in its walls and constituting part of the inner face thereof, passages from the bustle-pipes to the inclined passages, and water-cooling pipes located above the mouths of the inclined passages within the converter, and means for conducting molten materials from the converter.

21. The combination of a converter, a furnace into which the converter discharges, a settler, means for conducting molten material from the furnace to the settler and from the settler to the converter, a vertically-adjustable overflow-conductor in the settler, and a receiver in communication with the lower part of the converter to receive the finished product thereof.

22. The combination of a converter, a furnace into which the converter discharges, a settler, means for conducting molten materials from the furnace to the settler and from the settler to the converter, a vertically-adjustable overflow conductor in the settler, and a receiver in communication with the lower part of the converter to receive the finished product thereof; said receiver constituting a portion of the converter and being separated therefrom by a non-conducting partition.

813,826. EAVES-TROUGH HANGER. WILLIAM G. RAU, Louisville, Ky. Filed Oct. 11, 1905. Serial No. 282,267.

Claim.—1. An eaves-trough hanger consisting of the strap adapted to embrace the trough, and a V-shaped brace secured upon said strap and adapted to depress said strap and deflect water from said strap into the trough.

2. In an eaves-trough hanger, the combination with a strap embracing the trough, of a V-shaped brace secured upon said strap adjacent the edge of the trough and adapted to deflect water from said strap into the trough.

3. In an eaves-trough hanger, the combination with a trough and a strap embracing said trough, of a brace having slots therein adapted for the reception of the strap, said brace adapted to depress said strap and deflect the water from the strap into the trough.

813,827. DRAFTING INSTRUMENT. GEORGE RIND, Allegheny, Pa., assignor of one-third to Harvey H. Smith, Pittsburg, Pa. Filed June 13, 1905. Serial No. 265,067.

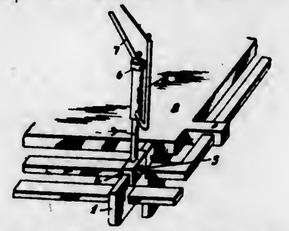

Claim.—1. The combination with a drafting-table, of a bracket carried by one edge thereof, a standard detachably connected to said bracket, a beam revolubly attached to said standard, an upwardly-extending arm carried by said standard adjacent to said standard, an adjustable wire connecting the top of said arm and the outer end of said beam, a sleeve adjustably mounted upon said beam, a plate carried by said sleeve, a shaft rotatably mounted in said plate, and a beam-compass carried by the lower end of said shaft, substantially as described.

2. The combination with a drafting-table having an upwardly-extending bracket, of a standard detachably secured to said bracket, a beam pivotally connected to said standard, a sleeve slidably mounted upon said beam, a plate carried by said sleeve, a shaft journaled in said plate, a beam-compass carried by the lower end of said shaft, means to adjustably support the outer end of the first-named beam, means to revolve said shaft, and means to lock said sleeve in engagement with said beam, substantially as described.

3. The combination with a table, of a bracket carried by one edge of said table, a standard detachably secured to said bracket, a beam pivotally mounted upon said standard, an adjustable beam-compass slidably mounted upon said beam, means to rotate said beam-compass, and means to support the outer end of the first-named beam, substantially as described.

4. The combination with a table, of a bracket mounted at one edge of the table, a standard detachably mounted on said bracket, a beam pivotally mounted upon said standard, a sleeve slidably mounted on said beam, a horizontal plate carried by said sleeve, a vertically-disposed rotary shaft carried by said plate, a member carried by said shaft and adjustable thereon, a beam passing through said member, adjustable heads mounted on said last-named beam, and markers carried by said heads.

813,828. ROCK-DRILL. EDWARD A. RIX, San Francisco, Cal. Filed Aug. 16, 1905. Serial No. 274,457.

Claim.—1. The combination in a rock-drill, of a cylinder, having a slide fixed to and projecting from its bottom, a shell within which said slide is movable, the bottom of said slide and the bottom of the guide being spaced from each other, and means operable in said space between said bottoms and adjustable in one direction to compensate for wear between the bottom and also the sides of said guide.

2. In a rock-drill, a slide cast integral with the cylinder and parallel with the bore thereof, said slide having diverging sides, a shell having corresponding interior surfaces between which the slide is

movable, the bottom of the slide and the bottom of the guide being separated from each other, and a wear-plate in the space between said bottoms and adjustable in one direction whereby contact between said surfaces is maintained and wear compensated.

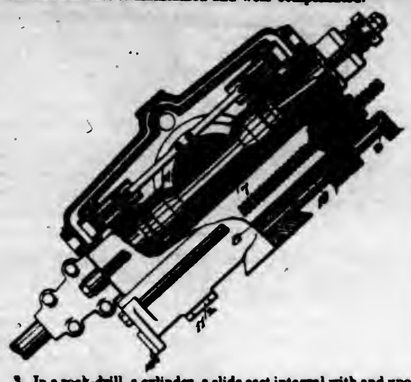

3. In a rock-drill, a cylinder, a slide cast integral with and upon one side of said cylinder, and having divergent sides; a shell having corresponding sides within which the slide is movable, a take-up plate bearing against the bottom of the slide and occupying a space between the bottom or outer surface of the slide and the interior of the shell, and means for adjusting said plate.

4. The combination with a rock-drill and the cylinder thereof of a hollow shell, with upwardly-convergent sides, a projection from the bottom of the cylinder with sides fitting and slidable against the sides of the shell, said shell and projection having bottoms spaced from each other, and a take-up plate in the said space between said bottoms, and means for adjusting said plate upwardly.

818,829. SUPPOSITORY. HERMAN ROSARTS, St. Louis, Mo., assignor of one-half to Frederick S. Hasbarin, St. Louis, Mo. Filed Nov. 8, 1905. Serial No. 287,943.

Claim.—The combination with a compressed expansive porous body and a cord secured thereto, of a solid homogeneous protective shell of medicated composition which entirely incloses and seals the expansive porous body and a portion of the cord which joins with said porous body, and which protective shell is fusible at the temperature of the body; substantially as specified.

818,880. ELEVATING DEVICE. ELI ROSEBOUX, Springfield, Minn. Filed Aug. 28, 1905. Serial No. 275,206.

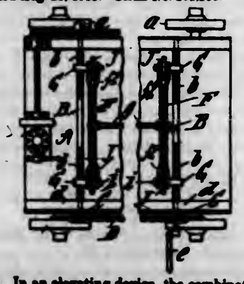

Claim.—1. In an elevating device, the combination with a bottom platform or support, a pair of horizontal parallel right and left threaded screw-shafts journaled for rotation thereon, and means for concurrently turning said shafts, of two pairs of nuts or screw-engaging parts on said shafts, opposite sets of lazy-tongs having the crossed lower members thereof pivotally engaged with said nuts, wheels or rollers provided for rotation on the pivots of the lower lazy-tongs bars, and having rolling supports on said bottom platform in lines parallel with the lengths of said screws, and a platform or supporting structure, supported at the tops of said sets of lazy-tongs.

2. In an elevating device, the combination with a bottom platform or support, a pair of horizontal parallel right and left threaded screw-shafts journaled for rotation thereon, and means for concurrently turning said shafts, of two pairs of nuts or screw-engaging parts, opposite sets of lazy-tongs having the crossed bar members thereof pivotally engaged with said nuts, and a platform or supporting structure, having at its opposite end portions centrally located, rigidly-affixed depending members pivotally connected at the junctions of the top pairs of lazy-tongs bars, and said platform also having at the middles of their end portions outside the said lazy-tongs rigidly-affixed depending bars, and guiding members, having vertical ways therethrough, affixed to each end of one of the pivot-bars between opposite pairs of the lazy-tongs bars which are below the top bars, in which members said depending bars have guiding engagements.

3. In an elevating device, the combination with a bottom platform or support, a pair of horizontal parallel right and left threaded screw-shafts journaled for rotation thereon, and means for concurrently turning said shafts, of two pairs of nuts or screw-engaging parts having horizontal transversely-extending studs, wheels mounted for rotation on said studs and running on said platform, opposite sets of lazy-tongs having the crossed lower bars thereof fork-shaped, engaged on said nut-studs and embracing said wheels, and nuts on the extremities of the studs and confining the forked lazy-tongs bars and said wheels in place on the nut-studs.

4. In an elevating device the combination with a bottom platform, a pair of horizontal parallel right and left threaded screw-shafts journaled for rotation thereon and each having a sprocket-wheel, a sprocket-chain running around said wheels, and means for rotating one of said screw-shafts, of two pairs of nuts having horizontal transversely-extending studs, wheels mounted for rotation on said studs, and running on said platform, opposite sets of lazy-tongs having the crossed lower bars thereof fork-shaped, engaged on said nut-studs and embracing said wheels, and nuts on the extremities of the studs and confining the forked lazy-tongs bars and said wheels in place on the nut-studs.

818,881. RAIL-JOINT. ALBERT T. ROWLANDS, Carrick, Pa. Filed Nov. 21, 1905. Serial No. 288,411.

Claim.—1. The combination of two sections of rails having their base-flanges scalloped, a chair having a seat formed therein, said seat having scalloped sides corresponding to the scalloped base-flanges of said rails, substantially as described.

2. The combination with a rail having the edge of its base-flange scalloped, of a chair having a seat formed therein, said seat having scalloped sides adapted to engage the base-flanges of said rail, substantially as described.

818,882. BAG-TYING MACHINE. PETER RUSS, Chicago, Ill. Filed May 28, 1904. Serial No. 210,128.

Claim.—1. In a bag-tying machine, the combination with means for folding the mouth of a filled bag, of a needle-arm, shuttle mechanism acting in conjunction with said needle-arm to form a loop of tying-cord about the folded part, a rotatable thimble in which said loop becomes disposed, said thimble being provided with wire, and means upon rotation of said thimble for causing said wire to be twisted about the ends of said loop to secure the folded end of the bag.

2. In a bag-tying machine, the combination with folding means for folding the mouth of a bag after filling thereof, of means independent of said folding means for looping cord about the folded part of the bag, and means for twisting wire about the ends of the loop to securely tie the bag.

3. In a bag-tying machine, the combination with a supporting-frame, of a stationary cross-bar thereon, jaw members extending forwardly from said stationary cross-bar at right angles thereto, means for suspending an empty bag between said stationary bar and said jaw members, and means for moving said jaw members parallelly toward each other and toward said stationary member, whereby the mouth of said bag is folded.

4. In a bag-tying machine, the combination with a supporting-frame, of a stationary cross-bar thereon, jaw members extending forwardly from said stationary bar, means for suspending an empty bag from said jaw members, means for moving said jaw members toward each other and toward the stationary bar to fold the mouth of the bag, arms pivoted to said jaw members and adapted upon movement of said jaw members to assist in folding the bag and securing the folded bag against the stationary bar, and means for tying the bag when folded.

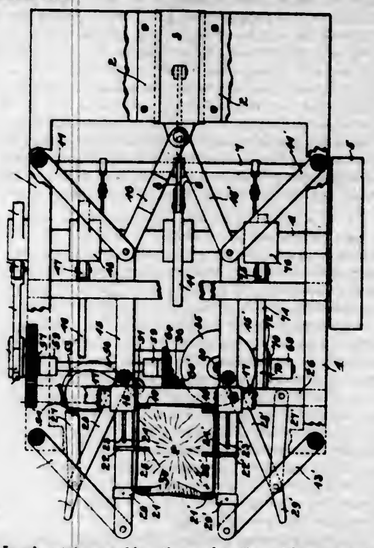

5. In a bag-tying machine, the combination with a supporting-frame, of a stationary cross-bar thereon, jaw members extending forward from said bar, hooks suspended from said jaw members, arms pivoted to said jaw members, means for causing the jaw members to move toward said stationary bar to fold the bag, and means for causing said arms to swing against the bag to assist in the folding operation and to secure the folded part of the bag against the stationary bar, means for looping cord about the folded part, and means for securing together the loop ends to securely tie the bag.

6. In a bag-tying machine, the combination with a supporting-jaw consisting of a stationary transverse rear member and forwardly-extending longitudinal side members, of hooks supported from the side members for receiving an empty bag, mechanism for causing said side members to move toward each other and toward the rear member, arms for assisting the side members to fold the mouth of the bag at the center thereof, and means upon folding of said bag for removing the bag from the hooks.

7. In a bag-tying machine, the combination with a supporting-jaw consisting of a stationary rear member and forwardly-extending side members, of hooks disposed about said jaw for supporting the bag, means for causing said side members to move toward each other and toward the stationary rear member to fold the mouth of the bag, and a shield over said hooks adapted upon closure of said jaw to remove the bag from the hooks.

8. In a bag-tying machine, the combination with a supporting-jaw consisting of a stationary rear member and forwardly-extending side members, of hooks carried by said members for supporting the bag, means causing said side members to move toward each other and toward the rear stationary member to fold the mouth of the bag, arms adapted to engage the folded portion of the bag to hold the folded portion against the rear stationary member, and means associated with each hook for removing the bag from the hooks upon closure of the jaw.

9. In a bag-tying machine, the combination with a supporting-frame, of a stationary cross-bar secured to the front end thereof, link members extending transversely over said cross-bar, the forward ends of said links forming a jaw with said cross-bar, hooks suspended in said jaw from said link members for supporting the bag, link mechanism connected with said connecting-links for moving said links parallelly toward each other and toward said cross-bar to fold the mouth of the bag in the jaw, and arms pivoted to said connecting-links adapted upon movement of said links to close over a folded part of the bag to secure said part against the stationary cross-piece.

10. In a bag-tying machine, the combination with a supporting-frame, of a cross-bar secured to the forward end thereof, parallel connecting-links extending transversely over said cross-bar, links connecting said connecting-links with the machine-frame, a cross-head connected with the rear ends of said connecting-links, cam mechanism for moving said cross-head to cause said connecting-links to move parallelly toward each other and toward the rear of the machine, the forward ends of said connecting-links forming a jaw with said stationary cross-bar, hooks for said jaw suspended from said connecting-links, actuation of said cross-head causing the said jaws to close the fold of the mouth of the bag, arms pivoted to said connecting-links, the ends of said arms adapted upon actuation of said connecting-links to cross over the folded part of the bag to secure this part against the stationary bar, means for removing the hooks from the bag after folding thereof, and means for tying the folded bag.

11. In a bag-tying machine, the combination with a supporting-frame, of a stationary cross-bar secured to the front end thereof, journal-boxes adapted for sliding engagement with said stationary bar, parallel connecting-links adapted to slide through said journal-boxes and transversely across said stationary bar, links connecting the ends of said connecting-links with the machine-frame, a cross-head connected with the rear ends of said connecting-links, cam mechanism for reciprocating said cross-head to cause said connecting-links to move parallelly toward each other and toward the rear of the machine, the forward end of said connecting-links forming a jaw with said stationary bar, hooks for said jaw suspended from said connecting-links and from said journal-boxes for supporting the bag, the mouth of said bag being folded upon rearward motion of said cross-head, arms pivoted to said connecting-links, the ends of said arms being adapted to engage over the folded part of the bag to secure this part against the stationary bar, means for removing the hooks from the bag after folding thereof, and means for tying the bag upon folding.

12. In a bag-tying machine, the combination with a supporting-frame, of a stationary cross-bar at the forward end thereof, journal-boxes adapted to slide on said cross-bar, sleeves passing through transverse openings through said boxes, connecting members passing through said sleeves and transversely over said stationary bar to form a jaw at their forward end with said bar, links connecting the ends of said connecting members with the machine-frame, a cross-head connected with the rear ends of said connecting members, means for moving said cross-head to bring said connecting members toward each other and toward the rear of the machine to close the jaw, hooks secured to the forward ends of said connecting-links, hooks secured to said boxes and hooks secured to said sleeves, said hooks serving to support the bag to be tied, said bag being folded at the mouth upon closure of said jaw, arms connected to said connecting members, means for closing the ends of said arms over the folded part of the bag upon rearward travel of the cross-head to secure the folded part against the stationary cross-bar, and means for tying the bag when folded.

13. In a bag-tying machine, the combination with means for folding the mouth of a filled bag, of means independent of said folding means for disposing a cord-loop about the folded part, and means for applying turns of wire about the loop ends adjacent to the folded part, the loop ends remaining stationary.

14. In a bag-tying machine, the combination with means for folding the mouth of a filled bag, of a needle-arm adapted to form a loop of tying-cord about the folded part, a slotted thimble in which said loop becomes disposed, means for inserting wire in said thimble, and means for rotating said thimble to tie said wire about the loop ends, whereby said bag is tied.

15. In a bag-tying machine, the combination with means for folding the mouth of a filled bag, of a needle-arm, shuttle mechanism acting in conjunction with said needle-arm to form a loop of tying-cord about the folded part of the bag independent of the folding means, and means for twisting a length of wire about the ends of said loop, whereby said bag is tied.

16. In a bag-tying machine, the combination with means for folding the mouth of a filled bag, of a needle-arm, shuttle mechanism acting in conjunction with said needle-arm to form a loop of tying-cord about the folded part, a thimble having a slot in which said loop becomes disposed, said thimble being provided with wire extending radially therethrough into said slot, and means for rotating said thimble to twist said wire about the ends of said loop.

17. In a bag-tying machine, the combination with means for

folding the mouth of a filled bag, of a needle-arm for conveying tying-cord, a slotted thimble disposed before the folded portion, a bearing in which said thimble may revolve, said bearing having a slot adapted to register with the slot through said thimble, there being a passage-way extending through said bearing and thimble into said thimble-slot, shuttle mechanism acting in conjunction with said needle-arm to form a loop of tying-cord about the folded part of the bag and to dispose the ends of said loop in said thimble-slot, means for causing rotation of said thimble within said bearing, and means upon such rotation for causing a length of wire sheared through said radial passage-ways and into the thimble-slot to be sheared off and twisted about the ends of said cord-loop.

18. In a bag-tying machine, the combination with means for folding the mouth of a filled bag, of a needle-arm adapted to convey tying-cord, a thimble having a longitudinal slot disposed before the folded part of the bag, a bearing in which said thimble may rotate, said bearing having a longitudinal slot adapted to register with the slot through said thimble, there being a passage-way extending radially through said bearing and said thimble-walls and through the thimble-slot, an end plate secured to said bearing and provided with an opening for receiving the end of a feed-wire extending through said passage-way, shuttle mechanism for forming a loop of tying-cord about the folded part of the bag and for disposing the loop ends within the slot through said thimble, and means for rotating said sleeve within said bearing, whereby the end is sheared from the feed-wire and whereby said end is twisted about the end of the cord-loop.

19. In a bag-tying machine, the combination with means for folding the mouth of a filled bag, of a needle-arm for conveying tying-cord from a supply-reel, a thimble having a longitudinal slot disposed with its end before the folded part of the bag, said thimble having a radial passage-way extending into said slot, a stationary part adjacent to the end of said slot having an opening for receiving a wire extending through said slot, shuttle mechanism acting in conjunction with said needle-arm for forming a loop of tying-cord about the folded part of the bag and for disposing said loop ends within said slot, means for rotating said thimble, whereby said wire is twisted about the end of said loop, and means for severing said loop from the remainder of the cord.

20. In a bag-tying machine, the combination with means for folding the mouth of a filled bag, of a needle-arm for conveying tying-cord from a supply-reel, a thimble having a longitudinal slot disposed with its end before the folded part of the bag and having a passage-way extending radially into said slot, a stationary part adjacent to the end of said slot having an opening for receiving a wire extending through said slot, shuttle mechanism acting in conjunction with said needle-arm for forming a loop of tying-cord about the folded part of the bag and for disposing said loop within said slot, teeth at the end of said thimble, a gear-wheel engaging said teeth for causing rotation of said thimble to cause said wire to be twisted about the loop ends close to the folded part of the bag, a knife secured to said gear-wheel, and means for causing said knife to sever said loop from the remaining cord after said wire has become twisted about the loop ends.

21. In a bag-tying machine, the combination with a thimble having a longitudinal slot extending radially to its center, of a needle-arm, shuttle mechanism acting in conjunction with said needle-arm, said needle-arm and shuttle mechanism being normally disposed to extend tying-cord across the end of said slot, means for folding the mouth of a filled bag and disposing the folded part before the end of said slot and before said cord, means for causing actuation of said needle-arm to convey said tying-cord toward said shuttle to be looped about the folded portion of the bag, means for causing said shuttle mechanism to convey the ends of the formed loop into said thimble-slot across a wire extending into said slot, and means for causing rotation of said thimble for twisting said wire about the loop ends.

22. In a bag-tying machine, the combination with a thimble having a longitudinal slot extending radially to its center, of a needle-arm normally disposed to one side of said thimble for carrying tying-cord, rotary shuttle mechanism disposed at the other side of said thimble, said tying-cord normally passing through the needle-eye and by the end of said thimble-slot, the end of said cord being held by said shuttle mechanism, means for folding the mouth of a filled bag and disposing the folded portion before the end of the thimble-slot and against the tying-cord, means for causing actuation of said needle-arm to carry the tying-cord toward said shuttle mechanism to form a loop about the folded portion of the bag, means for causing rotation of said shuttle mechanism to dispose the ends of said formed loop within the thimble-slot, there being a passage-way near the forward end of said thimble extending radially and forwardly toward the mouth of said slot for receiving a wire, a stationary member having an opening disposed before the mouth of said slot for receiving and securing the end of said wire, and means for causing rotation of said thimble, whereby said wire is twisted spirally about the ends of the cord-loop in said slot.

23. In a bag-tying machine, the combination with a thimble having a longitudinal slot extending to its center and having a transverse passage-way for receiving a wire extending into said slot, of a needle-arm normally disposed to one side of said thimble for carrying tying-cord, rotary shuttle mechanism disposed at the other side of said thimble, said tying-cord normally passing through the needle-eye and by the end of said thimble-slot, the end of said cord being held by said shuttle mechanism, means for folding the mouth of a filled bag and disposing the folded portion before the end of the thimble-slot and against the tying-cord, means for causing actuation of said needle-arm to carry the tying-cord toward said shuttle mechanism to form a loop about the folded portion of the bag, means for causing rotation of said shuttle mechanism to dispose the ends of said formed loop within the thimble-slot across the wire therein, and means for causing rotation of said thimble to cause said wire to be twisted about the ends of said loop close to the folded part of the bag.

24. In a bag-tying machine, the combination with a thimble having a longitudinal slot extending to its center, of a needle-arm normally disposed to one side of said thimble for carrying tying-cord, rotary shuttle mechanism disposed at the other side of said thimble, said tying-cord normally passing through the needle-eye and by the end of said thimble-slot, the end of said cord being held by said shuttle mechanism, means for folding the mouth of a filled bag and disposing the folded portion before the end of the thimble-slot and against the tying-cord, means for causing actuation of said needle-arm to carry the tying-cord toward said shuttle mechanism to form a loop about the folded portion of the bag, means for causing rotation of said shuttle mechanism to dispose the ends of said formed loop within the thimble-slot, there being a passage-way near the forward end of said thimble extending radially into said slot for receiving a wire, a stationary member before said slot having an opening for receiving the end of said wire, and means for causing rotation of said thimble, whereby said wire is twisted about the ends of the loop close to the folded part of the bag.

25. In a bag-tying machine, the combination with a thimble having a longitudinal slot extending radially to its center, of a needle-arm normally disposed to one side of said thimble for conveying tying-cord, rotary shuttle mechanism disposed at the other side of said thimble, said tying-cord normally passing through the needle-eye and by the end of said thimble-slot, the end of said cord being held by said shuttle mechanism, means for folding the mouth of a filled bag and disposing the folded portion before the end of the thimble-slot and against the tying-cord, means for causing actuation of said needle-arm to carry the tying-cord toward said shuttle mechanism to form a loop about the folded portion of the bag, means for causing rotation of said shuttle mechanism to dispose the ends of said formed loop within the thimble-slot, there being a passage-way near the forward end of said thimble extending radially and forwardly through said bearing and thimble, a plate secured to said bearing extending forwardly before the mouth of the thimble-slot, said plate having an opening for securing the end of a feed-wire extending through said radial passage-way, means for causing rotation of said thimble to shear from said feed-wire the part within the thimble, and means for causing said part to be twisted about the ends of the loop disposed within said slot.

27. In a bag-tying machine, the combination with a thimble having a longitudinal slot extending radially to its center, of a bearing in which said thimble may rotate, said bearing having a horizontal slot adapted to register with said thimble-slot, a needle-arm normally disposed at one side of said thimble for conveying tying-cord, rotary shuttle mechanism at the other side of said thimble, said tying-cord normally passing through the needle-eye and disposed before the mouth of said thimble-slot, the end of said cord being secured to said shuttle, means for folding the mouth of a filled bag and disposing the folded portion before the mouth of the thimble-slot and against the cord, means for causing rotation of said needle-arm toward said shuttle to form a loop of tying-cord about the folded part of the bag, means for causing rotation of the shuttle mechanism to carry the ends of the loop through the bearing-slot and into the thimble-slot and to tighten the loop, there being a passage-way near the mouth of said thimble-slot extending radially and forwardly through the walls of said bearing and said thimble for receiving a wire, an end plate secured to said bearing and disposed before the mouth of the thimble-slot, said plate having an opening for securing the end of said wire extending through said passage-way, means for causing rotation of said thimble to shear from said wire the part within the thimble and to twist said part about the ends of the loop within said slot.

28. In a bag-tying machine, the combination with a thimble having a longitudinal slot extending radially to its center, of a bearing in which said thimble may rotate, said bearing having a horizontal slot adapted to register with said thimble-slot, a needle-arm normally disposed at one side of said thimble for conveying tying-cord, rotary shuttle mechanism at the other side of said thimble, said tying-cord normally passing through the needle-eye and disposed before the mouth of said thimble-slot, the end of said cord being secured to said shuttle, means for folding the mouth of a filled bag and disposing the folded portion before the mouth of the thimble-slot and against the cord, means for causing rotation of said needle-arm toward said shuttle to form a loop of tying-cord about the folded part of the bag, means for causing rotation of the shuttle mechanism to carry the ends of the loop through the bearing-slot and into the thimble-slot and to tighten the loop, there being a passage-way near the mouth of said thimble-slot extending radially and forwardly through the walls of said bearing and said thimble for receiving a wire, an end plate secured to said bearing and disposed before the mouth of the thimble-slot, said plate having an opening for securing the end of said wire extending through said passage-way, means for causing rotation of said thimble to shear from said wire the part within the thimble and to twist said part about the ends of the loop within said slot, and means for severing the loop from the remainder of the cord after said wire is twisted.

29. In a bag-tying machine, the combination with a thimble having a longitudinal slot extending radially to its center, of a bearing in which said thimble may rotate having a horizontal slot adapted to register with said thimble-slot, a needle-arm normally disposed at one side of said thimble for conveying tying-cord, rotary shuttle mechanism at the other side of said thimble, said tying-cord normally passing through the needle-eye and disposed before the mouth of said thimble-slot, the end of said cord being secured to said shuttle, means for folding the mouth of a filled bag and for disposing the folded portion before the mouth of the thimble-slot and against the cord, means for causing rotation of said needle-arm toward said shuttle to form a loop of tying-cord about the folded part of the bag, means for causing rotation of the shuttle mechanism to carry the ends of the loop through the bearing-slot and into the thimble-slot and to tighten the loop, there being a passage-way near the mouth of said thimble-slot extending radially and forwardly through the walls of said bearing and said thimble for receiving a wire, an end plate secured to said bearing and disposed before the mouth of the thimble-slot, said plate having an opening for securing the end of said wire extending through said passage-way, teeth at the rear end of said thimble, a gear engaging said teeth for causing rotation of said thimble to shear from said feed-wire the part within the thimble and to twist said part about the ends of the loop disposed in said thimble-slot, and a knife secured to said gear-wheel adapted after said wire part is twisted about said loop to sever said loop from the remainder of the cord.

30. In a bag-tying machine, the combination with means for folding the mouth of a filled bag, of a needle-arm normally disposed at one side of the folded part of the bag for carrying tying-cord, shuttle mechanism disposed at the other side of said folded part, said tying-cord normally extending from the end of said needle-arm and passing by one side of said folded part, the end of said cord being secured to said shuttle mechanism, a stationary segmental part for said shuttle mechanism having an annular ridge provided with a groove, a rotatable disk disposed over said ridge, teeth on said disk adapted to enter said groove, means for causing said needle-arm to loop said cord about the folded part of the bag and to dispose the cord before the mouth of said groove, means for causing rotation of said disk, whereby a tooth engages the cord conveyed before said groove by said needle-arm to clamp said cord and to tighten the loop about said folded part, and means for twisting a wire about the ends of the loop.

31. In a bag-tying machine, the combination with means for folding the mouth of a filled bag, of a needle-arm normally disposed at one side of the folded part of the bag for carrying tying-cord, shuttle mechanism disposed at the other side of said folded part, said tying-cord normally extending from the end of said needle-arm and passing by one side of said folded part, a stationary segmental part for said mechanism having an annular ridge provided with a groove, a rotatable disk disposed over said ridge, teeth on said disk adapted to enter said groove, means for causing said needle-arm to loop said cord about the folded part of the bag and to dispose the cord before the mouth of said groove, means for causing rotation of said disk, whereby a tooth engages the cord conveyed before said groove by said needle-arm to clamp said cord and to tighten the loop about said folded part, means for twisting a wire about the ends of the loop, and means for severing the tied loop from the remainder of the cord.

32. In a bag-tying machine, the combination with means for folding the mouth of a filled bag, of a needle-arm normally disposed at one side of the bag, for carrying tying-cord, shuttle mechanism disposed at the other side of the bag, a normally stationary part for said shuttle mechanism having an annular groove, a rotatable disk disposed above said groove, teeth extending from said disk adapted to enter and pass through said groove, said tying-cord normally passing through the needle-eye and clamped at its end in said groove by one of said teeth, said cord being normally disposed at one side of the folded part, means for causing rotation of the needle-arm to form a loop about the folded part of the bag and to convey the cord before the mouth of said groove, means for causing rotation of said disk, whereby a tooth engages the cord before the groove and carries the cord to be clamped between the groove and disk, further rotation of the disk causing the loop to be tightened about the folded portion of the bag, and means for twisting wire about the loop ends close to the folded part of the bag.

33. In a bag-tying machine, the combination with a thimble having a horizontal slot extending radially to its center, of a needle-arm normally disposed at one side of said thimble for conveying tying-cord, shuttle mechanism disposed at the other side of said thimble, a stationary segmental part for said shuttle mechanism having an annular groove, a rotatable disk disposed above said segmental part, teeth extending from said disk adapted to enter and to pass through said groove, said tying-cord normally passing through the needle-eye and before the mouth of said thimble-slot, the end of said cord being clamped before one tooth between said disk and segmental part, means for folding the mouth of a filled bag and disposing the folded part before the mouth of said thimble and before said cord, means for causing rotation of said needle-arm to form a loop about said folded part and to convey the cord before the mouth of said annular groove, means for causing rotation of said disk, whereby another tooth engages the cord conveyed by the needle-arm to clamp said cord between the disk and segmental part, continued rotation of said disk causing both said teeth to carry the ends of the formed loop into said thimble-slot and to tighten said loop, and means for causing rotation of said thimble to twist a wire in said thimble about said loop ends adjacent to the folded part of the bag.

34. In a bag-tying machine, the combination with a thimble having a horizontal slot extending radially to its center, of a needle-arm normally disposed at one side of said thimble for conveying tying-cord, shuttle mechanism disposed at the other side of said thimble, a stationary segmental part for said shuttle mechanism having an annular groove, a rotatable disk disposed above said segmental part, teeth extending from said disk adapted to enter and to pass through said groove, said tying-cord extending through the needle-eye and before the mouth of said thimble-slot, the end of said cord being clamped before one tooth between said disk and segmental part, means for folding the mouth of a filled bag and disposing the folded part before the mouth of said thimble and before said cord, means for causing rotation of said needle-arm to form a loop about said folded part and to convey the cord before the mouth of said annular groove, means for causing rotation of said disk, whereby another tooth engages the cord conveyed by the needle-arm to clamp said cord between the disk and segmental part, continued rotation of said disk causing both said teeth to carry the ends of the formed loop into said thimble-slot and to tighten said loop, said thimble having a wire extending therefrom, means for causing rotation of said

thimble to twist said wire about said loop ends adjacent to the folded part of the bag, and means for severing the tied loop from the remainder of the cord.

35. In a bag-tying machine, the combination with means for folding the mouth of a filled bag, of a needle-arm for conveying tying-cord, a thimble having a longitudinal slot disposed before the folded part of the bag, a bearing in which said thimble may rotate, said bearing having a longitudinal slot adapted to register with said thimble-slot, a needle-arm normally disposed at one side of said thimble for conveying tying-cord, rotary shuttle mechanism at the other side of said thimble, said tying-cord normally passing through the needle-eye and disposed before the mouth of said thimble-slot, the end of said cord being secured to said shuttle, means for folding the mouth of a filled bag and disposing the folded portion before the mouth of the thimble-slot and against the tying-cord, means for causing actuation of said needle-arm to carry the tying-cord toward said shuttle mechanism to form a loop about the folded portion of the bag, means for causing rotation of said shuttle mechanism to carry the ends of the loop through the bearing-slot and into the thimble-slot and to tighten the loop, there being a passage-way near the mouth of said thimble-slot extending radially and forwardly through the walls of said bearing and said thimble for receiving a wire, an end plate secured to said bearing and disposed before the mouth of the thimble-slot, said plate having an opening for securing the end of said wire extending through said passage-way, means for causing rotation of said thimble to shear from said wire the part within the thimble and to twist said part about the ends of the loop within said slot, and means for severing the loop from the remainder of the cord after said wire is twisted.

36. In a bag-tying machine, the combination with means for folding the mouth of a filled bag, of a needle-arm normally disposed at one side of the folded part of the bag for carrying tying-cord, shuttle mechanism disposed at the other side of said folded part, said tying-cord normally extending from the end of said needle-arm and passing by one side of said folded part, the end of said cord being secured to said shuttle mechanism, a stationary segmental part for said shuttle mechanism having an annular ridge provided with a groove, a rotatable disk disposed over said ridge, teeth on said disk adapted to enter said groove, means for causing said needle-arm to loop said cord about the folded part of the bag and to dispose the cord before the mouth of said groove, means for causing rotation of said disk, whereby a tooth engages the cord conveyed before said groove by said needle-arm to clamp said cord and to tighten the loop about said folded part, means for twisting a wire about the ends of the loop, and means for severing the tied loop from the remainder of the cord.

37. In a bag-tying machine, the combination with means for folding the mouth of a filled bag, of a needle-arm normally disposed at one side of the bag, for carrying tying-cord, shuttle mechanism disposed at the other side of the bag, a normally stationary part for said shuttle mechanism having an annular groove, a rotatable disk disposed above said groove, teeth extending from said disk adapted to enter and pass through said groove, said tying-cord normally passing through the needle-eye and clamped at its end in said groove by one of said teeth, said cord being normally disposed at one side of the folded part, means for causing rotation of the needle-arm to form a loop about the folded part of the bag and to convey the cord before the mouth of said groove, means for causing rotation of said disk, whereby a tooth engages the cord before the groove and carries the cord to be clamped between the groove and disk, further rotation of the disk causing the loop to be tightened about the folded portion of the bag, and means for twisting wire about the loop ends close to the folded part of the bag.

38. In a bag-tying machine, the combination with a thimble having a horizontal slot extending radially to its center, of a needle-arm normally disposed at one side of said thimble for conveying tying-cord, shuttle mechanism disposed at the other side of said thimble, a stationary segmental part for said shuttle mechanism having an annular groove, a rotatable disk disposed above said segmental part, teeth extending from said disk adapted to enter and to pass through said groove, said tying-cord normally passing through the needle-eye and before the mouth of said thimble-slot, the end of said cord being clamped before one tooth between said disk and segmental part, means for folding the mouth of a filled bag and disposing the folded part before the mouth of said thimble and before said cord, means for causing rotation of said needle-arm to form a loop about said folded part and to convey the cord before the mouth of said annular groove, means for causing rotation of said disk, whereby another tooth engages the cord conveyed by the needle-arm to clamp said cord between the disk and segmental part, continued rotation of said disk causing both said teeth to carry the ends of the formed loop into said thimble-slot and to tighten said loop, said thimble having a wire extending therefrom, means for causing rotation of said

Claim.—1. In a loom, angle-rods pivoted therein; arms secured on said angle-rods; a whip-roll secured on said arms; a crank-shaft; [illegible] and two stone-clamping devices connected with said members by screw-threads, one of the screw-threads for each clamping device

thimble to twist said wire about said loop ends adjacent to the folded part of the bag, and means for severing the tied loop from the remainder of the cord.

36. In a bag-tying machine, the combination with a thimble having a horizontal slot extending radially to its center, of a needle-arm normally disposed at one side of said thimble for conveying tying-cord, shuttle mechanism disposed at the other side of said thimble, a stationary segmental part for said shuttle mechanism having an annular groove, a rotatable disk disposed above said segmental part, teeth extending from said disk adapted to enter and to pass through said groove, said tying-cord extending through the needle-eye and before the mouth of said thimble-slot, the end of said cord being clamped before one tooth between said disk and segmental part, means for folding the mouth of a filled bag and disposing the folded part before the mouth of said thimble and before said cord, means for causing rotation of said needle-arm to form a loop about said folded part and to convey the cord before the mouth of said annular groove, means for causing rotation of said disk, whereby another tooth engages the cord conveyed by the needle-arm to clamp said cord between the disk and segmental part, continued rotation of said disk causing both said teeth to carry the ends of the formed loop into said thimble-slot and to tighten said loop, a wire in said thimble, teeth at the rear end of said thimble, a gear-wheel engaging said teeth for causing rotation of said thimble to twist a wire passing through said thimble spirally about the ends of said cord-loop, and a knife secured to said gear-wheel adapted after said wire is twisted about the loop ends to cut said loop from the remainder of the cord.

37. In a bag-tying machine, the combination with hooks for suspending the distended bag, means for causing said hooks to converge to fold the mouth of the filled bag, means for holding the folded part in position after folding, means for releasing the hooks from the folded bag, means for forming a loop of tying-cord about the folded part, and means for twisting a wire about the ends of the loop adjacent to the folded part.

38. In a bag-tying machine, the combination with hooks from which the distended bag is suspended, means for converging said hooks to fold the mouth of the filled bag, means for holding the folded part in position after folding, shields for said hooks adapted to push the bag from the hook-points after folding thereof, means for forming a loop of tying-cord about the folded part, and means for spirally twisting a wire about the ends of the loop adjacent to the folded part.

39. In a bag-tying machine, the combination with a supporting-frame, of a stationary transverse bar at the front part thereof, longitudinal bars extending across said transverse bar, link members connecting said longitudinal bars with the machine-frame, a cross-head at the end of said supporting-frame, a driving-shaft pivoted in said frame, a cam mounted on said driving-shaft, and cam-levers connected with said cross-head and said cam, rotation of said shaft causing rotation of said cam to move the cross-head rearwardly whereby the longitudinal bars are brought toward each other and moved rearwardly, hooks supported from said longitudinal bars in front of said cross-arms for receiving a bag, the mouth of said bag being folded toward the center upon closure of said longitudinal bars.

40. In a bag-tying machine, the combination with hooks from which the distended bag is suspended, means for converging said hooks to fold the mouth of the filled bag, and means for severing the tied loop from the remainder of the cord.

41. In a bag-tying machine, the combination with hooks from which the distended bag is suspended, means for converging said hooks to fold the mouth of the filled bag, means for raising the bag during the folding operation, means for tying the folded part of the bag, means after tying for releasing the bag from the hooks, and means after releasing the bag from the hooks for again lowering said bag to its normal position.

42. In a bag-tying machine, the combination with hooks from which the distended bag is suspended, a platform for holding the filled bag, means for causing the hooks to move together to fold the mouth of the bag toward the center thereof, means for raising said platform with the bag during the folding operation, means for tying the bag after folding thereof, means for releasing the bag from the hooks, and means for thereafter lowering said platform to carry the bag to its normal position.

43. In a bag-tying machine, the combination with a supporting-frame, of a stationary cross-bar thereon, longitudinal parallel cross-bars cooperating with said transverse bar, a cross-head connected with said longitudinal bars, a driving-shaft pivoted in said frame, a cam mounted on said driving-shaft, a cam-arm associated with said cam and connected with said cross-head, hooks suspended from the longitudinal bars in front of said cross-bar for supporting the bag to be filled, a platform below the bag, lever mechanism connecting said platform with said cam-arm, actuation of said driving-shaft causing rotation of said cam to move the cross-head to carry the longitudinal arms toward each other and toward the cross-bar whereby said hooks are brought together to fold the mouth of the bag, said platform during said folding operation being moved by said lever mechanism to raise the bag, and means for tying the bag after folding thereof, further rotation of said cam allowing release of said longitudinal members and of said platform whereby the tied bag is released from the hooks and returned to its normal position.

44. In a bag-tying machine, the combination with a transverse bar, of longitudinal parallel bars extending across said transverse bar, bearing-boxes adapted to slide on said cross-bar and through which said longitudinal bars may slide, supporting-hooks suspended from said boxes, supporting-hooks suspended from said longitudinal bars in front of said transverse bar, sleeves passing over said longitudinal bars and through said boxes, supporting-hooks suspended from said sleeves, means for causing said longitudinal bars to be moved rearwardly and parallelly toward each other whereby the hooks are brought together and whereby the mouth of a bag suspended from said hooks is folded at the center of the bag.

45. In a bag-tying machine, the combination with supporting-bars, of hooks suspended from said bars, a shield over each hook normally disposed to allow application of a distended bag to the hooks, means for causing said bars to be moved together to fold the mouth of the bag, and means upon such movement of the bars for causing the shields on the hooks to be engaged to push the bag from the hooks.

46. In a bag-tying machine, the combination with a stationary transverse bar, of longitudinal parallel bars extending across the transverse bar, hooks suspended from said longitudinal bars in front of the transverse bar, a shield for each hook, said shields being normally disposed to permit application of a bag to the hooks, means for causing said longitudinal bars to be moved rearwardly and parallelly together to fold the mouth of the bag, the shields of the hooks on one longitudinal bar being engaged by the opposite longitudinal bar upon closure of the bars to cause the bag to be pushed from the hooks whereby said bag is released.

813,883. MEANS FOR REGULATING THE TENSION UPON WARP-THREADS OF LOOMS. WILLIAM H. RYDER, Providence, R. I. Filed Mar. 28, 1903. Serial No. 251,671.

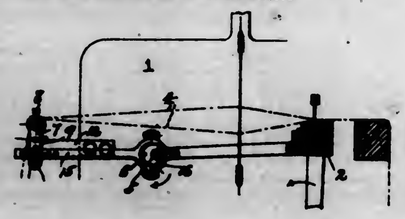

Claim.—1. In a loom, angle-rods pivoted therein; arms secured on said angle-rods; a whip-roll secured on said arms; a crank-shaft; an eccentric actuated thereby; a strap having a connection between said eccentric and one of said arms, and said eccentric and strap having a clearance therebetween.

2. In a loom, in combination with the lay having an operating crank-shaft, of pivotal angle-rods properly supported on the loom-frame; arms secured on said angle-rods, beneath their pivot centers; a whip-roll secured in the upper part of said arms; an eccentric secured upon the crank-shaft; a strap on said eccentric having a connection with the lower part of one of said arms, arranged to partially operate the whip-roll by the crank-shaft, and said eccentric and strap having a clearance therebetween to permit the tension of the warp-threads to complete the operation, substantially as set forth.

3. In a loom, in combination with the lay having an operating crank-shaft, of fixed brackets; supports mounted in said brackets and having bifurcated upper ends; arms; a whip-roll secured on said arms; angle-rods having one portion secured in said arms and the other portion mounted in the bifurcated ends of said supports; an eccentric secured upon the crank-shaft; a strap having a connection from said eccentric to an extension integral with one of said arms, and said strap being of greater diameter interiorly than the exterior of the eccentric to provide a clearance therebetween, substantially as set forth.

4. In a loom, a shaft, an eccentric actuated thereby, a movable whip-roll, and a connection between said whip-roll and eccentric, said connection and eccentric having a clearance therebetween.

5. In a loom, a lay, a whip-roll mounted on movable bearings, a lay-operating shaft, and connection between said whip-roll and lay-operating shaft for operating the whip-roll, comprising an eccentric and an eccentric-strap having a clearance between them.

6. In a loom, a whip-roll mounted on arms, pivotal connections between the arms and the frame of the loom, and means to operate said whip-roll comprising an eccentric and connection between the whip-roll and the eccentric having a clearance therebetween.

7. In a loom, the combination with the lay and the lay-operating means, of a swinging whip-roll, and connection between the lay-operating means and the whip-roll comprising an eccentric and an eccentric-strap having a clearance therebetween.

813,884. WOOD-GRINDER. THOMAS H. SAVERY, Wilmington, Del. Filed Apr. 18, 1903. Serial No. 153,054.

Claim.—1. A grinder comprising a shaft, a member connected with the shaft by a screw-thread and movable by such screw-thread along the shaft to increase the clamping pressure as the latter rotates, and a stone-clamping device connected with said member by a screw-thread, one of said screw-threads being tapered, substantially as described.

2. A grinder comprising a shaft, a member connected with the shaft by a screw-thread and movable by such screw-thread along the shaft to increase the clamping pressure as the latter rotates, and a stone-clamping device connected with said member by a tapering screw-thread, substantially as described.

3. A grinder comprising a shaft, a member connected with the shaft by a screw-thread and movable by such screw-thread along the shaft to increase the clamping pressure as the latter rotates, and a stone-clamping device connected with said member by a tapering screw-thread, said member being split, substantially as described.

4. A grinder comprising a shaft, a member connected with the shaft by a straight screw-thread and movable by such screw-thread along the shaft to increase the clamping pressure as the latter rotates, and a stone-clamping device connected with said member by a tapering screw-thread, said member being split, substantially as described.

5. A grinder comprising a shaft, two members connected with the shaft by right and left hand screw-threads and movable by such screw-threads along the shaft and toward each other as the shaft rotates, and two stone-clamping devices connected with said members by screw-threads, one of the screw-threads for each clamping device being tapered, substantially as described.

6. A grinder comprising a shaft, two members connected with the shaft by right and left hand screw-threads and movable by such screw-threads along the shaft and toward each other as the shaft rotates, and two stone-clamping devices connected with said members by tapering screw-threads, substantially as described.

7. A grinder comprising a shaft, two members connected with the shaft by right and left hand screw-threads and movable by such screw-threads along the shaft and toward each other as the shaft rotates, and two stone-clamping devices connected with said members by tapering screw-threads, said members being split substantially as described.

8. A grinder comprising a shaft, a member connected with the shaft by a screw-thread, and movable by such screw-thread along the shaft to increase the clamping pressure as the latter rotates, and a stone-clamping device connected with said member by a screw-thread, substantially as described.

9. A grinder comprising a shaft, two members connected with the shaft by right and left hand screw-threads and movable by such screw-threads along the shaft and toward each other as the shaft rotates, and two stone-clamping devices connected with said members by screw-threads, substantially as described.

10. A grinder comprising a shaft, a member connected with the shaft by a screw-thread and movable by such screw-thread along the shaft to increase the clamping pressure as the latter rotates, and a stone-clamping device connected with said member by a screw-thread, said member being split, substantially as described.

813,885. DANDY-ROLL. JOHN R. SINCLAIR, Holyoke, Mass. Filed Nov. 19, 1904. Serial No. 233,429.

Claim.—A dandy-roll consisting of end heads, one of which is essentially apertured, a wire or strip, cross-sectionally of the form of an elongated rectangle and of comparatively slight thickness, wound into a succession of helixes, and with such so-wound strip arranged with its larger cross-sectional dimension substantially radial to the roll center with its convolutions separated, and extending from one end head to the other, wires engaging the outer edges of the flat-strip helixes, and extending from end to end of the roll on gradually-sweeping helical lines, longitudinal wires, a winding-wire and a wire-gauze covering whereby is produced within and throughout the length of the roll a spiral channel having smooth parallel sides and its base or side uniting portion constituted by the aforesaid helical strip-supported wires and gauze covering, and the walls of said continuous spiral channel offering but a minimum of obstruction to the endwise progression of accumulations within the dandy-roll.

813,886. SHADOW-CLOCK. RICHARD B. BOYCE, New York, N. Y.

813,836. SHADOW-CLOCK. RICHARD B. SMITH, New York, N. Y. Filed Apr. 3, 1905. Serial No. 253,706.

Claim.—1. In an apparatus of the class described, a going-train having a member provided with studs, another train including a fly and a notched locking-disk, a double-armed locking-lever provided with projections adapted to engage, respectively, with said locking-disk and with a projection on the fly, an operating-lever in the path of the projections on said member of the going-train, an intermediate lever operatively related to the aforesaid levers, condensing and projecting lenses, a source of light, transparent time-indicating means intermediate of said lenses and actuated by the going-train, and a panel-carrier operating between the lenses and operated at intervals by the second-named train.

2. In an apparatus of the class described, condensing and projecting lenses, a source of light, a rotary toothed panel-carrier equipped with a plurality of transparent panels and arranged to present said panels successively between said lenses, transparent time-indicating disks operating between the lenses, a going-train adapted to operate said disks, said train including a member provided with studs, an operating-lever actuated by said studs, another train geared to the toothed panel-carrier, said last-mentioned train including a locking-disk and a fly, a locking-lever having two members arranged to engage, respectively, with said locking-disk and the fly of the last-mentioned train, and a lever intermediate of the operating and locking levers for releasing the train to operate the panel-carrier at intervals.

813,837. WIRE-STRETCHER. JOHN S. SNYDER and MOSE A. SNYDER, New Lexington, Pa. Filed Aug. 7, 1905. Serial No. 273,157.

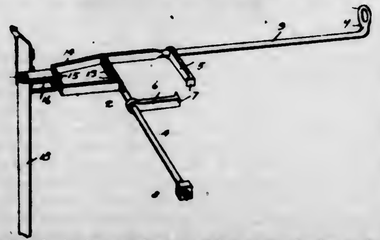

Claim.—1. A wire-stretcher comprising an angular frame, dogs slidable upon the angularly-disposed members of said frame and adapted to engage a post or the like, a guide upon one of said members, a lever pivotally mounted upon the other of said members, a flexible connection passed through said guide and engaged with said lever, a wire-attaching device upon one end of said flexible connection, and means for holding said chain in an adjusted position, substantially as described.

2. A wire-stretcher comprising a frame having substantially right-angularly-extending members, dogs slidable upon said members and formed with prongs to engage a post or the like, stops upon the outer ends of said members, one of said stops being formed with a guide-aperture, a bracket upon one of said members, a lever pivoted to said bracket and having a hooked end, a chain or the like engaged with the hook of said lever and passing through the guide-aperture in said stop, a clamping device upon one end of said chain and a locking-pin adapted to be passed through one of the links of said chain and into an aperture in one of said members, substantially as described.

813,838. CLASP. ISAAC STEINBERG, Nashville, Tenn., assignor to Hercules Safety Clasp Company, Nashville, Tenn., a Corporation of Tennessee. Filed May 9, 1905. Serial No. 259,499.

Claim.—1. In a clasp and in combination, a casing provided with a horizontal slit at one end thereof, an arched spring secured at one end to the bottom of the casing adjacent to the slit, a hook on the rise of the arch adjacent to the slit, a button secured to the rise of the arch adjacent to the free end of the spring and projecting through the upper face of the casing, and a slide traversing the slit in the casing and provided with an opening to engage the hook.

2. In a clasp, the combination of a casing, provided with an opening at one of the ends thereof, an arched spring secured at one end to the bottom of the casing adjacent to the opening, a slide traversing the opening on the casing, means actuated by the spring to engage the slide, and means without the casing for depressing the spring to release the engaging means.

813,839. POLISHING-MACHINE. FRANK TERRANOVA, San Francisco, Cal. Filed Jan. 21, 1905. Serial No. 242,006.

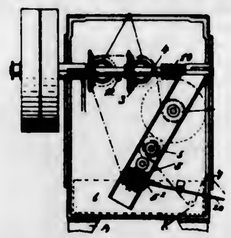

Claim.—1. An apparatus for abrading and polishing the surface of cloth, comprising revoluble rollers having an abrasive surface, rollers upon which independent rolls of cloth may be supported, means whereby the last-named rolls are caused to respectively rotate in the same directions to simultaneously wind and unwind the cloth, and means whereby the cloth may be drawn over the abrading-rollers from either of the cloth-supporting rollers.

2. In an apparatus for abrading and polishing cloth, revoluble rollers having an abrading-surface, mechanism by which the rollers are revolved, a plurality of rollers upon which lengths of cloth are first wound, either of said last-named rollers adapted to deliver the cloth to the abrading-rollers, means for rotating the last-named rollers simultaneously and in the same direction whereby the cloth is wound upon one roller and simultaneously unwound from the other roller, means for moistening the cloth before and during the operation, and means for retarding the movement of the cloth over the abrading-rollers.

3. In an apparatus for polishing cloth, revoluble rollers having abrading-surfaces, mechanisms by which said rollers are revolved, other rollers upon which the cloth is first coiled, a water-tank, guide-rollers over which the cloth is passed through the tank before being thus coiled, a supplemental spraying device located contiguous to the abrading-rollers, and a receiving-drum and mechanism by which it is revolved in unison with the movement of the abrading-rollers and in the same direction.

813,840. INSULATED RAIL-JOINT. McLEOD W. THOMSON, Altoona, Pa., assignor of one-half to Andrew Morrison, Pittsburg, Pa.; William Paton Thomson and Samuel Garver Thomson executors of said McLeod W. Thomson, deceased. Filed Apr. 10, 1902. Serial No. 102,956.

Claim.—1. An insulated rail-joint having opposite splice-bars, the halves of said bars on the same side of said joint being respectively insulated and uninsulated; substantially as described.

2. An insulated rail-joint having opposite splice-bars, the inner faces on one side of the joint being insulated and the corresponding faces on the other side of the joint being uninsulated; substantially as described.

3. An insulated rail-joint having opposite splice-bars, the portion of said bars on the same side of the joint being planed or recessed to admit of insulating material; substantially as described.

4. An insulated rail-joint having splice-bars provided with depending flexible flanges inclined inwardly at about forty-five degrees, and having flat inner faces, a triangular block of resilient material below the rail-bases and within the flanges, and cross-bolts or fastenings below the middle of the block and arranged to draw the flanges toward each other to force the block upwardly; substantially as described.

5. An insulated rail-joint having splice-bars with depending flanges inwardly inclined, a wooden block below the rail-bases and between the depending flanges, and cross-bolts or fastenings arranged to draw the flanges toward each other and force the block upwardly; substantially as described.

6. An insulated rail-joint having splice-bars with depending flanges inwardly inclined, a wooden block below the rail-bases and between the depending flanges, a metal plate seated on the block under the end portion of one rail only, and cross-bolts or fastenings arranged to draw the depending flanges toward each other and force the block upwardly; substantially as described.

7. An insulated rail-joint having splice-bars with depending flanges inwardly inclined, a triangular wooden block below the rail-bases and between the flanges, a metal plate seated in a recess in the block, and cross-bolts or fastenings arranged to draw the depending flanges toward each other; substantially as described.

8. An insulated rail-joint having splice-bars with depending inwardly-inclined flanges, a wooden block below the end portions of both rails and within the flanges, and a layer of insulating material between the wooden block and the rail-base; substantially as described.

9. An insulated rail-joint having splice-bars with depending inwardly-inclined flanges, a triangular wooden block below the rail-bases and between the flanges, a layer of insulating material upon the wooden block, and a metal plate in the recess of the block under the end portion of one rail only; substantially as described.

10. In an insulated rail-joint, an insulating-support extending below the rail ends, insulation thereon, a metallic protecting-plate between the same and the base of at least one of the rails, and insulating means for maintaining the rails in alinement; substantially as described.

11. In an insulated rail-joint, a resilient, insulating-support extending below the ends of the rails and having thereon a metallic plate below the base of at least one rail, insulation between said plate and the support, and insulating means for maintaining the rails in alinement and electrically separating their ends; substantially as described.

12. An insulated rail-joint having inclined depending flanges, a triangular block between said flanges, and bolts or other fastening means arranged to pass through said block and flanges to draw said flanges toward each other and force the block against the base of the rail; substantially as described.

13. An insulated rail-joint provided with inwardly-depending flanges having straight inner faces inclining with the base of the rail a triangular space, a wooden block in said space having a metal plate secured to the top face thereof, and bolts or other fastening means securing said flanges together and holding said block against the rail; substantially as described.

813,841. METHOD OF TREATING CEMENT AND CEMENT CONSTRUCTION. MAXIMILIAN TOCH, New York, N. Y., assignor of one-half to Henry M. Toch, New York, N. Y. Filed Oct. 13, 1905. Serial No. 282,886.

Claim.—1. The method of treating Portland-cement constructions which consists in applying to the surface of the cement a suitable organic acid or acid body, substantially as described.

2. The method of treating Portland-cement constructions which consists in applying to the surface of the cement a solution containing an acid resin, substantially as described.

3. The method of treating Portland-cement constructions which consists in applying to the surface of the cement a solution containing an acid resin and the vegetable drying-oil, substantially as described.

4. The method of treating Portland-cement constructions which consists in applying to the surface of the cement a solution containing an acid resin, a vegetable drying-oil and a diluent, substantially as described.

5. The method of treating Portland-cement constructions which consists in applying to the surface of the cement a suitable organic acid or acid body, and then applying a mixture containing a pigment, substantially as described.

6. The method of treating Portland-cement constructions which consists in applying to the surface of the cement a suitable organic acid or acid body, and then applying a mixture containing a dissolved resin and a pigment.

7. The method of treating Portland-cement constructions which consists in applying to the surface of the cement a solution containing an acid resin, a vegetable drying-oil and a diluent, and then applying a mixture containing a dissolved resin and a pigment, substantially as described.

8. An oil and water proof Portland-cement construction superficially treated with an organic acid or acid body, substantially as described.

9. An oil and water proof Portland-cement construction containing a compound of a resin acid, substantially as described.

10. An oil and water proof Portland-cement construction having a surface layer containing a compound of a resin acid, substantially as described.

11. An oil and water proof Portland-cement construction having a surface layer containing calcium resinate, substantially as described.

813,842. FLOOD-GATE. LEVERETT W. TRAVIS, Martin, Tenn. Filed Oct. 21, 1905. Serial No. 283,780.

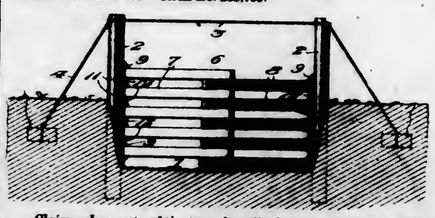

Claim.—In a gate of the type described, a pair of posts or standards, two sets of cooperating gate members arranged in vertically-spaced relation and in relative staggered order, said sets of members being adapted for arrangement with their outer ends in overlapping superposed condition, and means for pivotally connecting the sets of members with their respective posts, said pivoting means comprising an element threaded through the set of sections, and fastening members for attaching the element to the post at points between the sections.

813,843. PUNCH. EDWIN D. TOOKER, Santa Barbara, Cal. Filed May 23, 1905. Serial No. 261,857.

Claim.—1. In a device of the character described, a receptacle, a spring member having one of its ends rigidly secured to the receptacle, and a punch secured to the free end of said spring member, whereby to permit the punch being withdrawn and replaced in a perforation made in the receptacle thereby.

2. In a device of the character described, a receptacle, a spring member having one of its ends rigidly secured to the receptacle, and a punch movably secured to the free end of said spring member, whereby to permit the punch being removed and replaced in a perforation made in the receptacle thereby.

3. In a device of the character described, a receptacle, a spring

member having one of its ends rigidly secured to said receptacle, and a double-pointed punch secured to the free end of said spring member, whereby to permit the punch being withdrawn and replaced in perforations made in the receptacle thereby.

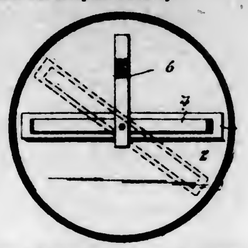

4. In a device of the character described, a receptacle, a spring member having one of its ends rigidly secured to said receptacle, a punch secured to the free end of said spring member, whereby to permit of its being removed and replaced in a perforation made in the receptacle thereby, and a sealing means carried by the punch.

5. In a device of the character described, a receptacle, a spring member having one of its ends rigidly secured to said receptacle, and a punch secured to the free end of said spring member, the end of said spring member projecting beyond the punch to provide a handle by means of which the punch may be removed and replaced in a perforation made in the receptacle thereby.

6. In a device of the character described, a receptacle having the top thereof provided with indentations, a spring-retaining member secured to the top thereof, a punch movably secured to said retaining member and provided with points adapted to normally occupy said indentations, means for preventing said punch from accidentally penetrating the bottoms of said indentations, and a sealing member secured to said punch.

7. In a device of the character described, a receptacle provided with an indentation, a yielding member secured to the receptacle, a punch secured to the yielding member and provided with a point adapted to be seated in said indentation, a seal means carried by the punch, and means carried by the punch for preventing the point thereof from accidentally penetrating the bottom of said indentation.

813,844. **ELECTROLYTIC APPARATUS.** Leroy Van Scoyoc, Gilbert Station, Iowa. Filed May 15, 1905. Serial No. 260,479.

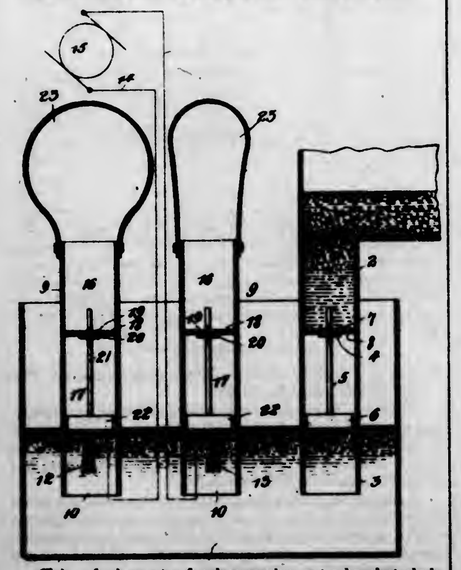

Claim.—1. Apparatus for decomposing water by electrolysis, comprising a receiver, means including a valve actuated by variations in the water-level in the receiver, to supply water to the latter, a gas-collector, electrodes in the receiver in suitable relationship to the gas-collector and a valve actuated by variations in the water-level in the receiver, to control the discharge of gas to the collector.

2. An electrolytic apparatus comprising a liquid-container, an automatic liquid-supply for maintaining the liquid in said container at a constant level, gas-collectors having their open lower ends projecting below the level of the liquid in said container, electrodes in said collectors, partitions in said collectors having valve-openings therein, and float-valves in said collectors and coacting with said valve-openings, substantially as described.

3. An electrolytic apparatus comprising a liquid-container, a liquid-supply therefor, a float-valve in said supply for containing the liquid at a constant level in said container, gas-collecting receptacles having their lower open ends submerged in said container, electrodes in said receptacles, partitions in said receptacles having valve-openings therein, float-valves in said receptacles and coacting with said valve-openings, and gas-bags at the upper open ends of said receptacles, substantially as described.

813,845. **CARPET-FASTENING.** George W. Voelkle, Collinsville, Tex. Filed June 2, 1905. Serial No. 263,450.

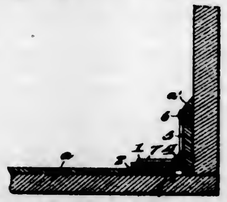

Claim.—The combination with a floor and washboard, of curved pins fixed to the floor and washboard, a clamping-strip having openings for the passage of the pins and pivotally mounted thereby upon the pins to swing between the floor and washboard, and holding devices pivoted to the washboard to swing in a direction longitudinally of the strip and having right-angularly-bent pressure-arms to engage and hold the strip in a horizontal position.

813,846. **ODOMETER.** Bernhard Volkmar, New York, N. Y., assignor to The Ajax Auto-Meter Company, New York, N. Y. Filed Sept. 6, 1905. Serial No. 277,212.

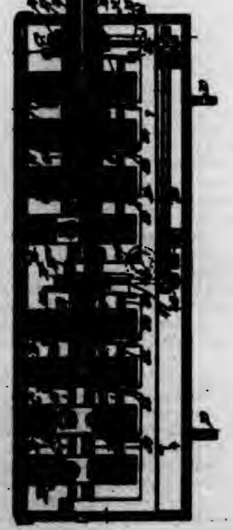

Claim.—1. In odometers, a casing, a carrying-shaft mounted for end and rotary movement in the casing, a set of registering-disks and a set of recording-disks loosely mounted on the said shaft, one set of disks being independent of the other and each disk in a set being independent of each other, each disk of both sets being provided with series of apertures in one of its faces, a ratchet-wheel loosely mounted on the said carrying-shaft adjacent to the initial disk of each set, spring latch-arms secured at one end to the face of each disk opposite that containing the apertures, a similar arm being similarly connected with each ratchet-wheel, each of the said latch-arms having a bevel foot-section formed at its free end, and posts on said foot-sections adapted to enter apertures in opposing disks, fixed spurs located in the path of the foot-sections of the said latch-arms, a line-shaft, means for driving the line-shaft, and independent dogs carried by said line-shaft, engaging the said ratchet-wheels.

2. In odometers, a casing, a carrying-shaft mounted for end and for rotary movement in the casing, a set of registering-disks and a set of recording-disks loosely mounted on the said shaft, one set of disks being independent of the other and each disk in a set being independent of each other, each disk of both sets being provided with series of apertures in one of its faces, a ratchet-wheel loosely mounted on said carrying-shaft adjacent to the initial disk of each set, spring latch-arms secured at one end to the face of each disk opposite that containing the apertures, a similar arm being similarly connected with each ratchet-wheel, each of the said latch-arms having a beveled foot-section formed at its free end, and posts on said foot-sections, adapted to enter apertures in opposing disks, fixed spurs located in the path of the foot-sections of the said latch-arms, a line-shaft common to both sets of disks, means for driving the line-shaft, eccentrics carried by the said line-shaft, and independent dogs carried by the said eccentrics, one dog being adapted for engagement with each ratchet-wheel.

3. In odometers, the combination with a casing, a carrying-shaft mounted for end and for rotary movement in the casing, a set of registering-disks loosely mounted on said shaft, a set of recording-disks likewise loosely mounted on the said shaft, the sets of disks being independent of each other, each disk having openings in one side face, a ratchet-wheel loosely mounted on the said shaft opposite the initial disk of each set, spring latch-arms attached to the faces of the disks opposite those provided with the openings and corresponding arms secured to the said disks, each latch-arm being provided with a beveled foot-section at its free end and posts extending from the said foot-sections, and a bar located below the disks and provided with spurs which are in the path of the free ends of the latch-arms as the disks and ratchet-wheels revolve, of pins extending from the faces of the registering-disks having the openings therein, sleeves frictionally mounted on the shaft, each registering-disk being adapted to turn loosely on a sleeve, each sleeve being provided with a finger to engage the pin of the disk to which it belongs, stops on the said shaft, whereby by moving the shaft endwise the disks are carried to and from the pin-faces of the said registering-disks, a line-shaft, cams carried by the line-shaft, means for rotating the line-shaft and dogs mounted on said cams, a dog being adapted for engagement with the ratchet-wheels of each set of disks, as described.

813,847. **BAND-CUTTER AND FEEDER.** Halbert C. Wallace, McPherson, Kans. Filed Jan. 13, 1906. Serial No. 240,800.

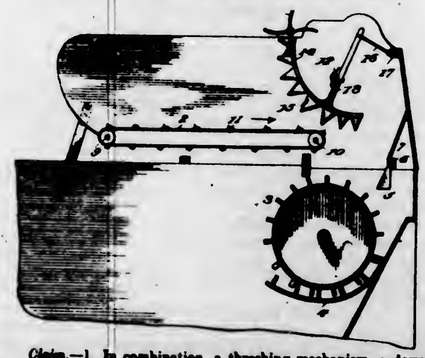

Claim.—1. In combination, a threshing mechanism, a downwardly and rearwardly inclined plate located above the threshing mechanism and at the rear side thereof, a transverse bar located a short distance from the lower edge of said plate, a second plate connected at its lower edge with said bar and inclined upwardly and rearwardly and forming a close joint at its upper edge with the first-mentioned plate, knives secured to said transverse bar, a feeder located forward of and above the threshing mechanism, and a band-cutter arranged above the delivery end of said feeder and acting jointly therewith to advance the grain and retard the upper portion thereof.

2. In combination, a threshing mechanism, a downwardly and rearwardly inclined plate located above the threshing mechanism and at the rear side thereof, a transverse bar located a short distance from the lower edge of said plate, a second plate connected at its lower edge with said bar and inclined upwardly and rearwardly and forming a close joint at its upper edge with the first-mentioned plate, knives secured to said transverse bar, a feeder located forward of and above the threshing mechanism, oscillatory band-cutters operating over the entrance to the threshing mechanism and above the delivery end of the feeder, and a rotary retarder located above the forward end of said oscillatory band-cutters.

813,848. **TYPE.** Kansas U. Whitted, Topeka, Kans. Filed Jan. 13, 1905. Serial No. 240,864.

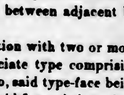

Claim.—1. The combination with a form having linotype-slugs with blank portions thereon, of an associate flanged type-face, said type-face being adapted to rest upon the blank portion of the slugs with the flange extending downwardly and clamped between adjacent slugs, substantially as set forth.

2. The combination with the product of type-casting or line-casting machines having bodies and faces and blank portions on the bodies, of an associate flanged type-face, said type-face being adapted to rest upon the blank portions with the flange extending downwardly and clamped between adjacent bodies, substantially as set forth.

3. The combination with two or more lines of type with blank portions, of an associate type comprising a thin type-face and a flange secured thereto, said type-face being adapted to rest upon the blank portions, and said flange being adapted to extend downwardly between contiguous lines of type so as to be held firmly in place in the lock-up, substantially as set forth.

813,849. **FLASH-LIGHT DEVICE.** Takenari Asuma, Kanda, Tokyo, Japan. Filed Aug. 11, 1905. Serial No. 273,733.

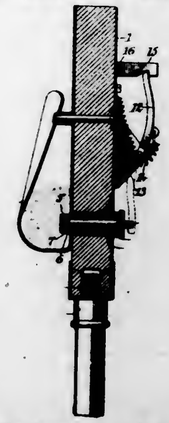

Claim.—1. A flash-light device comprising a body portion, a pan thereon open at the sides and top, the opening at the top being narrow, a tube extended removably through the body portion into the pan and adapted to receive an exploding medium, a plunger for operating in the tube, and a spring-actuated hammer for forcing the plunger against the igniting material.

2. A flash-light device, comprising a body portion, a pan thereon, a tube removably extended through the body portion and projected into the pan, the said tube having a slot through which an igniting medium may pass, a plunger operating in the tube, a spring-actuated hammer for striking the plunger, a holding-latch for said

813,851. **CORN CUTTER AND SHOCKER.** Elmer Berry and Homer A. Berry, Hebron, Ohio. Filed May 18, 1905. Serial No.

carriage slidably mounted on the track, a turn-table on the carriage, a cradle hinged to the turn-table, means for supporting the cradle from opposite ends of the tubular portion of the bill, a pin threaded

niting medium may pass, a plunger operating in the tube, a spring-actuated hammer for striking the plunger, a holding-latch for said hammer, and a pneumatic for releasing the latch from the hammer.

3. A flash-light device, comprising a body portion, a pan thereon having its outer wall inclined upward and inward, or toward the body portion, a tube removably extended through the body portion and into the pan, said tube having a slot through which an igniting medium may pass, a plunger operating in the tube, a spring-actuated hammer for striking the plunger, a latch for holding the hammer in one position, a lever on which said latch is mounted, a plate on the front end of the lever, an air-tube, and a cap movable on said air-tube for contact with said plate.

4. A flash-light device, comprising a body portion, a pan thereon, the said body portion having an opening leading into the pan, a tube for removably engaging in said opening and adapted to receive an igniting medium, a plunger operating in the tube, a plate on the outer end of said tube, buttons on the body portion for engaging the said plate, and a hammer for striking said plunger.

818,850. **WRENCH.** JOHN A. BARTON, Virginia, Minn. Filed Aug. 5, 1905. Serial No. 272,365.

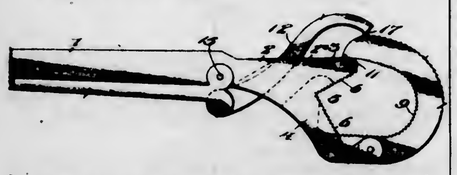

Claim.—1. A wrench comprising a handle carrying a fixed jaw, a rigid, arcuately-curved movable jaw pivoted at one end to one side of the fixed jaw and adapted to bear when closed at its free end upon the opposite side of the fixed jaw, and a pivoted dog for engaging the free end of and locking the movable jaw in closed position.

2. A wrench comprising a handle carrying a Y-shaped fixed jaw, a U-shaped rigid movable jaw pivoted at one end to one member of the fixed jaw and adapted to bear at its free end upon the other member of the fixed jaw, and pivotally supported independent of the movable jaw for engaging the free end of the movable jaw to hold the same in closed position.

3. A wrench comprising a handle carrying a fixed jaw and provided with a transverse slot, a rigid, arcuately-curved movable jaw pivoted at one end to one side of the fixed jaw and adapted to bear at its free end upon the opposite side thereof, a lever pivoted to the handle on one side thereof, and a dog extending through said transverse slot and connected at one end to the handle and provided at its opposite end with a toothed terminal to interlock with the free portion of the pivoted jaw.

4. A wrench comprising a handle carrying a fixed jaw, a rigid arcuately-curved movable jaw pivoted at one end to one side of the fixed jaw and adapted to bear when closed at its free end upon the opposite side of the fixed jaw, a lever pivoted to the handle of the wrench, and a dog pivotally connected to the lever and adapted to engage the free end of and lock the movable jaw in closed position.

5. A wrench comprising a handle carrying a Y-shaped fixed jaw and provided with an oblique slot in rear thereof, a rigid arcuately-curved movable jaw linked at one end to one of the branches of the fixed jaw and adapted to bear at its free end against the other branch of the fixed jaw, a lever pivoted to one side of the handle, and a dog projecting through said oblique slot and pivotally connected at one end to the lever and provided at its other end with a tooth to engage the free end of and lock the movable jaw in closed position.

6. A wrench comprising a handle provided with a Y-shaped fixed jaw and an oblique slot in rear thereof, one of the branches of said fixed jaw having a bearing-face, a rigid arcuately-curved lever linked to the other branch of the fixed jaw and adapted to bear at its free end against said bearing-face, said movable jaw being provided with an inner set of serrations and an outer set of locking-teeth, a lever pivoted to the handle at the side of the wrench opposite the bearing-face, and a locking-dog pivotally connected at one end to the lever and extending beyond the opposite side of the wrench through said oblique slot and having an offset free end provided with a tooth to engage the locking-teeth of the movable jaw, said offset free end being adapted to permit the free end of the movable jaw to have movement between it and the bearing-face of the fixed jaw and enable the movable jaw to be freely adjusted.

818,851. **CORN CUTTER AND SHOCKER.** BLAINE BERRY and HOMER S. BERRY, Hebron, Ohio. Filed May 18, 1905. Serial No. 261,014.

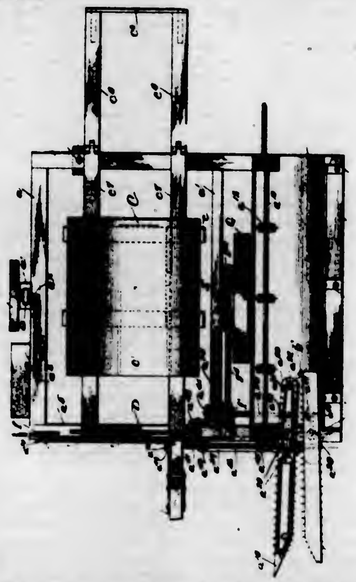

Claim.—1. In a corn cutter and shocker, the combination of a frame, dividing-boards on the frame, a cutter between the dividing-boards, lug-chain conveyers on the dividing-boards, a pin for engaging the butts of the stalks at the inner ends of the dividing-boards, a trough beyond the dividing-boards on the frame, upright supports secured to the frames, shafts journaled in the ends of the supports, lug-chain conveyers on the shafts, horizontal bars secured to the supports, shafts journaled in the ends of the bars, lug-chain conveyers on the shafts, a track on the frame and beneath the free ends of the bars, a hinged extension on the track at the rear of the frame, brackets on the free ends of the hinged extension, caster-wheels journaled in the brackets, a carriage slidably mounted on the track, a turn-table on the carriage, a cradle hinged to the turn-table, a depressible shoe for supporting the rear end of the frame, a grain-wheel for supporting one side of the frame, means whereby the grain-wheel may be elevated and depressed, a bull-wheel for supporting the opposite side of the frame, means for elevating and depressing the frame with respect to the bull-wheel, and connections between the bull-wheel, the cutter and the conveyers, whereby the motion of the bull-wheel will operate the cutter and conveyers.

2. In a corn cutter and shocker, the combination of a frame, dividing-boards on the frame, a cutter between the dividing-boards lug-chain conveyers on the dividing-boards, a pin for engaging the butts of the stalk at the inner end of the dividing-boards, a trough behind the dividing-boards and on the frame, upright supports secured to the frame, shafts journaled in the ends of the supports, lug-chain conveyers on the shafts, horizontal bars secured to the supports, shafts journaled in the ends of the bars, lug-chain conveyers on the shafts, a track on the frame and beneath the free ends of the bar, a hinged extension on the track at the rear of the frame, means for supporting the free ends of the extension, a carriage slidably mounted on the track, a turn-table on the carriage, a cradle hinged to the turn-table, means for supporting the frame and for actuating the cutter and conveyers, comprising a bull-wheel journaled in the frame, means for elevating and depressing the frame with respect to the bull-wheel, and connections between the bull-wheel and the cutter and conveyers.

3. In a corn cutter and shocker, the combination of a frame, dividing-boards on the frame, cutting means between the dividing-boards, conveying means on the dividing-boards, means for engaging the butts of the stalks at the inner end of the dividing-boards, a trough behind the dividing-boards for receiving the cut stalks, a track on the frame, a hinged extension on the track at the rear of the frame, means for supporting the free ends of the hinged extension, a carriage slidably mounted on the track, a turn-table on the carriage, a cradle hinged to the turn-table, means for conveying the cut stalks from the trough to the cradle, means for supporting the frame and for actuating the moving parts, comprising a bull-wheel journaled in the frame.

4. In a corn cutter and shocker, the combination of a frame, dividing-boards on the frame, means for cutting the corn, means for receiving the cut stalks, a track on the frame, and provided with a hinged extension, means for supporting the hinged extension, a carriage slidably mounted on the track, a turn-table on the carriage, a cradle hinged to the turn-table, means for conveying the corn from the receiving means to the cradle, and means for supporting the frame and actuating the cutter and conveyer.

5. In a corn cutter and shocker the combination of the frame, a trackway on the frame, and provided with a hinged extension, means for supporting the extension, a carriage mounted on the trackway, a turn-table on the carriage, a cradle hinged to the turn-table, means on the frame for cutting the corn, means for receiving the corn from the cutting means, and means for conveying the corn to the cradle.

6. In a corn cutter and shocker, the combination of the frame, a trackway on the frame, and provided with a hinged extension, means for supporting the extension, means for leveling the frame with respect to the extension, a carriage mounted on the trackway, a turn-table on the carriage, a cradle hinged to the turn-table, means on the frame for cutting the corn, means for receiving the corn from the cutting means, and means for conveying the corn to the cradle.

7. In a corn cutter and shocker, the combination of the frame, a trackway on the frame, an extension hinged to the ends of the trackway, caster-wheels on the ends of the extension, means for leveling the frame with respect to the extension, a carriage mounted on the trackway, and a tilting cradle on the carriage.

8. In a corn cutter and shocker, the combination of a frame, a trackway on the frame, an extension hinged to the ends of the trackway, caster-wheels on the ends of the extension, means for leveling the frame with respect to the extension, and a tilting cradle slidably mounted on the trackway.

813,852. **HARROW.** WILLIAM H. BOND, Newcastle, Ind. Filed Oct. 12, 1905. Serial No. 282,488.

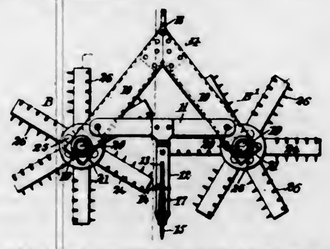

Claim.—In an agricultural implement, the combination with an A-frame and spindles mounted to revolve in the rear end portions of the limbs of the said frame, of harrows each comprising a body attached to one of the spindles, arms radially attached to the said body and teeth diagonally passed through the said arms, the inclination of the teeth of one harrow being opposite to the inclination of the teeth of the opposing harrow, an arm extending rearwardly from the frame between the two harrows, and a colter the shank of which is pivotally mounted in the said arm.

813,853. **ANIMAL-CALL.** JOSEF BRUNNER, Pinegrove, Mont. Filed Sept. 19, 1904. Serial No. 224,969.

Claim.—In a device of the character described, a trough-shaped bill pointed at its forward end, the rearward end of said bill being formed tubular and exteriorly threaded, a vibrating tongue secured at its rearward end over the open side of the bill, the forward or free end of the tongue tending to spring upward, a casing composed of two parts, the outer end of each part of the casing being provided with an opening smaller than the tubular portion of the bill, the other end of each part of the casing being interiorly threaded, and each part adapted to be threaded upon the threaded portion of the bill from opposite ends of the tubular portion of the bill, a pin threaded through the casing above the vibrating tongue, said pin adapted to control the vibrations of the tongue by screwing the same inward or outward, and a spring tending to force the pin away from the tongue, as and for the purpose specified.

813,854. **ROTARY ENGINE.** HENRY BURLIGH, New York, N. Y. Filed July 28, 1905. Serial No. 271,023.

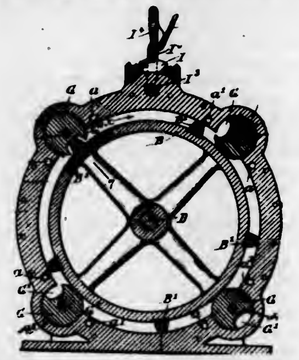

Claim.—1. A rotary engine comprising a cylinder, a rotor mounted concentrically within the said cylinder and having a plurality of peripheral heads, rotary abutments mounted in the said cylinder and having cut-out portions for the passage of the said rotor-heads, the number of abutments being one less than the number of the said heads, and an admission, cut-off and reversing valve mechanism for controlling the steam to the cylinder at either side of each of the said abutments, arranged on one side of said rotor and an exhaust-valve on the opposite side of the same.

2. A rotary engine comprising a cylinder, a rotor mounted concentrically within the said cylinder and having a plurality of peripheral heads, rotary abutments mounted in the said cylinder and having cut-out portions for the passage of the said rotor-heads, and a valve mechanism for controlling the motive agent to the said cylinder and consisting of a ring-shaped reversing-valve having sets of ports adapted to register with ports formed in the cylinder and leading to the working space at opposite sides of each abutment, means for turning the said ring-shaped valve, to bring either port of a set of ports in register with the corresponding cylinder-port, a manually-controlled cut-off valve connected with a steam-supply, and an admission-valve interposed between the said reversing-valve and the said cut-off valve and rotating with the said rotor, the said admission-valve having in its rim elongated openings adapted to register with the ports in the said reversing-valve and the ports in the said cut-off valve.

3. A rotary engine comprising a cylinder, a rotor mounted concentrically therein and having a plurality of peripheral heads, the said rotor forming a working chamber with the said cylinder, abutments mounted to rotate in the said cylinder and in unison with the said rotor, each abutment having a cut-out portion for the passage of the said rotor-heads, a steam-chest on one end of the said cylinder and connected with a steam-supply, a manually-controlled cut-off valve mounted to turn in the said steam-chest and concentric with the said rotor, and an admission-valve rotating with the said rotor and having elongated openings adapted to register with ports in the rim of the said cut-off valve, the said elongated openings of the admission-valve being also adapted to register with ports leading into the working chamber.

4. A rotary engine comprising a cylinder, a rotor mounted concentrically therein and having a plurality of peripheral heads, the said rotor forming a working chamber with the said cylinder, abutments mounted to rotate in the said cylinder and in unison with the said rotor, each abutment having a cut-out portion for the passage of the said rotor-heads, a steam-chest on one end of the said cylinder and connected with a steam-supply, a manualy-controlled cut-off valve mounted to turn in the said steam-chest and concentric with the said rotor, an admission-valve rotating with the said roter and having elongated openings adapted to register with ports in the rim of the said cut-off valve, and a manually-controlled reversing-valve mounted to turn in the said steam-chest and having sets of admission-

ports adapted to register with the said elongated openings and with sets of ports leading into the working chamber at opposite sides of the said abutments.

5. A rotary engine comprising a cylinder, a rotor mounted concentrically therein and having a plurality of peripheral heads, the said rotor forming a working chamber with the said cylinder, abutments mounted to rotate in the said cylinder and in unison with the said rotor, each abutment having a cut-out portion for the passage of the said rotor-heads, a steam-chest on one end of the said cylinder and connected with a steam-supply, a manually-controlled cut-off valve mounted to turn in the said steam-chest and concentric with the said rotor, an admission-valve rotating with the said rotor and having elongated openings adapted to register with ports in the rim of the said cut-off valve, a manually-controlled reversing-valve mounted to turn in the said steam-chest and having sets of admission-ports adapted to register with the said elongated openings and with sets of ports leading into the working chamber at opposite sides of the said abutments, and an exhaust-valve having sets of exhaust-ports opening into the said working chamber at opposite sides of the abutments, the said exhaust-valve turning with the said reversing-valve.

6. A rotary engine comprising a cylinder, a rotor mounted concentrically therein and having a plurality of peripheral heads, the said rotor forming a working chamber with the said cylinder, abutments mounted to rotate in the said cylinder and in unison with the said rotor, each abutment having a cut-out portion for the passage of the said rotor-heads, a steam-chest on one end of the said cylinder and connected with a steam-supply, a manually-controlled cut-off valve mounted to turn in the said steam-chest and concentric with the said rotor, an admission-valve rotating with the said rotor and having elongated openings adapted to register with ports in the rim of the said cut-off valve, a manually-controlled reversing-valve mounted to turn in the said steam-chest and having sets of admission-ports adapted to register with the said elongated openings and with sets of ports leading into the working chamber at opposite sides of the said abutments, an exhaust-valve having sets of exhaust-ports opening into the said working chamber at opposite sides of the abutments, the said exhaust-valve turning with the said reversing-valve, and an exhaust-chamber at the end of the cylinder opposite the one having the said steam-chest, the said ports in the exhaust-valve opening into the said exhaust-chamber.

7. A rotary engine comprising a cylinder, a rotor mounted concentrically therein and having a plurality of peripheral heads, the said rotor forming a working chamber with the said cylinder, abutments mounted to rotate in the said cylinder and in unison with the said rotor, each abutment having a cut-out portion for the passage of the said rotor-heads, a steam-chest on one end of the said cylinder and connected with a steam-supply, a manually-controlled cut-off valve mounted to turn in the said steam-chest and concentric with the said rotor, an admission-valve rotating with the said rotor and having elongated openings adapted to register with ports in the rim of the said cut-off valve, a manually-controlled reversing-valve mounted to turn in the said steam-chest and having sets of admission-ports adapted to register with the said elongated openings and with sets of ports leading into the working chamber at opposite sides of the said abutments, an exhaust-valve having sets of exhaust-ports opening into the said working chamber at opposite sides of the abutments, the said exhaust-valve turning with the said reversing-valve, an exhaust-chamber at the end of the cylinder opposite the one having the said steam-chest, the said ports in the exhaust-valve opening into the said exhaust-chamber, and gearing in the said exhaust-chamber and connecting the said rotor with the said abutments.

813,855. **CAR-REPLACER.** WILLIAM P. BYRD, Baltimore, Md., assignor of one-third to George A. Burton, Baltimore, Md., and one-third to Brook L. Burton, Frederick county, Md. Filed July 1, 1905. Serial No. 267,949.

Claim.—1. A car-replacer comprising a block provided with oppositely-inclined sides provided with grooves and a rotary head between the upper ends of said inclined sides and the bottom of said block having an inclined surface along one edge with a groove extending longitudinally adjacent said inclined bottom surface.

2. A car-replacer comprising a block provided with a rotary head and inclined surfaces at opposite sides of said head and each of said inclined surfaces having arms or prongs which diverge as they recede from said head.

3. A car-replacer comprising a block provided with a flat top surface with a rotary head on said surface and also having inclined grooved surfaces at opposite sides of said flat top and one side of said block having a vertically-projecting flange which extends from the edges of the grooved surfaces toward the center of said rotating head.

4. A car-replacer comprising a block having a flat top surface which is provided with a conical recess and also having a head with a conical stem which latter is rotatable in said recess, said block also having inclined surfaces at opposite sides of said head and a shoulder extending longitudinally at one side.

813,856. **BRAKE-OPERATING MECHANISM.** JOHN CALEY, Bedford, and JEREMIAH CALEY, Bloomington, Ind. Filed Dec. 5, 1904. Serial No. 235,563.

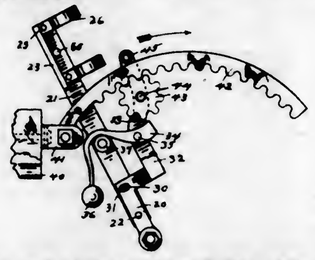

Claim.—1. In a brake-operating mechanism, a shaft, an actuating-crank thereon, a lever for moving said crank that has some movement independently thereof, a locking-pawl mounted on said crank, and means on said lever for holding said pawl in an unlocking position when said lever is at its limit of movement in either direction relative to said crank.

2. In a brake-operating mechanism, a shaft, an actuating-crank thereon, a lever for moving said crank that has some movement independently thereof, a locking-pawl mounted on said crank with an A-shaped shank, and means on said lever upon which the A-shaped shank of the pawl rests so that the movement of said lever in either direction independently of the crank will move said pawl to an unlocking position.

3. In a brake-operating mechanism, a shaft, an actuating-crank thereon, a lever for moving said crank that has some movement independently thereof, a locking-pawl mounted on said crank with an A-shaped shank, means on said lever upon which the A-shaped shank of the pawl rests so that the movement of said lever in either direction independently of the crank will move said pawl to an unlocking position, and a weight on the shank of said pawl for moving it into a locking position.

4. In a brake-operating mechanism, a shaft, an actuating-crank thereon, a ratchet-wheel carried by said crank, a rack-bar that said ratchet-wheel engages, a lever for moving said crank that has some movement independently thereof, and a pawl for engaging said ratchet-wheel and locking it with the rack-bar that is released by the independent movement of said lever.

5. In a brake-operating mechanism, a shaft, an actuating-crank thereon, a ratchet-wheel carried by said crank, a rack pivoted at one end to some stationary object, means on the crank for holding said rack in mesh with said ratchet-wheel, a lever for moving said crank which has some movement independently thereof, and a pawl mounted on said crank that engages said ratchet-wheel and locks it with the rack-bar and which is released by the independent movement of said lever.

813,857. **MACHINE FOR ICING CAKE AND OTHER PASTRY.** CLARENCE W. CARTER, Minneapolis, Minn. Filed May 14, 1904. Serial No. 207,910.

Claim.—1. In a machine of the class described, the combination with a stock-hopper and a mold or die plate, of a cut-off valve provided with an air-chamber spanning the mouth of the die-plate, when said valve is in a die-closing position, substantially as described.

2. In a machine of the class described, the combination with a stock-hopper and a mold or die plate, of a cut-off valve provided with an air-chamber spanning the mouths of the dies when said valve is in its die-closing position, substantially as described.

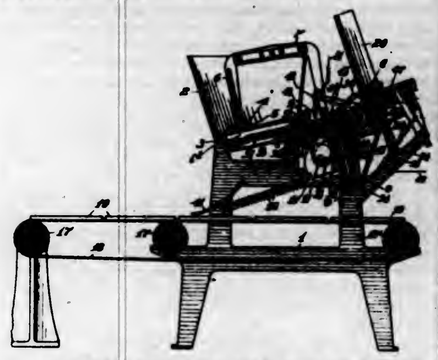

3. In a machine of the class described, the combination with a stock-hopper and a mold or die plate, of a cut-off valve and means for rendering air, under pressure, available to force the molded material out of the dies, substantially as described.

4. In a machine of the class described, the combination with a stock-hopper and a mold or die plate, of a cut-off valve which is recessed to afford an air-chamber spanning the dies, when the valve is in its die-closing position, and is provided with connections affording a supply of air, under pressure, to said chamber, for forcing the molded material out of the dies, substantially as described.

5. In a machine of the class described, the combination with a stock-hopper and a mold or die plate, of a pivoted chute and a pivoted guard-lever, coöperating to supply the cakes, one at a time, to the coöperating die, to hold the cake to its die-centered position until the material is molded thereon and to deliver the finished product from the die, substantially as described.

6. In a machine of the class described, the combination with a stock-hopper and a mold or die plate, of a movable chute and a movable guard device, subject to a differential motion in respect to each other, and coöperative to supply the cakes, one at a time, to the dies, hold the cakes in their die-centered position until the material is molded thereon and to deliver the finished product from the dies, substantially as described.

7. In a machine of the class described, the combination with a stock-hopper, a mold or die plate, and a cut-off valve, of a pivoted chute and a pivoted guard-lever provided with centering-fingers adapted to extend above the floor of the chute, which chute and guard-lever coöperate to supply the cakes to the coöperating die, one at a time, to hold the cake in its die-centered position until the material is molded thereon, and to deliver the finished product to receiving-trays or other receptacles, the said chute and guard-lever being subject to a differential movement for separating the same, to effect the delivery, and to bring the same together, immediately thereafter, to catch and hold the next cake and bring the same to its die-centered position, substantially as described.

8. In a machine of the class described, the combination with a stock-hopper, a mold or die plate and a cut-off valve, of a feed-magazine having a forced-feed device for supplying the cakes, one at a time, a pivoted chute and a pivoted guard-lever, coöperating to receive the cakes from said force-feed device, to supply the same, one at a time, to the coöperating die, to hold the cake in its die-centered position, until the material is molded thereon, and to deliver the finished product to receiving-trays or other receptacles, substantially as described.

9. In a machine of the class described, the combination with a stock-hopper having as its bottom a mold or die plate, provided with a series of die-openings, a cut-off valve movable over said plate, forced-feed supply devices, a series of independently-pivoted chutes, subject to independent cams and opposing springs, and a corresponding series of guard-levers, fixed to a common rock-shaft, and subject to a cam and spring, which chutes and guard-levers coöperate to receive the cakes from said forced-feed devices, center the same under the dies, hold the same in their centered position until the material is molded thereon, and to deliver the finished product into receiving-trays or other receptacles, substantially as described.

10. In a machine for molding comfectic material, such as icing, on cakes or other pastries, the combination with devices for supplying the cakes to the dies, one at a time, in a continuous chain, of an alarm device operative to indicate a skip or break in the supply-chain of cakes, whereby the machine can be stopped before the plastic material can waste through the unbacked or open sides of the mold-plate, substantially as described.

11. In a machine of the class described, the combination with a stock-hopper, mold or die plate, and devices for supplying the cakes to the dies, one at a time, in continuous chains, of an electric alarm device, including a circuit-controller, with yielding contacts normally intercepted by cakes in the supply-chains to hold the circuit open, if the supply is normal, but adapted to close the circuit if any of the intercepting cakes, always present in the normal feed, should be absent, substantially as and for the purpose set forth.

813,858. **MACHINE FOR CUTTING BUTTER, &c.** EDWIN K. CARMEN, New York, N. Y., assignor to The Knitcraft Butter Cutter Company, a Corporation of New Jersey. Filed Aug. 5, 1905. Serial No. 272,888.

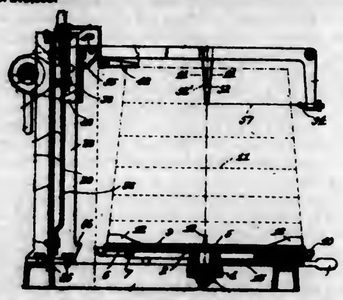

Claim.—1. A machine for cutting butter or the like material comprising a base, a cutter adjustable with respect to the base, and means for determining the adjusted positions or distances between the base and cutter, whereby cakes of butter or like material substantially frusto-conical in shape and of variable height and weight resting on said base are capable of being divided or cut into a plurality of sections, the several sections of the same cake being substantially of the same weight and volume.

2. A machine for cutting butter or like material comprising a base, a cutter adjustable with respect to the base, and means for determining the adjusted positions or distances between the base and cutter, whereby cakes of butter or like material of uniformly-varying cross-section and of variable height and weight resting on said base are capable of being divided or cut into a plurality of sections, the several sections of the same cake being substantially of the same weight and volume.

3. A machine for cutting butter or like material comprising a rotary base, a cutter adjustable with respect to the base and means for determining the adjusted positions or distances between the base and cutter, whereby cakes of butter or like material of uniformly-varying cross-section and of variable height and weight resting on said base are capable of being divided or cut into a plurality of sections, the several sections of the same cake being substantially of the same weight or volume.

4. A machine for cutting butter or like material comprising a base, a cutter adjustable with respect to the base, means for determining the adjusted positions or distances between the base and cutter, whereby a cake of butter or the like material of uniformly-varying cross-section and resting on said base is capable of being divided or cut into a plurality of sections of the same weight or volume, and means for subdividing each of the above sections of equal weight or volume into a plurality of radial segments or sections of predetermined weight or volume.

5. A machine for cutting butter or like material comprising a rotary platform, a cutter adjustable to and from the platform, and means for regulating the adjusted distances between the cutter and platform, whereby a cake of butter or like material of substantially frusto-conical shape and resting on said platform is divided up into a plurality of superposed sections of substantially the same weight or volume.

6. A machine for cutting butter or like material comprising a movable platform, a cutter adjustable to and from the platform, means for regulating the distances between the platform and cutter whereby a cake of butter or like material of substantially frusto-con-

tical shape resting on said platform is divided up into a plurality of equal contents, and means for moving said platform.

7. A machine for cutting butter or the like material comprising a rotary platform, a cutter vertically and variably adjustable with respect to the platform, means for regulating the adjustments between the platform and cutter whereby a cake of butter of uniformly-variable cross-section and resting on said platform is capable of being divided up into a plurality of superposed layers or sections of substantially the same weight or volume and means for regulating the rotation of said platform to determinately cut into segments each of the superposed layers.

8. A machine for cutting butter or the like material comprising a rotary platform, a cutter-supporting means vertically and variably adjustable with respect to the platform, means for locking said cutter-supporting means in its adjusted position, a cutter hinged to said cutter-supporting means and moving independently in a plane at right angles to the platform, and means for regulating the adjustments between the cutter-supporting means and the platform whereby a cake of butter is capable of being divided up into a plurality of sections of equal weight or volume and adjustable means for regulating the rotation of said platform to determinately cut into segments each of the sections.

9. A machine for cutting butter or the like material comprising a rotary platform, a cutter adjustable to and from the platform, and means for determining the variable distances between the cutter and platform whereby a block of butter or like material, substantially a frustum of cone in shape, and resting on said platform, is capable of being divided horizontally into a plurality of sections of the same weight or volume.

10. A machine for cutting butter or the like material comprising a rotary platform, a cutter variably adjustable to and from the platform, means for determining the variable distances between the cutter and platform whereby a block of butter or the like material resting on said platform and of substantially frusto-conical shape is capable of being divided horizontally into a plurality of sections of different height each being substantially the same weight or cubical contents, and means for rotating said platform through a predetermined and variable angle.

11. A machine for cutting butter or the like, comprising a platform, a cutter variably adjustable to and from the platform, and means for regulating the variable distances between the cutter and platform whereby a cake of butter or the like of variable height resting on said platform and of substantially frusto-conical shape is capable of being divided up into a plurality of sections of frusto-conical shape and different heights, and each section having the same weight or cubical contents.

12. A machine for cutting butter or the like comprising a rotary platform, a cutter having mountings adjustable to variable distances to and from the platform and having an independent movement in a plane at right angles to the plane of the platform, adjustable means for determining the variable distances between the cutter and platform whereby cakes of butter or the like of different heights resting on said platform and of substantially frusto-conical shape are capable of being divided up into a plurality of sections of frusto-conical shape and of different heights and each of the several sections of the same cake having substantially the same weight and volume, and means for rotating said platform through predetermined and variable angles to divide each of the sections into radial segments of predetermined weight or volume.

13. A machine for cutting butter or the like material comprising a base, a platform rotatably supported on said base, means for regulating the arc of rotation of said platform, a standard rigidly connected to the base, an adjustable dividing-plate pivotally supported to the standard and having a plurality of properly-spaced height-indicating edges between its pivot-point and upper end, means for locking the dividing-plate to the standard, an adjustable height-gage engaging the dividing-plate and controlling the adjusted or locked position of the said plate, an adjustable carriage constructed to move up and down on the standard and adapted to rest on the height edges of the dividing-plate in its different adjusted positions, and a cutter pivotally connected to said adjustable carriage and moving in a plane at right angles to the plane of the platform.

14. A machine for cutting butter or the like material comprising a base, a turn-table rotatably supported on said base and provided with a depending rim, a clutch mechanism for intermittently engaging the rim, an adjustable means for controlling the movement of the clutch mechanism and rotation of the turn-table, a standard rigidly connected to the base, an adjustable dividing-plate pivotally supported to the standard and having a plurality of properly determined and spaced height-indicating edges between its pivot-point and upper end, means for locking the dividing-plate to the standard, an adjustable height-gage engaging the dividing-plate and controlling the adjusted or locking position of the said plate, an adjustable carriage constructed to move up and down on the platform and adapted to rest on the height edges of the dividing-plate in its adjusted positions, and a cutter pivotally connected to the adjustable carriage and moving in a plane at right angles to the plane of the turn-table.

15. A machine for cutting butter or the like material comprising a base, a turn-table rotatably supported on said base, a pan resting on said turn-table and having a peripheral flange adapted to engage the same, means for rotating said turn-table, and means for operatively supporting a cutter above said turn-table.

16. A machine for cutting butter or like material comprising a base, a cutter adjustable with respect to the base, and means for determining the adjusted positions or distances between the base and cutter, whereby cakes of butter or like material of variable height and uniformly-varying cross-section resting on said base are capable of being divided or cut into a plurality of sections, the several sections of the same cake being substantially of the same weight and volume.

17. A machine for cutting butter or like material comprising a rotary base, a cutter adjustable with respect to the base and means for determining the adjusted positions or distances between the base and cutter, whereby cakes of butter or like material of variable height and uniformly-varying cross-section resting on said base are capable of being divided or cut into a plurality of sections, the several sections of the same cake being substantially of the same weight or volume.

18. A machine for cutting butter or like material comprising a base, a cutter adjustable with respect to the base, means for determining the adjusted positions or distances between the base and cutter, whereby a cake of butter or the like material resting on said base is capable of being divided or cut into a plurality of sections of the same weight or volume, and means for subdividing each of the above sections of equal weight or volume into a plurality of radial segments or sections of predetermined weight or volume.

19. A machine for cutting butter or the like material comprising a base, a turn-table rotatably supported on said base, a pan resting on said turn-table and having a peripheral flange adapted to engage the same, the outer edges of the flange being turned up to form a circular trough around the edge of the pan, and means for operatively supporting a cutter above said turn-table.

20. A butter-cutter comprising a rotary platform for holding a cake of butter, a vertical standard at the side of said platform, a vertically-extending dividing-plate pivoted near the bottom of said standard on a horizontal pivot, said dividing-plate being provided with a series of height-measuring edges having a predetermined relation to the platform, a height-gage vertically adjustable on the upper end of the standard, coöperating means between the pivoted dividing-plate and the height-gage whereby upon movement of the dividing-plate the height-gage is moved up or down, a vertically-movable carriage on the standard, a cutter secured to the carriage, and means for fixing the position of the carriage and cutter by coöperation with the height-measuring edges.

21. A butter-cutter comprising a rotary platform for holding a cake of butter, a vertical standard at the side of said platform, a vertically-extending dividing-plate pivoted near the bottom of said standard on a horizontal pivot, said dividing-plate being provided with a series of height-measuring edges having a predetermined relation to the platform, a height-gage having a vertically-sliding connection with the standard, an inclined slot in the dividing-plate, a pin projecting from the height-gage and into said slot whereby the pivotal movement of the dividing-plate moves the height-gage up or down, a vertically-movable carriage on the standard, a cutter secured to the carriage, and means for fixing the position of the carriage and cutter by coöperation with the height-measuring edges.

22. A butter-cutter comprising a rotary platform for holding a cake of butter, a vertical standard at the side of said platform, a vertically-extending dividing-plate pivoted near the bottom of said standard on a horizontal pivot, said dividing-plate being provided with a series of cut-away portions providing inclined height-measuring edges, a height-gage vertically adjustable on the upper end of the standard and having an arm adapted to engage the top of the cake of butter, the coöperating means between the pivoted dividing-plate and the height-gage whereby upon movement of the dividing-plate the height-gage is moved up or down, means for securing the dividing-plate in position when the arm of the height-gage has engaged the top of the cake of butter, a vertically-moving carriage, a projection on said carriage adapted to engage any one of the height-measuring edges, a cutter secured to the carriage, and means for securing the carriage to the standard in any adjusted position whereby the cutter is set in a predetermined relation to the platform.

24. A butter-cutter comprising a rotary platform for holding a cake of butter, a vertical standard at the side of said platform, a vertically-extending dividing-plate pivoted near the bottom of said standard on a horizontal pivot, said dividing-plate being provided with a series of height-measuring edges having a predetermined relation to the platform, a height-gage vertically adjustable on the upper end of the standard, coöperating means between the pivoted dividing-plate and the height-gage whereby upon movement of the dividing-plate the height-gage is moved up or down, a vertically-movable carriage on the standard, a cutter secured to the carriage, and means for fixing the position of the carriage and cutter by coöperation with the height-measuring edges, means for rotating the platform, and adjustable means for determining the arc of rotation of the platform whereby to sever from the cake of butter a predetermined volume or weight thereof.

25. A butter-cutter comprising a rotary platform for holding a cake of butter, a vertical standard at the side of said platform, a vertically-extending dividing-plate pivoted near the bottom of said standard on a horizontal pivot, said dividing-plate being provided with a series of height-measuring edges having a predetermined relation to the platform, a height-gage vertically adjustable on the upper end of the standard, coöperating means between the pivoted dividing-plate and the height-gage whereby upon movement of the dividing-plate the height-gage is moved up or down, a vertically-movable carriage on the standard, a cutter secured to the carriage, means for fixing the position of the carriage and cutter by coöperation with the height-measuring edges, a lever for rotating the platform, a stop for limiting the rotation of the platform in one direction, and an adjustable stop for limiting its movement in the opposite direction whereby to sever from the cake of butter a predetermined volume or weight thereof.

26. A butter-cutter comprising a rotary platform for holding a cake of butter, a vertical standard at the side of said platform, a vertically-extending dividing-plate pivoted near the bottom of said standard on a horizontal pivot, said dividing-plate being provided with a series of height-measuring edges having a predetermined relation to the platform, a height-gage vertically adjustable on the upper end of the standard, coöperating means between the pivoted dividing-plate and the height-gage whereby upon movement of the dividing-plate the height-gage is moved up or down, a vertically-movable carriage on the standard, a cutter secured to the carriage, means for fixing the position of the carriage and cutter by coöperation with the height-measuring edges, a lever for rotating the platform having means for engaging the platform whereby the lever when moved in one direction will move the platform but when moved in the opposite direction will move freely without disturbing the position of the platform, a fixed stop limiting the movement of the lever in one direction, a rotating graduating disk provided with a cam-stop for determining the starting-point of the lever and therefore the arc through which the platform may rotate whereby to sever from the cake of butter a predetermined volume or weight thereof.

27. In a machine for cutting butter or the like material, a base, a table supported on said base, a pan resting on said table and having a peripheral flange adapted to engage the outer edge of the table, the outer edge of the flange being turned up to form a circular trough around the edge of the pan.

28. In a machine for cutting butter or the like material, a base, a rotary table consisting of a plurality of separated radial arms and supported on said base, a pan resting on said table and having a peripheral flange adapted to engage the outer ends of the radial arms, the outer edge of the flange being turned up to form a circular trough around the edge of the pan.

29. In a machine for cutting butter or the like material, a base, a rotary table consisting of a plurality of separated radial arms and supported on said base, a pan resting on said table and having a peripheral flange adapted to engage the outer ends of the radial arms, the outer edge of the flange being turned up to form a circular trough around the edge of the pan, and ribs or ridges on the upper side of the pan.

813,859. **WIRE-STRETCHER.** FLOYD H. CARTER, Beloit, Wis. Filed Sept. 16, 1905. Serial No. 278,266.

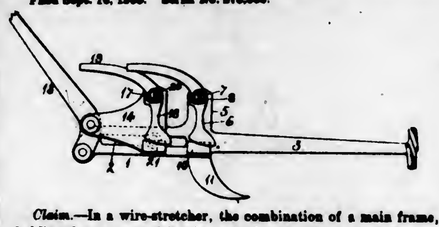

Claim.—In a wire-stretcher, the combination of a main frame, a holding-dog supported by the main frame, a lever pivotally connected to the main frame, the main frame provided with a lengthwise slot, a plate pivoted at one end with the lever and its other end slidably located in the slot, and a dog supported by the plate.

813,860. **KINETOSCOPE FOR ADVERTISING.** WILLIAM D. CARTER, Quincy, Ill. Filed Oct. 27, 1905. Serial No. 283,797.

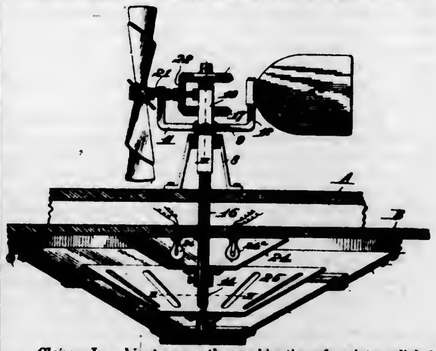

Claim.—In a kinetoscope, the combination of a picture-disk in the form of the frustum of a cone, a perforated disk arranged concentric and parallel to said picture-disk, means for rotating said disks in opposite directions, and a view-casing inclosing said disks and arranged concentric and parallel thereto, said casing comprising an upper sloping portion adapted to carry advertising matter, a lower sloping sight portion, and a straight bottom portion adapted to carry advertising matter, substantially as set forth.

813,861. **RAIL-JOINT.** CHARLES B. CHRISTIAN, Thurmond, W. Va. Filed May 26, 1905. Serial No. 262,266.

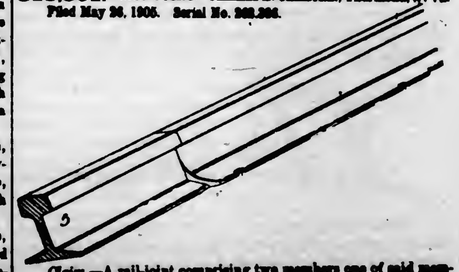

Claim.—A rail-joint comprising two members one of said members having an integral basal splice-tongue coextensive in width with the base thereof and formed with a transversely-convexed upper face, and the other member a basal recess to receive said tongue, said

recess being substantially coextensive in length and width with said tongue and formed with a curved wall to rest upon the curved face of the tongue, the latter-named member also being provided with thickened attaching-flanges overlying the sides of the tongue and formed with spike-notches.

813,862. AIR-ADMISSION DEVICE FOR LOCOMOTIVE FIRE-BOXES. CHARLES B. CLARK, New York, N. Y. Filed May 22, 1905. Serial No. 261,794.

Claim.—1. An air-admission device for locomotive fire-boxes comprising a closure for the fuel-opening therein, itself provided with an opening, an outwardly-swinging hood mounted on the face of the closure, and means for supporting the same in the different positions to which the lower edge thereof may be carried, embodying members having corresponding openings therein, and a device for insertion in opposite ones of said openings.

2. An air-admission device for locomotive fire-boxes comprising a closure for the fuel-opening therein, itself provided with an opening, an outwardly-swinging hood mounted on the face of the closure, means for supporting the same in the different positions to which the lower edge thereof may be carried, embodying forwardly-projecting members from the face of the closure having spaced openings therein, and a supporting-rod for the closure for insertion in corresponding ones of the openings.

3. An air-admission device for locomotive fire-boxes comprising a closure for the fuel-opening therein, itself provided with an opening, an outwardly-swinging hood mounted on the face of the closure, and means for supporting the same in the different positions to which the lower edge thereof may be carried, said hood being of outwardly-curved form and having end sections, and said means embodying forwardly-projecting members from the face of the closure constituting guides for the hood.

4. An air-admission device for locomotive fire-boxes comprising a closure for the fuel-opening therein, itself provided with an opening, an outwardly-swinging hood mounted on the face of the closure, and means for supporting the same in the different positions to which the lower edge thereof may be carried, the opening in the said closure being formed by bending portions of the closure inwardly, and said portions between them constituting a flue for imparting direction to the air passing into the fire-box.

5. An air-admission device for locomotive fire-boxes comprising a closure for the fuel-opening therein, itself provided with an opening, an outwardly-swinging hood mounted on the face of the closure, and means for supporting the same in the different positions to which the lower edge thereof may be carried, embodying forwardly-extending members having flanges lying against the face of the closure at opposite edges of the opening therein, and rivets securing said flanges to said closure.

813,868. HORSE-COLLAR FASTENER. JOHN C. CLARKE, Wausa, Nebr. Filed Aug. 3, 1905. Serial No. 272,869.

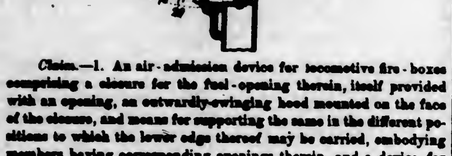

Claim.—1. A horse-collar fastener consisting of two base-plates, upwardly-projecting flanges at the adjacent edges of said plates, and a latch-bar pivoted longitudinally at one end to the body portion of one of said plates rearwardly of its flange, said latch-bar having a flange extending downwardly from its free end to swing over the upwardly-projecting flange of the opposite plate.

2. A horse-collar fastener consisting of two base-plates, one plate having a groove in its front edge, the other plate provided with a corresponding rib on its front edge to fit into said groove, a latch-bar pivotally secured longitudinally at its one end to the body portion of one of the plates rearwardly of its front edge and having a downwardly-projecting flange at its free end, and a vertical projection on the opposite plate over which the flanged end of said latch-bar is to be swung longitudinally and lock the adjacent edges of the two plates together.

3. A horse-collar fastener consisting of two plates, each plate having a flange or projection at its front edge, the flange of one plate having in its vertical face grooves on each side of a central filler or block, and the flange of the opposite plate having ribs to fit in said grooves and a cut-out or space to receive the aforesaid central filler, and a latch pivotally secured to one plate to swing over and engage the flange of the opposite plate.

4. A horse-collar fastener consisting of two base-plates, each plate having an upwardly-projecting flange at its front end, one of said flanges having a plurality of grooves in its front face and the flange on the opposite plate provided with ribs projecting from the front face of its flange fitting within the aforesaid grooves of the opposite flange, a latch-bar pivotally secured longitudinally at its one end to the body portion of one of said plates rearwardly of its flange and provided at its free end with a downwardly-projecting flange at its free end to be swung longitudinally over the upwardly-projecting flange of the opposite plate to lock the two plates together, and means for preventing the lateral displacement of the flanges when locked together.

5. A horse-collar fastener consisting of two plates, each plate provided with means for adjustably securing it to the ends of a collar and having a flange at its front edge, the flange of one plate having in its vertical face grooves on each side of a central filler or block, the flange of the opposite plate having ribs to fit in said grooves and a cut-out or space to receive the aforesaid central filler, one of the plates provided with vertically-projecting perforated ears, a latch having pintles pivotally secured in said ears, said latch swinging over and engaging the flange of the opposite plate.

813,864. DRILL-CHUCK. HARRY L. COFF, New London, Conn. Filed Sept. 3, 1904. Serial No. 223,180.

Claim.—1. A drill-chuck comprising a core, an enlarged portion at one end of said core, oblique openings through said enlarged portion, a sleeve surrounding said core, a collar surrounding said core within said sleeve and adapted to move lengthwise thereof, said collar having cylindrical openings extending transversely therethrough and openings extending through the face of said collar into said cylindrical openings of less diameter than said cylindrical openings, jaws circular in cross-section extending through said openings in the enlarged portion of said core and substantially disk-shaped heads on the inner ends of said jaws, said heads being adapted to enter the openings in the face of said collar when turned to a position parallel therewith, substantially as described.

2. A drill-chuck comprising a core, an enlarged portion at one end of said core, oblique openings through said enlarged portion, a sleeve surrounding said core, a collar surrounding said core within said sleeve and adapted to move lengthwise thereof, said collar having cylindrical openings extending transversely therethrough and openings extending through the face of said collar into said cylindrical openings of less diameter than said cylindrical openings, jaws circular in cross-section extending through said openings in the enlarged portion of said core and substantially disk-shaped heads on the inner ends, of said jaws, said heads being adapted to enter the openings in the face of said collar when turned to a position parallel therewith and means for preventing said jaws from being turned, substantially as described.

813,865. CURTAIN-FIXTURE. JOHN CRAMER, Lima, Ohio, assignor of one-half to Theodore Feist, Lima, Ohio. Filed Apr. 27, 1905. Serial No. 257,780.

Claim.—1. A combination-fixture comprising a slotted body-plate bent at one end to form an arm having an aperture therein and rebent to form a keeper portion and a pole-supporting bracket comprising a strip bent to form a tongue for connection with said supporting portion, and a shoulder to rest thereon.

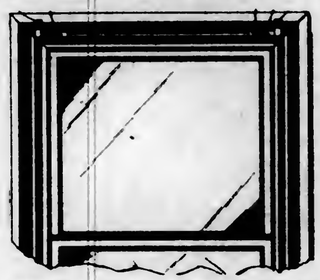

2. A combination-fixture comprising a slotted body-plate bent at one end to form an arm having an aperture therein and rebent to form a keeper portion, said keeper portion being folded upon itself to form a socket, and a pole-supporting bracket having a tongue to enter said socket and a shoulder to rest thereon.

813,866. TRACE-TIGHTENER. GEORGE S. DAVEY, Frankfort, Mich. Filed Aug. 26, 1904. Serial No. 223,167.

Claim.—1. A device of the kind described, consisting of a substantially U-shaped guide provided with means for securing the same in position, in combination with a slidable clevis, lateral extensions on the base of said clevis adapted to engage and loosely embrace lateral extensions on the upper parts of said guide, a pin 2, movement of said clevis and pin being parallel to said guide, resilient means tending to draw and normally maintain the clevis near the rear end of said guide, and a stop and arm arranged in the path of the clevis and pin adapted to simultaneously engage the base of the clevis and upper part of the pin respectively.

2. A device of the kind described, consisting of a substantially U-shaped guide provided with means for securing the same in position, in combination with a slidable clevis, lateral extensions on the base of said clevis adapted to engage and loosely embrace lateral extensions on the upper parts of said guide, a pin 2, movement of said clevis and pin being parallel to said guide, resilient means tending to draw and normally maintain the clevis near the rear end of said guide, a stop and arm arranged in the path of the clevis and pin adapted to simultaneously engage the base of the clevis and the upper part of the pin respectively, and an extension of the arm adapted to engage the pin and maintain the clevis against strain or displacement while sliding on the guide

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813,867. MICROMETRICAL ADJUSTMENT FOR PRINTING-FILM FRAMES. BENJAMIN DAY, West Hoboken, N. J. Filed Apr. 28, 1905. Serial No. 257,462.

Claim.—1. The combination of a locally-threaded stub-shaft journaled in a casing at both ends with a revoluble milled protractor operating or turning said stub-shaft at one end and a fixed collar at the other end to hold said stub-shaft loosely in position, an internally-threaded carriage through which the threaded portion of said stub-shaft passes, fitting its threads easily, and a powerful spiral spring encircling one end of the stub-shaft and tensioning the threads of the carriage against the threads of the stub-shaft and likewise of the collar where it bears on the outside of the casing, thus bringing pressure to bear on the threads of the carriage so as to take up the backlash of the threads when the stub-shaft is rotated and at the bearings of the collar where it impinges on the outside of the casing.

2. The combination of a milled-head protractor provided with an annular passage, a boss entering this annular passage and rigidly mounted upon the stud against which the milled-head protractor revolves, and a screw passing directly through the milled-head protractor and into this annular passage, which, when the milled-head protractor is turned in either direction the movement of the threaded pintle, is stopped by the screw striking the boss.

3. The combination of a casing, a carriage movably mounted therein and provided with a thread, a revoluble stub-shaft mounted partially within said casing and provided with a thread engaging said thread of said carriage, means for turning said revoluble stub-shaft, a spring mounted within said casing and engaging said carriage for the purpose of tensioning the same relatively to said stub-shaft, and means connected with said carriage for supporting a frame.

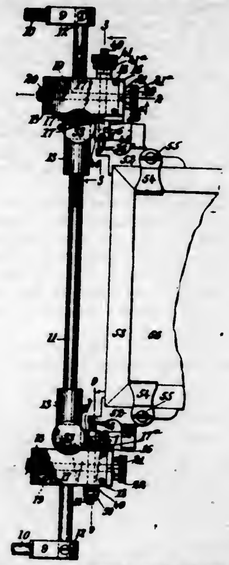

4. The combination of a supporting-rod, a sleeve mounted thereupon, a dolly connected with said sleeve, a spring for tensioning said dolly, and a screw for forcing said dolly into engagement with said supporting-rod.

5. The combination of a casing, a carriage mounted therein, a pintle engaging said carriage and adjustable relatively thereto, a spring for tensioning said pintle relatively to said carriage, a lug mounted upon said carriage, a protractor for measuring movements of said pintle relatively to said carriage, said protractor being provided with a revoluble head, and a member mounted upon said revoluble head and adapted to engage said lug.

6. The combination of a pintle serving as a journal for supporting an angularly-movable frame, a carriage provided with a lug for supporting said pintle, a spring for tensioning said pintle relatively to said carriage, a protractor provided with a revoluble member for adjusting the position of said pintle relatively to said carriage, and means for limiting the range of said protractor so as to maintain the tension of said spring approximately constant.

7. The combination of a casing, a stub-shaft mounted therein and adapted to be rotated, said stub-shaft being provided with a thread, a collar mounted upon said stub-shaft and engaging said casing so as to prevent longitudinal movements of said stub-shaft in one direction, a carriage mounted within said casing and provided with a thread engaging said thread of said stub-shaft, said casing being thus rendered movable by rotation of said stub-shaft, a spring encircling said stub-shaft and engaging said casing and said carriage, and a bearing connected with said carriage for supporting a printing-film.

8. The combination of a pintle, one end of which is threaded, a collar mounted upon said pintle, a comparatively strong spiral spring encircling said pintle and bearing at one end of said spring against said collar, a stop for supporting the other end of said spring, a revoluble milled-head protractor threaded internally to fit the threaded end of said pintle and bearing against said stop, a longitudinal guide-boss attached to said pintle and radiating laterally therefrom, and means for preventing angular movement of said guide-boss.

9. The combination of a frame for supporting a printing-film or the like, a pintle for supporting said frame, a boss mounted upon said pintle and extending radially therefrom to prevent rotation thereof, guide mechanism engaging said boss and allowing the same to travel in the general longitudinal direction of said pintle but not to move

angularly, and a micrometrical adjusting device for moving said pintle in the general direction of its axis, thereby securing a fine adjustment.

10. The combination of a supporting-rod, a casing mounted thereupon, a sleeve slidably mounted within said casing, a screw connected with said sleeve and adapted to move toward and from said supporting-rod, a dolly mounted intermediate of said screw and said rod so as to be forced against the latter, and mechanism connected with said casing for supporting a frame.

11. The combination of a carriage provided with depending lugs having apertures therethrough, a pintle disposed loosely within said apertures and provided with a threaded end, a revoluble member mounted upon said pintle and provided with a thread engaging said thread of said pintle for causing said pintle to travel in the general longitudinal direction of its axis relatively to said carriage, and a longitudinal guide-boss mounted upon said pintle and projecting laterally therefrom, for the purpose of engaging a portion of said carriage serving as a guideway therefor.

12. The combination of a carriage provided with a guideway, a pintle supported by said carriage and provided with a journal for supporting a printing-film frame or the like, a boss mounted upon said pintle and projecting laterally therefrom into said guideway so as to prevent rotation of said pintle and yet to move freely in the general longitudinal direction of said pintle, micrometric mechanism for moving said pintle in the general direction of the length thereof, and means for supporting said carriage.

13. The combination of a casing, a stub-shaft revolubly journaled therein and having a comparatively loose bearing-contact therewith, said stub-shaft being provided with a thread, a collar mounted upon said stub-shaft and engaging said casing so as to prevent movements of said stub-shaft in the general direction of the length of the axis thereof, a carriage mounted within said casing and provided with a thread engaging said thread of said stub-shaft, a spring for tensioning said stub-shaft relatively to said casing so as to limit the main friction due to rotation of said stub-shaft to points of engagement only, and a bearing connected with said carriage for supporting a printing-film or the like.

14. The combination of a casing, a carriage movable relatively thereto and provided with a thread, a stub-shaft provided with a thread engaging said thread of said carriage, a collar mounted upon said stub-shaft and engaging said casing, a spring engaging said casing and said carriage so as to take up the play between said stub-shaft and said carriage, a bearing connected with said carriage and adapted to support a printing-film frame or the like, and a member connected with said stub-shaft whereby the latter may be rotated.

15. The combination of a supporting member provided with an aperture, a pintle mounted upon said supporting member and adapted to move relatively thereto for supporting a printing-film frame or the like; a boss mounted upon said pintle and projecting radially therefrom through said aperture in said supporting member to prevent said pintle from turning, said boss being comparatively long so that its outer end may be readily observed by the operator, and a revoluble member threaded upon said pintle and engaging said carriage for adjusting said pintle in the general direction of the axis thereof.

813,868. TOBACCO-STRIPPER. MARTIN DELLER, Newark, N. J. Filed July 26, 1904. Serial No. 217,221.

Claim.—1. The combination with a drum presenting a circumferential slot with cutting edges on opposite sides thereof, and means for holding tobacco-leaves thereon, of a rotary cutter having a series of radial arms adapted to turn in said slot, each arm comprising a body portion flaring both from the hub radially outward and from its rear edge toward the forward edge, and knife-blades mounted on the sides of said body portion.

2. The combination with the circumferentially-slotted drum, and means for holding tobacco-leaves thereon, of a rotary cutter having a series of radial arms adapted to enter the slot of the drum, each arm comprising a body portion wedge-shaped in cross-section, with its widest edge forward, and knife-blades mounted on the sides of said body portion.

3. In a tobacco-stripping machine, the combination with a rotary drum, circumferentially slotted to receive the mid-rib of a leaf, and means for rotating said drum, of curved pressure-strips adapted to lie against the drum on opposite sides of said slot, and means for resiliently supporting said pressure-strips.

4. In a tobacco-stripping machine, the combination with a rotary drum, circumferentially slotted to receive the mid-rib of a leaf, and means for rotating said drum, of curved pressure-strips adapted to lie against the drum on opposite sides of said slot, rollers mounted upon said strips and lying between the same and across the drum-slot, and means for resiliently supporting said pressure-strips.

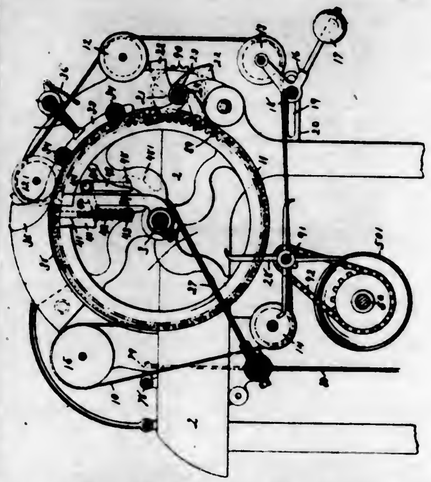

5. In a tobacco-stripping machine, the combination with a rotary drum, circumferentially slotted to receive the mid-rib of a leaf, and means for rotating said drum, of a resiliently-supported arm extending toward the drum in the plane of its slot and being bifurcated adjacent to said slot, a curved pressure-strip upon each bifurcation of said arm, adapted to lie against the drum at one side of its slot and having its forward and curved outward, and rollers mounted between and upon said pressure-strips and extending across the slot of the drum.

6. In a tobacco-stripping machine, the combination with a drum and means for imparting to said drum an intermittent rotary motion, of leaf-holding fingers normally lying against the surface of the drum, supporting means permitting said fingers to move away from the drum but always retaining their parallel relation thereto, and tripping means adapted to raise said fingers just before the drum stops in its rotary movement and release them just as the drum starts again.

7. The combination with the drum adapted to receive tobacco-leaves, of an arm fixed on the shaft of said drum and providing a radial slideway, a stem arranged in said slideway, and projecting through the drum-surface, a clamping-finger upon said stem outside the drum and parallel to the surface thereof, a spring normally forcing said stem toward the drum-shaft, and tripping means adapted to raise said fingers away from the drum at predetermined intervals.

8. In a tobacco-stripper, a frame, a shaft, a drum on said shaft and means for turning the same, an arm on the shaft providing a radial slideway, a stem in said slideway, a clamping-finger upon said stem outside the drum, a spring normally forcing said stem toward the shaft, a bent lever fulcrumed upon the drum and adapted at one end to engage said stem, and a pin upon the frame adapted to be engaged by the other end of said lever.

9. In a tobacco-stripper, a frame, a shaft, a drum on said shaft and means for turning the same, an arm on the shaft providing at one side of its outer end a tubular slideway having a slot in its side, a stem in said slideway having a lateral pin lying in said slot, a clamping member upon said stem outside the drum-surface, a stop upon the inner extremity of the stem, a coiled spring upon said stem between the slideway and said stop and adapted to force the stem inward toward the shaft, and tripping means upon the drum adapted to engage said pin of the stem.

813,869. SHAFT-CLUTCH. MARTIN DELLER, Newark, N. J. Filed Nov. 28, 1904. Serial No. 234,737.

Claim.—1. In a shaft-clutch, a member having a hub adapted to receive the shaft and being provided with a radially-projecting flange having a circular series of teeth upon one of its sides, a second member having a cross-piece adapted to be mounted directly upon the shaft and lie transversely thereof providing opposite arms which project radially from the shaft, levers fulcrumed intermediate of their ends one upon each arm of the cross-piece and adapted to swing in the plane determined by said arm and the shaft, each lever being adapted at its outer end or end farthest from the shaft to engage the said teeth of the first-mentioned member of the clutch and terminating at its opposite or inner end short of the shaft, and means for engaging said inner ends of the levers to swing the same, one of said clutch members being adapted to be fast on shaft and the other loose.

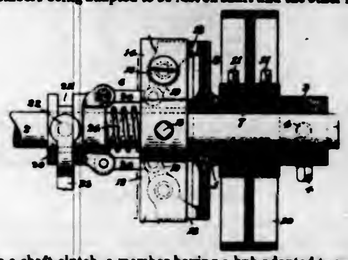

2. In a shaft-clutch, a member having a hub adapted to receive the shaft and being provided with a radially-projecting flange having a circular series of teeth upon one of its sides, a second member having a cross-piece adapted to be mounted directly upon the shaft and lie transversely thereof, providing opposite arms which project radially from the shaft, levers fulcrumed intermediate of their ends one upon each arm of the cross-piece and adapted to swing in the plane determined by said arm and the shaft, each lever being adapted at its outer end or end farthest from the shaft to engage the said teeth of the first-mentioned member of the clutch and terminating at its opposite or inner end short of the shaft, a controlling-sleeve on the shaft, and links substantially parallel to the shaft connecting the said inner ends of the levers to said sleeve, one of said clutch members being adapted to be fast on the shaft and the other loose.

3. In a shaft-clutch, a member having a hub adapted to receive the shaft and being provided with a radially-projecting flange having a circular series of teeth upon one of its sides, a second member having a cross-piece adapted to be mounted directly upon the shaft and lie transversely thereof, providing opposite arms which project radially from the shaft, levers fulcrumed intermediate of their ends one upon each arm of the cross-piece and adapted to swing in the plane determined by said arm and the shaft, each lever being adapted at its outer end or end farthest from the shaft to engage the said teeth of the first-mentioned member of the clutch and terminating at its opposite or inner end short of the shaft, a controlling-sleeve on the shaft, a coiled spring adapted to surround the shaft between said cross-piece and controlling-sleeve, and links outside said spring and substantially parallel to the shaft connecting the inner ends of the levers to the sleeve, one of said clutch members being adapted to be fast on the shaft and the other loose.

813,870. EXTENSIBLE SPRING-ROLLER. LOUIS J. DEMARE, Torrington, Conn., assignor, by direct and mesne assignments, to The Torrington Novelty Manufacturing and Supply Company, Torrington, Conn., a Corporation of Connecticut. Filed Nov. 28, 1904. Serial No. 234,790.

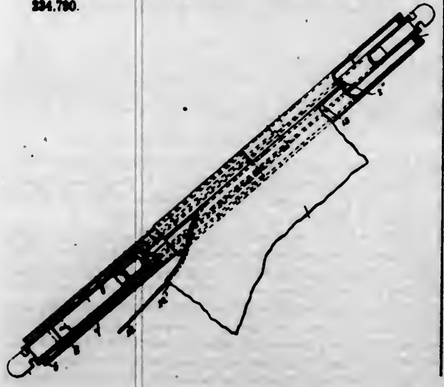

Claim.—1. A telescoping spring-roller comprising in combination, an exterior telescoping member, an inner telescoping member provided with a longitudinal slot, a sleeve slidably mounted on the inner member and secured to the exterior member, and a spring one of whose ends is secured to said sleeve and whose other end enters said slot.

2. In a telescoping spring-roller, the combination of a pair of telescoping tubes constituting an exterior member, a pair of telescoping tubes constituting an inner member, studs extending from the inner member and upon which the exterior member is mounted, and a spring interposed between said members.

3. In a telescoping spring-roller, the combination of a pair of telescoping tubes constituting an exterior member, plates at the ends of said member, a pair of telescoping tubes constituting an inner member, slotted studs extending from the inner member and upon which said plates are mounted, and a spring interposed between said members.

4. In a telescoping spring-roller, the combination of a pair of telescoping tubes constituting an exterior member whose parts are relatively immovable radially, a similar telescoping inner member which is provided with a longitudinal slot, studs extending from the inner member and upon which the exterior member is rotatably mounted, a sleeve slidably mounted upon the inner member and which is secured to the exterior member, and a spring one of whose ends is secured to said sleeve and whose opposite end enters said slot.

813,871. WARDROBE. PATRICK DOWD, New York, N. Y. Filed June 20, 1905. Serial No. 265,881.

Claim.—1. A wardrobe provided with a series of counterbalanced partitions, slidable in its casing.

2. A wardrobe provided with a series of opposing slideways, and partitions of less height than the height of the wardrobe, which partitions are mounted in said slideways, guide-pulleys carried by the casing, cables attached to the said partitions and passed over the said pulleys, and weights attached to the ends of the said cables.

3. In a wardrobe, a casing, counterbalance-partitions having vertical sliding movement in said casing, said partitions being provided with series of vertical ribs dividing them into compartments, and a hook in each of the said compartments.

4. In a wardrobe, a casing provided with side pockets open at the top and slideways upon its inner face, partitions of less height than the height of the casing mounted to slide in the said slideways, each partition being divided into a series of compartments by vertical parallel ribs, a hook in each of the said compartments, pulleys secured within the casing at the upper open portion of the pockets, cables attached to the upper end portions of the partitions, which cables are passed over the said pulleys into the said pockets, and weights attached to the lower ends of the said cables.

813,872. LAND-MARKING MONUMENT. JOHN H. DOWNS, New York, N. Y. Filed Jan. 23, 1905. Serial No. 242,262.

2. As a new article of manufacture, a pressed wear-plate of the character described having a projection at its upper side, and a seat

means for effecting the vertical adjustment of said brushing device, said outer and intermediate roll, a buffer secured to said lower jaw

813,872. LAND-MARKING MONUMENT. JOHN H. DOWNS, New York, N. Y. Filed Jan. 23, 1905. Serial No. 242,242.

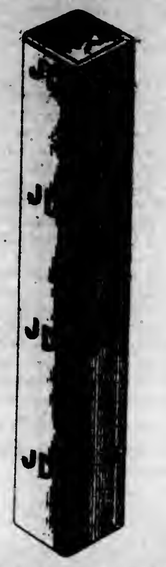

Claim.—The herein-described monument for marking property-lines consisting of a hollow outer shell 1, of rectangular cross-section and of equal diameter from end to end and having rounded corners, said shell being formed of vitrified clay, a cement filling 3 molded within the shell 1, longitudinally-disposed metallic stiffening-rods 4 embedded within the cement filling, said rods having their ends bent inwardly at right angles to anchor the rods in place, identification-marks arranged on the sides of said outer shell, and a center mark arranged in the cement filling in the upper end of the same, essentially as described.

813,873. ADJUSTABLE SWITCH-ROD. WILLIAM H. ELLIOT, St. Louis, Mo., assignor to Elliot Frog & Switch Company, East St. Louis, Ill., a Corporation. Filed Dec. 29, 1905. Serial No. 293,693.

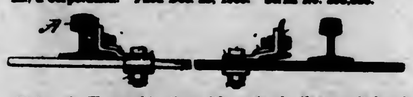

Claim.—1. The combination with a pair of railway switch-point rail-sections, of a bracket connected to one of said switch-point rail-sections, a switch-rod having a polygonal aperture therein, an eccentric-block seated in said polygonal aperture, and a bolt passing through said bracket and eccentric-block, substantially as set forth.

2. The combination with a pair of railway switch-point rail-sections, of a bracket connected to one of said rail-sections, a switch-rod having a star-shaped aperture therein, an eccentric-block of star shape fitting in said aperture, and a bolt passing through said bracket and said eccentric-block, substantially as set forth.

3. The combination of a pair of railway switch-point rail-sections, a bracket secured to one of said rail-sections and having a U-shaped arm, a switch-rod fitting within the U-shaped arm of said bracket and having a polygonal aperture therein, a polygonal eccentric-block seated in said polygonal aperture, and a bolt passing through said U-shaped arm and said eccentric-block, substantially as set forth.

813,874. WEAR-PLATE FOR RAILWAY-SWITCHES. WILLIAM H. ELLIOT, St. Louis, Mo., and JOHN J. TOUSSAINT, East St. Louis, Ill., assignors to Elliot Frog & Switch Company, East St. Louis, Ill., a Corporation. Filed Dec. 29, 1905. Serial No. 293,697.

Claim.—1. As a new article of manufacture, a pressed wear-plate of the character described having a projection, and a reinforcing-plate cut into said wear-plate at the location of said projection, substantially as set forth.

2. As a new article of manufacture, a pressed wear-plate of the character described having a projection at its upper side, and a seat beneath said projection, and a reinforcing-plate secured to said seat, substantially as set forth.

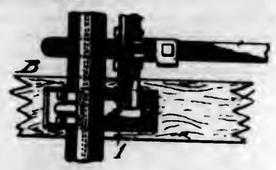

3. As a new article of manufacture, a pressed wear-plate of the character described having a projection at its upper side and a seat beneath said projection, and a reinforcing-plate having angle-joint engagement with said wear-plate within said seat, substantially as set forth.

813,875. APPLIANCE AND FIXTURE FOR RAILROAD RAILS AND TIES. FRANK W. FINK, Maneyo Corners, and PHILIP S. VAN WIE, Amsterdam, N. Y. Filed Sept. 28, 1904. Serial No. 226,541.

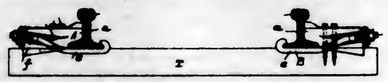

Claim.—1. A device of the character described comprising a block one end of which is provided with an overhang adapted to engage the side of a rail, whereby vertical adjustment of the latter is permitted, and an adjustable hook-bolt carried by said block.

2. A device of the character described comprising a block one end of which is provided with an overhang adapted to engage the side of a rail, whereby vertical adjustment of the latter is permitted, a hook-bolt carried thereby, and means for adjusting said bolt relatively to said block.

3. A device of the character described comprising a block one end of which is provided with an overhang adapted to engage the side of a rail, whereby vertical adjustment of the latter is permitted, said block being provided with a chamber or recess, and an adjustable hook-bolt having a stem located in said chamber or recess.

4. A device of the character described comprising a block one end of which is provided with an overhang adapted to engage the side of a rail, whereby vertical adjustment of the latter is permitted, said block being provided with a chamber or recess, and a nut working on said stem.

5. A device of the character described comprising a block one end of which is provided with an overhang adapted to engage the side of a rail, whereby vertical adjustment of the latter is permitted, said block being provided with a chamber or recess, a hook-bolt having a threaded stem located in said recess, a nut working on said stem, and a cushioned washer interposed between said nut and said block.

6. A device of the character described comprising a block one end of which is provided with an overhang adapted to engage the side of a rail, whereby vertical adjustment of the latter is permitted, means for securing said block to a tie, a hook-bolt and means for clamping said bolt against the rail.

7. A device of the character described comprising a flange-block provided with converging grooves terminating in a chamber or recess, a yoke-like hook-bolt having arms located in said grooves, and a stem located in said chamber or recess, and means for adjusting said bolt relatively to said block.

813,876. ATTACHMENT FOR LEATHER-STAKING MACHINES. EUGENE F. PEAR, New York, N. Y., assignor of one-half to F. F. Slocomb & Co., a Corporation of Delaware. Filed Aug. 30, 1905. Serial No. 276,269.

Claim.—1. In a leather-staking machine, an upper jaw carrying an outer roll thereon, a lower jaw having a brushing device thereon, said roll and brushing device being in substantial alinement and coacting with each other.

2. In a leather-staking machine, an upper jaw carrying an outer roll thereon, a lower jaw having a brushing device thereon, and means for effecting the vertical adjustment of said brushing device.

3. In a leather-staking machine, an upper jaw carrying an outer roll thereon, a lower jaw having a brushing device thereon, and means for effecting the vertical adjustment of said brushing device, said roll and brushing device being in substantial alinement and coacting with each other.

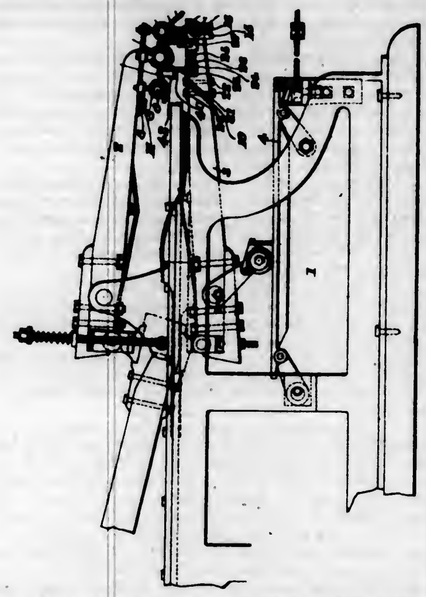

4. In a leather-staking machine, an upper jaw carrying inner and intermediate rolls, a lower jaw having a buffing device thereon, and means for adjusting the position of said buffing device with respect to said rolls.

5. In a leather-staking machine, an upper jaw carrying inner and intermediate rolls, means for effecting independent vertical and lateral adjustment of said inner roll, a lower jaw having a buffing device thereon, and means for adjusting the position of said buffing device with respect to said rolls.

6. In a leather-staking machine, an upper and lower jaw, an inner, outer and intermediate roll attached to said upper jaw, a brush attached to said lower jaw, a blade secured to said lower jaw between said intermediate and outer rolls and a buffer secured to said lower jaw between said inner and intermediate rolls.

7. In a leather-staking machine, an upper and lower jaw, an inner, outer and intermediate roll attached to said upper jaw, said intermediate roll being larger than said inner and outer roll, a brush attached to said lower jaw, a blade secured to said lower jaw between said intermediate and outer rolls and a buffer secured to said lower jaw between said inner and intermediate rolls.

8. In a leather-staking machine, an upper and lower jaw, an inner, outer and intermediate roll attached to said upper jaw, a brush adjustably attached to said lower jaw, a blade adjustably secured to said lower jaw between said intermediate and outer rolls and a buffer adjustably secured to said lower jaw between said inner and intermediate rolls.

9. In a leather-staking machine, an upper and lower jaw, an inner, outer and intermediate roll adjustably secured to said upper jaw, a brush adjustably secured to said lower jaw under said outer roll, a blade adjustably secured to said lower jaw between said outer and intermediate rolls, and a buffer adjustably secured to said lower jaw between said inner and intermediate rolls.

10. In a leather-staking machine, an upper and lower jaw, an inner, outer and intermediate roll attached to said upper jaw, a brush secured to said lower jaw beneath said outer roll, a blade secured to said lower jaw between said outer and intermediate roll, a buffer secured to said lower jaw between said inner and intermediate roll and means for independently adjusting said brush with respect to said outer roll.

11. In a leather-staking machine, an upper and lower jaw, an inner, outer and intermediate roll secured to said upper jaw, a brush secured to said lower jaw, a blade secured to said lower jaw between said outer and intermediate roll, a buffer secured to said lower jaw between said intermediate and inner rolls and means for adjusting said buffer and blade with respect to said brush.

12. In a leather-staking machine, an upper and lower jaw, an inner, outer and intermediate roll secured to said upper jaw, means for independently adjusting each of said rolls, a brush secured to said lower jaw, a blade secured to said lower jaw between said outer and intermediate rolls, a buffer secured to said lower jaw between said inner and intermediate rolls and means for independently adjusting said buffer.

13. In a leather-staking machine, an upper and lower jaw, an inner, outer and intermediate roll secured to said upper jaw, said intermediate roll being larger than said inner and outer rolls, a brush adjustably secured tosaid lower jaw under said outer roll, a blade adjustably secured to said lower jaw between said intermediate and outer rolls, a buffer adjustably secured to said lower jaw between said inner and intermediate rolls and means for adjusting said buffer and said blade.

14. In a leather-staking machine having an upper and a lower jaw pivotally supported, a brushing device secured to the lower jaw, a plate fastened to the latter, perching and buffing devices secured on said plate and rolls secured to the upper jaw and adapted to hold the skin in engagement with said devices.

15. In a leather-staking machine having an upper and a lower jaw, pivotally supported, a brushing device adjustably secured to the lower jaw, a plate adjustably fastened to the latter, perching and buffing devices adjustably secured to said plate and rolls rotatably mounted on the upper jaw adapted to hold the skin in engagement with said device.

16. In a machine of the character described, a plate, slots in said plate, a perching device secured to the latter, a buffing device adjustable on said plate and located in the rear of said perching device, a brushing device in front of the latter adjustably secured to said lower jaw, each of said devices being independently adjustable, and a series of rolls rotatably mounted on the upper jaw and adapted to retain the skin in engagement with said devices as required.

17. In a machine of the character described, a plate adjustably secured to the lower jaw, a buffing device thereon, lugs on said plate, a bracket adjustably attached to said lugs, a staking device carried by said bracket, a brushing device adjustably secured to said jaw beyond said bracket and rolls mounted on the upper jaw adapted to retain the skin in engagement with said devices.

813,877. INSTRUMENT FOR REMOVING RIBS. ALBERTUS W. PRESTHUS and JAN SCHOUSHAKER, Leiden, Netherlands. Filed Jan. 7, 1905. Serial No. 240,116.

Claim.—1. An instrument for the separation and cutting through of ribs, comprising a pair of tongs, a hook carried by one member, said hook being approximately at right angles to the member and projecting in a direction away from the opposing member, and a knife carried by the said opposing member and having movement over the outer face of the hook.

2. An instrument for the separation and cutting through of ribs, comprising a pair of tongs, on one member of which at the outer end is a hook standing at right angles to the member, for encircling the rib while the other member likewise at the outer end is supplied with a flat knife standing at right angles thereto, said knife working in a guide on the member having the hook.

3. An instrument of the character described, comprising two members pivoted together intermediate of their ends, a knife jointed to the end of one member and projected inwardly, and a hook projecting outwardly from the end of the other member and over the outer face of which the knife has guided movement.

4. An instrument of the character described, comprising two members pivoted together intermediate of their ends, a knife secured to the end of one member and projecting inwardly, said knife being provided with a groove on its inner face, an inwardly-projecting toe on the end of the other member and having a projection en-

tering the groove of the knife, and an outwardly-projecting hook on the end of a member having the toe.

5. In an instrument of the character described, the combination with pivoted shanks, one of which is provided with a recess in its end, of a knife carried by said shank and coacting with the other shank, said knife being provided with spaced projections between which the recessed end of the shank extends, and a pin carried by the projections and engaging the recess of said shank.

6. In an instrument of the character described, the combination with pivoted shanks, of an inwardly-projecting knife secured to the end of one shank and provided with a longitudinal groove on its inner face, and an inwardly-projecting toe on the end of the other shank and provided with a projection corresponding in shape to the groove of the knife.

813,878. **CELLULOSE SOLUTION.** HENRI W. FREDERICK, Bleton, Belgium. Filed Aug. 23, 1905. Serial No. 275,226.

Claim.—1. The process for the production of solutions of cellulose consisting in subjecting cellulose of any origin to the dissolving action of solutions of cupric oxid alkylamin, substantially as described.

2. The process for the production of solutions of cellulose consisting in subjecting disintegrated cellulose of any origin to the dissolving action of solutions of cupric oxid alkylamin, substantially as described.

3. The process for the production of solutions of cellulose consisting in moistening cellulose with hot water, pressing, treating with a solution of caustic soda, adding copper sulfate, filtering, triturating the residue and adding a solution of an alkylamin, substantially as described.

4. The process for the production of solutions of cellulose consisting in moistening cellulose with hot water, pressing, treating with a solution of caustic soda, adding copper sulfate, filtering, triturating the residue and adding a solution of monomethylamin, substantially as described.

5. As a new composition of matter solutions containing cellulose and cupric oxid alkylamin, substantially as described.

6. As a new composition of matter solutions containing cellulose and cupric oxid monomethylamin, substantially as described.

813,879. **SYSTEM OF CONTROL FOR ELECTRIC MOTORS.** CHARLES D. GILPIN, Cleveland, Ohio, assignor to The Electric Controller & Supply Company, Cleveland, Ohio, a Corporation of Ohio. Filed Oct. 6, 1905. Serial No. 281,651.

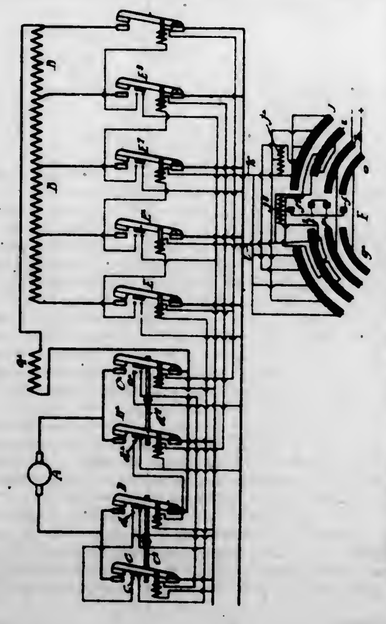

Claim.—1. A system including a motor, means for reversing the same, speed-varying means including a series of independent electromagnetic switches, with a master-controller connected to said apparatus by but two conductors, and including means for governing the operation of said reversing and speed-varying means, substantially as described.

2. A system including a motor, means for controlling the same including speed-varying means and a reversing device, with a master-controller distant from said apparatus but connected thereto by but two conductors, said controller being connected to current-supply mains independently of the remainder of the system and constructed to govern the operation of the reversing and speed-varying means, substantially as described.

3. A system including a motor, a reversing switch or switches therefor, a body of resistance having controlling-switches, actuating means for said switches, with a master-controller having connections for governing the operation of the reversing and the resistance-controlling switches, and being connected to said apparatus by but two conductors, substantially as described.

4. A system including a motor, two pairs of switches connected to serve as a reversing device for said motor, a body of resistance, a series of controlling-switches therefor, a device for operating each of said switches, and a master-controller for governing the actuation of said devices, the elements of said controller, as well as said devices, being interconnected to permit of the use of but two conductors between the controller and the said switches, substantially as described.

5. A motor-controlling system including electromagnetic resistance-controlling switches, auxiliary switches controlled by said main switches and each connected in circuit with the coil of a switch designed to operate after the switch which controls it, current-supply mains adjacent to the switches, a master-controller relatively distant from the switches, independent connections from the master-controller to current-supply mains, and connections between the master-controller and the coils of the resistance-controlling switches, one end of each of the coils of successive switches being alternately connected through the auxiliary switches to different supply-mains adjacent to the switches and the other end of each of said coils being alternately connected through the master-controller to the mains at said controller, substantially as described.

6. A motor-controlling system including electromagnetic switches, auxiliary switches controlled thereby and each connected in circuit with the coil of a switch designed to operate after the switch which controls it, current-supply mains adjacent to the switches, successive switch-actuating coils being alternately connected to supply-mains of different polarity through said auxiliary switches, a master-controller, current-supply mains connected to said controller, and two conductors connecting said controller and the coils of the resistance-controlling switches, said master-controller including means whereby said two conductors are alternately connected to supply to a switch coil or coils a current of sufficient magnitude to actuate the switch thereof, substantially as described.

7. A motor-controlling system including a body of resistance, a series of electromagnetic controlling-switches therefor, a master-controller, and conductors connecting the controller and the coils of said switches, with connections between the said coils and other connections to the controller whereby the operation of said controller causes said conductors to carry to a switch coil or coils a current of a magnitude sufficient to operate the switch or switches thereof, substantially as described.

8. A motor-controlling system including a body of resistance, a series of electromagnetic controlling-switches therefor, a master-controller, two conductors connecting said controller and the coils of said switches, other conductors between the said coils, whereby the operation of the controller causes said two conductors to be supplied with a current of a magnitude sufficient to operate the switches, and means for causing said coils to be successively actuated, substantially as described.

9. A motor-controlling system including a body of resistance, a series of electromagnetic resistance-controlling switches, a master-controller, conductors connected between the controller and the coils of the switches, and connections whereby the operation of said controller causes said conductors to alternately be supplied with a current of sufficient magnitude to operate the switch or switches therefor, with means for cutting down the current flowing through the conductor not so supplied to an extent sufficient to maintain closed the switches already closed but insufficient to close an open switch, substantially as described.

10. A motor-controlling system including a body of resistance, a series of electromagnetic resistance-controlling switches, a master-controller, conductors connected between the controller and the coils of the switches, and connections whereby the operation of said controller causes said conductors to alternately be supplied with a current of sufficient magnitude to operate the switch or switches therefor, with means for cutting down the current flowing through the conductor not so supplied to an extent sufficient to maintain closed the switches already closed but insufficient to close an open switch, substantially as described.

11. A motor-controlling system including a series of resistance-controlling electromagnetic switches, of which certain have auxiliary switches each in circuit with the coil of a switch designed to operate after it, one end of alternate coils being connected to one supply-main, and one end of the remaining coils being connected to a second supply-main, two conductors respectively connected to the second ends of said two sets of coils, with a master-controller connected to supply-mains and to said conductors having means whereby said conductors may at will be connected to the supply-mains in said controller to actuate said coils, substantially as described.

12. A system including a motor, a reversing switch or switches therefor, a body of resistance having controlling-switches, actuating means for said switches, with a master-controller having connections for governing the operation of the reversing and the resistance-controlling switches, there being direct connections from the current-supply mains to said controller and other independent connections from said mains to the switch-actuating means, substantially as described.

813,880. **AXLE-BEARING.** JOHN K. GOURDIN, Pineville, S. C., assignor of one-half to Robert L. Montague and Robert P. Tucker, Charleston, S. C. Filed Sept. 15, 1905. Serial No. 278,698.

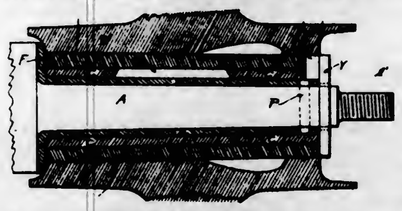

Claim.—1. The combination substantially as herein described, of the spindle, the spindle-skein fitted over the spindle and having at its inner end the outwardly-turned flange, the cross-pin for holding the skein on the spindle, the hub-skein fitting over the spindle-skein and provided with an opening or openings for lubricant, and having in its outer end a slot, said hub-skein overlying the cross-pin for securing the spindle and spindle-skein together, whereby to prevent displacement of said pin, the hub, the hub-boxing fitted over the hub-skein, and covering the lubricant-opening therein and provided in its outer end with a slot coinciding with that in the hub-skein, and the washer fitted over the spindle and provided on its inner side with a lug entering the coincident slots in the hub-skein and boxing, all substantially as and for the purposes set forth.

2. The combination with a hub, of a skein fitted therein and having an opening formed through it, and constituting a lubricant-chamber, and the hub-boxing fitted over said skein and covering the lubricant-chamber therein, coincident slots being formed in the outer ends of the boxing and skein and a washer having a lug entering said slots, substantially as set forth.

3. The combination with the hub, of the boxing held therein, and the hub-skein within the boxing, said boxing and skein being provided at their outer ends with coincident slots, and a locking device having a lug fitted in said slots for keying the boxing and skein together, substantially as set forth.

4. The combination with the spindle and the spindle-skein held thereon, of the hub, the hub-skein fitting over the spindle-skein, and the boxing within the hub and fitting over the hub-skein, said boxing and hub-skein being provided in their outer ends with coincident slots, and a washer having an inwardly-projecting lug entering the coincident slots, substantially as set forth.

813,881. **FERTILIZER-DISTRIBUTER.** JOHN K. GOURDIN, Pineville, S. C., assignor of one-half to Robert L. Montague and Robert P. Tucker, Charleston, S. C. Filed Sept. 15, 1905. Serial No. 278,694.

Claim.—1. The combination substantially as herein described, of the framing, the crushing and force-feed rollers corrugated longitudinally and meshing at their meeting faces, and having the depth of their corrugations comparatively shallow relative to the width of same, whereby gradual curvature is provided in the hollows of the corrugations, bearings and operating means for said rollers, the scraping-blades bearing at their free edges against the corrugated rollers, the pivoted saddles supporting said blades, the spring devices for actuating the blades, the hopper over the corrugated rollers, the feed device above the rollers and arranged intermediate the same and having the inclined feed-boards adjustably supported, the bottom boards arranged in front and rear of the feed device and movable toward and from the feed-boards, and the boards below the movable bottom boards and having flexible valve-plates bearing against their respective rollers, all substantially as and for the purposes set forth.

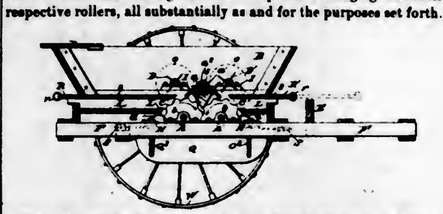

2. The combination substantially as herein described, of corrugated rollers meshing at their meeting faces and having the depths of their corrugations comparatively shallow relative to the width of the same, whereby a gradual curvature of the hollows of the corrugations is secured, and scraping-blades operating at their free edges in contact with their respective corrugated rollers, substantially as set forth.

3. The combination with the corrugated rollers, of the scraping-blades bearing at their free edges in contact with their respective rollers, the rocking saddles to which said blades are secured and springs operating upon the rocking saddles to press the blades against their rollers, substantially as set forth.

4. The combination of the hopper, the corrugated rollers meshing at their meeting faces, the feed device above the rollers and having the inclined feed-board discharging at their lower edges to their respective rollers, and the bottom boards movable toward and from their respective feed-boards whereby to vary or shut off the feed, substantially as described.

5. The combination in a fertilizer-distributer with the hopper, and the feed-rollers, of movable bottom boards whereby to shut off or regulate the feed, and boards below said movable bottom boards and provided at their inner edges with yielding devices bearing against the rollers, substantially as set forth.

6. The combination of the corrugated rollers meshing at their meeting faces, the feed device above said rollers and having inclined feed-boards discharging to their respective rollers, spring-actuated scraper-blades bearing against the rollers, the bottom board movable toward and from the inclined feed-boards, whereby to shut off or regulate the feed, said boards being arranged in series side by side, the boards below the movable bottom boards and having at their inner edges yielding devices bearing against their respective rollers, the pivoted boards extending longitudinally beneath the corrugated rollers, and means for adjusting the angle of said boards, substantially as set forth.

7. The combination of the hopper, the corrugated rollers, the feed device above the corrugated rollers, the boards forming a false bottom for the hopper and movable toward and from the feed device, the boards below the false-bottom boards and provided at their inner edges with yielding devices bearing against the corrugated rollers, and the scrapers below the latter boards and bearing against the rollers, substantially as set forth.

8. The combination with the framing, the hopper and the corrugated rollers meshing at their meeting faces, of the feed device above the corrugated rollers and provided with inclined feed-boards delivering at their lower edges to their respective rollers and adjustable toward and from said rollers, and the bottom boards movable in the hopper toward and from the feed-boards, substantially as set forth.

9. The combination with the framing, the hopper and the corrugated rollers, of a series of boards arranged side by side and movable longitudinally with relation to the corrugated rollers, whereby to control the feed of material thereto substantially as set forth.

813,882. **ELECTRIC SWITCH AND SIGNAL APPARATUS.** LAWRENCE GRIFFITH, Yonkers, N. Y. Filed Nov. 6, 1901. Serial No. 281,515.

Claim.—1. In electric apparatus for operating switches, signals, and the like comprising an electric indicator and a plurality of electrically-operated motion-plates or devices to be moved, means for preventing the action of the indicator while there is electric energy supplied to the operative means of any of said motion-plates.

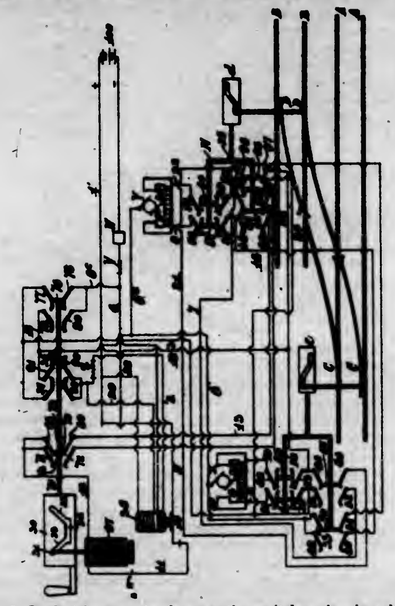

2. In electric apparatus for operating switches, signals and the like having a plurality of electrically-operated motion-plates or devices to be moved, means for shunting current away from one or more of the operative means of said motion-plates when the apparatus is at normal or reverse positions.

3. In electric apparatus for operating switches, signals and the like having a plurality of electrically-operated motion-plates or devices to be moved, the combination of an electric indicator, means for shunting current away from one or more of the operative means of said motion-plates, with means for preventing the action of the indicator while there is electric energy supplied to any of the operative means of said motion-plates.

4. In electric apparatus for operating switches, signals and the like having a plurality of electrically-governed motion-plates or devices to be moved, means for shunting current away from one or more of the governing devices of said motion-plates when the apparatus is at normal or reverse position.

5. In electric apparatus for operating switches, signals, and the like, comprising an electric indicator and a motion-plate or device to be moved electrically operated in two directions, electric means separate from the indicator for preventing the action of the indicator while there is electric energy supplied to the operative means of said motion-plate.

6. In electric apparatus for operating switches, signals, and the like, comprising an electric indicator and a motion-plate or device to be moved electrically operated in two directions, means for preventing the action of the indicator while there is electric energy supplied to the operative means of said motion-plate, which consists of a relay adapted to break the electric connection of said indicator at said time.

7. In electric apparatus for operating switches, signals, and the like, having a motion-plate or device to be moved electrically operated in two directions, means for shunting current away from the operative means of said motion-plate when the apparatus is at normal or reverse position.

8. In electric apparatus for operating switches, signals, and the like, having an electrically-operated motion-plate or device to be moved, the combination of an electric indicator, means for shunting current away from the operative means of said motion-plate, with means for preventing action of the indicator while there is electric energy supplied to the operative means of said motion-plate.

9. In electric apparatus for operating switches, signals, and the like, having an electrically-operated motion-plate or device to be moved, the combination of an operator's switch for said apparatus having contacts for shunting current on the circuit of the operative means of said motion-plate when the apparatus is at normal or reverse position back to battery, with a fuse or cut-out device in said operative circuit.

813,883. **APPARATUS FOR CARBONATING LIQUIDS.** PAUL G. HAAS, New Brunswick, N. J., assignor to James Donald Pickard, East Orange, N. J. Filed Nov. 4, 1904. Serial No. 231,251.

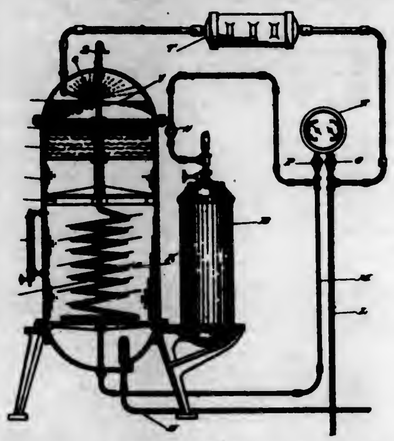

Claim.—1. A liquid-carbonating apparatus, comprising a containing-tank for liquid and gas under pressure; a liquid-inlet-governing float, arranged to carry a nozzle adapted to spray the liquid upwardly through an atmosphere of compressed gas, to form a combination of the liquid and the gas.

2. In a liquid-carbonating apparatus comprising a tank for liquid and gas under pressure, an upwardly-coiled perforated gas-inlet pipe, having attached spiral deflecting-plates, and a superimposed perforated distributing-diaphragm to diffuse compressed gas through a body of liquid held in a receptacle

3. In a liquid-carbonating apparatus comprising a tank for liquid and gas under pressure, a gas distributing and diffusing inlet comprising a vertical perforated coil with spiral deflecting-plates attached thereto, having a superimposed casing containing a series of corrugated deflecting-plates surmounted by a stratum of porous material, to cause the union of liquid and gas held in the containing-receptacle, by bringing them into intimate contact under pressure.

813,884. **MACHINE FOR SPINNING AND TWISTING FIBROUS MATERIALS.** GEORGE O. HADFIELD, Fall River, Mass. Filed June 21, 1904. Serial No. 213,493.

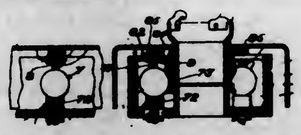

Claim.—1. In a machine for spinning or twisting fibrous materials, in combination, a rotating spinning-ring, a ring-rail, and antifriction-rolls on the said ring-rail rotating on vertical axes, each roll having journal-bearings at the top and bottom thereof, and the peripheral portions of said rolls engaging with the corresponding portion of the ring to support the ring both vertically and horizontally.

2. In a machine for spinning or twisting fibrous materials, in combination, a rotating spinning-ring, a ring-rail, and antifriction-rolls on the said ring-rail supporting the ring both vertically and horizontally, the said rolls rotating on vertical axes and each roll having journal-bearings at the top and bottom thereof, the periphery of each roll making contact with that of the ring at two points only.

3. In a machine for spinning or twisting fibrous materials, in combination, a rotating spinning-ring, a ring-rail, antifriction-rolls on the said ring-rail rotating on vertical axes, the peripheral portions of said rolls engaging with the corresponding portion of the ring, a step-bearing for each roll furnished with an oil-cup from which the lubricant travels under the influence of centrifugal force to the contacting portions of the rolls and ring, and an upper journal-bearing for each roll.

4. In a machine for spinning and twisting fibrous materials, in combination, a rotating spinning-ring, a ring-rail, antifriction-rolls on the said ring-rail, the said rolls rotating on vertical axes, and having the peripheral portions thereof in engagement with the corresponding portion of the ring at two points only, a step-bearing for each roll furnished with an oil-cup from which the lubricant travels under the influence of centrifugal force to the contacting portions of the rolls and ring and an upper journal-bearing for each roll.

5. In a machine for spinning or twisting fibrous materials, in combination, a rotating spinning-ring, a ring-rail, antifriction-rolls on the said ring-rail rotating on vertical axes and having the peripheral portions thereof in engagement with the peripheral portion of the ring, each roll making contact with the ring at two points only, the walls of one of the contacting peripheral portions extending tangentially with respect to the opposing peripheral portion at the points of contact, the step-bearing for each roll furnished with the oil-cup, and the upper journal-bearing for each roll.

6. In a machine for spinning or twisting fibrous materials, in combination, a rotating spinning-ring, a ring-rail, antifriction-rolls rotating on vertical axes, each roll having journal-bearings at top and bottom thereof and the peripheral portions of the rolls engaging with the corresponding portion of the ring to support the ring both vertically and horizontally, and the adjustable brackets or stands mounted upon the ring-rail and provided with the said journal-bearings.

813,885. **SIGNAL-LAMP.** ALEXANDER H. HAMBLAN, Jr., St. Louis, Mo. Filed Feb. 3, 1905. Serial No. 243,731.

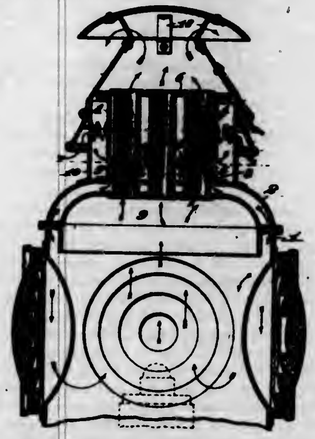

Claim.—In a signal-lamp, the combination of a main casing having an apertured top, an inner air-inlet member surmounting said casing at the location of the perforation in the casing and having perforations in its lower end, a top plate secured to the upper end of said inlet member, a plurality of vent-tubes secured in said top plate and extending downwardly within the inlet member, a bell secured to the lower ends of said vent-tubes and spaced from the casing, and an outer air-inlet member surmounting said casing and surrounding the inner air-inlet member; said outer inlet member having perforations in its upper end.

813,886. **BRIDLE.** HERMAN I. HAMMERSMITH, Hodgenville, Ky. Filed June 19, 1905. Serial No. 265,654.

Claim.—1. A bridle comprising side strips, a crown-piece, a brow-band and blinds or winkers secured to the side strips along a portion of their inner edges, the free ends of the blinds or winkers extending upwardly and bent forwardly and a winker-brace connecting the extreme ends of the blinds or winkers and attached to the brow-band whereby the main portions of the blinds or winkers are held braced in an outward direction at approximately right angles to the side strips.

2. A bridle comprising side strips, a crown-piece, a brow-band, blinds or winkers secured to the side strips along a portion of their inner edges, their free ends extending upwardly and inwardly and bent forwardly, and a winker-brace connecting the extreme ends of the blinds or winkers, and attached to the brow-band, whereby the main portions of the blinds are held braced in an outwardly direction at approximately right angles to the side strips.

3. A bridle, consisting of side strips, a crown-piece, and a brow-band mounted on the crown-piece, said brow-band having loops thereon, blinds or winkers secured to the side strips and extending outwardly, one end of the blinds projecting upwardly and inwardly, and means engaging said projecting portion, and passing over the brow-band and through the loops.

813,887. **TRAIN-CONTROLLING DEVICE.** JOHN C. HARDENBERGH, Cleveland, Ohio, assignor of one-fourth to Edwin S. Gaylord, Cleveland, Ohio. Filed May 20, 1905. Serial No. 261,716.

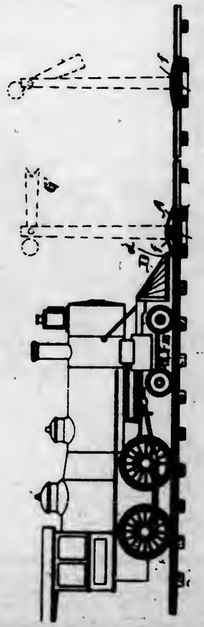

Claim.—1. The combination of a spring-bar having a pair of supporting-legs rigidly secured to railroad-ties, and means on the locomotive adapted to engage the upper surface of said bar, and means for holding said bar down in idle position.

2. A spring-bar bent to present an upward bulge and inwardly-extending legs whereby the upper surface of the bar may be inclined

upward in front of an approaching train or may be drawn down into idle position, combined with a rock-shaft for drawing the bar into such idle position.

3. In a train-controlling device, the combination of a spring-trip located at the track and an arm on the locomotive adapted to control an air-pipe, said arm being adapted to engage the upper surface of the trip and be swung thereby and means for bending the spring-trip downward out of the path of said arm.

4. In a train-controlling system, the combination of a spring-trip consisting of a bar normally bulging upwardly and having supporting-feet approaching each other, and a rock-shaft connected with said bar to draw it down to idle position, and an arm on the locomotive adapted to engage the upper surface of the bar.

5. A trip comprising a bar of spring metal bent to present intermediately an upward bulge and having its two ends bent downwardly and inwardly for feet, there being a downwardly-depending member on the under side of the intermediate part of the bar, and a rock-shaft engaging such member to draw the trip down into idle position.

6. In a train-controlling device, the combination of a trip located at the track and an arm on the locomotive adapted to control an air-pipe, said arm operating to open the pipe on alternate actuations, and means under the control of the engineer for giving intermediate actuations to said arm.

7. In a train-controlling system, a spring-trip consisting of a bar normally bulging upwardly and having supporting-feet approaching each other, and a rock-shaft connected with said bar to bend it down to idle position, combined with a semaphore and a common operating system for the semaphore and trip.

813,888. **PRESS FOR PRINTING AND EMBOSSING.** CYRUS HAWKINS, Camden, N. J., assignor, by direct and mesne assignments, to The Hawkins Wilson Company, a Corporation of Pennsylvania. Filed Dec. 6, 1904. Serial No. 235,691.

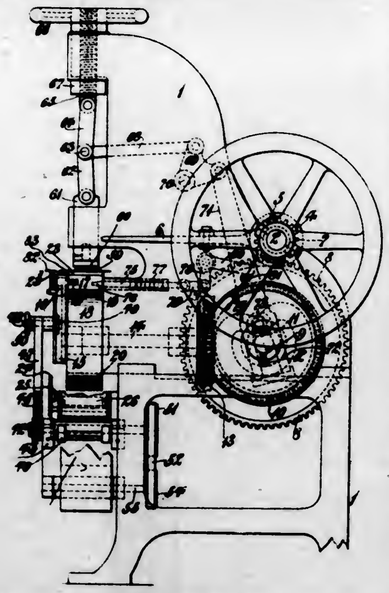

Claim.—1. In a device of the character described, a reciprocating platen, a holder adapted to receive a bed to coöperate therewith and a rotary arm carrying said holder, said holder being pivotally mounted on said arm.

2. In a device of the character described, a reciprocating platen, a holder adapted to receive a bed to coöperate therewith, a rotary arm carrying said holder and a track upon which said holder is adapted to be guided.

3. In a device of the character described, a reciprocating platen, a holder adapted to receive a bed to coöperate therewith and a rotary arm with which said holder is radially connected.

4. In a device of the character described, a die-holder, a rotary arm carrying said die-holder and a track upon which said die-holder is adapted to move, means for holding said die-holder in contact with said track and means for leading the end of the die-holder in conformation with the track.

5. In a device of the character described, a reciprocating platen, a holder adapted to receive a bed to coöperate therewith, a rotary arm carrying said holder, a track upon which said holder is adapted to move and yieldable means for keeping said holder in contact with said track.

6. In a device of the character described, a reciprocating platen, a holder adapted to receive a bed to coöperate therewith, a rotary arm, a sliding carrier mounted on said arm and carrying said holder, a guide for said holder and means for yieldingly holding said carrier and said arm in proper position with respect to each other.

7. In a device of the character described, a die-holder, an arm, means for imparting rotary motion to said arm, a sliding carrier mounted on said arm and supporting said die-holder, a track upon which said die-holder is adapted to travel, said track having upper and lower flattened faces, a wiper adjacent the lower flattened face, and means for holding said die-holder in contact with said track in its movement thereon.

8. In a device of the character described, a reciprocating platen, a holder adapted to receive a bed to coöperate therewith, a rotary arm, means for imparting movement to said arm, a sliding carrier mounted on said arm and carrying said holder, a guide for said holder and means actuated by the movement of said holder for inking the bed carried by said holder.

9. In a device of the character described, a die-holder, a rotary arm carrying said die-holder, a track upon which said die-holder moves, flattened for imparting motion to said die-holder in a right line and a stationary wiper with which the die is adapted to contact simultaneously with the right-lined movement of said holder.

10. In a device of the character described, a die-holder, a rotary arm carrying said die-holder, a track upon which said die-holder moves, flattened for imparting motion to said die-holder in a right line, a stationary wiper with which the die is adapted to contact simultaneously with the right-lined movement of said holder, and guides for said die-holder for holding the same in proper alinement during its passage over the wiper.

11. In a device of the character described, a die-holder, a rotary arm carrying said die-holder, a track upon which said die-holder moves, flattened for imparting motion to said die-holder in a right line a stationary wiper with which the die is adapted to contact simultaneously with the right-lined movement of said holder, and wiping material carried by said wiping device and movable thereon.

12. In a device of the character described, a die-holder, a rotary arm carrying said die-holder, a track upon which said die-holder moves, flattened for imparting motion to said die-holder in a right line, a stationary wiper with which the die is adapted to contact simultaneously with the right-lined movement of said holder, wiping material passing over said wiping device, and means for presenting a fresh surface of said material at each revolution of the die-holder.

13. In a device of the character described, a die-holder, a rotary arm carrying said die-holder, a track upon which said die-holder moves, means for imparting motion to said die-holder in a right line, a stationary wiper with which the die is adapted to contact simultaneously with the right-lined movement of said holder, wiping material passing over said wiping device, and means for presenting a fresh surface of said material at each revolution of the die-holder, said means being actuated by the movement of said rotary arm.

14. In a device of the character described, a die-holder, an arm, means for imparting rotary movement thereto, a sliding carrier mounted on said arm and pivotally connected with the said die-holder, a spring for retaining said sliding carrier and holder in proper position with respect to said arm, a track upon which said die-holder travels, and a second spring adapted to assist in holding said die-holder in proper contact with said track.

15. In a device of the character described, a die-holder, an arm, means for imparting rotary movement thereto, a sliding carrier connected with said arm and pivotally connected with said die-holder, a segment carried by said rotary arm, an inking-fountain, inking means movable with respect to said fountain, and a gear connected with said inking means adapted to be engaged by said segment to rotate said inking means during the passage of the die-holder.

16. In a device of the character described, a die-holder, a track upon which said die-holder is adapted to travel, said track having a flattened upper face a counter-die and a lock adapted to engage with said die-holder when in its proper position on said flattened surface beneath said counter-die.

17. In a device of the character described, a die-holder, a track upon which said die-holder is adapted to travel, said track having a flattened upper surface a counter-die and automatic means for locking said die-holder when in its proper position on said flattened surface beneath said counter-die.

18. In a device of the character described, a die-holder, a track upon which said die-holder is adapted to travel, said track having a flattened upper face a counter-die, automatic means for locking said die-holder when in its proper position on said flattened surface beneath said counter-die, and means for releasing said locking device at the proper time.

19. In a device of the character described, a die-holder, a track upon which said die-holder travels and having a flattened upper face, a recess in said die-holder and a beveled pin suitably actuated in order to enter said recess and lock the die-holder in position.

20. In a device of the character described, a reciprocating plunger, a die-holder, a rotary arm to which said holder is pivotally attached and means adapted to lock said holder, when in its proper position beneath said reciprocating plunger.

21. In a device of the character described, a reciprocating plunger, a die-holder, a track upon which said holder is adapted to travel, said track having a flattened upper face and means adapted to lock said holder, when in its proper position on said flattened surface beneath said reciprocating plunger.

813,889. **CAR-BRAKE.** JOSEPH F. HEISSER, Haines, Oreg. Filed Mar. 13, 1905. Serial No. 249,843.

Claim.—1. In brake mechanism of the class described, the combination of a car-body, wheels, a brake-beam, a movable frame carried by the car-body and connected with the beam, and toggle-levers arranged to actuate said frame.

2. In brake mechanism of the class described, the combination of a car-body, a truck, a brake-beam, a movable frame applied to the car-body and connected with the beam, coacting toggle-levers connecting the truck to the frame aforesaid, and means for actuating said toggle-levers.

3. In brake mechanism of the class described, the combination of a car-body, spaced brake-beams, a toggle connection between said brake-beams, and toggle-levers operably connected with the toggle connection aforesaid.

4. In a brake, the combination of a car-body, a truck therefor embodying front and rear axles, wheels supported by said axles, brake-beams at opposite ends of the truck, brake-shoes supported by said brake-beams and adapted to engage the wheels of the truck and to be moved by said wheels after being engaged therewith, frames pivoted to the car-body and having rigid connection with the brake-shoes aforesaid, and other brake-shoes operatively connected with the frames and arranged between the front and rear axles of the truck.

5. In brake mechanism of the class described, the combination of a car-body, spaced brake-beams, toggle-links connected with said brake-beams, a pintle-bar connecting the toggle-links aforesaid, and operating means carried by the car-body and operably connected with opposite ends of the pintle-bar aforesaid.

6. In brake mechanism of the class described, the combination of a car-body, spaced brake-beams, toggle-links connected with said brake-beams, a pintle-bar connecting the toggle-links aforesaid, a frame pivoted to the car-body, connections between said frame and the pintle-bar, and toggle-levers operably connected with the frame.

7. In brake mechanism of the class described, the combination of a car-body, a truck embodying front and rear axles, outer brake-beams at opposite ends of the truck for coöperation with the wheels, inner brake-beams arranged centrally of the truck, a toggle connection between the inner brake-beams, a movable frame carried by the car-body and operably connected with the toggle connection aforesaid, and means connecting the outer brake-beams with the movable frame.

8. In brake mechanism of the class described, the combination of a car-body, a truck embodying front and rear axles, outer brake-beams at opposite ends of the truck for coöperation with the wheels, inner brake means arranged centrally of the truck, a toggle connection between the inner brake-beams, a movable frame carried by the car-body and operably connected with the toggle connection aforesaid, means connecting the outer brake-beams with the movable frame, and toggle-levers operably connected with the movable frame and the truck for actuating the movable frame.

9. In brake mechanism of the class described, the combination of a car-body, front and rear trucks, a brake-beam supported by each of said trucks, a movable frame carried by the car-body adjacent each truck, a set of toggle-levers operably connecting the movable frame and the truck adjacent, and means for actuating the sets of toggle-levers of the trucks simultaneously.

813,890. **CLOVER-SEED-RECLEANING PROCESS.** SHIRL HERR, Lebanon, Ind. Filed Apr. 20, 1905. Serial No. 256,673.

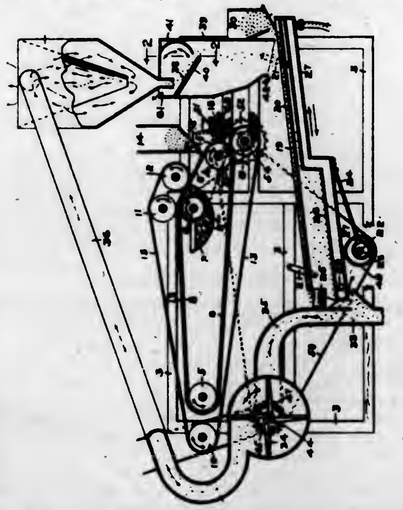

Claim.—1. The process of separating mixed seeds, which consists essentially in moistening the seeds, then bringing the seeds into contact with a comminuted material to which the undesirable seeds adhere but which material will not adhere to the good seeds, and then removing from the mass the undesirable seeds and material to which they adhere.

2. The process of separating mixed seeds, which consists essentially in moistening the seeds, then bringing the seeds into contact with a comminuted material to which the undesirable seeds ad-

here but which material will not adhere to the good seeds, then removing from the mass the undesirable seeds and material to which they adhere and then removing the remainder of said comminuted material from the good seeds.

813,891. LEAK-STOP. ARTHUR T. HUMMEL, Bradford, Pa. Filed May 2, 1905. Serial No. 258,858.

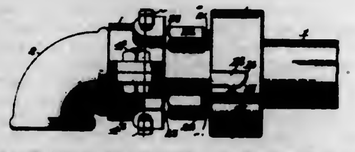

Claim.—1. The combination with an abutment-collar having a tapering bore, of a slip having a tapering outer face, a packing-collar carrying a packing-ring, and means causing a separation of the abutment-collar and the packing-collar to cause the slip to engage the pipes and the packing-ring to engage the joint to be packed.

2. The combination of a divided abutment-collar and a divided slip fitting within the bore of the collar.

3. The combination of a divided abutment-collar having a tapering bore, and a divided slip having a tapering outer face fitting within the bore of the collar.

4. The combination with a sectional abutment-collar, of a sectional slip fitting within the bore of the same, and means for securing a section of the slip to a section of the collar.

5. The combination with a sectional abutment-collar, of a sectional slip fitting within the bore of the same, and a dovetail connection between a section of the slip and a section of the collar.

6. The combination of a sectional abutment-collar having a tapering bore, a sectional slip having a tapering outer circumference and fitting within the bore of the collar, and means for securing a section of the slip to a section of the collar.

7. The combination of a divided abutment-collar having a tapering bore, and a divided slip fitting within the bore of the collar and having a tapering outer face and serrations on the interior.

8. The combination of the abutment-collar divided into sections and provided with non-circular pockets on one face thereof, and pressure devices comprising screws having non-circular heads adapted to be fitted in the pockets and turning-nuts having pointed ends.

9. The combination with the abutment-collar divided into two approximately semicircular sections, one of the sections having a lug on each side and the other section having a recess on each side to engage the lug and hold the sections together, of a tapering slip fitting the bore of the abutment-collar.

10. The combination with an abutment-collar divided into sections, of removable slip-sections carried by the sections of the collar.

11. The combination of a sectional abutment-collar having a tapering bore, means securing the sections together and permitting a separation of the sections by a relative lateral movement of the sections, and a slip having a tapering outer circumference, fitted within the abutment-collar.

813,892. WRENCH. JOHN W. HELLSCHER and WILLIAM F. STAHLEY, Kokomo, Ind. Filed Apr. 11, 1905. Serial No. 254,979.

Claim.—A wrench comprising a carrier, a fixed jaw supported thereby, a movable jaw having a shank arranged at an angle thereto and provided with an abutting face, an operating-handle pivoted to the carrier, whereby the latter is adapted to tilt thereon, said handle having a cam-face to engage the abutting face of the shank and swing the pivoted jaw, and an adjusting device on the carrier to engage the handle, whereby the carrier may be adjusted on the handle to regulate the normal distance between the jaws.

813,893. VALVE. MORITZ HOENVARD, Berlin, Germany. Filed Aug. 28, 1903. Serial No. 170,112.

Claim.—1. The combination of the valve-casing having a main valve-seat, a passage located on one side thereof and a cavity or recess adjacent to the passage; a valve adapted to seat on the main seat; and a trough-shaped ring positioned to cover the passage and overlap its walls when the main valve is closed and to connect the passage with the cavity after the main valve is open.

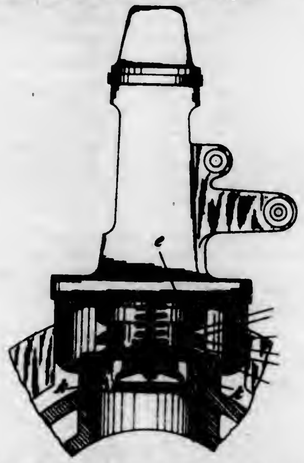

2. The combination of the valve-casing having a main valve-seat, a plurality of passages located on one side thereof, and a recess or cavity adjacent each passage; a valve adapted to seat on the main seat; and a plurality of trough-shaped members positioned to cover the passages when the main valve is closed and to connect the passages with the recesses or cavities after the main valve is open.

813,894. NURSERY-BOTTLE. BRIAN HOLLADAY, Richmond, Va. Filed June 10, 1904. Serial No. 211,974.

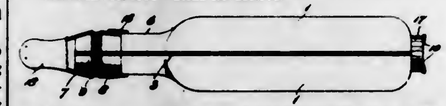

Claim.—1. As an article of manufacture, a bottle, comprising two longitudinally-separable sections having a temporary liquid-tight joint formed along their meeting edges, and a clamping means encircling the sections and serving to hold them together.

2. As an article of manufacture, a bottle, comprising two longitudinally-separable sections provided at their meeting edges with registering grooves, a removable packing located in the grooves, and a clamping means encircling the sections.

3. As an article of manufacture, a bottle comprising two separable longitudinal halves or sections, each comprising at one end the half portion of a neck and at its opposite end a half-round boss, and along its meeting edge having a groove, a packing located in the grooves, and clamping-rings fitting about the neck and bosses.

4. As an article of manufacture, a bottle comprising two longitudinal halves or sections, each half or section comprising a neck-section and a boss-section of a similar size, a packing inserted between the meeting edges of the sections, and clamping rings or bands encompassing the neck and boss sections.

5. As an article of manufacture, a bottle comprising two opposite longitudinal halves or sections, each half or section comprising a neck portion at one end and at the opposite end a half-boss having an inner beveled face, a suitable packing between the meeting edges of the two sections, and elastic rings or bands one of which encompasses the neck and another the two bosses.

6. As an article of manufacture, a bottle comprising opposing longitudinal halves or sections, and means for securing said halves or sections together, said bottle having its neck portion provided with an annular groove and in rear thereof reduced, and a rubber ring located in the reduced portion and adapted to become removably seated in the groove.

7. The opposite sections 1, 1, having grooves 2, neck 6 at one end provided with the reduced portions 7 and 8, an intermediate groove 9, and the half-bosses 10 at the opposite end, the packing within the grooves 2, the round rings 13 and 14 mounted respectively upon the neck and bosses, and suitable intermediate clamping-bands.

813,895. STREET AND STATION INDICATOR. DEAN A. HOLLENBECK, San Jose, Cal., assignor of one-half to Frank Check, San Jose, Cal. Filed Jan. 25, 1905. Serial No. 242,665.

Claim.—1. In a street or like indicator, cards having pins projecting from the ends of one side, disks mounted upon a horizontal revoluble shaft and having holes around the periphery to receive the pins, a ring turnably mounted upon the outer face of one of the disks, said ring forming a stop against which the ends of the pins contact and having a hole made through it to register with any of the pins and allow a card to be moved to disengage it from the disks.

2. In a street or like indicator, a shaft revoluble disks mounted thereon and having perforations around the periphery, cards having a length less than the distance between the disks and pins projecting from the ends of the cards near one side so as to enter the perforations, a ring fitting and turnable against the outer face of one of the disks, said ring having a hole made through it adapted to register with the pin of any card whereby the latter may be introduced or removed.

3. In a street or like indicator, a shaft revoluble disks mounted thereon and having perforations in their peripheries, cards having a length less than the distance between the disks and pins projecting from the ends of the cards near one side so as to enter the perforations, a ring fitting and turnable against the outer face of one of the disks, said ring having a hole made through it adapted to register with the pin of any card whereby the latter may be introduced or removed, stops against which the upper edges of the cards contact during the forward movement of the cards, an intermittently-operating mechanism by which the cards are disengaged singly from the stops and allowed to swing about the pivots into a pendent position.

4. In a street or like indicator, a shaft revoluble disks mounted thereon and having perforations in their peripheries, cards having a length less than the distance between the disks and having pins projecting from their ends near one side and adapted to enter the perforations, a ring fitting and turnable against the outer face of one of the disks and having a hole adapted to register with the pin of any card whereby the latter may be introduced or removed, stops against which the cards contact in their revolution toward the front and after passing the vertical plane, intermittently-acting mechanism for disengaging the cards singly from the stops to allow them to swing into a pendent position, and spring-latches over which the lower edges of the cards pass and by which they are retained in place.

5. In a street or like indicator, a carrier comprising horizontally-journaled disks having holes around their peripheries, cards with pins entering and loosely turnable in the holes, mechanism for intermittently rotating the disks, stops against which the cards contact after passing the vertical plane from the top of the carrier, said cards being individually released by each forward movement of the carrier, elastic latches engaging the lower edges of the cards as they fall into a pendent position, and rollers against which these edges move when passing downward.

813,896. CAR-LOCK. GUSTAVE HOLZ, Spicer, Minn. Filed Oct. 9, 1905. Serial No. 281,869.

Claim.—1. In an car-lock, the combination with a socket, of a yoke having a stem fitting said socket, said stem being bent at an angle to the plane of said yoke, and means for locking said car-lock against endwise movements with respect to said socket, when the said car-lock is in an operative position, substantially as described.

2. In an car-lock, the combination with a socket, of a yoke having a stem fitting said socket, said stem being bent at an angle to the plane of said yoke, means for locking said car-lock against endwise movement with respect to said socket, when the said car-lock is turned into an operative position, and arranged to be removed from said socket when the said car-lock is turned into an inoperative position, substantially as described.

3. In an car-lock, the combination with a socket, of a yoke having a stem fitting said socket, said stem being bent at an angle to the plane of said yoke, and said stem and said socket having a tongue and groove arranged to interlock, when the car-lock is turned into an operative position, substantially as described.

4. In an car-lock, the combination with a socket, of a yoke having a stem fitting said socket, said stem being bent at an angle to the plane of said yoke, said stem and said socket having a tongue and groove arranged to interlock, when said car-lock is turned into an operative position and arranged to permit endwise movement of said car-lock when the same is turned in an inoperative position, substantially as described.

5. In an car-lock, the combination with a socket 6 having a tongue 8, of a yoke 1 having a stem 2 fitting said socket 6, said stem 2 being bent at an angle to the plane of said yoke 1 and having an annular groove 3 adapted to receive the tongue 8 of said socket 2 when the car-lock is in an operative position, and having a notch 4 adapted to clear said tongue 8, to permit endwise movement of said car-lock when the same is turned in an inoperative position, substantially as described.

813,897. OVERSHOE-RETAINER. OCTAVE B. HUBBELL, Monroe, La. Filed Apr. 13, 1905. Serial No. 255,606.

Claim.—The herein-described overshoe-retainer comprising a yielding ball or loop shaped shoe-engaging strip 2 designed to extend under the shank of the overshoe and provided with loops 3 at its upper ends, and a spring-metal clip 4 passed through the loops 3 on said shoe-engaging strip to attach the same to the ankle of the wearer, said retainer being disconnected from the shoe, substantially as described.

813,898. AUTOMATIC BLOCK-SIGNAL SYSTEM FOR ELECTRIC RAILWAYS. GRAY W. JOHNSTON and ALEXANDER E. ACKERMANN, New York, N. Y. Filed Apr. 26, 1905. Serial No. 257,209.

Claim.—1. In a block-signal system for electric railways, electrically-controlled signaling devices in each block, a polarized relay in each block for controlling the circuits to said signaling devices, and means, automatically thrown into operation by the entrance of a car into a block, for causing a flow of current through the relay in the same block in a direction opposite to that which previously passed therethrough, whereby the armature of said relay will be shifted, the circuits to the signaling devices in the same block will be varied, and a different signal will be displayed.

2. In a block-signal system for electric railways, signaling devices in each block, electric circuits controlling said signaling devices, contacts forming the terminals of said circuits, a polarized relay for each block whose armature is movable between and adapted to engage said contacts for alternately making and breaking said circuits, and means, automatically thrown into operation by the entrance of a car into a block, for causing a flow of current through the relay in the same block in a direction opposite that which previously passed therethrough, as and for the purpose set forth.

3. In a block-signal system for electric railways, a line conductor, contact-strips at the entrance to each block adapted to be electrically connected with said conductor by a contact device carried by the car, return-circuit wires leading respectively from said strips, electrically-controlled signaling devices in each block, a polarized relay in each block for controlling the circuits to said signaling devices, and circuits between the return-wires of each two adjacent blocks including said relays, as and for the purpose set forth.

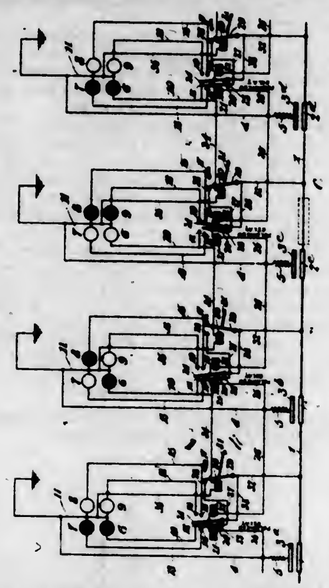

4. In a block-signal system for electric railways, a line conductor, contact-strips at the entrance to each block adapted to be electrically connected with said conductor by a contact device carried by the car, return-circuit wires leading respectively from said strips, signaling devices in each block, electric circuits controlling said signaling devices, contacts forming the terminals of said circuits, a polarized relay for each block whose armature is movable between and adapted to engage said contacts, for alternately making and breaking said circuits, and circuits between the return-wires of each two adjacent blocks, including said relays, as and for the purpose set forth.

5. In a block-signal system for electric railways, signaling devices for each block, a polarized relay in each block for controlling the circuits to said signaling devices, and means, automatically thrown into operation by the entrance of a car or train into a block, for closing circuits through the relays of two adjacent blocks in opposite directions.

6. In a block-signal system for electric railways, signaling devices for each block, electric circuits controlling said signaling devices, contacts forming the terminals of said circuits, a polarized relay for each block whose armature is movable between and adapted to engage said contacts for alternately making and breaking said circuits, circuits leading from each relay to opposite ends of the block in which it is located, and means, thrown into operation by the entrance of a car or train into a block, for successively closing the latter circuits, whereby a flow of current is automatically caused to flow through the relays of two adjacent blocks in opposite directions, as and for the purpose set forth.

7. In a block-signal system for electric railways, signaling devices for each block, electric circuits controlling said signaling devices, contacts forming the terminals of said circuits, a polarized relay for each block whose armature is movable between and adapted to engage said contacts, for alternately making and breaking said circuits, an additional pair of contacts in each block, one constituting a second terminal of the circuit to one of said signaling devices and the other being electrically connected to one of the contacts of the armature of said relay, a magnet included in an auxiliary circuit leading from the circuit of one of the signaling devices in the next adjacent block, an armature for said magnet normally held in engagement with one of said additional contacts but movable between and adapted to engage the other of said additional contacts, when said magnet is energized, and means, automatically thrown into operation by the entrance of a car into a block, for causing a flow of current through the relay in the same block in a direction opposite that which previously passed therethrough, as and for the purpose set forth.

8. In a block-signal system for electric railways, a line conductor, contact-strips, at the entrance to each block, adapted to be electrically connected with said conductor by a contact device carried by the car, return-circuit wires leading respectively from said strips, signaling devices in each block, electric circuits controlling said signaling devices, contacts forming the terminals of said circuits, a polarized relay for each block whose armature is movable between and adapted to engage said contacts, for alternately making and breaking said circuits; an additional pair of contacts in each block, one constituting a second terminal of the circuit to one of said signaling devices and the other being electrically connected to one of the contacts of the armature of said relay, a magnet in an auxiliary circuit leading from the circuit of one of the signaling devices in the next adjacent block, an armature for said magnet normally held in engagement with one of said additional contacts but movable between and adapted to engage the other of said additional contacts, when said magnet is energized, and circuits between the return-wires of each two adjacent blocks, including said relays, as and for the purpose set forth.

9. In a block-signal system for electric railways, electrically-controlled signal devices in each block, a polarized relay in each block for controlling the circuits to said signal devices, means automatically thrown into operation by the entrance of a car into a block, for causing a flow of current through the relay in the same block in a direction opposite to that which previously passed therethrough, whereby the armature of said relay will be shifted, the circuits to the signaling devices in the same block will be varied, and a different signal will be displayed, and a circuit closed by said relay for displaying a signal in a preceding block.

813,899. KETTLE. ARCHIBALD T. KERNS, Peoria, Ill. Filed Mar. 7, 1905. Serial No. 248,901.

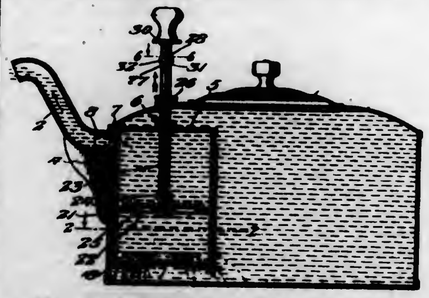

Claim.—1. The combination with a kettle, of a pump therein comprising a casing in open communication with the kettle-spout, a removable bottom for said casing, means for securing said bottom in position, a valve for said cylinder-bottom, arms connected to the valve and bearing against the cylinder-bottom for limiting the upward movement of the valve, a perforate piston movable lengthwise of the cylinder, a valve for said piston, means for limiting the upward movement of the valve, and a valve-stem connected with the piston and projecting through the kettle-top.

2. The combination with a kettle or the like, of a cylinder in open communication with the interior of the kettle, a piston within the cylinder, a projection from the cylinder engaging the interior of the kettle-spout, and a removable ring partially encircling the cylinder and removably engaging the kettle-wall.

3. The combination with a kettle or the like, of a pump therein comprising a cylinder removably secured at opposite ends to the kettle, said cylinder being open in communication with the kettle-spout at one end and kettle-body at the opposite end, and a piston within the cylinder and operable from without the kettle.

4. The combination with a kettle or the like, of a pump therein comprising a cylinder removably secured to the kettle, said cylinder being in open communication with the kettle-spout at one end and having valve communication with the kettle-body at the other end, a piston within the cylinder and means movable from without the kettle for operating the piston.

813,900. PROTECTING DEVICE FOR PNEUMATIC TIRES. EMILE LAPIERRE, Blood, France. Filed Sept. 2, 1905. Serial No. 276,886.

Claim.—1. A protecting device for pneumatic tires, formed by a strip of suitable material which is of sufficient width to wrap the cover of the pneumatic tire and to be secured between the flange of the rim and the flange of the said cover, and which is provided with flat heels practically at right angles with respect to the lateral portions; and hooking devices each composed of a metal plate having an outwardly-opening bight abutting on the flange of the rim of the wheel and provided with means by which it is secured to the flange of the protecting device.

2. A protecting device of a width enabling it to wrap the cover of the pneumatic tire, flanges formed at right angles on its edges to be nipped between the flange of the rim and the flange of the cover, and hooking devices each formed of a metal plate provided with a bight to abut on the flange of the rim and with a second bight to abut on the flange or heel of the protecting device, with means for securing the second bight on the protecting device.

3. In vehicle-wheels provided with pneumatic tires, a protecting device of sufficient width to be enabled to wrap the pneumatic tire, flanges formed at right angles on its edges, and hooking devices each formed of a metal plate provided with two bights opening in opposite directions, the one to abut on the flange of the protecting device, and the other and wider bight to abut on the flange of the rim of the wheel.

4. In a vehicle-wheel having a pneumatic tire, a hook to secure on the rim a protecting device provided with flanges, which hook is formed of a metal plate provided with a bight to abut on the rim of the wheel and with a second bight to abut on the flange of the protecting device, with rivet-holes and teeth to secure the same on the protecting device.

5. The combination with the rim of a vehicle-wheel having inwardly-extending flanges at its side edges, a pneumatic tire and cover for the same, which cover is provided with outer side flanges at its bottom portion, facing the flanges of the rim, a protective device for the tire, formed of suitable material of sufficient width to wrap the cover of the tire and having its lower edges carried out and held between the flanges of the tire cover and rim, and hooking devices each composed of a metal plate having an outwardly-opening bight which receives a flange of the rim, and means for attaching the plate to the protecting device where said device is located between the rim and the cover flanges.

6. A vehicle-wheel having forwardly-extending flanges at its outer side edges, a pneumatic tire having outwardly-extending side flanges located beneath the flanges of the rim, a protective covering for the tire, having its longitudinal edges carried outward and nipped between the flanges of the rim and the flanges of the tire, and locking devices for the protective covering, consisting of metal plates provided with bights which receive the flanges of the rim and bights which receive the longitudinal edges of the protective covering, and means for securing the second bights to the said protective covering.

813,901. MOLDING-MACHINE. PATTERSON G. LEMING, FRED EMERSON, and CHARLES W. GRANT, Urbana, Ill.; said Miller and Grant assignors to said Leming. Filed May 6, 1905. Serial No. 259,113.

Claim.—1. A block-molding machine having a pivoted frame, a mold thereon at a distance from the pivot of the frame, and two sills located at a distance from the pivot of the frame equivalent to the distance between the pivot and mold.

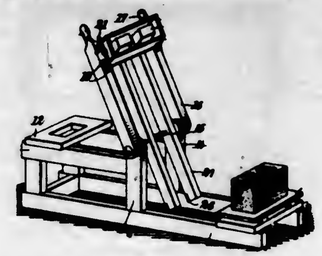

2. A block-molding machine having a pivoted frame, a mold thereon at a distance from the pivot of the frame, and two sills located at a distance from the pivot of the frame equivalent to the distance between the pivot and mold and on opposite sides of the pivot, whereby the frame is capable of carrying the mold from one sill to the other.

3. In a molding-machine, the combination of two sills, a frame pivoted at a point midway between them, a mold on the frame, a core, and means for automatically drawing the core from the mold when the frame is swung about its pivot.

4. In a molding-machine, the combination of two sills, a frame pivoted at a point midway between them, a mold on the frame, a core, and means for automatically drawing the core from the mold when the frame is swung about its pivot toward one sill; said means being constructed and adapted to operate before the mold reaches that sill.

5. In a molding-machine, the combination of two sills, a frame pivoted at a point midway between them, a mold on the frame, a core, and means for automatically drawing the core from the mold when the frame is swung about its pivot; said mold having separable walls, and spring-hinges by which the walls are connected to the main part of the mold.

6. In a molding-machine, the combination of two sills, a frame pivoted at a point midway between them, a mold on the frame, a core, and means for automatically drawing the core from the mold when the frame is swung about its pivot; said mold having separable walls, spring-hinges by which the walls are connected with the main part of the mold, and means for locking all of the walls in closed position.

7. In a molding-machine, the combination of a frame, a pallet-sill thereon, a tamping-sill, said sills being located at opposite ends of the frame and the tamping-sill being at a higher elevation than the pallet-sill, and a movable frame pivoted to the main frame at a point midway between said sills.

8. In a molding-machine, the combination of a frame, a pallet-sill thereon, a tamping-sill, said sills being located at opposite ends of the frame and the tamping-sill being at a higher elevation than the pallet-sill, a movable frame pivoted to the main frame at a point midway between said sills, and a mold located on said movable frame, the height of said mold being substantially equal to the distance in elevation of the two sills.

9. A molding-machine, comprising a pivoted frame, a mold thereon, a core, a bar connected with the core and pivotally mounted with respect to the frame, said bar having a projection, and means for engaging the projection to arrest the motion of the core while the frame is moving about its pivot.

10. A molding-machine, comprising a movable frame, a mold thereon, a core, a bar connected with the core, said bar having a projection, and means for engaging the projection to arrest the motion of the core while the frame is in motion.

11. In a molding-machine, the combination of a frame, a pallet-sill thereon, a tamping-sill, said sills being located at opposite ends of the frame and the tamping-sill being at a higher elevation than the pallet-sill, a frame movably mounted on the main frame, and a mold located on the last-named frame.

12. In a molding-machine, the combination of two sills, a frame movably mounted between them, a mold on the frame, a core, and means for automatically drawing the core from the mold when the frame is moved from one sill to the other.

13. In a molding-machine, the combination of a sill, a frame movably mounted adjacent thereto, a mold on the frame, a core, and means for automatically drawing the core from the mold when the frame is moved toward said sill, said means being constructed and adapted to operate before the mold reaches the sill.

813,902. HAT-FASTENING. DANIEL LEBEN, New York, N. Y. Filed Apr. 11, 1905. Serial No. 255,033.

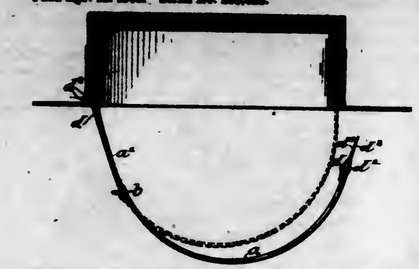

Claim.—A children's hat-fastening, comprising fastening devices adapted to be detachably secured to the hat-body, each consisting of a wire eye provided with means for piercing the hat-body so as to secure the device in position thereon, an elastic cord or band having one end secured to one fastening device and having the other end passed through the other fastening device and back on the body portion of the cord or band so as to form a loop, and a buckle at the junction of the free end with the body portion of the cord or band.

813,908. GRINDING-MILL. POUL T. LUNDGAARD, New York, N. Y. Filed July 1, 1904. Serial No. 214,869.

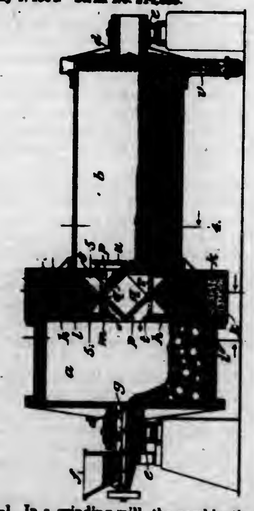

Claim.—1. In a grinding-mill, the combination of a grinding-drum to receive the material to be ground, a separator having a compartment formed therein to receive the partly-ground material from said drum and provided with means within the compartment for separating finely-ground material from the tailings, and a second grinding-drum to receive the finely-ground material from the separator and pulverize the same.

2. In a grinding-mill, the combination of a grinding-drum, means to deliver thereto material to be ground, a separator having a compartment formed therein, means to deliver the partly-ground material to the separator, and a second grinding-drum, said separator having means within the compartment adapted to deliver the finely-ground material to the second-named drum and also having means within the compartment adapted to return the tailings to the first-named drum.

3. In a grinding-mill, the combination of two grinding-drums, and an intermediate separator having a compartment formed therein, said separator having screens and partitions within its compartment and having inlet-openings meeting into the compartment, the separator being also provided with discharge-openings on one side of the screens communicating with one of the drums, and having discharge-openings on the other side of the screens communicating with the other drum.

4. In a grinding-mill, the combination of two grinding-drums, and an intermediate separating-drum, said separating-drum having therein a plurality of screens and having partitions behind each of said screens to catch the sifted matter, the drum also having inlet-openings near its periphery and discharge-openings near its center, both said inlet and discharge openings being on one side of the screens and communicating with one of the drums, the separating-drum also having discharge-openings upon the other side of the screens and communicating with the other of the drums.

5. In a grinding-mill, the combination of two grinding-drums and an intermediate separating-drum, said separating-drum having a plurality of curved screens, and having inlet-openings near its periphery and discharge-openings near its center, both said inlet and discharge openings being upon the concave sides of said screens and communicating with one of the drums, the separating-drum also having a partition upon the other side of each of the screens upon which the sifted matter is received and having a discharge-opening between each screen and the corresponding partition communicating with the other drum.

6. In a ball grinding-machine, the combination of a grinding-drum having relatively large and heavy balls, a second grinding-drum having relatively small and light balls, and an intermediate separating-drum, said separating-drum having within it a plurality of screens and a partition behind each of said screens to catch the sifted matter and also having inlet-openings near its periphery and discharge-openings near its center, both said inlet and discharge openings being upon one side of the screens and communicating with the drum having the larger balls, the separating-drum also having discharge-openings upon the other side of the screens communicating with the drum having the smaller balls.

7. In a grinding-mill, the combination of two grinding-drums, and an intermediate separating-drum, said separating-drum having within it a plurality of screens and partitions extending from near its center to its periphery and having inlet-openings on one side of the screens toward or near the periphery communicating with one of the drums, and also having two sets of discharge-openings toward or near the center, one set being on the same side of the screens and communicating with the same drum as the inlet-openings and the other set being on the other side of the screens and communicating with the other drum.

8. In a grinding-mill, the combination of two grinding-drums, and an intermediate separating-drum, said separating-drum having therein a plurality of screens and partitions extending from near its center to its periphery and having inlet-openings on one side of the screens toward or near the periphery communicating with one of the drums, and two sets of inclined plates within the separating-drum, the plates in one set extending from the same side of the screens on which the inlet-openings from one drum to the separating-drum are located, and the plates in the other set extending from the other side of the screens to the other drum.

9. In a grinding-mill, the combination of two grinding-drums, and an intermediate separating-drum, said separating-drum having therein a plurality of screens extending from near its center to its periphery, a plurality of partitions extending from the ends of the screens to the center of the separating-drum, a plurality of partitions extending from the center of the separating-drum to its periphery, the separating-drum having inlet-openings on the forward side of the screens communicating with one drum, and two sets of inclined plates, the plates in one set extending from the spaces between the forward sides of the screens and the second-named partitions to the same drum with which the inlet-openings communicate, and the other set extending from the spaces between the rear sides of the screens and the second-named partitions to the other drum, one set of plates crossing the first-named partitions which are cut off in front of the plates and the other set of plates crossing the second-named partitions which are cut off above the plates, and a central cylindrical structure through which the plates extend.

10. In a separating-drum for ball grinding-mills and the like, the combination of the ends or heads of the drum, having grooves extending from near the center toward the periphery, screens in the grooves, and a removable band around the periphery of the drum.

813,904. BOOT AND SHOE CLEANING AND POLISHING MACHINE. BENJAMIN F. LLOYD, Cherry Gardens, South Australia, Australia. Filed Aug. 11, 1904. Serial No. 220,267.

Claim.—1. In a boot cleaning and polishing machine, a reciprocating frame comprising two longitudinal members connected together by stays, stationary runners upon which the bottom portions of said stays slide, the said runners being supported by a suitable bed, brushes carried by said longitudinal members and arranged in pairs, thumb-screws for adjustably attaching the brushes to the longitudinal members so that the brushes can be moved in and out bodily to accommodate various sized boots, the connection between the screws and the brushes being loose so that the brushes may rock upon the screws to operate upon the back and front of the boots substantially as described and for the purpose set forth.

2. In a boot cleaning and polishing machine the combination with a reciprocating frame of brushes arranged in pairs and each having a concave face, and means for flexibly securing the brushes to the frame, the said means comprising a bridge-piece on the back of each brush, and a thumb-screw at the center of the bridge-piece, and securing it to the frame, the bridge-piece having a long pin at each end passing through a slot-opening in the frame substantially as described and for the purpose set forth.

3. In a boot cleaning and polishing machine the combination of a reciprocating frame, concave-faced brushes arranged in pairs, bridge-pieces secured to the backs of the brushes, one to each brush, thumb-screws attached at their points to the bridge-pieces and having their screw-threads engaging screw-threads in the frame, pins projecting from each end of the bridge-pieces to and through slot-openings in the frame, and spiral springs mounted upon the said pins between the bridge-piece and the frame, all substantially as described and for the purpose set forth.

4. In a boot and shoe cleaning and polishing machine, a reciprocating frame comprising two longitudinal members, arch-shaped metal stays connecting said members, stationary bars on which the lower ends of said stays are fitted to slide, brushes arranged in pairs, thumb-screws adjustable in the said longitudinal members, the said brushes being mounted to rock on the inner ends of said screws, and means for maintaining the brushes in an approximately horizontal position, substantially as described.

813,905. AUTOMOBILE-WHEEL BEARING. CHARLES S. LOCKWOOD, Newark, N. J., assignor to Hyatt Roller Bearing Company, Harrison, N. J., a Corporation of New Jersey. Filed May 6, 1903. Renewed Aug. 1, 1905. Serial No. 272,126.

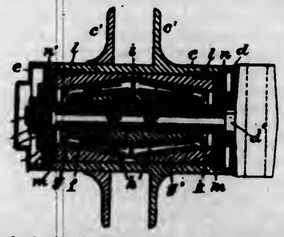

Claim.—1. A wheel-hub having the shell *e* with cylindrical bore, and a keyway and screw-threaded space at each end of the bore, and flanges *e'* for supporting the spokes, the journal *a*, having a double cone *f* tapered toward opposite ends, the tapered sleeves *g*, *g'*, fitted adjustably to the bore and having feathers *l* fitted movably to the keyways, the screw-collars *m* fitted to the threaded spaces for adjusting the sleeves, and rolls fitted between each double cone and sleeves and tapered in the same ratio as the cone and sleeve.

2. A wheel-hub having the shell *e* with cylindrical bore, and keyway and screw-threaded space at each end of the bore, and flanges *e'* for supporting the spokes, the journal *a* the double cone *f* thereon tapered toward opposite ends, the tapered sleeves *g*, *g'*, fitted adjustably to the bore the feathers *l* in the sleeves fitted movably to the keyways, the screw-collars *m* fitted to the threaded spaces for adjusting the sleeves, rolls fitted between each double cone and sleeves, the heads *n*, *n'* fitted to shoulders within the ends of the shell *e* to support the end thrust independently of the adjusting-collars, and the said journal having a collar at one end and adjustable nut at the other for adjustment to each heads.

3. A wheel-hub having the shell *e* with cylindrical bore, and keyway and screw-threaded space at each end of the bore, and flanges *e'* for supporting the spokes, the journal *a*, the double cone *f* thereon tapered toward opposite ends, the tapered sleeves *g*, *g'*, fitted adjustably to the bore the feathers *l* fitted movably to the keyways, the screw-collars *m* in the sleeves fitted to the threaded spaces for adjusting the sleeves, rolls fitted between each double cone and sleeves, the heads *n*, *n'*, fitted to shoulders within the ends of the shell *e* to support the end thrust independently of the adjusting-collars, the screw-cap *d* operating to clamp the head *n* rigidly against a shoulder within the shell, and the head *n'* being clamped to a shoulder within the opposite end of the shell, and the said journal having a collar at one end and nut at the other for adjustment to each heads.

813,906. BRAKE FOR BICYCLES. GUSTAV A. LOVE, Colusa, Minn. Filed Mar. 23, 1904. Serial No. 199,343.

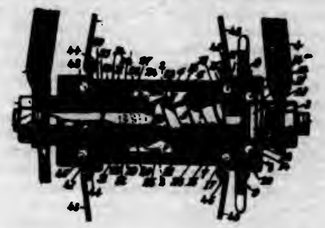

Claim.—1. In a brake for bicycles, the combination with the driving-sprocket and hub of the rear wheel of the machine, of a rotatable member rigid with said sprocket and extending into the hub, the latter having an inner shoulder at one end, an expansible friction device mounted on the member, means for moving said device longitudinally of the member to engage said shoulder to expand the device on forwardly rotating the member with the sprocket, a stationary member with which the other end of the friction device has interlocking engagement, and springs for returning the parts to their normal position.

2. In a brake for bicycles, the combination with the driving-sprocket hub of the rear wheel of the machine, of a rotatable member rigid with said sprocket and extending into the hub, the latter having an inner shoulder at one end, an expansible friction device mounted on the member provided with teeth at one end, and means for moving said device longitudinally of the member to engage said shoulder to expand the device on forwardly rotating the member with the sprocket, said expansible device comprising longitudinally-separated sections, and a split clamping-ring therefor; a fixed member provided with teeth with which the teeth of the friction device are adapted to engage, and reversely-disposed springs engaging the rotatable member and the friction device.

3. In a brake for bicycles, the combination with the driving-sprocket and hub of the rear wheel of the machine, of a cone rigid with said sprocket and having an externally-threaded member rotating therewith and extending therefrom into said hub, an expansible friction device mounted upon and internally threaded in conformity with said member, and an inner abutment at one end of the hub, said friction device comprising longitudinally-separated sections, and a split clamping-ring therefor.

4. In a brake for bicycles, the combination with the driving-sprocket and hub of the rear wheel of the machine, of a rotatable member rigid with said sprocket and extending into the hub, an expansible friction device mounted on said member, and provided at its inner end with teeth, a stationary member having similar teeth, and means for expanding said device to engage with the hub on reversely rotating said first-named member with the sprocket, and also for forcing the teeth of the device into engagement with the teeth of said stationary member.

5. In a brake for bicycles, the combination with the driving-sprocket and hub of the rear wheel of the machine, of a rotatable member rigid with said sprocket and extending into the hub, an expansible friction device mounted on said member, and provided at its inner end with teeth, a stationary member having similar teeth, and means for expanding said device to engage with the hub on reversely rotating said first-named member with the sprocket, and also for forcing the teeth of the device into engagement with the teeth of

said stationary member, said friction device comprising longitudinally-separated sections, and a split clamping-ring.

6. In a brake for bicycles, the combination with the driving-

with a side outlet, and a recess in the base of the block, in combination with a receptacle adapted to bear against the outlet side of the

tudinally thereof while elevated and then below and to original position, and means to deposit piles of material on the carrying-piece.

nected with said carrying-pieces and its lower end fixed to a rock-shaft, a longitudinal slot provided in the body of the forked lever to

said stationary member, said friction device comprising longitudinally-separated sections, and a split clamping-ring.

6. In a brake for bicycles, the combination with the driving-sprocket and hub of the rear wheel of the machine, said hub having an internal shoulder of a threaded rotatable member rigid with the sprocket and entering the hub from one end, said rotatable member having a reduced inner end formed with opposite slots, an expansible longitudinally-movable friction device mounted on said member, the latter being mounted on the axle in the hub, duplicate springs reversely disposed upon said end portion, with one of their extremities entering the slots, and the other turned outwardly and engaged by the friction device, and a stationary member forming an abutment for the friction device and engaging therewith to expand the same by reverse movement imparted to the rotatable member from the sprocket.

7. In a brake for bicycles, the combination with the driving-sprocket and hub of the rear wheel of the machine, said hub having an interior shoulder of a threaded rotatable member rigid with the sprocket and entering the hub from one end, said rotatable member having a reduced inner end formed with opposite slots, an expansible longitudinally-movable friction device mounted on said member, the latter being mounted on the axle in the hub, duplicate springs reversely disposed upon said end portion, with one of their extremities entering the slots, and the other turned outwardly and engaged by the friction device, and a stationary member forming an abutment for the friction device, and engaging therewith to expand the same by reverse movement imparted to the rotatable member from the sprocket, said friction device being internally threaded in conformity with said rotatable member, and comprising longitudinally-separated sections, and a split clamping-ring therefor.

8. In a brake for bicycles, the combination with the driving-sprocket, and the hub of the rear wheel, having a shoulder, of a rotatable member rigid with the sprocket-wheel and extending into the hub, a longitudinally-movable expansible friction device mounted on said member, springs reversely disposed upon the inner end of the rotatable member and engaging the rotatable member and the friction device, and a stationary member forming an abutment for the friction device and with which it has interlocking engagement.

9. In a brake for bicycles, the combination with the driving-sprocket, and the hub of the rear wheel having an internal shoulder at one end, of a rotatable member rigid with the sprocket-wheel and extending into the hub, said member having a reduced inner end, an expansible friction device mounted on said member and engaged thereby, springs reversely disposed upon the reduced end of the movable member and engaging the reduced end of the said member and the expansion device, and a stationary member forming an abutment for the friction device and with which it has interlocking engagement.

813,907. **TYPOGRAPHIC PAPER-PUNCH.** THAYER B. MELVIN, Allegheny, Pa. Filed July 11, 1905. Serial No. 269,208.

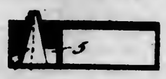

Claim.—1. A punch comprising a block provided with a perforating projection and a passage having a side outlet, and a receptacle having an open end adapted to be closed by the side of the block through which the outlet extends, said block and receptacle being coextensive in width and adapted to be conjointly locked in a chase, and being independent of one another.

2. A perforating attachment for printing-presses comprising a block provided with a punching projection and a passage communicating with said projection and having an outlet through one of the sides of the block, and a receptacle independent of the block and coextensive in width therewith, said receptacle having an open end adapted to bear against and to be closed by the side of the block through which the outlet extends.

3. A perforating attachment for printing-presses comprising a block having a punching projection and a passage communicating therewith, said passage having an outlet through one of the sides of the block, and a receptacle having an open end adapted to abut against and to be closed by the side of the block through which the outlet extends, said block and receptacle having interengaging portions to hold them in assembled relation.

4. A punch comprising a block provided with a tubular punching projection, a passage communicating therewith and provided with a side outlet, and a recess in the base of the block, in combination with a receptacle adapted to bear against the outlet side of the block and communicating with the passage and provided with a tongue or projection to fit within said recess.

813,908. **MACHINE FOR ASSEMBLING COLLAR-BLANKS.** HENRY C. MILLER, Waterford, N. Y. Filed Jan. 26, 1904. Serial No. 190,758.

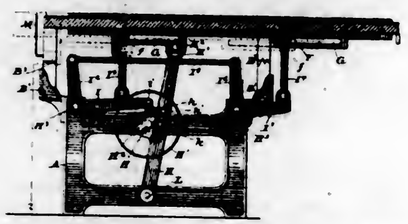

Claim.—1. In combination with means for individually depositing plies of material, of means for elevating and feeding while elevated said deposited plies in regular advance to assemble a plurality thereof in a pile.

2. In combination with means for depositing plies of material, of a feeder for elevating and regularly advancing while elevated said plies between the depositing operations.

3. In combination with means for regularly depositing plies of material, of means for elevating and advancing while elevated said plies a distance equal to the distance between the deposited plies in normal position.

4. In combination with means for depositing a plurality of plies of material, of means for elevating and advancing while elevated said plies beneath the depositing means to receive an additional deposit therefrom.

5. In combination with means for depositing successive plies of material, of a feeder comprising a carrying-piece to elevate said plies and advance them while elevated to a position beneath the next successive depositing means.

6. In combination with a plurality of depositing means, of a table arranged lengthwise said depositing means, and a carrying-piece operative through the table and arranged to elevate said deposited plies above the table and move them longitudinally of the table while elevated a distance equal to the distance between the adjacent depositing means.

7. In combination with means for depositing plies of material, of a table to receive said plies, a carrying-piece movable through the table and means to elevate the carrying-piece and the deposited plies of material above the table and advance while elevated said carrying-piece and the deposited plies in regular order, whereby to assemble a plurality of said plies in a pile.

8. In combination with successively-arranged depositing means operative to simultaneously deposit a plurality of plies, of a table to receive said deposited plies, and means carried by the table to elevate above the table and to advance while elevated and lower each of said plies beneath the next successive depositing means.

9. In combination with successively-arranged depositing means operative to simultaneously deposit a plurality of plies, of a table to receive said deposited plies, and means carried by the table to simultaneously elevate above the table and advance while elevated and lower all of said plies a distance equal to the distance between the successive depositing mechanisms.

10. In combination with a plurality of pick-up mechanisms, of a table to receive material from said pick-up mechanisms, and means carried by the table to elevate above the table and advance while elevated and lower said material in regular order beneath the pick-ups, said means operating to advance the material between the depositing operations of the pick-up.

11. A feeder comprising a table, a carrying-piece movable through the table, and means to elevate the operative surface of said carrying-piece wholly above and out of contact with the table, move it longitudinally thereof while elevated, depress it below the table and return it to original position, and means to deposit plies of material on the carrying-piece.

12. A feeder comprising a slotted table, a carrying-piece movable in said slot, and means to move the operative surface of said carrying-piece wholly above and out of contact with the table and longitudinally thereof while elevated and then below and to original position, and means to deposit plies of material on the carrying-piece.

13. A feeder comprising a slotted table, carrying-pieces movable in the slots of the table, and mechanism to move the operative surface of said carrying-pieces wholly above and out of contact with the table and longitudinally thereof while in said elevated position, and means to deposit plies of material on the carrying-piece.

14. A feeder comprising a table formed with a plurality of slots, a carrying-piece arranged in each slot, a lever for moving the carrying-pieces longitudinally of the table, and means for elevating and depressing the carrying-pieces, said elevating means maintaining the operative surface of the carrying-piece wholly above and out of contact with the table during the feeding operation, and means to deposit plies of material on the carrying-piece.

15. A feeder comprising a table formed with a plurality of slots, a carrying-piece arranged in each slot, a lever for moving the pieces longitudinally of the table, levers for elevating and depressing the carrying-pieces prior to their longitudinal movement, and means for operating said levers, said elevating means maintaining the operative surface of the carrying-piece wholly above and out of contact with the table during the feeding operation, and means to deposit plies of material on the carrying-piece.

16. A feeder comprising a table formed with a plurality of slots, a carrying-piece arranged in each slot, a lever for moving the pieces longitudinally of the table, levers for elevating and depressing the carrying-pieces prior to their longitudinal movement, and a cam for operating said lever, said elevating means maintaining the operative surface of the carrying-piece wholly above and out of contact with the table during the feeding operation, and means to deposit plies of material on the carrying-piece.

17. The combination with a table comprising a series of parallel bars, of a series of carrying-pieces supported between said bars, the parallel bars forming vertical guides for the carrying-pieces, horizontal guides connected with the carrying-pieces, mechanism for elevating said pieces to move the upper edges thereof above the plane of the surfaces of the bars of the table, and returning the same to below the said surfaces, and mechanism for moving said blades forward and the reverse.

18. The combination with a table comprising a series of parallel bars arranged a short distance apart, a series of movable carrying-pieces, said bars serving to guide the whole series of said pieces in their movement, mechanism for imparting a reciprocating movement to said pieces in a vertical direction, and mechanism for imparting a reciprocating movement to said pieces in a horizontal direction, with each respective vertical movement alternating with each horizontal movement and means to deposit plies of material on the series of parallel pieces.

19. The combination with a frame, a stationary table comprising a series of bars separated from each other and supported by said frame, a movable bed comprising a series of parallel carrying-pieces provided each with an operative surface on the same plane as the others, a revolving shaft, mechanism actuated by said shaft to impart to the operative surface of all the blades a vertical upward movement wholly above and out of contact with the table, a forward horizontal movement while above the table, a downwardly-vertical movement, and a rearward horizontal movement below the surface of the table, and mechanism for guiding the pieces in their horizontal movement, and means to deposit plies of material on the movable bed.

20. The combination with a frame, a table comprising a series of stationary parallel bars and a bed of carrying-pieces, of a series of vertical stationary fingers projected above the surface of the table, a receptacle forward of said fingers, and mechanism for imparting to the series of said pieces a reciprocating longitudinal movement and a vertical reciprocating movement.

21. The combination with a frame, a stationary table provided with a series of parallel openings, a series of parallel carrying-pieces movable longitudinally in the parallel openings, a revolvable shaft supported by the frame, a cam mounted on the shaft, a wrist-pin carried by the cam, a lever forked at its upper end and loosely engaging a pin projecting from the carrying-pieces, the lever being formed with a slot to receive the wrist-pin, mechanism actuated by the cam, arms connected and actuated by said mechanism, devices for guiding the bed of carrying-pieces in their vertical movement, and devices for guiding the pieces in their horizontal movements.

22. The combination with a stationary table provided with parallel openings, carrying-pieces mounted in said openings, a cam, a lever mechanism connected with the carrying-pieces and operated by the cam, a wrist-pin carried by said cam, a forked lever which is adapted to have a reciprocating movement with its forked upper end connected with said carrying-pieces and its lower end fixed to a rock-shaft, a longitudinal slot provided in the body of the forked lever to receive the wrist-pin, the rock-shaft being pivoted on the frame of the machine, and a drive-wheel for the parts.

23. The combination with a stationary table comprising a series of parallel sections with openings formed between the sections, a four-way moving bed comprising carrying-pieces guided in their respective movement in the openings of the table, mechanism for imparting to said bed a vertical reciprocating movement, mechanism for imparting to the bed a longitudinal reciprocating movement, with each vertical movement of the same alternating with each longitudinal movement, a series of stationary vertical fingers adjacent the discharge end of the bed, and between the carrying-pieces, the upper ends of the fingers projecting above the upper plane of said bed, and a receptacle at the discharge end of the movable bed for receiving pieces of material assembled on the same.

24. The combination with a frame, a carrying-bed operating on the frame, mechanism for intermittingly moving the carrying-bed to advance previously-deposited plies of material, means for reversing the movement of the bed, and means in the path of the bed for receiving the plies therefrom when the movement is reversed, and means against which the plies contact and are removed from the bed when the movement of the latter is reversed, to the means which receives the plies.

25. The combination with a frame, a carrying-bed operating on the frame, ply-removing means, mechanism for intermittently moving the carrying-bed to advance previously-deposited plies of material in front of the ply-removing means, means for reversing the movement of the bed, the reversal of the movement of said bed causing the ply-removing means to discharge the pile of plies from the bed.

813,909. **AUTOMATIC ELECTRIC BLOCK SYSTEM.** ALBERT M. MOTT, Hampton, Iowa. Filed June 26, 1905. Serial No. 267,160.

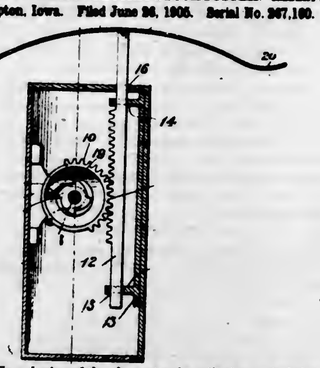

Claim.—1. In a device of the character described, a switch-box, a three-way switch on the side of said box, a cogged wheel on the switch, a cogged cap covering said cogged wheel, said toggle cap being held in position to allow the cap to rotate, which cap when rotated in one direction works the switch, and when rotated in the other direction permits the switch to remain stationary; a spring and ratchet or cogged plunger, adjusted to operate the cap, a roller attached to a portion of the train, and adjusted to operate the spring or plunger with each passage of the train.

2. In a device of the character described, a switch-box, a switch within the box, a rotary member within the box, a spring-pressed pawl carried by the rotary member engaging the switch, a guide-bar arranged vertically within the box, and a plunger extending within the box held by the guide-bar, said plunger imparting motion to the rotary member.

3. In a device of the character described, a switch-box, a switch within the box, a rotary member within the box, a spring-pressed pawl carried by the rotary member engaging the switch, a guide-bar within the box, a perforated arm near each end of the bar, a plunger extending within the box and through the perforations of the arms, said plunger imparting motion to the rotary member.

4. In a block system, suitable feed and return wires, block-signals at each end of a block, conductors for each set of signals, a switch at the end of each block for controlling the current to the conductors, comprising in its construction a smooth box, a three-point switch thereon, a cogged wheel on the switch, a cogged cap cover-

ing said cogged wheel, said cogged cap being held in position to allow the cap to rotate, which cap when rotated in one direction works the switch, and when rotated in the other direction permits the switch to remain stationary; a spring and ratchet or cogged plunger, adjusted to operate the cap, a roller attached to a portion of the train, and adjusted to operate the spring or plunger with each passage of the train.

813,910. SAW ROUNDING AND JOINTING ATTACHMENT. JAMES R. MCCLELLAN, Madison, Wis. Filed Jan. 19, 1905. Serial No. 241,570.

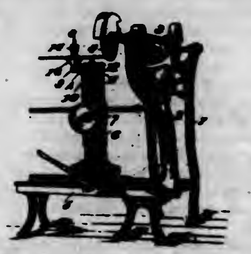

Claim.—The herein-described circular-saw-jointing attachment comprising a bracket consisting of diverged arms, plates at the inner ends of the arms having hooks at their upper ends and a collar at the converged ends of the arms having a vertical opening, a spindle fitted in the opening of the collar, and a tapered centering-piece and bowl-shaped support slipped upon said spindle.

813,911. PROCESS OF PRODUCING CARBONACEOUS PIGMENTS. DAVID J. OCHEY, Cincinnati, Ohio. Original application filed Aug. 13, 1897, Serial No. 648,167. Divided and this application filed July 28, 1902. Serial No. 117,282.

Claim.—1. The process of producing black or dark-colored pigments by impinging carbonaceous flames produced on a moving source, on water in a state of motion.

2. The process of producing black or dark-colored pigments by impinging carbonaceous flame in motion on water in motion, said water containing suitable soluble material whereby the repellent properties of the carbonaceous deposit toward the water are diminished or overcome.

813,912. SPACE FOR JUSTIFYING LINES OF TYPE. DAVID B. RAY, Huntington, N. Y. Filed Apr. 28, 1904. Serial No. 204,516.

Claim.—1. A compressible space consisting of a main part or stem having its ends bent back along said main stem once only, whereby the space when compressed equals only two thicknesses of the material of which the space is made.

2. A compressible space consisting of a main part or stem, of non-elastic material, having its ends curved back along said main stem once only, said curved parts having their ends bent toward the middle part of said main stem.

3. A compressible non-elastic space having a main stem A, arch-shaped parts B B bent back from the ends of said main stem, said arch-shaped parts having one end movable along said main stem toward the middle thereof when the space is compressed, and resting on said main stem.

4. A compressible non-elastic space having a main stem and having its ends bent back along said main stem once only at each end in the form of an arch.

813,913. SUPPORT FOR POWER-CARRYING LINES. JOSEPH ELIAS, Oil City, Pa. Filed Feb. 17, 1905. Serial No. 245,165.

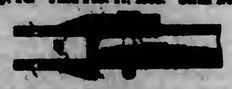

Claim.—1. In a carrying-line support, a line-clamp having a longitudinal channel, a pair of openings on opposite sides and near opposite ends of the channel, and grooves on the opposite sides of the channel; and J-shaped bolts fitted in the openings at one of their ends and extending into the grooves at the other of their ends.

2. In a carrying-line support, an upright provided with a recess, and a casting having a lug fitting in said recess.

3. In a carrying-line support, an upright having a recess, a casting having a lug fitting into said recess, and a U-shaped bolt surrounding the upright and secured to the casting.

4. In a carrying-line support, a swinging upright having a recess near its upper end; a bearing-casting having a pair of upwardly-extending ears; and a depending portion carrying a lateral lug for fitting in the recess in the upright; a U-shaped bolt surrounding the upright and secured to the casting; and a line-clamp pivoted between the ears of the casting.

5. In a carrying-line support, a trunnion-casting having an opening flared at its lower end, and a tubular upright fitted within the opening and flared.

6. In a carrying-line support, a trunnion-casting having an opening and a slot leading to the opening; an upright fitted within the opening; and a U-shaped bolt fitted into the slot to engage the upright and secured at its ends to the casting.

7. In a carrying-line support, a trunnion-casting having an opening therein, and lugs within the opening, and an upright resting on the lugs.

8. In a carrying-line support, a trunnion-casting having an opening flared at its lower end and lugs therein, and a tubular upright resting on the lugs and flared.

9. In a carrying-line support, a trunnion-casting having an opening flared at two opposite points, and lugs located between the flared portions; and a tubular upright fitting in the opening, notched at two opposite points and flared between the notched portions.

813,914. WIRELESS ELECTRIC SIGNALING SYSTEM. RAGNAR H. RUNDAHL, Berlin, Germany. Filed Aug. 19, 1905. Serial No. 274,904.

Claim.—1. A receiver arrangement for wireless electric signaling system in which a condenser is inserted in parallel to the indicator, the capacity of which condenser is at least twice as large as that of the indicator, and the damping of the indicator-circuit is so diminished by the diminution of its ohmic resistance that a diminution of the degree of coupling between the indicator-circuit and the receiver-circuit within certain limits has for a consequence an increase of the intensity in the indicator-circuit substantially as described.

2. A wireless electric signaling system in which the coupling between the indicator-circuit and the receiver-circuit is made so loose that the intensity in the indicator-circuit attains a maximum quantity with the object of obtaining a sharper tuning of the receiver-circuit with enlarged receiving capacity substantially as described.

813,915. APPARATUS FOR LAUNCHING SHIPS' BOATS. RICHARD H. RANDOLPH, Dartford, England. Filed July 6, 1905. Serial No. 268,599.

Claim.—1. In a boat-launching apparatus, the combination with the pivoting davits and means for operating same, of fixed chocks, movable chocks, and means for operating said movable chocks longitudinally and laterally relatively to said fixed chocks, substantially as described.

2. In boat-launching apparatus, the combination with the pivoting davits, of a fixed chock, a rotatably-mounted reciprocating shaft adjacent thereto, a second chock fixed to said shaft, and means for reciprocating and rotating said shaft, substantially as described.

3. In boat-launching apparatus, the combination with swiveling davits *a*, *a'* of a fixed chock *p*, a sliding and turning shaft *q*, a chock *p'* attached to said shaft-handle *r* jointed to shaft *q*, lever *t* turning on shaft *q*, pivot *e* on which lever *t* turns, all substantially as set forth.

4. In boat-launching apparatus, in combination with the sliding and turning shaft *q* fixed chock *p*, and movable chock *p'*, the brackets *x*, bent pins A fixed upon the shaft *q*, and entering holes in the brackets *x*, and rings *y* upon gripe *z*, substantially as set forth.

5. In boat-launching apparatus, the combination with the fixed and movable chocks, of a loosely-journaled roller interposed between the adjacent edge faces of said chocks, and means for operating said movable chock with relation to said roller and fixed chock, substantially as described.

6. In boat-launching apparatus, a combination with a sliding and turning shaft *q*, a fixed chock *p* and movable chock *p'*, of a handle *r* jointed to a stud G swiveling in a bracket H, and a bent link F jointed to the shaft *q* and the handle *r*, substantially as set forth.

7. In combination with the sliding and turning shaft *q*, fixed chock *p* and movable chock *p'*, the loose roller *w* upon the shaft *q*, between the chocks, and the pin K fixed to the movable chock *p'*, and passing through holes in the roller *w* and the fixed chock *p*, when the chock *p'* is vertical, substantially as set forth.

8. In boat-launching apparatus, the combination with the pivoting davits and tackle connection therebetween, a curved ratchet member adjacent one of said davits, a pawl member pivotally carried by said davit and coöperating with said ratchet member, and means for operating said other davit, substantially as described.

813,916. BRAKE-BEAM. HENRY B. ROSECRUPS, Kalamazoo, Mich., assignor to Chicago Railway Equipment Company, Chicago, Ill., a Corporation of Illinois. Filed Oct. 30, 1905. Serial No. 285,067.

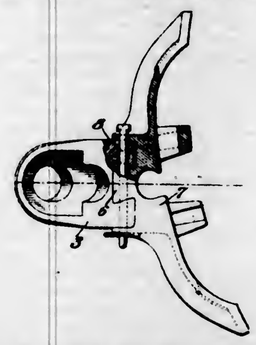

Claim.—1. In a trussed brake-beam, the combination of a thrust-block and a removable brake-head, one of said parts having a horizontally-disposed tapered socket, and the other of said parts having a horizontally-disposed tapered projection for interlocking with said socket, the taper being so arranged as to permit longitudinal and outward removal of the brake-head, and a vertically-disposed wedge-key for engaging the locking projection in its socket; substantially as described.

2. In a trussed brake-beam, the combination with a thrust-block having a horizontally-disposed tapered socket widest at its outer end, of a removable brake-head having a horizontally-disposed tapered projection thereon for interlocking with said socket, a renewable brake-shoe carried by said brake-head, and a vertically-disposed wedge-key for locking the brake-head in position; substantially as described.

3. The herein-described thrust-block for trussed brake-beams, the same being provided with a horizontally-disposed tapered socket for the attachment of a brake-head; substantially as described.

4. The herein-described brake-head for brake-beams, the same being provided with a horizontally-disposed tapered dovetailing projection for attachment to a thrust-block; substantially as described.

5. In a trussed brake-beam, the combination with a thrust-block and brake-head, one of said parts having a horizontally-disposed tapered socket and the other of said parts having a horizontally-disposed tapered projection for interlocking with said socket, said projection and the walls of the socket being recessed for the purpose described; substantially as described.

6. The herein-described thrust-block for trussed brake-beams, the same being provided with a horizontally-disposed tapered socket for the attachment of a brake-head, the walls of said socket being recessed or cut away to provide a vertically-disposed opening; substantially as described.

7. The herein-described brake-head for brake-beams, the same being provided with a horizontally-disposed tapered projection for attachment to a thrust-block, said projection being cut away or recessed at a point between its ends; substantially as described.

813,917. BURGLAR-ALARM. JOSEPH ROSEBROK and GENEVIEVE G. ROSEBROK, New York, N. Y. Filed Apr. 10, 1905. Serial No. 254,960.

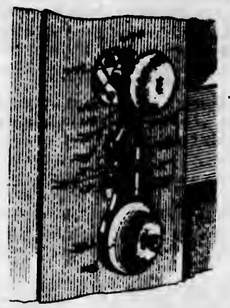

Claim.—1. A device of the kind described, comprising a hanger having a shoulder portion, a frame pendulously suspended upon the shoulder, an alarm mechanism carried by the frame and comprising an escapement-wheel and an escapement-anchor, the latter having a rod and bell-clapper connected thereto, an arm extending from the said rod, a spring-actuated rod, carried by the frame, a pin connected to the last-mentioned rod, shoulder portions arranged upon the frame and adapted for engagement by the pin, all substantially as and for the purpose specified.

2. A device of the kind described, comprising a hanger having a shoulder portion, the outer end of which is flanged, a frame pendulously suspended from the shoulder, said frame comprising a lower circular portion having arms extending therefrom and by which the frame is supported upon the hanger, a cross-bar connecting the arms, said cross-bar having an aperture vertically arranged therein and also having a recess upon its lower side by which shoulders are provided upon the bar, a rod operating through the aperture and also through an aperture in the lower portion of the frame, a pin carried by the rod, a spring surrounding the rod and engaging a pin and the lower apertured portion of the frame, an alarm mechanism carried by the frame and comprising an escapement-wheel and an escapement-anchor for engagement with the wheel, a rod having a bell-hammer connected to the escapement-anchor, an arm connected to the rod, said arm having its free end arranged in position to be engaged by the bar carried by the frame all substantially as and for the purpose set forth.

3. A burglar-alarm comprising a hanger and frame, an alarm mechanism carried by the frame, a spring-actuated rod slidably and revolubly journaled in the frame, and engaging the hanger and escapement of the alarm mechanism, and means carried by the rod for engagement with the frame by which the mechanism may be locked against operation irrespective of the movement of the frame or hanger.

4. A burglar-alarm consisting of a hanger and a frame pendulously supported from the hanger, an alarm mechanism carried by the frame, a rod slidably and revolubly held in the frame and engaging the hanger and escapement of the alarm mechanism when the alarm is set, a pin connected to the rod, a spring surrounding the rod and engaging the frame and pin, said spring being adapted to operate the rod to release the escapement when the hanger is disengaged from the rod, and a shoulder formed upon the frame for engagement by the pin whereby the rod may be locked against movement irrespective of the movement of the hanger or frame.

5. A burglar-alarm comprising a hanger and frame, an alarm

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ing said cogged wheel, said cogged cap being held in position to allow the cap to rotate, which cap when rotated in one direction works the switch, and when rotated in the other direction permits the switch to remain stationary; a spring and ratchet or cogged plunger, adjusted to operate the cap, a roller attached to a portion of the train, and adjusted to operate the spring or plunger with each passage of the train.

813,910. SAW ROUNDING AND JOINTING ATTACHMENT. JAMES R. HOLMLAND, Medina, Wis. Filed Jan. 19, 1905. Serial No. 241,570.

Claim.—The herein-described circular-saw-jointing attachment comprising a bracket consisting of diverged arms, pivoted at the inner ends of the arms having hooks at their upper ends and a collar at the converged ends of the arms having a vertical opening, a spindle fitted in the opening of the collar, and a tapered centering-piece and bowl-shaped support slipped upon said spindle.

813,911. PROCESS OF PRODUCING CARBONACEOUS PIGMENTS. DAVID J. CONLEY, Cincinnati, Ohio. Original application filed Aug. 13, 1897, Serial No. 648,167. Divided and this application filed July 26, 1902. Serial No. 117,202.

Claim.—1. The process of producing black or dark-colored pigments by impinging carbonaceous flames produced on a moving source, on water in a state of motion.

2. The process of producing black or dark-colored pigments by impinging carbonaceous flame in motion on water in motion, said water containing suitable soluble material whereby the repellent properties of the carbonaceous deposit toward the water are diminished or overcome.

813,912. SPACE FOR JUSTIFYING LINES OF TYPE. DAVID B. RAY, Huntington, N. Y. Filed Apr. 25, 1904. Serial No. 204,916.

Claim.—1. A compressible space consisting of a main part or stem having its ends bent back along said main stem once only, whereby the space when compressed equals only two thicknesses of the material of which the space is made.

2. A compressible space consisting of a main part or stem, of non-elastic material, having its ends curved back along said main stem once only, said curved parts having their ends bent toward the middle part of said main stem.

3. A compressible non-elastic space having a main stem A, arch-shaped parts B B bent back from the ends of said main stem, said arch-shaped parts having one end movable along said main stem toward the middle thereof when the space is compressed, and resting on said main stem.

4. A compressible non-elastic space having a main stem and having its ends bent back along said main stem once only at each end in the form of an arch.

813,913. SUPPORT FOR POWER-CARRYING LINES. JOSEPH RUSS, Oil City, Pa. Filed Feb. 17, 1905. Serial No. 245,969.

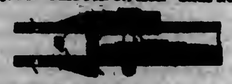

Claim.—1. In a carrying-line support, a line-clamp having a longitudinal channel, a pair of openings on opposite sides and near opposite ends of the channel, and grooves on the opposite sides of the channel; and J-shaped bolts fitted in the openings at one of their ends and extending into the grooves at the other of their ends.

2. In a carrying-line support, an upright provided with a recess, and a casting having a lug fitting in said recess.

3. In a carrying-line support, an upright having a recess, a casting having a lug fitting into said recess, and a U-shaped bolt surrounding the upright and secured to the casting.

4. In a carrying-line support, a swinging upright having a recess near its upper end; a bearing-casting having a pair of upwardly-extending ears; and a depending portion carrying a lateral lug for fitting in the recess in the upright; a U-shaped bolt surrounding the upright and secured to the casting; and a line-clamp pivoted between the ears of the casting.

5. In a carrying-line support, a trunnion-casting having an opening flared at its lower end, and a tubular upright fitted within the opening and flared.

6. In a carrying-line support, a trunnion-casting having an opening and a slot leading to the opening; an upright fitted within the opening; and a U-shaped bolt fitted into the slot to engage the upright and secured at its ends to the casting.

7. In a carrying-line support, a trunnion-casting having an opening therein, and lugs within the opening, and an upright resting on the lugs.

8. In a carrying-line support, a trunnion-casting having an opening flared at its lower end and lugs therein, and a tubular upright resting on the lugs and flared.

9. In a carrying-line support, a trunnion-casting having an opening flared at two opposite points, and lugs located between the flared portions; and a tubular upright fitting in the opening, notched at two opposite points and flared between the notched portions.

813,914. WIRELESS ELECTRIC SIGNALING SYSTEM. RAGNAR H. RUNDBAK, Berlin, Germany. Filed Aug. 10, 1903. Serial No. 174,904.

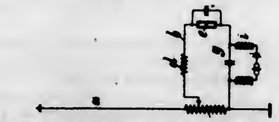

Claim.—1. A receiver arrangement for wireless electric signaling system in which a condenser is inserted in parallel to the indicator, the capacity of which condenser is at least twice as large as that of the indicator, and the damping of the indicator-circuit is so diminished by the diminution of its ohmic resistance that a diminution of the degree of coupling between the indicator-circuit and the receiver-circuit within certain limits has for a consequence an increase of the intensity in the indicator-circuit substantially as described.

2. A wireless electric signaling system in which the coupling between the indicator-circuit and the receiver-circuit is made so loose that the intensity in the indicator-circuit attains a maximum quantity with the object of obtaining a sharper tuning of the receiver-circuit with enlarged receiving capacity substantially as described.

813,915. APPARATUS FOR LAUNCHING SHIPS' BOATS. RICHARD H. ROGERSON, Dunfish, England. Filed July 6, 1905. Serial No. 268,889.

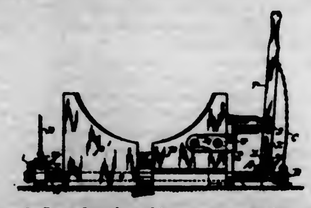

Claim.—1. In a boat-launching apparatus, the combination with the pivoting davits and means for operating same, of fixed chocks, movable chocks, and means for operating said movable chocks longitudinally and laterally relatively to said fixed chocks, substantially as described.

2. In boat-launching apparatus, the combination with the pivoting davits, of a fixed chock, a rotatably-mounted reciprocating shaft

adjacent thereto, a second chock fixed to said shaft, and means for reciprocating and rotating said shaft, substantially as described.

3. In boat-launching apparatus, the combination with swiveling davits *a*, *a'* of a fixed chock *p*, a sliding and turning shaft *q*, a chock *p'* attached to said shaft-handle *r* jointed to shaft *q*, lever *t* turning on shaft *q*, pivot *s* on which lever *t* turns, all substantially as set forth.

4. In boat-launching apparatus, in combination with the sliding and turning shaft *q* fixed chock *p*, and movable chock *p'*, the brackets *z*, bent pins A fixed upon the shaft *q*, and entering holes in the brackets *z*, and rings *y* upon grips *x*, substantially as set forth.

5. In boat-launching apparatus, the combination with the fixed and movable chocks, of a loosely-journaled roller interposed between the adjacent edge faces of said chocks, and means for operating said movable chock with relation to said roller and fixed chock, substantially as described.

6. In boat-launching apparatus, a combination with a sliding and turning shaft *q*, a fixed chock *p* and movable chock *p'*, of a handle *r* jointed to a stud G swiveling in a bracket H, and a bent link F jointed to the shaft *q* and the handle *r*, substantially as set forth.

7. In combination with the sliding and turning shaft *q*, fixed chock *p* and movable chock *p'* g the loose roller *w* upon the shaft *q*, between the chocks, and the pin K fixed to the movable chock *p'*, and passing through holes in the roller *w* and the fixed chock *p*, when the chock *p'* is vertical, substantially as set forth.

8. In boat-launching apparatus, the combination with the pivoting davits and tackle connection therebetween, a curved ratchet member adjacent one of said davits, a pawl member pivotally carried by said davit and coöperating with said ratchet member, and means for operating said other davit, substantially as described.

813,916. BRAKE-BEAM. HENRY B. ROBERTSON, Kalamazoo, Mich., assignor to Chicago Railway Equipment Company, Chicago, Ill., a Corporation of Illinois. Filed Oct. 30, 1905. Serial No. 285,087.

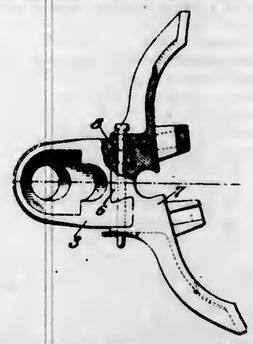

Claim.—1. In a trussed brake-beam, the combination of a thrust-block and a removable brake-head, one of said parts having a horizontally-disposed tapered socket, and the other of said parts having a horizontally-disposed tapered projection for interlocking with said socket, the taper being so arranged as to permit longitudinal and outward removal of the brake-head, and a vertically-disposed wedge-key for engaging the locking projection in its socket; substantially as described.

2. In a trussed brake-beam, the combination with a thrust-block having a horizontally-disposed tapered socket widest at its outer end, of a removable brake-head having a horizontally-disposed tapered projection thereon for interlocking with said socket, a renewable brake-shoe carried by said brake-head, and a vertically-disposed wedge-key for locking the brake-head in position; substantially as described.

3. The herein-described thrust-block for trussed brake-beams, the same being provided with a horizontally-disposed dovetailing tapered socket for the attachment of a brake-head; substantially as described.

4. The herein-described brake-head for brake-beams, the same being provided with a horizontally-disposed tapered dovetailing projection for attachment to a thrust-block; substantially as described.

5. In a trussed brake-beam, the combination with a thrust-block and brake-head, one of said parts having a horizontally-disposed tapered socket and the other of said parts having a horizontally-disposed tapered projection for interlocking with said socket, said projection and the walls of the socket being recessed for the purpose described; substantially as described.

6. The herein-described thrust-block for trussed brake-beams, the same being provided with a horizontally-disposed tapered socket for the attachment of a brake-head, the walls of said socket being recessed or cut away to provide a vertically-disposed opening; substantially as described.

7. The herein-described brake-head for brake-beams, the same being provided with a horizontally-disposed tapered projection for attachment to a thrust-block, said projection being cut away or recessed at a point between its ends; substantially as described.

813,917. BURGLAR-ALARM. JOSEPH RODERICK and GENEVIEVE G. RODERICK, New York, N. Y. Filed Apr. 10, 1905. Serial No. 254,920.

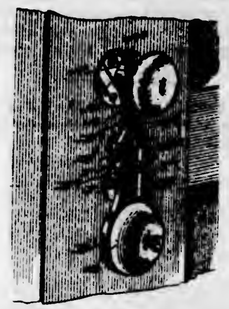

Claim.—1. A device of the kind described, comprising a hanger having a shoulder portion, a frame pendulously suspended upon the shoulder, an alarm mechanism carried by the frame and comprising an escapement-wheel and an escapement-anchor, the latter having a rod and bell-clapper connected thereto, an arm extending from the said rod, a spring-actuated rod, carried by the frame, a pin connected to the last-mentioned rod, shoulder portions arranged upon the frame and adapted for engagement by the pin, all substantially as and for the purpose specified.

2. A device of the kind described, comprising a hanger having a shoulder portion, the outer end of which is flanged, a frame pendulously suspended from the shoulder, said frame comprising a lower circular portion having arms extending therefrom and by which the frame is supported upon the hanger, a cross-bar connecting the arms, said cross-bar having an aperture vertically arranged therein and also having a recess upon its lower side by which shoulders are provided upon the bar, a rod operating through the aperture and also through an aperture in the lower portion of the frame, a pin carried by the rod, a spring surrounding the rod and engaging a pin and the lower apertured portion of the frame, an alarm mechanism carried by the frame and comprising an escapement-wheel and an escapement-anchor for engagement with the wheel, a rod having a bell-hammer connected to the escapement-anchor, an arm connected to the rod, said arm having its free end arranged in position to be engaged by the bar carried by the frame all substantially as and for the purpose set forth.

3. A burglar-alarm comprising a hanger and frame, an alarm mechanism carried by the frame, a spring-actuated rod slidably and revolubly journaled in the frame, and engaging the hanger and escapement of the alarm mechanism, and means carried by the rod for engagement with the frame by which the mechanism may be locked against operation irrespective of the movement of the frame or hanger.

4. A burglar-alarm consisting of a hanger and a frame pendulously supported from the hanger, an alarm mechanism carried by the frame, a rod slidably and revolubly held in the frame and engaging the hanger and escapement of the alarm mechanism when the alarm is set, a pin connected to the rod, a spring surrounding the rod and engaging the frame and pin, said spring being adapted to operate the rod to release the escapement when the hanger is disengaged from the rod, and a shoulder formed upon the frame for engagement by the pin whereby the rod may be locked against movement irrespective of the movement of the hanger or frame.

5. A burglar-alarm comprising a hanger and frame, an alarm

mechanism carried by the frame, a spring-actuated rod revolubly and slidably mounted in the frame, and adapted for locking the alarm-sounding mechanism, a pin carried by the rod, a shoulder formed upon the frame for engagement by the pin whereby the said rod may be held into engagement with the alarm-sounding mechanism irrespective of the movement of the frame or hanger.

6. A burglar-alarm comprising a hanger and frame, said hanger having a shoulder upon which the frame is held, the said frame comprising a lower circular recessed portion and vertical-extending arms connected at their upper ends, a cross-bar connecting the arms intermediate their ends, an alarm-sounding mechanism connected to the circular portion of the frame, an arm projecting from the escapement of the alarm mechanism and extending into the said recess, a rod slidably and revolubly held in the said cross-bar and lower portion of the frame, said rod engaging the hanger at one end and the arm of the escapement at its opposite end, a pin carried by the rod, a spring surrounding the rod and interposed between the base of the frame and pin, shoulders formed upon the cross-bar connecting the arms of the frame and adapted for engagement by the pin of the rod whereby the said rod may be held into engagement with the said arm of the escapement irrespective of the movement of the hanger or frame.

813,918. TUBE, SINGLE OR COMPOUND, WITH LONGITUDINAL RIBS. ALBERT SCHMITZ, Raunheim, Germany. Filed Dec. 20, 1900. Serial No. 742,514.

Claim.—1. A tube composed of two tubular members, one of which has longitudinal ribs or wings, said members being formed from two skelps and being entirely welded together and the joints formed by the edges of the two skelps being out of alinement, substantially as described and for the purpose set forth.

2. A tube composed of two tubular members both of which have longitudinal ribs or wings, said members being formed from two skelps and being entirely welded together and the joints formed by the edges of the two skelps being out of alinement, substantially as described and for the purpose set forth.

3. A tube composed of two tubular members, one of which has longitudinal ribs or wings and the other of which contacts with the ends of said ribs or wings and is welded to the same, the members being formed from two skelps and having the joints formed by the edges of the skelps out of alinement, substantially as described and for the purpose set forth.

4. A tube composed of two tubular members both of which have longitudinal ribs or wings, each of said members resting against the ends of the ribs of the other member and being welded to said ribs, said members being formed from two skelps, the joints formed by the edges of the skelps being out of alinement, substantially as described and for the purpose set forth.

5. A tube composed of a plurality of tubular members one or more of which is provided with longitudinal ribs or wings, each of said ribbed members having the ends of its ribs resting against the smooth surface of the adjacent member and being welded to the same, the joints of two adjacent members being out of alinement, substantially as described and for the purpose set forth.

813,919. LOOSE-LEAF BINDER. WILLIAM J. SCHULTE, Cincinnati, Ohio. Filed Sept. 11, 1905. Serial No. 277,894.

Claim.—1. A loose-leaf binder comprising a set of covers, the one provided with leaf-receiving posts, the other provided with a casing in its one end having openings registering with said posts, a plate provided with a block at its one end having a screw-threaded opening therethrough, said plate being adjustably mounted within said casing, said plate adapted to fit about the posts, a threaded rod taking into the threaded opening of said block on said plate and adapted to be controlled from the outside of the casing whereby upon its operation the walls of the openings in said plate are brought into frictional contact with said posts.

2. A loose-leaf binder comprising a set of covers, the one provided with leaf-receiving posts, the second cover provided with a casing in its one end having openings therethrough registering with said posts, an adjustably-mounted plate within said casing provided with openings through which the posts are adapted to take, a plate intermediate of the posts and within said casing, and means adapted to be operated from the outside of said casing whereby the adjustably-mounted plate may be shifted and brought into frictional contact with the posts.

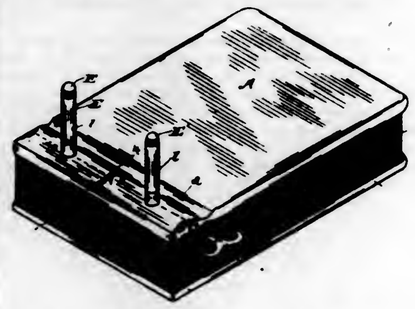

3. A loose-leaf binder comprising a set of covers, one of said covers provided with leaf-receiving posts, a second cover provided with openings adapted to register with the posts, an adjustably-mounted plate within said cover having openings through which said posts take, a reinforcing-plate intermediate of said posts and secured on said adjustable plate, a screw-rod taking into the adjustable plate and adapted to be operated from the outside of the cover whereby upon its operation the walls of the openings in said plate are brought into frictional contact with the leaf-receiving posts.

4. A loose-leaf binder comprising a set of covers, the one provided with leaf-receiving posts, the second cover provided with a casing at its one end having openings registering with the leaf-receiving posts, a plate within said casing provided with openings through which the posts extend, said plate provided with an enlarged and having a screw-threaded opening therethrough, a plate or strip within said casing and intermediate of the post-receiving opening and the screw-threaded openings in the first-mentioned plate and a screw-rod adapted to be operated from the outside of the casing and taking into the screw-threaded opening in said plate whereby the latter is adjusted and the walls of its openings brought into frictional contact with the posts.

5. A loose-leaf binder comprising a set of covers, one of said covers provided with leaf-receiving posts, a second cover provided with a casing in its one end having openings registering with the posts, a plate adjustably mounted within said casing and having openings through which the posts extend, a reinforcing-plate intermediate of the openings in said plate, and means taking through said casing and controllingly connected with said adjustable plate whereby said plates are brought into frictional contact with the posts.

6. A loose-leaf binder comprising a set of covers, one of said covers having leaf-receiving posts, the second cover provided with a casing in its one end, said casing provided with openings registering with the leaf-receiving posts, a plate adjustably mounted within said casing and having openings through which the posts extend, said plate provided with a hooded end having a threaded opening therethrough, a bowed plate secured within said casing and adapted to extend intermediate of the hooded end of the adjustable plate and the opening therethrough, and means taking through the hooded end of the adjustable plate and bearing against the bowed plate whereby the walls of the openings in the adjustable plate and the hooded plate are brought into frictional contact with the leaf-receiving posts.

7. A loose-leaf binder comprising a set of covers, one of said covers provided with leaf-receiving posts, the other provided with a casing in its one end having openings registering with said posts, a plate adjustably mounted within said casing and provided with openings through which the posts extend, a screw-rod adapted to take through said casing and into the adjustable plate, and a bowed plate secured within said casing and extending intermediate of the end of the screw-rod and one of said leaf-receiving posts.

8. A loose-leaf binder comprising a set of covers, one of said covers provided with leaf-receiving posts, the other provided with a casing at its one end having openings registering with said posts, a plate adjustably mounted within said casing, and provided with openings through which the posts are adapted to take, a screw-rod adapted to take through said casing and into the adjustable plate, and means secured within said casing and extending intermediate of the end of the screw-rod and one of said leaf-receiving posts.

813,920. ADJUSTABLE SWITCH-ROD. WILLIAM H. SCOTT, Maplewood, Mo., assignor to Illinit Frog & Switch Company, East St. Louis, Ill., a Corporation. Filed Dec. 28, 1905. Serial No. 293,086.

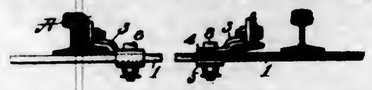

Claim.—1. In an adjustable switch-rod, the combination of a rod, an eccentric rotatably fitted in said rod, a bracket in which said rod is seated, and in a part of which is provided a non-circular bolt-hole, and a bolt passing through said bracket and having a non-circular shank portion seating in said non-circular bolt-hole, substantially as set forth.

2. In an adjustable switch-rod, the combination of a rod, an eccentric rotatably fitted in said rod, a bracket in which said rod is seated, and in a part of which is provided a star-shaped bolt-hole, and a bolt passing through said bracket and having a non-circular shank portion seating in said star-shaped bolt-hole; said star-shaped bolt-hole having a number of seats in multiple of the corners of the shank portion of said bolt, substantially as set forth.

3. In an adjustable switch-rod, the combination of a rod, an eccentric rotatably seated in said rod and provided with a non-circular bolt-hole, a bracket having a pair of arm members between which said rod is seated, and a bolt passing through said bracket-arm members, and having a non-circular shank portion; one of said bracket-arm members being provided with a circular bolt-hole and the other of said bracket-arm members being provided with a non-circular bolt-hole the latter of which is adapted to receive the non-circular shank portion of said bolt, substantially as set forth.

813,921. PNEUMATIC DOLLY. JAMES A. SHEPARD, Montour Falls, N. Y., assignor to The General Pneumatic Tool Company, Montour Falls, N. Y. Filed May 6, 1903. Serial No. 155,906.

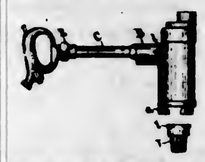

Claim.—1. In a dolly, the combination of a barrel, a piston projecting therefrom, a die set eccentrically upon the end of the piston, a handle projecting from one side of the barrel, a longitudinal slot on the piston, a guiding member in the barrel in engagement therewith, whereby the piston is held from rotation with freedom to reciprocate and the die is held in fixed relation to the handle, and means for admitting fluid under pressure behind the piston.

2. In a dolly, the combination of a barrel, a piston projecting therefrom, a die set eccentrically upon the end of the piston, a handle projecting from one side of the barrel, a plurality of longitudinal slots on the piston, a spring-actuated locking-bolt in the handle offset to engage any one of said slots, and means for admitting fluid under pressure behind the piston.

3. In a dolly, the combination of a barrel, a piston projecting therefrom, a die set eccentrically upon the end of the piston, a handle projecting from one side of the barrel, a plurality of longitudinal slots disposed around the periphery of the piston, a locking-bolt in the handle offset to engage one of said slots, and means for admitting fluid under pressure behind the piston.

4. In a dolly, the combination of a barrel, a piston projecting therefrom, a die carried eccentrically upon the end of the piston, a handle projecting from one side of the barrel, means whereby the piston is held from rotation with freedom to reciprocate in the barrel, means for changing the position of the die relatively to the handle and means for admitting fluid under pressure behind the piston.

5. In a dolly, the combination of a barrel, a piston projecting therefrom, a die carried upon the end of the piston, a handle attached to one side of the barrel, means for shifting the position of the die relatively to the axis of the handle, and means for admitting fluid under pressure behind the piston.

6. In a dolly, the combination of a barrel, a piston projecting therefrom, a die carried upon the end of the piston, a handle attached to an offset at one side of the barrel, a coupling between said handle and offset whereby the handle may be turned and set at different angles with reference to the axis of the barrel, and means for admitting fluid under pressure behind the piston.

7. In a dolly, the combination of a barrel, a piston projecting therefrom, a die carried upon the end of the piston, an offset at one side of the barrel, a duct leading therefrom to the barrel behind the piston, a handle provided with a controlling-valve and lever, a tubular distance-piece between the offset and handle, a coupling whereby the handle may be turned and set at different angles upon the distance-piece, and means for connecting the handle with the fluid-supply.

8. In a dolly of the type described, the combination, with the piston, of a packing member, a spring-plate between said packing member and the piston, and a recess in the end of the piston to permit said plate to vibrate.

9. In a dolly of the type described, the combination of a piston having a socket in its inner end, a packing member for said end of the piston separate therefrom, and a guide-rod to which the packing member is secured, said rod projecting into the piston-socket and being free to move therein.

10. In a dolly of the type described, the combination, with the piston, of a packing member, a spring-plate interposed between said packing member and the piston, a guide-rod to which the packing member and the spring-plate are secured, a socket in the piston to receive the guide-rod, and a recess or counterbore in the end of the piston to permit said plate to vibrate.

11. In a dolly of the type described, the combination, with the piston, of an independently-mounted packing member, and a spring interposed between the piston and the packing member for the purpose set forth.

12. In a dolly of the type described, the combination, with the barrel, of a brace-coupling comprising a sleeve provided with wings adapted to be brought into interlocking engagement with lugs projecting from the end of the cylinder, and a screw in the sleeve adapted to be set up against the barrel-head when the sleeve is in place.

813,922. TAKE-DOWN SQUARE. CHARLES K. SITTON and JOHN H. WILLIAMS, Portland, Oreg. Filed Mar. 20, 1905. Serial No. 251,044.

Claim.—1. As a new article of manufacture, the combination of two separable members *a*, *b*, the intersecting ends of which are respectively made with lips *a'*, *b'*; and interlocking shoulders, the line of one member being made with apertures like *c*, *f*, and the lip of the other member being provided with rotatable cams inserted in said apertures when the parts are assembled, and so arranged that the partial rotation of said cams will interlock the intersecting ends of said members substantially as described.

2. As a new article of manufacture, the combination of two separable members *a*, *b*, the intersecting ends of which are respectively made with lips *a'*, *b'*, and interlocking shoulders, the lips of one member being made with apertures like *c*, *f*, and the lip of the other member being provided with rotatable elliptical cams inserted in said apertures when the parts are assembled, and so arranged that the partial rotation of said cams will interlock the intersecting ends of said members substantially as described.

3. As a new article of manufacture, the combination of two separable members *a*, *b*, the intersecting ends of which are respectively made with lips *a'*, *b'*, having beveled inner edges and with beveled shoulders *d* for said inner edges to abut against; the lip of one member being made with apertures like *c*, *f*, and the lip of the other member being provided with rotatable cams inserted in said apertures and so arranged that the partial rotation of said cams will interlock the intersecting ends of said members substantially as described.

4. As a new article of manufacture, the combination of two separable members *a*, *b*, the intersecting ends of which are respectively made with lips *a'*, *b'*, having beveled inner edges and with beveled shoulders *d* for said inner edges to abut against; the lip of one member being made with apertures like *c*, *f*, and the lip of the other member being provided with rotatable, elliptical cams inserted in said apertures and so arranged that the partial rotation of said cams will interlock the intersecting ends of said members substantially as described.

813,923. SPRINGWORK. JOHN A. STAPLES, Newburgh, N. Y., assignor to Staples & Hanford Company, Newburgh, N. Y., a Corporation of New Jersey. Filed Apr. 9, 1903. Serial No. 151,889.

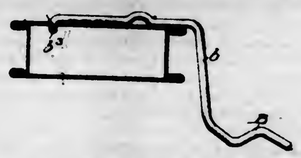

Claim.—1. A spring structure consisting of horizontal rails having permanent seats, spring-supports having angular ends adapted to be passed through said seats and interlocked with said rails, and springs carried by the supports.

2. A spring structure consisting of horizontal rails having seats, wires for supporting the springs and having angular ends entering the seats and lateral wings loosely engaging the rails; and springs on the wires.

3. In springwork, the combination with a frame having side rails provided with oppositely-disposed seats, drop-wires adapted when partially rotated to interlock with said seats, crossing wires arranged at intervals, and springs adapted to connect with both said wires at their points of crossing.

4. In springwork, the combination with a frame having side rails provided with oppositely-arranged holes, drop-wires having their ends bent to provide lateral wings adapted to said holes and to engage the under faces of the rails, crossing wires arranged at intervals, and springs adapted to interweave with said wires at their crossings.

5. A spring-support to engage the frame of springwork, consisting of a wire having vertical end hooks which terminate in wings lateral to the length of the wire and extending in the same direction.

6. In springwork, a pair of horizontal rails having holes, and a spring-support consisting of a wire having substantially vertical end hooks adapted to the holes and whose length is approximately the thickness of the wall of the rail, and lateral wings adapted to react against the rails.

7. In springwork, the combination with a frame composed of rails provided with oppositely-arranged holes, spring-supports composed of crossing wires adapted to said holes and having lateral wings to pass within the holes and out of register therewith, and springs connecting said wires at their crossings.

8. In springwork, the combination with a frame composed of hollow metallic rails provided with oppositely-arranged holes, spring-supports composed of corrugated crossing wires, the ends of said wires having hooks adapted to rest in said holes and lateral wings adapted to prevent displacement thereof, and springs interwoven with said wires at their crossings.

9. In springwork, a pair of horizontal rails having opposite seats, and a spring-support consisting of a wire having ends entering the seats and provided with lateral wings engaging the rails.

10. In springwork, a pair of rails having opposite holes, and a spring-support having angular ends adapted when the support is partially rotated to enter said holes and interlock with the rails.

11. In springwork, the combination with a pair of rails having opposite openings, and a spring-support provided at its ends with wings lateral to the said support and adapted to the openings and engaged therewith by partial rotation of the support.

813,924. SPRINGWORK. JOHN A. STAPLES, Newburgh, N. Y., assignor to Staples & Hanford Company, Newburgh, N. Y., a Corporation of New Jersey. Filed Apr. 28, 1904. Serial No. 205,626.

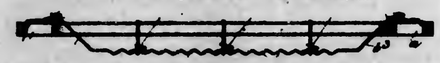

Claim.—1. In combination, a frame having opposite seats, and a rod provided with means at its ends interlocked with the seats and held against disengagement by the torsional resistance of the rod.

2. In combination, a frame having opposite seats, and a rod having its ends entering the seats and provided with wings held from disengagement with the frame by the torsional resistance of the rod.

3. In combination, a frame having opposite seats, a rod having its ends entering the seats and one of which ends is provided with a wing engaging the frame and held against displacement by the torsional resistance of the rod.

4. In combination, a frame having opposite seats, and a rod provided at its ends with vertical hooks adapted to the seats, and wings extending oppositely therefrom.

5. In combination, a pair of rails having opposite seats, and a rod provided at its ends with depending hooks entering the seats and oppositely-extending wings abutting against the rails.

6. In combination, a pair of rails having opposite openings, and a rod provided at its ends with oppositely-extending wings adapted to be sprung into the openings.

7. In combination, a pair of rails having opposite seats, a rod having hooks at the ends adapted to the seats, and oppositely and laterally extending wings engaging the rails and held against displacement by the torsional resistance of the rod.

8. In combination, a pair of rails having opposite seats, and a spring-support having angular ends entering the seats and one of which ends is sprung into its associated seat by putting the rod under torsion.

9. In combination, a pair of rails having opposite seats and a rod having lateral wings passing through the seats and one of which wings is entered into its associated seat by rotation of the same against the torsion of the rod.

10. In springwork, the combination with a frame having side rails provided with oppositely-arranged holes, crossing spring-supporting wires having their ends bent to provide oppositely-extending wings adapted to said holes and extending laterally therefrom in engagement with the rails, and springs interweaving with the said wires at their crossings.

11. In springwork, the combination with a frame composed of rails provided with oppositely-arranged holes, spring-supports composed of crossing wires adapted to said holes and having lateral wings to pass within the holes and out of register therewith and which are held against displacement by the torsional resistance of the supports, and springs connecting said wires at their crossings.

12. In springwork, the combination with a frame composed of rails provided with oppositely-arranged holes, spring-supports composed of corrugated crossing wires, the ends of said wires having hooks adapted to rest in said holes and oppositely-extending lateral wings adapted to engage the rails and prevent displacement thereof, and springs interwoven with said wires at their crossings.

813,925. HAY-STACKER. DANIEL H. SUMMERS, Mercer, Mo. Filed Apr. 21, 1905. Serial No. 256,742.

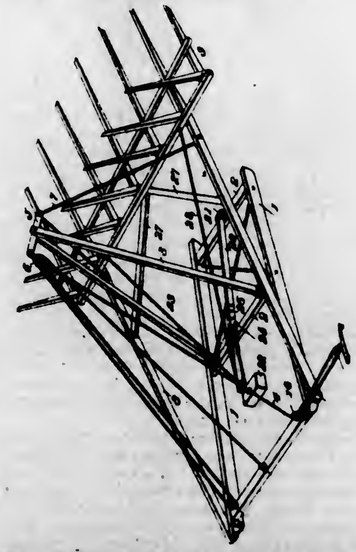

Claim.—1. In a hay-stacker, the combination of a supporting-frame, arms pivoted to the supporting-frame, a fork carried by said arms, a hoisting-frame, a hoisting-rope connected with the hoisting-frame, connecting means between the hoisting-frame and the arms carrying the fork, a pivoted weighted retarder-bar, a member adjustable longitudinally of said retarder-bar, and a connection between said adjustable member and the fork.

2. In a hay-stacker, the combination of a supporting-frame, arms pivoted to the supporting-frame, a fork carried by said arms, a hoisting-frame, a hoisting-rope connected with the hoisting-frame, connecting means between the hoisting-frame and the arms carrying the fork, a weighted retarder-bar pivoted to the supporting-frame of the stacker and provided longitudinally thereof with a plurality of openings, a pin insertible in a selected one of the openings in the retarder-bar, and a connection between said pin and the fork.

813,926. GAS-ENGINE SPARKER. ANDREW F. TALLHADOR, Washington, D. C. Filed Mar. 16, 1905. Serial No. 250,230.

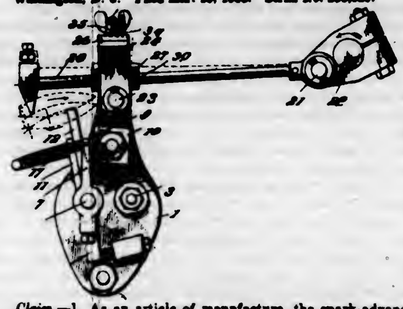

Claim.—1. As an article of manufacture, the spark-advancer comprising a block adapted to be mounted and rock on a journal and having a longitudinal slideway, a box through which the sparker-actuating rod is adapted to reciprocate, said box confined in said slideway, and means for adjusting said box longitudinally of said slideway and holding the same in the desired adjustment, substantially as described.

2. An explosive-engine spark-advancer comprising a block having a bearing on which the block is adapted to oscillate, a box confined to and movable longitudinally of said block, said box having a bore through which the sparker-actuating rod reciprocates, and a threaded rod and nut for adjusting said box and holding the same in the desired position longitudinally of the block.

3. A spark-advancer comprising a block having a bearing on which the block is adapted to oscillate with a swinging and reciprocating sparker-actuating rod, said block having a longitudinal slideway, a box confined in said slideway to slide longitudinally thereof and having a bore receiving and through which said rod reciprocates, a threaded rod for moving said box in one direction and extending longitudinally of the block, a spring yieldingly pressing said box in the opposite direction, and a nut on said rod for moving the same longitudinally.

4. A spark-advancer comprising a block having a longitudinal slideway, a plate closing the outer end thereof, a box extending through and longitudinally movable in said slideway and formed with a longitudinal bore therethrough, said box being formed of longitudinal sections removably secured together, a threaded rod confined to said box and extending outwardly through said plate, a spring compressed between said plate and the box, and a nut on the outer end of the rod at the outer face of said plate.

5. In an explosive-engine, in combination, sparking mechanism, a reciprocating and swinging actuating-rod provided with a tripping-dog for actuating said mechanism, means for actuating said rod, and an oscillating block provided with a box in which said rod is confined and through which the same reciprocates, and means for moving said box to move said rod laterally and for locking the same in the desired adjustment.

6. In an explosive-engine igniter, a movable electrode, an oscillatory tripped member, a reciprocating engine-operated tripping-rod, a guiding bearing-box surrounding said rod, a rocking block carrying said box, and provisions for shifting said box laterally with respect to the path of movement of the rod.

813,927. DOOR STOP AND RETAINER. DANIEL J. TAYLOR, Philadelphia, Pa., assignor of one-half to Samuel J. Taylor, Philadelphia, Pa. Filed Aug. 17, 1905. Serial No. 274,626.

Claim.—The combination in a door-retainer, of a stop made in a single piece and having a cavity in one end and an annular groove formed in the walls of the cavity, a perforated elastic disk forced into the annular groove and partially closing the cavity, with a headed knob, the head of the knob being greater in diameter than the opening in the disk, but less in diameter than the cavity, so that the disk is free to expand to allow the head of the knob to pass, substantially as described.

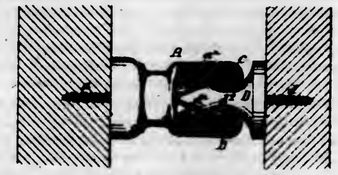

813,928. UNIVERSAL BUSINESS FILING-CARD. MYRON S. TELLER, Kingston, N. Y. Filed Sept. 16, 1905. Serial No. 278,789.

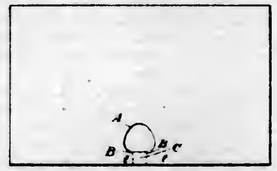

Claim.—A card for use in card-index filing-cases having a hole cut therein for the reception of the locking and holding rod of the case, and lines of perforations extending from the hole to the edge, to permit a piece or part to be readily torn or broken out, permitting the rod to be placed in said hole, and before removal to subserve the purpose of keeping the said piece or part torn out in place thus preserving intact the tabs at the sides of the said lines.

813,929. SEWING-MACHINE. JASPER VANHEYTE, Tiffin, Ohio. Filed Aug. 11, 1905. Serial No. 273,903.

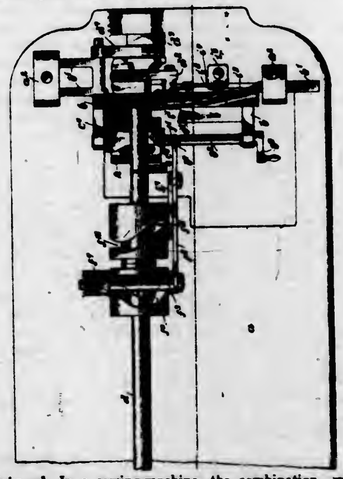

Claim.—1. In a sewing-machine, the combination, with the needle and its operating mechanism, of a spool carrying the under thread, a reciprocally-moving frame supporting said spool and having an opening of less length than the latter for the passage of the needle-thread loop in being passed around the spool, the position of said opening being shifted from one end to the other of the spool by the movement of the frame, and means for taking the thread-loop from the needle and passing it around said spool to interlock with the thread carried thereby, said means including a loop-seizing hook and a loop-spreader, the latter being independent of the hook and movable in a path through the said opening in the spool-frame.

2. In a sewing-machine, the combination, with the needle and its operating mechanism, of a spool carrying the under thread, a case inclosing said spool, a reciprocally-moving frame supporting said spool and case and having an opening for the passage of the needle-thread loop in being passed around the spool, the position of said opening being shifted from one end to the other of the spool by the movement of the frame, and means for taking the thread-loop from the needle and passing it around said spool to interlock with the thread carried thereby, said means including a loop-seizing hook and a loop-spreader, the latter being independent of the hook and movable in a path through the said opening in the spool-frame.

3. In a sewing-machine, the combination, with the needle and its operating mechanism, of a spool carrying the under thread, a frame supporting said spool and having an opening for the passage therethrough of the needle-thread loop, means for imparting movement to said spool and spool-frame in a direction in opposition to each other, and means for passing a needle-thread loop through said opening in the spool-frame and around the spool.

4. In a sewing-machine, the combination, with the needle and its operating mechanism, of a spool carrying the under thread, a reciprocally-moving frame supporting said spool and having an opening for the passage therethrough of the needle-thread loop, a reciprocally-moving spool-driver operating in a direction in opposition to the movements of the spool-frame, and means for passing a needle-thread loop around the spool.

5. In a sewing-machine, the combination, with the needle and its operating mechanism, of a spool carrying the under thread, a reciprocally-moving frame supporting said spool, a reciprocally-moving driver for imparting movement to the spool in a direction in opposition to the movements of the spool-frame, said driver being connected with the latter to be supported and guided thereby, and means for passing a needle-thread loop around the spool.

6. In a sewing-machine, the combination, with the needle and its operating mechanism, of a spool carrying the under thread, a frame supporting said spool provided with an opening for the passage of the needle-thread loop and also having guideways, a reciprocally-moving spool-driver supported and operating in said guideways in the spool-frame, and means for passing a needle-thread around the spool.

7. In a sewing-machine, the combination, with the needle and its operating mechanism, of a spool carrying the under thread, a reciprocally-moving frame supporting said spool and having an opening for the passage of the needle-thread loop, a loop-seizing hook operating in a path at one side of the spool-frame, a loop-spreader coöperating with said hook and moving in a path through said opening in the spool-frame to pass a needle-thread loop around the spool, means for operating said hook and loop-spreader, an operating-shaft having a crank or eccentric at that side of the frame opposite the hook, and means operatively connecting said crank or eccentric with the spool-frame.

8. In a sewing-machine, the combination, with the needle and its operating mechanism, of a spool carrying the under thread, a reciprocally-moving frame supporting said spool, a reciprocally-moving driver operating said spool in a direction in opposition to the movements of the frame, said driver having a part thereof provided with an opening to receive the spool-supporting portion of the spool-frame, and means for passing a needle-thread loop around the spool.

9. In a sewing-machine, the combination, with the needle and its operating mechanism, of a spool carrying the under thread, a support for said spool, a loop-seizing hook operating in a circular path at one side of said spool, a loop-spreader operating in a circular path at substantially right angles to the path of the hook and coöperating with the latter in passing the needle-thread around the spool, the thread engaging or drawing surface of the hook being arranged in a plane parallel with the plane of the path of movement of the hook, and means for operating said hook and spreader, respectively.

10. In a sewing-machine, the combination, with the needle and its operating mechanism, of a reciprocally-moving spool carrying the under thread, a support for said spool, a rotating loop-seizing hook having a relatively thin blade portion of substantially triangular form in a plane at right angles to its axis and provided with a thread-engaging surface at the rear end of said blade arranged in a plane parallel with the plane of the path of movement of the hook and of the needle, the lower edge of said blade being arranged to move, during its passage through the needle-thread loop, in a path in line with or above the lowest limit of movement of the needle-eye for the purpose set forth, and an independent loop-spreader coöperating with said hook in passing the needle-thread around the under thread.

11. In a sewing-machine, the combination, with the needle and its operating mechanism, of a spool carrying the under-thread supply, a rotating shaft carrying a loop-seizing hook, said hook being provided with a thread-engaging surface arranged at right angles to the axis of its operating-shaft whereby the sides of an engaged needle-thread loop will be opened or spread apart in a direction parallel with the plane of the path of movement of the hook, a loop-spreader moving in a path to engage one side of said opened loop and carry the same around the spool, and means for operating said loop-spreader.

12. In a sewing-machine, the combination, with the needle and its operating mechanism, of a spool carrying the under-thread supply, a frame supporting said spool, a circularly-moving loop-seizing hook operating in a path parallel with one side of the spool, a circularly-moving loop-spreader operating in a path around the spool, and means for operating the said hook and spreader, respectively.

13. In a sewing-machine, the combination, with the needle and its operating mechanism, of a reciprocally-moving spool carrying the under thread, a rotating loop-seizing hook having a relatively wide thread-engaging surface arranged at right angles to its axis for entering and opening the needle-thread loop into a triangular shape with the sides spread apart in the direction of movement of the hook, a loop-spreader moving in a path to engage one side of the opened loop and carry the same around the spool, and means for operating the hook and spreader, respectively.

14. In a sewing-machine, the combination, with the needle and its operating mechanism, of a spool carrying the under thread, a reciprocally-moving frame supporting said spool and having an opening for the passage of the needle-thread loop, a loop-seizing hook moving in a circular path at one side of said spool, a loop-spreader moving in a circular path around one end of the latter and coöperating with the hook in passing a needle-thread loop around the same, and means for operating the said hook and spreader, respectively.

15. In a sewing-machine, the combination, with the needle and its operating mechanism, of a spool carrying the under thread, a support for said spool, a loop-seizing hook and its operating mechanism, a circularly-moving loop-spreader coöperating with said hook in passing the needle-thread around the spool, consisting of a lever having means at its front end for engaging with the thread, a vibrating lever connecting with the rear end of said spreader-lever, and means, coöperating with said vibrating lever, to impart a circular movement to the thread-engaging end of the spreader-lever.

16. In a sewing-machine, the combination, with the needle and its operating mechanism, of a spool carrying the under thread, a reciprocally-moving frame supporting said spool and having an opening in its spool-supporting portion, a circularly-moving loop-seizing hook operating in a path at one side of the spool, a loop-spreader, consisting of a lever having a thread-engaging arm, and means for moving said lever through the said opening of the spool-frame and causing its thread-engaging arm to move in a circular path around the end of the spool.

17. In a sewing-machine, the combination, with the needle and its operating mechanism, of a spool carrying the under thread, a support for said spool, a loop-seizing hook and its operating mechanism, a loop-spreader for coöperating with said hook in passing a thread-loop around the spool, consisting of a lever having a thread-engaging portion, a vibrating lever pivotally connected with one end of said spreader-lever, and a second vibrating lever having a sliding connection with the spreader-lever and coöperating with the first lever in imparting a circular movement to the thread-engaging end or portion of said spreader-lever.

18. In a sewing-machine, the combination, with the needle and its operating mechanism, of a spool carrying the under thread, means for passing the needle-thread loop around one end of said spool, and a reciprocally-moving loop-pusher operating in a path at one side of the spool for pushing the thread-loop along the same.

19. In a sewing-machine, the combination, with the needle and its operating mechanism, of a spool carrying the under thread, a case inclosing said spool, means for passing the needle-thread loop around one end of said spool, and a reciprocally-moving loop-pusher operating in a path at one side of the spool and having a loose connection with the spool-case.

20. In a sewing-machine, the combination, with the needle and its operating mechanism, of a spool carrying the under thread, a case inclosing said spool and having a slot therein, means for passing the needle-thread loop around one end of said spool, and a reciprocally-moving loop-pusher operating in a path at one side of the spool with one edge thereof extending into said slot in the spool-case.

21. In a sewing-machine, the combination, with the needle and its operating mechanism, of a reciprocally-moving spool carrying the under thread, a cylindrical case inclosing said spool, means for passing the needle-thread loop around one end of said spool-case, a loop-pusher operating in a path at one side of the spool for pushing the thread-loop along the latter, and means for imparting a reciprocating movement to the loop-pusher in opposition to the movements of the spool.

22. In a sewing-machine, the combination, with the needle and its operating mechanism, of a spool carrying the under thread, a case inclosing said spool, a reciprocally-moving frame supporting said spool and case and having an opening for the passage of the needle-thread loop, means for passing the needle-thread loop around one end of said spool-case, and a loop-pusher carried by said spool-frame for pushing the thread-loop along the spool-case.

23. In a sewing-machine, the combination, with the needle and its operating mechanism, of a reciprocally-moving spool carrying the under thread, a case inclosing said spool, means for passing the needle-thread loop around one end of said spool-case, a loop-pusher, consisting of a plate supported with one edge thereof loosely engaging with the spool-case to hold the latter from turning, and provided with a notch in that edge thereof adjacent to the spool-case forming a thread-engaging shoulder, and means for imparting a reciprocating movement to the loop-pusher in opposition to the movements of the spool.

24. In a sewing-machine, the combination, with the needle and its operating mechanism, of a spool carrying the under thread, a support for the spool, a case inclosing said spool provided with an open slot extending lengthwise through the same, means located exteriorly of said case and extending loosely into its slot so as to prevent a turning or rocking movement of the case with its inclosed spool, and means for passing a needle-thread loop around the spool and spool-case to interlock with the under thread.

25. In a sewing-machine, the combination, with the needle and its operating mechanism, of a commercial spool carrying the under thread, a support for said spool, a cylindrical case supported directly upon the periphery of the end flanges of the spool and having a stop projection located on its inner wall at a point distant from the end of the case so as to engage with a spool of less length than the latter and prevent undue endwise movement of the same, and means for passing a needle-thread loop around the spool and spool-case to interlock with the under thread.

26. In a sewing-machine, the combination, with a spool-supporting frame comprising two pins or rods, of a spool carrying the under thread riding directly upon said pins, an open-ended cylindrical case supported upon the periphery of the end flanges of the spool and means independent of the case for holding the same in longitudinal position upon the spool and communicating a reciprocating movement to the case and its inclosed spool.

813,930. **AUTOMATIC KNUCKLE-OPENER.** NORMAN WARNER and GEORGE W. JACOBS, Glenns Ferry, Idaho. Filed Feb. 9, 1905. Renewed Jan. 27, 1906. Serial No. 242,266.

Claim.—1. The combination with a car-coupling mechanism including a pivoted knuckle, of means tending to maintain said knuckle in position to engage a coacting coupling part associated with a companion coupling mechanism, said means including a lever mounted on the pivot-pin of the knuckle and having an arm coacting with the knuckle, substantially as described.

2. The combination with a car-coupling mechanism including a pivoted knuckle, of means for automatically throwing the knuckle when freed in its open position and for yieldingly maintaining said knuckle in said open position, said means including a lever having an engagement with the interlocking arm of the knuckle, substantially as described.

3. The combination with a car-coupling mechanism including a pivoted knuckle, of a lever pivotally mounted outside of the coupling-head, said lever being connected at one end to one arm of the knuckle, and means associated with the lever for automatically shifting the same for throwing the knuckle into open position.

4. The combination with a car-coupling mechanism including a pivoted knuckle, of a pivoted lever having an arm connected to the interlocking arm of the knuckle and a second arm, and tensioning means connected to said second arm.

5. The combination with a car-coupling mechanism including a pivoted knuckle, of a pivoted lever having an arm connected to the interlocking arm of the knuckle, and a second arm, and a spring interposed between the second arm and a fixed part.

6. The combination with a buffer-block, a draw-bar head and a knuckle pivoted therein, of a lever mounted upon said head having one arm connected to the knuckle, and a second arm extending at an angle to the first, and a spring interposed between the second arm and the buffer-block.

7. The combination with a car-coupling mechanism including a head and a knuckle pivoted therein, of a lever mounted upon the end of the pivot-pin of the knuckle projecting through the top face of the head, a connection between one arm of the lever and the outer arm of the knuckle, and a spring interposed between a second arm of the lever and a part fixed relatively to the head.

8. The combination with a coupling mechanism including a head and a knuckle pivotally mounted therein, of a lever having a central eye to receive a pivot-pin, an integral arm extending obliquely from the eye and terminating in a vertically-depending part engaging the outer arm of the knuckle, a second integral arm extending from the eye, and tensioning means coacting with the latter arm.

813,931. **ANNUNCIATOR.** JAMES A. WOTTON, Atlanta, Ga. Filed May 16, 1904. Serial No. 208,236.

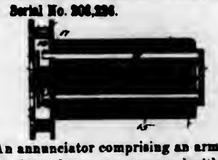

Claim.—1. An annunciator comprising an armature and an indicator carried thereby and a magnet arranged with its axis parallel with the axis of the armature the said magnet having poles projecting from its coils, the said poles having their axes also parallel with the axis of the armature and capable of operating the armature, the said magnet with its poles being removably mounted so that it may be withdrawn without disturbing the armature of the indicator.

2. An annunciator comprising a supporting-plate, an armature removably mounted upon one side thereof, an indicator carried by the said armature and a magnet removably mounted on the opposite side of the plate from the armature, the poles of the magnet extending to points adjacent to the armature, the removal of the magnet being accomplished without disturbing the armature or the indicator.

3. An annunciator mechanism comprising a supporting-casing, an approximately S-shaped armature mounted therein, an indicator secured to the armature and carried thereby, and a magnet secured to the said casing outside thereof the poles of said magnet projecting through the walls of the casing so as to occupy positions adjacent to the periphery of the armature.

4. An annunciator mechanism comprising a supporting-plate, a stud projecting therefrom, an armature mounted upon the said stud, an indicator carried by the armature, and a magnet mounted upon the plate with its axis approximately at right angles to the plane of the indicator the said magnet being bodily removable therefrom without disturbing the indicator, the poles of said magnet extending to positions adjacent the armature for affecting the same when energized.

5. An annunciator mechanism comprising separable indicating mechanism and actuating mechanism, the indicating mechanism comprising an armature and an indicator carried thereby and a weight mounted upon the indicator tending to hold it normally in one position, the actuating mechanism comprising a magnet arranged adjacent to the armature, but removable therefrom longitudinally, parallel with its axis without disturbing the armature and indicator, the poles of the magnet being capable of actuating the armature against the action of the weight.

6. An annunciator mechanism comprising an inclosing casing, an apertured face-plate secured thereto, an armature mounted in the casing, an indicator carried by the armature immediately to the rear of the face-plate, the surface of the indicator showing through the apertures in the face-plate, a removable magnet mounted outside the casing on one of the walls thereof, the poles thereof projecting through the casing-wall to points adjacent to the said armature for affecting the same.

7. An annunciator mechanism comprising a supporting-frame or casing, a removable armature mounted therein, a rocking indicator carried by the said armature, a weight upon the indicator for holding the indicator normally in a given position, stops carried by

the frame for engaging the armature and limiting its movement, and a magnet removably mounted upon the outside of the casing, the poles thereof projecting within the casing for moving the indicator against the action of the weight the longitudinal movement of the magnet causing the withdrawal of the poles without disturbing the indicating mechanism.

813,932. SIGHTING OF GUNS FROM COVER. WILLIAM YOULTEN, Westminster, England. Filed Nov. 21, 1902. Serial No. 132,333.

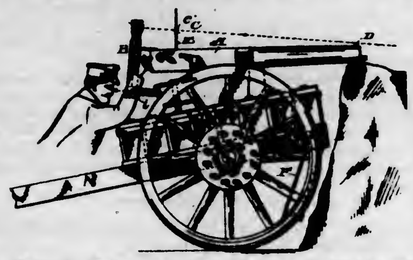

Claim.—1. An instrument for sighting guns from cover, consisting of a tube secured to the gun or cradle, and two substantially vertical tubes, one telescoping within the other, with a reflector in each tube, and an opening for admitting light to said reflector, mechanism for adjusting the height of the upper reflector, and mechanism for canting the instrument to the required inclination, substantially as described.

2. An instrument for sighting guns from cover, comprising a tube detachably connected to the gun or cradle, and provided with graduations, means for tilting said tube through a small angle, a second tube mounted to slide on the first tube and provided with an opening and a reflecting-surface, and a third tube also mounted to slide on the first tube and provided with a reflecting-surface, substantially as described.

3. An instrument for sighting guns from cover, comprising a tube detachably connected to the gun or cradle, and provided with graduations, means for tilting said tube through a small angle, a second tube mounted to slide on the first tube and provided with an opening and a reflecting-surface, a third tube also mounted to slide on the first tube and provided with a reflecting-surface, and a telescope carried by said third tube, substantially as described.

4. An instrument for sighting guns from cover, comprising a tube attached to the gun and provided with graduations for range, means for tilting said tube through a small angle, a second tube mounted on the first and provided with a prism for refracting light, means for moving said second tube longitudinally on the first, a third tube also mounted to slide on the first tube and provided with a prism therein, and a telescope mounted in rear of said second prism, substantially as and for the purposes described.

813,933. AUTOMATIC RECORDING DEVICE. ADOLF ABRAHAM, Neuhaus-on-the-Oste, Germany. Filed Sept. 20, 1905. Serial No. 279,345.

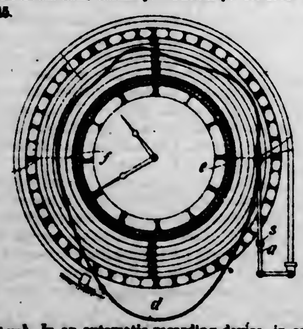

Claim.—1. In an automatic recording device, in combination an indicator, a clockwork, a movable surface and a chain moving together with the surface, means operated by the indicator to guide the chain on the surface.

2. In an automatic recording device, in combination an indicator, a clockwork a movable surface and a chain moving together with the surface, a lever operated by the indicator and provided with a guiding-eye to guide the chain on the surface.

3. In an automatic recording device, in combination an indicator, a clockwork, a movable surface and a chain moving together with the surface, a magnet to hold the chain to the surface, means operated by the indicator to guide the chain on the surface.

4. In an automatic recording device, in combination an indicator, a clockwork a movable disk and a chain moving together with the disk, the disk being provided with a scale, a magnet to hold the chain to the disk and a lever operated by the indicator to guide the chain on the disk.

5. In an automatic recording device, the combination with a suitable moving chart, a flexible metallic marker coöperating with the chart and magnetically held thereto, means to move the marker in accordance with the indications to be recorded.

6. In an automatic recording device, the combination with a suitable moving chart, an endless metallic chain coöperating with the chart to mark on a portion thereof the indications desired, means to position said chain on the chart in accordance with the indications to be recorded and means to create a magnetic field from the positioning means along the path of the chart for a determined distance, whereby said chain is held to the chart in the line recording the indications over a definite period of time and is automatically released from the chart after having passed said field.

7. In an automatic recording device, the combination with a chart, a driving mechanism therefor, means to produce a magnetic field extending over a portion of its path, an endless chain held to the chart by said field and means at the beginning of the field to guide the chain relatively to the chart in accordance with the indications to be recorded.

8. In an automatic recording device, a disk, a clockwork to rotate the same, said disk having concentric rulings to indicate different values and circumferential markings to indicate time, means to produce a magnetic field over the upper part of said disk between the determined time-markings, an endless chain held to said disk by said field, and an indicator moved in accordance with the indications to be recorded, to position said chain between the concentric rulings as it enters the magnetic field.

9. In an automatic recording device, the combination with a chart having parallel rulings thereon in the direction of travel of the chart and time-indicators at its edge, means to drive the chart, means to produce a magnetic field extending over a portion of its surface, an endless chain held to the chart by said magnetic field and an indicator to move the chain relatively to the rulings and in accordance with the indications to be recorded.

813,934. PROTECTIVE COVER FOR PNEUMATIC TIRES. JOSEF ALBERS, Aix-la-Chapelle, Germany. Filed Apr. 7, 1905. Serial No. 254,415.

Claim.—Improved protective cover for pneumatic tires of cycles of all kinds, composed of one single, continuous piece of leather adapted to inclose the entire outer surface of the pneumatic tire, including the reinforcements in the wheel-rim and vulcanized with the said tire and secured in the wheel-rim, reinforced internally by a lining of crescent shape in cross-section, secured to the outer cover by double-pointed internally-clenched rivets, presenting outwardly heavy heads on the thread surface, substantially as described.

813,935. SUBMARINE DREDGE. THADDEUS AVERY, Jr., Joliet, Ill. Filed Aug. 1, 1904. Serial No. 219,594.

Claim.—1. In a submarine dredge, the combination with a water-tight vessel, of an excavating-pump and means to drive the same, a suction-pipe provided with a swinging end portion, means to control the movement of said end portion, and a discharge-pipe.

2. In a submarine dredge, the combination with a water-tight vessel, of an excavating-pump located within the vessel and provided with a suction-pipe and a discharge-pipe, both extending from within the vessel to outside of the same, means located within the vessel to drive said pump, a third pipe extending from within the vessel to a point adjacent the outer end of said inlet-pipe, means located within the vessel for discharging water through said last-named pipe.

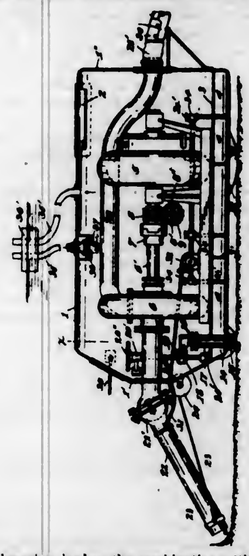

3. In a submarine dredge, the combination with a water-tight vessel, an excavating-pump having suction and discharge pipes and means to drive said pump, of a sluice-box connected to said discharge-pipe and a removable cover for said box.

4. In a submarine dredge, the combination with a water-tight vessel, an excavating-pump having suction and discharge pipes, and means carried within the vessel to drive said pump, of a sluice-box carried by the vessel exteriorly thereof and connected to the discharge-pipe.

5. In a submarine dredge, the combination with a water-tight vessel and the dredging device, of supporting and traction wheels for the vessel, means to rotate the axle of one pair of wheels and means to rotate the other pair of wheels to propel the vessel.

813,936. SWITCH. WILLIAM S. BAILEY, Spring Hope, N. C. Filed June 19, 1905. Serial No. 266,266.

Claim.—1. The combination with the track-rails and the movable switch-points connected therewith, of a rock-shaft journaled adjacent the track and connected with said switch-points, operating-rods connected with said rock-shaft, and means to depress said rods to hold the switch in set position during the passage of the car thereon.

2. The combination with the track-rails and the movable switch-points connected therewith, of a rock-shaft journaled adjacent the track and connected with the switch-points, operating-rods connected with the rock-shaft, an operating-plate overlying said rods and adapted to depress said rods in operation, and a holding-plate overlying said rods and adapted to operate the rod in vertical movement.

3. The combination with the track-rails and movable switch-points connected therewith, a rock-shaft journaled adjacent the rails and connected with said points, means for operating the shaft in one direction, operating-rods connected with the shaft for its reverse operation, means for initially operating said rods, and means for holding said rod when operated, said latter means being controlled by the movement of the car.

4. The combination with a main track, a siding, and switch-points coöperating therewith, of a rock-shaft journaled adjacent the track-rails and connected with the switch-points, means connected with the rock-shaft for automatically holding said switch-points to open the main track, means operated by the advancing car to move said rock-shaft to open the siding, and means operated by the advancing car to hold said rock-shaft in operative position during the passage of the car onto the siding.

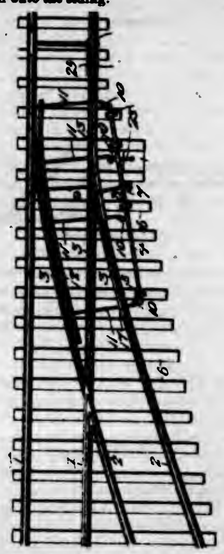

5. The combination with a main track, a siding, and switch-points coöperating therewith, of a rock-shaft journaled adjacent the track-rails and connected with the switch-points, means connected with the rock-shaft for automatically holding said switch-points to open the main track, means operated by the advancing car to move said rock-shaft to open the siding, and means operated by the advancing car to hold said rock-shaft in operative position during the passage of the car onto the siding, all of said parts being located below the tread of the rails.

813,937. CYCLE-LOCK. KARL BALLOD, Riga, Russia. Filed Nov. 18, 1904. Serial No. 233,365.

Claim.—1. A cycle-lock comprising two clamps adapted to be attached to the bars of the frame of a cycle, a spring-actuated bolt pivoted on one of said clamps, a casing containing a lock carried by the other clamp and a swinging attachment to said casing, said lock being provided with spring-actuated means for holding said bolt when swung into contact therewith, and with means for holding said lock open after it has been opened by a key, substantially as described.

2. A cycle-lock comprising two clamps adapted to be secured to the bars of the frame of a cycle, a swinging bolt pivotally attached to one of said clamps, a spring tending to swing said bolt out of contact with the cycle-wheel, a casing provided with a lock carried by the other clamp, said casing being provided with a swinging extension, and spring-actuated means in said lock for automatically engaging and locking said bolt when the latter is swung up into contact therewith, and spring-actuated means for holding said lock open after it has been opened by a key, substantially as described.

3. A cycle-lock comprising two clamps adapted to be secured to the bars of the frame of a cycle, a slotted bolt pivotally connected to one of said clamps, a spring engaging said bolt and normally tending to hold it out of contact with the cycle-wheel, a casing, provided with a swinging extension, carried by the other clamp, a lock in said casing, a spring-actuated sliding piece provided with a projection, the end of said sliding piece being adapted to engage the slot in said bolt and a spring-actuated pivoted piece provided with a projection adapted to engage the projection on said sliding piece and hold the lock open after it has been opened by a key, substantially as described.

813,938. CAR-FENDER. CHARLES BAUER, New York, N. Y. Filed Oct. 12, 1903. Serial No. 176,462.

to said lever and extending upward through said bench, plate and

the perforate chamber so as to leave a passage between the two caps

a gasket interposed between the body and head flanges and said

813,938. CAR-FENDER. CHARLES BAUER, New York, N. Y. Filed Oct. 12, 1905. Serial No. 282,402.

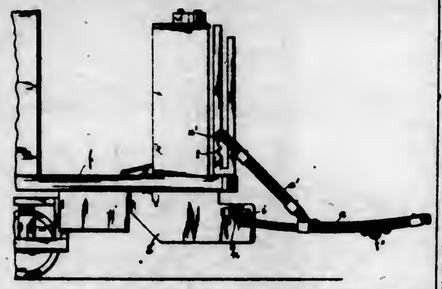

Claim.—1. A car-fender which normally is locked in a raised position from the track and in case of an accident is dropped onto the same, comprising two frames formed of U-shaped bars covered with nettings, one of said frames forming the fender proper and being removably supported from the car and the other forming the bumper-guard being hinged to the first to swing vertically therein, the rear end of said bumper-guard being vertically guided, a catch or lock mechanism underneath the platform of the car to normally lock the fender proper in raised position from the track, a releasing mechanism on the platform to allow the release of the catch mechanism at the desired moment, substantially and for the purpose as specified.

2. A car-fender which normally is locked in a raised position from the track and in case of accident is dropped onto the same, comprising two frames formed of U-shaped bars covered with nettings, one of said frames forming the fender proper and having its ends bent inward to form journals, castings fixed to the under surface of the car, recesses in said castings, said recesses being adapted to bear the said journals and allowing the latter to be easily slipped into said bearings and removed therefrom, means to prevent an involuntary disengagement of the journals from the bearings, the other frame forming the bumper-guard and being hinged to the fender proper to swing thereon vertically, a guide for said bumper-guard, said guide extending upward from the platform, a catch or lock mechanism underneath the platform to lock the fender proper in a raised position from the track and means for releasing the said lock mechanism, substantially and for the purpose as specified.

3. The combination with a car-fender which normally is locked in a raised position from the track and in case of accident is dropped onto the same, of a guide and catch for the bumper-guard, comprising two upright rods centrally arranged behind and at a distance from each other upon the platform, the rear end of the bumper-guard being adapted to engage between the said guide-rods and to slide therein when the fender proper is turned from one position into the other, notches at the lower end of the rear rod, said notches being adapted to engage and lock the bumper-guard when the main fender is dropped onto the track, and hold the latter in close contact therewith, substantially and for the purpose as specified.

813,939. PUNCHING-MACHINE. JOHN A. BELL, Lathrop, Cal. Filed Nov. 20, 1905. Serial No. 288,131.

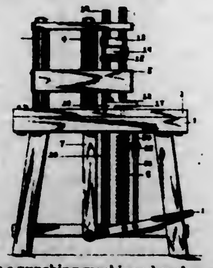

Claim.—1. In a punching-machine a bench, a plate arranged on the top of said bench, two upwardly-extending standards on said plate, two outwardly-extending arms on said standards, a foot-lever secured to the under side of said bench, a spring located between said lever and the under side of said bench, a rod pivotally secured to said lever and extending upward through said bench, plate and arms, a punch-rod bearing in said arms and means for connecting said rods, as specified.

2. In a punching-machine the combination of a bench, an iron plate arranged on the top thereof and provided with a punch-die, two standards extending upward from said plate, two arms extending at right angles to said standards, a foot-lever secured beneath said bench, a spring located between said lever and the under side of said bench, a rod pivotally secured to said lever and extending upward through said bench, plate and arms, two outwardly-extending lugs forming component parts of said rod between said arms, a punch-rod bearing in said arms and adapted to coact with said die, and a lug forming a component part of said punch-rod and extending between said first-named lugs.

3. In a punching-machine the combination of a punching device, a spacer, consisting of a table, a slotted plate arranged on the top thereof, a slide-plate arranged in said slot and provided with notches at given distances apart, a slot in said table opening into said first-named slot, a lever fulcrumed to the under side of said table, a foot-lever secured to said table, a link connecting said foot-lever to said first-named lever, a spring located between said foot-lever and the under side of said table, a catch pivotally secured to said first-named lever and extending through said last-named slot into said first-named slot, and engaging with said notches, and a spring secured to said first-named lever and bearing against said catch, as set forth.

813,940. LAMP FOR BURNING OIL, &c. GEORGE BENTOTE, Acton, England. Filed Dec. 16, 1905. Serial No. 292,065.

Claim.—1. In a lamp, a reservoir, a perforate chamber fitting within the reservoir and adapted to be filled with absorbent material, a conical centrally-perforated cap closing the top of the perforate chamber and a centrally-perforated conical cap or burner-cone closing the top of the reservoir and inclosing the cap of the perforate chamber but formed of larger dimensions than the latter cap so as to leave a passage between the two caps substantially as herein shown and described and for the purpose stated.

2. In a lamp, a reservoir, a perforate chamber removably fitting within the reservoir and adapted to be filled with absorbent material, a conical centrally-perforated cap closing the top of the perforate chamber, a centrally-perforated conical cap or burner-cone closing the top of the reservoir and inclosing the cap of the perforate chamber but formed of larger dimensions than the latter cap so as to leave a passage between the two caps and means for varying the elevation of the burner-cone substantially as herein shown and described and for the purpose stated.

3. In a lamp, a reservoir, a perforate chamber removably fitting within the reservoir and adapted to be filled with absorbent material, a centrally-perforated cap closing the top of the perforate chamber, a wick-tube fitted within said perforation and adapted to hold a wick, a conical cap or burner-cone closing the top of the reservoir and inclosing the cap of the perforate chamber and centrally perforated with a hole of larger diameter than the wick-tube said cap or cone being formed of larger dimensions than the cap of the perforate chamber so as to leave a passage between the two caps and means for varying the elevation of the burner-cone substantially as herein shown and described and for the purpose stated.

4. In a lamp, a reservoir, a perforate chamber removably fitting within the reservoir and adapted to be filled with absorbent material, a centrally-perforated cap closing the top of the perforate chamber and adapted to be fitted with a wick, a conical cap or burner-cone closing the top of the reservoir and inclosing the cap of the perforate chamber and centrally perforated and formed of larger dimensions than the cap of the perforate chamber so as to leave a passage between the two caps, a pin upon the reservoir and an inclined slot in the burner-cap or cone engaging said pin substantially as herein shown and described and for the purpose stated.

5. In a lamp, a reservoir, a perforate chamber removably fitted within the reservoir and adapted to be filled with absorbent material, a centrally-perforated cap closing the top of the perforate chamber, a wick-tube adjustably fitted within said perforation and adapted to hold a wick, a conical cap or burner-cone closing the top of the reservoir and inclosing the cap of the perforate chamber and centrally perforated with a hole of larger diameter than the wick-tube said cap or cone being formed of larger dimensions than the cap of the perforate chamber so as to leave a passage between the two caps and means for varying the elevation of the burner-cone substantially as herein shown and described and for the purpose stated.

813,941. ELEVATOR. DANIEL BLACKSTONE, Shelbyville, Ill. Filed Nov. 7, 1905. Serial No. 286,941.

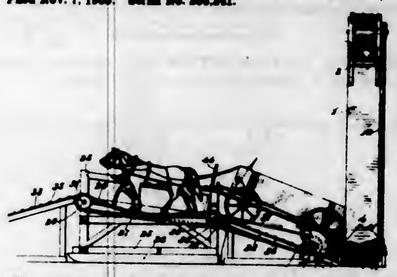

Claim.—1. In an elevating apparatus, the combination of a treadmill having inclined approaching and descending platforms leading thereto and extending therefrom, said mill comprising an endless belt having a driving-shaft provided with a sprocket-gear, an elevator disposed in rear and at one side of the inclined approach and provided with a drive-shaft carrying a pinion and a beveled gear, an intermediate power-shaft provided with a beveled gear meshing with the beveled gear on the elevator-shaft and carrying a sprocket-wheel, a sprocket-chain connecting said sprocket-wheel with the sprocket-gear on the treadmill-shaft, a conveyer-frame pivotally mounted to swing upon the elevator in a vertical plane and adapted to be lowered across the lower end of the inclined approach, said conveyer-frame having a drive-shaft and a conveyer actuated thereby, said shaft carrying at one end a sprocket-wheel, a chain connecting said sprocket-wheel with the sprocket-wheel on the elevator-shaft, and a brake for controlling the treadmill.

2. In an elevating apparatus, the combination of a treadmill, inclined passages leading to and from the mill, said mill comprising an endless belt mounted upon shafts, one of said shafts being provided at one end with a sprocket-wheel and at its opposite end with a friction brake-wheel, a pivotally-mounted lever for engaging said brake-wheel and provided with means for locking it in adjusted position, an elevator disposed at the rear and at one side of the inclined approach and having a drive-shaft provided with a beveled pinion and a sprocket-wheel, a power-shaft having a beveled gear meshing with said pinion, and a sprocket-wheel, a sprocket-chain connecting said sprocket-wheel with the sprocket-wheel on the treadmill-shaft, brackets on the elevator-frame, a conveyer having a drive-shaft journaled in said brackets and pivotally connecting the conveyer thereto; whereby said conveyer is adapted to be elevated and lowered to extend across the bottom of the inclined approach, means for securing the conveyer in raised position, a sprocket-wheel on the conveyer-shaft, and a chain connecting said sprocket-wheel with the sprocket-wheel on the elevator-shaft.

813,942. BURIAL-CASKET. JACOB BLAKE, Bedford, Iowa. Filed Nov. 7, 1905. Serial No. 286,936.

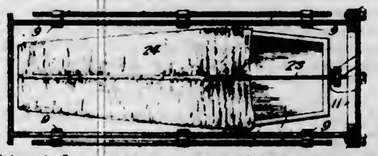

Claim.—1. In a burial device, a receptacle having a transparent panel, a rod disposed longitudinally thereof above said panel, and a curtain longitudinally adjustable on said rod to expose or cover the panel.

2. In a burial apparatus, an exterior coffin box or casing comprising a body provided at one end with a strengthening-flange depending to form a supporting-leg and having its opposite end open and formed with a surrounding flange and a hood projecting beyond the upper portion of the flange, said flange having a depending portion constituting a complementary leg, a head for closing the said open end of the casing provided with an inwardly-extending flange, a gasket interposed between the body and head flanges and said body-flange and marginal portion of the head outside the flange thereon, and bolts passing through the body-flange, gasket and marginal portion of the head and tightly joining said parts, the hood lapping over the upper portion of the joint, substantially as described.

3. In a burial apparatus, a casing, a coffin adapted to be inserted longitudinally therein, a rod permanently fastened at one end within the casing and having its opposite end free, perforated members on the coffin adapted to engage and slide along the rod upon the insertion of the coffin, to connect the coffin and casing together, and means for fixing the free end of the rod to the casing.

4. In a burial apparatus, a casing, a coffin adapted to be inserted longitudinally therein, interengaging devices upon the casing and coffin brought into engagement when the latter is inserted to hold the same stationary within the casing, and means for maintaining the parts in connected relation.

5. In a burial apparatus, a casing having an opening at one end thereof, a rod fixed at one end within the casing, a coffin adapted to be inserted longitudinally into the casing and provided with members to engage and interlock with said rod as the casket is inserted, a fastening device upon the casing to engage and hold the free end of the rod from movement, and a closure for the casket-opening.

813,943. MACHINE FOR CUTTING SUGAR-CANE. JAMES A. BOLDEN, Gray, La. Filed July 21, 1905. Serial No. 270,703.

Claim.—An apparatus for cutting cane, comprising a truck, an arm projecting from said truck, vertically-adjustable plates mounted in suitable guideways, knives fastened to said plates and disposed in horizontal planes with inclined cutting edges extending toward each other, a lever secured to one of said plates and fulcrumed over said projecting arm, means for holding the free end of said lever in different positions, and a bar secured to one end of the other of said plates and fastened to said lever, whereby as the lever is tilted, said plates may be raised or lowered, as set forth

813,944. SHIPPING-CRATE. JOHN H. DUBAR, Denver, Colo. Filed July 31, 1905. Serial No. 271,963.

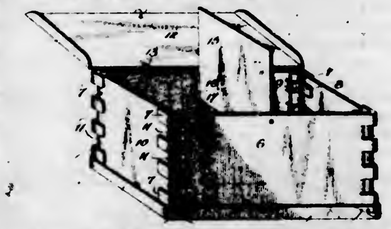

Claim.—1. A collapsible shipping-crate comprising a bottom section having side and end flanges, side sections mounted upon the bottom section, parallel series of fingers integral with each end of each side section and extending at right angles therefrom, and end sections having right-angle extensions at their ends adapted to be seated between the series of fingers and the side sections.

2. A collapsible crate comprising a bottom section, side sections mounted thereon, angular fingers at each end of and integral with each side section, said fingers being disposed in parallel rows, the end sections having end flanges adapted to be inserted between the rows of fingers at each end of the side sections.

813,945. DRESS-PLACKET FASTENER. GEORGE BURROWS, Liverpool, England. Filed July 14, 1904. Serial No. 216,619.

Claim.—1. In a device of the character described, the combination of a primary blade, a stirrup having an opening secured to said blade, said stirrup provided with parallel, right-angled extensions

material to said single saw and past said single saw to said plurality of saws.

tached thereto, the ends B, C, of the wire being twisted tightly about the lace proper and the body of the said wire being extended along

partment, and a delivery-pipe communicating with the upper compartment.

Claim.—1. In a device of the character described, the combination of a primary blade, a stirrup having an opening secured to said blade, said stirrup provided with parallel, right-angled extensions and a spring, an auxiliary blade provided with a stirrup pivotally mounted upon said extensions, said auxiliary stirrup provided with a finger, and said finger normally in engagement with said spring.

2. In a device of the character described, the combination of a flexible, primary blade, a stirrup having a rectangular opening secured to said blade, an angular spring secured upon said stirrup and partly closing and extending into said opening, said stirrup provided with parallel, right-angled extensions, an auxiliary flexible blade provided with a stirrup pivotally mounted upon said parallel extensions, said auxiliary blade provided with a finger, said finger extending into the rectangular opening of the stirrup secured to the primary blade and normally in engagement with the spring for controlling movement of the blade.

3. A device of the character described, comprising a primary and an auxiliary blade, said primary blade provided with a stirrup at one end, said stirrup having an opening formed therein, parallel, integral extensions formed upon said stirrup, a spring secured upon one side of said stirrup and projecting into the opening formed therein, a stirrup secured to said auxiliary blade near one end, and a finger formed upon said stirrup and normally engaging the portion of the spring projecting into the opening of the stirrup carried by the primary blade.

4. A device of the character described, comprising a primary and an auxiliary blade, a stirrup having a rectangular opening secured to said primary blade at its lower end, an angular spring secured near one end of said stirrup and projecting into said opening, said stirrup provided with parallel extensions projecting at right angles thereto, the auxiliary blade journaled upon said parallel extensions, a stirrup secured to the lower end of said auxiliary blade, a finger secured to said stirrup adapted to engage the inner face of said spring and slide longitudinally over a portion of the inner face of the same, when lateral movement is imparted to one of said blades.

5. In a device of the character described, the combination of a primary blade, a stirrup provided with an opening carried by said blade, said stirrup provided with extensions, a spring carried by said stirrup and extending into the opening thereof, an auxiliary blade provided with a stirrup, pivotally mounted upon said extensions, and a finger formed upon said stirrup carried by the auxiliary blade, the finger adapted to engage said spring.

813,946. **SHINGLE-TRIMMING MACHINE.** JOHN D. CALDWELL and IVAN BURROWS, Seattle, Wash. Filed Sept. 14, 1904. Serial No. 224,309.

Claim.—1. In a machine of the class described, the combination with the framework, of a plurality of saws mounted upon an arbor, feed and pressure rolls for said saws, a single saw mounted upon another arbor and positioned outside of the plane of the outermost of the aforesaid saws, track-rods mounted on said frame and extending from in front of to the rear of said single saw and a carriage mounted on said track-rods and adapted to convey the shingles being operated upon to first-mentioned plurality of saws or to the last-named saw, substantially as described.

2. In a machine of the class described, the combination with a framework, an arbor journaled therein, a single saw carried on said arbor and located outside the framework, of another arbor mounted on the framework, a plurality of saws mounted on said last-named arbor and a carriage mounted on the framework and adapted to feed material to said single saw and past said single saw to said plurality of saws.

3. In a machine of the class described, the combination with the framework, a plurality of saws carried by an arbor, said arbor, a carriage reciprocally mounted upon said frame, of a table positioned upon the opposite end of the frame to the carriage, said table having an opening therein through which the waste products will fall, substantially as described.

813,947. **PROP FOR CLOTHES-LINES.** ABSHERAN J. CAMPBELL, Berwyn, Pa. Filed July 13, 1904. Serial No. 216,265.

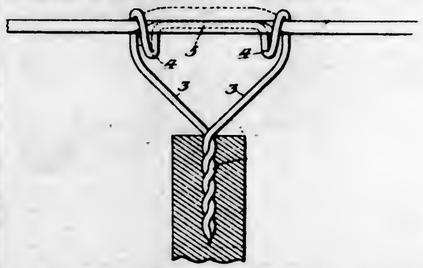

Claim.—A clothes-line prop comprising a head constructed of a single length of wire having its ends twisted together in spiral form, and provided with a sharp-pointed end, a pair of arms diverging upwardly from said spiral twist and provided respectively with spiral hooks having inner upturned portions, said hooks being spaced in a direction parallel with the longitudinal axis of a clothes-line, and a cross-bar connecting the terminals of the upturned portions of the hooks, and the clothes-line serving to contact with the cross-bar and arranged parallel therewith when said line is engaged by said hooks, substantially as specified.

813,948. **TEMPORARY BINDER.** JENS H. CHRISTENSEN, Chicago, Ill. Filed Apr. 10, 1905. Serial No. 254,871.

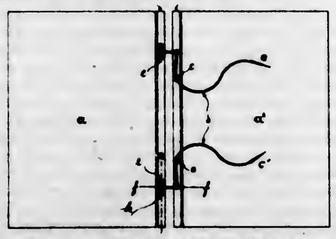

Claim.—A temporary binder consisting of two covers, a binding-strip flexibly connected to the rear edge of each cover and having a number of openings, fasteners secured on one strip, cords adapted to pass through said openings and connect the strips, each cord having at one end a metal retaining-tip, a portion of each of said tips being formed in cross-section into a half-tubular shape and the other portion of each tip being formed into full tubular shape and adapted to engage one end of the cords the other ends of the cords being adapted to engage said fasteners, substantially as described.

813,949. **SHOE-LACE.** WILLIAM H. CLING, Charleston, S. C. Filed Mar. 10, 1904. Serial No. 197,695.

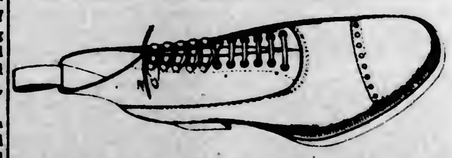

Claim.—The improved shoe-lace, comprising the flexible lace proper of ordinary construction, and the flexible wire which is attached thereto, the ends B, C, of the wire being twisted tightly about the lace proper and the body of the said wire being extended along such lace between such points of attachment, and the ends of the lace proper being left free, substantially as described.

813,950. **COMBINED RANGE, &c., AND HEATING APPARATUS.** WARREN H. CONOVER, Freehold, N. J., assignor of one-half to James Parker, Jersey City, N. J. Filed May 17, 1902. Serial No. 107,830.

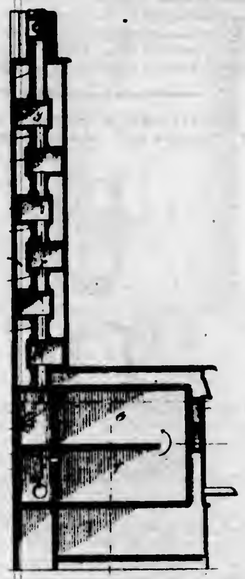

Claim.—1. In a water-heating appliance, for hot-water heating systems, in combination, a heating-chamber, a plurality of water-heating compartments arranged one above the other within said heating-chamber, each compartment being arranged on the opposite side of said heating-chamber from the adjacent compartment to provide a sinuous passage through said chamber between said compartments, and a single pipe connecting each compartment with the adjacent compartment, the pipes connecting the several compartments being arranged substantially in alinement, whereby a straight and single passage is provided through said heating-compartments.

2. In a water-heating appliance for hot-water heating systems, in combination, a fire-box, a heating-chamber communicating with said fire-box, a water-heating device having a plurality of water-heating compartments arranged one above the other within said heating-chamber, each compartment being arranged on the opposite side of said heating-chamber from the adjacent compartment to provide a sinuous passage through said heating-chamber between said compartments, a return-pipe of a hot-water heating system communicating with the bottom compartment, a delivery-pipe of a hot-water heating system communicating with the upper compartment, and a single pipe connecting each compartment with the adjacent compartment, the pipes connecting the several compartments being arranged substantially in alinement, whereby a straight and single passage is provided through said compartments.

3. The combination with a stove, of a water-heating chamber arranged at the rear of said stove and communicating with the fire-box thereof, said heating-chamber being in communication with the chimney of the stove, a plurality of water-heating compartments arranged one above the other within said chamber, each compartment being arranged on the opposite side of said chamber from the adjacent compartment to provide a sinuous passage through said chamber between said compartments, a single pipe connecting each compartment to the adjacent compartment, the pipes connecting the several compartments being arranged substantially in alinement, whereby a straight and single passage is provided through said heating-compartments, a return-pipe communicating with the bottom compartment, and a delivery-pipe communicating with the upper compartment.

4. The combination with a stove, of a water-receptacle arranged around the fire-box thereof, a return-pipe connected to said receptacle, a heating-chamber arranged at the rear of said stove and communicating with said fire-box and also the chimney of the stove, a plurality of water-heating compartments arranged one above the other within said heating-chamber, each compartment being arranged on the opposite side of said heating-chamber from the adjacent compartment to provide a sinuous passage through said chamber between said compartments, a single pipe connecting each compartment to the adjacent compartment, the pipes connecting the several compartments being arranged substantially in alinement, whereby a straight and single passage is provided through said heating-compartments, and a delivery-pipe connected to the upper compartment, the lower compartment being connected to said receptacle.

5. The combination of a range, stove, furnace, &c., and a water-heating apparatus consisting of a chamber having a lower section provided with an inlet and an upper section provided with an outlet, said sections communicating with each other at the end opposite the outlet and inlet and communicating with corresponding upper and lower sections of a second heating-chamber at the opposite side of the fire-box, to provide a tortuous passage therethrough, substantially as set forth.

6. The combination, with a range, stove, furnace, &c., of a water-heating apparatus having, at opposite sides of the fire-box of said stove, &c., lateral subdivided chambers, each of the thus formed upper and lower compartments of said chambers communicating at one end with each other, and a second compartment or sub divided chamber arranged at the back of said fire-box with its compartments communicating with the upper and lower compartments of said lateral chambers, at the opposite ends of the last named, and having an outlet and an inlet passage, respectively, substantially as set forth.

7. The combination of a stove, range, furnace, &c., a water-heating apparatus having opposite chambers provided with upper and lower sections communicating with each other at one end and opening at their opposite ends into common corresponding upper and lower chambers or compartments, separated one from the other, said lower chamber having a delivery-opening and said upper chamber communicating with a boiler, comprising a series of sections or compartments connected by means which form alining passages therethrough, arranged within said heating-chambers, substantially as set forth.

813,951. **TUFTED PILE FABRIC.** THOMAS COOPER, Kidderminster, England. Filed June 19, 1905. Serial No. 266,096.

Claim.—A tufted pile fabric of three-shot weft, the tufts being doubled on the lower shots of weft, the warps of which fabric are in series of four threads, one warp of each series of four threads being straight or approximately straight and being arranged under the top shot of weft, a pair of straight warps being situated under the middle shot of weft and a fourth thread or binding-warp passing under the lower shots of weft and over the upper shots of weft and between the last-named pair of straight warps substantially as set forth and shown.

813,952. **WALL-REGISTER.** EDWARD P. COMBY, St. Louis, Mo., assignor to Look-Well Wall Register Company, St. Louis, Mo., a Corporation of Missouri. Filed June 15, 1905. Serial No. 265,413.

Claim.—1. A wall-register, comprising in combination a frame, a grille-frame adapted to be removably positioned in said frame, a damper hinged to the upper end of said grille-frame, an operating-handle secured to said damper by a connection which permits said handle to be swung both vertically and laterally, said grille-frame being provided with a pin projecting horizontally and parallel with said damper, and said handle being provided with offset portions adapted to be engaged over said pin to retain the damper in its closed position or under said pin to retain the damper in its open positions.

2. A wall-register, comprising in combination a frame, a grille-frame adapted to be removably positioned in said frame, a damper hinged to the upper end of the grille-frame, an operating-handle se-

cured to said damper by a connection which permits said handle to be swung both vertically and laterally and which handle projects through the grille-frame and is so formed as to be engaged upon the grille-frame to retain the damper in either open or closed positions; substantially as specified.

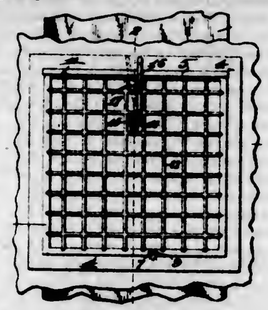

813,953. AMUSEMENT DEVICE. ALFRED DALFEN, Brooklyn, N. Y. Filed Sept. 6, 1905. Serial No. 277,202.

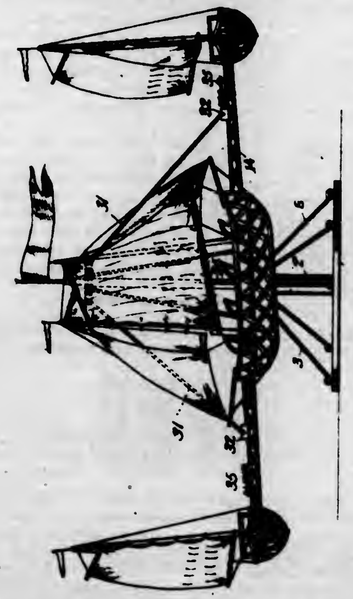

Claim.—1. An amusement device having a support, a hub mounted for a rotary movement on said support, said hub being formed with a plurality of pairs of shoulders arranged in different planes, and a plurality of pairs of supporting-beams resting against said shoulders and crossing each other at suitable angles.

2. An amusement device having a support, a hub mounted for a rotary movement on said support, said hub being formed with a plurality of pairs of shoulders arranged in different planes, and a plurality of pairs of supporting-beams resting against said shoulders and crossing each other at suitable angles, the ends of all of said beams terminating in the same plane.

3. An amusement device comprising a supporting member, a hub mounted for a rotary movement on said supporting member said hub having an irregular bore in the upper portion thereof, a plurality of rollers journaled upon the supporting member and adapted to engage the walls of the irregular bore for imparting a wabbling motion to the hub, a framework connected with the hub, and means for rotating the framework.

4. An amusement device comprising a supporting member, a hub mounted upon the supporting member and having an irregular bore in the upper portion thereof, a plurality of rollers journaled upon the hub and being adapted to contact with the walls of the irregular bore for imparting a wabbling motion to the hub, a plurality of pairs of shoulders formed upon the hub in different planes, a plurality of pairs of supporting-beams resting against the shoulders and having their outer ends arranged in the same plane, a plurality of boats connected with the supporting-beams, a vertical shaft extending through the supporting member, means for rotating the vertical shaft, a plurality of draw-rods connected with the vertical shaft, a plurality of sliding members upon the supporting-beam, said sliding members being connected with the draw-rods, and a plurality of buffing devices upon the supporting-beams, said buffing devices being adapted to coöperate with the sliding member to limit the tilting or wabbling movement of the frame formed by the supporting-beams.

813,954. POULTRY DRINKING-FOUNTAIN. THOMAS A. DAVIS, Findlay, Ill. Filed July 6, 1905. Serial No. 268,573.

Claim.—1. A poultry drinking-fountain, consisting of a pan, having supporting means in the bottom, substantially as stated; a receptacle-barrel having a horizontal flange provided with drinking-openings resting on said pan; and a reservoir or fountain, closed at the top and open at the bottom, arranged in said barrel and resting upon said supporting means in the pan.

2. A poultry drinking-fountain consisting of a pan having a bar and studs in its bottom, a receptacle-barrel having a horizontal flange provided with drinking-openings resting on the said studs in the said pan, and a reservoir or fountain closed at the top and open at the bottom, having its open bottom arranged in the said barrel and resting on the said bar on the bottom of the pan, the said bar being lower than the studs upon which the receptacle is supported.

813,955. COFFEE COOLER AND STONER. WILLIAM DEAN, Memphis, Tenn. Filed Mar. 28, 1905. Serial No. 252,549.

Claim.—1. An apparatus of the class described, comprising a substantially imperforate revolving receptacle provided internally with agitators, means for revolving the receptacle, a blower, pipes connecting both ends of the receptacle with the blower, and valves in the pipes, whereby the draft may be directed longitudinally through the receptacle in line with the feeding of the material to cool the same, or the direction of the draft reversed to discharge the material from the receptacle and separate foreign matter therefrom.

2. An apparatus of the class described comprising a substantially imperforate revolving receptacle, having stationary heads to close the ends thereof, each head having an opening, a pipe communicating with the opening in one of the heads, valves in the pipe, a blower connected to the pipe, a hopper connected to the pipe, a duct connecting the hopper and the opening in the second-mentioned head, whereby the draft created by the blower may be passed through the revolving receptacle in either direction, and means for revolving the receptacle.

3. An apparatus of the class described, comprising a substantially closed, revolving receptacle mounted on a revolving shaft, means revolving the shaft, agitating means in the receptacle, stationary heads at the ends of the receptacle, a chute communicating with an opening in one of said heads, a door in said head, a pipe communicating with the other head and connected to a blower, a blower, a duct communicating with the chute, a receiving-hopper and means for directing air from the blower longitudinally through the receptacle to cool the material therein, or in reverse direction to eject the material therefrom into the receiving-hopper.

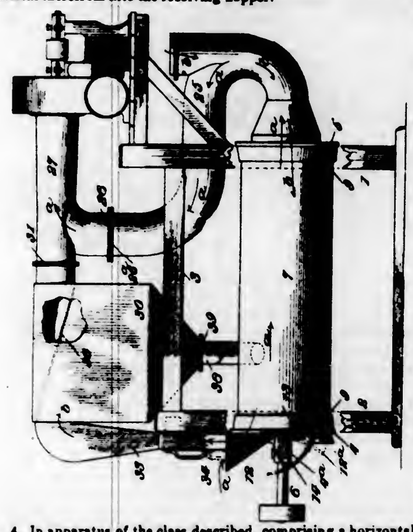

4. In apparatus of the class described, comprising a horizontal revolving shaft, a substantially imperforate revolving receptacle mounted on the shaft, a screen at or near one end of the receptacle; a pipe communicating with one end of the receptacle, a duct communicating with the opposite end of the receptacle, a hopper interposed between the duct and the pipe, a blower, and a system of valves for directing draft longitudinally through the receptacle toward the screen for cooling the material being treated, and reversing the direction of the draft to eject the material from the receptacle into the hopper.

5. An apparatus of the class described comprising a revolving receptacle having two sets of agitating means therein, one of said sets of agitators positioned to lift the material and drop the same in substantially the same plane, the second set of agitators elevating the material and changing the direction of the same, a screen adjacent the second set of agitators, means for directing a draft of air through the receptacle, and means for changing the direction of the air and passing it through the receptacle in a reverse direction.

6. An apparatus of the class described comprising a revolving receptacle provided with a screen at or near one end, inclined agitators which elevate the material and deflect the same away from the screen, means for creating a draft in the receptacle, and means for changing the direction of the draft.

7. An apparatus of the class described, comprising a substantially closed receptacle provided with a screen, agitators located adjacent the screen and positioned to deflect material therefrom, a pipe connected to one end of the receptacle, a blower connected to the pipe, a duct communicating with the opposite end of the receptacle, a hopper communicating with the duct and the pipe, a screen interposed between the open ends of the duct and the pipe in the hopper, and means for altering the direction of the draft of air in the receptacle.

8. An apparatus of the class described comprising a substantially closed receptacle having stationary heads, a chute communicating with one head, a duct communicating with the chute, a valve closing the chute from the atmosphere, a hopper connected to the opposite end of the duct, a pipe communicating with the other end of the receptacle, said pipe communicating with the hopper and a blower, a blower, valves in the pipe, said valves coöperating with the valve in the duct to alter the direction of the draft in the receptacle, and means for gaining access to the receptacle

9. An apparatus of the class described comprising a revolving receptacle, agitators in the receptacle, a screen in the receptacle, other agitators positioned adjacent the screen to deflect material therefrom, a duct communicating with one end of the receptacle and provided with a valve, a hopper communicating with the duct, a pipe communicating with the opposite end of the receptacle, two valves in the pipe, one of which closes the pipe against admission of air direct from the atmosphere, a branch pipe communicating with the first-mentioned pipe and the hopper, a valve in the branch pipe between the first-mentioned pipe and the hopper, a blower connected to the branch pipe, a screen in the hopper between the opening of the branch pipe and the duct, the valves serving to direct air through the receptacle in either direction.

10. An apparatus of the class described comprising a horizontal shaft, a revolving receptacle mounted on the shaft and provided at or near one end with a screen, inclined agitators mounted on the interior of the receptacle to elevate the material and deflect the same away from the screen, and means for creating a draft in the receptacle.

11. An apparatus of the class described, comprising a revolving receptacle provided with two sets of agitators, and a screen, one of said sets of agitators being positioned to lift the material and drop it in substantially the same plane, the other set of agitators being inclined and positioned adjacent the screen, a chute for supplying the receptacle with material, a hopper connected with a blower, a blower, a connection between the hopper and the receptacle, a connection between the receptacle and the blower, and a system of valves whereby the air and material may be directed toward the screen, or the air-current reversed to clean the receptacle

12. In an apparatus of the class described, comprising a receptacle, a hopper, a blower, a pipe between the hopper and blower, a pipe connecting the pipe between the blower and hopper and the receptacle, an exit formed in said latter pipe, a pipe connecting the other end of the hopper and the opposite end of the receptacle, a screen in the hopper between the pipes communicating therewith, and a system of valves for directing the air from the blower through the receptacle in either direction.

813,956. VEHICLE-BODY CONSTRUCTION. ENOCH DENNEY, St. Louis, Mo. Filed May 8, 1905. Serial No. 259,367.

Claim.—1. The combination with a vehicle-body frame, having suitably-located apertures therein of panels adapted to fit on certain parts of the frame, there being dovetail grooves formed in the inner faces of said panels; strips detachably seated in said dovetail grooves, and bolts carried by said strips that pass through the apertures in the frame, substantially as specified.

2. In a vehicle-body construction, the combination with a vehicle-body frame, through certain parts of which are formed suitably-located apertures of panels adapted to be positioned on said frame, there being dovetail grooves formed in the inner faces of said panels; dovetail strips removably seated in said grooves; bolts carried by said strips, which bolts are provided with countersunk heads, and conical nuts adapted to be engaged on the outer ends of said bolts, substantially as specified.

813,957. GRAIN THRESHING AND SEPARATING MACHINE. HENRY W. ESENHART, York, Pa., assignor to A. B. Farquhar Company, Limited, York, Pa. Filed June 20, 1905. Serial No. 266,127.

Claim.—1. The combination of a threshing-cylinder and concave, a casing or hood inclosing a space above the cylinder having side walls and a top, the side walls being cut away in front, offset plates secured to the side walls of the casing or hood opposite the cut-away parts thereof provided with bearings, and a feeder for the straw and grain to be threshed supported in the said bearings in the offset plates, substantially as set forth.

2. In a grain-threshing machine, the combination with the threshing-cylinder and concave and the straw and grain separating mechanism, of a curtain arranged in rear of the cylinder to prevent the grain thrown rearward thereby from flying out at the tail end of the machine—the curtain comprising a section, 50, hinged to the casing of the machine near its top and hanging downward therefrom, and of a width approximating the width of the machine, and a series of transversely-arranged sections, 49, independently hinged to the lower edge of the section, 50, from which they hang freely suspended, substantially as set forth.

3. The concave having its curved side arms pivoted at their rear

ends to the side plates 15, and provided at their front ends with a cross-rod 26 connected to and extending between them, and the concave-adjusting devices, in combination with the feed-board 25, having its lower end resting on and engaging the cross-rod 26, and slotted plates 28 at its upper end engaging pins or studs 27 on the side walls of the frame, as and for the purposes hereinbefore shown and described.

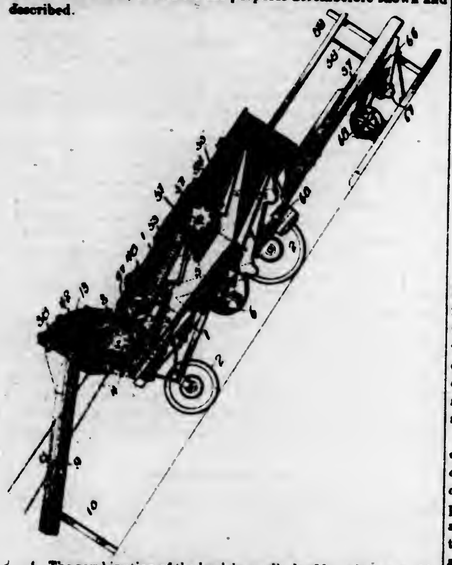

4. The combination of the bruising-cylinder 51, and concave 52, the straw-separating shaker 5, the grain-cleaning shaking-shoe 7, the fan 6, the shaking-frame 57, arranged to receive the discharge from the shaking-shoe 7, and shaker 5, such shaking-frame having a serrated or ribbed bottom imperforate near its forward end and perforated toward the rear, means for supporting the frame 57 and imparting thereto longitudinal reciprocating movements, a collecting-chamber arranged below the perforated portion of the bottom of the frame, and a blast-fan 68 arranged to discharge into the said collecting-chamber, substantially as set forth.

813,958. SKIVING-MACHINE. GEORGE W. EMERSON, Denison, Tex. Filed Aug. 23, 1905. Serial No. 275,236.

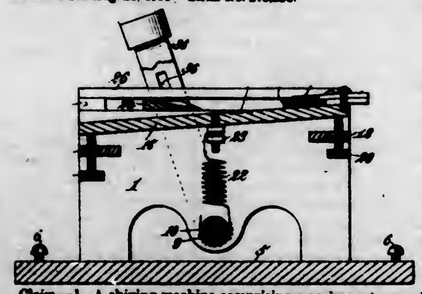

Claim.—1. A skiving-machine comprising a reciprocatory and transversely-movable loosely-mounted knife, an angularly-adjustable material-supporting plate associating with said knife, and an oscillatory lever independent of and loosely engaging with said knife for operating it when the lever is oscillated.

2. A skiving-machine comprising a reciprocatory and transversely-movable knife having an upwardly-extending guide-pin, a pair of retaining-bars for the knife and between which the knife extends, one of said bars provided with a diagonally-extending slot in which said pin operates during the reciprocation of the knife, thereby imparting a transverse movement to the knife, an angularly-adjustable material-supporting plate associating with said knife, and means for reciprocating the knife.

813,959. STARTING DEVICE FOR EXPLOSION-ENGINES. VICTOR EBERHARDT, Essen-on-the-Ruhr, Germany, assignor to Fried. Krupp Aktiengesellschaft, Essen-on-the-Ruhr, Germany. Filed Apr. 12, 1905. Serial No. 255,210.

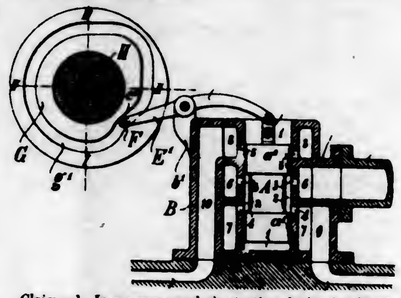

Claim.—1. In a compressed-air starting device for double-acting four-cycle explosion-engines, means constructed to open communication for the compressed air first to one end of the cylinder and then to the other end of the cylinder and then to close communication with both ends of the cylinder during the succeeding reciprocation of the piston, and means for connecting the means first named to the driving member of the engine to be started, whereby, when the air is admitted to one end of the cylinder, the subsequent movements follow automatically.

2. In combination with a double-acting four-cycle explosion-engine and a suitable source of compressed air, a valve movable to open communication for the compressed air with first one end of the cylinder and then the other end of the cylinder and then movable to a position to cut off said air-supply from both ends of the cylinder, and a cam adapted to be driven by the engine, and constructed to impart the two opening movements during successive strokes of the engine and to move the valve to the cut-off position during the two following strokes of the engine.

3. In combination with a double-acting four-cycle explosion-engine, a suitable source of compressed air, passages leading to the respective ends of the cylinder and a valve constructed to assume two consecutive positions which open communication successively with the respective ends of the cylinder, and an intermediate position which cuts off communication with both ends of the cylinder, a cam imparting the three movements to the valve during different strokes of the engine's movements, and means for making and breaking connection between the cam and a driven member of the engine.

813,960. ADJUSTABLE HEAD FOR BRAKE-BEAMS. ROBERT L. ETTINGER, Washington, D. C., assignor, by mesne assignments, to The Damascus Brake Beam Company, Cleveland, Ohio, a Corporation of Ohio. Filed May 17, 1905. Serial No. 260,886.

Claim.—1. In an adjustable brake of the character described, the combination of a brake-beam, a brake-head holder fixedly secured to the beam, a brake-head having a bearing on the brake-head holder permitting its angular adjustment thereon, and connections between said holder and head both above and below the said bearing, releasable and permitting the relative adjustment between the head and holder.

2. In an adjustable head-brake, the combination of a beam, a brake-head holder fixedly secured to the beam and a brake-head having a bearing upon said holder, permitting relative angular adjustment between the head and holder and bolted to the holder both above and below said bearing; each bolt being shiftable in one of the parts through which it passes so as to permit the adjustment of the brake-head when the bolts are released.

3. The combination with a brake-beam, of a brake-head holder rigidly secured to said beam, a brake-head fitted to said holder, and set-bolts passing through said brake-head and brake-head holder to unite them; one of said united members being provided with two sets of series of bolt-holes to receive said set-bolts, substantially as set forth.

4. The combination with a brake-beam, of a brake-head holder rigidly secured to said beam and provided with bolt-holes, a brake-head having two sets of series of bolt-holes and fitted to said holder, and set-bolts passing through alined pairs of the bolt-holes in said brake-head and through the bolt-holes in said brake-head holder, substantially as set forth.

5. The combination with a brake-beam, of a brake-head holder rigidly secured to said brake-beam and provided with bolt-holes, a brake-head having side webs provided with two sets of series of bolt-holes and fitting over said holder, and set-bolts passing through alined pairs of said brake-head bolt-holes and through the bolt-holes in said brake-head holder, substantially as set forth.

6. The combination with a brake-beam, of a brake-head holder rigidly secured to said beam and provided with bolt-holes, a brake-head recessed at its rear side and provided with two sets of series of bolt-holes, set-bolts passing through alined pairs of the bolt-holes in said brake-head and through the bolt-holes in said brake-head holder; said brake-head being provided interiorly at its forward side with a swell arranged to bear against the forward side of said brake-head holder, substantially as set forth.

7. The combination with a brake-beam, of a brake-head holder rigidly secured to said beam and provided with bolt-holes, a brake-head recessed at its rear side and provided with two sets of series of bolt-holes, set-bolts passing through alined pairs of the bolt-holes in said brake-head and through the bolt-holes in said brake-head holder; said brake-head being provided interiorly at its forward side with a swell arranged to bear against the forward side of said brake-head holder and containing pockets into which the forward portion of said brake-head holder enters when the brake-shoe is adjusted, substantially as set forth.

813,961. NON-REFILLABLE BOTTLE. SAMUEL F. ETTINGER, Little Rock, Ark. Filed Apr. 13, 1905. Serial No. 255,337.

Claim.—The combination with a receptacle provided with a neck having a continuous interior taper, the lower portion of the tapering interior forming a valve-seat, and the upper portion being provided with screw-threads, a tapering plug exteriorly threaded to engage the tapered threaded portion of the neck and provided at the bottom with spaced projections forming supporting portions and providing intervening passages, said plug having a stopper-receiving opening, and a tapering cup-shaped valve arranged within the lower portion of the neck and adapted to be supported by the said projections when the receptacle is inverted.

813,962. AXLE-BOX. JAMES R. FLEMING, Swansea, Pa. Filed Apr. 17, 1905. Serial No. 255,916.

Claim.—1. An axle-box comprising a bracket having a horizontal member adapted to be attached to a car-sill and having vertical transverse brace members depending therefrom to a level adjacent to the axle center, a separate journal-block positioned beneath the horizontal member, said member being provided with means on its under side for holding said block against outward movement, a lubricant-holding member having its outer end positioned beyond the journal-block and having vertical sides adapted to slide in between the brace members of the bracket and the sides of the journal-block, said sides and outer end of the lubricant-holding member being carried above the axle-bearing, and means for attaching the lubricant-holding member to the bracket.

2. An axle-box comprising a bracket having a horizontal member adapted to be attached to a car-sill, a separate journal-block positioned beneath the horizontal member, said member being provided with a longitudinal rib depending therefrom to engage the outer end of said block at the top, and a lubricant-holding member having vertical sides embracing the sides of the journal-block, said sides being carried up to the top of the journal-block where they are provided with tongues, and said horizontal member of the bracket being provided with grooves on the under side thereof to receive said tongues.

3. An axle-box comprising a bracket having a horizontal member adapted to be attached to a car-sill, a separate journal-block positioned beneath the horizontal member, said member being provided with means on its under side for holding said block against outward movement, a lubricant-holding member having vertical sides embracing the sides of the journal-block, said sides being carried up to the top of the journal-block and being provided with inset ledges to engage and support the under sides of the journal-block, and means for attaching the lubricant-holding member to the bracket.

4. The combination, with an axle, a car-wheel loosely mounted thereon, the hub of said wheel having an annular lubricant-holding chamber, and a journal-block having a half-sleeve projecting into said chamber, of an axle-box comprising a bracket having a horizontal member adapted to be attached to a car-sill, said horizontal member being provided with means for holding the journal-block in place, a lubricant-holding member having a half-sleeve projecting into the wheel-hub chamber and having vertical sides and an outer end embracing the sides of the journal-block and inclosing the outer end of the axle, said sides and outer end being carried above the axle, and means for attaching the lubricant-holding member to the bracket.

813,963. CENTRIFUGAL MACHINE. ANDREAS PENTAG, Amsterdam, Netherlands, assignor to Watson, Laidlaw & Company, Glasgow, Scotland. Filed Jan. 6, 1903. Serial No. 83,998.

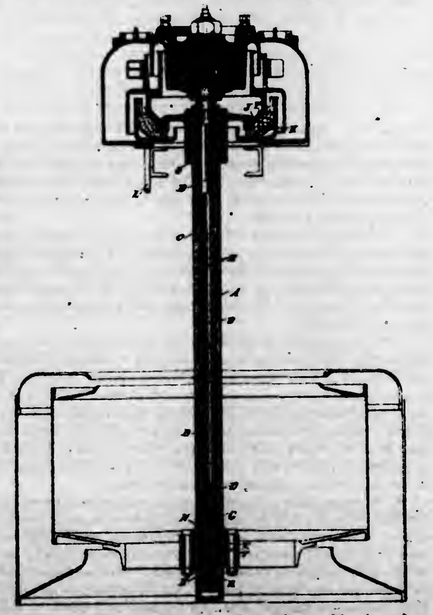

Claim.—1. In a centrifugal machine, the combination of an outer revolving spindle, an inner axially-movable spindle, a bush on the inner wall of said outer spindle, a bush on the outer wall of said

inner spindle, said inner spindle having a port discharging into the chamber formed between the two said bushes.

13. In an apparatus of the character specified for producing sound-vibrations in water, a sound-producing device comprising a

end, and an anchor consisting of a lower stratum of cement, a stratum of dirt, and an upper stratum of cement.

inner spindle, said inner spindle having a port discharging into the chamber formed between the two said bushes.

2. In a centrifugal machine, the combination of an outer revolving spindle, an inner axially-movable spindle, a bush rigidly secured to the inner wall of the revolving outer spindle, a bush rigidly secured to the outer wall of the inner stationary spindle, said inner spindle having a port for leading a fluid under pressure to the chamber formed between the two said bushes.

3. In a centrifugal machine, the combination of an outer revolving spindle, an inner axially-movable spindle, a ring on the inner wall of the outer spindle, a bush on the outer wall of the inner spindle, said ring and bush forming together with their respective spindle-walls a chamber for receiving a fluid under pressure, said inner spindle having a duct for leading the fluid under pressure to the said chamber.

4. In a centrifugal machine, the combination of two concentric hollow spindles, and bushes on the adjacent walls of said spindles forming with the walls of their respective spindles a chamber for the reception of a fluid under pressure.

813,964. MEANS FOR PRODUCING SOUND-VIBRATIONS IN WATER. HORACE B. GALE, Natick, and FRED M. DEWING, Boston, Mass., assignors to Submarine Signal Company, Waterville, Me., a Corporation of Maine. Filed Aug. 21, 1903. Serial No. 170,270.

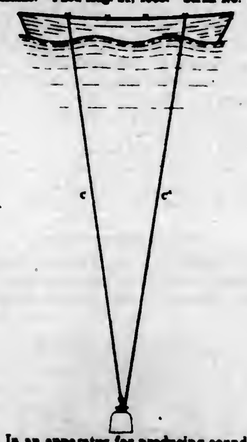

Claim.—1. In an apparatus for producing sound-vibrations in water, the combination with separate means of suspension of a sound-producing device hanging pendent therefrom, the same comprising a resonant body, and means for sounding said resonant body by the transfer of the whole or part of the weight of said device from one suspending means to another.

2. In an apparatus for producing sound-vibrations in water, the combination with separate means of suspension of a sound-producing device hanging pendent therefrom, the same comprising a resonant body, a striker therefor, and means whereby said striker may be operated by the transfer of the weight of said device from one suspending means to another.

3. In an apparatus for producing sound-vibrations in water, the combination with a floating structure and separate means of suspension attached at their upper ends at separate points thereto, of a sound-producing device from the lower ends of which means of suspension said sound-producing device hangs pendent, the same comprising a submerged resonant body, a striker adapted to strike the same so as to produce sound, and means whereby said striker may be operated by the transfer of the whole or a part of the weight of said device from one suspending means to another.

4. In an apparatus for producing sound-vibrations in water, the combination with a floating structure and suspension-cords secured at their upper ends thereto of a sound-producing device from the lower ends of which cords said sound-producing device hangs pendent, the same comprising a submerged resonant body, a striker therefor, and means adapted to be operated upon for actuating said striker, which means is submerged with said resonant body and is so connected with one of said suspension-cords as to be operated upon thereby with the transfer of the weight of said device from one suspending-cord to the other.

5. In an apparatus for producing sound-vibrations in water, a bowl-shaped casing of large internal diameter to contain a powerful striking mechanism, a powerful striking mechanism within the same, and a resonating section at mouth of said casing of appreciably less internal diameter than the internal diameter of the casing, whereby the apparatus while producing sound of high pitch by reason of its small resonating section is designed by reason of the large bowl-shaped casing to contain striking mechanism of sufficient power for submarine signaling purposes.

6. In an apparatus for producing sound-vibrations in water, a bowl-shaped casing of large internal diameter to contain a powerful striking mechanism, a powerful striking mechanism within the same, a striker actuated by said mechanism, means for operating the mechanism from without the casing, and a resonating section at the mouth of said casing of appreciably less internal diameter than the internal diameter of the casing, whereby the apparatus while producing sound of high pitch by reason of its small resonating section, is designed by reason of the large bowl-shaped casing to contain striking mechanism of sufficient power for submarine signaling purposes.

7. In an apparatus for producing sound-vibrations in water, the combination with a floating structure and separate means of suspension attached at their upper ends at separate points thereto, of a sound-producing device from the lower ends of which means of suspension said sound-producing device hangs pendent, the same comprising a submerged resonant body, a striker adapted to strike the same so as to produce sound, means adapted to be operated upon by one of said means of suspension for raising said striker into a striking position, and an instantaneous release.

8. In an apparatus for producing sound-vibrations in water, the combination with a floating structure and separate means of suspension attached at their upper ends at separate points thereto, of a sound-producing device from the lower ends of which means of suspension said sound-producing device hangs pendent, the same comprising a submerged resonant body, a striker adapted to strike the same so as to produce sound, means connected to be operated upon by said means of suspension for actuating said striker, and a returning-spring for restoring said means to a normally operative position.

9. In an apparatus for producing sound-vibrations in water, the combination with a floating structure and two cords attached at their upper ends thereto of a sound-producing device from the lower end of which cords said sound-producing device hangs pendent, the same comprising a resonant body, a striker therefor, and means for receiving the draft exerted upon one of said cords by the weight of said sound-producing device or a portion thereof being transferred thereto from the other of said cords whereby the power thus obtained may be utilized to raise said striker to a striking position, means for effecting its instantaneous release, and means for maintaining the parts in a normal position to be operated upon by the draft aforesaid.

10. In an apparatus for producing sound-vibrations in water, the combination with a floating structure and two cords attached at their upper end at separate points thereto, of a sound-producing device from the lower end of which cords said sound-producing device hangs pendent, the same comprising a submerged resonant body, and an apparatus contained within the same for sounding said resonant body by the transfer of the weight of said device from one cord to the other, said apparatus consisting of a striker, a movable member adapted to be moved by the draft of one of the suspending-cords when the weight of the sound-producing device comes thereon and to impart its motion to the said striker to raise the same to a striking position, where it may become automatically released.

11. In an apparatus for producing sound-vibrations in water, the combination with two suspending-cords of a sound-producing device hanging pendent from the lower ends thereof, the same comprising a resonant body, a striker contained within the same, a lever connected to actuate said striker by the draft exerted by the weight of the said sound-producing device or a portion thereof being transferred from one of its suspending-cords to the other, and means for holding said lever in a normally operable position.

12. In an apparatus for producing sound-vibrations in water, the combination with two suspending-cords of a sound-producing device from the lower ends of which said sound-producing device hangs pendent, the same comprising a resonant body, a striker carried by the same, a lever connected with said striker for actuating it, and means for receiving the draft exerted by the weight of said sound-producing device or a portion thereof upon one of its suspending-cords, said draft-receiving means comprising means whereby the force obtained thereby may be multiplied and transformed to operate said lever, and a spring for holding said striker and its actuating parts in position to be operated upon as aforesaid.

13. In an apparatus of the character specified for producing sound-vibrations in water, a sound-producing device comprising a resonant body, a striker for sounding the same, a lever, a latch joined to said lever and adapted to engage with a portion of said striker so raising said striker to a striking position with an automatic release when the lever is moved in one direction, and which latch is adapted to assume a position to engage said striker as aforesaid when said lever is moved in another direction, and means for actuating said lever.

14. In an apparatus for producing sound-vibrations in water, the combination with two suspension-cords of a sound-producing device hanging pendent therefrom, the same comprising a resonant body, a striker for sounding the same, a lever connected to engage with said striker whereby it may be raised to a striking position with an instantaneous release, and one or more pulleys connecting with said lever around which pulley or pulleys one of said suspending-cords is adapted to be passed, substantially as and for the purposes set forth.

15. In an apparatus for producing sound-vibrations in water, the combination with two suspension-cords of a sound-producing device having pendent therefrom, the same comprising a resonant body, a striker pivotally hung by its arm within said resonant body for sounding the same, said arm of the striker being slotted at the point of its pivotal connection, a stop for said arm of the striker beyond the point of its said pivotal connection, a spring connected with the striker between said stop and said pivotal connection, and means for operating said striker by the transfer of the weight of said device or a portion thereof from one suspending-cord to the other.

16. In an apparatus for producing sound-vibrations in water, the combination with two suspension-cords of a sound-producing device hanging pendent therefrom, the same comprising a resonant body, a striker pivotally hung by its arm within said resonant body, a spring connecting at one end with said arm of the striker beyond the point of its pivotal connection, and at its other end with one arm of a lever, said lever, a pivoted latch secured to the other arm thereof and adapted to engage with an inclined surface of said striker, stop-surfaces for defining the position of said latch and means whereby said lever may be operated by the transfer of the weight of said sound-producing device, or a portion thereof from one suspending-cord to the other.

17. In an apparatus for producing sound-vibrations in water, a casing or shell forming an internal or resonating chamber, and a sound-bow or resonating member at the open mouth of said casing, which sound-bow has a mean diameter considerably less than the mean diameter of said casing taken between the sides thereof.

18. In an apparatus for producing sound-vibrations in water, a casing or shell forming an internal or resonating chamber and a sound-bow or resonating member at the open mouth of said casing, which sound-bow projects inwardly from said mouth of the casing to which it is secured, and so far that its mean diameter will be less than the mean diameter of said casing taken between the sides thereof, whereby said sound-bow will close to an appreciable degree the mouth of the casing and assist in forming or inclosing the said internal or resonating chamber.

813,965. PRODUCTION OF CEMENT. BERNHARD GRAU, Kratzwiek, near Stettin, Germany. Filed June 21, 1904. Serial No. 213,541.

Claim.—As an improvement in the mode of producing cement from molten slag, the method herein described of blowing a sufficiently strong and violent jet of superheated steam against a jet of the molten blast-furnace slag that the thus-divided slag is driven off by the steam-jet so as to form a heap of slag and in allowing this mass to cool in itself without artificial means, thereby enabling the heat of the slag to act on the mass during its cooling, and then grinding this mass to powder, as and for the purpose described.

813,966. FENCE-POST. PHILIP J. HARMAN, Bloomfield, Ind. Filed Nov. 21, 1905. Serial No. 288,502.

Claim.—1. A fence-post composed of a single sheet of metal bent, in cross-section, into a double scroll-like formation with a space between its bent or rounded portions, that portion of the post opposite said space being flat to accommodate the fence-wires and formed with perforations for the binding-wires.

2. A fence-post having its edges bent or rolled inward to form a double scroll-like formation, in cross-section, and flared at its lower end, and an anchor consisting of a lower stratum of cement, a stratum of dirt, and an upper stratum of cement.

3. A fence-post composed of a single tapering sheet of metal bent, in cross-section, into a double scroll-like form, with a space between its bent or rounded portions, the upper portion of the post being of considerably less cross-sectional area than the lower portion.

813,967. SELF-IGNITING MATCH-SAFE. JOHN W. HART, La Harpe, Kans. Filed July 27, 1905. Serial No. 271,804.

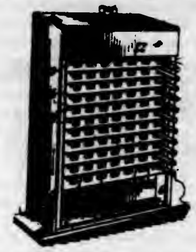

Claim.—1. A match-safe provided with a plurality of partitions having flat faces at one side, said partitions being provided at the opposite side with ribs arranged at intervals and spacing the partitions, said ribs being fitted against the flat faces of the contiguous partitions and dividing the spaces between the partitions into individual match-receiving cells.

2. A match-safe provided with a plurality of partitions having flat faces at one side, said partitions being provided at the opposite side with ribs arranged at intervals and spacing the partitions, said ribs being fitted against the flat faces of the contiguous partitions and dividing the spaces between the partitions into individual match-receiving cells, and strips of abrasive material interposed between the ribs and the flat faces of the partitions.

3. A match-safe provided with a plurality of partitions having flat faces at one side, said partitions being provided at the opposite side with ribs arranged at intervals and spacing the partitions, said ribs being fitted against the flat faces of the contiguous partitions and dividing the spaces between the partitions into individual match-receiving cells, and removable strips fitted against the flat faces of the partitions and supported by the ribs.

4. A match-safe, comprising a casing provided with horizontally-disposed individual match-receiving cells extending from the front to the back of the casing, said casing being open at the front, and a back hinged to the casing and arranged to engage the matches for forcing the same into the cells.

5. A match-safe, comprising a casing open at the front and provided at opposite sides with vertical ways, horizontally-disposed partitions slidable in the ways and having flat faces at one side and provided at the opposite side with ribs fitted against the contiguous flat faces of the partitions and spacing the same and dividing the spaces between the partitions into individual match-receiving cells, said cells extending from the front to the back of the casing, removable abrasive material interposed between the ribs and the flat faces of the partitions, and an adjustable device for yieldably holding the partitions in engagement with the matches and positively retaining the partitions in engagement with the strips of abrasive material.

6. A match-safe having a plurality of partitions provided with individual match-receiving spaces or cells, said partitions being also provided with flanges, and strips of abrasive material secured to the partitions by the flanges.

7. A match-safe having a plurality of partitions provided at one side with individual match-receiving cells or spaces having match-engaging faces, said partitions being also provided at the opposite side with means for detachably holding strips of abrasive material.

813,968. LOOM FOR WEAVING PILE FABRIC. ALFRED HEALD, Philadelphia, Pa. Filed June 26, 1904. Serial No. 213,263.

Claim.—1. The combination in a loom for weaving cut pile fabrics, of a lay, pile-loop-forming fingers located in advance of the same and having elevated inner ends, mechanism for forming loops of pile warp-thread on said fingers and interweaving other threads therewith, and a reed having its bars so disposed that the spaces between them at points adjacent to the elevated inner ends of the fingers, will be narrower than at other points, substantially as specified.

2. The combination, in a loom for weaving cut pile fabrics, of the lay and its reed, pile-loop-forming fingers located in advance of

813,969. SELF-ACTING MULE AND TWINER. ROBERT S. HEAP, Burnley, and GEORGE GREY, Cornholme, England. Filed Nov.

means into which the water from the melting ice drains, and means secured to the lower end of the tank for conducting away the water

for rotation thereon, a shaft supported independently of the bucket and carrying a stop member, stop-engaging means upon the bucket,

2. The combination, in a loom for weaving cut pile fabrics, of the lay and its reed, pile-loop-forming fingers located in advance of the lay, and a laterally-movable supplementary reed located in the rear of the main reed and serving to shog the pile warp-threads so as to cause them to operate first on one side of their respective fingers and then on the other side of the same, said supplementary reed having its bars so disposed that the spaces between them are narrower at the top than at the bottom, substantially as specified.

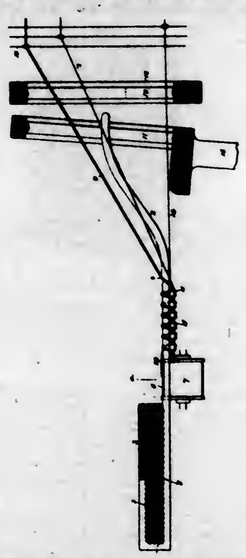

3. The combination, in a loom for weaving cut pile fabrics, of the lay and its reed, pile-loop-forming fingers located in advance of the lay, and a laterally-movable supplementary reed located in the rear of the main reed and serving to shog the pile warp-threads so as to cause them to operate first on one side of their respective fingers and then on the other side of the same, said supplementary reed having double bars whose members are disposed closely side by side at the bottom of the reed, but are separated at the top of the reed so as to contract, at that point, the spaces between the bars, substantially as specified.

4. The combination, in a loom for weaving cut pile fabrics, of pile-loop-forming fingers, mechanism for forming loops of pile warp-threads over said fingers and interweaving other threads therewith, a knife movable transversely across the tops of the fingers so as to sever the pile-loops as they are fed backwardly along the fingers, and means for imparting tension to said pile-loops at the time that the knife is acting upon the same, substantially as specified.

5. The combination, in a loom for weaving cut pile fabrics, of pile-loop-forming fingers, mechanism for forming loops of pile warp-threads on said fingers and interweaving other threads therewith, a knife movable transversely across the tops of the fingers for severing the pile-loops as they are fed backwardly along the fingers, and means for preventing rise of the cutting edge of said knife, substantially as specified.

6. The combination, in a loom for weaving cut pile fabrics, of pile-loop-forming fingers, mechanism for forming loops of pile warp-threads on said fingers and interweaving other threads therewith, a knife movable transversely across the tops of the fingers so as to sever the pile-loops as they are fed backwardly along the fingers, and means for preventing rise of the cutting edge of the knife and at the same time imparting tension to the pile-loops, substantially as specified.

7. As a new article of manufacture, a pile-loop-forming finger for looms, having on its upper edge a tongue for vertically confining the cutting edge of a knife moving transversely across the top of the finger, substantially as specified.

8. As a new article of manufacture, a pile-loop-forming finger for looms, having at its upper edge a recess for the reception of a transversely-moving knife, and a tongue extending over said recess so as to vertically confine the cutting edge of the knife, substantially as specified.

813,969. **SELF-ACTING MULE AND TWINER.** ROBERT S. HEAP, Burnley, and GEORGE GREY, Cornholme, England. Filed Nov. 11, 1904. Serial No. 232,256.

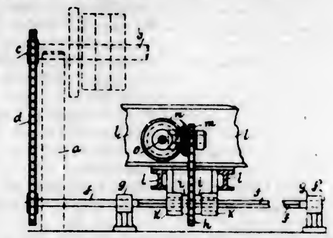

Claim.—1. In combination with the head-stock, carriage-frame and tin roller-shaft of a self-acting mule or twiner, a driving-shaft and a long shaft extending along the path of travel of the carriage, direct gearing between the driving-shaft and long shaft, and gearing connecting the tin roller-shaft and said long shaft, traveling with the carriage along said long shaft.

2. In combination with the head-stock, carriage-frame and tin roller-shaft of a self-acting mule or twiner, a driving-shaft, a gear thereon, a long shaft extending along the path of travel of the carriage, a gear on said long shaft and a chain between it and the driving-shaft, mechanism carried by the carriage for operating said tin roller-shaft, said mechanism adapted to engage said long shaft so as to be turned thereby, and adapted to slide longitudinally upon said long shaft.

813,970. **REFRIGERATOR-CAR.** ERVIN P. HINDS, New York, and GEORGE B. PAYNE, Long Island City, N. Y. Filed July 10, 1903. Serial No. 165,973.

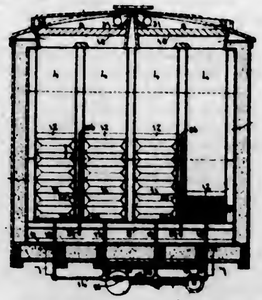

Claim.—1. In a refrigerator-car, the combination, with an ice-tank, of a movable false bottom therein, and means for applying air-pressure beneath said bottom to cause it to rise with the superposed ice as the latter melts.

2. In a refrigerator-car, the combination, with an ice-tank, of a movable false bottom therein, a collapsible air-bag beneath said bottom, and means for supplying air under pressure to said bag to elevate the false bottom and the superposed ice as the latter melts.

3. In a refrigerator-car, the combination, with an ice-tank, of a movable false bottom therein, means for elevating said false bottom and the superposed ice by air-pressure as the ice melts, an air connection between said means and the train-pipe system, and a reducing-valve in said connection to transmit the air from the train-pipe system at the required pressure.

4. In a refrigerator-car, the combination, with an ice-tank, of a movable false bottom therein, a collapsible air-bag beneath said bottom, pipe connections leading from said bag to the train-pipe system, and a reducing-valve in said pipe connection to transmit the air to the air-bag at the required pressure.

5. In a refrigerator-car, the combination, with an ice-tank, of a movable false bottom therein, a collapsible air-bag beneath said bottom, pipe connections leading therefrom to an air-supply tank, and means for maintaining air in said tank at the required pressure.

6. In a refrigerator-car, the combination, with an ice-tank, of a movable false bottom therein, means for elevating said false bottom and the superposed ice by air-pressure as the ice melts, a water-space being provided below the false bottom and around the elevating means into which the water from the melting ice drains, and means secured to the lower end of the tank for conducting away the water from said space

813,971. **FENCE.** JAMES HINDS, Paris, Ill. Filed Nov. 20, 1905. Serial No. 288,205.

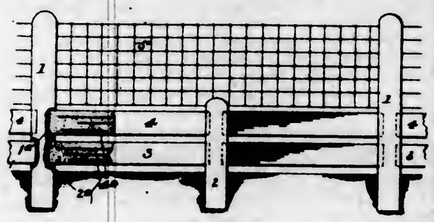

Claim.—1. A fence, equipped with concrete or cement base-boards, posts having mortises to receive the ends of said boards, and formed of wooden cores wrapped in paper or tin and having the latter suitably secured thereon, and the whole incased in concrete or cement.

2. A fence, equipped with base-boards of concrete or cement, and posts having mortises effective to receive the ends of said boards and formed of wooden cores wrapped in tin or paper, and having headed projections and the whole embedded in cement or concrete as set forth.

813,972. **WEIGHING-MACHINE.** HIRAM S. HIXSON, Hillsboro, Iowa. Filed Mar. 24, 1905. Serial No. 251,858.

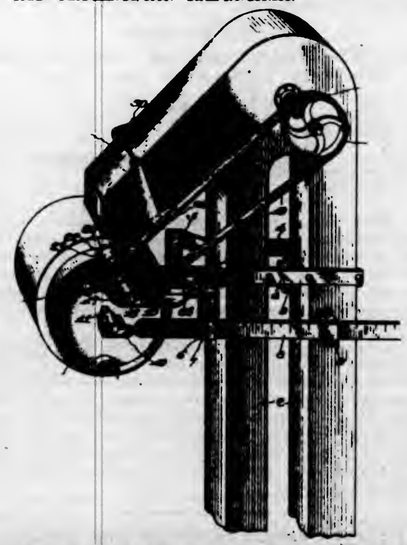

Claim.—1. In a weighing-machine, a tilting beam, a bucket supported thereby for rotation and having a diametrical partition and apertures adjacent thereto, a friction-rim connected with said bucket and having peripheral indentations and recesses, and an independently-supported shaft having a fixed and a loose pulley disposed for engagement with said rim and indentations and with said recesses respectively.

2. In a weighing-machine, a tilting beam, a bucket supported thereby for rotation and having a partition and diametrically opposite apertures, a friction-rim connected with said bucket and provided with diametrically opposite indentations and with relatively small recesses adjacent to said indentations, an independently-supported driven shaft, a loose pulley upon said shaft adapted for locking engagement with the small recesses, and a friction-wheel fixed upon said shaft for engagement with the friction-rim.

3. In a weighing-machine, a tilting beam, a bucket supported for rotation thereon, a shaft supported independently of the bucket and carrying a stop member, stop-engaging means upon the bucket, a friction-wheel upon the shaft, friction means upon the bucket adapted for engagement with said friction-pulley to be thereby driven when the bucket is depressed until the stop means upon the shaft and the bucket enter into engagement.

4. In a weighing-machine, a tilting beam, a bucket supported for rotation thereon, said bucket having a transverse partition and diametrically opposite apertures adjacent to the ends of said partition, adjustable weights upon the tilting beam, means for locking the bucket in position when overbalanced by the weights, and friction means for restoring said bucket to locked position after being tripped and partially rotated by the weight of material contained therein.

5. In a weighing-machine, a tilting beam, a bucket supported for rotation thereon and having a locking-recess, an independently-supported locking member disposed for engagement with said recess, friction means for rotating the drum when disengaged from the locking member, a pivotally-supported gate, and means for actuating said gate when the bucket is tripped out of engagement with the locking member.

6. In a weighing-machine, a tilting beam, a bucket supported for rotation thereon and having a locking-recess, said bucket being provided with an aperture for the admission of material to be weighed, a feed-spout, an independently-supported locking member disposed for engagement with the locking-recess of the drum, friction means for rotating the drum when disengaged from the locking member, a shaft supporting the friction means and the locking member, a pivotally-supported gate, and a link connecting said gate with the tilting beam to actuate said gate when the bucket is tripped out of engagement with the locking member.

813,973. **DRAFT-EQUALIZER.** WILLIAM B. KENT, Harlan, Iowa. Filed Mar. 13, 1905. Serial No. 249,853.

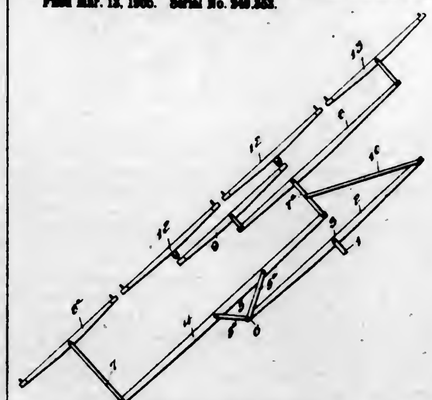

Claim.—In a draft-equalizer, the combination of the bar 1, the beam 2, the equalizing-bar 4, the rigid brace 5 composed of the angularly-extending elements 5ª pivotally connecting the bar 4 to the beam 2, the links 7 and 7', the swingletree 8 and evener parts 8, 9, 12 and 13, connected with said links 7 and 7', and the equalizing-link 10 connecting the beam 2 to the adjacent link 7'.

813,974. **TWIN-HEAD ROTARY ENGINE.** HOMER A. KING, Colton, Cal. Filed Aug. 5, 1905. Serial No. 272,267.

Claim.—1. One or more pistons and trailing cylinder-heads, within an annular cylinder of a rotary engine, connected to a disk and shaft revolved by the pressure of a motive fluid.

2. One or more pistons and trailing cylinder-heads having a cavity in each of the latter or in all, in which the ends of an elastic con-

section are secured, and a disk to which the pistons are secured within an annular cylinder of a rotary engine revolving a shaft by pressure of a motive fluid.

3. Within the annular cylinder of a rotary engine, a piston, a trailing cylinder-head having elastic connection therewith, with bolts movable by the pressure of a motive fluid, automatically locking the cylinder-head to the cylinder, and automatically unlocking it by the diminishing pressure and elastic connection to the piston, said piston being secured to a disk revolving a shaft by the pressure of a motive fluid.

813,975. **WIRELESS TELEGRAPHY.** JAMES P. KING, Washington, D. C. Filed Jan. 8, 1903. Serial No. 138,276.

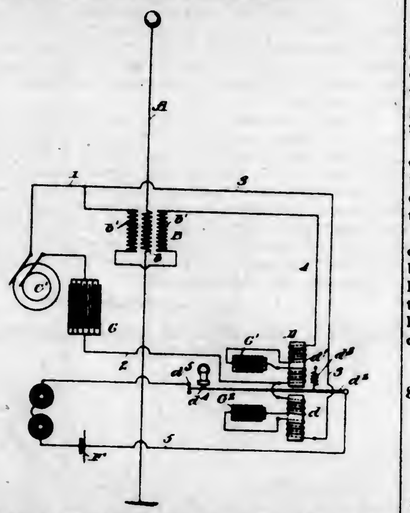

Claim.—1. The method of receiving wireless-telegraph messages which consists in normally impressing local generator-currents on two branch circuits, causing the currents in said circuits to set up opposing magnetic fields one of which is normally stronger than the other, and causing received oscillations to act to vary the normal relation between said fields.

2. The method of receiving wireless-telegraph messages which consists in normally impressing local generator-currents on two branch circuits, causing the currents in said circuits to set up opposing magnetic fields one of which is normally stronger than the other, subjecting a body normally to the opposing actions of said fields, and causing received oscillations to act to vary the normal relation between said fields.

813,976. **METAL BOX.** GOTTLIEB KLEMM, Defiance, Ohio, assignor to The Clipper Plow Company, Defiance, Ohio, a Corporation of Ohio. Filed Apr. 13, 1905. Serial No. 255,625.

Claim.—1. A metal box comprising ends, sides and bottom sections, means for fastening the ends and sides together, reinforcing-strips at the outer edges of the bottom, the reinforcing-strips and the ends and sides of the box being crimped to form an outwardly-extending flange at the lower edges of the box, said strips extending inwardly against bottom of the box and headed to form a projection horizontally spaced from the said flange.

2. A metal box comprising ends, sides and bottom sections, means for fastening the ends and sides together, a reinforcing outwardly-projecting flange at the lower edges of the box, and a projection next to and extending from the bottom of the box said projection being spaced horizontally from the outwardly-projecting flange.

3. A metal box comprising sides, ends and bottom sections, the sides and ends being crimped at the meeting edges to form outwardly-projecting flanges, a reinforcing-strip on the bottom, the sides, ends and bottom being crimped around the outer edge of the reinforcing-strip to form an outwardly-projecting flange at the lower edge of the box, and a depending projection on the inner edge of said reinforcing-strip, said projection being spaced from the outwardly-projecting flange formed at the lower edge of the box.

4. A metal box comprising side, end, and bottom sections, a reinforcing-strip at the outer edges of the bottom, said strip being parallel with and fitting against the under side of the bottom, the edges of the sides, ends, and bottom being crimped around the edge of the reinforcing-strip to form a reinforcing outwardly-projecting flange, the inner edge of the reinforcing-strip being bent to form a projecting head which is spaced from the outer edge of the reinforced flange.

5. A metal box formed with a depressed flange near its upper edge, a metal cover supported by the depressed flange, said cover being reinforced by beading its edges around a strengthening-wire located on the under side of the cover to form a flat surface on top of the cover.

6. A metal box formed with a depressed flange near its upper edge, a metal cover supported by the depressed flange, said cover being reinforced by beading its edges around a strengthening-wire located on the under side of the cover to form a flat surface on top of the cover, a depression formed adjacent one edge of the cover, and a lock, the upper end of which is flush with the top of the cover, and operating in the depression.

813,977. **TITRATION APPARATUS.** RUDOLF KÖNIG, Gelsenkirchen, Germany. Filed Aug. 25, 1905. Serial No. 275,317.

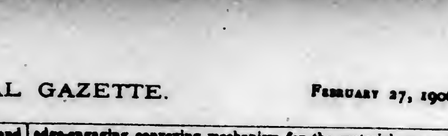

Claim.—1. In a titration apparatus the combination with a graduated burette of a closed supply vessel, of tubes at the top of the burette, one connecting it with the bottom of the supply vessel, and the other connecting it with the air-space of the same, and of a three-way cock at the top of the burette having passages to said connecting-tubes and having a third passage adapted to admit air into the burette substantially as described.

2. In a titration apparatus the combination with a graduated burette of a closed supply vessel, of tubes at the top of the burette, one connecting it with the bottom of the supply vessel, and the other connecting it with the air-space of the same, and of a three-way cock at the top of the burette having passages to said connecting-tubes and having a third passage adapted to admit air into the burette, of a stop-cock in the tube connecting the burette with the bottom of the supply vessel, and of ground joints in both connecting-tubes substantially as described.

813,978. **MACHINE FOR DIGGING BEETS.** ALLINGTON H. KRAMER, Monte Vista, Colo. Original application filed July 21, 1904, Serial No. 217,469. Divided and this application filed June 20, 1905. Serial No. 265,748.

Claim.—In a machine or lifting beets out of the ground, an axle, supporting-wheels secured to the axle, a sleeve loosely mounted on the said axle, having a clutch-surface at one end, a clutch operating on the axle and arranged for engagement with the clutch-surface of the said sleeve, gears secured on the sleeve and axle, a frame mounted to turn on the axle between the said gears, the said frame being provided with opposing segmental slots, beams located at the outer portions of the said frame, the rear ends of the said beams being curved downwardly and forwardly, a shaft connecting said beams and carried through the said slots in the frame, a lever operatively connected with the frame and with the said connecting-shaft for the beams, a shovel or scoop plow carried by the lower portion of the said beams, and an elevator carried by the said frame, over which a portion of the plow extends, substantially as described.

813,979. **ELEVATING MECHANISM AND SIGHTING DEVICE FOR GUNS.** OTTO LAUBER and FRIEDRICH STOCK, Essen-on-the-Ruhr, Germany, assignors to Fried. Krupp Aktiengesellschaft, Essen-on-the-Ruhr, Germany. Filed Sept. 26, 1905. Serial No. 280,109.

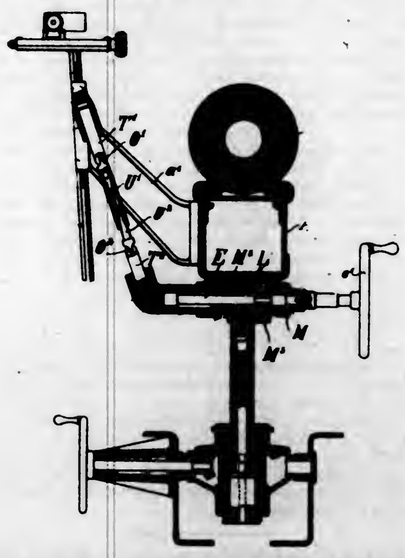

Claim.—1. In a gun provided with means for simultaneously adjusting its sight and elevating mechanism, also means imparting a horizontal training movement to the upper part of the mount; a yielding connection through which adjusting movement is imparted to the sight.

2. In a gun having an upper carriage movable horizontally on the lower carriage, a sight supported from the upper carriage, and means mounted on the lower carriage for simultaneously elevating the gun and shifting its sight; a yielding connection through which the shifting movement is imparted to the sight, whereby the control of the said sight is maintained at any horizontal adjustment of the upper carriage.

3. In a gun having an elevating mechanism, and an adjustable sight mounted respectively on the upper and lower portions of the carriage and means for relatively adjusting said portions of the carriage horizontally for the training of the gun; rotating shafts mounted respectively on the support for the sight and the lower portion of the carriage, having connections through which they are respectively adapted to adjust the elevating mechanism and said sight, and a yielding connection between said shafts whereby they may be driven simultaneously.

4. In a gun having horizontal training movement, a vertically-adjustable sight and means for elevating the gun, rotary shafts controlling the elevating and sight-adjusting means, and a yielding connection between said shafts consisting of a telescoping shaft and joints between the respective parts of the telescoping shafts and the shafts to be connected.

813,980. **SILVERING-MACHINE.** CLAUDE S. LAVAL, Pittsburg, Pa. Filed May 20, 1905. Serial No. 261,492.

Claim.—1. A machine of the class described including a supporting-table, oppositely-disposed frictional conveying means for moving material being treated over said table, means on the table for automatically adjusting said conveying means, and means for applying liquid coating substance to said material.

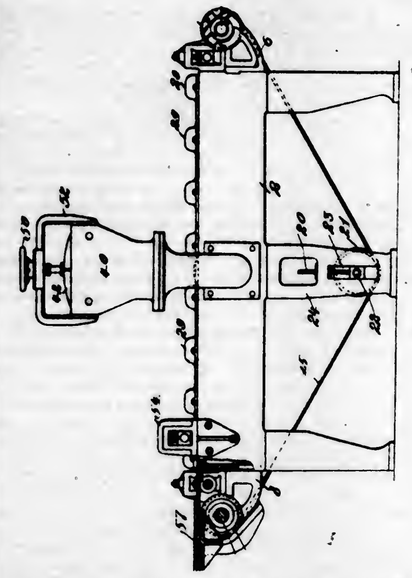

2. A machine of the class described including a supporting-table, frictional conveying mechanism thereon, means for automatically adjusting said frictional mechanism to maintain the same in contact with the material, and means for feeding liquid substance to the latter.

3. A machine of the class described including a supporting-table, endless conveying mechanism at opposite sides of said table for frictionally engaging the material, automatically-adjustable guide members for the conveyers, and means for feeding a liquid coating to the material.

4. A machine of the class described including a supporting-table, an intake-table at one end thereof, endless conveying mechanism for frictionally engaging the material, automatic guide members for said conveying mechanism, a hopper, and means cooperative therewith for feeding liquid coating to the material treated.

5. A machine of the class described including a supporting-table, rotatable endless conveying mechanism, means for adjusting the same, automatic guide members for the conveying mechanism, and means for feeding liquid coating to the material treated.

6. In a machine of the class described, a supporting-table, an intake-table, endless belts for frictionally engaging the material to convey the same over said table, means for adjusting the belts, automatic guide means for the latter, and means for supplying a liquid coating to said material.

7. In a machine of the class described, a supporting-table, traveling endless belts to frictionally engage the material for conveying the same over said table, adjustable guide members for said belts, automatic means for maintaining the belts in frictional engagement with the material being treated cooperative with said members, a supply-pipe, a feed-trough connected to said pipe for introducing a liquid coating to the material treated, and a hopper for supplying liquid to said feed-pipe.

8. A machine of the class described including endless conveying mechanism, adjustable guide members for the latter, and automatic, adjustable means carried by said members for maintaining the said conveying mechanism in frictional engagement with the material being treated.

9. A machine of the class described including endless conveying mechanism, adjustable guides therefor, automatic means cooperative with said guides for maintaining the said conveying mech-

anism in frictional engagement with the material being treated, and means for feeding a liquid coating to the material treated.

10. In a machine of the class described, a supporting-table having edge-engaging conveying mechanism for the material, means for automatically adjusting said mechanism, and means for supplying liquid substance to the said material.

tanks, a valved bell in each tank, means for limiting the upward movement of said bell, and automatic means whereby the fall of one

blade pivoted to a handle and means for limiting the pivotal movement of the blade.

anism in frictional engagement with the material being treated, and means for feeding a liquid coating to the material treated.

10. In a machine of the class described, a supporting-table having a conveying mechanism at opposite sides thereof, means for automatically adjusting said conveying mechanism, means for feeding a liquid coating to the material, and means for heating the said feeding means.

11. A machine of the class described including a supporting-table, pulleys at opposite sides of said table, conveyers on said pulleys, guide members for said conveyers, automatic means cooperative with said members for maintaining said conveyer in frictional engagement with the material being treated, and means for feeding liquid to the material treated.

12. A machine of the class described including a supporting-table having a transverse opening, an adjustable feed-trough below said opening, a liquid-receiving hopper having a feed-pipe communicating with said trough a valve mechanism controlling the supply to said trough pulleys on said table, endless conveying mechanism on said pulleys, and adjustable guides having automatic means for maintaining said conveying mechanism in frictional engagement with the material being treated.

13. A machine of the class described including a supporting-table having a transverse opening, an adjustable feed-trough below said opening, a liquid-receiving hopper having a feed-pipe communicating with said trough, a valve mechanism controlling the supply to said trough, pulleys for said table, endless conveying mechanism on said pulleys, adjustable guides having automatic means for maintaining said mechanism in frictional engagement with the material being treated, and means for keeping said conveyer mechanism taut.

14. A machine of the class described having a supporting-table with intermediate means for feeding a coating substance thereto, and automatically-adjustable frictional edge-engaging devices for conveying the material to be coated over the table.

15. A machine of the class described having a supporting-table with an intermediate opening for feeding a coating substance therethrough, and means for frictionally engaging the material for conveying the same to be coated over the table close to said opening.

16. A machine of the class described having a supporting-table with an intermediate opening for feeding a coating substance therethrough, a receptacle adjacent to said opening for the coating substance, frictional engaging mechanism for conveying the material to be coated over the table and means for holding the material close to said opening.

17. A machine of the class described having a supporting-table with an intermediate opening for feeding a coating substance therethrough, an adjustable receptacle adjacent to said opening for the coating substance, and mechanism frictionally contacting with the material for conveying the same to be coated over the table close to said opening

18. A machine of the class described having a supporting-table with an intermediate opening for feeding a coating substance therethrough, an adjustable receptacle under the table adjacent to the opening for the coating substance, mechanism for conveying the material to be coated over the table close to said opening, and means for automatically adjusting said mechanism to frictionally engage the same with the material.

19. A machine of the class described having a supporting-table with intermediate means for feeding a coating substance thereto, automatically-adjustable conveying mechanism, and means for regulating the feed of the coating substance to the table.

20. A machine of the class described having a supporting-table with an intermediate opening for feeding a coating substance therethrough, an adjustable feed-receptacle having oppositely-disposed ledges, below said opening the latter extending beyond the opening, and mechanism for conveying the material to be coated over the table close to said opening.

21. A machine of the class described having a supporting-table provided with an intermediate opening, an adjustable feed-receptacle having a slot coextensive with said opening under the table adjacent to said opening, an automatically-adjustable conveying mechanism for engaging the edges of the material to be coated, and means for supplying the liquid substance to the said feed-receptacle.

22. A machine of the class described including a supporting-table having frictional edge-engaging conveying mechanism for the material, automatically-adjustable guide means for the said mechanism, and means for feeding liquid coating substance to the material.

23. A machine of the class described having a supporting-table provided with an intermediate opening, a feed-receptacle coextensive with said opening, ledges forming troughs on said receptacle below the opening and extending beyond the same, oppositely-disposed edge-engaging conveying mechanism for the material, means for automatically adjusting said mechanism, and means for supplying liquid substance to the said receptacle.

24. A machine of the class described having a liquid coating feed device for the material, automatic frictional edge-engaging mechanism for conveying the material to be coated over the table, and a yieldable pressure means above the latter.

25. A machine of the class described having automatic frictional edge-engaging mechanism for conveying the material to be coated over the same, yieldable pressure means above the table at one and thereof, and means for supplying liquid coating substance to the material.

813,981. LADDER. ROBERT C. LAYSON, Elkridge, Md. Filed May 20, 1905. Serial No. 261,202.

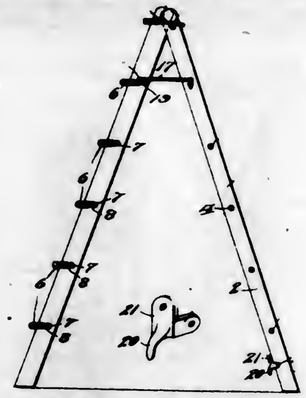

Claim.—In a device of the class described, a ladder-section comprising side bars, connecting members attached to said bars and each consisting of a shank having at one end, a rung-engaging hook, and at its other end, a right-angularly-disposed bearing portion, and a perforated laterally-projecting ear situated between the ends of the shank, and a second ladder-section adapted for relative movement longitudinally of the first-named section and having side bars, the side bars of the second section being engaged by the bearing portions of the connecting members.

813,982. SELF-REGULATING AIR-PUMP. MAXIMILIAN LOEWENSTERN, Brussels, Belgium, assignor of two-thirds to Jonas Stark, Brussels, Belgium, and Maurice Kind, New York, N. Y. Filed Apr. 14, 1905. Serial No. 255,617.

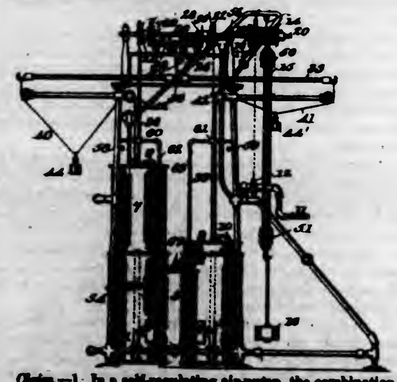

Claim.—1. In a self-regulating air-pump, the combination of a series of bells, means for lifting said bells alternately and automatically, and connections whereby the fall of one bell immediately causes it to be lifted and at the same time releases another bell, substantially as described.

2. In a self-regulating air-pump, the combination of a series of tanks, a valved bell in each tank, means for limiting the upward movement of said bell, and automatic means whereby the fall of one bell immediately causes it to be lifted and at the same time releases an adjacent bell, substantially as described.

3. In a self-regulating air-pump, the combination of a series of tanks, a reservoir connected to said tanks, a gravity-bell located in each of said tanks, means for lifting said bells, means for limiting the upward movement of said bells, and means whereby the fall of one bell causes said bell to be lifted and at the same time releases an adjacent bell allowing it to fall, substantially as described.

4. In a self-regulating air-pump, the combination of a series of tanks, a reservoir connected to said tanks, and a check-valve between said reservoir and each of said tanks, a series of gravity-bells, one located in each of said tanks and each provided with an automatic valve at or near its top, means for lifting said bells, means for limiting the upward movement of said bells, and automatically-operated means whereby the fall of one bell causes it to be at once lifted and at the same time releases an adjacent bell, allowing it to fall, substantially as described.

5. In a self-regulating air-pump, the combination of a series of tanks, a valved gravity-bell in each tank, operating means for lifting each bell, means for limiting the upward movement of each bell, and shifting mechanism operated by the fall of the bells respectively whereby the fall of one bell causes it at once to be lifted by the operating means and simultaneously releases an adjoining bell allowing it to fall, substantially as described.

6. In a self-regulating air-pump, the combination of a series of tanks, a valved bell in each tank, a weight-operated shaft, connections whereby the rotation of said shaft lifts said bells alternately, means for limiting the movement of said bells, and shifting mechanism located on said shaft, whereby the fall of one bell causes it to be immediately lifted by said shaft, and at the same time releases an adjoining bell allowing it to fall, substantially as described.

7. In a self-regulating pump, the combination of two tanks, a valved bell in each tank, a weight-operated shaft, sprocket-wheels on said shaft connected to said bells respectively, means for limiting the upward movement of each bell, and shifting mechanism whereby the fall of either bell immediately causes it to be lifted by the operation of said shaft, and at the same time releases the other bell allowing it to fall, substantially as described.

8. In a self-regulating air-pump, the combination of two tanks, a valved bell in each tank, a weight-operated shaft, sprocket-wheels loosely mounted on said shaft, and connected to said bells respectively, shifting mechanism adapted to engage said sprocket-wheels alternately, and an operating-lever connected to said shifting mechanism and to said bells, whereby the fall of either bell causes it to be lifted at once and at the same time releases the other bell, allowing it to fall, substantially as described.

9. In a self-regulating air-pump, the combination of two tanks, a valved bell in each tank, a weight-operated shaft, two sprocket-wheels loosely mounted on said shaft and connected to said bells respectively, sliding pulleys mounted on said shaft, a sliding frame for operating said pulleys, and a compound lever for operating said frame, one end of said lever being operated by the fall of either of said bells, substantially as described.

10. In a self-regulating air-pump, the combination of two tanks, a valved bell in each tank, an operating-shaft, sprocket-wheels loosely mounted on said shaft and connected to said bells respectively, a drum loosely mounted on said shaft, a cord mounted on said drum, a weight attached to said cord, ratchet mechanism between said drum and said shaft, means for winding up said drum, and shiftable clutch devices adapted to engage said sprocket-wheels successively, said devices being shifted by the fall of any one of said bells substantially as described.

11. In a self-regulating air-pump, the combination of two tanks, a reservoir connected thereto, a valved bell in each tank, an operating-shaft, sprocket-wheels loosely mounted on said shaft and connected to said bells respectively, said sprocket-wheels being provided with ratchet-faces, pulleys slidably mounted on said shaft, and means for shifting said pulleys, consisting of a plate provided with forks engaging said pulleys, a compound lever engaging said plate, and a cord extending from each end of said lever to said bells respectively, substantially as described.

813,988. SNOW-SHOVEL. WILLIAM D. LUSBY, Denison, Iowa. Filed July 1, 1905. Serial No. 267,851.

Claim.—1. A snow-shovel comprising a curved sheet-metal blade pivoted to a handle and means for limiting the pivotal movement of the blade.

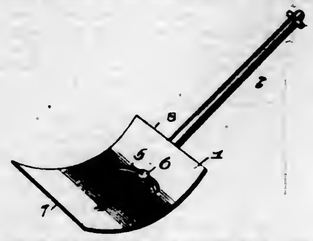

2. A snow-shovel comprising a reversible blade, said blade being curved longitudinally.

3. A snow-shovel comprising a curved sheet-steel blade, pivotally connected to a handle and provided with a curved slot, and a bolt passing through the slot and connected to the handle to permit the blade to have a limited lateral movement on its pivot.

4. A snow-shovel provided with a reversible blade pivoted to a handle and means for limiting the pivotal action of the blade.

5. A snow-shovel consisting of a curved sheet-steel blade, a handle having a curved seat or bearing for said blade, a bolt for pivoting the blade to the seat or bearing, said blade having an arc-shaped slot therein, and a bolt passing through the slot and handle to limit the pivotal movement of the blade.

813,984. PAPER-MAKING APPARATUS FOR SEPARATING SAND, METAL, AND OTHER IMPURITIES FROM PULP. JOSEPH MACNAUGHTON, Edinburgh, Scotland. Filed Nov. 23, 1905. Serial No. 288,764.

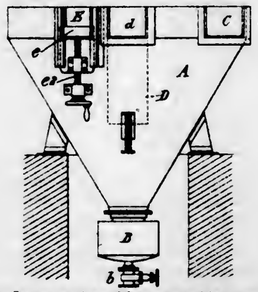

Claim.—1. In connection with paper-making apparatus, a casing, or vessel, such as A, situated so that the pulp passes through it on its way to the breast of the paper-making machine, the said casing, or vessel, being provided, at bottom, with a box, or receptacle for heavy impurities, and having an outlet, communicating with the interior of the said casing, or vessel, for the escape of purified pulp; substantially as hereinbefore described.

2. In connection with a paper-making apparatus, a casing adapted to permit the pulp to pass through it on its way to the breast of the paper-making machine, a box at the bottom of said casing for heavy impurities, and an outlet from said casing, in combination with an outlet for lighter impurities.

3. In combination with a paper-making machine, a casing adapted to permit the pulp to pass through on its way to the breast of the paper-making machine, an inlet passing tangentially into said casing, a box at the bottom of said casing for heavy impurities, and a central outlet from said casing for the escape of purified pulp.

4. In connection with a paper-making machine, a casing adapted to permit the pulp to pass through it on its way to the breast of the paper-making machine, an inlet passing tangentially into said casing, a box at the bottom of said casing for heavy impurities, and a central outlet from said casing for the escape of purified pulp, in combination with an adjustable outlet for lighter impurities at the side of said casing.

813,985. MACHINE FOR SEALING AND STAMPING ENVELOPES. CHARLES A. MADDEN, Brooklyn, N. Y. Filed June 21, 1902. Serial No. 112,668.

Claim.—1. A machine of the class described, comprising a suitable frame or casing, a stamp-sheet table located in the top portion thereof, a supplemental envelop-table arranged beneath the stamp-table, a main envelop-table at the front of the machine and in the same horizontal plane as the supplemental envelop-table, a depressible flap-folder mounted transversely of the machine between the main and the supplemental envelop-tables and normally slightly above said tables a swinging moistening-tank mounted transversely of the machine in front of the flap-folder means for depressing the flap-folder and for swinging the moistening-tank, and means for applying a stamp to the envelop, substantially as shown and described.

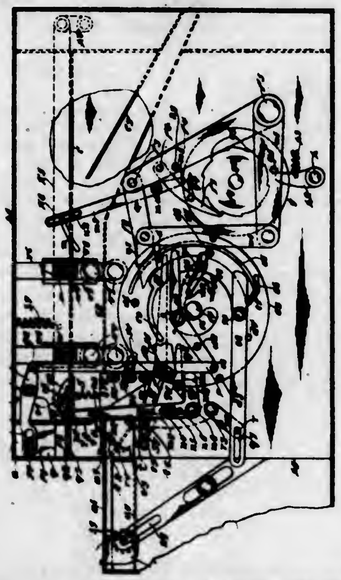

2. A machine of the class described, provided with main and supplemental envelop-tables, a vertically-movable spring-supported envelop-flap folder placed transversely of the machine between said tables and normally held above the same and the front side of which is inclined downwardly and backwardly, a plurality of pairs of rollers arranged rearwardly of said flap-folder the separate parts of each pair being mounted respectively above and below the supplemental envelop-table and being in frictional contact, a moistening-tank supported transversely of the machine in front of the flap-folder and adapted to swing forwardly and backwardly, devices for operating said parts and means for stamping the envelop, substantially as shown and described.

3. In a machine of the class described, a frame, a main outer casing inclosing said frame, a stamp-sheet table at the top of said frame, a main envelop-table at the front of the machine, a supplemental envelop-table arranged beneath the stamp-sheet table rearwardly of and in the same horizontal plane as the main envelop-table, a vertically-movable spring-supported envelop-flap folder arranged transversely between the supplemental and main envelop tables, a moistening-tank arranged transversely of the machine in front of the envelop-folder and adapted to swing forwardly and backwardly, means for operating said parts and for feeding an envelop through the machine, and devices for applying a stamp thereto, substantially as shown and described.

4. In a machine of the class described, a frame or support, a main outer casing inclosing said frame or support and provided with a front extension having a main envelop-table, a supplemental envelop-table arranged rearwardly of the main envelop-table within said frame, a stamp-sheet table placed over the supplemental envelop-table, a vertically-movable spring-supported envelop-folder placed transversely of the machine between the main and supplemental envelop-tables, a swinging flap-moistener placed transversely of the machine in front of the envelop-folder, devices for operating said parts, other devices for feeding an envelop through the machine, and means for applying a stamp to the envelop, substantially as shown and described.

5. In a machine of the class described, a frame or support a main outer casing inclosing said frame or support and provided with a front extension, having a main envelop-table, a supplemental table arranged within the frame or support rearwardly of and in the same plane as the main envelop-table, an envelop-chute rearwardly of the supplemental envelop-table, a stamp-sheet table arranged over the said supplemental envelop-table and said chute, a vertically-movable spring-supported flap-folder placed transversely between the main and supplemental envelop-tables, a swinging flap-moistener supported transversely of the frame or support in front of the flap-folder, feed-rollers arranged in pairs rearwardly of the flap-folder the separate members of each pair being arranged above and below the supplemental envelop-table and being in frictional contact, devices for operating the flap-moistener, the flap-folder and the feeding-rollers and means for applying a stamp to the envelop, substantially as shown and described.

6. A machine of the class described provided with a stamp-sheet table, main and supplemental envelop-tables, a flap-folder, a flap-moistening device, means for feeding an envelop through the machine devices for operating the flap-folder, means for operating the flap-moistening device, a stamp-sheet shifter, devices for cutting off a strip of stamps from the stamp-sheet, means for feeding a strip of stamps transversely of the machine and a device for cutting off a stamp from the end of said strip and applying the same to the envelop substantially as shown and described.

7. A machine of the class described provided with main and supplemental envelop-tables, arranged in the same horizontal plane, a depressible envelop-flap folder placed between said supplemental and main tables, and the upper side of which is normally above said tables and the front side of which is inclined downwardly and backwardly, a flap-moistening device mounted in front of the flap-folder and movable forwardly and backwardly, devices for operating the flap-folder, means for feeding an envelop through the machine and devices for applying a stamp to the envelop, substantially as shown and described.

8. A machine of the class described, provided with a stamp-sheet table, a main envelop-table at the front of the machine and below the stamp-sheet table, a supplemental envelop-table beneath the stamp-sheet table and in the same horizontal plane as the main envelop-table, means for feeding the envelop through the machine, devices for folding and sealing the flap of the envelop as it passes through the machine, a stamp-sheet shifter placed over the stamp-sheet table and adapted to move the stamp-sheet transversely of the machine, devices for cutting a strip of stamps from said sheet, means for moving said strip longitudinally of the machine and devices for cutting a stamp from the end of said strip and applying it to an envelop, substantially as shown and described.

9. A machine of the class described provided with a stamp-sheet table, a stamp-sheet shifter comprising a horizontal bar arranged over said table and having parallel end members; inwardly-directed fingers connected with said end members, spring-depressed pins connected with said bar and operating in connection with said fingers to hold a sheet of stamps and means for moving said shifter transversely of the stamp-sheet table, substantially as shown and described.

10. A machine of the class described provided with a stamp-sheet table, means for moving a sheet of stamps transversely of said table, devices for cutting a strip of stamps from said sheet, devices for moving said strip longitudinally of said table, a transversely-movable bar mounted at the end of said table and provided in one end with a stamp-moistening device, means for operating said bar so as to moisten the end stamp of said strip, and a vertically-movable plunger adapted to cut off said stamp and apply it to an envelop, substantially as shown and described.

11. A machine of the class described provided with a front extension having a main envelop-table at the top thereof, a shaft passing transversely through said extension below said table, said table being also provided with parallel slots or openings ranging forwardly and backwardly therein, slides mounted on said shaft and adapted to move an envelop lying on said table forwardly, means for moving said shaft forwardly and backwardly, consisting of an adjustable journal connected with the side of the extension at the front of the machine, a lever provided with a slot, through which the end of said shaft passes and in connection with said journal, and means for operating said lever, substantially as shown and described.

12. A machine of the class described, provided with a stamp-sheet table, main and supplemental envelop-tables arranged in the same horizontal plane, the supplemental envelop-table being beneath the stamp-sheet table and the main envelop-table being at the front of the machine, means for feeding the envelop through the machine over said envelop-tables, devices for moistening the flap of the envelop and sealing the same as the latter passes through the machine, means for shifting the stamp-sheet transversely of the machine, a knife arranged longitudinally over the stamp-sheet table and adapted to cut a strip of stamps from said sheet, means for operating said knife, devices for moving said strip forwardly, a transversely-movable stamp-moistening device at the front of the machine and adapted to moisten the end stamp of said strip, devices for operating said moistening device and a vertically-movable plunger adapted to cut a stamp from the end of said strip and to depress it onto an envelop, substantially as shown and described.

13. A machine of the class described, provided with a stamp-sheet table, a stamp-sheet shifter movable transversely of said table, a knife for cutting off a strip of stamps from said sheet, means for operating said knife, devices for moving the strip of stamps longitudinally of the machine, a transversely-movable moistening device at the end of the machine, means for operating said moistening device so as to moisten a stamp at the end of said strip, means for feeding an envelop through the machine beneath the stamp-sheet table, devices for folding and sealing the flap of the envelop as it is fed through the machine, and a vertically-movable plunger adapted to cut off a stamp from the end of said strip and apply the same to the envelop as it passes through the machine, substantially as shown and described.

14. A machine of the class described, provided with a stamp-sheet table, means for shifting a sheet of stamps transversely thereof, means for cutting a strip of stamps from said sheet, devices for moving said strip longitudinally of the machine comprising a lever m^7, a vertically-movable spring-depressed bar connected with said lever, transversely-arranged pins in the top of said lever and said bar, and means for operating said lever and said bar and said pins, substantially as shown and described.

15. A machine of the class described, provided with a stamp-sheet table, means for shifting a sheet of stamps transversely of said table, a knife for cutting off a strip of stamps from said sheet, and means for moving said strip longitudinally of the machine comprising a dog c^3 pivotally supported at one side of the machine, a vertically-arranged lever, a spring-depressed bar connected with said lever, inwardly-directed pins in the ends of said lever and said bar, the pin in the end of said lever being adapted to move over said dog and the pin in the end of said bar being adapted to move under said dog, a vertically-movable stamp-strip holder mounted adjacent and in front of said lever and means for operating said lever and said bar, substantially as shown and described.

16. A machine of the class described provided with main and supplemental envelop-tables arranged in the same horizontal plane, a plurality of pairs of feed-rollers, the separate members of which are arranged above and below the supplemental envelop-table and in frictional contact, one roller of each pair being also provided with a pinion, means for turning the rollers of each pair in opposite directions consisting of a rack-bar provided with two parallel members separated by a space the width of which is greater than the diameter of said pinions, and means for moving said rack-bar longitudinally and for raising and lowering the same, substantially as shown and described

17. A machine of the class described provided with a main shaft, a slotted arm connected with said shaft, a slotted lever connected with said arm, a longitudinally-movable rack-bar provided with a pin which operates in the slot of said lever, a vertically-movable plate in connection with which said rack-bar operates, links connected with said plate, crank-levers connected with said links, a slotted bar connected with said levers, a pin or journal connected with the first-named lever and operating in the slot of the last-named bar, lugs or projections connected with the opposite sides of the first-named lever, pins in connection with which said lugs or projections operate and means for operating said main shaft, substantially as shown and described.

18. A machine of the class described, provided with main and supplemental envelop-tables, a shaft mounted transversely beneath the main envelop-table and movable forwardly and backwardly, envelop-feeding devices connected with said shaft, rollers mounted in pairs above and below the supplemental envelop-table and in frictional contact, pinions connected with the corresponding rollers of the said pairs, a vertically-movable plate at one side of the machine and through which the shaft of said rollers projects, a rack-bar movable longitudinal of said plate and provided with parallel members, the space between which is wider than the diameter of said pinions, a main shaft passing transversely through the machine, devices in operative connection with said shaft, said rack-bar and said plate for moving said plate vertically and said rack-bar longitudinally, and other devices in operative connection with said shaft, and the shaft beneath the main envelop-table for moving said last-named shaft backwardly and forwardly, substantially as shown and described.

19. A machine for sealing and stamping envelops, comprising an inner frame or support, and an outer casing inclosing said frame or support and provided at the front with an extension having a main envelop-table, a supplemental envelop-table arranged within the frame or support and in the same horizontal plane as the main envelop-table, a plurality of pairs of rollers mounted transversely of the machine, the separate members of each pair being above and below the supplemental envelop-table and being in frictional contact, a vertically-movable envelop-folder placed between the main and supplemental envelop-tables and normally held above the same, a flap-folding device supported in front of said folder and movable backwardly and forwardly, devices beneath the main envelop-table for passing an envelop in the machine, and means for operating all of said devices so as to pass an envelop through the machine, substantially as shown and described.

20. A machine for sealing and stamping envelops, comprising an inner frame or support and an outer casing inclosing said frame or support and provided at the front with an extension having a main envelop-table, a supplemental envelop-table arranged within the frame or support and in the same horizontal plane as the main envelop-table, a plurality of pairs of rollers mounted transversely of the machine, the separate members of each pair being above and below the supplemental envelop-table and being in frictional contact, a vertically-movable envelop-folder placed between the main and supplemental envelop-tables and normally held above the same, a flap-moistening device supported in front of said folder and movable backwardly and forwardly, devices beneath the main envelop-table for passing an envelop in the machine, means for operating all of said devices so as to pass an envelop through the machine, and means for applying a stamp to the envelop as it passes through the machine, substantially as shown and described.

21. A machine of the class described provided with means for folding and sealing the flap of an envelop and passing said envelop through the machine, a stamp-sheet table arranged in the top portion of the machine, means for moving a sheet of stamps transversely of said table, a knife for cutting off a strip of stamps from said sheet, devices for moving said strip longitudinally of the machine, a transversely-movable bar arranged at one end of the machine and provided with stamp-moistening devices, means for operating said bar so as to moisten the end stamp of said strip, and a vertically-movable plunger for cutting off said stamp and applying it to the envelop, substantially as shown and described.

22. A machine of the class described provided at one side with a main operating-disk, a supplemental operating-disk arranged rearwardly of the main operating-disk and provided with a ratchet-wheel, a main shaft arranged rearwardly of the supplemental operating-disk and passing through the machine, a supplemental-operating-disk shaft, a main operative lever in operative connection with the main shaft, devices for connecting the main shaft with the main operating-disk, devices in operative connection with the main operating-disk for passing an envelop into the machine other devices in connection with said shaft for folding and moistening the flap of the envelop, devices in operative connection with the main shaft for passing the envelop through the machine and for sealing the flap thereof and other devices in operative connection with the main operating-disk, and the supplemental shaft for applying a stamp to the envelop, substantially as shown and described.

23. A machine of the class described provided with separate pairs of feed-rollers arranged vertically and transversely therein, a horizontal envelop-table having openings through which the separate rollers of each pair are placed in frictional contact, a vertically-movable plate at one side of the machine through which the shafts of said rollers pass, a pinion connected with the bottom roller of each pair, a longitudinal rack-bar mounted in said plate and provided with two members, the space between which is greater in width than the diameter of said pinions, devices for moving said rack-bar longitudinally of said plate and devices for moving said plate vertically, substantially as shown and described.

24. A machine of the class described provided with a main envelop-table having parallel slots formed therein, a shaft mounted beneath said table, blocks or slides connected with said shaft and provided with projections extending up through said slots or openings, and fingers connected with said blocks or slides at the top thereof and projecting beneath said table and in contact therewith, substantially as shown and described.

25. In a machine of the class described a transversely-movable

bar provided at one end with a water-receptacle, a moistening device in connection therewith telescopic tubes for supplying water to said receptacle, and means for supplying water to said tubes, substantially as shown and described.

26. A machine of the class described provided with a vertically-movable L-shaped stamp-holder, a pivotally-supported triangular plate pivoted near one corner and the opposite corners of which are provided with projections, the side edge of said plate between said projections and opposite the pivotal support being curved or segmental in form, said plate being also in operative connection with the stamp-holder, substantially as shown and described.

813,986. BOILER CONSTRUCTION. JAMES M. MCCLELLON, Everett, Mass. Filed Apr. 7, 1905. Serial No. 254,206.

Claim.—1. Two surfaces to be stayed, one of which is sectional and made up of channel-iron sections, and staying members rigid with the other surface, said staying members lying between and being secured to the flanges of the channel-iron sections.

2. Two surfaces to be stayed, both of which are sectional, and made up of channel-iron sections, the side flanges of some of the channel-iron sections extending between the two surfaces and constituting the staying members.

3. A fire-box comprising an inner shell inclosing the combustion-chamber and an outer shell, each formed of channel-iron sections secured together.

4. A fire-box comprising inner and outer shells, the inner shell having rigid therewith outwardly-extending flanges and the outer shell being composed of channel-iron sections interposed between said flanges.

5. A fire-box comprising inner and outer shells, the inner shell having rigid therewith outwardly-directed flanges extending transversely of the fire-box, and the outer shell being composed of channel-iron sections interposed between said flanges.

6. A fire-box comprising inner and outer shells, the inner shell having rigid therewith outwardly-directed flanges extending transversely of the fire-box, and the outer shell being composed of channel-iron sections interposed between said flanges, the portion of the flanges over the fire-box being perforated.

7. A fire-box comprising inner and outer shells, the inner shell having rigid therewith outwardly-directed flanges and the outer shell being composed of channel-iron sections interposed between said flanges, the compartments formed by the flanges having communication with each other.

8. A fire-box comprising inner and outer shells, and parallel staying-ribs extending from one shell to the other and secured to each.

9. A fire-box comprising inner and outer shells and parallel staying-ribs extending from one shell to the other and secured to each, said ribs dividing the space between the shells into separate compartments.

10. A fire-box comprising inner and outer shells, each formed of channel-iron sections and staying members forming part of or rigidly secured to the sections of the inner shell, said staying members also being secured to the sections of the outer shell.

11. A fire-box for a locomotive-boiler comprising inner and outer shells, the inner shell having outwardly-directed flanges and the outer shell comprising channel-iron sections interposed between said flanges, and said channel-iron sections having their flanges also directed outwardly.

12. In boiler construction, two shells or surfaces to be stayed, each of which has integral therewith flanges or ribs extending at right angles therefrom, the flanges or ribs of both shells extending in the same direction, and means to secure each flange of one shell to a flange of the other shell.

813,987. DEVICE FOR REPLANTING CORN. THOMAS S. MCMAHEN, Champaign, Ill. Filed Sept. 1, 1905. Serial No. 276,703.

Claim.—1. In a device of the kind described, the combination with a hopper, of an open side curved spout connected to said hopper and a curved member pivoted in said spout adapted to hold grain in the bottom of the spout, for the purpose described.

2. In a device of the kind described, the combination with a hopper, of an open side curved spout provided with a chamber at the top connected to said hopper, a curved strip pivoted in said spout provided with a cap at one end adapted to close said chamber, and means connected to said strip for opening or closing said chamber, for the purpose described.

3. In a device of the kind described, the combination with a hopper provided with a perforated slide, of an opened side pointed spout connected to said hopper provided with a chamber, a curved member pivoted in said spout adapted to close said chamber-spout and a spring-actuated lever connected to the member and slide, for the purpose described.

4. In a device of the kind described, the combination with a hopper provided with a perforated slide, of a spring member secured on said slide, an open spout connected to said hopper provided with a curved lower end, a strip pivoted in said spout provided with a curved lower end, and a spring-actuated lever connected to the strip and slide, for the purpose described.

5. In a device of the kind described, the combination with a hopper, of an open slide-spout connected to said hopper provided with a curved pointed lower end, a chamber formed in the top of the spout adjacent the hopper, a strip provided with a curve at one end and a cap at the other pivoted in said spout, and a spring-actuated lever connected to said strip, for the purpose described.

6. In a device of the kind described, the combination with a hopper provided with a perforated slide, a spring-guard secured over said slide, the brace secured to the bottom of the hopper, a guide-arm secured to the bottom of the hopper, of an open side curved pointed spout connected to the said hopper, provided with a chamber at its top, communicating with the hopper, a strip provided with a curve at one end, and a cap at the other end, pivoted in said spout, a lever pivoted on said brace, a link connecting said lever and slide, a spring connected to the upper end of the lever and to the hopper, and a link connecting the lever with the strip, for the purpose described.

813,988. PLOW. JOHN J. MCMANNON, Atlanta, Ga., assignor of one-half to O. W. Lintner, Ironton, Ohio. Filed May 10, 1905. Serial No. 259,721.

Claim.—The combination with a plow-standard comprising spaced bars connected at their lower ends, and a shovel having a squared hole therein, of a squared bolt extending between the bars, and having a hooked end extending through the hole in the shovel and behind the rear surface thereof, in contact with the said connection between the lower ends of the bars, to sustain the upward thrust on the plow.

813,989. ANTIFRICTION-BEARING. VIRTUS L. RICE, New York, N. Y. Filed Nov. 3, 1904. Serial No. 231,235.

2. A lock comprising a fixed tumbler and a plurality of movable superimposed tumblers, the fixed tumbler being formed with openings adapted to receive the securing means for securing the lock in

a glue-pot having an inclined under surface, a correspondingly-inclined supporting-surface upon which said pot rests and along which it may be slid in order to place it in or out of operative position, and

Claim.—1. An antifriction-bearing comprising an annular set of bearing-rollers, two concentric bearing parts contacting with the bearing-rollers, said bearing parts having unoccupied annular recesses at their ends, whereby the length of the operative surfaces of said bearing parts is less than the length of the operative surfaces of the bearing-rollers, and limiting means at the ends of the bearing parts, between which the bearing-rollers may move back and forth across said recesses.

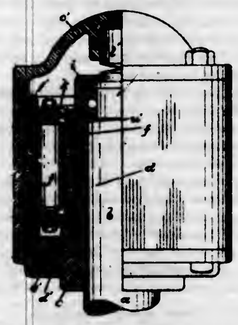

2. An antifriction-bearing comprising an annular set of bearing-rollers, having central longitudinal bores with conical recesses at the ends thereof, cage-rings at the ends of the bearing-rollers, bolts passing through the longitudinal bores of the bearing-rollers to fasten the cage-rings together, antifriction-cones on the bolts on the inner sides of the cage-rings to enter the conical recesses of the bearing-rollers and between which the bearing-rollers may individually move back and forth, two concentric bearing parts contacting with bearing-rollers, said bearing parts having unoccupied annular recesses at their ends whereby the length of the operative surfaces of said bearing parts is less than the operative surfaces of the bearing-rollers, and limiting means at the ends of the bearing parts between which the bearing-rollers may move back and forth across said recesses.

3. An antifriction-bearing comprising an annular set of bearing-rollers, having beveled ends and central longitudinal bores with conical recesses at the ends thereof, cage-rings at the ends of the bearing-rollers, bolts passing through the bores of the bearing-rollers to fasten the cage-rings together, antifriction-cones on the bolts on the inner sides of the cage-rings to enter the conical recesses of the bearing-rollers and between which the bearing-rollers may individually move back and forth, two concentric bearing parts contacting with the bearing-rollers, said bearing parts having unoccupied annular recesses at their ends whereby the length of the operative surfaces of said bearing parts is less than the length of the operative surfaces of the bearing-rollers, and arresting-rings at the ends of the bearing parts having beveled faces to contact with the beveled ends of the bearing-rollers, and between which the bearing-rollers may move back and forth across said recesses.

4. An antifriction-bearing comprising two concentric bearing parts, bearing-rollers having beveled ends interposed between the bearing parts, said bearing-rollers having central conical recesses in their ends, cage-rings at the ends of the bearing-rollers, antifriction-cones connected to the cage-rings to enter said conical recesses, and spacing-cones connected to the cage-rings intermediate the antifriction-cones to contact with the beveled ends of the bearing-rollers.

5. An antifriction-bearing comprising an annular set of bearing-rollers having beveled ends, cage-rings for the bearing-rollers and spacing-cones connected to the cage-rings to engage with the beveled ends of the bearing-rollers.

6. An antifriction-bearing comprising an annular set of bearing-rollers having beveled ends, concentric annular bearing parts contacting with the bearing-rollers, cage-rings to maintain the annular formation of the bearing-rollers, spacing-cones connected to the cage-rings to contact with the beveled ends of the bearing-rollers, annular arresting-rings at the ends of the bearing parts having beveled faces to engage with the beveled ends of the bearing-rollers, and between which the bearing-rollers are collectively movable back and forth.

7. An antifriction-bearing comprising an annular set of bearing-rollers having beveled ends and central longitudinal bores with conical recesses at the ends thereof, cage-rings, bolts passing through the bores of the bearing-rollers to tie the cage-rings together, antifriction-cones on the bolts to enter the conical recesses of the bearing-rollers and so positioned as to allow the bearing-rollers to individually move back and forth between them, spacing-cones connected to the cage-rings to contact the beveled ends of the bearing-rollers, annular bearing parts contacting with the bearing-rollers, and arresting-rings at the ends of the bearing parts having beveled faces to contact with the beveled ends of the bearing-rollers and between which the bearing-rollers are collectively movable back and forth.

813,990. BUNG-BUSHING. GEORGE H. RICKE, Cincinnati, Ohio. Filed Apr. 21, 1905. Serial No. 256,603.

Claim.—1. In a bung-bushing, an annulus provided with a flange, a series of screw-threads, said screw-threads disposed at the periphery of the bush, and means between said screw-threads and the extremity of the bush for guiding and holding the same in the bung-hole to prevent tilting as and for the purposes set forth.

2. In a bung-bushing, an annulus provided with a flange, a series of screw-threads at the periphery of said annulus, disposed midway of its length, lugs, said lugs extending out from the periphery of the bush between the screw-threads and the top flange and between the screw-threads and the lower extremity of the bush, as and for the purposes set forth.

3. In a bung-bushing, an annulus provided with a flange, a series of screw-threads at the periphery of said annulus disposed midway of its length, lugs, said lugs extending out from the periphery of the bush between the screw-threads and the top flange and between the screw-threads and the lower extremity of the bush, a space provided between said lugs, the periphery of the bush and the bung-hole wall, as and for the purposes set forth.

813,991. POCKET RECEPTACLE OR HOLDER. PHILIPP SEILER, Chicago, Ill., assignor, by direct and mesne assignments, to Abram Diffenderf, Chicago, Ill. Filed Sept. 23, 1904. Serial No. 225,711.

Claim.—1. A device of the character described comprising two portions each adapted to receive articles, parts arranged to close the respective portions and each having a notched ear, a pivoted clasp member, the ends of which are adapted, when the clasp member is centrally positioned, to engage the notch of each ear and when rocked in one direction or the other to alternately release and hold the respective ears and a spring engaged with the clasp member to hold the same in central position.

2. A device of the character described comprising a frame having two receiving portions, hinged parts adapted to close the respective receiving portions, and provided with devices adapted when said parts are in closed positions to extend transversely of the frame, and a clasp member carried on the frame between said devices and having end portions normally engaged with said devices but adapted when moved to be disengaged therefrom.

813,992. COMBINATION KEYLESS LOCK. JACOB W. WAGNER and BERNARD H. PRESSENDAHL, Lansdowne, Md., assignors of one-third to Francis H. Richards, Washington, D. C. Filed Oct. 29, 1904. Serial No. 230,513.

Claim.—1. A lock comprising a plurality of tumblers, means carried by the tumblers for locking engagement with a shackle, one of said tumblers being formed with openings arranged in annular series adapted to receive a securing means for securing the lock in position.

crank lever pivoted to the tongue, a reach also pivoted to the tongue an evener pivoted to a free end of the reach also to one end of the bell-

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813,996. MEANS FOR ELECTRICALLY CONNECTING RAILWAY-RAILS AND THE LIKE. JOHN M. ATKINSON, Chicago, Ill., as-

2. A lock comprising a fixed tumbler and a plurality of movable superimposed tumblers, the fixed tumbler being formed with openings adapted to receive the securing means for securing the lock in position, means carried by all of the tumblers for locking engagement with a shackle, the inner movable tumblers being counterparts of said fixed tumbler.

3. A lock embodying a plurality of superimposed tumblers, said tumblers carrying locking means for engagement with a shackle, said tumblers formed with central openings successively increasing in diameter, a flange overlying the outer portion of each of the said tumblers, and rings carrying said flanges and being secured to the adjacent tumbler in the rear of the respective tumblers which each flange overlies.

4. A lock comprising a fixed tumbler adapted to receive means for securing the lock in position, a movable tumbler mounted thereon and being a counterpart thereof, said tumblers being formed with central openings successively increasing in diameter, locking means carried by the tumblers for engagement with a shackle, and means for securing the tumblers together.

5. A lock comprising fixed and movable tumblers superimposed, each tumbler fitting into the other, said tumblers being formed with central openings successively increasing in diameter, locking means carried by the several tumblers for engagement with a shackle, and means carried by each tumbler for removably securing the succeeding tumblers thereto.

6. A lock comprising fixed and movable tumblers, fitting one into the other, each of said tumblers being formed with a tapered opening, said openings being of successively-increasing diameter in the several tumblers, a ring secured to the fixed tumbler and having a flange overlying the next movable tumbler, a ring secured to said movable tumbler and having a flange overlying the next movable tumbler, locking means carried by the several tumblers for engagement with a shackle, and a projection carried by the outer tumbler projecting beyond the outer ring.

7. A lock comprising a fixed tumbler formed with openings adapted to receive a securing means and a plurality of movable tumblers, each of said tumblers being formed with a tapered opening, said openings being of successively-increasing diameter in the several tumblers, said movable and fixed tumblers fitting one into the other, the inner movable tumblers being counterparts of the fixed tumbler, rings carried by the fixed and inner movable tumblers and being provided with flanges overlying the next outer tumbler, all of said tumblers being formed with openings and having locking-lugs projecting therefrom, the outer tumblers having a portion projecting beyond the outer ring, and securing means passing through the said fixed and inner-movable tumblers from their inner faces and engaging said rings for securing same in position.

813,994. GLUE-APPLYING MECHANISM. JACOB P. WEBSTER, Barberton, Ohio, assignor to The Diamond Match Company, Chicago, Ill., a Corporation of Illinois. Original application filed June 20, 1903, Serial No. 162,070. Divided and this application filed Apr. 11, 1905. Serial No. 254,962.

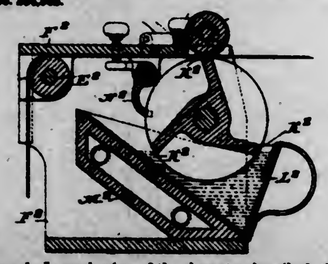

Claim.—1. In mechanism of the character described, the combination of a glue-pot, and a glue-wheel having arms with peripheral glue-applying surfaces, said arms inclining outwardly and rearwardly with respect to the direction of rotation of the wheel, and said wheel being situated above the glue-pot so that the arms thereof pass through the glue in the pot.

2. In mechanism of the character described, the combination of a glue-pot having an inclined under surface, a correspondingly-inclined supporting-surface upon which said pot rests and along which it may be slid in order to place it in or out of operative position, and a glue-applying device projecting into the pot when the latter is in position for use.

3. In mechanism of the character described, the combination of a glue-pot having an inclined under surface, a heater having a corresponding surface upon which said pot rests, and a glue-applying device projecting into the pot when the latter is in position for use.

4. In mechanism of the character described, the combination with a wheel mounted in a fixed position, of a pot or receptacle in which the lower portion of the wheel revolves, and a support for said pot or receptacle having an inclined supporting-surface that engages a like surface on the pot or receptacle.

5. In mechanism of the character described, the combination of a glue-pot having an inclined under surface, a heater having a corresponding surface upon which said pot rests, and a glue-applying wheel having a fixed axis of rotation and projecting into the pot when the latter is in position for use.

6. In mechanism of the character described, the combination of a glue-pot, a glue-wheel having arms with peripheral glue-applying surfaces, said arms inclining outwardly and rearwardly with respect to the direction of rotation of the wheel, and said wheel being situated above the glue-pot so that the arms thereof pass through the glue in the pot, and a circumferentially-grooved roller between which and the glue-wheel passes the material to receive the glue from said wheel.

813,994. DRAFT-EQUALIZER. MARION ABBY, Peoria, Ill., assignor of one-half to George P. Christensen, Bartonville, Ill. Filed June 6, 1903. Serial No. 160,574.

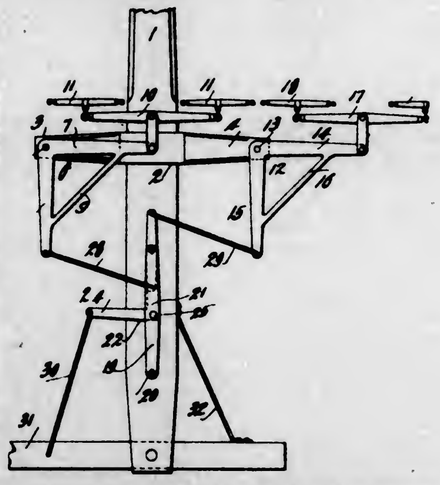

Claim.—1. In an equalizer, the combination with the tongue, of a bar supported by the tongue and having portions extending upon opposite sides thereof, a bell-crank lever pivotally attached to one end of the bar with its inner end extending toward the center of the said bar, a second bell-crank lever pivoted to the opposite end of the said bar with an extension of the lever extending some distance beyond the end of the bar, doubletree connections with the said levers, an evener pivoted to the tongue at a point removed to the rear of the said bar having oppositely-extended portions disposed longitudinally of the said tongue, and connecting-rods between the extensions of the evener and the opposite levers.

2. In an equalizer, the combination with a tongue, a bar supported by and transversely of the tongue, levers pivoted to the opposite ends of the bar, doubletrees attached to the said levers, a bell-crank lever pivoted to the tongue, an evener pivoted to the bell-crank, rods connecting the evener and the levers on the bar, and connections between the said bell-crank and a frame part of a suitable machine.

3. In an equalizer, the combination with a tongue, a bar supported by and transversely of the tongue, levers pivoted to the opposite ends of the bar, doubletrees attached to the said levers, a bell crank lever pivoted to the tongue, a reach also pivoted to the tongue an evener pivoted to a free end of the reach also to one end of the bell-crank, connections between the levers on the bar and the evener, and a connecting-rod between the bell-crank and a machine part.

4. In an equalizer, the combination with the tongue, of a bar supported by the tongue and having portions extending upon opposite sides thereof, a bell-crank lever pivotally attached to one end of the bar with its inner end extending toward the center of the said bar, a second bell-crank lever pivoted to the opposite end of the said bar with an extension of the lever extending some distance beyond the end of the bar, doubletree connections with the said levers, a reach pivoted to the tongue, a bell-crank lever pivoted to the tongue, an evener pivoted to the reach and to one end of the bell-crank, rods connecting the evener and the bell-cranks on the bar, and connections between the bell-crank on the tongue and to the frame of a suitable machine.

5. In an equalizer, the combination with the tongue, of a bar supported by the tongue and having portions extending upon opposite sides thereof, a bell-crank lever pivotally-attached to one end of the bar with its inner end extending toward the center of the said bar, a second bell-crank lever pivoted to the opposite end of the said bar with an extension of the lever extending some distance beyond the end of the bar, doubletree connections with the said levers, an evener pivotally mounted to the rear of the bar, connecting-rods between the extensions of the evener and the bell-crank levers, a member pivoted to the tongue to which the evener is pivoted and connections between the said member and a frame part of a suitable machine.

6. In an equalizer, the combination with the tongue, of a bar supported by said tongue, a pair of levers pivoted to the opposite ends of the bar, one of said levers having an extension 7 to the free end of which is attached a doubletree supporting swingletrees disposed upon opposite sides of the tongue, the right-angle extensions 8 of said lever, the second lever having the portion 14 to which is attached a doubletree supporting swingletrees, the right-angle extension 15 of said lever, an evener supported for oscillation on the tongue and longitudinally thereof, the rod 28 connecting one end of the evener with the extension 8 of the first-mentioned lever, and the rod 29 connecting the opposite end of the evener with the extension 15 of the last-mentioned lever.

813,995. AUTOMATIC APRON OR BELT GUIDE. WILLIAM J. ASHER, Willimantic, Conn. Original application filed May 12, 1903, Serial No. 156,816. Divided and this application filed Nov. 8, 1905. Serial No. 286,419.

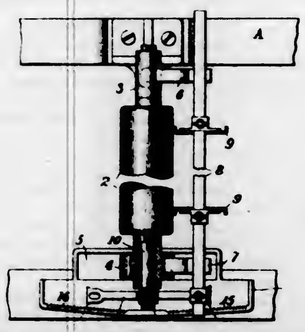

Claim.—1. An automatic apron or belt guide comprising a roll having a swiveled bearing at one end, a crank-pin on the opposite end of the roll, a pawl-bar reciprocated by said crank-pin and adapted to rock thereon, pawls on said bar, two series of ratchet-teeth adapted to coöperate respectively with said pawls, and means controlled by the apron for rocking the pawl-bar, the said pawls being normally out of engagement with their respective ratchet-teeth.

2. An automatic apron or belt guide comprising a roll having a swiveled bearing at one end, a crank-pin on the opposite end of the roll, a pawl-bar reciprocated by said crank-pin and provided with pawls at opposite ends, two series of ratchet-teeth arranged in planes at an angle to each other, and means controlled by the apron for rocking the bar upon the crank-pin to cause the pawls to engage with their respective ratchet-teeth should the apron vary from its normal path.

813,996. MEANS FOR ELECTRICALLY CONNECTING RAILWAY-RAILS AND THE LIKE. JOHN M. ATKINSON, Chicago, Ill., assignor, by mesne assignments, to The Rail Joint Company, a Corporation of New York. Filed Mar. 15, 1904. Serial No. 198,368.

Claim.—1. The improved angle-bar for connecting railway-rails, comprising an angle-bar having a shallow recess formed in a bearing of said angle-bar adapted to engage the rail, said recess containing a high conductor of electricity deposed in permanent molecular connection with the comparatively low conductive body of metal of said angle-bar.

2. The combination with the railway-rails, of angle-bars for connecting said railway-rails, said bars comprising angular, conducting-bars formed to contact with the faces of the rail-bases, the contact-bearings being recessed and containing a molecularly-adhering electrodeposit of highly-conductive metal adapted to contact with said flange of the rail, substantially as set forth.

813,997. BASE ATTACHMENT FOR CENTER-GAGES. JOHN L. BALTHER and LARGY S. STARRETT, Athol, Mass., assignors to The L. S. Starrett Co., Athol, Mass., a Corporation of Massachusetts. Filed Dec. 5, 1904. Serial No. 235,493.

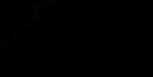

Claim.—1. A base or seat for a center-gage, the same comprising a rigid elongated body having in its bottom a continuous longitudinal recess with diverging walls and flattened lower edges, and formed in its top with a vertical longitudinal groove or slot immediately above the axis of said body, in combination with a spring mounted in such groove or slot, rising above the walls thereof on a uniform curve, and adapted to hold the gage or blade frictionally against the vertical wall of said groove, substantially as set forth.

2. The elongated base-block 6 having a rectangular recess 7 with radial walls flattened terminally and above it a vertical longitudinal slot 8, with spring 9 therein, anchored terminally to the base-block and adapted to hold the tool frictionally against the slot-wall, substantially as set forth.

813,998. INSULATED RAIL-JOINT. BANCROFT G. BRAINE, New York, N. Y., assignor, by mesne assignments, to The Rail Joint Company, a Corporation of New York. Filed Oct. 31, 1903. Serial No. 179,265.

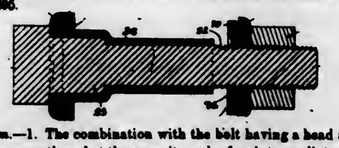

Claim.—1. The combination with the bolt having a head at one end and a screw-thread at the opposite end, of an intermediate sleeve of insulation hugging said bolt, and washers at the ends of said sleeve and having recesses at the sides toward said sleeve.

2. The combination with a bolt having a reduced portion intermediate of its extremities with shoulders or stops at the ends of said reduced portion, of a split insulating-sleeve upon the reduced portion.

3. The combination with a bolt having a head at one end and a threaded portion at the other, and being reduced intermediate of said ends, of a resilient split insulating-sleeve upon said reduced portion.

4. The combination with a bolt, of an insulating-sleeve upon the shank of said bolt, and an annular portion of insulation at one end of said sleeve, projecting peripherally beyond the same, and having its side next the sleeve annularly recessed.

5. The combination with a bolt, of an insulating-sleeve upon the shank of said bolt, and a washer at the end of said sleeve having in its side adjacent to the sleeve an annular recess of greater diameter.

6. The combination with a bolt having a reduced portion inter-

mediate of its ends, an insulating-sleeve upon said reduced portion, and an annular portion of insulation at one end of said sleeve, projecting peripherally beyond the same, and having its side next the

5. In a loom, a shuttle-box, a shuttle to contain a plurality of short wefts, means to select a weft to be delivered from said shuttle,

short weft, means to move said shuttle through the shed, controlling means to act upon said weft in the shed, and prevent the same from curling or getting out of position therein before the action of the reed

Claim.—1. In the generation of gas in a gas-producer, the process which consists in supplying to the draft-current an endothermic body consisting of mixed and averaged products of combustion from

mediate of its ends, an insulating-sleeve upon said reduced portion, and an annular portion of insulation at one end of said sleeve, projecting peripherally beyond the same, and having its side next the sleeve annularly recessed.

7. The combination with a bolt, of an insulating-sleeve upon the shank of said bolt and having its end next the entering end of the bolt tapered at the outer edges, and an annular portion of insulation at the other end of the sleeve, next the head of the bolt, projecting peripherally beyond the same, and having its side next the sleeve annularly recessed.

813,999. PHONOGRAPH-HORN. JAMES T. BROWN, New York, N. Y. Original application filed Dec. 24, 1904, Serial No. 238,241. Divided and this application filed June 13, 1905. Serial No. 265,085.

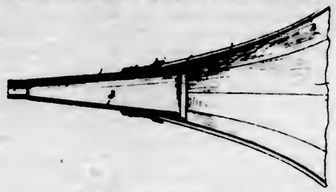

Claim.—1. A horn comprising a mouthpiece and a collapsible portion constructed with their inner surfaces of leather, said collapsible portion arranged to be expanded by engagement with said mouthpiece, and guards for protecting the leather inner surfaces during such engagement, substantially as described.

2. A horn comprising a mouthpiece and a collapsible portion constructed with their inner surfaces of leather, said collapsible portion arranged to be expanded and clamped in expanded position by engagement with said mouthpiece, and guards for protecting the leather inner surfaces during such engagement, substantially as described.

3. A horn comprising a mouthpiece and a collapsible portion constructed with their inner surfaces of leather, said mouthpiece arranged to telescope within the collapsible portion for expanding the latter, and guards for protecting the inner surfaces during such expansion, substantially as described.

4. A horn comprising a mouthpiece, a collapsible portion, said mouthpiece and collapsible portion constructed with their inner surfaces of leather, means carried by said mouthpiece for expanding the collapsible portion, and guard-rails carried by said collapsible portion in position for engagement by said expanding means, substantially as described.

5. A horn comprising a mouthpiece, a collapsible portion, said mouthpiece and collapsible portion constructed with their inner surfaces of leather, means carried by said mouthpiece for expanding the collapsible portion, and inclined guard-rails carried by said collapsible portion in position for engagement by said expanding means, substantially as described.

6. A horn comprising a mouthpiece, a collapsible portion, means carried by said mouthpiece for expanding the collapsible portion, and rails carried by said collapsible portion in position for engagement by said expanding means, substantially as described.

7. A horn comprising a mouthpiece, a collapsible portion, tapered means carried by said mouthpiece for expanding the collapsible portion, and inclined rails carried by said collapsible portion in position for engagement by said expanding means, substantially as described.

814,000. LOOM. ARTHUR S. COWAN, Worcester, Mass., assignor to Crompton & Knowles Loom Works, Worcester, Mass., a Corporation of Massachusetts. Filed Dec. 28, 1903. Serial No. 186,796.

Claim.—1. In a loom, means to form sheds, a shuttle to carry a plurality of short wefts, and means to move said shuttle to leave a short weft in the shed.

2. In a loom, a shuttle adapted to carry short lengths of weft, means to select said weft singly, means to hold the selected weft, and means to move the shuttle to deliver therefrom a weft.

3. In a loom, a shuttle to contain a plurality of short wefts, weft-selecting means, and weft-holding means to engage and hold a selected weft, and means to move the shuttle while the weft-holder holds the weft.

4. In a loom, a shuttle-box, a shuttle to contain a plurality of short wefts, means to select the wefts in said shuttle, and means to move the shuttle that it may deliver therefrom weft so selected.

5. In a loom, a shuttle-box, a shuttle to contain a plurality of short wefts, means to select a weft to be delivered from said shuttle, means to engage and hold the selected weft, and means to move the shuttle to deliver said weft.

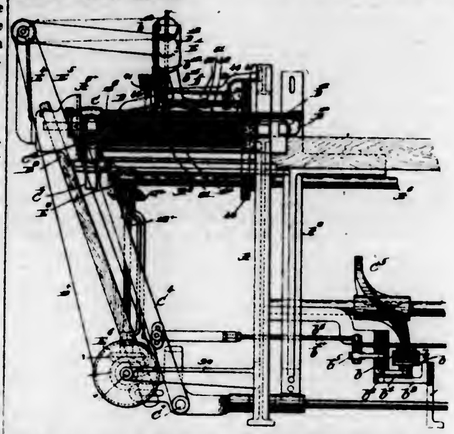

6. In a loom, a shuttle-box, a shuttle adapted to receive weft doubled on itself, and selecting means to enter the shuttle between its ends and engage and select the weft.

7. In a loom, a shuttle-box, a shuttle adapted to receive a plurality of doubled short wefts, selecting means to enter the shuttle and engage one of said short wefts near its end, and withdraw said end from the mass of short weft in the shuttle.

8. In a loom, a shuttle-box, a shuttle adapted to receive a plurality of short wefts, selecting means to enter the shuttle and engage one of said short wefts near its end, and withdraw said end from the mass of short wefts in the shuttle, and means to exert tension on the mass of short wefts in the shuttle and the single weft being drawn therefrom.

9. In a loom, a shuttle-box, a shuttle to contain a plurality of short wefts, weft-selecting devices, means to actuate said devices to select a weft, and means to arrest further movement of said devices after selecting a weft.

10. In a loom, a shuttle-box having a connected guide, weft-selecting means sustained by said shuttle-box, short-weft-holding means comprising normally closed jaws, means to move said holding means on said guide, and means to open said jaws to embrace a selected weft.

11. In a loom, shed-forming means, a shuttle to carry a plurality of short wefts, and a shuttle to carry a continuous weft, shifting shuttle-boxes to contain said shuttles, means for selecting said short wefts and for moving said shuttles as desired through the shed.

12. In a loom, a shuttle-box having a connected guide, weft-selecting means sustained by said shuttle-box, short-weft-holding means comprising normally closed jaws, means to move said holding means on said guide, means to open said jaws to embrace a selected weft, and means to then open said jaws a second time that the short weft held by it may be discharged.

13. In a loom of the class described, a guide, a shuttle to contain short weft, selecting means to select a short weft to be delivered in the shed by the shuttle, a weft-holder comprising normally closed jaws, actuated means to slide said weft-holder on said guide to engage and deliver the weft, and means for opening said holder to release the weft.

14. In a loom, a shuttle to contain a plurality of short wefts, a shuttle or shuttles to contain a continuous weft, shed-forming mechanism, shifting shuttle-boxes, picking mechanism, short-weft-selecting means, a short-weft holder, a pattern-surface, and mechanism connected with the shuttle-boxes and controlled as to its time of movement by said pattern-surface to place the shuttle-box containing the short wefts and the selecting mechanism, or the shuttle-box containing the shuttle carrying the continuous weft in operative position with relation to the race of the lay, that the loom may weave a fabric having a series of short wefts and a series of picks of continuous weft, the number of picks of short weft and of continuous weft being controlled by said pattern-surface.

15. In a loom, a short-weft-carrying shuttle, means to select a short weft, means to move said shuttle through the shed, controlling means to act upon said weft in the shed, and prevent the same from curling or getting out of position therein before the action of the reed thereon.

16. In a loom, shed-forming mechanism, a short-weft-carrying shuttle, selecting means to select the wefts singly, means to move said shuttle to deliver a short weft, and oppositely-moving devices to contact with the warps in the upper and lower planes of the shed, and cause said warps to be closed onto so as to engage and produce tension on the short weft laid in the shed preparatory to crossing the warps for the next shed and beating the weft into the fell.

17. In a loom for weaving with short wefts, a short-weft-carrying shuttle, and short-weft-selecting means adapted to select a short weft from the bunch of short wefts in said shuttle, said selecting means retaining temporarily one end of said selected short weft, and a holder to which said weft-selecting means gives up the end of said short weft.

18. In a loom, a shuttle-box, a short-weft-carrying shuttle adapted to carry in a bunch of short wefts, short-weft-selecting means coacting with said short-weft-carrying shuttle, and occupying such position with relation to the shuttle-box as to enter the ends of the bunch of short wefts of said shuttle when the latter is in its shuttle-box.

19. In a loom for weaving with short weft, a shed-forming pattern-surface, means for selecting and laying the short wefts in the shed, a lay, a feeler to feel for a short weft laid in the shed, a device under the control of said feeler, and means intermediate said device and said pattern-surface whereby when a weft is absent from the shed said device will actuate said means and arrest the movement of the pattern-surface, the presence of weft in the shed rendering said device inoperative, thus permitting said means to be moved and effect the automatic starting of the pattern-surface.

20. In a loom, shed-forming mechanism, a pattern-surface, means for actuating said pattern-surface and shed-forming mechanism, means to lay weft in the shed, a lay, a feeler to feel for weft in the shed, and means intermediate said feeler and said pattern-surface, whereby when a weft is absent said pattern will be stopped.

21. In a loom, shed-forming mechanism, a drop shuttle-box, a pattern-surface, means controlled by said pattern-surface to actuate the shed-forming mechanism, means also controlled by the pattern-surface to move the shuttle-box, a device coacting with the pattern-surface to move said pattern-surface or leave it at rest, weft-feeling mechanism, and means intermediate said feeler and device coacting with said pattern-surface to stop the pattern-surface when the weft fails, and means to effect the starting of the pattern-surface when weft is supplied to the shed.

814,001. PROCESS OF GENERATING GAS. CARLETON ELLIS, New York, N. Y., assignor to Combustion Utilities Company, New York, N. Y., a Corporation of New York. Original application filed Mar. 6, 1906, Serial No. 305,468. Divided and this application filed May 5, 1905. Serial No. 259,097.

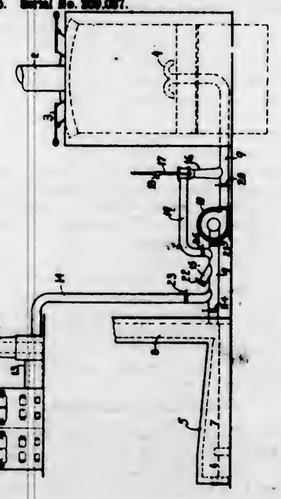

Claim.—1. In the generation of gas in a gas-producer, the process which consists in supplying to the draft-current an endothermic body consisting of mixed and averaged products of combustion from different sources, whereby the temperature of said endothermic body may be regulated to any desired degree.

2. In the generation of gas in a gas-producer, the process which consists in supplying to the draft-current as an endothermic body, products of combustion from a furnace treating ore and admixing therewith further products of combustion from a boiler-furnace.

814,002. TURBINE-WATER-WHEEL CONSTRUCTION. ARTHUR GIESLER, Dayton, Ohio. Filed May 31, 1905. Serial No. 263,076.

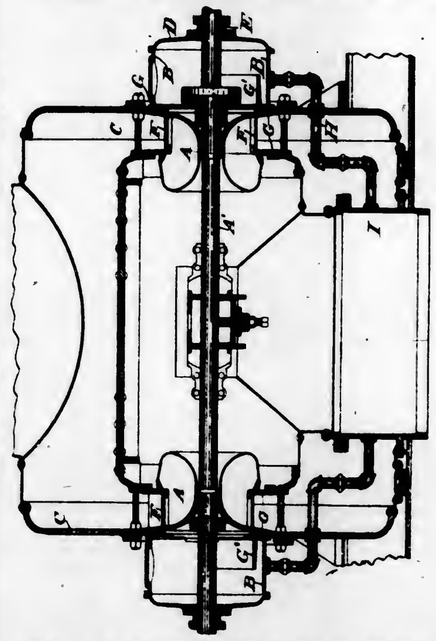

Claim.—1. In a water-wheel system, a chute-case conducting the water to the wheel, a gate within said chute-case, and an extension on said chute-case reaching outwardly into the dome-cylinder, said extension being in alinement with and adapted to receive the gate when opened.

2. In a water-wheel system, a flume, a water-wheel runner housed within said flume, a chute-case within said flume, a gate within said chute-case, and a dome-cylinder connected directly to said flume on the outside thereof and into which the gate is adapted to move, and means projected outwardly from the chute-case into said dome for supporting the gate when moving into the dome-cylinder, substantially as specified.

814,008. HAMMER FOR BEATING LEAF METAL. HANS B. GRABAU, New York, N. Y. Filed May 1, 1905. Serial No. 258,946.

Claim.—1. A hammer for beating leaf metal provided with a cross-head having angular abutments, levers pivoted thereto, means for suspending a hammer-head from the levers, set-screws engaging the levers, holders engaged by the set-screws, and buffers supported by the holders and adapted to engage the abutments, substantially as specified.

2. A hammer for beating leaf metal provided with a slidable cross-head, levers pivoted thereto, bearings slidably supported by the levers, rollers journaled in the bearings, a belt surrounding the rollers, a hammer-head suspended from the belt, and resilient buffers between the bearings and the levers, substantially as specified.

3. A hammer for beating leaf metal provided with a guideway and slidable cross-head guided thereby, levers pivoted thereto and having upwardly-extending arms, a belt connected to the lower free

ends of the levers, a hammer-head suspended from the belt, and re-

amount of latent motive power while the machine is not in action,

ends of the levers, a hammer-head suspended from the belt, and resilient buffers between the cross-head and the upwardly-extending lever-arms, substantially as specified.

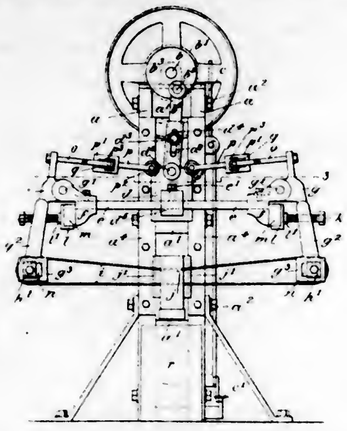

814,004. AUTOMATIC MOTORY MANUFACTURING-MACHINE. FRANK L. HARMON, Beverly, Mass. Original application filed Nov. 30, 1896. Serial No. 613,906. Divided and this application filed Sept. 26, 1903. Serial No. 174,760.

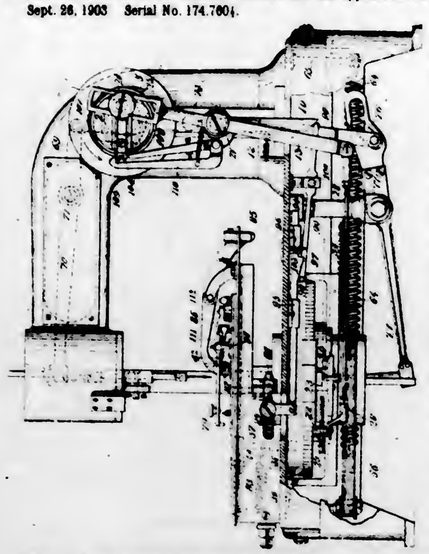

Claim —1. An automatic motory manufacturing-machine made for the special purpose of producing a predeterminate manufacturing operation upon a material held upon a support and then to cease operating thereon, and which comprises means for holding a proper amount of latent motive power while the machine is not in action, and means whereupon a proper amount of power may be generated at each operation of the machine, and means whereupon all the power that is generated in one operation of the machine may be released and utilized as motive power in one operation of the machine, and means adapted to be forced by said power to produce a predeterminate manufacturing operation upon a material held upon a support and then to cease operating thereon.

2. An automatic motory manufacturing-machine made for the special purpose of producing a predeterminate manufacturing operation upon a material held upon a support and then to cease operating thereon, and which comprises means for holding a proper amount of latent motive power while the machine is not in action, and means whereupon a proper amount of power may be generated at each operation of the machine, and means whereupon all the power that is generated in one operation of the machine, and means whereupon the power that is generated in one operation of the machine may be released and utilized as motive power in one operation of the machine, and a support upon which a material may be held, and means for the purpose of being forced by the power released and utilized to produce a predeterminate manufacturing operation upon said material on said support and then to cease operating thereon.

3. An automatic motory manufacturing-machine made for the special purpose of producing a predeterminate manufacturing operation upon a material held upon a support and then to cease operating thereon, and which comprises means for holding a proper amount of latent motive power while the machine is not in action, and means whereupon power may be released and utilized, and means for the purpose of being forced by power released and utilized to produce a predeterminate manufacturing operation upon a material held upon a support and then to cease operating thereon, and means having another power connected therewith to be employed, and means to be driven by the power released and utilized to automatically employ the power to be employed, and means adapted to be forced by the power to be employed to automatically generate the aforesaid power which is held latent to be released and utilized, and means whereupon the power thus employed is automatically disemployed when enough power is generated.

4. An automatic motory manufacturing-machine made for the special purpose of producing a predeterminate manufacturing operation upon a material held upon a support and then to cease operating thereon, and which comprises means for holding a proper amount of latent motive power while the machine is not in action, and means whereupon power may be released and utilized, and means for the purpose of being forced by power released and utilized to produce a predeterminate manufacturing operation upon a material held upon a support and then to cease operating thereon, and means having another power connected therewith to be employed, and means whereupon the power to be employed may be employed, and means forced by the employed power to automatically generate the aforesaid power which is held latent to be released and utilized, and means operated by the released power to cause the generating of power to automatically cease when enough power is generated.

5. An automatic motory manufacturing-machine made for the special purpose of producing a predeterminate manufacturing operation upon a material held upon a support and then to cease operating thereon, and which comprises means for holding a proper amount of latent motive power while the machine is not in action, and means whereupon power may be released and utilized, and means for the purpose of being forced by power released and utilized to produce a predeterminate manufacturing operation upon a material held upon a support and then to cease operating thereon, and means having another power connected therewith to be employed, and means whereupon the power to be employed may be employed, and means to be forced by the employed power to automatically generate the aforesaid power which is held latent to be released and utilized, and means whereupon the power that is employed is automatically disemployed when enough power is generated.

6. An automatic motory manufacturing-machine made for the special purpose of producing a predeterminate manufacturing operation upon a material held upon a support and then to cease operating thereon, and which comprises means for holding a proper amount of latent motive power while the machine is not in action, and means whereupon power may be released and utilized, and means for the purpose of being forced by power released and utilized to produce a predeterminate manufacturing operation upon a material held upon a support and then to cease operating thereon, and means having another power connected therewith to be employed, and means whereupon the power to be employed may be employed, and means forced by the employed power to automatically generate the proper amount of power which is held latent to be released and utilized, and means to be forced by the employed power to continue the operation of the machine upon the material, and means for automatically disemploying the employed power after the operation is finished upon the material and enough power is generated, whereupon the machine ceases its operation.

814,005. THILL-COUPLING. JOSEPH L. HENRY, Rochester, N. Y. Filed Feb. 20, 1905. Serial No. 246,367.

Claim.—1. The combination with a coupling-bracket having laterally-spaced ears and a pivot-bolt extending between said ears, of a pair of laterally-spaced straps yieldingly supported at their lower ends, a lock-piece embracing the ears of said bracket, and pivotally connected to said straps in line with said pivot-bolt, and provided with a lock-foot, and a detachable member having a head formed with an open seat adapted to engage the pivot-bolt of said coupling-bracket, and which lock-foot is adapted to engage the head of said detachable member to hold the same interlocked with said lock-bolt, substantially as described.

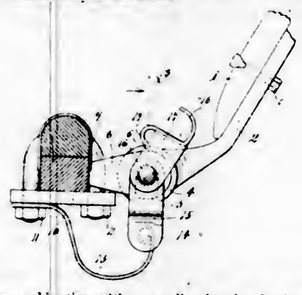

2. The combination with a coupling-bracket having laterally-spaced ears and an endwise-removable bolt seated in said ears, of a leaf-spring secured at one end with respect to said bracket, laterally-spaced straps connected to the free end of said spring and embracing the ears of said bracket, a yoke-like lock-piece pivoted to the ends of said straps and having a lock-foot, and a detachable member having a head formed with an open seat and with a lock-notch, which open seat is adapted to engage the bolt of said coupling-bracket, and which lock-notch is adapted to be engaged by the foot of said lock-piece, substantially as described.

3. The combination with a coupling-bracket having laterally-spaced ears and an endwise-removable bolt seated in said ears, of a leaf-spring secured at one end with respect to said bracket, laterally-spaced straps pivotally connected to the free end of said spring, with their upper ends embracing, and yieldingly held with respect to, the ears of said bracket, a yoke-like lock-piece, pivotally connected to the upper ends of said straps and having a lock-foot, and a headed member having an open seat and a lock-notch, which seat is engageable with the bolt of said bracket, and which lock-notch is adapted to be engaged by the foot of said lock-piece, substantially as described.

4. The combination with a coupling-bracket 8 having perforated ears, of a bolt 12 seated in said ears and extending less than completely through said ears, the spring 13 anchored at one end with respect to said bracket, the straps 15 pivotally connected to the free end of said spring and embracing the ears of said bracket, the yoke-like lock-piece 17 embracing the ears of bracket and provided with a finger-piece 18 and a lock-foot 19, rivets 16 pivotally connecting the prongs of said lock-piece to the upper ends of straps 15, with their inner heads yieldingly held in engagement with the perforations in the ears of said bracket 8, and the member 2, having a head 4 formed with open seat 5 and lock-notch 6, which seat is engageable with said bolt 12, and which notch is adapted to be engaged by the foot of said lock-piece, substantially as described.

814,006. PAPER-BAG MACHINE. WILLIAM LIDDELL, Brooklyn, N. Y., assignor to Continental Paper Bag Company, a Corporation of Maine. Filed Sept. 2, 1904. Serial No. 223,143.

Claim.—1. The combination of a folding-roll, a lever substantially radial to the roll pivoted at each end of the roll, a side clip mounted in the free end of each lever, means for oscillating the levers toward and away from the roll and means for raising and lowering said levers in the plane of their length all combined and operating together substantially as described.

2. The combination of a pair of distending-rolls, side clips oppositely disposed on opposite ends of each thereof respectively, means for moving the side clips into and out of engagement with their respective rolls and means for retracting said side clips radially to positions below the faces of the rolls respectively, all combined and operating together substantially as described.

3. The combination of a roll, a lever, pivotally mounted at each end thereof, a side clip mounted in the free end of each lever, means to oscillate the levers lengthwise of the rolls and means to raise and lower the side clips both in their inward and outward positions substantially radially of the rolls, all combined and operating together substantially as described.

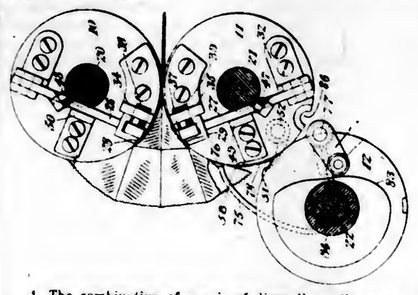

4. The combination of a pair of distending-rolls, means for holding the upper and lower plies of the forward end of a bag-blank thereto respectively, a lever substantially radial to its respective roll, pivotally mounted at each end of each of said rolls, a side clip, mounted in the free end of each of said levers, means to oscillate the levers longitudinally of the rolls and means to raise and lower the side clips substantially radially of the rolls respectively, all combined and operating together substantially as described.

5. The combination of a roll, a bar 63 therein, reciprocatable inwardly and outwardly with respect of the periphery of the roll, cams 64 for reciprocating the bar, a lever 270 pivotally mounted in each end of the bar, a side clip 290 carried by each lever and cams 43 for oscillating the levers toward and from the roll, all combined and operating together substantially as described.

6. The combination of a folding-roll, side clips mounted on said roll for reciprocation approximately radial thereto, means to reciprocate the side clips, and means for moving said side clips longitudinally of said roll in a plane radial thereto in coaction with said reciprocation, all combined and operating together substantially as described.

7. The combination of a folding-roll, side clips and a front clip thereon, a revoluble carrier 12, a supplemental front finger pivotally mounted in said carrier, means for revolving the carrier in time with the roll and for swinging said finger inwardly and outwardly of said carrier for coöperation with the folding-roll, all combined and operating together substantially as described.

8. The combination of a folding-roll, side clips and a front clip thereon, ironing-roll 12, supplemental front finger 75 pivoted therein, means, comprising arm 81 and cam 83 for swinging said finger inwardly and outwardly of the ironing-roll for coöperation with the folding-roll, and means for timing the ironing-roll with the folding-roll, all combined and operating together substantially as described.

9. The combination of a distending-cylinder, means to grip a bag-blank thereto a rotatable carrier adjacent to the distending-cylinder, a supplemental front finger eccentrically pivoted in the rotatable carrier, means for operating said finger for engagement with the bag-blank to prevent tearing in forming the diamond fold, all combined and operating together substantially as described.

10. The combination of a revoluble folding-bed 96, means for holding a bag-blank thereon, a revoluble pasting-wheel 14, a stripping-finger 105 mounted in said wheel for movement inwardly and outwardly thereof for coaction with the folding-bed, means to actuate the stripping-finger and means for timing the pasting-wheel and the folding-bed, all combined and operating together substantially as described.

11. The combination of a folding-roll, a lever substantially radial to the roll pivoted at each end of the roll, a side clip in the free end of each lever, means for oscillating the levers toward and away from the roll and means for raising and lowering the side clips radial to the roll all combined and operating together substantially as described.

REISSUES.

12,459. FRUIT-GRADER. WILLIAM C. ANDERSON, San Jose, Cal., assignor, by mesne assignments, to Anderson-Barngrover Mfg. Co., San Jose, Cal., a Corporation of California. Filed June 16, 1904. Serial No. 212,908. Original No. 703,887, dated July 1, 1902.

Claim.—1. In an apparatus for grading prunes, the combina-

tion of two series of perforated screens, a shorter upper series, and a

tion of two series of perforated screens, a shorter upper series, and a longer lower one, the screens in each series having perforations increasing in size from the receiving end of the machine and the screens in the upper series adapted to deliver the fruit simultaneously upon an equal number of the lower screens, whose perforations also increase from the head end of the machine, said last-named screen having its perforations smaller than the perforations in the screen immediately above it, and means whereby the screens are given a longitudinal shaking movement.

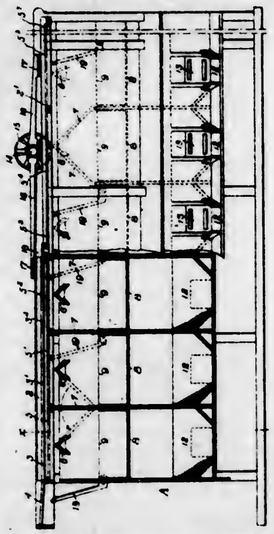

2. In an apparatus for grading prunes, the combination of two series of screens, an upper series and a longer lower and parallel series, said screens in each series having perforations of smallest diameter in the screen nearest the feed end of the apparatus, the perforations in the succeeding screen of successive large diameters, the perforations in the upper screens relatively larger than the perforations in the screens immediately beneath, and means whereby the fruit is made to travel over these screens.

3. In an apparatus for grading prunes, the combination of two series of screens, one above the other the uppermost having perforations of smallest diameter in the screen at the head of the machine and gradually increasing in size through the remaining screens, said screens adapted to pass successively two or more grades of fruit therethrough, a second series of screens beneath the upper series, having perforations of smallest diameter in the screen at the head of the machine, and gradually increasing in size through the remaining screens said screens adapted to pass successively but a single grade of fruit therethrough, and means by which these screens are given a longitudinally-shaking movement.

4. The combination in a fruit grading and classifying apparatus of grading-screens and blending means centrally below the same consisting of divergent transversely-disposed surfaces beneath the screens, and hinged coacting dividers interposed between adjacent blending means by which varying proportions of the product of adjacent screens may be mingled or diverted.

5. In a prune-grading apparatus, the combination of a plurality of horizontal perforated screens in line and forming an upper series, a second longer series of perforated screens below and parallel with and extending beyond the first series, said lower screens arranged in line with each other, the perforations in the screens in each series increasing in diameter from the receiving to the opposite end, the perforations in the upper series relatively larger and varying in wider proportion than the perforations in the lower screens, frames within which these two series are secured, a shaft centrally disposed of these frames and connections with the frame upon either side of the shaft whereby the frames are reciprocated.

6. An apparatus for grading and classifying prunes, consisting of two series of horizontally-disposed contiguous shaking-screens having perforations of gradually-increasing diameter from the commencement to the discharge end, said series consisting of a shorter upper one and a longer lower one, the screens in the upper series having perforations relatively larger than the perforations in the lower screens, roof-like sections transverse to, beneath and central of each of the lower screens, and dividers by which the product of any screen or any proportion of said product may be mingled with the discharge from adjacent screens.

7. The combination in an apparatus for grading and classifying prunes of a shorter upper and a longer lower series of approximately horizontal shaking-screens, with perforations of different sizes and increasing in diameter from the receiving to the opposite end, the screens in the upper series adapted to deliver the fruit simultaneously upon an equal number of the lower series, double inclined roof-like sections located transversely beneath the central portions of the lower screens, transverse sections hinged in line beneath the meeting edges of the screens, and turnable to divert a portion of the discharge of contiguous screens to either side, a longitudinally-disposed partition centrally located beneath said grading-sections, and sections hinged to its upper edge and turnable to divert the fruit to discharge upon either side of the apparatus.

8. The combination in a fruit grading and classifying apparatus, of grading-screens, fixed divergent, transversely-disposed surfaces located beneath the screens intermediate of their ends, and boards hinged in line beneath the junction of contiguous screens and turnable to form continuations of the divergent surfaces beneath either of said screens.

9. The combination in a fruit grading and classifying apparatus, of grading-screens, transverse downwardly-divergent surfaces fixed beneath the screens intermediate of their ends, transverse boards having their lower edges turnably supported approximately in planes below the junction of contiguous screens, whereby the upper edges may approach and form continuations with the divergent surfaces upon either side.

10. The combination in a fruit grading and classifying apparatus of grading-screens, fixed, downwardly-divergent, transversely-disposed surfaces centrally beneath the screens, transversely-hinged dividers coacting with said surfaces to mingle or divert the products of contiguous screens, longitudinally-divided bins, and longitudinally-hinged tilting boards, turnable to receive the blended product and divert it to the bins on either side.

11. In an apparatus for grading fruit two sets of horizontal perforated screens, consisting of an upper shorter set, and a lower longer set parallel with the upper set and having perforations increasing in diameter from the receiving to the discharging end, said lower set comprising two separate sections in line with each other but having an intervening space between adjacent ends, a flap or apron connecting the adjacent ends of said two sections whereby a continuous travel of fruit is effected, a rigid connection between the first section of the lower set and the upper set of screens and means for reciprocating both sets of screens.

12. In an apparatus for grading fruits, two sets of perforated screens consisting of an upper, shorter set, a longer lower set substantially parallel with the upper set and having perforations increasing in diameter from the receiving to the discharging end, said lower set comprising two separate sections in line with each other but having an intervening space between adjacent ends, a flap or apron connecting the adjacent ends of said two sections, whereby a continuous travel of fruit is effected, a connection between the first section of the lower set and the upper set of screens adapted to impart movement from one to the other, and means for reciprocating both sets of screens.

13. In an apparatus for grading fruits, two sets of perforated screens consisting of an upper, shorter set, a longer lower set substantially parallel with the upper set and having perforations increasing in diameter from the receiving to the discharging end, said lower set comprising two separate sections in line with each other but having an intervening space between adjacent ends, a flap or apron connecting the adjacent ends of said two sections, whereby a continuous travel of fruit is effected, and means for reciprocating both sets of screens and simultaneously reciprocating said first section of the lower set and said upper set of screens.

12,460. **NOZZLE FOR IMPACT WATER-WHEELS.** WILLIAM A. DOBLE, San Francisco, Cal. Filed Feb. 17, 1904. Serial No. 194,103. Original No. 751,720, dated Feb. 9, 1904.

Claim.—1. A hydraulic apparatus consisting of an impact-wheel with buckets, a nozzle-pipe of sinuous or double-curved form for directing a stream of water upon the buckets of said wheel, means for varying the amount of water discharged from said nozzle, and a supply-pipe to which said nozzle-pipe is pivoted on an axis in the plane of its sinuosity, said plane and axis being substantially parallel to the axis of the said impact-wheel, substantially as specified.

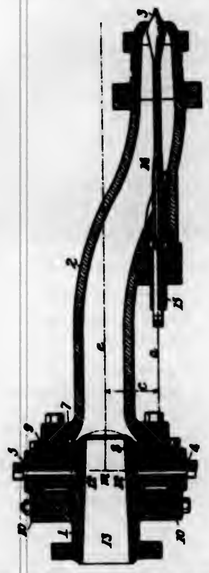

2. A hydraulic apparatus consisting of an impact-wheel, a nozzle rigid throughout, of curved form, for directing a stream upon said wheel, means for varying the amount of discharge from the tip of the nozzle, a supply-pipe, and a pivot connecting the nozzle and pipe, the axis of the pivot at right angles to the direction of flow at the axial point and located in the plane of the bend of the nozzle.

3. A hydraulic apparatus consisting of an impact-wheel, a nozzle rigid throughout and of curved form for directing a stream upon said wheel, means for varying the amount of discharge from the tip of the nozzle, a supply-pipe, and a pivot connecting the nozzle and pipe, the axis of movement of the nozzle being at right angles to the direction of flow at the axial point and located in the plane of the bend of the nozzle.

4. In a hydraulic apparatus for an impact-wheel provided with buckets and in which a jet from a pivoted nozzle is projected against the buckets in a plane perpendicular to the vertical plane of the axis of the wheel, the combination with a fluid-supply pipe, of a nozzle pivotally mounted at two diametrically opposite points outside the bore of said supply-pipe, said nozzle being bent or curved forward of the supply-pipe in the same plane as that occupied by its said pivoted points, and means arranged forward of said pivotal points for regulating the jet discharged by the nozzle.

5. In a hydraulic apparatus in which a bent rigid nozzle is provided with a valve regulating the discharge at the tip, the combination with said nozzle and valve, and with a main supply-pipe, of a pivot connecting the nozzle and pipe and located at right angles to the direction of flow at the axial point and in the plane of the bend of the nozzle.

6. A hydraulic apparatus consisting of an impact-wheel, a nozzle of sinuous or double-curved form for directing a stream upon the wheel, means for varying the amount of discharge from the nozzle, and a supply-pipe to which said nozzle is pivoted on an axis in the plane of its sinuosity, said plane and axis being substantially parallel to the axis of the said impact-wheel.

7. A hydraulic apparatus consisting of an impact-wheel, a nozzle rigid throughout, of curved form, for directing a stream upon said wheel, means for varying the amount of discharge from the tip of the nozzle, a supply-pipe, and a pivot connecting the nozzle and pipe, the axis of the pivot at right angles to the direction of flow at the axial point and located in the plane of the bend of the nozzle, and said plane parallel to that of the axis of the wheel.

8. A hydraulic apparatus consisting of an impact-wheel, a nozzle of sinuous or double-curved form for directing a stream upon said wheel, means for varying the amount of discharge from the nozzle, and a supply-pipe with which the nozzle has pivotal relation, the axis of movement of the nozzle located in the plane of the sinuosity of the nozzle.

12,461. **GAME APPARATUS.** EUGENE FAEL, St. Louis, Mo. Filed Aug. 30, 1905. Serial No. 276,452. Original No. 767,161, dated Apr. 11, 1905.

Claim—1. In a game apparatus, a board, means forming a semicircular surface leading upwardly and forwardly from the rear end of the board, and pins pivotally mounted and having wings extending below the upper end of the semicircular surface; substantially as described.

2. In a game apparatus, a board, a semicircular surface extending upwardly and forwardly from the end of the board, a baffle-plate in front of and below the upper end of the semicircular surface, and pins pivotally mounted, with wings extending below the upper end of the semicircular surface; substantially as described.

3. In a game apparatus, a board, a semicircular surface extending upwardly from the rear end of the board, grooves extending along the sides of the board, a baffle-plate in front of and below the upper end of the semicircular surface, and guide-strips upon the baffle-plate; substantially as described.

4. In a game apparatus, the rectangular block 6 having the semicircular forward faces 7, the spacing-blocks 8 between the blocks 6, the projections 9 at the forward upper ends of the blocks 8, the pins 20 pivoted to the upper forward corners of the blocks 6; and the wings 22 extending downwardly from the pins 20; substantially as described.

5. In a game apparatus, the rectangular block 6 having the semicircular faces 7, the spacing-blocks 8 between the blocks 6, the projections 9 at the forward upper ends of the blocks 8, the pins 20 pivoted to the upper forward corners of the blocks 6, the wings 22 extending downwardly from the pins 20, the baffle-plate 24 attached to the projections 9, and the guide-strips 25 and 26 secured to the baffle-plate; substantially as described.

6. In a game apparatus, a ball-surface having a flat level portion, and having a curved portion extending upwardly from the rear end of the flat portion and discharging forwardly, a baffle-plate to catch the ball from the upper part of the curved portion and discharging it back to the lower part and sides of the curved portion, a groove upon each side of the ball-surface to conduct the ball back to the player, and ride boards to hold the ball upon the ball-surface; substantially as described.

7. In a game apparatus, the combination with an alley having a horizontal portion and an upwardly-extending reflex curved portion, a baffle-plate upon which the ball is delivered after it leaves the upper

forward extremity of said curved portion, means on said baffle-plate for directing the ball to one side thereof, and a trough or channel for

37,849.

37,852. **CLOCK-CASE.** ALBERT T. FISCHER, Cleveland, Ohio. Filed

37,856. **LANTERN.** JACOB LOSLI, Portland, Oreg. Filed Aug. 16,

forward extremity of said curved portion, means on said baffle-plate for directing the ball to one side thereof, and a trough or channel for receiving the ball after it leaves the baffle-plate and returning it to the forward end of the alley; substantially as described.

8. In a game apparatus, the combination with the horizontal portion of an alley, an upwardly-extending reflex curved portion connected to the rear end of said horizontal portion, pins, means for displacing said pins by a ball delivered onto the horizontal portion of the alley, a rearwardly-inclined baffle-plate in advance of the upper forward extremity of the reflex curved portion of the alley, said baffle-plate receiving the ball, and means for directing the ball to one side of the baffle-plate as it rolls down the incline thereof and for conducting the ball back to the front end of the alley; substantially as described.

9. In a game apparatus, the combination of an alley having a horizontal portion and an upwardly-extending reflex curved portion connected to the rear end of said horizontal portion, a rearwardly-inclined baffle-plate arranged above the rear end of the horizontal portion of the alley and below the upper extremity of the curved portion thereof, whereby a ball leaving said curved portion will be delivered upon said inclined baffle-plate, and means for conducting the ball from said inclined baffle-plate to the forward end of the alley; substantially as described.

10. In a game apparatus, the combination of an alley having a horizontal portion and an upwardly-extending reflex curved portion connected to the rear end of said horizontal portion, a rearwardly-inclined baffle-plate arranged above the rear end of the horizontal portion of the alley and below the upper extremity of the curved portion thereof, whereby a ball leaving said curved portion will be delivered upon said inclined baffle-plate, and means for conducting the ball from said inclined baffle-plate to a trough substantially on the same plane as the horizontal portion of the alley and which leads to the forward end of the alley; substantially as described.

11. In a game apparatus, the combination with an alley having a horizontal portion and an upwardly-extending reflex curved portion at the rear end of said horizontal portion, a pin pivotally mounted upon the upper forward end of said curved portion, and means extending into the path of a ball and designed to be struck by a ball, whereby when the ball strikes said means said pin is swung on its pivot; substantially as described.

12. In a game apparatus, the combination with an alley having a horizontal portion and an upwardly-extending reflex curved portion at the rear end of said horizontal portion, a series of pins pivotally mounted upon a suitable support, and means extending into the paths of balls and designed to be struck by a ball, whereby when said means are struck by the ball said pins are swung on their pivots; substantially as described.

13. In a game apparatus, the combination with an alley having a horizontal portion and an upwardly-extending reflex curved portion at the rear end of said horizontal portion, pins pivotally mounted upon a suitable support, means extending below the upper end of said reflex curved portion and designed to be struck by a ball, whereby said pins are swung on their pivots, and a baffle-plate arranged below said means for receiving the ball and directing it laterally to a return-trough; substantially as described.

DESIGNS.

37,848. RING. GEORGE B. BURNS, Central Falls, R. I. Filed Jan. 23, 1906. Serial No. 297,574. Term of patent 7 years.

Claim.—The ornamental design for ring, as shown.

37,849. BACK FOR BRUSHES, MIRRORS, OR SIMILAR ARTICLES. HERBERT J. STRAHM, North Attleboro, Mass., assignor to Webster Company, a Corporation of Rhode Island. Filed Jan. 2, 1906. Serial No. 294,326. Term of patent 3½ years.

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Claim.—The ornamental design for a back for brushes, mirrors, or similar articles as shown.

37,850. HANDLE FOR FORKS, SPOONS, AND SIMILAR ARTICLES. SIDNEY SMITH, Bridgeport, Conn. Filed Dec. 30, 1905. Serial No. 294,021. Term of patent 7 years.

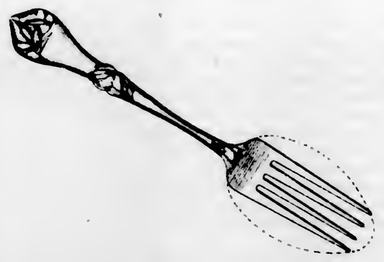

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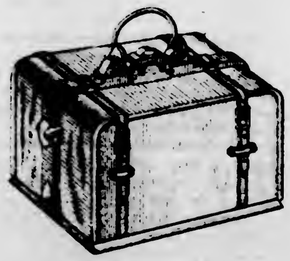

Claim.—The ornamental design for a glass receptacle, as shown.

37,852. CLOCK-CASE. ALBERT T. FISCHER, Cleveland, Ohio. Filed Jan. 8, 1906. Serial No. 295,190. Term of patent 7 years.

Claim.—The ornamental design for a clock-case, as shown.

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37,854. MUSIC-INDICATOR. JAMES MACMASTER, Dallas, Tex., assignor to International Conservatory of Music, Dallas, Tex., a Corporation of Texas. Filed Dec. 5, 1905. Serial No. 290,488. Term of patent 14 years.

Claim.—The ornamental design for a music-indicator, as shown.

37,855. PENCIL. EBERHARD FABER, New York, N. Y. Filed July 31, 1905. Serial No. 272,136. Term of patent 7 years.

Claim.—The ornamental design for a pencil, as shown.

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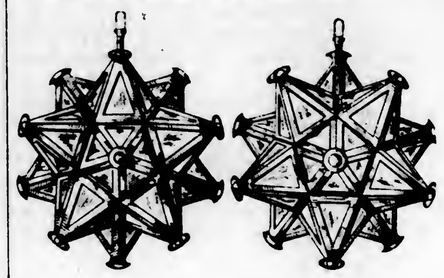

Claim.—The ornamental design for a lantern as herein shown.

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Claim.—The ornamental design for a case for a vending-machine as shown.

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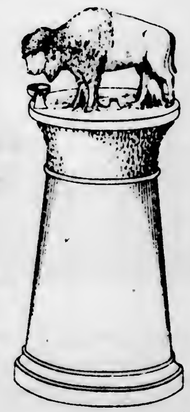

forward extremity of said curved portion, means on said baffle-plate for directing the ball to one side thereof, and a trough or channel for receiving the ball after it leaves the baffle-plate and returning it to the forward end of the alley; substantially as described.

8. In a game apparatus, the combination with the horizontal portion of an alley, an upwardly-extending reflex curved portion connected to the rear end of said horizontal portion, pins, means for displacing said pins by a ball delivered onto the horizontal portion of the alley, a rearwardly-inclined baffle-plate in advance of the upper forward extremity of the reflex curved portion of the alley, said baffle-plate receiving the ball, and means for directing the ball to one side of the baffle-plate as it rolls down the incline thereof and for conducting the ball back to the front end of the alley; substantially as described.

9. In a game apparatus, the combination of an alley having a horizontal portion and an upwardly-extending reflex curved portion connected to the rear end of said horizontal portion, a rearwardly-inclined baffle-plate arranged above the rear end of the horizontal portion of the alley and below the upper extremity of the curved portion thereof, whereby a ball leaving said curved portion will be delivered upon said inclined baffle-plate, and means for conducting the ball from said inclined baffle-plate to the forward end of the alley; substantially as described.

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11. In a game apparatus, the combination with an alley having a horizontal portion and an upwardly-extending reflex curved portion at the rear end of said horizontal portion, a pin pivotally mounted upon the upper forward end of said curved portion, and means extending into the path of a ball and designed to be struck by a ball, whereby when the ball strikes said means said pin is swung on its pivot; substantially as described.

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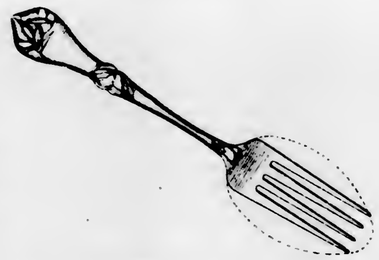

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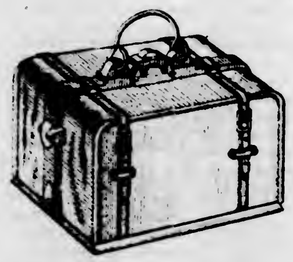

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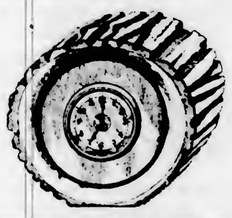

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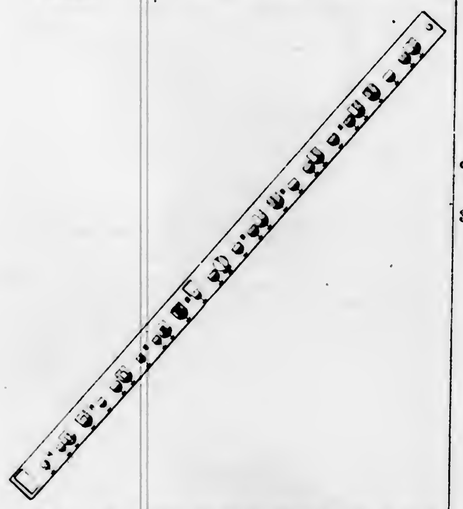

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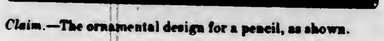

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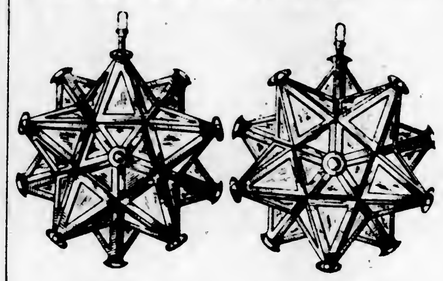

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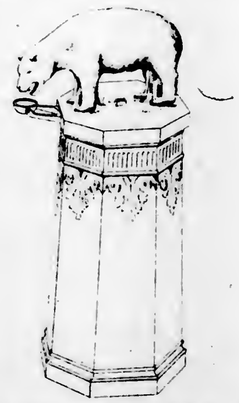

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37,859. CASE FOR VENDING-MACHINES. HENRY C. TRAUTH, New York, N. Y. Filed Jan. 15, 1906. Serial No. 296,235. Term of patent 7 years.

Claim.—The ornamental design for a case for a vending-machine, as shown.

37,860. CARD-MOUNT. HENRY H. COLLINS, Jr., Philadelphia, Pa. Filed Jan. 19, 1906. Serial No. 296,913. Term of patent 3½ years.

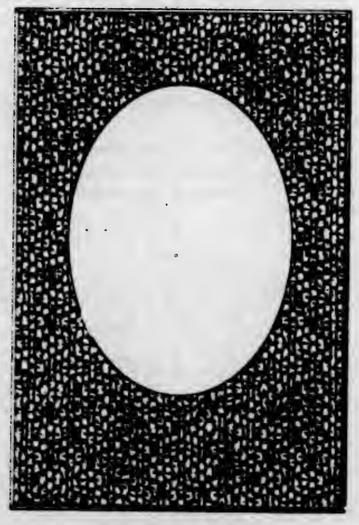

Claim.—The ornamental design for a card-mount, as shown.

37,861. CARD-MOUNT. HENRY H. COLLINS, Jr., Philadelphia, Pa. Filed Jan. 19, 1906. Serial No. 296,914. Term of patent 3½ years.

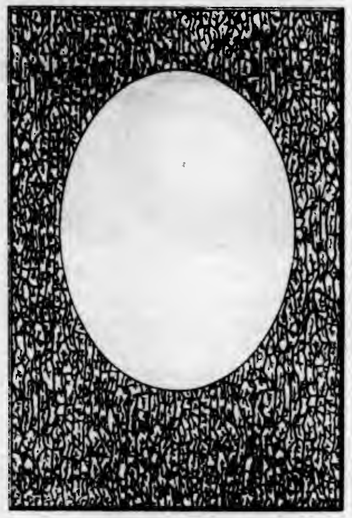

Claim.—The ornamental design for a card-mount, as shown.

37,862. PAPER BOX. PHINEAS B. MYERS, Morristown, N. J. Filed Jan. 25, 1906. Serial No. 297,910. Term of patent 7 years.

Claim.—The ornamental design for a paper box, as shown.

37,863. COLLAR. FRANK J. NOVAK, South Omaha, Nebr. Filed Aug. 29, 1905. Serial No. 276,310. Term of patent 14 years.

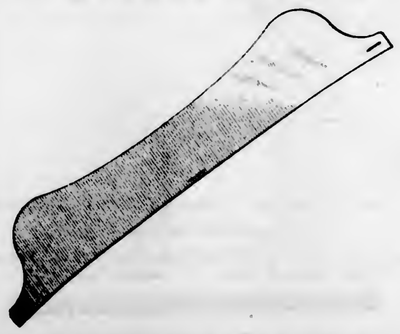

Claim.—The ornamental design for a collar as shown.

TRADE-MARKS

PUBLISHED FEBRUARY 27, 1906.

The following trade-marks have been adjudged entitled to registration under the act of February 20, 1905, and are published in compliance with section 6 of said act. Said section provides:

"Any person who believes he would be damaged by the registration of a mark may oppose the same by filing notice of opposition, stating the grounds therefor, in the Patent Office within thirty days after the publication of the mark sought to be registered, which said notice of opposition shall be verified by the person filing the same before one of the officers mentioned in section two of this act. If no notice of opposition is filed within said time the Commissioner shall issue a certificate of registration therefor, as hereinafter provided for."

Marks which are stated to have been "Used ten years" are registrable under the last proviso of section 5 of said act, which is as follows:

"And provided further, That nothing herein shall prevent the registration of any mark used by the applicant or his predecessors, or by those from whom title to the mark is derived, in commerce with foreign nations or among the several States, or with Indian tribes, which was in actual and exclusive use as a trade-mark of the applicant or his predecessors from whom he derived title for ten years next preceding the passage of this act."

Section 14 of said act provides for the following fee:

"On filing notice of opposition to the registration of a trade-mark, ten dollars."

SER. No. 257. WHISKY. THE UNION DISTILLING CO., Cincinnati, Ohio. Filed Apr. 3, 1905. Used ten years.

The word "LENOX," associated with the representation of a grand stand at a racing-track and a horse race showing three horses racing.

SER. No. 260. WHISKY. THE UNION DISTILLING CO., Cincinnati, Ohio. Filed Apr. 3, 1905.

The words "SOUTHERN BOUQUET," associated with the profile bust picture of a lady in evening-dress and carrying a bouquet.

SER. No. 1,198. BOOKS OF FICTION. LOTHROP, LEE & SHEPARD COMPANY, Boston, Mass. Filed Apr. 12, 1905.

PANSY

The arbitrary word "PANSY."

SER. No. 1,560. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio. Filed Apr. 15, 1905.

AUTOCYCLE

The word "AUTOCYCLE."

SER. No. 1,574. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio. Filed Apr. 15, 1905.

CHAINLESS

The word "CHAINLESS."

SER. No. 1,578. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio. Filed Apr. 15, 1905. Used ten years.

SER. No. 1,578.

LENOX

The word "LENOX."

SER. No. 1,583. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio. Filed Apr. 15, 1905.

LOCOMOBILE

The word "LOCOMOBILE."

SER. No. 1,584. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio. Filed Apr. 15, 1905.

TOURIST

The word "TOURIST."

SER. No. 1,585. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio. Filed Apr. 15, 1905.

PNEUMATIC

The word "PNEUMATIC."

SER. No. 1,594. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio. Filed Apr. 15, 1905.

TRI=TIRE

The words "TRI=TIRE."

SER. No. 1,599. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio. Filed Apr. 15, 1905.

LEAGUE

The word "LEAGUE."

SER. No. 1,789. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio. Filed Apr. 15, 1905.

MOTORCYCLE

The word "MOTORCYCLE."

SER. No. 1,620. RUBBER BOOTS AND SHOES. LAMBERTVILLE RUBBER COMPANY, Lambertville, N. J. Filed Apr. 15, 1905.

"SNAG-PROOF"

The word "SNAG-PROOF" in quotation-marks, associated with the representation of a rubber boot and a pair of rubber shoes. One of said shoes is shown as floating in a stream in the background to one side of the boot and the other of the shoes appears in the foreground. In and around said boot and shoes are numerous dwarfish figures or gnomes, who are represented as unsuccessfully endeavoring by means of various implements to puncture the boot and shoes. A ladder resting against the boot is breaking under the weight of a number of such dwarfish figures or gnomes. Others of said dwarfish figures or gnomes are shown as operating a steam-drill against the boot and working with other tools. On the leg of the boot appears a label bearing the word "SNAG-PROOF" and the representation of a boot around which a number of dwarfish figures or gnomes are represented as performing antics similar to those above set forth.

SER. No. 1,798. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio. Filed Apr. 15, 1905.

NEW FAN

The words "NEW FAN."

SER. No. 1,802. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio. Filed Apr. 15, 1905.

LANTERN

The word "LANTERN."

SER. No. 2,013. OILED CLOTHING OF ALL KINDS. A. J. TOWER COMPANY, Portland, Me., and Boston, Mass. Filed Apr. 17, 1905.

The representation of a fish, associated with the words "FISH BRAND."

SER. No. 2,401. COTTON RUBBER-LINED HOSE. EUREKA FIRE HOSE CO., Jersey City, N. J. Filed Apr. 20, 1905.

PIONEER

The word "PIONEER."

SER. No. 2,408. COTTON RUBBER-LINED HOSE. EUREKA FIRE HOSE CO., Jersey City, N. J. Filed Apr. 20, 1905.

VULCAN

The word "VULCAN."

SER. No. 2,492. WHISKY. S. N. WHEL & CO., Cincinnati, Ohio. Filed Apr. 20, 1905. Used ten years.

The word "STERLING" and a picture showing a pair of scales by a pyramid of bars ready for weighing, with two filled bags at the foot of the scales.

SER. No. 2,993. COATS, VESTS, AND TROUSERS. SYKES & A B KIRSCHBAUM & CO., New York, N. Y. Filed Apr. 25, 1905.

The hyphenated word "FOUR-IN-HAND" and the representation of a number of boys, to which are connected reins held in the hand of another boy holding a whip and acting as a driver.

SER. No. 3,091. TIN PLATES AND ROOFING-TIN. JACOB MEURER, Brooklyn, N. Y. Filed Apr. 26, 1905. Used ten years.

FLUSHING

The word "FLUSHING."

SER. No. 3,094. TIN PLATES AND ROOFING-TIN. JACOB MEURER, Brooklyn, N. Y. Filed Apr. 26, 1905. Used ten years.

PULLMAN

The word "PULLMAN."

SER. No. 3,095. TIN PLATES AND ROOFING-TIN. JACOB MEURER, Brooklyn, N. Y. Filed Apr. 26, 1905. Used ten years.

SER. No. 3,095.

MEURER'S OLD METHOD

The words "MEURER'S OLD METHOD."

SER. No. 3,122. WHISKY. SIMON BINSWANGER & BRO., St. Joseph, Mo. Filed Apr. 26, 1905.

The word "SUBURBAN" upon a circular panel having a circular border and inclosing three horses' heads, the circular panel and border being crossed at each side by a small rectangular panel.

SER. No. 3,139. KERSEYS AND CASSIMERES. W. J. DICKEY & SONS, INCORPORATED, Baltimore, Md. Filed Apr. 26, 1905. Used ten years.

SHEEP

The word "SHEEP."

SER. No. 3,178. WATCHCASES. THE DUEBER WATCH CASE MFG. CO., Canton, Ohio. Filed Apr. 26, 1905.

A horizontally-arranged elongated panel having pointed ends, a curved panel having pointed ends and arranged beneath the horizontally-arranged panel and a shield beneath the latter, and the words "DUEBER STERLING" arranged respectively upon the panels.

SER. No. 3,185. COTTON PIECE GOODS. THE PARKHILL MFG. CO., Fitchburg, Mass. Filed Apr. 26, 1905.

SER. No. 3,185.

TOILE DU NORD

The words "TOILE DU NORD."

SER. No. 3,244. PLASTERING AND FINISHING-CEMENT. J. B. King & Co., New York, N. Y. Filed Apr. 27, 1905. Used ten years.

WINDSOR

The word "WINDSOR."

SER. No. 3,267. CARTRIDGES. WINCHESTER REPEATING ARMS CO., New Haven, Conn. Filed Apr. 27, 1905.

AUTO

The arbitrary word "AUTO."

SER. No. 3,401. PREPARED COTTON IN THE FORM OF A SHEETED FABRIC MATERIAL FOR FILLING MATTRESSES AND THE LIKE. OSTERMOOR & Co., New York, N. Y. Filed Apr. 26, 1905.

PATENT ELASTIC FELT

The arbitrarily-selected words "PATENT ELASTIC FELT."

SER. No. 3,445. RUGS, ART-SQUARES, AND MATTING MADE OF GRASS-TWINE. OSHKOSH GRASS MATTING CO., Oshkosh, Wis. Filed Apr. 26, 1905.

DELTOX

The representation of a triangle inclosed within a circular border, in connection with the word "DELTOX" arranged across the lower portion or base of the triangle.

SER. No. 3,626. BEER. THE HOSTER-COLUMBUS ASSOCIATED BREWERIES CO., Columbus, Ohio. Filed Apr. 26, 1905.

The representation of a winged "H," associated with the representation of a globe and a wreath.

SER. No. 3,646. COTTON PLAIDS, CHECKS, AND STRIPES, ALSO COTTON CHEVIOTS. SAMUEL A. CROZER & SON, Upland, Pa. Filed Apr. 29, 1905. Used ten years.

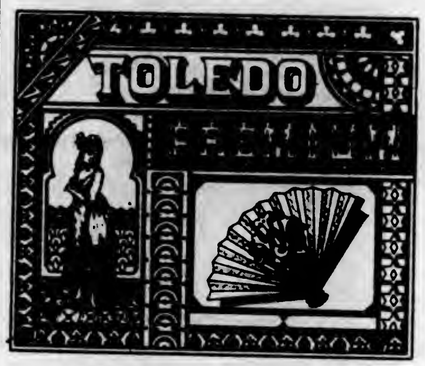

The words "TOLEDO PREMIUM" produced in two panels, one above the other, which panels are contained within a decorative border outlined by a line of clover-leaf figures, a line of star figures, and lines of connected arch figures with intervening spade-like figures, one corner of the said panel being distinguished by a diagonal bar-panel having zigzag figures therein and a semicircular panel decorated with a Grecian border, which latter decoration appears at one end of the panel containing the word "TOLEDO," and at the other end of the same panel a semicircular decorative figure is produced, including pointed figures, semicircular, plain, and plume figures. Beneath the word "PREMIUM" and the panel another panel appears on which an open fan is represented bearing the monogram composed of the letters, character, and abbreviation "J W L & Co" and at one side of the fan-panel another panel appears upon which a representation of a standing female figure is produced dressed in a fancy costume, the figure-panel and the fan-panel being separated by a vertical panel having a lattice effect and semicircular figures appearing at the apparent openings therein.

SER. No. 4,400. WATCH-MOVEMENTS. BYRON L. STRASBURGER, New York, N. Y. Filed May 5, 1905.

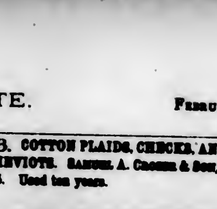

The word "IMPERIAL," associated with the representation of a scroll bearing the word "NON-MAGNETIC," the scroll extending across a shield-like figure from which the conventional representation of flashes of lightning diverge.

SER. No. 4,580. BRAIDS AND TAPES. DIECKERHOFF, RAFFLOER & Co., New York, N. Y. Filed May 6, 1905.

A triangular-shaped figure having the letter "C" thereon.

SER. No. 4,644. LEATHER BOOTS AND SHOES. GUTMANN CARPENTER & TELLING, Chicago, Ill. Filed May 8, 1905.

IROQUOIS

The word "IROQUOIS."

SER. No. 4,814. CIGARS. RODRIGUES, ARGUELLES & COMPANY, Havana, Cuba. Filed May 9, 1905.

ROMEO Y JULIETA

The words "ROMEO Y JULIETA."

SER. No. 4,960. COTTON PIECE GOODS. TREMONT & SUFFOLK MILLS, Lowell, Mass. Filed May 10, 1905.

The representation of an eagle standing on a rock with partially-spread wings and the head turned to one side.

SER. No. 4,978. COTTON PIECE GOODS. MASSACHUSETTS COTTON MILLS, Lowell, Mass. Filed May 10, 1905.

The representation of a swan swimming on a body of water partly surrounded by foliage, the swan being shown with partially-uplifted wings.

SER. No. 4,980. COTTON PIECE GOODS. MASSACHUSETTS COTTON MILLS, Lowell, Mass. Filed May 10, 1905.

The representation of an elephant's head.

SER. No. 4,997. COTTON PIECE GOODS. MASSACHUSETTS COTTON MILLS, Lowell, Mass. Filed May 10, 1905.

The representation of one face of an ancient Roman coin, said coin being of irregular outline. Upon the coin the head and shoulders of a soldier are depicted wearing a helmet and carrying a sword in position of rest over one shoulder, together with a grouping of letters forming a partial border around the coin.

SER. No. 5,018. PAINT-OILS. COLUMBIA REFINING CO., New York, N. Y. Filed May 11, 1905.

JAPINOL

The word-symbol "JAPINOL."

SER. No. 5,066. CANNED PINEAPPLES. THE PLANTERS PACKING AND PRESERVING CO., Delray, Fla. Filed May 11, 1905.

The word "FLOWERLAND," accompanied by the picture of the royal poinciana in bloom with a procession of fairies passing thereunder headed by a queen. Under and to the right of the picture is the figure of a crown having sprays of fern and arc-shaped

panels extending under and to each side thereof. On said panels occur the words "QUEEN OF FLOWERLAND." Above the crown occur the words "ROYAL POINCIANA."

The word-symbol "ATLANTIC."

SER. No. 5,294. SLEEVE-BUTTONS, COLLAR-BUTTONS, AND STUDS. PARKS BROS. & ROGERS, Providence, R. I. Filed May 12, 1905.

SER. No. 5,686.

panels extending under and to each side thereof. On said panels occur the words "QUEEN OF FLOWERLAND." Above the crown occur the words "ROYAL POINCIANA."

SER. No. 5,070. VELVET RIBBONS. WM. OPENHYM & SONS, New York, N. Y. Filed May 11, 1905. Used ten years.

Washington

The word "WASHINGTON."

SER. No. 5,078. VELVETEENS AND CORDUROYS. WM. OPENHYM & SONS, New York, N. Y. Filed May 11, 1905.

Nu Velvet

The arbitrary word-symbol "NU VELVET."

SER. No. 5,100. GLASS BOTTLES. L. ROSE & CO., LIMITED, London, England. Filed May 11, 1905.

A floral device representing branches showing leaves and fruit of the lime-tree. In the middle of the device are shown branches crossed at the top and bottom and forming a wreath of oval shape. On either side are smaller representations of branches of the lime-tree.

SER. No. 5,110. MOPS. PALMER, HILL & CO., Cincinnati, Ohio. Filed May 11, 1905.

STAR

The word "STAR" and the representation of a star.

SER. No. 5,154. RUBBER COMBS. AMERICAN HARD RUBBER CO., New York, N. Y. Filed May 11, 1905.

ATLANTIC

The word-symbol "ATLANTIC."

SER. No. 5,158. RUBBER COMBS. AMERICAN HARD RUBBER CO., New York, N. Y. Filed May 11, 1905.

Comet

The word "COMET" and the representation of a comet, the word appearing upon the tail of a comet.

SER. No. 5,160. HARD-RUBBER SYRINGES. AMERICAN HARD RUBBER CO., New York, N. Y. Filed May 11, 1905.

EUREKA

The word-symbol "EUREKA."

SER. No. 5,163. HARD-RUBBER COMBS. AMERICAN HARD RUBBER CO., New York, N. Y. Filed May 11, 1905.

HERCULES

The word-symbol "HERCULES."

SER. No. 5,196. WHISKY. CALHOUN DISTILLING COMPANY, Birmingham, Ala. Filed May 11, 1905. Used ten years.

CALHOUN

The word "CALHOUN," accompanied by a drawing of John C. Calhoun inclosed in a double circle.

SER. No. 5,258. COTTON PIECE GOODS. TREMONT & SUFFOLK MILLS, Lowell, Mass. Filed May 11, 1905.

The letter "S" in silver color.

SER. No. 5,294. SLEEVE-BUTTONS, COLLAR-BUTTONS, AND STUDS. PARES BROS. & ROGERS, Providence, R. I. Filed May 12, 1905.

The representation of a four-leaf clover inclosed by a horseshoe.

SER. No. 5,295. SLEEVE-BUTTONS, COLLAR-BUTTONS, AND STUDS. PARES BROS. & ROGERS, Providence, R. I. Filed May 12, 1905.

A representation of the world, upon which appear portions of both the Eastern and Western hemispheres and surrounded by concentric circles, between which appears the sentence "THE FIELD IS THE WORLD."

SER. No. 5,307. WHISKY. WEISS EICHOLD LIQUOR CO., Mobile, Ala. Filed May 12, 1905.

GOLDEN CREAM

The words "GOLDEN CREAM."

SER. No. 5,317. STOCK-FOOD. MARION W. SAVAGE, Minneapolis, Minn. Filed May 12, 1905. Used ten years.

The words "INTERNATIONAL STOCK FOOD," a monogram of the letters "M W S," the head of a horse, a steer, a hog, and a sheep, and the pictorial representation of a farm scene and stock-train.

SER. No. 5,686. ELECTRIC SWITCHES. THE HART & HEGEMAN MFG. CO., Hartford, Conn. Filed May 15, 1905. Used ten years

SER. No. 5,686.

HART

The word "HART."

SER. No. 5,660. DYNAMITE, DYNAMITE-CARTRIDGES, BLASTING-GELATIN, AND LOW-POWDER. THE AETNA POWDER CO., Chicago, Ill. Filed May 15, 1905. Used ten years.

AETNA

The word "AETNA."

SER. No. 5,725. ORANGES, LEMONS, GRAPE-FRUIT, AND CITRON. RIVERSIDE NAVEL ORANGE COMPANY, Riverside, Cal. Filed May 15, 1905.

A conventional representation of Uncle Sam holding a bunch of oranges in one hand suspended over a circular panel surrounded by scrollwork and in which appears the legend "I GROW THESE MYSELF IN," while below the circular panel appears the word "CALIFORNIA" inclosed in an oblong panel surrounded by scrollwork. In the background is a rectangular panel having scrollwork thereupon.

SER. No. 5,862. INTERNAL AND EXTERNAL REMEDY PRINCIPALLY USED FOR NEURALGIA, RHEUMATISM, STOMACH AND BOWEL COMPLAINTS, COLDS, &c. D. RANSOM, SON AND COMPANY, Buffalo, N. Y. Filed May 16, 1905.

The abbreviation, initials, and words "DR. J. R. MILLER'S UNIVERSAL MAGNETIC BALM" inclosed within a border consisting of two concentric circles, the inner one being comparatively heavy, said circular border having ornamental corners, which give a substantially square outline thereto. Between the abbreviation, initials, and words "DR. J. R. MILLER'S" and "UNIVERSAL" an ornamental design or scroll appears, and curved lines or scrolls appear above and below the word "MAGNETIC," the whole being inclosed within a rectangular outline.

SER. No. 5,998. WINDMILLS. FLINT AND WALLING MANUFACTURING COMPANY, Kendallville, Ind. Filed May 18, 1905.

SER. No. 6,295. CIGARS. RODRIGUEZ, ARGUELLES & COMPANY, Havana, Cuba. Filed May 22, 1905.

The compound word "SWEAT-O-NO."

SER. No. 6,685.

SER. No. 5,998. WINDMILLS. FLINT AND WALLING MANUFACTURING COMPANY, Kendallville, Ind. Filed May 18, 1905.

STAR

The word "STAR" or the representation of a star.

SER. No. 6,002. LAMP GLASSES AND GLOBES. MACBETH-EVANS GLASS COMPANY, Pittsburg, Pa. Filed May 18, 1905.

The fanciful word "AURORA" and the figure of an eagle with outstretched wings perched on a panel bearing the word.

SER. No. 6,086. WHISKY. MACY & JENKINS, New York, N. Y. Filed May 18, 1905.

OLD CLUB HOUSE

The words "OLD CLUB HOUSE."

SER. No. 6,122. CEMENT FOR BUILDING PURPOSES, GYPSUM, AND LIME. Lehigh & Co., Berlin, Germany. Filed May 20, 1905.

Lux

The arbitrarily-selected word "LUX."

SER. No. 6,123. CHOCOLATES. THE SHUPP-WILLIAMS CANDY CO., Ogden, Utah. Filed May 20, 1905.

U-tah-na

The hyphenated word "U-TAH-NA."

SER. No. 6,285. CIGARS. RODRIGUEZ, ARGUELLES & COMPANY, Havana, Cuba. Filed May 22, 1905.

LA MAR

The words "LA MAR."

SER. No. 6,330. HOSIERY. COOPER WELLS & CO., St. Joseph, Mich. Filed May 23, 1905.

Iron Clad

The words "IRON CLAD" arranged within a panel and associated with the words "ST. JOE KNIT HOSIERY."

SER. No. 6,380. WHEAT-MEAL, WHEAT-FLOUR, OAT-FLOUR, AND BARLEY-FLOUR. FRANK FULLER, New York, N. Y. Filed May 23, 1905. Used ten years.

HEALTH FOOD

The words "HEALTH FOOD."

SER. No. 6,409. STERILIZED CREAM. PACIFIC CREAMERY COMPANY, Buena Park and Los Angeles, Cal. Filed May 23, 1905.

The representation of three calla lilies and leaves, associated with the word "LILY" and the words "CALIFORNIA STERILIZED CREAM MANUFACTURED BY PACIFIC CREAMERY CO. LOS ANGELES, CALIFORNIA."

SER. No. 6,410. PREPARATION FOR THE CURE OF EXCESSIVE SWEATING AND FOR RELIEVING AND DESTROYING THE UNPLEASANT EFFECTS OF EXCESSIVE PERSPIRATION. FERDINAND HERB, Superior, Wis. Filed May 23, 1905.

SWEAT-O-NO

The compound word "SWEAT-O-NO."

SER. No. 6,461. CAKE-SOAP. A. KLIPSTEIN & COMPANY, New York, N. Y. Filed May 24, 1905. Used ten years.

CARMEL

The arbitrary word "CARMEL," associated with a conventional representation of sprigs of olive.

SER. No. 6,555. SALINE LAXATIVE, URIC-ACID SOLVENT, HEPATIC STIMULANT, AND ELIMINATOR OF TOXIC PRODUCTS. BRISTOL-MYERS COMPANY, Brooklyn, N. Y. Filed May 25, 1905.

SAL HEPATICA

The words "SAL HEPATICA."

SER. No. 6,644. DOLLS. ABRAHAM & STRAUS, Brooklyn, N. Y. Filed May 26, 1905.

Baby Violet

The words "BABY VIOLET."

SER. No. 6,667. CORSETS, CORSET-WAISTS, DRESS-STAYS, AND BUST-FORMS. CONSOLIDATED CORSET CO., Jackson, Mich. Filed May 25, 1905.

Flexibone

The word "FLEXIBONE."

SER. No. 6,682. SLEDS AND SLEIGHS. B. F. & H. L. SWEET COMPANY, Fond du Lac, Wis. Filed May 26, 1905. Used ten years.

COMMON SENSE SLEIGH

The words "COMMON SENSE SLEIGH."

SER. No. 6,685. WHISKY. L. GILLIAMS & CO., Philadelphia, Pa. Filed May 26, 1905.

SER. No. 6,685.

A broken circular border, within which appears the monogram "L G & Co." and words "GILLIAMS' RYE WHISKEY L. GILLIAMS & Co. PHILADELPHIA."

SER. No. 6,755. RUSTIC CHAIRS, SETTEES, TABLES, AND STOOLS. THE OLD HICKORY CHAIR CO., Martinsville, Ind. Filed May 26, 1905.

The words "OLD HICKORY" and a bust portrait of Andrew Jackson. Below the portrait is a representation of an arm-chair, and at one side of the chair are the words "ANDREW JACKSON CHAIR."

SER. No. 6,782. LAGER-BEER. THE WILLIAM PETER BR'G. CO., Union, N. J. Filed May 27, 1905.

The hyphenated words "PETER-BRÄU" arranged on a scroll and a bunch of hops and barley arranged back of the scroll and extending above and below the same.

SER. No. 6,756. NON-ALCOHOLIC MEDICINAL BEVERAGES CONTAINING THE ESSENTIAL PROPERTIES OF FRUIT. RUSSELL M. HUGHES & CO., Louisville, Ky. Filed May 26, 1905.

The monogram "O & H."

SER. No. 6,812. SHEETINGS, DRILLS, AND DUCKS. STARK MILLS, Manchester, N. H. Filed May 27, 1905.

The representation of a greyhound standing erect and in profile.

SER. No. 6,892. OILED CLOTHING. A. J. TOWER COMPANY, Portland, Me., and Boston, Mass. Filed May 29, 1905. Used ten years.

HERDERS

The word "HERDERS."

SER. No. 6,893. OILED CLOTHING OF ALL KINDS. A. J. TOWER COMPANY, Portland, Me., and Boston, Mass. Filed May 29, 1905.

A.J.T.

The letters "A. J. T.," in connection with an arrow.

SER. No. 7,094. HOSIERY. RICHARDSON ROGERS'S DRY GOODS CO., St. Joseph, Mo. Filed May 31, 1905.

THE DRAGON

The words "THE DRAGON" and the representation of a flying dragon.

SER. No. 6,918. CIGARS. SANCHEZ & HAVA CO., Tampa, Fla. Filed May 29, 1905.

The word "MIRAFLOR" and the representation of the head and bust of a beautiful woman showing the face in profile with powdered and plumed hair and wearing a bodice of blue and apparently leaning with arms upon a support, the whole being almost surrounded by a highly-ornamental border comprising scrolls and flowers.

SER. No. 7,080. VEGETABLE BITTERS FOR BILIOUSNESS, JAUNDICE, DYSPEPSIA, AND INDIGESTION. ELEANOR S. HAY and EDWARD A. HAY, executors of the estate of Henry H. Hay, deceased, Portland, Me. Filed May 31, 1905.

LF

The letters "L F."

SER. No. 7,145. BELT-FASTENERS. MANUFACTURERS' BELT HOOK CO., Chicago, Ill. Filed June 1, 1905.

BLAKE BELT FASTENERS

The word "GENUINE," the initial letter "G" of which word embraces the other letters of the word, and a star appearing in each end of said letter. A belt-fastener extends vertically over the letter, the name "BLAKE" appearing upon one side of said word "GENUINE," the word "BELT" upon the opposite side thereof, and the word "FASTENERS" being arranged centrally below the word "GENUINE."

SER. No. 7,164. CASTOR-OIL. THE BAKER CASTOR OIL COMPANY, New York, N. Y. Filed June 1, 1905.

A A

The arbitrary letter symbol "A A."

SER. No. 7,208. GROUND PRODUCTS OF ALFALFA. CALIFORNIA STOCK FOOD CO., Fresno, Cal. Filed May 26, 1905.

SER. No. 7,208.

CALFALFA

The word "CALFALFA."

SER. No. 7,478. PANAMA HATS. SAMUEL C. PARIS, Philadelphia, Pa. Filed June 5, 1905.

A monogram of the letters "G P."

SER. No. 7,552. EXTERNAL AND INTERNAL APPLICATIONS FOR CATARRH, PILES, CHAPPED HANDS, AND LAMENESS OF THE BODY. MARION B. BAXTER, Seattle, Wash. Filed June 6, 1905.

M.H.O.

The letters "M. H. O."

SER. No. 7,628. RAZORS. HERMANN HEISENBRUCH, Philadelphia, Pa. Filed June 8, 1905. Used ten years.

PERFECTION

The fanciful title "PERFECTION" and the representation of a bear with a staff in his paws.

SER. No. 7,714. EXTRACTS AND ESSENCES OF MEAT. BOVRIL LIMITED, London, England. Filed June 8, 1905.

BOVRIL

The word "BOVRIL."

SER. No. 7,859. UNDERSHIRTS AND DRAWERS AND UNION SUITS. THE DEIMEL LINEN-MESH SYSTEM COMPANY, San Francisco, Cal. Filed June 10, 1905.

Deimel

The word "DEIMEL" arranged in the particular and distinctive form of script shown in the drawing.

SER. No. 8,057. PLOWS, HARROWS, CULTIVATORS, AND PLANTERS. B. F. AVERY & SONS, Louisville, Ky. Filed June 13, 1905. Used ten years.

The representation of an iron cross on the arms and in the center of which are arranged the letters "A V E R Y."

SER. No. 8,140. OAK-TANNED COWHIDE HARNESS-LEATHER, SKIRTING, AND CUT STOCK. KULLMAN, SALZ & COMPANY, San Francisco, Cal. Filed June 14, 1905.

MONARCH OF THE OAKS

The words "MONARCH OF THE OAKS."

SER. No. 8,143. CHOCOLATE AND ALL KINDS OF CANDY. THE GREAT AMERICAN AUTOMATIC VENDING MACHINE COMPANY, Hoboken, N. J. Filed June 9, 1905.

The representation of a diagonal striped flag having thereon the letters "T. G. A. A. V., M. Co." and associated with groups of dots and the words "GREAT AMERICAN STANDARD," all inclosed in concentric circles.

SER. No. 8,236. WHISKY. CHARLES DENNERY & COMPANY, Chicago, Ill. Filed June 15, 1905. Used ten years.

MOUNTAIN DEW

The words "MOUNTAIN DEW."

SER. No. 8,286. WINE. FRITZ HANDRICK, New York, N. Y. Filed June 15, 1905.

A fanciful Bacchus head inclosed in a circular band bearing the motto "VINUM PELLIT CURAS" and a monogram composed of the letters "F H."

SER. No. 8,293. HOSE. KERRY KERRIGAN, Baltimore, Md. Filed June 19, 1905.

AMERICAN CROWN

The words "AMERICAN CROWN," associated with the representation of a crown in a circular figure located between the words.

SER. No. 8,356. GINGER-ALE. THE WHITE ROCK MIN. SPG. CO., Waukesha, Wis. Filed June 16, 1905. Used ten years.

WHITE ROCK

The words "WHITE ROCK" and the representation of Psyche kneeling on a rock and looking down into the water.

SER. No. 8,547. CIGARS. JOHN B. ROGERS & COMPANY, Binghamton, N. Y. Filed June 19, 1905.

FEDORA

The arbitrary word "FEDORA."

SER. No. 8,603. WROUGHT-IRON HOLLOW WARE (RAW, ENAMELED, TINNED, OR GALVANIZED) STAMPED IN ONE PIECE OR SEAMED. HERMAN WUPPERMAN GESELLSCHAFT MIT BESCHRÄNKTER HAFTUNG, Pinneberg, Germany. Filed June 20, 1905.

A conventional representation of an anchor with a scutcheon upon either side of the shank of said anchor over the flukes thereof, one of said scutcheons bearing the capital letter "U" and the other the capital letter "E," and the subordinate feature of a rectangular border inclosing the before-described portion of the mark.

SER. No. 8,607. HORSE-NAILS. UNION HORSE NAIL COMPANY, New Haven, Conn., and Chicago, Ill. Filed June 20, 1905. Used ten years.

LUCKY

The word "LUCKY."

SER. No. 8,610. HORSE-NAILS. UNION HORSE NAIL COMPANY, New Haven, Conn., and Chicago, Ill. Filed June 20, 1905. Used ten years.

The representation of a star.

SER. No. 8,657. HOSIERY. LORD & TAYLOR, New York, N. Y. Filed June 21, 1905.

E310

The letter and numerals "E 310."

SER. No. 8,659. HOSIERY. LORD & TAYLOR, New York, N. Y. Filed June 21, 1905.

E602

The letter and numerals "E602."

SER. No. 8,688. IRISH AND SWEET POTATOES. EASTERN SHORE OF VIRGINIA PRODUCE EXCHANGE, Onley, Va. Filed June 21, 1905.

BELL BRAND E.S.VA.PRO.EX.

The words "BELL BRAND," the representation of a bell, and the letters and abbreviations "E. S. VA. PRO. EX."

SER. No. 8,692. BASE-BALLS, CRICKET-BALLS, BASKET-BALLS, AND FOOT-BALLS. A. J. REACH CO., Philadelphia, Pa. Filed June 21, 1905. Used ten years.

The words "REACH'S SPECIAL."

SER. No. 8,709. CANDY. PHILIP WUNDERLE, Philadelphia, Pa. Filed June 21, 1905.

The representation of the head of a girl with spectacles on her nose and a cap on her head.

SER. No. 8,710. CANDY. PHILIP WUNDERLE, Philadelphia, Pa. Filed June 21, 1905.

The representation of a bird, twigs of berries on which the bird is perched, and sprays of flowers intermixed with said twigs and beside the bird.

SER. No. 8,801. PLUG CHEWING-TOBACCO. SAMUEL F. HASSROT, Cleveland, Ohio. Filed June 23, 1905. Used ten years.

REDSKIN

The word "REDSKIN," with two crossed pipes above and three crossed arrows below said word, the whole inclosed in a diamond-shaped figure.

SER. No. 8,802. CANNED EXTRACT OF GREEN CORN. THE HASSROT CANNERIES COMPANY, Cleveland, Ohio. Filed June 23, 1905. Used ten years.

Kornlet

The word "KORNLET."

SER. No. 8,862. MARASCHINO. FRANCESCO DRIOLI, Zara, Austria. Filed June 28, 1905.

CALCENIGA

The word "CALCENIGA."

SER. No. 8,928. WHISKY. JESSE MOORE HUNT CO., San Francisco, Cal. Filed June 24, 1905. Used ten years.

BEDFORD

The word "BEDFORD."

SER. No. 8,987. REMEDIES FOR BLOOD, STOMACH, KIDNEY, LIVER, AND RELATED COMPLAINTS. MAX LICHTENSTEIN, Jerome, Ariz. Filed June 24, 1905.

SER. No. 8,987.

HUSTLER

The word "HUSTLER."

SER. No. 8,993. OILED CLOTHING OF ALL KINDS. A. J. TOWER COMPANY, Portland, Me., and Boston, Mass. Filed June 24, 1905.

EUREKA

The word "EUREKA."

SER. No. 8,994. BACON. H. GOODEL & SONS, Peoria, Ill. Filed June 24, 1905.

Atlas

The word "ATLAS."

SER. No. 9,070. CLOTH HAVING A POLISHED FINISH. JOHN MELLOY AND CO., Chicago, Ill. Filed June 26, 1905.

SILKIZED

The word "SILKIZED."

SER. No. 9,072. OINTMENT FOR HUMAN USE. TRENCH'S REMEDIES LTD., Dublin, Ireland. Filed June 26, 1905.

Two crossed letters "T" inclosed in a circle or ring having a somewhat heart-shaped interior outline, beneath the letters and inside the circle or ring being a heart-shaped spot or dot.

SER. No. 9,121. MEDICINE EMPLOYED AS A TONIC, APPETIZER, AND STRENGTHENER. JAMES P. BALLARD, St. Louis, Mo. Filed June 26, 1905.

P
PURITY

The arbitrary letter "P" and the word "PURITY" below the same.

SER. No. 9,321. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y. Filed June 27, 1905. Used ten years.

913

The number "913."

SER. No. 9,344. FINISHED AND ORNAMENTAL CHESTS, BOXES, AND CABINETS FOR SILVERWARE CIGARS AND TOBACCO, LIQUOR SETS, &c. ISAAC N. DEITSCH, New York, N. Y. Filed June 26, 1905.

The letters "I N D," each inclosed in a diamond-shaped figure, the figures being arranged to form a larger figure of similar outline, but with one of the smaller figures omitted or only partially indicated between two others.

SER. No. 9,361. REMEDY FOR HEADACHE AND NEURALGIA. R. H. HUNSTOCK CHEMICAL CO., St. Louis, Mo. Filed June 28, 1905. Used ten years.

HEADINE

The word "HEADINE."

SER. No. 9,384. CANNED SARDINES. CLARENCE B. MITCHELL, Boston, Mass. Filed June 29, 1905.

FISHER BOY

The words "FISHER BOY."

SER. No. 9,443. BISCUITS AND CAKES. HUNTLEY & PALMERS, LTD., Reading, England. Filed June 30, 1905.

A square and bordered panel with rounded ornamental edges inclosing a representation of a partially-shaded garter and ornamental buckle, the garter bearing the words "SUPERIOR READING BISCUITS" and several rosettes and inclosing the words "HUNTLEY & PALMERS BISCUITS," arranged in circular shape and in turn inclosing an oblong panel with inwardly-rounded edges.

SER. No. 9,444. BISCUITS AND CAKES. HUNTLEY & PALMERS, LTD., Reading, England. Filed June 30, 1905.

A square and bordered panel with rounded ornamental edges inclosing a circular band-like panel bearing the words "HUNTLEY & PALMERS READING" and inclosing an approximately oblong panel, above which appears the word "SUPERIOR" and below which is displayed the word "BISCUITS."

SER. No. 9,539. INTERNAL REMEDY FOR ASTHMA, CATARRH, AND SIMILAR DISEASES. LORENZO D. QUINN, Athens, Ala. Filed June 30, 1905.

ROOTO

The word "ROOTO."

SER. No. 9,639. BLOTTING-PAPER. THE EATON-DIKEMAN CO., Lee, Mass. Filed July 3, 1905.

MagNet

The word and the representation of a horseshoe magnet, the magnet being placed between the syllable "MAG" and the syllable "NET."

SER. No. 9,828. WHISKY. JOHN P. WINAND, Baltimore, Md. Filed July 6, 1905. Used ten years.

WALTERS VIRGINIA GLADES

The words "WALTERS VIRGINIA GLADES."

SER. No. 9,854. MATTRESSES. DUBUQUE MATTRESS FACTORY, Dubuque, Iowa. Filed July 6, 1905.

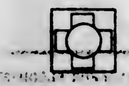

A representation of a Greek cross having a circular figure superposed thereon and inclosed in a rectangular border.

SER. No. 10,033. WHISKY. THE GINTER GROCERY COMPANY, Boston, Mass. Filed July 11, 1905.

MENTOR

The word "MENTOR" inclosed in a rectangular outline.

SER. No. 10,037. PUNCH. THE GINTER GROCERY COMPANY, Boston, Mass. Filed July 11, 1905.

Mardi-Gras

The word "MARDI-GRAS" inclosed in a fancy scroll border.

SER. No. 10,043. WHISKY. CHICAGO DISTILLING CO., Chicago, Ill. Filed July 11, 1905. Used ten years.

BERMINGHAM'S

The word "BERMINGHAM'S."

SER. No. 10,291. MEDICAL COMPOUND TO BE USED AS AN ASTRINGENT. KNOLL & CO., Ludwigshafen-on-the-Rhine, Germany. Filed July 14, 1905.

Tannalbin

The arbitrarily-selected word "TANNALBIN."

SER. No. 10,292. MEDICAL COMPOUND TO BE USED AS A HEMOSTATIC. KNOLL & CO., Ludwigshafen-on-the-Rhine, Germany. Filed July 14, 1905.

Styptol

The arbitrarily-selected word-symbol "STYPTOL."

SER. No. 10,246. COTTON SHEETINGS AND DRILLS. KENSO IWAHARA, New York, N. Y. Filed July 13, 1905.

The representation of a stout Chinaman with scroll bearing Chinese characters "ICHI-DAN-WA-KI," meaning a harmonious community.

SER. No. 10,516. SEWING-MACHINES AND SEWING-MACHINE PARTS. HOUSEHOLD SEWING MACHINE CO., Providence, R. I. Filed July 18, 1905.

Household

The word "HOUSEHOLD."

SER. No. 10,594. CORDS, LINES, TWINES, AND ROPES. SAMSON CORDAGE WORKS, Boston, Mass. Filed July 20, 1905. Used ten years.

An outline map of the State of Massachusetts, associated with the representation of a fish.

SER. No. 10,595. CORDS, LINES, TWINES, AND ROPES. SAMSON CORDAGE WORKS, Boston, Mass. Filed July 20, 1905. Used ten years.

A picture representing Samson and the lion.

SER. No. 10,627. CONTRACTORS' DUMPING-CONVEYERS. JAMES J. HAROLD, Jersey City, N. J., assignor to THOMAS A. [illegible], New

SER. No. 10,778. HARNESS, SOLE, AND SKIRTING LEATHER.

SER. No. 10,937. CURED FISH, (DRIED, SMOKED, OR SALTED,)

SER. No. 11,048

SER. No. 10,627. CONTRACTORS' DUMPING-CONVEYERS. JAMES J. HAROLD, Jersey City, N. J., assignor to Thomas A. Hill, New York, N. Y. Filed July 20, 1905.

CYCLOPEAN

The word "CYCLOPEAN."

SER. No. 10,655. WHISKY. CLOVER LEAF WINE CO., New York, N. Y. Filed July 21, 1905.

TUXEDO

The word "TUXEDO."

SER. No. 10,677. COMBS. DR. HEINRICH TRAUN & SÖHNE, Hamburg, Germany. Filed July 21, 1905.

Victoria

The word "VICTORIA."

SER. No. 10,716. COMPOUND FOR REMOVING GREASE, PAINT, TAR, AND THE LIKE FROM FABRICS. E. C. DAVIS, Rockland, Me. Filed July 22, 1905.

EVAPERO

The word "EVAPERO," spelled with an initial and final capital.

SER. No. 10,728. BLENDED FEEDS AND DISTILLERS' AND BREWERS' DRIED GRAINS. THE J. W. BILES CO., Cincinnati, Ohio. Filed July 24, 1905.

A wreath made up of a spray of barley corn and blades on the left side with a spray of hop-vines on the right side, the two sprays almost meeting at the top, with a bunch of ears of corn and leaves forming the lower part of the wreath between the two sprays and leaving a blank space in the center.

SER. No. 10,778. HARNESS, SOLE, AND SKIRTING LEATHER. A. B. PATRICK & CO., San Francisco, Cal. Filed July 25, 1905.

A. B. P. S. F.

The letters "A. B. P. S. F." inclosed in an oval-shaped figure.

SER. No. 10,878. CIGARS. LOPEZ Y CIA, Havana, Cuba. Filed July 27, 1905.

LA HERMANDAD

The words "LA HERMANDAD."

SER. No. 10,879. CIGARS. LOPEZ Y CIA, Havana, Cuba. Filed July 27, 1905.

BELINDA

The word "BELINDA."

SER. No. 10,887. SHIRTS, COLLARS, AND CUFFS. NEW COLUMBIA SHIRT CO., New York, N. Y. Filed July 27, 1905. Used ten years.

THE NEW Columbia

The words "THE NEW" printed in fancy type and the word "COLUMBIA" printed in script.

SER. No. 10,933. CURED FISH, (SMOKED, DRIED, OR SALTED.) GEORGE H. PERKINS, Gloucester, Mass. Filed July 28, 1905.

CRESCENT

The word "CRESCENT."

SER. No. 10,934. CURED FISH, (DRIED, SMOKED, OR SALTED.) GEORGE H. PERKINS, Gloucester, Mass. Filed July 28, 1905.

ANCHOR

An anchor, whether expressed in word or pictorially.

SER. No. 10,937. CURED FISH, (DRIED, SMOKED, OR SALTED.) GEORGE H. PERKINS, Gloucester, Mass. Filed July 28, 1905.

NAUTILUS

The word "NAUTILUS."

SER. No. 10,939. CURED FISH, (DRIED, SMOKED, OR SALTED.) GEORGE H. PERKINS, Gloucester, Mass. Filed July 28, 1905.

GOLDEN GATE

The words "GOLDEN GATE."

SER. No. 10,940. CURED FISH, (SMOKED, DRIED, OR SALTED.) GEORGE H. PERKINS, Gloucester, Mass. Filed July 28, 1905.

WATER WHITE

The words "WATER WHITE."

SER. No. 11,010. INDIA-RUBBER BAGS AND POUCHES. CONTINENTAL CAOUTCHOUC COMPANY, New York, N. Y. Filed July 29, 1905.

The representation of a prancing horse upon uneven ground at the center of concentric circles, the inner one of which is made up of small circles and between which appear the characters "C. C. & G. P. Co H."

SER. No. 11,043. LIQUID PUTTY OR GLAZING PREPARATION. F. O. PIERCE COMPANY, New York, N. Y. Filed July 31, 1905.

SER. No. 11,043.

MASTICA

The coined word "MASTICA."

SER. No. 11,108. AERATED OR CARBONATED BOTTLED SODA-WATER AND SYRUP FOR THE SAME. BENJAMIN H. MCDONALD, Fort Worth, Tex. Filed Aug. 1, 1905.

JERSEY CREAM

The words "JERSEY CREAM."

SER. No. 11,154. POISON OR EXTERMINATOR FOR RATS, VERMIN, AND INSECTS. EPHRAIM S. WELLS, Jersey City, N. J. Filed Aug. 2, 1905.

ROUGH ON RATS

The representation of a dead rat and three representations of skulls and cross-bones and the word "POISON," associated with the words "ROUGH ON RATS," two of the representations of the skull and cross-bones appearing on either side of the word "ON."

SER. No. 11,224. CAST-STEEL. BRAEBURN STEEL COMPANY, Braeburn, Pa. Filed Aug. 3, 1905.

BS

A monogram consisting of the letters "B S."

SER. No. 11,372. DRUMS. LYON & HEALY, Chicago, Ill. Filed Aug. 7, 1905.

MONARCH

The word "MONARCH."

SER. No. 11,394. WHISKY. MAURICE J. DORAN, Rochester, N. Y. Filed Aug. 7, 1905.

LYNNBROOK

The word "LYNNBROOK" and the picture of a brook with trees upon the banks thereof inclosed in an ornamental circular border.

SER. No. 11,454. MAGAZINES. MARIE D. MCAULTY, New York, N. Y. Filed Aug. 9, 1905.

MY BUSINESS FRIEND

The words "MY BUSINESS FRIEND."

SER. No. 11,469. WHEAT-FLOUR. WELLS ABBOTT NIEMAN COMPANY, Schuyler, Nebr. Filed Aug. 10, 1905.

The word "WANCO" surrounded by a wreath of ivy-leaves.

SER. No. 11,522. CORSETS. JOHN C. LEWIS CO., Louisville, Ky. Filed Aug. 10, 1905.

LA VERA

The words "LA VERA."

SER. No. 11,640. PIANOS. W. W. KIMBALL COMPANY, Chicago, Ill. Filed Aug. 14, 1905. Used ten years.

Hinze

The word "HINZE."

SER. No. 11,663. TRIMMINGS FOR LADIES' UNDERWEAR. FEIBELMAN-AARON MFG. CO., Philadelphia, Pa. Filed Aug. 15, 1905.

SER. No. 11,668.

An eagle in flight, associated with trimming which floats sinuously for some distance on each side of and under the eagle, the eagle holding the trimming in its beak, and the words "BRAIDS LACES EDGINGS" appearing on the portion of the trimming below the eagle.

SER. No. 11,665. SOFT AND STIFF FELT HATS AND CAPS. JOHN B. STETSON COMPANY, Philadelphia, Pa. Filed Aug. 15, 1905.

The words "THE BOSS RAW EDGE" arranged on the representation of a scroll.

SER. No. 11,676. BREAD. DAVID R. CONE, New Carlisle, Ohio. Filed Aug. 15, 1905.

The representation of a lighthouse on a rock rising above waves and a ray of light carrying the words "LIGHT-HOUSE BREAD" radiating from the top of the lighthouse, the whole picture appearing against a black background and forming a circular panel.

SER. No. 11,699. MACARONI, SPAGHETTI, VERMICELLI, AND NOODLES. CRESCENT MACARONI & CRACKER CO., Davenport, Iowa. Filed Aug. 16, 1905.

Golden Rod

The words "GOLDEN ROD."

SER. No. 11,726. FUR GARMENTS. A. JACOBSON & BRO., New York, N. Y. Filed Aug. 17, 1905.

KolinSable

The word "KOLINSABLE" printed in modified script with the letter "S" capitalized.

SER. No. 11,743. WHEAT-FLOUR. JOHN F. MEYER & SONS MILLING CO., St. Louis and Springfield, Mo. Filed Aug. 17, 1905. Used ten years.

SER. No. 11,743.

The pictorial representation of an albatross standing on a rocky shore, below which is a panel in which appears the word "ALBATROSS." Above the pictorial representation appear the words "JOHN F. MEYER & SONS" arranged in a semicircle, and below the panel appear the words "BEST PATENT SPRINGFIELD, MO.," all of which words and the pictorial representation are arranged within a heavy circular border-line.

SER. No. 11,746. WHEAT-FLOUR. JOHN F. MEYER & SONS MILLING CO., St. Louis and Springfield, Mo. Filed Aug. 17, 1905. Used ten years.

The words "WESTERN DELIGHT" arranged in a semicircle above the pictorial representation of a cowboy in the act of lassoing a steer. Above this pictorial representation and below the words appears the representation of the sun and a scroll on which appear the words "FULL PATENT." Below the pictorial representation appear the words "JOHN F. MEYER & SONS SPRINGFIELD, MO.," all of which words and pictorial representations are inclosed in a heavy circular border-line.

SER. No. 11,835. FLAVORING EXTRACTS OF ALL VARIETIES. SCHWABACHER BROS. & CO., INC., Seattle, Wash. Filed Aug. 21, 1905.

The representation of a silver shield within which is inscribed the words "SILVER SHIELD BRAND."

SER. No. 11,879. WHEAT-FLOUR. ACME MILLS & ELEVATOR COMPANY, Hopkinsville, Ky. Filed Aug. 21, 1905.

A bordered and shield-shaped mantelet surmounted by a crown and gathered about each of the two upper corners in a knot, around which is shown a tasseled cord. Upon the shield is the word "SUPREME."

SER. No. 11,946. COFFEE. CLARK, COGGIN AND JOHNSON COMPANY, Boston, Mass. Filed Aug. 23, 1905.

DE-TAN-ATED

The hyphenated word "DE-TAN-ATED."

SER. No. 11,980. DRY AND WET BATTERIES. ERICSSON TELEPHONE COMPANY, New York, N. Y. Filed Aug. 24, 1905.

A crescent and star associated with the words "ERICSSON BATTERY" disposed upon a contrasting background with the rays of said star extending over said words.

SER. No. 12,002. DRY BATTERIES. NUNGESSER ELECTRIC BATTERY CO., Cleveland, Ohio. Filed Aug. 25, 1905.

THE 1900

The word and figures "THE 1900."

SER. No. 12,048. BLANK BOOKS, PADS, AND TABLETS. BOORUM & PEASE COMPANY, New York, N. Y. Filed Aug. 26, 1905.

SER. No. 12,048.

The representation of a banner suspended from a staff having thereon the words and figures "STANDARD. 16 OZ. TO THE LB. 36 IN. TO THE YD. 25 SHEETS (100 PAGES) TO THE QUIRE."

SER. No. 12,054. PANORAMIC CAMERAS. ROCHESTER PANORAMIC CAMERA COMPANY, Rock Springs, Wyo. Filed Aug. 28, 1905.

CIRKUT

The word "CIRKUT."

SER. No. 12,091. GINGER-ALE. ADOLF R. HOLTHUSEN, New York, N. Y. Filed Aug. 30, 1905.

The representation of a seal bearing a monogram of the letters "A R H" and associated with the word "WHITEHALL," both the seal and the word appearing against a rectangular background formed by radiating lines.

SER. No. 12,102. LOAVES OF BREAD. LOUIS HEYING, Baltimore, Md. Filed Aug. 30, 1905.

GOLDEN WEDDING

The words "GOLDEN WEDDING."

SER. No. 12,106. ROPES, CORDS, TWINE, AND BINDER-TWINE. INTERNATIONAL HARVESTER CO. OF AMERICA, Chicago, Ill. Filed Aug. 31, 1905.

CHAMPION

The word "CHAMPION."

SER. No. 12,144. SCENIC RAILWAYS. THE L. A. THOMPSON SCENIC RAILWAY CO., New York, N. Y. Filed Sept. 1, 1905. Used ten years.

THOMPSON SCENIC RAILWAY

The words "THOMPSON SCENIC RAILWAY."

SER. No. 12,154. WASHING FLUIDS. EDWARD F. KARSTENS, New York, N. Y. Filed Sept. 1, 1905.

UZA CAPITOL BRAND

The words "UZA CAPITOL BRAND appearing upon a seal."

SER. No. 12,217. ANALGESICS. EL EBRNAC CO., New York, N. Y. Filed Sept. 5, 1905.

CACHET GAU

The words "CACHET GAU."

SER. No. 12,229. PLOWS. PARLIN & ORENDORFF CO., Canton, Ill. Filed Sept. 5, 1905.

CANTON CLIPPER

The words "CANTON CLIPPER."

SER. No. 12,249. PROPRIETARY MEDICINE FOR THE CURE OF DISEASES OF THE LIVER, KIDNEYS, STOMACH, AND BLOOD AND A GENERAL TONIC IN TABLET FORM. CHARLES A. MAYNARD, Springfield, Mass. Filed Sept. 5, 1905.

GOLDEN TABLETS

The words "GOLDEN TABLETS."

SER. No. 12,451. MEDICATED OILS. DAVID M. BYE, Indianapolis, Ind. Filed Sept. 11, 1905. Used ten years.

Combination Oil Cure

The phrase "COMBINATION OIL CURE."

SER. No. 12,514. ALE. BOSTON BEER COMPANY, Boston, Mass. Filed Sept. 13, 1905.

The word "RELIANCE" surrounded by an ornamental border with the phrases "BOSTON BEER COMPANY," "OLD STOCK ALE," and "BOSTON'S BEST BREW" outside the border with hops and oats pictorially represented, and a circular band bearing a star and the words "BOSTON BEER COMPANY" surrounds the letters "B. B. C." and the date "1828" above the ornamental border, the whole being inclosed in an oval band.

SER. No. 12,548. LADIES', MISSES', AND CHILDREN'S LEATHER SHOES. WILLIAM B. CARHART, Atlanta, Ga. Filed Sept. 14, 1905.

A representation of a bale of cotton having thereon the words "QUEEN COTTON," the said bale being open on one side and showing a shoe encircled by a crown, the words "QUEEN COTTON" appearing on the top facing of the shoe.

SER. No. 12,681. PLOWS, CULTIVATORS, AND HARROWS. B. F. AVERY & SONS, Louisville, Ky. Filed Sept. 15, 1905.

SER. No. 12,681.

The words "EL COLONO" on a curved panel, the representation of an iron cross appearing on a circular panel and the letter "A" appearing in the center and the letters "V E R Y" appearing on the arms of the cross, and the representation of a plantation owner wearing a sombrero and smoking a cigar arranged to one side of the words "EL COLONO," associated with a cane scene, and the portrait of B. F. AVERY, associated with the name "B. F. AVERY." arranged on the other side thereof.

SER. No. 12,648. HORSE-RADISH. THOMAS P. RIGHTMIRE, New York, N. Y. Filed Sept. 15, 1905.

The representation of a red horse, associated with the letters "I S H."

SER. No. 12,670. GIN. P. DEMPSEY & CO., Boston, Mass. Filed Sept. 15, 1905.

SER. No. 12,670.

SER. No. 12,700. EMOLLIENT SOAP COMPOUND. CARROLL B. GATES, Syracuse, N. Y., assignor to THOMAS L. NORTON, Holcomb, N. Y. Filed Sept. 16, 1905.

SER. No. 12,892.

lines. At the foot of the label in the center of the bottom border upon a disk are the words "TRUTH AND LIGHT," and on either

SER. No. 12,670.

The word "PURITAN," beneath which is the representation of a sailing vessel and a picture representing a Puritan with a gun over his shoulder, the latter drawing being inclosed in a circle.

SER. No. 12,672. WHISKY. P. DEMPSEY & Co., Boston, Mass. Filed Sept. 15, 1905. Used ten years.

MIAMI

The word "MIAMI" and a monogram composed of the letters, character, and abbreviation "P D & Co" inclosed in a double circle with a fanciful scroll design on either side.

SER. No. 12,674. CORDIALS. P. DEMPSEY & Co., Boston, Mass. Filed Sept. 15, 1905.

BUTTERFLY

The word "BUTTERFLY" and the representation of a butterfly.

SER. No. 12,676. WHISKY. P. DEMPSEY & Co., Boston, Mass. Filed Sept. 15, 1905. Used ten years.

MAYFAIR

The word "MAYFAIR."

SER. No. 12,678. WHISKY. P. DEMPSEY & Co., Boston, Mass. Filed Sept. 15, 1905.

OVERMARCH

The word "OVERMARCH."

SER. No. 12,700. EMOLLIENT SOAP COMPOUND. CARROLL B. GAYER, Syracuse, N. Y., assignor to Thomas L. Norton, Holcomb, N. Y. Filed Sept. 16, 1905.

The hyphenated word "KOSMO-KERAM" printed in modified script with a connecting paraph and appearing in white on a red panel, said panel having a fanciful scrollwork-border.

SER. No. 12,783. POISON FOR ANIMALS AND INSECTS. DAVID J. KAUFMANN, Perth Amboy, N. J. Filed Sept. 19, 1905.

KILRATO

The word "KILRATO."

SER. No. 12,842. FIXTURES FOR DISPLAYING GOODS IN STORES. THE HEIMANN-MILLER MANUFACTURING COMPANY, St. Louis, Mo. Filed Sept. 21, 1905.

The representation of an ape-like animal grasping a rod in the toes of one foot and supporting a ball with the toes of the other foot, and the index-finger of one of its hands pointing to said ball and the index-finger of the other hand pointing to its forehead.

SER. No. 12,891. TEA. HEWLETT & LEE, New York, N. Y. Filed Sept. 21, 1905.

The words "BLACK BEAR CHOP" over the figure of a black bear.

SER. No. 12,892. TEA. HEWLETT & LEE, New York, N. Y. Filed Sept. 21, 1905.

SER. No. 12,892.

The words "WHITE BEAR CHOP" over the figure of a white bear.

SER. No. 12,966. ALE AND STOUT. C. MACHEN & HUDSON, Liverpool, England. Filed Sept. 25, 1905.

An oval panel having an outer band divided centrally by a straight band. In the upper half of the panel is the representation of a beaver with a twig in his mouth standing upon a bank, part of a tree being shown on one side and the background consisting of a water scene. In the panel above the picture are the words "BEAVER BRAND." On the central band is the name "C. MACHEN & HUDSON." On an ornamental scroll below the straight band are the words "EXPORT BEER MERCHANTS LIVERPOOL."

SER. No. 12,967. DRY PREPARATION FOR MAKING A NON-INTOXICATING BEVERAGE. J. C. ENO, LIMITED, London, England. Filed Sept. 25, 1905.

The arbitrary words "FRUIT SALT" in large type arranged in the center of an oblong panel having a border representing leaves and fruit of the vine clinging to a framework composed of two parallel branches traversing the edge of the label on each side and fastened at each corner. Above the words "FRUIT SALT" is the name "ENO'S" in large type, and beneath the words "FRUIT SALT" and occupying the rest of the space in smaller type are the words "FRUIT SALINE, OR FRUIT POWDER," beneath which are two parallel lines. At the foot of the label in the center of the bottom border upon a disk are the words "TRUTH AND LIGHT," and on either side between the branches forming the bottom border are the words "HATCHAM FRUIT SALT WORKS," and below the disk is the word "LONDON."

SER. No. 13,080. CITRUS FRUITS AND PINEAPPLES. THE PASO REAL FRUIT COMPANY, Cincinnati, Ohio. Filed Sept. 26, 1905.

An oval design containing a pineapple with full top attached standing upright surrounded at the base with a group of oranges, lemons, and other fruits, a ridge of hills appearing in the extreme background. A smaller oval appears at the bottom of the principal oval containing the monogram of the letters "P R F C." The upper part of the border of the principal oval contains the words "THE PASO REAL FRUIT COMPANY." At the base of the smaller oval are the words "PINAR DEL RIO" and immediately below the same the words "CUBA, W. I."

SER. No. 13,179. OINTMENT. L. C. NICKERSON, Denver, Colo Filed Sept. 30, 1905.

Oxgulatum

The word "OXGULATUM."

SER. No. 13,201. MATTRESSES AND CUSHIONS. CHARLES A. FISHER, Chicago, Ill. Filed Oct. 2, 1905.

The representation of the conventional king of a playing-card. In the upper left-hand corner and lower right-hand corner of the

card is shown a representation of a leather tuft, such as is used in

SER. No. 13,567. FACE-POWDER. JOSEPH TAYLOW, Philadelphia,

card is shown a representation of a leather tuft, such as is used in tufting mattresses.

SER. No. 13,316. SCARFS. WILLIAM TREVOR, New York, N. Y. Filed Oct. 5, 1905.

Du Barry

The words "DU BARRY," arranged in the particular and distinctive manner shown in the drawing.

SER. No. 13,362. AXES. AMERICAN TOOL COMPANY, Highland Park, Ky. Filed Oct. 6, 1905.

The representation of a shield with the conventional figure of Uncle Sam appearing thereon and holding an ax, together with a scroll associated with the shield.

SER. No. 13,525. ANTISEPTICS FOR INTERNAL AND EXTERNAL USE. THORWALD ANDA, Chicago, Ill. Filed Oct. 12, 1905.

ECKINOL

The word "ECKINOL."

SER. No. 13,527. CATHARTICS, LAXATIVES, LIVER MEDICINE, AND MEDICAL COMPOUNDS TO RELIEVE AND CURE HEADACHE, DIZZINESS, SALLOW SKIN, TORPID LIVER, AND CONSTIPATION. THE OWL DRUG CO., San Francisco, Cal. Filed Oct. 12, 1905.

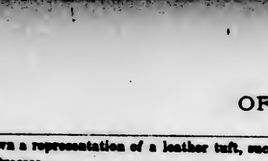

A picture representing the head and body of an owl standing upright with arms and hands holding a gun perpendicularly and directly in front of the figure with skull-cap on left side of head, the picture being used in combination with the words "CAPTAIN JOHN'S ORDERLETS" printed in Roman letters, and both words and figure being inside of a rectangle.

SER. No. 13,566. POWDER FOR TOILET AND NURSERY PURPOSES. JOSEPH TETLOW, Philadelphia, Pa. Filed Oct. 13, 1905.

SWAN DOWN

The title "SWAN DOWN."

SER. No. 13,567. FACE-POWDER. JOSEPH TETLOW, Philadelphia, Pa. Filed Oct. 13, 1905.

GOSSAMER

The word "GOSSAMER."

SER. No. 13,699. TONIC FOR CURE OF IMPURE BLOOD, MALARIA, NERVOUSNESS, INDIGESTION, LIVER, KIDNEY, AND CATARRHAL TROUBLES, GENERAL DEBILITY, RHEUMATISM, AND DISEASES OF THE SKIN. CARLETON F. TAYLOR, Hot Springs, Ark. Filed Oct. 17, 1905.

LIVONA

The word "LIVONA."

SER. No. 13,721. BATH-TUBS AND SINKS. STANDARD SANITARY MFG. CO., Pittsburg, Pa. Filed Oct. 18, 1905. Used ten years.

SM Co

The letters or initials "S M Co."

SER. No. 13,763. PURE OLIVE-OIL. GENNERICH & VON BREMEN, New York, N. Y. Filed Oct. 19, 1905.

CHERRY DIAMOND

The representation in cherry-red color, of a diamond composed of four bars intersecting each other surrounded by an open floral wreath having its branches tied together by a ribbon with ends spread apart and of the word-symbol "CHERRY DIAMOND" set underneath.

SER. No. 13,836. PARASOLS AND UMBRELLAS. WEINBERG HEYMAN & COMPANY, New York, N. Y. Filed Oct. 21, 1905.

The words "THE ARMOR" and the representation of a breastplate having crossed swords back of the same and bearing on its face the heraldic representation of a mythological bird.

SER. No. 13,877. DRESS-SILKS. THE NORFOLK SILK COMPANY, Norfolk, Va. Filed Oct. 23, 1905.

SERVISILK

The word "SERVISILK."

SER. No. 13,878. DRESS-SILKS. THE NORFOLK SILK COMPANY, Norfolk, Va. Filed Oct. 23, 1905.

PEAU DE CREPE

The words "PEAU DE CREPE."

SER. No. 13,949. LINIMENT TO BE APPLIED TO BRUISES, CUTS, TOOTHACHE, RHEUMATISM, SPRAINS, AND THE LIKE, USED BOTH INTERNALLY AND EXTERNALLY. EDWARD F. BAUTS, Pittsburg, Pa. Filed Oct. 16, 1905.

FIRE

The word "FIRE."

SER. No. 14,154. CHAMPAGNE-WINE. G. H. MUMM & CO., Reims France. Filed Nov. 1, 1905.

The representation of an eagle with head erect and wings extended holding a twig in his claws and encircled by the words "G. H. MUMM & CO." above and "G. DE BARY" below the eagle, the whole being inclosed by a circular border.

SER. No. 14,224. FRUITS—NAMELY, ORANGES, LEMONS, LIMES, GRAPE-FRUIT, PINEAPPLES, AND BANANAS. SOUTHERN CROSS FRUIT CO., Johnstown and New York, N. Y., and San Juan, Porto Rico. Filed Nov. 3, 1905.

The words "SOUTHERN CROSS," associated with the representation of a fruit-tree in the form of a cross, stars appearing at the terminals of the stem and branches.

SER. No. 14,225. FRUITS—NAMELY, ORANGES, LEMONS, LIMES, GRAPE-FRUIT, PINEAPPLES, AND BANANAS. SOUTHERN CROSS FRUIT CO., Johnstown and New York, N. Y., and San Juan, Porto Rico. Filed Nov. 3, 1905.

The representation of the constellation Southern Cross, the stars of which appear on the terminals of a Latin cross, a branch of an orange-tree appearing on the cross.

SER. No. 14,331. LAWN-MOWERS. ADELBERT B. CASE, Springfield, Mass. Filed Nov. 4, 1905.

MONEYBACK

The word "MONEYBACK."

SER. No. 14,371. WOMEN'S, MISSES', AND CHILDREN'S LEATHER BOOTS AND SHOES. DOROTHY DODD SHOE COMPANY, Montclair, N. J., and Boston, Mass. Filed Nov. 6, 1905.

Little Dorothy

The words "LITTLE DOROTHY."

SER. No. 14,394. MINCE-MEAT. THE CUDAHY PACKING CO., Chicago, Ill., and South Omaha, Nebr. Filed Nov. 7, 1905.

The letter "C" inclosed in a diamond figure, the word "DIAMOND," and the letter "C" inclosed in quotation-marks.

SER. No. 14,395. SOAP. THE CUDAHY PACKING CO., Chicago, Ill., and South Omaha, Nebr. Filed Nov. 7, 1905.

DIAMOND "C"

The letter "C" inclosed in a diamond figure, the word "DIAMOND," and the letter "C" inclosed in quotation-marks.

SER. No. 14,436. FOUNDRY FACINGS OR BLACKING COMPOSED OF FINELY GROUND OR COMMINUTED INGREDIENTS. THE J. S. MCCORMICK CO., Pittsburg, Pa. Filed Nov. 9, 1905.

AJAX

The word "AJAX."

SER. No. 14,437. FOUNDRY FACINGS OR BLACKING COMPOSED OF FINELY GROUND OR COMMINUTED INGREDIENTS. THE J. S. MCCORMICK CO., Pittsburg, Pa. Filed Nov. 9, 1905.

VULCAN

The word "VULCAN."

SER. No. 14,441. SOLE-LEATHER. J. M. DELANEY & CO. New York, N. Y. Filed Nov. 9, 1905.

SER. No. 14,441.

Two crossed letters "T" having beneath them a pentagonal step or spot. These are inclosed in an unequal-sided hexagonal border having on the outside at the meeting angles pentagonal de-

The word "STAG."

The word "HOMECOL."

SER. No. 14,441.

OK

The letters "O K" inclosed in an octagonal border.

SER. No. 14,443. CLOCKS AND WATCHES. THE WESTERN CLOCK MFG. CO., La Salle, Ill. Filed Nov. 9, 1905.

LA SALLITA

The words "LA SALLITA."

SER. No. 14,600. BOYS' HEAVY RIBBED HOSE. CHESTER KNITTING MILLS, Chester, Ill. Filed Nov. 14, 1905.

A rectangle bearing a representation of a lion and the words "THE LION HOSE KING OF STOCKINGS," the word "LION" being inclosed in quotation-marks.

SER. No. 14,865. FURNACES. THE LENNOX FURNACE CO., Marshalltown, Iowa. Filed Nov. 21, 1905. Used ten years.

LENNOX TORRID ZONE

The words "LENNOX TORRID ZONE."

SER. No. 14,733. MEDICAL PREPARATIONS FOR EXTERNAL AND INTERNAL USE BY MAN. TRISCOT'S REMEDIES Ltd., Dublin, Ireland. Filed Nov. 14, 1905.

Two crossed letters "T" having beneath them a pentagonal stop or spot. These are inclosed in an unequal-sided hexagonal border having on the outside at the meeting angles pentagonal devices connected by a border-line of small crossed letters "T" frequently repeated. On the top side of the hexagon is a device composed of four pentagonal bodies arranged in the form of a cross.

SER. No. 14,994. MILK-CANS. OAKES & BURGESS, Cattaraugus, N. Y. Filed Nov. 25, 1905. Used ten years.

EMPIRE STATE

The words "EMPIRE STATE."

SER. No. 15,114. CORSETS AND CORSET-WAISTS. HESS BROS., Allentown, Pa. Filed Dec. 1, 1905.

LA CHIQUE

The arbitrary words "LA CHIQUE."

SER. No. 15,144. MALT EXTRACT. OTTO HUBER BREWERY, Brooklyn, N. Y. Filed Dec. 2, 1905.

O-H

The hyphenated letters "O-H."

SER. No. 15,275. MOIST-PROOF MALINE. THEO. TIEDEMANN & SON, New York, N. Y. Filed Dec. 8, 1905.

MALINETTE

The word "MALINETTE."

SER. No. 15,296. DISINFECTANTS AND DEODORIZERS. THE P. M. FRANK DISINFECTING CO., New York, N. Y. Filed Dec. 9, 1905.

CHLOROZONE

The word "CHLOROZONE."

SER. No. 15,328. COMBS. JOSEPH P. NOYES & COMPANY, Binghamton, N. Y. Filed Dec. 11, 1905.

STAG

The word "STAG."

SER. No. 15,358. MONTHLY PERIODICAL. THE GARDNER PUBLISHING COMPANY, Cleveland, Ohio. Filed Dec. 12, 1905.

WOOD CRAFT

The arbitrary word symbol "WOOD CRAFT."

SER. No. 15,363. COTTON SHEETINGS AND DRILLS. KENRO IWAHARA, New York, N. Y. Filed Dec. 13, 1905.

The representation of a donkey ridden by a man with lifted right arm and wearing a derby hat.

SER. No. 15,364. CORSETS. WEINGARTEN BROS., New York, N. Y. Filed Dec. 13, 1905.

Reduso

The word "REDUSO."

SER. No. 15,448. NICKEL SALTS. THE HANSON & VAN WINKLE CO., Newark, N. J., New York, N. Y., and Chicago, Ill. Filed Dec. 15, 1905.

CAPSTONE

The word "CAPSTONE."

SER. No. 15,502. SENSITIZING DYESTUFFS. FARBENFABRIKEN OF ELBERFELD CO., New York, N. Y. Filed Dec. 18, 1905.

HOMOCOL

The word "HOMOCOL."

SER. No. 15,512. POWDER FOR CLEANING AND POLISHING MARBLE, STONEWORK, TILING, GLASS, WOODWORK, AND METALS. LEXINGTON MANUFACTURING CO., Baltimore, Md. Filed Dec. 19, 1905.

A conventional bust representation of the fictitious character Uncle Sam, above which is the word "UNCLE" and below the word "SAM," the letters of these words being studded with stars. Upon the left of said figure are the words "THE GREAT," and upon the right appears the word "CLEANSER."

SER. No. 15,540. TOOTHPICKS. THE WEBB MFG. CO., Toledo, Ohio. Filed Dec. 20, 1905.

The words "EASY PICKIN."

SER. No. 15,569. METAL PLATES FOR CEILINGS AND SIDE WALLS. ALFRED DU MONTIER, Washington, D. C. Filed Dec. 21, 1905.

LOKTILE

The word "LOKTILE."

SER. No. 15,675. PERFUMED POWDERS. EDDY PALMER, New York, N. Y. Filed Dec. 27, 1905. Used ten years.

Palmer

The word "PALMER."

SER. No. 15,676. PERFUMES, INCLUDING EXTRACTS, ESSENCES, COLOGNES, AND TOILET WATERS. EDDY PALMER, New York, N. Y. Filed Dec. 27, 1905. Used ten years.

Palmer

The word "PALMER."

SER. No. 15,677. LOTIONS FOR AFFECTIONS OF THE SKIN. EDDY PALMER, New York, N. Y. Filed Dec. 27, 1905. Used ten years.

The word "VITALINE."

SER. No. 16,168. KNIT UNDERWEAR. MURPHY, GRANT & CO., New York, N. Y., and San Francisco, Cal. Filed Jan. 13, 1906.

The words "AMERICAN GENTLEMAN."

SER. No. 15,677. LOTIONS FOR AFFECTIONS OF THE SKIN. ERDT PALMER, New York, N. Y. Filed Dec. 27, 1905. Used ten years.

PALMER'S

The word "PALMER'S."

SER. No. 15,818. LAUNDRY AND TOILET SOAP. SCHMIDT & SCHILLING, La Crosse, Wis. Filed Jan. 2, 1906.

MAGIC

The word "MAGIC."

SER. No. 15,821. CHEMICAL PREPARATIONS FOR USE IN MAKING LEMONADES. CHEMISCHE INDUSTRIE A.-G. ST. MARGRETHEN, St. Margrethen, Switzerland. Filed Jan. 2, 1906.

The word "CITROL," together with a branch of a lemon-tree and part of the figure of a woman placing a tablet in a glass of water with one hand and holding in the other hand a package containing tablets.

SER. No. 15,834. BLOTTING-PAPER. THE ALBEMARLE PAPER MFG. CO., Richmond, Va. Filed Jan. 2, 1906.

VIENNA MOIRE

The word "MOIRE" preceded by the word "VIENNA." Both words are disposed in a scroll.

SER. No. 15,971. BITTERS. GEO. BENZ & SONS, St. Paul, Minn. Filed Jan. 4, 1906.

Appetine

The word "APPETINE."

SER. No. 15,978. BRANDY. GEO. BENZ & SONS, St. Paul, Minn. Filed Jan. 5, 1906.

VITALINE

The word "VITALINE."

SER. No. 15,999. WHISKY. FERDINAND WESTHEIMER & SONS, Cincinnati, Ohio. Filed Jan. 8, 1906. Used ten years.

Pennland

The word "PENNLAND."

SER. No. 16,061. SOAP OF ALL KINDS. PRICE'S PATENT CANDLE CO. LIMITED, London, Battersea, and Bromborough Pool Works, England. Filed Jan. 9, 1906.

The representation of a large ship under full sail on the sea. Another ship is seen in the distance astern. The whole is inclosed in a substantially rectangular border.

SER. No. 16,062. ILLUMINATING AND HEATING OILS. PRICE'S PATENT CANDLE CO. LIMITED, London, Battersea, and Bromborough Pool Works, England. Filed Jan. 9, 1906.

The representation of a large ship under full sail on the sea. Another ship is seen in the distance astern. The whole is inclosed in a substantially rectangular border.

SER. No. 16,067. MEN'S, WOMEN'S, AND CHILDREN'S HOSIERY. H. A. LANG & CO., Philadelphia, Pa. Filed Jan. 9, 1906.

LANGDON FAST DYE

The representation of a shield with diagonal bar and the letter "L" thereon. Beneath the shield is a conventional wreath of leaves. Above the shield is the word "LANGDON," and below the wreath are the words "FAST DYE."

SER. No. 16,168. KNIT UNDERWEAR. MURPHY, GRANT & CO., New York, N. Y., and San Francisco, Cal. Filed Jan. 13, 1906.

The words "EL DORADO," associated with the representation of a female figure holding in her hands a horn of plenty, and a tropical landscape in connection therewith surrounded by an approximately circular ornamental border.

SER. No. 16,169. KNIT HOSIERY. MURPHY, GRANT & CO., New York, N. Y., and San Francisco, Cal. Filed Jan. 13, 1906.

The words "EL DORADO," associated with the representation of a female figure holding in her hands a horn of plenty, and a tropical landscape in connection therewith surrounded by an approximately circular ornamental border.

SER. No. 16,180. HOSIERY AND KNIT UNDERWEAR. HOME HOSIERY CO., Philadelphia, Pa. Filed Jan. 13, 1906.

RED CROSS

The representation of a red cross and the words "RED CROSS," used singly or together.

SER. No. 16,239. WOMEN'S LIQUID AND PASTE SHOE-DRESSING. HAMILTON-BROWN SHOE CO., St. Louis, Mo. Filed Jan. 17, 1906.

American Lady

The words "AMERICAN LADY."

SER. No. 16,240. MEN'S LIQUID AND PASTE SHOE-DRESSING. HAMILTON-BROWN SHOE CO., St. Louis, Mo. Filed Jan. 17, 1906.

American Gentleman

The words "AMERICAN GENTLEMAN."

SER. No. 16,258. DRESSING FOR BOOTS AND SHOES. F. H. YOUNG COMPANY, Boston, Mass. Filed Jan. 17, 1906.

UNEEDA

The word "UNEEDA."

SER. No. 16,255. CLEANING COMPOUNDS FOR DUCK AND CANVAS. F. H. YOUNG COMPANY, Boston, Mass. Filed Jan. 17, 1906.

WHITE

The word "WHITE" arranged above the pictorial representation of a duck.

SER. No. 16,277. MATCHES OF ALL KINDS. AKTIEBOLAGET SÖDERTELJE TÄNDSTICKSFABRIK, Södertelje, Sweden. Filed Jan. 18, 1906.

The representation of a tulip inclosed in an ellipse, the cup of which is red. Below and at the right side of the ellipse there are in a bent line the words "SAFETY MATCH." Above the line are the words "THE RED TULIP IMPREGNATED" and below the same the words "MANUFACTURED BY ERIC HOLMBERG SÖDERTELJE, SWEDEN."

SER. No. 16,278. DRESSING FOR BOOTS AND SHOES. F. H. YOUNG COMPANY, Boston, Mass. Filed Jan. 18, 1906.

Empress

The word "EMPRESS."

SER. No. 16,279. DRESSING FOR LEATHER AND LEATHER BOOTS AND SHOES. F. H. YOUNG COMPANY, Boston, Mass. Filed Jan. 18, 1906.

JUMBO

The word "JUMBO."

SER. No. 16,280. CLEANING COMPOUNDS FOR DUCK AND CANVAS. F. H. YOUNG COMPANY, Boston, Mass. Filed Jan. 18, 1906.

WHITEINE

The word "TOUCHLESS."

The word "WHITBINE."

SER. No. 16,284. SMOKING-TOBACCO. BRITTAIN TOBACCO WORKS, Columbia, Tenn. Filed Jan. 13, 1906. Used ten years.

WILD CAT

The words "WILD CAT."

SER. No. 16,287. SPIRITS OF TURPENTINE. STANDARD OIL COMPANY, Louisville, Ky. Filed Jan. 15, 1906.

Two concentric circles, in the upper part of the outer concentric circle being the words "PINE GUM BRAND." Inclosed in the inner concentric circle is the representation of a woodland scene, in the direct foreground being a tree, near the base of which appears a pail into which sap is running from the bark of the tree.

SER. No. 16,294. TEA. CHARLES & Co., New York, N. Y. Filed Jan. 18, 1906.

MISSION GARDEN

The words "MISSION GARDEN."

SER. No. 16,306. INDIA-RUBBER BINDING. KNAPP RUBBER BINDING Co., New York, N. Y. Filed Jan. 19, 1906. Used ten years.

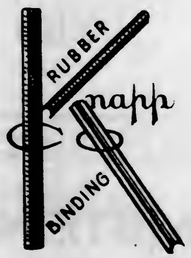

The words "KNAPP RUBBER BINDING Co."

SER. No. 16,307. INDIA-RUBBER BINDING. KNAPP RUBBER BINDING Co., New York, N. Y. Filed Jan. 19, 1906.

The representation of a frame upon the upper cross-bars of which is supported a piece of rubber binding and between said cross-bars of which is secured a piece of matting, the upper edge of which is bound and the lower edge of which is ragged and upon which appear the words "BIND THE RAGGED EDGE." Upon the front upper cross-bar appear the words and abbreviations "KNAPP RUBBER BINDING Co., N. Y."

SER. No. 16,313. MONTHLY MAGAZINES. GAS POWER PUBLISHING Co., St. Joseph, Mich. Filed Jan. 19, 1906.

GAS POWER

The words "GAS POWER."

SER. No. 16,315. SOAP. ANTI-GRIME SOAP COMPANY, Elmira, N. Y. Filed Jan. 19, 1906.

ANTI-GRIME

The arbitrary and fanciful word "ANTI-GRIME."

SER. No. 16,333. WHISKY. EDWARD WEIL, Houston, Tex. Filed Jan. 20, 1906.

SEA GULL

The words "SEA GULL."

SER. No. 16,334. WHISKY. EDWARD WEIL, Houston, Tex. Filed Jan. 20, 1906.

TIDAL WAVE

The words "TIDAL WAVE."

SER. No. 16,335. WHISKY. EDWARD WEIL, Houston, Tex. Filed Jan. 20, 1906.

CLEAR ROCK

The words "CLEAR ROCK."

SER. No. 16,343. KNIT HEADGEAR, INCLUDING TAMS, TOQUES, AND CAPS. STEPHENSON & Co., Philadelphia, Pa. Filed Jan. 20, 1906.

The word "DEBUTANTE."

SER. No. 16,422. WHISKY. JOHN C. WELLER Co., Louisville, Ky. Filed Jan. 23, 1906.

J.C.W.

The letters "J. C. W." above the representation of a well on the wall of which appear the letters "E R." Above the well is a windlass with rope attached running down into the well.

SER. No. 16,425. VARNISHES AND VARNISH-STAINS. THE GLIDDEN VARNISH COMPANY, Cleveland, Ohio. Filed Jan. 23, 1906.

The representation of two female figures in Japanese costume, one standing and one sitting in the foreground, each of whom holds a fan in her right hand. A screen near said figures bears the words "WEARS LIKE IRON." The background shows a sheet of water and some trees in the distance upon the left, while a wall cuts off the view upon the right.

SER. No. 16,429. WHISKY. GEO. BENZ & SONS, St. Paul, Minn. Filed Jan. 23, 1906.

Oldays

The word "OLDAYS."

SER. No. 16,432. WHISKY. THE MOUNTAIN DISTG. Co., Cincinnati, Ohio. Filed Jan. 23, 1906.

Old Ripple

The words "OLD RIPPLE."

SER. No. 16,434. LIQUID PAINT. GEO. D. WETHERILL & Co., INC. Philadelphia, Pa. Filed Jan. 23, 1906.

The name "REVERE" and the pictorial representation of the patriot, Paul Revere, mounted upon a horse and depicted in his famous ride, within a circular border in the foreground of a minor scene comprising houses, there being also in the background the representation of an old church and church-tower.

SER. No. 16,435. RAZOR-STROPS. ANDREW J. JORDAN, St. Louis, Mo. Filed Jan. 23, 1906.

OLD FAITHFUL

The words "OLD FAITHFUL."

SER. No. 16,498. INDIA-RUBBER STAIR-NOSINGS. KNAPP RUBBER BINDING Co., New York, N. Y. Filed Jan. 26, 1906.

The representation of a flight of three steps the treads of which

SER. No. 16,542. HYDGLASSES, SPECTACLES, AND PARTS

The representation of a flight of three steps the treads of which are protected by coverings and the edges of the treads of which are protected by nosings, the nosings of the two upper steps being shown loose at one end. At the side of the flight of steps is shown a piece of nosing upon which appears the arbitrary and fanciful word "ANTISLIPPIN," and upon the rise of the upper step appear the words and abbreviations "KNAPP RUBBER BINDING Co., N. Y.," the whole inclosed within a square border interlocked at each corner.

SER. No. 16,499. INDIA-RUBBER STAIR-NOSINGS. KNAPP RUBBER BINDING Co., New York, N. Y. Filed Jan. 25, 1906.

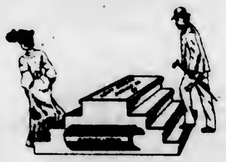

The representation of two flights of steps meeting in a common landing, starting toward which upon the lowermost step of one flight is shown a man and leaving which on the lowermost step of the other flight is shown a woman and upon which appear the words and abbreviations "KNAPP RUBBER BINDING Co. N. Y.," the edges of the treads of the steps being protected by nosings. Upon the side of the steps is shown a piece of nosing upon which appears the arbitrary and fanciful word "ANTISLIPPIN."

SER. No. 16,505. BROOMS. LEE BROOM & DUSTER COMPANY, Lincoln, Nebr. Filed Jan. 25, 1906.

FYNELYTE

The word "FYNELYTE."

SER. No. 16,512. MOUTH-HARMONICAS. FIRM OF M. HOHNER, New York, N. Y. Filed Jan. 26, 1906.

THE CHIMEWOOD

The words "THE CHIMEWOOD."

SER. No. 16,513. ELASTIC TUBING ADAPTED FOR USE AS HOSE OR PACKING. NEW JERSEY CAR SPRING & RUBBER Co., Jersey City, N. J. Filed Jan. 25, 1906.

GIBRALTAR

The word "GIBRALTAR."

SER. No. 16,538. PAPER FOR WRAPPING FOOD PRODUCTS. GEORGE STABER, New York, N. Y. Filed Jan. 26, 1906.

KOSMOS

The word "KOSMOS."

SER. No. 16,542. EYEGLASSES, SPECTACLES, AND PARTS AND REPAIRS AND CASES THEREFOR. E. KIRSTEIN SONS Co. Rochester, N. Y. Filed Jan. 26, 1906.

SHUR-ON

The word "SHUR-ON."

SER. No. 16,581. METAL-CLEANING COMPOUNDS. CLAUDE J. WOOSRUFF, St. Louis, Mo. Filed Jan. 29, 1906.

A diamond-shaped figure in the center of which appears the numeral "1" intersected by the word "MINUTE."

SER. No. 16,584. COOKING AND HEATING STOVES. BARSTOW STOVE COMPANY, Providence, R. I. Filed Jan. 29, 1906.

JEWEL

The word "JEWEL."

SER. No. 16,589. SCISSORS AND SHEARS. KEITH, SIMMONS & Co., Nashville, Tenn. Filed Jan. 29, 1906.

KEEN EDGE

A symbol consisting of a disk from which extend at equidistant points four bell-shaped figures with concave sides and convex bases and intercepting two concentric rings, equal arcs or segments of which appear in the spaces between said figures, said symbol appearing between the words "KEEN" and "EDGE."

SER. No. 16,688. SUSPENSORY BANDAGES. J. ELLWOOD LEE COMPANY, Conshohocken, Pa. Filed Feb. 2, 1906. Used ten years.

J.P.

The letters "J. P."

SER. No. 16,697. HOT-AIR HEATING-FURNACES. CHARLES SMITH COMPANY, Chicago, Ill. Filed Feb. 3, 1906.

NewHero

The words "NEW HERO."

TRADE-MARKS

REGISTERED FEBRUARY 27, 1906.

49,931. UNDERSHIRTS AND UNDERDRAWERS. ERLANGER BROS., New York, N. Y.
The letters "B. V. D."
Filed July 15, 1905. Serial No. 10,401. PUBLISHED JANUARY 2, 1906.

49,932. INCANDESCENT GAS-MANTLES. FLASH SELF LIGHTING MANTLE Co., New York, N. Y., assignor to The Flash Self-Lighting Mantle Company, a Corporation of Maine.
The word "FLASH," terminating in a zigzag, in which appear the words "SELF LIGHTING MANTLE."
Filed April 12, 1905. Serial No. 1,218. PUBLISHED JANUARY 2, 1906.

49,933. SEWING-MACHINES AND SEWING-MACHINE PARTS. HOUSEHOLD SEWING MACHINE Co., Providence, R. I.
The word "MARGUERITE."
Filed July 18, 1905. Serial No. 10,518. PUBLISHED JANUARY 2, 1906

49,934. LACE-LEATHER. NEW YORK LEATHER BELTING Co., New York, N. Y.
The word "VICTOR."
Filed July 13, 1905. Serial No. 10,268. PUBLISHED JANUARY 2, 1906.

49,935. WHISKY. THE D. KELLY Co., Columbus, Ohio.
The word "HILLSDALE." Used ten years.
Filed July 3, 1905. Serial No. 9,713. PUBLISHED JANUARY 2, 1906.

49,936 PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.
A rectangular design of scrolls. In each corner is a profile of a griffin-head with tongue protruding. In the center a conventional rosette appears within a circle.
Filed July 12, 1905. Serial No. 10,135. PUBLISHED JANUARY 2, 1906.

49,937. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.
A design in which a rectangular panel is shown having rounded projections at the sides and ends. The surface of the panel is covered by a conventional scroll, and in the center within two circles is an ornamental rosette.
Filed July 12, 1905. Serial No. 10,139. PUBLISHED JANUARY 2, 1906.

49,938. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.
A rectangular design having a central dark panel with a border of circular figures. At the center of the panel is a wheel with light dots arranged about, and at each end is a scroll. Surrounding the panel is a delicate scroll suggesting a vine and leaves.
Filed July 12, 1905. Serial No. 10,141. PUBLISHED JANUARY 2, 1906.

49,939. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.
An elaborate design having a central six-sided scroll inclosing a conventional figure which starts at the center and spreads toward each end. In each corner an elaborate scroll appears, which intertwines with the central scroll. Scattered over the design are many berry-like figures.
Filed July 12, 1905. Serial No. 10,145. PUBLISHED JANUARY 2, 1906.

49,940. WHISKY. THE ULLMAN EINSTEIN Co., Cleveland, Ohio.
The name "D. T. GILMORE & SON." Used ten years.
Filed July 3, 1905. Serial No. 9,700. PUBLISHED JANUARY 2, 1906.

49,941. HORSE-NAILS. UNION HORSE NAIL COMPANY, New Haven, Conn., and Chicago, Ill.
The representation of two hands clasping each other.
Filed June 20, 1905. Serial No. 8,606. PUBLISHED JANUARY 2, 1906.

49,942. METAL-POLISH. AMERICAN METAL POLISH Co., Somerville, Mass.
The words "SILVA PUTZ." Used ten years.
Filed May 18, 1905. Serial No. 6,042. PUBLISHED JANUARY 2, 1906.

49,943. WHISKY. BACK AND GREIWE, Cincinnati, Ohio.
The word "INDEX" partially surrounded by fanciful scroll-lines, and a hand with the index-finger pointing to the word.
Filed July 3, 1905. Serial No. 9,684. PUBLISHED JANUARY 2, 1906.

49,944. LIQUID PAINT FOR METALLIC ROOFS. LEWIS C. BROWN, New York, N. Y.
The representation of the head and shoulders of the sphinx with the words "SPHINX TIN-ROOF PAINT" printed across the breast portion thereof. A ladder is inclined against the side of the head of the sphinx, and upon the sphinx, the ladder, and the ground are several brownies, all at work, as though applying paint to the sphinx.
Filed May 15, 1905. Serial No. 5,732. PUBLISHED JANUARY 2 1906.

49,945. PICKERS AND BURRING-MACHINES AND ATTACHMENTS AND PARTS THEREOF. CURTIS & MARBLE MACHINE Co., Worcester, Mass.
The word "PARKHURST." Used ten years.
Filed October 27, 1905. Serial No. 13,988. PUBLISHED JANUARY 2, 1906.

49,946. HECTOGRAPHIC-PRINTING APPARATUS. FELIX FALK DAUS, New York, N. Y.
The words "TIP TOP" inclosed in quotation-marks.
Filed April 28, 1905. Serial No. 3,489. PUBLISHED JANUARY 2, 1906.

49,947. WIRE ROPE. DURABLE WIRE ROPE Co., Boston, Mass.
The word "JUPITER."
Filed June 28, 1905. Serial No. 9,319 PUBLISHED JANUARY 2, 1906.

49,948. HOSE-PIPES, NOZZLES, GATES, AND COUPLINGS. EUREKA FIRE HOSE COMPANY, Jersey City, N. J.
The word "EUREKA."
Filed October 28, 1905. Serial No. 14,025. PUBLISHED JANUARY 2, 1906.

49,949. VENTILATORS, CHIMNEY-COWLS AND VENTILATING-CAPS AND RIDGING. GLOBE VENTILATOR COMPANY, Troy, N. Y.
The word "GLOBE."
Filed April 26, 1905. Serial No. 3,179. PUBLISHED JANUARY 2, 1906.

49,950. NON-FERROUS ALLOYS. LUMEN BEARING COMPANY, Buffalo, N. Y.
The representation of a star bearing the word "LUMEN" and associated with the representation of a buffalo standing below the star, a pair of crucibles in the background behind the buffalo on opposite sides of the star, and a circular band surrounding these

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various features and bearing the words and abbreviations "LUMEN BEARING COMPANY—BUFFALO, N. Y."

49,964. HORSE-NAILS. UNION HORSE NAIL COMPANY, New Haven, Conn., and Chicago, Ill.

word "PEERLESS" increase in size toward the end, while the letters of the word "ENAMEL" decrease in size toward the end, the

Filed June 21, 1905. Serial No. 8,694. PUBLISHED JANUARY 2, 1906.

various features and bearing the words and abbreviations "LUMEN BEARING COMPANY—BUFFALO, N. Y."
Filed August 9 1905. Serial No. 11,451. PUBLISHED JANUARY 2, 1906.

49,951. RUBBER ERASERS. EAGLE PENCIL COMPANY, New York, N. Y.
The representation of an eagle with outstretched wings holding pencils in its beak and talons.
Filed August 21, 1905. Serial No. 11,985. PUBLISHED JANUARY 2, 1906.

49,952. WHISKY. MANY, BLANC & Co., Chicago, Ill.
The word "ETHYL," ornamented with fanciful scroll-lines beneath the word. Used ten years.
Filed July 3, 1905. Serial No. 9,686. PUBLISHED JANUARY 2, 1906.

49,953. LEATHER AND CANVAS SHOES AND SLIPPERS. MCRAE & BEVILL, Memphis, Tenn.
The word "TENNA."
Filed October 18, 1905. Serial No. 13,725. PUBLISHED JANUARY 2, 1906.

49,954. BOOTS, SHOES, AND SLIPPERS, AND SOLES THEREFOR. MORSE & ROGERS, New York, N. Y.
The words "SMART SET."
Filed June 27, 1905. Serial No. 9,154. PUBLISHED JANUARY 2, 1906.

49,955. BOOTS, SHOES, AND SLIPPERS, AND SOLES THEREFOR. MORSE & ROGERS, New York, N. Y.
The words "RED DRAGON."
Filed June 27, 1905. Serial No. 9,156. PUBLISHED JANUARY 2, 1906.

49,956. BEER. JACOB RUPPERT, New York, N. Y.
The representation of an American Beauty rose.
Filed August 11, 1905. Serial No. 11,529. PUBLISHED JANUARY 2, 1906.

49,957. BEER. JACOB RUPPERT, New York, N. Y.
The representation of a Maréchal Niel rose.
Filed August 11, 1905. Serial No. 11,530. PUBLISHED JANUARY 2, 1906.

49,958. BEER. JACOB RUPPERT, New York, N. Y.
The hyphenated word "ROSE-BUD."
Filed August 11, 1905. Serial No. 11,531. PUBLISHED JANUARY 2, 1906.

49,959. AUTOMOBILES. ST. LOUIS MOTOR CARRIAGE CO., St. Louis, Mo.
The phrase "RIGS THAT RUN," in connection with a winged wheel, the phrase appearing across the spokes of the wheel the phrase and wheel being associated with the words "ST. LOUIS MOTOR CARRIAGE CO." and "ST. LOUIS, MO."
Filed July 3, 1905. Serial No. 9,787. PUBLISHED JANUARY 2, 1906.

49,960. VARNISHES. THE AMERICAN VARNISH COMPANY, Chicago, Ill.
The words "GRANITE FINISH." Used ten years.
Filed July 10, 1905. Serial No. 9,961. PUBLISHED JANUARY 2, 1906.

49,961. VARNISHES. THE AMERICAN VARNISH COMPANY, Chicago, Ill.
The word "FLOORENE." Used ten years.
Filed July 10, 1905. Serial No. 9,963. PUBLISHED JANUARY 2, 1906.

49,962. WHISKY. THE STANDARD DISTILLING CO., Cincinnati, Ohio.
The word "GLADIATOR," associated with a figure of a man dressed as a gladiator, holding in one hand a sword and in the other a shield and with his foot resting on the prostrate figure of a man, and inclosed in a rectangular panel.
Filed July 11, 1905. Serial No. 10,017. PUBLISHED JANUARY 2, 1906.

49,963. WHISKY. THE STANDARD DISTILLING CO., Cincinnati, Ohio.
The words "SWEET CAPORAL" and a design of a monogram of the letters "S D Co" within a circular outline bordered by ornamental scroll-lines.
Filed July 11, 1905. Serial No. 10,025. PUBLISHED JANUARY 2, 1906.

49,964. HORSE-NAILS. UNION HORSE NAIL COMPANY, New Haven, Conn., and Chicago, Ill.
The initials "N W."
Filed June 20, 1905. Serial No. 8,611. PUBLISHED JANUARY 2, 1906.

49,965. SCISSORS AND SHEARS. CHALLENGE CUTLERY CORPORATION, Bridgeport, Conn.
The word "CHALLENGE."
Filed August 26, 1905. Serial No. 12,019. PUBLISHED JANUARY 2, 1906.

49,966. SWITCHBOARD-CORDS. JOHN E. CRAWFORD, Chicago, Ill.
The arbitrary word, letters, and quotation-marks "PREMIER "B B."""
Filed August 31, 1905. Serial No. 12,123. PUBLISHED JANUARY 2, 1906.

49,967. PICKERS AND BURRING-MACHINES AND ATTACHMENTS AND PARTS THEREOF. CURTIS & MARBLE MACHINE CO., Worcester, Mass.
The word "ATLAS." Used ten years.
Filed October 27, 1905. Serial No. 13,989. PUBLISHED JANUARY 2, 1906.

49,968. CLEANING PREPARATIONS. INDIA ALKALI WORKS, Boston, Mass.
The word "MARBLICA."
Filed November 28, 1905. Serial No. 15,035. PUBLISHED JANUARY 2, 1906.

49,969. SHOW-CASES. JOHN PHILLIPS & Co. LTD., Detroit, Mich.
The words "SILENT SALESMAN."
Filed August 23, 1905. Serial No. 11,945. PUBLISHED JANUARY 2, 1906.

49,970. VARNISHES. JOHN W. MASURY & SON, Brooklyn, N. Y.
The word "MASURY'S." Used ten years.
Filed November 24, 1905. Serial No. 14,958. PUBLISHED JANUARY 2, 1906.

49,971. MEDICINAL CORDIAL. KIRK-GEARY & Co., Sacramento, Cal.
A rectangular panel within which is arranged a shield ornamented by scrollwork, the word "DU VAL'S" being arranged on said shield near the top and a curved panel being disposed near the bottom of the shield, there being radiating lines from the shield toward the edges of the rectangular panel.
Filed November 27, 1905. Serial No. 15,027. PUBLISHED JANUARY 2, 1906.

49,972. A PERIODICAL. WILLIAM A. MARSH, Columbus, Ohio.
The words "THE DIRT MOVER."
Filed October 18, 1905. Serial No. 13,738. PUBLISHED JANUARY 2, 1906.

49,973. EXPLOSIVES. MASURITE EXPLOSIVE COMPANY, Masury, Ohio.
A series of concentric diamond-shaped figures bearing the word "MASURITE."
Filed October 16, 1905. Serial No. 13,643. PUBLISHED JANUARY 2, 1906.

49,974. LEATHER AND CANVAS SHOES AND SLIPPERS. MCRAE & BEVILL, Memphis, Tenn.
The word "MEMPHA."
Filed October 18, 1905. Serial No. 13,726. PUBLISHED JANUARY 2, 1906.

49,975. BEER. PABST BREWING COMPANY, Milwaukee, Wis.
The arbitrary words "BLUE RIBBON," above the words a design comprising the representation of a conventionalized hop-leaf, the initial "B" on the leaf, a circular red band surrounding the leaf, the name "PABST" on the upper part of the band, the name "MILWAUKEE" on the lower part of the band, a number of barley-heads springing outwardly and upwardly from below the band, a rhomboidal border comprising an inner narrow gilt line, and a blue band surrounding the entire design.
Filed November 4, 1905. Serial No. 14,347. PUBLISHED JANUARY 2, 1906.

49,976. ENAMEL PAINTS. PEERLESS ENAMEL PAINT WORKS, New York, N. Y.
A diamond-shaped background against which are displayed the words "PEERLESS ENAMEL," so arranged that the letters of the word "PEERLESS" increase in size toward the end, while the letters of the word "ENAMEL" decrease in size toward the end, the whole being inclosed in a diamond-shaped geometrical figure, opposite each side of which are the letters "P. E. P. W."
Filed December 2, 1905. Serial No. 15,150. PUBLISHED JANUARY 2, 1906.

49,977. WHISKY. CHARLES F. RIORDAN, Boston, Mass.
The letters "C F R" and beneath them a scroll design crossing the lower extended part of the "F."
Filed May 11, 1905. Serial No. 5,190. PUBLISHED JANUARY 2, 1906.

49,978. LAGER-BEER. S. S. PIERCE Co., Boston, Mass.
The picture of a war vessel at sea located in an oval panel. Underneath the panel is the representation of an eagle holding a shield, on which is a lion rampant. Beneath the vessel is a scroll, and beneath the scroll on a rectangular panel is the word "OLYMPIA." The whole is surrounded by an ornamental border, in the upper corners of which are the letters "S S P" arranged as monograms on small shields.
Filed May 15, 1905. Serial No. 5,692. PUBLISHED JANUARY 2, 1906.

49,979. CARRIAGES, WAGONS, AND CARTS. STUDEBAKER BROTHERS MANUFACTURING COMPANY, South Bend, Ind.
The word "STUDEBAKER" arranged in a particular and distinctive form of script, with a paraph extending from the final "R" back under the word.
Filed September 8, 1905. Serial No. 12,395. PUBLISHED JANUARY 2, 1906.

49,980. JEWELERS' PENDANT-BOWS. SWARTCHILD & Co., Chicago, Ill.
The words "GOLD SHELL" within quotation-marks, the type of the letters of said words being block capital.
Filed August 28, 1905. Serial No. 12,057. PUBLISHED JANUARY 2, 1906.

49,981. MALT EXTRACT. THE PARAGON MALT EXTRACT Co., New York, N. Y.
The letters "A & P" and the representation of a shock of barley.
Filed November 14, 1905. Serial No. 14,604. PUBLISHED JANUARY 2, 1906.

49,982. REAMERS. THE STANDARD TOOL COMPANY, Cleveland, Ohio.
The representation of the outline of a shield, with the words "STANDARD TOOL CO." included within the outline of the shield.
Filed November 28, 1905. Serial No. 15,038. PUBLISHED JANUARY 2, 1906.

49,983. TAPS. THE STANDARD TOOL COMPANY, Cleveland, Ohio.
The representation of the outline of a shield, with the words "STANDARD TOOL CO." included within the outline of the shield.
Filed November 28, 1905. Serial No. 15,040. PUBLISHED JANUARY 2, 1906.

49,984. SOUND-BOXES FOR TALKING-MACHINES. VICTOR TALKING MACHINE COMPANY, Camden, N. J.
The word "CONCERT."
Filed November 13, 1905. Serial No. 14,523. PUBLISHED JANUARY 2, 1906.

49,985. RECORDS FOR TALKING-MACHINES. VICTOR TALKING MACHINE COMPANY, Camden, N. J.
The representation of a winged cupid seated leaning on one hand and drawing substantially concentric lines around himself with a quill held in the other hand.
Filed November 13, 1905. Serial No. 14,524. PUBLISHED JANUARY 2, 1906.

49,986. PATENT-LEATHER. A. C. LAWRENCE LEATHER Co., Boston, Mass.
The words "BLACK DIAMOND," inclosed in a diamond-shaped figure.
Filed June 10, 1905. Serial No. 7,806. PUBLISHED JANUARY 2, 1906.

49,987. BASE-BALLS. A. J. REACH Co., Philadelphia, Pa.
The words "OFFICIAL SOUTHERN LEAGUE." Used ten years.
Filed June 21, 1905. Serial No. 8,691. PUBLISHED JANUARY 2, 1906.

49,988. BOXING-GLOVES. A. J. REACH Co., Philadelphia, Pa.
The words "THE CORBETT." Used ten years.
Filed June 21, 1905. Serial No. 8,694. PUBLISHED JANUARY 2, 1906.

49,989. WHISKY. ASHER GUCKENHEIMER & BROS., Pittsburg, Pa.
The word "PENNBROOK." Used ten years.
Filed May 22, 1905. Serial No. 6,280. PUBLISHED NOVEMBER 21, 1905.

49,990. EMBROIDERY. ATLANTIC NOVELTY Co., New York, N. Y.
The representation of a butterfly with outspread wings, together with the word "JETEVEUX."
Filed July 20, 1905. Serial No. 10,623. PUBLISHED JANUARY 2, 1906.

49,991. WATERPROOF TEXTILE FABRICS. ARTHUR BEREL, New York, N. Y.
The words "WATER QUEEN" appearing upon a solid black background and associated with the picture of a mermaid wearing a crown upon her head and holding extended in her right hand a mirror, and the words "SHOWER PROOF" underneath the picture.
Filed May 24, 1905. Serial No. 6,430. PUBLISHED JANUARY 2, 1906.

49,992. WHISKY. ELIAS BLOCK & SONS, Cincinnati, Ohio.
The word "PENWICK." Used ten years.
Filed August 10, 1905. Serial No. 11,477. PUBLISHED NOVEMBR 14, 1905.

49,993. LINIMENT. FREDC. G. BOYNTON, Boston, Mass.
The phrase "JOHNSON'S AMERICAN ANODYNE LINIMENT." Used ten years.
Filed May 11, 1905. Serial No. 5,122. PUBLISHED JANUARY 2, 1906.

49,994. PURGATIVE MEDICINE. FREDC. G. BOYNTON, Boston, Mass.
The phrase "PARSONS' PURGATIVE PILLS," associated with the letters "P P P." Used ten years.
Filed May 11, 1905. Serial No. 5,123. PUBLISHED JANUARY 2, 1906.

49,995. REMEDIES FOR ASTHMA. JOHN K. BRATER, New York, N. Y.
A black border surrounding a blue field, upon which field the medallion likeness of the proprietor is produced. Above the medallion the word "BRATER'S" appears, at one side of it the word "ASTHMA" and at the opposite side the word "CURE," the two words "ASTHMA" and "CURE" being partially surrounded by scrolls.
Filed October 30, 1905. Serial No. 14,078. PUBLISHED JANUARY 2, 1906.

49,996. GAME-BOARDS. CARROM-ARCHARENA Co., Ludington, Mich.
The word "CARROMS."
Filed June 19, 1905. Serial No. 8,538. PUBLISHED JANUARY 2, 1906.

49,997. DYESTUFF. CASSELLA COLOR COMPANY, New York, N. Y.
The words "IMMEDIAL BLACK."
Filed June 14, 1905. Serial No. 8,078. PUBLISHED JANUARY 2, 1906.

49,998. POCKET-KNIVES. CHALLENGE CUTLERY CORPORATION, Bridgeport, Conn.
The word "CHALLENGE."
Filed August 26, 1905. Serial No. 12,020. PUBLISHED JANUARY 2, 1906.

49,999. LEATHER BOOTS, SHOES, AND SLIPPERS CLARK-HUTCHINSON COMPANY, Boston, Mass.
The word "DEVELOPER."
Filed May 29, 1905. Serial No. 6,980. PUBLISHED JANUARY 2, 1906.

50,000. LEATHER BOOTS, SHOES, AND SLIPPERS. CLARK-HUTCHINSON COMPANY, Boston, Mass.
The word "ROYCROFT."
Filed May 29, 1905. Serial No. 6,981. PUBLISHED JANUARY 2, 1906.

50,001 LEATHER BOOTS, SHOES, AND SLIPPERS CLARK-HUTCHINSON COMPANY, Boston, Mass.
The word "PROGRESS."
Filed May 29, 1905. Serial No. 6,983. PUBLISHED JANUARY 2, 1906.

50,002. HOSIERY. ROBERT J. FISHER, Athens, Tenn.
The words "TOM SAWYER."
Filed May 20, 1905. Serial No. 6,146. PUBLISHED JANUARY 2, 1906.

50,003. HAIR-RESTORERS AND DANDRUFF-DESTROYERS. WILLIAM J. FOREE, Owenton, Ky.
The representation of a shield surmounted by a representation of the head of a woman with flowing hair, there being four "E's" arranged in vertical alinement upon the field of the shield, said shield surmounting a streamer, upon which are the words "FOREE'S HAIR RESTORER AND DANDRUFF DESTROYER."
Filed April 20, 1905. Serial No. 2,474. PUBLISHED SEPTEMBER 26, 1905.

50,004. HIGH-SPEED TOOL-STEEL. FULLER BROTHERS & Co., New York, N. Y.
The word "CRESTA."
Filed June 21, 1905. Serial No. 8,655. PUBLISHED JANUARY 2, 1906.

50,005. PAINTS AND ENAMELS. GERSTENDORFER BROS., New York, N. Y.
The representation of a woman in Japanese costume holding in her right hand a fan and carrying a parasol over her left shoulder. To the side of the female figure is the word "JAPANESE." Used ten years.
Filed April 26, 1905. Serial No. 3,061. PUBLISHED JANUARY 2, 1906.

50,006. BRUSHES FOR PAINTERS AND DECORATORS. HANLON & GOODMAN, New York, N. Y.
The word "MURESCO."
Filed July 27, 1905. Serial No. 10,919. PUBLISHED JANUARY 2, 1906.

50,007. MIRRORS AND MIRROR FRAMES OR SUPPORTS. J. P. EUSTIS MFG. CO., Boston, Mass.
The words "THE BRASSCRAFTERS."
Filed June 9, 1905. Serial No. 7,758. PUBLISHED AUGUST 29, 1905.

50,008. GLAZED AND DULL OR "MAT" KID. KEYSTONE LEATHER CO., Philadelphia, Pa.
The representation of a keystone with the head of a kid in the center and the word "KEYSTONE" above it and the word "KID" below.
Filed July 21, 1905. Serial No. 10,641. PUBLISHED JANUARY 2, 1906.

50,009. FINGER-RINGS. WM. LOEB & Co., Providence, R. I.
The letters and character "W. L. & Co."
Filed April 28, 1905. Serial No. 3,531. PUBLISHED JANUARY 2, 1906.

50,010. TRADE JOURNAL. M. T. RICHARDSON COMPANY, New York, N. Y.
The words "THE BLACKSMITH AND WHEELWRIGHT."
Filed June 13, 1905. Serial No. 8,058. PUBLISHED JANUARY 2, 1906.

50,011. GOVERNORS FOR PUMPING-ENGINES. CHARLES P. MCMULLEN, New York, N. Y.
The word "IDEAL."
Filed June 12, 1905 Serial No. 7,960. PUBLISHED JANUARY 2, 1906.

50,012. SYNTHETIC COAL-TAR PRODUCT. MELLIER DRUG COMPANY, St. Louis, Mo.
The word "BROMOPHINE."
Filed May 22, 1905. Serial No. 6,319. PUBLISHED JANUARY 2, 1906.

50,013. COTTON DUCK. MOUNT VERNON-WOODBERRY COTTON DUCK COMPANY, Baltimore, Md.
The words and abbreviations "WOODBERRY U. S. ARMY DUCK." Used ten years.
Filed May 18, 1905. Serial No. 5,983. PUBLISHED JANUARY 2, 1906.

50,014 WHISKY. P. J. BOWLIN LIQUOR CO., St. Paul, Minn.
The word "HUMBODT" displayed on an ornamental panel design, beneath which is a monogram composed of the letters and abbreviation "P J B L Co" within an oval outline on a shield design, at each side of which are heads and leaves of grain. Used ten years.
Filed June 21, 1905. Serial No. 8,629. PUBLISHED JANUARY 2, 1906.

50,015. STOGIES. R. & W. JENKINSON CO., Pittsburg, Pa.
The words "RED LABEL." Used ten years.
Filed August 4, 1905. Serial No. 11,242. PUBLISHED JANUARY 2, 1906.

50,016. CIGARS. R. & W. JENKINSON CO., Pittsburg, Pa.
The words "DUQUESNE CLUB" and the representation of a club-house of said club, the words "DUQUESNE CLUB" appearing upon panels or scrolls on either side of the representation of the building, the panels being produced upon shield-like devices with torches across them, the shields being in the foreground of garlands of flowers, there being also suspended from the panel or scroll bearing the word "DUQUESNE" the representation of a fanciful coat of arms upon a shield, and from the scroll bearing the word 'CLUB" is suspended a shield bearing a monogram of the letters and character "R & W J Co."
Filed August 4, 1905. Serial No. 11,243. PUBLISHED JANUARY 2, 1906.

50,017. PROPRIETARY MEDICINE. SALO SEDATUS CHEMICAL COMPANY, St. Louis, Mo.
The hyphenated word "SALO-SEDATUS." Used ten years.
Filed July 17, 1905. Serial No. 10,473. PUBLISHED JANUARY 2, 1906.

50,018. RUBBER SUBSTITUTES. THE DERMATINE COMPANY LIMITED, London, England.
The word "DERMATINE" on a scroll and the representation of a hippopotamus. Used ten years.
Filed May 26, 1905. Serial No. 6,745. PUBLISHED JANUARY 2, 1906.

50,019. SUPPOSITORIES. THE ELI LILLY & COMPANY, Indianapolis, Ind.
The word "GLYCONES."
Filed April 24, 1905. Serial No. 2,925. PUBLISHED JANUARY 2, 1906.

50,020. REMEDY FOR THROAT AFFECTIONS. THE GLESSNER MEDICINE CO., Findlay, Ohio.
The words "DR. DRAKE'S GERMAN CROUP REMEDY," the word "CROUP" being formed by a large letter "C" and the remaining letters, "ROUP," on a panel. Used ten years.
Filed July 6, 1905. Serial No. 9,850. PUBLISHED JANUARY 2, 1906.

50,021. WATCHES AND WATCH PARTS. THE HAMPDEN WATCH CO., Canton, Ohio.
The words "THE DUEBER WATCH CO."
Filed April 25, 1905. Serial No. 2,946. PUBLISHED JANUARY 2, 1906.

50,022. LAGER-BEER. THE J. CHR. G. HUFFEL BREWING CO., New York, N. Y.
The capital letter "H," which is inclosed in a rectangular panel formed by four connected and intercrossing loops.
Filed May 11, 1905. Serial No. 5,223. PUBLISHED JANUARY 2, 1906.

50,023. WHISKY. THE J. W. EVENDEN CO., Buffalo, N. Y.
The word "ATEX," below which is a fanciful picture of the head of an old man with smooth-shaven face and heavy gray hair.
Filed July 11, 1905. Serial No. 10,029. PUBLISHED JANUARY 2, 1906.

50,024. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.
A panel having at each corner a shell-like figure and at the ends and sides a conventional leaf design surrounding an inner panel, at the center of which, within a two-lined circle, is a rosette. Surrounding said two-lined circle within an outer circle is a curved design set off by a background of parallel horizontal lines. The ends of the inner panel each contain a large fleur-de-lis pointing inward and ten smaller fleurs-de-lis pointing in the same direction.
Filed May 2, 1905. Serial No. 3,957. PUBLISHED JANUARY 2, 1906.

50,025. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.
A device displaying at each end a conventional bearded face with a fillet. From a central rosette-like figure a conventional leaf-like double scroll extends toward each side, the rest of the design being covered by branching curved scrolls.
Filed May 5, 1905. Serial No. 4,297. PUBLISHED JANUARY 2, 1906.

50,026. SUCCEDANEUM FOR COD-LIVER OIL. THE NORWICH PHARMACAL COMPANY, New York, N. Y.
The word "LEINOL."
Filed April 24, 1905. Serial No. 2,804. PUBLISHED MAY 30, 1906.

50,027. RUBBER WATER-BAGS AND WATER-BOTTLES. THE SEAMLESS RUBBER CO., New Haven, Conn.
A conventional fleur-de-lis with the letters "S R C," one letter appearing on each leaf.
Filed May 22, 1905. Serial No. 6,324 PUBLISHED JANUARY 2, 1906.

50,028. WHISKY. THE STAR DISTILLERY COMPANY, Cincinnati, Ohio.
The words "GOLDEN BLOSSOM."
Filed May 22, 1905. Serial No. 6,286. PUBLISHED JANUARY 2, 1905.

50,029. HOOF-DRESSING. WILBUR F. YOUNG, Springfield, Mass.
The word "TAROLEUM."
Filed April 24, 1905. Serial No. 2,784. PUBLISHED JANUARY 2, 1906.

50,030. CANNED OYSTERS, FISH, CLAMS, CRABS, SHRIMP, AND LOBSTERS. A. BOOTH AND COMPANY, Chicago, Ill.; Baltimore, Md.; St. Paul, Duluth, and Minneapolis, Minn.; St. Louis, Mo.; Louisville, Ky.; Omaha, Nebr.; Indianapolis, Ind., and Port Arthur, Canada.
An oval panel with rays radiating therefrom and forming a diamond-shaped figure, the oval panel being printed in red and bearing the word "BOOTH."
Filed May 11, 1905. Serial No. 5,135. PUBLISHED JANUARY 2, 1906.

50,031. QUEBRACHO EXTRACT. A. KLIPSTEIN & COMPANY, New York, N. Y.
The word "ARGAM."
Filed October 27, 1905. Serial No. 13,975. PUBLISHED JANUARY 2, 1906.

50,032. CALICOES. AMERICAN PRINTING COMPANY, Fall River, Mass.
A band of silver containing the word "AMERICAN." Used ten years.
Filed May 1, 1905. Serial No. 3,849. PUBLISHED JANUARY 2, 1906.

50,033. CALICOES. AMERICAN PRINTING COMPANY, Fall River, Mass.
A band of gold having a central longitudinal strip of red extending throughout its length.
Filed May 1, 1905. Serial No. 3,853. PUBLISHED JANUARY 2, 1906.

50,034. CALICOES. AMERICAN PRINTING COMPANY, Fall River, Mass.
The word-symbol "CALCUTTA FANCIES." Used ten years.
Filed May 1, 1905. Serial No. 3,855. PUBLISHED JANUARY 2, 1906.

50,035. TONICS AND REMEDIES FOR DYSPEPSIA AND STOMACH TROUBLES. VICTOR E. BECK, New York, N. Y.
The representation of a three-leafed clover inclosed within two concentric circles and the word "VITALINE" between the circles.
Filed May 2, 1905. Serial No. 4,038. PUBLISHED AUGUST 15, 1905.

50,036. CONDENSED MILK. BORDEN'S CONDENSED MILK CO., New York, N. Y.
The words "FULL WEIGHT," associated with the word "BRAND." Used ten years.
Filed August 1, 1905. Serial No. 11,102. PUBLISHED JANUARY 2, 1906.

50,037. INSECT-POWDER. CAROH CHEMICAL COMPANY, Philadelphia, Pa.
The representation of the bust of a woman with her right hand uplifted, from which she is shaking or distributing powder from a box, all appearing on an elliptical panel, to the right and to the left of which, respectively, are shown four insects, comprising a beetle, bugs, roaches, ants, and a fly, with their heads turned away from the panel, and the word "KLEAN-M-OUT" above the panel.
Filed July 29, 1905. Serial No. 11,015. PUBLISHED JANUARY 2, 1906.

50,038. LAWN-MOWERS. ADELBERT B. CASE, Springfield, Mass.
The word "UNIVERSAL." Used ten years.
Filed May 11, 1905. Serial No. 5,105. PUBLISHED JANUARY 2, 1906.

50,039 CLOTH FOR BOOKBINDING PURPOSES. CEDRIC CHIVERS, New York, N. Y.
The word "DURABLINE."
Filed May 12, 1905. Serial No. 5,380. PUBLISHED JANUARY 2, 1906.

50,040. SHOE POLISHES AND BLACKINGS. FRANK E. FENNESSY, Boston, Mass.
The word "WAXOL."
Filed May 31, 1905. Serial No. 7,101. PUBLISHED JANUARY 2, 1906.

50,041. DISTILLED AND CARBONATED WATERS. FRANK M. FINLEY, Washington, D. C.
The letter "F" in a parallelogram or outline figure of a diamond.
Filed April 17, 1905. Serial No. 2,060. PUBLISHED JANUARY 2, 1906.

50,042. CHOCOLATE CONFECTIONS AND BONBONS. H. D. FOSS AND CO. INCORPORATED. Boston, Mass.
The representation of a fleur-de-lis.
Filed April 10, 1905. Serial No. 891. PUBLISHED JULY 11, 1905.

50,043. ASEPTIC PREPARATION. H. K. MULFORD COMPANY, Philadelphia, Pa.
The word "CORNUTOL."
Filed July 17, 1905. Serial No. 10,482. PUBLISHED JANUARY 2, 1906.

50,044. CANDY. GEORGE B. HAZARD, Providence, R. I.
The word "ANDERSON'S." Used ten years.
Filed August 4, 1905. Serial No. 11,272. PUBLISHED JANUARY 2, 1906.

50,045. OIL SHADE-CLOTH. HULSE BRADFORD CO., San Francisco, Cal.
The word or combination of letters "TATCHO."
Filed October 24, 1905. Serial No. 13,913. PUBLISHED JANUARY 2, 1906.

50,046. WHEAT-FLOUR. J. B. CAMORS & Co., New Orleans, La.
The word "PICKWICK."
Filed April 28, 1905. Serial No. 3,454. PUBLISHED JANUARY 2, 1906.

50,047. PILLS. LAMONT, CORLISS & Co., New York, N. Y.
The word "PILLIKIN."
Filed July 13, 1905. Serial No. 10,282. PUBLISHED JANUARY 2, 1906.

50,048. COFFEE. LEVERING COFFEE CO., Baltimore, Md.
The word "HUNTER" and the representation of a man in hunting costume mounted on horseback and inclosed in an oval-shaped frame.
Filed May 4, 1905. Serial No. 4,231. PUBLISHED JANUARY 2, 1906.

50,049. CORSETS. MARSHALL FIELD & COMPANY, Chicago, Ill.
The word "NOBLESSE."
Filed October 30, 1905. Serial No. 14,086. PUBLISHED JANUARY 2, 1906.

50,050. CANNED SALMON. JOSEPH G. MEGLER, Brookfield, Wash.
The name "ST. GEORGE'S BRAND," associated with a representation of St. George and the dragon within an oval border, the major axis of which is horizontal, and representations of the obverse and reverse of a medal of the "INTERNATIONAL FISHERIES EXHIBITION 1883," these words and figures appearing on the reverse, in connection with representations of a net, fishes, and an eel, and the obverse bearing the profile of Queen Victoria and the words "VICTORIA REGINA." The medal representations form circular figures at the respective ends of the major axis of the oval and partly overlap the oval border, and above them conventional representations of plumes project from the oval border. Used ten years.
Filed August 7, 1905. Serial No. 11,309. PUBLISHED JANUARY 2, 1906.

50,051. CANNED SALMON. JOSEPH G. MEGLER, Brookfield, Wash.
The word "MASCOT." Used ten years.

Filed August 7, 1905. Serial No. 11,310. PUBLISHED JANUARY 2,1906.

50,052. CANNED SALMON. JOSEPH G. MEGLER, Brookfield, Wash.

The name or brand "FORGET ME NOT."

Filed August 7, 1905. Serial No. 11,312. PUBLISHED JANUARY 2, 1906.

50,053. JELLY PREPARATION. MICHIGAN CARBON WORKS, Detroit, Mich.

The word "GELVET."

Filed June 10, 1905. Serial No. 7,853. PUBLISHED JANUARY 2, 1906.

50,054. MEDICINES FOR DISEASES OF THE LIVER. PEACOCK CHEMICAL CO., St. Louis, Mo.

The word "CHIONIA."

Filed May 22, 1905. Serial No. 6,312. PUBLISHED AUGUST 15, 1905.

50,055. HORSE-BLANKETS. WM. B. RILEY & CO., Philadelphia, Pa.

The fanciful title "STONE." Used ten years.

Filed June 13, 1905. Serial No. 8,010. PUBLISHED JANUARY 2, 1906.

50,056. SMOKED HERRING. SLADE GORTON & CO., Gloucester, Mass.

The word "MARINER" on a banner placed across a marine scene. The marine scene shows a portion of the rear of a vessel and the upper portion of a man in oil clothing with a hand on the wheel. The waves appear in the background.

Filed April 17, 1905. Serial No. 1,957. PUBLISHED JANUARY 2, 1906.

50,057. COFFEE. STEWART BROTHERS COMPANY, Omaha, Nebr.

The representation of a Wedgwood vase inclosed in a circle, in connection with which appears the word "WEDGWOOD." There is a wreath partially surrounding the circle and an ornamental scroll design extending from opposite sides of the wreath.

Filed November 18, 1905. Serial No. 14,797. PUBLISHED JANUARY 2, 1906.

50,058. SILK FABRICS. STEWART SILK COMPANY, Easton, Pa., and New York, N. Y.

The word "PUREDI."

Filed April 21, 1905. Serial No. 2,648. PUBLISHED JANUARY 2, 1906.

50,059. PREPARED CEREAL FOODS. THE AMERICAN CEREAL COMPANY, Akron, Ohio; Chicago, Ill., and Cedar Rapids, Iowa.

The word "ZEST."

Filed May 15, 1905. Serial No. 5,614. PUBLISHED DECEMBER 5, 1905.

50,060. CEREAL PASTE GOODS. THE JOHN B. CANEPA COMPANY, Chicago, Ill.

The representation of a red Greek cross.

Filed September 5, 1905. Serial No. 12,211. PUBLISHED OCTOBER 10, 1905.

50,061. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.

A design displaying at the center a dark ace of spades with a light line along its outer border and displaying over its surface a curved scroll, a few light dots, and three rosette-like figures. Around the ace of spades is a light heart-shaped band having dark dots at its apex and also at its lower end on each side of the prong of the ace figure. At the bottom is a ribbon-like scroll extending outward from the center and connecting, by a bow, sprays of leaves and buds, which extend upward on each side of the central figure. Near the top of the heart-shaped design is a horizontal band shown at each side, but hidden at the middle by the heart-shaped figure. Used ten years.

Filed May 11, 1905. Serial No. 5,011. PUBLISHED JANUARY 2, 1906.

50,062. CORSETS. THE WARNER BROS. CO., Bridgeport, Conn.

The word "WARNER'S." Used ten years.

Filed October 24, 1905. Serial No. 13,885. PUBLISHED JANUARY 2, 1906.

50,063. CORSETS. THE WARNER BROS. CO., Bridgeport. Conn.

The hyphenated word "RUST-PROOF." Used ten years.

Filed October 24, 1905. Serial No. 13,886. PUBLISHED JANUARY 2, 1906.

50,064. CORSETS. WEINGARTEN BROS., New York, N. Y.

The words "LA DAUPHINE."

Filed July 25, 1905. Serial No. 10,790. PUBLISHED JANUARY 2, 1906.

50,065. JAMS AND JELLIES. WILKINSON, GADDIS & CO., Newark, N. J.

The word "IDEAL."

Filed June 17, 1905. Serial No. 8,389. PUBLISHED JANUARY 2, 1906.

LABELS

REGISTERED FEBRUARY 27, 1906.

12,684.—*Title:* "PATRICIAN FRICTION POLISH." (For Shoe-Dressing.) FAUNCE & SPINNEY, Lynn, Mass. Filed December 8, 1905.

12,685.—*Title:* "HANDELSMAN'S MUNIFICENT MUTUAL BENEFIT TRADING SYSTEM." (For Pass-Books.) IKE HANDELSMAN, Lisbon, Ohio. Filed December 30, 1905.

12,686.—*Title:* "FERRO-CHINA-BASCAL." (For Bitters.) BASILEA & CALANDRA, New York, N. Y. Filed February 2, 1906.

12,687.—*Title:* "ALE OF GINGER." (For Ginger-Ale.) CHATTANOOGA BOTTLING COMPANY, Chattanooga, Tenn. Filed January 18, 1906.

12,688.—*Title:* "MACARONI BREAD." (For Bread.) JOHN S. NORMAN, Minneapolis, Minn. Filed December 22, 1905.

12,689.—*Title:* "PRIDE CROWN BRAND MEATS." (For Meats.) ALBERT R. WORM, Indianapolis, Ind. Filed December 23, 1905.

12,690.—*Title:* "ALEXANDER HAMILTON." (For Cigars.) GEORGE B. SAMUEL, Chicago, Ill. Filed January 17, 1906.

12,691.—*Title:* "ALKA-DENT." (For Dentifrice.) C. M. GRISWOLD, Chicago, Ill. Filed December 20, 1905.

12,692.—*Title:* "EAGLE BRAND." (For Hair-Restorative.) ELIZABETH REYNOLDS, Chicago, Ill. Filed December 5, 1905.

PRINTS

REGISTERED FEBRUARY 27, 1906.

1,582.—*Title:* "A STORMY DAY AT THE FLAT IRON BUILDING." (For Rubbers.) STAHL AND JAEGER, New York, N. Y. Filed January 30, 1906.

1,583.—*Title:* "PAIN KING." (For Liniment.) F. B. CLARK & COMPANY, Harrisburg, Pa. Filed August 30, 1905.

1,584.—*Title:* "MANDOLIN." (For Playing-Cards.) WILLIS W. RUSSELL CARD CO., New York, N. Y. Filed January 31, 1906.

1,585.—*Title:* "SABRE." (For Playing-Cards.) WILLIS W. RUSSELL CARD CO., New York, N. Y. Filed January 31, 1906.

1,586.—*Title:* "OAK." (For Playing-Cards.) WILLIS W. RUSSELL CARD CO., New York, N. Y. Filed January 31, 1906.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

EX PARTE DAVIDSON.

Decided December 13, 1905.

1. APPEAL—REJECTION FOR INOPERATIVENESS.

Where claims are rejected on the ground of inoperativeness, the applicant's remedy is by appeal to the Examiners-in-Chief and not by petition.

2. REJECTION FOR INOPERATIVENESS—AFFIDAVITS—JUDGMENT OF EXAMINER NOT CONTROLLED.

The Examiner is not bound to accept the conclusions stated in affidavits filed to overcome a rejection on the ground of inoperativeness, nor is he compelled to cite references and authorities, and his judgment will not be controlled on interlocutory petition.

ON PETITION.

OIL AND FEED-WATER SEPARATOR.

Messrs. C. A. Snow & Co. for the applicant.

ALLEN, *Commissioner:*

This is a petition from the action of the Primary Examiner rejecting claim 6 on the ground of inoperativeness.

The invention is an oil and feed-water separator, and claim 6 drawn thereto is held by the Examiner to cover an inoperative structure, because it rests upon the assumption that a solution of kerosene and cylinder-oil will stratify if allowed to stand. The Examiner holds that no such stratification will take place and refuses to change his opinion because of certain affidavits filed by the applicant. In this petition it is asked that the Examiner be instructed:

a. That an unsupported statement of theory by an Examiner is not a sufficient answer to facts established by affidavits and exhibits.

b. That in the absence of any references, or any valid objection, further delay in allowance of the application is unwarranted.

The question whether the affidavits and exhibits establish the supposed facts is a matter to be determined by the Examiner, and his judgment will not be controlled on interlocutory petition. He is not bound to accept the affidavits as proof unless he is satisfied of the truth of the allegations contained therein. He may reject the conclusion stated in the affidavits when those conclusions are contrary to well-known scientific laws or facts. In the present case the Examiner says that the allegation made in the claims and in the affidavits—

* * * involves a scientific impossibility and is a contradiction of the law of the diffusion of liquids mutually soluble in one another.

The Examiner has thus made his position clear, and it is not necessary for him to cite references or refer to authorities.

The petitioner's remedy is by appeal to the Examiners-in-Chief, and therefore this petition is dismissed.

EX PARTE GIRONCOLI.

Decided December 13, 1905.

ABANDONED APPLICATION—LONG DELAY—SATISFACTORY SHOWING REQUIRED.

A delay of four years in acting upon an application is not to be excused except upon the clearest and most satisfactory showing that it was unavoidable.

ON PETITION.

PROCESS OF PRESERVING MEAT.

Mr. Francis H. Richards for the applicant.

ALLEN, *Commissioner:*

This is a petition for a ruling that the above-entitled application is not abandoned notwithstanding the fact that no action has been taken by the applicant within the past four years.

It is alleged that the delay in acting was unavoidable, and in support thereof certain affidavits have been filed tending to show that the inventor was unwell, poor, and dependent upon others for assistance. The last action in the case was a decision by the Examiners-in-Chief on appeal, and it is alleged that the inventor was unable to raise the money necessary for a further appeal.

While the showing is such as might be accepted as a sufficient excuse for a short delay, it is not believed that it should be accepted as covering such a long period of time as has elapsed in this case. Where the delay is so long, the showing should be such as to leave no reasonable doubt of the fact that it was impossible for the inventor to proceed sooner. It is not sufficient to show that it was not convenient to proceed and that there were many difficulties in the way. The rights of the public must be taken into consideration in these cases, and it must be contemplated that others may have begun to use the invention and may have acquired rights which should not be disturbed. It is not believed that Congress contemplated that a delay of four years should be excused except upon the clearest proof.

The petition is denied.

EX PARTE RICHARDSON.

Decided December 14, 1905.

1. ABANDONED APPLICATION—ACTION NECESSARY BEFORE REVIVAL.

The question whether delay in acting upon a case was unavoidable can be determined only after action is taken, and therefore a petition not accompanied by an action must be denied.

2. SAME—INSUFFICIENT EXCUSE FOR DELAY—ERROR BY OFFICE.

Supposed error in the Examiner's action is no excuse for delay in responding beyond the year allowed by law.

ON PETITION.

SELF-FEEDING MATCH-BOX.

Mr. David P. Moore for the applicant.

ALLEN, *Commissioner:*

This is a petition from the ruling that the above-entitled application is abandoned.

No amendment or other action has been filed in the case since the last Office action and none accompanies this petition. The petition, furthermore, is not supported by an affidavit as to the facts supposed to excuse the delay in prosecution.

It is very clear that the question whether the delay in taking action upon the case was unavoidable can be determined only after the action is taken. This Office has no authority to revive a case upon which no action has been taken within one year, but merely has authority to determine after an action is taken whether the delay in presenting it was unavoidable.

It is urged by the attorney that this case should be revived because, in his opinion, the Examiner was wrong in rejecting the claims. It is well settled, however, that an error by the Office furnishes no justification for delay by the applicant beyond the period of one year allowed by statute. If such error justified delay, it would follow that an applicant may appeal from a decision at any time, since an appeal is taken because of the supposed errors in the decision.

The petition is denied.

EX PARTE KELLOGG.

Decided December 22, 1905.

1. CROSS-REFERENCE—APPLICATIONS BY DIFFERENT INVENTORS.
Where two applications filed by different inventors are owned by the same party and the assignee wishes to refer in one case to the other, *Held* that there is nothing in the rule that applications are preserved in secrecy which would make the reference improper.

2. SAME—DISCLOSURE OF INVENTION.
Reference should not be made in one application to another for a disclosure of a feature of the invention, since each application should be complete within itself.

ON PETITION.

CONTROLLING-SWITCHES FOR MOTOR-OPERATED DOORS.

Mr. Albert G. Davis for the applicant.

ALLEN, *Commissioner:*

This is a petition from the action of the Primary Examiner requiring the cancellation of a statement in the specification referring to an application for patent filed by another inventor.

It is alleged in the brief filed that the present applicant made an improvement upon the invention disclosed in the prior application mentioned, both parties being employed by the same company and each having knowledge of the work done by the other. Both applications are owned by the company which employs both inventors, and it is said that the statement to which objection has been made was inserted in this case for the purpose of clearness and to avoid any possible misunderstanding by this Office as to the proper lines to be drawn between the two cases.

The only objection made by the Examiner to the statement referring to the other application is that it is in violation of the requirement that applications be preserved in secrecy, as set forth in Rule 15. It is said that when this case becomes a patent the public will be informed of the pendency of the other application filed by a different party. While this is true, the only party entitled to complain is the owner of the invention and application mentioned. That owner has the right to remove the cloak of secrecy and disclose the invention to the public, since it was in his interest alone that the rule of secrecy was made. It must be held, therefore, that there is nothing in the rule of secrecy which prevents the reference in one application to another, provided the record clearly shows that the same party owns both and that the reference is made in his behalf.

Since no objection was made to the subject-matter included in the statement under consideration, it has been assumed in disposing of the case that the statement is otherwise unobjectionable. It is to be noted, however, that a party should not be permitted to refer to another application for a disclosure of an invention or of a feature. Each application must be complete within itself, and the reference to the other case is permissible only in connection with a statement sufficient in itself distinguishing between what is old and what is new in the matter disclosed. (Rule 36.)

The petition is granted.

EX PARTE SPRINGER.

Decided January 3, 1906.

APPEAL, INTERLOCUTORY—ABANDONMENT OF APPLICATION REVIEWABLE UPON.

The question of abandonment of an application for failure to prosecute is one which is reviewable by the Commissioner on petition under Rule 145 and is not appealable to the Examiners-in-Chief. Abandonment of an application must be distinguished from abandonment of invention.

ON PETITION.

DEVICE FOR THE RECORDING OF SPEECH.

Mr. Ruter W. Springer pro se.

ALLEN, *Commissioner:*

This is a petition for review and reversal of the Examiner's action refusing to forward to the Examiners-in-Chief an appeal from the Examiner's ruling that the application was abandoned by failure to prosecute it.

The question of abandonment of an application is reviewable on petition under Rule 145 and not on appeal to the Examiners-in-Chief under Rule 133. The question of abandonment which is appealable under Rule 133 is abandonment of the invention disclosed and claimed in the application and not abandonment of the application.

The Examiner was right in refusing to forward the appeal, and therefore the petition is denied.

RIKER *v.* LAW.

Decided January 3, 1906.

PRACTICE UNDER RULE 105—SUFFICIENCY OF COPY TO BE DETERMINED BY PRIMARY EXAMINER—HEARING TO PARTIES.

Where a party files a copy of portions of his application for use in interference proceedings in an attempt to comply with Rule 105, the question of the sufficiency of the copy is a matter to be determined by the Primary Examiner in the first instance. In determining this question the Primary Examiner should fix a day upon which the parties may be heard and should render a decision upon the matter in issue.

ON PETITION.

SPEED-CHANGING MECHANISM.

Mr. Frederick L. Emery for Riker.

Mr. Hermann F. Cuntz and *Messrs. Sturtevant & Greeley* for Law.

ALLEN, *Commissioner:*

This is a petition by Riker that the party Law be required to place in the interference record his entire application or a certified copy of all parts, including amendments and letters relating to the subject-matter in interference.

It appears that Law has filed a copy of portions of his application for use in the interference in supposed compliance with Rule 105; but Riker regards that copy as insufficient. Riker is entitled to see those parts of the proceedings relating to the subject-matter of the interference; but the question whether the copy furnished by Law is sufficient for that purpose is a matter which should be considered by the Primary Examiner in the first instance.

Proceedings are suspended, and the case is remanded to the Primary Examiner for action. He should fix a day upon which the parties may be heard and should render a decision upon the matter in issue.

To this extent the petition is granted.

EX PARTE WARREN.

Decided January 4, 1906.

APPEAL TO EXAMINERS-IN-CHIEF—FORWARDING—FORMAL OBJECTIONS NOT OVERCOME.

Where an appeal to the Examiners-in-Chief is filed in a case in which one of the appealed claims had been objected to on the ground that it attempted to define the article by the process of making it, it is not necessary to remove the objection before forwarding the appeal, as the objection is one that can be properly considered by the Examiners-in-Chief with the other questions of patentability.

ON PETITION.

BRUSHES.

Mr. Fred L. Chappell for the applicant.

ALLEN, *Commissioner:*

This is a petition from the Examiner's action refusing to forward an appeal to the Examiners-in-Chief filed April 26, 1905, on the ground that the application is abandoned.

The appeal was filed within one year after the Examiner's action finally rejecting the claims; but it appears that the letter of final rejection included a criticism of claim 3, which the Examiner holds should have been avoided before appeal. He therefore rules that the appeal was not such action as the condition of the case required.

The criticism of claim 3 was to the effect that it sought to define an article of manufacture by a statement of the process of making it. The matter seems to be one which may be considered properly by the Examiners-in-Chief in connection with the other questions of patentability.

The petition is granted.

EX PARTE GWINN BROS. & CO.

Decided January 4, 1906.

TRADE-MARK—ASSOCIATED REPRESENTATIONS OF ANCHOR AND SEA-MONSTER—ANTICIPATION.

A trade-mark consisting of the representation of a sea-monster associated with an anchor represented as standing vertically upon its point and having the head of the sea-monster protruding from between the anchor-arms and the body of the sea-monster entwined spirally about the shank of the anchor *Held* not registrable in view of the prior registration of a trade-mark consisting of an anchor and the arbitrarily-selected word "Anchor" placed across said representation.

ON APPEAL.

TRADE-MARK FOR WHEAT-FLOUR.

Mr. W. H. Wills and *Mr. C. T. Belt* for the appellants.

ALLEN, *Commissioner:*

This is an appeal from the decision of the Examiner of Trade-Marks refusing to register a mark described as follows:

> Our trade-mark consists of the representation of a sea-monster associated with an anchor represented as standing vertically upon its point and having the head of the sea-monster protruding from between the anchor-arms, and the body of the sea-monster entwined spirally about the shank of the anchor.

The ground of refusal is that this mark so nearly resembles a registered mark as to cause confusion. The mark referred to is that of D. & A. Luckenbach, No. 16,670, June 4, 1889, which is said to be used upon goods of the same character as the appellants'. It is said in this registration:

> The trade-mark consists of the representation of an anchor and the arbitrarily-selected word "Anchor" placed across said representation.

Both marks therefore include a representation of an anchor.

In connection with this appeal a paper has been filed, saying:

> Your orator, the associate attorney, having been engaged to answer this appeal, finds the description or claim appealed not to be a true and correct description of application. It fails to identify the Aldine device.

The same paper includes a proposed amendment to the application seeking to avoid the reference cited. It is clear that such amendment should be considered, if at all, by the Examiner in the first instance.

It is held that the Examiner was right in refusing registration of the case as presented, and therefore his decision must be affirmed. If he concludes that the proposed amendment avoids the reference cited, he is at liberty to enter it and act upon the case in view thereof.

The decision of the Examiner is affirmed.

EX PARTE SINDINGCHRISTENSEN.

Decided January 4, 1906.

REJECTION—AGGREGATION CLAIMS—SEPARATE FEATURES MAY BE FOUND IN DIFFERENT REFERENCES.

Where claims are considered to be aggregations, it is not necessary to a valid rejection thereof that all the features specified in the claims shall be found in a single reference. A rejection for lack of patentable novelty in view of the prior art calls for a general view of the prior art. This general view can be obtained only by looking at each reference cited in the light of the disclosure contained in the other references. It is the knowledge of the public derived not from one patent alone, but from all which negatives patentable novelty in any case.

ON PETITION.

APPARATUS FOR ELECTRIC LIGHTING.

Mr. Burnham C. Stickney for the applicant.

ALLEN, *Commissioner:*

This is a petition that the Examiner be instructed to withdraw his final rejection of June 26, 1905, and explain more fully his position in regard to the references cited.

It appears that after several letters of rejection by the Examiner and amendments and arguments by the applicant the Examiner wrote an eight-page letter on May 20, 1903, explaining fully his views as to the main features of the applicant's supposed invention and the reasons why those features were regarded as lacking in patentable novelty. Thereafter the applicant filed communications containing numerous questions in regard to the numerous references. Those questions dealt with each reference sep-

arately and purported to seek an explanation wherein that particular reference disclosed certain elements of an alleged combination. The Examiner replied that it was unnecessary to answer these questions in detail, since they were irrelevant, and to discuss them would obscure rather than make clear the issue. He further said:

It has never been pretended that the Office had any one reference showing all of the features claimed, and it has been necessary to "piece together several patents in order to reject claims" for the reason that the claims so rejected were obviously and clearly the results of a piecing together of the features of the references, involving clearly nothing further than aggregations of these features.

The applicant seems to think that the Examiner has not made his position clear merely because he has not pointed out wherein a single reference anticipates the claims, although, as pointed out in the above quotation, the Examiner has never taken the position that there is such anticipation by a single reference. In his argument the applicant seems to have overlooked the fact that a rejection for lack of patentable novelty in view of the prior art calls for a general view of the prior art and that this general view can be obtained only by looking at each reference cited in the light of the disclosure contained in the other references. It is the knowledge of the public derived not from one patent alone, but from all, which negatives patentable novelty in any case.

Although the Examiner has not answered specifically all of the questions asked, he has made his position clear, and therefore this petition is denied.

DECISIONS OF THE U. S. COURTS.

Court of Appeals of the District of Columbia.

IN RE THOMSON.

Decided January 4, 1906.

1. PATENTABILITY—AFFIDAVITS.

Held that affidavits going to show the practical success of the applicant's device where the truth thereof is substantially conceded are entitled to material weight in view of the fact that the grant of a patent confers no absolute right of property and in view of the customary rule of resolving ordinary doubts in favor of applicants.

2. SAME—POPULARITY CONSEQUENTIAL ONLY WHEN NOVELTY IS IN DOUBT.

A patent should not be granted merely because a device or combination may possess great advantages, thereby bringing it into immediate use, as it is only when the question of novelty is in doubt that the fact that the device has gone into commercial use, displacing others employed for a like purpose or supplying the place of others whose intrinsic defects have prevented their general adoption and use, is sufficient to turn the scale in favor of invention. (*Potts* v. *Creager*, 155 U. S., 597, 609.)

3. SAME—COMBINATION—PRIOR COMBINATION DIFFERENT.

Where the applicant claimed a combination of old elements and a reference shows a combination which is intended for a different use and which involves differences of operation and one of the elements shown in the reference is different from the corresponding element in the applicant's device, *Held* that a patent should not necessarily be refused on account of such reference.

4. SAME—SAME—SAME.

Where a prior combination cited against the combination claimed includes elements in addition to those used by the applicant which result in differences in operation undesirable for the purposes of the applicant's device and one of the elements of the prior combination is different from the corresponding element of the applicant's combination, *Held* that a patent should not necessarily be refused on account of the prior combination.

5. SAME—RESOLVING DOUBTS.

Where there was doubt as to the sufficiency of the references and the applicant demonstrated that he had produced an apparatus of great utility, *Held* that the doubt should be resolved in favor of the applicant's claim.

6. PATENTS—EFFECT OF GRANT.

By the grant of a patent a patentee is merely put in a position to assert his *prima facie* right against infringers who may in their defense raise the question of the validity of the patent and have the same finally adjudicated in the light of a full presentation and consideration of all the evidence attainable in respect of anticipation, prior knowledge, use, and the like.

Mr. F. P. Warfield, *Mr. H. S. Duell*, *Mr. R. S. Blair*, *Mr. A. F. Nathan*, and *Mr. C. H. Wilson* for the appellant.

Mr. J. M. Coit for the Commissioner of Patents.

SHEPARD, *J.*:

This is an appeal from a decision of the Commissioner of Patents rejecting an application for a patent for an improvement in lighting systems.

The consideration of the merits of the applicant's alleged novel combination was embarrassed, and possibly prejudiced, by the great number of claims presented and insisted upon throughout the proceedings in the Patent Office. On this appeal, the applicant has abandoned all of his twenty-one claims except the four following:

3. In combination, a shunt-wound generator having serially included in its field-circuit a plurality of contacting electrodes and positively-acting electromagnetic means controlled by the current output of the generator for varying the pressure with which said electrodes contact.

13. In a car-axle lighting system, in combination, a dynamo adapted to be driven from a car-axle, said dynamo having a single field-circuit shunt-wound from the main circuit, a variable-resistance device included in said field-circuit, said device embodying a material whose resistance varies with pressure, a controlling device in series with the main circuit of the dynamo, said controlling device adapted to be operated by variations of current in said main circuit, and connections from said controlling device for varying the pressure on said resistance device.

17. In a car-axle lighting system, in combination, a dynamo adapted to be driven from a car-axle, said dynamo having a field-circuit shunt-wound from the main circuit, a series of carbon disks interposed in said field-circuit, a controlling device adapted to be actuated by variations in current in the main circuit of the dynamo and in series therewith, a connection between said controlling device and said disks such that pressure on said disks is decreased as the current in the main circuit increases, and a spring acting upon said disks in opposition to said controlling device to increase the pressure thereon.

20. In a car-axle lighting system, in combination, a dynamo adapted to be driven from a car-axle, said dynamo having a field-circuit shunt-wound from the main circuit, a series of carbon disks included in said field-circuit, a solenoid in series with the main circuit of the dynamo and independent of the field-circuit, a connection between the plunger of said solenoid and said disks such that the pressure upon said disks is decreased as the current in the main circuit increases, and a spring adapted to act upon said disks to increase the pressure thereon in opposition to said solenoid.

In rejecting the series of claims, the tribunals of the Patent Office referred to a number of patents, the most important of which are: Weston, No. 292,715, of January 29, 1884; Moskowitz, No. 626,713, of June 13, 1899; and Creveling, No. 688,394, of December 10, 1901.

The object sought to be accomplished by the combination of the application is a practical and effective system of electrical lighting for railway-cars, and there is no doubt of the great and urgent demand for such a system.

Two systems of electrical car-lighting have heretofore been in use. In the first of these, cumbersome storage batteries have been used in the cars which must be charged from time to time. This involves labor, loss of time, and expense, practically confining the use to comparatively short trips, and apparently preventing general adoption. The second system, which it seems has been as little used as the first, is operated by a generator driven from the locomotive. This involves a complicated system of connections rendering the installation and maintenance expensive and otherwise unsatisfactory. On account of these objections, systems of electrical car-lighting have not gone into anything like general use on the principal railways of the country. The general conclusion of practical railway

managers, it seems, has been, that for practical use each car must be made to generate its own current through the power furnished by its own axles when in motion. In such a system the storage battery is a necessary accessory in order to maintain the light when the car is at rest. The difficulty with such a system lies in the variable speed of the cars through which the current is increased or diminished, thereby seriously affecting the character of the light furnished. The object of the invention, as claimed, is to overcome this difficulty through a combination the dominant features of which consist in the character of the variable-resistance device used as a means for controlling the shunt-circuit of the generator, and the relation of this variable-resistance device to the shunt-circuit and to the current output of the dynamo.

Before the final hearing before the Commissioner, affidavits were received and filed, showing that a full-sized apparatus, constructed in accordance with the specifications and claims of the application, had been installed in a car on the New York Central Railroad in October 1904; and that said car had been run daily, from that time until the date of the affidavits, between New York and Troy, a distance of three hundred miles. It was further shown, that during the entire period the apparatus had worked in a satisfactory manner completely demonstrating its practical efficiency.

The applicant does not claim the invention of any distinctly new element, but a combination of elements which mutually coact and interact to produce a new result—not the mere sum of the results of individual, or separate use, but a result due to their conjoint use in the course of which they mutually affect one another through their peculiar adaptation for use one with another.

The tribunals in the Patent Office, while admitting the manifest advantages of the applicant's combination system over others, deny the claim aforesaid. Based on the references to existing patents, their conclusion was, substantially, that the various devices of the combination are old; that the resulting advantages are inherent in the several devices themselves; and that their operation and value are matters of common knowledge to be availed of by mechanical, electrical skill.

Their conclusion, however, is not made so clear to our minds by the discussion of the references as it appears to have been to their own.

The Weston patent, on which great stress is laid, shows an ordinary lighting system. Referring to this the Examiners-in-Chief say of the applicant:

He created no new situation except in the limited sense that he has applied carbon resistance to the old Weston system, which is practically identical with the applicant's system except in the use of a different form of variable resistance.

We are not prepared to accept this view of the identity of the two systems as broadly stated. It is true that Weston, whose system was intended for a different use from that of the applicant, shows a shunt-wound generator with a variable resistance in its field-circuit, apparently designed to regulate the positions of the carbons of a series of arc-lamps as illustrated by the drawings.

The resistance devices of the two systems are admitted to be different. There is, however, another important difference in that applicant's device, through pressure resistance in the shunt-field of the generator, exercises control from or upon the main current or output of the dynamo which is essential to the successful operation of his system.

It was further said, in rejecting the application, that Creveling's system shows the features of the applicant's, except in respect of the particular type of the variable resistance, and would operate in the same way by the transfer thereto of the variable resistance device of Moskowitz's patent. This involves the elimination of certain features of Creveling not found in applicant's combination. Bearing in mind that the applicant expressly disclaims the invention of any distinctly new element in his combination, and without analyzing the other features referred to, the foregoing proposition may be conceded to be correct in a very general sense. As before stated, applicant's contention is that he has combined old elements, changing and adapting them in such a way as to produce a new and useful result, indicating the exercise of inventive talent, rather than of the mechanical skill of an expert electrician.

Granting a general similarity of construction and purpose in other resistance devices, it has not been denied that they operate with what has been called a "step-by-step" action, tending to produce a partial and jerking regulation, whereby, through frequent increase or diminution of current, small changes would result in great variations in the brilliancy of the series of lamps. As pointed out by the applicant, with all of these old resistance devices, a considerable movement of the armature of the controlling-magnet is necessary to effect regulation—a movement which results either in bringing the armature closer to the magnet, in a position to be more strongly affected thereby, or in permitting the armature to move farther away, with the opposite effect. If then, the magnet or solenoid be of constant strength it would have a stronger pull upon the armature or plunger owing to its being brought so much nearer thereto, or weaker owing to its being so much farther removed. And this is independent of any increase in attraction due to rise of current and results, upon the armature moving toward the magnet, in an excessive pull thereupon and consequent increase in the field-circuit beyond that contemplated by the regulating system employed. On the other hand, it is claimed that in the apparatus of the applicant, no such error can arise, because there is an insignificant, almost inappreciable movement in accomplishing the regulation, by which the armature does not, necessarily, materially approach or recede from the magnet. This nicely-adjusted continuous variation of resistance, with its consequent elimination of flickering in the lamps, would be valueless if the potential or voltage coil be used with an introduction of current changes compared with which those due to a step-by-step resistance would be insignificant.

There is a special adaptation of this pressure resistance in the shunt-field whereby the current is maintained substantially uniform for use with a controlling device directly affected by the current; that is to say, there is a special adaptation of this control direct from the current for use with a resistance device of this type. If this supersensitive variable-resistance device be controlled by any indirect factor, as voltage, for example, which would necessarily introduce errors into the regulation, this very sensitiveness would multiply the effect of such errors and render the system a useless one. Therefore, to use the sensitive pressure-controlled resistance to produce the requisite even brilliancy of the lamps, it is essential that the same be acted upon directly by the factor upon which this brilliancy depends, namely, the current.

Instancing the difficulties and failures of other systems of car-lighting, the urgent demand for a new and improved one, relieved of those difficulties, and the failure of skilled electricians, working in the same field, to satisfy that demand, the applicant contends that his adaptation of former devices in a new combination, obtaining thereby a new and satisfactory result, passes beyond the boundary of mechanical skill and attains the dignity of invention.

Between these opposing contentions we must confess some doubt as to which is the correct one.

In case of ordinary doubt, the policy of the patent system, as customarily maintained in the Patent Office, has been to give the applicant the benefit thereof, because no absolute right of property is conferred by the grant of a patent. (*Ex parte Fanshawe*, C. D., 1891, 203.) The patentee is merely put in a position to assert his *prima facie* right against infringers who may, in their defense, raise the question of the validity of the patent, and have the same finally adjudicated in the light of a full presentation and consideration of all the evidence attainable in respect of anticipation, prior knowledge, use, and the like.

In view of these considerations, the testimony going to show the practical success of the applicant's combination, the truth of which is substantially conceded, is entitled to material weight. Owing to the very serious difficulties, which appear to have been successfully overcome by the applicant, other electrical train-lighting systems have not gone into general use. The demand for an improved system has been an urgent one for years, and yet no other inventor, or electrical expert, with all the knowledge afforded by prior patents and constructions, has succeeded in devising a system answering this demand.

Now that it has succeeded [as said by Mr. Justice Bradley] it may seem very plain to any one that he could have done it as well. This is often the case with inventions of the greatest merit. It may be laid down as a general rule, though perhaps not an invariable one, that if a new combination and arrangement of known elements produce a new and useful result never attained before, it is evidence of invention. (*Loom Co.* v. *Higgins*, 105 U. S., 580, 591.)

We are, of course, not to be understood as maintaining that, merely because a device or combination may possess great advantages over others, thereby bringing it into immediate general use, a patent should, therefore, be granted for it as an invention. The fact is important only in those instances where, irrespective of it, the question of novelty remains in doubt. It is only when the question of novelty is in doubt, that the fact that the device has gone into commercial use, displacing others employed for a like purpose, or supplying the place of others whose intrinsic defects have prevented their general adoption and use, is sufficient to turn the scale in favor of invention. (*Potts* v. *Creager* 155 U. S., 597, 609.)

Entertaining such a doubt in this case, we think it just, and in accordance with precedent, that the applicant's demonstrated success in producing an apparatus of great utility, ought to resolve that doubt in favor of his claim. (*Cleveland Foundry Co.* v. *Kauffman*, 135 Fed. Rep., C. C. A., 360, 362.)

For these reasons, the decision will be reversed as to the four claims recited, and this decision will be certified to the Commissioner of Patents as the law directs. Reversed.

Ruling of Cuban Government Relative to International Registration of Trade-Marks.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., February 17, 1906.

This Office has received, through the Department of State, a copy of the following ruling by the Cuban Government in regard to its enforcement of the Madrid arrangement of April 14, 1891, relative to the international registration of trade-marks.

F. I. ALLEN,
Commissioner.

[Inclosure to Despatch No. 1,453.]

(Translation.)

DEPARTMENT OF AGRICULTURE, INDUSTRY AND COMMERCE.

Ruling.—For the enforcement of the Madrid arrangement of April 14, 1891, relative to the international registration of trade-marks.

I. Any private or legal person in lawful possession of a trade-mark duly registered in his name in the proper office of the Department of Agriculture, Industry and Commerce may, as provided for in the arrangement of April 14, 1891, concerning the international registration of trade-marks, promulgated in the *Official Gazette* of December 27, 1904, obtain protection for such trade-mark in the subscribing states and in any state that may in future subscribe to the said arrangement by the compliance with the formalities called for in this ruling.

II. Parties concerned shall make written application, over their own signature or that of a properly-authorized person, to the Secretary of Agriculture, Industry and Commerce, in which shall be detailed the name and surname of the applicant, his nationality, the place where he has his establishment, the number and date of his certificate of registration in Cuba, of the mark or marks for which international registration is sought and the product or article that each mark is for.

III. Said application must be accompanied by:

a. An engraving or typographical cut of each mark so that it may be printed in black in the official periodical of the International Office. These cuts must exactly reproduce the mark just as it was when granted and in such manner that all details will be visible. It should not be less than fifteen millimeters nor more than ten centimeters in either length or breadth. The exact thickness of the cut should be twenty-four millimeters, the same as the height of printing-type.

b. Three sample typographical reproductions on white paper of the cut demanded in the preceding paragraph.

c. When it is urged that the distinguishing feature of a mark is its color the applicant shall be obliged to so declare accompanying his application with a description in which the color is mentioned and inclosing forty-two samples of the said mark in color.

d. A postal money-order or check for 100 francs in the case of a single mark and of fifty francs additional for each mark whose registration is sought at the same time by the same owner, the order or check to be in favor of the "International Bureau of Industrial Property, Berne."

e. An authorized power of attorney when the application is made by proxy.

f. The official receipt showing that the Government tax of $5.00 official money, provided for by Article VIII of the arrangement of April 14, above mentioned, has been paid in the collector's office of the proper fiscal zone.

IV. Requests for registration sent to the International Office will be placed in the respective files of the archives of national marks and in turn, the international registration having been effected, given the number of such registration.

V. Trespass on trade-mark property and any alteration trade-marks may suffer shall be communicated officially by those in charge of the national files to the official in charge of international marks and by him in turn to the International Office at Berne as provided for and according to the said arrangement and this ruling.

VI. The Department of Agriculture, Industry and Commerce shall immediately transmit to interested parties all news received by the International Office relating to their marks and will also inform them of the refusal of any of the subscribing nations to protect their marks.

VII. Six months before the expiration of the term of protection in this Republic the Secretary of Agriculture, Industry and Commerce will advise the owners of internationally-registered Cuban marks that in order to continue the international registration in force, as provided by Article VI of the arrangement of April 14th, 1891, they must take steps to again register their national marks.

VIII. The terms of the foregoing article in no wise affect the dispositions of Articles VI and VII of the said arrangement so far as they concern the duration of the international registration which shall remain in force during the entire time that the national registration of the mark is effective.

IX. To renew the international registration at the expiration of its twenty-year term, the same formalities must be observed as if a mark were being so registered for the first time, excepting the cut which it will be unnecessary to furnish.

XI. In order to give publicity to international marks an album of internationally-registered marks may be consulted by the public in the Department of Agriculture, Industry and Commerce during office hours.

HAVANA, *October 28, 1905.*

T. ESTRADE PALMA.

GABRIEL CASUSO,
Secretary of Agriculture, Industry and Commerce.

Which, by order of the Secretary, shall be published in the *Official Gazette* so that it may be generally known, and shall be enforced from the tenth day after its publication.

FRANCISCO I. DE VILDOSOLA,
Assistant Secretary.

HAVANA, *January 15, 1906.*

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AND OF

UNITED STATES COURTS

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DIGEST OF DECISIONS

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DIGEST OF DECISIONS.

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ABANDONED APPLICATIONS.

1. LONG DELAY—SATISFACTORY SHOWING REQUIRED.
A delay of four years in acting upon an application is not to be excused except upon the clearest and most satisfactory showing that it was unavoidable. [*Ex parte* Gironcoli, 2753.

2. ACTION NECESSARY BEFORE REVIVAL.
The question whether delay in acting upon a case was unavoidable can be determined only after action is taken, and therefore a petition not accompanied by an action must be denied. [*Ex parte* Richardson, 2753.

3. INSUFFICIENT EXCUSE FOR DELAY—ERROR BY OFFICE.
Supposed error in the Examiner's action is no excuse for delay in responding beyond the year allowed by law. [Id.

ABANDONMENT OF APPLICATIONS.

(See Prosecution of Application by Assignee; Trade-Marks, 5, 6, 7, 8.)

1. FAILURE TO PROSECUTE—SUFFICIENCY OF AMENDMENT.
Where certain formal objections are raised and the claims are finally rejected, an amendment curing the formal objections will not save the case from abandonment, even though by curing the formal objections the scope of the claims is changed. A final rejection must be met by an appeal and not by an amendment changing the scope of the claims.
[*Ex parte* Walton, 659.

2. SAME—APPLICANT BOUND BY ACTS OF ATTORNEY.
Where applicant's attorneys place the case in condition for final action and final action is given, the applicant cannot secure an extension of the time allowed by law by revoking the power of attorney and filing a request for further explanation, even though such request is filed within the year.
[*Ex parte* Cazin, 660.

3. REVIEW OF FORMER COMMISSIONER'S DECISION—ALLEGATION OF FRAUD BY APPLICANT.
The question of abandonment of an application decided by a former Commissioner will not be reviewed except upon a clear and satisfactory showing that the Commissioner was misled by the applicant as to the facts, and mere *ex parte* affidavits cannot be regarded as such showing. [Kinsman *v.* Strohm, 2127.

4. APPEAL, INTERLOCUTORY—REVIEWABLE UPON APPEAL.
The question of abandonment of an application for failure to prosecute is one which is reviewable by the Commissioner on petition under Rule 145 and is not appealable to the Examiners-in-Chief. Abandonment of an application must be distinguished from abandonment of invention.
[*Ex parte* Springer, 2754.

ACCESS TO PENDING APPLICATIONS.

PATENT AND APPLICATION.
Where a patent is granted containing the statement that it is a continuation *in part* of a prior application, access to such prior application will not be granted to strangers without a proper showing of interest and without giving the applicant an opportunity to oppose such action, particularly where such prior application is still pending, and it appears that its subject-matter is not identical with that of the patent.
[*Ex parte* Wixford, 1166.

ACTS OF 1881 AND 1905.

(See Trade-Marks, 24, 25.)

ACTS OF 1881 AND 1905 COMPARED.
The act of 1905 contains the same provisions and has the same meaning as the act of 1881 in so far as the limitation to goods of substantially the same descriptive properties is concerned.
[*Ex parte* A. G. Spalding & Bros., 325.

AFFIDAVITS.

(See Abandonment of Applications, 2; Examination of Applications, 3; Invention, 4; Reopening of Rejected Cases, 2.)

AFFIDAVIT UNDER RULE 75.

(See Reopening of Rejected Cases, 1.)

NOT ADMITTED AFTER FINAL REJECTION.
After a claim has been finally rejected on several references an antedating affidavit under Rule 75 tending to overcome one of the references cannot be admitted. [*Ex parte* Berg, 903.

AGGREGATION.

(See Rejection of Claims, 2.)

AMBIGUOUS TERMS.

(See Claims, 2, 5.)

AMENDMENT AFTER FINAL REJECTION.

SHOWING REQUIRED.
The statement of the attorney that the subject-matter of a proposed amendment filed after final rejection was not earlier called to his attention by the inventor is not a sufficient showing upon which to admit the amendment.
[*Ex parte* Schrader, 2127.

AMENDMENTS.

(See Abandonment of Applications, 1; Amendment After Final Rejection; Interference, 28; Trade-Marks, 3, 24, 25.)

AMENDMENT TO PRELIMINARY STATEMENTS.

(See Priority of Invention, 1.)

INTERFERENCE—APPEAL ON PRIORITY.
A motion to amend a preliminary statement to correct the inadvertent use of the word "model" instead of the words "full-sized machine" will not be granted where it is found that the device referred to as the "full-sized machine" does not disclose the issue. [Parkes *v.* Lewis, 323.

ANCILLARY QUESTIONS.

(See Interference, 26.)

ANTICIPATION.

(See Invention, 3; Trade-Marks, 9, 34.)

APPEAL.

(See Appeal to the Commissioner of Patents; Appeal to the Examiners-in-Chief; Interference, 8, 9; Limit of Appeal; Motion to Dissolve Interference, 8, 10, 12.)

APPEAL FROM THE EXAMINERS-IN-CHIEF.

(See Motion to Dissolve Interference, 1.)

APPEAL FROM FAVORABLE DECISION.

(See Interference, 15.)

APPEAL TO THE COMMISSIONER OF PATENTS.

(See Interference, 14, 15; Motion to Dissolve Interference, 1; Supervisory Authority of the Secretary of the Interior Over the Commissioner of Patents.)

INTERFERENCE—APPEAL OR MOTION [illegible]

3. PRACTICE ANALOGOUS TO THAT APPLIED TO DIVISIONAL APPLICATIONS.
It is the uniform custom of the Office to apply to divisional applications assignments of the original cases, and no good reason is seen why the same practice should not be applied [illegible]

COMMISSIONER OF PATENTS.

(See Interference, 13, 20, 21.)

DESCRIPTION.

(See Design, 1; Examination of

APPEAL TO THE COMMISSIONER OF PATENTS.

(See Interference, 14, 15; Motion to Dissolve Interference, 1; Supervisory Authority of the Secretary of the Interior Over the Commissioner of Patents.)

INTERFERENCE—APPEAL ON MOTION TO DISSOLVE—NON-APPEALABLE QUESTIONS RAISED.
Concerning an appeal taken to the Commissioner from a decision of the Primary Examiner denying a motion to dissolve an interference, *Held* that the appeal to the Commissioner, though alleging the appealable questions of interference in fact and irregularity in declaration, was one attempting to raise by indirection the non-appealable question of an opponent's right to make certain claims. [†Blackmore *v.* Hall, 1477.

APPEAL TO THE COURT OF APPEALS OF THE DISTRICT OF COLUMBIA.

(See Trade-Marks, 24.)

APPEAL TO THE EXAMINERS-IN-CHIEF.

(See Abandonment of Applications, 4; Claims, 3; Motion to Dissolve Interference, 1; Rejection of Claims, 1.)

1. APPEAL AFTER EXPIRATION OF LIMIT OF APPEAL—VERIFIED SHOWING.
A petition to extend the limit of appeal to include an appeal filed after the expiration thereof must be supported by a verified showing in excuse for the delay. (*Ex parte Kleitzker* and *Gessel* v. *Dodson*, 109 O. G., 1336.) [Autenrieth and Kane *v.* Sorensen, 2126.

2. FORWARDING—FORMAL OBJECTIONS NOT OVERCOME.
Where an appeal to the Examiners-in-Chief is filed in a case in which one of the appealed claims had been objected to on the ground that it attempted to define the article by the process of making it, it is not necessary to remove the objection before forwarding the appeal, as the objection is one that can be properly considered by the Examiners-in-Chief with the other questions of patentability. [*Ex parte* Warren, 2755.

APPLICANT AND PATENTEE.

(See Interference, 19.)

APPLICATIONS.

(Abandoned Applications; Abandonment of Applications; Access to Pending Applications; Applications by Different Inventors, Same Assignee; Assignments, 1; Examination of Applications; Invention; Priority of Invention, 5; Prosecution of Application by Assignee; Reissue; Rejection of Claims; Trade-Marks, 2, 3, 4, 5, 6, 7, 8.)

APPLICATIONS BY DIFFERENT INVENTORS, SAME ASSIGNEE.

1. CROSS-REFERENCE—APPLICATIONS BY DIFFERENT INVENTORS.
Where two applications filed by different inventors are owned by the same party and the assignee wishes to refer in one case to the other, *Held* that there is nothing in the rule that applications are preserved in secrecy which would make the reference improper. [*Ex parte* Kellogg, 2754.

2. SAME—DISCLOSURE OF INVENTION.
Reference should not be made in one application to another for a disclosure of a feature of the invention, since each application should be complete within itself. [Id.

ASSIGNEES.

(See Applications by Different Inventors, Same Assignee; Assignments, 2, 4; Interference, 33; Prosecution of Application by Assignee.)

ASSIGNMENTS.

1. IDENTIFICATION BY DATE OF EXECUTION OF APPLICATION.
An assignment does not identify an application with certainty where it alleges that such application was executed November 9, 1904, but the notary's certificate attached to the application bears the date of November 9, 1890. [*Ex parte* Wurts, 2441.

2. IDENTIFICATION OF INVENTION BY REFERENCE TO CAVEAT.
An assignment executed by an inventor transferring his entire interest in certain inventions disclosed in a caveat filed in the Patent Office, identifying such caveat by date of filing and subject-matter, and requesting that the patent upon the application "which I am about to make" issue to the assignee, identifies an application subsequently filed sufficiently to warrant its recognition by the Office where it is found that the subject-matter of the caveat corresponds to that of the application. [Id.

3. PRACTICE ANALOGOUS TO THAT APPLIED TO DIVISIONAL APPLICATIONS.
It is the uniform custom of the Office to apply to divisional applications assignments of the original cases, and no good reason is seen why the same practice should not be applied to caveats and subsequent applications for the same subject-matter. [Id.

4. TWO ASSIGNMENTS OF SAME INVENTOR—FIRST ASSIGNEE RECOGNIZED.
Where an inventor assigns his entire invention to another, identifying the invention by reference to a caveat filed in the Patent Office, and requests that the patent which may be issued on an application which he is "about to make" be issued to the assignee, and subsequently makes another assignment of the same invention similar to the first, except that he identifies the invention by referring to the date of execution of the application, the first assignee is entitled to prosecute the application and receive the patent, as the first assignment, as well as the second, conveys the legal title. [Id.

ATTORNEYS.

(See Abandonment of Applications, 2; Amendment After Final Rejection.)

BURDEN OF PROOF.

(See Interference, 17, 19.)

CAVEAT.

(See Assignments, 2, 3, 4.)

CERTIFIED COPIES OF PARTS OF APPLICATION.

(See Interference, 42.)

CLAIMS.

(See Abandonment of Applications, 1; Affidavit Under Rule 75; Appeal to the Examiners-in-Chief, 2; Examination of Applications, 1, 2, 3; Interference, 1, 2, 27, 28, 30, 31; Rejection of Claims; Reopening of Rejected Cases, 1.)

1. ALTERNATIVE.
A claim should not be drawn in an alternative form even where the alternative elements are equivalents, but should use some broad term of description which will include both forms. [*Ex parte* Caldwell and Barr, 2125.

2. SAME—INDEFINITE.
A claim including a description of an element as "brick or the like" is alternative in form and is indefinite, since the word "like" fails to identify the characteristics of the substance. [Id.

3. MULTIPLICATION OF—REQUIREMENT TO ELIMINATE APPEALABLE TO EXAMINERS-IN-CHIEF.
The requirement to eliminate certain claims because they are substantially the same as other claims in the same case is to be regarded as a rejection and is appealable to the Examiners-in-Chief. [*Ex parte* Chapman, 2446.

4. MULTIPLICATION OF CLAIMS NOT PERMITTED—EFFECT ON PATENT.
The multiplication of claims is not to be permitted, since it tends to impose a needless burden upon the Office in the examination of the application, and a patent including them would tend to deceive and confuse the public. Moreover, it may lead to a strict construction of the patent, and it may in some cases render the patent void. [Id.

5. THE WORDS "PARTIALLY SATURATED" OBJECTIONABLE.
A claim for "lumber partially saturated with sulfuric acid" *Held* to be objectionable, the words "partially saturated" being inapt. [Id.

CLERICAL ERRORS.

(See Interference 3.)

COAT OF ARMS

(See Trade-Marks, 1.)

COMBINATION.

(See Invention, 6, 7.)

COMMISSIONER OF PATENTS.

(See Interference, 17, 23, 24.)

CONCEPTION OF INVENTION.

(See Interference, 20, 21, 33; Priority of Invention, 2, 4.)

CONSTRUCTION OF RULES.

(See Abandonment of Applications, 4; Interference, 10, 42; Motion to Dissolve Interference, 1.)

CONSTRUCTION OF STATUTES.

(See Acts of 1881 and 1905; Description of Goods, 2, 3; Designs 5; Trade-Marks, 2, 3, 12, 13, 14, 15, 17, 21, 22, 24.)

CROSS-REFERENCES.

(See Applications by Different Inventors, Same Assignee.)

DATE OF EXECUTION

(See Assignments, 1, 4.)

DECISION BY FORMER COMMISSIONER.

(See Abandonment of Applications, 3.)

DECISION OF THE COMMISSIONER OF PATENTS AFFIRMED.

(See Interference, 17.)

DECISION OF THE EXAMINER.

(See Interference, 42.)

DECISIONS OF THE EXAMINERS-IN-CHIEF.

(See Interference, 16.)

DECISIONS OF THE PATENT OFFICE.

(See Interference, 17, 24; Patentability, 4.)

DELAY.

(See Abandoned Applications; Appeal to the Examiners-in-Chief, 1; Interference, 11; Limit of Appeal; Priority of Invention, 4; Trade-Marks, 4, 8.)

DELAY IN BRINGING MOTION TO DISSOLVE INTERFERENCE.

(See Motion to Dissolve Interference, 2, 3, 4.)

DELAY IN FILING APPLICATION.

(See Interference, 36, 37, 38, 39, 40.)

DELAY IN PROSECUTING APPLICATION.

(See Abandoned Applications; Trade-Marks, 6.)

DEPOSITIONS.

(See Interference, 12, 21.)

DESCRIPTION.

(See Designs, 1; Examination of Applications, 1.)

DESCRIPTION OF GOODS.

(See Trade-Marks, 22, 23.)

1. TRADE-MARKS—DESCRIPTION OF PARTICULAR GOODS—STATUTORY REQUIREMENT.
Where a trade-mark application said that the mark had been used upon "implements, apparatus, and goods used in athletic games and sports," registration was properly refused on the ground that the statutory requirement for a description of the particular goods had not been complied with. [*Ex parte* A. G. Spalding & Bros., 325.

2. SAME—SAME—INDEFINITENESS—PRIMA FACIE RIGHT.
A description which is so indefinite as to convey no intelligible idea of the particular goods upon which the mark has been used is not a compliance with the statute and does not make out a *prima facie* right to registration. [Id.

3. SAME—USE UPON PARTICULAR GOODS NECESSARY—FACTS, NOT CONCLUSIONS, MUST BE STATED.
An applicant's right to registration of a trade-mark is dependent upon his use of it upon some specific goods, and under the terms of the statute the facts upon which the right is based must be stated, leaving the scope of the right acquired for subsequent judicial determination. [Id.

4. SAME—SAME—GOODS NOT OF SUBSTANTIALLY THE SAME DESCRIPTIVE PROPERTIES.
Where the description of the goods upon which the mark has been used is in such broad and general terms as to include goods which are not of substantially the same descriptive properties, registration must be refused on the ground that the application is not limited to a single trade-mark right. [Id.

5. SAME—DIVISION—SINGLE TRADE-MARK RIGHT.
A single trade-mark registration should include only a single trade-mark right, and a single right extends no further than to merchandise having substantially the same descriptive properties. [Id.

DESIGNS.

1. FONT OF TYPE—ILLUSTRATION.
Where criticism was made that the type were not shown, but only the kind of printed matter produced, *Held* that the answer thereto is that the conventional drawing accepted by the Patent Office for years has been furnished and that the absence of description is authorized by the Patent Office rules. [**In re* Schraubstadter, 1167.

2. PATENTABILITY—INVENTION.
Where small differences existed in the applicant's design over the references, which differences would appear greater to an expert than to the average observer, *Held*, nevertheless, that the design was not patentable, because the differences did not rise to the dignity of invention. [*Id.

3. SAME—SAME.
Where peculiarities in the applicant's design were such as to prevent that design from being regarded in the trade as a substitute for the design shown by the references, *Held* that the applicant's design was nevertheless not patentable, because such peculiarities did not rise to the dignity of invention. [*Id.

4. SAME—EFFECT ON AVERAGE OBSERVER—ARTISTS AND EXPERTS.
Held that the conclusion of the Court in *Gorham Co.* v. *White* (2 O. G., 592; 14 Wall., 511) was that the novelty of a design was to be determined and infringement decided by the comparative appearance of the designs in the eyes of average observers and was not to be determined by such appearance to the eyes of experts. [*Id.

5 SAME—SAME—SAME.
Where contention was made that it is impracticable for the Patent Office to pass on esthetic values and that the proper estimation of the applicant's design required cultivated taste, *Held* that the statutes as construed by the courts intend that the patentability of designs shall be determined by their appeal to the eye of the ordinary man. [*Id.

. SAME—FONT OF TYPE.
Where the applicant's design was for a font of type in which the letters had a waved outline, *Held* that aside from the waved outline the letters seemed to be of a very ordinary style and that to add a waved outline, which was old, to common forms of letters did not involve invention. [*Id.

DILIGENCE.

(See Interference, 36, 37, 38, 39, 40; Motion to Dissolve Interference, 3.)

DISCLOSURE OF INVENTION.

(See Applications by Different Inventors, same assignee, 2; Interference, 20, 22, 33, 34; Priority of Invention, 2, 5.)

DISCRETION OF THE EXAMINER.

(See Hearing.)

EX PARTE DECISION.

(See Reissue.)

INTERFERENCE.

(See Appeal to the Commissioner of Patents; Priority of Inven-

14. APPEAL ON PRIORITY—CONSIDERATION OF PATENTABILITY.
Where a party who cannot prevail upon priority takes an ap-

DISCRETION OF THE EXAMINER.

(See Hearing.)

DISSOLUTION OF INTERFERENCE.

(See Interference, 2, 3; Motion to Dissolve Interference.)

DIVISIONAL APPLICATIONS.

(See Assignments, 3.)

DOUBLE USE.

(See Patentability, 1.)

DRAWINGS.

(See Designs, 1.)

EQUIVALENTS.

(See Claims, 1, 2; Patentability, 1.)

EVIDENCE.

(See Interference, 5, 7, 12, 17, 18, 19, 20, 21, 22, 33, 40; Invention, 4, 5; Priority of Invention, 4, 5; Reopening of Rejected Cases, 2, 3; Trade-Marks, 15.)

EXAMINATION OF APPLICATIONS.

(See Amendment After Final Rejection; Amendments; Claims; Rejection of Claims; Specifications; Trade-Marks.)

1. DESCRIPTION—REFERENCE TO MODIFICATIONS—CANCELATION NOT REQUIRED

Where the applicant states in his specification that he does not regard his invention as limited to the exact details of construction and it appears that his claims are not so limited, *Held* that he should not be required to cancel the statement as superfluous. (*Ex parte Champ*, 114 O. G., 1827, distinguished.) [*Ex parte* Jansson, 2126.

2. SAME—SCOPE OF CLAIMS—INTENT OF APPLICANT MATERIAL.

In a case of doubt the intent of the applicant in using a term in a claim and the understanding of the Office in allowing the claim have a material bearing upon its meaning and scope, and therefore the applicant should not be required to cancel statements where such cancelation may result in a more limited construction of the claim than is necessary. [Id.

3. REJECTION FOR INOPERATIVENESS—AFFIDAVITS—JUDGMENT OF EXAMINER NOT CONTROLLED.

The Examiner is not bound to accept the conclusions stated in affidavits filed to overcome a rejection on the ground of inoperativeness, nor is he compelled to cite references and authorities, and his judgment will not be controlled on interlocutory petition. [*Ex parte* Davidson, 2753.

EXAMINER OF INTERFERENCES.

(See Interference, 8, 9; Trade-Marks, 10, 11.)

EXAMINERS.

(See Appeal to the Commissioner of Patents; Examination of Applications, 3; Hearing; Motion to Dissolve Interference, 1; Reopening of Rejected Cases, 1, 2; Supervisory Authority of the Secretary of the Interior Over the Commissioner of Patents.)

EXAMINERS-IN-CHIEF.

(See Appeal to the Examiners-in-Chief; Interference, 16, 24; Reopening of Rejected Cases, 2.)

EXHIBITS.

(See Interference, 12.)

EX PARTE DECISION.

(See Reissue.)

FAILURE TO PROSECUTE APPLICATIONS.

(See Abandonment of Applications, 1, 2, 4.)

FIRST AND ORIGINAL INVENTOR.

(See Interference, 18 19, 22; Priority of Invention, 2, 3.)

FORMER DECISION CITED.

(See Appeal to the Examiners-in-Chief, 1; Designs, 4; Examination of Applications, 1; Interference, 14, 21, 29; Invention, 5; Motion to Dissolve Interference, 8, 10, 12; Supervisory Authority of the Secretary of the Interior Over the Commissioner of Patents.)

FORMER DECISION DISTINGUISHED.

(See Examination of Applications, 1.)

FORMER DECISIONS REFERRED TO.

(See Interference, 22; Patentability, 2.)

FUNCTION.

(See Interference, 13; Motion to Dissolve Interference, 12.)

GRANT OF PATENT.

(See Invention, 4.)

PATENTS—EFFECT OF GRANT.

By the grant of a patent a patentee is merely put in a position to assert his *prima facie* right against infringers who may in their defense raise the question of the validity of the patent and have the same finally adjudicated in the light of a full presentation and consideration of all the evidence attainable in respect of anticipation, prior knowledge, use, and the like. [*In re* Thomson, 2756.

HARDSHIP.

(See Hearing; Trade-Marks, 11.)

HEARING.

(See Interference, 42.)

DURATION—DISCRETION OF EXAMINER.

Where upon petition that the Examiner be directed to hear further a party on motion in interference it appears that no hardship or irreparable injury will be suffered through the Examiner's refusal to hear, *Held* that the Examiner would not be controlled in the exercise of his discretion as to the duration of the hearing. [Moore *v.* Curtis, 324.

IDENTICAL CLAIMS.

(See Interference, 13.)

IDENTIFICATION OF APPLICATION.

(See Assignments, 1, 2.)

IDENTITY OF INVENTION.

(See Interference, 30, 32.)

INOPERATIVENESS.

(See Examination of Applications, 3; Rejection of Claims, 1.)

INTERFERENCE.

(See Appeal to the Commissioner of Patents; Priority of Invention; Testimony; Trade-Marks, 16, 18, 24, 25, 26, 33.)

1. MOTION TO AMEND—CONSIDERATION OF RIGHT TO MAKE PROPOSED CLAIMS.

Upon petition that the Examiner be directed to hear a party upon his opponent's motion to amend on the question of his opponent's right to make proposed claims, *Held* that petitioner may present his arguments upon motion for dissolution in case the proposed claims are admitted. [Moore *v.* Curtis, 324.

2. DISSOLUTION—FAILURE TO INCLUDE CLAIMS MADE BY BOTH PARTIES.

Failure to include in the issue certain claims made by both parties does not constitute an irregularity where such claims are not patentably different from those which were included. [Gally *v.* Burton, 325.

3. SAME—CLERICAL ERRORS DO NOT WARRANT DISSOLUTION.

The omission or improper use of hyphens in the counts of an issue and the use of the word "power" instead of the word *primary* are mere clerical errors, which may be corrected by a letter of the Primary Examiner calling attention to them, and they furnish no reason for dissolving the interference on the ground of irregularity in the declaration. [Id.

4. RIGHT TO MAKE CLAIM AND INTERFERENCE IN FACT CONFUSED.

The contention by an interlocutant that the opposing parties do not have a construction responding to certain language in the issue is one relating to the right to make the claim and not to interference in fact. [Carnell *v.* Glasgow *v.* Cook, 901.

5. OFFICE CANNOT COMPEL WITNESS TO ANSWER—SUPPRESSION OF TESTIMONY.

The testimony of a witness may be suppressed on account of his refusal to furnish material evidence; but the Office has no machinery for compelling him to furnish such evidence. [Lindstrom *v.* Lipschutz, 904.

6. STRIKING OUT ALLEGED SUPPLEMENTAL BRIEF.

Where at the hearing of a motion to compel a witness to answer certain questions or to suppress his deposition the interference was suspended for ten days to permit the parties to come to some agreement and a paper was thereafter filed in the case, in accordance with the agreement of counsel, to show that no agreement could be reached, *Held* that such paper will not be stricken out upon the allegation that it is a supplemental brief filed in violation of the rules. [Id.

7. EVIDENCE—CANNOT BE ADMITTED MERELY FOR INSPECTION OF OFFICE.

A letter which a party refused to introduce into evidence on the ground that it related to a secret invention cannot be filed in this Office merely for the inspection of the various tribunals who may consider the case. If the letter did not tend to affect the final judgment, there would be no reason for considering it, and if it did the opposing party would have a right to inspect and meet it as he might see fit. [Id.

8. MOTION FOR JUDGMENT ON RECORD—APPEAL.

Held that decisions of the Examiner of Interferences denying motions for judgment on the record should not be subject to review on appeal, as such decisions are not final determinations that judgment will not be rendered in favor of the moving parties. [Lemp *v.* Randall and Bates *v.* Thomson, 905.

9. SAME—SAME.

Denial of an appeal from decisions of the Examiner of Interferences refusing to render judgment on the record deprives the parties of no substantial right, while to permit appeals in such cases results in unnecessary delay, labor, and expense. [Id.

10. JUDGMENT ON RECORD.

Held that Rule 114 does not clearly and unmistakably require the Examiner of Interferences to render judgment against a party who has been called upon to show cause under that rule and who fails to take any action in response. [Id.

11. STAY OF PROCEEDINGS—UNWARRANTED APPEAL—MOTION BY PARTY IDENTIFIED IN INTEREST WITH APPELLANT.

When a party to an interference who has no substantial standing therein takes an unwarranted appeal, *Held* that another party thereto who is identified in interest with the first-mentioned party would not be granted a suspension of proceedings pending decision upon said appeal in prolongation of previous extensive delay. [Dalton *v.* Hopkins *v.* Newman, 906.

12. REOPENING A SECOND TIME—REFUSED.

Where the testimony in an interference refers to a certain exhibit which is not introduced in evidence, although its whereabouts is known, and the interference is reopened for the purpose of taking an additional deposition to properly connect such exhibit with the original testimony, the interference will not be reopened a second time because of the insufficiency of such deposition. [Autenrieth and Kane *v.* Sorensen, 1164.

13. BROAD ISSUE—INTERFERENCE IN FACT.

Where the claims of interfering parties are in identical language and each party has a construction responding in function to the broad terms thereof, there is an interference in fact, although the constructions are specifically different. [Gordon *v.* Wentworth, 1165.

14. APPEAL ON PRIORITY—CONSIDERATION OF PATENTABILITY.

Where a party who cannot prevail upon priority takes an appeal from the decision against him thereon merely for the purpose of attacking the patentability of the issue, *Held* that the appeal raises merely the question of priority, and the decision below must ordinarily be affirmed without consideration of the question of patentability, for the reasons given in *Sobey v. Holeclaw*, (119 O. G., 1922.) [Potter *v.* McIntosh, 1822.

15. SAME—SAME.

Whatever objections there may be to the policy and rule preventing appeal from decisions affirming patentability or right to make claims in those cases where affirmance may result in preventing the issue of a patent to a party who, in the event of a contrary decision, might have been entitled thereto, this policy and rule are believed to be in accordance with sound reason and unimpeachable in their application to cases where the would-be appellant upon patentability has in any event no standing before the Office as a claimant for a patent upon the matter in question. [Id.

16. SAME—SAME—STATEMENT OF EXAMINERS-IN-CHIEF.

Where in their decision on priority one Examiner-in-Chief found the issue to be patentable and another found it unpatentable and the third was absent, *Held* that the case is not distinguished in substance from one where all three found the issue unpatentable, since by their divided opinion they affirm the conclusion of the Primary Examiner that the issue is patentable. [Id.

17. PRIORITY.

Held that the controversy turned entirely upon the facts in evidence; that in addition to the burden imposed upon him by the patents regularly issued to Crone, Bauer has that of overcoming the effect of the successive adverse decisions in the Patent Office; that the evidence on behalf of Bauer is uncertain, fraught with suspicion, and cannot be accepted as sufficient proof of the facts essential to establish the appellant's averments either as originally made or as sought to be amended, and that the decision of the Commissioner must be affirmed. [*Bauer *v.* Crone, 1824.

18. ORIGINALITY.

Evidence considered and *Held* insufficient to clearly prove that the invention of the issue originated with French rather than Halcomb. [*French *v.* Halcomb, 1824.

19. BURDEN OF PROOF—APPLICANT *v.* PATENTEE.

An applicant in interference with a patent granted before the filing of the application has the burden of proving his case beyond a reasonable doubt, and this burden is not discharged where the testimony merely raises a doubt as to which of the two parties made the invention or whether a third party may not have contributed the essential idea which led to the invention. [*Id.

20. EVIDENCE OF INVENTOR PRACTICALLY UNCORROBORATED.

The statements in a memorandum of a note-book produced by French, one of the interfering parties, and alleged to disclose the invention in issue, *Held* insufficient to prove conception where it appears that the entry was seen by no one and there is no corroborative evidence on the point except a statement of another witness that French produced such a book at a given date. [*Id.

21. UNSUPPORTED TESTIMONY OF JOINT INVENTORS.

Where the only testimony taken by joint inventors upon the question of the date of their invention is their own depositions, *Held* that the depositions of parties to interference upon this point, unless corroborated by independent circumstances established by the evidence, are clearly insufficient to prove conception of the invention. (*Garrelle v. Freeman*, 103 O. G., 1683; 21 App. D. C., 207.) [*Podlesak and Podlesak *v.* McInnerney, 2127.

22. ORIGINALITY.

Where a party contended that he communicated the invention to his opponent, but did not claim to have made complete disclosure, and the circumstances did not support the theory of derivation, *Held* that the rule of *Winslow v. Austin* (86 O. G., 471; 14 App. D. C., 137) that the failure of a party to rebut the sworn statement of his adversary that he had fully disclosed the invention to him furnished strong evidence that the latter was not the prior inventor did not apply. [*Id.

23. PRIORITY.

Held that the Commissioner of Patents having found there was an interference in fact and that McInnerney had the right to make the claim could come to no other conclusion upon the proofs and the law applicable thereto than the one he did, and consequently his award of priority is correct if the remaining questions be decided in McInnerney's favor. [*Id.

24. RIGHT TO MAKE CLAIMS AND INTERFERENCE IN FACT—CONCURRENT DECISIONS IN PATENT OFFICE ORDINARILY CONCLUSIVE.

Where a question of interference in fact or right to make claims has been fully considered by the Primary Examiner, the Examiners-in-Chief, and the Commissioner and all have concurred in finding that a party to an interference has the right to make a claim which is the same as the count of the issue of an interference, *Held* that these conclusions will ordinarily be considered by the court as conclusive. [*Id.

25. RIGHT TO CLAIM—EFFECT OF INCORRECT DECISION.

If it be incorrectly held that a party to an interference has a right to make a claim in issue, an award of priority to him is made possible. His adversary would thereby be deprived of a substantial right in that he would be refused a claim where he was necessarily the prior inventor, his adversary never having made the invention. [*Id.

28. SAME—DECISION OF PRIMARY EXAMINER NOT FINAL—CONSIDERATION BY COURT OF APPEALS.

In view of the possible effect upon the determination of priority of an error in a decision holding that a party has a right to make a claim, *Held* that the latter question should not be finally

39. SAME—SAME—SAME—INVENTION AN ASSET.

It is to be presumed that an invention which is contested in interference proceedings is a valuable asset and that an inventor if without other means can ordinarily draw on this source, at least for means wherewith to file his application. If he fails to

8. SAME—RESOLVING DOUBTS.

Where there was doubt as to the sufficiency of the references

MOTION TO AMEND APPLICATION.

(See Interference, 1.)

26. SAME—DECISION OF PRIMARY EXAMINER NOT FINAL—CONSIDERATION BY COURT OF APPEALS.
In view of the possible effect upon the determination of priority of an error in a decision holding that a party has a right to make a claim, *Held* that the latter question should not be finally determined by the Primary Examiner who originally declared the interference and that the court would therefore take jurisdiction to determine that question as ancillary to that of priority. [*Id.

27. SAME LANGUAGE AND DIFFERENT INVENTIONS.
General terms may be used which apply equally to two structures which are not the same, as may be shown when those terms are read and construed in the light of the specifications behind them; but in most cases where two structures are not specifically the same and the art does not warrant a generic claim the language of the claims can be made precise and to fittingly describe each structure so that the use of identical language be avoided. [*Id.

28. SAME—AMENDMENT NECESSARY.
Where the claim read in the light of the specification of one party means one thing and the same claim read in the light of the specification of another party means another thing. *Held* that the same phraseology should not be employed. [*Id.

29. INTERPRETATION OF ISSUE.
The meaning given to the counts of an interference must be that intended by the party to the interference first making the claim (*Tracy* v. *Leslie*, 87 O. G., 891; 14 App. D. C., 126; *Auete* v. *Elwell*, 87 O. G., 2119; 15 App. D. C., 21.) [*Id.

30. CONSTRUED ISSUE—INAPPLICABLE TO CASES OF BOTH PARTIES—CASE REFERRED TO PATENT OFFICE UNDECIDED.
Where the issue if broadly construed read upon the devices of both parties, but consisted of a claim which had been allowed over a reference only upon a narrow construction inapplicable to the devices of one party, and it appeared that such construction of the claims was necessary in order to sustain the same, *Held* that, in the opinion of the court, an error had been committed and that the case should be remanded undecided to the Patent Office for further consideration as to identity of invention. [*Id.

31. NO INTERFERENCE IN FACT—RE-FORMATION OF CLAIMS IN ISSUE.
Held that apparently neither party is entitled to a claim for the feature in controversy which should dominate the other and that apparently the claims presented by both and made the issue should be so re-formed that each should have a specific claim, provided each could draw one to avoid the reference. [*Id.

32. CASE REMANDED UNDECIDED—FURTHER CONSIDERATION BY COURT.
In remanding the interference to the Patent Office undecided for further consideration of the question of identity of invention. *Held* that if after such consideration the Office adheres to the opinion that there is an interference in fact the present interference record with any additions will be further considered by the court. [*Id.

33. EVIDENCE—TESTIMONY OF ASSIGNEE.
Where a party depends for corroboration of his claims of conception and disclosure of the invention upon the testimony of his assignee and the character for veracity and the reliability of the assignee are unimpeached and the circumstances afford no reason for disbelieving the statements in the deposition of the assignee, *Held* that the corroboration is not rendered insufficient by the fact that the witness is the party's assignee. [Turnbull v. Curtis, 2442.

34. SAME—FAILURE TO CALL A WITNESS.
Where party claimed to have disclosed his invention to his solicitor, among others, and the solicitor was not put upon the stand, but it appears that the party was not certain of disclosure to the solicitor at the early date upon which disclosure was made to another witness who did testify, *Held* that the failure to call the solicitor as a witness was of no consequence. [Id.

35. SAME—NON-PRODUCTION OF SKETCHES.
Where sketches claimed to have been made by the inventor were not produced, but the inventor testified that the sketches were not made for preservation and were, in fact, not preserved, *Held* that no unfavorable inference should be drawn from their non-production. [Id.

36. PRIORITY—DILIGENCE—POVERTY—ENLISTING AID OR FILING APPLICATION.
The conceiver of an invention whose financial condition is such as to excuse him from any attempt unaided to actually reduce the invention to practice must, if he would hold the field, enlist the aid of others in actual reduction to practice or file an application for patent. [Id.

37. SAME—SAME—SAME—COMMERCIAL EXPLOITATION.
Where a party was in straitened financial condition, but his efforts during the period of delay in reducing to practice were directed toward commercial exploitation of his inventions generally, rather than toward securing the construction of the machine in issue or toward filing an application for patent thereon, *Held* that he was not reasonably diligent. [Id.

38. SAME—SAME—SAME—FILING APPLICATION.
The contention that a party could not file his application earlier than he did is rebutted by the fact that he filed or caused to be filed subsequent to his conception of the invention in issue and prior to the filing of his application in interference applications for patents upon six other inventions. [Id.

39. SAME—SAME—SAME—INVENTION AN ASSET.
It is to be presumed that an invention which is contested in interference proceedings is a valuable asset and that an inventor if without other means can ordinarily draw on this source, at least for means wherewith to file his application. If he fails to do so, he must show that the failure was unavoidable and after every reasonable effort in that direction had been exerted. [Id.

40. SAME—SAME—DELAY IN FAVOR OF RELATED INVENTION—EVIDENCE.
In order to bring his case within the doctrine of those cases where inventors were considered diligent who postponed the completion of their inventions in order to complete other devices intimately connected therewith, a party must produce evidence that his invention is not useful except in connection with the devices in whose favor the delay was made. Failing to do so, his opponent is relieved from the duty of producing evidence to the contrary, and the party cannot thereafter rely upon the absence of such evidence to the contrary to support the contention that the invention was not otherwise useful. [Id.

41. INTERFERENCE IN FACT—GENERIC ISSUE.
There may be an interference in fact on a generic issue based on two devices which are specifically different. [Kolb v. Hemingway v. Curtis, 2445.

42. PRACTICE UNDER RULE 105—SUFFICIENCY OF COPY TO BE DETERMINED BY PRIMARY EXAMINER—HEARING TO PARTIES.
Where a party files a copy of portions of his application for use in interference proceedings in an attempt to comply with Rule 105, the question of the sufficiency of the copy is a matter to be determined by the Primary Examiner in the first instance. In determining this question the Primary Examiner should fix a day upon which the parties may be heard and should render a decision upon the matter in issue. [Riker v. Law, 2754.

INTERLOCUTORY APPEALS.

(See Abandonment of Applications, 4; Trade Marks, 10, 11.)

INTERLOCUTORY PETITIONS.

(See Examination of Applications, 3.)

INVENTION.

(See Designs, 2, 3, 6.)

1. WATERPROOF CASING UPON ELECTROMAGNET.
Held that the provision of a waterproof casing upon an electromagnet which is to be used under water does not involve invention. [*Ex parte* Hayes, 901.

2. NON-MAGNETIC CASING UPON ELECTROMAGNET.
Held that the use of non-magnetic material for the casing of an electromagnet by one who does not claim to be the discoverer of the fact that magnetic material would interfere with the proper operation of the device cannot be regarded as patentable. [Id.

3. ANTICIPATION—INCASED ELECTROMAGNET.
An electromagnet having a waterproof casing of non-magnetic metal *Held* to be without patentable novelty, in view of a patent disclosing an electromagnet with a moisture-proof casing of non-magnetic material. [Id.

4. PATENTABILITY—AFFIDAVITS.
Held that affidavits going to show the practical success of the applicant's device where the truth thereof is substantially conceded are entitled to material weight in view of the fact that the grant of a patent confers no absolute right of property and in view of the customary rule of resolving ordinary doubts in favor of applicants. [*In re* Thomson, 2756

5. SAME—POPULARITY CONSEQUENTIAL ONLY WHEN NOVELTY IS IN DOUBT.
A patent should not be granted merely because a device or combination may possess great advantages, thereby bringing it into immediate use, as it is only when the question of novelty is in doubt that the fact that the device has gone into commercial use, displacing others employed for a like purpose or supplying the place of others whose intrinsic defects have prevented their general adoption and use, is sufficient to turn the scale in favor of invention. (*Potts* v. *Creager*, 70 O. G., 494; 155 U. S., 597, 609.) [*Id.

6. SAME—COMBINATION—PRIOR COMBINATION DIFFERENT.
Where the applicant claimed a combination of old elements and a reference shows a combination which is intended for a different use and which involves differences of operation and one of the elements shown in the reference is different from the corresponding element in the applicant's device, *Held* that a patent should not necessarily be refused on account of such reference. [*Id.

7. SAME—SAME—SAME.
Where a prior combination cited against the combination claimed includes elements in addition to those used by the applicant which result in differences in operation undesirable for the purposes of the applicant's device and one of the elements of the prior combination is different from the corresponding element of the applicant's combination, *Held* that a patent should not necessarily be refused on account of the prior combination. [*Id.

8. SAME—RESOLVING DOUBTS.
Where there was doubt as to the sufficiency of the references and the applicant demonstrated that he had produced an apparatus of great utility, *Held* that the doubt should be resolved in favor of the applicant's claim [*Id.

INVENTOR.

(See Applications by Different Inventors, Same Assignee, 1; Assignments, 4; Prosecution of Application by Assignee.)

ISSUE IN INTERFERENCE CASES.

(See Amendments to Preliminary Statements, 1; Interference, 2, 4, 13, 14, 16, 29, 24, 25, 41; Testimony, 1.)

JOINT INVENTORS.

(See Interference, 21.)

JUDGMENT ON THE RECORD.

(See Interference, 8, 9, 10: Priority of Invention, 1.)

JURISDICTION OF THE COURT OF APPEALS OF THE DISTRICT OF COLUMBIA.

(See Interference, 26.)

LACHES.

(See Trade-Marks 7.)

LIMITATION OF CLAIMS.

(See Examination of Applications 1, 2; Interference, 30.)

LIMIT OF APPEAL.

(See Appeal to the Examiners-in-Chief, 1.)

MOTION TO EXTEND AFTER LIMIT EXPIRES—VERIFIED SHOWING.
After the expiration of a limit of appeal a motion to extend the limit will not be entertained except upon a verified showing in excuse for the delay. [Thullen v. Young and Townsend, 904.

LIMIT OF TIME.

(See Abandonment of Applications, 2; Motion to Dissolve Interference, 1, 2, 3, 4.)

MERITS OF THE CASE.

(See Supervisory Authority of the Secretary of the Interior Over the Commissioner of Patents.)

MISTAKE.

(See Interference, 30.)

MISTAKE OF THE OFFICE.

(See Abandonment of Applications, 2, 3.)

MODEL.

(See Amendments to Preliminary Statements, 1.)

MOOT QUESTION.

See Trade-Marks 32.)

MOTION TO AMEND APPLICATION.

(See Interference, 1.)

MOTION TO AMEND PRELIMINARY STATEMENT.

(See Priority of Invention, 1.)

MOTION TO DISSOLVE INTERFERENCE.

(See Appeal to the Commissioner of Patents; Interference, 1, 2, 3, 4; Reissue; Supervisory Authority of the Secretary of the Interior over the Commissioner of Patents.)

1. INTERFERENCE—APPEAL ON PRIORITY—MOTION TO TRANSMIT MOTION TO DISSOLVE NOT GRANTED.
Where the grounds for dissolution specified in Rule 122 were raised at the proper time and decided by the Primary Examiner and by the Examiners-in-Chief on appeal and the case is appealed to the Commissioner from a decision of the Examiners-in-Chief on the question of priority, a motion to transmit the interference to the Primary Examiner to consider the question of patentability will not be granted unless a clear and unmistakable error appears in the prior decisions. [Parkes v. Lewis, 323.

2. SAME—DELAY IN BRINGING—EXCUSES.
Where excuses offered for delay in bringing motion for dissolution do not cover the period in which the motion should have been brought or some of the subsequent period, but apply only to the latter portion of the subsequent period, *Held* that the motion should not be transmitted. [McKee v. Baker, 657.

3. SAME—SAME—SAME.
Where it is not shown that a party went diligently to work upon his case at the proper time to discover whether a motion for dissolution should be brought nor that he was prevented from making the necessary investigation and bringing the motion within the period fixed by the rules, *Held* that the motion should not be transmitted. [Id.

4. SAME—SAME—SAME.
The rule requiring motions to be brought within a fixed time is a wholesome one, and its enforcement requires that motions be not accepted when brought after the expiration of that time except where circumstances are shown which made it impossible to bring the motion within the regular period or under which the party could not reasonably be expected to have brought it therein. [Id.

5. SAME—STATEMENTS OF FACTS—TRANSMISSION
Where nothing in the statement of the facts upon which a motion to dissolve on the ground of irregularity in declaration was based is directed to anything other than the patentability of claims, the rights of the parties to make claims, or the identity in meaning of claims when read in the respective cases, *Held* that the motion was properly refused transmission as to this ground. [Klepetko v. Becker, 658.

6. SAME—SAME—SAME.
Where no facts are alleged in support of a motion for dissolution on the ground of non-patentability except such as relate to the right of a party to make claims, *Held* that the motion was properly refused transmission as to the ground of non-patentability. [Id.

7. SAME—SAME—SAME.
In order to restrict, so far as possible, the labor of investigation and consideration on the part of the Office and on the part of the parties against whom motions for dissolution are brought to the exact matters by reason of which the moving party believes the interference should be dissolved, it is believed that the motion should set forth the specific facts relied upon to show that the interference should not continue. [Id.

8. SAME—SAME—SAME.
In setting forth facts in motions for dissolution the distinctions between the general grounds of dissolution which have been pointed out in *Woodward* v. *Newton*, (86 O. G., 492,) *Owens* v. *Richardson*, (111 O. G., 1037,) and *Kecsmeker* v. *Hodges and Hodges* (118 O. G., 836) must be carefully observed. The observance of these distinctions is necessary to the logical presentation of the questions raised and to the avoidance of confusion in the matter of appeals. [Id.

9. SAME—SAME—SAME.
Where the motion does not state facts of such nature as might form proper basis for dissolution upon the general ground upon which the facts are alleged, the motion is not sufficiently clear and definite, and it should not be transmitted as to those grounds to which such objections apply. [Id.

10. DISSOLUTION—APPEAL ON MOTION—RIGHT TO CLAIM NOT CONSIDERED UNDER HEAD OF INTERFERENCE IN FACT.
Where it is contended upon appeal on motion to dissolve for non-interference in fact that a party has no right to make claims, *Held* that the question of right to make claims is different from that of interference in fact and will not be considered of such on appeal. (*Blackmore* v. *Hall*, 119 O. G., 2523.)
[Heintzelman and Camp v. Vraalstad and Doyle, 906.

11. INTERFERENCE IN FACT.
Where, so far as the invention in issue is concerned, the same results are accomplished by substantially the same or equivalent means in the device of each party and the terms of the issue have the same meaning in each case, *Held* that there is interference in fact. [Id.

12. SAME—EFFECT OF DIFFERENCES IN THE DEVICES NOT INVOLVED IN THE ISSUE.

12. SAME—EFFECT OF DIFFERENCES IN THE DEVICES NOT INVOLVED IN THE ISSUE.
Where it is contended upon appeal on motion to dissolve for non-interference in fact that, in view of functions effected in appellees' apparatus which it is claimed are not effected in that of the appellants, the inventions claimed by the respective parties are essentially different, *Held* that the differences in function referred to related to specific differences in the devices to which the issue is limited and formed no basis for dissolution of the interference. (*Townsend* v. *Copeland* v. *Robinson*, 119 O. G., 2523.) [Id.

MULTIPLICITY OF CLAIMS.

(See Claims, 3, 4.)

NEW MATTER.

(See Reissue.)

NEW USE.

(See Invention, 6; Patentability, 2, 3.)

NOVELTY.

(See Designs, 4; Invention, 5.)

OLD DEVICES.

(See Patentability, 2, 3.)

OLD ELEMENTS.

(See Invention, 6.)

OPPOSITION.

(See Trade-Marks, 10, 11, 12, 13, 14, 15, 19, 20, 30, 31, 32.)

OWNERSHIP OF TRADE-MARK.

(See Trade-Marks, 28, 29.)

PARTICULAR DESCRIPTION OF GOODS.

(See Trade-Marks, 22, 23.)

PARTNERSHIP.

(See Trade-Marks, 28, 29.)

PATENTABILITY.

(See Appeal to the Examiners-in-Chief, 2; Designs, 2, 3, 5; Interference, 14, 15; Invention; Motion to Dissolve Interference, 5, 6; Rejection of Claims, 2; Testimony, 1.)

1. DOUBLE USE—SUBSTITUTION OF EQUIVALENTS.
Where in a rock-crusher a mantle removably secured upon a conical core is concededly unpatentable, *Held* that the provision of old pin-and-slot fastening devices for retaining the mantle tightly upon the conical core is mere double use and, in view of certain references, an obvious substitution of equivalents.
[*In re* Thurston, 1166.

2. SAME—SAME.
In denying patentability to a change in prior devices, *Held* that the change was not made by transferring an old device to use in an entirely different and unrelated art and that therefore the case of *Potts* v. *Creager* (70 O. G., 494; 155 U. S., 597) does not apply. [Id.

3. POPULARITY—LARGE SALES.
Where the assertion was made that the new machine had met with instant favor and large sales, but there was nothing in the record to bear out the assertion, *Held* that no effect could be given thereto. [Id.

4. RULES AS TO DOUBTS.
Where there is a serious doubt as to patentability, that doubt should be resolved in favor of the one seeking a patent, for if his claim be denied he has nothing with which he can go into court and attempt to enforce a lawful monopoly; but in reversing the concurrent decisions of the Patent Office there should be conviction beyond a reasonable doubt that in the absence of anything but what is shown by the record a patent granted on the application would be held a valid one.
[*In re* Schraubstadter, 1167.

PATENTS.

(See Access to Pending Applications; Claims, 5; Grant of Patent; Invention, 4.)

PATENTS AND APPLICATIONS.

(See Access to Pending Applications.)

PENDING APPLICATIONS.

(See Trade-Marks, 2, 3, 4, 5, 25.)

PETITION TO THE COMMISSIONER OF PATENTS.

(See Abandonment of Application.)

POVERTY.

(See Interference, 36, 37.)

PRELIMINARY STATEMENT.

(See Amendments to Preliminary Statements; Priority of Invention, 1.)

PRIOR APPLICATION.

(See Access to Pending Applications.)

PRIORITY OF INVENTION.

(See Interference, 14, 15, 16, 17, 18, 19, 22, 23, 25, 26, 36, 37, 38, 39, 40; Motion to Dissolve Interference.)

1. INTERFERENCE—JUDGMENT ON THE RECORD.
Where the preliminary statement of N. and T. failed to overcome the record date of O.'s application and motion by N. and T. to amend their preliminary statement had been denied and the denial affirmed on appeal, *Held* that O. is entitled to an award of priority of invention.
[Neth and Tamplin v. Ohmer, 323.

2. SAME—ORIGINALITY—DERIVATION BY S. FROM B. THROUGH ANOTHER—EVIDENCE.
Where B. claims conception of the invention and disclosure to an associate of S. prior to S.'s alleged date of conception and is corroborated as to both matters by credible witnesses and the associate is discredited by his denial that the invention was so disclosed to him and the weight of circumstances is in favor of derivation by S. from B. through the associate, *Held* that the testimony of S. and the associate to independent invention by S. and the inference unfavorable to B. from inactivity in connection with the invention are overcome and that B. is entitled to an award of priority of invention.
[Beall v. Shuman, 655.

3. SAME—SAME—EVIDENCE—SIMILARITY OF INVENTION AND OPPORTUNITY OF DERIVATION.
Held that the mere appearance of two parties with the same invention identical in many novel and distinct details raises some suspicion of derivation by one from the other, and where one of these parties is proved to have been in possession of the invention prior to any date of possession proved by the other party and it is shown that opportunity for derivation by the later party from the earlier party occurred prior to such proved date of possession by the later party the suspicion of derivation, in the absence of satisfactory evidence to the contrary, becomes conviction, and it must be held that the later party did, in fact, obtain the invention from the earlier party.
[Id.

4. SAME—SAME—SAME—INACTIVITY OF PARTY—NOTICE OF ADVERSE CLAIM.
Where B. was not active in obtaining patents or in the reduction to practice and promotion of the invention which was carried on by S., but produces evidence in support of his claim that he supposed S. to be carrying out B.'s conception in the business of the common employer of B. and S., *Held* that in the absence of proof that B. in the period of his inactivity had notice of S.'s adverse claim no inferences strongly unfavorable to B. can be drawn from his inactivity. [Id.

5. SAME—EVIDENCE—DISCREPANCY BETWEEN TESTIMONY AND APPLICATION AS TO EXTENT OF THE INVENTION.
Where B. carefully omitted from his applications, prepared from S.'s patents, features of invention disclosed in the patents to S. and which B. in testifying claims to have invented, *Held* that the inference from these facts that B. did not originate the inventions in issue is too remote to stand against satisfactory evidence that B. did originate the invention in issue. [Id.

PROSECUTION OF APPLICATION BY ASSIGNEE.

PROSECUTION BY ASSIGNEES OF PART INTEREST—INVENTOR MISSING.
Where assignees of half interest petition for permission to prosecute the case, alleging that inventor has disappeared, and it appears that the inventor has a habit of absenting himself, and the application has not been acted upon by the Office, *Held* that the petition is premature and may be renewed in case it shall appear to be necessary to permit prosecution by the assignees to save the case from abandonment.
[*Ex parte* Fitzhugh, 660.

REDUCTION TO PRACTICE.

(See Interference, 36, 37, 38, 39, 40; Priority of Invention, 4.)

REFERENCES.

(See Examination of Applications, 3; Invention, 6, 7, 8; Rejection of Claims, 2; Reopening of Rejected Cases, 1.)

REGISTRATION.

(See Acts of 1881 and 1905; Description of Goods; Trade-Marks, 12, 13, 14, 15, 19, 23.)

REISSUE.

PRIOR EX PARTE DECISION BY APPELLATE TRIBUNAL—NOT BINDING ON PRIMARY EXAMINER ON INTER PARTES CONSIDERATION.
An *ex parte* decision on the question of new matter in a reissue application is not absolutely binding on the Primary Examiner when the question is raised *inter partes* on a motion to dissolve; but it should be persuasive. If the *inter partes* consideration of the case does not bring out new reasons or new phases of the old reasons or such new light as would reasonably tend to change the decision by the appellate tribunal, then such decision should be followed. [Felsing v. Nelson, 2445.

REJECTION OF CLAIMS.

(See Abandonment of Applications, 1; Examination of Applications, 3; Reopening of Rejected Cases, 2, 3.)

1. APPEAL—INOPERATIVENESS.
Where claims are rejected on the ground of inoperativeness, the applicant's remedy is by appeal to the Examiners-in-Chief and not by petition. [*Ex parte* Davidson, 2753.

2. REJECTION—AGGREGATION CLAIMS—SEPARATE FEATURES MAY BE FOUND IN DIFFERENT REFERENCES.
Where claims are considered to be aggregations, it is not necessary to a valid rejection thereof that all the features specified in the claims shall be found in a single reference. A rejection for lack of patentable novelty in view of the prior art calls for a general view of the prior art. This general view can be obtained only by looking at each reference cited in the light of the disclosure contained in the other references. It is the knowledge of the public derived not from one patent alone, but from all, which negatives patentable novelty in any case.
[*Ex parte* Sindlingchristensen, 2755.

REOPENING OF INTERFERENCE.

(See Interference, 12.)

REOPENING OF REJECTED CASES.

(See Amendment After Final Rejection.)

1. REOPENING EX PARTE CASE—ALLEGED STATEMENT OF NEW REASONS FOR REJECTION BY EXAMINER.
Where antedating affidavits under Rule 75 to overcome one of several references are filed after final rejection and in refusing consideration to such affidavits the Examiner states that the rejection could be sustained on the references other than the one attempted to be overcome, *Held* that this statement of the Examiner is not a statement of new reasons for rejection and does not operate to reopen the case. [*Ex parte* Berg, 903.

2. AFFIDAVITS—FILED AFTER FINAL REJECTION AND DECISION ON APPEAL.
Where affidavits are presented after final rejection of the claims and decision by the Examiners-in-Chief on appeal purporting to show that the rejection of the claims was improper and it is alleged that the affidavits are based upon experiments made after the decision of the Examiners-in-Chief, *Held* that the experiments should have been made and the affidavits filed before the case was closed before the Primary Examiner and that the affidavits would not be admitted.
[*Ex parte* Richmond, 905.

3. NEW EVIDENCE—SHOWING REQUIRED.
Where the party fails to make his demonstration and to submit his evidence in response to the original rejection before prosecuting his case to final rejection, the case will not thereafter be reopened except upon showing of good and sufficient reasons why the evidence whose admission is sought was not earlier presented. [Id.

RESULTS.

(See Patentability, 2, 3.)

REVIVAL OF ABANDONED APPLICATIONS.

(See Abandoned Applications, 2.)

RIGHT TO TRADE-MARK.

(See Trade-Marks, 27.)

SCOPE OF CLAIM.

(See Abandonment of Applications, 1; Examination of Applications, 2.)

SECRETARY OF THE INTERIOR.

(See Supervisory Authority of the Secretary of the Interior Over the Commissioner of Patents.)

SKETCHES.

(See Interference, 35.)

SPECIFICATIONS.

(See Examination of Applications, 1; Interference, 27, 28.)

STAY OF PROCEEDINGS.

(See Interference, 11.)

SUPERVISORY AUTHORITY OF THE SECRETARY OF THE INTERIOR OVER THE COMMISSIONER OF PATENTS.

DISMISSAL OF APPEAL A QUASI-JUDICIAL DETERMINATION.
Where the Commissioner dismissed an appeal from the decision of the Primary Examiner denying a motion to dissolve an interference on the ground that the appeal, though alleging appealable grounds, only sought consideration of non-appealable questions, *Held* that the decision of the Commissioner was a quasi-judicial determination which bears more or less directly upon the merits of the controversy and presents a question over which the Secretary of the Interior has no supervisory jurisdiction by appeal or otherwise. (See *Butterworth* v. *Hoe*, 29 O. G., 615; 112 U. S., 50, and *Poole* v. *Avery*, 87 O. G., 357; 14 *Assistant Attorneys-General Opinions*, 177.) [†Blackmore v. Hall, 1477

SUPPLEMENTAL BRIEF.

(See Interference, 6.)

SUPPRESSION OF TESTIMONY.

(See Interference, 5, 6.)

TEN-YEARS CLAUSE.

(See Trade-Marks, 1.)

TESTIMONY.

(See Interference, 5, 12, 19, 21, 33.)

1. REBUTTAL RELATING TO PATENTABILITY STRICKEN OUT.
Rebuttal testimony which related solely to the patentability of the issue *Held* to have been properly stricken out.
[Parkes v. Lewis, 223.

2. LEADING QUESTIONS.
Where some leading questions were asked in the course of the examination of witnesses, *Held* that their testimony as a whole

16. LACK OF INTERFERENCE—"OLD JAY" AND "OLD CROW."
A mark consisting of "Old Jay" and the representation of a jay does not so nearly resemble the words "Old Crow" and the

30. OPPOSITION—"HENDERSON" NOT REFUSED ON "ANDERSON."
A trade-mark including the word "Henderson" is not

34. ASSOCIATED REPRESENTATIONS OF ANCHOR AND SEA-MON-

2. LEADING QUESTIONS.
Where some leading questions were asked in the course of the examination of witnesses, *Held* that their testimony as a whole was, nevertheless, sufficiently free from dependence upon the suggestion of counsel to be entitled to acceptance without diminution of weight on account of this objection.
[Beall v. Shuman, 655.

TRADE-MARKS.

(See Acts of 1881 and 1905; Description of Goods.)

1. COAT OF ARMS—"TEN-YEARS" CLAUSE.
The coat of arms of the United States is not registrable as a trade-mark even under the "ten-years" clause of the law.
[*Ex parte* American Glue Company, 324.

2. "PENDING" CASES—REJECTION BY EXAMINER.
A trade-mark application is not to be regarded as adjudicated and as not "pending" within the meaning of sections 14 and 24 of the act of 1905 merely because it had been rejected by the Examiner.
[*Ex parte* Griserin-Werke Paul Camphausen G. M. B. H., 327.

3. SAME—SAME—FINAL ADJUDICATION.
The mere rejection by the Examiner of a trade-mark application under the act of 1881 did not finally dispose of it, since it was subject to amendment and reconsideration if request therefor were made within a reasonable time. [Id.

4. SAME—APPEAL—UNREASONABLE DELAY.
While a trade-mark application is not taken out of the class of pending cases merely because it has been rejected, it is taken out of that class where the right of appeal was exhausted and where there has been unreasonable delay in prosecuting the application. [Id.

5. SAME—ABANDONMENT.
Where after rejection the trade-mark applicant abandoned all intention of further prosecuting the case, it was not a live or pending case, but was abandoned. [Id.

6. SAME—DELAY IN PROSECUTION—EVIDENCE OF ABANDONMENT.
Failure to take any action in prosecution of an application for a long period of time is evidence of an intention to abandon the application and in the absence of proof to the contrary is to be taken as establishing the fact. [Id.

7. SAME—LACHES—APPLICATION NOT NOTICE.
An application for the registration of a trade-mark is not notice to the public through this Office of the applicant's claim of ownership unless that application is prosecuted with reasonable diligence. The application is abandoned by laches. [Id.

8. SAME—DELAY OF ONE YEAR UNREASONABLE.
No hard and fast rule can be laid down as to what delay will be regarded as an abandonment of a trade-mark application: but ordinarily a delay for more than one year will be deemed unreasonable unless excuse is made therefor. [Id.

9. ANTICIPATION—"GRISERIN" AND "ELECTRENE."
The trade-mark "Griserin" does not so nearly resemble the mark "Electrene" as to deceive purchasers. [Id.

10. OPPOSITION—APPEAL UPON INTERLOCUTORY ORDER—PLEADINGS.
Where exception taken to applicant's answer on ground of impertinence was overruled by Examiner of Interferences, *Held* that no appeal from this action would be entertained.
[Whittingham v. Automatic Switch Company, 659.

11. SAME—SAME—SAME.
In overruling the exceptions to the answer the Examiner of Interferences denied to opponent no substantial rights, nor is it understood wherein opponent would be subjected to hardships by erroneous decisions of the Examiner overruling such exceptions sufficient to justify the general hardship in delay, labor, and expense which would be imposed upon parties by permitting interlocutory appeals in these cases. [Id.

12. PUBLICATION—REJECTION THEREAFTER WITHOUT OPPOSITION.
The Examiner may refuse registration after the publication of a trade-mark under section 6 of the Trade-Mark Act even where no notice of opposition is filed.
[*Ex parte* Cluett, Peabody & Company, 902.

13. SAME—SECTION 6 CONSTRUED—PERMISSIVE, NOT MANDATORY.
The provision in section 6 of the act that the Commissioner "shall issue a certificate of registration" in case no notice of opposition is filed is permissive and is not mandatory. [Id.

14. SAME—SAME—RIGHT TO REJECT—INTENT.
Section 6 was intended to provide an additional means for determining the right of the applicant to registration, and not for the purpose of cutting off the right of the Office to consider and act upon any and all legitimate questions as to the applicant's right. [Id.

15. SAME—SAME—CONSIDERATION OF EVIDENCE.
It was not the intent of section 6 that this Office should reject an applicant upon evidence presented by one opposing and disregard the same evidence if discovered by its own efforts. [Id.

16. LACK OF INTERFERENCE—"OLD JAY" AND "OLD CROW."
A mark consisting of "Old Jay" and the representation of a jay does not so nearly resemble the words "Old Crow" and the representation of a crow as to mislead the public or deceive purchasers.
[W. A. Gaines & Co. v. Carlton Importation Co., 902.

17. CONSTITUTIONALITY OF LAW—QUESTION FOR COURTS.
The question as to the constitutionality of the trade-mark law will not be determined upon opposition to the registration of a trade-mark, but will be left to the courts for determination. [Id.

18. LACK OF IDENTITY—"RAVEN VALLEY" AND "OLD CROW."
Registration of a mark consisting of the words "Raven Valley" and the representation of three ravens is not to be refused because of the prior use by another of the words "Old Crow" and the picture of a crow. The marks are not so nearly alike as to deceive purchasers.
[W. A. Gaines and Company v. C. A. Knecht and Son, 1163.

19. OPPOSITION—SUFFICIENCY OF ANSWER.
Where opposition is made to the registration of a trade-mark and the applicant is called upon to make answer within a certain time and he does within that time file a paper entitled a demurrer, setting forth reasons which the Office regards as sufficient for dismissing the opposition, *Held* that he has complied with the Office requirement for an answer. [Id.

20. SAME—PLEADINGS—TECHNICAL FORMS NOT INSISTED UPON.
Technical and refined objections to the form of pleadings in trade-mark oppositions will not be sustained. It is sufficient if the parties present to the Office the material which will enable it to properly dispose of the case on its merits, and it is not necessary to insist upon technical forms. [Id.

21. CONSTITUTIONALITY OF ACT OF 1905—MATTER FOR COURTS.
The question whether the Trade-Mark Act of February 20, 1905, is unconstitutional will not be entertained or determined by the Patent Office, but will be left for determination by the courts. The Office will perform the duties imposed by the act, leaving to the courts the question as to the validity of the registrations made thereunder. [Id.

22. PARTICULAR DESCRIPTION OF GOODS—STATUTORY REQUIREMENT.
The statute requires that the applicant specify the particular goods upon which his mark has been used and not merely the class of goods. The term "meats" gives the class, but not the particular goods and is not sufficiently definite.
[*Ex parte* The Kingan Packing Association, 1165.

23. DIVISION—GOODS OF THE SAME DESCRIPTIVE PROPERTIES.
Only one trade-mark right should be covered by a single registration, and where the statement of the goods to which the mark has been applied is so broad as to include goods which are not of substantially the same descriptive properties registration will be refused. [Id.

24. APPEAL TO COURT—INTERFERENCE DECLARED UNDER ACT OF 1881.
A trade-mark interference declared under the act of 1881, but not decided until after the passage of the act of February 20, 1905, is appealable to the Court of Appeals of the District of Columbia under the act of February 20, 1905, where the only application involved has been amended to bring it under the provisions of that act.
[*Giles Remedy Company v. Giles, 1826.

25. SAME—PENDING APPLICATION.
A trade-mark application which was involved in an interference at the time of the passage of the act of February 20, 1905, was a pending application such as might be amended to bring it under the act. [*Id.

26. INTERFERENCE—PRIORITY OF ADOPTION AND USE.
Where it appears that Sanford Giles first adopted and used the trade-mark and secured registration thereof and subsequently the mark was used by him and by Daniel Giles at a single place of business under the name of the Giles Remedy Company until a disagreement between them which resulted in their separation, *Held* that Sanford Giles was the owner of the mark and that judgment of priority must be in his favor. [*Id.

27. SAME—SAME—RIGHT ACQUIRED BY TRANSFER.
Where a trade-mark registrant is shown to have been the first to adopt and use the mark and to have been the owner at the time he secured the registration, he is not to be defeated in an interference by showing that his opponent subsequently acquired title to the mark from him. Such showing might in appropriate proceedings justify compelling the transfer of the certificate of registration; but it does not justify the holding that the later applicant was the first to adopt and use the mark. [*Id.

28. OWNERSHIP BY PARTNERS—RIGHTS UPON DISSOLUTION.
The general rule that when a partner retires from a partnership and assents to the retention by the other partners of the possession of the old place of business and the future conduct of the business by them under the old name the trade-mark remains with the latter has no application to the facts of this case. [*Id.

29. SAME—SAME—WITHDRAWAL OF MEMBER.
In the absence of express agreement a trade-mark used theretofore by one who enters into partnership with others does not at the dissolution of the partnership, caused by the withdrawal of the member bringing the mark into the partnership, remain the property of the partnership. [*Id.

30. OPPOSITION—"HENDERSON" NOT REFUSED ON "ANDERSON."
A trade-mark including the word "Henderson" is not to be refused registration because an entirely different mark including the word "Anderson" had been used previously by another upon the same class of goods.
[Buchanan-Anderson-Nelson Company v. Breen & Kennedy, 2125.

31. OPPOSITION FILED TOO LATE—OFFICE WITHOUT JURISDICTION.
This Office has no authority to entertain a notice of opposition to the registration of a trade-mark filed more than thirty days after the publication of the mark.
[Winand v. P. J. Drury Company, 2126.

32. OPPOSITION TO REGISTERED MARK—MOOT QUESTION.
Where opposition is made to the registration of a mark and it appears that the mark has been registered, the opposition will be dismissed as raising a moot question. [Id.

33. INTERFERENCE—"OLD JAY" AND "BLUE JAY."
There is such a close resemblance between a mark consisting of the words "Old J" or "Old Jay Rye" in connection with a representation of a blue-jay and the words "Blue Jay" as to cause confusion and bring about a conflict of rights.
[W. H. Jones & Co. v. Carlton Importation Company, 2444.

34. ASSOCIATED REPRESENTATIONS OF ANCHOR AND SEA-MONSTER—ANTICIPATION.
A trade-mark consisting of the representation of a sea-monster associated with an anchor represented as standing vertically upon its point and having the head of the sea-monster protruding from between the anchor-arms and the body of the sea-monster entwined spirail yabout the shank of the anchor, *Held* not registrable in view of the prior registration of a trade-mark consisting of an anchor and the arbitrarily-selected word "Anchor" placed across said representation.
[*Ex parte* Gwinn Bros. & Co., 2755.

VALIDITY OF PATENT.

(See Claims, 4.)

WITNESSES.

(See Interference, 5, 6, 20, 33, 34; Testimony, 2.)

ALPHABETICAL LIST OF PATENTEES

FOR THE

MONTHS OF JANUARY AND FEBRUARY, 1906.

[Claims and drawings of Designs do not appear in the Monthly Volumes. Separate indexes for Designs, Trade-Marks, Labels, Prints, and Disclaimers follow this.]

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
			Specification.	Drawing.	Volume.	Page.
A. Schrader's Son. (See Schrader, George H. F., assignor.)						
A. B. Dick Company. (See Dick, Albert B., assignor.)						
A. B. Dick Company. (See Steere, Clarence E., assignor.)						
A. M. McPhail Piano Company. (See Blinn, Charles P., assignor.)						
Aarons, David E., *et al.* (See Spies, Peter H. F., assignor.)						
Abbot, Harry B. (See Abbot, Thomas and H. B.)						
Abbot, Thomas and H. B., Terrell, Tex. Baling-press	813,270	Feb. 20	3486	768-9	120	2333
Abbott, James, Newport, England. Metal-cutting machine	813,071	Feb. 20	3103	680	120	2253
Abendroth, Louis, Rhttenscheid, near Essen-on-the-Ruhr, assignor to F. Krupp Aktiengesellschaft, Essen-on-the-Ruhr, Germany. Impact-fuse	809,885	Jan. 9	2533	525	120	560
Abraham, Adolf, Neuhaus-on-the-Oste, Germany. Automatic recording device	813,933	Feb. 27	4820	1063-4	120	2680
Abrim, John, Joliet, Ill. Combined storm and screen door	813,271	Feb. 20	3487	769	120	2334
Abshier, Alfred J., Diehlstadt, Mo. Automatic hen's nest	811,891	Feb. 6	687	150	120	1630
Acker, Charles E., Niagara Falls, N. Y., assignor to Acker Process Company. Making stannic chlorid	810,454	Jan. 23	3794	780	120	948
Acker, Charles E., Niagara Falls, N. Y., assignor to Acker Process Company. Making stannous chlorid	810,455	Jan. 23	3797	780	120	949
Acker, Charles E., Niagara Falls, N. Y., assignor to Acker Process Company. Making chlorin compounds of tin	810,456	Jan. 23	3800	781	120	949
Acker, Charles E., Niagara Falls, N. Y., assignor to Acker Process Company. Apparatus for producing compounds of tin	810,897	Jan. 30	4659	971	120	1171
Acker Process Company. (See Acker, Charles E., assignor.)						
Ackerman, Fred D., Kendallville, Ind. Automatic electrical controller for air-compressors	809,083	Jan. 2	921	193	120	204
Ackerman, Fred D., Hampton, Va. Sliding door for railway-cars	811,115	Jan. 30	5076	1061	120	1262
Ackerman, Jasper L., Monticello, Ind. Artificial bait	810,017	Jan. 16	2624	584	120	704
Ackermann, Alexander H. (See Johnston and Ackermann.)						
Ackley, Raymond E., Rockford, assignor of one-half to A. E. Hix, Kingston, Ill. Wire-bending machine	812,579	Feb. 13	2510	552	120	2075
Acklin, Alfred M., assignor to Heyl & Patterson, Inc., Pittsburg, Pa. Cable conveyer	811,991	Feb. 6	930	203	120	1679
Ackroyd, Charles, Paterson, N. J. Shoe and slipper hanger	813,072	Feb. 20	3105	680	120	2253
Acme Auto-Meter Company. (See Volkmar, Bernhard, assignor.)						
Actien-Gesellschaft für Anilin Fabrikation. (See Altschul, Julius, assignor.)						
Actien-Gesellschaft für Anilin Fabrikation. (See Giey, Richard, assignor.)						
Adams Bagnall Electric Company *et al.* (See Ossanyan, Paul C., assignor.)						
Adams, C. E., *et al.* (See Dysart, Fred D., assignor.)						
Adams, Earl E., Battle Creek, Mich. Carburetor	813,663	Feb. 27	4320	951	120	2573
Adams, Frank C., assignor of one-half to J. M. and O. M. Seropian, Fresno, Cal. Treating raisins to remove the cap-stems	812 971	Feb. 20	2905	641	120	2209
Adams, Henry, Tunbridge Wells, England. Jack for lifting and transporting motor-cars, &c	811,116	Jan. 30	5077	1061	120	1263
Adams, Isaac M., assignor of one-half to W. Stein, Shenandoah, Pa. Safety device for mine-elevators	811,892	Feb. 6	689	150	120	1631
Adams, Isaac M., assignor of one-half to W. Stein, Shenandoah, Pa. Safety device for mine-cages	811,893	Feb. 6	690	151	120	1631
Adams, Orsemas T. X. (See Adams, P. H. and O. T. X.)						
Adams, Phineas H. and O. T. X., Chicago, Ill. Boring-machine	811,664	Feb. 6	260	65	120	1540
Adams, Powell O., Cameron, Tex. Emergency rail-brake	810,316	Jan. 16	3464	715-16	120	839
Adams, Richard, Toronto, Canada. Pipe-wrench	806,801	Jan. 2	357	77	120	79
Adams, Thomas E., Cleveland, Ohio. Rock-drill	811,685	Feb. 6	291	66	120	1549
Addressograph Company. (See Duncan, Joseph S., assignor.)						
Addressograph Company. (See Duncan and Tavander, assignors.)						
Addy, Marion, Peoria, assignor of one-half to G. P. Christensen, Bartonville, Ill. Draft-equalizer	813,904	Feb. 27	4930	1091	120	2702
Adell, John A. (See Starrett and Adell.)						
Adreon, Robert E., and F. M. Stambaugh, St. Louis, Mo.; said Stambaugh assignor to said Adreon. Combined air-brake-setting device and alarm	808,711	Jan. 2	170	30	120	38
Adriance, Adrian D. (See Calleson, Adriance, and Duppler.)						
Adriance, Benjamin, and A. Calleson, Brooklyn, N. Y.; said Calleson assignor to said Adriance. Cam-binding machine	810,245	Jan. 16	3308	695-6	120	805
Aeolian Company. (See Wood, Frederick L., assignor.)						
Aeolian Company. (See Wright, Morris S., assignor.)						
Agar, James B., *et al.* (See Martin, George W., assignor.)						
Agnew, Robert I., Salem, Va. Flour bleacher and purifier	812,110	Feb. 6	1149	262	120	1722

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Alphabetical list of patentees for January and February—Continued.

			Monthly volume.		Official Gazette.	
			Specification.	Drawing.	Volume.	Page.

Alphabetical list of patentees for January and February—Continued.

			Monthly volume.		Official Gazette.	
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Alphabetical list of patentees for January and February—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Agnew, Frank R., *et al.* (See Ward, George, assignor.)						
Ahlgrim, Charles, *et al.* (See McDonner, Charley, assignor.)						
Aicher, George E., *et al.* (See Mitchell, Ira G., assignor.)						
Aiken, Edward L., East Orange, assignor to New Jersey Patent Company, West Orange, N. J. Repeating attachment for phonographs	810,018	Jan. 16	2826	584–5	120	704
Ainley, Emmett. (See Leffort, William M., assignor.)						
Akers, Henry H., assignor to O. B. Akers, Cherryvale, Kans. Mail-bag catcher and deliverer	812,471	Feb. 13	1911	421–2	120	1955
Akers, Ora B. (See Akers, Henry H., assignor.)						
Akers, William M., and B. F. Huston, Decatur, Iowa. Building-wall construction	811,534	Feb. 6	3	1	120	1485
Aktiebolaget L. M. Ericsson & Co. (See Johansson, Hemming, assignor.)						
Aktiebolaget Separator. (See Ljungström, Fredrik, assignor.)						
Alaska Codfish Co. (See Whitman, Victor, assignor.)						
Albers, Josef, Aix-la-Chapelle, Germany. Protective cover for pneumatic tires	813,934	Feb. 27	4821	1064	120	2680
Alden, Louis, Jr., Bryn Mawr, Pa. Can-opener	811,894	Feb. 6	691	151	120	1631
Aldrich, Alonzo, Beloit, Wis. Paper-making machine	811,527	Jan 30	5867	1230	120	1430
Alexander, Frank P., Ludington, Mich. String musical instrument	808,802	Jan. 2	358	77	120	80
Alexander, Julius A., Pine Bluffs, Ark. Hame	810,383	Jan. 23	3627	747	120	909
Alexander, Robert L., Moral, assignor of one-half to A. Coleman, McComb, Okla. Ter. Rail-joint	809,238	Jan. 2	1252	255	120	276
Alexander, Sidney A., Meriden, Conn. Parquet-flooring	812,320	Feb. 13	1636	360	120	1809
Alexander, Tony, Brookhaven, Miss. Level	812,261	Feb. 13	1492	326	120	1865
Alexander, William J., *et al.* (See McCarl, Joseph C., assignor.)						
Allbright, William B., Chicago, Ill. Filter-plate	813,395	Feb. 27	3759	826	120	2449
Allen, Aaron B., Pueblo, Colo. Nut-lock	813,031	Feb. 20	3017	664	120	2232
Allen, Arthur S., Brookline, assignor to United Printing Machinery Company, Boston, Mass. Leveler for forms of type	811,254	Jan. 30	5565	1161	120	1368
Allen, Charles M. (See Baggaley, Allen, and Lindquist.)						
Allen, Charles M., Lolo, Mont. Saving metal values from slag	810,364	Jan. 16	3563	733	120	863
Allen, Charles M., Lolo, Mont., assignor to R. Baggaley, Pittsburg, Pa. Converting matte	808,618	Jan. 2	1	1	120	3
Allen, Clarence L., assignor to Cotton Collar Company, Atlanta, Ga. Horse-collar	809,886	Jan. 9	2535	526	120	591
Allen, Jacob S., Jr., Philadelphia, Pa. Derrick	810,691	Jan. 23	4241	878–9	120	1048
Allen, James B. (See Bryant and Allen.)						
Allen, John H. (See Campbell, John C., assignor.)						
Allen, Matthew F., Nashville, Tenn. Range construction	809,766	Jan. 9	2328	481–2	120	544
Allen, Oliver C., Greenfield, Ind. Cross-arm construction for telegraph-poles, &c.	811,895	Feb. 6	693	151	120	1631
Allen, Thomas G., London, England. Moter-car for preventing side slip	813,664	Feb. 27	4322	951	120	2574
Allen, Uriah C., Sandyhill, N. Y. Treating waste fiber	811,896	Feb. 6	694	151–2	120	1632
Allen, William C., Gurley, Ala. Pneumatic grain-elevator	813,073	Feb. 20	3106	680	120	2264
Allen, William D., and C. F. Bowes, assignors to W. D. Allen Manufacturing Company, Chicago, Ill. Hose-rack	811,686	Feb. 6	293	66	120	1550
Alliance Machine Company. (See Shem, George W., assignor.)						
Allis-Chalmers Company. (See Martin, Ludolph P., assignor.)						
Allis-Chalmers Company. (See Reynolds, Edwin, assignor.)						
Allison, Andrew J., Mount Sylvan, Tex. Driving mechanism	810,217	Jan. 16	3468	716	120	849
Allison, James J., Rockfalls, Ill. Stopper for bottles	811,811	Feb. 6	820	116	120	1588
Allison, Robert B., Topeka, Kans. Shingling-hatchet	810,597	Jan. 23	4076	840	120	1019
Allsbouse, J. Irving, *et al.* (See Howard, James, assignor.)						
Allwardt, Morris H., Jordan Valley, Oreg. Hay-net	812,262	Feb. 13	1498	336–7	120	1865
Alpert, William, Richardton, N. D. Match-box	812,714	Feb. 13	2080	895	120	2080
Alrite Duplicating Supply Company. (See Hilliker, George L., assignor.)						
Alsobrook, James C., Sorrento, Fla. Animal-trap	812,472	Feb. 13	1914	422	120	1956
Alsop Process Company. (See Mitchell, John E., assignor.)						
Alspach, Alpheus J., Chicago, Ohio. Combined step-ladder and ironing-table	809,926	Jan. 16	2331	544	120	663
Althaus, Frederick D., New York, N. Y. Ration-engine	812,176	Feb. 13	1341	291–3	120	1831
Altmann, Charles P., Lyon, France. Steam-generator	813,133	Feb. 20	3239	710	120	2263
Altschul, Julius, assignor to Actien-Gesellschaft für Anilin Fabrikation, Berlin, Germany. Making silk fibroin peptone	813,272	Feb. 20	3498	.....	120	2334
Aluminum Manufacturing Company. (See Kummerow, Adolph, assignor.)						
Aluminum Press Company. (See Claridge and Randall, assignors.)						
Ambrose, Harry T. (See Donning, George W., assignor.)						
Amendt, Christian, Latrobe, Pa. Self-centering dividers	809,887	Jan. 9	2536	526	120	591
America Company. (See Sutton, William S., assignor.)						
American Absorbent Fiber Company. (See Green, Willard R., assignor.)						
American Blower Company. (See Treat, Charles H., assignor.)						
American Borax Company. (See Blumenberg, Henry, Jr., assignor.)						
American Brake Company. (See Barlow, George D., assignor.)						
American Brake Company. (See Reinhart, Charles, assignor.)						
American Brake Company. (See Stambaugh, Francis M., assignor.)						
American Can Company. (See Lots, Augustus, assignor.)						
American Can Company. (See Macarthy, Henry, assignor.)						
American Can Company. (See Marcuse, Isaac J., assignor.)						
American Can Company. (See Sharp, Lee C., assignor.)						
American Can Company. (See Williams, Harry B., assignor.)						
American Car & Foundry Company. (See Ostrander, Allen E., assignor.)						
American Car Strap Advertising Company. (See Collins, John S., assignor.)						
American Cigar Company. (See Richards, Francis H., assignor.)						
American Column Company. (See Treadder, John J., assignor.)						
American Compressed Air Supplying Company. (See Palm, John V. O., assignor.)						
American Electric Brake Company. (See Mahoney, Joseph N., assignor.)						
American Electric Telephone Company. (See Carlisa, Albert, assignor.)						
American Electric Telephone Company. (See Olsen, Halvor M., assignor.)						
American Electric Telephone Company. (See Setter, Michael, assignor.)						
American Electromobile Company. (See Rae, Frank B., assignor.)						
American Graphophone Company. (See Manwaring, George A., assignor.)						
American Heel Machine Company. (See Wolfe, William, assignor.) (Reissue.)						
American Locomotive Company. (See Cole, Francis J., assignor.)						
American Meter Company. (See McDonald and Scofield, assignors.)						
American Multigraph Company. (See Gammeter, Harry C., assignor.)						
American Optical Company. (See Coates, Walter A., assignor.)						
American Paper Bottle Company. (See Kinsey, James C., assignor.)						
American Paper Bottle Company. (See Kinsey and Heyl, assignors.)						
American Patent Promotion Company. (See Wilkes, Thomas E., assignor.)						
American Pulley Company. (See Brinley, Charles A., assignor.)						
American Road Machine Company. (See Phillips, Edwin S., assignor.)						
American Rotary Engine Company. (See Porter and Whiting, assignors.)						

Alphabetical list of patentees for January and February—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
American Sales Book Company. (See Landon, Asa E., assignor.)						
American Seeding Machine Company. (See Mills, Adelbert F., assignor.)						
American Seeding Machine Company. (See Packham and Oates, assignors.)						
American Serial Lock Company. (See Townsend, Harry P., assignor.)						
American Sheet & Tin Plate Company. (See Bray, Charles W., assignor.)						
American Sheet and Tin Plate Company. (See Mora, Fritz C., assignor.)						
American Sintering Company. (See Davison, George L., assignor.)						
American Specialty Company. (See Cioffi and Case, assignors.)						
American Steel & Wire Company of New Jersey. (See Backlin and Eklund, assignors.)						
American Suction Gas Producer Company. (See Sandner, Erich, assignor.)						
American Turpentine and Tar Company. (See Gilmer, George O., assignor.)						
American Type Founders Company. (See Benton, Linn B., assignor.)						
American Water Softener Company. (See Spencer, Ira H., assignor.)						
American Wire Cloth Company. (See Christian and Reynolds, assignors.)						
Ammerman, William M., assignor to Edwin J. Toof Company, New Haven, Conn. Sewing-machine	809,600	Jan. 9	2017	418	120	474
Ammerman, William M., assignor to Edwin J. Toof Company, New Haven, Conn. Interchangeable lock and chain stitch sewing-machine	809,660	Jan. 9	2132	442	120	499
Ammerman, William M., assignor to Edwin J. Toof Company, New Haven, Conn. Feeding mechanism for sewing-machines	809,661	Jan. 9	2135	442–3	120	499
Amundson, Martin O., Ivanhoe, Minn. Lamp-burner	810,457	Jan. 23	3802	781	120	950
Andem, Clinton S., North Greevenor Dale, Conn. Cloth-tension device for take-up mechanism for looms	809,239	Jan. 2	1254	255	120	276
Andersen, Peder, assignor to O. Hanson, Seattle, Wash. Horse-blanket	808,803	Jan. 2	361	78	120	80
Anderson, Andrew, Mason, Wis. Car-lock	813,782	Feb. 27	4462	966	120	2604
Anderson, Anton, and W. E. Palmer, Graniteville, Utah. Hay-fork	811,266	Jan. 30	5399	1126	120	1332
Anderson-Barngrover Mfg. Co. (See Anderson, William C., assignor.) (Reissue.)						
Anderson, Charles H., Chicago, Ill. Conveyer	813,134	Feb. ?	3241	711–13	120	2263
Anderson, Edward H., Schenectady, N. Y., assignor to General Electric Company. Control of automobile-motors	811,533	Feb. 6	1	1	120	1485
Anderson, Edward V., Pittsburg, Pa. Stand-pipe for railways	811,812	Feb. 6	521	116–17	120	1596
Anderson, Edward V., Pittsburg, Pa. Valve	811,813	Feb. 6	523	117	120	1597
Anderson, Frederick F., New York, N. Y. Cigarette-machine	811,118	Jan. 30	5061	1062	120	1263
Anderson, Frederick F., New York, N. Y. Means for cleaning floors	811,119	Jan. 30	5063	1063	120	1264
Anderson, John, Boston, Mass. Means for muting vibrations in railway-rails	811,535	Feb. 6	4	1	120	1485
Anderson, John S., St. Louis, Mo., assignor to North & Judd Manufacturing Company, New Britain, Conn. Breast-strap slide and attachment	809,927	Jan. 16	2632	544	120	663
Anderson, Knud, Tacoma, Wash., and L. Pederson, assignors of one-third to H. Meyer, Manitowoc, Wis. Door-securer	810,692	Jan. 23	4244	879	120	1049
Anderson, Leman C., Indianapolis, Ind. Weather-board gage	810,246	Jan. 16	3309	686	120	805
Anderson, Rowland, Chihuahua, Mexico. Railway-spike	810,458	Jan. 23	3803	781	120	950
Anderson, William C., assignor, by mesne assignments, to Anderson-Barngrover Mfg. Co., San Jose, Cal. Fruit-grader. (Reissue)	12,459	Feb. 27	4963	1099	120	2707
Anderson, William M., Pittsburg, Pa. Glass-furnace	808,804	Jan. 2	362	78	120	80
Anderson, William M., Pittsburg, Pa. Lear	813,194	Feb. 20	3341	735	120	2304
Anderton, Charles, Jr. (See Leppert, William, assignor.)						
Andrews, Frederick A., assignor to W. A. S. Benson and Company, Limited, London, England. Pendent gas and other lamp	812,111	Feb. 6	1151	253	120	1723
Andrews, George C., Minneapolis, Minn. Machine for punching metal	808,712	Jan. 2	172	39	120	39
Andrews, Ignatius, New York N. Y. Folding baby-carriage and cradle	810,247	Jan. 16	3311	686–7	120	806
Andrews, Thomas M., Nashville, Tenn. Valve for engines	811,117	Jan. 30	5078	1061–2	120	1263
Andrews, W. K. (See Thomas, Bert H., assignor.)						
Andrus, Herbert B., Buffalo, Wyo. Gun-sight	811,267	Jan. 30	5401	1127	120	1333
Anger, John E. (See Stanley and Anger.)						
Angin, Wallace W., assignor of one-half to J. A. Lamun, Buffalo, Mo. Rail-joint	810,598	Jan. 23	4077	840	120	1010
Angus, Anna A., and D. B. Cameron, New York, N. Y. Manicuring appliance	811,992	Feb. 6	932	204	120	1679
Aniline Colour and Extract Works, formerly John R. Geigy. (See Hagenbach, John, assignor.)						
Anker-Holth, Severin C., Riverside, Ill. Friction-clutch	813,396	Feb. 27	3760	826	120	2449
Annis, John E. (See Lieb, Robert C., assignor.)						
Ansorge, Eugene K., Greenbay, Wis. Wrench	810,599	Jan. 23	4078	840	120	1011
Anstice, Josiah. (See Smith, Edward F., assignor.)						
Anthony, Daniel E., assignor of one-half to E. E. Mellen, Akron, Iowa. Corn-harvester	810,693	Jan. 23	4246	879–80	120	1049
Anthony, Edgar G., New York, N. Y. Picture-frame	811,355	Jan. 30	5566	1161	120	1368
Apgar, Gorman J., Robinson, Ill. Cement-block machine	810,019	Jan. 16	2930	585	120	705
Appert, Leon, Paris, France. Manufacturing window-glass	809,418	Jan. 9	1653	339–40	120	396
Apple, Vincent G., Dayton, Ohio. Gas-engine	811,757	Feb. 6	410	90	120	1576
Applegate, Clarence R., Evansville, assignor of five-eighths to S. A. Schmitt, Vanderburg county, Ind. Filter	810,020	Jan. 16	2832	586	120	706
Appleyard, Hollo, Silvertown, England. Ball	808,713	Jan. 2	174	40	120	39
Aradi, Johann, Prakfalu, Austria-Hungary. Dismountable building	809,163	Jan. 2	1063	221	120	233
Arbecam Nautical Instrument Co. (See How, Benjamin V., assignor.)						
Arbuthnot, Charles, McKees Rocks, Pa. Horseshoe-shaping machine	813,135	Feb. 20	3245	713–14	120	2284
Arcade Manufacturing Company. See Bitner, Harry, assignor.)						
Archer, William S., Providence, R. I. Machine for disintegrating, cleaning, and assorting fibrous materials	810,898	Jan. 30	4661	971	120	1171
Arduino, Amedeo A. (See Arduino, Peter W. and A. A.)						
Arduino, Peter W. and A. A., Stamford, Conn. Electric lamplighter	810,384	Jan. 23	3628	747	120	909
Arey, Fred C., Chicago Heights, Ill. Tool for bonding rails	812,803	Feb. 20	2561	564	120	2133
Arlington Company. (See Chapman and Stone, assignors.)						
Armes, Scott, Montgomery, Ind. Wire-stretcher	809,767	Jan. 9	2330	482	120	544
Armstrong, Albert H., Schenectady, N. Y., assignor to General Electric Company. Induction-motor control	811,758	Feb. 6	414	91	120	1576
Armstrong, Frederick M. (See Kip and Armstrong.)						
Arnett, Edgar C., Washington, Kans. Automatic weighing-machine	810,694	Jan. 23	4248	880–1	120	1049
Arnold, Allen A. (See Scanlon and Arnold.)						
Arnold, Ernest W., assignor of one-half to V. Salas, San Francisco, Cal. Treating ores	812,473	Feb 13	1915	422	120	1966
Arnold, George T., assignor of one-half to H. W. Lewis, Oshkosh, Wis. Rudder	812,161	Feb. 6	1287	281–2	120	1751
Arnold, Horace L., Brooklyn, N. Y., assignor to Union Typewriter Company, Jersey City, N. J. Type-writing machine	808,714	Jan. 2	176	40	120	39
Arnold, Jasil M. (See Kelly, George E., assignor.)						
Arnold Print Works. (See Jeanmaire and Schmid, assignors.)						
Aron, Hermann, Charlottenburg, Germany. Clockwork electricity-meter	813,610	Feb. 27	4186	919	120	2545
Aron, Hermann, Charlottenburg, Germany. Electricity-meter	813,685	Feb. 27	4324	951–2	120	2574
Aronstein, Sidney. (See Coleman, Clyde J., assignor.)						
Arrowsmith, William H., Oakland, Cal. Measuring-spoon	808,967	Jan. 2	699	151	120	154

Alphabetical list of patentees for January and February—Continued.

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Arsem, William C., Schenectady, N. Y., assignor to General Electric Company. Electro-deposition	811,750	Feb. 6	415	91	120	1577
Arsmault, Albert J., Boston, Mass. Street letter-box	811,611	Feb. 6	150	33	120	1516
Arthur, Nicol S., Glasgow, Scotland. Machine for bending metal bars, &c.	808,619	Jan. 2	3	1	120	3
Ashcraft, Alonzo, Fort Smith, Ark. Cut-off valve for gas or oil burners	812,715	Feb. 13	2391	526	120	2080
Asher, William J., Willimantic, Conn. Automatic apron or belt guide	813,996	Feb. 27	4932	1091	120	2703
Ashley, Frank M., New York, N. Y. Inkstand	811,536	Feb. 6	5	1-2	120	1486
Askenasy, Paul. (See Koller and Askenasy.)						
Ateliers de Constructions Mécaniques Cidevant Ducommun. (See Muff, Charles E., assignor.)						
Atherton, Edwin F., Macedon, N. Y. Horseshoe-calk	808,891	Jan. 2	538	120	120	119
Athey, James L., Woodbine, Iowa. Mail-crane	810,800	Jan. 23	4080	841	120	1011
Atkins, Frank S. (See Devin and Atkins.)						
Atkinson, Adrienna O., Louisville, Ky., assignor of one-half to G. Jurt, Alexandria, Ind. Sifter	813,763	Feb. 27	4464	986	120	2604
Atkinson, John M., Chicago, Ill., assignor, by mesne assignments, to Rail Joint Company. Means for electrically connecting railway-rails and the like	813,996	Feb. 27	4933	1091	120	2703
Auchly, Albert, Montgomery, Mo. Hog-trap	812,391	Feb. 13	1771	387-8	120	1927
Audrieth, Ludwig, New York, N. Y. Door-check	810,021	Jan. 16	2833	526	120	706
Augustine, Benjamin F., Buffalo, N. Y. Rotary engine	810,901	Jan. 23	4082	841-2	120	1011
Auld, Hugh R., Boston, Mass. Vehicle-tire	812,321	Feb. 13	1637	380	120	1899
Aultman, Thomas G., Fairmont, W. Va. Self-lubricating wheel	811,356	Jan. 30	5567	1162	120	1368
Aulton, Emma M., Bushbury, near Wolverhampton, England. Harness lining and pad and the like	809,276	Jan. 9	1345	273	120	331
Aupperle, Charles F. (See Corbin, Charles B., assignor.)						
Aurora Automatic Machinery Company. (See Norling, Reinhold A., assignor.)						
Aurora Automatic Machinery Company. (See Ottaway, William, assignor.)						
Austin, Edward N. (See Austin, James D. and E. N.)						
Austin, Frederick T. (See Reece and Austin.)						
Austin, Henry, Felton, Del. Apparatus for heating propagating-beds	810,835	Jan. 23	4506	938	120	1105
Austin, James D. and E. N., assignors of one-third to H. Hoover, Campbell Hill, Ill. Steam-valve	810,248	Jan. 16	3313	687	120	806
Auto-Car Equipment Company. (See Smith, Russell G., assignor.)						
Autocoil Company. (See Varley, Richard, assignor.)						
Automatic Car Fender Co. (See Fairchild, Frank J., assignor.)						
Automobile Importing Company. (See Grillier, Georges, assignor.)						
Automobile Wheel and Rim Company of New Jersey. (See Hodgson, Isaac, assignor.)						
Avery, George C., assignor to B. F. Avery & Sons, Louisville, Ky. Wheel for planters	809,888	Jan. 9	2538	526	120	591
Avery Manufacturing Company. (See Springer, William N., assignor.)						
Avery, Thaddeus, Jr., Joliet, Ill. Submarine dredge	813,935	Feb. 27	4822	1064	120	2680
Awbrey, Henry R., Forsyth, Mo. Stovepipe-thimble	811,537	Feb. 6	7	2	120	1486
Axford, Edward, Philadelphia, Pa. Wrench	813,686	Feb. 27	4327	952	120	2575
Ayers, Dee, and J. D. Sloan, Mount Vernon, Mo. Churn	809,889	Jan. 9	2540	527	120	592
Ayers, Raymond F. (See Keen and Ayers.)						
Azary, Cornelius von, Lippa, Austria-Hungary. Apparatus for making open-work wire receptacles	811,357	Jan. 30	5569	1162	120	1368
Azuma, Takesari, Kanda, Tokyo, Japan. Flash-light device	813,849	Feb. 27	4654	1029	120	2645
B. F. Avery & Sons. (See Avery, George C., assignor.)						
Baar, Charles, Grand Rapids, Mich. Boring-tool	810,602	Jan. 23	4098	842	120	1012
Babio, José G., Brooklyn, N. Y. Spring-wheel for vehicles	813,397	Feb. 27	3761	826	120	2449
Babio, Manuel G., New York, N. Y. Vehicle-wheel	809,040	Jan. 2	816	176	120	180
Babio, Manuel G., New York, N. Y. Vehicle-wheel	812,629	Feb. 13	2237	487	120	2020
Babu, Lala R., Patiala, Patiala State, India. Chess-recorder	810,899	Jan. 30	4664	971-3	120	1172
Bach, Julius H., Chicago, Ill. Brick-clay-crusher rolls	813,273	Feb. 20	3490	709	120	2334
Bacher, Peter. (See Rowland and Bacher.)						
Backlin, Axel F., and I. Eklund, assignors to American Steel & Wire Company of New Jersey, Worcester, Mass. Spindle-brake device for wire-fence machines	808,892	Jan. 2	539	120	120	119
Backlin, Axel F., and I. Eklund, assignors to American Steel & Wire Company of New Jersey, Worcester, Mass. Tension mechanism for wire-fence machines	810,695	Jan. 23	4254	881-2	120	1051
Backlin, Axel F., and I. Eklund, assignors to American Steel & Wire Company of New Jersey, Worcester, Mass. Driving mechanism for coiler-spindles of wire-fence machines	810,696	Jan. 23	4256	882-3	120	1051
Backus, Henry N., Detroit, Mich. Slatted crate	811,023	Jan. 30	4916	1025	120	1228
Backus, John C., Smethport, Pa. Means for setting and spotting tenpins	809,890	Jan. 9	2541	527-8	120	592
Badeau, George M., *et al.* (See Duplessis, Elould, assignor.)						
Badger, Thomas N., Oakland, Cal. Beam-compass	812,322	Feb. 13	1639	360	120	1899
Badger, William F., Quincy, Mass. Pneumatic tool	810,603	Jan. 23	4087	842	120	1012
Badische Anilin & Soda Fabrik. (See Bally and Isler, assignors.)						
Badische Anilin & Soda Fabrik. (See Bally and Wolff, assignors.)						
Badische Anilin & Soda Fabrik. (See Hesseberger, Johannes, assignor.)						
Badische Anilin & Soda Fabrik. (See Strahlenert and Reubold, assignors.)						
Baehr, George, McKeesport, assignor to National Tube Company, Pittsburg, Pa. Tube-drawing apparatus	808,620	Jan. 2	6	2	120	4
Baer, Frederick A., Paterson, N. J. Beaming-machine	811,358	Jan. 30	5570	1162	120	1369
Baggaley, Ralph. (See Allen, Charles M., assignor.)						
Baggaley, Ralph, Pittsburg, Pa. Producing vitrified brick, tile, and various shapes	810,022	Jan. 16	2834	.....	120	706
Baggaley, Ralph, Pittsburg, Pa., C. M. Allen, Lolo, Mont., and E. W. Lindquist, Chicago, Ill.; said Allen and Lindquist assignors to said Baggaley. Refining copper	810,249	Jan. 16	3314	688	120	806
Baggett, Robert A., Belton, Tex., assignor to Mellor Box Opener Company, Sedalia, Mo. Combination-tool. (Reissue)	12,458	Feb. 20	3756	825	120	2390
Bagley, Forrest C. (See Hill, John L., assignor.)						
Bagley, Olin H., Deadwood, Cal. Gold-saving apparatus	812,474	Feb. 13	1916	422-3	120	1967
Bagnall, Joseph, North Attleboro, Mass. Bracelet	808,805	Jan. 2	363	78	120	81
Bahl, Joseph and J. C., Chicago, Ill. Music-leaf turner	811,903	Feb. 6	934	204-5	120	1679
Bahl, Joseph C. (See Bahl, Joseph and J. C.)						
Baier, George, assignor of one-half to G. Baier, Jr., Buffalo, N. Y. Protector for windows	810,604	Jan. 23	4093	842	120	1014
Bailey, James, *et al.* (See Richardson, Abraham, assignor.)						
Bailey, James, *et al.* (See Richardson and Jones, assignors.)						
Bailey, Ralph W., West Newbury, Mass., assignor of one-half to C. A. Stiles, Los Angeles, Cal. Order-card	813,764	Feb. 27	4465	986	120	2604
Bailey, William S., Spring Hope, N. C. Switch	813,936	Feb. 27	4824	1065	120	2681
Bailey, Wood E., Tarkio, Mo. Cultivator	811,897	Feb. 6	896	152-3	120	1632
Baile, John J., Lancaster, Pa. Fitting-stand for dressmakers, &c.	811,288	Jan. 30	5402	1127	120	1333
Baird, Edgar W., and J. F. Durkin, Philadelphia, Pa., assignors to Standard Automatic Lubricator Company, Camden, N. J. Lubricator	811,034	Jan. 30	4917	1026	120	1229
Baker, Bryden G., Minneapolis, Minn. Threshing-machine	811,035	Jan. 30	4919	1026-7	120	1229

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Baker, Charles W., Paw Paw, Mich. Load-binder	813,032	Feb. 20	3018	664	120	2232
Baker, Edmond L., Roanoke, Va. Trolley-wire clamp	809,601	Jan. 9	2019	419	120	475
Baker, Frederick H. (See Baker, Shevlin, and Baker.)						
Baker, George W., Wilmington, Del. Machine for fleshing and working out hides and skins	811,359	Jan. 30	5572	1163-4	120	1369
Baker, Harry G., Worcester, Mass., assignor to Crompton & Knowles Loom Works. Warp stop-motion for looms	813,765	Feb. 27	4466	987	120	2605
Baker, Henry M. (See Sheetz, William J., assignor.)						
Baker, James H., G. F. Shevlin, and F. H. Baker, assignors to Baker and Shevlin Company, Saratoga Springs, N. Y. Centrifugal pulp-screen	809,041	Jan. 2	821	176	120	181
Baker, Jefferson H., Collinsville, Tex. Plow	811,814	Feb. 6	524	117	120	1597
Baker and Shevlin Company. (See Baker, Shevlin, and Baker, assignors.)						
Balch, Samuel W., Montclair, N. J. Troposcope	813,136	Feb. 20	3247	714	120	2284
Baldauf, George L. (See Neumaier, John, assignor.)						
Baldwin, Clarence K., and T. Robins, Jr., New York, N. Y., assignors to Robins Conveying Belt Co. Conveyer	810,605	Jan. 23	4094	843-4	120	1015
Baldwin Company. (See Jobes, Lawrence U., assignor.)						
Baldwin, Homer, Youngstown, Ohio. Separating-machine	812,972	Feb. 20	2906	641	120	2209
Baldwin, Stephen G., Marion, Ind. Ink-well	809,891	Jan. 9	2547	528	120	594
Ball, Francis M., Falls Church, Va. Toy pistol	808,621	Jan. 2	8	2	120	4
Ball, Frank H., Plainfield, N. J. Friction-clutch	808,622	Jan. 2	9	2	120	4
Ball, Henry P., Schenectady, N. Y., assignor of one-half to S. Insull, Chicago, Ill. Music-roll and adjustable driving-support therefor	810,606	Jan. 23	4096	844	120	1015
Ball, Reuben S., *et al.* (See Mitchell, Ira G., assignor.)						
Ballard, Heaton T., Youngstown, Ohio. Governor mechanism	812,630	Feb. 13	2241	487	120	2021
Ballard, Milton H., Lynn, Mass., assignor to Tripp Fruit Wrapping Machine Company. Wrapping-machine	812,912	Feb. 20	2774	610	120	2180
Ballentine, Fred, Moscow, Okla. Ter. Animal-trap	810,518	Jan. 23	3925	807	120	979
Ballod, Karl, Riga, Russia. Cycle-lock	813,937	Feb. 27	4826	1065	120	2681
Bally, Oscar, and M. H. Isler, Mannheim, assignors to Badische Anilin & Soda Fabrik, Ludwigshafen-on-the-Rhine, Germany. Violet dye and making same	809,892	Jan. 9	2548	.....	120	594
Bally, Oscar, Mannheim, and H. Wolff, assignors to Badische Anilin & Soda Fabrik, Ludwigshafen-on-the-Rhine, Germany. Anthracene compound and making same	809,893	Jan. 9	2550	.....	120	594
Bally, Oscar, Mannheim, and H. Wolff, assignors to Badische Anilin & Soda Fabrik, Ludwigshafen-on-the-Rhine, Germany. Anthracene compound and making same	809,894	Jan. 9	2552	.....	120	594
Bally, Oscar, Mannheim, and H. Wolff, assignors to Badische Anilin & Soda Fabrik, Ludwigshafen-on-the-Rhine, Germany. Anthracene dye and making same	811,471	Jan. 30	5764	.....	120	1409
Balsam, Louis, New York, N. Y. Cap	810,697	Jan. 23	4257	883	120	1052
Baltzer, John L., and L. S. Starrett, assignors to L. S. Starrett Co., Athol, Mass. Base attachment for center-gages	813,997	Feb. 27	4935	1091	120	2703
Bancroft, James E., assignor of one-half to C. M. Milroy, Toledo, Ohio. Tire-heater	811,026	Jan. 30	4924	1027	120	1230
Bane, James O., Waseca, Minn. Pump spring attachment	812,716	Feb. 13	2394	526	120	2050
Banker, Clarence M. (See Creighton and Banker.)						
Banks, Alexander F. (See Campbell, Robert B., assignor.)						
Banks, Archie W., assignor of one-fifth to M. A. Banks, Rockford, Ill. Heater	810,607	Jan. 23	4101	844-5	120	1016
Banks, Martin A. (See Banks, Archie W., assignor.)						
Barakat, Elias E., Washington, D. C. Portable scale	809,602	Jan. 9	2021	419	120	475
Barber Asphalt Paving Company. (See Wardell, Henry R., assignor.)						
Barber, Charles E., Syracuse, N. Y. Boat-propeller	812,475	Feb. 13	1919	423	120	1967
Barber, Charles E., Syracuse, N. Y. Boat-propeller	813,074	Feb. 20	3107	681	120	2254
Barber, Homer F., Salem, Ohio. Railway-rail joint	812,717	Feb. 13	2396	526	120	2051
Barber, John C., Chicago, Ill. Truck-bolster	809,768	Jan. 9	2331	482-3	120	545
Barbier, Benard & Turenne. (See Turenne, Emile L. P., assignor.)						
Barbour, William, Oxford, Iowa. Stock-watering tank	809,928	Jan. 16	2533	544	120	663
Barclay, James A., Indianapolis, Ind. Scale pivot-bearing	811,194	Jan. 30	5260	1101	120	1302
Barclay, John C., assignor to Western Union Telegraph Company, New York, N. Y. Telegraph-transmitter	811,994	Feb. 6	938	205-7	120	1680
Barclay, John C., assignor to Western Union Telegraph Company, New York, N. Y. Printing mechanism	811,995	Feb. 6	946	207	120	1681
Barclay, John C., assignor to Western Union Telegraph Company, New York, N. Y. Relay	811,996	Feb. 6	950	208	120	1682
Bardsley, William, Kearney, N. J. Cushioning apparatus for elevator-shaft gates	812,392	Feb. 13	1774	389	120	1927
Barisela, Tomás, J. P. Mislowsky, A. Caricchia, and L. E. Odio, Buenos Ayres, Argentina. Ether mixture for disinfecting	812,631	Feb. 13	2243	.....	120	2021
Barker, Elihu F. (See De Moss, Charles E., assignor.)						
Barker, England J., Morgan Park, Ill. Web-perfecting printing-press	810,608	Jan. 23	4102	845-7	120	1017
Barker, England J., Morgan Park, Ill. Type-writing machine	812,177	Feb. 13	1344	292-3	120	1831
Barker, England J., Morgan Park, Ill. Tension-regulating device for autographic registers	813,481	Feb. 27	3927	861-2	120	2488
Barker, Frank M., assignor to H. B. Rouse, Chicago, Ill. Printer's composing-stick	808,715	Jan. 2	184	40	120	42
Barker, John H., assignor to C. A. Parsons, Newcastle-upon-Tyne, England. Turbine	809,277	Jan. 9	1347	274	120	331
Barker, Walter H., Harrow, England. Child's folding carriage	812,323	Feb. 13	1641	361	120	1899
Barkhouse, N. N., *et al.* (See Howard, James, assignor.)						
Barlow, George D., assignor to American Brake Company, St. Louis, Mo. Turning-tool	811,027	Jan. 30	4925	1027	120	1230
Barlow, Henry C., Goldendale, Wash. Pipe-wrench	810,365	Jan. 16	3566	733	120	863
Barlow, John B., Grand Rapids, Mich. Temporary binder	811,360	Jan. 30	5574	1164	120	1370
Barnes, Dora E., W. O. Blackmun, and A. Miller, Hays, Kans. Wagon-dumping apparatus	813,687	Feb. 27	4329	952	120	2575
Barnes and Erb Company. (See Binder, Gottlob, assignor.)						
Barnes, Joshua, New York, N. Y. Inhaler	809,662	Jan. 9	2137	443	120	500
Barnes, Joshua B., Springfield, Ill. Lubricator for piston-rods	813,398	Feb. 27	3763	826	120	2450
Barnes, William M., Philadelphia, Pa. Collar and cuff shaper	811,120	Jan. 30	5086	1063	120	1264
Barnett, Morrieson J., San Francisco, Cal., assignor, by mesne assignments, to Whitson Autopress Company. Bed-and-cylinder motion for printing-presses	808,806	Jan. 2	364	79	120	81
Barnsdall, Theodore N., 2nd. (See McCourt and Barnsdall.)						
Barothy, Arpad M. (See Kovacs, Alexander, assignor.)						
Barr, Andrew J., assignor of one-half to H. E. Homberger, Mansfield, Ohio. Flush	809,603	Jan. 9	2022	419	120	475
Barr, Harry L., and F. Gaudert, Mansfield, Ohio. Brick-cutting machine	812,973	Feb. 20	2909	641	120	2209
Barret, Walter M., *et al.* (See Wyatt, George R., assignor.)						
Barrett, John F., and N. C. Collins, Chicago, Ill. Electric-light fixture	810,836	Jan. 23	4508	939	120	1106
Barry, Charles E., Schenectady, N. Y., assignor to General Electric Company. Brake system	808,716	Jan. 2	186	41	120	42
Barry, Henry, Chicago, Ill. Foldable railway-velocipede	811,289	Jan. 30	5403	1127-8	120	1333
Barry, James, assignor of three-eighths to L. D. Bodum, Seattle, Wash., and E. J. Brennan, St. Paul, Minn. Railway-tie	810,698	Jan. 23	4259	883	120	1052

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Barry, Jefferson D., assignor of three-fourths to D. Wise, F. D. Dehn, and M. L. Crossland, Waco, Tex. Combination-tool	813,342	Feb. 20	3630	798	120	2364
Barry, Thomas D., Brockton, Mass. Stitch-separator and pricking-up machine	811,997	Feb. 6	952	208	120	1682
Bartalt, Friedrich L., Bristol, England. Apparatus for preparing bleaching liquor	813,686	Feb. 27	4330	953	120	2576
Barth, Albert, assignor to S. A. John, Pawpaw, Ill., and J. L. Krats, Columbus, Ohio. Sheep-shearing table	810,181	Jan. 16	3165	655	120	775
Barth, Otto B., Loveland, Colo. Sugar-machine	810,260	Jan. 16	3320	689	120	807
Bartlett, Albert D., Hampton, Va. Shutter-fastener	813,343	Feb. 20	3640	798	120	2365
Bartlett, Eayre O., and W. F. Gordon, Joplin, Mo. Densifying and eliminating air and gas from masses of pulverulent metallic salts and oxids	809,354	Jan. 9	1499	303	120	365
Bartlett, Henry F., Hamilton, Canada. Flexible toy-hanger	810,900	Jan. 30	4670	973	120	1173
Bartlett, John E. (See Voss, Detlef C., assignor.)						
Bartlett, Marcus J., Chicago, Ill. Cattle-tag	810,385	Jan. 23	3630	748	120	909
Bartoletti, Peter, Brownsville, Pa. Rotary explosion-engine	810,366	Jan. 16	3567	733-4	120	893
Barton, John A., Virginia, Minn. Wrench	813,850	Feb. 27	4655	1029	120	2646
Bascom, Almon W., Spokane, Wash. Metallic railway-tie	813,611	Feb. 27	4190	919	120	2546
Base, Robert S., *et al.* (See Melton, Henry C., assignor.)						
Bastian, Charles L., Chicago, Ill. Guiding means for bowling-alley pin spotters or setters	811,612	Feb. 6	152	33	120	1518
Bastian, Charles L., Chicago, Ill. Bowling-alley pin-spotter	812,253	Feb. 13	1495	327	120	1865
Bastian, Charles O., assignor to Bastian Meter Company Limited, London, England. Electrolytic electricity-meter	811,538	Feb. 6	8	2-3	120	1486
Bastian Meter Company. (See Bastian, Charles O., assignor.)						
Batcheider, Asa F., Schenectady, N. Y., assignor to General Electric Company. Electric locomotive	808,717	Jan. 2	188	41	120	43
Batcheller, Birney C., Philadelphia, Pa., assignor to Pearsall Pneumatic Tube and Power Company, New York, N. Y. Carrier for pneumatic tubes	808,623	Jan. 2	11	3	120	5
Bates, Adelmer M., assignor to Bates Valve Bag Company, Cleveland, Ohio. Valve-bag	810,318	Jan. 16	3467	717	120	840
Bates & Bacon. (See Wallenthin, Walfrid, assignor.)						
Bates, Ralph E., Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company. Electrical control system	811,539	Feb. 6	10	3	120	1487
Bates, Theodore C., Worcester, Mass. Apparatus for sterilizing and cleansing bottles	812,974	Feb. 20	2910	642	120	2210
Bates Valve Bag Company. (See Bates, Adelmer M., assignor.)						
Bates Valve Bag Company. (See Rogers, John, assignor.)						
Bates, William H., R. C. Douglass, and W. G. Nourse, assignors to Marine Iron Works, Chicago, Ill. Rotary engine	811,613	Feb. 6	153	33-4	120	1518
Bauchelle, John U., *et al.* (See Rich, Charles C., assignor.)						
Bauchelle, Wm. M., *et al.* (See Rich, Charles C., assignor.)						
Baudin, Adrien, Paris, France. Generator of fluid-pressure	813,075	Feb. 20	3109	681	120	2254
Bauer & Black. (See Bauer, Parry S., assignor.)						
Bauer & Black. (See Schuls, Otto C., assignor.)						
Bauer, Carl E., Hammond, Ind., assignor to Simplex Railway Appliance Company, Chicago, Ill. Reinforced brake-beam	813,612	Feb. 27	4191	919	120	2546
Bauer, Charles, New York, N. Y. Car-fender	812,838	Feb. 27	4527	1005	120	2682
Bauer, Parry S., assignor to Bauer & Black, Chicago, Ill. Sanitary napkin	808,494	Jan. 2	12	3	120	6
Baugh, Thomas J., Hopkinsville, Ky. Wire-working tool	810,837	Jan. 23	4509	999	120	1106
Baugher, David L., assignor of one-half to J. P. Thayer, Paola, Kans. Well-drilling machine	812,393	Feb. 13	1777	389	120	1928
Baumann, Ernst K. A. (See Seyboth and Baumann.)						
Baumgart, August, Lind, Wash. Life-saving boat	811,815	Feb. 6	525	118	120	1397
Baurmann, Gustav, assignor to Illinois Sewing Machine Company, Chicago, Ill., White Sewing Machine Company, Cleveland, and Davis Sewing Machine Company, Dayton, Ohio. Sewing-machine cabinet	809,240	Jan. 2	1255	256	120	277
Bauroth, Leonhard, assignor to Lawrence Manufacturing Co., Toledo, Ohio. Collapsible die for wiring or beading	810,022	Jan. 16	2636	586	120	706
Bausch, Lomb, Saegmuller Co. (See Saegmuller, George N., assignor.)						
Baxendell, Franklin A., *et al.* (See Stein, Jacob, assignor.)						
Bayne, John J., Alexandria, Va. Gun-bearing	811,540	Feb. 6	12	3-4	120	1487
Beach, Edward W. (See Stiskin, Fredrick W., assignor.)						
Beach, Edwin R., Jersey City, N. J. Adding-machine	808,898	Jan. 2	542	120	120	120
Beach, Harry W., Montrose, Pa. Valve	811,361	Jan. 30	5576	1164	120	1370
Beach, Thaddeus C., St. Johns, Mich. Pedestal-table	812,394	Feb. 13	1780	390	120	1928
Beale, Harry A., McCook, Nebr. Torpedo-setting device	811,472	Jan. 30	5765	1207	120	1409
Beals, Eri V., Boston, Mass. Attachment for keyboard-machines	812,542	Feb. 13	2089	452-5	120	1987
Bean, Roscoe, Berea, Ohio. Repeating torpedo-cane	810,386	Jan. 23	3631	748	120	910
Beanes, Warwick H., and H. Walton, Peterborough, England. Hot-water heating apparatus	809,164	Jan. 2	1055	221-2	120	223
Beans, Manasseh W., Memphis, Mo. Railway-signal	810,357	Jan. 23	3635	749	120	910
Beard, Richard M., New York, N. Y. Intercommunication telephone system	809,939	Jan. 16	3634	545	120	663
Beatrice Manufacturing Company. (See Walter, Theophil P., assignor.)						
Beau, Henri, Paris, France. Pump	810,182	Jan. 16	3165	655	120	775
Beaufore, William C. (See Brabant and Beaufore.)						
Beaumont, Thomas R., Park Place, London, England. Construction of wheels	808,625	Jan. 2	13	3	120	5
Beaver, John E., Warwick, Ohio. Boltless joint connection	811,473	Jan. 30	5766	1207	120	1409
Beasley, Joseph O., Baltimore, Md. Faucet	809,595	Jan. 9	2553	528	120	594
Beckman, Henry F., assignor to Duplex Printing Press Company, Battlecreek, Mich. Flat-bed web-printing press	809,241	Jan. 2	1257	256	120	277
Beckman, Henry F., assignor to Duplex Printing Press Company, Battlecreek, Mich. Web-manipulating mechanism	811,121	Jan 30	5087	1064	120	1264
Beckman, Henry F., assignor to Duplex Printing Press Company, Battlecreek, Mich. Web-looping mechanism	811,270	Jan. 30	5408	1128	120	1334
Beckman, Henry F., assignor to Duplex Printing Press Company, Battlecreek, Mich. Web-looping mechanism	811,271	Jan. 30	5410	1128	120	1335
Beck, George C., Beavercreek, Minn. Register for pool-tables	811,195	Jan. 30	5262	1101-2	120	1302
Beck, John, Ashland, Wis. Refrigerating means	813,196	Feb. 20	3343	735-6	120	2204
Beck, William, St. Paul, assignor of six-tenths to F. and W. Brabs, J. McGrann, C. Joyce, F. Johnson, and T. Welsh, Henderson, Minn. Shoe-sole fastener	808,897	Jan. 2	388	79	120	81
Becker, Charles J., Los Angeles, Cal. Brooder	808,898	Jan. 2	387	79	120	81
Becker, John, Wichita, Kans. Door-holder	812,476	Feb. 13	1921	423	120	1988
Becker & Kahlsinger. (See Mihaster, Karl, assignor.)						
Becker, Theodor. (See Richmagrin and Becker.)						
Beckh, Walter. (See Conrad and Beckh.)						
Bedell, Richard M., Brooklyn, N. Y., assignor to Mergenthaler Linotype Company. Linotype-machine	811,362	Jan. 30	5578	1164	120	1371
Bee-Hive Fly Catcher Company. (See Samuels, Jacob, assignor.)						
Beeney, Henry S., Elmo, Ill. Brake mechanism	809,165	Jan. 2	1071	222	120	235

Alphabetical list of patentees for January and February—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drf's.	Official Gazette. Vol.	Official Gazette. Page.
Beerkle, Frank X., Jr., Hiteman, Iowa. Rake attachment	811,760	Feb. 6	416	91	120	1577
Beidler, George C., Oklahoma, Okla. Ter. Machine for exposing and developing photographic films	810,388	Jan. 23	3637	749-50	120	911
Beitner, Fred W., Traverse City, Mich. Log-turner	811,028	Jan. 30	4928	1028	120	1231
Belcher, Gilbert L., San Francisco, Cal. Dispensing device	809,419	Jan. 9	1656	340	120	396
Belcher, Gilbert L., Oakland, Cal. Fountain-brush	811,272	Jan. 30	5411	1128	120	1335
Belisl, Albert J., Mulhall, Okla. Ter. Wagon-spindle	809,166	Jan. 2	1072	223	120	235
Bell, Emma, assignor of one-half to J. Walter, Jacksonville, Fla. Heater attachment to stoves	813,137	Feb. 20	3249	714	120	2284
Bell, Jesse T., Washington, N. J. Horseshoe	808,626	Jan. 2	14	3	120	6
Bell, John A., Lathrop, Cal. Punching-machine	813,939	Feb. 27	4829	1066	120	2682
Bell, Walter J., assignor of one-half to L. F. Moss, Los Angeles, Cal. Electrofluid pressure mechanism for operating railway appliances	810,609	Jan. 23	4110	848	120	1018
Bellamy, Alfred R., Edgeley, Stockport, England. Sparking igniter for internal-combustion engines	811,122	Jan. 30	5089	1064	120	1265
Bellamy, Elmer E. (See Van Tassel-Beck, Margaret, assignor.)						
Bellamy, Frederick A., London, England. Tube-clip	813,033	Feb. 20	3019	665	120	2232
Bellefontaine Foundry & Machine Company. (See Turner, George E., assignor.)						
Bellows, Benjamin F. (See Coffe, William O., assignor.)						
Belyea, Frederick S., Brookline, Mass. Portable dental furnace	812,395	Feb. 13	1782	390	120	1929
Bemis, Thomas, Indianapolis, Ind. Pneumatic tube for store service	812,162	Feb. 6	1288	282	120	1751
Bender, Edward A., Philadelphia, Pa. Liquid-soap holder	809,806	Jan. 9	2555	529	120	595
Bending, Joseph P., Otway, Ohio. Burial-vault	809,807	Jan. 9	2556	529	120	595
Benedict, Edward S., New York, N. Y. Amusement device	811,998	Feb. 6	954	208	120	1683
Beneke, John. (See Jahnke, Rudolph G., assignor.)						
Beneke, Richard, Bromberg, Germany. Drum-mill	813,076	Feb. 20	3110	681	120	2254
Benet, Peter A., Boston, Mass. Safety-razor	811,999	Feb. 6	956	209	120	1684
Benjamin, George H., New York, N. Y., assignor to Coe Brass Manufacturing Company. Cylinder for treating heated metal	811,196	Jan. 30	5266	1102	120	1303
Bennett, Alexander, Buffalo, N. Y. Non-refillable bottle	812,904	Feb. 20	2563	564	120	2133
Bennett, Arthur E., assignor to Bennett Manufacturing Company, Buffalo, N. Y. Ice-cream mold and dipper	809,663	Jan. 9	2138	443	120	500
Bennett, Charles A., Dover, N. J. Type-wheel alinement	810,024	Jan. 16	2830	587	120	707
Bennett, Frederick, and S. A. Walker, New York, N. Y. Car-seat	809,084	Jan. 2	923	193-4	120	204
Bennett, Garfield G. (See Kyle and Hicks, assignors.)						
Bennett, Grant E., Cleveland, Ohio. Harness	812,913	Feb. 20	2781	612	120	2181
Bennett Manufacturing Company. (See Bennett, Arthur E., assignor.)						
Bennett, Walter G., and J. F. Seyfang, Toledo, Ohio. Machine for molding concrete blocks	810,025	Jan. 16	2840	587	120	707
Benson, Lewis W., Wichita, Kans. Tire-tightener	812,254	Feb. 13	1497	328	120	1866
Benson, William H., San Francisco, Cal. Mold	811,474	Jan. 30	5769	1207	120	1410
Benton, Linn B., assignor to American Type Founders Company, New York, N. Y. Matrix and punch cutting machine	809,548	Jan. 9	1893	393-4	120	450
Bentote, George, Acton, England. Lamp for burning oil, &c	813,940	Feb. 27	4831	1066	120	2682
Berens, Stanislaus. (See Gatzert and Berens.)						
Berens, Stanislaus, La Grange, and A. N. Gatzert, Chicago, Ill. Automatic flash-light apparatus	813,077	Feb. 20	3111	682	120	2255
Berg, Charles. (See Ledvinka, Joseph, assignor.)						
Bergen, Harry S., Dayton, Ohio. Perforating-machine	811,816	Feb. 6	527	118	120	1598
Bergman, August. (See Casaday and Bergman.)						
Bergmann, John, Pittsburg, Pa. Utilizing worn-out railway or like spiral steel springs	809,664	Jan. 9	2139	443	120	500
Bergoff, Julius, assignor to Empire Jewelry Case Company, Buffalo, N. Y. Covered box	810,901	Jan. 30	4670	973-4	120	1173
Beringer, John M., Pomeroy, Wash. Manure-spreader	810,459	Jan. 23	3804	782	120	950
Berkey, Albert J. (See Mick, Josiah O., assignor.)						
Berman, Benjiman N., and A. Harris, Philadelphia, Pa. Bunching-machine for making cigars	813,766	Feb. 27	4469	987	120	2605
Birmingham, John C., Kansas City, Mo. Bed-lock for ink-table distribution-presses	812,914	Feb. 20	2782	612	120	2181
Bernard, Charles, Hericourt, France. Winding mechanism for cotton-laps	811,614	Feb. 6	157	34-5	120	1519
Bernard, Horace D., Beaumont, Tex. Rotary for oil-wells	812,000	Feb. 6	958	209	120	1684
Bernhardt, Ernst F., Leipnic, Germany. Potash leaching apparatus	813,078	Feb. 20	3113	682-3	120	2255
Bernheim, Samuel, New York, N. Y. Gas-burner	812,975	Feb. 20	2911	642	120	2210
Bernstein, William F., Philadelphia, Pa. End piece for metallic bedsteads	810,699	Jan. 23	4260	883	120	1052
Berquist, Axel S. F., *et al.* (See McCabe, Franklin J., assignor.)						
Berry, Austin, Ottawa, Canada. Adjustable suspender for electrical devices	808,894	Jan. 2	545	121	120	120
Berry, Austin, Ottawa, Canada. Journal-lubricator	812,915	Feb. 20	2783	612	120	2182
Berry, Benjamin F., St. Louis, Mo., assignor to United Printing Machinery Company, Boston, Mass. Two-revolution cylinder printing-press	812,632	Feb. 13	2244	487	120	2021
Berry, Elmer and H. S., Hebron, Ohio. Corn cutter and shocker	813,851	Feb. 27	4656	1030	120	2646
Berry, Homer S. (See Berry, Elmer and H. S.)						
Berry, Leroy A., Hartford, Me. Smoothing and polishing machine	809,420	Jan. 9	1658	340	120	396
Berryman, John, Clifton, Bristol, England. Holder for match-boxes	809,665	Jan. 9	2140	444	120	501
Bertschy, Adolph J. P., assignor of one-fourth to C. H. Donnelly, Woodstock, Ill. Telephonic repeating system	812,718	Feb. 13	2396	526-7	120	2051
Bessenger, Frank H. (See Moore, Alanson A., assignor.)						
Besser, Herman, Alpena, Mich. Molding-machine	810,700	Jan. 23	4261	884	120	1052
Best, Isaac, Essex, Mass. Machine for combing wool	811,817	Feb. 6	530	118	120	1598
Best, John, Jeannette, Pa. Paddle-wheel	812,805	Feb. 20	2565	564	120	2133
Bethlehem Steel Company. (See Hammar, Sigard A. S., assignor.)						
Bethlehem Steel Company. (See Maigs and Hammar, assignors.)						
Bethlehem Steel Company. (See Maigs and Jakobsson, assignors.)						
Bethlehem Steel Company. (See Maigs and Stout, assignors.)						
Bethlehem Steel Company. (See Maigs, Jakobsson, and Sullivan, assignors.)						
Bethlehem Steel Company. (See Philp, Castmir von, assignor.)						
Bethlehem Steel Company. (See Stout, Robert P., assignor.)						
Bethlehem Steel Company. (See Stout and Hughes, assignors.)						
Bettendorf Metal Wheel Company. (See Rinkelt, Emil, assignor.)						
Betsel, William F. (See McDermott and Betsel.)						
Bewyer, Frank E., Newton, Iowa. Display-rack	812,396	Feb. 13	1783	390	120	1929
Beyer, Otto S., East Rutherford, N. J., assignor to E. W. Bliss Company. Seaming-machine	813,024	Feb. 20	3020	665	120	2233
Beyerle, Gottlob W., San Diego, Cal. Wire-fence lock	809,549	Jan. 9	1902	394	120	451
Beyland, Sidney A., assignor to Dean Electric Company, Elyria, Ohio. Lamp-jack for telephone-switchboards	810,367	Jan. 16	3569	734	120	964
Bible, Hunley. (See Robinson and Bible.)						
Biddle, William B. (See Miller, John, Jr., assignor.)						
Biddle, William S. (See Pettrey and Biddle.)						
Bidwell, Richard O., South Vineland, N. J. Machine for washing sand	810,261	Jan. 16	3322	689	120	807

Alphabetical list of patentees for January and February—Continued.

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Bian, Julius H., assignor to C. A. Maydwell, San Francisco, Cal. Fly-paper	813,196	Feb. 20	3345	736	120	2304
Bigelow, George E., assignor to Morgan Spring Company, Worcester, Mass. Means for supporting upholstery-springs	810,902	Jan. 30	4672	974	120	1173
Bigelow, Hayes, *et al.* (See Driver, Charles H., assignor.)						
Biggs, George F., St. Louis, Mo. Sample-display case	810,026	Jan. 16	2844	587	120	708
Bigham, John, Pittsburg, Pa. Puzzle	809,808	Jan. 9	2557	529	120	595
Bijur, Joseph, assignor to General Storage Battery Company, New York, N. Y. End-cell switch	810,389	Jan. 23	3646	750	120	914
Billings, Frederick C., Rockford, Ill. Flange for piano-actions	810,701	Jan. 23	4264	884	120	1053
Billingsley, James W. (See Haller and Billingsley.)						
Billington, Robert, *et al.* (See Richardson, Abraham, assignor.)						
Billington, Robert, *et al.* (See Richardson and Jones, assignors.)						
Billman, Charles H., Boston, Mass. Rope	808,895	Jan. 2	547	121	120	120
Billman, Obed C. (See Foster, Samuel T., Jr., assignor.)						
Bills, Walter, South Melbourne, Victoria, Australia. Wire mattress	810,519	Jan. 23	3926	808	120	979
Billstein, Aaron, assignor to Friedenwald Company of Baltimore City, Baltimore, Md. Collapsible reel	811,898	Feb. 6	701	153	120	1633
Billstein, Aaron, assignor to Friedenwald Company of Baltimore City, Baltimore, Md. Collapsible reel	811,899	Feb. 6	701	153	120	1633
Bilz, William C., New York, N. Y. Fire-extinguishing device	812,001	Feb. 6	960	209	120	1684
Binder, Gottlob, assignor to Barnes and Erb Company, Philadelphia, Pa. Support for centrifugal extractors	811,363	Jan. 30	5580	1165	120	1371
Bingham, George S. (See Calder, James, assignor.)						
Birch, John H. (See Birch, John H. and J. H.)						
Birch, John H. and J. H., Crawfordsville, Ind. Box-tray-forming machine	809,930	Jan. 16	2641	545–6	120	667
Bird, Peter B., New York, N. Y. Boiler compound	810,838	Jan. 23	4510	.....	120	1106
Birmingham, John P., assignor to R. Catlett, R. A. Marr, Lexington, W. G. Mathews, Clifton Forge, J. E. Edmunds, D. P. Halsey, and J. W. Gerow, Lynchburg, Va. Automatic emergency air-brake-operating device for railways	811,687	Feb. 6	295	66	120	1550
Birt, Charles S., Birmingham, England, assignor, by mesne assignments, to E. De Trey & Sons. Inhaler	813,344	Feb. 20	3641	798	120	2365
Birtman, Charles F., Chicago, Ill. Ozone-generator	811,364	Jan. 30	5581	1165–6	120	1372
Bishop, Abiathar, Pittsburg, Pa. Pile-driver	809,242	Jan. 2	1259	256	120	278
Bishop, Emerie L., Wausaukee, Wis. Saw-dressing machine	810,610	Jan. 23	4111	848–9	120	1019
Bishop, Robert H., and W. Down, Highgate, assignors of two-thirds to L. E. Clark and S. F. Staples, London, England. Money-box	811,818	Feb. 6	533	119	120	1599
Bisler, Gustav A., Philadelphia, Pa. Candy-holder	812,002	Feb. 6	961	210	120	1685
Bitner, Harry, Berwyn, assignor to Arcade Manufacturing Company, Freeport, Ill. Mop-holder	809,243	Jan. 2	1264	257	120	279
Bittle, James F. (See Booth and Bittle.)						
Bixler, Emma E., Easton, Pa. Metal window-box for flowers	812,806	Feb. 20	2566	565	120	2133
Bjurström, Fredrik, New York, N. Y. Inking apparatus for stamp-canceling and post-marking machines	812,255	Feb. 13	1499	328	120	1866
Bjurström, Fredrik, New York, N. Y. Feed mechanism for stamp-canceling and post-marking machines	812,780	Feb. 13	2511	552	120	2076
Black, Charles H., Pettyville, Ind. Reinforced concrete construction	813,540	Feb. 27	4045	886	120	2515
Black-Ford Utility Oil Company. (See Blackmore, Henry S., assignor.)						
Black, George F., Baltimore, Md. Apparatus for cooling liquids	812,256	Feb. 13	1500	328	120	1866
Black, Gilbert L., Minoa, N. Y. Gun-sight	810,702	Jan. 23	4265	884	120	1053
Black, Gilbert L., Minoa, N. Y. Gun-sight	810,703	Jan. 23	4266	885	120	1053
Black, William, Rices Landing, Pa. Cage for mine and elevator shafts	809,809	Jan. 9	2560	529–30	120	595
Black, William C., Plymouth, Ohio. Kneading-tray	810,101	Jan. 16	3006	626	120	746
Blackburn, Frank H., Fostoria, assignor to National Electric Lamp Company, Cleveland, Ohio. Machine for making air-hole glassware	810,460	Jan. 23	3806	782	120	951
Blackburn, Frank H., Fostoria, assignor to National Electric Lamp Company, Cleveland, Ohio. Machine for glazing air-hole glassware	810,461	Jan. 23	3808	782	120	951
Blackburn, Frank H., Fostoria, assignor to National Electric Lamp Company, Cleveland, Ohio. Apparatus for making air-hole glassware	810,462	Jan. 23	3810	783	120	952
Blackburn, Frank H., Fostoria, assignor to National Electric Lamp Company, Cleveland, Ohio. Making air-hole glassware	810,463	Jan. 23	3814	783	120	953
Blackburn, Frank H., Fostoria, assignor to National Electric Lamp Company, Cleveland, Ohio. Machine for making air-hole glassware	810,464	Jan. 23	3815	784	120	953
Blackburn, Frank H., Fostoria, assignor to National Electric Lamp Company, Cleveland, Ohio. Apparatus for making air-hole glassware	810,465	Jan. 23	3816	784	120	954
Blackburn, Frank H., Fostoria, assignor to National Electric Lamp Company, Cleveland, Ohio. Making incandescent lamps	810,466	Jan. 23	3818	784	120	954
Blackburn, Jasper, Chillicothe, Mo. Anchor for guy-wires	812,003	Feb. 6	963	210	120	1685
Blackford, Joseph H. M. (See Faherty and Blackford.)						
Blackmore, Henry S., Mount Vernon, N. Y. Electrolytic apparatus	809,085	Jan. 2	925	194	120	205
Blackmore, Henry S., Mount Vernon, N. Y. Producing caustic alkali	809,086	Jan. 2	936	195	120	207
Blackmore, Henry S., Mount Vernon, N. Y. Making caustic alkali	809,089	Jan. 2	940	195	120	208
Blackmore, Henry S., Mount Vernon, N. Y. Making ketones	809,900	Jan. 9	2561	530	120	596
Blackmore, Henry S., Mount Vernon, N. Y., assignor to Black-Ford Utility Oil Company. Extracting sulfur from the sulfur-containing constituents of petroleum	809,086	Jan. 2	929	194	120	206
Blackmore, Henry S., Mount Vernon, N. Y., assignor to Black-Ford Utility Oil Company. Eliminating sulfur from the sulfur-containing constituents of petroleum	809,087	Jan. 2	93[illegible]	194	120	206
Blackmun, William O. (See Barnes, Blackmun, and Miller.)						
Blackstone, Daniel, Shelbyville, Ill. Elevator	813,941	Feb. 27	4833	1066–7	120	2663
Blackwell, Henry, *et al.* (See Hubbard, Frederick J., assignor.)						
Blair, Frank M., Toledo, Ohio. Automobile	813,541	Feb. 27	4046	886	120	2516
Blair, Welsey W. (See Greenlaw, Warren A., assignor.)						
Blake, Charles C., Brookline, Mass. Electric signal	810,027	Jan. 16	2845	588	120	708
Blake, Jacob, Bedford, Iowa. Burial-casket	813,942	Feb. 27	4835	1067	120	2663
Blake, John A., and J. Kenrich, Wolcott, Ind. Concrete-block machine	809,901	Jan. 9	2563	530–1	120	596
Blakeslee, Henry J., Hartford, Conn. Regulating-transformer	808,718	Jan. 2	194	42	120	45
Blasingame, Wesley F., Moultrie, Ga. Dental obtunder	810,611	Jan. 23	4113	849	120	1019
Blaylock, Henry H., Houstonville, N. C. Folding bedstead	809,167	Jan. 2	1073	223	120	235
Blasej, Richard, New York, N. Y. V-block	810,319	Jan. 16	3470	717	120	840
Bleesschmidt, Charles E., Bellevue, Ky., assignor to Victor Safe & Lock Co., Cincinnati, Ohio. Grinding-machine	810,903	Jan. 30	4674	974	120	1174
Bliss, Philip F., Chicago, Ill. Automatic elevator-gate	810,839	Jan. 23	4511	939	120	1106
Bliss, Charles P., assignor to A. M. McPhail Piano Company, Boston, Mass. Hammer-supporting flange for piano-actions	809,042	Jan. 2	825	177	120	182
Bliss, Anthony H., North Attleboro, Mass. Bracelet	810,183	Jan. 16	3166	656	120	776
Blodgett, William H., Los Angeles, Cal., and W. E. Miller, Boise, Idaho. Centerless engine	811,668	Feb. 6	207	66	120	1551
Bloemquist, Frank L., Sanders, Idaho. Clothes-tongs	809,244	Jan. 2	1265	257	120	279
Bloomingdale, Frank, Voorheesville, N. Y. Dumping-wagon	810,028	Jan. 16	2851	588	120	709

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Blossom, Francis, *et al.* (See Haller and Billingsley, assignors.)						
Blue, Charles E., Wheeling, W. Va. Machine for the manufacture of glassware	809,902	Jan. 9	2565	531	120	597
Blumenberg, Henry, Jr., Daggett, Cal., assignor to American Borax Company, Pittsburg, Pa. Making boric acid, &c.	809,550	Jan. 9	1903	394	120	451
Blumenthal, August. (See Lewin and Blumenthal.)						
Blumenthal, Sigmund, New York, N. Y. Needle-threader for sewing-machines	813,138	Feb. 20	3250	714	120	2285
Boals, John R., River Falls, Wis. Pump-rod coupling	813,613	Feb. 27	4192	919	120	2546
Boardman, Arthur F., Somerville, assignor to Electric Gas Lighting Company, Boston, Mass. Telephone for ships, mines, &c.	811,029	Jan. 30	4927	1028	120	1231
Boatright, Jacob, Joplin, Mo. Hub and spindle	811,541	Feb. 6	14	4	120	1487
Bockhoff, William F., Indianapolis, Ind., assignor to National Cash Register Company, Jersey City, N. J. Cash-register	811,761	Feb. 6	417	92–3	120	1577
Boda, Lee M. (See Boda, William J., assignor.)						
Boda, William J., Dayton, assignor of one-half to L. M. Boda, Columbus, Ohio. Secret nail	808,968	Jan. 2	700	151	120	154
Bode, Peter J., St. Louis, Mo. Back-pressure trap for sewer-pipes	810,390	Jan. 23	3650	750–1	120	915
Bodum, Louis D., *et al.* (See Barry, James, assignor.)						
Boehner, Jacob P., Freeport, Ill. Binder for loose leaves of books	812,397	Feb. 13	1786	391	120	1929
Boehringer & Boehne, C. F. (See Barason, Leopold, assignor.)						
Boggs, James F., Needles, Cal. Cloth measuring and marking machine	813,767	Feb. 27	4471	987	120	2606
Bolce, Augustin. (See Schuman, James B., assignor.)						
Bois, Clara. (See Plotkin, Max, assignor.)						
Boise, Frank C. (See Warner, Isaac M., assignor.)						
Boisse, Louis M. J. de. (See Denis and Boisse.)						
Bokmayer, Walter. (See Swoboda, Adolf, assignor.)						
Bolden, James A., Gray, La. Machine for cutting sugar-cane	813,943	Feb. 27	4837	1067	120	2683
Boldenweck, Carl G. (See Neff and Boldenweck.)						
Bolin, Nils P., assignor of one-half to W. G. Smith, Brockton, Mass. Device for detachably securing rubber heels to boots and shoes	811,365	Jan. 30	5586	1166	120	1372
Boller, Peter, Chicago, Ill. Upholstery apparatus	811,366	Jan. 30	5587	1166–7	120	1373
Bollman, George W., Pittsburg, Pa., assignor to Otis Elevator Company, Jersey City, N. J. Steam hoisting apparatus	812,324	Feb. 13	1042	361–2	120	1900
Bölsterli, Walther, Winterthur, Switzerland. Producing solutions containing pure silver salt	809,278	Jan. 9	1348	.....	120	331
Bond, William H., Newcastle, Ind. Harrow	813,852	Feb. 27	4659	1030	120	2647
Bonn, Clyde G., Pine Bluff, Ark. Sawmill-carriage	810,320	Jan. 16	3471	717	120	841
Bonnechoes, Gaston C. E. de, Paris, France. Turbine-engine	810,252	Jan. 16	3324	690	120	808
Bonvillain, Philibert, Paris, France. Apparatus for grinding or crushing foundry-sand, &c.	810,904	Jan. 30	4675	974–5	120	1174
Bonvillain, Philibert, Paris, France. Molding-machine	812,004	Feb. 6	965	210	120	1685
Bonvillain, Philibert, Paris, France. Mold-charging apparatus	813,614	Feb. 27	4193	920	120	2546
Boof, Michel, Strassburg, Germany. Roasting apparatus for coffee, malt, &c.	813,274	Feb. 20	3491	769	120	2334
Boon, Arthur W., Brixton, England. Expansible sprocket	809,421	Jan. 9	1659	341	120	396
Boone, George M., Baltimore, Md. Smoke-consumer	809,168	Jan. 2	1074	223	120	236
Boone, John R., Nashville, Tenn. Hydrocarbon-burner	810,253	Jan. 16	3326	690–1	120	808
Booth, Alba C., Burlington, Vt. Bottle-cap lifter	812,257	Feb. 13	1501	329	120	1866
Booth, Kraft, assignor to Gillinder & Sons, Inc., Philadelphia, Pa. Knob	808,627	Jan. 2	15	4	120	6
Booth, Robert E., and J. Wise, Charleroi, Pa. Car-starter	811,123	Jan. 30	5060	1065	120	1265
Booth, Zachary T., and J. F. Bittle, assignors of one-third to C. Smith, Brunswick, Md. Railway-tie	812,807	Feb. 20	2568	565	120	2134
Borated Specialty Company. (See Dix, Edward S., assignor.)						
Borchers, William F. (See Yoders, Irvin G., assignor.)						
Borden, Bradford, assignor, by mesne assignments, to Borden Company, Warren, Ohio. Adjustable die-stock	812,308	Feb. 13	1787	391	120	1930
Borden Company. (See Borden, Bradford, assignor.)						
Born, Frank A., Grover, S. D. Spring-wheel	813,035	Feb. 20	3023	665–6	120	2233
Borneman, Andrew G., Athenia, N. J. Clothes-pin	810,704	Jan. 23	4267	885	120	1054
Borneman, Henry, Paterson, N. J. Climbing apparatus	810,254	Jan. 16	3328	691	120	809
Bornot, André F., Philadelphia, Pa. Machine for scouring garments, fabrics, &c.	812,005	Feb. 6	966	210	120	1686
Borst, Frank A., assignor to Ideal Concrete Machinery Company, South Bend, Ind. Adjustable face-plate	812,916	Feb. 20	2784	613	120	2182
Boston Pneumatic Power Company. (See Nolan and Sanborn, assignors.)						
Bottomley, James F., Wallsend, R. S. Hutton, Manchester, and A. Paget, North Cray, England. Manufacture of silica glass	812,309	Feb. 13	1790	391–2	120	1931
Boughton, Seymour W., Cleveland, Ohio. Expansion-controlled apparatus	810,255	Jan. 16	3329	691	120	809
Bouhall, Herman J., assignor of one-half to A. B. Honecker, Cleveland, Ohio. Individual safety garment-rack	812,917	Feb. 20	2785	613	120	2182
Bovee, David W., Waterloo, Iowa. Apparatus for the construction of plastic walls	812,006	Feb. 6	968	211	120	1686
Bowden, Charles H. J. (See Boulleau, Joseph A. A., assignor.)						
Bowdr, Abram L., Boyertown, Pa. Block-signal system for electric railways	810,705	Jan. 23	4268	885	120	1054
Bower, Clarence E., Denver, Colo. Baling-press	810,029	Jan. 16	2853	589	120	710
Bower, Henry F. (See Slade and Bower.)						
Bowerman, William J., Detroit, Mich. Shooting-gallery. (Reissue)	12,440	Jan. 30	5881	1233	120	1433
Bowers, Harvey, Wichita, Kans. Window-sash adjuster	812,808	Feb. 20	2569	565	120	2124
Bowers, William F. San Francisco, Cal. Dredger-sleeve	809,903	Jan. 9	2569	532	120	597
Bowes, Charles F. (See Allen and Bowes.)						
Bowler, Noadiah P. (See Roberts, Albert E., assignor.)						
Bowling, George S., Clarksville, Tenn. Ice-can filler	808,809	Jan. 2	399	80	120	82
Bowman, Benton S., Millersburg, Pa. Safety-brake for elevators	810,256	Jan. 16	3331	691	120	809
Bowman, D O, Rockford, Mich. Potato-digger	812,007	Feb. 6	971	211–12	120	1687
Bowmaster, Charles F., Litchfield, Ill. Lantern-globe rack	809,422	Jan. 9	1660	341	120	397
Bowsher, Samuel. (See Petery, Evan E. P., assignor.)						
Bowsher, Samuel. (See Petery and Jackson, assignors.)						
Boyce, Michael L., Carroll, Iowa. Fence-post	808,969	Jan. 2	701	152	120	154
Boyd, Chase, *et al.* (See Boyd, William M., assignor.)						
Boyd, Ernest I., *et al.* (See Boyd, William M., assignor.)						
Boyd, Frederic R. C. (See Callan and Boyd.)						
Boyd, John, Bessemer, Ala. Molding-bit	811,124	Jan. 30	5091	1065	120	1265
Boyd, John M., Fond du Lac, Wis. Suspended track for elevators and carriers	812,477	Feb. 13	1922	424	120	1958
Boyd, Walter C., Williamsburg, Iowa. Gate	813,615	Feb. 27	4194	920	120	2547
Boyd, William M., assignor of two-thirds to C. and E. I. Boyd, Connersville, Ind. Means for lubricating vehicle-wheels	811,615	Feb. 6	158	35	120	1520
Boyer, Charles A., and D. C. Peck, Marengo, Ill. Stovepipe	810,706	Jan. 23	4271	885	120	1055
Boyer, Oliver, Conant, Ohio. Corn-shocker	812,809	Feb. 20	2570	565–7	120	2134
Boyle, Francis D., Toledo, Ohio. Pad for upholstered furniture	813,616	Feb. 27	4196	921	120	2547
Brabant, Charles C., and W. C. Beaufore, Alpena, Mich. Wheel-hub	809,686	Jan. 9	2142	444	120	801
Bracken, William C., Gallitzin, Pa. Boiler-tube	813,788	Feb. 27	4472	988	120	2606
Bradford, Fred W. R., Melrose, Mass. Bottle-wrapper	811,669	Feb. 6	209	67	120	1583

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Bradham, Caleb D., Newbern, N. C. Shipping-tag	812,633	Feb. 13	2246	488	120	2022
Bradley, Charles A. (See Grünwald, Andreas, assignor.)						
Bradley, Frank L., Cincinnati, Ohio. Combined dresser, chair, and trunk	811,475	Jan. 30	5769	1208	120	1410
Bradley, Walter M., New Haven, Conn. Blowpipe	810,257	Jan. 16	3333	692	120	810
Bradley, William W. (See Wirth and Bradley.)						
Bradshaw, Harry, assignor of one-half to W. D. House, Kansas City, Mo. Paper-feeding machine	810,391	Jan. 23	3651	751–3	120	915
Bradshaw, Harry, assignor of one-half to W. D. House, Kansas City, Mo. Sheet-registering machine	810,392	Jan. 23	3651	753–4	120	917
Bradshaw, William S., San Jose, Cal. Baling-press brake	810,102	Jan. 16	3007	626–7	120	746
Brady, Frank J., Choconut, Pa. Antikicking attachment	810,520	Jan. 23	3927	808	120	979
Bragg, Austin, Waterville, Me. Power-hammer	810,905	Jan. 30	4676	973	120	1174
Brahs, Frank, *et al.* (See Beck, William, assignor.)						
Brahs, William, *et al.* (See Beck, William, assignor.)						
Brainard, William S., West Bridgewater, Mass., assignor to United Shoe Machinery Company, Paterson, N. J. Rough-rounding and channeling machine	808,628	Jan. 2	16	4	120	6
Braine, Bancroft G., New York, N. Y., assignor, by mesne assignments, to Rail Joint Company. Electrically-conductive rail-joint and bond therefor	812,781	Feb. 13	2513	553	120	2076
Braine, Bancroft G., New York, N. Y., assignor, by mesne assignments, to Rail Joint Company. Insulated rail-joint	813,998	Feb. 27	4036	1092	120	2703
Braithwaite, Wilfred, Middlefield, Conn. Gun-sight	810,258	Jan. 16	3334	692	120	810
Brand, Fritz, Berlin, Germany. Emergency electric-lighting arrangement for theaters and similar buildings	809,904	Jan. 9	2570	532	120	597
Brandt, Anthony. (See Weber, Arnold W., assignor.)						
Brandt Cashier Company. (See Brandt, Edward J., assignor.)						
Brandt, Edward J., Watertown, Wis., assignor to Brandt Cashier Company, Chicago, Ill. Coin-tray	811,197	Jan. 30	5267	1102	120	1303
Bransgrove, Charles, Monroe, Mich. Cord tension-alarm	811,367	Jan. 30	5588	1167	120	1373
Branson, Tilghman E., assignor of two-thirds to H. Hatfield and W. S. Foster, Bellepiaine, Kans. Pneumatic lifting means for grain-doors	811,660	Feb. 6	301	67	120	1552
Braun, Anton N., Arad, Austria-Hungary. Production of stove-polish	809,279	Jan. 9	1349	.....	120	331
Braxton, Daniel, assignor of one-third to C. J. Dobler, Baltimore, Md. Wrench	812,008	Feb. 6	971	212	120	1687
Bray, Charles W., assignor to American Sheet & Tin Plate Company, Pittsburg, Pa. Roll-removing device	808,719	Jan. 2	196	42	120	45
Brayshaw, Shipley N., Hulme, Manchester, England, assignor to G. Nash, New York, N. Y. Melt or bath for hardening steel	812,178	Feb. 13	1348	.....	120	1832
Braseal, Joseph E., Birmingham, Ala. Chute for unloading railway-cars	812,009	Feb. 6	972	212	120	1687
Brazier, James D., and D. O. Sullivan, Vicksburg, assignors, by mesne assignments, of one-half to B. Siani, Rolling Fork, Miss. Grabot-machine	810,707	Jan. 23	4272	896	120	1055
Breen, Cornelius M., New York, N. Y. Guard for vent-pipes	809,667	Jan. 9	2144	444	120	501
Bremer, René M. V., Schaerbeeck-Brussels, Belgium. Indicating-target	812,400	Feb. 13	1794	392	120	1931
Brennan, Dennis J., Shenandoah, Pa. Jointed rule	812,010	Feb. 6	974	213	120	1687
Brennan, Edward J., *et al.* (See Barry, James, assignor.)						
Brennan, John P., Lawrence, Mass. Expansible pulley	809,169	Jan. 2	1075	224	120	236
Brennan, Thomas L., Deward, Mich. Railway-frog	809,457	Jan. 9	1787	360	120	426
Brenton, Wiley Carlisle, Ind. Threshing-machine	812,719	Feb. 13	2405	527	120	2053
Brenzinger, Julius, assignor to Max Ams Machine Co., New York, N. Y. Can-heading machine	813,482	Feb. 27	3930	862	120	2488
Bresnahan, Maurice V. (See Heys, John J., assignor.)						
Brett, Edward S., Coventry, England. Drop-hammer	811,368	Jan. 30	5590	1167–8	120	1373
Bretschneider, Israel E., and E. K. Thumler, New York, N. Y. Regulating-hinge for piano swinging frames	809,043	Jan. 2	827	177	120	182
Brewster, Frederick H., Auburn, N. Y. Machine for blacking shoes	811,030	Jan. 30	4928	1038	120	1231
Brewster, Morris B., Columbus, Ohio. Elevator and conveyer	812,478	Feb. 13	1927	424	120	1959
Brewton, Joseph L., Mill, La. Vehicle-brake	810,612	Jan. 23	4114	849	120	1019
Bridge, James H., New York, N. Y., and C. Ellis, assignors, by mesne assignments, of one-third to Sawyer, Foster and Hardy, Boston, Mass. Making hydrated oxid of lead	811,552	Feb. 6	28	.....	120	1491
Bridgeport Hardware Manufacturing Company. (See Hobbs, Willis F., assignor.)						
Bried, Julien A., San Francisco, Cal. Panoramic camera	812,163	Feb. 6	1289	282	120	1751
Brierley, Thomas, *et al.* (See Richardson and Jones, assignors.)						
Briery, Thomas, *et al.* (See Richardson, Abraham, assignor.)						
Briggs, Arthur J., assignor to Smith Premier Typewriter Company, Syracuse, N. Y. Type-writing machine	813,345	Feb 20	3643	799	120	2366
Briggs, James E., Waterloo, Iowa. Dumping-wagon	812,918	Feb. 20	2787	613	120	2182
Bright, Henry C. (See Watson, Henry W., assignor.)						
Brill, George M., assignor to J. A. Brill, Philadelphia, Pa. Adjustable brake-hanger	813,346	Feb. 20	3647	799	120	2367
Brill, John A. (See Brill, George M., assignor.)						
Brill, John A. (See Carwen, Samuel M., assignor.)						
Brill, John A. (See Pickles, Charles K., assignor.)						
Brinker, Charles B., assignor to Brinker Safety Switch Attachment Company, West Lebanon, Ind. Railway-switch	810,906	Jan. 30	4678	975	120	1174
Brinker Safety Switch Attachment Company. (See Brinker, Charles B., assignor.)						
Brinkman, Louis H., assignor to Whitlock Coil Pipe Company, West Hartford, Conn. Automatic bending-machine	812,258	Feb. 13	1501	329	120	1957
Brinkmeyer, Fredrick W., Decatur, Ill. Ball-return mechanism for bowling-alleys	808,245	Jan. 2	1286	257	120	279
Brinkmeyer, Fredrick W., Decatur, Ill. Bowling-alley	811,476	Jan. 30	5771	1208	120	1410
Brinley, Charles A., assignor to American Pulley Company, Philadelphia, Pa. Wheel	812,179	Feb. 13	1349	293	120	1833
Brinton, Walter, High Bridge, N. J., assignor to Taylor Iron and Steel Company. Cast manganese-steel rail	812,810	Feb. 20	2578	567	120	2136
Brinton, Walter, High Bridge, N. J., assignor to Taylor Iron and Steel Company. Treating manganese steel	812,811	Feb. 20	2580	.....	120	2137
Brinton, Walter, High Bridge, N. J., assignor to Taylor Iron and Steel Company. Making safes or vaults	813,304	Feb. 20	3734	821	120	2385
Briquetting Company. (See Cole, Henry W. N., assignor.)						
Briscoe, Benjamin, assignor to Briscoe Manufacturing Company, Detroit, Mich. Cooler	810,030	Jan. 16	2855	589	120	719
Briscoe Manufacturing Company. (See Briscoe, Benjamin, assignor.)						
Brister, Samuel H., Monticello, Iowa. Brush	810,708	Jan. 23	4274	896	120	1056
Bristol, William H., New York, N. Y. Thermo-electric couple	811,819	Feb. 6	535	119	120	1389
Bristol, William H., New York, N. Y. Indicating and recording device	813,689	Feb. 27	4322	963	120	2576
Britt, Orlin P. (See Kramer and Britt.)						
Britton, James A., Bethlehem, Pa. Hose puller and wringer	810,269	Jan. 16	3335	692–3	120	810
Broad, William, Aliquippa, Pa. Wire-stretching device	812,401	Feb. 13	1796	393	120	1931
Broadbent, William, Salt Lake City, Utah. Carved gum-form	810,184	Jan. 16	3167	688	120	776
Broadbent, John W., and F. W. Ordish, assignors to Robert Dempster & Sons, Ltd., Elland, England. Apparatus for discharging gas-retorts	813,479	Feb. 13	1939	425–6	120	1999
Broadwell, Walter L., South Norfolk, Va. Collapsible table	809,170	Jan. 2	1077	224–5	120	236

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Brockway, Watson O., Threecoaks, Mich. Overshoe-fastener	809,905	Jan. 9	2571	532	120	598
Brode, Charles W., New Comerstown, Ohio. Clothes-frame	812,011	Feb. 6	975	213	120	1686
Brodeur, Francois X., assignor of one-half to E. W. Mullins, Lynn, Mass. Shoe	812,812	Feb. 20	2583	567	120	2137
Brodnax, Clarence M., and P. F. King, New York, N. Y. Bottle-closure	808,639	Jan. 2	18	4	120	6
Bromley, George W., Lake View, N. J. Winding-machine	812,012	Feb. 6	977	213	120	1688
Bronder, Gaston A., Brooklyn, N. Y. Lubricating device for wheels and axles	812,402	Feb. 13	1798	393	120	1931
Bronson, Enos A. (See Wilson and Bronson.)						
Brooke, Isaac, Pottstown, assignor to Floyd-Wells Company, Royersford, Pa. Radiator	813,275	Feb. 20	3492	770	120	2335
Brookfield, Henry M., New York, N. Y. Glass-furnace	808,810	Jan. 2	371	80	120	82
Brookfield, Henry M., New York, N. Y. Press for making glass articles	810,031	Jan. 16	2857	590–1	120	711
Brooks, Byron A., Brooklyn, N. Y., assignor to Union Typewriter Company, Jersey City, N. J. Type-writing machine	812,782	Feb. 13	2514	553	120	2076
Brooks, Edward J., East Orange, N. J. Seal-press	813,079	Feb. 20	3115	683	120	2255
Brooks, Everett W. (See Hildebrandt, Charles T., assignor.)						
Broomall, Edgar W., Rochester, N. Y. Bearing for vertical shafts	809,280	Jan. 9	1349	274	120	331
Broomall, Edgar W., Rochester, N. Y. Centrifugal cream-separator	809,355	Jan. 9	1499	304	120	365
Brosius, Samuel G., Washington, D. C. Safety-razor	809,604	Jan. 9	2023	419	120	476
Brosius, Samuel G., Washington, D. C. Safety-razor	810,709	Jan. 23	4275	896	120	1056
Brower, Ernest C., and J. D. H. Schuls, Brooklyn, N. Y. Folding stair-chair	812,013	Feb. 6	978	213–14	120	1688
Brower, William, assignor of one-half to M. P. Seibel, Manlius, Ill. Cutting and reaming knife	812,325	Feb. 13	1647	362	120	1901
Brown, Alexander E., assignor to Brown Hoisting Machinery Company, Cleveland, Ohio. Grab-bucket	808,630	Jan. 2	20	5	120	7
Brown, Alexander T., Syracuse, N. Y. Propeller	810,032	Jan. 16	2863	591–2	120	712
Brown, Alexander T., assignor to Brown-Lipe Gear Company, Syracuse, N. Y. Steering device	809,171	Jan. 2	1078	225	120	237
Brown, Andrew J., Chicago, Ill. Corn-planter	810,103	Jan. 16	3009	627	120	746
Brown, Augustus, Elgin, Ill. Chronometer-escapement	808,631	Jan. 2	21	5–6	120	7
Brown, Benjamin S., Altoona, Pa. Center-stem guide for car-bodies	812,720	Feb. 13	2407	527–8	120	2053
Brown, Benjamin S., Altoona, Pa. Draft-rigging mechanism for cars	812,721	Feb. 13	2409	528	120	2054
Brown, Calvin S., Toledo, Ohio, and J. N. Clouse, St. Louis, Mo. Spirit-level	809,275	Jan. 2	1330	270	120	293
Brown, Charles C., West Greensburg, Pa. Rail-joint	811,369	Jan. 30	5592	1168	120	1374
Brown, Charles F., trustee. (See Coy, Frederick W., assignor.)						
Brown, De Witt G., American Falls, Idaho. Label-holder	812,634	Feb. 13	2248	488	120	2022
Brown, Ebenezer C. (See Williams and Brown.)						
Brown, Edward G., Glenellen, Cal. Folding box	813,347	Feb. 20	3649	800	120	2367
Brown, Edward T., assignor to Owosso Manufacturing Company, Owosso, Mich. Window-screen	812,813	Feb. 20	2584	567	120	2138
Brown, Euthaddeus I., Princess Anne, Md. Apparatus for printing photographs	810,907	Jan. 30	4681	976	120	1175
Brown, George, and G. Taylor, Ladd, Ill. Shaft-gate	812,814	Feb. 20	2585	568	120	2138
Brown, George H., Norfolk, Va. Machine for making veneer-stave barrels	811,031	Jan. 30	4931	1029	120	1232
Brown, George M., Otto, N. Y. Computing device	809,605	Jan. 9	2026	420	120	477
Brown, Herbert S. (See Sittmann, Gustav, assignor.)						
Brown, Herbert S., New York, N. Y. Oscillating electric fan	809,356	Jan. 9	1501	304	120	365
Brown Hoisting Machinery Company. (See Brown, Alexander E., assignor.)						
Brown, James H., St. Charles, assignor of one-half to H. D. Kirk, Chicago, Ill. Fence	809,906	Jan. 9	2572	532	120	598
Brown, James T., New York, N. Y. Folding phonograph-horn	811,900	Feb. 6	703	154	120	1634
Brown, James T., New York, N. Y. Phonograph-horn	813,999	Feb. 27	4937	1092	120	2704
Brown, James W., Minneapolis, Minn. Automatic pressure-retainer	808,811	Jan. 2	372	80	120	82
Brown, John H., and C. Franciscus, Pittsburg, Pa. Fire-escape	813,139	Feb. 20	3251	715	120	2285
Brown-Lipe Gear Company. (See Brown, Alexander T., assignor.)						
Brown, Nathaniel H., assignor to Williams, Brown & Earle, Philadelphia, Pa. Pantograph	809,346	Jan. 2	1267	257–8	120	280
Brown, R. T. (See Offutt, John W., assignor.)						
Brown, Robert A., Chicago, Ill. Life-boat	812,815	Feb. 20	2586	568	120	2138
Brown & Sharpe Manufacturing Company. (See Gabriel, Charles R., assignor.)						
Brown and Sharpe Manufacturing Company. (See Thacher, John J., assignor.)						
Brown and Sharpe Manufacturing Company. (See Wingo, Richard T., assignor.)						
Brown, Silas B., Cincinnati, Ohio. Time-controlled damper	808,806	Jan. 2	548	121	120	121
Brown, William H., Indianapolis, Ind. Heater	811,273	Jan. 30	5412	1129	120	1335
Brown, William H., Lockhart, Tex. Photographic-printing device	812,816	Feb. 20	2588	569	120	2139
Brown, William M., Gibsonburg, Ohio. Hoisting-machine	808,632	Jan. 2	22	6	120	8
Brown, William V., Berwick, Canada. Shingling-hatchet	812,403	Feb. 13	1799	394	120	1931
Browne, Richard B., New York, assignor to Richey, Browne & Donald, Brooklyn, N. Y. Door-hanger	813,309	Feb. 27	3765	827	120	2450
Browning, John M., Ogden, Utah. Recoil-brake for automatic guns	812,226	Feb. 13	1648	362	120	1901
Browning, Tillie J., Philadelphia, Pa. Eye for garment-hooks	813,140	Feb. 20	3253	715	120	2285
Brownsville Glass Company. (See Harvey, George H., assignor.)						
Brownsville Glass Company. (See Spear, James R., assignor.)						
Brownsville Glass Company. (See Spear and Harvey, assignors.)						
Brühl, Ernst, Berlin, Germany. Powder for dusting patterns in foundries	811,477	Jan. 30	5774	.....	120	1411
Brundage, Robert K., *et al.* (See Torst, William, Jr., assignor.)						
Brundage, T. J., *et al.* (See Torst, William, Jr., assignor.)						
Brunner, Josef, Pinegrove, Mont. Animal-call	813,853	Feb. 27	4060	1031	120	2647
Brunner, Margaret A., New York, N. Y. Umbrella attachment	809,551	Jan. 9	1904	395	120	451
Brush, William, Weehawken, N. J. Dental can	811,370	Jan. 30	5593	1168	120	1374
Bryan, John H. B., Buffalo, N. Y., assignor to Niles-Bement-Pond Company, Jersey City, N. J. Clutch mechanism	812,817	Feb. 20	2592	569	120	2139
Bryant, John M., and J. B. Allen, Detroit, Mich. Closet-bowl seat	812,490	Feb. 13	1932	426	120	1960
Bryant, Niles, Battle Creek, Mich. Tuning instrument	813,760	Feb. 27	4475	988	120	2607
Bryant, Warren S., Adhall, assignor of one-half to C. C. Dockery, Cameron, Tex. Hay-press power	808,633	Jan. 2	27	6	120	8
Bubar, John H., Denver, Colo. Shipping-crate	813,944	Feb. 27	4838	1068	120	2653
Bubenheim, Henry J., Pittsburg, Pa. Roller-table	811,820	Feb. 6	536	119	120	1599
Buccieri, Benedetto, Sharpeburg, assignor of one-half to V. De Luca, Pittsburg, Pa. Safety device for oil-cans	809,281	Jan. 9	1350	274	120	332
Buchanan, Archibald, Jr., New York, N. Y. Floor-flange for water-closet bowls	812,542	Feb. 13	2081	455	120	1990
Buchanan, John A., Pittsburg, Pa. Swingletree	809,760	Jan. 9	2338	483	120	545
Bucher, Bertram H., assignor to J. A. Jeffrey, Columbus, Ohio. Conveyer	811,125	Jan. 30	5092	1065–6	120	1265
Buck, Taylor S., New York, N. Y. Stamp	808,812	Jan. 2	374	80	120	83
Buckeye Lubricating Company. (See Fickes, John C., assignor.)						
Buckham, George T. (See Dawson and Buckham.)						
Buckland, Edward S., assignor of one-half to W. J. Haskin, Binghamton, N. Y. Envelop-moistener	811,478	Jan. 30	5775	1209	120	1411

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Buckley, John J., T. P. McGinn, and J. A. Rogan, Plymouth, assignors of one-fourth to T. Roche, Boston, Mass. Spinning mechanism	811,528	Jan. 30	5869	1230–1	120	1430
Buckminster, Prescott S., Haywards, Cal. Indicator	811,542	Feb. 6	15	4	120	1488
Buckman, Robert M., Medford, Mass. Gas-burner and fixture therefor	811,529	Jan. 30	5872	1231	120	1431
Bucyrus Company. (See Ferris, Walter, assignor.)						
Bucyrus Company. (See Knox, Samuel L. G., assignor.)						
Bucyrus Company. (See Knox and Ferris, assignors.)						
Bucyrus Company. (See Magie, William E., assignor.)						
Budde & Westermann. (See Müller and Zipprich, assignors.)						
Buehler, Charles H., St. Marys, Ohio. Base-ball bat	813,400	Feb. 27	3766	827	120	2450
Buell, Edward A., Dekalb, Ill. Party telephone-line	811,691	Feb. 6	303	67	120	1552
Buell, Edward A., Dekalb, Ill. Party telephone-line	811,692	Feb. 6	311	68	120	1554
Buff, Frank L., Eaton, Ill. Bow-facing oar	808,720	Jan. 2	197	43	120	46
Buffalo Dental Manufacturing Company. (See Lewis, Theodore G., assignor.)						
Buffalo Forge Company. (See Carrier, Willis H., assignor.)						
Buffelen, John, Tacoma, Wash. Woodworking-machine	809,552	Jan. 9	1905	395–6	120	451
Bugby, Sullivan, Soldiers Home, Cal. Fence	810,260	Jan. 16	3338	693	120	811
Bullard, Charles R., St. Ives, county of Huntingdon, England. Non-skidding device for tires	808,721	Jan. 2	199	43	120	46
Bullard Edwin W., Springfield, Mass. Driving mechanism for profiling-machines	812,818	Feb. 20	2593	569–70	120	2140
Bulley, Louis T., New Haven, Conn. Shade-roller	808,722	Jan. 2	200	43	120	46
Bullock, John H., Millerton, Kans. Stacker for grain or the like	812,014	Feb. 6	980	214	120	1689
Bunce, William H., Jersey City, N. J., assignor to Woolworth & Graham, New York, N.Y. Postal-card printing and banding machine	812,180	Feb. 13	1350	294	120	1833
Burcham, Andrew J., Kelso, Wash. Dredge	810,710	Jan. 23	4276	887	120	1056
Burchardi, Bernhard T., Brooklyn, N. Y. Fluid-brake mechanism	811,198	Jan. 30	5268	1102	120	1303
Burdick, John, Fort Shaw, Mont. Bouquet-holder	809,172	Jan. 2	1081	225	120	238
Burger, Frans, and H. M. Williams, Fort Wayne, Ind.; said Burger assignor of one-half to said Williams. Fire-box	809,247	Jan. 2	1270	258	120	280
Burke, Charles G., Brooklyn, N. Y., assignor of one-half to J. Q. A. Whittemore, Boston, Mass. Telephone	809,423	Jan. 9	1661	341	120	397
Burke, Frank. (See Rink, William E., assignor.)						
Burke, Nathan L., Benton Harbor, Mich. Dental compress	811,479	Jan. 30	5776	1209	120	1411
Burke, Thomas F., and T. L. Vallely, Newcastle, Pa. Return-ball	810,613	Jan. 23	4115	849	120	1020
Burkhart, George W. (See Hartman, Noble W., assignor.)						
Burkholder, Isaac R., Dayton, Ohio, assignor of one-half to C. N. Heist, Cisnapark, Ill. Gate	811,371	Jan. 30	5593	1168	120	1374
Burley, Franklin G., Boston, Mass. Jar-closure	813,276	Feb. 20	3493	770	120	2335
Burlich, Henry, New York, N. Y. Rotary engine	813,854	Feb. 27	4661	1031	120	2647
Burnham, Williams & Company. (See Ehle and Nice, assignors.)						
Burns, Frederick W., Boston, Mass. Game apparatus	809,606	Jan. 9	2028	420	120	477
Burns, Henry C. (See Houston, Burns, and Van Voorhees.)						
Burr, Ellis M., Champaign, Ill. Changeable-speed gearing	813,770	Feb. 27	4477	968–9	120	2607
Burrell, Henry, Glasgow, Scotland. Cover for ships' hatchways	810,185	Jan. 16	3168	656–7	120	776
Burrowes, Darrington E. (See Spear, Murray H., assignor.)						
Burrows, Alexander, Woodward, Okla. Ter. Whip-operating device	813,401	Feb. 27	3767	827	120	2450
Burrows, George, Liverpool, England. Dress-placket fastener	813,945	Feb. 27	4839	1068	120	2683
Bury, John, assignor of one-half to J. E. Munson, New York, N. Y. Telegraphy and telegraph apparatus	811,127	Jan. 30	5097	1066–8	120	1266
Burson, Abraham. (See Rodney, Ford, Conroy, Burson, and Fitch.)						
Burt, Albert J. (See Thoeni, Herman, assignor.)						
Burt Company. (See Hoyt and Gaven, assignors.)						
Burt, Eli A., and H. Harris, New York, N. Y. Clasp for hatbands	811,126	Jan. 30	5096	1066	120	1266
Busch, Horace L., De Queen, Ark. Churn-operating mechanism	812,819	Feb. 20	2595	570	120	2140
Busch, John G., Potter Valley, Cal. Ax holster and guard	810,614	Jan. 23	4116	850	120	1020
Bush, James F., Springfield, Mass. Wicket-valve	813,771	Feb. 27	4483	969	120	2609
Bush, Samuel P., Columbus, Ohio. Car-coupling	810,104	Jan. 16	3011	627	120	747
Bushong, Ivan. (See Caldwell and Bushong.)						
Busa, George W., Woburn, Mass. Folding step-ladder	811,616	Feb. 6	160	36	120	1520
Butler, Blannie C., Asheville, N. C. Cotton-chopper	811,530	Jan. 30	5876	1232	120	1432
Butler, George M., and C. G. Ehringer, Washburn, Ill. Eaves-trough clamp	812,404	Feb. 13	1800	394	120	1932
Butler, James F., Scranton, Pa. Fire-escape	810,615	Jan. 23	4117	850	120	1020
Butman, Thomas R., Lake Bluff, Ill. Steam-generator	809,282	Jan. 9	1351	274–5	120	332
Butta, Richard. (See Jokseh and Pettfk, assignors.)						
Büttner, Max, Wilmersdorf-Berlin, Germany. Asymmetric cell	809,770	Jan. 9	2334	483	120	545
Burton, Brook L., *et al.* (See Byrd, William P., assignor.)						
Buxton, George A., *et al.* (See Byrd, William P., assignor.)						
Buyten, Hermann, Düsseldorf, Germany. Folding table	810,616	Jan. 23	4120	850–1	120	1020
Bye, Martin, Worcester, Mass., assignor to Harrington & Richardson Arms Company. Recoil-operated firearm	812,015	Feb. 6	982	214–16	120	1689
Bye, Martin, Worcester, Mass., assignor to Harrington & Richardson Arms Company. Handle for firearms	812,016	Feb. 6	987	216	120	1690
Byor, Gustav A., Edgar, Nebr. Mold	811,032	Jan. 30	4934	1029–30	120	1233
Byram, William S. (See James, McAllister, and Byram.)						
Byrd, William P., assignor of two-thirds to G. A. Buxton, Baltimore, and B. L. Buxton, Frederick county, Md. Car-replacer	813,855	Feb. 27	4664	1032	120	2648
Byrnes, Clarence P., Pittsburg, Pa. Sectional case	810,033	Jan. 16	2866	592	120	713
C. B. Cottrell & Sons Company. (See Cottrell, Charles P., assignor.)						
Cachat, Peter J., Louisville, Ohio. Window-sash pivot	811,531	Jan. 30	5877	1232	120	1433
Cade, Enos B., Seattle, Wash. Tide power	811,762	Feb. 6	423	93	120	1578
Cadillac Cabinet Company. (See Johnson, Henry, assignor.)						
Cage, William E., Hoben Solms, La. Chain sling and trip	813,277	Feb. 20	3495	770	120	2335
Cagle, Carter M., Beckville, Tex. Machine for forming round cotton-bales	809,283	Jan. 9	1354	275–6	120	333
Cagle, Carter M., Beckville, Tex. Bale-tying machine	810,521	Jan. 23	3927	808–9	120	979
Cahill, John, Norfolk, Va. Rolling door or shutter and means for operating the same	812,722	Feb. 13	2411	528–9	120	2054
Cahn, Helen W., New York, N. Y. Hose-supporter	813,197	Feb. 20	3346	736	120	2304
Caillouet, Nicholas. (See Robichaux, Caillouet, and Delhaye.)						
Cain, William S., Chicago, Ill. Computing measuring vessel	809,091	Jan. 2	945	196	120	208
Cain, Wright W., Kosciusko, Miss. Wagon attachment	809,488	Jan. 9	1788	370	120	426
Caise, Frank C., Cleveland, Ohio. Interior concrete structural work	809,090	Jan. 2	943	195	120	208
Calder, James, assignor of one-half to G. S. Bingham, Hamilton, Canada. Shocking attachment for harvester-binders	810,186	Jan. 16	3170	657–9	120	776
Calder, Warren H. (See Davis, Edward F., assignor.)						
Caldwell, John A., Montclair, N. J. Mechanical stoker	812,635	Feb. 13	2246	468–9	120	2022
Caldwell, John D., and I. Bushong, Seattle, Wash. Shingle-trimming machine	813,946	Feb. 27	4841	1068	120	2684

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Caldwell, John D., and N. A. Sorenson, assignors to Caldwell-Sorenson Linnograph Co., Seattle, Wash. Clothes-marking apparatus	812,723	Feb. 13	2413	529	120	2055
Caldwell Manufacturing Company. (See Ralston, William A., assignor.)						
Caldwell-Sorenson Linnograph Co. (See Caldwell and Sorenson, assignors.)						
Caldwell, William D., *et al.* (See Connor, Charles R., assignor.)						
Caley, Charles J., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn. Lock and latch fittings	809,425	Jan. 9	1665	342	120	398
Caley, Charles J., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn. Sash-pulley	809,489	Jan. 9	1790	370	120	427
Caley, Charles J., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn. Molding-machine	812,820	Feb. 20	2596	570	120	2140
Caley, Charles J., and H. G. Voight, assignors to Russell and Erwin Manufacturing Company, New Britain, Conn. Lock	809,424	Jan. 9	1663	341	120	397
Caley, Charles J., and H. G. Voight, assignors to Russell & Erwin Manufacturing Company, New Britain, Conn. Lock mechanism	812,821	Feb. 20	2597	570	120	2141
Caley, Jeremiah. (See Caley, John and J.)						
Caley, John, Bedford, and J. Caley, Bloomington, Ind. Brake-operating mechanism	813,856	Feb. 27	4665	1032	120	2648
Calhoun, Charles. (See Ferguson and Calhoun.)						
Calhoun, William G. (See Calhoun, William H. and W. G.)						
Calhoun, William H., Marshalltown, Iowa, and W. G. Calhoun, Fargo, N. D., assignors of one-half to E. H. Uhl, Chicago, Ill. Heater	811,199	Jan. 30	5270	1103	120	1304
California Fruit Canners Association. (See Cerruti, Antonio, assignor.)						
Callahan, John, Seattle, Wash. Cleaning compound	810,105	Jan. 16	3012	.....	120	747
Callan, John G., Lynn, Mass., assignor to General Electric Company. Automatic speed-regulator for internal-combustion engines	809,771	Jan. 9	2334	483	120	545
Callan, John G., Lynn, Mass., assignor to General Electric Company. Variable-stroke crank	812,636	Feb. 13	2252	489	120	2023
Callan, John G., and F. R. C. Boyd, Lynn, Mass., assignors to General Electric Company. Emergency-governor	809,772	Jan. 9	2338	484	120	546
Calleson, Amos. (See Adriance and Calleson.)						
Calleson, Amos, A. D. Adriance, Brooklyn, N. Y., and A. Duppler, Jersey City, N. J., assignors to Warp Twisting-In Machine Company, New York, N. Y. Warp-twisting-in machine	810,711	Jan. 23	4278	887–90	120	1057
Calmore, Walter W. (See Vogel, Paul F., assignor.)						
Calvo, José, San Francisco, Cal. Key-ring	811,693	Feb. 6	316	68	120	1556
Cameron, Dorothy B. (See Angus and Cameron.)						
Cameron, William, assignor to T. Wold, Chicago, Ill. Machine for making can-bodies	813,772	Feb. 27	4484	989–90	120	2609
Camfield, James D., Skillesville, Ky. Portable table	811,480	Jan. 30	5777	1209–10	120	1411
Camp, Horace B., Akron, Ohio. Drier	811,821	Feb. 6	537	120	120	1599
Campbell, Adoniram J., Berwyn, Pa. Prop for clothes-lines	813,947	Feb. 27	4842	1068	120	2684
Campbell, Alexander B. (See Halsell and Campbell.)						
Campbell, Alonzo B., Corsopolis, Pa. Bridle-bit	812,112	Feb. 6	1153	253	120	1723
Campbell, Argyle, assignor to Enterprise Railway Equipment Company, Chicago, Ill. Car-bolster	810,840	Jan. 23	4513	940	120	1107
Campbell, Argyle, assignor to Enterprise Railway Equipment Company, Chicago, Ill. Car-door-operating mechanism	812,783	Feb. 13	2520	554	120	2078
Campbell, Charles A., and J. Reagan, Philadelphia, Pa. Horseshoe	809,553	Jan. 9	1911	396	120	453
Campbell, George L., Williamsport, Pa., assignor to Railways Surface Contact Supplies Company. Contact-box for electric-railway systems	812,164	Feb. 6	1292	283	120	1752
Campbell, George W., New York, N. Y. Type-writing machine	811,481	Jan. 30	5779	1210	120	1412
Campbell, Henry F., Melrose, assignor to National Magnetic Mineral Separating Company, Boston, Mass. Magnetic separator	810,841	Jan. 23	4515	940	120	1108
Campbell, John C., assignor of one-third to J. H. Allen, Chicago, Ill. Metal car-roof	809,907	Jan. 9	2574	533	120	598
Campbell Printing Press & Manufacturing Company. (See Wood, Henry A. W., assignor.)						
Campbell, Robert B., Joliet, assignor to himself, and A. F. Banks, Evanston, Ill. Railway-tie	810,393	Jan. 23	3666	754	120	918
Campbell, Thomas J., Lathrop, Mo. Seed-harvester	811,694	Feb. 6	317	68–9	120	1556
Campbell, Thomas J., Lathrop, Mo. Platform-adjusting means for seed-harvesters	813,349	Feb. 20	3652	800–1	120	2368
Canda, Ferdinand E., New York, N. Y., assignor to Chrome Steel Works, Chrome, N. J. Combining titanium with other metals	813,278	Feb. 20	3496	770	120	2335
Candi, Cesar. (See Candi, Oreste and C.)						
Candi, Oreste and C., Genoa, Italy. Electric lighter and extinguisher for gas-burners	811,200	Jan. 30	5271	1103	120	1304
Canfield, Frank, assignor to G. W. Skinner, Jr., Denver, Colo. Jar-closure fastener	810,106	Jan. 16	3013	628	120	747
Cantelo, Walter, Sharon, Pa. Extensometer	812,181	Feb. 13	1352	295	120	1833
Cantelou, Peter L., Hillsboro, Tex. Steering-gear for traction-engines	810,261	Jan. 16	3340	693–4	120	811
Canto, Emilio M., Santiago, Chili. Pistol and revolver sight	811,033	Jan. 30	4936	1030	120	1233
Caporale, Peter, Hartford, Conn. Safety scaffold-support	809,490	Jan. 9	1791	370	120	427
Caps, John E., Kansas City, Mo. Tire-protector	812,259	Feb. 13	1503	329	120	1867
Card, Edward M., Middlefield, Conn. Eyeglass-mounting	812,113	Feb. 6	1154	253	120	1723
Card, John M., Olean, N. Y. Artificial denture	810,712	Jan. 23	4285	890–1	120	1058
Card, John M., Olean, N. Y. Artificial denture	810,713	Jan. 23	4287	891	120	1058
Card, John M., Olean, N. Y. Artificial denture	810,842	Jan. 23	4519	941	120	1108
Cardwell, Charles W., Jamaica, N. Y. Saw-clamp	813,036	Feb. 20	3024	666	120	2234
Carence, Thomas, Salina, Kans. Nasal shield	810,617	Jan. 23	4120	851	120	1021
Cariocchia, Alfredo. (See Bargiela, Mislowsky, Cariocchia, and Odio.)						
Cariveau, Joseph, *et al.* (See St. Peter, Napoleon, Jr., assignor.)						
Carl, Goliah, Wamego, and A. Sohns, Clay Center, Kans. Petroleum-burner	810,908	Jan. 30	4683	976	120	1175
Carlaw, Alexander L. (See Carlaw, David, Sr., David, Jr., A. L., and J. W.)						
Carlaw, David, Sr., David, Jr., A. L., and J. W., Glasgow, Scotland. Numbering arrangement for use in connection with printing and numbering machines	811,372	Jan. 30	5595	1169	120	1374
Carlaw, James W. (See Carlaw, David, Sr., David, Jr., A. L., and J. W.)						
Carle, Harry J., Chicago, Ill. Fountain sight-feed	811,543	Feb. 6	16	4–5	120	1488
Carls, Robert E., Blackstone, Mass. Tension device for spinning-frames	812,919	Feb. 20	2789	613	120	2183
Carlise, Albert, assignor to American Electric Telephone Company, Chicago, Ill. Annunciator	808,723	Jan. 2	202	43	120	46
Carlson, Peet, Manor, Tex. Vessel-propelling device	808,634	Jan. 2	28	7	120	9
Carlyon, Philip H. (See Walker, Thomas H., assignor.)						
Carmichael, Albert B., administrator. (See Carmichael, Alexander.)						
Carmichael, Alexander, deceased; A. B. Carmichael, Westerly, R. I., administrator. Pressure-regulator	812,017	Feb. 6	989	216	120	1690
Carnahan, R., Jr. (See Roberts, John E., assignor.)						
Carothers, Eugene S., Westpoint, Miss. Carpet-stretcher	812,405	Feb. 13	1802	394	120	1982
Carpenter, Francis W., Greenwich, Conn., assignor to F. F. Carpenter, New York, N. Y. Toy	809,092	Jan. 2	945	196–7	120	209

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Carpenter, Frederick F. (See Carpenter, Francis W., assignor.)						
Carpenter, George T., Chicago, Ill. Dental tool for removing crown-pins	812,976	Feb. 20	2913	642	120	2210
Carpenter, Henry A., Sewickley, Pa., assignor to Riter-Conley Manufacturing Company, Jersey City, N. J. Conveyer for coke-retorts	812,977	Feb. 20	2914	642	120	2210
Carpenter Paper Company. (See Rudolph, Frank E., assignor.)						
Carrier, Willis H., assignor to Buffalo Forge Company, Buffalo, N. Y. Apparatus for treating air	808,897	Jan. 2	849	122	120	121
Carriker, William M., Irving, Ill. Neck-yoke	812,822	Feb. 20	2599	571	120	2141
Carroll, Charles E., Newport, Ark. Non-refillable bottle	812,724	Feb. 13	2416	530	120	2055
Carroll, Samuel T., Crothers, Pa. Metallic railway-tie	810,321	Jan. 16	3473	718	120	841
Carter, Albert, Los Angeles, Cal., assignor to Solar Furnace and Power Co. Solar furnace	811,274	Jan. 30	5414	1129	120	1336
Carter, Clarence W., Minneapolis, Minn. Machine for icing cake and other pastry	813,857	Feb. 27	4067	1032–3	120	2648
Carter, Edwin K., New York, N. Y., assignor to Kuttowait Butter Cutter Company. Machine for cutting butter, &c	813,858	Feb. 27	4671	1033–4	120	2649
Carter, Floyd H., Beloit, Wis. Wire-stretcher	813,859	Feb. 27	4679	1034	120	2651
Carter, George J., Kenton, Ohio. Prison-door-locking mechanism	812,637	Feb. 13	2253	489–90	120	2023
Carter, Henry W. (See Friede, Samuel M., assignor.)						
Carter, James, Stalybridge, G. Hall, Manchester, and A. Parsons, Leeds, England. Automatic circuit-breaking safety appliance for use in trolley-wire systems for electric traction	811,822	Feb. 6	539	120	120	1600
Carter, W. F., *et al.* (See Liesmann, Louis, assignor.)						
Carter, William D., Quincy, Ill. Kinetoscope for advertising	813,860	Feb. 27	4680	1034	120	2651
Carver, Thomas A. B., Glasgow, Scotland. Warp stop-motion	811,373	Jan. 30	5598	1169	120	1375
Cary Safe Company. (See Kasselman, William J., assignor.)						
Casaday, William L., and A. Bergman, South Bend, Ind. Annealing or malleableizing oven	813,483	Feb. 27	3932	863	120	2489
Case, Charles W., Jr., New Orleans, La. Feeding and blending machine	811,482	Jan. 30	5781	1210	120	1413
Case, Frank E., Schenectady, N. Y., assignor to General Electric Company. Emergency operating means for reversing-switches	809,773	Jan. 9	2342	484	120	547
Case, Frank E., Schenectady, N. Y., assignor to General Electric Company. System of control	809,774	Jan. 9	2344	484	120	547
Case, Frank E., Schenectady, N. Y., assignor to General Electric Company. System of control	809,908	Jan. 9	2575	533	120	598
Case, Frank E., Schenectady, N. Y., assignor to General Electric Company. Surface-contact system	812,726	Feb. 13	2417	530	120	2055
Case, Henry, Gloversville, N. Y. Hinged-leaf button	811,901	Feb. 6	704	154	120	1634
Case, John M., Cincinnati, Ohio. Bolting-machine	808,724	Jan. 2	326	44	120	47
Case, John M., Cincinnati, Ohio. Gradual-reduction mill	811,128	Jan. 30	5120	1069–70	120	1271
Case, John M., Louisville, Ky. Package and letter delivering and collecting system	813,542	Feb. 27	4048	886–8	120	2516
Case, Rolland A. (See Cloth and Case.)						
Casella, Secondo L., assignor to W. F. Barnes Commercial Company and B. F. Mackall, San Francisco, Cal. Automatic basket-machine	813,773	Feb. 27	4490	990–2	120	2610
Casey Bros. (See Omalia, Mathew, assignor.)						
Casey, Dennis D., Springfield, Mass. Tank-valve	811,034	Jan. 30	4936	1030	120	1233
Cassella Color Company. (See Kalischer, Georg, assignor.)						
Cassels, Louis J. (See McCain, John A., assignor.)						
Casserly, Joseph E., New York, N. Y., assignor to Remington and Sherman Company, Philadelphia, Pa. Boltwork for circular looms	811,695	Feb. 6	320	69	120	1556
Casserly, Joseph E., New York, N. Y., assignor to Remington and Sherman Company, Philadelphia, Pa. Boltwork for circular looms	811,696	Feb. 6	321	70	120	1556
Casserly, Joseph E., New York, N. Y., assignor to Remington and Sherman Company, Philadelphia, Pa. Boltwork for circular looms	811,697	Feb. 6	321	70	120	1557
Casserly, Joseph E., New York, N. Y., assignor to Remington and Sherman Company, Philadelphia, Pa. Boltwork for circular looms	811,698	Feb. 6	322	70	120	1557
Casserly, Joseph E., New York, N. Y., assignor to Remington and Sherman Company, Philadelphia, Pa. Boltwork for circular looms	811,699	Feb. 6	323	70	120	1557
Casserly, Joseph E., New York, N. Y., assignor to Remington and Sherman Company, Philadelphia, Pa. Boltwork for circular looms	811,700	Feb. 6	323	71	120	1557
Casserly, Joseph E., New York, N. Y., assignor to Remington and Sherman Company, Philadelphia, Pa. Boltwork for circular looms	811,701	Feb. 6	324	71	120	1558
Cassidy, Mars, Washington, D. C. Portable starting-gate for race-courses	808,813	Jan. 2	375	81	120	83
Castle, Peter C. D., Bebington, England. Manufacture of artificial mother-of-pearl	809,909	Jan. 9	2592	.....	120	603
Caswell, William A., assignor, by mesne assignments, to National Coal Dump Car Company, Chicago, Ill. Car. (Reissue)	12,447	Feb. 6	1321	267–9	120	1760
Cates, Robert S., Kingman, Kans. Ice-machine	808,898	Jan. 2	551	122	120	121
Cathey, Albert M., Davidson, N. C. Transferring apparatus	812,638	Feb. 13	2255	490	120	2023
Catlett, Robert, *et al.* (See Birmingham, John P., assignor.)						
Catlin, William, and M. McMillan, Kansas City, Mo. Carriage for display-racks	810,909	Jan. 30	4683	977	120	1175
Caulfield, Frank P., *et al.*, executors. (See Creque, Allen P.)						
Caughey, Albert S., Omaha, Nebr., assignor of one-half to J. Freese and S. W. Creel, Council Bluffs, Iowa. Lighter	808,725	Jan. 2	209	45	120	48
Cavanaugh, Patrick W. (See Shaffer, Francis F., assignor.)						
Cawood, Walter E., Toledo, Ohio. Eyeglasses	810,368	Jan. 16	3572	734	120	864
Caywood, Walter L., and E. M. Steele, Canon City, Colo. Music-leaf turner	813,617	Feb. 27	4197	921	120	2547
Cedervall, Carl W., administrator. (See Cedervall, Frans R.)						
Cedervall, Frans R., deceased; C. W. Cedervall, Gothenburg, Sweden, administrator. Protecting-sleeve for screw-propeller shafts	810,187	Jan. 16	3180	659	120	779
Celenza, Aristodemo and D., New York, N. Y. Bottle-closure	813 198	Feb. 20	3348	736	120	2305
Celenza, Domenico. (See Celenza, Aristodemo and D.)						
Cerruti, Antonio, assignor to California Fruit Canners Association, San Francisco, Cal. Can-filling apparatus	810,034	Jan. 16	2899	593	120	714
Chadeloid Chemical Company. (See Ellis, Carleton, assignor.)						
Chadwick, Edward W., Edgartown, Mass. Glass-cutting board	811,201	Jan. 30	5272	1103	120	1304
Chalfant, Walter B. (See Davis, James L., assignor.)						
Chamberlain, Arthur. (See Chamberlain, William and A.)						
Chamberlain, Leander T. (See Turner, Isaac J., assignor.)						
Chamberlain, William and A., Wigston Magna, England. Brake for the hubs of cycles	811,617	Feb. 6	162	36	120	1530
Chambers, James A., assignor to W. J. Patton, Allegheny, Pa. Apparatus for drawing glass	810,035	Jan. 16	2872	593	120	715
Champion Machinery Company. (See Meyer, Ernest C., assignor.)						
Champion Metal Weather Strip and Parting Bead Company. (See Faulkner, Charles H., assignor.)						
Champion Shoe Machinery Company. (See Corcoran and Dobyne, assignors.)						
Chaney, Christopher C., Hartford, Ala. Glass-retaining device for mashes	811,544	Feb. 6	19	5	120	1489
Chandler, William E., Elcampo, Tex. Calf-weaner	809,775	Jan. 9	2348	485	120	548
Chaney, John K., *et al.* (See Driver, Charles H., assignor.)						
Channell, George H., assignor to Union Spring and Manufacturing Co., New Kensington, Pa. Spring end	809,173	Jan. 2	1082	226	120	238
Chapman, Henry S., Glenridge, N. J., and W. M. Stone, New York, N. Y., assignors to Arlington Company. Coated strip and making the same	813,618	Feb. 27	4199	922	120	2548
Chapman, Matthew T., Aurora, Ill. Well-sinking apparatus	810,910	Jan. 30	4685	977–8	120	1176
Chapman, Robert E., Colorado City, Colo. Triple valve	809,491	Jan. 9	1792	370	120	427
Chard, Nicholas D. (See Lodge and Chard.)						
Charles Parker Company. (See Walker, Eli M., assignor.)						
Charpentier, Edmond, and J. Richelle, Verviers, Belgium. Heddle-making machine	809,668	Jan. 9	2145	444–5	120	502
Chase, Amos F., Lynn, Mass. Shirt	813,774	Feb. 27	4495	992–3	120	2611
Chase, James L., Ayer, Mass., assignor of one-half to E. A. Terrell, Nashua, N. H. Portable measuring-can	813,402	Feb. 27	3769	827	120	2451
Chase, James W., Buffalo, N. Y. Wall-plaster	812,978	Feb. 20	2915	.....	120	2211
Chatem, John E., Los Angeles, Cal. Folding bed	810,036	Jan. 16	2874	593	120	715
Cheek, Frank. (See Holsberg, Dean A., assignor.)						
Cheesman, Charles H., Burlington, N. J. Making stiffening material	812,639	Feb. 13	2257	.....	120	2024
Cheever, Murray, assignor to E. Howard Clock Company, Boston, Mass. Electromagnetic motor	813,775	Feb. 27	4496	993	120	2611
Chemische Fabrik von Heyden Aktiengesellschaft. (See Seifert, Bruno R., assignor.)						
Chenoweth, Walter B. (See Parks, Thomas W., assignor.)						
Chester, John F., assignor of thirty-five one-hundredths to J. J. Selberz, Louisville, Ky. Mail-bag catcher	810,322	Jan. 16	3474	718	120	841
Cheyne, Samuel D., Belfast, Ireland. Apparatus for measuring and marking the distance from the ground of skirts, &c	809,669	Jan. 9	2156	446	120	505
Chicago Car Seal & Manufacturing Company. (See Foote, Lewis A., assignor.)						
Chicago Pneumatic Tool Company. (See Mull, James H., assignor.)						
Chicago Railway Equipment Company. (See Huntoon, Charles F., assignor.)						
Chicago Railway Equipment Company. (See Roblschung, Henry B., assignor.)						
Chicago Railway Equipment Company. (See Williams, Charles H., Jr., assignor.)						
Chidester, John H., Dobbs Ferry, N. Y. Adjustable washer	811,035	Jan. 30	4938	1030	120	1234
Chimzar, Frank, Ely, Minn. Propeller-wheel	808,814	Jan. 2	378	81	120	84
Chioders, Alfred, Zurich, Switzerland. Navigable balloon	809,093	Jan. 2	950	197	120	210
Choiniere, Arthur, Holyoke, Mass. Molding-machine	812,979	Feb. 20	2915	643	120	2211
Chormann, Alvin W., and L. L. Combs, Hickory, Pa. Rail-joint	809,284	Jan. 9	1358	276	120	334
Chovan, Andrew, and M. Gex, Allegheny, Pa. Fender	813,776	Feb. 27	4499	993–4	120	2612
Christensen, Emil. (See Pfluger and Christensen.)						
Christensen, George P. (See Addy, Marion, assignor.)						
Christensen, Jens N., Chicago, Ill. Temporary binder	813,948	Feb. 27	4843	1069	120	2684
Christenson, Algot L., Stockholm, Sweden. Centrifugal liquid-separator	812,544	Feb. 13	2062	456	120	1990
Christian, Charles E., Thurmond, W. Va. Rail-joint	813,861	Feb. 27	4681	1035	120	2651
Christian, John B., Minneapolis, Minn. Gasolene lighting system	811,823	Feb. 6	541	121	120	1600
Christian, Madison L., and E. E. Reynolds, assignors to American Wire Cloth Company, Clinton, Iowa. Shuttle-motion for looms	809,776	Jan. 9	2349	485	120	549
Christiansen, Carl, Crookston, Minn. Friction-clutch and governor	811,374	Jan. 30	5600	1170	120	1375
Chrome Steel Works. (See Canda, Ferdinand E., assignor.)						
Chun, William A., Houston, Tex. Switch-operating device	810,323	Jan. 16	3475	718–19	120	841
Chundelah, Abraham, San Francisco, Cal. Tea-strainer holder	809,607	Jan. 9	2030	421	120	478
Church, Duane H., deceased, Newton, Mass.; H. L. Church, executrix. Machine for gaging pivots	809,248	Jan. 2	1272	259–61	120	281
Church, Harriet L., executrix. (See Church, Duane H.)						
Churchill, William, assignor to Corning Glass Works, Corning, N. Y. Signaling	810,714	Jan. 23	4289	891	120	1058
Churchill, William, assignor to Corning Glass Works, Corning, N. Y. Intensifying the colors of signal-lights	810,715	Jan. 23	4292	891	120	1059
Churchward, Alexander, New York, N. Y., assignor to General Electric Company. Locking device for automobiles	812,726	Feb. 13	2420	530	120	2057
Chute, George E., Princeton, Minn. Attachment for potato-diggers	810,716	Jan. 23	4294	892	120	1059
Chute, Louis P., Minneapolis, Minn. Automatic stay-release	812,182	Feb. 13	1355	295	120	1834
Cincinnati Butchers Supply Company. (See Schmidt and Schmidgall, assignors.)						
Cioli, Antonino, and H. A. Case, assignors to American Specialty Company, Cleveland, Ohio. Apparatus for treating diseased tissues	808,635	Jan. 2	29	7	120	9
City Trust Company of New York, trustee. (See Dement and Hull, assignors.)						
Clagett, Mary H., *et al.* (See St. Hoor, Samuel S., assignor.)						
Clagett, William S., *et al.* (See St. Hoor, Samuel S., assignor.)						
Claghorn, Clarence R., Wehrum, Pa. Car-dump	811,129	Jan. 30	5123	1070–1	120	1271
Clapp, George E., Kalamazoo, Mich. Show or display case	808,726	Jan. 2	211	45	120	48
Clark, Charles R., Homestead, Pa. Printing-press attachment	813,279	Feb. 20	3498	771	120	2336
Claridge, Thomas G., and T. A. Randall, Plainfield, N. J., assignors to Aluminum Press Company, New York, N. Y. Printing-press	812,545	Feb. 13	2084	456–8	120	1991
Clark, Carle D., Clifton, Ariz. Ter. Hydraulic cement and making the same	811,902	Feb. 6	705	.....	120	1634
Clark, Charles B., New York, N. Y. Air-admission device for locomotive fire-boxes	813,862	Feb. 27	4682	1035	120	2652
Clark, Eugene B., 2nd. (See Field, Clark, and Wilson.)						
Clark, Frank H. (See Knudson, Adolphus A., assignor.)						
Clark, George L. (See Taylor and Clark.)						
Clark, James P., Newark, N. J. Wired plating and dipping rack	811,375	Jan. 30	5602	1170	120	1376
Clark, James T., assignor of one-half to G. D. McKay, Winnipeg, Canada. Automatic nut-lock	809,044	Jan. 2	829	177	120	183
Clark, Jester J., Athens, Ohio. Rope-clamp	808,970	Jan. 2	702	152	120	155
Clark, Lee, Garrison, Iowa. Truss for cement posts	810,717	Jan. 23	4296	892	120	1059
Clark, Lewis L., *et al.* (See McPhaill, Hugh, assignor.)						
Clark, Lyonel E., *et al.* (See Bishop and Down, assignors.)						
Clark, Nelson H. and R. L., Munnsville, N. Y. Egg-carrier	810,324	Jan. 16	3478	719	120	842
Clark, Robert L. (See Clark, Nelson H. and R. L.)						
Clark, Samuel H., Ridgestar, Tex. Plow attachment	810,467	Jan. 23	3819	784	120	955
Clark, Walter G., Seattle, Wash. Insulator-clamp	810,618	Jan. 23	4121	851	120	1021
Clark, William J., Chicago, Ill. Drip device for steam systems	810,911	Jan. 30	4688	979	120	1177
Clark, William R., Chillicothe, Ohio. Crib attachment for beds	810,718	Jan. 23	4297	892	120	1060
Clarke, George W. (See Epperson, Henry T., assignor.)						
Classen, Alexander, Aachen, Germany. Electrolytic production of lustrous metallic coatings upon metals	809,492	Jan. 9	1793	.....	120	428
Claudel, Charles H., Argenteuil, France. Carbureter for hydrocarbon-engines	811,618	Feb. 6	163	36–7	120	1521
Clausen, John C., Wausa, Nebr. Horse-collar fastener	813,863	Feb. 27	4684	1035	120	2652
Clauser, Philip S., Aurora, Ill. Seal-lock	809,357	Jan. 9	1504	304	120	366
Clausson, Edward E., Hartford, Conn., assignor to Union Paper Bag Machine Company, Philadelphia, Pa. Paper-bag machine	813,280	Feb. 20	3499	771–2	120	2336

Alphabetical list of patentees for January and February—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Clausseen, Niels H., Copenhagen, Denmark. Manufacture of English beers or malt liquors.	813,199	Feb. 20	3349	.....	120	2305
Clay, Francis W. H., Pittsburg, Pa. Bottle-closure	811,824	Feb. 6	542	121	120	1600
Clay, Francis W. H., Pittsburg, Pa. Bottle-closure	811,825	Feb. 6	544	121	120	1601
Clay, Harry C., assignor to Reeves & Company, Columbus, Ind. Sawmill feed-drive	812,823	Feb. 20	2601	571	120	2142
Clay, Harry C., assignor to Reeves & Company, Columbus, Ind. Throttling-governor	813,037	Feb. 20	3025	666	120	2234
Clay, Harry C., and M. T. Reeves, assignors to Reeves & Company, Columbus, Ind. Band-cutter	812,784	Feb. 13	2522	554	120	2078
Clay, William E., Williamstown, Ky. Magazine-rifle	809,094	Jan. 2	952	198	120	211
Clayton, Ernest S., Newark, N. J. Dry-pipe valve for automatic sprinkler systems	813,350	Feb. 20	3653	801	120	2368
Cleaver, Howard C., London, England. Open fireplace	810,719	Jan. 23	4298	892–3	120	1060
Cleff, Bernhard, Rauenthal, near Barmen, Germany, assignor to Susquehanna Silk Mills, New York, N. Y. Oxidizing fabrics	810,394	Jan. 23	3668	754–6	120	919
Cleghorn, Edward D. (See Trueman and Cleghorn.)						
Clement, Edward E., Washington, D. C. Method of and means for railway-track construction	812,018	Feb. 6	990	217	120	1690
Clements, George, and J. M. Hostler, Chicago, Ill. Heat-controlling apparatus	811,483	Jan. 30	5784	1211	120	1413
Clements, Margaret E., Eastman, Ga. Piano pedal-guard	810,325	Jan. 16	3480	719	120	842
Clemons, De Laski T., assignor of two-thirds to J. Peytrenet and J. F. Richardson, Hornellsville, N. Y. Sanding and polishing machine	810,037	Jan. 16	2875	594	120	716
Cleveland, Charles E., Fond du Lac, Wis. Resawing-machine	811,376	Jan. 30	5603	1170–1	120	1376
Cleveland, Charles E., Fond du Lac, Wis. Lumber-feeding machine	811,377	Jan. 30	5605	1172–3	120	1377
Cleveland, Frederick A., New York, N. Y. Binder	809,428	Jan. 9	1667	342	120	398
Cleveland, Frederick A., New York, N. Y. Binder	809,493	Jan. 9	1795	371	120	428
Cleveland, Frederick A., New York, N. Y. Binder	809,494	Jan. 9	1798	371	120	429
Cleveland, Frederick A., New York, N. Y. Binder	809,495	Jan. 9	1801	371	120	430
Clevenger, Joshua D., assignor of one-half to A. H. MacNutt, San Francisco, Cal. Stone-saw	809,496	Jan. 9	1804	371	120	431
Clifford, Hobbs E., Lafountaine, Ind. Air-compressing engine	813,484	Feb. 27	3934	864	120	2490
Clifton Manufacturing Company. (See Thoma, Andrew, assignor.)	811,378	Jan. 30	5609	1173–4	120	1378
Cline, Fred N., Chicago, Ill. Horseshoe	811,619	Feb. 6	165	37	120	1521
Clinton Wire Cloth Company. (See Perry, John C., assignor.)	813,949	Feb. 27	4844	1069	120	2684
Clipper Plow Company. (See Klenk, Gottlieb, assignor.)						
Cloninger, Ellie B., Hughes Springs, Tex. Pot-rack	812,546	Feb. 13	2089	458	120	1992
Closson, John M., Hoosick Falls, assignor of one-half to B. McCusker, Troy, N. Y. Truck attachment for sleighs	811,545	Feb. 6	19	5	120	1489
Clotz, Frank E., Menominee, Mich. Firearm-cartridge	811,379	Jan. 30	5613	1174	120	1379
Cloud, Arthur D., Davenport, Iowa. Announcing device for railway-cars	811,903	Feb. 6	706	154–5	120	1634
Cloud, John W., King's Cross, London, England. Automatic vacuum-brake	812,481	Feb. 13	1933	426–7	120	1960
Clough, Francis W., assignor to N. C. Newell, Springfield, Mass. Drilling-machine	813,351	Feb. 20	3657	801–2	120	2369
Clouse, Joseph N. (See Brown and Clouse.)						
Coates, Walter A., assignor to American Optical Company, Southbridge, Mass. Manufacturing spectacle-frames	808,899	Jan. 2	553	122	120	122
Coats, Miner. (See Rice, Stanley K., assignor.)						
Coats, Paul, Lapraírie, Ill. Brooder	811,484	Jan. 30	5786	1211	120	1414
Cobb, Amory M., Malden, Mass. Spraying apparatus	809,045	Jan. 2	830	177–8	120	183
Coburn, Lemuel, Holyoke, Mass. Wood-veneered metal object	812,824	Feb. 20	2602	571	120	2142
Cochran, Charles, Plattsburg, N. Y. Can-opener	812,406	Feb. 13	1803	394	120	1933
Cochrane, David, Philadelphia, Pa. Means for purifying and regulating water	811,485	Jan. 30	5787	1211	120	1414
Cockburn Barrow and Machine Company. (See McIlvrid, William, assignor.)						
Coe Brass Manufacturing Company. (See Benjamin, George H., assignor.)						
Coe Brass Manufacturing Company. (See Ellis, John F., assignor.)						
Coen-Cagli, Enrico, Naples, Italy. Acoustic signaling apparatus for railways	813,619	Feb. 27	4201	922–4	120	2548
Coffe, William O., assignor to B. F. Bellows, Cleveland, Ohio. Telegraph-key	812,183	Feb. 13	1356	295–6	120	1835
Coffman, George W., St. Louis, Mo. Marking-machine	810,468	Jan. 23	3820	785	120	955
Coffman, John I., *et al.* (See Stahl, George, assignor.)						
Coffman, William P., *et al.* (See Stahl, George, assignor.)						
Cohen, Charles, New York, N. Y. Bin	812,019	Feb. 6	993	217	120	1690
Cohen, Isaac Z., Bluefield, W. Va. Pocket tobacco-box	810,720	Jan. 23	4300	893	120	1061
Cohendius, Abraham, New York, N. Y. Distributer for finely-divided substances	810,107	Jan. 16	3014	628	120	747
Coit, Harry L., New London, Conn. Drill-chuck	813,864	Feb. 27	4585	1035	120	2652
Coldiron, James L., Woolsey, Ind. Ter. Baling-press	809,931	Jan. 16	2545	546	120	666
Cole, Ernest C., assignor to Cole Manufacturing Company, Chicago, Ill. Lift-plate	810,721	Jan. 23	4301	893	120	1061
Cole, Francis J., assignor to American Locomotive Company, New York, N. Y. Steam-boiler superheater	810,619	Jan. 23	4123	852	120	1021
Cole, Frederick W., Newton, Mass. Automatic non-interfering repeater for fire-alarm circuits	810,912	Jan. 30	4689	979–81	120	1177
Cole, Harlan P., assignor to N. D. Cole, Hartford, Conn. Anatomical footwear	812,020	Feb. 20	2790	614	120	2183
Cole, Henry W. N., Brooklyn, assignor to Briquetting Company, New York, N. Y. Machine for molding articles from plastic materials	809,554	Jan. 9	1912	397	120	454
Cole, James P., Chicago, Ill. Dredging apparatus	811,275	Jan. 30	5417	1129	120	1336
Cole, John A., Chicago, Ill. Street connection for pitometers	811,763	Feb. 6	425	94	120	1579
Cole Manufacturing Company. (See Cole, Ernest C., assignor.)						
Cole, Nettie D. (See Cole, Harlan P., assignor.)						
Cole, William B., and F. H. Thornley, Rhinebeck, N. Y. Horseshoe-calk	810,843	Jan. 23	4522	941	120	1108
Colegrove, Austin E., and S. Reed, Cynthiana, Ky. Chimney-cap	811,764	Feb. 6	427	94	120	1579
Coleman, Albert. (See Alexander, Robert L., assignor.)						
Coleman, Clarence W., Westfield, N. J., assignor to Hall Signal Company. Railway-traffic-controlling apparatus	810,262	Jan. 16	3341	694	120	811
Coleman, Clarence W., Westfield, N. J., assignor to Hall Signal Company. Utilizing liquefied gas for railway-traffic-controlling apparatus	810,263	Jan. 16	3349	694	120	814
Coleman, Clyde J., Rockaway, N. J., assignor of one-half to S. Aronstein, New York, N. Y. Railway-switch-operating apparatus	812,825	Feb. 20	2604	573	120	2142
Coleman, John D., Glenwood, Ill. Gun-cleaning device	810,913	Jan. 30	4698	981	120	1179
Coligny, Frank de, Chicago, Ill. Power-transmission device	812,483	Feb. 13	1942	428	120	1962
Collapsible Barrel Company. (See Meison and Marvil, assignors.)						
Collar, Adoniram J., Yreka, Cal. System of water control	812,482	Feb. 13	1939	428	120	1961
Collath, Frank F., Milwaukee, Wis. Excavator	808,636	Jan. 2	32	7	120	9
Collins, Charles J., *et al.* (See De Jay, Charles, assignor.)						
Collins, George W., St. Joseph, Mo. Razor-strop	809,777	Jan. 9	2351	485	120	549
Collins, Horatio E., assignor of one-half to J. H. Harrison, Detroit, Mich. Coat and hat hook	811,380	Jan. 30	5614	1174	120	1379
Collins, John F., Buffalo, N. Y. Ladder attachment for pipes	809,778	Jan. 9	2352	485	120	549
Collins, John S., assignor to American Car Strap Advertising Company, New York, N. Y. Hanging-strap for passenger-vehicles	810,396	Jan. 23	3670	756	120	919

Alphabetical list of patentees for January and February—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Collins, Lathrop H. (See Nagel, Theodore, assignor.)						
Collins, Nat C. (See Barrett and Collins.)						
Collins, Walter A., Penns Manor, Pa. Sprinkling-machine	809,046	Jan. 2	834	178	120	184
Collord, Frank M. (See McMillan, Johnson, and Collord.)						
Colorado Railway Signal Company. (See Dowler, Charles R., assignor.)						
Colpitt, Parker R. (See Stanford and Colpitt.)						
Colton, Arthur D., Chicago, Ill. Thermostat	813,403	Feb. 27	3772	828	120	2451
Columbian Rope Company. (See Metcalf, Edwin D., assignor.)						
Columbus Brass Company. (See Lindenberg, Frank H., assignor.)						
Combs, Clark W., Washington, D. C. Overlay	809,095	Jan. 2	954	198	120	211
Combs, Harry, Upson, Wis. Log-derrick	813,352	Feb. 20	3660	802	120	2369
Combs, Logan L. (See Chormann and Combs.)						
Combustion Utilities Company. (See Eldred, Byron E., assignor.)						
Combustion Utilities Company. (See Eldred and Ellis, assignors.)						
Combustion Utilities Company. (See Ellis, Carleton, assignor.)						
Combustion Utilities Company. (See Tait, Godfrey M. S., assignor.)						
Comer, Joseph A., Los Angeles, Cal. Extracting gold, silver, &c.	813,620	Feb. 27	4205	924	120	2549
Comins, William A., and J. Connor, Stafford Springs, Conn. Horseshoe-calk	813,777	Feb. 27	4500	994	120	2612
Commercial Artificial Fuel Company. (See Pritschau, Ferdinand A., assignor.)						
Commonwealth Trust Company, trustee. (See Thoma, Andrew, assignor.)						
Compagnie des Produits Chimiques d'Alais et de la Camargue. (See Pechiney, Alfred R., assignor.)						
Compton, Weldon B., Lismas, Mont. Veterinary surgical instrument	813,080	Feb. 20	3117	683	120	2256
Computing Scale Company. (See Orias, Orange O., assignor.)						
Comstock, Edgar M., Ypsilanti, Mich. Cord-fastener	811,381	Jan. 30	5615	1175	120	1379
Conant, Charles B., assignor of one-half to O. M. Whitmore, Adrian, Mich. Lock for sashes	808,815	Jan. 2	378	82	120	84
Condo, Joseph C., Alexandria, Ind. Bottle-closure	809,427	Jan. 9	1669	342	120	399
Condren, Hugh, Vancouver, Canada. Bevel-gage for handsaws	808,971	Jan. 2	703	152	120	155
Confectioners and Bakers Supply Co. (See Dickson, George F., assignor.)						
Conkey, Leonard L., Grand Rapids, Mich. Veterinary-surgeon's table	809,358	Jan. 9	1505	305	120	366
Conley, John E., Arcola, Ill. Railway switch and crossing frog	812,640	Feb. 13	2258	490	120	2024
Conley, John R., Oakland, Kans. Safety device for elevators	809,285	Jan. 9	1359	276	120	334
Conley, Patrick. (See Gormley and Conley.)						
Connable, Caroline A., executrix, (See Connable, John L.)						
Connable, Frank L. (See Connable, John L., assignor.)						
Connable, John L., deceased, Chattanooga, Tenn.; C. A. Connable, executrix, assignor of one-half to F. L. Connable, Wilmington, Del. Tire	812,165	Feb. 6	1294	283	120	1753
Connell, James F., Bazine, Kans. Collar-protector	808,816	Jan. 2	380	82	120	84
Connell, James F., Bazine, Kans. Non-refillable bottle	809,932	Jan. 16	2646	547	120	667
Connelly, James A., Ludlow, Pa. Locking mechanism for stretching-frames	811,904	Feb. 6	712	155	120	1636
Connelly, Patrick F., Sioux Falls, S. D. Tool for making artificial-stone walks	808,900	Jan. 2	555	123	120	122
Conner, Morton, Rushville, Ind. Non-refillable bottle	813,038	Feb. 20	3028	667	120	2235
Connolly, Frank E. (See Connolly, Patrick, assignor.)						
Connolly, John J., *et al.* (See Osborne, Vivian, assignor.)						
Connolly, Patrick, assignor to F. E. Connolly, Brooklyn, N. Y. Tub	812,826	Feb. 20	2613	572	120	2144
Connolly, Samuel F., *et al.* (See Osborne, Vivian, assignor.)						
Connor, Charles R., assignor of three-fourths to W. D. Caldwell, Ensley, and J. W. Wilkes, Jefferson county, Ala. Tipple	811,496	Jan. 30	5788	1212	120	1414
Connor, Frank C., Waco, Tex. Rubber shoe sole and heel	812,484	Feb. 13	1943	429	120	1962
Connor, Joseph. (See Comins and Connor.)						
Connor, Joseph B., Liverpool, England, assignor to T. Mortland, New York, N. Y. Car-fender	810,326	Jan. 16	3481	719	120	842
Connor, Walter, Toledo, Ohio. Plow	808,727	Jan. 2	213	45–6	120	49
Conover, Warren H., Freehold, assignor of one-half to J. Parker, Jersey City, N. J. Combined range, &c., and heating apparatus	813,950	Feb. 27	4845	1069–70	120	2685
Conrad, Max, Aschaffenburg, and W. Beckh, Darmstadt, Germany. Making 4-imino-2-6-dioxypyrimidin	811,826	Feb. 6	546	.....	120	1601
Conrad, Max, Aschaffenburg, and W. Beckh, Darmstadt, Germany. Making pyrimidin derivatives	811,827	Feb. 6	547	.....	120	1601
Conrad, Max, Aschaffenburg, and W. Beckh, Darmstadt, Germany. Making pyrimidin derivatives	811,828	Feb. 6	548	.....	120	1601
Conrad, Max, Aschaffenburg, and W. Beckh, Darmstadt, Germany. Making pyrimidin derivatives	811,829	Feb. 6	548	.....	120	1602
Conrader, Rudolph, Erie, Pa. Pressure-governor	810,108	Jan. 16	3015	628	120	748
Conrader, Rudolph, Erie, Pa. Vacuum-governor	810,109	Jan. 16	3017	629	120	748
Conrath, George A. (See Cook and Conrath.)						
Conroy, Frank M. (See Rodney, Ford, Conroy, Burson, and Fitch.)						
Conroy, Patrick J., New York, N. Y. Punching-bag	811,546	Feb. 6	21	5	120	1489
Continental Paper Bag Company. (See Liddell, William, assignor.)						
Continental Paper Bag Company. (See Strasburg, Frederick E., assignor.)						
Coogan, Michael J., Port Chester, N. Y. Window-blind slat-fastener	809,779	Jan. 9	2353	486	120	549
Cook, David S., Basil, assignor of two-thirds to J. W. McCord and W. S. Cook, Columbus, Ohio. Removing rough and irregular foreign seeds from clover and other smooth seeds	813,404	Feb. 27	3774	828	120	2452
Cook, Edward L., Brattleboro, Vt. Folding square	810,188	Jan. 16	3181	659	120	779
Cook, Edward M., Elyria, Ohio. Metallic packing	812,114	Feb. 6	1155	254	120	1723
Cook, Frank B., Chicago, Ill. Protective apparatus	810,914	Jan. 30	4698	981–2	120	1179
Cook, Frank B., Chicago, Ill. Thermal protector and alarm	812,164	Feb. 13	1280	296	120	1836
Cook, Frank B., Chicago, Ill. Self-soldering heat-cartridge and protective apparatus	812,980	Feb. 20	2917	643	120	2211
Cook, Frederick D., and G. A. Conrath, Blairsville, Pa. Mold for casting hollow ware	813,405	Feb. 27	3775	828	120	2452
Cook, George F., East Washington, N. H. Bicycle-support	812,547	Feb. 13	2090	458	120	1993
Cook, Henry F., Sag Harbor, N. Y. Vehicle attachment	810,722	Jan. 23	4302	894	120	1061
Cook, John H., assignor of one-half to A. Kinkead, Irving, Ill. Doubletree-hitch	813,039	Feb. 20	3030	667	120	2235
Cook, Lewis D., Mount Holly Springs, Pa. Initiating apparatus	811,702	Feb. 6	326	71	120	1558
Cook, Russell P., St. Augustine, Fla. Rail-tie and rail-joint combined	812,548	Feb. 13	2092	459	120	1993
Cook, William S., *et al.* (See Cook, David S., assignor.)						
Cook, William S., San Jose, Cal. Disk plow	810,620	Jan. 23	4125	852	120	1022
Cool, William H. (See Stiarwalt and Cool.)						
Coon, William R., Gowanda, N. Y. Device for fastening folded papers	812,115	Feb. 6	1156	254	120	1724
Cooper, Angus R., Mobile, Ala. Chimney-holder	809,780	Jan. 9	2354	486	120	550
Cooper, Frank P., Cincinnati, Ohio. Tubular boiler	811,547	Feb. 6	22	6	120	1489
Cooper, Henry B., Columbus, Ohio. Hose-supporter	813,021	Feb. 27	4207	925	120	2549
Cooper, Henry B., Columbus, Ohio. Hose-supporter	813,022	Feb. 27	4209	925	120	2550
Cooper Hewitt Electric Company. (See Thomas, Percy H., assignor.)						
Cooper, John, Diamond, La. Arbor	811,276	Jan. 30	5419	1130	120	1337

Alphabetical list of patentees for January and February—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.

Alphabetical list of patentees for January and February—Continued.

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Cooper, John, Bellevue, Pa., assignor to Ingersoll-Sergeant Drill Company, New York, N. Y. Automatic oiler	810,621	Jan. 23	4128	853	120	1022
Cooper, Thomas, Kidderminster, England. Tufted pile fabric	812,951	Feb. 27	4847	1070	120	2685
Cooper, William, Denver, Colo. Safety device for hoisting mechanisms	810,189	Jan. 16	3182	650-60	120	780
Cooper, William, Providence, R. I. Union	810,190	Jan. 16	3188	660	120	780
Coppage, Benjamin D., Wilmington, Del. Slide-rule	813,485	Feb. 27	3935	864	120	2490
Corbin, Charles B., assignor of one-half to C. F. Aupperle, Grand Rapids, Mich. Shoe-form	812,116	Feb. 6	1186	254	120	1724
Corbin, John R., New York, N. Y. Adjustable door-jamb	813,600	Feb. 27	4334	953	120	2578
Corbin, Newell S. (See Rahm and May, assignors.)						
Corbin Screw Corporation. (See Glover, Charles, assignor.)						
Corbin Screw Corporation. (See Svenson, Charles W., assignor.)						
Corby, Edward P., assignor to Lock-Well Wall Register Company, St. Louis, Mo. Wall-register	813,952	Feb. 27	4848	1070	120	2685
Corcoran, George L., and G. A. Dobyns, assignors to Champion Shoe Machinery Company, St. Louis, Mo. Wax-pot for sewing-machines	809,428	Jan. 9	1672	342	120	399
Corcoran, George L., and G. A. Dobyns, assignors to Champion Shoe Machinery Company, St. Louis, Mo. Sewing-machine	812,641	Feb. 13	2259	491-2	120	2024
Corcoran, John H., Kenosha, Wis. Combined sash-balance and lock	811,382	Jan. 30	5616	1175	120	1379
Corey, Fred B., Schenectady, N. Y., assignor to General Electric Company. Electromagnet	811,277	Jan. 30	5420	1130	120	1337
Corey, Fred B., Schenectady, N. Y., assignor to General Electric Company. Air-brake system and automatic valve	811,765	Feb. 6	428	94	120	1580
Corey, Fred B., Schenectady, N. Y., assignor to General Electric Company. System of motor control	811,766	Feb. 6	431	94	120	1580
Corley, Benjamin R. (See Turner and Corley.)						
Cormack, George, Jr., and F. C. Zumdahl, Rockford, Ill. Sparking igniter for explosive-engines	813,081	Feb 20	3119	663	120	2256
Cornelison, Jesse U., Eula, Tex. Agricultural implement	810,622	Jan. 23	4130	853	120	1023
Cornell, Joseph, Earlville, N. Y. Table-leg fastening	813,406	Feb. 27	3777	826	120	2453
Corning Glass Works. (See Churchill, William, assignor.)						
Cortland Implement Company. (See Johnson, Charles, assignor.)						
Cosmos Construction Company. (See Lamson, Franklin S., assignor.)						
Cossey, Myron, Brooklyn, assignor to Reliance Ball Bearing Door Hanger Company, New York, N. Y. Door-hanger	809,781	Jan. 9	2355	486	120	550
Costello, Thomas H., Chicago, Ill. Blackboard	810,623	Jan. 23	4131	853	120	1023
Cotton Collar Company. (See Allen, Clarence L., assignor.)						
Cotton, William E., and L. C. Moor, Kansas City, Mo. Extension gas-chandelier	812,549	Feb. 13	2093	459	120	1993
Cottrell, Charles P., Westerly, R. I., assignor to C. B. Cottrell & Sons Company, New York, N. Y. Pressure-controlling device for the air-springs of printing-presses	810,624	Jan. 23	4132	854	120	1023
Cottrell, Herbert, Newark, N. J. Mechanical and magnetic toy	813,082	Feb. 20	3120	664	120	2256
Cottrell, John C., Kingsley, Iowa. Railway-car	808,817	Jan. 2	361	83-4	120	84
Couch, Elbert M., assignor to Whitney Manufacturing Company, Hartford, Conn. Printing-press	813,778	Feb. 27	4501	994-5	120	2612
Country Hydrant Company. (See Johnson, John, assignor.)						
Coupette, Paulin, Cologne, Germany. Advertising device	813,300	Feb. 20	3351	737	120	2305
Covel Manufacturing Company. (See Filstrup, Lars L., assignor.)						
Covell, Harry N., New York, N. Y., assignor to Lidgerwood Manufacturing Company. Drake-band	812,827	Feb. 20	2615	573	120	2145
Covarrubias, Samuel T., Mount Pleasant, Mich. Rail-joint	811,130	Jan. 30	5128	1071	120	1272
Covert, James C., Watervliet, N. Y. Fire-escape	809,670	Jan. 9	2156	446	120	506
Cowan, Arthur S., assignor to Crompton & Knowles Loom Works, Worcester, Mass. Loom	814,000	Feb. 27	4930	1092-4	120	2704
Cowern, William, Hawera, New Zealand. Means for filtering or purifying water	813,779	Feb. 27	4505	995	120	2613
Cowing, Percy F., New York, N. Y. Shot-making machine	809,671	Jan. 9	2158	446	120	506
Cowles, Burton S., Plainville, assignor to Cowles Engineering Corporation, New Haven, Conn. Machine for bending cast-iron	813,141	Feb. 20	3254	715	120	2285
Cowles Engineering Corporation. (See Cowles, Burton S., assignor.)						
Cowles, William B., assignor to "Long Arm" System Company, Cleveland, Ohio. Automatic cut-out mechanism for electrically-operated bulkhead-doors	810,915	Jan. 30	4705	982	120	1181
Cowles, William H., et al. (See Williams, Charles, assignor.)						
Cox, George E. (See Price, Cox, and Marshall.)						
Coy, Frederick W., Boston, assignor to C. F. Brown, trustee, Reading, Mass. Adjustable clutch-controlled standard	811,278	Jan. 30	5423	1130	120	1338
Crabb, Charles L., New York, N. Y. Apparatus for rendering drawings and documents transparent and waterproof	808,901	Jan. 2	357	123	120	122
Craft, Edward B. (See McBerty and Craft.)						
Craig, Allen, and E. Double, Los Angeles, Cal. Well-drilling apparatus	811,905	Feb. 6	715	156-6	120	1636
Craig, James, and R. E. Rowan, Parnassus, Pa. Apparatus for flattening glass	810,723	Jan. 23	4208	894	120	1062
Cram, Walter W., Sheldon, Iowa. Decoy	811,036	Jan. 30	4989	1031	120	1224
Cramer, Charles W., and H. C. Haak, Scranton, Pa. Motor	810,206	Jan. 23	3671	756-7	120	919
Cramer, John, assignor of one-half to T. Feist, Lima, Ohio. Curtain-fixture	813,886	Feb. 27	4686	1036	120	2652
Cramer, Stuart W., Charlotte, N. C. Automatic indicating and regulating hygrometer	809,672	Jan. 9	2161	447	120	507
Cramer, Stuart W., Charlotte, N. C. Hygrometer for regulating humidifying and heating systems	811,363	Jan. 30	5617	1175-6	120	1379
Cramer, Stuart W., Charlotte, N. C. Electrically-controlled regulating-valve for humidifying and heating systems	813,063	Feb. 20	3121	664	120	2257
Crandall Construction Co. (See Crandall, Lucius S., assignor.)						
Crandall, Lucius S., assignor to Crandall Construction Co., Brooklyn, N. Y. Mechanical calculator and recorder	813,261	Feb. 20	3503	773-4	120	2337
Crandall, Nathan W., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn. Valve for door-checks	811,530	Feb. 6	540	121	120	1602
Crandall, Nathan W., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn. Lock and latch mechanism	812,826	Feb. 20	3617	573	120	2145
Crandall, Nathan W., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn. Door check and closer	812,829	Feb. 20	3620	573-4	120	2146
Crane, Charles R., Seattle, Wash. Automatic recording ice-scale	809,439	Jan. 9	1673	343-4	120	400
Crane Company. (See Hayden, James T., assignor.)						
Crane Company. (See Kreuter, Henry, assignor.)						
Crane Company. (See Rother, John L., assignor.)						
Crane, George W., Vandenburg, Ind. Shoulder-loader	808,972	Jan. 2	704	133-3	120	155
Crane, George W., Vandenburg, Ind. Dumping-wagon	808,973	Jan. 2	705	153	120	155
Crane, James D., Aledo, Tex. Separator	810,985	Jan. 23	4135	854	120	1024
Crane, Newton, assignor to Newton Crane Gas Engine Company, Boston, Mass. Gas-engine	808,902	Jan. 2	359	123-4	120	122

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Cranner, Bjarne, Kongsberg, Norway. Apparatus for sorting or separating coins	812,327	Feb. 13	1649	363	120	1901
Crawford, Hezekiah H., El Paso, Tex. Lock-nut	812,185	Feb. 13	1364	296	120	1837
Crawford, Lundy O., Pendleton, assignor of one-half to J. F. Wagner, Anderson, Ind. Lubricator	810,844	Jan. 23	4523	941	120	1108
Crawford, Sherman L., Hoquiam, Wash. Railway-train-stopping device	810,916	Jan. 30	4711	983	120	1184
Crawford, William H., Cliftonforge, Va. Combined cigar cutter and lighter	809,782	Jan. 9	2357	487	120	551
Creedon, John J., Moline, Ill. Buckle	811,548	Feb. 6	23	6	120	1490
Creedon, John J., Moline, Ill. Harness	813,543	Feb. 27	4053	898	120	2517
Creel, Seth W., et al. (See Caughey, Albert E., assignor.)						
Creighton, Walter C., and C. M. Banker, Ilion, N. Y. Piano attachment	811,279	Jan. 30	5424	1130-1	120	1338
Crenshaw, William, Atlanta, Ga. Dental matrix	812,328	Feb. 13	1651	363	120	1902
Crepy, Edouard, and L. Fremaux, Brussels, Belgium. Combing and drawing machine	812,550	Feb. 13	2095	459-60	120	1993
Creque, Allen P., deceased; E. De Camp and F. P. Caufield, Newark, N. J., executors. Lavatory-fixture	812,832	Feb. 20	2624	574-5	120	2147
Creason Co., Geo. V. (See Stacks, Howard R., assignor.)						
Creveling, William C., St. Louis, Mo. Danger-signal	811,037	Jan. 30	4940	1031	120	1234
Cribbs, Charles A., and H. E. McCoy, Vandergrift, Pa. Window-fixture	810,469	Jan. 23	3824	785	120	956
Crippen, Henry M., Ballston Spa, assignor to Max Huncke Chemical Co., Brooklyn, N. Y. Embalming-catheter	812,020	Feb. 6	995	218	120	1691
Crippen, Walter, New York, N. Y., assignor to Wilcox & White Company, Meriden, Conn. Autopneumatic musical instrument	808,903	Jan. 2	564	124-5	120	124
Crombie, Herbert S., Woburn, Mass. Union-coupling	812,642	Feb. 13	2263	492	120	2025
Crommett, Herbert A., Patten, Me. Sash-balance	809,783	Jan. 9	2360	487	120	551
Crompton & Knowles Loom Works. (See Baker, Harry G., assignor.)						
Crompton & Knowles Loom Works. (See Cowan, Arthur S., assignor.)						
Crompton & Knowles Loom Works. (See Gordon, Albert A., Jr., assignor.)						
Crompton & Knowles Loom Works. (See Hollingworth, Edward, assignor.)						
Crompton & Knowles Loom Works. (See Ryon, Eppa H., assignor.)						
Crompton & Knowles Loom Works. (See Wattie, William, assignor.)						
Crompton & Knowles Loom Works. (See Wyman and Cyr, assignors.)						
Crompton, Randolph, Worcester, Mass. Harness mechanism for looms	809,933	Jan. 16	2648	547	120	667
Crompton-Thayer Loom Company. (See O'Reilly, Anthony J., assignor.)						
Cromwell, John C., Cleveland, Ohio, assignor to Garrett-Cromwell Engineering Company. Shear-table	810,845	Jan. 23	4524	942	120	1109
Cronin, Jeremiah, New York, N. Y. Dumping-vehicle	810,264	Jan. 16	3353	694	120	814
Cronstedt, Elias, St. Paul, Minn. Hydrant	812,407	Feb. 13	1805	395	120	1933
Crosby, Charles E., Gassoway, W. Va. Wire-stretcher	810,724	Jan. 23	4307	895	120	1062
Crosby, Richard M., Tacoma, Wash. Bell-ringer	810,725	Jan. 23	4308	895	120	1062
Crosbier, Van Wyck A., San Francisco, Cal. Automatic animal-feeder	811,038	Jan. 30	4943	1032	120	1235
Cross, Frank L., Mystic, Conn., assignor to Cross Paper Feeder Company, Boston, Mass. Sheet-feeding machine	812,260	Feb. 13	1506	330-2	120	1868
Cross Paper Feeder Company. (See Cross, Frank L., assignor.)						
Cross, Theodore, Washington, Ind. Mail-bag receiving and delivering apparatus	809,430	Jan. 9	1677	344	120	401
Crossland, Mortimer L., et al. (See Barry, Jefferson D., assignor.)						
Crossley, Arthur M. (See Whyte and Crossley.)						
Crossley, Francis M., Dayton, Ohio. Combination rail and tie fastener	808,904	Jan. 2	567	125	120	124
Crossley, William, West Haven, Conn. Elevator mechanism	808,637	Jan. 2	35	8	120	10
Crossley, William, West Haven, Conn. Conveyer-scoop	810,917	Jan. 30	4713	983	120	1184
Crossman, Martin R., Boston, Mass. Fountain-pen	810,327	Jan. 16	3482	720	120	843
Crouse, Huntington B., Syracuse, N. Y. Insulator	813,353	Feb. 20	3661	802	120	2369
Crow, Elmette C., assignor of one-half to A. B. McClure, Allegheny, Pa. Advertising device	813,354	Feb. 20	3663	803	120	2370
Crowley, John H., Duluth, Minn. Railway-track gage and brace	811,384	Jan. 30	5619	1176	120	1380
Crown Cork and Seal Company. (See Mack, Ernest U., assignor.)						
Crown Cork and Seal Company. (See Wood, William C., assignor.)						
Crowther, Joseph D., and A. Sykes, Huddersfield, assignors to E. Hollingworth, Dobcross, England. Picking-motion for looms	810,191	Jan. 16	3187	661	120	780
Cubbage, David. (See Hamfeldt and Cubbage.)						
Cudell, Frank E., Cleveland, Ohio. Plan for numbering streets in irregular cities	811,385	Jan. 30	5620	1176	120	1380
Culley, John S., Louisville, Ky. Building construction	812,727	Feb. 13	2422	530	120	2057
Cullinsy, John V., Lebanon, Pa. Working rolled metals	809,234	Jan. 16	2640	547	120	667
Culver, Ross A., Bristol, Conn. Implement for decorating wood	811,386	Jan. 30	5621	1176	120	1380
Cumings, Rebbecca J., Greersville, Ohio. Curtain-hanger	810,726	Jan. 23	4311	895	120	1063
Cummings, Thaddeus L., Spencer, Iowa. Automatic friction-governor in fly-wheels	809,784	Jan. 9	2362	487	120	552
Cumnock, Robert L., Anderson, S. C. Bobbin-holding means for loom-shuttles	811,620	Feb. 6	167	37	120	1522
Cunningham, Andrew C., Annapolis, Md. Floating caisson for repairing floating dry-dock bottoms	808,638	Jan. 2	36	8	120	10
Cunningham, Andrew C., Washington, D. C. Floating caisson	808,728	Jan. 2	217	46	120	50
Cunningham, Edgar W., Roselle, N. J. Door-bolt	810,918	Jan. 30	4715	984	120	1184
Cunningham, John T., Allegheny, Pa. Filter	810,846	Jan. 23	4526	942	120	1109
Cunningham, Kenneth, Cheyenne, Okla. Ter. Wire-stretcher	812,981	Feb. 20	2921	643	120	2212
Cunningham, William R. (See Wibel, Cunningham, and Gray.)						
Currier, Burleigh. (See Porter and Currier.)						
Curtain Supply Company. (See Hopkins, Charles L., assignor.)						
Curtain Supply Company. (See Houghtaling, Paul A., assignor.)						
Curtis, Frank C., Troy, N. Y., assignor to Universal Brush Company. Brush-filling machine	811,831	Feb. 6	551	122	120	1602
Curtis, Zenas A., Channing, Tex. Wire-stretcher	839,066	Jan. 2	565	126-9	120	211
Curwen, Samuel M., assignor to J. A. Brill, Philadelphia, Pa. Walk-over car-seat	808,905	Jan. 2	560	125	120	125
Cushman, Abe L., assignor to Cushman Electric Company, Concord, N. H. Induction-motor. (Reissue)	12,431	Jan. 2	1338	272	120	294
Cushman Electric Company. (See Cushman, Abe L., assignor.) (Reissue.)						
Custer, John S. (See Turner and Custer.)						
Cutler, John M., assignor of one-half to J. L. McNab, Ukiah, Cal. Bottle	810,727	Jan. 23	4312	896	120	1064
Cutting, Charles R., Raton, N. Mex. Ter. Wind-wheel	809,431	Jan. 9	1679	344-5	120	401
Cyr, Henry, Biddeford, Me., assignor to Draper Company, Hopedale, Mass. Harness-motion for looms	812,166	Feb. 6	1206	263	120	1753
Cyr, Joseph T. (See Wyman and Cyr.)						
D. M. Sechler Carriage Company. (See Englund, Ernst E., assignor.)						
D'Antony, Amedeo. (See Moreno and D'Antony.)						
Dahl, William T., Bottineau, N. D. Faucet-lock	812,021	Feb. 6	996	218	120	1691
Dahlberg, Gustaf L. B., Altwood, N. J. Easel	809,785	Jan. 9	2363	488	120	552
Dahlman, Henry E., Burlington, Wis. Weighing device	812,830	Feb. 20	2622	574	120	2146
Dalton, Alfred, Brooklyn, N. Y. Amusement device	813,263	Feb. 27	4940	1070-1	120	2688
Dalton, George T., Sr., assignor to J. B. Dalton, Washington, D. C. Automatic locking device for loose-leaf binders	810,919	Jan. 30	4716	984	120	1185

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Dalton, Joseph B. (See Dalton, George T., Sr., assignor.)						
Daly, Edmund J., assignor to M. J. Daly and Sons, Incorporated, Waterbury, Conn. Furnace fire-door protector	810,728	Jan. 23	4313	896	120	1064
Damascus Brake Beam Company. (See Ettenger, Robert L., assignor.)						
Danczyge, Simon, deceased, Dayton, Ohio; S. Platau, administrator. Tag-clasp	813,407	Feb. 27	3778	829	120	2453
Daninger, Gottfried, Przemysl, Austria-Hungary. Small-arm	810,192	Jan. 16	3189	661	120	780
Darby, Thomas A., trustee. (See McCarty, William F. M., assignor.)						
Dare, William H., Whitestone, N. Y. Non-refillable bottle	811,387	Jan. 30	5622	1177	120	1381
Darley, John W., Jr., assignor to William Knabe & Company Manufacturing Company, Baltimore, Md. Self-playing piano	813,355	Feb. 20	3664	803–4	120	2370
Darley, John W., Jr., assignor to William Knabe & Company Manufacturing Company, Baltimore, Md. Self-playing piano attachment	813,356	Feb. 20	3665	804	120	2370
Darley, John W., Jr., assignor of one-half to M. Holzman, P. and L. Hamburger, Baltimore, Md. Piano-action	810,920	Jan. 30	4717	984–5	120	1185
Därrschmidt, Gustav J., Dresden-Pieschen, Germany. Adjustable holder for drawing models and the like	809,432	Jan. 9	1681	345	120	402
Daugherty, Charles C., Columbus, Ohio. Storm-front for vehicle-tops	811,039	Jan. 30	4945	1032	120	1235
Daugherty, William G., Baltimore, Md. Apparatus for applying molten solder to sheet metal, can-caps, &c	812,329	Feb. 13	1652	363	120	1902
Daum, Felix, Mains, Germany. Soap-molding machine	810,193	Jan. 16	3190	661	120	781
Davenport, Harvey M., Sheridan, Wyo. Headlight-cover	812,982	Feb. 20	2921	644	120	2212
Davey, Elijah C., Chicago, Ill. Fountain-brush	810,470	Jan. 23	3825	785	120	956
Davey, George S., Frankfort, Mich. Trace-tightener	813,866	Feb. 27	4687	1036	120	2653
David, Benjamin E. (See Mendel, Sophie, assignor.)						
David Bradley Manufacturing Company. (See Paul, William L., assignor.)						
David, Henri, Paris, France. Protector for pneumatic tires	808,974	Jan. 2	706	153	120	156
Davidge, John M., *et al.* (See Evans, Lewis J., assignor.)						
Davidson Bros. (See Strain, Charles M., assignor.)						
Davidson, George R., Lenox, Mich. Oil and feed-water separator	812,831	Feb. 20	2623	574	120	2146
Davidson, Miriam, New York, N. Y. Waterproof eyeglass-case	811,487	Jan. 30	5790	1212	120	1414
Davidson, Samuel. (See McKnight, Stephen E., assignor.)						
Davies, Charles P., Oakland, Cal. Combined table and folding bed	808,818	Jan. 2	387	84	120	86
Davis, Charles B. (See Perry, Benjamin F., assignor.)						
Davis, Edward F., assignor of one-fourth to W. H. Calder, Lynn, Mass. Shears or scissors grinding apparatus	811,202	Jan. 30	5274	1103–4	120	1305
Davis, Frank J., assignor to himself, J. C. Walker, and F. R. Taisey, Indianapolis, Ind. Non-refillable bottle	809,249	Jan. 2	1282	261	120	282
Davis, Frank S. (See Schaaf and Davis.)						
Davis, George A., Grand Rapids, Mich. Pedestal-table	810,265	Jan. 16	3354	696	120	815
Davis, George H., West Orange, N. J. Electrically actuated and controlled self-playing musical instrument	812,117	Feb. 6	1157	255	120	1724
Davis, Harry A., assignor to Draper Company, Hopedale, Mass. Picking mechanism for looms	812,495	Feb. 13	1945	429	120	1962
Davis, Herbert L., Washington, D. C. Automatic paper-perforating machine	811,621	Feb. 6	168	37–8	120	1522
Davis, Herbert W., Fall River, Mass. Loom	810,471	Jan. 23	3826	785	120	956
Davis, Herman, New Orleans, La. Trunk	809,286	Jan. 9	1360	277	120	334
Davis, James H. (See Davis, Joseph D., assignor.)						
Davis, James H., Chicago, Ill. Automatic trap or valve for draining heating systems	809,786	Jan. 9	2365	488	120	553
Davis, James L., assignor of one-fourth to W. B. Chalfant, Brazneil, Pa. Cable-grip for cars	813,040	Feb. 20	3030	667	120	2235
Davis, James W., assignor of one-half to M. E. McBee, Alto, Tex. Can-opener	809,673	Jan. 9	2162	447	120	507
Davis, John S. (See Smith and Davis.)						
Davis, Joseph D., assignor of one-half to J. H. Davis, Peachland, N. C. Combined corn-planter and fertilizer-distributer	812,963	Feb. 20	2923	644	120	2212
Davis, Martha E., Worthington, Minn. Fence structure	810,626	Jan. 23	4137	855	120	1024
Davis, Martha J., St. Joseph, Mo. Implement-holder for sewing-machines	808,639	Jan. 2	38	8	120	11
Davis Sewing Machine Company *et al.* (See Baurmann, Gustav, assignor.)						
Davis, Silas N. (See McCardle and Davis.)						
Davis, Spencer E., Minneapolis, Minn. Feeding device for seeders or drills	811,203	Jan. 30	5277	1104	120	1305
Davis, Spencer E., Minneapolis, Minn. Draft-equalizer	811,703	Feb. 6	326	72	120	1558
Davis, Spencer E., Minneapolis, assignor to Monitor Drill Co., St. Louis Park, Minn. Yielding link for seeders and other machines	811,280	Jan. 30	5425	1131	120	1338
Davis, Thomas A., Findlay, Ill. Gas-light switch	813,357	Feb. 20	3667	804	120	2371
Davis, Thomas A., Findlay, Ill. Poultry drinking-fountain	813,954	Feb. 27	4851	1071	120	2686
Davis, Thomas L., Speedwell, Tenn. Violin-bridge	809,174	Jan. 2	1084	226	120	239
Davis, William A., and W. H. Samelius, Chicago, Ill. Air-stop for windows	808,640	Jan. 2	39	9	120	11
Davison, Clarence M., Newburgh, N. Y. Drying apparatus	813,358	Feb. 20	3668	805	120	2371
Davison, George L., assignor to American Sintering Company, Chicago, Ill. Sintering comminuted ore or fine-dust	811,040	Jan. 30	4946	.....	120	1236
Davy Brothers. (See Holmes, Thomas E., assignor.)						
Daws, Henry J., Hopkins, assignor to S. N. Sorensen, Minneapolis, Minn. Pneumatic stacker	811,532	Jan. 30	5879	1232–3	120	1433
Dawson, Arthur T., and G. T. Buckham, Westminster, London, assignors to Vickers Sons & Maxim Limited, Westminster, England. Breech mechanism of ordnance	812,642	Feb. 13	2265	492–3	120	2025
Dawson, Charles, Tacoma, Wash. Truing device for flour-mill rolls	810,627	Jan. 23	4138	855	120	1025
Dawson, John, and C. O. Rosen, Chicago, Ill. Map-case	808,175	Jan. 2	1085	226	120	239
Day, Arthur M., Butte, Mont. Apparatus for smelting and converting ores	812,186	Feb. 13	1365	297	120	1837
Day, Arthur M., Butte, Mont. Smelting and converting ores	812,785	Feb. 13	2224	555	120	2079
Day, Benjamin, West Hoboken, N. J. Micrometrical adjustment for printing-film frames	813,867	Feb. 27	4688	1036–7	120	2653
Day, Maxwell W., Schenectady, N. Y., assignor to General Electric Company. System of control for electric motors	808,729	Jan. 2	218	46	120	80
De Buren, Henri G. (See Hiss and De Buren.)						
De Camp, Elphalet, *et al.*, executors. (See Creque, Allen P.)						
De Forrest, Earl J. W. and F. I., Bradner, Ohio. Hose-coupling	813,359	Feb. 20	3673	805	120	2372
De Forrest, Fred I. (See De Forrest, Earl J. W. and F. I.)						
De France, Murry A., assignor of three-fourths to A. H. Sisson, C. E. Krebs, and W. B. Wingerter, Newark, Ohio. Brake and track-sanding mechanism	813,691	Feb. 27	4335	954	120	2677
De Grody, Martin M., St. Louis, Mo. Coffee-pot	808,730	Jan. 2	222	47	120	51
De Hart, William. (See Holloway, Henry C., assignor.)						
De La Rue and Company, Thomas. (See Sweetser, George, assignor.)						
De Lay, Charles, assignor of two-thirds to A. B. Hunt and C. J. Collins, Omaha, Nebr. Pipe-laying device	809,910	Jan. 9	2593	534	120	608
De Leeuw, Adolph L., Hamilton, Ohio. Speed-controlling system	813,301	Feb. 20	3354	737–8	120	2305
De Long Hook and Eye Company. (See Jones, Lora, assignor.)						
De Luca, Vincenzo. (See Benzieri, Benedetto, assignor.)						
De Moss, Charles E., Indianapolis, assignor of one-half to E. F. Barker, Franklin, Ind. Trucking device for slaughter-house travelers	808,819	Jan. 2	369	84	120	86

Alphabetical list of patentees for January and February—Continued.

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De Phillippi, John. (See Herrington, Jacob, assignor.)						
De Trey & Sons, E. (See Birt, Charles S., assignor.)						
De Vito, Angelo, New York, N. Y. Machine for making flat macaronis	812,704	Feb. 13	2373	520	120	2046
De Vito, John A., Roxbury, Mass. Variable-speed device	812,729	Feb. 13	2424	531	120	2057
De Wallace, Harry, Watertown, N. Y. Ventilating apparatus	811,832	Feb. 6	552	122	120	1602
De Witt, Emma. (See Story, Milton W., assignor.)						
Deadman, John F. (See Pemberton and Deadman.)						
Deal, Stephen F. (See Ross and Deal.)						
Dean Electric Company. (See Beyland, Sidney A., assignor.)						
Dean, Theodore S., *et al.* (See Wilcox, William W., assignor.)						
Dean, William, Memphis, Tenn. Coffee cooler and stoner	813,955	Feb. 27	4852	1072	120	2686
Deane, Herbert C., Salt Lake City, Utah. Skirt-supporter	810,729	Jan. 23	4314	896	120	1064
Decker, Earle H., Keokuk, Iowa, assignor of one-half to G. J. Stiteley, Joliet, Ill. Base-ball glove	812,921	Feb. 20	2791	614	120	2183
Decker, Phillip J., San Francisco, Cal. Rotary engine	811,204	Jan. 30	5278	1104–5	120	1306
Decker, William H. (See Warden, Manns, and Decker.)						
Decker, William W. K., *et al.* (See Driver, Charles H., assignor.)						
Defenbaugh, Andrew, Laureiville, Ohio. Vehicle-wrench	811,549	Feb. 6	24	6	120	1490
Degen, Julius. (See Lea and Degen.)						
Degenhardt, Johannes, Berlin, Germany, assignor to W. F. Plass, New York, N. Y. Skylight. (Reissue)	12,432	Jan. 2	1339	272	120	295
Dehn, Frederick D., *et al.* (See Barry, Jefferson D., assignor.)						
Deiller, Martin, Newark, N. J. Tobacco-stripper	813,868	Feb. 27	4693	1037–9	120	2654
Deiller, Martin, Newark, N. J. Shaft-clutch	813,869	Feb. 27	4697	1039	120	2654
Deister, Emil, Fort Wayne, Ind. Ore-concentrator	810,847	Jan. 23	4530	943	120	1110
Del Mar, Harry, New York, N. Y. Mailing-tube sheet and wrapper	812,187	Feb. 13	1369	298	120	1838
Delano, Frederic A., Chicago, Ill. Box-car	810,472	Jan. 23	3829	786	120	957
Delany, Patrick B., South Orange, N. J. Wireless telegraphy	808,641	Jan. 2	40	9	120	11
Delany, Patrick B., South Orange, N. J. Telegraphic keyboard apparatus	808,642	Jan. 2	43	9	120	12
Delhaye, Hubert F. (See Robichaux, Caillouet, and Delhaye.)						
Delisle, Napoleon, St. Tite, Canada. Wrench	812,551	Feb. 13	2097	460	120	1994
Delk, John T., Ivor, Va. Peanut-thresher	809,097	Jan. 2	957	199	120	212
Demarest, David C., Angels Camp, Cal. Rock-drill	813,041	Feb. 20	3031	667	120	2236
Dement, Isaac S., East Orange, N. J., and F. J. Hull, Brooklyn, N. Y., assignors, by mesne assignments, to City Trust Company of New York, trustee. Keyboard-locking mechanism for mechanical cashiers, registers, and recorders	813,360	Feb. 20	3674	805–6	120	2373
Dement, Wallace E., Blaine, Wash. Cattle-guard	812,984	Feb. 20	2926	644	120	2213
Demsky, Enoch, St. Louis, Mo. Vehicle-body construction	813,056	Feb. 27	4355	1072	120	2687
Denegre, Edward, Chicago, Ill. Dust-guard	810,039	Jan. 16	2879	594–5	120	716
Denegre, Edward, assignor to McCord & Company, Chicago, Ill. Dust-guard	810,038	Jan. 16	2877	594	120	716
Denis, Jules E. G., and L. M. J. de Boisse, Paris, France. Driving-axle for automobile vehicles	812,118	Feb. 6	1160	255	120	1724
Denison, Linus S. (See Shatto and Denison.)						
Denmead, John W., Akron, assignor to E. C. Prince and C. C. Patterson, Barberton, Ohio. Water-heater	811,388	Jan. 30	5623	1177	120	1381
Dennett, Charles. (See Wyman, Dennett, and Tinkham.)						
Denning, Patrick F., Newark, N. J. Clamp	808,731	Jan. 2	222	47	120	51
Dennis, Adolphus S., Cleveland, Ohio. Adding and recording machine	813,361	Feb. 20	3677	806–8	120	2373
Dennis, Harry H., Lunda, Ohio. Shield attachment for cultivators	810,628	Jan. 23	4140	855	120	1025
Denphis, Peter, Michigamme, Mich. Pressure and moving jack	811,131	Jan. 30	5129	1071	120	1272
Densmoor, Frank, Markesan, Wis. Rotary cutter and topper	810,397	Jan. 23	3676	757	120	921
Denson, Arthur B., Beloit, Wis. Sandpapering-machine	812,119	Feb. 6	1162	256	120	1725
Dent, Joshua H. (See Hatfield, James I., assignor.)						
Denton, Gilbert E., Denver, Colo. Landing-chair for mining-cages	809,176	Jan. 2	1087	226–7	120	239
Denver Tent and Awning Company. (See Roth, Charles C., assignor.)						
Deppe, Nelson R., Deppe, N. C. Kiln-door	812,728	Feb. 13	2423	531	120	2057
Derby, Harold R., assignor to S. L. Hill, Jerseyville, Ill. Spring-roller for window-shades	809,008	Jan. 2	962	199	120	213
Derby, John H., Brookline, Mass. Automatic valve for fire-extinguishers	810,040	Jan. 16	2880	595	120	716
Déri, Max, Vienna, Austria-Hungary, assignor to Stanley Electric Manufacturing Company, Pittsfield, Mass. Alternating-current motor	809,787	Jan. 9	2367	488	120	553
Desrumaux, Henri, Paris, France. Filtering, purifying, and decanting apparatus	809,099	Jan. 2	963	200	120	213
Detmer, Henry. (See Kolby, Nicolaus, assignor.)						
Deutsch, Ludwig. (See Schlatter and Deutsch.)						
Devan, Andrew, Missoula, Mont. Cattle-guard	810,328	Jan. 16	3483	720	120	843
Devin, Lee A., and F. S. Atkins, Oakland, Cal. Car fender and brake	812,022	Feb. 6	997	218	120	1691
Devis, Charles. (See Shafer and Devis.)						
Dewes, Abednego, New York, N. Y. Tire for vehicle-wheels	810,921	Jan. 30	4721	985	120	1185
Dewing, Fred M. (See Gale and Dewing.)						
Dexter, Himan C. (See Dexter, Marshall C., assignor.)						
Dexter, Marshall C., assignor to H. C. Dexter, New York, N. Y. Safety-pocket	813,362	Feb. 20	3682	809	120	2374
Dial, Grant D., Chicago, Ill. Display-hanger	809,359	Jan. 9	1507	305	120	367
Dial Voting Machine Company. (See Harrington, Charles F., assignor.)						
Dial, Wilbur F. (See Dimond and Dial.)						
Diamond Iron Works. (See Dittbenner, Hermann G., assignor.)						
Diamond Match Company. (See Prindle, Edwin J., assignor.)						
Diamond Match Company. (See Wright, Jacob P., assignor.)						
Dibie, Napoleon W., Kansas City, Mo. Apparatus for promoting the growth of hair	809,360	Jan. 9	1508	305	120	367
Dick, Albert B., Lake Forest, assignor to A. B. Dick Company, Chicago, Ill. Duplicating apparatus	809,287	Jan. 9	1362	277	120	335
Dick, Albert B., Lake Forest, assignor to A. B. Dick Company, Chicago, Ill. Duplicating apparatus	809,288	Jan. 9	1365	277	120	335
Dick, Willis V., Columbus, Ohio. Fire-resisting cabinet	809,497	Jan. 9	1807	372	120	431
Dickerman, Oscar C., Gainesville, Tex. Whiffletree connection	812,188	Feb. 13	1370	298	120	1838
Dickerson, Roy E., Boukler Creek, Cal. Educational device for teaching spherics	812,408	Feb. 13	1806	395	120	1923
Dickey, Eliza R., Dugger, Ind. Coal-screen	810,922	Jan. 30	4722	986	120	1186
Dickinson, Edward C., Elgin, Ill. Lamp-guard	810,266	Jan. 16	3356	695	120	815
Dickinson, Harry E. (See Mitchell and Millingar, assignors.)						
Dickinson, Joseph H. (See Miller and Dickinson.)						
Dickson, Frederick L., El Paso, Tex. Fishing-reel	812,023	Feb. 6	999	218	120	1691
Dickson, George F., Chicago, Ill., assignor to Confectioners and Bakers Supply Co. Confectioner's sizing and cutting machine	809,498	Jan. 9	1809	373	120	432
Diederichs, Louis. (See Voland, Diederichs, and Monnet.)						
Diedendorf, Abram. (See Seller, Philipp, assignor.)						
Diehl, Jacob, assignor to Standard Sewing Machine Company, Cleveland, Ohio. Sewing and cutting machine	812,409	Feb. 13	1809	396	120	1934

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Diener, Friedrich, London, England. Hollow roll pastry	809,100	Jan. 2	964	200	120	213
Diener, Kurt. (See Hopke and Diener.)						
Dieterich, Albert E., Washington, D. C. Formaldehyde-generator	812,263	Feb. 20	3033	809	120	2375
Dieterich, Karl, Helfenberg, Germany. Making stable non-alcoholic iron compounds	809,101	Jan. 2	965	.....	120	213
Dietrich, William N. (See Hosmer and Dietrich.)						
Dietterick, H. W., *et al.* (See Kemper, Otto, assignor.)						
Dietz, Ernest, assignor to Pearl Manufacturing Company, Buffalo, N. Y. Lubricator	810,194	Jan. 16	3192	662	120	781
Dietz, George. (See Long, Arthur D., assignor.)						
Digney, Nellie L., Bridgeport, Conn. Combined abdominal support and hose-supporter	812,120	Feb. 6	1164	266	120	1725
Dilg, Charles H. J., New York, N. Y. Knife-cleaning machine	813,142	Feb. 20	3254	715–16	120	2286
Dill, Emma B., and S. F. Du Bois, Chillicothe, Ohio. Surgical table	810,842	Jan. 23	4534	944	120	1111
Dillon, James A., assignor, by mesne assignments, of one-half to National Laundry Machinery Co., Chicago, Ill. Steam-condenser	813,486	Feb. 27	3937	864	120	2490
Dillon, Washington M., and P. Frants, Sterling, Ill. Crimping meshanism for wire-fence machines	813,406	Feb. 27	3778	820	120	2453
Dilworth, Edward C., Pittsburg, Pa. Adding device	811,205	Jan. 30	5262	1105	120	1307
Dimond, George H., and W. F. Dial, assignors to Wheeler & Wilson Manufacturing Company, Bridgeport, Conn. Rotary loop-taker for sewing-machines	812,410	Feb. 13	1813	397	120	1935
Dinkel, George, Jersey City, N. J. Means for hanging overdriven centrifugal machines	812,094	Feb. 6	1000	219	120	1692
Dinrad, Louis J., assignor to Torrington Novelty Manufacturing and Supply Company, Torrington, Conn. Extensible spring-roller	813,570	Feb. 27	4606	1039	120	2655
Dinslager, Castor H. A., Wrightsville, Pa. Change-gearing	808,723	Jan. 2	226	47–8	120	89
Ditthenner, Hermann G., Minneapolis, Minn., assignor to Diamond Iron Works. Friction-clutch	808,975	Jan. 2	707	153	120	156
Divan, James M., Freeport, Ill., assignor of one-half to W. Nelson, Montrose, Mo. Knockdown crate	810,369	Jan. 16	3573	734–5	120	864
Dix, Bert C. W. (See Dix, Harry G. and B. C. W.)						
Dix, Edward S., New York, assignor to Borated Specialty Company, Brooklyn, N. Y. Catamenial bandage	811,704	Feb. 6	327	72	120	1558
Dix, Edward S., New York, assignor to Borated Specialty Company, Brooklyn, N. Y. Skirt-protecting garment	812,486	Feb. 13	1948	439	120	1963
Dix, Harry G. and B. C. W., Grand Rapids, Mich. Automatic mail-bag catcher for railways	811,132	Jan. 30	5131	1072	120	1273
Dix, William J., Milford, Mass. Marking apparatus	810,629	Jan. 23	4141	856	120	1025
Dixon, E. M. (See Gifford, William, assignor.)						
Dixon, Robert M., East Orange, N. J., assignor to Safety Car Heating & Lighting Company. Gas-lamp	813,457	Feb. 27	3939	865	120	2491
Doane, Samuel E., assignor to National Electric Lamp Company, Cleveland, Ohio. Adapter for incandescent-lamp sockets	810,473	Jan. 23	3831	786	120	957
Doane, Samuel E., assignor to National Electric Lamp Company, Cleveland, Ohio. Machine for perforating glass	810,474	Jan. 23	3832	787	120	958
Dobelman, John D., Chicago, Ill. Door	810,923	Jan. 30	4724	988	120	1186
Doble, William A., San Francisco, Cal. Nozzle for impact water-wheels. (Reissue)	12,460	Feb. 27	4606	1100	120	2708
Dobler, Charles J. (See Braxton, Daniel, assignor.)						
Dobson, John E., assignor to Michigan Machinery Manufacturing Company, Ypsilanti, Mich. Power-press	810,196	Jan. 16	3194	662	120	781
Dobson, John E., assignor to Michigan Machinery Mnfg. Company, Ypsilanti, Mich. Clutch	811,041	Jan. 30	4947	1033	120	1236
Dobyne, George A. (See Corcoran and Dobyne.)						
Dockery, C. C. (See Bryant, Warren S., assignor.)						
Dodds, Ethan I., Avalon, assignor to Pressed Steel Car Company, Pittsburg, Pa. Car part	811,306	Jan. 30	5264	1105	120	1307
Dodds, Ethan I., Avalon, Pa., assignor to Pullman Company, Chicago, Ill. Steel side stake for cars	813,488	Feb. 27	3943	865	120	2492
Dodge, Charles C., Bloomfield, N. J., assignor to Dodge Lubricator Company, Boston, Mass. Lubricator	812,361	Feb. 13	1818	332	120	1871
Dodge, Charles C., Newark, N. J., assignor to Dodge Lubricator Company, Boston, Mass. Lubricator	812,330	Feb. 13	1654	363	120	1902
Dodge Lubricator Company. (See Dodge, Charles C., assignor.)						
Doerr, George P., Chicago, Ill. Gage-reading device	812,411	Feb. 13	1814	397	120	1935
Dohse, Ernest H., Buffalo, N. Y. Lubricator	812,644	Feb. 13	2267	494	120	2036
Dolan, Christopher C., Lockport, N. Y. Hoisting and conveying mechanism	813,364	Feb. 20	3065	809–10	120	2375
Dolan, William J., and F. H. Shoemaker, Indianapolis, Ind. Non-refillable bottle	809,289	Jan. 9	1367	278	120	336
Dols, Frederick J., New York, N. Y., assignor to Great American Automatic Vending Machine Company, Hoboken, N. J. Coin-controlled apparatus	812,231	Feb. 13	1666	364	120	1903
Dolores Refining Company. (See Haynes and Engle, assignors.)						
Donaho, James R. (See Rumfield and Donaho.)						
Donaldson, Edwin, New York, N. Y. Roundabout	813,623	Feb. 27	4210	926–6	120	2550
Donaldson, James H., Chicago, Ill. Bridge-guard whip	810,041	Jan. 16	2984	595	120	717
Donaldson, James M., Marengo, Iowa. Cultivator	811,133	Jan. 30	5133	1072–3	120	1274
Donaldson, Walter. (See Hall and Donaldson.)						
Donaldson, William H., Joliet, Ill. Operating headlights of locomotives	813,662	Feb. 27	4337	954	120	2577
Donshew, Morton G., Russell township, Putnam county, Ind. Grain-door for cars	808,906	Jan. 2	570	126	120	125
Donnelly, Charles H. (See Bertschy, Adolph J. P., assignor.)						
Donnelly, William T., assignor to General Gas Appliance Company, New York, N. Y., Gas-controlling device	813,730	Feb. 13	2435	531	120	2058
Donning, George W., East Orange, assignor to H. T. Ambrose, Orange, N. J. Work-holder for flat-platen type-writers	813,489	Feb. 27	3944	865	120	2492
Donohoe, Charles L., Santa Barbara, Cal. Binder	812,731	Feb. 13	2437	531–2	120	2058
Donovan, James, assignor, by mesne assignments, to Sheffield Car Company, Three Rivers, Mich. Hand-car frame	811,042	Jan. 30	4949	1033	120	1236
Donovan, James, assignor, by mesne assignments, to Sheffield Car Company, Three Rivers, Mich. Railway-rail stay	811,580	Feb. 6	26	7	120	1490
Dooley, Thomas B., Malden, Mass. Printing-press	811,515	Jan. 30	5641	1228	120	1494
Dooley, Thomas B., assignor to J. Middleby, Jr., Malden, Mass. Printing-press	811,488	Jan. 30	5762	1213	120	1415
Doran, James A. and J. C., Providence, R. I. Feed attachment	812,233	Feb. 20	2831	575	120	2148
Doran, James A. and J. C., Providence, R. I. Badge	813,694	Feb. 27	4312	926	120	2550
Doran, James C. (See Doran, James A. and J. C.)						
Dorrah, Thomas B., Philadelphia, Pa. Woven fabric	808,976	Jan. 2	709	154	120	156
Dorr, Harry A., Providence, R. I. Toilet article	812,199	Feb. 13	1373	298	120	1839
Dossert & Company. (See Dossert, John J., assignor.)						
Dossert, John J., New York, N. Y., assignor to Dossert & Company. Electric coupling	811,906	Feb. 6	716	156	120	1636
Dossert, John J., New York, N. Y., assignor to Dossert & Company. Branch coupling for electric conductors	811,907	Feb. 6	718	156	120	1637
Dossert, John J., New York, N. Y., assignor to Dossert & Company. Split-sleeve connector	811,908	Feb. 6	719	157	120	1637

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Double, Edward. (See Craig and Double.)						
Double, Edward, *et al.* (See Jones, Frederick W., assignor.)						
Doud, William L., Manila, Philippine Islands. Adjustable seat for water-closets	811,551	Feb. 6	27	7	120	1490
Douglass, J. Walter, trustee. (See Koons, Frederick W., assignor.)						
Douglass, Robert C. (See Bates, Douglass, and Nourse.)						
Douglass, William W., Kansas City, Mo. Water elevating and storage apparatus	809,361	Jan. 9	1510	306–7	120	367
Dover, George W., Cranston, R. I. Barrette-fastener	810,475	Jan. 23	3836	788	120	958
Dover, George W., Cranston, R. I. Setting	813,084	Feb. 20	3123	684	120	2257
Dow, Charles H., Boston, Mass. Ash-sifter	813,625	Feb. 27	4313	926	120	2550
Dowagiac Manufacturing Company. (See Fowle, Charles L., assignor.)						
Dowd, Patrick, New York, N. Y. Wardrobe	813,871	Feb. 27	4699	1040	120	2655
Dowden, John W., Pearl, La. Churn	812,190	Feb. 13	1374	296–9	120	1839
Dowler, Charles E., Lamar, Colo., assignor to Colorado Railway Signal Company. Signal	812,026	Feb. 6	1003	219	120	1693
Dowling, Stonewall J., Waxahachie, Tex. Vehicle-body construction	809,788	Jan. 9	2369	489	120	553
Down, William. (See Bishop and Down.)						
Downer, Murillo, Chicago, Ill. Air-cushion for vehicles	811,622	Feb. 6	172	38	120	1522
Downs, Hugh, Pittsburg, and W. C. Wally, Etna, Pa. Device for coupling wire and Manila rope	812,412	Feb. 13	1816	397	120	1935
Downs, Hugh, Pittsburg, and W. C. Wally, Etna, Pa. Wire-rope protector	812,413	Feb. 13	1816	398	120	1935
Downs, John H., New York, N. Y. Land-marking monument	813,872	Feb. 27	4700	1040	120	2656
Drake, Chester T. (See Mackin, John W., assignor.)						
Drake, Elvis E., Nashville, Tenn. Head-block for hay-presses	813,409	Feb. 27	3781	830	120	2453
Drake, Joseph E., Blue Rapids, Kans. Grain-door	810,267	Jan. 16	3357	695	120	815
Draper Company. (See Cyr, Henry, assignor.)						
Draper Company. (See Davis, Harry A., assignor.)						
Draper Company. (See Northrop, Jonas, assignor.)						
Draper Company. (See Nutting, Charles E., assignor.)						
Draper Company. (See Peterson, Patrik L., assignor.)						
Draper, David, and G. A. Hay, Johannesburg, Transvaal. Amalgamator	813,780	Feb. 27	4506	906	120	2613
Draudt, Frank W., Zion City, Ill. Candy-screening machine	813,626	Feb. 27	4213	926–7	120	2550
Drear, Harry J., Vanport, assignor of one-half to E. J. Overton, Freedom, Pa. Dinner-bucket	810,730	Jan. 23	4315	896–7	120	1064
Dreibelbis, Alfred S., Reading, Pa. Rail and tie fastener	809,555	Jan. 9	1915	397	120	454
Drennan, John S., Cleburne, Tex. Gate-latch	809,606	Jan. 9	2031	421	120	478
Dressel, Charles H., assignor to Dressel Railway Lamp Works, New York, N. Y. Signal-lantern	813,781	Feb. 27	4511	906	120	2614
Dressel, Frederick W., assignor to Dressel Railway Lamp Works, New York, N. Y. Lamp-burner	813,202	Feb. 20	3357	738	120	2307
Dressel Railway Lamp Works. (See Dressel, Charles H., assignor.)						
Dressel Railway Lamp Work. (See Dressel, Frederick W., assignor.)						
Drewes, Ferdinand B., Granada, Minn. Road-grader	808,820	Jan. 2	391	85	120	87
Drevers, Emil, Pforzheim, Germany. Bracelet	811,767	Feb. 6	435	96	120	1581
Dreyer, Wilhelm, Bad Rothenfelde, Germany. Cask or vessel for ignitible or explosive liquids or gases	813,365	Feb. 20	3689	810	120	2375
Driscoll, Robert H., *et al.* (See Seybers, Frank, assignor.)						
Driver, Charles H., assignor of one-half to W. W. K. Decker, J. K. Chaney, and H. Bigelow, Tarpon Springs, Fla. Axle-lubricator	812,552	Feb. 13	2096	460	120	1994
Drolshagen, Paul L. E., New York, N. Y. Dowel	809,177	Jan. 2	1091	227	120	240
Druehl, Louis A., Chicago, Ill. Dial-lock	809,556	Jan. 9	1916	398	120	454
Drury-Knealy Manufacturing Company. (See Knealy, Daniel W., assignor.)						
Dryer, Charles A., Champaign, Ill. Ejector	812,026	Feb. 6	1005	220	120	1693
Du Bea, George W., New Orleans, La. Pocketless standard	808,733	Jan. 2	226	48	120	52
Du Bea, George W., Kansas City, Mo. Standard	808,907	Jan. 2	572	126	120	125
Du Bois, Solomon F. (See Dill and Du Bois.)						
Du Mond, Alonzo A. (See Willis and Du Mond.)						
Du Pont, Francis I., Wilmington, Del. Gunpowder and making same	813,020	Feb. 20	2905	.....	120	2229
Dubéy, Alfred E., New York, N. Y. Tympan-offset paper for printing-presses	812,853	Feb. 13	2100	460	120	1994
Dudley, John S., Marion, Ohio. Copy-holder	808,821	Jan. 2	392	86	120	87
Duff, John T., Pittsburg, Pa. Gong attachment	808,908	Jan. 2	572	127	120	125
Dufour, Albert Q., assignor to J. A. Jeffrey, Columbus, Ohio. Sprocket-wheel	811,134	Jan. 30	5136	1073	120	1274
Dugdill, John, Failsworth, Manchester, England. Rotary electric switch	809,433	Jan. 9	1682	345–6	120	402
Duggins, Edward, assignor of one-half to J. R. Richards, Oliver Springs, Tenn. Pipe-tongs or wrench	809,102	Jan. 2	966	200	120	213
Dumas, Ernest G., Lowell, Mass. Loose-leaf binder	809,557	Jan. 9	1917	398	120	455
Duncan, Arthur T., Clinton, Mo. Stopper-valve	809,789	Jan. 9	2370	489	120	554
Duncan Electric Manufacturing Co. (See Duncan, Thomas, assignor.) (Reissue.)						
Duncan, Henry J., Alpena, Mich. Machine for roughing wood spools, cores, &c	811,281	Jan. 30	5427	1131–2	120	1339
Duncan, Joseph S., assignor to Addressograph Company, Chicago, Ill. Type-setting machine	811,623	Feb. 6	174	38–40	120	1524
Duncan, Joseph S., and O. N. Tevander, Chicago, Ill., assignors to Addressograph Company. Index-card	808,909	Jan. 2	574	127	120	126
Duncan, Thomas, assignor to Duncan Electric Manufacturing Co., La Fayette, Ind. Electric meter. (Reissue)	12,453	Feb. 20	2726	821	120	2285
Duncan, William D., Boston, Mass. Mooring device	810,042	Jan. 16	2986	596	120	718
Dunham, Frank A., Brockton, Mass. Faucet	808,910	Jan. 2	575	127	120	126
Dunham, Wiley J., Berea, Ohio. Land-roller	811,909	Feb. 6	721	157	120	1637
Dunhill, Alfred, South Hampstead, England. Advertising device	812,191	Feb. 13	1375	299	120	1839
Dunkle, Abram B., Steelton, Pa. Window-shade bracket	812,362	Feb. 13	1822	332	120	1872
Dunkle, John M., Rolla, Pa. Non-refillable bottle	810,398	Jan. 23	3678	757	120	921
Dunn, Alice M., administratrix. (See Monfort, Charles J.)						
Dunn, Charles W., Cleveland, Ohio. Convertible furniture	808,822	Jan. 2	393	86–6	120	87
Dunn, Clifford E., New York, N. Y. Curtain-fixture	810,266	Jan. 16	3356	694	120	814
Dunn, Frank P., Anderson, assignor to Stimpson Computing Scale Company, Elkhart, Ind. Cheese-cutter	810,043	Jan. 16	2987	596	120	718
Dunn, Herbert H., Dayton, Ohio. Cork-extractor	810,476	Jan. 23	3837	788	120	959
Dunn, Herbert O., Baltimore, Md. Anchor	810,924	Jan. 30	4724	988	120	1186
Dunn, Thomas B. (See Tierney and Funck, assignors.)						
Dunne, William H., Toronto, Canada. Skate	809,103	Jan. 2	967	200	120	214
Dunnell, William W. (See Howland, Matthew M., assignor.)						
Dunwell, William C., Chicago, Ill. Card-case	811,469	Jan. 30	5797	1213	120	1415
Duplessis, Eluclid, assignor of two-thirds to G. M. Bedeau and J. A. Therien, Sorel, Canada. Hat-fastening device	811,042	Jan. 30	4950	1034	120	1237
Duplex Printing Press Company. (See Beshman, Henry F., assignor.)						
Duppler, Anton. (See Callesen, Adrienne, and Duppler.)						
Durrge, Jules J., Duluth, Minn. Draft-leveling mechanism	811,624	Feb. 6	180	40	120	1525

Alphabetical list of patentees for January and February—Continued.

Alphabetical list of patentees for January and February—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drf's.	Official Gazette. Vol.	Official Gazette. Page.
Durand and Co. (See Durand, Wallace, assignor.)						
Durand, Wallace, assignor to Durand and Co., Newark, N. J. Cigarette-holder	813,366	Feb. 20	3690	811	120	2376
Durkin, John P. (See Baird and Durkin.)						
Durn, Aaron L., Richland Center, Pa. Horseshoe	810,399	Jan. 23	3678	757	120	921
Dutcher, Edward H., Siegfried, Pa., assignor to Lehigh Oil and Waste Saving Company, Camden, N. J. Centrifugal machine	813,282	Feb. 20	3511	774	120	2339
Dutcher, Edward H., Siegfried, Pa., assignor to Lehigh Oil and Waste Saving Company, Camden, N. J. Speed-controlling mechanism for centrifugal machines	813,283	Feb. 20	3513	775	120	2339
Dutcher, Edward H., Siegfried, Pa., assignor to Lehigh Oil and Waste Saving Company, Camden, N. J. Lubricating device for centrifugal oil-extracting machines	813,367	Feb. 20	3692	811	120	2376
Dutcher, Edward H., Siegfried, Pa., assignor to Lehigh Oil and Waste Saving Company, Camden, N. J. Centrifugal filter	813,368	Feb. 20	3693	811	120	2377
Dutcher, Frank, Versailles, Pa. Fibrous plastic railway-torpedo	812,027	Feb. 6	1006	220	120	1693
Dutcher, Frank, Philadelphia, Pa. Fireproof sash structure	812,732	Feb. 13	2429	532	120	2058
Dwiggins Wire Fence Company. (See Swank, Lafe, assignor.)						
Dwight, George C., New York, N. Y. Beach-making device	810,630	Jan. 23	4143	856	120	1026
Dyett, Emily, New York, N. Y. Dust and scrap bag and holder	810,329	Jan. 16	3486	720	120	843
Dysart, Fred B., assignor of two-thirds to C. E. Adams and A. C. Felt, Superior, Nebr. Cement-brick machine	809,250	Jan. 2	1283	261	120	283
Dysart, Fred B., assignor of two-thirds to C. E. Adams and A. C. Felt, Superior, Nebr. Cement-tile machine	809,251	Jan. 2	1284	261	120	283
Dysart, Fred B., assignor of two-thirds to C. E. Adams and A. C. Felt, Superior, Nebr. Cement-block machine	809,252	Jan. 2	1285	262	120	283
E. Bement's Sons. (See Kelly, Fred J., assignor.)						
E. Goldman & Company. (See Paul, John T. H., assignor.)						
E. Howard Clock Company. (See Cheever, Murray, assignor.)						
E. I. Du Pont de Nemours Powder Company. (See Hope, Walter R., assignor.)						
E. I. Du Pont de Nemours Powder Company. (See Kimber, Simeon B., assignor.)						
E. I. Du Pont de Nemours Powder Company. (See Sparre, Fin, assignor.)						
E. W. Bliss Company. (See Beyer, Otto S., assignor.)						
E. W. Bliss Company. (See Lindgren, Bror J., assignor.)						
Eaches, William R., Reading, assignor to J. T. Williams, Easton, Pa. Annealing metal	808,911	Jan. 2	577	.....	120	126
Eade, William J., Dayton, Ohio. Fence-post	813,782	Feb. 27	4513	996	120	2615
Eagle Pencil Company. (See McIntyre, Frank, assignor.)						
Eakins, Herbert W., assignor to W. Z. Long, Springfield, Ohio. Corn-popper	808,734	Jan. 2	227	48-9	120	52
Eames, George M., and J. S. Finch, assignors to Wheeler & Wilson Manufacturing Company. Bridgeport, Conn. Sewing-machine bobbin-winder	809,911	Jan. 9	2594	534	120	603
Earle, Swepson, Washington, D. C. Sounding device	811,207	Jan. 30	5285	1106	120	1307
Eastman, George N., assignor to Minerallac Company, Chicago, Ill. Voltmeter-switch	810,522	Jan. 23	3933	809	120	980
Eastwood, Arthur C., Cleveland, Ohio. Operating electric motors	810,269	Jan. 16	3361	696	120	817
Eaton, Carp D., Allen, Mich. Watch-pendant attachment	811,705	Feb. 6	328	72	120	1558
Eaves, Charles M., J. W. Slaven, and O. W. Wade, Galesburg, Ill. Street-sweeper	813,544	Feb. 27	4054	888-9	120	2517
Eberlein, August, Bridgeport, Conn. Device for reseating valves and faucets	808,912	Jan. 2	578	128	120	127
Ebken, John G., Pittsburg, Pa. Vehicle-brake	813,545	Feb. 27	4057	889	120	2518
Eby, Maurice S., New Orleans, assignor of one-half to A. H. Thompson, Patterson, La. Dog for sawmill-carriages	813,143	Feb. 20	3257	716	120	2286
Eck, Charles A., Newark, N. J. Motor control	813,410	Feb. 27	3782	830	120	2454
Eckersley, Frank, Crofton, near Wakefield, England. Feed for coal-cutting machines	809,790	Jan. 9	2371	489-90	120	554
Eckler, George E., Akron, Ohio. Rotary engine	813,284	Feb. 20	3515	775	120	2340
Eckley, Matthew, Archbold, Ohio. Cement-block machine	808,643	Jan. 2	45	10	120	12
Economy Cement Post Machine Company. (See Terry, George H., assignor.)						
Edbrooke, Harry W. J., and F. Lindquist, Chicago, Ill. Window-sash	809,609	Jan. 9	2032	421	120	478
Edenfield, Dempsey S., assignor of one-half to J. L. Hiers, Savannah, Ga. Hay-baling press	812,332	Feb. 13	1658	364-5	120	1903
Edge, Evander, Ruskin, N. C. Haulage system	810,731	Jan 23	4317	897	120	1065
Edgerle, Harrison H., Cherryvale, Kans. Nut-lock	810,523	Jan. 23	3936	809	120	981
Edison Storage Battery Company. (See Edison, Thomas A., assignor.)						
Edison, Thomas A., Llewellyn Park, N. J. Cement-kiln	813,490	Feb. 27	3946	865	120	2493
Edison, Thomas A., Llewellyn Park, assignor to Edison Storage Battery Company, West Orange, N. J. Pocket-filling machine	813,491	Feb. 27	3947	866-7	120	2493
Edmonds, Herbert H., Longueville, near Sydney, New South Wales, Australia. Instrument for graphically solving spherical triangles on a plane surface	811,625	Feb. 6	182	41	120	1526
Edmunds, James E., *et al.* (See Birmingham, John P., assignor.)						
Edstrom, Axel W., Stanton, Iowa. Sieve	812,333	Feb. 13	1660	365	120	1903
Edward E. Rieck Company. (See Glanzer, John J., assignor.)						
Edward F. Luce & Company. (See Luce, Edward F., assignor.)						
Edward Miller & Company. (See Homan and Williams, assignors.)						
Edwards, Charles D., Albert Lea, Minn. Road grader and ditcher	810,477	Jan. 23	3838	788-9	120	959
Edwards, Charles D., Albert Lea, Minn. Landside-wheel	810,478	Jan. 23	3841	789	120	959
Edwards, Edgar A., Cincinnati, Ohio, assignor, by mesne assignments, to Metropolitan Trust & Savings Bank, trustee. Locomotive-headlight	812,192	Feb. 13	1376	299	120	1820
Edwards, John J., Ann Arbor, Mich. Temporary binder	812,121	Feb. 6	1165	256	120	1725
Edwards, Marshall F., Stillwater, Okla. Ter. Hub-wrench	812,334	Feb. 13	1661	365	120	1904
Edwin J. Toof Company. (See Ammerman, William M., assignor.)						
Egersdörfer, Fritz, Wiesbaden, assignor of one-half to F. Linder, Sr., Barmen, Germany. Rotary engine	812,414	Feb. 13	1818	398	120	1936
Egge, Nils N., Joice, Iowa. Draft-equalizer	808,823	Jan. 2	396	86	120	88
Egger, Fritz, Solothurn, Switzerland. Nailless horseshoe	810,949	Jan. 23	4535	944	120	1112
Eggers, Frederick, Cincinnati, Ohio. Ore-washing plant	810,166	Jan. 16	3197	662	120	782
Ehle, Archibald H., and J. H. Nice, assignors to Burnham, Williams & Company, Philadelphia, Pa. Clutch	813,369	Feb. 20	3695	812	120	2377
Ehmann, Charles P., Manchester, England. Antivibrator burner for incandescent gas-lights	812,167	Feb. 6	1298	263	120	1753
Ehringer, Charles G. (See Butler and Ehringer.)						
Eichengrün, Arthur, Elberfeld, Germany, assignor to Farbenfabriken of Elberfeld Co., New York, N. Y. Flash-light composition	812,028	Feb. 6	1007	.....	120	1693
Eichengrün, Arthur, and T. Becker, Elberfeld, Germany, assignors to Farbenfabriken of Elberfeld Co., New York, N. Y. Cellulose acetate	809,935	Jan. 16	2660	.....	120	667
Eichhorn, Johann, Nuremberg, Germany, assignor to Eugene Dietzgen Co., New York, N. Y. Adjusting mechanism for saw-threaded needle-point insertions of compasses	808,644	Jan. 2	47	10	120	12
Eisk, Otto, Baltimore, Md. Bottle-holding rack	808,824	Jan. 2	397	86	120	88
Eigen, Benno vom, assignor to A. Goertz & Co., Newark, N. J. Bag-frame	810,926	Jan. 30	4725	987	120	1186
Eigen, Benno vom, Newark, N. J., assignor to A. Goertz & Co. Handle or strap attachment for bag-frames	810,928	Jan. 30	4728	987	120	1186
Eikler, Fred. (See Lemley, Elkior, and Grant.)						
Eichholz, Emil, Davenport, Iowa, assignor to Bettendorf Metal Wheel Company. Metal axle	808,736	Jan. 2	230	49-50	120	53

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Einfeldt, Emil, Davenport, Iowa, assignor to Bettendorf Metal Wheel Company. Shaping metal bars	808,736	Jan. 2	231	80	120	53
Einfeldt, Emil, Davenport, Iowa, assignor to Bettendorf Metal Wheel Company. Machine for making metal wheels	810,197	Jan. 16	3199	663-4	120	782
Einfeldt, Emil, Davenport, Iowa, assignor to Bettendorf Metal Wheel Company. Making metal wheels	810,198	Jan. 16	3208	665	120	784
Einfeldt, Emil, Davenport, Iowa, assignor to Bettendorf Metal Wheel Company. Wagon-gear	813,285	Feb. 20	3519	776	120	2340
Einfeldt, Emil, Davenport, Iowa, assignor to Bettendorf Metal Wheel Company. Wagon-gear	813,286	Feb. 20	3521	776	120	2341
Einhorn, Alfred, Munich, assignor to Farbwerke vorm. Meister, Lucius & Brüning, Höchst-on-the-Main, Germany. Alkamin esters of para-aminobenzoic acid	812,554	Feb. 13	2100	.....	120	1904
Eiselt, Victor, Muggia, near Triest, Austria-Hungary. Screw-wrench	810,850	Jan. 23	4536	944	120	1112
Eisenhart, Henry W., assignor to A. B. Farquhar Company, Limited, York, Pa. Grain threshing and separating machine	813,967	Feb. 27	4856	1072-4	120	2687
Eisenhuth Horseless Vehicle Co. (See Eisenhuth, John W., assignor.)						
Eisenhuth Horseless Vehicle Company. (See Graham and Fox, assignors.)						
Eisenhuth, John W., Brooklyn, N. Y., assignor to Eisenhuth Horseless Vehicle Co. Compound gas-engine	809,791	Jan. 9	2372	490	120	554
Eklund, Idoff. (See Backlin and Eklund.)						
Eklund, John, St. Joseph, Mich., and E. L. Walker, St. Louis, Mo. Machine for use in making baskets or other receptacles	810,270	Jan. 16	3363	696-7	120	817
Ekroos, Sigurd W., New York, N. Y. Safety gas-burner	808,825	Jan. 2	398	87	120	89
Elder, James M., Indianapolis, Ind. Pneumatic tire	811,490	Jan. 30	5798	1213	120	1416
Eldred, Byron E., Bronxville, assignor to Combustion Utilities Company, New York, N. Y. Burning ceramic ware	810,044	Jan. 16	2889	596	120	718
Eldred, Byron E., Bronxville, assignor to Combustion Utilities Company, New York, N. Y. Steam-boiler furnace	811,626	Feb. 6	191	41	120	1526
Eldred, Byron E., Bronxville, assignor to Combustion Utilities Company, New York, N. Y. Blast combustion	812,193	Feb. 13	1376	299	120	1840
Eldred, Byron E., Bronxville, assignor to Combustion Utilities Company, New York, N. Y. Oscillating cement-kiln	812,834	Feb. 20	2632	575	120	2148
Eldred, Byron E., Bronxville, assignor to Combustion Utilities Company, New York, N. Y. Operating gas-producers	813,628	Feb. 27	4217	927	120	2551
Eldred, Byron E., Brookline, Mass., assignor to Combustion Utilities Company, New York, N. Y. Cement-burning process and apparatus therefor	813,627	Feb. 27	4215	927	120	2551
Eldred, Byron E., and C. Ellis, assignors to Combustion Utilities Company, New York, N. Y. Apparatus for generating gas	811,706	Feb. 6	329	72	120	1559
Eldridge, Edward L., Cazenovia, N. Y. Door check and closer	813,693	Feb. 27	4389	955	120	2577
Electric Amusement Company. (See Gaynor, Thomas F., assignor.)						
Electric Boat Company. (See Spear, Lawrence Y., assignor.)						
Electric Controller & Supply Company. (See Gilpin, Charles D., assignor.)						
Electric Gas Lighting Company. (See Boardman, Arthur F., assignor.)						
Elevator Securities Company. (See Hiss and De Buren, assignors.)						
Elevator Securities Company. (See MacKaye, Harold S., assignor.)						
Elicker, Charles A. (See Lease, Lyman G., assignor.)						
Elkins, John P. (See Myers, McClelland, assignor.)						
Ellés, Edouard. (See Kraemer and Ellés.)						
Elliff, Josiah C., Willis Point, Tex. Mail-bag catcher	812,835	Feb. 20	2635	576	120	2149
Elliot Frog & Switch Company. (See Elliot, William H., assignor.)						
Elliot Frog & Switch Company. (See Elliot and Townsend, assignors.)						
Elliot Frog & Switch Company. (See Scott, William H., assignor.)						
Elliot, William H., St. Louis, Mo., assignor to Elliot Frog & Switch Company, East St. Louis, Ill. Adjustable switch-rod	813,873	Feb. 27	4701	1040	120	2656
Elliot, William H., St. Louis, Mo., and J. J. Townsend, assignors to Elliot Frog & Switch Company, East St. Louis, Ill. Wear-plate for railway-switches	813,874	Feb. 27	4702	1041	120	2656
Elliott, Lewis P., Jackson Center, Ohio. Car-coupling	810,400	Jan. 23	3679	758	120	921
Ellis, Carleton. (See Bridge and Ellis.)						
Ellis, Carleton. (See Eldred and Ellis.)						
Ellis, Carleton, Roslindale, Mass., assignor to Chadeloid Chemical Company, New York, N. Y. Paint and varnish remover	811,044	Jan. 30	4951	.....	120	1237
Ellis, Carleton, assignor to Combustion Utilities Company, New York, N. Y. Gas-producer	811,208	Jan. 30	5287	1106	120	1307
Ellis, Carleton, assignor to Combustion Utilities Company, New York, N. Y. Power-gas producing and consuming apparatus	812,194	Feb. 13	1379	300	120	1840
Ellis, Carleton, assignor to Combustion Utilities Company, New York, N. Y. Heat-recuperator for cement-kilns	812,786	Feb. 13	2528	555	120	2080
Ellis, Carleton, assignor to Combustion Utilities Company, New York, N. Y. Gas-producer	813,629	Feb. 27	4219	927	120	2552
Ellis, Carleton, assignor to Combustion Utilities Company, New York, N. Y. Heat-regenerator for cement-kilns	813,630	Feb. 27	4223	928	120	2553
Ellis, Carleton, assignor to Combustion Utilities Company, New York, N. Y. Generating gas	814,001	Feb. 27	4949	1094	120	2705
Ellis, John F., Torrington, Conn., assignor to Coe Brass Manufacturing Company. Cylinder for treating heated metal	811,707	Feb. 6	331	73	120	1559
Elrich, Robert C., assignor to Peck, Stow & Wilcox Company, Southington, Conn. Bit-brace jaw	809,936	Jan. 16	2651	543	120	668
Elmberg, Ernest F., Chicago, Ill. Attachment for type-writing machines	810,595	Jan. 23	4046	969	120	1124
Elmquist, Victor, Chicago, Ill. Door for grain-cars	813,831	Feb. 27	4725	928-9	120	2553
Elwell, Braden L., and W. Grimm, assignors to Interlocking Fence Company, Morton, Ill. Wire fence	813,370	Feb. 20	3697	812	120	2378
Emerson, Frederic M., Brookline, Mass. Concrete-mold	811,135	Jan. 30	5137	1073	120	1274
Emerson, George W., Denison, Tex. Skiving-machine	813,958	Feb. 27	4960	1075	120	2688
Emery, Albert H., Stamford, Conn. Cartridge	811,910	Feb. 6	722	157-8	120	1637
Emett, Arthur, Ealing, England. Frame and board for displaying advertising bills, pictures, &c.	812,415	Feb. 13	1819	398	120	1936
Emmerich, Rudolph F. (See Spaulding, Elijah F., assignor.)						
Emmert, George C., Mount Morris, Ill. Sliding-door latch and lock	810,927	Jan. 30	4731	987-8	120	1186
Emmet, William L. R., Schenectady, N. Y., assignor to General Electric Company. Packing for elastic-fluid turbines	811,833	Feb. 6	554	122-3	120	1603
Emmons, Fannie B., Richmond, Ind. Hair-drier	808,645	Jan. 2	46	10	120	13
Emmons Loom Harness Company. (See Wingate, Wilbur E., assignor.)						
Empire Electric Steam Lighting Company. (See George, Joseph F., assignor.)						
Empire Jewelry Case Company. (See Bergod, Julius, assignor.)						
Emry, Robert H., Batavia, Iowa. Garment-supporter	811,553	Feb. 6	29	7	120	1491
Engberg, Ephraim O., Salt Lake City, Utah, assignor to J. B. Patton, Kent, Ohio. Machine for trimming and applying shade goods. (Reissue)	12,445	Feb. 6	1311	386-7	120	1757

Alphabetical list of patentees for January and February—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drf'g.	Official Gazette. Vol.	Official Gazette. Page.
Engelberg Huller Company. (See Halstead, Willard, assignor.)						
Engelmann, Max, Elberfeld, Germany, assignor to Farbenfabriken of Elberfeld Co., New York, N. Y. Making dialkyl-barbituric acids	809,362	Jan. 9	1515	.....	120	368
Engle, Wilber D. (See Haynes and Engle.)						
Englemier, Charles W., assignor of one-half to A. E. Fink, Newark, N. J. Stair-tread	811,834	Feb. 6	556	128	120	1603
English, Frank, New Philadelphia, and A. G. Quimby, Uhrichsville, Ohio. Railway	810,479	Jan. 23	3641	789	120	980
Englund, Albert O., Wayne, Kans. Rotary engine	809,363	Jan. 9	1516	307–8	120	368
Englund, Ernst E., assignor to D. M. Sechler Carriage Company, Moline, Ill. Corn-planter	811,554	Feb. 6	30	7–8	120	1491
Enos, Silvanus F., Mattoon, Ill. Game	810,631	Jan. 23	4144	856	120	1026
Ensign, Emory S., Cambridgeport, assignor to Ensign Manufacturing Company, Boston, Mass. Calculating-machine	809,047	Jan. 2	336	178–9	120	185
Ensign Manufacturing Company. (See Ensign, Emory S., assignor.)						
Enterprise Railway Equipment Company. (See Campbell, Argyle, assignor.)						
Epley, John A., Iuka, Kans. Spool-cabinet	809,274	Jan. 2	1329	270	120	293
Epperson, Henry T., San Francisco, Cal., assignor of one-half to G. W. Clarke, East Liverpool, Ohio. Kiln	812,029	Feb. 6	1008	220	120	1693
Eppinger, William, New York, N. Y. Apparatus for smoking and curing meat products	812,922	Feb. 20	2703	615	120	2184
Erard, Oral P., Toledo, Ohio. Front bolster and body-support for children's wagons	808,977	Jan. 2	715	154	120	188
Erath, Jean, Strassburg, Germany. Floor structure	811,491	Jan. 30	5709	1214	120	1416
Erdmenger, Victor, assignor to F. Krupp Aktiengesellschaft, Essen-on-the-Ruhr, Germany. Starting device for explosion-engines	813,959	Feb. 27	4862	1075–6	120	2668
Erickson, Gustaf A., R., and H., Fort Dodge, Iowa. Feed-water heater	810,732	Jan. 23	4319	897	120	1065
Erickson, Hildor. (See Erickson, Gustaf A., R., and H.)						
Erickson, Robert. (See Erickson, Gustaf A., R., and H.)						
Ericson, Job E., San Francisco, Cal. Flushing-tank valve	812,030	Feb. 6	1009	220	120	1694
Ericson, John V. (See Ericson, Richard W. and J. V.)						
Ericson, Richard W. and J. V., Chicago, Ill. Dumping-car	810,524	Jan. 23	3936	810	120	981
Erikson, Erik, assignor of one-half to O. E. Huglin, Odebolt, Iowa. Floor-scraper	811,282	Jan. 30	5430	1132	120	1239
Ernst, John H., assignor to Silver & Company, Brooklyn, N. Y. Alcohol-burner	813,763	Feb. 27	4515	997	120	2615
Erret, Joseph, Cleveland, Ohio. Vehicle-step	810,199	Jan. 16	3211	665	120	784
Ersahan, Nicholas, Elkton, S. D. Railway-signal	812,555	Feb. 13	2101	461	120	1994
Erskine, William B., Madison Mills, Ohio. Crane	809,674	Jan. 9	2163	447	120	507
Escales, Richard, Munich-Schwabing, Germany. Explosive compound	812,196	Feb. 13	1382	.....	120	1841
Eten, William B. (See Worth and Eten.)						
Etheridge, Carroll L. (See Heinrich, Schmidt, and Etheridge.)						
Ettenger, Robert L., Washington, D. C., assignor, by mesne assignments, to Damascus Brake Beam Company, Cleveland, Ohio. Adjustable head for brake-beams	813,960	Feb. 27	4864	1076	120	2668
Ettinger, Samuel F., Little Rock, Ark. Non-refillable bottle	813,961	Feb. 27	4866	1076	120	2669
Etsenhouser, Elias, and R. L. Morss, San Jose, Cal. Window-lock	810,045	Jan. 16	2892	566	120	719
Eugene Dietzgen Co. (See Eichmüller, Johann, assignor.)						
Eustis, John P., Newton, Mass. Pipe-coupling	809,792	Jan. 9	2375	490	120	555
Evans, Charles M., Carmichaels, Pa. Sash-lock	810,110	Jan. 16	3025	629	120	751
Evans, David C., and O. Q. Patterson, Uniontown, Pa. Street-car indicator	813,144	Feb. 20	3258	716–17	120	2286
Evans, George W. Tuxedo Park, Md. Ventilator for sewer and other pipes	810,733	Jan. 23	4320	898	120	1066
Evans, Harry. (See Weisnak, Ignatz, assignor.)						
Evans, Lewis J., Riverside, assignor of five-eighths to C. Tyler and J. M. Davidge, Binghamton, N. Y. Mail-bag catcher	808,646	Jan. 2	80	10–11	120	13
Eveland, Samuel S., Philadelphia, Pa. Lifting-jack	811,136	Jan. 30	5139	1074	120	1275
Eveland, Samuel S., Philadelphia, Pa. Electric riveter	811,137	Jan. 30	5140	1074	120	1275
Eveland, Samuel S., Philadelphia, Pa. Ball-bearing	811,708	Feb. 6	333	73	120	1560
Eveleth, Clarence M., Plymouth, N. H. Weather-strip	812,411	Feb. 27	3784	830–1	120	2454
Evershed, Sydney, Streatley, assignor to himself, and Evershed and Vignoles, Limited, Chiswick, England. Apparatus for measuring electric resistances	810,320	Jan. 16	3488	720–1	120	844
Evershed, Sydney, Streatley, assignor to himself, and Evershed and Vignoles, Limited, Chiswick, England. Apparatus for measuring electric resistances	812,196	Feb. 13	1382	300–1	120	1841
Evershed and Vignoles. (See Evershed, Sydney, assignor.)						
Ewing, Aurelius M., Seattle, Wash. Rail-joint chair	809,434	Jan. 9	1684	346	120	402
F. F. Slocomb & Co. (See Fle, Eugene F., assignor.)						
Faas, Martin, New York, N. Y. Attachment for reclining-chairs	811,138	Jan. 30	5141	1074	120	1275
Fagan, Bernard J., New York, N. Y. Theatrical appliance	810,734	Jan. 23	4321	898	120	1066
Faherty, John P., and J. H. M. Blackford, Duquesne, Pa. Boiler attachment	810,532	Jan. 23	4145	856	120	1026
Fahl, Eugene, St. Louis, Mo. Game apparatus. (Reissue)	12,461	Feb. 27	4068	1100	120	2709
Fair, Milton Q., Sr., Chicago, Ill. Cot for invalids	811,492	Jan. 30	5800	1214	120	1416
Fairbanks, James G., and G. L. Sauer, Marion, Ohio. Jack for steam-dredges, &c	811,709	Feb. 6	334	73	120	1560
Fairbanks, Morse & Company. (See Hobart, Franklin G., assignor.)						
Fairbanks, Morse & Company. (See Johnson, Wallace B., assignor.)						
Fairbrother, Henry, London, England. Handle or grip of dumb-bells or other exercising apparatus	808,737	Jan. 2	233	50	120	53
Fairchild, Frank J., Detroit, assignor to Automatic Car Fender Co., Wyandotte, Mich. Car-fender	813,632	Feb. 27	4227	929	120	2554
Fairless, James D., Iuka, Miss. Cotton-scraper	813,085	Feb. 20	3124	695	120	2257
Falk, George, and W. H. Parker, Cardiff, Ill. Safety-hook	810,928	Jan. 30	4737	966	120	1189
Falls, Charles H., Clarksville, Iowa. Bridle-bit	809,264	Jan. 9	1524	309	120	370
Falt, Fred A., West Medford, Mass. Pipe-cleaner	808,836	Jan. 2	400	87	120	89
Fancher, Charles J., West Granby, Conn., assignor to Simplex Manufacturing Company, New York, N. Y. Safety-valve	813,145	Feb. 20	3261	717	120	2287
Fancher, Charles J., and H. S. Parmelee, West Granby, assignors to Simplex Manufacturing Company, Hartford, Conn. Envelop-sealing machine	812,963	Feb. 13	1534	332–3	120	1872
Fanning, Frederick F. (See Mumford, John F., assignor.)						
Fantom, Chester W., Wellsville, N. Y., assignor to Oil Well Supply Company, Pittsburg, Pa. Tempering-screw	812,487	Feb. 13	1949	430	120	1963
Farbenfabriken of Elberfeld Co. (See Eichengrün, Arthur, assignor.)						
Farbenfabriken of Elberfeld Co. (See Eichengrün and Becker, assignors.)						
Farbenfabriken of Elberfeld Co. (See Engelmann, Max, assignor.)						
Farbenfabriken of Elberfeld Co. (See Heilmann, Fritz, assignor.)						
Farbenfabriken of Elberfeld Co. (See Kugel, Max, assignor.)						
Farbenfabriken of Elberfeld Co. (See Schmidt, Robert E., assignor.)						
Farbenfabriken of Elberfeld Co. (See Schmidt and Thun, assignors.)						
Farbwerke vorm. Meister, Lucius & Brüning. (See Ehrhorn, Alfred, assignor.)						
Farbwerke vorm. Meister, Lucius & Brüning. (See Schmidt and Kruchoh, assignors.)						
Farmer, George M., Rossland, assignor to C. E. Heard, Victoria, British Columbia, Canada. Valve	812,021	Feb. 6	1011	221	120	1694
Farmer, Edwin T., assignor of one-half to J. Rubi, Carthage, Mo. Flour-sifter	809,178	Jan. 2	1082	227	120	240
Farmer, Henry, Brooklyn, N. Y. Inverted incandescent gas-burner	812,042	Feb. 20	2683	695	120	2286
Farquhar Company, A. B. (See Eisenhart, Henry W., assignor.)						
Farrand, Hiram A., New York, N. Y. Camera	813,669	Feb. 27	4229	929–30	120	2554

Alphabetical list of patentees for January and February—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drf'g.	Official Gazette. Vol.	Official Gazette. Page.
Farrell, John H., Chicago, Ill. Knockdown support	811,209	Jan. 30	5288	1106	120	1308
Farrell, Philip H., Flushing, N. Y. Dop	812,836	Feb. 20	2636	576	120	2149
Fassett, Riley D., assignor of one-half to W. H. Ned, Denver, Colo. Grinding-machine	812,122	Feb. 6	1168	256–7	120	1726
Faulk, James M., assignor of two-sixths to W. Frazee, St. John, Kans., and D. J. Smith, Curevo, N. Mex. Ter. Automatic railway-switch	808,827	Jan. 2	401	87–8	120	89
Faulkner, Charles H., Somerville, assignor to Champion Metal Weather Strip and Parting Bead Company, Boston, Mass. Window attachment	810,735	Jan. 23	4322	898	120	1066
Faut, Delbert A., Chicago, Ill. Car-step	811,911	Feb. 6	726	158–9	120	1639
Featherstone Foundry and Machine Company. (See Niles, Francis H., assignor.)						
Febles, Ramon, Harrisburg, Pa. Tool	813,412	Feb. 27	3786	831	120	2455
Feckse, Gottlieb L. (See Swasey and Feckse.)						
Fedden, John H., New York, N. Y., assignor of one-half to T. A. O'Callaghan, Hoboken, N. J. Stocking	812,168	Feb. 6	1299	284	120	1754
Feder, Harry, New York, N. Y. Waterproofing twine	812,837	Feb. 20	2637	.....	120	2149
Fedick, Edward A. (See Johengen and Fedick.)						
Felicke, Adolf, Charlottenburg, Germany. Watch	809,200	Jan. 9	1368	278	120	336
Feist, Theodore. (See Cramer, John, assignor.)						
Feland, Joseph E., *et al.* (See Swallow, Fredric, assignor.)						
Felbel, Jacob, New York, N. Y., assignor to Union Typewriter Company, Jersey City, N. J. Type-writing machine	809,675	Jan. 9	2164	447	120	507
Fellenberg, Wilhelm, Charlottenburg, Germany. Inclosed safety device for fuses for electrical installations	813,546	Feb. 27	4057	889	120	2518
Fellows Olin S., and A. E. Hopkins, Middletown, N. Y. Apparatus for removing superfluous metallic coating from sheet metal	810,851	Jan. 23	4537	944–5	120	1112
Felt, A. C., *et al.* (See Dysart, Fred B., assignor.)						
Feltmann, Adam W., Chicago, Ill. Dental tool	809,365	Jan. 9	1525	309	120	370
Felton, Samuel M. (See Mansfield and Felton.)						
Fenn, Prosper D., Chicago, Ill. Stereoscope	810,401	Jan. 23	3681	758	120	922
Fenn, William B., Sheepshead Bay, N. Y. Closure device for glass jars and other vessels	810,736	Jan. 23	4323	898	120	1066
Fenn, William B., Sheepshead Bay, N. Y. Metallic can	810,737	Jan. 23	4324	899	120	1067
Fennell, William, and W. P. Perry, Leytonstone, England. Storage battery	810,929	Jan. 30	4739	966	120	1189
Fennell, William, and W. P. Perry, Leytonstone, England. Storage battery	810,930	Jan. 30	4739	969	120	1190
Fensky, Charles, St. Louis, Mo. Non-refillable bottle	813,547	Feb. 27	4059	889	120	2518
Ferguson, James, assignor to Kelvin & James White, Limited, Glasgow, Scotland. Electrostatic voltmeter	809,703	Jan. 9	2376	491	120	555
Ferguson, James J., and S. P. Oswald, Nashville, Tenn. Sack-filling machine	812,335	Feb. 13	1662	365–6	120	1904
Ferguson, John A., Denver, Colo. Press for concrete building-blocks	812,416	Feb. 13	1820	398–9	120	1936
Ferguson, Samuel B., and C. Calhoun, Rome, Miss. Rail-tie	810,633	Jan. 23	4146	857	120	1026
Ferris, Henry L., assignor to Hunt, Helm, Ferris & Company, Harvard, Ill. Wagon	809,912	Jan. 9	2597	534–5	120	604
Ferris, Henry L., assignor to Hunt, Helm, Ferris & Company, Harvard, Ill. Wagon	809,913	Jan. 9	2599	535	120	605
Ferris, Walter. (See Knox and Ferris.)						
Ferris, Walter, assignor to Bucyrus Company, South Milwaukee, Wis. Railway-car truck	809,435	Jan. 9	1685	346–7	120	402
Ferris, Walter, assignor to Bucyrus Company, South Milwaukee, Wis. Dipper for dredges, excavators, and the like	809,436	Jan. 9	1686	347	120	403
Ferris, Walter, assignor to Bucyrus Company, South Milwaukee, Wis. Composite boom for steam-shovels and the like	812,264	Feb. 13	1531	334	120	1874
Ferry, Arthur C., Chicopee Falls, Mass. Ball-player's mitt	811,389	Jan. 30	5624	1178	120	1381
Ferry, James F., Leadville, Colo. Cooking utensil. (Reissue)	12,452	Feb. 13	2560	563	120	2087
Fertig, Lewis P., Chicago, Ill. Combined car axle and wheel structure	810,525	Jan. 23	3938	810	120	981
Fesler, Stephen A., Cupertino, Cal. Pipe-wrench	810,738	Jan. 23	4326	899	120	1067
Fetters, Arthur H. (See McKeen and Fetters.)						
Fetzer, Louis W. (See Kraft and Fetzer.)						
Fetzer, William, Middletown, Ohio. Transplanter	812,556	Feb. 13	2103	461	120	1995
Feucht, John, Brainerd, Minn. Grain-door for cars	812,838	Feb. 20	2638	576–7	120	2149
Feucht, John, Brainerd, Minn. Grain-door lock	812,839	Feb. 20	2640	577	120	2150
Feust, Sigmund, New York, N. Y. Show-window	813,634	Feb. 27	4231	930	120	2555
Fichtner, Conrad, Goodrich, N. D. Shaping-tool	813,784	Feb. 27	4516	997	120	2616
Fick, Frank W., Maneys Corners, and P. S. Van Wie, Amsterdam, N. Y. Appliance and fixture for railway rails and ties	813,875	Feb. 27	4704	1041	120	2656
Fickes, John C., assignor to Buckeye Lubricating Company, Steubenville, Ohio. Lubricator	812,032	Feb. 6	1012	221	120	1694
Fidjeland, Terje A., Fostvedt, Iveland, Norway. Automatic rifle	813,694	Feb. 27	4339	955	120	2578
Fiebach, Frank A. R., H. C., and O. L., London, Wis. Corn-fodder elevator and loader	810,739	Jan. 23	4326	899	120	1067
Fiebach, Henry C. (See Fiebach, Frank A. R., H. C., and O. L.)						
Fiebach, Otto L. (See Fiebach, Frank A. R., H. C., and O. L.)						
Field, Stephen D., Stockbridge, Mass. Receiving telegraphic signals	812,557	Feb. 13	2105	462	120	1995
Field, William A., E. B. Clark, 2nd, and F. Wilson, Chicago, Ill., assignors to Wellman, Seaver, Morgan Company, Cleveland, Ohio. Reversing-valve	812,840	Feb. 20	2641	577–8	120	2150
Fielding, John S., Toronto, Canada. Dam, retaining-wall, or breakwater	813,695	Feb. 27	4343	956	120	2578
Fifer, Charles F., Boulder, Colo. Claw-hammer and spike-puller	812,985	Feb. 20	2926	645	120	2313
Finell, Chester C., Grand Junction, Iowa. Gas-burning tank-heater	810,852	Jan. 23	4540	945	120	1112
Fildes, Rollin D., assignor of one-half to L. Parish, Chicago, Ill. Hydraulic tool-clamp	808,647	Jan. 2	53	11	120	14
Fle, Eugene F., New York, N. Y., assignor of one-half to F. F. Slocomb & Co. Attachment for leather-staking machines	813,876	Feb. 27	4705	1041–2	120	2656
Filstrup, Lars L., assignor to Covel Manufacturing Company, Chicago, Ill. Saw-dressing machine	811,835	Feb. 6	557	123–4	120	1604
Finch, George P., assignor of two-thirds to A. M. Hill and W. H. Peck, Garnsill, Mont. Device for removing or replacing hay-racks or the like from or to their running-gear	808,913	Jan. 2	580	126	120	127
Finch, John S. (See Eames and Finch.)						
Findlay, William, Edinburgh, Scotland. Cover for vehicles	808,828	Jan. 2	403	88	120	90
Fink, Adolph E. (See Englemier, Charles W., assignor.)						
Fink-Huguenot, Laurent, Paris, France. Apparatus for the preparation of metallic oxids	813,785	Feb. 27	4517	997	120	2616
Fink-Huguenot, Laurent, Paris, France. Producing metallic oxids	813,786	Feb. 27	4519	997	120	2616
Finley, John H. (See Raymond and Finley.)						
Finney, David C., Huntsville, Ala. Thread-guide	809,457	Jan. 9	1667	347	120	403
Firnaes, Edward, *et al.* (See Salmon, Carl R., assignor.)						
Fischer, Adolph, Milwaukee, Wis. Horseshoe-pad	808,829	Jan. 2	404	88	120	90
Fischer, August. (See Lang and Fischer.)						
Fischer, Charles E., West Harrison, Ind. Collapsible truck	808,738	Jan. 2	234	51	120	53
Fischer, Jens J. O., assignor to himself and M. J. Goepfert, Racine, Wis. Anticreeping device for rails	808,648	Jan. 2	54	12	120	14
Fischer, Joseph B., assignor of one-half to E. A. Tesch, Chicago, Ill. Fishing-rod	813,492	Feb. 27	3954	887	120	2495
Fischer, William C., New York, N. Y., assignor to Standard Pulley Manufacturing Company. Sheave	812,488	Feb. 13	1951	430	120	1964

Alphabetical list of patentees for January and February—Continued.

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Fisher & Company, J. M. (See Wallenthin, Nils C., assignor.)						
Fisher, Daniel C., Boston, Mass. Machine for disentangling fibers	808,978	Jan. 2	716	154–5	120	158
Fisher, Ebenezer, Philadelphia, Pa., assignor to Fisher Wrench Company, Egg Harbor, N. J. Pipe-wrench. (Reissue)	12,438	Jan. 23	4652	970	120	1135
Fisher, George F., North Tonawanda, N. Y. Building construction	813,548	Feb. 27	4060	800	120	2519
Fisher, Henry R. (See Schlosser and Fisher.)						
Fisher, John, *et al.* (See Salmen, Carl R., assignor.)						
Fisher, Martin E., Mineral City, Ohio. Making hard-rubber balls	810,740	Jan. 23	4328	.....	120	1068
Fisher Wrench Company. (See Fisher, Ebenezer, assignor.) (Reissue.)						
Fitch, Fred W. (See Rodney, Ford, Conroy, Burson, and Fitch.)						
Fitzgerald, John M. (See Tracy, John W., assignor.)						
Fitzgibbons, David, Oswego, N. Y. Steam-generator	809,366	Jan. 9	1527	310	120	370
Fitzkee, Archibald M., Atkinson, Ill. Safety-pocket	811,045	Jan. 30	4952	1034	120	1237
Fitzpatrick, Edward F., *et al.* (See Wyatt, George R., assignor.)						
Flager, Edward G. (See McGahan and Flager.)						
Flannery Bolt Company. (See Tate, John B., assignor.)						
Flannery, James J., *et al.* (See Hinkson, Frank B., assignor.)						
Flannery, Joseph M., *et al.* (See Hinkson, Frank B., assignor.)						
Flatau, Sol, administrator. (See Dancyger, Simon.)						
Flather, Herbert L., Nashua, N. H. Change-speed gearing for engine-lathes	810,634	Jan. 23	4147	857–8	120	1027
Flay, Robert. (See Hubbard and Flay.)						
Fleischer, Emil, Dresden-Strehlen, assignor to J. E. Goldschmid, Frankfort-on-the-Main, Germany. Manufacturing iron or steel	809,291	Jan. 9	1369	278	120	337
Fleming, Christopher C., Dallas, Tex. Saw-tooth	813,371	Feb. 20	3698	812	120	2378
Fleming, James R., Scranton, Pa. Axle-box	813,962	Feb. 27	4867	1076	120	2689
Fleming, William B., South Pasadena, Cal. Musical instrument	811,912	Feb. 6	728	159–60	120	1639
Flesher, Andrew, Taylorville, Ill. Safety-catch for elevators	811,046	Jan. 30	4953	1034	120	1237
Fletcher, Pearl E., Ridge, assignor of one-half to K. G. Warner, Pendleton, Oreg. Sickle	809,676	Jan. 9	2166	448	120	508
Fling, Walter T., and J. E. Nichols, Holt, Mo. Smoke-consumer	810,741	Jan. 23	4329	900	120	1068
Floeter, Robert K., Lima, Ohio. Automatic railway-switch	811,627	Feb. 6	194	41	120	1527
Flory, Llewellyn H., Ashley, Pa. Hair-pin	813,787	Feb. 27	4520	998	120	2616
Flowers, Alonzo H., Miami, Fla. Column	812,033	Feb. 6	1015	221	120	1695
Floyd-Wells Company. (See Brooke, Isaac, assignor.)						
Flynn, John K., Duluth, Minn. Stump-puller	813,666	Feb. 27	4345	956	120	2579
Focht, George, Hoboken, N. J. Street-sweeper's cart	808,739	Jan. 2	235	51	120	54
Foley, Philip J. (See Johnston and Foley.)						
Follett Manufacturing Company. (See Follett, Wilbur I., assignor.)						
Follett, Wilbur I., Summit, N. J. Time-recording apparatus	810,370	Jan. 16	3574	735	120	865
Follett, Wilbur I., Mendham, N. J., assignor to Follett Manufacturing Company, New York, N. Y. Hand dating-stamp	813,635	Feb. 27	4233	930	120	2555
Fontaine, Patrick H., Bethel Hill, N. C. Riding-saddle	809,179	Jan. 2	1093	227	120	240
Food & Fiber Products Company. (See Manns, Albert G., assignor.)						
Foote, Lewis A., assignor to Chicago Car Seal & Manufacturing Company, Chicago, Ill. Seal-press	811,283	Jan. 30	5431	1132	120	1339
Forberg, John. (See Skov and Forberg.)						
Forbes, Alexander A., Duluth, Minn. Machine for molding building-blocks	812,123	Feb. 6	1171	257–8	120	1727
Forbes, Andrew. (See Hough, Benjamin B., assignor.)						
Forbes, John D., Mill Valley, Cal. Planer-head and cutter	811,768	Feb. 6	437	95	120	1581
Forbes, John D., San Francisco, Cal. Planer-head	811,769	Feb. 6	438	95	120	1581
Forbes, John S., Philadelphia, Pa. Distilling and condensing	808,649	Jan. 2	56	12	120	15
Ford, Hannibal C., Jamaica, N. Y. Railway system	809,774	Jan. 9	2377	491	120	555
Ford, James J. (See Rodney, Ford, Conroy, Burson, and Fitch.)						
Ford, John M., Barrow-in-Furness, England. Experimental tank for testing ships' models	813,413	Feb. 27	3788	831–2	120	2455
Fordyce, Edmond A., Boston, Mass., assignor to Lamson Consolidated Store Service Company, Newark, N. J. Pneumatic-despatch-tube apparatus	813,636	Feb. 27	4234	930	120	2555
Foreman, Samuel E., Paducah, Ky. Tool-handle	811,300	Jan. 30	5626	1178	120	1381
Forquer, George, and A. R. Musick, Brashear, Mo. Spark-arrester	813,493	Feb. 27	3956	808	120	2495
Forrester, Eli T., Hot Springs, S. D. Railway-tie	810,200	Jan. 16	3211	665	120	784
Forrester, Eli T., Denver, Colo. Railway-rail joint	812,417	Feb. 13	1822	399	120	1936
Forrister, Isham G., Versailles, Ky. Rain-holder	812,034	Feb. 6	1016	221	120	1695
Forsyth, Robert H., Washington, D. C. Box for holding coins	810,742	Jan. 23	4330	900	120	1068
Forter Miller Engineering Company. (See Miller, James C., assignor.)						
Foesnight, Charles E., Warren, Ohio. Hair-pin	811,628	Feb. 6	197	42	120	1528
Fosselman, Christian A., *et al.* (See Hinsch, Gustave L., assignor.)						
Foster, Charles L., and P. K. Higgins, Los Angeles, Cal. Police signaling apparatus	812,733	Feb. 13	2430	532	120	2059
Foster, George W., Pawtucket, R. I. Thread-winding machine	813,372	Feb. 20	3696	813	120	2378
Foster, John, Rochester, N. Y. Stanchion	813,788	Feb. 27	4521	998	120	2616
Foster, Samuel T., Jr., Victoria, Mexico, assignor of three-fourths to O. C. Billman, Lodi, Ohio. Electric gun	811,913	Feb. 6	731	160	120	1639
Foster, Theodore W., Providence, R. I. Bracelet	813,697	Feb. 27	4346	957	120	2579
Foster, W. S., *et al.* (See Branson, Tilghman E., assignor.)						
Fougerat, Charles, Lyon, France. Apparatus for permitting the successive exhibition of photographs	808,530	Jan. 2	405	80	120	90
Fourneaux, Emile A., assignor to H. A. Metz, New York, N. Y. Formaldehyde hydrosulfite and making same	812,124	Feb. 6	1176	.....	120	1729
Fowle, Charles L., assignor to Dowagiac Manufacturing Company, Dowagiac, Mich. Seedbox for grain-drills	808,979	Jan. 2	718	155	120	159
Fowler, Lewis D., assignor of one-half to I. A. Kness, Oklahoma, Okla. Ter. Folding transportation poultry-coop	811,047	Jan. 30	4954	1034	120	1237
Fowler, Samuel J., Cambridge, Mass. Stand-pipe and connection for gas-retorts	808,831	Jan. 2	405	89–90	120	90
Fowler, Thomas, Beaumont, Tex. Car-truck bolster	811,493	Jan. 30	5602	1215	120	1416
Fowler, Thomas R. (See Tabler, Frank C., assignor.)						
Fowler, William, Colorado Springs, Colo. Electrical hose signaling apparatus	811,536	Feb. 6	539	124–5	120	1604
Fox, Annie, Marietta, Mich. Jar-holder	813,780	Feb. 27	4522	998	120	2617
Fox, Ansley H., Philadelphia, Pa. Barrel-locking device for breakdown guns	810,046	Jan. 16	2693	597	120	719
Fox, Frank A. (See Graham and Fox.)						
Fox, John H., New York, assignor to Mott Carbonator Company, Utica, N. Y. Beverage-carbonator	813,414	Feb. 27	3789	832	120	2455
Fox, William T., Rochester, N. Y. Gas-engine	809,292	Jan. 9	1371	276–9	120	337
Fralick, Charles F. (See Waite and Fralick.)						
Francisque, Constant. (See Brown and Francisque.)						
Frank, David, *et al.* (See Sebastil, Jager, and Walsleben, assignors.)						
Frank, Harry J., Philadelphia, Pa. Dumping-wagon	812,734	Feb. 13	2433	532–3	120	2059
Frank, Henry C., New York, N. Y. Cuff-holder	811,210	Jan. 30	4389	1103	120	1303

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Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Frank, John J., Schenectady, N. Y., assignor to General Electric Company. Transformer	808,740	Jan. 2	237	51	120	54
Frank, Robert J., assignor to Standard Audit Company, Chicago, Ill. Loose-leaf ledger	809,914	Jan. 9	2601	536	120	605
Franklin, Edward A., Austin, Tex. Vapor-burner	813,494	Feb. 27	3957	808	120	2495
Franklin, James W., Boston, Ga. Nut-lock	812,035	Feb. 6	1017	222	120	1695
Franquist, Gustave E., New York, N. Y. Muffler	813,203	Feb. 20	3359	738	120	2307
Frantz, Peter. (See Dillon and Frantz.)						
Franz, Charles J., Baltimore, Md. Button or check	810,635	Jan. 23	4151	858	120	1027
Franz, Friederich, Corona, N. Y. Tool for grinding glass plates	809,499	Jan. 9	1812	373	120	433
Frayer, Lee A., and W. J. Miller, Columbus, Ohio. Engine-driven blower for explosion-engines	813,204	Feb. 20	3360	738	120	2307
Frazee, William, *et al.* (See Faulk, James M., assignor.)						
Frazer, Anne E. W., Washington, D. C. Amusement-railway	811,211	Jan. 30	5290	1107	120	1308
Frech, George F. (See Wolfe and Frech.)						
Freda, Frank J., Detroit, Mich. Buttonhole attachment for sewing-machines	808,914	Jan. 2	582	128	120	127
Fredlund, Henning A., Dubuc, Canada. Rotary engine	809,180	Jan. 2	1095	228	120	241
Freel, William S., Bay City, Mich. Fishing device	811,555	Feb. 6	33	8	120	1492
Freeman, Frank A., Philadelphia, Pa. Fastening device	811,494	Jan. 30	5803	1215	120	1417
Freeman, Willard S., St. Cloud, Minn. Alarm for incubators	810,931	Jan. 30	4741	989	120	1190
Freeman, William, New York, N. Y. Printed dress-pattern	811,770	Feb. 6	439	95–6	120	1582
Freese, John, *et al.* (See Caughey, Albert E., assignor.)						
Freitag, Andreas, Amsterdam, Netherlands, assignor to Watson, Laidlaw & Company, Glasgow, Scotland. Centrifugal machine	813,963	Feb. 27	4869	1077	120	2689
Fremaux, Louis. (See Crepy and Fremaux.)						
French, Edson B., Helena, Mont. Combined curtain-pole and shade-roller support	811,629	Feb. 6	197	42	120	1528
French, John R., Los Angeles, Cal. Pneumatic riveting-machine	812,787	Feb. 13	2529	556	120	2080
French, Tomson E., Davenport, Iowa. Window-crane	809,104	Jan. 2	909	201	120	214
Frenk, William F. (See Smith and Frenk.)						
Frentzen, Albertus W., and J. Schoemaker, Leiden, Netherlands. Instrument for removing ribs	813,877	Feb. 27	4707	1042	120	2657
Frenzel, John A., Wausau, Wis. Train-pipe coupling	813,637	Feb. 27	4237	931	120	2556
Freschi, Alfred, Chicago, Ill. Flexible adhesive brace	813,790	Feb. 27	4523	998	120	2617
Freshman, Sam, *et al.* (See Moeckel, Aratine G., assignor.)						
Fretts, George H., Springfield, Mass. Electrically-operated controlling mechanism	813,638	Feb. 27	4238	931	120	2557
Frey, Jacob A. (See Knollenberg and Frey.)						
Fridman, William M. (See Lancaster, John P., assignor.)						
Friede, Samuel M., assignor of one-half to H. W. Carter, Chicago, Ill. Amusement apparatus	809,937	Jan. 16	2652	548	120	668
Friede, Samuel M., assignor to Revolving Air Ship Tower Company, Chicago, Ill. Revolving air-ship tower	813,549	Feb. 27	4062	800–1	120	2519
Friedel, Albert H., New York, N. Y. Shell	811,048	Jan. 30	4956	1035	120	1238
Friedenthal, Albert, Oakland, Cal. Game apparatus	809,293	Jan. 9	1374	279	120	338
Friedenwald Company of Baltimore City. (See Billstein, Aaron, assignor.)						
Friedman, John L., and J. Graham, Lawton, Okla. Ter. Cattle-guard	811,049	Jan. 30	4957	1035	120	1238
Friedman, Samuel, New York, N. Y. Tuck-guide for sewing-machines	812,558	Feb. 13	2108	462	120	1996
Friedrich, Ernst W., Blaton, Belgium. Cellulose solution	813,878	Feb. 27	4709	.....	120	2658
Frieg, Franz, Ludwigsburg, Germany. Knife-polishing machine	812,489	Feb. 13	1952	430	120	1964
Friese, Adolph H., New York, N. Y. Nail-clipper	810,402	Jan. 23	3682	758	120	922
Fringer, Charles F., Lithia, Va. Door-lock	809,610	Jan. 9	2033	421	120	478
Frisbee, Daniel D. (See Graves, George W., assignor.)						
Frist, Robert P., Bridgeton, N. J., assignor to S. S. Stafford, Incorporated, New York, N. Y. Paste-pot	813,086	Feb. 20	3125	685	120	2257
Fritz, John H., Ainsworth, Nebr. Draft attachment for vehicles	813,639	Feb. 27	4240	932	120	2557
Frizzell, William L. (See Vickery, Frank E., assignor.)						
Frohlich, George W. Chicago, Ill. Window-ventilator	809,500	Jan. 9	1813	373	120	433
Fruehauf, William F., Plainfield, N. J. Clinical thermometer	812,559	Feb. 13	2111	462	120	1996
Fruehauf, William F., Plainfield, N. J. Clinical thermometer	812,560	Feb. 13	2112	462	120	1997
Fruin, John L., New York, N. Y. Combined fitting for closets and sinks	809,938	Jan. 16	2654	548	120	666
Fruin, John L., New York, N. Y. Plumbing system	810,047	Jan. 16	2696	597	120	720
Fry, Speed S., Breckenridge, Colo. Calculator	809,294	Jan. 9	1374	279	120	338
Fryer, George G., Syracuse, N. Y. Coke-handling apparatus	808,741	Jan. 2	239	52	120	54
Fuchs & Lang Manufacturing Co. (See Haenlein, Louis, assignor.)						
Fuel Saver Heating Company. (See Hampden, Wellesley R., assignor.)						
Fuller, Harvey R., Kirksville, Mo. Method of instruction	812,107	Feb. 13	1387	301	120	1842
Fuller, James W., Jr., Catasauqua, Pa. Producing self-lubricating car-wheels	813,146	Feb. 20	3263	717	120	2287
Fuller, Louis C., Kansas City, Mo. Incandescent gas-lamp	811,050	Jan. 30	4960	1035	120	1238
Fulton Company. (See Fulton and Richards, assignors.)						
Fulton, Weston M., and W. H. Richards, assignors to Fulton Company, Knoxville, Tenn. Reservoir for gasolene and other vapor burners	810,403	Jan. 23	3683	758–9	120	922
Funck, Philipp. (See Tierney and Funck.)						
Furchtbar, John J., Joetta, Ill. Vehicle	809,048	Jan. 2	842	179	120	186
Furlow, Floyd C., Montclair, assignor to Otis Elevator Company, East Orange, N. J. Retarding device for plunger-elevators	810,404	Jan. 23	3685	759	120	923
Gabriel, Charles R., assignor to Brown & Sharpe Manufacturing Company, Providence, R. I. Gearing	809,915	Jan. 9	2603	536	120	606
Gabryszek, Wladyslaw J., Greenbay, Wis. Catafalque	811,495	Jan. 30	5805	1215	120	1417
Gaebel, Carl. (See Winter, Carl, assignor.)						
Gaertner, Frederick W., Niagara Falls, N. Y. Extracting albumin from vegetable substances	813,373	Feb. 20	3701	814	120	2378
Gall, John F., assignor to Simmons Manufacturing Company, Kenosha, Wis. Machine for making coil-springs	810,048	Jan. 16	2698	597–607	120	720
Gale, Georgiana C. (See Gale, Henry A., assignor.)						
Gale, Henry A., assignor to G. C. Gale, Hartford, Conn. Machine for forming box-shooks	808,742	Jan. 2	242	52–3	120	55
Gale, Horace B., Natick, and F. M. Dewing, Boston, Mass., assignors to Submarine Signal Company, Waterville, Me. Means for producing sound-vibrations in water	813,964	Feb. 27	4870	1077	120	2690
Gallagher, Fred E., assignor of two-thirds to S. L. Phillips and W. D. Valentine, San Francisco, Cal. Receiver and recorder for wireless and other transmissions	808,832	Jan. 2	409	90	120	91
Gallagher, John C., Elmira, N. Y. Controlling device for motor-vehicles	809,916	Jan. 9	2605	536–7	120	606
Gallagher, Joseph D., Glenridge, N. J. Brake-shoe	810,405	Jan. 23	3689	759	120	924
Gallagher, William L., Point Reys Station, Cal. Stopper retaining and extracting device	810,331	Jan. 16	3490	721	120	844
Galland, George, assignor to M. S. Galland, Wilkes-Barre, Pa. Display-form	812,986	Feb. 20	3929	645	120	2214
Galland, Minnie S. (See Galland, George, assignor.)						
Galloway, John W., Linton, Ind. Pianoforte	813,791	Feb. 27	4524	999	120	2617

Alphabetical list of patentees for January and February—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Gallup, Lloyd G., Walton, N. Y. Brake block and shoe	813,640	Feb. 27	4241	932	120	2558
Galopin, Henri, Melbourne, Victoria, Australia. Mechanism for automatically distributing liquid fuel	809,436	Jan. 9	1691	348	120	404
Gamble, John, assignor to G. A. Reach, Philadelphia, Pa. Base-ball-catcher's mitt	808,960	Jan. 2	721	155	120	159
Gamboa, John M., St. Louis, Mo. Non-refillable bottle	810,480	Jan. 23	3843	789	120	960
Gammeter, Harry C., assignor to American Multigraph Company, Cleveland, Ohio. Feeding mechanism for printing-machines	812,735	Feb. 13	2434	533	120	2060
Gandert, Fredrick. (See Barr and Gandert.)						
Garber, Chester A., Brookville, Ohio. Railway-mail-bag device	811,710	Feb. 6	335	74	120	1560
Gardiner, Benjamin P., assignor to Petroleum Electric Producing Company, Chicago, Ill. Electric heater for oil-wells and making same	809,917	Jan. 9	2606	537	120	606
Gardiner, Edmund E., Hamler, Ohio. Combined punch and shears	812,845	Feb. 13	2269	494	120	2026
Gare, Thomas, New Brighton, England. Wheel for vehicles	810,526	Jan. 23	3941	811	120	962
Garland, Michael, assignor to M. Garland Company, Bay City, Mich. Resawing attachment for band-saws	812,987	Feb 20	2930	645-6	120	2214
Garnett, Harrison, Norristown, Pa. Loom-shuttle check	811,130	Jan. 30	5143	1078	120	1276
Garnett, William H., Little Rock, Ark. Non-refillable bottle	810,481	Jan. 23	3944	790	120	960
Garney, Edythe P., Scranton, Pa. Telephone or other booth	811,140	Jan. 30	5144	1078	120	1276
Garretson, Frank B., Worcester, Mass. Filling attachment for sight-feed oilers	811,051	Jan. 30	4960	1036	120	1236
Garrett-Cromwell Engineering Company. (See Cromwell, John C., assignor.)						
Garrett, Myers A., Chicago, Ill. Centering device for draw-bars	809,151	Jan. 2	1097	228	120	241
Garrett, Samuel H., West Philadelphia, Pa. Window-screen	812,490	Feb. 13	1962	430	120	1964
Garrett, William O., Maryville, Mo. Stock-watering apparatus	810,111	Jan. 16	3025	629-30	120	751
Garton-Daniels Company. (See Jones, Walter C., assignor.)						
Garvin Cyanide Extraction Company. (See Garvin, Edward J., assignor.)						
Garvin, Edward J., Portland, Oreg., assignor to Garvin Cyanide Extraction Company. Apparatus for recovering precious metals	809,989	Jan. 16	2655	549	120	668
Gaskine, Lindsey, Hamilton, Va. Automatic bell-signal for railway-track crossings	810,112	Jan. 16	3027	630	120	752
Gates, Harvey P., Remington, Ind. Block-molding machine	809,367	Jan. 9	1528	310	120	370
Gates, Walter. (See Olsen and Gates.)						
Gates, William H., Worcester, Mass. Drive-chain	811,391	Jan. 30	5627	1178	120	1381
Gatsert, Abraham N. (See Berens and Gatsert.)						
Gatsert, Abraham N., Chicago, and S. Berens, La Grange, Ill. Illuminating-sign	813,087	Feb. 20	3126	685	120	2258
Gault, Frank M., Oklahoma, Okla. Ter. Poultry-shipping coop	809,558	Jan. 9	1918	398	120	455
Gault, Frank M., Oklahoma, Okla. Ter. Crate for transporting poultry	809,559	Jan. 9	1919	398-9	120	455
Gaven, William J. (See Hoyt and Gaven.)						
Gaylor, Leonard B., Newton Center, Mass. Automobile	810,636	Jan. 23	4152	858	120	1028
Gaylord, Edwin S. (See Hartenbergh, John C., assignor.)						
Gaynor, Thomas F., New York, N. Y., assignor to Electric Amusement Company. Electric race-track	811,264	Jan. 30	5433	1132-3	120	1340
Gegner, John P., Sandusky, Ohio. Attachment for horseshoes	809,105	Jan. 2	972	201	120	215
Gehr, John H., Waynesboro, Pa. Wall-mold	809,106	Jan. 2	973	201	120	215
Gehrsbma, Edward F., Schenectady, N. Y., assignor to General Electric Company. Starting-compensator for alternating-current motors	809,677	Jan. 9	2167	448	120	508
Geisenhöner, Henry, Schenectady, N. Y., assignor to General Electric Company. Machine for shaping the ends of metal bars	811,771	Feb. 6	441	96	120	1562
General Chemical Company. (See Knietsch, Rudolf, assignor.)						
General Electric Company. (See Anderson, Edward H., assignor.)						
General Electric Company. (See Armstrong, Albert H., assignor.)						
General Electric Company. (See Arsem, William C., assignor.)						
General Electric Company. (See Barry, Charles E., assignor.)						
General Electric Company. (See Batcheldor, Asa F., assignor.)						
General Electric Company. (See Callan, John G., assignor.)						
General Electric Company. (See Callan and Boyd, assignors.)						
General Electric Company. (See Case, Frank E., assignor.)						
General Electric Company. (See Churchward, Alexander, assignor.)						
General Electric Company. (See Corey, Fred B., assignor.)						
General Electric Company. (See Day, Maxwell W., assignor.)						
General Electric Company. (See Emmet, William L. R., assignor.)						
General Electric Company. (See Frank, John J., assignor.)						
General Electric Company. (See Gehrsbma, Edward F., assignor.)						
General Electric Company. (See Geisenhöner, Henry, assignor.)						
General Electric Company. (See Gomborow, Josef, assignor.)						
General Electric Company. (See Herman, Reinhold, assignor.)						
General Electric Company. (See Jackson, Alexander M., assignor.)						
General Electric Company. (See Keller, Huldreich, assignor.)						
General Electric Company. (See Kay, James F., assignor.)						
General Electric Company. (See Kruesi, August H., assignor.)						
General Electric Company. (See Latour, Marius C. A., assignor.)						
General Electric Company. (See Lamp, Hermann, assignor.)						
General Electric Company. (See Linn, John B., assignor.)						
General Electric Company. (See Möller, Karl, assignor.)						
General Electric Company. (See Newton, Arthur D., assignor.)						
General Electric Company. (See Ober, Julius E., assignor.)						
General Electric Company. (See Potter, William B., assignor.)						
General Electric Company. (See Reist, Henry G., assignor.)						
General Electric Company. (See Rice, Edwin W., Jr., assignor.)						
General Electric Company. (See Riddell, John, assignor.)						
General Electric Company. (See Samuelson, Frederick, assignor.)						
General Electric Company. (See Sargent, Howard R., assignor.)						
General Electric Company. (See Steinmetz, Charles P., assignor.)						
General Electric Company. (See Stevens, George E., assignor.)						
General Electric Company. (See Stone, Fred L., assignor.)						
General Electric Company. (See Stumpf, Johann, assignor.)						
General Electric Company. (See Thomas, Elihu, assignor.)						
General Electric Company. (See Wilson, Howard B., assignor.)						
General Electric Company. (See Wood, Montravile M., assignor.)						
General Fire Appliance Company. (See Donnelly, William T., assignor.)						
General Fireproofing Company. (See Shepard, James A., assignor.)						
General Fireproofing Company. (See Shaw, John A., assignor.)						
General Railway Signal Company. (See Townsend, Frederick, assignor.)						
General Refining Company. (See Filer, Joseph, assignor.)						
General Refining Company. (See Lyndon, Lemuel, assignor.)						
General Refining Company of West Virginia. (See Gibson, David, assignor.)						
Gibson, David, assignor to Gibson Coal Manufacturing Company of West Virginia, Baltimore, Md. Mining subsided anthracite compounds	809,705	Jan. 9	1980	492	120	555

Alphabetical list of patentees for January and February—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Geneux, Emile C., Jeanerette, La. Railway-rail	812,988	Feb. 20	2933	646	120	2214
Geometric Tool Company. (See Leonard, Wilbur A., assignor.)						
George, Jerome R., assignor to Morgan Construction Company, Worcester, Mass. Gas-producer	809,295	Jan. 9	1375	279	120	338
George, Joseph F., New York, N. Y., assignor, by mesne assignments, to Empire Electric Stage Lighting Company. Electrical switch	810,527	Jan. 23	3942	811	120	962
Geraci, Ignatius, assignor of one-half to C. Linkins, Washington, D. C. Tailor's measure	813,415	Feb. 27	3793	832	120	2456
Gerding, Herbert. (See Schultz and Gerding.)						
Gerdon, Gregory, Watervliet, N. Y., assignor to Ordnance Improvement Company. Firing mechanism for breech-loading guns	809,107	Jan. 2	974	201	120	215
Gerhardt, August H. L., Bettenhausen, near Cassel, Germany. Apparatus for continuously distilling benzin and the like	810,637	Jan. 23	4155	858	120	1028
Gerlach, Gustav B., assignor of one-half to Ketling & Braun, Crimmitzschau, Saxony, Germany. Machine for steaming cloth	810,271	Jan. 16	3372	698	120	819
Gerow, James W., et al. (See Birmingham, John P., assignor.)						
Gesellschaft für Industrielle Feuerungsanlagen m. b. H. (See Lutzner, Maximilian A., assignor.)	812,198	Feb. 13	1388	201-2	120	1842
Gessert, Jacob, Buffalo, N. Y. Bit-brace	810,638	Jan. 23	4156	859	120	1029
Gessner, David, Worcester, Mass. Cloth-pressing machine						
Gex, Michael. (See Chevan and Gex.)						
Geyerman, Peter T., Brewster, Minn. Telephone-call	811,052	Jan. 30	4962	1036	120	1239
Gharky, William D., Philadelphia, Pa. Telephone transmitter-arm	812,125	Feb. 6	1178	258	120	1729
Gianera, Peter A., Gualala, Cal. Saw-set	811,392	Jan. 30	5628	1178	120	1382
Gibbons, Robert P., Kopa, New Zealand. Compound steam-engine	812,199	Feb. 13	1391	302	120	1842
Gibbs, David, Livonia, N. Y. Crate	810,272	Jan. 16	3372	698	120	819
Gibson, Arthur H., Easton Pa., assignor to Ingersoll-Sergeant Drill Company, New York N. Y. Rock-drill	810,639	Jan. 23	4159	859	120	1029
Gibson, William D. (See Thompson, Hamlin T., assignor.)						
Giddings, Frank D., Fort Collins, Colo. Water head-gate	811,212	Jan. 30	5292	1107	120	1309
Gieseler, Arthur, Dayton, Ohio. Turbine-water-wheel construction	814,002	Feb. 27	4950	1085	120	2705
Gifford, Dexter N., and J. Hall, Brooklyn, N. Y. Apparatus for aerating, purifying, and cooling milk	811,053	Jan. 30	4965	1036	120	1239
Gifford, William, assignor of one-half to E. M. Dixon, Thompsonville, Mich. Lightning-arrester	812,126	Feb. 6	1179	258	120	1729
Gihon, George H., San Francisco, Cal. Printing apparatus	810,743	Jan. 23	4332	900-2	120	1088
Gilbert, Frank B., Minneapolis, Minn. Telephone memorandum attachment	812,841	Feb. 20	2645	579	120	2150
Gilbert, George T., Northampton, assignor of one-third to W. D. Hamilton, Springfield, Mass. Automatic prick-punch	813,641	Feb. 27	4242	932	120	2558
Gilbert, Pearl, Newport, R. I. Soldering-iron	813,374	Feb. 20	3703	814	120	2379
Gilbert, William F., Derby, assignor of one-half to H. C. Cook Co., Ansonia, Conn. Pocket finger-nail cleaner	810,744	Jan. 23	4337	902	120	1089
Gilbough, Benjamin G., Chicago, Ill. Spur	810,049	Jan. 16	2918	607	120	726
Gilliard, Christopher G., Swansea, Mass. Low-water alarm for steam-boilers	811,213	Jan. 30	5293	1107	120	1309
Gilliard, Christopher G., Swansea, Mass. Low-water alarm for steam-boilers	811,214	Jan. 30	5296	1108	120	1309
Gilpin, Adolph C., Passaic, assignor to New York Automatic Telephone Company, Paterson, N. J. Telephone-switch-plug mechanism	812,491	Feb. 13	1964	431	120	1964
Gill, Charles H., Litchfield, Ill. Semaphore-signal attachment	809,678	Jan. 9	2180	449	120	509
Gill, Charles H., assignor, by mesne assignments, of one-half to C. H. Rickard, Kalamazoo, Mich. Carriage-top	810,932	Jan. 30	4742	989	120	1190
Gill, Edwin R., Yonkers, N. Y. Support for incandescent lamps	811,837	Feb. 6	565	125	120	1606
Gill, John. (See Mackenzie and Ross, assignors.)						
Gill, Samuel E. (See Stewart, Francis L., assignor.)						
Gilland, Homer E. and W. H., Saginaw, Mich. Rolling window-screen	813,642	Feb. 27	4244	932	120	2558
Gilland, William H. (See Gilland, Homer E. and W. H.)						
Gillchrist, Edward A., McKeesport, Pa. Cross-tie and means for holding track-rails thereon	813,205	Feb 20	3261	720	120	2207
Gillenwaters, Grant F., East Sacramento, Cal. Poultry-fountain	811,914	Feb. 6	733	160	120	1640
Giller, Hugo, New York, N. Y. Coin-controlled clock and money-box	812,200	Feb. 13	1393	302-3	120	1843
Gillespie, Charles C., Chicago, Ill. Chemical fire-pail	812,646	Feb. 13	2271	494	120	2026
Gillespie, Robert T., Lisbon, Ohio. Reservoir-pen	812,647	Feb. 13	2272	495	120	2027
Gillett, Vernor J., Detroit, Mich. Mattress-holder for folding beds	809,049	Jan. 2	843	179	120	186
Gillette Safety Razor Company. (See Nickerson, William E., assignor.)						
Gillinder & Sons. (See Booth, Kraft, assignor.)						
Gillmore, John L. (See Stanley and Gillmore.)						
Gilloon, Thomas. (See Morgans and Gilloon.)						
Gilman, George H., St. Paul, Minn. Lifting-jack	810,482	Jan. 23	3845	790	120	961
Gilmer, George C., assignor, by mesne assignments, to American Turpentine and Tar Company, Limited, New Orleans, La. Refining turpentine	813,088	Feb. 20	3128	685	120	2258
Gilpin, Charles D., assignor to Electric Controller & Supply Company, Cleveland, Ohio. System of control for electric motors	813,879	Feb. 27	4710	1042-3	120	2656
Gilson, Lewis, Colorado Springs, Colo. Railway	813,416	Feb. 27	3795	833	120	2457
Gipp, Emanuel C., Chicago, Ill. Extensible chain	811,054	Jan. 30	4966	1037	120	1240
Girardot, Léonce, Futeaux, France. Mounting and automatically adjusting the lamps of motor road-vehicles	812,201	Feb. 13	1395	303	120	1843
Girard, Emile, Paris, France. Overhead line	812,861	Feb. 13	2114	463	120	1997
Gladish, Theodore, Petersburg, Ind. Corn harvester and husker	812,736	Feb. 13	2436	534-5	120	2080
Glass, Perley R., Quincy, assignor to Peerless Machinery Company, Boston, Mass. Machine for inserting lacing-studs	811,838	Feb. 6	567	125	120	1606
Glass, Perley R., Quincy, assignor to Peerless Machinery Company, Boston, Mass. Machine for setting lacing hooks or studs	811,839	Feb. 6	571	125-6	120	1606
Glass, Perley R., Quincy, assignor to Peerless Machinery Company, Boston, Mass. Hook-setting machine	811,840	Feb. 6	580	127	120	1606
Glass, Perley R., Quincy, assignor to Peerless Machinery Company, Boston, Mass. Hook-setting machine	811,841	Feb. 6	582	127	120	1606
Glatfelter, Emerson C., New Philadelphia, Ohio. Machine for forming concrete blocks	812,236	Feb. 13	1664	365	120	1904
Glenny, John J., assignor to Edward E. Rieck Company, Pittsburg, Pa. Ice-cream mould	813,375	Feb. 20	3705	814	120	2379
Gleason, Charles A. (See Robbs, Harry B., assignor.)						
Gleason, John L., Boston, Mass. Universal molding-box	811,773	Feb. 6	443	96	120	1563
Gleason, Albert, assignor of one-half to S. O. Kloss, Scranton, Iowa. Tile-molding machine	809,940	Jan. 16	2661	549-50	120	670
Gley, Richard, assignor to Action Gesellschaft für Anilin Fabrikation, Berlin, Germany. Oxyazine-rubber dye and making same	812,642	Feb. 27	4245		120	2422
Glidden, Frederick A., Cleveland, Ohio. Vacuum for skipping vessels	810,488	Jan. 23	3847	790	120	961
Globe Optical Company. (See Slade and Bower, assignors.)						
Gluck, Eugene F. (See Thomas, Avis, assignor.)						
Glückler, Gottlieb, Stuttgart, Germany. Water-conductor	809,941	Jan. 16	2665	550	120	671

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drfg.	Official Gazette. Vol.	Official Gazette. Page.
Glover, Charles, assignor to Corbin Screw Corporation, New Britain, Conn. Bearing	811,630	Feb. 6	198	42	120	1526
Glunt, Samuel P., Union City, Ind. Separating buckhorn and plantain seed from clover and alfalfa seed	813,495	Feb. 27	3959	868	120	2496
Gluyas, Charles, Johannesburg, Transvaal. Apparatus for treating slimes, &c., for the recovery of the precious metals	812,418	Feb. 13	1823	399–400	120	1937
Goddard, Lewis W. (See Strauhs, Francis M., assignor.)						
Goeb, Rudolph W., assignor to United States Fiber Stopper Company, St. Louis, Mo. Measuring-valve mechanism	809,439	Jan. 9	1693	348	120	405
Goepfert, Martin J. (See Fischer, Jens J. O., assignor.)						
Goerts & Co., Aug. (See Eigen, Benno vom, assignor.)						
Goff, Frank C., Denver, Colo. Device for circulating steam, &c	809,253	Jan. 2	1286	262–3	120	283
Golden, Edward B., Galt, assignor to A. F. Hatch, Toronto, Canada. Combined brush and mop holder	813,550	Feb. 27	4067	891	120	2520
Golden, George W., Detroit, Mich. Grinder	809,264	Jan. 2	1290	263	120	284
Golden, John P., Columbus, Ga. Feed-box for cane-mills	809,440	Jan. 9	1696	348	120	406
Golden, John P., Columbus, Ga. Evaporating-pan	813,089	Feb. 20	3131	686	120	2258
Goldman, Gustav, Baltimore, Md. Fabric containing haircloth	810,933	Jan. 30	4744	989	120	1190
Goldman, Gustav, Baltimore, Md. Making fabric containing haircloth	810,934	Jan. 30	4746		120	1190
Goldmann, Carl, assignor of one-half to E. Kehr, New York, N. Y. Box-opener	810,935	Jan. 30	4747	990	120	1191
Goldschmid, Jacob E. (See Fleischer, Emil, assignor.)	809,050	Jan. 2	845	179	120	187
Goldsmith, Maurice, New York, N. Y. Bag-handle	811,215	Jan. 30	5299	1108	120	1310
Golombek, Sigmund, New York, N. Y. Clock-movement	813,644	Feb. 27	4246	933–4	120	2558
Goltstein, Ewald, Cologne, Germany. Bottle-sealing mechanism	808,833	Jan. 2	411	90–1	120	91
Goltstein, Ewald, Cologne, Germany. Apparatus for closing bottles by means of metal capsules	812,648	Feb. 13	2275	495	120	2027
Gomborow, Joel, Lynn, Mass., assignor to General Electric Company. System of distant electrical control	811,773	Feb. 6	446	97	120	1583
Gooch, Shadrack W., Bridgeport, Ohio, and W. C. Leasure, Wheeling, W. Va. Hose-coupling	813,792	Feb. 27	4525	999	120	2617
Good, Alvah W., Zanesville, Ohio. Hat and coat rack	811,711	Feb. 6	336	74	120	1561
Good, Ezra E., Waterloo, Iowa, assignor to Sanitary Cow Milking Company, Minneapolis, Minn. Milking apparatus	812,842	Feb. 20	2646	579	120	2150
Good, John, New York, N. Y., assignor to John Good Cordage Co. Tension device	811,141	Jan. 30	5145	1075	120	1276
Goode, Curtis B., Boston, Mass. Power-brake mechanism	812,989	Feb. 20	2934	646–7	120	2214
Goodknight, Alva L., Council Bluffs, Iowa. Air-brake mechanism	813,090	Feb. 20	3131	686	120	2258
Goodman, Bradford L. (See Goodman, Oliver G. and B. L.)						
Goodman, Oliver G. and B. L., Birmingham, England. Collar-supporter	812,127	Feb. 6	1181	259	120	1730
Goodrich, Clarence L., assignor to Pratt & Whitney Company, Hartford, Conn. Tool-holder	808,981	Jan. 2	721	156	120	159
Goodrum, Charles L., Rochester, N. Y. Relay	808,534	Jan. 2	412	91	120	91
Goodsell, Harry H., Indiana Harbor, Ind. Treating metals	813,208	Feb. 20	3363	730	120	2308
Goodson, Lydia A., Elgin, and W. A. Nason, Algonquin, Ill. Invalid-bed	809,051	Jan. 2	846	180	120	187
Goodspeed, Arthur B., East Orange, N. J., assignor to Industrial Development Company, New York, N. Y. Carbureter and igniter for hydrocarbon-engines	808,915	Jan. 2	583	129	120	126
Goodwin, Charles, East Providence, R. I. Eyeglass-guard	809,268	Jan. 9	1530	311	120	371
Goodyear, Nelson, Flushing, N. Y., assignor to J. B. Colt Company. Gas-generator	808,650	Jan. 2	59	12–13	120	15
Goodyear, William E., Boston, Mass. Buttonhole-stitching machine	809,052	Jan. 2	849	180	120	188
Gordon, Albert A., Jr., Worcester, Mass., assignor to Crompton & Knowles Loom Works. Brake mechanism of looms	810,113	Jan. 16	3029	630	120	752
Gordon, Albert A., Jr., Worcester, Mass., assignor to Crompton & Knowles Loom Works. Loom for making pile fabrics	811,842	Feb. 6	586	128	120	1606
Gordon, Alexander, Weiser, Idaho. Manufacture of sand-lime bricks	809,063	Jan. 2	852	181	120	186
Gordon, Charles, Milwaukee, Wis. Drill-chuck	809,296	Jan. 9	1378	280	120	339
Gordon, Robert J., Detroit, Mich. Rivet-holder	808,535	Jan. 2	415	91	120	92
Gordon, Walter T., Juniper, Oreg. Draper	808,916	Jan. 2	585	129	120	126
Gordon, William F. (See Bartlett and Gordon.)						
Gordon, William W., Washington, D. C. Car-coupling	809,255	Jan. 2	1292	263	120	284
Gorman, James P., Jr., New York, N. Y. Electric-traction system	813,287	Feb. 20	3522	776	120	2341
Gormley, James R., Chicago, J. Gormley and P. Conley, Rockford, Ill. Smoke-consumer	808,917	Jan. 2	586	129	120	126
Gormley, John. (See Gormley and Conley.)						
Gormley, William, Chicago, Ill. Pipe-wrench	813,645	Feb. 27	4251	934	120	2559
Goss, George F., Wallaceton, Pa., and J. E. Parker, Washington, D. C.; said Parker assignor to said Goss. Game-register	813,551	Feb. 27	4068	892–3	120	2521
Goss Printing Press Company. (See Goss, Samuel G., assignor.)						
Goss, Samuel G., assignor to Goss Printing Press Company, Chicago, Ill. Delivery apparatus for printing-presses	812,923	Feb. 20	2795	615–16	120	2184
Goss, Samuel G., assignor to Goss Printing Press Company, Chicago, Ill. Stereotyping apparatus	812,924	Feb. 20	2801	616–17	120	2186
Gossett, William, Falls City, Nebr. Wheelbarrow	811,285	Jan. 30	5440	1134	120	1241
Gottlieb, Edward O. (See Zaczek and Gottlieb.)	812,990	Feb. 20	2936	647	120	2215
Gould Coupler Company. (See Richards, Willard F., assignor.)						
Gould Storage Battery Company. (See Richards, Willard F., assignor.)						
Gouldsberry, Joseph H., Teutonia, W. Va. Cylinder-boring machine	810,114	Jan. 16	3032	631	120	752
Gourdin, John K., Pineville, assignor of one-half to R. L. Montague and R. P. Tucker, Charleston, S. C. Axle-bearing	813,880	Feb. 27	4714	1043	120	2659
Gourdin, John K., Pineville, assignor of one-half to R. L. Montague and R. P. Tucker, Charleston, S. C. Fertilizer-distributer	813,881	Feb. 27	4715	1043	120	2659
Graaff & Company Gesellschaft mit beschränkter Haftung, W. (See Mikorey, Hans, assignor.)						
Graban, Hans E., New York, N. Y. Hammer for beating leaf metal	814,003	Feb. 27	4951	1095	120	2705
Grabscheid, Gustav, assignor to Phoenix Elektrotechnische Gesellschaft M. B. H., Berlin, Germany. Electric hand-cutting apparatus	809,796	Jan. 9	2381	492	120	556
Grace, John F., assignor to Henry L. Worthington, New York, N. Y. Condenser	809,679	Jan. 9	2171	449	120	509
Graefe, Adolph, Brooklyn, N. Y. Adjustable stand for flower-pots	811,712	Feb. 6	337	74	120	1561
Grahstrom, Dorothy B., administratrix. (See Grahstrom, Edward.)						
Grahstrom, Edward, deceased, Topeka, Kans.; D. B. Grahstrom, administratrix. Car-coupling device	808,651	Jan. 2	64	14	120	16
Grant, Caswell F., St. Louis, Mo. Railway-rail	811,055	Jan. 30	4966	1057	120	1240
Grant, Andrew W., assignor of one-half to L. E. Mallory, Bradford, Pa. Pipe-coupling	811,631	Feb. 6	199	42–3	120	1528
Grant, Andrew W., assignor of one-half to L. E. Mallory, Bradford, Pa. Pipe-coupling	811,632	Feb. 6	201	43	120	1530
Grant, David F., and F. A. Fox, Stamford, assignors, by mesne assignments, to Eisenhuth Horseless Vehicle Company, Middletown, Conn. Combined sparker and governor for gas-engines	809,889	Jan. 9	1921	399	120	455

Alphabetical list of patentees for January and February—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drfg.	Official Gazette. Vol.	Official Gazette. Page.
Graham, David F., and F. A. Fox, Stamford, assignors, by mesne assignments, to Eisenhuth Horseless Vehicle Company, Middletown, Conn. Valve-controlling mechanism for explosive-engines	813,043	Feb. 20	3036	668	120	2236
Graham, John. (See Friedman and Graham.)						
Graham, William S., assignor to Parlin & Orendorff Company, Canton, Ill. Planter	812,925	Feb. 20	2804	617–18	120	2186
Grant, Charles W. (See Leaning, Elklor, and Grant.)						
Grant, Jordan W., Portsmouth, Va. Pop safety-valve	810,201	Jan. 16	3213	665	120	785
Grant, Thomas, assignor of one-half to Michigan Buggy Company, Kalamazoo, Mich. Shifting thill	812,843	Feb. 20	2648	579	120	2151
Grasser, Augusta, *et al.* (See Grasser, William H., assignor.)						
Grasser, Jasper P., *et al.* (See Grasser, William H., assignor.)						
Grasser, William H., Leland, assignor of two-thirds to A. and J. P. Grasser, Orofino, Idaho. Fly-trap	812,169	Feb. 6	1300	264	120	1754
Grattan, John W., Watertown, N. Y. Top	808,918	Jan. 2	587	129	120	129
Grau, Bernhard, Kratzwieck, near Stettin, Germany. Production of cement	813,965	Feb. 27	4574		120	2691
Graves, George W., assignor to D. D. Frisbee, Detroit, Mich. Apparatus for heating tires	810,538	Jan. 23	3943	811	120	982
Graves, John, Milwaukee, Wis. Loose-leaf-ledger binder	811,286	Jan. 30	5443	1135	120	1242
Gray, Alonso L., Vanderbilt, Pa. Mailing-tube	811,556	Feb. 6	35	8	120	1492
Gray, Frank, Muskegon, Mich. Reversible propeller	811,287	Jan. 30	5445	1135	120	1242
Gray, Horace A. (See Wibel, Cunningham, and Gray.)						
Gray, John M., Port Carbon, Pa. Ice-creeper	810,484	Jan. 23	3848	790	120	961
Gray National Telautograph Company. (See Tiffany, George S., assignor.)						
Gray Telephone Pay Station Company. (See Long, George A., assignor.)						
Gray, William, assignor of one-half to J. C. Robertson, Springfield, Mass. Float-valve	812,337	Feb. 13	1666	366	120	1905
Green, Alexandre M., New York, N. Y. Shoulder-form	810,332	Jan. 16	3491	721	120	844
Green, Alexandre M., New York, N. Y. Shoulder and sleeve form	810,333	Jan. 16	3492	722	120	844
Great American Automatic Vending Machine Company. (See Dole, Frederick J., assignor.)						
Great American Automatic Vending Machine Company. (See Wyatt, Albert E., assignor.)						
Green, Andrew L., Lake City, Fla. Bottle-seal	810,334	Jan. 16	3493	722	120	845
Green, George F., Basette, assignor of one-half to E. S. Jones, Kerens, Tex. Cooking-stove attachment	811,056	Jan. 30	4969	1037	120	1240
Green, James J., Bremen, Ga. Cultivator	809,942	Jan. 16	2666	550	120	672
Green, Stanley K., Baltimore, Md. Apparatus for detaching the heads from the bodies of sheet-metal cans	809,108	Jan. 2	977	202	120	216
Green, Stanley K., Baltimore, Md. Treating oxidized tinned sheets or surfaces	813,147	Feb. 20	3264		120	2287
Green, Willard R., Muscatine, Iowa. Absorbent bandage and material therefor	810,115	Jan. 16	3034	631	120	753
Green, Willard R., Muscatine, Iowa. Absorbent material	810,136	Jan. 16	3079	636	120	759
Green, Willard R., Muscatine, Iowa. Absorbent material	810,137	Jan. 16	3082	637	120	759
Green, Willard R., Muscatine, Iowa. Absorbent material	810,138	Jan. 16	3084	637	120	760
Green, Willard R., Muscatine, Iowa. Absorbent material and fiber-stock therefor	810,139	Jan. 16	3086	637	120	760
Green, Willard R., Muscatine, Iowa. Absorbent bandage	810,371	Jan. 16	3577	736	120	865
Green, Willard R., Muscatine, Iowa, assignor to American Absorbent Fiber Company, Portland, Me. Absorbent bandage	810,116	Jan. 16	3037	631	120	753
Green, Willard R., Muscatine, Iowa, assignor to American Absorbent Fiber Company, Portland, Me. Absorbent bandage	810,117	Jan. 16	3038	632	120	753
Green, Willard R., Muscatine, Iowa, assignor to American Absorbent Fiber Company, Portland, Me. Absorbent bandage	810,118	Jan. 16	3040	632	120	754
Green, Willard R., Muscatine, Iowa, assignor to American Absorbent Fiber Company, Portland, Me. Absorbent bandage	810,119	Jan. 16	3042	632	120	754
Green, Willard R., Muscatine, Iowa, assignor to American Absorbent Fiber Company, Portland, Me. Absorbent bandage	810,120	Jan. 16	3044	632	120	754
Green, Willard R., Muscatine, Iowa, assignor to American Absorbent Fiber Company, Portland, Me. Absorbent bandage	810,121	Jan. 16	3047	633	120	754
Green, Willard R., Muscatine, Iowa, assignor to American Absorbent Fiber Company, Portland, Me. Absorbent bandage	810,122	Jan. 16	3049	633	120	754
Green, Willard R., Muscatine, Iowa, assignor to American Absorbent Fiber Company, Portland, Me. Absorbent bandage	810,123	Jan. 16	3051	633	120	755
Green, Willard R., Muscatine, Iowa, assignor to American Absorbent Fiber Company, Portland, Me. Absorbent bandage	810,124	Jan. 16	3053	633	120	755
Green, Willard R., Muscatine, Iowa, assignor to American Absorbent Fiber Company, Portland, Me. Absorbent bandage	810,125	Jan. 16	3055	634	120	755
Green, Willard R., Muscatine, Iowa, assignor to American Absorbent Fiber Company, Portland, Me. Absorbent bandage	810,126	Jan. 16	3058	634	120	756
Green, Willard R., Muscatine, Iowa, assignor to American Absorbent Fiber Company, Portland, Me. Absorbent bandage	810,127	Jan. 16	3060	634	120	756
Green, Willard R., Muscatine, Iowa, assignor to American Absorbent Fiber Company, Portland, Me. Absorbent bandage	810,128	Jan. 16	3062	634	120	756
Green, Willard R., Muscatine, Iowa, assignor to American Absorbent Fiber Company, Portland, Me. Absorbent bandage	810,129	Jan. 16	3065	635	120	757
Green, Willard R., Muscatine, Iowa, assignor to American Absorbent Fiber Company, Portland, Me. Absorbent bandage	810,130	Jan. 16	3068	635	120	757
Green, Willard R., Muscatine, Iowa, assignor to American Absorbent Fiber Company, Portland, Me. Absorbent bandage	810,131	Jan. 16	3069	635	120	757
Green, Willard R., Muscatine, Iowa, assignor to American Absorbent Fiber Company, Portland, Me. Absorbent bandage	810,132	Jan. 16	3072	635	120	758
Green, Willard R., Muscatine, Iowa, assignor to American Absorbent Fiber Company, Portland, Me. Absorbent bandage	810,133	Jan. 16	3074	636	120	758
Green, Willard R., Muscatine, Iowa, assignor to American Absorbent Fiber Company, Portland, Me. Absorbent bandage	810,134	Jan. 16	3076	636	120	759
Green, Willard R., Muscatine, Iowa, assignor to American Absorbent Fiber Company, Portland, Me. Absorbent bandage	810,135	Jan. 16	3078	636	120	759
Green, William W., Newcreek, W. Va. King-bolt coupling	811,406	Jan. 30	5806	1216	120	1417
Greenaway Company. (See Marsh, Elon A., assignor.)						
Greene, George F., Detroit, Mich. Concrete or cement post or analogous structure	810,060	Jan. 16	2919	608	120	726
Greene, Glenn G., Warren, Pa. Hame-fastener	812,640	Feb. 13	2277	466	120	2032
Greene, Harry S., Woonsocket, R. I. Napping-machine	810,273	Jan. 16	3374	688	120	819
Greene, James G. (See Knupp and Greene.)						
Greene, William H., Prophetstown, Ill. Automatic device for photographic purposes	809,269	Jan. 9	1551	311	120	371
Greener, Charles T., Fazikton, S. D. Brush holder and scraper	810,640	Jan. 23	4189	889	120	1089
Greenfield, Edwin T., Monticello, N. Y. Mechanism for constructing flexible metal tubes and armoring flexible hose or other tubes	809,561	Jan. 9	1923	399–400	120	456
Greenky, Louis, New York, N. Y. Support for hoisting devices	810,274	Jan. 16	3374	688	120	820
Greenlaw, Warren A., Boston, assignor of one-half to W. W. Blair, Newton, Mass. Flexible joint for pipes	812,932	Feb. 13	1988	398	120	1943

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Drg.	Official Gazette. Vol.	Page.
Greenthaler, Frank, Guttenberg, N. J. Tar-lined leader and pipe	811,268	Jan. 30	5448	1135	120	1343
Greenwood, Ernest. (See Kip and Greenwood.)						
Greenwood, Jasper L., Hoboken, N. J. Latch	813,376	Feb. 20	3707	815	120	2379
Gregory, Charles W., Jr., Bristol, England. Compressible packing for wood-block road-paving	810,529	Jan. 23	3945	812	120	983
Gregory, Walter. (See Lafever and Gregory.)						
Gregory, Walter, trustee. (See Richardson, John S., assignor.)						
Grey, George. (See Heap and Grey.)						
Grey, James M., Burnley, England. Weft-replenishing mechanism for looms	810,406	Jan. 23	3891	759–61	120	924
Grey, Sylvester P., assignor to Machinery Exchange, Indianapolis, Ind. Furnace	811,557	Feb. 6	36	8–9	120	1492
Gridley, Albert T. (See Rudel, William F., assignor.)						
Griffin, Alvah M., assignor to New Process Steel & Wire Company, East St. Louis, Ill. Bale-tie machine	809,943	Jan. 16	2668	551–2	120	672
Griffin, Tobias C. (See Hatfield, Wallace O., assignor.)						
Griffin, William C., Verdigris, Nebr. Threader and cutter	811,774	Feb. 6	448	97	120	1583
Griffith, Horace S., Glen Riddle, Pa. Terry-loom	812,788	Feb. 13	2531	556	120	2081
Griffith, Lawrence, Yonkers, N. Y. Electric switch and signal apparatus	813,882	Feb. 27	4718	1044	120	2659
Griffith, Samuel N., Chicago, Ill. Railway-tie	812,991	Feb. 20	2937	647	120	2215
Griffith, William H., Worthington, Ind. Lifting-jack	812,128	Feb. 6	1182	259	120	1730
Griffiths, William U., Philadelphia, Pa. Flushing apparatus for outdoor water-closets	810,936	Jan. 30	4755	990	120	1192
Griffiths, William U., Philadelphia, Pa. Flushing apparatus for water-closets	812,992	Feb. 20	2938	647	120	2215
Grill, John, Jr., Franklin township, Summit county, Ohio. Fodder-binder	813,646	Feb. 27	4252	934	120	2559
Grillier, Georges, assignor to Automobile Importing Company, Chicago, Ill. Antivibration device for vehicles	809,501	Jan. 9	1815	374	120	433
Grimm, William. (See Elwell and Grimm.)						
Griswold, George W., Manomet, assignor to Standard Game and Toy Company, Taunton, Mass. Croquet apparatus	810,853	Jan. 23	4542	946	120	1114
Groff, John W., Albion, Mich. Ship's davit	810,854	Jan. 23	4543	946	120	1114
Grogan, Archibald, London, assignor to L. H. Webber, Onslow Gardens, England. Artificial hand	809,797	Jan. 9	2383	492–3	120	556
Gronau, William F. (See Reynolds and Gronau.)						
Gröndal, Gustaf, Djursholm, Sweden. Apparatus for magnetic separation of iron ore	812,170	Feb. 6	1301	284	120	1754
Gröndal, Gustaf, Djursholm, Sweden. Magnetic ore-separator	812,171	Feb. 6	1303	285	120	1755
Gröndal, Gustaf, Djursholm, Sweden. Magnetic separation of iron ore	812,172	Feb. 6	1304	285	120	1755
Gröndal, Gustaf, Djursholm, Sweden. Magnetic ore-separator	812,173	Feb. 6	1306	285	120	1755
Gröndal, Gustaf, Djursholm, Sweden. Manufacturing iron sponge	812,174	Feb. 6	1307	285–6	120	1756
Gronde, Louis J., Chicago, Ill. Invalid-bedstead	811,713	Feb. 6	340	74	120	1561
Grönwald, Andreas, New Haven, assignor of one-half to C. A. Bradley, Woodbridge, Conn. Boiler-flue cleaner	808,982	Jan. 2	723	156	120	160
Gronwald, Hugo, Berlin, Germany. Pasteurizing beer	810,745	Jan. 23	4338	902	120	1099
Grose, Nuna, St. Louis, Mo. Abdominal supporter	810,407	Jan. 23	3895	761	120	925
Grover, Zenas T., South New Berlin, N. Y. Attachment for phonographs	811,633	Feb. 6	202	43	120	1529
Gruber, Joseph, Newark, N. J. Decorating device	811,393	Jan. 30	5630	1179	120	1382
Gruner, Robert, Louisville, Ky. Shaft and pole coupling for wagons	810,641	Jan. 23	4162	859	120	1030
Gruwell, Robert E. (See Wiebke and Gruwell.)						
Guchess, William T. S., assignor to Nichols and Shepard Company, Battlecreek, Mich. Changeable-speed gear for feeder-aprons	810,642	Jan. 23	4163	860	120	1030
Guderian, Hugo, Good Thunder, Minn. Feeder for clover-hullers	810,937	Jan. 30	4757	990–1	120	1193
Guedel, John, Indianapolis, Ind. Saw	810,530	Jan. 23	3946	812	120	983
Guice, Benjamin J. H., Grapeland, Tex. Garden rake and cultivator	813,377	Feb. 20	3708	815	120	2380
Guilleaume, Rudolf, Mülheim-on-the-Rhine, assignor to Maschinen und Dampfkesselfabrik "Guilleaume Werke" Gesellschaft mit Beschränkter Haftung, Neustadt-on-the-Hardt, Germany. Saddle tree or frame	809,370	Jan. 9	1534	311	120	372
Guillott, James W., Chicago, Ill. Machine for making gaskets	809,256	Jan 2	1294	263–4	120	285
Guindollet, Pierre, St. Amand, France. Fastening for horse-collars	811,714	Feb. 6	341	75	120	1562
Guinsburg, Victor, New York, N. Y. Hose-supporter	813,793	Feb. 27	4526	1060	120	2617
Gumpp, Frederick, Massillon, Ohio. Combination-gage	809,562	Jan. 9	1926	400	120	456
Gundersen, Otto C. N., Spokane, Wash. Tramway-switch	813,091	Feb. 20	3136	687	120	2259
Gunderson, Adolph T., Dunbar, Iowa. Milk pail and strainer	810,408	Jan. 23	3896	761	120	925
Gunn, John A., Des Moines, and J. J. McBride, Laporte, Iowa; said McBride assignor to said Gunn. Method of and apparatus for stacking straw	810,485	Jan. 23	3849	791	120	961
Guyon, John L., Maud, Pa. Shutter-bower	812,036	Feb. 6	1018	222	120	1696
H. Mueller Manufacturing Company. (See Mueller, Philip, assignor.)						
H. A. Tuttle Manufacturing Company. (See Tuttle, Henry A., assignor.)						
H. C. Cook Co. (See Gilbert, William F., assignor.)						
H. D. Smith & Company. (See Ward, William S., assignor.)						
H. F. Brammer Manufacturing Company. (See Paarmann, Hans J., assignor.)						
Haak, Harry C. (See Cramer and Haak.)						
Haake, August F. J. S. and H. A. R. A., Hamburg, Germany. Preparing soluble starch	813,647	Feb. 27	4253	.....	120	2559
Haake, Heinrich A. R. A. (See Haake, August F. J. S. and H. A. R. A.)						
Haan, Paul C., New Brunswick, assignor to J. D. Pickard, East Orange, N. J. Apparatus for carbonating liquids	813,883	Feb. 27	4720	1044	120	2660
Haas, Jackson O., Pottsville, Pa. Steering-knuckle for vehicles	810,372	Jan. 16	3578	736	120	865
Haas, Martin, Kalamazoo township, Kalamazoo county, Mich. Building block or wall	811,634	Feb. 6	204	43	120	1530
Haas, Morris, *et al.* (See Swallow, Fredric, assignor.)						
Haase, Paul, Pösneck, Germany. Dusting-machine for candy	809,182	Jan. 2	1100	229	120	242
Habegger, Gustave, Berkeley, Cal. Valve	811,497	Jan. 30	5808	1216	120	1418
Hacking, William H., Bury, England. Cloth-folding machine	813,552	Feb. 27	4076	893	120	2622
Hackmann, John C., and W. H. Palmer, St. Paul, Minn. Note-book	808,662	Jan. 2	66	14	120	17
Hackworth, Thomas R., South Pittsburg, Tenn. Hay-press	810,275	Jan. 16	3375	699	120	820
Hadfield, George O., Fall River, Mass. Machine for spinning and twisting fibrous materials	813,884	Feb. 27	4721	1044	120	2660
Hadfield, Robert A., Sheffield, England. Hardening steel	810,531	Jan. 23	3947	.....	120	983
Hadfield, Robert A., and A. G. M. Jack, Sheffield, England. Gun-shield	811,715	Feb. 6	342	75	120	1562
Hadley, Benjamin, and B. Moylan, Elmira, N. Y. Check-valve for water-gages	810,746	Jan. 23	4340	902	120	1070
Hasberis, Frederick S. (See Roberts, Heber, assignor.)						
Hagaman, Louis, East Rutherford, N. J., assignor to Fuchs & Lang Manufacturing Co., New York, N. Y. Browning-machine	812,562	Feb. 13	2114	483	120	1997
Hagaka, Charles M., South Bend, Ind. Axle-truss	809,297	Jan. 9	1380	280	120	339
Hahly, Alfred C., Brooklyn, N. Y. File or holder for papers and leaves	812,419	Feb. 13	1826	400	120	1937
Hagan, Barret C., assignor of one-half to C. M. Hagan, West Monterey, Pa. Tempering-screw	813,378	Feb. 20	3710	815	120	2380
Hagan, C. M. (See Hagan, Barret C., assignor.)						
Hagans, Christian, Erfurt, Germany. Locomotive	813,379	Feb. 20	3711	815–16	120	2380
Hagenbach, John, assignor to Aniline Colour and Extract Works, formerly John R. Geigy, Basle, Switzerland. Red azo dye and making same	808,919	Jan. 2	586	.....	120	129

Alphabetical list of patentees for January and February—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Drg.	Official Gazette. Vol.	Page.
Hager, Andrew, San Francisco, Cal. Rotary engine	809,054	Jan. 2	853	181	120	189
Hager, Daniel S., Toledo, Ohio. Pneumatic-tube cash-carrier	811,915	Feb. 6	734	160	120	1640
Hager, Harry, Chicago, Ill. Coffee-cooler	810,140	Jan. 16	3068	637	120	760
Hagerstrom, John A., New York, N. Y. Type-writing machine	810,202	Jan. 16	3214	666	120	785
Hahn, George W., Mansfield, Ill. Horse-collar	809,298	Jan. 9	1381	280	120	339
Haines, William B., Sunbury, Pa. Combined oil pump and measure	810,532	Jan. 23	3949	812	120	983
Hains, Peter C., Washington, D. C. Mixing concrete	808,636	Jan. 2	416	91–2	120	92
Halbert, Xavier C., Charenton, La. Paper-bag rack	811,142	Jan. 30	5146	1075–6	120	1276
Hale, Ashley G., administrator. (See Hale, Nelson T.)						
Hale, Frank A., Chicago, Ill. Standard for desk-calendars	813,553	Feb. 27	4079	894	120	2522
Hale, Henry S., Philadelphia, Pa., assignor to Hale and Kilburn Manufacturing Company. Seat-cushion	811,289	Jan. 30	5448	1135	120	1343
Hale and Kilburn Manufacturing Company. (See Hale, Henry S., assignor.)						
Hale, Nelson T., deceased, Baldwinsville, Mass.; A. H. Hale, administrator. Game-board	809,502	Jan. 9	1816	374	120	434
Hall, Bicknell, assignor to Huber-Hodgman Printing Press Company, Taunton, Mass. Ink-roller-driving mechanism for printing-presses	810,051	Jan. 16	2920	608	120	726
Hall, Charles C., Alexandria, Ind. Insulating material	811,778	Feb. 6	453	.....	120	1584
Hall, Edward L., New York, N. Y. Carrier for photographic plates	811,498	Jan. 30	5810	1216	120	1418
Hall, Elijah C., Braintree, Mass. Hinge	810,052	Jan. 16	2922	608	120	727
Hall, Frank B. (See Poole and Hall.)						
Hall, Frank B., and A. F. Poole, Wheeling, W. Va. Telephone party-line system	810,335	Jan. 16	3494	722	120	845
Hall, Fred E., Brookline, and A. MacLeod, Brighton, assignors to United States Vending Corporation, Boston, Mass. Coin-controlled vending-machine	810,747	Jan. 23	4341	903	120	1070
Hall, George. (See Carter, Hall, and Parsons.)						
Hall, J Everett, Erie, Pa. Valve mechanism for sterilizers	810,533	Jan. 23	3950	812–13	120	984
Hall, James. (See Clifford and Hall.)						
Hall, Joseph, Cheltenham, England. Making pipes of artificial stone	809,680	Jan. 9	2172	449–50	120	510
Hall, Samuel A., Christiana, Pa. Nut-lock	811,916	Feb. 6	735	161	120	1640
Hall Signal Company. (See Coleman, Clarence W., assignor.)						
Hall, William F., and W. Donaldson, Washington, D. C. Garment-hanger	808,553	Jan. 2	66	14	120	17
Hallander, Samuel, Vancouver, Canada. Boiler	812,844	Feb. 20	2649	579–80	120	2151
Haller, Carl, Chicago, Ill. Electric sign	811,057	Jan. 30	4970	1038	120	1240
Haller, Carl, Chicago, Ill. Electric sign	811,058	Jan. 30	4972	1038	120	1241
Haller, Carl, Chicago, Ill. Electric sign	811,059	Jan. 30	4974	1038	120	1241
Haller, Winfield A., New Orleans, La., and J. W. Billingsley, Tivoli, assignors to E. N. Sanderson, Brooklyn, H. H. Porter, Lawrence, F. Blossom, Brooklyn, and R. Talbot, Tuxedo, N. Y. Concrete building-block	810,748	Jan. 23	4345	903	120	1071
Haller, Winfield A., New Orleans, La., and J. W. Billingsley, Tivoli, assignors to E. N. Sanderson, Brooklyn, H. H. Porter, Lawrence, F. Blossom, Brooklyn, and R. Talbot, Tuxedo, N. Y. Manhole for conduits and the like	810,855	Jan. 23	4545	946	120	1114
Hallock, Arthur T., Canandaigua, N. Y. Show-case	810,857	Jan. 23	4549	947	120	1115
Hallock, Arthur T., Canandaigua, assignor, by mesne assignments, to C. B. Knox, Johnstown, N. Y. Coin-controlled apparatus	810,856	Jan. 23	4546	947	120	1115
Hallowell, Howard T., Davisgrove, Pa., assignor to Standard Pressed Steel Company. Pulley	811,290	Jan. 30	5450	1136	120	1343
Hallowell, Louis S., New York, N. Y., assignor of one-half to T. L. Ricart, Philadelphia, Pa. Telephone-holder	808,963	Jan. 2	724	156	120	160
Halsall, Robert E., and A. B. Campbell, Laurel, Miss. Book-support	810,141	Jan. 16	3069	638	120	760
Halsey, Don P., *et al.* (See Birmingham, John P., assignor.)						
Halsey, Samuel E., Everett, Wash. Type-cleaning device for type-writing machines	811,394	Jan. 30	5631	1179	120	1382
Halstead, Willard, assignor to Engelberg Huller Company, Syracuse, N. Y. Grinding-mill	812,737	Feb. 13	2440	535	120	2061
Halstein, Frank H., Wheaton, Ill. Washing-machine	811,291	Jan. 30	5451	1136	120	1344
Ham, Henry C., assignor to Rude Brothers, Liberty, Ind. Disk drill	810,858	Jan. 23	4551	947–8	120	1115
Ham, Simeon, assignor of one-half to A. H. Timmerman, Indianapolis, Ind. Cooling means for explosive-engine cylinders	810,643	Jan. 23	4165	860	120	1031
Hamann, Herman, Beavercreek, Minn. Traction-engine tender	811,060	Jan. 30	4975	1038–9	120	1242
Hambay, James T., New York, N. Y. Signaling apparatus	808,984	Jan. 2	727	157	120	161
Hamburger, Leon, *et al.* (See Darley, John W., Jr., assignor.)						
Hamburger, Philip, *et al.* (See Darley, John W., Jr., assignor.)						
Hamel, Louis C., Appleton, Wis. Sign	813,554	Feb. 27	4080	894	120	2523
Hamfeldt, George K., Munhall, and D. Cubbage, Swissvale, Pa. Apparatus for making artificial sand	812,660	Feb. 13	2278	496	120	2028
Hamilton, Kosotsako. (See Wilson, David M., assignor.)						
Hamilton, Thomas J., New York, N. Y. Wardrobe-trunk	810,203	Jan. 16	3216	666	120	785
Hamilton, Willis D. (See Gilbert, George T., assignor.)						
Hamm, John, Minneapolis, Minn. Flask for molding concrete blocks	810,053	Jan. 16	2923	609	120	727
Hammar, Sigard A. S. (See Meigs and Hammar.)						
Hammar, Sigard A. S., assignor to Bethlehem Steel Company, South Bethlehem, Pa. Sight for ordnance	810,644	Jan. 23	4166	860	120	1031
Hammer, Aleksander O. and G., Christiania, Norway. Net-making machine	809,611	Jan. 9	2035	422–3	120	479
Hammer, Gustav. (See Hammer, Aleksander O. and G.)						
Hammon, W. P. (See Peake and Henderson, assignors.)						
Hampden, Wellesley R., Kansas City, Mo., assignor to Fuel Saver Heating Company. Furnace	812,789	Feb. 13	2533	556	120	2081
Hampden, Wellesley R., Kansas City, Mo., assignor to Fuel Saver Heating Company. Steam-boiler furnace	813,380	Feb. 20	3712	816	120	2380
Hampton, Joseph, Sr., King's Hill, Wednesbury, England. Hacksawing-machine	810,749	Jan. 23	4346	903	120	1071
Hampy, William F., Bucklin, Kans. Machine for sharpening disks	811,716	Feb. 6	343	75	120	1562
Hancock, Thomas, Holyoke, Mass. Felt-regulating device for paper-machines	812,389	Feb. 20	3324	777	120	2343
Handlan, Alexander M., Jr., St. Louis, Mo. Signal-lamp	813,885	Feb. 27	4724	1044	120	2661
Hanagraaf, Peter A., Roseville, Ill. Family cook and frying pan	810,259	Jan. 23	4344	902	120	1118
Hanger, James B., Washington, D. C. Chair	809,944	Jan. 16	2674	552	120	673
Hanke, Wilhelm, Gowarzewo, near Schwersens, Germany. Safety device	810,936	Jan. 30	4760	991	120	1193
Hanken, Edward E., New Douglas, Ill. Gate	811,558	Feb. 6	37	9	120	1498
Hanks, Elmer E., Winthrop Harbor, Ill. Cigar-holder for billiard and pool tables	809,441	Jan. 9	1697	349	120	406
Hanley, Patrick J., Elizabeth, N. J. Shuttle holder and driver for sewing-machines	811,499	Jan. 30	5811	1216	120	1418
Hanlon, Leroy M., *et al.* (See Spies, Peter H. F., assignor.)						
Hannon, Joseph H., Nathan, Mich. Extension-bed	811,216	Jan. 30	5300	1108	120	1310
Hanover Gas Regenerating Co. (See McKnight, John W., assignor.)						
Hansberger, Henry, Millersport, Ohio. Wire-fence tool	812,285	Feb. 13	1833	334	120	1874
Hanscrough, Hubbard I., Hedgesville, Ky. Bridle	813,886	Feb. 27	4726	1045	120	2661
Hansel, Charles, Rochester, N. Y. Semaphore	811,292	Jan. 30	5452	1136	120	1344
Hansen, Hans K., Sioux City, Iowa. Vending-machine	809,563	Jan. 9	1923	400	120	457
Hansen, Hans T., Waswatosa, Wis. Motor-driven vehicle	812,286	Feb. 13	1833	367	120	1905
Hansen, Max, Berlin, Germany. Kinematographic camera	812,845	Feb. 20	2622	580	120	2152

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Hanson, Bengt M. W., assignor to Pratt & Whitney Company, Hartford, Conn. Tool-holder	809,257	Jan. 2	1296	264	120	286
Hanson, Bengt M. W., assignor to Pratt & Whitney Company, Hartford, Conn. Adjustable support for metal-working tools	813,381	Feb. 20	3714	816-17	120	2381
Hanson, John H., and J. J. Petraborg, Aitkin, Minn. Vehicle	812,037	Feb. 6	1019	222	120	1696
Hanson, Joseph, Inwood, Iowa. Lubricator	811,917	Feb. 6	736	161	120	1640
Hanson, Michael F., Philadelphia, Pa. Non-refillable bottle	811,217	Jan. 30	5301	1109	120	1310
Hanson, Ola. (See Andersen, Peder, assignor.)						
Hanson, Paul, St. Paul, Minn. Knotter mechanism for grain-binders	813,698	Feb. 27	4346	967-8	120	2579
Hanson, Peter E., Galveston, Tex. Motor-vehicle	813,044	Feb. 20	3038	669	120	2237
Hantgen, Frank H. J., *et al.* (See Mitchell, Ira G., assignor.)						
Happel, Jacob, Anchorage, Ky. Wagon-brake	812,339	Feb. 13	1699	367	120	1906
Harden, James A., Andalusia, Ala. Cotton-chopping machine	812,738	Feb. 13	2441	536	120	2061
Hardenbergh, John C., assignor of one-fourth to E. S. Gaylord, Cleveland, Ohio. Train-controlling device	813,887	Feb. 27	4726	1045	120	2661
Hardgrove, Henry M., Madison, Wis. Separator	812,240	Feb. 13	1671	367-8	120	1906
Harding, Henry M., New York, N. Y. Means for controlling overhead electric carriers	809,798	Jan. 9	2384	493	120	557
Harding, Henry M., New York, N. Y. Overhead electric carrier	809,799	Jan. 9	2385	493-4	120	557
Hardscog, Lester C., Ottumwa, Iowa. Rock and coal drill	808,837	Jan. 2	418	92	120	93
Hardscog Wonder Drill Company. (See Smith, Clark J., assignor.)						
Hardy, Periam B., Tecumseh, Mich. Therapeutic pad	813,092	Feb. 20	3137	687	120	2259
Haring, William N., Nyack, N. Y. Electric-railway system	812,790	Feb. 13	2535	557-8	120	2081
Harles, Martin, St. Louis, Mo. Dumping-wagon	812,739	Feb. 13	2443	536	120	2062
Harmet, Henri, St. Etienne, France. Compressing steel in conical molds	811,143	Jan. 30	5148	1076	120	1277
Harmon, Frank L., Beverly, Mass. Automatic motory manufacturing-machine	814,004	Feb. 27	4952	1095-7	120	2706
Harold, Emma. (See Harold, James J., assignor.)						
Harold, James J., assignor, by mesne assignments, to E. Harold, Jersey City, N. J. Metal piling	808,836	Jan. 2	420	92	120	93
Harold, James J., assignor, by mesne assignments, to E. Harold, Jersey City, N. J. Metal piling	808,986	Jan. 2	728	157	120	161
Harper, Christopher C., Audubon, Iowa. Card-mounting	812,993	Feb. 20	2940	648	120	2216
Harper, Lewis G., Westchester, Pa. Milking device	810,750	Jan. 23	4348	904	120	1073
Harper, Percy E., Wellston, Ohio. Rail-joint	811,779	Feb. 6	454	98	120	1584
Harrah, Philip J., Bloomfield, Ind. Fence-post	813,986	Feb. 27	4675	1078	120	2691
Harriman, Frederick C., Yonkers, N. Y. Burglar-alarm	812,420	Feb. 13	1828	400-1	120	1937
Harrington, Benoni R., Phœnix, Ariz. Ter. Windmill	811,218	Jan. 30	5302	1109	120	1311
Harrington, Charles F., deceased; E. A. Harrington, executrix, assignor to Dial Voting Machine Company, Lyndhurst, N. J. Voting-machine	809,371	Jan. 9	1535	312	120	372
Harrington, Charles F., deceased; E. A. Harrington, executrix, assignor to Dial Voting Machine Company, Lyndhurst, N. J. Support for voting-machines	810,645	Jan. 23	4167	861	120	1031
Harrington, Eliza A., executrix. (See Harrington, Charles F.)						
Harrington, Frances M., assignor to Harrington Manufacturing Company, Peoria, Ill. Two-wheeled vehicle	812,421	Feb. 13	1839	401	120	1938
Harrington, Herbert S. (See Towers and Harrington.)						
Harrington, Joseph P., Killingly, Conn. Leg-strap attachment	813,417	Feb. 27	3798	833	120	2457
Harrington Manufacturing Company. (See Harrington, Frances M., assignor.)						
Harrington & Richardson Arms Company. (See Bye, Martin, assignor.)						
Harris, Abraham. (See Berman and Harris.)						
Harris, Arthur C., Lagrande, and E. C. Jarman, Haines, Oreg. Handy device for paper-hangers	812,740	Feb. 13	2444	536	120	2062
Harris Automatic Press Company. (See Harris, Charles G., assignor.)						
Harris, Charles G., assignor to Harris Automatic Press Company, Niles, Ohio. Dampener for sheet feeds or separators	811,843	Feb. 6	588	128	120	1609
Harris, Elijah T. (See Reed, Albert S., assignor.)						
Harris, Harmon. (See Burt and Harris.)						
Harris, Jesse J., Beren, and A. A. Prior, assignors of one-half to T. Reid, Cleveland, Ohio. Nut-tapping machine	812,422	Feb. 13	1831	401-2	120	1938
Harris, Leo. (See Lovejoy, George W., assignor.)						
Harris, Louis J., New York, N. Y. Observation-trolley-car railway	810,646	Jan. 23	4166	861	120	1032
Harris, William D., Philadelphia, Pa. Current-tap	809,183	Jan. 2	1101	239	120	242
Harrison, Amos, assignor of one-fourth to R. H. Walch, Chicago, Ill. Vapor-generator	810,486	Jan. 23	3862	792	120	982
Harrison, Amos, assignor of one-fourth to R. H. Walch, Chicago, Ill. Low-pressure heating system	812,926	Feb. 20	2807	618	120	2187
Harrison, Edward F., Philadelphia, Pa. Magnesium flash-lamp	813,143	Feb. 20	3265	717	120	2287
Harrison, Frank G., and A. C. Jacoby, assignors to W. R. Harrison, Massillon, Ohio. Fodder-cutter	810,204	Jan. 16	3218	666	120	786
Harrison, J. H. (See Collins, Horatio E., assignor.)						
Harrison, William. (See Menges, Albert C., assignor.)						
Harrison, William P., Cincinnati, Ohio. Oil-stove	811,635	Feb. 6	205	44	120	1530
Harrison, Williamson B. (See Harrison and Jacoby, assignors.)						
Harrover, Robert M., Washington, D. C. Bottle-crate	813,609	Feb. 27	4353	958	120	2580
Harsch, Otto, Swissvale, Pa. Ice-crusher	813,140	Feb. 20	3266	718	120	2288
Hart, Harry, Milwaukee, Wis. Strap-loop	809,681	Jan. 9	2175	450	120	510
Hart, Harry S., and W. Yost, assignors to Rodger Ballast Car Company, Chicago, Ill. Dump-car	811,717	Feb. 6	344	76	120	1562
Hart, J. E. (See Hart, William L., assignor.)						
Hart, John W., La Harpe, Kans. Self-igniting match-safe	813,967	Feb. 27	4876	1078	120	2691
Hart, Mat B. (See Lenthook and Hart.)						
Hart, William E., Greathead, Kans. Fly-screen	810,534	Jan. 23	3952	813	120	984
Hart, William L., assignor of one-half to J. E. Hart, Mansfield, Mo. Churn-dasher	808,743	Jan. 2	247	53	120	57
Hartley, Sherman. (See McIntyre, Robert D., assignor.)						
Hartmann, Edward V., *et al.* (See Trudeau, Jules M. M., assignor.) (Reissue.)						
Hartnett, George H., *et al.* (See Trudeau, Jules M. M., assignor.) (Reissue.)						
Hartgraves, Ella E., Wyndmere, N. D. Valve	808,654	Jan. 2	68	15	120	17
Hartley, James M., Washington, D. C. Hair-pin	813,741	Feb. 13	2445	536	120	2062
Hartley, Robert H., Pittsburg, Pa. Toy or display device	813,651	Feb. 13	2279	496	120	2026
Hartman, Frank O., Mansfield, Ohio. Electric-circuit breaker	810,751	Jan. 23	4360	904-5	120	1072
Hartness, Noble W., Toledo, Ohio, assignor of one-half to G. W. Burkhart, Detroit, Mich. Glass-blowing machine	813,289	Feb. 20	3525	777-8	120	2342
Harton, Pembroke D. (See Randall, Alfred H., Jr., assignor.)						
Harvey, George H. (See Spear and Harvey.)						
Harvey, George H., Cleveland, assignor, by mesne assignments, to Brownsville Glass Company, Brownsville, Pa. Glass-drawing machine	813,290	Feb. 20	3530	778	120	2343
Harvey, George H., Cleveland, assignor, by mesne assignments, to Brownsville Glass Company, Brownsville, Pa. Glass-drawing machine	813,291	Feb. 20	3531	778	120	2343
Harvey, Urban, U. S. Revenue-Cutter Service. Hydraulic hoist	808,655	Jan. 2	69	15	120	17

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Haskin, William J. (See Buckland, Edward S., assignor.)						
Hasley, Thomas R., Houghton, Mich. Railway-tie	809,682	Jan. 9	2176	450	120	510
Haslinger, Anton, Allegheny, Pa. Extinguisher	809,055	Jan. 2	855	181	120	189
Haslup, Dodson, Grafton, W. Va. Hub for car-wheels	813,418	Feb. 27	3801	834	120	2458
Hatch, Arthur F. (See Golden, Edward B., assignor.)						
Hatch, Frank E., Winnipeg, Canada. Hoof mixture	811,718	Feb. 6	346	.....	120	1563
Hatfield, Harry, *et al.* (See Branson, Tilghman E., assignor.)						
Hatfield, James I., Douglas, Ga. Spout for gathering turpentine	812,682	Feb. 13	2281	496	120	2028
Hatfield, James I., assignor of one-half to J. H. Dent, Douglas, Ga. Spout for collecting crude turpentine	810,782	Jan. 23	4368	905	120	1074
Hatfield, Wallace O., Syracuse, N. Y., assignor of one-third to T. C. Griffin. Spike-protector for shoe-spikes	810,753	Jan. 23	4358	905	120	1074
Hattery, Jeremiah L., San Bernardino, Cal. Trousers-press	812,742	Feb. 13	2446	537	120	2063
Haughton, Frank A., Schenectady, N. Y. Means for superheating steam	809,612	Jan. 9	2037	423	120	479
Haughton, Frank A., Schenectady, N. Y. Steam generator and superheater	809,683	Jan. 9	2177	451	120	510
Hausmann, Ernst, Cologne, Germany. Crucible-furnace	811,219	Jan. 30	5306	1109	120	1312
Haussmann, Wilhelm, Barmen, Germany. Shuttle for ribbon-looms	809,564	Jan. 9	1929	401	120	457
Haven, Rutherford C. (See Hippisley, William H., assignor.) (Reissue.)						
Haverfield, Joseph L., assignor to Mayfield Mfg. Co., Mayfield, Ky. Press-operating device	813,292	Feb. 20	3533	779	120	2343
Hawkes, Charles W., Chicago, Ill. Steam-boiler	809,503	Jan. 9	1817	374	120	434
Hawkins, Cyrus, Camden, N. J., assignor to Hawkins Wilson Company. Press for printing and embossing	813,888	Feb. 27	4728	1045-6	120	2662
Hawkins, John C., Loudonville, Ohio. Hub	810,754	Jan. 23	4360	905	120	1074
Hawkins Wilson Company. (See Hawkins, Cyrus, assignor.)						
Hawley, Charles G. (See Holderness and Hawley.)						
Hawley, Charles G., and H. O. Holderness, Chicago, Ill. Selective signaling system	813,419	Feb. 27	3802	834-5	120	2458
Hawley, Sylvester S., Centralia, Ill. Multiple-bolt mechanism	809,184	Jan. 2	1103	229	120	243
Hay, George A. (See Draper and Hay.)						
Hayden, James T., assignor to Crane Company, Chicago, Ill. Spring-disk valve	813,555	Feb. 27	4082	894	120	2523
Haydock, James, *et al.* (See Richardson, Abraham, assignor.)						
Haydock, James, *et al.* (See Richardson and Jones, assignors.)						
Hayes, Dennis H., Adrian, Mich. Magazine for fence-looms	811,500	Jan. 30	5812	1217	120	1419
Hayes, Frederick W., Detroit, Mich. Eraser-holder	809,056	Jan. 2	856	181	120	189
Hayford, Eugene S., Boston, Mass. Refilled-bottle detector and identity-destroyer	810,647	Jan. 23	4170	862	120	1032
Haynes, Frederick M., Buffalo, N. Y. Curtain-stretcher	809,684	Jan. 9	2180	451	120	512
Haynes, Justin H., and W. D. Engle, assignors to Dolores Refining Company, Denver, Colo. Treating ores	808,839	Jan. 2	420	.....	120	93
Haynes, William L., Ambridge, Pa. Spacing mechanism	810,648	Jan. 23	4171	862	120	1032
Haynie, James W., Fairburn, Ga. Cotton-chopper	809,109	Jan. 2	979	202	120	216
Hays, Edward F., trustee. (See Hays, Harry J., assignor.)						
Hays, Harry J., assignor to E. F. Hays, trustee, Pittsburg, Pa. Apparatus for forming sheet and plate glass	813,794	Feb. 27	4527	1000	120	2618
Hayward, Judson, New York, N. Y. Hoisting and conveying apparatus	811,144	Jan. 30	5150	1077	120	1277
Haywood, Daniel H., New York, N. Y., assignor to W. B. Wadsworth, Plainfield, N. J. Cut-off socket	808,656	Jan. 2	72	15	120	18
Hazard, Henry T., Los Angeles, Cal., assignor of one-half to A. Hobercht, Ensada, Mexico. Means to replenish the air-chambers of pumps with air	812,423	Feb. 13	1833	402	120	1939
Hazlewood, George W., and H. C. Robinson, Mineral Wells, Tex. Hitching device	813,045	Feb. 20	3039	669	120	2237
Heald, Alfred, Philadelphia, Pa. Loom for weaving pile fabrics	813,968	Feb. 27	4878	1078	120	2691
Heald, James N. (See Morgan and Heald.)						
Heald Machine Company. (See Morgan and Heald, assignors.)						
Heap, Henry, *et al.* (See Richardson, Abraham, assignor.)						
Heap, Henry, *et al.* (See Richardson and Jones, assignors.)						
Heap, Joseph, *et al.* (See Richardson, Abraham, assignor.)						
Heap, Joseph, *et al.* (See Richardson and Jones, assignors.)						
Heap, Robert S., Burnley, and G. Grey, Cornholme, England. Self-acting mule and twiner	813,969	Feb. 27	4880	1078-9	120	2692
Heard, C. E. (See Farleigh, George M., assignor.)						
Heard, George M. D., Worcester, Mass. Ratchet-brace	810,409	Jan. 23	3697	761	120	925
Heart, Charles, assignor to Heart Metal Wheel and Gear Company, Alexandria, Ind. Wheel	810,649	Jan. 23	4175	862	120	1033
Heart, Charles, assignor to Heart Metal Wheel and Gear Company, Alexandria, Ind. Wheel-fally	810,860	Jan. 23	4556	948	120	1116
Heart Metal Wheel and Gear Company. (See Heart, Charles, assignor.)						
Heberling, John, Rochester, N. Y. Dumping-wagon	811,719	Feb. 6	347	77	120	1563
Heckert, William. (See Wheeler and Heckert.)						
Hedemann, Christian J., Honolulu, Hawaii. Liquid-weighing machine	812,846	Feb. 20	2853	580-1	120	2152
Hedgeland, Frederick W., Chicago, Ill. Self-playing mechanism for instruments	809,556	Jan. 9	1930	401	120	457
Hedges, William H., Kansas City, Kans. Portable fireproof vault	810,961	Jan. 23	4557	949	120	1117
Healy, Patrick, and J. Keers, New York, N. Y. Tool for spreading the tubes of water-tube boilers	808,920	Jan. 2	589	130	120	139
Healy, Patrick, and J. Keers, Brooklyn, N. Y. Tool for holding fire-bricks of water-tube boilers	811,844	Feb. 6	589	129	120	1609
Heane, George W., Cleveland, Ohio. Blank stamping or impressing machine	809,891	Jan. 9	1983	412	120	467
Heap, August J., *et al.* (See Reinschmidt, Frank, assignor.)						
Heffner, John L., Peoria, Ill. Couch	810,939	Jan. 30	4781	991	120	1198
Hegg, Nels, Harmony, Minn. Horseshoe-calk	810,755	Jan. 23	4361	906	120	1074
Heggie, David, McKeesport, assignor to National Tube Company, Pittsburg, Pa. Socket-welding apparatus	808,657	Jan. 2	74	16	120	18
Heid, Clara C., Juneau, Alaska. Letter-file	812,653	Feb. 13	2282	496	120	2029
Heidenkamp, Joseph, Springdale, Pa. Apparatus for making wire-glass	812,994	Feb. 20	2942	648	120	2216
Heidorn, Hugo, Hamburg, Germany. Apparatus for firing incandescent mantles	812,743	Feb. 13	2447	537	120	2063
Heinisch, Joseph, Topeka, Kans. Signal-lamp	813,700	Feb. 27	4354	905	120	2580
Heinrich, Heinrich, assignor of one-half to D. D. A. Outcalt, Spotswood, N. J. Explosion-engine	810,535	Jan. 23	3963	813-14	120	985
Heinrich, John, J. Schmidt, and C. L. Etheridge, Kansas City, Mo. Fraud-preventive mechanism for cigar-vending machines	811,395	Jan. 30	5633	1179	120	1383
Heinrich, John, J. Schmidt, and C. L. Etheridge, Kansas City, Mo. Mechanism for feeding cigars in vending-machines	811,396	Jan. 30	5637	1180	120	1383
Heinrich, John, J. Schmidt, Kansas City, and C. L. Etheridge, St. Louis, Mo. Coin-controlled vending-machine	811,501	Jan. 30	5815	1217-18	120	1419
Heintz, Otto L., Buffalo, N. Y. Enameled ornament	808,744	Jan. 2	246	54	120	57
Heist, Charles N. (See Burkholder, Isaac R., assignor.)						
Heitz-Boyer, Maurice G., Paris, France. Vehicle-wheel	812,583	Feb. 13	2115	469-4	120	1997
Helfrich, Michael D. (See Winter, Charles F., assignor.)						
Hellmuth, Charles, New York, N. Y. Combined knife, fork, can-opener, and saw	812,434	Feb. 13	1834	402	120	1939

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Hellström, Carl D., Nyfors, Sweden. Liner for centrifugal liquid-separators	809,685	Jan. 9	2181	451–2	120	512
Hellwig, Albert A., Gloversville, N. Y. Skin-stretching machine	813,293	Feb. 20	3534	779	120	2344
Helmig, Katie C., *et al.* (See Turney, Edgar E., assignor.)						
Hemleb, Martin, Elizabeth, N. J., assignor to Singer Manufacturing Company. Sewing-machine feed and loop-taker actuating mechanism	809,566	Jan. 9	1932	401	120	458
Hemleb, Martin, Elizabeth, N. J., assignor to Singer Manufacturing Company. Feed-regulating device for sewing-machines	809,945	Jan. 16	2676	552	120	673
Hemmick, Roland J. (See Read, William E., assignor.)						
Henckel, Gustave A., East Orange, N. J. Tableware and like articles	809,567	Jan. 9	1934	402	120	458
Henderson, James. (See Peake and Henderson.)						
Henderson, James A., St. Louis, Mo. Show-case corner	810,410	Jan. 23	3699	762	120	925
Henderson, Leo, Peoria, Ill. Hydrocarbon-gas generator	811,845	Feb. 6	592	129	120	1610
Henderson, Thomas D., Chicago, Ill. Railway-rail stay	808,921	Jan. 2	592	130	120	130
Henderson, William G., and J. W. Weiss, Oil City, Pa. Cooker	812,564	Feb. 13	2118	464	120	1998
Hendley, Martha G., Mayfield, Ky. Iron-heater	810,650	Jan. 23	4177	863	120	1034
Hendricks, John J. (See Loudon and Hendricks.)						
Henke, Christian B. E., and G. A. H. Schulte, Bremen, Germany. Manufacture of bottle-envelops	809,299	Jan. 9	1383	281	120	340
Henn, Edwin C., Cleveland, Ohio. Binding-post	813,093	Feb. 20	3138	687	120	2259
Henner, Joseph F., Haines, Oreg. Car-brake	813,880	Feb. 27	4732	1046	120	2663
Hennicke, Charles A., assignor to Pratt & Letchworth Company, Buffalo, N. Y. Spring-gear for vehicles	809,946	Jan. 16	2678	553	120	674
Henningsen, George, Kimballton, Iowa, assignor to Henningsen & Jensen. Mold-forming mechanism	809,504	Jan. 9	1820	375	120	434
Henningsen & Jensen. (See Henningsen, George, assignor.)						
Henricks Novelty Company. (See Wynn, Robert E., assignor.)						
Henry, George J., Jr., assignor of one-half to Pelton Water Wheel Company, San Francisco, Cal. Hydraulic support for deflecting nozzles	810,756	Jan. 23	4361	906	120	1075
Henry, Joseph L., Rochester, N. Y. Thill-coupling	814,005	Feb. 27	4956	1097–8	120	2706
Henry R. Worthington. (See Grace, John F., assignor.)						
Henry R. Worthington. (See Ray, Frederick, assignor.)						
Henry Vogt Machine Company. (See Thurstenson, Soren, assignor.)						
Henry, William K., assignor to P. & F. Corbin, New Britain, Conn. Door check and closer	810,411	Jan. 23	3700	762	120	926
Hensel, Harry C., Chicago, Ill. Type-distributing mechanism	810,206	Jan. 16	3219	667	120	786
Hensley, Charles H. (See Louise and Hensley.)						
Hensley, John, Huntington, Ind. Trolley-wheel	812,847	Feb. 20	2654	581	120	2152
Hensley, Joseph B., Beeville, Tex. Rail-joint	810,757	Jan. 23	4363	906	120	1075
Henson, William M., Kansas City, Mo. Kitchen-cabinet	811,918	Feb. 6	738	161	120	1641
Hepke, Alexander, and K. Diener, Berlin, Germany. Switch-plug with electrical fuse	809,300	Jan. 9	1384	281	120	340
Hepke, Alexander, and K. Diener, Berlin, Germany. Electric multiple-fuse plug	809,301	Jan. 9	1386	281	120	340
Heppe, Bernhard. (See Ward, George, assignor.)						
Herblin, William L. (See Mettenheimer and Herblin.)						
Hercules Safety Clasp Company. (See Steinberg, Isaac, assignor.)						
Herder, Charles G., Blanchester, Ohio. Display-rack	811,720	Feb. 6	349	77	120	1564
Herman, Reinhold, Crafton, Pa., assignor to General Electric Company. Rain-guard for signals	809,800	Jan. 9	2387	494	120	557
Hermanson, Gustaf A., Chicago, assignor to J. Munton, Maywood, Ill. Car-coupling	812,927	Feb. 20	2809	619	120	2188
Hermedorf, Max, assignor to F. Krupp Aktiengesellschaft, Essen-on-the-Ruhr, Germany. Lever-actuated wedge breech-block	809,801	Jan. 9	2388	494	120	558
Herndon, Florence E., Dallas, Tex. Bathing-hat	809,947	Jan. 16	2680	553	120	674
Hero Fruit Jar Company. (See Sagee, Charles W., assignor.)						
Herold, John, Detroit, Mich. Target	811,636	Feb. 6	206	44	120	1530
Herr, John, Port Huron, Mich. Package	809,948	Jan. 16	2681	553	120	675
Herr, Joseph, Gibsonburg, Ohio. Shade-roller and curtain-pole support	810,142	Jan. 16	3091	636	120	760
Herr, Shirl, Lebanon, Ind. Clover-seed-recleaning process	813,880	Feb. 27	4735	1047	120	2663
Herrick, Austin T., Bradford, Pa. Pipe-coupling	808,922	Jan. 2	594	130	120	130
Herrick, Austin T., Bradford, Pa. Pipe-coupling	808,923	Jan. 2	595	131	120	130
Herrick, Austin T., Bradford, Pa. Leak-stop	813,891	Feb. 27	4736	1047	120	2664
Herrington, Florence L., New York, N. Y., and H. Knight, Jersey City, N. J., assignors to International Cigar Machinery Company, New York, N. Y. Wrapper-transferring mechanism	808,745	Jan. 2	249	54	120	57
Herrington, Jacob, assignor of one-half to J. De Phillippi, Houston, Tex. Bottle-closure	809,258	Jan. 2	1300	265	120	286
Herrmann, Gustav H., Schweidnitz, Germany. Flash-light cartridge	811,780	Feb. 6	455	98	120	1584
Herrmann, John, and C. Schwaner, Charlottesville, Va. Wire-stretcher	809,949	Jan. 16	2683	554	120	675
Herrmann, Oscar, Brown Station, N. Y. Foot-release valve for pneumatic actions for organs and pianos	812,995	Feb. 20	2944	648	120	2217
Hervey, Oscar H., trustee. (See Stanley, George P., assignor.)						
Hertzig, Fred G., New Philadelphia, Ohio. Post-hole auger	812,744	Feb. 13	2448	537	120	2063
Hervey, Ben E., Spokane, Wash. Automobile	812,129	Feb. 6	1183	259	120	1730
Hess, Max, New York, N. Y. Jewelry-display device	812,203	Feb. 13	1397	304	120	1844
Hessig, Edward, West Hoboken, N. J. Tension device for looms	808,558	Jan. 2	76	16	120	19
Hessig, Edward, West Hoboken, N. J. Shuttle	811,721	Feb. 6	351	73	120	1564
Hessog, Leo F., St. Louis, Mo. Ax-handle wedge	811,502	Jan. 30	5220	1218	120	1420
Hess, Charles F., Scranton, Pa. Coin separating, counting, and stacking device	811,559	Feb. 6	41	9–10	120	1493
Hess, John M., Grundy Center, Iowa. Fertilizer-distributer	813,556	Feb. 27	4063	895–6	120	2624
Hessberger, Johannes, assignor to Badische Anilin & Soda Fabrik, Ludwighafen-on-the-Rhine, Germany. Regulation of electric currents which feed electric arcs	812,038	Feb. 6	1020	222	120	1696
Hesser, Otto, Cannstatt, Germany. Machine for making paper bags	813,207	Feb. 20	3366	740–2	120	2306
Hesser, Otto, Cannstatt, Germany. Conveying mechanism for paper-bag machines	813,208	Feb. 20	3373	743	120	2309
Hester, James K., Rhinecliff, N. Y. Attachment for ladders	809,057	Jan. 2	857	182	120	189
Hetherington, John P., Logansport, Ind. Transformer cut-out	809,302	Jan. 9	1387	281–3	120	341
Hettwer, Alois J. (See Loewen, Wilhelm, assignor.)						
Hewitt, David, Homewood, Pa. Rail-joint	812,039	Feb. 6	1021	223	120	1696
Heyl, Henry R. (See Kinsley and Heyl.)						
Heyl & Patterson. (See Acklin, Alfred M., assignor.)						
Heyl & Patterson. (See Patterson and Robb, assignors.)						
Heyl & Patterson. (See Whan, William E., assignor.)						
Heye, John J., assignor of one-half to M. V. Brennahan, Lynn, Mass. Sole-molding machine	810,940	Jan. 30	4763	991–2	120	1194
Heysinger, Isaac W., Philadelphia, Pa. Locking device for motor-cars, automobiles, and the like	810,206	Jan. 16	3220	667	120	786
Heysinger, Isaac W., and A. Latshaw, Philadelphia, Pa.; said Heysinger assignor to said Latshaw. Scale-markings for rules, &c.	809,950	Jan. 16	2684	554	120	675
Heywood, Silas L., Minneapolis, Minn. Variable-speed mechanism	809,802	Jan. 9	2389	494–5	120	558
Hibbard, Charles and W., assignors to Hibbard Gas Engine Co., Sandyhill, N. Y. Vaporizer	811,397	Jan. 30	5442	1181	120	1384

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Hibbard Gas Engine Co. (See Hibbard, Charles and W., assignors.)						
Hibbard, Paul W., Jefferson, Wis. Bob-sleigh	813,420	Feb. 27	3808	835	120	2459
Hibbard, Warren. (See Hibbard, Charles and W.)						
Hicks, John W. (See Kyle and Hicks.)						
Hidden, Charles P., Baltimore, Md. Perpetual calendar	811,846	Feb. 6	593	129	120	1610
Hielscher, John W., and W. F. Standley, Kniman, Ind. Wrench	813,892	Feb. 27	4738	1047	120	2664
Hiers, J. Lawton. (See Edenfield, Dempsey S., assignor.)						
Higgins, Charles S., New York, N. Y., assignor to Instructing and Manufacturing Company, of New York. Mixing apparatus	811,145	Jan. 30	5153	1077	120	1278
Higgins, Elmer E., St. Paul, Minn. Device for leading animals from burning buildings	813,496	Feb. 27	3961	868–9	120	2496
Higgins, Patrick J., New Vienna, Ohio. Checkrein	810,336	Jan. 16	3503	722	120	848
Higgins, Peter K. (See Foster and Higgins.)						
Higgins, Robert B., St. Louis, Mo. Trolley-replacer	811,919	Feb. 6	740	162	120	1641
Hight, Clarence A. (See Pfeiffer, Emil C., assignor.)						
Higman, William J., Denver, Colo. Non-refillable bottle	813,421	Feb. 27	3808	835	120	2459
Hildebrand, Henry W., Denver, Colo. Automatically-operating fire-extinguisher	811,221	Jan. 30	5309	1110	120	1312
Hildebrandt, Charles T., assignor of one-half to E. W. Brooks, Chicago, Ill. Multiple-piston explosive-engine	811,220	Jan. 30	5307	1110	120	1312
Hildreth, Warnie W. (See Webb and Hildreth.)						
Hilger, George M., Chicago, Ill. Vacuum-trap	812,130	Feb. 6	1184	259–60	120	1730
Hill, Alexander M., *et al.* (See Finch, George P., assignor.)						
Hill, Austin M., Rockville Center, N. Y. Button-holder	810,758	Jan. 23	4364	906	120	1075
Hill, Christian C., deceased; C. B. Hill, executrix, assignor to Steel Ball Company, Chicago, Ill. Pumping apparatus	812,266	Feb. 13	1534	334–5	120	1875
Hill, Clothilde B., executrix. (See Hill, Christian C.)						
Hill, Ebenezer, Norwalk, Conn. Valve for compound air-compressors	810,759	Jan. 23	4365	907	120	1076
Hill, Edgar C., Columbus, Ohio. Jar-closure	810,760	Jan. 23	4368	907	120	1076
Hill, George A., Chicago, Ill. Alarm	811,061	Jan. 30	4977	1039	120	1242
Hill, Hugh, assignor to Hill Standard Manufacturing Company, Anderson, Ind. Self-propelled vehicle	813,422	Feb. 27	3812	836	120	2460
Hill, Hugh, assignor to Hill Standard Manufacturing Company, Anderson, Ind. Mechanism for connecting vehicle-wheels to axles	813,423	Feb. 27	3813	836	120	2460
Hill, Hugh, assignor to Hill Standard Manufacturing Company, Anderson, Ind. Vehicle-axle mechanism	813,424	Feb. 27	3814	836	120	2461
Hill, James B., Findlay, Ohio. Mold for drain or sewer pipes	810,276	Jan. 16	3378	669	120	820
Hill, James F., Norwalk, Ohio. Oil-cellar for journal-boxes	811,637	Feb. 6	207	44	120	1530
Hill, John L., assignor to F. C. Bagley, Jackson, Mich. Inhaler and exhaler	813,425	Feb. 27	3815	836	120	2461
Hill, John R. (See Smith, Burgess, assignor.)						
Hill, John R., Washington, D. C. Transfer-press	813,795	Feb. 27	4530	1000–2	120	2618
Hill, Samuel M., Sunnyside, Wash. Tool for removing sickle-bars	811,293	Jan. 30	5454	1137	120	1344
Hill Standard Manufacturing Company. (See Hill, Hugh, assignor.)						
Hill, Sylvanus L. (See Derby, Harold R., assignor.)						
Hill, Thomas G., Portland, Oreg. Giant swing	812,996	Feb. 20	2947	640	120	2217
Hill, William H., Calhoun, Ky. Hame	813,294	Feb. 20	3538	780	120	2344
Hillabrandt, Lucian, Johnstown, N. Y. Gun-sight	810,761	Jan. 23	4369	907	120	1076
Hiller, Peter, Foley, Minn. Folding stove	811,294	Jan. 30	5455	1137	120	1345
Hillhouse, Percy A., Busby, Scotland. Photographic mask	810,143	Jan. 16	3092	638	120	761
Hilliker, George L., assignor to Alrite Duplicating Supply Company, Chicago, Ill. Attachment for cutting stencils	813,094	Feb. 20	3140	688	120	2280
Hills, Walbie, Kansas City, Kans. Adjustable track or trolley-wire	813,295	Feb. 20	3540	780	120	2345
Himburg, John A., Troy, Ala. Motor-chair	812,997	Feb. 20	2949	640	120	2218
Hinaman, Louis H., Port Jervis, N. Y., assignor of three-fourths to T. Hinaman, Kellam, Pa. Mail-pouch fastener	809,058	Jan. 2	858	182	120	190
Hinaman, Louis H., Port Jervis, N. Y., assignor of one-fourth to T. Hinaman, Kellam, Pa. Toy pistol	809,059	Jan. 2	860	182	120	190
Hinaman, Titus. (See Hinaman, Louis H., assignor.)						
Hinchman, Charles R., Cleveland, Ohio. Safety locking device for cranes	812,565	Feb. 13	2119	464–5	120	1998
Hinchman, George N., and H. Schroeder, assignors to Standard Adding Machine Company, St. Louis, Mo. Adding-machine	811,920	Feb. 6	742	162–9	120	1641
Hinchman, James B., Denver, Colo. Concrete building construction	811,560	Feb. 6	47	10	120	1495
Hinds, Ervin P., New York, and G. E. Payne, Long Island City, N. Y. Refrigerator-car	813,970	Feb. 27	4980	1079	120	2692
Hinds, James, Paris, Ill. Fence	813,971	Feb. 27	4983	1071	120	2693
Hinklein, Johannes, Frankfort-on-the-Main, assignor to Firm of Maschinenhandlung von Max Stern & Co., Frankfort-on-the-Main, Bockenheim, Germany. Plow for bookbinders	812,998	Feb. 20	2950	650	120	2218
Hinkley, John W., Watertown, Mass. Cream-separator	809,442	Jan. 9	1697	349	120	406
Hinkson, Frank B., Newcastle, assignor of two-thirds to J. M. and J. J. Flannery, Pittsburg, Pa. Treating hides	810,144	Jan. 16	3093	638–9	120	761
Hinsch, Gustave L., assignor of one-half to C. A. Fossedman and C. C. Hohnsbehn, Waverly, Iowa. Wheel	810,337	Jan. 16	3504	723	120	849
Hintlian, Seth H., Providence, R. I. Nut-tapping machine	810,054	Jan. 16	2926	600	120	727
Hippisley, William H., deceased, assignor to R. C. Haven, Trenton, N. J. Garment-hook. (Reissue)	12,451	Feb. 13	2558	563	120	2087
Hipwood, George, Laconia, N. H. Fender for cars and other vehicles	810,762	Jan. 23	4370	907–8	120	1077
Hipwood, George, Laconia, N. H. Fender for cars and other vehicles	810,763	Jan. 23	4373	908	120	1077
Hird, James W., Beaton, Wis. Fastening device for vehicle end-gates	812,341	Feb. 13	1672	398	120	1906
Hirsch, Charles C., Tripp, S. D. Window-screen	812,654	Feb. 13	2282	496–7	120	2020
Hiscock, Charles O., Valparaiso, Ind. Filing-case	813,180	Feb. 20	3268	718	120	2288
Hise, Nelson, and H. G. De Buren, New York, N. Y., assignors to Elevator Securities Company. Traction apparatus	810,941	Jan. 30	4769	992	120	1196
Hist, John, Orange township, Cuyahoga county, Ohio. Potato-digger	808,746	Jan. 2	252	54	120	58
Hist, John, Solon, Ohio. Potato-digger	809,259	Jan. 2	1302	265	120	286
Hist, John, Solon, Ohio. Potato-digger	809,260	Jan. 2	1302	265	120	287
Hitchcock, Samuel R., St. Louis, Mo. Combination churn and cream-whipper	813,497	Feb. 27	3964	869	120	2496
Hix, Albert E. (See Astley, Raymond E., assignor.)						
Hixon, Peter B., Chicago, Ill. Shoe-polishing stand	808,988	Jan. 2	726	158	120	161
Hixson, Charles T., Ringwood, Okla. Ter. Traction-engine tender	810,145	Jan. 16	3094	639	120	761
Hixson, Hiram D., Hillsboro, Iowa. Weighing-machine	813,972	Feb. 27	4984	1080	120	2693
Hixson, John W., St. Joseph, Mo. Fly-paper holder	809,951	Jan. 16	2967	584	120	676
Hobart, Franklin G., Beloit, Wis., assignor to Fairbanks Morse & Company, Chicago, Ill. Valve for gas-producers	809,261	Jan. 2	1304	265	120	287
Hobbs, Elbert R., Lamar, Colo. Ringer for telephones and the like	809,060	Jan. 2	861	183	120	191
Hobbs, John O., Chicago, Ill. Shaft and clutch mechanism	810,412	Jan. 23	3701	762	120	926
Hobbs, Willis F., assignor to Bridgeport Hardware Manufacturing Company, Bridgeport, Conn. Nail-puller	809,803	Jan. 9	2392	495	120	559
Hobbs, Willis F., assignor to Bridgeport Hardware Manufacturing Company, Bridgeport, Conn. Container-punch	809,804	Jan. 9	2393	495	120	559

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Hobrecht, Albert. (See Hazard, Henry T., assignor.)						
Hobson, Francis J. (See Smith and Hobson.)						
Hobt, Albert, Wellston, Ohio. Horse fly-net	812,267	Feb. 13	1539	335	120	1377
Hochwald, Morits, Berlin, Germany. Valve	813,393	Feb. 27	4739	1047	120	2064
Hodges, Clarence B. and F. W., Detroit, Mich. Lubricator. (Reissue)	12,484	Feb. 20	3740	821-2	120	2387
Hodges, D. D. (See Stering, Samuel, assignor.)						
Hodges, Frederick F., Battlecreek, Mich. Hame and trace connector	808,840	Jan. 2	421	92	120	93
Hodges, Frederick W. (See Hodges, Clarence B. and F. W.) (Reissue.)						
Hodges, William H., Union Star, Mo. Poultry-coop	810,207	Jan. 16	3226	667-8	120	787
Hodgkinson, Francis. (See Longwell and Hodgkinson.)						
Hodgson, Isaac, Minneapolis, Minn., assignor to Automobile Wheel and Rim Company of New Jersey. Vehicle-wheel rim	813,382	Feb. 20	3717	817	120	2381
Hoefer, Emil A., assignor to Hoefer Manufacturing Company, Freeport, Ill. Variable-speed gear	809,372	Jan. 9	1537	312	120	372
Hoefer Manufacturing Company. (See Hoefer, Emil A., assignor.)						
Hoekstra, William, Harrison, S. D. Pump-rod ejector	812,131	Feb. 6	1187	260	120	1731
Hoenscheid, Peter J., assignor to National Twist Drill & Tool Company, Detroit, Mich. Drill-chuck	811,722	Feb. 6	352	78	120	1564
Hoerr, Louis A., St. Louis, Mo. Railway-car	809,513	Jan. 9	2039	423	120	480
Hoey, John, San Francisco, Cal. Mattress or couch fabric	811,222	Jan. 30	5314	1111	120	1314
Hoey, John, San Francisco, Cal. Extension-couch	811,221	Feb. 6	774	169	120	1646
Hof, David C., and C. F. Ladwig, Nora Springs, Iowa. Portable grain-elevator	809,373	Jan. 9	1539	313	120	373
Hofbauer, Frank X., West Orange, N. J. Electric generator for bicycles	810,651	Jan. 23	4178	863	120	1034
Hoffa, Charles W., Garrett, Pa. Medicine-glass	809,952	Jan. 16	2688	555	120	676
Hoffman, Frank C., Somerville, N. J. Rail-bond for steam and electric railways	812,040	Feb. 6	1022	223	120	1606
Hoffman Manufacturing Company. (See Hoffman, Ross J., assignor.)						
Hoffman, Paul W., Albany, N. Y. Skirt-supporter	811,638	Feb. 6	209	44	120	1530
Hoffman, Ross J., assignor to Hoffman Manufacturing Company, Bradford, Pa. System for pumping oil-wells	809,805	Jan. 9	2394	496	120	559
Hoffman, Ross J., assignor to Hoffman Manufacturing Company, Bradford, Pa. Producing oil from oil-wells	809,806	Jan. 9	2396	496	120	560
Hoffmann, Jacob J., Jersey City, N. J. Display-tray	812,999	Feb. 20	2951	650	120	2218
Hoffmann, Philip J., Pittsburg, Pa. Horseshoe	811,398	Jan. 30	5645	1181	120	1385
Hoffsümmer, Ignaz, Düren, Germany. Manufacturing photographic papers	812,204	Feb. 13	1399	.....	120	1844
Hofmann, Fritz, Elberfeld, Germany, assignor to Farbenfabriken of Elberfeld Co., New York, N. Y. Beta-substituted ester of diamidoglycerin and making same	808,747	Jan. 2	253	.....	120	58
Hofmann, Fritz, Elberfeld, Germany, assignor to Farbenfabriken of Elberfeld Co., New York, N. Y. Benzoyl chlorid derivative of beta-ethylitetramethyldiaminoglycerin	808,748	Jan. 2	255	.....	120	58
Hofmann, Ottokar, Argentine, Kans., assignor to United Zinc and Chemical Company, Kansas City, Mo. Roasting-furnace	809,953	Jan. 16	2689	555	120	676
Hofstatter, William J., Toledo, Ohio. Safety coupling-section for air-brake pipes	810,862	Jan. 23	4560	949-50	120	1117
Hofstatter, William J., Toledo, Ohio. Coupling-section for train air-pipes	810,863	Jan. 23	4565	950	120	1118
Hogan, Eli, Portland, Oreg. Coil-spring	810,146	Jan. 16	3097	630	120	782
Hogue, James C., Winfield, Tex. Churn-cover	812,566	Feb. 13	2122	465	120	1990
Hohlfeld, Herman L., Philadelphia, Pa. Hammock	810,942	Jan. 30	4770	992	120	1196
Hohlfeld, Herman L., Philadelphia, Pa. Loop for hammocks	811,922	Feb. 6	777	169	120	1647
Hohnbach, Robert, Jr., and W. Leitel, Joliet, Ill. Dough dividing and sealing machine	809,443	Jan. 9	1609	349	120	406
Hohnebehn, Claus C., *et al.* (See Hinsch, Gustave L., assignor.)						
Holden, Arthur P. (See Marston and Holden.)						
Holden, Ezra C. and H. Des Moines, Iowa. Earth-anchor	809,374	Jan. 9	1543	313	120	374
Holden, Harry. (See Holden, Ezra C. and H.)						
Holden, Jonas H. (See Warren and Holden.)						
Holden, Thomas F., *et al.* (See Tincher, Timothy S., assignor.)						
Holderness, Herbert O. (See Hawley and Holderness.)						
Holderness, Herbert O., and C. G. Hawley, assignors to Readable Signal Company, Chicago, Ill. Signaling system	813,426	Feb. 27	3816	837	120	2461
Holgate, George H., Philadelphia, Pa. Carburetor	813,726	Feb. 27	4535	1002-3	120	2619
Holladay, Brian, Richmond, Va. Nursery-bottle	813,894	Feb. 27	4740	1048	120	2664
Holland, Charles E. (See Holland, Charles L., assignor.)						
Holland, Charles L., assignor of one-half to C. E. Holland, Boston, Mass. Holder and handle for safety-razors	808,650	Jan. 2	78	17	120	19
Hollander, William H., Evansville, Ind. Dough-raiser	811,781	Feb. 6	456	99	120	1585
Holley, Carl H., *et al.* (See McPhaill, Hugh, assignor.)						
Hollinghead, Edward H., and C. P. Jennings, Bradford, Pa. Pipe-cutter	810,764	Jan. 23	4375	908	120	1078
Hollingworth, Edward. (See Crowther and Sykes, assignors.)						
Hollingworth, Edward, Doberer, England, assignor to Crompton & Knowles Loom Works. Loom for wire fabrics or gauze	811,847	Feb. 6	594	129	120	1610
Hollis, Henry L., Chicago, Ill. Filtering system	808,924	Jan. 2	596	131	120	131
Holloway, Henry C., Gilroy, assignor of one-half to W. De Hart, Watsonville, Cal. Internal-combustion engine	809,614	Jan. 9	2040	424	120	480
Hollyday, Virginia M., Baltimore, Md. Attachment for chairs	810,277	Jan. 16	3379	699	120	821
Holm, Lars N., Bryant, S. D. Band-cutter and feeder	813,000	Feb. 20	2953	650-1	120	2218
Holman, John W., *et al.* (See Miller, Ernest H., assignor.)						
Holman, John W. (See Miller and Rota, assignors.)						
Holman, Robert C., Hamilton, Ohio. Engine-valve	810,055	Jan. 16	2927	609	120	728
Holmer, Lars Ljuksama, Sweden. Support for sliding doors	808,749	Jan. 2	256	55	120	59
Holmes, Frank T., Brooklyn, assignor of one-half to Huntley Manufacturing Company, Silvercreek, N. Y. Coffee-roasting machine	812,268	Feb. 13	1540	335-6	120	1877
Holmes, Susan M. P., administratrix. (See Parrish, Frances E.)						
Holmes, Thomas E., assignor of one-half to Davy Brothers Limited, Sheffield, England. Steam hydraulic intensifier	813,269	Feb. 20	3374	743-4	120	2309
Holmgren, Per F., New York, N. Y. Turbine-engine	811,639	Feb. 6	210	45	120	1530
Holmsbak, Frank J., Oakland, Iowa. Music-leaf turner	810,943	Jan. 30	4772	993	120	1196
Holsberg, Dean A., assignor of one-half to F. Cheek, San Jose, Cal. Street and station indicator	813,395	Feb. 27	4742	1048	120	2665
Holstein, William, Chicago, Ill. Independent steam-heat radiator	808,925	Jan. 2	600	131	120	122
Holt, Charles H., Brockton, Mass. Shoe-rack tag	813,001	Feb. 20	2957	651	120	2220
Holt, Frank A., Holyoke, Mass. Means for holding spools and sewing-machine bobbins	809,308	Jan. 9	1362	288	120	341
Holt, George, Spicer, Minn. Oar-lock	813,396	Feb. 27	4744	1048	120	2665
Holtshausen, Franz, Nossen, Germany. Decorticator	812,041	Feb. 6	1023	223	120	1606
Holzer, Hans, Frankfort-on-the-Main, Germany. Turning switch with lighted handle for electric lines	810,536	Jan. 23	3956	814	120	985
Holzmann, Michael, *et al.* (See Darley, John W., Jr., assignor.)						
Holzmark, Albert J. (See Lee, Charles A., assignor.)						
Homan, William C., and F. T. Williams, assignors to Edward Miller & Company, Meriden, Conn. Gas-burner	811,399	Jan. 30	5646	1181	120	1385

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Homberger, Herman E. (See Barr, Andrew J., assignor.)						
Honecker, A. B. (See Bouhall, Herman J., assignor.)						
Hood, Ralph O., Danvers, assignor of one-half to W. D. King, Peabody, Mass. Contact device for induction apparatus	809,262	Jan. 2	1305	266	120	267
Hookey, James E., Littlefalls, N. Y. Cross-head and cross-head guide	812,745	Feb. 13	2449	537	120	2063
Hooper, Charles S., Erie, Pa. Supporting-lug for boilers	812,492	Feb. 13	1958	481	120	1965
Hooper, Geo. J., *et al.* (See Smith, Harry F., assignor.)						
Hoopes, William W., Philadelphia, Pa. Suspender-end	813,396	Feb. 20	3541	780	120	2345
Hoover, Frank E., and A. J. Mason, Chicago, Ill. Apparatus for chilling cinder or slag	810,864	Jan. 23	4572	951	120	1119
Hoover, Frank E., and A. J. Mason, Chicago, Ill. Chilling cinder or slag	810,865	Jan. 23	4574	952	120	1120
Hoover, Harvey. (See Austin, James D. and E. N., assignors.)						
Hoover, Henry H., Fort Smith, Ark. Chair	809,061	Jan. 2	863	183	120	191
Hoover, Peter. (See Settino and Hoover.)						
Hope, Walter R., assignor to E. I. Du Pont de Nemours Powder Company, Wilmington, Del. Machine for making tubes from pulp, paper, or similar material	813,701	Feb. 27	4356	959	120	2581
Hopkins, Archibald E. (See Fellows and Hopkins.)						
Hopkins, Charles L., Albany, N. Y., assignor to Curtain Supply Company, Newark, N. J. Curtain-fixture	810,278	Jan. 16	3380	700	120	821
Hopkins, Charles L., Albany, N. Y., assignor to Curtain Supply Company, Newark, N. J. Shade-fixture	810,279	Jan. 16	3383	700	120	821
Hopkins, Heber A., West Roxbury, Mass. Garment-fastener	810,537	Jan. 23	3957	814	120	985
Hopkins, J. S., *et al.* (See Smith, Harry F., assignor.)						
Hopkins, James M., Chicago, Ill. Car-truck	809,505	Jan. 9	1822	375	120	435
Hopkins, James M., Chicago, Ill. Railway-car truck	811,062	Jan. 30	4979	1039	120	1242
Hopkins, James M., Chicago, Ill. Railway-car truck	813,797	Feb. 27	4538	1003	120	2630
Hopkins, Louis J., Torrington, Conn. Pad-holder	809,615	Jan. 9	2042	424	120	480
Hopkinson, John E., West Drayton, England. Elastic tire	810,944	Jan. 30	4774	993	120	1197
Hopper, Henry S., Detroit, Mich. Apparatus for the manufacture of toothpicks	808,841	Jan. 2	423	93	120	94
Horel, Francis R. (See Hunter, William F., assignor.)						
Horine, Edmund E., Nicholasville, assignor of one-half to R. H. Welch, Lexington, Ky. Fiber-scutcher	810,280	Jan. 16	3384	700-1	120	822
Hornby, John, New York, N. Y. Gage for ivory-nut saws	813,002	Feb. 20	2958	651-2	120	2220
Hornby, Frank, Liverpool, England. Toy or educational device	810,148	Jan. 16	3099	640	120	782
Horne, Joseph A., assignor to Yale & Towne Manufacturing Company, Stamford, Conn. Trunk-lock	810,147	Jan. 16	3098	640	120	782
Horne, Thomas H. (See Taylor, Alfred, assignor.)						
Horne, William T., Hillsboro, Tex. Cow, calf, and colt weaner	812,342	Feb. 13	1673	368	120	1907
Horner, William A. (See Horner and Landis, assignors.)						
Horner, William C., assignor to C. P. McDougall, Indianapolis, Ind. Tilting bin and cover	812,343	Feb. 13	1674	368	120	1907
Horner, William M., and B. F. Landis, Columbus, assignors of one-third to W. A. Horner, Steubenville, Ohio. Rail-joint	810,208	Jan. 16	3226	668	120	788
Horning, Walter R., assignor to Williams Telephone & Supply Company, Cleveland, Ohio. Annunciator	811,063	Jan. 30	4980	1039	120	1242
Horsfall, Arthur E., Halifax, England. Apparatus for ascertaining errors in the alinement of shafting and for like purposes	813,003	Feb. 20	2960	652	120	2220
Horst, George C., assignor to J. A. Jeffrey, Columbus, Ohio. Conveyer	810,149	Jan. 16	3100	640	120	762
Horton, Edwin H., Pontiac, Mich. Rafter-gage	809,666	Jan. 9	2185	452	120	512
Horton, George R., San Diego, Cal., assignor of one-half to E. L. Nicholson, Seattle, Wash. Endless propeller for boats	813,648	Feb. 27	4354	934-5	120	2559
Horton, Peter D. (See Rohiting and Horton.)						
Horton, Robert E., assignor to D. L. Mott, Utica, N. Y. Water-level-gaging instrument	812,269	Feb. 13	1542	336	120	1677
Hoskins Company. (See Marsh, Albert L., assignor.)						
Hoskins, William, Lexington, Ill. Granulating aluminium	812,498	Feb. 13	1969	431	120	1966
Hosmer, Elwood B., and W. N. Dietrich, Montreal, Canada. Electrical safety device	813,397	Feb. 20	3542	780-1	120	2345
Hostler, James M. (See Clements and Hostler.)						
Hostetler, Irvin O., Cedar Orchard, Nebr. Wheel for traction-engines	810,457	Jan. 23	3855	792	120	943
Hotchkiss, John F., Dubuque, Iowa. Trammel	812,095	Feb. 20	3142	668	120	2280
Hough, Benjamin B., assignor of one-half to A. Forbes, Philadelphia, Pa. Printing-machine	813,702	Feb. 27	4350	969-60	120	2582
Howe, Sidney V. (See Ivey and McDonald, assignors.)						
Howeling, Paul A., Riverton, assignor to Curtain Supply Company, Newark, N. J. Curtain-fixture	810,281	Jan. 16	3387	701	120	822
Howes, Henry A., Bridgeport, Conn. Recoil-check for vehicles	810,282	Jan. 16	3389	701	120	823
Howes, Henry A., Bridgeport, Conn. Liquid-indicator	813,096	Feb. 20	3143	668	120	2281
House, Warren D. (See Bradshaw, Harry, assignor.)						
Houser, John O., Pittsburg, Pa. Attachment for musical instruments	811,295	Jan. 30	5456	1137	120	1345
Houston, Isaac W., H. C. Burns, and A. Van Voorhees, Marshall, Mich. Safety attachment for gages	809,110	Jan. 2	980	202	120	216
Houston, Wiley E., Santa Ana, Cal. Motor-controller	812,791	Feb. 13	2339	488	120	2062
House, Leon J., Port Marion, Pa. Refractory wall for glass-tanks	811,223	Jan. 30	5315	1111	120	1314
Hovey, Frank W., Independence, Iowa. Manure-spreader	810,413	Jan. 23	3704	763	120	927
How, Benjamin V. Weston, assignor to Arbecam Nautical Instrument Co., Boston, Mass. Compass-indicating apparatus	810,896	Jan. 23	4576	953	120	1120
Howard, Aaron H., Saline, Mich. Headstone and grave-marker	809,616	Jan. 9	2042	424	120	480
Howard, Clarence H., St. Louis, Mo. Locomotive-tender frame	811,561	Feb. 6	49	11	120	1466
Howard, Clarence H., St. Louis, Mo. Railway motor-car	813,427	Feb. 27	3823	837	120	2462
Howard, Henry A., Sherburne, N. Y. Mill	809,667	Jan. 9	2188	452	120	513
Howard, Henry M. (See Merrill and Howard.)						
Howard, James, Millvale, assignor of one-half to J. I. Allshouse, Stanton, and N. N. Barthouse, Baxter, Pa. Horseshoe	809,668	Jan. 9	2189	453	120	513
Howard, Kirk R., Chicago, Ill. Gas-meter	813,007	Feb. 20	3144	669	120	2281
Howard, Oscar, assignor of one-half to R. Robertson, Wheeling, W. Va. Book and job chase	812 426	Feb. 13	1836	408	120	1939
Howarth, Ella, *et al.* (See Howarth and McKinlay, assignors.)						
Howarth, Fred A., Johnstown, and J. J. McKinlay, Amsterdam, assignors to said McKinlay, F. D. Oliver, L. K. Maylender, and E. Howarth, Johnstown, N. Y. Railway-switch	812,205	Feb. 13	1400	304	120	1844
Howe, Charles F. (See Roberts, Henry P., assignor.)						
Howe, James H., St. Louis, Mo. Magazine display-easel	813,426	Feb. 27	3824	837	120	2462
Howe, John, St. Joseph, Mo. Pneumatic bell-ringer	811,400	Jan. 30	5647	1182	120	1385
Howland, Ephraim, Pontiac, Mich. Loading, conveying, and dumping device	811,923	Feb. 6	779	170	120	1647
Howland, Matthew M., Providence, R. I. Wrench	811,224	Jan. 30	5315	1111	120	1315
Howland, Matthew M., assignor of one-half to W. W. Dunnell, Providence, R. I. Pneumatic spring for vehicles	811,296	Jan. 30	5456	1138	120	1345
Howser, Benjamin H., Mount Eden, Ky. Adjustable support	812,344	Feb. 13	1675	369	120	1907
Hoyt, William H., *et al.* (See McCarl, Joseph C., assignor.)						
Hoyt, William H., and W. J. Gaven, Bridgeport, Conn., assignors to Burt Company, Hackensack, N. J. Manufacture of sound-records	808,842	Jan. 2	426	94	120	94

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Hoyt, William H., and W. J. Gaven, Bridgeport, Conn., assignors to Burt Company, Hackensack, N. J. Manufacturing sound-records	808,843	Jan. 2	427	94	120	96
Hoyt, William H., and W. J. Gaven, Bridgeport, Conn., assignors to Burt Company, Hackensack, N. J. Sound-record tablet	809,263	Jan. 2	1307	266	120	288
Hoyt, William H., and W. J. Gaven, Bridgeport, Conn., assignors to Burt Company, Hackensack, N. J. Sieve	810,652	Jan. 23	4180	863	120	1034
Hronish, Louis J., Geddes, S. D. Hoof-trimmer	813,298	Feb. 20	3545	781	120	2346
Hubbard, Arthur R., Bermondsey, and R. Flay, county of Middlesex, England. Cooking-range	812,746	Feb. 13	2451	538	120	2064
Hubbard, Arthur R., Bermondsey, and R. Flay, county of Middlesex, England. Fire-pot and grate therefor	812,747	Feb. 13	2452	538	120	2064
Hubbard, Fred M., and C. E. Taylor, Chicago, Ill., assignors, by mesne assignments, to National Coal Dump Car Company, Rapid City, S. D. Dumping-car	808,750	Jan. 2	257	55-6	120	59
Hubbard, Frederick J., assignor to W. E. Pardridge and H. Blackwell, Detroit, Mich. Folding bed	813,004	Feb. 20	2962	652-3	120	2220
Hubbard, Ira B. (See Ward, Henry D., assignor.)						
Hubbell, Octave E., Monroe, La. Overshoe-retainer	813,897	Feb. 27	4745	1049	120	2665
Huber Account Register Company. (See Huber, John F., assignor.)						
Huber, Alfred F., Chicago, Ill. Excavating-machine	809,689	Jan. 9	2190	453-4	120	513
Huber, Emil, Detroit, Mich. Transmission-gearing	812,345	Feb. 13	1677	369	120	1906
Huber, Frederick K., Celina, Tex. Mortising-tool	809,954	Jan. 16	2691	555	120	676
Huber-Hodgman Printing Press Company. (See Hall, Bicknell, assignor.)						
Huber, John F., Lockport, assignor to Huber Account Register Company, Buffalo, N. Y. File	812,132	Feb. 6	1188	260	120	1731
Huber, Sigmund V., Pittsburg, Pa. Straightening-table	808,751	Jan. 2	261	56	120	60
Hubert, Gustav, Baraboo, Wis. Leaf-turner	811,225	Jan. 30	5320	1112	120	1315
Hudson, Bertram S., Castleton, N. Y. Device for measuring the thickness of paper	812,042	Feb. 6	1023	223-4	120	1697
Huebel, Otto H., Jersey City, N. J. Device for applying powder to the person	811,924	Feb. 6	781	170-1	120	1648
Hug, Daniel, assignor to J. T. Lund, Denver, Colo. Water-wheel	813,299	Feb. 20	3546	781	120	2346
Hughes, Edwin T., Gladstone, assignor of three-fourths to V. J. O'Brien, W. Z. Kinney, and J. M. Rogers, Silverton, Colo. Air-brake	811,064	Jan. 30	4982	1040	120	1243
Hughes, Frederick G. (See Stout and Hughes.)						
Hughes, Henry and R., Mount Vernon, N. Y. Device for dressing stone	813,210	Feb. 20	3377	744	120	2310
Hughes, Robert. (See Hughes, Henry and R.)						
Hughs, George G., Fort Worth, Tex. Wood-conveyer	808,926	Jan. 2	601	132	120	132
Huglin, Oscar E. (See Eriksson, Erik, assignor.)						
Hull, Foster J. (See Dement and Hull.)						
Hull, Scott H. (See Kellerman, William L., assignor.)						
Hull, Wolcott A., New York, N. Y. Filter	813,429	Feb. 27	3827	838	120	2462
Hullerman, William, Independence, Iowa. Shaft and pole coupling for vehicles	813,703	Feb. 27	4362	961	120	2582
Hullings, Charles W., assignor of one-half to J. W. Thatcher, Philadelphia, Pa. Steam-boiler fire-box	811,401	Jan. 30	5649	1182	120	1386
Hülsmeyer, Christian, Düsseldorf, Germany. Wireless transmitting and receiving mechanism for electric waves	810,150	Jan. 16	3102	640-1	120	763
Hult, Charles, Minneapolis, Minn. Paper-pressing attachment for recording instruments	813,005	Feb. 20	2965	653	120	2221
Hume, Edward C. (See Towers and Harrington, assignors.)						
Humphreys, William J., Elmwood, Ill. Truss-bridge	809,264	Jan. 2	1308	266	120	288
Hunn, Howard G., New York, N. Y. Adjusting-screw for revolving chairs	808,927	Jan. 2	603	132	120	133
Hunt, Alonzo B., *et al.* (See De Lay, Charles, assignor.)						
Hunt, Charles W., West New Brighton, N. Y. Friction device for brakes and clutches	811,562	Feb. 6	50	11	120	1495
Hunt, Frank P. (See Peterson, Per A., assignor.)						
Hunt, Helm, Ferris & Company. (See Ferris, Henry L., assignor.)						
Hunt, James H., Massillon, Ohio. Razor-blade holder	809,690	Jan. 9	2192	454	120	514
Hunter, William A., Terre Haute, Ind. Storm-top	810,151	Jan. 16	3105	641	120	763
Hunter, William F., assignor of one-half to F. R. Horsl, Arcata, Cal. Propeller	813,430	Feb. 27	3829	838	120	2463
Huntley Manufacturing Company. (See Hobnes, Frank T., assignor.)						
Huntoon, Charles F., assignor to Chicago Railway Equipment Company, Chicago, Ill. Brake-beam	813,704	Feb. 27	4364	961	120	2583
Huntoon, Charles F., assignor to Chicago Railway Equipment Company, Chicago, Ill. Brake-beam	813,705	Feb. 27	4365	961-2	120	2583
Huntoon, Charles F., assignor to Chicago Railway Equipment Company, Chicago, Ill. Brake-beam	813,706	Feb. 27	4366	962	120	2583
Huntoon, Charles F., assignor to Chicago Railway Equipment Company, Chicago, Ill. Brake-beam	813,798	Feb. 27	4540	1003	120	2630
Hunnse, Otto, St. Louis, Mo. Vehicle-axle	808,844	Jan. 2	426	94	120	96
Hunsinger, George, New York, N. Y. Reclining-chair	813,799	Feb. 27	4541	1004	120	2631
Hurd, William, Warren, Ind., and W. Wright, Franklin, Pa. Frame for pumping powers	810,945	Jan. 30	4775	993	120	1197
Hurlburt, Lansing W. (See Hurlburt, Samuel W., assignor.)						
Hurlburt, Samuel W., assignor of one-half to L. W. Hurlburt, Creston, Iowa. Clothes-pin basket	809,568	Jan. 9	1935	402	120	458
Hurst, Charles M., Rawlins, Wyo. Railway switch and signal mechanism	810,867	Jan. 23	4578	953	120	1121
Hurst, Charles M., Rawlins, Wyo. Switch and signal track trip	810,868	Jan. 23	4580	954	120	1121
Hurst, Timothy C., New York, N. Y. Amusement device	812,843	Feb. 20	2655	551-2	120	2153
Hussey, Alfred E., Chicago, Ill. Soldering compound	812,494	Feb. 13	1980	.....	120	1966
Huston, Benjamin F. (See Ahara and Huston.)						
Hutchins, Arthur W., Providence, R. I. Mechanical movement	808,926	Jan. 2	604	132	120	133
Hutchinson, Edson L. (See Moore and Hutchinson.)						
Hutchinson, Edson L., Honolulu, Hawaii. Dental clamp	811,848	Feb. 6	596	130	120	1610
Hutchinson, Edson L., Honolulu, Hawaii. Teeth-separator	811,849	Feb. 6	597	130	120	1611
Hutchinson, William P. (See Weston, Milton T., assignor.)						
Hutchison, Robert B., Wilkinsburg, Pa. Surface-cleaning machine	813,557	Feb. 27	4088	896	120	2524
Hutton, Robert S. (See Bottomley, Hutton, and Paget.)						
Hyatt, John W., Newark, N. J., assignor to F. S. Warmoth, Lawrence, La. Disintegrating-machine	813,300	Feb. 20	3547	782	120	2346
Hyatt Roller Bearing Company. (See Lockwood, Charles S., assignor.)						
Hyatt, Samuel W., Mount Vernon, Ohio. Gas-burner	810,653	Jan. 23	4181	864	120	1034
Hyde, Elmer A., Vinton, Iowa. Window-sash holder	811,402	Jan. 30	5651	1183	120	1386
Hyde, Frank S., Riverside, Cal. Steam-engine	813,201	Feb. 20	3549	782	120	2347
Hydro-Press Manufacturing Company. (See Rivers, Julian H., assignor.)						
Hyzer, Lee P. (See Fine and Hyzer.)						
Ideal Concrete Machinery Company. (See Borst, Frank A., assignor.)						
Ihmsen, John P., New York, N. Y. Lacquer or varnish	811,863	Feb. 6	53	.....	120	1496
Ihrig, Frank, *et al.* (See Kemper, Otto, assignor.)						
Ilg, William J. (See Lorenz, Alexander, assignor.)						
Illingworth, John, Newark, N. J. Ingot-casting machine	810,654	Jan. 23	4182	864	120	1035

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Illinois Sewing Machine Company *et al.* (See Baurmann, Gustav, assignor.)						
Improved Paper Machinery Company. (See Parker, Howard, assignor.)						
Imrie, Andrew D., Ferney, S. D. Folding egg-crate	810,283	Jan. 16	3391	701-2	120	834
Indiana Manufacturing Company. (See Nethery, Joseph W., assignor.)						
Industrial Development Company. (See Goodspeed, Arthur B., assignor.)						
Ingalls, Charles N. P., Lynn, Mass. Door check or fastener	809,062	Jan. 2	864	183	120	191
Ingersoll-Sergeant Drill Company. (See Cooper, John, assignor.)						
Ingersoll-Sergeant Drill Company. (See Gibson, Arthur H., assignor.)						
Ingersoll-Sergeant Drill Company. (See Prellwitz, William, assignor.)						
Ingersoll-Sergeant Drill Company. (See Taylor, Albert H., assignor.)						
Inglis, Alexander, Indianapolis, Ind. Motor-vehicle	811,403	Jan. 30	5652	1183	120	1386
Inman, Harry A., Amsterdam, N. Y. Box-covering machine	810,414	Jan. 23	3705	763-4	120	927
Instructing and Manufacturing Company. (See Higgins, Charles S., assignor.)						
Insull, Samuel. (See Ball, Henry P., assignor.)						
Interlocking Fence Company. (See Elwell and Grimm, assignors.)						
International Cigar Machinery Company. (See Herrington and Knight, assignors.)						
International Cigar Machinery Company. (See Luckett, William S., assignor.)						
International Cigar Machinery Company. (See Tyberg, Olaf, assignor.)						
International Harvester Company. (See Latimer, John W., assignor.)						
International Register Company. (See McCormick and Morrison, assignors.)						
International Silver Co. (See Kintz, Robert R., assignor.)						
International Steam Pump Company. (See Woodford, Bronson C., assignor.)						
Ippers, John W., assignor to A. H. Walker, trustee, New York, N. Y. Photomechanical printing	809,955	Jan. 16	2693	555	120	677
Ippers, John W., assignor to A. H. Walker, trustee, New York, N. Y. Photomechanical printing	812,495	Feb. 13	1962	431	120	1966
Ippers, John W., assignor to A. H. Walker, trustee, New York, N. Y. Photography	812,748	Feb. 13	2453	538-9	120	2064
Ireland, A. Bertsell, Greene, N. Y. Casein-picker	810,655	Jan. 23	4184	864	120	1035
Iroquois Machine Company. (See Tucker, Zechariah R., assignor.)						
Irwin, Herbert E., Galesburg, Ill. Resilient heel and sole	812,496	Feb. 13	1967	432	120	1966
Isaacs, John D., Oakland, and J. B. Speed, Berkeley, assignors to Rifled Pipe Company, San Francisco, Cal. Helically-rifled fluid pipe-line	808,752	Jan. 2	262	57	120	60
Isham, William, and F. E. Miller, Ionia, Mich. Road-culvert	809,304	Jan. 9	1393	283	120	342
Isler, Max H. (See Bally and Isler.)						
Isreal, Joseph. (See McKeown, James, assignor.)						
Iverson, Michael S., New York, N. Y. Floating elevator or lighter	812,206	Feb. 13	1401	304-5	120	1844
Iveson, Albert E., Gainsborough, and A. R. Wilson, Brighton, England; said Wilson assignor to said Iveson. Comminuting-machine	812,749	Feb. 13	2457	539	120	2065
Ivey, Romulus L., and R. D. McDonald, assignors of one-third to S. V. Hough, De Land, Fla. Turpentine-box-cutting machine	809,444	Jan. 9	1700	349-51	120	407
Ivory, James W., Philadelphia, Pa. Dental-instrument holder	812,567	Feb. 13	2122	465	120	1999
Iwanami, Takao, and M. R. Woodward, Washington, D. C. Diving apparatus	813,431	Feb. 27	3830	838-9	120	2463
J. B. Colt Company. (See Goodyear, Nelson, assignor.)						
J. H. Bunnell and Company. (See Zundel, Gustave A., assignor.)						
Jack, Alexander G. M. (See Hadfield and Jack.)						
Jackson, Alexander M., Schenectady, N. Y., assignor to General Electric Company. Vapor electric apparatus	808,753	Jan. 2	263	57	120	60
Jackson, Hugh H., Lebanon, Tenn. Quilting-frame	813,707	Feb. 27	4367	962	120	2584
Jackson, Isaac, Glossop, England. Fastening device	811,925	Feb. 6	782	171	120	1648
Jackson, James O. (See Petery and Jackson.)						
Jackson, John P., Orleans, Ind. Attachment to spectacles	811,564	Feb. 6	54	11	120	1496
Jackson, Peter H., San Francisco, Cal. Ventilator for basements and the like	809,617	Jan. 9	2043	424	120	481
Jackson, William J., San Francisco, Cal. Applying heat for the treatment of ores and metalliferous sands	808,754	Jan. 2	264	.....	120	61
Jacobs, Charles C., assignor to Jacobs' Steel Excavator Company, Amboy, Ill. Excavating-machine. (Reissue)	12,441	Jan. 30	5882	1233-4	120	1434
Jacobs, Frederick A., Jamaica, N. Y. Drain-valve for hydrant-pipes	809,063	Jan. 2	866	184	120	191
Jacobs, George W. (See Warner and Jacobs.)						
Jacobs, Jacob, New York, N. Y. Bracing for vault-lights, floors, &c.	808,660	Jan. 2	78	17	120	19
Jacobs, John P., Coalinga, Cal. Drilling-machine	813,211	Feb. 20	3379	744-5	120	2310
Jacobs, John S., Dallas, Tex. Embroidering attachment for sewing-machines	811,146	Jan. 30	5155	1078	120	1278
Jacobs' Steel Excavator Company. (See Jacobs, Charles C., assignor.) (Reissue.)						
Jacobson, Henry D., Atlantic, Iowa. Perforating-machine	808,661	Jan. 2	79	17	120	19
Jacoby, Albert C. (See Harrison and Jacoby.)						
Jacoby, Medwin L., Canton, Ohio. Horse-blanket pin	809,691	Jan. 9	2193	454	120	514
Jacques, Frank W., Victor, Colo. Ore-sorting belt	812,270	Feb. 13	1544	336-7	120	1878
Jacques, John S., Dorchester, Mass. Pneumatic despatch-tube system	812,271	Feb. 13	1546	337-8	120	1878
Jacques, John S., Dorchester, Mass. Pneumatic despatch-tube system	812,792	Feb. 13	2540	568-9	120	2082
Jaeger, Alexander, Philadelphia, Pa. Removable head for barrels	809,918	Jan. 9	2607	537	120	606
Jaeger, Charles H., New York, N. Y. Amusement device	809,956	Jan. 16	2697	556	120	677
Jaeger, Christian. (See Schnetti, Jaeger, and Waisleben.)						
Jaeger, Ferdinand, New York, N. Y. Copying apparatus	811,065	Jan. 30	4983	1040	120	1242
Jagenberg, Ferdinand E., Düsseldorf, Germany. Copying-press	809,375	Jan. 9	1544	312-14	120	374
Jagenberg, Ferdinand E., Düsseldorf, Germany. Contrivance for covering cardboard, sheet metal, wood, &c., with paper, &c.	813,708	Feb. 27	4368	963	120	2584
Jäger, Carl, Rock Island, Ill., assignor to Rock Island Battery Company. Electrical battery	806,755	Jan. 2	265	57	120	61
Jahn, Frederick L. (See Watson and Jahn.)						
Jahnke, Rudolph G., assignor of one-half to J. Beneke, Cincinnati, Ohio. Nut-lock	812,497	Feb. 13	1969	433	120	1967
Jakobsen, Herman G. (See Meigs and Jakobsen.)						
Jakobsen, Herman G. (See Meigs, Jakobsen, and Sullivan.)						
James B. Clow & Sons. (See Rice, Frank L., assignor.)						
James, Henry F., Franklin, Pa. Gearing	811,147	Jan. 30	5157	1078	120	1278
James, John R. (See Reeves, Frederick W., assignor.)						
James, Joseph, Baltimore, Md. Composition for cleaning lithographic stones	813,709	Feb. 27	4369	.....	120	2584
James, Thomas, Braddock, Pa. Drill-chuck	813,151	Feb. 20	3209	718	120	2238
James, Thomas J., R. McAlister, and W. S. Byram, Missoula, Mont. Surgical table	812,133	Feb. 6	1191	261	120	1732
James, Thomas L. (See James, Walter W. and T. L.)						
James, Walter W. and T. L., Rawles Springs, Miss. Apparatus for distilling wood and obtaining therefrom the different by-products	813,202	Feb. 20	3554	788	120	2347
James, Willard C., Cucamonga, Cal. Combined heater and folding furniture	813,268	Feb. 20	3718	813	120	2351
Janes, William D., Saginaw, assignor to Quaker Shade Roller Company, Bay City, Mich. Shade-roller						
Janner, Salvator, La Chaux-de-Fonds, Switzerland. Watch	812,134	Feb. 6	1192	261	120	1732
Janowitz, Myer, assignor to R. Janowitz, Sioux City, Iowa. Steam-boiler	813,432	Feb. 27	3834	839	120	2464
	811,066	Jan. 30	4984	1040	120	1243

Alphabetical list of patentees for January and February—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drfs.	Official Gazette. Vol.	Official Gazette. Page.
Janowitz, Rose. (See Janowitz, Myer, assignor.)						
Janssen, Henry, assignor to Textile Machine Works, Wyomissing, Pa. Braiding-machine	810,086	Jan. 16	2930	610	120	729
Janssens, Antoine, St. Nicolas, Belgium. Wharf or landing-stage	813,046	Feb. 20	3040	669	120	2337
Japp, Henry, New York, assignor to S. Pearson and Son, Inc., Long Island City, N. Y. Apparatus for erecting tunnels	811,404	Jan. 30	5653	1183–4	120	1396
Jaques, William, Royersford, Pa. Flue-cleaner for stoves and ranges	811,503	Jan. 30	5821	1216	120	1420
Jaquet, Charles, Strassburg-Königshofen, Germany. Mixing-machine	812,849	Feb. 20	2657	582	120	2153
Jarck, Eduard. (See Müller and Jarck.)						
Jarman, Alfred J., assignor to Paragon Photo-Chemical Company, New York, N. Y. Printing-frame	812,426	Feb. 13	1837	408	120	1940
Jarman, Edward C. (See Harris and Jarman.)						
Jarvis, Edgar B., Toronto, Canada. Reinforced concrete	811,926	Feb. 6	783	171	120	1648
Jarvis, Edgar B., Toronto, Canada. Reinforced truss for concrete	811,927	Feb. 6	784	171	120	1649
Jarvis, Edgar B., Toronto, Canada. Reinforcing-truss for concrete	813,303	Feb. 20	3556	783	120	2348
Jarvis, George W., Townsend, Mont. Shovel-guard	810,488	Jan. 23	3856	792	120	963
Jeanmaire, Paul, and H. Schmid, Mülhausen, Germany, assignors to Arnold Print Works, North Adams, Mass. Printing fabrics	808,987	Jan. 2	730		120	161
Jefferis, Richard W., Camden, N. J., assignor to Merritt & Company. Metal locker	810,415	Jan. 23	3709	764–5	120	928
Jefferis, Richard W., Camden, N. J., assignor to Merritt & Company. Panel for metal lockers	810,946	Jan. 30	4776	993–4	120	1197
Jefferis, Richard W., Camden, N. J., assignor to Merritt & Company. Locking device for metal lockers	810,947	Jan. 30	4777	994	120	1197
Jeffery, Thomas B. (See Symmonds, Robert, Jr., assignor.)						
Jeffrey, Joseph A. (See Bucher, Bertram H., assignor.)						
Jeffrey, Joseph A. (See Dufour, Albert Q., assignor.)						
Jeffrey, Joseph A. (See Horst, George C., assignor.)						
Jeffrey, Joseph A. (See Lynch, George E., assignor.)						
Jeffrey, Joseph A. (See Merrill, Edwin R., assignor.)						
Jeffrey, Joseph A. (See Murphy, Daniel R., assignor.)						
Jeffrey, Joseph A. (See Palmros, Alexander, assignor.)						
Jeffrey, Joseph A. (See Sessions, Frank L., assignor.)						
Jeffrey, Joseph A. (See Slocum, John C., assignor.)						
Jeffrey, Joseph A. (See Steckel, Archibald W. F., assignor.)						
Jeffrey, Joseph A. (See Webster, Alfred J., assignor.)						
Jeffrey, Joseph A. (See Willson, Freeman R., Jr., assignor.)						
Jelks, Edwin B., Quitman, Ga. Spatula and cork-extractor	810,538	Jan. 23	3958	815	120	985
Jelliffe, Alfred, St. Louis, Mo. Sample-display case	809,445	Jan. 9	1704	351	120	408
Jenkins, Charles F. (See Thomas and Jenkins.)						
Jenkins, Richard I., assignor of one-tenth to B. F. Marsh, Lewistown, Mont. Miner's lamp safety-shield	809,111	Jan. 2	961	203	120	217
Jennings, Archer B., Yalesville, Conn. Draw-knife	813,152	Feb. 20	3270	719	120	2288
Jennings, Charles P. (See Hollingshead and Jennings.)						
Jerald, Samuel E., Waterloo, Iowa. Pneumatic sulky	811,723	Feb. 6	353	78	120	1565
Jerkins, William L., Moultrie, Ga. Medicine-spoon	808,845	Jan. 2	428	94	120	95
Jesseman, John F., Lynn, Mass. Buffing-machine	811,504	Jan. 30	5823	1219	120	1421
Jewett, Eugene C., Eaglegrove, Iowa. Spade	809,807	Jan. 9	2397	496	120	560
Jigouse, Paul, Vanves, France. Electric motor	811,405	Jan. 30	5654	1184	120	1397
Jobborn, Arthur, assignor to M. Jobborn, Hamilton, Canada. Scale	810,539	Jan. 23	3959	815	120	985
Jobborn, Moses. (See Jobborn, Arthur, assignor.)						
Jobes, Lawrence U., Cincinnati, Ohio. Pneumatic motor	809,919	Jan. 9	2609	537–8	120	607
Jobes, Lawrence U., Cincinnati, assignor to Baldwin Company, Hamilton, Ohio. Mechanical musical-instrument player	810,057	Jan. 16	3932	610–11	120	729
Johanesson, Hemming, assignor to Aktiebolaget L. M. Ericsson & Co., Stockholm, Sweden. Relay	813,710	Feb. 27	4370	963	120	2584
Johansen, Jacob, and E. A. Fedick, Hamburg, N. Y. Potato-digger	810,765	Jan. 23	4377	909	120	1078
John Good Cordage Co. (See Good, John, assignor.)						
John, Hugo, Erfurt, Germany. Driving mechanism	810,766	Jan. 23	4379	909–10	120	1079
John, Martha E., Portsmouth, Va. Car-fender	813,498	Feb. 27	3965	869–70	120	2497
John, S. A., *et al.* (See Barth, Albert, assignor.)						
Johnson, Charles B., assignor of one-half to J. W. Stiefel, St. Paul, Minn. Fur-sewing-machine attachment	809,265	Jan. 2	1310	266	120	286
Johnson, Adolph, Battlecreek, Mich. Roller-chain for conveyers	812,686	Feb. 13	2288	497	120	2029
Johnson, Alfred W., New Brunswick, N. J. Meat-cutter	810,767	Jan. 23	4382	910–11	120	1080
Johnson, Allen A., Central Falls, R. I., assignor to Kip-Armstrong Company, New York, N. Y. Warp stop-motion for looms	813,304	Feb. 20	3557	783	120	2346
Johnson, Alvin S., assignor of one-fourth to F. J. Moore, Minneapolis, Minn. Safety starting device for gas-engines	811,928	Feb. 6	785	172	120	1649
Johnson, Annie M., and D. H. Rowe, Oakland, Cal. Window-cleaner	813,800	Feb. 27	4543	1004	120	2621
Johnson, Bascom. (See Rhodes, Byron F., assignor.)						
Johnson, Charles, Cortland, N. Y. Fertiliser-distributer	809,808	Jan. 9	2398	497	120	560
Johnson, Charles, assignor to Cortland Implement Company, Cortland, N. Y. Fertiliser-distributer	813,711	Feb. 27	4371	963–5	120	2585
Johnson, Charles J., and W. B. Porter, Minneapolis, Minn. Compo-board machine	808,756	Jan. 2	298	57–8	120	61
Johnson, Charles K., Florence, S. C. Fertilizer-distributer	810,768	Jan. 23	4387	911	120	1081
Johnson, Edward G. (See Johnson, Martin M. and E. G.)						
Johnson, Edward H. (See Lang, Johan G. V., assignor.)						
Johnson, Frank G., Elkader, Iowa. Valve-gear	813,433	Feb. 27	3536	840	120	2465
Johnson, Fred, *et al.* (See Beck, William, assignor.)						
Johnson, Frederick G., Hartford, Conn. Calculator	809,446	Jan. 9	1705	351–2	120	408
Johnson, Henry, assignor to Cadillac Cabinet Company, Detroit, Mich. Desk-table	809,276	Jan. 9	1545	314	120	374
Johnson, Isabella J., Cokedale, Mont. Garment-supporter	811,825	Jan. 30	5825	1219	120	1421
Johnson, James H., and H. Meyer, Fort Recovery, Ohio. Mold	808,849	Jan. 2	439	95	120	95
Johnson, Jeremiah P., Detroit, Mich. Corner construction for carriage-bodies	812,207	Feb. 13	1405	305	120	1846
Johnson, John, Overland Park, assignor to Country Hydrant Company, St. Louis, Mo. Automatic water-supply system	808,662	Jan. 2	80	18	120	20
Johnson, John, Overland Park, assignor to Country Hydrant Company, St. Louis, Mo. Automatic water-supply system	813,558	Feb. 27	4080	887	120	2525
Johnson, John A., Chicago, Ill. Gage for use of carpenters and joiners in fitting doors	810,459	Jan. 23	3956	792	120	963
Johnson, John A., Wheatfield, Ind. Building-block	812,498	Feb 13	1999	432	120	1967
Johnson, John B., Mount Vernon, S. D. Railway-tie	813,006	Feb. 20	2987	654	120	2222
Johnson, John E., Ishpeming, Mich. Marine vessel	809,654	Jan. 2	867	184	120	192
Johnson, John F., Chester, Pa. Explosive-engine	809,185	Jan. 2	1104	230	120	243
Johnson, Lewis M., East Providence, R. I. Fishing-float	812,153	Feb. 20	3271	719	120	2289
Johnson, Louis A. B., Philadelphia, Pa. Plunger-lubricator	809,509	Jan. 9	2400	497–8	120	560

Alphabetical list of patentees for January and February—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drfs.	Official Gazette. Vol.	Official Gazette. Page.
Johnson, Martin M., Greenville, Ohio. Game-table	811,148	Jan. 30	5157	1078	120	1379
Johnson, Martin M. and E. G., Malta, Ill. Corn-husker	811,067	Jan. 30	4985	1040	120	1343
Johnson, Moses E., Pittsburg, Pa. Wire basket	813,460	Feb. 27	3988	870	120	2497
Johnson, Ole, Cedarhouse, Wash. Penholder	809,622	Jan. 9	2194	454–5	120	514
Johnson, Oliver J., Wheeling, W. Va. Feed mechanism for metal sheets	810,132	Jan. 16	3106	641–2	120	784
Johnson, Oliver W., Cleveland, Ohio. Stamp-affixing machine	809,569	Jan. 9	1938	409–3	120	458
Johnson, Robert, Goin, Tenn. Mill-pick	813,212	Feb. 20	3380	745	120	2310
Johnson, Thomas C., assignor to Winchester Repeating Arms Co., New Haven, Conn. Firearm	813,801	Feb. 27	4544	1004	120	2621
Johnson, Thomas C., assignor to Winchester Repeating Arms Co., New Haven, Conn. Firearm	813,802	Feb. 27	4545	1005	120	2622
Johnson, Wallace B., assignor to Fairbanks, Morse & Company, Chicago, Ill. Conveyer	811,149	Jan. 30	5159	1078	120	1379
Johnson, Warren S., Milwaukee, Wis. Steam-generator	813,098	Feb. 20	3146	669	120	2261
Johnson, Warren S., Milwaukee, Wis. Motor-propelled vehicle	813,213	Feb. 20	3381	744–7	120	2311
Johnson, Wilber H., Cumberland, Md. Supply and exhaust valve mechanism for motors	813,305	Feb. 20	3562	784	120	2349
Johnson, William C. (See McMillan, Johnson, and Collord.)						
Johnson, William M., Detroit, Mich. Shaft carrier and tug	811,850	Feb. 6	598	130	120	1611
Johnston, Allen, Ottumwa, Iowa. Manufacture of hollow metallic balls from sheet metal	812,135	Feb. 6	1193	261	120	1732
Johnston, Edward A., Sterling, Ill. Hay-loader	812,788	Feb. 13	2543	549	120	2083
Johnston, Frank J., Sacramento, Cal. Decoy	812,490	Feb. 13	1970	433	120	1967
Johnston, Gray W., New York, N. Y. Mechanical movement	809,693	Jan. 9	2195	455	120	515
Johnston, Gray W., and A. H. Ackermann, New York, N. Y. Automatic block-signal system for electric railways	813,898	Feb. 27	4746	1049	120	2665
Johnston, William O., and P. J. Foley, Chicago, Ill. Sash-lifting apparatus for greenhouses	811,506	Jan. 30	5827	1220	120	1421
Johnston, William W., and W. T. Watts, Doniphan, Mo. Type-writer cabinet	810,416	Jan. 23	3712	765	120	928
Jokesch, Victor, Karlin-Prague, and J. Petřík, assignors of one-third to R. Butta, Prague, Austria-Hungary. Automatic switch for electric railways	813,154	Feb. 20	3272	719	120	2289
Jolly, Charles L., assignor of one-half to S. Sherwood, Salinas, Cal. Beet-harvester	809,694	Jan. 9	2197	455	120	515
Jones, Andrew A., Cincinnati, Ohio. Sash-holder	812,136	Feb. 6	1195	262	120	1733
Jones, Arthur C. (See Smith, William F., assignor.)						
Jones, Benjamin H., St. Louis, Mo. Corner-fastening for beds	809,447	Jan. 9	1709	352	120	409
Jones, Dora, New York, N. Y. Condiment-holder	813,649	Feb. 27	4257	935	120	2560
Jones, Edward M., St. Louis, Mo. Railway-track-grading machine	811,929	Feb. 6	787	172–3	120	1649
Jones, Edwin C., Woodstock, Canada. Inhaler	810,760	Jan. 23	4389	911	120	1081
Jones, Ernest S. (See Green, George F., assignor.)						
Jones, Frederick W., Santa Paula, assignor to E. North and E. Double, Los Angeles, Cal. Underreamer	809,570	Jan. 9	1942	403	120	459
Jones, Harry F. (See Smith and Jones.)						
Jones, Harry S. and W. G., Chicago, Ill. Leaf-flexing machine	810,540	Jan. 23	3962	815–17	120	986
Jones, Howard S. (See Kelley, William V. D., assignor.)						
Jones, John A., Mitchell, Mont. Gate-hinge	808,757	Jan. 2	269	58	120	62
Jones, Leon V. (See Thomas, Albion W., assignor.)						
Jones, Llewellyn W., Sewickley, Pa. Strainer	813,434	Feb. 27	3837	840	120	2465
Jones, Lora, Newton, Kans., assignor to De Long Hook and Eye Company, Philadelphia, Pa. Hook	809,065	Jan. 2	866	184	120	192
Jones, Thomas S., *et al.* (See Richardson, Abraham, assignor.)						
Jones, Thomas S. (See Richardson and Jones.)						
Jones, Walter C., Chicago, Ill., assignor to Garton-Daniels Company, Keokuk, Iowa. Lightning-arrester	811,226	Jan. 30	5322	1112	120	1316
Jones, William O. (See Jones, Harry S. and W. G.)						
Joors, Alphonse, Forest, near Brussels, and A. Mercenier, Brussels, Belgium. Telemeter	810,541	Jan. 23	3960	817	120	987
Jordan, Fred B., Winchester, Mass. Temporary binder	810,338	Jan. 16	3505	723	120	849
Jost, John F. W., Philadelphia, Pa. Incandescent gas-lamp	809,810	Jan. 9	2403	498	120	561
Joy Horn Manufacturing Company. (See Joy, Joseph F., assignor.)						
Joy, Joseph F., assignor to Joy Horn Manufacturing Company, Monongahela, Pa. Lubricator for cars	813,214	Feb. 20	3386	747	120	2311
Joyal, Dolphis, Lowell, Mass. Lamp-burner	809,112	Jan. 2	963	203	120	217
Joyce, Charles, *et al.* (See Beck, William, assignor.)						
Joyce, James M., Edgerton, Wis. Chain	809,113	Jan. 2	964	203	120	217
Joyce, William H., *et al.* (See Kelly, Alonso, assignor.)						
Judge, Henry A., Washington, D. C. Telephone system	809,186	Jan. 2	1109	230	120	245
Juengst, Charles A., Croton Falls, N. Y. Stapling-machine	813,215	Feb. 20	3390	747–8	120	2312
Juhl, Claus A., Chicago, Ill. Hoist or elevator	809,066	Jan. 2	869	184	120	192
Julhe, Jean B. I. A., St. Mandé, France. Construction of ships' hulls	812,656	Feb. 13	2287	497	120	2030
Juppet, Pierre, Paris, France. Device for rendering bottles non-refillable	809,811	Jan. 9	2405	498	120	562
Jurt, Grace. (See Atkinson, Adrianne O., assignor.)						
Kadel, Dottie, Powder Springs, Ga. Mixer and kneader	810,417	Jan. 23	3713	765	120	929
Kahl, Louis C., assignor to Waterbury Machine Company, Waterbury, Conn. Carrier mechanism	808,758	Jan. 2	270	58	120	62
Kahlenberg, William R., Two Rivers, Wis. Exhaust-muffler	810,542	Jan. 23	3970	818	120	988
Kahlenberg, William R., Two Rivers, Wis. Crank	812,208	Feb. 13	1408	306	120	1846
Kahn, Julius, assignor to Trussed Concrete Steel Company, Detroit, Mich. Combined steel and concrete beam	813,803	Feb. 27	4546	1005	120	2622
Kahn, Solomon, Cadillac, Mich. Adjustable bracket	809,448	Jan. 9	1710	352	120	409
Kakao-Compagnie Theodor Reichardt Gesellschaft mit Beschränkter Haftung. (See Neumann, Friedrich E. F., assignor.)						
Kalisch, Frederick, assignor of one-eighth to G. D. Kluegel, St. Louis, Mo. Automatic air-brake apparatus for automobiles	811,507	Jan. 30	5828	1220	120	1422
Kallscher, Georg, Frankfort-on-the-Main, Germany, assignor to Cassella Color Company, New York, N. Y. Red azo dye and making same	813,155	Feb. 20	3273		120	2289
Kallitsch, Hugo J. (See Lindner and Kallitsch.)						
Kallwoda, Irene, Sopron, Austria-Hungary. Crochet-work button	811,734	Feb. 6	354	78	120	1565
Kampfe, Frederick. (See Kampfe, Otto and F.)						
Kampfe, Frederick, New York, N. Y. Razor-strop	812,568	Feb. 13	2124	466	120	1999
Kampfe, Otto and F., New York, N. Y. Razor-strop	809,114	Jan. 2	965	203	120	218
Kane, Peter W., Mason City, Iowa. Variable-speed gear	810,058	Jan. 16	3884	611	120	780
Karibo, Mabel H., San Louis Obispo, Cal. Book-strap	812,216	Feb. 20	2304	746	120	2313
Karpen, Julius, Chicago, Ill. Safety-match box	809,508	Jan. 9	1823	376	120	435
Karr, James P., Monticello, Ind. Side brace or anchor for dredges	812,043	Feb. 6	1035	224	120	1697
Kas, Johann, Asch, Austria-Hungary. Farrier's tool	812,780	Feb. 13	2460	540	120	2065
Kasselman, William J., assignor to Cary Safe Company, Buffalo, N. Y. Bolt operating and locking mechanism	812,044	Feb. 6	1039	224–5	120	1698

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Kaufmann, Julius. (See Kochmann and Kaufmann.)						
Kaumagraph Co. (See Scott, William, assignor.)						
Kauntze, Edward, Hanford, Cal. Door-releasing mechanism	812,500	Feb. 13	1973	433	120	1988
Kausch, Charles, Bath, N. Y. Trolling-spoon	813,500	Feb. 27	3967	870	120	2497
Kay, William W., St. Louis, Mo. Conductor's cash-fare-receipt register	809,377	Jan. 9	1546	314–16	120	374
Kay, William W., St. Louis, Mo. Fare-register	809,378	Jan. 9	1556	316–18	120	376
Kaylor, John D., Harrison township, Logan county, Ohio. Corn-shock loader and carrier	812,272	Feb. 13	1580	338	120	1879
Kaysar, Albert, Oakland, Cal. Desk appurtenance	812,501	Feb. 13	1974	433	120	1988
Keech, Alvin W., Hilo, Hawaii. Loading and unloading device	809,618	Jan. 9	2045	426	120	481
Keal, Charles E., Indianapolis, Ind. Stenographic type-writing machine	810,209	Jan. 16	3229	668–9	120	788
Keen, Eliot, and R. F. Ayers, New York, N. Y. Amusement device	811,775	Feb. 6	449	97	120	1584
Keene, Archibald T., Peoria, Ill. Kettle	813,899	Feb. 27	4750	1049	120	2666
Keeney, Alanson M., Ann Arbor, Mich. Wire-lock	812,928	Feb. 20	2812	619	120	2189
Keers, John. (See Healy and Keers.)						
Kegrise, Frank M., Philadelphia, Pa. Fountain-pen	810,284	Jan. 16	3392	702	120	824
Kehoe, Pannell B., Flemingsburg, Ky. Electrical piano-player	809,305	Jan. 9	1393	283–4	120	342
Kehoe, Thomas J., Fort Wayne, Ind. Oil-feeding device	811,640	Feb. 6	211	45	120	1531
Kehr, Ernest. (See Goldmann, Carl, assignor.)						
Keil, Henry F., Bronxville, N. Y. Casing for wheels, &c., and track therefor	809,695	Jan. 9	2200	456	120	516
Keil, Henry F., Bronxville, N. Y. Casing for wheels, &c., and track therefor	809,696	Jan. 9	2201	456	120	516
Keil, Henry F., Bronxville, N. Y. Track or way	809,697	Jan. 9	2202	456	120	516
Keil, Henry F., Bronxville, N. Y. Air goods	811,406	Jan. 30	5655	1185	120	1387
Keil, Henry F., Bronxville, N. Y. Fabric for air goods	811,407	Jan. 30	5657	1185–6	120	1388
Keil, Henry F., Bronxville, N. Y. Bracket	813,501	Feb. 27	3968	870–1	120	2497
Kelm, Frank L., assignor to William Wharton, Jr., & Company, Incorporated, Philadelphia, Pa. Movable-point railway-crossing	812,796	Feb. 13	2546	560	120	2084
Keith, Daniel W., Keithville, La. Window-screen	812,850	Feb. 20	2657	582	120	2153
Keller, Huldreich, Berlin, Germany, assignor to General Electric Company. Bucket for turbines	812,795	Feb. 13	2547	560	120	2084
Kellerman, William L., assignor of one-half to S. H. Hull, Oskaloosa, Iowa. Harness-pad	809,449	Jan. 9	1711	353	120	409
Kelley, Samuel D., Boston, Mass. Lay-motion for looms	811,408	Jan. 30	5658	1186	120	1388
Kelley, Wilbur S., assignor of one-half to C. C. Koeper, Newton, Iowa. Traction-engine	812,137	Feb. 6	1196	262–3	120	1733
Kelley, William V. D., Newark, N. J., assignor of one-half to H. S. Jones, Brooklyn, N. Y. Display-mirror	809,698	Jan. 9	2203	456	120	516
Kellner, Henry F., North Platte, assignor to J. Whitney, Fremont, Nebr. Fascine	812,045	Feb. 6	1032	225	120	1699
Kellogg, William M., Pittsfield, Mass., assignor to Yankee Novelty Company. Broom-holder	813,712	Feb. 27	4375	965	120	2585
Kelly, Alonzo, assignor of three-fourths to F. R. Scott, W. H. Joyce, and J. C. Smith, Harrisburg, Pa. Car-coupling	813,650	Feb. 27	4258	935	120	2560
Kelly, Charles L., Grant, Ky. Washing-machine	812,138	Feb. 6	1199	263–4	120	1734
Kelly, Fred J., assignor to E. Bement's Sons, Lansing, Mich. Lifting device for gang and sulky plows	812,273	Feb. 13	1551	338–9	120	1879
Kelly, George, Hinsdale, Ill. Composite insulating material	811,227	Jan. 30	5324	.....	120	1316
Kelly, George E., Dorranceton, assignor of one-half to J. M. Arnold, Wilkesbarre, Pa. Coupling apparatus for cars	811,068	Jan. 30	4987	1041	120	1244
Kelly, James J., Albany, N. Y. Machine for dressing and finishing surfaces of floors	810,770	Jan. 23	4393	911	120	1062
Kelly, William H. (See Luckenbach, Harry, assignor.)						
Kelvin & James White. (See Ferguson, James, assignor.)						
Kemper, Otto, assignor of three-fourths to J. T. Tracy, H. W. Dietterick, and F. Ikeler, Bloomsburg, Pa. Garment-clasp	810,948	Jan. 30	4778	994	120	1198
Kempf, John, Jr., Salt Lake City, Utah. Fence	812,274	Feb. 13	1553	339	120	1880
Kempton, Henry N., Terry, Mont. Hame	812,139	Feb. 6	1201	264	120	1734
Kendall, George H., New York, N. Y. Numbering mechanism for printing-presses	811,508	Jan. 30	5830	1220–1	120	1422
Kenna, Michael P., Dubuque, Iowa. Envelop printing and addressing machine	809,957	Jan. 16	2699	556	120	677
Kennedy, David S., Brooklyn, N. Y., assignor to Mergenthaler Linotype Company. Linotype-machine	810,153	Jan. 16	3109	642	120	764
Kennedy, John W., Cecil, Ga. Turpentine-gutter	811,069	Jan. 30	4992	1041	120	1245
Kennedy, Julian, Pittsburg, Pa. Blowing-engine valve	811,228	Jan. 30	5325	1112	120	1316
Kennedy, Peter, McBain, Mich. Stock-tank	809,958	Jan. 16	2703	557	120	678
Kennedy, Thomas W., *et al.* (See Thompson, John M., assignor.)						
Kennedy, William H., Portland, Oreg. Cattle or stock guard	813,713	Feb. 27	4376	965–6	120	2586
Kennicott, Cass L., assignor to Kennicott Water-Softener Company, Chicago, Ill. Water-purifying apparatus	811,229	Jan. 30	5326	1113	120	1316
Kennicott Water-Softener Company. (See Kennicott, Cass L., assignor.)						
Kenrich, Jay. (See Blake and Kenrich.)						
Kent, Archibald, New York, assignor to J. W. Kent, Brooklyn, N. Y. Body-forming machine	811,566	Feb. 6	61	13	120	1496
Kent, Archibald, and R. Orr, New York, N. Y.; said Kent assignor to said Orr. Wire bending and twisting machine	811,565	Feb. 6	55	12	120	1496
Kent, George M., and C. L. Smith, New York, N. Y. Signature-gatherer	811,509	Jan. 30	5832	1221–2	120	1422
Kent, James W. (See Kent, Archibald assignor.)						
Kent, Perry E., Utica, N. Y. Gun-barrel for pistols, rifles, and ordnance	812,140	Feb. 6	1202	264	120	1734
Kent, William E., Harlan, Iowa. Draft-equalizer	813,973	Feb. 27	4886	1080	120	2693
Kepler, Emanuel O., Denver, Colo. Developing-cabinet for photographic purposes	810,418	Jan. 23	3714	766	120	929
Kern, Albert G., assignor to Nichols and Shepard Co., Battlecreek, Mich. Traction-engine	811,641	Feb. 6	213	45	120	1531
Kern, Bernard, Jr., Toledo, Ohio. Clinometer	809,699	Jan. 9	2205	457	120	517
Kern, Bernard, Jr., Toledo, Ohio. Dust-collector	810,771	Jan. 23	4395	912	120	1062
Kernaghan, William. (See Turner, Kernaghan, and Swinehart.)						
Kerngood, Herman, Baltimore, Md., and H. A. Taylor, New York, N. Y. Wheel-tire for automobiles	812,427	Feb. 13	1838	404	120	1940
Kernin, Gustav, Crandon, Wis. Tongs	812,929	Feb. 20	2813	619	120	2189
Kerr, George W., Springfield, Mass. Wind-shield for vehicles	812,930	Feb. 20	2814	620	120	2189
Kerr, William M., Washington, D. C. Shell-fuse	812,046	Feb. 6	1033	226	120	1699
Kespohl, William M., Duluth, Minn. Artificial limb	812,276	Feb. 13	1554	339	120	1880
Kessee, Walter L., Reagan, Tex. Trunk-corder	811,180	Jan. 30	5162	1079	120	1280
Kesselman, William H., Parkersburg, W. Va. Trip-casing spear	812,889	Feb. 13	2126	468	120	2000
Ketcham, Henry W., Patchogue, N. Y. Bolt-locking washer	813,714	Feb. 27	4378	966	120	2586
Kettling & Braun. (See Gerisch, Gustav B., assignor.)						
Ketterling, Preston A., Cadiz, Ohio. Automatic gas danger-signal	808,929	Jan. 2	606	132	120	134
Keuffel & Esser Company. (See Reichsteter, Alexander, assignor.)						
Key, James P., Schenectady, N. Y., assignor to General Electric Company. Hydraulic shaft-packing for turbines	811,642	Feb. 6	214	46	120	1531
Kidd, James W., Okarche, Okla. Ter. Fence-post	812,141	Feb. 6	1205	264	120	1734
Kidder, William N., Providence, R. I. Separable button or stud	808,988	Jan. 2	783	188	120	162

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Kiefer, Karl, Cincinnati, Ohio. Filtering apparatus	812,931	Feb. 20	2816	620	120	2190
Kiefer, Karl, Cincinnati, Ohio. Filtering element	812,932	Feb. 20	2819	621–2	120	2191
Kiefer, Karl, Cincinnati, Ohio. Filter	812,933	Feb. 20	2822	622	120	2192
Kiefer, Karl, Cincinnati, Ohio. Filter	812,934	Feb. 20	2824	622–3	120	2192
Kiefer, Karl, Cincinnati, Ohio. Lifting device	812,394	Feb. 20	3721	818	120	2382
Kiefer, Karl, Cincinnati, Ohio. Filter-pulp-packing machine. (Reissue)	12,455	Feb. 20	3748	822–3	120	2388
Kielberg, Carl J., Bornholm, Denmark. Molding apparatus	811,207	Jan. 30	5460	1138	120	1345
Kiesel, William F., Jr., Altoona, Pa. Post and carline for railway-car frames	809,920	Jan. 9	2811	538	120	607
Kiesel, William F., Jr., Altoona, Pa. Steel underframe for railway-cars	809,921	Jan. 9	2812	538–9	120	608
Kiger, Samuel D. (See Marsh, John M., assignor.)						
Kihlgren, Bernhard, Holyoke, Mass. Paper-pulp-assorting apparatus	811,930	Feb. 6	790	173	120	1650
Kilduff, John M., Boston, Mass. Non-refillable bottle	813,715	Feb. 27	4379	966	120	2586
Kilduff, John M., Boston, Mass. Non-refillable bottle	813,804	Feb. 27	4548	1005	120	2622
Killam, Perry A. A., Ellsworth, Me. Nursing-bottle holder	808,848	Jan. 2	434	98	120	96
Killefer, John, Los Angeles, Cal. Weed-cutter	812,276	Feb. 13	1555	340	120	1880
Kimber, Simeon B., Marquette, Mich., assignor to E. I. Du Pont de Nemours Powder Company, Wilmington, Del. Cartridge-loading machine	813,435	Feb. 27	3838	840–1	120	2465
Kimbrough, Charles E., Logansport, Ind. Voting-machine	813,007	Feb. 20	2968	654	120	2222
Kimes, Hugh W., assignor to Valle & Kimes, Dayton, Ohio. Pumping apparatus	813,008	Feb. 20	2971	654	120	2222
Kimmey, John V. A., Jr., New Haven, Conn. Thermostatic switch for incandescent electric lamps	809,700	Jan. 9	2207	457	120	517
Kimmons, Herbert L., Decker, Ind. Mail-deliverer	809,187	Jan. 2	1111	231	120	245
Kimsey, James C., assignor to American Paper Bottle Company, Philadelphia, Pa. Paper bottle, cup, or other container	809,812	Jan. 9	2406	499	120	562
Kimsey, James C., assignor to American Paper Bottle Company, Philadelphia, Pa. Making paper receptacles	811,409	Jan. 30	5660	1186	120	1388
Kimsey, James C., and H. R. Heyl, assignors to American Paper Bottle Company, Philadelphia, Pa. Manufacture of paper bottles, cups, &c	809,813	Jan. 9	2408	499	120	562
Kincaid, Walter C., St. Charles, Ill. Fence-making machine	811,931	Feb. 6	792	174	120	1650
Kind, Maurice, *et al.* (See Loewenstein, Maximilian, assignor.)						
Kinder, Arthur H., assignor to L. C. Chase & Company, Boston, Mass. Horse-blanket	812,796	Feb. 13	2548	560	120	2084
Kinealy, John H., Ferguson, Mo. Air-purifying apparatus	813,217	Feb. 20	3395	748–9	120	2313
King, Alphonse. (See Roussel, Willis J., assignor.)						
King, Arthur W., assignor to C. Rogers, London, England. Means for soldering aluminium	811,725	Feb. 6	355	.....	120	1565
King, Charles C., Louisville, Ky. Tag-stamping device	809,188	Jan. 2	1113	231	120	245
King, David, *et al.* (See St. Peter, Napoleon, Jr., assignor.)						
King, Edwin A., Philadelphia, Pa. Updraft-kiln	808,847	Jan. 2	431	95–6	120	96
King, Homer A., Colton, Cal. Twin-head rotary engine	813,974	Feb. 27	4887	1080	120	2693
King, James F., Washington, D. C. Wireless telegraphy	813,975	Feb. 27	4888	1081	120	2694
King, John B., Plymouth, England. Power-transmitting mechanism	810,869	Jan. 23	4581	954	120	1121
King, John W., assignor to Lawson Boat and Car Company, New York, N. Y. Laterally-movable dumping-vehicle	811,851	Feb. 6	599	130–1	120	1611
King, Louis A., and C. Ploss, Salem, Mass. Holder	813,047	Feb. 20	3041	669	120	2238
King, Philip F. (See Brodnax and King.)						
King, Robert E., Beaufort, N. C. Druggist's prescription-file	810,772	Jan. 23	4398	912	120	1063
King, Robert E., Beaufort, N. C. Toy	811,510	Jan. 30	5835	1222	120	1423
King, Robert E., Beaufort, N. C. Match-box	812,047	Feb. 6	1037	226	120	1700
King, Samuel M., assignor of one-third to D. A. Williams, Marion, Ind. Piano-repairer's tool	810,285	Jan. 16	3395	702	120	824
King, Thomas J., Richmond, Va. Combined weeder and harrow	810,154	Jan. 16	3111	643	120	765
King, Tom C., New York, N. Y., assignor to National Metallurgic Company, Jersey City, N. J. Preventing the formation of scaffolds in kilns	810,059	Jan. 16	2936	.....	120	730
King, Warren D. (See Hood, Ralph O., assignor.)						
Kingsbury, Edmund W., Framingham, Mass. Bulletin-board and rack	811,298	Jan. 30	5463	1139	120	1346
Kingston, Thomas H., Somerville, Mass. Portable staging	808,989	Jan. 2	734	158	120	162
Kinkead, Arthur. (See Cook, John H., assignor.)						
Kinman, Ira, Pearl City, Ill. Toy	813,308	Feb. 20	3564	784	120	2350
Kinney, Willis Z., *et al.* (See Hughes, Edwin T., assignor.)						
Kinter, John H., Indiana, Pa. Trolley for electric cars	812,851	Feb. 20	2659	582	120	2154
Kintz, Robert R., assignor to International Silver Co., Meriden, Conn. Salver or tray	811,209	Jan. 30	5464	1139	120	1346
Kious, Silas G. (See Glenn, Allen, assignor.)						
Kip-Armstrong Company. (See Johnson, Allan A., assignor.)						
Kip-Armstrong Company. (See Kip and Armstrong, assignors.)						
Kip-Armstrong Company. (See Kip and Greenwood, assignors.)						
Kip-Armstrong Company. (See Kip and Smith, assignors.)						
Kip, Frederic F., Montclair, N. J., and E. C. Smith, Central Falls, R. I., assignors to Kip-Armstrong Company, New York, N. Y. Warp stop-motion for looms	813,309	Feb. 20	3577	786	120	2352
Kip, Frederic F., Montclair, N. J., and E. Greenwood, Bridgeport, Conn., assignors to Kip-Armstrong Company, New York, N. Y. Warp stop-motion for looms	813,308	Feb. 20	3572	785	120	2351
Kip, Frederic F., Montclair, N. J., and F. M. Armstrong, Pawtucket, R. I., assignors to Kip-Armstrong Company, New York, N. Y. Warp stop-motion for looms	813,307	Feb. 20	3565	784–5	120	2350
Kipp, Anna. (See Kipp, Leonard, assignor.)						
Kipp, Leonard, Waterbury, Conn., assignor to A. Kipp, New York, N. Y. Reclining-chair	813,156	Feb. 20	3274	719–20	120	2289
Kirby, Edmund B., Roseland, Canada. Separating minerals	809,989	Jan. 16	2708	557	120	678
Kirby, George F., New Bedford, Mass. Game apparatus	812,048	Feb. 6	1038	226	120	1700
Kirk, Harry D. (See Brown, James H., assignor.)						
Kirkland, David K., Schell City, Mo. Wire-stretcher	808,750	Jan. 2	372	89	120	62
Kirkpatrick, George W., Rochester, N. Y. Attachment for vehicle-wheels	810,419	Jan. 23	3717	766	120	930
Kirkpatrick, George W., Rochester, N. Y. Attachment for vehicle-wheels	810,420	Jan. 23	3719	766	120	930
Kirkwood, William, Chicago, Ill. High-pressure gas-burner	810,570	Jan. 23	4562	954	120	1122
Kirlin, Linden. (See Shearer, Andrew, assignor.)						
Kirsten, Joseph A. G., Randfontein, Transvaal. Apparatus for sharpening rock-drilling-machine bits	812,570	Feb. 12	2127	466	120	2000
Kirtley, Simeon B., Columbia, Mo. Self-indexing loose-leaf ledger. (Reissue)	12,448	Feb. 6	1218	267	120	1759
Kissel, Wilhelm, Königswusterhausen, Germany. Apparatus for automatically lighting gas-lamps	809,814	Jan. 9	2409	499	120	562
Kitsee, Isidor. (See Nacke, Arnold, assignor.)						
Kitsee, Isidor Philadelphia, Pa. Ascertaining the compass direction of moving objects	811,282	Feb. 6	600	131	120	1612
Kitsee, Isidor, Philadelphia, Pa. Electric coil	812,667	Feb. 13	2288	498	120	2030
Kittleson, Ole O., Lee, Ill. Lubricator	812,428	Feb. 13	1839	404	120	1940
Klauer, William H., Dubuque, Iowa. Manufacture of sheet-metal elbows	810,155	Jan. 16	3114	643	120	765
Klauk, William H., and J. P. Lowry, Winchester, Ky. Hemp-breaking machine	811,726	Feb. 6	356	79	120	1565
Klein, Charles J., assignor to R. A. Schoenberg, New York, N. Y. Means for converting motion	811,410	Jan. 30	5661	1187	120	1388
Kleine, George, Chicago, Ill. Stereopticon	810,230	Jan. 16	3007	723	120	840

Alphabetical list of patentees for January and February—Continued.

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Kleinschmidt, Edward E., assignor to F. Kleinschmidt, New York, N. Y. Facsimile-telegraph	812,142	Feb. 6	1208	285–7	120	1735
Kleinschmidt, Frederick. (See Kleinschmidt, Edward E., assignor.)						
Klemm, William J., Chicago, Ill. Window	813,716	Feb. 27	4381	986–7	120	2586
Klemme, Julius L., Quincy, Ill. Heater	809,507	Jan. 9	1824	376	120	435
Klenk, Gottlieb, assignor to Clipper Plow Company, Defiance, Ohio. Metal box	813,976	Feb. 27	4869	1081	120	2694
Klepetko, Frank, New York, N. Y. Roasting-furnace	811,643	Feb. 6	216	46	120	1582
Klie, Joseph G. (See Schreiber and Klie.)						
Kline, David C., assignor to Pritchard-Strong Company, Rochester, N. Y. Burner device for tubular lanterns	808,930	Jan. 2	607	133	120	134
Kline, David C., Rochester, N. Y., assignor to Pritchard Manufacturing Company. Lantern	809,508	Jan. 9	1826	376	120	435
Kline, Harvey Z., assignor of one-half to A. F. Van Ostram, Indianapolis, Ind. Machine for making artificial stone	811,300	Jan. 30	5465	1139–40	120	1346
Kline, Rudolph D., Streator, Ill. Core-extracting device	811,301	Jan. 30	5467	1140	120	1347
Kline, Rudolph D., Streator, Ill. Plant-excavator	813,717	Feb. 27	4384	987	120	2587
Klingenberg, John, Kipling, Mich. Gun-sight	810,156	Jan. 16	3115	643	120	765
Klint, Axel A. C., Holton, Kans. Milk-strainer	809,115	Jan. 2	987	204	120	218
Kloman, Theodore W., New York, assignor of one-half to G. Lucas, Brooklyn, N. Y. Transposer for musical instruments	810,949	Jan. 30	4779	995	120	1198
Kluegel, Geo. D. (See Kalisch, Frederick, assignor.)						
Knapp, Louis H., Parkersburg, W. Va. Mold for casting center-hung sash-weights	812,935	Feb. 20	2826	623	120	2192
Knapp, Stefan, Detroit, Mich. Fire-pot and grate	809,701	Jan. 9	2208	457	120	517
Knecht, Wilhelm, Stuttgart, Germany. Nail-supplying device for shoe-nailing machines	813,310	Feb. 20	3583	786	120	2353
Knisely, Daniel W., assignor to Drury-Knisely Manufacturing Company, Dayton, Ohio. Labeling-machine	812,936	Feb. 20	2827	624–5	120	2193
Knose, Isaac A. (See Fowler, Lewis D., assignor.)						
Knouper, George M., New York, N. Y. Filter	811,151	Jan. 30	5163	1079	120	1280
Knietsch, Rudolf, Ludwigshafen-on-the-Rhine, Germany, assignor, by mesne assignments, to General Chemical Company. Making sulfuric anhydrid	809,450	Jan. 9	1712	353	120	409
Knight, Fred E., Troy, Pa. Traction-wheel	812,502	Feb. 13	1975	433–4	120	1968
Knight, Harry. (See Herrington and Knight.)						
Knight, Herbert L., and B. W. Sweet, assignors to Williams-Abbott Electric Company, Cleveland, Ohio. Adjustable support for telephones	809,379	Jan. 9	1565	319	120	377
Knight, James S., and M. B. Russ, Kansas City, Mo. Barrel-opener	809,380	Jan. 9	1566	319	120	378
Knight, William B., Bellefontaine, Ohio. Device for splicing T-rails	813,157	Feb. 20	3276	720	120	2260
Knipe, Oliver C., Norristown, Pa., assignor to Pressed Steel Manufacturing Company. Ball-bearing caster	811,152	Jan. 30	5165	1079	120	1281
Knoblock, A. J. (See Stewart, Robert A., assignor.)						
Knoke, Herman A., Chicago, Ill. Clamp	810,543	Jan. 23	3971	818	120	968
Knollenberg, William E., and J. A. Frey, St. Louis, Mo. Non-refillable bottle	812,751	Feb. 13	2462	540	120	2065
Knoop, John H. W., Philadelphia, Pa. Attachment for linotype-machines	808,981	Jan. 2	606	133	120	134
Knorr, Georg, Britz, near Berlin, Germany. Distributing-valve for air-brakes	812,752	Feb. 13	2463	540–1	120	2066
Knowles, Samuel E., San Francisco, Cal. Trolling-spoon	813,718	Feb. 27	4385	987	120	2587
Knox, Charles B. (See Hallock, Arthur T., assignor.)						
Knox, Samuel L. G., Milwaukee, assignor to Bucyrus Company, South Milwaukee, Wis. Traversing mechanism	811,230	Jan. 30	5329	1113.	120	1317
Knox, Samuel L. G., Milwaukee, and W. Ferris, assignors to Bucyrus Company, South Milwaukee, Wis. Hoisting apparatus	808,990	Jan. 2	735	159	120	162
Knudson, Adolphus A., New York, assignor of one-half to F. H. Clark, Brooklyn, N. Y. Insulating attachment for electric fixtures	812,797	Feb. 13	2549	560	120	2085
Knudsvig, Knud H., Buxton, N. D. Belt-guide	811,302	Jan. 30	5468	1140	120	1347
Knupp, Jacob C., and J. G. Greene, Warren, Pa. Sand-reel	810,490	Jan. 23	3958	798	120	964
Kay, Richard, Brooklyn, N. Y. Knife	813,009	Feb. 20	2972	655	120	2222
Koblizek, Vincenz, Salmthal, Austria-Hungary. Tachometer or speed-indicator	812,987	Feb. 20	2833	625	120	2194
Koch, James W., Reynolds, Pa. Nut-lock	812,439	Feb. 13	1842	404	120	1941
Koch, Walter E., Pittsburg, Pa. Treating molten matte	808,849	Jan. 2	436	96	120	97
Kochmann, Carl, and J. Kaufmann, Berlin, Germany. Rendering materials or articles resistant to water and chemicals	813,218	Feb. 20	3366	.....	120	2614
Koehler, Casper, Canyon City, Oreg. Hay-stacker	813,719	Feb. 27	4387	988	120	2587
Koehler, Charles, Toledo, Ohio. Hat-display rack	810,421	Jan. 23	3721	767	120	920
Koehler, Henry L., Deer Park, Ky. Adjustable curved type and cylinder	811,727	Feb. 6	366	70	120	1565
Koehler, Henry L., Deer Park, Ky. Interchangeable curved type and plate	811,776	Feb. 6	460	97	120	1584
Koeper, Charles C. (See Kelley, Wilbur S., assignor.)						
Koerter, Henry, assignor to Crane Company, Chicago, Ill. Tapping-machine	813,559	Feb. 27	4092	907–8	120	2525
Kohn, Morris, New York, N. Y. Coin collecting and carrying device	810,668	Jan. 23	4185	865	120	1036
Kolby, Nicolaus, assignor to H. Detmer, Chicago, Ill. Harp	812,200	Feb. 13	1407	306	120	1846
Kolbe, Hugo, Vienna, Austria-Hungary, and P. Askenasy, Nuremberg, Germany. Producing circulation in electrolytic processes	809,116	Jan. 2	988	204	120	218
Kollmar, Robert, Newark, N. J. Jewelry-catch	808,760	Jan. 2	273	59	120	62
Kones, Peter, Castlewood, S. D. Wrench	810,667	Jan. 23	4188	865	120	1035
König, Albert, assignor to Firm of C. Zeiss, Jena, Germany. Angle-measuring instrument	811,777	Feb. 6	461	98	120	1584
König, Rudolf, Gelsenkirchen, Germany. Titration apparatus	813,977	Feb. 27	4390	1082	120	2694
Koons, John H., Huntington Mills, Pa. Outside dry-earth closet	811,412	Jan. 30	5670	1188	120	1389
Koons, Joseph K., Montgomery, Pa. Bolt-machine	811,411	Jan. 30	5664	1187–8	120	1388
Koons, Frederick W., assignor to J. W. Douglass, trustee, Philadelphia, Pa. Apparatus for treating and roasting waste materials	812,266	Feb. 20	3732	818	120	2332
Koorie, Hanna, Paterson, N. J. Clothes-line pulley	809,515	Jan. 9	2411	500	120	563
Kopke, Ernst, Honolulu, Hawaii. Pot-machine	809,571	Jan. 9	1946	402–4	120	440
Kops, Daniel, New York, N. Y. Apparel-corset	813,205	Feb. 27	4546	1006–8	120	2622
Korns, Clarence C., Johnstown, Pa., assignor to Lorain Steel Company. Machine for forming sand cores	812,262	Feb. 20	3660	583	120	2154
Körting, Ernst. (See Schuette and Körting.)						
Kosse, James W., Washington Court-House, assignor to Ohio Manufacturing Company, Upper Sandusky, Ohio. Traction-engine	808,189	Jan. 2	1115	232–3	120	246
Kosse, Worthy, assignor of one-half to F. H. Quincy, Salina, Kans. Carbureter for gas-engines	812,783	Feb. 13	2465	541	120	2066
Kotzen, Alexander, assignor of one-half to A. M. Barotky, Chicago, Ill. Pipe-cutter	812,210	Feb. 13	1409	308–7	120	1947
Kovács, Kamerich. (See Bathory and Kovács.)						
Kozma, Joseph, Newark, N. J. Eyeglasses and spectacles	809,703	Jan. 9	2209	457	120	518
Kozow, Arthur B. (See Schloss, Daniel B., assignor.)						
Krämer, George J., London, England, and E. Ellis, Geneva, Switzerland. Table	809,708	Jan. 9	2210	458	120	518
Kraft, Clarence H., and L. W. Foster, Findlay, Ohio. Well-pulling machine	809,190	Jan. 2	1118	233	120	247
Krag, Erik L., Chicago, Ill., assignor to Krag Imperial Cabinet Company. Cabinet	810,644	Jan. 23	3974	818	120	969
Krag, Erik L., Chicago, Ill., assignor to Krag Imperial Cabinet Company. Metallic cabinet	810,645	Jan. 23	3975	819	120	969

Alphabetical list of patentees for January and February—Continued.

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Krag Imperial Cabinet Company. (See Krag, Erik L., assignor.)						
Krahn, Abraham, Langdon, N. D. Draft-equalizer	813,502	Feb. 27	3989	871	120	2497
Kralund, John, New York, N. Y. Rule attachment	811,070	Jan. 30	4998	1043	120	1245
Kramer, Allington H., Monte Vista, Colo. Machine for digging beets	813,978	Feb. 27	4391	1083	120	2694
Kramer, Arthur R., and O. P. Britt, Uniontown, Pa. Self-lubricating trolley-wheel	810,157	Jan. 16	3117	644	120	766
Krämer, Friedrich, assignor to Firm of H. Wilke, Grüne, near Iserlohn, Germany. Hook for chains	812,388	Feb. 20	3726	819	120	2282
Kramer, Peter R., and G. E. Wilcox, Stillwater, Minn. Band-cutter and feeder	811,982	Feb. 6	794	174–6	120	1651
Kranz, William G., Sharon, Pa., assignor to National Malleable Castings Company, Cleveland, Ohio. Furnace-charging apparatus	810,396	Jan. 16	3386	702	120	824
Kratz, J. L., *et al.* (See Barth, Albert, assignor.)						
Krebs, Charles E., *et al.* (See De France, Murry A., assignor.)						
Kreft, Franz L., Glauchau, Germany. Numerator for sewing-machines	812,099	Feb. 20	3146	669	120	2282
Kreiling, George, Chicago, Ill. Press for printing upon metal	810,980	Jan. 30	4781	995	120	1198
Kreitzer, Joseph, assignor of one-half to T. J. Schon, Superior, Wis. Fifth-wheel	810,546	Jan. 23	3976	819	120	969
Krepa, Charles, Chicago, Ill. Mail-transferring device	808,982	Jan. 2	609	133	120	134
Krippendorf-Dittmann Company. (See Lautenschlager, William F., assignor.)						
Krohn, Emil H. F., Hamburg, Germany. Lock	811,511	Jan. 30	5837	1222	120	1423
Kron, Georg, Malmo, Sweden. Apparatus for binding in the toes of footwear	810,773	Jan. 23	4400	912–13	120	1083
Kronhols, Erich. (See Schmidt and Kronhols.)						
Krueger, Amandus M., Belleville, Tex. Musical instrument	812,049	Feb. 6	1040	226	120	1700
Krusel, August H., Schenectady, N. Y., assignor to General Electric Company. Elastic-fluid turbine	809,816	Jan. 9	2411	500	120	563
Krupp Aktiengesellschaft, Fried. (See Abendroth, Louis, assignor.)						
Krupp Aktiengesellschaft, Fried. (See Erdmenger, Victor, assignor.)						
Krupp Aktiengesellschaft, Fried. (See Hermsdorf, Max, assignor.)						
Krupp Aktiengesellschaft, Fried. (See Lauber, Otto, assignor.)						
Krupp Aktiengesellschaft, Fried. (See Lauber and Stock, assignors.)						
Krupp Aktiengesellschaft, Fried. (See Lauber and Thiele, assignors.)						
Krupp Aktiengesellschaft, Fried. (See Mayer, Wilhelm, assignor.)						
Krupp, Fried. (See Mothes, Georg, assignor.)						
Kuckuck, Ernst B. B., Charlottenburg, Germany. Tie-preserving cylinder-car	808,761	Jan. 2	274	59	120	62
Kugel, John, Chicago, Ill. Protective attachment for infants' high chairs	811,933	Feb. 6	796	176	120	1651
Kugel, Max, Wiesdorf, near Cologne, Germany, assignor to Farbenfabriken of Elberfeld Co., New York, N. Y. Yellow anthracene dye	808,762	Jan. 2	276	.....	120	62
Kummerow, Adolph, assignor to Aluminum Manufacturing Company, Two Rivers, Wis. Decorative process	813,720	Feb. 27	4389	988	120	2588
Kundtz, Theodor, Lakewood, Ohio. Cabinet-work for sewing-machine tables	809,980	Jan. 16	2708	588	120	679
Kunst, John, *et al.* (See Landait, Dewis, assignor.)						
Kuns, Constantin, Vienna, Austria-Hungary. Automatic discharge for washing apparatus	812,211	Feb. 13	1412	307	120	1846
Kunzler, Nicholas A., Braddock, Pa. Window-lock	812,060	Feb. 6	1041	227	120	1701
Kurtz, Albert B., Connellsville, Pa. Hose-supporter	811,413	Jan. 30	5672	1188	120	1390
Kurzwernhart, Adalbert, Zuckmantel, near Teplitz, Austria-Hungary. Siemens regenerative furnace	809,067	Jan. 2	871	185	120	198
Kuttowait Butter Cutter Company. (See Carter, Edwin K., assignor.)						
Kyle, Henry J., Tipton, Ind. Motor-plow	809,704	Jan. 9	2212	458–9	120	518
Kyle, Joseph W., and J. W. Hicks, assignors of one-third to G. G. Bennett, Chicago, Ill. Double-acting explosive-engine	809,451	Jan. 9	1714	353–4	120	409
Kyllonen, Erik, Enterprise, N. D. Threshing-machine	810,774	Jan. 23	4403	913	120	1084
L. C. Chase & Company. (See Kinder, Arthur H., assignor.)						
L. E. Knott Apparatus Company *et al.* (See Wynne, Philip H., assignor.)						
L. S. Starrett Co. (See Baltzer and Starrett, assignors.)						
L. S. Starrett Company. (See Starrett and Adell, assignors.)						
L'Hommedieu, Arthur W., assignor to C. F. L'Hommedieu, Chicago, Ill. Electroplating apparatus	809,309	Jan. 9	1410	306	120	345
L'Hommedieu, Charles F. (See L'Hommedieu, Arthur W., assignor.)						
La Duke, Edward J., and I. G. O'Harra, Seattle, Wash. Combination-tool	809,191	Jan. 2	1121	233	120	247
La Francis, Anthony, Newark, N. J. Drill holder and gage	811,414	Jan. 30	5673	1189	120	1390
La Sor, William A., Rahway, N. J., and C. M. Smith, New York, N. Y. Paper-slitting device for folding-machines. (Reissue)	12,486	Feb. 20	3751	828–4	120	2339
La Tour, William N., *et al.* (See Thompson, John M., assignor.)						
Lachman, Laurence S., New York, N. Y. Hub	811,303	Jan. 30	5469	1140	120	1347
Lacon, Charles S. (See Pennepacker and Lacon.)						
Ladd, James B., Wayne, Pa. Speed-varying mechanism	813,651	Feb. 27	4369	985–6	120	2600
Ladd, William C., Mendota, Ill. Check-loop	808,850	Jan. 2	437	96	120	97
Ladwig, Charles F. (See Hof and Ladwig.)						
Lafever, Minard, Battlecreek, Mich., and W. Gregory, Minneapolis, Minn. Traction-wheel	809,366	Jan. 2	1312	267	120	269
Laforêt, Jean, Etoile, France, assignor to A. B. Strange, New York, N. Y. Shuttle-brake. (Reissue)	12,488	Jan. 2	1288	271	120	268
Lagergren, John E., New York, N. Y. Trolley-pole	811,183	Jan. 30	5186	1079	120	1281
Lagonda Manufacturing Co. (See Rayner, Edwin B., assignor.)						
Laird, William H. (See Trupp, Bernhard, assignor.)						
Lally, John E., Frankfort, Kans. Horse-evener	810,267	Jan. 16	2997	708	120	825
Lamacchia, Otto, Bridgeport, Conn. Safety-catch	812,436	Feb. 27	3648	843	120	2402
Lambert, Asher, Newark, N. J. Automatic holdfast for electric-hoister drums	808,763	Jan. 2	276	60	120	62
Lambert, Gustaf, Charlottenburg, Germany. Telephone system for central stations	812,500	Feb. 27	4095	998	120	2626
Lambert, William C., *et al.* (See Lees, Wesley, assignor.)						
Lambert, William T., *et al.* (See Spies, Peter H. F., assignor.)						
Lambie, Charles K., Los Angeles, Cal. Concrete-block mold and block	813,721	Feb. 27	4390	989–9	120	2588
Lamerton, William E. (See Ramsley and Lamerton.)						
Lamme, Benjamin G., Pittsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company. Alternating-current motor	811,221	Jan. 30	5320	1113–14	120	1317
Lamme, Benjamin G., Pittsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company. Single-phase alternating-current motor	811,644	Feb. 6	218	46	120	1533
Lamplough, Frederick, Willesden, England. Radiator, steam-condenser, and the like	811,853	Feb. 6	608	131–2	120	1612
Lampton, Theodore A. (See Stevens, John J., assignor.)						
Lamson Consolidated Store Service Company. (See Fordyce, Edmond A., assignor.)						
Lamson, Franklin S., assignor to Cosmos Construction Company, Washington, D. C. Air-heating system	809,206	Jan. 9	1469	324–5	120	343
Lamun, John A. (See Angle, Wallace W., assignor.)						
Lanagan, Henry J., Clinton, Iowa. Reclining-chair	812,661	Feb. 6	1042	227	120	1701
Lancaster, George W., Petersburg, Va. Railway-crossing	813,511	Feb. 20	3684	797	120	2333
Lancaster, John P., assignor of one-fourth to W. M. Friedman, Cincinnati, Ohio. Railway-tie	809,981	Jan. 16	2712	588	120	680

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Lancaster, Samuel C., Jackson, Tenn. Dumping-vehicle	808,991	Jan. 2	738	159-60	120	163
Lanchester, Frederick W., Edgbaston, Birmingham, England. Motor-car	809,809	Jan. 9	1827	377	120	436
Landes, Dewis, assignor of one-half to J. Kunst and E. McKenna, San Francisco, Cal. Pipe-coupling	813,437	Feb. 27	3846	842	120	2468
Landes, John, Jr., New York, N. Y. Car-fender	812,671	Feb. 13	2120	498-7	120	2001
Landers, Frary & Clark. (See Paquette, John B., assignor.)						
Landis, Benjamin F. (See Horner and Landis.)						
Landis, Harry, Richmond, Ind. Stove-leg caster	813,438	Feb. 27	3847	842	120	2468
Landis, Israel L., Chicago, Ill. Machine for molding hollow walls	809,482	Jan. 9	1719	354-5	120	411
Landis Machine Company. (See Pedersen, Christian, assignor.)						
Landis Machine Company. (See Whipple, Joel N., assignor.)						
Landon, Asa E., Canton, Pa., assignor to American Sales Book Company, Elmira, N. Y. Holder for sales-pads	812,658	Feb. 13	2289	498	120	2030
Landon Cement Product Company. (See Landon, Charles A., assignor.)						
Landon, Charles A., Findlay, assignor to Landon Cement Product Company, Tiffin, Ohio. Mold	812,439	Feb. 27	3846	843	120	2468
Landrum, Tom J., Louisville, Ky. Paper box or carton	812,212	Feb. 13	1413	307	120	1848
Lane, George. (See Lane, William J. and G.)						
Lane, George, Poughkeepsie, N. Y. Engine-valve	810,422	Jan. 23	3723	767	120	931
Lane, Henry D., administrator. (See Whitney, Isaac.)						
Lane, Oscar A., Adrian, Mich. Wrench and analogous article	809,992	Jan. 16	2713	558-9	120	680
Lane, William J. and G., Poughkeepsie, N. Y. Water-level regulator	809,510	Jan. 9	1529	377	120	436
Lang, Abram, Eden, N. Y. Rubber horseshoe	808,933	Jan. 2	611	133	120	135
Lang, Carl H., Chicago, Ill. Piano-hammer extractor	813,503	Feb. 13	1976	434	120	1968
Lang, Edward M., Jr. (See Lovejoy, Marcellus C., assignor.)						
Lang, Edward M., Jr., Portland, Me. Wire-finishing tool	812,754	Feb. 13	2466	541	120	2086
Lang, Johan G. V., assignor of one-half to E. H. Johnson, London, England. Regulation of electric motors	811,415	Jan. 30	5674	1189	120	1360
Lang, Jules, and A. Fischer, Chicago, Ill. Vehicle-tire	811,232	Jan. 30	5333	1114	120	1318
Langé, Gabriel, Paris, France. Machine for producing printed railway-tickets	810,158	Jan. 16	3118	644-5	120	706
Langfitt, John W., Adel, Iowa. Road-grader	813,010	Feb. 20	2973	655	120	2222
Langford, John B. (See Seal, John W., assignor.)						
Langguth, Charles, Chicago, Ill. Hook and eye	810,775	Jan. 23	4404	913	120	1084
Lanham, Colonel W., Stanford, Ky. Corn-planter	812,775	Feb. 13	2498	541-2	120	2086
Lanigan, Oscar J., Chicago, Ill. Soldering-flux	809,281	Jan. 9	1566		120	378
Lapeyrade, Pierre A. J., Paris, France. Dynamo-electric machine	811,154	Jan. 30	5160	1060	120	1281
Lapisse, Emile, Elbeuf, France. Protecting device for pneumatic tires	813,900	Feb. 27	4752	1049	120	2057
Laporte, Frank, St. Louis, Mo. Self-locking seal	813,219	Feb. 20	3360	749	120	2314
Lapp, John, *et al.* (See Seyhers, Frank, assignor.)						
Lardinois, John B., assignor of one-half to G. Pierre, Brussels, Wis. Safety-gate for draw-bridges	809,817	Jan. 9	2113	800-1	120	563
Large, Preston T., North Tonawanda, N. Y. Metallic railway-tie	811,782	Feb. 6	457	98	120	1585
Larkin, Maurice D., Dayton, Ohio. Valve	810,961	Jan. 30	4783	995	120	1199
Larsen, Louis J. C., assignor of one-half to A. Rauh, New York, N. Y. Liquid forcing or pumping device	812,052	Feb. 6	1044	227	120	1701
Larsh, John M., assignor of one-half to S. D. Kiger, Indianapolis, Ind. Bulletin for mail-boxes	808,784	Jan. 2	279	61	120	64
Lassiter, Sam D., Mullins, S. C. Plow and cultivator	813,722	Feb. 27	4391	989	120	2668
Latimer, R. R. (See Latimer, William E., assignor.)						
Latimer, John W., Chicago, Ill., assignor to International Harvester Company. Hay-loader	812,213	Feb. 13	1414	307-9	120	1848
Latimer, William E., assignor to E. R. Latimer, Utica, N. Y. Tufting-machine	809,572	Jan. 9	1947	404	120	461
Latour, Marius C. A., Paris, France, assignor to General Electric Company. Alternating-current machine	811,304	Jan. 30	5471	1141	120	1348
Latshaw, Allen. (See Heydinger and Latshaw.)						
Lauber, Albert, New York, N. Y. Register	811,416	Jan. 30	5678	1189	120	1360
Lauber, Otto, assignor to F. Krupp Aktiengesellschaft, Essen-on-the-Ruhr, Germany. Means of securing shields to portable guns	809,520	Jan. 9	2418	502	120	565
Lauber, Otto, assignor to F. Krupp Aktiengesellschaft, Essen-on-the-Ruhr, Germany. Recoil-gun	809,521	Jan. 9	2419	503	120	565
Lauber, Otto, and F. Stock, assignor to F. Krupp Aktiengesellschaft, Essen-on-the-Ruhr, Germany. Elevating and sighting attachment for guns	809,518	Jan. 9	2414	501	120	564
Lauber, Otto, and F. Stock, assignors to F. Krupp Aktiengesellschaft, Essen-on-the-Ruhr, Germany. Elevating mechanism and sighting device for guns	813,979	Feb. 27	4803	1082-3	120	2205
Lauber, Otto, Essen-on-the-Ruhr, and M. Thiele, Borbeck, near Essen-on-the-Ruhr, assignors to F. Krupp Aktiengesellschaft, Essen-on-the-Ruhr, Germany. Device for securing the gun-barrels or the cradles of portable guns in the traveling position	809,519	Jan. 9	2416	502	120	564
Laubscher, Alexander, assignor to Wheeler & Wilson Manufacturing Company, Bridgeport, Conn. Ruffling mechanism for sewing-machines	809,922	Jan. 9	2617	540-1	120	609
Lauzon, Christa, Arnaville, Ill. Dress-form	813,652	Feb. 27	4262	957	120	2561
Lawrence, George, Visalia, Cal. Safety system for railways	812,573	Feb. 13	2128	457	120	2001
Lawrenceberger, William F., assignor of one-half to Krippendorf-Dittmann Company, Cincinnati, Ohio. Cementing-machine	810,373	Jan. 16	3680	736-7	120	905
Lazo, Edward. (See Pieve and Lazo.)						
Lazzel, Claude C., Pittsburg, Pa. Silvering-machine	813,980	Feb. 27	4805	1084-5	120	2205
Leaman, Charles W., Halifax, Canada. Repairing device for vehicles	809,192	Jan. 2	1123	234	120	248
Leavey, Henry C., West Superior, Wis., assignor to Mills Novelty Company, Chicago, Ill. Stamping-press	811,723	Feb. 6	430	98-102	120	1585
Law, Fred A., Hartford, Conn. Carburetter	813,633	Feb. 27	4263	957	120	2561
Law, Harrison O. (See Law, Samuel H., H. O., and Samuel H., Jr.)						
Law, Samuel H., H. O., and Samuel H., Jr., New York, N. Y. Handle attachment for bowling-balls	812,214	Feb. 13	1418	309	120	1849
Lawhead, Thomas B. (See Stockberry and Lawhead.)						
Lawhon, Lemord A., Malden, S. C. Renewing-machine	809,307	Jan. 9	1404	285	120	344
Lawrence, Elvin F. (See Lawrence, John H., assignor.)						
Lawrence, George R. (See Miller and Lawrence.)						
Lawrence, John H., assignor of one-half to E. F. Lawrence, Sterling, Ill. Door-hanger	812,345	Feb. 13	1690	389	120	1909
Lawrence, John H., assignor of one-half to E. F. Lawrence, Sterling, Ill. Door-hanger	813,347	Feb. 13	1693	370	120	1909
Lawrence, John H., assignor of one-half to E. F. Lawrence, Sterling, Ill. Hasp-fastener	813,348	Feb. 13	1693	370	120	1909
Lawrence Manufacturing Co. (See Beuroth, Leonhard, assignor.)						
Lawry, Edwards A., Pittsburg, Pa. Article of chewing-gum	810,210	Jan. 16	3234	689	120	789
Lawson, Hotel and Car Company. (See King, John W., assignor.)						
Lawson, Isaac, New York, N. Y. Extensible handle	808,988	Jan. 2	749	160	120	163
Lawton, Charles H., Northfield, Mass. Holder for rotary tool-operating machines	809,522	Jan. 9	2620	808	120	865
Lawton, De Lee A., and L. L. Withey, Rome, N. Y. Pin holding and delivery device	810,923	Jan. 30	4787	996	120	1200
Lay, Henry M., Chicago, Ill. Trestle	810,776	Jan. 23	4405	913-14	120	1084

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Layman, George R., Lincoln, Ill. Elevator	809,117	Jan. 2	989	204	120	218
Laynor, Roger C., Milridge, Md. Ladder	813,961	Feb. 27	4899	1085	120	2668
Layton, Stephen D., Westport, Ind. Voting-machine	812,938	Feb. 20	3234	636-6	120	2184
Lazarus, Henry E., assignor of one-half to I. A. Levinson, Chicago, Ill. Bottle-stopper	808,934	Jan. 2	613	134	120	135
Le Brocq, Richard F., Etna, N. J., assignor of one-half to J. P. Niemann, New York, N. Y. Station-indicator	809,267	Jan. 2	1316	267	120	289
Le Favre, George A., Orangeburg, N. Y. Railway	811,855	Feb. 6	607	133	120	1613
Le May, Marcus M., Leighton, Ala. Wrench	810,288	Jan. 16	3398	703	120	825
Le Moen, Axel R., assignor to Nelson & Le Moen, Chicago, Ill. Apparatus for applying tires to wheels	811,936	Feb. 6	804	177	120	1653
Le Pontois, Leon J., New Rochelle, N. Y., assignor to Poly-Phase Ignition System Company. Sparking ignition system	809,268	Jan. 2	1217	267-8	120	290
Le Pontois, Leon J., New Rochelle, N. Y., assignor to Poly-Phase Ignition System Company. High-tension current distributer for internal-combustion engines	809,453	Jan. 9	1721	355	120	411
Le Sueur, Phillip, Los Angeles, Cal. Seed-planter	812,278	Feb. 13	1557	340	120	1881
Lea, Arthur C. (See Scott and Steinhoff, assignors.)						
Lea-Degen Pump Company. (See Lea and Degen, assignors.)						
Lea, Edward S., and J. Degen, assignors, by mesne assignments, to Lea-Degen Pump Company, Trenton, N. J. Automatic packing	811,934	Feb. 6	799	176	120	1652
Lea, Edward S., and J. Degen, assignors, by mesne assignments, to Lea-Degen Pump Company, Trenton, N. J. Bearing	812,786	Feb. 13	2471	542	120	2087
Leahy, Louis K., Los Angeles, Cal. Injector-burner	811,935	Feb. 6	801	176	120	1652
Lease, Lyman G., Warren, assignor of one-half to C. A. Elicker, Cleveland, Ohio. Wire-stay	812,053	Feb. 6	1045	228	120	1702
Leasure, William C. (See Gooch and Leasure.)						
Leathers, George H., Howard, Pa. Packing-case	810,080	Jan. 16	2936	611	120	780
Leavitt Automatic Stop Motion Company. (See Mansell, Arthur D., assignor.)						
Leavitt, Charles, St. Johnsville, N. Y. Wagon-body	811,155	Jan. 30	5173	1080	120	1282
Leblanc, Adolphe D., Montreal, Canada. Head for carpenters' braces	811,305	Jan. 30	5473	1141	120	1346
Leblanc, Maxime, Montreal, Canada. Stair-marking tool	811,233	Jan. 30	5335	1114	120	1316
Leckenby, James T., Hamilton, Canada. Machine for trimming the corners of boxes	809,306	Jan. 9	1406	286	120	344
Lecompte, Louis, Chicago, Ill. Combined railway draw-head and air coupling	809,705	Jan. 9	2214	458-60	120	518
Ledgerwood, Frank, Greenfield, Iowa. Obstetrical instrument	812,349	Feb. 13	1684	370	120	1909
Ledwinka, Joseph, Detroit, Mich., assignor of one-half to C. Erg, Cleveland, Ohio. Wheel structure	808,765	Jan. 2	280	61	120	64
Lee, Charles A., assignor of one-half to A. J. Holsmark, Kansas City, Kans. Pneumatic-cushion wheel	810,061	Jan. 16	2933	612	120	730
Lee Electric Insole Company. (See Lee, Frank B., assignor.)						
Lee, Frank B., Buffalo, assignor to Lee Electric Insole Company, New York, N. Y. Foot-arch supporter	811,512	Jan. 30	5838	1232	120	1424
Lee, James E., Grand Haven, Mich. Printer's register-book	808,663	Jan. 2	83	18	120	20
Lee, John, Philadelphia, Pa. Tinning or coating metal sheets with tin or other metallic coatings	811,854	Feb. 6	605	132	120	1612
Lee, Thomas, Home City, Ohio. Sheet-metal building structure	808,664	Jan. 2	84	19	120	20
Lee, Thomas, Home City, Ohio. Window-locking means	809,382	Jan. 9	1569	319	120	378
Lee, William A., Jr., New York, N. Y. Gill-box	813,654	Feb. 27	4266	938	120	2562
Lee, Willis L., St. Louis, Mo. Adjustable time-limit stamp	808,992	Jan. 2	741	160	120	164
Lee, Willis L., St. Louis, Mo. Combined punch and time-stamp	808,994	Jan. 2	742	160-1	120	164
Leech, Monroe S., Chicago, Ill. Burial-casket	809,573	Jan. 9	1950	404	120	461
Leeper, John F., Alton, Ill. Corn-harvester	812,215	Feb. 13	1420	309	120	1849
Leetch, John, *et al.* (See Tincher, Timothy S., assignor.)						
Lefever, Charles F. and D. M., Syracuse, N. Y. Single-trigger mechanism for double-barrel guns	810,871	Jan. 23	4584	954	120	1122
Lefever, Daniel M. (See Lefever, Charles F. and D. M.)						
Leffort, William M., assignor of one-half to E. Alsley, Providence, R. I. Spring-hub for vehicles	812,143	Feb. 6	1230	267	120	1741
Lehigh Oil and Waste Saving Company. (See Dutcher, Edward H., assignor.)						
Lehmann, Ernst P., Brandenburg-on-the-Havel, Germany. Joint for sheet metal and the like	808,766	Jan. 2	281	61	120	64
Lehmann, Friedrich A., Berlin, Germany. Rail-crossing	813,387	Feb. 20	3726	819	120	2363
Lehr, Edwin E., Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company. Electrical measuring instrument	811,645	Feb. 6	219	47	120	1533
Leighty, John R., Cumberland, Md. Anticreeping device	809,193	Jan. 2	1124	234	120	248
Leinen, Franz, Kleingstein, Germany. Collar for draft-animals	812,430	Feb. 13	1843	404	120	1941
Leisure, Charles H. (See Myers, William F., assignor.)						
Leitel, William. (See Hohnbach and Leitel.)						
Lembeck, Arthur J. L., and N. B. Hart, Walla Walla, Wash. Shaft-coupling	810,777	Jan. 23	4405	914	120	1085
Lemieux, Leon, Patterson, N. J. Weaving	809,118	Jan. 2	991	206	120	219
Lemley, Parrmace O., F. Elkior, and C. W. Grant, Urbana, Ill.; said Elkior and Grant assignors to said Lemley. Molding-machine	813,901	Feb. 27	4753	1030	120	2357
Lemp, Hermann, Lynn, Mass., assignor to General Electric Company. Automobile	812,573	Feb. 13	2123	457	120	2001
Lenhart, Moses, Chariton, Iowa. Adjustable wagon-box	812,054	Feb. 6	1046	228	120	1702
Lentz, Hugo, Berlin, Germany. Reversing-brake for turbine-engines	811,856	Feb. 6	609	133	120	1613
Lentz, Hugo, Berlin, Germany. Turbine-driven locomotive	812,277	Feb. 13	1595	340	120	1881
Lentz, Hugo, Berlin, Germany. Nozzle for turbine-engines	813,806	Feb. 27	4580	1006	120	2622
Leonard, Joseph T., Sedalia, Mo. Hanger for sifters and screens	811,857	Feb. 6	610	133	120	1613
Leonard, Wilbur A., assignor, by mesne assignments, to Geometric Tool Company, New Haven, Conn. Collapsible tap	810,289	Jan. 16	3400	703-4	120	825
Leonhardt Wagon Manufacturing Company. (See Leonhardt, William, assignor.)						
Leonhardt, William, assignor to Leonhardt Wagon Manufacturing Company, Baltimore, Md. Dumping coal-wagon	810,953	Jan. 30	4790	996	120	1200
Leonhart, Rudolph, San Anselmo, Cal. Level	813,581	Feb. 27	4267	958	120	2363
Leppert, William, Tappenamo City, assignor to C. Anderton, Jr., Dayton, Ohio. Wagon	810,572	Jan. 23	4587	955	120	1122
Lesser, Blanca, New York, N. Y. Hat-fastening	813,902	Feb. 27	4755	1030	120	2358
Lesser, Joseph M. (See Wilson, Albert B., assignor.)						
Lestrd, Phillip H., Attleboro Falls, assignor to T. I. Smith Co., North Attleboro, Mass. Bracelet	809,619	Jan. 9	2069	426	120	482
Leuchs, Maximilian J. C., New York, N. Y. Finger-curette	808,119	Jan. 2	993	205	120	219
Lenz, Georg, Berlin, Germany. Device for unshipping endless traveling ropes from their pulleys	809,833	Jan. 9	2633	803	120	866
Leutheuser, Fred W., assignor to Mossah-Younker Company, Chicago, Ill. Air-valve for radiators	813,911	Feb. 20	2976	665	120	2224
Levak, John, Lemont Furnace, Pa. Spragging device for coal and pit cars	810,778	Jan. 23	4406	914	120	1085
Levak, John, Lemont Furnace, Pa. Door-actuating mechanism for cars	813,807	Feb. 27	4581	1006	120	2622
Levalley, Christopher W., Milwaukee, Wis. Conveyor	813,787	Feb. 13	2472	548	120	2087
Levett, Louis, New York, N. Y. Anode	813,048	Feb. 20	3042	670	120	2286

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Levin, David R., and G. E. Sundstrom, Chicago, Ill.; said Sundstrom assignor to said Levin. Sheet-metal receptacle	811,728	Feb. 6	359	79	120	1566
Levinson, Charles, New York, N. Y. Electric railway	809,120	Jan. 2	993	205	120	219
Levinson, Isaac A. (See Lazarus, Henry E., assignor.)						
Lewin, Simon, Schlesberg, near Berlin, and A. Blumenthal, Berlin, Germany. Manufacturing artificial tails from fur	810,159	Jan. 16	3121	645	120	766
Lewis, Allen A., Hamilton, Iowa. Retaining-stall for calves	809,923	Jan. 9	2621	541	120	610
Lewis, Harry W. (See Arnold, George T., assignor.)						
Lewis, Robert S., *et al.* (See Menck, Andrew B., assignor.)						
Lewis, Theodore G., assignor to Buffalo Dental Manufacturing Company, Buffalo, N. Y. Handle for dental floats	808,935	Jan. 2	614	134	120	136
Lewis, Wilfred, Philadelphia, Pa. Saw-drive	812,853	Feb. 20	2661	583	120	2154
Lewis, William H. (See McSpadden, Wilkie, and Lewis.)						
Lewy, Julius, Frankfort-on-the-Main, Germany. Illuminant	809,121	Jan. 2	995	.....	120	219
Libby, Sam H., East Orange, N. J., assignor to Sprague Electric Company. Brake	812,758	Feb. 13	2473	542	120	2068
Liberman, Bernard, Philadelphia, Pa. Cigar-branding machine	811,071	Jan. 30	4994	1042	120	1245
Liberty Manufacturing Company. (See McIntosh, Ross S., assignor.)						
Lichtenstein, David, Chicago, Ill. Composition of matter	809,068	Jan. 2	873	.....	120	193
Liddell, William, Brooklyn, N. Y., assignor to Continental Paper Bag Company. Paper-bag machine	814,006	Feb. 27	4958	1098-9	120	2707
Lidgerwood Manufacturing Company. (See Covell, Harry N., assignor.)						
Lidgerwood Manufacturing Company. (See Tribken, Charles W., assignor.)						
Lidka, Otto F., and G. Seymour, Ypsilanti, Mich. Fence-post	809,824	Jan. 9	2424	503	120	566
Lieb, Robert C., assignor to J. E. Annis, Chattanooga, Tenn. Fireproof metal window	811,072	Jan. 30	4996	1043	120	1245
Lieen, Nils M., Langhei, Minn. Interlocking clevis	809,511	Jan. 9	1829	378	120	436
Lieske, Frank, Marquette, assignor of one-half to J. J. Moriarty, Hudson, Mich. Hen's nest	811,156	Jan. 30	5176	1081	120	1283
Liesmann, Louis, assignor of two-fifths to F. Welch and W. F. Carter, Dixon, Mo. Railway stock-guard	813,220	Feb. 20	3400	749	120	2314
Light, Samuel E. (See Weaver, Isaac D., assignor.)						
Lincoln, Frederick H., Philadelphia, Pa. Gear-casing	808,995	Jan. 2	744	161	120	164
Lind, Gustaf A. L., New Dorchester, Mass. Rotary engine	810,062	Jan. 16	2040	612	120	731
Lindemann, Robert, Osnabrück, Germany. Duplex smelting-furnace	810,063	Jan. 16	2041	612	120	731
Lindenberg, Frank H., assignor to Columbus Brass Company, Columbus, Ohio. Closet-tank	811,937	Feb. 6	808	177	120	1654
Linder, Fritz, Sr. (See Egersdörfer, Fritz, assignor.)						
Lindgren, Alexus C., Moline, Ill., assignor to Moline Plow Company. Wheeled plow	810,779	Jan. 23	4410	914-15	120	1085
Lindgren, Bror J., New York, N. Y., assignor to E. W. Bliss Company. Perforating-machine	813,049	Feb. 20	3043	670-1	120	2238
Lindhard, Povl T., New York, N. Y. Grinding-mill	813,903	Feb. 27	4756	1050	120	2668
Lindner, Henry E., and H. J. Kaltinich, Hartford, Conn. Match-box	813,503	Feb. 27	3971	871	120	2498
Lindquist, Edward W. (See Baggaley, Allan, and Lindquist.)						
Lindquist, Frederick. (See Edbrooke and Lindquist.)						
Lindsay, George B. (See Pearson and Lindsay.)						
Lindsay, Benjamin F., Mansfield, Ohio. Bed-spring	812,939	Feb. 20	2637	626	120	2196
Lindsey, Harry C., Kansas City, Mo. Head-block	808,955	Jan. 2	85	19	120	21
Lindström, Karl A., Vesterås, Sweden. Electric alternating-current machine	809,706	Jan. 9	2216	460	120	519
Lingenfelter, Frank D., Patrick, Wyo. Running-gear	810,160	Jan. 16	3122	646	120	767
Linke, Hans, New York, N. Y. Piston-rod-moving device	813,158	Feb. 20	3277	720	120	2290
Linkins, Charles. (See Geraci, Ignatius, assignor.)						
Linn, John B., Schenectady, N. Y., assignor to General Electric Company. Pneumatic train-control system	809,707	Jan. 9	2218	460-1	120	519
Linnig, Charles E., Peru, Ill. Protector for spectacles	809,194	Jan. 2	1126	234	120	248
Linotype and Machinery. (See North, Thomas M., assignor.)						
Linscott, William D., Piedmont, S. D. Cattle-guard	810,064	Jan. 16	2043	612-13	120	731
Linthicum, Charles W., assignor to G. S. Linthicum, Baltimore, Md. Protector for boots and shoes	808,666	Jan. 2	87	19	120	21
Linthicum, George S. (See Linthicum, Charles W., assignor.)						
Lintner, O. W. (See McMasmon, John J., assignor.)						
Linton, Ernest O., Marion, assignor, by mesne assignments, to Syphonic Measure Tank Company, Sheboygan, Wis. Measuring appliance and compressor for liquids. (Reissue)	12,430	Jan. 23	4656	970	120	1126
Linton, John S., New York, N. Y. Saw-gage	812,574	Feb. 13	2135	492	120	2002
Linton, Jules J., Montclair, N. J. Photographic plate and film lifter	808,986	Jan. 2	615	134	120	136
Linville, Stephen A. M., Concordia, Kans. Floor-scraper	812,055	Feb. 6	1048	226	120	1702
Lippincott, Arthur, St. Louis, Mo. Journal-bearing	809,708	Jan. 9	2223	461	120	521
Lippincott, Arthur, St. Louis, Mo. Journal-box lid	813,804	Feb. 27	3972	871-2	120	2498
Lippincott, Arthur, assignor of one-half to H. W. Wolff, St. Louis, Mo. Roof-carline	811,073	Jan. 30	4999	1044	120	1246
Lipsett, Ormond M., Westpoint, N. Y. Machine for assembling cartridge-clips	810,065	Jan. 16	2042	613-14	120	732
Lipsett, Ormond M., Westpoint, N. Y. Cartridge-clip	810,161	Jan. 16	3123	646	120	767
Lipsett, Ormond M., Westpoint, N. Y. Apparatus for jumping and vaulting	811,417	Jan. 30	5051	1190	120	1391
Lister, Frank. (See Springer and Lister.)						
Little, Charles H., Chicago, Ill. Flow	812,056	Feb. 6	1050	226	120	1702
Little, Henry O., assignor to Ontario Fruit Package Company, (Limited,) Ingersoll, Canada. Veneer-bending machine	813,854	Feb. 20	3983	894	120	2154
Little, Joseph W., Westpoint, Miss. Seed-planter	812,057	Feb. 6	1050	229	120	1706
Llewellyn, Thomas, Tremont, Ill. Wire-fence fabric. (Reissue)	12,434	Jan. 9	2626	542	120	611
Livengood, Winfield S., assignor to Smith & Sons Mfg. Co., Kansas City, Mo. Baling-press	808,996	Jan. 2	746	161-2	120	164
Lloyd, Thomas J., Norfolk, Va. Trunk	809,709	Jan. 9	2225	461	120	521
Lönnström, Fredrik, assignor to Aktiebolaget Separator, Stockholm, Sweden. Milk-separator	812,895	Feb. 20	2668	586	120	2156
Lobb, Benjamin F., Cherry Gardens, South Australia, Australia. Boot and shoe cleaning and polishing machine	813,804	Feb. 27	4789	1051	120	2668
Lobdell, John, Bridgeport, Conn. Bobbin-tray	809,195	Jan. 2	1127	234-5	120	248
Lobdell, John C., Norwood, Ohio. Compensator for solutions	808,997	Jan. 2	748	163	120	165
Lobl, William J., assignor to Stanley Electric Manufacturing Company, Pittsfield, Mass.	809,825	Jan. 9	2425	504	120	566
Locke Worm Gear Engineer Company. (See Corby, Edward P., assignor.)						
Locke Worm Gearing Company. (See Watts, Arthur S., assignor.)						
Lockhart, Samuel C., Salem, Mass., assignor to Locke Regulator Company, Kittery, Me.	812,379	Feb. 13	1861	341	120	1881
Locke Worm Gear Company. (See Locke, Mechanical C., assignor.)						
Lockie, Thomas C., Kingsland, Ind. Bee-hive	808,667	Jan. 2	88	20	120	21
Lockwood, Charles E., and G. A. Luts, New York, N. Y. Primary battery	812,804	Feb. 13	1979	434	120	1999

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Lockwood, Charles E., and G. A. Luts, New York, N. Y. Primary battery	812,805	Feb. 13	1979	434	120	1999
Lockwood, Charles S., Newark, assignor to Hyatt Roller Bearing Company, Harrison, N. J. Automobile-wheel bearing	813,905	Feb. 27	4761	1051	120	2669
Lodge & Shipley Machine Tool Company. (See Lodge and Chard, assignors.)						
Lodge, William, and N. D. Chard, assignors to Lodge & Shipley Machine Tool Company, Cincinnati, Ohio. Follower-rest for lathes	809,513	Jan. 9	1832	378-9	120	437
Loetscher, Christian, Dubuque, Iowa. Manufacturing siding	808,998	Jan. 2	749	163	120	165
Loew, Charles H. (See Stahl, Max, assignor.)						
Loew, Charles H., Lakewood, Ohio. Pasteurizing beer	808,666	Jan. 2	89	20	120	21
Loew, Charles H., Lakewood, Ohio. Bottle-rinser	812,940	Feb. 20	2639	626-7	120	2195
Loew, Charles H., Lakewood, Ohio. Machine for cleaning bottles	813,013	Feb. 20	2978	696	120	2224
Loew, Charles H., Cleveland, Ohio. Bottle-cleaning machine	813,100	Feb. 20	3153	660	120	2263
Loew, Charles H., and H. G. Miller, assignors to Loew Supply & Manufacturing Company, Cleveland, Ohio. Bottle-washing machine	809,514	Jan. 9	1833	379	120	437
Loew Supply & Manufacturing Company. (See Loew and Miller, assignors.)						
Loew Supply & Manufacturing Company. (See Miller, Henry G., assignor.)						
Loewen, Wilhelm, Glatz, assignor to A. J. Hettwer, Landeck, Germany. Toothpick-holder	810,954	Jan. 30	4791	996	120	1201
Loewenstein, Maximilian, assignor of two-thirds to J. Stork, Brussels, Belgium, and M. Kind, New York, N. Y. Self-regulating air-pump	813,982	Feb. 27	4900	1085	120	2696
Logan, Elmer E., Larned, Kans. Grain-handling apparatus	811,938	Feb. 6	809	178	120	1654
Lohmann, Augustus W., Sr., Chattanooga, Tenn., and J. Pruis, Chicago, Ill. Closed conduit for electric railways	813,101	Feb. 20	3159	661	120	2265
Lohse, Carl, Liége, Belgium. Hammerless drop-down gun	810,162	Jan. 16	3124	646-7	120	767
Loker, Albert C., Kansas City, Mo. Stop-watch	809,196	Jan. 2	1129	235	120	249
Lombard, Nathaniel, Worcester, Mass. Gate mechanism for turbines	812,806	Feb. 13	1980	435	120	1999
Long & Allstatter Co. (See Macbeth, Charles E., assignor.)						
"Long Arm" System Company. (See Cowles, William B., assignor.)						
Long, Arthur D., assignor of one-half to G. Dietz, Fairfield, Iowa. Copy-holder	809,310	Jan. 9	1412	287	120	345
Long, George A., assignor to Gray Telephone Pay Station Company, Hartford, Conn. Telephone toll apparatus	810,491	Jan. 23	3990	793	120	964
Long, George W., Lindsay, Ind. Ter. Self-fastening cotton-marker	809,197	Jan. 2	1131	235	120	249
Long, Timothy, Cleveland, Ohio. Merry-go-round	813,159	Feb. 20	3278	720	120	2290
Long, Walter Z. (See Eakins, Herbert W., assignor.)						
Long, Williard O., Mansfield, Ohio. Horseshoe-calk and fastener	813,655	Feb. 27	4268	938	120	2562
Longenecker, Ralph, administrator. (See Schmerts, Edmund C.) (Reissue.)						
Longstreth Wallace M., Terra Alta, W. Va. Catamantal sack	813,221	Feb. 20	3401	749	120	2315
Longwell, Henry E., Pittsburg, and F. Hodgkinson, Edgewood Park, Pa., assignors to Westinghouse Machine Company. Packing	813,723	Feb. 27	4303	969	120	2589
Loomis, Kvarts G. (See Wildman and Loomis.)						
Loomis, George P., Schenectady, N. Y. Automatic match-making machine	808,767	Jan. 2	283	62-3	120	64
Looe, Wesley, assignor of three-fourths to E. V. Lorig and W. C. Lambert, South Omaha, Nebr. Railway-signal	812,941	Feb. 20	2842	627	120	2196
Lorain Steel Company. (See Korns, Clarence C., assignor.)						
Lorain Steel Company. (See McFeaters, George H., assignor.)						
Lorain Steel Company. (See Prior, Ernest B., assignor.)						
Loreman, James F., Crisfield, Md. Dredge	813,222	Feb. 20	3402	750	120	2315
Loreman, James F., Crisfield, Md. Spike-puller	813,223	Feb. 20	3403	750	120	2315
Lorenz, Victor. (See Lorenz, Wladimir and V.)						
Lorenz, Wladimir and V., Budapest, Austria-Hungary. Power-transmitter	810,780	Jan. 23	4414	916	120	1086
Lorentzen, John, Duluth, Minn. Coin-controlled scale	809,198	Jan. 2	1132	235-6	120	249
Lorentzen, John, Duluth, Minn. Weighing-scale	809,826	Jan. 9	2426	504	120	567
Lorenz, Alexander, assignor of one-half to W. J. Ilig, San Antonio, Tex. Hay-press	813,013	Feb. 20	2981	656	120	2226
Lorig, Emanuel V., *et al.* (See Looe, Wesley, assignor.)						
Lorimer, George W., Piqua, Ohio. Power-controlling lever	812,216	Feb. 13	1422	310	120	1859
Lorimer, John H., Philadelphia, Pa. Drying-machine	811,306	Jan. 30	5474	1141	120	1348
Lorimer, John H., Philadelphia, Pa. Drying and conditioning machine	811,307	Jan. 30	5475	1141	120	1349
Lorimer, John H., Philadelphia, Pa. Vehicle-wheel tire	811,646	Feb. 6	221	47	120	1532
Lorsch, Gideon D., New York, N. Y., assignor to Standard Oiled Clothing Company. Hat	812,659	Feb. 13	2280	498	120	2030
Loryea, Milton I., Spokane, Wash. Camera attachment	813,906	Feb. 27	4553	1006-7	120	2622
Loss, Henrik V., Philadelphia, Pa. Upsetting metal	812,866	Feb. 20	2670	585	120	2158
Lotterhand, Jason C., New York, N. Y. Combined adding and type-writing machine	811,157	Jan. 30	5177	1081-3	120	1283
Lotz, Augustus, San Francisco, Cal., assignor to American Can Company, Jersey City, N. J. Automatic square-can heading and crimping machine	812,857	Feb. 20	2671	585-7	120	2157
Lotz, Augustus, San Francisco, Cal., assignor to American Can Company, Jersey City, N. J. Automatic round-can heading and crimping machine	812,858	Feb. 20	2675	587-9	120	2157
Loudon, Milton H., Kansas City, Mo. Electrical railway signaling system	809,515	Jan. 9	1836	379	120	437
Loudon, William, and J. J. Hendricks, Seattle, Wash. Feed-water mechanism	811,930	Feb. 6	811	178	120	1654
Loudon, William A., Chicago, Ill. Wheel-tire	812,739	Feb. 13	2475	543	120	2068
Lougee, Amanda M., Boston, Mass. Fireproof wire	809,211	Jan. 9	1413	287	120	346
Lougee, Amanda M., Boston, Mass. Making fireproof conductors	809,212	Jan. 9	1414	287	120	346
Lougee, Amanda M., Boston, Mass. Protected conductor	809,213	Jan. 9	1419	287	120	346
Loughman, Michael J., New York, N. Y. Flanged-joint casing for heat-insulating pipes	809,963	Jan. 16	2715	599	120	681
Louiso, George P., and C. H. Hensley, assignors to said Louiso and J. L. Vermillion, Anderson, Ind. Computing cheese-cutter	812,980	Feb. 13	1982	441	120	1982
Love, Andrew J., St. Louis, Mich. Block-molding machine	811,647	Feb. 6	222	47-8	120	1534
Love, Gustav A., Cokato, Minn. Brake for bicycles	813,908	Feb. 27	4763	1052	120	2669
Lovegrove, Thomas G., assignor to M. A. Wood, Philadelphia, Pa. Adjustable mirror-support	812,880	Feb. 13	2291	466	120	2031
Lovejoy, George W., assignor of one-half to L. Harris, Tehachapi, Cal. Means for lubricating wheels	811,858	Feb. 6	611	123	120	1613
Lovejoy, Marcellus C., assignor to E. M. Lang, Jr., Portland, Me. Coiling-machine	809,200	Jan. 2	1221	268	120	291
Lovett, James L., New London, Pa. Doweling-machine	809,069	Jan. 2	875	186	120	198
Low, Abbot A., Hezekiah, N. Y. Hydrocarbon-motor	812,880	Feb. 20	2980	691	120	2189
Lowe, David T., Pana, Ill. Corn-harvester	812,678	Feb. 13	2126	466-9	120	2030
Lowe, Leon P., San Francisco, Cal. Cleansing manufactured gases	809,362	Jan. 9	1570	319	120	378
Lowe, Leon P., San Francisco, Cal. Combined gas washer and scrubber	812,717	Feb. 13	1426	310	120	1860
Lowe, Leon P., San Francisco, Cal. Gas-purifier	812,718	Feb. 13	1434	310	120	1860
Lowenhaupt, James F., Woodhaven, N. Y. Embossing-machine	812,850	Feb. 20	2676	589-91	120	2158
Lowry, James P. (See Klenk and Lowry.)						
Lowry, Walter F., Mattinsville, Tenn. Fireplace and grate blower	813,805	Feb. 27	3973	872	120	2499
Lubin, Siegmund. (See Weimer, Orville T., assignor.)						
Lucas, George. (See Klemaas, Theodore W., assignor.)						
Lucas, George, Passaic, N. J. Conveyer	809,827	Jan. 9	2429	504-5	120	567
Lucas, William H., Newark, Ohio. Maul	809,199	Jan. 2	1125	233	120	248
Luce, Edward T., assignor to Edward F. Luce & Company, Inc., Chicago, Ill. Car-door hanger	813,724	Feb. 27	4305	970	120	2669

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Lees, George D., New Orleans, La. Device for loading sugar-cane	810,260	Jan. 16	3402	704	120	836
Leuthenand, Louis R., and H. W. Newton, Boston, Mass. Cushion-tread and the like for boots and shoes	809,964	Jan. 16	2717	559	120	681
Leuzinback, Harry, assignor to W. H. Kelly, San Francisco, Cal. Apparatus for producing perfect combustion in furnaces	810,163	Jan. 16	3126	647	120	767
Lockett, William S., East Orange, N. J., assignor to International Cigar Machinery Company, New York, N. Y. Cigar-machine	809,384	Jan. 9	1571	320	120	378
Lockett, William S., East Orange, N. J., assignor to International Cigar Machinery Company, New York, N. Y. Feeding mechanism	812,219	Feb. 13	1426	311	120	1851
Lockett, William S., East Orange, N. J., assignor to International Cigar Machinery Company, New York, N. Y. Feeding mechanism	812,220	Feb. 13	1430	311-12	120	1852
Lockhaupt, Lawrence J., St. Louis, Mo. Carriage-curtain fastener	812,681	Feb. 13	2282	469	120	2031
Lodewick, Humbert. (See Lodewick, Tonie and H.)						
Lodewick, Tonie and H., Irving, Ill. Whip-holder	811,308	Jan. 30	5478	1142	120	1349
Ludewig, William H., Rock Island, Ill. Surgical operating-engine	812,507	Feb. 13	1982	435-6	120	1970
Ludington, Frank J., Waterbury, Conn. Appliance for cutting off and creasing cigarettes	808,851	Jan. 2	437	97	120	97
Ludolph, Frank J., Rochester, N. Y. Trolley device	808,852	Jan. 2	443	98	120	99
Lühne, Johann, Aix-la-Chapelle, Germany. Apparatus for vaporizing liquid combustibles	809,200	Jan. 2	1137	236	120	250
Lui, Nathan, New York, N. Y. Folding bed and cabinet	809,710	Jan. 9	2226	462	120	521
Lum, Walter H., Chicago, Ill. Hat-tip-rubbing machine	811,309	Jan. 30	5479	1142	120	1349
Lumley, William, Chicago, Ill. Card-index drawer	809,314	Jan. 9	1423	288	120	347
Lund, Andreas, Christiania, Norway. Means for regulating turbines	810,955	Jan. 30	4791	996-7	120	1201
Lund, Christian, Wausau, Wis. Plant-support	812,942	Feb. 20	2845	628	120	2196
Lund, John T. (See Hug, Daniel, assignor.)						
Lumey, William D., Denison, Iowa. Snow-shovel	813,983	Feb. 27	4903	1085	120	2697
Luquire, Wiley H., Birmingham, Ala. Hitching-post	808,999	Jan. 2	751	162	120	165
Lutke Manufacturing Co. (See Lutke, Robert G., assignor.)						
Lutke, Robert G., assignor to Lutke Manufacturing Co., Portland, Oreg. Show-case	810,956	Jan. 30	4795	997	120	1202
Lution, William J., Paterson, N. J. Loom	812,508	Feb. 13	1985	436	120	1971
Lutz, Alexander, assignor to United States Sanitary and Utility Sewage Disposal Company, New York, N. Y. Receiving-basin	809,201	Jan. 2	1130	237	120	250
Lutz, George A. (See Lockwood and Lutz.)						
Lutzmer, Maximilian A., assignor to Gesellschaft für Industrielle Feuerungsanlagen m. b. H., Berlin, Germany. Air-feeding device for furnaces	813,102	Feb. 20	3161	691	120	2266
Lyle, Robert W., New York, N. Y., assignor to W. J. Lyle, South River, N. J. System and means for drying and burning clay products	812,509	Feb. 13	1987	436-7	120	1971
Lyle, William J. (See Lyle, Robert W., assignor.)						
Lyman, Dwight G., Omaha, Nebr. Carrier	813,160	Feb. 20	3278	721	120	2290
Lynch, George E., assignor to J. A. Jeffrey, Columbus, Ohio. Switch	813,506	Feb. 27	3975	873	120	2496
Lynch, Jasper. (See Thomas and Lynch.)						
Lynch, Patrick H., New York, N. Y. Pump	813,051	Feb. 20	3052	671	120	2241
Lynch, Thomas, Jefferson, Iowa. Tip for rocking-chairs	810,957	Jan. 30	4796	997	120	1202
Lyndon, Lamar, assignor to General Storage Battery Company, New York, N. Y. End-cell switch	810,958	Jan. 30	4798	998	120	1202
Lyons, William H., West Orange, N. J. Hat-sizing machine	813,656	Feb. 27	4270	938-9	120	2562
Lystne, Andrew O., Eagle Lake, Minn. Fishing device	809,965	Jan. 16	2718	559	120	681
Lytton, Jarard W., Portsmouth, Va. Apparatus for discharging liquids in vacuo	809,385	Jan. 9	1574	320	120	379
M. Garland Company. (See Garland, Michael, assignor.)						
M. J. Daly and Sons. (See Daly, Edmund J., assignor.)						
Maag, Edward L., Clarksburg, Ohio. Mold	811,310	Jan. 30	5481	1142-3	120	1350
Maag, George, assignor to XXth Century Heating and Ventilating Company, Akron, Ohio. Furnace-radiator	813,507	Feb. 27	3978	873	120	2499
MacKaye, Harold S., Yonkers, N. Y., assignor, by mesne assignments, to Elevator Securities Company. Elevator	811,513	Jan. 30	5830	1223	120	1424
MacKenzie, George W., Ben Avon, Pa. Blotting-ruler	811,311	Jan. 30	5483	1143	120	1350
MacLean, James. (See Tuttle and MacLean.)						
MacLeod, Alexander. (See Hall and MacLeod.)						
MacNutt, Archibald H. (See Clevenger, Joshua D., assignor.)						
Macarthy, Henry, assignor to American Can Company, New York, N. Y. Sheet-metal can	811,648	Feb. 6	223	48	120	1534
Macarthy, Henry, assignor to American Can Company, New York, N. Y. Sheet-metal humidor	811,729	Feb. 6	360	80	120	1566
Macbeth, Charles E., assignor to Long & Allstatter Co., Hamilton, Ohio. Punch or shears	812,878	Feb. 13	2141	469	120	2003
MacauBum, James, St. Louis, Mo. Book-support	809,315	Jan. 9	1424	288	120	347
Macchiarina, Charles R., Waltham, Mass. Tablet-board	808,998	Jan. 2	92	21	120	22
Macfie, Daniel, Edinburgh, Scotland. Dry meter for gas, air, and like fluids	813,312	Feb. 20	3587	787	120	2353
Macfie, Frank J. (See Macfie and Macfie.)						
Macfie, Henry Eustace. (See Gray, Sylvester P., assignor.)						
Mack, Ernest U., Florence, S. C., assignor to Crown Cork and Seal Company, Baltimore, Md. Bottling-machine	813,562	Feb. 27	4098	899	120	2527
Macnall, B. F., et al. (See Casalis, Secondo L., assignor.)						
Mackay, William E. S., South Yarra, Victoria, Australia. Door for lifts	810,873	Jan. 23	4589	965	120	1123
Mackenzie, Alexander W., and J. Ross, assignors of one-third to J. Gill, Edinburgh, Scotland. Dumb-bell	812,144	Feb. 6	1232	267-8	120	1742
Maskin, John W., assignor to C. T. Drake, Chicago, Ill. Conveyer	809,316	Jan. 9	1425	288-9	120	347
Macnaughton, Joseph, Edinburgh, Scotland. Paper-making apparatus for separating sand, metal, and other impurities from pulp	813,984	Feb. 27	4904	1086	120	2697
Macomber, Andrew S., South Portland, Me. Car-signal	808,937	Jan. 2	617	134	120	138
Macomber, Joshua O., assignor of one-half to F. G. Munser, Bakersfield, Cal. Egg-carrier	811,158	Jan. 30	5187	1083	120	1265
Madigan, Patrick J., Chicago, Ill. Combined door-lock and indicator for carriers used in pneumatic tubes	808,768	Jan. 2	291	63	120	68
Magnin, Charles A., Brooklyn, N. Y. Machine for sealing and stamping envelops	813,985	Feb. 27	4905	1086-7	120	2697
Magoun, Warren P., Boston, Mass. Base-ball-game apparatus	811,180	Jan. 30	5188	1084	120	1266
Maguire, Thomas R., assignor to Bucyrus Company, South Milwaukee, Wis. Traversing [illegible]	809,454	Jan. 9	1723	356	120	412
Mahoney, Thomas J., Montreal, Canada. Machine for use in packing biscuits	812,221	Feb. 13	1434	312-13	120	1853
Mahoney, Thomas R., Brunswick, Maine. Combined envelop and letter-paper	810,853	Jan. 23	4189	885	120	1096
Mahoney, Thomas R., Brunswick, Maine. Combined envelop and letter-paper	813,725	Feb. 27	4366	970	120	2360
Maier, Albert, Orleans, France. Lifting and separating wheel	810,668	Jan. 16	3046	614	120	782
Maier, Frederick, Jr., Auburn, N. Y., assignor, by mesne assignments, to American Electric Heating Company. Electric heater for vehicles	813,062	Feb. 20	3088	672	120	2241
Mainwaring, William F., Washington, D. C. Bottle-stopper	812,688	Feb. 6	1053	239	120	1709
Mair, Robert, Montreal, Canada, assignor to Canadian Rand Company. Turbine	809,711	Jan. 9	2220	462	120	520
Maire, Emile, Minneapolis, Minn. Rubber for ribbons, &c.	811,415	Jan. 30	5363	1198	120	1352
Maire, Emile, Minneapolis, Minn. Snow-removing apparatus	813,089	Feb. 20	3289	971	120	2240

Alphabetical list of patentees for January and February—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume		Official Gazette.	
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Major, Stephen T. (See Richardson, George W., assignor.)						
Majors, George S., Schell City, Mo. Wire-working tool	811,567	Feb. 6	64	13	120	1499
Malden-Ereole, Charles. (See Ravel, Joseph and E., assignors.)						
Maley, Henry A., Boston, Mass. Plate-holder for printing-presses	810,087	Jan. 16	2948	614	120	732
Malinofsky, John, Cleveland, Ohio. Awning	813,108	Feb. 20	3162	691	120	2266
Mallory, Lewis E. (See Graham, Andrew W., assignor.)						
Maloney, Philip M., Philadelphia, Pa. Amusement device	812,577	Feb. 13	2149	469-70	120	2003
Maloy, John, and A. White, Dunbar, Pa. Lubricator	812,578	Feb. 13	2145	470	120	2004
Manahan, Thomas, New York, N. Y. Bag	813,440	Feb. 27	3851	843	120	2489
Mangan, Joseph F., St. Paul, Minn. Churn	813,563	Feb. 27	4100	899	120	2527
Manger, George H., assignor of one-fourth to J. Weber, Jr., Des Moines, Iowa. Loose-leaf book	811,730	Feb. 6	362	80	120	1566
Mangum, Dewitt C. (See Tatum, James W., assignor.)						
Manix, Mathew J., Kansas City, Mo. Disinfecting compound	811,074	Jan. 30	5000	.....	120	1246
Mann, Adelaide E. (See Mann, Edgar E., assignor.)						
Mann, Charles A., Albany, N. Y. Railway-switch	811,160	Jan. 30	5190	1084	120	1266
Mann, Edgar E., assignor to A. E. Mann, Waterbury, Conn. Tent	809,516	Jan. 9	1837	379-80	120	438
Mann, William D., Chicago, Ill. Interior building construction	810,391	Jan. 16	3408	704	120	826
Manns, Albert G., assignor to Food & Fiber Products Company, Chicago, Ill. Preparing fiber from cornstalks and analogous pithy plants	811,419	Jan. 30	5684	.....	120	1362
Manns, Fredrick. (See Warden, Manns, and Decker.)						
Manny, Walter D., New York, N. Y., assignor to Pike Adding Machine Company, Orange, N. J. Stopping and starting device for motor-driven apparatus	809,986	Jan. 16	2719	560	120	682
Mansell, Arthur D., Newport, Me., assignor to Leavitt Automatic Stop Motion Company. Stop-motion for fulling-machines	811,075	Jan. 30	5000	1044	120	1246
Mansfield, Albert K., Salem, Ohio, and S. M. Felton, Chicago, Ill. Mechanical stoker	809,202	Jan. 2	1141	237	120	251
Mansfield, Thomas L., Washington, Pa. Speed-regulating device	812,579	Feb. 13	2145	470	120	2004
Manson, Roy C., Chicago, Ill. Springwork	811,234	Jan. 30	5338	1115	120	1319
Manuel, Ralph W., Minneapolis, Minn. Device for teaching penmanship	809,712	Jan. 9	2230	462	120	523
Manwaring, George A., Bayonne, N. J., assignor to American Graphophone Company, Washington, D. C. Graphophone-reproducer	811,568	Feb. 6	66	13	120	1499
Manzel Brothers Co. (See Manzel, Charles W., assignor.)						
Manzel, Charles W., Buffalo, N. Y., assignor, by mesne assignments, to Manzel Brothers Co. Rotary valve	811,225	Jan. 30	5330	1115	120	1319
Marble, George W., Chicago, Ill. Power-transmission device	808,769	Jan. 2	293	63-4	120	66
Marchand, John G., Buffalo, N. Y. Shoe	812,053	Feb. 20	3070	672	120	2246
Marcounet, Georges, Paris, France. Apparatus for producing gas	813,726	Feb. 27	4367	970	120	2360
Marcotte, Thomas, Magog, Canada. Steam-trap	810,423	Jan. 23	3724	767	120	931
Marcucci, Umberto G., East Oakland, Cal. Rail-joint	812,059	Feb. 6	1054	239	120	1703
Marcuse, Isaac J., Richmond, Va., assignor to American Can Company, New York, N. Y. Sheet-metal can	810,211	Jan. 16	3234	669	120	789
Marcuse, Isaac J., Richmond, Va., assignor to American Can Company, New York, N. Y. Sheet-metal can	811,649	Feb. 6	225	48	120	1534
Marcuse, Isaac J., assignor to R. A. Patterson Tobacco Co., Richmond, Va. Sheet-metal pocket-box	812,175	Feb. 6	1309	286	120	1756
Marine Iron Works. (See Bates, Douglass, and Nourse, assignors.)						
Markey, Bernard, Hays, Kans. Wire-stretcher	810,659	Jan. 23	4191	886	120	1037
Markey, John J., Anderson, Ind. Annealing-box	812,943	Feb. 20	2846	628	120	2197
Markham Air Ride Company. (See Polley, David F., assignor.)						
Markkula, Matt, and A. Rantala, Fort Bragg, Cal. Free-running wheel	810,896	Jan. 23	4651	999	120	1135
Markus, Harris, Manchester, England. Machine for coating fabrics with finely-comminuted materials	813,564	Feb. 27	4101	899	120	2527
Marmon, Howard C., assignor to Nordyke & Marmon Company, Indianapolis, Ind. Oil system	810,989	Jan. 30	4808	998	120	1203
Maroha, Charles F., Milwaukee, Wis. Wheel	813,565	Feb. 27	4102	899	120	2527
Marquardt, John A., Asheville, N. C. Adjustable fly-screen	813,727	Feb. 27	4400	970	120	2361
Marquis, Henry O., Superior, Pa. Switch-throwing mechanism	812,581	Feb. 13	2151	471	120	2005
Marr, Robert A., et al. (See Birmingham, John P., assignor.)						
Marsh, Albert, London, England. Registering or indicating device for turnstiles	809,826	Jan. 9	2431	505	120	566
Marsh, Albert L., Lake Bluff, assignor to Hoskins Company, Chicago, Ill. Electric resistance element	811,859	Feb. 6	613	124	120	1614
Marsh, B. F. (See Jenkins, Richard L., assignor.)						
Marsh, Clarence T., assignor of one-half to L. H. Weisseder, Cincinnati, Ohio. Ascertaining the origin of coloring-matters present in distilled liquors	813,728	Feb. 27	4401	.....	120	2501
Marsh, Edwin T., Rochester, N. Y. Mail-box	812,692	Feb. 13	2293	499	120	2031
Marsh, Elon A., assignor to Greenaway Company, Detroit, Mich. Steam-trap	811,420	Jan. 30	5687	1190	120	1362
Marsh, Harry, Hamilton, Canada. Machine for cutting cotton-wicking into lengths and bundling the same	813,441	Feb. 27	3851	844	120	2489
Marsh, Horace S., Reading, England. Boiler-setting and blocks therefor	808,853	Jan. 2	445	98	120	99
Marsh, Howard E., Palms, assignor of one-half to W. P. Wagy, Los Angeles, Cal. Briquetting-press	811,860	Feb. 6	614	124	120	1614
Marsh, Howard E., assignor of one-half to W. P. Wagy, Los Angeles, Cal. Briquet-machine	813,657	Feb. 27	4271	930-40	120	2563
Marsh, Hugh M., Chicago, Ill. Lifting-jack	811,731	Feb. 6	364	80	120	1567
Marsh, Hugh M., Chicago, Ill. Lifting-jack	812,580	Feb. 13	2150	471	120	2004
Marshall, George, Fremont, Nebr. Steam-boiler	809,517	Jan. 9	1840	380	120	438
Marshall, George, Fremont, Nebr. Marine boiler	809,518	Jan. 9	1842	381	120	439
Marshall, George, Fremont, Nebr. Steam-boiler	811,236	Jan. 30	5341	1115-16	120	1320
Marshall, James G. (See Price, Cox, and Marshall.)						
Marshall, Norman, Newton, Mass. Incandescent-lamp socket	811,161	Jan. 30	5191	1084	120	1266
Marshall, William E. (See Wright and Marshall.)						
Marson, Frank W. (See Van Meter, James M., assignor.)						
Marston, Charles H., Reading, and A. P. Holden, Malden, assignors to National Shawmut Bank, Boston, Mass. Machine for cutting sheets	811,940	Feb. 6	814	178-9	120	1695
Martin, Benjamin H., Bay City, Mich. Gate	809,987	Jan. 16	2720	560	120	682
Martin, George W., assignor of two-thirds to J. S. Agar and D. C. Roach, Chicago, Ill. Pendent or trolley-carrier seat-hook	812,881	Feb. 20	3081	691	120	2189
Martin, Horace E., Athens, Ga. Wagon-body	811,580	Feb. 6	67	14	120	1500
Martin, John D., Harrodsburg, Ky. Ditcher and road-grader	810,874	Jan. 23	4591	965-6	120	1123
Martin, Ludolph P., assignor to Allis-Chalmers Company, Milwaukee, Wis. Steam-shovel support	810,575	Jan. 23	4088	900	120	1124
Martin, Patrick L., Thomasville, Ga. Fire-fighting device	813,729	Feb. 27	4402	971	120	2502
Martin, Frank D., Tacoma, Wash. Game apparatus	810,781	Jan. 23	4319	917	120	1095
Martin, W. S. (See Thomas, Evans, and Martin, assignors.)						
Martin, William H. (See Thomas, Evans, and Martin.)						
Martin, William H., Chicago, Ill. Automatic car feeder	809,839	Jan. 9	2433	505	120	566
Martin, William R., Twin Falls, Idaho. Excavator	813,566	Feb. 27	4104	900	120	2528

Alphabetical list of patentees for January and February—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Marts, Randolph N., Frederick, Md. Vehicle	810,492	Jan. 23	3862	793-4	120	965
Marvil, Joshua D. (See Melson and Marvil.)						
Maschinen und Dampfkesselfabrik "Guilleaume Werke" Gesellschaft mit Beschränkter Haftung. (See Guilleaume, Rudolf, assignor.)						
Maschinenfabrik für Tabakindustrie Gesellschaft mit Beschränkter Haftung. (See Schmitt, Johann B., assignor.)						
Maschinenhandlung von Max Stern & Co., Firm of. (See Hinklein, Johannes, assignor.)						
Mason, Alfred, Molenbeek, assignor to Société Générale du Laminage Annulaire, Bruxelles, Belgium. Rolling-machine	812,281	Feb. 13	1563	342	120	1862
Mason, Arthur J. (See Hoover and Mason.)						
Mason, Thomas F., assignor of one-half to T. P. Watson, Colonial Beach, Va. Windlass	808,670	Jan. 2	98	21	120	22
Mason, Thomas S., assignor to New York Shipbuilding Company, Camden, N. J. Calking-tool	810,424	Jan. 23	3725	767	120	931
Mason, William, assignor to Winchester Repeating Arms Co., New Haven, Conn. Chuck	810,782	Jan. 23	4421	917-18	120	1085
Massey, Dora, Duncanville, Tex. Quilting-frame	811,650	Feb. 6	226	48-9	120	1535
Masse, Alfred N., Belleville, Ill. Key-lock	812,663	Feb. 13	2294	499	120	2081
Matchless Cigar Lighter Manufacturing Company. (See Weiss, Albert R., assignor.)						
Mather, William S., Newark, N. J. Crucible-shaker	813,658	Feb. 27	4277	940-1	120	2564
Mathews, Charles E., Rio, Wis. Chlorate-powder	811,941	Feb. 6	817	.....	120	1655
Mathews, William G., *et al.* (See Birmingham, John P., assignor.)						
Matlock, Charles H., Emden, Ill. Four-horse equalizer	813,567	Feb. 27	4108	900	120	2529
Matteson, Lynn B., Pittsburg, Pa. Flying toy	811,784	Feb. 6	477	102	120	1588
Matthias, Edward A., Liverpool, England. Closure device for bottles, jars, and similar vessels	810,164	Jan. 16	3127	647	120	768
Mauser, Paul, Oberndorf-on-the-Neckar, Germany. Magazine for small-arms	808,926	Jan. 2	618	125	120	126
Maw, Robert, Montreal, Canada. Car starting and stopping device	808,939	Jan. 2	621	126	120	127
Mawdsley, John H. S., Taunton, England. Dynamo-electric machinery	811,312	Jan. 30	5484	1143	120	1350
Max Ams Machine Co. (See Breuninger, Julius, assignor.)						
Max Huncke Chemical Co. (See Crippen, Henry M., assignor.)						
Maxey, James W., Louisville, Ky. Straightening wooden handles	812,350	Feb. 13	1685	.....	120	1910
Maxwell, Jacob B. (See Paxson, Wallace T., assignor.)						
Maxwell, Jonathan D., Detroit, Mich. Friction-clutch	810,783	Jan. 23	4424	918	120	1087
May, Ira C. (See Rahm and May.)						
Maydwell, C. A. (See Bien, Julius H., assignor.)						
Mayer, Oscar. (See Wiese, Otto C., assignor.)						
Mayer, Wilhelm, Rüttenscheid, near Essen-on-the-Ruhr, assignor to F. Krupp Aktiengesellschaft, Essen-on-the-Ruhr, Germany. Ammunition-package	808,854	Jan. 2	447	98	120	99
Mayer, Wilhelm, Essen-on-the-Ruhr-Rüttenscheid, assignor to F. Krupp Aktiengesellschaft, Essen-on-the-Ruhr, Germany. Tilting ammunition-wagon	808,855	Jan. 2	448	99	120	100
Mayfield Mfg. Co. (See Haverfield, Joseph L., assignor.)						
Mayhew, Percy G., Grand Rapids, Mich. Waterproof shoe	809,713	Jan. 9	2232	463	120	523
Maylender, Louis K., *et al.* (See Howarth and McKinlay, assignors.)						
Maynard, William C., Miami, Fla. Pin-retainer	811,421	Jan. 30	5068	1191	120	1302
Maynard, William G., Rondout, N. Y. Canceling-machine	813,809	Feb. 27	4555	1007-8	120	2624
Maynard, William G., Rondout, N. Y. Feeder	813,810	Feb. 27	4559	1008	120	2625
Mayo, Thomas W., Redding, Cal. Rail-joint	813,224	Feb. 20	3405	750	120	2315
Maze, Walter H., *et al.* (See Nelson, John, assignor.)						
Mazerand, Alexandre H., Paris, France. Draft apparatus for boiler-furnaces	811,570	Feb. 6	66	14	120	1500
McAfee, Stanley, North Adams, Mass. Reversible window	812,070	Feb. 6	1073	234-5	120	1707
McAllister, Addams S., New York, N. Y. Alternating-current machinery	809,835	Jan. 9	2448	509	120	571
McAllister, Robert. (See James, McAllister, and Byram.)						
McArthur, Fred J. (See Walberg and McArthur.)						
McArthur, Henry E., *et al.* (See Wilcox, William W., assignor.)						
McArthur, Jennie F., Detroit, Mich. Sleeve-ironing board	810,964	Jan. 30	4814	1000	120	1206
McBee, Marshall E. (See Davis, James W., assignor.)						
McBerty, Frank R., Evanston, and F. B. Craft, assignors to Western Electric Company, Chicago, Ill. Service-meter for telephone-exchanges	813,220	Feb. 20	3414	752-3	120	2317
McBride, Charles L., Toledo, Ohio. Die-press	812,263	Feb. 13	1506	343	120	1863
McBride, Joseph J. (See Gunn and McBride.)						
McBride, Patrick L., Lowell, Mass., assignor to T. K. Miller, Crafton, Pa. Feeding mechanism for carding-machines	812,863	Feb. 20	2684	592	120	2160
McCabe, Franklin J., assignor to A. S. F. Berquist and F. Tench, New York, N. Y. Amusement apparatus	811,315	Jan. 30	5489	1144	120	1351
McCain, John A., Atlanta, assignor of one-half to L. J. Cassels, Decatur, Ga. Spirit-level	808,892	Jan. 2	499	101	120	102
McCall, Uriah L., *et al.* (See McCall, William W., assignor.)						
McCall, William B. (See Scott and McCall.)						
McCall, William W., assignor of two-fifths to W. F. Stone and U. L. McCall, Kansas City, Mo. Damper-lever flange for piano-actions	809,970	Jan. 16	2728	561	120	934
McCallip, William W., Columbus, Ohio. Screen	810,985	Jan. 30	4814	1001	120	1206
McCallum, Henry C., Montreal, Canada. Counting mechanism	810,550	Jan. 23	3998	831	120	992
McCardell, William K., Houston, Tex. Mosquito-net-frame attachment for bedsteads	812,284	Feb. 13	1567	349	120	1863
McCardle, Christopher Y., Cameron, and S. N. Davis, Elm Grove, W. Va. Churning apparatus	813,722	Feb. 27	4407	972	120	2692
McCarl, Joseph C., Weston, W. Va., assignor of three-fourths to W. J. Alexander, W. H. Heyl, and J. O'Hara, Norwalk, Ohio. Automatic valve for water-closets	809,722	Jan. 9	2246	467	120	527
McCarroll, David C., Kansas City, Mo. Automatic governing device for gasolene-engines	811,734	Feb. 6	370	81	120	1588
McCarthy, Louis, Boston, Mass. Electric-light-fixture insulator	808,126	Jan. 2	1002	207	120	221
McCarthy, Thomas F., Waltham, Mass. Column	813,318	Feb. 20	3385	790	120	2355
McCartney, John F., Worcester, Mass. Plumber's trap	809,971	Jan. 16	2729	561	120	934
McCarty, William F. M., Rocky Ridge, Md., assignor to T. A. Darby, trustee, New York, N. Y. Decomposing water by electrolysis	813,105	Feb. 20	3164	692	120	2257
McCaskey, Perry A., Lisbon, Ohio. Credit-accounting appliance	809,723	Jan. 9	2280	467	120	527
McCaslin, Albert B., Denver, Colo. Winding-machine	811,655	Feb. 6	231	50-1	120	1536
McClave-Brooks Company. (See McClave, William, assignor.)						
McClave, William, Scranton, Pa., assignor to McClave-Brooks Company. Sectional [illegible]	812,071	Feb. 6	1075	236	120	1708
[illegible], William, assignor to McClave-Brooks Company, Scranton, Pa. Furnace-com[illegible]	812,072	Feb. 6	1076	236-6	120	1708
[illegible], William, Scranton, Pa., assignor to McClave-Brooks Company. Furnace draft-[illegible]	812,669	Feb. 13	2304	502-3	120	2053
[illegible], Thomas W., Ohio. Gate-carriage	813,105	Feb. 20	3163	692	120	2257
[illegible], Thomas W., Wheeling, W. Va. Saw rounding and jointing attachment	813,910	Feb. 27	4775	1034	120	2672
[illegible], Thomas W., Wheeling, W. Va. Roller construction	813,986	Feb. 27	4946	1068	120	2700
[illegible], Thomas W., Wheeling, Ohio. Roller for fireproof blinds or curtains	809,926	Jan. 30	4826	1026	120	1206
[illegible], Thomas W., Wheeling, Ohio. Roller for fireproof blinds or curtains	809,927	Jan. 30	4826	1026	120	1206
[illegible], Jesse (Dover, Missouri P. O., assignee.)						
[illegible], George E., Fleming, Kans. Railway-joint	813,057	Feb. 20	3370	674-5	120	2248

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
McCollum, William W., Brierfield, Ala. Balloting-box	810,790	Jan. 23	4435	920	120	1080
McCombs, James A., Fort Chester, N. Y. Checkrein attachment	810,214	Jan. 16	3242	671	120	791
McConnell Asbestos & Covering Co. (See McConnell, John A., assignor.)						
McConnell, John A., Allegheny, assignor to McConnell Asbestos & Covering Co., Pittsburg, Pa. Apparatus for molding materials which set by the addition of water thereto	812,147	Feb. 6	1240	269-70	120	1743
McConnell, John A., Allegheny, assignor to McConnell Asbestos & Covering Co., Pittsburg, Pa. Apparatus for molding plastic material	812,148	Feb. 6	1243	270	120	1744
McConway & Torley Company. (See McConway, William, Jr., assignor.)						
McConway, William, Jr., assignor to McConway & Torley Company, Pittsburg, Pa. Car-coupling	813,107	Feb. 20	3166	692-4	120	2268
McCord & Company. (See Dempsey, Edward, assignor.)						
McCord, Joseph W., *et al.* (See Cook, David S., assignor.)						
McCormick, John H. (Columbus, Ohio, and J. D. Morrison, Washington, D. C. Cash register and indicator	810,377	Jan. 16	3509	740-2	120	870
McCormick, John H., and J. D. Morrison, assignors, by mesne assignments, to International Register Company, Columbus, Ohio. Cash indicator and recorder	810,376	Jan. 16	3508	738-40	120	867
McCourt, Newton W., and T. N. Barnsdall, 2nd, Bradford, Pa. Druggist's label-holder	810,701	Jan. 23	4436	921	120	1080
McCoy, Alonzo B. Burlington, N. J. Steering device for boats	809,072	Jan. 2	861	187	120	195
McCoy, Harry E. (See Cribbs and McCoy.)						
McCullough, C. E. (See Nicholas, James A., assignor.)						
McCune, Samuel A., New Waterford, Ohio. Weeder-tooth	811,517	Jan. 30	5847	1224	120	1425
McCurdy, Oscar S., Wilkinsburg, Pa. Heating apparatus	809,207	Jan. 2	1150	239	120	253
McCusker, Bernard. (See Closson, John M., assignor.)						
McDermott, Joseph F., Umatilla, Canada. Delivery-spout	811,240	Jan. 30	5346	1117	120	1321
McDermott, William T., and W. F. Betzel, Baltimore, Md. Pulley-mounting	809,280	Jan. 9	1501	323	120	383
McDonald, Charles B., Chicago, Ill. Can-testing machine	812,224	Feb. 13	1440	314-15	120	1854
McDonald, Donald, and L. M. Scofield, Albany, assignors to American Meter Company, New York, N. Y. Station-meter index	809,127	Jan. 2	1008	207	120	221
McDonald, John, Blair township, Washington county, Nebr. Toe or grouter attachment for traction-wheels	813,571	Feb. 27	4117	902	120	2530
McDonald, Joseph P., Philadelphia, Pa. Postage-stamp-book cabinet	812,073	Feb. 6	1082	236	120	1709
McDonald, Ronald D. (See Ivey and McDonald.)						
McDonnell, Harry F., Latrobe, Pa. Cabinet	812,074	Feb. 6	1082	236-7	120	1709
McDonnell, John J. (See Toole and McDonnell.)						
McDonner, Charley, assignor of two-thirds to J. J. Roemer and C. Ahlgrim, Manitowoc, Wis. Refrigerator	810,499	Jan. 23	3983	796	120	970
McDougall, Charles P. (See Horner, William C., assignor.)						
McDowell, Willis H., Auburn, Ind. Molding apparatus	813,572	Feb. 27	4118	902	120	2531
McDowell, Willis H., Auburn, Ind. Machine for manufacturing concrete building-blocks	813,573	Feb. 27	4119	902-3	120	2531
McElroy, John H., Chicago, Ill. Locked-seam can-body machine	812,285	Feb. 13	1560	343-5	120	1863
McElroy, Josephine D., Leavenworth, Kans. Dish-washing machine	811,735	Feb. 6	374	82	120	1588
McEvoy, James E. (See Wilson, George W., assignor.)						
McFarlane, George C., Bay City, Mich. Meridian-transfer apparatus	812,567	Feb. 13	2163	473-4	120	2007
McFeaters, George H., Johnstown, Pa., assignor to Lorain Steel Company. Surface-contact electric railway	808,773	Jan. 2	303	65	120	69
McGahan, Frederick L., and E. G. Flager, St. Louis, Mo.; said Flager assignor to said McGahan. Fluid-fuel burner	811,078	Jan. 30	5005	1045-6	120	1247
McGarvey, Edward, Youngstown, Ohio. Mechanical recording-scale	812,286	Feb. 13	1576	345-6	120	1865
McGinn, Thomas P. (See Buckley, McGinn, and Rogan.)						
McGowen, Alfred E. (See Provost, Camille, assignor.)						
McGown, Samuel F., Dial, Ky. Grub-puller	809,972	Jan. 16	2730	562	120	934
McGranighan, John, Roxboro, Pa. Pile-tube	810,551	Jan. 23	3989	821	120	992
McGrann, John, *et al.* (See Beck, William, assignor.)						
McGregor, John M. D., Alley, Ga. Leaf-holder for use in transferring entries	809,126	Jan. 2	1007	208	120	232
McGuire, Michael G., Chicago, Ill. Umbrella	808,883	Jan. 2	459	101	120	102
McGuire, Thomas A., Oakland, Ill. Dressing-booth	813,661	Feb. 27	4262	942	120	2586
McHenry, Earl O. (See Noble and McHenry.)						
McHenry, Grant, Mount Liberty, Ohio. Vehicle running-gear	811,944	Feb. 6	820	179-80	120	1646
McHugh, William J., Dana, Iowa. Drain-tile protector	813,016	Feb. 20	2985	657	120	2226
McIlvaine, William, assignor to Cockburn Barrow and Machine Company, Jersey City, N. J. Air-lock for caissons	810,268	Jan. 16	3431	708	120	832
McIntosh, James, Lansing, Mich. Carburetor	810,792	Jan. 23	4439	921	120	1091
McIntosh, Josephine M., Providence, R. I. Tobacco-stripping machine	809,724	Jan. 9	2261	467-8	120	527
McIntosh, Ross S., Buffalo, N. Y., assignor to Liberty Manufacturing Company, Pittsburg, Pa. Rotary engine	813,815	Feb. 27	4566	1010	120	2636
McIntyre, Frank, assignor to Eagle Pencil Company, New York, N. Y. Pencil-tip	813,108	Feb. 20	3173	694	120	2260
McIntyre, James, Edmonton, Canada. Folding scaffold-bracket	809,973	Jan. 16	2731	562	120	935
McIntyre, James P., Chicago Lawn, Ill. Feed-box	811,573	Feb. 6	78	15	120	1502
McIntyre, Robert D., assignor of one-half to S. Harter, Mansfield, Ohio. Incandescent-light hanger	812,355	Feb. 13	1602	372	120	1911
McIntyre, William J., Hartford, Conn. Tool for marking and incising hinge-butt recesses	813,319	Feb. 20	3397	700-1	120	2356
McKay, George D. (See Clark, James T., assignor.)						
McKeen, William R., Jr., Omaha, Nebr. Car-frame	809,317	Jan. 9	1426	309	120	348
McKeen, William R., Jr., Omaha, Nebr. Truss-frame for cars	809,974	Jan. 16	2732	562-3	120	935
McKeen, William R., Jr., and A. H. Fetters, Omaha, Nebr. Vegetation-destroyer	810,793	Jan. 23	4443	921-2	120	1092
McKenna, Edward, *et al.* (See Landau, Dewis, assignor.)						
McKenzie, Alpine, Evangeline, La. Combined hair-brush and comb	812,786	Feb. 13	2490	547	120	2071
McKenzie, James S., Atlanta, Ga. Harness-tug	809,577	Jan. 9	1266	406	120	462
McKeown, James, assignor of one-half to J. Isreal, Pittsburg, Pa. Injector connection for locomotive-boilers	810,877	Jan. 23	4086	967	120	1135
McKeraban, George, Marshfield, Oreg. Adjustable wrench	812,440	Feb. 13	1861	409	120	1945
McKerrow, Herbert G. (See Sandison, William M., assignor.)						
McKimmey, William J., Barnett, Ill. Screw-connecting die and stock	812,075	Feb. 6	1084	237	120	1709
McKinlay, John J. (See Howarth and McKinlay.)						
McKinley, Joseph S., Cincinnati, Ohio. Ink-distributer for printing-presses	809,521	Jan. 9	1347	362	120	440
McKinney, Walter S., Chicago, Ill. Stamp-actuating mechanism for ore-crushers	811,079	Jan. 30	5005	1046	120	1248
McKinstry, George. (See Mosser, Daniel, assignor.)						
McKnight, John W., Hanover, Pa., assignor to Hanover Gas Regenerating Co. Inspirator and mixer for gas-burners	810,988	Jan. 30	4817	1002	120	1207
McKnight, Stephen E., Iola, assignor to S. Davidson, Yates Center, Kans. Crude-oil burner	811,439	Jan. 30	5704	1194	120	1396
McKnight, Thomas K., assignor to Western Wheeled Scraper Company, Aurora, Ill. Dump-car	809,522	Jan. 9	1349	362-4	120	440
McLain, John T., Stumpypost, N. C. Anchor	809,975	Jan. 16	2733	563	120	935
McLaughlin, Cunningham N., assignor to New Winona Manufacturing Co., Winona, Minn. Grinding-mill	811,945	Feb. 6	821	180	120	1636

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McLaughlin, John A., San Rafael, Cal. Thill-coupling	810,552	Jan. 23	3990	822	120	992
McLaughlin, Luther E., Pittsburg, Pa. Paper-file	808,884	Jan. 2	461	101	120	103
McLaughlin, Neal, Jethro, Ark. Combined scraper and shovel-plow	809,626	Jan. 9	2092	427	120	484
McLean, John, Newark, N. J. Paper-clip	812,800	Feb. 13	2553	562	120	2086
McLean, John, assignor to Whitehead & Hoag Company, Newark, N. J. Tape-holder	812,149	Feb. 6	1246	270	120	1744
McLean, John, assignor to Whitehead & Hoag Company, Newark, N. J. Tape-measure	812,150	Feb. 6	1247	271	120	1744
McLean, Robert C., Cleveland, Ohio. Rotary engine	812,598	Feb. 13	2145	474	120	2007
McLean, William H., Manchester, England. Worm-wheel-cutting machine	812,441	Feb. 13	1854	410	120	1946
McLeish, Archibald L., Glencoe, Ill. Sales-check book	808,885	Jan. 2	463	102	120	103
McMahon, Thomas S., Champaign, Ill. Device for replanting corn	813,967	Feb. 27	4919	1089	120	2700
McMasmon, John J., Atlanta, Ga., assignor of one-half to O. W. Lintner, Ironton, Ohio. Plow	813,968	Feb. 27	4920	1089	120	2700
McMichael & Wildman Manufacturing Co. (See Wildman and Loomis, assignors.)						
McMillan, Bennett H., W. C. Johnson, and F. M. Collord, Danville, Ill. Machine for molding cement fence-posts	812,767	Feb. 13	2491	547-9	120	2071
McMillan, Milton. (See Catlin and McMillan.)						
McMullen, Charles P., Brooklyn, N. Y., assignor of one-half to W. E. Nye, Wareham, Mass. Governor for pumping-engines	810,686	Jan. 23	4201	869	120	1039
McMurtrie, Gilbert, Clinton, Iowa. Wagon-bolster	810,500	Jan. 23	3885	798	120	970
McMyler, John, Cleveland, Ohio. Clam-shell bucket	811,945	Feb. 6	824	181	120	1657
McNab, John L. (See Cutler, John M., assignor.)						
McNally, Charles H., Waipahu, Hawaii. Machine for clearing land	809,523	Jan. 9	1851	384	120	440
McNamee, James, Piltsmont, N. Y. Knitting-machine	810,794	Jan. 23	4445	922-3	120	1092
McNamee, William, Aberdeen, S. D. Wire-stretcher	813,574	Feb. 27	4121	903	120	2531
McNaught, William, Holyoke, Mass. Head-box for paper-machines	809,073	Jan. 2	882	187-8	120	195
McNeil, Alfred H., Clapton, assignor to Pearson Fire Alarm, Limited, London, England. Electric fire-alarm and thermo-indicator	810,501	Jan. 23	3886	798	120	971
McNeil, Angus, North Sydney, Canada. Draft appliance	809,318	Jan. 9	1421	289	120	349
McNeily, Thomas J., New York, N. Y. Target	812,580	Feb. 13	2167	474	120	2007
McPhail, Alta, et al. (See McPhail, Hugh, assignor.)						
McPhail, Hugh, Visalia, assignor of eleven-twentieths to A. McPhail, L. L. Clark, and C. H. Hodley, Tulare county, Cal. Piano-playing attachment	808,774	Jan. 2	304	66-7	120	89
McPherson, Charles R., Monango, N. D. Wire-stretcher	810,795	Jan. 23	4440	923	120	1093
McPherson, Clayton, Bridgeton, N. J. Damper-operating mechanism	810,071	Jan. 16	2953	615	120	734
McPherson, James A., Hamilton, Canada. Hockey-boot	811,316	Jan. 30	5492	1145	120	1352
McSpadden, John I., II. L. Wilkie, and W. H. Lewis, Detour, Mich. Splicing-pin	811,788	Feb. 6	483	104	120	1589
McVey, John C., Kansas City, Mo. Fence-post	813,816	Feb. 27	4568	1010	120	2626
McVoy, Joseph I., Chicago, Ill. Faneted goods-receptacle	809,005	Jan. 2	759	164	120	167
Meacham, Larned E., et al. (See Reeve, Sidney A., assignor.)						
Meacham, William M., et al. (See Reeve, Sidney A., assignor.)						
Meade, George L., Cleveland, Ohio. Metallic hoop	809,519	Jan. 9	1843	381	120	439
Meaker, John W., Chicago, Ill., assignor, by mesne assignments, to Meaker Sales Company. Spool-holder	810,292	Jan. 16	3404	705	120	826
Meaker, John W., Chicago, Ill., assignor, by mesne assignments, to Meaker Sales Company. Paper-cabinet	810,293	Jan. 16	3407	705	120	827
Meaker, John W., Chicago, Ill., assignor, by mesne assignments, to Meaker Sales Company. Paper-cabinet	810,294	Jan. 16	3410	705	120	827
Meaker, John W., Chicago, Ill., assignor, by mesne assignments, to Meaker Sales Company. Stand or table	810,295	Jan. 16	3414	706	120	828
Meaker Sales Company. (See Meaker, John W., assignor.)	810,296	Jan. 16	3417	706	120	828
Mebane, James A., South Boston, Va. Electrical rosette	812,760	Feb. 13	2477	543	120	2069
Meier, Julius W., New York, N. Y. Roach-trap	812,761	Feb. 13	2479	543	120	2069
Meigs, John F., and H. G. Jakobsson, Bethlehem, assignors to Bethlehem Steel Company, South Bethlehem, Pa. Firing mechanism for guns	812,431	Feb. 13	1843	405	120	1941
Meigs, John F., and H. G. Jakobsson, Bethlehem, assignors to Bethlehem Steel Company, South Bethlehem, Pa. Firing mechanism for guns	812,432	Feb. 13	1847	405-6	120	1943
Meigs, John F., and R. P. Stout, assignors to Bethlehem Steel Company, South Bethlehem, Pa. Ammunition-hoisting mechanism	809,455	Jan. 9	1724	355-6	120	412
Meigs, John F., and S. A. S. Hammar, Bethlehem, assignors to Bethlehem Steel Company, South Bethlehem, Pa. Gun-mount	810,660	Jan. 23	4192	866-7	120	1037
Meigs, John F., and S. A. S. Hammar, assignors to Bethlehem Steel Company, South Bethlehem, Pa. Gun-mount	810,661	Jan. 23	4193	867	120	1037
Meigs, John F., South Bethlehem, H. G. Jakobsson and F. A. Sullivan, Bethlehem, assignors to Bethlehem Steel Company, South Bethlehem, Pa. Balancing mechanism for guns	810,662	Jan. 23	4194	868	120	1037
Meigsahn, Christian W., Jersey City Heights, N. J., assignor to Whitall Tatum Company, New York, N. Y. Stopper for ice-bags, helmets, and the like	810,784	Jan. 23	4426	918	120	1088
Meinard, Theodore P., assignor to St. Louis Car Company, St. Louis, Mo. Steering mechanism for motor-vehicles	809,620	Jan. 9	2051	425-6	120	482
Meinhard, Theodore P., assignor to St. Louis Car Company, St. Louis, Mo. Transmission-gear for motor-vehicles	812,664	Feb. 13	2286	499-500	120	2031
Meis, Henry E., Lawton, Okla. Tw. Springless lock	810,340	Jan. 16	3510	724	120	880
Meisel, John W., Bureau county, Ill. Combination adjustable trestle	808,940	Jan. 2	625	136	120	135
Meisenheimer, Edward J., assignor to Meisenheimer Printing Company, Milwaukee, Wis. Folder and binding	812,798	Feb. 13	2550	541	120	2085
Meisenheimer Printing Company. (See Meisenheimer, Edward J., assignor.)						
Meisner, Otto W., assignor to Badger Ballast Car Company, Chicago, Ill. Freight-car	812,145	Feb. 6	1233	268	120	1742
Meisner, Otto W., assignor to Badger Ballast Car Company, Chicago, Ill. Railway ballast-plow	812,223	Feb. 13	1437	313-14	120	1853
Melhuish, Emery E. (See Anthony, Daniel E., assignor.)						
Mellinger, George B., assignor of two-thirds to R. Skemp and J. R. Stauffer, Scottdale, Pa. Tube-making machine	811,891	Feb. 6	616	135	120	1615
Mellinger, George B., assignor of two-thirds to R. Skemp and J. R. Stauffer, Scottdale, Pa. Tube-making machine	812,148	Feb. 6	1235	268-9	120	1742
Mellon Manufacturing Company. (See Bassett, Robert A., assignor.) (Reissue.)						
Mellor, Thomas, and G. A. Westerson, Canton Falls, Minn. Hay-elevator and conveyer	812,899	Feb. 6	1055	220	120	1704
Mellor, Thomas, and O. A. Westerson, Canton Falls, Minn. Grapple-fork	812,651	Feb. 6	1057	220	120	1704
Melzer, Carl, Gesellschaft mit beschränkter Haftung. (See Pfennings, Carl, assignor.)						
Menaugh, John T., and J. D. Marvil, assignors to Collegeville Barrel Company, Laurel, Del.	812,652	Feb. 6	1058	220	120	1704
Mendenhall, [illegible] assignor to J. P. Tanner, Wissahoon, and R. S. Bass, [illegible] and speed-changing gear	808,883	Jan. 2	462	99	120	109
Mendenhall, [illegible] Wheel	808,988	Feb. 20	2485	781	120	2615
Mendenhall, Thomas E., Allegheny, Pa. Typographic paper-punch	813,599	Feb. 27	4769	1059	120	2670

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Mendel, Sophie, assignor to B. E. David, New York, N. Y. Thread-cutter for sewing-machines	813,811	Feb. 27	4861	1009	120	2685
Mendelsohn, Aaron, San Francisco, Cal. Cigar for asthma	811,942	Feb. 6	817	179	120	1656
Mendenhall, John F., Springville, Utah. Self-dumping scraper	810,165	Jan. 16	3128	647	120	788
Menges, Albert C., assignor to W. Harrison, Grand Rapids, Mich. Friction-clutch	811,422	Jan. 30	5090	1191	120	1393
Menkin, Max, New York, N. Y. Self-winding electric clock	813,161	Feb. 20	3281	721-2	120	2201
Mercer, Albert N., Johnstown, Pa. Lock	810,786	Jan. 23	4427	913-19	120	1088
Menzies, Robert C., Glens Falls, N. Y. Self-loading cart	810,547	Jan. 23	3978	830	120	990
Mercantile Manufacturing Company. (See Peterson, Charles E., assignor.)						
Mercenier, Adhémar. (See Joors and Mercenier.)						
Merchant, George B., Johnston, S. C. Winding mechanism for stump-extractors	813,063	Feb. 6	1060	231	120	1705
Merchant, William M., Garrison, Iowa. Lamp-burner	808,770	Jan. 2	298	64	120	68
Merckens, August, East Orange, N. J. Vending-machine	811,571	Feb. 6	71	15	120	1300
Mergenthaler Linotype Company. (See Bedell, Richard M., assignor.)						
Mergenthaler Linotype Company. (See Kennedy, David S., assignor.)						
Mergenthaler Linotype Company. (See Morehouse, Melvin W., assignor.)						
Mergenthaler Linotype Company. (See Muehlaisen, Carl, assignor.)						
Mergenthaler Linotype Company. (See Rogers, John R., assignor.)						
Mergenthaler Linotype Company. (See Saffery, Joseph E., assignor.)						
Merrill, Alver S., and H. M. Howard, Beulah, Mich. Buckle	812,892	Feb. 20	2683	892	120	2159
Merrill, Charles W., Lead, S. D. Container for filter-presses	813,014	Feb. 20	2992	957	120	2225
Merrill, Edwin R., assignor to J. A. Jeffrey, Columbus, Ohio. Mining-machine	813,508	Feb. 27	3090	574	120	2499
Merritt, Arthur A., New York, N. Y. Beam-compass	811,237	Jan. 30	5342	1116	120	1320
Merritt & Company. (See Jeffcris, Richard W., assignor.)						
Merritt, Henry W., assignor to Monarch Typewriter Company, Syracuse, N. Y. Type-writing machine	808,771	Jan. 2	299	65	120	68
Mersleider, Daniel, Cincinnati, and W. L. Mersleider, Norwood, Ohio. Rail-joint chair	810,493	Jan. 23	3865	794	120	966
Mersleider, William L. (See Mersleider, Daniel and W. L.)						
Messer, Daniel, assignor of one-half to G. McKinstry, Rochester, N. Y. Ironing-board	810,166	Jan. 16	3139	648	120	788
Messler, Eugene L., Pittsburg, Pa. Gas-relief valve for blast-furnaces	813,442	Feb. 27	3853	844	120	2470
Metal Sectional Furniture Company. (See Rice, Lowell H., assignor.)						
Metcalf, Edwin D., assignor to Columbian Rope Company, Auburn, N. Y. Rope	809,386	Jan. 9	1580	321	120	331
Metcalf, Frank G., Southbury, Conn. Metallic railway-tie and means for securing rails thereto	809,000	Jan. 2	752	163	120	166
Metcalf, Walton J., and J. W. Pickering, Leominster, Mass. Ornamental comb	809,574	Jan. 9	1951	405	120	461
Metropolitan Sewing Machine Company. (See Miller, William V., assignor.)						
Metropolitan Trust & Savings Bank, trustee. (See Edwards, Edgar A., assignor.)						
Mettenheimer, John H., and W. L. Herblin, Austin, Tex. Sewerage system for trains	809,070	Jan. 2	876	188	120	194
Mettler, Eugene, Indianapolis, Ind. Guard for boiler-tube cleaners	811,862	Feb. 6	622	136	120	1616
Metz, Herman A. (See Fourmeaux, Emile A., assignor.)						
Meurisse, Paul, Lille, France. Steam-boiler	811,785	Feb. 6	478	103	120	1588
Meyer, Anton, St. Louis, Mo. Glass-rolling apparatus	810,786	Jan. 23	4428	919	120	1088
Meyer, Ernest C., assignor to Champion Machinery Company, Cleveland, Ohio. Heading-machine	809,520	Jan. 9	1844	381-3	120	439
Meyer, Franz, Oak Park, Ill. Piano-bridge	812,510	Feb. 13	1994	437	120	1973
Meyer, Hans. (See Anderson and Pederson, assignors.)						
Meyer, Henry. (See Johnson and Meyer.)						
Meyer, Henry A., assignor to Wolf Electrical Promoting Company, Cincinnati, Ohio. Circular knife and retaining-gear therefor for cloth-cutting machines	813,313	Feb. 20	3586	788	120	2354
Meyer, Louis, Dayton, Ky. Vegetable-washer	810,548	Jan. 23	3986	830	120	991
Meyers, Charles A., Lapole, Ohio. Press for molding cement or plastic blocks	811,423	Jan. 30	5091	1191-2	120	1393
Meyrowitz, Emil B., New York, N. Y., assignor to Meyrowitz Manufacturing Co. Eye-glasses	809,001	Jan. 2	753	163	120	166
Meyrowitz Manufacturing Co. (See Meyrowitz, Emil B., assignor.)						
Michaelis, Gustavus, Albany, N. Y. Paint-remover	812,582	Feb. 13	2153	.....	120	2005
Michigan Buggy Company. (See Grant, Thomas, assignor.)						
Michigan Machinery Manufacturing Company. (See Dobson, John E., assignor.)						
Mick, Josiah O., assignor of two-fifths to A. J. Berkey, Goshen, Ind. Canopy-support and chandelier	810,096	Jan. 16	2960	615	120	733
Middlebrook, William D., assignor to Oakville Company, Waterbury, Conn. Machine for making safety-pins	812,762	Feb. 13	2480	544-5	120	2069
Middleby, Joseph, Jr. (See Dooley, Thomas B., assignor.)						
Mielke, O. W. (See Stewart, Lois O., assignor.)						
Miethke, Charles F., and F. J. Meek, New York, N. Y. Clothes-line support	812,583	Feb. 13	2154	471	120	2005
Miftolasek, John F. Vodnany, S. D. Ditching-plow	811,424	Jan. 30	5095	1192	120	1394
Milnroy, Hans, Schöneberg, near Berlin, assignor to W. Graaff & Company Gesellschaft mit beschränkter Haftung, Berlin, Germany. Compressor	813,443	Feb. 27	3854	844	120	2470
Miller, Alva. (See Barnes, Blackmun, and Miller.)						
Miller, Arthur E., Peekskill, N. Y. Pump	808,857	Jan. 2	451	99	120	100
Miller, Charles J., Minneapolis, Minn. Store-service apparatus	809,714	Jan. 9	2234	468	120	522
Miller, Charles M., Tyrone, Pa. Coaling device for moving trains	811,425	Jan. 30	5095	1192-3	120	1394
Miller, David, Evanston, Ill. Bowling-alley	809,715	Jan. 9	2235	464	120	524
Miller, Edward R., Wytheville, Va. Harrow	809,716	Jan. 9	2237	464	120	524
Miller, Ernest H., assignor of two-thirds to J. W. Holman and C. V. Rote, Lancaster, Pa. Electromagnet	812,511	Feb. 13	1997	438	120	1973
Miller, Ernest H., and C. V. Rote, assignors of one-third to J. W. Holman, Lancaster, Pa. Air-brake	811,863	Feb. 6	625	136-7	120	1616
Miller, Ernest L., Louisville, Ky. Bottling-machine	809,621	Jan. 9	2053	426	120	482
Miller, Frank E. (See Isham and Miller.)						
Miller, Franklin P., Bloomfield, N. J. Tool-holder	811,786	Feb. 6	479	103	120	1588
Miller, Frederick C., Cincinnati, Ohio. Front axle for automobiles	811,076	Jan. 30	5022	1044	120	1247
Miller, George B., Parry Sound, Canada. Gang-saw for manufacturing lumber	809,671	Jan. 2	95	22	120	23
Miller, George E., assignor of one-half to E. L. Fequegnat, Riverside, Cal. Fruit-display box	811,851	Feb. 6	237	49	120	1615
Miller, George J., Ballevitt, Wash. Animal-trap	808,908	Jan. 2	1143	237	120	251
Miller, Harry A., Los Angeles, Cal. Sparking device	812,104	Feb. 20	2483	889	120	2206
Miller, Harvey C., Philadelphia, Pa. Cleaning grains	810,560	Jan. 30	4996	1180	120	1294
Miller, Harvey C., Philadelphia, Pa. Apparatus for cleaning grains	812,790	Feb. 13	2488	891	120	2085
Miller, Henry C., Watertown, N. Y. Buttonhole-sewing machine	810,297	Jan. 16	3708	787-8	120	988
Miller, Henry C., Watertown, N. Y. Machine for assembling collar-blanks	813,606	Feb. 27	3619	1060-1	120	2670
Miller, Henry G. (See Loew and Miller.)						
Miller, Henry G., Cleveland, Ohio, assignor to Loew Supply & Manufacturing Company, Caldwell, N. J. Fluid-water heater	812,044	Feb. 20	2660	883	120	2197
Miller, Henry G., and G. R. Lawrence, Cleveland, Ohio. Banking apparatus	808,941	Jan. 2	697	157	120	183
Miller, Henry R., Fond du Lac, Wis. Screen for photographic camera-lenses	809,180	Jan. 9	1764	387-9	120	393
Miller, Jacob C., Greenwood, Ind. Feeding device	812,666	Feb. 13	2292	500	120	2032

Alphabetical list of patentees for January and February—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Miller, James C., assignor to Forter Miller Engineering Company, Pittsburg, Pa. Furnace.						
Miller, James M., Rushville, Ind. Corn-lifting device	813,226	Feb. 20	3408	751	120	2316
Miller, Jasper N., Ashland, Oreg. Book-holder	813,509	Feb. 27	3982	874	120	2500
Miller, John, Jr., assignor to W. R. Biddle, Amesbury, Mass. Overhead trolley harp and shoe for electric railways	813,227	Feb. 20	3410	751	120	2316
Miller, John C., Jackson, Mich. Block-mold	810,069	Jan. 16	2950	615	120	733
Miller, John C., assignor, by mesne assignments, to Miller Pasteurizing Machine Co., Canton, Ohio. Apparatus for sterilizing liquids. (Reissue)	810,494	Jan. 23	3867	794	120	966
Miller, John L., Wood River, Nebr. Check-row corn-planter	12,448	Feb. 6	1329	289	120	1762
Miller, John Z., Erie, Pa. Telephone-transmitter	812,866	Feb. 13	2299	500	120	2032
Miller Pasteurizing Machine Co. (See Miller, John C., assignor.) (Reissue.)	809,831	Jan. 9	2435	506	120	568
Miller, Richard, Appleton, Wis. Hay-carrier	811,572	Feb. 6	74	15	120	1501
Miller, Robert R., Grand Rapids, Mich. Incandescent-lamp socket	813,568	Feb. 27	4109	901	120	2529
Miller, Samuel P., Boston, Mass. Cigar retainer and cutter	812,064	Feb. 6	1062	231	120	1705
Miller, Thomas K. (See McBride, Patrick L., assignor.)						
Miller, Thomas S., South Orange, N. J. Cableway	809,287	Jan. 9	1582	321-2	120	381
Miller, Thomas S., South Orange, and J. H. Dickinson, Montclair, N. J. Conveyer	809,968	Jan. 16	2722	560	120	682
Miller, Vernon B., Philadelphia, Pa. Starting mechanism for gas-engines	808,858	Jan. 2	452	100	120	101
Miller, William E. (See Blodgett and Miller.)	812,584	Feb. 13	2155	472	120	2005
Miller, William G., West Medway, Mass. Gas-engine	810,495	Jan. 23	3868	795	120	966
Miller, William H., Galveston, Tex. Sheet-metal fireproof window	810,663	Jan. 23	4195	868	120	1038
Miller, William J. (See Frayer and Miller.)						
Miller, William V., assignor to Metropolitan Sewing Machine Company, Nyack, N. Y. Pitman connection	810,961	Jan. 30	4808	999	120	1204
Miller, Wilson W., Newton, Kans. Push-rake	813,569	Feb. 27	4111	901	120	2529
Milligas, Lorenzo A., Barstow, Cal. Spike-puller	809,122	Jan. 2	906	205-6	120	219
Milligan, William. (See Rickabaugh, Justus A., assignor.)						
Milliken, John A., New York, N.Y., assignor, by mesne assignments, to Schauer Factory. Nail and rivet delivering machine	813,162	Feb. 20	3286	722-3	120	2297
Millingar, Harry. (See Mitchell and Millingar.)						
Milliron, Ira A., Franklin, Pa. Glass-working furnace	812,055	Feb. 6	1063	231-2	120	1705
Milliron, Lorenzo, Flandreau, S. D. Pencil and pen holder	812,763	Feb. 13	2485	546	120	2070
Mills, Adalbert F., Shortsville, N. Y., assignor to American Seeding Machine Company, Jersey City, N. J. Adjustable feed for grain-drills	813,054	Feb. 20	3071	672-3	120	2247
Mills, Charles, Woolston, near Christchurch, New Zealand. Adjustable bracket for employment on windows, ladders, and parapets	811,514	Jan. 30	5840	1223	120	1424
Mills, David, East Rand, Transvaal. Air-pump	809,002	Jan. 2	754	163	120	166
Mills, David B., East Orange, N. J. Attachment device for electric conductors	810,664	Jan. 23	4198	868	120	1038
Mills, George B., South Bend, Ind. Convertible wagon-box and hay-rack	809,386	Jan. 9	1586	322-3	120	282
Mills, Herbert S., Chicago, Ill. Gramophone	812,512	Feb. 13	1999	438	120	1973
Mills, Joseph H., assignor to Richmond Casket Company, Richmond, Ind. Burial-casket	812,945	Feb. 20	2852	629	120	2199
Mills Novelty Company. (See Lavery, Henry C., assignor.)						
Mills, Silas P., Garfield, Kans. Wheel-hub	813,659	Feb. 27	4279	941	120	2565
Mills, Virgil H., Hubbard, Tex. Hydrant	808,859	Jan. 2	453	100	120	101
Milroy, Charles M. (See Beaseroft, James E., assignor.)						
Miner, Thomas H., Winona, Mo. Lightning-conductor	813,660	Feb. 27	4281	941	120	2565
Mineralac Company. (See Eastman, George N., assignor.)						
Minor, Frank, Batavia, N. Y. Shoe-display fixture	810,425	Jan. 23	3726	768	120	932
Milowsky, José P. (See Bargiela, Milowsky, Carlochia, and Odio.)						
Mississippi Glass Company. (See Walsh, Robert A. B., assignor.)						
Mississippi Wire Glass Company. (See Speer and Otto, assignors.)						
Mitchell, Charles, and H. Millingar, assignors of one-half to H. E. Dickinson, East St. Louis, Ill. Electrical railway signaling system	812,432	Feb. 13	1849	405-7	120	1943
Mitchell, George, Los Angeles, Cal. Apparatus for generating steam from hot slag	809,128	Jan. 2	907	208	120	219
Mitchell, George, Los Angeles, Cal. Slag steam-generator	809,204	Jan. 2	1144	236	120	262
Mitchell, Hiram A., and T. D. Singleton, Fall River, Mass. Potato-parer	811,652	Feb. 6	226	49	120	1535
Mitchell, Ira G., assignor of one-half to A. C. Moulton, F. E. Sheriden, R. S. Ball, L. Peterson, F. H. J. Hastgen, and G. E. Aleher, Mosher, Colo. Adjustable crank-disk	811,426	Jan. 30	5699	1193	120	1395
Mitchell, James H., Westerly, R. I. Device for bending fore-and-aft sails	810,787	Jan. 23	4431	920	120	1089
Mitchell, John, Damascmora, N. Y. Carrier for harrels and the like	808,008	Jan. 2	756	163	120	166
Mitchell, John E., assignor to Alsop Process Company, St. Louis, Mo. Treating flour	812,764	Feb. 13	2488	546	120	2070
Mitchell, Wade H., Ragby, Tex. Cultivator attachment	812,946	Feb. 20	2854	630	120	2199
Mix, Allen H., assignor to Porter Screen Manufacturing Company, Burlington, Vt. Metal window-screen	810,962	Jan. 30	4810	1000	120	1205
Mlada, Joseph, Manitowoc, Wis. Mold for butter	810,666	Jan. 23	4200	869	120	1038
Mobley, Richard, assignor of one-half to D. B. Ridpath, St. Louis, Mo. Bending-machine	808,672	Jan. 2	97	22	120	22
Moeller, Amelia G., assignor of one-half to S. Freshman and Z. J. Reese, Dallas, Tex. Washing-machine	810,549	Jan. 23	3867	831	120	991
Moeller, William J., Hartwell, assignor to Philip Carey Manufacturing Company, Lockland, Ohio. Ready-made roofing	813,163	Feb. 20	2989	723	120	2282
Moffat, Henry E., Woodstock, Canada. Oil-extractor	813,314	Feb. 20	3039	786	120	2284
Mois, John G., Batavia, Ill. Horse-power	813,262	Feb. 13	1865	343-3	120	1863
Moline Plow Company. (See Lundgren, Alexus C., assignor.)						
Molinenkien, Herman E. E., Cour d'Alene, Idaho. Combination-tool of the hammer type	812,947	Feb. 20	2895	629	120	2199
Molk, John F., Sturgeon Bay, Wis. Type-writing machine	813,570	Feb. 27	4112	901-2	120	2530
Möller, Karl, Charlottenburg, Germany, assignor to General Electric Company. Signal	811,388	Jan. 30	5344	1116	120	1320
Molloy, John, Miller's Forest, New South Wales, Australia. Tobacco-pipe	813,351	Feb. 13	1686	370	120	1910
Monarch Typewriter Company. (See Merritt, Henry W., assignor.)						
Monarch Vanisher Company. (See Leachman, Fred W., assignor.)						
Mond, Robert L. (See Wilderman and Mond.)						
Mond, Rogers, Chemnitz, Germany. Apparatus for discharging condensed steam	811,162	Jan. 30	5193	1084-5	120	1286
Monell, Ambrose, New York, N. Y. Manufacture of nickel-copper alloys	811,299	Jan. 30	5346	.....	120	1321
Monell, Charles J., Bernard, St. Paul, Minn.; A. M. Dunn, administratrix. Steam-feed for wells and measuring tanks	810,496	Jan. 23	3874	796	120	966
Monge, Gustave H., Piedmont, W. Va. Lathe attachment	809,717	Jan. 9	2236	445	120	524
Monitor Drill Co. (See Davis, Spencer F., assignor.)						
Monnett, Joan B. (See Wyman, Hendricks, and Monnett.)						
Monroe, William L., Omaha, Nebr. Alarm	813,164	Feb. 20	2990	725	120	2283
Monroe, Robert, Bucharest, Roumania. Apparatus for printing books in type for the blind						
Monroe Galvanized Air Conveyor of Missouri. (See Obear, Bryan, assignor.)	811,767	Feb. 6	451	104	120	1868
Montague, Robert L., et al. (See Montague, John K., assignor.)						
Montague, Robert C., assignor of one-half to E. M. Vynne, New York, N. Y. Machine for grooving tubes	812,434	Feb. 13	1852	407	120	1944

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Montague, Robert C., assignor of one-half to E. M. Vynne, New York, N. Y. Helically grooving tubes	812,435	Feb. 13	1854	408	120	1944
Moor, Levi C. (See Cotton and Moor.)						
Moore, Alanson A., assignor of one-half to F. H. Bessenger, Detroit, Mich. Armor for pneumatic tires	811,732	Feb. 6	367	81	120	1567
Moore, Charles H., New York, N. Y. Water-closet flush-pipe	810,070	Jan. 16	2953	615	120	733
Moore, Edward Y., Cleveland, Ohio. Hoist	811,077	Jan. 30	5002	1044-5	120	1347
Moore, F. J. (See Johnson, Alvin S., assignor.)						
Moore, Franklin O., Los Angeles, Cal. Music-leaf turner	810,497	Jan. 23	3875	796	120	969
Moore, Henry W., Anderson, assignor of one-fifth to M. G. Moore, Madison county, Ind. Truck	812,066	Feb. 6	1064	232	120	1706
Moore, John W., and J. A. White, Philadelphia, Pa. Paper-making machine	809,532	Jan. 9	2436	506	120	569
Moore Leather Machine Company. (See Moore, William H., assignor.)						
Moore, Mettie G. (See Moore, Henry W., assignor.)						
Moore, Richmond S. A., Ridgedale, Tenn. Box	810,341	Jan. 16	3511	734	120	850
Moore, Thomas R., Walden, N. Y. Machine for grinding cutlery-blades and the like	813,510	Feb. 27	3984	874-5	120	2500
Moore, Walter T. (See Simmons and Moore.)						
Moore, William D., Creston, Iowa. Building-block	812,667	Feb. 13	2301	501	120	2032
Moore, William H., Salem, Mass., assignor to Moore Leather Machine Company, Kittery, Me. Leather-seasoning machine	809,718	Jan. 9	2240	465-6	120	524
Moore, William L., Honolulu, Hawaii. Centrifuge attachment for electric fans	811,865	Feb. 6	631	138	120	1619
Moore, William L., and E. L. Hutchinson, Honolulu, Hawaii. Dental and surgical obtunder	811,864	Feb. 6	629	137	120	1618
Moore, Willis C., Los Angeles, Cal. Rock-boring machine	811,943	Feb. 6	818	179	120	1656
Moran, Robert, Seattle, Wash. Power plant	812,668	Feb. 13	2302	501	120	2033
Morehouse, Melvin W., Brooklyn, N. Y., assignor to Mergenthaler Linotype Company. Linotype-machine	808,772	Jan. 2	302	65	120	69
Morel, Charles F. V., Paris, France. Apparatus for sterilizing liquid by heat under pressure	812,765	Feb. 13	2488	546	120	2070
Morelock, William H. H., Jonesboro, Ark. Automatic damper	813,226	Feb. 20	3411	752	120	2317
Moreno, Luigi, and A. D'Antony, Turin, Italy. Apparatus for burning gas	812,513	Feb. 13	2000	438-9	120	1974
Morewood, William B., Elizabeth, N. J. Door-bolt and means for operating the same	808,573	Jan. 2	98	22	120	24
Morgan Construction Company. (See George, Jerome R., assignor.)						
Morgan, Edward L., Little Rock, Ark. Railway-switch stand	809,719	Jan. 9	2243	466	120	536
Morgan, Mary E., Fort Smith, Ark. Trunk	809,124	Jan. 2	999	206	120	220
Morgan Potter Company. (See Potter, Morgan, assignor.)						
Morgan, Ralph L., and J. N. Heald, assignors to Heald Machine Company, Worcester, Mass. Grinding-machine	810,426	Jan. 23	3727	756	120	932
Morgan Spring Company. (See Bigelow, George E., assignor.)						
Morganay, William C., and T. Gilloon, Dubuque, Iowa. Bale binder and tier	810,312	Jan. 16	3235	669-70	120	789
Moriarty, John J. (See Lisota, Frank, assignor.)						
Morris, Archibald D., New York, N. Y. Detachable-link chain	813,239	Feb. 20	3412	752	120	2317
Morris, De Haven, Wilmington, Del. Tool	812,067	Feb. 6	1068	233	120	1706
Morris, William C., Houston, Tex. Double-screw swivel lifting-jack	810,374	Jan. 16	3582	737	120	896
Morrison, Andrew. (See Thomson, MacLeod W., assignor.)						
Morrison, Douglas P., Newark, N. J. System of calibrating recording watt-hour meters	812,436	Feb. 13	1855	408	120	1944
Morrison, Frederick J., Emporium, Pa. Grab-hook	808,860	Jan. 2	454	100	120	101
Morrison, James D. (See McCormick and Morrison.)						
Morrison, John C., Louisville, Ky. Hat-fastener	808,674	Jan. 2	99	23	120	24
Morrison, Reason R., Mineral City, Ohio. Fire-clay block and attachment	812,437	Feb. 13	1857	408	120	1944
Morrison, Walter D., San Francisco, Cal. Machine for automatically segregating, measuring, and delivering molten glass	810,167	Jan. 16	3121	648	120	798
Morrow, David W., Plumville, Pa. Mail-box	812,514	Feb. 13	2002	439	120	1974
Morrow, Ernest E., Bluffton, Ind. Window-screen	811,733	Feb. 6	369	81	120	1566
Morrow, Mark. (See Orr, Francis L., assignor.)						
More, Fritz C., Elwood, Ind., assignor to American Sheet and Tin Plate Company, Pittsburg, Pa. Power-sledge	809,575	Jan. 9	1962	405	120	462
Morse, Jay D., Holbrook, Nebr. Post	811,313	Jan. 30	5468	1144	120	1280
Morse, Oscar D., Adrian, Mich. Fence-tie	811,896	Feb. 6	631	138	120	1619
Morsier, Frédéric de, Geneva, Switzerland. Expansion cramp device	811,163	Jan. 30	5195	1085	120	1287
Morsing, Christian, Plummer, Minn. Road-grader	812,065	Feb. 20	3072	673	120	2247
Morse, Rosannah L. (See Eisenhouser and Morse.)						
Mortensen, Casper C. M. (See Riddell and Mortensen.)						
Mortensen, Martin, Sioux City, Iowa. Cream cooler and aerator	809,125	Jan. 2	1000	206	120	220
Mortland, Thomas. (See Cpanor, Joseph B., assignor.)						
Morton, Ephraim S., Brockton, Mass. Last-thimble	813,812	Feb. 27	4562	1009	120	2626
Morton Trust Company, trustee. (See Pope, Harry M., assignor.)						
Mossbach, Albert, assignor to H. Mossbach & Sons, Philadelphia, Pa. Candy-machine	813,315	Feb. 20	3091	788-9	120	2254
Mossbach & Sons, H. (See Mossbach, Albert, assignor.)						
Mossley, Herman F., Rockymount, Va. Soak-filter	811,883	Feb. 6	229	49	120	1535
Mossley, John B., Danville, Va. Screen	810,788	Jan. 23	4433	920	120	1089
Mosher, De Witt C., Manitou, Colo. Barrel-filter	812,438	Feb. 13	1858	408	120	1945
Mosher, John J., Rochester, N. Y. Mechanism for printing-presses	809,004	Jan. 2	767	164	120	187
Moss, Leon F. (See Bell, Walter J., assignor.)						
Moss, Walter L., Blains, Ga. Fishing device	810,789	Jan. 23	4434	920	120	1089
Mosteller, Dosier H., assignor to Mosteller Manufacturing Company, Chicago, Ill. Fruit-squeezer	808,861	Jan. 2	456	100	120	101
Mosteller Manufacturing Company. (See Mosteller, Dosier H., assignor.)						
Mothes, Georg, Rüttenscheid, near Essen-on-the-Ruhr, assignor to F. Krupp, Essen-on-the-Ruhr, Germany. Apparatus for the production of globoidal worm-wheels	809,823	Jan. 9	2438	507	120	563
Mothy, Philipps B., Montreal, Canada. Means for supporting the expansion ends of bridges, &c	808,071	Jan 2	878	188-7	120	194
Motor Traction Company. (See Rhodes, Levi, assignor.)						
Motsinger Device Manufacturing Company. (See Motsinger, Homer N., assignor.)						
Motsinger, Homer N., assignor to Motsinger Device Manufacturing Company, Pendleton, Ind. Electric igniter	810,963	Jan. 30	4811	1000	120	1205
Mott, Albert M., Hampton, Iowa. Automatic electric block system	813,909	Feb. 27	4778	1053-4	120	2671
Mott Carbonator Company. (See Fox, John H., assignor.)						
Mott, Daniel L. (See Horton, Robert E., assignor.)						
Mouchel, Gustave L., London, England. Concrete pile, pillar, &c	812,228	Feb. 13	1436	314	120	1864
Mouat, Andrew B., Twisp, Wash., assignor of two-thirds to R. S. Lewis and T. Twichell, Fargo, N. D. Leaching-tank	808,678	Jan. 2	101	23	120	25
Moulton, Arthur C., et al. (See Mitchell, Ira G., assignor.)						
Moulton, Dexter E. (See Sumnith and Moulton.)						
Moulton, James N., Haverhill, Mass., assignor to Waterproof Welt & Filler Co., Hartford, Conn. Shoe	809,822	Jan. 9	2065	488	120	463

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Moulton, James N., Philadelphia, Pa., assignor to J. R. Reynolds, Hartford, Conn. Waterproof sole	809,623	Jan. 9	2057	427	120	483
Moyian, Bryan. (See Hadley and Moyian.)						
Mraray, John, et al. (See Salmon, Carl R., assignor.)						
Mueller, John S., assignor to Standard Elevator Interlock Company, Philadelphia, Pa. Locking mechanism for elevators	811,627	Jan. 30	5700	1193	120	1306
Muehlsiepen, Carl, Berlin, Germany, assignor to Mergenthaler Linotype Company. Typographic machine	812,585	Feb. 13	2157	472	120	2008
Muehlsiepen, Carl, Berlin, Germany, assignor to Mergenthaler Linotype Company. Linotype-machine	812,586	Feb. 13	2161	473	120	2008
Mueller, Philip, assignor to H. Mueller Manufacturing Company, Decatur, Ill. Basin-cock	809,720	Jan. 9	2346	466	120	530
Mueller, Philip, assignor to H. Mueller Manufacturing Company, Decatur, Ill. Basin-cock	810,168	Jan. 16	3133	648	120	769
Muff, Charles E., assignor of one-half to Ateliers de Constructions Mécaniques Cidevant Dollfus, Mieg & Cie., Mülhausen, Alsace, Germany. Driving mechanism for motor-vehicles	811,214	Jan. 30	5467	1144	120	1351
Mühlrad, Johann, Jasle, Austria-Hungary. Lubrication-pipe	812,252	Feb. 13	1957	371	120	1910
Mull, James H., Philadelphia, Pa., assignor to Chicago Pneumatic Tool Company, Chicago, Ill. Pipe-bending machine	811,516	Jan. 30	5545	1224	120	1425
Müller, Adolph, Berlin, Germany. Storage battery	813,730	Feb. 27	4405	971	120	2502
Müller, Gustav H., Kiel, and E. Jarck, Hamburg, Germany. Heat-non-conducting material	810,342	Jan. 16	3512	724	120	850
Müller, Herman, Astoria, and E. Zipprich, assignors to Budde & Westermann, New York, N. Y. Bottle-capping machine	812,088	Feb. 6	1069	233-4	120	1706
Mullins, Edward W. (See Brodeur, Francois X., assignor.)						
Mumford, John F., Fall River, Mass., assignor of one-half to F. F. Fanning, Providence, R. I. Lace-curtain-exhibiting apparatus	813,165	Feb. 20	3291	723-4	120	2293
Munroe, Frederick M., Brooklyn, N. Y. Mucilage-bottle	813,813	Feb. 27	4564	1009	120	2626
Munsing, George D., New York, N. Y. Vehicle-wheel	809,205	Jan. 2	1146	226	120	263
Munson, Hugh H., Truro, Iowa. Gearing for washing-machines	813,015	Feb. 20	2953	657	120	2225
Munson, James E. (See Burry, John, assignor.)						
Munson, Martin L., New York, N. Y. Folding phonographic horn	813,814	Feb. 27	4565	1009	120	2626
Münster, Karl, assignor to Becker & Kollsberger, Munich, Germany. Pictorial post-card	812,515	Feb. 13	2004	430	120	1975
Munter, Charles, New York, N. Y. Combination-corset	811,498	Jan. 30	5701	1194	120	1306
Munton, James. (See Hermanson, Gustaf A., assignor.)						
Münzel, Max, Brunswick, Germany. Automatic cut-off for explosive-engines	813,316	Feb. 20	3093	789-90	120	2355
Munzer, Francis G. (See Maddux, Joshua O., assignor.)						
Murchison, Neil, New York, N. Y. Attachment for boat-davits	812,089	Feb. 6	1071	234	120	1707
Murdock and Geb Company. (See Murdock, Thomas J., assignor.)						
Murdock, Horace B., Detroit, Mich. Cement-brick press	809,434	Jan. 9	2441	507-8	120	569
Murdock, Thomas J., assignor to Murdock and Geb Company, Franklin, Mass. Bobbin-holder	809,624	Jan. 9	2089	427	120	484
Murmans, John, Cleveland, Ohio. Aerating device for mattresses	813,731	Feb. 27	4406	971	120	2502
Murphy, Daniel R., Scenery Hill, Pa., assignor to J. A. Jeffrey, Columbus, Ohio. Mining-machine	809,206	Jan. 2	1147	226	120	263
Murphy, Frank, Lisbon, N. Y. Butter-press	812,439	Feb. 13	1888	409	120	1945
Murphy, Henry J., Courtney, N. D. Tobacco-moistening apparatus	809,576	Jan. 9	1954	408	120	493
Murphy, John P., Sacramento, Cal. Indicator	812,264	Feb. 13	1991	372	120	1911
Murphy, Joseph F., Ennis, Tex. Steam-engine	812,263	Feb. 13	1988	371	120	1910
Murphy, Thomas J., New York, N. Y. Electric-wave detector	811,644	Feb. 6	220	40	120	1535
Murray, Edward, Chicago, Ill. Railway-tie	810,870	Jan. 23	4892	964	120	1124
Murray, Eugene and W. B., Washington, D. C. Elevator-cage-door opener	810,160	Jan. 16	3124	648-9	120	770
Murray, George C., Washington, D. C. Car truck-bolster	809,836	Jan. 9	2080	427	120	484
Murray Iron Works Company. (See Salmon, Frederick W., assignor.)						
Murray, James H., Los Angeles, Cal. Floor-rack for stalls	812,217	Feb. 20	3295	790	120	2355
Murray, John, Edinburgh, Scotland. Gearing for bundling-presses	811,184	Jan. 30	5188	1085	120	1267
Murray, William B. (See Murray, Eugene and W. B.)						
Musick, Albert R. (See Forquer and Musick.)						
Myers and Brother, F. E. (See Myers, Philip A., assignor.)						
Myers, Gamaliel C. (See Rissler, Edward L., assignor.)						
Myers, Jacob A., St. Louis, Mo. Farm-gate	810,213	Jan. 16	3240	671	120	791
Myers, James W., assignor to Myers Manufacturing Company, Chicago, Ill. Combination machine-tool	813,088	Feb. 20	3073	673-4	120	2247
Myers Manufacturing Company. (See Myers, James W., assignor.)						
Myers, McClelland, Moosic, Pa. Glass-molding apparatus	809,980	Jan. 16	2723	560-1	120	668
Myers, McClelland, Moosic, assignor of one-half to J. P. Elkins, Indiana, Pa. Glass-manufacturing apparatus	810,275	Jan. 16	3483	727	120	888
Myers, Philip A., assignor to F. E. Myers and Brother, Ashland, Ohio. Pump	809,389	Jan. 9	1978	223	120	263
Myers, Philip A., assignor to F. E. Myers and Brother, Ashland, Ohio. Hay-carrier	810,486	Jan. 23	3679	706-7	120	959
Myers, William F., Breton Bow, Nebr., assignor of one-half to C. H. Lilleare. Wire stretcher and stringer	809,721	Jan. 9	2347	466	120	530
Nacke, Arnold, assignor of one-half to I. Kitzes, Philadelphia, Pa. Platform for power-motors	813,444	Feb. 27	3836	845	120	2470
Nagel, Theodore, assignor of one-half to L. H. Collins, Chicago, Ill. Test-clamp	813,287	Feb. 13	1899	346	120	1955
Nagy, Ignaz. (See Watzke, Eduard, assignor.)						
Nalezak, William H., Bellaire, N. Y. Brake-shoe	809,627	Jan. 9	2063	426	120	485
Nash, George. (See Brayshaw, Shipley N., assignor.)						
Nason, William A. (See Goodson and Nason.)						
National Cash Register Company. (See Bockhoff, William F., assignor.)						
National Coal Dump Car Company. (See Caswell, William A., assignor.) (Reissue.)						
National Coal Dump Car Company. (See Hubbard and Taylor, assignors.)						
National Coal Dump Car Company. (See Otis, Spencer, assignor.)						
National Electric Lamp Company. (See Blackburn, Frank H., assignor.)						
National Electric Lamp Company. (See Doane, Samuel E., assignor.)						
National Glass Company. (See Furnas, William I., assignor.)						
National Jewelry Machinery Co. (See Dillon, James A., assignor.)						
National Magnetic Mineral Separating Company. (See Campbell, Henry F., assignor.)						
National Portable Cottage Company. (See Kraus, William G., assignor.)						
National Stamping Company. (See King, Tom C., assignor.)						
National Surety Bank. (See Marston and Holden, assignors.)						
National Tube Company. (See Reese, George, assignor.)						
National Tube Company. (See Riggs, David, assignor.)						
National Tube Company. (See Patterson, Peter C., assignor.)						
National Tube Co. (See Stead, Ralph G., assignor.)						
National Tube & Fuel Company. (See Homestead, Peter J., assignor.)						
Naue, Louis W., Muskegon, Mich. Spool-holder	812,670	Feb. 13	2310	503	120	2034

Alphabetical list of patentees for January and February—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Neeland, Marvin A., Youngstown, Ohio. Valve-removing apparatus	810,215	Jan. 16	3243	671-2	120	791
Neeland, Marvin A., Youngstown, Ohio. Valve for blowing-engines, &c.	810,216	Jan. 16	3245	672	120	792
Neelen, Edward B. (See Swimmer and Neelen.)						
Neely, Ira L., Independence, Kans. Well-drilling apparatus	811,947	Feb. 6	535	181	120	1666
Neff, August E., and C. G. Boldenweck, Chicago, Ill. Woven-pile-fabric rope	810,553	Jan. 23	3902	822	120	993
Neff, Louis C., New York, N. Y. Type-writing machine	809,201	Jan 9	1583	334	120	264
Neff, Louis C., New York, N. Y. Duplicating apparatus	809,725	Jan. 9	2253	466	120	536
Neff, William H. (See Fassett, Riley D., assignor.)						
Nehr, Herman F., New York, N. Y. Luna for holding the host	810,217	Jan. 16	3246	672	120	792
Neikirk, John O., Chicago, Ill. Brake-operating mechanism for cars	813,511	Feb. 27	3801	875	120	2502
Nelson, August W., Spokane, Wash. Electrical railway-signal	813,892	Feb. 27	4263	942	120	2506
Nelson, Charles H., Chicago, Ill., assignor to Sieber & Trussell Manufacturing Company. File-binder	813,817	Feb. 27	4570	1010	120	2627
Nelson, Charles H., Chicago, Ill., assignor to Sieber & Trussell Manufacturing Company. Binder-file	813,818	Feb. 27	4571	1011	120	2627
Nelson, Edward, Jersey City, N. J. Cord-clamp	809,726	Jan. 9	2257	466	120	536
Nelson, John, Ottawa, Kans. Punching-machine	810,796	Jan. 23	4451	922-4	120	1093
Nelson, John, assignor of two-thirds to W. H. Mase and R. F. Struever, Peru, Ill. Polishing-machine	810,554	Jan. 23	3904	822-3	120	993
Nelson & Le Moon. (See Le Moon, Axel R., assignor.)						
Nelson, Soren M., and N. Nelsen, Marietta, Minn. Shock-loader	811,165	Jan. 30	5197	1086	120	1268
Nelson, William. (See Dixon, James M., assignor.)						
Nethery, Joseph W., assignor to Indiana Manufacturing Company, Indianapolis, Ind. Pneumatic straw-stacker	811,726	Feb. 6	375	82	120	1566
Neubener, Jacob, Wells, Minn. Lifting apparatus	812,256	Feb. 13	1993	372	120	1911
Neumaier, John, assignor of one-half to G. L. Baldauf, Milwaukee, Wis. Marine-torpedo guard	808,942	Jan. 2	.631	137-8	120	139
Neumann, Engelbert, assignor of one-half to A. Weyers & Cie., Crefeld, Prussia, Germany. Transfer apparatus for wire heddles	812,076	Feb. 6	1086	237-8	120	1710
Neumann, Friedrich E. F., assignor to Kakao-Compagnie Theodor Reichardt Gesellschaft mit Beschränkter Haftung, Wandsbek, Germany. Lateral packing for the end faces of pairs of rollers	813,220	Feb. 20	3001	701	120	2264
Nevens, Herbert R., Portland, Me. Circuit-closer for telegraph-keys	813,512	Feb. 27	3993	875	120	2502
Neville, John P., Oakland, Cal. Dry method of preparing lead compounds	812,357	Feb. 13	1894	377	120	1911
Nevin, John H., Washington, Pa. Folding umbrella	811,948	Feb. 6	827	162	120	1668
Nevins, Patrick J., Haverhill, Mass. Gas-fixture	809,727	Jan. 9	2258	466	120	530
New British Hardware Manufacturing Company. (See Pfeiffer, Christian, assignor.)						
New Haven Clock Company. (See Porter, Wilson E., assignor.)						
New Jersey Patent Company. (See Allen, Edward L., assignor.)						
New Jersey Patent Company. (See Ott, John F., assignor.)						
New Jersey Patent Company. (See Weber, Peter, assignor.)						
New Process Steel & Wire Company. (See Griffin, Alvah M., assignor.)						
New Winona Manufacturing Co. (See McLaughlin, Cunningham N., assignor.)						
New York Adding Typewriter Company. (See Pike, William H., Jr., assignor.)						
New York Automatic Telephone Company. (See Gilson, Adolph C., assignor.)						
New York Shipbuilding Company. (See Mason, Thomas S., assignor.)						
Newark Cornice and Skylight Works. (See Yunker and Schwing, assignors.)						
Newcomer, Melchor S., Polo, Ill. Windmill	809,208	Jan. 2	1152	230	120	263
Newcomer, Melchor S., Polo, Ill. Windmill-regulating mechanism	813,671	Feb. 13	2311	503-4	120	2034
Newell, Alfred A. (See Quick, Emmett B., assignor.)						
Newell, Nelson C. (See Clough, Francis W., assignor.)						
Newman, William J., Chicago, Ill. Automatic-dumping elevator-cage	809,456	Jan. 9	1727	386	120	413
Newman, William J., Chicago, Ill. Tripping apparatus	810,555	Jan. 23	3905	823	120	993
Newman, William J., Chicago, Ill. Derrick	810,556	Jan. 23	3907	823	120	994
Newton, Albert E., Worcester, Mass. Drill-press	811,317	Jan. 30	5493	1145	120	1357
Newton, Arthur D., Hartford, Conn., assignor to General Electric Company. Electrical heating system	809,728	Jan. 9	2260	466	120	530
Newton Crane Gas Engine Company. (See Crane, Newton, assignor.)						
Newton, Herbert W. (See Leuchterhand and Newton.)						
Newton, James E., Fall River, Mass. Shovel	813,166	Feb. 20	3293	724	120	2293
Ney Manufacturing Company. (See Rowland and Bacher, assignors.)						
Nice, Jesse H. (Ehle and Nice.)						
Nicholas, George T., Bethany, Mo. Draft-equalizer	810,797	Jan. 23	4452	924	120	1094
Nicholas, James A., assignor to C. E. McCullough, Sheffield, Ill. Lock for end-gates	810,072	Jan. 16	2954	616	120	734
Nichols, Aaron S., Boston, Mass. Game-recording device	812,884	Feb. 20	2957	808	120	2460
Nichols, Arthur C., assignor to Seovill Manufacturing Company, Waterbury, Conn. Eyelet	813,576	Feb. 27	4122	908	120	2631
Nichols, Frank L. (See Starr and Nichols.)						
Nichols, Henry B., Philadelphia, Pa. Portable melting and heating apparatus	810,073	Jan. 16	2955	616	120	734
Nichols, Henry B., Philadelphia, Pa. Device for use in the manufacture of rail-joints	810,074	Jan. 16	2956	616	120	734
Nichols, Henry H., Philadelphia, Pa. Device for use in the manufacture of rail-joints	810,075	Jan. 16	2957	617	120	735
Nichols, John E. (See Fling and Nichols.)	812,077	Feb. 6	1089	238-9	120	1710
Nichols and Shepard Co. (See Korn, Albert G., assignor.)						
Nichols and Shepard Company. (See Gustavus, William T. S., assignor.)						
Nicholson, Edgar L. (See Horton, George R., assignor.)						
Nicharson, William E., Cambridge, assignor to Gillette Safety Razor Company, Boston, Mass. Method of hardening	812,442	Feb. 13	1985	410-11	120	1946
Niebling, Andrew E. (See Urban, Joseph S., assignor.)						
Nielsen, Niels. (See Nielsen and Nielsen.)						
Niemann, James P. (See Le Breux, Richard F., assignor.)						
Nightingale, Frank W., Quincy, Mass. Snow-shoe for wheels	813,221	Feb. 20	3417	753	120	2318
Nikolai, Jacob M., Madison, Minn. Roller-mill	811,574	Feb. 6	80	16	120	1503
Niles-Bement-Pond Company. (See Bryan, John H. B., assignor.)						
Niles-Bement-Pond Company. (See Sears, Willard T., assignor.)						
Niles, Francis H., assignor to Featherstone Foundry and Machine Company, Chicago, Ill. Double-pipe return-bend	811,320	Jan. 30	5486	1146	120	1323
Niles, Harry F., Chicago, Ill. Garment-supporter	809,074	Jan. 2	885	183	120	388
Nisbet, Joseph, Argo, Miss. Cotton-picking machine	813,060	Feb. 20	2999	692-3	120	2241
Noah, Henry, Baxter, Iowa. Mold for making building-blocks	811,020	Jan. 30	5020	1047	120	1249
Noble, Cyrus W., and F. O. McHenry, Meyersville, Ohio. Curtain-holder for heavy drops	810,457	Jan. 9	1720	357	120	414
Noblett, Edward J., Chicago, Ill. Means for preventing theft of brasses from railway journal-boxes	812,888	Feb. 20	2959	808	120	2461
Noiseless Typewriter Company. (See Small, William A., assignor.)						
Nolan, John H., and M. L. Sherborn, assignors to Boston Pneumatic Power Company, Boston, Mass. Check-valve	810,822	Jan. 23	3957	792	120	971
Nolan, Oliver, Minneapolis, Minn. Brick-machine	811,518	Jan. 30	5548	1234-5	120	1426

Alphabetical list of patentees for January and February—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Pages.
Nordberg, Bruno V., Milwaukee, Wis. Fluid-operated engine	812,151	Feb. 6	1248	271	120	1745
Nordstrom, Fred, New York, N. Y. Tailor's measure	809,836	Jan. 9	3451	509	120	571
Nordyke & Marmon Company. (See Marmon, Howard C., assignor.)						
Nordyke & Marmon Company. (See Warrington, Jesse, assignor.)						
Norling, Reinhold A., assignor to Aurora Automatic Machinery Company, Aurora, Ill. Pneumatic hammer	813,100	Feb. 20	3174	604–5	120	2269
Norling, Reinhold A., assignor to Aurora Automatic Machinery Company, Aurora, Ill. Throttle-valve	813,110	Feb. 20	3180	605	120	2270
Normand, Joseph M., assignor to Ridgely Trimmer Company, Springfield, Ohio. Trestle.	809,729	Jan. 9	2280	499	120	530
Northington, Henry E., West Bay City, Mich. Stamp	811,940	Feb. 6	328	152	120	1656
Norris, Almon E., Cambridge, Mass. Hoisting and conveying apparatus	813,663	Feb. 27	4284	943	120	2595
Norris, Frank B., Holmes, Mont. Suspenders	811,051	Jan. 30	5010	1047	120	1249
North, Frederick H., Detroit, Mich. Button-guard for collars	809,730	Jan. 9	2282	499	120	530
Norris, George E., Detroit, Mich. Collar	810,076	Jan. 16	2958	617	120	735
Norstrand, Hans C. G., Chicago, Ill. Lock-seam pipe	812,298	Feb. 13	1563	347	120	1887
North, Arthur W., administrator. (See Wilde, Samuel.)						
North, Edward, *et al.* (See Jones, Frederick W., assignor.)						
North, Joseph, Lancaster, Ohio. Glass-working machine	810,218	Jan. 16	3247	673	120	792
North & Judd Manufacturing Company. (See Anderson, John S., assignor.)						
North & Judd Manufacturing Company. (See Wightman, Elbridge M., assignor.)						
North, Thomas M., assignor to Linotype and Machinery Limited, London, England. Trimming mechanism for stereotype-casting machines	809,524	Jan. 9	1853	385	120	441
Northrop, Jonas, assignor to Draper Company, Hopedale, Mass. Shuttle-clearing means for filling-replenishing looms	812,516	Feb. 13	2005	440	120	1975
Norton Electrical Manufacturing Company. (See Norton, Frederick G., assignor.)						
Norton, Frederick G., Chicago, Ill., assignor to Norton Electrical Manufacturing Company. Machine for pressing clothing	811,241	Jan. 30	5347	1117	120	1321
Norton, Martin H., Newport, Vt. Knife-holder for veneer-lathes	812,078	Feb. 6	1091	239	120	1711
Noures, William G. (See Bates, Douglass, and Noures.)						
Nowak, Ottokar H., assignor of one-half to E. Smith, Chicago, Ill. Waterproof compound	809,731	Jan. 9	2283	.....	120	530
Noxon, Charles P. L., Syracuse, N. Y. Spark-coil	811,656	Feb. 6	238	51–2	120	1537
Noyes, Frank G. (See Smith, Willard C., assignor.)						
Nuessen, Gerhart J., Andale, Kans. Hammock-support	811,166	Jan. 30	5199	1086	120	1288
Numsmaker, Albert, Cleveland, Ohio. Motor-vehicle	809,826	Jan. 9	1854	385	120	441
Nungesser Electric Battery Co. (See Nungesser, Philip P., assignor.)						
Nungesser, Philip P., assignor to Nungesser Electric Battery Co., Cleveland, Ohio. Machine for filling dry batteries	809,828	Jan. 9	1855	385–6	120	441
Nutting, Charles E., assignor to Draper Company, Hopedale, Mass. Loom-shuttle	811,242	Jan. 30	5350	1117	120	1321
Nyce, Burnham K. (See Sherwood, Matthew M., assignor.)						
Nye, Anselm T., Marietta, Ohio. Heating-stove	812,079	Feb. 6	1093	239–40	120	1711
Nye, John R., Waterville, Me. Cooking utensil	809,139	Jan. 2	1009	208	120	222
Nye, William E. (See McMullen, Charles P., assignor.)						
O. K. Tool Holder Company. (See Robinson, Pearl H., assignor.)						
O'Brien, Arthur, Chicago, Ill. Flexible pipe	809,977	Jan. 16	2736	563	120	667
O'Brien, John D., Boston, Mass. Hose-supporter	810,077	Jan. 16	2959	617	120	735
O'Brien, Thomas E., Chicago, Ill. Couch-display truck	811,657	Feb. 6	240	52	120	1537
O'Brien, Vincent J., *et al.* (See Hughes, Edwin T., assignor.)						
O'Brien, William F., Salem, Mass. Railway-switch	811,319	Jan. 30	5498	1146	120	1353
O'Bryan, Joseph B., Jr., and O. H. Rudolph, Nashville, Tenn. Machine for measuring and cutting off lengths of fabric	812,672	Feb. 13	2316	504	120	2085
O'Callaghan, Thomas A. (See Fedden, John H., assignor.)						
O'Connor, James, New York, N. Y. Mechanical piano-player	811,062	Jan. 30	5011	1047	120	1249
O'Connor, John F., assignor to W. H. Miner Company, Chicago, Ill. Tandem-spring draft-rigging for railway-cars	812,867	Feb. 20	2693	594	120	2162
O'Connor, John F., assignor to W. H. Miner Company, Chicago, Ill. Draft appliance for railway-cars	812,868	Feb. 20	2697	594–5	120	2163
O'Connor, Malachi, Oswego, N. Y. Latching mechanism for excavator-dippers	809,209	Jan. 2	1156	240	120	254
O'Connor, Peter M., St. Louis, Mo. Folding view-holder	811,658	Feb. 6	242	52	120	1538
O'Donnell, John H., assignor to Waterbury Wire Die Company, Waterbury, Conn. Diamond-drill	810,503	Jan. 23	3380	709	120	971
O'Donnell, John H., assignor to Waterbury Wire Die Company, Waterbury, Conn. Diamond-drill and burnishing-lathe	810,504	Jan. 23	3381	709	120	972
O'Donnell, Michael H., Detroit, Mich. Manhole cover and frame	810,960	Jan. 30	4819	1002	120	1207
O'Hare, Anna, and C. B. Weston, Brooklyn, N. Y. Heater	812,860	Feb. 20	2690	595	120	2164
O'Hare, John, *et al.* (See McCord, Joseph C., assignor.)						
O'Harra, James G. (See La Dehn and O'Harra.)						
O'Neill, Kitty I. (See Paxton and O'Neill.)						
O'Neill, William R., Findlay, Ohio. Extensible pitman-rod	810,798	Jan. 23	4453	924	120	1094
O'Reilly, Anthony J., assignor to Crompton-Thayer Loom Company, Worcester, Mass. Crank-shaft support for looms	809,392	Jan. 9	1800	334	120	385
O'Riley, Peter, assignor of one-half to N. A. Perkins, Grand Rapids, Mich. Folding box.	811,659	Feb. 6	243	52	120	1538
O'Shea, Jeremiah. (See O'Shea, John J. and J.)						
O'Shea, John J. and J., Chicago, Ill. Furnace	811,897	Feb. 6	632	126	120	1619
Oakman, Richard N., New York, N. Y. Apparatus for lighting and extinguishing gas	813,576	Feb. 27	4123	908	120	2532
Oakman, Richard N., New York, N. Y. Apparatus for controlling gas-conduits	813,577	Feb. 27	4124	904	120	2532
Oakstrand, Bertin. (See Wood and Oakstrand.)						
Oakville Company. (See Middlebrook, William D., assignor.)						
Oates, George P. (See Packham and Oates.)						
Oberr, Bryan, assignor to Montague Compressed Air Company of Missouri, St. Louis, Mo. Valve-operating means for hydraulic pumps	812,444	Feb. 13	1869	411–12	120	1946
Oberhardt, Franz, Fuerth, Germany. Rail-joint and the like	812,080	Feb. 6	1095	240	120	1712
Ober, Julius E., Schenectady, N. Y., assignor to General Electric Company. Electric furnace	812,801	Feb. 13	2554	562	120	2066
Ober, Reuben H., Garrettsville, Ohio. Filing box or drawer	809,976	Jan. 16	2726	563	120	666
Oberlin, August W., Weymouth, Pa. Culinary vessel	813,280	Feb. 13	2168	474	120	2008
Obi, Lewis B. (See Jordan, Mahoney, Carlisle, and Obi.)						
Oehmichen, Jean L. (See Lemale & Oehmichen.)	808,886	Jan. 2	988	192	120	108
Oehmichen, Jean L., assignor to Lemale & Oehmichen. (See Oehmichen.)						
Oesterly, Henry W., assignor of one-half to E. T. Brown, Elwood City, Pa. Razor	813,282	Feb. 20	3419	753	120	2318
Oesper, Daniel J., Cincinnati, Ohio. Pyrotechnic carbonaceous pigments	813,911	Feb. 27	4776	.....	120	2672
Ofer, Elmer L., assignor to Pure Electric Manufacturing Company, Peru, Ind. Electric	809,978	Jan. 16	2730	564	120	667
Ogle Manufacturing Company. (See Kramer, Moses W., assignor.)						
Ohmer Fare Register Co. (See Ohmer, John F., assignor.)						
Ohmer, John F., Dayton, Ohio, assignor to Ohmer Fare Register Co., Rochester, N. Y. Fare-recorder	812,017	Feb. 20	2668	468	120	2226

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Pages.
Oil Well Supply Company. (See Panton, Chester W., assignor.)						
Olum, Thomas N., Lisbon, N. D. Potato-digger	812,673	Feb. 13	2318	504–5	120	2086
Okun, Moses S., New York, N. Y. Rotary engine and motor	813,018	Feb. 20	2690	589	120	2227
Old Hickory Chair Company. (See Staley, Harrison L., assignor.)						
Olds, Gorham L. (See Payne, John W., assignor.)						
Oldorf, Moses, New York, N. Y. Crown-protector for hats	812,019	Feb. 20	2694	589	120	2228
Oliver, Frank D., *et al.* (See Howarth and McKinley, assignors.)						
Oliver, Frederick M., Pendleton, Oreg. Apparatus for use in hospitals, sick-rooms, and like places	812,358	Feb. 13	1606	372	120	1912
Oliver, John S., and G. J. Thomas, Baltimore, Md. Combination-rack	812,081	Feb. 6	1096	240	120	1712
Oliver Typewriter Company. (See Poole, Charles C., assignor.)						
Oliver, William F., Oakland, Cal. Wicket	812,948	Feb. 20	2856	620	120	2200
Olsen, Gustave A., Providence, R. I. Attachment for faucets	812,062	Feb. 6	1093	241	120	1713
Olmsted, Leverett H., Hackensack, N. J. Grinding apparatus	813,167	Feb. 20	3294	734	120	2283
Olsen, Halvor M., assignor to American Electric Telephone Company, Chicago, Ill. Annunciator	811,063	Jan. 30	5013	1047	120	1249
Olsen, Ole M. J., and W. Gates, Parramatta, New South Wales, Australia. Regulator for gas-lamps	811,064	Jan. 30	5016	1048	120	1250
Olson, Andrew P. (See Simm and Olson.)						
Omalia, Mathew, assignor of three-fifths to Casey Bros., Scranton, Pa. Nut-lock	812,591	Feb. 13	2170	475	120	2008
Onderdonk, Lansing, New York, N. Y., assignor to Union Special Sewing Machine Company, Chicago, Ill. Seam for sewed articles	811,789	Feb. 6	484	104–5	120	1589
Onderdonk, Lansing, New York, N. Y., assignor to Union Special Sewing Machine Company, Chicago, Ill. Seam for sewed articles	811,790	Feb. 6	484	105	120	1589
Ontario Fruit Package Company. (See Little, Henry O., assignor.)						
Oran, William L., Kingston, Tenn. Harrow	811,575	Feb. 6	82	16	120	1503
Ordish, Francis W. (See Broadhead and Ordish.)						
Ordnance Improvement Company. (See Gerdom, Gregory, assignor.)						
Orewiler, Benjamin F., Chicago, Ill. Garment-supporter	809,210	Jan. 2	1158	240	120	255
Ornstein, Max. (See Wetzler and Ornstein.)						
Orr, Francis L., Thurman, assignor of one-half to M. Morrow, Percival, Iowa. Starting means for gas or similar engines	809,211	Jan. 2	1161	240	120	256
Orr, Robert. (See Kent and Orr.)						
Ortell, Bertha, Newark, N. J. Garment-supporter	810,505	Jan. 23	3393	709–809	120	972
Orywall, Paul, Paderborn, Germany. Reservoir-pen	809,319	Jan. 9	1432	280	120	349
Osborne, Vivian, assignor of two-thirds to J. J. and S. F. Connolly, London, England. Measuring instrument	812,674	Feb. 13	2319	505	120	2086
Osbourn, Millard P. (See Schofield and Osbourn.)						
Oscanyan, Paul C., Newark, N. J., assignor of one-half to Adams Bagnall Electric Company, Cleveland, Ohio, and G. A. Thomson, Somerville, N. J. Elastic-fluid turbine	810,667	Jan. 23	4203	869	120	1089
Osel, Kistel, St. Paul, Minn. Sliding hinged grain-door	810,557	Jan. 23	3998	822–4	120	994
Osgood, Ernest J., Oakland, Cal. Inkstand	811,430	Jan. 30	5705	1194	120	1309
Osgood, Frederick M., Manchester, N. H. Non-refillable bottle	809,212	Jan. 2	1164	241	120	256
Osgood, Frederick M., Manchester, N. H. Means for sealing bottles	809,213	Jan. 2	1166	241	120	256
Osmondson, Osmond A., Richmond, Va. Bill file and cabinet	809,006	Jan. 2	760	164–5	120	167
Oster, Herman W., assignor to Oster Manufacturing Company, Cleveland, Ohio. Machine for cutting dies for die-stocks	809,007	Jan. 2	764	165	120	168
Oster, Herman W., assignor to Oster Manufacturing Company, Cleveland, Ohio. Die-stock	812,870	Feb. 20	2700	595	120	2164
Oster Manufacturing Company. (See Oster, Herman W., assignor.)						
Osterhout, Garret B., New York, N. Y. Single-trigger mechanism for guns	813,513	Feb. 27	3995	876	120	2502
Ostrander, Alfred I., Yonkers, N. Y. Multiple-expansion rotary engine	812,819	Feb. 27	4572	1011	120	2638
Ostrander, Allen E., Paterson, N. J., assignor to American Car & Foundry Company, St. Louis, Mo. Cross-bearer	809,732	Jan. 9	2265	469–70	120	530
Ostrander, Allen E., Paterson, N. J., assignor to American Car & Foundry Company, St. Louis, Mo. Cross-bearer	809,733	Jan. 9	2266	470	120	530
Ostrander, Allen E., Paterson, N. J., assignor to American Car & Foundry Company, St. Louis, Mo. Cross-bearer	809,734	Jan. 9	2268	470	120	531
Ostrander, Allen E., Paterson, N. J., assignor to American Car & Foundry Company, St. Louis, Mo. Cross-bearer	809,735	Jan. 9	2270	470	120	532
Ostrander, Allen E., Paterson, N. J., assignor to American Car & Foundry Company, St. Louis, Mo. Bolster	809,736	Jan. 9	2272	471	120	532
Ostrander, Allen E., Paterson, N. J., assignor to American Car & Foundry Company, St. Louis, Mo. Car-seat	810,558	Jan. 23	4000	824	120	994
Ostrander, James, Indianapolis, Ind. Packing	808,778	Jan. 2	312	67	120	70
Oswald, Simon P. (See Ferguson and Oswald.)						
Otis Elevator Company. (See Bollman, George W., assignor.)						
Otis Elevator Company. (See Furlow, Floyd C., assignor.)						
Otis, Spencer, Chicago, Ill. Dump-car	813,733	Feb. 27	4409	972–3	120	2592
Otis, Spencer, Chicago, Ill., assignor to National Coal Dump Car Company, Rapid City, S. D. Dump-car	812,359	Feb. 13	1608	373	120	1912
Ott, Florian. (See Thole and Ott.)						
Ott, John F., assignor to New Jersey Patent Company, Orange, N. J. Apparatus for applying pigment to engraved ends of phonograph-records	813,514	Feb. 27	3997	876–7	120	2503
Ottaway, William, assignor to Aurora Automatic Machinery Company, Aurora, Ill. Sparking plug	809,578	Jan. 9	1957	407	120	462
Otto, Henry A. (See Soper and Otto.)						
Outcalt, David D. A. (See Heinrich, Heinrich, assignor.)						
Overholt, Edward H. (See Wesenhaver and Overholt.)						
Overton, Richard J. (See Dreer, Henry J., assignor.)						
Owen, Oscar L., and J. F. Harding, assignors to Whitin Machine Works, Whitinsville, Mass. Thread-guide mechanism for spinning or twisting machines	810,668	Jan. 23	4205	870	120	1089
Owens, Allan L., Atchison, Kans. Washing-machine	810,427	Jan. 23	3728	768	120	952
Owosso Manufacturing Company. (See Brown, Edward T., assignor.)						
Ozias, Orange O., assignor to Computing Scale Company, Dayton, Ohio. Price-scale	812,289	Feb. 13	1585	347	120	1889
P. & P. Corbin. (See Henry, William E., assignor.)						
Paarmann, Hans J., assignor to H. F. Brammer Manufacturing Company, Davenport, Iowa. Mechanical movement	811,888	Feb. 6	634	126	120	1620
Pace, William T., Iron City, Ga. Tie liner and spacer	809,888	Jan. 2	768	165	120	169
Pacific Electric Heating Company. (See Richardson, Karl H., assignor.)						
Packard, Edwin D., *et al.* (See Stamp, Orson L., assignor.)						
Packard, Sumner T., Hamilton, Mass. Head for jack-spools, warp-beams, or the like	810,806	Jan. 23	3986	899	120	978
Packer, James W., Glens Falls, N. Y., assignor to Sandy Hill Iron and Brass Works. Paper-machine	812,820	Feb. 27	4570	1011–12	120	2639
Packham, Frank R., and G. F. Oates, Springfield, Ohio, assignors to American Sheeting Machine Company, Jersey City, N. J. Speed device for sheeting-machines	812,734	Feb. 27	4413	972	120	2593

Alphabetical list of patentees for January and February—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg's.	Official Gazette. Vol.	Official Gazette. Page.
Paddock, Milan L., Lyons, N. Y. Protector for backs and chests	811,167	Jan. 30	5200	1087	120	1289
Padmore, Arthur M., Lead, S. D. Combined davenport and bed	813,233	Feb. 20	3419	753–4	120	2319
Page, Joseph W., Charlotte, N. C. Measuring device	810,790	Jan. 23	4455	924	120	1094
Paget, Arthur. (See Bottomley, Hutton, and Paget.)						
Paindavoine-Dufour, Pierre A. (See Paindavoine and Paindavoine-Dufour.)						
Paindavoine, Pierre H. J., and P. A. Paindavoine-Dufour, Les Fontanettes à la Chapelle aux Pots, France. Balanced suction and force pump	813,821	Feb. 27	4581	1013	120	2630
Paine, William H., Louisville, Ky. Time stock-feeder	811,431	Jan. 30	5706	1195	120	1396
Painter, Frank C., Osman, Ill. Rail-support	809,214	Jan. 2	1167	241	120	267
Painter, John L., Bellevue, Ohio. Bolt-clipper and punch	812,225	Feb. 13	1444	315	120	1855
Paiste, Henry T., Philadelphia, Pa. Fuse-plug	809,827	Jan. 9	3452	509	120	572
Pallady, Hubert E., Sebastopol, Cal. Window-screen frame	813,234	Feb. 20	3421	754	120	2319
Pallweber, Joseph, Mannheim, Germany. Adding-machine	813,578	Feb. 27	4126	904	120	2532
Palm, John V. O., assignor to American Compressed Air Supplying Company, Milwaukee, Wis. Dust-collector	810,559	Jan. 23	4001	824	120	995
Palmer, Andrew C., Washington, Ind. Harrow	810,800	Jan. 23	4455	925	120	1094
Palmer, John S., Chicago, Ill. Carrier-cover for pneumatic store-service	810,970	Jan. 30	4820	1002	120	1207
Palmer, Lyndon C., Buffalo, N. Y. Machine for stripping blanks for paper boxes	810,971	Jan. 30	4821	1002–3	120	1207
Palmer, Wilford E. (See Anderson and Palmer.)						
Palmer, William, Jr., Rincon, N. Mex. Ter. Selective call for telephones and telegraphs	810,878	Jan. 23	4598	957–8	120	1125
Palmer, William H. (See Hackmann and Palmer.)						
Palmros, Alexander, assignor to J. A. Jeffrey, Columbus, Ohio. Trolley-supporting device	813,515	Feb. 27	3999	877	120	2504
Pankow, Theodore, Sioux Falls, S. D. Bottle-labeling machine	811,576	Feb. 6	83	17	120	1503
Panoulias, Panayiotis, New York, N. Y. Dipping-frame for coating candies	809,737	Jan. 9	2273	471	120	533
Pape, Hermann G., New York, N. Y. Multipolar electromagnet	812,445	Feb. 13	1872	412	120	1947
Papenfoth, Paul. (See Parker and Papenfoth.)						
Papenfoth Paul, assignor to Russell & Erwin Manufacturing Company, New Britain, Conn. Lock and latch	812,871	Feb. 20	2702	595	120	2164
Paquette, John B., assignor to Landers, Frary & Clark, New Britain, Conn. Spring-scale	813,735	Feb. 27	4414	973	120	2593
Paradice, Frank H., Denver, Colo. System for sprinkling lawns, gardens, greenhouses, parks, &c	810,972	Jan. 30	4824	1003	120	1208
Paradis, Victor H., and J. B. Putrow, Rice Lake, Wis. Cigar-clipper and match-safe	810,801	Jan. 23	4457	925	120	1094
Paragou Photo-Chemical Company. (See Jarman, Alfred J., assignor.)						
Pardee, John E., Rydal, Kans. Device for counterbalancing tongues	811,168	Jan. 30	5201	1087	120	1289
Pardridge, William E., *et al.* (See Hubbard, Frederick J., assignor.)						
Parfitt, Alfred, Topeka, Kans. Steam-boiler	810,078	Jan. 16	2961	617–18	120	736
Parfitt, Arthur W., New London, assignor of one-half to A. G. Westphal, Hortonia, Wis. Wrench	809,838	Jan. 9	2454	510	120	572
Parish, Le Grand. (See Fildes, Rollin D., assignor.)						
Park, Kennedy, Mansfield, Ohio. Apparatus for forming serpentine hollow bodies	808,943	Jan. 2	633	138	120	139
Parker, Charles I., and P. Papenfoth, assignors to Russell & Erwin Manufacturing Company, New Britain, Conn. Door-check	813,111	Feb. 20	3182	696	120	2271
Parker-Clark Electric Company. (See Parker, Herschel C., assignor.)						
Parker, Herschel C., New York, N. Y., assignor to Parker-Clark Electric Company, Jersey City, N. J. Incandescent electric lamp	812,872	Feb. 20	2703	596	120	2164
Parker, Howard, Nashua, N. H., assignor to Improved Paper Machinery Company, Castine, Me., and Nashua, N. H. Pulp-treating machine	811,660	Feb. 6	244	53–4	120	1538
Parker, James. (See Conover, Warren H., assignor.)						
Parker, John E. (See Goss and Parker.)						
Parker, William H. (See Falk and Parker.)						
Parker, William H., Royaloak, Mich. Dust-allayer for automobiles	809,738	Jan. 9	2277	471	120	533
Parkerson, Richard K., Ealing, New Zealand. Water-motor	810,807	Jan. 23	3896	800	120	973
Parkes, Frank, Birmingham, England. Spade and similar handle	812,675	Feb. 13	2321	505–6	120	2036
Parkes, Helen W., and S. L. Vincent, Cleveland, Ohio. Electric railway-signal	810,560	Jan. 23	4004	825	120	995
Parkhurst, Lemuel W., Twana, Wash. Saw gage and jointer	810,802	Jan. 23	4459	925	120	1095
Parks, Thomas W., assignor of one-half to W. B. Chenoweth, Alexandria, Ind. Auxiliary vehicle-seat	812,360	Feb. 13	1701	373–4	120	1913
Parlin & Orendorff Company. (See Graham, William S., assignor.)						
Parmelee, Charles L., Orange, N. J., and E. G. Williams, Washington, D. C. Tunnel-shield	810,428	Jan. 23	3729	769	120	932
Parmelee, Hubert S. (See Fanober and Parmelee.)						
Parrish, Frances E., deceased, New York, N. Y.; S. M. P. Holmes, administratrix. Educational apparatus	811,169	Jan. 30	5202	1087	120	1289
Parsons, Henry E., New York, N. Y. Locomotive ash-pit and blower	809,215	Jan. 2	1168	241–2	120	267
Parsons, Arthur. (See Carter, Hall, and Parsons.)						
Parsons, Charles A. (See Barker, John H., assignor.)						
Parsons, Charles E., Glens Falls, N. Y. Cushion device for gates of water-wheel casings	810,808	Jan. 23	4460	926	120	1095
Parsons, Charles L., Durham, N. H. Gas-generator	811,737	Feb. 6	377	82	120	1569
Parsons, Frederick W., Cleveland, Ohio. Collar	809,009	Jan. 2	767	166	120	169
Parsons, Henry, Marlboro, Mass. Beam-presser	812,260	Feb. 13	1586	347	120	1898
Parsons, James L., Jr., Washington, D. C. Combined derrick and concrete-mixer	811,243	Jan. 30	5351	1117	120	1322
Parsons, Louis R., Stronghurst, Ill. Railway-switch	811,738	Feb. 6	379	83	120	1569
Parsons, William P., Beverly, Mass. Work-rest for lathes	808,676	Jan. 2	103	28	120	25
Partridge, Allen R., San Francisco, Cal., assignor, by mesne assignments, to Vencedora Mine Equipment Company. Smelting-furnace	812,083	Feb. 6	1100	241	120	1713
Pass & Seymour. (See Seymour, Albert P., assignor.)						
Pastore, Ernesto, New Haven, Conn. Combined tweezers, needle, and eye-curette	809,579	Jan. 9	1959	407	120	463
Patch, Frederick H., Richmond, Va. Adhesive and making same	809,739	Jan. 9	2279	.....	120	534
Pattenden, Alexander and A. B., Buffalo, N. Y. Disinfecting device for sink-drains	810,973	Jan. 30	4826	1003	120	1208
Pattenden, Annie B. (See Pattenden, Alexander and A. B.)						
Patterson, Charles C., *et al.* (See Desmond, John W., assignor.)						
Patterson, James L., assignor to Union Special Sewing Machine Company, Chicago, Ill. Seam for sewed articles	812,902	Feb. 13	2556	562	120	2036
Patterson, Oliver Q. (See Evans and Patterson.)						
Patterson, Peter C., McKeesport, assignor to National Tube Company, Pittsburg, Pa. Device for operating mandrel-bars	813,226	Feb. 13	1446	315–16	120	1855
Patterson, Thomas C., New York, N. Y. Lathe-dog	813,445	Feb. 27	3856	845	120	2471
Patterson, Thomas S., New York, N. Y. Lubricator for crank and similar shafts	808,749	Jan. 9	2370	472	120	534
Patterson, William J., and L. J. Robb, assignors to Hoyt & Patterson, Pittsburg, Pa. Dust-collecting hood	812,694	Feb. 6	1101	243–3	120	1713
Patterson, William C., Salt Lake City, Utah. Lubricator	809,388	Jan. 9	1601	334	120	385
Patton, Charles B. (See Lindberg, Ephraim O., assignor.) (Reissue.)						
Patton, John J. (See Chambers, James A., assignor.)						
Paul, Irving C., assignor, by mesne assignments, to Paul Pattern Company, Cincinnati, Ohio. Card game	812,476	Feb. 13	2322	508	120	2036

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Paul, John T. H., assignor to E. Goldman & Company, Chicago, Ill. Filter	812,517	Feb. 13	2009	440–1	120	1976
Paul Pattern Company. (See Paul, Irving C., assignor.)						
Paul, William L., assignor to David Bradley Manufacturing Company, Bradley, Ill. Coupling for agricultural implements, &c	808,677	Jan. 2	104	24	120	26
Paulson, Knut, Manistique, Mich. Fish-net-lifting machine	812,577	Feb. 13	2223	506–7	120	2036
Paxson, Wallace T., assignor to J. B. Maxwell, Washington, D. C. Smoke-consuming furnace	809,458	Jan. 9	1731	357	120	414
Paxton, John B., and E. I. O'Neill, Philadelphia, Pa. Circular-knitting machine	811,577	Feb. 6	84	17–18	120	1504
Payette, William J., Centralia, Wash. Plow attachment	812,085	Feb. 6	1104	243	120	1714
Payne, Charles H., Milligan, Tenn. Cabinet-index	809,741	Jan. 9	2280	472	120	534
Payne, Darius W., Minneapolis, Minn. Pasteurizer or cooler	811,170	Jan. 30	5204	1088	120	1289
Payne, Fred S., Boston, Mass. Safety device for elevators	809,220	Jan. 9	1433	290	120	349
Payne, George E. (See Hinds and Payne.)						
Payne, John W., assignor of one-third to G. L. Olds, Alexandria Bay, N. Y. Steam-generator	809,320	Jan. 9	2456	510	120	573
Payne, Reginald H., Aylesbury, England. Bridge for stringed musical instruments	809,459	Jan. 9	1733	358	120	414
Peabody, George L., Pittsburg, Pa. Reinforcing device for concrete construction	810,561	Jan. 23	4006	825	120	996
Peake, Albert E., Everett, Wash. Means for displaying pictures and the like	811,432	Jan. 30	5707	1195	120	1396
Peake, Harry G., and J. Henderson, assignors to W. P. Hammon, Oroville, Cal. Dredge-bucket coupling	812,518	Feb. 13	2011	441	120	1977
Pearce, Charles F., assignor to F. Pearce, New York, N. Y. Dial-transmitter	811,950	Feb. 6	828	182–4	120	1658
Pearce, Frederick. (See Pearce, Charles F., assignor.)						
Pearce, Joshua, Pickering, La. Harvester-reel	809,216	Jan. 2	1170	242	120	267
Pearl Manufacturing Company. (See Dietz, Ernest, assignor.)						
Pearsall Pneumatic Tube and Power Company. (See Batcheller, Birney C., assignor.)						
Pearson Fire Alarm. (See McNeil, Alfred H., assignor.)						
Pearson, Thomas S., Clay township, and G. B. Lindsay, Center township, Howard county, Ind. Straw-stack shaper	812,446	Feb. 13	1874	412	120	1948
Pease, Sumner. (See Turner, Pease, and Martin.)						
Pechiney, Alfred R., Salindres, assignor to Compagnie des Produits Chimiques d'Alais et de la Camargue, Lyon, France. Calcination of hydrated alumina	811,433	Jan. 30	5708	.....	120	1397
Peck, Daniel C. (See Boyer and Peck.)						
Peck, Stow & Wilcox Company. (See Ellrich, Robert C., assignor.)						
Peck, Walter H., *et al.* (See Finch, George F., assignor.)						
Pedersen, Adolph, assignor to Van Dorn-Elliott Electric Co., Cleveland, Ohio. Electrically-operated portable drill	809,394	Jan. 9	1602	325	120	386
Pedersen, Adolph, assignor to Van Dorn-Elliott Electric Company, Cleveland, Ohio. Motor-controller	809,460	Jan. 9	1734	358	120	414
Pedersen, Christian, assignor to Landis Machine Company, St. Louis, Mo. Sewing-machine	811,578	Feb. 6	90	18–19	120	1505
Pedersen, Christian, assignor to Landis Machine Company, St. Louis, Mo. Loop-spreader for sewing-machines	811,579	Feb. 6	92	19	120	1505
Pedersen, Christian, assignor to Landis Machine Company, St. Louis, Mo. Needle-guide for sewing-machines	811,580	Feb. 6	93	20	120	1505
Pedersen, Christian, assignor to Landis Machine Company, St. Louis, Mo. Heating device for sewing-machines	811,581	Feb. 6	94	20	120	1505
Pedersen, Christian, assignor to Landis Machine Company, St. Louis, Mo. Mechanism for adjusting the lengths of stitches in sewing-machines	811,582	Feb. 6	95	20–1	120	1506
Pedersen, Christian, assignor to Landis Machine Company, St. Louis, Mo. Thread-measurer for sewing-machines	811,583	Feb. 6	97	21–2	120	1506
Pedersen, Christian, assignor to Landis Machine Company, St. Louis, Mo. Thread-laying device	813,822	Feb. 27	4583	1013–14	120	2630
Pederson, Lars. (See Anderson and Pederson.)						
Pederson, Lars P., Westbrook, Minn. Cylinder-tooth	813,679	Feb. 27	4126	904	120	2532
Pedley, W. E., administrator. (See Praed, Humphrey M.)						
Pee Dee Iron Works. (See Smith, John D., assignor.)						
Peerless Machinery Company. (See Glass, Perley R., assignor.)						
Peirson, Ernest V. (See Randall and Peirson.)						
Peisker, Frederick S. C., San Saba, Tex. Shovel	809,840	Jan. 9	2458	510	120	573
Pelabrixim, Curt von, and J. Thümmel, Ehrang, Germany. Process and press for pressing pulverous material	808,776	Jan. 2	313	68	120	70
Pelfrey, David W., and W. S. Biddle, Haleyville, Ala. Grade-level	811,730	Feb. 6	381	83	120	1570
Pellerin, Joseph, Cordova, Alaska. Safety-envelop	810,804	Jan. 23	4462	927	120	1096
Pelton Water Wheel Company. (See Henry, George J., Jr., assignor.)						
Pemberton, Samuel, and J. F. Deadmarsh, Sault Ste. Marie, Mich. Marine boat	811,171	Jan. 30	5206	1088–9	120	1290
Pence, Alonzo H., Somerville, Ala. Saw-set	812,086	Feb. 6	1105	243	120	1714
Pendleton, Gurdon, Groton, assignor to Thomas Motor Company, New London, Conn. Explosive-engine	813,736	Feb. 27	4415	973	120	2594
Penewitt, Alexander H. (See Samuell, Charles A., assignor.)						
Pennepacker, Clara W., administratrix. (See Pennepacker and Lacon.)						
Pennepacker, George M., deceased, (C. W. Pennepacker, administratrix,) and C. S. Lacon, Philadelphia, Pa. Auxiliary car-coupling	811,434	Jan. 30	5710	1195	120	1397
Penrose, William T., Spokane, Wash. Automobile	813,056	Feb. 20	3080	675	120	2248
Pequegnat, Edward L. (See Miller, George E., assignor.)						
Perdue, James M., Matthews, Ga. Telegraph or telephone pole	811,435	Jan. 30	5711	1195	120	1397
Perkins, Elmer E., Melrose, Mass. Drying-kiln	810,974	Jan. 30	4826	1004	120	1209
Perkins, Franklin J., Woburn, assignor, by mesne assignments, to Turner Tanning Machinery Company, Boston, Mass. Leather-working machine	809,010	Jan. 2	766	166	120	169
Perkins, Norman A. (See O'Riley, Peter, assignor.)						
Perlstein, Joseph. (See Webstein and Perlstein.)						
Perzner, William L., Rochester, assignor to National Glass Company, Pittsburg, Pa. Glass-press	811,220	Jan. 30	5409	1146–7	120	1354
Perry, Benjamin F., assignor of one-half to C. B. Davis, Todds Point township, Shelby county, Ill. Water-sweep	810,879	Jan. 23	4462	926	120	1125
Perry, David P., Chicago, Ill. Storage-battery plate	809,742	Jan. 9	2282	472	120	534
Perry, Dyer W., Keene, N. H. Badge	808,887	Jan. 2	487	103	120	104
Perry, James. (See Widdop, Thomas, assignor.)						
Perry, John C., assignor to Clinton Wire Cloth Company, Clinton, Mass. Machine for making wire spools	813,332	Feb. 27	4585	1014–19	120	2630
Perry, William H., Concord, N. H. Ice-cutter for surface railways	812,873	Feb. 20	2705	596	120	2164
Perry, William P. (See Pennell and Perry.)						
Peru Electric Manufacturing Company. (See Ogle, Elmer L., assignor.)						
Peru Electric Manufacturing Company. (See Rhoades, Charles W., assignor.)						
Peter, Maurice L., and W. J. Sterrett, Columbus, Ohio. Hinge	811,740	Feb. 6	382	83	120	1570
Peterman, Addison E., Repton, Ala. Telegraph-key	808,777	Jan. 2	316	69–9	120	71
Peters, Charles, Nampa, Idaho. Underreamer for wells	811,484	Feb. 6	89	22	120	1397

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Peters, Clarence D., Etherley, Ill. Rail-joint	809,217	Jan. 2	1171	242	120	258
Peters, Frederick J., Milwaukee, Wis. Sash-supporting platform for glaziers	809,321	Jan. 9	1434	290	120	350
Peters, John, Bothwell, assignor of two-thirds to R. C. Russell, Arthur, Ontario, Canada. Nut-lock	813,168	Feb. 20	3295	725	120	2294
Petersen, Joachim H. C., Hamburg, Germany. Centrifugal pump	810,976	Jan. 30	4830	1004	120	1209
Peterson, Charles A., Salt Lake City, Utah. Sign	813,580	Feb. 27	4127	905	120	2532
Peterson, Charles E., Brooklyn, N. Y., assignor, by mesne assignments, to Mercantile Manufacturing Company. Type-writing machine	809,979	Jan. 16	2740	564	120	687
Peterson, Daniel, Lamont, Okla. Ter. Machine for changing money	810,508	Jan. 23	3866	800-2	120	973
Peterson, Gustave E., Hartford, Conn. Indicator for lathes	811,244	Jan. 30	5352	1118	120	1322
Petersen, John, St. Paul, Minn. Hay and manure gatherer and loader	808,678	Jan. 2	108	24-5	120	25
Peterson, Lee, *et al.* (See Mitchell, Ira G., assignor.)						
Peterson, Patrik L., North Grosvenor Dale, Conn., assignor to Draper Company, Hopedale, Mass. Tension device for loom-shuttles	810,669	Jan. 23	4207	870	120	1040
Peterson, Per A., New York, assignor to F. P. Hunt, Nyack, N. Y. Moistening device.	812,087	Feb. 6	1106	244	120	1714
Peterson, William J., New York, N. Y. Chandelier	810,429	Jan. 23	3732	769	120	983
Petersson, Peter T., Spatten, Minn. Wrench	811,741	Feb. 6	383	84	120	1570
Petery, Evan E. P., assignor of one-half to S. Bowsher, Indianapolis, Ind. Cross-arm for carrying high-tension wires	809,743	Jan. 9	2284	473	120	535
Petery, Evan E. P., Indianapolis, and J. O. Jackson, Swayzee, Ind.; said Jackson assignor to S. Bowsher. Water-brake for poles	810,880	Jan. 23	4603	959	120	1126
Petley, Benjamin H., Seattle, Wash. Gas-regulator	810,562	Jan. 23	4008	825	120	996
Petraborg, John J. (See Hanson and Petraborg.)						
Petrelli, Joseph, assignor to Snow & Petrelli Mfg. Co., New Haven, Conn. Power-transmitting mechanism	812,519	Feb. 13	2012	441-2	120	1977
Petrie, Margaret, San Francisco, Cal. Drip attachment for bottles	811,742	Feb. 6	384	84	120	1570
Petřík, Josef. (See Jokisch and Petřík.)						
Petrini, Edvard, Uppsala, Sweden. Roller-skate	809,980	Jan. 16	2744	564	120	688
Petroleum Electric Producing Company. (See Gardner, Benjamin F., assignor.)						
Pettee, Oliver E., Rockland, Me. Game apparatus	810,299	Jan. 16	3433	708	120	833
Pettee, Oliver E., Rockland, Me. Table	810,378	Jan. 16	3610	743	120	872
Pettit, Daniel I. and J. E., Grand Junction, Iowa. Machine for making blocks or tiles	810,300	Jan. 16	3435	709	120	833
Pettit, Frank A., Kansas City, Mo. Knife-wiper for linotypes	810,079	Jan. 16	2964	618	120	726
Pettit, John E. (See Pettit, Daniel I. and J. E.)						
Pettyjohn, John M., Terre Haute, Ind. Concrete-block mold	810,343	Jan. 16	3513	724	120	850
Petzel, Gustav, Tegel, Germany. Explosion-engine	809,841	Jan. 9	2459	510-11	120	573
Peust, Albert, Hanover, Germany. Elastic metal felly	812,227	Feb. 13	1448	316	120	1856
Peytraut, J., *et al.* (See Clemons, De Laski T., assignor.)						
Pfauts, Daniel M., Germantown, Pa. Filtering apparatus	813,516	Feb. 27	4004	877-8	120	2505
Pfauts, Daniel M.; Germantown, Pa. Water-filter	813,517	Feb. 27	4006	878	120	2505
Pfeifer, Adam, Frankfort-on-the-Main, Germany. Apparatus for the complete combustion of solid fuel	809,322	Jan. 9	1435	290	120	350
Pfeiffer, Christian, assignor to New Britian Hardware Manufacturing Company, New Britain, Conn. Equalizing winder for spring-motors	809,130	Jan. 2	1010	208-9	120	222
Pfeiffer, Emil C., Boston, assignor to C. A. Hight, Brookline, Mass. Puzzle	811,321	Jan. 30	5503	1147	120	1354
Pfenninger, Carl, Munich, assignor to Melms & Pfenninger Gesellschaft mit Beschränkter Haftung, Munich-Hirschau, Bavaria, Germany. Combined impulse and reaction turbine	813,169	Feb. 20	3297	725	120	2294
Pflager, Harry M., St. Louis, Mo. Draft-gear for railway-cars	810,805	Jan. 23	4464	927	120	1006
Pflueger, Frank, and E. Christensen, Portland, Oreg. Bung-hole bushing	810,430	Jan. 23	3733	769	120	933
Pflueger, Frank, and E. Christensen, Portland, Oreg. Combined expander and flanger for bung-hole bushings	810,431	Jan. 23	3734	769	120	933
Pflueger, Frank, and E. Christensen, Portland, Oreg. Counterboring-tool for casks	810,432	Jan. 23	3737	770	120	934
Phouts, Leroy S., Canton, Ohio. Motor-vehicle	810,881	Jan. 23	4604	959	120	1126
Phelis, Isaac F., Woodville, Ohio. Universal timepiece	811,565	Feb. 6	101	22	120	1507
Phelps, Charles N., Lagrange, Ill. Mattress-sewing machine	810,862	Jan. 23	4606	960-2	120	1126
Phelps, Ernest L., Toronto, Canada. Garment-designing curve-rule	812,874	Feb. 20	2707	596	120	2165
Phelps, Frank, Walston, Okla. Ter. Cotton-gin	809,131	Jan. 2	1013	210	120	223
Philadelphia Tapestry Mills. (See Zimmerman, John, assignor.)						
Philip Carey Manufacturing Company. (See Moeller, William J., assignor.)						
Phillips, Edwin S., assignor to American Road Machine Company, Kennett Square, Pa. Mounted screen-bin	810,219	Jan. 16	3250	673-4	120	793
Phillips, Simeon L., *et al.* (See Gallagher, Fred E., assignor.)						
Philp, Casmair von, Bethlehem, assignor to Bethlehem Steel Company, South Bethlehem, Pa. Apparatus for storing and conveying liquid metals	810,301	Jan. 16	3437	709-10	120	834
Philp, Casmair von, Bethlehem, assignor to Bethlehem Steel Company, South Bethlehem, Pa. Fluid-pressure metal-working machine	812,226	Feb. 13	1448	316-17	120	1856
Phippin, Isaac N., Mount Sterling, Ky. Toy	809,270	Jan. 2	1022	209	120	291
Phoenix Elektrochemische Gesellschaft M. B. H. (See Grabosch, Gustav, assignor.)						
Pickard, James D. (See Hean, Paul C., assignor.)						
Pickard, Orson L., Toledo, Ohio. Rim for rubber-tired wheels. (Reissue)	12,460	Feb. 13	2557	562	120	2067
Pickering, John W. (See Metcalf and Pickering.)						
Pickles, Alfred, Wakefield, and P. R. Sewell, Bradford, England. Tube, conduit, and pipe cleaner	812,361	Feb. 13	1702	374	120	1914
Pickles, Charles K., assignor to J. A. Brill, Philadelphia, Pa. Disappearing seat	808,579	Jan. 2	108	25	120	26
Pictet, Raoul P., Berlin, Germany. Apparatus for the separation of gases from their mixtures	809,216	Jan. 2	1173	242-3	120	258
Pictet, Raoul P., Steglitz, Germany. Apparatus for dehydrating compressed gases	809,219	Jan. 2	1183	244	120	262
Pier, Harvey L., Dubuque, Iowa. Mail-box	810,926	Jan. 23	4466	926	120	1006
Pierce, Charles S., Duluth, Minn. Kettle and lid securing and operating means therefor	809,461	Jan. 9	1737	359	120	415
Pierce, Edward, and E. Lanz, Burlington, Iowa. Lawn-trimmer	810,344	Jan. 16	3514	726	120	851
Pierce, George L., Manchester, N. H., assignor to Whitin Machine Works, Whitinsville, Mass. Top-roll saddle	813,575	Feb. 20	2708	597	120	2165
Pierce, Walter W., Marco, Cal. Cartridge-extracting implement	812,098	Feb. 6	1108	244	120	1714
Piercy, Charles B. (See Piercy, Mae and C. B.)						
Piercy, Mae and C. B., Redoak, Iowa. Child's carriage	812,447	Feb. 13	1578	413	120	1948
Pierre, Gaspar. (See Larribeau, John B., assignor.)						
Pierson, Arthur S., Morristown, N. J. Reinforcing device for concrete structures	810,220	Jan. 16	3255	674	120	794
Pierson, Arthur S., Morristown, N. J. Tension or reinforcing device for use in concrete structures	810,221	Jan. 16	3255	675	120	794
Pierson, Paul M., Genesee, N. Y., assignor to Pierson-Sefton Company, Jersey City, N. J. Centerless and other closed structure	811,951	Feb. 6	630	134-5	120	1660
Pierson-Sefton Company. (See Pierson, Paul M., assignor.)						
Pike Printing Machine Company. (See Massey, Walter B., assignor.)						
Pike, William H., Jr., assignor to New York Idding Typewriter Company, Orange, N. J. Hanger for type-bars	813,684	Feb. 27	4357	944	120	2667

Alphabetical list of patentees for January and February—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Pilkington, William, Errington, England. Manufacture of horseshoes	810,080	Jan. 16	2965	618	120	737
Pilling Air Engine Company. (See Pilling, James L., assignor.)						
Pilling, James L., Port Huron, assignor to Pilling Air Engine Company, Detroit, Mich. Reversing-valve for hoisting-engines	810,883	Jan. 23	4618	962	120	1139
Pilling, James L., Busyrus, Ohio, assignor to Pilling Air Engine Company, Detroit, Mich. Pneumatic bolst	810,884	Jan. 23	4620	963	120	1139
Pineus, Julius, Norfolk, Va. Detachable fastener and button	811,661	Feb. 6	246	54	120	1539
Pinder, Joseph W., San Francisco, Cal. Ore-concentrator	812,520	Feb. 13	2017	442	120	1978
Pine, William J., Chicago, Ill., and L. P. Hynes, Laporte, Ind. Steam-pipe coupling	813,235	Feb. 20	3423	754	120	2319
Pino, Caterina, Genoa, Italy. Apparatus for raising submerged objects	812,521	Feb. 13	2021	442-3	120	1979
Piper, Edmund F., Fargo, N. D. Gang-plow	813,446	Feb. 27	3858	845-6	120	2471
Piper, James K., Wilmerding, Pa. Cotton-picker	813,170	Feb. 20	3298	725-6	120	2294
Piper, Robert H., Waterbury, Conn. Key-holder	810,081	Jan. 16	2966	619	120	737
Piso Company. (See Schloesser and Fisher, assignors.)						
Pisor, Jacob H., Electric, Mont. Weather-strip	813,518	Feb. 27	4010	879	120	2507
Pitcher, Lester D., Daytona, Fla. Guy-anchor	810,807	Jan. 23	4467	928	120	1006
Pitkin, Julian H., Chicago, Ill. Division-block for hay-balers	813,665	Feb. 27	4289	944	120	2567
Pittman, James E., Goldhill, Colo. Spike	810,808	Jan. 23	4468	928	120	1007
Pittman, James E., Goldhill, Colo. Trap	812,522	Feb. 13	2023	443	120	1979
Pickard, Marion, Orestes, Ind. Fodder loader and hauler	809,223	Jan. 9	1436	290	120	350
Plancich, Nicholas A., San Francisco, Cal. Ticket-holder	809,132	Jan. 2	1016	210	120	223
Plantinga, Pierre, Cleveland, Ohio. Gas-purifying apparatus	810,563	Jan. 23	4010	825	120	997
Plate, William F. (See Degenhardt, Johannes, assignor.) (Reissue.)						
Plate, Albert L., Clinton, Ill. Aerial top	813,519	Feb. 27	4011	879	120	2507
Plate, Wilhelm, Weinheim, Germany. Superheater	812,448	Feb. 13	1877	413	120	1948
Plass, Samuel V., Polk, Ohio. Hay-loader	813,581	Feb. 27	4128	905	120	2533
Plass, Clarence. (See King and Plass.)						
Plotkin, Max, New York, assignor to C. Bois, Brooklyn, N. Y. Stair structure	811,436	Jan. 30	5713	1196	120	1397
Plume and Atwood Manufacturing Company. (See Wirth, Charles E., assignor.)						
Plume and Atwood Mfg. Co. (See Wirth and Bradley, assignors.)						
Pocklington, Elmer T., Clayton, Mich. Lock for crossed wires	809,395	Jan. 9	1605	325	120	386
Pogue, Jasper M. (See Tichenor, Robert R., assignor.)						
Pohl, Carl, Budapest, Austria-Hungary. Production of artificial-stone plates	813,171	Feb. 20	3304	727	120	2296
Pohlé, Edwin C., Reno, Nev. Recovering values from sulfid ores	811,085	Jan. 30	5018	.....	120	1251
Pokorny, Edward. (See Tauber, Maurice, assignor.)						
Pollard, Enos C., Seattle, Wash. Smelting and refining	813,824	Feb. 27	4600	1019	120	2633
Pollard, Enos C., Seattle, Wash. Smelting and refining apparatus	813,825	Feb. 27	4606	1020	120	2634
Polley, David F., assignor to Markham Air Rifle Company, Plymouth, Mich. Air-gun	808,680	Jan. 2	109	25	120	26
Pollock, John A., East Rutherford, N. J. Folding canopy	811,322	Jan. 30	5504	1148	120	1355
Poly-Phase Ignition System Company. (See Le Fontois, Leon J., assignor.)						
Pomeroy, Silas H., New York, N. Y., assignor of one-half to F. Volgtmann, Chicago, Ill. Fireproof window	810,564	Jan. 23	4011	836	120	997
Pond, Edmund M., Rutland, Vt. Medicated tampon	812,768	Feb. 13	2405	549	120	2072
Pond, Edmund M., Rutland, Vt. Medicated tampon	812,769	Feb. 13	2406	549	120	2072
Pond, Edmund M., Rutland, Vt. Medicated tampon	812,770	Feb. 13	2408	549	120	2072
Pool, William L., Astec, N. Mex. Ter. Churn	812,592	Feb. 13	2172	475	120	2006
Poole, Arthur F. (See Hall and Poole.)						
Poole, Arthur F., and F. B. Hall, Wheeling, W. Va. Telephone party-line system	810,345	Jan. 16	3516	725-6	120	851
Poole, Arthur F., and F. B. Hall, Wheeling, W. Va. Party-line signaling system	810,346	Jan. 16	3525	726	120	852
Poole, Charles C., Evanston, assignor to Oliver Typewriter Company, Chicago, Ill. Paper-movement indicator for type-writers	811,172	Jan. 30	5207	1089	120	1290
Poole, Charles C., Evanston, assignor to Oliver Typewriter Company, Chicago, Ill. Paper-movement indicator for type-writers	811,173	Jan. 30	5211	1089	120	1291
Poor, Nathan, Peabody, Mass. Hot-air furnace	811,869	Feb. 6	635	139-40	120	1620
Pope, Harry M., Chicopee Falls, Mass., assignor, by mesne assignments, to Morton Trust Company, trustee. Motor-vehicle	810,379	Jan. 16	3611	743	120	872
Pope, Henry W., New York, N. Y. Ready-reference device	813,447	Feb. 27	3860	846	120	2472
Pope, William C., Philadelphia, Pa. Transfer-ticket	813,321	Feb. 20	3603	791	120	2357
Popper & Co. (See Zellinger, Adalbert, assignor.)						
Porritt, Edwin, New York, N. Y. Boiler	810,809	Jan. 23	4469	928	120	1007
Portan, William, St. Paul, Minn. Mold for building-blocks	810,976	Jan. 30	4832	1004-5	120	1210
Porter, Edwin F., and W. R. Whiting, assignors to American Rotary Engine Company, Boston, Mass. Gas-engine	810,347	Jan. 16	3538	727	120	856
Porter, Edwin F., and W. R. Whiting, assignors to American Rotary Engine Company, Boston, Mass. Gas-engine	810,565	Jan. 23	4012	836	120	997
Porter, Edwin H., and B. Currier, Philadelphia, Pa. Alternating-current-motor reverser	808,944	Jan. 2	635	138-9	120	140
Porter, Edwin H., and B. Currier, Philadelphia, Pa. Electric motor	811,323	Jan. 30	5507	1148	120	1356
Porter, Fred G. (See Rose, Edwin G. and J. R., assignors.)						
Porter, Harris H., assignor to Rhode Island Electromobile Company, Providence, R. I. Electric storage battery	813,582	Feb. 27	4129	905	120	2533
Porter, Henry H., *et al.* (See Haller and Billingsley, assignors.)						
Porter Screen Manufacturing Company. (See Mix, Allen H., assignor.)						
Porter Screen Manufacturing Company. (See Segar, Eugene D., assignor.)						
Porter, William B. (See Johnson and Porter.)						
Porter, Wilson F., assignor to New Haven Clock Company, New Haven, Conn. Repeating alarm-clock	809,133	Jan. 2	1017	210	120	224
Porter, Wilson L., assignor to New Haven Clock Co., New Haven, Conn. Clock	811,234	Jan. 30	5510	1148	120	1356
Porterfield, Harry B. (See Tillinghast and Porterfield.)						
Posey Automatic Switching Company. (See Posey, James A., assignor.)						
Posey, James A., Midlothian, Tex., assignor, by mesne assignments, to Posey Automatic Switching Company. Electric switch for street-railways	811,519	Jan. 30	5651	1225	120	1427
Posson, Edward, Chicago, Ill. Dust-guard for journal-boxes	812,823	Feb. 13	2094	462-4	120	1980
Potter, Clifford B., Springfield, Mass. Yarn and making the same	813,583	Feb. 27	4131	906	120	2533
Potter, Joseph L., Indianapolis, Ind. Electromagnetic power-generator	812,949	Feb. 20	2867	620	120	2200
Potter, Morgan, assignor to Morgan Potter Company, Fishkill-on-the-Hudson, N. Y. Adjustable appliance for ladders	810,170	Jan. 16	3136	649	120	770
Potter, William, New York, N. Y. Level	812,449	Feb. 13	1878	413	120	1949
Potter, William B., Schenectady, N. Y., assignor to General Electric Company. Motor-control system	808,778	Jan. 2	313	69	120	71
Potts, David, assignor to Warren Featherbone Company, Three Oaks, Mich. Collar-foundation	812,876	Feb. 20	2709	597	120	2165
Pouleon, Britton, assignor of one-half to F. Ziemendorff, Fort Wayne, Ind. Cement-block-making machine	813,112	Feb. 20	3183	696	120	2271
Poure, Georges, Boulogne-sur-Mer, France. Winding-reel	810,977	Jan. 30	4834	1005-6	120	1210
Powell, James, assignor to Wm. Powell Co., Cincinnati, Ohio. Construction of oil-cups	812,893	Feb. 13	1708	374	120	1914

Alphabetical list of patentees for January and February—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Power, James, Methuen, Mass. Sash-lock	812,229	Feb. 13	1452	317	120	1857
Power, Nicholas, New York, N. Y. Apparatus for exhibiting moving pictures	809,961	Jan. 16	2746	564–5	120	688
Poyas, Karl H., Los Angeles, Cal. Telephone signaling apparatus	808,868	Jan. 2	466	108	120	104
Praed, Humphrey M., deceased, Riverside, Cal.; W. E. Pedley, administrator. Bin	813,059	Feb. 20	3081	675	120	2245
Pratt, Austin A., Los Angeles, Cal. Electric heater	813,113	Feb. 20	3186	697	120	2271
Pratt & Letchworth Company. (See Hennicke, Charles A., assignor.)						
Pratt, Lewis M., and E. H. Van Natta, Belleville, Kans.; said Pratt assignor to said Van Natta. Molding-machine	812,291	Feb. 13	1587	348	120	1888
Pratt & Whitney Company. (See Goodrich, Clarence L., assignor.)						
Pratt & Whitney Company. (See Hanson, Bengt M. W., assignor.)						
Pratta, Gust, Flint, Mich. Candy-making machine	811,086	Jan. 30	3020	1048	120	1251
Prébanbert, Louis, and G. A. Thubé, Nantes, France. Tarring roads	812,593	Feb. 13	2173	.....	120	2008
Prellwitz, William, Easton, Pa., assignor to Ingersoll-Sergeant Drill Company, New York, N. Y. Cooler for compressors	810,670	Jan. 23	4209	870–1	120	1041
Prellwitz, William, Easton, Pa., assignor to Ingersoll-Sergeant Drill Company, New York, N. Y. Separable head-coupling	810,671	Jan. 23	4210	871	120	1041
Prellwitz, William, Easton, Pa., assignor to Ingersoll-Sergeant Drill Company, New York, N. Y. Discharge-valve for fluid-compressors	810,672	Jan. 23	4211	871	120	1041
Prendergast, Bernard H. (See Wachter and Prendergast.)						
Prendergast, Edward, St. Louis, Mo. Refrigerator	809,324	Jan. 9	1438	291	120	350
Pressed Steel Car Company. (See Dodds, Ethan I., assignor.)						
Pressed Steel Manufacturing Company. (See Knipe, Oliver C., assignor.)						
Pressler, Caswell, Pleasantgrove, Miss. Cultivator	812,678	Feb. 13	2226	507	120	2037
Preston, Percy C., Denison, Tex. Reed-organ	811,987	Jan. 30	3023	1049	120	1252
Pretsman, John H., Greenville, Ohio. Multiple bolt	809,626	Jan. 9	2064	428	120	485
Preuss, Paul, Berlin, Germany. Device for cutting screws upon long rods	813,114	Feb. 20	3188	697	120	2272
Price, Charles R., Des Moines, Iowa. Farm-gate	808,889	Jan. 2	469	103	120	104
Price, Edgar F., G. E. Cox, and J. G. Marshall, assignors to Union Carbide Company, Niagara Falls, N. Y. Apparatus for the production of calcium carbid	809,842	Jan. 9	2460	511	120	574
Price, George B., Colorado Springs, Colo. Fire-escape apparatus	812,950	Feb. 20	2690	630	120	2200
Prier, Andrew E., New York, N. Y. Bottle-seal	809,011	Jan. 2	773	167	120	170
Prince, Ernest C., *et al.* (See Denmead, John W., assignor.)						
Prince Stokes Oil Stove Company. (See Stokes, John M., assignor.)						
Prindle, Edwin J., Washington, D. C., assignor to Diamond Match Company, New York, N. Y. Match-making machine	808,945	Jan. 2	538	130–40	120	140
Prindle, Otis H., Collinwood, Ohio. Iron railway-tie	813,584	Feb. 27	4133	906	120	2533
Printz, Emanual. (See Roeske, Henry, assignor.)						
Prior, Andrew A. (See Harris and Prior.)						
Prior, Ernest B., Brooklyn, N. Y., assignor to Lorain Steel Company, Philadelphia, Pa. Tongue-switch	810,433	Jan. 23	3740	770	120	935
Pritchard, Albert R., Rochester, N. Y. Lantern	809,462	Jan. 9	1739	359	120	416
Pritchard Manufacturing Company. (See Kline, David C., assignor.)						
Pritchard-Strong Company. (See Kline, David C., assignor.)						
Pritschau, Ferdinand A., assignor to Commercial Artificial Fuel Company, Toledo, Ohio. Peat-mill	813,530	Feb. 27	4012	879–80	120	2508
Probyn, Leslie, Freetown, Sierra Leone. Tobacco-pipe, cigar-holder, and cigarette-holder	809,326	Jan. 9	1438	291	120	351
Proctor, Olin S., Denver, Colo. Means for operating drills	811,791	Feb. 6	485	105	120	1589
Proeger, Julius, Greensburg, Pa. Glass-tank furnace	811,962	Feb. 6	842	185–6	120	1690
Provan, James W., Oshawa, Canada. Feed and litter carrier	812,263	Feb. 13	1707	374	120	1915
Provandie, Herbert F., Melrose, Mass. Electric transformer and connections	812,089	Feb. 6	1109	244	120	1714
Provost, Camille, assignor of one-half to A. B. McGowen, Jeanerette, La. Shingle-edging machine	812,951	Feb. 20	2802	631	120	2201
Pruett, John M., and J. C. Simpson, Rockville, Ind. Burial-vault mold	809,639	Jan. 9	2085	428	120	485
Pruis, Johan. (See Lohmann and Pruis.)						
Pruya, William H., Jr., Chicago, Ill. Concrete railway-tie	812,524	Feb. 13	2086	444	120	1980
Pulliam, Oswald S., Pittsburg, Pa. Draft-rigging carrier and body-bolster	813,666	Feb. 27	4289	944	120	2567
Pulliam, Oswald S., Pittsburg, Pa. Car-body underframe construction	813,667	Feb. 27	4290	944–5	120	2567
Pulliam, Oswald S., Pittsburg, Pa. Metallic railway-tie	813,668	Feb. 27	4291	945	120	2568
Pullman Company. (See Dodds, Ethan I., assignor.)						
Pulvitt, John, Alvarado, Tex. Bolt-clipper	809,843	Jan. 9	2462	512	120	574
Purdum, Hershel F., Sac City, Iowa. Self-loading scraper	808,870	Jan. 2	470	103–4	120	104
Purdy, Thomas C., Paris, France. Apparatus for supplying liquid fuel to burners of lamps and lanterns	813,286	Feb. 20	3425	754	120	2320
Purves, Thomas C., Chicago, Ill. Washing-machine	812,322	Feb. 13	1836	348	120	1889
Puryear, Taylor, Jonesboro, Ark. Shirt-sleeve	811,662	Feb. 6	247	54	120	1539
Putney, John J., Stuart, Iowa. Automatic potato cutter and planter	809,396	Jan. 9	1606	326–6	120	396
Putrow, John B. (See Paradis and Putrow.)						
Quaker Shade Roller Company. (See Janes, William D., assignor.)						
Quenzeau, Augustin L. J., South Bethlehem, Pa. Charging retorts, muffles, furnaces, and the like	813,021	Feb. 20	2998	659	120	2229
Quenzeau, Augustin L. J., South Bethlehem, Pa. Charging-machine	813,022	Feb. 20	2998	660	120	2229
Quenzeau, Augustin L. J., South Bethlehem, Pa. Apparatus for charging retort-benches	813,023	Feb. 20	3000	660–1	120	2229
Quick, Albert A., Brushycreek, Tex. Sash-holder	810,302	Jan. 16	3436	710	120	834
Quick, Emmett B., assignor of one-half to A. A. Newell, Comstock, Tex. Neck-yoke gauge	811,963	Feb. 6	845	186	120	1661
Quimby, Albert G. (See English and Quimby.)						
Quincy, Frederick H. (See Koons, Wesley, assignor.)						
Quittner, Hermann, Berlin, Germany. Drinking and feeding appliance for bird-cages	811,870	Feb. 6	638	140	120	1620
R. A. Patterson Tobacco Co. (See Marcuse, Isaac J., assignor.)						
Raab, Henry, and J. M. Wolfson, New York, N. Y. Measuring device	810,682	Jan. 16	2867	619	120	737
Rabinowitch, Lazar A. (See Weinreb and Rabinowitch.)						
Rae, Frank B., Chicago, Ill., assignor to American Electromobile Company, East Orange, N. J. Vehicle-steering mechanism	810,673	Jan. 23	4212	872	120	1042
Rae, Frank B., Detroit, Mich., assignor to American Electromobile Company, East Orange, N. J. Vehicle-motor-suspension mechanism	810,674	Jan. 23	4214	872	120	1042
Rae, James J., assignor of one-half to C. Smith, Cherry Valley, Mass. Carding-machine	810,171	Jan. 16	3138	649	120	770
Rae, Ernest G., New York, N. Y. Collapsible window-platform	809,681	Jan. 2	110	26	120	27
Rahn, Elmer, and I. C. May, assignors of one-third to N. S. Corbin, Sacramento, Cal. Tank-holder	808,871	Jan. 2	474	104	120	105
Raikes, Edward W. (See Raikes, James M. and E. W.)						
Raikes, James M. and E. W., Cleveland, Ohio. Valve mechanism	809,612	Jan. 2	773	167	120	170
Rail Joint Company. (See Atkinson, John M., assignor.)						
Rail Joint Company. (See Brown, Bancroft G., assignor.)						
Railways Surface Contact Supplies Company. (See Campbell, George L., assignor.)						
Railwater, Henry T., Clinton, Ark. Loading apparatus	813,448	Feb. 27	3861	846	120	2472

Alphabetical list of patentees for January and February—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Raithel, George, Middleville, N. Y. Spoke-extractor	809,267	Jan. 9	1608	326	120	387
Ralston, William A., assignor to Caldwell Manufacturing Company, Rochester, N. Y. Window-ventilator	813,737	Feb. 27	4416	974	120	2694
Ramage, Daniel A., Percy, Pa. Coke-drawing machine	813,264	Feb. 13	1708	375	120	1915
Ramaley, William H., and W. E. Lamerton, Pittsburg, Pa. Heater	811,326	Jan. 30	3511	1140	120	1356
Ramsay, George S., St. Marys, Pa. Coal-washer	811,871	Feb. 6	630	140	120	1620
Ramsdell, Frederick H., Waterville, Me. Locomotive-pedestal	809,744	Jan. 9	2365	478	120	535
Randall, Alfred H., Jr., assignor of one-half to P. D. Harton, Philadelphia, Pa. Machine for making all-tobacco cigarettes	812,152	Feb. 6	1280	271–5	120	1745
Randall, Robert F., and E. V. Peirson, Newark, N. Y., assignors of two-thirds to said Peirson and one-third to said Randall. Attachment for coffee-pots	813,337	Feb. 20	3426	755	120	2320
Randall, Thomas A. (See Claridge and Randall.)						
Rankin, Edmund M., Los Angeles, Cal. Railway-frog for turn-ins and turnouts	812,877	Feb. 20	2710	597	120	2166
Rankin, William G., Coal Valley, Pa. Lamp-burner	813,172	Feb. 20	3306	727	120	2297
Rantala, August. (See Markkula and Rantala.)						
Rantine, Daniel W., Brooklyn, N. Y. Universal propelling mechanism	812,450	Feb. 13	1880	414	120	1949
Rantzau, Fritz G., Great Falls, Mont. Monument	812,203	Feb. 13	1591	348	120	1869
Rateau, Auguste C. E., and G. Sautter, Paris, France, assignors to Rateau Turbine Company, Chicago, Ill. Turbine-driven machinery	812,878	Feb. 20	2712	597–8	120	2166
Rateau Turbine Company. (See Rateau and Sautter, assignors.)						
Rathbun, Charles B., Canton Junction, Mass. Leather-stretching clamp. (Reissue)	12,457	Feb. 20	3754	824	120	2300
Rathbun, Lewis V., Rochester, N. Y. Burial-case	810,172	Jan. 16	3139	649–50	120	771
Rathsam, John M., St. Louis, Mo. Transparent sign	812,525	Feb. 13	2027	444	120	1969
Rau, Henry F., Tacoma, Wash. Brooder	813,115	Feb. 20	3189	697–8	120	2272
Rau, William G., Louisville, Ky. Eaves-trough hanger	813,826	Feb. 27	4611	1020	120	2635
Rauh, Adolph. (See Larsen, Louis J. C., assignor.)						
Rauscher, John, St. Paul, Minn. Current-motor	810,063	Jan. 16	2969	619–20	120	737
Ravel, Edouard. (See Ravel, Joseph and E.)						
Ravel, Joseph and E., assignors to C. Malden-Ercale, Paris, France. Somersaulting-vehicle	810,303	Jan. 16	3439	710–11	120	834
Ray, David B., Huntington, N. Y. Space for justifying lines of type	813,912	Feb. 27	4777	1054	120	2672
Ray, Frederick, East Orange, N. J., assignor to Henry R. Worthington, New York, N. Y. Centrifugal turbine or similar pump	808,682	Jan. 2	114	26	120	27
Ray, Herbert B., Bridgeport, Conn. Can-opener	809,527	Jan. 9	1858	386	120	442
Raymond, Charles W., Dayton, Ohio. Emptying apparatus for clay-bins	812,220	Feb. 13	1453	317–18	120	1857
Raymond, Edwin M., and W. S. Stoughton, Grand Rapids, Mich. Mail-box	808,872	Jan. 2	475	104	120	105
Raymond, George, Chicago, and J. H. Finlay, Warsaw, Ill. Pulverizer	812,231	Feb. 13	1454	318–19	120	1857
Rayner, Edwin B., Piqua, assignor to Lagonda Manufacturing Co., Springfield, Ohio. Damper-regulator	813,669	Feb. 27	4292	945	120	2568
Rea, Victor H., Elgin, Ill. Garment-supporter	812,526	Feb. 13	2028	445	120	1980
Reach, George A. (See Gamble, John, assignor.)						
Read, William E., assignor to R. J. Hennuick, Lipton, Canada. Rifle-carrying attachment	811,437	Jan. 30	5713	1196	120	1308
Readable Signal Company. (See Holderness and Hawley, assignors.)						
Reagan, James. (See Campbell and Reagan.)						
Reading, Joseph M., Datona, Fla. Mechanic's square	813,173	Feb. 20	3307	727	120	2297
Rechnitzer, Alexander, Vienna, Austria-Hungary, assignor to Keuffel & Esser Company, Hoboken, N. J. Calculator	809,075	Jan. 2	886	188–90	120	196
Reck, Anders B., Copenhagen, Denmark. Hot-water-circulating apparatus	809,013	Jan. 2	775	167	120	171
Reckard, Henry L., assignor to A. H. Walker, trustee, New York, N. Y. Photomechanical printing	810,434	Jan. 23	3742	771	120	935
Reddaway, Frank. (See Sankey, William A., assignor.)						
Reddick, William A., Niles, Mich. Fork	812,771	Feb. 13	2499	580	120	2072
Redington, William H., Chicago, Ill. Bottle-stopper	813,449	Feb. 27	3863	846	120	2473
Redlich, Berthold. (See Suter and Redlich.)						
Reece, Curtis D., and F. T. Austin, Coggon, Iowa. Wire hinge	809,134	Jan. 2	1020	211	120	224
Reed, Albert S., assignor of one-half to E. T. Harris, Chicago, Ill. Wing-nut	812,204	Feb. 13	1591	349	120	1889
Reed, Clifford L., Portland, Oreg. Clutch-operating mechanism	810,509	Jan. 23	3902	802	120	974
Reed, Evan L., Oregon, Ill. Rack for cracker-cans	810,566	Jan 23	4017	827	120	998
Reed, Shelton. (See Colegrove and Reed.)						
Reese, Z. J., *et al.* (See Mocstral, Aratino G., assignor.)						
Reesor, Isaac C., El Paso, Tex. Pencil-holder	809,135	Jan. 2	1021	211	120	224
Reeve, Sidney A., Brooklyn, N. Y., assignor to W. M. and L. E. Meacham, Chicago, Ill. Marine navigation	811,743	Feb. 6	385	84	120	1571
Reeves Centrifugal Engine Company. (See Reeves, Frederick W., assignor.)						
Reeves & Company. (See Clay, Harry C., assignor.)						
Reeves & Company. (See Clay and Reeves, assignors.)						
Reeves, Frederick W., Allegheny, assignor of one-half to J. R. James, Pittsburg, Pa. Turbine	811,663	Feb. 6	249	55–6	120	1539
Reeves, Frederick W., Allegheny, assignor to Reeves Centrifugal Engine Company, Pittsburg, Pa. Reciprocating rotary engine	812,527	Feb. 13	2029	445–6	120	1961
Reeves, Marshal T. (See Clay and Reeves.)						
Regenerated Cold Air Company. (See White, Frederick, assignor.)						
Regina Company. (See Stampen, Jose, assignor.)						
Reichenbach, Frank B., Los Angeles, Cal. Floor waxing, polishing, and cleaning machine	809,580	Jan. 9	1980	407	120	463
Reichenbach, Fritz, Charlottenburg, Germany. Combustion-engine	811,744	Feb. 6	389	84	120	1571
Reichert, John, Racine, Wis. Harness snap and slide	809,745	Jan. 9	2288	473	120	528
Reichert, John, Racine, Wis. Combined harness snap and slide	809,924	Jan. 9	2628	541	120	619
Reid, Charles T., Syracuse, Kans. Hen's nest	809,528	Jan. 9	1960	398	120	443
Reid, Joseph, Oil City, Pa. Support for power-carrying lines	813,913	Feb. 27	4778	1054–5	120	2672
Reid, Thomas. (See Harris and Prior, assignors.)						
Reid, William J., Dalton, Pa. Garment	813,585	Feb. 27	4144	906	120	2534
Reidenbaugh, John, *et al.* (See Stumph, Osman L., assignor.)						
Reilly, Martin, Cheltenham, Pa. Folding cot and cradle	813,321	Feb. 27	4016	880	120	2505
Reinanus, Mathias, Valkenburg, Netherlands. Surgical appliance	812,679	Feb. 13	2228	507	120	2037
Reinhert, Charles, assignor to American Brake Company, St. Louis, Mo. Forging and welding machine	813,174	Feb. 20	3310	728	120	2297
Reinschmidt, Edwin J., *et al.* (See Reinschmidt, Frank, assignor.)						
Reinschmidt, Frank, assignor of two-thirds to E. J. Reinschmidt and A. J. Hesp, St. Louis, Mo. Spittoon	810,567	Jan. 23	4013	827	120	998
Reisch, Emily. (See Reisch, Michael, assignor.)						
Reisch, Michael, assignor to E. Reisch, Buffalo, N. Y. Ratchet mechanism	808,946	Jan. 2	941	140	120	141
Reist, Henry G., Schenectady, N. Y., assignor to General Electric Company. Collector-ring	809,220	Jan. 2	1191	244	120	303
Reist, Henry G., Schenectady, N. Y., assignor to General Electric Company. Dynamo-electric machine	811,782	Feb. 6	402	106	120	1600

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Reliance Ball Bearing Door Hanger Company. (See Cossey, Myron, assignor.)						
Remington Arms Company. (See Witherell, George E., assignor.)						
Remington and Sherman Company. (See Casserly, Joseph E., assignor.)						
Remion, Louis V., San Bernardino, Cal. Pipe-wrench	810,304	Jan. 16	3441	711	120	834
Remppis, William F. (See Schaefer, William G., assignor.)						
Remy, Benjamin P. and F. I., assignors to Remy Electric Company, Anderson, Ind. Electric generator	808,779	Jan. 2	322	69	120	2
Remy Electric Company. (See Remy, Benjamin P. and F. I., assignors.)						
Remy, Frank I. (See Remy, Benjamin P. and F. I.)						
Rendahl, Ragnar H., Berlin, Germany. Wireless electric signaling system	813,914	Feb. 27	4779	1055-6	120	2672
Renfrew Crusher Company. (See Wegarif, Johannes C., assignor.)						
Renner, Jacob H., Canal Dover, Ohio. Rotary engine	813,024	Feb. 20	3008	661	120	2220
Renner, John, Burlington, Iowa. Window-shade holder	809,221	Jan. 2	1193	244	120	264
Renshaw, William. (See Sullivan and Renshaw.)						
Rens, Eugene, assignor to Stirling Silk Manufacturing Company, Stirling, N. J. Warp-tension	810,305	Jan. 16	3443	711-12	120	835
Rentzin, Clement, Philadelphia, Pa. Packing	809,581	Jan. 9	1961	407	120	463
Reubold, Friedrich. (See Strehlenert and Reubold.)						
Revolving Air Ship Tower Company. (See Friede, Samuel M., assignor.)						
Rew, Madison, Grinnell, Iowa. Side-delivery hay rake and loader	811,745	Feb. 6	390	85	120	1571
Reynolds, Edwin, Milwaukee, Wis., assignor to Allis-Chalmers Company, Chicago, Ill. Steam-engine	811,520	Jan. 30	5853	1235-8	120	1427
Reynolds, Elmer E. (See Christian and Reynolds.)						
Reynolds, Frank, Syracuse, N. Y. Rotary explosive-engine	810,435	Jan. 23	3748	771-2	120	937
Reynolds, Fred S., Cranston, R. I. Adjustable collar-supporter	811,326	Jan. 30	5513	1149	120	1257
Reynolds, John R. (See Moulton, James N., assignor.)						
Reynolds, John R., assignor to Waterproof Welt and Filler Company, Hartford, Conn. Making waterproof welts	811,793	Feb. 6	490	106	120	1591
Reynolds, John W., Erin, Tenn. Baling-press	809,244	Jan. 9	2462	512	120	574
Reynolds, Winfred E., and W. F. Gronau, New York, N. Y. Vehicle-platform	810,222	Jan. 16	3257	675	120	794
Rheaden, Charles W., assignor to Peru Electric Manufacturing Company, Peru, Ind. Electric safety-fuse	809,982	Jan. 16	2749	565	120	689
Rhoads, Samuel M., Philadelphia, Pa. Hose-coupling	809,746	Jan. 9	2289	474	120	536
Rhode Island Electromobile Company. (See Porter, Harris H., assignor.)						
Rhodes, Byron F., assignor of one-half to B. Johnson, Philadelphia, Pa. Running-shoe	811,438	Jan. 30	5715	1196	120	1398
Rhodes, Charles M., Steubenville, Ohio. Rail-joint	812,894	Feb. 13	2174	475	120	2009
Rhodes, Levi, assignor to Motor Traction Company, Spokane, Wash. Injector	812,382	Feb. 13	1486	310	120	1858
Ricart, Thomas L. (See Hallowell, Louis S., assignor.)						
Rice, Charles D., Hartford, Conn., assignor to Underwood Typewriter Company, New York, N. Y. Fastening-hook	812,879	Feb. 20	2716	598	120	2167
Rice, Edwin W., Jr., Schenectady, N. Y., assignor to General Electric Company. Switch or circuit breaker for high-potential circuits	812,880	Feb. 20	2717	598-9	120	2167
Rice, Frank L., assignor to James B. Clow & Sons, Chicago, Ill. Combined water-heater and pressure-reservoir	808,947	Jan. 2	643	140	120	142
Rice, Lowell H., Chicago, Ill., assignor to Metal Sectional Furniture Company. Beveling-machine	811,174	Jan. 30	5215	1089-90	120	1291
Rice, Stanley K., assignor of one-half to M. Coats, Concord, Nebr. Washing-machine	812,772	Feb. 13	2500	560	120	2073
Rice, Thomas B., Jr., Philadelphia, Pa. Device for preventing the shafts or arbors of saw-blades from sagging	813,236	Feb. 20	3427	755	120	2321
Rice, Vlette L., New York, N. Y. Antifriction-bearing	812,989	Feb. 27	4021	1089	120	2700
Rice, William J., Mason City, Iowa. Air-valve	812,451	Feb. 13	1883	414	120	1950
Rich, Charles C., Mount Vernon, N. Y., assignor of two-thirds to J. U. and W. M. Beaudette, Montclair, N. J. Apparatus for maintaining hot-water or steam pressure in portable boilers	811,345	Jan. 30	5354	1118	120	1322
Rich, Frederick S., Canton, Ohio, assignor to Rich Self Feeder Company, St. Louis, Mo. Feeding and bend-cutting mechanism	810,568	Jan. 23	4019	827-8	120	999
Rich Self Feeder Company. (See Rich, Frederick S., assignor.)						
Richard, Fred J. (See Richardson, John L., assignor.)						
Richards, Albert J. (See Richards, Charles H. and A. J.)						
Richards, Charles E., Chicago, Ill. Canopy-frame for caskets	810,509	Jan. 23	4022	828	120	999
Richards, Charles H. and A. J., Elgin, Ill. Feed-governor for mills, &c.	810,978	Jan. 30	4635	1006	120	1210
Richards, Francis R. (See Webster and Prendergast, assignors.)						
Richards, Francis H., Hartford, Conn. Golf-ball	808,683	Jan. 2	115	27	120	26
Richards, Francis H., Hartford, Conn., assignor to American Cigar Company, New York, N. Y. Marking-machine	810,979	Jan. 30	4636	1007-8	120	1211
Richards, Frank A., assignor of one-half to J. H. Richards, Philadelphia, Pa. Hand-power shears	812,483	Feb. 13	1984	415	120	1960
Richards, George W., Mountaintop, Pa. Sectional car-wheel	809,393	Jan. 9	1610	327	120	388
Richards, Hubert P., assignor to Stanley Rule & Level Company, New Britain, Conn. Ratchet mechanism for tools	813,586	Feb. 27	4137	906	120	2694
Richards, John H. (See Richards, Frank A., assignor.)						
Richards, John R. (See Duggins, Edward, assignor.)						
Richards Manufacturing Company. (See Wilkesson, Gustavus, assignor.)						
Richards, Willard P., Buffalo, assignor to Gould Coupler Company, New York N. Y. Car-side bar	808,694	Jan. 2	117	27	120	26
Richards, Willard P., Buffalo, assignor to Gould Storage Battery Company, New York, N. Y. Machine for making battery-grids	812,295	Feb. 13	1852	349-51	120	1890
Richards, William, Magnetic, Pa. Device for raising liquids from wells	813,322	Feb. 20	3006	791	120	2368
Richards, William H. (See Fulton and Richards.)						
Richardson, Abraham, owner of seven-eighths to J. and H. Heap, J. Bailey, T. Brierley, R. Richardson, J. Haydock, and T. S. Jones, Blackpool, England. Hanger or ear for overhead electric traveling-wires	812,881	Feb. 20	2722	599	120	2169
Richardson, Abraham, and T. S. Jones, assignors of six-eighths to J. and H. Heap, J. Bailey, T. Brierley, R. Richardson, and J. Haydock, Blackpool, England. Hanger or ear for overhead electric traveling-wires	809,747	Jan. 9	2291	474	120	536
Richardson, Earl H., assignor to Pacific Electric Heating Company, Ontario, Cal. Electric heater or iron	809,539	Jan. 9	1951	387	120	443
Richardson, George W., Wissahickon, assignor of one-half to S. T. Major, Norristown, Pa. Process of dyeing and treating cotton	811,088	Jan. 30	5025	1049	120	1232
Richardson, J. J., et al. (See Chilcott, De Lacy T., assignor.)						
Richardson, John J., Pittsburg, Pa. Brazing steel and copper	811,984	Feb. 6	846	186	120	1661
Richardson, John L., assignor of one-half to F. J. Richard, Bloomsburg, Pa. Mold for concrete posts	813,265	Feb. 13	1710	375-6	120	1916
Richardson, John S., Nowata, N. D., assignor to W. Gregory, trustee, Minneapolis, Minn.	810,320	Jan. 16	3512	743-4	120	872
Richardson, Samuel H., Seattle, Wash. Apparatus for cutting and shaving	810,510	Jan. 23	4470	959	120	1097

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Richardson, Solon O., Jr., Toledo, Ohio. Glass-furnace	809,926	Jan. 9	2634	542	120	610
Richelle, Joseph. (See Charpentier and Richelle.)						
Richey, Browne & Donald. (See Browne, Richard B., assignor.)						
Richmond Casket Company. (See Mills, Joseph H., assignor.)						
Richmond, William H., Mount Pleasant, Mich. Crate	809,326	Jan. 9	1441	292	120	361
Richter, Gustav F., New York, N. Y. Dilator	810,675	Jan. 23	4215	872	120	1042
Richter, Hans, assignor to Vereinigte Maschinenfabrik Augsburg und Maschinenbau-Gesellschaft Nürnberg A.-G., Nuremberg, Germany. Valve-gear for explosion-engines	813,116	Feb. 20	3194	698	120	2273
Rickabaugh, Justus A., Altoona, assignor of one-half to W. Milligan, Allegheny City, Pa. Portable ice-crusher	812,453	Feb. 13	1885	415	120	1950
Rickard, Charles H. (See Gill, Charles H., assignor.)						
Ricks, George H., Cincinnati, Ohio. Bung-bushing	813,990	Feb. 27	4033	1090	120	2701
Rieker, William H., Cambridge, Mass. Hot-air heating system	811,089	Jan. 30	5024	1049-50	120	1232
Ridd, Ambrose, Newport, Ky. Planishing sheets of metal	808,681	Jan. 2	125	30	120	30
Riddell, John, Schenectady, N. Y., assignor to General Electric Company. Belt	811,794	Feb. 6	492	108	120	1591
Riddell, John, and C. C. M. Mortensen, Schenectady, N. Y. Tool-grinding device	810,281	Jan. 16	3618	744-5	120	874
Riddle, James L., Logana, Ky. Logging-wagon	810,980	Jan. 30	4942	1008	120	1212
Rider, John T., Oil City, Pa. Level	811,175	Jan. 30	5219	1091	120	1292
Ridgely Trimmer Company. (See Normand, Joseph M., assignor.)						
Ridpath, D. B. (See Mobley, Richard, assignor.)						
Riedel Aktiengesellschaft, J. D. (See Werner, Emil, assignor.)						
Risk, Constance A., assignor of one-half to C. H. Schureman, Hermann, Mo. Barrel-stand	813,587	Feb. 27	4139	907	120	2535
Ries, Moses, Milwaukee, Wis. Lacing device	811,872	Feb. 6	642	141	120	1621
Rieske, Edward L., Troy, assignor to G. C. Myers, Dayton, Ohio. Pipe-clamp	809,227	Jan. 9	1442	292	120	351
Rifled Pipe Company. (See Isaacs and Speed, assignors.)						
Rifled Pipe Company. (See Speed, James B., assignor.)						
Rine, George A., Williamsport, Pa. Back-spacing attachment to type-writing machines	812,680	Feb. 13	2236	507	120	2037
Rinehart, Bentley L., Camden, N. J., assignor to Victor Talking Machine Company. Sound-box for talking-machines	810,961	Jan. 30	4844	1008	120	1212
Ring, George, Allegheny, assignor of one-third to H. H. Smith, Pittsburg, Pa. Drafting instrument	813,827	Feb. 27	4612	1020	120	2635
Rink, William E., Maplewood, assignor of one-half to F. Burke, Newark, N. J. Trimming attachment for sewing-machines	812,153	Feb. 6	1262	276	120	1746
Ritchie, Frederick A., St. John, Canada. Suspender-hook	811,090	Jan. 30	5027	1050	120	1253
Ritter-Conley Manufacturing Company. (See Carpenter, Henry A., assignor.)						
Ritschard, William, Columbus, Ohio. Pipe-dressing tool	812,366	Feb. 13	1712	376	120	1916
Ritten, Louis N., Estherville, Iowa. Poison-bottle stopper	810,576	Jan. 23	4218	873	120	1034
Rittenhouse, Thomas J. (See Tverdahl, Ole, assignor.)						
Ritter, Isaac B., Philadelphia, Pa. Safety device for elevators	809,076	Jan. 2	905	190-1	120	200
Ritts, Collins, Shingleton, Cal. Saw-tool	811,439	Jan. 30	5716	1197	120	1398
Ritts, J., et al. (See Stirling, Joseph C., assignor.)						
Ritz, August N., Milwaukee, Wis. Paste-jar brush	810,436	Jan. 23	3753	773	120	938
Rivera, Julian H., assignor to Hydro-Press Manufacturing Company, St. Louis, Mo. Fumigating material and making same	813,223	Feb. 20	3209	702	120	2259
Riviera, Louis C. G., Paris, France. Transmission mechanism for motor-cycles	811,327	Jan. 30	5514	1149	120	1257
Rix, Edward A., San Francisco, Cal. Rock-drill	813,228	Feb. 27	4614	1021	120	2635
Roach, David C., et al. (See Martin, George W., assignor.)						
Robarts, Heber, assignor of one-half to F. B. Haeberle, St. Louis, Mo. Suppository	813,529	Feb. 27	4615	1021	120	2636
Robb, Lewis J. (See Patterson and Robb.)						
Robbins, Cordillera J., Pekin, Ill. Grain-car door	811,091	Jan. 30	5028	1050	120	1253
Robbins, David W., New York, N. Y. Line-fastener	810,206	Jan. 16	3444	712	120	835
Robert Dempster & Sons. (See Broadhead and Ordish, assignors.)						
Robert, Jacques, Algiers, Algeria. Water-tube locomotive-boiler	812,681	Feb. 13	2227	508-9	120	2037
Robert Mitchell Machinery Co. (See Smith, Frank F., assignor.)						
Roberts, Albert E., Norwalk, assignor to N. P. Bowler, Cleveland, Ohio. Overshoe	808,948	Jan. 2	645	141	120	142
Roberts, Ellwood W., Philadelphia, Pa., assignor, by mesne assignments, to Roberts Manufacturing Company, Incorporated. Filter	809,463	Jan. 9	1739	389-90	120	416
Roberts, Henry F., assignor to C. F. Howe, Boston, Mass. Safety-envelop	811,092	Jan. 30	5029	1050	120	1253
Roberts, James I., Sparta, Ga. Cotton-chopper	810,811	Jan. 23	4472	959	120	1096
Roberts, John E., assignor of one-half to R. Carnahan, Jr., Onedia, Ky. Locomotive-engine	808,686	Jan. 2	118	27	120	29
Roberts Manufacturing Company. (See Roberts, Ellwood W., assignor.)						
Roberts, Otis, Winfield, Kans. Amusement apparatus	812,596	Feb. 13	2176	475	120	2009
Roberts, William F., Nashville, Tenn. Block	811,440	Jan. 30	5717	1197	120	1398
Roberts, William L., Norfield, Miss. Lock-nut	811,093	Jan. 30	5030	1051	120	1253
Robertson, Andrew G., Philadelphia, assignor to Thomas L. Leedom Company, Bristol, Pa. Woven pile fabric	812,596	Feb. 13	2178	476	120	2009
Robertson, Edwin B., East Norwalk, Conn. Reversing mechanism for explosive-engines	811,965	Feb. 6	847	187	120	1851
Robertson, James C. (See Gray, William, assignor.)						
Robertson, Malva M., Des Moines, Iowa. Mold for cement construction-blocks	810,382	Jan. 16	3621	745	120	875
Robertson, Richard. (See Howard, Oscar, assignor.)						
Robertson, William, Chicago, Ill. Mattress	811,094	Jan. 30	5031	1051	120	1253
Robichaux, Leonard J., N. Caillouet, and H. F. Delhaye, Charenton, La. Rail-joint	812,296	Feb. 13	1898	351	120	1890
Robidoux, Eli, Springfield, Mass. Elevating device	813,530	Feb. 27	4615	1021	120	2636
Robins Conveying Belt Co. (See Baldwin and Robins, assignors.)						
Robins Conveying Belt Company. (See Robins, Thomas, Jr., assignor.)						
Robins, Thomas, Jr. (See Baldwin and Robins.)						
Robins, Thomas, Jr., assignor to Robins Conveying Belt Company, New York, N. Y. Belt conveyer	810,510	Jan. 23	3904	833	120	975
Robinson, Benjamin F. (See Vinson and Robinson.)						
Robinson, Eugene M., Chicago, Ill. Phonograph	813,670	Feb. 27	4396	946-6	120	2669
Robinson, Henry, et al. (See Sperry, Henry B., assignor.)						
Robinson, Henry, Brooklyn, N. Y. Machine for peeling vegetables	809,862	Jan. 9	1963	408	120	498
Robinson, Henry C. (See Hazlewood and Robinson.)						
Robinson, Henry R., Richmond, Ind. Separator-tooth	811,441	Jan. 30	5719	1197	120	1399
Robinson, James R., Dublin, Ga. Baling-press	808,720	Jan. 2	322	69-70	120	72
Robinson, Lee A., and H. Blair, Sherman, Tex. Solid-rim wood column	813,480	Feb. 27	3904	847	120	2673
Robinson, Pearl R., assignor to O. K. Tool Holder Company, Shelton, Conn. Tool-holder	810,207	Jan. 16	3445	712	120	835
Robinson, Richard H., Dawlish, England. Apparatus for launching ships' boats	813,915	Feb. 27	4781	1088	120	2672
Robinson, St. Elmo, Arlington, Oreg. Animal-shears	813,888	Feb. 20	3734	850	120	2460
Robisburg, Henry B., Kalamazoo, Mich., assignor to Chicago Railway Equipment Company, Chicago, Ill. Brake-beam	813,915	Feb. 27	4783	1088	120	2673

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Roche, Thomas. (See Buckley, McGinn, and Rogan, assignors.)						
Rock Island Battery Company. (See Jäger, Carl, assignor.)						
Rock, Montague C., Sunnyside, England. Tripod-head	812,233	Feb. 13	1458	319	120	1858
Rockstroh, Charles F., assignor to Rockstroh Manufacturing Company, Brooklyn, N. Y. Stereotype-plate holder	809,209	Jan. 9	1611	327	120	388
Rockstroh, Charles F., assignor to Rockstroh Manufacturing Company, Brooklyn, N. Y. Printing-plate holder	811,328	Jan. 30	5516	1149–50	120	1357
Rockstroh Manufacturing Company. (See Rockstroh, Charles F., assignor.)						
Rockstroh, Max, Dresden-Heidenau, Germany. Safety device for two-revolution printing-presses	809,748	Jan. 9	2292	474	120	536
Rockwell, Byrd C., Peria, Ark., assignor to Rockwell Manufacturing Co. Window-screen fastening	808,686	Jan. 2	120	28	120	29
Rockwell, Edward D., Bristol, Conn. Trolley attachment	809,630	Jan. 9	2087	429	120	485
Rockwell Manufacturing Co. (See Rockwell, Byrd C., assignor.)						
Roderick, Genevieve G. (See Roderick, Joseph and G. G.)						
Roderick, Joseph and G. G., New York, N. Y. Burglar-alarm	813,917	Feb. 27	4784	1057	120	2673
Rodger Ballast Car Company. (See Hart and Yost, assignors.)						
Rodger Ballast Car Company. (See Meissner, Otto W., assignor.)						
Rodgers, Clarence F., Conneaut, Ohio. Dental and surgical lamp	811,442	Jan. 30	5719	1198	120	1399
Rodgers, Clarence F., Conneaut, Ohio. Collar-button	811,443	Jan. 30	5720	1198	120	1399
Rodgers, Louis E., Chicago, Ill. Rail-clip	813,738	Feb. 27	4417	974	120	2594
Rodney, Michael J., J. J. Ford, Fort Dodge, F. M. Conroy, A. Burson, and F. W. Fitch, Fonda, Iowa. Grain-shock and hay loader	810,511	Jan. 23	3908	803–4	120	975
Rodrigues y Fonoll, Jacinto, Cienfuegos, Cuba. Furnace	810,348	Jan. 16	3539	727	120	856
Roehl, Robert C., Chicago, Ill. Gas-controller for flash-lights and the like	809,077	Jan. 2	907	191	120	208
Roener, Joseph J., *et al.* (See McDonner, Charley, assignor.)						
Roeske, Henry, assignor to E. Printz, Philadelphia, Pa. Apparatus for degreasing substances	810,223	Jan. 16	3259	675–6	120	795
Rogan, John A. (See Buckley, McGinn, and Rogan.)						
Rogers, Charles. (See King, Arthur W., assignor.)						
Rogers, George M. (See Turner, Edward W., assignor.)						
Rogers, James M., *et al.* (See Hughes, Edwin T., assignor.)						
Rogers, John, Platteville, Wis. Molding-machine	811,873	Feb. 6	643	141	120	1621
Rogers, John, assignor to Bates Valve Bag Company, Cleveland, Ohio. Valve-bag	810,349	Jan. 16	3540	727	120	856
Rogers, John, assignor to Bates Valve Bag Company, Cleveland, Ohio. Valve-bag	812,454	Feb. 13	1697	415	120	1951
Rogers, John, assignor to Bates Valve Bag Company, Cleveland, Ohio. Valve-bag	812,455	Feb. 13	1698	416	120	1951
Rogers, John F., Belfast, Me. Vamp-marking machine	811,346	Jan. 30	5357	1118	120	1323
Rogers, John R., Brooklyn, N. Y., assignor to Mergenthaler Linotype Company. Linotype-machine	808,873	Jan. 2	476	104–5	120	106
Rohde, Harry B., assignor of one-half to C. A. Gleason, Detroit, Mich. Tea-kettle	812,456	Feb. 13	1888	416	120	1951
Rohlfing, John M., and P. D. Horton, Alliance, Ohio. Safety device for hoisting mechanisms	813,451	Feb. 27	3865	847	120	2478
Rohrer, John S., Lancaster, Pa. Pruning implement	812,528	Feb. 13	2037	447	120	1983
Rollins, Charles H., Watertown, Mass. Water-closet	809,222	Jan. 2	1195	244	120	264
Rollins, George E., East Bridgewater, Mass. Welt-making machine. (Reissue)	12,429	Jan. 2	1334	271	120	293
Rollins, John E., assignor to Crane Company, Chicago, Ill. Adjustable pipe-bracket	813,588	Feb. 27	4140	907	120	2535
Romberger, Harry R., Winona, Miss. Nut-lock	810,084	Jan. 16	2970	620	120	738
Rood, Lloyd V., Marietta, Ohio. Filter	811,684	Feb. 6	255	56	120	1541
Rooney, James, New York, N. Y. Car-coupling	811,320	Jan. 30	5520	1150	120	1358
Roop, Albert L. and F. C., Philadelphia, Pa. Machine for stuffing cushions	811,095	Jan. 30	5033	1051–2	120	1254
Roop, Fannie C. (See Roop, Albert L. and F. C.)						
Roos, Theophilus, Newark, N. J. Mold for the manufacturing of hair-pins	808,949	Jan. 2	647	141	120	143
Roost, Hermann, St. Imier, Switzerland. Watch	812,234	Feb. 13	1459	320	120	1858
Rose, Edwin G. and J. R., Empire, assignors of one-third to F. G. Porter, Wellsville, Ohio. Automatic cut-off	809,749	Jan. 9	2293	475	120	537
Rose, Henry, Shreveport, La. Banana-crate	812,060	Feb. 6	1111	245	120	1715
Rose, James R. (See Rose, Edwin G. and J. R.)						
Rose, John H., Shreveport, La. Combined scaffold and step-ladder	812,091	Feb. 6	1112	245	120	1715
Rose, William H., Baltimore, Md. Dropper for disinfecting apparatus	809,014	Jan. 2	777	167	120	171
Rose, William H., Baltimore, Md. Door-operated air-pump for atomizers	812,863	Feb. 20	2725	599	120	2189
Rosebrough, David R., Casey, Ill. Clothes-pin	808,587	Jan. 2	122	28	120	29
Rosen, Charles O. (See Dawson and Rosen.)						
Rosenberg, Charles B. (See Rosenberg, Frank J. and C. B.)						
Rosenberg, Frank J. and C. B., Los Angeles, Cal. Ledger	810,677	Jan. 23	4218	873	120	1043
Rosenberg, Max, Philadelphia, Pa. Trousers-rack	812,339	Feb. 20	3429	755	120	2321
Rosenblum, Moritz E., New York, N. Y. Safety device for scarf-pins	809,750	Jan. 9	2295	475	120	537
Rosenwasser, Morris, New York, N. Y. Legging	810,982	Jan. 30	4846	1009	120	1212
Roswarne, Richard E., Covington, Ky. Variable-speed mechanism	809,845	Jan. 9	2465	512–13	120	575
Ross, Charles W., Newton, Mass. Device for cutting vegetable and other growths from the inner surfaces of sewer and similar pipes	813,739	Feb. 27	4419	974–5	120	2594
Ross, George, and S. F. Deal, Kansas City, Mo. Road-bed	811,746	Feb. 6	393	.....	120	1572
Ross, James. (See Mackenzie and Ross.)						
Ross, John F., assignor to W. E. and P. F. Ross and C. F. Vanhorn, Toronto, Canada. Can	809,983	Jan. 16	2750	565	120	689
Ross, Percy F., *et al.* (See Ross, John F., assignor.)						
Ross, William E., *et al.* (See Ross, John F., assignor.)						
Rotary File and Mashing Company. (See Sweet, Parker H., assignor.)						
Rote, Charles V., *et al.* (See Miller, Ernest H., assignor.)						
Rote, Charles V. (See Miller and Rote.)						
Roth, Charles C., assignor to Denver Tent and Awning Company, Denver, Colo. Combined smoke-flue and ventilating device	809,223	Jan. 2	1197	245	120	265
Roth, Eugen, Schlesberg, near Berlin, Germany. Pressure and suction device	811,330	Jan. 30	5521	1150–1	120	1358
Roth, John A., Massbel, Ohio. Equalizing device for vehicle-springs	813,365	Feb. 20	3727	819	120	2383
Rouleau, Joseph A. A., St. Cunegonde, assignor of one-half to C. H. J. Bowden, Montreal, Canada. Merchandise-hook	812,336	Feb. 12	1460	320	120	1858
Rouse, Henry B. (See Barber, Frank M., assignor.)						
Rouse, Ida M., Kansas City, Mo. Dress or skirt gage	809,494	Jan. 9	1743	380	120	417
Rousseau, Frank L., Chicago, Ill. Pencil	812,822	Feb. 27	4017	880	120	2509
Roussel, Willis J., New Orleans, La., assignor of one-eighth to A. King, Chicago, Ill. Electrically-operated type-writer	811,347	Jan. 30	5359	1119	120	1324
Rowan, Robert E. (See Craig and Rowan.)						
Rowe, David H. (See Johnson and Rowe.)						
Rowe, David H., Ogden, Ill. Dumping-wagon	810,088	Jan. 16	2972	620	120	738
Rowe, Lyell L. (See Tuttle and MacLean, assignors.)						
Rowe, William, Merrickville, near Sydney, assignor to Rowe's Patent Lock and Block Limited, Sydney, New South Wales, Australia. Railway-traffic-control system	812,897	Feb. 13	2176	476	120	2010

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Rowe, William J., and A. L. Witbeck, Cleveland, Ohio. Rotary engine	811,747	Feb. 6	394	85–6	120	1572
Rowell, Dudley G. (See Rowell, Guilford D., assignor.)						
Rowell, Guilford D., assignor of one-half to D. G. Rowell, Appleton, Wis. Lifter for lifting hollow blocks	813,060	Feb. 20	3062	676	120	2249
Rowell, William F., Deadwood, S. D. Attachment for garment-suspenders	812,367	Feb. 13	1714	376	120	1916
Rowe's Patent Lock and Block. (See Rowe, William, assignor.)						
Rowland, David E., and P. Bacher, assignors to Ney Manufacturing Company, Canton, Ohio. Hay-elevator	809,984	Jan. 16	2751	565–6	120	689
Rowland, Thomas F., New York, N. Y. Welded shell	810,812	Jan. 23	4473	929	120	1098
Rowland, Thomas F., New York, N. Y. Shell for torpedoes or similar purposes	810,983	Jan. 30	4848	1009	120	1213
Rowlands, Albert T., Carrick, Pa. Rail-joint	813,831	Feb. 27	4617	1022	120	2636
Rowley, James F., Chicago, Ill. Artificial limb	813,740	Feb. 27	4421	976	120	2595
Roy, Edward H. (See Roy, William D. and E. H.)						
Roy, Edward H., Nashville, Tenn. Door-latch	812,092	Feb. 6	1115	246	120	1715
Roy, William D. and E. H., Nashville, Tenn. Skirt-fastener	809,485	Jan. 9	1745	380	120	417
Royle, Vernon, Paterson, N. J. Pinion-guard for circular looms	811,177	Jan. 30	5222	1092	120	1293
Royle, Vernon E., Paterson, N. J. Piano machine-head for punching jacquard-cards	811,176	Jan. 30	5220	1091–2	120	1292
Rubin, Selvyn, New York, N. Y. Garment-clasp	810,678	Jan. 23	4219	873	120	1043
Rudbeck, Claus A., Gibson City, Ill. Velocipede	813,741	Feb. 27	4423	975	120	2595
Rudbeck, Claus A., Gibson City, Ill. Velocipede	813,742	Feb. 27	4426	976	120	2596
Rudd, Peter, Chicago, Ill. Bag-tying machine	813,832	Feb. 27	4618	1022–3	120	2636
Ruddick, Hamilton, deceased; W. H. Ruddick, New York, N. Y., administrator. Dynamometer	813,324	Feb. 20	3611	792	120	2359
Ruddick, Walter H., administrator. (See Ruddick, Hamilton.)						
Rude Brothers. (See Ham, Henry C., assignor.)						
Rude, Carl G. (See Sylstad and Rude.)						
Rudel, William F., assignor to A. T. Gridley, Aurora, Ind. Making starch	810,086	Jan. 16	2973	.....	120	738
Rudert, George K., Wilmington, Del. Steering device for vehicles	810,679	Jan. 23	4220	874	120	1043
Rudolph, Frank E., assignor of one-half to Carpenter Paper Company, Omaha, Nebr. Ruling-machine	811,331	Jan. 30	5522	1151	120	1358
Rudolph, Otto H. (See O'Bryan and Rudolph.)						
Ruehle, Carl, Orangeville, Ill. Bean-harvester	809,751	Jan. 9	2296	475–6	120	537
Ruff, Emma M., Brooklyn, N. Y. Window-shade bracket	811,874	Feb. 6	647	142	120	1622
Rufli, Herman, Indianapolis, Ind., assignor of one-half to A. W. Van Hafften, Minneapolis, Minn. Block-sawing machine	811,332	Jan. 30	5525	1151–2	120	1359
Rugg, Francis A., Greenfield, Mass. Rake	812,457	Feb. 13	1889	416	120	1951
Rugg, Walter S. (See Varley, Thomas W., assignor.)						
Ruhl, John. (See Farmer, Edwin T., assignor.)						
Rumely, William N., Laporte, Ind. Boiler	812,529	Feb. 13	2039	447	120	1983
Rumsfield, Henry I., and J. R. Donaho, Willowhole, Tex. Clothes-pin	813,589	Feb. 27	4141	907–8	120	2535
Rumrill, George E., Carrollton, Ill. Doubletree and whiffletree coupling	812,093	Feb. 6	1116	246	120	1716
Rundberg, Charles J., Kansas City, Mo. Incandescent-electric-lamp remover, replacer, and cleaner	809,985	Jan. 16	2753	566	120	690
Runyan, Clay M., Elyria, Ohio. Molding-machine	813,117	Feb. 20	3186	699	120	2274
Runyan, Clay M., Elyria, Ohio. Butter-churn	813,326	Feb. 20	3613	792	120	2359
Rupke, Max, Ohligs, Germany. Protecting-rail for building structures, stairs, corners, and the like	813,326	Feb. 20	3615	793	120	2359
Ruse, Myron B. (See Knight and Ruse.)						
Russell & Erwin Manufacturing Company. (See Caley, Charles J., assignor.)						
Russell & Erwin Manufacturing Company. (See Caley and Voight, assignors.)						
Russell & Erwin Manufacturing Company. (See Crandall, Nathan W., assignor.)						
Russell & Erwin Manufacturing Company. (See Papenfoth, Paul, assignor.)						
Russell & Erwin Manufacturing Company. (See Parker and Papenfoth, assignors.)						
Russell & Erwin Manufacturing Company. (See Shepard, Amos, assignor.)						
Russell & Erwin Manufacturing Company. (See Voight, Henry G., assignor.)						
Russell, James J., Milwaukee, Wis. Veneer-cutting machine	809,136	Jan. 2	1022	211	120	225
Russell, Robert C. (See Peters, John, assignor.)						
Ruth, George W., York, Pa., assignor to Ruth Machine Company. Stop-motion for knitting-machines	813,240	Feb. 20	3430	756	120	2321
Ruth Machine Company. (See Ruth, George W., assignor.)						
Ryan, Edward, Clinton, Iowa. Slack-adjuster for draw-bars	812,682	Feb. 13	2330	509	120	2038
Ryan, Nora, New York, N. Y. Portable wardrobe	813,452	Feb. 27	3867	847–8	120	2473
Ryan, Walter D., West Lynn, Mass. Salute-gun	809,752	Jan. 9	2297	476	120	537
Ryder, William H., Providence, R. I. Means for regulating the tension upon warp-threads of looms	813,833	Feb. 27	4626	1024	120	2640
Ryon, Eppa H., Worcester, Mass., assignor to Crompton & Knowles Loom Works. Loom reversing mechanism	810,680	Jan. 23	4222	874	120	1044
Ryon, Eppa H., Worcester, Mass., assignor to Crompton & Knowles Loom Works. Shuttle-operating mechanism	810,681	Jan. 23	4224	875	120	1044
Rypinski, Maurice C., New York, N. Y. Electrical measuring instrument	811,956	Feb. 6	880	187	120	1662
Rystrom, Charles, Rockford, Ill. Lock-nut	811,957	Feb. 6	883	188	120	1662
S. Morgan Smith Company. (See Smith, Charles E., assignor.)						
S. Pearson and Son. (See Japp, Henry, assignor.)						
S. Stevenson & Company. (See Wright, Walter, assignor.)						
S. S. Stafford, Incorporated. (See Frist, Robert P., assignor.)						
Sachsenröder, Gustav H., Barmen, Germany. Manufacturing lined or enveloped tubes of parchment-paper	809,846	Jan. 9	2467	513	120	576
Sackett, Frank L., Fredonia, N. Y. Game apparatus	810,224	Jan. 16	3261	676	120	795
Sackett, Frank L., Fredonia, N. Y. Game-piece	810,262	Jan. 16	3541	728	120	857
Saegmuller, George N., assignor to Bausch, Lomb, Saegmuller Co., Rochester, N. Y. Magnetic needle	811,248	Jan. 30	5365	1120	120	1325
Safety Car Heating & Lighting Company. (See Dixon, Robert M., assignor.)						
Safery, Joseph E., Brooklyn, N. Y., assignor to Mergenthaler Linotype Company. Linotype-machine	810,173	Jan. 16	3141	650	120	771
Sage, Cyrus H., *et al.* (See Sage, Frederick, assignor.)						
Sage, Enos B., *et al.* (See Sage, Frederick, assignor.)						
Sage, Frederick, assignor to E. B. Sage, Bedrock, and C. H. Sage, Johnsonburg, Pa. Fluid-pressure motor	811,664	Feb. 6	257	56–7	120	1541
Sagee, Charles W., assignor to Hero Fruit Jar Company, Philadelphia, Pa. Machine for molding glass	810,570	Jan. 23	4094	838–9	120	1000
Sager, Franklin P., Maplewood, Ohio. Clothes-drainer	812,894	Feb. 20	2728	600	120	2140
Sahlberg, Carl A., Chicago, Ill. Wave-motor	808,688	Jan. 2	122	28	120	29
Saighman, Edward S., Chicago, Ill. Massage-applicator	810,886	Jan. 23	4022	960–4	120	1139
Saks & Company. (See Saks, Horace A., assignor.)						
Saks, Horace A., assignor to Saks & Company, New York, N. Y. Lady's automobile-hat	811,178	Jan. 30	4224	1022	120	1293
Saling, Thomas F., Cora, Idaho. Plush hinge	808,187	Jan. 2	1034	212	120	225

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Salmon, Carl R., Montreal, Canada, assignor of four-fifths to J. Fieber, F. Sarlay, Catasauqua, Pa., J. Mrazay and E. Firmen, Montreal, Canada. Fire-lighting apparatus.	813,453	Feb. 27	3899	848	120	2474
Salmon, Frederick W., assignor to Murray Iron Works Company, Burlington, Iowa. Engine-bed	809,466	Jan. 9	1746	360	120	418
Saltzgeall, Nathaniel, Battlecreek, Mich. Brooder	809,631	Jan. 9	2089	429–30	120	486
Salzer, Bruno, and G. Walther, Chemnitz, Germany. Means of converting constant oscillatory motion into rectilinear motion	810,308	Jan. 16	3446	712	120	836
Salzer, Bruno, and G. Walther, Chemnitz, Germany. Variable cam	810,353	Jan. 16	3543	728–9	120	857
Salzmann, Benno, Berlin, Germany. Jack-cord distributer	812,236	Feb. 13	1461	320	120	1858
Sametine, William H. (See Davis and Sametine.)						
Sampere, Jose, New York, N. Y., assignor to Regina Company, Rahway, N. J. Tone-modulating device for pianos	812,237	Feb. 13	1462	320–1	120	1859
Samuell, Charles A., Easton, Ill. Decoy	811,587	Feb. 6	106	23	120	1508
Samuell, Charles A., assignor of one-half to A. H. Penewitt, Easton, Ill. Decoy-duck-tethering device	811,586	Feb. 6	106	23	120	1508
Samuels, Jacob, Chicago, Ill., assignor to Bee-Hive Fly Catcher Company, Kenosha, Wis. Insect-catcher	811,875	Feb. 6	648	142	120	1623
Samuelson, Frederick, Rugby, England, assignor to General Electric Company. Controller for turbines	809,847	Jan. 9	2469	513–14	120	576
Samuelson, Frederick, Rugby, England, assignor to General Electric Company. Governing mechanism for elastic-fluid turbines	811,249	Jan. 30	5367	1120	130	1326
Sanborn, Moses L. (See Nolan and Sanborn.)						
Sanborn, Moses L., Boston, Mass. Check-valve	812,885	Feb. 20	2727	600	120	2170
Sandborg, Carl A., Bloomington, Ill. Rotary engine	812,398	Feb. 13	1714	376–7	120	1916
Sanders, Charles Z., Sacramento, Cal. Anchor emergency air-brake	809,632	Jan. 9	2073	430	120	487
Sanders, Stephen P., Cupertino, Cal. Carburetor	810,087	Jan. 16	2974	621	120	739
Sanderson, Edwin N., *et al.* (See Haller and Billingsley, assignors.)						
Sandison, William M., Ashfield, Ayton, Scotland, assignor of one-half to H. G. McKerrow, Newton, Mass. Prevention and laying of dust in roads, &c.	813,380	Feb. 20	3728	.....	120	2384
Sandner, Erich, assignor to American Suction Gas Producer Company, Lansing, Mich. Governor for suction gas-producers	809,848	Jan. 9	2471	514	120	576
Sandner, Erich, assignor to American Suction Gas Producer Company, Lansing, Mich. Gas-producer	809,849	Jan. 9	2472	514	120	577
Sandy Hill Iron and Brass Works. (See Packer, James W., assignor.)						
Sanford-Burton, Harry, Oxford, England. Grinding stone and disk employed in mechanical and operative dentistry	813,348	Feb. 20	3651	800	120	2367
Sanguinetti, Herbert, London, England. Oscillating cylindrical pulp-strainer	810,813	Jan. 23	4474	929–30	120	1098
Sanitary Cow Milking Company. (See Good, Ezra E., assignor.)						
Sankey, William A., Sutton, assignor to F. Reddaway, Manchester, England. Pneumatic-tire cover	809,530	Jan. 9	1864	387	120	444
Santini, Adolphus P., Buenavista, Fla. Bicycle attachment	810,814	Jan. 23	4476	931	120	1098
Sarason, Leopold, Berlin, assignor to C. F. Boehringer & Soehne, Mannheim-Waldhof, Baden, Germany. Milk-preserve and making same	809,138	Jan. 2	1025	.....	120	225
Sargent & Company. (See Sargent, Edward H., assignor.)						
Sargent, Edward H., assignor to Sargent & Company, New Haven, Conn. Casket-handle	810,088	Jan. 16	2977	621	120	739
Sargent, Howard R., Schenectady, N. Y., assignor to General Electric Company. Wall-receptacle	811,795	Feb. 6	493	106	120	1591
Sargent, Howard R., Schenectady, N. Y., assignor to General Electric Company. Snap-switch	811,796	Feb. 6	494	107	120	1591
Sarlay, Francis, *et al.* (See Salmon, Carl R., assignor.)						
Sartain, Heraclitus H., Burroughs Cove, Tenn. Air-brake coupling	813,290	Feb. 20	3730	819	120	2384
Saugen, Michael J., St. Mathias, Minn. Wagon-box and hay-rack lifter	810,512	Jan. 23	3014	804–5	120	976
Sattley Manufacturing Company. (See Weaver, Ira A., assignor.)						
Sauer, George L. (See Fairbanks and Sauer.)						
Saugstad, Olaf, assignor to W. B. Wadsworth, Plainfield, N. J. Cut-off socket	808,689	Jan. 2	123	29	120	30
Sautter, Gaston. (See Rateau and Sautter.)						
Savage, Arthur J., Utica, N. Y., assignor to J. Stevens Arms & Tool Company, Chicopee Falls, Mass. Firearm	810,571	Jan. 23	4025	829	120	1000
Savage, George R., Meriden, Conn. Water-cooler	808,692	Jan. 2	127	29	120	30
Savage, George R., Meriden, Conn. Water-cooler	808,781	Jan. 2	326	70	120	72
Savelsberg, Joseph, Papenburg, Germany. Treating ores	810,572	Jan. 23	4028	.....	120	1000
Savery, Thomas H., Wilmington, Del. Wood-grinder	813,234	Feb. 27	4630	1094	120	2641
Sawyer, Foster and Hardy. (See Bridge and Ellis, assignors.)						
Sawyer, Frank M., Charlotte, N. C. Building-block	812,399	Feb. 13	1716	377	120	1917
Sawyer, Frank M., Charlotte, N. C. Mold for molding tiles and similar articles	813,500	Feb. 27	4142	908	120	2536
Saxon, William, Worcester, Mass. Rotary toy for baby or doll carriages	813,201	Feb. 20	3731	820	120	2384
Saxton, Edmund L., Lenox, Mich. Measuring-tape	808,139	Jan. 2	1026	212	120	225
Sayer, Robert G., Bristol, England. Retaining horizontal and vertical spaces	812,952	Feb. 20	2664	631–3	120	2201
Scanlon, John S. (See Scanlon and Arnold.)						
Scanlon, Mary E. (See Scanlon and Arnold, assignors.)						
Scanlon, Michael L. and J. S., and A. A. Arnold; said Michael L. Scanlon and J. S. Scanlon assignors of one-fourth to M. E. Scanlon, Galion, Ohio. Hose-coupling	810,364	Jan. 16	3545	729	120	857
Schaad, Ernst, Lucerne, Switzerland. Coupling-joint for pipe-sections	812,454	Feb. 27	3570	848	120	2474
Schaaf, Albert E., and F. S. Davis, Toledo, Ohio. Automobile-frame	813,178	Feb. 20	3311	726	120	2297
Schaeffer, William G., assignor to W. F. Kemppis, Reading, Pa. Cushion-fork for motor-cycles and other vehicles	811,260	Jan. 30	5370	1121	120	1327
Schaer, Dietrich, Sacramento, Cal. Window-ventilator	812,228	Feb. 13	1464	321	120	1859
Schaetzler, George M. (See Schaetzler, John M., assignor.)						
Schaetzler, John M., Hamburg, assignor of one-half to G. M. Schaetzler, Indianapolis, Ind. Fruit-evaporator	812,227	Feb. 13	1599	351	120	1891
Schaaf, Richard O., Philadelphia, Pa. Window	813,455	Feb. 27	3671	848	120	2474
Schaan, Henry, Milwaukee, Wis. Tasting-engine	808,660	Jan. 2	648	141	120	143
Schaaf, Oscar F., Cincinnati, Ohio. Drop-handle for coffins	809,457	Jan. 9	1747	361	120	418
[illegible], Oscar F., New York, N. Y., assignor to Submarine Gold Mining Company. Submarine [illegible]	809,633	Jan. 9	2075	430	120	487
[illegible], Richard G. H., Orange, N. J. Diamond	809,531	Jan. 9	1886	397	120	444
[illegible], Albert [illegible], assignor to J. Williamson, Chicago, Ill. Valve for gas-generators	812,853	Feb. 13	2331	509–10	120	2086
[illegible], Albert [illegible], Wis. Confectioner's work-table	811,179	Jan. 30	5224	1086	130	1286
[illegible], Albert, Adams, Pa. Replanting attachment for cultivators	812,230	Feb. 13	1466	321–2	120	1860
[illegible], Albert (See Schaefer, John A., assignor.)						
[illegible], Fly Mountain, N. Y. Self-adjusting belt for supporting catamenial						
[illegible], Gustav R., Detroit, Mich. Mixing-tile	813,175	Feb. 20	3312	726	120	2297
[illegible], William F., Cleveland, Ohio. Filter	812,953	Feb. 20	2667	632	120	2202
[illegible], [illegible], New York, N. Y. Chain	813,237	Feb. 20	3616	796	120	2369
	808,615	Jan. 2	773	166	120	171

Alphabetical list of patentees for January and February—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Schlatter, Alfred, and L. Deutsch, Budapest, Austria-Hungary. Apparatus for analysis of gases	813,671	Feb. 27	4389	946	120	2639
Schlichter, David A., Brown City, Mich. Silo	812,288	Feb. 13	1601	361	120	1891
Schlosser, Robert J., and H. R. Fisher, assignors to Pisc Company, Warren, Pa. Bottle-corking machine	809,880	Jan. 9	2473	515	120	577
Schmertz, Edmund C., deceased; R. Longenecker, administrator, assignor, by mesne assignments, to Schmertz Wire Glass Company, New York, N. Y. Apparatus and process for manufacturing wire-glass. (Reissue)	13,443	Jan. 30	5890	1235	120	1435
Schmertz Wire Glass Company. (See Schmertz, Edmund C., assignor.) (Reissue.)						
Schmid, Henry. (See Jeanmaire and Schmid.)						
Schmidgall, Frederick. (See Schmidt and Schmidgall.)						
Schmidmer, Georg E., Nuremberg, Germany. Flexible electrical conductor	809,498	Jan. 9	1749	361	120	418
Schmidt, Albrecht, and E. Kronholz, assignors to Farbwerke vorm. Meister, Lucius & Brüning, Höchst-on-the-Main, Germany. Chlorinating indigo	812,886	Feb. 13	2185	.....	120	2011
Schmidt, August, Langensalza, Germany. Apparatus for moistening and warming rooms or apartments	813,228	Feb. 20	3618	793	120	2360
Schmidt, Gustav, and F. Schmidgall, Cincinnati, Ohio, assignors to Cincinnati Butchers Supply Company. Knocking-pen	811,966	Feb. 6	853	188	120	1662
Schmidt, John. (See Heinrich, Schmidt, and Etheridge.)						
Schmidt, Robert E., Elberfeld, Germany, assignor to Farbenfabriken of Elberfeld Co., New York N. Y. Green anthraquinone dye	812,884	Feb. 13	2336	.....	120	2039
Schmidt, Robert E., and K. Thun, Elberfeld, Germany, assignors to Farbenfabriken of Elberfeld Co., New York, N. Y. Yellow-green anthraquinone dye	812,890	Feb. 13	2186	.....	120	2011
Schmitt, Johann R., assignor to Maschinenfabrik für Tabakindustrie Gesellschaft mit Beschränkter Haftung, Frankfort-on-the-Main, Germany. Machine for the production of cheroots	809,499	Jan. 9	1750	361	120	418
Schmitt, John, Brooklyn, N. Y. Nut-lock	812,399	Feb. 13	1602	362	120	1891
Schmitt, Simon A. (See Applegate, Clarence R., assignor.)						
Schmits, Albert, Raunheim, Germany. Tubes, single or compound, with longitudinal ribs	813,918	Feb. 27	4786	1057	120	2674
Schneckenburg, Herman, Hoboken, N. J. Device for cutting butter	809,522	Jan. 9	1887	388	120	444
Schneckloth, Henry, Holstein, Iowa. Ice-velocipede	813,025	Feb. 20	3005	662	120	2220
Schneider, Charles P. E., Le Creusot, France. Apparatus for loading guns in turrets, &c.	811,797	Feb. 6	496	107–12	120	1592
Schneider, Hugo, Cleveland, Ohio. Automatic gas-controlling device	811,898	Feb. 6	108	28	120	1500
Schneider, Jacob, Newport, Ky. Curtain-fastener	809,140	Jan. 2	1027	212	120	226
Schneider, John C., Winona, Minn. Steam-boiler	812,682	Feb. 13	2336	510–11	120	2039
Schneider, Peter, Oswego, N. Y. Dumping-car	809,010	Jan. 2	779	166	120	172
Schneider, Reinhold, Sharon, Pa. Arch	811,261	Jan. 30	5371	1121	120	1327
Schnell, Heinrich, Cologne, Germany. Wheel for plow-locomotives	812,000	Feb. 13	2187	477	120	2011
Schoemaker, Jan. (See Frentzen and Schoemaker.)						
Schoen, Herman J., Brooklyn, N. Y. Power plate-printing press	813,241	Feb. 20	3432	756–7	120	2322
Schoenberg, Ralph A. (See Klein, Charles J., assignor.)						
Schoenborn, Gustav C., assignor to Winkley Company, Hartford, Conn. Oil-cup	813,891	Feb. 27	4144	906	120	2636
Schoettl, Joseph, C. Jaeger, and P. Walsleben, assignors to D. Frank, Brooklyn, and J. Trounstine, New York, N. Y. Operating-table	812,240	Feb. 13	1466	322	120	1860
Schofield, Frederick C., Washington, D. C. Collapsible bed and similar furniture	810,573	Jan. 23	4029	839	120	1001
Schofield, William B., and M. P. Osbourn, Merchantville, N. J. Automatic controlling device for gas-stoves	811,959	Feb. 6	856	188	120	1663
Scholfield, Joseph J., Providence, R. I. Cloth winding and measuring machine	813,743	Feb. 27	4427	976–7	120	2596
Schön, Ludwig, Vienna, Austria-Hungary. Safety-spout for receptacles containing volatile inflammable liquids	809,634	Jan. 9	2079	431	120	487
Schoonmaker, William E., Montclair, N. J. Valve mechanism for internal-combustion engines	809,400	Jan. 9	1617	328	120	388
Schork, Henry T., and F. A. Stahl, New York, N. Y. Syringe	812,686	Feb. 13	2336	511	120	2039
Schott, Charles H. (See Thurston, Horace, assignor.)						
Schotto, Louis C., St. Louis, Mo. Ash-pan	812,370	Feb. 13	1716	377	120	1917
Schou, Christian W., Antvorskov, near Slagelse, Denmark. Apparatus for the production of line designs on bricks, &c	813,592	Feb. 27	4145	908–9	120	2636
Schrade, George, Walden, N. Y. Pocket-knife	812,601	Feb. 13	2189	477	120	2011
Schrader, George H. F., assignor to A. Schrader's Son, Incorporated, New York, N. Y. Tire and other valve	809,986	Jan. 16	2755	606	120	690
Schrader, John R., Buffalo, N. Y. Car journal-box	809,685	Jan. 9	2080	431–2	120	488
Schreiber, Edward A., and J. G. Klier, Rochester, N. Y. Razor-guard	809,234	Jan. 2	1196	245	120	265
Schreyer, Benjamin Z., Columbus, Ohio. Wardrobe-hook	809,017	Jan. 2	781	166	120	172
Schroeder, Conrad, Milwaukee, Wis. Means for corking or closing bottles or other receptacles	811,876	Feb. 6	649	142	120	1628
Schroeder, Henry. (See Hinchman and Schroeder.)						
Schroeder, William S., Chicago, Ill. Car-coupling	813,744	Feb. 27	4430	977	120	2636
Schuh, Frank, Albany, N. Y. Water-closet	811,444	Jan. 30	5721	1198	120	1389
Schulhoff, Saul, Philadelphia, Pa. Speed-indicator	811,898	Feb. 6	280	57	120	1542
Schuller, Lawrence, Chicago, Ill. Centering for arches	808,951	Jan. 2	651	142	120	143
Schuller, Martin M., Chicago, Ill. Shingle-fastening device	811,445	Jan. 30	5722	1198	120	1400
Schulte, Georg A. H. (See Henke and Schulte.)						
Schulte, Joseph, Jr., Walford, Iowa. Water-wheel	813,672	Feb. 27	4301	946	120	2670
Schultz, Louis N., Oakland, Miss. Plow	813,115	Feb. 20	3301	700	120	2275
Schultz, William J., Cincinnati, Ohio. Loose-leaf binder	813,919	Feb. 27	4789	1057	120	2674
Schultz, William J., Cincinnati, Ohio, and H. Gerding, Newport, Ky., assignors to Tenacity Loose-Leaf Metal Company, Cincinnati, Ohio. Loose-leaf book-back	812,603	Feb. 13	2190	477	120	2011
Schulz, John D. H. (See Brower and Schulz.)						
Schuh, Otto C., assignor to Bauer & Black, Chicago, Ill. Dental-silk box	808,660	Jan. 2	125	29	120	30
Schumacher, Wilhelm, Oberdollendorf, Germany. Manufacturing artificial paving-stones	809,226	Jan. 2	1189	.....	120	265
Schumaker, Frank K., Fort Scott, Kans. Stay for harness-breeching	811,321	Jan. 30	5668	1238	120	1428
Schuman, James B., assignor of three-fourths to A. Bates, Indianapolis, Ind. Grain-conveyer	809,670	Jan. 9	1753	362	120	419
Schuspbach, Armand L., New Britain, Conn. Fish-trap	813,200	Feb. 13	1468	322	120	1891
Schurman, Charles H. (See Blair, Constance A., assignor.)						
Schutte and Koerting Company. (See Schutte and Körting, assignors.)						
Schütte, Louis, Philadelphia, Pa., and E. Körting, Pegli, Italy, assignors to Schutte and Koerting Company, Philadelphia, Pa. Calorimeter	808,696	Jan. 2	126	30	120	31
Schutz, Edward J., Akron, Ohio. Hot-water bottle	809,141	Jan. 2	1028	213	120	226
Schutz, Edward J., Akron, Ohio. Hot-water bottle	809,142	Jan. 2	1029	213	120	226
Schutz, Edward J., Akron, Ohio. Making hot-water bottles	809,143	Jan. 2	1030	213	120	226
Schwamer, Conrad. (See Hartmann and Schwamer.)						
Schwartz, Fred M., *et al.* (See Sweeney, James M., assignor.)						
Schwartz, Walter M., Philadelphia, Pa. Veneer-slicer	811,468	Jan. 30	5722	1199	120	1400

Alphabetical list of patentees for January and February—Continued.

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Schwarz, Constantine P., Elyria, Ohio. Side plate for filters	812,530	Feb. 13	2040	447	120	1983
Schwarz, Henry H. A., Brighton, England. Pencil-sharpener	811,798	Feb. 6	501	112	120	1592
Schwarze, Carl J., assignor to Schwarze Electric Company, Adrian, Mich. Telegraph instrument	812,773	Feb. 13	2501	550	120	2073
Schwarze Electric Company. (See Schwarze, Carl J., assignor.)						
Schwedt, Charles, Buffalo, N. Y. Extensible scaffold-board	812,201	Feb. 13	1605	352	120	1892
Schwerdtfeger, Charles, *et al.* (See Werner, Emil, assignor.)						
Schwing, George. (See Yunker and Schwing.)						
Scofield, Lyan M. (See McDonald and Scofield.)						
Scott, Charles S., Cadiz, assignor of one-half to F. A. Seiberling, Akron, Ohio. Wheel-rim	809,533	Jan. 9	1868	388	120	444
Scott, Francis R., *et al.* (See Kelly, Alonzo, assignor.)						
Scott, James C., assignor to Scott Muffler Co., Portsmouth, Ohio. Neck-muffler	811,096	Jan. 30	5037	1062	120	1255
Scott, John E., Philadelphia, Pa. Roaster	809,851	Jan. 9	2479	516	120	579
Scott Muffler Co. (See Scott, James C., assignor.)						
Scott, Robert E., and L. O. Steinhoff; said Scott assignor to A. C. Lea, Simcoe, Canada. Continuous steam-cooker	812,154	Feb. 6	1263	276–7	120	1747
Scott, Samuel J., Columbus, Ohio. Rail fastening and support	813,673	Feb. 27	4302	947	120	2570
Scotts, Walter, Plainfield, N. J. Printing and folding machine	810,225	Jan. 16	3263	676–7	120	795
Scott, Walter, Plainfield, N. J. Printing and delivery mechanism	810,886	Jan. 23	4626	964	120	1130
Scott, William, assignor to Kaumagraph Co., New York, N. Y. Roller stamping device	809,018	Jan. 2	782	169	120	172
Scott, William A., and W. S. McCall, Quincy, Fla. Rein-guard	813,329	Feb. 20	3619	794	120	2361
Scott, William H., Maplewood, Mo., assignor to Elliot Frog & Switch Company, East St. Louis, Ill. Adjustable switch-rod	813,920	Feb. 27	4791	1058	120	2675
Scott, Zaccheus, West Newton, Pa. Vessel	813,177	Feb. 20	3314	729	120	2296
Scovill Manufacturing Company. (See Nichols, Arthur C., assignor.)						
Scoville, Eugene M., Waipahu, Hawaii. Device for calculating horse-power	809,019	Jan. 2	783	169	120	172
Scribner, Charles E., Jericho, Vt., assignor to Western Electric Company, Chicago, Ill. Annunciator-drop	812,954	Feb. 20	2899	634	120	2202
Scudder, John M., Farmington, Ill. Car-replacer	812,302	Feb. 13	1606	352	120	1892
Seabury, Gorham T., Cheyenne, Wyo. Water or fluid gaging tube	809,471	Jan. 9	1756	362–3	120	420
Seal, John W., London, assignor of two-thirds to J. B. Langford, Chiswick, England. Incandescent igniter for use with internal-combustion engines	813,456	Feb. 27	3872	849	120	2474
Seaman, Alonzo D., *et al.* (See Theil, Charles W., assignor.)						
Seaman, John T., *et al.* (See Theil, Charles W., assignor.)						
Seaman, Joseph S., Pittsburg, Pa. Apparatus for treating molten metal	811,097	Jan. 30	5038	1053	120	1255
Seaman, Joseph S., Pittsburg, Pa. Treating molten metal	811,522	Jan. 30	5858	1228–9	120	1428
Searer, Christian, Vandalia, Mich. Draft-gear for vehicles	809,328	Jan. 9	1443	292	120	351
Sears, Willard T., Philadelphia, Pa., assignor to Niles-Bement-Pond Company, Jersey City, N. J. Variable-speed gearing	812,886	Feb. 20	2729	600	120	2170
Seasholtz, Edward G., Sunbury, Pa. Mail-box	810,089	Jan. 16	2978	621	120	739
Secor, John A., New York, N. Y., assignor to General Power Company. Speed-regulator for explosive-engines	812,371	Feb. 13	1718	377–8	120	1917
Secrist, William J. (See Peter and Secrist.)						
Seddon, Henry C., West Kensington, England. Fuse for projectiles	811,252	Jan. 30	5372	1121	120	1327
Seddon, Henry C., West Kensington, England. Fuse for projectiles	811,667	Feb. 6	262	57	120	1542
Seddon, Henry C., West Kensington, England. Fuse for projectiles	811,668	Feb. 6	263	57	120	1543
See, Arthur R., Alma, Ill. Key-ring	812,458	Feb. 13	1890	416	120	1951
Seebach, George W., New York, N. Y. Grip for ropes and the like	813,457	Feb. 27	3873	849	120	2475
Seeger, Henry, Morley, Iowa. Nut-lock	813,242	Feb. 20	3434	757	120	2322
Seeser, Ludwig W., Ragnhn, Germany. Figured covering	812,531	Feb. 13	2040	.....	120	1983
Segar, Eugene D., Randolph, assignor to Porter Screen Manufacturing Company, Burlington, Vt. Window-screen	809,753	Jan. 9	2300	476	120	538
Seibel, Max P. (See Brower, William, assignor.)						
Seiberling, Frank A. (See Scott, Charles S., assignor.)						
Seibers, John J. (See Chester, John F., assignor.)						
Seidel, Harry A., Lebanon, Pa. Mounting for eyeglasses	811,960	Feb. 6	859	189	120	1664
Seidemann, Otto, assignor to Firm of C. Zeiss, Jena, Germany. Belt-shifting for speed-cones	811,709	Feb. 6	502	112	120	1593
Seidl, Frank W., Manitowoc, Wis. Swivel	809,020	Jan. 2	785	169	120	173
Seifert, Bruno R., assignor to Chemische Fabrik von Heyden Aktiengesellschaft, Radebeul, near Dresden, Germany. Bismuth disalicylate and making same	809,583	Jan. 9	1987	.....	120	464
Seiler, Philipp, assignor to A. Diefendorf, Chicago, Ill. Pocket receptacle or holder	813,991	Feb. 27	4925	1060	120	2701
Seiter, Michael C. (See Skinner, Sidney L., assignor.)						
Seitz, Edward, Peoria, Ill. Vapor-lamp	810,226	Jan. 16	3271	678	120	797
Selden, George B., Jr., Rochester, N. Y. Starting-crank for engines	812,094	Feb. 6	1118	246	120	1716
Self, Rolley C., Norman, Okla. Ter. Aerial tramway	813,745	Feb. 27	4432	977–8	120	2697
Sellers, John M., assignor to Sellers Manufacturing Company, Chicago, Ill. Tie-plate	809,987	Jan. 16	2758	567	120	691
Sellers Manufacturing Company. (See Sellers, John M., assignor.)						
Sellers, Otis Q., Wellsboro, Ohio. Lubricating-wheel	812,887	Feb. 20	2731	600	120	2170
Selve, Victor. (See Arnold, Ernest W., assignor.)						
Semsleder, Oskar, Vienna, Austria-Hungary. Orthopedic appliance for curing knock-knees, &c.	810,255	Jan. 16	3546	729	120	857
Semple, Harry, Wilmington, Del. Machine for making necked glass articles	808,574	Jan. 2	478	105–6	120	108
Semple, John B., Sewickley, Pa. Indicating the trajectory of projectiles	809,988	Jan. 16	2759	567	120	691
Sound, Carolus A., New York, N. Y. Phonograph-horn	811,577	Feb. 6	651	142–3	120	1622
Senton, Benjamin C., Rutland, Vt., assignor to Senton and Evans, New York, N. Y. Composition of matter	809,472	Jan. 9	1759	.....	120	420
Senton and Evans. (See Senton, Benjamin C., assignor.)						
Seroplan, George M., *et al.* (See Adams, Frank C., assignor.)						
Seroplan, John M., *et al.* (See Adams, Frank C., assignor.)						
Sessions, Frank L., assignor to J. A. Jeffrey, Columbus, Ohio. Wire-carrier	809,226	Jan. 2	1200	245	120	265
Sessions, Frank L., assignor to J. A. Jeffrey, Columbus, Ohio. Brush-holder for motors or generators	813,523	Feb. 27	4018	880	120	2609
Setter, Michael, assignor to American Electric Telephone Company, Chicago, Ill. Telephone-transmitter	811,098	Jan. 30	5040	1053	120	1255
Settine, Pietro, and P. Hoover, Steelton, Pa. Automatic air-pipe coupling	812,533	Feb. 13	2042	447	120	1983
Seville, Leo, *et al.* (See Swallow, Fredric, assignor.)						
Sewall, Percy R. (See Perkins and Sewall.)						
Sewell, William N., Winchester, Ky. Collapsible box	810,574	Jan. 23	4031	830	120	1001
Sexsmith, Emerson V., Fond du Lac, Wis., and D. E. Moulton, Belle Plaine, Iowa. Automatic air-coupling	811,961	Feb. 6	860	189	120	1664
Seyton, Arthur R., Los Angeles, Cal. Paper-folding machine	813,328	Feb. 27	4147	909–10	120	2537
Seyton, Arthur R., Los Angeles, Cal. Paper-holder	813,994	Feb. 27	4149	910	120	2537
Seyboth, Friedrich W., and E. K. A. Baumann, Zwickau, Germany. Belt-shifter	809,330	Jan. 9	1443	288	120	333

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Seyfang, John F. (See Bennett and Seyfang.)						
Seyhers, Frank, Lead, assignor of one-half to J. Lapp, Rochford, and R. H. Driscoll, Lead, S. D. Railway-tie	809,401	Jan. 9	1619	328	120	389
Seymour, Albert P., Syracuse, assignor to Pass & Seymour, Incorporated, Solvay, N. Y. Socket for incandescent electric lamps	811,263	Jan. 30	5375	1121	120	1327
Seymour, Charles D., Rensselaer, N. Y. Adjustable leg for billiard-tables	809,078	Jan. 2	911	191	120	202
Seymour, Georga. (See Lidks and Seymour.)						
Shaaber, Mahlon, Reading, Pa. Ball-bearing trolley-wheel bushing	809,852	Jan. 9	2480	516	120	579
Shackleford, Gibbon C., Allegheny, Pa. Charging apparatus for blast-furnaces	809,754	Jan. 9	2301	477	120	539
Shafer, Lemeon P., and C. Devis, Canton, Ohio. Sand or clay screen	810,662	Jan. 23	4226	875	120	1045
Shaffer, Francis F., assignor of one-third to P. W. Cavanaugh, Cumberland, Md. Railway-car truck	810,815	Jan. 23	4477	931	120	1099
Shaffield Car Company. (See Donovan, James, assignor.)						
Shaker, Alfred, Chicago, Ill. Pantograph	811,333	Jan. 30	5526	1152	120	1359
Shakespeare, Franklin H., East Orange, N. J. Continuous-rail frog and switch	812,687	Feb. 13	2337	511–12	120	2039
Shanck, Henry K., Cleveland, Ohio. Explosive-engine	813,748	Feb. 27	4433	978–9	120	2598
Shanklin, Philip A., assignor to J. E. Taylor, Sandoval, Ill. Rolling-colter standard and fork attachment	811,447	Jan. 30	5724	1199	120	1400
Shankwiler, Donald P., South Bend, Ind. Ruling device	810,356	Jan. 16	3547	730	120	858
Shannon, Charles E., Marble City, Ind. Ter. Railway-tie	813,243	Feb. 20	3435	757	120	2322
Shannon, Charles V., Dawson, Canada. Copy-holder	811,962	Feb. 6	862	189	120	1664
Shannon, John J., Bangor, Me. Lifting-jack	809,584	Jan. 9	1988	408	120	464
Shahnon, Peter, Chicago, Ill. Speed-changing mechanism	812,888	Feb. 20	2732	601	120	2170
Sharman, John A. (See Thompson and Sharman.)						
Sharp, John, Glasgow, Scotland. Rotary exhauster	812,688	Feb. 13	2342	512	120	2040
Sharp, John M., Chattanooga, Tenn. Calculating-machine	810,090	Jan. 16	2982	622	120	740
Sharp, Lee C., Omaha, Nebr., assignor to American Can Company, New York, N. Y. Apparatus for forming and soldering can-bodies	812,955	Feb. 20	2870	634–5	120	2202
Shatto, Clyde O., Sharon, Pa., and L. S. Denison, Ravenna, Ohio. Electric time-switch	811,589	Feb. 6	109	23–4	120	1509
Shaules Amusement Construction Company. (See Shaules, Herbert A., assignor.)						
Shaules Herbert A., assignor to Shaules Amusement Construction Company, New York, N. Y. Target	811,963	Feb. 6	863	190	120	1665
Shaw, John, Kirwin, Wyo. Lock-buckle	812,372	Feb. 13	1726	378	120	1918
Shaw, Ora D., Boston, Mass. Sewing-machine	809,980	Jan. 16	2761	568	120	691
Sheafer, James E. (See Skinner and Sheafer.)						
Sheaffer, James E., assignor of one-half to O. C. Skinner, Burnham, Pa. Preventing the formation of clinker in gas-producers	809,021	Jan. 2	786	169	120	173
Shearley, Arthur M., Stockton, Cal. Fiber-baling machine	812,155	Feb. 6	1266	277	120	1747
Shearer, Andrew, Frankfort, Kans. assignor of one-half to L. Kirlin, Kansas City, Mo. Combined lister-plow and planter	810,576	Jan. 23	4033	830	120	1001
Shedd, Harrison B. (See Solomon, Emmet O., assignor.)						
Sheehy, William E., Boston, Mass. Power-hammer for forging tapered work	811,669	Feb. 6	263	58	120	1543
Sheets, Henry W. (See Straube, Francis M., assignor.)						
Sheets, Jacob L., Stella, Wash. Detachable saw-handle	811,099	Jan. 30	5041	1054	120	1255
Sheetz, William J., assignor of one-half to H. M. Baker, Washington, D. C. Hot-water heating system	812,889	Feb. 20	2734	601–2	120	2171
Sheetz, William J., assignor of one-half to H. M. Baker, Washington, D. C. Boiler	812,890	Feb. 20	2736	602	120	2171
Sheffield Car Company. (See Donovan, James, assignor.)						
Shelby Steel Tube Company. (See Wikstrom, Malcolm, assignor.)						
Shellenberger, John, Rome, Ga. Crate-nailing-up form	811,448	Jan. 30	5726	1199	120	1401
Shellenberger, John, Rome, Ga. Fruit-crate	811,449	Jan. 30	5729	1200	120	1401
Shem, George W., assignor to Alliance Machine Company, Alliance, Ohio. Automatic brake	810,227	Jan. 16	3273	678	120	797
Shepard, Amos, Plainsville, assignor to Russell & Erwin Manufacturing Company, New Britain, Conn. Latch	809,534	Jan. 9	1869	388	120	445
Shepard, Charles H., New York, assignor to Wyckoff, Seamans & Benedict, Ilion, N. Y. Type-writing machine	808,875	Jan. 2	492	106–7	120	110
Shepard, James A., assignor to General Pneumatic Tool Company, Montour Falls, N. Y. Pneumatic dolly	813,921	Feb. 27	4792	1066	120	2675
Shepard, William E., Paris, France. Steam-turbine	811,578	Feb. 6	653	143–5	120	1624
Shepherd, Frank D., Salt Lake City, Utah. Smokeless furnace	811,746	Feb. 6	396	85–7	120	1573
Shepherd, Harry C., Crete, Nebr. Cuff-fastening	812,603	Feb. 13	2193	476	120	2012
Shepherd, John, Toledo, Ohio. Adjustable bed-bottom	813,456	Feb. 27	3874	849	120	2475
Shepherd, John H., Huron, Ohio. Window-sash	809,900	Jan. 16	2763	568	120	692
Sherer, Ralph, Eaton, Ohio. Telephone system	813,330	Feb. 20	3620	794	120	2361
Sheridan, Frank, Anamosa, Iowa. Dustless attachment for brooms	809,901	Jan. 16	2764	568	120	692
Sheridan, Frank E., *et al.* (See Mitchell, Ira O., assignor.)						
Sherwood, Matthew M., assignor of one-half to B. K. Nyce, Scranton, Pa. Fifth-wheel	812,096	Feb. 6	1121	247	120	1716
Sherwood, Stansfield. (See Jolly, Charles L., assignor.)						
Shevlin, George F. (See Baker, Shevlin, and Baker.)						
Shilling, W. W., executor. (See Wheeler and Heckert.)						
Shimmel, Newton J., Summerville, Pa. Vegetable-disintegrator	810,816	Jan. 23	4478	931	120	1099
Shipton, Frank T., Kinsikinick, Ohio. Safety-stirrup	811,100	Jan. 30	5042	1054	120	1255
Shive, Caleb C., Frederick, Okla. Ter. Latch device	813,595	Feb. 27	4151	910	120	2537
Shiverick, Charles, Omaha, Nebr. Foot-measure	812,303	Feb. 13	1607	353	120	1892
Shoemaker, Frank H. (See Dolan and Shoemaker.)						
Shortt, Edward G., Carthage, N. Y. Explosive-gas engine	812,204	Feb. 13	1608	353–4	120	1892
Shubert, Charles M., Philadelphia, Pa. Comb	812,241	Feb. 13	1475	323	120	1861
Shuster, Franklin B., New Haven, Conn. Wire straightening and cutting-off machine	809,636	Jan. 9	2082	433–3	120	486
Siani, Bernard. (See Frazier and Sullivan, assignors.)						
Sidwell, Lester L., Rivera, Cal. Pneumatic-tire protector	812,373	Feb. 13	1727	378	120	1918
Sieber & Trussell Manufacturing Company. (See Nelson, Charles R., assignor.)						
Sieber & Trussell Mfg. Co. (See Trussell, Emory A., assignor.)						
Siegfried, Robert, Pittsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company. Interconnected suspension means for gearless motors	812,891	Feb. 20	2737	602	120	2171
Silberman, Henry, New York, N. Y. Display device for millinery articles	809,760	Jan. 9	2300	478	120	540
Silver & Company. (See Ernst, John H., assignor.)						
Silverberg, Jacob, Pittsburg, Pa. Heater	809,902	Jan. 16	2765	569	120	692
Silvernail, Isaac, assignor of one-half to J. Speirs, Syracuse, N. Y. Game-board	809,253	Jan. 9	2051	516	120	579
Silvey, Faines N., Boaz, Ala. Hot-air engine	811,579	Feb. 6	655	145–6	120	1625
Sim, John, Liverpool, England. Paper-holder	809,329	Jan. 9	1445	288	120	333
Simering, John C., Baltimore, Md. Peanut-vender	813,095	Feb. 20	3098	662	120	2361
Simms, James C., Jr., and A. P. Olson, Chicago, Ill. Frame for wind-shields for automobiles	813,894	Feb. 27	4089	891	120	2609
Simmons, Charles, Paignton, assignor to C. Simmons' "Drillibits," Limited, London, England. Appliance for lifting and turning drills for rock-boring and other purposes	808,876	Jan. 2	496	107–8	120	112

Alphabetical list of patentees for January and February—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Simmons' "Drillbite," Charles. (See Simmons, Charles, assignor.)						
Simmons, George W., St. Louis, Mo. Cyclometer attachment for type-writing machines.	813,826	Feb. 27	4021	881	120	2510
Simmons Manufacturing Company. (See Gall, John F., assignor.)						
Simmons, Samuel T., and W. T. Moore, Columbus, Ohio. Sander	810,209	Jan. 16	3449	713	120	836
Simon, William F., West Hoboken, N. Y. Toy whip	811,984	Feb. 6	865	190	120	1065
Simonds, Frank A., Grand Rapids, Mich. Heating by steam	811,670	Feb. 6	266	58	120	1043
Simons, Domenico R. de, *et al.* (See Simons, Michele G. de, assignor.)						
Simons, Michele G. de, assignor of five-eighths to D. R. de Simons and Wilkinson Sword Company, Limited, London, England. Clutch mechanism	809,331	Jan. 9	1447	293–4	120	352
Simplex Manufacturing Company. (See Fancher, Charles J., assignor.)						
Simplex Manufacturing Company. (See Fancher and Parmelee, assignors.)						
Simplex Railway Appliance Company. (See Bauer, Carl E., assignor.)						
Simpson, George, Mariner Harbor, N. Y. Submarine vessel and mechanism connected therewith	812,956	Feb. 20	2879	636	120	2204
Simpson, Herbert S. (See Simpson, Peter L., assignor.)						
Simpson, Jacob C. (See Pruett and Simpson.)						
Simpson, Joseph B., assignor of one-half to C. R. Thomas, Washington, D. C. Ground connection for electric circuits	813,826	Feb. 27	4022	881	120	2510
Simpson, Peter L., assignor to H. S. Simpson, Chicago, Ill. Crusher	811,671	Feb. 6	267	58–9	120	1543
Sinclair, John R., Holyoke, Mass. Dandy-roll	812,835	Feb. 27	4022	1024	120	2641
Sinclair, William E., Mobile, Ala. Log-carrier	812,689	Feb. 13	2343	513	120	2041
Singer Manufacturing Company. (See Hemlab, Martin, assignor.)						
Singer, Roy H., Uniontown, Md. Gate for wire fences	812,690	Feb. 13	2345	513	120	2041
Singleton, John, Manchester, England. Horseshoe	809,144	Jan. 2	1033	213–14	120	226
Singleton, Thomas D. (See Mitchell and Singleton.)						
Sinsheimer, Sidney W., New York, N. Y. Automatic lift-separator	809,022	Jan. 2	787	170	120	173
Sisson, Albert H., *et al.* (See De France, Murry A., assignor.)						
Sittmann, Gustav, Brooklyn, assignor to H. S. Brown, New York, N. Y. Oscillating electric fan	810,174	Jan. 16	3142	660–1	120	771
Sitton, Charles K., and J. H. Williams, Portland, Oreg. Take-down square	813,922	Feb. 27	4795	1058	120	2675
Sitzler, John J., New York, N. Y. Marine vessel	812,804	Feb. 13	2194	478	120	2012
Sjoberg, Nils P., Jamestown, N. Y. Door	809,145	Jan. 2	1034	214	120	227
Skamp, Robert, *et al.* (See Mellinger, George B., assignor.)						
Skillings, Arthur H., Brooklyn, N. Y. Automatic air-brake coupling	813,747	Feb. 27	4435	979	120	2598
Skinner, George W., Jr. (See Camfield, Frank, assignor.)						
Skinner, James A., Denver, Colo. Feed-bag	811,490	Jan. 30	5731	1200	120	1402
Skinner, John H., Angus, N. Mex. Ter. Motor for churns, pumps, &c.	812,459	Feb. 13	1891	417	120	1952
Skinner, Orville C. (See Sheaffer, James E., assignor.)						
Skinner, Orville C., and J. E. Sheaffer, Buraham, Pa. Gas-producer	809,023	Jan. 2	789	170	120	174
Skinner, Sidney L., assignor to M. C. Setter, Ottawa, Ill. Shade-fixture	812,342	Feb. 13	1477	328	120	1851
Skirrow, John F., East Orange, N. J. Clamping-sleeve for pneumatic-despatch tubes	813,674	Feb. 27	4303	947	120	2570
Skov, Rasmus, and J. Forberg, Aneta, N. D. Brick-tongs	809,146	Jan. 2	1036	214	120	227
Slade, Walter W., Boston, and H. F. Bower, Everett, assignors to Globe Optical Company, Boston, Mass. Lens-cutting machine	813,450	Feb. 27	3876	849–50	120	2475
Slama, Lewis, Humboldt, Nebr. Rubber-tire guard	812,605	Feb. 13	2195	478	120	2012
Slaven, John W. (See Eaves, Slaven, and Wade.)						
Sleezer, Flavius J., Newark, Ill. Dumping mechanism	812,967	Feb. 20	2881	636–7	120	2204
Slick, Edwin E., Pittsburg, Pa. Furnace-roof	810,226	Jan. 16	3277	678	120	798
Sloan, James D. (See Ayers and Sloan.)						
Sloan, Patrick J., Bayonne, N. J. Clothes-line support	809,024	Jan. 2	790	170	120	174
Slocum, John C., assignor to J. A. Jeffrey, Columbus, Ohio. Clam-shell bucket	813,527	Feb. 27	4023	881	120	2510
Slocum, John C., assignor to J. A. Jeffrey, Columbus, Ohio. Clam-shell bucket	813,528	Feb. 27	4026	882	120	2511
Small, William A., San Francisco, Cal., assignor to Noiseless Typewriter Company. Roller for type-writers	811,800	Feb. 6	503	112	120	1563
Smart, Earl B. (See Smart, Salma H., assignor.)						
Smart, Salma H., assignor to E. B. Smart, Grand Rapids, Wis. Core for paper-rolls	812,305	Feb. 13	1813	354	120	1894
Smarup, Nelson, Amsterdam, N. Y. Needle-operating mechanism for looms	811,560	Feb. 6	111	24	120	1509
Smead, Burton A. (See Smead, Isaac D., assignor.)						
Smead, Isaac D., assignor to B. A. Smead, Cincinnati, Ohio. Movable roadway	812,374	Feb. 13	1728	379–80	120	1919
Smedley, Jacob R., Chicago, Ill. Interchangeable cultivator and seed-drill	811,334	Jan. 30	5528	1152	120	1360
Smith, Arthur A., Eaglegrove, Iowa. Wire-stretcher	809,025	Jan. 2	792	171	120	175
Smith, Arthur P. (See Smith, Hinsdale and A. P.)						
Smith, Burgess, assignor to J. R. Hill, Washington, D. C. Transfer-press and attachments therefor	811,672	Feb. 6	270	59–60	120	1544
Smith, Channing. (See Rae, James J., assignor.)						
Smith, Charles. (See Thomas, Charles W., assignor.)						
Smith, Charles A., Chicago, Ill. Core-making machine	812,606	Feb. 13	2190	478–9	120	2013
Smith, Charles D., Fond du Lac, Wis. Electric surface and elevated trolley-railway	811,101	Jan. 30	5044	1054–5	120	1266
Smith, Charles E., assignor to S. Morgan Smith Company, York, Pa. Turbine	809,147	Jan. 2	1036	214–15	120	227
Smith, Charles L. (See Kent and Smith.)						
Smith, Charles M. (See La Sor and Smith.) (Reissue.)						
Smith, Christian. (See Booth and Bittle, assignors.)						
Smith, Clark J., assignor to Hardscog Wonder Drill Company, Ottumwa, Iowa. Rock-drill	812,375	Feb. 13	1722	380	120	1919
Smith, Clark J., assignor to Hardscog Wonder Drill Company, Ottumwa, Iowa. Rock-drill	812,774	Feb. 13	2002	550	120	2073
Smith, Clinton D., Russell, Iowa. Road-leveling machine	808,877	Jan. 2	499	106	120	112
Smith Co., T. L. (See Letord, Philip H., assignor.)						
Smith, D. J., *et al.* (See Faulk, James M., assignor.)						
Smith, Elias A., Wolverville, Mich. Fence-post	811,451	Jan. 30	5733	1200	120	1402
Smith, Everard E., and H. F. Jones, Philadelphia, Pa. Slip-joint connection for dental engine	813,178	Feb. 20	2315	729	120	2286
Smith, Francis F., assignor to J. Anstice, Rochester, N. Y. Slicing-machine	811,463	Jan. 30	5734	1200–1	120	1402
Smith, Frank O. (See Kay and Smith.)						
Smith, Frank W., Pittsburg, Pa. Automatic sprinkler	813,881	Feb. 20	2084	676	120	2249
Smith, Frederick (See Newark, Ottobar H., assignor.)						
Smith, Frederick B. (See Smith, Lord G. and F. B.)						
Smith, George F., Fairmore, W. Va. Motor	813,179	Feb. 20	2316	729–30	120	2286
Smith, George W., assignor to Robert Mitchell Machinery Co., Detroit, Mich. Lip-turner	809,333	Jan. 9	1448	294	120	353
Smith, Hamilton L., Chicago Park, Mass. Rifle-telescope	812,376	Feb. 13	1726	380	120	1921
Smith, Hinsdale, assignor of two-thirds to J. S. Hopkins and G. J. Hooper, Richmond, Ind. Lathe	813,119	Feb. 20	2302	700	120	2275
Smith, Horace H. (See King, Orestes, assignor.)						
Smith, Hugh A., Rush, and W. F. Frank, Dundee, Ill.; said Frank assignor of one-tenth to said Smith	809,755	Jan. 9	2002	477	120	539

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Smith, Henry C., assignor to Smith-Warren Company, Boston, Mass. Window-frame	810,887	Jan. 23	4631	985–6	120	1131
Smith, Henry P., and F. J. Hobson, Guanajuato, Mexico. Agitator for cyanid solutions.	812,460	Feb. 13	1892	417	120	1952
Smith, Hinsdale and A. P., Springfield, Mass. Metal vehicle-body	813,460	Feb. 27	3980	850–1	120	2476
Smith, James C., San Francisco, Cal. Rotary hook-support for garments and the like	812,601	Feb. 13	2346	513	120	2041
Smith, James C., and J. S. Davis, Montgomery, Ala. Time-indicator for letter-boxes	812,602	Feb. 13	2347	514	120	2041
Smith, James L., Piru, Cal. Quick-acting monkey-wrench	812,180	Feb. 20	3318	730	120	2260
Smith, James M., Wender, Cal. Miter-box and saw-guide	810,175	Jan. 16	3145	661–2	120	772
Smith, John D., assignor of one-half to Pee Dee Iron Works, Cheraw, S. C. Truck	811,965	Feb. 6	886	190	120	1065
Smith, John G., Kaltonberg, Tenn. Churn	811,109	Jan. 30	5045	1055	120	1264
Smith, Joseph C., *et al.* (See Kelly, Alonzo, assignor.)						
Smith, Levi O. and F. B., South Sterling, Pa. Traction-engine	808,878	Jan. 2	500	109	120	113
Smith, Louis C. (See Vinton, John H., assignor.)						
Smith, Louis R., Denver, Colo. Book-index	813,748	Feb. 27	4437	979	120	2598
Smith, Nathan, Stevensville, Md. Oil-cup	811,801	Feb. 6	504	113	120	1502
Smith, Norman R., Seattle, Wash. Steam-turbine	812,603	Feb. 13	2348	514	120	2041
Smith, Oberlin, Bridgeton, N. J. Press	808,694	Jan. 2	134	31–2	120	32
Smith Premier Typewriter Company. (See Briggs, Arthur J., assignor.)						
Smith, Richard B., New York, N. Y. Shadow-clock	813,836	Feb. 27	4634	1024–5	120	2642
Smith, Robert C., Oak Park, Ill. Mixing and measuring apparatus	809,585	Jan. 9	1969	409	120	464
Smith, Russell G., assignor of one-half to Auto-Car Equipment Company, Buffalo, N. Y. Tire	813,529	Feb. 27	4029	882	120	2512
Smith, Sidney F., Freeport, and S. S. Street, New York, N. Y. Window-screen	808,695	Jan. 2	137	32	120	32
Smith & Sons Mfg. Co. (See Liverpool, Winfield S., assignor.)						
Smith-Warren Company. (See Smith, Henry C., assignor.)						
Smith, Watson R., Jackson, Mich. Cushion-spring	813,244	Feb. 20	3437	757	120	2323
Smith, Willard C., assignor of one-half to F. G. Noyes, Coldwater, Mich. Tool for operating upon jar-covers	810,984	Jan. 30	4848	1009	120	1213
Smith, William, La Crescent, Minn. Stump-puller	808,879	Jan. 2	502	109	120	113
Smith, William F., assignor of one-half to A. C. Jones, Jackson, Miss. Adding-machine	808,696	Jan. 2	138	33–3	120	32
Smith, William G. (See Bolin, Nils P., assignor.)						
Smith, William S., Berkeley, Cal. Bucket for impulse water-wheels	811,802	Feb. 6	505	113	120	1502
Smock, Jasper D., Terre Haute, Ind. Head-rest for beds	808,700	Jan. 2	143	34	120	35
Smyth, Milton B., Holton, Kans. Truss	808,697	Jan. 2	145	34	120	34
Sneddon, James P., Barberton, Ohio, assignor to Stirling Consolidated Boiler Company, New York, N. Y. Header connection	813,245	Feb. 20	3439	758	120	2323
Snell, Harry K. (See Vogel and Snell.)						
Snelling, John F. (See Owen and Snelling.)						
Snow, Jacob H., Indianapolis, Ind. Burglar-alarm	812,892	Feb. 20	2738	602–3	120	2172
Snow & Petrelli Mfg. Co. (See Petrelli, Joseph, assignor.)						
Snyder, John A. L., Bonnie, Cal. Fountain-pen	808,880	Jan. 2	504	110	120	113
Snyder, John S. and R. A., New Lexington, Pa. Wire-stretcher	813,837	Feb. 27	4635	1025	120	2642
Snyder, Ross A. (See Snyder, John S. and R. A.)						
Snypp, Charles E., Gretna, La., assignor to Southern Cotton Oil Company, Jersey City, N. J. Electric scale for accurate lard-weighing	809,026	Jan. 2	793	171	120	175
Sobers, Eugene F., Bethlehem, Pa. Wheel-tire	812,893	Feb. 20	2730	603	120	2172
Sochurek, Frank, Sr., Milwaukee, Wis. Shipping-crate	809,854	Jan. 9	2483	516	120	580
Société Générale du Laminage Annulaire. (See Mason, Alfred, assignor.)						
Sohns, Albert. (See Carl and Sohns.)						
Solar Furnace and Power Co. (See Carter, Albert, assignor.)						
Solomon, Emmet G., Omaha, assignor of one-half to H. B. Shedd, Ashland, Nebr. Trailing fender	808,783	Jan. 2	328	70	120	73
Solon, Thomas J. (See Kreisiger, Joseph, assignor.)						
Somers Amos N., Sharon, Mass. Automatic mixer and distributer	811,749	Feb. 6	307	87	120	1573
Somers, Joseph. (See Sweet, Warren, assignor.)						
Sorenson, Severin N. (See Daws, Henry L., assignor.)						
Sorenson, James W., Grayling, Mich. Cab-runner	811,453	Jan. 30	5737	1201	120	1403
Sorenson, Nels A. (See Caldwell and Sorenson.)						
Sorg, Frederick W., Englewood, N. J. Cable-hanger	809,998	Jan. 16	2767	589	120	993
Sose, Joseph, New York, N. Y. Hinge	809,027	Jan. 2	795	172	120	175
Southard, George L., Southard, Okla. Ter., assignor to Union Tank Line Company, Bayonne, N. J. Railway tank-car	812 096	Feb. 6	1123	247	120	1717
Southern Cotton Oil Company. (See Snypp, Charles E., assignor.)						
Sowerby, William, Indiana, Pa. Attachment for culinary vessels	810,817	Jan. 23	4479	931	120	1059
Spangenberg, Brewster H., Germantown, Pa. Adjustable bracket	811,335	Jan. 30	5529	1153	120	1360
Sparks, Henry O., Shelbina, Mo. Tilting hay-fork	810,985	Jan. 30	4849	1009	120	1213
Sparks, William A., Zurich, Kans. Magazine	810,310	Jan. 16	3451	713	120	837
Sparre, Fin, Wilmington, Del. Blank smokeless-powder cartridge	812,156	Feb. 6	1268	278	120	1748
Sparre, Fin, assignor to E. I. Du Pont de Nemours Powder Company, Wilmington, Del. Explosive	812,958	Feb. 20	2883	.....	120	2204
Sparre, Fin, assignor to E. I. Du Pont de Nemours Powder Company, Wilmington, Del. Explosive	812,959	Feb. 20	2885	.....	120	2205
Spaulding, Elijah F., Troy, assignor to E. F. Emmerich, Brooklyn, N. Y. Coin-controlled vending-machine	810,576	Jan. 23	4086	830–1	120	1002
Spear, Lawrence Y., assignor to Electric Boat Company, Greenport, N. Y. Means for steering submarine and submergible boats	812,306	Feb. 13	1814	354–5	120	1894
Spear, Murray H., assignor to B. E. Burrowes, London, England. Apparatus for holding, turning, threading, and cutting pipes	813,530	Feb. 27	4031	883	120	2513
Spears, Mathew E., Neame, La. Logging-cart	808,861	Jan. 2	507	110	120	114
Speed, James B. (See Isaacs and Speed.)						
Speed, James B., Berkeley, assignor to Rifled Pipe Company, San Francisco, Cal. Fluid pipe-line	808,782	Jan. 2	327	70	120	73
Spear, Arthur E., Pittsburg, Pa. Partitioned packing-case	813,246	Feb. 20	3440	758	120	2323
Spear, James R., assignor to Brownsville Glass Company, Pittsburg, Pa. Manufacturing glass	813,247	Feb. 20	3441	758	120	2323
Spear, James R., Pittsburg, and G. H. Harvey, Glenfield, assignors to Brownsville Glass Company, Pittsburg, Pa. Manufacture of glass	812,894	Feb. 20	2741	603	120	2173
Spear, James R., Pittsburg, and G. H. Harvey, Glenfield, assignors to Brownsville Glass Company, Pittsburg, Pa. Glass-drawing apparatus	813,248	Feb. 20	3443	758–9	120	2324
Spear, James R., Pittsburg, and H. A. Otto, Allegheny, Pa., assignors, by mesne assignments, to Mississippi Wire Glass Company, Jersey City, N. J. Glass-casting apparatus	813,675	Feb. 27	4305	947–8	120	2571
Spehr, James. (See Silversmith, Isaac, assignor.)						
Spence, James W., Racine, Wis. Work-holder	812,960	Feb. 20	2886	637	120	2205
Spencer, Ira H., Hartford, Conn., assignor to American Water Softener Company, Philadelphia, Pa. Rotary motor	809,637	Jan. 9	2080	433	120	499
Spencer, Israel H., St. Louis, Mo. Clutch	812,894	Feb. 13	2210	514	120	2042
Spencer, Jonathan R., Los Angeles, Cal. Photographic-printing frame	813,531	Feb. 27	4032	884	120	2513

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Sperry, Henry B., assignor of two-thirds to J. F. Townsend and H. Robinson, Akron, Ohio. Grate-bar	810,986	Jan. 30	4851	1010	120	1214
Spicer, John R., Lovelady, Tex. Combination-tool	810,987	Jan. 30	4852	1010	120	1214
Spies, Charles A., Menominee, Mich. Candle	808,698	Jan. 2	146	34	120	34
Spies, Peter H. F., assignor to D. E. Aarons, L. M. Hanlon, and W. T. Lambert, New York, N. Y. Electric switch for street arc-lamps, &c.	810,857	Jan. 16	3549	730	120	858
Spieske, Frederic O., Brooklyn, N. Y. Heat-storing compound	811,750	Feb. 6	399	.....	120	1574
Spimler, Charles, Blooming Prairie, Minn. Trap	809,148	Jan. 2	1040	215	120	228
Spitdorf, John, New York, N. Y. Induction-coil	812,607	Feb. 13	2199	479	120	2013
Sprague Electric Company. (See Libby, Sam H., assignor.)						
Springer Bros. Manufacturing Company. (See Springer, Henry J., assignor.)						
Springer, Charles E., Chicago, Ill. Scaffold-nail						
Springer, George D., and F. Lister, South Knoxville, Tenn. Car-wheel	809,402	Jan. 9	1621	329	120	289
Springer, Henry, St. Louis, Mo. Vestibule-curtain hook	810,437	Jan. 23	3754	773	120	988
Springer, Henry J., assignor to Springer Bros. Manufacturing Company, Edwardsville, Ill. Potato-planter	809,904	Jan. 16	2766	569	120	608
Springer, William N., assignor to Avery Manufacturing Company, Peoria, Ill. Vehicle-truck	812,695	Feb. 13	2352	515	120	2042
Squires, Thomas, Mariposa township, Ontario, Canada. Automatic safety railway-crossing	810,091	Jan. 16	2987	622–3	120	741
St. Clair, Augustus A., Indianapolis, Ind. Air-brake apparatus	809,028	Jan. 2	796	172	120	176
St. Clair, Moffat, Fort Wayne, Ind. Electrical brush-holder	812,697	Feb. 13	2361	517	120	2044
St. Hoor, Samuel S., assignor of one-half to W. S. and M. H. Clagett, Kansas City, Mo. Combined heating and illuminating device	811,673	Feb. 6	272	60	120	1545
St. Louis Car Company. (See Meinhard, Theodore P., assignor.)	811,591	Feb. 6	112	24	120	1510
St. Louis Car Company. (See Witte, Hubert, assignor.)						
St. Peter, Napoleon, Jr., assignor of two-thirds to D. King, Fairfield, and J. Cariveau, Waterville, Me. Street-cleaning apparatus	810,362	Jan. 16	3560	732–3	120	862
Stacks, Howard R., assignor to Geo. V. Creason Co., Philadelphia, Pa. Change-speed gearing	813,461	Feb. 27	3885	851	120	2477
Stadelman, George M., Akron, Ohio. Vehicle-tire	813,676	Feb. 27	4306	948	120	2571
Stafford, Frederick A., Charlton, Iowa. Lightning-arrester	808,862	Jan. 2	508	110	120	114
Stahl, Frederick A. (See Schoerk and Stahl.)						
Stahl, George, assignor of one-half to W. P. and J. I. Coffman, Dayton, Ohio. Paging-machine	810,577	Jan. 23	4042	831	120	1003
Stahl, Max, Chicago, Ill., assignor to C. H. Loew, Lakewood, Ohio. Circulating system for beer-filters	812,243	Feb. 13	1478	323	120	1861
Staib, Gustav, New York, N. Y. Store-service apparatus	810,092	Jan. 16	2989	623	120	742
Staley, Harrison L., assignor to Old Hickory Chair Company, Martinsville, Ind. Machine for shaping chair-legs for rockers	812,461	Feb. 13	1893	417–18	120	1952
Stalker, Daniel B., Hot Springs, Ark., assignor of one-half to A. S. Koyer, Los Angeles, Cal. Rotary engine	809,149	Jan. 2	1041	215–16	120	228
Stallman, Granville H., Philadelphia, Pa. Piston	811,256	Jan. 30	5579	1122	120	1228
Stambaugh, Francis M. (See Adreon and Stambaugh.)						
Stambaugh, Francis M., assignor to American Brake Company, St. Louis, Mo. Vise	809,271	Jan. 2	1324	269	120	291
Stambaugh, Francis M., assignor to American Brake Company, St. Louis, Mo. Machine for cutting gear-wheels	811,236	Jan. 30	5530	1153–4	120	1200
Stambaugh, Francis M., assignor to American Brake Company, St. Louis, Mo. Gearing	811,751	Feb. 6	401	87	120	1574
Stanbro, Dono D., Lamar, Mo. Baling-press	812,696	Feb. 13	2354	515–17	120	2043
Standard Adding Machine Company. (See Hinchman and Schroeder, assignors.)						
Standard Audit Company. (See Frank, Robert J., assignor.)						
Standard Automatic Lubricator Company. (See Baird and Durkin, assignors.)						
Standard Elevator Interlock Company. (See Muckld, John S., assignor.)						
Standard Game and Toy Company. (See Griswold, George W., assignor.)						
Standard Oiled Clothing Company. (See Lorsch, Gideon D., assignor.)						
Standard Optical Company. (See Van Tassel, John R., assignor.)						
Standard Pressed Steel Company. (See Hallowell, Howard T., assignor.)						
Standard Pulley Manufacturing Company. (See Fischer, William C., assignor.)						
Standard Sewing Machine Company. (See Diehl, Jacob, assignor.)						
Standley, William F. (See Hielscher and Standley.)						
Stanford, Robert, and P. R. Colpitt, Halifax, Canada. Signal	809,020	Jan. 2	798	172	120	176
Stange, Herman, Cincinnati, Ohio. Warming-kettle	810,220	Jan. 16	3278	679	120	799
Stanley Electric Manufacturing Company. (See Déri, Max, assignor.)						
Stanley Electric Manufacturing Company. (See Lloyd, William J., assignor.)						
Stanley Electric Manufacturing Company. (See Wilson, Leonard, assignor.)						
Stanley, Ethelbert A., and J. E. Anger, Preston, England. Tram-car and other like vehicle	812,097	Feb. 6	1131	247–8	120	1719
Stanley, Frank E., and J. L. Gillmore, Bellingham, Wash. Convertible car	813,240	Feb. 20	3447	760	120	2524
Stanley, George P., Dixfield, assignor to O. H. Hersey, trustee, Portland, Me. Cutter for cutting toothpicks from veneer strips	812,895	Feb. 20	2743	604	120	2173
Stanley Rule & Level Company. (See Richards, Hubert P., assignor.)						
Stanley, William, Great Barrington, Mass. Electric meter	809,995	Jan. 16	2769	569–70	120	663
Staples & Hanford Company. (See Staples, John A., assignor.)						
Staples, John A., assignor to Staples & Hanford Company, Newburgh, N. Y. Springwork	812,923	Feb. 27	4798	1059	120	2676
Staples, John A., assignor to Staples & Hanford Company, Newburgh, N. Y. Springwork	812,924	Feb. 27	4799	1059	120	2676
Staples, Sydney F., *et al.* (See Bishop and Down, assignors.)						
Stark, Charles W., Mountain Lake, Minn. Latch for wagon end-gates	810,663	Jan. 23	4236	875–6	120	1045
Starnes, Green R., Charlotte, N. C. Dumping-wagon	810,664	Jan. 23	4230	876	120	1045
Starr, Hyman, New York, N. Y., and F. L. Nichols, Stamford, Conn.; said Nichols assignor to said Starr. Machine for sewing looped fabrics	809,856	Jan. 9	2485	517	120	580
Starrett, Leroy S. (See Baltzer and Starrett.)						
Starrett, Leroy S., and J. A. Adell, assignors to L. S. Starrett Company, Athol, Mass. Quick-adjusting micrometer	809,272	Jan. 2	1225	269	120	292
Stasaart, Lois O., assignor of two-thirds to O. W. Mielks, Portland, Oreg. Envelop-sealer	810,093	Jan. 16	2992	623	120	743
Staten, John W., Brownwood, Tex. Sash-fastener	811,883	Feb. 6	807	113	120	1694
Steele, Edwin G., Minneapolis, Minn. Bag-fastener	809,786	Jan. 9	2504	477	120	630
Steadler, Joseph H., *et al.* (See Mellinger, George B., assignor.)						
Steeman, George, Chicago, Ill. Bag-holder	812,397	Feb. 13	1616	355	120	1894
Steiber, Bernard T., Utica, N. Y. Knitting-machine	808,724	Jan. 2	220	71	120	73
Steiber, Bernard T., Utica, N. Y. Knitting-machine	810,575	Jan. 23	4044	883–3	120	1003
Steichel, Archibald W. F., assignor to J. A. Jeffrey, Columbus, Ohio. Conveyer-belt support	809,227	Jan. 2	1201	246	120	268
Steichel, Archibald W. F., assignor to J. A. Jeffrey, Columbus, Ohio. Conveyer	811,189	Jan. 30	5525	1092–4	120	1286
Steel Ball Company. (See Hill, Christian C., assignor.)						
Steel, Wm. Tennyson, Ark. Combined fan and score-card	809,895	Jan. 9	1271	262–3	120	445
Steele, Clarence M., Statesville, N. C. Internal-combustion engine	813,220	Feb. 20	3449	760–1	120	2525

Alphabetical list of patentees for January and February—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Steele, Edwin G. (See Sutton and Steele.)						
Steele, Ernest M. (See Caywood and Steele.)						
Steele, Harry C., W. Stenson, and F. J. Trout, Jacksonville, Fla. Molding-machine	810,988	Jan. 30	4854	1010	120	1214
Steele, Samuel H., Canaan, Ind. Plow	809 787	Jan. 9	2305	477	120	530
Steele, Walter L. (See Sutton and Steele.)						
Steensland, James O., and W. Weaver, Blanchardville, Wis. Latch	811,880	Feb. 6	667	146	120	1626
Steere, Clarence E., Maywood, Ill., assignor to A. B. Dick Company. Duplicating-machine	811,674	Feb. 6	273	60–1	120	1545
Stage, Jacob, Arden, Nebr. Hame-fastener	812,462	Feb. 13	1896	418	120	1953
Stein, Charles, Akron, Ohio. Vehicle-tire	810,888	Jan. 23	4635	966	120	1123
Stein, Jacob, Coal Valley, assignor of one-third to L. K. Yoder and one-fourth to F. A. Baxendell, Pittsburg, Pa. Auger-bit	809,856	Jan. 9	2488	517	120	580
Stein, William. (See Adams, Isaac M., assignor.)						
Steinbach, George P., Baltimore, Md. Baby-tender	811,881	Feb. 6	668	146	120	1627
Steinbeck, William P. (See Weathers, Hoyt M., assignor.)						
Steinberg, Isaac, assignor to Hercules Safety Clasp Company, Nashville, Tenn. Clasp	813,536	Feb. 27	4637	1025	120	2642
Steinert, Carl, Munich, Germany. Device for transporting green malt	810,989	Jan. 30	4856	1011	120	1215
Steinhoff, Lyman O. (See Scott and Steinhoff.)						
Steinlehe, Therese, Berlin, Germany. Inverted incandescent gas-lamp	812,961	Feb. 20	2887	637	120	2205
Steinmetz, Charles P., Schenectady, N. Y., assignor to General Electric Company. System of electrical distribution	809,906	Jan. 16	2772	570	120	604
Steinmetz, Joseph A., Philadelphia, Pa. Turnbuckle	809,030	Jan. 2	799	173	120	176
Stenson, William. (See Steele, Stenson, and Trout.)						
Stenwall, Alfred, Kewanee, Ill. Slide-gate valve	809,857	Jan. 9	2489	517	120	580
Stephan, Alfred, Gross-Lichterfelde, near Berlin, Germany. Making a formic-aldehyde compound	812,608	Feb. 13	2200	.....	120	2013
Stephens, Augustus A., Bellaire, Ohio. Window-ventilator	809,238	Jan. 2	1203	248	120	266
Stephens, Charles H., Bartlett, Tex. Rail-joint	809,536	Jan. 9	1875	389	120	446
Stephensmeier, John H., St. Louis, Mo. Horseshoe	813,506	Feb. 27	4153	910	120	2538
Sterling, Ezra, Brooklyn, N. Y. Gold-separator	809,536	Jan. 9	1975	409–10	120	465
Sterling, Frank H., London, England. Tire for wheeled vehicles	809,537	Jan. 9	1876	389	120	446
Sterling, Samuel, Chickasawba, assignor of one-half to D. D. Hodges, Paragould, Ark. Vehicle hub and spindle	812,775	Feb. 13	2503	551	120	2074
Stern, Philip K., New York, N. Y. Cam-movement explosive-engine	809,333	Jan. 9	1452	294	120	353
Sterne, Louis, London, England. Gas-compressor	811,181	Jan. 30	5228	1094	120	1294
Sterné, Theodore, Paris, France. Elastic tire for vehicle-wheels	812,606	Feb. 13	2364	518	120	2044
Stevens, Abner M. and G. E., Malvern, Kans. Hay-stacker	809,538	Jan. 9	1879	390	120	447
Stevens, Alonzo E., Dallas Center, Iowa. Rotary engine	811,103	Jan. 30	5047	1055	120	1256
Stevens Arms & Tool Company, J. (See Savage, Arthur J., assignor.)						
Stevens, David, Ogden, Utah. Wagon-body	811,104	Jan. 30	5049	1055–6	120	1257
Stevens, George E. (See Stevens, Abner M. and G. E.)						
Stevens, George E., Lynn, Mass., assignor to General Electric Company. Electric heater for liquids	812,609	Feb. 13	2200	479	120	2013
Stevens, George E., Lynn, Mass., assignor to General Electric Company. Rheostat	812,700	Feb. 13	2367	518	120	2045
Stevens, John J., assignor of one-half to T. A. Lampton, Dallas, Tex. Clamp	812,699	Feb. 13	2366	518	120	2045
Stevens, Josiah P., Atlanta, Ga. Apparatus for engraving	810,990	Jan. 30	4857	1011	120	1215
Stevens, Richard H., Munhall, Pa. Adjusting mechanism for rope-drives	808,699	Jan. 2	147	35	120	34
Stevens, Richard H., Munhall, Pa. Metal-turning apparatus	809,997	Jan. 16	2776	570–1	120	606
Stevenson, John S., Detroit, Mich. Hopper-bottom car	813,181	Feb. 20	3319	730	120	2209
Stevenson, S. Price, Chester, Pa. Door-frame, door, and adjunctive mechanism for air-tight compartments	809,538	Jan. 9	2080	433	120	490
Stevenson, Thomas, Dunedin, New Zealand. Machine for bending metal bars	812,377	Feb. 13	1738	381	120	1921
Stewart, Francis L., Murraysville, assignor of one-half to S. E. Gill, Pittsburg, Pa. Making maize-sugar	810,818	Jan. 23	4480	932	120	1099
Stewart, Francis L., Murraysville, assignor of one-half to S. E. Gill, Pittsburg, Pa. Treatment of maize for the manufacture of cellulose products	811,523	Jan. 30	5860	.....	120	1426
Stewart, John, New Glasgow, Canada. Railway-track jack	811,524	Jan. 30	5861	.....	120	1429
Stewart, Robert A., assignor of one-half to A. J. Knoblock, San Francisco, Cal. Means for aging and purifying liquors	810,356	Jan. 16	3551	730	120	859
Stiarwalt, William L., and W. H. Cool, Bellefontaine, Ohio. Air-brake	811,909	Feb. 6	887	190	120	1686
Stickle, Fredrick W., assignor of one-half to E. W. Beach, Waterbury, Conn. Truck-wheel	811,525	Jan. 30	5862	1229	120	1429
Stickney, Burnham C., Elizabeth, assignor to Union Typewriter Company, Jersey City, N. J. Type-writing machine	810,438	Jan. 23	3755	773	120	936
Stickney, Burnham C., Elizabeth, assignor to Union Typewriter Company, Jersey City, N. J. Type-writing machine	810,859	Jan. 16	3552	730–1	120	860
Stickney, Burnham C., Elizabeth, N. J., assignor to Underwood Typewriter Company, New York, N. Y. Type-writing machine	810,860	Jan. 16	3555	731–2	120	860
Stickney, Burnham C., Elizabeth, N. J., assignor to Underwood Typewriter Company, New York, N. Y. Type-writing machine	811,182	Jan. 30	5230	1095	120	1294
Stickney, Henry R., Portland, Me. Turn-table for automobiles	811,183	Jan. 30	5232	1095	120	1295
Stiefel, John W. (See Johnson, Charles B., assignor.)	813,462	Feb. 27	3889	852	120	2478
Stiefel, Ralph C., Ellwood City, Pa., assignor, by mesne assignments, to National Tube Company. Mechanism for feeding tubular billets	811,526	Jan. 30	5863	1229–30	120	1430
Stiefel, Ralph C., Ellwood City, Pa., assignor to National Tube Company, New York, N. Y. Apparatus for rolling tubes and tubular bodies	813,597	Feb. 27	4154	911	120	2538
Stiles, Conrad A. (See Bailey, Ralph W., assignor.)						
Stillson, August, New York, N. Y. Manufacture of artificial fuel	809,998	Jan. 16	2777	.....	120	606
Stillwell, Frederick W., Scranton, Pa. Combined bayonet and telescope	813,677	Feb. 27	4307	948	120	2571
Stillwell, Lewis B., Lakewood, N. J. Electric car	811,887	Feb. 6	888	191–2	120	1686
Stillwell, Charles B., Wayne, Pa. Paper-footing machine	808,883	Jan. 2	510	110–15	120	114
Stimpson Computing Scale Company. (See Dunn, Frank P., assignor.)						
Stinebring, George W., Shippe, Ohio. Sawmill	813,463	Feb. 27	3890	852	120	2478
Stiner, James H., Gowen, Pa. Tack-puller	812,701	Feb. 13	2369	518	120	2045
Stinson, William J., Minneapolis, Minn. Acetylene-gas plant	809,473	Jan. 9	1760	366	120	489
Stirling Consolidated Boiler Company. (See Sneddon, James P., assignor.)						
Stirling, D. W., *et al.* (See Stirling, Joseph C., assignor.)						
Stirling, Joseph C., Baltzerova, assignor of four-sixths to D. W. Stirling and J. Ritts, Glade Mills, Pa. Elevating device	811,908	Feb. 6	871	182	120	1690
Stirling Silk Manufacturing Company. (See Rees, Eugene, assignor.)						
Stitsley, George J. (See Dreher, Earle E., assignor.)						
Stites, Townsend, assignor to Wabash Light Company, Gloucester City, N. J. Mantle-support	810,991	Jan. 30	4860	1012	120	1215
Stock, Friedrich. (See Lautter and Stock.)						
Stockmair, Hans, Baltimore, Md. Musical instrument	809,539	Jan. 9	1881	389	120	447

Alphabetical list of patentees for January and February—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Stoess, Louis, Pensig, Germany. Chimney for incandescent gas-burners	812,610	Feb. 13	2202	479	120	2014
Stoffel, Fernand, Paris, France. Manufacture of vegetable strips	812,463	Feb. 13	1897	419	120	1953
Stokes, Miles M., Nashville, Tenn. Halter	813,062	Feb. 20	3086	676	120	2289
Stokesbery, Alvaro R., Washington Court-House, and T. B. Lawhead, Greenfield, Ohio. Rein-supporter	812,806	Feb. 20	2744	604	120	2173
Stokoe, Carl E., Grand Haven, Mich. Mold for making concrete fence-posts	810,579	Jan. 23	4049	833	120	1004
Stokoe, John M., Cleveland, assignor to Prince Stokoe Oil Stove Company, Cincinnati, Ohio. Broiler	809,639	Jan. 9	2093	434	120	491
Stoll, Heinrich, Jr., Reutlingen, Germany. Knitting-machine	813,251	Feb. 20	3452	761	120	2225
Stone, Fred L., Schenectady, N. Y., assignor to General Electric Company. Rheostat	812,611	Feb. 13	2203	480	120	2014
Stone, Wilbur M. (See Chapman and Stone.)						
Stone, William F., et al. (See McCall, William W., assignor.)						
Stoneburner, Charles D. (See Stoneburner, John S. H. and C. D.)						
Stoneburner, John S. H. and C. D., Arlington, Va. Feed-box	811,592	Feb. 6	114	26	120	1510
Storey, Andrew W., Moston, near Manchester, England. Fusible link	811,256	Jan. 30	5379	1122	120	1328
Stork, Jonas, et al. (See Loewenstein, Maxmilian, assignor.)						
Storle, Ole O., Burlington, Wis. Elastic-fluid turbine	810,992	Jan. 30	4860	1012	120	1216
Storm, Edwin R., New York, N. Y. Printing-plate holder	809,220	Jan. 2	1204	246	120	268
Storm, Francis, Maywood, N. J. Hydrometer test-jar	810,361	Jan. 16	3559	732	120	862
Storms, Douglas G., Hamilton, Canada. Supporting apparatus for pathological conditions requiring a sitting position	810,580	Jan. 23	4050	833	120	1004
Story, Milton W., assignor of one-half to E. De Witt, Indianapolis, Ind. Attachment for washtubs	808,702	Jan. 2	152	35	120	36
Stots, Henry, Albert Lea, Minn. Box-fastener	812,308	Feb. 13	1617	355	120	1804
Stoughton, William S. (See Raymond and Stoughton.)						
Stout, Robert P. (See Meigs and Stout.)						
Stout, Robert P., assignor to Bethlehem Steel Company, South Bethlehem, Pa. Shrapnel	810,582	Jan. 23	4052	834	120	1005
Stout, Robert P., and F. G. Hughes, assignors to Bethlehem Steel Company, South Bethlehem, Pa. Sighting attachment for guns	810,581	Jan. 23	4051	833–4	120	1005
Stout, William H., Dayton, Ohio. Cylindrical-box trimmer	811,563	Feb. 6	117	26	120	1511
Stow, Audley H., Hunter, W. Va. Gun	809,640	Jan. 9	2094	434	120	491
Stowell, James A., Leominster, Mass. Polishing-machine	811,454	Jan. 30	5739	1201	120	1403
Straesser, Christian, Peoria, Ill. Line-holder	808,403	Jan. 9	1621	329	120	389
Strain, Charles M., assignor of one-third to Davidson Bros., Crawfordsville, Iowa. Disk-sharpener	809,334	Jan. 9	1455	294–5	120	354
Strange, Albert B. (See Laforêt, Jean, assignor.) (Reissue.)						
Strasburg, Frederick E., Rumford Falls, Me., assignor to Continental Paper Bag Company. Paper-bag machine	809,220	Jan. 2	1208	246–7	120	268
Strasburg, Frederick E., Rumford Falls, Me., assignor to Continental Paper Bag Company. Cutting mechanism	810,993	Jan. 30	4862	1012–13	120	1216
Strasburg, Frederick E., Rumford Falls, Me., assignor to Continental Paper Bag Company. Paper-bag machine	812,378	Feb. 13	1740	381–3	120	1921
Stratton, Joseph F. and R. S., Sullivan, Ind. Mine-harness	810,439	Jan. 23	3757	773	120	989
Stratton, Robert S. (See Stratton, Joseph F. and R. S.)						
Straube, Francis M., assignor of one-half to L. W. Goddard, Boulder, Colo. Wrench	809,858	Jan. 9	2491	518	120	581
Straube, Francis M., assignor of one-half to H. W. Sheets, Boulder, Colo. Sash lock and fastener	810,440	Jan. 23	3757	774	120	989
Straubel, Frederick L. G., Green Bay, Wis. File-cabinet	812,962	Feb. 20	2889	637	120	2205
Straus, Moses H., Indianapolis, Ind. Trousers-press	810,583	Jan. 23	4053	834	120	1005
Strauss, Joseph B., Chicago, Ill. Bridge and making the same	811,267	Jan. 30	5380	1122–3	120	1328
Strecker, Otto C., Darmstadt, Germany. Electrolytically preparing metals or alloys for lithographic purposes	810,899	Jan. 23	4036	966–7	120	1123
Streeper, Daniel H., and J. W. Oelenschlager, Norristown, Pa. Steam-separator and automatic shut-off	808,701	Jan. 2	150	35	120	35
Streeter, Herbert A., Chicago, Ill. Metal clip for uniting metal beams	810,819	Jan. 23	4481	932	120	1100
Strehlenert, Robert W., Djursholm, Sweden, and F. Reubold, assignors to Badische Anilin & Soda Fabrik, Ludwigshafen-on-the-Rhine, Germany. Cellulose compound and making the same	812,098	Feb. 6	1133	.....	120	1719
Stringer, Theodias, Girard, Ohio. Water-gage mechanism	809,474	Jan. 9	1762	364	120	421
Strob, John W., Decatur, Ill. Washing-machine	811,894	Feb. 6	508	114	120	1894
Strohm, Samuel D., Philadelphia, Pa. Railway signaling	809,999	Jan. 16	2778	571–3	120	685
Strohm, Samuel D., Philadelphia, Pa. Railway signaling	811,105	Jan. 30	5060	1056–7	120	1267
Strom, Victor A., assignor of one-half to W. H. Williamson, Alameda, Cal. Dredger	813,262	Feb. 20	3453	761	120	2226
Strook, Louis S., New York, N. Y. Lap-robe	811,337	Jan. 30	5633	1154	120	1361
Struever, Rudolph F., et al. (See Nelson, John, assignor.)						
Stuart, James W., Paris, Ill. Core-cutter for cement-block machines	812,702	Feb. 13	2370	519	120	2046
Stuart, John, Wellaston, Mass. Connecting-rod for engines	810,994	Jan. 30	4866	1013	120	1217
Stubier, Edward A., Oil City, Pa. Device for recovering articles from deep wells	812,379	Feb. 13	1746	383	120	1923
Stucky, Charles R., La Chaux-de-Fonds, Switzerland. Stem-winding mechanism for timepieces	812,963	Feb. 20	2890	638	120	2206
Stulp, Fred J., Muskegon, Mich. Water-gage	809,859	Jan. 9	2493	518	120	581
Stump, Osman L., assignor of two-thirds to J. Reidenbaugh and E. D. Packard, Marion, Ohio. Feed-water heater	810,441	Jan. 23	3759	774–5	120	989
Stumpf, Johann, Berlin, Germany, assignor to General Electric Company. Steam or gas turbine	811,752	Feb. 6	402	88	120	1574
Stumpf, Johann, Berlin, Germany, assignor to General Electric Company. Steam-turbine	811,805	Feb. 6	509	114	120	1894
Sturtevant Mill Company. (See Sturtevant, Thomas L. and T. J., assignors.)						
Sturtevant, Thomas J. (See Sturtevant, Thomas L. and T. J.)						
Sturtevant, Thomas L., Quincy, and T. J. Sturtevant, Wellesley, Mass., assignors to Sturtevant Mill Company, Portland, Me. Motor-vehicle	809,478	Jan. 9	1764	364	120	421
Stutz, Heinrich, Witten, Germany. Axle-box for railway-cars	809,404	Jan. 9	1623	329–30	120	389
Submarine Gold Mining Company. (See Schelbe, Edgar F., assignor.)						
Submarine Signal Company. (See Geib and Dewing, assignors.)						
Suchsland, Jesse L., Washington, D. C. Surgical table	810,820	Jan. 23	4483	932	120	1169
Sudre, Charles, Paris, France. Treatment of vinasses	810,442	Jan. 23	3762	776	120	989
Sullivan, Albert W., and W. Renshaw, Chicago, Ill. Railway-car	810,000	Jan. 16	2761	572–4	120	686
Sullivan, Albert W., St. Louis, Mo., and W. Renshaw, Chicago, Ill. Metal box-beam	810,001	Jan. 16	2766	575	120	687
Sullivan, Charles A., Windsor, Canada. Water-closet	811,582	Feb. 6	670	146	120	1687
Sullivan, Daniel O. (See Brazier and Sullivan.)						
Sullivan, Frank A. (See Meigs, Jakobsen, and Sullivan.)						
Sullivan, John Q., Winnipeg, Canada. Anticreeper for railways	808,902	Jan. 2	668	142	120	144
Sullivan, John H., Grand Rapids, Mich. Mold	813,248	Feb. 20	3455	761	120	2226
Sullivan, Stephen C., Chicago, Ill. Car-door cleat and sealing device	810,996	Jan. 30	4867	1013	120	1217
Summers, Daniel E., Mercer, Mo. Hay-stacker	812,986	Feb. 27	4091	1069	120	2686

Alphabetical list of patentees for January and February—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Sundstrom, Gabriel E. (See Levin and Sundstrom.)						
Suppes, Maximilian M., Elyria, Ohio. Skimming slag from molten metal	809,405	Jan. 9	1636	331	120	389
Susquehanna Silk Mills. (See Cleff, Bernhard, assignor.)						
Sussman, Leon, Bayonne, N. J., assignor of one-half to S. and E. R. Wilmer, New York, N. Y. Loose-leaf binder	809,897	Jan. 9	1977	410	120	466
Suter, Carl, and B. Redlich, Ratibor, Germany. Electrolytic production of metals of the earthy alkalies	813,532	Feb. 27	4034	884	120	2513
Sutherland, Jesse H., Dawkins, Colo. Hay-rake attachment	812,897	Feb. 20	2745	604	120	2173
Suttle, Willis A., Nineveh, Tex. Automatic fire-alarm	813,533	Feb. 27	4035	884	120	2513
Sutton, Henry M., W. L. and E. G. Steele, Dallas, Tex. Separating substances of different dielectric capacities	813,083	Feb. 20	3087	676	120	2250
Sutton, John W., Collinsville, Ind. Ter. Vehicle-spring	813,678	Feb. 27	4309	949	120	2572
Sutton, William H., assignor of one-half to J. T. Swank, Camden, Ark. Cotton-chopper	811,106	Jan. 30	4058	1058	120	1269
Sutton, William S., assignor to America Company, Rockford, Ill. Lock	810,584	Jan. 23	4055	834	120	1006
Susuki, Tosaburo, Sunamura, Japan. Vertical boiler	810,002	Jan. 16	2787	575	120	697
Susuki, Tosaburo, Sunamura, Japan. Flue-scraper for evaporators, boilers, and the like	810,998	Jan. 30	4869	1013–14	120	1218
Susuki, Tosaburo, Sumamura, Japan. Furnace	812,380	Feb. 13	1747	383–4	120	1922
Svenson, Charles W., assignor to Corbin Screw Corporation, New Britain, Conn. Two-speed hub	813,464	Feb. 27	3893	853	120	2479
Svenson, Charles W., assignor to Corbin Screw Corporation, New Britain, Conn. Two-speed hub	813,465	Feb. 27	3896	854	120	2479
Swagerty, Thomas I., Pleasanton, Kans. Broom-handle	812,309	Feb. 13	1619	356	120	1895
Swallow, Fredric, assignor of three-fourths to L. Settle, M. Haas, and J. E. Feland, Claremore, Ind. Ter. Churn	809,031	Jan. 2	800	173	120	177
Swan, Allan P., Dundalk, Ireland. Apparatus for purifying air	811,969	Feb. 6	873	193	120	1666
Swan, William B., Seymour, Conn. Bit-extender	810,230	Jan. 16	3280	679	120	799
Swank, John T. (See Sutton, William H., assignor.)						
Swank, Lafe, assignor to Dwiggins Wire Fence Company, Anderson, Ind. Wire-stretcher	810,003	Jan. 16	2790	576	120	698
Swanson, Alfred, Albuquerque, N. Mex. Ter. Necktie-fastener	811,455	Jan. 30	5740	1202	120	1404
Swanson, Andrew, St. Francis, Minn. Logging-sled	812,310	Feb. 13	1619	356	120	1895
Swanson, Herman S., Shenandoah, Iowa. Single-row cultivator	809,336	Jan. 9	1460	295–6	120	356
Swanson, Herman S., Shenandoah, Iowa, assignor to Swanson Mfg. Co. Cultivator	809,335	Jan. 9	1457	296	120	354
Swanson Mfg. Co. (See Swanson, Herman S., assignor.)						
Swantess, Samuel F., Itasca, Ill. Back-protection garment	812,612	Feb. 13	2204	480	120	2014
Swanton, Henry A., Roxbury, Mass. Engine	811,184	Jan. 30	5234	1095	120	1296
Swasey, Ambrose, and G. L. Fecker, assignors to Warner & Swasey Company, Cleveland, Ohio. Optical instrument	812,464	Feb. 13	1896	419	120	1953
Sweeney, Hugh H., et al. (See Sweeney, James M., assignor.)						
Sweeney, James M., assignor of two-thirds to F. M. Schwartz, Anaconda, Mont., and H. H. Sweeney, Seattle, Wash. Spray	813,254	Feb. 20	3456	762	120	2226
Sweeney, John, Johnstown, Pa. Gas-valve	810,443	Jan. 23	3764	775	120	940
Sweeny, Alfred P., Helena, Mont. Cutting and measuring machine	811,338	Jan. 30	5534	1154–5	120	1361
Sweet, Burton W. (See Knight and Sweet.)						
Sweet, Parker H., New York, assignor to Rotary File and Machine Company, Brooklyn, N. Y. Pinking-machine	812,465	Feb. 13	1901	419	120	1954
Sweet, Stephen S. (See Smith and Sweet.)						
Sweet, Warren, assignor of one-half to J. Somers, Fort Wayne, Ind. Mechanical movement for washing-machines	813,302	Feb. 20	3732	820	120	2384
Sweetser, George, Upper Norwood, assignor to T. De La Rue and Company, Limited, London, England. Fountain-pen	813,534	Feb. 27	4036	884	120	2513
Swett, Lyman R., Boston, Mass. Two-compartment envelop	810,585	Jan. 23	4056	835	120	1006
Swift, Edward S., trustee. (See Zange, Max C., assignor.)						
Swimmer, Robert, New York, N. Y., and E. B. Neelen, Lyndhurst, N. J. Gas-burner	811,970	Feb. 6	876	193–4	120	1668
Swinehart, Charles M. (See Turner, Kernaghan, and Swinehart.)						
Swinehart, James A., Akron, Ohio. Vehicle-tire	809,641	Jan. 9	2102	435	120	491
Swink, Charles B., Muskogee, Ind. Ter. Delivery mechanism for printing-presses	810,231	Jan. 16	3281	679	120	799
Swink, Charles B., Muskogee, Ind. Ter. Printing-press	813,466	Feb. 27	3900	855	120	2480
Swoboda, Adolf, Vienna, assignor of one-half to W. Bokmayer, Modling, near Vienna, Austria-Hungary. Match	810,363	Jan. 16	3561	.....	120	862
Swortfiger, George F., Newark, N. J. Earth-anchor	809,082	Jan. 2	802	173	120	177
Swortfiger, George F., Newark, N. J. Combined anchor-hook, guy-clamp, and guy-stretcher	813,182	Feb. 20	3321	730	120	2209
Sykes, Alfred. (See Crowther and Sykes.)						
Sylstad, Martin J., and C. G. Rude, Sacred Heart, Minn. Automatic carrier and self-dumping device	810,586	Jan. 23	4057	835	120	1006
Sylvester, William A., Reading, Mass. Cutting mechanism	813,506	Feb. 27	4156	911	120	2536
Symmonds, Robert, Jr., assignor to T. B. Jeffery, Kenosha, Wis. Power-transmitting mechanism for motor-vehicles	809,337	Jan. 9	1462	296	120	356
Symmonds, Robert, Jr., assignor to T. B. Jeffery, Kenosha, Wis. Power-transmitting mechanism for motor-vehicles	809,338	Jan. 9	1466	296–7	120	358
Symons, Johnson V., Johnstown, Pa. Controlling mechanism for blowing-engines	813,084	Feb. 20	3091	677	120	2251
Symons, Wilson E., Pittsburg, Kans. Locomotive-truck	813,265	Feb. 20	3457	762–3	120	2227
Syphonic Measure Tank Company. (See Linton, Ernest O., assignor.) (Reissue.)						
Szekely, Salamon, and E. Kovács, Budapest, Austria-Hungary. Manufacturing milk preparations	811,971	Feb. 6	878	.....	120	1668
Tabler, Frank C., assignor to T. R. Fowler, St. Louis, Mo. Cable-hanger	810,004	Jan. 16	2791	576	120	698
Talsey, Fred R., et al. (See Davis, Frank J., assignor.)						
Tait, Casatus, St. Joseph, Mo. Toy pistol	812,613	Feb. 13	2206	480	120	2014
Tait, Godfrey M. S., Montclair, N. J., assignor to Combustion Utilities Company, New York, N. Y. Fluid-sealing device for gas-producers	809,230	Jan. 9	1466	297	120	358
Tait, Godfrey M. S., Montclair, N. J., assignor to Combustion Utilities Company, New York, N. Y. Power gas apparatus	810,685	Jan. 23	4321	876	120	1046
Tait, La Roy E., Radcloud, Nebr. Feed-gage	809,983	Jan. 2	653	143	120	144
Takaki, Shio-Ichi, New York, N. Y. Pipette	813,256	Feb. 20	3461	762	120	2226
Talbert, Emmett, Fresno, Cal. Dispensing apparatus	813,087	Feb. 20	3010	663	120	2251
Talbot, Richmond, et al. (See Haller and Billingsley, assignors.)						
Talcott, Morton C., Hartford, Conn. Variable-speed gear	809,406	Jan. 9	1635	331	120	389
Talcott, Morton C., Hartford, Conn. Transmission-gearing	809,540	Jan. 9	1682	391	120	447
Tallmadge, Andrew P., Washington, D. C. Gas-engine sparker	813,289	Feb. 27	4088	1060	120	2677
Tapila, Alvin, Forestville, Conn. Scrubbing-machine for removing foreign matter from the surfaces of globular objects	812,466	Feb. 13	1902	420	120	1954
Tarling, Thomas R., St. Albans, England. Oil-lamp	813,231	Feb. 20	3433	704	120	2201
Tarr, Elmer E., Mount Vernon, Ohio. Knockdown ironing-board	813,267	Feb. 20	3462	763	120	2226
Tasker, William, Biloxi, Miss. Wheelbarrow	809,240	Jan. 9	1469	297	120	359

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Tate, John B., Altoona, assignor to Flannery Bolt Company, Pittsburg, Pa. Stay-bolt	813,120	Feb. 20	3204	700	120	2295
Tatum, James W., assignor of one-half to D. C. Mangum, Durham, N. C. Combined heating and cooking stove	813,381	Feb. 13	1751	364	120	1922
Tauber, Maurice, assignor of one-half to E. Pokorny, Chicago, Ill. Upholstering apparatus	811,863	Feb. 6	670	147	120	1027
Taylor, Addie. (See Taylor, Frank and A.)						
Taylor, Albert H., Easton, Pa., assignor to Ingersoll-Sergeant Drill Company, New York, N. Y. Automatic oiler	810,866	Jan. 23	4232	877	120	1045
Taylor, Albert H., Easton, Pa., assignor to Ingersoll-Sergeant Drill Company, New York, N. Y. Reversing mechanism for rotary motors	810,890	Jan. 23	4630	967	120	1132
Taylor, Alfred, assignor of one-half to T. H. Horne, Victoria, Canada. Automatic fire-alarm	812,776	Feb. 13	2605	551	120	2074
Taylor, Arthur K., Jacksonville, Fla. Baby-bed	812,090	Feb. 6	1134	248	120	1719
Taylor, Carl T. and G. L. Clark, Mount Sterling, Ill. Stove	812,614	Feb. 13	2207	480-1	120	2014
Taylor, Cecil H., Philadelphia, Pa., assignor, by mesne assignments, to K. Taylor, Highbridge, N. J. Gas-operated mechanism for firearms	811,595	Feb. 6	120	26	120	1512
Taylor, Charles E. (See Hubbard and Taylor.)						
Taylor, Charles G., Hartford, Conn. Device for securing doors, &c.	811,594	Feb. 6	118	26	120	1511
Taylor, Charles M., Jr., Philadelphia, Pa. Means for making milk products and recovering milk fluids	809,860	Jan. 9	2405	518	120	552
Taylor, Charles M., Jr., Philadelphia, Pa. Suction apparatus for dairy products	809,861	Jan. 9	2406	519	120	552
Taylor, Daniel J., assignor of one-half to S. J. Taylor, Philadelphia, Pa. Door stop and retainer	813,927	Feb. 27	4805	1080	120	2677
Taylor, Frank and A., Bay City, Mich. Headwear	813,467	Feb. 27	3901	855	120	2480
Taylor, George. (See Brown and Taylor.)						
Taylor, George B. (See Voynow and Taylor.)						
Taylor, Harry A. (See Kerngood and Taylor.)						
Taylor, Horace H., San Jose, Cal. Self-propelled vehicle-truck	810,997	Jan. 30	4871	1014	120	1218
Taylor, Horace H., San Jose, Cal. Power-transmitting mechanism	811,258	Jan. 30	5383	1123	120	1339
Taylor Iron and Steel Company. (See Brinton, Walter, assignor.)						
Taylor, James E. (See Shanklin, Philip A., assignor.)						
Taylor, John H., Battle Creek, Mich. Steam-trap	813,332	Feb. 20	3625	795	120	2362
Taylor, Knox. (See Taylor, Cecil H., assignor.)						
Taylor, Samuel J. (See Taylor, Daniel J., assignor.)						
Taylor, Vincent A., Bedford, Ohio. Chair-seat	811,259	Jan. 30	5386	1123	120	1320
Testa, Ritchie E., Toledo, Ohio. Cement-block-molding machine	812,615	Feb. 13	2208	481	120	2015
Teller, Myron S., Kingston, N. Y. Universal business filing-card	813,928	Feb. 27	4805	1061	120	2677
Ten Eyck, Frank E., Auburn, N. Y. Check-valve	811,185	Jan. 30	5236	1096	120	1296
Tenacity Loose-Leaf Metal Company. (See Schultz and Gerding, assignors.)						
Tench, Frederick, *et al.* (See McCabe, Franklin J., assignor.)						
Terpening, Elmer A., Geneseo, Ill. Electroresponsive device	810,311	Jan. 16	3452	713-14	120	837
Terpening, Elmer A., Geneseo, Ill. Telephone system	811,972	Feb. 6	880	194	120	1488
Terramorse, Frank, San Francisco, Cal. Polishing-machine	813,839	Feb. 27	4637	1026	120	2642
Terrell, Edward A. (See Chase, James L., assignor.)						
Terry, George H., assignor to Economy Cement Post Machine Company, Leslie, Mich. Cement-fence-post mold	811,675	Feb. 6	276	61	120	1546
Terry, Joshua, Draper, Utah. Rack attachment for stoves	813,749	Feb. 27	4439	980	120	2560
Teuch, Ernest A. (See Fischer, Joseph B., assignor.)						
Tettenborn, Charles, Cincinnati, Ohio. Hinge for step-ladders	813,535	Feb. 27	4037	885	120	2513
Tevander, Olaf N. (See Duncan and Tevander.)						
Textile Machine Works. (See Janssen, Henry, assignor.)						
Textile Machine Works. (See Thus, Max, assignor.)						
Thacher, John J., Attleboro, Mass., assignor to Brown and Sharpe Manufacturing Company, Providence, R. I. Feed mechanism	812,898	Feb. 20	2747	605	120	2173
Thacher, John J., Attleboro, Mass., assignor to Brown and Sharpe Manufacturing Company, Providence, R. I. Belt-tightener	812,899	Feb. 20	2750	606	120	2174
Thomas Motor Company. (See Pendleton, Gurdon, assignor.)						
Tharp, John H., Chesokee, Kans. Animal-trap	813,333	Feb. 20	3627	795	120	2362
Thatcher, Frederick B., Providence, R. I. Bottle-filling machine	809,407	Jan. 9	1628	331-2	120	391
Thatcher, Jesse W. (See Hullings, Charles W., assignor.)						
Thausing, Victor, Vienna, Austria-Hungary. Refrigerating apparatus for cooling air	811,596	Feb. 6	121	26	120	1512
Thayer, John P. (See Baugher, David L., assignor.)						
Thayer, Paul M., Plymouth, Ind. Weed-puller	809,476	Jan. 9	1767	364	120	422
Thayer, Russell, Philadelphia, Pa. Electrically-propelled vehicle. (Reissue)	12,449	Feb. 6	1334	280-90	120	1763
Theil, Charles W., assignor of two-thirds to A. D. and J. T. Seaman, Milwaukee, Wis. Electric drill	810,444	Jan. 23	3766	775	120	940
Thels, Rudolf, Solingen, Germany. Scissors	809,541	Jan. 9	1884	391	120	447
Themeer, John, Caribou, Me. Adjustable stilt	809,862	Jan. 9	2407	519	120	552
Therien, Joseph A., *et al.* (See Dupleasis, Elouild, assignor.)						
Thiebaut, Camille, Vitry-sur-Seine, France. Chain-machine for the manufacture of corrugated cardboard	810,891	Jan. 23	4641	967-8	120	1133
Thiele, Karl. (See Leuber and Thiele.)						
Thielen, Anthony, Bryant, Iowa. Attachment for plows	812,382	Feb. 13	1753	364	120	1922
Thielen, Nicholas, Chicago, Ill. Cigar-bunching device	809,758	Jan. 9	2206	478	120	540
Thier, Max, Erfurt, Germany. Cylinder for internal-combustion motors and the like	813,536	Feb. 27	4038	885	120	2514
Thimes, William B., Trenton, N. J. Bonding or tying device	809,231	Jan. 2	1214	248	120	268
Thiss, George R., Minneapolis, Minn. Wardrobe-rack	813,258	Feb. 20	3463	763	120	2326
Thoesl, Herman, assignor of one-half to A. J. Burt, Spokane, Wash. Weed-exterminator	812,616	Feb. 13	2211	482	120	2015
Thole, Wilhelm F., and F. Ott, Allegheny, Pa. Fire-escape	809,083	Jan. 2	803	172-4	120	177
Thomas, Andrew, Cambridge, assignor to Clifton Manufacturing Company, Boston, Mass. Making inner soles and the like	812,883	Feb. 13	1755	385	120	1924
Thomas, Andrew, Cambridge, Mass., assignor to Commonwealth Trust Company, trustee, Dublin, N. Y. Reinforcing fabric for inner soles	812,884	Feb. 13	1756	385	120	1924
Thomas, Albion W., assignor to L. V. Jones, Rome, N. Y. Cutting-machine for vegetables, &c.	810,998	Jan. 30	4873	1014-15	120	1219
Thomas, Avila, assignor of one-half to E. F. Glock, Detroit, Mich. Reinforced concrete curbing	813,334	Feb. 20	3626	795	120	2362
Thomas, Bert H., assignor of one-half to W. K. Andrews, Millers Station, Pa. Milk-separator	810,892	Jan. 23	4643	968	120	1133
Thomas, Charles J. (See Oliver and Thomas.)						
Thomas, Charles W., Nutley, assignor of one-half to C. Smith, Belleville, N. J. Centrifugal machine for extracting pulp	809,642	Jan. 9	2104	435-6	120	492
Thomas, Cornelius R. (See Simpson, Joseph B., assignor.)						
Thomas, Edward C., and C. F. Jenkins, Washington, D. C. Automatic sign-changing device	808,894	Jan. 2	806	115	120	117

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drf's.	Official Gazette. Vol.	Official Gazette. Page.
Thomas, Edward G., Cambridge, Mass. Rail-bond	812,900	Feb. 20	2733	606	120	2174
Thomas, George H., Philadelphia, Pa. Dumping-wagon	812,100	Feb. 6	1136	248	120	1720
Thomas, George W., Yosemite, Ky. Combined post and wire-stretcher	810,232	Jan. 16	3262	679	120	920
Thomas, John B., and J. Lynch, Lakewood, N. J. Race-course for automobiles	809,886	Jan. 9	1979	410-11	120	496
Thomas L. Leedom Company. (See Robertson, Andrew G., assignee.)						
Thomas, Percy H., East Orange, N. J., assignor to Cooper Hewitt Electric Company, New York, N. Y. Means for controlling mercury-vapor electric lamps	809,643	Jan. 9	2107	436	120	493
Thomas, William L., Chicago, Ill. Golf-ball	809,084	Jan. 2	806	174	120	178
Thomas, William L., Chicago, Ill. Golf-ball	809,085	Jan. 2	807	174	120	178
Thompson, Albert H. (See Eby, Maurice S., assignor.)						
Thompson, Charles P., Oswego Falls, N. Y. Pivot-bolt for loom-shuttle spindles	808,895	Jan. 2	834	115	120	117
Thompson, Frank H., Haw River, N. C. Combined animal tether and feed-bag	812,157	Feb. 6	1270	278	120	1748
Thompson, George D., Arlington Heights, Ohio. Elevator-gate	809,644	Jan. 9	2109	436	120	493
Thompson, George W., Canton, Ill. Date	812,964	Feb. 20	2892	638	120	2206
Thompson, Gilbert S., Cedar Rapids, Iowa. Water-closet flush-tank	813,589	Feb. 27	4157	911-12	120	2639
Thompson, Hamlin T., Fioville, assignor of one-half to W. D. Gibson, Fayetteville, Ga. Wrench	808,954	Jan. 2	854	143	120	144
Thompson, Hugh L., Waterbury, Conn. Gripping means for wire-drawing devices	811,107	Jan. 30	5060	1058	120	1259
Thompson, James T., Tuolumne, Cal. Drill sharpener, shaper, and gager	808,896	Jan. 2	835	116	120	117
Thompson, John H., Fitchburg, Mass. Automatic draft-opener	810,821	Jan. 23	4486	983	120	1101
Thompson, John H., Charleston, W. Va., assignor to Universal Electric Equipment Company, Birmingham, Ala. Power-transmission mechanism	810,176	Jan. 16	3148	662	120	773
Thompson, John M., assignor of three-fourths to T. W. Kennady and W. N. La Tour, Buffalo, N. Y. Sewer-cleaner	813,026	Feb. 20	3012	663	120	2331
Thompson, Oliver E., Ypsilanti, Mich. Kraut-cutter. (Reissue)	12,436	Jan. 16	3622	745-6	120	575
Thompson, Orrin B., Jersey, Ohio. Invalid-lift	808,785	Jan. 2	831	71	120	74
Thompson, Richard, New York, N. Y., and J. A. Sharman, East Orange, N. J. Hydraulic lubricator	810,909	Jan. 30	4875	1015	120	1219
Thomson, Arthur T. M., London, England. Semi-automatic telephone-exchange system	809,232	Jan. 2	1216	248-52	120	269
Thomson, Elihu, Swampscott, Mass., assignor to General Electric Company. Electrostatic influence-machine	809,761	Jan. 9	2310	479	120	540
Thomson, George A., *et al.* (See Oseanyan, Paul C., assignor.)						
Thomson, McLeod W., deceased, Altoona, (W. P. and S. G. Thomson, executors,) assignor of one-half to A. Morrison, Pittsburg, Pa. Insulated rail-joint	813,840	Feb. 27	4639	1026	120	2643
Thomson, Samuel G., *et al.*, executors. (See Thomson, McLeod W.)						
Thomson, William P., *et al.*, executors. (See Thomson, McLeod W.)						
Thorne, Percy R., and R. D. Welton, Vincennes, Ind. Disk jointer for plows	809,477	Jan. 9	1760	365	120	422
Thornley, Frank H. (See Cole and Thornley.)						
Thornton, John A., Morgan City, La. Grab	812,617	Feb. 13	2213	482	120	2015
Thornton, Thomas W., Cheyenne, Okla. Ter. Mechanical fly-trap	810,094	Jan. 16	2993	624	120	743
Thubé, Gaston A. (See Preaubert and Thubé.)						
Thumler, Robert K. (See Bretsfeider and Thumler.)						
Thümmel, Johann. (See Pelchrzim and Thümmel.)						
Thun, Karl. (See Schmidt and Thun.)						
Thurman, John S., St. Louis, Mo. Dust-collector	809,408	Jan. 9	1632	332	120	392
Thurstensen, Soren, assignor to Henry Vogt Machine Company, Louisville, Ky. Filter-press	813,121	Feb. 20	3205	701	120	2276
Thurstensen, Soren, assignor to Henry Vogt Machine Company, Louisville, Ky. Steam-drier	813,750	Feb. 27	4440	980-1	120	2599
Thurston, Horace, Providence, R. I., assignor of one-half to C. H. Schott, Brooklyn, N. Y. Press	812,101	Feb. 6	1137	248-9	120	1720
Thurston, John W., Maple Falls, Wash. Shingle-press	811,456	Jan. 30	5741	1202	120	1404
Thus, Max, Reading, assignor to Textile Machine Works, Wyomissing, Pa. Stocking and manufacturing same	810,095	Jan. 16	2995	624	120	743
Tibbetts, Fred H., Columbus, Ohio. Automatic sheet-adjusting device for printing-presses	812,901	Feb. 20	2757	607	120	2176
Tichenor, Robert R., assignor of one-half to J. M. Pogue, Fesley, Minn. Grain-door	810,893	Jan. 23	4644	968	120	1133
Tidwell, Albert F., Celina, Tex. Cotton-handling apparatus	812,618	Feb. 13	2214	483	120	2016
Tiemann, Frederick, Ordway, Colo. Sugar-beet seeder	809,233	Jan. 2	1226	253	120	269
Tierney, Edward J., and P. Funck, assignors to T. B. Dunn, Rochester, N. Y. Package-wrapping machine	810,005	Jan. 16	2792	576-8	120	696
Tierney, Thomas J., *et al.* (See Ward, George, assignor.)						
Tiffany, George S., assignor to Gray National Telautograph Company, New York, N. Y. Telautographic and other electric circuits	809,762	Jan. 9	2212	479	120	541
Tillinghast, Barrett D., and H. B. Porterfield, McDonald, Pa. Rope-cutter	810,587	Jan. 23	4036	825	120	1036
Tillinghast, Pardon W., Edgewood, R. I. Pneumatic tire	809,409	Jan. 9	1634	332	120	392
Timm, Friedrich C. W., Hamburg, Germany. Preserving the inner walls of furnaces	812,619	Feb. 13	2215	484	120	2016
Timmerman, August H. (See Ham, Simson, assignor.)						
Timmons, Edwin S., Chicago, Ill. Amusement apparatus	809,589	Jan. 9	1980	411	120	496
Tincher, Timothy S., assignor of two-thirds to T. F. Holden and J. Leetch, Washington, D. C. Turbine steam-engine	811,457	Jan. 30	5742	1202	120	1404
Tinkess, George W., Hubbard, Miss. Lure for use with troller-hooks	810,822	Jan. 23	4487	983	120	1101
Tinkham, Cortland O. (See Wyman, Dennett, and Tinkham.)						
Tirrell, Arthur R., North Weymouth, Mass. Insole	811,260	Jan. 30	5387	1124	120	1320
Tobey, Fred W., Grand Rapids, Mich. Bookcase	810,233	Jan. 16	3264	680	120	800
Tobey, Fred W., Grand Rapids, Mich. Filing-cabinet	810,823	Jan. 23	4488	983	120	1101
Tobey, Fred W., Grand Rapids, Mich. Shelf	810,824	Jan. 23	4491	984	120	1102
Toch, Henry M. (See Toch, Maximilian, assignor.)						
Toch, Maximilian, assignor of one-half to H. M. Toch, New York, N. Y. Treating cement and cement construction	813,841	Feb. 27	4641		120	2643
Todd, Henry, Marshfield, Ohio. Miner's drill	810,513	Jan. 23	3915	826	120	977
Tomkins, Alfred, Pittsburg, Pa. Conveyor	809,763	Jan. 9	2315	480	120	541
Tomlinson, Charles H., assignor to Tomlinson Coupler Company, Denver, Colo. Car-coupling	810,898	Jan. 23	4061	898	120	1007
Tomlinson Coupler Company. (See Tomlinson, Charles H., assignor.)						
Tompkins Brothers Company. (See Tompkins, Ernest, assignor.)						
Tompkins, Ernest, assignor to Tompkins Brothers Company, Troy, N. Y. Stop-motion for knitting-machines	809,234	Jan. 2	1228	254	120	270
Tompkins, Vreeland, Jersey City, N. J. Gasket	811,000	Jan. 30	4877	1015	120	1220
Tonk, Richard, and W. J. McDonald, Portage, Pa. Hose-coupling	809,789	Jan. 9	2307	478	120	540
Torrington Novelty Manufacturing and Supply Company. (See Dérand, Louis J., assignor.)						
Toss, William, Jr., San Pedro, assignor to T. J. and R. K. Brundage, Farmersville, Cal. Oil-tank fastener	809,542	Jan. 9	1884	391	120	446
Toscani, Domenico, Mesa Imperiale, Italy. Combined seeding and manure-spreading machine	809,985	Jan. 9	2405	519	120	552

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Towers, William M., and H. S. Harrington, assignors of one-fourth to E. C. Hume, Rome, Ga. Developing-machine	810,234	Jan. 16	3286	660	120	801
Townsend, Fitzhugh, New York, N. Y., assignor to General Railway Signal Company. System of automatic signaling for electric railways	810,687	Jan. 23	4234	877	120	1046
Townsend, Frederick B., assignor to W. H. Miner Company, Chicago, Ill. Friction draft-rigging for railway-cars	812,902	Feb. 20	2759	607	120	2176
Townsend, Harry P., New Britain, assignor to American Serial Lock Company, Hartford, Conn. Receptacle-holder	813,537	Feb. 27	4089	865	120	2614
Townsend, John F., *et al.* (See Sperry, Henry B., assignor.)						
Townsend, John J. (See Elliot and Townsend.)						
Townsend, John W. and N. S., Newark, N. J. Attachment or fixture for horseshoes	811,598	Feb. 6	124	27	120	1512
Townsend, Nelson S. (See Townsend, John W. and N. S.)						
Townsley, George T. (See Wister and Townsley.)						
Tracy, J. T., *et al.* (See Kemper, Otto, assignor)						
Tracy, John W., Nash county, assignor of one-half to J. M. Fitzgerald, Rockymount, N. C. Rail-joint	811,261	Jan. 30	5388	1124	120	1350
Trautmann, Max, Dresden, Germany. Fabric-moving mechanism for embroidering-machines	813,122	Feb. 20	3208	701	120	2276
Travis, John J., Cascade, Mont. Sod-turner for disk plows	813,065	Feb. 20	3094	678	120	2251
Travis, Littleton W., Martin, Tenn. Flood-gate	813,842	Feb. 27	4542	1026–7	120	2643
Travis, Owen J., Denver, Colo. Loader and unloader	811,973	Feb. 6	883	194	120	1669
Treat, Charles H., assignor to American Blower Company, Detroit, Mich. Ventilating apparatus	809,645	Jan. 9	2110	436–7	120	493
Tregoning, William C., assignor to Trumbull Electric Manufacturing Company, Plainville, Conn. Insulated receptacle for panel and switch boards	809,864	Jan. 9	2500	520	120	583
Tresidder, John J., New York, assignor to American Column Company, Brooklyn, N. Y. Fireproof column and column-cap	813,183	Feb. 20	3323	731	120	2300
Tribken, Charles W., Brooklyn, assignor to Lidgerwood Manufacturing Company, New York, N. Y. Hoisting apparatus	810,445	Jan. 23	3767	776	120	941
Trimm, Addison P., Buffalo, N. Y. Cleaning device	811,001	Jan. 30	4878	1015	120	1220
Tripodi, Luca, New York, N. Y. Combined pen-rack and inkstand-holder	809,646	Jan. 9	2112	437	120	494
Tripp Fruit Wrapping Machine Company. (See Ballard, Milton H., assignor.)						
Troll, Frederick J., Baltimore, Md. Connector for electrical conductors	813,538	Feb. 27	4042	885	120	2615
Tropp, Bernhard, assignor to W. H. Laird, New York, N. Y. Gearing	812,903	Feb. 20	2761	607	120	2177
Troumetine, John, *et al.* (See Schoettl, Jaeger, and Walsleben, assignors.)						
Troup, Charles, Wataska, Ill. Switch and signal	812,109	Feb. 6	1138	249	120	1720
Troupe, Albert B., Sandwich, Ill. Match-lighter	813,751	Feb. 27	4444	961	120	2600
Trout, Fred J. (See Steele, Stenson, and Trout.)						
Truckenbrod, Gustavous A., Lamoille, Ill. Harrow	809,150	Jan. 2	1044	216	120	229
True, Jacob, Castile, N. Y. Making glass ornaments	813,123	Feb. 20	3209	701	120	2277
Trueman, Henry P., and E. D. Cleghorn, Worcester, England. Screw-making and metal-turning lathe	808,887	Jan. 2	527	116–18	120	117
Truffault, Jules M. M., Paris, France, assignor to E. V. and G. H. Hartford, Orange, N. J. Frictional retarding means for spring-vehicles. (Reissue)	12,437	Jan. 16	3624	746	120	875
Truitt, John T., St. Louis, Mo. Belt-gearing for extractors	812,703	Feb. 13	2372	519	120	2046
Trumbull Electric Manufacturing Company. (See Tregoning, William C., assignor.)						
Trumbull Electric Manufacturing Company. (See Wheeler, Frank T., assignor.)						
Trump, Edward N., Syracuse, N. Y. Gas-producer	813,600	Feb. 27	4158	912–13	120	2539
Trussed Concrete Steel Company. (See Kahn, Julius, assignor.)						
Trussell, Emory A., St. Louis, Mo., assignor to Sieber & Trussell Mfg. Co. Loose-leaf binder	813,752	Feb. 27	4445	961–2	120	2600
Trussell, Emory A., St. Louis, Mo., assignor to Sieber & Trussell Mfg. Co. Loose-leaf binder	813,753	Feb. 27	4446	962	120	2600
Tsuji, Kaaho, Takaoka, Japan. Apparatus for producing efflorescence	811,002	Jan. 30	4880	1016	120	1220
Tsukamoto, Kumajiro, Tokyo, Japan. Electric cell	809,647	Jan. 9	2114	438	120	494
Tucker, Benjamin W., Newark, N. J. Machine for applying labels and the like to bottles and other articles	808,955	Jan. 2	655	140–5	120	145
Tucker, Benjamin W., Newark, N. J. Machine for applying wrappers to magazines, books, and the like	808,956	Jan. 2	669	145–7	120	148
Tucker, Edwin D., Santa Barbara, Cal. Punch	813,843	Feb. 27	4543	1027	120	2643
Tucker, Robert P., *et al.* (See Goundin, John K., assignor.)						
Tucker, Zechariah R., Providence, R. I., assignor to Iroquois Machine Company, Bedford, N. Y. Bearing for spindles of grinding-machines	811,239	Jan. 30	5539	1156	120	1362
Tudor Boiler Manufacturing Company. (See Tudor, Charles E., assignor.)						
Tudor, Charles E., assignor to Tudor Boiler Manufacturing Company, Cincinnati, Ohio. Tie-plate for furnaces	811,003	Jan. 30	4882	1017	120	1221
Tulloch, Louis R., Angels Camp, Cal. Frue concentrator	809,648	Jan. 9	2115	438	120	494
Tulloch, Louis R., Angels Camp, Cal. Mechanical movement	813,601	Feb. 27	4160	913	120	2539
Tunks, Nelson H., *et al.* (See Turney, Edgar E., assignor.)						
Turchi, Carlo, Ferrara, Italy. Combined telegraph and telephone system	809,865	Jan. 9	2502	520	120	583
Turenne, Emile L. P., assignor to Barbier, Benard & Turenne, Paris, France. Light-projector	812,103	Feb. 6	1140	260	120	1721
Turner, Edward W., Swansboro, assignor of one-half to G. M. Rogers, Richmond, Va. Churn	810,668	Jan. 23	4238	878	120	1047
Turner, Frank S., S. Pease, and W. B. Martin, Geneva, Ohio, assignors, by mesne assignments, to W. B. Martin. Liquid-measuring device	809,273	Jan. 2	1227	270	120	292
Turner, George E., assignor to Bellefontaine Foundry & Machine Company, Bellefontaine, Ohio. Steam shovel and dredge	812,244	Feb. 13	1480	329	120	1862
Turner, George E., assignor to Bellefontaine Foundry & Machine Company, Bellefontaine, Ohio. Steam-dredge	812,245	Feb. 13	1481	324	120	1862
Turner, Isaac J., assignor to L. T. Chamberlain, New York, N. Y. Motor-wheel	811,899	Feb. 6	127	28	120	1513
Turner, James J., *et al.* (See Melton, Henry C., assignor.)						
Turner, Miles, W. Kernaghan, and C. M. Swinehart, Steamboat Springs, Colo. Brake	810,825	Jan. 23	4462	934	120	1102
Turner, Robert, New Canaan, Conn., and B. R. Corley, New York, N. Y. Plate-press	809,086	Jan. 2	808	174	120	178
Turner Tanning Machinery Company. (See Perkins, Franklin J., assignor.)						
Turner, Thomas J. R., Taylor, Iowa. Mail-box	809,866	Jan. 9	2505	520	120	584
Turner, Walter V., Wilmerding, assignor to Westinghouse Air Brake Company, Wilmerding, Pa. Load-brake apparatus	808,708	Jan. 2	153	30	120	36
Turner, Walter V., Wilmerding, and J. B. Carter, assignors to Westinghouse Air Brake Company, Pittsburg, Pa. Fluid-pressure brake	810,514	Jan. 23	3917	806–6	120	977
Turner, William, Wenatchee, Wash. Combined weeder, orchard-cultivator, and fallow-plow	811,600	Feb. 6	128	26	120	1513
Tyrrell, Elmer H., assignor of two-thirds to N. H. Tunks and K. C. Helmig, Peru, Ind. [illegible] for automatic car-couplings	812,395	Feb. 13	1760	388	120	1924
Tyrrell, [illegible], Triest, Austria-Hungary. Trigger mechanism for small-arms	810,177	Jan. 16	3154	688	120	774
Tyrrell, Percy W., Skaneateles, N. Y. Window-screen	811,974	Feb. 6	884	195	120	1669

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Tutt, John C., Kansas City, Mo. Card or check receiver	813,486	Feb. 27	3902	855	120	2481
Tuttle & Bailey Mfg. Company. (See Tuttle, Willard S., assignor.)						
Tuttle, Henry A., assignor to H. A. Tuttle Manufacturing Company, South Norwalk, Conn. Reversing-gear	813,533	Feb. 13	3043	443	120	1984
Tuttle, James E., Watertown, and J. MacLean, assignors to L. L. Rowe, Boston, Mass. Machine for cutting wooden dishes	811,004	Jan. 30	4883	1017–19	120	1221
Tuttle, Willard S., assignor to Tuttle & Bailey Mfg. Company, Brooklyn, N. Y. Grille-plate	813,158	Feb. 6	1271	278	120	1748
Tverdahl, Ole, Mineral City, assignor of one-half to T. J. Rittenhouse, Coshocton, Ohio. Polishing-machine for sad-irons	808,786	Jan. 2	333	71–3	120	74
Twichell, Treadwell, *et al.* (See Mouck, Andrew B., assignor.)						
Twomey, Patrick, New York, N. Y. Truck	809,478	Jan. 9	1771	365	120	423
Tyars, George P., Cape Town, Cape Colony. Apparatus for treating and amalgamating metals	808,787	Jan. 2	334	72	120	74
Tyberg, Olof, assignor to International Cigar Machinery Company, New York, N. Y. Wrapper-support for cigar-machines	811,106	Jan. 30	5061	1069	120	1259
Tyden, Emil, Hastings, Mich. Fiber-mixer	812,311	Feb. 13	1620	356	120	1895
Tyler, Coe, *et al.* (See Evans, Lewis J., assignor.)						
Uhl, Edward H. (See Calhoun, William H. and W. G., assignors.)						
Ulah, James M., Lancaster, Pa. Harrow-tooth	811,753	Feb. 6	404	86	120	1574
Underwood Typewriter Company. (See Rice, Charles D., assignor.)						
Underwood Typewriter Company. (See Stickney, Burnham C., assignor.)						
Unfried, Joseph, Groesbeck, Tex. Baling-press	809,867	Jan. 9	2507	521	120	585
Union Carbide Company. (See Price, Cox, and Marshall, assignors.)						
Union Paper Bag Machine Company. (See Claussen, Edward E., assignor.)						
Union Special Sewing Machine Company. (See Onderdonk, Lansing, assignor.)						
Union Special Sewing Machine Company. (See Patterson, James L., assignor.)						
Union Spring and Manufacturing Co. (See Channell, George H., assignor.)						
Union Tank Line Company. (See Southard, George L., assignor.)						
Union Typewriter Company. (See Arnold, Horace L., assignor.)						
Union Typewriter Company. (See Brooks, Byron A., assignor.)						
Union Typewriter Company. (See Feibel, Jacob, assignor.)						
Union Typewriter Company. (See Stickney, Burnham C., assignor.)						
United Printing Machinery Company. (See Allen, Arthur S., assignor.)						
United Printing Machinery Company. (See Berry, Benjamin F., assignor.)						
United Shoe Machinery Company. (See Brainard, William S., assignor.)						
United States Envelope Company. (See Williams, Harry J., assignor.)						
United States Fiber Stopper Company. (See Goeb, Rudolph W., assignor.)						
United States Horn Company. (See Villy, Gustave H., assignor.) (Reissue.)						
United States Sanitary and Utility Sewage Disposal Company. (See Luts, Alexander, assignor.)						
United States Vending Corporation. (See Hall and MacLeod, assignors.)						
United Zinc and Chemical Company. (See Hofmann, Ottokar, assignor.)						
Universal Brush Company. (See Curtis, Frank C., assignor.)						
Universal Electric Equipment Company. (See Thompson, John H., assignor.)						
Unks, William H., Duluth, Minn. Garment-fastener	811,005	Jan. 30	4489	1019	120	1222
Urban, Joseph S., assignor of one-half to A. E. Niebling, Indianapolis, Ind. Automatic igniter for match-boxes	811,458	Jan. 30	5744	1203	120	1404
Vail, Henry B., Arlington, Ohio. Pig-brooder	809,543	Jan. 9	1886	391–2	120	448
Valle & Kimes. (See Kimes, Hugh W., assignor.)						
Valentine, Walter D., *et al.* (See Gallagher, Fred E., assignor.)						
Valentiner, Friedrich W. S., Leipsic, Germany. Salicylic-acid methylene acetate and making same	811,884	Feb. 6	673		120	1638
Vallely, Thomas L. (See Burke and Vallely.)						
Van Alstine, Frank, Sacramento, Cal. Attachment for ladders	813,620	Feb. 13	2220	484	120	2017
Van Cleft, Robert E., Newton, Iowa. Band-cutter and feeder	813,259	Feb. 20	3463	764	120	2328
Van Der Vaart, Henry W., San Francisco, Cal. Automatic attachment for carbonating apparatus	809,649	Jan. 9	2116	438	120	495
Van Dorn-Elliott Electric Co. (See Pedersen, Adolph, assignor.)						
Van Gulpen, Max, Mülheim-on-the-Rhine, Germany. Machine for the manufacture of cigars, cigarettes, cigar-fillers, and the like	809,410	Jan. 9	1635	332–6	120	393
Van Halteren, Alexander W. (See Raffi, Herman, assignor.)						
Van Kannel Revolving Door Company. (See Van Kannel, Theophilus, assignor.)						
Van Kannel, Theophilus, assignor to Van Kannel Revolving Door Company, New York, N. Y. Metallic frame for revolving doors	813,602	Feb. 27	4162	913–14	120	2540
Van Meter, James M., assignor of one-half to F. W. Marson, Cambridge City, Ind. Fence anchor and driver	808,704	Jan. 2	157	36	120	36
Van Natta, Erastus H. (See Pratt and Van Natta.)						
Van Ostrum, Alva F. (See Kline, Harvey Z., assignor.)						
Van Scoyoc, Leroy, Gilbert Station, Iowa. Electrolytic apparatus	813,844	Feb. 27	4545	1027	120	2644
Van Tassel-Beck, Margaret, assignor of one-half to E. E. Bellamy, Cleveland, Ohio. Combined hot-water bag and syringe	809,650	Jan. 9	2118	438	120	495
Van Tassel, John E., assignor to Standard Optical Company, Geneva, N. Y. Lens-mounting for eyeglasses	808,886	Jan. 2	531	119	120	118
Van Voorhees, Amos. (See Houston, Burns, and Van Voorhees.)						
Van Wie, Philip S. (See Fisk and Van Wie.)						
Vanhorn, Charles P., *et al.* (See Ross, John F., assignor.)						
Vannette, Jasper, Tiffin, Ohio. Sewing-machine	813,020	Feb. 27	4036	1061–2	120	2577
Vare, Thomas W., Philadelphia, Pa. Vise	813,260	Feb. 20	3465	764	120	2329
Varley, Richard, Englewood, N. J., assignor, by mesne assignments, to Autocoil Co. Circuit-controller	808,967	Jan. 2	678	167–8	120	180
Varley, Richard, Englewood, N. J., assignor to Autocoil Company. Spark-ignition system for explosive-engines	808,968	Jan. 2	680	168	120	181
Varley, Richard, Englewood, N. J., assignor to Autocoil Company. Induction-coil vibrator	808,225	Jan. 2	1260	264	120	270
Varley, Thomas W., assignor of one-half to W. S. Hagg, New York, N. Y. Electrical measuring instrument	810,295	Jan. 16	2267	660–1	120	801
Vaubel, Selim, Paris, France. Producing multicolored photographic proofs	809,651	Jan. 9	2119		120	495
Vaughan, Joshua D., Shreveport, La. Log-jack	809,868	Jan. 9	2508	524	120	1169
Vaughan, Thomas L., assignor to G. K. Wendling, San Francisco, Cal. Electrical heater	813,261	Feb. 20	3466	888	120	2329
Vaught, James C. R., Ipswich, S. D. Automatic safety attachment for stamp-mills	809,869	Jan. 16	2759	576	120	699
Vaught, Joseph K., assignor of one-half to W. M. Vaught, Elizabethton, Tenn. Car-coupling	811,499	Jan. 30	5745	1203	120	1404
Vaught, William M. (See Vaught, Joseph K., assignor.)						
Veatch, Everett P., Paola, Kans. Automatic wagon-brake	809,181	Jan. 2	1643	344	120	397
Velin, Friedrich, Hölderlin-the-Odenwald, Germany. Pneumatic tire	811,109	Jan. 30	5063	1069	120	1259

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Venator, Jean, Cassel, Germany. Compound engine	810,589	Jan. 23	4063	836	120	1007
Venezdora Mine Equipment Company. (See Partridge, Allen R., assignor.)						
Vera, Angel and L. G., Queretaro, Mexico. Relay	813,184	Feb. 20	3324	731	120	2300
Vera, Luis G. (See Vera, Angel and L. G.)						
Verdel, Jules, Lyon, France. Jacquard-machine for looms	812,246	Feb. 13	1483	324	120	1363
Vereinigte Maschinenfabrik Augsburg und Maschinenbau-Gesellschaft Nurnberg A.-G. (See Richter, Hans, assignor.)						
Vermillion, Jesse L., *et al.* (See Louise and Hensley, assignors.)						
Verneuil, Edward B., Batson, Tex. Railway-rail joint	808,705	Jan. 2	156	37	120	36
Vernon, Frederick R., Freeport, N. Y. Box	811,676	Feb. 6	277	62	120	1546
Vetter, August G., Rochester, N. Y., assignor to Vetter Desk Works. Filing-tray for card-indexes, &c.	813,670	Feb. 27	4311	949	120	2572
Vetter Desk Works. (See Vetter, August G., assignor.)						
Vicars, John, Jr. (See Vicars, Thomas and J., Jr.)						
Vicars, Thomas and J., Jr., Knaresborough, England. Sprinkling granular substances on dough in biscuit-cutting machines	813,680	Feb. 27	4314	949–50	120	2572
Vickers Sons & Maxim. (See Dawson and Buckham, assignors.)						
Vickery, Frank E., Jewell, assignor of one-half to W. L. Frissell, Davenport, Iowa. Martingale and connection	809,866	Jan. 9	2508	521	120	585
Victor Safe & Lock Co. (See Bleshcshmidt, Charles E., assignor.)						
Victor Talking Machine Company. (See Rinehart, Bentley L., assignor.)						
Villedrouin, Saint Charles, Jeremie, Haiti. Dumb-bell and Indian club	808,706	Jan. 2	160	37	120	37
Villy, Gustave H., Manchester, England, assignor to United States Horn Company, New York, N. Y. Horn for phonographs, ear-trumpets, &c. (Reissue)	12,442	Jan. 30	5868	1235	120	1436
Vincent, Gaius, assignor of one-half to H. Woollett, Minneapolis, Minn. Lawn-edger	813,539	Feb. 27	4044	886	120	2515
Vincent, Stella L. (See Parkes and Vincent.)						
Vining, George H., assignor to Vining's News Bureau, Kansas City, Mo. Means for producing folding matrices	813,261	Feb. 20	3466	765	120	2329
Vining's News Bureau. (See Vining, George H., assignor.)						
Vinson, Eva D., and B. F. Robinson, Newark, N. J. Game apparatus	808,959	Jan. 2	688	148	120	151
Vinton, John H., Boston, assignor to L. C. Smith, Winthrop, Mass. Pipe-wrench	810,096	Jan. 16	2907	624	120	744
Viola, Bartholomew, Brooklyn, N. Y. Vehicle-brake	809,341	Jan. 9	1470	297–8	120	349
Visser, William M., Harrodsburg, Ky. Flour-sifter	810,894	Jan. 23	4645	998	120	1133
Vives-Navarro, Carlos, Ponce, Porto Rico. Thill-coupling	809,079	Jan. 2	912	191	120	202
Voelkle, George W., Collinsville, Tex. Carpet-fastening	813,845	Feb. 27	4646	1027–8	120	2644
Vogel, Frederick, Farmington, Ill. Railway-switch	813,754	Feb. 27	4447	982–3	120	2600
Vogel, Paul F., St. Louis, Mo., assignor of one-half to W. W. Calmore, Philadelphia, Pa. Aging dyed fabrics	810,312	Jan. 16	3456	714	120	838
Vogel, William C., and H. K. Snell, Newcastle, Ind. Piano-action	812,705	Feb. 13	2375	520	120	2047
Voight, Henry G. (See Calsy and Voight.)						
Voight, Henry G., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn. Lock and latch mechanism	809,342	Jan. 9	1472	298	120	360
Voight, Henry G., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn. Lock and latch mechanism	812,904	Feb. 20	2762	608	120	2177
Voight, Henry G., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn. Lock and latch mechanism	812,905	Feb. 20	2764	608	120	2177
Voigtmann, Frank. (See Pomeroy, Silas H., assignor.)						
Voland, Francisque, Villeurbanne, L. Diederichs, Jallieu, and J. B. Monnet, Bourgoin, France. Loom	811,597	Feb. 6	123	27	120	1512
Volk, Ferdinand, Pittsburg, Pa. Attachment for electric controllers	811,340	Jan. 30	5541	1156	120	1363
Volkmar, Bernhard, assignor to Acme Auto-Meter Company, New York, N. Y. Speed-indicator	813,185	Feb. 20	3326	731	120	2300
Volkmar, Bernhard, assignor to Acme Auto-Meter Company, New York, N. Y. Odometer	813,846	Feb. 27	4647	1028	120	2644
Vollmer, Wilhelm, Winfield, N. Y. Machine for bending angle-irons	811,975	Feb. 6	386	195	120	1689
Von Auw, Alwin, New York, N. Y. Bookbinder's gage	809,411	Jan. 9	1638	337	120	393
Von Culin, Clayton, Wayland, N. Y. Cutting-gage for saw-tables	808,889	Jan. 2	534	119	120	118
Von der Linde, Richard, Crefeld, Germany. Machine for cutting and pressing canisters, &c	809,512	Jan. 9	1530	378	120	436
Voorhees, Gardner T., Boston, Mass. Air and liquid cooling apparatus	813,066	Feb. 20	3094	678	120	2251
Voorhies, Alexis, New Iberia, La. Portable canopy	811,460	Jan. 30	5747	1208	120	1406
Vorster, Bastiaan C. A., Amsterdam, Netherlands. Apparatus for damping and affixing adhesive stamps	810,236	Jan. 16	3289	661	120	801
Voss, Detlef C., Somerville, assignor to J. E. Bartlett, Chelsea, Mass. Garment-marker for laundries and the like	808,788	Jan. 2	335	72	120	75
Voss, Frederick, Chicago, Ill. Metallic studding	808,789	Jan. 2	336	73	120	75
Voynow, Constantine B., and G. B. Taylor, Philadelphia, Pa. Crane structure for cars	810,827	Jan. 23	4493	934–5	120	1102
Vyvane, Emma M. (See Montesgle, Robert C., assignor.)						
W. Canning & Co. (See Wood and Oakford, assignors.)						
W. A. S. Benson and Company. (See Andrews, Frederick A., assignor.)						
W. D. Allen Manufacturing Company. (See Allen and Bowes, assignors.)						
W. F. Barnes Commercial Company *et al.* (See Casella, Secondo L., assignor.)						
W. H. Miner Company. (See O'Connor, John F., assignor.)						
W. H. Miner Company. (See Townsend, Frederick B., assignor.)						
Wachter, Jacob W., and B. H. Prendergast, Lansdowne, Md., assignors of one-third to F. E. Richards, Washington, D. C. Combination keyless lock	812,992	Feb. 27	4027	1080	120	2701
Wade, George W. (See Eaves, Slaven, and Wade.)						
Wadsworth, Willard, assignor to W. B. Wadsworth, Plainfield, N. J. Temperature-regulating means	808,707	Jan. 2	161	37	120	37
Wadsworth, Willard, assignor to W. B. Wadsworth, Plainfield, N. J. Means for controlling the level of liquids	810,237	Jan. 16	2292	662	120	802
Wadsworth, William B. (See Haywood, Daniel H., assignor.)						
Wadsworth, William B. (See Sengstad, Olaf, assignor.)						
Wadsworth, William B. (See Wadsworth, Willard, assignor.)						
Wagner, Bruno O., Swissvale, Pa. Electromagnetic switch-setting apparatus and electric rail heater	809,236	Jan. 2	1282	264–5	120	270
Wagner, Bruno O., Swissvale, Pa. Sunnyshore mechanism	809,237	Jan. 2	1247	265	120	276
Wagner, John F. (See Crawford, Landy O., assignor.)						
Wagner, Robert C., Toledo, Ohio. Moving-picture apparatus	811,341	Jan. 30	5544	1156–7	120	1363
Wagy, Solomon E., Wichita, Kans. Wrench	811,461	Jan. 30	5749	1204	120	1406
Wahl, William P. (See Marsh, Howard H., assignor.)						
Wahle, John C., Detroit, Pa. Take-up device for overhead-cable railways	812,851	Feb. 13	2238	484	120	2017
Wahle, Charles H., and C. F. Frankel, New York, N. Y. Cleat and socket	811,198	Jan. 30	5393	1088	120	1297
Wahl, Frank W., Springfield, Mass. Tool holding and adjusting device	810,298	Jan. 16	2363	662	120	802
Wait, Henry L., Newton, Mass. Hand mail-marking machine	811,876	Feb. 6	880	188	120	1670
Waite, Benjamin F., Trenton. (See Wyatt, George W., assignor.)						
Waitt, George W., assignor to D. P. Waitt, trustee, San Francisco, Cal. Pipe-wrench	809,122	Jan. 2	1046	217	120	206

Alphabetical list of patentees for January and February—Continued.

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Wakefield, James, Cockermouth, England. Bleaching fibers	809,889	Jan. 9	2020	.....	120	395
Walberg, Nels, and P. J. McArthur, Aberdeen, S. D. Feeding attachment for threshers	810,329	Jan. 16	2994	668–9	120	812
Walch, Robert H. (See Harrison, Amasa, assignor.)						
Waldberg, Benjamin, Chicago, Ill. Plate-mobile	809,843	Jan. 9	1675	388	120	390
Walden, Frederick E., Worcester, Mass. Spectacles-bracket	812,285	Feb. 13	1761	388	120	1926
Walden, Henry, Philadelphia, Pa. Buttonhole	809,488	Jan. 9	2130	439	120	466
Waldron, William H., New Brunswick, N. J. Oil-cloth-printing machine	811,242	Jan. 30	5547	1157	120	1364
Walker, Albert H., trustee. (See Ippers, John W., assignor.)						
Walker, Albert H., trustee. (See Markard, Henry L., assignor.)						
Walker, Alexander, assignor to What Cheer Tool Company, What Cheer, Iowa. Drilling-machine	813,235	Feb. 20	3229	706	120	2288
Walker, Eli M., assignor to Charles Parker Company, Meriden, Conn. Vise-slide	808,980	Jan. 2	695	149	120	152
Walker, Elmer A., Saratoga Springs, N. Y. Gage for cutter-heads	809,087	Jan. 2	810	178	120	179
Walker, Enos L. (See Eklund and Walker.)						
Walker, George T., Washington, D. C. Converter	811,006	Jan. 30	4600	1019–20	120	1223
Walker, James G., Moro, Oreg. Self-feeding attachment for threshing-machines	811,007	Jan. 30	4602	1020	120	1223
Walker, John C., *et al.* (See Davis, Frank J., assignor.)						
Walker, Robert, Newark, N. J. Mirror for surgical, dental, and like uses	811,806	Feb. 6	811	114	120	1586
Walker, Sheridan A. (See Bennett and Walker.)						
Walker, Thomas H., Tumwater, assignor of one-fourth to P. H. Carlyon, Olympia, Wash. Excavating-machine	813,393	Feb. 20	3723	830	120	2384
Walker, Ward C., Battlecreek, Mich. Hose-clamp	811,348	Jan. 30	5549	1158	120	1364
Walker, William L., Council Bluffs, Iowa. Washing-machine	811,601	Feb. 6	129	28	120	1513
Wallace, Halbert G., McPherson, Kans. Band-cutter and feeder	813,247	Feb. 27	4580	1026–9	120	2645
Wallen, Andrew K., Jr., Jackson, Miss. Well-boring apparatus	810,097	Jan. 16	2960	634–5	120	744
Wallenthin, Nils C., Central Falls, R. I., assignor to J. M. Fisher & Company. Joint for bracelets	809,153	Jan. 2	1047	217	120	220
Wallenthin, Waltrid, assignor to Bates & Bacon, Attleboro, Mass. Bracelet	813,755	Feb. 27	4449	983	120	2601
Wallick, Jodie, Sumpter, Oreg. Photo-holder	811,008	Jan. 30	4606	1020	120	1223
Walling, John E., Salt Lake City, Utah. Railway-tie	811,262	Jan. 30	5390	1134–5	120	1330
Wallof, Edward G., Minneapolis, Minn. Propeller attachment for rowboats	812,534	Feb. 13	2046	448–9	120	1994
Walsh, Robert A. B., assignor to Mississippi Glass Company, St. Louis, Mo. Wired-glass-making machine	810,446	Jan. 23	3769	776	120	942
Walsh, Robert A. B., assignor to Mississippi Glass Company, St. Louis, Mo. Machine for making wired plate-glass	810,447	Jan. 23	3770	777	120	942
Walsleben, Paul. (See Schoettl, Jaeger, and Walsleben.)						
Walstrom, Andrew H., Birmingham, Ala. Coke-oven cover	809,244	Jan. 9	1476	299	120	361
Walter, John. (See Bell, Emma, assignor.)						
Walter, Theophil P., assignor to Beatrice Manufacturing Company, Beatrice, Nebr. Corn-husker	810,086	Jan. 16	3000	626	120	745
Walter, William H., New York, N. Y. Electrical igniter for internal-combustion engines	812,622	Feb. 13	2225	484	120	2017
Walther, Gustav. (See Salzer and Walther.)						
Walther, Gustava A., *et al.* (See Werner, Emil, assignor.)						
Walton, Hugh. (See Beaman and Walton.)						
Walton, John, Milwaukee, Wis. Resawing band-mill	811,009	Jan. 30	4604	1021	120	1224
Walton, Richard N., Los Angeles, Cal. Railway-crossing	810,178	Jan. 16	3158	653	120	774
Wands, John C., St. Louis, Mo. Lifting device	811,344	Jan. 30	5552	1158	120	1365
Wanner & Co. (See Widmer-Abegg, Ernst, assignor.)						
Warbasse, Joseph, Newton, N. J. Respirator	812,706	Feb. 13	2377	521	120	2047
Ward, Ernest A. (See Woolldridge and Ward.)						
Ward, George, Roma, Queensland, Australia. Apparatus for removing articles from shelves	813,029	Feb. 20	3013	663–4	120	2231
Ward, George, assignor of one-fourth to B. Heppe, Homestead, Pa. Unloading mechanism	812,623	Feb. 13	2227	485	120	2018
Ward, George, Homestead, assignor of one-fourth to T. J. Tierney and F. R. Agnew, Pittsburg, Pa. Switch-operating mechanism	810,826	Jan. 23	4496	985	120	1103
Ward, Henry D., assignor of one-half to I. B. Hubbard, Worcester, Mass. Covered spoon	812,312	Feb. 13	1622	357	120	1896
Ward, Michael J., Millersville, Pa. Apparatus for ventilating mines	809,653	Jan. 9	2121	439	120	466
Ward, Philo M., Johnson City, Tenn. Display-stand	810,839	Jan. 23	4496	985	120	1103
Ward, William S., assignor to H. D. Smith & Company, Plantsville, Conn. Making devisirons	810,007	Jan. 16	2932	578	120	700
Ward, William S., assignor to H. D. Smith & Company, Plantsville, Conn. Hook	811,197	Jan. 30	5389	1088	120	1297
Wardell, Henry R., Ardmore, assignor to Barber Asphalt Paving Company, Philadelphia, Pa. Sheet roofing material	813,236	Feb. 20	3230	706	120	2288
Warden, Herbert A., F. Manns, and W. H. Decker, Newburgh, N. Y. Automatic starting device	813,262	Feb. 20	3468	765	120	2329
Ware, Alfred J., and W. Zoller, Seattle, Wash. Check printer and protector	813,707	Feb. 13	2378	521	120	2047
Warne, Antone F., Jackson, Mich. Loop-shield	813,104	Feb. 6	1141	230	120	1721
Waring, John B., East Orange, N. J., assignor to Waring Patents Company, New York, N. Y. Fluid-level-controlling means	811,188	Jan. 30	5540	1096–7	120	1297
Waring Patents Company. (See Waring, John B., assignor.)						
Warnock, Frank S. (See Hyatt, John W., assignor.)						
Warner, Charles E., Beloit, Wis. Combined taximeter and cyclometer	813,821	Feb. 27	4315	950	120	2572
Warner, Clarence M., Cambridge, Ill. Vesting-machine	809,679	Jan. 9	1722	384–5	120	468
Warner, George, Dearborn, Mich. Gate-latch	809,844	Jan. 9	1682	382	120	449
Warner, Isaac M., Harvard, Ill., assignor to F. C. Boice, Union City, Mich. Wire-fence stretcher	810,899	Jan. 16	3082	686	120	745
Warner, Kenneth G. (See Fletcher, Frank E., assignor.)						
Warner, Norman, and G. W. Jacobs, Glenns Ferry, Idaho. Emergency car-coupling	813,469	Feb. 27	3982	888	120	2481
Warner, Norman, and G. W. Jacobs, Glenns Ferry, Idaho. Automatic knuckle-opener	813,893	Feb. 27	4615	1023	120	2570
Warren, Robert L., Newton Center, Mass. Holder for shaving-cakes	812,905	Feb. 20	2763	608	120	2176
Warner & Swasey Company. (See Swasey, Ambrose, and Pratt, Benjamin.)						
Warp Twisting-In Machine Company. (See Cochran, Adriance, and Doppler, assignors.)						
Warren, Edward F., Thorneside, Ont. Feed mechanism for quilting machines	811,263	Jan. 30	5393	1156	120	1331
Warren, Edward [illegible] and J. [illegible], assignors to Warren Featherbone Company, Threesaw, Mich.	808,709	Jan. 2	339	73	120	76
Warren, Edward [illegible], assignor to Warren Featherbone Company, Threesaw, Mich.	808,721	Jan. 2	339	73	120	76
Warren, Edward [illegible], assignor to Warren Featherbone Company, Threesaw, Mich.	808,722	Jan. 2	339	73	120	76
Warren [illegible] (See [illegible], assignors.)						
Warren [illegible] (See [illegible], assignors.)						
Warren, [illegible] F., Boston, Mass. Toy arms and shelter toys	813,295	Feb. 13	2230	449	120	2032
Warren, [illegible] F., Boston, Mass. Toy target	813,296	Feb. 13	2230	449	120	2032

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Warrington, Jesse, assignor to Nordyke & Marmon Company, Indianapolis, Ind. Steering-gear for automobiles	813,186	Feb. 20	3328	731-2	120	2301
Washburn, Edwin C., Minneapolis, Minn. Car-coupling	810,008	Jan. 16	2803	578-9	120	700
Washburn, Edwin C., Minneapolis, Minn. Lateral-motion device for car-trucks	811,677	Feb. 6	279	62	120	1546
Washburn, Edwin C., Minneapolis, Minn. Cast truck-bolster	812,313	Feb. 13	1624	357	120	1898
Washburn, William S., Brockton, Mass. Heating apparatus	809,154	Jan. 2	1049	217-18	120	230
Washington, George M., Houston, Tex. Baling-press	813,603	Feb. 27	4166	914-15	120	2540
Waterbury Machine Company. (See Kahl, Louis C., assignor.)						
Waterbury Wire Die Company. (See O'Donnell, John H., assignor.)						
Waterhouse, George L., New York, N. Y. Apparatus for pumping liquid	811,110	Jan. 30	5065	1059	120	1260
Waterhouse, Howard A., Providence, R. I. Sign-holder	811,264	Jan. 30	5395	1125	120	1331
Waterproof Welt & Filler Co. (See Moulton, James N., assignor.)						
Waterproof Welt and Filler Company. (See Reynolds, John R., assignor.)						
Waters, William L., Milwaukee, Wis. Balancing device	811,676	Feb. 6	280	62	120	1547
Watkins, John W., Philadelphia, Pa. Sheet-metal window-sash	812,467	Feb. 13	1904	420	120	1954
Watson, Henry W., assignor of one-fourth to H. C. Bright, Danville, Ky. Lawn-swing	809,480	Jan. 9	1776	366	120	424
Watson, James P., and F. L. Jahn, Philadelphia, Pa., assignors to Watson & McDaniel Company. Pump-regulator	809,590	Jan. 9	1982	411	120	467
Watson, Laidlaw & Company. (See Freitag, Andreas, assignor.)						
Watson & McDaniel Company. (See Watson and Jahn, assignors.)						
Watson, Thomas P. (See Mason, Thomas F., assignor.)						
Wattle, William, Worcester, Mass., assignor to Crompton & Knowles Loom Works. Give-way connection for box-motions of looms	812,468	Feb. 13	1907	421	120	1954
Watts, Alfred E., Duluth, Minn. Automatic trip mechanism	809,345	Jan. 9	1478	299	120	361
Watts, Alfred E., Duluth, Minn. Automatic tripping device for photographic shutters	809,346	Jan. 9	1483	300	120	362
Watts, Arthur S., assignor to Locke Insulator Manufacturing Company, Victor, N. Y. Mold for plastic materials	811,602	Feb. 6	131	29	120	1514
Watts, David H., Jr., Philadelphia, Pa. Metallic wall-closet	809,592	Jan. 9	1988	412-13	120	468
Watts, William T. (See Johnston and Watts.)						
Watzke, Eduard, assignor of one-half to I. Nagy, Friedberg, Austria-Hungary. Machine for the manufacture of capsules for bottles	813,604	Feb. 27	4166	915-16	120	2541
Waxman, Harris, New York, N. Y. Tire-protector	811,345	Jan. 30	5553	1158	120	1365
Way, William R., Columbia, S. C. Infant's diaper	810,689	Jan. 23	4239	878	120	1047
Weathers, Franklin, Findlay, Ill. Bridle-bit and attaching means therefor	813,337	Feb. 20	3631	797	120	2363
Weathers, Hoyt M., assignor to W. P. Steinbeck, Stockton, Cal. Conveyer	811,462	Jan. 30	5750	1204	120	1406
Weaver, Ira A., assignor to Sattley Manufacturing Company, Springfield, Ill. Corn-planter	811,977	Feb. 6	892	196-8	120	1670
Weaver, Isaac D., assignor of one-half to S. E. Light, Lebanon, Pa. Forming helices for chain-links	809,412	Jan. 9	1641	377	120	394
Weaver, Isaac D., assignor of one-half to S. E. Light, Lebanon, Pa. Manufacture of helices for chain-links	809,413	Jan. 9	1642	337-8	120	394
Weaver, James E., Allegheny, Pa. Toy cannon	809,414	Jan. 9	1643	338	120	394
Weaver, Philo H., Pittsburg, Pa. Piston-rod packing	811,628	Feb. 6	132	29	120	1514
Weaver, Stephen S., Carrollton, Mo. Plow	809,570	Jan. 9	2510	521	120	585
Weaver, William. (See Steensland and Weaver.)						
Webb, Samuel J., Minden, La. Roller-compress	809,415	Jan. 9	1645	338-9	120	394
Webb, William, and W. W. Hildreth, Gloversville, N. Y. Wrench	811,585	Feb. 6	674	147	120	1628
Webber, Lionel H. (See Grogan, Archibald, assignor.)						
Weber, Arnold W., assignor of one-half to A. Brandt, Bellevue, Iowa. Combined strainer and out-off	810,515	Jan. 23	3921	806	120	978
Weber, Herman, Colorado Springs, Colo. Truck. (Reissue)	12,430	Jan. 2	1337	271	120	294
Weber, John, Jr. (See Manger, George H., assignor.)						
Weber, Peter, East Orange, assignor to New Jersey Patent Company, Orange, N. J. Phonograph speed-index	811,010	Jan. 30	4696	1021	120	1224
Weberg, Bernt M., Balsam Lake, Wis. Automatic brake for sleds	809,155	Jan. 2	1052	218	120	231
Webster, Alfred J., assignor to J. A. Jeffrey, Columbus, Ohio. Conveying and elevating apparatus	811,189	Jan. 30	5243	1097-8	120	1306
Webster, Alfred J., assignor to J. A. Jeffrey, Columbus, Ohio. Conveyer	811,190	Jan. 30	5246	1098	120	1306
Webster, Alfred J., assignor to J. A. Jeffrey, Columbus, Ohio. Conveyer	811,463	Jan. 30	5751	1204-5	120	1406
Webster, Cyrus C., Minneapolis, Minn. Machine for manufacturing printers' leads	812,708	Feb. 13	2381	521-3	120	1948
Webster, William R., Bridgeport, Conn. Drum for coiling metal	812,709	Feb. 13	2383	523-4	120	1948
Weems, John C., Dillards, Ala. Nut-lock	811,011	Jan. 30	4697	1021	120	1224
Weguefarth, George C., Baltimore, Md. Syringe	811,111	Jan. 30	5070	1060	120	1261
Weguerif, Johannes C., Battlesbridge, assignor to Renfrew Crusher Company, Limited, London, England. Pan-and-roller mill for crushing and grinding	810,530	Jan. 23	4497	986	120	1103
Wegner, Frederick A., Detroit, Mich. Thill-coupling	811,464	Jan. 30	5754	1205	120	1407
Weichardt, Wolfgang, Berlin, Germany. Antitoxin for fatigue and making the same	809,347	Jan. 9	1488		120	363
Weidner, Charles F., New York, N. Y. Merry-go-round. (Reissue)	12,436	Jan. 9	2026	543	120	611
Weigel, Frederick A., Florella, Pa. Safety device for elevators	811,604	Feb. 6	133	29	120	1514
Weigel, Nels A., Clearlake, Iowa. Strawberry-vine trimmer	811,978	Feb. 6	897	198	120	1671
Weinreb, Lee, and L. A. Rabinowitch, Vienna, Austria-Hungary; said Weinreb assignor to said Rabinowitch. Apparatus for delivering or counting coins and the like	812,824	Feb. 13	2239	485	120	2018
Weinstein, Leopold, and J. Feinstein, Chicago, Ill. Fan attachment for sewing-machines	809,416	Jan. 9	1650	339	120	395
Weir, George F., Elkhart, Ind. Dust-collector for cars	810,831	Jan. 23	4800	996	120	1104
Weiser, Orville T., assignor to S. Lubin, Philadelphia, Pa. Fire insulator and extinguisher	812,537	Feb. 13	2060	449	120	1965
Weisenk, Ignatz, Mindenmines, Mo., assignor of one-fourth to H. Evans, Burdine, Pa. Wrench	812,538	Feb. 13	2061	450	120	1965
Weiss, Joseph W. (See Henderson and Weiss.)						
Weiss, Louis T., Brooklyn, N. Y. Exhaust-muffler	809,654	Jan. 9	2122	439	120	466
Weiss, Martin, Philadelphia, Pa. Producing compound ingots	809,571	Jan. 9	2011	421	120	585
Weiss, Prosper, Highland Falls, N. Y. Bird-kite	810,690	Jan. 23	4240	878	120	1048
Weissenborn, Albert E., Appleton, Wis. Lay-motion for looms	811,012	Jan. 30	4698	1021-2	120	1225
Weiss, Theodor, Heidelberg, Germany. Door-lock	811,013	Jan. 30	4698	1022	120	1226
Welchsler, Louis H. (See Marsh, Clarence T., assignor.)						
Welss, Albert E., assignor to Matchless Cigar Lighter Manufacturing Company, New York, N. Y. Automatic turning, shaping, and finishing machine	813,167	Feb. 20	3329	732-3	120	2301
Welsh, Allie R. and F. S., Pontiac, Mich. Automobile-body	809,655	Jan. 9	2123	440	120	466
Welsh, Allie R. and F. S., Pontiac, Mich. Automobile-frame	809,656	Jan. 9	2125	440	120	467
Welsh, Fred, et al. (See Lippmann, Louis, assignor.)						
Welsh, Fred S. (See Welsh, Allie R. and F. S.)						
Welsh, Roscoe H. (See Horton, Edmund E., assignor.)						
Welsh, Thomas, et al. (See Reid, William, assignor.)						
Welter, Frank D., Toledo, Ohio. Hoppla	811,614	Jan. 30	4994	1082	120	1326
Wellman, Charles A., Ottumwa, Iowa. Fruit-carrier	810,313	Jan. 16	3457	714	120	898

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Wellman, Seaver, Morgan Company. (See Field, Clark, and Wilson, assignors.)						
Wells, George W., Southbridge, Mass. Eyeglass-mounting	809,156	Jan. 2	1054	218	120	231
Wells, Joel C., Southbridge, Mass. Eyeglasses	812,030	Feb. 20	3015	664	120	2232
Welsbach Light Company. (See Stites, Townsend, assignor.)						
Welton, Raymond D. (See Thorne and Welton.)						
Wemp, Ernest E., Orford, Mich. Bean cleaning and polishing machine	810,009	Jan. 16	2805	579	120	700
Wendler, Julius, Berlin, Germany. Device for hanging revolving-door wings	812,907	Feb. 20	2767	609	120	2178
Wendling, G. X. (See Vaughn, Emma L., assignor.)						
Wendt, William F., Altoona, Pa. Car-door lock	809,872	Jan. 9	2512	522	120	586
Wenzelmann, Gustave, and E. H. Overholt, Streator, Ill., assignors to Wenzelmann Manufacturing Company. Portable grain elevator and conveyer	810,010	Jan. 16	2807	580	120	701
Wenzelmann, Gustave, and E. H. Overholt, assignors to Wenzelmann Manufacturing Company, Streator, Ill. Elevator or jack	810,448	Jan. 23	3772	777-8	120	942
Wenzelmann Manufacturing Company. (See Wenzelmann and Overholt, assignors.)						
Werner, Emil, assignor of two-thirds to G. A. Walther, Philadelphia, and C. Schwerdfeger, Lansdale, Pa. Piano-action	813,263	Feb. 20	3470	760	120	2330
Werner, Ernest E., Indianapolis, Ind. Treating flour	812,777	Feb. 13	2507	551	120	2074
Wersel, George N., Cincinnati, Ohio. Sofa-bed	809,657	Jan. 9	2126	440	120	497
Wertz, Merrian N., Thomasville, Ga. Swinging hammock	812,387	Feb. 13	1762	386	120	1925
Wesel, Ferdinand, Brooklyn, N. Y. Folio-mortising machine	813,756	Feb. 27	4451	963-4	120	2601
Weser, Joseph F., Pittsburg, Pa. Regulating-spring	811,346	Jan. 30	5554	1159	120	1366
Wesselock, August, West New Brighton, N. Y. Shade-supporting device	811,465	Jan. 30	5756	1206	120	1407
Wesson, Joseph H., Springfield, Mass. Firearm	811,807	Feb. 6	512	114	120	1595
West, Alexander L., Gowrie, Iowa. Strainer	811,754	Feb. 6	406	88-9	120	1575
West, Charles W., Cedar Rapids, Iowa. Manure-spreader feed mechanism	810,449	Jan. 23	3776	778	120	943
West, Mansfield M., Cleveland, Ohio. Plate for soles and heels of shoes	811,605	Feb. 6	135	29	120	1515
Western Electric Company. (See McBerty and Craft, assignors.)						
Western Electric Company. (See Scribner, Charles E., assignor.)						
Western Union Telegraph Company. (See Barclay, John C., assignor.)						
Western Wheeled Scraper Company. (See McKnight, Thomas R., assignor.)						
Westerson, Oscar A. (See Mellquist and Westerson.)						
Westinghouse Air Brake Company. (See Turner, Walter V., assignor.)						
Westinghouse Air Brake Company. (See Turner and Custer, assignors.)						
Westinghouse Electric & Manufacturing Company. (See Bates, Ralph E., assignor.)						
Westinghouse Electric & Manufacturing Company. (See Lamme, Benjamin G., assignor.)						
Westinghouse Electric & Manufacturing Company. (See Lahr, Edwin E., assignor.)						
Westinghouse Electric & Manufacturing Company. (See Siegfried, Robert, assignor.)						
Westinghouse Machine Company. (See Longwell and Hodgkinson, assignors.)						
Westman, Gustaf M., New York, N. Y. Reducing iron ore	812,247	Feb. 13	1485	325	120	1863
Weston, Charles B. (See O'Hare and Weston.)						
Weston, Leroy A., Adams, Mass. Hose and hydrant connection	812,625	Feb. 13	2230	496	120	2018
Weston, Milton T., assignor of one-half to W. F. Hutchinson, Nyack, N. Y. Power-hammer	809,348	Jan. 9	1469	300	120	363
Westphal, Albert G. (See Parfitt, Arthur W., assignor.)						
Wetzler, Ferdinand, and M. Ornstein, New York, N. Y. Advertising projecting apparatus	812,106	Feb. 6	1142	280-1	120	1721
Wever, Sebern J., Sheller, Ill. Carpet-stretcher	809,545	Jan. 9	1890	393	120	449
Wever, Sebern J., Sheller, Ill. Table-spread support	809,546	Jan. 9	1891	393	120	449
Weyand, Paul A., Maywood, Ill. Electric-motor-controller regulator	810,240	Jan. 16	2296	683	120	802
Weyburn, Lewis A., Rockford, Ill. Calk for horseshoes	812,966	Feb. 20	2996	636	120	2207
Weyer, Joseph G., Providence, R. I. Forming molds for casting purposes	813,605	Feb. 27	4172		120	2542
Weyers & Co., A. (See Neumann, Engelbert, assignor.)						
Weyl, Maurice N., Philadelphia, Pa. Photomechanical multicolor-printing	809,157	Jan. 2	1055	219	120	232
Whalen, John T., Brooklyn, N. Y. Vehicle-recorder	811,015	Jan. 30	4905	1023	120	1226
Whalley, Christopher, Clitheroe, England. Weft-replenishing loom	809,158	Jan. 2	1057	219	120	232
What Cheer Tool Company. (See Walker, Alexander, assignor.)						
Wheatley, Jesse, East Molesey, England. Railway signaling apparatus	810,011	Jan. 16	2811	580-2	120	702
Wheatley, Thomas, Syracuse, N. Y. Air-valve	813,606	Feb. 27	4174	916	120	2542
Wheeler, Earl A., deceased, and W. Heckert, Sharon, Pa.; W. W. Shilling, executor. Automobile-wheel	811,112	Jan. 30	5072	1060	120	1261
Wheeler, Frank T., assignor to Trumbull Electric Manufacturing Company, Plainville, Conn. Panel cut-out and receptacle	809,873	Jan. 9	2513	522	120	586
Wheeler, Seth, Albany, N. Y. Dispensing-cabinet	810,100	Jan. 16	3004	626	120	746
Wheeler & Wilson Manufacturing Company. (See Dimond and Dial, assignors.)						
Wheeler & Wilson Manufacturing Company. (See Eames and Finch, assignors.)						
Wheeler & Wilson Manufacturing Company. (See Laubscher, Alexander, assignor.)						
Whelan, Thomas H., New York, N. Y. Construction of submarine boats	811,886	Feb. 6	675	148	120	1626
Whelan, Thomas H., New York, N. Y. High-speed motor-boat	811,887	Feb. 6	678	148-9	120	1626
Whetham, Charles, Sheffield, Canada. Temporary binder	808,793	Jan. 2	340	74	120	76
Whipple, Joel N., assignor to Landis Machine Company, St. Louis, Mo. Presser-foot and mechanism for operating the same	812,189	Feb. 6	1273	279	120	1749
Whitall Tatum Company. (See Meinecke, Christian W., assignor.)						
Whitcher, Charles H., Ipswich, Mass. Knitting-machine	812,314	Feb. 13	1625	357	120	1894
White, Archie. (See Maloy and White.)						
White, Charles W., Waco, Tex. Mattress-making machine	812,470	Feb. 27	3904	856-7	120	2481
White, Edgar L., Waco, Tex. Baling-press	808,796	Jan. 2	343	74	120	76
White, Edward P., Quincy, Mass. Shoe-rack	808,794	Jan. 2	342	74	120	76
White, Frederick, Boston, Mass., assignor to Regenerated Cold Air Company, Portland, Me. Apparatus for treating air	810,450	Jan. 23	3778	778-9	120	944
White, Frederick, South Boston, Mass., assignor to Regenerated Cold Air Company, Kittery, Me. Apparatus for treating air	810,451	Jan. 23	3786	779	120	945
White, Joseph A. (See Moore and White.)						
White, Royal C., Chicago, Ill. Filling apparatus for liquids	809,764	Jan. 9	2317	480-1	120	542
White Sewing Machine Company et al. (See Baurmann, Gustav, assignor.)						
Whitehead & Hoag Company. (See McLean, John, assignor.)						
Whitehead, William E., Trenton, N. J. Valve	810,880	Jan. 23	4064	837	120	1008
Whiteside, Frank F., Youngstown, Ohio. Pulley-block	811,191	Jan. 30	5249	1099	120	1309
Whitham, Hugh, Hamilton, Canada. Pipe-damper	813,168	Feb. 20	3282	733	120	2302
Whitin Machine Works. (See Owen and Harding, assignors.)						
Whitin Machine Works. (See Pierce, George L., assignor.)						
Whiting, Walter R. (See Porter and Whiting.)						
Whitlatch, Marshall, Westfield, N. J. Indoor-golf game apparatus	811,247	Jan. 30	5455	1139	120	1346
Whitlock Coil Pipe Company. (See Brinkman, Louis H., assignor.)						
Whitman, Victor, assignor to Alaska Codfish Co., San Francisco, Cal. Apparatus for dry-curing fish	812,264	Feb. 20	3472	760	120	2330

Alphabetical list of patentees for January and February—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Wickman, Victor, assignor to Alaska Codfish Company, San Francisco, Cal. Dry-curing ...	813,265	Feb. 20	3475	706	120	2331
Wickwire, Oliver M. (See Cunard, Charles B., assignor.)						
Widney, George M., Lawson, Colo. Ore-concentrator	809,785	Jan. 9	2824	481	120	843
Widney, Isaac, deceased, Cedarboga, Iowa; H. D. Lane, administrator. Mine-shaft door	813,087	Feb. 20	3096	678	120	2262
Widney, Jessie. (See Kellner, Henry F., assignor.)						
Wiedeke Manufacturing Company. (See Couch, Elbert M., assignor.)						
Wiedeke Autogenic Company. (See Barnett, Morrimon J., assignor.)						
Wiegand, Matthew J., Worcester, Mass. Woven pile fabric	810,012	Jan. 16	2614	583	120	702
Wiegand, Matthew J., Worcester, Mass. Woven pile fabric	810,013	Jan. 16	2617	582	120	702
Wiegand, Felix T., Wheatley, Ark. Buckle	809,574	Jan. 9	2515	522	120	557
Wiegand, Kansas U., Topeka, Kans. Type	812,948	Feb. 27	4462	1029	120	2545
Wiegmann, John G. A. (See Burks, Charles G., assignor.)						
Wiegmann, John M., Erie, Pa. Crane mechanism	809,481	Jan. 9	1775	396-7	120	424
Wiegmann, John R., Erie, Pa. Crane-locking mechanism	809,482	Jan. 9	1779	397	120	424
Wiegmann, John R., Erie, Pa. Locking device for cranes	809,483	Jan. 9	1781	397-8	120	425
Wigle, John, and A. M. Crossley, Glasgow, Scotland. Boiler-tube	811,016	Jan. 30	4008	1094	120	1227
Wigle, Solomon W., W. R. Cunningham, Denver, and H. A. Gray, Arvada, Colo. Car-coupling						
Wigle, Simon W., Bakersfield, Cal. Device for removing mining and other debris	811,808	Feb. 6	814	115	120	1595
Wigle, Frederick, Esher, England. Apparatus for casting projectiles for small-arms	809,893	Jan. 9	1990	413	120	469
Wigle, Frederick, Esher, England. Apparatus for casting projectiles for small-arms	810,891	Jan. 23	4085	537	120	1008
Wiggin, Thomas, assignor of one-half to J. Perry, Mountainview, Wyo. Harness-fastener	810,832	Jan. 23	4301	937	120	1104
Wiggins, Charles J., Newark, N. J. Metal bed	811,756	Feb. 6	407	89	120	1575
Wildman, Gustavus, assignor to Richards Manufacturing Company, Aurora, Ill. Grind-stone-frame	813,471	Feb. 27	3908	857	120	2482
Wilhelm, Paul H., Denver, Colo. Acetylene-gas apparatus	809,249	Jan. 9	1491	300	120	363
Wilhelm-Abegg, Ernst, assignor to Wanner & Co., Horgen, Switzerland. Self-acting mule-saddle-machine	812,268	Feb. 13	1764	386	120	1925
Wilhoit, August, and R. E. Gruwell, Miles City, Mont. Current-motor	809,894	Jan. 9	1991	412-14	120	469
Wiederhold, Oscar, Jersey City, N. J. Making manties	810,314	Jan. 16	3459	714-15	120	838
Wiederhold, Oscar, Jersey City, N. J. Holder for incandescing manties	811,017	Jan. 30	4009	1024	120	1227
Wiegand, Henry J., Milwaukee, Wis. Explosive-engine-starting mechanism	811,018	Jan. 30	4010	1024	120	1227
Wiese, Otto C., assignor of one-half to O. Mayer, New York, N. Y. Spring-scale	813,068	Feb. 20	3089	679	120	2253
Wiese, Otto C., Brooklyn, assignor of one-half to O. Mayer, New York, N. Y. Spring-scale	811,979	Feb. 6	986	196-9	120	1571
Wigert, David, Greensburgh, Ill. Steam-boiler	811,980	Feb. 6	900	189	120	1572
Wiggs, James A., Jr., Beaumont, Tex. Hydraulic swivel	812,908	Feb. 20	2766	609	120	2178
Wiggs, Alfred T., Rowton, Tex. Gun attachment	810,315	Jan. 16	3460	715	120	838
Wiggin, Eldridge M., assignor to North & Judd Manufacturing Company, New Britain, Conn. Breast-strap slide	809,080	Jan. 2	915	192	120	208
Wiggin, Ernest, New York, N. Y. Gearing	810,014	Jan. 16	2819	553	120	703
Wiggins, Charles C., Morristown, Tenn. Trunk	813,189	Feb. 20	3333	713	120	2303
Wiggins, John W., Chicago, Ill. Power mechanism	813,267	Feb. 20	3267	639	120	2207
Wiggins, Nicholas, Shelby, Ohio, assignor to Shelby Steel Tube Company, Pittsburg, Pa. Apparatus for reducing the ends of tubes	813,767	Feb. 27	4455	934	120	2602
Wight & Wilson Company. (See Crippen, Walter, assignor.)	810,241	Jan. 16	3290	934	120	808
Wilbur, William W., Somersport, assignor of two-eighths to T. S. Dean and H. E. McArthur, Brockport, N. Y. Post						
Wilde, Lewis M., North Walpole, N. H. Candle-holder	813,338	Feb. 20	3332	707	120	2263
Wilde, Samuel, deceased; A. W. North, Woodland, Cal., administrator. Boot and shoe	812,248	Feb. 13	1488	385	120	1884
Wilder, William D., Brockton, Mass. Shoe-tree	812,449	Feb. 13	1886	411	120	1946
Wilderman, Morris, and R. L. Mond, London, England. Thermopile	812,215	Feb. 13	1628	358	120	1897
Wildman, Frank B., and H. G. Loomis, assignors to McMichael & Wildman Manufacturing Co., Norristown, Pa. Drying mechanism	813,682	Feb. 27	4317	900	120	2573
Wile, Joseph, New York, N. Y. Kerosene-lamp	811,861	Feb. 6	901	199-200	120	1572
Wiley, Town of, Kansas. (See Krämer, Friedrich, assignor.)	812,249	Feb. 13	1490	326-6	120	1884
Wilkes, Thomas W., et al. (See Conner, Charles R., assignor.)						
Wilkes, Thomas L., assignor to American Patent Promotion Company, Phœnix, Ariz.						
Wilkie, Robert L. (See Mathewson, Wilkie, and Lewis.)	812,160	Feb. 6	1275	279-81	120	1749
Wilkin, George E., Corinth, Vt. Gang-saw mill	812,530	Feb. 13	2053	450	120	1995
Wilkins, George E., Oshkosh, Wis. Artificial limb	809,575	Jan. 9	2516	522-3	120	557
Wilkins, George E., Oshkosh, Wis. Artificial limb	809,576	Jan. 9	2520	523	120	557
Wilkinson, James, Birmingham, Ala., assignor to Wilkinson Turbine Company. Controlling mechanism for engines	811,982	Feb. 6	904	200	120	1573
Wilkinson, James, Birmingham, Ala., assignor to Wilkinson Turbine Company. Valve mechanism for engines	811,983	Feb. 6	906	200	120	1574
Wilkinson, James, Birmingham, Ala., assignor to Wilkinson Turbine Company. Marine engine	811,986	Feb. 6	917	201	120	1575
Wilkinson, James, Birmingham, Ala., assignor to Wilkinson Turbine Company. Marine engine	811,987	Feb. 6	919	202	120	1576
Wilkinson, James, Providence, R. I., assignor to Wilkinson Turbine Company. Elastic-fluid turbine	811,984	Feb. 6	913	201	120	1574
Wilkinson, James, Providence, R. I., assignor to Wilkinson Turbine Company. Turbine engine	811,985	Feb. 6	915	201	120	1575
Wilkinson Company, et al. (See Abbasse, Michele G. de, assignor.)						
Wilkinson Turbine Company. (See Wilkinson, James, assignor.)						
Will, Frederick L., Walsall Green, England. Ball push, pull, &c	809,595	Jan. 9	2001	415	120	471
Willard, Charles, Ohio. Gate	811,919	Jan. 30	4013	1024	120	1228
Willard, Frank W., Portland, Oreg. Log-dog	812,289	Feb. 13	1767	387	120	1926
Willcox & Company Manufacturing Company. (See Darley, John W., Jr., assignor.)						
Willcox, Jr., & Company, Incorporated. (See Kaim, Frank L., assignor.)						
Willcox Company. (See Knight and Sweet, assignors.)						
Willcox, Moses, Boston, Mass. Manufacture of garments	809,877	Jan. 9	2839	528	120	598
Willcox, Walter A. (See Brown, Nathaniel H., assignor.)						
Willcox, Walter A., assignor of fifteen-eighteenths to W. H. Cowles and J. F. Young, Spokane, Wash. Apparatus for treating ores	813,124	Feb. 20	3210	701-4	120	2277
Willcox, Walter A., assignor of fifteen-eighteenths to W. H. Cowles and J. F. Young, Spokane, Wash. Process of treating ores	813,125	Feb. 20	3217	704-6	120	2278
Willcox, Walter A., assignor of fifteen-eighteenths to W. H. Cowles and J. F. Young, Spokane, Wash. Process of treating ores	813,126	Feb. 20	3221	706-7	120	2279
Willcox, Walter A., assignor of fifteen-eighteenths to W. H. Cowles and J. F. Young, Spokane, Wash. Process of treating ores	813,127	Feb. 20	3226	707-8	120	2280

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Williams, Charles B., Ontario, Cal. Trap-nest for laying hens	809,036	Jan. 2	811	175	120	179
Williams, Charles H., Jr., assignor to Chicago Railway Equipment Company, Chicago, Ill. Brake-beam	813,758	Feb. 27	4456	985	120	2602
Williams, David A. (See King, Samuel M., assignor.)						
Williams, Edward G. (See Parmelee and Williams.)						
Williams, Edward T., Boston, Mass. Food compound and preparing the same	811,465	Jan. 30	5757	.....	120	1407
Williams, Frank T. (See Homan and Williams.)						
Williams, Harry B., Brooklyn, assignor to American Can Company, New York, N. Y. Vacuum-sealing preserving-can	812,966	Feb. 20	2908	639	120	2207
Williams, Harry J., Meriden, Conn., assignor to United States Envelope Company, Springfield, Mass. Paper-fixture	813,128	Feb. 20	3228	708	120	2280
Williams, Henry M. (See Burger and Williams.)						
Williams, John H. (See Sitton and Williams.)						
Williams, Joseph A., Cleveland, Ohio. Explosive-engine	811,809	Feb. 6	517	115	120	1595
Williams, Joseph A., Cleveland, Ohio. Explosive-engine	811,888	Feb. 6	679	149	120	1639
Williams, Joseph B., and E. C. Brown, Susanville, Cal. Support for horses' heads	813,750	Feb. 27	4457	985	120	2603
Williams, Joseph T. (See Eaches, William R., assignor.)						
Williams, Milton F., assignor to Williams Patent Crusher & Pulverizer Company, St. Louis, Mo. Cage for crushers and pulverizers	811,679	Feb. 6	282	63	120	1547
Williams, Milton F., assignor to Williams Patent Crusher & Pulverizer Company, St. Louis, Mo. Disintegrating-machine	813,190	Feb. 20	3334	733	120	2302
Williams Patent Crusher & Pulverizer Company. (See Williams, Milton F., assignor.)						
Williams, Sydney S., Chicago, Ill. Internal-combustion engine	809,081	Jan. 2	916	192	120	203
Williams Telephone & Supply Company. (See Horning, Walter R., assignor.)						
Williams, William H., Belle, Okla. Ter. Combined lister-plow and planter	811,606	Feb. 6	136	30-1	120	1515
Williams, William J., Terre Haute, Ind. Continuous-rail joint and clamp	809,417	Jan. 9	1652	339	120	398
Williamson, John. (See Schenck, Rudolph, assignor.)						
Williamson, John S., Elizabethtown, N. C. Bag-fastener	813,266	Feb. 20	3477	706-7	120	2331
Williamson, William, Saginaw, Mich. Check-rein	808,951	Jan. 2	686	149	120	182
Williamson, Wm. H. (See Strom, Victor A., assignor.)						
Willis, Edward J., Richmond, Va. Electric machine	813,472	Feb. 27	3911	856	120	2483
Willis, Henry M., East Williston, N. Y. Display rack or stand	808,982	Jan. 2	688	149	120	182
Willis, Richard M., New York, and A. A. Du Mond, Rochester, N. Y.; said Du Mond assignor to said Willis. Dispensing bottle or jar	809,159	Jan. 2	1059	220	120	232
Willix, Daniel B., assignor of one-half to G. W. Willix, Alexandria Bay, N. Y. Controller for sparking devices of gas-engines	811,680	Feb. 6	283	63	120	1547
Willix, George W. (See Willix, Daniel B., assignor.)						
Willson, Freeman R., Jr., assignor to J. A. Jeffrey, Columbus, Ohio. Separator	811,192	Jan. 30	5254	1099-1100	120	1201
Willson, Freeman R., Jr., Worthington, assignor to J. A. Jeffrey, Columbus, Ohio. Conveyer-chute	813,473	Feb. 27	3912	858	120	2483
Willson, Freeman R., Jr., Worthington, assignor to J. A. Jeffrey, Columbus, Ohio. Conveyer	813,474	Feb. 27	3915	859	120	2484
Wilmer, Elias R., et al. (See Sussman, Leon, assignor.)						
Wilmer, Elias R., New York, N. Y. Incandescent gas-burner	812,469	Feb. 13	1908	421	120	1965
Wilmer, Samuel, et al. (See Sussman, Leon, assignor.)						
Wilson, Albert B., assignor of one-fourth to J. M. Lesser, New York, N. Y. Car-fender	813,475	Feb. 27	3917	859	120	2485
Wilson, Archibald R. (See Iveson and Wilson.)						
Wilson, Arthur, Berlin, Wis. Portable electric-lamp outfit	812,710	Feb. 13	2385	524	120	2049
Wilson, David M., near Maynardville, Tenn., assignor to K. Hamilton, Washington, D. C. Automatic car-coupling	812,540	Feb. 13	2055	451	120	1986
Wilson, Ernest, London, England. Apparatus for measuring watts in electrical circuits	810,179	Jan. 16	3156	653-5	120	774
Wilson, Fred. (See Field, Clark, and Wilson.)						
Wilson, George E. (See Kramer and Wilson.)						
Wilson, George W., Rockwell, assignor of one-half to J. E. McEvoy, Hagerman, Idaho. Whiffletree-hook	812,260	Feb. 13	1769	387	120	1926
Wilson, Henry, Emlenton, Pa. Device for oil-wells	812,711	Feb. 13	2385	524	120	2049
Wilson, Howard B., Schenectady, N. Y., assignor to General Electric Company. Starting device for electric motors	809,578	Jan. 9	2524	523	120	598
Wilson, James G., Larchmont, N. Y. Shutter	811,607	Feb. 6	141	31	120	1516
Wilson, James H., Denver, Colo. Trace-carrier	812,909	Feb. 20	2770	610	120	2179
Wilson, Joseph, Christchurch, New Zealand. Combined file and binder for newspapers and such like material	809,484	Jan. 9	1782	398	120	425
Wilson, Joseph F., Invercargill, New Zealand. Friction-clutch	810,516	Jan. 23	3823	806	120	978
Wilson, Leonard, assignor to Stanley Electric Manufacturing Company, Pittsfield, Mass. Protection against reversal of energy	811,265	Jan. 30	5366	1126	120	1231
Wilson, Robert C., Athens, Ga. Combined bottle-cap and cork-puller	811,113	Jan. 30	3074	1060	120	1208
Wilson, Samuel A., and E. A. Bronson, Newburgh, N. Y. Sand-drier	812,191	Feb. 20	2386	734	120	2303
Wilson, William L., Tilden, Ill. Power-transmitting apparatus	812,626	Feb. 13	2262	486	120	2019
Wiltse, Richard, Grand Junction, Iowa. Anchor-post	809,579	Jan. 9	2526	524	120	599
Wimer, Jacob C., Joplin, Mo. Invoicing-machine	812,910	Feb. 20	2771	610	120	2179
Winberg, August F., New York, N. Y. Awning	808,963	Jan. 2	669	149	120	183
Winchester Repeating Arms Co. (See Johnson, Thomas C., assignor.)						
Winchester Repeating Arms Co. (See Mason, William, assignor.)						
Winfield Manufacturing Company. (See Winfield, William C., assignor.)						
Winfield, William C., assignor to Winfield Manufacturing Company, Warren, Ohio. Electric welding-machine	812,989	Feb. 20	2900	639-40	120	2207
Winfrey, James W., Ashdown, Ark. Heating device for oil-presses	809,547	Jan. 9	1892	398	120	449
Wingate, Earnest R., Spokane, Wash. Clamp	808,706	Jan. 2	163	37	120	37
Wingate, Wilbur E., assignor of one-half to Emmons Loom Harness Company, Lawrence, Mass. False reed for looms	812,216	Feb. 13	1629	356	120	1897
Wingerter, W. Bernard, et al. (See De France, Murry A., assignor.)						
Winget Concrete Machine Company. (See Winget, Marion A., assignor.) (Reissue.)						
Winget, Marion A., deceased, assignor, by mesne assignments, to Winget Concrete Machine Company, Columbus, Ohio. Machine for making concrete bodies. (Reissue)	12,444	Jan. 30	5892	1226	120	1426
Wingo, Richard T., assignor to Brown and Sharpe Manufacturing Company, Providence, R. I. Mechanical movement	809,160	Jan. 2	1060	220	120	232
Wingo, Richard T., assignor to Brown and Sharpe Manufacturing Company, Providence, R. I. Mechanical movement	813,129	Feb. 20	3229	709	120	2281
Winkley Company. (See Schoenberger, Gustav C., assignor.)						
Winn, Virgil, Toledo, Wash. Self-feeding device-table	812,105	Feb. 6	1143	261	120	1721
Winn, William E., assignor to Hoyl & Patterson, Inc., Pittsburg, Pa. Coal and like washer	811,602	Feb. 6	142	31	120	1516
Winn, William E., assignor to Hoyl & Patterson, Inc., Pittsburg, Pa. Coal and like washer	811,603	Feb. 6	144	32	120	1516
Winslow, Horace L., Chicago, Ill. Brake-shoe	808,688	Jan. 9	2126	441	120	497

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Winter, Carl, assignor to C. Gaebel, Chicago, Ill. Sad-iron handle	811,020	Jan. 30	4913	1025	120	1226
Winter, Charles F., Hamilton, Ohio, assignor to M. D. Helfrich, Evansville, Ind. Flushing-valve	811,988	Feb. 6	924	202	120	1677
Winterbottom, Thomas, White Cloud, Kans. Rope-rack	813,760	Feb. 27	4458	985	120	2603
Wintermute, Harris C., Kansas City, Mo. Artificial limb	810,180	Jan. 16	3163	655	120	775
Wirth, Edward J., Memphis, Tenn. Latch for refrigerator-doors	812,107	Feb. 6	1144	251	120	1722
Wirth, Charles E., assignor to Plume and Atwood Manufacturing Company, Waterbury, Conn. Gas-regulating Bunsen burner	811,989	Feb. 6	926	202	120	1678
Wirth, Charles E., and W. W. Bradley, assignors to Plume and Atwood Mfg. Co., Waterbury, Conn. Gas-regulating device	812,627	Feb. 13	2223	486	120	2019
Wirth, Theodore, Hartford, Conn. Amusement device	808,796	Jan. 2	347	75	120	77
Wise, Daniel, *et al.* (See Barry, Jefferson D., assignor.)						
Wise, John. (See Booth and Wise.)						
Wismar, Emil, Los Angeles, Cal. Dado-cutter	811,681	Feb. 6	285	63	120	1548
Wismar, Emil, Los Angeles, Cal. Cutter-head for wood-shapers	811,682	Feb. 6	286	64	120	1548
Wissmann, Conrad, Geisenkirchen, Germany. Coal-mining machine	809,350	Jan. 9	1492	301-2	120	364
Wister, Jacob E., and G. T. Townsley, Philadelphia, Pa. Device for filling bottles	813,761	Feb. 27	4459	985-6	120	2603
Witbeck, Arba L. (See Rowe and Witbeck.)						
Witherell, George E., Hartford, Conn., assignor to Remington Arms Company, Ilion, N. Y. Single-trigger mechanism for firearms	808,890	Jan. 2	536	119	120	118
Witherell, George E., Hartford, Conn., assignor to Remington Arms Company, Ilion, N. Y. Firing mechanism for firearms	808,964	Jan. 2	600	150	120	152
Withey, Louis L. (See Lawton and Withey.)						
Witte, Hubert, assignor to St. Louis Car Company, St. Louis, Mo. Revolving and reclining chair	809,596	Jan. 9	2003	415	120	472
Witte, Hubert, assignor to St. Louis Car Company, St. Louis, Mo. Car-platform gate	809,597	Jan. 9	2005	416	120	472
Witte, Hubert, assignor to St. Louis Car Company, St. Louis, Mo. Folding gate for car-platforms	810,502	Jan. 23	4057	837	120	1008
Witte, Hubert, assignor to St. Louis Car Company, St. Louis, Mo. Reversible car-seat	810,533	Jan. 23	4803	938	120	1105
Witte, Hubert, assignor to St. Louis Car Company, St. Louis, Mo. Reversible car-seat	813,267	Feb. 20	3478	767	120	2332
Wittkowski, Friedrich W., Des Moines, Iowa. Track-sanding apparatus	808,797	Jan. 2	349	75	120	78
Wittmer, Owen W., Columbus, Ohio. Brake-hanger	813,476	Feb. 27	3019	660	120	2485
Wixcel, Samuel M., Marcus, Iowa. Hay-loader	809,598	Jan. 9	2004	416-18	120	472
Wlodarczyk, Wladyslaw, Borislaw, Austria-Hungary. Deep-boring apparatus	812,541	Feb. 13	2057	451-2	120	1986
Wm. Powell Co. (See Powell, James, assignor.)						
Wold, Torris. (See Cameron, William, assignor.)						
Wolf, Abram W., Amos, W. Va. Fishing-tool for oil-wells	811,348	Jan. 30	5586	1159	120	1366
Wolf, Alvin Q., Dayton, Ohio. Sash-operating mechanism	810,242	Jan. 16	3200	664-5	120	804
Wolf, Charles L. E., New York, N. Y. Non-refillable bottle	810,453	Jan. 23	3788	779	120	946
Wolf Electrical Promoting Company. (See Meyer, Henry A., assignor.)						
Wolf, John H., Cottagegrove, Wis. Land-roller	810,453	Jan. 23	3792	780	120	948
Wolfe, John, and G. F. Frech, Cincinnati, Ohio. Ball-caster	811,467	Jan. 30	5759	1205	120	1408
Wolfe, William, Batavia, assignor to American Heel Machine Company, Cincinnati, Ohio. Heel-building machine. (Reissue)	12,433	Jan. 2	1341	272	120	295
Wolf, Herbert W. (See Lipschutz, Arthur, assignor.)						
Wolff, Hugo. (See Bally and Wolff.)						
Wolff, Julie, New York, N. Y. Household-cleaner	812,339	Feb. 20	3635	797	120	2364
Wolfram, Paul H., Chicago, Ill. Ice-box	810,015	Jan. 16	2819	583	120	703
Wolfson, Jacob M. (See Raab and Wolfson.)						
Womack, Samuel W., Laramie, Wyo. Plaster-kettle	813,192	Feb. 20	3336	734	120	2303
Wood, Charles W., New Orleans, La. Fireman's protective dress	811,021	Jan. 30	4914	1026	120	1226
Wood, Edgar J., New York, N. Y. Turbine-engine	808,709	Jan. 2	164	38	120	38
Wood, Frederick L., Worcester, Mass., assignor to Aeolian Company, New York, N. Y. Take-up roll for perforated music-sheets	813,607	Feb. 27	4179	916	120	2543
Wood, Henry A. W., assignor to Campbell Printing Press & Manufacturing Company, New York, N. Y. Impression mechanism of cylinder printing-machines	810,016	Jan. 16	2821	583-4	120	703
Wood, Henry A. W., assignor to Campbell Printing Press & Manufacturing Company, New York, N. Y. Combined rotary web printing and folding machine	810,593	Jan. 23	4069	898	120	1009
Wood, Marshall A. (See Lovegrove, Thomas G., assignor.)						
Wood, Montraville M., Schenectady, N. Y., assignor to General Electric Company. Lamp-guard	811,810	Feb. 6	519	116	120	1506
Wood, William C., assignor to Crown Cork and Seal Company, Baltimore, Md. Soda-water-bottling machine	813,340	Feb. 20	3635	797	120	2364
Wood, William C., and B. Oakford, London, assignors to W. Canning & Co., Birmingham, England. Apparatus for the agitation of solutions used in electrodeposition of metals	808,798	Jan. 2	351	75	120	78
Wood, William H., Media, Pa. Hydraulic riveting-machine	811,468	Jan. 30	5726	1205	120	1408
Wood, William H., Media, Pa. Hydraulic distributing-valve	812,626	Feb. 13	2226	486-7	120	2020
Woodard, Roy L., Richburg, N. Y. Clutch	808,995	Jan. 2	692	150	120	153
Woodbern, Lewis W., Charleston, Ill. Weather-strip	813,268	Feb. 20	3479	767	120	2332
Woodcock, James S., New Lexington, Ohio. Grinding-mill	813,280	Feb. 13	1491	336	120	1864
Woodford, Brenson C., assignor to International Steam Pump Company, New York, N. Y. Vacuum-breaker for condensers	811,690	Feb. 6	938	208	120	1678
Woodhead, Fred J., Bakersfield, Cal. Hydrocarbon-burner	812,712	Feb. 13	2366	534	120	2049
Woods, Edwin S., Chicago, Ill. Roller side bearing for railway-cars	809,599	Jan. 9	2015	418	120	474
Woodward, Amos W., Mostford, Ill. Stove or furnace	811,349	Jan. 30	5658	1189	120	1366
Woodward, Mark R. (See Iwanami and Woodward.)						
Woodworth, Elmer C., Deer Isle, Me. Purifier for gas	809,669	Jan. 9	2129	441	120	496
Woodridge, Tom A., and E. A. Ward, Birmingham, England. Flexible coupling	809,880	Jan. 9	2626	534	120	589
Woodside, Henry. (See Vincent, Gales, assignor.)						
Woolley, Robert J., Portland, Oreg. Butter-cutter	811,469	Jan. 30	5761	1206	120	1408
Woolman, Albert J., Urbana, Ill. Fertilizer-distributer	808,799	Jan. 2	352	76	120	78
Woolverton, Thomas N., Grimsby, Canada. Fruit-sorter	812,470	Feb. 13	1910	451	120	1965
Woolworth & Graham. (See Bunce, William H., assignor.)						
Worner, Emil, assignor to J. D. Riedel Aktiengesellschaft, Berlin, Germany. Mercury cable of shells and making same	811,193	Jan. 30	5389		120	1301
Worth, James E., and W. B. Ries, Fancyhill, Va. Sparking device for engines	811,470	Jan. 30	5763	1206	120	1408
Wrightington, Charles C., Dunellen, N. J. Vehicle-wheel tire	812,477	Feb. 27	3989	880	120	2486
Wright, Francis A., Atlanta, Ga. Annunciator	813,981	Feb. 27	4814	1062	120	2679
Wright, Emil, Dahlem, Germany. Fastening device	809,851	Jan. 9	1494	302	120	364
Wright, Charles H., and W. E. Marshall, Cleveland, Pa. Adjustable means for rods, bars, or pulleys	811,260	Jan. 30	5389	1189	120	1367
Wright, Henry C., Cambridge, Mass. Heat-stirring means for lasts	810,494	Jan. 23	4071	899	120	1009
Wright, Frank W., San Francisco, Cal. Levee-building suction-dredge	809,600	Jan. 2	354	76-7	120	79
Wright, Frank W., San Francisco, Cal. Levee	813,699	Feb. 20	3101	679	120	2252
Wright, George C., Cleveland, Ohio. Show-case	810,243	Jan. 16	3008	635	120	804

Alphabetical list of patentees for January and February—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
			Spec.	Drgs.	Vol.	Page.
Wright, George C., Cleveland, Ohio. Electric-lamp bracket	810,244	Jan. 16	3304	685	120	804
Wright, Jacob P., New Haven, Conn., assignor to Diamond Match Company, Chicago, Ill. Box-machine	813,808	Feb. 27	4181	917-18	120	2544
Wright, Jacob P., Barberton, Ohio, assignor to Diamond Match Company, Chicago, Ill. Glue-applying mechanism	813,983	Feb. 27	4929	1090	120	2702
Wright, Morris S., Worcester, Mass., assignor to Aeolian Company. Pneumatic-action of musical instruments	809,039	Jan. 2	814	178	120	179
Wright, Thomas, Jersey City, N. J. Internal-combustion engine	809,062	Jan. 2	919	192	120	203
Wright, Walter, assignor to S. Stevenson & Company, Glasgow, Scotland. Vehicle-wheel	809,881	Jan. 9	2529	534	120	589
Wright, William. (See Hurd and Wright.)						
Wright, William A., Cumming, Ga. Bedstead attachment	808,352	Jan. 9	1495	302	120	364
Wrigley, John, Philadelphia, Pa., assignor to J. E. Wrigley, Smithville, N. J. Clamp	809,882	Jan. 9	2530	525	120	590
Wrigley, Joseph E. (See Wrigley, John, assignor.)						
Wuest, Frederick A., Lawrenceburg, Ind. Saw	809,485	Jan. 9	1784	369	120	426
Wyant, Willis H., Tabor, Iowa. Radiator	809,486	Jan. 9	1785	369	120	426
Wyatt, Albert E., assignor to Great American Automatic Vending Machine Company, Hoboken, N. J. Automatic vending-machine	812,778	Feb. 13	2508	551	120	2075
Wyatt, George C., Rome, Ga. Plastic composition	812,108	Feb. 6	1145		120	1722
Wyatt, George R., assignor of one-half to W. M. Barret and E. F. Fitzpatrick, Redwood City, Cal. Fence-post	812,109	Feb. 6	1146	252	120	1722
Wyckoff, Eliza A., administratrix. (See Wyckoff, Frank T.)						
Wyckoff, Frank T., deceased; E. A. Wyckoff, administratrix, assignor to Wyckoff Pipe and Creosoting Company, Stamford, Conn. Knife for auger-bits	811,351	Jan. 30	5561	1160	120	1367
Wyckoff Pipe and Creosoting Company. (See Wyckoff, Frank T., assignor.)						
Wyckoff, Seamans & Benedict. (See Shepard, Charles H., assignor.)						
Wyman, Horace, and J. T. Cyr, Worcester, Mass., ass gnors to Crompton & Knowles Loom Works. Weft-replenishing loom	811,889	Feb. 6	682	149	120	1629
Wyman, Horace W., deceased, Worcester, Mass.; M. H. Wyman, administratrix. Weft-replenishing loom	808,966	Jan. 2	595	151	120	154
Wyman, Mary H., administratrix. (See Wyman, Horace W.)						
Wyman, Orrin J., Medina, C. Dennett and C. O. Tinkham, Akron, N. Y. Barrel-heading press	812,911	Feb. 20	2772	610	120	2179
Wynn, Robert E., assignor to Henricks Novelty Company, Indianapolis, Ind. Self-governing clutch	811,352	Jan. 30	5563	1160	120	1367
Wynne, Agnes, *et al.* (See Wynne, Philip H., assignor.)						
Wynne, Philip H., assignor to A. Wynne and L. E. Knott Apparatus Company, Boston, Mass. Galvanometer	813,269	Feb. 20	3482	768	120	2333
Wysong, Olmedo C., Greensboro, N. C. Woodworking-machine	812,317	Feb. 13	1630	358-9	120	1897
X Kth Century Heating and Ventilating Company. (See Maag, George, assignor.)						
Yale & Towne Manufacturing Company. (See Horne, Joseph A., assignor.)						
Yankee Novelty Company. (See Kellogg, William M., assignor.)						
Yates, William B., Chicago, Ill. Automatic driving and reversing mechanism	812,318	Feb. 13	1632	359	120	1898
Yeoman, Frank, Oroville, Cal. Dredge	811,663	Feb. 6	267	64-5	120	1548
Yocum, George C., Scranton, Pa. Automatic vending-machine	811,756	Feb. 6	406	89	120	1575
Yoder, David B., Guthrie, Okla. Ter. Attachment for wood-boring braces	813,070	Feb. 20	3102	679-80	120	2252
Yoder, Luther K., *et al.* (See Stein, Jacob, assignor.)						
Yoders, Irvin G., assignor of five-eighths to W. F. Borchers, Washington, Pa. Reversing mechanism	813,341	Feb. 20	3638	798	120	2364
York, David W., Gardiner, Me. Washbowl-valve	809,161	Jan. 2	1061	220	120	232
York, Francis M., San Angelo, Tex. Pump-jack	811,114	Jan. 30	5074	1061	120	1262
Yost, Winfield. (See Hart and Yost.)						
Youlten, William, Westminster, England. Sighting of guns from cover	813,932	Feb. 27	4817	1062-3	120	2680
Young, Edward K., Middle Fork, Ohio. Fall-rope carrier	808,710	Jan. 2	167	38-9	120	38
Young, George H., Welcome, Wis. Loading device for dirt, manure, &c.	813,193	Feb. 20	3339	735	120	2303
Young, Herrald S., Beyrout, N. D. Concrete fence-post	811,022	Jan. 30	4915	1026	120	1226
Young, John F., *et al.* (See Williams, Charles, assignor.)						
Young, Millard H., Catskill, N. Y. Horseshoe	811,353	Jan. 30	5564	1161	120	1367
Yunker, Gottlieb, and G. Schwing, Newark, N. J., assignors to Newark Cornice and Skylight Works. Automatic fire-window	810,595	Jan. 23	4073	899	120	1010
Zacnek, Stefan, and E. O. Gottlieb, New York, N. Y. Apparatus for displaying pictures	811,610	Feb. 6	146	32-3	120	1517
Zange, Max C., assignor to E. S. Swift, trustee, New Haven, Conn. Lathe attachment	809,353	Jan. 9	1497	302-3	120	365
Zeckhauser, Ezekiel, Scottdale, Pa. Button	809,883	Jan. 9	2531	525	120	590
Zeidler, Emil T., Riesa, Germany. Weighing device for vehicles	810,517	Jan. 23	3923	806-7	120	978
Zeigler, Andrew W., Elwood City, Pa. Show-case	812,713	Feb. 13	2389	525	120	2050
Zeiss, Firm of Carl. (See König, Albert, assignor.)						
Zeiss, Firm of Carl. (See Seidemann, Otto, assignor.)						
Zenker, Charles F., New York, N. Y. Cigar	809,162	Jan. 2	1063	221	120	233
Ziegler, Arthur W., Berlin, Wis. Cover for jars, glasses, &c.	810,524	Jan. 23	4505	938	120	1105
Ziegler, Fredrick W., Nicola Lake, Canada. Life-saving appliance	813,609	Feb. 27	4187	918	120	2545
Ziemendorff, Frederick. (See Poulson, Britton, assignor.)						
Ziems, Gilbert L., Glenavon, Ill. Conveyer	812,319	Feb. 13	1634	359-60	120	1898
Zillessen, Ernst, Passaic, N. J. Dysing apparatus	813,478	Feb. 27	3922	880	120	2486
Zillessen, Ernst, Passaic, N. J. Dysing apparatus	813,479	Feb. 27	3924	881	120	2487
Zimmerman, Charles F. (See Zimmerman, Ida, C. F., and H. C.)						
Zimmerman, Harry C. (See Zimmerman, Ida, C. F., and H. C.)						
Zimmerman, Ida, C. F., and H. C., Frederick, Md. Shutter bower and fastener	809,884	Jan. 9	2532	525	120	590
Zimmerman, John, Philadelphia, Pa., assignor to Philadelphia Tapestry Mills. Woven pile fabric	813,130	Feb. 20	3234	709	120	2281
Zimmerman, John, Philadelphia, Pa., assignor to Philadelphia Tapestry Mills. Woven pile fabric	813,131	Feb. 20	3235	709-10	120	2282
Zimmerman, John, Philadelphia, Pa., assignor to Philadelphia Tapestry Mills. Pile-gage	813,132	Feb. 20	3238	710	120	2282
Zipprich, Eugene. (See Müller and Zipprich.)						
Zoschke, Frank, Fryburg, Pa. Door opener and closer for mines	811,890	Feb. 6	685	150	120	1630
Zoller, William. (See Ware and Zoller.)						
Zollinger, Adalbert, Leipsic-Eutritzsch, assignor to Popper & Co., Leipsic, Germany. Action for mechanical musical instruments	813,480	Feb. 27	3926	881	120	2487
Zumdahl, Frederick C. (See Cormack and Zumdahl.)						
Zundel, Gustave A., New York, N. Y., assignor to J. H. Bunnell and Company. Spring-jack wedge	810,596	Jan. 23	4075	899	120	1010
Zwicky, Heinrich, Schindellegi, Switzerland. Weft-replenishing mechanism for looms	812,970	Feb. 20	2902	640	120	2206

ALPHABETICAL LIST OF PATENTEES OF DESIGNS.

Name, residence, and design.	No.	Date.	Official Gazette. Volume.	Page.
Adams, William L., South Portland, Me. Steering-wheel	37,810	Feb. 6	120	1766
Atwood, Irving H., Amesbury, Mass. Lamp	37,772	Jan. 2	120	297
Barker, Samuel N., Kalamazoo, Mich. Back for playing-cards	37,789	Jan. 16	120	876
Beach, Henry B., and H. Kayser, assignors to International Silver Company, Meriden, Conn. Supporting base or standard for candelabra	37,780	Jan. 9	120	613
Beach, Henry B., and H. Kayser, assignors to International Silver Company, Meriden, Conn. Cup or ornament	37,781	Jan. 9	120	613
Bennett, Charles A., Taunton, Mass., assignor to Reed & Barton Corporation. Spoon or fork	37,769	Jan. 2	120	296
Bennett, John, Attleboro, Mass., assignor to Electric Chain Company. Bracelet	37,805	Feb. 6	120	1765
Bennett, John, Attleboro, Mass., assignor to Electric Chain Company. Bracelet	37,818	Feb. 13	120	2088
Birkin, Charles W., Nottingham, England. Lovers lace	37,783	Jan. 9	120	613
Birkin, Charles W., Nottingham, England. Lovers lace	37,838	Feb. 20	120	2892
Birkin, Charles W., Nottingham, England. Lovers lace	37,839	Feb. 20	120	2893
Birkin, Charles W., Nottingham, England. Lovers lace	37,840	Feb. 20	120	2893
Birkin, Charles W., Nottingham, England. Lovers lace	37,841	Feb. 20	120	2893
Boykin, Christopher C., Norfolk, Va. Souvenir-cradle	37,842	Feb. 20	120	2893
Bradley, William A., New York, N. Y. Toilet-powder receptacle	37,768	Jan. 2	120	296
Bromley & Sons, John. (See Petsold, Adolph, assignor.)	37,819	Feb. 13	120	2088
Brotherhood of Locomotive Firemen. (See Carter, William S., assignor.)				
Burns, George E., Central Falls, R. I. Ring	37,848	Feb. 27	120	2710
Carruthers, Samuel O., Portland, Me. Bottle	37,787	Jan. 16	120	876
Carter, William S., assignor to Brotherhood of Locomotive Firemen, Peoria, Ill. Badge	37,797	Jan. 30	120	1436
Chastenet Frères. (See Chastenet, Maurice, assignor.)				
Chastenet, Maurice, assignor to Chastenet Frères, Bordeaux, France. Bottle	37,820	Feb. 13	120	2088
Churchill, William, Corning, N. Y. Reflector for lamps	37,798	Jan. 30	120	1437
Codman, William C., assignor to Gorham Manufacturing Company, Providence, R. I. Handle of spoons, forks, or similar articles	37,786	Jan. 16	120	876
Coffman, Will S., Columbia, Tenn. Wagon-body	37,782	Jan. 9	120	613
Collins, Henry H., Jr., Philadelphia, Pa. Card-mount	37,860	Feb. 27	120	2712
Collins, Henry H., Jr., Philadelphia, Pa. Card-mount	37,861	Feb. 27	120	2712
Continuous Glass Press Company. (See Shuman, Frank, assignor.)				
Crosby, Joseph H., Jacksonville, Fla., assignor to Greenleaf and Crosby Company. Brooch or similar article	37,790	Jan. 23	120	1136
Dawes, John L., Pittsburg, Pa. Illuminated chandelier-sign	37,799	Jan. 30	120	1437
Dawes, John L., Pittsburg, Pa. Illuminated chandelier-sign	37,800	Jan. 30	120	1437
Dawes, John L., Pittsburg, Pa. Illuminated chandelier-sign	37,801	Jan. 30	120	1437
Dawes, John L., Pittsburg, Pa. Illuminated chandelier-sign	37,802	Jan. 30	120	1437
Dawes, John L., Pittsburg, Pa. Illuminated chandelier-sign	37,823	Feb. 13	120	2089
Dietz Company, R. E. (See Everett, Ernest C., assignor.)				
Douglas, Archer W., assignor to Simmons Hardware Company, St. Louis, Mo. Padlock	37,771	Jan. 2	120	296
E. H. H. Smith Silver Company. (See Ittig, George P., assignor.)				
E. R. Thomas Motor Company. (See Thomas and Koen, assignors.)				
Electric Chain Company. (See Bennett, John, assignor.)				
Everett, Ernest C., assignor to R. E. Dietz Company, New York, N. Y. Vehicle-lamp	37,773	Jan. 2	120	297
Faber, Eberhard, New York, N. Y. Pencil	37,855	Feb. 27	120	2711
Fischer, Albert T., Cleveland, Ohio. Clock-case	37,852	Feb. 27	120	2711
Fischer, Albert T., Cleveland, Ohio. Clock-case	37,853	Feb. 27	120	2711
Goddard, William B., assignor to Meurer Bros. Co., Brooklyn, N. Y. Tile	37,836	Feb. 20	120	2892
Gorham Manufacturing Company. (See Codman, William C., assignor.)				
Greenleaf and Crosby Company. (See Crosby, Joseph H., assignor.)				
Haas, Frank A., New York, N. Y., assignor to M. J. Whittall, Worcester, Mass. Rug	37,826	Feb. 13	120	2090
Hamburger, Moses, New York, N. Y. Portière	37,784	Jan. 9	120	614
Hamburger, Moses, New York, N. Y. Portière	37,785	Jan. 9	120	614
Hertzmann, Siegmund, assignor to Mission Gold Bond Co., San Francisco, Cal. Trading-stamp	37,808	Feb. 6	120	1765
Herzog, Joseph L., New York, N. Y. Finger-ring	37,766	Jan. 2	120	296
Hirschberg, David, New York, N. Y. Belt	37,776	Jan. 2	120	296
Hubbell, Lindley D., Hartford, Conn. Frame of radiators for automobiles	37,827	Feb. 13	120	2090
Huber, Walter J., assignor of one-half to W. Imhoff, Dubuque, Iowa. Grave-cover	37,837	Feb. 20	120	2892
Hurd, Charles S., Newark, N. J. Bracelet	37,767	Jan. 2	120	296
Imhoff, William. (See Huber, Walter J., assignor.)				
International Conservatory of Music. (See MacMaster, James, assignor.)				
International Silver Company. (See Beach and Kayser, assignors.)				
Ittig, George P., assignor to E. H. H. Smith Silver Company, Bridgeport, Conn. Handle for spoons	37,791	Jan. 23	120	1137
Johnson and Johnson. (See Lea, John F., assignor.)				
Johnson, Robert L., Stoke-upon-Trent, England. Cover-dish	37,792	Jan. 23	120	1137
Johnson, Robert L., Stoke-upon-Trent, England. Cover-dish	37,793	Jan. 23	120	1137
Johntra, Joseph A., Flushing, N. Y. Premium-stamp	37,822	Feb. 13	120	2088
Kayser, Henry. (See Beach and Kayser.)				
Keller, Sidney A., New York, N. Y., assignor to Webster Company, North Attleboro, Mass. Back for brushes, hand-mirrors, and similar articles	37,777	Jan. 9	120	612
Keller, Sidney A., New York, N. Y., assignor to Woodside Sterling Company. Back of hand-mirrors or similar articles	37,778	Jan. 9	120	612
Koen, James R. (See Thomas and Koen.)				
Kunzel, Hugo, Cologne-Lindenthal, Germany. Casing for toy shooting apparatus	37,831	Feb. 20	120	2891
Lea, John F., Conshohocken, Pa., assignor to Johnson and Johnson, New Brunswick, N. J. Jar	37,830	Feb. 20	120	2890
Lodi, Jacob, Portland, Oreg. Lantern	37,856	Feb. 27	120	2711
MacMaster, James, assignor to International Conservatory of Music, Dallas, Tex. Music-indicator	37,854	Feb. 27	120	2711
McMahon, Joseph M., Brentsridge, assignor to Tarentum Glass Company, Tarentum, Pa. Glass dish	37,821	Feb. 13	120	2088
Merkle, Frank J., Zanesville, Ohio. Clay building-block	37,811	Feb. 6	120	1765

Alphabetical list of patentees of designs for January and February—Continued.

Name, residence, and design.	No.	Date.	Official Gazette. Vol.	Page.
Meurer Bros. Co. (See Goddard, William B., assignor.)				
Mission Gold Bond Co. (See Hertzmann, Siegmund, assignor.)				
Myers, Phineas B., Morristown, N. J. Paper box	37,802	Feb. 27	120	2712
Mygatt, Otis A., New York, N. Y. Reflector for artificial lights	37,808	Feb. 6	120	1765
Mygatt, Otis A., New York, N. Y. Illuminator	37,809	Feb. 6	120	1765
Mygatt, Otis A., New York, N. Y. Reflector of prismatic glass	37,812	Feb. 6	120	1766
Mygatt, Otis A., New York, N. Y. Reflector of prismatic glass	37,813	Feb. 6	120	1766
Mygatt, Otis A., New York, N. Y. Illuminator	37,824	Feb. 13	120	2089
Mygatt, Otis A., New York, N. Y. Illuminator	37,825	Feb. 13	120	2089
Mygatt, Otis A., New York, N. Y. Reflector for incandescent electric lamps	37,832	Feb. 20	120	2391
Mygatt, Otis A., New York, N. Y. Reflector for incandescent electric lamps	37,833	Feb. 20	120	2391
Mygatt, Otis A., New York, N. Y. Reflector for incandescent electric lamps	37,834	Feb. 20	120	2392
Mygatt, Otis A., New York, N. Y. Reflector for incandescent electric lamps	37,835	Feb. 20	120	2392
Novak, Frank J., South Omaha, Nebr. Collar	37,803	Feb. 27	120	2712
Petzold, Adolph, assignor to J. Bromley & Sons, Philadelphia, Pa. Rug	37,814	Feb. 6	120	1766
Petzold, Adolph, assignor to J. Bromley & Sons, Philadelphia, Pa. Rug	37,815	Feb. 6	120	1766
Petzold, Adolph, assignor to J. Bromley & Sons, Philadelphia, Pa. Rug	37,816	Feb. 6	120	1766
Petzold, Adolph, assignor to J. Bromley & Sons, Philadelphia, Pa. Rug	37,845	Feb. 20	120	2394
Petzold, Adolph, assignor to J. Bromley & Sons, Philadelphia, Pa. Rug	37,846	Feb. 20	120	2394
Porter, Henry K., Chelsea, Mass. Cutter-lever handle	37,847	Feb. 20	120	2394
Porter, Richard A., Patchogue, N. Y. Badge	37,826	Feb. 13	120	2089
Reed & Barton Corporation. (See Bennett, Charles A., assignor.)	37,817	Feb. 13	120	2088
Rooney, Margaret M. J., New York, N. Y. Crumb-tray	37,796	Jan. 23	120	1138
Schenker, Francis, assignor to Vincennes Novelty Manufacturing Company, Vincennes, Ind. Condiment-holder	37,779	Jan 9	120	613
Schickerling, Alfred, assignor to Schickerling Brothers & Company, New York, N. Y. Card-case or similar article	37,788	Jan. 16	120	876
Schickerling Brothers & Company. (See Schickerling, Alfred, assignor.)				
Shuman, Frank, Philadelphia, Pa., assignor to Continuous Glass Press Company. Sheet-glass	37,808	Jan. 30	120	1438
Simmons Hardware Company. (See Douglas, Archer W., assignor.)				
Smith, Sidney, Bridgeport, Conn. Handle for forks, spoons, and similar articles	37,850	Feb. 27	120	2710
Stachowski, Kasimir, Chicago, Ill. Society badge or button	37,804	Feb. 6	120	1764
Stevenhagen, Wilhelm, Weehawken, N. J. Hand-bag frame	37,830	Feb. 20	120	2391
Straker, Herbert J., North Attleboro, Mass., assignor to Webster Company. Back for brushes, mirrors, or similar articles	37,849	Feb. 27	120	2710
Tarentum Glass Company. (see McMahon, Joseph M., assignor.)				
Thomas, Edwin R., and J. R. Koen, assignors to F. R. Thomas Motor Company, Buffalo, N. Y. Automobile-body	37,774	Jan. 2	120	297
Traute, Henry C., New York, N. Y. Case for vending-machines	37,857	Feb. 27	120	2711
Traute, Henry C., New York, N. Y. Case for vending-machines	37,858	Feb. 27	120	2711
Traute, Henry C., New York, N. Y. Case for vending-machines	37,859	Feb. 27	120	2712
Vandergaw, Edward B., Brooklyn, N. Y. Printed textile fabric	37,843	Feb. 20	120	2393
Vandergaw, Edward B., Brooklyn, N. Y. Printed textile fabric	37,844	Feb. 20	120	2393
Vincennes Novelty Manufacturing Company. (See Schenker, Francis, assignor.)				
Walsh, Arthur Q., New York, N. Y. Ash-tray	37,770	Jan. 2	120	296
Walther & Company. (See Walther, Frank O., assignor.)				
Walther, Frank O., assignor to Walther & Company, New York, N. Y. Wrapping-paper	37,775	Jan. 2	120	298
Webster Company. (See Keller, Sidney A., assignor.)				
Webster Company. (See Straker, Herbert J., assignor.)				
Webster, Edward T., Milwaukee, Wis. Earthenware closet-bowl	37,807	Feb. 6	120	1765
West, George R., Pittsburg, Pa. Glass receptacle	37,851	Feb. 27	120	2710
Whittall, Matthew J. (See Haas, Frank A., assignor.)				
Wolf, Frederick J., Bucyrus, Ohio. Game-board	37,796	Jan. 23	120	1138
Woodside Sterling Company. (See Keller, Sidney A., assignor.)				
Ziegler, Charles E., Limoges, France. Plate	37,794	Jan. 23	120	1137

ALPHABETICAL LIST OF REGISTRANTS OF TRADE-MARKS.

Name, residence, and title.	No.	Date.	Official Gazette. Volume.	Page.
A. Baldwin & Co., Ltd., New Orleans, La. Cook-stoves, heating-stoves, and ranges	49,997	Feb. 20	120	2437
A. Booth and Company, Chicago, Ill.; Baltimore, Md.; St. Paul, Duluth, and Minneapolis, Minn.; St. Louis, Mo.; Louisville, Ky.; Omaha, Nebr.; Indianapolis, Ind., and Port Arthur, Canada. Canned oysters, fish, clams, crabs, shrimp, and lobsters	50,030	Feb. 27	120	2749
A. Dougherty, New York, N. Y. Playing-cards	49,426	Feb. 6	120	1815
A. Herbert Woolley & Co., Nottingham, England. Silk hair-nets	48,970	Jan. 16	120	898
A. Klipstein & Company, New York, N. Y. Cake soap	49,025	Jan. 23	120	1155
A. Klipstein & Company, New York, N. Y. Quebracho extract	50,031	Feb. 27	120	2749
A. Leschen & Sons Rope Co., St. Louis, Mo. Wire ropes	49,139	Jan. 23	120	1160
A. A. Berry Shoe Company, Portland, Me. Women's leather shoes	49,179	Jan. 30	120	1467
A. C. Lawrence Leather Co., Boston, Mass. Patent-leather	49,986	Feb. 27	120	2747
A. H. Berry Shoe Company, Portland, Me. Leather boots and shoes	49,755	Feb. 13	120	2122
A. H. Heisey & Co., Inc., Newark, Ohio. Pressed or blown glassware	49,335	Jan. 30	120	1473
A. J. Reach Co., Philadelphia, Pa. Base-balls	49,987	Feb. 27	120	2747
A. J. Reach Co., Philadelphia, Pa. Boxing-gloves	49,988	Feb. 27	120	2747
A. J. Tower Company, Portland, Me., and Boston, Mass. Waterproof hats	49,370	Feb. 6	120	1813
A. J. Tower Company, Portland, Me., and Boston, Mass. Oiled clothing	49,427	Feb. 6	120	1815
A. J. Tower Company, Boston, Mass. Oiled clothing	49,700	Feb. 13	120	2120
A. J. Tower Company, Boston, Mass., and Portland, Me. Oiled clothing of all kinds	49,756	Feb. 13	120	2122
A. L. Joslin Company, Oxford, Mass. Boots and shoes made of leather	49,180	Jan. 30	120	1467
Abraham & Straus, New York, N. Y. Gloves	48,629	Jan. 9	120	647
Abraham & Straus, New York, N. Y. Corsets	48,973	Jan. 16	120	898
Abraham & Straus, New York, N. Y. Gloves	49,040	Jan. 23	120	1156
Abraham & Straus, New York, N. Y. Gloves	49,701	Feb. 13	120	2120
Abraham & Straus, Brooklyn, N. Y. Cigars	49,267	Jan, 30	120	1470
Abraham & Straus, Brooklyn, N. Y. Trunks, valises, and satchels	49,428	Feb. 6	120	1815
Acker, Merrall & Condit Company, New York, N. Y. Tea	48,974	Jan. 16	120	898
Acme Milling Company, Indianapolis, Ind. Wheat-flour	48,975	Jan. 16,	120	898
Adams and Ford Company, Cleveland, Ohio. Rubber overshoes	48,598	Jan. 2	120	321
Adler & Co., Jacob, New York, N. Y. Gloves	48,630	Jan. 9	120	647
Adler & Co., Louis J., Pittsburg, Pa. Whisky	49,626	Feb. 13	120	2117
Adolph Kastor & Bros., New York, N. Y. Pocket-knives and razors	48,928	Jan. 16	120	896
Aid-Ant Remedy Co., Concord, N. H. Salve	48,905	Jan. 16	120	896
Ajax Manufacturing Company, Cleveland, Ohio. Metal forging and forming machines	49,879	Feb. 20	120	2436
Ajax Mfg. Co., Allegheny, Pa. Boring-machines	48,710	Jan. 9	120	650
Ajax Mfg. Co., Allegheny, Pa. Tube-expanders	49,323	Jan. 30	120	1473
Albert Dickinson Company, Chicago, Ill. Seeds	48,831	Jan. 16	120	893
Albert Dickinson Company, Chicago, Ill. Certain named seeds	49,834	Feb. 20	120	2435
Albert Dickinson Company, Chicago, Ill. Certain named seeds	49,835	Feb. 20	120	2435
Albert Dickinson Company, Chicago, Ill. Certain named seeds	49,836	Feb. 20	120	2435
Albert Dickinson Company, Chicago, Ill. Certain named seeds	49,837	Feb. 20	120	2435
Albert Dickinson Company, Chicago, Ill. Certain named seeds	49,838	Feb. 20	120	2435
Albert Dickinson Company, Chicago, Ill. Dried beans	49,917	Feb. 20	120	2436
Albert M. Gugenheim Company, Cincinnati, Ohio. Whisky	48,597	Jan. 2	120	321
Alexander, William L., Esslenton, Pa. Stuffing for leather	49,026	Jan. 23	120	1155
Allcock Manufacturing Co., New York, N. Y. Pills	49,559	Feb. 13	120	2115
Altmayer, S., Macon, Ga. Whisky	49,010	Jan. 23	120	1155
American Brazing Company, New York, N. Y., assignor to American Ferrofix Brazing Company. Compounds for brazing metals	48,749	Jan. 9	120	652
American Brazing Company, New York, N. Y., assignor to American Ferrofix Brazing Company. Fluxes for brazing metals	48,750	Jan. 9	120	652
American Cement Company, Philadelphia, Pa. Portland, natural-rock, and improved cement	48,470	Jan. 2	120	316
American Cement Company, Philadelphia, Pa. Portland, natural-rock, and improved cement	48,614	Jan. 9	120	647
American Cement Company, Philadelphia, Pa. Portland, natural-rock, and improved cement	48,615	Jan. 9	120	647
American Cement Company, Philadelphia, Pa. Portland, natural-rock, and improved cement	48,616	Jan. 9	120	647
American Cement Company, Philadelphia, Pa. Portland, natural-rock, and improved cement	48,647	Jan. 9	120	648
American Cement Company, Philadelphia, Pa. Portland, natural-rock, and improved cement	48,648	Jan. 9	120	648
American Cement Company, Philadelphia, Pa. Portland, natural-rock, and improved cement	48,774	Jan. 16	120	891
American Cereal Company, Akron, Ohio; Chicago, Ill., and Cedar Rapids, Iowa. Prepared cereal foods	50,089	Feb. 27	120	2750
American Chicle Co., New York, N. Y. Chewing-gum	48,675	Jan. 9	120	649
American Dyewood Company, Philadelphia, Pa. Manufactured colors for printing and dyeing	49,140	Jan. 23	120	1160
American Ferrofix Brazing Company. (See American Brazing Company, assignor.)				
American Iron & Steel M'f'g Co., Lebanon and Reading, Pa. Railway-track bolts	49,089	Jan. 23	120	1158
American Iron & Steel M'f'g Co., Lebanon and Reading, Pa. Rivet and screw bolts	49,117	Jan. 23	120	1159
American Metal Polish Co., Somerville, Mass. Metal-polish	49,942	Feb. 27	120	2745
American Multigraph Co., Cleveland, Ohio. Rotary printing-machines adapted to be operated by hand	48,699	Jan. 9	120	650
American Multigraph Company, Cleveland, Ohio. Rotary type-printing machines	48,320	Jan. 2	120	316
American Oak Leather Company, Cincinnati, Ohio. Leather belting	48,809	Jan. 16	120	892
American Oak Leather Company, Cincinnati, Ohio. Leather boots and shoes and leather therefor	49,798	Feb. 20	120	2433
American Peroxide and Chemical Company, New York, N. Y. Tooth-powder	49,576	Feb. 13	120	2115
American Printing Company, Fall River, Mass. Calicoes	50,082	Feb. 27	120	2749
American Printing Company, Fall River, Mass. Calicoes	50,083	Feb. 27	120	2749
American Printing Company, Fall River, Mass. Calicoes	50,084	Feb. 27	120	2749
American Steam Packing Company, Boston, Mass. Steam and water packing	49,141	Jan. 23	120	1160
American Steam Packing Company, Boston, Mass. Steam and water packing	49,429	Feb. 6	120	1816
American Stocking Company, New York, N. Y. Hosiery	49,323	Jan. 30	120	1470
American Tap Bush Co., Detroit, Mich. Taps and bushes	48,446	Jan. 2	120	316
American Varnish Company, Chicago, Ill. Varnishes	49,940	Feb. 27	120	2744
American Varnish Company, Chicago, Ill. Varnishes	49,941	Feb. 27	120	2745
American Waltham Watch Co., Waltham, Mass. Main-springs for watches	48,775	Jan. 16	120	891
American Washboard Company, Cleveland, Ohio. Washboards	49,288	Feb. 6	120	1814
Ammonol Chemical Co., New York, N. Y. Antipyretic and analgesic	48,709	Jan. 9	120	650
Angelo Myers Distillery, Inc., Philadelphia, Pa. Whisky	48,598	Jan. 2	120	316
Anger Baking Co., New York, N. Y. Macaroni, spaghetti, vermicelli, and noodles	48,943	Jan. 16	120	896

Alphabetical list of registrants of trade-marks for January and February—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Anglo-American Medical Co., Chicago, Ill. Liquid medicinal preparation	48,844	Jan. 16	120	893
Ansonia Clock Company, Ansonia, Conn., and New York, N. Y. Clocks	49,494	Feb. 6	120	1816
Ansonia Clock Company, Ansonia, Conn., and New York, N. Y. Clocks	49,731	Feb. 13	120	2121
Ansonia Clock Company, Ansonia, Conn., and New York, N. Y. Clocks	49,732	Feb. 13	120	2121
Arcade File Works, Anderson, Ind. Files and rasps	49,460	Feb. 6	120	1816
Arcade File Works, Anderson, Ind. Files and rasps	49,461	Feb. 6	120	1816
Armspear Manufacturing Company, New York, N. Y. Railway lamps and lanterns	49,757	Feb. 13	120	2122
Armspear Manufacturing Company, New York, N. Y. Railway lamps and lanterns	49,758	Feb. 13	120	2122
Artzold Cream Company, Waco, Tex. Cream for the complexion and wrinkle-lotion	48,862	Jan. 16	120	894
Aschenbach & Miller, assignor to Aschenbach & Miller, Incorporated, Philadelphia, Pa. Sulfur soap	49,627	Feb. 13	120	2117
Aschenbach & Miller, Incorporated. (See Aschenbach & Miller, assignor.)				
Aspegren & Co., New York, N. Y. Ground wood and wood-pulp for paper-stock	49,790	Feb 20	120	2433
Atlanta Agricultural Works, Atlanta, Ga. Harrows and cultivators	49,142	Jan. 23	120	1160
Atlantic Novelty Co., New York, N. Y. Embroidery	49,930	Feb. 27	120	2747
Auburn Wagon Co., Martinsburg, W. Va. Wagons	48,906	Jan. 16	120	896
Auerbach & Sons, D., New York, N. Y. Small round candies of various flavors	49,143	Jan. 23	120	1160
Augusta Factory, Augusta, Ga. Cotton sheetings and drills	49,880	Feb. 20	120	2436
Avery Stamping Company, Cleveland, Ohio. Spades, shovels, and scoops	48,726	Jan. 9	120	651
Avery Stamping Company, Cleveland, Ohio. Steel shovels, scoops, and spades	49,108	Jan. 23	120	1161
B. H. Bacon Co., Rochester, N. Y. Remedy for the nerves	49,462	Feb. 6	120	1816
B. S. Flersheim Mercantile Co., Kansas City, Mo. Whisky	49,511	Feb. 6	120	1818
Babbitt Bros. Fitchburg, Mass. Metal screws	49,324	Jan. 30	120	1473
Beak and Gretwe, Cincinnati, Ohio. Whisky	49,943	Feb. 27	120	2745
Baird Manufacturing Company, Chicago, Ill. Telephone sets	49,847	Feb. 20	120	2435
Baker Castor Oil Company, New York, N. Y. Castor-oil	48,944	Jan. 16	120	897
Baker & Co., Charles F., Boston, Mass. Wire nails	49,090	Jan. 23	120	1158
Baker & Co., Charles F., Boston, Mass. Wire nails	49,583	Feb. 13	120	2116
Baker & Sons, G. W., Aberdeen, Md. Canned or preserved fruits and vegetables	48,978	Jan. 16	120	898
Ball Chemical Co., Allegheny, Pa. Turpentine	49,686	Feb. 13	120	2120
Balsa Hermanos, Vera Cruz, Mexico. Cigars	48,617	Jan. 9	120	647
Barataria Canning Co., Biloxi, Miss. Packed shrimp	48,447	Jan. 2	120	315
Barnard & Leas Manufacturing Company, Moline, Ill. Shaking-bolts	49,848	Feb. 20	120	2435
Barstow Stove Co., Providence, R. I. Stoves, ranges, furnaces, and boilers	49,209	Jan. 30	120	1470
Battrell-Whittinghill Shoe Co., St. Joseph, Mo. Leather shoes	48,495	Jan. 2	120	317
Baugh & Sons Company, Philadelphia, Pa. Bone phosphate	49,371	Feb. 6	120	1813
Beach Soap Company, Lawrence, Mass. Laundry and toilet soap and soap powder	49,372	Feb. 6	120	1813
Beadenkopf, Martin, Wilmington, Del. Leather known as kid	49,463	Feb. 6	120	1816
Beam & Company, M. C., Gethsemane, Ky. Whisky	48,650	Jan. 9	120	648
Beck, Victor E., New York, N. Y. Tonics and remedies for dyspepsia and stomach troubles	50,035	Feb. 27	120	2749
Becker, Albert C., Chicago, Ill. Alarm-clocks	49,027	Jan. 23	120	1155
Belmont Distilling Co., Louisville, Ky. Whisky	48,676	Jan. 9	120	649
Belmont Distilling Co., Louisville, Ky. Whisky	48,677	Jan. 9	120	649
Bevi, Arthur, New York, N. Y. Waterproof textile fabric	49,991	Feb. 27	120	2747
Bernheim Distilling Co., Inc., Louisville, Ky. Whisky	48,571	Jan. 2	120	320
Bernheim, Röes, Pierson-Augsburg, Germany. Chemical finishing compound	49,512	Feb. 6	120	1818
Berry Hill Mineral Spring Co. of Va., Washington, D. C. Mineral water	49,733	Feb. 13	120	2121
Bertea, Rahale S., New York, N. Y. Canned pears	49,896	Feb. 20	120	2437
Bibbb Bros. & Co., Lynchburg, Va. Whisky	49,750	Feb. 13	120	2122
Billboard Publishing Company, Cincinnati, Ohio. Weekly newspaper	49,226	Jan. 30	120	1469
Billings Clapp Company, Boston, Mass. Alterative medicine	49,118	Jan. 23	120	1159
Bion Laboratory Co., Incorporated, Danbury, Conn. Phosphatic tonic	49,881	Feb. 20	120	2436
Birdsey & Somers, New York, N. Y. Corsets	49,702	Feb. 13	120	2120
Birdsey & Somers, New York, N. Y. Corsets	49,703	Feb. 13	120	2120
Birkhead, John W., Dallas, Tex. Non-alcoholic beverages	48,572	Jan. 2	120	320
Bloch Brothers Tobacco Company, Wheeling, W. Va. Chewing and smoking tobacco	49,061	Jan. 23	120	1157
Bloch & Neuburger, Mobile, Ala. Dress-shirts, collars, and cuffs	49,760	Feb. 13	120	2122
Block & Sons, Elias, Cincinnati, Ohio. Whisky	49,992	Feb. 27	120	2747
Bluthenthal & Heilbronner, Memphis, Tenn. Whisky	49,011	Jan. 23	120	1155
Boettger, Fredrick, Peoria, Ill. Medicine for the cure of ecurema and kindred troubles	48,519	Jan. 2	120	318
Bolzer, Carl F., New York, N. Y. Anvils	49,144	Jan. 23	120	1160
Bon Ami Company, New York, N. Y. Scouring-soap	49,626	Feb. 13	120	2117
Borated Specialty Company, Hartwick and Brooklyn, N. Y. Catamenial bandages	48,810	Jan. 16	120	892
Borden's Condensed Milk Co., New York, N. Y. Condensed milk	50,036	Feb. 27	120	2749
Boston & Lockport Block Company, Boston, Mass. Pulleys, blocks, and parts thereof	49,849	Feb. 20	120	2435
Boston Molasses Co., Boston, Mass. Sugar	49,086	Jan. 23	120	1157
Boston Molasses Co., Boston, Mass. Molasses	49,513	Feb. 6	120	1819
Boston and Germain Co., Ripon, Wis. Yellow horse-hide gloves and mittens	48,979	Jan. 16	120	898
Bostwell Milling & Grain Co., Troy, N. Y. Rye-flour	48,668	Jan. 9	120	649
Bovinine Company, New York, N. Y. Beef-juice	48,863	Jan. 16	120	894
Bovril Limited, London, England, and Montreal, Canada. Syrups, flavorings, tonics, and extracts for non-intoxicating beverages	48,907	Jan. 16	120	896
Boyer, Mary J., Baltimore, Md. Canned fruits and vegetables	49,630	Feb. 13	120	2117
Boynton, Fredo. O., Boston, Mass. Liniment	49,903	Feb. 27	120	2747
Boynton, Fredo. O., Boston, Mass. Purgative medicine	49,904	Feb. 27	120	2747
Bradley & Metcalf Company, Milwaukee, Wis. Leather boots	49,091	Jan. 23	120	1158
Bradley Smith & Co., New Haven, Conn. Candy	48,945	Jan. 16	120	897
Bradley Smith & Co., New Haven, Conn. Candy	49,160	Jan. 23	120	1161
Brand Brothers Company, Chicago, Ill. Syrups, flavorings, tonics, and extracts for non-intoxicating aerated beverages	48,518	Jan. 2	120	317
Brand Brothers Company, Chicago, Ill. Whisky	49,182	Jan. 30	120	1467
Brater, John K., New York, N. Y. Remedies for asthma	49,995	Feb. 27	120	2747
Brown & Pitts, Inc., Chicago, Ill. Butterin or oleomargarin	48,980	Jan. 16	120	898
Brown & Pitts, Inc., Chicago, Ill. Butterin or oleomargarin	48,980	Jan. 16	120	898
Brown & Pitts, Inc., Chicago, Ill. Butterin or oleomargarin	48,981	Jan. 16	120	898
Brown & Pitts, Inc., Chicago, Ill. Butterin or oleomargarin	48,982	Jan. 16	120	898
Brown & Pitts, Inc., Chicago, Ill. Butterin	49,761	Feb. 13	120	2122
Brown Hopkins Company, Baltimore, Md. Straw hats	48,976	Jan. 16	120	898
Brownings Manufacturing Company, Chicago, Ill. Lye and potash	49,151	Jan. 30	120	1467
Brown-Forman Co., Louisville, Ky. Whisky	49,013	Jan. 23	120	1155
Brown, Lewis C., New York, N. Y. Liquid paint for metallic roofs	49,944	Feb. 27	120	2745
Brown Mfg. Co., Greenville, Tenn. Remedies for certain named diseases	48,999	Jan. 16	120	896
Brown Mfg. Co., Greenville, Tenn. Remedies for certain named diseases	48,910	Jan. 16	120	896
Brown & Sharpe Manufacturing Company, Providence, R. I. Hair-clippers	48,448	Jan. 2	120	315
Brunt & Son, John L., Boston, Mass. Medicated lozenges	48,889	Jan. 2	120	313
Brunt & Son, John L., Boston, Mass. Medicated lozenges	48,678	Jan. 9	120	649
Brownell & Field Company, Providence, R. I. Coffee	48,977	Jan. 16	120	898

Alphabetical list of registrants of trade-marks for January and February—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Brownell & Field Company, Providence, R. I. Mustard and spices	49,057	Jan. 23	120	1157
Bromor, Emile, New York, N. Y. Pills and tablets	49,464	Feb. 6	120	1816
Bodmer Pharmacal Company, New York, N. Y. Antiseptic and germicide	49,465	Feb. 6	120	1816
Boermann, August, Newark, N. J. Spurs, bits, and stirrups	48,814	Jan. 16	120	892
Buffalo Rubber Manufacturing Company, Buffalo, N. Y. Gloves	48,494	Jan. 9	120	647
Baker Pill Co., Bangor, Me. Medicine for certain named diseases	49,877	Feb. 13	120	2115
Burke, Frank G., New York, N. Y. Laundry and toilet soap	48,471	Jan. 2	120	316
Burnby, Augustus C., Philadelphia, Pa. Lubricating-grease	49,630	Feb. 13	120	2117
Byron C. Gould, Inc., New York, N. Y. Toilet powder	49,119	Jan. 23	120	1159
Byron C. Gould, Inc., New York, N. Y. Toilet powder	49,880	Feb. 13	120	2115
Byron C. Gould, Inc., New York, N. Y. Toilet powder	49,884	Feb. 13	120	2116
C. Howard Hunt Pen Co., Camden, N. J. Pens	48,474	Jan. 2	120	316
C. Poyet, Ine., New York, N. Y. Confectionery	49,373	Feb. 6	120	1813
C. Schmidt and Sons Brewing Company, Philadelphia, Pa. Lager-beer	48,496	Jan. 2	120	317
C. F. Rumpp & Sons, Inc., Philadelphia, Pa. Certain named leather goods	48,812	Jan. 16	120	892
C. F. Rumpp & Sons, Inc., Philadelphia, Pa. Metal ornaments	48,913	Jan. 16	120	895
C. L. Hanthaway & Sons, Incorporated, Boston, Mass., and Portland, Me. Liquid blacking	49,631	Feb. 13	120	2118
C. L. Hanthaway & Sons, Incorporated, Boston, Mass., and Portland, Me. Leather-cement	49,632	Feb. 13	120	2118
C. L. Hanthaway & Sons, Incorporated, Portland, Me., and Boston, Mass. Channel-cement	49,633	Feb. 13	120	2118
California Fig Syrup Co., San Francisco, Cal. Liquid purgative compounds	49,881	Feb. 13	120	2115
California Wine Association, San Francisco, Cal. Brandy	49,514	Feb. 6	120	1819
California Wine Association, San Francisco, Cal. Wine	49,704	Feb. 13	120	2120
California Wine Association, San Francisco, Cal. Wine	49,705	Feb. 13	120	2120
Camors & Co., J. B., New Orleans, La., Wheat-flour	50,046	Feb. 27	120	2749
Capewell, George J., Jr., Hartford, Conn. Pin-retainers	48,631	Jan. 9	120	647
Cappon & Bertsch Leather Co., Holland, Mich. Harness-leather	48,472	Jan. 2	120	316
Capodise Chemical Company, Raleigh, N. C. Remedy for certain named diseases	48,911	Jan. 16	120	895
Carborundum Company, Niagara Falls, N. Y. Abradant	49,204	Feb. 6	120	1814
Caroh Chemical Company, Philadelphia, Pa. Insect-powder	50,037	Feb. 27	120	2749
Carow, Charles, New York, N. Y. Remedy for rheumatism	49,880	Feb. 20	120	2435
Carpenter, Thomas E., Mount Kisco, N. Y. Emollient and medicinal preparation	48,845	Jan. 16	120	893
Carrom-Arcbarena Co., Ludington, Mich. Game-boards	49,998	Feb. 27	120	2747
Carstairs, McCall & Co., Philadelphia, Pa. Whisky	49,485	Feb. 6	120	1816
Carstairs, McCall & Co., Philadelphia, Pa. Whisky	49,515	Feb. 6	120	1819
Carter's Ink Company, Boston, Mass., and New York, N. Y. Writing-inks and writing fluids of all kinds	48,946	Jan. 16	120	897
Carter's Ink Company, Boston, Mass., and New York, N. Y. Mucilages	49,033	Jan. 23	120	1156
Cartun, Jacob, Philadelphia, Pa. Whisky	48,815	Jan. 16	120	892
Carver File Company, Philadelphia, Pa. Files	49,706	Feb. 13	120	2120
Case, Adelbert B., Springfield, Mass. Lawn-mowers	50,038	Feb. 27	120	2749
Cassella Color Company, New York, N. Y. Hydrosulfite compound	49,182	Jan. 30	120	1467
Cassella Color Company, New York, N. Y. Dyestuff	49,997	Feb. 27	120	2747
Catch On Clasp Mfg. Co., Baltimore, Md. Fasteners for the waistbands of trousers	49,230	Jan. 30	120	1469
Catherwood, H. & H. W., Philadelphia, Pa. Whisky	48,540	Jan. 2	120	318
Cayey-Caguas Tobacco Company, New York, N. Y., and Porto Rico. Cigars, cheroots, and cigarettes made of cigar-tobacco	48,651	Jan. 9	120	648
Celluloid Starch Company, New York, N. Y. Laundry starch	49,092	Feb. 13	120	2120
Celluloid Starch Company, New York, N. Y. Laundry starch	49,093	Feb. 13	120	2120
Cement Machinery Co., Jackson, Mich. Machines for making concrete building-blocks	49,120	Jan. 23	120	1159
Cement Machinery Co., Jackson, Mich. Machines for making concrete building-blocks	49,121	Jan. 23	120	1159
Cement Machinery Co., Jackson, Mich. Machines for making concrete building-blocks	49,231	Jan. 30	120	1469
Ceylon Perfume Company, Englewood, N. J. Perfume for repelling mosquitos	48,820	Jan. 2	120	313
Challenge Cutlery Corporation, Bridgeport, Conn. Razors	48,670	Jan. 9	120	649
Challenge Cutlery Corporation, Bridgeport, Conn. Razors	49,226	Jan. 30	120	1473
Challenge Cutlery Corporation, Bridgeport, Conn. Scissors and shears	49,965	Feb. 27	120	2746
Challenge Cutlery Corporation, Bridgeport, Conn. Pocket-knives	49,998	Feb. 27	120	2747
Chalmers Knitting Company, Amsterdam, N. Y. Cotton, wool, silk, and linen underwear	48,473	Jan. 2	120	316
Champion Blower & Forge Company, Lancaster, Pa. Forges	49,690	Feb. 13	120	2120
Champion Blower & Forge Company, Lancaster, Pa. Tuyers	49,691	Feb. 13	120	2120
Champion Paper Cutter Co., Piqua, Ohio. Roll-paper holders and cutters	48,947	Jan. 16	120	897
Champion Paper Cutter Co., Piqua, Ohio. Roll-paper holders and cutters	48,948	Jan. 16	120	897
Chandler and Rudd Company, Cleveland, Ohio. Candy	48,580	Jan. 2	120	321
Chandler and Rudd Company, Cleveland, Ohio. Candy	48,701	Jan. 9	120	650
Charles Jacquin et Cie., Inc., New York, N. Y. Sloe gin	48,572	Jan. 2	120	320
Charles Jacquin et Cie., Inc., New York, N. Y. Cointreau	48,574	Jan. 2	120	320
Charles Jacquin et Cie., Inc., New York, N. Y. Kümmel	49,701	Feb. 20	120	2432
Charles, James, Marion, Ind. Mixed winter and spring wheat flour	48,982	Jan. 16	120	898
Charles N. Crittenton Company, New York, N. Y. Soap	49,627	Feb. 13	120	2130
Charles Taylor & Company, Wilmington, Del. Hosiery	48,914	Jan. 16	120	895
Charles Taylor & Company, Wilmington, Del. Hosiery	48,915	Jan. 16	120	895
Chas. A. Stevens & Bros., Chicago, Ill. Knit underwear and hosiery	48,682	Jan. 9	120	649
Chas. Stimser's Sons, New York N. Y. Hosiery	48,941	Jan. 16	120	897
Chattanooga Paint Co., Chattanooga, Tenn. Mineral paint	49,634	Feb. 13	120	2118
Chenney, Frank J., Toledo, Ohio. Catarrh cure	48,146	Jan. 23	120	1160
Chenney, Frank J., Toledo, Ohio. Pills	49,146	Jan. 23	120	1160
Chicago Distilling Co., Chicago, Ill. Whisky	48,675	Jan. 9	120	649
Chicago Distilling Co., Chicago, Ill. Gin	48,676	Jan. 9	120	649
Chicago Flexible Shaft Company, Chicago, Ill. Horse-clippers	49,092	Jan. 23	120	1158
Chicago Tubing & Braiding Co., Chicago, Ill. Flexible tubing	49,516	Feb. 6	120	1819
Chivers, Cedric, New York, N. Y. Cloth for book-binding purposes	50,039	Feb. 27	120	2749
Cholerfield, John P., Chicago, Ill. Medicinal compound	49,227	Jan. 30	120	1473
Christian Feigenspan, Newark, N. J. Lager-beer	48,546	Jan. 16	120	893
Cincinnati Game Co., Cincinnati, Ohio. Card games	48,727	Jan. 9	120	651
Citrus Soap Company, San Diego, Cal. Washing-powders	49,228	Jan. 30	120	1473
Clark-Hutchinson Company, Boston, Mass. Leather boots, shoes, and slippers	49,999	Feb. 27	120	2747
Clark-Hutchinson Company, Boston, Mass. Leather boots, shoes, and slippers	50,000	Feb. 27	120	2747
Clark-Hutchinson Company, Boston, Mass. Leather boots, shoes, and slippers	50,001	Feb. 27	120	2747
Clark, J. L. Oshkosh, Wis. Vehicle spring seats and cushions	49,232	Jan. 30	120	1473
Clark, James A., Bedford City, Va. Smoking and chewing tobacco	48,478	Jan. 16	120	891
Clark Mile-End Spool Cotton Co., East Newark, N. J. Cotton thread	48,479	Jan. 16	120	891
Clauss, Henrie, Fremont, Ohio. Razors	48,916	Jan. 16	120	895
Cleveland Gas and Electric Fixture Company, Cleveland, Ohio. Incandescent mantles and supports therefor	48,685	Jan. 9	120	647
Clinton & Co., E., Philadelphia, Pa. Paint-brushes	49,517	Feb. 6	120	1819
Cluett, Peabody & Co., Troy, N. Y. Outer shirts and dress-shirts	49,888	Jan. 23	120	1158
Cochseo Mfg. Co., Dover, N. H. Velveteens	49,635	Feb. 6	120	1814

Alphabetical list of registrants of trade-marks for January and February—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Colton, Albert E., Newark, N. J. Corsets	49,466	Feb. 6	120	1816
Colt's Patent Fire Arms Manufacturing Company, Hartford, Conn. Pistols	49,430	Feb. 6	120	1815
Columbia Distilling Co., St. Louis, Mo. Whisky	48,541	Jan. 2	120	313
Columbia Hosiery Co., New York, N. Y. Stockings	49,788	Feb. 13	120	2122
Columbia Incandescent Lamp Co., St. Louis, Mo. Incandescent electric lamps	49,084	Jan. 23	120	1165
Columbia Overgaiter & Legging Co., Chicago, Ill. Leggings or overgaiters	49,229	Jan. 30	120	1469
Columbia Refining Co., New York, N. Y. Cleaning and renovating compounds	49,028	Jan. 23	120	1155
Colytieine Chemical Co., St. Louis, Mo. Antiseptic, prophylactic disinfectants, and parasiticides	49,147	Jan. 23	120	1160
Conewango Refining Co., Warren, Pa. Cylinder-lubricants and lubricant-stock	49,682	Feb. 13	120	2120
Conewango Refining Co., Warren, Pa. Cylinder-lubricants and lubricant-stock	49,862	Feb. 20	120	2436
Conklin, Horace E., Binghamton, N. Y. Grass-seed	49,789	Feb. 13	120	2123
Conkling, Allen, South Chicago, Ill. Toilet and bath soap	49,637	Feb. 13	120	2116
Conkling, Allen, South Chicago, Ill. Laundry soap	49,638	Feb. 13	120	2116
Connable, Ralph M., Baltimore, Md. Medical ointment	49,808	Feb. 20	120	2433
Cook's Sons, Adam, New York, N. Y. Lubricating grease	49,636	Feb. 13	120	2116
Cooley, Herbert S., Keyport, N. J. Laxative compound or preparation	49,467	Feb. 6	120	1817
Cooley, Martin I., New York, N. Y. Cotton piece goods	49,148	Jan. 23	120	1160
Corato, Joseph, Stockton, Cal. Tonic	49,807	Feb. 20	120	2432
Cosbland & Co., G. F., New York, N. Y. Whisky	48,577	Jan. 2	120	320
Cosmoboom, Pearce & Co., Aspen, Colo. Polish for metals	49,635	Feb. 13	120	2116
Crawford, John E., Chicago, Ill. Switchboard-cords	49,066	Feb. 27	120	2746
Creighton & Son, G. A., Lynn, Mass. Leather boots and shoes	48,634	Jan. 9	120	647
Crescent Manufacturing Co., Seattle, Wash. Flavoring extracts	48,449	Jan. 2	120	315
Crescent Manufacturing Co., Seattle, Wash. Coffee	49,093	Jan. 23	120	1157
Criterion Publishing Company, Chicago, Ill. Magazines	49,521	Feb. 20	120	2434
Cromwell, Philip G., Baltimore, Md. Hams	48,450	Jan. 2	120	315
Cromwell, Philip G., Baltimore, Md. Ham and bacon	48,451	Jan. 2	120	315
Cromwell, Philip G., Baltimore, Md. Hams	48,452	Jan. 2	120	315
Cromwell, Philip G., Baltimore, Md. Lard	49,809	Feb. 20	120	2437
Crosby & Co., Detroit, Mich. Certain named polish	49,639	Feb. 13	120	2118
Crowley, Charles H., New York, N. Y. Needles	49,431	Feb. 6	120	1815
Croser & Son, Samuel A., Upland, Pa. Cotton plaids and stripes	48,653	Jan. 9	120	648
Crume, Jonathan R., Bardstown, Ky. Remedy for chicken cholera, roup, and limberneck	48,917	Jan. 16	120	896
Cudahy Packing Company, Chicago, Ill., and South Omaha, Nebr. Lard and lard compound	49,170	Jan. 23	120	1161
Curtis & Brown Manufacturing Company, (Limited,) New York, N. Y. Remedy for internal or external use	48,680	Jan. 9	120	649
Curtis and Brown Manufacturing Company, (Limited,) New York, N. Y. Tooth-powder	48,751	Jan. 9	120	652
Curtis & Marble Machine Co., Worcester, Mass. Worm medicine	48,918	Jan. 16	120	896
Curtis & Marble Machine Co., Worcester, Mass. Pickers and burring-machines and attachments and parts thereof	49,945	Feb. 27	120	2745
Curtis & Marble Machine Co., Worcester, Mass. Pickers and burring-machines and attachments and parts thereof	49,967	Feb. 27	120	2746
Cushing & Co., W., Foxcroft, Me. Dye-colors	49,184	Jan. 30	120	1467
Cushman Drug Co., Vincennes, Ind. Remedy for certain named diseases	49,562	Feb. 13	120	2115
Cushmann & Denison Manufacturing Company, New York, N. Y. Paper-clips	49,132	Jan. 23	120	1159
Cusic, Marshall M., Princeton, Ill. Preparation for the removal of superfluous hair	48,847	Jan. 16	120	894
D. Eddy & Sons Co., Boston, Mass. Refrigerators	49,707	Feb. 13	120	2120
D. Kelly Co., Columbus, Ohio. Whisky	49,985	Feb. 27	120	2745
D. Kelly Company, Columbus, Ohio. Whisky	48,800	Jan. 2	120	321
D. Kelly Company, Columbus, Ohio. Whisky	48,801	Jan. 2	120	321
D. F. Briggs Co., Attleboro, Mass. Bracelets	48,642	Jan. 9	120	648
D. L. Moore Distillery Co., Lawrenceburg, Ky. Whisky	48,880	Jan. 2	120	319
Damon, Henrietta J., Boston, Mass. Chocolate and cocoa	48,919	Jan. 16	120	896
Daniel, Chas. A., Philadelphia, Pa. Machinery-packing	49,808	Feb. 20	120	2433
Daniel Forbes Company, Chicago, Ill. Leather blanks, soles, and taps	49,702	Feb. 20	120	2433
Daniels & Co., Geo. F., Boston, Mass. Leather and leather-and-cloth boots, shoes, and slippers	48,752	Jan. 9	120	652
Dans, Felix F., New York, N. Y. Hectographic-printing apparatus	49,946	Feb. 27	120	2745
David B. Crockett Co., Bridgeport, Conn. Varnishes	49,863	Feb. 20	120	2436
David Williams Company, New York, N. Y. Trade newspaper	49,764	Feb. 13	120	2120
Davis, Emry, New York, N. Y. Inkstands	48,618	Jan. 9	120	647
Davis, Emry, New York, N. Y. Inkstands	48,632	Jan. 9	120	647
Davis, Emry, New York, N. Y. Inkstands	48,633	Jan. 9	120	647
Davis, James A., Boston, Mass. Dog-blankets	48,984	Jan. 16	120	898
Dechter, William M., Buffalo, N. Y. Nursing-bottles	48,455	Jan. 2	120	315
Deere & Webber Co., Minneapolis, Minn. Farm-trucks or low-wheel wagons	49,229	Jan. 30	120	1473
Deere & Webber Co., Minneapolis, Minn. Farm-trucks or low-wheel wagons	49,230	Jan. 30	120	1473
Deere & Webber Co., Minneapolis, Minn. Farm-trucks or low-wheel wagons	49,231	Jan. 30	120	1473
Deere & Webber Co., Minneapolis, Minn. Hay-tedders	49,432	Feb. 6	120	1815
Deere & Webber Co., Minneapolis, Minn. Farm-trucks or low-wheel wagons	49,585	Feb. 13	120	2116
Deere & Webber Company, Minneapolis, Minn. Certain named vehicles	49,286	Feb. 6	120	1814
Dennison & Sons, New York, N. Y. Certain named paper	48,464	Jan. 9	120	646
Dermatine Company, Limited, London, England. Rubber-substitutes	50,013	Feb. 27	120	2748
Detroit Auto-Marine Co., Detroit, Mich. Gas or gasolene engines	49,060	Jan. 23	120	1157
Dexter Portland Cement Company, Nazareth, Pa. Portland cement	49,099	Jan. 23	120	1155
Diamond Chain and Manufacturing Company, Indianapolis, Ind. Chains	49,098	Jan. 23	120	1158
Diamond Ink Company, Milwaukee, Wis. Writing-inks and writing fluids	49,232	Jan. 30	120	1473
Dial Manufacturing Company, Elizabethport, N. J. Certain named electric machines	49,433	Feb. 6	120	1815
Direct Supply Co., Martinsburg, W. Va., and New York, N. Y. Knit underwear	49,734	Feb. 13	120	2121
Direct Supply Co., Martinsburg, W. Va., and New York, N. Y. Knit underwear	49,786	Feb. 13	120	2122
Dixon, Charles, New York, N. Y. Base-balls	48,231	Jan. 2	120	318
Dolanger & Bro., C. H. A., Wrightsville, Pa. Explosive-engines, internal-combustion motors, gas and gasolene engines	48,980	Jan. 16	120	896
Dolfinger, Adler & James, Philadelphia, Pa. Imitation of Persian-lamb fabric	49,272	Jan. 30	120	1470
Dosit & Co., Chas., Fleetwood, N. Y. Cattle-feed consisting of ground corn and oats	49,640	Feb. 13	120	2118
Dodd & Struble, Des Moines, Iowa. Lightning-rods	49,288	Feb. 13	120	2116
Donnelson Imperial Commercial, Rochester, N. Y. Whisky	49,778	Feb. 13	120	2120
Dr. C. Bernard's Assembly Co., Louisville, Ky. Gin	48,816	Jan. 16	120	898
Dr. Hopkins Co., Toledo, Ohio. Uric-acid solvent	49,280	Jan. 30	120	1471
Dr. Miles Medical Co., Elkhart, Ind. Tonics, nervine, and sedatives	49,817	Feb. 20	120	2434
Dunlop, Alexander, Newark, N. J. Hair waves and curlers	49,468	Feb. 6	120	1817
Dunphree, Wall & Co., Paducah, Ky. Whisky	48,849	Jan. 16	120	894
Dunphree, Wall & Co., Paducah, Ky. Whisky	48,850	Jan. 16	120	894
Dyersville Brewing & Malting Co., Dubuque, Iowa. Lager-beer	49,273	Jan. 30	120	1470
Eagle, Alex. T., Geneva, Ohio. Butter	48,648	Jan. 9	120	648
Eagle Manufacturing Company, Alleghany, Pa. Jacks	48,940	Jan. 16	120	897
Eagle Manufacturing Company, St. Louis, Mo. Drums	49,551	Feb. 20	120	2435

Alphabetical list of registrants of trade-marks for January and February—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Dupuis, Dennis R., St. Louis, Mo. Preparation for the cure of cancers and kindred diseases	48,542	Jan. 2	120	313
Durable Wire Rope Co., Boston, Mass. Wire rope	49,947	Feb. 27	120	2745
Durkee & Co., E. R., New York, N. Y. Baking-powder, cream of tartar, and baking-soda	48,921	Jan. 16	120	896
Durkee & Co., E. R., New York, N. Y. Seeds and prepared mixtures of seeds as food for birds and fowls	48,985	Jan. 16	120	899
Durkee & Co., E. R., New York, N. Y. Spices and mustard	48,986	Jan. 16	120	899
Durkee & Co., E. R., New York, N. Y. Baking-soda, cream of tartar, and baking-powder	49,841	Feb. 13	120	2118
Durkee & Co., E. R., New York, N. Y. Baking-soda, cream of tartar, and baking-powder	49,842	Feb. 13	120	2118
Durkee & Co., E. R., New York, N. Y. Baking-soda, cream of tartar, and baking-powder	49,843	Feb. 13	120	2118
Durkee & Co., E. R., New York, N. Y. Baking-soda, cream of tartar, and baking-powder	49,844	Feb. 13	120	2118
Dyer Remedy Company, Kansas City, Mo. Preparation for the cure of horse ailments	48,922	Jan. 16	120	896
E. B. Millar & Co., Chicago, Ill. Spices	49,070	Jan. 23	120	1157
E. C. Atkins & Company, Indianapolis, Ind.; New York, N. Y.; Memphis, Tenn.; Atlanta, Ga.; Minneapolis, Minn.; Portland, Oreg.; Seattle, Wash.; San Francisco, Cal.; Chicago, Ill., and Toronto, Canada. Saws	48,453	Jan. 2	120	315
E. C. Atkins & Company, Indianapolis, Ind.; New York, N. Y.; Memphis, Tenn.; Atlanta, Ga.; Minneapolis, Minn.; Portland, Oreg.; Seattle, Wash.; San Francisco, Cal.; Chicago, Ill., and Toronto, Canada. Saws of all kinds	49,469	Feb. 6	120	1817
E. E. Downham Co., Alexandria, Va. Whisky	49,518	Feb. 6	120	1819
E. E. Sutherland Medicine Co., Paducah, Ky. Preparation for the treatment of certain named diseases	48,951	Jan. 16	120	897
E. J. Brooks & Company, New York, N. Y., and Newark, N. J. Seals	49,645	Feb. 13	120	2118
E. and T. Fairbanks and Company, St. Johnsbury, Vt. Weighing-machines and parts thereof	48,454	Jan. 2	120	315
Eagle Pencil Company, New York, N. Y. Lead-pencils	49,122	Jan. 23	120	1159
Eagle Pencil Company, New York, N. Y. Rubber erasers	49,951	Feb. 27	120	2746
Eagle White Lead Co., Cincinnati, Ohio. Pure red lead	49,306	Feb. 6	120	1814
Eastern Refining Co., New York, N. Y. Molasses	48,950	Jan. 16	120	897
Eastern Refining Co., New York, N. Y. Molasses	49,918	Feb. 20	120	2438
Eaton-Dikeman Co., Lee, Mass. Blotting-paper	49,243	Jan. 30	120	1469
Eccles, E. M., McKeesport, Pa. Insecticide	48,850	Jan. 16	120	894
Eclipse Cement & Blacking Co., Philadelphia, Pa. Cement	48,475	Jan. 2	120	316
Economy Manufacturing Co., New Haven, Conn. Concrete washtrays	49,071	Jan. 23	120	1157
Eddystone Manufacturing Co., Eddystone and Philadelphia, Pa. Drapery and upholstery fabrics	49,246	Jan. 30	120	1469
Eddystone Manufacturing Co., Eddystone and Philadelphia, Pa. Drapery and upholstery textile fabrics	49,446	Feb. 6	120	1816
Eddystone Manufacturing Co., Eddystone and Philadelphia, Pa. Drapery and upholstery textile fabrics	49,447	Feb. 6	120	1816
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Printed and dyed textile fabrics	49,448	Feb. 6	120	1816
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Drapery and upholstery textile fabrics	49,244	Jan. 30	120	1469
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Printed and dyed textile fabrics	49,245	Jan. 30	120	1469
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Printed and dyed textile fabrics	49,300	Jan. 30	120	1471
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Printed and dyed cotton textile fabrics	49,301	Jan. 30	120	1472
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Printed and dyed textile fabrics	49,302	Jan. 30	120	1472
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Printed and dyed textile fabrics	49,303	Jan. 30	120	1472
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Printed and dyed textile fabrics	49,304	Jan. 30	120	1472
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Printed and dyed textile fabrics	49,305	Jan. 30	120	1472
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Printed and dyed textile fabrics	49,306	Jan. 30	120	1472
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Drapery and upholstery textile fabrics	49,307	Jan. 30	120	1472
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Printed and dyed textile fabrics	49,449	Feb. 6	120	1816
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Printed and dyed textile fabrics	49,450	Feb. 6	120	1816
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Drapery and upholstery textile fabrics	49,451	Feb. 6	120	1816
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Drapery and upholstery textile fabrics	49,452	Feb. 6	120	1816
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Drapery and upholstery textile fabrics	49,453	Feb. 6	120	1816
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Drapery and upholstery textile fabrics	49,454	Feb. 6	120	1816
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Drapery and upholstery textile fabrics	49,455	Feb. 6	120	1816
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Dyed and printed cotton drapery and upholstery goods	49,456	Feb. 6	120	1816
Edgewood Distilling Company, Cincinnati, Ohio. Whisky	49,726	Feb. 13	120	2122
Ehrmann, Hilmar, Louisville, Ky. Whisky	48,947	Jan. 30	120	1469
Einer & Son, Th. D., Brooklyn, N. Y. Embroideries	48,641	Jan. 9	120	648
Electrical Review Pub. Co., New York, N. Y. Publications treating of electrotechnics	49,128	Jan. 23	120	1157
Electro-Silicon Co., New York, N. Y. Preparation for cleaning and polishing metals and glass	49,470	Feb. 6	120	1817
Elsy Brothers Limited, London, England. Cartridges	49,085	Jan. 23	120	1158
Eli Lilly & Company, Indianapolis, Ind.; New York, N. Y.; Chicago, Ill.; St. Louis and Kansas City, Mo., and New Orleans, La. Uterine tonic and sedative	49,634	Feb. 6	120	1815
Eli Lilly & Company, Indianapolis, Ind. Suppositories	49,545	Feb. 6	120	1820
Elizabeth Mill Co., Providence, R. I. Thread-yarn	50,019	Feb. 27	120	2748
Emerson Manufacturing Co., Rockford, Ill. Plows, listers, and harrows	49,471	Feb. 6	120	1817
Enoch Morgan's Sons Company, New York, N. Y. Cleansing or scouring compound	49,262	Jan. 30	120	1469
Erlanger Bros., New York, N. Y. Undershirts and underdrawers	49,546	Feb. 13	120	2118
Euler & Co., Chas., New York, N. Y. Lamp-chimneys	49,881	Feb. 27	120	2745
Eureka Fire Hose Company, Jersey City, N. J. Fabric hose	49,819	Feb. 20	120	2434
Eureka Fire Hose Company, Jersey City, N. J. Hose-pipes, nozzles, gates, and couplings	48,896	Jan. 16	120	898
Everett, Charles A., Detroit, Mich. Powders for cleaning solid and plated wares and metals	49,948	Feb. 27	120	2745
Ewart & Co., R., Pittsburg, Pa. Steggin or tobies	49,080	Jan. 23	120	1158
Ewart & Co., R., Pittsburg, Pa. Steggin and tobies	49,547	Feb. 13	120	2118

Alphabetical list of registrants of trade-marks for January and February—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Exton & Co., A., Trenton, N. J. Biscuits and crackers	48,851	Jan. 16	120	894
Eye Shine Polish Company, Chicago, Ill. Stove-polish	49,282	Feb. 20	120	2435
F. B. O. Clothing Co., New York, N. Y. Overcoats, coats, vests, trousers, and knee-pants	49,308	Jan. 30	120	1472
F. H. Sadler Co., Attleboro, Mass. Gold-plated rings	49,496	Feb. 6	120	1818
F. H. Sadler Co., Attleboro, Mass. Bracelets	49,779	Feb. 13	120	2122
Fahnestock Co., B. A., Pittsburg, Pa. Vermifuge	49,149	Jan. 23	120	1160
Fairbanks Co., New York, N. Y. Steam-valves and water-valves	49,253	Jan. 30	120	1474
Fairbanks Co., New York, N. Y. Steam-valves and water-valves	49,254	Jan. 30	120	1474
Fairbanks Co., New York, N. Y. Packing for valve-joints	49,780	Feb. 13	120	2123
Fairchild Bros. & Foster, New York, N. Y. Medicinal preparations	48,682	Jan. 9	120	649
Favorite Stove & Range Co., Piqua, Ohio. Stoves, furnaces, and ranges	48,682	Jan. 16	120	897
Favorite Stove & Range Co., Piqua, Ohio. Stoves, furnaces, and ranges	48,683	Jan. 16	120	897
Federal Chemical Co., Louisville, Ky. Fertilizers	48,476	Jan. 2	120	316
Feldman, Nellie von, Washington, D. C. Compounds for the treatment of the hair and scalp	48,534	Jan. 2	120	318
Fellows and Company, Troy, N. Y. Shirts, collars, and cuffs	49,283	Jan. 30	120	1469
Fellows Medical Mf'g Co., Limited, New York, N. Y. Preparation of hypophosphites	48,578	Feb. 13	120	2116
Fennessy, Frank E., Boston, Mass. Blacking and leather-dressing	49,353	Feb. 20	120	2435
Fennessy, Frank E., Boston, Mass. Shoe polishes and blackings	50,040	Feb. 27	120	2740
Ferris, Mary A., Plainville, Ohio. Mineral waters	49,549	Feb. 13	120	2118
Field, Fred P., Brockton, Mass. Leather boots, shoes, and slippers and leather therefor	49,705	Feb. 13	120	2123
Finley, Frank M., Washington, D. C. Distilled and carbonated waters	50,041	Feb. 27	120	2740
Fisher, Robert J., Athens, Tenn. Hosiery	50,002	Feb. 27	120	2743
Flash Self Lighting Mantle Co., New York, N. Y., assignor to Flash Self-Lighting Mantle Company. Incandescent gas-mantles	49,932	Feb. 27	120	2745
Flash Self-Lighting Mantle Company. (See Flash Self-Lighting Mantle Co., assignor.)				
Fletcher Manufacturing Company, Providence, R. I. Wicks, webs, and webbings	48,777	Jan. 16	120	891
Fletcher Manufacturing Company, Providence, R. I. Braids, bindings, and trimmings	49,157	Jan. 30	120	1467
Florida White Pressed Brick Company, Greencove Springs, Fla. Bricks and artificial stone	49,255	Jan. 30	120	1474
Ford, Thomas P., New York, N. Y. Regulating-valves for fluids	49,708	Feb. 13	120	2121
Fores, William J., Owenton, Ky. Hair-restorers and dandruff-destroyers	50,003	Feb. 27	120	2743
Foster Milburn Co., Buffalo, N. Y. Cough-syrup	48,522	Jan. 2	120	318
Fowler Medicine Company, Rochester, N. Y. Corn remedy	48,954	Jan. 16	120	897
Fox River Paper Company, Appleton, Wis. Writing-paper	49,004	Jan. 23	120	1158
Francis Gowdy Distilling Co., Melrose, Conn. Gin	49,158	Jan. 30	120	1467
Francis H. Leggett & Company, New York, N. Y. Corn-starch and laundry starch	49,348	Jan. 30	120	1469
Francis H. Leggett & Company, New York, N. Y. Corn-starch and laundry starch	48,857	Jan. 9	120	646
Francis H. Leggett & Company, New York, N. Y. Chocolate and cocoa	48,858	Jan. 9	120	646
Francis H. Leggett & Company, New York, N. Y. Jellies, jelly-powders, jams, and preserves	48,959	Jan. 16	120	896
Francis H. Leggett & Company, New York, N. Y. Salt	49,333	Jan. 30	120	1473
Francis H. Leggett & Company, New York, N. Y. Lard	49,519	Feb. 6	120	1819
Frank C. Weber and Co., Chicago, Ill. Canned fruits and vegetables	49,520	Feb. 6	120	1819
Frank C. Weber and Co., Chicago, Ill. Canned fruits and vegetables	49,550	Feb. 13	120	2118
Frank H. Stewart Electric Company, Philadelphia, Pa. Electric-light supports	49,851	Feb. 13	120	2118
Frank H. Stewart Electric Company, Philadelphia, Pa. Socket-bushings for electric fixtures	49,854	Feb. 20	120	2436
Frankel, Rosenthal and Damler, St. Paul, Minn. Whisky	49,855	Feb. 20	120	2435
Frankel, Rosenthal and Damler, St. Paul, Minn. Whisky	48,643	Jan. 2	120	318
Frankel, Rosenthal and Damler, St. Paul, Minn. Whisky	48,644	Jan. 2	120	319
Frankel, Rosenthal and Damler, St. Paul, Minn. Whisky	48,645	Jan. 2	120	319
Franklin's Sons & Co., J. C., Troy, N. Y. Remedy for children's colic and cholera infantum	48,546	Jan. 2	120	319
Fred F. Field Company, Brockton, Mass. Leather boots, shoes, and slippers	49,809	Feb. 20	120	2434
Freiberg, J. & A., Cincinnati, Ohio. Whisky	49,767	Feb. 13	120	2122
Freiberg, J. & A., Cincinnati, Ohio. Whisky	49,189	Jan. 30	120	1467
Freiberg & Workum, Cincinnati, Ohio. Whisky	49,810	Feb. 20	120	2434
Freiler, Philip, Elgin, Ill. Wine	49,190	Jan. 30	120	1467
Freiler, Philip, Elgin, Ill. Whisky	48,533	Jan. 2	120	318
French & Company, Factoryville, Pa. Biscuits, crackers, &c	49,013	Jan. 23	120	1155
French Drug Company, New York, N. Y. Proprietary remedy for diseases peculiar to women	48,456	Jan. 2	120	315
Friedlander Metal Company, Richmond, Va. Alloy for bearing metal	49,072	Jan. 23	120	1157
Friedman, Keller & Co., Paducah, Ky. Whisky	48,567	Feb. 13	120	2116
Fritts & Wyeth, Chattanooga, Tenn. Tonics and specifics	49,191	Jan. 30	120	1467
Fritz Schuls Jun. Aktiengesellschaft, Leipsic, Germany and Lincoln, N. J. Preparations for cleaning, polishing, and preserving	49,192	Jan. 30	120	1467
Fritz Schuls Jun. Aktiengesellschaft, Leipsic, Germany, and Lincoln, N. J. Preparations for cleaning and polishing	48,778	Jan. 16	120	891
Fritz Schuls Jun. Aktiengesellschaft, Leipsic, Germany, and Lincoln, N. J. Preparations for polishing, cleaning, and preserving leather	48,779	Jan. 16	120	891
Fritz Schuls Jun. Aktiengesellschaft, Leipsic, Germany, and Lincoln, N. J. Stove-polish	48,780	Jan. 16	120	891
Fritz Schuls Jun. Aktiengesellschaft, Leipsic, Germany, and Lincoln, N. J. Cleaning and polishing preparations	48,781	Jan. 16	120	891
Frog in Your Throat Co., New York, N. Y. Bronchial lozenges and throat-tablets	48,617	Jan. 16	120	892
Fruit-Grower Company, St. Joseph, Mo. Printed publications	49,271	Jan. 30	120	1470
Fuller Brothers & Co., New York, N. Y. High-speed tool-steel	49,783	Feb. 13	120	2120
G. B. Farrington Co., New York, N. Y. Coffee	50,004	Feb. 27	120	2743
G. B. Farrington Company, New York, N. Y. Coffee	49,052	Jan. 23	120	1157
G. & H. Barnett Company, Philadelphia, Pa. Files and rasps	49,053	Jan. 23	120	1157
G. W. Cheaus & Son Mercantile Co., St. Joseph, Mo. Tobacco and tobacco products	49,472	Feb. 6	120	1817
Gabriel, Emil E., New York, N. Y. Pianos	49,274	Feb. 6	120	1813
Gabriel & Schaul, New York, N. Y. Asphalt mastic	49,553	Feb. 13	120	2118
Galena Oil Company, Franklin, Pa. Lubricating-oils	49,014	Jan. 23	120	1155
Gantz, William G., New York, N. Y. Hair remedy	49,274	Jan. 30	120	1470
Gem City Stove Co., Dayton, Ohio. Stoves and ranges	48,524	Jan. 16	120	896
General Specialty Company, Philadelphia, Pa. Tack and nail pullers	49,159	Jan. 30	120	1474
Geo. D. Witt Shoe Co., Lynchburg, Va. Leather boots and shoes	49,194	Feb. 13	120	2116
Geo. H. Keith Company, Brockton, Mass. Shoe-dressing	49,677	Jan. 2	120	316
Geo. H. Keith Company, Brockton, Mass. Leather and canvas boots and shoes	49,678	Jan. 2	120	316
Geo. G. Goodman Company, Paducah, Ky. Whisky	49,811	Feb. 20	120	2434
Geo. W. Lentz Co., Philadelphia, Pa. Boiler compound	48,521	Feb. 6	120	1819
George A. Hormel & Co., Austin, Minn. Cured meats	49,078	Jan. 23	120	1157
German-American Portland Cement Works, Lasalle, Ill. Portland cement	49,457	Jan. 2	120	316
Germantown Paint Co., New York, N. Y. Certain named paints, enamels, and bronzing liquids	49,015	Jan. 23	120	1155
Germantown Paint Co., New York, N. Y. Paints and enamels	49,016	Jan. 23	120	1155
Gibbs Medicine Co., Chattanooga, Tenn. Remedy for the diseases of women	49,195	Feb. 27	120	2742
Gibbs Medicine Co., Chattanooga, Tenn. Medical preparation of sarsaparilla	48,580	Jan. 16	120	894
Gilbert Brown & Co., New York, N. Y. Lard	48,580	Jan. 16	120	895
Gill Company, Ironton, Ohio. Coal, coke, and charcoal	49,200	Jan. 30	120	1473

Alphabetical list of registrants of trade-marks for January and February—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Ginter Grocery Company, Boston, Mass. Champagne	49,787	Feb. 13	120	2122
Ginter Grocery Company, Boston, Mass. Whisky	49,800	Feb. 20	120	2433
Glasner & Barsen Distilling & Importing Co., Kansas City, Mo. Whisky	49,198	Jan. 30	120	1467
Glasner & Barsen Distilling & Importing Co., Kansas City, Mo. Whisky	49,522	Feb. 6	120	1819
Glastonbury Knitting Company, Addison, Conn. Knitted underwear	49,768	Feb. 13	120	2122
Glessner Medicine Co., Findlay, Ohio. Remedy for throat affections	50,020	Feb. 27	120	2742
Glidden Varnish Company, Cleveland, Ohio. First coat or substitute for shellac	49,884	Feb. 20	120	2436
Globe Ventilator Company, Troy, N. Y. Ventilators, chimney-cowls and ventilating-caps, and ridging	49,949	Feb. 27	120	2745
Goldsmith, Joseph, Fulse Co., Cleveland, Ohio. Coats, vests, trousers, and overcoats	49,295	Feb. 20	120	2436
Goodkind Bros., Helena, Mont. Whisky	48,578	Jan. 2	120	320
Goss Printing Press Company, Chicago, Ill. Web-perfecting printing-machines	49,310	Jan. 30	120	1472
Gottfried Brewing Company, Chicago, Ill. Beer	48,497	Jan. 2	120	317
Gousset, Cyprien, New York, N. Y. Chocolate creams	49,709	Feb. 13	120	2121
Graef & Schmidt, New York, N. Y. Shears and scissors	48,458	Jan. 2	120	316
Gramm, Benjamin A., Chillicothe, Ohio. Automobiles and motor-cars	49,234	Jan. 30	120	1469
Graton and Knight Manufacturing Company, Worcester, Mass. Leather belting	49,546	Feb. 6	120	1820
Graves & Sons, C. H., Boston, Mass. Gin	48,579	Jan. 2	120	320
Graves & Sons, C. H., Boston, Mass. Alcohol	49,857	Feb. 20	120	2435
Green-Wheeler Shoe Co., Fort Dodge, Iowa. Fine kid shoes	48,559	Jan. 9	120	648
Greenfield's Son & Co., E., New York, N. Y. Chocolate confectionery	49,095	Jan. 23	120	1158
Greenfield's Son & Co., E., New York, N. Y. Chocolate confectionery	49,234	Jan. 30	120	1473
Griffin & Co., G. W., Franklin Falls, N. H. Hacksaws and hacksaw-blades	49,710	Feb. 13	120	2121
Griffin & Skelley Co., San Francisco, Cal. Dried and evaporated fruits	48,967	Jan. 16	120	899
Griffin & Skelley Co., San Francisco, Cal. Dried and evaporated fruits	48,968	Jan. 16	120	899
Griffin & Skelley Co., San Francisco, Cal. Dried and evaporated fruits	48,969	Jan. 16	120	899
Griffon Company, New York, N. Y., and Philadelphia, Pa. Cloths for ladies', men's, and children's wear	49,074	Jan. 23	120	1157
Griggs, Cooper and Company, St. Paul, Minn. Biscuits	48,553	Jan. 16	120	894
Groevenor & Co., J. M., Boston, Mass. Toilet cream	49,563	Feb. 13	120	2115
Groves' Son and Co., Dr. M. F., Philadelphia, Pa. Anodyne	48,563	Jan. 9	120	649
Groves' Son and Co., Dr. M. F., Philadelphia, Pa. Remedy for certain named diseases	49,185	Jan. 30	120	1467
Guckenheimer & Bros., Asher, Pittsburg, Pa. Whisky	49,960	Feb. 27	120	2747
Guild & Co., Curtis, Boston, Mass. Weekly newspaper	49,128	Jan. 23	120	1159
Gulden, Charles, New York, N. Y. Olives	48,459	Jan. 2	120	315
Gulden, Charles, New York, N. Y. Mustard	48,460	Jan. 2	120	315
Gulden, Charles, New York, N. Y. Olives	48,960	Jan. 16	120	899
Gulf Refining Company, Fort Arthur, Tex., and Pittsburg, Pa. Petroleum burning-oils	48,782	Jan. 16	120	891
Gulf Refining Company, Fort Arthur, Tex., and Pittsburg, Pa. Petroleum burning-oils	48,783	Jan. 16	120	891
Gulf Refining Company, Fort Arthur, Tex., and Pittsburg, Pa. Petroleum burning-oils	48,784	Jan. 16	120	891
Gulf Refining Company, Fort Arthur, Tex., and Pittsburg, Pa. Petroleum burning-oils	48,785	Jan. 16	120	891
Gulf Refining Company, Fort Arthur, Tex., and Pittsburg, Pa. Petroleum burning-oils	48,786	Jan. 16	120	891
Gulf Refining Company, Fort Arthur, Tex., and Pittsburg, Pa. Petroleum lubricating-oils	48,787	Jan. 16	120	891
Gurney Heater Manufacturing Company, Boston, Mass. Steam and hot-water heaters and radiators	49,150	Jan. 23	120	1160
Guthmann, Carpenter & Tolling, Chicago, Ill. Leather boots and shoes	49,151	Jan. 23	120	1160
H. D. Foss and Co., Incorporated, Boston, Mass. Chocolate confections and bonbons	50,042	Feb. 27	120	2749
H. K. Mulford Company, Philadelphia, Pa. Aseptic preparation	50,043	Feb. 27	120	2749
Hagen & Travers, Buffalo, N. Y. Whisky	48,580	Jan. 2	120	320
Hagerty & Co., John J., Dorchester, Mass. Whisky	49,812	Feb. 20	120	2434
Hamilton and Hamilton, Jr., Providence, R. I. Sterling-silver flat ware, hollow ware, and tableware	49,473	Feb. 6	120	1817
Hampden Watch Co., Canton, Ohio. Watch-movements	49,497	Feb. 6	120	1818
Hampden Watch Co., Canton, Ohio. Watch-movements	49,919	Feb. 20	120	2433
Hampden Watch Co., Canton, Ohio. Watch-movements	49,920	Feb. 20	120	2436
Hampden Watch Co., Canton, Ohio. Watches and watch parts	50,021	Feb. 27	120	2742
Hanlon & Goodman, New York, N. Y. Brushes for painters and decorators	50,016	Feb. 27	120	2743
Hannah & Hogg, Chicago, Ill. Whisky	48,581	Jan. 2	120	320
Harrell, Earle G., Camilla, Ga. Salve	48,654	Jan. 9	120	649
Harris Suspender Co., New York, N. Y. Suspenders and braces	48,660	Jan. 9	120	648
Harris Suspender Co., New York, N. Y. Suspenders and braces	48,661	Jan. 9	120	648
Harris Suspender Co., New York, N. Y. Men's suspenders and braces	48,901	Jan. 16	120	899
Hart Manufacturing Co., Cleveland, Ohio. Die-stocks	49,211	Jan. 30	120	1472
Hart Manufacturing Company, Hartford, Conn. Electrical appliances	49,100	Jan. 23	120	1158
Haskins Bros. & Co., Sioux City, Iowa, and Omaha, Nebr. Toilet and laundry soap	49,553	Feb. 13	120	2115
Hattervig, Osmond O., Vilnorg, S. D. Veterinary remedy	49,096	Jan. 23	120	1158
Havana Commercial Company, New York, N. Y. Cigars	48,786	Jan. 16	120	891
Havana Commercial Company, New York, N. Y. Havana cigars	49,575	Feb. 6	120	1813
Hawley & Hoops, New York, N. Y. Candy	48,631	Jan. 9	120	647
Hawley & Hoops, New York, N. Y. Candies	49,097	Jan. 23	120	1158
Hayden, Sarah H. E., Bedford, Mass. Medical compound	49,564	Feb. 13	120	2115
Hazard, George B., Providence, R. I. Candy	50,044	Feb. 27	120	2749
Hazen Confectionery Company, Boston, Mass. Chocolate candies	49,900	Feb. 20	120	2437
Heimann-Miller Manufacturing Company, St. Louis, Mo. Display-fixtures	49,240	Jan. 30	120	1470
Heidelberg Cement Co., Hives Cave, N. Y. Portland cement	49,898	Feb. 20	120	2438
Henis Fruit Press Co., New York, N. Y. Fruit-presses	48,928	Jan. 16	120	895
Henry Disston & Sons, Incorporated, Philadelphia, Pa. Saws	49,399	Feb. 6	120	1814
Henry Disston & Sons, Incorporated, Philadelphia, Pa. Saws	49,400	Feb. 6	120	1814
Henry Disston & Sons, Incorporated, Philadelphia, Pa. Saws	49,401	Feb. 6	120	1814
Henry Disston & Sons, Incorporated, Philadelphia, Pa. Saws	49,402	Feb. 6	120	1814
Henry Disston & Sons, Incorporated, Philadelphia, Pa. Saws	49,403	Feb. 6	120	1814
Henry Disston & Sons, Incorporated, Philadelphia, Pa. Saw-swages	49,554	Feb. 13	120	2115
Henry E. Frankenberg Co., New York, N. Y. Woolen, worsted, and mohair yarns	49,711	Feb. 13	120	2121
Henry E. Frankenberg Co., New York, N. Y. Woolen, worsted, and mohair yarns	49,194	Jan. 30	120	1467
Henry E. Frankenberg Company, New York, N. Y. Threads, chenille, and arrasene	49,196	Jan. 30	120	1467
Henry E. Frankenberg Company, New York, N. Y. Silks	49,051	Jan. 23	120	1155
Henry E. Frankenberg Company, New York, N. Y. Trimmings and braids	49,052	Jan. 23	120	1155
Henry E. Frankenberg Company, New York, N. Y. Trimmings and braids	49,196	Jan. 30	120	1467
Henry E. Frankenberg Company, New York, N. Y. Woolen, worsted, and mohair yarns	49,197	Jan. 30	120	1467
Henry E. Frankenberg Company, New York, N. Y. Silks	49,198	Jan. 30	120	1467
Henry E. Frankenberg Company, New York, N. Y. Threads, chenille, tinsel, and arrasene	49,202	Jan. 30	120	1469
Herb Medicine Company, Springfield, Ohio. Food and medicine for live stock and poultry	49,375	Jan. 30	120	1470
Herbst, Solomon C., Milwaukee, Wis. All kinds of whiskies	49,569	Feb. 6	120	1820
Heyl, Cornelius, Warren, Pennsylvania. Patent-leather, enamels, and waxed enamels	49,891	Feb. 20	120	2437
Hezel Milling Company, East St. Louis, Ill. Wheat-flour	49,218	Jan. 15	120	892
	49,992	Jan. 16	120	899

Alphabetical list of registrants of trade-marks for January and February—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Hazel Milling Company, East St. Louis, Ill. Wheat-flour	49,276	Jan. 30	120	1471
Hickson, Stephen, New York, N. Y. Gold-leaf	49,435	Feb. 6	120	1815
Higley, Christina J., New York, N. Y. Hose-supporters	49,277	Jan. 30	120	1471
Higley, Christina J., New York, N. Y. Hose-supporters	49,822	Feb. 20	120	2434
Higley, Christina J., New York, N. Y. Hose-supporters	49,823	Feb. 20	120	2434
Hine & Lynch, Poughkeepsie, N. Y. Leather boots and shoes	49,866	Feb. 20	120	2435
Hinkle Shoe Co., Evansville, Ind. Leather boots and shoes	49,153	Jan. 23	120	1160
Hitchner Biscuit Co., West Pittston, Pa. Biscuits, crackers, and wafers	48,499	Jan. 2	120	317
Hochstadter, Sigmund, New York, N. Y. Wines	49,547	Feb. 6	120	1820
Hochstadter, Sigmund, New York, N. Y. Cognac	48,547	Jan. 2	120	319
Hochstadter, Sigmund, New York, N. Y. Cocktails	48,552	Jan. 2	120	320
Hoffheimer Bros. Co., Cincinnati, Ohio. Whisky	48,819	Jan. 16	120	892
Hoffheimer Bros. Co., Cincinnati, Ohio. Whisky	49,782	Feb. 13	120	2123
Hoffheimer Soap Co., Chicago, Ill. Monthly magazine	49,818	Feb. 20	120	2434
Hoffheimer Soap Co., Chicago, Ill. Monthly magazine	49,199	Jan. 30	120	1467
Hoffheimer Soap Co., Chicago, Ill. Soap	49,200	Jan. 30	120	1467
Hoffheimer Soap Co., Chicago, Ill. Soap	49,376	Feb. 6	120	1813
Hoffman and Co., Red Hook, N. Y. Smoking and chewing tobacco	49,655	Feb. 13	120	2118
Hokien, George C., Philadelphia, Pa. Headache remedy and tonic	49,377	Feb. 6	120	1813
Holland Rusk Co., Holland, Mich. Rusks	48,524	Jan. 2	120	318
Holliday, W. H., Albertville, Ala. Medicine for diseases of the vagina	49,656	Feb. 13	120	2118
Holloway, William, Philadelphia, Pa. Medicated confections	49,336	Jan. 30	120	1473
Holloway, William, Philadelphia, Pa. Bitters	48,685	Jan. 9	120	649
Holzapfel's Compositions Company, Limited, Newcastle-upon-Tyne, England. Detergent preparation	48,686	Jan. 9	120	649
Homefolks Publishing Company, Chicago, Ill. Magazine or periodical	49,859	Feb. 20	120	2435
Hopkins, Ferdinand T., New York, N. Y. Soap	49,474	Feb. 6	120	1817
Horwood, Edward H., New York, N. Y. Underwaists	48,479	Jan. 2	120	316
Houck & Dieter Co., El Paso, Tex. Whisky	48,711	Jan. 9	120	650
Household Sewing Machine Co., Providence, R. I. Sewing-machines and sewing-machine parts	48,854	Jan. 16	120	894
Howe & Howe, Boston, Mass. Dress, bosom, and negligee shirts	49,033	Feb. 27	120	2745
Hudson & Co., Inc., New York, N. Y. Antiseptic liquid	49,712	Feb. 13	120	2121
Huesefeld, Ernst H., Cincinnati, Ohio. Removable ovens for cooking-stoves	49,565	Feb. 13	120	2115
Hulman & Co., Terre Haute, Ind. Baking-powder	48,480	Jan. 2	120	316
Hulse Bradford Co., San Francisco, Cal. Oil shade-cloth	49,902	Feb. 20	120	2437
Hunt & Co., F. W., Boston, Mass. Whisky	50,045	Feb. 27	120	2749
Hunt & Co., F. W., Boston, Mass. Whisky	48,687	Jan. 9	120	649
Hunter, Robert J., Washington, D. C. Men's and women's hats and caps	48,688	Jan. 9	120	649
Hy-Jen Chemical Co., Chicago, Ill. Dentifrice	49,824	Feb. 20	120	2434
Hy-Jen Chemical Co., Chicago, Ill. Antiseptic and detergent washes	49,201	Jan. 30	120	1467
Hyde Co., S. N., Hydes, Md. Canned corn	49,566	Feb. 13	120	2115
Hydrex Felt & Engineering Co., East Walpole, Mass. Waterproofing felt	49,543	Feb. 6	120	1820
Hydro-Carbon Manufacturing Company, Denver, Colo. Acid, heat, water, and weather proof and wood and metal preservative paint	49,378	Feb. 6	120	1813
I. B. Kleinert Rubber Co., New York, N. Y. Dress-shields	48,530	Jan. 2	120	318
Illinois Sewing Machine Co., Rockford and Chicago, Ill. Sewing-machines and parts thereof	48,993	Jan. 16	120	899
Incorporated New London Wash Silk Co., New London, Conn. Silk floss or embroidery-silk	49,317	Jan. 30	120	1473
Independent Brewing Ass'n, Chicago, Ill. Malt tonic	49,053	Jan. 23	120	1156
Indio Alkali Works, Boston, Mass. Cleaning preparations	49,154	Jan. 23	120	1160
Indian Head Mills of Alabama, Cordova, Ala. Cotton piece goods	49,986	Feb. 27	120	2746
Indianapolis Brewing Company, Indianapolis, Ind. Beer	49,236	Jan. 30	120	1469
Indianapolis Brewing Company, Indianapolis, Ind. Beer	48,512	Jan. 2	120	317
Inseda-Cofpho Co., Louisville, Ky. Stimulating and non-intoxicating tonic beverage	48,513	Jan. 2	120	317
Ingersoll & Bro., Robt. H., New York, N. Y. Watches and clocks	49,379	Feb. 6	120	1813
Inland Chemical Co., Indianapolis, Ind. Alteratives	49,237	Jan. 30	120	1469
International Harvester Co. of America, Chicago, Ill. Harvesters, mowers, and reapers	49,567	Feb. 13	120	2115
International Silver Company, Meriden, Conn. Silver-plated hollow ware	49,496	Feb. 6	120	1815
International Silver Company, Meriden, Conn. Silver-plated hollow ware	49,338	Jan. 30	120	1473
International Silver Company, Meriden, Conn. Silver-plated hollow ware	49,339	Jan. 30	120	1473
International Silver Company, Meriden, Conn. Silver-plated hollow ware	49,340	Jan. 30	120	1473
International Silver Company, Meriden, Conn. Silver-plated hollow ware	49,341	Jan. 30	120	1473
International Silver Company, Meriden, Conn. Silver-plated hollow ware	49,769	Feb. 13	120	2123
International Silver Company, Meriden, Conn. Silver-plated hollow ware	49,825	Feb. 20	120	2434
Irons & Russell, Providence, R. I. Gold-plated badges	49,826	Feb. 20	120	2434
Iseman, Samuel, Baltimore, Md. Tonics	49,860	Feb. 20	120	2436
J. Chr. G. Hupfel Brewing Co., New York, N. Y. Lager-beer	49,568	Feb. 13	120	2115
J. A. Bokel Company of Baltimore City, Baltimore, Md. Whisky	50,022	Feb. 27	120	2748
J. C. Grant Chemical Company, East St. Louis, Ill. Baking-powder	49,813	Feb. 20	120	2434
J. C. Hubinger Bros. Co., New Haven, Conn. Laundry starch	49,861	Feb. 20	120	2436
J. C. Hubinger Bros. Co., New Haven, Conn. Lump starch for laundry purposes	49,862	Feb. 20	120	2436
J. C. Hubinger Bros. Co., New Haven, Conn. Corn-starch	49,903	Feb. 20	120	2437
J. F. Parkhurst & Son Co., Bangor, Me. Trunks	49,904	Feb. 20	120	2437
J. G. Brandt Shoe Company, St. Louis, Mo. Leather shoes, boots, and slippers	48,955	Jan. 16	120	897
J. G. McDonald Candy Co., Salt Lake City, Utah. Candies of all kinds	49,980	Feb. 20	120	2438
J. H. Rowe Company, Portland, Me., and Gloucester, Mass. Oiled clothing	48,927	Jan. 16	120	896
J. H. Rowe Company, Portland, Me., and Gloucester, Mass. Oiled clothing	48,635	Jan. 9	120	647
J. H. Rowe Company, Portland, Me., and Gloucester, Mass. Oiled clothing	48,636	Jan. 9	120	647
J. F. Eustis Mfg. Co., Boston, Mass. Mirrors and mirror frames or supports	49,278	Jan. 30	120	1471
J. F. Hartray Shoe Co., Chicago, Ill. Leather shoes	50,007	Feb. 27	120	2748
J. W. Evendon Co., Buffalo, N. Y. Whisky	49,124	Jan. 23	120	1159
J. W. Evendon Co., Buffalo, N. Y. Whisky	48,602	Jan. 2	120	321
Jabuz Bros., New York, N. Y. Ceylon tea	50,023	Feb. 27	120	2748
Jabuz Bros., New York, N. Y. Prepared spices	49,528	Feb. 6	120	1819
Jashaway Company, Nashua, N. H. Cotton piece goods	48,667	Feb. 13	120	2116
Jacob J. Vollrath Mfg. Co., Sheboygan, Wis. Stamped steel ware	49,437	Feb. 6	120	1815
Jacobs & Garrett, Memphis, Tenn. Whisky	49,790	Feb. 20	120	2433
Jaeques, Jos., Waterbury, Conn. Mixed drinks	49,475	Feb. 6	120	1817
Jaenecke Printing Ink Co., Newark, N. J. Printing-inks	49,202	Jan. 30	120	1466
James B. Hoey & Co., Alexandria, Va. Painting, staining, and graining oil	49,212	Jan. 30	120	1472
James C. Delaney Hardware Co., Pittsburg, Pa. Hatchets, axes, and adzes	49,863	Feb. 20	120	2436
Jandus Electric Co., Cleveland, Ohio. Electric-arc lamps	49,155	Jan. 23	120	1160
Jandus Electric Co., Cleveland, Ohio. Electric fans	49,260	Jan. 30	120	1470
Jaynes & Son, Dr. D., Philadelphia, Pa. Medicinal and chemical preparations	49,261	Jan. 30	120	1470
Jaynes & Son, Dr. D., Philadelphia, Pa. Medicinal and chemical preparations	48,855	Jan. 16	120	894
Jaynes & Son, Dr. D., Philadelphia, Pa. Medicinal and chemical preparations	48,856	Jan. 16	120	894
	48,857	Jan. 16	120	894

Alphabetical list of registrants of trade-marks for January and February—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Jel-Nut Manufacturing Company, Baltimore, Md. Peanut-butter	48,668	Jan. 9	120	649
Jenkins, Benjamin S., Cookmanville, N. Y. Washboards	49,076	Jan. 23	120	1157
Jenkins Bros., New York, N. Y. Insect-poison	49,203	Jan. 30	120	1469
Jessup-Wheelan Co., San Francisco, Cal. Clover-seed	48,688	Jan. 9	120	647
John B. Canepa Company, Chicago, Ill. Cereal paste goods	50,080	Feb. 27	120	2750
John Bardenheier Wine and Liquor Co., St. Louis, Mo. Brandy	49,204	Jan. 30	120	1469
John Church Company, Cincinnati, Ohio. Upright pianos	48,670	Jan. 9	120	649
John Eichler Brewing Co., New York, N. Y. Beer	48,738	Jan. 9	120	651
John J. Clark & Co., Pawtucket, R. I. Spool-cotton	48,632	Jan. 9	120	647
John L. Whiting & Son Co., Boston, Mass. Paint, varnish, and sash-tool brushes	48,637	Jan. 9	120	648
John L. Whiting & Son Co., Boston, Mass. Paint, varnish and sash-tool brushes	48,682	Jan. 9	120	648
John L. Whiting & Son Co., Boston, Mass. Paint, varnish, and sash-tool brushes	48,683	Jan. 9	120	648
John L. Whiting & Son Co., Boston, Mass. Brushes	48,820	Jan. 16	120	892
John Phillips & Co., Ltd., Detroit, Mich. Show-cases	49,980	Feb. 27	120	2746
John T. Lewis & Bros. Co., Philadelphia, Pa. Pigment colors and colored paints	49,041	Jan. 23	120	1158
John W. Masury & Son, Brooklyn, N. Y. Varnishes	49,970	Feb. 27	120	2746
John W. Russ Co., Haverhill, Mass. Leather boots and shoes	48,698	Jan. 9	120	648
John W. Russ Company, Haverhill, Mass. Leather boots and shoes	48,500	Jan. 2	120	317
John W. Russ Company, Haverhill, Mass. Leather boots and shoes	49,125	Jan. 23	120	1159
Johnson & Johnson, New Brunswick, N. J. Plasters	49,279	Jan. 30	120	1471
Johnson & Johnson, New Brunswick, N. J. Plasters	49,280	Jan. 30	120	1471
Johnson & Johnson, New Brunswick, N. J. Membranes	49,281	Jan. 30	120	1471
Johnson & Johnson, New Brunswick, N. J. Surgical dressings	49,282	Jan. 30	120	1471
Johnson & Johnson, New Brunswick, N. J. Catheters and bougies	49,283	Jan. 30	120	1471
Johnson & Johnson, New Brunswick, N. J. Plasters	49,380	Feb. 6	120	1813
Johnson & Lund, Philadelphia, Pa. Artificial teeth and parts connected therewith	49,381	Feb. 6	120	1813
Johnson-Richardson Co., Limited, Montreal, Canada. Dyes and dyestuffs	49,524	Feb. 6	120	1816
Jones & Co., Paul, Louisville, Ky. Rye and Bourbon whiskies	49,101	Jan. 23	120	1158
Jones, Frank G., Boston, Mass. Leather boots and shoes and leather for the same	48,548	Jan. 2	120	319
Jordan Marsh Company, Boston, Mass. Leather boots and shoes	48,498	Jan. 2	120	317
Joseph Campbell Company, Camden, N. J. Condensed soups	49,205	Jan. 30	120	1468
Joseph Campbell Company, Camden, N. J. Condensed soups	48,461	Jan. 2	120	315
Joseph N. Eisendrath Company, Chicago, Ill. Leather	48,664	Jan. 9	120	649
Joseph N. Eisendrath Company, Chicago, Ill. Leather	49,738	Feb. 13	120	2122
Jung, Louis E., New Orleans, La. Bitters	49,739	Feb. 13	120	2122
Kabo Corset Company, Chicago, Ill. Corsets	49,666	Feb. 13	120	2119
Kahn, Harry, Cincinnati, Ohio. Whisky	49,827	Feb. 20	120	2434
Kalkhoff, Alfons F., Toledo, Ohio. Medical preparation for genito-urinary diseases	48,583	Jan. 2	120	320
Katharmon Chemical Co., St. Louis, Mo. Tonics	49,264	Jan. 30	120	1471
Kaufmann Bros. & Co., Toledo, Ohio. Whisky	49,525	Feb. 6	120	1819
Kearney & Foot Company, Paterson, N. J. Files and rasps	49,639	Feb. 13	120	2119
Kearney & Foot Company, Paterson, N. J. Files and rasps	49,262	Feb. 6	120	1813
Keasbey & Mattison Company, Ambler, Pa. Packings	49,476	Feb. 6	120	1817
Keidel, Henry, Baltimore, Md. Gasolene and marine engines	49,526	Feb. 6	120	1819
Keidel, Henry, Baltimore, Md. Shotguns, rifles, and revolvers	49,285	Jan. 30	120	1471
Keidel, Henry, Baltimore, Md. Rifles, shotguns, and revolvers	49,342	Jan. 30	120	1473
Keil, Julius M., Western Springs, Ill. Crystalline soluble chemical	49,713	Feb. 13	120	2121
Keller, A. H., Sioux Falls, S. D. Medicine	49,206	Jan. 30	120	1468
Keller, George J., Newark, N. J. Coffee	49,098	Jan. 23	120	1158
Keuffel & Esser Company, Hoboken, N. J. Drawing-paper	49,660	Feb. 13	120	2119
Keystone Leather Co., Philadelphia, Pa. Glazed and dull or "mat" kid	49,262	Jan. 30	120	1470
Keystone Nail Company, Inc., Philadelphia, Pa. Galvanized fastening devices	50,008	Feb. 27	120	2748
Kilbourne & Jacobs Manufacturing Company, Columbus, Ohio. Wheelbarrows and the parts thereof	49,864	Feb. 20	120	2436
Kilbourne & Jacobs Manufacturing Company, Columbus, Ohio. Wheelbarrows and the parts thereof	48,702	Jan. 9	120	650
Kilbourne & Jacobs Manufacturing Company, Columbus, Ohio. Wheelbarrows and the parts thereof	48,703	Jan. 9	120	650
Kilbourne & Jacobs Manufacturing Company, Columbus, Ohio. Wheelbarrows and the parts thereof	48,704	Jan. 9	120	650
Kilbourne & Jacobs Manufacturing Company, Columbus, Ohio. Wheelbarrows and the parts thereof	48,729	Jan. 9	120	651
Kilbourne & Jacobs Manufacturing Company, Columbus, Ohio. Wheelbarrows and the parts thereof	48,730	Jan. 9	120	651
Kilbourne and Jacobs Manufacturing Company, Columbus, Ohio. Wheelbarrow-wheels	48,731	Jan. 9	120	651
Kilbourne & Jacobs Manufacturing Company, Columbus, Ohio. Earth-scrapers	48,956	Jan. 16	120	896
Kilbourne & Jacobs Manufacturing Company, Columbus, Ohio. Earth-scrapers	49,313	Jan. 30	120	1472
Kilmer & Co., Dr., Binghamton, N. Y. Certain proprietary medicines	49,314	Jan. 30	120	1472
Kilmer & Co., Dr., Binghamton, N. Y. Certain proprietary medicine	48,789	Jan. 16	120	891
Kilmer & Co., Dr., Binghamton, N. Y. Ointment	48,790	Jan. 16	120	891
Kilmer & Co., Dr., Binghamton, N. Y. Proprietary medicine	48,791	Jan. 16	120	891
Kilmer & Co., Dr., Binghamton, N. Y. Proprietary medicine	48,792	Jan. 16	120	891
Kilmer & Co., Dr., Binghamton, N. Y. Proprietary medicine	48,793	Jan. 16	120	891
Kilmer & Co., Dr., Binghamton, N. Y. Proprietary remedy	48,794	Jan. 16	120	892
Kilmer & Co., Dr., Binghamton, N. Y. Proprietary medicine	48,795	Jan. 16	120	892
Kilmer & Co., Dr., Binghamton, N. Y. Proprietary remedy	48,796	Jan. 16	120	892
Kilmer & Co., Dr., Binghamton, N. Y. Proprietary remedy	48,797	Jan. 16	120	892
Kilmer & Co., Dr., Binghamton, N. Y. Proprietary remedy	48,798	Jan. 16	120	892
Kilmer & Co., Dr., Binghamton, N. Y. Proprietary medicines	48,799	Jan. 16	120	892
Kilmer & Co., Dr., Binghamton, N. Y. Proprietary remedy	48,800	Jan. 16	120	892
Kilmer & Co., Dr., Binghamton, N. Y. Proprietary medicine	48,801	Jan. 16	120	892
King Collar Button Co., New York, N. Y. Collar and cuff buttons	49,186	Jan. 23	120	1160
King, Elliott H., Brooklyn, N. Y. Canned soups	49,637	Jan. 9	120	647
King Manufacturing Co., Piqua, Ohio. Roll-paper holders and cutters	48,994	Jan. 16	120	899
Kirk-Geary & Co., Sacramento, Cal. Medicinal cordial	48,957	Jan. 16	120	896
Klein Bros., Cincinnati, Ohio. Whisky	49,971	Feb. 27	120	2746
Klen-So Pharmacal Company, Philadelphia, Pa. Compound for cleaning and disinfecting	48,884	Jan. 2	120	320
Knickerbocker Brace Co., Easton, Pa. Shoulder-braces, chest-expanders, and suspenders	49,207	Jan. 30	120	1469
Knickerbocker Chocolate Company, New York, N. Y. Chocolate	49,988	Feb. 6	120	1815
Knickerbocker Chocolate Company, New York, N. Y. Chocolate and cocoa	49,157	Jan. 23	120	1160
Knickerbocker Chocolate Company, New York, N. Y. Chocolate and cocoa	49,346	Jan. 30	120	1473
Knox Automobile Company, Springfield, Mass. Automobiles	49,714	Feb. 13	120	2121
Knox Hat Manufacturing Co., Brooklyn, N. Y. Hats and caps	48,992	Feb. 20	120	2437
Knox Hat Manufacturing Co., Brooklyn, N. Y. Hats and caps	49,708	Feb. 13	120	2120
Koeralan, Edgar J., Cincinnati, Ohio. Salve and ointment	49,704	Feb. 13	120	2120
	48,989	Jan. 2	120	319

Alphabetical list of registrants of trade-marks for January and February—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Kraus & Glauberg Co., New York, N. Y. Hair combs, retainers, ornaments, and pins	48,753	Jan. 9	120	652
Kraus & Glauberg Co., New York, N. Y. Hair combs, retainers, ornaments, and pins	48,754	Jan. 9	120	652
Krebs Pigment & Chemical Co., Wilmington, Del. Pigments for paints	49,081	Jan. 23	120	1155
Kreisheimer Bros., Seattle, Wash. Whisky	48,755	Jan. 9	120	652
Krementz & Co., Newark, N. J. Collar-buttons	49,770	Feb. 13	120	2123
Kullman, Salz & Company, San Francisco, Cal. Oak-tanned cowhide	48,821	Jan. 16	120	893
Kuttowait Butter Cutter Company, Chicago, Ill. Butter-cutters	49,693	Feb. 13	120	2120
L. E. Waterman Company, New York, N. Y. Fountain-pens	49,478	Feb. 6	120	1817
L. E. Waterman Company, New York, N. Y. Fountain-pens	49,715	Feb. 13	120	2121
Lamadt, Corliss & Co., New York, N. Y. Pills	49,569	Feb. 13	120	2115
Lange, Morris, Cincinnati, Ohio. Whisky	50,047	Feb. 27	120	2749
Lange, Morris, Cincinnati, Ohio. Whisky	48,822	Jan. 16	120	893
Lange, Morris, Cincinnati, Ohio. Whisky	49,477	Feb. 6	120	1817
Lanman & Kemp, New York, N. Y. Sugar-coated pills	49,661	Feb. 13	120	2119
Larned, Carter and Co., Detroit, Mich. Coats, pants, overalls, and blouses	49,570	Feb. 13	120	2115
Lattemann, John J., New York, N. Y. Leather boots and shoes	48,481	Jan. 2	120	316
Lauritsen Malt Co., Minneapolis, Minn. Non-intoxicating table-malt	49,209	Jan. 30	120	1468
Lavadura Chemical Co., Savannah, Ga. Demulcents	49,364	Feb. 6	120	1813
Laventhal Bros., San Francisco, Cal. Whisky	49,286	Jan. 30	120	1471
Lazarus and Nassauer, Cairo, Ill. Whisky	49,527	Feb. 6	120	1819
Lea & McVitty, Incorporated, Philadelphia, Pa. Tanned leather	49,771	Feb. 13	120	2123
Lee, Wm. H., Chicago, Ill. Books	48,823	Jan. 16	120	893
Lefebvre, Michel T., Montreal, Canada. Coffee substitutes	49,528	Feb. 6	120	1819
Leggett & Brother, New York, N. Y. Chlorid of lime	49,906	Feb. 20	120	2437
Labesiol Preparation Co., Melrose, Mass. Ointments and lotions	49,210	Jan. 30	120	1468
Lehigh Portland Cement Co., Ormrod and Allentown, Pa. Portland cement	49 253	Jan. 30	120	1470
Lehmann, William C., New York, N. Y. Wash for treatment of affections of the eye	49,238	Jan. 30	120	1469
Leslie E. Keeley Co., Dwight, Ill. Medicinal preparation	48,860	Jan. 16	120	894
Levering Coffee Co., Baltimore, Md. Coffee	49,315	Jan. 30	120	1472
Levey Bros. & Co., Indianapolis, Ind. Bank-checks	50,048	Feb. 27	120	2749
Levi, Sol E., Portland, Oreg. Whisky	48,824	Jan. 16	120	893
Levy & Co., L. W., Galveston, Tex. Whisky	48,585	Jan. 2	120	320
Levy, David H., New York, N. Y. Cigars and cheroots	49,208	Jan. 30	120	1468
Liberty Silk Co., New York, N. Y. Dress-silks	49,662	Feb. 13	120	2119
Liberty Stove Company, Philadelphia, Pa. Stoves and ranges	49,438	Feb. 6	120	1815
Lieber, Albert, Indianapolis, Ind. Malt extracts and peptonized malt foods	49,907	Feb. 20	120	2437
Listman Mill Company, La Crose, Wis. Wheat-flour	48,501	Jan. 2	120	317
Lodge & Shipley Machine Tool Co., Cincinnati, Ohio. Metal-turning lathes	49,529	Feb. 6	120	1819
Loeb, Adolph, Cincinnati, Ohio. Whisky	49,595	Feb. 13	120	2116
Loeb Bloom & Co., Paducah, Ky. Whisky	49,716	Feb. 13	120	2121
Loeb & Co., Wm., Providence, R. I. Finger-rings	48,825	Jan. 16	120	893
Lord & Nagle Company, Boston, Mass. Trade-journal periodical or magazine	50,009	Feb. 27	120	2748
Los Angeles Olive Growers' Ass'n, Los Angeles, Cal. Olives and pickled olives	49,826	Feb. 20	120	2434
Louis Bergdoll Brewing Company, Philadelphia, Pa. Lager-beer	49,668	Feb. 13	120	2119
Lowenthal & Brother, Max, Rochester, N. Y. Double-breasted buttonless infants' vests	48,732	Jan. 9	120	651
Ludlow Manfg. Associates, Boston, Mass. Jute bagging	48,482	Jan. 2	120	316
Ludlow Manfg. Associates, Boston, Mass. Jute bagging	48,905	Jan. 16	120	899
Ludlow Valve Manufacturing Company, Troy, N. Y. Valves, hydrants, and valve-indicators	49,000	Jan. 16	120	899
Lunsen Bearing Company, Buffalo, N. Y. Non-ferrous alloys	49,457	Feb. 6	120	1816
Lunkenheimer Company, Cincinnati, Ohio. Grease-cups	49,960	Feb. 27	120	2745
Luyties Brothers, New York, N. Y. Ginger-ale	49,887	Feb. 20	120	2436
Luyties, F. August, St. Louis, Mo. Tonics	49,158	Jan. 23	120	1160
Lynchburg Shoe Co., Lynchburg, Va. Leather boots and shoes	49,598	Feb. 13	120	2116
Lyon & Healy, Chicago, Ill. Guitars and mandolins	49,793	Feb. 20	120	2433
Lyon & Healy, Chicago, Ill. Guitars and mandolins	48,488	Jan. 2	120	316
M. Shaughnessy Distilling Company, St. Louis, Mo. Whisky	49,395	Feb. 6	120	1813
M. H. Alexander Co., Cincinnati, Ohio. Syrups, molasses, and sorghum	49,017	Jan. 23	120	1155
M. N. Arnold Co., North Abington and Boston, Mass. Leather boots and shoes	48,671	Jan. 9	120	649
M. T. Richardson Company, New York, N. Y. Trade journal	49,530	Feb. 6	120	1819
Macbeth-Evans Glass Company, Pittsburg, Pa. Lamp glasses and globes	50,010	Feb. 27	120	2748
Macbeth-Evans Glass Company, Pittsburg, Pa. Lamp glasses and globes	48,502	Jan. 2	120	317
Mackenzie, Cora T., Baltimore, Md. External remedy	48,586	Jan. 2	120	320
Magee Furnace Co., Boston, Mass. Stoves, ranges, furnaces, heaters, and parts thereof	49,571	Feb. 13	120	2115
Magic Soap Co., Ltd., New Orleans, La. Laundry soap	49,717	Feb. 13	120	2121
Magic Soap Co., Ltd., New Orleans, La. Laundry and toilet soap	49,387	Feb. 6	120	1813
Mahoney, J. & E., Portsmouth, Va. Whisky	49,388	Feb. 6	120	1813
Maltine Company, Brooklyn, N. Y. Medical preparations	48,560	Jan. 2	120	319
Manahan, Thomas, New York, N. Y. Mothproof bags	48,761	Jan. 9	120	652
Manifest Shirt Co., Philadelphia, Pa. Dress and negligée shirts	48,712	Jan. 9	120	650
Manifest Shirt Co., Philadelphia, Pa. Dress and negligée shirts	49,801	Feb. 20	120	2433
Manitou Mineral Springs Company, Manitou, Colo. Natural mineral water	49,839	Feb. 20	120	2435
Many, Blanc & Co., Chicago, Ill. Whisky	49,171	Jan. 23	120	1161
Many, Blanc & Co., Chicago, Ill. Whisky	48,587	Jan. 2	120	320
Maple City Soap Works Monmouth, Ill. Laundry soap	49,903	Feb. 27	120	2746
Maple City Soap Works, Monmouth, Ill. Laundry soap	49,244	Jan. 30	120	1473
Mapleton Milling Company, Mapleton, Minn. Wheat-flour	49,243	Jan. 30	120	1473
Marchesini Bros., New York, N. Y. Olive-oil	49,531	Feb. 6	120	1819
Marion Iron & Brass Bed Co., Marion, Ind. Metal bedsteads	49,076	Jan. 23	120	1157
Marks Rothenberg & Co., Meridian, Miss. Leather boots and shoes	49,128	Jan. 23	120	1159
Marsh, William A., Columbus, Ohio. Periodical	49,772	Feb. 13	120	2123
Marshall Field & Company, Chicago, Ill. Corsets	49,973	Feb. 27	120	2746
Marx & Haas Clothing Co., St. Louis, Mo. Overcoats, coats, vests, and trousers	50,049	Feb. 27	120	2749
Mason, Albert G., Cleveland, Ohio. Sewing-machines	49,287	Jan. 30	120	1471
Massachusetts Chemical Company, Boston, Mass. Rubber heels and soles	48,561	Jan. 2	120	319
Massachusetts Chemical Company, Walpole, Mass. Insulating-tape	49,159	Jan. 23	120	1160
Massachusetts Cotton Mills, Lowell, Mass. Cotton piece goods	49,439	Feb. 6	120	1815
Massachusetts Cotton Mills, Lowell, Mass. Cotton piece goods	48,484	Jan. 2	120	316
Massachusetts Cotton Mills, Lowell, Mass. Cotton piece goods	48,503	Jan. 2	120	317
Massachusetts Cotton Mills, Lowell, Mass. Cotton piece goods	48,630	Jan. 9	120	648
Massachusetts Cotton Mills, Lowell, Mass. Cotton piece goods	49,077	Jan. 23	120	1157
Massachusetts Cotton Mills, Lowell, Mass. Cotton piece goods	49,211	Jan. 30	120	1468
Massachusetts Cotton Mills, Lowell, Mass. Cotton piece goods	49,212	Jan. 30	120	1468
Massachusetts Cotton Mills, Lowell, Mass. Drillings and sheetings	49,293	Jan. 30	120	1471
Massachusetts Cotton Mills, Lowell, Mass. Cotton piece goods	49,440	Feb. 6	120	1815
Massachusetts Cotton Mills, Lowell, Mass. Cotton piece goods	49,718	Feb. 13	120	2121
Massachusetts Cotton Mills, Lowell, Mass. Cotton piece goods	49,719	Feb. 13	120	2121

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Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Massachusetts Cotton Mills, Lowell, Mass. Cotton piece goods	49,720	Feb. 13	120	2121
Massachusetts Cotton Mills, Lowell, Mass. Cotton piece goods	49,772	Feb. 13	120	2123
Masurite Explosive Company, Masury, Ohio. Explosives	49,829	Feb. 20	120	2434
Matthews, William B., Washington, D. C. Natural water	49,973	Feb. 27	120	2746
Mayer & Loewenstein, New York, N. Y. Varnishes and japans	48,858	Jan. 16	120	894
Mayer, M. & C., New York, N. Y. Knit hosiery and underwear	49,042	Jan. 23	120	1158
Mayer, M. & C., New York, N. Y. Knit hosiery and underwear	48,929	Jan. 16	120	896
Mayer, M. & C., New York, N. Y. Knit hosiery and underwear	49,908	Feb. 20	120	2437
Mayer, Schoner, Offner & Co., Cincinnati, Ohio. Men's and boys' coats and overcoats	49,909	Feb. 20	120	2437
Mayer & Sons, S., New York, N. Y. Infants' hats and caps	49,054	Jan. 23	120	1156
Mayers, H. J., Cleveland, Ohio. Effervescent laxative fruit preparation	49,398	Feb. 6	120	1813
McAleer & Sons, John, Philadelphia Pa. Wheat-flour	49,895	Feb. 20	120	2436
McAvoy Brewing Co., Chicago, Ill. Malt tonic	48,713	Jan. 9	120	650
McAvoy Brewing Co., Chicago, Ill. Malt tonic	48,504	Jan. 2	120	317
McCann & Co., New Orleans, La. Molasses	48,930	Jan. 16	120	896
McConway & Torley Co., Pittsburg, Pa. Automatic car-couplings	49,078	Jan. 23	120	1157
McCrohan, Jeremiah J., Chicago, Ill. Tonic	48,958	Jan. 16	120	898
McDougall, Charles P., Indianapolis, Ind. Kitchen-cabinets	48,859	Jan. 16	120	894
McLaren, John D., New York, N. Y. Remedy for pain in crayon form	49,213	Jan. 30	120	1468
McMullen, Charles P., Brooklyn, N. Y. Governors for pumping-engines	49,289	Jan. 30	120	1471
McRae & Bevill, Memphis, Tenn. Leather and canvas shoes and slippers	50,011	Feb. 27	120	2748
McRae & Bevill, Memphis, Tenn. Leather and canvas shoes and slippers	49,953	Feb. 27	120	2746
Mealy, Edw. H., Baltimore, Md. Electric heel-plates	49,974	Feb. 27	120	2746
Mechanical Metal Mfg. Co., Philadelphia, Pa. Solders, newspaper metals, and Babbitt metals	48,552	Jan. 2	120	319
Megler, Joseph G., Brookfield, Wash. Canned salmon	48,931	Jan. 16	120	897
Megler, Joseph G., Brookfield, Wash. Canned salmon	50,050	Feb. 27	120	2749
Megler, Joseph G., Brookfield, Wash. Canned salmon	50,051	Feb. 27	120	2749
Melini & Eakin, Albuquerque, N. Mex. Ter. Whisky	50,052	Feb. 27	120	2750
Mellier Drug Company, St. Louis, Mo. Synthetic coal-tar product	48,826	Jan. 16	120	893
Merck, E., Darmstadt, Germany. Soluble thiocinamine compound for medicinal use	50,012	Feb. 27	120	2748
Merck, E., Darmstadt, Germany. Dipropyl-barbituric acid	49,160	Jan. 23	120	1160
Mettler, John W., New Brunswick, N. J. Knitted hosiery, undershirts, and drawers	48,756	Jan. 9	120	652
Meyer Brothers Coffee and Spice Company, St. Louis, Mo. Coffee	49,830	Feb. 20	120	2434
Meyer Brothers Coffee and Spice Company, St. Louis, Mo. Coffee	48,932	Jan. 16	120	897
Meyer Brothers Coffee and Spice Company, St. Louis, Mo. Coffee	49,001	Jan. 16	120	899
Meyer & Goetzes, New York, N. Y. Certain named cotton fabrics	49,002	Jan. 16	120	899
Michaelis & Sons, M., New York, N. Y. Gelatin	49,831	Feb. 20	120	2434
Michigan Carbon Works, Detroit, Mich. Jelly preparation	49,055	Jan. 23	120	1156
Miller Ladder Company, Chicago, Ill. Wooden ladders of all kinds	50,053	Feb. 27	120	2750
Milliken, Tomlinson Co., Portland, Me. Coffee-berry	49,548	Feb. 6	120	1820
Milosiewsky & Krans, Chicago, Ill. Whisky	48,642	Jan. 9	120	648
Mitchell, Fletcher & Company, Incorporated, Philadelphia, Pa. Whisky	49,246	Jan. 30	120	1473
Mitchell, William F., Philadelphia, Pa. Cordials	49,794	Feb. 20	120	2433
Moline Wagon Compy., Moline, Ill. Wagons	49,016	Jan. 23	120	1155
Monitor Drill Co., St. Louis Park and Minneapolis, Minn. Seeding-machines	49,721	Feb. 13	120	2121
Montgomery, Q. L., New York, N. Y. Sheetings and drillings	49,099	Jan. 23	120	1158
Morris Bros., New York, N. Y. Suspenders	49,598	Feb. 13	120	2116
Morrison Manufacturing Company, Pierre, S. D., and Fort Madison, Iowa. Plows, listers, cultivators, and harrows	49,056	Jan. 23	120	1156
Morse & Rogers, New York, N. Y. Boots, shoes, and slippers and soles therefor	49,043	Jan. 23	120	1156
Morse & Rogers, New York, N. Y. Boots, shoes, and slippers and soles therefor	48,933	Jan. 16	120	897
Morse & Rogers, New York, N. Y. Boots, shoes, and slippers and soles therefor	49,161	Jan. 23	120	1161
Morway & Son, Felix P., Worcester, Mass. Whisky	49,954	Feb. 27	120	2746
Moesberg Wrench Company, Central Falls, R. I. Counter-shafts and appurtenances thereto	49,955	Feb. 27	120	2746
Mount Vernon-Woodberry Cotton Duck Company, Baltimore, Md. Cotton duck	49,532	Feb. 6	120	1819
Mount Vernon-Woodberry Cotton Duck Company, Baltimore, Md. Cotton duck	48,959	Jan. 16	120	898
Mount Vernon-Woodberry Cotton Duck Company, Baltimore, Md. Canvas, hose-duck, awning-stripes, and sail-duck	49,044	Jan. 23	120	1158
Mount Vernon-Woodberry Cotton Duck Company, Baltimore, Md. Cotton duck	49,214	Jan. 30	120	1468
Mount Vernon-Woodberry Cotton Duck Company, Baltimore, Md. Cotton duck	49,722	Feb. 13	120	2121
Mount Vernon-Woodberry Cotton Duck Company, Baltimore, Md. Cotton duck	49,774	Feb. 13	120	2123
Müller, C. H. F., Hamburg, Germany. Vacuum-tubes, X-ray tubes, and parts thereof	50,013	Feb. 27	120	2748
Mumford, Chas. B., Kansas City, Mo. Remedy for coughs, colds, croup, and consumption	48,934	Jan. 16	120	897
Municipal News Association, New York, N. Y. News periodicals and magazines	49,215	Jan. 30	120	1468
Munson, James G., San Jose, Cal. Remedy for headache, neuralgia, and nervousness	49,533	Feb. 6	120	1819
Murbach Company, Baltimore, Md. Candy	49,534	Feb. 6	120	1819
Murine Eye Remedy Company, Chicago, Ill. Eye remedies	49,102	Jan. 23	120	1158
Myers & Andrews, Boston, Mass. Men's and children's overcoats, coats, vests, and trousers	49,893	Feb. 20	120	2437
Myers, Angelo, Philadelphia, Pa. Whisky	48,505	Jan. 2	120	317
Myers, Angelo, Philadelphia, Pa. Whisky	48,588	Jan. 2	120	320
Myers, Angelo, Philadelphia, Pa. Whisky	48,589	Jan. 2	120	320
N. Erlanger, Blumgart & Co., New York, N. Y. Mohair dress goods	49,535	Feb. 6	120	1819
N. K. Fairbank Company, Chicago, Ill. Lard and lard compound	49,293	Jan. 30	120	1471
Na Kas Trading Corporation, New York, N. Y. Silk piece goods	49,894	Feb. 13	120	2120
National-Acme Manufacturing Company, Cleveland, Ohio. Lathes	49,003	Jan. 16	120	899
National Casket Co., Allegheny, Pa. Burial-caskets and casket attachments	49,597	Feb. 13	120	2116
National Casket Co., New York, N. Y. Caskets, coffins, and fixtures therefor	49,079	Jan. 23	120	1157
National Casket Co., New York, N. Y. Burial-caskets, coffins, and fixtures therefor	49,162	Jan. 23	120	1161
National Coal Tar Co., Revere, Mass. Roofing and waterproofing material	49,441	Feb. 6	120	1815
National Distilling Co., Milwaukee, Wis. Gin	49,290	Jan. 30	120	1471
National Food Co., Fond du Lac, Wis. Ointments	49,018	Jan. 23	120	1155
National Lead Company, Jersey City, N. J., and New York, N. Y. White lead	48,936	Jan. 16	120	897
National Lead Company, Jersey City, N. J., and New York, N. Y. White lead	48,526	Jan. 2	120	318
National Lead Company, Jersey City, N. J., and New York, N. Y. White lead	49,291	Jan. 30	120	1471
National Lead Company, Jersey City, N. J., and New York, N. Y. White lead	49,292	Jan. 30	120	1471
National Lead Company, Jersey City, N. J., and New York, N. Y. Babbitt metal	49,404	Feb. 6	120	1814
National Lead Company, Jersey City, N. J., and New York, N. Y. Babbitt metal	49,405	Feb. 6	120	1814
National Lead Company, Jersey City, N. J., and New York, N. Y. Babbitt metal	49,406	Feb. 6	120	1814
National Lead Company, Jersey City, N. J., and New York, N. Y. Babbitt metal	49,407	Feb. 6	120	1814
National Lead Company, Jersey City, N. J., and New York, N. Y. Babbitt metal	49,408	Feb. 6	120	1814
National Lead Company, Jersey City, N. J., and New York, N. Y. Solder	49,409	Feb. 6	120	1814
National Lead Company, Jersey City, N. J., and New York, N. Y. White lead	49,896	Feb. 13	120	2119
National Liquid Paint Co., San Francisco, Cal. Liquid paint	49,895	Feb. 20	120	2436
National Specialty Manufacturing Co., Philadelphia, Pa. Sausage-stuffers and lard-presses	48,532	Jan. 16	120	892
National Spring Bed Company, New Britain, Conn. Bed-bottoms and bedsteads	49,897	Feb. 20	120	2436
	48,532	Jan. 16	120	892

Alphabetical list of registrants of trade-marks for January and February—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
National Toilet Company, Paris, Tenn. Cream ointments	49,589	Feb. 13	120	2116
Neagle, James H., Oakland, Cal. Medicine for certain named diseases	49,536	Feb. 6	120	1819
Nesp, Elisabeth A., Paterson, N. J. Liquid remedy	48,889	Jan. 9	120	660
Nolan Distilling Co., St. Louis, Mo. Whisky	48,880	Jan. 2	120	320
Nolson, Louisa, Nashville, Tenn. Whisky	49,778	Feb. 13	120	2128
New England Box Co., Greenfield, Mass. Wooden boxes	49,128	Jan. 23	120	1139
New England Confectionery Co., Boston, Mass. Candy	49,280	Jan. 30	120	1469
New England Confectionery Co., Boston, Mass. Chocolate drops	49,284	Jan. 30	120	1471
New England Confectionery Co., Boston, Mass. Candy	49,285	Jan. 30	120	1471
New Orleans Coffee Co., Ltd., New Orleans, La. Roasted and ground coffee	49,057	Jan. 23	120	1157
New York Consolidated Card Company, New York, N. Y. Playing-cards	48,531	Jan. 2	120	318
New York Consolidated Card Company, New York, N. Y. Playing-cards	48,532	Jan. 2	120	318
New York Consolidated Card Company, New York, N. Y. Playing-cards	48,461	Jan. 2	120	319
New York Consolidated Card Company, New York, N. Y. Playing-cards	48,462	Jan. 2	120	319
New York Consolidated Card Company, New York, N. Y. Playing-cards	48,463	Jan. 2	120	319
New York Consolidated Card Company, New York, N. Y. Playing-cards	48,464	Jan. 2	120	319
New York Consolidated Card Company, New York, N. Y. Playing-cards	48,733	Jan. 9	120	651
New York Consolidated Card Company, New York, N. Y. Playing-cards	48,734	Jan. 9	120	651
New York Consolidated Card Company, New York, N. Y. Playing-cards	48,735	Jan. 9	120	651
New York Consolidated Card Company, New York, N. Y. Playing-cards	48,736	Jan. 9	120	651
New York Consolidated Card Company, New York, N. Y. Playing-cards	48,737	Jan. 9	120	651
New York Consolidated Card Company, New York, N. Y. Playing-cards	48,738	Jan. 9	120	651
New York Consolidated Card Company, New York, N. Y. Playing-cards	48,739	Jan. 9	120	651
New York Consolidated Card Company, New York, N. Y. Playing-cards	48,762	Jan. 9	120	652
New York Consolidated Card Company, New York, N. Y. Playing-cards	48,763	Jan. 9	120	652
New York Consolidated Card Company, New York, N. Y. Playing-cards	48,764	Jan. 9	120	653
New York Consolidated Card Company, New York, N. Y. Playing-cards	48,765	Jan. 9	120	653
New York Consolidated Card Company, New York, N. Y. Playing-cards	48,766	Jan. 9	120	653
New York Consolidated Card Company, New York, N. Y. Playing-cards	48,767	Jan. 9	120	653
New York Consolidated Card Company, New York, N. Y. Playing-cards	48,768	Jan. 9	120	653
New York Consolidated Card Company, New York, N. Y. Playing-cards	48,769	Jan. 9	120	653
New York Consolidated Card Company, New York, N. Y. Playing-cards	49,108	Jan. 23	120	1158
New York Consolidated Card Company, New York, N. Y. Playing-cards	49,104	Jan. 23	120	1158
New York Consolidated Card Company, New York, N. Y. Playing-cards	49,105	Jan. 23	120	1158
New York Consolidated Card Company, New York, N. Y. Playing-cards	49,106	Jan. 23	120	1158
New York Consolidated Card Company, New York, N. Y. Playing-cards	49,107	Jan. 23	120	1158
New York Consolidated Card Company, New York, N. Y. Playing-cards	49,108	Jan. 23	120	1158
New York Consolidated Card Company, New York, N. Y. Playing-cards	49,109	Jan. 23	120	1159
New York Consolidated Card Company, New York, N. Y. Playing-cards	49,110	Jan. 23	120	1159
New York Consolidated Card Company, New York, N. Y. Playing-cards	49,111	Jan. 23	120	1159
New York Consolidated Card Company, New York, N. Y. Playing-cards	49,413	Feb. 6	120	1814
New York Consolidated Card Company, New York, N. Y. Playing-cards	49,414	Feb. 6	120	1814
New York Consolidated Card Company, New York, N. Y. Playing-cards	49,415	Feb. 6	120	1814
New York Consolidated Card Company, New York, N. Y. Playing-cards	49,416	Feb. 6	120	1815
New York Consolidated Card Company, New York, N. Y. Playing-cards	49,417	Feb. 6	120	1815
New York Consolidated Card Company, New York, N. Y. Playing-cards	49,418	Feb. 6	120	1815
New York Consolidated Card Company, New York, N. Y. Playing-cards	49,742	Feb. 13	120	2122
New York Consolidated Card Company, New York, N. Y. Playing-cards	49,840	Feb. 20	120	2435
New York Consolidated Card Company, New York, N. Y. Playing-cards	49,841	Feb. 20	120	2435
New York Consolidated Card Company, New York, N. Y. Playing-cards	49,842	Feb. 20	120	2435
New York Consolidated Card Company, New York, N. Y. Playing-cards	49,843	Feb. 20	120	2435
New York Consolidated Card Company, New York, N. Y. Playing-cards	49,989	Feb. 20	120	2437
New York Consolidated Card Company, New York, N. Y. Playing-cards	49,926	Feb. 27	120	2745
New York Consolidated Card Company, New York, N. Y. Playing-cards	49,927	Feb. 27	120	2745
New York Consolidated Card Company, New York, N. Y. Playing-cards	49,928	Feb. 27	120	2745
New York Consolidated Card Company, New York, N. Y. Playing-cards	49,929	Feb. 27	120	2745
New York Consolidated Card Company, New York, N. Y. Playing-cards	50,024	Feb. 27	120	2746
New York Consolidated Card Company, New York, N. Y. Playing-cards	50,025	Feb. 27	120	2746
New York Consolidated Card Company, New York, N. Y. Playing-cards	50,051	Feb. 27	120	2780
New York Herald Company, New York, N. Y. Comic section of newspapers	49,490	Feb. 6	120	1818
New York Leather Belting Co., New York, N. Y. Canvas stitched and balata belting	49,479	Feb. 6	120	1817
New York Leather Belting Co., New York, N. Y. Lace-leather	49,934	Feb. 27	120	2745
Newark Lime & Cement M'f'g Co., Newark, N. J., and Rondout, N. Y. Natural-rock or hydraulic cement, lime, and plaster	48,644	Jan. 9	120	648
Nicholson File Company, Providence, R. I. Files and rasps and holders and handles therefor	49,410	Feb. 6	120	1814
Nicholson File Company, Providence, R. I. Files and rasps	49,411	Feb. 6	120	1814
Nicholson File Company, Providence, R. I. Files and rasps	49,412	Feb. 6	120	1814
Nicholson File Company, Providence, R. I. Files and rasps	49,660	Feb. 13	120	2119
No Name Hat M'f'g. Co., Orange, N. J. Soft and stiff fur-felt hats	48,508	Jan. 2	120	317
Norddeutsche Kartoffelmehl-Fabrik mit Beschränkter Haftung, Küstrin, Germany. Dextrin	48,685	Jan. 9	120	649
Norddeutsche Kartoffelmehl-Fabrik mit beschränkter Haftung, Cüstrin, Germany. Starch and dextrin	49,657	Feb. 13	120	2119
Norddeutsche Kartoffelmehl-Fabrik mit Beschränkter Haftung, Cüstrin, Germany. Potato-flour, potato-starch, and dextrin	49,911	Feb. 20	120	2437
Norfolk Loom Picker Co., Norfolk, Va. Loom-pickers	49,888	Feb. 20	120	2436
Norris, Alfred E., Philadelphia, Pa. Whisky	49,019	Jan. 23	120	1155
Northwestern Consolidated Milling Company, Minneapolis, Minn. Wheat-flour	48,469	Jan. 2	120	315
Northwestern Consolidated Milling Company, Minneapolis, Minn. Wheat-flour	48,468	Jan. 2	120	315
Northwestern Consolidated Milling Company, Minneapolis, Minn. Wheat-flour	48,466	Jan. 2	120	315
Northwestern Knitting Company, Minneapolis, Minn. Knit underwear	48,694	Jan. 16	120	899
Norwich Pharmacal Company, New York, N. Y. Succedaneum for cod-liver oil	50,023	Feb. 27	120	2749
Nutrolactic Co., New York, N. Y. Tonic	48,705	Jan. 9	120	660
O. F. Richardson Co., Corning, N. Y. Cut-glass ware	49,098	Jan. 23	120	1158
O'Donnell & Co., C. R., Boston, Mass. Dress goods and clothings	48,888	Jan. 9	120	647
Oehm & Co., Theo., Bloomfield, N. J. Suitings for men and boys	49,240	Jan. 30	120	1469
Officer, Henry T., Washington, D. C. Cigars	48,803	Jan. 16	120	892
Ohio Tissue Company, Limited, New York, N. Y. Adhesive tape or cloth	48,515	Jan. 2	120	317
Old Times Distillery Company, Louisville, Ky. Whisky	48,691	Jan. 9	120	650
Olin, Edward A., New York, N. Y. Tar soap	49,889	Feb. 6	120	1813
Oliver Typewriter Company, Chicago, Ill. Type-writing machines and parts therefor	48,509	Jan. 16	120	892
Oppenheimer's Sons, Lewis, Philadelphia, Pa. Men's suspenders	48,507	Jan. 2	120	317
Oppenheimer's Sons, Lewis, Philadelphia, Pa. Men's garters	48,506	Jan. 2	120	317
Oregon Liquor Co., Portland, Oreg. Whisky	48,886	Jan. 9	120	881
Oshkosh Clothing Manufacturing Company, Oshkosh, Wis. Overalls, blouses, coats, vests, and trousers	48,509	Jan. 2	120	317
Otto Huber Brewery, Brooklyn, N. Y. Malt extracts	48,699	Jan. 9	120	650

Alphabetical list of registrants of trade-marks for January and February—Continued.

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P. Rielly & Son, Newark, N. J. Buffed leather	48,836	Jan. 16	120	893
P. J. Bowlin Liquor Co., St. Paul, Minn. Whisky	48,887	Jan. 16	120	893
P. J. Bowlin Liquor Co., St. Paul, Minn. Whisky	50,014	Feb. 27	120	2748
Pabst Brewing Company, Milwaukee, Wis. Beer	49,975	Feb. 27	120	2746
Packard & Field, Brockton, Mass. Leather boots, shoes, and slippers and leather therefor	49,127	Jan. 23	120	1139
Packard & Field, Brockton, Mass. Leather boots, shoes, and slippers and upper and sole leather	49,469	Feb. 6	120	1817
Paducah Saddlery Company, Incorporated, Paducah, Ky. Harness, saddles, collars, and bridles	49,128	Jan. 23	120	1139
Palethorpe, Percy R., Louisville, Ky. Remedy for blood and nerve diseases	49,129	Jan. 23	120	1139
Palethrope, Percy R., Louisville, Ky. Medicine for certain named diseases	49,537	Feb. 6	120	1819
Papyrhesion Company, New York, N. Y. Sizing-strengthening compound	48,811	Jan. 16	120	892
Paragon Malt Extract Co., New York, N. Y. Malt extract	49,981	Feb. 27	120	2747
Park Steel Company, Pittsburg, Pa. Steel	48,163	Jan. 23	120	1161
Park Steel Company, Pittsburg, Pa. Steel	49,164	Jan. 23	120	1161
Park Steel Company, Pittsburg, Pa. Steel	49,869	Feb. 20	120	2436
Parmet Button Co., Waterbury, Conn. Fasteners	49,740	Feb. 13	120	2122
Patterson, Gottfried & Hunter, Limited, New York, N. Y. Drills and reamers	48,691	Jan. 9	120	650
Patterson, Gottfried & Hunter, Limited, New York, N. Y. Saws of all kinds	48,692	Jan. 9	120	650
Patterson, Gottfried & Hunter, Limited, New York, N. Y. Punches of all kinds	48,693	Jan. 9	120	650
Patterson, Gottfried & Hunter, Limited, New York, N. Y. Screw-drivers and screw-driver holders	48,936	Jan. 16	120	897
Patterson, Gottfried & Hunter, Limited, New York, N. Y. Grinding and polishing heads	48,937	Jan. 16	120	897
Patterson, Gottfried & Hunter, Limited, New York, N. Y. Forges, blowers, and twyer-irons	48,938	Jan. 16	120	897
Patterson, Gottfried & Hunter, Limited, New York, N. Y. Lathes	49,247	Jan. 30	120	1473
Peacock Chemical Co., St. Louis, Mo. Preparation of bromids	49,573	Feb. 13	120	2115
Peacock Chemical Co., St. Louis, Mo. Medicines for diseases of the liver	50,054	Feb. 27	120	2780
Pearsall & Co., James, London, England. Embroidery and knitting silk	49,795	Feb. 20	120	2433
Peerless Enamel Paint Works, New York, N. Y. Enamel paints	49,976	Feb. 27	120	2746
Peltason, Leo H., St. Louis, Mo. Lamp-chimneys and lamp-globes	49,728	Feb. 13	120	2121
Pemberton Company, Lawrence and Boston, Mass. Cotton flannel	49,832	Feb. 20	120	2434
Perry & Company Limited, Birmingham, England. Steel pens	49,776	Feb. 13	120	2124
Peters, Harry S., Dover, N. J. Overalls and workmen's shirts, coats or jackets, and pants	49,046	Jan. 23	120	1156
Pfeiffer & Diller, Harxheim, near Worms, Germany. Coffee preparation	49,666	Feb. 13	120	2119
Philadelphia Grease Manufacturing Co., Philadelphia, Pa. Lubricating-grease	49,216	Jan. 30	120	1472
Philadelphia Rubber Works, Philadelphia, Pa. Restored or devulcanized rubber	49,451	Feb. 6	120	1817
Philadelphia Watch Case Co., Riverside, N. J. Watches, watchcases, and watch-movements	49,452	Feb. 6	120	1817
Philadelphia Watch Case Co., Riverside, N. J. Watches, watchcases, and watch-movements	49,453	Feb. 6	120	1817
Philadelphia Watch Case Co., Riverside, N. J. Watches, watchcases, and watch-movements	49,538	Feb. 6	120	1819
Phillips, John Q., Clinton, S. C. May-apple pills	48,930	Jan. 16	120	897
Phoenix Glass Co., Pittsburg, Pa. Glass electric globes and glass shades	49,741	Feb. 13	120	2122
Phoenix Jewelry Co., New York, N. Y. Certain named jewelry	48,804	Jan. 16	120	892
Pike Manufacturing Company, Pike, Littleton and Lisbon, N. H.; Hot Springs, Ark.; Orleans, Ind.; Evansville, Vt., and New York, N. Y. Sharpening-stones	49,257	Jan. 30	120	1474
Pike Manufacturing Company, Pike, Littleton, and Lisbon, N. H.; Hot Springs, Ark.; Orleans, Ind.; Evansville, Vt. and New York, N. Y. Hones	49,258	Jan. 30	120	1474
Pike Manufacturing Company, Pike, Littleton, and Lisbon, N. H.; Hot Springs, Ark.; Orleans, Ind.; Evansville, Vt., and New York, N. Y. Abrading materials and tools	49,396	Feb. 6	120	1814
Pike Manufacturing Company, Pike, Littleton, and Lisbon, N. H.; Hot Springs, Ark.; Orleans, Ind.; Evansville, Vt., and New York, N. Y. Sharpening-stones	49,660	Feb. 13	120	2119
Pillsbury-Washburn Flour Mills Company, Ltd., Minneapolis, Minn. Flour made from wheat	49,005	Jan. 16	120	889
Pioneer Tar Soap Co., Dayton, Ohio. Tar soap	49,317	Jan. 30	120	1472
Pittsburgh Milling Co., Pittsburg, Pa. Wheat-flour	49,912	Feb. 20	120	2438
Plume & Atwood Mfg. Co., Waterbury Conn., and New York, N. Y. Pins	49,458	Feb. 6	120	1816
Plymouth Cordage Company, Plymouth, Mass. Twine and binder-twine	48,714	Jan. 9	120	660
Plymouth Cordage Company, Plymouth, Mass. Fibrous rope and twine	48,715	Jan. 9	120	660
Plymouth Cordage Company, Plymouth, Mass. Fibrous or textile rope and twine	48,716	Jan. 9	120	660
Plymouth Cordage Company, Plymouth, Mass. Fibrous or textile rope and twine	48,717	Jan. 9	120	661
Pohlman & Co., John, Indianapolis, Ind. Whisky	49,216	Jan. 30	120	1468
Pohlman & Co., John, Indianapolis, Ind. Whisky	49,217	Jan. 30	120	1468
Pohlman & Co., John, Indianapolis, Ind. Whisky	49,218	Jan. 30	120	1468
Pond's Extract Company, New York, N. Y. Distillation of hamamelis	49,494	Feb. 6	120	1817
Pope, Henry C., Birmingham, Ala. Antiseptic	48,894	Jan. 9	120	650
Porter Medicine Company, Paris, Tenn. Remedy for certain named diseases	49,579	Feb. 13	120	2116
Portland Packing Company, Portland, Me. Canned fruits and vegetables	49,670	Feb. 13	120	2119
Portland Packing Company, Portland, Me. Canned fruits and vegetables	49,671	Feb. 13	120	2119
Portland Packing Company, Portland, Me. Canned fruits and vegetables	49,672	Feb. 13	120	2119
Portland Packing Company, Portland, Me. Canned fruits and vegetables	49,673	Feb. 13	120	2119
Porto Rico Co., San Francisco, Cal. Coffee	49,674	Feb. 13	120	2119
Postma Cereal Co., Limited, Battlecreek, Mich. Candy	49,913	Feb. 20	120	2438
Potter Drug & Chemical Corporation, Boston, Mass. Ointment	49,573	Feb. 13	120	2115
Potter Drug & Chemical Corporation, Boston, Mass. Medicated and perfumed soap	49,675	Feb. 13	120	2119
Potter Drug & Chemical Corporation, Boston, Mass. Medicine for internal use	49,724	Feb. 13	120	2121
Preservaline Mfg. Co., New York, N. Y. Paste	49,725	Feb. 13	120	2123
Prewitt-Spurr Mfg. Co., Nashville, Tenn. Certain named wooden receptacles	49,777	Feb. 13	120	2123
Price Baking Powder Company, Chicago, Ill. Baking-powder	49,008	Jan. 16	120	889
Puritan Drug Company, Boston, Mass. Tooth washes and powders	49,219	Jan. 30	120	1468
Quinn, Edward J., Washington, D. C. Whisky	49,220	Jan. 30	120	1468
R. Hudnut's Pharmacy, New York, N. Y. Toilet water and liquid perfumes	49,221	Jan. 30	120	1468
R. Hudnut's Pharmacy, New York, N. Y. Toilet water	49,495	Feb. 6	120	1817
R. Wallace & Sons Mfg. Co., Wallingford, Conn. Knives, forks, and spoons which are made of steel and tinned	48,827	Jan. 9	120	818
R. L. Ferry Co., Boston, Mass. Chocolates and bonbons	48,511	Jan. 2	120	317
R. & W. Jenkinson Co., Pittsburg, Pa. Stogies	50,015	Feb. 27	120	2748
R. & W. Jenkinson Co., Pittsburg, Pa. Cigars	50,016	Feb. 27	120	2748
Radio-Sulpho Co., Denver, Colo. Remedies for certain named diseases	48,893	Jan. 9	120	818
Raphael Tuck and Sons Co., Ltd., New York, N. Y. Art-lithographs	49,130	Jan. 23	120	1139
Raphael & Zengerschmidt, Pittsburg, Pa. Whisky	49,222	Jan. 30	120	1468
Raphael & Zengerschmidt, Pittsburg, Pa. Whisky	49,223	Jan. 30	120	1468
Reed Carpet Company, Bridgeport, Conn. Rugs	49,743	Feb. 13	120	2123
Reeds, William J., New York, N. Y. Weed-destroyer	48,737	Jan. 9	120	652
Reed and Gannon, Gloucester, Mass. Dry, pickled, and canned fish	48,738	Jan. 9	120	652
Regnell, Bigney and Co., Attleboro, Mass. Imitations of precious stones for jewelry	49,570	Feb. 13	120	2115
Reppie, W. F., Reading, Pa. Motor-cycles	49,248	Jan. 30	120	1473
Renfrew Manufacturing Company, Adams, Mass. Cotton piece goods	48,645	Jan. 9	120	648
Reymer & Brothers, Incorporated, Pittsburg, Pa. Candy	48,698	Jan. 9	120	650

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Reymer & Brothers, Incorporated, Pittsburg, Pa. Candy	49,496	Feb. 6	120	1817
Richard Young Company, New York, N. Y. Tanned sheepskins	49,725	Feb. 13	120	2121
Richardson, Roberts Dry Goods Co., St. Joseph, Mo. Dress-shirts	49,726	Feb. 13	120	2121
Rife Hyd. Engine Mfg. Co., New York, N. Y., and Waynesboro, Va. Hydraulic engines and rams	49,296	Jan. 30	120	1471
Riley & Co., Wm. B., Philadelphia, Pa. Horse-blankets	50,055	Feb. 27	120	2750
Rinaldi Bros., Philadelphia, Pa. Paint for metallic surfaces	48,666	Jan. 9	120	649
Rio Chemical Co., New York, N. Y. Uterine tonic and restorative	49,814	Feb. 20	120	2434
Riordan, Charles F., Boston, Mass. Whisky	49,977	Feb. 27	120	2747
Riverside Metal Co., Riverside, N. J. Metallic alloy and articles of which such alloy forms a part	48,706	Jan. 9	120	650
Roaring Spring Blank Book Co., Roaring Spring, Pa. Blank books, tablets, ruled and flat papers	49,487	Feb. 6	120	1817
Robert F. Mackenzie Co., Cleveland, Ohio. Molasses taffy, candy kisses, and other candies	48,516	Jan. 2	120	317
Robert H. Foerderer, Inc., Philadelphia, Pa. Leather for the uppers of shoes	48,510	Jan. 2	120	317
Robert H. Foerderer, Incorporated, Philadelphia, Pa. Leather for the uppers of shoes	48,829	Jan. 16	120	893
Roberts, Johnson & Rand Shoe Co., St. Louis, Mo. Leather boots and shoes	49,530	Feb. 6	120	1819
Roberts, Johnson & Rand Shoe Co., St. Louis, Mo. Leather boots and shoes	49,540	Feb. 6	120	1819
Roberts, Johnson & Rand Shoe Co., St. Louis, Mo. Leather boots and shoes	49,541	Feb. 6	120	1820
Robertson, Arthur R., Boston, Mass. Hammers	49,590	Feb. 13	120	2116
Rodearmel, Montgomery G., Minneapolis, Minn. Knives and slicers	48,719	Jan. 9	120	651
Rodwell Sign Co., Buffalo, N. Y. Glass and metal advertising-signs	48,720	Jan. 9	120	651
Rodwell Sign Co., Buffalo, N. Y. Glass and metal advertising-signs	48,721	Jan. 9	120	651
Roessler & Hasslacher Chemical Co., New York, N. Y. Chemicals for the ceramic arts	48,770	Jan. 9	120	653
Rogers & Thompson, New York, N. Y. Silk piece goods having a rough surface	49,871	Feb. 20	120	2436
Rosenberg, Joseph L., New York, N. Y. Hats for women	49,046	Jan. 23	120	1156
Rosenblatt Co., San Francisco, Cal. Wines	48,961	Jan. 16	120	898
Rosenfeld Bros. & Co., Chicago, Ill. Whisky	49,542	Feb. 6	120	1820
Rosenthal Bros. Co., New York, N. Y. Ladies' and misses' shirt-waists and suits	49,442	Feb. 6	120	1815
Ross & Co., Charles H., Baltimore, Md. Whisky	48,593	Jan. 2	120	321
Ross & Co., Charles H., Baltimore, Md. Whisky	49,224	Jan. 30	120	1468
Rosskam, Gerstley & Co., Philadelphia, Pa. Whisky	49,020	Jan. 23	120	1155
Rubber and Celluloid Harness Trimming Co., Newark, N. J. Lather-brushes, shaving-brushes, and paint-brushes	48,640	Jan. 9	120	648
Rubber and Celluloid Harness Trimming Co., Newark, N. J. Lather-brushes, shaving-brushes, and paint-brushes	48,641	Jan. 9	120	648
Rubber & Celluloid Harness Trimming Co., Newark, N.J. Lather-brushes	49,131	Jan. 23	120	1159
Rubel-Lilienfeld Co., Chicago, Ill. Whisky	48,553	Jan. 2	120	319
Rubel-Lilienfeld Co., Chicago, Ill. Whisky	48,554	Jan. 2	120	319
Ruster & Company, (Incorporated,) Roxbury, Mass. Ale	49,380	Feb. 6	120	1813
Rumford Chemical Works, Providence, R. I. Phosphatic solutions	49,572	Feb. 20	120	2436
Rumford Chemical Works, Providence, R. I. Bread-raising preparation	49,914	Feb. 20	120	2438
Ruppert, Jacob, New York, N. Y. Lager-beer	49,727	Feb. 13	120	2121
Ruppert, Jacob, New York, N. Y. Beer	49,956	Feb. 27	120	2746
Ruppert, Jacob, New York, N. Y. Beer	49,957	Feb. 27	120	2746
Russell Burdsall & Ward Bolt & Nut Co., Port Chester, N. Y. Tire-bolts	49,958	Feb. 27	120	2746
Russell & Erwin Manufacturing Company, New Britain, Conn. Locks and keys	48,695	Jan. 9	120	650
S. Hamill Company, Keokuk, Iowa. Wheat-flour	49,349	Jan. 30	120	1473
S. Hamill Company, Keokuk, Iowa. Canned and bottled fruits and vegetables	49,350	Jan. 30	120	1474
S. Lichtenstein Co., New York, N. Y. Cigars and cheroots	49,576	Feb. 13	120	2119
S. H. Moore Co., New York, N. Y. Monthly magazine	49,677	Feb. 13	120	2119
S. S. Pierce Co., Boston, Mass. Bottled cider	49,488	Feb. 6	120	1817
S. S. Pierce Co., Boston, Mass. Cigars	48,528	Jan. 2	120	318
S. S. Pierce Co., Boston, Mass. Cigars	48,830	Jan. 16	120	893
S. S. Pierce Co., Boston, Mass. Cigars	49,391	Feb. 6	120	1814
S. S. Pierce Co., Boston, Mass. Wines	49,392	Feb. 6	120	1814
S. S. Pierce Co., Boston, Mass. Lager-beer	49,873	Feb. 20	120	2436
S. S. White Dental Mfg. Co., Philadelphia, Pa; Chicago, Ill.; New York, Brooklyn, and Rochester, N. Y.; Boston, Mass.; Atlanta, Ga.; New Orleans, La.; Toronto, Canada; Buenos Ayres, Argentina; Berlin, Germany, and St. Petersburg, Russia. Cement	49,083	Jan. 23	120	1158
S. S. White Dental Mfg. Co., Philadelphia, Pa.; Chicago, Ill.; New York, Brooklyn, and Rochester, N. Y.; Boston, Mass.; Atlanta, Ga.; New Orleans, La.; Toronto, Canada; Buenos Ayres, Argentina; Berlin, Germany, and St. Petersburg, Russia. Lathes	49,084	Jan. 23	120	1158
S. S. White Dental Mfg. Co., Philadelphia, Pa.; Chicago, Ill.; New York, Brooklyn, and Rochester, N. Y.; Boston, Mass.; Atlanta, Ga.; New Orleans, La.; Toronto, Canada; Buenos Ayres, Argentina; Berlin, Germany, and St. Petersburg, Russia. Dental varnish	49,134	Jan. 23	120	1159
Salo-Sedatus Chemical Company, St. Louis, Mo. Proprietary medicine	50,017	Feb. 27	120	2748
Samson Manufacturing Company, Denver, Colo. Rock-crushers	49,508	Feb. 13	120	2116
San Diego, Brewing Co., San Diego, Cal. Beer	48,517	Jan. 2	120	317
Sanches & Haya Co., Tampa, Fla. Cigars	49,728	Feb. 13	120	2121
Sander, Henry, Philadelphia, Pa. Whisky	49,544	Feb. 6	120	1820
Sanders, Edward G., Chattanooga, Tenn. Overalls	49,874	Feb. 20	120	2436
Sandheger, Christ, Cincinnati, Ohio. Whisky	49,032	Jan. 23	120	1156
Sands, Taylor & Wood Company, Boston, Mass. Wheat-flour	48,667	Jan. 9	120	649
Sandwich Manufacturing Co., Sandwich, Ill. Hay-loaders	48,722	Jan. 9	120	651
Sandwich Manufacturing Co., Sandwich, Ill. Hay-baling presses	48,723	Jan. 9	120	651
Sandwich Manufacturing Co., Sandwich, Ill. Hay-baling presses	48,724	Jan. 9	120	651
Sandwich Manufacturing Co., Sandwich, Ill. Hay-baling presses	49,165	Jan. 23	120	1161
Sangster, Frederick W., Rochester, N. Y. Steel-hardening solution	48,758	Jan. 9	120	652
Savage, Marion W., Minneapolis, Minn. Heave cure	48,696	Jan. 9	120	650
Scarlett, Wm. G., Baltimore, Md. Grass and field seeds	49,225	Jan. 30	120	1468
Scarlett, Wm. G., Baltimore, Md. Grass and field seeds	49,226	Jan. 30	120	1468
Scarlett, Wm. G., Baltimore, Md. Grass and field seeds	49,489	Feb. 6	120	1818
Scarlett, Wm. G., Baltimore, Md. Grass and field seeds	49,490	Feb. 6	120	1818
Scarlett, Wm. G., Baltimore, Md. Grass and field seeds	49,491	Feb. 6	120	1818
Scarlett, Wm. G., Baltimore, Md. Grass and field seeds	49,492	Feb. 6	120	1818
Schlatter Jute Cordage Co., Philadelphia, Pa. Rope, cord, and twine	48,743	Jan. 9	120	652
Schrader & Ehlers, New York, N. Y. Combs	49,574	Feb. 13	120	2115
Schuetzmann & Seltzmann Company, Milwaukee, Wis. Whisky	49,578	Feb. 13	120	2119
Schuetzmann & Seltzmann Company, Milwaukee, Wis. Whisky	49,729	Feb. 13	120	2121
Schuster, Frederick, Columbus, Ohio. Whisky	48,594	Jan. 2	120	321
Scranton Stove Works, Scranton, Pa. Stoves, ranges, furnaces, and parts thereof	48,940	Jan. 16	120	897
Scudders-Gale Grocer Company, St. Louis, Mo. Canned fruits and vegetables	48,485	Jan. 2	120	316
Scudders-Gale Grocer Company, St. Louis, Mo. Canned fruits and vegetables	48,740	Jan. 9	120	652
Sea Gull Specialty Co., Baltimore, Md. Baking-powder	49,549	Feb. 6	120	1820
Seamless Rubber Co., New Haven, Conn. Rubber water-bags and water-bottles	50,027	Feb. 27	120	2749
Seaman & Co., B. J., Memphis, Tenn. Whiskies, both rye and Bourbon	49,021	Jan. 23	120	1155
Sharp & Smith, Chicago, Ill. Surgical belts and bandages	48,805	Jan. 16	120	893

Alphabetical list of registrants of trade-marks for January and February—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Sherman Brothers and Company, Chicago, Ill. Tea	49,080	Jan. 23	120	1157
Sherman, Reid & Co., New York, N. Y. Long-cloth	49,241	Jan. 30	120	1469
Shiff, Mayer & Co., Cincinnati, Ohio. Whisky	48,687	Jan. 9	120	650
Shute, William T., Gloucester, Mass. Dried, smoked, pickled, salted, and canned fish	49,058	Jan. 23	120	1157
Shute, William T., Gloucester, Mass. Dried, smoked, pickled, salted, and canned fish	49,059	Jan. 23	120	1157
Shute, William T., Gloucester, Mass. Dried, smoked, pickled, salted, and canned fish	49,060	Jan. 23	120	1157
Siegel, Cooper & Co., Chicago, Ill. Vinegar	49,679	Feb. 13	120	2119
Simon, Herman, Union, N. J. Woven silk fabrics	49,443	Feb. 6	120	1815
Singer Manufacturing Company, New York, N. Y. Sewing-machines	49,599	Feb. 13	120	2116
Singer Manufacturing Company, New York, N. Y. Sewing-machines	49,600	Feb. 13	120	2116
Singer Manufacturing Company, New York, N. Y. Sewing-machine stands and their parts and attachments	49,601	Feb. 13	120	2116
Singer Manufacturing Company, New York, N. Y. Sewing-machines	49,602	Feb. 13	120	2116
Singer Manufacturing Company, New York, N. Y. Sewing-machines	49,603	Feb. 13	120	2116
Singer Manufacturing Company, New York, N. Y. Sewing-machines	49,604	Feb. 13	120	2116
Singer Manufacturing Company, New York, N. Y. Sewing-machines	49,605	Feb. 13	120	2117
Slade Gorton & Co., Gloucester, Mass. Smoked herring	50,056	Feb. 27	120	2750
Sloat, George M., Valdosta, Ga. Liquid remedy	49,815	Feb. 20	120	2434
Smalley, Albert G., Boston, Mass. Glass bottles	49,875	Feb. 20	120	2436
Smith & Co., C. H., Boston, Mass. Polishes for wood, metal, marble, and glass	49,242	Jan. 30	120	1469
Smith Co., T. I., North Attleboro, Mass. Buttons and studs	48,646	Jan. 9	120	648
Smith, Samuel W., Ansonia, Conn. Vermifuges or worm-syrups	48,613	Jan. 2	120	321
Solomon, Isaac, Cincinnati, Ohio. Whisky	48,555	Jan. 2	120	319
Sonneborn, Moses, Wheeling, W. Va. Hats and caps	49,730	Feb. 13	120	2121
Spartanburg Fertilizer Co., Spartanburg, S. C. Artificial fertilizers	49,877	Feb. 20	120	2436
Spaulding & Co., Chicago, Ill. Clocks	48,806	Jan. 16	120	892
Spengler, John, Kansas City, Mo. Whisky	48,595	Jan. 2	120	321
Spotless Company, Incorporated, Richmond, Va. Washing-machines	49,680	Feb. 13	120	2120
Springer, George H., Kansas City, Mo. Razors	49,166	Jan. 23	120	1161
St. Charles Condensing Co., St. Charles, Ill. Condensed milk	48,942	Jan. 16	120	897
St. Charles Condensing Co., St. Charles, Ill. Condensed milk	49,061	Jan. 23	120	1157
St. Louis Motor Carriage Co., St. Louis, Mo. Automobiles	49,959	Feb. 27	120	2746
Standard Distilling Co., Cincinnati, Ohio. Whisky	48,603	Jan. 2	120	321
Standard Distilling Co., Cincinnati, Ohio. Whisky	49,962	Feb. 27	120	2746
Standard Distilling Co., Cincinnati, Ohio. Whisky	49,963	Feb. 27	120	2746
Standard Horse Nail Company, New Brighton, Pa. Horse-nails	49,444	Feb. 6	120	1816
Standard Horse Nail Company, New Brighton, Pa. Horse-nails	49,445	Feb. 6	120	1816
Standard Horse Nail Company, New Brighton, Pa. Horse-nails	49,501	Feb. 13	120	2116
Standard Horse Nail Company, New Brighton, Pa. Horse-nails	49,592	Feb. 13	120	2116
Standard Horse Nail Company, New Brighton, Pa. Horse-nails	49,681	Feb. 13	120	2120
Standard Horse Nail Company, New Brighton, Pa. Horse-nails	49,682	Feb. 13	120	2120
Standard Horse Nail Company, New Brighton, Pa. Horse-nails	49,683	Feb. 13	120	2120
Standard Paint Company, New York, N. Y. Case lining, sheathing, insulating, and roofing papers	48,741	Jan. 9	120	652
Standard Paint Company, New York, N. Y. Papers prepared with moisture-resistant substances	48,742	Jan. 9	120	652
Standard Paint Company, New York, N. Y. Insulating-tape	49,172	Jan. 23	120	1161
Standard Paint Company, New York, N. Y. Waterproof fabric	49,254	Jan. 30	120	1470
Standard Paint Company, New York, N. Y. Paints and insulating compounds	49,696	Feb. 13	120	2120
Standard Tool Company, Cleveland, Ohio. Twist-drills	49,921	Feb. 20	120	2438
Standard Tool Company, Cleveland, Ohio. Milling-cutters	49,922	Feb. 20	120	2438
Standard Tool Company, Cleveland, Ohio. Reamers	49,962	Feb. 27	120	2747
Standard Tool Company, Cleveland, Ohio. Taps	49,963	Feb. 27	120	2747
Standard Underground Cable Company, Pittsburg, Pa. Insulating compound	49,876	Feb. 20	120	2436
Staples & Hanford Co., Newburgh, N. Y. Springwork and wire-spring supports for chairs, sofas, beds, and carriage-seats	48,725	Jan. 9	120	651
Staples Valve Co., Newburgh, N. Y. Water-supply tanks and valves therefor	48,466	Jan. 2	120	316
Star Distillery Company, Cincinnati, Ohio. Whisky	48,984	Jan. 16	120	894
Star Distillery Company, Cincinnati, Ohio. Whisky	49,037	Jan. 23	120	1156
Star Distillery Company, Cincinnati, Ohio. Whisky	49 048	Jan. 23	120	1156
Star Distillery Company, Cincinnati, Ohio. Whisky	50,028	Feb. 27	120	2749
Star Pin Company, Shelton, Conn. Toilet-pins	49,609	Feb. 13	120	2117
Star Pin Company, Shelton, Conn. Hooks and eyes	49,744	Feb. 13	120	2122
Stark Mills, Manchester, N. H. Seamless woven bags	49,007	Jan. 16	120	899
Starks, Richard S., Midway, Ky. Headache-powders	49,816	Feb. 20	120	2434
Stein & Co., A., Chicago, Ill. Garters	49 008	Jan. 16	120	899
Sterling Company, Derby, Conn. Pianos	49,890	Feb 20	120	2437
Stetson Shoe Company, Weymouth, Mass. Leather boots, shoes, and slippers	49,550	Feb. 6	120	1820
Stevens Linen Works, Dudley and Boston, Mass. Linen crash	49,833	Feb. 20	120	2434
Stewart Brothers Company, Omaha, Nebr. Coffee	50,057	Feb. 27	120	2750
Stewart Silk Company, Easton, Pa., and New York, N. Y. Silk fabrics	50,058	Feb. 27	120	2750
Stone & Forsyth, Boston, Mass. Toilet-paper	49,493	Feb. 6	120	1818
Straus Brothers Company, Chicago, Ill. Whisky	48,556	Jan. 2	120	319
Straus Brothers Company, Chicago, Ill. Whisky	48,557	Jan. 2	120	319
Straus Brothers Company, Chicago, Ill. Whisky	48,759	Jan. 9	120	652
Straus Brothers Company, Chicago, Ill. Whisky	48,760	Jan. 9	120	652
Straus Brothers Company, Chicago, Ill. Whisky	48,861	Jan. 16	120	894
Straus, Gunst & Co., Richmond, Va. Whisky	49,084	Feb. 13	120	2120
Strause, Henry P., New York, N. Y. Cigarettes	48,485	Jan. 2	120	316
Strauss, Pritz & Co., Cincinnati, Ohio. Whisky	48,596	Jan. 2	120	321
Stringer, Hannon, New York, N. Y. Remedies for diseases of the throat, lungs, and bronchial organs	48,558	Jan. 2	120	319
Stübgen & Co., Fr., Erfurt, Germany. Lamps, lanterns, and parts thereof	48,807	Jan. 16	120	892
Studebaker Automobile Company, South Bend, Ind. Automobiles	49,915	Feb. 20	120	2433
Studebaker Brothers Manufacturing Company, South Bend, Ind. Carriages, buggies, wagons, and carts	49,351	Jan. 30	120	1474
Studebaker Brothers Manufacturing Company, South Bend, Ind. Horse-drawn vehicles	49,352	Jan. 30	120	1474
Studebaker Brothers Manufacturing Company, South Bend, Ind. Carriages, wagons, and carts	49,979	Feb. 27	120	2747
Sunbrights California Food Co., Los Angeles, Cal. Foods for invalids and infants	49,695	Feb. 13	120	2120
Supplee Hardware Co., Philadelphia, Pa. Axes, hatchets, and adzes	49,167	Jan. 23	120	1161
Supplee Hardware Company, Philadelphia, Pa. Shovels, spades, scoops, and spading-forks	49,297	Jan. 30	120	1471
Supplee Hardware Company, Philadelphia, Pa. Shovels, spades, and scoops	49,698	Feb. 13	120	2116
Supplee Hardware Company, Philadelphia, Pa. Shovels, spades, scoops, and spading-forks	49,878	Feb. 20	120	2436
Supplee Hardware Company, Philadelphia, Pa. Axes and hatchets	49,916	Feb. 20	120	2436
Swartchild & Co., Chicago, Ill. Jewelers' pendant-bows	49,980	Feb. 27	120	2747
Swarts, & Co., H. Boston, Mass. Whisky	49,047	Jan. 23	120	1156
Swaty, Frans, Marburg, Austria-Hungary. Razor-hones, sharpening-stones, and sharpening-wheels	48,808	Jan. 16	120	892

Alphabetical list of registrants of trade-marks for January and February—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Swift and Company, Chicago, Ill. Lard	48,698	Jan. 9	120	650
T. J. Maxwell Co., Peekskill, N. Y. Pajamas and night-robes	49,891	Feb. 20	120	2437
T. W. Samuels Dis'y, Bardstown, Ky. Whisky	49,796	Feb. 20	120	2433
Talbott, William A., Warren, Pa. Proprietary medicine for women's diseases	49,578	Feb. 13	120	2115
Taylor, Edward R., Penn Yan, N. Y. Carbon bisulfid (CS_2)	49,237	Jan. 30	120	1469
Tedcastle & Co., A. W., Boston, Mass. Leather boots and shoes	49,510	Feb. 6	120	1818
Terre Haute Brewing Co., Terre Haute, Ind. Lager-beer and bottled beer	48,943	Jan. 16	120	897
Thayer, Fess & Co., Boston, Mass. Upper-leather for boots and shoes	49,797	Feb. 20	120	2433
Theo. Hamm Brewing Co., St. Paul, Minn. Malt extract	48,514	Jan. 2	120	317
Theo. Hamm Brewing Co., St. Paul, Minn. Beer	48,568	Jan. 2	120	320
Thomas G. Plant Company, Boston, Mass. Leather boots and shoes	49,749	Feb. 13	120	2122
Thomas G. Plant Company, Boston, Mass. Leather boots and shoes	49,788	Feb. 13	120	2123
Thomas McMullen & Co., New York, N. Y. Olive-oil	49,910	Feb. 20	120	2437
Thompson & Norris Co., Brooklyn and New York, N. Y. Paper-board and envelops or receptacles made therefrom	48,457	Jan. 2	120	316
Thomson Wood Finishing Co., Philadelphia, Pa. Paints, varnishes, colors, fillers, surfacers, stains, and enamels	48,833	Jan. 16	120	893
Threefoot Bros. & Co., Meridian, Miss. Wheat-flour	48,834	Jan. 16	120	893
Threefoot Bros. & Co., Meridian, Miss. Wheat-flour	49,000	Jan. 16	120	899
Tiedemann & Son, Theo., New York, N. Y. Malines and mousselines	49,923	Feb. 20	120	2438
To-Kalon Vineyard Co., Chicago, Ill. Whisky	49,318	Jan. 30	120	1472
To-Kalon Vineyard Co., Chicago, Ill. Whisky	49,502	Feb. 6	120	1818
To-Kalon Vineyard Co., Chicago, Ill. Whisky	49,551	Feb. 6	120	1820
To-Kalon Vineyard Co., Chicago, Ill. Whisky	49,552	Feb. 6	120	1820
Tobias, Dr. S. I., deceased, New York, N. Y.; L. Tobias, executrix. Liniment	49,553	Feb. 6	120	1820
Tobias, Louisa, executrix. (See Tobias, Dr. S. I.)	49,135	Jan. 23	120	1160
Tuft Brothers, New York, N. Y. White lead	49,321	Jan. 30	120	1472
Todd Manufacturing Co., New Albany, Ind. Hames	49,802	Feb. 20	120	2433
Tone Bros., Des Moines, Iowa. Mustard and spices	48,467	Jan. 2	120	316
Topeka Milling Company, Topeka, Kans. Self-raising or pancake flour	49,360	Jan. 30	120	1474
Toussaud Mfg. Co., Mme., Chicago, Ill. Cream for the skin	48,771	Jan. 9	120	653
Tower & Lyon Co., New York, N. Y. Handcuffs and leg-irons	48,746	Jan. 9	120	652
Tower & Lyon Co., New York, N. Y. Police-twisters	48,747	Jan. 9	120	652
Tower & Lyon Co., New York, N. Y. Nail-pullers	48,748	Jan. 9	120	652
Tower & Lyon Co., New York, N. Y. Screw-drivers	49,360	Jan. 30	120	1474
Transue, Levi B., Hazleton, Pa. Pile remedy	49,454	Feb. 6	120	1820
Traun Rubber Co., New York, N. Y. Rubber for dental purposes	49,126	Jan. 23	120	1160
Treat, Harry W., Seattle, Wash. Bars, ingots, sheets, or molds of gold, silver, or copper	49,893	Feb. 20	120	2437
Tremont & Suffolk Mills, Lowell, Mass. Cotton piece goods	49,319	Jan. 30	120	1472
Tremont & Suffolk Mills, Lowell, Mass. Cotton piece goods	49,750	Feb. 13	120	2122
Trimer, Joseph, Chicago, Ill. Bitter wines	48,889	Jan. 2	120	320
Ullman Einstein Co., Cleveland, Ohio. Whisky	48,604	Jan. 2	120	321
Ullman Einstein Co., Cleveland, Ohio. Whisky	48,605	Jan. 2	120	321
Ullman Einstein Co., Cleveland, Ohio. Bitters	48,606	Jan. 2	120	321
Ullman Einstein Co., Cleveland, Ohio. Whisky	48,607	Jan. 2	120	321
Ulrici, Charles J., New York, N. Y. Tonic remedy for anemia and nervous diseases	49,940	Feb. 27	120	2745
Union Horse Nail Company, New Haven, Conn., and Chicago, Ill. Horse-nails	48,953	Jan. 16	120	898
Union Horse Nail Company, New Haven, Conn., and Chicago, Ill. Horse-nails	49,941	Feb. 27	120	2745
Union Manufacturing Company, Peterboro, N. H. Crochet quilts	49,954	Feb. 27	120	2746
Union Manufacturing Company, Peterboro, N. H. Crochet quilts	48,488	Jan. 2	120	316
Union Manufacturing Company, Peterboro, N. H. Crochet quilts	49,063	Jan. 23	120	1157
Union Manufacturing Company, Peterboro, N. H. Crochet quilts	49,261	Jan. 30	120	1470
Union Metallic Cartridge Company, Bridgeport, Conn. Gun and pistol cartridges and parts thereof	49,262	Jan. 30	120	1470
Union Metallic Cartridge Company, Bridgeport, Conn. Cartridges and cartridge-shells	49,600	Feb. 6	120	1818
Union Metallic Cartridge Company, Bridgeport, Conn. Cartridges and cartridge-shells	49,606	Feb. 13	120	2117
Union Metallic Cartridge Company, Bridgeport, Conn., and New York, N. Y. Cartridges and cartridge-shells	49,607	Feb. 13	120	2117
Union Metallic Cartridge Company, Bridgeport, Conn. Cartridges and metal and paper cartridge-shells	49,610	Feb. 13	120	2117
Union Metallic Cartridge Company, Bridgeport, Conn. Gun and pistol cartridges and parts thereof	49,611	Feb. 13	120	2117
Union Metallic Cartridge Company, Bridgeport, Conn. Gun and pistol cartridges and parts thereof	49,612	Feb. 13	120	2117
Union Metallic Cartridge Company, Bridgeport, Conn. Cartridges and cartridge-shells	49,613	Feb. 13	120	2117
Union Metallic Cartridge Company, Bridgeport, Conn. Cartridges	49,614	Feb. 13	120	2117
Union Metallic Cartridge Company, Bridgeport, Conn. Gun and pistol cartridges and parts thereof	49,615	Feb. 13	120	2117
Union Metallic Cartridge Company, Bridgeport, Conn. Gun and pistol cartridges and parts thereof	49,616	Feb. 13	120	2117
Union Metallic Cartridge Company, Bridgeport, Conn. Gun and pistol cartridges and parts thereof	49,617	Feb. 13	120	2117
Union Metallic Cartridge Company, Bridgeport, Conn. Gun and pistol cartridges and parts thereof	49,618	Feb. 13	120	2117
Union Metallic Cartridge Company, Bridgeport, Conn. Cartridges and cartridge-shells	49,619	Feb. 13	120	2117
Union Metallic Cartridge Company, Bridgeport, Conn. Cartridges and cartridge-shells	49,620	Feb. 13	120	2117
Union Metallic Cartridge Company, Bridgeport, Conn. Cartridges and cartridge-shells	49,621	Feb. 13	120	2117
Union Metallic Cartridge Company, Bridgeport, Conn. Cartridges and cartridge-shells	49,622	Feb. 13	120	2117
Union Metallic Cartridge Company, Bridgeport, Conn. Cartridges and cartridge-shells	49,623	Feb. 13	120	2117
Union Special Machine Company, Chicago, Ill. Sewing-machines and parts thereof	49,204	Feb. 13	120	2117
Union Special Machine Company, Chicago, Ill. Sewing-machines and parts thereof	48,707	Jan. 9	120	650
Union Special Machine Company, Chicago, Ill. Sewing-machines and parts thereof	49,301	Jan. 30	120	1474
Union Wholesale Liquor Co., Chicago, Ill. Whisky	49,262	Jan. 30	120	1474
Unique Manufacturing Company, Shelton, Conn. Hooks and eyes	49,263	Jan. 30	120	1470
Unique Manufacturing Company, Shelton, Conn. Hooks and eyes	49,788	Feb. 13	120	2123
United States Mica Mining and Milling Co., Chicago, Ill. Mica for lubricating purposes	49,787	Feb. 13	120	2123
United States Paper Cutter Co., St. Louis, Mo. Roll-paper holders and cutters	49,220	Jan. 30	120	1472
United States Paper Cutter Co., St. Louis, Mo. Roll-paper holders and cutters	48,954	Jan. 16	120	893
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	48,955	Jan. 16	120	893
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	48,956	Jan. 2	120	319
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	48,957	Jan. 2	120	319
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	48,744	Jan. 9	120	652
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	48,745	Jan. 9	120	652
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	48,885	Jan. 16	120	894
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	48,886	Jan. 16	120	894
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	48,887	Jan. 16	120	894
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	48,888	Jan. 16	120	894
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	48,889	Jan. 16	120	894
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	48,890	Jan. 16	120	894
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	48,891	Jan. 16	120	894
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	48,892	Jan. 16	120	894
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	48,893	Jan. 16	120	894
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	48,894	Jan. 16	120	894
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	48,895	Jan. 16	120	894
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	48,896	Jan. 16	120	894
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	48,897	Jan. 16	120	894
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	48,898	Jan. 16	120	894
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	48,899	Jan. 16	120	894
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	48,900	Jan. 16	120	894
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	48,901	Jan. 16	120	894
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	48,902	Jan. 16	120	894
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	48,903	Jan. 16	120	894
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	48,904	Jan. 16	120	894
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	48,905	Jan. 16	120	894
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	49,112	Jan. 23	120	1159
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	49,113	Jan. 23	120	1159
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	49,114	Jan. 23	120	1159
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	49,255	Jan. 30	120	1470
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	49,256	Jan. 30	120	1470
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	49,257	Jan. 30	120	1470
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	49,419	Feb. 6	120	1815
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	49,420	Feb. 6	120	1815
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	49,421	Feb. 6	120	1815
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	49,422	Feb. 6	120	1816
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	49,423	Feb. 6	120	1815
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	49,424	Feb. 6	120	1815
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	49,425	Feb. 6	120	1816
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	49,745	Feb. 13	120	2122
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	49,746	Feb. 13	120	2122
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	49,747	Feb. 13	120	2122
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	49,748	Feb. 13	120	2122
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	49,803	Feb. 20	120	2433
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	49,844	Feb. 20	120	2435
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	49,845	Feb. 20	120	2435
Upsa Light Co., New York, N. Y. Self-lighting incandescent gas-mantles	49,846	Feb. 20	120	2435
Utica Drop Forge & Tool Company, Utica, N. Y. Nippers, pincers, and cutting-pliers	49,751	Feb. 13	120	2122
V. K. and A. H. Jones Co., Lynn, Mass. Boots and shoes made of leather and of canvas	49,173	Jan. 23	120	1161
V. K. and A. H. Jones Co., Lynn, Mass. Shoes made of leather and of canvas	48,535	Jan. 16	120	893
Valentin Blatz Brewing Co., Milwaukee, Wis. Bottled lager-beer	49,264	Jan. 30	120	1470
Valk & Bro., S. J., New York, N. Y. Olives	49,804	Feb. 20	120	2433
Valk & Bro., S. J., New York, N. Y. Olives	49,924	Feb. 20	120	2438
Van Emden Cocoa Co., San Francisco, Cal. Chocolates	49,925	Feb. 20	120	2438
Van Emden Cocoa Co., San Francisco, Cal. Chocolates	49,115	Jan. 23	120	1159
Van Ness, Theodore P., Newark, N. J. Remedy for certain named diseases	49,263	Jan. 30	120	1474
Van Nostrand, Alonzo G., Boston, Mass. Ale	49,580	Feb. 13	120	2116
Van Vleet-Mansfield Drug Co., Memphis, Tenn. Whisky	49,732	Feb. 13	120	2122
Van Vleet-Mansfield Drug Co., Memphis, Tenn. Whisky	48,672	Jan. 9	120	649
Van Vleet-Mansfield Drug Co., Memphis, Tenn. Whisky	48,708	Jan. 9	120	650
Van Vleet-Mansfield Drug Co., Memphis, Tenn. Whisky	48,772	Jan. 9	120	653
Van Vleet-Mansfield Drug Co., Memphis, Tenn. Medicated blackberry brandy	48,773	Jan. 9	120	653
Van Vleet-Mansfield Drug Co., Memphis, Tenn. Whisky	48,836	Jan. 16	120	893
Van Vleet-Mansfield Drug Co., Memphis, Tenn. Medicine or remedy for diseases of the kidneys and bladder	48,837	Jan. 16	120	893
Van Vleet-Mansfield Drug Co., Memphis, Tenn. Remedy for coughs and ailments of the throat and lungs	48,901	Jan. 16	120	895
Van Vleet-Mansfield Drug Co., Memphis, Tenn. Pile-salve	48,902	Jan. 16	120	895
Van Vleet-Mansfield Drug Co., Memphis, Tenn. Liniment	48,903	Jan. 16	120	895
Van Vleet-Mansfield Drug Co., Memphis, Tenn. Remedy for certain named diseases	48,904	Jan. 16	120	895
Van Vleet-Mansfield Drug Co., Memphis, Tenn. Remedy for the cure of rheumatism	48,967	Jan. 16	120	896
Van Vleet-Mansfield Drug Co., Memphis, Tenn. Pills for the cure and alleviation of diseases and disorders of the liver	48,968	Jan. 16	120	896
Van Vleet-Mansfield Drug Co., Memphis, Tenn. Remedy for certain named diseases	49,504	Feb. 6	120	1818
Van Vleet-Mansfield Drug Co., Memphis, Tenn. Vermifuge	49,505	Feb. 6	120	1818
Van Vleet-Mansfield Drug Co., Memphis, Tenn. Preparation for certain named diseases	49,506	Feb. 6	120	1818
Van Vleet-Mansfield Drug Co., Memphis, Tenn. Remedy for certain named diseases	49,507	Feb. 6	120	1818
Victor Talking Machine Co., Camden, N. J. Records for talking-machines	49,264	Jan. 30	120	1474
Victor Talking Machine Company, Camden, N. J. Sound-boxes for talking-machines	49,984	Feb. 27	120	2747
Victor Talking Machine Company, Camden, N. J. Records for talking-machines	49,985	Feb. 27	120	2747
Vig-Nil Medicine Co., Chicago, Ill. Dyspepsia tablets and capsules	49,924	Feb. 20	120	2437
Voorhees Estate, Dr. C. A., Philadelphia, Pa. Worm-syrup	49,581	Feb. 13	120	2116
Vulcan Iron Works, San Francisco, Cal. Ammonia-compressors	49,805	Feb. 20	120	2437
W. C. & F. P. Church, Incorporated, New York, N. Y. Weekly newspaper	49,508	Feb. 6	120	1818
W. E. Wroe & Company, Chicago, Ill. Board-paper	49,174	Jan. 23	120	1161
W. H. Comstock Company, Limited, Morristown, N. Y. Purgative pills	49,819	Feb. 20	120	2434
W. W. Mooney & Sons, Incorporated, Columbus, Ind. Harness and saddlery leather	49,122	Jan. 23	120	1160
W. W. Mooney & Sons, Incorporated, Columbus, Ind. Harness and saddlery leather	49,176	Jan. 23	120	1161
W. W. Mooney & Sons, Incorporated, Columbus, Ind. Harness and saddlery leather	49,177	Jan. 23	120	1161
Waldmann Distilling Co., Chattanooga, Tenn. Whisky	48,487	Jan. 2	120	320
Waldmann Distilling Co., Chattanooga, Tenn. Whisky	48,609	Jan. 2	120	321
Waldteufel & Bates, New York, N. Y. Powder for drying the hair	49,095	Jan. 23	120	1158
Walsh, James J., Quincy, Ill. Horse-renovating powders	49,555	Feb. 6	120	1820
Walsh, James J., Quincy, Ill. Colic medicine for horses	49,556	Feb. 6	120	1820
Walter Baker & Company, Limited, Boston, Mass. Cocoa	49,926	Feb. 20	120	2438
Walter Stewart Company, New York, N. Y. Skirt-braids	49,226	Jan. 30	120	1470
Ward, George S., Philadelphia, Pa. Bread and crushers	49,697	Feb. 13	120	2120
Warner Bros. Co., Bridgeport, Conn. Hose-supporters	49,507	Feb. 6	120	1814
Warner Bros. Co., Bridgeport, Conn. Corsets	50,002	Feb. 27	120	2750

Alphabetical list of registrants of trade-marks for January and February—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	48,574	Jan. 16	120	894
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	48,575	Jan. 16	120	894
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	48,576	Jan. 16	120	894
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	48,577	Jan. 16	120	895
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	48,578	Jan. 16	120	895
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	48,579	Jan. 16	120	895
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	48,880	Jan. 16	120	895
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	48,881	Jan. 16	120	895
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	48,882	Jan. 16	120	895
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	48,883	Jan. 16	120	895
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	48,884	Jan. 16	120	895
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	48,885	Jan. 16	120	895
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	48,886	Jan. 16	120	895
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	48,887	Jan. 16	120	895
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	48,888	Jan. 16	120	895
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	48,889	Jan. 16	120	895
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	48,890	Jan. 16	120	895
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	48,891	Jan. 16	120	895
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	48,892	Jan. 16	120	895
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	48,893	Jan. 16	120	895
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	48,894	Jan. 16	120	895
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	48,895	Jan. 16	120	895
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	49,112	Jan. 23	120	1159
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	49,113	Jan. 23	120	1159
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	49,114	Jan. 23	120	1159
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	49,255	Jan. 30	120	1470
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	49,256	Jan. 30	120	1470
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	49,257	Jan. 30	120	1470
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	49,419	Feb. 6	120	1815
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	49,420	Feb. 6	120	1815
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	49,421	Feb. 6	120	1815
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	49,422	Feb. 6	120	1816
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	49,423	Feb. 6	120	1815
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	49,424	Feb. 6	120	1815
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	49,425	Feb. 6	120	1816
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	49,745	Feb. 13	120	2122
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	49,746	Feb. 13	120	2122
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	49,747	Feb. 13	120	2122
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	49,748	Feb. 13	120	2122
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	49,803	Feb. 20	120	2433
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	49,844	Feb. 20	120	2435
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	49,845	Feb. 20	120	2435
Upsa Light Co., New York, N. Y. Self-lighting incandescent gas-mantles	49,846	Feb. 20	120	2435
Utica Drop Forge & Tool Company, Utica, N. Y. Nippers, pincers, and cutting-pliers	49,751	Feb. 13	120	2122
V. K. and A. H. Jones Co., Lynn, Mass. Boots and shoes made of leather and of canvas	49,173	Jan. 23	120	1161
V. K. and A. H. Jones Co., Lynn, Mass. Shoes made of leather and of canvas	48,535	Jan. 16	120	893
Valentin Blatz Brewing Co., Milwaukee, Wis. Bottled lager-beer	49,264	Jan. 30	120	1470
Valk & Bro., S. J., New York, N. Y. Olives	49,804	Feb. 20	120	2433
Valk & Bro., S. J., New York, N. Y. Olives	49,924	Feb. 20	120	2438
Van Emden Cocoa Co., San Francisco, Cal. Chocolates	49,925	Feb. 20	120	2438
Van Emden Cocoa Co., San Francisco, Cal. Chocolates	49,115	Jan. 23	120	1159
Van Ness, Theodore P., Newark, N. J. Remedy for certain named diseases	49,263	Jan. 30	120	1474
Van Nostrand, Alonzo G., Boston, Mass. Ale	49,580	Feb. 13	120	2116
Van Vleet-Mansfield Drug Co., Memphis, Tenn. Whisky	49,732	Feb. 13	120	2122
Van Vleet-Mansfield Drug Co., Memphis, Tenn. Whisky	48,672	Jan. 9	120	649
Van Vleet-Mansfield Drug Co., Memphis, Tenn. Whisky	48,708	Jan. 9	120	650
Van Vleet-Mansfield Drug Co., Memphis, Tenn. Whisky	48,772	Jan. 9	120	653
Van Vleet-Mansfield Drug Co., Memphis, Tenn. Medicated blackberry brandy	48,773	Jan. 9	120	653
Van Vleet-Mansfield Drug Co., Memphis, Tenn. Whisky	48,836	Jan. 16	120	893
Van Vleet-Mansfield Drug Co., Memphis, Tenn. Medicine or remedy for diseases of the kidneys and bladder	48,837	Jan. 16	120	893
Van Vleet-Mansfield Drug Co., Memphis, Tenn. Remedy for coughs and ailments of the throat and lungs	48,901	Jan. 16	120	895
Van Vleet-Mansfield Drug Co., Memphis, Tenn. Pile-salve	48,902	Jan. 16	120	895
Van Vleet-Mansfield Drug Co., Memphis, Tenn. Liniment	48,903	Jan. 16	120	895
Van Vleet-Mansfield Drug Co., Memphis, Tenn. Remedy for certain named diseases	48,904	Jan. 16	120	895
Van Vleet-Mansfield Drug Co., Memphis, Tenn. Remedy for the cure of rheumatism	48,967	Jan. 16	120	896
Van Vleet-Mansfield Drug Co., Memphis, Tenn. Pills for the cure and alleviation of diseases and disorders of the liver	48,968	Jan. 16	120	896
Van Vleet-Mansfield Drug Co., Memphis, Tenn. Remedy for certain named diseases	49,504	Feb. 6	120	1818
Van Vleet-Mansfield Drug Co., Memphis, Tenn. Vermifuge	49,505	Feb. 6	120	1818
Van Vleet-Mansfield Drug Co., Memphis, Tenn. Preparation for certain named diseases	49,506	Feb. 6	120	1818
Van Vleet-Mansfield Drug Co., Memphis, Tenn. Remedy for certain named diseases	49,507	Feb. 6	120	1818
Victor Talking Machine Co., Camden, N. J. Records for talking-machines	49,264	Jan. 30	120	1474
Victor Talking Machine Company, Camden, N. J. Sound-boxes for talking-machines	49,984	Feb. 27	120	2747
Victor Talking Machine Company, Camden, N. J. Records for talking-machines	49,985	Feb. 27	120	2747
Vig-Nil Medicine Co., Chicago, Ill. Dyspepsia tablets and capsules	49,924	Feb. 20	120	2437
Voorhees Estate, Dr. C. A., Philadelphia, Pa. Worm-syrup	49,581	Feb. 13	120	2116
Vulcan Iron Works, San Francisco, Cal. Ammonia-compressors	49,805	Feb. 20	120	2437
W. C. & F. P. Church, Incorporated, New York, N. Y. Weekly newspaper	49,508	Feb. 6	120	1818
W. E. Wroe & Company, Chicago, Ill. Board-paper	49,174	Jan. 23	120	1161
W. H. Comstock Company, Limited, Morristown, N. Y. Purgative pills	49,819	Feb. 20	120	2434
W. W. Mooney & Sons, Incorporated, Columbus, Ind. Harness and saddlery leather	49,122	Jan. 23	120	1160
W. W. Mooney & Sons, Incorporated, Columbus, Ind. Harness and saddlery leather	49,176	Jan. 23	120	1161
W. W. Mooney & Sons, Incorporated, Columbus, Ind. Harness and saddlery leather	49,177	Jan. 23	120	1161
Waldmann Distilling Co., Chattanooga, Tenn. Whisky	48,487	Jan. 2	120	320
Waldmann Distilling Co., Chattanooga, Tenn. Whisky	48,609	Jan. 2	120	321
Waldteufel & Bates, New York, N. Y. Powder for drying the hair	49,095	Jan. 23	120	1158
Walsh, James J., Quincy, Ill. Horse-renovating powders	49,555	Feb. 6	120	1820
Walsh, James J., Quincy, Ill. Colic medicine for horses	49,556	Feb. 6	120	1820
Walter Baker & Company, Limited, Boston, Mass. Cocoa	49,926	Feb. 20	120	2438
Walter Stewart Company, New York, N. Y. Skirt-braids	49,226	Jan. 30	120	1470
Ward, George S., Philadelphia, Pa. Bread and crushers	49,697	Feb. 13	120	2120
Warner Bros. Co., Bridgeport, Conn. Hose-supporters	49,507	Feb. 6	120	1814
Warner Bros. Co., Bridgeport, Conn. Corsets	50,002	Feb. 27	120	2750

Alphabetical list of registrants of trade-marks for January and February—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Warner Bros. Co., Bridgeport, Conn. Corsets	50,063	Feb. 27	120	2750
Warner & Co., William R., Philadelphia, Pa. Medicinal preparations	48,896	Jan. 16	120	895
Warner & Co., William R., Philadelphia, Pa. Medicinal preparations	48,897	Jan. 16	120	895
Warner & Co., William R., Philadelphia, Pa. Medicinal preparations	48,898	Jan. 16	120	895
Warner & Co., William R., Philadelphia, Pa. Remedy for certain named diseases	48,899	Jan. 16	120	895
Warner & Co., William R., Philadelphia, Pa. Medicinal preparations	49,137	Jan. 23	120	1160
Warren Brothers Company, Boston, Mass. Disinfectants	49,820	Feb. 20	120	2434
Waterbury Chemical Company, Des Moines, Iowa. Cod-liver oil	49,557	Feb. 6	120	1820
Watson, Frank, Philadelphia, Pa. Ointment	49,086	Jan. 23	120	1158
Weideman Company, Cleveland, Ohio. Whisky	49,365	Jan. 30	120	1474
Weideman-Fries Co., Cleveland, Ohio. Whisky	49,259	Jan. 30	120	1470
Weil & Sons, H., Paducah, Ky. Whisky	48,610	Jan. 2	120	321
Weingarten Bros., New York, N. Y. Corsets	48,611	Jan. 2	120	321
Weinreich, Joseph, Dayton, Ohio. Cigars	50,064	Feb. 27	120	2750
Wellen & Oichman, New York, N. Y. Trunks	48,673	Jan. 9	120	649
Wells & Richardson Company, Burlington, Vt. Preparations for coloring butter	49,366	Jan. 30	120	1474
Wells & Richardson Company, Burlington, Vt., and Montreal, Canada. Remedy for certain named diseases	49,265	Jan. 30	120	1470
Wells & Richardson Company, Burlington, Vt., and Montreal, Canada. Remedy for certain named diseases	49,509	Feb. 6	120	1818
Wells, Stone & Co., Chicago, Ill. Sardines and like fish	49,536	Feb. 6	120	1820
Wendel, George V., New York, N. Y. Whisky	48,468	Jan. 2	120	316
Wertheimer & Co., New York, N. Y. Gloves	49,570	Jan. 2	120	360
Wetherald, James T., Boston, Mass. Antiseptics	48,535	Jan. 2	120	318
Whipple Brothers Co., Westerly, R. I. Washing-machines	48,709	Jan. 9	120	650
White Top Champagne Company, Hammondsport, N. Y. Sparkling wines	48,489	Jan. 2	120	316
Whitman & Barnes Manufacturing Company, Akron, Ohio. Wrenches	48,536	Jan. 2	120	318
Whitman & Co., Clarence, New York, N. Y. Mercerized cotton fabrics	49,625	Feb. 13	120	2117
Whitman & Co., Clarence, New York, N. Y. Cotton piece goods	49,064	Jan. 23	120	1157
Whitman, John F., Philadelphia, Pa. Compound for cleaning	49,065	Jan. 23	120	1157
Whitney, Wabel & Co., Cleveland, Ohio. Boys' leather boots and shoes	48,812	Jan. 16	120	892
Whittemore Bros. and Co., Cambridge, Mass. Leather-polish	48,838	Jan. 16	120	893
Whittemore Brothers and Company, Cambridge, Mass. Leather-polish	49,608	Feb. 13	120	2120
Whittier Mills, Chattahoochee, Ga. Braided cord	48,628	Jan. 9	120	647
Whittier Mills, Chattahoochee, Ga. Braided cord	49,367	Jan. 30	120	1474
Wi-da-me Company, Fairmount, Ind. Salves	49,368	Jan. 30	120	1474
Wiard Plow Co., Batavia, N. Y. Plows, cultivators, rollers, and harrows	48,969	Jan. 16	120	898
Wilcox & White Company, Meriden, Conn. Piano-players, combination-pianos, and parts thereof	49,608	Feb. 13	120	2117
Wilkinson, Gaddis & Co., Newark, N. J. Jams and jellies	49,802	Feb. 20	120	2437
William Barker Comp'y., Watervliet, N. Y. Collars and cuffs	50,065	Feb. 27	120	2750
William Underwood Company, Boston, Mass. Canned sardines	49,805	Feb. 20	120	2433
William Underwood Company, Boston, Mass. Devilled entremets	48,674	Jan. 9	120	649
William Werder & Son Company, Ashland, Wis. Whisky	49,927	Feb. 20	120	2438
Williams & Co., R. C., New York, N. Y. Vegetable and fruit preserves, jams, jellies, butters, and marmalades	48,609	Jan. 2	120	321
Williams & Co., R. C., New York, N. Y. Canned fish, clams, and oysters	48,900	Jan. 16	120	895
Williams, Frank C., Easton, Pa. Self-raising prepared buckwheat-flour	49,087	Jan. 23	120	1158
Williams, Samuel W., Harriman, Tenn. Baking-powder	49,928	Feb. 20	120	2438
Williams, Wilford M., Indianapolis, Ind. Washing preparation in a dry or powdered form	49,088	Jan. 23	120	1158
Wmans, George H., Kalamazoo, Mich. Folding canvas hammocks and swings	48,813	Jan. 16	120	892
Winchester Repeating Arms Co., New Haven, Conn. Cartridges	49,508	Feb. 6	120	1818
Winchester Repeating Arms Co., New Haven, Conn. Gun-grease	49,175	Jan. 23	120	1161
Wingo, Ellett & Crump Shoe Co., Richmond, Va. Leather boots and shoes	49,609	Feb. 13	120	2120
Wingo, Ellett & Crump Shoe Co., Manchester, Va. Boots, shoes, and slippers made of leather	48,490	Jan. 2	120	316
Wise, David, Chicago, Ill. Whisky	48,839	Jan. 16	120	893
Wise, David, Chicago, Ill. Whisky	49,022	Jan. 23	120	1155
Wise, David, Chicago, Ill. Whisky	49,023	Jan. 23	120	1155
Wise, David, Chicago, Ill. Whisky	49,049	Jan. 23	120	1156
Wm. A. Rogers, Limited, New York, N. Y. Silver-plated flat ware, hollow ware, and tableware	48,491	Jan. 2	120	316
Wm. A. Rogers, Limited, New York, N. Y. Silver-plated flat ware, hollow ware, and tableware	48,492	Jan. 2	120	316
Wm. A. Rogers, Limited, New York, N. Y. Silver-plated flat ware, hollow ware, and tableware	48,493	Jan. 2	120	316
Wm. A. Rogers, Limited, New York, N. Y. Silver-plated flat ware, hollow ware, and tableware	48,537	Jan. 2	120	318
Wm. Bergenthal Co., Milwaukee, Wis. Brandy	49,266	Jan. 30	120	1470
Wm. Hoelscher and Co., Inc., San Francisco, Cal. Wine	49,501	Feb. 6	120	1818
Wolff Chemical Company, Philadelphia, Pa. Shoe-dressing	49,753	Feb. 13	120	2122
Wood, Arnold, New York, N. Y. Fluid soaps	49,260	Jan. 30	120	1470
Woodcock Macaroni Company, Rochester, N. Y. Macaroni, spaghetti, and vermicelli	49,038	Jan. 23	120	1156
Woolner & Company, Peoria, Ill. Whisky	49,360	Jan. 30	120	1474
Woolner & Company, Peoria, Ill. Whisky	48,840	Jan. 16	120	893
Woolner & Company, Peoria, Ill. Whisky	48,841	Jan. 16	120	893
Woolner & Company, Peoria, Ill. Whisky	48,842	Jan. 16	120	893
Worch, Hugo, Washington, D. C. Pianos	49,039	Jan. 23	120	1156
Wort, Aaron D., Jamestown, N. Y. Cough-drops	49,116	Jan. 23	120	1159
World's Dispensary Medical Association, Buffalo, N. Y. Liniment	49,582	Feb. 13	120	2116
Wright & Taylor, Louisville, Ky. Whisky	49,024	Jan. 23	120	1155
Wulfes & Co., John P., San Francisco, Cal. Metal-polishes	49,806	Feb. 20	120	2437
Wyoming Shovel Works, Wyoming, Pa. Shovels, spades, and scoops	48,962	Jan. 16	120	898
X-Zalia Corporation, Boston, Mass. Remedy for certain named diseases	49,178	Jan. 23	120	1161
York, Chauncey F., Warriorsmark, Pa. Pills and tablets for diseases of the blood, liver, stomach, bowels, kidneys, and nerves	48,538	Jan. 2	120	318
Yost Yeast Co., Arkansas City, Kans. Crumb-yeast	49,929	Feb. 20	120	2438
Young, Andrew M., Womelsdorf, Pa. Gin	48,612	Jan. 2	120	321
Young, George C., assignor to Young Remedy Company, Jackson, Mich. Absorbent pads or plasters	48,494	Jan. 2	120	316
Young Remedy Company. (See Young, George C., assignor.)				
Young, Wilbur F., Springfield, Mass. Liniments and embrocations	49,322	Jan. 30	120	1472
Young, Wilbur F., Springfield, Mass. Hoof-dressing	50,029	Feb. 27	120	2749
Zahrlskie, Geo. A., New York, N. Y. Wheat-flour	48,490	Jan. 2	120	316
Zamaroff & Co., A., New York, N. Y. Bitters	48,971	Jan. 16	120	898
Zeltner Brewing Co., New York, N. Y. Lager-beer	49,754	Feb. 13	120	2122

ALPHABETICAL LIST OF REGISTRANTS OF LABELS.

Name, residence, and title.	No.	Date.	Official Gazette. Volume.	Page.
Abdulla & Co., Limited, New York, N. Y. "Abdulla & Co. Ltd." (For Cigarettes and Cigarette-Tobacco)	12,588	Jan. 2	120	322
Albers Bros. Milling Co., Portland, Oreg. "Violet Self Raising Pancake Flour." (For Pancake-Flour)	12,640	Jan. 30	120	1475
Albers Bros. Milling Co., Portland, Oreg. "Violet Self Raising Buckwheat Flour." (For Buck-wheat-Flour)	12,641	Jan. 30	120	1475
Albers Bros. Milling Co., Portland, Oreg. "Columbia Oat Flakes." (For Oat-Flakes)	12,642	Jan. 30	120	1475
Albers Bros. Milling Co., Portland, Oreg. "Violet Wheat." (For Wheat-Flakes)	12,643	Jan. 30	120	1475
Albers Bros. Milling Co., Portland, Oreg. "Columbia Wheat Flakes." (For Wheat-Flakes)	12,644	Jan. 30	120	1475
Ambrosia Chocolate Company, Milwaukee, Wis. "Ambrosia Sweet Chocolate." (For Chocolate)	12,620	Jan. 23	120	1162
Ambrosia Chocolate Company, Milwaukee, Wis. "Ambrosia Angel's Food Sweet Vanilla Chocolate." (For Chocolate)	12,621	Jan. 23	120	1162
Ambrosia Chocolate Company, Milwaukee, Wis. "Ambrosia Pure Cocoa." (For Cocoa)	12,622	Jan. 23	120	1162
Atlanta Antiseptic Co., Atlanta, Ga. "A A Dental Mouth Wash." (For Mouth-Wash)	12,606	Jan. 9	120	654
Basilea & Calandra, New York, N. Y. "Ferro-China-Bascal." (For Bitters)	12,686	Feb. 27	120	2751
Battelle, Hurd & Co., New York, N. Y. "Monogram Mills." (For Dress Goods)	12,607	Jan. 9	120	654
Bethany Cigar Company, Bethany, Mo. "61." (For Cigars)	12,609	Feb. 20	120	2439
Body Builders Medicine Company, Binghamton, N. Y. "Body Builders." (For Medicine)	12,618	Jan. 23	120	1162
Braasch, Charles E., New York, N. Y. "X Ray Polish." (For a Cleaning Preparation)	12,613	Jan. 9	120	654
C. F. Sauer Company, Richmond, Va. "Sauer's Pure Concentrated Extract." (For Flavoring Extracts)	12,646	Jan. 30	120	1475
C. H. Wittenberg Dist'g Co., St. Louis, Mo. "Blue Wing Rye Whiskey." (For Rye Whisky)	12,626	Jan. 23	120	1162
Callier, Julian B., Trenton and Atlantic City, N. J. "Callier's Cut Loaf Cream Candy." (For Candy)	12,675	Feb. 20	120	2439
Castle Brothers, Incorporated, San Francisco, Cal. "Outing Brand California Peaches." (For California Peaches)	12,630	Jan. 23	120	1162
Chattanooga Bottling Company, Chattanooga, Tenn. "Ale of Ginger." (For Ginger-Ale)	12,687	Feb. 27	120	2751
Chubb, Morgan, Brooklyn, N. Y. "Mrs. Winslow's Borated Violet Talcum" (For Toilet Powder)	12,676	Feb. 20	120	2439
Columbia Phonograph Company, Washington, D. C. "Columbia Phonograph Co., Columbia Record." (For Sound-Records)	12,683	Feb. 20	120	2439
Crump, J. C., Isleton, Cal. "J. C. Crump's Salve." (For Salve)	12,609	Jan. 9	120	654
Crump, J. C., Isleton, Cal. "J. C. Crump's Hoof Ointment." (For Hoof-Ointment)	12,610	Jan. 9	120	654
Dinet & Delfosse Pharmacal Co., Chicago, Ill. "Hydrarg-Nucleoid." (For Medicine)	12,616	Jan. 23	120	1162
Dinet & Delfosse Pharmacal Co., Chicago, Ill. "Hydrarg-Iodo-Nucleoid." (For Medicine)	12,617	Jan. 23	120	1162
Edstrom, O. E., Los Angeles, Cal. "Edstrom's Lung Gas." (For Medicine)	12,677	Feb. 20	120	2439
Fairchild & Bro., M. H., Chicago, Ill. "Tubs." (For Pulverized Scouring-Soap)	12,632	Jan. 23	120	1162
Faunce & Spinney, Lynn, Mass. "Patrician Satin Gloss Dressing." (For Shoe-Dressing)	12,649	Jan. 30	120	1475
Faunce & Spinney, Lynn, Mass. "Patrician Alabastine." (For Shoe-Dressing)	12,650	Jan. 30	120	1475
Faunce & Spinney, Lynn, Mass. "Patrician Friction Polish." (For Shoe-Dressing)	12,684	Feb. 27	120	2751
Fischer & Co., B., New York, N. Y. "Hotel Astor Coffee." (For Coffee)	12,599	Jan. 9	120	654
Fort Smith Commission Company, Fort Smith, Ark. "Bonnette." (For Coffee)	12,671	Feb. 20	120	2439
Foster, Joseph J., St. Louis, Mo. "M. A. C." (For Cigars)	12,601	Jan. 9	120	654
Gasser Coffee Co., Toledo, Ohio. "Kar-a-van." (For Coffee)	12,623	Jan. 23	120	1162
Gasser Coffee Co., Toledo, Ohio. "Kar-a-van." (For Coffee)	12,624	Jan. 23	120	1162
Georgia Syrup Co., Bainbridge, Ga. "Pride of Georgia." (For Syrup)	12,656	Feb. 6	120	1821
Giovanni, Rizzo, Philadelphia, Pa. "Pillole Antimalariche Liver Pills." (For Liver-Pills)	12,662	Feb. 13	120	2124
Griswold, C. M., Chicago, Ill. "Alka-Dent." (For Dentifrice)	12,691	Feb. 27	120	2751
Haase, Louis, St. Louis, Mo. "Haase's Delight." (For Cigars)	12,636	Jan. 30	120	1475
Hable, Jacob, Baltimore, Md. "Birnbaum Cigar Co's. Caswell." (For Cigars)	12,634	Jan. 30	120	1475
Handelsman, Ike, Lisbon, Ohio. "Handelsman's Munificent Mutual Benefit Trading System." (For Pass-Books)	12,685	Feb. 27	120	2751
Henschel & Co., A. C., Chicago, Ill. "El Sazonado." (For Cigars)	12,619	Jan. 23	120	1162
Hook & Crownfield, Baltimore, Md. "Sponge-Ate The Greatest Bait." (For Confectionery)	12,674	Feb. 20	120	2439
Hugel, Conrad J., Chicago, Ill. "Capillarbe." (For Hair-Restorative)	12,615	Jan. 23	120	1162
Indiana Drug Concern, St. Louis, Mo. "Hills Honey & Tar." (For Medicine)	12,660	Feb. 13	120	2124
Indiana Drug Concern, St. Louis, Mo. "Hills Di-Col-Q." (For Medicine)	12,661	Feb. 13	120	2124
J. J. Wiedmann Cigar Box Co., St. Louis, Mo. "Lady Gertrude." (For Cigars)	12,608	Jan. 9	120	654
J. M. Robinson, Norton & Co., Louisville, Ky. "Pride of Kentucky." (For Bleached Cotton)	12,592	Jan. 2	120	322
Jacobs & Sons, H., New York, N. Y. "Little Nemo's Barefoot Sandal." (For Sandals)	12,681	Feb. 20	120	2439
Jacobus Pharmacal Co., Chicago, Ill. "Almond Cold Cream, La Favorita." (For Cold-Cream)	12,631	Jan. 23	120	1162
Jolissaint, Louis, Chicago, Ill. "Jersey Cheese." (For Cheese)	12,655	Feb. 6	120	1821
Kamp Distilling Co., St. Louis, Mo. "Frost King Whiskey." (For Whisky)	12,627	Jan. 23	120	116
Keeton-Williams Gold Company, Kansas City, Mo. "Keeton Gold." (For Dental Gold)	12,605	Jan. 9	120	654
Keller Bros., Newark, N. J. "Vomiting Syrup for Diphtheria, Croup, &c." (For Medicine)	12,648	Jan. 30	120	1475
Keyes, Charles H., Denver, Colo. "Syrset." (For Syrup)	12,673	Feb. 20	120	2439
Krieg, Theodor, Saginaw, Mich. "Penna Dela." (For Cigars)	12,633	Jan. 30	120	1475
Kruger, Rudolph J., St. Paul, Minn. "Dr. Olga Schiller's Gray Hair Restorer." (For Gray-Hair-Restorer Tonic)	12,611	Jan. 9	120	654
Leistikow, Oscar A., Milwaukee, Wis. "Hazel Patch." (For Cigars)	12,670	Feb. 20	120	2439
Lynch, Albert E., Cambridge, Mass. "Prince's Liniment The Great Panacea." (For Liniment)	12,679	Feb. 20	120	2439
Malariacide Manufacturing Co., San Francisco, Cal. "Dr. M. F. Roberts' Malariacide." (For Medicine)	12,652	Feb. 6	120	1821
Masons Medical Co., Boston, Mass. "Rattle-snake Oil Liniment." (For a Liniment)	12,614	Jan. 23	120	1162
McCarthy Dry Plate Co., St. Louis, Mo. "McCarthy's Winner." (For Dry-Plates)	12,682	Feb. 20	120	2439
McLoughlin Bros., New York and Brooklyn, N. Y. "District Messenger Boy." (For a Game)	12,612	Jan. 9	120	654
N. Benjamin Son, Inc., Brooklyn, N. Y. "King Bee—Honey and Rock." (For a Tonic for Coughs and Colds)	12,653	Feb. 6	120	1821
Norman, John S., Minneapolis, Minn. "Macaroni Bread." (For Bread)	12,688	Feb. 27	120	2751
O'Brien, Francis, Chicago, Ill. "La Cigale French Bath Sachet." (For Toilet Articles)	12,647	Jan. 30	120	1475
Ogden and Shimer, Middletown, N. Y. "Mystic Cream." (For a Toilet Preparation)	12,591	Jan. 2	120	322
Palmer, Harvey H., New York, N. Y. "Old Ben Franklin." (For Coffee)	12,625	Jan. 23	120	1162

Alphabetical list of registrants of labels for January and February—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Penn Chemical Company, Washington, D. C., and Bellefonte, Pa. "Penn's Plasters." (For Adhesive Plasters)	12,678	Feb. 20	120	2439
Physicians Chemical & Drug Company, Denver, Colo. "Glycero-Medicated-Plaster." (For Medicated Plasters)	12,663	Feb. 13	120	2124
Pollock, Robert, Pittsburg, Pa. "Pollock's Gems." (For Cigars and Stogies)	12,602	Jan. 9	120	654
R. Steinecke Company, New York, N. Y. "American Cabinet." (For Cigars)	12,635	Jan. 30	120	1475
Reynolds, Elizabeth, Chicago, Ill. "Eagle Brand." (For Hair-Restorative)	12,602	Feb. 27	120	2751
Rich, Isidor, New Orleans, La. "La Chapina." (For Flour)	12,656	Feb. 13	120	2124
Rubin, George S., Boston, Mass. "The Harvard Eye Remedy." (For Eye Medicine)	12,659	Feb. 13	120	2124
Samuel, George B., Chicago, Ill. "Alexander Hamilton." (For Cigars)	12,600	Feb. 27	120	2751
Schmidt & Co., New York, N. Y. "Rosa de Farina." (For Cigars)	12,637	Jan. 30	120	1475
Scott Paper Co., Philadelphia, Pa. "Bonadd." (For Toilet-Paper)	12,660	Feb. 20	120	2439
Sewall, Frank L., East Highlands, Cal. "Mount Harrison Brand." (For Oranges)	12,590	Jan. 2	120	322
Shade, William P., Decatur, Ill. "Es Kay Whiskey." (For Whisky)	12,638	Jan. 30	120	1475
Shure, Mandel, Chicago, Ill. "Dextro." (For Stationery)	12,651	Jan. 30	120	1475
Smith, John W., Cincinnati, Ohio. "Buckeye Cigar." (For Cigars)	12,604	Jan. 9	120	654
Soap Products Company, Inc., Norfolk, Va. "Rest—A High Grade Washing Powder." (For Washing-Powder)	12,664	Feb. 13	120	2124
Soap Products Company, Inc., Norfolk, Va. "Speed—Pulverized Scouring Soap." (For Scouring-Soap)	12,665	Feb. 13	120	2124
Société Anme. Filature & Filteries Réunies, Alost, Belgium. "Fil Gire, Noir Sublime." (For Linen Thread)	12,666	Feb. 13	120	2124
Société Anonyme Filature & Filteries Réunies, Alost, Belgium. "Au Marchand Chinois." (For Linen Thread)	12,667	Feb. 13	120	2124
Soda Mint Water Co., Chicago, Ill. "Soda Mint Water." (For Carbonated Water)	12,672	Feb. 20	120	2439
Stewart Brothers Company, Omaha, Nebr. "Wedgwood." (For Salmon)	12,654	Feb. 6	120	1821
Triumph Catsup & Pickle Co., East St. Louis, Ill. "McTague's Shell Fish Chili Sauce." (For Chili Sauce)	12,629	Jan. 23	120	1162
Tropic Fruit Company, Limited, Wahiawa, Hawaii. "Hawaiian Relish." (For a Relish)	12,594	Jan. 9	120	654
Tropic Fruit Company, Limited, Wahiawa, Hawaii. "Sherbet Pineapple." (For Cut, Grated, or Chopped Pineapple)	12,595	Jan. 9	120	654
Tropic Fruit Company, Limited, Wahiawa, Hawaii. "Pineapple (Short Squares)." (For Cut Pineapple)	12,596	Jan. 9	120	654
Tropic Fruit Company, Limited, Wahiawa, Hawaii. "Hawaiian Pineapple (Long Squares)." (For Cut Pineapple)	12,597	Jan. 9	120	654
Union Biscuit Company, St. Louis, Mo. "Krakrjak." (For Biscuits)	12,645	Jan. 30	120	1475
United States Printing Company, Brooklyn, N. Y. "Vamocha Brand Mocha and Java Coffee." (For Canned Coffee)	12,600	Jan. 9	120	654
Wabash Chemical & Baking Powder Co., Wabash, Ind. "Blue Ribbon." (For Baking-Powder)	12,657	Feb. 13	120	2124
Wedehase, F., Sebastopol, Cal. "Fig Yeast." (For Yeast)	12,589	Jan. 2	120	322
Werberg, William V., Chicago, Ill. "Sirocco Whiskey." (For Whisky)	12,626	Jan. 23	120	1162
Wilborine Salve Co., Belleville, Ill. "Wilborine Salve." (For Salve)	12,603	Jan. 9	120	654
Wilmanns Bros. Co., Milwaukee, Wis. "Magnet." (For Beer)	12,639	Jan. 30	120	1475
Wise, Robert, New York, N. Y. "Snow-White Towel Duplex Weave." (For Towels)	12,593	Jan. 2	120	322
Witkop, Theodore L., Buffalo, N. Y. "Royal Jelly Powder." (For Jelly-Powder)	12,598	Jan. 9	120	654
Wohl & Co., Peter, Chicago, Ill. "Havana Bit." (For Cigars)	12,666	Feb. 20	120	2439
Worm, Albert R., Indianapolis, Ind. "Pride Crown Brand Meats." (For Meats)	12,669	Feb. 27	120	2751

PRINTS.

Name, residence, and title.	No.	Date.	Official Gazette. Volume.	Page.
Alaska Packers Association, San Francisco, Cal. "Argo Salmon—Salmon Fritters." (For Salmon)	1,532	Jan. 2	120	322
Alaska Packers Association, San Francisco, Cal. "Argo Salmon—Delicious Baked." (For Salmon)	1,533	Jan. 2	120	322
Alaska Packers Association, San Francisco, Cal. "Argo Salmon—Stuffed Eggs." (For Salmon)	1,534	Jan. 2	120	322
Alaska Packers Association, San Francisco, Cal. "Argo Salmon—Salmon Chowder." (For Salmon)	1,535	Jan. 2	120	322
American Cigar Co., New York, N. Y. "The New Cremo Victoria." (For Cigars)	1,557	Jan. 9	120	654
Ayer Medical Company, New York, N. Y. "Ayer's Cherry Dentifrice." (For Cherry Dentifrice)	1,562	Jan. 23	120	1162
Bacon, A. S., San Jose, Cal. "Fit-Easy." (For Shoes)	1,578	Feb. 20	120	2439
Blanchard & Company, Cambridge, Mass. "Punjap." (For a Game)	1,549	Jan. 2	120	322
Borden's Condensed Milk Co., New York, N. Y. "Borden's Columbian Brand Evaporated Cream." (For Evaporated Cream)	1,571	Feb. 6	120	1821
Boston Bank Note Co., Boston, Mass. "Ferguson's White Seal." (For Bread)	1,552	Jan. 9	120	654
Boston Bank Note Co., Boston, Mass. "Ferguson's White Seal." (For Pies)	1,553	Jan. 9	120	654
Boston Bank Note Co., Boston, Mass. "Ferguson's Mince Pies." (For Mince Pies)	1,554	Jan. 9	120	654
Both, W. C., Chicago, Ill. "Men's Apparel." (For Men's Apparel)	1,579	Feb. 20	120	2439
Brown Shoe Co., St. Louis, Mo. "Harry Tether." (For Shoes)	1,536	Jan. 2	120	322
Brown Shoe Co., St. Louis, Mo. "Attention Boys and Girls." (For Shoes)	1,537	Jan. 2	120	322
Brown Shoe Co., St. Louis, Mo. "The Praise of Buster Brown Blue Ribbon Shoes." (For Shoes)	1,538	Jan. 2	120	322
Brown Shoe Co., St. Louis, Mo. "A Toast." (For Shoes)	1,539	Jan. 2	120	322
Brown Shoe Co., St. Louis, Mo. "Little Jakkie Horner." (For Shoes)	1,540	Jan. 2	120	322
Brown Shoe Co., St. Louis, Mo. "Buster Brown Guards are on Parade." (For Shoes)	1,541	Jan. 2	120	322
Brown Shoe Co., St. Louis, Mo. "Sammie so Haughty." (For Shoes)	1,542	Jan. 2	120	322
Brown Shoe Co., St. Louis, Mo. "Little Indians Snow and Crow." (For Shoes)	1,543	Jan. 2	120	322
Brown Shoe Co., St. Louis, Mo. "Buster Brown's Heart." (For Shoes)	1,544	Jan. 2	120	322
Brown Shoe Co., St. Louis, Mo. "The Return of Jakkie Horner." (For Shoes)	1,545	Jan. 2	120	322
Brown Shoe Co., St. Louis, Mo. "Jane and I." (For Shoes)	1,546	Jan. 2	120	322
Brown Shoe Co., St. Louis, Mo. "Buster Brown Blue Ribbon Book." (For Shoes)	1,547	Jan. 2	120	322
Brown Shoe Co., St. Louis, Mo. "100 Yard Dash." (For Shoes)	1,548	Jan. 2	120	322
Clark & Company, F. B., Harrisburg, Pa. "Pain King." (For Liniment)	1,583	Feb. 27	120	2751
David Adler & Sons Cothing Co., Milwaukee, Wis. "Adler's Spring and Summer Clothes." (For Men's Spring Apparel)	1,580	Feb. 20	120	2439
Du Pont Company, E. I., Wilmington, Del. "Shoot 'Infallible' Powder for Field and Trap." (For Powder)	1,550	Jan. 2	120	322
Emergency Baggage Repair Company, New York, N. Y. "Your old trunk or baggage made as good as new." (For Trunks and Baggage)	1,551	Jan. 2	120	322
Grossman Paper Box Co., Cleveland, Ohio. "C. Poyet Inc. Candies." (For Candies)	1,558	Jan. 9	120	654
Grossman Paper Box Co., Cleveland, Ohio. "Fine Braces." (For Braces)	1,560	Jan. 9	120	654
H. J. Putman & Co., Minneapolis, Minn. "Putman Boots." (For Boots)	1,568	Jan. 30	120	1475
Hord, Annie G., near Nashville, Tenn. "Mrs. Hord's Colonial Pickle." (For Pickle)	1,563	Jan. 23	120	1162
Iver Johnson's Arms & Cycle Works, Fitchburg, Mass. "Hammer the Hammer." (For Revolvers)	1,581	Feb. 20	120	2439
Joseph N. Eisendrath Company, Chicago, Ill. "The Sign of the Good Glove." (For Gloves and Mittens)	1,564	Jan. 23	120	1162
Lux, F. Albert, New York, N. Y. "The Nox-All Hat." (For Hats)	1,577	Feb. 20	120	2439
MacClean, Ernest G., Washington, Pa. "Ughl heap canned white man." (For Talking-Machines)	1,570	Jan. 30	120	1475
Meek Company, Coshocton, Ohio. "Under the Evening Light." (For Ale)	1,530	Jan. 2	120	322
Meek Company, Coshocton, Ohio. "A Wisconsin Deer Hunt. The Return—Two Bucks." (For Beer)	1,530	Jan. 2	120	322
Meek Company, Coshocton, Ohio. "The Cowboy's Delight." (For Whisky)	1,531	Jan. 2	120	322
Piqua Flour Co., Piqua, Ohio. "Every One to Their Own Taste." (For Flour)	1,561	Jan. 16	120	900
Rochester Candy Works, Rochester, N. Y. "The Delicious." (For Candy)	1,575	Feb. 20	120	2439
Salt Lake Knitting Works, Salt Lake City, Utah. "Prize Medal Brand Garments." (For Underwear)	1,569	Jan. 30	120	1475
Sauer Co., C. F., Richmond, Va. "Sauer's Famous Flavoring Extracts." (For Flavoring Extracts)	1,573	Feb. 20	120	2439
Savage Manufacturing Co., Brooklyn, N. Y. "Coming Thro' the Rye." (For Whisky)	1,566	Jan 30	120	1475
Severson & Johnson, Colorado Springs, Colo. "Just as Good." (For a Popcorn Confection)	1,556	Jan. 9	120	654
Sheldon, Dwight F., Rochester, N. Y. "Arrowetta." (For Cough Medicine)	1,559	Jan. 9	120	654
Stahl and Jaeger, New York, N. Y. "A Stormy Day at the Flat Iron Building." (For Rubbers)	1,582	Feb. 27	120	2751
Walpole, John L., Portland, Oreg. "Mill Work." (For Wood Millwork Articles)	1,565	Jan. 23	120	1162
Washburn-Crosby Company, Minneapolis, Minn. "Don't Discharge the Cook." (For Flour)	1,567	Jan. 30	120	1475
Washburn-Crosby Company, Minneapolis, Minn. "The First Hands." (For Flour)	1,574	Feb. 20	120	2439
Willis W. Russell Card Co., New York, N. Y. "Designs for Playing Card Spots or Pips." (For Playing-Cards)	1,572	Feb. 6	120	1821
Willis W. Russell Card Co., New York, N. Y. "Mandolin." (For Playing-Cards)	1,584	Feb. 27	120	2751
Willis W. Russell Card Co., New York, N. Y. "Sabre." (For Playing-Cards)	1,585	Feb. 27	120	2751
Willis W. Russell Card Co., New York, N. Y. "Oak." (For Playing-Cards)	1,586	Feb. 27	120	2751
Wolfe Company, Udolpho, New York, N. Y. "Wolfe's Schnappe." (For Schiedam Schnappe)	1,555	Jan. 9	120	654
Woodward, Orator F., Lacey, N. Y. "An Easy Shave." (For Shaving-Soap)	1,576	Feb. 20	120	2439

DISCLAIMER.

Name, residence, and invention.	No.	Filed.	Official Gazette. Volume.	Page.
Betts, Anson G., Troy, N. Y.; disclaimer filed by patentee. Electrodepositing antimony	792,207	Jan. 24, 1905	120	1169

ALPHABETICAL LIST OF TRADE-MARK APPLICANTS.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Volume.	Page.
A. Baldwin & Co., Limited, New Orleans, La. Plows	11,616	Jan. 30	120	1456
A. Booth and Company, Chicago, Ill.; Baltimore, Md.; St. Paul, Duluth, and Minneapolis, Minn.; St. Louis, Mo.; Louisville, Ky.; Omaha, Nebr.; Indianapolis, Ind., and Port Arthur, Canada. Canned oysters, fish, clams, crabs, shrimp, and lobsters	5,135	Jan. 2	120	302
A. Klipstein & Co., New York, N. Y. Quebracho extract	13,975	Jan. 2	120	312
A. Klipstein & Company, New York, N. Y. Cake soap	6,461	Feb. 27	120	2721
A. Santaella & Co., Chicago, Ill. Cigars	16,004-6	Feb. 20	120	2429
A. Slauson & Co., New York, N. Y. Lozenges	14,447-50	Feb. 20	120	2423
A. B. Patrick & Co., San Francisco, Cal. Harness, sole, and skirting leather	10,778	Feb. 27	120	2728
A. C. Lawrence Leather Co., Boston, Mass. Patent-leather	7,806	Jan. 2	120	304
A C Simmons, Jr Medicine Co, Sherman, Tex. Liver remedy	5,221	Feb. 20	120	2400
A. D. Kerr Co., Buffalo, N. Y. Whisky	8,285	Feb. 6	120	1782
A. G. Spalding & Bros, New York, N. Y. Base-ball bats	13,561	Jan. 30	120	1463
A. H. Heisey & Co., Newark, Ohio. Pressed glassware	8,754	Jan. 9	120	626
A. H. Lewis Medicine Co., St. Louis, Mo. Medicines for the regulation of the liver and purification of the blood	71	Jan. 30	120	1439
A. J. Reach Co., Philadelphia, Pa. Base-balls	8,691	Jan. 2	120	306
A. J. Reach Co., Philadelphia, Pa. Boxing-gloves	8,694	Jan. 2	120	306
A. J. Reach Co., Philadelphia, Pa. Base-ball	8,690	Jan. 30	120	1448
A. J. Reach Co., Philadelphia, Pa. Dressing for softening and preserving leather used in base-ball mitts and gloves	8,695	Feb. 20	120	2406
A. J. Reach Co., Philadelphia, Pa. Base, cricket, basket, and foot balls	8,692	Feb. 27	120	2724
A. J. Tower Company, Boston, Mass. Oiled clothing	13,104	Jan. 30	120	1461
A. J. Tower Company, Portland, Me., and Boston, Mass. Oiled clothing	2,013	Feb. 27	120	2714
A. J. Tower Company, Portland, Me., and Boston, Mass. Oiled clothing	6,892-3	Feb. 27	120	2722
A. J. Tower Company, Portland, Me., and Boston, Mass. Oiled clothing	8,993	Feb. 27	120	2725
A. M. McPhail Piano Co., Boston, Mass. Pianos	13,470	Feb. 6	120	1802
A. P. Hotaling & Co., San Francisco, Cal. Whisky	6,657	Feb. 20	120	2403
A. Y. McDonald & Morrison Manufacturing Company, Dubuque, Iowa. Stop and waste cocks	12,909	Jan. 30	120	1461
Abraham & Straus, Brooklyn, N. Y. Knit underwear	4,584	Feb. 13	120	2095
Abraham & Straus, Brooklyn, N. Y. Dolls	6,644	Feb. 27	120	2721
Acker, Merrall & Condit Company, New York, N. Y. Tea	13,903	Feb. 6	120	1804
Acme Mills & Elevator Company, Hopkinsville, Ky. Wheat-flour	11,879	Feb. 27	120	2731
Adam Roth Grocery Company, St. Louis, Mo. Condensed milk and evaporated cream	11,796	Jan. 9	120	636
Adler, Louis, Reading, Pa. Medicinal preparation for the cure of rheumatism	11,856	Jan. 23	120	1149
Adler, Louis J., Pittsburg, Pa. Whisky	6,300	Feb. 20	120	2402
Advance Publishing Co., Chicago, Ill. Magazine periodical	13,976	Jan. 23	120	1151
Aetna Powder Co., Chicago, Ill. Dynamite, dynamite-cartridges, blasting-gelatin, and low powder	5,660	Feb. 27	120	2719
Aktiebolaget Södertelje Tändsticksfabrik, Södertelje, Sweden. Matches	16,277	Feb. 27	120	2741
Aktien-Gesellschaft Vereinigte Berner & Zürcher Chocolade-Fabriken Lindt & Sprüngli, Berne, Switzerland. Chocolate, cocoa, and milk, hazel-nut, almond, and coffee chocolate in powder, block, or tablet form	6,543	Feb. 20	120	2402
Alabastine Company, Grand Rapids, Mich. Wall paint or coating	15,280	Jan. 16	120	886
Albany Wine & Liquor Co., Albany, N. Y. Whisky	13 717	Feb. 6	120	1804
Albemarle Paper Mfg. Co., Richmond, Va. Blotting-paper	15,834	Feb. 27	120	2740
Albert Dickinson Company, Chicago, Ill. Popcorn	8,410	Jan. 9	120	626
Albert Dickinson Company, Chicago, Ill. Poultry-food	15,717	Feb. 6	120	1809
Albrecht, Wilhelm, Boston, Mass. Whisky	15,242	Jan 30	120	1465
American Box Ball Co., Indianapolis, Ind. Portable bowling-alleys	2,294	Feb. 20	120	2397
American Brake Shoe & Foundry Company, New York, N. Y. Brake-shoes	1,559	Jan. 9	120	616
American Broom & Brush Co., Amsterdam, N. Y. Brooms	12,355-8	Jan. 9	120	637
American Broom & Brush Co., Amsterdam, N. Y. Brooms	12,360	Jan. 9	120	637
American Caramel Co., Lancaster, Philadelphia, and York, Pa. Caramels and candies	6,551	Jan. 30	120	1445
American Caramel Co., Lancaster, Philadelphia, and York, Pa. Caramels and candies	6,553	Jan. 30	120	1445
American Glue Co., Boston, Mass. Gelatin	4,104	Jan. 30	120	1442
American Hard Rubber Co., New York, N. Y. Rubber combs	5,155-7	Feb. 20	120	2400
American Hard Rubber Co., New York, N. Y. Rubber combs	5,154	Feb. 27	120	2718
American Hard Rubber Co., New York, N. Y. Rubber combs	5,158	Feb. 27	120	2718
American Hard Rubber Co., New York, N. Y. Hard-rubber syringes	5,160	Feb. 27	120	2718
American Hard Rubber Co., New York, N. Y. Hard-rubber combs	5,163	Feb. 27	120	2718
American Hoist & Derrick Company, St. Paul, Minn. Rope-clips	13,648	Feb. 6	120	1803
American Hominy Company, Indianapolis, Ind. Product of corn in flake form	5,166-8	Feb. 6	120	1774
American Hominy Company, Indianapolis, Ind. Hominy feed	16,256	Feb. 20	120	2431
American Lead Pencil Co., New York, N. Y. Lead-pencils	15,572	Feb. 6	120	1808
American Lead Pencil Co., New York, N. Y. Lead-pencils	15,435	Feb. 20	120	2425
American Metal Polish Co., Somerville, Mass. Metal-polish	6,042	Jan. 2	120	308
American Offset Company, New York, N. Y. "Antiset-off" compositions	15,179	Jan. 30	120	1465
American Peroxide and Chemical Company, New York, N. Y. Liquid dentifrices	8,108	Jan. 9	120	625
American Printing Company, Fall River, Mass. Calicoes	2,849	Jan. 2	120	301
American Printing Company, Fall River, Mass. Calicoes	2,853	Jan. 2	120	301
American Printing Company, Fall River, Mass. Calicoes	2,855	Jan. 2	120	300
American Separator Co., Bainbridge, N. Y. Cream-separators	15,279	Jan. 9	120	646
American Terra Cotta and Ceramic Company, Chicago, Ill. Ornamental pottery-ware, comprising vases, bowls, soap-boxes, and jars	4,946	Feb. 6	120	1774
American Tool Company, Highland Park, Ky. Axes	13,262	Feb. 27	120	2726
American Varnish Company, Chicago, Ill. Varnishes	9,981	Jan. 2	120	297
American Varnish Company, Chicago, Ill. Varnishes	9,983	Jan. 2	120	297
American Washboard Company, Cleveland, Ohio. Washboards	4,882	Feb. 20	120	2400
American Woolen Company, Boston, Mass. Woolen cloths	7,813	Jan. 9	120	624
Ammo Phenix Chemical Company, St. Louis, Mo. Antipyretics	9,487	Jan. 23	120	1146

Alphabetical list of trade-mark applicants published during January and February—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Ammon & Person, Jersey City, N. J. Shortening for pastry	13,514	Feb. 6	120	1808
Amory, Browne & Co., Boston, Mass. Shade-cloths	7,896	Jan. 30	120	1447
Anda, Thorwald, Chicago, Ill. Antiseptics for internal and external use	13,525	Feb. 27	120	2726
Andrew McLean Co., Passaic, N. J. Upholstery tartile fabrics	1,546	Feb. 20	120	2396
Angar Baking Co., New York, N. Y. Macaroni, spaghetti, vermicelli, and noodles	12,802	Jan. 9	120	638
Anheuser-Busch Brewing Association, St. Louis, Mo. Beer	9,758	Feb. 6	120	1786
Anheuser-Busch Brewing Association, St. Louis, Mo. Beer	9,776	Feb. 20	120	2409
Ansted & Burk Co., Springfield, Ohio. Wheat-flour	6,734	Feb. 13	120	2097
Anti-Grime Soap Company, Elmira, N. Y. Soap	16,315	Feb. 27	120	2742
Anticongestine Company, Akron, Ohio. Plastic substances for external use	14,080	Jan. 2	120	312
Antiseptic Pharmacal Company, St. Louis, Mo. Preparation for external application and having antiseptic, analgesic, disinfectant, and deodorant properties	14,639	Jan. 30	120	1464
Arabol M'f'g Co., New York, N. Y. Turkey-red oil and soluble grease as used for dyeing, lubricating, finishing, &c	4,014	Feb. 20	120	2399
Arbuckle Bros., New York, N. Y.; Pittsburg, Pa., and Chicago, Ill. Coffee	12,939	Jan. 23	120	1151
Arbuckle Bros., New York, N. Y.; Pittsburg, Pa., and Chicago, Ill. Coffee	13,374	Jan. 29	120	1151
Armspear Manufacturing Company, New York, N Y. Railway lamps and lanterns	7,666	Feb. 6	120	1780
Armstrong Mfg. Co., Bridgeport, Conn. Pipe cutters, vises, and threading machines and stocks and dies	3,464	Feb. 13	120	2094
Artists' Model Corset Co., Cleveland, Ohio. Corsets	4,233	Feb. 13	120	2095
Aschenbach & Miller, Philadelphia, Pa., assignors to Aschenbach & Miller, Incorporated. Birdfood	9,929	Feb. 6	120	1786
Aschenbach & Miller, Incorporated, Philadelphia, Pa., assignors to Aschenbach & Miller. Blood and liver purifiers	10,004	Feb. 20	120	2410
Atlantic Novelty Co., New York, N. Y. Embroidery	10,623	Jan. 2	120	308
Auerbach & Sons, D., New York, N. Y. Candies, chocolates, and bonbons	731	Feb. 13	120	2091
Austin Cartridge Co., Cleveland, Ohio. Shotgun-shells	3,751	Feb. 20	120	2399
Austin, Young & Co., Chelsea, Mass. Crackers, cakes, and bread	14,431	Feb. 13	120	2110
Autopiano Company, New York, N. Y. Self-playing pianos and piano-players	4,705	Feb. 6	120	1773
Ayers & Sons, William, Philadelphia, Pa. Horse blankets, sheets, covers, and nets, saddle-housings, lap-robes, and dusters	15,509	Feb. 20	120	2426
Aztec Turquois Company, New York, N. Y. Genuine mined and cut turquoise	12,098	Feb. 6	120	1801
B. Maktoyer Co., New York, N. Y. Silk and mixed cotton and silk piece goods	7,290	Jan. 9	120	622
B. F. Avery & Sons, Louisville, Ky. Plows, harrows, cultivators, and planters	8,057	Feb. 27	120	2723
B. F. Avery & Sons, Louisville, Ky. Plows, cultivators, and harrows	12,631	Feb. 27	120	2723
B. F. & H. L. Sweet Company, Fond du Lac, Wis. Sleds and sleighs	6,662	Feb. 27	120	2721
B. H. Bacon Co., Rochester, N. Y. Remedy for the nerves	13,155	Feb. 6	120	1801
Babcock & Co., John, Boston, Mass. Varnishes	8,080	Feb. 6	120	1781
Bachman, Joseph S., Reading, Pa. Pretzels	12,161	Jan. 30	120	1458
Bask and Greiwe, Cincinnati, Ohio. Whisky	9,084	Jan. 2	120	308
Bacon Brothers, Seattle, Wash. Carbon copying paper	7,480	Feb. 20	120	2404
Baker Castor Oil Company, New York, N. Y. Castor-oil	7,184	Feb. 27	120	2722
Baker Extract Company, Portland, Me., and Springfield, Mass. Flavoring extracts and preparations	2,882	Feb. 6	120	1770
Baker, James G., Fairfield, Ill. Remedy for the cure or alleviation of headaches and liver disorders	2,480	Feb. 20	120	2397
Baker, William H., Winchester, Va. Chocolate and cocoa used as a beverage and for cooking purposes, and sweet chocolate in cake form	10,374	Feb. 6	120	1788
Ballard, James F., St. Louis, Mo. Topical remedies for skin diseases, inflammations, and eruptions	8,474	Feb. 13	120	2101
Ballard, James F., St. Louis, Mo. Liniment	7,316	Feb. 20	120	2403
Ballard, James F., St. Louis, Mo. Non-irritant germicide and antiseptic compound for internal and external and hypoderm o administration	7,317	Feb. 20	120	2404
Ballard, James F., St. Louis, Mo. Medicine employed as a tonic, appetizer, and strengthener	9,121	Feb. 27	120	2726
Ballou, Harry G., Rhyolite, Nev. Medicinal preparations for curing diseases of the blood, brain, and nerves	11,304	Jan. 16	120	935
Banner Cigar M'f'g. Co., Detroit, Mich. Cigars	12,408	Jan. 16	120	936
Barclay & Barclay, New York, N. Y. Medicinal soap	15,353-4	Jan. 23	120	1153
Barnet Leather Co , New York, N. Y Dull-black and colored calf-leather	7,773	Jan. 30	120	1463
Barrett Manufacturing Company, New York, N. Y. Ready tar-and-felt roofing	15,286	Jan. 16	120	939
Barrett Manufacturing Company, New York, N. Y. Building, roofing, and sheathing paper	11,570	Feb. 6	120	1783
Barrett Manufacturing Company, New York, N. Y. Tar and pitch	11,571	Feb. 6	120	1783
Barrett Manufacturing Company, New York, N. Y. Roofing-felt	11,572	Feb. 20	120	2415
Barstow Stove Company, Providence, R. I. Cooking and heating stoves	16,584	Feb. 27	120	2744
Bartel, Rudolph F., New York, N. Y. Suspenders for wearing-apparel	13,018	Jan. 30	120	1451
Barta, Wygant & Brown, Hornellsville, N. Y. Electric motors	7,543	Jan. 30	120	1447
Bates, Theodore C., North Brookfield, Mass. Spring-water	14,029	Feb. 6	120	1804
Baumeister, Hattie, New York, N. Y. Pianos	11,385	Jan. 30	120	1455
Bautz, Edward F., Pittsburg, Pa. Liniment for bruises, cuts, &c	12,949	Feb. 27	120	2737
Baxter, Marion B., Seattle, Wash. External and internal applications for catarrh, piles, chapped hands, and lameness of the body	7,582	Feb. 27	120	2723
Bay State Milling Company, Winona, Minn., and Boston, Mass. Wheat-flour	12,200	Jan. 30	120	1458
Bay State Optical Company, Attleboro, Mass. Spectacle and eyeglass frames	13,492	Feb. 6	120	1808
Beam, John H., Early Times, Ky. Whisky	4,074	Feb. 13	120	2094
Beam, Moses L., Salisbury, N. C. Whisky	15,583	Feb. 20	120	2426
Beaumont, Ferdinand, New York, N. Y. Croustades	7,595	Jan. 9	120	625
Beaumont, Ferdinand, New York, N. Y. Croustades	7,596	Feb. 13	120	2099
Becker, Simon, Spartanburg, S. C. Ginger-ale	13,654	Feb. 20	120	2421
Beerveld & Lovin, New York, N. Y. Lubricating-grease	15,089	Jan. 23	120	1153
Bentley & Olmsted Company, Des Moines, Iowa. Rubber boots, shoes, and sandals	7,453	Feb. 6	120	1779
Bentley & Olmsted Company, Des Moines, Iowa. Leather boots and shoes	7,454	Feb. 13	120	2098
Berg, Arthur, New York, N. Y. Waterproof textile fabrics	6,430	Jan. 2	120	304
Berg, Arthur, New York, N. Y. Covert cloths, vesetians, broadcloths, and cheviots	6,431	Jan. 30	120	1445
Berger & Co., Albert, New York, N. Y. Watch-glasses	10,257	Feb. 6	120	1788
Berry & Berry Co., Columbus, Ohio. Whisky	7,706	Jan. 2	120	304
Berzelius Filter Gesellschaft, G. m. b. H., Cöln, Germany. Filtering apparatus and filter-cylinders	8,805	Feb. 6	120	1783
Bethel, Thomas, Hamilton, Ohio. Whisky	6,371	Jan. 2	120	308
Bevington Malting Co., Jno., Louisville, Ky. Malt extract	9,497	Jan. 9	120	622
Beyer Bros. Co., Manchester, Ind. Butter	10,128	Feb. 13	120	2102
Bickmore Gall Cure Company, Old Town, Me. Salve	10,699	Jan. 30	120	1453
Bidgood, Bros. & Co., Lynchburg, Va. Whisky	13,397	Feb. 6	120	1808
Bigelow Carpet Company, Boston, Mass. Woven carpets and rugs	12,445	Feb. 6	120	1788
Bigwood, H. Bros., Sons & Co., St. Joseph, Mo. Whisky	5,128	Feb. 27	120	2715
Bird Archer Company, New York, N. Y. Chemical compounds for the removal of grease, oil, and scale from boilers and the prevention of the formation of new scale, &c., in boilers	7,580	Feb. 6	120	1779

Alphabetical list of trade-mark applicants published during January and February—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Bird, Clinton H., New Haven, Conn. Instrument for mechanically measuring the capacity of the lungs in cubic inches	12,089	Jan. 23	120	1149
Bird & Son, F. W., Walpole, Mass. Waterproof papers	13,130	Jan. 30	120	1461
Birdsey & Somers, New York, N. Y. Corsets	14,439	Feb. 6	120	1805
Birdsey & Somers, New York, N. Y. Corsets	11,062	Feb. 20	120	2413
Birmingham Small Arms Co., Ld., Birmingham, England. Cycles, motor-cycles, and parts thereof	6,108	Feb. 6	120	1776
Birmingham Small Arms Co. Ltd., Birmingham, England. Automobiles and their component parts	15,286	Feb. 6	120	1810
Blabea, Fred S., Benton Harbor, Mich. Fabrics of silk and wool, silk and cotton, or silk and linen	13,171	Feb. 13	120	2108
Bischoff & Co., C., New York, N. Y. Anilin dyestuffs	11,288	Feb. 20	120	2414
Bischoff, Dr. Ernst, New York, N. Y. Iron tonics	15,289	Feb. 13	120	2111
Bishop, Herbert F., Washington, D. C. Compound for the treatment of affections of the respiratory passages	9,846	Feb. 6	120	1786
Bissell, Leavitt P., Suffield, Conn. Cigars	16,020	Feb. 20	120	2430
Black Diamond Manufacturing Company, Cincinnati, Ohio. Belt-dressings	6,400-1	Feb. 13	120	2095
Black Diamond Medicine Company, Cowlesville, N. Y. Medical preparations for coughs and for the cure of throat and lung diseases	7,480	Feb. 13	120	2096
Blackburn, Ira R., Dayton, Ohio. Castor-oil in the form of pellets	11,046	Jan. 16	120	894
Blair, Henry A., San Antonio, Tex. Remedies, as teas &c., for the cure and alleviation of liver and kidney affections, headache, coughs, &c	2,549	Feb. 6	120	1770
Bland, Frank G., Clarksburg, W. Va. Liquid vegetable compound for the cure of rheumatism	9,013	Feb. 6	120	1783
Bligh, Martin J., Logansport, Ind. Whisky	3,814	Jan. 30	120	1441
Bligh, Martin J., Logansport, Ind. Whisky	3,811	Feb. 13	120	2094
Block, Harry E., St. Louis, Mo. Whisky	9,126	Feb. 6	120	1784
Block Light Company, New York, N. Y. Incandescent mantles for gas-lamps	15,596	Feb. 6	120	1808
Blood & Co., John, Philadelphia, Pa. Hosiery	8,265	Jan. 9	120	625
Blue Rock Mineral Spring Company, Louisville, Ky. Natural, concentrated, and carbonated mineral water	14,215	Jan. 30	120	1463
Bluthenthal & Bickart, Atlanta, Ga. Whisky	3,254	Feb. 6	120	1771
Boekel and Company, William, Philadelphia, Pa. Laryngoscopes	3,218	Jan. 16	120	878
Boettger, Frederick, Peoria, Ill. Medicine for stopping excessive perspiration	10,644	Jan. 9	120	633
Boker, Carl F., New York, N. Y. Scissors	12,549	Jan. 23	120	1150
Böker & Co., Heinrich, Solingen, Germany. Pocket-knives	7,608	Feb. 6	120	1780
Bon Ami Company, New York, N. Y. Scouring-soap	14,208	Feb. 6	120	1805
Bond, Harry L., Wheeling, W. Va. Leather boots and shoes	12,898	Jan. 30	120	1460
Bonyman, Frederick E., Boston, Mass. Medicine for diphtheria and rheumatism	8,742	Jan. 9	120	626
Boogher, Force & Goodbar Hat Company, St. Louis, Mo. Hats	4,774	Feb. 6	120	1773
Boorum & Pease Company, New York, N. Y. Blank books, pads, and tablets	12,043	Feb. 27	120	2731
Borated Specialty Company, New York, N. Y. Catamenial bandages	15,924	Feb. 6	120	1811
Borden's Condensed Milk Co., New York, N. Y. Condensed milk	11,102	Jan. 2	120	309
Borden's Condensed Milk Co., Jersey City, N. J., and New York, N. Y. Condensed milk and evaporated cream	13,702	Feb. 13	120	2108
Boston Beer Company, Boston, Mass. Ale	12,514	Feb. 27	120	2733
Boston & Lockport Block Company, Boston, Mass. Pulleys, blocks, and parts thereof	7,232	Feb. 6	120	1778
Boston Molasses Co., Boston, Mass. Molasses	5,664	Jan. 23	120	1142
Boucher, William, Baltimore, Md. Cigars	3,805	Jan. 9	120	617
Bovril Limited, London, England. Extracts and essences of meat	7,714	Feb. 27	120	2723
Boynton, Frank. G., Boston, Mass. Liniment for external and internal use for the curing and alleviation of various human ailments	5,122	Jan. 2	120	302
Boynton, Frank. G., Boston, Mass. Purgative medicine	5,123	Jan. 2	120	302
Boynton, Frederic G., Boston, Mass. Condition-powders for the cure and alleviation of ailments of animals, stock, and poultry	8,062	Jan. 30	120	1448
Bradham, Caleb D., Newbern, N. C. Liquid preparation for the treatment of headaches, &c	7,979	Feb. 13	120	2090
Bradley, Ada B., San Francisco, Cal. Diuretic, laxative, diaphoretic, and tonic medicine	6,072	Feb. 20	120	2405
Bradley & Son, D. R., New York, N. Y. Toilet soap	15,273	Jan. 23	120	1153
Brasburn Steel Company, Brasburn, Pa. Cast-steel	11,294	Feb. 27	120	2729
Brandreth Co., Cassing-on-Hudson, N. Y. Proprietary remedy for external application to animals	9,303	Feb. 20	120	2408
Brandt, L. A. H., Buffalo, N. Y. Hair-restorer	15,126	Jan. 30	120	1465
Brasear Company. (See Hinton, Jno., assignor.)				
Brater, John K., New York, N. Y. Remedies for asthma	14,078	Jan. 2	120	312
Brauer & Lowenthal, New York, N. Y. Leather shoes	12,546	Jan. 2	120	311
Braun & Fitts, Inc., Chicago, Ill. Butterin or oleomargarin	1,207	Feb. 6	120	1768
Brennan, Michael F., Washington, D. C. Whiskies	12,416	Feb. 20	120	2417
Briggs & Co., John, Boston, Mass. Bronze-green paints	16,097	Feb. 13	120	2113
Bristol-Myers Company, Brooklyn, N. Y. Saline laxative, uric-acid solvent, hepatic stimulant, and eliminator of toxic products	6,555	Feb. 27	120	2721
Brittain Tobacco Works, Columbia, Tenn. Smoking-tobacco	16,283	Feb. 20	120	2431
Brittain Tobacco Works, Columbia, Tenn. Smoking-tobacco	16,284	Feb. 27	120	2742
Brown & Co., H. H., Boston, Mass. Leather boots and shoes	10,847	Feb. 6	120	1790
Brown, Lewis C., New York, N. Y. Liquid paint for metallic roofs	5,732	Jan. 2	120	303
Brown & Sharpe Manufacturing Company, Providence, R. I. Hair-clippers	15,954	Feb. 6	120	1811
Brown & Sons, J. T. S., Louisville, Ky. Whiskey	8,281	Jan. 9	120	625
Brunel, Charles, Cleveland, Ohio. Whisky	8,554	Feb. 20	120	2406
Bryden Horse Shoe Company, Catasauqua, Pa. Horseshoes	15,290	Jan. 30	120	1466
Buchanan Foster Company, Philadelphia, Pa. Ready felt roofing	15,583	Feb. 6	120	1810
Buckley, Kate A., Washington, D. C. Whisky	7,204	Jan. 2	120	304
Buffalo Pure Food Company, Buffalo, N. Y. Cereal coffee	15,084	Feb. 13	120	2111
Burd, Monte W., Louisville, Ky. Dress-linings	11,449	Jan. 23	120	1148
Burkstrom, Carl O. F., Chicago, Ill. Tonic, blood-purifier, and liver and kidney renovator	5,004	Jan. 30	120	1443
Burrus Mill & Elevator Company, Fort Worth, Tex. Wheat-flour	14,141	Jan. 23	120	1152
Bush, Louis, Washington, D. C. Whisky	11,143	Jan. 16	120	894
Bustos-Bottler, (Successor to.) New York, N. Y. Cigarettes	5,838	Feb. 6	120	1783
Bye, David M., Indianapolis, Ind. Medicated oils	12,451	Feb. 27	120	2733
Byfield Snuff Co., Byfield, Mass. Snuff	5,884	Feb. 6	120	1775
C. F. Mueller Co., Jersey City, N. J. Egg noodles and macaroni	12,208	Jan. 30	120	1466
C. H. Evans & Sons, Hudson, N. Y. Ale	13,947	Jan. 16	120	937
C. L. Hawthaway & Sons, Incorporated, Portland, Me., and Boston, Mass. Liquid dressing for boots and shoes	10,898	Jan. 9	120	633
C. L. Hawthaway & Sons, Incorporated, Portland, Me., and Boston, Mass. Liquid dressing for leather boots and shoes	10,899	Jan. 9	120	633
C. M. Robbins Co., Attleboro, Mass. Souvenir articles, consisting of badges, brooches, medals, pins, charms, and buttons	9,005	Jan. 30	120	1446
C. S. Bell Co., Hillsboro, Ohio. Farm, church, and school bells	16,157	Feb. 6	120	1812
C. S. Morey Mercantile Company, Denver, Colo. Dried fruits, canned fruits, and vegetables	12,082	Jan. 30	120	1466

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Cable Company, Chicago, Ill. Pianos	11,696	Feb. 20	120	2415
Cahn, Belt & Co., Baltimore, Md. Whisky	154	Feb. 20	120	2395
Calhoun Distilling Company, Birmingham, Ala. Whisky	5,198	Feb. 27	120	2718
California Stock Food Co., Fresno, Cal. Ground products of alfalfa	7,268	Feb. 27	120	2722
Camel Company, Chicago, Ill. Freight-car-door hangers, fasteners, and guide-brackets	7,804-5	Feb. 6	120	1780
Camors & Co., J. B., New Orleans, La. Wheat-flour	3,454	Jan. 2	120	300
Campe & Co., Henry, San Francisco, Cal. Brandy	6,634	Jan. 9	120	622
Capewell Horse Nail Company, Hartford, Conn. Horse-nails	7,430	Jan. 9	120	623
Capewell Horse Nail Company, Hartford, Conn. Horse-nails	7,429	Jan. 23	120	1144
Capewell Horse Nail Company, Hartford, Conn. Horse-nails	7,427	Feb. 13	120	2096
Carboil Salve Co., Fayetteville, Tenn. Salve for treatment of boils and carbuncles	13,526	Jan. 23	120	1161
Carborundum Company, Niagara Falls, N. Y. Carborundum abrasive material	3,230	Jan. 9	120	617
Carey, Bayne & Smith Company, (Incorporated,) New York, N. Y. Sheetings	14,429	Jan. 9	120	640
Carhart, William B., Atlanta, Ga. Ladies', misses', and children's leather shoes	12,548	Feb. 27	120	2733
Carney, Hugh A., Boston, Mass. Coffee	14,997	Feb. 20	120	2424
Carno Chemical Co., Jersey City, N. J. Disinfectant, preservative, and bactericide	10,331	Feb. 6	120	1788
Carob Chemical Company, Philadelphia, Pa. Insect-powder	11,015	Jan. 2	120	309
Carpenter Chemical Co., Detroit, Mich. Liquid court-plaster	2,066	Jan. 30	120	1441
Carrom-Archarena Co., Ludington, Mich. Game-boards	8,538	Jan. 2	120	305
Carter-Crume Co., Limited, Niagara Falls, N. Y. Autographic registers	5,706	Jan. 16	120	879
Carter-Crume Co. Limited, Niagara Falls, N. Y. Duplicate-sales-slip books and paper pads therefor	15,891	Jan. 30	120	1466
Carter & Sons, H. W., Lebanon, N. H. Overalls	9,320-1	Jan. 9	120	628
Carter's Ink Company, Boston, Mass. Mucilage, paste, and adhesive cements	6,703	Jan. 23	120	1142
Carver File Company, Philadelphia, Pa. Files and rasps	15,264	Jan. 9	120	645
Case, Adelbert B., Springfield, Mass. Lawn-mowers	5,105	Jan. 2	120	302
Case, Adelbert B., Springfield, Mass. Lawn-mowers	14,331	Feb. 27	120	2737
Case, Alfred W., Manchester, Conn. Pulpboard containing more or less ground leather	15,687	Feb. 13	120	2113
Cassella Color Company, New York, N. Y. Dyestuff	8,078	Jan. 2	120	305
Cassella Color Company, New York, N. Y. Dyestuff	8,080	Jan. 9	120	625
Cassella Color Company, New York, N. Y. Dyestuff	8,084	Jan. 9	120	625
Cassella Color Company, New York, N. Y. Dyestuff	8,085	Jan. 23	120	1145
Cassella Color Company, New York, N. Y. Dyestuff	8,076	Jan. 30	120	1448
Catlin & Co., New York, N. Y. Cotton piece goods	13,607	Jan. 9	120	639
Cayey-Caguas Tobacco Company, New York, N. Y., and Island of Porto Rico. Cigars, cheroots, and cigarettes made of cigar-tobacco	15,493	Jan. 30	120	1466
Cayey Caguas Tobacco Company, New York, N. Y. Cigars, cheroots, and cigarettes made of cigar-tobacco	13,387	Feb. 6	120	1802
Central Kansas Milling Company, Lyons, Kans. Wheat-flour	15,808	Feb. 6	120	1810
Century Inkstand Company, New York, N. Y. Inkstands	15,566	Feb. 6	120	1808
Century Pen Company, Whitewater, Wis. Fountain-pens	3,176	Feb. 13	120	2094
Challenge Cutlery Co., Bridgeport, Conn. Razors	1,781	Feb. 6	120	1769
Challenge Cutlery Corporation, Bridgeport, Conn. Scissors and shears	12,019	Jan. 2	120	310
Challenge Cutlery Corporation, Bridgeport, Conn. Pocket-knives	12,020	Jan. 2	120	310
Chamberlain Medicine Co., Des Moines, Iowa. Remedy for colic, cholera, diarrhea, &c	9,570	Jan. 16	120	883
Chambers, John J., Seattle, Wash. Liquid medical compound used for painting or applying to diseased skin and abnormal growths upon the skin or body	10,000	Feb. 6	120	1786
Chandler, Justin E., Brockton, Mass. Wax for factory use in finishing the bottoms of boots and shoes during their manufacture	15,345	Jan. 23	120	1153
Chapin & Gould Paper Co., Springfield, Mass. Writing-paper	7,343	Feb. 13	120	2098
Chapin-Stephens Company, Pine Meadow, Conn. Rules, yardsticks, and board and log measures	724	Feb. 20	120	2395
Charles & Co., New York, N. Y. Tea	16,294	Feb. 27	120	2742
Charles Dennehy & Company, Chicago, Ill. Whisky	8,235	Feb. 13	120	2100
Charles Dennehy & Company, Chicago, Ill. Whisky	8,237	Feb. 20	120	2406
Charles Dennehy & Company, Chicago, Ill. Whisky	8,236	Feb. 27	120	2723
Charles Hammesfahr Company, Chicago, Ill. Blood tonic or nutriment	10,081	Jan. 9	120	631
Charles Jacquin et Cie., Inc., New York, N. Y. Corn brandy	7,243	Feb. 13	120	2098
Charles Jacquin et Cie., Inc., New York, N. Y. Dry gin	7,247	Feb. 13	120	2098
Charles Jacquin et Cie., Inc., New York, N. Y. Vermouth	10,158	Feb. 13	120	2102
Charles Smith Company, Chicago, Ill. Hot-air heating-furnaces	16,607	Feb. 27	120	2744
Chas. A. Stevens & Bros., Chicago, Ill. Underwear, drawers, tights, vests, and union-suits	9,206	Feb. 6	120	1784
Chas. E. Meyer & Co., Freeport, Ill. Cider vinegar	9,665	Feb. 6	120	1786
Chas. H. Gillespie & Sons, Jersey City, N. J. Varnishes, finishes, oil-finishes, japans, and fillers	1,671	Feb. 13	120	2092
Chas. H. Phillips Chemical Co., New York, N. Y. Acid phosphate and a syrup of phosphates	1,176	Feb. 20	120	2396
Chemische Fabrik für Leim & Dünger "Zimmermann," Ludwigshafen A. R., Germany. Glue	14,170	Jan. 30	120	1463
Chemische Industrie A.-G. St. Margrethen, St. Margrethen, Switzerland. Chemical preparations for use in making lemonades	15,821	Feb. 27	120	2740
Chester Knitting Mills, Chester, Ill. Boys' heavy ribbed hose	14,000	Feb. 27	120	2738
Chesterton & Co., A. W., Boston, Mass. Boiler-tube cleaners or scrapers	12,742	Jan. 23	120	1151
Chicago Distilling Co., Chicago, Ill. Whisky	10,043	Feb. 27	120	2727
Chicago Feather Duster Co., Chicago, Ill. Feather dusters	15,542	Feb. 6	120	1808
Chiquola Manfg. Co., Honea Path, S. C. Cotton piece goods	15,253	Feb. 20	120	2425
Chivers, Cedric, New York, N. Y. Cloth for bookbinding purposes	8,280	Jan. 2	120	302
Christian Moerlein Brewing Co., Cincinnati, Ohio. Beer	14,562	Feb. 13	120	2110
Citizens' Wholesale Supply Co., Columbus, Ohio. Desiccated cocoanut	11,654	Jan. 9	120	635
Citizens' Wholesale Supply Co., Columbus, Ohio. Ground spices	7,262	Jan. 23	120	1143
Clark, Coggin and Johnson Company, Boston, Mass. Coffee	11,946	Feb. 27	120	2731
Clark-Hutchinson Company, Boston, Mass. Leather boots, shoes, and slippers	6,995-1	Jan. 2	120	304
Clark-Hutchinson Company, Boston, Mass. Leather boots, shoes, and slippers	6,953	Jan. 2	120	304
Clarke Bros., Scranton, Pa. Leather shoes	11,309	Feb. 20	120	2414
Clarke's-Pyramid and Fairy Light Company, Limited, London, England. Lamps	7,434	Jan. 16	120	880
Clarke's-Pyramid and Fairy Light Company, Limited, London, England. Candle-lamps	7,436	Jan. 16	120	880
Clarke's-Pyramid and Fairy Light Company, Limited, London, England. Short thick candles	7,431-3	Jan. 23	120	1144
Clauss, Henrie, Fremont, Ohio. Shears and scissors	7,464	Feb. 20	120	2404
Clemson, George N., Middletown, N. Y. Saws	6,000	Jan. 30	120	1444
Clendinning, Francis, Brooklyn Hills and Richmond Hill, N. Y. Powder remedy for catarrh and similar diseases of the head and nose	15,666	Feb. 20	120	2426
Cleveland & Whitehill Company, Newburgh, N. Y. Overalls, aprons, coats, and pants	1,763	Jan. 30	120	1440
Clifton Manufacturing Co., Clifton, S. C. Cotton piece goods	6,382	Feb. 6	120	1777
Climax Cleaner Mfg. Co., Cleveland, Ohio. Fresco, calcimine, and wall-paper cleaner	9,782	Jan. 9	120	630
Cliften Iron and Steel Company, Pittsburg, Pa. Pig-iron	4,389	Feb. 20	120	2390
Clumpy, John, New York, N. Y. Paper bags	6,020	Jan. 30	120	1444
Clover Leaf Wine Co., New York, N. Y. Whisky	10,665	Feb. 27	120	2726
Clowes Peabody & Co., Troy, N. Y. Outer and dress shirts, collars, and cuffs	9,233	Jan. 30	120	1449
Coe Brass Manufacturing Company, Torrington, Conn. Extruded metals	14,683	Jan. 30	120	1463
Coen, Albert R., Williamsburg, Pa. Metallic and roofing paint	15,201	Feb. 13	120	2111

Alphabetical list of trade-mark applicants published during January and February—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Cohn, George, Louisville, Ky. Whisky	8,650	Feb. 6	120	1783
Cohn, George, Louisville, Ky. Whisky	7,710	Feb. 13	120	2099
Colburn, Birks & Co., Peoria, Ill. Tonic	9,420	Jan. 9	120	629
Colburn, Birks & Co., Peoria, Ill. Cordials	9,419	Feb. 20	120	2408
Colburn, Birks & Co., Peoria, Ill. Cherry rye phosphates	9,755	Feb. 20	120	2409
Cole Lithographing Company, Chicago, Ill. Advertising-cartons	5,260	Feb. 6	120	1775
Coleman, Georgia A., Washington, D. C. Remedy for skin diseases	12,120	Feb. 13	120	2106
Coles Company, Middletown, Conn. Wheat-flour	13,600	Jan. 23	120	1151
Colgate & Co., New York, N. Y. Perfumery	13,978	Jan. 16	120	887
Collins Company, Collinsville, Conn. Axes, hatchets, and adzes	485	Jan. 9	120	615
Collins Company, Collinsville, Conn. Axes, hatchets, and adzes	376	Jan. 23	120	1139
Collins & Fairbanks Company, Boston, Mass. Hats, caps, and bonnets	2,878	Feb. 6	120	1770
Collins, William A., Cambridge, Mass. Powder for use in making ice-cream and ices	7,202	Jan. 23	120	1143
Colt's Patent Fire Arms Manufacturing Company, Hartford, Conn. Pistols	11,090	Jan. 9	120	634
Colt's Patent Fire Arms Manufacturing Company, Hartford, Conn. Pistols	11,093	Jan. 23	120	1143
Colt's Patent Fire Arms Manufacturing Company, Hartford, Conn. Pistols	11,093-4	Jan. 30	120	1454
Columbia Hosiery Co., New York, N. Y. Stockings	12,098	Jan. 23	120	1149
Columbia Refining Co., New York, N. Y. Paint-oils	5,013	Feb. 27	120	2717
Columbian Rope Company, Auburn, N. Y. Rope	10,962	Jan. 30	120	1454
Comfort Heel Cushion Company, Philadelphia, Pa. Air-cushioning heel-pads and insoles for boots and shoes	10,969	Jan. 16	120	884
Compagnie Générale de Phonographes Cinématographes et Appareils de Précision, Paris, France. Photographic films	15,738	Feb. 6	120	1809
Cone, David R., New Carlisle, Ohio. Bread	11,676	Feb. 27	120	2730
Connelly Iron Sponge and Governor Company, New York, N. Y. Iron oxid	7,964	Feb. 13	120	2099
Conrad & Company, Felix, New York, N. Y. Plate, dry-plate, and window glass	15,535	Feb. 6	120	1807
Consumers Park Brewing Co., New York, N. Y. Lager-beer	15,130	Jan. 30	120	1465
Consumers Supply Company, St. Louis, Mo. Coffee	12,400	Feb. 6	120	1796
Continental Caoutchouc Company, New York, N. Y. India-rubber bags and pouches	9,006	Feb. 20	120	2407
Continental Caoutchouc Company, New York, N. Y. India-rubber bags and pouches	11,010	Feb. 27	120	2729
Cook, Arthur J., Westfield, Mass. Whips	16,040	Feb. 13	120	2113
Cook & Bernheimer Co., New York, N. Y. Bottles of square or cubical form	7,760	Jan. 30	120	1448
Cooper & McKee, New York, N. Y. Refrigerators	11,067	Feb. 20	120	2413
Cooper, Wells & Co., St Joseph, Mich. Hosiery	6,329	Jan. 30	120	1445
Cooper, Wells & Co., St. Joseph, Mich. Hosiery	6,330	Feb. 27	120	2720
Corning and Company, Peoria, Ill. Whisky	3,737	Feb. 20	120	2398
Corning and Company, Peoria, Ill. Whisky	3,739	Feb. 20	120	2399
Corona Kid Company, assignor to Corona Kid Manufacturing Company, Boston, Mass. Finished or dressed leather	11,802-3	Feb. 6	120	1792-3
Corona Kid Manufacturing Company. (See Corona Kid Company, assignor.)				
Coronet Corset Co., Jackson, Mich. Corsets, corset-waists, dress-stays, &c	6,667	Feb. 27	120	2721
Cotton States Belting & Supply Co., Atlanta, Ga. Babbitt and antifriction metal	16,036	Feb. 6	120	1812
Couch Brothers & J. J. Eagan Co., Atlanta and Eastpoint, Ga. Collars, collar-pads, and backbands	6,160	Feb. 6	120	1777
Courtenay Mfg. Co., Newry, S. C. Sheetings	14,421	Feb. 6	120	1805
Cover, Harvey S., South Bend, Ind. Respirators	7,647	Jan. 23	120	1144
Craddock-Terry Company, Lynchburg, Va. Leather boots and shoes	12,930	Feb. 20	120	2419
Crawford, John E., Chicago, Ill. Switchboard-cords	12,122	Jan. 2	120	311
Crescent Electrical & Manufacturing Company, Valparaiso, Ind. Electric time-switches	15,250	Jan. 16	120	889
Crescent Macaroni & Cracker Co., Davenport, Iowa. Macaroni, spaghetti, vermicelli, and noodles	11,699	Feb. 27	120	2730
Crescent Manufacturing Co., Seattle, Wash. Baking-powder	3,058	Feb. 13	120	2093
Crew Levick Co., Philadelphia, Pa. Lubricating-oils	11,611	Feb. 6	120	1791
Crigler & Crigler, Covington, Ky. Whisky	6,515	Jan. 16	120	879
Cross, John H., Lynn, Mass. Leather boots and shoes	9,589	Jan. 9	120	629
Crouse-Hinds Company, Syracuse, N. Y. Electric-conduit fittings for the branching of electric wires	15,646-7	Jan. 23	120	1154
Crowley, Charles H., New York, N. Y. Needles	11,710	Jan. 9	120	635
Crown Oil & Wax Company, Wilmington, Del., and Baltimore, Md. Liquid wax used in shoemaking	12,655	Feb. 13	120	2107
Crown Pipe and Foundry Co., Jackson, Ohio. Soil-pipes, fittings, and connections therefor	10,230	Jan. 16	120	883
Croser & Son, Samuel A., Upland, Pa. Cotton plaids, checks, and stripes, also cotton cheviots	3,646	Jan. 2	120	301
Croser & Son, Samuel A., Upland, Pa. Cotton plaids, checks, and stripes, also cotton cheviots	3,646	Feb. 27	120	2716
Crucible Steel Company of America, Pittsburg, Pa. Steel bars, rods, billets, blooms, sheets, plates, slabs, strips, blocks, and forgings	5,512	Feb. 6	120	1775
Crucible Steel Company of America, Pittsburg, Pa. Steel bars, rods, billets, blooms, sheets, plates, slabs, strips, blocks, and forgings	5,515	Feb. 6	120	1775
Crucible Steel Company of America, Pittsburg, Pa. Steel bars, rods, billets, blooms, sheets, plates, slabs, strips, blocks, and forgings	5,517	Feb. 6	120	1775
Cudahy Packing Co., Chicago, Ill., and South Omaha, Nebr. Lard	14,302	Jan. 9	120	640
Cudahy Packing Co., Chicago, Ill., and South Omaha, Nebr. Beef extract	14,303	Jan. 9	120	640
Cudahy Packing Co., Chicago, Ill., and South Omaha, Nebr. Lard	14,305	Jan. 9	120	640
Cudahy Packing Co., Chicago, Ill., and South Omaha, Nebr. Soap powder combined with mineral ingredients	12,635	Jan. 30	120	1459
Cudahy Packing Co., Chicago, Ill., and South Omaha, Nebr. Mince-meat	14,304	Feb. 27	120	2737
Cudahy Packing Co., Chicago, Ill., and South Omaha, Nebr. Soap	14,306	Feb. 27	120	2737
Cuesta, Rey & Co., West Tampa, Fla. Cigars	13,270	Jan. 16	120	886
Cuesta, Rey & Co., West Tampa, Fla. Cigars	13,269	Feb. 20	120	2420
Currier-Todd Co., Lawrence, Mass Butter	13,485	Feb. 6	120	1802
Curtis & Marble Machine Co., Worcester, Mass. Pickers and burring-machines and attachments and parts thereof for working wool, &c	13,968-9	Jan. 2	120	312
D. Kelly Co., Columbus, Ohio. Whisky	9,713	Jan. 2	120	306
D. Ransom, Son and Company, Buffalo, N. Y. Ointment for allaying inflammation and healing wounds	5,864	Feb. 20	120	2401
D. Ransom, Son and Company, Buffalo, N. Y. Liniment for sprains, bruises, inflammation, &c	5,865	Feb. 20	120	2401
D. Ransom, Son and Company, Buffalo, N. Y. Internal and external remedy for neuralgia, rheumatism, &c	5,862	Feb. 27	120	2719
D. E. Wood Butter Co., Elgin, Ill. Butter	13,763	Feb. 6	120	1809
Daggett Remedy Company, Boston, Mass. Remedy for distemper	13,209	Feb. 20	120	2421
Dahl, Harald A. C., New York, N. Y. Dyspepsia-cakes	12,009-9	Jan. 30	120	1457
Dairymen's Supply Company, Philadelphia, Pa. Milk-coolers	5,216	Feb. 6	120	1774
Dallas Brewery, Dallas, Tex. Non-intoxicating malt beverage	10,826	Feb. 6	120	1799
Danbury Hat Company, New York, N. Y. Hats of all kinds	4,555	Feb. 6	120	1773
Daniel, Jno. B., Atlanta, Ga. Flavoring-syrup for beverages	5,259	Feb. 6	120	1776
Dans, Felix F., New York, N. Y. Hectographic printing apparatus	3,489	Jan. 2	120	300
Davenport Ice Chipping Machine Co., Davenport, Iowa. Ice chipping, cutting, shaving, and crushing machines	12,482	Feb. 20	120	2417

Alphabetical list of trade-mark applicants published during January and February—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
David B. Crockett Company, Bridgeport, Conn. Varnishes	10,981	Feb. 13	120	2108
Davies, Rose & Co., Ltd., Boston, Mass. Cough-drops	14,242	Jan. 23	120	1152
Davis, B. T., Huntington, W. Va. Liquid preparation for the cure of rheumatism	10,602	Feb. 20	120	2411
Davis, Barker & Company, Portland, Me. Canned fruits and vegetables	9,077	Feb. 20	120	2407
Davis, E. C., Rockland, Me. Compound for removing grease, paint, tar, and the like from fabrics	10,716	Feb. 27	120	2726
Davis Milling Comp., St. Joseph, Mo. Self-raising flour	12,280	Feb. 6	120	1795
Davison, John T., Pueblo, Colo. Medicinal tea	7,495	Feb. 6	120	1779
De Laval Separator Company, New York and Poughkeepsie, N. Y. Cream-separators	9,449	Jan. 2	120	306
De Laval Separator Company, New York and Poughkeepsie, N. Y. Cream-separators	9,451	Jan. 9	120	630
De Long Hook & Eye Company, Philadelphia, Pa. Hooks and eyes	18,294-5	Feb. 13	120	2111
Dexter Medicine Co., Dr., Paterson, N. J. Remedy for chills, fever and ague, and malarial diseases	7,347	Jan. 16	120	880
Deimel Linen-Mesh System Company, San Francisco, Cal. Undershirts and drawers and union suits	7,857	Jan. 30	120	1445
Deimel Linen-Mesh System Company, San Francisco, Cal. Undershirts and drawers and union suits	7,869	Feb. 27	120	2723
Deisel-Wemmer Co., Lima, Ohio. Cigars	2,939	Feb. 20	120	2398
Deitsch, Isaac N., New York, N. Y. Finished and ornamental chests, boxes, and cabinets for silverware, cigars, &c.	9,344	Feb. 27	120	2726
Delaney & Co., J. M., New York, N. Y. Sole-leather	14,441	Feb. 27	120	2737
Delaware Chair Co., Delaware, Ohio. Double-caned chairs and rockers	9,900	Jan. 30	120	1451
Dempsey & Co., P., Boston, Mass. Gin	12,670	Feb. 27	120	2733
Dempsey & Co., P., Boston, Mass. Whisky	12,672	Feb. 27	120	2734
Dempsey & Co., P., Boston, Mass. Cordials	12,674	Feb. 27	120	2734
Dempsey & Co., P., Boston, Mass. Whisky	12,676	Feb. 27	120	2734
Dempsey & Co., P., Boston, Mass. Whisky	12,678	Feb. 27	120	2734
Denner, Goodhart & Scheuer, New York, N. Y. Stiff and soft felt and straw hats	11,017-18	Feb. 13	120	2104
Denner, Goodhart & Scheuer, New York, N. Y. Stiff and soft felt and straw hats	11,016	Feb. 20	120	2412
Dermatine Company Limited, Camberwell, London, England. Rubber substitutes	6,765	Jan. 2	120	304
Dessenberg & Co., B., Kalamazoo, Mich. Tea	2,124	Feb. 13	120	2092
Diagraph Company, St. Louis Mo. Machines for cutting stencils	10,001	Feb. 6	120	1786
Diamond Elevator & Milling Company, Minneapolis, Minn. Cornmeal, both bolted and granulated	12,386	Jan. 23	120	1150
Diamond Elevator & Milling Company, Minneapolis, Minn. Wheat, Graham, and rye flour	1,138	Feb. 20	120	2395
Dieckerhoff, Raffloer & Co., New York, N. Y. Toilet-pins	4,578	Jan. 16	120	878
Dieckerhoff, Raffloer & Co., New York, N. Y. Buttons	4,579	Jan. 30	120	1442
Dieckerhoff, Raffloer & Co., New York, N. Y. Braids and tapes	4,580	Feb. 27	120	2716
Dilworth, Gilbert & Towne, Incorporated, New York, N. Y. Metal bars, sheets, plates, hoops, bands, billets, blooms, slabs, angles, channels, I-beams, Z-bars, T's, ingots, and pigs	2,416	Feb. 20	120	2397
Dios Tejada, Juan de, New York, N. Y. Acetylene-gas generators	12,081	Feb. 6	120	1795
Disbrow, Wm. E., New York, N. Y. Traveling toilet-cases	10,080	Jan. 9	120	631
Doerr & Reinhart, Worms, Germany. Calfskin, patent-leather, and waxed calf	10,916	Jan. 30	120	1453
Donighan & Co., St. Joseph, Mo. Cough-candy	4,016	Feb. 20	120	2399
Donley & Co., Providence, R. I. White-stone pins, ear-rings, and studs	994	Jan. 23	120	1140
Doran, Maurice J., Rochester, N. Y. Whisky	11,394	Feb. 27	120	2729
Dorothy Dodd Shoe Company, Montclair, N. J., and Boston, Mass. Women's, misses', and children's leather boots and shoes	14,371	Feb. 27	120	2737
Dort, Elisabeth, Buffalo, N. Y. Nerve-elixir	8,017	Jan. 23	120	1145
Doesh, Peter, Bridgeport, Conn. Sash-pulleys	7,477	Feb. 13	120	2099
Douglas Manufacturing Company, Newark, N. J. Liquid compound used as a substitute for court-plasters which has medicinal properties	10,711	Jan. 9	120	633
Doulton & Co., Limited, Lambeth, London, England. Pottery, earthenware, and china	7,167-8	Jan. 16	120	880
Dowling Bros., Inc., Burgin, Ky. Whisky	7,662	Jan. 2	120	304
Dr. Pepper Co., Dallas, Tex. Aerated tonic beverages and syrups for the same	14,356	Jan. 30	120	1444
Dr. Peter Fahrney & Sons Co., Chicago, Ill. Liniment	6,983	Jan. 23	120	1142
Dr. Peter Fahrney & Sons Co., Chicago, Ill. Preparation for the treatment of diseases of the stomach and bowels	6,984	Jan. 23	120	1142
Dr. Pierre Chemical Company, Chicago, Ill. Suppositories	10,301	Feb. 20	120	2410
Draper, John S., Cincinnati, Ohio. Wines	14,373	Feb. 13	120	2110
Driöli, Francesco, Zara, Austria. Maraschino	8,882	Feb. 27	120	2725
Du Montier, Alfred, Washington, D. C. Metal plates for ceilings and side walls	13,269	Feb. 27	120	2730
Dubuque Mattress Factory, Dubuque, Iowa. Mattresses	9,854	Feb. 27	120	2728
Dueber Watch Case Mfg. Co., Canton, Ohio. Watchcases	2,178	Feb. 27	120	2715
Duff & Sons, P., Pittsburg, Pa. Molasses	10,289	Feb. 20	120	2410
Dunham, Carrigan & Hayden Co., San Francisco, Cal. Flax packing	11,346	Jan. 9	120	635
Dunham, Carrigan & Hayden Company, San Francisco, Cal. Crucible, tool, drill, and pick steel	11,336	Jan. 16	120	884
Dunlap & Co. New York, N. Y. Hats and caps of all kinds	6,249	Feb. 6	120	1778
Dunlevy & Brother, Pittsburg, Pa. Hams, breakfast-bacon, sugar-cured shoulders, and dry-salt and smoked sides and bellies	4,695	Feb. 6	120	1773
Dunn, Adam E., Chicago, Ill. Periodical	15,190	Jan. 9	120	645
Dunwoody Bros. Soap Company, Denver, Colo. Soap	3,857	Jan. 23	120	1140
Dupier Manufacturing Company, St. Louis, Mo. Banjo and drum heads	12,081	Jan. 23	120	1149
Durable Wire Rope Co., Boston, Mass. Wire-rope	9,319	Jan. 2	120	306
Durkee & Co., E. R., New York, N. Y. Machine-oils	9,321	Jan. 2	120	307
Durkee & Co., E. R., New York, N. Y. Spices	3,974	Jan. 9	120	618
Durkee & Co., E. R., New York, N. Y. Salad-dressing and sauces	3,979	Feb. 6	120	1771
E. Godel & Sons, Peoria, Ill. Bacon	8,904	Feb. 27	120	2726
E. Kirstein Sons Co., Rochester, N. Y. Eyeglasses, spectacles, and parts and repairs and cases therefor	16,542	Feb. 27	120	2744
E. A. Rosenbaum Co., Cincinnati, Ohio. Whisky	6,526	Feb. 13	120	2097
E. A. Williams, Incorporated, Newark, N. J. Wheat bread	10,927	Feb. 20	120	2412
E. C. Atkins & Company, Indianapolis, Ind. Wood and cabinet scrapers	11,982	Feb. 6	120	1811
E. H. Gato Cigar Company, Key West, Fla. Cigars	9,659-1	Jan. 2	120	630
E. H. Gato Cigar Company, Key West, Fla. Cigars	10,574	Jan. 9	120	633
E. H. Gato Cigar Company, Key West, Fla. Cigars	9,294	Feb. 13	120	2102
E. J. Hart & Co., Limited, New Orleans, La. Tonics	11,396	Feb. 13	120	2104
E. O. Whitford Company, Washington, D. C. Butter	13,107	Feb. 13	120	2103
E. and T. Fairbanks and Company, St. Johnsbury, Vt. Weighing-machines and parts thereof	5,971	Feb. 13	120	2096
Eagle Lye Works, Milwaukee, Wis. Lye and potash	1,980	Jan. 9	120	617
Eagle Lye Works, Milwaukee, Wis. Lye and potash	9,894	Jan. 9	120	618
Eagle Paper Co., Richmond, Va. Bags of paper, cloth, and like materials	7,268	Feb. 6	120	1775
Eagle Pencil Company, New York, N. Y. Rubber erasers	11,986	Jan. 2	120	310
Eagle Pencil Company, New York, N. Y. Lead-pencils	12,394	Jan. 9	120	627
Eagle Pencil Company, New York, N. Y. Penholders	12,395	Jan. 9	120	627
Eagle Pencil Company, New York, N. Y. Lead-pencils	12,712	Feb. 6	120	1793

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Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Eagle Pencil Company, New York, N. Y. Lead-pencils	15,539	Feb. 6	120	1806
Eagle & Phenix Mills, Columbus, Ga. Cotton piece goods	11,902	Jan. 30	120	1456
Eagle & Phenix Mills, Columbus, Ga. Tickings	11,899-901	Feb. 6	120	1794
Eagle & Phenix Mills, Columbus, Ga. Cotton piece goods	12,566	Feb. 6	120	1797
Eagle & Phenix Mills, Columbus, Ga. Cotton plaids and stripes	12,567	Feb. 6	120	1797
Eagle & Phenix Mills, Columbus, Ga. Cotton piece goods	12,568	Feb. 6	120	1797
Eagle White Lead Co., Cincinnati, Ohio. Pure white lead	10,804	Feb. 20	120	2412
Easley Cotton Mills, Easley, S. C. Sheetings and drillings	5,656	Feb. 6	120	1776
Easley Cotton Mills, Easley, S. C. Sheetings and drills	5,656	Feb. 20	120	2401
Eastern Shore of Virginia Produce Exchange, Onley, Va. Irish and sweet potatoes	8,688	Feb. 27	120	2724
Eaton-Dikeman Co., Lee, Mass. Blotting-paper	9,639	Feb. 27	120	2726
Eclipse Cement & Blacking Co., Philadelphia, Pa. Leather and rubber cement	1,855	Feb. 20	120	2396
Economy Fuel Co., Montgomery, W. Va., and Cincinnati, Ohio. Bituminous and anthracite coal	6,222-3	Jan. 23	120	1142
Economy Manufacturing Co., New Haven, Conn. Concrete washtrays	13,050	Jan. 30	120	1461
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Drapery and upholstery textile fabrics	10,301	Jan. 9	120	632
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Printed and dyed textile fabrics	10,701	Jan. 9	120	633
Eddystone Manufacturing Company, Eddystone, and Philadelphia, Pa. Bleached, unbleached, printed, and dyed textile fabrics	9,483	Jan. 23	120	1146
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Bleached, unbleached, printed, and dyed textile fabrics	9,806	Jan. 23	120	1146
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Bleached, unbleached, printed, and dyed textile fabrics	10,551	Jan. 23	120	1147
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Bleached, unbleached, printed, and dyed textile fabrics	11,963	Jan. 23	120	1149
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Bleached, unbleached, printed, and dyed textile fabrics	9,462	Jan. 30	120	1450
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Bleached, unbleached, printed, and dyed textile fabrics	9,467	Jan. 30	120	1450
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Printed and dyed textile fabrics	9,476	Jan. 30	120	1450
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Bleached, unbleached, printed, and dyed textile fabrics	9,478	Jan. 30	120	1450
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Printed and dyed cotton textile fabrics	9,655	Jan. 30	120	1450
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Bleached, unbleached, printed, and dyed textile fabrics	9,927	Jan. 30	120	1451
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Haircloth shevriots	10,175-6	Jan. 30	120	1451
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Bleached, unbleached, printed, and dyed textile fabrics	10,302	Jan. 30	120	1452
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Drapery and upholstery cretonnes	10,307-8	Jan. 30	120	1452
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Printed and dyed textile fabrics	10,363	Jan. 30	120	1452
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Shirtings	10,364	Jan. 30	120	1453
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Bleached, unbleached, printed, and dyed textile fabrics	10,552	Jan. 30	120	1453
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Printed and dyed textile fabrics	11,253	Jan. 30	120	1455
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Bleached, unbleached, printed, and dyed textile fabrics	12,014	Jan. 30	120	1457
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Printed and dyed textile fabrics	12,234	Jan. 30	120	1458
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Printed and dyed textile fabrics	9,481	Feb. 6	120	1784
Edwin C. Burt Company, New York, N. Y. Boots, shoes, and slippers of leather or textile material, or both, and soles thereof	11,115	Feb. 6	120	1790
Egerton Bros., Baltimore, Md. Molasses	3,612	Feb. 6	120	1771
Eiseman & Company, Samuel, New York, N. Y. Ribbons	1,196	Feb. 6	120	1768
Eisenlohr & Bros., Otto, Philadelphia, Pa. Cigars and cheroots	15,787	Feb. 6	120	1809
Ekenberg Milk Products Co., Cortland, N. Y. Powdered preparation used chiefly in cooking and made from skim-milk	8,355	Feb. 6	120	1782
El Zarnac Co., New York, N. Y. Analgesics	5,342-3	Jan. 30	120	1443-4
Electric Appliance Co., Huntington, Kans. Insoles	12,217	Feb. 27	120	2732
Elgin National Watch Co., Elgin, Ill. Watches	4,826	Jan. 23	120	1141
Elgin National Watch Company, Elgin and Chicago, Ill. Watches	12,306	Jan. 9	120	627
Eli Lilly & Company, Indianapolis, Ind. Suppositories	1,115	Feb. 6	120	1768
Elias Bros. & Co., New York, N. Y. Dress-shirts as distinguished from undershirts	2,925	Jan. 2	120	300
Eminence Distillery Co., St. Paul, Minn. Whisky	11,954	Jan. 30	120	1457
Englewood Co., Chicago, Ill. Talking-machine records	16,003	Feb. 20	120	2420
Eppstein, Milton L., Fort Worth, Tex. Whisky	11,203	Jan. 30	120	1454
Eppstein, Milton L., Fort Worth, Tex. Whisky	8,938	Jan. 9	120	627
Eppstein, Milton L., Fort Worth, Tex. Whisky	8,940	Jan. 9	120	627
Eppstein, Milton L., Fort Worth, Tex. Whisky	8,941	Jan. 16	120	882
Eppstein, Milton L., Fort Worth, Tex. Bitters	8,942	Jan. 16	120	882
Epstein Bros. Co. Ltd., New Orleans, La. Whisky	13,214	Feb. 20	120	2420
Ericsson Telephone Company, New York, N. Y. Dry and wet batteries	11,980	Feb. 27	120	2731
Erlanger Bros., New York, N. Y. Undershirts and drawers	10,401	Jan. 2	120	308
Erste Wiener Export Malzfabrik Hauser & Sobotka, Stadlau, near Vienna, Austria-Hungary. Alimentary products made from malt or malt extract, in combination with other suitable substances	11,788	Feb. 6	120	1793
Ely, David J., Pittsburg, Pa. Granulated toast	13,463	Jan. 30	120	1462
Eucaline Medicine Co., Dallas, Tex. Remedy for chills and fever and affections resulting from malaria, la grippe, cold, and pneumonia	3,473	Feb. 20	120	2396
Eugene Rimmel Limited, London, England. Perfumery	11,256	Feb. 20	120	2413
Eugene Rimmel Limited, London, England. Perfumed soap	16,142	Feb. 20	120	2420
Eureka Chemical Co., Omaha, Nebr. Ointment or local anesthetic	10,899	Feb. 13	120	2103
Eureka Fire Hose Co., Jersey City, N. J. Cotton rubber-lined hose	2,461	Feb. 27	120	2715
Eureka Fire Hose Co., Jersey City, N. J. Cotton rubber-lined hose	2,462	Feb. 27	120	2715
Eureka Fire Hose Company, Jersey City, N. J. Hose pipes, nozzles, gates, and couplings	14,685	Jan. 2	120	314
Evans, Clarence D., Healdsburg, Cal. Preparation for the face and skin to remove freckles, tan, moth-patches, sunburn, &c.	13,889	Jan. 16	120	887
Evansville Tool Works, Evansville, Ind. Broadaxes, adzes, hatchets, and boys' and hunters' axes	10,264	Jan. 30	120	1462

Alphabetical list of trade-mark applicants published during January and February—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Ewa Plantation Co., Honolulu, Hawaii. Food-stuff for horses, mules, cows, hogs, and horned cattle	16,123	Feb. 6	120	1812
Exposition Cotton Mills, Atlanta, Ga. Sheetings and drillings	15,882	Feb. 13	120	2112
Exposition Cotton Mills, Atlanta, Ga. Sheetings and drillings	15,887	Feb. 13	120	2112
Exposition Cotton Mills, Atlanta, Ga. Sheetings and drillings	15,630-1	Feb. 13	120	2112-13
Exposition Cotton Mills, Atlanta, Ga. Sheetings and drillings	15,579-81	Feb. 20	120	2426
Exposition Cotton Mills, Atlanta, Ga. Sheetings and drillings	15,883	Feb. 20	120	2426
Exposition Cotton Mills, Atlanta, Ga. Sheetings and drillings	15,886-8	Feb. 20	120	2427
Exposition Cotton Mills, Atlanta, Ga. Sheetings and drillings	15,888	Feb. 20	120	2427
Exposition Cotton Mills, Atlanta, Ga. Sheetings and drillings	15,635-9	Feb. 20	120	2427
Eye-Fix Remedy Company, Detroit, Mich. Remedies for diseases of the eye	5,914	Feb. 20	120	2401
F. Korbel & Bros., Inc., San Francisco, Cal. Champagne and still wine	3,978	Jan. 9	120	627
F. Mayer Boot & Shoe Co., Milwaukee, Wis. Leather boots and shoes	14,734	Jan. 9	120	642
F. A. Poth & Sons, Incorporated, Philadelphia, Pa. Lager-beer	11,114	Jan. 9	120	634
F. B. Washburn & Co., Brockton, Mass. Biscuits	2,942	Feb. 20	120	2397
F. H. Young Company, Boston, Mass. Dressing for boots and shoes	16,254	Feb. 20	120	2431
F. H. Young Company, Boston, Mass. Dressing for boots and shoes	16,263	Feb. 27	120	2741
F. H. Young Company, Boston, Mass. Cleaning compounds for duck and canvas	16,255	Feb. 27	120	2741
F. H. Young Company, Boston, Mass. Dressing for boots and shoes	16,278	Feb. 27	120	2741
F. H. Young Company, Boston, Mass. Dressing for leather and leather boots and shoes	16,279	Feb. 27	120	2741
F. H. Young Company, Boston, Mass. Cleaning compounds for duck and canvas	16,280	Feb. 27	120	2741
F. O. Pierce Company, New York, N. Y. Liquid putty or glazing preparation	11,043	Feb. 27	120	2739
F. R. Penn Tob. Co., Reidsville, N. C. Granulated smoking-tobacco	1,211	Jan. 30	120	1440
Faber, Eberhard, New York, N. Y. Pen and pencil holders, penholders, pencil-holders, and point-protectors	14,506	Feb. 13	120	2110
Fairbanks Co., New York, N. Y. Bearing metal	1,987	Feb. 6	120	1789
Fairbanks Co., New York, N. Y. Gas and gasolene engines	1,988	Feb. 20	120	2396
Fairchild Bros. & Foster, New York, N. Y. Preparation of lecithin (obtained from brain) in combination with nucleo proteids	11,247	Feb. 6	120	1791
Fairchild Bros. & Foster, New York, N. Y. Preparation of hydrochloric acid in combination with protaid	11,249	Feb. 6	120	1791
Family Doctor Publishing Co., New York, N. Y. Monthly periodical	15,341	Jan. 16	120	889
Fandrey, Joseph, Los Angeles, Cal. Lotion used in the treatment of hernia	9,950	Jan. 23	120	1146
Farbenfabriken of Elberfeld Co., New York, N. Y. Sensitizing dyestuffs	15,502	Feb. 27	120	2739
Fastless Starch Co., Kansas City, Mo. Powdered laundry starch	10,549	Feb. 6	120	1789
Feiner, Bernard S., Springfield, Mass. Charcoal	10,333	Jan. 20	120	1452
Feirstein, Isaac, Hopkinsville, Ky. Anesthetic	11,014	Feb. 6	120	1790
Fennessey, Frank E., Boston, Mass. Shoe polishes and blackings	7,101	Jan. 2	120	304
Ferd Roddewig Sons, Davenport, Iowa. Whisky	6,254	Feb. 13	120	2097
Fidalgo Island Packing Co., Anacortes, Wash. Canned salmon	12,979	Feb. 13	120	2107
Fidalgo Island Packing Co., Anacortes, Wash. Canned salmon	12,983-3	Feb. 13	120	2107
Fidalgo Island Packing Co., Anacortes, Wash. Canned salmon	12,984	Feb. 20	120	2419
Filbean, Axel L., New York, N. Y. Blood remedies or purifiers for internal and external use	5,883	Jan. 9	120	630
Finley, Frank M., Washington, D. C. Distilled and carbonated waters	2,080	Jan. 2	120	299
Finley, Frank M., Washington, D. C. Ginger-ale, sarsaparilla, and other sweetened and flavored non-alcoholic carbonated beverages	9,735	Feb. 13	120	2102
Fischer Chemical Importing Co., New York, N. Y. Remedies for pulmonary diseases	11,119	Jan. 16	120	884
Fischer Chemical Importing Co., New York, N. Y. Remedies for pulmonary diseases	11,118	Jan. 23	120	1148
Fishel, Nessler & Co., New York, N. Y. Hair pins and ornaments	13,072	Feb. 20	120	2419
Fisher, Charles A., Chicago, Ill. Mattresses and cushions	13,201	Feb. 27	120	2735
Fisher, Robert J., Athens, Tenn. Hosiery	6,146	Jan. 2	120	303
Flash Self Lighting Mantle Co., New York, N. Y., assignor to Flash Self Lighting Mantle Company. Incandescent gas-mantles	1,218	Jan. 2	120	299
Flinn, Fitz Allen, New York, N. Y. Paper and envelops, including both ruled and unruled commercial and correspondence paper of all kinds, both sheet and bound form	13,945	Feb. 6	120	1804
Flint and Walling Manufacturing Company, Kendallville, Ind. Windmills	5,908	Feb. 27	120	2720
Follansbee Brothers Company, Pittsburg, Pa. Tin and terne plates	9,608	Feb. 13	120	2101
Follansbee Brothers Company, Pittsburg, Pa. Tin and terne plates	9,612-14	Feb. 13	120	2101
Follansbee Brothers Company, Pittsburg, Pa. Tin and terne plates	9,617-19	Feb. 13	120	2101
Follansbee Brothers Company, Pittsburg, Pa. Tin and terne plates	9,621-24	Feb. 13	120	2101-2
Follansbee Brothers Company, Pittsburg, Pa. Tin and terne plates	9,631	Feb. 13	120	2102
Follansbee Brothers Company, Pittsburg, Pa. Tin and terne plates	9,634	Feb. 13	120	2102
Follansbee Brothers Company, Pittsburg, Pa. Tin and terne plates	9,636	Feb. 20	120	2400
Follansbee Brothers Company, Pittsburg, Pa. Tin and terne plates	9,609	Feb. 20	120	2400
Follansbee Brothers Company, Pittsburg, Pa. Tin and terne plates	9,611	Feb. 20	120	2400
Follansbee Brothers Company, Pittsburg, Pa. Tin and terne plates	9,616	Feb. 20	120	2400
Ford, Perry M., Columbus, Ohio. Cure for consumption	12,008	Feb. 6	120	1795
Fort Smith Commission Company, Fort Smith, Ark. Roasted coffee	13,019	Jan. 23	120	1151
Foster, Edward C., Providence, R. I. Dyeing preparation	4,831	Jan. 9	120	619
Foster-Milburn Co., Buffalo, N. Y. Ointments	5,943	Feb. 6	120	1776
Foster Milburn Company, Buffalo, N. Y. Astringent remedies for bowel and similar complaints	12,743	Feb. 20	120	2418
Fowler, Henry E., Guilford, Conn. Liquid preparation for external application for rheumatism	14,832	Jan. 30	120	1465
Fox, Charles K., Haverhill, Mass. Women's leather and cloth slippers and shoes	10,676	Feb. 20	120	2412
Fox River Butter Company, Aurora, Ill. Butter	677	Jan. 23	120	1139
Foy, M. L., St. Louis, Mo. Brown liquid containing the active principles of eupatorium, purpureum, and viburnum opulus in solution with aromatics	11,267	Jan. 23	120	1146
Francis H. Leggett & Company, New York, N. Y. Canned meats	9,170	Jan. 16	120	882
Francis H. Leggett & Company, New York, N. Y. Syrup and molasses	9,182	Jan. 20	120	1449
Francis H. Leggett & Company, New York, N. Y. Butter	9,314	Feb. 20	120	2403
Frank, Joseph, San Jose, Cal. Canned fruits and vegetables	10,524	Jan. 16	120	883
Frank, Joseph, San Jose, Cal. Dried fruits	10,525	Jan. 16	120	884
Frank H. Fahey & Company, Philadelphia, Pa. Chewing-gum	2,371	Feb. 13	120	2093
Frank Siller Company, New York, N. Y. Leather-dressing in liquid, pasts, and solid form	14,628	Jan. 30	120	1466
Frederick Dreher, St. Paul, Minn. Bitters	9,111	Jan. 9	120	632
Frederick Loeser & Co., New York, N. Y. Sauces	12,922	Feb. 20	120	2415
Frederick Wells Co., Hartford, Conn. Electric lamps	7,289	Feb. 6	120	1780
Frederick A. Ginger Co., Philadelphia, Pa. Preparation of ginger	14,630	Feb. 13	120	2112
Frederick A. Gunckel, Cincinnati, Ohio. Whisky	4,905	Jan. 9	120	627
Frederick A. Gunckel, Cincinnati, Ohio. Whisky	5,891	Feb. 20	120	2407
Frederick A. Gunckel, Cincinnati, Ohio. Whisky	5,906	Feb. 20	120	2407
Frederick A. Gunckel, Cincinnati, Ohio. Whisky	6,888	Jan. 9	120	631
Frederick A. Gunckel, Cincinnati, Ohio. Whisky	6,898	Jan. 16	120	879
Frederick A. Gunckel, Cincinnati, Ohio. Whisky	2,883	Jan. 23	120	1140
Frederick A. Gunckel, Cincinnati, Ohio. Whisky	1,888	Feb. 13	120	2092
Frederick A. Gunckel, Cincinnati, Ohio. Whisky	10,641	Feb. 20	120	2420
Frederick A. Gunckel, Cincinnati, Ohio. Whisky	11,883	Feb. 27	120	2730
Frederick Manufacturing Co., Philadelphia, Pa. Trimmings for ladies' underwear				

Alphabetical list of trade-mark applicants published during January and February—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Friedman & Co., A., Denver, Colo. Whisky	8,287	Feb. 20	120	2408
Frink, Byron, Detroit, Mich. Corn-file	9,064	Jan. 30	120	1448
Fruit-Grower Company, St. Joseph, Mo. Monthly magazine	10,907	Feb. 20	120	2412
Fuller, Joseph, New York, N. Y. Bitters	15,140	Feb. 13	120	2111
Fuller Bros. & Co., New York, N. Y. High-speed tool-steel	2,088	Jan. 2	120	305
Fuller, Frank, New York, N. Y. Wheat-meal and wheat, oat, and barley flour	6,380	Feb. 27	120	2720
Funke, Albert H., New York, N. Y. Acetylene-lamps and generators therefor for motor-vehicles	11,808-9	Jan. 23	120	1149
G. C. Hanford Manufacturing Co., Syracuse, N. Y. Remedy for cuts, wounds, strains, sprains, bruises, burns, scalds, stings, &c.	15,235	Feb. 6	120	1807
G. & C. Merriam Company, Springfield, Mass. Dictionaries	2,066-7	Jan. 30	120	1441
Gabriel Horn Mfg. Co., Cleveland, Ohio. Automobile-horns	13,806	Feb. 6	120	1805
Gage Brothers & Company, Chicago, Ill. Hats	5,635	Jan. 23	120	1142
Galena Axle Grease Co., Galena, Ill. Cup-grease and lubricating-oils	15,307	Feb. 20	120	2425
Galena-Signal Oil Company, Franklin, Pa. Lubricating-oils	10,314	Feb. 6	120	1788
Gallagher, Charles J., Philadelphia, Pa. Whisky	12,746	Feb. 20	120	2418
Gansert, William L., Knox Island, Ill. Cheesecloths	8,376	Jan. 16	120	881
Gardiner & Son, George N., New York, N. Y. Antifouling compositions for the bottoms of steel and iron ships	630	Feb. 13	120	2091
Gardiner & Son, George N., New York, N. Y. Anticorrosive composition for application to the bottoms of steel and iron ships	1,213	Feb. 13	120	2092
Gardner Publishing Company, Cleveland, Ohio. Monthly periodical	15,356	Feb. 27	120	2730
Garretson & Co., F. P., Newport, R. I., and New York, N. Y. Hams	4,577	Feb. 6	120	1777
Gas Power Publishing Co., St. Joseph, Mich. Monthly magazines	16,313	Feb. 27	120	2742
Gates, Carroll E., Syracuse, assignor to T. L. Norton, Holcomb, N. Y. Emollient soap compound	12,700	Feb. 27	120	2734
Gavitt Medical Co., W. W., Topeka, Kans. Medicine for the purification of the blood and diseases of the liver, kidneys, and stomach	15,727	Feb. 13	120	2113
Geisler, Max, Omaha, Nebr. Song-birds	15,462	Feb. 6	120	1807
General Specialty Company, Philadelphia, Pa. Paper-fasteners	11,557	Jan. 16	120	886
General Specialty Company, Philadelphia, Pa. Locks	15,201	Feb. 20	120	2424
Gennerich & Von Bremsen, New York, N. Y. Canned fruits	16,092	Feb. 6	120	1812
Gennerich & Von Bremsen, New York, N. Y. Pure olive-oil	13,783	Feb. 27	120	2736
Geo. A. Newman Co., Louisville, Ky. Nerve and nutritive tonic	15,480	Feb. 13	120	2112
Geo. Benz & Sons, St. Paul, Minn. Whisky	15,969	Feb. 20	120	2428
Geo. Benz & Sons, St. Paul, Minn. Whisky	15,977	Feb. 20	120	2428
Geo. Benz & Sons, St. Paul, Minn. Bitters	15,971	Feb. 27	120	2740
Geo. Benz & Sons, St. Paul, Minn. Brandy	15,978	Feb. 27	120	2740
Geo. Benz & Sons, St. Paul, Minn. Whisky	15,429	Feb. 27	120	2740
Geo. D. Wetherill & Co., Inc., Philadelphia, Pa. Liquid paint	16,434	Feb. 27	120	2743
Geo. E. Keith Company, Brockton, Mass. Leather and canvas boots and shoes	7,845	Feb. 20	120	2405
George F. Hewett Co., Worcester, Mass. Ginger-ale	6,970	Jan. 9	120	623
George F. Hewett Co., Worcester, Mass. Cocktails	7,895	Jan. 9	120	624
George G. Loesdon Manufacturing Company, Lynn, Mass. Instep-supporter or arch-prop	9,019	Jan. 23	120	1145
Gerstendorfer Bros., New York, N. Y. Gold, bronze, silver, and aluminum paints and enamels	3,061	Jan. 2	120	300
Gibbs, John W., New York, N. Y. Devices for use in applying electricity to the human body for curative purposes	4,289	Jan. 16	120	878
Gibbs Preserving Company of Baltimore City, Baltimore, Md. Canned fruits and vegetables	7,066	Jan. 23	120	1143
Gibford, Edward B., Adrian, Mich. Razor-strops	9,512	Feb. 20	120	2408
Gilbert Manufacturing Company, New York, N. Y. Cotton piece goods	10,063	Jan. 23	120	1147
Gilbert Son & Co., Murray, Ky. Strong black plug chewing-tobacco	12,882	Jan. 30	120	1460
Gilbertson, Joseph R., New York, N. Y. Hats	13,106	Feb. 20	120	2410
Gilliams & Co., L., Philadelphia, Pa. Whisky	6,665	Feb. 27	120	2721
Gilliams, Jones & Co., Philadelphia, Pa. Rye whisky	7,765	Jan. 23	120	1144
Gilliams, Jones & Co., Philadelphia, Pa. Rye whisky	9,727	Feb. 13	120	2102
Gin-Seng-Gin Company, Cincinnati, Ohio. Liquid medicine to be taken internally as a cure for organic and nervous diseases	2,602	Feb. 6	120	1770
Ginter Grocery Company, Boston, Mass. Whisky	10,033	Feb. 27	120	2727
Ginter Grocery Company, Boston, Mass. Punch	10,037	Feb. 27	120	2727
Girard Company, Incorporated, Philadelphia, Pa. Alkaline antiseptic and germicide	14,638	Jan. 30	120	1464
Glasner & Barsan Distilling & Importing Co., Kansas City, Mo. Whisky	13,335	Jan. 30	120	1462
Glaub, Rose, Crittenden, Ky. Toilet wash for the skin	12,806	Jan. 30	120	1459
Glens Falls Portland Cement Co., Glens Falls, N. Y. Portland cement	11,288	Feb. 6	120	1791
Glens Falls Portland Cement Co., Glens Falls, N. Y. Portland cement	11,289	Feb. 13	120	2104
Gliddon Varnish Company, Cleveland, Ohio. Varnishes and varnish stains	9,850	Jan. 2	120	307
Globe Ventilator Company, Troy, N. Y. Ventilators, chimney-cowls, and ventilating-caps for air-shafts, &c., and ventilated ridging	16,425	Feb. 27	120	2743
Gloversville Knitting Co., Gloversville, N. Y. Knitted covers for hot-water bottles	2,179	Jan. 2	120	300
Gobeaman Bros. & Kahler Co., New Albany, Ind. Stoves, ranges, furnaces, and castings therefor	12,087	Jan. 30	120	1461
Gold Spirit Chemical Co., South Bend, Ind. Antiseptic and germicide preparations	7,555	Feb. 6	120	1779
Goldmann, Benjamin T., St. Paul, Minn. Hair-restorers for restoring color and vigor to gray, faded, and bleached hair	7,846	Feb. 20	120	2404
Goldman & Co., M., New York, N. Y., and Cleveland, Ohio. Women's, misses', and children's shirts of all descriptions	10,909	Jan. 23	120	1147
Goldsberry, Edgar, Lafayette, Ind. Leather boots and shoes	7,106	Jan. 30	120	1446
Goldschmidt & Co., New York, N. Y. Ladies' shirt-waists and shirt-waist suits	9,982	Jan. 30	120	1451
Goodhue, Wells, Chicago, Ill. Monthly publication	15,119	Feb. 13	120	2111
Gordon Manufacturing Company, New Rochelle, N. Y. Suspenders for trousers	11,785	Feb. 13	120	2105
Gorham Rubber Company, San Francisco, Cal. Rubber hose	13,048	Feb. 6	120	1801
Gorton & Co., Slade, Gloucester, Mass. Smoked herring	5,170	Jan. 9	120	619
Gould Coupler Co., New York, N. Y. Car-couplings and buffers, draft-gears, and parts thereof	1,987	Jan. 2	120	299
Geyer Alliance Rubber Company, Memphis, Tenn. Stock-food	6,540	Jan. 23	120	1142
Graaff & Co. G. m. b. H., Berlin, Germany. Chemical fire-extinguishers	14,263	Feb. 20	120	2403
Graves & Sons, C. H., Boston, Mass. Alcoholic punch	10,400	Feb. 20	120	2410
Green, Alexander M., New York, N. Y. Skirt-distenders	6,873	Feb. 13	120	2097
Great American Automatic Vending Machine Company, Hoboken, N. J. Chocolate and all kinds of candy	14,724	Feb. 6	120	1809
Great Western Cereal Co., Chicago, Ill. Cracked oats	5,143	Feb. 27	120	2723
Green Brook Distilling Company, Cincinnati, Ohio. Whisky	10,727	Feb. 6	120	1799
Green, David, Kansas City, Mo. Whisky	9,185	Jan. 30	120	1449
Green Green & Co., Dayton, Ohio. Crackers and biscuits	8,574	Jan. 23	120	1141
Greene, Tweed & Co., New York, N. Y. Packings	13,173	Feb. 6	120	1802
Greene, Tweed & Co., New York, N. Y. Rod-packings	14,670	Jan. 9	120	645
Greene, Tweed & Co., New York, N. Y. Power-feed lubricators and the parts thereof	15,324	Jan. 30	120	1466
Greene, Tweed & Co., New York, N. Y. Rod-packings	15,364	Feb. 20	120	2426
Grenfell Knit Goods Co., Grenfell, N. C. Bandings and offsetings	4,888	Jan. 23	120	1143
Griffin & Skelley Co., San Francisco, Cal. Dried and evaporated fruits	16,980	Jan. 9	120	644

Alphabetical list of trade-mark applicants published during January and February—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Griggs, Cooper & Company, St. Paul, Minn. Syrup	9,648	Feb. 6	120	1785
Griggs, Cooper and Company, St. Paul, Minn. Bluing	9,650	Feb. 6	120	1785
Griggs, Cooper and Company, St. Paul, Minn. Chocolates	9,651	Feb. 6	120	1786
Griggs, Cooper & Company, St. Paul, Minn. Cracker-meal	9,652	Feb. 6	120	1786
Grossman, Maurice H., Philadelphia, Pa. Blood, nerve, and brain food put up in tablet form	13,294	Jan. 9	120	630
Grosvenor & Co., J. M., Boston, Mass. Tooth-paste	11,217	Feb. 13	120	2104
Grove Sons, H., Madison, Wis. Whisky	8,294	Jan. 9	120	626
Gruen & Sons, D., Cincinnati, Ohio. Watches, watch cases and movements	10,448	Jan. 23	120	1147
Guiterman Bros., St. Paul, Minn. Outing-shirts for men and women	8,229	Jan. 23	120	1148
Gulden, Charles, New York, N. Y. Preserved olives	1,333	Jan. 9	120	618
Gulfport Grocery Company, Gulfport, Miss. Cornmeal	11,237	Jan. 23	120	1148
Gump & Sons, G., Baltimore, Md. Rye whisky	5,292	Jan. 30	120	1442
Guthmann Carpenter & Telling, Chicago, Ill. Leather boots and shoes	4,644	Feb. 27	120	2717
Gwinn Bros. & Co., Huntington, W. Va., and Washington Court-House, Ohio. Wheat-flour	5,890	Jan. 30	120	1444
H. Webster Company, New York, N. Y. Whisky	3,410	Feb. 6	120	1771
H. G. Tombler Grocery Co., Easton, Pa. Coffee	290	Feb. 6	120	1767
H. H. Babcock Company, Watertown, N. Y. Carriages	16,130	Feb. 6	120	1812
H. J. Heins Company, Allegheny, Pa. Vinegar	15,678	Feb. 6	120	1800
H. K. Mulford Company, Philadelphia, Pa. Aseptic preparation of ergot of rye used as a hemostatic and in gynecologic work	10,482	Jan. 2	120	308
H. K. Mulford Company, Philadelphia, Pa. Antiseptic for local and internal use	10,480	Feb. 20	120	2411
H. K. Mulford Company, Philadelphia, Pa. Odorless, neutral, colorless mineral oil used as a local application in throat, nose, and gynecologic work	10,483	Feb 20	120	2411
H. K. Mulford Company, Philadelphia, Pa. Remedy for the treatment of remittent and pernicious malarial fevers	10,484	Feb 20	120	2411
H. K. Mulford Company, Philadelphia, Pa. Medicinal preparation in suppository or ointment form used as a local anesthetic, antiphlogistic, astringent, and hemostatic	10,485	Feb. 20	120	2411
H. K. Mulford Company, Philadelphia, Pa. Granular effervescent salt of strontium and ammonium salicylate, an antipyretic and analgesic	10,489	Feb. 20	120	2411
H. N. Martin & Co., Louisville, Ky. Plug chewing and smoking tobacco	6,100	Feb. 20	120	2402
H. & W. Company, Newark, N. J. Children's underwaists	11,554	Jan. 16	120	995
H. W. Huguley Company, Boston, Mass. Whisky	6,331	Jan. 9	120	621
H. W. Huguley Company, Boston, Mass. Whisky	7,995	Jan. 9	120	623
Hadley, William B., New York, N. Y. Liniment	3,998	Jan. 30	120	1442
Hahne & Company, Newark, N. J. Ladies' shoes	4,171	Jan. 30	120	1442
Håkansson, Per, Eskilstuna, Sweden. Antiseptic compound	7,506	Jan. 30	120	1447
Haldeman, Jere B., St. Louis, Mo. Powdered preparation for cleaning precious metals	5,850	Jan. 9	120	620
Hall, John W., Baltimore, Md. Non-alcoholic beverages made of cola-nuts	15,055	Jan. 23	120	1152
Hamer's Sure Cure Company, Vermont, Ill. Veterinary remedy for the cure of fistula, poll-evil, lump-jaw, spavin, ringbone, &c., in horses and cattle	13,319	Jan. 30	120	1462
Hamilton-Brown Shoe Co., St. Louis, Mo. Women's liquid and paste shoe-dressing	11,854	Jan. 30	120	1456
Hamilton-Brown Shoe Co., St. Louis, Mo. Men's liquid and paste shoe-dressing	16,239	Feb. 27	120	2741
Hamilton-Brown Shoe Company, St. Louis, Mo. Men's leather shoes	16,240	Feb. 27	120	2741
Hamilton, Mable A., Boston, Mass. Medicine for kidney affections	14,401	Jan. 9	120	640
Hammer Dry Plate Company, St. Louis, Mo. Photographic dry-plates	12,806	Feb. 6	120	1800
Hampden Watch Co., Canton, Ohio. Watches and watch parts	3,163	Feb. 6	120	1771
Hamrick Tank & Barrel Hard Shell Enameling Co., Philadelphia, Pa. Enamel for coating the interiors and exteriors of barrels, casks, tanks, &c	2,946	Jan. 2	120	300
Hansen & Son, New York, N. Y. Leather and cloth boots, shoes, and slippers	9,893	Feb. 6	120	1785
Hanse Bros. & White, Philadelphia, Pa. Gelatinous elastic capsules containing liquid or solid medicinal ingredients	4,750	Feb. 6	120	1773
Handbiesitft Cie. C. Wm. Book, Schweinau, near Nuremburg, Germany. Pencils	4,804	Jan. 16	120	878
Handrick, Fritz, New York, N. Y. Wine	9,248	Feb. 13	120	2097
Hanlin, Faith L., Chicago, Ill. Insecticides	8,286	Feb. 27	120	2723
Hanlon & Goodman, New York, N. Y. Brushes for painters and decorators	9,844	Jan. 30	120	1451
Hannach & Stifel, Memphis, Tenn. Men's outer shirts	10,919	Jan. 2	120	309
Hannah & Hogg, Chicago, Ill. Whisky	14,498	Feb. 6	120	1806
Hanson, J. Edward, Pass Christian, Miss. Remedy for bronchitis, pneumonia, and other lung and throat affections	10,339	Feb. 6	120	1788
Hanson & Van Winkle Co., Newark, N. J.; New York, N. Y., and Chicago, Ill. Nickel salts	12,440	Feb. 6	120	1796
Hardy, Richard T., Baltimore, Md. Face-lotion	15,448	Feb. 27	120	2739
Harold, James J., Jersey City, N. J., assignor to T. A. Hill, New York, N. Y. Contractors' dump-bag-conveyers	13,317	Feb. 6	120	1802
Harris & Bro., Robt., Reidsville, N. C. Chewing and smoking tobacco	10,627	Feb. 27	120	2728
Harris, Charles R., North Windham, Conn. Chains, robe, chatelaines, and chain-trimmings	2,646	Feb. 20	120	2397
Hart & Hegeman Mfg. Co., Hartford, Conn. Electric switches	1,122	Jan. 9	120	615
Hartman, Goldsmith & Co., New York, N. Y. Whisky	5,636	Feb. 27	120	2719
Hartman, Samuel B., Columbus, Ohio. Laxative medicine	7,871	Jan. 9	120	624
Hartwig, Otto J., Chicago, Ill. Remedies for skin and scalp diseases	1,433	Jan. 30	120	1440
Hasenfratz Canneries Company, Cleveland, Ohio. Canned extract of green corn	8,428	Feb. 13	120	2100
Hasenfratz, Samuel F., Cleveland, Ohio. Plug chewing-tobacco	8,802	Feb. 27	120	2725
Haskins Bros. & Co., Sioux City, Iowa, and Omaha, Nebr. Toilet and laundry soap	8,801	Feb. 27	120	2725
Hauger, Charles C., Indianapolis, Ind., and Dayton and Columbus, Ohio. Coats, vests, trousers, and overcoats	8,946	Feb. 6	120	1783
Havana Commercial Company, Jersey City, N. J., and New York, N. Y. Havana cigars	8,353	Feb. 6	120	1782
Havana Commercial Company, Jersey City, N. J., and New York, N. Y. Havana cigars	11,428	Feb. 13	120	2105
Hawbridge Bros., Boston, Mass. Tool-steel and steel bars, rods, and sheets	12,517	Feb. 13	120	2107
Hawkridge Brothers, Boston, Mass. Tool-steel and steel bars, rods, and sheets made from steel	1,151	Feb. 6	120	1766
Hawley & Hoops, New York, N. Y. Cocoa and chocolate for a confection	12,172	Feb. 6	120	1796
Hay, Edward L., *et al.*, executors. (See Hay, Henry H.)	8,980	Jan. 9	120	627
Hay, Florence S., *et al.*, executors. (See Hay, Henry H.)				
Hay, Henry H., deceased, Portland, Me.; E. S. and E. A. Hay, executors. Vegetable bitters for [illegible], jaundice, dyspepsia, and indigestion	7,080	Feb. 27	120	2722
Boston Automatic & Equipment Company, New York, N. Y. Shovels, scoops, and spades	11,207	Feb. 13	120	2104
Boston Milling Company, Portland, Ind. Wheat-flour	12,780	Feb. 20	120	2410
Hazard, George H., Providence, R. I. Candy	11,272	Jan. 2	120	309
Hazelwood Company, Limited, Spokane, Wash.; Galena, Ill.; Sioux City, Iowa; New York, N. Y., and Portland, Oreg. Candies of all kinds	12,770	Jan. 30	120	1459
Hazeltine, George V. G., Philadelphia, Pa. Cosmetic hair and skin tonics	14,510	Feb. 20	120	2413
Hazelton, Mrs. Catherine, New York, N. Y. Underskirts and drawers for men and women	4,234	Jan. 23	120	1141
Heaton & Company, St. Louis, Mo. Fixtures for displaying goods in [illegible]				
Hebe & Co., New York, N. Y. Oils used in making perfume	12,242	Feb. 27	120	2734
Heiny L. Gluck Co., Baltimore, Md. Rye whisky	11,121	Jan. 16	120	994
	12,099-8	Jan. 9	120	626-7

Alphabetical list of trade-mark applicants published during January and February—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Henry Heil Chemical Co., St. Louis, Mo. Liquid medicinal preparation for an antiseptic, germicide, and healing agent	1,817	Jan. 9	120	616
Henry Milward & Sons, Limited, Redditch, England. Needles for hand and machine sewing	13,198	Feb. 20	120	2420
Henry Pollack Trunk Co., Dallas, Tex. Trunks, suit-cases, and traveling-bags and various styles of satchels and telescopes	13,283	Jan. 30	120	1462
Herb, Ferdinand, Superior, Wis. Preparation for the cure of excessive sweating and for relieving and destroying the unpleasant effects of excessive perspiration	6,410	Feb. 27	120	2720
Herb Medicine Company, Springfield, Ohio. Liquid preparation for internal and external application	3,458	Feb. 20	120	2398
Herendeen Manufacturing Co., Geneva, N. Y. Steam and hot-water heaters and parts thereof	5,900	Feb. 20	120	2401
Herman Wupperman Gesellschaft mit beschränkter Haftung, Pinneberg, Germany. Wrought-iron hollow ware (raw, enameled, tinned, or galvanized) stamped in one piece or seamed	8,603	Feb. 27	120	2724
Hermann, Oscar, New York, N. Y. Organs	13,658	Feb. 6	120	1803
Hesoun, Frank, Jr., Cleveland, Ohio. Whisky	5,544	Jan. 9	120	620
Hess-Bright Manufacturing Co., Philadelphia, Pa. Ball-bearings	15,394	Jan. 9	120	646
Hess Bros., Allentown, Pa. Corsets and corset-waists	15,114	Feb. 27	120	2738
Hess & Clark, Dr., Ashland, Ohio. Worm-powder	8,190	Jan. 9	120	625
Hess & Clark, Dr., Ashland, Ohio. Food and medicine for poultry, usually put up in powdered form	8,188	Feb. 20	120	2405
Hess & Clark, Dr., Ashland, Ohio. Gall cure	8,191	Feb. 20	120	2405
Hess & Clark, Dr., Ashland, Ohio. Powder for killing vermin and disinfecting	8,746	Feb. 20	120	2405
Heusenbruch, Hermann, Philadelphia, Pa. Razors	7,628	Feb. 27	120	2723
Hewlett & Lee, New York, N. Y. Cotton cloth	12,803-5	Jan. 30	120	1460
Hewlett & Lee, New York, N. Y. Tea	12,801-2	Feb. 27	120	2734
Heying, Louis, Baltimore, Md. Loaves of bread	12,102	Feb. 27	120	2732
Highland Drug Company, Newburgh, N. Y. Remedy for diseases of the liver and digestive tract in liquid form	11,007	Feb. 20	120	2412
Higley, Christina J., New York, N. Y. Hose-supporters	9,870	Jan. 16	120	883
Higley, Christina J., New York, N. Y. Garters	8,515	Jan. 30	120	1448
Higley, Christina J., New York, N. Y. Hose-supporters	15,494	Feb. 20	120	2426
Hill, Thomas A. (See Harold, James J., assignor.)				
Hillerich & Son, J. F., Louisville, Ky. Base-ball bats	15,666	Feb. 6	120	1808
Hills Bros., San Francisco, Cal. Coffee	13,139	Feb. 20	120	2420
Hinds & Coon, Boston, Mass. Metal polish	15,183	Jan. 9	120	645
Hinton, Jno., assignor, by mesne assignments, to Brasear Company, Incorporated, Richmond, Va. Non-alcoholic tonic beverage	10,408	Feb. 20	120	2410
Hirsch & Co., S., Kansas City, Mo. Whisky	15,553	Jan. 30	120	1466
Hirsh Brothers, New York, N. Y. Garment-supporter clasps	11,230	Jan. 16	120	995
Hirshberg, Simon, Boston, Mass. Ladies', men's, and children's leather shoes	12,984	Feb. 6	120	1800
Hite, William T., Walnut, Kans. Ointment for external application in the treatment of skin diseases and eruptions, inflammation, &c	8,996	Feb. 20	120	2407
Hochbaum, Jacob, Little Rock, Ark. Cakes	16,280	Feb 13	120	2114
Hochstadter, Sigmund, New York, N. Y. Gin	8,192	Feb. 13	120	2098
Hochstadter, Sigmund, New York, N. Y. Cordials	8,197	Feb. 13	120	2098
Hoerber Brewing Co., J. L., Chicago, Ill. Beer	7,494	Feb. 13	120	2099
Hogansville Manufacturing Company, Hoganesville, Ga. Cotton duck	11,781	Jan. 9	120	626
Hoganesville Manufacturing Company, Hoganesville, Ga. Cotton duck	11,144	Jan. 23	120	1148
Hoggys' Asbestos Sock Coy., Dr., London, England. Asbestos sock-soles	10,225	Feb. 6	120	1788
Hohenadel, P., Jr., Janesville, Wis., and Rockalle, Ill. Canned corn	10,164	Feb. 6	120	1787
Hohner, Firm of M., New York, N. Y. Mouth-harmonicas	16,512	Feb. 27	120	2744
Holley & Co., S. C., Danbury, Conn. Stiff fur hats	14,650	Feb. 6	120	1806
Hollingsworth & Whitney Company, Boston, Mass. Wrapping-paper and paper bags and sacks	3,476	Jan. 30	120	1441
Hollingsworth & Whitney Company, Boston, Mass. Wrapping-paper and paper bags and sacks	15,905-8	Feb. 6	120	1810
Hollingsworth & Whitney Company, Boston, Mass. Wrapping-paper and paper bags and sacks	15,910	Feb. 6	120	1811
Hollingsworth & Whitney Company, Boston, Mass. Wrapping-paper and paper bags and sacks	15,912-13	Feb. 6	120	1811
Hollingsworth & Whitney Company, Boston, Mass. Wrapping-paper and paper bags and sacks	15,915-17	Feb. 6	120	1811
Hollingsworth & Whitney Company, Boston, Mass. Writing-paper	15,920	Feb. 6	120	1811
Holthusen, Adolf R., New York, N. Y. Ginger-ale	12,091	Feb. 27	120	2732
Holzman, Samuel, New York, N. Y. Pills to be used for stomach disorders, liver trouble, and impure blood, and cough medicine	11,944	Jan. 30	120	1457
Home Hosiery Co., Philadelphia, Pa. Hosiery and knit underwear	16,180	Feb. 27	120	2741
Home Remedy Co., South Haven, Mich. Remedy for catarrh, hay-fever, and cold in the head	4,672	Feb. 13	120	2095
Home, Daniel, Finsbury, England. Natural and artificial whalebone	6,730	Jan. 9	120	622
Hood, James M., Albertville, Ala. Liniment for rheumatism, neuralgia, sprains, bruises &c	11,536	Jan. 30	120	1455
Hood Rubber Co., Boston, Mass. Tennis-shoes	12,103	Jan. 23	120	1130
Hoover & Bros., P. L., Castalia, Ind. Liniment for external use on man or beast	5,967	Jan. 30	120	1444
Hopkins, Ferdinand T., New York, N. Y. Face-powder	7,186	Feb. 20	120	2403
Horton Mfg. Co., Bristol, Conn. Steel fishing-rods	5,257	Feb. 6	120	1775
Hostetter-Columbus Associated Breweries Co., Columbus, Ohio. Beer	3,626	Feb. 27	120	2716
Hot Shot Medicine Co., Keams, Pa. Remedies for rheumatism for internal and external use	7,051	Jan. 30	120	1446
Household Sewing Machine Co., Providence, R. I. Sewing-machines and their parts	10,513	Jan. 2	120	308
Household Sewing Machine Co., Providence, R. I. Sewing-machines and parts thereof	10,517	Feb. 13	120	2108
Household Sewing Machine Co., Providence, R. I. Sewing-machines and parts thereof	10,516	Feb. 27	120	2727
Howe Brown & Co., Ltd., Pittsburg, Pa. Steel bars, rods, billets, blooms, sheets, plates, slabs, strips, blocks, and forgings	5,492	Feb. 6	120	1775
Howe & Howe, Boston, Mass. Undershirts and drawers	10,910	Jan. 16	120	994
Hower, Frank B., Buffalo, N. Y. Lubricating oils and grease	7,888	Jan. 23	120	1144
Hubbard & Co., J., Boston, Mass. Vegetable germicides	4,827	Feb. 13	120	2095
Hubbs & Corning Co., Baltimore, Md. Wrapping-papers	9,205	Feb. 6	120	1784
Hudgin, Louis, Nogales, Ariz. Ter. Game-boards	13,519	Feb. 6	120	1803
Hull Coal & Coke Corporation, Roanoke, Va. Coal	15,257	Feb. 6	120	1810
Hulman & Co., Terre Haute, Ind. Coffee	8,641	Jan. 9	120	629
Hulman & Co., Terre Haute, Ind. Baking-powder	8,645	Jan. 9	120	629
Hulse Bradford Co., San Francisco, Cal. Oil shade-cloth	13,913	Jan. 2	120	313
Hunstock Chemical Co., R. H., St. Louis, Mo. Remedy for headache and neuralgia	9,261	Feb. 27	120	2729
Huntley & Palmers, Ltd., Reading, England. Biscuits and cakes	9,442	Feb. 20	120	2403
Huntley & Palmers, Ltd., Reading, England. Biscuits and cakes	9,442-4	Feb. 27	120	2726
Hurley & Co., Boston, Mass. Whisky	9,117-18	Jan. 9	120	628
Hurley, Horace O., Louisville, Ky. Medicine for the treatment of rheumatism, lithemia, gout, lumbago, and neuralgia	9,047	Jan. 9	120	627
Hurley, Horace O., Louisville, Ky. Remedy for anæmia and chlorosis and also a digestant of starch	9,048	Jan. 23	120	1145
Hutchinson, Pierce & Co., New York, N. Y. Shirts, shirt-waists, and blouses	2,710	Feb. 6	120	1770
Hydrex Felt & Engineering Co., Portland, Me.; East Walpole, Mass.; New York, N. Y., and Chicago, Ill. Asphaltic waterproofing compound	11,623	Feb. 6	120	1782
Hyndman, Robert J., Cincinnati, Ohio. Sheet-metal roofing-plates	11,798	Feb. 6	120	1782

Alphabetical list of trade-mark applicants published during January and February—Continued.

Name, residence, and title	Serial No.	Date.	Official Gazette. Vol.	Page.
I. Trager Co., Cincinnati, Ohio. Whisky	6,452-3	Jan. 9	120	621
I. Trager Co., Cincinnati, Ohio. Whisky	6,461	Jan. 16	120	879
Ihle and Grupp, Buffalo, N. Y. Brushes	12,238	Jan. 2	120	311
Illinois Laboratories, Chicago, Ill. Tablets for diseases of the entire digestive tract	6,705	Jan. 9	120	622
Illinois Laboratories, Chicago, Ill. Medicinal and toilet oil for skin diseases	6,704	Jan. 23	120	1142
Independence Coffee and Spice Co., Pueblo, Colo. Coffee	11,004	Jan. 9	120	634
Independent Cotton Oil Co., Chicago, Ill. Cooking and baking oils	5,264	Feb. 20	120	2401
Independent Packers Fertilizer Co., Columbus, Ohio. Fertilizers	15,122	Jan. 23	120	1152
India Alkali Works, Boston, Mass. Preparations for cleaning marble, tile, stone, mosaic, and composition surfaces	15,035	Jan. 2	120	313
India Alkali Works, Boston, Mass. Certain preparation for scouring and cleansing wool, fulling yarn or cloth, washing floors, windows, &c.	15,034	Feb. 6	120	1807
Industrial Press, New York, N. Y. Annual publication embodying a complete index to the names and addresses of all manufacturers in the United States	10,480	Jan. 9	120	633
Industrie-Gesellschaft für Schappe, Basel, Switzerland. Spun silk	10,774	Feb. 13	120	2103
Ingram, Frederick F., Detroit, Mich. Dentifrice	9,635	Jan. 16	120	889
International Cutlery Company, Fremont, Ohio. Snips, shears, and scissors	9,671	Feb. 20	120	2408
International Harvester Co. of America, Chicago, Ill. Grain-binding, corn, and rice harvesters, mowers and reapers, and extra and repair parts and pieces for same	12,110-11	Jan. 23	120	1150
International Harvester Co. of America, Chicago, Ill. Ropes, cords, twine, and binder-twine	12,105	Feb. 27	120	2732
International Paper Company, New York, N. Y. Book, news, and wrapping paper, pasteboard, and other papers made wholly or principally from wood-pulp	3,670	Feb. 6	120	1771
International Power Company, Providence, R. I. Fire-engines	16,131	Feb. 6	120	1812
International Silver Company, Meriden, Conn. Silver-plated hollow ware	9,326	Jan. 2	120	306
International Silver Company, Meriden, Conn. Silver-plated hollow ware	14,476	Feb. 6	120	1806
International Silver Company, Meriden, Conn. Silver-plated hollow ware	14,478	Feb. 6	120	1806
International Silver Company, Meriden, Conn. Silver-plated hollow ware	14,236	Feb. 13	120	2110
International Sprinkler Co., Philadelphia, Pa. Automatic fire-extinguishing apparatus	1,719	Jan. 9	120	616
Iowa Soap Company, Burlington, Iowa. Pumice soap	15,043	Jan. 9	120	644
Irons & Russell, Providence, R. I. Solid-gold badges	7,563	Jan. 16	120	880
Italian Swiss Colony, San Francisco, Cal. Wine	6,522	Jan. 9	120	621
Italian Swiss Colony, San Francisco, Cal. Wine	6,580	Jan. 9	120	621
Italian Swiss Colony, San Francisco, Cal. Wine	6,581	Feb. 20	120	2403
Iwahara, Kenzo, New York, N. Y. Cotton sheetings and drills	10,244	Jan. 23	120	1147
Iwahara, Kenzo, New York, N. Y. Cotton sheetings and drills	11,716	Jan. 23	120	1149
Iwahara, Kenzo, New York, N. Y. Cotton sheetings and drills	10,246	Feb. 6	120	1788
Iwahara, Kenzo, New York, N. Y. Cotton sheetings and drills	10,436	Feb. 13	120	2108
Iwahara, Kenzo, New York, N. Y. Cotton sheetings and drills	10,577	Feb. 13	120	2104
Iwahara, Kenzo, New York, N. Y. Cotton sheetings or drills	10,246	Feb. 27	120	2727
Iwahara, Kenzo, New York, N. Y. Cotton sheetings and drills	15,363	Feb. 27	120	2729
J. Chr. G. Ruppel Brewing Co., New York, N. Y. Lager-beer	5,223	Jan. 2	120	302
J. Ellwood Lee Company, Conshohocken, Pa. Suspensory bandages	14,698	Feb. 27	120	2744
J. A. Wright & Co., Keene, N. H. Polishes in powder and liquid form for use in cleaning metal and glass ware	14,328	Feb. 13	120	2109
J. B. Brooks & Co., Limited, Birmingham, England. Cycle-saddles	6,026	Jan. 9	120	620
J. C. Eno, Limited, London, England. Dry preparation for making a non-intoxicating beverage	12,967	Feb. 27	120	2725
J. C. Marks Liquor Co., Birmingham, Ala. Whiskies	8,379	Feb. 6	120	1781
J. D. & R. S. Christian Co., Richmond, Va. Baking-powder	11,660	Feb. 13	120	2105
J. & F. Schroth Pack. Co., Cincinnati, Ohio. Hams, shoulders, and bacon	13,902	Feb. 13	120	2109
J. H. Kennedy Milling Company, Glencoe, Mass. Wheat-flour	12,280	Feb. 6	120	1802
J. J. Douglas Co., Louisville, Ky. Whisky	3,725	Feb. 6	120	1772
J. J. Douglas Co., Louisville, Ky. Whisky	3,731	Feb. 20	120	2396
J. M. Carpenter Tap & Die Co., Pawtucket, R. I. Taps, dies, reamers, screw-plates, die-stocks, and tap-wrenches	2,625	Feb. 6	120	1770
J. M. Robinson, Norton & Co., Louisville, Ky. Men's negligée and dress shirts	5,127	Feb. 6	120	1781
J. P. Boden Fireless Co., Winfield, Kans. Heater	15,223	Jan. 23	120	1154
J. P. Bustin Mfg. Co., Boston, Mass. Water sprayers, showers, and parts, fixed or portable	7,757	Jan. 30	120	1447
J. T. Kenny & Co., St. Paul, Minn. Soap chips	14,498-7	Feb. 27	120	2737
J. W. Bliss Co., Cincinnati, Ohio. Blended feeds and distillers' and brewers' dried grains	12,726	Jan. 30	120	1439
J. W. Evenden Co., Buffalo, N. Y. Whisky	10,728	Feb. 27	120	2728
Jack Frost Baking Powder Co., St. Louis, Mo. Baking-powder	10,620	Jan. 2	120	307
Jacobs & Garrett, Memphis, Tenn. Whisky	1,302	Jan. 30	120	1439
Jacobson & Bro., A., New York, N. Y. Fur garments	14,524	Feb. 20	120	2402
James H. Rhodes & Company, Chicago, Ill. Natural stone used for rubbing purposes	11,728	Feb. 27	120	2720
James M. Houston Grocer Company, St. Louis, Mo. Canned fruits and vegetables	13,666	Feb. 20	120	2421
Janovitz, Julius, New York, N. Y. Corset busks or stays	1,720	Jan. 30	120	1440
Jas. E. Pepper & Co., Lexington, Ky. Whisky	646	Jan. 23	120	1139
Jas R Ross & Co., Indianapolis, Ind. Whisky	7,895	Jan. 9	120	624
Jeffery & Co., Thomas B., Kenosha, Wis. Automobiles	4,057	Feb. 13	120	2094
Jesse Moore Hunt Co., San Francisco, Cal. Whisky	8,459	Feb. 13	120	2100
Jesse Moore Hunt Co., San Francisco, Cal. Whisky	8,860	Jan. 9	120	627
John B. Rogers & Company, Binghamton, N. Y. Cigars	8,838	Feb. 27	120	2726
John B. Stetson Company, Philadelphia, Pa. Soft and stiff felt hats and caps	8,547	Feb. 27	120	2724
John Bardenheier Wine and Liquor Co., St. Louis, Mo. Whisky	11,885	Feb. 27	120	2720
John Bardenheier Wine & Liquor Co., St. Louis, Mo. Bitters	4,178	Feb. 6	120	1772
John Brenner Brewing Co., Covington, Ky. Beer	4,643	Feb. 13	120	2095
John Brenner Company, San Francisco, Cal. Mattresses	1,289	Jan. 30	120	1440
John C. Lewis Co., Louisville, Ky. Corsets	13,508	Feb. 6	120	1804
John C. Weller Co., Louisville, Ky. Whisky	11,223	Feb. 27	120	2730
John Calahan and Co., Inc., Seattle, Wash. Roller-cleaning compounds	10,422	Feb. 27	120	2743
John F. Meyer & Sons Milling Co., St. Louis and Springfield, Mo. Wheat-flour	7,851	Feb. 6	120	1779
John F. Meyer & Sons Milling Co., St. Louis and Springfield, Mo. Wheat-flour	11,743	Feb. 27	120	2730
John Main Brass Works, San Francisco, Cal. Babbitt metal and antifriction and bearing metals for the journal parts of machines and machinery	11,746	Feb. 27	120	2731
John Main Brass Works, San Francisco, Cal. Antifriction and bearing metals for the journals of machines and machinery	11,306-7	Feb. 6	120	1791
John Meyer Company, New York, N. Y. Silk dress material	11,208	Feb. 6	120	1791
John M. Wolf Company, Brooklyn, N. Y. Stove polishes and varnishes	10,280	Jan. 16	120	883
John P. Smith & Co., Ltd., Detroit, Mich. Show-cases	7,774	Jan. 16	120	881
John T. Lewis & Bros. Co., Philadelphia, Pa. Pigment colors and colored paints	11,945	Jan. 2	120	310
John T. Lewis & Bros. Co., Philadelphia, Pa. Pigment colors and colored paints	13,220	Feb. 20	120	2410
John T. Lewis & Bros. Co., Philadelphia, Pa. Pigment colors and colored paints	13,220	Feb. 20	120	2411
John W. Masury & Son, Brooklyn, N. Y. Varnishes	14,988	Jan. 2	120	313
Johnson, Avery H., East Orange, N. J. Hair-tonics	13,200	Feb. 13	120	2108
Johnson & Johnson, New Brunswick, N. J. Tooth-picks	14,042	Jan. 16	120	887

Alphabetical list of trade-mark applicants published during January and February—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Johnson & Watson Co., Greensboro, N. C. Leather boots and shoes	10,548	Feb. 6	120	1780
Johnston, Thomas, Freeport, N. Y. Medicine for the treatment of alcoholism	8,787	Feb. 6	120	1783
Joliet Stove Works, Joliet, Ill. Heating and cooking stoves	11,283	Feb. 20	120	2414
Joliet Stove Works, Joliet, Ill. Heating and cooking stoves	11,918	Feb. 20	120	2416
Jones and Co., W. H., Boston, Mass. Whisky	248	Feb. 6	120	1767
Jones and Co., W. H., Boston, Mass. Whisky	249	Feb. 13	120	2091
Jones & Co., W. H., Boston, Mass. Whisky	16,022-9	Feb. 20	120	2429
Jones Dry Goods Co., Kansas City, Mo. Coats, vests, and trousers	10,531	Feb. 20	120	2411
Jones, Robert H., Bath, N. Y. Champagne	13,215	Feb. 6	120	1801
Jordan, Andrew J., St. Louis, Mo. Razor-strops	16,435	Feb. 27	120	2743
Jordan Stabler Co., Baltimore, Md. Flavoring extracts	138	Jan. 9	120	615
Joseph A. Eisendrath Company, Chicago, Ill. Gloves and mittens	1,354	Feb. 13	120	2089
Joseph Burnett Co., Boston, Mass. Flavoring extracts	12,552	Jan. 23	120	1150
Joseph Campbell Company, Camden, N. J. Tobasco and tomato catchup	15,387	Jan. 9	120	645
Joseph Campbell Company, Camden, N. J. Chili and tobasco sauce and salad-dressing	15,388	Jan. 9	120	645
Joseph G. Dill, Inc., Richmond, Va. Plug, cut-plug, and smoking tobacco	3,868	Jan. 9	120	618
Joseph N. Eisendrath Company, Chicago, Ill. Gloves and mittens	1,355	Jan. 9	120	616
Jovelte Manufacturing Company, Alexandria, Va. Nitro compounds	12,894	Jan. 30	120	1460
Jungmann, J., New York, N. Y. Remedy for the cure of liver complaints, constipation, and biliousness	10,645	Jan. 16	120	883
K. k. landesgriv. Milly-Kerzen-, Seifen-und Glycerin-Fabrik, von F. A. Sarg's Sohn & Co., IV, Vienna and Liesing, near Vienna, Lower Austria, Austria-Hungary. Tooth-soap	11,240	Feb. 13	120	2104
Kabo Corset Company, Chicago, Ill. Corsets	9,972	Jan. 9	120	630
Kaestner, Edward F., New York, N. Y. Washing fluids	12,154	Feb. 27	120	2732
Kahama Chemical Co., St. Louis, Mo. Internal remedies and a remedy in the form of suppositories for anæmia, neurasthenia, bronchitis, influenza, &c.	3,465	Jan. 16	120	878
Kahn, Harry, Cincinnati, Ohio. Whisky	6,662	Jan. 9	120	622
Kahn, Harry, Cincinnati, Ohio. Whisky	7,192	Feb. 6	120	1778
Kalamazoo Stove Co., Kalamazoo, Mich. Ranges and cooking and heating stoves	11,767	Feb. 13	120	2105
Kansas Portland Cement Co., Iola, Kans. Portland cement	10,288	Feb. 6	120	1782
Kaufmann, Baer & Co., Cincinnati, Ohio. Whisky	4,208	Jan. 9	120	618
Kaufmann, Baer & Co., Cincinnati, Ohio. Whisky	5,148	Jan. 9	120	619
Kaufmann Bros. & Co., Toledo, Ohio. Whisky	3,933	Jan. 9	120	627
Kaufmann, David J., Perth Amboy, N. J. Poison for animals and insects	12,753	Feb. 27	120	2724
Kaidel, Henry, Baltimore, Md. Bicycles	3,296	Feb. 13	120	2100
Kaidel, Henry, Baltimore, Md. Hose	3,303	Feb. 27	120	2724
Keith Simmons & Co., Nashville, Tenn. Scissors and shears	16,489	Feb. 27	120	2744
Kellogg-Mackay-Cameron Co., Chicago, Ill. Boilers and radiators	9,789	Feb. 20	120	2409
Kellogg-Mackay-Cameron Co., Chicago, Ill. Bath-tubs and lavatories	9,790	Feb. 20	120	2410
Kelly & Co., M. R., Joliet, Ill. Corn-killing plasters	9,739	Jan. 9	120	630
Kendall Mfg. Co., Providence, R. I. Polishing-soap	6,209	Feb. 6	120	1777
Kendall Mfg. Co., Providence, R. I. Soap	6,401	Feb. 6	120	1778
Kenneweg Company, Cumberland, Md. Condensed milk	1,926	Jan. 16	120	877
Kenneweg Company, Cumberland, Md. Wheat-flour	1,929	Feb. 6	120	1769
Kent Lubricating Company, Milwaukee, Wis. Grease for a lubricant or dressing	4,172	Jan. 9	120	618
Kerins, Thomas J., Addison, N. Y. Cigars	15,965	Feb. 20	120	2426
Keystone Leather Co., Philadelphia, Pa. Glazed and dull or "mat" kid	10,641	Jan. 2	120	308
Kibbe Brothers Co., Springfield, Mass. Hard-boiled candy	9,511	Jan. 30	120	1460
Kickapoo Indian Medicine Co., Clintonville, Conn. Cough cure	970	Jan. 23	120	1139
Kilbourne & Jacobs Manufacturing Company, Columbus, Ohio. Wheelbarrows and the parts thereof	13,203	Jan. 30	120	1462
Kilbourne & Jacobs Manufacturing Company, Columbus, Ohio. Earth-scrapers	12,894	Feb. 6	120	1799
Kilbourne & Jacobs Manufacturing Company, Columbus, Ohio. Wheelbarrows and the parts thereof	12,820	Feb. 20	120	2413
King, Brissenden Mercantile Company, St. Louis, Mo. Ladies' and children's hats	1,347	Jan. 30	120	1440
King & Co., J. B., New York, N. Y. Plastering and finishing cement	8,244	Feb. 27	120	2716
King & Son, Charles, Alexandria, Va. Wheat-flour	14,085	Feb. 20	120	2432
Kirk-Geary & Co., Sacramento, Cal. Combination of rye whisky, rock candy, and horehound	15,027	Jan. 2	120	316
Kisser, Richard, Gumpoldskirchen, Austria. Packing materials for use in stuffing-boxes and the like	10,913	Feb. 6	120	1780
Knapp Rubber Binding Co., New York, N. Y. India-rubber binding	16,208-7	Feb. 27	120	2742
Knapp Rubber Binding Co., New York, N. Y. India-rubber stair-nosings	16,468-9	Feb. 27	120	2742-4
Knoll & Co., Ludwigshafen-on-the-Rhine, Germany. Medical compound to be used as an astringent	10,291	Feb. 27	120	2727
Knoll & Co., Ludwigshafen-on-the-Rhine, Germany. Medical compound to be used as a hæmostatic	10,292	Feb. 27	120	2727
Knox, Charles B., Johnstown, N. Y. Compound for curing blood and skin diseases put up in the form of pills, powders, ointments, soaps, and plasters	7,581	Jan. 16	120	881
Knox, Edward M., New York, N. Y. Hats and caps	7,080	Jan. 30	120	1446
Kny-Scheerer Company, Brooklyn, N. Y. Materials, solid or liquid, which when introduced into a bath will effervesce and generate gas therein	11,838	Feb. 13	120	2105
Kohn, David, Philadelphia, Pa. Whisky	16,049	Feb. 20	120	2430
Köller & Co., F., Solingen, Germany. Pocket-knives	8,435	Feb. 6	120	1782
Köller & Co., F., Solingen, Germany. Scissors	16,219	Feb. 20	120	2431
Kopp, Charles E., York, Pa. Soothing-syrup for the cure of wind-colic, griping in the bowels, diarrhœa, and all troubles consequent upon teething	11,242	Feb. 6	120	1799
Kops Bros., New York, N. Y. Corsets, corset waists and steels	5,088	Feb. 6	120	1774
Krank, Alfred J., St. Paul, Minn. Dandruff and skin cure	9,518	Feb. 20	120	2409
Krauser & Brother, E., Milton, Pa. Liquid extract of smoke for preserving meats	4,820	Jan. 16	120	878
Krista, John E., Dunnsville, Va. Canned fruits and vegetables	7,121	Feb. 6	120	1778
Kullman, Salz & Company, San Francisco, Cal. Oak-tanned cowhide, harness-leather, skirting, and cut stock	3,149	Feb. 27	120	2728
L. Ross & Co., Limited, London, England. Glass bottles	5,100	Feb. 27	120	2718
L. A. Thompson Scenic Railway Co., New York, N. Y. Scenic railways	12,144	Feb. 27	120	2738
La Bastie Glass Co., Ottawa, Ill. Glass lamp-chimneys	16,116	Jan. 30	120	1465
Lacey & Co., C. E., Aberdeen, S. D. Insecticides	14,389	Feb. 13	120	2113
Lambertville Rubber Company, Lambertville, N. J. Rubber boots and shoes	1,689	Feb. 27	120	2714
Lamont, Corliss & Co., New York, N. Y. Pills for diseases of the stomach and liver	10,263	Jan. 2	120	303
Lang & Co., H. A., Philadelphia, Pa. Mens', women's, and children's hosiery	13,057	Feb. 27	120	2740
Lanman & Kemp, New York, N. Y. Hair-tonics	4,276	Feb. 6	120	1773
Larom, Frank W., New York, N. Y. Ladies' and gentlemen's kid, cloth, and chamois gloves	12,471	Feb. 20	120	2417
Lattimer-Williams Manufacturing Company, Columbus, Ohio. Stoves and ranges	12,183	Feb. 20	120	2417
Lauber, Carl F., Philadelphia, Pa. Gins	15,670	Feb. 6	120	1803
Lauber, Carl F., Philadelphia, Pa. Brandies and fruit brandies	15,671	Feb. 6	120	1803
Lautenbach, Emile, Baltimore, Md. Proprietary compounds for headache, neuralgia, &c	9,927	Jan. 23	120	1143
Lautenbach, Emile, Baltimore, Md. Proprietary compounds for headache, neuralgia, &c	9,928	Jan. 23	120	1461

Alphabetical list of trade-mark applicants published during January and February—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Lawrence, Benjamin B., New York, N. Y. Local anesthetics	14,559	Jan. 30	120	1464
Lawrence & Son, W. A., Chester, N. Y. Neufchatel cheese	8,619	Jan. 30	120	1448
Leclanché Battery Co., New York, N. Y. Electric batteries	2,101	Feb. 6	120	1770
Lee Broom & Duster Company, Lincoln, Nebr. Brooms	16,505	Feb. 27	120	2744
Lehmaier, Louis A., New York, N. Y. Writing-paper	15,410	Jan. 23	120	1154
Lehn & Fink, New York, N. Y. Spices	13,969	Feb. 20	120	2422
Lennox Furnace Co., Marshalltown, Iowa. Furnaces	14,885	Feb. 27	120	2738
Leo, V. de, Tampa, Fla. Liquid preparation to be taken internally as a remedy for pulmonary diseases, intestinal catarrh, &c., and may be applied externally for wounds and burns	10,233	Jan. 20	120	1451
Levalley, Christopher W., Milwaukee, Wis. Shaft-hangers	13,561	Jan 30	120	1463
Levering Coffee Co., Baltimore, Md. Coffee	4,231	Jan. 2	120	302
Levi, Simon, Terre Haute, Ind. Wool blankets	11,222	Jan. 9	120	634
Levi Strauss & Co., San Francisco, Cal. Blouses, overalls, jumpers, trousers, coats, vests, and workingmen's aprons	4,176	Jan. 30	120	1442
Levi Strauss & Company, San Francisco Cal. Overshirts	16,095	Feb. 20	120	2430
Levinstein, Israel, Baltimore, Md. Leather boots and shoes	7,036	Jan. 9	120	622
Levinstein, Israel, Baltimore, Md. Leather boots and shoes	7,128	Jan. 9	120	622
Levy, Adolph, New York, N. Y. Men's coats, vests, and pants	6,247	Feb. 13	120	2097
Levy & Co., L. W., Galveston, Tex. Whisky	6,546	Jan. 30	120	1445
Levy & Co., Lee, St. Louis, Mo. Whisky	8,649	Jan. 9	120	626
Levy & Sons Co., D., Baltimore, Md. Ladies' shirt-waists and shirt-waist suits	2,059	Feb. 13	120	2092
Lewis Pharmacal Co., Baltimore, Md. Headache remedy	13,468	Jan. 23	120	1151
Lexington Manufacturing Co., Baltimore, Md. Powder for cleaning and polishing marble, stonework, &c	15,512	Feb. 27	120	2730
Lichtenstein, Max, Jerome, Ariz. Ter. Remedies for blood, stomach, &c., complaints	8,987	Feb. 27	120	2725
Lieberman, Samuel, Brooklyn, N. Y. Whisky	11,259	Jan. 9	120	634
Liebold & Co., Berlin, Germany. Cement for building purposes, gypsum, and lime	6,122	Feb. 27	120	2720
Lindsay, Samuel W., Omaha, Nebr. Gold rings	10,705	Feb. 6	120	1789
Lion Extract Co., Winnsboro, S. C. Flavoring extracts	13,302	Feb. 13	120	2108
Liquozone Company, Chicago, Ill. Germicidal medicines	15,602	Feb. 20	120	2427
Little & Company, A. E., Lynn, Mass. Boots and shoes of leather and leather and cloth	12,693	Jan. 16	120	886
Livingston Seed Co., Columbus, Ohio. Garden, flower, and field seeds	5,218	Jan. 23	120	1141
Lloyd Brothers, Cincinnati, Ohio. Antiseptics	7,251	Jan. 23	120	1143
Lloyd Brothers, Cincinnati, Ohio. Escharotics	7,252	Jan. 23	120	1143
Lloyd Brothers, Cincinnati, Ohio. Pharmaceutical preparation manufactured from tobacco used as an anodyne	7,253	Jan. 23	120	1143
Lloyd Brothers, Cincinnati, Ohio. Pharmaceutical preparation to be used as a remedy for diseases of the mucous membranes	7,255	Jan. 23	120	1143
Lloyd Brothers, Cincinnati, Ohio. Antiseptics or germicides	7,257	Jan. 23	120	1143
Loeb, Adolph, Cincinnati, Ohio. Whisky	8,963	Feb. 20	120	2407
Loeb & Co., H., New York, N. Y. Undershirts and drawers	3,532	Jan. 9	120	618
Loeb & Co., Wm., Providence, R. I. Finger-rings	3,531	Jan. 2	120	300
Logan, Millie B., Rochester, N. Y. Gold, silver, and plated spoons	6,384	Feb. 6	120	1777
Leake, John, New York, N. Y. Woolen dress goods	13,593	Feb. 20	120	2421
Lopez y Cia, Havana, Cuba. Cigars	10,878-9	Feb. 27	120	2722
Leray Mills, Gastonia, N. C. Sheetings and drills	4,845	Feb. 13	120	2095
Lord & Taylor, New York, N. Y. Hosiery	8,657	Feb. 27	120	2724
Lord & Taylor, New York, N. Y. Hosiery	8,659	Feb. 27	120	2724
Los Angeles Olive Growers' Association, Los Angeles, Cal. Olive-oil	2,984	Feb. 13	120	2093
Lothrop, Lee & Shepard Company, Boston, Mass. Books of fiction	1,198	Feb. 27	120	2713
Louderbough, Harry, Jersey City, N. J. Marine paint	4,288	Feb. 20	120	2399
Low Moor Company, Limited, Low Moor, near Bradford, England. Iron bars, rods, sheets, plates, hooping, and tires	6,744	Feb. 13	120	2097
Low Moor Company, Limited, Low Moor, near Bradford, England. Rivets	15,210	Feb. 13	120	2111
Lowell Weaving Company, Lowell and Boston, Mass. Cotton duck	13,981	Feb. 20	120	2422
Lowell Weaving Company, Lowell and Boston, Mass. Cotton duck	14,019	Feb. 20	120	2422
Lowenstein & Co., Atlanta, Ga. Carbonated ginger-ale	12,514	Jan. 30	120	1150
Lumen Bearing Company, Buffalo, N. Y. Non-ferrous alloys	11,451	Jan. 2	120	310
Lunkenheimer Company, Cincinnati, Ohio. Grease-cups	10,795	Jan. 23	120	1147
Lunkenheimer Company, Cincinnati, Ohio. Oil-cups	10,796	Jan. 30	120	1453
Luthy & Co., Peoria, Ill. End-gate seeding-machines	14,937	Feb. 20	120	2424
Luyties Brothers, New York, N. Y. Sherry	14,653	Feb. 13	120	2110
Lynchburg Shoe Co., Lynchburg, Va. Leather boots and shoes	14,541	Jan. 9	120	640
Lyon & Healy, Chicago, Ill. Guitars and mandolins	11,363	Jan. 30	120	1455
Lyon & Healy, Chicago, Ill. Strings for violins and guitars	11,371	Feb. 6	120	1791
Lyon & Healy, Chicago, Ill. Strings for violins	11,375	Feb. 13	120	2105
Lyon & Healy, Chicago, Ill. Pianos	15,224	Feb. 13	120	2111
Lyon & Healy, Chicago, Ill. Self-playing pianos without keyboard	11,349	Feb. 20	120	2413
Lyon & Healy, Chicago, Ill. Violin-strings	11,358	Feb. 20	120	2413
Lyon & Healy, Chicago, Ill. Guitars and mandolins	11,365	Feb. 20	120	2414
Lyon & Healy, Chicago, Ill. Banjos	11,367	Feb. 20	120	2414
Lyon & Healy, Chicago, Ill. Strings for banjos, guitars, mandolins, violins, violoncellos, and double-bass viols	11,370	Feb. 20	120	2414
Lyon & Healy, Chicago, Ill. Drums	11,372	Feb. 27	120	2720
M. A. Packard Company, Brockton, Mass. Boots and shoes made of leather	12,919	Jan. 23	120	1151
M. I. S. T. Co., Toledo, Ohio. Medicines for purifying the blood	7,722-3	Jan. 30	120	1447
M. T. Richardson Company, New York, N. Y. Trade-journal	8,058	Jan. 2	120	305
Macbeth-Evans Glass Company, Pittsburg, Pa. Lamp glasses and globes	6,007	Jan. 16	120	879
Macbeth-Evans Glass Company, Pittsburg, Pa. Lamp glasses and globes	6,002	Feb. 27	120	2720
Machen & Hudson, C., Liverpool, England. Ale and stout	12,986	Feb. 27	120	2735
Macleod, Warren M., Philadelphia, Pa. Medical tablet for the cure of malaria and similar diseases	12,954	Feb. 6	120	1800
[illegible] & Jenkins, New York, N. Y. Whisky	6,086	Feb. 27	120	2720
[illegible] & Co., Jos. A., Cincinnati, Ohio. Whisky	7,704	Jan. 9	120	624
[illegible] Supply Co., Wichita, Kans. Whisky	14,062-3	Feb. 20	120	2422
[illegible], J. & E., Portsmouth, Va. Whisky	9,434	Jan. 9	120	[illegible]
[illegible] Co., Philadelphia, Pa. Machine-belting	16,156	Feb. 20	120	2431
[illegible] Company, Salem, N. C. Covers for corsets, ladies' pants and vests	4,255	Feb. 6	120	1772
[illegible] Company, Branford, Conn. Metal pipe-fittings	4,565	Feb. 20	120	[illegible]
[illegible] Co., Colgate, Md. Whisky	7,717	Feb. 6	120	1780
[illegible] Co., Malone, N. Y. Men's and boys' pants	2,630	Feb. 20	120	[illegible]
[illegible], D. C. Remedy for epilepsy	12,876	Jan. 9	120	[illegible]
[illegible] Company, Cincinnati, Ohio. Leather boots and shoes	12,263	Feb. 6	120	[illegible]
[illegible] Co., Chicago, Ill. Belt-fasteners	7,145	Feb. 27	120	2722
[illegible] Publishing Company, Baltimore, Md. Newspaper	15,232	Jan. 16	120	[illegible]
[illegible] & Co., Chicago, Ill. Whisky	9,866	Jan. 2	120	305

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Maple City Soap Works, Monmouth, Ill. Toilet and laundry soap	12,848	Jan. 30	120	1460
Maple City Soap Works, Monmouth, Ill. Soap for laundry, toilet, and household use	12,845	Feb. 6	120	1799
Mariani & Co., New York, N. Y. Cordials	13,967	Jan. 30	120	1463
Marietta Knitting Co., Marietta, Ga. Hosiery	9,832	Feb. 6	120	1786
Marino, Charles G., Coney Island, N. Y. Medicines for venereal diseases	14,847	Jan. 30	120	1465
Marschner, Alfred, Omaha, Nebr. Combination of cigar and chewing tobacco having the outward appearance and consistency of an ordinary cigar	15,491	Feb. 6	120	1807
Marsh, William A., Columbus, Ohio. Periodical devoted to the interests of contractors	13,728	Jan. 2	120	311
Marshall Field & Company, Chicago, Ill. Corsets	14,086	Jan. 2	120	312
Marshall Field & Company, Chicago, Ill. Quilts	15,180	Feb. 20	120	2424
Martin L. Cohn Co., New York, N. Y. Dress goods and linings of silk and mixtures of silk with cotton and wool	12,308	Feb. 6	120	1796
Martin & McAndrews, Baltimore, Md. Whisky	11,913	Jan. 30	120	1456
Martindale & Co., Thomas, Philadelphia, Pa. Champagne	14,721	Feb. 13	120	2110
Martine, Mary B., New York, N. Y. Ribbon, ribbon bows, and galloon bindings for use on slippers	7,117	Jan. 16	120	880
Maryland Distilling Co., Chicago, Ill. Whisky	4,478	Jan. 9	120	618
Mason, Albert G., Cleveland, Ohio. Sewing-machines	279	Feb. 20	120	2395
Mason & Hamlin Co., Cambridge, Mass. Pianos	10,336	Feb. 20	120	2410
Massachusetts Cotton Mills, Lowell, Mass. Cotton piece goods	5,234	Jan. 30	120	1443
Massachusetts Cotton Mills, Lowell, Mass. Cotton piece goods	4,994	Feb. 20	120	2400
Massachusetts Cotton Mills, Lowell, Mass. Cotton piece goods	4,978	Feb. 27	120	2717
Massachusetts Cotton Mills, Lowell, Mass. Cotton piece goods	4,980	Feb. 27	120	2717
Massachusetts Cotton Mills, Lowell, Mass. Cotton piece goods	4,997	Feb. 27	120	2717
Masurite Explosive Company, Masury, Ohio. Explosives	13,643	Jan. 2	120	311
Masurite Explosive Company, Masury, Ohio. Explosives	9,364	Jan. 30	120	1449
Maynard, Charles A., Springfield, Mass. Proprietary medicine for the cure of diseases of the liver, kidneys, &c., and a general tonic in tablet form	12,249	Feb. 27	120	2732
Mayor, Henry A., Kansas City, Mo. Hair-color restorer or hair-dye	3,931	Feb. 6	120	1772
McAnulty, Marie D., New York, N. Y. Magazines	11,454	Feb. 27	120	2730
McBride, John H., Des Moines, Iowa. Clothes-pins	11,618	Jan. 16	120	885
McCart Mosset Co., Cleveland, Ohio. Whisky	8,909	Jan. 9	120	627
McClellan, Hugh H., Troy, N. Y. Outer and dress shirts	12,956	Feb. 6	120	1800
McConway & Torley Co., Pittsburg, Pa. Iron and steel castings and forgings	13,460	Jan. 30	120	1462
McDonald, Benjamin H., Fort Worth, Tex. Aerated or carbonated bottled soda-water and syrup for the same	11,108	Feb. 27	120	2729
McDonough, Michael F., Philadelphia, Pa. Whisky	1,222	Feb. 6	120	1768
McKesson & Robbins, New York, N. Y. Pharmaceutical preparations for the treatment of kidney diseases	14,888	Jan. 30	120	1465
McKesson & Robbins, New York N. Y. Chemical preparation for the treatment of diseases characterized by hypersecretion of mucus	4,892	Feb. 6	120	1774
McKinney, William C., New Brighton, Pa. Preparations for cleaning enameled and porcelain ware	15,478	Jan. 23	120	1154
McKinney, William C., New Brighton, assignor to Porcela Company, Pittsburg, Pa. Preparations for cleaning enameled and porcelain ware	13,101	Feb. 20	120	2419
McMullen, Charles P., New York, N. Y. Governors for pumping-engines	7,980	Jan. 2	120	305
McRae & Bevill, Memphis, Tenn. Leather and canvas shoes and slippers	13,725-6	Jan. 2	120	311
Meadville, Pennsylvania Distilling Company, Meadville, Pa. Whiskies	4,838	Jan. 9	120	618
Medical Lake Salts Mfg. Co., Spokane, Wash. Toilet soap	7,226	Feb. 6	120	1778
Medicinal Balsam Company, San Francisco and Palo Alto, Cal. Remedy for catarrh, tuberculosis, &c	7,356	Jan. 30	120	1446
Megler, Joseph G., Brookfield, Wash. Canned salmon	11,309-10	Jan. 2	120	310
Megler, Joseph G., Brookfield, Wash. Canned salmon	11,312	Jan. 2	120	309
Megler, Joseph G., Brookfield, Wash. Canned salmon	11,311	Jan. 9	120	634
Megler, Joseph G., Brookfield, Wash. Canned salmon	11,313	Jan. 9	120	635
Mellier Drug Company, St. Louis, Mo. Synthetic coal-tar product in tablet form for the cure of headaches, neuralgia, &c	6,319	Jan. 2	120	308
Mellier Drug Company, St. Louis, Mo. Tonic and general stimulant	6,320	Feb. 20	120	2402
Mellier Drug Company, St. Louis, Mo. Specific for neuralgia and rheumatism	6,321	Feb. 20	120	2402
Menard, Robert P., Macon, Ga. Remedy for croup and colds	6,353	Jan. 30	120	1445
Mendleson's Sons, A., Albany, N. Y. Potash, lye, and caustic soda	6,086	Jan. 30	120	1444
Menendez, Joaquin, New York, N. Y. Butter	11,608	Feb. 20	120	2415
Mercer Chemical Company, Mercer, Pa. Antiseptic solution	12,927	Feb. 20	120	2418
Merchant & Evans Co., Camden, N. J. Antifriction metals	11,437	Jan. 23	120	1148
Merchants Coal Company, Baltimore, Md. Coal	13,160	Feb. 6	120	1801
Meurer, Jacob, Brooklyn, N. Y. Tin plates and roofing-tin	3,091	Feb. 27	120	2715
Meurer, Jacob, Brooklyn, N. Y. Tin plates and roofing-tin	3,094-5	Feb. 27	120	2715
Michaelis & Sons, M., New York, N. Y. Cocoa-oatmeal preparations	3,550	Feb. 6	120	1771
Michelson & Bros., I., Cincinnati, Ohio. Whisky	5,252	Jan. 9	120	619
Michelson & Bros., I., Cincinnati, Ohio. Whisky	6,521	Jan. 16	120	870
Michigan Carbon Works, Detroit, Mich. Jelly preparation	7,253	Jan. 2	120	305
Michigan Condensed Milk Co., New York, N. Y. Condensed milk	11,103-4	Feb. 20	120	2413
Michigan Tobacco Works, Adrian, Mich. Smoking and chewing tobaccos	9,370	Jan. 30	120	1449
Midget Fly Plate Company, San Francisco, Cal. Sticky fly-paper	8,618	Feb. 6	120	1782
Midland Manufacturing Co., Tarkio, Mo. Cultivators	14,208	Feb. 20	120	2422
Migranose Importing Co., Philadelphia, Pa. Headache specific put up in tabular form	12,503	Jan. 16	120	[illegible]
Miller, Charles A., Buffalo, N. Y. Games comprising each a board and movable pieces associated therewith	14,174	Feb. 20	120	2422
Miller & Co., F. E., New Albany, Ind. Whisky	15,021	Jan. 2	120	313
Miller, Du Brul & Peters Mfg. Co., Cincinnati, Ohio. Cigarettes	1,746	Feb. 6	120	1769
Miller, Sidney F., New York, N. Y. Whisky	3,503	Jan. 30	120	1441
Milliken, Tomlinson Co., Portland, Me. Coffee-berry, either whole or ground	9,061	Jan. 23	120	1145
Milloy and Co., John, Chicago, Ill. Cloth having a polished finish	9,070	Feb. 27	120	2726
Minor & Son, P. W., Batavia, N. Y. Leather boots and shoes	7,[illegible]	Jan. 9	120	[illegible]
Minor & Son, P. W., Batavia, N. Y. Rubber heels for boots and shoes	7,641	Jan. 9	120	[illegible]
Mitchell, Clarence B., Boston, Mass. Canned sardines	9,[illegible]	Jan. 9	120	[illegible]
Mitchell, Clarence B., Boston, Mass. Canned sardines	9,384	Feb. 27	120	2726
Model Milling & Elevator Company, Greeley, Colo. Wheat-flour	5,[illegible]	Jan. 9	120	620
Monaghan, Michael W., Woodhaven, Long Island, N. Y. Liquid rheumatic remedy	7,267	Feb. 13	120	[illegible]
Morris Bros., Allegheny, Pa. Castor-oil	14,219	Jan. 30	120	1463
Morris and Company, Yardville, N. J. Carpets	14,[illegible]	Feb. 6	120	[illegible]
Morris & Company, Nelson, Chicago, Ill. Hash and hashed meats	14,349	Feb. 20	120	2422
Morrison, John C., New York, N. Y. Hat-fasteners	15,272	Jan. 16	120	[illegible]
Morse, Hasam, New Rochelle, N. Y. Nutritive tonics and tissue-builders	12,314	Feb. 20	120	2417
Morse & Rogers, New York, N. Y. Boots, shoes, and slippers of leather or textile material, or both, and soles therefor	9,154	Jan. 2	120	308

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Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Morse & Rogers, New York, N. Y. Boots, shoes, and slippers of leather or textile materials, or both, and soles therefor	9,186	Jan. 2	120	306
Moseberg Wrench Company, Central Falls, R. I. Counter-shafts and appurtenances thereto	15,895	Feb. 6	120	1810
Mount Vernon-Woodberry Cotton Duck Company, Baltimore, Md. Cotton duck	5,929	Jan. 2	120	308
Mount Vernon-Woodberry Cotton Duck Company, Baltimore, Md. Cotton duck	5,930	Jan. 9	120	620
Mount Vernon-Woodberry Cotton Duck Company, Baltimore, Md. Cotton duck	10,941	Jan. 9	120	634
Mount Vernon-Woodberry Cotton Duck Company, Baltimore, Md. Cotton duck	12,621	Feb. 6	120	1797
Mount Vernon-Woodberry Cotton Duck Company, Baltimore, Md. Fabric of cotton duck	5,984	Feb. 20	120	2402
Mountain Distg. Co., Cincinnati, Ohio. Whisky	15,961-2	Feb. 20	120	2426
Mountain Distg. Co., Cincinnati, Ohio. Whisky	15,984	Feb. 20	120	2426
Mountain Distg. Co., Cincinnati, Ohio. Whisky	15,967	Feb. 20	120	2426
Mountain Distg. Co., Cincinnati, Ohio. Whisky	16,422	Feb. 27	120	2743
Mountain Valley Springs Company, Mountain Valley Springs, Ark. Mineral-spring water	8,595	Feb. 20	120	2406
Mueller, Wathen and Kobert, Lebanon, Ky. Whisky	5,436	Jan. 9	120	619
Mueller, Wathen & Kobert, Lebanon, Ky. Whisky	7,186	Jan. 23	120	1143
Mulconroy Co., Inc., Philadelphia, Pa. Rod-packing	13,425	Feb. 13	120	2106
Mulconroy Co., Inc., Philadelphia, Pa. Rubber hose	15,260-1	Feb. 13	120	2111
Mülhens & Kropff, New York, N. Y. Toilet soaps	13,777	Jan. 30	120	1483
Mülhens & Kropff, New York, N. Y. Glycerin soap	1,342	Feb. 20	120	2396
Mumford, Chas. E., Kansas City, Mo. Remedies for the cure of blood diseases and rheumatism	899	Feb. 6	120	1767
Munn & Co., G. H., Reims, France. Champagne-wine	14,154	Feb. 27	120	2737
Municipal Engineering Company, Indianapolis, Ind. Monthly magazine devoted to the improvement of cities and towns along sanitary and engineering lines	15,382	Jan. 16	120	880
Munyon's Homœopathic Home Remedy Co., Philadelphia, Pa. Pills for biliousness and constipation	12,565	Feb. 6	120	1797
Munyon's Homœopathic Home Remedy Co., Philadelphia, Pa. Stomach-bitters	12,564	Feb. 20	120	2417
Murphy, Grant & Co., New York, N. Y., and San Francisco, Cal. Knit underwear	16,188	Feb. 27	120	2741
Murphy, Grant & Co., New York, N. Y., and San Francisco, Cal. Knit hosiery	16,189	Feb. 27	120	2741
Myers, Henry R., Covington, Ky. Gin	7,702	Jan. 9	120	624
Myers, Henry R., Covington, Ky. Whisky	7,697	Jan. 23	120	1144
N. K. Fairbank Company, Chicago, Ill. Prepared fatty, oleaginous, or unctuous food substances	11,145	Jan. 16	120	884
N. K. Fairbank Company, Chicago, Ill. Soap	12,682	Feb. 13	120	2106
N. K. Fairbank Company, Chicago, Ill. Soap	11,156	Feb. 20	120	2413
N. W. Tunesig Co., New York, N. Y. Molasses	5,698	Jan. 23	120	1141
N. Z. Graves Co., Inc., Philadelphia, Pa. Black paints and japans	2,104	Feb. 20	120	2397
N. Z. Graves Co., Inc., Philadelphia, Pa. Black paints and japans	9,099	Feb. 20	120	2407
Nashville Tobacco Works, Nashville, Tenn. Smoking or chewing tobacco	12,557	Feb. 20	120	2417
Nath'l Fisher & Co., New York, N. Y. Boots, shoes, and slippers of leather or textile material, or both, and soles therefor	14,126	Feb. 6	120	1805
National Distilling Co., Milwaukee, Wis. Gin	6,607	Jan. 9	120	621
National Grocer Company, Chicago, Ill. Dried and evaporated fruits	15,846	Feb. 6	120	1808
National Lead Company, Jersey City, N. J., and New York, N. Y. Castor-oil	14,414	Jan. 23	120	1152
National Lead Company, Jersey City, N. J., and New York, N. Y. White lead and oxids of lead	11,813	Feb. 6	120	1798
National Lead Company, Jersey City, N. J., and New York, N. Y. White lead	10,868-9	Feb. 13	120	2105-6
National Lead Company, Jersey City, N. J., and New York, N. Y. White lead	11,810	Feb. 13	120	2106
National Lead Company, Jersey City, N. J., and New York, N. Y. White lead and oxids of lead	11,814	Feb. 13	120	2106
National Lead Company, Jersey City, N. J., and New York, N. Y. White lead	12,443-6	Feb. 13	120	2106-7
National Lead Company, Jersey City, N. J., and New York, N. Y. White lead and oxids of lead	12,122-4	Feb. 20	120	2416
National Lead Company, Jersey City, N. J., and New York, N. Y. Babbitt metal	14,407	Feb. 20	120	2423
National Malleable Castings Company, Cleveland, Ohio. Vertical-plane car-couplers	1,337	Feb. 6	120	1769
National Malleable Castings Company, Cleveland, Ohio. Vertical-plane car-couplers	1,339	Feb. 6	120	1769
National Specialty Manufacturing Company, Philadelphia, Pa. Coffee-grinders	2,900	Jan. 23	120	1140
Nazareth Waist Co., Reading, Pa. Children's underwaists	681	Feb. 13	120	2091
Nelson, Louisa, Nashville, Tenn. Whisky	6,602	Feb. 13	120	2097
Nesmith Shoe Company, Brockton and Boston, Mass. Leather boots and shoes	14,729	Jan. 9	120	643
New Columbia Shirt Co., New York, N. Y. Shirts, collars, and cuffs	10,283	Feb. 20	120	2412
New Columbia Shirt Co., New York, N. Y. Shirts, collars, and cuffs	10,287	Feb. 27	120	2728
New Jersey Car Spring & Rubber Co., Jersey City, N. J. Elastic tubing adapted for use as hose or packing	16,513	Feb. 27	120	2744
New London Milling Company, New London and Wilmar, Minn. Wheat-flour	13,650	Feb. 6	120	1808
New Orleans Coffee Co., Ltd., New Orleans, La. Coffee	4,009	Jan. 23	120	1140
New York Consolidated Card Company, New York, N. Y. Playing-cards	3,957	Jan. 2	120	301
New York Consolidated Card Company, New York, N. Y. Playing-cards	4,397	Jan. 2	120	301
New York Consolidated Card Company, New York, N. Y. Playing-cards	5,011	Jan. 2	120	302
New York Consolidated Card Company, New York, N. Y. Playing-cards	10,136	Jan. 2	120	307
New York Consolidated Card Company, New York, N. Y. Playing-cards	10,139	Jan. 2	120	307
New York Consolidated Card Company, New York, N. Y. Playing-cards	10,141	Jan. 2	120	308
New York Consolidated Card Company, New York, N. Y. Playing-cards	10,145	Jan. 2	120	308
New York Consolidated Card Company, New York, N. Y. Playing-cards	9,369	Jan. 9	120	626
New York Consolidated Card Company, New York, N. Y. Playing-cards	9,821	Jan. 9	120	630
New York Consolidated Card Company, New York, N. Y. Playing-cards	10,126-30	Jan. 9	120	631
New York Consolidated Card Company, New York, N. Y. Playing-cards	10,132	Jan. 9	120	631
New York Consolidated Card Company, New York, N. Y. Playing-cards	10,133	Jan. 9	120	632
New York Consolidated Card Company, New York, N. Y. Playing-cards	10,134	Jan. 9	120	632
New York Consolidated Card Company, New York, N. Y. Playing-cards	10,142-4	Jan. 9	120	633
New York Consolidated Card Company, New York, N. Y. Playing-cards	10,146-8	Feb. 20	120	2410
New York Consolidated Card Company, New York, N. Y. Playing-cards	14,320	Feb. 20	120	2423
New York Consolidated Card Company, New York, N. Y. Playing-cards	9,321	Feb. 27	120	2726
New York Gas Tubing Company, New York, N. Y. Flexible gas-tubing	13,691	Feb. 20	120	2421
New York Genuine Co., New York, N. Y. Laundry starch	9,823	Jan. 16	120	883
New York Herald Company, New York, N. Y. Combs sections or pages of newspapers	15,736	Jan. 30	120	1488
New York Leather Belting Co., New York, N. Y. Lace-leather	10 388	Jan. 2	120	302
New York Leather Belting Co., New York, N. Y. Belt-cement	10,619	Feb. 13	120	2103
Newman, Wilmot J., Boston, Mass. Leather boots and shoes	14,486	Feb. 6	120	1805
Nicholson File Company, Providence, R. I., and Beaver Falls, Pa. Files and rasps	7,960-1	Jan. 9	120	624-5
Nicholson File Company, Providence, R. I. Files, rasps, and handles and holders therefor	8,102	Jan. 9	120	625
Nicholson File Company, Providence, R. I. Files and rasps and handles and holders therefor	7,959-5	Feb. 6	120	1780-1
Nicholson, L. G., Dover, Colo. Ointment	13,179	Feb. 27	120	2738
Nobel's Explosives Company, Limited, Glasgow, Scotland. Explosives	13,688	Feb. 20	120	2419
Noble, Gustave, Lancaster, Germany. Knives, forks, and spoons made of britannia metal	9,888	Feb. 6	120	1785
Nonpareil Smelting Co., Connellsville, Pa. Soldering fluid for tin, brass, copper, and like	11,822	Feb. 6	120	1794
Nonotuck Silk Company, Northampton and Boston, Mass. Thread of silk, cotton, or flax for sewing, stitching, quilting, embroidering, lasting, &c.	7,732	Jan. 9	120	624
Northcutt, Daniel E., Bardstown, Ky. Whisky	6,239	Jan. 30	120	1485

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Norfolk Silk Company, Norfolk, Va. Dress-silks	13,877-8	Feb. 27	120	2736-7
Norris & Christian Stone & Lime Co., Marion, Ohio. Lime	10,614	Feb. 20	120	2412
Norris Sash Pulley Company, Baltimore, Md. Sash-pulleys	14,022	Feb. 6	120	1804
North American Metallic Co., Long Island City, N. Y. Metal bearings, bushings, and journals	6,123	Feb. 13	120	2096
Norton, Thomas L. (Sue Gates, Carroll E., assignor.)	1,717	Feb. 20	120	2396
Norway Pharmacal Company, New York, N. Y. Liquid compounds of cod-liver oil	14,253	Feb. 27	120	2738
Noyes & Company, Joseph F., Binghamton, N. Y. Combs	13,002	Feb. 27	120	2781
Nungesser Electric Battery Co., Cleveland, Ohio. Dry batteries	11,440	Jan. 23	120	1145
Nuyens & Cie., Bordeaux, France. Apricot brandy	13,789	Feb. 13	120	2105
O. W. Petros Company, Lafayette, Ind. Wheat-flour	15,117	Feb. 20	120	2434
O. W. Petros Company, Lafayette, Ind. Coffee	14,657	Jan. 9	120	640
O'Callaghan & Feldes, New York, N. Y. Hosiery	5,236	Jan. 30	120	1443
O'Keefe, Thomas E., Oswego, N. Y. Whisky	14,904	Feb. 27	120	2738
Oakes & Burger, Cattaraugus, N. Y. Milk-cans	13,449	Jan. 30	120	1482
Offterdinger, Henry T., Washington, D. C. Cigars	14,886	Feb. 6	120	1806
Ohmer Fare Register Co., Dayton, Ohio. Ticket issuing and recording machines	9,531	Jan. 9	120	630
Okonite Company, Limited, New York, N. Y. Rubber insulating compound	6,785	Feb. 27	120	2721
Old Hickory Chair Co., Martinsville, Ind. Rustic chairs, settees, tables, and stools	13,207	Jan. 9	120	639
Old Veteran Rheumatic Cure Company, Adairville, Ky. Rheumatic cure	1,849	Jan. 16	120	877
Olds, Edward A., New York, N. Y. Solid and liquid soaps	13,973	Feb. 6	120	1804
Olds, Edward A., New York, N. Y. Soap	12,754	Feb. 6	120	1798
Oliver Typewriter Company, Chicago, Ill. Type-writing machines	5,847	Feb. 6	120	1776
Oneida Hosiery Company, Oneida, N. Y. Hosiery	5,072	Feb. 6	120	1774
Openhym & Sons, Wm., New York, N. Y. Velvets, corduroys, and other cotton-velvet fabrics	5,070	Feb. 27	120	2718
Openhym & Sons, Wm., New York, N. Y. Velvet ribbons	5,073	Feb. 27	120	2718
Openhym & Sons, Wm., New York, N. Y. Velveteens and corduroys	16,182	Feb. 13	120	2431
Oppenheimer, Ely, Cincinnati, Ohio. Whisky	15,555	Jan. 30	120	1496
Oregon Nursery Company Limited, Salem, Oreg. Fruit-trees, buds, and scions thereof	5,446	Feb. 20	120	2398
Oshkosh Grass Matting Co., Oshkosh, Wis. Rugs, art squares, and matting made of grass twine	3,445	Feb. 27	120	2716
Oshkosh Grass Matting Co., Oshkosh, Wis. Rugs, art squares, and matting made of grass twine	3,401	Feb. 27	120	2716
Ostermoor & Co., New York, N. Y. Prepared cotton in the form of sheeted fabric material for filling mattresses, &c	4,158	Feb. 13	120	2094
Ott, Francis S., Sacramento, Cal. Remedy for malaria and chills, and fever	8,088	Jan. 23	120	1145
Otto Gas Engine Works, Philadelphia, Pa. Gas and gasolene engines	15,144	Feb. 27	120	2736
Otto Huber Brewery, Brooklyn, N. Y. Malt extract	13,827	Feb. 27	120	2736
Owl Drug Co., San Francisco, Cal. Cathartics, laxatives, liver medicine, and medical compounds to relieve and cure headache, &c	10,186	Feb. 6	120	1787
P. Hohenadel, Jr., Canning Co., Rochelle, Ill. Canned corn	10,165	Feb. 6	120	1787
P. Hohenadel, Jr. Co., Janesville, Wis. Canned corn	10,375	Jan. 30	120	1483
P. Rielly & Son, Newark, N. J. Chrome-tanned leather	8,620	Jan. 2	120	305
P. J. Bowlin Liquor Co., St. Paul, Minn. Whisky	8,626	Jan. 9	120	626
P. J. Bowlin Liquor Co., St. Paul, Minn. Whisky	[illegible]	Jan. 9	120	626
P. J. Bowlin Liquor Co., St. Paul, Minn. Wine	8,636	Jan. 16	120	882
P. J. Bowlin Liquor Co., St. Paul, Minn. Brandy	9,484-5	Feb. 6	120	1784-5
P. J. Bowlin Liquor Co., St. Paul, Minn. Rock and rye	8,632	Feb. 20	120	2406
P. M. Frank Disinfecting Co., New York, N. Y. Disinfectants and deodorizers	15,208	Feb. 27	120	2728
Paas Dye Co., Newark, N. J. Dyes	14,530-1	Jan. 30	120	1484
Pabst Brewing Company, Milwaukee, Wis. Beer	14,347	Jan. 2	120	312
Pacific Coast Borax Company, San Francisco, Cal. Borax soap	15,130	Jan. 16	120	886
Pacific Coast Borax Company, San Francisco, Cal. Borax soap	15,128	Jan. 23	120	1153
Pacific Creamery Company, Buena Park and Los Angeles, Cal. Sterilized cream	6,409	Feb. 27	120	2720
Palaani Company, Boston, Mass. Cleansing and scouring preparation in jelly, fluid, paste, and powder form	11,473	Jan. 30	120	1485
Palmer, Eddy, New York, N. Y. Perfumed powders	15,675	Feb. 27	120	2739
Palmer, Eddy, New York, N. Y. Perfumes, including extracts, essences, colognes, and toilet-waters	15,676	Feb. 27	120	2739
Palmer, Eddy, New York, N. Y. Lotions for affections of the skin	15,677	Feb. 27	120	2740
Palmer, Hil & Co., Cincinnati Ohio. Mops	5,110	Feb. 27	120	2718
Paracamph Company, Louisville, Ky. Laxatives	10,765	Jan. 9	120	634
Paragon Malt Extract Co., New York, N. Y. Malt extract	14,804	Jan. 2	120	313
Paragon Malt Extract Company, New York, N. Y. Malt extract	9,401	Feb. 6	120	1784
Pardridge & Blackwell, Detroit, Mich. Toilet soap	8,855	Feb. 13	120	2101
Paris Medicine Co., St. Louis, Mo. Remedies for malarial diseases	2,998	Jan. 9	120	617
Paris Medicine Co., St. Louis, Mo. Antiseptic healing-oil	13,271-2	Jan. 9	120	638
Paris, Samuel C., Philadelphia, Pa. Panama hats	7,478	Feb. 27	120	2723
Parke, Davis & Co., Detroit, Mich., and New York, N. Y. Hemostatic, astringent, blood-pressure-raising, and stimulating preparations for medicinal or surgical purposes	11,909	Jan. 16	120	886
Parker Holmes & Company, Boston, Mass. Leather boots, shoes, and slippers	11,645	Feb. 6	120	1792
Parker Holmes & Company, Boston, Mass. Leather boots, shoes, and slippers	11,647	Feb. 6	120	1792
Parker Holmes & Company, Boston, Mass. Leather boots, shoes, and slippers	16,088	Feb. 6	120	1812
Parkhill Mfg. Co., Fitchburg, Mass. Cotton piece goods	3,185	Feb. 27	120	2715
Parks Bros. & Rogers, Providence, R. I. Watch, fob, neck, lorgnette, boa, and bracelet chains, chain-linked bracelets, hoy-chains, chatelaines, and chain-trimmings	5,283	Jan. 16	120	878
Parks Bros. & Rogers, Providence, R. I. Sleeve and collar buttons and studs	5,284-5	Feb. 27	120	2719
Parlin & Orendorff Co., Canton, Ill. Riding and walking plows	11,212	Jan. 30	120	1484
Parlin & Orendorff Co., Canton, Ill. Plows	11,210	Feb. 20	120	2413
Parlin & Orendorff Co., Canton, Ill. Plows	12,220	Feb. 27	120	2733
Parsons, Charles A., Newcastle-on-Tyne, England. Electric generators and motors and parts thereof	16,327	Feb. 20	120	2431
Paso Real Fruit Company, Cincinnati, Ohio. Citrus fruits and pineapples	13,020	Feb. 27	120	2734
Passavant & Co., New York, N. Y. Ribbons	14,451	Feb. 6	120	1805
Passavant & Co., New York, N. Y. Ribbons	14,452	Feb. 13	120	2130
Pater, Joseph J., Hamilton, Ohio. Remedy for hog-cholera	10,320	Jan. 30	120	1482
Patten, John H., Butler, Mo. Salve	12,921	Feb. 6	120	1800
Patterson, Gottfried & Hunter, Limited, New York, N. Y. Leather belting	13,127	Jan. 9	120	638
Patterson Sargent Co., Cleveland, Ohio. Carbon paints	13,771	Feb. 20	120	2418
Paul Bros. Medicine Co., Alton, Ill. Medicine for the treatment of malaria, chills, swamp fever, bilious fever, &c	14,383	Jan. 23	120	1152
Peacock Chemical Co., St. Louis, Mo. Medicinal preparation used as a nerve sedative	6,511	Feb. 20	120	2402
Pearl & Co., I. L., Johnson, Vt. Trousers	15,680	Feb. 20	120	2426
Peebles Gemless Ring Mfg. Co., New York, N. Y. Solid-gold finger-rings	2,904	Feb. 6	120	1776
Pendas Enamel Paint Works, New York, N. Y. Enamel paints	14,180	Jan. 2	120	314
Peltier, Ella A., Dresden, Ohio. Games and toys	12,726	Feb. 20	120	2422
Pen-Mar Distilling Co., Waynesboro, Pa. Whisky	11,474	Jan. 16	120	885

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Penn Wall Paper Company, Pittsburg, Pa. Wall-paper	9,537	Feb. 6	120	1785
Peoria Drill and Seeder Co., Peoria, Ill. Seeding-machines	12,963	Jan. 30	120	1461
Perkins, Charles B., Boston, Mass. Cigars	6,905	Feb. 6	120	1778
Perkins, Charles B., Boston, Mass. Cigars	6,907	Feb. 6	120	1778
Perkins, George H., Gloucester, Mass. Cured fish (smoked, dried, or salted)	10,953-4	Feb. 27	120	2728
Perkins, George H., Gloucester, Mass. Cured fish (smoked, dried, or salted)	10,957	Feb. 27	120	2729
Perry & Company, Limited, Birmingham, England. Steel, fountain, and stylographic pens and penholders	10,939-40	Feb. 27	120	2729
Personeni, Joseph, New York, N. Y. Solid salts for making beverages	11,169	Feb. 6	120	1791
Pfister & Vogel Leather Company, Milwaukee, Wis. Leather for shoes, gloves, and harness	7,490	Feb. 13	120	2099
Phelps Company, Meadville, Pa. Chocolates	3,191	Feb. 20	120	2398
Phenix Cheese Co., South Edmeston, N. Y. Cheese	13,452	Jan. 30	120	1462
Phillips Drug Co., Warren, Pa. Rheumatic remedies	5,585	Jan. 9	120	620
Phillips Insulated Wire Co., Pawtucket, R. I. Insulated wire and wire cables	14,969	Feb. 6	120	1806
Phillips Insulated Wire Co., Pawtucket, R. I. Insulated conducting-wires for telegraphs, telephones, electric lights, &c.	11,328	Feb. 6	120	1791
Phoenix Cap Company, New York, N. Y. Caps and corks	11,329	Feb. 6	120	1791
Phoenix Jewelry Co., New York, N. Y. Sleeve, link, and collar buttons, shirt-studs, and emblem-buttons	6,166	Feb. 6	120	1777
Phoenix Mill Co., Minneapolis, Minn. Wheat-flour	16,463	Feb. 20	120	2432
Picchianti, Elvira, Chicago, Ill. Sauce for spaghetti	15,695-6	Feb. 6	120	1809
Pickering Governor Co., Portland, Conn. Engine-governors	11,109	Feb. 6	120	1790
Pillsbury-Washburn Flour Mills Company, Ltd., Minneapolis, Minn. Wheat-flour	7,749	Feb. 20	120	2404
Pillsbury-Washburn Flour Mills Company, Ltd., Minneapolis, Minn. Wheat-flour	2,965	Jan. 30	120	1441
Pillsbury-Washburn Flour Mills Company, Ltd., Minneapolis, Minn. Wheat-flour	2,967	Jan. 30	120	1441
Pillsbury-Washburn Flour Mills Company, Minneapolis, Minn. Wheat-flour	2,978	Jan. 30	120	1441
Pinet, Elise, Minneapolis, Minn. Toilet waters	14,475	Feb. 20	120	2423
Pioneer Suspender Company, Philadelphia, Pa. Hose-supporters	9,203	Feb. 6	120	1784
Pioneer Suspender Company, Philadelphia, Pa. Hose-supporters	12,843	Feb. 6	120	1799
Piso Company, Warren, Pa. Consumption remedy	13,595	Feb. 6	120	1803
Piso Company, Warren, Pa. Remedy for catarrh	14,760	Jan. 30	120	1464
Pittsburgh Milling Co., Allegheny, Pa. Wheat-flour	14,761	Jan. 30	120	1465
Pittsburgh Milling Co., Allegheny, Pa. Wheat-flour	9,830	Jan. 16	120	883
Planten, John R., New York, N. Y. Round, pearl-shaped, or globular gelatin capsules filled	2,847	Jan. 23	120	1140
Planten, John R., New York, N. Y. Filled gelatin capsules	3,393	Feb. 13	120	2094
Planters Packing and Preserving Co., Delray, Fla. Canned pineapples	3,395	Feb. 13	120	2094
Platt, Mary E., New York, N. Y. Liquid disinfectants	5,066	Feb. 27	120	2717
Pleasant Valley Wine Co., Rheims, N. Y. Wine	7,606	Jan. 9	120	623
Pollasky, Max E., Buffalo, N. Y. Whisky	5,374	Jan. 16	120	878
Pond's Extract Company, New York, N. Y. Cream for the treatment of the skin	6,631	Jan. 16	120	879
Pond's Extract Company, New York, N. Y. Distillation of hamamelis	12,810	Feb. 6	120	1798
Pond's Extract Company, New York, N. Y. Ointments	12,812-13	Feb. 6	120	1798-9
Pond's Extract Company, New York, N. Y. Distillation of hamamelis	12,814	Feb. 6	120	1799
Pond's Extract Company, New York, N. Y. Catarrh remedies	12,815	Feb. 6	120	1799
Pond's Extract Company, New York, N. Y. Veterinary remedies for horses and all domestic animals	12,816	Feb. 6	120	1799
Pond's Extract Company, New York, N. Y. Toilet-paper	12,817	Feb. 6	120	1799
Pope, Henry C., Birmingham, Ala. Antiseptic remedy for internal and external use for man and beast for pains, aches, cuts, rheumatism, &c.	12,818	Feb. 20	120	2418
Porcela Company. (See McKinney, William C., assignor.)	11,000	Jan. 30	120	1454
Portland Packing Company, Portland, Me. Canned lobsters, mackerel, clams, and clam-chowder	9,185	Jan. 30	120	1449
Postum Cereal Co., Limited, Battle creek, Mich. Breakfast-foods prepared from cereals	4,101	Feb. 6	120	1772
Potter Drug & Chemical Corporation, Boston, Mass. Liquid for internal use as an antiseptic, tonic, digestive, and blood-purifier	14,982	Jan. 30	120	1464
Potter Drug & Chemical Corporation, Boston, Mass. Ointment	14,983	Jan. 30	120	1464
Powell, Chas. A., Whitesboro, N. Y. Corset-covers and waists	8,898	Feb. 13	120	2101
Power Specialty Co, Detroit, Mich. Tools for cleaning steam-boilers	13,382	Feb. 6	120	1802
Pratt Food Co., Philadelphia, Pa. Washes or lotions to rid animals of vermin	12,857	Feb. 6	120	1797
Pratt & Lambert, Buffalo, N. Y. Liquid driers	7,043	Jan. 30	120	1446
Pratt-Low Preserving Co., San Jose, Cal. Canned fruits and vegetables	6,550	Jan. 30	120	1445
Pratt-Low Preserving Co., San Jose, Cal. Canned fruits and vegetables	1,256	Feb. 6	120	1768
Presto Pharmacal Company, Reading, Pa. Soothing-syrup	12,822	Feb. 6	120	1798
Presto Pharmacal Company, Reading, Pa. Salves	13,545	Feb. 20	120	2421
Preston B. Keith Shoe Co., Brockton, Mass. Leather boots, shoes, and slippers	9,135	Jan. 30	120	1444
Price Baking Powder Company, Chicago, Ill. Baking-powder	11,572	Jan. 16	120	885
Price Baking Powder Company, Chicago, Ill. Baking-powder	11,574	Feb. 13	120	2105
Price's Patent Candle Co. Limited, London, Battersea, and Bromborough Pool Works, England. Soap	16,081	Feb. 27	120	2740
Price's Patent Candle Co. Limited, London, Battersea, and Bromborough Pool Works, England. Illuminating and heating oils	16,082	Feb. 27	120	2740
Progressive Mfg. Co., Torrington, Conn. Internal-combustion engines	13,070	Feb. 6	120	1801
Prouty-Bowler Soap Company, Des Moines, Iowa. Laundry soap	4,826	Feb. 6	120	1773
Provident Chemical Works, St. Louis, Mo. Powdered acid phosphate of lime	2,346	Feb. 13	120	2098
Pumah Brothers, St. Louis, Mo. Shirts	13,042	Feb. 6	120	1800
Purcell Mill & Elevator Company, Purcell, Ind. Ter. Wheat-flour	11,470	Jan. 9	120	635
Purdy, Charles G., New York, N. Y. Butter made from nuts	5,623	Jan. 16	120	882
Putnam & Co., W. W., Staunton, Va. Organs	14,980	Jan. 9	120	644
Quinn, Lorenzo D., Athens, Ala. Internal remedy for asthma, catarrh, &c.	9,539	Feb. 27	120	2726
R. Buchanan Company, St. Paul, Minn. Remedy for the treatment of asthma, phthisic, hay-fever, bronchitis, and catarrh	2,999	Feb. 13	120	2098
R. J. Perry Co., Boston, Mass. Chocolates and bonbons	7,781	Jan. 9	120	624
R. J. Perry Co., Boston, Mass. Chocolates and bonbons	7,753	Jan. 30	120	1447
R. M. Rose Co., Athens, Ga. Whisky	4,186	Feb. 20	120	2389
R. & W. Jenkinson Co., Pittsburg, Pa. Stogies	11,262	Jan. 2	120	309
R. & W. Jenkinson Co., Pittsburg, Pa. Cigars	11,263	Jan. 2	120	309
R. & W. Jenkinson Co., Pittsburg, Pa. Stogies	2,082	Jan. 30	120	1449
Radam, Ida, New York, N. Y. Microbe-killer	5,002	Jan. 23	120	1141
Radenmacher, John L., New York, N. Y. Mattresses	9,857	Feb. 13	120	2102
Ralston Purina Co., St. Louis, Mo. Stock-feed	683	Feb. 20	120	2396
Randall Mattress Company, Cleveland, Ohio. Mattresses and pillows and feathers for mattresses and pillows	8,743	Feb. 6	120	1783
Ray, Rachel B., Eureka Springs, Ark. Ointment	12,041	Jan. 30	120	1457
Red Diamond Clothing Co., St. Louis, Mo. Overalls, coats, and trousers	1,040	Feb. 6	120	1768
Red Snapper Sauce Co., Memphis, Tenn. Sauces and relishes for meats, fish, game, &c.	9,297	Jan. 16	120	883

Alphabetical list of trade-mark applicants published during January and February—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Red Star Mill & Elevator Company, Wichita, Kans. Wheat-flour	15,216	Jan. 16	120	889
Reinert, Adolphus, New York, N. Y. Cordial for blending whiskies	13,044	Jan. 30	120	1461
Renal Pharmacal Co., Mount Vernon, N. Y. Rheumatic cure	13,761	Jan. 9	120	639
Renal Pharmacal Co., Mount Vernon, N. Y. Remedy for diabetes	13 762	Jan. 9	120	639
Republic of France, Paris, France. Smoking and chewing tobacco, snuff, and tobacco extracts	13,375	Feb. 20	120	2430
Republic of France, Paris, France. Smoking-tobacco	13,376	Feb. 20	120	2430
Reversible Collar Company, Boston and Cambridge, Mass. Shirt-fronts and false shirt-bosoms	9,304	Feb. 20	120	2408
Review Publishing Company, New York, N. Y. Monthly magazine	11,943	Jan. 9	120	636
Rex Chemical Co., Toledo, Ohio. Remedy for kidney, liver, and stomach diseases and blood disorders	15,786	Feb. 13	120	2113
Reymer & Brothers, Incorporated, Pittsburg, Pa. Candy	9,010	Jan. 30	120	1448
Reynolds, Bion F., Brockton, Mass. Leather boots and shoes	13,863	Feb. 13	120	2109
Rhuma-Sulphur Co., St. Louis, Mo. Germicides and remedies for germ and skin diseases	5,109	Jan. 23	120	1141
Rice & Co., A. H., Pittsfield, Mass. Plain braids	7,261	Feb. 13	120	2097
Rice & Hutchins, Incorporated, Boston, Mass., assignor to Rice and Hutchins Incorporated. Leather boots and shoes and leather used in their manufacture	7,797	Feb. 20	120	2404
Rice, Stix Dry Goods Company, St. Louis, Mo. Hosiery	7,943	Feb. 20	120	2405
Rice, Stix Dry Goods Company, St. Louis, Mo. Hosiery	15,213-14	Feb. 20	120	2425
Rice, Stix Dry Goods Company, St. Louis, Mo. Hosiery	15,514	Feb. 20	120	2426
Rice, Stix Dry Goods Company, St. Louis, Mo. Hosiery	15,763	Feb. 20	120	2428
Richards, Ed. T., Chicago, Ill. Powdered nerve and muscle tonic	7,075	Feb. 13	120	2097
Richardson & Boynton Company, New York, N. Y. Stoves, ranges, heaters, furnaces, and parts thereof	2,619	Feb. 20	120	2397
Richardson, George, Grayslake, Ill. Remedies for asthma	15,206	Feb. 13	120	2111
Richardson Roberts Dry Goods Co., St. Joseph, Mo. Pants, overalls, coats, and vests	10,540	Feb. 6	120	1788
Richardson Roberts Dry Goods Co., St. Joseph, Mo. Hosiery	7,004	Feb. 27	120	2722
Richmond Baking Company, Richmond, Ind. Crackers and wafers	12,732	Jan. 30	120	1460
Ridenour-Baker Grocery Company, Kansas City, Mo. Coffee	7,975	Feb. 6	120	1781
Rightmire, Thomas F., New York, N. Y. Horse-radish	12,648	Feb. 27	120	2733
Riley & Co., Wm. B., Philadelphia, Pa. Horse-blankets	8,010	Jan. 2	120	305
Rindge, Kalmbach, Logie & Co., Lt'd, Grand Rapids, Mich. Leather boots, shoes, and slippers	1,014	Jan. 23	120	1140
Riordan, Charles F., Boston, Mass. Whisky	5,190	Jan. 2	120	302
Ritter Dental Mfg. Co., Rochester, N. Y. Dental chairs	10,350-61	Jan. 23	120	1147
Riverside Navel Orange Company, Riverside, Cal. Oranges, lemons, grape-fruit and citron	5,725	Feb. 27	120	2719
Robert Smith Ale Brewing Company, Philadelphia, Pa. Ale	416	Feb. 6	120	1767
Roberts, Johnson & Rand Shoe Company, St. Louis, Mo. Leather boots and shoes	16,150	Feb. 6	120	1812
Robertson, Arthur R., Boston, Mass. Hammers	8,476	Feb. 20	120	2406
Rochester Panoramic Camera Company, Rock Springs, Wyo. Panoramic cameras	12,054	Feb. 27	120	2732
Rock Hill Buggy Co., Rock Hill, S. C. Buggies and carriages	11,723	Feb. 20	120	2415
Rock Hill Buggy Co., Rock Hill, S. C. Buggies and carriages	11,726	Feb. 20	120	2415
Rock-Spring Distg. Co., Owensboro, Ky. Whisky	3,119	Jan. 9	120	617
Rodrigues, Arguelles & Company, Havana, Cuba. Cigars	4,814	Feb. 27	120	2717
Rodrigues, Arguelles & Company, Havana, Cuba. Cigars	6,235	Feb. 27	120	2720
Rogers & Hubbard Co., Middletown, Conn. Bone rings	16,133	Feb. 13	120	2113
Rogers Paper Mfg. Co., Inc'd, Manchester, Conn. Press-board or press-paper	11,947	Feb. 13	120	2106
Rosemary Manufacturing Company, Roanoke Rapids, N. C. Cotton damask	12,771	Jan. 9	120	639
Rosen & Bergner, Chicago, Ill. Liniments or lotions	5,003	Jan. 30	120	1443
Rosenbaum Company, Pittsburg, Pa. Clothing for women and misses, consisting of waists, dresses, and suits complete	6,520	Feb. 20	120	2402
Rosenzweig, Louis, Chicago, Ill. Fruit wine	6,296	Jan. 9	120	621
Rosenzweig, Louis, Chicago, Ill. Whisky	6,294	Jan 30	120	1445
Ross Brothers, Worcester, Mass. Chicken-feed	14,739	Jan. 30	120	1456
Ross, Lewis P., Rochester, N. Y. Lumbermen's rubbers for men, boys, and youths, and men's, boys', youths', women's, misses', and children's rubber boots	15,512	Feb. 6	120	1807
Roth, Charles, Cincinnati, Ohio. Whisky	13,536	Feb. 6	120	1808
Roth & Co., San Francisco, Cal. Whisky	15,231	Feb. 6	120	1807
Roth & Engelhardt, New York, N. Y. Pneumatically-actuated pianofortes	10,998	Jan. 16	120	884
Rothenburg & Schloss, Kansas City, Mo. Havana cigars	5,570	Feb. 6	120	1775
Round Top Cement Company, Bloomfield, N. J. Artificial Portland and hydraulic cement	7,880	Jan. 16	120	881
Round Top Cement Company, Bloomfield, N. J. Natural and artificial Portland and hydraulic cement	7,881	Feb. 20	120	2405
Rousey de Sales, Jules F. G. de, Paris, France. Soaps	10,528	Feb. 20	120	2411
Rowe Patent Square Shoulder Shoe Calk Co., Hartford, Conn. Horseshoes and horseshoe-calks	1,122	Jan. 16	120	877
Roxbury Carpet Company, Boston, Mass. Tapestry, Brussels, and velvet carpets	10,452	Jan. 30	120	1453
Roxbury Carpet Company, Boston, Mass. Tapestry Brussels and tapestry velvet carpets	10,452	Feb. 20	120	2411
Royal Worcester Corset Co., Worcester, Mass. Corsets	7,322	Jan. 9	120	622
Royal Worcester Corset Co., Worcester, Mass. Corsets	7,327	Jan. 9	120	622
Royal Worcester Corset Co., Worcester, Mass. Corsets	7,324-5	Jan. 16	120	880
Royal Worcester Corset Co., Worcester, Mass. Corsets	7,326-9	Jan. 16	120	880
Royal Worcester Corset Co., Worcester, Mass. Corset steels and clasps	7,330	Jan. 16	120	880
Rumford Chemical Works, Providence, R. I. Yeast-powder	5,768	Jan. 9	120	630
Rumford Chemical Works, Providence, R. I. Sparkling effervescent tonic beverage	5,770	Feb. 20	120	2401
Ruppert, Jacob, New York, N. Y. Beer	11,528-31	Jan. 2	120	310
Russ Company, South Bend, Ind. Laundry bluing	5,909	Jan. 9	120	620
Russell & Co., Cambridge, Mass. Chocolates, bonbons, and similar candies	647	Feb. 6	120	1767
Russell M. Hughes & Co., Louisville, Ky. Non-alcoholic medicinal beverages containing the essential properties of fruit	6,756	Feb. 27	120	2722
Ryan-Hampton Tobacco Co., Newburg, Ind. High grade of chewing-tobacco	10,108	Jan. 30	120	1451
Ryan-Hampton Tobacco Co., Newburg, Ind. Especially high grade of plug-tobacco	10,112	Feb. 6	120	1787
Ryan-Hampton Tobacco Co., Newburg, Ind. Chewing-tobacco	10,113	Feb. 6	120	1787
Ryan, M., Nashville, Tenn. Whisky	8,589	Jan. 23	120	1145
S. Bolton's Sons, Troy, N. Y. Ale	3,494	Jan. 23	120	1140
S. D. & B. W. Fleisher, Incorporated, Philadelphia, Pa. Worsted yarns	7,893	Jan. 16	120	881
S. H. Frank & Co., San Francisco, Cal. Bole-leather	5,804	Jan. 9	120	628
S. H. Wetmore Co., New York, N. Y. Suspensory bandages and jock-straps	5,858	Jan. 23	120	1144
S. S. Pierce Co., Boston, Mass. Lager-beer	5,892	Jan. 2	120	308
S. S. Pierce Co., Boston, Mass. Cigars	9,881	Jan. 30	120	1460
S. S. Pierce Co., Boston, Mass. Cigars	9,882	Feb. 20	120	2409
S. W. Noggle Wholesale & Mfg. Co., Kansas City, Mo. Laundry starch	8,809	Feb. 6	120	1783
Sakabe, Jiro, New York, N. Y. Toilet, tooth, nail, hand, hair, military, cloth, hat, bath, and infant brushes	15,804	Jan. 16	120	889
Salo-Sedatus Chemical Company, St. Louis, Mo. Proprietary medicine which is an external and internal antiseptic and disinfectant, antipyretic, diuretic, anodyne, and hypnotic	10,473	Jan. 2	120	308
Sample & Co., New York, N. Y. Whisky	4,514	Feb. 6	120	1772
Sample & Co., New York, N. Y. Whisky	6,230	Feb. 6	120	1777

Alphabetical list of trade-mark applicants published during January and February—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Samson Cordage Works, Boston, Mass. Braided sash-cord	10,803	Feb. 6	120	1789
Samson Cordage Works, Boston, Mass. Cords, lines, twines, and ropes	15,811-12	Feb. 6	120	1810
Samson Cordage Works, Boston, Mass. Cords, lines, twines, and ropes	10,994-5	Feb. 27	120	2727
Samuel Westheimer & Son Wholesale Liquor Co., St. Joseph, Mo. Whisky	10,979	Jan. 30	120	1454
Samuel Westheimer & Son Wholesale Liquor Company, St. Joseph, Mo. Whisky	5,785	Feb. 6	120	1776
Samuels & Bro., J., Providence, R. I. Coats and trousers	4,557	Jan. 30	120	1462
Sanchez & Haya Co., Tampa, Fla. Cigars	6,918	Feb. 27	120	2722
Savage, Marion W., Minneapolis, Minn. Stock-food	7,480	Jan. 23	120	1144
Savage, Marion W., Minneapolis, Minn. Poultry-food	5,313	Feb. 6	120	1774
Savage, Marion W., Minneapolis, Minn. Healing pine-oil	5,314	Feb. 6	120	1775
Savage, Marion W., Minneapolis, Minn. Breakfast-food made from wheat	9,288	Feb. 6	120	1785
Savage, Marion W., Minneapolis, Minn. Antiseptics and germicides	5,311	Feb. 20	120	2400
Savage, Marion W., Minneapolis, Minn. Poultry-food	5,313	Feb. 20	120	2400
Savage, Marion W., Minneapolis, Minn. Gall cure	6,643	Feb. 20	120	2403
Savage, Marion W., Minneapolis, Minn. Stock-food	5,317	Feb. 27	120	2719
Sawyer Crystal Blue Company, Boston, Mass. Washing-blue	10,443	Feb. 6	120	1788
Sawyer Crystal Blue Company, Boston, Mass. Washing-blue	10,443	Feb. 20	120	2411
Schaefer, William H., Toledo, Ohio. Cap-mantles	15,492	Feb. 6	120	1807
Schall & Co., New York, N. Y. Candies	11,988	Feb. 20	120	2418
Scharf, L. & A., St. Louis, Mo. Whisky	9,106	Jan. 9	120	626
Schenck, Joseph H., Philadelphia, Pa. Medicinal, restorative, and regulative compounds	13,984	Feb. 20	120	2422
Schilling & Company, A., San Francisco, Cal. Coffee	9,286	Jan. 23	120	1146
Schilling & Company, A., San Francisco, Cal. Baking-powder, bicarbonate of soda, and cream of tartar	9,291	Jan. 23	120	1146
Schilling & Company, A., San Francisco, Cal. Spices	9,292	Jan. 23	120	1146
Schilling & Company, A., San Francisco, Cal. Coffee	9,293	Jan. 30	120	1449
Schilling & Company, A., San Francisco, Cal. Spices	9,292	Jan. 30	120	1449
Schlaepfer, Ulrich F., Zurich, Switzerland. Preparation for the treatment of rheumatism, gout, sciatica, neuralgia, &c.	14,780	Jan. 30	120	1465
Schmidt, Alexander O., San Francisco, Cal. Medicine for diseases peculiar to females	12,473	Feb. 13	120	2107
Schmidt, Geo. A., Chicago, Ill. Soap in liquid, solid, plastic, and granular form	9,289	Jan. 30	120	1449
Schmidt & Schiller, La Crosse, Wis. Laundry and toilet soap	15,818	Feb. 27	120	2740
Schoble & Co., Frank, Philadelphia, Pa. Men's and boys' hats and caps	8,115	Feb. 6	120	1781
Schoble & Co., Frank, Philadelphia, Pa. Soft and stiff fur-felt, straw, and silk hats, caps for men and boys' wear, and ladies' hats	8,111	Feb. 13	120	2099
Schott, Charles H., New York, N. Y., and Providence, R. I. Button parts	14,841	Feb. 6	120	1806
Schrader & Ehlers, New York, N. Y. Combs	9,279	Feb. 6	120	1784
Schulten and Co., Jno. J., Louisville, Ky. Leather boots and shoes	11,917	Jan. 16	120	885
Schultz, Christian, Vienna, Austria-Hungary. Cigarette-paper	13,926	Feb. 13	120	2109
Schwabacher Bros. & Co., Inc., Seattle, Wash. Spices of all varieties and mustard	11,898	Feb. 6	120	1793
Schwabacher Bros & Co Inc., Seattle, Wash. Coffee	11,894	Feb. 13	120	2108
Schwabacher Bros. & Co. Inc., Seattle, Wash. Canned fish	11,892-3	Feb. 20	120	2415
Schwabacher Bros & Co Inc., Seattle, Wash. Flavoring extracts	11,896	Feb. 27	120	2731
Schwartz, Joseph H., Plymouth, Pa. Whisky	12,664-5	Feb. 6	120	1788
Schwartz, Joseph H., Plymouth, Pa. Whisky	12,667-8	Feb. 6	120	1796
Scranton Stove Works, Scranton, Pa. Stoves, ranges, furnaces, and parts thereof	4,332	Jan. 16	120	878
Scranton Whetstone and Abrasive Wheel Co., Scranton, Pa. Oil, water, wheel, and grind stones and hones	14,220½	Jan. 30	120	1464
Seamless Rubber Co., New Haven, Conn. Rubber water bags and bottles	6,324	Jan. 2	120	304
Seamless Rubber Co., New Haven, Conn. Rubber nipples for nursing-bottles	6,325	Jan. 9	120	630
Seal, William E., Harrisburg, Pa. Blended whisky	5,796	Feb. 6	120	1776
Sebastelmer, Henry A., Cincinnati, Ohio. Boys' suits	7,144	Feb. 20	120	2403
Selby Smelting and Lead Company, San Francisco, Cal. Pig, calking, and bar-lead	8,782	Jan. 16	120	882
Semmon Bache & Company, New York, N. Y. Sheet and picture glass	6,947	Jan. 16	120	880
Seneca, Stephen J., Havre de Grace, Md. Canned vegetables and fruits	11,790	Jan. 9	120	636
Shales, George L., Sacramento, Cal. Preparation for the relief of rheumatism and kindred ailments	14,519	Jan. 30	120	1464
Sharood, Charles K., St. Paul, Minn. Leather shoes	8,201	Feb. 13	120	2100
Sharood, Charles K., St. Paul, Minn. Leather boots, shoes, and slippers	8,200	Feb. 20	120	2408
Sheboygan Knitting Company, Sheboygan, Wis. Hosiery	14,229	Jan. 9	120	644
Shedd, Freeman B., Lowell, Mass. Cologne	5,744	Feb. 20	120	2401
Shefield-King Milling Co., Minneapolis, Minn. Wheat-flour	14,284	Feb. 20	120	2432
Shimer, Elmer R., Milton, Pa. Antifriction metals	9,595	Feb. 6	120	1795
Shire, Nathaniel N., New York, N. Y. Ointment for the cure of eczema	9,894	Feb. 6	120	1795
Shortell & Thrasher, Boston, Mass. Whisky	283	Jan. 23	120	1139
Shupe-Williams Candy Co., Ogden, Utah. Chocolates	6,133	Feb. 27	120	2720
Shute, William T., Gloucester, Mass. Dried, smoked, pickled, salted, and canned fish	4,077	Jan. 9	120	618
Shute, William T., Gloucester, Mass. Dried, smoked, pickled, and canned fish	10,667	Jan. 16	120	883
Sibley, William E., Freeport, Ill. Tea	795	Feb. 13	120	2091
Siebel Chemische Fabrik Linimer, Ferdinand, Linimer, by Hannover, Germany. Uniting agents for colors	7,672	Feb. 20	120	2404
Siebert & Trussell Mfg. Co., St. Louis, Mo. Loose-leaf binders	11,087	Jan. 23	120	1146
Sill Stove Works, Rochester, N. Y. Stoves, ranges, gas-stoves, and attachments and parts and repairs thereof	10,546	Feb. 6	120	1789
Sill Stove Works, Rochester, N. Y. Stoves, ranges, gas-stoves, and attachments and parts and repairs thereof, such as water-fronts, fire-bricks, pots, grates, and fire-box linings	10,548	Feb. 6	120	1789
Sill Stove Works, Rochester, N. Y. Cooking stoves and ranges, heating-stoves, and repairs and parts thereof	13,961	Feb. 20	120	2421
Silver, Bennett C., New York, N. Y. Remedies for the relief and cure of asthma, consumption, and kindred diseases	12,174	Feb. 13	120	2106
Silver & Company, New York, N. Y. Tea and coffee pots and coffee-urns	15,940	Feb. 6	120	1811
Simmons Mfg. Co., New Ulm, Minn. Wheat-flour	280	Jan. 2	120	299
Simpson, Hall & Co., New York, N. Y. Cotton, silk, hemp, and other fiber threads	13,927	Jan. 9	120	629
Singhamus, Frank, Cincinnati Company, Syracuse, N. Y. Type-writing machines	6,000	Feb. 6	120	1774
Smith, Kline & French Co., Philadelphia, Pa. Chemically-pure borax	14,510	Feb. 20	120	2432
Smith, Kline & French, Cal. Wines	11,887	Feb. 6	120	1793
Smith, Kline & French, Cal. Wines	11,888	Feb. 6	120	1793
Smith, Kline & French, N. Y. Cough-drops for coughs and colds	5,889	Feb. 6	120	1776
Smith & Wood, Inc., Geneva, N. Y. Variety of peach-tree known as the Elizabeth peach	11,148	Jan. 9	120	634
Société Anonyme des Manufactures de Tabacs de Monterrey, Schinard & fils, Monterrey, Canton of Vaud, Switzerland. Cigarettes and cigars	6,287	Feb. 6	120	1777
Société Anonyme [illegible], Boisseau, and Paris, France. Cigarettes	6,751	Jan. 23	120	1148
Société Anonyme [illegible], Geneva, Switzerland. Photographic paper and films	5,918	Jan. 23	120	1144
Soda Springs [illegible] Co., Soda Springs, Idaho. Glass	15,994	Jan. 23	120	1166
Soda Springs [illegible] Co., Soda Springs, Idaho. Glass	15,995	Jan. 9	120	638
Soda Springs [illegible] Co., Soda Springs, Wis. Mineral waters	15,993	Jan. 9	120	638
Soehnlein, Edward C., New York, N. Y. Lead-pencils	10,353	Feb. 20	120	2401

Alphabetical list of trade-mark applicants published during January and February—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Southern Cross Fruit Co., Johnstown and New York, N. Y., and San Juan, Porto Rico. Fruits—namely, oranges, lemons, limes, grape-fruit, pineapples, and bananas	14,234-5	Feb. 27	120	2737
Southern Manufacturing Co., Richmond, Va. Baking-powder	15,181	Feb. 6	120	1807
Spang, Chalfant & Co., Pittsburg, Pa. Iron and steel tubes	9,351	Jan. 30	120	1449
Spies Piano Mfg. Company, New York, N. Y. Pianos	13,277	Jan. 9	120	628
Spiritline Chemical Company, Wilmington, N. C. Pine-wood oil	1,279	Feb. 20	120	2386
Splaine & Co., Richard A., Haverhill, Mass. Whisky	16,021-2	Feb. 20	120	2430
Sprague Co., Fred'k H., Orange, Mass. Men's vests and waistcoats	12,274	Feb. 6	120	1799
Sprague, Warner & Company, Chicago, Ill. Tea	13,479	Feb. 20	120	2417
Squibb & Co., W. P., Lawrenceburg, Ind. Whisky	14,282	Jan. 9	120	642
Squibb & Co., W. P., Lawrenceburg, Ind. Whisky	14,283	Jan. 9	120	644
St. Louis Motor Carriage Co., St. Louis, Mo. Automobiles	9,787	Jan. 2	120	307
Staber, George, New York, N. Y. Paper for wrapping food products	14,098	Feb. 6	120	1813
Staber, George, New York, N. Y. Paper for wrapping food products	15,538	Feb. 27	120	2744
Stamford Manufacturing Company, New York, N. Y. Tanning extract	13,748	Jan. 16	120	887
Stamford Mfg. Co., New York, N. Y. Tanning extract	6,895-6	Feb. 20	120	2403
Stamford Mfg. Co., New York, N. Y. Dye stuff or coloring mixture for leather	6,887	Feb. 20	120	2403
Standard Button Company, Attleboro, Mass. Links, sleeve-buttons, collar-buttons, studs, and blouse-button sets	4,939	Jan. 9	120	619
Standard Distilling Co., Cincinnati, Ohio. Whisky	10,017	Jan. 2	120	307
Standard Distilling Co., Cincinnati, Ohio. Whisky	10,025	Jan. 2	120	307
Standard Oil Co. of New York, New York, N. Y. Illuminating-oils	8,235	Feb. 6	120	1782
Standard Oil Co. of New York, New York, N. Y. Illuminating-oils	10,134	Feb. 6	120	1787
Standard Oil Company, Louisville, Ky. Spirits of turpentine	16,267	Feb. 27	120	2742
Standard Paint Company, New York, N. Y. Flexible waterproof fabric for use as roofing, damp courses, and other purposes	1,185	Feb. 6	120	1788
Standard Paint Company, New York, N. Y. Preservative and insulating varnishes	14,795	Feb. 20	120	2424
Standard Paper M'f'g. Co., Manchester, Va. Blotting-paper	13,326	Jan. 9	120	637
Standard Printing Ink Company, Cincinnati, Ohio, and Chicago, Ill. Printing-ink	7,884	Feb. 6	120	1780
Standard Sanitary Mfg. Co., Pittsburg, Pa. Bath-tubs and sinks	13,721	Feb. 27	120	2736
Standard Table Oil Cloth Co., New York, N. Y. Table oil-cloth, carriage enamel-cloth, bag-muslin, and other light-weight oil-cloths	9,290	Feb. 6	120	1784
Standard Tool Company, Cleveland, Ohio. Reamers	13,026	Jan. 2	120	313
Standard Tool Company, Cleveland, Ohio. Taps	15,040	Jan. 2	120	314
Star Distilling Company, Cincinnati, Ohio. Whisky	6,296	Jan. 2	120	308
Star Electric Fuse Works, Wilkesbarre, Pa. Electric fuses with or without cap	11,059	Feb. 20	120	2413
Star Manuf'g Co., Carpentersville, Ill. Plows, cultivators, and stock parts or shapes therefor	4,337	Feb. 20	120	2399
Star Yeast Cake Co., Richmond, Va. Yeast-cake	12,945	Feb. 6	120	1800
Stark Mills, Manchester, N. H. Sheetings, drills, and ducks	6,812	Feb. 27	120	2722
Steinhardt Bros. & Co., New York, N. Y. Whisky	15,722	Feb. 6	120	1809
Steketee, George G., Grand Rapids, Mich. Worm-destroyer or vermifuge	13,086	Feb. 20	120	2419
Steketee, George G., Grand Rapids, Mich. Neuralgia-drops	13,087	Feb. 20	120	2419
Stephenson & Co., Philadelphia, Pa. Knit headgear, including tams, toques, and caps	16,343	Feb. 27	120	2743
Stephenson Mfg. Co., Albany, N. Y. Belt-dressing	6,093	Feb. 13	120	2094
Sterling Whip Company, Westfield, Mass. Whip-centers	6,098	Feb. 6	120	1776
Stern Brothers, New York, N. Y. Kid and lambskin gloves	3,857	Jan. 30	120	1442
Stern & Saalberg Company, New York, N. Y. Powdered dessert-jelly preparation	2,441	Feb. 20	120	2397
Stewart Brothers Company, Omaha, Nebr. Coffee	14,797	Jan. 2	120	313
Stewart, Howe and May Coy., Jersey City, N. J.; New York, N. Y.; Boston, Mass.; St. Louis, Mo.; Chicago, Ill., and San Francisco, Cal. Petticoats and underskirts	7,364	Feb. 20	120	2404
Stewart Silk Company, Easton, Pa., and New York, N. Y. Silk fabrics	2,648	Jan. 2	120	300
Stoddard, Gilbert & Co., New Haven, Conn. Canned vegetables and fruits	13,212	Feb. 6	120	1801
Storage Battery Supply Co., New York, N. Y. Storage batteries	12,877	Feb. 6	120	1799
Stork Company, Boston, Mass. Toilet powder	179	Jan. 30	120	1439
Storz Brewing Co., Omaha, Nebr. Beer	7,134	Feb. 20	120	2403
Stowell Manufacturing Company, Jersey City, N. J. Asphalt roofing	15,392-3	Jan. 16	120	889
Strasburger, Byron L., New York, N. Y. Watch-movements	4,400	Feb. 27	120	2718
Straus, Aaron, Chicago, Ill. Cigars	11,911	Feb. 20	120	2416
Straus Brothers Company, Chicago, Ill. Whisky	13,660	Jan. 23	120	1151
Strauss, Henry P., New York, N. Y. Cigarettes and cigarette-tobacco	12,279	Jan. 16	120	886
Studebaker Brothers Manufacturing Company, South Bend, Ind. Carriages, wagons, and carts	12,205	Jan. 2	120	311
Studebaker Brothers Manufacturing Company, South Bend, Ind. Harness	12,208	Jan. 9	120	638
Suffern, Robert A., New York, N. Y. Sheetings, shirtings, and drills	9,173-4	Feb. 20	120	2402
Summit City Soap Works, Fort Wayne, Ind. Soap	1,960	Jan. 23	120	1140
Summit City Soap Works, Fort Wayne, Ind. Washing-powder	1,961	Jan. 23	120	1140
Summit City Soap Works, Fort Wayne, Ind. Soap	12,781	Jan. 23	120	1151
Sun Manufacturing Company, Columbus, Ohio. Coffee-mills	12,224-5	Feb. 20	120	2420
Supplee Hardware Co., Philadelphia, Pa. Adzes, hatchets, and axes	14,266	Feb. 13	120	2110
Supplee Hardware Company, Philadelphia, Pa. Locks	8,795	Feb. 6	120	1783
Supplee Hardware Company, Philadelphia, Pa. Axes and hatchets	12,227	Feb. 13	120	2109
Supplee Hardware Company, Philadelphia, Pa. Lawn-mowers	13,829	Feb. 20	120	2431
Supplee Hardware Company, Philadelphia, Pa. Lawn-mowers	13,831	Feb. 20	120	2431
Swabb, Arthur H., Fremont, Ohio. Germicides for external and internal use in liquid form	11,726	Feb. 6	120	1792
Swartchild & Co., Chicago, Ill. Jewelers' pendant-bows	13,057	Jan. 2	120	310
Swartchild & Co., Chicago, Ill. Mainsprings	12,782	Feb. 6	120	1804
Sweet Candy Co., Salt Lake City, Utah. Candy	7,542	Feb. 20	120	2404
Sweet Springs Milling Company, Sweet Springs, Mo. Wheat-flour	12,188	Jan. 30	120	1468
Sweet Springs Milling Company, Sweet Springs, Mo. Flour	13,189	Feb. 6	120	1795
Sweet Springs Milling Company, Sweet Springs, Mo. Wheat-flour	13,188	Feb. 6	120	1795
Swift and Company, Chicago, Ill. Lard and lard compounds	11,893	Feb. 6	120	1795
Sykes & A. B. Hendekeson & Co., New York, N. Y. Coats, vests, and trousers	2,998	Feb. 27	120	2715
T. G. Hawkes & Company, Corning, N. Y. Cut and engraved glass	7,941	Jan. 23	120	1144
Tutts Asthmadene Company, New York, N. Y. Remedy for asthma	12,488	Jan. 9	120	630
Tutt & Sons, George, Norfolk, Va. Garden, trucking, and flower seeds and bulbs	12,661	Feb. 6	120	1803
Twenig, Omer, New York, N. Y. Whisky	7,883	Feb. 20	120	2404
Taylor, Carleton F., Hot Springs, Ark. Tonic for cure of impure blood, malaria, nervousness, indigestion, &c	13,689	Feb. 27	120	2738
Taylor, Thomas D., Boston, Mass. Binder-boards	12,742	Feb. 6	120	1803
Taylor, William G., Richmond, Va. Liquid paste	14,524	Feb. 6	120	1808
Telegraphic & Co., A. W., Lynn, Mass. Leather boots and shoes	14,668	Feb. 13	120	2111
Terre Haute Brewing Co., Terre Haute, Ind. Lager-beer and bottled beer	7,881	Feb. 20	120	2404
Terry, George F., [illegible] Co., Chicago, Ill. Magazine or periodical	15,290	Feb. 6	120	1805
Tetlow, Joseph, [illegible] Co., Philadelphia, Pa. Talcum-powder	11,737	Feb. 13	120	2104
Tetlow, Joseph, [illegible] Co., Philadelphia, Pa. Powder for toilet and nursery purposes	11,738	Feb. 13	120	2104
Tetlow, Joseph, [illegible] Co., Philadelphia, Pa. Face-powder	11,737	Feb. 27	120	2734
Texas Nursery Company, Sherman, Tex. Peach-trees, stocks, cuttings, grafts, roots, and stocks	15,527	Feb. 20	120	2421

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Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Theobald and Son Co., Columbus, Ohio. Whisky	16,033	Feb. 20	120	2430
Theodore W. Foster & Bro. Co., Providence, R. I. Sterling-silver flat ware, hollow ware, and tableware	7,754	Jan. 30	120	1447
Thomas J. Taylor Company, New York, N. Y. Celluloid hair-pins	11,402	Feb. 20	120	2414
Thomas Walker & Son, Ltd., Birmingham, England. Ship-logs and sounding-machines	11,757	Feb. 6	120	1792
Thomas Walker & Son, Ltd., Birmingham, England. Ships' logs	15,060	Feb. 20	120	2424
Thompson, Amasa G., Chicago, Ill. Beverage in extract form for the cure and alleviation of ailments of the blood, brain, body tissue, and nerves	12,180	Jan. 30	120	1458
Thompson Medical Company, Titusville, Pa. Medicine for the cure of liver and kidney diseases	4,263	Jan. 30	120	1442
Thornburn & Chester Milling Co., Buffalo, N. Y. Wheat-flour	4,794	Jan. 9	120	619
Throckort Bros. & Co., Meridian, Miss. Cornmeal	15,157	Jan. 23	120	1153
Tichenor, G. H., New Orleans, La. Antiseptic refrigerants for wounds	11,495	Jan. 23	120	1149
Tiedemann & Son, Thos. New York, N. Y. Moist-proof maline	15,275	Feb. 27	120	2738
Tiffin Wagon Co., Tiffin, Ohio. Wagons	4,822	Jan. 30	120	1443
Tosh Brothers, New York, N. Y. Paints	15,437	Jan. 23	120	1154
Tosh Brothers, New York, N. Y. Varnishes	11,578	Jan. 30	120	1456
Tosh Brothers, New York, N. Y. Paint and varnish remover	11,586	Jan. 30	120	1455
Tosh Brothers, New York, N. Y. White lead	11,587	Jan. 30	120	1456
Tosh Brothers, New York, N. Y. Coating for walls, &c., consisting of a chemical compound in dry powder form	11 590	Feb. 13	120	2105
Toledo Saw Co., Toledo, Ohio. Circular and band saws	10,535	Feb. 20	120	2412
Tomkins, Calvin, New York, N. Y. Calcined plaster, a manufactured product of gypsum or plaster-rock	3,928	Jan. 9	120	618
Tomlinson, Anne E., New York, N. Y. Ladies' belts	15,308	Feb. 20	120	2425
Tongue & Bros., R. E., Philadelphia, Pa. Lamp-chimneys and lantern-globes	14,460	Feb. 20	120	2423
Tower & Lyon Co. New York, N. Y. Handcuffs and leg-irons	8,175	Jan. 16	120	881
Tradesman's Publishing Company, St. Louis, Mo. Weekly publication or paper	11,748-9	Feb. 20	120	2415
Transo-Paper Company, Chicago, Ill. Envelope	7,498	Jan. 9	120	623
Traun & Stine, Dr. Heinrich, Hamburg, Germany. Combe	10,674-5	Feb. 20	120	2412
Traun & Stine, Dr. Heinrich, Hamburg, Germany. Combe	10,677	Feb. 27	120	2728
Trust & Rhue Mfg. Co., New Britain, Conn. Upholsterers' nails	11,472	Jan. 9	120	635
Tremont & Suffolk Mills, Lowell, Mass. Cotton piece goods	4,989	Jan. 16	120	878
Tremont & Suffolk Mills, Lowell, Mass. Cotton piece goods	15,268	Feb. 20	120	2425
Tremont & Suffolk Mills, Lowell, Mass. Cotton piece goods	4,980	Feb. 27	120	2717
Tremont & Suffolk Mills, Lowell, Mass. Cotton piece goods	5,258	Feb. 27	120	2718
Trench's Remedies Ltd., Dublin, Ireland. Ointment for human use	9,072	Feb. 27	120	2725
Trench's Remedies Ltd., Dublin, Ireland. Medical preparations for external and internal use by man	14,733	Feb. 27	120	2738
Trevor, William, New York, N. Y. Scarfs	13,812	Jan. 23	120	1151
Trevor, William, New York, N. Y. Scarfs	13,316	Feb. 27	120	2736
Tribune Co., Chicago, Ill. Magazines	13,141	Jan. 30	120	1462
Tremmer Company, Tremont, Ohio. Malt extracts	6,094	Jan. 30	120	1444
Trost Bros., Louisville, Ky. Whisky	4,522	Feb. 6	120	1773
Truman, Lorinda E., Springfield, Mo. Medicines for the cure of female disorders	6,383	Feb. 13	120	2087
Tubular Rivet & Stud Company, Boston, Mass. Lacing hooks and studs	7,981	Jan. 9	120	625
Tucker & Hagen, Chicago, Ill. Boys' and girls' leather boots and shoes	9,413	Feb. 20	120	2408
Tunnell & Company, Frederic W., Philadelphia, Pa. Animal-matter fertilisers	15,438	Feb. 20	120	2426
Turner, Albert, Holt Town, Manchester, England. Black and colored inks in fluid, crystal, and powdered form	11,673	Jan. 30	120	1456
Tyler, Frank R., Staunton, Va. Germicidal and antiseptic liquid for a tooth and mouth wash and throat gargle and spray	9,260	Jan. 16	120	883
U. S. Chemical Co., Tampa, Fla. Remedies for consumption	12,745	Feb. 13	120	2107
U. S. Rubber Reclaiming Works of New York, New York, N. Y. Reclaimed rubber in sheet form	12,249	Feb. 20	120	2417
Ullman Einstein Co., Cleveland, Ohio. Whisky	9,700	Jan. 2	120	308
Ulman, Reykin & Co., Baltimore, Md. Rye whisky	4,824	Jan. 30	120	1442
Ulrich, John D., Brooklyn, N. Y. Whisky	7,016	Jan. 9	120	622
Union Bag & Paper Company, New York, N. Y. Paper bags	14,649	Feb. 6	120	1806
Union Distilling Co., Cincinnati, Ohio. Whisky	257	Feb. 27	120	2712
Union Distilling Co., Cincinnati, Ohio. Whisky	260	Feb. 27	120	2713
Union Distg. Co., Cincinnati, Ohio. Whisky	3,165	Feb. 6	120	1771
Union Horse Nail Company, New Haven, Conn., and Chicago, Ill. Horse-nails	8,608	Jan. 2	120	305
Union Horse Nail Company, New Haven, Conn., and Chicago, Ill. Horse-nails	8,611	Jan. 2	120	305
Union Horse Nail Company, New Haven, Conn., and Chicago, Ill. Horse-nails	8,607	Feb. 27	120	2734
Union Horse Nail Company, New Haven, Conn., and Chicago, Ill. Horse-nails	8,610	Feb. 27	120	2734
United Breweries Company, Chicago, Ill. Beer	6,225	Jan. 9	120	620
United Fast Color Eyelet Company, Boston, Mass. Eyelets and lacing-hooks	10,981	Jan. 30	120	1454
United Injector Co., New York, N. Y. Ejectors	11,518	Jan. 30	120	1456
United Shoe Machinery Company, Boston, Mass. Wire used in making boots and shoes	10,939	Jan. 30	120	1453
United States Food Co., Pleasant City, Ohio. Medicated food for horses, cattle, sheep, and hogs prepared from roots barks, seeds, &c	7,905	Jan. 16	120	881
United States Paper Cutter Co., St. Louis, Mo. Roll-paper holders and cutters	12,525	Feb. 6	120	1796
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	1,611	Jan. 9	120	616
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	1,609	Jan. 9	120	616
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	10,298-9	Jan. 9	120	622
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	1,600	Jan. 16	120	877
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	1,602	Jan. 16	120	877
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	1,610	Jan. 16	120	877
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	1,566	Feb. 6	120	1769
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	10,296	Feb. 13	120	2108
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	1,561	Feb. 20	120	2396
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	1,599	Feb. 20	120	2396
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	1,562	Feb. 20	120	2396
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	1,560	Feb. 27	120	2713
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	1,574	Feb. 27	120	2713
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	1,578	Feb. 27	120	2713
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	1,562-3	Feb. 27	120	2714
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	1,564	Feb. 27	120	2714
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	1,569	Feb. 27	120	2714
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	1,739	Feb. 27	120	2714
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	1,788	Feb. 27	120	2714
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	1,803	Feb. 27	120	2714
United States Wood Pavement Company, New York, N. Y. Wood blocks for paving	11,619	Feb. 9	120	1789
United Wine and Liquor Company, New York, N. Y. Whisky	10 164	Jan. 9	120	622
United Wine and Liquor Company, Baltimore, Md. Whisky	8,710-11	Jan. 16	120	882
Universal Shoe Company, Ltd., Leicester, England. Leather boots and shoes	1,823-4	Jan. 9	120	616
Upham Cigar & Liquor Co., Memphis, Tenn. Whisky	5,573	Jan. 23	120	1141

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Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Valentin Blatz Brewing Co., Milwaukee, Wis. Malt extract	14,861	Jan. 9	120	641
Valentine & Company, New York, N. Y. Varnishes and japans	9,239	Jan. 30	120	1449
Valentine's Meat Juice Company, Richmond, Va. Preparations of meat-juice and compound of meat-juice and glycerin	11,110	Feb. 6	120	1780
Van Antwerp & Son, G., Mobile, Ala. Internal remedies for headaches	11,433	Feb. 20	120	2414
Van Duser, S. R., New York, N. Y. Hair-restoratives	9,376	Jan. 9	120	626
Van Duser, S. R., New York, N. Y. Liquid composition for the head and hair	9,377	Jan. 9	120	626
Van Houten & Zoon, C. J., Weesp, Holland. Cocoa	10,704	Feb. 6	120	1780
Van Lissel, Johanna W., Pella, Iowa. Remedies for the cure of rheumatism	15,852	Feb. 13	120	2113
Van Vleet-Mansfield Drug Co., Memphis, Tenn. Whisky	11,174	Jan. 30	120	1454
Van Vleet-Mansfield Drug Co., Memphis, Tenn. Whisky	11,173	Feb. 20	120	2413
Vantier frères, Carouge, Switzerland. Files	9,204	Feb. 6	120	1784
Vedanta Society, New York, N. Y. Printed books	8,276	Feb. 6	120	1782
Venus Chemical Co., New York, N. Y. Embalming fluids	12,309	Feb. 6	120	1766
Victor Talking Machine Company, Camden, N. J. Sound-boxes for talking-machines	14,523	Jan. 2	120	312
Victor Talking Machine Company, Camden, N. J. Records for talking-machines	14,524	Jan. 2	120	313
Victor Talking Machine Company, Camden, N. J. Talking-machine records	15,106	Jan. 9	120	644
Victor Talking Machine Company, Camden, N. J. Talking-machines and parts thereof	15,107	Jan. 9	120	644
Victor Talking Machine Company, Camden, N. J. Talking-machine records	15,517	Jan. 30	120	1466
Voigt & Co., Chattanooga, Tenn. Liquid preparation of sodium phosphate	8,343	Feb. 13	120	2100
Voigt & Co., Chattanooga, Tenn. Aromatic syrup for disguising quinine	8,345	Feb. 13	120	2100
Voigt & Co., Chattanooga, Tenn. Remedy for indigestion	8,346	Feb. 13	120	2100
Voigt & Co., Chattanooga, Tenn. Tonic cordial containing cod-liver oil and hypophosphites	8,347	Feb. 13	120	2100
Von Bremen, MacMonnies & Co., New York, N. Y. Sardines	12,467	Jan. 30	120	1459
W. H. Coe Mfg. Co., Providence, R. I. Package-rolls of gold, silver, aluminum, composition, or other metal leaf	2,008	Feb. 20	120	2397
W. H. Rankin Company, Elizabeth, N. J. Sheathing-paper	11,868	Jan. 9	120	636
W. H. Rankin Company, Elizabeth, N. J. Tarred roofing-felt	11,867	Feb. 13	120	2106
W. J. Dickey & Sons, Incorporated, Baltimore, Md. Kerseys and cassimeres	3,130	Feb. 27	120	2715
W. W. Kimball Company, Chicago, Ill. Pianos	11,640	Feb. 27	120	2720
Wable Foundry and Machine Works, Davenport, Iowa. Washing-machines	12,366	Jan. 30	120	1459
Walker, Richard S., Midlothian, Tex. Antiseptic	10,388	Jan. 9	120	633
Walsh, Arthur Q., New York, N. Y. Cigarette-holders	4,372	Feb. 6	120	1772
Walsh, James J., Quincy, Ill. Liniment for man and beast	3,471	Jan. 9	120	617
Walworth M'f'g. Co., Boston, Mass. Wrenches	14,144	Feb. 6	120	1805
Wamsutta Mills, New Bedford, Mass. Shirtings and sheetings	10,005-6	Feb. 6	120	1787
War Eagle Fuel Company, War Eagle, W. Va. Bituminous coal	9,802	Jan. 23	120	1148
Ward Salve Co., Washington, D. C. Medicated salves for the cure of wounds and sores	15,800	Feb. 13	120	2112
Warner Bros. Co., Bridgeport, Conn. Corsets	13,325-6	Jan. 2	120	311
Warner Bros. Co., Bridgeport, Conn. Ladies' and children's underwaists	15,534	Feb. 20	120	2431
Warner Sugar Refining Company, Waukegan, Ill. Corn-starch	9,981	Feb. 6	120	1795
Warren Chemical & Manufacturing Company, New York, N. Y. Asphalt	15,197	Jan. 9	120	645
Warren-Ehret Company, Philadelphia, Pa. Pitch	12,040	Jan. 9	120	630
Watson, Paul E., Salisbury, Md. Cigars	12,703	Jan. 9	120	638
Watson-Plummer Shoe Company, Chicago, Ill. Children's leather shoes	12,237	Feb. 6	120	1795
Wattles & Son, G. M., Buffalo, N. Y. Hens' eggs	15,384	Jan. 23	120	1153
Weber Piano Company, New York, N. Y. Pianos	10,620	Feb. 20	120	2411
Weber Wagon Company, Chicago, Ill. Wagons	11,452	Feb. 6	120	1792
Webley & Scott Revolver & Arms Co., Ld., Birmingham, England. Guns, rifles, pistols, revolvers, and parts thereof	6,086	Jan. 16	120	879
Wedderburn, Gertrude F., Chevy Chase, Md. Card-holder	16,415	Feb. 13	120	2114
Weideman Company, Cleveland, Ohio. Whisky	2,586	Jan. 9	120	617
Weideman Company, Cleveland, Ohio; Chicago, Ill., and New York, N. Y. Canned fruits and vegetables	3,041-2	Feb. 13	120	2093
Weil & Co., S. N., Cincinnati, Ohio. Whisky	2,492	Feb. 27	120	2715
Weil, Edward, Houston, Tex. Whisky	15,333-5	Feb. 27	120	2742-3
Weinberg Heyman & Company, New York, N. Y. Parasols and umbrellas	13,536	Feb. 27	120	2738
Weingarten Bros., New York, N. Y. Corsets	10,780	Jan. 2	120	309
Weingarten Bros., New York, N. Y. Corsets	15,264	Feb. 27	120	2739
Weinraub, Joseph, Dayton, Ohio. Cigars	7,221	Jan. 9	120	623
Weis Mfg. Co., Toledo, Ohio. Toothpicks	15,540	Feb. 27	120	2739
Weisert Brothers Tobacco Company, St. Louis, Mo. Plug-cut tobacco	3,877	Jan. 30	120	1452
Weiss Eichold Liquor Co., Mobile, Ala. Whisky	5,544	Jan. 16	120	876
Weiss Eichold Liquor Co., Mobile, Ala. Whisky	5,207	Feb. 27	120	2719
Wellington Typewriter Company, New York, N. Y. Type-writing machines	16,111	Feb. 6	120	1812
Wells Abbott Nieman Company, Schuyler, Nebr. Wheat-flour	11,408	Feb. 27	120	2730
Wells, Clarence L., Troy, N. Y. Remedy for dysentery, diarrhea, cholera morbus, summer complaint, and pains in the stomach and bowels	8,783	Feb. 6	120	1763
Wells, Ephraim S., Jersey City, N. J. Poison or exterminator for rats, vermin, and insects	11,154	Feb. 27	120	2729
Welsbach Light Company, Gloucester City, N. J. Inverted incandescent mantles and lamps and lamp-fittings therefor	16,066	Feb. 20	120	2430
Wertheimer-Swarts Shoe Co., St. Louis, Mo. Leather boots and shoes	11,978	Feb. 6	120	1794
Western Clock Mfg. Co., La Salle, Ill. Clocks and watches	14,443	Feb. 27	120	2728
Westheimer & Sons, Ferdinand, Cincinnati, Ohio. Whisky	15,999	Feb. 27	120	2740
Westheimer & Sons, Ferdinand, Cincinnati, Ohio. Whisky	15,997	Feb. 20	120	2429
Westheimer & Sons, Ferdinand, Cincinnati, Ohio. Whisky	16,000	Feb. 20	120	2429
West's Nephews, Frederick R., New York, N. Y. Scotch whisky	11,370	Jan. 2	120	310
Wetherill & Brother, Philadelphia, Pa. White-lead	1,614	Feb. 6	120	1760
Wetsel, (a Firm,) New York, N. Y. Coats, overcoats, rain-coats, waistcoats, (or vests,) trousers, and breeches	4,223	Feb. 6	120	1772
Wharton Chemical Co., Nashville, Tenn. Tonic beverages and extracts for making the same	12,534	Jan. 23	120	1150
Wheeler Condenser & Engineering Co., New York, N. Y. Steam pumping-engines and steam-pumps	12,405	Jan. 16	120	886
Whetsel, Frank P., Garrett, Ind. Liquid preparation for treatment of the scalp and hair	10,626	Jan. 16	120	883
Whitcher, Frank W., Boston, Mass. Imitation leather	15,261	Jan. 16	120	883
Whitcher, Frank W., Boston, Mass. Heel-protectors	11,776	Jan. 30	120	1466
Whitcher, Frank W., Boston, Mass. Box-toe material and inner soling	15,820	Jan. 30	120	1466
White, Heintz & Co., Philadelphia, Pa. Whisky	6,144	Feb. 13	120	2096
White, Joseph J., New Lisbon, N. J. Cranberries	12,573	Jan. 23	120	1150
White Rock Min. Spr. Co., Waukesha, Wis. Ginger-ale	8,266	Feb. 27	120	2734
Whitman & Barnes Manufacturing Company, Akron, Ohio. Wrenches	14,714	Feb. 20	120	2424
Whitman & Co., Clarence, New York, N. Y. Silk piece goods	12,547	Feb. 6	120	1797
Whitman Grocery Company, Orange, Mass. Cereal coffee	8,174	Jan. 16	120	881
Whitman & Son, Stephen F., Philadelphia, Pa. Candies and chocolates of all descriptions	14,395	Feb. 6	120	1805
Whitman & Son, Stephen F., Philadelphia, Pa. Candies and chocolates of all descriptions	14,402	Feb. 6	120	1805
Wiesman, Lutgen & Co., San Francisco, Cal. Malt whisky	4,716	Jan. 9	120	619

Alphabetical list of trade-mark applicants published during January and February—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Wichman, Lutgen & Co., San Francisco, Cal. Whisky	4,718	Feb. 13	120	2095
Wiebusch & Hilger, Limited, New York, N. Y. Anvils	1,782	Jan. 30	120	1440
Wiley Manufacturing Co., Atlanta, Ga. Soda-water syrup and a drink made from such syrup	12,052	Jan. 23	120	1149
Wilkinson, Geddis & Co., Newark, N. J. Jams and jellies	8,389	Jan. 2	120	306
William A. Hardy & Son's Co., Fitchburg, Mass. Antifriction or bearing metals	5,938	Feb. 20	120	2402
William E. Hooper & Sons Co. of Baltimore City, Baltimore, Md. Cotton duck	3,170	Feb. 13	120	2094
William H. Lee & Co., St. Louis, Mo. Whisky	9,421	Jan. 9	120	629
William Peter Brg. Co., Union, N. J. Lager-beer	6,782	Feb. 27	120	2721
William Skinner Manufacturing Company, Holyoke, Mass.; New York, N. Y.; Boston, Mass.; Chicago, Ill., and Philadelphia, Pa. Silks and satins	3,282	Jan. 9	120	617
William Underwood Company, Boston, Mass. Canned sardines	12,389	Jan. 16	120	886
William Underwood Company, Boston, Mass. Canned sardines	12,391	Jan. 23	120	1150
Williams & Bros., J., Meyersdale, Pa. Stogies	7,274	Jan. 30	120	1446
Williams & Co., Frank S., Washington, D. C. Skin-lotions used as a cure for chapped hands, face, or lips, also sunburn, tan, and roughness of the skin	6,138	Feb. 13	120	2096
Williams, Martin & Gray, Inc., Norfolk, Va. Ready-mixed paints	7,870	Feb. 20	120	2405
Williams, Robert J., West Liberty, Iowa. Washing fluid	12,629	Feb. 20	120	2417
Williamsville Manufacturing Company, Killingly, Conn. Cotton-cloth buff-wheels	371	Jan. 9	120	615
Willis & Co., Grinnell, New York, N. Y. Bleached and unbleached shirtings and sheetings, cambrics, and long cloth	14,696-9	Jan. 9	120	641
Willis & Co., Grinnell, New York, N. Y. Bleached and unbleached shirtings and sheetings, cambrics, and long cloth	14,701-2	Jan. 9	120	641-2
Willis & Co., Grinnell, New York, N. Y. Bleached and unbleached shirtings and sheetings, cambrics, and long cloth	14,706	Jan. 9	120	642
Willis & Co., Grinnell, New York, N. Y. Bleached and unbleached shirtings and sheetings, cambrics, and long cloth	14,708	Jan. 9	120	642
Willis & Co., Grinnell, New York, N. Y. Bleached and unbleached shirtings and sheetings, cambrics, and long cloth	14,744	Jan. 9	120	642
Willis & Co., Grinnell, New York, N. Y. Bleached and unbleached shirtings and sheetings, cambrics, and long cloth	14,748-9	Jan. 9	120	643
Willis & Co., Grinnell, New York, N. Y. Bleached and unbleached shirtings and sheetings, cambrics, and long cloth	14,752-3	Jan. 9	120	643
Willis & Co., Grinnell, New York, N. Y. Bleached and unbleached shirtings and sheetings, cambrics, and long cloth	14,755	Jan. 9	120	643
Willis & Co., Grinnell, New York, N. Y. Bleached and unbleached sheetings and shirtings, cambrics, and long cloth	14,707	Jan. 16	120	887
Willis & Co., Grinnell, New York, N. Y. Bleached and unbleached shirtings and sheetings, cambrics, and long cloth	14,710	Jan. 16	120	887
Willis & Co., Grinnell, New York, N. Y. Bleached and unbleached shirtings and sheetings, cambrics, and long cloth	14,746-7	Jan. 16	120	888
Willis & Co., Grinnell, New York, N. Y. Bleached and unbleached shirtings and sheetings, cambrics, and long cloth	14,750-1	Jan. 16	120	888
Wilmerding-Loewe Co., San Francisco, Cal. Whisky	9,098	Feb. 20	120	2407
Wimpfheimer and Brother, New York, N. Y. Velveteens	11,206	Jan. 30	120	1455
Winand Distilling Company of Baltimore County, Baltimore, Md. Whisky	11,938	Jan. 16	120	886
Winand, John F., Baltimore, Md. Whisky	9,528	Feb. 27	120	2726
Winans, George H., Kalamazoo, Mich. Folding canvas boats	13,790	Feb. 13	120	2109
Winchester Repeating Arms Co., New Haven, Conn. Cartridges	3,267	Feb. 27	120	2716
Wing, John, New Bedford, Mass. Lubricating-oil for watches and clocks	7,279	Feb. 13	120	2098
Wingo, Ellett & Crump Shoe Co., Richmond, Va. Leather boots and shoes	5,213	Jan. 30	120	1443
Wintersmith Medicine Co., Louisville, Ky. Antimalarial tonics	12,410-11	Feb. 6	120	1796
Wintersmith Medicine Co., Louisville, Ky. Tonics	12,928	Feb. 6	120	1800
Wisconsin Cigar Co., Madison, Wis. Cigars, cheroots, and stogies	14,214	Jan. 30	120	1463
Wise & Co., David, Chicago, Ill. Whisky	1,727	Jan. 9	120	616
Wise Furnace Co., Akron, Ohio. Hot-air furnaces	13,039	Feb. 6	120	1801
Wm. A. Coombs Milling Company, Coldwater, Mich. Wheat-flour	11,467	Jan. 9	120	635
Wm. H. Horstmann Company, Philadelphia, Pa.; New York, N. Y.; Boston, Mass.; Baltimore, Md.; Detroit, Mich., and Paris and Lyons, France. Yarns of all descriptions	1,331	Jan. 9	120	615
Wolf & Co., A. A., Pittsburg, Pa. Whisky	1,917	Jan. 9	120	617
Wolff Process Leather Company, Philadelphia, Pa. Enameled leather	15,070	Feb. 20	120	2424
Wonderful Dream Salve Co., Detroit, Mich. Salves	2,020	Feb. 6	120	1769
Woodbury & Company, E. S., Boston, Mass. Leather boots and shoes	14,434	Feb. 20	120	2423
Woodman-Davis Co., Worcester, Mass. Tooth-powder	12,933	Jan. 30	120	1461
Woodruff, Claude J., St. Louis, Mo. Metal-cleaning compounds	16,581	Feb. 27	120	2744
Wood's Sons, T. B., Chambersburg, Pa. Clutches	13,541	Feb. 6	120	1802
Woodside Sterling Company, New York, N. Y. Silver table, hollow, and flat ware	5,004	Feb. 20	120	2398
Wortmann, Morris, New York, N. Y. Whisky	5,550	Jan. 30	120	1444
Wright & Taylor, Louisville, Ky. Whisky	6,233	Jan. 16	120	879
Wunderle, Philip, Philadelphia, Pa. Candy	8,709-10	Feb. 27	120	2724-5
Wyeth Hardware & Manufacturing Co., St. Joseph, Mo. Horse-collars	11,497	Feb. 20	120	2414
X-Ray Stove Polish Co., New York, N. Y. Powdered stove-polish	4,646	Jan. 23	120	1141
Yeaka, Joseph, New York, N. Y. Men's coats, trousers, and vests	2,008	Feb. 13	120	2092
Young & Co., Chas. W., Philadelphia, Pa. Soap in form of cakes or bars	2,219	Feb. 13	120	2092
Young & Co., Chas. W., Philadelphia, Pa. Toilet soap	8,326	Feb. 13	120	2100
Young & Co., Chas. W., Philadelphia, Pa. Chipped soap	13,866	Feb. 13	120	2109
Young & Co., Chas. W., Philadelphia, Pa. Laundry and powdered soap	13,867	Feb. 13	120	2109
Young, Wilbur F., Springfield, Mass. Hoof-dressing	2,784	Jan. 2	120	300
Zacos, Antonio, New York, N. Y. Olive-oil	12,087	Jan. 30	120	1457

ALPHABETICAL LIST OF INVENTIONS.

Invention.	Name.	No.	Date.	Monthly volume. Specification	Drawing.	Official Gazette. Volume.	Page.
Abdominal support and hose-supporter. Combined	N. L. Digney	812,120	Feb. 6	1164	256	120	1725
Abdominal supporter	N. Grose	810,407	Jan. 23	3695	761	120	925
Absorbent material	W. R. Green	810,136	Jan. 16	3079	636	120	759
Absorbent material	W. R. Green	810,137	Jan. 16	3082	637	120	759
Absorbent material and fiber-stock therefor	W. R. Green	810,138	Jan. 16	3084	637	120	760
Accounting appliance. Credit-	P. A. McCaskey	810,139	Jan. 16	3086	637	120	760
Acid. Alkamin esters of para-aminobenzoic	A. Einhorn	809,723	Jan. 9	2250	467	120	527
Acid and making same. Mercury salts of cholic	E. Wörner	812,554	Feb. 13	2100	.....	120	1994
Acid, &c. Making boric	H. Blumenberg, Jr.	811,193	Jan. 30	5259	.....	120	1301
Acid methylene acetate and making same. Salicylic-	F. W. S. Valentiner	809,550	Jan. 9	1908	394	120	451
Acids. Making dialkyl-barbituric	M. Engelmann	811 884	Feb. 6	673	.....	120	1628
Adding and recording machine	A. S. Dennis	809,362	Jan. 9	1515	.....	120	368
Adding and type-writing machine. Combined	J. C. Lotterhand	813,361	Feb. 20	3677	806-8	120	2373
Adding device	E. C. Dilworth	811,157	Jan. 30	5177	1081-3	120	1283
Adding-machine	W. F. Smith	811,305	Jan. 30	5282	1105	120	1307
Adding-machine	E. R. Beach	808,695	Jan. 2	138	32-3	120	32
Adding-machine	G. N. Hinchman and H. Schroeder.	808,893	Jan. 2	542	120	120	120
Adding-machine	J. Pallweber	811,920	Feb. 6	742	162-9	120	1641
Adhesive and making same	F. H. Patch	813,578	Feb. 27	4125	904	120	2532
Adhesive brace. Flexible	A. Freschl	809,739	Jan. 9	2279	.....	120	534
Adjustable bracket	S. Kahn	813,790	Feb. 27	4523	996	120	2617
Adjustable bracket	B. H. Spangenberg	809,448	Jan. 9	1710	352	120	409
Adjustable washer	J. H. Childester	811,335	Jan. 30	5529	1153	120	1360
Adjustable wrench	G. McKerahan	811,035	Jan. 30	4938	1030	120	1234
Advertising device	A. Dunhill	812,440	Feb. 13	1861	409	120	1945
Advertising device	P. Coupette	812,191	Feb. 13	1375	299	120	1839
Advertising device	E. C. Crow	813,200	Feb. 20	3351	737	120	2305
Advertising projecting apparatus	F. Wetzler and M. Ornstein	813,354	Feb. 20	3663	803	120	2370
Aerial top	A. L. Platt	812,105	Feb. 6	1142	250-1	120	1721
Aging and purifying liquors. Means for	R. A. Stewart	813,519	Feb. 27	4011	879	120	2507
Agricultural implement	J. U. Cornelison	811,966	Feb. 6	867	190	120	1666
Agricultural-implement, &c., coupling	W. L. Paul	810,622	Jan. 23	4130	853	120	1023
Air and liquid cooling apparatus	G. T. Voorhees	808,677	Jan. 2	104	24	120	25
Air-brake	E. T. Hughes	813,086	Feb. 20	3094	678	120	2251
Air-brake	W. L. Stiarwalt and W. H. Cool	811,054	Jan. 30	4962	1040	120	1243
Air-brake	E. H. Miller and C. V. Rote	811,525	Jan. 30	5362	1229	120	1429
Air-brake. Anchor emergency	C. Z. Sanders	811,863	Feb. 6	623	136-7	120	1616
Air-brake apparatus	A. A. St. Clair	809,632	Jan. 9	2073	430	120	487
Air-brake coupling	H. H. Sartain	812,097	Feb. 13	2361	517	120	2044
Air-brake coupling. Automatic	A. H. Skillings	813,390	Feb. 20	3730	819	120	2384
Air-brake mechanism	A. L. Goodknight	813,747	Feb. 27	4435	979	120	2598
Air-brake-operating device for railways. Automatic emergency	J. P. Birmingham	813,090	Feb. 20	3131	686	120	2258
Air-brake pipes. Safety coupling-section for	W. J. Hofstatter	811,687	Feb. 6	295	66	120	1550
Air-brake-setting device and alarm	R. E. Adreon and F. M. Stambaugh.	810,962	Jan. 23	4560	949-50	120	1117
Air-brake system and automatic valve	F. B. Corey	808,711	Jan. 2	170	39	120	38
Air-compressing engine	H. E. Clifford	811,765	Feb. 6	428	94	120	1580
Air-compressors. Automatic electrical controller for	F. D. Ackerman	811,378	Jan. 30	5609	1173-4	120	1378
Air-coupling. Automatic	E. V. Sexmith and D. E. Moulton	809,063	Jan. 2	921	193	120	204
Air-cushion for vehicles	M. Downer	811,261	Feb. 6	880	189	120	1664
Air goods	H. F. Keil	811,622	Feb. 6	172	38	120	1523
Air-goods fabric	H. F. Keil	811,406	Jan. 30	5655	1185	120	1387
Air-heating system	F. S. Lamson	811,407	Jan. 30	5657	1185-6	120	1388
Air-purifying apparatus	A. P. Swan	809,306	Jan. 9	1400	294-5	120	343
Air-purifying apparatus	J. H. Kinealy	811,960	Feb. 6	873	193	120	1666
Air-ship tower. Revolving	S. M. Friede	813,217	Feb. 20	3395	748-9	120	2313
Air-treating apparatus	W. H. Carrier	813,549	Feb. 27	4062	860-1	120	2519
Air-treating apparatus	F. White	808,897	Jan. 2	549	122	120	121
Air-treating apparatus	F. White	810,450	Jan. 23	3778	778-9	120	944
Alarm: *See* Burglar-alarm. Cord tension-alarm. Fire-alarm. Incubator-alarm. Low-water alarm.		810,451	Jan. 23	3786	779	120	946
Alarm	G. A. Hill	811,061	Jan. 30	4977	1089	120	1242
Albumen from vegetable substances. Extracting	W. L. Monroe	813,184	Feb. 20	3280	723	120	2286
Alcohol-burner	F. W. Gaertner	813,573	Feb. 20	3701	814	120	2376
Alkali. Making caustic	J. H. Ernst	812,783	Feb. 27	4515	997	120	2615
Alkali. Producing caustic	H. S. Blackmore	809,089	Jan. 2	940	195	120	269
Alloys. Manufacture of nickel-copper	H. S. Blackmore	809,088	Jan. 2	939	195	120	267
Alumina. Calcination of hydrated	A. Mosell	811,239	Jan. 30	5345	.....	120	1231
Aluminium. Granulating	A. R. Pechiney	811,433	Jan. 30	5708	.....	120	1397
Amalgamator	W. Hoskins	812,493	Feb. 13	1989	431	120	1986
Ammunition-hoisting mechanism	D. Draper and G. A. Hay	813,730	Feb. 27	4808	966	120	2611
Ammunition-package	J. F. Meigs and R. P. Stout	808,455	Jan. 9	1734	365-6	120	412
Ammunition-wagon. Tilting	W. Mayer	808,854	Jan. 2	447	98	120	99
Amusement apparatus	W. Mayer	808,855	Jan. 2	448	98	120	100
	E. S. Timmons	809,589	Jan. 9	1980	411	120	466

Alphabetical list of inventions for January and February—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Amusement apparatus	S. M. Friede	809,937	Jan. 16	2652	548	120	668
Amusement apparatus	F. J. McCabe	811,315	Jan. 30	5489	1144	120	1351
Amusement apparatus	O. Roberts	812,986	Feb. 13	2176	475	120	2009
Amusement device	T. Wirth	808,796	Jan. 2	347	75	120	77
Amusement device	C. H. Jaeger	809,956	Jan. 16	2697	556	120	677
Amusement device	E. Keen and R. F. Ayers	811,775	Feb. 6	449	97	120	1584
Amusement device	E. S. Benedict	811,998	Feb. 6	964	208	120	1663
Amusement device	P. M. Maloney	812,577	Feb. 13	2142	469–70	120	2003
Amusement device	T. C. Hurst	812,848	Feb. 20	2855	581–2	120	2153
Amusement device	A. Dalton	813,953	Feb. 27	4940	1070–1	120	2666
Anchor	H. O. Dunn	810,924	Jan. 30	4724	986	120	1185
Anchor. Earth-	G. F. Swortfiger	809,332	Jan. 2	802	173	120	177
Anchor. Earth-	E. C. and H. Holden	809,374	Jan. 9	1543	313	120	374
Anchor for guy-wires	J. Blackburn	812,003	Feb. 6	963	210	120	1685
Anchor. Guy-	L. D. Pitcher	810,807	Jan. 23	4467	926	120	1096
Anchor-hook, guy-clamp, and guy-stretcher. Combined	G. F. Swortfiger	813,182	Feb. 20	3321	730	120	2299
Anchor-post	R. Wiltse	809,879	Jan. 9	2526	524	120	589
Andiron	J. T. McLain	809,975	Jan. 16	2736	563	120	686
Angle-iron-bending machine	W. Vollmer	811,975	Feb. 6	886	195	120	1669
Animal-call	J. Brunner	813,853	Feb. 27	4660	1031	120	2647
Animal-shears	S. Robinson	812,882	Feb. 20	2724	599	120	2169
Animal-trap	G. J. Miller	809,203	Jan. 2	1143	237	120	261
Animal-trap	F. Ballentine	810,518	Jan. 23	3925	807	120	979
Animal-trap	J. C. Alsobrook	812,472	Feb. 13	1914	422	120	1956
Animal-trap	J. H. Tharp	813,333	Feb. 20	3627	795	120	2302
Annealing-box	J. J. Markey	812,943	Feb. 20	2646	628	120	2197
Annealing metal	W. R. Eaches	808,911	Jan. 2	577	.....	120	126
Annealing or malleableizing oven	W. L. Casaday and A. Bergman	813,483	Feb. 27	3932	863	120	2489
Annunciator	A. Carliss	808,723	Jan. 2	202	43	120	46
Annunciator	W. R. Horning	811,063	Jan. 30	4980	1039	120	1242
Annunciator	H. M. Olsen	811,083	Jan. 30	5013	1047	120	1249
Annunciator	J. A. Wotton	813,931	Feb. 27	4814	1062	120	2679
Annunciator-drop	C. E. Scribner	812,954	Feb. 20	2960	634	120	2202
Anode	L. Levett	813,048	Feb. 20	3042	670	120	2238
Anthracene compound and making same	O. Bally and H. Wolff	809,893	Jan. 9	2550	.....	120	594
Anthracene compound and making same	O. Bally and H. Wolff	809,894	Jan. 9	2562	.....	120	594
Anticreeping device	J. R. Leighty	809,193	Jan. 2	1124	234	120	248
Antiskating attachment	F. J. Brady	810,520	Jan. 23	3927	808	120	979
Antiseptic compounds. Making solidified	D. Genese	809,795	Jan. 9	2380	492	120	555
Antitoxin for fatigue and making the same	W. Weichardt	809,347	Jan. 9	1488	.....	120	363
Apron or belt guide. Automatic	W. J. Asher	813,995	Feb. 27	4932	1091	120	2703
Arbor	J. Cooper	811,276	Jan. 30	5419	1130	120	1337
Arch	R. Schneider	811,251	Jan. 30	5371	1121	120	1327
Arch-centering	L. Schuller	808,951	Jan. 2	651	142	120	143
Ash-pan	L. C. Schotto	812,370	Feb. 13	1716	377	120	1917
Asymmetric cell	M. Büttner	809,770	Jan. 9	2334	483	120	545
Auger-bit	J. Stein	809,856	Jan. 9	2488	517	120	580
Auger-bit knife	F. T. Wyrkoff	811,351	Jan. 30	5561	1160	120	1367
Auger. Post-hole	F. G. Hertzig	812,744	Feb. 13	2443	537	120	2063
Automatic brake	G. W. Shem	810,227	Jan. 16	3273	676	120	797
Automatic carrier and self-dumping device	M. J. Sylstad and C. G. Rude	810,386	Jan. 23	4057	835	120	1006
Automatic mixer and distributer	A. N. Somers	811,749	Feb. 6	397	87	120	1573
Automatic sprinkler	E. V. Smith	813,061	Feb. 20	3084	676	120	2249
Automobile	L. B. Gaylor	810,636	Jan. 23	4182	858	120	1028
Automobile	B. E. Hervey	812,129	Feb. 6	1183	259	120	1730
Automobile	H. Lamp	812,573	Feb. 13	2133	467	120	2002
Automobile	W. T. Penrose	813,058	Feb. 20	3080	675	120	2248
Automobile	F. M. Blair	813,541	Feb. 27	4046	886	120	2516
Automobile-body	A. R. and F. S. Welch	809,655	Jan. 9	2123	440	120	496
Automobile dust-allayer	W. H. Parker	809,738	Jan. 9	2277	471	120	533
Automobile-frame	A. R. and F. S. Welch	809,656	Jan. 9	2125	440	120	497
Automobile-frame	A. E. Sehaaf and F. S. Davis	813,175	Feb. 20	3311	726	120	2297
Automobile front axle	F. C. Miller	811,076	Jan. 30	5002	1044	120	1247
Automobile locking device	A. Churchward	812,726	Feb. 13	2420	530	120	2057
Automobile-motor control	E. H. Anderson	811,533	Feb. 6	1	1*	120	1485
Automobile race-course	J. B. Thomas and J. Lynch	809,588	Jan. 9	1979	410–11	120	466
Automobile steering-gear	J. Warrington	813,186	Feb. 20	3328	731–2	120	2301
Automobile turn-table	H. R. Stickney	813,462	Feb. 27	3880	852	120	2478
Automobile vehicles. Driving-axle for	J. E. G. Denis and L. M. J. de Boisse.	812,118	Feb. 6	1160	255	120	1724
Automobile-wheel	E. A. Wheeler and W. Heckert	811,112	Jan. 30	5072	1060	120	1261
Automobiles. Automatic air-brake apparatus for	F. Kalisch	811,537	Jan. 30	5628	1220	120	1422
Automobiles. Frame for wind-shields for	J. C. Simm, Jr., and A. P. Olson	813,534	Feb. 27	4020	881	120	2509
Awning	A. F. Winberg	808,963	Jan. 2	689	149	120	152
Awning	J. Malinofsky	813,103	Feb. 20	3162	691	120	2298
Ax-handle vedge	L. F. Herzog	811,802	Jan. 30	5820	1218	120	1420
Ax holster and guard	J. G. Busch	810,614	Jan. 23	4116	850	120	1020
Axle and wheel structure. Combined car	L. P. Fertig	810,525	Jan. 23	3938	810	120	981
Axle-box	J. R. Fleming	813,962	Feb. 27	4867	1076	120	2689
Axle box. Car-	W. F. Richards	808,684	Jan. 2	117	27	120	28
Axle-box. Railway-car	H. Stüting	809,404	Jan. 9	1623	329–30	120	390
Axle-lubricator	C. H. Driver	812,552	Feb. 13	2098	460	120	1994
Axle mechanism. Vehicle-	H. Hill	813,424	Feb. 27	3814	836	120	2461
Axle. Metal	E. Einfeldt	808,735	Jan. 2	230	49–50	120	53
Axle-truss	C. M. Haeske	809,297	Jan. 9	1380	289	120	339
Axle. Vehicle-	O. Hunze	808,844	Jan. 2	428	94	120	95
Baby-tender	G. P. Steinbach	811,981	Feb. 6	668	146	120	1627
Baby-tender	M. L. Paddock	811,167	Jan. 30	5200	1057	120	1289
Badge	D. W. Perry	808,867	Jan. 2	467	108	120	104
Badge	J. A. and J. C. Doran	813,624	Feb. 27	4212	928	120	2550
Bag: *See* Dust and scrap bag. Feed-bag. Hot-water bag. Punching-bag. Valve-bag.							
Bag	T. Manahan	813,440	Feb. 27	3851	843	120	2469

Alphabetical list of inventions for January and February—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Bag-fastener	E. G. Staude	809,756	Jan. 9	2304	477	120	539
Bag-fastener	J. S. Williamson	813,268	Feb. 20	3477	706–7	120	2321
Bag-frame	B. vom Eigen	810,925	Jan. 30	4725	987	120	1186
Bag-frame handle or strap attachment	B. vom Eigen	810,926	Jan. 30	4726	987	120	1187
Bag-handle	M. Goldsmith	811,215	Jan. 30	5289	1103	120	1310
Bag-holder	G. Stearns	812,307	Feb. 13	1616	345	120	1894
Bag-tying machine	P. Rudd	813,832	Feb. 27	4618	1022–3	120	2636
Bait. Artificial	J. L. Ackerman	810,017	Jan. 16	2824	594	120	704
Balancing device	W. L. Waters	811,678	Feb. 6	280	62	120	1547
Bale binder and tier	W. C. Morgans and T. Gilloon	810,212	Jan. 16	3235	689–70	120	789
Bale-tie machine	A. M. Griffin	809,943	Jan. 16	2668	561–2	120	672
Bale-tying machine	C. M. Cagle	810,521	Jan. 23	3927	808–9	120	979
Bales. Machine for forming round cotton-	C. M. Cagle	809,283	Jan. 9	1354	278–6	120	333
Balers. Division-block for hay-	J. H. Pitkin	813,665	Feb. 27	4289	944	120	2567
Baling machine. Fiber-	A. M. Sheakley	812,155	Feb. 6	1266	277	120	1747
Baling-press	J. R. Robinson	808,780	Jan. 2	322	69–70	120	72
Baling-press	E. L. White	808,795	Jan. 2	343	74	120	76
Baling-press	W. S. Livengood	808,998	Jan. 2	745	161–2	120	164
Baling-press	J. W. Reynolds	809,544	Jan. 9	2463	512	120	574
Baling-press	J. Unfried	809,867	Jan. 9	2507	521	120	585
Baling-press	J. L. Coldiron	809,931	Jan. 16	2845	546	120	666
Baling-press	C. E. Bower	810,029	Jan. 16	2853	589	120	710
Baling-press	D. D. Stanbro	812,698	Feb. 13	2354	515–17	120	2043
Baling-press	T. and H. B. Abbot	813,270	Feb. 20	3486	708–9	120	2333
Baling-press	G. M. Washington	813,603	Feb. 27	4166	914–15	120	2540
Baling-press brake	W. S. Bradshaw	810,102	Jan. 16	3007	626–7	120	746
Baling press. Hay-	D. S. Edenfield	812,332	Feb. 13	1658	364–5	120	1903
Ball: *See* Golf-ball. Return-ball.							
Ball	R. Appleyard	808,713	Jan. 2	174	40	120	39
Balls from sheet metal. Manufacture of hollow metallic	A. Johnston	812,135	Feb. 6	1193	261	120	1732
Balloon. Navigable	A. Chiodera	809,093	Jan. 2	960	197	120	210
Balloting-box	W. W. McCollum	810,790	Jan. 23	4435	920	120	1090
Band-cutter	H. C. Clay and M. T. Reeves	812,784	Feb. 13	2522	554	120	2078
Band-cutter and feeder	P. R. Kramer and G. E. Wilson	811,932	Feb. 6	794	174–6	120	1651
Band-cutter and feeder	L. N. Holm	813,000	Feb. 20	2953	650–1	120	2218
Band-cutter and feeder	R. E. Van Court	813,259	Feb. 20	3463	764	120	2328
Band-cutter and feeder	H. C. Wallace	813,847	Feb. 27	4650	1028–9	120	2645
Bandage. Absorbent	W. R. Green	810,116	Jan. 16	3037	631	120	753
Bandage. Absorbent	W. R. Green	810,117	Jan. 16	3038	632	120	753
Bandage. Absorbent	W. R. Green	810,118	Jan. 16	3040	632	120	754
Bandage. Absorbent	W. R. Green	810,119	Jan. 16	3042	632	120	754
Bandage. Absorbent	W. R. Green	810,120	Jan. 16	3044	632	120	754
Bandage. Absorbent	W. R. Green	810,121	Jan. 16	3047	633	120	754
Bandage. Absorbent	W. R. Green	810,122	Jan. 16	3049	633	120	754
Bandage. Absorbent	W. R. Green	810,123	Jan. 16	3051	633	120	755
Bandage. Absorbent	W. R. Green	810,124	Jan. 16	3053	633	120	755
Bandage. Absorbent	W. R. Green	810,125	Jan. 16	3055	634	120	755
Bandage. Absorbent	W. R. Green	810,126	Jan. 16	3058	634	120	756
Bandage. Absorbent	W. R. Green	810,127	Jan. 16	3060	634	120	756
Bandage. Absorbent	W. R. Green	810,128	Jan. 16	3062	634	120	756
Bandage. Absorbent	W. R. Green	810,129	Jan. 16	3065	635	120	757
Bandage. Absorbent	W. R. Green	810,130	Jan. 16	3068	635	120	757
Bandage. Absorbent	W. R. Green	810,131	Jan. 16	3069	635	120	757
Bandage. Absorbent	W. R. Green	810,132	Jan. 16	3072	635	120	758
Bandage. Absorbent	W. R. Green	810,133	Jan. 16	3074	636	120	758
Bandage. Absorbent	W. R. Green	810,134	Jan. 16	3076	636	120	759
Bandage. Absorbent	W. R. Green	810,135	Jan. 16	3078	636	120	759
Bandage and material therefor. Absorbent	W. R. Green	810,371	Jan. 16	3577	736	120	865
Bar: *See* Grate-bar.	W. R. Green	810,115	Jan. 16	3034	631	120	753
Barrel	J. T. Melson and J. D. Marvil	812,062	Feb. 6	1058	230	120	1704
Barrel-head. Removable	A. Jaeger	809,918	Jan. 9	2007	537	120	606
Barrel-heading press	O. J. Wyman, C. Dennett, and C. O. Tinkham	812,911	Feb. 20	2772	610	120	2179
Barrel-opener	J. S. Knight and M. B. Russ	809,380	Jan. 9	1566	319	120	378
Barrel-stand	C. A. Rick	813,567	Feb. 27	4139	907	120	2535
Barrels and the like. Carrier for	J. Mitchell	809,003	Jan. 2	756	163	120	166
Barrels. Machine for making veneer-stave	G. H. Brown	811,031	Jan. 30	4931	1029	120	1232
Barrette-fastener	G. W. Dover	810,475	Jan. 23	3836	788	120	968
Basement and the like ventilator	P. H. Jackson	809,817	Jan. 9	2043	424	120	481
Basin. Receiving-	A. Lutz	809,201	Jan. 2	1120	237	120	250
Basket. Clothes-pin	S. W. Hurlburt	809,508	Jan. 9	1935	402	120	458
Basket-machine. Automatic	S. L. Casella	813,773	Feb. 27	4480	980–2	120	2610
Baskets or other receptacles. Machine for use in making	J. Eklund and E. L. Walker	810,270	Jan. 16	3363	686–7	120	817
Bat. Base-ball	C. H. Buehler	813,400	Feb. 27	3766	827	120	2450
Batteries. Machine for filling dry	P. P. Nungesser	809,826	Jan. 9	1855	385–6	120	441
Battery: *See* Electrical battery. Storage battery. Primary battery.							
Battery-grids. Machine for making	W. F. Richards	812,295	Feb. 13	1852	349–51	120	1890
Battery plate. Storage-	D. P. Perry	809,742	Jan. 9	2262	472	120	534
Bayonet and telescope. Combined	F. W. Stillwell	812,577	Feb. 27	4307	948	120	2571
Bench-shaking device	G. C. Dwight	810,680	Jan. 23	4143	866	120	1038
Beam. Combined steel and concrete	J. Kahn	812,808	Feb. 27	4646	1026	120	2632
Beam-presser	H. Parsons	812,260	Feb. 13	1886	367	120	1885
Beaming-machine	F. A. Baer	811,268	Jan. 30	5570	1163	120	1360
Bean cleaning and polishing machine	E. E. Wemp	810,609	Jan. 16	2895	579	120	700
Bearing	C. Glover	811,630	Feb. 6	196	43	120	1536
Bearing	E. S. Lea and J. Dagen	812,788	Feb. 13	2471	542	120	2067
Bearing. Antifriction-	V. L. Rice	813,989	Feb. 27	4931	1030	120	2700
Bearing. Automobile-wheel	C. S. Lockwood	813,906	Feb. 27	4761	1051	120	2589
Bearing. Axle-	J. K. Gourdin	813,980	Feb. 27	4714	1043	120	2689

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Bearing. Ball-	S. S. Eveland	811,708	Feb. 6	333	73	120	1560
Bearing for spindles of grinding-machines	Z. R. Tucker	811,339	Jan. 30	5539	1156	120	1362
Bearing. Scale pivot-	J. A. Barclay	811,194	Jan. 30	5260	1101	120	1302
Bearing. Vertical-shaft	E. W. Broomall	809,280	Jan. 9	1349	274	120	331
Bed and cabinet. Folding	N. Lui	809,710	Jan. 9	2226	462	120	521
Bed and similar furniture. Collapsible	F. C. Schofield	810,573	Jan. 23	4029	829	120	1001
Bed. Baby-	A. K. Taylor	812,099	Feb. 6	1134	248	120	1719
Bed-bottom. Adjustable	J. Shepherd	813,458	Feb. 27	3874	849	120	2475
Bed corner-fastening	B. H. Jones	809,447	Jan. 9	1709	352	120	400
Bed. Extension-	J. H. Hannon	811,216	Jan. 30	5300	1106	120	1310
Bed. Folding	J. E. Chatem	810,036	Jan. 16	2874	593	120	715
Bed. Folding	F. J. Hubbard	813,004	Feb. 20	2962	652–3	120	2220
Bed. Invalid-	L. A. Goodson and W. A. Nason	809,051	Jan. 2	846	180	120	187
Bed. Metal	C. J. Widegren	813,471	Feb. 27	3908	857	120	2482
Bed. Sofa-	G. N. Wersel	809,657	Jan. 9	2126	440	120	497
Bed. Spring-	G. C. Locklin	808,667	Jan. 2	88	20	120	21
Bed-spring	B. F. Lindsley	812,939	Feb. 20	2837	626	120	2195
Beds. Crib attachment for	W. R. Clark	810,718	Jan. 23	4297	892	120	1060
Beds. Head-rest for	J. D. Smock	808,700	Jan. 2	148	35	120	35
Beds. Mattress-holder for folding	V. J. Gillett	809,049	Jan. 2	843	179	120	186
Bedstead attachment	W. A. Wright	809,352	Jan. 9	1495	302	120	364
Bedstead end piece. Metallic-	W. F. Bernstein	810,609	Jan. 23	4260	883	120	1052
Bedstead. Folding	H. H. Blaylock	809,167	Jan. 2	1073	223	120	235
Bedstead. Invalid-	L. J. Gronde	811,713	Feb. 6	340	74	120	1561
Bedstead. Metallic	P. P. Oedbauer	808,866	Jan. 2	466	102	120	103
Bedsteads. Mosquito-net-frame attachment for	W. K. McCardell	812,284	Feb. 13	1567	343	120	1883
Bear. Pasteurizing	C. H. Loew	808,668	Jan. 2	89	20	120	21
Beers or malt liquors. Manufacture of English	H. Gronwald	810,745	Jan. 23	4338	902	120	1069
Beet-digging machine	N. H. Claussen	813,199	Feb. 20	3349	.....	120	2305
Beet seeder. Sugar-	A. H. Kramer	813,978	Feb. 27	4891	1082	120	2604
Bell push, pull, &c.	F. Tiemann	809,233	Jan. 2	1226	253	120	299
Bell-ringer	L. S. Wilks	809,596	Jan. 9	2001	415	120	471
Bell-ringer. Pneumatic	R. M. Crosby	810,725	Jan. 23	4308	895	120	1062
Belt	J. Howe	811,400	Jan. 30	5647	1182	120	1385
Belt for supporting catamenial bandages. Self-adjusting	J. Riddell	811,794	Feb. 6	492	106	120	1591
Belt-guide	E. Schiok	813,176	Feb. 20	3312	728	120	2297
Belt-shifter	K. H. Knudsvig	811,302	Jan. 30	5468	1140	120	1347
	F. W. Seyboth and E. K. A. Baumann	809,329	Jan. 9	1445	293	120	352
Belt-shifting for speed-cones	O. Seidemann	811,799	Feb. 6	502	112	120	1593
Belt-tightener	J. J. Thacher	812,899	Feb. 20	2750	606	120	2174
Bending-machine	R. Mobley	808,672	Jan. 2	97	22	120	23
Bending-machine. Automatic	L. H. Brinkman	812,258	Feb. 13	1501	329	120	1867
Beta-ethyltetramethyldiaminoglycerin. Benzoyl chlorid derivative of	F. Hofmann	808,748	Jan. 2	255	.....	120	58
Beta-substituted ester of diaminoglycerin and making same	F. Hofmann	808,747	Jan. 2	253	.....	120	58
Bevel-gage for handsaws	H. Condren	808,971	Jan. 2	703	152	120	155
Beveling-machine	L. H. Rice	811,174	Jan. 30	5215	1089–90	120	1291
Beverage-carbonator	J. H. Fox	813,414	Feb. 27	3789	832	120	2455
Bicycle attachment	A. P. Santini	810,814	Jan. 23	4476	981	120	1098
Bicycle-brake	G. A. Love	813,906	Feb. 27	4763	1052	120	2589
Bicycle-support	G. F. Cook	812,547	Feb. 13	2090	458	120	1993
Bicycles. Electric generator for	F. X. Hofbauer	810,651	Jan. 23	4178	863	120	1034
Billets. Mechanism for feeding tubular	R. C. Stiefel	811,526	Jan. 30	5863	1229–30	120	1429
Billiard and pool tables. Cigar-holder for	E. E. Hanks	809,441	Jan. 9	1697	349	120	408
Billiard-table leg. Adjustable	C. D. Seymour	809,078	Jan. 2	911	191	120	202
Bin: *See* Screen-bin. Tilting bin.							
Bin	C. Cohen	812,019	Feb. 6	993	217	120	1690
Bin	H. M. Praed	813,059	Feb. 20	3051	675	120	2248
Binder	F. A. Cleveland	809,426	Jan. 9	1657	342	120	398
Binder	F. A. Cleveland	809,493	Jan. 9	1796	371	120	426
Binder	F. A. Cleveland	809,494	Jan. 9	1798	371	120	429
Binder	F. A. Cleveland	809,495	Jan. 9	1801	371	120	430
Binder	F. A. Cleveland	809,496	Jan. 9	1804	371	120	431
Binder attachment	C. L. Donohoe	812,731	Feb. 13	2437	531–2	120	2056
Binder. File-	A. Williams	809,577	Jan. 9	2523	523	120	588
Binder-file	C. R. Nelson	813,517	Feb. 27	4570	1010	120	2527
Binder for loose leaves of books	C. R. Nelson	813,518	Feb. 27	4571	1011	120	2527
Binder. Loose-leaf	J. P. Boehner	812,307	Feb. 13	1786	391	120	1929
Binder. Loose-leaf	E. G. Dumas	809,557	Jan. 9	1917	398	120	455
Binder. Loose-leaf	L. Suesman	809,587	Jan. 9	1977	410	120	466
Binder. Loose-leaf	E. A. Trussell	813,752	Feb. 27	4445	981–2	120	2600
Binder. Loose-leaf	E. A. Trussell	813,753	Feb. 27	4446	982	120	2600
Binder. Loose-leaf-ledger	W. J. Schultz	813,919	Feb. 27	4789	1057	120	2574
Binder. Temporary	J. Graves	811,286	Jan. 30	5443	1135	120	1342
Binder. Temporary	C. Whetham	808,793	Jan. 2	340	74	120	76
Binder. Temporary	F. B. Jordan	810,338	Jan. 16	3505	723	120	849
Binder. Temporary	J. B. Barlow	811,360	Jan. 30	5574	1164	120	1370
Binder. Temporary	J. J. Edwards	812,121	Feb. 6	1165	256	120	1725
Binder. Temporary	J. N. Christensen	813,943	Feb. 27	4843	1069	120	2584
Binding-post	G. T. Dalton, Sr	810,919	Jan. 30	4716	984	120	1185
Biscuit-cutting machines. Sprinkling granular substances on dough in	E. C. Henn	813,093	Feb. 20	3138	697	120	2269
Biscuit-pasting machine	T. and J. Vicars, Jr	813,980	Feb. 27	4314	949–50	120	2572
Bismuth dimethylate and making same	A. Magnan	812,221	Feb. 13	1434	312–13	120	1853
Bit: *See* Auger-bit. Molding-bit. Rabbet-bit.	B. R. Seifert	809,583	Jan. 9	1967	.....	120	464
Bit-brace	J. Gessert	812,196	Feb. 13	1388	301–2	120	1842
Bit-brace jaw	R. C. Ehrich	809,936	Jan. 16	2651	548	120	686
Bit-extender	W. B. Swan	810,220	Jan. 16	3260	679	120	799
Blackboard	T. H. Costello	810,628	Jan. 23	4131	853	120	1033

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Blacking machine. Shoe-	F. H. Brewster	811,080	Jan. 30	4928	1028	120	1231
Blast combustion	B. E. Eldred	812,193	Feb. 13	1376	299	120	1840
Bleaching fibers	J. Wakefield	809,899	Jan. 9	2809	.....	120	885
Bleaching liquor. Apparatus for preparing	F. L. Bartelt	813,698	Feb. 27	4230	953	120	2576
Blind slat-fastener. Window-	M. J. Coogan	809,779	Jan. 9	2353	486	120	549
Block: *See* Brake-block. Fire-clay block. Breech-block. Hay-press head-block. Building-block. Head-block. Concrete building-block. Pulley-block. V-block.							
Block	W. F. Roberts	811,440	Jan. 30	5717	1197	120	1396
Block lifter. Hollow-	G. D. Rowell	813,060	Feb. 20	3082	676	120	2249
Block-mold	J. C. Miller	810,494	Jan. 23	3867	794	120	986
Block-molding machine	H. P. Gates	809,367	Jan. 9	1538	310	120	370
Block-molding machine	A. J. Love	811,647	Feb. 6	222	47–8	120	1534
Block or tile making machine	D. I. and J. E. Pettit	810,300	Jan. 16	3435	709	120	833
Block system. Automatic electric	A. M. Mott	813,909	Feb. 27	4773	1053–4	120	2571
Blower. Fireplace and grate	W. F. Lowry	813,506	Feb. 27	3973	872	120	2486
Blower for explosion-engines. Engine-driven	L. A. Frayer and W. J. Miller	813,204	Feb. 20	3360	738	120	2307
Blowpipe	W. M. Bradley	810,257	Jan. 16	3333	692	120	810
Board: *See* Blackboard. Ironing-board. Bulletin-board. Scaffold-board. Game-board. Tablet-board. Glass-cutting board.							
Boat. High-speed motor-	T. H. Wheless	811,887	Feb. 6	678	148–9	120	1628
Boat-launching apparatus. Ship's-	R. H. Robinson	813,915	Feb. 27	4781	1056	120	2572
Boat. Life-	R. A. Brown	812,815	Feb. 20	2586	568	120	2138
Boat. Life-saving	A. Baumgart	811,815	Feb. 6	525	118	120	1597
Boat. Marine	S. Pemberton and J. F. Deadman	811,171	Jan. 30	5206	1088–9	120	1290
Boats. Construction of submarine	T. H. Wheless	811,886	Feb. 6	675	148	120	1628
Bobbin-holder	T. J. Murdock	809,624	Jan. 9	2059	427	120	484
Bobbin-tray	J. Lloyd	809,195	Jan. 2	1127	234–5	120	248
Body-forming machine	A. Kent	811,566	Feb. 6	61	13	120	1498
Boiler: *See* Locomotive-boiler. Tubular boiler. Marine boiler. Vertical boiler. Steam-boiler.							
Boiler	E. Porritt	810,809	Jan. 23	4469	928	120	1097
Boiler	W. N. Rumely	812,529	Feb. 13	2039	447	120	1983
Boiler	S. Hallander	812,844	Feb. 20	2649	579–80	120	2161
Boiler	W. J. Sheetz	812,890	Feb. 20	2736	602	120	2171
Boiler attachment	J. P. Faherty and J. H. M. Blackford	810,632	Jan. 23	4145	856	120	1026
Boiler compound	P. B. Bird	810,528	Jan. 23	4510	.....	120	1106
Boiler construction	J. M. McClellon	813,986	Feb. 27	4916	1066	120	2700
Boiler fire-box. Steam-	C. W. Hullings	811,401	Jan. 30	5649	1182	120	1386
Boiler-flue cleaner	A. Grönvald	808,962	Jan. 2	723	156	120	160
Boiler furnace. Steam-	B. E. Eldred	811,626	Feb. 6	191	41	120	1526
Boiler furnace. Steam-	W. R. Hampden	813,380	Feb. 20	3712	816	120	2380
Boiler-setting and blocks therefor	H. S. Marsh	808,853	Jan. 2	445	98	120	99
Boiler superheater. Steam-	F. J. Cole	810,619	Jan. 23	4123	852	120	1021
Boiler-supporting lug	C. S. Hooper	812,492	Feb. 13	1958	431	120	1985
Boiler-tube	J. Whyte and A. M. Crossley	811,016	Jan. 30	4908	1024	120	1227
Boiler-tube	W. C. Bracken	813,768	Feb. 27	4473	988	120	2606
Boiler-tube cleaners. Guard for	E. Mettler	811,862	Feb. 6	622	136	120	1616
Boilers. Apparatus for maintaining hot-water or steam pressure in portable	C. C. Rich	811,345	Jan. 30	5354	1118	120	1322
Boilers. Tool for holding fire-bricks of water-tube	P. Healy and J. Kears	811,844	Feb. 6	589	129	120	1609
Boilers. Tool for spreading the tubes of water-tube	P. Healy and J. Kears	808,920	Jan. 2	589	120	120	120
Bolster	A. E. Ostrander	809,736	Jan. 9	2272	471	120	532
Bolt: *See* Door-bolt. Stay-bolt. Multiple bolt.							
Bolt-clipper	J. Pulvitt	809,843	Jan. 9	2462	512	120	574
Bolt-clipper and punch	J. L. Painter	812,226	Feb. 13	1444	315	120	1835
Bolt coupling. King-	W. W. Green	811,496	Jan. 30	5806	1216	120	1417
Bolt-locking washer	H. W. Ketcham	813,714	Feb. 27	4378	906	120	2540
Bolt-machine	J. K. Koons	811,411	Jan. 30	5664	1187–8	120	1388
Bolt mechanism. Multiple-	S. S. Hawley	809,184	Jan. 2	1103	229	120	263
Bolt operating and locking mechanism	W. J. Kasselman	812,044	Feb. 6	1029	224–5	120	1608
Bolting-machine	J. M. Case	808,724	Jan. 2	205	44	120	47
Bonding or tying device	W. B. Thines	809,231	Jan. 2	1214	248	120	268
Book and job chase	O. Howard	812,426	Feb. 13	1835	408	120	1939
Book-back. Loose-leaf	W. J. Schults and H. Gerding	812,602	Feb. 13	2190	477	120	2011
Book-holder	J. N. Miller	813,227	Feb. 20	3410	751	120	2316
Book. Loose-leaf	G. H. Manger	811,730	Feb. 6	362	80	120	1546
Book. Note-	J.C. Hackmann and W. H. Palmer	808,682	Jan. 2	66	14	120	17
Book. Sales-check	A. L. McLeish	808,865	Jan. 2	463	102	120	108
Book-strap	M. H. Karibo	813,216	Feb. 20	3304	748	120	2312
Book-support	J. Maccalhum	809,315	Jan. 9	1434	293	120	347
Book-support	R. E. Halsell and A. B. Campbell.	810,141	Jan. 16	3089	636	120	760
Bookbinder's gage	A. Von Auw	809,411	Jan. 9	1638	337	120	396
Bookbinder's plow	J. Hinklein	812,998	Feb. 20	2960	650	120	2215
Bookcase	F. W. Tobey	810,223	Jan. 16	3284	680	120	800
Boom for steam-shovels and the like. Composite	W. Ferris	812,384	Feb. 13	1531	334	120	1874
Boot and shoe	S. Wilde	812,448	Feb. 13	1886	411	120	1946
Boot and shoe cleaning and polishing machine	B. F. Lloyd	813,904	Feb. 27	4799	1051	120	2568
Boot and shoe protector	C. W. Linthicum	808,686	Jan. 2	87	19	120	21
Boot. Hockey-	J. A. McPherson	811,316	Jan. 30	5402	1146	120	1338
Boots and shoes. Cushion-tread and the like for	L. R. Luehrhand and H. W. Newton.	809,964	Jan. 16	2717	589	120	692
Booth. Dressing-	T. A. McGuire	812,661	Feb. 27	4383	942	120	2593
Boring apparatus. Deep-	W. Wlodarczyk	812,541	Feb. 13	2057	461–2	120	1986

Alphabetical list of inventions for January and February—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Boring-machine	P. H. and O. T. X. Adams	811,684	Feb. 6	290	65	120	1549
Boring machine. Cylinder-	J. H. Gouldsberry	810,114	Jan. 16	3032	631	120	752
Boring-tool	C. Baar	810,602	Jan. 23	4086	842	120	1012
Bottle	J. M. Cutler	810,727	Jan. 23	4312	896	120	1064
Bottle-cap and cork-puller. Combined	R. C. Wilson	811,113	Jan. 30	5074	1060	120	1262
Bottle-cap lifter	A. C. Booth	812,267	Feb. 13	1501	320	120	1866
Bottle-capping machine	H. Müller and E. Zipprich	812,086	Feb. 6	1089	233–4	120	1706
Bottle-cleaning machine	C. H. Loew	813,012	Feb. 20	2978	656	120	2224
Bottle-cleaning machine	C. H. Loew	813,100	Feb. 20	3153	690	120	2263
Bottle-closure	C. M. Brodnax and P. F. King	808,629	Jan. 2	18	4	120	6
Bottle-closure	J. Herrington	809,256	Jan. 2	1300	285	120	286
Bottle-closure	J. C. Condo	809,427	Jan. 9	1669	342	120	350
Bottle-closure	F. W. H. Clay	811,524	Feb. 6	542	121	120	1600
Bottle-closure	F. W. H. Clay	811,525	Feb. 6	544	121	120	1601
Bottle-closure	A. and D. Calenza	813,198	Feb. 20	3348	736	120	2205
Bottle-corking machine	R. J. Schlosser and H. R. Fisher	809,850	Jan. 9	2473	515	120	577
Bottle detector and identity-destroyer. Refilled-	E. S. Hayford	810,647	Jan. 23	4170	862	120	1032
Bottle drip attachment	M. Petrie	811,742	Feb. 6	384	84	120	1570
Bottle-filling device	J. E. Wister and G. T. Townsley	813,761	Feb. 27	4459	985–6	120	2603
Bottle-filling machine	F. B. Thatcher	809,407	Jan. 9	1628	331–2	120	391
Bottle holder. Nursing-	P. A. A. Killam	808,848	Jan. 2	434	96	120	96
Bottle-holding rack	O. Eick	808,824	Jan. 2	397	86	120	88
Bottle. Hot-water	E. J. Schuts	809,141	Jan. 2	1028	212	120	226
Bottle. Hot-water	E. J. Schuts	809,142	Jan. 2	1029	213	120	226
Bottle-labeling machine	T. Pankow	811,576	Feb. 6	83	17	120	1503
Bottle. Mucilage-	F. M. Munroe	813,813	Feb. 27	4564	1009	120	2626
Bottle. Non-refillable	F. M. Osgood	809,212	Jan. 2	1164	241	120	256
Bottle. Non-refillable	F. J. Davis	809,249	Jan. 2	1282	261	120	282
Bottle. Non-refillable	W. J. Dolan and F. H. Shoemaker	809,289	Jan. 9	1367	278	120	336
Bottle. Non-refillable	J. F. Connell	809,932	Jan. 16	2546	547	120	667
Bottle. Non-refillable	J. M. Dunkle	810,398	Jan. 23	3678	757	120	921
Bottle. Non-refillable	C. L. E. Wolf	810,452	Jan. 23	3788	779	120	946
Bottle. Non-refillable	J. M. Gambon	810,480	Jan. 23	3843	789	120	960
Bottle. Non-refillable	W. H. Garnett	810,481	Jan. 23	3844	790	120	960
Bottle. Non-refillable	M. F. Hanson	811,217	Jan. 30	5301	1109	120	1310
Bottle. Non-refillable	W. H. Dare	811,387	Jan. 30	5622	1177	120	1381
Bottle. Non-refillable	C. E. Carroll	812,794	Feb. 13	2416	530	120	2055
Bottle. Non-refillable	W. E. Knollenberg and J. A. Frey	812,751	Feb. 13	2462	540	120	2065
Bottle. Non-refillable	A. Bennett	812,804	Feb. 20	2563	564	120	2133
Bottle. Non-refillable	M. Conner	813,038	Feb. 20	3028	667	120	2235
Bottle. Non-refillable	W. J. Higman	813,421	Feb. 27	3808	835	120	2459
Bottle. Non-refillable	C. Fensky	813,547	Feb. 27	4059	889	120	2518
Bottle. Non-refillable	J. M. Kilduff	813,715	Feb. 27	4379	966	120	2586
Bottle. Non-refillable	J. M. Kilduff	813,804	Feb. 27	4548	1005	120	2622
Bottle. Non-refillable	S. F. Ettinger	813,961	Feb. 27	4866	1076	120	2680
Bottle. Nursery-	B. Holladay	813,894	Feb. 27	4740	1048	120	2664
Bottle or jar. Dispensing	R. M. Willis and A. A. Du Mond	809,150	Jan. 2	1059	220	120	232
Bottle-rinser	C. H. Loew	812,940	Feb. 20	2839	626–7	120	2195
Bottle sterilizing and cleansing apparatus	T. C. Bates	812,974	Feb. 20	2910	642	120	2210
Bottle-stopper	H. E. Lazarus	808,934	Jan. 2	613	134	120	135
Bottle-stopper	J. J. Allison	811,811	Feb. 6	520	116	120	1596
Bottle-stopper	W. F. Mahony	812,058	Feb. 6	1053	229	120	1703
Bottle-stopper	W. H. Redington	813,440	Feb. 27	3862	846	120	2473
Bottle stopper. Poison-	L. N. Ritten	810,676	Jan. 23	4218	873	120	1043
Bottle-washing machine	C. H. Loew and H. G. Miller	809,514	Jan. 9	1833	379	120	437
Bottle-wrapper	F. W. R. Bradford	811,689	Feb. 6	299	67	120	1552
Bottles by means of metal capsules. Apparatus for closing	E. Goltstein	812,648	Feb. 13	2275	495	120	2027
Bottles. Frangible cap for the closure of	S. M. Stevens	813,181	Feb. 20	3319	730	120	2299
Bottles, jars, and similar vessels. Closure device for	E. A. Matthias	810,164	Jan. 16	3127	647	120	768
Bottles. Machine for the manufacture of capsules for	E. Watzke	813,604	Feb. 27	4168	915–16	120	2541
Bottles. Making hot-water	E. J. Schuts	809,143	Jan. 2	1030	213	120	226
Bottles non-refillable. Device for rendering	P. Juppet	809,811	Jan. 9	2405	498	120	562
Bottles or other receptacles. Means for corking or closing	C. Schroeder	811,576	Feb. 6	649	142	120	1623
Bottling-machine	E. L. Miller	809,621	Jan. 9	2053	426	120	482
Bottling-machine	E. U. Mack	813,562	Feb. 27	4098	899	120	2527
Bouquet-holder	J. Burdick	809,172	Jan. 2	1061	225	120	238
Bowling-alley	D. Miller	809,715	Jan. 9	2235	464	120	524
Bowling-alley	F. W. Brinkmeyer	811,476	Jan. 30	5771	1208	120	1410
Bowling-alley pin-spotter	C. L. Bastian	812,263	Feb. 13	1495	327	120	1865
Bowling-alley pin spotters or setters. Guiding means for	C. L. Bastian	811,612	Feb. 6	152	33	120	1518
Bowling-alleys. Ball-return mechanism for	F. W. Brinkmeyer	809,245	Jan. 2	1266	257	120	279
Bowling-ball handle attachment	S. H., H. O., and S. H. Law, Jr.	812,214	Feb. 13	1418	309	120	1849
Box:							
See Annealing-box.	Ice-box.						
Axle-box.	Letter-box.						
Balloting-box.	Mail-box.						
Boiler fire-box.	Match-box.						
Cane-mill feed-box.	Metal box.						
Coin-holding box.	Miter-box.						
Collapsible box.	Molding-box.						
Covered box.	Money-box.						
Dental-gift box.	Paper box.						
Display-box.	Paper-machine head-box.						
Fruit-box.	Talking-machine sound-box.						
Mixing-box.	Tobacco-box.						
Packing box.	Wagon-box.						
Silk-reel.	Window-box.						
Grain-drill seedbox.							
Box	R. S. A. Moore	810,241	Jan. 16	3511	734	120	850
Box	F. R. Vernon	811,676	Feb. 6	277	62	120	1548
Box and target. Combined	P. R. Warren	812,536	Feb. 13	2060	449	120	1985
Box-corner-trimming machine	J. T. Ledbetter	809,309	Jan. 9	1406	286	120	344

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Box-covering machine	H. A. Inman	810,414	Jan. 23	3705	763–4	120	927
Box-fastener	H. Stotz	812,308	Feb. 13	1617	355	120	1894
Box-machine	J. P. Wright	813,808	Feb. 27	4181	917–18	120	2544
Box-opener	C. Goldmann	809,050	Jan. 2	845	176	120	187
Box-shook-forming machine	H. A. Gale	808,743	Jan. 2	242	52–3	120	55
Box-tray-forming machine	J. H. and J. H. Birch	809,920	Jan. 16	2641	545–6	120	606
Box trimmer. Cylindrical-	W. H. Stout	811,893	Feb. 6	117	25	120	1511
Brace:							
See Adhesive brace.	Ratchet-brace.						
Bit-brace.							
Bracelet	J. Bagnall	808,805	Jan. 2	363	78	120	81
Bracelet	P. H. Lattré	809,619	Jan. 9	2049	425	120	482
Bracelet	A. H. Bliss	810,183	Jan. 16	3166	656	120	776
Bracelet	E. Drews	811,767	Feb. 6	435	95	120	1581
Bracelet	T. W. Foster	813,697	Feb. 27	4346	957	120	2579
Bracelet	W. Wallenthin	813,755	Feb. 27	4449	983	120	2601
Bracelet-joint	N. C. Wallenthin	809,153	Jan. 2	1047	217	120	230
Bracket:							
See Adjustable bracket.	Scaffold-bracket.						
Lamp-bracket.	Shade-bracket.						
Pipe-bracket.	Suspension-bracket.						
Bracket	H. F. Keil	813,801	Feb. 27	3988	870–1	120	2497
Bracket for employment on windows, ladders, and parapets. Adjustable	C. Mills	811,514	Jan. 30	5840	1223	120	1434
Braiding-machine	H. Janssen	810,056	Jan. 16	2930	610	120	720
Brake:							
See Air-brake.	Fluid-pressure brake.						
Automatic brake.	Rail-brake.						
Baling-press brake.	Shuttle-brake.						
Bicycle-brake.	Sled-brake.						
Car-brake.	Vacuum-brake.						
Elevator safety-brake.	Vehicle-brake.						
Engine reversing-brake.	Wagon-brake.						
Brake	M. Turner, W. Kernaghan, and C. M. Swinehart.	810,825	Jan. 23	4492	934	120	1102
Brake	S. H. Libby	812,758	Feb. 13	2473	542	120	2066
Brake and track-sanding mechanism	M. A. De France	813,601	Feb. 27	4335	954	120	2577
Brake apparatus. Load-	W. V. Turner	808,703	Jan. 2	153	36	120	36
Brake-band	H. N. Covell	812,827	Feb. 20	2615	573	120	2145
Brake-beam	C. F. Huntoon	813,704	Feb. 27	4364	961	120	2582
Brake-beam	C. F. Huntoon	813,706	Feb. 27	4365	961–2	120	2583
Brake-beam	C. F. Huntoon	813,705	Feb. 27	4366	962	120	2582
Brake-beam	C. H. Williams, Jr.	813,758	Feb. 27	4456	985	120	2602
Brake-beam	C. F. Huntoon	813,708	Feb. 27	4540	1003	120	2620
Brake-beam. Reinforced	H. B. Robischung	813,916	Feb. 27	4783	1056	120	2673
Brake-beams. Adjustable head for	C. E. Bauer	813,512	Feb. 27	4191	919	120	2546
Brake block and shoe	R. L. Ettenger	813,980	Feb. 27	4864	1078	120	2695
Brake-hanger	L. G. Gallup	813,640	Feb. 27	4241	932	120	2558
Brake-hanger. Adjustable	O. W. Wittmer	813,476	Feb. 27	3919	880	120	2486
Brake mechanism	G. M. Brill	813,346	Feb. 20	3647	799	120	2387
Brake mechanism	H. S. Beeney	809,165	Jan. 2	1071	232	120	236
Brake mechanism. Fluid-	B. T. Burchardt	811,198	Jan. 30	5269	1162	120	1303
Brake mechanism. Power-	C. B. Goode	812,989	Feb. 20	2984	646–7	120	2214
Brake-operating mechanism	J. and J. Caley	813,886	Feb. 27	4665	1032	120	2648
Brake-shoe	W. H. Namack	809,627	Jan. 9	2063	426	120	485
Brake-shoe	H. L. Winslow	809,658	Jan. 9	2126	441	120	497
Brake-shoe	J. D. Gallagher	810,405	Jan. 23	3689	788	120	924
Brake system	C. E. Barry	808,716	Jan. 2	188	41	120	62
Brakes and clutches. Friction device for	C. W. Hunt	811,562	Feb. 6	30	11	120	1495
Brazing steel and copper	J. F. Richardson	811,954	Feb. 6	845	186	120	1661
Breast-strap slide	E. M. Wightman	810,014	Jan. 16	2819	593	120	703
Breast-strap slide and attachment	J. S. Anderson	809,927	Jan. 16	2632	544	120	663
Breech-block. Lever-actuated wedge	M. Hernadorf	809,801	Jan. 9	2388	494	120	558
Breeching stay. Harness-	F. X. Schumaker	811,521	Jan. 30	5588	1238	120	1428
Brick-clay-crusher rolls	J. H. Bach	813,273	Feb. 20	3480	769	120	2324
Brick-cutting machine	H. L. Barr and F. Gandert	812,973	Feb. 20	2968	641	120	2209
Brick-machine	O. Nolan	811,518	Jan. 30	5967	1294–5	120	1428
Brick, tile, and various shapes. Producing vitrified	R. Baggaley	810,022	Jan. 16	2824		120	706
Brick-tongs	R. Skov and J. Forberg	809,148	Jan. 2	1036	214	120	227
Bricks. Manufacture of sand-lime	A. Gordon	809,053	Jan. 2	853	181	120	188
Bridge and making the same	J. B. Strauss	811,267	Jan. 30	5360	1122–3	120	1324
Bridge-guard whip	J. H. Donaldson	810,041	Jan. 16	2884	606	120	717
Bridge safety-gate. Draw-	J. B. Lardineis	809,317	Jan. 9	2413	500–1	120	563
Bridge. Truss-	W. J. Humphreys	809,264	Jan. 2	1308	264	120	288
Bridges, &c. Means for supporting the expansion ends of	P. B. Motley	809,071	Jan. 2	878	186–7	120	194
Bridging horizontal and vertical spaces	R. C. Sayer	812,962	Feb. 20	2954	671–3	120	2224
Bridle	H. I. Hansbrough	813,886	Feb. 27	4726	1045	120	2661
Bridle-bit	C. H. Falls	809,264	Jan. 9	1524	320	120	370
Bridle-bit	A. B. Campbell	812,112	Feb. 6	1163	253	120	1726
Bridle-bit and attaching means therefor	F. Weathers	813,337	Feb. 20	3291	707	120	2355
Briquet-machine	H. E. Marsh	813,467	Feb. 27	4371	969–70	120	2585
Briquetting-press	H. E. Marsh	811,880	Feb. 6	814	171	120	1644
Broiler	J. M. Stokes	809,439	Jan. 9	2088	434	120	491
Bronzing-machine	L. Haenlein	812,982	Feb. 13	2114	434	120	1937
Brooder	C. J. Becker	808,893	Jan. 2	557	79	120	91
Brooder	N. Saltcoatsall	809,031	Jan. 9	2369	488–89	120	549
Brooder	P. Coats	811,404	Jan. 30	5788	1211	120	1414
Brooder	H. F. Rau	813,116	Feb. 20	3000	657–8	120	2218
Brooder. Pig-	H. B. Vail	809,543	Jan. 9	2159	447–8	120	508
Broom-handle	T. I. Swagerty	812,880	Feb. 13	1654	363	120	1898
Broom-holder	W. M. Kellogg	813,713	Feb. 27	4376	966	120	2586
Brooms. Dustless attachment for	F. Sheridan	809,691	Jan. 16	2704	558	120	618
Brush	S. H. Bristor	810,768	Jan. 23	4274	885	120	1056
Brush and comb. Combined hair-	A. McKenzie	812,788	Feb. 13	2469	547	120	1871
Brush and mop holder. Combined	E. B. Golden	813,689	Feb. 27	4397	974	120	2589

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drfs.	Official Gazette. Vol.	Official Gazette. Page.
Brush-filling machine	F. C. Curtis	811,831	Feb. 6	551	122	120	1602
Brush. Fountain-	E. C. Davey	810,470	Jan. 23	3825	785	120	966
Brush. Fountain-	G. L. Belcher	811,272	Jan. 30	5411	1128	120	1336
Brush holder and scraper	C. T. Greener	810,640	Jan. 23	4160	860	120	1030
Brush-holder. Electrical	M. St. Clair	811,673	Feb. 6	272	60	120	1548
Brush. Paste-jar	A. N. Bitts	810,436	Jan. 23	3753	773	120	986
Bucket. Clam-shell	J. McMyler	811,946	Feb. 6	824	181	120	1657
Bucket. Clam-shell	J. C. Slocum	813,527	Feb. 27	4023	861	120	2610
Bucket. Clam-shell	J. C. Slocum	813,528	Feb. 27	4026	862	120	2611
Bucket. Dipper-	H. J. Drear	810,730	Jan. 23	4315	898-7	120	1084
Bucket. Grab-	A. E. Brown	808,630	Jan. 2	20	6	120	7
Buckle	F. T. Whitted	809,574	Jan. 9	2515	532	120	867
Buckle	J. J. Creedon	811,548	Feb. 6	23	6	120	1490
Buckle	A. S. Merrill and H. M. Howard	812,862	Feb. 20	2683	592	120	2189
Buckle. Lock-	J. Shaw	812,372	Feb. 13	1726	378	120	1913
Buffing-machine	J. F. Jeeseman	811,504	Jan. 30	5823	1219	120	1421
Buggy-top curtain-holder	C. W. Noble and E. O. McHenry	809,457	Jan. 9	1729	357	120	414
Building-block	F. M. Sawyer	812,369	Feb. 13	1716	377	120	1917
Building-block	J. A. Johnson	812,498	Feb. 13	1989	432	120	1967
Building-block	W. D. Moore	812,867	Feb. 13	2301	501	120	2032
Building-block mold	W. Porten	810,976	Jan. 30	4832	1004-5	120	1210
Building-block mold	H. Noah	811,080	Jan. 30	5009	1047	120	1249
Building-block-molding machine	A. A. Forbes	812,123	Feb. 6	1171	257-8	120	1727
Building block or wall	M. Haas	811,634	Feb. 6	204	43	120	1530
Building construction	J. S. Culley	812,727	Feb. 13	2422	530	120	2057
Building construction	G. F. Fisher	813,548	Feb. 27	4060	890	120	2619
Building construction. Interior	W. D. Mann	810,291	Jan. 16	3403	704	120	836
Building. Dismountable	J. Aradi	809,163	Jan. 2	1063	221	120	233
Building structures, stairs, corners, and the like. Protecting-rail for	M. Rupke	813,226	Feb. 20	3615	793	120	2359
Bulkhead-doors. Automatic cut-out mechanism for electrically-operated	W. B. Cowles	810,915	Jan. 30	4705	982	120	1181
Bulletin-board and rack	E. W. Kingsbury	811,298	Jan. 30	5463	1139	120	1346
Bundle-loader	J. S. Richardson	810,380	Jan. 16	3614	743-4	120	873
Bunsen burner. Gas-regulating	C. E. Wirth	811,989	Feb. 6	925	202	120	1678
Burglar-alarm	F. C. Harriman	812,420	Feb. 13	1828	400-1	120	1937
Burglar-alarm	J. H. Snow	812,892	Feb. 20	2736	602-3	120	2173
Burglar-alarm	J. and G. G. Roderick	813,917	Feb. 27	4784	1057	120	2673
Burial-case	L. V. Rathbun	810,172	Jan. 16	3130	649-50	120	771
Burial-casket	M. S. Leech	809,573	Jan. 9	1950	404	120	461
Burial-casket	J. H. Mills	812,945	Feb. 20	2852	629	120	2189
Burial-casket	J. Blake	813,942	Feb. 27	4835	1067	120	2683
Burner: *See* Alcohol-burner. Bunsen burner. Fluid-fuel burner. Gas-burner. Hydrocarbon-burner. Injector-burner. Lamp-burner. Oil-burner. Petroleum-burner. Vapor-burner.							
Burners. Reservoir for gasolene and other vapor	W. M. Fulton and W. H. Richards.	810,403	Jan. 23	3863	758-9	120	922
Burning buildings. Device for leading animals from	E. E. Higgins	813,496	Feb. 27	3961	866-9	120	2496
Bushing. Bung-	G. H. Ricke	813,990	Feb. 27	4923	1080	120	2701
Bushing. Bung-hole	F. Pfluger and E. Christensen	810,430	Jan. 23	3733	769	120	983
Bushings. Combined expander and flanger for bung-hole	F. Pfluger and E. Christensen	810,431	Jan. 23	3734	769	120	983
Butter-cutter	R. J. Woolley	811,469	Jan. 30	5781	1206	120	1403
Butter-cutting device	H. Schnackenberg	809,532	Jan. 9	1957	396	120	444
Butter, &c. Machine for cutting	E. K. Carter	813,858	Feb. 27	4671	1033-4	120	2549
Butter-mold	J. Mlade	810,695	Jan. 23	4200	886	120	1038
Butter-press	F. Murphy	812,430	Feb. 13	1858	409	120	1945
Button	E. Zeckhauser	809,883	Jan. 9	2631	535	120	880
Button. Collar-	C. F. Rodgers	811,443	Jan. 30	5720	1198	120	1399
Button. Crochet-work	I. Kalliwoda	811,724	Feb. 6	354	78	120	1585
Button guard. Collar-	F. H. Norris	809,730	Jan. 9	2262	469	120	530
Button. Hinged-leaf	H. Case	811,901	Feb. 6	704	154	120	1634
Button-holder	A. M. Hill	810,755	Jan. 23	4384	906	120	1075
Button or cheek	C. J. Franz	810,635	Jan. 23	4151	866	120	1027
Button or stud. Separable	W. N. Kidder	808,988	Jan. 2	733	168	120	162
Buttonhole	H. Walden	809,852	Jan. 9	2120	430	120	496
Cab-runner	J. W. Sorenson	811,453	Jan. 30	5737	1201	120	1403
Cabinet	E. L. Krag	810,544	Jan. 23	3974	818	120	959
Cabinet	H. F. McDonnell	812,074	Feb. 6	1062	236-7	120	1709
Cabinet. Kitchen-	W. M. Henson	811,918	Feb. 6	738	161	120	1641
Cabinet. Metallic	E. L. Krag	810,545	Jan. 23	3975	819	120	959
Cable-hanger	F. W. Sorg	809,993	Jan. 16	2767	569	120	603
Cable-hanger	F. C. Tabler	810,004	Jan. 16	2791	576	120	606
Cableway	T. S. Miller	809,287	Jan. 9	1582	321-2	120	381
Cages. Drinking and feeding appliance for bird-	H. Quittner	811,570	Feb. 6	636	140	120	1620
Caisson air-lock	W. McIlvrid	810,298	Jan. 16	3431	708	120	832
Caisson. Floating	A. C. Cunningham	808,728	Jan. 2	217	46	120	50
Caisson for repairing dry-dock bottoms. Floating	A. C. Cunningham	808,636	Jan. 2	36	8	120	10
Calcium carbid. Apparatus for the production of	E. F. Price, G. E. Cox, and J. G. Marshall.	809,842	Jan. 9	2460	511	120	574
Calculating machine	E. S. Ensign	809,047	Jan. 2	536	178-9	120	186
Calculating machine	J. M. Sharp	810,090	Jan. 16	2982	622	120	740
Calculating machine	A. Reohnitzer	809,075	Jan. 2	886	183-90	120	198
Calculator	S. S. Fry	809,204	Jan. 9	1374	279	120	336
Calculator	F. G. Johnson	809,446	Jan. 9	1705	361-2	120	408
Calculator and recorder. Mechanical	L. S. Crandall	813,281	Feb. 20	3503	773-4	120	2357
Calendar. Perpetual	C. P. Hilden	811,846	Feb. 6	593	128	120	1610
Caliber standard. Desk-	F. A. Hale	813,553	Feb. 27	4079	894	120	2622
Caliper-tool	T. S. Mabie	810,424	Jan. 23	3725	767	120	981
Calipers	L. Schutte and E. Körting	808,693	Jan. 2	128	30	120	31
Calk. Variable	B. Salzer and G. Walther	810,388	Jan. 16	3543	728-9	120	857
Camera	H. A. Farrand	813,623	Feb. 27	4339	950-30	120	2654
Camera attachment	M. I. Loryea	813,995	Feb. 27	4553	1008-7	120	2698

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drfs.	Official Gazette. Vol.	Official Gazette. Page.
Camera. Kinematographic	M. Hansen	812,845	Feb. 20	2852	590	120	2182
Camera-lenses. Screen for photographic	H. S. Miller	809,520	Jan. 9	2434	505-6	120	598
Camera. Panoramic	J. A. Bried	812,163	Feb. 6	1269	262	120	1761
Can: *See* Dental can. Measuring-can. Metallic can. Preserving-can. Sheet-metal can.							
Can	J. F. Roes	809,963	Jan. 16	2750	565	120	689
Can-body forming and soldering apparatus	L. C. Sharp	812,955	Feb. 20	2870	634-5	120	2202
Can-body machine. Locked-seam	J. H. McElroy	812,265	Feb. 13	1569	343-5	120	1863
Can-body-making machine	W. Cameron	813,772	Feb. 27	4484	989-90	120	2609
Can-filling apparatus	A. Cerruti	810,034	Jan. 16	2869	593	120	714
Can heading and crimping machine. Automatic round-	A. Lotz	812,858	Feb. 20	2675	587-9	120	2157
Can heading and crimping machine. Automatic square-	A. Lotz	812,857	Feb. 20	2671	586-7	120	2157
Can-heading machine	B. Adriance and A. Calleson	810,245	Jan. 16	3306	685-6	120	805
Can-heading machine	J. Brenzinger	813,482	Feb. 27	3930	862	120	2488
Can-opener	H. B. Ray	809,527	Jan. 9	1858	386	120	442
Can-opener	J. W. Davis	809,573	Jan. 9	2162	447	120	507
Can-opener	L. Alden, Jr.	811,894	Feb. 6	601	151	120	1631
Can-opener	C. Cochran	812,408	Feb. 13	1803	394	120	1963
Can safety device. Oil-	E. L. Reed	810,566	Jan. 23	4017	827	120	996
Can-testing machine	B. Buccieri	809,281	Jan. 9	1350	274	120	332
Cans. Apparatus for detaching the heads from the bodies of sheet-metal	C. B. McDonald	812,224	Feb. 13	1440	314-15	120	1854
Canceling and postmarking machines. Feed mechanism for stamp-	S. K. Green	809,108	Jan. 2	977	202	120	216
Canceling and postmarking machines. Inking apparatus for stamp-	F. Bjurström	812,780	Feb. 13	2511	552	120	2076
Canceling-machine	F. Bjurström	812,255	Feb. 13	1499	328	120	1866
Candles. Dipping-frame for coating	W. G. Maynard	813,809	Feb. 27	4555	1007-8	120	2624
Candy-dusting machine	P. Panoutlias	809,737	Jan. 9	2273	471	120	533
Candy-holder	P. Haase	809,182	Jan. 2	1100	229	120	242
Candy-machine	G. A. Bissler	812,002	Feb. 6	961	210	120	1685
Candy-making machine	A. Moesbach	813,315	Feb. 20	3591	788-9	120	2354
Candy-screening machine	F. W. Draudt	811,086	Jan. 30	5020	1043	120	1251
Candle	C. A. Spies	813,026	Feb. 27	4213	926-7	120	2550
Candle-holder	L. M. Wilde	808,668	Jan. 2	146	34	120	34
Cane-cutting machine. Sugar-	J. A. Bolden	812,248	Feb. 13	1458	325	120	1854
Cane-loading device. Sugar-	G. D. Luce	813,943	Feb. 27	4837	1067	120	2683
Cane-mill feed-box	J. P. Golden	810,290	Jan. 16	3402	704	120	836
Cane. Repeating torpedo-	R. Bean	809,440	Jan. 9	1696	348	120	406
Canisters, &c. Machine for cutting and pressing	R. Von der Linde	810,286	Jan. 23	3634	748	120	910
Canopy. Folding-	J. A. Poltock	809,512	Jan. 9	1530	378	120	436
Canopy. Portable	A. Voorhies	811,322	Jan. 30	5504	1148	120	1385
Canopy-support and chandelier	J. O. Mick	811,460	Jan. 30	5747	1203	120	1405
Cap	L. Balsam	810,068	Jan. 16	2980	615	120	733
Car	W. A. Caswell. (Reissue)	810,697	Jan. 23	4257	883	120	1052
Car and other like vehicle. Tram-	E. A. Stanley and J. E. Anger	12,447	Feb. 6	1321	287-9	120	1760
Car announcing device. Railway-	A. D. Cloud	812,097	Feb. 6	1131	247-8	120	1719
Car-bodies. Center-stem guide for	B. S. Brown	811,903	Feb. 6	706	154-5	120	1634
Car-body underframe construction	O. S. Pulliam	812,720	Feb. 13	2407	527-8	120	2068
Car-bolster	A. Campbell	813,067	Feb. 27	4290	941-5	120	2667
Car. Box-	F. A. Delano	810,840	Jan. 23	4513	940	120	1107
Car-brake	J. F. Henner	810,472	Jan. 23	3820	786	120	987
Car-brake-operating mechanism	J. O. Neikirk	813,589	Feb. 27	4732	1046	120	2663
Car. Convertible	F. E. Stanley and J. L. Gillmore	813,511	Feb. 27	3991	875	120	2602
Car-coupling	W. W. Gordon	813,249	Feb. 20	3447	760	120	2234
Car-coupling	E. C. Washburn	809,255	Jan. 2	1302	263	120	284
Car-coupling	S. P. Bush	810,008	Jan. 16	2933	578-9	120	700
Car-coupling	L. P. Elliott	810,104	Jan. 16	3011	627	120	747
Car-coupling	C. H. Tomlinson	810,400	Jan. 23	3670	758	120	921
Car-coupling	J. Rooney	810,588	Jan. 23	4061	836	120	1007
Car-coupling	J. K. Vaught	811,329	Jan. 30	5530	1150	120	1388
Car-coupling	S. W. Wibel, W. R. Cunningham, and H. A. Gray.	811,459	Jan. 30	5745	1202	120	1405
Car-coupling	G. A. Hermanson	811,808	Feb. 6	514	115	120	1596
Car-coupling	W. McConway, Jr.	812,927	Feb. 20	2809	619	120	2188
Car-coupling	A. Kelly	813,107	Feb. 20	3166	692-4	120	2386
Car-coupling	W. S. Schroeder	813,650	Feb. 27	4258	925	120	2660
Car-coupling apparatus	O. E. Kelly	813,744	Feb. 27	4429	977	120	2606
Car-coupling. Automatic	D. M. Wilson	811,068	Jan. 30	4987	1041	120	1244
Car-coupling. Auxiliary	G. M. Pennepacker and C. S. Lacon.	812,540	Feb. 13	2055	451	120	1998
Car coupling device	E. Grafstrom	811,434	Jan. 30	5710	1195	120	1397
Car-coupling. Emergency	N. Warner and G. W. Jacobs	808,851	Jan. 2	64	14	120	16
Car-couplings. Operating mechanism for automatic	E. E. Turney	812,460	Feb. 27	3908	859	120	2481
Car-door-actuating mechanism	J. Lovak	812,295	Feb. 13	1780	388	120	1934
Car-door cleat and sealing device	S. C. Sullivan	812,897	Feb. 27	4551	1008	120	2626
Car door. Grain-	C. L. Robbins	810,986	Jan. 30	4987	1013	120	1217
Car door. Grain-	V. Elmquist	811,091	Jan. 30	5028	1050	120	1253
Car-door hanger	E. F. Luce	813,631	Feb. 27	4226	926-9	120	2553
Car-door lock	W. F. Wendt	813,734	Feb. 27	4395	970	120	2599
Car-door-operating mechanism	A. Campbell	808,572	Jan. 2	2612	522	120	826
Car draft appliance. Railway-	J. F. O'Connor	812,783	Feb. 13	2080	564	120	2076
Car draft-gear. Railway-	H. M. Pflager	812,886	Feb. 20	2857	594-5	120	2185
Car draft-rigging mechanism	R. S. Brown	810,805	Jan. 23	4464	927	120	1036
Car. Dump-	T. R. McKnight	812,721	Feb. 13	2409	528	120	2054
Car. Dump-	H. S. Hart and W. Yost	809,822	Jan. 9	1849	389-4	120	449
Car. Dump-	S. Otis	811,717	Feb. 6	344	76	120	1589
Car. Dump-	S. Otis	812,209	Feb. 13	1698	373	120	1912
Car-dump	C. R. Cleghorn	813,723	Feb. 27	4409	975-6	120	2598
Car. Dumping-	F. M. Hubbard and C. E. Taylor	811,139	Jan. 30	5128	1070	120	1271
		808,760	Jan. 2	267	55-6	120	59

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Car. Dumping	P. Schneider	809,016	Jan. 2	779	168	120	172
Car. Dumping	R. W. and J. V. Ericson	810,324	Jan. 23	3936	810	120	981
Car dust-collector	G. F. Weir	810,331	Jan. 23	4500	936	120	1104
Car. Electric	L. B. Stillwell	811,967	Feb. 6	868	191–2	120	1606
Car-fender	J. B. Connor	810,326	Jan. 16	3481	719	120	842
Car-fender	J. Landau, Jr.	812,571	Feb. 13	2130	466–7	120	2001
Car-fender	A. B. Wilson	813,475	Feb. 27	3917	859	120	2435
Car-fender	M. E. John	813,498	Feb. 27	3955	869–70	120	2497
Car-fender	F. J. Fairchild	813,632	Feb. 27	4227	929	120	2554
Car-fender	C. Bauer	813,938	Feb. 27	4827	1065	120	2852
Car fender and brake	L. A. Devin and F. S. Atkins	812,022	Feb. 6	997	218	120	1691
Car fender. Street	W. Martin	809,829	Jan. 9	2432	505	120	588
Car for preventing side slip. Motor	T. G. Allen	813,694	Feb. 27	4322	951	120	2574
Car-frame	W. R. McKeen, Jr	809,317	Jan. 9	1428	280	120	348
Car frame. Hand	J. Donovan	811,042	Jan. 30	4949	1033	120	1236
Car frames. Post and carline for railway	W. F. Kiesel, Jr.	809,920	Jan. 9	2611	538	120	607
Car. Freight	O. W. Meissner	812,145	Feb. 6	1233	266	120	1742
Car friction draft-rigging. Railway	F. B. Townsend	812,902	Feb. 20	2750	607	120	2176
Car grain-door	M. G. Donehew	806,906	Jan. 2	570	126	120	125
Car grain-door	J. Feuchi	812,538	Feb. 20	2638	576–7	120	2149
Car. Hopper-bottom	J. S. Stevenson	809,538	Jan. 9	2090	453	120	490
Car indicator. Street	D. C. Evans and O. Q. Patterson	813,144	Feb. 20	3258	716–17	120	2286
Car journal-box	J. R. Schrader	809,535	Jan. 9	2080	431–2	120	488
Car-lubricator	J. F. Joy	813,214	Feb. 20	3386	747	120	2311
Car. Motor	F. W. Lanchester	809,909	Jan. 9	1827	377	120	436
Car part	E. I. Dodds	811,208	Jan. 30	5284	1105	120	1307
Car-platform folding gate	H. Witte	810,592	Jan. 23	4067	857	120	1006
Car-platform gate	H. Witte	809,507	Jan. 9	2005	416	120	472
Car. Railway	J. C. Cottrell	808,817	Jan. 2	381	82–4	120	84
Car. Railway	L. A. Hoerr	809,613	Jan. 9	2039	423	120	480
Car. Railway	A. W. Sullivan and W. Renshaw	810,000	Jan. 16	2781	573–4	120	696
Car. Railway motor	C. H. Howard	813,427	Feb. 27	3823	837	120	2462
Car. Railway tank	G. L. Southard	812,096	Feb. 6	1123	247	120	1717
Car-replacer	J. M. Scudder	812,302	Feb. 13	1606	352	120	1892
Car-replacer	W. P. Byrd	813,855	Feb. 27	4064	1032	120	2648
Car roller side bearing. Railway	E. S. Woods	809,509	Jan. 9	2015	418	120	474
Car-roof. Metal	J. C. Campbell	809,907	Jan. 9	2574	533	120	596
Car-seat	F. Bennett and S. A. Walker	809,084	Jan. 2	923	193–4	120	204
Car-seat	A. E. Ostrander	810,558	Jan. 23	4000	824	120	994
Car-seat. Reversible	H. Witte	810,833	Jan. 23	4503	938	120	1105
Car-seat. Reversible	H. Witte	813,267	Feb. 20	3478	767	120	2332
Car-seat. Walk-over	S. M. Curwan	808,906	Jan. 2	569	125	120	125
Car-signal	A. S. Macreadie	806,937	Jan. 2	617	134	120	126
Car sliding door. Railway	F. D. Ackerman	811,115	Jan. 30	5076	1061	120	1262
Car-starter	R. E. Booth and J. Wise	811,123	Jan. 30	5090	1065	120	1265
Car starting and stopping device	R. Maw	808,930	Jan. 2	621	135	120	137
Car-step	D. A. Faut	811,911	Feb. 6	726	158–9	120	1639
Car. Tie-preserving cylinder	E. B. B. Kuckuck	808,761	Jan. 2	274	59	120	63
Car truss-frame	W. R. McKeen, Jr	809,974	Jan. 16	2732	562–3	120	695
Car-wheel	G. D. Springer and F. Lister	810,437	Jan. 23	3754	773	120	933
Car-wheel hub	D. Haslup	813,418	Feb. 27	3801	834	120	2456
Car-wheel. Sectional	G. W. Richards	809,306	Jan. 9	1610	327	120	328
Car-wheels. Producing self-lubricating	J. W. Fuller, Jr.	813,146	Feb. 20	3263	717	120	2287
Cars and other vehicles. Fender for	G. Hipwood	810,762	Jan. 23	4370	907–8	120	1077
Cars and other vehicles. Fender for	G. Hipwood	810,763	Jan. 23	4373	908	120	1077
Cars, automobiles, and the like. Locking device for motor-	I. W. Heysinger	810,206	Jan. 16	3220	667	120	786
Cars. Cable-grip for	J. L. Davis	813,040	Feb. 20	3030	667	120	2235
Cars. Chute for unloading railway	J. E. Brassel	812,009	Feb. 6	972	212	120	1687
Cars. Crane structure for	C. B. Voynow and G. B. Taylor	810,527	Jan. 23	4493	934–5	120	1102
Cars. Spragging device for coal and pit	J. Levak	810,778	Jan. 23	4409	914	120	1086
Cars. Steel side stake for	E. I. Dodds	813,466	Feb. 27	3943	865	130	2492
Cars. Steel underframe for railway	W. F. Kiesel, Jr.	809,921	Jan. 9	2612	538–9	120	608
Cars. Tandem-spring draft-rigging for railway	J. F. O'Connor	812,867	Feb. 20	2863	894	120	2162
Carbonating apparatus. Automatic attachment for	H. W. Van Der Vaart	809,649	Jan. 9	2116	432	120	495
Carbonating apparatus. Liquid	P. C. Haan	813,863	Feb. 27	4720	1044	120	2650
Carburetor	S. P. Sanders	810,087	Jan. 16	2974	621	120	730
Carburetor	J. Melmoth	810,792	Jan. 23	4430	921	120	1091
Carburetor	F. A. Law	813,653	Feb. 27	4283	937	120	2561
Carburetor	E. E. Adams	813,683	Feb. 27	4320	951	120	2573
Carburetor	G. H. Holgate	813,796	Feb. 27	4535	1002–3	120	2619
Carburetor and igniter for hydrocarbon-engines	A. B. Goodspeed	808,915	Jan. 2	553	129	120	126
Carburetor for hydrocarbon-engines	C. H. Claudel	811,618	Feb. 6	163	36–7	120	1621
Carburetor. Hydrocarbon-engine	W. Kopse	812,753	Feb. 13	2465	541	120	2086
Card-cases	W. G. Dunwell	811,499	Jan. 30	5797	1213	120	1415
Card-mounting	C. C. Harper	812,993	Feb. 20	2940	648	120	2216
Card or check receiver	J. C. Tutt	813,468	Feb. 27	3902	855	120	2481
Cards. Cutter	R. W. Bailey	813,764	Feb. 27	4465	986	120	2604
Cards. Piano machine-head for punching jacquard	V. E. Royle	811,176	Jan. 30	5220	1091–2	120	1292
Carpet. Chain-machine for the manufacture of	C. Thibbaut	810,891	Jan. 23	4641	967–8	120	1133
Carpet-lining, sheet metal, wood, &c., with paper, &c.	F. E. Jagenberg	813,708	Feb. 27	4368	963	120	2584
Carpet-sweepers for covering	J. J. Rae	810,171	Jan. 16	3138	649	120	770
Carriage-driving mechanism	P. L. McBride	812,883	Feb. 20	2894	862	120	2180
Carriage-top bow-head	A. D. Leblanc	811,305	Jan. 30	5473	1141	120	1348
Carriage-top	G. W. Voelkle	813,845	Feb. 27	4646	1027–8	120	2644
Carriage-top	S. J. Wever	809,545	Jan. 9	1890	393	120	449
Carriage-top cradle. Folding baby	E. S. Carothers	812,405	Feb. 13	1802	394	120	1982
Carriage-top corner construction	I. Andrews	810,247	Jan. 16	3311	686–7	120	804
Carriage. Child's	J. P. Johnson	812 207	Feb. 13	1405	305	120	1946
Carriage. Child's	M. and C. R. Piercy	812,447	Feb. 13	1576	413	120	1948
Carriage-curtain fastener	W. H. Barter	812,323	Feb. 13	1641	361	120	1899
Carriage-lamp	L. J. Lankhaupt	812,661	Feb. 13	2292	499	120	2081
	C. M. Gill	810,932	Jan. 30	4743	989	120	1190

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Carrier: *See* Automatic carrier. Cash-carrier. Draft-rigging carrier. Egg-carrier. Electric carrier. Feed and litter carrier. Fruit-carrier. Hay-carrier. Log-carrier. Photographic-plate carrier. Pneumatic-tube carrier. Rope-carrier. Shaft-carrier. Trace-carrier. Wire-carrier.							
Carrier	D. G. Lyman	813,160	Feb. 20	3278	721	120	2300
Carrier mechanism	L. C. Kahl	808,758	Jan. 2	370	58	120	62
Cart. Logging	M. E. Spears	808,881	Jan. 2	507	110	120	114
Cart. Self-loading	R. C. Menzies	810,547	Jan. 23	3978	820	120	990
Cart. Street-sweeper's	G. Focht	808,739	Jan. 2	333	61	120	54
Cartridge	A. H. Emery	811,910	Feb. 6	722	157–8	120	1637
Cartridge. Blank smokeless-powder	F. Sperre	812,156	Feb. 6	1268	278	120	1748
Cartridge-clip	O. M. Lissak	810,161	Jan. 16	3123	646	120	767
Cartridge-clip-assembling machine	O. M. Lissak	810,055	Jan. 16	2943	613–14	120	732
Cartridge-extracting implement	W. W. Pierce	812,088	Feb. 6	1108	244	120	1714
Cartridge. Firearm	F. E. Clots	811,379	Jan. 30	5813	1174	120	1379
Cartridge-loading machine	S. B. Kimber	813,495	Feb. 27	3838	840–1	120	2465
Case: *See* Bookcase. Burial-case. Card-case. Display-case. Eyeglass-case. Filing-case. Map-case. Packing-case. Sectional case. Show-case. Show or display case.							
Casein-picker	A. B. Ireland	810,655	Jan. 23	4184	864	120	1035
Cash-carrier. Pneumatic-tube	D. S. Hager	811,915	Feb. 6	734	160	120	1640
Cash indicator and recorder	J. H. McCormick and J. D. Morrison.	810,376	Jan. 16	3586	738–40	120	867
Cash-register	W. F. Bockhoff	811,761	Feb. 6	417	92–3	120	1577
Cash register and indicator	J. H. McCormick and J. D. Morrison.	810,377	Jan. 16	3589	740–2	120	870
Cashiers, registers, and recorders. Keyboard-locking mechanism for mechanical	I. S. Dement and F. J. Hull	813,360	Feb. 20	3674	805–6	120	2373
Casing-spear. Trip	W. H. Kesselman	812,569	Feb. 13	2125	466	120	2000
Cask or vessel for ignitible or explosive liquids or gases	W. Dreyer	813,265	Feb. 20	3669	810	120	2375
Casket-handle	E. R. Sargent	810,088	Jan. 16	2977	621	120	730
Caskets. Canopy-frame for	C. E. Richards	810,569	Jan. 23	4022	838	120	999
Caster. Ball-	J. Wolfe and G. F. Frech	811,467	Jan. 30	5759	1205	120	1408
Caster. Ball-bearing	O. C. Knipe	811,152	Jan. 30	5168	1079	120	1261
Caster. Stove-leg	H. Landis	813,438	Feb. 27	3847	842	120	2468
Casting hollow ware. Mold for	F. D. Cook and G. A. Conrath	813,405	Feb. 27	3775	826	120	2452
Casting machine. Ingot-	J. Illingworth	810,654	Jan. 23	4182	864	120	1035
Casting purposes. Forming molds for	J. G. Weyer	813,605	Feb. 27	4172	.....	120	2642
Catafalque	W. J. Gabryszek	811,495	Jan. 30	5805	1215	120	1417
Catamenial bandage	E. S. Dix	811,704	Feb. 6	327	72	120	1558
Catamenial sack	W. M. Longstreth	813,221	Feb. 20	3401	749	120	2315
Catch. Safety	O. Lamacchia	813,436	Feb. 27	3845	842	120	2468
Catheter. Embalming	H. M. Crippen	812,020	Feb. 6	995	218	120	1691
Cattle-guard	W. D. Linscott	810,064	Jan. 16	2943	613–13	120	731
Cattle-guard	A. Devan	810,326	Jan. 16	3483	720	120	843
Cattle-guard	J. L. Friedman and J. Graham	811,049	Jan. 30	4987	1035	120	1233
Cattle-guard	W. E. Dement	812,984	Feb. 20	2886	644	120	2213
Cattle or stock guard	W. H. Kennedy	813,713	Feb. 27	4376	998–6	120	2585
Cellulose acetate	A. Eichengrün and T. Becker	809,935	Jan. 16	2880	.....	120	667
Cellulose compound and making the same	R. W. Strehlenart and F. Reubold	812,098	Feb. 6	1123	.....	120	1719
Cellulose products. Treatment of maize for the manufacture of	F. L. Stewart	811,534	Jan. 30	5881	.....	120	1439
Cellulose solution	E. W. Friedrich	813,878	Feb. 27	4709	.....	120	2656
Cement and cement construction. Treating	M. Toch	813,841	Feb. 27	4641	.....	120	2643
Cement and making the same. Hydraulic	C. D. Clark	811,902	Feb. 6	705	.....	120	1634
Cement-block machine	M. Eckley	808,643	Jan. 2	45	10	120	12
Cement-block machine	F. B. Dysart	809,262	Jan. 2	1265	262	120	262
Cement-block machine	G. J. Apgar	810,019	Jan. 16	2930	595	120	705
Cement-block machines. Core-cutter for	J. W. Stuart	812,702	Feb. 13	2270	519	120	2040
Cement-block-making machine	B. Poulson	813,112	Feb. 20	3183	698	120	2271
Cement-block-molding machine	R. E. Testa	812,615	Feb. 13	2205	481	120	2015
Cement-brick machine	F. B. Dysart	809,260	Jan. 2	1263	261	120	262
Cement-brick press	H. B. Murdock	809,534	Jan. 9	2041	507–9	120	589
Cement-burning process and apparatus therefor	B. E. Eldred	813,827	Feb. 27	4215	927	120	2551
Cement-construction-block mold	M. M. Robertson	810,362	Jan. 16	3621	745	120	875
Cement-fence-post mold	G. H. Terry	811,875	Feb. 6	270	61	120	1546
Cement-fence-post-molding machine	B. H. McMillan, W. C. Johnson, and F. M. Collord.	812,767	Feb. 13	2491	547–9	120	2071
Cement-kiln	T. A. Edison	812,890	Feb. 27	3946	885	120	2482
Cement-kiln heat-recuperator	C. Ellis	812,788	Feb. 13	2528	555	120	2080
Cement-kiln heat-regenerator	C. Ellis	812,680	Feb. 27	4223	926	120	2563
Cement-kiln. Oscillating	B. E. Eldred	812,824	Feb. 20	2883	878	120	2148
Cement or plastic block molding press	C. A. Meyers	811,623	Jan. 30	5691	1191–2	120	1393
Cement-post truss	L. Clark	810,717	Jan. 23	4388	883	120	1089
Cement. Production of	B. Grau	813,986	Feb. 27	4574	.....	120	2601
Cement-tile machine	F. B. Dysart	809,261	Jan. 2	1264	261	120	262
Cementing-machine	W. F. Lautenschlager	810,878	Jan. 16	3589	736–7	120	865
Centerless engine	W. H. Blodgett and W. E. Miller	811,669	Feb. 6	297	63	120	1641
Centrifugal machine	E. H. Dutcher	813,282	Feb. 20	3511	774	120	2329
Centrifugal machine	A. Freitag	813,993	Feb. 27	4699	1077	120	2609
Centrifugal machines. Means for hanging overdriven	G. Dinkel	812,824	Feb. 6	1020	239	120	1722
Centrifugal machines. Speed-controlling mechanism for	E. H. Dutcher	813,283	Feb. 20	3513	775	120	2330
Ceramic ware. Burning	B. E. Eldred	810,044	Jan. 16	2929	595	120	716
Chain	S. Schlegall	809,015	Jan. 2	778	168	120	171

Alphabetical list of inventions for January and February—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Chain	J. M. Joyce	809,113	Jan. 2	984	203	120	217
Chain. Detachable-link	A. D. Morris	813 229	Feb. 20	3412	752	120	2317
Chain. Drive-	W. H. Gates	811,701	Jan. 30	5627	1178	120	1351
Chain. Extensible	E. C. Gipe	811,054	Jan. 30	4986	1037	120	1240
Chain-hook	F. Krämer	813,386	Feb. 20	3725	819	120	2383
Chain-links. Forming helices for	I. D. Weaver	809,412	Jan. 9	1641	337	120	304
Chain-links. Manufacture of helices for	I. D. Weaver	809,413	Jan. 9	1642	337–8	120	304
Chain sling and trip	W. E. Cage	813,277	Feb. 20	3495	770	120	2335
Chair:							
See Motor-chair. Revolving and reclining chair. Rail-joint chair. Stair-chair. Reclining-chair.							
Chair	H. H. Hoover	809,061	Jan. 2	863	183	120	191
Chair	J. E. Hanger	809,944	Jan. 16	2674	552	120	673
Chair adjusting-screw. Revolving	H. G. Hunn	808,927	Jan. 2	603	132	120	133
Chair attachment	V. M. Hollyday	810,277	Jan. 16	3379	699	120	821
Chair attachment. Reclining	M. Faas	811,138	Jan. 30	5141	1074	120	1275
Chair-legs for rockers. Machine for shaping	H. L. Staley	812,461	Feb. 13	1893	417–18	120	1952
Chair-seat	V. A. Taylor	811,259	Jan. 30	5386	1123	120	1330
Chair tip. Rocking	T. Lynch	810,957	Jan. 30	4796	997	120	1202
Chairs. Protective attachment for infants' high	J. Kugel	811,933	Feb. 6	798	176	120	1651
Chandelier	W. J. Peterson	810,429	Jan. 23	3732	769	120	933
Chandelier. Extension gas-	W. E. Cotton and L. C. Moor	812,549	Feb. 13	2093	459	120	1993
Change-making machine	T. S. Wilkes	812,160	Feb. 6	1275	279–81	120	1749
Charging-machine	A. L. J Queneau	813,022	Feb. 20	2908	660	120	2229
Check-loop	W. C. Ladd	808,850	Jan. 2	437	96	120	97
Checkrein	W. Williamson	808,961	Jan. 2	686	149	120	152
Checkrein attachment	P. J. Higgins	810,336	Jan. 16	3503	722	120	848
Cheese-cutter	J. A. McCombs	810,214	Jan. 16	3242	671	120	791
Cheese-cutter. Computing	F. P. Dunn	810,043	Jan. 16	2887	596	120	718
Cheroot-machine	G. P. Louise and C. H. Hensley	812,260	Feb. 13	1562	341	120	1882
Chess-recorder	J. R. Schmitt	809,460	Jan. 9	1760	361	120	418
Chimney-cap	L. R. Babu	810,899	Jan. 30	4664	971–3	120	1172
Chimney-holder	A. E. Colegrove and S. Reed	811,764	Feb. 6	427	94	120	1579
Chlorate-powder	A. R. Cooper	809,780	Jan. 9	2354	486	120	550
Chlorid. Making stannic	C. E. Mathews	811,941	Feb. 6	817		120	1655
Chlorid. Making stannous	C. E. Acker	810,454	Jan. 23	3794	780	120	948
Chopper:	C. E. Acker	810,455	Jan. 23	3797	780	120	949
See Cotton-chopper.							
Chronometer-escapement	A. Brown	808,631	Jan. 2	21	5–6	120	7
Chuck	W. Mason	810,782	Jan. 23	4421	917–18	120	1087
Chuck. Drill-	C. Gordon	809,205	Jan. 9	1378	280	120	339
Chuck. Drill-	F. J. Hoenscheid	811,722	Feb. 6	352	78	120	1564
Chuck. Drill-	T. James	813,151	Feb. 20	3209	718	120	2288
Churn	H. L. Colt	813,864	Feb. 27	4685	1035	120	2652
Churn	F. Swallow	809,031	Jan. 2	800	173	120	177
Churn	D. Ayers and J. D. Sloan	809,889	Jan. 9	2540	527	120	592
Churn	E. W. Turner	810,688	Jan. 23	4238	878	120	1047
Churn	J. G. Smith	811,102	Jan. 30	5045	1055	120	1256
Churn	J. W. Dowden	812,190	Feb. 13	1374	298–9	120	1839
Churn	W. L. Pool	812,592	Feb. 13	2172	475	120	2008
Churn	J. F. Mangan	813,563	Feb. 27	4100	899	120	2527
Churn and cream-whipper. Combination	S. S. Hitchcock	813,497	Feb. 27	3954	869	120	2496
Churn. Butter-	C. M. Runyan	813,326	Feb. 20	3613	792	120	2350
Churn-cover	J. C. Hogue	812,586	Feb. 13	2122	465	120	1999
Churn-dasher	W. L. Hart	808,742	Jan. 2	247	53	120	57
Churn-operating mechanism	H. L. Busch	812,819	Feb. 20	2595	570	120	2140
Churns, pumps, &c. Motor for	J. H. Skinner	812,489	Feb. 13	1891	417	120	1952
Churning apparatus	C. Y. McCardle and S. N. Davis	813,732	Feb. 27	4407	972	120	2592
Cigar	C. F. Zenker	809,182	Jan. 2	1063	231	120	233
Cigar-branding machine	B. Liberman	811,071	Jan. 30	4904	1042	120	1245
Cigar-bunching device	N. Thisen	809,758	Jan. 9	2306	478	120	540
Cigar-bunching machine	B. N. Berman and A. Harris	813,706	Feb. 27	4469	987	120	2605
Cigar-clipper and match-safe	V. H. Paradis and J. B. Putrow	810,801	Jan. 23	4457	926	120	1094
Cigar cutter and lighter. Combined	W. H. Crawford	809,782	Jan. 9	2357	487	120	551
Cigar for asthma	A. Mendelsohn	811,942	Feb. 6	817	179	120	1656
Cigar-machine	W. S. Luckett	809,384	Jan. 9	1571	320	120	378
Cigar-machines. Wrapper-support for	O. Tyberg	811,108	Jan. 30	5081	1059	120	1259
Cigar retainer and cutter	S. P. Miller	812,064	Feb. 6	1062	231	120	1705
Cigars, cigarettes, cigar-fillers, &c. Machine for the manufacture of	M. Van Gilpen	809,410	Jan. 9	1635	333–6	120	308
Cigarette-holder	W. Durand	813,366	Feb. 20	3920	811	120	2376
Cigarette-machine	F. F. Anderson	811,118	Jan. 30	5081	1062	120	1263
Cigarettes. Appliance for cutting off and creasing	F. J. Ludington	808,851	Jan. 2	437	97	120	97
Cigarettes. Machine for making all-tobacco	A. H. Randall, Jr	812,153	Feb. 6	1250	271–5	120	1745
Cinder or slag. Chilling	F. K. Hoover and A. J. Mason	810,865	Jan. 23	4574	962	120	1120
Cinder or slag chilling apparatus	F. K. Hoover and A. J. Mason	810,864	Jan. 23	4572	961	120	1119
Circuit-controller	R. Varley	808,967	Jan. 2	678	147–8	120	160
Circuits. Switch or circuit-breaker for high-potential	E. W. Rice, Jr	812,880	Feb. 20	2717	598–9	120	2167
Clamp:							
See Cord-clamp. Rope-clamp. Dental clamp. Set-clamp. Eaves-trough clamp. Tent-clamp. Hose-clamp. Tool-clamp. Insulator-clamp. Trolley-wire clamp. Pipe-clamp.							
Clamp	E. R. Wingate	808,708	Jan. 2	163	37	120	37
Clamp	P. F. Deming	808,731	Jan. 2	223	47	120	51
Clamp	J. Wrigley	809,883	Jan. 9	2530	525	120	590
Clamp	H. A. Krohn	810,542	Jan. 23	3971	818	120	988
Clamp	J. J. Stevens	812,009	Feb. 13	2206	518	120	2045
Clasp.							
See Garment-clasp. Tag-clasp. Rethand-clasp.							
Clasp	I. Steinberg	813,898	Feb. 27	4687	1035	120	2642

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Clay-bin-emptying apparatus	C. W. Raymond	812,230	Feb. 13	1453	317–18	120	1857
Clay products. System and means for drying and burning	R. W. Lyle	812,509	Feb. 13	1987	436–7	120	1971
Cleaner:							
See Boiler-flue cleaner. Pipe-cleaner. Finger-nail cleaner. Sewer-cleaner. Flue-cleaner. Window-cleaner. Household-cleaner.							
Cleaning compound	J. Callahan	810,105	Jan. 16	2012		120	747
Cleaning device	A. P. Trimm	811,001	Jan. 30	4878	1015	120	1220
Cleat and socket	C. M. Waite and C. F. Fralick	811,186	Jan. 30	5238	1096	120	1297
Clevis. Interlocking	N. M. Lien	809,511	Jan. 9	1829	378	120	436
Clevis-irons. Making	W. S. Ward	810,007	Jan. 16	2802	578	120	700
Climbing apparatus	H. Borneman	810,264	Jan. 16	3328	691	120	809
Clinometer	B. Kern, Jr	809,699	Jan. 9	2205	457	120	517
Clip:							
See Cartridge-clip. Rail-clip. Paper-clip. Tube-clip.							
Clock	W. F. Porter	811,324	Jan. 30	5510	1148	120	1356
Clock and money-box. Coin-controlled	H. Giller	812,300	Feb. 13	1393	302–3	120	1843
Clock-movement	S. Golombek	813,644	Feb. 27	4246	933–4	120	2558
Clock. Repeating alarm-	W. E. Porter	809,133	Jan. 2	1017	210	120	224
Clock. Self-winding electric	M. Menkin	813,161	Feb. 20	3281	721–2	120	2291
Clock. Shadow-	R. B. Smith	813,836	Feb. 27	4634	1024–5	120	2642
Closet:							
See Earth-closet. Water-closet. Wall-closet.							
Closet and sink fitting. Combined	J. L. Fruin	809,938	Jan. 16	2654	548	120	668
Closet-bowl seat	J. M. Bryant and J. B. Allen	812,480	Feb. 13	1932	426	120	1960
Closet-tank	F. H. Lindenberg	811,937	Feb. 6	806	177	120	1654
Cloth-cutting machines. Circular knife and retaining-gear for	H. A. Meyer	813,313	Feb. 20	3588	788	120	2354
Cloth-folding machine	W. H. Hacking	813,552	Feb. 27	4076	893	120	2522
Cloth-pressing machine	D. Gessner	810,638	Jan. 23	4158	859	120	1029
Cloth-steaming machine	G. B. Gerlach	810,271	Jan. 16	3372	698	120	819
Cloth winding and measuring machine	J. J. Schofield	813,743	Feb. 27	4427	976–7	120	2596
Clothes-drainer	F. P. Sager	812,884	Feb. 20	2726	600	120	2169
Clothes-frame	C. W. Brode	812,011	Feb. 6	975	213	120	1688
Clothes-line prop	A. J. Campbell	813,947	Feb. 27	4842	1068	120	2684
Clothes-line support	P. J. Sloan	809,094	Jan. 2	790	170	120	174
Clothes-line support	C. F. Miethke and F. J. Mach	812,583	Feb. 13	2154	471	120	2005
Clothes-marking apparatus	J. D. Caldwell and N. A. Sorenson	812,723	Feb. 13	2413	530	120	2055
Clothes-pin	D. R. Rosebrough	808,687	Jan. 2	122	28	120	29
Clothes-pin	A. G. Borneman	810,704	Jan. 23	4267	885	120	1054
Clothes-pin	H. I. Rumfeld and J. R. Donaho	813,589	Feb. 27	4141	907–8	120	2535
Clothes-tongs	F. L. Blomquist	809,244	Jan. 2	1266	257	120	279
Clover-huller feeder	H. Guderian	810,937	Jan. 30	4757	990–1	120	1193
Clutch	R. L. Woodard	808,965	Jan. 2	693	150	120	153
Clutch	J. E. Dobson	811,041	Jan. 30	4947	1033	120	1236
Clutch	I. H. Spencer	812,694	Feb. 13	2350	514	120	2042
Clutch	A. H. Eble and J. H. Nice	813,369	Feb. 20	3695	812	120	2377
Clutch and governor. Friction-	C. Christiansen	811,374	Jan. 30	5600	1170	120	1375
Clutch. Friction-	F. H. Ball	808,622	Jan. 2	9	2	120	4
Clutch. Friction-	H. G. Dittbenner	808,975	Jan. 2	707	153	120	156
Clutch. Friction-	J. F. Wilson	810,516	Jan. 23	3923	806	120	978
Clutch. Friction-	J. D. Maxwell	810,783	Jan. 23	4424	918	120	1087
Clutch. Friction-	A. C. Menges	811,422	Jan. 30	5690	1191	120	1393
Clutch. Friction-	S. C. Anker-Holth	813,706	Feb. 27	3780	826	120	2449
Clutch mechanism	M. G. de Simone	809,331	Jan. 9	1447	293–4	120	352
Clutch mechanism	J. H. B. Bryan	812,817	Feb. 20	2592	569	120	2139
Clutch-operating mechanism	C. L. Reed	810,509	Jan. 23	3902	802	120	974
Clutch. Self-governing	R. E. Wynn	811,352	Jan. 30	5563	1180	120	1387
Clutch. Shaft-	M. Deller	813,969	Feb. 27	4697	1039	120	2654
Coal and like washer	W. E. Winn	811,608	Feb. 6	142	31	120	1516
Coal and like washer	W. E. Winn	811,609	Feb. 6	144	32	120	1516
Coal-cutting-machine feed	F. Eckersley	809,700	Jan. 9	2371	489–90	120	554
Coal-handling plant	W. J. Patterson and L. J. Robb	812,084	Feb. 6	1101	243–3	120	1713
Coal-screen	F. R. Dickey	810,922	Jan. 30	4722	988	120	1185
Coal-washer	G. S. Ramsay	811,871	Feb. 6	639	140	120	1620
Coating device. Moving-train	C. M. Miller	811,425	Jan. 30	5695	1193–5	120	1394
Coat and hat hook	H. E. Collins	811,380	Jan. 30	5614	1174	120	1379
Coated strip and making the same	H. S. Chapman and W. M. Stone	813,618	Feb. 27	4199	922	120	2548
Coatings upon metals. Electrolytic production of lustrous metallic	A. Classen	809,492	Jan. 9	1763		120	438
Cock. Basin-	P. Mueller	809,720	Jan. 9	2346	486	120	536
Cock. Basin-	P. Mueller	810,168	Jan. 16	3123	648	120	709
Coffee-cooler	H. Hager	810,140	Jan. 16	3098	637	120	700
Coffee cooler and stoner	W. Dean	813,955	Feb. 27	4832	1072	120	2686
Coffee, malt, &c. Roasting apparatus for	M. Boof	813,374	Feb. 20	3401	769	120	2384
Coffee-pot	M. M. De Grody	808,720	Jan. 2	222	47	120	51
Coffee-pot attachment	R. F. Randall and E. V. Peirson	812,227	Feb. 20	2488	755	120	2220
Coffee-roasting machine	F. T. Holmes	812,288	Feb. 13	1540	335–6	120	1877
Coffin drop-handle	G. A. Schehr	809,467	Jan. 9	1747	361	120	418
Coil-spring	E. Hogan	810,149	Jan. 16	3097	630	120	702
Coiling-machine	M. C. Lovejoy	809,269	Jan. 2	1221	249	120	291
Coin collecting and carrying device	M. Kohn	810,849	Jan. 23	4185	865	120	1036
Coin-controlled apparatus	A. T. Hallock	810,856	Jan. 23	4546	947	120	1115
Coin-controlled apparatus	F. J. Dole	812,331	Feb. 13	1988	384	120	1988
Coin-holding box	R. H. Forsyth	810,742	Jan. 23	4330	900	120	1088
Coin separating, counting, and stacking device	C. F. Hess	811,589	Feb. 6	41	9–10	120	1493
Coin sorting or separating apparatus	B. Cranner	812,337	Feb. 13	1949	383	120	1991
Coin-tray	E. J. Brandt	811,197	Jan. 30	5357	1102	120	1328
Coins and the like. Apparatus for delivering or counting	L. Weinreb and L. A. Rabinowitch	812,634	Feb. 13	2230	495	120	2038
Coke-drawing machine	D. A. Ramage	812,264	Feb. 13	1708	375	120	1915
Coke-handling apparatus	G. G. Fryer	808,741	Jan. 2	289	52	120	54

Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Spec.	Drg.	Vol.	Page.
Coke-oven cover	A. H. Walstrom	809,344	Jan. 9	1476	289	120	361
Collapsible box	W. N. Sewell	810,574	Jan. 23	4081	830	120	1001
Collapsible reel	A. Billstein	811,898	Feb. 6	701	153	120	1633
Collapsible reel	A. Billstein	811,899	Feb. 6	701	153	120	1633
Collapsible table	W. L. Broadwell	809,170	Jan. 2	1077	234-5	120	236
Collar	F. W. Parsons	809,009	Jan. 2	767	165	120	169
Collar and cuff shaper	G. E. Norris	810,076	Jan. 16	2358	617	120	735
Collar-blank-assembling machine	W. M. Barnes	811,130	Jan. 30	3026	1063	120	1294
Collar fastener. Horse-	H. C. Miller	813,908	Feb. 27	4798	1082-3	120	2070
Collar fastening. Horse-	J. C. Clausen	813,863	Feb. 27	4684	1085	120	2052
Collar for draft-animals	P. Guindollet	811,714	Feb. 6	341	75	120	1502
Collar-foundation	F. Leinen	812,430	Feb. 13	1843	404	120	1941
Collar. Horse-	D. Potts	812,576	Feb. 20	2709	597	120	2165
Collar. Horse-	G. W. Hahn	809,208	Jan. 9	1281	280	120	330
Collar-protector	C. L. Allen	809,886	Jan. 9	2535	526	120	591
Collar-supporter	J. F. Connell	808,816	Jan. 2	380	82	120	84
Collar-supporter. Adjustable	O. G. and B. L. Goodman	812,127	Feb. 6	1181	259	120	1730
Collecter-ring	F. S. Reynolds	811,326	Jan. 30	5513	1140	120	1357
Colter standard and fork attachment. Rolling-	H. G. Reist	809,220	Jan. 2	1191	244	120	283
Column	P. A. Shanklin	811,447	Jan. 30	5724	1199	120	1400
Column	A. H. Flowers	812,023	Feb. 6	1015	221	120	1695
Column. Solid-rim wood	T. F. McCarthy	812,218	Feb. 20	3506	790	120	2355
Comb:	L. A. Robinson and H. Bible	813,450	Feb. 27	3864	847	120	2473
See Ornamental comb.							
Comb	C. M. Shubert	812 241	Feb. 13	1475	322	120	1861
Combing and drawing machine	E. Crepy and L. Fremaux	812,550	Feb. 13	2095	459-60	120	1933
Combing machine. Wool-	I. Best	811,817	Feb. 6	530	116	120	1598
Combination-gage	F. Gumpp	809,562	Jan 9	1926	420	120	456
Combination-rack	J. S. Oliver and C. J. Thomas	812,061	Feb. 6	1096	240	120	1712
Combustion-engine	F. Reichenbach	811,744	Feb. 6	389	84	120	1571
Commutating-machine	A. E. Iveson and A. R. Wilson	812,749	Feb. 13	2457	539	120	2055
Compass. Beam-	A. A. Merritt	811,237	Jan. 30	5342	1116	120	1320
Compass. Beam-	T. N. Badger	812,322	Feb. 13	1639	360	120	1899
Compass direction of moving objects. Ascertaining the	I. Kitsee	811,832	Feb. 6	600	131	120	1612
Compass-indicating apparatus	B. V. How	810,866	Jan. 23	4576	963	120	1120
Compasses. Adjusting mechanism for screw-threaded needle-point insertions of	J. Eichmüller	808,644	Jan. 2	47	10	120	13
Compo-board machine	C. J. Johnson and W. B. Porter	808,756	Jan. 2	266	57-8	120	61
Composition of matter	D. Lichtenstein	809,068	Jan. 2	573	.....	120	198
Composition of matter	B. C. Senton	809,472	Jan. 9	1789	.....	120	420
Compound engine	J. Venator	810,589	Jan. 23	4063	836	120	1007
Compressor	H. Mikorey	813,443	Feb. 27	3854	844	120	2470
Compressor-cooler	W. Prellwitz	810,670	Jan. 23	4200	870-1	120	1041
Computing device	G. M. Brown	809,605	Jan. 9	2028	420	120	477
Concentrator. Fruit-	L. R. Tulloch	809,648	Jan. 9	2115	436	120	494
Concentrator. Solution-	J. U. Lloyd	808,997	Jan. 2	748	162	120	165
Concrete-block-forming machine	E. C. Glatfelter	812,336	Feb. 13	1664	366	120	1904
Concrete-block machine	J. A. Blake and J. Kenrich	809,901	Jan. 9	2663	530-1	120	596
Concrete-block mold	J. M. Pettyjohn	810,243	Jan. 16	3513	724	120	850
Concrete-block mold and block	C. K. Lamble	813,721	Feb. 27	4389	988-9	120	2568
Concrete-block-molding flask	J. Hamm	810,083	Jan. 16	3026	609	120	727
Concrete-block-molding machine	W. G. Bennett and J. F. Seyfang	810,026	Jan. 16	2940	587	120	707
Concrete bodies. Machine for molding	M. A. Winget. (Reissue)	12,444	Jan. 30	5092	1236	120	1456
Concrete building-block	W. A. Haller and J. W. Billingsley	810,748	Jan. 30	4345	908	120	1071
Concrete-building-block press	J. A. Ferguson	812,416	Feb. 13	1820	398-9	120	1986
Concrete building-blocks. Machine for manufacturing	W. H. McDowell	813,573	Feb. 27	4119	902-3	120	2531
Concrete building construction	J. B. Hinchman	811,890	Feb. 6	47	10	120	1495
Concrete construction. Reinforced	C. H. Black	813,540	Feb. 27	4046	893	120	2515
Concrete construction. Reinforcing device for	G. L. Peabody	810,851	Jan. 23	4998	1026	120	998
Concrete curbing. Reinforced	A. Thomas	813,334	Feb. 20	3523	780	120	2322
Concrete fence-post	H. S. Young	811,082	Jan. 30	4915	1035	120	1228
Concrete fence-posts. Mold for making	C. E. Stokoe	810,579	Jan. 23	4049	833	120	1004
Concrete. Mixing	P. C. Haine	808,826	Jan. 2	416	91-2	120	92
Concrete-mold	F. M. Emerson	811,135	Jan. 30	5137	1073	120	1274
Concrete or cement post or analogous structure	G. F. Greene	810,060	Jan. 16	2919	603	120	726
Concrete pile, pillar, &c	G. L. Mouchel	812,223	Feb. 13	1436	314	120	1854
Concrete. Reinforced	E. B. Jarvis	811,926	Feb. 6	783	171	120	1648
Concrete. Reinforced truss for	E. B. Jarvis	811,927	Feb. 6	784	171	120	1649
Concrete. Reinforcing-truss for	E. B. Jarvis	813,308	Feb. 20	3488	783	120	2345
Concrete-wall mold	J. L. Richardson	812,386	Feb. 13	1710	378-9	120	1916
Concrete structural work. Interior	F. C. Caine	809,080	Jan. 2	943	196	120	208
Concrete-structure reinforcing device	A. S. Pierson	810,220	Jan. 16	3263	674	120	794
Concrete-structure tension or reinforcing device	A. S. Pierson	810,231	Jan. 16	3265	675	120	794
Condenser	J. F. Grace	809,679	Jan. 9	2171	449	120	509
Condenser. Steam-	J. A. Dillon	813,488	Feb. 27	3887	864	120	2490
Condensers. Vacuum-breaker for	B. C. Woodford	811,980	Feb. 6	988	203	120	1678
Condiment-holder	D. Jones	813,649	Feb. 27	4257	935	120	2540
Conductor. Protected	A. M. Lougee	809,313	Jan. 9	1419	297	120	346
Confectioner's sizing and cutting machine	G. F. Dickson	809,498	Jan. 9	1809	373	120	432
Confectioner's work-table	L. Schendt	811,179	Jan. 30	5224	1093	120	1293
Conduit system. Surface-	F. E. Case	813,725	Feb. 13	2417	529	120	2055
Connecting-rod	F. E. Case	809,774	Jan. 9	2344	484	120	547
Connecting-rod	F. E. Case	809,908	Jan. 9	2576	538	120	592
Connecting-rod	G. T. Walker	811,098	Jan. 30	4899	1019-20	120	1223
Connecting-rod	T. S. Miller and J. H. Dickinson	808,858	Jan. 2	402	100	120	101
Connecting-rod	J. W. Mackin	809,316	Jan. 9	1435	288-9	120	347
Connecting-rod	A. Tomkins	809,763	Jan. 9	2315	480	120	541
Connecting-rod	G. Lucas	809,827	Jan. 9	2402	504-5	120	557
Connecting-rod	G. C. Horst	810,149	Jan. 16	3100	640	120	782
Connecting-rod	C. E. Baldwin and T. Robins, Jr	810,605	Jan. 23	4094	843-4	120	1015
Connecting-rod	B. H. Busher	811,126	Jan. 30	5092	1056-6	120	1265
Connecting-rod	W. B. Johnson	811,140	Jan. 30	5139	1070	120	1279
Connecting-rod	A. W. F. Steebel	811,180	Jan. 30	5233	1093-4	120	1296

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Conveyer	A. J. Webster	811,190	Jan. 30	5266	1088	120	1299
Conveyer	H. M. Weathers	811,468	Jan. 30	5780	1204	120	1408
Conveyer	A. J. Webster	811,483	Jan. 30	5781	1204-5	120	1408
Conveyer	G. J. Zieme	812,219	Feb. 13	1634	359-60	120	1898
Conveyer	C. W. Lenahey	812,757	Feb. 13	2472	542	120	2057
Conveyer	C. H. Anderson	813,134	Feb. 20	3241	711-13	120	2423
Conveyer	F. R. Willson, Jr	813,474	Feb. 27	3915	859	120	2494
Conveyer. Belt	T. Robins, Jr	810,510	Jan. 23	3904	803	120	975
Conveyer-belt support	A. W. F. Steckel	809,227	Jan. 2	1201	245	120	284
Conveyer. Cable	A. M. Aakhus	811,991	Feb. 6	920	203	120	1679
Conveyer-chute	F. R. Willson, Jr	813,473	Feb. 27	3912	858	120	2493
Conveyer for coke-retorts	H. A. Carpenter	812,977	Feb. 20	2914	642	120	2210
Conveyer-scoop	W. Crossley	810,917	Jan. 30	4713	983	120	1184
Conveyers. Roller-chain for	A. Johnson	812,655	Feb. 13	2266	497	120	2029
Conveying and elevating apparatus	A. J. Webster	811,189	Jan. 30	5243	1097-8	120	1298
Cook and frying pan. Family	P. A. Hanegraaf	810,859	Jan. 23	4554	948	120	1116
Cooker	W. G. Henderson and J. W. Weiss	812,564	Feb. 13	2118	464	120	1998
Cooker. Continuous steam-	R. E. Scott and L. O. Steinhoff	812,154	Feb. 6	1263	276-7	120	1747
Cooking utensil	J. R. Nye	809,120	Jan. 2	1009	208	120	222
Cooking utensil	J. F. Ferry. (Reissue)	12,452	Feb. 13	2360	563	120	2087
Cooler:							
See Coffee-cooler. Cream-cooler. Compressor-cooler. Water-cooler.							
Cooler	B. Briscoe	810,030	Jan. 16	2855	589	120	710
Coop. Folding transportation poultry-	L. D. Fowler	811,047	Jan. 30	4964	1034	120	1237
Coop. Poultry-	W. H. Hodges	810,207	Jan. 16	3226	667-8	120	787
Coop. Poultry-shipping	F. M. Gault	809,558	Jan. 9	1918	398	120	455
Copper. Refining	R. Baggaley, C. M. Allen, and E. W. Lindquist	810,249	Jan. 16	3314	688	120	806
Copy-holder	J. S. Dudley	808,821	Jan. 2	392	85	120	87
Copy-holder	A. D. Long	809,310	Jan. 9	1412	287	120	345
Copy-holder	C. V. Shannon	811,962	Feb. 6	862	189	120	1664
Copying apparatus	F. Jaeger	811,055	Jan. 30	4983	1040	120	1243
Copying-press	F. E. Jagenberg	809,375	Jan. 9	1544	313-14	120	374
Cord-clamp	E. Nelson	809,726	Jan. 9	2287	468	120	528
Cord-fastener	E. M. Comstock	811,361	Jan. 30	5515	1175	120	1379
Cord tension-alarm	C. Branagrove	811,367	Jan. 30	5568	1167	120	1373
Core-extracting device	R. D. Kline	811,301	Jan. 30	5467	1140	120	1347
Core-forming machine. Sand-	C. C. Korns	812,852	Feb. 20	2980	583	120	2154
Core-making machine	C. A. Smith	812,606	Feb. 13	2196	478-9	120	2013
Cork-extractor	H. H. Dunn	810,476	Jan. 23	3837	788	120	959
Corn cutter and shocker	E. and H. S. Berry	813,851	Feb. 27	4656	1030	120	2646
Corn-husker	T. P. Walter	810,098	Jan. 16	3000	626	120	745
Corn-husker	M. M. and E. G. Johnson	811,057	Jan. 30	4985	1040	120	1243
Corn-lifting device	J. M. Miller	813,509	Feb. 27	3982	874	120	2500
Corn-popper	H. W. Eakins	808,784	Jan. 2	327	48-9	120	52
Corn-shock loader and carrier	J. D. Kaylor	812,272	Feb. 13	1580	338	120	1879
Corn-shocker	O. Boyer	812,808	Feb. 20	2570	565-7	120	2134
Corset. Apparel-	D. Kops	813,805	Feb. 27	4548	1006-6	120	2522
Corset. Conformer-	C. Munter	811,428	Jan. 30	5701	1194	120	1396
Cot and cradle. Folding	M. Reilly	813,521	Feb. 27	4016	880	120	2508
Cot. Invalid-	M. O. Fair, Sr	811,492	Jan. 30	5800	1214	120	1416
Cotton-chopper	J. W. Haynie	809,100	Jan. 2	979	202	120	216
Cotton-chopper	J. I. Roberts	810,811	Jan. 23	4472	939	120	1095
Cotton-chopper	W. H. Sutton	811,105	Jan. 30	5058	1055	120	1260
Cotton-chopper	B. C. Butler	811,530	Jan. 30	5878	1232	120	1428
Cotton-chopping machine	J. A. Harden	812,738	Feb. 13	2441	536	120	2061
Cotton-gin	F. Phelps	809,131	Jan. 2	1013	210	120	223
Cotton-handling apparatus	A. F. Tidwell	812,618	Feb. 13	2214	483	120	2016
Cotton-marker. Self-fastening	G. W. Long	809,197	Jan. 2	1131	225	120	249
Cotton-picker	J. K. Piper	813,170	Feb. 20	3098	725-6	120	2284
Cotton-picking machine	J. Nisbet	812,895	Feb. 20	2680	592-3	120	2161
Cotton-scraper	J. D. Fairless	813,085	Feb. 20	3124	698	120	2327
Couch	J. L. Hefner	810,939	Jan. 30	4761	991	120	1193
Couch. Extension-	J. Hoey	811,921	Feb. 6	774	169	120	1646
Counterboring-tool for casks	F. Pfluger and E. Christensen	810,432	Jan. 23	3737	770	120	934
Counting mechanism	H. C. McCallum	810,580	Jan. 23	3988	821	120	992
Coupling:							
See Agricultural-implement, &c., coupling. Air-brake coupling. Bolt-coupling. Car-coupling. Doubletree and whiffletree coupling. Dredge-bucket coupling. Electric coupling. Flexible coupling. Head-coupling. Hose-coupling. Pipe-coupling. Pump-rod coupling. Shaft-coupling. Shaft and pole coupling. Thill-coupling. Union-coupling.							
Coupling device. Wire and Manila rope	H. Downs and W. C. Wally	813,412	Feb. 13	1818	397	120	1936
Covered box	J. Bergoff	810,801	Jan. 30	4670	972-4	120	1179
Covering. Figured	L. W. Beaver	812,531	Feb. 13	2040	.....	120	1989
Crane	W. B. Erskine	809,474	Jan. 9	2169	447	120	507
Crane-locking device	J. R. Whittemore	809,683	Jan. 9	1781	367-8	120	625
Crane-locking mechanism	J. R. Whittemore	809,682	Jan. 9	1779	367	120	624
Crane mechanism	J. R. Whittemore	809,681	Jan. 9	1778	366-7	120	624
Crane. Window-	T. E. French	809,104	Jan. 2	980	201	120	214
Cranes. Safety locking device for	C. E. Hinchman	812,888	Feb. 13	2110	464-5	120	1988
Crank	W. R. Kahlenberg	812,208	Feb. 13	1668	368	120	1949
Crank-dish. Adjustable	L. G. Mitstedt	811,436	Jan. 30	5660	1182	120	1386
Crank. Variable-stroke	J. G. Callan	812,636	Feb. 13	2262	489	120	2026
Crate	W. H. Richmond	809,226	Jan. 9	1441	295	120	321
Crate	D. Gibbs	810,373	Jan. 16	3372	695	120	859
Crate. Banana-	H. Ross	812,689	Feb. 6	1111	249	120	1715
Crate. Bottle-	R. M. Harrower	813,699	Feb. 27	4253	943	120	2550
Crate. Folding egg-	A. D. Imrie	810,383	Jan. 16	3391	701-2	120	874

Alphabetical list of inventions for January and February—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Crate for transporting poultry	F. M. Gault	809,559	Jan. 9	1919	308–9	120	455
Crate. Fruit-	J. Shellenberger	811,449	Jan. 30	5729	1200	120	1401
Crate. Knockdown	J. M. Divan	810,369	Jan. 16	3573	734–5	120	864
Crate-nailing-up form	J. Shellenberger	811,448	Jan. 30	5726	1199	120	1401
Crate. Shipping-	F. Sochurek, Sr.	809,854	Jan. 9	2483	516	120	580
Crate. Shipping-	J. H. Bubar	813,944	Feb. 27	4838	1068	120	2683
Crate. Slatted	H. N. Backus	811,023	Jan. 30	4916	1025	120	1226
Cream cooler and aerator	M. Mortensen	809,125	Jan. 2	1000	206	120	220
Cream-separator	J. W. Hinkley	809,442	Jan. 9	1697	349	120	406
Cream-separator. Centrifugal	E. W. Broomall	809,355	Jan. 9	1499	304	120	365
Croquet apparatus	G. W. Griswold	810,853	Jan. 23	4542	946	120	1114
Cross-bearer	A. E. Ostrander	809,732	Jan. 9	2265	469–70	120	530
Cross-bearer	A. E. Ostrander	809,733	Jan. 9	2266	470	120	530
Cross-bearer	A. E. Ostrander	809,734	Jan. 9	2268	470	120	531
Cross-bearer	A. E. Ostrander	809,735	Jan. 9	2270	470	120	532
Cross-head and cross-head guide	J. E. Hooley	812,745	Feb. 13	2449	537	120	2053
Cross-tie and means for holding track-rails thereon	E. A. Gilchrist	813,205	Feb. 20	3361	739	120	2307
Crucible-furnace	E. Hausmann	811,219	Jan. 30	5306	1109	120	1312
Crucible-shaker	W. S. Mather	813,658	Feb. 27	4277	940–1	120	2564
Crusher: *See* Ice-crusher.							
Crusher	P. L. Simpson	811,671	Feb. 6	267	58–9	120	1543
Crushers and pulverizers. Cage for	M. F. Williams	811,679	Feb. 6	282	63	120	1547
Cuff-fastening	H. C. Shepherd	812,603	Feb. 13	2193	478	120	2012
Cuff-holder	H. C. Frank	811,210	Jan. 30	5289	1106	120	1308
Culinary vessel	A. W. Obermann	812,590	Feb. 13	2168	474	120	2006
Culinary-vessel attachment	W. Sowerby	810,817	Jan. 23	4479	931	120	1099
Cultivator	H. S. Swanson	809,335	Jan. 9	1457	295	120	354
Cultivator	J. J. Green	809,942	Jan. 16	2666	550	120	672
Cultivator	J. M. Donaldson	811,133	Jan. 30	5133	1072–3	120	1274
Cultivator	S. E. Ballor	811,897	Feb. 6	696	152–3	120	1632
Cultivator	C. Pressler	812,678	Feb. 13	2325	507	120	2037
Cultivator and seed-drill. Interchangeable	J. B. Smiley	809,025	Jan. 2	792	171	120	175
Cultivator attachment	W. H. Mitchell	812,945	Feb. 20	2854	629	120	2199
Cultivator replanting attachment	W. J. Scherer	812,239	Feb. 13	1466	321–2	120	1860
Cultivator shield attachment	H. H. Dennis	810,628	Jan. 23	4140	855	120	1025
Cultivator. Single-row	H. S. Swanson	809,336	Jan. 9	1460	295–6	120	356
Culvert. Road-	W. Isham and F. E. Miller	809,304	Jan. 9	1393	283	120	342
Cup: *See* Oil-cup.							
Curette. Finger-	M. J. C. Leuchs	809,119	Jan. 2	993	205	120	219
Current machine. Alternating-	M. C. A. Latour	811,304	Jan. 30	5471	1141	120	1348
Current machine. Electric alternating-	K. A. Lindström	809,706	Jan. 9	2216	460	120	519
Current machinery. Alternating-	A. S. McAllister	809,835	Jan. 9	2448	509	120	570
Current-motor	J. Rauscher	810,083	Jan. 16	2969	619–20	120	737
Current-motor	A. Wiebke and R. E. Gruwell	810,314	Jan. 16	3459	714–15	120	888
Current motor. Alternating-	M. Déri	809,787	Jan. 9	2367	488	120	553
Current motor. Alternating-	B. G. Lamme	811,231	Jan. 30	5330	1113–14	120	1317
Current motor. Single-phase alternating-	B. G. Lamme	811,644	Feb. 6	218	46	120	1533
Current motors. Starting-compensator for alternating-	E. F. Gehrkens	809,677	Jan. 9	2167	448	120	508
Curtain-fastener	J. Schneider	809,140	Jan. 2	1027	212	120	225
Curtain-fixture	C. E. Dunn	810,268	Jan. 16	3358	696	120	816
Curtain-fixture	C. L. Hopkins	810,278	Jan. 16	3380	700	120	821
Curtain-fixture	F. A. Houghtaling	810,281	Jan. 16	3387	701	120	822
Curtain-fixture	J. Cramer	813,865	Feb. 27	4586	1036	120	2552
Curtain-hanger	R. J. Cummings	810,726	Jan. 23	4311	895	120	1063
Curtain hook. Vestibule-	H. Springer	809,904	Jan. 16	2768	569	120	698
Curtain-pole and shade-roller support. Combined	E. B. French	811,629	Feb. 6	197	42	120	1528
Curtain-stretcher	F. M. Haynes	809,684	Jan. 9	2180	451	120	512
Cushion: *See* Air-cushion. Seat-cushion.							
Cushion-spring	W. R. Smith	813,244	Feb. 20	3437	757	120	2323
Cushion-stuffing machine	A. L. and F. C. Roop	811,095	Jan. 30	5093	1051–2	120	1254
Cut-off. Automatic	E. G. and J. R. Rose	809,749	Jan. 9	2293	475	120	537
Cut-off socket	D. H. Haywood	808,656	Jan. 2	72	15	120	18
Cut-off socket	O. Saugstad	808,689	Jan. 2	123	29	120	30
Cut-out. Transformer	J. P. Hetherington	809,302	Jan. 9	1367	281–3	120	341
Cutter: *See* Band-cutter. Butter-cutter. Cheese-cutter. Cigar-cutter. Corn-cutter. Dado-cutter. Fodder-cutter. Kraut-cutter. Meat-cutter. Pipe-cutter. Potato-cutter. Rope-cutter. Rotary cutter. Sewing-machine thread-cutter. Weed-cutter.							
Cutter-head for wood-shapers	E. Wismar	811,662	Feb. 6	286	64	120	1548
Cutter-head gage	E. A. Walker	809,087	Jan. 2	810	175	120	179
Cutting and measuring machine	A. P. Sweeny	811,338	Jan. 30	5534	1154–5	120	1361
Cutting and running knife	W. Brower	812,325	Feb. 13	1647	362	120	1901
Cutting and slotting apparatus	S. H. Richardson	810,510	Jan. 23	4470	929	120	1097
Cutting mechanism	F. E. Strasburg	810,993	Jan. 30	4992	1012–13	120	1216
Cutting mechanism	W. A. Sylvester	813,266	Feb. 27	4156	911	120	2538
Cyanid-solution agitator	H. P. Smith and F. J. Hobson	812,460	Feb. 13	1992	417	120	1952
Cycle-fork	K. Ballod	813,937	Feb. 27	4628	1065	120	2681
Cycle transmission mechanism. Motor-	L. C. G. Rivière	811,327	Jan. 30	5514	1149	120	1357
Cycles and other vehicles. Cushion-fork for motor-	W. G. Schaeffler	811,250	Jan. 30	5370	1121	120	1327
Cycles. Brake for the hubs of	W. and A. Chamberlain	811,617	Feb. 6	162	36	120	1530
Cylinder-lapper	L. P. Pederson	813,579	Feb. 27	4128	904	120	2532
Cylinder-reamer	E. Wismar	811,661	Feb. 6	285	63	120	1548
Dairy products. Suction apparatus for	C. M. Taylor, Jr.	809,861	Jan. 9	2496	519	120	582
Dam, retaining-wall, or breakwater	J. S. Fielding	813,695	Feb. 27	4343	986	120	2578
Dampener for sheet feeds or separators	C. G. Harris	811,843	Feb. 6	566	126	120	1609
Damper. Automatic	W. H. H. Morelock	813,238	Feb. 20	3411	752	120	2317
Damper-operating mechanism	C. McPherson	810,071	Jan. 16	2983	615	120	784

Alphabetical list of inventions for January and February—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Damper. Pipe-	H. Whitham	813,188	Feb. 20	3332	733	120	2302
Damper-regulator	E. B. Rayner	813,669	Feb. 27	4292	945	120	2568
Damper. Time-controlled	S. B. Brown	808,806	Jan. 2	548	121	120	121
Dandy-roll	J. R. Sinclair	813,835	Feb. 27	4632	1024	120	2641
Danger-signal	W. C. Creveling	811,037	Jan. 30	4940	1031	120	1234
Davenport and bed. Combined	A. M. Padmore	813,233	Feb. 20	3419	753–4	120	2319
Davit. Ship's	J. W. Groff	810,854	Jan. 23	4543	946	120	1114
Davits. Attachment for boat-	N. Murchison	812,089	Feb. 6	1071	234	120	1707
Decorating device	J. Gruber	811,393	Jan. 30	5630	1179	120	1382
Decorative process	A. Kummerow	813,720	Feb. 27	4389	968	120	2588
Decorticator	F. Holtzhausen	812,041	Feb. 6	1023	223	120	1696
Decoy	W. W. Cram	811,036	Jan. 30	4939	1031	120	1234
Decoy	C. A. Samuell	811,587	Feb. 6	106	23	120	1508
Decoy	F. J. Johnston	812,499	Feb. 13	1970	433	120	1967
Decoy-duck-tethering device	C. A. Samuell	811,586	Feb. 6	106	23	120	1508
Degreasing substances. Apparatus for	H. Roseke	810,223	Jan. 16	3259	675–6	120	795
Dental and surgical lamp	C. F. Rodgers	811,442	Jan. 30	5719	1196	120	1399
Dental and surgical obtunder	W. L. Moore and E. L. Hutchinson.	811,864	Feb. 6	629	137	120	1618
Dental can	W. Brush	811,370	Jan. 30	5593	1168	120	1374
Dental clamp	E. L. Hutchinson	811,848	Feb. 6	596	130	120	1610
Dental compress	N. L. Burke	811,479	Jan. 30	5776	1209	120	1411
Dental-flask handle	T. G. Lewis	808,935	Jan. 2	614	134	120	136
Dental furnace. Portable	F. S. Belyea	812,395	Feb. 13	1782	390	120	1929
Dental handpieces. Slip-joint connection for	E. E. Smith and H. F. Jones	813,178	Feb. 20	3315	729	120	2298
Dental-instrument holder	J. W. Ivory	812,567	Feb. 13	2122	465	120	1999
Dental matrix	W. Crenshaw	812,328	Feb. 13	1651	363	120	1902
Dental obtunder	W. F. Blasingame	810,611	Jan. 23	4113	849	120	1019
Dental-silk box	O. C. Schulz	808,690	Jan. 2	125	29	120	30
Dental tool	A. W. Feltmann	809,365	Jan. 9	1525	309	120	370
Dental tool for removing crown-pins	G. T. Carpenter	812,976	Feb. 20	2913	642	120	2210
Dentistry. Grinding stone and disk employed in mechanical and operative	H. Sanford-Burton	813,348	Feb. 20	3651	800	120	2367
Denture. Artificial	J. M. Card	810,712	Jan. 23	4285	890–1	120	1058
Denture. Artificial	J. M. Card	810,713	Jan. 23	4287	891	120	1058
Denture. Artificial	J. M. Card	810,842	Jan. 23	4519	941	120	1108
Derrick	W. J. Newman	810,556	Jan. 23	3997	823	120	994
Derrick	J. S. Allen, Jr.	810,691	Jan. 23	4241	878–9	120	1048
Derrick and concrete-mixer. Combined	J. L. Parsons, Jr.	811,243	Jan. 30	5351	1117	120	1322
Derrick. Log-	H. Combs	813,352	Feb. 20	3660	802	120	2369
Derrick-table. Self-feeding	V. Winn	812,106	Feb. 6	1143	251	120	1721
Designs on bricks, &c. Apparatus for the production of line	C. W. Schou	813,592	Feb. 27	4145	908–9	120	2536
Desk appurtenance	A. Kayser	812,501	Feb. 13	1974	433	120	1968
Desk-pad	I. Smigel	811,334	Jan. 30	5528	1152	120	1360
Desk-table	H. Johnson	809,376	Jan. 9	1545	314	120	374
Developing-machine	W. M. Towers and H. S. Harrington.	810,234	Jan. 16	3286	680	120	801
Dial-lock	L. A. Druehl	809,556	Jan. 9	1916	398	120	454
Dial-transmitter	C. F. Pearce	811,950	Feb. 6	528	182–4	120	1658
Diamond	E. G. H. Schenck	809,531	Jan. 9	1866	387	120	444
Diamond-drill	J. H. O'Donnell	810,503	Jan. 23	3889	799	120	971
Diamond-drill and burnishing-lathe	J. H. O'Donnell	810,504	Jan. 23	3891	799	120	972
Diaper. Infant's	W. R. Way	810,689	Jan. 23	4239	878	120	1047
Die: *See* Screw-connecting die.							
Die-press	C. L. McBride	812,263	Feb. 13	1566	343	120	1883
Die-stock	H. W. Oster	812,870	Feb. 20	2700	595	120	2164
Die-stock. Adjustable	B. Borden	812,398	Feb. 13	1787	391	120	1930
Dies for die-stocks. Machine for cutting	H. W. Oster	809,007	Jan. 2	764	165	120	168
Digger: *See* Potato-digger.							
Dilator	G. F. Richter	810,675	Jan. 23	4215	872	120	1042
Dioxypyrimidin. Making 4-imino-2-6-	M. Conrad and W. Beckh	811,826	Feb. 6	546		120	1601
Disappearing seat	C. K. Pickles	808,679	Jan. 2	108	25	120	26
Diseased tissues. Apparatus for treating	A. Cioli and R. A. Case	808,535	Jan. 2	29	7	120	9
Dish-washing machine	J. D. McElroy	811,735	Feb. 6	374	82	120	1568
Disinfecting-apparatus dropper	W. H. Rose	809,014	Jan. 2	777	167	120	171
Disinfecting compound	M. J. Manix	811,074	Jan. 30	5000		120	1246
Disinfecting device for sink-drains	A. and A. B. Pattenden	810,973	Jan. 30	4826	1008	120	1208
Disintegrating-machine	M. F. Williams	813,190	Feb. 20	3334	738	120	2302
Disintegrating-machine	J. W. Hyatt	813,200	Feb. 20	3547	782	120	2346
Disk drill	H. C. Ham	810,858	Jan. 23	4551	947–8	120	1115
Dispensing apparatus	E. Talbert	813,037	Feb. 20	3010	663	120	2221
Dispensing-cabinet	S. Wheeler	810,100	Jan. 16	3004	626	120	746
Dispensing device	G. L. Belcher	809,419	Jan. 9	1656	340	120	396
Display box. Fruit-	G. F. Miller	811,551	Feb. 6	327	69	120	1535
Display case. Sample-	A. Jelliffe	809,445	Jan. 9	1704	351	120	408
Display case. Sample-	G. F. Biggs	810,026	Jan. 16	2844	587	120	706
Display device for millinery articles	H. Silberman	809,780	Jan. 9	2309	478	120	540
Display device. Jewelry-	M. Herz	812,208	Feb. 13	1307	304	120	1844
Display-easel. Magazine	J. H. Howe	813,426	Feb. 27	3824	837	120	2462
Display fixture. Shoe-	F. Minor	810,425	Jan. 23	3726	768	120	932
Display-form	G. Galland	812,988	Feb. 20	2920	645	120	2214
Display-hanger	G. D. Dial	809,389	Jan. 9	1507	305	120	367
Display-mirror	W. V. D. Kelley	809,698	Jan. 9	2203	456	120	516
Display-rack	C. G. Herder	811,720	Feb. 6	349	77	120	1564
Display-rack	F. E. Bowyer	812,396	Feb. 13	1783	380	120	1929
Display-rack carriage	W. Catlin and M. McMillan	810,909	Jan. 30	4683	977	120	1175
Display rack. Hat-	C. Koehler	810,421	Jan. 23	3721	767	120	930
Display rack or stand	H. M. Willis	808,962	Jan. 2	686	149	120	182
Display-stand	P. M. Ward	810,239	Jan. 23	4406	905	120	1138
Display-tray	J. J. Hoffmann	812,989	Feb. 20	2951	650	120	2218
Display trunk. Couch-	T. E. O'Brien	811,667	Feb. 6	240	52	120	1537
Displaying advertising bills, pictures, &c. Frame and board for	A. Emett	812,415	Feb. 13	1819	398	120	1936
Distilling and condensing	J. S. Forbes	808,649	Jan. 2	56	12	120	15

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Distilling benzin and the like. Apparatus for continuously	A. H. L. Gerhardt	810,637	Jan. 23	4155	886	120	1036
Distilling wood and obtaining therefrom the different by-products. Apparatus for	W. W. and T. L. James	813,202	Feb. 20	3554	788	120	2347
Distributer for finely-divided substances	A. Cohenctus	810,107	Jan. 16	3014	628	120	747
Ditcher and road-grader	J. D. Martin	810,874	Jan. 23	4591	965-6	120	1123
Dividers. Self-centering	C. Amendt	809,887	Jan. 9	2636	526	120	591
Diving apparatus	T. Iwanami and M. R. Woodward	812,431	Feb. 27	3830	838-9	120	2463
Dolly. Pneumatic	J. A. Shepard	813,921	Feb. 27	4792	1058	120	2675
Door	N. P. Sjobring	809,145	Jan. 2	1094	214	120	227
Door	J. D. Dobelman	810,926	Jan. 30	4724	988	120	1186
Door-bolt	E. W. Cunningham	810,918	Jan. 30	4715	984	120	1184
Door-bolt and means for operating the same	W. B. Morewood	808,672	Jan. 2	98	22	120	24
Door boltwork. Circular-	J. E. Casserly	811,695	Feb. 6	320	69	120	1556
Door boltwork. Circular-	J. E. Casserly	811,696	Feb. 6	321	70	120	1556
Door boltwork. Circular-	J. E. Casserly	811,697	Feb. 6	321	70	120	1557
Door boltwork. Circular-	J. E. Casserly	811,698	Feb. 6	322	70	120	1557
Door boltwork. Circular-	J. E. Casserly	811,699	Feb. 6	323	70	120	1557
Door boltwork. Circular-	J. E. Casserly	811,700	Feb. 6	323	71	120	1557
Door boltwork. Circular-	J. E. Casserly	811,701	Feb. 6	324	71	120	1558
Door-check	L. Audrieth	810,021	Jan. 16	2833	586	120	706
Door-check	C. I. Parker and P. Papenfoth	813,111	Feb. 20	3182	698	120	2271
Door check and closer	W. K. Henry	810,411	Jan. 23	3700	762	120	926
Door check and closer	N. W. Crandall	812,829	Feb. 20	2620	573-4	120	2146
Door check and closer	E. L. Eldridge	813,693	Feb. 27	4330	955	120	2577
Door check or fastener	C. N. P. Ingalls	809,062	Jan. 2	864	183	120	191
Door. Combined storm and screen	J. Abrim	813,271	Feb. 20	3487	660	120	2234
Door-frame, door, and adjunctive mechanism for air-tight compartments	S. P. Stevenson	812,377	Feb. 13	1738	381	120	1921
Door. Grain-	J. E. Drake	810,287	Jan. 16	3357	696	120	815
Door. Grain-	R. R. Tichenor	810,893	Jan. 23	4644	966	120	1133
Door-hanger	M. Cossey	809,781	Jan. 9	2355	486	120	550
Door-hanger	J. H. Lawrence	812,346	Feb. 13	1680	369	120	1908
Door-hanger	J. H. Lawrence	812,347	Feb. 13	1682	370	120	1909
Door-hanger	R. B. Browne	813,309	Feb. 27	3765	827	120	2450
Door-holder	J. Becker	812,476	Feb. 13	1921	423	120	1958
Door-jamb. Adjustable	J. R. Corbin	813,690	Feb. 27	4334	953	120	2576
Door-lock	C. F. Fringer	809,610	Jan. 9	2083	421	120	478
Door-lock	T. Weisser	811,013	Jan. 30	4903	1022	120	1228
Door lock. Grain-	J. Feuchet	812,839	Feb. 20	2840	577	120	2150
Door-locking mechanism. Prison-	G. J. Carter	812,637	Feb. 13	2263	489-90	120	2023
Door or shutter and means for operating the same. Rolling	J. Cahill	812,722	Feb. 13	2411	528-9	120	2064
Door-releasing mechanism	E. Kauntze	812,300	Feb. 13	1973	433	120	1968
Door-securer	K. Anderson and L. Pederson	810,692	Jan. 23	4244	879	120	1049
Door. Sliding hinged grain-	K. Oesl	810,557	Jan. 23	3998	823-4	120	994
Door stop and retainer	D. J. Taylor	813,927	Feb. 27	4805	1060	120	2677
Door support. Sliding-	L. Holmer	808,749	Jan. 2	256	55	120	59
Door wings. Device for hanging revolving-	J. Wendler	812,907	Feb. 20	2767	609	120	2178
Doors, &c. Device for securing	C. G. Taylor	811,594	Feb. 6	118	26	120	1511
Doors. Metallic frame for revolving	T. Van Kannel	813,602	Feb. 27	4162	913-14	120	2540
Doors. Pneumatic lifting means for grain-	T. E. Branson	811,690	Feb. 6	301	67	120	1552
Dop	P. H. Farrell	812,836	Feb. 20	2636	576	120	2149
Doubletree and whiffletree coupling	G. E. Rumrill	812,093	Feb. 6	1116	246	120	1716
Doubletree-hitch	J. H. Cook	813,080	Feb. 20	3030	667	120	2225
Dough dividing and sealing machine	R. Hohnbach, Jr., and W. Leitel	809,443	Jan. 9	1699	349	120	406
Dough-raiser	W. H. Hollander	811,781	Feb. 6	456	99	120	1585
Dowel	P. L. E. Drolshagen	809,177	Jan. 2	1081	227	120	240
Doweling-machine	J. L. Lovett	809,069	Jan. 2	878	186	120	193
Draft appliance	A. McNeil	809,318	Jan. 9	1431	289	120	349
Draft-equaliser	N. N. Egge	808,823	Jan. 2	396	86	120	88
Draft-equaliser	G. T. Nicholas	810,797	Jan. 23	4452	924	120	1094
Draft-equaliser	S. E. Davis	811,703	Feb. 6	326	72	120	1558
Draft-equaliser	A. Krahn	813,302	Feb. 27	3950	871	120	2497
Draft-equaliser	W. E. Kent	813,973	Feb. 27	4928	1080	120	2693
Draft-equaliser	M. Addy	813,984	Feb. 27	4930	1091	120	2708
Draft-forcing mechanism	J. J. Durage	811,624	Feb. 6	180	40	120	1525
Draft-opener. Automatic	J. H. Thompson	810,821	Jan. 23	4498	933	120	1101
Draft-rigging carrier and body-bolster	O. S. Pulliam	813,666	Feb. 27	4280	944	120	2567
Drafting instrument	G. Ring	813,827	Feb. 27	4612	1020	120	2635
Draper	W. T. Gordon	808,916	Jan. 2	585	120	120	128
Draw-bar-centering device	M. A. Garrett	809,181	Jan. 2	1097	228	120	241
Draw-bars. Slack-adjuster for	E. Ryan	812,682	Feb. 13	2330	509	120	2038
Draw-knife	A. B. Jennings	813,152	Feb. 20	3270	719	120	2288
Drawing models and the like. Adjustable holder for	G. J. Därrschmidt	809,432	Jan. 9	1661	345	120	402
Drawings and documents transparent and waterproof. Apparatus for rendering	C. L. Crabb	808,901	Jan. 2	557	123	120	122
Dredge	A. J. Burcham	810,710	Jan. 23	4276	887	120	1056
Dredge	F. Yeoman	811,683	Feb. 6	287	64-5	120	1548
Dredge	J. F. Loreman	813,222	Feb. 20	3403	750	120	2315
Dredge-bucket coupling	H. G. Peake and J. Henderson	812,518	Feb. 13	2011	441	120	1977
Dredge. Levee-building suction-	F. V. Wright	808,800	Jan. 2	364	76-7	120	79
Dredge. Steam-	G. E. Turner	812,245	Feb. 13	1481	324	120	1882
Dredge. Submarine	T. Avery, Jr.	813,935	Feb. 27	4832	1064	120	2680
Dredges, excavators, and the like. Dipper for	W. Ferris	809,426	Jan. 9	1666	347	120	408
Dredging [illegible]	V. A. Strom	812,263	Feb. 20	3452	761	120	2330
Dredging [illegible] side brace or anchor	J. P. Karr	812,043	Feb. 6	1026	224	120	1697
Dredging [illegible]	W. F. Bowers	809,908	Jan. 9	2560	532	120	597
Dredging apparatus	J. P. Cole	811,278	Jan. 30	5417	1129	120	1336
[illegible]	C. Leamar	813,688	Feb. 27	4288	987	120	2551
[illegible] or [illegible] gage	I. M. Rouse	809,404	Jan. 9	1743	368	120	417
[illegible]. Printed	W. Freeman	811,770	Feb. 6	429	95-6	120	1582
[illegible], chair, and trunk. Combined	F. L. Bradley	811,475	Jan. 30	5769	1208	120	1170
Drier: See Hair-drier. Steam-drier. Sand-drier. Veneer-drier.							
Drier	H. B. Camp	811,821	Feb. 6	537	120	120	1599

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Dry meter for gas, air, and like fluids	D. Maris	812,312	Feb. 20	3507	787	120	2308
Drying and conditioning machine	J. H. Lorimer	811,307	Jan. 30	5473	1141	120	1349
Drying and ironing apparatus. Electric	G. W. Richardson	811,565	Jan. 30	4895	1069	120	1223
Drying apparatus	C. M. Davison	812,368	Feb. 20	3666	805	120	2371
Drying-kiln	E. E. Perkins	810,874	Jan. 30	4685	1604	120	1209
Drying-machine	J. H. Lorimer	811,306	Jan. 30	5474	1141	120	1348
Drill: See Diamond-drill. Miner's drill. Disk drill. Rock-drill. Electric drill. Rock and coal drill. Electrically-operated portable drill.							
Drill holder and gage	A. La Francis	811,414	Jan. 30	5673	1180	120	1390
Drill-operating means	O. S. Proctor	811,791	Feb. 6	485	105	120	1589
Drill-press	A. E. Newton	811,317	Jan. 30	5493	1145	120	1352
Drills for rock-boring and other purposes. Appliance for lifting and turning	C. Simmons	808,576	Jan. 2	406	107-8	120	112
Drilling-machine	J. P. Jacobs	813,211	Feb. 20	3379	744-5	120	2310
Drilling-machine	A. Walker	813,335	Feb. 20	3620	796	120	2363
Drilling-machine	F. W. Clough	813,351	Feb. 20	3657	801-2	120	2369
Drinking-fountain. Poultry	T. A. Davis	813,954	Feb. 27	4851	1071	120	2686
Driving and reversing mechanism. Automatic	W. B. Yates	812,318	Feb. 13	1632	359	120	1896
Driving mechanism	A. J. Allison	810,317	Jan. 16	3466	716	120	840
Driving mechanism	H. John	810,765	Jan. 23	4379	909-10	120	1079
Driving mechanism	F. B. Wildman and E. G. Loomis	811,981	Feb. 6	901	199-200	120	1672
Dropper: See Disinfecting-apparatus dropper.							
Druggist's label-holder	N. W. McCourt and T. N. Barnsdall, 2nd.	810,791	Jan. 23	4436	921	120	1090
Druggist's prescription-file	R. E. King	810,772	Jan. 23	4398	912	120	1083
Drum-mill	R. Beneke	813,076	Feb. 20	3110	681	120	2254
Dumb-bell	A. W. Mackenzie and J. Ross	812,144	Feb. 6	1232	267-8	120	1742
Dumb-bell and Indian club	S. C. Villadrouin	808,706	Jan. 2	160	37	120	37
Dumping mechanism	F. J. Sleezer	812,957	Feb. 20	2881	636-7	120	2204
Duplicating apparatus	A. B. Dick	809,287	Jan. 9	1362	277	120	335
Duplicating apparatus	A. B. Dick	809,288	Jan. 9	1365	277	120	335
Duplicating apparatus	L. C. Neff	809,725	Jan. 9	2253	468	120	528
Duplicating-machine	C. E. Steere	811,674	Feb. 6	273	60-1	120	1545
Dust and scrap bag and holder	E. Dyett	810,329	Jan. 16	3488	720	120	843
Dust-collector	J. S. Thurman	809,408	Jan. 9	1632	332	120	392
Dust-collector	J. V. O. Palm	810,559	Jan. 23	4001	824	120	996
Dust-collector	B. Kern, Jr	810,771	Jan. 23	4396	912	120	1082
Dust-guard	E. Denegre	810,038	Jan. 16	2877	594	120	716
Dust-guard	E. Denegre	810,039	Jan. 16	2879	594-5	120	716
Dye and making same. Anthracene	O. Bally and H. Wolff	811,471	Jan. 30	5764		120	1409
Dye and making same. Orange-yellow sulfur	R. Gley	813,643	Feb. 27	4245		120	2558
Dye and making same. Red azo	J. Heggenbach	808,919	Jan. 2	588		120	129
Dye and making same. Red azo	G. Kalischer	813,155	Feb. 20	3273		120	2289
Dye and making same. Violet	O. Bally and M. H. Isler	809,802	Jan. 9	2548		120	594
Dye. Green anthraquinone	R. E. Schmidt	812,684	Feb. 13	2335		120	2039
Dye. Yellow anthracene	M. Kugel	808,762	Jan. 2	276		120	63
Dye. Yellow-green anthraquinone	R. E. Schmidt and K. Thun	812,590	Feb. 13	2186		120	2011
Dyeing apparatus	E. Zillessen	813,478	Feb. 27	3922	860	120	2486
Dyeing apparatus	E. Zillessen	813,479	Feb. 27	3924	861	120	2487
Dynamometer	H. Ruddick	813,324	Feb. 20	3611	792	120	2350
Earth closet. Outside dry-	J. R. Koons	811,412	Jan. 30	5670	1128	120	1380
Easel	G. L. R. Dahlberg	809,795	Jan. 9	2383	498	120	552
Eaves-trough clamp	G. M. Butler and C. G. Ehringer	812,404	Feb. 13	1800	394	120	1932
Eaves-trough hanger	W. G. Rau	813,826	Feb. 27	4611	1020	120	2635
Educational apparatus	F. E. Parrish	811,169	Jan. 30	5208	1087	120	1289
Efflorescence. Apparatus for producing	K. Tsuji	811,002	Jan. 30	4880	1016	120	1220
Egg-carrier	N. H. and R. L. Clark	810,324	Jan. 16	3478	719	120	842
Egg-carrier	J. O. Maddux	811,158	Jan. 30	5187	1083	120	1285
Ejector	C. A. Dryer	812,026	Feb. 6	1005	220	120	1693
Electric carrier. Overhead	H. M. Harding	809,790	Jan. 9	2385	492-4	120	557
Electric carriers. Means for controlling overhead	H. M. Harding	809,798	Jan. 9	2384	493	120	557
Electric cell	K. Tsukamoto	809,647	Jan. 9	2114	438	120	494
Electric-circuit breaker	F. O. Hartman	810,751	Jan. 23	4350	904-5	120	1072
[illegible] ground connection	J. B. Simpson	813,526	Feb. 27	4022	881	120	2510
[illegible] coil	I. Kitsee	812,657	Feb. 13	2288	498	120	2030
[illegible]. Attachment device for	D. B. Mills	810,684	Jan. 23	4198	868	120	1038
[illegible]. Branch coupling for	J. J. Dossert	811,907	Feb. 6	718	156	120	1637
[illegible] attachment	F. Volk	811,340	Jan. 30	5541	1155	120	1363
[illegible] coupling	J. J. Dossert	811,906	Feb. 6	716	156	120	1636
[illegible] currents which feed electric arcs. Regulator of	J. Hamberger	812,036	Feb. 6	1020	228	120	1696
[illegible] drill	C. W. Thell	810,444	Jan. 23	3766	775	120	940
[illegible] fan. Centrifugal attachment for	W. L. Moore	811,865	Feb. 6	631	136	120	1619
[illegible] furnace	J. E. Ober	812,601	Feb. 13	2534	562	120	2086
[illegible]	B. P. and F. I. Remy	808,779	Jan. 2	322	69	120	73
[illegible]	A. A. Pratt	813,113	Feb. 20	3186	697	120	2271
[illegible]	J. F. Barrett and N. C. Collins	[illegible]	Jan. 23	4298	[illegible]	120	1168
[illegible] arrangement for theaters and similar [illegible]. Emergency	F. Brand	809,904	Jan. 9	2570	532	120	597
[illegible]. Turning switch with lighted handle for	H. Heisey	[illegible]	Jan. 23	[illegible]	[illegible]	120	[illegible]
[illegible]	E. J. Wills	813,472	Feb. 27	3911	[illegible]	120	[illegible]
[illegible]. Dynamo-	P. A. J. Lapeyrade	811,164	Jan. 30	[illegible]	[illegible]	120	[illegible]
[illegible]. Dynamo-	H. G. [illegible]	811,792	Feb. 6	[illegible]	[illegible]	120	[illegible]
[illegible]. Dynamo-	J. [illegible]	811,312	Jan. 30	[illegible]	[illegible]	120	[illegible]
[illegible]	W. [illegible] Lloyd	[illegible]	Jan. [illegible]	[illegible]	[illegible]	120	[illegible]
[illegible]	W. [illegible]	[illegible]	Jan. 16	[illegible]	[illegible]	120	[illegible]
[illegible]	[illegible] and [illegible] Carder	[illegible]	Jan. [illegible]	[illegible]	[illegible]	120	[illegible]
[illegible]	[illegible] ([illegible])	[illegible]	Feb. [illegible]	[illegible]	[illegible]	120	[illegible]
[illegible]	F. [illegible]	[illegible]	Jan. [illegible]	[illegible]	[illegible]	120	[illegible]
[illegible]	M. [illegible]	[illegible]	Jan. 2	[illegible]	[illegible]	120	[illegible]
[illegible]	C. [illegible]	[illegible]	Feb. 27	[illegible]	[illegible]	120	[illegible]
[illegible]	A. [illegible]	[illegible]	Feb. 6	[illegible]	[illegible]	120	[illegible]
[illegible]	G. [illegible]	[illegible]	Jan. [illegible]	[illegible]	[illegible]	120	703

Alphabetical list of inventions for January and February—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Electric switch. Rotary	J. Dugdill	809,433	Jan. 9	1682	345-6	120	402
Electric time-switch	C. O. Shatto and L. S. Denison	811,580	Feb. 6	100	23-4	120	1509
Electric transformer and connections	H. F. Provandie	812,080	Feb. 6	1100	244	120	1714
Electric-wave detector	T. J. Murphy	811,664	Feb. 6	230	50	120	1535
Electric waves. Wireless transmitting and receiving mechanism for	C. Hülsmeyer	810,150	Jan. 16	3102	640-1	120	763
Electrical battery	C. Jäger	808,755	Jan. 2	265	57	120	61
Electrical conductor. Flexible	G. E. Schmidmer	809,466	Jan. 9	1740	361	120	418
Electrical conductors. Connector for	F. J. Troll	813,538	Feb. 27	4042	885	120	2515
Electrical control system	R. E. Bates	811,530	Feb. 6	10	3	120	1487
Electrical control system. Distant	J. Gomborow	811,773	Feb. 6	446	97	120	1583
Electrical devices. Adjustable suspender for	A. Berry	808,894	Jan. 2	545	121	120	120
Electrical-distribution system	C. P. Steinmetz	809,906	Jan. 16	2772	570	120	694
Electrical heater	E. L. Vaughn	812,956	Feb. 20	2895	628	120	2206
Electrical rosette	J. A. Mebane	812,760	Feb. 13	2477	543	120	2089
Electrical safety apparatus	E. B. Hosmer and W. N. Dietrich	813,297	Feb. 20	3542	780-1	120	2345
Electrical switch	J. F. George	810,537	Jan. 23	3042	811	120	982
Electrically-operated controlling mechanism	G. H. Fretts	813,638	Feb. 27	4238	931	120	2557
Electrically-operated portable drill	A. Pedersen	809,294	Jan. 9	1602	325	120	355
Electricity-meter	H. Aron	813,665	Feb. 27	4294	951-2	120	2574
Electricity-meter. Clockwork	H. Aron	813,610	Feb. 27	4188	910	120	2545
Electricity-meter. Electrolytic	C. O. Bastian	811,538	Feb. 6	8	2-3	120	1486
Electrodeposition	W. C. Arsem	811,759	Feb. 6	415	91	120	1577
Electrolytic apparatus	H. S. Blackmore	809,085	Jan. 2	926	194	120	205
Electrolytic apparatus	L. Van Scoyoc	813,844	Feb. 27	4645	1027	120	2644
Electrolytic processes. Producing circulation in	H. Koller and P. Askenasy	809,116	Jan. 2	986	204	120	218
Electromagnet	F. B. Corey	811,277	Jan. 30	5420	1130	120	1337
Electromagnet	E. H. Miller	812,511	Feb. 13	1907	428	120	1973
Electromagnet. Multipolar	H. G. Pape	812,445	Feb. 13	1872	412	120	1947
Electromagnetic motor	M. Cheever	813,775	Feb. 27	4496	993	120	2611
Electroplating apparatus	A. W. L'Hommedieu	809,309	Jan. 9	1410	286	120	345
Electroresponsive device	E. A. Terpening	810,311	Jan. 16	3452	713-14	120	837
Electrostatic influence-machine	E. Thomson	809,761	Jan. 9	2310	479	120	540
Elevating device	J. C. Stirling	811,968	Feb. 6	871	192	120	1666
Elevating device	E. Robidoux	813,830	Feb. 27	4615	1021	120	2636
Elevator: *See* Floating elevator. Fodder-elevator. Grain-elevator. Hay-elevator.							
Elevator	G. R. Layman	809,117	Jan. 2	989	204	120	218
Elevator	H. S. MacKaye	811,513	Jan. 30	5620	1223	120	1424
Elevator	D. Blackstone	813,941	Feb. 27	4533	1066-7	120	2682
Elevator and conveyer	M. B. Brewster	812,478	Feb. 13	1927	424	120	1959
Elevator-cage. Automatic-dumping	W. J. Newman	809,456	Jan. 9	1727	356	120	416
Elevator-cage-door opener	E. and W. B. Murray	810,160	Jan. 16	3134	648-9	120	770
Elevator-gate	G. D. Thompson	809,644	Jan. 9	2109	436	120	483
Elevator-gate. Automatic	P. F. Bliss	810,830	Jan. 23	4511	930	120	1106
Elevator-locking mechanism	J. S. Muckle	811,427	Jan. 30	5700	1188	120	1395
Elevator mechanism	W. Crossley	808,637	Jan. 2	35	8	120	10
Elevator or jack	G. Wenzelmann and E. H. Overholt	810,448	Jan. 23	3772	777-8	120	942
Elevator safety-brake	B. S. Bowman	810,256	Jan. 16	3331	691	120	809
Elevator safety-catch	A. Fleisher	811,046	Jan. 30	4053	1084	120	1287
Elevator safety device	I. B. Ritter	809,076	Jan. 2	905	190-1	120	200
Elevator safety device	J. R. Conley	809,265	Jan. 9	1309	276	120	334
Elevator safety device	F. S. Payne	809,220	Jan. 9	1423	290	120	349
Elevator safety device	F. A. Weigel	811,604	Feb. 6	133	29	120	1514
Elevator-shaft gates. Cushioning apparatus for	W. Bardsley	812,302	Feb. 13	1774	389	120	1927
Elevators and carriers. Suspended track for	J. M. Boyd	812,477	Feb. 13	1922	424	120	1958
Elevators. Retarding device for plunger-	F. C. Furlow	810,404	Jan. 23	3685	759	120	928
Embossing-machine	J. F. Lowenhaupt	812,859	Feb. 20	2678	590-91	120	2138
Embroidering-machines. Fabric-moving mechanism for	M. Trautmann	813,122	Feb. 20	3208	701	120	2276
Enameled ornament	O. L. Heintz	808,744	Jan. 2	245	54	120	57
End-cell switch	J. Bijur	810,369	Jan. 23	3646	739	120	914
End-cell switch	L. Lyndon	810,958	Jan. 30	4798	988	120	1162
End-gate fastening device. Vehicle-	J. W. Hird	812,341	Feb. 13	1672	365	120	1906
End-gate latch. Wagon-	C. W. Stark	810,663	Jan. 23	4226	875-6	120	1045
End-gate lock	J. A. Nicholas	810,072	Jan. 16	2954	616	120	734
Energy. Protection against reversal of	L. Wilson	811,285	Jan. 30	5306	1126	120	1331
Engine: *See* Air-compressing engine. Caterless engine. Combustion-engine. Compound engine. Explosion-engine. Explosive-engine. Fluid-operated engine. Gas-engine. Hot-air engine. Internal-combustion engine. Locomotive-engine. Rotary engine. Rotary explosion-engine. Rotary explosive-engine. Steam-engine. Surgical operating-engine. Traction-engine. Turbine-engine. Recision-engine.							
[illegible]	H. A. Swanton	811,184	Jan. 30	[illegible]	[illegible]	120	[illegible]
[illegible]	F. W. Salmon	809,466	Jan. 9	1746	[illegible]	120	416
[illegible]	J. Stuart	810,894	Jan. 30	[illegible]	[illegible]	120	[illegible]
[illegible] mechanism. Blowing-	J. V. Symons	812,064	Feb. 20	[illegible]	677	120	[illegible]
[illegible] Cooling means for explosive-	S. Ham	810,843	Jan. 23	4165	[illegible]	120	[illegible]
[illegible] brake. Turbine-	H. Lentz	811,[illegible]	Feb. 6	609	[illegible]	120	[illegible]
[illegible] mechanism. Explosive-	E. B. Robertson	811,955	Feb. 6	847	187	120	[illegible]
[illegible] starting device. Gas-	A. S. Johnson	811,[illegible]	Feb. 6	786	179	120	[illegible]
[illegible] combined. Gas-	D. F. Graham and F. A. Fox	809,[illegible]	Jan. 9	1621	[illegible]	120	[illegible]
[illegible] Gas-	A. P. Talmadge	813,926	Feb. 27	[illegible]	[illegible]	120	[illegible]
[illegible]	J. E. Worth and W. B. Eton	811,470	Jan. 30	[illegible]	[illegible]	120	[illegible]
[illegible] igniter. Explosive-	G. Cormack, Jr., and F. C. Zumdahl	813,[illegible]	Feb. 20	3119	[illegible]	120	[illegible]
Engine sparking igniter. Internal-combustion-	A. R. Bellamy	811,122	Jan. 30	[illegible]	1094	120	[illegible]

Alphabetical list of inventions for January and February—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Engine speed-regulator. Explosive-	J. A. Secor	812,871	Feb. 13	1718	377-8	120	1917
Engine starting-crank	G. B. Selden, Jr	812,094	Feb. 6	1118	246	120	1716
Engine-starting device. Explosion-	V. Erdmenger	813,969	Feb. 27	4893	1075-6	120	2688
Engine starting means. Gas or similar	F. L. Orr	809,211	Jan. 2	1161	240	120	298
Engine-starting mechanism. Explosive-	H. J. Wiegand	813,085	Feb. 20	3090	679	120	2262
Engine starting mechanism. Gas-	V. B. Miller	812,584	Feb. 13	2155	473	120	2005
Engine steering-gear. Traction-	P. L. Cantelou	810,261	Jan. 16	3340	693-4	120	811
Engine-stop. Automatic	N. C. Locke	812,379	Feb. 13	1861	341	120	1921
Engine tender. Traction-	C. T. Hixson	810,145	Jan. 16	3094	639	120	761
Engine tender. Traction-	H. Hamann	811,060	Jan. 30	4975	1058-9	120	1262
Engine wheel. Traction-	I. O. Hotaling	810,487	Jan. 23	3855	792	120	968
Engines. Automatic cut-off for explosive-	M. Münsel	813,316	Feb. 20	3583	789-90	120	2355
Engines. Automatic speed-regulator for internal-combustion	J. G. Callan	809,771	Jan. 9	2334	483	120	545
Engines. Controller for sparking devices of gas-	D. B. Willix	811,680	Feb. 6	283	63	120	1547
Engines. Electrical igniter for internal-combustion	W. H. Walter	812,622	Feb. 13	2225	494	120	2017
Engines. High-tension current-distributer for internal-combustion	L. J. Le Pontois	809,453	Jan. 9	1721	355	120	411
Engines. Incandescent igniter for use with internal-combustion	J. W. Seal	813,456	Feb. 27	3872	849	120	2474
Engines. Nozzle for turbine-	H. Lentz	813,808	Feb. 27	4550	1006	120	2623
Engines. Spark-ignition system for explosion-	R. Varley	808,958	Jan. 2	680	148	120	151
Engraving apparatus	J. P. Stevens	810,990	Jan. 30	4857	1011	120	1215
Envelop and letter-paper. Combined	A. B. Magoun	810,658	Jan. 23	4180	866	120	1036
Envelop and letter-paper. Combined	A. B. Magoun	813,726	Feb. 27	4396	970	120	2590
Envelop. Safety-	J. Pellerin	810,804	Jan. 23	4462	927	120	1095
Envelop. Safety-	H. P. Roberts	811,092	Jan. 30	5020	1060	120	1262
Envelop. Two-compartment	L. R. Swett	810,585	Jan. 23	4056	835	120	1006
Envelops. Manufacture of bottle-	C. B. E. Henke and G. A. H. Schulte	809,390	Jan. 9	1363	281	120	340
Equalizer. Four-horse	C. H. Matlock	813,867	Feb. 27	4108	900	120	2530
Eraser-holder	F. W. Hayes	809,056	Jan. 2	856	181	120	189
Ether mixture for disinfecting	T. Bargiela, J. P. Mislowsky, A. Caricchia, and L. E. Odio	812,631	Feb. 13	2243	....	120	2021
Evaporating-pan	J. P. Golden	813,080	Feb. 20	3131	686	120	2258
Excavating-machine	A. F. Huber	809,689	Jan. 9	2190	453-4	120	512
Excavating-machine	C. C. Jacobs. (Reissue)	12,441	Jan. 30	5882	1283-4	120	1494
Excavating-machine	T. H. Walker	813,393	Feb. 20	3723	830	120	2394
Excavator	F. F. Collath	808,636	Jan. 2	32	7	120	9
Excavator	W. R. Martin	813,566	Feb. 27	4104	900	120	2526
Excavator-dippers. Latching mechanism for	M. O'Connor	809,209	Jan. 2	1156	240	120	254
Exercising apparatus. Handle or grip of dumb-bells or other	H. Fairbrother	808,737	Jan. 2	283	50	120	55
Exhauster. Rotary	J. Sharp	812,886	Feb. 13	2242	512	120	2040
Exhibiting apparatus. Lace-curtain-	J. F. Mumford	813,165	Feb. 20	3291	723-4	120	2298
Expansion-controlled apparatus	S. W. Boughton	810,255	Jan. 16	3329	691	120	809
Expansion cramp device	F. de Morsier	811,168	Jan. 30	5195	1086	120	1287
Explosion-engine	G. Petsel	809,841	Jan. 9	2480	510-11	120	578
Explosion-engine	H. Heinrich	810,535	Jan. 23	3953	813-14	120	985
Explosive	F. Sparre	812,958	Feb. 20	2583	....	120	2204
Explosive	F. Sparre	812,959	Feb. 20	2585	....	120	2205
Explosive compound	R. Escales	812,195	Feb. 13	1382	....	120	1841
Explosive-engine	J. F. Johnson	809,126	Jan. 2	1104	230	120	243
Explosive-engine	J. A. Williams	811,809	Feb. 6	517	115	120	1605
Explosive-engine	J. A. Williams	811,858	Feb. 6	679	149	120	1629
Explosive-engine	G. Pendleton	813,736	Feb. 27	4415	973	120	2594
Explosive-engine	H. K. Shanck	813,746	Feb. 27	4433	978-9	120	2598
Explosive-engine. Cam-movement	P. K. Stern	809,333	Jan. 9	1462	294	120	362
Explosive-engine. Double-acting	J. W. Kyle and J. W. Hicks	809,451	Jan. 9	1714	353-4	120	409
Explosive-engine. Multiple-piston	C. T. Hildebrandt	811,220	Jan. 30	5307	1110	120	1312
Extensible handle	D. Lawson	808,892	Jan. 2	740	160	120	163
Extensometer	W. Cantelo	812,181	Feb. 13	1352	295	120	1833
Extinguisher	A. Haslinger	809,055	Jan. 2	855	181	120	189
Extractor: *See* Cork-extractor. Oil-extractor. Piano-hammer extractor. Spoke-extractor.							
Extractor support. Centrifugal-	G. Binder	811,383	Jan. 30	5580	1165	120	1371
Eyeglass-case. Waterproof	M. Davidson	811,487	Jan. 30	5790	1212	120	1414
Eyeglass-guard	C. Goodwin	809,388	Jan. 9	1530	311	120	371
Eyeglass-mounting	G. W. Wells	809,156	Jan. 2	1054	218	120	231
Eyeglass-mounting	H. A. Seddel	811,960	Feb. 6	880	189	120	1664
Eyeglass-mounting	E. M. Card	812,113	Feb. 6	1154	253	120	1728
Eyeglasses	E. B. Meyrowitz	809,091	Jan. 2	753	165	120	166
Eyeglasses	W. E. Cawood	810,265	Jan. 16	3372	724	120	864
Eyeglasses	J. C. Wells	812,980	Feb. 20	2854	634	120	2203
Eyeglasses and spectacles	J. Kovacs	809,782	Jan. 9	2390	497	120	516
Eyelet	A. C. Nichols	813,575	Feb. 27	4122	903	120	2531
Fabric: *See* Air-goods fabric. Feather fabric. Fence fabric. Mattress or couch fabric. Pile fabric. Woven fabric.							
Fabric containing haircloth	G. Goldman	810,983	Jan. 30	4744	980	120	1190
Fabric containing haircloth. Making	G. Goldman	810,984	Jan. 30	4746	....	120	1190
Fabrics. Aging dyed	P. F. Vogel	810,212	Jan. 16	3456	714	120	836
Fabrics. Oxidizing	B. Cleff	810,904	Jan. 23	3665	753-6	120	929
Fabrics with finely-comminuted materials. Machine for coating	H. Markus	813,984	Feb. 27	4101	899	120	2527
Face-plate. Adjustable	F. A. Borst	812,946	Feb. 20	2785	[illegible]	120	[illegible]
Fan and score-card. Combined	W. Steel	809,535	Jan. 9	1871	[illegible]	120	445
Fan. Oscillating electric	H. S. Brown	809,[illegible]	Jan. 9	[illegible]	[illegible]	120	[illegible]
Fan. Oscillating electric	G. [illegible]	810,174	Jan. 16	3143	[illegible]	120	771
Fare-receipt register. Conductor's cash-	W. W. Kay	809,377	Jan. 9	1546	316-16	120	[illegible]
Fare-recorder	J. F. Ohmer	812,917	Feb. 20	[illegible]	[illegible]	120	[illegible]
Fare-register	W. W. Kay	809,378	Jan. 9	[illegible]	316-18	120	376

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drt.	Official Gazette. Vol.	Official Gazette. Page.
[illegible]	C. R. Price	812,889	Jan. 2	4[illegible]	[illegible]5	138	3[illegible]
[illegible]	J. A. Myers	810,512	Jan. 16	2[illegible]	[illegible]71	138	731
[illegible]	T. Kee	812,789	Feb. 13	2[illegible]	[illegible]6	138	[illegible]
[illegible]	H. F. Kellner	812,868	Feb. 13	2[illegible]	[illegible]8	138	[illegible]
[illegible] and Holder. Detachable	J. Pierce	811,865	Feb. 6	1[illegible]	[illegible]8	138	[illegible]
[illegible]	R. Wetzel	809,351	Jan. 2	1[illegible]	[illegible]4	138	[illegible]
[illegible]	F. A. Freeman	811,484	Jan. 30	[illegible]	[illegible]4	138	[illegible]
[illegible]	L. Jackson	811,885	Feb. 6	7[illegible]	172[illegible]	138	1417
[illegible]	C. D. Rice	813,570	Feb. 20	2[illegible]	17[illegible]	138	[illegible]
[illegible]	F. A. Denham	809,918	Jan. 2	2[illegible]	[illegible]8	138	[illegible]
[illegible]	J. C. Beasley	809,365	Jan. 2	8[illegible]	[illegible]7	138	[illegible]
[illegible]	G. A. Olson	812,865	Jan. 9	2[illegible]	[illegible]8	138	[illegible]
[illegible]	W. T. Dahl	812,661	Feb. 6	1[illegible]	24[illegible]	138	1722
[illegible]	E. K. Warren and J. H. Holden	808,701	Jan. 2	1[illegible]	[illegible]6	138	[illegible]
[illegible]	E. K. Warren and J. H. Holden	808,702	Jan. 2	1[illegible]	[illegible]3	138	73
[illegible]	E. K. Warren and J. H. Holden	808,703	Jan. 2	1[illegible]	[illegible]3	138	73
[illegible] and fitter carrier	J. W. Frowan	812,369	Feb. 13	1[illegible]	[illegible]3	138	73
[illegible] attachment	J. A. and J. C. Doran	812,532	Feb. 20	1[illegible]	[illegible]8	138	[illegible]
[illegible]	J. A. Skinner	811,490	Jan. 30	5[illegible]	1[illegible]8	138	[illegible]
[illegible]	J. F. McIntyre	811,573	Feb. 6	1[illegible]	[illegible]5	138	[illegible]
[illegible]	J. S. H. and C. D. Stonesburner	811,892	Feb. 6	1[illegible]	[illegible]6	138	[illegible]
[illegible]	L. R. Tait	808,888	Jan. 2	1[illegible]	[illegible]6	138	[illegible]
[illegible]	J. J. Thacher	812,888	Feb. 20	2[illegible]	[illegible]6	138	[illegible]
[illegible]	O. L. Stump	810,441	Jan. 23	2[illegible]	[illegible]8	138	[illegible]
[illegible]	G. A., R. and H. Erickson	810,782	Jan. 23	2[illegible]	[illegible]8	138	[illegible]
[illegible]	H. G. Miller	813,944	Feb. 20	2[illegible]	[illegible]8	138	[illegible]
[illegible]	W. Loudon and J. J. Hendricks	813,889	Feb. 6	2[illegible]	[illegible]8	138	[illegible]
[illegible]	W. G. Maynard	813,810	Feb. 27	2[illegible]	[illegible]8	138	[illegible]
[illegible]	V. A. Crosbier	811,882	Jan. 30	2[illegible]	[illegible]8	138	[illegible]
[illegible]	W. H. Fahs	811,681	Jan. 30	2[illegible]	[illegible]8	138	[illegible]
[illegible]	F. S. Rich	810,681	Jan. 23	2[illegible]	[illegible]8	138	[illegible]
[illegible]	C. W. Case, Jr.	811,482	Jan. 30	2[illegible]	[illegible]8	138	[illegible]
[illegible]	J. C. Miller	813,685	Feb. 13	2[illegible]	[illegible]8	138	[illegible]
[illegible]	W. S. Lambett	813,719	Feb. 13	2[illegible]	[illegible]8	138	[illegible]
[illegible]	W. S. Lambett	813,720	Feb. 13	2[illegible]	[illegible]8	138	[illegible]
[illegible]	A. Fenet	813,787	Feb. 13	2[illegible]	[illegible]8	138	[illegible]
[illegible]	C. Heart	810,889	Jan. 23	2[illegible]	[illegible]8	138	[illegible]
[illegible]	J. H. Brown	809,889	Jan. 9	2[illegible]	[illegible]8	138	[illegible]
[illegible]	S. Beggby	812,889	Jan. 16	2[illegible]	[illegible]8	138	[illegible]
[illegible]	J. Kampl, Jr.	812,874	Feb. 13	2[illegible]	[illegible]8	138	[illegible]
[illegible]	J. Hinde	813,871	Feb. 27	2[illegible]	[illegible]8	138	[illegible]
[illegible] and driver	J. M. Van Meter	809,704	Jan. 2	1[illegible]	[illegible]8	138	[illegible]
[illegible] Wire-	T. Litwiller. (Reissue)	12,424	Jan. 9	1[illegible]	[illegible]8	138	[illegible]
[illegible] Wire-	R. H. Stager	813,880	Feb. 13	2[illegible]	[illegible]8	138	[illegible]
[illegible]	G. W. Bayonde	809,840	Jan. 9	2[illegible]	[illegible]8	138	[illegible]
[illegible] Magazine for	D. H. Hayes	811,850	Jan. 30	2[illegible]	[illegible]8	138	[illegible]
[illegible] Bringing mechanism for wire-	W. M. Dillon and P. Frantz	813,400	Feb. 27	2[illegible]	[illegible]8	138	[illegible]
[illegible] Driving mechanism for cutter-spin-dle of wire-	A. F. Backlin and I. Eklund	810,686	Jan. 16	2[illegible]	2[illegible]5	138	[illegible]
[illegible] Spindle-brake device for wire-	A. F. Backlin and I. Eklund	810,682	Jan. 2	1[illegible]	19[illegible]	138	1[illegible]
[illegible] Tension mechanism for wire-	A. F. Backlin and I. Eklund	810,684	Jan. 16	2[illegible]	[illegible]-6	138	[illegible]
[illegible]	W. C. Kincaid	811,851	Feb. 6	1[illegible]	17[illegible]	138	[illegible]
[illegible]	M. L. Boyce	809,889	Jan. 2	1[illegible]	[illegible]8	138	[illegible]
[illegible]	O. F. Lidke and G. Seymour	809,884	Jan. 2	1[illegible]	[illegible]8	138	[illegible]
[illegible]	D. A. Smith	811,451	Jan. 30	1[illegible]	[illegible]8	138	[illegible]
[illegible]	G. R. Wyatt	812,189	Feb. 6	1[illegible]	[illegible]8	138	[illegible]
[illegible]	J. W. Kidd	812,141	Feb. 6	1[illegible]	[illegible]8	138	[illegible]
[illegible]	W. J. Eade	813,788	Feb. 27	2[illegible]	[illegible]8	138	[illegible]
[illegible]	J. C. McVey	813,516	Feb. 27	2[illegible]	[illegible]8	138	[illegible]
[illegible]	P. J. Harrah	813,888	Feb. 27	2[illegible]	[illegible]8	138	[illegible]
[illegible]	I. M. Warner	810,889	Jan. 16	1[illegible]	[illegible]8	138	[illegible]
[illegible]	M. E. Davis	810,823	Jan. 23	2[illegible]	[illegible]8	138	[illegible]
[illegible]	O. D. Morse	811,888	Feb. 6	1[illegible]	[illegible]8	138	[illegible]
[illegible]	H. Hansberger	813,365	Feb. 13	2[illegible]	[illegible]8	138	[illegible]
[illegible]	B. L. Elwell and W. Grimm	813,370	Feb. 20	2[illegible]	[illegible]8	138	[illegible]
[illegible] Trailing fender.	A. Chevras and M. Gex	813,776	Feb. 27	4[illegible]	[illegible]8	138	[illegible]
[illegible]	H. C. Melton	808,866	Jan. 2	1[illegible]	[illegible]8	138	[illegible]
[illegible]	A. J. Woolman	808,782	Jan. 2	1[illegible]	[illegible]8	138	[illegible]
[illegible]	C. Johnson	809,888	Jan. 9	2[illegible]	[illegible]8	138	[illegible]
[illegible]	C. K. Johnson	810,782	Jan. 23	2[illegible]	[illegible]8	138	[illegible]
[illegible]	J. M. Hess	813,448	Feb. 27	4[illegible]	[illegible]8	138	[illegible]
[illegible]	C. Johnson	813,711	Feb. 27	4[illegible]	[illegible]8	138	[illegible]
[illegible]	J. K. Gourdin	813,821	Feb. 27	4716	[illegible]8	138	[illegible]
[illegible]	D. C. Fisher	808,973	Jan. 2	1[illegible]	[illegible]8	138	[illegible]
[illegible] and analgesic pithy plants.	A. G. Manns	811,419	Jan. 23	2[illegible]	[illegible]8	138	[illegible]
[illegible]	B. Tyden	813,311	Feb. 13	2[illegible]	[illegible]8	138	[illegible]
[illegible]	E. F. Horine	810,780	Jan. 16	2[illegible]	[illegible]8	138	[illegible]
[illegible]	U. C. Allen	811,888	Feb. 6	1[illegible]	[illegible]8	138	[illegible]
[illegible]	W. S. Amber	810,888	Jan. 23	2[illegible]	[illegible]8	138	[illegible]
[illegible]	J. Krutsinger	808,846	Jan. 2	1[illegible]	[illegible]8	138	[illegible]
[illegible]	W. M. Sherwood	813,888	Feb. 13	2[illegible]	[illegible]8	138	[illegible]
[illegible]	J. E. Huber	812,152	Feb. 6	1[illegible]	[illegible]8	138	[illegible]
[illegible]	J. Wilson	808,884	Jan. 2	1[illegible]	[illegible]8	138	[illegible]
[illegible]	O. A. Connaughton	809,884	Jan. 2	1[illegible]	[illegible]8	138	[illegible]
[illegible]	O. L. G. Stonestal	812,884	Feb. 6	1[illegible]	[illegible]8	138	[illegible]
[illegible]	C. C. Hall	812,884	Feb. 6	1[illegible]	[illegible]8	138	[illegible]
[illegible]	A. Hanby	812,884	Feb. 6	1[illegible]	[illegible]8	138	[illegible]
[illegible]	L. [illegible]	812,884	Feb. 6	1[illegible]	[illegible]8	138	[illegible]
[illegible]	[illegible]	812,884	Feb. 6	1[illegible]	[illegible]8	138	[illegible]
[illegible]	[illegible]	812,884	Feb. 6	1[illegible]	[illegible]8	138	[illegible]
[illegible]	[illegible]	812,884	Feb. 6	1[illegible]	[illegible]8	138	[illegible]
[illegible]	C. G. [illegible]	812,884	Feb. 6	1[illegible]	[illegible]8	138	[illegible]

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drt.	Official Gazette. Vol.	Official Gazette. Page.
Filing-tray for card-indexes, &c	A. G. Vetter	812,670	Feb. 27	4811	940	139	2072
Film frames. Micrometrical adjustment for printing-	B. Day	813,857	Feb. 27	4888	1088-7	139	2188
Filter	E. W. Roberts	808,888	Jan. 2	1789	888-6	138	416
Filter	C. E. Applegate	810,888	Jan. 16	2888	888	138	708
Filter	J. T. Cunningham	810,846	Jan. 23	2888	863	138	1169
Filter	G. M. Kasemper	811,151	Jan. 30	2888	889	138	1288
Filter	L. V. Bood	811,894	Feb. 6	1888	88	138	1418
Filter	J. T. H. Paul	812,517	Feb. 13	2888	448-7	138	2076
Filter	K. Kieler	812,088	Feb. 20	2888	888	138	2188
Filter	K. Kieler	812,094	Feb. 20	2888	882-6	138	2188
Filter	B. F. Schirmer	813,257	Feb. 20	2888	888	138	2188
Filter. Barrel-	W. A. Hull	813,430	Feb. 27	2888	888	138	2188
Filter. Centrifugal	D. C. Mosher	813,488	Feb. 13	2888	888	138	1912
Filter-plate	E. H. Dutcher	813,388	Feb. 20	2888	888	138	2157
Filter-press	W. B. Allbright	813,385	Feb. 27	2789	888	138	2188
Filter-press container	S. Thurstenson	813,131	Feb. 20	2888	888	138	2188
Filter-pulp-packing machine	C. W. Merrill	812,014	Feb. 20	2888	887	138	2188
Filter. Water-	K. Keifer. (Reissue)	12,455	Feb. 20	2788	883-8	138	2188
Filters. Circulating system for beer-	D. M. Pfautz	813,517	Feb. 27	4806	878	138	2188
Filters. Side plate for	M. Stahl	812,343	Feb. 13	1478	888	138	2188
Filtering apparatus	C. P. Schwarz	813,530	Feb. 13	2040	447	138	2188
Filtering apparatus	K. Kieler	812,091	Feb. 20	2816	880	138	2188
Filtering element	D. M. Pfautz	812,516	Feb. 27	4004	877-8	138	2188
Filtering or purifying water. Means for	K. Kieler	812,922	Feb. 20	2816	881-8	138	2188
Filtering, purifying, and decanting apparatus	W. Cowern	813,770	Feb. 27	4505	888	138	2188
Filtering system	H. Desrumeaux	809,089	Jan. 2	1888	888	138	888
Fire-alarm and thermo-indicator. Electric	H. L. Hollis	808,994	Jan. 2	1888	121	138	121
Fire-alarm. Automatic	A. H. McNeil	810,801	Jan. 23	2888	788	138	1971
Fire-alarm. Automatic	A. Taylor	813,776	Feb. 13	2888	888	138	2074
Fire-alarm circuits. Automatic non-interfering re-peater for	W. A. Suttle	813,583	Feb. 27	4888	884	138	2188
Fire-box	F. W. Cole	810,812	Jan. 30	2888	979-88	138	1117
Fire-clay block and attachment	F. Burger and H. M. Williams	809,347	Jan. 2	1778	888	138	888
Fire-escape	R. R. Morrison	812,457	Feb. 13	1887	888	138	2044
Fire-escape	W. F. Thole and F. Ott	809,082	Jan. 2	888	178-4	138	177
Fire-escape	J. C. Covert	809,570	Jan. 9	2188	888	138	888
Fire-escape	J. F. Butler	810,848	Jan. 23	4117	888	138	888
Fire-escape	J. H. Brown and C. Franciscus	813,139	Feb. 20	2851	715	138	2188
Fire-escape apparatus	G. B. Price	812,980	Feb. 20	2888	888	138	2188
Fire-extinguisher automatic valve	J. H. Derby	810,889	Jan. 16	2888	888	138	708
Fire-extinguisher. Automatically-operating	H. W. Hildebrand	811,221	Jan. 30	8888	1118	138	1818
Fire-extinguishing device	W. G. Bills	812,001	Feb. 6	880	888	138	1884
Fire insulator and extinguisher	O. T. Weiser	813,587	Feb. 13	2050	448	138	1885
Fire-lighting apparatus	C. E. Jackson	813,458	Feb. 27	3888	888	138	2074
Fire-lighting device	M. L. Martin	812,720	Feb. 27	4488	971	138	2044
Fire-pail. Chemical	C. C. Gillespie	812,888	Feb. 13	2271	884	138	2088
Fire-pot and grate	S. Knapp	809,701	Jan. 9	2208	887	138	617
Fire-pot and grate therefor	A. R. Hubbard and R. Flay	812,767	Feb. 13	2402	888	138	2044
Fire-resisting cabinet	W. V. Dick	809,497	Jan. 9	1207	872	138	421
Fire-window. Automatic	G. Yunker and G. Schwing	810,886	Jan. 23	4073	888	138	1919
Firearm	A. J. Savage	810,571	Jan. 23	4025	888	138	1880
Firearm	J. H. Wesson	811,897	Feb. 6	812	114	138	1886
Firearm	T. C. Johnson	812,891	Feb. 27	4544	1084	138	2031
Firearm	T. C. Johnson	812,892	Feb. 27	4545	1085	138	2032
Firearm firing mechanism	G. E. Witherell	808,984	Jan. 2	888	188	138	188
Firearm-handle	M. Bye	812,088	Feb. 6	1887	888	138	1888
Firearms. Recoil-operated	M. Bye	812,018	Feb. 6	1888	214-8	138	1888
Firearms. Gas-operated mechanism for	C. H. Taylor	811,886	Feb. 6	1888	88	138	1872
Firearms. Single-trigger mechanism for	G. E. Witherell	808,980	Jan. 2	888	188	138	118
Fireman's protective dress	C. W. Wood	811,081	Jan. 30	2814	1088	138	1288
Fireplace. Open	H. C. Cleaver	810,719	Jan. 23	2888	884-8	138	1888
Fireproof blind or curtain roller	E. H. McCloud	810,896	Jan. 30	2818	1088	138	1888
Fireproof blind or curtain roller	E. H. McCloud	810,897	Jan. 30	2818	1088	138	1888
Fireproof column and column-cap	J. J. Trueblider	813,188	Feb. 20	2888	781	138	2188
Fireproof conductors. Making	A. M. Lesage	809,812	Jan. 9	1416	887	138	648
Fireproof metal window	R. C. Lieb	811,872	Jan. 30	2888	1088	138	1888
Fireproof sash structure	F. Dutcher	813,782	Feb. 13	2650	888	138	2188
Fireproof vault. Portable	W. H. Hodges	810,881	Jan. 23	4887	888	138	1117
Fireproof window	S. H. Pomeroy	810,884	Jan. 23	4911	888	138	1888
Fireproof window. Sheet-metal	W. H. Miller	810,888	Jan. 23	4888	888	138	1888
Fireproof wire	A. M. Lesage	809,811	Jan. 9	1416	887	138	648
Fish. Apparatus for dry-curing	V. Whitman	813,284	Feb. 20	2472	788	138	2188
Fish. Dry-curing	V. Whitman	813,288	Feb. 20	2472	788	138	2188
Fish-net-lifting machine	K. Paulson	812,977	Feb. 13	1888	888-8	138	2188
Fish-trap	A. L. Schoppach	812,888	Feb. 13	1888	888	138	2188
Fishing device	A. O. Lyons	809,888	Jan. 23	2788	888	138	2188
Fishing device	W. L. Mogg	810,788	Jan. 23	4484	888	138	2188
Fishing device	W. S. Pyne	811,888	Feb. 6	88	8	138	2188
Fishing-float	L. M. Johnson	808,188	Jan. 2	1888	888	138	2188
Fishing-reel	F. L. Dickson	812,888	Feb. 6	1888	778	138	2188
Fishing-rod	J. S. Hunter	812,488	Feb. 27	4888	888	138	2188
Fishing-tackle	B. Waldberg	808,888	Jan. 9	1888	888	138	2188
Fitting stand for dressmakers, &c	J. J. Keir	811,888	Jan. 30	2888	1188	138	2188
Flash-light apparatus. Automatic	S. Barnes and A. N. Gatsert	813,877	Feb. 27	2111	888	138	2188
Flash-light cartridge	G. H. Stevenson	811,889	Feb. 6	888	88	138	2188
Flash-light composition	A. Rinbergen	812,888	Feb. 6	888	88	138	2188
Flash-light device	T. Aspeg	812,848	Feb. 27	4888	1888	138	2188
Flask: See Concrete-block-molding flask.							
Flexible coupling	T. A. Weldridge and E. A. Ward	809,889	Jan. 9	2888	888	138	888
Flexible pipe	A. O'Brien	809,877	Jan. 16	2888	888	138	888
Floating elevator or lighter	M. S. Iverson	812,888	Feb. 13	2888	888	138	2188
Flood-gate	L. W. Travis	812,888	Feb. 13	2888	888	138	2188
Floor-cleaning means	F. F. Anderson	812,888	Feb. 13	2888	888	138	2188
Floor-damper	E. Erikson	812,888	Jan. 23	2888	888	138	2188

Alphabetical list of inventions for January and February—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drfs.	Official Gazette. Vol.	Official Gazette. Page.
Floor-sweeper	S. A. M. Linville	812,055	Feb. 6	1042	228	120	1702
Floor structure	J. Kraft	811,491	Jan. 30	5709	1214	120	1416
Floor waxing, polishing, and cleaning machine	F. B. Reichenbach	810,580	Jan. 9	1980	407	120	663
Flours. Machine for dressing and finishing surfaces of	J. J. Kelly	810,770	Jan. 23	4308	911	120	1089
Fluid-pressure. Parquet-	S. A. Alexander	812,230	Feb. 13	1638	280	120	1899
Fluid-pressure feed pavilion	R. I. Agner	812,130	Feb. 6	1149	232	120	1722
Fluid-pressure. Tilting device for	C. Dawson	810,627	Jan. 23	4138	1056	120	1058
Fluid-pressure. Trunking	J. E. Mitchell	812,764	Feb. 13	2408	546	120	2070
Fluid-pressure. Trunking	E. E. Werner	812,777	Feb. 13	2207	551	120	2074
Fluid-pressure pot stand. Adjustable	A. Grasse	811,712	Feb. 6	327	74	120	1561
Fluid-pressure. Stove and range	W. Jaques	811,508	Jan. 30	5881	1318	120	1420
Fluid-pressure for evaporators, boilers, and the like	T. Suzuki	810,986	Jan. 30	4988	1013-14	120	1218
Fluid-pressure governing means	F. L. McGehan and E. G. Flager	811,079	Jan. 30	5005	1045-6	120	1247
Fluid-pressure governing means	J. B. Waring	811,188	Jan. 30	5240	1086-7	120	1297
Fluid-pressure motor	B. V. Nordberg	812,151	Feb. 6	1248	271	120	1745
Fluid-pressure regulator	W. V. Turner and J. S. Custer	810,514	Jan. 23	3917	805-6	120	977
Fluid-pressure generator	A. Baudin	813,075	Feb. 20	3109	681	120	2254
Fluid-pressure motor	F. Sage	811,855	Feb. 6	257	56-7	120	1541
Fly	A. J. Barr	809,608	Jan. 9	2022	419	120	475
Fly-paper	J. H. Bien	813,198	Feb. 20	3345	736	120	2304
Fly-paper holder	J. W. Hixson	813,251	Jan. 16	2987	654	120	676
Fly-screen	W. E. Hart	810,234	Jan. 23	3963	813	120	984
Fly-screen. Adjustable	J. A. Marquardt	813,727	Feb. 27	4400	970	120	2301
Fly-trap	W. H. Grasser	812,109	Feb. 6	1200	264	120	1734
Fly-trap. Mechanical	T. W. Thornton	810,094	Jan. 16	3393	694	120	743
Fodder-cutter	J. Grill, Jr.	813,645	Feb. 27	4252	934	120	2589
Fodder elevator and loader. Corn-	F. G. Harrison and A. C. Jacoby	810,304	Jan. 16	3218	698	120	788
Fodder loader and hauler	F. A. R., H. C., and O. L. Fiebach	810,730	Jan. 23	4328	939	120	1067
Fodder and binding	M. Plackard	809,228	Jan. 9	1496	320	120	350
Folding box	E. J. Meisenheimer	812,798	Feb. 13	2580	581	120	2035
Folding box	P. O'Riley	811,689	Feb. 6	943	52	120	1538
Folding-machines. Paper-slitting device for	E. G. Brown	813,347	Feb. 20	3640	800	120	2367
Folding table	W. A. La Sor and C. M. Smith. (Reissue.)	12,456	Feb. 20	3751	823-4	120	2389
Food compound and preparing the same	H. Buyten	810,616	Jan. 23	4120	850-1	120	1030
Foot-arch supporter	E. T. Williams	811,466	Jan. 30	5757	.....	120	1407
Footwear. Anatomical	F. B. Lee	811,513	Jan. 30	5838	1222	120	1424
Footwear. Apparatus for binding in the toes of	H. P. Cole	812,980	Feb. 20	2790	614	120	2183
Forging and welding machine	G. Kron	810,773	Jan. 23	4400	912-13	120	1083
Fork:	C. Reinhart	812,174	Feb. 20	3310	728	120	2207
See Grapple-fork. Hay-fork.							
Fork	W. A. Reddick	812,771	Feb. 13	2499	550	120	2072
Formaldehyde-generator	A. R. Dieterich	813,262	Feb. 20	3663	809	120	2275
Formaldehyde hydrosulfite and making same	E. A. Fourneaux	812,124	Feb. 6	1176	.....	120	1729
Formic-aldehyde compound. Making a	A. Stephan	812,606	Feb. 13	2300	.....	120	2013
Foundries. Powder for dusting patterns in	E. Brühl	811,477	Jan. 30	5776	.....	120	1411
Fountain:							
See Poultry-fountain.							
Frame:							
See Automobile-frame. Bag-frame. Car-frame. Car truss-frame. Clothes-frame. Door-frame. Grindstone-frame. Locomotive-tender frame. Photographic-printing frame. Picture-frame. Printing-frame. Pumping-power frame. Quilting-frame. Window-frame. Window-screen frame.							
Free-wheeling wheel	M. Markkula and A. Rantala	810,896	Jan. 23	4051	889	120	1135
Fruit-marker	C. A. Wellman	810,313	Jan. 16	3407	714	120	886
Fruit-grader	W. C. Anderson. (Reissue)	12,469	Feb. 27	4068	1020	120	2707
Fruit-picker	T. N. Woolverton	813,470	Feb. 13	1910	431	120	1955
Fruit-picker	D. H. Mosteller	809,681	Jan. 2	428	109	120	101
Fuel. Apparatus for the complete combustion of	A. Pistler	809,222	Jan. 9	1488	360	120	350
Fuel. Manufacture of artificial	A. Stillson	809,606	Jan. 16	2777	.....	120	685
Fuel-smoke consumer	A. D. Mansell	811,675	Jan. 30	5930	1044	120	1345
Fuel-supply and regulating means	J. H. Rivers	813,288	Feb. 20	3630	792	120	2360
Fuel. Treating artificial fuels from	S. Lewin and A. Blumenthal	810,189	Jan. 16	3191	645	120	768
Furnace:							
See Blast-furnace. Brick-burning furnace. Cupola-furnace. Electric furnace. Heating-furnace. Metallurgical furnace. Puddling-furnace. Reheating furnace. Smelting-furnace. Steam-generating furnace. Tube-furnace. Vapor-burning furnace. Water-tube furnace.							
[illegible]	J. Rodrigues y Fenoll	810,349	Jan. 16	3539	737	120	738
[illegible]	A. P. Grey	811,887	Feb. 6	[illegible]	[illegible]	120	1555
[illegible]	J. J. and J. O'Shea	811,887	Feb. 6	[illegible]	[illegible]	120	1555
[illegible]	T. Zanoni	811,887	Feb. 6	[illegible]	[illegible]	120	1555
[illegible]	W. R. Wingeam	811,887	Feb. 6	[illegible]	[illegible]	120	1555
[illegible]	J. C. Miller	811,887	Feb. 6	[illegible]	[illegible]	120	1555
[illegible]	W. G. Evans	811,887	Feb. 6	[illegible]	[illegible]	120	1555
[illegible]	G. C. Shackleford	811,887	Feb. 6	[illegible]	[illegible]	120	1555
[illegible]	W. McCrea	811,887	Feb. 6	[illegible]	[illegible]	120	1555
[illegible]	E. E. Kingwood	811,887	Feb. 6	[illegible]	[illegible]	120	1555
[illegible]	W. McCrea	811,887	Feb. 6	[illegible]	[illegible]	120	1555
[illegible]	E. V. Daly	811,887	Feb. 6	[illegible]	[illegible]	120	1555
[illegible]	G. [illegible]	811,887	Feb. 6	[illegible]	[illegible]	120	1555
[illegible]	E. [illegible]	811,887	Feb. 6	[illegible]	[illegible]	120	1555
[illegible]	O. E. Potter	811,887	Feb. 6	[illegible]	[illegible]	120	1555
[illegible]	E. A. Lemieux	810,180	Jan. 16	[illegible]	[illegible]	120	1555

Alphabetical list of inventions for January and February—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drfs.	Official Gazette. Vol.	Official Gazette. Page.
Furnaces. Apparatus for producing perfect combustion in	H. Luckenbach	810,160	Jan. 16	3126	647	120	767
Furnaces. Gas-relief valve for blast-	E. L. Messler	813,442	Feb. 27	3983	844	120	2470
Furnaces. Preserving the inner walls of	F. C. W. Timm	813,819	Feb. 13	2218	481	120	2110
Furniture. Convertible	C. W. Dunn	809,522	Jan. 2	380	85-6	120	87
Furniture pad. Upholstered-	F. D. Boyle	813,616	Feb. 27	4195	921	120	2547
Fuse. Electric safety-	E. L. Ogle	809,978	Jan. 16	2720	584	120	937
Fuse. Electric safety-	C. W. Elliott	809,982	Jan. 16	2749	592	120	939
Fuse. Impact-	L. Abendroth	809,595	Jan. 9	2532	539	120	580
Fuse-plug	H. T. Paiste	809,527	Jan. 9	2482	529	120	572
Fuse plug. Electric multiple-	A. Hepke and K. Diener	809,901	Jan. 9	1295	261	120	340
Fuse. Projectile-	H. C. Seddon	811,262	Jan. 30	5372	1151	120	1337
Fuse. Projectile-	H. C. Seddon	811,267	Feb. 6	268	57	120	1543
Fuse. Projectile-	H. C. Seddon	811,268	Feb. 6	263	57	120	1543
Fuse. Shell-	W. M. Kershaw	812,048	Feb. 6	1023	226	120	1660
Fuses for electrical installations. Inclosed safety device for	W. Fellenberg	813,545	Feb. 27	4057	869	120	2518
Gage:							
See Bevel-gage. Bookbinder's gage. Combination-gage. Cutter-head gage. Dress or skirt gage. Feed-gage. Pile-gage. Rafter-gage. Railway-track gage. Saw-gage. Saw-table cutting-gage. Water-gage. Weather-board gage.							
Gage attachment. Safety	I. W. Houston, H. C. Burns, and A. Van Voorhees.	809,110	Jan. 2	960	202	120	216
Gage for use of carpenters and joiners in fitting doors	J. A. Johnson	810,489	Jan. 23	3856	792	120	962
Gage-reading device	G. F. Doern	812,411	Feb. 13	1814	397	120	1985
Gages. Base attachment for center-	J. L. Baltzer and L. S. Starrett	813,907	Feb. 27	4985	1081	120	2703
Galvanometer	P. H. Wynne	813,369	Feb. 20	3483	678	120	2333
Game	S. F. Enos	810,631	Jan. 23	4144	886	120	1035
Game apparatus	E. B. Vinson and B. F. Robinson	808,989	Jan. 2	063	146	120	151
Game apparatus	A. Friedenthal	809,203	Jan. 9	1374	279	120	338
Game apparatus	F. W. Burns	809,809	Jan. 9	2088	420	120	477
Game apparatus	F. L. Sackett	810,294	Jan. 16	3261	676	120	795
Game apparatus	O. E. Pettes	810,320	Jan. 16	3433	708	120	823
Game apparatus	R. D. Martin	810,751	Jan. 23	4419	947	120	1088
Game apparatus	G. F. Kirby	812,048	Feb. 6	1022	226	120	1700
Game apparatus. Base-ball-	E. Fahl. (Reissue)	12,451	Feb. 27	4068	1020	120	2709
Game apparatus. Indoor-golf	J. P. Magenis	811,189	Jan. 30	5188	1084	120	1388
Game-board	M. Whitlatch	811,347	Jan. 30	5555	1139	120	1396
Game-board	N. T. Hale	809,502	Jan. 9	1816	374	120	494
Game. Card	L. Silvernail	809,853	Jan. 9	2481	516	120	579
Game-piece	L. C. Paul	812,676	Feb. 13	2232	468	120	2088
Game-recording device	F. L. Sackett	810,262	Jan. 16	3541	726	120	857
Game-register	A. S. Nichols	812,884	Feb. 20	2957	598	120	2160
Game-table	G. F. Goss and J. E. Parker	813,551	Feb. 27	4098	863-4	120	2521
Garden rake and cultivator	M. M. Johnson	811,149	Jan. 30	5157	1078	120	1270
Garment	B. J. H. Culos	813,277	Feb. 20	3708	818	120	2280
Garment. Back-protection	W. J. Reid	813,588	Feb. 27	4134	888	120	2534
Garment-clasp	S. F. Swantess	812,613	Feb. 13	2204	480	120	2014
Garment-clasp	S. Rubin	810,678	Jan. 23	4210	973	120	1043
Garment-fastener	O. Kemper	810,948	Jan. 30	4776	994	120	1188
Garment-fastener	H. A. Hopkins	810,527	Jan. 23	3957	814	120	988
Garment-hanger	W. H. Unks	811,698	Jan. 30	6089	1019	120	1523
Garment-hook	W. F. Hall and W. Donaldson	809,088	Jan. 2	14	14	120	17
Garment-pads. Making	W. H. Hippisley. (Reissue)	12,451	Feb. 13	2568	563	120	2057
Garment-rack. Individual safety	G. Goldman	810,986	Jan. 30	4747	989	120	1161
Garment-supporter	H. J. Bonball	813,917	Feb. 20	3788	833	120	2162
Garment-supporter	H. F. Niles	809,074	Jan. 2	885	189	120	228
Garment-supporter	B. F. Crowther	809,310	Jan. 2	1188	249	120	288
Garment-supporter	B. Ortell	810,805	Jan. 23	3988	790-799	120	972
Garment-supporter	I. J. Johnson	811,805	Jan. 30	6026	1319	120	1481
Garment-supporter	R. H. Emery	811,853	Feb. 6	30	7	120	1481
Garments and the like. Rotary hook-support for	V. H. Rea	812,126	Feb. 13	2036	445	120	1980
Gas apparatus. Acetylene-	J. C. Smith	812,601	Feb. 13	2246	513	120	2041
Gas apparatus. Power-	P. H. Widman	812,366	Feb. 13	1764	386	120	1935
Gas-burner	G. M. S. Tait	810,695	Jan. 23	4231	970	120	1048
Gas-burner	S. W. Hyatt	810,613	Jan. 23	4131	884	120	1034
Gas-burner	W. C. Holman and F. T. Williams	811,308	Jan. 30	5648	1161	120	1385
Gas-burner	E. Swinnerr and E. B. Neelen	811,970	Feb. 6	276	59-4	120	1555
Gas-burner	S. Berabeim	812,675	Feb. 20	3811	848	120	2316
Gas-burner	E. M. Buckman	811,329	Jan. 30	5975	1288	120	1431
Gas-burner. High-pressure	W. Kirkwood	810,570	Jan. 23	4085	994	120	1132
Gas-burner. Incandescent	E. E. Wilner	813,469	Feb. 13	1936	426	120	1966
Gas-burner inspirator and mixer	J. W. McKnight	813,440	Jan. 30	6057	1309	120	1507
Gas-burner. Inverted incandescent	H. Farnell	813,048	Feb. 20	3625	806	120	2253
Gas-burner. Safety	S. W. Ekroos	809,606	Jan. 9	2085	57	120	57
Gas-burners. Chimney for incandescent	L. Stoess	813,639	Feb. 13	2036	445	120	2124
Gas-burners. Electric lighter and extinguisher for	O. and C. Candi	812,998	Feb. 20	2807	618	120	2184
Gas-burning apparatus	L. Moreno and A. D'Antony	813,438	Feb. 13	2036	445	120	1980
Gas-compressor	L. Sterne	811,811	Feb. 6	1	1	120	1481
Gas-conduit-controlling apparatus	E. F. Dehman	811,811	Feb. 6	1	1	120	1481
Gas-controller for flash-lights and the like	P. C. Reid	811,811	Feb. 6	1	1	120	1481
Gas-controlling device	W. T. Donnelly	811,811	Feb. 6	1	1	120	1481
Gas-controlling device. Automatic	H. Schaefer	811,811	Feb. 6	1	1	120	1481
Gas-engine	F. A. Kettering	811,811	Feb. 6	1	1	120	1481
Gas-engine	J. Crane	811,811	Feb. 6	1	1	120	1481
Gas-engine	W. F. Lee	811,811	Feb. 6	1	1	120	1481
Gas-engine	J. P. Taylor and W. R. Whiting	811,811	Feb. 6	1	1	120	1481
Gas-engine	J. G. Turner	811,811	Feb. 6	1	1	120	1481
Gas-engine	J. P. Taylor and W. R. Whiting	811,811	Feb. 6	1	1	120	1481
Gas-engine	V. O. Apple	811,811	Feb. 6	1	1	120	1481
Gas-engine. Compound	J. W. Underhill	811,811	Feb. 6	1	1	120	1481
Gas-engine. Explosive-	E. G. Ehartt	811,811	Feb. 13	2036	445	120	1980

Alphabetical list of inventions for January and February—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Gas-fixture	P. J. Nevins	809,727	Jan. 9	2268	468	120	539
Gas for railway-traffic-controlling apparatus. Utilizing liquefied	C. W. Coleman	810,263	Jan. 16	2249	604	120	814
Gas. Generating	C. Ellis	814,001	Feb. 27	4049	1094	120	2706
Gas-generating apparatus	B. E. Eldred and C. Ellis	811,706	Feb. 6	339	72	120	1539
Gas-generator	N. Goodyear	808,680	Jan. 2	38	12-13	120	15
Gas-generator	C. L. Parsons	811,787	Feb. 6	377	82	120	1580
Gas-generator. Hydrocarbon-	L. Henderson	811,845	Feb. 6	502	120	120	1610
Gas-light switch	T. A. Davis	812,857	Feb. 20	3687	804	120	2371
Gas-lights. Antivibrator burner for incandescent	C. P. Ehmann	812,107	Feb. 6	1296	283	120	1753
Gas lighting and extinguishing apparatus	R. N. Oakman	813,576	Feb. 27	4123	906	120	2532
Gas-meter	K. R. Howard	813,097	Feb. 20	3144	689	120	2281
Gas plant. Acetylene-	W. J. Stinson	809,473	Jan. 9	1760	388	120	430
Gas-producer	O. C. Skinner and J. E. Sheaffer	809,026	Jan. 2	790	170	120	174
Gas-producer	J. R. George	809,296	Jan. 9	1375	279	120	336
Gas-producer	E. Sandner	809,649	Jan. 9	2472	574	120	577
Gas-producer	C. Ellis	811,290	Jan. 30	5287	1106	120	1307
Gas-producer	E. N. Trump	[illegible]	Feb. 27	4158	912-13	120	2530
Gas-producer valve	C. Ellis	813,620	Feb. 27	4210	927	120	2552
Gas-producers. Fluid-sealing device for	F. G. Hobart	[illegible]	Jan. 2	1304	265	120	287
Gas-producers. Governor for suction	G. M. S. Tait	[illegible]	Jan. 9	1468	297	120	358
Gas-producers. Operating	E. Sandner	[illegible]	Jan. 9	2471	514	120	576
Gas-producers. Preventing the formation of clinker in	B. E. Eldred	[illegible]	Feb. 27	4217	927	120	2551
[illegible]	J. E. Sheaffer	809,021	Jan. 2	786	169	120	173
Gas producing and consuming apparatus. Power-	C. Ellis	812,194	Feb. 13	1370	300	120	1840
Gas-producing apparatus	G. Marconnet	813,728	Feb. 27	4307	970	120	2600
Gas-purifier	E. C. Woodworth	809,689	Jan. 9	2120	441	120	498
Gas-purifier	L. P. Lowe	812,218	Feb. 13	1434	310	120	1850
Gas-purifying apparatus	P. Plantinga	810,863	Jan. 23	4010	886	120	997
Gas-regulating device	C. E. Wirth and W. W. Bradley	812,627	Feb. 13	2232	486	120	2019
Gas-regulator	B. H. Petley	810,862	Jan. 23	4008	886	120	996
Gas-retort-discharging apparatus	J. W. Broadhead and F. W. Ordish	812,479	Feb. 13	1929	425-6	120	1960
Gas-retorts. Stand-pipe and connection for	S. J. Fowler	808,831	Jan. 2	408	89-90	120	90
Gas-valve	J. Sweeney	810,443	Jan. 23	3764	775	120	940
Gas washer and scrubber. Combined	L. P. Lowe	812,217	Feb. 13	1429	310	120	1850
Gases. Apparatus for analysis of	A. Schlatter and L. Deutsch	813,671	Feb. 27	4299	946	120	2599
Gases. Apparatus for dehydrating compressed	R. P. Pictet	809,219	Jan. 2	1188	244	120	263
Gases. Cleaning manufactured	L. P. Lowe	809,283	Jan. 9	1370	319	120	378
Gases from their mixtures. Apparatus for the separation of	R. P. Pictet	809,218	Jan. 2	1173	243-3	120	266
Gasket	V. Tompkins	811,000	Jan. 30	4877	1015	120	1220
Gasket-making machine	J. W. Guillott	809,286	Jan. 2	1204	263-4	120	265
Gasoline lighting system	J. B. Christian	811,833	Feb. 6	541	121	120	1600
Gate: *See* Bridge safety-gate. Car-platform gate. Car-platform folding gate. Elevator-gate. Farm-gate. Fence-gate. Flood-gate. Race-course starting-gate. Shaft-gate. Water head-gate.							
Gate	B. H. Martin	809,987	Jan. 16	2720	580	120	682
Gate	J. J. Willaman	811,019	Jan. 30	4912	1094	120	1228
Gate	I. R. Burkholder	811,371	Jan. 30	5506	1168	120	1374
Gate	E. E. Hanken	811,588	Feb. 6	87	9	120	1468
Gate	G. W. Thompson	812,904	Feb. 20	2802	638	120	2206
Gate	W. C. Boyd	813,615	Feb. 27	4194	920	120	2547
Gear-casing	F. H. Lincoln	808,905	Jan. 2	744	161	120	164
Gear for feeder-aprons. Changeable-speed	W. T. S. Gushee	810,842	Jan. 23	4163	880	120	1030
Gear. [illegible]	H. A. Tuttle	812,533	Feb. 13	2043	448	120	1984
Gear. [illegible]	E. A. Hoefer	809,272	Jan. 9	1537	313	120	372
Gear. [illegible]	M. C. Talcott	809,406	Jan. 9	1636	351	120	390
Gear. [illegible]	P. W. Kane	[illegible]	Jan. 16	2834	611	120	730
[illegible] machine	F. M. Stambaugh	811,296	Jan. 30	5530	1153-4	120	1320
[illegible]	C. R. Gabriel	809,365	Jan. 9	2608	536	120	606
[illegible]	H. F. James	811,147	Jan. 30	5157	1078	120	1278
[illegible]	F. M. Stambaugh	811,751	Feb. 6	402	87	120	1574
[illegible]	B. Tropp	812,968	Feb. 20	2781	607	120	2177
[illegible]	E. Wighton	813,189	Feb. 20	3323	733	120	2308
[illegible]	C. M. A. Diesinger	808,738	Jan. 2	225	47-8	120	[illegible]
[illegible]	H. R. Stacks	813,481	Feb. 27	3935	851	120	2477
[illegible]	E. M. Burr	813,770	Feb. 27	4477	988-9	120	2607
[illegible]	J. Murray	811,164	Jan. 30	5196	1085	120	1287
[illegible]	J. T. Truitt	812,768	Feb. 13	2573	519	120	2066
[illegible]	M. C. Talcott	809,540	Jan. 9	1862	391	120	447
[illegible]	E. Huber	812,345	Feb. 13	1677	366	120	1908
[illegible]	W. T. Sears	812,889	Feb. 20	2729	600	120	2170
[illegible] *See* [illegible]							
[illegible]	W. A. Lee, Jr.	812,654	Feb. 27	[illegible]	[illegible]	120	[illegible]
[illegible] process for manufacturing	E. C. Schmertz. (Reissue)	12,443	Jan. 30	[illegible]	1236	120	1426
[illegible]	H. Sample	808,374	Jan. 2	473	105-6	120	108
[illegible]	H. M. Brookfield	[illegible]	Jan. 16	2857	[illegible]	120	711
[illegible]	N. W. Hartman	[illegible]	Feb. 20	[illegible]	777-8	120	[illegible]
[illegible]	J. R. Spear and H. A. Otto	[illegible]	Feb. 27	[illegible]	947-8	120	[illegible]
[illegible]	E. W. Chadwick	[illegible]	Jan. 30	[illegible]	1106	120	[illegible]
[illegible]	J. A. Chambers	[illegible]	Jan. 16	[illegible]	[illegible]	120	718
[illegible]	J. R. Spear and G. H. Harvey	[illegible]	Feb. 20	[illegible]	788-9	120	[illegible]

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Glass-drawing machine	G. H. Harvey	812,880	Feb. 20	3680	778	120	2242
Glass-drawing machine	G. H. Harvey	812,881	Feb. 20	3681	779	120	2242
Glass-flattening apparatus	J. Craig and R. E. Rowan	810,728	Jan. 23	4308	894	120	[illegible]
Glass forming apparatus. Sheet and plate	H. J. Hays	813,794	Feb. 27	4527	1000	120	2615
Glass-furnace	W. M. Anderson	808,804	Jan. 2	368	78	120	80
Glass-furnace	H. M. Brookfield	808,810	Jan. 2	371	80	120	82
Glass-furnace	S. O. Richardson, Jr.	[illegible]	Jan. 9	[illegible]	542	120	619
Glass. Machine for automatically segregating, measuring, and delivering molten	W. D. Morrison	810,167	Jan. 16	3131	648	120	[illegible]
Glass-making apparatus. Wire-	J. Heidenkamp	812,964	Feb. 20	2942	648	120	2216
Glass-making machine. Wired-	R. A. B. Walsh	810,446	Jan. 23	3769	776	120	942
Glass-making machine. Wired-plate-	R. A. B. Walsh	810,447	Jan. 23	3770	777	120	942
Glass. Manufacture of	J. R. Spear and G. H. Harvey	812,884	Feb. 20	2741	608	120	2172
Glass. Manufacture of silica	J. F. Bottomley, R. S. Hutton, and A. Paget	812,280	Feb. 13	1780	391-2	120	1881
Glass. Manufacturing	J. R. Spear	813,247	Feb. 20	3441	758	120	[illegible]
Glass-manufacturing apparatus	M. Myers	810,375	Jan. 16	[illegible]	737	120	[illegible]
Glass. Manufacturing window-	L. Appert	809,418	Jan. 9	[illegible]	339-40	120	[illegible]
Glass-molding apparatus	M. Myers	[illegible]	Jan. 16	[illegible]	[illegible]	120	[illegible]
Glass-molding machine	C. W. Sages	810,576	Jan. 23	4034	[illegible]	120	1000
Glass ornaments. Making	J. True	813,128	Feb. 20	[illegible]	701	120	2277
Glass-perforating machine	S. E. Doane	810,474	Jan. 23	3832	787	120	[illegible]
Glass-plate-grinding tool	F. Franz	[illegible]	Jan. 9	1813	373	120	[illegible]
Glass-press	W. I. Permar	811,230	Jan. 30	5400	1146-7	120	1354
Glass-rolling apparatus	A. Meyer	810,786	Jan. 23	4428	919	120	[illegible]
Glass-tank furnace	J. Proeger	811,962	Feb. 6	842	185-6	120	1680
Glass-tanks. Refractory wall for	L. J. Houze	[illegible]	Jan. 30	5315	1111	120	1314
Glass-working furnace	I. A. Milliron	812,085	Feb. 6	1063	231-2	120	1705
Glass-working machine	J. North	810,312	Jan. 16	3247	673	120	782
Glassware. Apparatus for making air-hole	F. H. Blackburn	810,462	Jan. 23	3810	783	120	[illegible]
Glassware. Apparatus for making air-hole	F. H. Blackburn	810,465	Jan. 23	3816	784	120	954
Glassware. Machine for glazing air-hole	F. H. Blackburn	810,461	Jan. 23	3808	782	120	951
Glassware. Machine for making air-hole	F. H. Blackburn	810,460	Jan. 23	3806	782	120	951
Glassware. Machine for making air-hole	F. H. Blackburn	810,464	Jan. 23	3815	784	120	953
Glassware. Machine for the manufacture of	C. E. Blue	[illegible]	Jan. 9	[illegible]	581	120	[illegible]
Glassware. Making air-hole	F. H. Blackburn	810,463	Jan. 23	3814	783	120	[illegible]
Glaziers. Sash-supporting platform for	F. J. Peters	809,321	Jan. 9	1434	290	120	[illegible]
Glove. Base-ball	E. H. Decker	812,981	Feb. 20	2791	614	120	2183
Glue-applying mechanism	J. P. Wright	[illegible]	Feb. 27	[illegible]	1090	120	2702
Gold-saving apparatus	O. H. Bagley	812,474	Feb. 13	1916	422-3	120	1957
Gold-separator	E. J. Sterling	809,586	Jan. 9	1875	409-10	120	465
Gold, silver, &c. Extracting	J. A. Comer	[illegible]	Feb. 27	4285	944	120	[illegible]
Golf-ball	F. H. Richards	[illegible]	Jan. 2	115	27	120	28
Golf-ball	W. I. Thomas	809,084	Jan. 2	806	174	120	178
Golf-ball	W. I. Thomas	809,085	Jan. 2	807	174	120	178
Gong attachment	J. T. Duff	808,908	Jan. 2	572	127	120	125
Goods-receptacle. Paneled	J. I. McVoy	809,005	Jan. 2	750	164	120	167
Governing device for gasoline-engines. Automatic	D. C. McCarroll	811,734	Feb. 6	370	81	120	1568
Governor. Emergency-	J. G. Callan and F. R. C. Boyd	[illegible]	Jan. 9	2336	484	120	546
Governor in fly-wheels. Automatic friction-	T. L. Cummings	[illegible]	Jan. 9	2262	467	120	553
Governor mechanism	H. T. Ballard	812,630	Feb. 13	2241	487	120	2021
Governor. Pressure-	R. Conrader	810,108	Jan. 16	3015	628	120	748
Governor. Pumping-engine	C. P. McMullen	810,606	Jan. 23	4201	880	120	[illegible]
Governor. Throttling-	H. C. Clay	813,087	Feb. 20	[illegible]	[illegible]	120	[illegible]
Governor. Vacuum-	R. Conrader	810,109	Jan. 16	3017	628	120	748
Grab	J. A. Thornton	812,617	Feb. 13	2213	[illegible]	120	2015
Grab-hook	F. J. Morrison	808,880	Jan. 2	454	100	120	[illegible]
Grabot-machine	J. D. Brazier and D. O. Sullivan	810,707	Jan. 23	4272	[illegible]	120	[illegible]
Grader and ditcher. Road	C. D. Edwards	810,477	Jan. 23	[illegible]	788-9	120	[illegible]
Grader. Road-	F. B. Drewes	808,820	Jan. 2	391	86	120	87
Grader. Road-	J. W. Langfitt	813,010	Feb. 20	2973	[illegible]	120	[illegible]
Grader. Road-	C. Morsing	[illegible]	Feb. 20	3072	673	120	[illegible]
Grain-binder knotter mechanism	P. Hanson	812,606	Feb. 27	4348	957-8	120	[illegible]
Grain-cleaning apparatus	H. C. Miller	812,790	Feb. 13	2551	561	120	[illegible]
Grain-conveyer	J. B. Schuman	808,470	Jan. 9	1752	[illegible]	120	419
Grain-drill seedbox	C. L. Fowle	808,979	Jan. 2	718	155	120	158
Grain-drills. Adjustable feed for	A. F. Mills	812,054	Feb. 20	3071	[illegible]	120	[illegible]
Grain elevator and conveyer. Portable	G. Wenzelmann and E. H. Overbolt	810,010	Jan. 16	2807	[illegible]	120	[illegible]
Grain-elevator. Pneumatic	W. C. Allen	812,677	Feb. 20	[illegible]	[illegible]	120	[illegible]
Grain-elevator. Portable	D. C. Hof and C. F. Ladwig	[illegible]	Jan. 9	1836	[illegible]	120	[illegible]
Grain-handling apparatus	E. E. Logan	[illegible]	Feb. 6	809	176	120	1654
Grain-shock and hay loader	M. J. Rodney, J. J. Ford, F. M. Conroy, A. Burson, and F. W. Fitch	[illegible]	Jan. 23	[illegible]	[illegible]	120	976
Grains. Cleaning	H. C. Miller	810,980	Jan. 30	4808	[illegible]	120	[illegible]
Gramophone	H. S. Mills	[illegible]	Feb. 13	[illegible]	[illegible]	[illegible]	[illegible]
Graphophone-reproducer	G. A. Manwaring	[illegible]	Feb. 6	[illegible]	[illegible]	[illegible]	1460
Grapple-fork	A. Mellquist and O. A. Westerson	[illegible]	Feb. 6	1057	[illegible]	[illegible]	1704
Grate-bar	H. B. Sperry	[illegible]	Jan. 30	[illegible]	[illegible]	[illegible]	[illegible]
Grate-bar. Sectional	W. McClave	812,071	Feb. 6	[illegible]	[illegible]	[illegible]	[illegible]
Greenhouse and other glazed structure	P. M. Pierson	[illegible]	Feb. 6	[illegible]	[illegible]	[illegible]	[illegible]
Greenhouses. Sash-lifting apparatus for	W. O. Johnston and P. J. Foley	[illegible]	Jan. 30	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	W. S. Tuttle	[illegible]	Feb. 6	1371	[illegible]	[illegible]	[illegible]
[illegible]	G. W. Golden	[illegible]	Jan. 2	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] apparatus	L. H. Olmsted	[illegible]	Feb. 20	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] apparatus. Shears or scissors	E. F. Davis	[illegible]	Jan. 30	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] and the like. Machine for	T. [illegible]	[illegible]	Feb. 27	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] device. Tool-	J. [illegible] and C. C. M. Mortensen	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible] and J. N. Heald	[illegible]	Jan. 30	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	Jan. 30	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	Feb. 6	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	Feb. 6	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	Feb. 13	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	Feb. 13	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	F. T. [illegible]	[illegible]	Feb. 27	[illegible]	[illegible]	[illegible]	[illegible]

Alphabetical list of inventions for January and February—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drfs.	Official Gazette. Vol.	Official Gazette. Page.
Guide-bar frame	G. Wideman	809,549	Jan. 9	1481	200	120	223
Guy for ropes and the like	G. W. Seebach	812,457	Feb. 27	3573	848	120	2415
Gyro-pilot	S. F. McGown	809,973	Jan. 16	2720	268	120	894
Gun. Article of clothing	B. A. Lowe	810,240	Jan. 16	2324	697	120	770
Gun-barrel. Carved	W. Brendlent	810,154	Jan. 16	2147	698	120	770
Gun. Air-	A. H. Boyer	809,649	Jan. 9	2204	424	120	891
Gun. Air-	D. F. Fobley	808,889	Jan. 2	109	25	120	25
Gun attachment	A. T. Wight	809,020	Jan. 2	915	122	120	209
Gun balancing mechanism	J. F. Meigs, H. G. Jakobeson, and F. A. Sullivan.	810,033	Jan. 23	4194	388	120	1057
Gun-barrel for pistols, rifles, and ordnance	P. E. Kent	813,140	Feb. 6	1302	204	120	1784
Gun barrel-locking device. Breakdown-	A. H. Fox	810,046	Jan. 16	2263	597	120	719
Gun-barrels or the cradles of portable guns in the traveling position. Device for securing the	O. Lauber and K. Thiele	809,819	Jan. 9	2416	302	120	844
Gun-bearing	J. J. Bayne	811,540	Feb. 6	12	2-4	120	1467
Gun-carriage	S. N. McClean	813,106	Feb. 20	3166	892	120	2267
Gun-cleaning device	J. D. Coleman	810,913	Jan. 30	4088	861	120	1179
Gun. Electric	S. T. Foster, Jr	811,913	Feb. 6	731	180	120	1630
Gun elevating and sighting attachment	O. Lauber and F. Stock	809,818	Jan. 9	2414	301	120	844
Gun-elevating mechanism and sighting device	O. Lauber and F. Stock	812,979	Feb. 27	4503	1082-3	120	2295
Gun firing mechanism	J. F. Meigs and H. G. Jakobeson	812,431	Feb. 13	1843	406	120	1941
Gun firing mechanism	J. F. Meigs and H. G. Jakobeson	812,432	Feb. 13	1847	406-4	120	1942
Gun. Hammerless drop-down	C. Lobee	810,102	Jan. 16	3124	645-7	120	767
Gun-mount	J. F. Meigs and S. A. S. Hammar	810,030	Jan. 23	4192	386-7	120	1057
Gun-mount	J. F. Meigs and S. A. S. Hammar	810,031	Jan. 23	4193	387	120	1057
Gun. Recoil-	O. Lauber	809,821	Jan. 9	2419	303	120	895
Gun. Salute-	W. D. Ryan	809,782	Jan. 9	2297	476	120	837
Gun-shield	R. A. Hadfield and A. G. M. Jack	811,715	Feb. 6	342	75	120	1502
Gun-sight	J. Klingenberg	810,156	Jan. 16	3115	643	120	765
Gun-sight	W. Braithwaite	810,256	Jan. 16	3334	692	120	810
Gun-sight	G. L. Black	810,702	Jan. 23	4265	894	120	1053
Gun-sight	G. L. Black	810,703	Jan. 23	4266	895	120	1053
Gun-sight	L. Hillabrandt	810,761	Jan. 23	4369	907	120	1076
Gun-sight	H. B. Andrus	811,267	Jan. 30	5401	1127	120	1332
Gun sighting attachment	R. P. Stout and F. G. Hughes	810,381	Jan. 23	4051	833-4	120	1005
Guns. Firing mechanism for breech-loading	G. Gerdom	808,107	Jan. 2	974	201	120	215
Guns from cover. Sighting	W. Youlten	813,322	Feb. 27	4817	1002-3	120	2360
Guns in turrets, &c. Apparatus for loading	C. P. E. Schneider	811,767	Feb. 6	496	107-12	120	1508
Guns. Means for securing shields to portable	O. Lauber	809,820	Jan. 9	2418	302	120	895
Guns. Recoil-brake for automatic	J. M. Browning	812,289	Feb. 13	1648	362	120	1901
Guns. Single-trigger mechanism for	G. B. Osterhout	813,513	Feb. 27	3995	870	120	2302
Guns. Single-trigger mechanism for double-barrel	C. F. and D. M. Lefever	810,371	Jan. 23	4284	954	120	1122
Hackwaving-machine	J. Hampton, Sr	810,749	Jan. 23	4340	952	120	1071
Hair. Apparatus for promoting the growth of	N. W. Dible	810,320	Jan. 9	1508	305	120	307
Hair-drier	F. S. Emmons	808,646	Jan. 2	48	10	120	13
Hair-pin	C. E. Foresight	811,528	Feb. 6	197	42	120	1526
Hair-pin	J. M. Hartley	812,741	Feb. 13	2445	536	120	2008
Hair-pin	L. H. Flory	813,787	Feb. 27	4520	998	120	2316
Hair-pins. Mold for the manufacturing of	T. Roos	808,949	Jan. 2	947	141	120	143
Halter	M. M. Stokes	813,088	Feb. 20	3088	676	120	2260
Hame	J. A. Alexander	810,382	Jan. 23	3827	747	120	959
Hame	H. N. Kempton	812,159	Feb. 6	1201	264	120	1734
Hame	W. H. Hill	813,284	Feb. 20	3338	780	120	2344
Hame and trace connector	F. F. Hodges	808,849	Jan. 2	421	92	120	98
Hame fastener	J. Stage	812,488	Feb. 13	1588	418	120	1963
Hammer and spike-puller. Claw-	G. G. Greene	812,682	Feb. 13	2377	626	120	2038
Hammer. Tack-	C. F. Filer	812,983	Feb. 20	3038	645	120	2213
Hammer for forging leaf metal	E. S. Brett	811,788	Jan. 30	5350	1167-8	120	1573
Hammer for forging tapered work. Power-	H. E. Graban	814,088	Feb. 27	4961	1086	120	2705
Hammer. Forging-	W. E. Sheehy	811,589	Feb. 6	289	68	120	1549
Hammer. Power-	R. A. Norting	813,169	Feb. 20	3178	694-5	120	2269
Hammer. Power-	M. T. Weston	809,969	Jan. 9	1489	300	120	880
Hammer. Power-	A. Bragg	810,095	Jan. 30	4676	975	120	1174
Hammer-handle	H. L. Hohlfeld	810,953	Jan. 30	4770	993	120	1192
Hammer-handle	H. L. Hohlfeld	811,889	Feb. 6	777	189	120	1627
Hammer. Pneumatic	G. J. Nyssen	811,169	Jan. 30	5169	1088	120	1328
Hammer. Riveting	M. N. Werts	813,327	Feb. 13	1763	388	120	1955
Hand. Artificial	A. Gregan	808,797	Jan. 9	2283	469-5	120	886
Hand-bag handle.	Flexible handle.						
Hand-bag handle.	Flexible handle.						
Hand-bag handle.	Rod-bend shifter han- dle.						
Hand-bag handle.	Tool-handle.						
Hand-bag.	Lidless bag.						
Hand-bag.	Slipper and flapper bag-						
Hand-bag.	Spring-slot-screen bag-						
Hand-bag.	Tie-fastener.						
Hand-bag hanger.	Type-bar hanger.						
Hand-cart	W. E. Nicherson	813,443	Feb. 13	1885	410-11	120	1946
Hand-cart	G. E. Bennett	813,513	Feb. 20	3281	812	120	2341
Hand-cart	J. J. Crandon	813,553	Feb. 27	4383	1	120	2317
Hand-cart	T. [illegible]	[illegible]	Feb. 6	[illegible]	[illegible]	120	[illegible]
Hand-cart	[illegible]	[illegible]	Jan. 9	[illegible]	[illegible]	[illegible]	[illegible]
Hand-cart	[illegible]	[illegible]	Jan. 9	[illegible]	[illegible]	[illegible]	[illegible]
Hand-cart	[illegible]	[illegible]	Jan. 9	[illegible]	[illegible]	[illegible]	[illegible]
Hand-cart	J. [illegible]	[illegible]	Jan. 16	[illegible]	[illegible]	[illegible]	[illegible]
Hand-cart	W. [illegible]	[illegible]	Jan. 23	[illegible]	[illegible]	[illegible]	[illegible]
Hand-cart	G. [illegible]	[illegible]	Jan. 30	[illegible]	[illegible]	[illegible]	[illegible]
Hand-cart	M. [illegible]	[illegible]	Jan. 30	[illegible]	[illegible]	[illegible]	[illegible]
Hand-cart	A. C. [illegible]	[illegible]	Jan. 30	[illegible]	[illegible]	[illegible]	[illegible]

Alphabetical list of inventions for January and February—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drfs.	Official Gazette. Vol.	Official Gazette. Page.
Harrow	W. L. Oran	811,575	Feb. 6	53	15	120	1502
Harrow	W. H. Bond	813,282	Feb. 27	4589	1083	120	2347
Harrow-tooth	J. M. Ulah	811,783	Feb. 6	684	82	120	1574
Harvester and husker. Corn	T. Gledish	812,738	Feb. 13	2438	524-5	120	2009
Harvester. Bean-	C. Rushle	808,761	Jan. 9	2288	472-5	120	887
Harvester. Beet-	C. L. Jolly	809,694	Jan. 9	2197	455	120	845
Harvester-binders. Shocking attachment for	J. Calder	810,139	Jan. 16	3170	657-9	120	776
Harvester. Corn-	D. E. Anthony	810,699	Jan. 23	4048	879-80	120	1049
Harvester. Corn-	J. F. Lemper	813,218	Feb. 13	1450	338	120	1783
Harvester. Corn-	D. T. Lowe	812,574	Feb. 13	2186	482-3	120	2023
Harvester platform-adjusting means. Seed-	T. J. Campbell	812,240	Feb. 20	3033	630-1	120	2218
Harvester-reel	J. Pearce	809,316	Jan. 2	1170	243	120	1217
Harvester. Seed-	T. J. Campbell	811,694	Feb. 6	317	69-9	120	1510
Hasp-fastener	J. H. Lawrence	812,348	Feb. 13	1968	370	120	1939
Hat	G. D. Lorsch	812,680	Feb. 13	2380	492	120	2037
Hat and coat rack	A. W. Good	811,711	Feb. 6	538	78	120	1561
Hat. Bathing-	F. E. Herndon	809,947	Jan. 16	2800	534	120	874
Hat-crown protector	M. Olldort	813,819	Feb. 20	3304	809	120	2328
Hat-fastener	J. C. Morrison	808,674	Jan. 2	99	28	120	24
Hat-fastening device	B. Leeser	813,903	Feb. 27	4785	1089	120	2688
Hat. Lady's automobile-	E. Duplessis	811,063	Jan. 30	4880	1004	120	1257
Hat-sizing machine	H. A. Saks	811,178	Jan. 30	5334	1082	120	1308
Hat-tip-rubbing machine	W. H. Lyons	813,666	Feb. 27	4270	938-9	120	2288
Hatband-clasp	W. H. Lum	811,309	Jan. 30	5479	1142	120	1349
Hatchet. Shingling-	E. A. Burt and H. Harris	811,138	Jan. 30	5096	1068	120	1266
Hatchet. Shingling-	R. B. Allison	810,897	Jan. 23	4076	849	120	1019
Hatchway cover. Ship's-	W. V. Brown	813,408	Feb. 13	1799	394	120	1951
Haulage system	E. Edge	810,126	Jan. 16	3168	656-7	120	776
Hay and manure gatherer and loader	J. Peterson	810,731	Jan. 23	4317	897	120	1045
Hay-carrier	P. A. Myers	808,678	Jan. 2	106	24-5	120	25
Hay-carrier	R. Miller	810,492	Jan. 23	3879	795-7	120	940
Hay-elevator	D. E. Rowland and P. Bacher	811,572	Feb. 6	74	15	120	1501
Hay elevator and conveyer	A. Maliquist and O. A. Westerson	808,964	Jan. 16	2761	585-6	120	889
Hay-fork	A. Anderson and W. E. Palmer	812,060	Feb. 6	1055	230	120	1704
Hay-fork. Tilting	H. O. Sparks	811,398	Jan. 30	4389	1126	120	1332
Hay-loader	S. M. Wilmot	810,925	Jan. 30	4949	1020	120	1218
Hay-loader	J. W. Latimer	809,998	Jan. 9	2008	416-18	120	872
Hay-loader	F. A. Johnston	812,313	Feb. 13	1414	307-8	120	1942
Hay-loader	S. V. Ptice	812,783	Feb. 13	2543	550	120	2033
Hay-net	M. H. Allwardt	813,581	Feb. 27	4126	906	120	2332
Hay-press	T. R. Hackworth	812,262	Feb. 13	1483	328-7	120	1895
Hay-press	A. Lorens	810,275	Jan. 16	3275	680	120	830
Hay-press head-block	E. E. Drake	812,013	Feb. 20	2961	636	120	2235
Hay-press power	W. S. Bryant	813,409	Feb. 27	3781	830	120	2453
Hay-racks or the like from or to their running-gear. Device for removing or replacing	G. P. Finch	808,633	Jan. 2	27	6	120	8
Hay rake and loader. Side-delivery	M. Rew	808,913	Jan. 2	580	126	120	127
Hay-rake attachment	J. H. Sutherland	811,745	Feb. 6	390	85	120	1571
Head-block	H. C. Lindsly	812,827	Feb. 20	2745	604	120	2175
Head-coupling. Separable	W. Prellwitz	808,665	Jan. 2	85	19	120	21
Header connection	J. P. Sneddon	810,471	Jan. 23	4210	371	120	1042
Heading-machine	E. C. Meyer	812,248	Feb. 20	3049	796	120	2220
Headlight-cover	H. M. Davenport	809,529	Jan. 9	1944	381-3	120	868
Headlights of locomotives. Operating	E. A. Edwards	812,889	Feb. 20	2981	644	120	2215
Headstone and grave-marker	W. H. Donaldson	812,682	Feb. 13	1376	329	120	1787
Headwear	A. H. Howard	809,516	Jan. 9	2049	424	120	879
Heat-cartridge and protective apparatus. Self-soldering	F. and A. Taylor	813,467	Feb. 27	3801	831	120	2340
Heat-controlling apparatus	F. B. Cook	812,989	Feb. 20	2917	643	120	2211
Heat-non-conducting material	G. Clements and J. M. Hostler	811,468	Jan. 30	5794	1211	120	1413
Heat-storing compound	G. H. Miller and E. Jarek	810,243	Jan. 16	3513	734	120	889
Heater:	F. O. Spieske	811,730	Feb. 6	388		120	1574
See Electric heater. Electrical heater. Feed-water heater. Iron-heater. Liquid-heater. Steam-heater. Tank-heater. Tire-heater. Water-heater.							
Heater	J. L. Klemme	809,807	Jan. 9	1891	338	120	858
Heater	J. Silverberg	809,888	Jan. 9	1781	320	120	858
Heater	A. W. Banks	810,027	Jan. 23	4186	864	120	1057
Heater	W. H. and W. G. Calhoun	811,189	Jan. 30	5236	1051	120	1308
Heater	W. H. Brown	811,223	Jan. 30	5258	1060	120	1308
Heater	W. H. Ramsley and W. E. Lamerton	811,338	Jan. 30	5322	1076	120	1332
Heater	A. O'Hare and C. B. Weston	812,889	Feb. 20	2988	650	120	2222
Heater and folding furniture. Combined	W. C. Jaques	812,988	Feb. 20	3028	658	120	2222
Heating and illuminating device. Combined	S. S. St. Hoor	811,992	Feb. 20	2788	618	120	2222
Heating apparatus	W. S. Washburn	809,184	Jan. 2	1	1	120	1
Heating apparatus	O. S. McCurdy	809,187	Jan. 2	1	817-18	120	1
Heating apparatus. Hot-water	W. M. Bonner and H. Walton	809,188	Jan. 2	1	1	120	1
Heating by steam	F. A. Gorton	811,530	Feb. 6	1	1	120	1
Heating system. Electrical	A. D. Norton	811,731	Feb. 6	1	1	120	1
Heating system. Hot-air	W. H. Baker	811,732	Feb. 6	1	1	120	1
Heating system. Hot-water	W. J. Keith	811,733	Feb. 6	1	1	120	1
Heating system. Low-pressure	A. [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Heel-compressing machine	F. [illegible] and J. Nicholls	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Heel-nailing machine for operating for wire	F. [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Heel-nailing machine	H. [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Heel-nailing machine	W. W. [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Heels and soles. Machine for finishing and working	W. H. [illegible] and J. F. Leary	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Helm. Treating	G. W. [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Hinge	F. B. Hinkens	810,144	Jan. 16	3183	660	120	777
Hinge	J. [illegible]	[illegible]	Jan. 2	[illegible]	[illegible]	[illegible]	[illegible]

Alphabetical list of inventions for January and February—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
[illegible]	E. C. Hall	[illegible]	Jan. 16	[illegible]	608	120	737
[illegible]	M. L. Peter and W. J. Searist	811,740	Feb. 6	[illegible]	[illegible]	120	1570
[illegible]. Tool for marking and twisting	W. J. McIntyre	[illegible]	Feb. 20	[illegible]	790-1	120	[illegible]
[illegible]	T. F. Saling	[illegible]	Jan. 2	[illegible]	222	120	225
[illegible] for step-ladders	C. Tuttenborn	[illegible]	Feb. 27	[illegible]	[illegible]	120	2613
[illegible] Gate-	J. A. Jones	808,757	Jan. 2	[illegible]	58	120	62
[illegible] Wire-	C. D. Reese and F. T. Austin	809,124	Jan. 2	1020	211	120	224
[illegible] device	G. W. Hazlewood and H. C. Robinson	[illegible]	Feb. 20	[illegible]	[illegible]	120	[illegible]
[illegible]	W. H. Luquire	[illegible]	Jan. 2	781	162	120	165
[illegible]	A. Auchly	[illegible]	Feb. 13	1771	387-8	120	1927
[illegible]	E. Y. Moore	811,077	Jan. 30	[illegible]	1044-5	120	1347
[illegible] Hydraulic	U. Harvey	808,655	Jan. 2	60	15	120	17
[illegible] or elevator	C. A. Juhl	809,086	Jan. 2	[illegible]	186	120	192
[illegible]. Automatic holdfast for electric-	A. Lambert	808,762	Jan. 2	276	60	120	63
[illegible] and conveying apparatus	J. Hayward	811,144	Jan. 30	5150	1077	120	1277
[illegible] and conveying apparatus	A. E. Norris	812,[illegible]	Feb. 27	[illegible]	943	120	[illegible]
[illegible] and conveying mechanism	C. C. Dolan	812,[illegible]	Feb. 20	[illegible]	[illegible]-10	120	[illegible]
[illegible] apparatus	S. L. G. Knox and W. Ferris	808,900	Jan. 2	736	159	120	162
[illegible] apparatus	C. W. Tribken	810,445	Jan. 23	3767	776	120	941
[illegible] apparatus. Steam	G. W. Bollman	812,224	Feb. 13	1642	361-2	120	1900
[illegible] support	L. Greenky	810,274	Jan. 16	3374	690	120	820
[illegible]	W. M. Brown	808,632	Jan. 2	22	6	120	8
[illegible] safety device	W. Cooper	810,150	Jan. 16	3152	659-60	120	780
[illegible] safety device	J. M. Rohlfing and P. D. Horton	813,451	Feb. 27	3865	847	120	2473
[illegible]	L. A. King and C. Ploss	812,047	Feb. 20	3041	[illegible]	120	[illegible]
[illegible]. Apparatus for forming serpentine	K. Park	808,943	Jan. 2	[illegible]	138	120	139
[illegible]	F. E. Hatch	811,718	Feb. 6	346	......	120	1563
[illegible]	L. J. Hronish	[illegible]	Feb. 20	3645	781	120	2846
Hook:							
See Anchor-hook. Chain-hook. Coat and hat hook. Curtain-hook. Fastening-hook. Grab-hook. Log-hook. Meat-hook. Merchandise-hook. Printer's register-hook. Safety-hook. Suspender-hook. Wardrobe-hook. Whiffletree-hook.							
Hook	L. Jones	809,065	Jan. 2	898	184	120	193
Hook	W. S. Ward	811,187	Jan. 30	5230	1096	120	1297
Hook and eye	C. Langguth	810,775	Jan. 23	4404	913	120	1084
Hook eye. Garment-	T. J. Browning	812,140	Feb. 20	[illegible]	715	120	[illegible]
Hook-setting machine	P. R. Glass	811,840	Feb. 6	580	127	120	1608
Hook-setting machine	P. R. Glass	811,841	Feb. 6	582	127	120	1608
Hoop:							
See Metallic hoop.							
[illegible]	F. D. Weller	811,014	Jan. 30	4904	1082	120	[illegible]
[illegible] blanket	P. Andersen	808,803	Jan. 2	341	78	120	80
[illegible] blanket	A. H. Kinder	812,796	Feb. 13	2548	560	120	2084
[illegible] blanket pin	M. L. Jacoby	809,691	Jan. 9	2198	454	120	514
[illegible]	J. E. Lally	810,267	Jan. 16	[illegible]	703	120	826
[illegible]	J. G. Mole	812,282	Feb. 13	[illegible]	342-3	120	[illegible]
[illegible] power-calculating device	E. M. Scoville	809,019	Jan. 2	[illegible]	160	120	172
[illegible] stand support	J. B. Williams and E. C. Brown	812,780	Feb. 27	4457	[illegible]	120	[illegible]
[illegible]	J. T. Bell	[illegible]	Jan. 2	14	2	120	6
[illegible]	J. Singleton	809,144	Jan. 2	[illegible]	213-14	120	[illegible]
[illegible]	C. A. Campbell and J. Reagan	809,553	Jan. 9	2011	396	120	[illegible]
[illegible]	J. Howard	[illegible]	Jan. 9	[illegible]	[illegible]	120	513
[illegible]	A. L. Dunn	[illegible]	Jan. 23	3678	757	120	921
[illegible]	M. H. Young	[illegible]	Jan. 30	[illegible]	1161	120	[illegible]
[illegible]	P. J. Hoffmann	[illegible]	Jan. 30	[illegible]	1181	120	[illegible]
[illegible]	F. N. Cline	811,619	Feb. 6	[illegible]	37	120	[illegible]
[illegible] attachment	J. H. Stephensmeier	[illegible]	Feb. 27	4152	[illegible]	120	[illegible]
[illegible] attachment or fixture	J. F. Gegner	809,105	Jan. 2	972	201	120	215
[illegible]	J. W. and N. S. Townsend	[illegible]	Feb. 6	124	27	120	1512
[illegible]	E. F. Atherton	[illegible]	Jan. 2	[illegible]	120	120	119
[illegible]	N. Hogg	[illegible]	Jan. 23	[illegible]	[illegible]	120	1074
[illegible]	W. B. Cole and F. H. Thornley	[illegible]	Jan. 23	[illegible]	941	120	1108
[illegible]	L. A. Weyburn	[illegible]	Feb. 20	[illegible]	[illegible]	120	2207
[illegible]	W. A. Comins and J. Connor	812,777	Feb. 27	[illegible]	[illegible]	120	2612
[illegible] and fastener	W. O. Long	[illegible]	Feb. 27	[illegible]	[illegible]	120	[illegible]
[illegible]	F. [illegible]	[illegible]	Jan. 23	[illegible]	944	120	1112
[illegible]	A. Fischer	[illegible]	Jan. 2	404	[illegible]	120	[illegible]
[illegible]	A. [illegible]	[illegible]	Jan. 2	611	[illegible]	120	[illegible]
[illegible]	C. Arbuthnot	812,136	Feb. 20	[illegible]	712-14	120	[illegible]
[illegible]	W. [illegible]	[illegible]	Jan. 16	[illegible]	618	120	787
[illegible]	L. A. Weston	[illegible]	Feb. 13	[illegible]	466	120	2015
[illegible]	W. O. Walker	811,343	Jan. 30	[illegible]	1153	120	1284
[illegible]	S. M. Rhoads	[illegible]	Jan. 9	[illegible]	474	120	[illegible]
[illegible]	R. Toole and J. J. McDonnell	[illegible]	Jan. 9	[illegible]	[illegible]	120	540
[illegible]	M. L. and J. S. Scanlon and A. A. Arnold	810,354	Jan. 16	3545	779	120	837
[illegible]	F. I. W. and F. I. De Forest	[illegible]	Feb. 20	[illegible]	[illegible]	120	[illegible]
[illegible]	S. W. Gooch and W. C. Leasure	[illegible]	Feb. 27	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	J. A. [illegible]	[illegible]	Jan. 16	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	W. D. Allen and G. F. Rowes	[illegible]	Feb. 6	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	J. D. [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]. Apparatus	[illegible]	[illegible]	Feb. 13	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	Feb. 6	[illegible]	146-8	120	[illegible]
[illegible]	[illegible]	[illegible]	Feb. 6	[illegible]	[illegible]	120	[illegible]
[illegible]. Compound	M. [illegible]	[illegible]	Jan. 9	[illegible]	[illegible]	120	[illegible]

Alphabetical list of inventions for January and February—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Hot-water-circulating apparatus	A. B. Reck	809,013	Jan. 2	775	167	120	171
Household-cleaner	J. Wolff	813,320	Feb. 20	[illegible]	787	120	[illegible]
Hub	J. C. Hawkins	810,754	Jan. 23	[illegible]	905	120	1074
Hub	L. S. Lachman	811,308	Jan. 30	5460	1149	120	1347
Hub and spindle	J. Boatright	811,541	Feb. 6	14	4	120	1487
Hub and spindle. Vehicle	S. Sterling	812,775	Feb. 13	[illegible]	551	120	2074
Hub for vehicles. Spring-	W. M. Lefort	812,143	Feb. 6	1230	267	120	1741
Hub. Two-speed	C. W. Svenson	813,464	Feb. 27	[illegible]	853	120	2479
Hub. Two-speed	C. W. Svenson	813,465	Feb. 27	[illegible]	854	120	2479
Hub. Wheel-	C. C. Brabant and W. C. Beaufore	809,666	Jan. 9	2142	444	120	501
Hub. Wheel-	S. P. Mills	813,650	Feb. 27	4279	941	120	[illegible]
Hub-wrench	M. F. Edwards	812,334	Feb. 13	[illegible]	365	120	1904
Hydrant	V. H. Mills	808,859	Jan. 2	453	100	120	101
Hydrant	E. Cronstedt	812,407	Feb. 13	1806	396	120	[illegible]
Hydraulic intensifier. Steam	T. E. Holmes	813,209	Feb. 20	3374	743-4	120	[illegible]
Hydraulic lubricator	R. Thompson and J. A. Sharman	810,990	Jan. 30	4875	1015	120	1219
Hydrocarbon-burner	J. R. Boone	810,253	Jan. 16	3326	690-1	120	[illegible]
Hydrocarbon-burner	F. J. Woodhead	812,712	Feb. 13	2368	524	120	2049
Hydrocarbon-motor	A. A. Low	812,860	Feb. 20	[illegible]	591	120	[illegible]
Hydrometer test-jar	F. Storm	810,361	Jan. 16	[illegible]	732	120	[illegible]
Hygrometer. Automatic indicating and regulating	S. W. Cramer	809,672	Jan. 9	2161	447	120	507
Hygrometer for regulating humidifying and heating systems	S. W. Cramer	811,383	Jan. 30	5617	1175-6	120	1379
Ice-bags, helmets, and the like. Stopper for	C. W. Meinecke	810,784	Jan. 23	4426	918	120	[illegible]
Ice-box	P. H. Wolfram	810,015	Jan. 16	2819	583	120	703
Ice-can filler	G. S. Bowling	808,809	Jan. 2	369	80	120	82
Ice-cream machine	J. J. Glauser	813,375	Feb. 20	3705	814	120	[illegible]
Ice-cream mold and dipper	A. E. Bennett	809,663	Jan. 9	2138	443	120	500
Ice-creeper	J. M. Gray	810,464	Jan. 23	[illegible]	790	120	961
Ice-crusher	O. Harsch	812,149	Feb. 20	[illegible]	718	120	[illegible]
Ice-crusher. Portable	J. A. Rickabaugh	812,453	Feb. 13	1885	415	120	[illegible]
Ice-machine	R. S. Cates	808,898	Jan. 2	551	122	120	121
Icing cake and other pastry. Machine for	C. W Carter	813,857	Feb. 27	4667	1032-3	120	[illegible]
Igniter. Electric	H. N. Motsinger	810,963	Jan. 30	4811	1000	120	1205
Illuminant	J. Lewy	809,121	Jan. 2	906	......	120	219
Incandescent mantles. Apparatus for firing	H. Heidorn	812,743	Feb. 13	2447	537	120	2063
Incubator-alarm	W. S. Freeman	810,931	Jan. 30	4741	989	120	1190
Index. Book-	L. R. Smith	813,748	Feb. 27	4437	979	120	[illegible]
Index. Cabinet-	C. H. Payne	809,741	Jan. 9	2280	472	120	534
Index-card	J. S. Duncan and O. N. Tevander	808,909	Jan. 2	574	127	120	126
Index drawer. Card-	W. Lumley	809,314	Jan. 9	1423	298	120	347
Index. Station-meter	D. McDonald and L. M. Scofield	809,127	Jan. 2	1003	207	120	221
Indicating and recording device	W. H. Bristol	813,689	Feb. 27	4332	953	120	2576
Indicator:							
See Car-indicator. Cash-indicator. Lathe-indicator. Letter-box time-indicator. Liquid-indicator. Oil-tank indicator. Speed-indicator. Station-indicator. Street and station indicator. Tank-indicator.							
Indicator	P. S. Buckminster	811,542	Feb. 6	15	4	120	1488
Indicator	J. P. Murphy	812,354	Feb. 13	1691	372	120	1911
Indigo. Chlorinating	A. Schmidt and E. Kronholz	812,506	Feb. 13	2185	......	120	2011
Induction-apparatus contact device	R. O. Hood	809,262	Jan. 2	1305	286	120	287
Induction-coil	J. Splitdorf	812,607	Feb. 13	2190	479	120	2013
Induction-coil vibrator	R. Varley	809,235	Jan. 2	1220	264	120	270
Induction-motor	A. L. Cushman. (Reissue)	12,431	Jan. 2	[illegible]	273	120	[illegible]
Ingots. Producing compound	M. Weiss	809,871	Jan. 9	2511	521	120	[illegible]
Inhaler	J. Barnes	809,662	Jan. 9	2137	442	120	500
Inhaler	E. C. Jones	810,769	Jan. 23	[illegible]	911	120	1081
Inhaler	C. S. Birt	812,344	Feb. 20	[illegible]	[illegible]	120	[illegible]
Inhaler and exhaler	J. L. Hill	813,426	Feb. 27	3815	[illegible]	120	2461
Initiating apparatus	L. D. Cook	811,702	Feb. 6	225	71	120	[illegible]
Injector	L. Rhodes	812,232	Feb. 13	1456	319	120	[illegible]
Injector-burner	L. K. Leahy	811,935	Feb. 6	801	176	120	[illegible]
Injector connection. Locomotive-boiler	J. McKeown	810,877	Jan. 23	[illegible]	967	120	1128
Ink-well	S. G. Baldwin	[illegible]	Jan. 9	2547	[illegible]	120	[illegible]
Inking mechanism for presses	C. Williams	813,125	Feb. 20	3217	704-5	120	[illegible]
Inkstand	E. J. Osgood	811,420	Jan. 30	5705	1194	120	[illegible]
Inkstand	F. M. Ashley	811,536	Feb. 6	5	1-2	120	[illegible]
Inner soles and the like. Making	A. Thoma	812,363	Feb. 13	1755	[illegible]	120	[illegible]
Inner soles. Reinforcing fabric for	A. Thoma	812,364	Feb. 13	1758	[illegible]	120	[illegible]
Insect-catcher	J. Samuels	811,875	Feb. 6	[illegible]	142	120	[illegible]
Insole	A. R. Tirrell	811,360	Jan. 30	[illegible]	1124	120	[illegible]
Instruction. Method of	H. R. Fuller	812,197	Feb. 13	[illegible]	301	120	1842
Instruments. Self-playing mechanism for	F. W. Hedgeland	[illegible]	Jan. 9	[illegible]	[illegible]	120	457
Insulated rail-joint	M. W. Thomson	813,840	Feb. 27	[illegible]	[illegible]	120	[illegible]
Insulated rail-joint	B. G. Braine	[illegible]	Feb. 27	[illegible]	[illegible]	120	[illegible]
Insulated receptacle for panel and switch boards	W. C. Tregoning	[illegible]	Jan. 9	[illegible]	[illegible]	120	[illegible]
Insulating attachment for electric fixtures	A. A. Knudson	[illegible]	Feb. 13	[illegible]	[illegible]	120	[illegible]
Insulating material	C. C. Hall	811,778	Feb. 6	[illegible]	......	120	[illegible]
Insulating material. Composite	G. Kelly	811,227	Jan. 30	[illegible]	......	120	[illegible]
Insulating pipes. Flanged-joint casing for heat-	M. J. Loughman	[illegible]	Jan. 16	2715	[illegible]	[illegible]	[illegible]
Insulator	H. B. Crouse	[illegible]	Feb. 20	[illegible]	[illegible]	[illegible]	[illegible]
Insulator-clamp	W. G. Clark	810,818	Jan. 23	[illegible]	[illegible]	[illegible]	[illegible]
Insulator. Electric-light-fixture	L. McCarthy	[illegible]	Jan. 2	[illegible]	[illegible]	[illegible]	[illegible]
Internal-combustion engine	S. S. Williams	[illegible]	Jan. 2	[illegible]	[illegible]	[illegible]	[illegible]
Internal-combustion engine	T. Wright	[illegible]	Jan. 2	[illegible]	[illegible]	[illegible]	[illegible]
Internal-combustion engine	H. C. Holloway	[illegible]	Jan. 9	[illegible]	[illegible]	[illegible]	[illegible]
Internal-combustion engine	C. M. Steele	[illegible]	Feb. 20	[illegible]	[illegible]	[illegible]	[illegible]
Invalid-lift	O. B. Thompson	[illegible]	Jan. 2	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]-machine	J. Q. Wimer	[illegible]	Feb. 20	2771	[illegible]	[illegible]	[illegible]
Iron:							
See Laundry-iron. Soldering-iron.							
Iron-bending machine. Cast-	B. S. Cowles	813,141	Feb. 20	[illegible]	715	120	[illegible]
Iron compounds. Making stable non-alcoholic	K. Dieterich	[illegible]	Jan. 2	[illegible]	......	120	[illegible]

Alphabetical list of inventions for January and February—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drfg.	Official Gazette. Vol.	Official Gazette. Page.
Iron-heater	M. G. Hendley	810,650	Jan. 23	4177	863	120	1034
Iron or steel. Manufacturing	E. Fleischer	809,291	Jan. 9	1389	278	120	337
Iron sponge. Manufacturing	G. Grondal	812,174	Feb. 6	1307	285–6	120	1756
Ironing-board	D. Messer	810,196	Jan. 16	3129	646	120	768
Ironing-board. Knockdown	E. E. Tarr	813,257	Feb. 20	3462	763	120	2228
Ironing board. Sleeve	J. F. McArthur	810,964	Jan. 30	4614	1000	120	1206
Jack:							
See Lifting-jack. Pump-jack. Pressure and moving jack. Rail-jack. Railway-track jack.							
Jack-cord distributer	B. Salzmann	812,236	Feb. 13	1461	320	120	1858
Jack for lifting and transporting motor-cars, &c	H. Adams	811,116	Jan. 30	5077	1061	120	1263
Jack for steam-dredges, &c	J. G. Fairbanks and G. L. Sauer	811,709	Feb. 6	334	73	120	1560
Jack-spools, warp-beams, or the like. Head for	S. T. Packard	810,506	Jan. 23	3895	800	120	973
Jar:							
See Hydrometer test-jar.							
Jar-closure	E. C. Hill	810,760	Jan. 23	4368	907	120	1076
Jar-closure	F. G. Burley	813,276	Feb. 20	3493	770	120	2335
Jar-cover	F. Canfield	810,106	Jan. 16	3013	628	120	747
Jar-cover. Tool for operating upon	W. C. Smith	810,984	Jan. 30	4848	1009	120	1213
Jar-holder	A. Fox	813,789	Feb. 27	4522	906	120	2617
Jars and other vessels. Closure device for glass	W. B. Fenn	810,736	Jan. 23	4323	898	120	1066
Jars, glasses, &c. Cover for	A. W. Ziegler	810,834	Jan. 23	4505	938	120	1106
Jewelry-catch	R. Kollmar	808,760	Jan. 2	273	59	120	62
Joint:							
See Bracelet-joint. Rail-joint. Insulated rail-joint. Railway-joint. Pipe-joint. Railway-rail joint. Pipe-section coupling-joint.							
Joint connection. Bottless	J. E. Beaver	811,473	Jan. 30	5766	1207	120	1409
Joint for sheet metal and the like	E. P. Lehmann	808,766	Jan. 2	281	61	120	64
Journal-bearing	A. Lipschutz	809,708	Jan. 9	2223	461	120	521
Journal-box dust-guard	E. Posson	812,523	Feb. 13	2024	443–4	120	1980
Journal-box lid	A. Lipschutz	813,504	Feb. 27	3972	871–2	120	2408
Journal-box oil-collar	J. F. Hill	811,637	Feb. 6	207	44	120	1530
Journal-lubricator	A. Berry	812,015	Feb. 20	2783	612	120	2182
Jumping and vaulting apparatus	O. M. Lissak	811,417	Jan. 30	5681	1190	120	1301
Kadonas. Making	H. S. Blackmore	809,900	Jan. 9	2561	530	120	595
Kettle	A. T. Keene	813,899	Feb. 27	4750	1049	120	2666
Kettle and lid securing and operating means therefor	C. S. Pierce	809,461	Jan. 9	1737	359	120	415
Kettle. Plaster	S. W. Womack	813,192	Feb. 20	3838	734	120	2208
Kettle. Warming	H. Stange	810,229	Jan. 16	3278	679	120	799
Key:							
See Telegraph-key.							
Key-holder	R. H. Piper	810,081	Jan. 16	2966	619	120	737
Key-lock	A. N. Massie	812,663	Feb. 13	2294	469	120	2081
Key-ring	J. Calvo	811,693	Feb. 6	316	68	120	1566
Key-ring	A. R. See	812,458	Feb. 13	1890	416	120	1951
Keyboard-machine attachment	E. V. Beals	812,542	Feb. 13	2059	452–5	120	1987
Keyless lock. Combination	J. W. Wachter and B. H. Prendergast.	813,992	Feb. 27	4927	1090	120	2701
Kiln:							
See Cement-kiln. Updraft-kiln. Drying-kiln.							
Kiln	H. T. Epperson	812,029	Feb. 6	1008	220	120	1693
Kiln-door	N. R. Deppe	812,728	Feb. 13	2423	531	120	2057
Kilns. Preventing the formation of seaffolds in	T. C. King	810,059	Jan. 16	2936		120	720
Kinetoscope for advertising	W. D. Carter	813,880	Feb. 27	4680	1034	120	2651
Kite. Bird-	P. Weles	810,690	Jan. 23	4240	878	120	1048
Kneading-tray	W. C. Black	810,101	Jan. 16	3006	626	120	746
Knife:							
See Auger-bit knife. Draw-knife. Cutting and reaming knife. Pocket-knife.							
Knife	R. Kny	812,009	Feb. 20	2972	655	120	2222
Knife-[illegible] machine	C. H. J. Dilg	812,142	Feb. 20	3254	715–16	120	2386
Knife, fork, can-opener, and saw. Combined	C. Hellmuth	812,424	Feb. 13	1834	402	120	1939
Knife-[illegible] machine	F. Frieg	812,489	Feb. 13	1952	430	120	1964
[illegible] machine	B. T. Steber	808,784	Jan. 2	320	71	120	73
[illegible] machine	B. T. Steber	810,578	Jan. 23	4044	892–3	120	1008
[illegible] machine	J. McNamee	810,794	Jan. 23	4445	922–3	120	1092
[illegible] machine	C. H. Whitcher	812,314	Feb. 13	1626	357	120	1808
[illegible] machine. Circular	H. Stoll, Jr	813,351	Feb. 20	3482	761	120	2325
[illegible] machine stop-motion	J. B. Parton and E. I. O'Neill	811,577	Feb. 6	84	17–18	120	1504
[illegible] machine stop-motion	E. Tompkins	808,284	Jan. 2	1228	264	120	270
[illegible] support	G. W. Ruth	813,240	Feb. 20	3430	756	120	2221
[illegible] Automatic	K. Booth	808,627	Jan. 2	15	4	120	6
[illegible]	J. H. Farrell	811,209	Jan. 30	5288	1106	120	1308
[illegible]	N. Warner and G. W. Jacobs	813,980	Feb. 27	4813	1062	120	2679
[illegible]	O. E. Thompson. (Reissue)	12,436	Jan. 16	2832	748–6	120	578
[illegible] and the like to bottles and other articles. Ma- [illegible] for applying	D. G. Brown	812,634	Feb. 13	2245	488	120	2022
[illegible]	B. W. Tucker	808,955	Jan. 2	665	143–5	120	145
[illegible]	D. W. Knisely	812,986	Feb. 20	2837	624–5	120	2193
[illegible]	W. H. Cling	813,949	Feb. 27	4844	1039	120	2664
[illegible]	M. Ries	811,572	Feb. 6	642	141	120	1621
[illegible] or studs. Machine for setting	F. R. Glass	811,898	Feb. 6	571	125–6	120	1606
[illegible] Machine for inserting	F. R. Glass	811,899	Feb. 6	567	126	120	1605
[illegible] or varnish	J. P. Ibart	811,883	Feb. 6	53		120	1499
[illegible] Combined stop-	R. C. Laynor	813,921	Feb. 27	4889	1085	120	2695
[illegible]	A. J. Alspeah	809,888	Jan. 16	2881	644	120	698
[illegible]	M. Potter	810,170	Jan. 16	3136	689	120	770
[illegible]	J. K. Hasker	809,857	Jan. 2	857	188	120	199
[illegible]	F. Van Alstine	813,620	Feb. 13	2220	494	120	2017
[illegible]	J. V. Collins	809,778	Jan. 9	2822	492	120	549
[illegible]	G. W. Bass	811,616	Feb. 6	169	36	120	1529

Alphabetical list of inventions for January and February—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drfg.	Official Gazette. Vol.	Official Gazette. Page.
Lamp bracket. Electric	G. C. Wright	810,244	Jan. 16	2904	685	120	804
Lamp-burner	W. M. Merchant	808,770	Jan. 2	268	64	120	68
Lamp-burner	D. Joyal	809,112	Jan. 2	983	208	120	217
Lamp-burner	M. O. Amundson	810,457	Jan. 23	3802	781	120	960
Lamp-burner	W. G. Rankin	813,172	Feb. 20	3306	727	120	2397
Lamp-burner	F. W. Dressel	813,302	Feb. 20	3357	738	120	2307
Lamp for burning oil, &c	G. Bentote	813,940	Feb. 27	4831	1066	120	2662
Lamp. Gas-	R. M. Dixon	813,487	Feb. 27	3939	865	120	2491
Lamp-guard	E. C. Dickinson	810,206	Jan. 16	3356	696	120	815
Lamp-guard	M. M. Wood	811,810	Feb. 6	519	116	120	1586
Lamp. Incandescent electric	H. C. Parker	812,872	Feb. 20	2703	606	120	2164
Lamp. Incandescent gas-	J. F. W. Jost	809,810	Jan. 9	2403	498	120	561
Lamp. Incandescent gas-	L. C. Fuller	811,080	Jan. 30	4939	1035	120	1238
Lamp. Inverted incandescent gas-	T. Steinicke	812,961	Feb. 20	2857	637	120	2205
Lamp. Kerosene-	J. Wilentz	812,249	Feb. 13	1490	325–6	120	1864
Lamp. Magnesium flash-	E. F. Harrison	813,148	Feb. 20	3295	717	120	2287
Lamp. Oil-	T. S. Tarling	813,331	Feb. 20	3623	794–5	120	2281
Lamp outfit. Portable electric-	A. Wilson	812,710	Feb. 13	2385	524	120	2040
Lamp. Pendent gas and other	F. A. Andrews	812,111	Feb. 6	1151	253	120	1732
Lamp regulator. Gas-	O. M. J. Olsen and W. Gates	811,084	Jan. 30	5016	1048	120	1240
Lamp remover, replacer, and cleaner. Incandescent-electric-	C. J. Rundberg	809,985	Jan. 16	2753	566	120	660
Lamp safety-shield. Miner's-	R. I. Jenkins	809,111	Jan. 2	981	208	120	217
Lamp. Signal-	J. Heinisch	813,700	Feb. 27	4354	958	120	2580
Lamp. Signal-	A. H. Handlan, Jr	813,985	Feb. 27	4724	1044	120	2661
Lamp socket. Incandescent-	N. Marshall	811,161	Jan. 30	5191	1084	120	1286
Lamp socket. Incandescent-	R. R. Miller	813,568	Feb. 27	4109	901	120	2529
Lamp socket. Incandescent-electric-	A. P. Seymour	811,253	Jan. 30	5375	1121	120	1237
Lamp sockets. Adapter for incandescent-	S. E. Doane	810,473	Jan. 23	3831	786	120	957
Lamp support. Incandescent-	E. R. Gill	811,837	Feb. 6	565	125	120	1605
Lamp. Vapor-	E. Seitz	810,226	Jan. 16	3271	678	120	797
Lamps and lanterns. Apparatus for supplying liquid fuel to burners of	T. C. Purdy	813,286	Feb. 20	3425	754	120	2230
Lamps. Apparatus for automatically lighting gas-	W. Kissel	809,814	Jan. 9	2409	499	120	562
Lamps, &c. Electric switch for street arc-	P. H. F. Spies	810,357	Jan. 16	3549	730	120	858
Lamps. Making incandescent	F. H. Blackburn	810,466	Jan. 23	3818	784	120	954
Lamps. Means for controlling mercury-vapor electric	P. H. Thomas	809,643	Jan. 9	2107	436	120	498
Lamps of motor road-vehicles. Mounting and automatically adjusting the	L. Girardot	812,201	Feb. 13	1395	303	120	1843
Lamps. Thermostatic switch for incandescent electric	J. V. A. Kimmey, Jr	809,700	Jan. 9	2207	457	120	517
Lamplighter. Electric	P. W. and A. A. Arduino	810,284	Jan. 23	3626	747	120	909
Land-clearing machine	C. H. McNally	809,523	Jan. 9	1851	384	120	440
Land-roller	J. H. Wolf	810,453	Jan. 23	3792	780	120	948
Land-roller	W. J. Dunham	811,909	Feb. 6	721	157	120	1637
Landside-wheel	C. D. Edwards	810,478	Jan. 23	3841	789	120	959
Lantern	A. R. Pritchard	809,462	Jan. 9	1730	399	120	416
Lantern	D. C. Kline	809,605	Jan. 9	1826	376	120	435
Lantern burner device. Tubular-	D. C. Kline	808,030	Jan. 2	607	133	120	134
Lantern-globe rack	C. F. Bowmaster	809,622	Jan. 9	1660	341	120	397
Lantern. Signal-	C. H. Dressel	813,781	Feb. 27	4511	996	120	2614
Lap-robe	L. S. Stroock	811,237	Jan. 30	5532	1154	120	1261
Last-thimble	E. S. Morton	813,812	Feb. 27	4562	1009	120	2625
Lasts. Heel-aligning means for	E. C. Wright	810,204	Jan. 23	4071	836–9	120	1009
Latch	A. Shepard	809,534	Jan. 9	1869	388	120	445
Latch	J. O. Steensland and W. Weaver	811,880	Feb. 6	667	146	120	1626
Latch	J. L. Greenwood	813,376	Feb. 20	3707	815	120	2370
Latch and lock. Sliding-door	G. C. Emmert	810,927	Jan. 30	4731	967–8	120	1188
Latch device	C. C. Shive	813,906	Feb. 27	4151	910	120	2537
Latch. Door-	E. H. Roy	812,092	Feb. 6	1115	248	120	1715
Latch. Gate-	G. Warner	809,544	Jan. 9	1886	392	120	449
Latch. Gate-	J. S. Drennan	809,606	Jan. 9	2031	421	120	478
Latch. Refrigerator-door	E. J. Wirfs	812,107	Feb. 6	1144	251	120	1722
Lathe attachment	M. C. Zange	809,353	Jan. 9	1497	302–3	120	365
Lathe attachment	G. H. Mong	809,717	Jan. 9	2288	495	120	524
Lathe-dog	T. C. Patterson	813,445	Feb. 27	3956	845	120	2471
Lathe follower-rest	W. Lodge and N. D. Chard	809,512	Jan. 9	1832	378–9	120	437
Lathe-indicator	G. E. Peterson	811,544	Jan. 30	5382	1118	120	1322
Lathe. Screw-making and metal-turning	H. P. Trueman and E. D. Cleghorn.	808,987	Jan. 2	537	116–18	120	117
Lathe work-rest	W. F. Parsons	808,676	Jan. 2	108	23	120	25
Lathes. Change-speed gearing for engine-	H. L. Flather	810,634	Jan. 23	4147	857–8	120	1027
Lathes. Knife-holder for veneer-	M. H. Norton	813,078	Feb. 6	1091	229	120	1711
Laundries and the like. Garment-marker for	D. C. Voss	808,788	Jan. 2	285	73	120	76
Laundry-iron. Electric	E. H. Richardson	809,830	Jan. 9	1861	387	120	442
Lavatory-fixture	A. P. Creque	812,832	Feb. 20	2824	574–5	120	2147
Lawn-edger	G. Vincent	813,530	Feb. 27	4044	886	120	2515
Lawn-trimmer	E. Pierce and E. Laux	810,944	Jan. 16	3514	735	120	851
Leaching apparatus. Potash	E. F. Barnhardt	813,076	Feb. 20	3113	663–3	120	2264
Leaching-tank	A. B. Mouck	808,675	Jan. 2	101	23	120	25
Lead compounds. Dry method of preparing	J. P. Neville	812,257	Feb. 13	1694	373	120	1911
Lead. Making hydrated oxid of	J. H. Bridge and C. Ellis	811,552	Feb. 6	26		120	1491
Leader and pipe. Tar-lined	F. Greenthaler	811,288	Jan. 30	5446	1136	120	1243
Leaf-flecing machine	H. S. and W. G. Jones	810,649	Jan. 23	3982	815–17	120	998
Leaf-holder for use in transferring entries	J. M. D. McGregor	808,138	Jan. 2	1007	228	120	232
Leaf-turner	G. Hubert	811,295	Jan. 30	5330	1113	120	1215
Leak-stop	A. T. Herriek	812,891	Feb. 27	4736	1047	120	2664
Leather-seasoning machine	W. H. Moore	808,718	Jan. 9	2249	466–8	120	524
Leather-staking-machine attachment	E. F. Fife	813,570	Feb. 27	4705	1041–2	120	2689
Leather-stretching clamp	C. B. Rathbun. (Reissue)	12,437	Feb. 20	2784	624	120	2220
Leather-working machine	F. J. Perkins	809,010	Jan. 9	703	162	120	189
Ledger	F. J. and C. B. Rosenberg	810,977	Jan. 30	4913	973	120	1042
Ledger. Loose-leaf	B. J. Frank	809,914	Jan. 9	2393	497	120	555
Ledger. Self-indexing loose-leaf	S. B. Kirtley. (Reissue)	12,443	Feb. 6	1216	267	120	1720
Lee	W. M. Anderson	813,194	Feb. 20	3941	778	120	2324
Legging	M. Rosenwasser	810,822	Jan. 30	4948	1020	120	1312

Alphabetical list of inventions for January and February—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drfs.	Official Gazette. Vol.	Official Gazette. Page.
Lens-cutting machine	W. W. Slade and H. F. Bower	813,459	Feb. 27	3876	849–50	120	2478
Lens-mounting for eyeglasses	J. R. Van Tassel	808,888	Jan. 2	531	119	120	113
Letter-box. Street	A. J. Arsenault	811,611	Feb. 6	150	33	120	1518
Letter-box time-indicator	J. C. Smith and J. S. Davis	812,662	Feb. 13	2347	514	120	2041
Levee	F. V. Wright	813,069	Feb. 20	3101	679	120	2262
Level	J. T. Rider	811,175	Jan. 30	5219	1091	120	1393
Level	T. Alexander	812,251	Feb. 13	1492	326	120	1885
Level	W. Potter	812,449	Feb. 13	1878	413	120	1949
Level	R. Leonhart	813,561	Feb. 27	4097	896	120	2529
Level. Grade-	D. W. Pelfrey and W. S. Biddle	811,739	Feb. 6	361	83	120	1570
Level. Spirit-	J. A. McCain	808,862	Jan. 2	459	101	120	102
Level. Spirit-	C. S. Brown and J. N. Clouse	809,275	Jan. 2	1230	270	120	288
Lever. Power-controlling	G. W. Lorimer	812,216	Feb. 13	1422	310	120	1850
Life-saving appliance	F. W. Ziegler	813,609	Feb. 27	4187	918	120	2545
Lift-door	W. E. S. Mackay	810,873	Jan. 23	4589	955	120	1123
Lift-plate	E. C. Cole	810,721	Jan. 23	4301	893	120	1061
Lift-separator. Automatic	S. W. Sinsheimer	809,022	Jan. 2	787	170	120	173
Lifter: *See* Block-lifter. Wagon-box and hay-rack lifter. Bottle-cap lifter.							
Lifting and separating wheel	A. Maguin	810,066	Jan. 16	2946	614	120	723
Lifting apparatus	J. Neubauer	812,356	Feb. 13	1693	372	120	1911
Lifting device	J. C. Wands	811,344	Jan. 30	5552	1158	120	1365
Lifting device	K. Kiefer	813,384	Feb. 20	3721	818	120	2382
Lifting-jack	J. J. Shannon	809,594	Jan. 9	1998	408	120	464
Lifting-jack	G. H. Gilman	810,482	Jan. 23	3845	790	120	961
Lifting-jack	S. S. Eveland	811,126	Jan. 30	5130	1074	120	1275
Lifting-jack	H. M. Marsh	811,731	Feb. 6	364	80	120	1567
Lifting-jack	W. H. Griffith	812,128	Feb. 6	1182	259	120	1720
Lifting-jack	H. M. Marsh	812,580	Feb. 13	2150	471	120	2004
Lifting-jack. Double-screw swivel	W. C. Morris	810,374	Jan. 16	3582	737	120	896
Light hanger. Incandescent-	R. D. McIntyre	812,355	Feb. 13	1692	372	120	1911
Light-projector	E. L. P. Turenne	812,103	Feb. 6	1140	250	120	1721
Lighter	A. F. Caughey	808,726	Jan. 2	209	45	120	48
Lightning-arrester	F. A. Stafford	808,882	Jan. 2	508	110	120	114
Lightning-arrester	W. C. Jones	811,226	Jan. 30	5322	1112	120	1316
Lightning-arrester	W. Gifford	812,126	Feb. 6	1179	258	120	1720
Lightning-conductor	T. H. Miner	813,660	Feb. 27	4281	941	120	2566
Limb. Artificial	G. E. Wilkins	809,875	Jan. 9	2616	522–3	120	587
Limb. Artificial	G. E. Wilkins	809,876	Jan. 9	2620	523	120	587
Limb. Artificial	H. C. Wintermute	810,180	Jan. 16	3163	655	120	775
Limb. Artificial	W. M. Kespohl	812,275	Feb. 13	1554	339	120	1880
Limb. Artificial	J. F. Rowley	813,740	Feb. 27	4421	975	120	2595
Line-fastener	D. W. Robbins	810,206	Jan. 16	3444	712	120	826
Line-holder	C. Straesser	809,403	Jan. 9	1621	329	120	369
Link. Fusible	A. W. Storey	811,256	Jan. 30	5370	1122	120	1328
Linotype-knife wiper	F. A. Pettit	810,079	Jan. 16	2964	618	120	736
Linotype-machine	M. W. Morehouse	808,772	Jan. 2	302	65	120	60
Linotype-machine	J. R. Rogers	808,873	Jan. 2	476	104–5	120	108
Linotype-machine	D. S. Kennedy	810,153	Jan. 16	3109	642	120	764
Linotype-machine	J. E. Saffery	810,173	Jan. 16	3141	650	120	771
Linotype-machine	R. M. Bedell	811,362	Jan. 30	5578	1164	120	1371
Linotype-machine	C. Muehleisen	812,586	Feb. 13	2161	473	120	2006
Linotype-machine attachment	J. H. W. Knoop	808,931	Jan. 2	608	133	120	134
Lip-turner	F. F. Smith	809,332	Jan. 9	1448	294	120	353
Liquid combustibles. Apparatus for vaporizing	J. Lühne	809,200	Jan. 2	1137	236	120	250
Liquid-cooling apparatus	G. F. Black	812,256	Feb. 13	1500	328	120	1886
Liquid-filling apparatus	R. C. White	809,764	Jan. 9	2317	480–1	120	542
Liquid forcing or pumping device	L. J. C. Larsen	812,052	Feb. 6	1044	227	120	1701
Liquid fuel. Mechanism for automatically distributing	H. Galopin	809,436	Jan. 9	1691	348	120	404
Liquid-heater. Electric	G. E. Stevens	812,609	Feb. 13	2200	479	120	2013
Liquid-indicator	H. A. House	812,006	Feb. 20	3143	668	120	2261
Liquid-separator. Centrifugal	A. L. Christenson	813,544	Feb. 13	2082	456	120	1990
Liquid-separator liner. Centrifugal-	C. D. Hellström	809,685	Jan. 9	2181	451–2	120	512
Liquid-weighing machine	C. J. Hedemann	812,946	Feb. 20	3653	780–1	120	2182
Liquids in vacuo. Apparatus for discharging	J. W. Lytton	809,385	Jan. 9	1574	320	120	370
Liquids. Means for controlling the level of	W. Wadsworth	810,237	Jan. 16	2269	482	120	802
Liquors. Ascertaining the origin of coloring-matters present in distilled	C. T. Marsh	813,728	Feb. 27	4401	.....	120	2591
Lithographic purposes. Electrolytically preparing metals or alloys for	O. C. Strecker	810,889	Jan. 23	4605	986–7	120	1132
Lithographic stones. Composition for cleaning	J. James	813,709	Feb. 27	4369	.....	120	2584
Load-binder	C. W. Baker	812,032	Feb. 20	3018	664	120	2222
Loader and unloader	O. J. Travis	811,973	Feb. 6	883	194	120	1699
Loading and unloading device	A. W. Keech	809,618	Jan. 9	2045	426	120	481
Loading apparatus	H. T. Rainwater	813,448	Feb. 27	3961	846	120	2472
Loading, conveying, and dumping device	E. Howland	811,923	Feb. 6	779	170	120	1647
Loading device for dirt, manure, &c	G. H. Young	813,198	Feb. 20	3339	736	120	2308
Lock: *See* Coleman air-lock. Keyless lock. One-door lock. Nut-lock. Grain-lock. Oar-lock. Hub-lock. Rock-lock. Door-lock. Seat-lock. Seat-gate lock. Stenographer's lock. Sewer-lock. Spool-lock. Stable-lock. Window-lock. Toy-lock. White lock.							
Lock	C. J. Caley and H. G. Voight	809,434	Jan. 9	1663	341	120	397
Lock	W. S. Sutton	810,894	Jan. 23	4055	834	120	1133
Lock	A. N. Manson	810,786	Jan. 23	4427	918–19	120	1338
Lock	E. H. F. Krahn	811,511	Jan. 30	5537	1232	120	1498
Lock and latch	P. Fagnoloth	812,571	Feb. 20	3703	866	120	2264
Lock and latch	C. J. Caley	809,435	Jan. 9	1665	342	120	398
Lock and latch mechanism	H. G. Voight	809,342	Jan. 9	1473	288	120	339

Alphabetical list of inventions for January and February—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drfs.	Official Gazette. Vol.	Official Gazette. Page.
Lock and latch mechanism	N. W. Crandall	812,898	Feb. 20	3617	573	120	2145
Lock and latch mechanism	H. G. Voight	812,904	Feb. 20	3702	608	120	2177
Lock and latch mechanism	H. G. Voight	812,905	Feb. 20	3704	608	120	2177
Lock mechanism	C. J. Caley and H. G. Voight	812,821	Feb. 20	3697	570	120	2141
Lock-seam pipe	H. P. G. Norstrand	812,268	Feb. 13	1868	347	120	1897
Lock-strike. Electric	H. F. Smith	813,119	Feb. 20	3308	700	120	2375
Lockers. Locking device for metal	R. W. Jefferis	810,415	Jan. 23	3709	764–5	120	998
Lockers. Panel for metal	R. W. Jefferis	810,947	Jan. 30	4777	994	120	1197
Locomotive	C. Hagans	810,948	Jan. 30	4776	993–4	120	1197
Locomotive ash-pit and blower	H. E. Parson	813,379	Feb. 20	3711	815–16	120	2389
Locomotive-boiler. Water-tube	J. Robert	809,215	Jan. 2	1168	241–2	120	287
Locomotive. Electric	A. F. Batchelder	812,681	Feb. 13	2327	508–9	120	2087
Locomotive-engine	J. E. Roberts	808,717	Jan. 2	186	41	120	48
Locomotive fire-boxes. Air-admission device for	C. B. Clark	808,688	Jan. 2	118	27	120	29
Locomotive-pedestal	F. H. Ramsdell	813,582	Feb. 27	4683	1036	120	2652
Locomotive-tender frame	C. H. Howard	809,744	Jan. 9	2286	473	120	535
Locomotive. Turbine-driven	H. Lentz	811,561	Feb. 6	49	11	120	1496
Locomotive wheel. Plow-	H. Schnell	812,277	Feb. 13	1556	340	120	1881
Log-carrier	W. E. Sinclair	812,600	Feb. 13	2187	477	120	2011
Log-dog	C. W. Willett	812,589	Feb. 13	2243	513	120	2041
Log-hook	J. D. Vaughan	812,389	Feb. 13	1767	387	120	1926
Log-turner	F. W. Beitner	810,826	Jan. 23	4492	984	120	1103
Loom	H. W. Davis	811,026	Jan. 30	4926	1026	120	1261
Loom	F. Voland, L. Diederichs, and J. B. Monnet	810,471	Jan. 23	3826	786	120	969
Loom	W. J. Lutton	811,597	Feb. 6	123	27	120	1512
Loom	A. S. Cowan	812,508	Feb. 13	1985	436	120	1971
Loom brake mechanism	A. A. Gordon, Jr	814,000	Feb. 27	4930	1082–4	120	2704
Loom for making pile fabrics	A. A. Gordon, Jr	810,113	Jan. 16	3029	630	120	788
Loom for weaving pile fabric	A. Heald	811,842	Feb. 6	586	128	120	1608
Loom harness mechanism	R. Crompton	813,958	Feb. 27	4578	1078	120	2691
Loom harness-motion	H. Cyr	809,932	Jan. 16	2648	547	120	667
Loom jacquard-machine	J. Verdol	812,166	Feb. 6	1206	263	120	1753
Loom lay-motion	A. B. Weissenborn	812,246	Feb. 13	1483	324	120	1863
Loom lay-motion	S. D. Kelley	811,012	Jan. 30	4906	1021–2	120	1226
Loom picking mechanism	H. A. Davis	811,408	Jan. 30	5658	1186	120	1388
Loom picking-motion	J. D. Crowther and A. Sykes	812,485	Feb. 13	1945	420	120	1962
Loom pinion-guard. Circular-	V. Royle	810,191	Jan. 16	3187	661	120	780
Loom reversing mechanism	E. H. Ryon	811,177	Jan. 30	5222	1092	120	1293
Loom-shuttle	C. E. Nutting	810,680	Jan. 23	4222	874	120	1044
Loom-shuttle check	H. Garnett	811,242	Jan. 30	5350	1117	120	1321
Loom shuttle-motion	M. L. Christian and E. E. Reynolds	811,139	Jan. 30	5143	1075	120	1276
Loom shuttle. Ribbon-	W. Hausmann	809,776	Jan. 9	2349	485	120	549
Loom-shuttle spindles. Pivot-bolt for	C. F. Thompson	809,564	Jan. 9	1929	401	120	457
Loom-shuttle tension device	P. L. Peterson	808,885	Jan. 2	524	116	120	117
Loom-shuttles. Bobbin-holding means for	R. L. Cumnock	810,669	Jan. 23	4207	870	120	1040
Loom tension device	E. Herzig	811,620	Feb. 6	167	37	120	1522
Loom. Terry-	H. S. Griffith	808,658	Jan. 2	76	16	120	19
Loom warp stop-motion	A. A. Johnson	812,788	Feb. 13	2531	556	120	2051
Loom warp stop-motion	F. E. Kip and F. M. Armstrong	813,304	Feb. 20	3557	782	120	2348
Loom warp stop-motion	F. E. Kip and E. Greenwood	813,307	Feb. 20	3565	784–5	120	2350
Loom warp stop-motion	F. E. Kip and E. C. Smith	813,308	Feb. 20	3572	785	120	2351
Loom warp stop-motion	H. G. Baker	813,309	Feb. 20	3577	786	120	2352
Loom. Weft-replenishing	H. W. Wyman	813,765	Feb. 27	4466	987	120	2605
Loom. Weft-replenishing	C. Whalley	808,906	Jan. 2	696	151	120	154
Loom. Weft-replenishing	H. Wyman and J. T. Cyr	809,158	Jan. 2	1057	219	120	232
Loom weft-replenishing mechanism	J. M. Grey	811,869	Feb. 6	682	149	120	1639
Loom weft-replenishing mechanism	H. Zwicky	810,406	Jan. 23	3991	759–61	120	924
Looms. Cloth-tension device for take-up mechanism for	C. S. Andem	812,970	Feb. 20	2902	640	120	2206
Looms. Crank-shaft support for	A. J. O'Reilly	809,220	Jan. 2	1254	265	120	276
Looms. False reed for	W. E. Wingate	809,262	Jan. 9	1600	324	120	386
Looms. Give-way connection for box-motions of	W. Wattie	812,216	Feb. 13	1539	356	120	1897
Looms. Means for regulating the tension upon warp-threads of	W. H. Ryder	812,402	Feb. 13	1907	431	120	1954
Looms. Needle-operating mechanism for	N. Smarup	812,853	Feb. 27	4628	1094	120	2640
Looms. Shuttle-clearing means for filling-replenishing	J. Northrop	811,890	Feb. 6	111	24	120	1609
Loop-shield	A. F. Warele	812,516	Feb. 13	2005	440	120	1975
Low-water alarm. Steam-boiler	C. G. Gilldard	812,104	Feb. 6	1141	260	120	1721
Low-water alarm. Steam-boiler	C. G. Gilldard	811,213	Jan. 30	5303	1107	120	1309
Lubricating device. Wheel and axle	G. A. Bronder	811,214	Jan. 30	5296	1108	120	1309
Lubricating vehicle-wheels. Means for	W. M. Boyd	812,402	Feb. 13	1798	398	120	1951
Lubricating-wheel	O. O. Sellers	811,615	Feb. 6	158	35	120	1539
Lubricating wheels. Means for	G. W. Lovejoy	812,587	Feb. 20	2731	600	120	2170
Lubrication-pipe	J. Mühlrad	811,886	Feb. 6	611	138	120	1612
Lubricator: *See* Axle-lubricator. Piston-rod lubricator. Car-lubricator. Plunger-lubricator. Hydraulic lubricator. Shaft-lubricator. Journal-lubricator.		812,252	Feb. 13	1667	371	120	1919
Lubricator	W. S. Patterson	809,368	Jan. 9	1691	324	120	386
Lubricator	E. Dietz	810,194	Jan. 16	3122	649	120	781
Lubricator	L. O. Crawford	810,944	Jan. 23	4639	941	120	1135
Lubricator	E. W. Baird and J. F. Durkin	811,624	Jan. 30	4917	1025	120	1230
Lubricator	J. Haasen	811,917	Feb. 6	726	161	120	1640
Lubricator	J. C. Fiske	812,622	Feb. 6	2022	455	120	1970
Lubricator	C. C. Dodge	812,321	Feb. 13	1838	383	120	1924
Lubricator	C. C. Dodge	812,322	Feb. 13	1854	383	120	1924
Lubricator	O. O. Kittleson	812,428	Feb. 13	1899	404	120	1943
Lubricator	J. Maloy and A. White	812,573	Feb. 13	2146	453	120	1988
Lubricator	E. H. Dehne	812,644	Feb. 13	2287	492	120	2015
Lubricator	C. E. and F. W. Hodges. (Reissue)	12,464	Feb. 13	2740	601–2	120	2167
Lug-strap attachment	J. F. Harrington	813,417	Feb. 27	3798	822	120	2457

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Lumber-feeding machine	C. E. Cleveland	811,377	Jan. 30	5805	1172-3	120	1377
Luna for holding the hoof	H. F. Nehr	810,217	Jan. 16	3246	672	120	782
Lure for use with trolling-hooks	G. W. Tinkess	810,822	Jan. 23	4457	933	120	1101
Macaroni. Machine for making flat	A. De Vito	812,704	Feb. 13	2373	520	120	2049
Machine-tool. Combination	J. W. Myers	813,056	Feb. 20	3073	673-4	120	2247
Magazine	W. A. Sparks	810,310	Jan. 16	3451	713	120	837
Magnetic needle	G. N. Saegmuller	811,243	Jan. 30	5365	1120	120	1325
Magnetic separator	H. F. Campbell	810,841	Jan. 23	4515	940	120	1108
Mail-bag catcher	L. J. Evans	808,646	Jan. 2	50	10-11	120	13
Mail-bag catcher	J. F. Chester	810,322	Jan. 16	3474	718	120	841
Mail-bag catcher	J. C. Elliff	812,835	Feb. 20	2635	576	120	2149
Mail-bag catcher and deliverer	H. H. Akers	812,471	Feb. 13	1911	431-2	120	1955
Mail-bag catcher for railways. Automatic	H. G. and B. C. W. Dix	811,122	Jan. 30	5131	1072	120	1273
Mail-bag device. Railway	C. A. Garber	811,710	Feb. 6	335	74	120	1560
Mail-bag receiving and delivering apparatus	T. Cross	809,430	Jan. 9	1677	344	120	401
Mail-box	E. M. Raymond and W. S. Stoughton	808,872	Jan. 2	475	104	120	108
Mail-box	T. J. R. Turner	809,866	Jan. 9	2505	520	120	584
Mail-box	E. G. Seasholtz	810,099	Jan. 16	2978	621	120	739
Mail-box	H. L. Pier	810,905	Jan. 23	4466	928	120	1086
Mail-box	D. W. Morrow	812,514	Feb. 13	2002	439	120	1974
Mail-box	E. T. Marsh	812,662	Feb. 13	2293	499	120	2031
Mail-box bulletin	J. M. Larsh	808,764	Jan. 2	279	61	120	64
Mail-crane	J. L. Athey	810,600	Jan. 23	4080	841	120	1011
Mail-deliverer	H. L. Kimmons	809,187	Jan. 2	1111	231	120	245
Mail-marking machine. Hand	H. E. Waite	811,976	Feb. 6	890	196	120	1670
Mail-pouch fastener	L. H. Hinaman	809,058	Jan. 2	858	182	120	190
Mail-transferring device	C. Kreps	808,932	Jan. 2	609	133	120	134
Mailing-tube	A. L. Gray	811,556	Feb. 6	35	8	120	1462
Mailing-tube sheet and wrapper	H. Del Mar	812,187	Feb. 13	1369	298	120	1838
Malt-transporting device. Green	C. Steinert	810,980	Jan. 30	4856	1011	120	1215
Mandrel-bars. Device for operating	P. C. Patterson	812,226	Feb. 13	1446	315-16	120	1855
Manhole cover and frame	M. H. O'Donnell	810,969	Jan. 30	4819	1002	120	1207
Manhole for conduits and the like	W. A. Haller and J. W. Billingsley.	810,855	Jan. 23	4545	946	120	1114
Manicuring appliance	A. A. Angus and D. B. Cameron	811,992	Feb. 6	932	204	120	1679
Mantle holder. Incandescing	O. Wiederhold	811,018	Jan. 30	4910	1024	120	1227
Mantle-support	T. Stites	810,991	Jan. 30	4859	1012	120	1215
Mantles. Making	O. Wiederhold	811,017	Jan. 30	4909	1024	120	1227
Manure-spreader	F. W. Hovey	810,413	Jan. 23	3704	763	120	927
Manure-spreader	J. M. Beringer	810,459	Jan. 23	3804	782	120	960
Manure-spreader feed mechanism	C. W. West	810,449	Jan. 23	3776	778	120	943
Map-case	J. Dawson and C. O. Rosen	809,175	Jan. 2	1065	226	120	230
Marine boiler	G. Marshall	809,518	Jan. 9	1842	381	120	439
Marine navigation	S. A. Reeve	811 743	Feb. 6	385	84	120	1571
Marking apparatus	W. J. Dix	810,629	Jan. 23	4141	856	120	1025
Marking-machine	G. W. Coffman	810,468	Jan. 23	3820	785	120	955
Marking-machine	F. H. Richards	810,979	Jan. 30	4838	1007-8	120	1211
Marking monument. Land	J. H. Downs	813,872	Feb. 27	4700	1040	120	2656
Martingale and connection	F. E. Vickery	809,868	Jan. 9	2508	521	120	585
Massage-applicator	E. S. Salghman	810,885	Jan. 23	4622	963-4	120	1129
Match	A. Swoboda	810,363	Jan. 16	3561	.....	120	862
Match-box	R. E. King	812,047	Feb. 6	1037	226	120	1700
Match-box	W. Alpert	812,714	Feb. 13	2390	525	120	2050
Match-box	H. E. Lindner and H. J. Kallinich	813,503	Feb. 27	3971	871	120	2498
Match box holder	J. Berryman	809,665	Jan. 9	2140	444	120	501
Match box. Safety	J. Karpen	809,506	Jan. 9	1823	376	120	435
Match-boxes. Automatic igniter for	J. S. Urban	811,458	Jan. 30	5744	1203	120	1404
Match-lighter	A. B. Troupa	813,751	Feb. 27	4444	961	120	2600
Match-making machine	E. J. Prindle	808,945	Jan. 2	638	139-40	120	140
Match-making machine. Automatic	G. P. Loomis	808,767	Jan. 2	283	62-3	120	64
Match-safe. Self-igniting	J. W. Hart	813,967	Feb. 27	4876	1078	120	2691
Matrices. Producing folding	G. H. Vining	813,261	Feb. 20	3466	765	120	2329
Matrix and punch cutting machine	L. B. Benton	809,548	Jan. 9	1893	393-4	120	450
Matte. Converting	C. M. Allen	808,618	Jan. 2	1	1	120	3
Matte. Treating molten	W. E. Koch	808,849	Jan. 2	436	96	120	97
Mattress	W. Robertson	811,094	Jan. 30	5031	1051	120	1253
Mattress-aerating device	J. Murmans	813,731	Feb. 27	4406	971	120	2592
Mattress-making machine	C. W. White	813,470	Feb. 27	3904	856-7	120	2481
Mattress or couch fabric	J. Hoey	811,222	Jan. 30	5314	1111	120	1314
Mattress. Wire	W. Bills	810,519	Jan. 23	3926	808	120	979
Measure. Foot	C. Shiverick	812,203	Feb. 13	1607	353	120	1893
Measure. Tailor's	F. Nordstrom	809,536	Jan. 9	2451	509	120	571
Measure. Tailor's	I. Geraci	813,415	Feb. 27	3793	822	120	2456
Measure. Tape	J. McLean	812,150	Feb. 6	1247	271	120	1744
Measuring and cutting off lengths of fabric. Machine for	J. B. O'Bryan, Jr., and O. H. Rudolph.	812,672	Feb. 13	2316	504	120	2035
Measuring and marking machine. Cloth	J. F. Boggs	813,767	Feb. 27	4471	967	120	2608
Measuring and marking the distance from the ground of shirts, &c. Apparatus for	S. D. Cheyne	809,609	Jan. 9	2156	446	120	505
Measuring appliance and compressor for liquids	E. O. Linton. (Reissue)	12,429	Jan. 23	4656	970	120	1136
Measuring-can. Portable	J. L. Chase	813,402	Feb. 27	3769	827	120	2451
Measuring device	H. Raab and J. M. Wolfson	810,052	Jan. 16	3967	619	120	737
Measuring device	J. W. Page	810,799	Jan. 23	4455	924	120	1094
Measuring device. Liquid	F. S. Turner, S. Pease, and W. B. Martin.	809,273	Jan. 2	1327	270	120	292
Measuring electric resistances. Apparatus for	S. Evershed	810,330	Jan. 16	3488	720-1	120	844
Measuring electric resistances. Apparatus for	S. Evershed	812,196	Feb. 13	1882	390-1	120	1841
Measuring instrument	V. Osborne	812,674	Feb. 13	2319	505	120	2036
Measuring instrument. Angle	A. König	811,777	Feb. 6	451	98	120	1594
Measuring instrument. Electrical	T. W. Varley	810,295	Jan. 16	3267	680-1	120	801
Measuring instrument. Electrical	E. E. Lehr	811,645	Feb. 6	219	47	120	1528
Measuring instrument. Electrical	M. C. Rypinski	811,998	Feb. 6	880	187	120	1682
Measuring rule	E. L. Sarton	809,139	Jan. 2	1029	219	120	328
Measuring vessel. Computing	W. S. Cain	809,091	Jan. 2	945	198	120	322
Measuring watts in electrical circuits. Apparatus for	E. Wilson	810,179	Jan. 16	3186	663-5	120	774

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Meat-cutter	A. W. Johnson	810,767	Jan. 23	4383	910-11	120	1089
Meat-hook. Pendent or trolley-carrier	G. W. Martin	812,881	Feb. 20	2961	691	120	2189
Meat products. Apparatus for smoking and curing	W. Eppinger	812,922	Feb. 20	2760	645	120	2134
Mechanical movement	A. W. Hutchins	808,926	Jan. 2	604	133	120	133
Mechanical movement	R. T. Wingo	809,160	Jan. 2	1060	230	120	232
Mechanical movement	G. W. Johnston	809,693	Jan. 9	2195	455	120	515
Mechanical movement	H. J. Paarmann	811,868	Feb. 6	634	139	120	1620
Mechanical movement	C. Williams	813,126	Feb. 20	3221	706-7	120	2279
Mechanical movement	R. T. Wingo	813,129	Feb. 20	3229	709	120	2281
Mechanical movement	L. R. Tulloch	813,601	Feb. 27	4160	913	120	2530
Medicated tampon	E. M. Pond	812,768	Feb. 13	2495	549	120	2072
Medicated tampon	E. M. Pond	812,769	Feb. 13	2496	549	120	2072
Medicated tampon	E. M. Pond	812,770	Feb. 13	2498	549	120	2072
Medicine-glass	C. W. Hoffa	809,952	Jan. 16	2668	585	120	676
Melting and heating apparatus. Portable	H. B. Nichols	810,073	Jan. 16	2955	616	120	734
Merchandise-hook	J. A. A. Rouleau	812,235	Feb. 13	1460	320	120	1858
Meridian-transfer apparatus	G. C. McFarlane	812,587	Feb. 13	2163	473-4	120	2007
Merry-go-round	C. F. Weidner. (Reissue)	12,435	Jan. 9	2628	543	120	611
Metal. Apparatus for treating molten	T. Long	813,150	Feb. 20	3278	720	120	2260
Metal-bar-bending machine	J. S. Seaman	811,097	Jan. 30	5038	1053	120	1265
Metal bars, &c. Machine for bending	T. Stevenson	810,818	Jan. 23	4480	932	120	1089
Metal bars. Machine for shaping the ends of	N. S. Arthur	808,619	Jan. 2	3	1	120	3
Metal bars. Shaping	H. Geisenhöner	811,771	Feb. 6	441	96	120	1582
Metal beams. Metal clip for uniting	E. Einfeldt	808,736	Jan. 2	231	50	120	53
Metal box	H. A. Streeter	810,819	Jan. 23	4481	932	120	1100
Metal box-beam	G. Klenk	813,976	Feb. 27	4899	1061	120	2694
Metal-coiling drum	A. W. Sullivan and W. Renshaw	810,001	Jan. 16	2786	575	120	697
Metal-cutting machine	W. R. Webster	812,709	Feb. 13	2383	523-4	120	2048
Metal. Cylinder for treating heated	J. Abbott	813,071	Feb. 20	3103	680	120	2253
Metal. Cylinder for treating heated	G. H. Benjamin	811,196	Jan. 30	5266	1102	120	1303
Metal object. Wood-veneered	J F. Ellis	811,707	Feb. 6	331	73	120	1559
Metal. Planishing sheets of	L. Coburn	812,824	Feb. 20	2602	571	120	2142
Metal sheets. Feed mechanism for	A. Ridd	808,601	Jan. 2	125	29	120	30
Metal. Skimming slag from molten	O. J. Johnson	810,152	Jan. 16	3106	641-2	120	764
Metal storing and conveying apparatus. Liquid	M. M. Suppes	809,405	Jan. 9	1626	331	120	390
Metal treating and amalgamating apparatus	C. von Philp	810,301	Jan. 16	3437	709-10	120	834
Metal. Treating molten	G. P. Tyars	808,787	Jan. 2	334	72	120	74
Metal-turning apparatus	J. S. Seaman	811,522	Jan. 30	5858	1228-9	120	1428
Metal. Upsetting	R. H. Stevens	809,997	Jan. 16	2776	570-1	120	695
Metal-wheel-making machine	H. V. Loss	812,856	Feb. 20	2670	585	120	2156
Metal wheels. Making	E. Einfeldt	810,197	Jan. 16	3199	663-4	120	782
Metal-working machine. Fluid-pressure	E. Einfeldt	810,198	Jan. 16	3208	665	120	784
Metal-working tools. Adjustable support for	C. von Philp	812,228	Feb. 13	1448	316-17	120	1856
Metals. Apparatus for the agitation of solutions used in electrodeposition of	B. M. W. Hanson	813,381	Feb. 20	3714	816-17	120	2381
Metals of the earthy alkalies. Electrolytic production of	W. C. Wood and B. Oaksford	808,798	Jan. 2	351	75	120	78
Metals. Treating	C. Suter and B. Redlich	813,532	Feb. 27	4034	864	120	2513
Metals. Working rolled	H. H. Goodsell	813,206	Feb. 20	3363	739	120	2306
Metallic can	J. V. Culliney	809,934	Jan. 16	2649	547	120	667
Metallic hoop	W. B. Fenn	810,737	Jan. 23	4324	899	120	1057
Metallic salts and oxids. Densifying and eliminating air and gas from masses of pulverulent	G. L. Meade	809,519	Jan. 9	1843	381	120	439
	E. O. Bartlett and W. F. Gordon	809,354	Jan. 9	1490	308	120	305
Meter: *See* Dry meter. Electric meter. Electricity-meter. Gas-meter.							
Meters. System of calibrating recording watt-hour	D. P. Morrison	812,436	Feb. 13	1855	408	120	1944
Micrometer. Quick-adjusting	L. S. Starrett and J. A. Adell	809,272	Jan. 2	1326	289	120	292
Milk aerating, purifying, and cooling apparatus	D. N. Gifford and J. Hall	811,053	Jan. 30	4955	1032	120	1230
Milk-aerator	B. H. Thomas	810,892	Jan. 23	4645	988	120	1132
Milk-preparations. Manufacturing	S. Székely and E. Kovács	811,971	Feb. 6	878	.....	120	1666
Milk-preserve and making same	L. Sarason	809,138	Jan. 2	1025	.....	120	225
Milk products and recovering milk fluids. Means for making	C. M. Taylor, Jr	809,880	Jan. 9	2495	518	120	582
Milking apparatus	E. E. Good	812,942	Feb. 20	2940	679	120	2180
Milking device	L. G. Harper	810,750	Jan. 23	4348	904	120	1071
Milking-machine	F. Ljungström	812,855	Feb. 20	2668	585	120	2156
Mill: *See* Drum-mill. Grinding-mill. Pan-and-roller mill. Peat-mill. Reduction-mill. Resawing band-mill. Roller-mill. Sawmill. Windmill.							
Mill	H. A. Howard	809,667	Jan. 9	2138	488	120	513
Mill-pick	R. Johnson	813,312	Feb. 20	3380	745	120	2310
Mills, &c. Feed-governor for	C. H. and A. J. Richards	810,973	Jan. 30	4825	1005	120	1210
Mine and elevator shafts. Cage for	W. Black	809,880	Jan. 9	6800	820-21	120	295
Mine-cage safety device	I. M. Adams	811,892	Feb. 6	699	151	120	1651
Mine-door opener and closer	F. Zoerkler	811,990	Feb. 6	930	195	120	1680
Mine-elevator safety device	I. M. Adams	811,892	Feb. 6	699	151	120	1651
Mine-harness	J. P. and R. S. Stratton	810,430	Jan. 23	3757	778	120	1090
Mine-shaft door	I. Whitney	813,067	Feb. 20	3098	672	120	2252
Mine-ventilating apparatus	M. J. Ward	809,653	Jan. 9	2121	430	120	494
Miner's drill	H. Todd	810,513	Jan. 23	3915	825	120	977
Mining and other debris. Device for removing	S. W. Wible	809,998	Jan. 9	1980	418	120	469
Mining-cage landing-chair	G. H. Dunton	809,176	Jan. 2	1057	228-7	120	230
Mining-machine	D. R. Murphy	809,308	Jan. 2	1147	250	120	262
Mining-machine	E. R. Merrill	813,893	Feb. 27	3980	874	120	2490
Mining machine. Coal	C. Wiesenann	809,980	Jan. 9	1462	301-2	120	364
Mining. Submarine	E. F. Schelbe	809,883	Jan. 9	2073	430	120	457
Minerals. Separating	E. B. Kirby	809,889	Jan. 16	2769	547	120	676
Mirror-support. Adjustable	T. G. Lovegrove	813,960	Feb. 13	2291	493	120	2031
Miter-box and saw-guide	J. M. Smith	810,178	Jan. 16	3165	661-2	120	772
Mitt. Ball-player's	A. C. Ferry	811,289	Jan. 30	5394	1170	120	1331
Mitt. Base-ball-catcher's	J. Gamble	808,993	Jan. 2	721	156	120	159

Alphabetical list of inventions for January and February—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Mixer:							
See Automatic mixer. Fiber-mixer.							
Mixer and kneader	D. Kadel	810,417	Jan. 23	3713	765	120	939
Mixing and measuring apparatus	R. C. Smith	809,585	Jan. 9	1999	409	120	464
Mixing apparatus	C. S. Higgins	811,145	Jan. 30	5183	1077	120	1378
Mixing machine	C. Jaquet	812,849	Feb. 20	2857	852	120	2183
Mixing-machine. Envelop-	E. S. Buckland	811,478	Jan. 30	5775	1309	120	1411
Moistening and warming rooms or apartments. Apparatus for	A. Schmidt	812,328	Feb. 20	3618	793	120	2260
Moistening device	P. A. Peterson	812,087	Feb. 6	1108	344	120	1714
Mold:							
See Block-mold. Concrete-block mold. Building-block mold. Concrete-wall mold. Butter-mold. Ice-cream mold. Cement-construction-block mold. Pipe-mold. Cement-fence-post mold. Plastic-material mold. Concrete-mold. Vault-mold. Wall-mold.							
Mold	J. H. Johnson and H. Meyer	808,846	Jan. 2	429	95	120	95
Mold	W. H. Lucas	809,190	Jan. 2	1135	236	120	260
Mold	G. A. Byor	811,082	Jan. 30	4934	1029–30	120	1232
Mold	E. L. Maag	811,310	Jan. 30	5481	1142–3	120	1350
Mold	W. H. Benson	811,474	Jan. 30	5769	1207	120	1410
Mold	J. H. Sullivan	812,263	Feb. 20	3645	761	120	2236
Mold-charging apparatus	C. A. Landon	813,439	Feb. 27	3948	843	120	2468
Mold-forming mechanism	P. Bonvillain	812,614	Feb. 27	4193	920	120	2646
Molding apparatus	G. Henningsen	809,504	Jan. 9	1820	375	120	434
Molding apparatus	C. J. Kielberg	811,297	Jan. 30	5480	1138	120	1345
Molding-bit	W. H. McDowell	813,572	Feb. 27	4118	902	120	2531
Molding-box. Universal	J. Boyd	811,124	Jan. 30	5091	1065	120	1286
Molding-machine	J. L. Gleason	811,772	Feb. 6	443	96	120	1583
Molding-machine	H. Besser	810,700	Jan. 23	4281	884	120	1062
Molding-machine	H. C. Steele, W. Stenson, and F. J. Trout	810,968	Jan. 30	4954	1010	120	1214
Molding-machine	J. Rogers	811,273	Feb. 6	643	141	120	1621
Molding-machine	P. Bonvillain	812,604	Feb. 6	965	210	120	1665
Molding-machine	L. M. Pratt and E. H. Van Natta	812,201	Feb. 13	1557	348	120	1988
Molding-machine	C. J. Caley	812,520	Feb. 20	2595	570	120	2140
Molding-machine	A. Choiniere	812,979	Feb. 20	2915	643	120	2211
Molding-machine	C. M. Runyan	813,117	Feb. 20	3196	699	120	2274
Molding materials which set by the addition of water thereto. Apparatus for	P. G. Leming, F. Eiklor, and C. W. Grant	813,901	Feb. 27	4753	1050	120	2667
Money-box	J. A. McConnell	812,147	Feb. 6	1240	269–70	120	1743
Money-changing machine	R. H. Bishop and W. Down	811,813	Feb. 6	583	119	120	1599
Monkey-wrench. Quick-acting	D. Peterson	810,806	Jan. 23	3998	800–2	120	972
Monoliths	J. L. Smith	813,180	Feb. 20	3318	730	120	2200
Mooring device	F. G. Rantzau	812,293	Feb. 13	1591	349	120	1889
Mop-holder	W. D. Duncan	810,042	Jan. 16	2886	595	120	718
Mop-wringer	H. Bitner	809,243	Jan. 2	1264	257	120	279
Mortising machine. Folio-	F. B. Smith	813,170	Feb. 20	3316	729–30	120	2298
Mortising-tool	F. Wesel	812,786	Feb. 27	4451	963–4	120	2601
Mother-of-pearl. Manufacture of artificial	F. K. Huber	809,884	Jan. 16	2691	555	120	676
Motion-converting means	P. C. D. Castle	808,809	Jan. 9	2302		120	603
Motion. Means for converting constant oscillatory into rectilinear	C. J. Klein	811,410	Jan. 30	5661	1157	120	1366
Motor:	B. Salzer and G. Walther	810,308	Jan. 16	3446	712	120	836
See Current-motor. Induction-motor. Electric motor. Pneumatic motor. Electromagnetic motor. Rotary motor. Water-motor. Fluid-pressure motor. Wave-motor. Hydrocarbon-motor.							
Motor	C. W. Cramer and H. C. Haak	810,306	Jan. 23	3671	756–7	120	919
Motor-circuit	J. A. Himburg	812,987	Feb. 20	2949	649	120	2218
Motor control	C. A. Eck	813,410	Feb. 27	3782	820	120	2454
Motor control. Induction-	A. H. Armstrong	811,788	Feb. 6	414	91	120	1576
Motor-control system	W. B. Potter	808,778	Jan. 2	318	69	120	71
Motor-control system	F. B. Corey	811,706	Feb. 6	431	94	120	1660
Motor-generator	A. Pederson	809,460	Jan. 9	1734	385	120	414
Motor regulator. Electric-	W. E. Houston	812,791	Feb. 13	2539	546	120	2082
Motor-starting apparatus. Stopping and starting device	P. A. Weyand	810,240	Jan. 16	3288	688	120	808
Motor vehicle. Power-	W. B. Manny	809,986	Jan. 16	2719	580	120	662
Motor-vehicle. Alternating-current-	A. Necke	812,444	Feb. 27	3986	845	120	2470
Motor-vehicle mechanism. Rotary-	J. G. V. Lang	811,415	Jan. 30	5574	1189	120	1360
Motor-vehicle device. Electric-	E. H. Porter and B. Currier	808,944	Jan. 2	435	132–9	120	140
Motor-vehicle, the. Cylinder for internal-combustion-	A. H. Taylor	810,880	Jan. 23	4030	867	120	1122
Mounting washer for spring-	H. B. Wilcox	809,878	Jan. 9	2004	428	120	588
Movement, Automatic-	I. J. Turner	811,880	Feb. 6	137	28	120	1513
Mowing-machine. Automatic-	M. Thier	813,536	Feb. 27	4038	865	120	2514
Mowing-machine. Lawn-	C. Pfeiffer	809,130	Jan. 2	1010	208–9	120	222
Mowing-machine. Rotary-	R. Siegfried	813,891	Feb. 20	2737	603	120	2171
Mowing-machine. Sickle-	A. C. Eastwood	810,289	Jan. 16	3361	686	120	817
Mowing-machine. Vertical-	F. L. Seastone	813,823	Feb. 27	4013	882	120	2500
Mowing-machine. Weed-	F. L. Harmon	814,004	Feb. 27	4652	1005–7	120	2700
Mowing-machine. Automatic	G. E. Franquist	813,328	Feb. 20	3320	728	120	2297
Mowing-machine. Lawn-	L. T. Wiles	808,824	Jan. 9	2122	439	120	592
Mowing-machine. Rotary-	W. R. Kahlenberg	810,542	Jan. 23	3970	818	120	988
Mowing-machine. Self-acting-	J. C. Scott	811,088	Jan. 30	5037	1062	120	1264
Mowing-machine. Sickle-	R. S. Heap and G. Grey	813,969	Feb. 27	4699	1072–9	120	2668
Mowing-machine. Vertical-	C. Williams	813,124	Feb. 20	3210	704–4	120	2277

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Multiple bolt	J. H. Pretsman	809,626	Jan. 9	2064	426	120	495
Multispindle-machine. Self-acting	E. Widmer-Abegg	808,894	Jan. 9	1901	412–14	120	469
Music-leaf turner	F. O. Moore	810,467	Jan. 23	3875	788	120	989
Music-leaf turner	F. J. Holoubek	810,943	Jan. 30	4772	985	120	1186
Music-leaf turner	J. and J. C. Bahl	811,988	Feb. 6	984	204–5	120	1679
Music-leaf turner	W. L. Caywood and E. M. Steele	813,617	Feb. 27	4197	921	120	2547
Music-roll and adjustable driving-support therefor	H. P. Ball	810,608	Jan. 23	4086	846	120	1035
Music-sheets. Take-up roll for perforated	F. L. Wood	813,607	Feb. 27	4179	916	120	2543
Musical instrument	H. Stoakmeir	809,539	Jan. 9	1881	390	120	447
Musical instrument	W. B. Fleming	811,912	Feb. 6	726	159–60	120	1689
Musical instrument	A. M. Krueger	812,049	Feb. 6	1040	226	120	1709
Musical-instrument attachment	J. O. Houser	811,205	Jan. 30	5456	1137	120	1345
Musical instrument. Autopneumatic	W. Crippen	808,903	Jan. 2	564	124–5	120	124
Musical-instrument bridge. Stringed-	R. H. Payne	809,459	Jan. 9	1733	358	120	414
Musical instrument. Electrically actuated and controlled self-playing	G. H. Davis	812,117	Feb. 6	1157	255	120	1734
Musical-instrument player. Mechanical	L. U. Jobes	810,057	Jan. 16	2982	610–11	120	729
Musical instrument. String	F. P. Alexander	808,802	Jan. 2	358	77	120	80
Musical-instrument transposer	T. W. Kloman	810,949	Jan. 30	4779	986	120	1189
Musical instruments. Action for mechanical	A. Zollinger	813,480	Feb. 27	3926	861	120	2457
Musical instruments. Pneumatic-action of	M. S. Wright	809,039	Jan. 2	814	175	120	179
Nail:							
See Scaffold-nail.							
Nail and rivet delivering machine	J. A. Milliken	813,162	Feb. 20	3286	722–3	120	2282
Nail cleaner. Pocket finger-	W. F. Gilbert	810,744	Jan. 23	4337	902	120	1059
Nail-clipper	A. H. Friese	810,402	Jan. 23	3862	786	120	982
Nail-puller	W. F. Hobbs	809,808	Jan. 9	2202	485	120	589
Nail. Secret	W. J. Boda	808,988	Jan. 2	700	151	120	154
Napkin. Sanitary	P. S. Bauer	808,624	Jan. 2	12	3	120	5
Napping-machine	H. S. Greene	810,273	Jan. 16	2874	603	120	819
Nasal shield	T. Carence	810,617	Jan. 23	4120	851	120	1031
Necktie-fastener	A. Swanson	811,455	Jan. 30	5740	1202	120	1404
Nest. Automatic hen's-	A. J. Abshier	811,891	Feb. 6	687	150	120	1680
Nest for laying hens. Trap-	C. B. Williams	809,036	Jan. 2	811	175	120	179
Nest. Hen's-	C. T. Reid	809,526	Jan. 9	1859	395	120	442
Nest. Hen's-	F. Lieske	811,156	Jan. 30	5176	1081	120	1263
Net. Horse fly-	A. Hobt	812,267	Feb. 13	1539	336	120	1877
Net-making machine	A. O. and G. Hammer	809,611	Jan. 9	2025	422–3	120	479
Nozzles. Hydraulic support for deflecting	G. J. Henry, Jr.	810,756	Jan. 23	4361	908	120	1078
Numbering streets in irregular cities. Plan for	F. E. Cudell	811,385	Jan. 30	5620	1176	120	1360
Nut-lock	H. R. Romberger	810,084	Jan. 16	2970	620	120	728
Nut-lock	H. H. Edgerly	810,528	Jan. 23	3936	809	120	981
Nut-lock	J. C. Weems	811,011	Jan. 30	4957	1021	120	1234
Nut-lock	L. A. Hall	811,916	Feb. 6	735	161	120	1640
Nut-lock	J. W. Franklin	812,095	Feb. 6	1017	222	120	1698
Nut-lock	J. Schmitt	812,290	Feb. 13	1602	352	120	1891
Nut-lock	J. W. Koch	812,620	Feb. 13	1842	404	120	1941
Nut-lock	R. G. Jahnke	812,697	Feb. 13	1969	433	120	1967
Nut-lock	M. Omalia	812,891	Feb. 13	2170	475	120	2008
Nut-lock	A. B. Allen	813,051	Feb. 20	3017	664	120	2223
Nut-lock	J. Peters	813,168	Feb. 20	3295	725	120	2294
Nut-lock	H. Seeger	813,242	Feb. 20	3434	757	120	2322
Nut. Lock-	W. L. Roberts	811,098	Jan. 30	5030	1051	120	1263
Nut. Lock-	C. Rystrom	811,967	Feb. 6	853	188	120	1692
Nut. Lock-	H. H. Crawford	812,185	Feb. 13	1364	298	120	1837
Nut-lock. Automatic	J. T. Clark	808,044	Jan. 2	839	177	120	183
Nut-tapping machine	S. H. Hinthian	810,084	Jan. 16	2936	609	120	727
Nut-tapping machine	J. J. Harris and A. A. Prior	812,422	Feb. 13	1631	401–3	120	1936
Nut. Wing-	A. S. Reed	812,204	Feb. 13	1591	349	120	1889
Oar. Bow-facing	F. L. Buff	808,720	Jan. 2	197	43	120	46
Oar-lock	A. Anderson	813,782	Feb. 27	4462	988	120	2604
Oar-lock	G. Holt	813,898	Feb. 27	4744	1048	120	2693
Obstetrical instrument	F. Ledgerwood	812,540	Feb. 13	1824	370	120	1939
Odometer	B. Volkmar	813,846	Feb. 27	4547	1003	120	2644
Oil and feed-water separator	G. R. Davidson	812,831	Feb. 20	2928	676	120	2146
Oil burner. Crude-	S. E. McKnight	811,629	Jan. 30	5704	1194	120	1398
Oil-cup	N. Smith	811,801	Feb. 6	804	113	120	1693
Oil-cup	G. C. Schoenborn	813,591	Feb. 27	4144	908	120	2536
Oil-cups. Construction of	J. Powell	813,382	Feb. 13	1703	374	120	1914
Oil-extracting machines. Lubricating device for centrifugal	E. H. Dutcher	813,367	Feb. 20	3692	811	120	2276
Oil-extractor	H. E. Moffat	813,314	Feb. 20	3689	788	120	2264
Oil-feeding device	T. J. Kehoe	811,640	Feb. 6	211	45	120	1631
Oil-press heating device	J. W. Winfrey	809,547	Jan. 9	1892	393	120	449
Oil system	H. C. Marmon	810,999	Jan. 30	4803	993	120	1203
Oil-tank indicator	W. Torst, Jr.	809,542	Jan. 9	1894	391	120	448
Oiler. Automatic	J. Cooper	810,631	Jan. 23	4126	853	120	1033
Oiler. Automatic	A. H. Taylor	810,686	Jan. 23	4262	877	120	1046
Oilers. Filling attachment for sight-feed	F. B. Garretson	811,051	Jan. 30	4989	1035	120	1238
Operating-table	J. Schoettl, C. Jaeger, and P. Waleisten	812,340	Feb. 13	1498	322	120	1880
Optical instrument	A. Swasey and G. L. Fuller	812,464	Feb. 13	1898	419	120	1933
Ordnance breech mechanism	A. T. Dawson and G. T. Buckham	812,643	Feb. 13	2026	462–3	120	1953
Ordnance sight	S. A. S. Hammar	810,644	Jan. 23	4140	860	120	1051
Ore. Apparatus for magnetic separation of iron	G. Grondal	812,170	Feb. 6	1301	271	120	1734
Ore-concentrator	G. M. Whitney	809,795	Jan. 9	2054	424	120	542
Ore-concentrator	E. Deister	810,947	Jan. 30	4939	983	120	1159
Ore-concentrator	J. W. Pinder	812,580	Feb. 13	2017	448	120	1979
Ore-crushers. Stamp-actuating mechanism for	W. S. McKinney	811,079	Jan. 30	5058	1056	120	1248
Ore. Magnetic separation of iron	G. Grondal	812,172	Feb. 6	1304	286	120	1735
Ore or flue dust. Burning comminuted	G. L. Davison	811,849	Jan. 30	4965		120	1239
Ore. Reducing iron	G. M. Westman	812,247	Feb. 13	1495	321	120	1888
Ore-separator. Magnetic	G. Grondal	812,171	Feb. 6	1303	285	120	1735
Ore-separator. Magnetic	G. Grondal	812,173	Feb. 6	1305	287	120	1735
Ore-sorting belt	F. W. Jacques	812,370	Feb. 13	11545	334–5	120	1675
Ore-washing plant	F. Eggers	810,196	Jan. 16	3197	695	120	788

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drf'g.	Official Gazette. Vol.	Official Gazette. Page.
Ores and metalliferous sands. Applying heat for the treatment of	W. J. Jackson	808,784	Jan. 2	264	.....	120	61
Ores. Recovering values from sulfid	E. C. Pohlé	811,085	Jan. 30	5018	.....	120	1251
Ores. Treating	J. H. Haynes and W. D. Engle	808,839	Jan. 2	420	.....	120	98
Ores. Treating	J. Savelsberg	810,572	Jan. 23	4038	.....	120	1000
Organs. Reed-	E. W. Arnold	812,473	Feb. 13	1915	422	120	1909
Organs and pianos. Foot-release valve for pneumatic actions for	F. C. Preston	811,087	Jan. 30	5028	1049	120	1252
Ornamental comb	O. Herrmann	812,906	Feb. 20	2944	648	120	2217
Orthopedic appliance for curing knock-knees, &c.	W. J. Metcalf and J. W. Pickering	809,574	Jan. 9	1951	405	120	461
Overhead line	O. Semeleder	810,355	Jan. 16	3546	720	120	887
Overlay	E. Giraud	812,561	Feb. 13	2114	463	120	1907
Overshoe	C. W. Combe	809,096	Jan. 2	964	198	120	211
Overshoe-fastener	A. E. Roberts	808,948	Jan. 2	645	141	120	142
Overshoe-retainer	W. O. Brockway	809,805	Jan. 9	2571	532	120	586
Oxids. Apparatus for the preparation of metallic	O. E. Hubbell	813,897	Feb. 27	4745	1049	120	2665
Oxids. Producing metallic	L. Fink-Huguenot	813,785	Feb. 27	4517	997	120	2616
Ozone-generator	L. Fink-Huguenot	813,786	Feb. 27	4519	997	120	2616
Package	C. F. Birtman	811,364	Jan. 30	5581	1165–6	120	1372
Package and letter delivering and collecting system	J. Herr	809,948	Jan. 16	3881	853	120	676
Packing	J. M. Case	813,542	Feb. 27	4048	886–8	120	2516
Packing	J. Ostrander	808,775	Jan. 2	312	67	120	70
Packing	C. Restein	809,581	Jan. 9	1961	407	120	463
Packing	H. E. Longwell and F. Hodgkinson	813,723	Feb. 27	4393	969	120	2589
Packing. Automatic	E. S. Lea and J. Degen	811,934	Feb. 6	799	176	120	1662
Packing-case	G. H. Leathers	810,060	Jan. 16	3036	611	120	730
Packing-case. Partitioned	A. R. Speer	813,246	Feb. 20	3440	758	120	2328
Packing for the end faces of pairs of rollers. Lateral	F. E. F. Neumann	813,320	Feb. 20	3601	791	120	2356
Packing. Metallic	E. M. Cook	812,114	Feb. 6	1155	254	120	1723
Packing. Piston-rod	P. H. Weaver	811,603	Feb. 6	132	29	120	1514
Pad: *See* Desk-pad. Furniture-pad. Harness-pad. Horseshoe-pad. Therapeutic pad.							
Pad-holder	L. J. Hopkins	809,615	Jan. 9	2042	424	120	480
Paddle-wheel	J. Best	812,805	Feb. 20	2565	564	120	2133
Paging-machine	G. Stahl	810,577	Jan. 23	4042	831	120	1003
Pail and strainer. Milk	A. T. Gunderson	810,408	Jan. 23	3896	761	120	925
Paint and varnish remover	C. Ellis	811,044	Jan. 30	4951	.....	120	1237
Paint-remover	G. Michaelis	812,582	Feb. 13	2153	.....	120	2005
Pan: *See* Evaporating-pan. Cook and frying pan.							
Pan-and-roller mill for crushing and grinding	J. C. Wegerif	810,830	Jan. 23	4497	936	120	1103
Panel cut-out and receptacle	F. T. Wheeler	809,873	Jan. 9	2513	522	120	586
Pantograph	N. H. Brown	809,246	Jan. 2	1267	257–8	120	280
Pantograph	A. Shaker	811,333	Jan. 30	5526	1152	120	1359
Paper-bag machine	F. E. Strasburg	809,230	Jan. 2	1208	246–7	120	266
Paper-bag machine	F. E. Strasburg	812,378	Feb. 13	1740	351–3	120	1921
Paper-bag machine	E. E. Claussen	813,280	Feb. 20	3499	771–2	120	2336
Paper-bag machine	W. Liddell	814,006	Feb. 27	4958	1096–9	120	2707
Paper-bag machines. Conveying mechanism for	O. Hesser	813,206	Feb. 20	3373	743	120	2309
Paper-bag-making machine	O. Hesser	813,207	Feb. 20	3366	740–2	120	2308
Paper-bag rack	X. C. Halbert	811,142	Jan. 30	5146	1075–6	120	1276
Paper bottle, cup, or other container	J. C. Kimsey	809,812	Jan. 9	2406	499	120	562
Paper bottles, cups, &c. Manufacture of	J. C. Kimsey and H. R. Heyl	809,813	Jan. 9	2408	499	120	562
Paper-box-blank-stripping machine	L. C. Palmer	810,971	Jan. 30	4821	1002–3	120	1207
Paper box or carton	T. J. Landrum	812,212	Feb. 13	1413	307	120	1848
Paper-cabinet	J. W. Meaker	810,293	Jan. 16	3407	705	120	827
Paper-cabinet	J. W. Meaker	810,294	Jan. 16	3410	705	120	827
Paper-cabinet	J. W. Meaker	810,295	Jan. 16	3414	706	120	828
Paper-clip	J. McLean	812,800	Feb. 13	2553	562	120	2086
Paper. Device for measuring the thickness of	B. S. Hudson	812,042	Feb. 6	1023	223–4	120	1697
Paper-feeding machine	C. B. Stilwell	808,953	Jan. 2	510	110–15	120	114
Paper-feeding machine	H. Bradshaw	810,391	Jan. 23	3851	751–3	120	915
Paper-feeding mechanism	C. Williams	813,127	Feb. 20	3226	707–8	120	2280
Paper-fixture	H. J. Williams	813,128	Feb. 20	3228	708	120	2280
Paper-folding machine	A. E. Sexton	813,563	Feb. 27	4147	909–10	120	2537
Paper-hanger's handy device	A. C. Harris and E. C. Jarman	812,740	Feb. 13	2444	536	120	2002
Paper-holder	J. Sim	809,330	Jan. 9	1445	293	120	352
Paper-holder	A. E. Sexton	813,564	Feb. 27	4149	910	120	2537
Paper-machine	J. W. Packer	813,820	Feb. 27	4578	1011–13	120	2629
Paper-machine head-box	W. McNaught	809,073	Jan. 2	882	187–8	120	195
Paper-machines. Felt-regulating device for	T. Hancock	813,268	Feb. 20	3524	777	120	2342
Paper-making apparatus for separating sand, metal, and other impurities from pulp	J. Macnaughton	813 964	Feb. 27	4904	1086	120	2697
Paper-making machine	J. W. Moore and J. A. White	809,532	Jan. 9	2436	505	120	569
Paper-making machine	A. Aldrich	811,527	Jan. 30	5867	1230	120	1430
Paper. Manufacturing lined or enveloped tubes of	G. H. Sachsenröder	809,846	Jan. 9	2467	513	120	576
Paper-perforating machine. Automatic	H. L. Davis	811,621	Feb. 6	168	37–8	120	1522
Paper pulp-asorting apparatus	B. Kihlgren	811,880	Feb. 6	700	173	120	1660
Paper receptacles. Making	J. C. Kimsey	811,409	Jan. 30	5680	1188	120	1393
Paper-roll core	S. H. Smart	812,205	Feb. 13	1613	364	120	1894
Patent. Device for fastening folded	W. R. Coon	812,115	Feb. 6	1156	254	120	1724
Patent. Potato-	H. A. Mitchell and T. D. Singleton	811,852	Feb. 6	226	49	120	1536
Paste-pot	R. P. Frist	813,096	Feb. 20	3135	695	120	2267
Pasteurizer or cooler	D. W. Payne	811,170	Jan. 30	5004	1083	120	1289
Pastry-bag	F. Dieper	809,160	Jan. 2	994	209	120	313
Patchwork coverlet requiring a sitting position	D. G. Sterns	810,289	Jan. 23	4388	883	120	1004
Patchwork implement for	C. W. Gregory, Jr.	810,290	Jan. 23	3945	813	120	988
Patent. Device for preventing packing for wood-block roadway	W. Schumacher	813,236	Jan. 2	1160	.....	120	285
Patent. Means for covering artificial	J. T. Dell	808,827	Jan. 2	357	100	120	112
Patent. Potato-	F. A. Pritchett	813,289	Feb. 27	4913	870–80	120	2688

Alphabetical list of inventions for January and February—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drf'g.	Official Gazette. Vol.	Official Gazette. Page.
Pedestal-table	G. A. Davis	810,395	Jan. 16	3364	686	120	815
Pedestal-table	T. C. Beech	812,304	Feb. 13	1780	360	120	1933
Peeling machine. Vegetable-	H. Robinson	809,569	Jan. 9	1962	402	120	462
Pen. Fountain-	J. A. L. Snyder	808,980	Jan. 2	554	110	120	113
Pen. Fountain-	F. M. Kegrise	810,324	Jan. 16	3382	702	120	824
Pen. Fountain-	M. R. Crossman	810,327	Jan. 16	3402	704	120	842
Pen. Fountain-	G. Swester	812,854	Feb. 27	4066	874	120	2513
Pen. Knocking-	G. Schmidt and F. Schmidgall	811,068	Feb. 6	888	188	120	1662
Pen-rack and inkstand-holder. Combined	L. Tripodi	809,646	Jan. 9	2112	437	120	494
Pen. Reservoir-	P. Orywall	809,719	Jan. 9	1433	289	120	349
Pen. Reservoir-	R. T. Gillespie	812,647	Feb. 13	2272	486	120	2027
Penholder	O. Johnson	809,892	Jan. 9	2194	454–5	120	514
Pencil	F. L. Rousseau	813,522	Feb. 27	4017	880	120	2509
Pencil and pen holder	L. Milliron	812,763	Feb. 13	2483	545	120	2070
Pencil-holder	I. C. Resnor	809,135	Jan. 2	1021	211	120	234
Pencil-sharpener	H. H. A. Schwarz	811,798	Feb. 6	801	112	120	1582
Pencil-tip	F. McIntyre	813,108	Feb. 20	3173	694	120	2260
Perforating-machine	H. D. Jacobson	808,661	Jan. 2	79	17	120	19
Perforating-machine	H. S. Bergen	811,816	Feb. 6	827	118	120	1588
Perforating-machine	B. J. Lindgren	813,049	Feb. 20	3043	670–1	120	2238
Petroleum-burner	G. Carl and A. Sohns	810,908	Jan. 30	4983	976	120	1175
Petroleum. Eliminating sulfur from the sulfur-containing constituents of	H. S. Blackmore	809,087	Jan. 2	932	194	120	208
Petroleum. Extracting sulfur from the sulfur-containing constituents of	H. S. Blackmore	809,086	Jan. 2	929	194	120	208
Phonograph	E. M. Robinson	813,670	Feb. 27	4396	945–6	120	2589
Phonograph attachment	Z. T. Grover	811,633	Feb. 6	202	43	120	1529
Phonograph-horn	C. A. Senné	811,577	Feb. 6	651	142–3	120	1623
Phonograph-horn	J. T. Brown	813,909	Feb. 27	4937	1092	120	2704
Phonograph-horn. Folding	J. T. Brown	811,900	Feb. 6	703	154	120	1624
Phonograph-records. Apparatus for applying pigment to engraved ends of	J. F. Ott	813,514	Feb. 27	3997	876–7	120	2503
Phonograph repeating attachment	E. L. Aiken	810,018	Jan. 16	2826	584–5	120	704
Phonograph speed-indicator	P. Weber	811,010	Jan. 30	4896	1021	120	1224
Phonographs, ear-trumpets, &c. Horn for	G. H. Villy. (Reissue)	12,442	Jan. 30	5688	1235	120	1435
Phonographic horn. Folding	M. L. Munson	813,814	Feb. 27	4565	1009	120	2626
Photo-holder	J. Wallick	811,008	Jan. 30	4893	1020	120	1223
Photograph-printing apparatus	E. I. Brown	810,907	Jan. 30	4681	976	120	1175
Photographs. Apparatus for permitting the successive exhibition of	C. Fougerat	808,830	Jan. 2	405	89	120	90
Photographic developing-cabinet	E. O. Kepler	810,413	Jan. 23	3714	786	120	929
Photographic-film exposing and developing machine	G. C. Beidler	810,388	Jan. 23	3637	749–50	120	911
Photographic mask	P. A. Hillhouse	810,143	Jan. 16	3092	638	120	761
Photographic papers. Manufacturing	I. Hoffedimmer	812,204	Feb. 13	1390	.....	120	1844
Photographic plate and film lifter	J. J. Lintz	808,936	Jan. 2	615	134	120	136
Photographic-plate carrier	E. L. Hall	811,496	Jan. 30	5810	1216	120	1418
Photographic-printing device	W. H. Brown	812,816	Feb. 20	2588	540	120	2130
Photographic-printing frame	J. R. Spencer	813,531	Feb. 27	4063	884	120	2513
Photographic proofs. Producing multicolored	S. Vathis	809,651	Jan. 9	2118	.....	120	495
Photographic purposes. Automatic device for	W. H. Greene	809,389	Jan. 9	1531	311	120	371
Photographic shutters. Automatic tripping device for	A. E. Watts	809,346	Jan. 9	1483	300	120	362
Photography	J. W. Ippers	812,748	Feb. 13	2453	538–9	120	2064
Piano-action	J. W. Darley, Jr.	810,920	Jan. 30	4717	984–5	120	1185
Piano-action	W. C. Vogel and H. K. Snell	812,705	Feb. 13	2375	520	120	2047
Piano-action	E. Werner	813,263	Feb. 20	3470	766	120	2330
Piano-action flange	F. C. Billings	810,701	Jan. 23	4264	884	120	1053
Piano-actions. Damper-lever flange for	W. W. McCall	809,970	Jan. 16	3728	831	120	684
Piano-actions. Hammer-supporting flange for	C. P. Blinn	809,042	Jan. 2	825	177	120	182
Piano attachment	W. C. Creighton and C. M. Banker	811,279	Jan. 30	5424	1130–1	120	1338
Piano attachment. Self-playing	J. W. Darley, Jr.	813,256	Feb. 20	3065	804	120	2370
Piano-bridge	F. Meyer	812,510	Feb. 13	1994	427	120	1973
Piano-hammer extractor	C. H. Lang	812,806	Feb. 13	1976	434	120	1993
Piano pedal-guard	M. E. Clements	810,225	Jan. 16	3420	719	120	842
Piano-player. Electrical	P. B. Kehoe	809,305	Jan. 9	1393	282–4	120	343
Piano-player. Mechanical	J. O'Connor	811,082	Jan. 30	5011	1047	120	1240
Piano-playing attachment	H. McPhail	808,774	Jan. 2	304	66–7	120	69
Piano-repairer a tool	S. M. King	810,285	Jan. 16	3395	703	120	834
Piano. Self-playing	J. W. Darley, Jr.	813,355	Feb. 20	3664	809–4	120	2370
Piano swinging frames. Regulating-hinge for	L. E. Bretzfelder and R. K. Thumler.	809,043	Jan. 2	827	177	120	182
Piano-tone-modulating device	J. Sampere	812,237	Feb. 13	1402	320–1	120	1899
Pianoforte	J. W. Galloway	813,791	Feb. 27	4524	999	120	2617
Picker: *See* Cassia-picker. Cotton-picker.							
Picture apparatus. Moving-	R. C. Wagner	811,341	Jan. 30	5544	1154–7	120	1363
Picture-displaying apparatus	S. Zecnik and E. O. Gottlieb	811,610	Feb. 6	146	33–3	120	1617
Picture-exhibiting apparatus. Moving-	N. Bowes	809,981	Jan. 16	3748	864–5	120	693
Picture-frame	E. G. Anthony	811,365	Jan. 30	5566	1161	120	1366
Pictures and the like. Means for displaying	A. E. Pauls	811,422	Jan. 30	5707	1196	120	1396
Pigments. Producing carbonaceous	D. J. Ogilvy	813,911	Feb. 27	4778	.....	120	2672
Pile-driver	A. Bishop	809 342	Jan. 2	1209	266	120	276
Pile fabric. Tufted	T. Cooper	813,561	Feb. 27	4047	1070	120	2662
Pile fabric. Woven	M. J. Whitsell	810,012	Jan. 16	2814	683	120	702
Pile fabric. Woven	M. J. Whitsell	810,013	Jan. 16	2817	684	120	703
Pile fabric. Woven	A. G. Robertson	813,898	Feb. 27	4870	978	120	2688
Pile fabric. Woven	J. Zimmerman	813,130	Feb. 20	3224	709	120	2280
Pile-fabric	J. Zimmerman	813,131	Feb. 20	3225	709–10	120	2280
Pile-fabric	J. Zimmerman	813,132	Feb. 20	3226	710	120	2280
Piling. Metal	J. McGrew	810,851	Jan. 23	3989	881	120	1003
Piling. Metal	J. J. Russell	808,958	Jan. 2	520	98	120	98
Pin: *See* Clothes-pin. Hair-pin. Horse-blanket pin. Spinning-pin.	J. J. Russell	808,959	Jan. 2	726	157	120	161
Pin holding and delivery device	D. A. Lawton and L. L. Withey	810,922	Jan. 30	4767	988	120	1200

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Pin-making machine. Safety-	W. D. Middlebrook	812,762	Feb. 13	2480	544-5	120	2089
Pin-retainer	W. C. Maynard	811,421	Jan. 30	5688	1191	120	1393
Pinking-machine	P. H. Sweet	812,466	Feb. 13	1901	419	120	1954
Pipe:							
See Flexible pipe. Lock-seam pipe. Lubrication-pipe. Railway stand-pipe. Stovepipe. Tobacco-pipe. Water-closet flush-pipe.							
Pipe-bending machine	J. H. Mull	811,516	Jan. 30	5845	1224	120	1426
Pipe-bracket. Adjustable	J. E. Rollins	813,588	Feb. 27	4140	907	120	2535
Pipe-clamp	E. L. Rieske	809,327	Jan. 9	1442	292	120	351
Pipe-cleaner	F. A. Falt	808,526	Jan. 2	400	87	120	89
Pipe-coupling	A. T. Herrick	808,922	Jan. 2	594	130	120	130
Pipe-coupling	A. T. Herrick	808,923	Jan. 2	595	131	120	130
Pipe-coupling	J. P. Eustis	809,792	Jan. 9	2375	490	120	555
Pipe-coupling	A. W. Graham	811,631	Feb. 6	199	42-3	120	1526
Pipe-coupling	A. W. Graham	811,632	Feb. 6	201	43	120	1529
Pipe-coupling	D. Landau	813,437	Feb. 27	3846	842	120	2468
Pipe coupling. Automatic air-	P. Settino and P. Hoover	812,532	Feb. 13	2042	447	120	1983
Pipe coupling. Steam-	W. J. Pine and L. P. Hynes	813,235	Feb. 20	3423	754	120	2319
Pipe coupling. Train-	J. A. Frenzel	813,637	Feb. 27	4237	931	120	2656
Pipe-cutter	E. H. Hollingshead and C. P. Jennings.	810,784	Jan. 23	4375	908	120	1078
Pipe-cutter	A. Kovacs	812,210	Feb. 13	1409	306-7	120	1847
Pipe-dressing tool	W. Ritschard	812,366	Feb. 13	1712	376	120	1916
Pipe guard. Vent-	C. M. Brean	809,667	Jan. 9	2144	444	120	501
Pipe-joint. Flexible	W. A. Greenlaw	812,202	Feb. 13	1396	303	120	1843
Pipe-laying device	C. De Lay	809,910	Jan. 9	2563	534	120	608
Pipe-line. Fluid	J. B. Speed	808,782	Jan. 2	327	70	120	72
Pipe-line. Helically-ribbed fluid	D. J. Isaacs and J. B. Speed	808,752	Jan. 2	262	57	120	60
Pipe mold. Drain or sewer	J. B. Hill	810,276	Jan. 16	3378	699	120	820
Pipe return-bend. Double-	F. H. Niles	811,318	Jan. 30	5496	1145	120	1353
Pipe-section coupling-joint	I. Schaad	813,454	Feb. 27	3870	848	120	2474
Pipe tongs or wrench	E. Duggins	809,102	Jan. 2	966	200	120	213
Pipe-wrench	R. Adams	808,801	Jan. 2	357	77	120	79
Pipe-wrench	G. W. Waitt	809,152	Jan. 2	1046	217	120	230
Pipe-wrench	J. H. Vinton	810,096	Jan. 16	2907	624	120	744
Pipe-wrench	L. V. Remion	810,304	Jan. 16	3441	711	120	834
Pipe-wrench	H. C. Barlow	810,366	Jan. 16	3596	733	120	863
Pipe-wrench	S. A. Feeler	810,726	Jan. 23	4326	899	120	1057
Pipe-wrench	E. Fisher. (Reissue)	12,438	Jun. 23	4652	970	120	1135
Pipe-wrench	W. Gormley	813,645	Feb. 27	4251	934	120	2580
Pipes. Apparatus for holding, turning, threading, and cutting	M. H. Spear	813,530	Feb. 27	4031	883	120	2513
Pipes of artificial stone. Making	J. Hall	809 680	Jan. 9	2172	449-50	120	510
Pipette	S.-I. Takaki	813,256	Feb. 20	3461	763	120	2328
Pistol and revolver sight	E. M. Canto	811,033	Jan. 30	4936	1030	120	1233
Piston	G. H. Stallman	811,255	Jan. 30	5379	1122	120	1328
Piston-rod lubricator	J. B. Barnes	813,398	Feb. 27	3763	826	120	2480
Piston-rod-moving device	H. Linke	813,158	Feb. 20	3277	720	120	2290
Pitman connection	W. V. Miller	810,981	Jan. 30	4808	989	120	1204
Pitman-rod. Extensible	W. R. O'Neill	810,798	Jan. 23	4453	934	120	1094
Pitometers. Street connection for	A. J. Cole	811,763	Feb. 6	425	94	120	1579
Pivot-gaging machine	D. H. Church	809,248	Jan. 2	1272	259-61	120	261
Placket fastener. Dress-	G. Burrows	813,945	Feb. 27	4630	1008	120	2663
Planer-head	J. B. Forbes	811,769	Feb. 6	438	96	120	1581
Planer-head and cutter	J. B. Forbes	811,768	Feb. 6	437	96	120	1581
Plant-excavator	R. D. Kline	813,717	Feb. 27	4284	937	120	2667
Plant-support	C. Lund	812,942	Feb. 20	2845	623	120	2186
Planter	W. S. Graham	812,925	Feb. 20	2804	617-18	120	2186
Planter and fertilizer-distributer. Combined corn-	J. D. Davis	812,983	Feb. 20	2923	644	120	2212
Planter. Check-row corn-	J. L. Miller	812,606	Feb. 13	2360	500	120	2062
Planter. Corn-	A. J. Brown	810,103	Jan. 16	3099	637	120	746
Planter. Corn-	E. E. Englund	811,554	Feb. 6	30	7-8	120	1491
Planter. Corn-	I. A. Weaver	811,977	Feb. 6	892	196-8	120	1670
Planter. Corn-	C. W. Lanham	812,755	Feb. 13	2468	541-2	120	2098
Planter. Potato-	H. J. Springer	812,695	Feb. 13	2382	515	120	2042
Planter. Seed-	J. W. Little	812,057	Feb. 6	1080	230	120	1708
Planter. Seed-	P. Le Sueur	812,278	Feb. 13	1557	340	120	1821
Planter-wheel	G. C. Avery	809,886	Jan. 9	2638	538	120	591
Plaster. Wall-	J. W. Chase	812,978	Feb. 20	2915		120	2211
Plaster composition	G. C. Wyatt	812,109	Feb. 6	1145		120	1722
Plastic-material mold	A. S. Watts	811,602	Feb. 6	121	30	120	1514
Plastic-material-molding apparatus	J. A. McConnell	812,148	Feb. 6	1242	270	120	1744
Plastic materials. Machine for molding articles from	H. W. N. Cole	809,564	Jan. 9	1913	397	120	494
Plate-guard	R. Turner and B. R. Corley	809,026	Jan. 2	909	174	120	178
Plating and dipping rack. Wire-	J. P. Clark	811,375	Jan. 30	5092	1170	120	1376
Plow	W. Connor	808,727	Jan. 2	213	46-4	120	49
Plow	S. H. Steele	809,757	Jan. 9	2305	477	120	535
Plow	S. S. Weaver	809,870	Jan. 9	2510	521	120	585
Plow	J. H. Baker	811,514	Feb. 6	394	117	120	1487
Plow	C. H. Little	812,056	Feb. 6	1080	228	120	1708
Plow	L. N. Schultz	813,118	Feb. 20	3301	703	120	2275
Plow	J. J. McManmon	813,988	Feb. 27	4680	1018	120	2709
Plow	R. B. Lassiter	813,722	Feb. 27	4281	933	120	2668
Plow	A. Shearer	676,576	Jan. 23	4323	898	120	1057
Plow	W. H. Williams	811,608	Feb. 6	136	30-1	120	1515
Plow	S. H. Clark	808,437	Jan. 23	3619	752	120	885
Plow	W. J. Payette	813,283	Feb. 6	1164	245	120	1713
Plow	A. Thiesen	810,280	Feb. 13	1723	364	120	1885
Plow-attachment	W. S. Cook	810,220	Jan. 23	4158	864	120	1033
Plow-beam	P. R. Thorne and R. D. Walton	809,477	Jan. 9	1793	378	120	479
Plow-coulter	J. F. Mikolasek	811,494	Jan. 30	5322	1115	120	1321
Plow-handle	S. F. Piper	812,445	Feb. 27	4630	1008	120	2671
Plow-handle	H. J. Kyle	809,304	Jan. 9	2213	464-5	120	515
Plow-share	A. C. Lindgren	810,779	Jan. 23	4436	914-15	120	1085

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Plows. Lifting device for gang and sulky	F. J. Kelly	812,273	Feb. 13	1851	398-9	120	1879
Plows. Sod-turner for disk	J. J. Travis	813,086	Feb. 20	3094	678	120	2351
Plumber's trap	J. F. McCartney	810,971	Jan. 16	3729	801	120	994
Plumbing system	J. L. Frain	810,047	Jan. 16	3288	707	120	750
Plunger-lubricator	L. A. B. Johnson	809,809	Jan. 9	2469	497-8	120	569
Pneumatic-cushion wheel	C. A. Lee	810,081	Jan. 16	3268	612	120	720
Pneumatic-despatch-tube apparatus	E. A. Fordyce	813,439	Feb. 27	4224	920	120	2655
Pneumatic-despatch-tube system	J. S. Jacques	812,271	Feb. 13	1548	337-8	120	1872
Pneumatic-despatch-tube system	J. S. Jacques	812,702	Feb. 13	2540	539-9	120	2092
Pneumatic-despatch tubes. Clamping-sleeve for	J. F. Skirrow	813,674	Feb. 27	4303	947	120	2670
Pneumatic hoist	J. L. Pilling	810,884	Jan. 23	4622	963	120	1139
Pneumatic motor	L. U. Jobes	809,919	Jan. 9	2609	537-8	120	607
Pneumatic-tube carrier	B. C. Batcheller	808,628	Jan. 2	11	3	120	5
Pneumatic tube for store service	T. Bemis	812,162	Feb. 6	1266	282	120	1751
Pneumatic tubes. Combined door, lock, and indicator for carriers used in	P. J. Madigan	808,768	Jan. 2	291	66	120	66
Pocket-box. Sheet-metal	I. J. Marcuse	812,175	Feb. 6	1309	286	120	1766
Pocket-filling machine	T. A. Edison	813,491	Feb. 27	3947	866-7	120	2498
Pocket-knife	G. Schrade	812,601	Feb. 13	2189	477	120	2011
Pocket. Safety-	A. M. Fitzkee	811,045	Jan. 30	4952	1084	120	1237
Pocket. Safety-	M. C. Dexter	813,262	Feb. 20	3082	800	120	2374
Pol-machine	E. Kopke	809,571	Jan. 9	1948	429-4	120	480
Poles. Water-brake for	E. E. P. Petery and J. O. Jackson	810,880	Jan. 23	4603	999	120	1136
Polishing-machine	J. Nelson	810,454	Jan. 23	3904	823-3	120	988
Polishing-machine	J. A. Stowell	811,454	Jan. 30	5789	1301	120	1408
Polishing-machine	F. Terramorse	813,829	Feb. 27	4637	1026	120	2642
Pool-table register	G. C. Beck	811,195	Jan. 30	5262	1101-2	120	1302
Portable table	J. D. Camfield	811,480	Jan. 30	5777	1209-10	120	1411
Post:							
See Anchor-post. Binding-post. Concrete fence-post. Concrete or cement post. Fence-post. Hitching-post.							
Post	J. D. Morse	811,313	Jan. 30	5486	1144	120	1350
Post	W. W. Wilcox	813,336	Feb. 20	3532	797	120	2368
Post and wire-stretcher. Combined	G. W. Thomas	810,282	Jan. 16	3263	679	120	800
Post-card. Pictorial	K. Münster	812,515	Feb. 13	2004	439	120	1975
Pot:							
See Coffee-pot. Fire-pot. Paste-pot. Sewing-machine wax-pot.							
Pot-rack	E. B. Cloninger	812,546	Feb. 13	2089	456	120	1902
Potato cutter and planter. Automatic	J. J. Putney	809,290	Jan. 9	1606	325-6	120	396
Potato-digger	J. Hist	808,748	Jan. 2	282	54	120	58
Potato-digger	J. Hist	809,220	Jan. 2	1302	265	120	268
Potato-digger	J. Hist	809,282	Jan. 2	1302	265	120	267
Potato-digger	J. Johansen and E. A. Fedick	810,702	Jan. 23	4377	889	120	1078
Potato-digger	D O Bowman	812,007	Feb. 6	971	211-12	120	1687
Potato-digger	T. N. Oium	812,673	Feb. 13	2318	504-5	120	2086
Potato-digger attachment	G. E. Chute	810,716	Jan. 23	4394	893	120	1080
Poultry-fountain	G. F. Gillenwaters	811,914	Feb. 6	783	160	120	1649
Powder and making same. Gun-	F. I. Du Pont	813,020	Feb. 20	2905		120	2239
Powder to the person. Device for applying	O. H. Huebel	811,924	Feb. 6	781	170-1	120	1648
Power:							
See Horse-power. Tide power.							
Power-carrying lines. Support for	J. Reid	812,912	Feb. 27	4778	1054-5	120	2672
Power-generator. Electromagnetic	J. L. Potter	812,949	Feb. 20	2957	630	120	2300
Power mechanism	J. W. Wihlborg	813,767	Feb. 27	4465	984	120	2602
Power plant	R. Moran	812,666	Feb. 13	2302	501	120	2083
Power-press	J. E. Dobson	810,796	Jan. 16	3194	683	120	731
Power shears. Hand-	F. A. Richards	812,422	Feb. 13	1894	415	120	1950
Power-transmission device	G. W. Marble	808,709	Jan. 2	268	60-4	120	63
Power-transmission device	F. de Coligny	812,482	Feb. 13	1942	426	120	1962
Power-transmission mechanism	J. H. Thompson	810,178	Jan. 16	3148	692	120	773
Power-transmitter	W. and V. Lorenz	810,720	Jan. 23	4414	898	120	1082
Power-transmitting apparatus	W. L. Wilson	812,628	Feb. 13	2352	495	120	2010
Power-transmitting mechanism	J. B. King	810,809	Jan. 23	4681	864	120	1121
Power-transmitting mechanism	H. H. Taylor	811,368	Jan. 30	5388	1193	120	1339
Power-transmitting mechanism	J. Petrelli	812,519	Feb. 13	2012	441-2	120	1977
Precious metals. Apparatus for recovering	E. J. Garvin	809,899	Jan. 16	2605	549	120	603
Precious metals. Apparatus for treating slimes, &c., for the recovery of the	C. Gluyas	812,418	Feb. 13	1838	399-400	120	1947
Preserving-can. Vacuum-sealing	H. B. Williams	812,908	Feb. 20	2906	629	120	2297
Press:							
See Baling-press. Barrel-heading press. Briqueting-press. Butter-press. Cement-brick press. Cement or plastic block molding press. Concrete-building-block press. Copying-press. Die-press. Drill-press. Filter-press. Glass-press. Hay-press. Multicolor-press. Plate-press. Power-press. Printing-press. Printing and embossing press. Seal-press. Shingle-press. Stamping-press. Transfer-press. Trousers-press.							
Press	O. Smith	808,804	Jan. 2	354	71-2	120	73
Press-operating device	H. Thurston	812,901	Feb. 20	2897	620	120	2295
Presses. Belt-feed for ink-table distributing-	J. L. Haverfield	813,788	Feb. 27	4485	988	120	2605
Presser-foot and mechanism for operating the same	J. C. Bermingham	812,914	Feb. 20	2887	618	120	2291
Pressing machine. Clothes-	J. H. Whipple	812,156	Feb. 6	1257	280	120	1750
Pressure and moving look	F. G. Norton	811,911	Feb. 6	1257	280	120	1750
Pressure and suction device	F. Dumble	811,155	Jan. 30	5159	1151	120	1298
Pressure-regulator	E. Roth	811,980	Jan. 30	5881	1310-1	120	1488
	A. B. Carmichael	812,017	Feb. 6	989	210	120	1688

Alphabetical list of inventions for January and February—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Pressure-retainer. Automatic	J. W. Brown	808,811	Jan. 2	372	80	120	82
Primary battery	C. E. Lockwood and G. A. Lutz	812,804	Feb. 13	1978	434	120	1999
Primary battery	C. E. Lockwood and G. A. Lutz	812,805	Feb. 13	1979	434	120	1999
Primer and protector. Check	A. J. Ware and W. Zoller	812,707	Feb. 13	2378	821	120	2047
Printer's composing-stick	F. M. Barker	808,715	Jan. 2	184	40	120	62
Printers' leads. Machine for manufacturing	C. C. Webster	812,708	Feb. 13	2381	521-3	120	2048
Printer's register-hook	J. E. Lee	808,663	Jan. 2	51	13	120	20
Printing and addressing machine. Envelop	M. P. Kenna	809,957	Jan. 16	2009	556	120	677
Printing and delivery mechanism	W. H. Bunce	812,180	Feb. 13	1380	204	120	1831
Printing and embossing press	W. Scott	810,891	Jan. 23	4088	984	120	1130
Printing and folding machine	C. Hawkins	813,228	Feb. 27	4728	1045-6	120	2662
Printing and folding machine. Combined rotary web	W. Scott	810,228	Jan. 16	2283	676-7	120	795
Printing and numbering machines. Numbering arrangement for use in connection with	H. A. W. Wood	810,803	Jan. 23	4089	838	120	1009
Printing apparatus	D. Sr. and Jr., A. L., and J. W. Carlaw	811,372	Jan. 30	5896	1169	120	1274
Printing books in type for the blind. Apparatus for	G. H. Gihon	810,742	Jan. 23	4332	900-2	120	1068
Printing fabrics	R. Monske	811,787	Feb. 6	481	104	120	1538
Printing-frame	P. Jeanmaire and H. Schmid	808,987	Jan. 2	730		120	161
Printing-machine	A. J. Jarman	812,426	Feb. 13	1837	403	120	1940
Printing-machine feeding mechanism	B. B. Hough	813,702	Feb. 27	4359	959-60	120	2562
Printing machine. Oil-cloth	H. C. Gammeter	812,736	Feb. 13	2434	533	120	2060
Printing-machines. Impression mechanism of cylinder	W. H. Waldron	811,342	Jan. 30	5547	1157	120	1264
Printing mechanism	H. A. W. Wood	810,016	Jan. 16	2821	583-4	120	703
Printing. Photomechanical	J. C. Barclay	811,995	Feb. 6	946	207	120	1681
Printing. Photomechanical	J. W. Ippers	809,955	Jan. 16	2003	555	120	677
Printing. Photomechanical	H. L. Reckard	810,434	Jan. 23	3742	771	120	935
Printing. Photomechanical multicolor	J. W. Ippers	812,405	Feb. 13	1952	431	120	1966
Printing-plate holder	M. N. Weyl	809,157	Jan. 2	1055	219	120	282
Printing-plate holder	E. R. Storm	809,239	Jan. 2	1204	246	120	295
Printing-press	C. F. Rockstroh	811,226	Jan. 30	5516	1149-50	120	1257
Printing-press	T. B. Dooley	811,488	Jan. 30	5792	1213	120	1415
Printing-press	T. B. Dooley	811,515	Jan. 30	5841	1223	120	1424
Printing-press	T. G. Claridge and T. A. Randall	812,545	Feb. 13	2084	456-8	120	1991
Printing-press	C. B. Swink	813,466	Feb. 27	3900	855	120	2480
Printing-press attachment	E. M. Couch	813,778	Feb. 27	4501	994-5	120	2612
Printing-press automatic sheet-adjusting device	C. R. Clare	813,279	Feb. 20	3496	771	120	2336
Printing-press bed and cylinder motion	F. H. Tibbetts	812,901	Feb. 20	2757	607	120	2176
Printing-press delivery apparatus	M. J. Barnett	808,806	Jan. 2	364	79	120	81
Printing-press delivery mechanism	S. G. Goss	812,923	Feb. 20	2795	615-16	120	2184
Printing press. Flat-bed web	C. B. Swink	810,231	Jan. 16	2281	679	120	799
Printing-press ink-distributer	H. F. Beehman	809,241	Jan. 2	1257	268	120	277
Printing-press ink-roller-driving mechanism	J. S. McKinley	809,531	Jan. 9	1847	383	120	440
Printing-press mechanism	B. Hall	810,051	Jan. 16	2820	582	120	726
Printing-press numbering mechanism	J. J. Mosher	809,004	Jan. 2	757	164	120	167
Printing-press plate-holder	G. H. Kendall	811,806	Jan. 30	5820	1220-1	120	1422
Printing press. Power plate	H. A. Maley	810,067	Jan. 16	2848	614	120	722
Printing-press. Two-revolution cylinder	H. J. Schoen	813,241	Feb. 20	3423	786-7	120	2322
Printing-press. Web-perfecting	B. F. Berry	812,652	Feb. 13	2244	487	120	2021
Printing-presses. Pressure-controlling device for the air-springs of	E. J. Barker	810,926	Jan. 23	4102	845-7	120	1017
Printing-presses. Safety device for two-revolution	C. P. Cottrell	810,624	Jan. 23	4123	854	120	1028
Printing-presses. Tympan-offset paper for	M. Rockstroh	809,748	Jan. 9	2282	474	120	536
Printing upon metal. Press for	A. E. Dubéy	812,563	Feb. 13	2100	440	120	1904
Profiling-machine driving mechanism	G. Kreiling	810,960	Jan. 30	4781	995	120	1188
Projectiles for small-arms. Apparatus for casting	E. W. Bullard	813,818	Feb. 20	2988	569-70	120	2140
Projectiles for small-arms. Apparatus for casting	F. Wicks	810,891	Jan. 23	4086	837	120	1008
Projectiles. Indicating the trajectory of	F. Wicks	810,892	Jan. 23	4901	987	120	1009
Propagating-beds. Apparatus for heating	J. B. Semple	809,988	Jan. 16	2789	557	120	1104
Propeller	H. Austin	810,826	Jan. 23	4806	988	120	1105
Propeller	A. T. Brown	810,083	Jan. 16	2988	591-2	120	712
Propeller	W. F. Hunter	813,430	Feb. 27	3820	836	120	2463
Propeller attachment for rowboats	E. G. Wallof	812,534	Feb. 13	2046	448-9	120	1984
Propeller. Boat	C. E. Barber	812,473	Feb. 13	1919	423	120	1957
Propeller. Boat	C. E. Barber	813,074	Feb. 20	3107	681	120	2264
Propeller for boats. Endless	G. R. Horton	813,648	Feb. 27	4264	934-5	120	2589
Propeller. Reversible	F. Gray	811,267	Jan. 30	5445	1135	120	1242
Propeller shafts. Protecting-sleeve for screw-	F. R. Cedervall	810,187	Jan. 16	3180	699	120	779
Propeller-wheel	F. Chimzar	808,814	Jan. 2	378	81	120	84
Propelling device. Vessel	P. Carleon	808,894	Jan. 2	38	7	120	9
Propelling mechanism. Universal	D. W. Rantine	812,480	Feb. 13	1880	414	120	1949
Protective apparatus	F. B. Cook	810,914	Jan. 30	4998	981-2	120	1179
Pruning implement	J. S. Rohrer	812,838	Feb. 13	2087	447	120	1963
Puller:							
See Bottle-cap and cork-puller.							
See Grub-puller.							
See Hose-puller.							
See Nail-puller.							
See Spike-puller.							
See Stump-puller.							
See Tack-puller.							
See Weed-puller.							
Pulley	H. T. Hallowell	811,260	Jan. 30	5480	1126	120	1243
Pulley-block	F. P. Whiteside	811,192	Jan. 30	5249	1089	120	1200
Pulley. Clothes-line	H. Koorie	808,815	Jan. 9	2411	500	120	563
Pulley. Expansible	J. P. Brennan	808,268	Jan. 2	1075	224	120	295
Pulley-mounting	W. T. McDermott and W. F. Betsel	809,260	Jan. 9	1891	388	120	353
Pulley. Sash	C. J. Caley	809,469	Jan. 9	1780	370	120	427
Pulp-screen. Centrifugal	J. H. Baker, G. F. Shevlin, and F. H. Baker	809,041	Jan. 2	821	176	120	181
Pulp-screening machine. Centrifugal	C. W. Thomas	809,642	Jan. 9	2104	432-4	120	482
Pulp-screening machine. Centrifugal cylindrical	H. Sesamstatti	810,813	Jan. 23	4474	892-3	120	1066
Pulp-screening machine. Centrifugal	H. Parker	811,489	Feb. 6	244	58-4	120	1592
Pulverizer material. Pressing and press for pressing	G. Raymond and J. H. Finley	812,921	Feb. 13	1484	318-19	120	1957
Pump	C. von Falkenstein and J. Thümmel	808,776	Jan. 2	313	68	120	70
Pump	A. K. Miller	809,827	Jan. 9	1911	391	120	439
Pump	P. A. Myers	809,389	Jan. 9	1239	252	120	288
Pump	H. Bean	810,189	Jan. 16	3165	698	120	778

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Pump	P. H. Lynch	813,051	Feb. 20	3092	671	120	2341
Pump. Air	D. Mills	809,002	Jan. 2	754	162	120	166
Pump and measure. Combined oil	W. B. Haines	810,832	Jan. 23	3949	812	120	998
Pump. Balanced suction and force	P. H. J. Paindavoine and P. A. Paindavoine-Dufour	813,821	Feb. 27	4581	1013	120	2630
Pump. Centrifugal	J. H. C. Petersen	810,975	Jan. 30	4830	1004	120	1209
Pump. Centrifugal turbine or similar	F. Ray	808,662	Jan. 2	114	26	120	27
Pump for atomizers. Door-operated air-	W. H. Ross	812,863	Feb. 20	2726	590	120	2189
Pump-jack	F. M. York	811,114	Jan. 30	5074	1061	120	1222
Pump-regulator	J. P. Watson and F. L. Jahn	809,500	Jan. 9	1982	411	120	457
Pump-rod coupling	J. R. Boals	813,613	Feb. 27	4192	919	120	2546
Pump-rod ejector	W. Hoekstra	812,131	Feb. 6	1187	260	120	1731
Pump. Self-regulating air-	M. Lowenstein	813,962	Feb. 27	4900	1065	120	2696
Pump spring attachment	J. O. Bean	812,716	Feb. 13	2304	536	120	2040
Pump valve-operating means. Hydraulic-	B. Obear	812,444	Feb. 13	1899	411-12	120	1946
Pumps with air. Means to replenish the air-chambers of	H. T. Hazard	812,423	Feb. 13	1833	402	120	1940
Pumping apparatus	C. C. Hill	812,206	Feb. 13	1534	334-5	120	1875
Pumping apparatus	H. W. Kimes	813,008	Feb. 20	2971	654	120	2222
Pumping apparatus. Liquid-	G. L. Waterhouse	811,110	Jan. 30	5088	1059	120	1220
Pumping-power frame	W. Hurd and W. Wright	810,945	Jan. 30	4776	993	120	1197
Pumping system. Oil-well-	R. J. Hoffman	809,806	Jan. 9	2394	494	120	549
Punch	E. D. Tucker	813,843	Feb. 27	4843	1027	120	2643
Punch and shears. Combined	E. E. Gardner	812,645	Feb. 13	2260	494	120	2026
Punch and time-stamp. Combined	W. L. Lee	808,984	Jan. 2	742	160-1	120	194
Punch. Automatic prick-	G. T. Gilbert	813,641	Feb. 27	4242	932	120	2586
Punch. Container	W. F. Hobbs	809,804	Jan. 9	2368	495	120	549
Punch or shears	C. E. Macbeth	812,576	Feb. 13	2141	469	120	2008
Punch. Typographic paper	T. E. Melvin	813,907	Feb. 27	4766	1052	120	2670
Punching-bag	P. J. Conroy	811,546	Feb. 6	21	5	120	1469
Punching-machine	J. Nelson	810,796	Jan. 23	4451	923-4	120	1068
Punching-machine	J. A. Bell	813,930	Feb. 27	4839	1056	120	2663
Punching machine. Metal-	G. C. Andrews	808,712	Jan. 2	173	39	120	39
Push-rake	W. W. Miller	813,560	Feb. 27	4111	901	120	2620
Puzzle	J. Bigham	809,898	Jan. 9	2557	529	120	595
Puzzle	E. C. Pfeiffer	811,321	Jan. 30	5503	1147	120	1264
Pyrimidin derivatives. Making	M. Conrad and W. Beckh	811,827	Feb. 6	547		120	1601
Pyrimidin derivatives. Making	M. Conrad and W. Beckh	811,828	Feb. 6	548		120	1601
Pyrimidin derivatives. Making	M. Conrad and W. Beckh	811,829	Feb. 6	548		120	1602
Quill-treating machines. Feed mechanism for	R. K. Warren	811,363	Jan. 30	5392	1126	120	1261
Quilting-frame	D. Massey	811,650	Feb. 6	236	48-9	120	1526
Quilting-frame	H. H. Jackson	813,707	Feb. 27	4367	962	120	2624
Race-course starting-gate. Portable	M. Cassidy	808,813	Jan. 2	376	81	120	85
Race-track. Electric	T. F. Gaynor	811,284	Jan. 30	5433	1133	120	1240
Rack:							
See Bottle-holding rack.							
See Can-rack.							
See Combination-rack.							
See Display-rack.							
See Garment-rack.							
See Hat and coat rack.							
See Hose-rack.							
See Lantern-globe rack.							
See Paper-bag rack.							
See Pen-rack.							
See Pot-rack.							
See Rope-rack.							
See Shoe-rack.							
See Stall floor-rack.							
See Trousers-rack.							
See Wardrobe-rack.							
Racking apparatus	H. G. Miller and G. R. Lawrence	808,941	Jan. 2	627	137	120	136
Radiator	W. H. Wyant	809,498	Jan. 9	1786	389	120	433
Radiator	I. Brooks	813,275	Feb. 20	3402	670	120	2333
Radiator air-valve	F. W. Leuthesser	813,011	Feb. 20	2976	655	120	2224
Radiator. Independent steam-heat	W. Holstein	808,925	Jan. 2	600	131	120	133
Radiator, steam-condenser, &c	F. Lamplough	811,853	Feb. 6	603	131-2	120	1612
Rafter-gage	E. H. Horton	808,988	Jan. 2	2185	433	120	512
Rail and tie fastener	A. S. Dreibelbis	809,535	Jan. 9	1915	397	120	454
Rail and tie fastener. Combination	F. M. Crossley	808,904	Jan. 2	567	126	120	134
Rail-bond	E. G. Thomas	812,900	Feb. 20	2752	606	120	2174
Rail-bonding tool	F. C. Arey	812,808	Feb. 20	2561	564	120	2123
Rail-brake. Emergency	P. O. Adams	810,316	Jan. 16	3464	715-16	120	839
Rail. Cast manganese-steel	W. Brinton	812,810	Feb. 20	2578	567	120	2136
Rail-clip	L. E. Rodgers	813,738	Feb. 27	4417	974	120	2594
Rail-crossing	F. A. Lehmann	813,387	Feb. 20	3726	819	120	2353
Rail fastening and support	S. J. Scott	813,673	Feb. 27	4302	947	120	2670
Rail frog and switch. Continuous-	F. H. Shakespeare	812,667	Feb. 13	2337	511-12	120	2030
Rail-jack and the like	F. Obelhardt	812,080	Feb. 6	1095	240	120	1712
Rail-joint	C. D. Peters	809,217	Jan. 2	1171	242	120	263
Rail-joint	R. L. Alexander	809,288	Jan. 2	1252	255	120	276
Rail-joint	A. W. Obermann and L. L. Combs	809,304	Jan. 9	1268	276	120	284
Rail-joint	C. H. Stephens	809,536	Jan. 9	1975	399	120	446
Rail-joint	W. M. Horner and B. F. Landis	810,203	Jan. 16	3239	668	120	788
Rail-joint	W. W. Anglin	810,269	Jan. 23	4077	840	120	1030
Rail-joint	J. B. Hensley	810,787	Jan. 23	4389	908	120	1075
Rail-joint	S. T. Coverstone	811,120	Jan. 30	5128	1071	120	1273
Rail-joint	J. W. Tracy	811,281	Jan. 30	5382	1124	120	1259
Rail-joint	C. C. Brown	811,289	Jan. 30	5393	1126	120	1274
Rail-joint	P. E. Harper	811,770	Feb. 6	454	98	120	1594
Rail-joint	D. Hewitt	812,030	Feb. 6	1021	228	120	1695
Rail-joint	U. G. Marucci	812,039	Feb. 6	1054	229	120	1703
Rail-joint	L. J. Robichaux, N. Caillouet, and H. F. Delhaye	812,396	Feb. 13	1896	351	120	1980
Rail-joint	C. M. Rhodes	812,494	Feb. 13	2178	475	120	2000
Rail-joint	T. W. Mayo	812,524	Feb. 20	2406	739	120	2215
Rail-joint	A. T. Rowlands	813,681	Feb. 27	4617	1008	120	2603
Rail-joint	C. E. Chrisman	813,681	Feb. 27	4681	1015	120	2621
Rail-joint	B. G. Brazee	813,781	Feb. 13	2013	433	120	1970
Rail-joint	W. J. Williams	809,417	Jan. 9	1625	353	120	411
Rail-joint	D. M. Hughes	809,454	Jan. 9	1694	365	120	423
Rail-joint	D. and W. L. Mendsider	810,888	Jan. 23	3982	794	120	1023
Rail-joints. Device for use in the manufacture of	H. B. Nichols	810,094	Jan. 16	2988	616	120	734

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Rail-joints. Device for use in the manufacture of	H. B. Nichols	810,075	Jan. 16	2957	617	120	735
Rail-splicing device. T-	W. B. Knight	813,1a/	Feb. 20	3776	720	120	2290
Rail-support	F. C. Painter	809,214	Jan. 2	1167	241	120	267
Rail-tie	S. B. Ferguson and C. Calhoun	810,833	Jan. 23	4146	857	120	1026
Rail-tie and rail-joint combined	R. P. Cook	812,648	Feb. 13	2093	439	120	1093
Rails. Anticreeping device for	J. J. O. Fischer	808,648	Jan. 2	54	12	120	14
Railway	F. English and A. G. Quimby	810,479	Jan. 23	3941	789	120	960
Railway	G. A. Le Fevre	811,855	Feb. 6	607	133	120	1613
Railway	L. Ginger	812,416	Feb. 27	3795	833	120	2467
Railway. Amusement	A. E. W. Fraser	811,211	Jan. 30	5290	1107	120	1308
Railway appliances. Electrofluid pressure mechanism for operating	W. J. Bell	810,609	Jan. 23	4110	846	120	1018
Railway automatic switch. Electric	V. Joksch and J. Petřík	813,154	Feb. 20	3272	710	120	2269
Railway ballast-plow	O. W. Meissner	812,222	Feb. 13	1437	313–14	120	1853
Railway block-signal system. Electric	A. L. Bower	810,705	Jan. 23	4268	885	120	1054
Railway-crossing	R. N. Walton	810,178	Jan. 16	3136	653	120	774
Railway-crossing. Automatic safety	G. W. Lancaster	813,311	Feb. 20	3584	787	120	2383
Railway-crossing. Movable-point	T. Squires	809,028	Jan. 2	706	172	120	175
Railway draw-head and air coupling. Combined	F. L. Kelm	812,794	Feb. 13	2546	560	120	2084
Railway. Electric	L. Lecompte	809,706	Jan. 9	2214	469–60	120	518
Railway. Electric surface and elevated trolley	C. Levinson	809,120	Jan. 2	993	206	120	219
Railway electric switch. Street	C. D. Smith	811,101	Jan. 30	5044	1064–5	120	1266
Railway-frog	J. A. Posey	811,419	Jan. 30	5951	1226	120	1427
Railway-frog for turn-ins and turnouts	T. L. Brennan	809,487	Jan. 9	1757	389	120	438
Railway-joint	E. M. Rankin	812,877	Feb. 20	2710	597	120	2166
Railway journal-boxes. Means for preventing theft of brasses from	G. M. McClure	813,057	Feb. 20	30'9	674–5	120	2248
Railway. Observation-trolley-car	E. J. Noblett	812,866	Feb. 20	2992	663	120	2161
Railway-rail	L. J. Harris	810,646	Jan. 23	4168	861	120	1032
Railway-rail	C. F. Graft	811,055	Jan. 30	4968	1037	120	1240
Railway-rail	E. C. Geneux	812,988	Feb. 20	2933	646	120	2214
Railway rail-bond. Steam and electric	F. C. Hoffman	812,040	Feb. 6	1022	223	120	1606
Railway-rail joint	E. B. Verneuil	808,705	Jan. 2	158	37	120	36
Railway-rail joint	E. T. Forrester	812,417	Feb. 13	1822	399	120	1986
Railway-rail stay	H. F. Barber	812,717	Feb. 13	2305	526	120	2051
Railway-rail stay	T. D. Henderson	808,921	Jan. 2	502	130	120	130
Railway-rails and the like. Means for electrically connecting	J. Donovan	811,550	Feb. 6	25	7	120	1490
Railway rails and ties. Appliance and fixture for	J. M. Atkinson	813,906	Feb. 27	4033	1091	120	2703
Railway-rails. Means for muting vibrations in	F. W. Fick and P. S. Van Wie	813,875	Feb. 27	4704	1041	120	2656
Railway safety system	J. Anderson	811,535	Feb. 6	4	1	120	1465
Railway-signal	G. Laurenzo	812,572	Feb. 13	2132	467	120	2001
Railway-signal	M. W. Beans	810,387	Jan. 23	3636	749	120	910
Railway-signal	N. Erschens	812,555	Feb. 13	2101	461	120	1994
Railway-signal	W. Loos	812,941	Feb. 20	2842	627	120	2196
Railway-signal. Electric	H. W. Parker and S. L. Vincent	810,560	Jan. 23	4004	825	120	996
Railway-signal. Electrical	A. W. Nelson	813,662	Feb. 27	4283	942	120	2566
Railway signaling	S. D. Strohm	809,999	Jan. 16	2778	571–3	120	695
Railway signaling	S. D. Strohm	811,108	Jan. 30	5060	1059–7	120	1267
Railway signaling apparatus	J. Wheatley	810,011	Jan. 16	2811	580–2	120	702
Railway signaling apparatus. Acoustic	E. Coen-Cagli	813,619	Feb. 27	4201	922–4	120	2548
Railway signaling system. Electrical	M. H. Loudon	809,515	Jan. 9	1836	379	120	437
Railway signaling system. Electrical	C. Mitchell and H. Millingar	812,423	Feb. 13	1849	405–7	120	1942
Railway-spike	R. Anderson	810,455	Jan. 23	3803	781	120	950
Railway stand-pipe	E. V. Anderson	811,813	Feb. 6	521	116–17	120	1599
Railway stock-guard	L. Liesmann	813,220	Feb. 20	3400	749	120	2314
Railway. Surface-contact electric	G. H. McFeaters	808,773	Jan. 2	303	65	120	69
Railway-switch	C. B. Brinker	810,906	Jan. 30	4678	978	120	1174
Railway-switch	C. A. Mann	811,160	Jan. 30	5190	1084	120	1288
Railway-switch	W. P. O'Brien	811,919	Jan. 30	5498	1146	120	1353
Railway-switch	L. R. Parsons	811,738	Feb. 6	379	83	120	1589
Railway-switch	F. A. Howarth and J. J. McKinlay	813,205	Feb. 13	1400	304	120	1844
Railway-switch	F. Vogel	813,754	Feb. 27	4447	982–3	120	2600
Railway switch and crossing frog	J. E. Conley	812,840	Feb. 13	2258	490	120	2024
Railway switch and signal mechanism	C. M. Hurst	810,267	Jan. 23	4578	963	120	1121
Railway-switch. Automatic	J. M. Faulk	808,527	Jan. 2	401	87–8	120	89
Railway-switch. Automatic	R. K. Floetar	811,627	Feb. 6	194	41	120	1557
Railway-switch-operating apparatus	C. J. Coleman	812,226	Feb. 20	2004	572	120	2142
Railway-switch stand	E. L. Morgan	809,719	Jan. 9	2343	492	120	538
Railway-switches. Wear-plate for	W. H. Elliot and J. J. Townsend	813,574	Feb. 27	4702	1041	120	2656
Railway system	H. C. Ford	809,794	Jan. 9	2377	491	120	555
Railway system. Electric	W. N. Haring	813,790	Feb. 13	2535	557–8	120	2051
Railway system. Contact-box for electric	G. L. Campbell	812,164	Feb. 6	1382	293	120	1733
Rain-guide	F. Seyhers	809,491	Jan. 9	1619	338	120	379
Rain-guide	T. R. Hasley	809,663	Jan. 9	2176	450	120	510
Rain-guide	J. P. Lancaster	808,961	Jan. 16	2712	568	120	680
Rain-guide	E. T. Forrester	810,200	Jan. 16	3211	665	120	784
Rain-guide	R. B. Campbell	810,398	Jan. 23	3986	754	120	918
Rain-guide	J. Barry	810,498	Jan. 23	4369	852	120	1032
Rain-guide	E. Murray	810,576	Jan. 23	4963	966	120	1134
Rain-guide	J. E. Walting	811,823	Jan. 30	5380	1124–5	120	1230
Rain-guide	Z. T. Booth and J. F. Bittle	813,577	Feb. 20	2968	595	120	2134
Rain-guide	S. N. Griffith	812,991	Feb. 20	2937	647	120	2215
Rain-guide	J. B. Johnson	813,009	Feb. 20	2957	654	120	2222
Rain-guide	C. E. Shannon	813,249	Feb. 20	3435	757	120	2323
Rail-joint and means for securing rails thereto	F. G. Metcalf	809,020	Jan. 2	783	163	120	186
Railway	W. H. Pruyn, Jr	812,894	Feb. 13	2026	444	120	1939
Railway. Conservio	O. H. Prindle	813,894	Feb. 27	4123	903	120	2539
Railway-switch	S. T. Carroll	810,371	Jan. 16	3473	718	120	941
Railway-switch	P. T. Largo	811,783	Feb. 6	457	99	120	1555
Railway-switch	A. W. Bascom	813,611	Feb. 27	4190	919	120	2545
Railway-switch	O. S. Pullman	813,666	Feb. 27	4391	965	120	2603
Railway-track construction. Method of and means	E. E. Clement	812,618	Feb. 6	980	217	120	1659
Railway-track crossings. Automatic bell-signal for	L. Gaskins	810,112	Jan. 16	3687	680	120	762

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drf.	Official Gazette. Vol.	Official Gazette. Page.
Railway-track gage and brace	J. H. Crowley	811,394	Jan. 30	5319	1176	120	1260
Railway-track-grading machine	E. M. Jones	811,989	Feb. 6	787	173–3	120	1649
Railway-track jack	J. Stewart	810,358	Jan. 16	3561	730	120	889
Railway-traffic-control system	W. Rowe	812,897	Feb. 13	2170	476	120	2010
Railway-traffic-controlling apparatus	C. W. Coleman	810,302	Jan. 16	3341	694	120	811
Railway-train-stopping device	S. L. Crawford	810,916	Jan. 30	4711	982	120	1184
Railways. Anticreeper for	J. G. Sullivan	808,052	Jan. 2	822	142	120	144
Railways. Automatic block-signal system for electric	G. W. Johnston and A. H. Ackermann	813,898	Feb. 27	4746	1040	120	2688
Railways. Closed conduit for electric	A. W. Lohmann, Sr., and J. Pruis	813,101	Feb. 20	3139	691	120	2285
Railways. Ice-cutter for surface	W. H. Perry	812,873	Feb. 20	2705	598	120	2164
Railways. System of automatic signaling for electric	F. Townsend	810,667	Jan. 23	4284	877	120	1046
Railways. Take-up device for overhead-cable	J. G. Walls	812,621	Feb. 13	2223	484	120	2017
Raisins to remove cap-stems. Treating	F. C. Adams	812,971	Feb. 20	2905	641	120	2369
Rake: *See* Garden-rake. Hay-rake. Push-rake.							
Rake	F. A. Rugg	812,457	Feb. 13	1889	416	120	1981
Rake attachment	F. X. Beerle, Jr	811,760	Feb. 6	716	91	120	1577
Range construction	W. H. Conover	813,950	Feb. 27	4845	1069–70	120	2695
Range. Cooking	M. F. Allen	809,705	Jan. 9	2228	481–2	120	544
Ratchet-brace	A. R. Hubbard and R. Flay	812,746	Feb. 13	2451	538	120	2064
Ratchet mechanism	G. M. D. Heard	810,400	Jan. 23	3897	761	120	935
Ratchet mechanism for tools	M. Reisch	808,946	Jan. 2	641	140	120	141
Razor	H. P. Richards	813,588	Feb. 27	4137	906	120	2534
Razor-blade holder	J. W. Offutt	813,232	Feb. 20	3419	753	120	2318
Razor-guard	J. H. Hunt	809,690	Jan. 9	2102	454	120	514
Razor holder and handle. Safety	E. A. Schreiber and J. G. Klier	809,224	Jan. 2	1106	245	120	265
Razor. Safety	C. L. Holland	808,659	Jan. 2	78	17	120	19
Razor. Safety	S. G. Broslus	809,604	Jan. 9	2022	419	120	478
Razor. Safety	S. G. Broslus	810,709	Jan. 23	4275	885	120	1009
Razor-strop	P. A. Benet	811,999	Feb. 6	956	209	120	1694
Razor-strop	O. and F. Kampfe	809,114	Jan. 2	965	203	120	218
Razor-strop	G. W. Collins	809,777	Jan. 9	2351	485	120	549
Ready-reference device	F. Kampfe	812,668	Feb. 13	2124	466	120	1999
Receptacle-holder	H. W. Pope	813,447	Feb. 27	3860	846	120	2472
Receptacle or holder. Pocket	H. P. Townsend	813,537	Feb. 27	4039	885	120	2514
Recision-engine	P. Seller	813,991	Feb. 27	4925	1090	120	2701
Reclining-chair	F. D. Althauses	812,176	Feb. 13	1341	291–2	120	1831
Reclining-chair	H. J. Lanagan	812,051	Feb. 6	1042	227	120	1701
Reclining-chair	L. Kipp	813,156	Feb. 20	3274	719–20	120	2289
Recorder: *See* Chess-recorder. Fare-recorder. Vehicle-recorder.	G. Hunzinger	813,799	Feb. 27	4541	1004	120	2621
Recording device. Automatic	A. Abraham	813,933	Feb. 27	4820	1063–4	120	2680
Recording instruments. Paper-pressing attachment for	C. Hult	813,005	Feb. 20	2965	653	120	2221
Reduction mill. Gradual	J. M. Case	811,128	Jan. 30	5120	1069–70	120	1271
Reel: *See* Collapsible reel. Fishing-reel. Harvester-reel. Sand-reel. Winding-reel.							
Refrigerating apparatus for cooling air	V. Thausing	811,598	Feb. 6	121	26	120	1512
Refrigerating means	J. Beck	813,195	Feb. 20	3343	735–6	120	2304
Refrigerator	E. Prendergast	809,224	Jan. 9	1438	301	120	350
Refrigerator-car	C. McDonner	810,499	Jan. 23	3953	769	120	970
Regenerative furnace. Siemens	E. P. Hinds and G. E. Payne	813,970	Feb. 27	4980	1070	120	2692
Register: *See* Cash-register. Fare-register. Fare-receipt register. Game-register. Pool-table register. Wall-register.	A. Kurzwernhart	809,067	Jan. 2	871	185	120	193
Register	A. Lauber	811,416	Jan. 30	5578	1189	120	1390
Registers. Tension-regulating device for autographic	E. J. Barker	813,481	Feb. 27	3927	861–2	120	2488
Regulating-spring	J. F. Weser	811,346	Jan. 30	5554	1189	120	1386
Regulator: *See* Damper-regulator. Engine-speed-regulator. Gas-regulator. Lamp-regulator. Motor-controller regulator. Pressure-regulator. Pump-regulator. Water-level regulator.							
Rein-guard	W. A. Scott and W. S. McCall	813,329	Feb. 20	3619	794	120	2361
Rein-holder	I. G. Forrister	812,054	Feb. 6	1016	221	120	1605
Rein-supporter	A. R. Stokesbury and T. B. Lawhead	812,806	Feb. 20	2744	604	120	2173
Relay	C. L. Goodrum	808,534	Jan. 2	412	91	120	91
Relay	J. C. Barclay	811,986	Feb. 6	980	208	120	1652
Relay	A. and L. G. Vera	813,184	Feb. 20	3324	731	120	2300
Relay	H. Johansson	812,710	Feb. 27	4370	943	120	2584
Replicating device. Corn	T. S. McMahon	813,987	Feb. 27	4919	1089	120	2700
Reseeding band-mill	J. Walton	811,009	Jan. 30	4884	1021	120	1284
Reseeding-machine	L. A. Lawhon	809,207	Jan. 9	1464	305	120	344
Reseeding-machine	C. E. Cleveland	811,376	Jan. 30	5808	1170–1	120	1376
Respirator	J. Warbasse	812,708	Feb. 13	2377	521	120	2047
Retorts, muffles, furnaces, and the like. Charging	A. L. J. Queneau	813,023	Feb. 20	3009	660–1	120	2239
Return-ball	A. L. J. Queneau	813,021	Feb. 20	3008	659	120	2239
Reversing mechanism	T. F. Burke and T. L. Valley	810,813	Jan. 23	4115	893	120	1030
Revolving and reclining chair	I. G. Yoders	813,341	Feb. 20	3036	760	120	2304
Ribbetter	H. Witte	809,986	Jan. 9	2008	415	120	472
Ribbetter	F. L. Stone	812,611	Feb. 13	2288	490	120	2042
Ribbons, &c. Holder for	G. E. Stevens	812,700	Feb. 13	2367	533	120	2045
Ribs. Instrument for removing	H. Maine	811,418	Jan. 30	5008	1152	120	1393
Rifle. Automatic	A. W. Frantzen and J. Schoemaker	813,877	Feb. 27	4767	1032	120	2667
	T. A. Fidjeland	813,694	Feb. 27	4539	985	120	2578

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Rifle-carrying attachment	W. E. Read	811,437	Jan. 30	5713	1196	120	1368
Rifle. Magazine	W. E. Clay	809,094	Jan. 2	963	198	120	211
Ring:							
See Collector-ring. Key-ring.							
Rivet-holder	R. J. Gordon	808,835	Jan. 2	415	91	120	92
Riveter. Electric	S. S. Eveland	811,137	Jan. 30	5140	1074	120	1275
Riveting-machine. Hydraulic	W. H. Wood	811,468	Jan. 30	5730	1206	120	1403
Riveting-machine. Pneumatic	J. R. French	812,787	Feb. 13	2229	556	120	2009
Roach-trap	J. W. Meier	812,761	Feb. 13	2479	543	120	2009
Road-bed	G. Ross and S. F. Deal	811,746	Feb. 6	393		120	1572
Road-leveling machine	C. D. Smith	808,877	Jan. 2	499	108	120	112
Roads, &c. Prevention and laying of dust in	W. M. Sandison	813,380	Feb. 20	3726		120	2284
Roads. Tarring	L. Préaubert and G. A. Thubé	812,593	Feb. 13	2173		120	2008
Roadway. Movable	I. D. Smead	812,374	Feb. 13	1728	379–80	120	1919
Roaster	J. E. Scott	809,851	Jan. 9	2479	516	120	579
Roasting-furnace	O. Hofmann	809,953	Jan. 16	2689	555	120	676
Roasting-furnace	F. Klepetko	811,643	Feb. 6	216	46	120	1532
Rock and coal drill	L. C. Hardsocg	808,837	Jan. 2	418	92	120	93
Rock-boring machine	W. C. Moore	811,943	Feb. 6	818	179	120	1656
Rock-drill	A. H. Gibson	810,639	Jan. 23	4159	859	120	1029
Rock-drill	T. E. Adams	811,085	Feb. 6	291	66	120	1549
Rock-drill	C. J. Smith	812,375	Feb. 13	1732	380	120	1919
Rock-drill	C. J. Smith	812,774	Feb. 13	2502	550	120	2073
Rock-drill	D. C. Demarest	813,041	Feb. 20	3031	667	120	2236
Rock-drill	E. A. Rix	813,828	Feb. 27	4614	1021	120	2635
Rod:							
See Engine connecting-rod. Pitman-rod. Fishing-rod. Switch-rod.							
Rods, bars, or cables. Adjustable means for	C. H. Wright and W. E. Marshall	811,350	Jan. 30	5560	1160	120	1367
Roll-removing device	C. W. Bray	808,719	Jan. 2	196	42	120	45
Roller:							
See Land-roller. Spring-roller. Skate-roller.							
Roller-compress	S. J. Webb	809,415	Jan. 9	1645	338–9	120	394
Roller-mill	J. M. Nikolai	811,574	Feb. 6	80	16	120	1502
Roller-table	H. J. Bubenheim	811,820	Feb. 6	536	119	120	1599
Rolling-machine	A. Masion	812,281	Feb. 13	1563	342	120	1882
Rolling tubes and tubular bodies. Apparatus for	R. C. Stiefel	813,597	Feb. 27	4154	911	120	2538
Roof-caring	A. Lipschuts	811,073	Jan. 30	4999	1044	120	1246
Roofing material. Sheet	H. R. Wardell	813,336	Feb. 20	3630	796	120	2361
Roofing. Ready-made	W. J. Moeller	813,163	Feb. 20	3289	723	120	2292
Rope	C. H. Billman	808,895	Jan. 2	547	121	120	120
Rope	E. D. Metcalf	809,396	Jan. 9	1580	321	120	361
Rope carrier. Fall-	E. K. Young	808,710	Jan. 2	167	38–9	120	38
Rope-clamp	J. J. Clark	808,970	Jan. 2	702	152	120	155
Rope-cutter	B. D. Tillinghast and H. B. Porterfield.	810,587	Jan. 23	4089	835	120	1009
Rope-drive-adjusting mechanism	R. H. Stevens	808,899	Jan. 2	147	35	120	34
Rope-drum	T. S. Miller	809,958	Jan. 16	2722	560	120	662
Rope-rack	T. Winterbottom	813,780	Feb. 27	4458	995	120	2602
Rope. Woven-pile-fabric	A. E. Neff and C. G. Boldenweck	810,458	Jan. 23	3892	822	120	993
Ropes from their pulleys. Device for unshipping endless traveling	G. Lenz	809,223	Jan. 9	2423	503	120	988
Rotary cutter and topper	F. Densmoor	810,397	Jan. 23	3676	757	120	921
Rotary engine	A. Hager	809,054	Jan. 2	853	181	120	189
Rotary engine	D. B. Stalker	809,149	Jan. 2	1041	215–16	120	228
Rotary engine	H. A. Fredlund	809,180	Jan. 2	1095	226	120	241
Rotary engine	A. O. Laglund	809,363	Jan. 9	1516	307–8	120	368
Rotary engine	G. A. L. Lind	810,062	Jan. 16	2940	612	120	731
Rotary engine	B. F. Augustine	810,601	Jan. 23	4082	841–2	120	1011
Rotary engine	A. E. Stevens	811,108	Jan. 30	5047	1065	120	1296
Rotary engine	P. J. Decker	811,204	Jan. 30	5278	1104–5	120	1308
Rotary engine	W. H. Bates, R. C. Douglass, and W. G. Nourse.	811,513	Feb. 6	153	33–4	120	1518
Rotary engine	W. J. Rowe and A. L. Witbeck	811,747	Feb. 6	394	85–6	120	1572
Rotary engine	C. A. Sandborg	812,398	Feb. 13	1714	376–7	120	1916
Rotary engine	F. Egersdörfer	812,414	Feb. 13	1818	398	120	1926
Rotary engine	R. C. McLean	812,488	Feb. 13	2165	474	120	2007
Rotary engine	J. H. Rehner	813,024	Feb. 20	3003	661	120	2229
Rotary engine	G. E. Ecklor	813,284	Feb. 20	3515	775	120	2349
Rotary engine	R. S. McIntosh	813,815	Feb. 27	4606	1010	120	2626
Rotary engine	H. Burlich	813,854	Feb. 27	4661	1031	120	2647
Rotary engine and motor	M. S. Okun	813,018	Feb. 20	2990	659	120	2227
Rotary engine. Multiple-expansion	A. I. Ostrander	813,819	Feb. 27	4572	1011	120	2626
Rotary engine. Reciprocating	F. W. Reeves	813,527	Feb. 13	2029	446–6	120	1981
Rotary engine. Twin-head	H. A. King	813,974	Feb. 27	4667	1060	120	2602
Rotary explosion-engine	P. Bartoletti	810,366	Jan. 16	3567	733–4	120	883
Rotary explosive-engine	F. Reynolds	810,435	Jan. 23	3748	771–2	120	937
Rotary motor	I. H. Spencer	809,637	Jan. 9	2069	433	120	499
Rotary rounding and channeling machine	W. S. Brainerd	808,628	Jan. 2	16	4	120	6
Rotary valve	E. Donaldson	813,623	Feb. 27	4210	925–6	120	2509
Rubber balls. Making hard	M. E. Fisher	810,740	Jan. 23	4328		120	1068
Rubber heels to boots and shoes. Device for detaching	N. P. Bolin	811,365	Jan. 30	5586	1166	120	1372
Rubber shoe sole and heel	F. C. Connor	812,484	Feb. 13	1943	439	120	1963
Rudder	G. T. Arnold	812,161	Feb. 6	1257	281–2	120	1751
Rule. Parallel-designing curve	J. Kralund	811,070	Jan. 30	4998	1043	120	1245
Rule. Ruler	E. L. Phelps	812,874	Feb. 20	2707	606	120	2105
Rule. Spacing	D. J. Brennan	812,010	Feb. 6	974	213	120	1657
Rule. Spacing	B. D. Coppage	813,495	Feb. 27	3895	864	120	2482
Rule. Spacing	G. W. MacKenzie	811,311	Jan. 30	5488	1143	120	1360
Rule. Spacing	D. P. Shankwiler	810,358	Jan. 16	3547	730	120	883
Rule. Spacing	F. E. Rudolph	811,331	Jan. 30	5522	1151	120	1363
Rule. Spacing	F. D. Lingenfelter	810,160	Jan. 16	3122	646	120	767
Rule. Spacing	H. E. Moseley	811,853	Feb. 6	230	49	120	1536
Rule-dividing machine	J. J. Ferguson and S. P. Oswald	812,336	Feb. 13	1989	366–6	120	1904

Alphabetical list of inventions for January and February—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Sad-iron handle	C. Winter	811,020	Jan. 30	4913	1026	120	1236
Sad-iron-polishing machine	O. Tverdahl	808,785	Jan. 2	333	71–2	120	74
Saddle. Riding	P. H. Fontaine	809,179	Jan. 2	1093	227	120	240
Saddle tree or frame	R. Guillaume	809,370	Jan. 9	1534	311	120	372
Safes or vaults. Making	W. Brinton	813,304	Feb. 20	3734	821	120	2285
Safety device	W. Hanke	810,938	Jan. 30	4760	991	120	1193
Safety-hook	G. Falk and W. H. Parker	810,926	Jan. 30	4737	986	120	1189
Sails. Device for bending fore-and-aft	J. H. Mitchell	810,787	Jan. 23	4431	930	120	1069
Salse-pad holder	A. E. Landon	812,656	Feb. 13	2289	488	120	2089
Salver or tray	R. R. Kintz	811,209	Jan. 30	5464	1139	120	1349
Sand, &c. Apparatus for grinding or crushing foundry-	P. Bonvillain	810,904	Jan. 30	4675	974–5	120	1174
Sand-drier	S. A. Wilson and E. A. Bronson	813,191	Feb. 20	3336	734	120	2302
Sand-making apparatus. Artificial	G. K. Hamfeldt and D. Cubbage	812,650	Feb. 13	2278	495	120	2088
Sand or clay screen	L. P. Shafer and C. Devis	810,682	Jan. 23	4226	875	120	1045
Sand-reel	J. C. Knapp and J. G. Greene	810,490	Jan. 23	3956	788	120	964
Sand-washing machine	R. O. Bidwell	810,251	Jan. 16	3322	689	120	807
Sander	S. T. Simmons and W. T. Moore	810,309	Jan. 16	3449	713	120	836
Sanding and polishing machine	D. T. Clemons	810,037	Jan. 16	2875	594	120	716
Sandpapering-machine	A. B. Denson	812,119	Feb. 6	1162	266	120	1726
Sash adjuster. Window	H. Bowers	812,808	Feb. 20	2560	565	120	2134
Sash-balance	H. A. Crommett	809,783	Jan. 9	2360	487	120	553
Sash-balance and lock. Combined	J. H. Corcoran	811,382	Jan. 30	5616	1175	120	1376
Sash-fastener	J. W. Staton	811,803	Feb. 6	507	113	120	1594
Sash-holder	A. A. Quick	810,302	Jan. 16	3438	710	120	834
Sash-holder	A. A. Jones	812,136	Feb. 6	1196	262	120	1723
Sash holder. Window	E. A. Hyde	811,402	Jan. 30	5551	1183	120	1398
Sash-lock	C. B. Conant	808,815	Jan. 2	378	82	120	84
Sash-lock	C. M. Evans	810,110	Jan. 16	3025	630	120	751
Sash-lock	J. Power	812,229	Feb. 13	1452	317	120	1857
Sash lock and fastener	F. M. Straube	810,440	Jan. 23	3757	774	120	939
Sash-operating mechanism	A. Q. Wolf	810,242	Jan. 16	3300	684–5	120	804
Sash pivot. Window	F. J. Cachat	811,531	Jan. 30	5577	1233	120	1432
Sash. Sheet-metal window	J. W. Watkins	812,467	Feb. 13	1904	430	120	1964
Sash-weights. Mold for casting center-hung	L. H. Knapp	812,935	Feb. 20	2826	623	120	2192
Sash. Window	H. W. J. Edbrooke and F. Lindquist.	809,600	Jan. 9	2032	421	120	478
Sash. Window	J. H. Shepherd	809,990	Jan. 16	2763	568	120	692
Sashes. Glass-retaining device for	C. C. Chancey	811,544	Feb. 6	19	5	120	1489
Saw	F. A. Wuest	809,435	Jan. 9	1784	369	120	438
Saw	J. Guedel	810,530	Jan. 23	3946	812	120	983
Saw-blades from sagging. Device for preventing the shafts or arbors of	T. B. Rice, Jr.	813,238	Feb. 20	3427	755	120	2321
Saw-clamp	C. W. Cardwell	813,096	Feb. 20	3024	666	120	2234
Saw-dressing machine	E. L. Bishop	810,610	Jan. 23	4111	848–9	120	1019
Saw-dressing machine	L. L. Filstrup	811,835	Feb. 6	557	123–4	120	1604
Saw-drive	W. Lewis	812,853	Feb. 20	2681	583	120	2154
Saw for manufacturing lumber. Gang	G. B. Miller	808,671	Jan. 2	95	22	120	23
Saw-gage	J. S. Linton	812,574	Feb. 13	2135	468	120	2002
Saw gage and jointer	L. W. Parkhurst	810,802	Jan. 23	4489	926	120	1095
Saw-handle. Detachable	J. L. Sheets	811,099	Jan. 30	5041	1054	120	1266
Sawmill	G. W. Stinebring	813,463	Feb. 27	3800	852	120	2478
Sawmill-carriage	C. G. Bonn	810,220	Jan. 16	3471	717	120	841
Sawmill-carriage dog	M. S. Eby	813,143	Feb. 20	3257	716	120	2286
Sawmill feed-device	H. C. Clay	812,823	Feb. 20	2801	571	120	2142
Saw mill. Gang	W. M. Wilkin	812,530	Feb. 13	2063	480	120	1986
Saw rounding and jointing attachment	J. R. McClellan	813,910	Feb. 27	4778	1054	120	2672
Saw-set	P. A. Glaser	811,302	Jan. 30	5428	1176	120	1362
Saw-set	A. H. Pence	812,066	Feb. 6	1105	243	120	1714
Saw-table cutting-gage	C. Von Cuhn	808,859	Jan. 2	534	119	120	118
Saw-tool	C. Ritts	811,439	Jan. 30	5716	1197	120	1388
Saw-tooth	C. C. Fleming	813,371	Feb. 20	3660	812	120	2378
Saws. Gage for ivory-nut	J. Hormby	813,002	Feb. 20	3069	651–2	120	2220
Saws. Resawing attachment for band	M. Garland	812,267	Feb. 20	2990	648–9	120	2214
Sawing machine. Block	H. Ruffi	811,323	Jan. 30	5426	1151–2	120	1359
Sawing-machine numerator	F. L. Krell	813,099	Feb. 20	3146	690	120	2253
Scaffold and step-ladder. Combined	J. H. Rose	812,081	Feb. 6	1112	245	120	1715
Scaffold-board. Extensible	C. Schwedt	812,301	Feb. 13	1936	382	120	1892
Scaffold-bracket. Folding	J. McIntyre	809,973	Jan. 16	2731	563	120	685
Scaffold-nail	C. E. Springer	809,402	Jan. 9	1621	329	120	489
Scaffold-support. Safety	P. Caporale	809,460	Jan. 9	1791	370	120	437
Scale	A. Jobborn	810,539	Jan. 23	3939	815	120	985
Scale. Automatic recording ice	C. E. Crane	809,439	Jan. 9	1673	342–4	120	400
Scale. Coke-controlled	J. Lorentsen	809,198	Jan. 2	1122	235–6	120	249
Scale for accurate lard-weighing. Electric	C. E. Snypp	809,026	Jan. 2	798	171	120	175
Scale-markings for rules, &c	I. W. Heysinger and A. Latshaw	809,960	Jan. 16	2684	554	120	675
Scale. Mechanical recording	E. McGarvey	812,296	Feb. 13	1876	345–6	120	1888
Scale. Portable	E. E. Barakat	809,602	Jan. 9	2031	419	120	478
Scale. Price	O. O. Ozias	812,280	Feb. 13	1886	347	120	1888
Scale. Spring	O. C. Wiese	811,979	Feb. 6	888	188–9	120	1671
Scale. Spring	O. C. Wiese	811,980	Feb. 6	900	190	120	1672
Scale. Spring	J. B. Paquette	813,726	Feb. 27	4414	973	120	2588
Scale. Weighing	J. Lorentsen	809,826	Jan. 9	2426	504	120	507
Scarf-pin safety device	M. E. Rosenblum	809,720	Jan. 9	2285	475	120	457
Scissors	R. Theis	809,541	Jan. 9	1894	395	120	447
Scouring machine. Garment, fabric, &c	A. F. Bornot	812,005	Feb. 6	966	210	120	1653
Scraper and shovel-plow. Combined	N. McLaughlin	809,828	Jan. 9	2432	507	120	494
Scraper. Self-dumping	J. F. Mendenhall	810,165	Jan. 16	3138	647	120	768
Scraper. Self-loading	H. F. Purdum	808,870	Jan. 2	479	105–6	120	104
Screen:							
See Coal-screen. Fly-screen. Pulp-screen. Sand or clay screen. Window-screen.							
Screen	J. B. Moseley	810,788	Jan. 23	4426	880	120	1089
Screen	W. W. McCallip	810,966	Jan. 30	4814	1004	120	1236
Screen-bin. Mounted	E. S. Phillips	810,319	Jan. 16	3260	673–4	120	795

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Screw-connecting die and stock	W. J. McKimmey	812,075	Feb. 6	1084	237	120	1709
Screw. Temper-	C. W. Fanton	812,487	Feb. 13	1949	430	120	1963
Screw. Temper-	B. C. Hagan	813,278	Feb. 20	3710	815	120	2380
Screw-wrench	V. Eiselt	810,850	Jan. 23	4536	944	120	1112
Scrubbing-machine for removing foreign matter from the surfaces of globular objects	P. Preuss	813,114	Feb. 20	3186	697	120	2272
Seal. Bottle-	A. Taplin	812,466	Feb. 13	1908	420	120	1954
Seal. Bottle-	A. E. Prier	809,011	Jan. 2	773	167	120	170
Seal-lock	A. L. Green	810,334	Jan. 16	3463	722	120	845
Seal-press	P. S. Clauser	809,357	Jan. 9	1504	304	120	366
Seal-press	L. A. Foote	811,283	Jan. 30	5431	1132	120	1339
Seal. Self-locking	E. J. Brooks	813,079	Feb. 20	3115	683	120	2255
Sealer. Envelop-	F. Laporte	813,219	Feb. 20	3399	749	120	2314
Sealing and stamping envelops. Machine for	L. O. Staesart	810,093	Jan. 16	2992	623	120	743
Sealing bottles. Means for	C. A. Madsen	813,985	Feb. 27	4905	1086-7	120	2697
Sealing machine. Envelop-	F. M. Osgood	809,213	Jan. 2	1166	241	120	256
Sealing mechanism. Bottle-	C. J. Fancher and H. S. Parmelee	812,263	Feb. 13	1524	332-3	120	1872
Seaming-machine	E. Goltstein	808,833	Jan. 2	411	90-1	120	91
Seat:	O. S. Beyer	813,034	Feb. 20	3020	665	120	2233
See Car-seat. Disappearing seat. Chair-seat. Vehicle-seat. Closet-bowl seat. Water-closet seat.							
Seat-cushion	H. S. Hale	811,289	Jan. 30	5448	1135	120	1343
Sectional case	C. P. Byrnes	810,033	Jan. 16	2986	592	120	713
Seed from clover and alfalfa seed. Separating buckhorn and plantain	S. P. Glunt	813,495	Feb. 27	3959	868	120	2496
Seed-recleaning process. Clover-	S. Herr	813,990	Feb. 27	4735	1047	120	2663
Seeds from clover and other smooth seeds. Removing rough and irregular foreign	D. S. Cook	813,404	Feb. 27	3774	828	120	2452
Seeders and other machines. Yielding link for	S. E. Davis	811,280	Jan. 30	5425	1131	120	1338
Seeders or drills. Feeding device for	S. E. Davis	811,203	Jan. 30	5277	1104	120	1305
Seeding and manure-spreading machine. Combined	D. Toscani	809,863	Jan. 9	2498	519	120	583
Seeding-machine speed device	F. R. Packham and G. P. Oates	813,734	Feb. 27	4413	973	120	2593
Self-lubricating wheel	T. G. Aultman	811,356	Jan. 30	5367	1162	120	1368
Semaphore	C. Hansel	811,292	Jan. 30	5452	1136	120	1344
Semaphore mechanism	B. O. Wagner	809,237	Jan. 2	1247	255	120	275
Separating-machine	H. Baldwin	812,972	Feb. 20	2906	641	120	2209
Separating substances of different dielectric capacities	H. M. Sutton, W. L. and E. G. Steele.	813,063	Feb. 20	3087	676	120	2250
Separator: *See* Cream-separator. Ore-separator. Gold-separator. Sewing-machine loop-separator. Lift-separator. Liquid-separator. Steam-separator. Magnetic separator. Stitch-separator. Oil and feed-water separator. Teeth-separator.							
Separator	J. D. Crane	810,625	Jan. 23	4135	854	120	1024
Separator	F. R. Willson, Jr.	811,192	Jan. 30	5254	1099-1100	120	1301
Separator	H. M. Hardgrove	812,340	Feb. 13	1671	367-8	120	1906
Separator-tooth	H. R. Robinson	811,441	Jan. 30	5719	1197	120	1399
Setting	G. W. Dover	813,084	Feb. 20	3123	684	120	2257
Sewed-article seam	L. Onderdonk	811,750	Feb. 6	484	104-5	120	1589
Sewed-article seam	L. Onderdonk	811,700	Feb. 6	484	105	120	1589
Sewed-article seam	J. L. Patterson	812,802	Feb. 13	2546	562	120	2086
Sewing and cutting machine	J. Diehl	812,408	Feb. 13	1809	396	120	1934
Sewing-machine	W. M. Ammerman	809,600	Jan. 9	2017	418	120	474
Sewing-machine	O. D. Shaw	809,989	Jan. 16	2761	566	120	691
Sewing-machine	C. Pedersen	811,578	Feb. 6	90	18-19	120	1505
Sewing-machine	G. L. Corcoran and G. A. Dobyne	812,641	Feb. 13	2239	491-2	120	2024
Sewing-machine	J. Vannette	813,929	Feb. 27	4606	1061-2	120	2677
Sewing-machine	C. B. Johnsen	809,265	Jan. 2	1310	266	120	298
Sewing-machine bobbin-winder	G. M. Eames and J. S. Finch	809,911	Jan. 9	2594	534	120	603
Sewing-machine buttonhole	H. C. Miller	810,297	Jan. 16	3419	707-8	120	828
Sewing-machine buttonhole attachment	F. J. Freda	808,914	Jan. 2	582	128	120	127
Sewing-machine cabinet	G. Baurmann	809,240	Jan. 2	1265	266	120	277
Sewing-machine embroidering attachment	J. S. Jacobs	811,146	Jan. 30	5155	1078	120	1278
Sewing-machine fan attachment	L. Weinstein and J. Perlstein	809,416	Jan. 9	1650	339	120	395
Sewing-machine feed and loop-taker actuating mechanism	M. Hemleb	809,896	Jan. 9	1982	401	120	458
Sewing-machine feed-regulating device	M. Hemleb	809,945	Jan. 16	2676	552	120	673
Sewing-machine feeding mechanism	W. M. Ammerman	809,681	Jan. 9	2135	443-3	120	499
Sewing-machine heating device	C. Pedersen	811,581	Feb. 6	94	20	120	1506
Sewing-machine implement holder	M. J. Davis	808,632	Jan. 2	38	8	120	11
Sewing-machine. Interchangeable lock and chain stitch	W. M. Ammerman	809,680	Jan. 9	2132	442	120	499
Sewing-machine loop-spreader	C. Pedersen	811,579	Feb. 6	92	19	120	1505
Sewing machine. Looped-fabric-	H. Starr and F. L. Nichols	809,265	Jan. 9	2458	517	120	580
Sewing-machine. Mattress-	C. N. Phelps	810,362	Jan. 23	4606	980-2	120	1126
Sewing-machine needle-guide	C. Pedersen	811,580	Feb. 6	93	20	120	1505
Sewing-machine needle-threader	S. Blumenthal	813,136	Feb. 20	3260	714	120	2265
Sewing-machine rotary loop-taker	G. H. Dimond and W. F. Dial	812,419	Feb. 13	1813	397	120	1955
Sewing-machine ruffling mechanism	A. Laubecher	809,922	Jan. 9	2617	540-1	120	609
Sewing-machine shuttle holder and driver	P. J. Hanley	811,480	Jan. 30	5511	1216	120	1418
Sewing-machine tables. Cabinet-work for	T. Kundts	809,980	Jan. 16	2708	558	120	679
Sewing-machine thread-cutter	S. Mendel	813,811	Feb. 27	4561	1009	120	2625
Sewing-machine thread-measurer	C. Pedersen	811,583	Feb. 6	97	21-2	120	1506
Sewing-machine trimming attachement	W. E. Rink	812,183	Feb. 6	1262	276	120	1746
Sewing-machine tuck-guide	S. Friedman	812,588	Feb. 13	2108	462	120	1988
Sewing-machine wax-pot	O. L. Corcoran and G. A. Dobyne	809,626	Jan. 9	1672	342	120	389
Sewing-machines. Mechanism for adjusting the lengths of stitches in	C. Pedersen	811,582	Feb. 6	96	20-1	120	1506
Sewer and other pipe ventilator	G. W. Evans	810,723	Jan. 23	4320	896	120	1088
Sewer and similar pipes. Device for cutting vegetable and other growths from the inner surfaces of	C. W. Ross	813,739	Feb. 27	4419	974-5	120	2594
Sewer-cleaner	J. M. Thompson	813,028	Feb. 20	3012	663	120	2231

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Sewer-pipe back-pressure trap	P. J. Bode	810,980	Jan. 23	3680	780-1	120	915
Shade bracket. Window-	E. M. Ruff	811,874	Feb. 6	647	143	120	1622
Shade bracket. Window-	A. B. Dunkle	812,262	Feb. 13	1522	332	120	1872
Shade-fixture	C. L. Hopkins	810,270	Jan. 16	3383	700	120	821
Shade-fixture	S. L. Skinner	812,342	Feb. 13	1477	322	120	1851
Shade goods. Machine for trimming and applying	E. O. Eagberg. (Reissue)	12,445	Feb. 6	1311	285-7	120	1737
Shade holder. Window-	J. Renner	809,221	Jan. 2	1152	244	120	254
Shade-roller	L. T. Bulley	808,722	Jan. 2	200	43	120	46
Shade-roller	W. D. Janes	812,184	Feb. 6	1192	261	120	1732
Shade-roller and curtain-pole support	J. Herr	810,142	Jan. 16	3091	638	120	780
Shade-supporting device	A. Wesselock	811,455	Jan. 30	5786	1205	120	1407
Shades. Spring-roller for window-	H. R. Derby	809,098	Jan. 2	962	199	120	212
Shaft and clutch mechanism	J. O. Hobbs	810,412	Jan. 23	3701	783	120	928
Shaft and pole coupling for wagons	R. Gruner	810,641	Jan. 23	4162	859	120	1089
Shaft and pole coupling. Vehicle	W. Hullerman	813,703	Feb. 27	4362	961	120	2562
Shaft carrier and tug	W. M. Johnson	811,850	Feb. 6	598	130	120	1611
Shaft-coupling	A. J. L. Lembeck and N. B. Hart	810,777	Jan. 23	4406	914	120	1085
Shaft-gate	G. Brown and G. Taylor	812,814	Feb. 20	2585	566	120	2136
Shaft lubricator. Crank and similar	T. S. Patterson	809,740	Jan. 9	2279	473	120	534
Shafting and for like purposes. Apparatus for ascertaining errors in the alinement of	A. E. Horsfall	813,003	Feb. 20	2960	652	120	2220
Shaping-tool	C. Fichtner	813,784	Feb. 27	4516	997	120	2616
Sharpener. Disk-	C. M. Strain	809,334	Jan. 9	1455	294-5	120	354
Sharpener, shaper, and gager. Drill	J. T. Thompson	808,686	Jan. 2	525	116	120	117
Sharpening disks. Machine for	W. F. Hampy	811,716	Feb. 6	343	73	120	1582
Sharpening rock-drilling-machine bits. Apparatus for	J. A. G. Kirsten	812,570	Feb. 13	2127	466	120	2000
Shaving-stick holder	R. L. Warner	812,906	Feb. 20	2766	606	120	2178
Shear-table	J. C. Cromwell	810,845	Jan. 23	4534	942	120	1109
Shears: *See* Animal-shears. Power-shears.							
Sheave	W. C. Fischer	812,488	Feb. 13	1951	430	120	1994
Sheep-shearing table	A. Barth	810,181	Jan. 16	3165	655	120	775
Sheet-cutting machine	C. H. Marston and A. P. Holden	811,940	Feb. 6	814	178-9	120	1655
Sheet-feeding machine	F. L. Cross	812,260	Feb. 13	1506	330-2	120	1868
Sheet metal. Apparatus for removing superfluous metallic coating from	O. S. Fellows and A. E. Hopkins	810,851	Jan. 23	4537	944-5	120	1112
Sheet-metal building structure	T. Lee	808,664	Jan. 2	84	19	120	20
Sheet-metal can	I. J. Marcuse	810,211	Jan. 16	3234	669	120	789
Sheet-metal can	H. Macarthy	811,648	Feb. 6	223	48	120	1534
Sheet-metal can	I. J. Marcuse	811,649	Feb. 6	225	48	120	1534
Sheet-metal elbows. Manufacture of	W. H. Klauer	810,155	Jan. 16	3114	642	120	765
Sheet-metal humidor	H. Macarthy	811,720	Feb. 6	360	80	120	1586
Sheet-metal receptacle	D. R. Levin and G. E. Sundstrom.	811,728	Feb. 6	359	79	120	1586
Sheet-registering machine	H. Bradshaw	810,302	Jan. 23	3661	753-4	120	917
Shelf	F. W. Tobey	810,894	Jan. 23	4491	924	120	1102
Shelves. Apparatus for removing articles from	G. Ward	813,029	Feb. 20	3013	663-4	120	2231
Shell	A. H. Friedel	811,048	Jan. 30	4956	1035	120	1236
Shell for torpedoes or similar purposes	T. F. Rowland	810,983	Jan. 30	4848	1009	120	1213
Shell. Welded-	T. F. Rowland	810,812	Jan. 23	4473	929	120	1098
Shingle-edging machine	C. Provost	812,961	Feb. 20	2962	631	120	2201
Shingle-fastening device	M. M. Schuller	811,445	Jan. 30	5722	1195	120	1400
Shingle-press	J. W. Thurston	811,456	Jan. 30	5741	1202	120	1404
Shingle-trimming machine	J. D. Caldwell and I. Bushong	812,946	Feb. 27	4841	1023	120	2654
Ship's pe bulls. Construction of	J. B. I. A. Julhe	812,666	Feb. 13	2267	497	120	2000
Ships' models. Experimental tank for testing	J. M. Ford	813,413	Feb. 27	3788	831-2	120	2461
Shirt	A. F. Chase	813,774	Feb. 27	4405	902-3	120	2611
Shirt-sleeve	T. Puryear	811,662	Feb. 6	247	54	120	1539
Shock-compressor	J. M. Schebler	812,297	Feb. 13	1889	351	120	1891
Shock-loader	S. M. Nelson and N. Nielsen	811,165	Jan. 30	5197	1088	120	1288
Shoe	J. N. Moulton	809,622	Jan. 9	2055	426	120	488
Shoe	F. X. Brodeur	812,812	Feb. 20	2583	567	120	2137
Shoe	J. G. Marshand	813,053	Feb. 20	3070	672	120	2246
Shoe and slipper hanger	C. Ackroyd	813,072	Feb. 20	3105	680	120	2263
Shoe-form	C. B. Corbin	812,116	Feb. 6	1156	254	120	1724
Shoe-nailing machines. Nail-supplying device for	W. Knecht	813,310	Feb. 20	3362	736	120	2353
Shoe-polishing stand	P. H. Hixon	808,986	Jan. 2	728	158	120	161
Shoe-rack	E. F. White	808,794	Jan. 2	342	74	120	76
Shoe. Running-	B. F. Rhodes	811,428	Jan. 30	5715	1196	120	1398
Shoe-spike protector	W. O. Hatfield	810,753	Jan. 23	4368	905	120	1074
Shoe-tree	W. D. Wilder	812,315	Feb. 13	1628	388	120	1897
Shoe. Waterproof-	P. G. Mayhew	808,713	Jan. 9	2222	468	120	523
Shooting-gallery	W. J. Bowerman. (Reissue)	12,440	Jan. 30	5681	1233	120	1433
Shot-making machine	P. F. Cowling	809,871	Jan. 9	2153	446	120	508
Shoulder and sleeve form	A. M. Grean	810,333	Jan. 16	3402	722	120	844
Shoulder-form	A. M. Grean	810,332	Jan. 16	3401	721	120	844
Shovel: *See* Snow-shovel. Steam-shovel.							
Shovel	F. S. C. Pulsher	809,840	Jan. 9	2088	510	120	573
Shovel	J. E. Newton	813,196	Feb. 20	3208	724	120	2288
Shovel-guard	G. W. Jarvis	810,488	Jan. 23	3888	788	120	988
Shovel support. Steam-	L. P. Martin	810,575	Jan. 23	4362	906	120	1124
Show-case	G. C. Wright	810,343	Jan. 16	3308	685	120	804
Show-case	A. T. Hallock	810,887	Jan. 23	4549	947	120	1115
Show-case	R. G. Luthe	810,966	Jan. 30	4796	997	120	1208
Show-case	A. W. Zeigler	812,712	Feb. 13	2289	485	120	2009
Show-case corner	J. A. Henderson	810,410	Jan. 23	3699	782	120	985
Show or display case	G. E. Clapp	808,726	Jan. 2	211	46	120	48
Show-window	S. Feust	812,624	Feb. 27	4221	880	120	2585
Shrapnel	R. P. Stout	810,888	Jan. 23	4063	831	120	1075
Shredder-feeder	G. W. Crane	809,972	Jan. 9	704	159-3	120	135
Shutter	J. G. Wilson	811,627	Feb. 6	141	31	120	1582
Shutter-bower	J. L. Guyce	812,660	Feb. 6	1068	223	120	1868
Shutter bower and fastener	L. C. F. and H. C. Zimmerman	809,894	Jan. 9	2092	496	120	573
Shutter-fastener	A. D. Bartlett	812,343	Feb. 20	3040	705	120	2235

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drfs.	Official Gazette. Vol.	Official Gazette. Page.
Shuttle	E. Herzig	811,721	Feb. 6	351	78	120	1564
Shuttle-brake	J. Laforêt. (Reissue)	12,426	Jan. 2	1333	271	120	266
Shuttle-operating mechanism	E. H. Ryon	810,681	Jan. 23	4226	875	120	1044
Sickle	P. E. Fletcher	809,676	Jan. 9	2186	448	120	808
Sickle-bar-removing tool	S. M. Hill	811,208	Jan. 30	5454	1157	120	1344
Siding. Manufacturing	C. Loetscher	808,988	Jan. 2	749	162	120	165
Sieve	W. H. Hoyt and W. J. Gaven	810,652	Jan. 23	4120	853	120	1034
Sieve	A. W. Edstrom	812,333	Feb. 13	1680	365	120	1909
Sifter	A. O. Atkinson	813,763	Feb. 27	4464	989	120	2604
Sifter and screen hanger	J. T. Leonard	811,857	Feb. 6	610	129	120	1612
Sifter. Ash-	C. H. Dow	813,625	Feb. 27	4213	928	120	2580
Sifter. Flour-	E. T. Farmer	809,178	Jan. 2	1082	227	120	240
Sifter. Flour-	W. M. Viser	810,894	Jan. 23	4645	988	120	1133
Sight-feed. Fountain	H. J. Carle	811,543	Feb. 6	16	4–5	120	1488
Sign	L. C. Hamel	813,554	Feb. 27	4080	894	120	2523
Sign	C. A. Peterson	813,580	Feb. 27	4127	905	120	2532
Sign-changing letter. Automatic	E. C. Thomas and C. F. Jenkins	808,884	Jan. 2	524	115	120	117
Sign. Electric	C. Haller	811,057	Jan. 30	4970	1088	120	1240
Sign. Electric	C. Haller	811,058	Jan. 30	4972	1088	120	1241
Sign-holder	C. Haller	811,059	Jan. 30	4974	1088	120	1241
Sign. Illuminating	H. A. Waterhouse	811,264	Jan. 30	5305	1126	120	1331
Sign. Transparent	A. N. Gatzert and S. Berens	813,087	Feb. 20	3126	685	120	2258
Signal: *See* Car-signal. Danger-signal. Electric signal. Gas danger-signal. Railway-signal.	J. M. Rathsam	812,525	Feb. 13	2027	444	120	1980
Signal	R. Stanford and P. R. Colpitt	809,029	Jan. 2	798	172	120	176
Signal	K. Möller	811,238	Jan. 30	5344	1116	120	1320
Signal attachment. Semaphore	C. R. Dowler	812,025	Feb. 6	1003	219	120	1694
Signal-lights. Intensifying the colors of	C. H. Gill	809,678	Jan. 9	2189	449	120	809
Signals. Rain-guard for	W. Churchill	810,715	Jan. 23	4292	891	120	1059
Signaling	R. Herman	809,800	Jan. 9	2387	494	120	857
Signaling apparatus	W. Churchill	810,714	Jan. 23	4289	891	120	1058
Signaling apparatus. Electrical hose-	J. T. Hambay	806,984	Jan. 2	727	157	120	161
Signaling apparatus. Police	W. Fowler	811,836	Feb. 6	559	124–5	120	1604
Signaling system	C. L. Foster and P. K. Higgins	812,733	Feb. 13	2430	532	120	2059
Signaling system. Party-line	H. O. Holderness and C. G. Hawley.	813,426	Feb. 27	3816	837	120	2461
Signaling system. Selective	A. F. Poole and F. B. Hall	810,346	Jan. 16	3525	726	120	852
Signaling system. Wireless electric	C. G. Hawley and H. O. Holderness.	813,419	Feb. 27	3802	834–5	120	2458
Signature-gatherer	R. H. Rendahl	813,914	Feb. 27	4779	1055–6	120	2672
Silk fibroin peptone. Making	G. M. Kent and C. L. Smith	811,509	Jan. 30	5832	1221–2	120	1422
Silo	J. Altachul	813,272	Feb. 20	3488	.....	120	2334
Silver salt. Producing solutions containing pure	D. A. Schlichter	812,386	Feb. 13	1801	351	120	1891
Silvering-machine	W. Bölsterli	809,378	Jan. 9	1348	.....	120	331
Skate	C. C. Laval	813,980	Feb. 27	4595	1084–5	120	2695
Skate. Roller-	W. H. Dunne	809,108	Jan. 2	967	200	120	214
Skin-stretching machine	E. Petrini	809,980	Jan. 16	2744	564	120	988
Skirt-fastener	A. A. Hellwig	813,202	Feb. 20	3534	779	120	2344
Skirt-protecting garment	W. D. and E. H. Roy	809,465	Jan. 9	1745	360	120	417
Skirt-supporter	H. C. Deane	812,496	Feb. 13	1948	429	120	1983
Skirt-supporter	P. W. Hoffman	810,720	Jan. 23	4314	896	120	1064
Skiving-machine	G. W. Emerson	811,538	Feb. 6	209	44	120	1530
Skylight	J. Degenhardt. (Reissue)	813,958	Feb. 27	4860	1075	120	2688
Slag. Saving metal values from	C. M. Allen	12,432	Jan. 2	1339	272	120	265
Slaughter-house travelers. Tracking device for	C. E. De Moss	810,364	Jan. 16	3563	733	120	863
Sled-brake. Automatic	B. M. Weberg	808,819	Jan. 2	389	84	120	88
Sled. Logging-	A. Swanson	809,155	Jan. 2	1052	218	120	231
Sledge. Power-	F. C. Mors	812,310	Feb. 13	1619	356	120	1895
Sleeve connector. Split-	J. J. Dossert	809,575	Jan. 9	1962	405	120	662
Sleigh. Bob-	P. W. Hibbard	811,908	Feb. 6	719	157	120	1637
Sleighs. Truck attachment for	J. M. Closson	813,420	Feb. 27	3808	835	120	2459
Sliding-machine	E. F. Smith	811,545	Feb. 6	19	5	120	1489
Small-arm	G. Daninger	811,452	Jan. 30	5734	1200–1	120	1402
Small-arm magazine	P. Manser	810,192	Jan. 16	3189	681	120	780
Smelting and converting apparatus. Ore-	A. M. Day	808,938	Jan. 2	618	135	120	156
Smelting and converting ores	A. M. Day	812,186	Feb. 13	1385	307	120	1857
Smelting and refining	A. M. Day	812,786	Feb. 13	2824	555	120	2079
Smelting and refining apparatus	E. C. Pollard	813,824	Feb. 27	4600	1019	120	2633
Smelting-furnace	E. C. Pollard	813,825	Feb. 27	4606	1020	120	2634
Smelting-furnace. Duplex	A. R. Partridge	812,083	Feb. 6	1100	241	120	1718
Smoke-consumer	R. Lindemann	810,093	Jan. 16	3041	612	120	731
Smoke-consumer	J. R. and J. Gormley and P. Conley.	808,917	Jan. 2	586	120	120	128
Smoke-consuming furnace	G. M. Boone	808,168	Jan. 2	1074	222	120	226
Smoke-flue and ventilating device. Combined	W. T. Fling and J. E. Nichols	810,741	Jan. 23	4239	902	120	1066
Smoldering furnace	W. T. Paxson	809,458	Jan. 9	1731	367	120	414
Smoothing and polishing machine	C. C. Roth	808,228	Jan. 2	1197	263	120	255
Snap-switch	F. D. Shepherd	811,745	Feb. 6	396	86–7	120	1573
Snow-removing apparatus	L. A. Berry	809,420	Jan. 9	1653	340	120	398
Snow-shovel	H. R. Sargent	811,796	Feb. 6	494	107	120	1591
Soap holder. Liquid-	H. Maine	813,050	Feb. 20	3060	671	120	2240
Soap-melting machine	W. D. Luney	813,983	Feb. 27	4908	1085	120	2697
Soda-water-bottling machine	E. A. Bender	808,896	Jan. 9	2555	539	120	826
Solar furnace	F. Daum	810,193	Jan. 16	3190	681	120	781
Solder to sheet-metal can-caps, &c. Apparatus for	W. C. Wood	813,940	Feb. 20	3635	797	120	2264
Soldering machine. Means for	A. Carter	811,574	Jan. 30	5414	1139	120	1336
Solder-compound	W. G. Daugherty	812,359	Feb. 13	1662	383	120	1908
Solder-furnace	A. W. King	811,725	Feb. 6	355	.....	120	1585
Solder-furnace	A. R. Hussey	812,494	Feb. 13	1980	.....	120	1948
Solder-iron	O. J. Landgan	808,281	Jan. 9	1068	.....	120	278
Sole-blacker. Shoe-	P. Gilbert	813,274	Feb. 20	3703	814	120	2279
	W. Beck	808,807	Jan. 2	366	79	120	81

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Sole-molding machine	J. J. Heys	810,940	Jan. 30	4782	981–3	120	1194
Sole. Waterproof	J. N. Moulton	809,628	Jan. 9	2097	427	120	633
Soles and heels of shoes. Plate for	M. M. West	811,805	Feb. 6	126	29	120	1615
Sound-record tablet	W. H. Hoyt and W. J. Gaven	808,283	Jan. 2	1287	288	120	288
Sound-records. Manufacture of	W. H. Hoyt and W. J. Gaven	808,842	Jan. 2	426	94	120	94
Sound-records. Manufacture of	W. H. Hoyt and W. J. Gaven	808,843	Jan. 2	427	94	120	95
Sound-vibrations in water. Means for producing	H. B. Gale and F. M. Dewing	812,954	Feb. 27	4570	1077	120	2660
Sounding device	S. Earle	811,207	Jan. 30	4995	1103	120	1297
Spacing mechanism	W. L. Haynes	810,648	Jan. 23	4171	883	120	1023
Spade	E. C. Jewett	809,207	Jan. 9	1997	434	120	689
Spade and similar handle	F. Parkes	812,675	Feb. 13	2231	502–4	120	2103
Spark-arrester	G. Forquer and A. R. Musick	813,493	Feb. 27	3995	885	120	2493
Spark-coil	C. P. L. Noxon	811,686	Feb. 6	238	51–2	120	1597
Sparking device	H. A. Miller	812,104	Feb. 20	3163	692	120	2266
Sparking ignition system	L. J. Le Pontois	809,266	Jan. 2	1317	287–8	120	300
Sparking plug	W. Ottaway	809,578	Jan. 9	1957	407	120	662
Spatula and cork-extractor	E. B. Jelks	810,538	Jan. 23	3953	815	120	995
Spectacle-frames. Manufacturing	W. A. Coates	808,580	Jan. 2	553	122	120	122
Spectacles. Attachment to	J. P. Jackson	811,584	Feb. 6	54	11	120	1496
Spectacles. Protector for	C. E. Linnig	809,194	Jan. 2	1126	234	120	246
Speed-changing mechanism	P. Shannon	812,888	Feb. 20	3732	801	120	2170
Speed-controlling system	A. L. De Leeuw	813,201	Feb. 20	3354	737–8	120	2303
Speed device. Variable-	J. A. De Vito	812,720	Feb. 13	2424	531	120	2057
Speed-indicator	S. Schulhoff	811,686	Feb. 6	260	57	120	1562
Speed-indicator	B. Volkmar	813,185	Feb. 20	3326	731	120	2300
Speed mechanism. Variable-	S. L. Heywood	809,802	Jan. 9	2389	494–5	120	858
Speed mechanism. Variable-	R. E. Roosevarne	809,845	Jan. 9	2455	512–13	120	875
Speed-regulating device	T. L. Mansfield	812,579	Feb. 13	2146	470	120	2004
Speed-varying mechanism	J. B. Ladd	813,651	Feb. 27	4259	935–6	120	2580
Spike	J. E. Pittman	810,908	Jan. 23	4468	938	120	1097
Spike-puller	L. A. Milligan	809,122	Jan. 2	996	205–6	120	219
Spike-puller	J. F. Loreman	813,223	Feb. 20	3403	750	120	2315
Spindle: *See* Wagon-spindle.							
Spinning and twisting fibrous materials. Machine for	G. O. Haddeld	813,984	Feb. 27	4721	1044	120	2680
Spinning-frame tension device	R. G. Carle	812,919	Feb. 20	2789	613	120	2183
Spinning mechanism	J. J. Buckley, T. P. McGinn, and J. A. Rogan.	811,528	Jan. 30	5869	1230–1	120	1436
Spinning or twisting machine thread-guide mechanism	O. L. Owen and J. F. Snelling	810,668	Jan. 23	4205	870	120	1040
Spittoon	F. Reinschmidt	810,567	Jan. 23	4018	827	120	998
Splicing-pin	J. L. McSpadden, H. L. Wilkie, and W. H. Lewis.	811,788	Feb. 6	483	104	120	1589
Spoke-extractor	G. Ratthel	809,207	Jan. 9	1998	336	120	387
Spool-cabinet	J. A. Epley	809,274	Jan. 2	1320	270	120	293
Spool-holder	J. W. Meaker	810,202	Jan. 16	3404	705	120	836
Spool-holder	L. W. Near	812,670	Feb. 13	2210	498	120	2094
Spools and sewing-machine bobbins. Means for holding	F. A. Holt	809,208	Jan. 9	1992	283	120	341
Spoon. Covered	H. D. Ward	812,212	Feb. 13	1623	357	120	1888
Spoon. Measuring-	W. H. Arrowsmith	808,967	Jan. 2	600	151	120	154
Spoon. Medicine-	W. L. Jenkins	808,545	Jan. 2	122	24	120	98
Spout. Delivery-	J. F. McDermott	811,240	Jan. 30	5349	1117	120	1321
Spout for receptacles containing volatile inflammable liquids. Safety-	L. Schön	809,634	Jan. 9	2079	431	120	427
Spray	J. M. Sweeney	813,254	Feb. 20	3486	762	120	2326
Spraying apparatus	A. M. Cobb	809,045	Jan. 2	830	177–8	120	183
Spring: *See* Bed-spring. Coil-spring. Cushion-spring. Regulating-spring. Vehicle-spring.							
Spring end	G. H. Channell	809,173	Jan. 2	1082	226	120	236
Spring-making machine. Coil-	J. F. Gall	810,048	Jan. 16	2898	597–607	120	720
Spring-roller. Extensible	L. J. Dirand	813,570	Feb. 27	4698	1089	120	2655
Spring-wheel	F. A. Born	813,085	Feb. 20	3023	665–6	120	2232
Springs. Utilizing worn-out railway or like spiral steel	J. Bergmann	809,664	Jan. 9	2130	443	120	800
Springless lock	H. K. Meis	810,240	Jan. 16	3510	724	120	860
Springwork	R. C. Manson	811,224	Jan. 30	5238	1115	120	1319
Springwork	J. A. Staples	813,923	Feb. 27	4706	1089	120	2676
Springwork	J. A. Staples	813,924	Feb. 27	4709	1089	120	2676
Sprinkler: *See* Automatic sprinkler.							
Sprinkling lawns, gardens, greenhouses, parks, &c. System for	F. H. Paradice	810,972	Jan. 30	4934	1008	120	1208
Sprinkling-machine	W. A. Collins	809,046	Jan. 2	834	178	120	184
Sprocket. Expansible	A. W. Boon	809,431	Jan. 9	1699	341	120	398
Sprocket-wheel	A. Q. Dufour	811,124	Jan. 30	5128	1072	120	1274
Spur	B. G. Gilbough	810,049	Jan. 16	3015	627	120	72
Square. Folding	E. L. Cook	810,186	Jan. 16	3181	680	120	779
Square. Mechanic's	J. M. Realing	813,173	Feb. 20	3307	726	120	2297
Square. Take-down	C. K. Sitton and J. H. Williams	813,922	Feb. 27	4705	1088	120	2675
Stack shaper. Straw-	T. S. Pearson and G. B. Lindsay	812,446	Feb. 13	1874	418	120	1948
Stacker for grain or the like	J. H. Bulleck	812,014	Feb. 6	982	214	120	1690
Stacker. Hay-	A. M. and G. E. Stevens	809,838	Jan. 9	1879	388	120	647
Stacker. Hay-	C. Koehler	813,719	Feb. 27	4367	948	120	2667
Stacker. Hay-	D. E. Summers	813,908	Feb. 27	4691	1086	120	2668
Stacker. Pneumatic	H. J. Daws	811,822	Jan. 30	5570	1189–9	120	1423
Stacker. Pneumatic straw-	J. W. Nethery	811,728	Feb. 6	373	80	120	1585
Stacking method and apparatus. Straw-	J. A. Gunn and J. J. McBride	810,488	Jan. 23	3988	771	120	1000
Staging. Portable	T. H. Kingston	808,989	Jan. 2	724	159	120	170
Stair-chair. Folding	B. C. Brewer and J. D. H. Schuls	813,952	Feb. 27	4778	219–56	120	2688
Stair-marking tool	M. Lebiane	811,328	Jan. 30	5258	1114	120	1312
Stair structure	M. Plotkin	811,466	Jan. 30	5713	1196	120	1397
Stair-tread	C. W. Engbeiser	811,894	Feb. 6	698	152	120	1633
Stall floor-rack	J. H. Murray	813,217	Feb. 20	3466	760	120	2295

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Stall for calves. Retaining-	A. A. Lewis	809,922	Jan. 9	2621	541	120	610
Stamp	T. S. Buck	808,812	Jan. 2	374	80	120	53
Stamp	H. H. Norrington	811,949	Feb. 6	828	182	120	1655
Stamp. Adjustable time-limit	W. L. Lee	808,933	Jan. 2	741	160	120	164
Stamp-affixing machine	O. W. Johnson	809,589	Jan. 9	1936	402-3	120	458
Stamp-book cabinet. Postage	J. P. McDonald	812,072	Feb. 6	1082	236	120	1709
Stamp damping and affixing apparatus. Adhesive-	B. C. A. Vorster	810,236	Jan. 16	3289	681	120	801
Stamp. Hand dating	W. I. Follett	813,635	Feb. 27	4233	930	120	2555
Stamp-affix. Automatic safety attachment for	J. C. H. Vaught	810,006	Jan. 16	2790	578	120	699
Stamping device. Roller	W. Scott	809,018	Jan. 2	782	160	120	172
Stamping device. Tag	C. C. King	809,188	Jan. 2	1113	231	120	245
Stamping or impressing machine. Blank	G. W. Hesne	809,591	Jan. 9	1983	412	120	467
Stamping-press	H. C. Lavery	811,783	Feb. 6	459	99-102	120	1585
Stanchion	J. Foster	813,788	Feb. 27	4521	998	120	2616
Stand:							
See Barrel-stand. Display-stand. Fitting-stand. Flower-pot stand. Inkstand. Railway-switch stand. Shoe-polishing stand.							
Stand or table	J. W. Meaker	810,296	Jan. 16	3417	706	120	828
Standard	G. W. Du Bes	808,907	Jan. 2	572	126	120	125
Standard. Adjustable clutch-controlled	F. W. Coy	811,378	Jan. 30	5423	1130	120	1336
Standard. Pocketless	G. W. Du Bes	808,733	Jan. 2	226	48	120	52
Stapling-machine	C. A. Juengst	813,215	Feb. 20	3390	747-8	120	2312
Starch. Making	W. F. Rudel	810,096	Jan. 16	2973	.....	120	738
Starch. Preparing soluble	A. F. J. S. and H. A. R. A. Haake	813,647	Feb. 27	4253	.....	120	2559
Starting device. Automatic	H. A. Warden, F. Manns, and W. H. Decker.	813,262	Feb. 20	3468	765	120	2329
Station-indicator	R. F. Le Brocq	809,267	Jan. 2	1315	267	120	289
Stay-bolt	J. B. Tate	813,120	Feb. 20	3204	700	120	2276
Stay-release. Automatic	L. P. Chute	812,182	Feb. 13	1358	288	120	1834
Steam-boiler	C. W. Hawkes	809,303	Jan. 9	1817	374	120	494
Steam-boiler	G. Marshall	809,517	Jan. 9	1840	380	120	458
Steam-boiler	A. Parfitt	810,078	Jan. 16	2961	617-18	120	736
Steam-boiler	M. Janowitz	811,066	Jan. 30	4964	1040	120	1243
Steam-boiler	G. Marshall	811,236	Jan. 30	5341	1115-16	120	1320
Steam-boiler	P. Meurisse	811,785	Feb. 6	478	103	120	1583
Steam-boiler	J. C. Schneider	812,686	Feb. 13	2536	510-11	120	2039
Steam, &c. Device for circulating	P. Wigert	812,908	Feb. 20	2768	609	120	2178
Steam-discharging apparatus. Condensed-	P. C. Goff	809,253	Jan. 2	1296	262-3	120	263
Steam-drier	E. Mondt	811,162	Jan. 30	5193	1084-5	120	1286
Steam-engine	S. Thurstensen	813,750	Feb. 27	4440	980-1	120	2599
Steam-engine	E. Reynolds	811,520	Jan. 30	5853	1225-6	120	1427
Steam-engine	J. F. Murphy	813,353	Feb. 13	1686	371	120	1910
Steam-engine. Compound	F. S. Hyde	813,301	Feb. 20	3549	782	120	2347
Steam-engine. Turbine	R. P. Gibbons	813,199	Feb. 13	1301	302	120	1842
Steam from hot slag. Apparatus for generating	T. S. Tincher	811,457	Jan. 30	5742	1202	120	1404
Steam-generator	G. Mitchell	809,122	Jan. 2	907	206	120	219
Steam-generator	T. R. Butman	809,332	Jan. 9	1351	274-5	120	332
Steam-generator	D. Fitzgibbons	809,396	Jan. 9	1827	310	120	370
Steam-generator	J. W. Payne	809,539	Jan. 9	2456	510	120	573
Steam-generator	W. S. Johnson	813,096	Feb. 20	3146	689	120	2261
Steam generator and superheater	C. P. Altmann	813,133	Feb. 20	3239	710	120	2283
Steam-generator. Slag	F. A. Haughton	809,683	Jan. 9	2177	451	120	510
Steam-heater for warming and moistening foods	G. Mitchell	809,204	Jan. 2	1144	238	120	252
Steam. Means for superheating	C. J. Monfort	810,496	Jan. 23	3874	796	120	966
Steam-separator and automatic shut-off	F. A. Haughton	809,512	Jan. 9	2037	423	120	479
	D. H. Streeper and J. W. Oelenschlager.	808,701	Jan. 2	150	35	120	35
Steam shovel and dredge	G. R. Turner	812,344	Feb. 13	1480	333	120	1862
Steam systems. Drip device for	W. J. Clark	810,911	Jan. 30	4668	979	120	1177
Steam-trap	T. Marcotte	810,423	Jan. 23	3724	767	120	931
Steam-trap	E. A. Marsh	811,620	Jan. 30	5667	1190	120	1392
Steam-trap	J. H. Taylor	813,332	Feb. 20	3026	795	120	2362
Steel. Hardening	R. A. Hadfield	810,531	Jan. 23	3947	.....	120	983
Steel in conical molds. Compressing	H. Harmet	811,143	Jan. 30	5148	1076	120	1277
Steel. Melt or bath for hardening	S. N. Brayshaw	813,178	Feb. 13	1348	.....	120	1832
Steel. Treating manganese	W. Brinton	812,811	Feb. 20	2580	.....	120	2137
Steering device	A. T. Brown	808,171	Jan. 2	1078	225	120	237
Steering device. Boat-	A. B. McCoy	809,072	Jan. 2	881	187	120	195
Steering submarine and submergible boats. Means for	L. Y. Spear	812,206	Feb. 13	1614	354-5	120	1894
Stencil-cutting attachment	G. L. Hilliker	813,094	Feb. 20	3140	688	120	2260
Stereotype	G. Kleine	810,330	Jan. 16	3507	723	120	840
Stereotype-casting machines. Trimming mechanism for	P. D. Fenn	810,401	Jan. 23	3681	758	120	922
Stereotype-plate holder	T. M. North	809,524	Jan. 9	1863	395	120	441
Stereotyping apparatus	C. F. Rockstroh	809,369	Jan. 9	1611	337	120	388
Stirrup. Valve mechanism for	S. G. Goss	812,824	Feb. 20	2601	616-17	120	2185
Stoking apparatus. Liquid-	J. E. Hall	810,533	Jan. 23	3960	813-13	120	984
Stopper held by heat under pressure. Apparatus for	J. C. Miller. (Reissue)	12,448	Feb. 6	1339	289	120	1702
Stopping material. Making	C. F. V. Morel	812,765	Feb. 13	3428	849	120	2070
Storage-battery	C. H. Cheesman	812,639	Feb. 13	2357	.....	120	2024
Storage-battery and printing-up machine	J. Thomson	809,892	Jan. 9	2497	519	120	583
Storage battery. Motorcycle	F. T. Shipton	811,100	Jan. 30	5042	1054	120	1256
Storage-battery plate	T. D. Barry	811,997	Feb. 6	942	208	120	1662
Storage-battery separator	W. B. Goodyear	809,083	Jan. 2	849	190	120	188
Storage-battery terminal	P. Kennedy	809,958	Jan. 16	2703	557	120	678
Storage-battery terminal	J. H. Feldman	812,168	Feb. 6	1299	284	120	1754
Storage-battery terminal	M. Thee	810,095	Jan. 16	2985	624	120	743
Storage-battery terminal	A. K. Mansfield and S. M. Felton.	809,302	Jan. 9	1141	237	120	261
Storage-battery terminal	J. A. Caldwell	812,686	Feb. 13	2363	491-2	120	2038
Storage-battery terminal	H. and R. Hughes	813,210	Feb. 20	3277	744	120	2310
Storage-battery terminal	H. S. Kline	811,360	Jan. 30	5495	1139-40	120	1346

Alphabetical list of inventions for January and February—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page
Stone plates. Production of artificial-	C. Pohl	813,171	Feb. 20	3304	727	120	2296
Stone-saw	J. D. Clevenger	813,484	Feb. 27	3934	864	120	2480
Stone walks. Tool for making artificial-	P. F. Connelly	808,980	Jan. 2	585	128	120	122
Stopper:							
See Bottle-stopper.							
Stopper retaining and extracting device	W. L. Gallagher	810,231	Jan. 16	3490	721	120	844
Storage battery	W. Fennell and W. P. Perry	810,929	Jan. 30	4730	988	120	1189
Storage battery	W. Fennell and W. P. Perry	810,930	Jan. 30	4730	989	120	1190
Storage battery	A. Müller	813,730	Feb. 27	4405	971	120	2562
Storage battery. Electric	H. H. Porter	813,582	Feb. 27	4130	905	120	2533
Store-service apparatus	C. J. Miller	809,714	Jan. 9	2234	463	120	533
Store-service apparatus	G. Staib	810,092	Jan. 16	2989	633	120	742
Store-service. Carrier-cover for pneumatic	J. S. Palmer	810,970	Jan. 30	4830	1002	120	1207
Storm-top	W. A. Hunter	810,151	Jan. 16	3108	641	120	763
Stove	C. T. Taylor and G. L. Clark	812,614	Feb. 13	2207	480-1	120	2014
Stove attachment. Cooking	G. F. Green	811,026	Jan. 30	4969	1027	120	1240
Stove. Combined heating and cooking	J. W. Tatum	812,261	Feb. 13	1781	384	120	1892
Stove. Folding	P. Hiller	811,394	Jan. 30	5485	1137	120	1345
Stove. Heating	A. T. Nye	812,070	Feb. 6	1092	229-40	120	1711
Stove. Oil	W. P. Harrison	811,635	Feb. 6	206	44	120	1530
Stove or furnace	A. W. Woodward	811,249	Jan. 30	5556	1159	120	1296
Stove-polish. Production of	A. N. Braun	809,279	Jan. 9	1949	.....	120	321
Stove rack attachment	J. Terry	813,749	Feb. 27	4439	960	120	2599
Stoves. Automatic controlling device for gas-	W. B. Schofield and M. P. Osbourn.	811,969	Feb. 6	856	188	120	1663
Stoves. Heater attachment to	E. Bell	813,137	Feb. 20	3249	714	120	2284
Stovepipe	C. A. Boyer and D. C. Peck	810,706	Jan. 23	4271	885	120	1055
Stovepipe-thimble	H. R. Awbrey	811,537	Feb. 6	7	2	120	1496
Straightening-table	S. V. Huber	808,751	Jan. 2	261	56	120	80
Strainer	A. L. West	811,784	Feb. 6	406	88-9	120	1575
Strainer	L. W. Jones	813,434	Feb. 27	3887	840	120	2465
Strainer and cut-off. Combined	A. W. Weber	810,515	Jan. 23	3921	806	120	978
Strainer holder. Tea-	A. Chumdelah	809,807	Jan. 9	2080	431	120	478
Strainer. Milk-	A. A. C. Klint	809,115	Jan. 2	987	204	120	218
Strap:							
See Book-strap.							
Strap-loop	H. Hart	809,681	Jan. 9	2175	450	120	510
Street and station indicator	D. A. Holsberg	813,295	Feb. 27	4745	1046	120	2665
Street-cleaning apparatus	N. St. Peter, Jr.	810,302	Jan. 16	3560	732-3	120	892
Street-sweeper	C. M. Eaves, J. W. Slaven, and G. W. Wade.	813,544	Feb. 27	4054	888-9	120	2517
Stretching-frames. Locking mechanism for	J. A. Connelly	811,904	Feb. 6	712	155	120	1636
Studding. Metallic	F. Voss	808,780	Jan. 2	226	78	120	78
Stump-extractor winding mechanism	G. B. Merchant	812,063	Feb. 6	1060	231	120	1705
Stump-puller	W. Smith	808,879	Jan. 2	502	109	120	113
Stump-puller	J. K. Flynn	813,896	Feb. 27	4845	986	120	2579
Submerged objects. Apparatus for raising	C. Pino	812,521	Feb. 13	2021	443-5	120	1979
Sugar-machine	O. B. Barth	810,260	Jan. 16	3280	689	120	807
Sugar. Making maize-	F. L. Stewart	811,523	Jan. 30	5660	.....	120	1403
Sulfuric anhydrid. Making	R. Knietsch	809,480	Jan. 9	1712	362	120	409
Sulky. Pneumatic	S. E. Jerald	811,723	Feb. 6	363	78	120	1585
Superheater	W. Plats	812,448	Feb. 13	1877	413	120	1946
Support. Adjustable	B. H. Howser	812,344	Feb. 13	1675	369	120	1907
Suppository	H. Roberts	813,220	Feb. 27	4515	1021	120	2536
Surface-cleaning machine	R. B. Hutchison	813,567	Feb. 27	4026	886	120	2524
Surgical appliance	M. Rehmanns	812,679	Feb. 13	2236	507	120	2037
Surgical, dental, and like uses. Mirror for	R. Walker	811,206	Feb. 6	511	114	120	1586
Surgical operating-engine	W. H. Ludewig	812,207	Feb. 13	1923	426-6	120	1970
Surgical table	J. L. Suddarth	810,520	Jan. 23	4468	983	120	1160
Surgical table	E. B. Dill and S. F. Du Bois	810,948	Jan. 23	4394	944	120	1111
Surgical table	T. J. James, R. McAllister, and W. S. Byram.	812,133	Feb. 6	1191	261	120	1782
Suspender attachment. Garment-	W. F. Rowell	812,267	Feb. 13	1714	376	120	1916
Suspender-end	W. W. Hoopes	813,296	Feb. 20	3341	789	120	2345
Suspender-hook	F. A. Ritchie	811,090	Jan. 30	5027	1080	120	1253
Suspenders	F. B. Norris	811,081	Jan. 30	5010	1047	120	1249
Suspension-bracket	F. E. Walden	813,286	Feb. 13	1761	395	120	1895
Swing. Giant	T. G. Hill	812,906	Feb. 20	2947	649	120	2217
Swing. Lawn-	H. W. Watson	808,480	Jan. 9	1776	395	120	494
Swingletree	J. A. Buchanan	809,789	Jan. 9	2283	493	120	545
Switch:							
See Electric switch. Electric time-switch. Electrical switch. End-sill switch. Gas-light switch. Railway-switch. Railway electric switch. Snap-switch. Tongue-switch. Tramway-switch. Voltmeter-switch. Railway automatic switch.							
Switch	G. E. Lynch	813,506	Feb. 27	3975	873	120	2488
Switch	W. S. Bailey	813,696	Feb. 27	4294	1003	120	2651
Switch and signal	C. Troup	812,102	Feb. 6	1136	249	120	1720
Switch and signal apparatus. Electric	L. Griffith	813,892	Feb. 27	4718	1044	120	2660
Switch and signal track trip	C. M. Hurst	810,898	Jan. 23	4260	954	120	1121
Switch-locking device	H. H. Nichols	812,077	Feb. 6	1099	232-3	120	1710
Switch-operating device	W. A. Clem	810,823	Jan. 16	3478	718-19	120	841
Switch-operating mechanism	G. Ward	810,886	Jan. 23	4466	988	120	1108
Switch-plug with electrical fuse	A. Hopke and K. Diener	809,200	Jan. 9	1894	381	120	510
Switch-rod. Adjustable	W. H. Elliot	813,573	Feb. 27	4701	1040	120	2650
Switch-rod. Adjustable	W. H. Scott	813,930	Feb. 27	4791	1062	120	2675
Switch-setting apparatus and electric rail-heater. Electromagnetic	B. O. Wagner	809,596	Jan. 2	1332	324-5	120	570
Switch-throwing mechanism	H. O. Marquis	812,881	Feb. 13	2153	477	120	2026
Switches. Emergency operating means for reversing-	F. R. Case	809,773	Jan. 9	2242	494	120	547
Swivel	F. W. Seidl	808,859	Jan. 2	705	160	120	172
Swivel. Hydraulic	J. A. Wiggs, Jr.	810,315	Jan. 16	3488	715	120	838
Syringe	G. C. Wegenarth	811,111	Jan. 30	5270	1060	120	1261

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Syringe	H. T. Schork and F. A. Stahl	812,686	Feb. 13	2336	511	130	2080
Table:							
See Automobile turn-table. Pedestal-table. Collapsible table. Portable table. Confectioner's work-table. Roller-table. Derrick-table. Shear-table. Desk-table. Sheep-shearing table. Folding table. Straightening-table. Game-table. Surgical table. Operating-table. Veterinary-surgeon's table.							
Table	G. J. Kraemer and E. Elde	809,708	Jan. 9	2210	458	130	518
Table	O. E. Pettes	810,378	Jan. 16	3610	743	130	872
Table	C. F. Davies	808,818	Jan. 2	387	84	130	86
Table	J. Cornell	813,406	Feb. 27	3777	828	130	2453
Table and folding bed. Combined	S. J. Wever	809,546	Jan. 9	1891	393	130	449
Table-leg fastening	G. A. Henckel	809,567	Jan. 9	1994	402	130	456
Table-spread support	C. B. Macfarlane	808,669	Jan. 2	92	21	130	22
Tableware and like articles	C. H. Warner	813,681	Feb. 27	4315	950	130	2573
Tachometer and cyclometer. Combined	V. Kobliask	812,937	Feb. 20	2533	626	130	2194
Tachometer or speed-indicator	J. H. Stiner	812,701	Feb. 13	2369	518	130	2045
Tack-puller	M. J. Bartlett	810,365	Jan. 23	3630	748	130	909
Tag. Cattle	S. Dancygar	813,407	Feb. 27	3778	820	130	2453
Tag. Shipping	C. D. Bradham	812,633	Feb. 13	2246	488	130	2022
Tag. Shoe-rack	C. H. Holt	813,001	Feb. 20	2057	651	130	2220
Talking-machine sound-box	B. L. Rinehart	810,981	Jan. 30	4944	1008	130	1212
Tank:							
See Closet-tank. Water-closet flush-tank. Leaching-tank. Watering-tank. Stock-tank.							
Tank-heater. Gas-burning	C. C. Fifield	810,852	Jan. 23	4540	945	130	1113
Tank-indicator	E. Rahm and I. C. May	808,871	Jan. 2	474	104	130	105
Tap. Collapsible	W. A. Leonard	810,269	Jan. 16	3400	708-4	130	825
Tap. Current	W. D. Harris	809,183	Jan. 2	1101	230	130	242
Tapping-machine	H. Koester	813,559	Feb. 27	4092	897-8	130	2525
Tape-holder	J. McLean	812,149	Feb. 6	1246	270	130	1744
Target	J. Herold	811,636	Feb. 6	206	44	130	1530
Target	H. A. Shanles	811,963	Feb. 6	863	190	130	1665
Target	T. J. McNally	812,589	Feb. 13	2167	474	130	2007
Target. Indicating	R. M. V. Bremer	812,400	Feb. 13	1794	392	130	1981
Target-setting apparatus. Electric	G. Grabosch	809,796	Jan. 9	2381	482	130	556
Tea-kettle	H. B. Robde	812,486	Feb. 13	1988	416	130	1951
Teaching device. Penmanship	R. W. Manuel	809,712	Jan. 9	2220	462	130	523
Teaching spherics. Educational device for	R. E. Dickerson	812,403	Feb. 13	1806	395	130	1983
Teeth-separator	E. L. Hutchinson	811,849	Feb. 6	807	180	130	1611
Telautographic and other electric circuits	G. S. Tiffany	809,762	Jan. 9	2512	479	130	541
Telegraph and telephone system. Combined	C. Turchi	809,895	Jan. 9	2652	520	130	583
Telegraph. Facsimile	E. E. Kleinschmidt	813,142	Feb. 6	1206	265-7	130	1735
Telegraph instrument	C. J. Schwarze	812,773	Feb. 13	2801	580	130	2073
Telegraph-key	A. E. Peterman	808,777	Jan. 2	316	68-9	130	71
Telegraph-key	W. O. Coffe	812,183	Feb. 13	1386	295-6	130	1835
Telegraph-keys. Circuit-closer for	H. R. Nevens	813,512	Feb. 27	3993	875	130	2502
Telegraph or telephone pole	J. M. Perdue	811,435	Jan. 30	5711	1195	130	1397
Telegraph-poles, &c. Cross-arm construction for	O. C. Allen	811,896	Feb. 6	693	151	130	1631
Telegraph-transmitter	J. C. Barclay	811,994	Feb. 6	988	205-7	130	1680
Telegraphic keyboard apparatus	F. B. Delany	808,642	Jan. 2	43	9	130	1
Telegraphic signals. Receiving	S. D. Field	812,557	Feb. 13	2105	462	130	1995
Telegraphy and telegraph apparatus	J. Burry	811,127	Jan. 30	5097	1067-8	130	1266
Telegraphy. Wireless	P. B. Delany	808,641	Jan. 2	40	9	130	11
Telegraphy. Wireless	J. F. King	813,975	Feb. 27	4868	1081	130	2694
Telemeter	A. Joors and A. Mercenier	810,541	Jan. 23	3980	817	130	987
Telephone	C. G. Burke	809,423	Jan. 9	1981	341	130	397
Telephone-call	P. T. Geyerman	811,062	Jan. 30	4962	1086	130	1320
Telephone-exchange system. Semi-automatic	A. T. M. Thomson	808,252	Jan. 2	1216	245-52	130	220
Telephone-exchanges. Service-meter for	F. R. McBerty and E. B. Craft	813,220	Feb. 20	3414	752-3	130	2217
Telephone for ships, mines, &c	A. F. Boardman	811,029	Jan. 30	4927	1088	130	1281
Telephone-holder	L. S. Hallowell	808,988	Jan. 2	724	156	130	180
Telephone-line. Party	E. A. Buell	811,691	Feb. 6	308	67	130	1552
Telephone-line. Party	E. A. Buell	811,692	Feb. 6	311	68	130	1554
Telephone memorandum attachment	F. B. Gilbert	812,841	Feb. 20	2645	570	130	2150
Telephone or other booth	E. P. Garney	811,140	Jan. 30	5144	1075	130	1276
Telephone party-line system	F. B. Hall and A. F. Poole	810,335	Jan. 16	3494	752	130	845
Telephone party-line system	A. F. Poole and F. B. Hall	810,345	Jan. 16	3518	726-6	130	851
Telephone signaling apparatus	K. H. Poyas	808,998	Jan. 2	498	108	130	104
Telephone-switching mechanism	A. C. Gilgan	812,491	Feb. 13	1954	421	130	1964
Telephone-switchboards. Lamp-jack for	S. A. Beyland	810,307	Jan. 16	3989	734	130	824
Telephone system	H. A. Judge	808,126	Jan. 2	1109	239	130	245
Telephone system	E. A. Terpening	811,972	Feb. 6	980	194	130	1668
Telephone system	R. Shaver	813,330	Feb. 20	3620	794	130	2351
Telephone system for central stations	G. Lambert	813,360	Feb. 27	4035	896	130	2535
Telephone system. Intercommunication	R. M. Beard	808,929	Jan. 16	2634	545	130	663
Telephone toll apparatus	G. A. Long	810,491	Jan. 23	3930	788	130	954
Telephone transmitter	J. Z. Miller	809,851	Jan. 9	2436	503	130	555
Telephone transmitter arm	M. Setter	811,858	Jan. 30	5049	1053	130	1295
Telephone. Adjustable support for	W. D. Ghazky	813,135	Feb. 6	1178	253	130	1729
Telephone and telegraph. Selective call for	H. L. Knight and B. W. Sweet	809,579	Jan. 9	1895	389	130	377
Telephone and the like. Hanger for	W. Palmer, Jr.	810,573	Jan. 23	4088	867-8	130	1125
Telephone repeating system	E. R. Hobbs	809,980	Jan. 2	691	152	130	101
Telephone. Toll-	A. J. P. Bertashy	813,718	Feb. 13	2289	526-7	130	2031
Telephone-repeating system	F. L. Smith	812,976	Feb. 13	1728	399	130	1921
Telephone dial spelling system	W. Wadsworth	808,707	Jan. 2	161	37	130	57
Telephony	J. C. Rankine	808,990	Jan. 9	2641	577-8	130	632
Telescope	J. Good	811,141	Jan. 30	5145	1076	130	1276
Telescope	E. R. Mann	808,616	Jan. 9	1897	370-80	130	488
Telescope	T. Engel	812,957	Feb. 13	1880	345	130	1858
Telescope-holder. Combined camera	F. H. Thompson	812,157	Feb. 6	1270	276	130	1748

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Theatrical appliance	B. J. Fagan	810,734	Jan. 28	4321	888	130	1035
Therapeutic pad	P. B. Hardy	813,082	Feb. 20	3127	687	130	2322
Thermal protector and alarm	F. B. Cook	812,184	Feb. 13	1389	295	130	1836
Thermo-electric couple	W. H. Bristol	811,819	Feb. 6	535	119	130	1589
Thermometer. Clinical	W. F. Fruehauf	812,589	Feb. 13	2111	468	130	1996
Thermometer. Clinical	W. F. Fruehauf	812,588	Feb. 13	2113	468	130	1997
Thermopile	M. Wilderman and R. L. Mond	813,682	Feb. 27	4317	980	130	2573
Thermostat	A. D. Colton	813,408	Feb. 27	3772	836	130	2451
Thill-coupling	C. Vives-Navarro	809,079	Jan. 2	913	191	130	208
Thill-coupling	J. A. McLaughlin	810,562	Jan. 23	3900	832	130	992
Thill-coupling	F. A. Wagner	811,464	Jan. 30	5754	1205	130	1407
Thill-coupling	J. L. Henry	814,005	Feb. 27	4885	1097-8	130	2766
Thill Shifting	T. Grant	812,843	Feb. 20	2646	570	130	2151
Thread-guide	D. C. Finney	808,437	Jan. 9	1867	347	130	408
Thread-laying device	C. Pedersen	813,823	Feb. 27	4563	1013-14	130	2630
Threader and cutter	W. C. Griffin	811,774	Feb. 6	448	97	130	1562
Thresher-feeding attachment	N. Walberg and F. J. McArthur	810,239	Jan. 16	3394	682-3	130	802
Threshing and separating machine. Grain	H. W. Eisenhart	813,957	Feb. 27	4865	1072-4	130	2687
Threshing-machine	E. Kyllonen	810,774	Jan. 23	4402	918	130	1034
Threshing-machine	B. G. Baker	811,026	Jan. 30	4910	1026-7	130	1239
Threshing-machine	W. Brenton	812,719	Feb. 13	2402	527	130	2023
Threshing-machine self-feeding attachment	J. G. Walker	811,007	Jan. 30	4903	1020	130	1233
Ticket-holder	N. A. Plancich	809,123	Jan. 2	1016	210	130	228
Ticket. Transfer	W. C. Pope	813,321	Feb. 20	3603	791	130	2347
Tickets. Machine for producing printed railway	G. Lange	810,188	Jan. 16	3118	644-5	130	788
Tide power	E. B. Cade	811,762	Feb. 6	428	93	130	1578
Tie:							
See Cross-tie. Rail-tie. Fence-tie. Railway-tie.							
Tie liner and spacer	W. T. Pace	809,008	Jan. 2	766	166	130	169
Tie-plate	J. M. Sellers	809,967	Jan. 16	2758	547	130	691
Tile. Mixing	G. R. Schimmel	812,963	Feb. 20	2667	633	130	2202
Tile-molding machine	A. Glenn	809,949	Jan. 16	2681	549-50	130	670
Tile protector. Drain	W. J. McHugh	813,016	Feb. 20	2965	657	130	2236
Tiles and similar articles. Mold for molding	F. M. Sawyer	813,380	Feb. 27	4142	908	130	2536
Tilting bin and cover	W. C. Horner	812,243	Feb. 13	1674	368	130	1907
Time-recording apparatus	W. I. Follett	810,370	Jan. 16	3574	735	130	865
Timepiece stem-winding mechanism	C. R. Stucky	812,963	Feb. 20	2690	638	130	2208
Timepiece. Universal	I. F. Pheile	811,568	Feb. 6	101	23	130	1507
Tin. Apparatus for producing compounds of	C. E. Acker	810,897	Jan. 30	4660	971	130	1171
Tin. Making chlorin compounds of	C. E. Acker	810,456	Jan. 23	3800	781	130	949
Tinned sheets or surfaces. Treating oxidized	S. K. Green	813,147	Feb. 20	3264		130	2287
Tinning or coating metal sheets with tin or other metallic coatings	J. Lee	811,884	Feb. 6	606	133	130	1612
Tipple	C. R. Connor	811,486	Jan. 30	5788	1212	130	1414
Tire	J. L. Connable	812,165	Feb. 6	1294	283	130	1753
Tire	R. G. Smith	813,530	Feb. 27	4020	883	130	2512
Tire and other valves	G. H. F. Schrader	809,986	Jan. 16	2755	546	130	690
Tire armor. Pneumatic	A. A. Moore	811,732	Feb. 6	367	81	130	1567
Tire cover. Pneumatic	W. A. Sankey	809,830	Jan. 9	1884	387	130	444
Tire. Elastic	J. E. Hopkinson	810,944	Jan. 30	4774	993	130	1197
Tire for automobiles. Wheel	H. Kerngood and H. A. Taylor	812,427	Feb. 13	1826	404	130	1940
Tire for vehicle-wheels. Elastic	T. Sterne	813,686	Feb. 13	2264	518	130	2044
Tire for wheeled vehicles	F. H. Sterling	809,537	Jan. 9	1876	369	130	446
Tire guard. Rubber	L. Skama	812,805	Feb. 13	2195	478	130	2012
Tire-heater	J. E. Bancroft	811,026	Jan. 30	4924	1027	130	1220
Tire-heating apparatus	G. W. Graves	810,526	Jan. 23	3943	811	130	982
Tire. Pneumatic	P. W. Tillinghast	809,409	Jan. 9	1934	398	130	288
Tire. Pneumatic	F. Veith	811,100	Jan. 30	5063	1039	130	1250
Tire. Pneumatic	J. M. Elder	811,460	Jan. 30	5706	1213	130	1410
Tire-protecting device. Pneumatic	E. Lapisse	813,900	Feb. 27	4732	1049	130	2667
Tire-protector	H. Waxman	811,345	Jan. 30	5553	1158	130	1346
Tire-protector	J. E. Cape	812,920	Feb. 13	1858	339	130	1837
Tire protector. Pneumatic	H. David	808,974	Jan. 2	706	158	130	156
Tire protector. Pneumatic	L. L. Sidwell	812,273	Feb. 13	1727	378	130	1918
Tire-tightener	L. W. Benson	813,264	Feb. 13	1497	328	130	1888
Tire. Vehicle	J. A. Swinehart	809,841	Jan. 9	2103	435	130	491
Tire. Vehicle	C. Stein	810,988	Jan. 23	4035	866	130	1133
Tire. Vehicle	J. Lang and A. Fischer	811,323	Jan. 30	5332	1114	130	1316
Tire. Vehicle	H. R. Auld	812,831	Feb. 13	1837	340	130	1899
Tire. Vehicle	G. M. Stadelman	813,676	Feb. 27	4305	948	130	2571
Tire. Vehicle-wheel	A. Dewes	810,921	Jan. 30	4721	986	130	1188
Tire. Vehicle-wheel	J. H. Lorimer	811,646	Feb. 6	221	47	130	1533
Tire. Vehicle-wheel	C. C. Worthington	813,477	Feb. 27	3980	869	130	2488
Tire. Wheel	W. A. London	813,789	Feb. 13	2475	543	130	2096
Tire. Wheel	E. F. Sobers	812,893	Feb. 20	2720	608	130	2172
Tires. Non-skidding device for	C. R. Bullard	808,721	Jan. 2	189	43	130	73
Tires. Protective cover for pneumatic	J. Albers	813,894	Feb. 27	4831	1064	130	2660
Tires to wheels. Apparatus for applying	A. R. Le Moon	811,986	Feb. 6	894	177	130	1655
Titanium with other metals. Combining	F. E. Canda	812,278	Feb. 20	2498	770	130	2205
Titration apparatus	R. König	813,977	Feb. 27	4883	1082	130	2694
Tobacco-box. Pocket	I. Z. Cohen	810,729	Jan. 23	4020	889	130	1081
Tobacco-moistening apparatus	H. J. Murphy	809,676	Jan. 9	1894	393	130	501
Tobacco-pipe	I. Mahoney	812,261	Feb. 13	1708	388	130	1910
Tobacco-pipe, cigar-holder, and cigarette-holder	L. Probyn	809,844	Jan. 9	1898	391	130	501
Tobacco-stripper	M. Dellar	813,698	Feb. 27	4888	1057-9	130	2654
Tobacco-stripping machine	J. M. Malntosh	809,724	Jan. 9	2251	487-8	130	527
Toilet article	H. A. Dorr	812,189	Feb. 13	1573	365	130	1880
Tongs	G. Kamin	812,939	Feb. 20	2613	623	130	2188
Tongue-counterbalancing device	J. E. Pardee	811,148	Jan. 30	5201	1102	130	1280
Tongue-switch	E. B. Prior	810,423	Jan. 23	3760	770	130	940
Tool	H. A. Smith and W. F. Frank	808,725	Jan. 2	1109	237	130	249
Tool	D. Morris	811,837	Feb. 6	2665	585	130	1733
Tool	R. Fobes	812,413	Feb. 27	4265	931	130	2545
Tool-stamp. Hydraulic	E. D. Fiske	808,647	Jan. 2	98	11	130	14
Tool. Combination	E. J. La Dake and I. G. O'Harra	809,191	Jan. 2	1151	255	130	267

Alphabetical list of inventions for January and February—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drfs.	Official Gazette. Vol.	Official Gazette. Page.
Tool. Combination-	J. R. Spicer	810,827	Jan. 30	4852	1010	120	1214
Tool. Combination-	J. D. Karry	813,342	Feb. 20	3539	796	120	2264
Tool. Combination-	R. A. Baggett. (Reissue)	12,488	Feb. 20	3736	825	120	2280
Tool-handle	S. E. Foreman	811,380	Jan. 30	5629	1178	120	1301
Tool-holder	C. L. Goodrich	808,861	Jan. 2	721	126	120	189
Tool-holder	B. M. W. Hanson	809,357	Jan. 3	1288	294	120	288
Tool-holder	P. H. Robinson	810,207	Jan. 16	3445	712	120	625
Tool-holder	P. P. Miller	811,786	Feb. 6	479	103	120	1602
Tool-holder	F. W. Waite	810,286	Jan. 16	3283	682	120	632
Tool holding and adjusting device	H. E. E. Molbenthin	812,947	Feb. 20	2886	620	120	2199
Tool of the hammer type. Combination-	C. H. Lawton	809,822	Jan. 9	2620	808	120	895
Tool-operating machines. Holder for rotary	W. E. Badger	810,608	Jan. 23	4057	842	120	1012
Tool. Pneumatic	W. Loewen	810,954	Jan. 30	4791	998	120	1201
Toothpick-holder	H. S. Hopper	808,941	Jan. 2	428	93	120	94
Toothpicks. Apparatus for the manufacture of	G. P. Stanley	812,895	Feb. 20	2743	604	120	2173
Toothpicks from veneer strips. Cutter for cutting	J. W. Grattan	808,918	Jan. 2	587	130	120	129
Top	G. L. Pierce	812,575	Feb. 20	2708	597	120	2165
Top-roll saddle	F. Dutcher	812,087	Feb. 6	1006	220	120	1603
Torpedo. Fibrous plastic railway-	J. Neumaier	808,942	Jan. 2	631	137-8	120	139
Torpedo guard. Marine-	H. A. Beale	811,472	Jan. 30	5765	1207	120	1409
Torpedo-setting device	F. W. Carpenter	809,082	Jan. 2	945	196-7	120	209
Toy	I. N. Phippe	809,270	Jan. 3	1322	289	120	201
Toy	R. E. King	811,510	Jan. 30	5836	1222	120	1423
Toy	I. Kinman	813,306	Feb. 20	3564	784	120	2250
Toy. Flying	J. E. Weaver	808,414	Jan. 9	1642	338	120	304
Toy for baby or doll carriages. Rotary	L. B. Matteson	811,786	Feb. 6	477	102	120	1588
Toy guns and similar toys. Box for holding	W. Saxon	813,391	Feb. 20	3731	820	120	2264
Toy-hanger. Flexible	P. R. Warren	813,536	Feb. 13	2049	449	120	1985
Toy. Mechanical and magnetic	H. F. Bartlett	810,900	Jan. 30	4670	973	120	1178
Toy or display device	H. Cottrell	813,082	Feb. 20	3120	664	120	2256
Toy or educational device	R. H. Hartley	812,651	Feb. 13	2279	496	120	2028
Toy pistol	F. Hornby	810,148	Jan. 16	3089	640	120	782
Toy pistol	F. M. Ball	808,621	Jan. 2	8	2	120	4
Toy pistol	L. H. Hinaman	809,060	Jan. 2	880	182	120	190
Toy whip	C. Tait	812,613	Feb. 13	2206	480	120	2014
Trace-carrier	W. F. Simon	811,984	Feb. 6	895	190	120	1665
Trace-tightener	H. Wilson	812,909	Feb. 20	2770	610	120	2179
Track or trolley wire. Adjustable	G. S. Davey	813,866	Feb. 27	4057	1036	120	2653
Track or way	W. Hills	813,295	Feb. 20	3540	780	120	2245
Track-sanding apparatus	H. F. Kail	809,027	Jan. 9	2202	456	120	516
Traction apparatus	F. W. Wittkowski	809,797	Jan. 2	349	78	120	78
Traction-engine	N. Hiss and H. G. De Buren	810,941	Jan. 30	4760	992	120	1195
Traction-engine	L. O. and F. B. Smith	809,678	Jan. 2	500	109	120	113
Traction-engine	M. W. Koons	808,139	Jan. 2	1115	252-3	120	246
Traction-engine	A. G. Kern	811,641	Feb. 6	213	45	120	1531
Traction system. Electric-	W. S. Kelley	813,137	Feb. 6	1196	262-3	120	1732
Traction-wheel	J. P. Gorman, Jr.	813,267	Feb. 20	3522	776	120	2241
Traction-wheel	M. Lefever and W. Gregory	809,236	Jan. 2	1212	267	120	269
Trailing fender	F. E. Knight	813,802	Feb. 13	1975	433-4	120	1968
Train air-pipes. Coupling-section for	E. G. Solomon	808,783	Jan. 2	326	70	120	73
Train-control system. Pneumatic	W. J. Hofstatter	810,863	Jan. 23	4965	980	120	1118
Train-controlling device	J. B. Linn	809,707	Jan. 9	2218	490-1	120	519
Trains. Sewerage system for	J. C. Hardenbergh	813,857	Feb. 27	4726	1045	120	2661
Trammel	J. H. Mettenheimer and W. L. Herblin	809,070	Jan. 2	876	186	120	194
Tramway. Aerial	J. F. Hottman	813,095	Feb. 20	3142	688	120	2200
Tramway-switch	R. C. Self	813,746	Feb. 27	4433	977-8	120	2597
Transfer-press	O. C. N. Gundersen	813,091	Feb. 20	3126	687	120	2259
Transfer-press and attachments therefor	J. R. Hill	813,795	Feb. 27	4530	1000-2	120	2618
Transferring apparatus	B. Smith	811,672	Feb. 6	370	80-81	120	1544
Transformer	A. M. Cathey	812,888	Feb. 13	2205	480	120	2023
Transformer. Regulating-	J. J. Frank	808,740	Jan. 2	387	81	120	84
Transplanter	H. J. Blakeslee	808,715	Jan. 2	194	43	120	45
Trap:	W. Fetzer	812,886	Feb. 13	2108	461	120	1995
See Animal-trap. Bird-trap. Fly-trap. Hog-trap. Plumber's trap. Roach-trap. Sewer-pipe back-pressure trap. Steam-trap. Vacuum-trap.							
Trap	C. Spinler	809,142	Jan. 2	1040	215	120	228
Trap	J. E. Pittman	812,623	Feb. 13	2088	443	120	1979
Trap or valve for draining heating systems. Automatic	J. H. Davis	809,788	Jan. 9	2065	488	120	553
Traversing mechanism	W. E. Magie	809,454	Jan. 9	1739	365	120	413
Traversing mechanism	S. L. G. Knox	811,280	Jan. 30	5520	1113	120	1317
Tree fastener. Shoe-tree.							
Trench	J. M. Normand	808,729	Jan. 9	2020	468	120	529
Trench	H. M. Lay	810,776	Jan. 23	4485	912-14	120	1084
Trigger and safety-guard. Instrument for graphic	J. W. Meisel	809,940	Jan. 2	695	126	120	133
Trigger-mechanism for small-arms	H. H. Edmonds	811,686	Feb. 6	188	41	120	1556
Trimmer. Vine-trimmer.	S. Turudija	810,177	Jan. 16	3154	662	120	774
Trolley-arm	A. R. Watts	809,242	Jan. 9	1479	328	120	361
Trolley-base	W. J. Norman	812,858	Jan. 23	3992	828	120	2065
Trolley-catch	H. A. Knight	812,859	Feb. 13	1973	432	120	1968
Trolley-fender	J. A. Brandt	811,818	Jan. 9	2217	488	120	548
Trolley-guard	J. A. Brandt	811,819	Jan. 9	2217	488	120	548
Trolley-harp	J. A. Brandt	811,820	Jan. 9	2217	488	120	548
Trolley-pole	J. A. Brandt	811,821	Jan. 9	2217	488	120	548
Trolley-pole-carrying device for electric railways. Overhead	J. Hess, Jr.	811,822	Jan. 9	2218	488	120	548
Trolley-supporting device	A. Palmros	812,515	Feb. 27	3999	877	120	2604
Trolley-wheel	J. Hensley	812,947	Feb. 20	2654	581	120	2152
Trolley-wheel bushing. Ball-bearing	M. Sheaber	808,882	Jan. 9	2480	516	120	579
Trolley-wheel. Self-lubricating	A. R. Kramer and O. P. Britt	810,157	Jan. 16	3117	644	120	766
Trolley-wire clamp	E. L. Baker	809,801	Jan. 9	2019	419	120	478
Trolley-wire systems for electric traction. Automatic circuit-breaking safety appliance for use in	J. Carter, G. Hall, and A. Parsons	811,522	Feb. 6	539	120	120	1600
Trolley-wires. Hanger or ear for overhead electric	A. Richardson and T. S. Jones	809,747	Jan. 9	2201	474	120	536
Trolley-wires. Hanger or ear for overhead electric	A. Richardson	812,861	Feb. 20	2728	599	120	2189
Trolling-spoon	C. Kausch	813,500	Feb. 27	3987	870	120	2497
Trolling-spoon	S. E. Knowles	813,718	Feb. 27	4395	967	120	2657
Troposcope	S. W. Baleh	813,126	Feb. 20	3247	714	120	2284
Trousers-press	M. H. Straus	810,583	Jan. 23	4053	894	120	1005
Trousers-press	J. L. Hattery	812,742	Feb. 13	2446	537	120	2033
Trousers-rack	M. Rosenberg	813,239	Feb. 20	3429	755	120	2231
Truck	H. Weber. (Reissue)	12,480	Jan. 2	1337	271	120	294
Truck	P. Twomey	809,478	Jan. 9	1771	385	120	433
Truck	J. D. Smith	811,965	Feb. 6	866	190	120	1665
Truck-bolster	H. W. Moore	812,086	Feb. 6	1064	232	120	1706
Truck bolster. Car-	J. C. Barber	809,768	Jan. 9	2231	482-3	120	544
Truck bolster. Car-	G. C. Murray	809,625	Jan. 9	2060	427	120	484
Truck-bolster. Cast	T. Fowler	811,493	Jan. 30	5802	1215	120	1416
Truck. Car-	E. C. Washburn	812,313	Feb. 13	1624	357	120	1896
Truck. Collapsible	J. M. Hopkins	809,505	Jan. 9	1823	375	120	435
Truck. Locomotive-	C. E. Fleshen	808,738	Jan. 2	234	51	120	53
Truck. Railway-car	W. E. Symons	813,255	Feb. 20	3457	762-3	120	2327
Truck. Railway-car	W. Ferris	809,435	Jan. 9	1685	346-7	120	402
Truck. Railway-car	F. F. Shaffer	810,815	Jan. 23	4477	931	120	1099
Truck. Railway-car	J. M. Hopkins	811,062	Jan. 30	4979	1039	120	1242
Truck. Self-propelled vehicle	J. M. Hopkins	813,797	Feb. 27	4538	1003	120	2620
Truck. Vehicle	H. H. Taylor	810,997	Jan. 30	4971	1014	120	1218
Truck-wheel	W. N. Springer	810,001	Jan. 16	2987	629-3	120	741
Trucks. Lateral-motion device for car-	F. W. Sickle	810,438	Jan. 23	3755	773	120	938
Trunk	E. C. Washburn	811,677	Feb. 6	379	62	120	1546
Trunk	M. E. Morgan	809,124	Jan. 2	999	206	120	220
Trunk	H. Davis	809,386	Jan. 9	1280	277	120	334
Trunk	T. J. Livas	809,709	Jan. 9	2226	461	120	521
Trunk-corder	C. C. Wigington	812,967	Feb. 20	2897	629	120	2307
Trunk-lock	W. L. Keesee	811,150	Jan. 30	5162	1079	120	1260
Trunk. Wardrobe-	J. A. Horne	810,147	Jan. 16	3096	640	120	762
Truss	T. J. Hamilton	810,203	Jan. 16	3216	666	120	785
Truss	M. B. Smyth	808,697	Jan. 2	145	34	120	34
Tub	G. M. Farleigh	812,031	Feb. 6	1011	221	120	1604
Tube:	F. Connolly	812,826	Feb. 20	2613	572	120	2144
See Boiler-tube. Pneumatic tube. Mailing-tube. Water or fluid gaging tube. Pile-tube.							
Tube-clip	F. A. Bellamy	813,033	Feb. 20	3019	668	120	2282
Tube, conduit, and pipe cleaner	A. Pickles and P. R. Sewell	812,261	Feb. 13	1702	374	120	1914
Tube-drawing apparatus	G. Baehr	808,620	Jan. 2	6	2	120	4
Tube-making machine	G. B. Mellinger	811,951	Feb. 6	616	135	120	1615
Tubes and armoring flexible hose or other tubes. Mechanism for constructing flexible metal	E. T. Greenfield	809,561	Jan. 9	1923	399-400	120	456
Tubes. Apparatus for reducing the ends of	M. Wikstrom	810,241	Jan. 16	3299	684	120	803
Tubes from pulp, paper, or similar material. Machine for making	W. B. Hope	813,701	Feb. 27	4356	950	120	2581
Tubes. Helically grooving	R. C. Montesgle	812,435	Feb. 13	1854	408	120	1944
Tubes. Machine for helically grooving	R. C. Montesgle	812,434	Feb. 13	1862	407	120	1944
Tubes. Producing	G. B. Mellinger	812,146	Feb. 6	1235	269-0	120	1742
Tubes, single or compound, with longitudinal ribs	A. Schmitz	813,918	Feb. 27	4786	1057	120	2674
Tubular boiler	F. P. Cooper	811,547	Feb. 6	22	6	120	1489
Tufting-machine	W. E. Latimer	809,572	Jan. 9	1947	404	120	461
Tug. Harness-	J. S. McKenzie	809,577	Jan. 9	1966	406	120	462
Tuning instrument	N. Bryant	813,709	Feb. 27	4475	988	120	2607
Tunnel-erecting apparatus	H. Japp	811,404	Jan. 30	5683	1183-4	120	1396
Tunnel-shield	C. L. Parmelee and E. G. Williams	810,426	Jan. 23	3729	769	120	932
Turbine	C. E. Smith	809,147	Jan. 2	1038	214-15	120	227
Turbine	J. H. Barker	809,377	Jan. 9	1347	274	120	331
Turbine	E. Maier	809,711	Jan. 9	2220	462	120	522
Turbine	F. W. Reeves	811,053	Feb. 6	240	55-6	120	1539
Turbine-bucket	H. Keller	812,795	Feb. 13	2547	520	120	2084
Turbine bucket-wheel	J. Wilkinson	811,995	Feb. 6	915	201	120	1675
Turbine. Combined impulse and reaction	C. Pfenninger	813,169	Feb. 20	3297	726	120	2294
Turbine-controller	F. Samuelson	809,847	Jan. 9	2469	513-14	120	570
Turbine controller mechanism	J. Wilkinson	811,992	Feb. 6	904	200	120	1673
Turbine-driven machinery	A. C. E. Rateau and G. Sautter	812,878	Feb. 20	2712	597-8	120	2168
Turbine. Elastic-fluid	A. H. Krusi	809,636	Jan. 9	2411	503	120	568
Turbine. Elastic-fluid	P. C. Ossanyan	810,667	Jan. 23	4288	889	120	1089
Turbine. Elastic-fluid	O. O. Storlo	810,992	Jan. 30	4990	1012	120	1236
Turbine-engine	J. Wilkinson	811,994	Feb. 6	912	201	120	1674
Turbine-engine	E. J. Wood	808,709	Jan. 2	164	38	120	38
Turbine-engine	H. Schoele	808,989	Jan. 2	648	141	120	143
Turbine-engine	G. C. E. de Bonneshose	810,382	Jan. 16	3284	680	120	808
Turbine gate mechanism	P. F. Holmgren	811,689	Feb. 6	218	45	120	1550
Turbine. Marine-	N. Lombard	812,828	Feb. 13	1969	425	120	1968
Turbine. Marine-	J. Wilkinson	811,993	Feb. 6	917	202	120	1675
Turbine-regulating means	J. Wilkinson	811,997	Feb. 6	919	202	120	1676
Turbine. Steam-	A. Lund	810,665	Jan. 23	4701	963-4	120	1221
Turbine. Steam-	J. Stumpf	811,825	Feb. 6	809	174	120	1624
Turbine. Steam-	W. E. Sheppard	811,878	Feb. 6	888	142-3	120	1634
Turbine. Steam or gas	N. R. Smith	812,883	Feb. 13	2048	454	120	2041
Turbine. Governing mechanism for elastic-fluid	J. Stumpf	811,726	Feb. 6	488	98	120	1574
Turbines. Hydraulic shaft-packing for	F. Samuelson	811,249	Jan. 30	5367	1150	120	1338
	J. P. Kay	811,662	Feb. 6	314	68	120	1581

Alphabetical list of inventions for January and February—Continued.

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Turbines. Packing for elastic-fluid	W. L. R. Emmet	811,533	Feb. 6	554	122-3	120	1603
Turnbuckle	J. A. Steinmetz	809,080	Jan. 2	799	173	120	176
Turning, shaping, and finishing machine. Automatic	A. R. Weiss	813,187	Feb. 20	3230	732-3	120	2301
Turning-tool	G. D. Barlow	811,027	Jan. 30	4926	1027	120	1230
Turnstile registering or indicating device	A. Marsh	809,836	Jan. 9	2421	805	120	566
Turpentine-box-cutting machine	R. L. Ivey and R. D. McDonald	809,444	Jan. 9	1700	349-51	120	407
Turpentine-collecting spout. Crude-	J. I. Hatfield	810,782	Jan. 23	4356	905	120	1074
Turpentine-gathering spout	J. I. Hatfield	812,682	Feb. 13	2261	495	120	2026
Turpentine. Refining	J. W. Kennedy	811,089	Jan. 30	4992	1041	120	1245
Tweezers, needle, and eye-gurette. Combined	G. O. Gilmer	813,086	Feb. 20	3128	685	120	2258
Twine. Waterproofing	E. Pastore	809,579	Jan. 9	1989	497	120	468
Type	H. Feder	812,837	Feb. 20	2627		120	2149
Type and cylinder. Adjustable curved	K. U. Whitted	813,848	Feb. 27	4552	1039	120	2845
Type and plate. Interchangeable curved	H. L. Koehler	811,727	Feb. 6	356	79	120	1495
Type-bar hanger	H. L. Koehler	811,776	Feb. 6	450	97	120	1504
Type-distributing mechanism	W. H. Pike, Jr.	813,654	Feb. 27	4287	944	120	2567
Type-form leveler	H. C. Hensel	810,205	Jan. 16	3219	667	120	786
Type-setter's machine	A. S. Allen	811,254	Jan. 30	5565	1161	120	1368
Type-setting machine	J. G. Gosselin	811,265	Jan. 30	5440	1134	120	1241
Type. Space for justifying lines of	J. S. Duncan	811,622	Feb. 6	174	38-40	120	1524
Type-wheel alinement	D. B. Ray	813,912	Feb. 27	4777	1054	120	2672
Type-writer cabinet	C. A. Bennett	810,024	Jan. 16	2539	557	120	707
Type-writer. Electrically-operated	W. W. Johnston and W. T. Watts	810,416	Jan. 23	3712	765	120	926
Type-writer roller	W. J. Roussel	811,247	Jan. 30	5350	1119	120	1324
Type-writer work-holder. Flat-platen	W. A. Small	811,800	Feb. 6	508	112	120	1503
Type-writers. Paper-movement indicator for	G. W. Donning	813,489	Feb. 27	3944	865	120	2492
Type-writers. Paper-movement indicator for	C. C. Poole	811,172	Jan. 30	5307	1089	120	1200
Type-writing machine	C. C. Poole	811,173	Jan. 30	5211	1089	120	1201
Type-writing machine	H. L. Arnold	808,714	Jan. 2	176	40	120	30
Type-writing machine	H. W. Merritt	808,771	Jan. 2	299	65	120	68
Type-writing machine	C. H. Shepard	808,878	Jan. 2	492	108-7	120	110
Type-writing machine	L. C. Neff	809,391	Jan. 9	1503	334	120	364
Type-writing machine	J. Felbel	809,678	Jan. 9	2164	448	120	507
Type-writing machine	C. E. Peterson	809,979	Jan. 16	2740	564	120	627
Type-writing machine	J. A. Hagerstrom	810,202	Jan. 16	3214	666	120	785
Type-writing machine	B. C. Stickney	810,259	Jan. 16	3552	730-1	120	859
Type-writing machine	B. C. Stickney	810,260	Jan. 16	3555	731-2	120	860
Type-writing machine	B. C. Stickney	811,182	Jan. 30	5230	1095	120	1204
Type-writing machine	G. W. Campbell	811,183	Jan 30	5232	1095	120	1205
Type-writing machine	E. J. Barker	811,481	Jan. 30	5779	1210	120	1412
Type-writing machine	B. A. Brooks	812,177	Feb. 13	1344	292-3	120	1531
Type-writing machine	A. J. Briggs	812,782	Feb. 13	2514	553	120	2076
Type-writing machine	J. E. Molle	813,245	Feb. 20	3643	799	120	2366
Type-writing-machine attachment	E. F. Elmberg	813,570	Feb. 27	4113	901-2	120	2530
Type-writing-machine back-spacing attachment	G. A. Rine	810,896	Jan. 23	4046	909	120	1134
Type-writing-machine cyclometer attachment	G. W. Simmons	812,669	Feb. 13	2228	507	120	2037
Type-writing machine. Stenographic	C. E. Keel	812,626	Feb. 27	4021	881	120	2510
Type-writing-machine type-cleaning device	S. E. Halsey	810,209	Jan. 16	3220	666-9	120	786
Typographic machine	C. Muehleisen	811,304	Jan. 30	5631	1179	120	1562
Umbrella	M. G. McGuire	812,585	Feb. 13	2157	472	120	2006
Umbrella attachment	M. A. Brunner	808,863	Jan. 2	459	101	120	102
Umbrella. Folding	J. H. Nevin	809,551	Jan. 9	1904	395	120	451
Undercreaser	F. W. Jones	811,948	Feb. 6	837	182	120	1658
Union	W. Cooper	809,570	Jan. 9	1942	405	120	459
Union-coupling	H. S. Crombie	810,190	Jan. 16	3195	660	120	780
Unloading mechanism	G. Ward	812,642	Feb. 13	2252	492	120	2025
Upright-file	E. A. King	812,823	Feb. 13	2227	488	120	2018
Upsetting apparatus	M. Tauber	808,947	Jan. 2	631	96-6	120	96
Upsetting apparatus	P. Boller	811,383	Feb. 6	670	147	120	1527
Upsetting-springs. Means for supporting	G. E. Bigelow	810,902	Jan. 30	5687	1166-7	120	1373
Uptake	R. Bland	810,319	Jan. 16	3470	717	120	1173
Vacuum-brake. Automatic	J. W. Cloud	812,461	Feb. 13	1983	428-7	120	1990
Vacuum-trap	G. M. Hilger	812,120	Feb. 6	1184	269-60	120	1730
Valve	E. F. Hargrave	808,884	Jan. 2	66	15	120	17
Valve	W. R. Whitehead	810,500	Jan. 23	4064	857	120	1008
Valve	M. D. Larkin	810,951	Jan. 30	4783	995	120	1199
Valve	H. W. Beach	811,361	Jan. 30	5578	1164	120	1370
Valve	G. Habegger	811,497	Jan. 30	5808	1216	120	1418
Valve	E. V. Anderson	811,513	Feb. 6	323	117	120	1507
Valve	M. Hochwald	811,586	Feb. 27	4739	1047	120	2664
Valve. Air-	W. J. Rice	812,451	Feb. 13	1982	414	120	1960
Valve. Air-	T. Wheatley	813,606	Feb. 27	4174	916	120	2642
Valve and faucet reseating device	A. Eberlein	808,912	Jan. 2	573	128	120	127
Valve-bag	A. M. Bates	810,318	Jan. 16	3467	717	120	840
Valve-bag	J. Rogers	810,340	Jan. 16	3540	727	120	856
Valve-bag	J. Rogers	812,464	Feb. 13	1957	415	120	1951
Valve. Blowing-engine	J. Kennedy	811,226	Jan. 30	5326	1112	120	1216
Valve. Check-	J. H. Nolan and M. L. Sanborn	810,803	Jan. 23	3957	709	120	971
Valve. Check-	F. E. Ten Eyck	811,185	Jan. 30	5226	1088	120	1205
Valve. Check-	M. L. Sanborn	812,885	Feb. 20	2727	600	120	2170
Valve-controlling mechanism for explosive-engines	D. F. Graham and F. A. Fox	813,043	Feb. 20	3036	668	120	2226
Valve. Engine-	R. C. Holman	810,055	Jan. 16	3227	669	120	728
Valve. Gate-	G. Lane	810,422	Jan. 23	3723	767	120	931
Valve. Gate-	T. M. Andrews	811,117	Jan. 30	5073	1081-2	120	1263
Valve. Hydraulic tank	W. Gray	812,237	Feb. 13	1695	366	120	1905
Valve for automatic sprinkler systems. Dry-pipe	C. F. Whaler	811,998	Feb. 6	924	203	120	1677
Valve for blowing-engines, &c.	J. E. Ericson	812,080	Feb. 6	1009	220	120	1804
Valve for air-compressors	G. Knorr	813,722	Feb. 13	2463	540-1	120	2066
Valve for air-compressors. Discharge-	E. S. Clayton	813,260	Feb. 20	3653	801	120	2368
	M. A. Neuland	810,216	Jan. 16	3245	672	120	792
	E. Hill	810,720	Jan. 23	4265	927	120	1076
	M. W. Crandall	811,220	Feb. 6	849	121	120	1603
	W. Prellwitz	810,672	Jan. 23	4211	871	120	1041

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Valve for gas-generators	R. Schenck	812,083	Feb. 13	2231	509-10	120	2023
Valve for gas or oil burners. Cut-off	A. Ashcraft	812,715	Feb. 13	2391	535	120	2050
Valve for hoisting-engines. Reversing	J. L. Pilling	810,883	Jan. 23	4618	982	120	1139
Valve for humidifying and heating systems. Electrically-controlled regulating	S. W. Cramer	813,083	Feb. 20	3131	694	120	2257
Valve for hydrant-pipes. Drain-	F. A. Jacobs	809,063	Jan. 2	806	184	120	191
Valve for water-gages. Check-	B. Hadley and B. Moylan	810,746	Jan. 23	4340	968	120	1070
Valve-gear	F. G. Johnson	813,433	Feb. 27	3836	849	120	2465
Valve-gear for explosion-engines	H. Richter	813,116	Feb. 20	3194	698	120	2273
Valve. Hydraulic distributing-	W. H. Wood	812,636	Feb. 13	2226	486-7	120	2020
Valve mechanism	J. M. and E. W. Ralkes	809,013	Jan. 2	773	167	120	170
Valve mechanism for fluid-motors	J. Wilkinson	811,983	Feb. 6	908	200	120	1674
Valve mechanism for internal-combustion engines	W. H. Schoonmaker	809,400	Jan. 9	1617	338	120	388
Valve mechanism for motors. Supply and exhaust	W. H. Johnson	813,305	Feb. 20	3562	784	120	2340
Valve mechanism. Measuring-	R. W. Goeb	809,490	Jan. 9	1698	345	120	405
Valve. Pop safety-	J. W. Grant	810,201	Jan. 16	3213	665	120	785
Valve-removing apparatus	M. A. Neeland	810,215	Jan. 16	3243	671-2	120	791
Valve. Reversing-	W. A. Field, B. B. Clark, 2nd, and F. Wilson.	812,840	Feb. 20	3641	577-8	120	2150
Valve. Rotary	C. W. Manzel	811,235	Jan. 30	5339	1115	120	1319
Valve. Safety-	C. J. Fancher	813,145	Feb. 20	3261	717	120	2287
Valve. Slide-gate	A. Stenwall	809,857	Jan. 9	2489	517	120	580
Valve. Spring-disk	J. T. Hayden	813,555	Feb. 27	4062	894	120	2532
Valve. Steam-	J. D. and E. N. Austin	810,348	Jan. 16	3518	687	120	808
Valve. Stopper-	A. T. Duncan	808,789	Jan. 2	2370	489	120	554
Valve. Tank-	D. D. Casey	811,084	Jan. 30	4936	1030	120	1233
Valve. Throttle-	R. A. Norling	813,110	Feb. 20	3180	695	120	2270
Valve. Triple-	R. E. Chapman	809,491	Jan. 9	1702	370	120	427
Valve. Wicket-	J. F. Bush	813,771	Feb. 27	4463	989	120	2609
Vamp-marking machine	J. F. Rogers	811,246	Jan. 30	5357	1118	120	1322
Vapor-burner	E. A. Franklin	813,494	Feb. 27	3957	866	120	2495
Vapor electric apparatus	A. M. Jackson	808,753	Jan. 2	263	57	120	60
Vapor-generator	A. Harrison	810,486	Jan. 23	3862	792	120	962
Vaporizer	C. and W. Hibbard	811,307	Jan. 30	5642	1181	120	1364
Vault. Burial-	J. P. Bending	809,897	Jan. 9	2556	530	120	595
Vault-lights, floors, &c. Bracing for	J. Jacobs	808,680	Jan. 2	78	17	120	19
Vault mold. Burial-	J. M. Pruett and J. C. Simpson	809,820	Jan. 9	2068	428	120	495
Vegetable-disintegrator	N. J. Shimmel	810,816	Jan. 23	4478	931	120	1089
Vegetable strips. Manufacture of	F. Stoffel	812,462	Feb. 13	1957	419	120	1953
Vegetable-washer	L. Meyer	810,549	Jan. 23	3960	820	120	961
Vegetables, &c. Cutting-machine for	A. W. Thomas	810,926	Jan. 30	4873	1014-15	120	1210
Vegetation-destroyer	W. R. McKeen, Jr., and A. H. Fetters.	810,793	Jan. 23	4442	921-2	120	1092
Vehicle	J. T. Furchtbar	809,048	Jan. 2	842	179	120	186
Vehicle	R. N. Marts	810,492	Jan. 23	3962	798-4	120	965
Vehicle antivibration device	J. H. Hanson and J. J. Petraborg	812,037	Feb. 6	1019	222	120	1606
Vehicle attachment	G. Grillier	809,501	Jan. 9	1615	374	120	422
Vehicle-body construction	H. F. Cook	810,722	Jan. 23	4302	894	120	1061
Vehicle-body construction	S. J. Dowling	809,786	Jan. 9	2260	489	120	553
Vehicle-body. Metal	E. Demsky	812,956	Feb. 27	4855	1072	120	2687
Vehicle-brake	H. and A. P. Smith	813,460	Feb. 27	3980	850-1	120	2476
Vehicle-brake	B. Viola	809,341	Jan. 9	1470	327-8	120	359
Vehicle-brake	J. L. Brewton	810,612	Jan. 23	4114	849	120	1019
Vehicle-brake	J. G. Ebken	813,545	Feb. 27	4057	889	120	2518
Vehicle-brake. Electric	J. N. Mahoney	813,062	Feb. 20	3065	672	120	2241
Vehicle-controlling device. Motor-	J. C. Gallagher	809,916	Jan. 9	2008	550-7	120	603
Vehicle-cover	W. Findlay	808,826	Jan. 2	403	88	120	89
Vehicle draft attachment	J. H. Fritz	813,630	Feb. 27	4260	963	120	2557
Vehicle draft-gear	C. Searer	809,295	Jan. 9	1443	289	120	351
Vehicle-driving mechanism. Motor-	G. E. Muff	811,314	Jan. 30	5497	1144	120	1351
Vehicle. Dumping-	S. C. Lancaster	808,991	Jan. 2	726	159-60	120	163
Vehicle. Dumping-	J. Cronin	810,204	Jan. 16	3263	664	120	814
Vehicle. Electrically-propelled	R. Thayer. (Reissue)	12,449	Feb. 6	1234	269-60	120	1763
Vehicle. Laterally-movable dumping-	J. W. King	811,851	Feb. 6	880	130-1	120	1611
Vehicle. Motor-	T. L. and T. J. Sturtevant	809,475	Jan. 9	1764	384	120	431
Vehicle. Motor-	A. Nemesaker	809,535	Jan. 9	1854	393	120	441
Vehicle. Motor-	H. M. Pope	810,370	Jan. 16	3611	763	120	872
Vehicle. Motor-	L. S. Picaits	810,881	Jan. 23	4604	989	120	1126
Vehicle. Motor-	A. Ingis	811,403	Jan. 30	5853	1133	120	1388
Vehicle. Motor-driven	P. E. Hanson	813,044	Feb. 20	3036	668	120	2237
Vehicle. Motor-propelled	H. T. Hansen	813,238	Feb. 13	1995	387	120	1995
Vehicle-motor-suspension mechanism	W. S. Johnson	813,513	Feb. 20	3251	745-7	120	2311
Vehicle-platform	F. B. Rae	810,674	Jan. 23	4214	872	120	1042
Vehicle power-transmitting mechanism. Motor-	W. E. Reynolds and W. F. Gronau.	810,222	Jan. 16	3257	676	120	794
Vehicle power-transmitting mechanism. Motor-	R. Symmonds, Jr.	809,337	Jan. 9	1462	326	120	354
Vehicle recoil-check	R. Symmonds, Jr.	809,338	Jan. 9	1463	326-7	120	355
Vehicle-recorder	H. A. Mouse	810,362	Jan. 16	3589	776	120	866
Vehicle-repairing device	J. T. Whalen	811,015	Jan. 30	4905	1026	120	1228
Vehicle running-gear	C. W. Levers	809,198	Jan. 2	1122	264	120	248
Vehicle-seat. Auxiliary	G. McHenry	811,944	Feb. 6	833	179-80	120	1658
Vehicle. Self-propelled	T. W. Parks	812,360	Feb. 13	1701	372-4	120	1813
Vehicle. Somersaulting-	H. Hill	813,422	Feb. 27	3913	852	120	2480
Vehicle-spring	J. and E. Ravel	810,208	Jan. 16	3488	710-11	120	824
Vehicle spring-gear	J. W. Sutton	813,678	Feb. 27	4289	940	120	2572
Vehicle-springs. Pneumatic	C. A. Hemstehe	809,946	Jan. 16	2573	533	120	674
Vehicle spring-wheel	M. M. Howland	811,380	Jan. 30	5452	1152	120	1345
Vehicle-springs. Equalizing device for	J. G. Babio	813,397	Feb. 27	3761	825	120	2446
Vehicle-steering device	J. A. Roth	813,368	Feb. 20	3727	755	120	2353
Vehicle steering-knuckle	G. K. Rudert	810,578	Jan. 23	4389	874	120	1046
Vehicle-steering mechanism	J. O. Haas	810,572	Jan. 16	3578	730	120	858
Vehicle-steering mechanism. Motor-	F. B. Rae	810,673	Jan. 23	4213	872	120	1042
Vehicle-stop	F. P. Maishard	809,939	Jan. 9	2081	444-5	120	525
Vehicle-top storm-front	J. Ernst	810,199	Jan. 16	3211	666	120	784
Vehicle transmission-gear. Motor-	C. C. Daugherty	811,299	Jan. 30	5485	1133	120	1339
	T. P. Maishard	812,884	Feb. 13	2286	499-500	120	2031

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Vehicle. Two-wheeled	F. M. Harrington	812,421	Feb. 13	1829	401	120	1026
Vehicle weighing device	E. T. Zeidler	810,517	Jan. 23	3023	808-7	120	978
Vehicle-wheel	M. G. Babio	809,040	Jan. 2	816	176	120	180
Vehicle-wheel	G. D. Munsing	809,206	Jan. 2	1146	238	120	252
Vehicle-wheel	W. Wright	809,681	Jan. 9	2889	854	120	589
Vehicle-wheel	T. Gare	810,356	Jan. 23	3041	811	120	982
Vehicle-wheel	M. G. Helts-Boyer	812,863	Feb. 13	2115	463-4	120	1207
Vehicle-wheel	M. G. Babio	812,629	Feb. 13	2237	457	120	2020
Vehicle-wrench	A. Desmbaugh	811,549	Feb. 6	34	6	120	1490
Vehicles. Frictional retarding means for spring-	J. M. M. Trumault. (Reissue)	12,437	Jan. 16	3024	746	120	875
Vehicles. Hanging-strap for passenger-	J. S. Collins	810,305	Jan. 23	3570	736	120	919
Vehicles. Wind-shield for	G. W. Kerr	812,930	Feb. 20	2614	620	120	2189
Velocipede	C. A. Rudbeck	812,741	Feb. 27	4423	975	120	2606
Velocipede	C. A. Rudbeck	812,742	Feb. 27	4426	976	120	2606
Velocipede. Foldable railway-	H. Barry	811,389	Jan. 30	5403	1127-8	120	1232
Velocipede. Ice-	H. Schnackloth	813,025	Feb. 20	3005	662	120	2220
Vender. Peanut-	J. C. Simering	813,026	Feb. 20	3006	662	120	2221
Vending-machine	H. K. Hansen	809,863	Jan. 9	1989	400	120	457
Vending-machine	A. Merckens	811,571	Feb. 6	71	15	120	1500
Vending-machine. Automatic	G. C. Yocum	811,756	Feb. 6	408	89	120	1575
Vending-machine. Automatic	A. E. Wyatt	812,778	Feb. 13	2508	551	120	2075
Vending-machine. Coin-controlled	E. F. Spaulding	810,576	Jan. 23	4096	830-1	120	1002
Vending-machine. Coin-controlled	F. E. Hall and A. MacLeod	810,747	Jan. 23	4341	908	120	1070
Vending-machine. Coin-controlled	J. Heinrich, J. Schmidt, and C. L. Etheridge	811,501	Jan. 30	5815	1217-18	120	1419
Vending machines. Fraud-preventive mechanism for cigar-	J. Heinrich, J. Schmidt, and C. L. Etheridge.	811,395	Jan. 30	5633	1179	120	1383
Vending-machines. Mechanism for feeding cigars in	J. Heinrich, J. Schmidt, and C. L. Etheridge.	811,396	Jan. 30	5637	1180	120	1383
Veneer-bending machine	H. O. Little	812,854	Feb. 20	2963	584	120	2154
Veneer-cutting machine	J. J. Russell	809,136	Jan. 2	1022	211	120	225
Veneer-drier	W. M. Schwartz	811,446	Jan. 30	5722	1199	120	1400
Ventilating apparatus	C. H. Treat	809,645	Jan. 9	2110	436-7	120	493
Ventilating apparatus	H. De Wallace	811,832	Feb. 6	582	122	120	1602
Ventilator: *See* Sewer and other pipe ventilator. Window-ventilator.							
Vertical boiler	T. Susuki	810,002	Jan 16	2787	575	120	697
Vessel	Z. Scott	813,177	Feb. 20	3314	729	120	2206
Vessel and mechanism connected therewith. Submarine	G. Simpson	812,950	Feb. 20	2879	636	120	2204
Vessel. Marine	J. E. Johnson	809,084	Jan. 2	867	184	120	192
Vessel. Marine	J. J. Sitzler	812,604	Feb. 13	2194	478	120	2012
Veterinary-surgeon's table	L. L. Conkey	809,358	Jan. 9	1305	325	120	366
Veterinary surgical instrument	W. B. Compton	813,080	Feb. 20	3117	683	120	2256
View-holder. Folding	P. M. O'Connor	811,658	Feb. 6	242	52	120	1538
Vinasses. Treatment of	C. Sudre	810,442	Jan. 23	3762	775	120	940
Vine trimmer. Strawberry-	N. A. Weigen	811,978	Feb. 6	897	198	120	1671
Violin-bridge	T. L. Davis	809,174	Jan. 2	1064	226	120	239
Vise	F. M. Stambaugh	809,271	Jan. 2	1324	289	120	291
Vise	T. W. Vare	813,260	Feb. 20	3465	764	120	2329
Vise-slide	E. M. Walker	808,980	Jan. 2	685	149	120	152
Voltmeter. Electrostatic	J. Ferguson	809,788	Jan. 9	2376	491	120	555
Voltmeter-switch	G. N. Eastman	810,522	Jan. 23	3683	809	120	980
Voting-machine	C. F. Harrington	809,371	Jan. 9	1535	313	120	372
Voting-machine	G. M. Warner	809,479	Jan. 9	1773	365-6	120	423
Voting-machine	S. D. Layton	812,988	Feb. 20	2834	625-6	120	2194
Voting-machine	C. E. Kimbrough	813,007	Feb. 20	2968	654	120	2222
Voting-machine	C. F. Harrington	810,648	Jan. 23	4167	861	120	1031
Voting-machine	F. A. Glidden	810,483	Jan. 23	3547	790	120	961
Voting-machine	H. L. Ferris	809,915	Jan. 9	2267	534-5	120	604
Voting-machine	H. L. Ferris	809,913	Jan. 9	2260	535	120	605
Voting-machine	W. Leppert	810,872	Jan. 23	4587	955	120	1122
Voting-machine	W. W. Cain	809,486	Jan. 9	1788	370	120	426
Wagon-body	D. Stevens	811,104	Jan. 30	5049	1055-6	120	1257
Wagon-body	C. Leavitt	811,158	Jan. 30	5173	1080	120	1282
Wagon-body	H. E. Martin	811,888	Feb. 6	67	14	120	1500
Wagon-bolster	G. McMurtrie	810,500	Jan. 23	3885	798	120	970
Wagon-box. Adjustable	M. Lambart	812,064	Feb. 6	1046	228	120	1702
Wagon-box and hay-rack. Convertible	G. B. Mills	809,388	Jan. 9	1586	329-3	120	382
Wagon-box and hay-rack lifter	M. J. Saxgen	810,812	Jan. 23	3914	804-5	120	976
Wagon-brake	J. Happel	812,239	Feb. 13	1699	367	120	1906
Wagon-brake. Automatic	E. P. Veatch	809,181	Jan. 2	1045	216	120	229
Wagon. Dumping	G. W. Crane	808,973	Jan. 2	706	153	120	155
Wagon. Dumping	F. Bloomingdale	810,088	Jan. 16	2851	586	120	709
Wagon. Dumping	D. M. Rowe	810,089	Jan. 16	2872	620	120	738
Wagon. Dumping	G. R. Starnes	810,894	Jan. 23	4260	876	120	1045
Wagon. Dumping	J. Haberling	811,770	Feb. 6	347	77	120	1563
Wagon. Dumping	G. H. Thomas	812,100	Feb. 6	1126	248	120	1720
Wagon. Dumping	H. J. Frank	812,734	Feb. 13	2432	532-3	120	2059
Wagon. Dumping	M. Haries	812,739	Feb. 13	2443	539	120	2062
Wagon. Dumping	J. E. Briggs	812,918	Feb. 20	2787	612	120	2182
Wagon-dumping apparatus	D. E. Barnes, W. O. Blackmun, and A. Miller.	812,667	Feb. 27	4320	952	120	2575
Wagon. Dumping coal-	W. Leonhardt	810,963	Jan. 30	4790	996	120	1200
Wagon-gear	E. Ehrhidt	813,286	Feb. 20	3619	776	120	2240
Wagon-gear	E. Ehrhidt	813,286	Feb. 20	3621	776	120	2241
Wagon-jack	J. L. Riddle	810,990	Jan. 30	4843	1008	120	1212
Wagon-jack	A. J. Bellel	809,146	Jan. 2	1072	228	120	236
Wagon. Front bolster and body-support for chil-	O. P. Erard	808,977	Jan. 2	715	154	120	156
Wagon. Metallic	D. H. Watts, Jr.	809,892	Jan. 9	1998	423-12	120	468
Wagon-running. Building-	W. M. Akers and B. F. Huston	811,894	Feb. 6	3	1	120	1486
Wagon-running. Motor-	J. M. Gehr	808,108	Jan. 2	972	201	120	215
Wagon-tongue	L. A. Landis	809,488	Jan. 9	1719	364-5	120	411
Wagon-tongue	E. B. Sargent	813,788	Feb. 6	488	103	120	1691

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Wall-register	E. P. Corby	813,963	Feb. 27	4048	1070	120	2685
Walls. Apparatus for the construction of plastic	D. W. Boves	812,008	Feb. 6	988	211	120	1688
Wardrobe	P. Dowd	812,571	Feb. 27	4030	1040	120	2665
Wardrobe-hook	B. Z. Schreyer	809,017	Jan. 2	781	168	120	172
Wardrobe. Portable	N. Ryan	812,453	Feb. 27	3957	847-8	120	2573
Wardrobe-rack	G. R. Thies	813,248	Feb. 20	3463	768	120	2328
Warp stop-motion	T. A. B. Carver	811,373	Jan. 30	5098	1140	120	1375
Warp-tension	E. Renz	810,305	Jan. 16	3443	711-12	120	895
Warp-twisting-in machine	A. Calleson, A. D. Adriance, and A. Duppler.	810,711	Jan. 23	4378	887-89	120	1057
Washer: *See* Adjustable washer. Bolt-locking washer. Coal-washer. Coal and like washer. Gas-washer. Vegetable-washer.							
Washing apparatus. Automatic discharge for	C. Küns	812,211	Feb. 13	1413	307	120	1868
Washing-machine	A. L. Owens	810,427	Jan. 23	3728	798	120	952
Washing-machine	A. G. Moeckel	810,549	Jan. 23	3957	821	120	994
Washing-machine	F. H. Halstein	811,291	Jan. 30	5451	1186	120	1344
Washing-machine	W. I. Walker	811,801	Feb. 6	139	28	120	1613
Washing-machine	J. W. Stroh	811,804	Feb. 6	808	114	120	1894
Washing-machine	C. L. Kelly	812,126	Feb. 6	1190	263-4	120	1734
Washing-machine	T. C. Purves	812,302	Feb. 13	1589	346	120	1989
Washing-machine	S. K. Rice	812,772	Feb. 13	2500	550	120	2073
Washing-machine gearing	H. H. Munson	813,015	Feb. 20	2983	657	120	2226
Washing-machines. Mechanical movement for	W. Sweet	813,302	Feb. 20	3732	820	120	2284
Washbowl-valve	D. W. York	809,161	Jan. 2	1061	220	120	223
Washtub attachment	M. W. Story	808,702	Jan. 2	152	35	120	36
Waste materials. Apparatus for treating and roasting	F. W. Koons	813,285	Feb. 20	3722	818	120	2262
Watch	A. Felicke	809,290	Jan. 9	1268	278	120	326
Watch	H. Roost	812,234	Feb. 13	1459	320	120	1856
Watch	S. Janner	813,432	Feb. 27	3834	830	120	2464
Watch-pendant attachment	C. D. Eaton	811,705	Feb. 6	328	72	120	1558
Watch. Stop-	A. C. Loker	809,196	Jan. 2	1129	235	120	249
Water and chemicals. Rendering materials or articles resistant to	C. Kochmann and J. Kaufmann	813,218	Feb. 20	3308	.....	120	2314
Water by electrolysis. Decomposing	W. F. M. McCarty	813,105	Feb. 20	3164	602	120	2267
Water-closet	C. H. Rollins	809,222	Jan. 2	1195	244	120	264
Water-closet	F. Schuh	811,444	Jan. 30	5721	1196	120	1399
Water-closet	C. A. Sullivan	811,882	Feb. 6	670	140	120	1627
Water-closet bowls. Floor-flange for	A. Buchanan, Jr.	812,543	Feb. 13	2081	455	120	1950
Water-closet flush-pipe	C. H. Moore	810,070	Jan. 16	2952	615	120	722
Water-closet flush-tank	G. S. Thompson	813,500	Feb. 27	4157	911-12	120	2539
Water-closet flushing apparatus	W. U. Griffiths	812,902	Feb. 20	2938	647	120	2215
Water-closet flushing apparatus. Outdoor-	W. U. Griffiths	810,936	Jan. 30	4755	990	120	1182
Water-closet seat. Adjustable	W. L. Doud	811,551	Feb. 6	27	7	120	1490
Water-closet valve. Automatic	J. C. McCarl	809,722	Jan. 9	2248	467	120	537
Water-conductor	G. Glöckler	809,941	Jan. 16	2665	550	120	671
Water-control system	A. J. Collar	812,482	Feb. 13	1939	426	120	1961
Water-cooler	G. E. Savage	808,692	Jan. 2	127	30	120	30
Water-cooler	G. E. Savage	808,781	Jan. 2	325	70	120	72
Water elevating and storage apparatus	W. W. Douglass	809,351	Jan. 9	1510	306-7	120	367
Water-escape	B. F. Perry	810,579	Jan. 23	4002	988	120	1135
Water-gage	F. J. Stulp	809,850	Jan. 9	2403	518	120	581
Water-gage mechanism	T. Stringer	809,474	Jan. 9	1763	384	120	421
Water head-gate	F. D. Gliddings	811,212	Jan. 30	5292	1107	120	1309
Water-heater	J. W. Denmead	811,386	Jan. 30	5623	1177	120	1381
Water-heater and pressure-reservoir. Combined	F. L. Rice	808,947	Jan. 2	643	140	120	142
Water-level-gaging instrument	R. E. Horton	812,269	Feb. 13	1542	338	120	1877
Water-level regulator	W. J. and G. Lane	809,510	Jan. 9	1838	377	120	438
Water-motor	R. K. Parkerson	810,307	Jan. 23	3580	820	120	973
Water or fluid gaging tube	G. T. Seabury	809,471	Jan. 9	1756	363-3	120	420
Water purifying and regulating means	D. Cochrane	811,485	Jan. 30	5787	1211	120	1414
Water-purifying apparatus	C. L. Kennicott	811,229	Jan. 30	5328	1113	120	1316
Water-supply system. Automatic	J. Johnson	808,662	Jan. 2	80	18	120	20
Water-supply system. Automatic	J. Johnson	813,558	Feb. 27	4090	897	120	2535
Water-wheel	D. Hug	813,209	Feb. 20	3546	781	120	2246
Water-wheel	J. Schulte, Jr.	813,672	Feb. 27	4301	946	120	2570
Water-wheel casings. Cushion device for gates of	C. E. Parsons	810,808	Jan. 23	4080	988	120	1085
Water-wheel construction. Turbine-	A. Giesler	814,002	Feb. 27	4950	1085	120	2705
Water-wheel nozzle. Impact-	W. A. Dobie. (Reissue)	12,480	Feb. 27	4096	1109	120	2709
Water-wheels. Bucket for impulse	W. S. Smith	811,802	Feb. 6	505	118	120	1589
Watering apparatus. Stock-	W. O. Garrett	810,111	Jan. 16	3025	629-30	120	751
Watering tank. Stock-	W. Barbour	809,923	Jan. 16	2033	544	120	603
Waterproof compound	O. H. Nowak	809,721	Jan. 9	2263	.....	120	539
Wave-motor	C. A. Sahlberg	808,982	Jan. 2	122	28	120	30
Weaner. Calf-	W. E. Chandler	809,779	Jan. 9	2248	485	120	548
Weaner. Cow, calf, and colt	W. T. Horne	812,243	Feb. 13	1673	368	120	1937
Weather-board gage	L. C. Anderson	810,240	Jan. 16	2900	630	120	688
Weather-strip	L. W. Woodburn	813,288	Feb. 20	3470	767	120	2330
Weather-strip	C. M. Eveleth	812,411	Feb. 27	3784	830-1	120	2454
Weather-strip	J. H. Fiser	813,518	Feb. 27	4010	879	120	2502
Weaving	L. Lemieux	809,118	Jan. 2	991	202	120	210
Web-looping mechanism	H. F. Beckman	811,370	Jan. 30	5408	1139	120	1294
Web-looping mechanism	H. F. Beckman	811,371	Jan. 30	5410	1139	120	1295
Web-manipulating mechanism	H. F. Beckman	811,121	Jan. 30	5057	1061	120	1261
Wedge. Spring-jack	G. A. Zundel	810,886	Jan. 23	4076	949	120	1060
Weed-cutter	J. Kiliefer	813,276	Feb. 13	1885	349	120	1880
Weed-exterminator	H. Thoesl	813,616	Feb. 13	2811	492	120	2515
Weed-puller	P. M. Thayer	809,476	Jan. 9	1767	364	120	422
Weeder and harrow. Combined	A. J. King	810,154	Jan. 16	3111	648	120	788
Weeder, orchard-cultivator, and fallow-plow. Combined	W. Turner	811,899	Feb. 6	126	28	120	1630
Weeder-tooth	S. A. McCune	811,517	Jan. 30	5047	1254	120	1405
Weighing device	H. E. Dahlman	812,699	Feb. 20	2922	674	120	2148
Weighing-machine	H. B. Hixson	812,973	Feb. 27	4304	1003	120	2666

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Weighing-machine. Automatic	E. C. Arnett	810,604	Jan. 23	4248	880–1	120	1049
Welding apparatus. Socket-	D. Heggie	808,557	Jan. 2	74	16	120	18
Welding-machine. Electric	W. C. Winfield	812,999	Feb. 20	2930	639–40	120	2207
Well-boring apparatus	A. K. Wallen, Sr	810,097	Jan. 16	2999	624–5	120	744
Well device. Oil-	H. Wilson	812,711	Feb. 13	2398	524	120	2049
Well-drilling apparatus	A. Craig and E. Double	811,906	Feb. 6	715	155–6	120	1636
Well-drilling apparatus	I. L. Neely	811,947	Feb. 6	825	181	120	1658
Well-drilling machine	D. L. Baugher	812,303	Feb. 13	1777	389	120	1929
Well-pulling machine	O. D. Kraft and L. W. Fetzer	809,190	Jan. 2	1118	233	120	247
Well-sinking apparatus	M. T. Chapman	810,910	Jan. 20	4685	977–8	120	1176
Well-underreamer	C. Peters	811,584	Feb. 6	99	22	120	1507
Wells and making same. Electric heater for oil-	B. F. Gardner	809,917	Jan. 9	2806	537	120	606
Wells. Device for raising liquids from	W. Richards	813,322	Feb. 20	3606	721	120	2358
Wells. Device for recovering articles from deep	E. A. Stubler	812,379	Feb. 13	1746	383	120	1922
Wells. Fishing-tool for oil-	A. W. Wolf	811,348	Jan. 30	5556	1159	120	1306
Wells. Producing oil from oil-	R. J. Hoffman	809,806	Jan. 9	2396	496	120	580
Wells. Rotary for oil-	H. D. Bernard	812,000	Feb. 6	958	209	120	1684
Welt-making machine	G. E. Rollins. (Reissue)	12,429	Jan. 2	1334	271	120	293
Welts. Making waterproof	J. R. Reynolds	811,793	Feb. 6	490	106	120	1591
Wharf or landing-stage	A. Janssens	813,046	Feb. 20	3040	669	120	2237
Wheel: *See* Automobile-wheel. Car-wheel. Engine-wheel. Fifth-wheel. Free-running wheel. Landside-wheel. Lifting and separating wheel. Locomotive-wheel. Lubricating-wheel. Motor-wheel. Paddle-wheel. Planter-wheel. Pneumatic-cushion wheel. Propeller-wheel. Self-lubricating wheel. Spring-wheel. Sprocket-wheel. Traction-wheel. Trolley-wheel. Truck-wheel. Vehicle-wheel. Vehicle spring-wheel. Water-wheel. Wind-wheel.							
Wheel	G. L. Hinsch	810,337	Jan. 16	3504	723	120	849
Wheel	C. Heart	810,649	Jan. 23	4175	862	120	1033
Wheel	C. A. Brinley	812,179	Feb. 13	1349	293	120	1833
Wheel	C. P. Melvin	813,225	Feb. 20	3406	751	120	2315
Wheel	C. F. Marohn	813,565	Feb. 27	4102	899	120	2527
Wheel attachment. Vehicle-	G. W. Kirkpatrick	810,419	Jan. 23	3717	766	120	929
Wheel attachment. Vehicle-	G. W. Kirkpatrick	810,420	Jan. 23	3719	766	120	930
Wheel-cutting machine. Worm-	W. B. McLean	812,441	Feb. 13	1864	410	120	1946
Wheel-rim	C. S. Scott	809,533	Jan. 9	1868	388	120	444
Wheel rim. Rubber-tired-	O. L. Pickard. (Reissue)	12,450	Feb. 13	2557	562	120	2067
Wheel rim. Vehicle-	I. Hodgson	813,382	Feb. 20	3717	817	120	2381
Wheel structure	J. Ledwinka	808,765	Jan. 2	280	61	120	64
Wheels, &c., and track therefor. Casing for	H. F. Kell	809,095	Jan. 9	2200	456	120	516
Wheels, &c., and track therefor. Casing for	H. F. Kell	809,096	Jan. 9	2201	456	120	516
Wheels. Apparatus for the production of globoidal worm-	G. Mothes	809,533	Jan. 9	2496	507	120	569
Wheels. Construction of	T. R. Beaumont	808,625	Jan. 2	13	3	120	5
Wheels. Snow-shoe for	F. W. Nightingale	813,231	Feb. 20	3417	753	120	2318
Wheels to axles. Mechanism for connecting vehicle-	H. Ellil	812,423	Feb. 27	3813	836	120	2460
Wheels. Toe or grouter attachment for traction-	J. McDonald	813,571	Feb. 27	4117	902	120	2530
Wheelbarrow	W. Tasker	809,240	Jan. 9	1469	297	120	359
Wheelbarrow	W. Gossett	812,090	Feb. 20	2936	647	120	2215
Whiffletree connection	O. C. Dickerman	812,189	Feb. 13	1370	298	120	1838
Whiffletree-hook	G. W. Wilson	812,300	Feb. 13	1769	387	120	1926
Whip-holder	T. and H. Ludewick	811,308	Jan. 30	5478	1142	120	1349
Whip-operating device	A. Burrows	813,401	Feb. 27	3767	827	120	2450
Whirl	W. F Oliver	812,948	Feb. 20	2856	630	120	2200
Whisking in lengths and bundling the same. Machine for cutting cotton-	H. Marsh	813,441	Feb. 27	3851	844	120	2469
Wind-wheel	C. R. Cutting	809,431	Jan. 9	1679	344–5	120	401
Windmill	M. S. Newcomer	809,208	Jan. 2	1152	239	120	253
Windmill	B. R. Harrington	811,218	Jan. 30	5302	1109	120	1311
Windmill-regulating mechanism	M. S. Newcomer	812,671	Feb. 13	2311	503–4	120	2034
Winding-machine	A. B. McCauley	811,855	Feb. 6	231	50–1	120	1536
Winding-machine	G. W. Bromley	813,012	Feb. 6	977	213	120	1668
Winding machine. Thread-	G. W. Foster	813,372	Feb. 20	3608	813	120	2378
Winding mechanism for cotton-laps	C. Bernard	811,514	Feb. 6	157	34–5	120	1519
Winding-reel	G. Poure	810,977	Jan. 30	4834	1005–6	120	1210
Windlass	T. F. Mason	808,670	Jan. 2	93	21	120	22
Window	R. O. Scheel	813,455	Feb. 27	3871	848	120	2474
Window	W. J. Klemm	813,716	Feb. 27	4381	966–7	120	2566
Window attachment	C. H. Faulkner	810,733	Jan. 23	4322	898	120	1088
Window-box for flowers. Metal	E. E. Bixler	811,805	Feb. 20	2566	565	120	2133
Window-cleaner	A. M. Johnson and D. H. Rowe	813,800	Feb. 27	4543	1004	120	2621
Window-fixture	C. A. Cribbs and H. E. McCoy	810,489	Jan. 23	3524	795	120	956
Window-frame	H. C. Smith	810,287	Jan. 23	4631	965–6	120	1131
Window-hook	E. Etsenhouser and R. L. Morse	810,045	Jan. 16	2892	598	120	719
Window-locking means	N. A. Kunzler	812,060	Feb. 6	1041	227	120	1701
Window-shutter. Collapsible	T. Lee	809,382	Jan. 9	1509	319	120	378
Window-ventilator	E. O. Raf	808,681	Jan. 2	110	26	120	27
Window-ventilator	O. Baier	810,804	Jan. 23	4083	842	120	1014
Window-ventilator	S. McAfee	812,070	Feb. 6	1073	234–5	120	1707
Window-ventilator	S. F. Smith and S. S. Sweet	808,695	Jan. 2	137	32	120	32
Window-ventilator	R. D. Segar	809,753	Jan. 9	2300	476	120	538
Window-ventilator	E. E. Morrow	811,733	Feb. 6	389	81	120	1585
Window-ventilator	H. W. Tuthill	811,974	Feb. 6	884	186	120	1669
Window-ventilator	S. H. Garrett	812,490	Feb. 13	1922	430	120	1964
Window-ventilator	C. C. Hirsch	812,864	Feb. 13	2283	496–7	120	2089
Window-ventilator	E. T. Brown	812,913	Feb. 20	2694	567	120	2128
Window-ventilator	D. W. Keith	812,980	Feb. 20	2857	603	120	2183
Window-ventilator bracing	B. C. Rockwell	808,668	Jan. 2	120	28	120	29
Window-ventilator frame	H. E. Pallady	813,394	Feb. 20	3421	754	120	2319

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Window-screen. Metal	A. H. Mix	810,962	Jan. 30	4810	1000	120	1205
Window-screen. Rolling	H. E. and W. H. Gilland	813,642	Feb. 27	4344	952	120	2558
Window-ventilator	A. A. Stephens	809,228	Jan. 2	1202	246	120	208
Window-ventilator	G. W. Frohlich	809,500	Jan. 9	1513	370	120	433
Window-ventilator	D. Schafer	812,228	Feb. 13	1464	331	120	1839
Window-ventilator	W. A. Ralston	813,737	Feb. 27	4416	974	120	2594
Windows. Air-stop for	W. A. Davis and W. H. Samelius	808,640	Jan. 2	39	9	120	11
Wire basket	M. E. Johnson	813,490	Feb. 27	3966	870	120	2497
Wire bending and twisting machine	A. Kent and R. Orr	811,565	Feb. 6	55	12	120	1496
Wire-bending machine	R. E. Ackley	812,779	Feb. 13	2510	533	120	2075
Wire-carrier	F. L. Sessions	809,226	Jan. 2	1200	245	120	205
Wire-drawing devices. Gripping means for	H. L. Thompson	811,107	Jan. 30	5060	1058	120	1289
Wire fabrics or gauze. Loom for	E. Hollingworth	811,847	Feb. 6	594	130	120	1610
Wire-finishing tool	E. M. Lang, Jr	812,754	Feb. 13	2466	541	120	2068
Wire-goods-making machine	J. C. Perry	813,823	Feb. 27	4585	1014–19	120	2630
Wire lock	A. M. Keeney	812,926	Feb. 20	2812	619	120	2189
Wire receptacles. Apparatus for making open-work	C. von Azary	811,357	Jan. 30	5569	1162	120	1366
Wire-rope protector	H. Downs and W. C. Wally	812,413	Feb. 13	1816	398	120	1985
Wire-stay	L. G. Lease	812,053	Feb. 6	1045	226	120	1702
Wire straightening and cutting-off machine	F. B. Shuster	809,636	Jan. 9	2063	423–3	120	488
Wire-stretcher	D. K. Kirkland	808,750	Jan. 2	272	59	120	62
Wire-stretcher	Z. A. Curtis	809,006	Jan. 2	955	196–9	120	211
Wire-stretcher	S. Armes	809,767	Jan. 9	2330	482	120	544
Wire-stretcher	J. Herrmann and C. Schwaner	809,949	Jan. 16	2683	554	120	675
Wire-stretcher	L. Swank	810,003	Jan. 16	2790	576	120	698
Wire-stretcher	B. Markey	810,650	Jan. 23	4191	866	120	1057
Wire-stretcher	C. E. Crosby	810,724	Jan. 23	4307	895	120	1062
Wire-stretcher	C. R. McPherson	810,795	Jan. 23	4440	923	120	1098
Wire-stretcher	A. A. Smith	811,254	Jan. 30	5376	1122	120	1328
Wire-stretcher	K. Cunningham	812,961	Feb. 20	2921	643	120	2212
Wire-stretcher	W. McNames	813,574	Feb. 27	4121	903	120	2531
Wire-stretcher	J. S. and R. A. Snyder	813,837	Feb. 27	4635	1025	120	2642
Wire-stretcher	F. H. Carter	813,850	Feb. 27	4679	1034	120	2651
Wire stretcher and stringer	W. F. Myers	809,721	Jan. 9	2247	466	120	526
Wire-stretching device	W. Broad	812,401	Feb. 13	1796	393	120	1981
Wire-working tool	T. J. Baugh	810,837	Jan. 23	4509	989	120	1106
Wire-working tool	G. S. Majors	811,567	Feb. 6	64	13	120	1489
Wires. Cross-arm for carrying high-tension	E. E. P. Petery	809,743	Jan. 9	2284	473	120	535
Wires. Lock for crossed	E. T. Pocklington	809,396	Jan. 9	1605	325	120	388
Wireless and other transmissions. Receiver and recorder for	F. E. Gallagher	808,832	Jan. 2	409	90	120	91
Wiring or beading. Collapsible die for	L. Bauroth	810,023	Jan. 16	2836	586	120	706
Wood-boring braces. Attachment for	D. B. Yoder	813,070	Feb. 20	3102	679–80	120	2252
Wood-conveyer	G. G. Hughs	808,926	Jan. 2	601	133	120	132
Wood-decorating implement	R. A. Culver	811,396	Jan. 30	5621	1176	120	1380
Wood-grinder	T. H. Savery	813,834	Feb. 27	4630	1024	120	2641
Wood spools, cores, &c. Machine for roughing	H. J. Duncan	811,281	Jan. 30	5427	1131–2	120	1330
Wooden dishes. Machine for cutting	J. E. Tuttle and J. MacLean	811,004	Jan. 30	4883	1017–19	120	1221
Wooden handles. Straightening	J. W. Maxey	812,350	Feb. 13	1665	.....	120	1910
Woodworking-machine	J. Buffalen	809,552	Jan. 9	1905	395–6	120	451
Woodworking-machine	O. C. Wysong	812,217	Feb. 13	1630	368–9	120	1897
Work-holder	J. W. Spence	812,980	Feb. 20	2886	637	120	2205
Woven fabric	T. B. Dornan	808,976	Jan. 2	709	154	120	156
Wrapper-transferring mechanism	F. L. Herrington and H. Knight	808,745	Jan. 2	249	54	120	57
Wrappers to magazines, books, and the like. Machine for applying	B. W. Tucker	808,966	Jan. 2	689	145–7	120	148
Wrapping-machine	M. H. Ballard	812,912	Feb. 20	2774	610–11	120	2180
Wrapping machine. Package-	E. J. Tierney and P. Funck	810,005	Jan. 16	2792	576–8	120	698
Wrench: *See* Adjustable wrench. Hub-wrench. Monkey-wrench. Pipe-wrench. Screw-wrench. Vehicle-wrench.							
Wrench	H. T. Thompson	808,954	Jan. 2	654	143	120	144
Wrench	A. W. Parfitt	809,536	Jan. 9	2464	510	120	572
Wrench	F. M. Straube	809,855	Jan. 9	2491	518	120	581
Wrench	M. M. Le May	810,388	Jan. 16	2998	708	120	835
Wrench	E. K. Ansorge	810,590	Jan. 23	4078	840	120	1011
Wrench	P. Kones	810,657	Jan. 23	4188	865	120	1066
Wrench	M. M. Howland	811,234	Jan. 30	5313	1111	120	1315
Wrench	B. R. Wagy	811,451	Jan. 30	5749	1204	120	1405
Wrench	P. T. Petersson	811,741	Feb. 6	382	84	120	1579
Wrench	W. Webb and W. W. Hildreth	811,895	Feb. 6	674	147	120	1628
Wrench	D. Braxton	812,008	Feb. 6	971	212	120	1697
Wrench	I. Weisnak	812,526	Feb. 13	2051	450	120	1985
Wrench	N. Deilsle	812,551	Feb. 13	2097	460	120	1994
Wrench	E. Axford	813,096	Feb. 27	4327	952	120	2573
Wrench	J. A. Barton	813,860	Feb. 27	4695	1029	120	2643
Wrench	J. W. Hielscher and W. F. Standley	813,892	Feb. 27	4736	1047	120	2664
Wrench and analogous article	O. A. Lane	809,962	Jan. 16	2713	562–9	120	689
Wringer: *See* Mop-wringer.							
Yarn and making the same	C. B. Potter	813,583	Feb. 27	4131	905	120	2532
Yoke center. Neck-	E. B. Quick	811,953	Feb. 6	845	189	120	1661
Yoke. Neck-	W. M. Carriker	813,822	Feb. 20	3599	871	120	2141

ALPHABETICAL LIST OF DESIGNS.

Design.	Name.	No.	Date.	Official Gazette. Volume.	Page.
Ash-tray	A. Q. Walsh	37,770	Jan. 2	120	296
Automobile-body	E. R. Thomas and J. R. Koen	37,774	Jan. 2	120	297
Automobiles. Frame or radiators for	L. D. Hubbell	37,827	Feb. 13	120	2060
Badge	W. S. Carter	37,797	Jan. 30	120	1436
Badge	R. A. Porter	37,817	Feb. 13	120	2068
Badge or button. Society	K. Stachowski	37,804	Feb. 6	120	1764
Bag frame. Hand-	W. Stavenhagen	37,830	Feb. 20	120	2391
Belt	D. Hirschberg	37,776	Jan. 2	120	298
Bottle	S. O. Carruthers	37,787	Jan. 16	120	876
Bottle	M. Chastenet	37,820	Feb. 13	120	2068
Bracelet	C. S. Hurd	37,767	Jan. 2	120	296
Bracelet	J. Bennett	37,805	Feb. 6	120	1765
Bracelet	J. Bennett	37,818	Feb. 13	120	2068
Brooch or similar article	J. H. Crosby	37,790	Jan. 23	120	1136
Brushes, hand-mirrors, and similar articles. Back for	S. A. Keller	37,777	Jan. 9	120	612
Brushes, mirrors, or similar articles. Back for	H. J. Straker	37,849	Feb. 27	120	2710
Candelabra supporting base or standard	H. B. Beach and H. Kayser	37,780	Jan. 9	120	613
Card back. Playing-	S. N. Barker	37,789	Jan. 16	120	876
Card case or similar article	A. Schickerling	37,788	Jan. 16	120	876
Card-mount	H. H. Collins, Jr.	37,860	Feb. 27	120	2712
Card-mount	H. H. Collins, Jr.	37,861	Feb. 27	120	2712
Clay building-block	F. J. Merkle	37,811	Feb. 6	120	1765
Clock-case	A. T. Fischer	37,852	Feb. 27	120	2711
Clock-case	A. T. Fischer	37,853	Feb. 27	120	2711
Closet-bowl. Earthenware	E. T. Webster	37,807	Feb. 6	120	1766
Collar	F. J. Novak	37,863	Feb. 27	120	2712
Condiment-holder	F. Schenker	37,779	Jan. 9	120	613
Cradle. Souvenir-	C. C. Boykin	37,766	Jan. 2	120	296
Crumb-tray	M. M. J. Rooney	37,795	Jan. 23	120	1138
Cup or ornament	H. B. Beach and H. Kayser	37,781	Jan. 9	120	612
Cutter-lever handle	H. K. Porter	37,826	Feb. 13	120	2069
Dish. Cover-	R. L. Johnson	37,792	Jan. 23	120	1137
Dish. Cover-	R. L. Johnson	37,793	Jan. 23	120	1137
Fabric. Printed textile	E. B. Vandergaw	37,843	Feb. 20	120	2393
Fabric. Printed textile	E. B. Vandergaw	37,844	Feb. 20	120	2393
Finger-ring	J. L. Herzog	37,765	Jan. 2	120	296
Forks, spoons, and similar articles. Handle for	S. Smith	37,850	Feb. 27	120	2710
Game-board	F. J. Wolf	37,796	Jan. 23	120	1138
Glass dish	J. M. McMahon	37,821	Feb. 13	120	2068
Glass receptacle	G. R. West	37,851	Feb. 27	120	2710
Glass reflector. Prismatic-	O. A. Mygatt	37,812	Feb. 6	120	1766
Glass reflector. Prismatic-	O. A. Mygatt	37,813	Feb. 6	120	1766
Glass. Sheet-	F. Shuman	37,803	Jan. 30	120	1436
Grave-cover	W. J. Huber	37,837	Feb. 20	120	2392
Illuminator	O. A. Mygatt	37,809	Feb. 6	120	1765
Illuminator	O. A. Mygatt	37,824	Feb. 13	120	2069
Illuminator	O. A. Mygatt	37,825	Feb. 13	120	2069
Jar	J. E. Lee	37,829	Feb. 20	120	2390
Lace. Levers	C. W. Birkin	37,783	Jan. 9	120	613
Lace. Levers	C. W. Birkin	37,838	Feb. 20	120	2392
Lace. Levers	C. W. Birkin	37,839	Feb. 20	120	2393
Lace. Levers	C. W. Birkin	37,840	Feb. 20	120	2393
Lace. Levers	C. W. Birkin	37,841	Feb. 20	120	2393
Lace. Levers	C. W. Birkin	37,842	Feb. 20	120	2393
Lamp	I. H. Atwood	37 772	Jan. 2	120	297
Lamp-reflector	W. Churchill	37,798	Jan. 30	120	1437
Lamp reflector. Incandescent-electric-	O. A. Mygatt	37,832	Feb. 20	120	2391
Lamp reflector. Incandescent-electric-	O. A. Mygatt	37,833	Feb. 20	120	2391
Lamp reflector. Incandescent-electric-	O. A. Mygatt	37,834	Feb. 20	120	2392
Lamp reflector. Incandescent-electric-	O. A. Mygatt	37,835	Feb. 20	120	2392
Lamp. Vehicle-	E. C. Everett	37,773	Jan. 2	120	297
Lantern	J. Loeil	37,856	Feb. 27	120	2711
Mirrors or similar articles. Back of hand-	S. A. Keller	37,778	Jan. 9	120	612
Music-indicator	J. MacMaster	37,854	Feb. 27	120	2711
Padlock	A. W. Douglas	37,771	Jan. 2	120	296
Paper box	P. B. Myers	37,862	Feb. 27	120	2712
Paper. Wrapping-	F. O. Walther	37,775	Jan. 2	120	298
Pencil	E. Faber	37,855	Feb. 27	120	2711
Plate	C. E. Ziegler	37,794	Jan. 23	120	1137
Portière	M. Hamburger	37,784	Jan. 9	120	614
Portière	M. Hamburger	37,785	Jan. 9	120	614
Reflector for artificial lights	O. A. Mygatt	37,808	Feb. 6	120	1765
Ring	G. E. Burns	37,848	Feb. 27	120	2710
Rug	A. Petzold	37,814	Feb. 6	120	1766
Rug	A. Petzold	37,815	Feb. 6	120	1766
Rug	A. Petzold	37,816	Feb. 6	120	1766
Rug	F. A. Haas	37,828	Feb. 13	120	2069
Rug	A. Petzold	37,845	Feb. 20	120	2394
Rug	A. Petzold	37,846	Feb. 20	120	2394
Rug	A. Petzold	37,847	Feb. 20	120	2394
Sign. Illuminated chandelier-	J. L. Dawes	37,799	Jan. 30	120	1437
Sign. Illuminated chandelier-	J. L. Dawes	37,800	Jan. 30	120	1437
Sign. Illuminated chandelier-	J. L. Dawes	37,801	Jan. 30	120	1437

Alphabetical list of designs for January and February—Continued.

Design.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Sign. Illuminated chandelier	J. L. Dawes	37,802	Jan. 30	120	1437
Sign. Illuminated chandelier	J. L. Dawes	37,823	Feb. 13	120	2089
Spoon-handle	G. P. Ittig	37,791	Jan. 23	120	1137
Spoon or fork	C. A. Bennett	37,769	Jan. 2	120	296
Spoons, forks, or similar articles. Handle of	W. C. Codman	37,786	Jan. 16	120	876
Stamp. Premium	J. A. Johntra	37,822	Feb. 13	120	2088
Stamp. Trading	S. Hertzmann	37,806	Feb. 6	120	1765
Steering-wheel	W. L. Adams	37,810	Feb. 6	120	1766
Tile	W. B. Goddard	37,836	Feb. 20	120	2392
Toilet-powder receptacle	W. A. Bradley	37,819	Feb. 13	120	2088
Toy shooting apparatus. Casing for	H. Künzel	37,831	Feb. 20	120	2391
Vending-machine case	H. C. Traute	37,857	Feb. 27	120	2711
Vending-machine case	H. C. Traute	37,858	Feb. 27	120	2711
Vending-machine case	H. C. Traute	37,859	Feb. 27	120	2712
Wagon-body	W. S. Coffman	37,782	Jan. 9	120	613

ALPHABETICAL LIST OF TRADE-MARKS.

Title.	Name.	No.	Date.	Official Gazette. Volume.	Page.
Abradant	Carborundum Company	49,394	Feb. 6	120	1814
Abrading materials and tools	Pike Manufacturing Company	49,396	Feb. 6	120	1814
Absorbent pads or plasters	G. C. Young	48,494	Jan. 2	120	316
Acid. Dipropyl-barbituric	E. Merck	48,756	Jan. 9	120	652
Adhesive tape or cloth	Okonite Company	48,515	Jan. 2	120	317
Alcohol	C. H. Graves & Sons	49,857	Feb. 20	120	2435
Ale	Ruster & Company	49,390	Feb. 6	120	1813
Ale	A. G. Van Nostrand	49,752	Feb. 13	120	2122
Ale. Ginger	Luyties Brothers	49,158	Jan. 23	120	1160
Alloy and articles of which such alloy forms a part. Metallic	Riverside Metal Co	48,706	Jan. 9	120	650
Alloy for bearing metal	Frictionless Metal Company	49,587	Feb. 13	120	2116
Alloys. Non-ferrous	Lumen Bearing Company	49,950	Feb. 27	120	2745
Alteratives	Inland Chemical Co	49,567	Feb. 13	120	2115
Ammonia-compressors	Vulcan Iron Works	49,895	Feb. 20	120	2437
Anodyne	Dr. M. F. Groves' Sons and Co	48,683	Jan. 9	120	649
Antipyretic and analgesic	Ammonol Chemical Co	48,700	Jan. 9	120	650
Antiseptic	H. C. Pope	48,694	Jan. 9	120	650
Antiseptic and detergent washes	Hy-Jen Chemical Co	49,566	Feb. 13	120	2115
Antiseptic and germicide	Budner Pharmacal Company	49,495	Feb. 6	120	1818
Antiseptic liquid	Hudson & Co	49,565	Feb. 13	120	2115
Antiseptic, prophylactic disinfectants, and parasiticides	Colyticine Chemical Co	49,147	Jan. 23	120	1160
Antiseptics	J. T. Wetherald	48,709	Jan. 9	120	650
Anvils	C. F. Boker	49,144	Jan. 23	120	1160
Aseptic preparation	H. K. Mulford Company	50,043	Feb. 27	120	2749
Asphalt mastic	Gabriel & Schall	49,014	Jan. 23	120	1158
Automobiles	Knox Automobile Company	49,905	Feb. 20	120	2437
Automobiles	Studebaker Automobile Company	49,915	Feb. 20	120	2438
Automobiles	St. Louis Motor Carriage Co	49,959	Feb. 27	120	2746
Automobiles and motor-cars	B. A. Gramm	49,234	Jan. 30	120	1469
Axes and hatchets	Supplee Hardware Company	49,916	Feb. 20	120	2438
Axes, hatchets, and adzes	Supplee Hardware Co	49,167	Jan. 23	120	1161
Badges. Gold-plated	Irons & Russell	49,860	Feb. 20	120	2436
Bagging. Jute	Ludlow Manfg. Associates	48,995	Jan. 16	120	899
Bagging. Jute	Ludlow Manfg. Associates	48,996	Jan. 16	120	899
Bagging. Jute	Ludlow Manfg. Associates	48,997	Jan. 16	120	899
Bagging. Jute	Ludlow Manfg. Associates	48,998	Jan. 16	120	899
Bagging. Jute	Ludlow Manfg. Associates	48,999	Jan. 16	120	899
Bagging. Jute	Ludlow Manfg. Associates	49,000	Jan. 16	120	899
Bags. Seamless woven	Stark Mills	49,007	Jan. 16	120	899
Baking-powder	Price Baking Powder Company	49,006	Jan. 16	120	899
Baking-powder	S. W. Williams	49,088	Jan. 23	120	1158
Baking-powder	Sea Gull Specialty Co	49,549	Feb. 6	120	1820
Baking-powder	J. C. Grant Chemical Company	49,861	Feb. 20	120	2436
Baking-powder	Hulman & Co	49,902	Feb. 20	120	2437
Baking-powder, cream of tartar, and baking-soda	E. R. Durkee & Co	48,921	Jan. 16	120	898
Baling presses. Hay	Sandwich Manufacturing Co	48,722	Jan. 9	120	651
Baling presses. Hay	Sandwich Manufacturing Co	48,724	Jan. 9	120	651
Baling presses. Hay	Sandwich Manufacturing Co	49,165	Jan. 23	120	1161
Balls. Base	C. Disch	48,521	Jan. 2	120	316
Balls. Base	A. J. Reach Co	49,957	Feb. 27	120	2747
Beans. Dried	Albert Dickinson Company	49,917	Feb. 20	120	2436
Bed-bottoms and bedsteads	National Spring Bed Company	48,832	Jan. 16	120	893
Bedsteads. Metal	Marion Iron & Brass Bed Co	49,126	Jan. 23	120	1159
Beef-juice	Bovinine Company	48,863	Jan. 16	120	894
Beer	Gottfried Brewing Company	48,497	Jan. 2	120	317
Beer	Indianapolis Brewing Company	48,512	Jan. 2	120	317
Beer	Indianapolis Brewing Company	48,513	Jan. 2	120	317
Beer	San Diego Brewing Co	48,517	Jan. 2	120	317
Beer	Theo. Hamm Brewing Co	48,568	Jan. 2	120	320
Beer	John Eichler Brewing Co	48,728	Jan. 9	120	651
Beer	J. Ruppert	49,956	Feb. 27	120	2746
Beer	J. Ruppert	49,957	Feb. 27	120	2746
Beer	J. Ruppert	49,958	Feb. 27	120	2746
Beer	Pabst Brewing Company	49,978	Feb. 27	120	2746
Beer	Terre Haute Brewing Co	48,943	Jan. 16	120	897
Beer and bottled beer. Lager	Valentin Blatz Brewing Co	49,804	Feb. 20	120	2433
Beer. Bottled lager	C. Schmidt and Sons Brewing Company	48,496	Jan. 2	120	317
Beer. Lager	Louis Bergdoll Brewing Company	48,732	Jan. 9	120	651
Beer. Lager	Christian Feigenspan	48,846	Jan. 16	120	893
Beer. Lager	Dubuque Brewing & Malting Co	49,273	Jan. 30	120	1470
Beer. Lager	J. Ruppert	49,737	Feb. 13	120	2121
Beer. Lager	Zeltner Brewing Co	49,754	Feb. 13	120	2122
Beer. Lager	S. S. Pierce Co	49,978	Feb. 27	120	2747
Beer. Lager	J. Chr. G. Hupfel Brewing Co	50,022	Feb. 27	120	2748
Belting. Canvas stitched and balata	New York Leather Belting Co	49,479	Feb. 6	120	1817
Belting. Leather	Graton and Knight Manufacturing Company	49,545	Feb. 6	120	1820
Beltings. Leather	American Oak Leather Company	48,909	Jan. 16	120	898
Beverages. Non-alcoholic	J. W. Birkhead	48,572	Jan. 2	120	320
Biscuits	Griggs, Cooper and Company	48,883	Jan. 16	120	894
Biscuits and crackers	A. Exton & Co	48,861	Jan. 16	120	894

Alphabetical list of trade-marks for January and February—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Biscuits, crackers, &c.	French & Company	48,456	Jan. 2	120	315
Biscuits, crackers, and wafers.	Hitchner Biscuit Co	49,547	Feb. 6	120	1820
Bitters	Ullman Einstein Co	48,607	Jan. 2	120	321
Bitters	W. Halloway	48,686	Jan. 9	120	649
Bitters	A. Zanmatti & Co	48,971	Jan. 16	120	808
Bitters	L. E. Jung	49,668	Feb. 13	120	2119
Blacking and leather-dressing	F. E. Fennessey	49,853	Feb. 20	120	2435
Blacking, Liquid	C. L. Hauthaway & Sons	49,631	Feb. 13	120	2118
Blanks, soles, and taps. Leather	Daniel Forbes Company	49,792	Feb. 20	120	2433
Boiler compounds	Geo. W. Lord Co	49,073	Jan. 23	120	1157
Bolts. Shaking	Barnard & Leas Manufacturing Company.	49,848	Feb. 20	120	2435
Bookbinding-cloth	C. Chivers	50,039	Feb. 27	120	2749
Books	W. H. Lee	49,528	Feb. 6	120	1819
Books, tablets, ruled and flat papers. Blank	Roaring Spring Blank Book Co	49,487	Feb. 6	120	1817
Boots and shoes and leather for the same. Leather	F. G. Jones	48,496	Jan. 2	120	317
Boots and shoes and leather therefor. Leather	American Oak Leather Company	49,796	Feb. 20	120	2433
Boots and shoes. Boys' leather	Whitney Wabel & Co	48,538	Jan. 16	120	893
Boots and shoes. Leather	Geo. D. Witt Shoe Co	48,477	Jan. 2	120	316
Boots and shoes. Leather	Wingo, Ellett & Crump Shoe Co	48,490	Jan. 2	120	316
Boots and shoes. Leather	Hinkle Shoe Co	48,499	Jan. 2	120	317
Boots and shoes. Leather	John W. Russ Company	48,500	Jan. 2	120	317
Boots and shoes. Leather	G. A. Creighton & Son	48,634	Jan. 9	120	647
Boots and shoes. Leather	John W. Russ Co	48,638	Jan. 9	120	648
Boots and shoes. Leather	John W. Russ Company	49,125	Jan. 23	120	1159
Boots and shoes. Leather	Guthmann, Carpenter & Telling	49,151	Jan. 23	120	1160
Boots and shoes. Leather	Hine & Lynch	49,153	Jan. 23	120	1160
Boots and shoes. Leather	A. L. Joslin Company	49,180	Jan. 30	120	1467
Boots and shoes. Leather	Jordan Marsh Company	49,205	Jan. 30	120	1468
Boots and shoes. Leather	J. J. Lattemann	49,209	Jan. 30	120	1468
Boots and shoes. Leather	A. W. Tedcastle & Co	49,510	Feb. 6	120	1818
Boots and shoes. Leather	M. N. Arnold	49,530	Feb. 6	120	1819
Boots and shoes. Leather	Roberts, Johnson & Rand Shoe Co.	49,539	Feb. 6	120	1819
Boots and shoes. Leather	Roberts, Johnson & Rand Shoe Co.	49,540	Feb. 6	120	1819
Boots and shoes. Leather	Roberts, Johnson & Rand Shoe Co.	49,541	Feb. 6	120	1820
Boots and shoes. Leather	Thomas G. Plant Company	49,749	Feb. 13	120	2123
Boots and shoes. Leather	A. H. Berry Shoe Company	49,755	Feb. 13	120	2122
Boots and shoes. Leather	Marks, Rothenberg & Co	49,772	Feb. 13	120	2123
Boots and shoes. Leather	Thomas G. Plant Company	49,788	Feb. 13	120	2123
Boots and shoes. Leather	Lynchburg Shoe Co	49,793	Feb. 20	120	2433
Boots and shoes. Leather and canvas	Geo. E. Keith Company	49,811	Feb. 20	120	2434
Boots and shoes made of leather and of canvas	V. K. and A. H. Jones Co	48,835	Jan. 16	120	893
Boots. Leather	Bradley & Metcalf Co	49,091	Jan. 23	120	1158
Boots, shoes, and slippers and leather therefor. Leather	Packard & Field	49,127	Jan. 23	120	1159
Boots, shoes, and slippers and leather therefor. Leather	F. F. Field	49,766	Feb. 13	120	2122
Boots, shoes, and slippers and soles therefor	Morse & Rogers	49,161	Jan. 23	120	1161
Boots, shoes, and slippers and soles therefor	Morse & Rogers	49,954	Feb. 27	120	2746
Boots, shoes, and slippers and soles therefor	Morse & Rogers	49,955	Feb. 27	120	2746
Boots, shoes, and slippers and upper and sole leather. Leather	Packard & Field	49,480	Feb. 6	120	1817
Boots, shoes, and slippers. Leather	Stetson Shoe Company	49,550	Feb. 6	120	1820
Boots, shoes, and slippers. Leather	Fred F. Field Company	49,767	Feb. 13	120	2123
Boots, shoes, and slippers. Leather	Clark-Hutchinson Company	49,999	Feb. 27	120	2747
Boots, shoes, and slippers. Leather	Clark-Hutchinson Company	50,000	Feb. 27	120	2747
Boots, shoes, and slippers. Leather	Clark-Hutchinson Company	50,001	Feb. 27	120	2747
Boots, shoes, and slippers. Leather and leather-and-cloth	G. F. Daniels & Co	48,752	Jan. 9	120	652
Boots, shoes, and slippers made of leather	Wingo, Ellett & Crump Shoe Co	48,839	Jan. 16	120	893
Boring-machines	Ajax Mfg. Co	48,710	Jan. 9	120	650
Bottles. Glass	A. G. Smalley	49,575	Feb. 20	120	2436
Bottles. Nursing	W. M. Decker	48,455	Jan. 2	120	315
Boxes. Wooden	New England Box Co	49,133	Jan. 23	120	1159
Bracelets	D. F. Briggs Co	48,642	Jan. 9	120	648
Bracelets	F. H. Sadler Co	49,779	Feb. 13	120	2123
Braces and suspenders	Harris Suspender Co	48,661	Jan. 9	120	648
Braids, bindings, and trimmings	Fletcher Manufacturing Company.	49,187	Jan. 30	120	1467
Braids. Skirt	Walter Stewart Company	49,268	Jan. 30	120	1470
Brandy	John Bardenheier Wine and Liquor Co.	49,204	Jan. 30	120	1468
Brandy	Wm. Bergenthal Co	49,501	Feb. 6	120	1818
Brandy	California Wine Association	49,514	Feb. 6	120	1819
Brazing compound. Metal	American Brazing Company	48,749	Jan. 9	120	652
Brazing metals. Fluxes for	American Brazing Company	48,750	Jan. 9	120	652
Bread and crackers	G. S. Ward	49,697	Feb. 13	120	2120
Bread-raising preparation	Rumford Chemical Works	49,914	Feb. 20	120	2436
Bricks and artificial stone	Florida White Pressed Brick Company.	49,355	Jan. 30	120	1474
Brocade. Preparation of	Peacock Chemical Co	49,573	Feb. 13	120	2115
Brushes	John L. Whiting & Son Co	48,820	Jan. 16	120	893
Brushes for painters and decorators	Hanlon & Goodman	50,008	Feb. 27	120	2748
Brushes. Lather	Rubber & Celluloid Harness Trimming Co.	49,131	Jan. 23	120	1158
Brushes. Lather, shaving, and paint	Rubber and Celluloid Harness Trimming Co	48,640	Jan. 9	120	648
Brushes. Lather, shaving, and paint	Rubber and Celluloid Harness Trimming Co.	48,641	Jan. 9	120	648
Brushes. Paint, vitrain, and sash-tool	E. Clinton & Co	49,517	Feb. 6	120	1819
Brushes. Paint, vitrain, and sash-tool	John L. Whiting & Son Co	48,637	Jan. 9	120	648
Brushes. Paint, vitrain, and sash-tool	John L. Whiting & Son Co	48,662	Jan. 9	120	648
Brushes. Paint, vitrain, and sash-tool	John L. Whiting & Son Co	48,663	Jan. 9	120	648
Burial-caskets and casket attachments	National Casket Co	49,079	Jan. 23	120	1157
Burial-caskets, coffins, and fixtures therefor	National Casket Co	49,441	Feb. 6	120	1815
Burner	E. F. Dudley	48,655	Jan. 9	120	648
Burnt-coloring preparations	Wells & Richardson Company	49,285	Jan. 30	120	1470

Alphabetical list of trade-marks for January and February—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Butter-cutters	Kuttowait Butter Cutter Company.	49,698	Feb. 13	120	2120
Butterin	Braun & Fitts	49,761	Feb. 13	120	2122
Butterin or oleomargarin	Braun & Fitts	48,908	Jan. 16	120	896
Butterin or oleomargarin	Braun & Fitts	48,980	Jan. 16	120	896
Butterin or oleomargarin	Braun & Fitts	48,981	Jan. 16	120	896
Butterin or oleomargarin	Braun & Fitts	48,982	Jan. 16	120	896
Buttons and studs	T. I. Smith Co	48,646	Jan. 9	120	648
Buttons. Collar	Krements & Co	49,770	Feb. 13	120	2120
Buttons. Collar and cuff	King Collar Button Co	48,627	Jan. 9	120	647
Cabinets. Kitchen	C. F. McDougall	49,213	Jan. 30	120	1466
Calicoes	American Printing Company	50,032	Feb. 27	120	2749
Calicoes	American Printing Company	50,033	Feb. 27	120	2749
Calicoes	American Printing Company	50,034	Feb. 27	120	2749
Candies	Hawley & Hoops	49,097	Jan. 23	120	1158
Candies. Chocolate	Hazen Confectionery Company	49,900	Feb. 20	120	2437
Candies of all kinds	J. G. McDonald Candy Co	48,927	Jan. 16	120	896
Candies of various flavors. Small round	D. Auerbach & Sons	49,143	Jan. 23	120	1160
Candy	Reymer & Brothers	48,526	Jan. 2	120	318
Candy	Chandler and Rudd Company	48,599	Jan. 2	120	321
Candy	Hawley & Hoops	48,621	Jan. 9	120	647
Candy	Chandler and Rudd Company	48,701	Jan. 9	120	650
Candy	Bradley Smith & Co	48,945	Jan. 16	120	897
Candy	Murbach Company	49,102	Jan. 23	120	1158
Candy	Bradley Smith & Co	49,169	Jan. 23	120	1161
Candy	New England Confectionery Co	49,239	Jan. 30	120	1469
Candy	New England Confectionery Co	49,286	Jan. 30	120	1471
Candy	Reymer & Brothers	49,486	Feb. 6	120	1817
Candy	Postum Cereal Co	49,013	Feb. 20	120	2438
Candy	G. B. Hazard	50,044	Feb. 27	120	2749
Canned and bottled fruits and vegetables	S. Hamill Company	49,676	Feb. 13	120	2119
Canned corn	S. N. Hyde Co	49,543	Feb. 6	120	1820
Canned fish, clams, and oysters	R. C. Williams & Co	49,087	Jan. 23	120	1158
Canned fruits and vegetables	Scudders-Gale Grocer Company	48,465	Jan. 2	120	316
Canned fruits and vegetables	Scudders-Gale Grocer Company	48,740	Jan. 9	120	652
Canned fruits and vegetables	M. J. Boyer	49,629	Feb. 13	120	2117
Canned fruits and vegetables	Frank C. Weber and Co	49,650	Feb. 13	120	2118
Canned fruits and vegetables	Frank C. Weber and Co	49,651	Feb. 13	120	2118
Canned fruits and vegetables	Portland Packing Company	49,670	Feb. 13	120	2119
Canned fruits and vegetables	Portland Packing Company	49,671	Feb. 13	120	2119
Canned fruits and vegetables	Portland Packing Company	49,672	Feb. 13	120	2119
Canned fruits and vegetables	Portland Packing Company	49,673	Feb. 13	120	2119
Canned or preserved fruits and vegetables	C. W. Baker & Sons	48,978	Jan. 16	120	898
Canned oysters, fish, clams, crabs, shrimp, and lobsters	A. Booth and Company	50,030	Feb. 27	120	2749
Canned pears	R. S. Beston	49,898	Feb. 20	120	2437
Canned salmon	J. G. Megler	50,050	Feb. 27	120	2749
Canned salmon	J. G. Megler	50,051	Feb. 27	120	2749
Canned salmon	J. G. Megler	50,052	Feb. 27	120	2750
Canned sardines	William Underwood Company	48,674	Jan. 9	120	649
Canned soups	E. H. King	48,994	Jan. 16	120	899
Canvas hose-duck, awning-stripes, and sail-duck	Mount Vernon-Woodberry Cotton Duck Company.	49,722	Feb. 13	120	2121
Car-couplings. Automatic	McConway & Torley Co	48,958	Jan. 16	120	896
Carbon bisulfid (CS_2)	E. R. Taylor	49,227	Jan. 30	120	1469
Cards. Playing	New York Consolidated Card Company.	48,531	Jan. 2	120	318
Cards. Playing	New York Consolidated Card Company.	48,532	Jan. 2	120	318
Cards. Playing	New York Consolidated Card Company.	48,561	Jan. 2	120	319
Cards. Playing	New York Consolidated Card Company.	48,562	Jan. 2	120	319
Cards. Playing	New York Consolidated Card Company.	48,563	Jan. 2	120	319
Cards. Playing	New York Consolidated Card Company.	48,564	Jan. 2	120	319
Cards. Playing	United States Playing Card Co	48,565	Jan. 2	120	319
Cards. Playing	United States Playing Card Co	48,566	Jan. 2	120	319
Cards. Playing	New York Consolidated Card Company.	48,733	Jan. 9	120	651
Cards. Playing	New York Consolinated Card Company.	48,734	Jan. 9	120	650
Cards. Playing	New York Consolidated Card Company.	48,735	Jan. 9	120	651
Cards. Playing	New York Consolidated Card Company.	48,736	Jan. 9	120	651
Cards. Playing	New York Consolidated Card Company.	48,737	Jan. 9	120	651
Cards. Playing	New York Consolidated Card Company.	48,738	Jan. 9	120	651
Cards. Playing	New York Consolidated Card Company	48,739	Jan. 9	120	651
Cards. Playing	United States Playing Card Co	48,744	Jan. 9	120	652
Cards. Playing	United States Playing Card Co	48,745	Jan. 9	120	652
Cards. Playing	New York Consolidated Card Company.	48,762	Jan. 9	120	652
Cards. Playing	New York Consolidated Card Company.	48,763	Jan. 9	120	652
Cards. Playing	New York Consolidated Card Company.	48,764	Jan. 9	120	653
Cards. Playing	New York Consolidated Card Company.	48,765	Jan. 9	120	653
Cards. Playing	New York Consolidated Card Company.	48,766	Jan. 9	120	653
Cards. Playing	New York Consolidated Card Company.	48,767	Jan. 9	120	653

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Cards. Playing	New York Consolidated Card Company.	48,768	Jan. 9	120	663
Cards. Playing	New York Consolidated Card Company.	48,769	Jan. 9	120	663
Cards. Playing	United States Playing Card Co...	48,864	Jan. 16	120	894
Cards. Playing	United States Playing Card Co...	48,865	Jan. 16	120	894
Cards. Playing	United States Playing Card Co...	48,866	Jan. 16	120	894
Cards. Playing	United States Playing Card Co...	48,867	Jan. 16	120	894
Cards. Playing	United States Playing Card Co...	48,868	Jan. 16	120	894
Cards. Playing	United States Playing Card Co...	48,869	Jan. 16	120	894
Cards. Playing	United States Playing Card Co...	48,870	Jan. 16	120	894
Cards. Playing	United States Playing Card Co...	48,871	Jan. 16	120	894
Cards. Playing	United States Playing Card Co...	48,872	Jan. 16	120	894
Cards. Playing	United States Playing Card Co...	48,873	Jan. 16	120	894
Cards. Playing	United States Playing Card Co...	48,874	Jan. 16	120	894
Cards. Playing	United States Playing Card Co...	48,875	Jan. 16	120	894
Cards. Playing	United States Playing Card Co...	48,876	Jan. 16	120	894
Cards. Playing	United States Playing Card Co...	48,877	Jan. 16	120	895
Cards. Playing	United States Playing Card Co...	48,878	Jan. 16	120	895
Cards. Playing	United States Playing Card Co...	48,879	Jan. 16	120	895
Cards. Playing	United States Playing Card Co...	48,880	Jan. 16	120	895
Cards. Playing	United States Playing Card Co...	48,881	Jan. 16	120	895
Cards. Playing	United States Playing Card Co...	48,882	Jan. 16	120	895
Cards. Playing	United States Playing Card Co...	48,883	Jan. 16	120	895
Cards Playing	United States Playing Card Co...	48,884	Jan. 16	120	895
Cards. Playing	United States Playing Card Co...	48,885	Jan. 16	120	895
Cards. Playing	United States Playing Card Co...	48,886	Jan. 16	120	895
Cards. Playing	United States Playing Card Co...	48,887	Jan. 16	120	895
Cards. Playing	United States Playing Card Co...	48,888	Jan. 16	120	895
Cards. Playing	United States Playing Card Co...	48,889	Jan. 16	120	895
Cards. Playing	United States Playing Card Co...	48,890	Jan. 16	120	895
Cards. Playing	United States Playing Card Co...	48,891	Jan. 16	120	895
Cards. Playing	United States Playing Card Co...	48,892	Jan. 16	120	895
Cards. Playing	United States Playing Card Co...	48,893	Jan. 16	120	895
Cards. Playing	United States Playing Card Co...	48,894	Jan. 16	120	895
Cards. Playing	United States Playing Card Co...	48,895	Jan. 16	120	895
Cards. Playing	New York Consolidated Card Company.	49,103	Jan. 23	120	1158
Cards. Playing	New York Consolidated Card pany.	49,104	Jan. 23	120	1158
Cards. Playing	New York Consolidated Card Company.	49,105	Jan. 23	120	1158
Cards. Playing	New York Consolidated Card Company.	49,106	Jan. 23	120	1158
Cards. Playing	New York Consolidated Card Company.	49,107	Jan. 23	120	1158
Cards. Playing	New York Consolidated Card Company.	49,108	Jan. 23	120	1158
Cards. Playing	New York Consolidated Card Company.	49,109	Jan. 23	120	1159
Cards. Playing	New York Consolidated Card Company.	49,110	Jan. 23	120	1159
Cards. Playing	New York Consolidated Card Company.	49,111	Jan. 23	120	1159
Cards. Playing	United States Playing Card Co...	49,112	Jan. 23	120	1159
Cards. Playing	United States Playing Card Co...	49,113	Jan. 23	120	1159
Cards. Playing	United States Playing Card Co...	49,114	Jan. 23	120	1159
Cards. Playing	United States Playing Card Co...	49,255	Jan. 30	120	1470
Cards. Playing	United States Playing Card Co...	49,256	Jan. 30	120	1470
Cards. Playing	United States Playing Card Co...	49,257	Jan. 30	120	1470
Cards. Playing	New York Consolidated Card Company.	49,413	Feb. 6	120	1814
Cards. Playing	New York Consolidated Card Company.	49,414	Feb. 6	120	1814
Cards. Playing	New York Consolidated Card Company.	49,415	Feb. 6	120	1814
Cards. Playing	New York Consolidated Card Company.	49,416	Feb. 6	120	1815
Cards. Playing	New York Consolidated Card Company.	49,417	Feb. 6	120	1815
Cards. Playing	New York Consolidated Card Company.	49,418	Feb. 6	120	1815
Cards. Playing	United States Playing Card Co...	49,419	Feb. 6	120	1815
Cards. Playing	United States Playing Card Co...	49,420	Feb. 6	120	1815
Cards. Playing	United States Playing Card Co...	49,421	Feb. 6	120	1815
Cards. Playing	United States Playing Card Co...	49,422	Feb. 6	120	1815
Cards. Playing	United States Playing Card Co...	49,423	Feb. 6	120	1815
Cards. Playing	United States Playing Card Co...	49,424	Feb. 6	120	1815
Cards. Playing	United States Playing Card Co...	49,425	Feb. 6	120	1815
Cards. Playing	A. Dougherty	49,426	Feb. 6	120	1816
Cards. Playing	New York Consolidated Card Company.	49,742	Feb. 13	120	2122
Cards. Playing	United States Playing Card Co...	49,745	Feb. 13	120	2122
Cards. Playing	United States Playing Card Co...	49,746	Feb. 13	120	2122
Cards. Playing	United States Playing Card Co...	49,747	Feb. 13	120	2122
Cards. Playing	United States Playing Card Co...	49,748	Feb. 13	120	2122
Cards. Playing	United States Playing Card Co...	49,808	Feb. 20	120	2433
Cards. Playing	New York Consolidated Card Company.	49,840	Feb. 20	120	2435
Cards. Playing	New York Consolidated Card Company.	49,841	Feb. 20	120	2435
Cards. Playing	New York Consolidated Card Company.	49,842	Feb. 20	120	2435
Cards. Playing	New York Consolidated Card Company.	49,843	Feb. 20	120	2435
Cards. Playing	United States Playing Card Co...	49,844	Feb. 20	120	2435

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Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Cards. Playing	United States Playing Card Co...	49,845	Feb. 20	120	2435
Cards. Playing	United States Playing Card Co...	49,846	Feb. 20	120	2435
Cards. Playing	New York Consolidated Card Company.	49,889	Feb. 20	120	2437
Cards. Playing	New York Consolidated Card Company.	49,936	Feb. 27	120	2745
Cards. Playing	New York Consolidated Card Company.	49,937	Feb. 27	120	2745
Cards. Playing	New York Consolidated Card Company.	49,938	Feb. 27	120	2745
Cards. Playing	New York Consolidated Card Company.	49,939	Feb. 27	120	2745
Cards. Playing	New York Consolidated Card Company.	50,024	Feb. 27	120	2746
Cards. Playing	New York Consolidated Card Company.	50,025	Feb. 27	120	2746
Cards. Playing	New York Consolidated Card Company.	50,061	Feb. 27	120	2750
Carriages, buggies, wagons, and carts	Studebaker Brothers Manufacturing Company.	49,351	Jan. 30	120	1474
Carriages, wagons, and carts	Studebaker Brothers Manufacturing Company.	49,979	Feb. 27	120	2747
Cartridges	Winchester Repeating Arms Co...	49,175	Jan. 23	120	1161
Cartridges	Eley Brothers	49,434	Feb. 6	120	1815
Cartridges	Union Metallic Cartridge Company.	49,615	Feb. 13	120	2117
Cartridges and cartridge-shells	Union Metallic Cartridge Company.	49,606	Feb. 13	120	2117
Cartridges and cartridge-shells	Union Metallic Cartridge Company.	49,607	Feb. 13	120	2117
Cartridges and cartridge-shells	Union Metallic Cartridge Company.	49,610	Feb. 13	120	2117
Cartridges and cartridge-shells	Union Metallic Cartridge Company.	49,614	Feb. 13	120	2117
Cartridges and cartridge-shells	Union Metallic Cartridge Company.	49,620	Feb. 13	120	2117
Cartridges and cartridge-shells	Union Metallic Cartridge Company.	49,621	Feb. 13	120	2117
Cartridges and cartridge-shells	Union Metallic Cartridge Company.	49,622	Feb. 13	120	2117
Cartridges and cartridge-shells	Union Metallic Cartridge Company.	49,623	Feb. 13	120	2117
Cartridges and cartridge-shells	Union Metallic Cartridge Company.	49,624	Feb. 13	120	2117
Cartridges and metal and paper cartridge-shells	Union Metallic Cartridge Company.	49,611	Feb. 13	120	2117
Cartridges and parts thereof. Gun and pistol	Union Metallic Cartridge Company.	49,500	Feb. 6	120	1816
Cartridges and parts thereof. Gun and pistol	Union Metallic Cartridge Company.	49,612	Feb. 13	120	2117
Cartridges and parts thereof. Gun and pistol	Union Metallic Cartridge Company.	49,613	Feb. 13	120	2117
Cartridges and parts thereof. Gun and pistol	Union Metallic Cartridge Company.	49,616	Feb. 13	120	2117
Cartridges and parts thereof. Gun and pistol	Union Metallic Cartridge Company.	49,617	Feb. 13	120	2117
Cartridges and parts thereof. Gun and pistol	Union Metallic Cartridge Company.	49,618	Feb. 13	120	2117
Cartridges and parts thereof. Gun and pistol	Union Metallic Cartridge Company.	49,619	Feb. 13	120	2117
Caskets, coffins, and fixtures therefor	National Casket Co	49,162	Jan. 23	120	1161
Catamenial bandages	Borated Specialty Company	48,810	Jan. 16	120	892
Catarrh cure	F. J. Cheney	49,145	Jan. 23	120	1160
Catheters and bougies	Johnson & Johnson	49,263	Jan. 30	120	1471
Cement	Eclipse Cement & Blacking Co	45,475	Jan. 2	120	316
Cement	S. S. White Dental Mfg. Co	49,083	Jan. 23	120	1158
Cement. Channel	C. L. Hauthaway & Sons	49,632	Feb. 13	120	2118
Cement. Leather	C. L. Hauthaway & Sons	49,632	Feb. 13	120	2118
Cement, lime, and plaster. Natural-rock or hydraulic	Newark Lime & Cement Mfg. Co	48,844	Jan. 9	120	646
Cement. Portland	German-American Portland Cement Works.	49,015	Jan. 23	120	1155
Cement. Portland	Dexter Portland Cement Company.	49,029	Jan. 23	120	1155
Cement. Portland	Lehigh Portland Cement Co	49,228	Jan. 30	120	1469
Cement. Portland	Helderberg Cement Co	49,886	Feb. 20	120	2436
Cement. Portland, natural-rock, and improved	American Cement Company	48,470	Jan. 2	120	316
Cement. Portland, natural-rock, and improved	American Cement Company	48,614	Jan. 9	120	647
Cement. Portland, natural-rock, and improved	American Cement Company	48,615	Jan. 9	120	647
Cement. Portland, natural-rock, and improved	American Cement Company	48,616	Jan. 9	120	647
Cement. Portland, natural-rock, and improved	American Cement Company	48,647	Jan. 9	120	648
Cement. Portland, natural-rock, and improved	American Cement Company	48,648	Jan. 9	120	648
Cement. Portland, natural-rock, and improved	American Cement Company	48,774	Jan. 16	120	891
Chains	Diamond Chain and Manufacturing Company.	49,093	Jan. 23	120	1158
Champagne	Ginter Grocery Company	49,737	Feb. 13	120	2122
Checks. Bank	Levey Bros. & Co	48,894	Jan. 16	120	893
Chemical. Crystalline soluble	J. M. Kell	49,206	Jan. 30	120	1469
Chemical finishing compound	R. Bernheim	49,513	Feb. 6	120	1818
Chemicals for the ceramic arts	Roessler & Hasslacher Chemical Co.	48,770	Jan. 9	120	663
Chlorid of lime	Leggett & Brother	49,210	Jan. 30	120	1469
Chocolate	Knickerbocker Chocolate Company.	49,187	Jan. 23	120	1160
Chocolate and cocoa	H. J. Damon	48,919	Jan. 16	120	893
Chocolate and cocoa	Francis H. Leggett & Company	48,938	Jan. 16	120	893

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Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Chocolate and cocoa	Knickerbocker Chocolate Company.	49,343	Jan. 30	120	1473
Chocolate and cocoa	Knickerbocker Chocolate Company.	49,714	Feb. 13	120	2121
Chocolate creams	C. Gousset	49,709	Feb. 13	120	2121
Chocolate drops	New England Confectionery Co.	49,294	Jan. 30	120	1471
Chocolates	Van Emden Cocoa Co	49,115	Jan. 23	120	1159
Chocolates	Van Emden Cocoa Co	49,363	Jan. 30	120	1474
Chocolates and bonbons	R. L. Perry Co	48,511	Jan. 2	120	317
Cider, Bottled	S. S. Pierce Co	48,528	Jan. 2	120	318
Cigarettes	H. P. Strause	48,485	Jan. 2	120	316
Cigars	D. Hermance	48,617	Jan. 9	120	647
Cigars	J. Weinreich	48,673	Jan. 9	120	649
Cigars	Havana Commercial Company	48,788	Jan. 16	120	891
Cigars	H. T. Offterdinger	48,803	Jan. 16	120	892
Cigars	S. S. Pierce Co	48,830	Jan. 16	120	893
Cigars	Abraham & Straus	49,267	Jan. 20	120	1470
Cigars	S. S. Pierce Co	49,301	Feb. 6	120	1814
Cigars	S. S. Pierce Co	49,302	Feb. 6	120	1814
Cigars	Sanchez & Haya Co	49,728	Feb. 13	120	2121
Cigars and cheroots	R. & W. Jenkinson Co	50,016	Feb. 27	120	2748
Cigars and cheroots	D. H. Levy	49,062	Feb. 13	120	2119
Cigars, cheroots, and cigarettes made of cigar-tobacco	S. Lichtenstein Co	49,577	Feb. 13	120	2119
Cigars. Havana	Cayey-Caguas Tobacco Company.	48,651	Jan. 9	120	648
Cleaning and disinfecting compound	Havana Commercial Company	49,375	Feb. 6	120	1813
Cleaning and polishing preparations	Klen-So Pharmacal Company	49,207	Jan. 30	120	1468
Cleaning and polishing preparations	Fritz Schulz Jun. Aktiengesellschaft.	48,779	Jan. 16	120	891
Cleaning and polishing preparations. Metal and glass	Fritz Schulz Jun. Aktiengesellschaft.	48,817	Jan. 16	120	892
Cleaning and renovating compounds	Electro-Silicon Co	49,035	Jan. 23	120	1156
Cleaning compound	Columbia Refining Co	49,028	Jan. 23	120	1155
Cleaning, polishing, and preserving preparations	J. F. Whitman	48,812	Jan. 16	120	892
Cleaning preparations	Fritz Schulz Jun. Aktiengesellschaft.	48,778	Jan. 16	120	891
Cleansing or scouring compound	India Alkali Works	49,968	Feb. 27	120	2746
Clocks	Enoch Morgan's Sons Company	49,646	Feb. 13	120	2118
Clocks	Spaulding & Co	48,806	Jan. 16	120	892
Clocks	Ansonia Clock Company	49,494	Feb. 6	120	1818
Clocks	Ansonia Clock Company	49,731	Feb. 13	120	2121
Clocks	Ansonia Clock Company	49,732	Feb. 13	120	2121
Clocks. Alarm	A. C. Becken	49,027	Jan. 23	120	1155
Cloths for ladies', men's, and children's wear	Grifton Company	49,074	Jan. 23	120	1157
Coal, coke, and charcoal	Ginn Company	49,309	Jan. 30	120	1472
Coal-tar product. Synthetic	Mellier Drug Company	50,012	Feb. 27	120	2748
Coats and overcoats. Men's and boys'	Mayer, Scheuer, Offner & Co	49,054	Jan. 23	120	1156
Coats, pants, overalls, and blouses	Larned, Carter and Co	48,481	Jan. 2	120	316
Coats, vests, trousers, and overcoats	Goldsmith, Joseph, Feiss Co	49,885	Feb. 20	120	2436
Coats, vests, trousers, overalls, and jumpers	Miller Manufacturing Company	48,643	Jan. 9	120	648
Cocktails	Charles Jacquin et Cie	48,574	Jan. 2	120	320
Cocktails	S. Hochstadter	48,819	Jan. 16	120	892
Cocoa	Walter Baker & Company	49,926	Feb. 20	120	2438
Coffee	Meyer Brothers Coffee and Spice Company	48,932	Jan. 16	120	897
Coffee	Brownell & Field Company	48,977	Jan. 16	120	898
Coffee	Meyer Brothers Coffee and Spice Company.	49,001	Jan. 16	120	899
Coffee	Meyer Brothers Coffee and Spice Company.	49,002	Jan. 16	120	899
Coffee	G. B. Farrington Co	49,062	Jan. 23	120	1157
Coffee	Crescent Manufacturing Co	49,066	Jan. 23	120	1157
Coffee	G. B. Farrington Company	49,082	Jan. 23	120	1157
Coffee	G. J. Keller	49,660	Feb. 13	120	2119
Coffee	Porto Rico Co	49,674	Feb. 13	120	2119
Coffee	Levering Coffee Co	50,048	Feb. 27	120	2749
Coffee	Stewart Brothers Company	50,057	Feb. 27	120	2750
Coffee	Milliken, Tomlinson Co	49,346	Jan. 30	120	1473
Coffee	Pfeiffer & Diller	49,668	Feb. 13	120	2119
Coffee	New Orleans Coffee Co	49,057	Jan. 23	120	1157
Coffee	M. T. Lefebvre	49,906	Feb. 20	120	2437
Coffee	S. Hochstadter	48,582	Jan. 2	120	320
Coffee	William Barker Compy	49,895	Feb. 20	120	2433
Coffee-berry	Schrader & Ehlers	49,574	Feb. 13	120	2115
Coffee preparation	Cement Machinery Co	49,120	Jan. 30	120	1158
Coffee. Roasted and ground	Cement Machinery Co	49,121	Jan. 23	120	1159
Coffee substitutes	Cement Machinery Co	49,231	Jan. 30	120	1469
Cognac	Economy Manufacturing Co	49,071	Jan. 23	120	1157
Collars and cuffs	C. Poyet	49,373	Feb. 6	120	1813
Combs	E. Greenfield's Son & Co	49,086	Jan. 23	120	1158
Confectionery. Chocolate	E. Greenfield's Son & Co	49,334	Jan. 30	120	1473
Confectionery. Chocolate	H. D. Foss and Co	50,042	Feb. 27	120	2749
Confectionery and bonbons. Chocolate	Whittier Mills	49,357	Jan. 30	120	1474
Corn, Braided	Whittier Mills	49,358	Jan. 30	120	1474
Corn, Braided	W. F. Mitchell	49,721	Feb. 13	120	2121
Corncobs	J. C. Rubinger Bros. Co	49,904	Feb. 20	120	2437
Corn-starch	Abraham & Straus	48,973	Jan. 16	120	898
Corsets	A. R. Colton	49,496	Feb. 6	120	1816
Corsets	Dirdsey & Somers	49,702	Feb. 13	120	2120
Corsets	Dirdsey & Somers	49,703	Feb. 13	120	2120
Corsets	Kabo Corset Company	49,827	Feb. 20	120	2434
Corsets	Marshall Field & Company	50,049	Feb. 27	120	2749
Corsets	Warner Bros. Co	50,082	Feb. 27	120	2750
Corsets	Warner Bros. Co	50,083	Feb. 27	120	2750
Corsets	Weingarten Bros	50,084	Feb. 27	120	2750

Alphabetical list of trade-marks for January and February—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Cotton drapery and upholstery goods. Dyed and printed	Eddystone Manufacturing Company.	49,736	Feb. 13	120	2122
Cotton duck	Mount Vernon-Woodberry Cotton Duck Company.	49,044	Jan. 23	120	1156
Cotton duck	Mount Vernon-Woodberry Cotton Duck Company.	49,214	Jan. 30	120	1468
Cotton duck	Mount Vernon-Woodberry Cotton Duck Company.	49,774	Feb. 13	120	2122
Cotton duck	Mount Vernon-Woodberry Cotton Duck Company.	50,013	Feb. 27	120	2748
Cotton fabrics. Certain named	Meyer & Goetze	49,831	Feb. 20	120	2434
Cotton flannel	Pemberton Company	49,832	Feb. 20	120	2434
Cotton piece goods	Massachusetts Cotton Mills	48,484	Jan. 2	120	316
Cotton piece goods	Massachusetts Cotton Mills	48,503	Jan. 2	120	317
Cotton piece goods	Massachusetts Cotton Mills	48,639	Jan. 9	120	648
Cotton piece goods	Renfrew Manufacturing Company.	48,645	Jan. 9	120	648
Cotton piece goods	C. Whitman & Co	49,065	Jan. 23	120	1157
Cotton piece goods	Massachusetts Cotton Mills	49,077	Jan. 23	120	1157
Cotton piece goods	M. I. Cooley	49,148	Jan. 23	120	1160
Cotton piece goods	Massachusetts Cotton Mills	49,211	Jan. 30	120	1468
Cotton piece goods	Massachusetts Cotton Mills	49,212	Jan. 30	120	1468
Cotton piece goods	Indian Head Mills of Alabama	49,236	Jan. 30	120	1469
Cotton piece goods	Massachusetts Cotton Mills	49,286	Jan. 30	120	1471
Cotton piece goods	Tremont & Suffolk Mills	49,319	Jan. 30	120	1472
Cotton piece goods	Jackson Company	49,437	Feb. 6	120	1815
Cotton piece goods	Massachusetts Cotton Mills	49,718	Feb. 13	120	2121
Cotton piece goods	Massachusetts Cotton Mills	49,719	Feb. 13	120	2121
Cotton piece goods	Massachusetts Cotton Mills	49,720	Feb. 13	120	2121
Cotton piece goods	Tremont & Suffolk Mills	49,750	Feb. 13	120	2122
Cotton piece goods	Massachusetts Cotton Mills	49,773	Feb. 13	120	2122
Cotton piece goods	Massachusetts Cotton Mills	49,829	Feb. 20	120	2434
Cotton plaids and stripes	S. A. Crozer & Son	48,653	Jan. 9	120	648
Cotton sheetings and drills	Augusta Factory	49,880	Feb. 20	120	2436
Cotton. Spool-	John J. Clark & Co	48,622	Jan. 9	120	646
Cough-drops	A. D. Work	49,116	Jan. 23	120	1157
Cough-syrup	Foster Milburn Co	48,522	Jan. 2	120	319
Counter-shafts and appurtenances thereto	Moesberg Wrench Company	48,969	Jan. 16	120	898
Cowhide. Oak-tanned	Kullman, Salz & Company	48,821	Jan. 16	120	893
Crash. Linen	Stevens Linen Works	49,833	Feb. 10	120	2434
Cream for the complexion and wrinkle-lotion	Artesia Cream Company	48,862	Jan. 26	120	894
Cream for the skin	Mme. Toussaud Mfg. Co	48,771	Jan. 9	120	653
Crochet quilts	Union Manufacturing Company	48,488	Jan. 2	120	316
Crochet quilts	Union Manufacturing Company	49,063	Jan. 23	120	1157
Crochet quilts	Union Manufacturing Company	49,261	Jan. 30	120	1470
Crochet quilts	Union Manufacturing Company	49,262	Jan. 30	120	1470
Cure. Heave	M. W. Savage	48,696	Jan. 9	120	650
Cure of cancers and kindred diseases. Preparation for the	D. R. Dupuis	48,542	Jan. 2	120	318
Cure of horse ailments. Preparation for the	Dyer Remedy Company	48,922	Jan. 16	120	896
Demulcents	Lavadura Chemical Co	49,286	Jan. 30	120	1471
Dental purposes. Rubber for	Traun Rubber Co	49,136	Jan. 23	120	1160
Dental varnish	S. S. White Dental Mfg. Co	49,134	Jan. 23	120	1159
Dentifrice	Hy-Jen Chemical Co	49,201	Jan. 30	120	1467
Detergent preparation	Holzapfel's Compositions Company.	49,859	Feb. 20	120	2435
Dextrin	Norddeutsche Kartoffelmehl-Fabrik mit Beschränkter Haftung.	48,665	Jan. 9	120	649
Die-stocks	Hart Manufacturing Co	49,311	Jan. 30	120	1472
Disinfectants	Warren Brothers Company	49,557	Feb. 6	120	1820
Display-fixtures	Heimann-Miller Manufacturing Company.	49,249	Jan. 30	120	1470
Dog-blankets	J. A. Davis	49,084	Jan. 16	120	898
Dress goods and cloakings	C. R. O'Donald & Co	48,623	Jan. 9	120	647
Dress goods. Mohair	N. Erlanger, Blumgart & Co	48,308	Jan. 30	120	1471
Dress-shields	I. B. Kleinert Rubber Co	46,993	Jan. 16	120	899
Drillings and sheetings	Massachusetts Cotton Mills	49,440	Feb. 6	120	1815
Drills and reamers	Patterson, Gottfried & Hunter	48,601	Jan. 9	120	650
Drinks. Mixed	J. Jacques	49,202	Jan. 30	120	1468
Drums	Duplex Manufacturing Company	49,851	Feb. 20	120	2435
Dye-colors	W. Cushing & Co	49,184	Jan. 30	120	1467
Dyes and dyestuffs	Johnson-Richardson Co	49,101	Jan. 23	120	1158
Dyestuff	Cassella Color Company	49,997	Feb. 27	120	2747
Dyspepsia tablets and capsules	Vig-Ni Medicine Co	49,894	Feb. 20	120	2437
Electric fans	Jandus Electric Co	49,251	Jan. 30	120	1470
Electric fixtures. Socket-bushings for	Frank H. Stewart Electric Company.	49,855	Feb. 20	120	2435
Electric-light supports	Frank H. Stewart Electric Company.	49,854	Feb. 20	120	2435
Electric machines. Certain named	Diehl Manufacturing Company	49,438	Feb. 6	120	1815
Electrical appliances	Hart Manufacturing Company	49,100	Jan. 23	120	1158
Embroideries	T. D. Elsner & Son	49,188	Jan. 30	120	1467
Embroidery	Atlantic Novelty Co	49,990	Feb. 27	120	2747
Emollient and medicinal preparation	T. E. Carpenter	48,845	Jan. 16	120	893
Engines and mains. Hydraulic	Erie Hyd. Engine Mfg. Co	49,286	Jan. 30	120	1471
Engines. Gas or gasolene	Detroit Auto-Marine Co	49,099	Jan. 23	120	1157
Engines. Gasoline and marine	H. Keidel	49,285	Jan. 30	120	1471
Entremets. Devilled	William Underwood Company	49,827	Feb. 20	120	2434
Explosive-engines, internal-combustion motors, gas and gasolene engines.	C. H. A. Dissinger & Bro	48,930	Jan. 16	120	896
Explosives	Maxurite Explosive Company	49,973	Feb. 27	120	2746
Eye. Wash for treatment of affections of the	W. C. Lehmann	48,880	Jan. 16	120	894
Fabrics. Imitation of Persian-lamb	J. & J. Dobson	49,372	Jan. 30	120	1470
Fabrics. Waterproof	Standard Paint Company	49,254	Jan. 30	120	1470
Fabrics. Drapery and upholstery	Eddystone Manufacturing Co	49,346	Jan. 30	120	1469

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Fabrics. Drapery and upholstery textile	Eddystone Manufacturing Company.	49,245	Jan. 30	120	1469
Fabrics. Drapery and upholstery textile	Eddystone Manufacturing Co	49,446	Feb. 6	120	1816
Fabrics. Drapery and upholstery textile	Eddystone Manufacturing Co	49,447	Feb. 6	120	1816
Fabrics. Drapery and upholstery textile	Eddystone Manufacturing Company.	49,448	Feb. 6	120	1816
Fabrics. Drapery and upholstery textile	Eddystone Manufacturing Co	49,449	Feb. 6	120	1816
Fabrics. Drapery and upholstery textile	Eddystone Manufacturing Company.	49,452	Feb. 6	120	1816
Fabrics. Drapery and upholstery textile	Eddystone Manufacturing Company.	49,453	Feb. 6	120	1816
Fabrics. Drapery and upholstery textile	Eddystone Manufacturing Company.	49,454	Feb. 6	120	1816
Fabrics. Drapery and upholstery textile	Eddystone Manufacturing Company.	49,455	Feb. 6	120	1816
Fabrics. Drapery and upholstery textile	Eddystone Manufacturing Company.	49,456	Feb. 6	120	1816
Fabrics. Mercerized cotton	C. Whitman & Co	49,064	Jan. 23	120	1157
Fabrics. Printed and dyed cotton textile	Eddystone Manufacturing Company.	49,302	Jan. 30	120	1472
Fabrics. Printed and dyed textile	Eddystone Manufacturing Company.	49,244	Jan. 30	120	1469
Fabrics. Printed and dyed textile	Eddystone Manufacturing Company.	49,300	Jan. 30	120	1471
Fabrics. Printed and dyed textile	Eddystone Manufacturing Company.	49,301	Jan. 30	120	1472
Fabrics. Printed and dyed textile	Eddystone Manufacturing Company.	49,303	Jan. 30	120	1472
Fabrics. Printed and dyed textile	Eddystone Manufacturing Company.	49,304	Jan. 30	120	1472
Fabrics. Printed and dyed textile	Eddystone Manufacturing Company.	49,305	Jan. 30	120	1472
Fabrics. Printed and dyed textile	Eddystone Manufacturing Company.	49,306	Jan. 30	120	1472
Fabrics. Printed and dyed textile	Eddystone Manufacturing Company.	49,307	Jan. 30	120	1472
Fabrics. Printed and dyed textile	Eddystone Manufacturing Company.	49,450	Feb. 6	120	1816
Fabrics. Printed and dyed textile	Eddystone Manufacturing Company.	49,451	Feb. 6	120	1816
Fabrics. Silk	Stewart Silk Company	50,058	Feb. 27	120	2750
Fabrics. Waterproof textile	A. Berel	49,991	Feb. 27	120	2747
Fabrics. Woven silk	H. Simon	49,443	Feb. 6	120	1815
Fasteners	Patent Button Co	49,740	Feb. 13	120	2122
Feed consisting of ground corn and oats. Cattle-	Dock & Coal Co	49,640	Feb. 13	120	2118
Felt. Waterproofing	Hydrex Felt & Engineering Co	49,378	Feb. 6	120	1813
Fertilisers	Federal Chemical Co	48,476	Jan. 2	120	316
Fertilisers. Artificial	Spartanburg Fertilizer Co	49,377	Feb. 20	120	2436
Files	Carver File Company	49,709	Feb. 13	120	2120
Files and rasps	Kearney & Foot Company	49,282	Feb. 6	120	1813
Files and rasps	Nicholson File Company	49,411	Feb. 6	120	1814
Files and rasps	Nicholson File Company	49,413	Feb. 6	120	1814
Files and rasps	Arcade File Works	49,460	Feb. 6	120	1816
Files and rasps	Arcade File Works	49,461	Feb. 6	120	1816
Files and rasps	G. & H. Barnett Company	49,472	Feb. 6	120	1817
Files and rasps	Kearney & Foot Company	49,476	Feb. 6	120	1817
Files and rasps	Nicholson File Company	49,668	Feb. 13	120	2119
Files and rasps and holders and handles therefor	Nicholson File Company	49,410	Feb. 6	120	1814
Fish. Dried, smoked, pickled, salted, and canned	W. T. Shute	49,058	Jan. 23	120	1157
Fish. Dried, smoked, pickled, salted, and canned	W. T. Shute	49,059	Jan. 23	120	1157
Fish. Dried, smoked, pickled, salted, and canned	W. T. Shute	49,060	Jan. 23	120	1157
Fish. Dry, pickled, and canned	Reed and Gamage	48,718	Jan. 9	120	651
Flavoring extracts	Crescent Manufacturing Co	48,449	Jan. 2	120	315
Flour. Mixed winter and spring wheat	J. Charles	48,983	Jan. 16	120	898
Flour, potato-starch, and dextrin. Potato-	Norddeutsche Kartoffelmehl-Fabrik mit Beschränkter Haftung.	49,911	Feb. 20	120	2437
Flour. Rye	Boutwell Milling & Grain Co	48,668	Jan. 9	120	649
Flour. Self-raising or pancake	Topeka Milling Company	49,289	Jan. 30	120	1474
Flour. Self-raising prepared buckwheat	F. C. Williams	49,926	Feb. 20	120	2438
Flour. Wheat	Northwestern Consolidated Milling Company.	48,462	Jan. 2	120	315
Flour. Wheat	Northwestern Consolidated Milling Company.	48,464	Jan. 2	120	315
Flour. Wheat	G. A. Zabriskie	48,469	Jan. 2	120	316
Flour. Wheat	Sands, Taylor & Wood Company.	48,667	Jan. 9	120	649
Flour. Wheat	J. McAleer & Sons	48,713	Jan. 9	120	650
Flour. Wheat	Acme Milling Company	48,975	Jan. 16	120	898
Flour. Wheat	Hesel Milling Company	48,992	Jan. 16	120	899
Flour. Wheat	Pillsbury-Washburn Flour Mills Company.	49,005	Jan. 16	120	899
Flour. Wheat	Threefoot Bros. & Co	49,009	Jan. 16	120	899
Flour. Wheat	Hesel Milling Company	49,276	Jan. 30	120	1471
Flour. Wheat	S. Hamill Company	49,290	Jan. 30	120	1474
Flour. Wheat	Listman Mill Company	49,320	Feb. 6	120	1819
Flour. Wheat	Mapleton Milling Company	49,321	Feb. 6	120	1819
Flour. Wheat	Pittsburgh Milling Co	49,912	Feb. 20	120	2436
Flour. Wheat	Threefoot Bros. & Co	49,923	Feb. 20	120	2436
Flour. Wheat	J. B. Camors & Co	50,046	Feb. 27	120	2749
Food and medicine for live stock and poultry	Herb Medicine Company	49,496	Feb. 6	120	1818
Food for birds and fowls. Seeds and prepared mixtures of seeds for	E. R. Durkee & Co	48,986	Jan. 16	120	899
Foods for invalids and infants	Sunbrights California Food Co	49,685	Feb. 13	120	2120
Foods. Prepared cereal	American Cereal Company	50,059	Feb. 27	120	2750

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Forges	Champion Blower & Forge Company.	49,690	Feb. 13	120	2120
Forges, blowers, and twyer-irons	Patterson, Gottfried & Hunter	48,936	Jan. 16	120	897
Forging and forming machines. Metal	Ajax Manufacturing Company	49,579	Feb. 20	120	2436
Fruit-presses	Henis Fruit Press Co	48,926	Jan. 16	120	896
Fruits. Dried and evaporated	Griffin & Skelley Co	48,987	Jan. 16	120	899
Fruits. Dried and evaporated	Griffin & Skelley Co	48,988	Jan. 16	120	899
Fruits. Dried and evaporated	Griffin & Skelley Co	48,989	Jan. 16	120	899
Galvanized fastening devices	Keystone Nail Company	49,954	Feb. 20	120	2436
Game-boards	Carrom-Arcbarena Co	49,998	Feb. 27	120	2747
Games. Card	Cincinnati Game Co	48,727	Jan. 9	120	651
Garters	A. Stein & Co	49,008	Jan. 16	120	899
Garters. Men's	L. Oppenheimer's Sons	48,508	Jan. 2	120	317
Gas-mantles. Incandescent	Flash Self Lighting Mantle Co	49,932	Feb. 27	120	2745
Gas-mantles. Self-lighting incandescent	Usona Light Co	49,751	Feb. 13	120	2122
Gelatin	M. Michaelis & Sons	49,055	Jan. 23	120	1156
Gin	Chicago Distilling Co	48,576	Jan. 2	120	320
Gin	C. H. Graves & Sons	48,579	Jan. 2	120	320
Gin	A. M. Young	48,612	Jan. 2	120	321
Gin	Dr. C. Bouviers Specialty Co	48,816	Jan. 16	120	892
Gin	National Distilling Co	49,018	Jan. 23	120	1155
Gin	Francis Gowdy Distilling Co	49,246	Jan. 30	120	1469
Gin. Sloe	Charles Jacquin et Cie	48,573	Jan. 2	120	320
Glass electric globes and glass shades	Phoenix Glass Co	49,741	Feb. 13	120	2122
Glass ware. Cut	O. F. Eggleton Co	49,036	Jan. 23	120	1156
Glassware. Pressed or blown	A. H. Heisey & Co	49,235	Jan. 30	120	1473
Gloves	Wertheimer & Co	48,535	Jan. 2	120	318
Gloves	Buffalo Rubber Manufacturing Company.	48,624	Jan. 9	120	647
Gloves	Abraham & Straus	48,629	Jan. 9	120	647
Gloves	J. Adler & Co	48,630	Jan. 9	120	647
Gloves	Abraham & Straus	49,040	Jan. 23	120	1156
Gloves	Fownes Brothers & Co	49,094	Jan. 23	120	1158
Gloves	Abraham & Straus	49,701	Feb. 13	120	2120
Gloves and mittens. Yellow horse-hide	Bouton and Germain Co	48,979	Jan. 16	120	898
Gloves. Boxing	A. J. Reach Co	49,988	Feb. 27	120	2747
Gold-leaf	S. Hickson	49,435	Feb. 6	120	1815
Gold, silver, or copper. Bars, ingots, sheets, or molds of	H. W. Treat	49,893	Feb. 20	120	2437
Governors for pumping-engines	C. P. McMullen	50,011	Feb 27	120	2748
Grease-cups	Lunkenheimer Company	49,887	Feb. 20	120	2436
Grease. Lubricating	Philadelphia Grease Manufacturing Co.	49,316	Jan. 30	120	1472
Grinding and polishing heads	Patterson, Gottfried & Hunter	48,937	Jan. 16	120	897
Guitars and mandolins	Lyon & Healy	48,483	Jan. 2	120	316
Guitars and mandolins	Lyon & Healy	49,386	Feb. 6	120	1813
Gum. Chewing	American Chicle Co	48,675	Jan. 9	120	649
Gum-grease	Winchester Repeating Arms Co	49,690	Feb. 13	120	2120
Hair and scalp. Compounds for the treatment of the	N. von Feldman	48,534	Jan. 2	120	318
Hair-clippers	Brown & Sharpe Manufacturing Company.	48,448	Jan. 2	120	315
Hair combs, retainers, ornaments, and pins	Kraus & Glauberg Co	48,753	Jan. 9	120	652
Hair combs, retainers, ornaments, and pins	Kraus & Glauberg Co	48,754	Jan. 9	120	652
Hair-drying powder	Waldeyer & Betts	49,065	Jan. 23	120	1158
Hair. Preparation for the removal of superfluous	M. M. Cusic	48,947	Jan. 16	120	894
Hair remedy	W. G. Gesty	48,924	Jan. 16	120	896
Hair-restorers and dandruff-destroyers	W. J. Forse	50,003	Feb. 27	120	2748
Hair wavers and curlers	A. Drede	49,468	Feb. 6	120	1817
Ham and bacon	P. G. Cromwell	48,451	Jan. 2	120	315
Hams	P. G. Cromwell	48,450	Jan. 2	120	315
Hams	P. G. Cromwell	48,452	Jan. 2	120	315
Hamamelis. Distillation of	Pond's Extract Company	49,484	Feb. 6	120	1817
Hames	Todd Manufacturing Co	49,802	Feb. 20	120	2433
Hammers	A. R. Robertson	49,590	Feb. 13	120	2116
Hammocks and swings. Folding canvas	G. H. Winans	49,508	Feb. 6	120	1818
Handcuffs and leg-irons	Tower & Lyon Co	48,746	Jan. 9	120	652
Harness, saddles, collars, and bridles	Paducah Saddlery Company	49,128	Jan. 23	120	1159
Harrows and cultivators	Atlanta Agricultural Works	49,142	Jan. 23	120	1160
Harvesters, mowers, and reapers	International Harvester Co. of America.	49,436	Feb. 6	120	1815
Hatchets, axes, and adzes	James C. Lindsay Hardware Co	49,155	Jan. 23	120	1160
Hats and caps	M. Sonneborn	49,720	Feb. 13	120	2121
Hats and caps	Knox Hat Manufacturing Co	49,783	Feb. 13	120	2128
Hats and caps	Knox Hat Manufacturing Co	49,784	Feb. 13	120	2128
Hats and caps. Infants'	S. Mayer & Sons	49,366	Feb. 6	120	1813
Hats and caps. Men's and women's	R. J. Hunter	49,894	Feb. 20	120	2434
Hats for women	J. L. Rosenberg	49,046	Jan. 23	120	1156
Hats. Soft and stiff fur-felt	No Name Hat Mfg. Co	48,506	Jan. 2	120	317
Hats. Straw	Brigham Hopkins Company	48,976	Jan. 16	120	898
Hats. Waterproof	A. J. Tower Company	49,370	Feb. 6	120	1813
Hay-loader	Sandwich Manufacturing Co	48,722	Jan. 9	120	651
Hay-tedders	Deere & Webber Co	49,432	Feb. 6	120	1815
Heaters and radiators. Steam and hot-water	Gurney Heater Manufacturing Company.	49,150	Jan. 23	120	1160
Heel-plates. Electric	E. H. Mealy	48,552	Jan. 2	120	319
Herring. Smoked	Slade Gorton & Co	50,055	Feb. 27	120	2750
Hones	Pike Manufacturing Company	49,292	Jan. 30	120	1474
Hones, sharpening-stones, and sharpening-wheels. Razor-	J. Sweaty	48,802	Jan. 16	120	893
Hoof-dressing	W. F. Young	50,029	Feb. 27	120	2749
Hooks and eyes	Star Pin Company	49,744	Feb. 13	120	2122
Hooks and eyes	Unique Manufacturing Company	49,786	Feb. 13	120	2123
Hooks and eyes	Unique Manufacturing Company	49,787	Feb. 13	120	2123
Horse-blankets	W. B. Riley & Co	49,995	Feb. 27	120	2750
Horse-clippers	Chicago Flexible Shaft Company	49,098	Jan. 23	120	1158
Horse-renovating powders	J. J. Walsh	49,555	Feb. 6	120	1820
Hose. Fabric	Eureka Fire Hose Company	48,898	Jan. 9	120	646
Hose-pipes, nozzles, gates, and couplings	Eureka Fire Hose Company	49,948	Feb. 27	120	2745

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Title.	Name.	No.	Date.	Official Gazette. Vol.	Official Gazette. Page.
Hose-supporters	C. J. Higley	49,277	Jan. 30	120	1471
Hose-supporters	Warner Bros. Co	49,397	Feb. 6	120	1814
Hose-supporters	C. J. Higley	49,822	Feb. 20	120	2434
Hose-supporters	C. J. Higley	49,823	Feb. 20	120	2434
Hose-supporters	C. J. Higley	49,858	Feb. 20	120	2435
Hosiery	American Stocking Company	49,266	Jan. 30	120	1470
Hosiery	Charles Taylor & Company	48,914	Jan. 16	120	896
Hosiery	Charles Taylor & Company	48,915	Jan. 16	120	896
Hosiery	C. Simon's Sons	48,941	Jan. 16	120	897
Hosiery	R. J. Fisher	50,002	Feb. 27	120	2748
Hydrosulfite compound	Cassella Color Company	49,183	Jan. 30	120	1467
Hypophosphites. Preparation of	Fellows Medical M'f'g Co	49,578	Feb. 13	120	2116
Incandescent mantles and supports therefor	Cleveland Gas and Electric Fixture Company.	48,625	Jan. 9	120	647
Inks and writing fluids of all kinds. Writing-	Carter's Ink Company	48,947	Jan. 16	120	897
Inks and writing fluids. Writing-	Diamond Ink Company	49,332	Jan. 30	120	1473
Inks. Printing-	Jaenecke Printing Ink Co	49,312	Jan. 30	120	1472
Inkstands	E Davis	48,618	Jan. 9	120	647
Inkstands	E. Davis	48,632	Jan. 9	120	647
Inkstands	E. Davis	48,633	Jan. 9	120	647
Insect-poison	Jenkins Bros	49,203	Jan. 30	120	1468
Insect-powder	Caroh Chemical Company	50,037	Feb. 27	120	2749
Insecticide	E. M. Eccles	48,850	Jan. 16	120	894
Insulating compound	Standard Underground Cable Company.	49,876	Feb. 20	120	2436
Insulating-tape	Standard Paint Company	49,172	Jan. 23	120	1161
Insulating-tape	Massachusetts Chemical Company.	49,439	Feb. 6	120	1815
Jacks	Duff Manufacturing Company	48,949	Jan. 16	120	897
Jams and jellies	Wilkinson, Gaddis & Co	50,065	Feb. 27	120	2750
Jellies, jelly-powders, jams, and preserves	Francis H. Leggett & Company	49,333	Jan. 30	120	1473
Jelly preparation	Michigan Carbon Works	50,053	Feb. 27	120	2750
Jewelers' pendant-bows	Swartchild & Co	49,980	Feb. 27	120	2747
Jewelry. Certain named	Phoenix Jewelry Co	48,804	Jan. 16	120	892
Journal. Trade	M. T. Richardson Company	50,010	Feb. 27	120	2748
Kid. Glazed and dull or "mat"	Keystone Leather Co	50,008	Feb. 27	120	2748
Knit hosiery and underwear	M. & C. Mayer	48,929	Jan. 16	120	896
Knit hosiery and underwear	M. & C. Mayer	49,908	Feb. 20	120	2437
Knit hosiery and underwear	M. & C. Mayer	49,909	Feb. 20	120	2437
Knit underwear	Northwestern Knitting Company	49,004	Jan. 16	120	899
Knit underwear	Direct Supply Co	49,734	Feb. 13	120	2121
Knit underwear	Direct Supply Co	49,735	Feb. 13	120	2122
Knit underwear and hosiery	Chas. A. Stevens & Bros	48,652	Jan. 9	120	648
Knitted hosiery, undershirts, and drawers	J. W. Mettler	49,830	Feb. 20	120	2434
Knitted underwear	Glastonbury Knitting Company	49,768	Feb. 13	120	2123
Knives and razors. Pocket-	A. Kastor & Bros	48,928	Jan. 16	120	896
Knives and slicers	M. G. Rodearmel	48,719	Jan. 9	120	651
Knives, forks, and spoons which are made of steel and tinned	R. Wallace & Sons Mfg. Co	48,527	Jan. 2	120	318
Knives. Pocket-	Challenge Cutlery Corporation	49,998	Feb. 27	120	2747
Kümmel	Charles Jacquin et Cie	49,791	Feb. 20	120	2433
Ladders of all kinds. Wooden	Miller Ladder Company	49,548	Feb. 6	120	1820
Lamp-chimneys	F. Euler & Co	48,619	Jan. 9	120	647
Lamp-chimneys and lamp-globes	L. H. Peltason	49,723	Feb. 13	120	2121
Lamp glasses and globes	Macbeth-Evans Glass Company	48,502	Jan. 2	120	317
Lamp glasses and globes	Macbeth-Evans Glass Company	48,586	Jan. 2	120	320
Lamps and lanterns. Railway	Armspear Manufacturing Company.	49,757	Feb. 13	120	2122
Lamps and lanterns. Railway	Armspear Manufacturing Company.	49,758	Feb. 13	120	2122
Lamps. Electric-arc	Jandus Electric Co	49,260	Jan. 30	120	1470
Lamps. Incandescent electric	Columbia Incandescent Lamp Co	49,034	Jan. 23	120	1156
Lamps, lanterns, and parts thereof	Fr. Stübgen & Co	48,807	Jan. 16	120	892
Lard	Gillespie Bros. & Co	48,620	Jan. 9	120	647
Lard	Swift and Company	48,698	Jan. 9	120	650
Lard	Francis H. Leggett & Company	49,530	Feb. 6	120	1819
Lard	P. G. Cromwell	49,899	Feb. 20	120	2437
Lard and lard compound	Cudahy Packing Company	49,170	Jan. 23	120	1161
Lard and lard compound	N. K. Fairbank Company	49,604	Feb. 13	120	2120
Lathes	S. S. White Dental Mfg. Co	49,064	Jan. 23	120	1158
Lathes	Patterson, Gottfried & Hunter	49,347	Jan. 30	120	1473
Lathes	National-Acme Manufacturing Company.	49,597	Feb. 13	120	2116
Lathes. Metal-turning	Lodge & Shipley Machine Tool Co.	49,595	Feb. 13	120	2116
Laxative compound or preparation	H. S. Cooley	49,467	Feb. 6	120	1817
Laxative fruit preparation. Effervescent	H. J. Mayers	49,865	Feb. 20	120	2436
Lead. Pure red	Eagle White Lead Co	49,395	Feb. 6	120	1814
Lead. White	National Lead Company	48,525	Jan. 2	120	318
Lead. White	National Lead Company	49,291	Jan. 30	120	1471
Lead. White	National Lead Company	49,292	Jan. 30	120	1471
Lead. White	Toch Brothers	49,321	Jan. 30	120	1472
Lead. White	National Lead Company	49,685	Feb. 13	120	2119
Lead. White	National Lead Company of Massachusetts.	49,866	Feb. 20	120	2436
Leather	Joseph N. Eisendrath Company	49,738	Feb. 13	120	2122
Leather	Joseph N. Eisendrath Company	49,739	Feb. 13	120	2122
Leather. Buffed	P. Reilly & Son	48,828	Jan. 16	120	893
Leather, calfskins, and waxed calfskins. Patent-	C. Heyl	48,818	Jan. 16	120	892
Leather for boots and shoes. Upper-	Thayer Foss & Co	49,797	Feb. 20	120	2433
Leather for the uppers of shoes	R. H. Foerderer	48,510	Jan. 2	120	317
Leather for the uppers of shoes	Robert H. Foerderer	48,839	Jan. 16	120	893
Leather goods. Certain named	C. F. Rumpp & Sons	48,912	Jan. 16	120	896
Leather. Harness-	Cappon & Bertsch Leather Co	48,472	Jan. 2	120	316
Leather. Harness and saddlery	W. W. Mooney & Sons	49,138	Jan. 23	120	1160
Leather. Harness and saddlery	W. W. Mooney & Sons	49,176	Jan. 23	120	1161
Leather. Harness and saddlery	W. W. Mooney & Sons	49,177	Jan. 23	120	1161

Alphabetical list of trade-marks for January and February—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Official Gazette. Page.
Leather known as kid	M. Beadenkopf	[illegible]	Feb. 6	120	1816
Leather. Lace-	New York Leather Belting Co	49,984	Feb. 27	120	2746
Leather. Patent-	A. C. Lawrence Leather Co	49,986	Feb. 27	120	2747
Leather-polish	Whittemore Brothers and Company.	48,626	Jan. 9	120	647
Leather-polish	Whittemore Bros. and Co	49,608	Feb. 13	120	2120
Leather polishing, cleaning, and preserving preparations	Fritz Schulz Jun. Aktiengesellschaft.	48,780	Jan. 16	120	891
Leather. Stuffing for	W. L. Alexander	49,086	Jan. 23	120	1155
Leather. Tanned	Lane & McVitty	48,823	Jan. 16	120	[illegible]
Leggings or overgaiters	Columbia Overgaiter & Legging Co.	49,220	Jan. 30	120	1469
Lightning-rods	Dodd & Struthers	49,586	Feb. 13	120	2118
Liniment	Van Vleet-Mansfield Drug Co	48,904	Jan. 16	120	895
Liniment	Dr. S. I. Tobias	49,126	Jan. 23	120	1160
Liniment	World's Dispensary Medical Association.	49,582	Feb. 13	120	2116
Liniment	F. G. Boynton	49,963	Feb. 27	120	2747
Liniments and embrocations	W. F. Young	49,323	Jan. 30	120	1472
Lithographs. Art-	Raphael Tuck and Sons Co	49,130	Jan. 23	120	1160
Locks and keys	Russell & Erwin Manufacturing Company.	49,240	Jan. 30	120	1473
Long-cloth	Sherman, Reid & Co	49,241	Jan. 30	120	1469
Loom-pickers	Norfolk Loom Picker Co	49,866	Feb. 20	120	2436
Lozenges and throat-tablets. Bronchial	Frog in Your Throat Co	49,271	Jan. 30	120	1470
Lubricants and lubricant-stock. Cylinder-	Conewango Refining Co	49,602	Feb. 13	120	2120
Lubricants and lubricant-stock. Cylinder-	Conewango Refining Co	49,882	Feb. 20	120	2436
Lubricating-grease	A. C. Busby	49,630	Feb. 13	120	2117
Lubricating-grease	A. Cook's Sons	49,636	Feb. 13	120	2118
Lye and potash	Brookman Manufacturing Company.	49,181	Jan. 30	120	1467
Macaroni, spaghetti, and vermicelli	Woodcock Macaroni Company	49,269	Jan. 30	120	1474
Macaroni, spaghetti, vermicelli, and noodles	Auger Baking Co	48,843	Jan. 16	120	893
Magazine. Monthly	Hoffheimer Soap Co	49,199	Jan. 30	120	1467
Magazine. Monthly	Hoffheimer Soap Co	49,200	Jan. 30	120	1467
Magazine. Monthly	S. H. Moore Co	49,488	Feb. 6	120	1817
Magazine or periodical	Homefolks Publishing Company	49,474	Feb. 6	120	1817
Magazines	Criterion Publishing Company	49,821	Feb. 20	120	2434
Malines and mousselines	T. Tiedemann & Son	49,318	Jan. 30	120	1473
Malt extract	Theo. Hamm Brewing Co	48,514	Jan. 2	120	317
Malt extract	Paragon Malt Extract Co	49,981	Feb. 27	120	2747
Malt extracts	Otto Huber Brewery	48,690	Jan. 9	120	650
Malt extracts and peptonized malt foods	A. Lieber	48,501	Jan. 2	120	317
Malt. Non-intoxicating table-	Lauritzen Malt Co	49,384	Feb. 6	120	1813
Malt tonic	McAvoy Brewing Co	48,504	Jan. 2	120	317
Meats. Cured	George A. Hormel & Co	48,457	Jan. 2	120	315
Medical compound	S. H. E. Hayden	49,584	Feb. 13	120	2115
Medical ointment	R. M. Connable	49,806	Feb. 20	120	2433
Medical preparation for genito-urinary diseases	A. F. Kalkhoff	49,284	Jan. 30	120	1471
Medical preparation of sarsaparilla	Gerstle Medicine Co	48,926	Jan. 16	120	896
Medical preparations	Maltine Company	48,761	Jan. 9	120	652
Medicated blackberry brandy	Van Vleet-Mansfield Drug Co	48,836	Jan. 16	120	893
Medicated confections	W. Holloway	48,686	Jan. 9	120	649
Medicated lozenges	J. I. Brown & Son	48,530	Jan. 2	120	318
Medicated lozenges	J. I. Brown & Son	48,678	Jan. 9	120	649
Medicinal and chemical preparations	Dr. D. Jayne & Son	[illegible]	Jan. 16	120	894
Medicinal and chemical preparations	Dr. D. Jayne & Son	[illegible]	Jan. 16	120	894
Medicinal and chemical preparations	Dr. D. Jayne & Son	48,867	Jan. 16	120	894
Medicinal compound	J. P. Cholewinski	49,327	Jan. 30	120	1473
Medicinal cordial	Kirk-Geary & Co	49,971	Feb. 27	120	2746
Medicinal preparation	Leslie E. Keeley Co	49,315	Jan. 30	120	1473
Medicinal preparation. Liquid	Anglo-American Medical Co	48,844	Jan. 16	120	893
Medicinal preparations	Fairchild Bros. & Foster	48,682	Jan. 9	120	649
Medicinal preparations	W. R. Warner & Co	[illegible]	Jan. 16	120	[illegible]
Medicinal preparations	W. R. Warner & Co	[illegible]	Jan. 16	120	[illegible]
Medicinal preparations	W. R. Warner & Co	[illegible]	Jan. 16	120	[illegible]
[illegible]	W. R. Warner & Co	[illegible]	Jan. 16	120	[illegible]
[illegible]	W. R. Warner & Co	[illegible]	Feb. 20	120	[illegible]
[illegible] Soluble [illegible] compound for	E. Merck	49,100	Jan. 23	120	[illegible]
Medicine	A. H. Keller	[illegible]	Jan. 23	120	[illegible]
Medicine. Alterative	[illegible] Clapp Company	49,118	Jan. 23	120	[illegible]
Medicine for certain named diseases	J. H. [illegible]	[illegible]	Feb. 6	120	[illegible]
Medicine for certain named diseases	P. R. Palethorpe	[illegible]	Feb. 6	120	[illegible]
Medicine for certain named diseases	[illegible] Pill Co	49,577	Feb. 13	120	2115
Medicine for horses. Colic	J. J. Walsh	[illegible]	Feb. 6	120	[illegible]
Medicine for internal use	Potter Drug & Chemical Corporation.	49,734	Feb. 13	120	[illegible]
Medicine for the cure of [illegible] and kindred troubles	F. [illegible]	[illegible]	Jan. 2	120	[illegible]
Medicine for women's diseases. Proprietary	W. A. [illegible]	49,575	Feb. 13	120	[illegible]
[illegible] or remedy for diseases of the kidneys and bladder	Van Vleet-Mansfield Drug Co	[illegible]	Jan. 16	120	[illegible]
[illegible]	Dr. [illegible] & Co	[illegible]	Jan. [illegible]	[illegible]	[illegible]
[illegible]	Dr. [illegible] & Co	[illegible]	Jan. [illegible]	[illegible]	[illegible]
[illegible]	Dr. [illegible] & Co	[illegible]	Jan. [illegible]	[illegible]	[illegible]
[illegible]	Dr. [illegible] & Co	[illegible]	Jan. [illegible]	[illegible]	[illegible]
[illegible]	Dr. [illegible] & Co	[illegible]	Jan. [illegible]	[illegible]	[illegible]
[illegible]	Dr. [illegible] & Co	[illegible]	Jan. [illegible]	[illegible]	[illegible]
[illegible]	Dr. [illegible] & Co	[illegible]	Jan. [illegible]	[illegible]	[illegible]
[illegible]	[illegible] Chemical Company	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible] Manufacturing Company.	[illegible]	[illegible]	[illegible]	[illegible]
Medicines. [illegible]	Dr. [illegible] & Co	[illegible]	Jan. [illegible]	[illegible]	[illegible]
[illegible]	[illegible] Chemical Company	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	Jan. [illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible] Company	[illegible]	Feb. 6	[illegible]	[illegible]

Alphabetical list of trade-marks for January and February—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Metal. Babbitt	National Lead Company	49,405	Feb. 6	120	1214
Metal. Babbitt	National Lead Company	49,406	Feb. 6	120	1214
Metal. Babbitt	National Lead Company	49,407	Feb. 6	120	1214
Metal. Babbitt	National Lead Company	49,408	Feb. 6	120	1214
Metal-polish	Cossebeom, Pearse & Co	49,895	Feb. 13	120	2118
Metal-polish	American Metal Polish Co	49,942	Feb. 27	120	2745
Metal-polishes	J. F. Wulsen & Co	49,289	Feb. 20	120	2437
Mica for lubricating purposes	United States Mica Mining and Milling Co.	49,230	Jan. 30	120	1473
Milk. Condensed	St. Charles Condensing Co	48,942	Jan. 16	120	897
Milk. Condensed	St. Charles Condensing Co	49,081	Jan. 23	120	1157
Milk. Condensed	Borden's Condensed Milk Co	50,088	Feb. 27	120	2749
Milling-cutters	Standard Tool Company	49,922	Feb. 20	120	2436
Mineral water	Derry Hill Mineral Spring Co. of Va	49,723	Feb. 13	120	2121
Mineral water. Natural	Manitou Mineral Springs Company.	49,171	Jan. 23	120	1161
Mineral waters	M. A. Ferris	49,649	Feb. 13	120	2116
Mirrors and mirror frames or supports	J. P. Eustis Mfg. Co	50,007	Feb. 27	120	2745
Molasses	Eastern Refining Co	48,950	Jan. 16	120	897
Molasses	McCann & Co	49,078	Jan. 23	120	1157
Molasses	Boston Molasses Co	49,512	Feb. 6	120	1819
Molasses	Eastern Refining Co	49,918	Feb. 20	120	2438
Molasses taffy, candy kisses, and other candies	Robert F. Mackenzie Co	48,516	Jan. 2	120	317
Mothproof bags	T. Manahan	48,712	Jan. 9	120	640
Motor-cycles	W. F. Remppis	49,346	Jan. 30	120	1472
Mousetraps	A. B. Case	50,086	Feb. 27	120	2749
Mowers. Lawn	Carter's Ink Company	49,083	Jan. 23	120	1158
Mustard	C. Gulden	48,460	Jan. 2	120	315
Mustard and spices	Tone Bros	48,467	Jan. 2	120	316
Mustard and spices	Brownell & Field Company	49,087	Jan. 23	120	1157
Nail-pullers	Tower & Lyon Co	48,748	Jan. 9	120	652
Nails. Horse	Standard Horse Nail Company	49,444	Feb. 6	120	1816
Nails. Horse	Standard Horse Nail Company	49,445	Feb. 6	120	1816
Nails. Horse	Standard Horse Nail Company	49,591	Feb. 13	120	2116
Nails. Horse	Standard Horse Nail Company	49,592	Feb. 13	120	2116
Nails. Horse	Standard Horse Nail Company	49,681	Feb. 13	120	2120
Nails. Horse	Standard Horse Nail Company	49,682	Feb. 13	120	2120
Nails. Horse	Standard Horse Nail Company	49,683	Feb. 13	120	2120
Nails. Horse	Union Horse Nail Company	49,941	Feb. 27	120	2745
Nails. Wire	Union Horse Nail Company	49,984	Feb. 27	120	2746
Nails. Wire	C. F. Baker & Co	49,090	Jan. 23	120	1158
Needles	C. F. Baker & Co	49,323	Feb. 13	120	2116
Nets. Silk hair	C. H. Crowley	49,491	Feb. 6	120	1815
Newspaper. Trade	A. H. Woolley & Co	48,970	Jan. 16	120	898
Newspaper. Weekly	David Williams Company	49,704	Feb. 13	120	2120
Newspaper. Weekly	C. Guild & Co	49,122	Jan. 23	120	1159
Newspaper. Weekly	Billboard Publishing Company	49,228	Jan. 30	120	1469
Newspapers. Comic section of	W. C. & F. P. Church	49,488	Feb. 6	120	1815
Nippers, pincers, and cutting-pliers	New York Herald Company	49,488	Feb. 6	120	1819
	Utica Drop Forge & Tool Company.	49,173	Jan. 23	120	1161
Oil. Castor	Baker Castor Oil Company	48,944	Jan. 16	120	897
Oil. Cod-liver	Waterbury Chemical Company	49,088	Jan. 23	120	1158
Oil. Olive	Marchesini Bros	49,076	Jan. 23	120	1157
Oil. Olive	Thomas McMullen & Co	49,910	Feb. 20	120	2437
Oil. Painting, staining, and graining	James B. Sipe & Co	48,888	Feb. 20	120	2436
Oil. Succedaneum for cod-liver	Norwich Pharmacal Company	50,088	Feb. 27	120	2749
Oils. Lubricating	Galena-Signal Oil Company	48,274	Jan. 30	120	1470
Oils. Petroleum burning	Gulf Refining Company	48,722	Jan. 16	120	891
Oils. Petroleum burning	Gulf Refining Company	48,723	Jan. 16	120	891
Oils. Petroleum burning	Gulf Refining Company	48,724	Jan. 16	120	891
Oils. Petroleum burning	Gulf Refining Company	48,726	Jan. 16	120	891
Oils. Petroleum burning	Gulf Refining Company	48,726	Jan. 16	120	891
Oils. Petroleum lubricating	Gulf Refining Company	48,727	Jan. 16	120	891
Oilcloth clothing	J. H. Rowe Company	48,888	Jan. 9	120	647
Oilcloth clothing	J. H. Rowe Company	48,889	Jan. 9	120	647
Oilcloth clothing	J. H. Rowe Company	48,270	Jan. 30	120	1471
Oilcloth clothing	A. J. Tower Company	49,497	Feb. 6	120	1816
Oilcloth clothing	A. J. Tower Company	49,708	Feb. 13	120	2120
Oilcloth clothing of all kinds	A. J. Tower Company	49,726	Feb. 13	120	2122
Ointment	Dr. Kilmer & Co	48,721	Jan. 16	120	891
Ointment	F. Watson	49,288	Jan. 30	120	1474
Ointment	Potter Drug & Chemical Corporation.	49,273	Feb. 13	120	2115
Ointments	National Food Co	48,895	Jan. 16	120	897
Ointments and lotions	Lasselet Preparation Co	49,288	Jan. 30	120	1470
Ointments. Cream	National Toilet Company	49,889	Feb. 13	120	2116
Olives	C. Gulden	48,459	Jan. 2	120	315
Olives	C. Gulden	48,468	Jan. 16	120	898
Olives	S. J. Valk & Bro	49,284	Feb. 20	120	2438
Olives	S. J. Valk & Bro	49,285	Feb. 20	120	2438
Olives and pickled olives	Los Angeles Olive Growers' Ass'n	49,288	Feb. 13	120	2119
Oxidizers. Metal	O. P. Ritzinger & Sons	48,218	Jan. 16	120	898
Overalls and workmen's shirts, coats or jackets, and pants	S. G. Sanger	49,274	Feb. 20	120	2438
Overcoats, blouses, coats, vests, and trousers	H. S. Peters	49,042	Jan. 23	120	1159
Overcoats, coats, vests, and trousers	Oshkosh Clothing Manufacturing Company.	48,898	Jan. 2	120	317
Overcoats, coats, vests, and trousers. Men's and children's	Manz & Hinz Clothing Co	48,267	Jan. 30	120	1471
Overcoats, coats, vests, trousers, and knee-pants	Myers & Andrews	48,897	Jan. 2	120	317
Overcoats, jackets, trousers, and knee-pants	P. H. O. Clothing Co	48,896	Jan. 2	120	1472
Oxidizers. Metal	Petroleum Co	49,287	Feb. 13	120	2118
Oysters. Shucked and water	C. A. Dunch	49,287	Feb. 13	120	2118
Packing. Steam and water	American Steam Packing Company.	49,141	Jan. 23	120	1160
Packings	American Steam Packing Company.	49,489	Feb. 6	120	1815
	Kinsley & Matthews Company	49,188	Feb. 6	120	1819

Alphabetical list of trade-marks for January and February—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Paint. Acid, heat, water, and weather proof and wood and metal preservative	Hydro-Carbon Manufacturing Company.	48,530	Jan. 2	120	318
Paint for metallic roofs. Liquid	L. C. Brown	49,944	Feb. 27	120	2745
Paint for metallic surfaces	Rinshi Bros	48,898	Jan. 9	120	649
Paint. Liquid	Mineral Liquid Paint Co	48,922	Jan. 16	120	898
Paint. Mineral	Carbonadum Paint Co	49,824	Feb. 13	120	2115
Paints and enamels	Carbonadum Bros	50,075	Feb. 27	120	2745
Paints and insulating compounds	Standard Paint Company	49,880	Feb. 13	120	2120
Paints. Enamel	Pearless Enamel Paint Works	49,978	Feb. 27	120	2745
Paints, enamels, and bronzing liquids. Certain named	Carbonadum Bros	49,825	Feb. 20	120	2438
Paints. Pigments for	Krebs Pigment & Chemical Co	49,681	Jan. 23	120	1158
Paints, varnishes, colors, fillers, surfacers, stains, and enamels	Thomson Wood Finishing Co	48,223	Jan. 16	120	898
Paints, varnishes, colors, fillers, surfacers, stains, and enamels	Thomson Wood Finishing Co	48,224	Jan. 16	120	898
Pajamas and night-robes	T. J. Maxwell Co	49,891	Feb. 20	120	2437
Paper. Blotting	Eaton-Dillaman Co	49,243	Jan. 30	120	1469
Paper-board and envelops or receptacles made therefrom	Thompson & Norris Co	48,467	Jan. 2	120	316
Paper. Bond	W. E. Wroe & Company	49,174	Jan. 23	120	1161
Paper. Certain named	Dennison & Sons	48,888	Jan. 9	120	648
Paper-clips	Cushman & Denison Manufacturing Company.	49,133	Jan. 23	120	1159
Paper. Drawing	Keuhl & Esser Company	49,282	Jan. 30	120	1470
Paper holders and cutters. Roll	Champion Paper Cutter Co	48,947	Jan. 16	120	897
Paper holders and cutters. Roll	Champion Paper Cutter Co	48,948	Jan. 16	120	897
Paper holders and cutters. Roll	King Manufacturing Co	48,967	Jan. 16	120	898
Paper holders and cutters. Roll	United States Paper Cutter Co	48,964	Jan. 16	120	898
Paper holders and cutters. Roll	United States Paper Cutter Co	48,965	Jan. 16	120	898
Paper-stock. Ground wood and wood-pulp for	Appagren & Co	49,790	Feb. 20	120	2433
Paper. Toilet	Stokes & Forsyth	49,492	Feb. 6	120	1816
Paper. Writing	Fox River Paper Company	49,188	Jan. 30	120	1467
Papers. Case lining, sheathing, insulating, and roofing	Standard Paint Company	48,741	Jan. 9	120	652
Papers prepared with moisture-resistant substances	Standard Paint Company	48,742	Jan. 9	120	652
Paste	Preservaline Mfg. Co	49,726	Feb. 13	120	2122
Paste goods. Cereal	John D. Canapa Company	50,080	Feb. 27	120	2749
Peanut-butter	Jel-Nut Manufacturing Company	48,898	Jan. 9	120	649
Pencils. Lead	Eagle Pencil Company	49,123	Jan. 23	120	1159
Pens	C. Howard Hunt Pen Co	48,474	Jan. 2	120	316
Pens. Fountain	L. E. Waterman Company	49,478	Feb. 6	120	1817
Pens. Fountain	L. E. Waterman Company	49,715	Feb. 13	120	2121
Pens. Steel	Perry & Company	49,776	Feb. 13	120	2136
Perfume for repelling mosquitoes	Ceylon Perfume Company	48,480	Jan. 2	120	316
Periodical	W. A. Marsh	49,972	Feb. 27	120	2746
Periodical or magazine. Trade-journal	Lord & Nagle Company	49,838	Feb. 20	120	2434
Periodicals and magazines. News	Municipal News Association	49,832	Feb. 6	120	1819
Phosphate. Bone	Baugh & Sons Company	49,871	Feb. 6	120	1813
Phosphatic solutions	Rumford Chemical Works	49,872	Feb. 20	120	2436
Piano-players, combination-pianos, and parts thereof	Wilcox & White Company	48,888	Feb. 20	120	2437
Pianos	H. Worch	49,080	Jan. 23	120	1158
Pianos	E. E. Gabler	49,822	Feb. 13	120	2115
Pianos	Sterling Company	49,880	Feb. 20	120	2437
Pianos. Upright	John Church Company	48,870	Jan. 9	120	649
Pickers and burring-machines and attachments and parts thereof	Curtis & Marble Machine Co	49,945	Feb. 27	120	2745
Pickers and burring-machines and attachments and parts thereof	Curtis & Marble Machine Co	49,967	Feb. 27	120	2746
Pigment colors and colored paints	J. T. Lewis & Bros. Co	49,041	Jan. 23	120	1158
Pills	F. J. Cheney	49,146	Jan. 23	120	1160
Pills	Allcock Manufacturing Co	49,889	Feb. 13	120	2115
Pills	Lamont, Corliss & Co	50,047	Feb. 27	120	2746
Pills and tablets	E. Brunor	49,464	Feb. 6	120	1816
Pills and tablets for diseases of the blood, liver, stomach, bowels, kidneys, and nerves	C. F. York	48,536	Jan. 2	120	318
Pills for the cure and alleviation of diseases and disorders of the liver	Van Vleet-Mansfield Drug Co	48,988	Jan. 16	120	898
Pills. May-apple	J. Q. Phillips	48,930	Jan. 16	120	897
Pills. Purgative	W. H. Comstock Company	49,219	Feb. 20	120	2434
Pills. Sugar-coated	Lemman & Kemp	49,570	Feb. 13	120	2115
Pin-cushions	O. J. Capewell, Jr	48,821	Jan. 9	120	647
Pins	Plume & Atwood Mfg. Co	49,488	Feb. 6	120	1816
Pins. Toilet	Star Pin Company	49,809	Feb. 13	120	2117
Pistols	Colt's Patent Fire Arms Manufacturing Company.	49,480	Feb. 6	120	1815
Plasters	Johnson & Johnson	49,279	Jan. 30	120	1471
Plasters	Johnson & Johnson	49,280	Jan. 30	120	1471
Plasters	Johnson & Johnson	49,280	Feb. 6	120	1819
Plows, cultivators, rollers, and harrows	Wiard Plow Co	49,888	Feb. 13	120	2117
Plows, rakes, and harrows	Emerson Manufacturing Co	49,288	Jan. 30	120	1469
Plows, rakes, cultivators, and harrows	Merriam Manufacturing Company.	48,886	Jan. 16	120	897
Pocket-cutlery	Tower & Lyon Co	48,747	Jan. 9	120	652
Polish. Certain named	Cowley & Co	49,888	Feb. 13	120	2115
Polishes for wood, metal, marble, and glass	C. H. Eaton & Co	49,822	Feb. 13	120	2115
Powder. Toilet	Byron G. Gould	49,888	Feb. 13	120	2115
Powders for cleaning gold and plated ware and metals	Byron G. Gould	49,824	Feb. 13	120	2115
Powders. Headache	C. A. Brandt	49,888	Jan. 30	120	1469
Presses, dies, and tools for jewelry. Imitations of	E. E. Brandt	49,888	Feb. 13	120	2115
Preparations for certain named diseases	Brandt, Henry and Co	49,888	Feb. 13	120	2115
Preparations for the treatment of certain named diseases	Van Vleet-Mansfield Drug Co	49,888	Feb. 13	120	2115
Preparations for the treatment of certain named diseases	Van Vleet-Mansfield Drug Co	49,888	Jan. 30	120	1469
Preparations, grass, jujube, bamboo, and marshmallow. Vegetable and fruit	C. C. Williams & Co	49,888	Jan. 30	120	1469
Printers' and dyers'. Aniline-mineral colors for	Standard Dyewood Company	49,140	Jan. 23	120	1159
Printing machines. Rotary, operated by hand. Hoppy		49,888	Feb. 27	120	2745
Printing machines		49,888	Jan. 9	120	649
		49,888	Jan. 30	120	1469

Alphabetical list of trade-marks for January and February—Continued.

Title.	Name.	No.	Date.	Official Gazette.	
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Publications. Printed	Fruit Grower Company	40,781	Feb. 13	120	2128
Publications treating of electrotechnics	Electrical Review Pub. Co	40,470	Feb. 6	120	1817
Pulleys, blocks, and parts thereof	Boston & Lockport Block Company.	40,840	Feb. 20	120	2435
Punches of all kinds	Patterson, Gottfried & Hunter	48,698	Jan. 9	120	650
Purgative compounds. Liquid	California Fig Syrup Co	40,681	Feb. 13	120	2115
Quebracho extract	A. Klipstein & Company	50,081	Feb. 27	120	2749
Railway-track bolts	American Iron & Steel M'f'g Co	40,080	Jan. 23	120	1158
Razors	Challenge Cutlery Corp	48,670	Jan. 9	120	649
Razors	H. Clauss	48,918	Jan. 16	120	898
Razors	G. R. Springer	40,166	Jan. 23	120	1161
Razors	Challenge Cutlery Corporation	40,326	Jan. 30	120	1473
Reamers	Standard Tool Company	40,985	Feb. 27	120	2747
Refrigerators	D. Eddy & Sons Co	40,707	Feb. 13	120	2120
Remedies. Eye	Murine Eye Remedy Company	40,888	Feb. 20	120	2437
Remedies for asthma	J. K. Brater	40,996	Feb. 27	120	2767
Remedies for certain named diseases	Radio-Sulpho Co	48,553	Jan. 2	120	318
Remedies for certain named diseases	Brown Mfg. Co	48,909	Jan. 16	120	895
Remedies for certain named diseases	Brown Mfg. Co	48,910	Jan. 16	120	895
Remedies for diseases of the throat, lungs, and bronchial organs	H. Stringer	48,556	Jan. 2	120	319
Remedy and tonic. Headache	G. C. Holden	48,524	Jan. 2	120	312
Remedy. Corn	Fowler Medicine Company	48,954	Jan. 16	120	897
Remedy. External	C. T. Mackenzie	40,671	Feb. 13	120	2115
Remedy for anemia and nervous diseases	C. J. Ulrici	48,962	Jan. 16	120	898
Remedy for blood and nerve diseases	P. R. Palethorpe	40,120	Jan. 23	120	1159
Remedy for certain named diseases	Capudine Chemical Company	48,911	Jan. 16	120	895
Remedy for certain named diseases	Van Vleet-Mansfield Drug Co	48,956	Jan. 16	120	896
Remedy for certain named diseases	W. R. Warner & Co	40,137	Jan. 23	120	1160
Remedy for certain named diseases	X-Zalia Corporation	40,178	Jan. 23	120	1161
Remedy for certain named diseases	Dr. M. F. Groves' Son and Co	40,185	Jan. 30	120	1467
Remedy for certain named diseases	Van Vleet-Mansfield Drug Co	40,504	Feb. 6	120	1812
Remedy for certain named diseases	Van Vleet-Mansfield Drug Co	40,507	Feb. 6	120	1813
Remedy for certain named diseases	Wells & Richardson Company	40,509	Feb. 6	120	1813
Remedy for certain named diseases	Wells & Richardson Company	40,526	Feb. 6	120	1820
Remedy for certain named diseases	Cushman Drug Co	40,662	Feb. 13	120	2115
Remedy for certain named diseases	Porter Medicine Company	40,679	Feb. 13	120	2116
Remedy for certain named diseases	T. P. Van Ness	40,680	Feb. 13	120	2116
Remedy for chicken cholera, roup, and limberneck	J. R. Crume	48,917	Jan. 16	120	895
Remedy for children's colic and cholera infantum	J. C. Franklin's Sons & Co	40,809	Feb. 20	120	2434
Remedy for coughs and ailments of the throat and lungs	Van Vleet-Mansfield Drug Co	48,959	Jan. 16	120	896
Remedy for coughs, colds, croup, and consumption	C. B. Mumford	40,215	Jan. 30	120	1468
Remedy for diseases of women	Gerstle Medicine Co	48,953	Jan. 16	120	894
Remedy for diseases peculiar to women. Proprietary	French Drug Company	40,072	Jan. 23	120	1157
Remedy for headache, neuralgia, and nervousness	J. G. Munson	40,504	Feb. 6	120	1819
Remedy for internal or external use	Curtis & Brown Manufacturing Company.	48,680	Jan. 9	120	649
Remedy for pain in crayon form	J. D. McLaren	40,289	Jan. 30	120	1471
Remedy for rheumatism	C. Carow	40,830	Feb. 20	120	2435
Remedy for the cure of rheumatism	Van Vleet-Mansfield Drug Co	48,957	Jan. 16	120	896
Remedy for the nerves	B. H. Bacon Co	40,462	Feb. 6	120	1816
Remedy for throat affections	Glessner Medicine Co	50,020	Feb. 27	120	2748
Remedy. Liquid	E. A. Near	48,680	Jan. 9	120	650
Remedy. Liquid	G. M. Sloat	40,815	Feb. 20	120	2434
Remedy. Pile	L. B. Transue	40,554	Feb. 6	120	1820
Remedy. Proprietary	Dr. Kilmer & Co	48,797	Jan. 16	120	892
Remedy. Proprietary	Dr. Kilmer & Co	48,798	Jan. 16	120	892
Remedy. Proprietary	Dr. Kilmer & Co	48,799	Jan. 16	120	892
Remedy. Proprietary	Dr. Kilmer & Co	48,800	Jan. 16	120	893
Remedy. Proprietary	Dr. Kilmer & Co	48,801	Jan. 16	120	893
Rifles, shotguns, and revolvers	H. Keidel	40,713	Feb. 13	120	2121
Rings. Finger-	W. Loeb & Co	50,003	Feb. 27	120	2748
Rings. Gold-plated	F. H. Sadler Co	40,485	Feb. 6	120	1818
Rivet and screw bolts	American Iron & Steel M'f'g Co	40,117	Jan. 23	120	1159
Rock-crushers	Samson Manufacturing Company	40,686	Feb. 13	120	2116
Roofing and waterproofing material	National Coal Tar Co	40,280	Jan. 30	120	1471
Rope and twine. Fibrous	Plymouth Cordage Company	48,715	Jan. 9	120	650
Rope and twine. Fibrous or textile	Plymouth Cordage Company	48,716	Jan. 9	120	650
Rope and twine. Fibrous or textile	Plymouth Cordage Company	48,717	Jan. 9	120	651
Rope, cord, and twine	Schlichter Jute Cordage Co	48,743	Jan. 9	120	652
Rubber erasers	Eagle Pencil Company	40,951	Feb. 27	120	2746
Rubber heels and soles	Massachusetts Chemical Company.	40,159	Jan. 23	120	1160
Rubber overshoes	Adams and Ford Company	48,588	Jan. 2	120	321
Rubber. Restored or devulcanized	Philadelphia Rubber Works	40,481	Feb. 6	120	1817
Rubber substitutes	Dermatine Company	50,008	Feb. 27	120	2748
Rubber water-bags and water-bottles	[illegible] Rubber Co	50,027	Feb. 27	120	2749
Rugs	Reed Carpet Company	40,746	Feb. 13	120	2122
Rusks	Holland Rusk Co	40,686	Feb. 13	120	2118
Salt	Francis H. Leggett & Company	40,519	Feb. 6	120	1820
Salve	E. G. Hurrell	48,686	Jan. 9	120	650
Salve	Aid-Ant Remedy Co	48,905	Jan. 16	120	895
Salve and ointment	R. J. Koernlein	48,540	Jan. 2	120	320
Salve. Pile-	Van Vleet-Mansfield Drug Co	48,960	Jan. 16	120	896
Salves	Wi-de-me Company	48,969	Jan. 16	120	898
Sardines and like fish	Wells, Stone & Co	48,488	Jan. 2	120	316
Sausage-stuffers and lard-presses	National Specialty Manufacturing Co.	40,837	Feb. 20	120	2436
Saw-swages	Henry Disston & Sons	40,711	Feb. 13	120	2121
[illegible]	E. C. Atkins & Company	48,458	Jan. 2	120	315
[illegible]	Henry [illegible] & Sons	40,380	Feb. 6	120	1814
[illegible]	Henry [illegible] & Sons	[illegible]	Feb. 6	120	1814
[illegible]	Henry [illegible] & Sons	[illegible]	Feb. 6	120	1814
[illegible]	Henry [illegible] & Sons	[illegible]	Feb. 6	120	1814
[illegible]	Henry [illegible] & Sons	[illegible]	Feb. 6	120	1814
[illegible]	Henry [illegible] & Sons	[illegible]	Feb. 13	120	2118
[illegible] and hacksaw-blades. Hack-	C. W. [illegible] & Co	40,750	Feb. 13	120	2122

Alphabetical list of trade-marks for January and February—Continued.

Title.	Name.	No	Date.	Official Gazette.	
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Saws of all kinds	Patterson, Gottfried & Hunter	48,698	Jan. 9	120	650
Saws of all kinds	E. C. Atkins & Company	40,469	Feb. 6	120	1817
Scissors and shears	Challenge Cutlery Corporation	40,965	Feb. 27	120	2746
Scrapers. Earth-	Kilbourne & Jacobs Manufacturing Company.	40,313	Jan. 30	120	1472
Scrapers. Earth-	Kilbourne & Jacobs Manufacturing Company.	40,314	Jan. 30	120	1472
Screw-drivers	Tower & Lyon Co	40,360	Jan. 30	120	1474
Screw-drivers and screw-driver holders	Patterson, Gottfried & Hunter	48,906	Jan. 16	120	897
Screws. Metal	Babbitt Bros	40,334	Jan. 30	120	1473
Seals	E. J. Brooks & Company	40,645	Feb. 13	120	2118
Seed. Clover-	Jessup-Whelan Co	48,636	Jan. 9	120	647
Seed. Grass-	H. E. Conklin	40,759	Feb. 13	120	2128
Seeds	Albert Dickinson Company	48,931	Jan. 16	120	898
Seeds. Certain named	Albert Dickinson Company	40,834	Feb. 20	120	2436
Seeds. Certain named	Albert Dickinson Company	40,835	Feb. 20	120	2436
Seeds. Certain named	Albert Dickinson Company	40,836	Feb. 20	120	2436
Seeds. Certain named	Albert Dickinson Company	40,837	Feb. 20	120	2436
Seeds. Certain named	Albert Dickinson Company	40,838	Feb. 20	120	2436
Seeds. Grass and field	W. G. Scarlett	40,326	Jan. 30	120	1468
Seeds. Grass and field	W. G. Scarlett	40,328	Jan. 30	120	1468
Seeds. Grass and field	W. G. Scarlett	40,489	Feb. 6	120	1817
Seeds. Grass and field	W. G. Scarlett	40,490	Feb. 6	120	1818
Seeds. Grass and field	W. G. Scarlett	40,491	Feb. 6	120	1818
Seeds. Grass and field	W. G. Scarlett	40,492	Feb. 6	120	1818
Seeding-machines	Monitor Drill Co	40,686	Feb. 13	120	2116
Sewing-machine stands and their parts and attachments	Singer Manufacturing Company	40,601	Feb. 13	120	2116
Sewing-machines	A. G. Mason	48,551	Jan. 2	120	319
Sewing-machines	Singer Manufacturing Company	40,599	Feb. 13	120	2116
Sewing-machines	Singer Manufacturing Company	40,600	Feb. 13	120	2116
Sewing-machines	Singer Manufacturing Company	40,602	Feb. 13	120	2116
Sewing-machines	Singer Manufacturing Company	40,603	Feb. 13	120	2116
Sewing-machines	Singer Manufacturing Company	40,604	Feb. 13	120	2116
Sewing-machines	Singer Manufacturing Company	40,605	Feb. 13	120	2117
Sewing-machines and parts thereof	Union Special Machine Company	48,707	Jan. 9	120	650
Sewing-machines and parts thereof	Illinois Sewing Machine Co	40,337	Jan. 30	120	1473
Sewing-machines and parts thereof	Union Special Machine Company	40,361	Jan. 30	120	1474
Sewing-machines and parts thereof	Union Special Machine Company	40,362	Jan. 30	120	1474
Sewing-machines and sewing-machine parts	Household Sewing Machine Co	40,983	Feb. 27	120	2746
Shade-cloth. Oil	Hulse Bradford Co	50,045	Feb. 27	120	2749
Sharpening-stones	Pike Manufacturing Company	40,357	Jan. 30	120	1474
Sharpening-stones	Pike Manufacturing Company	40,660	Feb. 13	120	2119
Sharpening-stones	Pike Manufacturing Company	40,695	Feb. 13	120	2120
Shears and scissors	Graef & Schmidt	48,458	Jan. 2	120	315
Sheetings and drillings	G. L. Montgomery	40,066	Jan. 23	120	1156
Shellac. First coat or substitute for	Glidden Varnish Company	40,884	Feb. 20	120	2436
Shirt-waists and suits. Ladies' and misses'	Rosenthal Bros. Co	40,442	Feb. 6	120	1815
Shirts and dress-shirts. Outer	Cluett, Peabody & Co	40,050	Jan. 23	120	1156
Shirts, collars, and cuffs	Fellows and Company	40,233	Jan. 30	120	1469
Shirts, collars, and cuffs. Dress-	Bloch & Neuburger	40,760	Feb. 13	120	2122
Shirts. Dress-	Richardson, Roberts Dry Goods Co.	40,736	Feb. 13	120	2121
Shirts. Dress and negligée	Manifest Shirt Co	40,801	Feb. 20	120	2432
Shirts. Dress and negligée	Manifest Shirt Co	40,830	Feb. 20	120	2435
Shirts. Dress, bosom, and negligée	Howe & Howe	40,712	Feb. 13	120	2121
Shoe-dressing	Geo. E. Keith Company	48,475	Jan. 2	120	316
Shoe-dressing	Wolff Chemical Company	40,280	Jan. 30	120	1470
Shoe polishes and blackings	F. E. Fennessy	50,040	Feb. 27	120	2749
Shoes and slippers. Leather and canvas	McRae & Bevill	40,963	Feb. 27	120	2746
Shoes and slippers. Leather and canvas	McRae & Bevill	40,974	Feb. 27	120	2746
Shoes, boots, and slippers. Leather	J. G. Brandt Shoe Company	40,880	Feb. 20	120	2436
Shoes. Fine kid	Green-Wheeler Shoe Co	48,660	Jan. 9	120	646
Shoes. Leather	Battreall-Whittinghill Shoe Co	48,495	Jan. 2	120	317
Shoes. Leather	J. P. Hartray Shoe Co	40,124	Jan. 23	120	1159
Shoes made of leather and of canvas	V. K. and A. H. Jones Co	40,284	Jan. 30	120	1470
Shoes. Women's leather	A. H. Berry Shoe Company	40,179	Jan. 30	120	1467
Shotguns, rifles, and revolvers	H. Keidel	40,342	Jan. 30	120	1473
Shoulder-braces, chest-expanders, and suspenders	Knickerbocker Brace Co	40,383	Feb. 6	120	1813
Shovels, scoops, and spades. Steel	Avery Stamping Company	40,165	Jan. 23	120	1161
Shovels, spades, and scoops	Wyoming Shovel Works	48,982	Jan. 16	120	898
Shovels, spades, and scoops	Supplee Hardware Company	40,656	Feb. 13	120	2114
Shovels, spades, scoops, and spading-forks	Supplee Hardware Company	40,297	Jan. 30	120	1471
Shovels, spades, scoops, and spading-forks	Supplee Hardware Company	40,879	Feb. 20	120	2436
Show-cases	John Phillips & Co	40,960	Feb. 27	120	2746
Shrimp. Packed	Barataria Canning Co	48,447	Jan. 2	120	315
Signs. Glass and metal advertising-	Bedwell Sign Co	48,720	Jan. 9	120	651
Signs. Glass and metal advertising-	Bedwell Sign Co	48,721	Jan. 9	120	651
Silk. Embroidery and knitting	J. Pearsall & Co	40,795	Feb. 20	120	2433
Silk floss or embroidery-silk	Incorporated New London Wash Silk Co.	40,063	Jan. 23	120	1156
Silk piece goods	Na Kan Trading Corporation	48,930	Jan. 16	120	899
Silk piece goods having a rough surface	Rogers & Thompson	40,871	Feb. 20	120	2436
[illegible]	Henry E. Frankenberg Company	40,058	Jan. 23	120	1156
[illegible]	Henry E. Frankenberg Company	40,236	Jan. 30	120	1469
[illegible] Dress-	Liberty Silk Co	40,436	Feb. 6	120	1815
[illegible] hollow ware, and tableware. Sterling-	Hamilton and Hamilton, Jr.	40,453	Feb. 6	120	1817
[illegible] ware, hollow ware, and tableware	Wm. A. Rogers	48,461	Jan. 2	120	316
[illegible] ware, hollow ware, and tableware	Wm. A. [illegible]	[illegible]	Jan. 2	120	316
[illegible] ware, hollow ware, and tableware	Wm. A. [illegible]	[illegible]	Jan. 2	120	316
[illegible] ware, hollow ware, and tableware	Wm. A. [illegible]	[illegible]	Jan. 2	120	316
[illegible] ware, hollow ware, and tableware	Wm. A. [illegible]	[illegible]	Jan. 30	120	1469
[illegible] ware	[illegible] Silver Company	[illegible]	Jan. 30	120	1469
[illegible] ware	[illegible] Silver Company	[illegible]	Jan. 30	120	1469
[illegible] ware	[illegible] Silver Company	[illegible]	Jan. 30	120	1469
[illegible] ware	[illegible] Silver Company	[illegible]	Jan. 30	120	1469
[illegible] ware	[illegible] Silver Company	40,760	Feb. 13	120	2122

Alphabetical list of trade-marks for January and February—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Silver-plated hollow ware	International Silver Company	40,625	Feb. 20	120	2634
Silver-plated hollow ware	International Silver Company	40,629	Feb. 20	120	2634
Sizing-strengthening compound	Papyrhesion Company	43,511	Jan. 16	120	888
Skins. Tanned sheep-	Richard Young Company	40,726	Feb. 13	120	2121
Soap	F. T. Hopkins	43,479	Jan. 2	120	316
Soap	Hoffheimer Soap Co	40,576	Feb. 6	120	1512
Soap	Johnson & Johnson	40,261	Feb. 6	120	1513
Soap	Hoffheimer Soap Co	40,655	Feb. 13	120	2118
Soap	Charles N. Crittenton Company	40,667	Feb. 13	120	2120
Soap and soap powder. Laundry and toilet	Beach Soap Company	40,572	Feb. 6	120	1512
Soap. Cake-	A. Klipstein & Company	40,095	Jan. 23	120	1166
Soap. Laundry	Maple City Soap Works	40,344	Jan. 30	120	1472
Soap. Laundry	Maple City Soap Works	40,345	Jan. 30	120	1473
Soap. Laundry	Magic Soap Co	40,267	Feb. 6	120	1513
Soap. Laundry and toilet	A. Conkling	40,638	Feb. 13	120	2118
Soap. Laundry and toilet	F. G. Burke	43,471	Jan. 2	120	316
Soap. Medicated and perfumed	Magic Soap Co	40,268	Feb. 6	120	1513
	Potter Drug & Chemical Corporation.	40,675	Feb. 13	120	2119
Soap. Scouring-	Bon Ami Company	40,626	Feb. 13	120	2117
Soap. Sulfur	Aschenbach & Miller	40,627	Feb. 13	120	2117
Soap. Tar	Pioneer Tar Soap Co	40,317	Jan. 30	120	1472
Soap. Tar	E. A. Olds	40,260	Feb. 6	120	1513
Soap. Toilet and bath	A. Conkling	40,637	Feb. 13	120	2118
Soap. Toilet and laundry	Haskins Bros. & Co	40,633	Feb. 13	120	2118
Soaps. Fluid	A. Wood	40,098	Jan. 23	120	1166
Soda, cream of tartar, and baking-powder. Baking-	E. R. Durkee & Co	40,641	Feb. 13	120	2118
Soda, cream of tartar, and baking-powder. Baking-	E. R. Durkee & Co	40,642	Feb. 13	120	2118
Soda, cream of tartar, and baking-powder. Baking-	E. R. Durkee & Co	40,643	Feb. 13	120	2118
Soda, cream of tartar, and baking-powder. Baking-	E. R. Durkee & Co	40,644	Feb. 13	120	2118
Solder	National Lead Comapany	40,409	Feb. 6	120	1514
Solders, newspaper metals, and Babbitt metals	Mechanical Metal Mfg. Co	43,331	Jan. 16	120	887
Soups. Condensed	Joseph Campbell Company	43,461	Jan. 2	120	315
Soups. Condensed	Joseph Campbell Company	43,664	Jan. 9	120	449
Spades, shovels, and scoops	Avery Stamping Company	43,736	Jan. 9	120	651
Spices	E. B. Millar & Co	40,070	Jan. 23	120	1167
Spices and mustard	E. R. Durkee & Co	43,986	Jan. 16	120	889
Spices. Prepared	Jaburg Bros	40,657	Feb. 13	120	2118
Springwork and wire-spring supports for chairs, sofas, beds, and carriage-seats	Staples & Hazelord Co	43,726	Jan. 9	120	651
Spurs, bits, and stirrups	A. Bourmann	43,514	Jan. 16	120	892
Starch and dextrin	Norddeutsche Kartoffelmehl-Fabrik mit beschränkter Haftung.	40,667	Feb. 13	120	2119
Starch. Corn and laundry	Francis H. Leggett & Company	43,657	Jan. 9	120	646
Starch. Corn and laundry	Francis H. Leggett & Company	43,658	Jan. 9	120	646
Starch for laundry purposes. Lump	J. C. Hubinger Bros. Co	40,698	Feb. 20	120	2437
Starch. Laundry	Cathcart Starch Company	40,688	Feb. 13	120	2120
Starch. Laundry	Cathcart Starch Company	40,689	Feb. 13	120	2120
Starch. Laundry	J. C. Hubinger Bros. Co	40,699	Feb. 20	120	2438
Steel	Park Steel Company	40,162	Jan. 23	120	1161
Steel	Park Steel Company	40,164	Jan. 23	120	1161
Steel	Park Steel Company	40,699	Feb. 20	120	2438
Steel-hardening solution	F. W. Gaugler	43,732	Jan. 9	120	652
Steel. High-speed tool	Fuller Brothers & Co	30,004	Feb. 27	120	2746
Steel ware. Stamped	Jacob J. Volkrath Mfg. Co	40,709	Feb. 20	120	2439
Stockings	Columbia Hosiery Co	40,703	Feb. 13	120	2122
Stogies	R. & W. Jenkinson Co	30,015	Feb. 27	120	2746
Stogies and tobies	S. Ewart & Co	40,646	Feb. 13	120	2118
Stogies or tobies	S. Ewart & Co	40,647	Feb. 13	120	2118
Stove-polish	Fritz Schulz Jun. Aktiengesellschaft.	43,781	Jan. 16	120	891
Stove-polish	Eye Shine Polish Company	40,682	Feb. 20	120	2435
Stoves and ranges	Gem City Stove Co	40,326	Jan. 30	120	1474
Stoves and ranges	Liberty Stove Company	40,697	Feb. 20	120	2437
Stoves, furnaces, and ranges	Favorite Stove & Range Co	40,698	Jan. 16	120	887
Stoves, furnaces, and ranges	Favorite Stove & Range Co	40,699	Jan. 16	120	887
Stoves, heating-stoves, and ranges. Cook-	A. Baldwin & Co	40,697	Feb. 20	120	2437
Stoves, ranges, furnaces, and boilers	Barstow Stove Co	40,320	Jan. 30	120	1470
Stoves, ranges, furnaces, and parts thereof	Scranton Stove Works	40,510	Jan. 16	120	887
Stoves, ranges, furnaces, heaters, and parts thereof	Magee Furnace Co	40,717	Feb. 13	120	2121
Stoves. Removable oven for cooking-	E. E. Hasenclef	40,693	Jan. 9	120	655
Soap	Boston Mohawk Co	40,693	Jan. 23	120	1167
Stockings for men and boys	T. Cohen & Co	40,328	Jan. 30	120	1469
Stomach tonics	Eli Lilly & Company	40,653	Feb. 13	120	2119
Surgical belts and bandages	Sharp & Smith	43,488	Jan. 16	120	888
Surgical dressings	Johnson & Johnson	40,259	Jan. 30	120	1471
Suspenders	Morris Bros	40,248	Jan. 23	120	1165
Suspenders and braces	Harris Suspender Co	40,698	Jan. 9	120	649
Suspenders and braces. Men's	Harris Suspender Co	40,699	Jan. 16	120	889
Suspenders. Men's	L. Oppenheimer's Sons	40,697	Jan. 2	120	317
Sweeping-brooms	J. E. Crawford	40,688	Feb. 27	120	2748
Syrups, beverages, tonics, and extracts for non-intoxicating purposes	Brand Brothers Company	40,512	Jan. 2	120	317
Syrups, beverages, tonics, and extracts for non-intoxicating purposes	Bovril Limited	40,697	Jan. 16	120	886
Tablets, lozenges, and confections	M. H. Alexander Co	43,671	Jan. 9	120	649
Tacks and nails	General Specialty Company	43,344	Feb. 13	120	2116
Tailors' measures	Victor Safety Machine Co	43,332	Jan. 16	120	1470
Tailors' measures	Victor Safety Machine Company	43,333	Feb. 27	120	2747
Tailors' measures	Victor Safety Machine Company	43,334	Feb. 27	120	2747
Tailors' measures	Victor Safety Machine Company	43,335	Feb. 27	120	2747
Tanks and towers	Chicago Tank Co	43,502	Jan. 2	120	316
Tapes, bands, and webbing	Adams, Howell & Cornish Company.	43,516	Jan. 16	120	888
Tea	Thomas Brothers and Company	40,699	Jan. 30	120	1167
Tea. Ceylon	Jaburg Bros	40,658	Feb. 6	120	1520

Alphabetical list of trade-marks for January and February—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Teeth and parts connected therewith. Artificial	Johnson & Lund	40,694	Feb. 6	120	1510
Telephone sets	Beard Manufacturing Company	40,647	Feb. 13	120	2635
Thread. Cotton	Clark Mile-End Spool Cotton Co	43,366	Jan. 30	120	1471
Threads, chenille, and arrasene	Henry E. Frankenberg Company	40,681	Jan. 23	120	1165
Threads, chenille, tinsel, and arrasene	Henry E. Frankenberg Company	40,276	Jan. 30	120	1470
Tire-bolts	Russell, Burdsall & Ward Bolt & Nut Co.	43,696	Jan. 9	120	650
Tobacco and tobacco products	G. W. Chase & Son Mercantile Co	40,274	Feb. 6	120	1512
Tobacco. Chewing and smoking	Bloch Brothers Tobacco Company.	40,661	Jan. 23	120	1167
Tobacco. Smoking and chewing	J. A. Clark	43,776	Jan. 16	120	891
Tobacco. Smoking and chewing	Hoffman and Co	40,277	Feb. 6	120	1512
Toilet cream	J. M. Grosvenor & Co	40,668	Feb. 13	120	2115
Toilet powder	Byron C. Gould	40,119	Jan. 23	120	1159
Toilet water	R. Hudnut's Pharmacy	40,695	Feb. 6	120	1517
Toilet water and liquid perfumes	R. Hudnut's Pharmacy	40,221	Jan. 30	120	1468
Tonic	Nutrolastic Co	43,705	Jan. 9	120	650
Tonic	J. J. McCrohan	43,359	Jan. 16	120	894
Tonic	J. Corato	40,207	Feb. 20	120	2433
Tonic and restorative. Uterine	Rio Chemical Co	40,514	Feb. 20	120	2434
Tonic and sedative. Uterine	Eli Lilly & Company	40,545	Feb. 6	120	1520
Tonic beverage. Stimulating and non-intoxicating	Inesda-Coipho Co	40,279	Feb. 6	120	1513
Tonic. Malt	McAvoy Brewing Co	43,080	Jan. 16	120	886
Tonic. Malt	Independent Brewing Ass'n	40,154	Jan. 23	120	1160
Tonic. Phosphatic	Rios Laboratory Co	40,221	Feb. 20	120	2435
Tonics	Kathermon Chemical Co	40,526	Feb. 6	120	1519
Tonics	S. Isaacs	40,668	Feb. 13	120	2115
Tonics	F. A. Laytins	40,668	Feb. 13	120	2115
Tonics and remedies for dyspepsia and stomach troubles	V. E. Beck	50,085	Feb. 27	120	2749
Tonics and specifics	Fritts & Wiehl	40,192	Jan. 30	120	1467
Tonics, nervine, and sedatives	Dr. Miles Medical Co	40,517	Feb. 20	120	2434
Tooth-powder	Curtis and Brown Manufacturing Company.	43,761	Jan. 9	120	652
Tooth-powder	American Peroxide and Chemical Company.	40,576	Feb. 13	120	2115
Tooth washes and powders	Puritan Drug Company	40,219	Jan. 30	120	1468
Trimmings and braids	Henry E. Frankenberg Company	40,196	Jan. 30	120	1467
Trimmings and braids	Henry E. Frankenberg Company	40,197	Jan. 30	120	1467
Trousers. Fasteners for the waistbands of	Catch On Clasp Mfg. Co	40,220	Jan. 30	120	1469
Trucks or low-wheel wagons. Farm-	Deere & Webber Co	40,230	Jan. 30	120	1472
Trucks or low-wheel wagons. Farm-	Deere & Webber Co	40,230	Jan. 30	120	1472
Trucks or low-wheel wagons. Farm-	Deere & Webber Co	40,231	Jan. 30	120	1472
Trucks or low-wheel wagons. Farm-	Deere & Webber Co	40,695	Feb. 13	120	2116
Trunks	J. F. Parkhurst & Son Co	43,345	Jan. 16	120	887
Trunks	Wellen & Oleiman	40,200	Jan. 30	120	1474
Trunks, valises, and satchels	Abraham & Straus	40,688	Feb. 6	120	1515
Tube-expanders	Ajax Mfg. Co	40,232	Jan. 30	120	1473
Tubing. Flexible	Chicago Tubing & Braiding Co	40,516	Feb. 6	120	1519
Turpentine	Ball Chemical Co	40,698	Feb. 13	120	2120
Twine and binder-twine	Plymouth Cordage Company	43,714	Jan. 9	120	650
Twist-drills	Standard Tool Company	40,251	Feb. 20	120	2433
Twyers	Champion Blower & Forge Company.	40,691	Feb. 13	120	2120
Type-writing machines and parts thereof	Oliver Typewriter Company	43,340	Jan. 16	120	893
Undershirts and underdrawers	Erlanger Bros	40,281	Feb. 27	120	2745
Underwaists	E. H. Horwood	43,711	Jan. 9	120	650
Underwear. Cotton, wool, silk, and linen	Chalmers Knitting Company	43,473	Jan. 2	120	316
Uric-acid solvent	Dr. Haskins Co	40,220	Jan. 30	120	1471
Vacuum-tubes, X-ray tubes, and parts thereof	C. H. F. Müller	43,694	Jan. 16	120	887
Valves and water-valves. Steam-	Fairbanks Co	40,262	Jan. 30	120	1474
Valves and water-valves. Steam-	Fairbanks Co	40,264	Jan. 30	120	1474
Valves for fluids. Regulating	T. P. Ford	40,708	Feb. 13	120	2121
Valves, hydrants, and valve-indicators	Ludlow Valve Manufacturing Company.	40,467	Feb. 6	120	1516
Varnishes	David B. Crockett Co	40,282	Feb. 20	120	2436
Varnishes	American Varnish Company	40,280	Feb. 27	120	2746
Varnishes	American Varnish Company	40,281	Feb. 27	120	2746
Varnishes	John W. Masury & Son	40,270	Feb. 27	120	2746
Varnishes and japans	Mayer & Loewenstein	40,042	Jan. 23	120	1159
Vehicle spring seats and cushions	J. L. Clark	40,322	Jan. 30	120	1469
Vehicles. Certain named	Deere & Webber Company	40,228	Feb. 6	120	1514
Vehicles. Horse-drawn	Studebaker Brothers Manufacturing Company.	40,322	Jan. 30	120	1474
Velveteens	Otto Mfg. Co	40,488	Feb. 6	120	1515
Ventilators, chimney-cowls and ventilating-caps, and ridging	Globe Ventilator Company	40,648	Feb. 27	120	2745
Vermifuges	R. A. Valentine Co	40,140	Jan. 23	120	1159
Vermifuges	Van Vleet-Mansfield Drug Co	40,225	Feb. 6	120	1513
Vermifuges or worm-syrups	S. W. Smith	43,513	Jan. 2	120	315
Vests. Double-breasted buttonless infants'	M. Lowenthal & Brother	43,462	Jan. 2	120	315
Veterinary remedy	C. O. Hattervig	40,266	Jan. 30	120	1468
Vinegar	Shook, Copper & Co	40,573	Feb. 13	120	2119
Wagons	Auburn Wagon Co	40,698	Jan. 30	120	1474
Wagons	Kelley Wagon Comgy	40,699	Jan. 30	120	1475
Washboards	D. B. Jenkins	40,222	Jan. 30	120	1469
Washboards	American Washboard Company	40,223	Feb. 6	120	1514
Washing-machines	Upham Brothers Co	43,338	Jan. 2	120	315
Washing-machines	Rochester Company	43,339	Jan. 16	120	886
Washing-powders	Clinton Soap Company	43,340	Jan. 16	120	886
Washing-preparation in dry or powdered form	Wm. Waltz	43,341	Jan. 16	120	886
Watch-movements	Waltham Watch Co	40,242	Jan. 30	120	1469
Watch-movements	Elgin Watch Co	40,243	Jan. 30	120	1469
Watch-movements	Elgin Watch Co	40,244	Jan. 30	120	1469
Watches and watch-cases	Elgin Watch Co	40,245	Jan. 30	120	1469
Watches and watch parts	Waltham Watch Co	40,246	Jan. 30	120	1469
Watches, watch-cases, and watch-movements	Keystone Watch Case Co	40,248	Jan. 30	120	1469

Alphabetical list of trade-marks for January and February—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Watches, watchcases, and watch-movements	Philadelphia Watch Case Co	48,493	Feb. 6	120	1817
Watches, watchcases, and watch-movements	Philadelphia Watch Case Co	48,536	Feb. 6	120	1819
Water. Natural	W. B. Matthews	48,409	Jan. 16	120	894
Water-supply tanks and valves therefor	Staples Valve Co	48,408	Jan. 2	120	316
Waters. Distilled and carbonated	F. M. Finley	48,641	Feb. 27	120	2749
Weed-destroyer	W. J. Reade	48,757	Jan. 9	120	662
Weighing-machines and parts thereof	E. and T. Fairbanks and Company.	48,484	Jan. 2	120	315
Wheelbarrow-wheels	Kilbourne and Jacobs Manufacturing Company.	48,986	Jan. 16	120	898
Wheelbarrows and the parts thereof	Kilbourne & Jacobs Manufacturing Company.	48,702	Jan. 9	120	650
Wheelbarrows and the parts thereof	Kilbourne & Jacobs Manufacturing Company.	48,703	Jan. 9	120	650
Wheelbarrows and the parts thereof	Kilbourne & Jacobs Manufacturing Company.	48,704	Jan. 9	120	650
Wheelbarrows and the parts thereof	Kilbourne & Jacobs Manufacturing Company.	48,720	Jan. 9	120	651
Wheelbarrows and the parts thereof	Kilbourne & Jacobs Manufacturing Company.	48,730	Jan. 9	120	651
Wheelbarrows and the parts thereof	Kilbourne & Jacobs Manufacturing Company.	48,731	Jan. 9	120	650
Whiskies. All kinds of	S. C. Herbst	49,201	Feb. 20	120	2437
Whiskies, both rye and Bourbon	B. J. Semmes & Co	49,021	Jan. 23	120	1155
Whiskies. Rye and Bourbon	P. Jones & Co	48,549	Jan. 2	120	310
Whisky	H. & H. W. Catherwood	48,540	Jan. 2	120	310
Whisky	Columbia Distilling Co	48,541	Jan. 2	120	310
Whisky	Frankel, Regenthal and Damler	48,543	Jan. 2	120	310
Whisky	Frankel, Regenthal and Damler	48,544	Jan. 2	120	310
Whisky	Frankel, Regenthal and Damler	48,545	Jan. 2	120	310
Whisky	Frankel, Regenthal and Damler	48,546	Jan. 2	120	310
Whisky	J. & E. Mahoney	48,550	Jan. 2	120	310
Whisky	Rubel-Lilienfeld Co	48,553	Jan. 2	120	310
Whisky	Rubel-Lilienfeld Co	48,554	Jan. 2	120	310
Whisky	I. Solomon	48,555	Jan. 2	120	310
Whisky	Straus Brothers Company	48,556	Jan. 2	120	310
Whisky	Straus Brothers Company	48,557	Jan. 2	120	310
Whisky	Angelo Myers Distillery	48,559	Jan. 2	120	310
Whisky	D. L. Moore Distillery Co	48,560	Jan. 2	120	310
Whisky	Wakeman Distilling Co	48,567	Jan. 2	120	310
Whisky	G. V. Wendel	48,570	Jan. 2	120	310
Whisky	Bernheim Distilling Co	48,571	Jan. 2	120	310
Whisky	Chicago Distilling Co	48,576	Jan. 2	120	310
Whisky	G. F. Cochland & Co	48,577	Jan. 2	120	310
Whisky	Goodkind Bros	48,578	Jan. 2	120	310
Whisky	Hagan & Travers	48,580	Jan. 2	120	310
Whisky	Hannah & Hogg	48,581	Jan. 2	120	310
Whisky	H. Kahn	48,582	Jan. 2	120	310
Whisky	Klein Bros	48,584	Jan. 2	120	310
Whisky	S. E. Levi	48,585	Jan. 2	120	310
Whisky	Maury, Blanc & Co	48,587	Jan. 2	120	310
Whisky	A. Myers	48,588	Jan. 2	120	310
Whisky	A. Myers	48,589	Jan. 2	120	310
Whisky	Nelson Distilling Co	48,590	Jan. 2	120	310
Whisky	Old Tesis Distillery Company	48,591	Jan. 2	120	310
Whisky	Oregon Importing Co	48,592	Jan. 2	120	311
Whisky	C. H. Ross & Co	48,593	Jan. 2	120	311
Whisky	F. Schuster	48,594	Jan. 2	120	311
Whisky	J. Spengler	48,595	Jan. 2	120	311
Whisky	Stinson, Fritz & Co	48,596	Jan. 2	120	311
Whisky	Albert M. Guggenheim Company	48,597	Jan. 2	120	311
Whisky	D. Kahn Co	48,598	Jan. 2	120	311
Whisky	D. Kahn Company	48,599	Jan. 2	120	311
Whisky	J. W. Hyndman Co	48,600	Jan. 2	120	311
Whisky	Standard Distilling Co	48,602	Jan. 2	120	311
Whisky	Ullman Einstein Co	48,603	Jan. 2	120	311
Whisky	Ullman Einstein Co	48,604	Jan. 2	120	311
Whisky	Ullman Einstein Co	48,605	Jan. 2	120	311
Whisky	Wakeman Distilling Co	48,606	Jan. 2	120	311
Whisky	William Wexler & Son Company.	48,608	Jan. 2	120	311
Whisky	Wollman-Fritz Co	48,609	Jan. 2	120	311
Whisky	H. Wulf & Sons	48,611	Jan. 2	120	311
Whisky	M. C. Bauer & Company	48,612	Jan. 2	120	311
Whisky	Van Vleet-Mansfield Drug Co	48,613	Jan. 2	120	311
Whisky	Belmont Distillery Co	48,614	Jan. 2	120	311
Whisky	Belmont Distillery Co	48,615	Jan. 2	120	311
Whisky	E. Eisenman	48,616	Jan. 2	120	311
Whisky	F. W. Frank & Co	48,617	Jan. 2	120	311
Whisky	F. W. Frank & Co	48,618	Jan. 2	120	311
Whisky	Hall, Myers & Co	48,619	Jan. 2	120	311
Whisky	Van Vleet-Mansfield Drug Co	48,620	Jan. 2	120	311
Whisky	Kentucky Distilling Co	48,621	Jan. 2	120	311
Whisky	Mount Vernon Company	48,622	Jan. 2	120	311
Whisky	Van Vleet-Mansfield Drug Co	48,623	Jan. 2	120	311
Whisky	Van Vleet-Mansfield Drug Co	48,624	Jan. 2	120	311
Whisky	L. [illegible]	48,625	Jan. 2	120	311
Whisky	[illegible] Co	48,626	Jan. 2	120	311
Whisky	[illegible]	48,627	Jan. 2	120	311
Whisky	Van Vleet-Mansfield Drug Co	48,628	Jan. 2	120	311
Whisky	[illegible]	48,629	Jan. 2	120	311
Whisky	[illegible]	48,630	Jan. 2	120	311

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Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Whisky	Dreyfuss, Weil & Co	48,538	Jan. 16	120	894
Whisky	Dreyfuss, Weil & Co	48,540	Jan. 16	120	894
Whisky	Houck & Dieter Co	48,554	Jan. 16	120	894
Whisky	Straus Brothers Company	48,881	Jan. 16	120	894
Whisky	Star Distillery Company	48,884	Jan. 16	120	894
Whisky	S. Altmayer	49,010	Jan. 23	120	1155
Whisky	Bluthenthal & Heilbronner	49,011	Jan. 23	120	1155
Whisky	Brown-Forman Co	49,012	Jan. 23	120	1155
Whisky	P. Freiler	49,013	Jan. 23	120	1155
Whisky	Mitchell, Fletcher & Company	49,016	Jan. 23	120	1155
Whisky	M. Shaughnessy Distilling Company.	49,017	Jan. 23	120	1155
Whisky	A. E. Norris	49,019	Jan. 23	120	1155
Whisky	Rookam, Gerstley & Co	49,020	Jan. 23	120	1155
Whisky	D. Wise	49,022	Jan. 23	120	1155
Whisky	D. Wise	49,023	Jan. 23	120	1155
Whisky	Wright & Taylor	49,024	Jan. 23	120	1155
Whisky	C. Sandberger	49,032	Jan. 23	120	1156
Whisky	Star Distillery Company	49,037	Jan. 23	120	1156
Whisky	H. Swartz & Co	49,047	Jan. 23	120	1156
Whisky	Star Distillery Company	49,048	Jan. 23	120	1156
Whisky	D. Wise	49,049	Jan. 23	120	1156
Whisky	Brand Brothers Company	49,182	Jan. 30	120	1467
Whisky	J. & A. Freiberg	49,189	Jan. 30	120	1467
Whisky	Freiberg & Workum	49,190	Jan. 30	120	1467
Whisky	Friedman, Keller & Co	49,191	Jan. 30	120	1467
Whisky	Glasgow & Barnes Distilling & Importing Co	49,193	Jan. 30	120	1467
Whisky	L. W. Levy & Co	49,208	Jan. 30	120	1468
Whisky	J. Pohlman & Co	49,216	Jan. 30	120	1468
Whisky	J. Pohlman & Co	49,217	Jan. 30	120	1468
Whisky	J. Pohlman & Co	49,218	Jan. 30	120	1468
Whisky	E. J. Quinn	49,220	Jan. 30	120	1468
Whisky	Raphael & Zeugschmidt	49,222	Jan. 30	120	1468
Whisky	Raphael & Zeugschmidt	49,223	Jan. 30	120	1468
Whisky	C. H. Ross & Co	49,224	Jan. 30	120	1468
Whisky	Edgewood Distilling Company	49,247	Jan. 30	120	1469
Whisky	Waldeman Company	49,259	Jan. 30	120	1470
Whisky	Union Wholesale Liquor Co	49,263	Jan. 30	120	1470
Whisky	Carstairs, McCall & Co	48,465	Feb. 6	120	1816
Whisky	Jacobs & Garrett	48,475	Feb. 6	120	1817
Whisky	M. Lange	48,477	Feb. 6	120	1817
Whisky	Te-Kalon Vineyard Co	48,502	Feb. 6	120	1818
Whisky	B. S. Fleischein Mercantile Co	48,511	Feb. 6	120	1818
Whisky	Carstairs, McCall & Co	48,515	Feb. 6	120	1819
Whisky	E. E. Downham Co	48,518	Feb. 6	120	1819
Whisky	Geo. H. Goodman Company	48,521	Feb. 6	120	1819
Whisky	Glasmer & Barnes Distilling & Importing Co	48,522	Feb. 6	120	1819
Whisky	Leventhal Bros	48,527	Feb. 6	120	1819
Whisky	P. P. Morway & Son	48,532	Feb. 6	120	1819
Whisky	A. Myers	48,536	Feb. 6	120	1820
Whisky	Rosenfeld Bros. & Co	48,542	Feb. 6	120	1820
Whisky	H. Sander	48,544	Feb. 6	120	1820
Whisky	Te-Kalon Vineyard Co	48,551	Feb. 6	120	1820
Whisky	Te-Kalon Vineyard Co	48,552	Feb. 6	120	1820
Whisky	Te-Kalon Vineyard Co	48,553	Feb. 6	120	1820
Whisky	L. J. Adler & Co	48,638	Feb. 13	120	2117
Whisky	Kaufmann Bros. & Co	48,660	Feb. 13	120	2119
Whisky	M. Lange	48,661	Feb. 13	120	2119
Whisky	Schoenkmann & Seligmann Company.	48,676	Feb. 13	120	2119
Whisky	Stinson, Gunst & Co	48,694	Feb. 13	120	2120
Whisky	A. Loeb	48,716	Feb. 13	120	2121
Whisky	Schoenkmann & Seligmann Company.	48,729	Feb. 13	120	2121
Whisky	Bights Bros. & Co	48,760	Feb. 13	120	2122
Whisky	Lazarus and Nassauer	48,771	Feb. 13	120	2123
Whisky	L. Nelson	48,775	Feb. 13	120	2123
Whisky	Donaghan Importing Company	48,776	Feb. 13	120	2123
Whisky	Hoffheimer Bros. Co	48,782	Feb. 13	120	2123
Whisky	Mikolewsky & Kraus	48,784	Feb. 20	120	2333
Whisky	T. W. Samuels Dist'y	48,785	Feb. 20	120	2333
Whisky	Glaser Grocery Company	48,808	Feb. 20	120	2333
Whisky	J. & A. Freiberg	48,809	Feb. 20	120	2334
Whisky	J. J. Hagerty & Co	48,812	Feb. 20	120	2334
Whisky	J. A. Bolzi Company of Baltimore City.	48,813	Feb. 20	120	2334
Whisky	Hoffheimer Bros. Co	48,818	Feb. 20	120	2334
Whisky	D. Kelly Co	48,828	Feb. 27	120	2745
Whisky	Ullman Einstein Co	48,829	Feb. 27	120	2745
Whisky	Beuk and Grieves	48,830	Feb. 27	120	2745
Whisky	Maury, Blanc & Co	48,832	Feb. 27	120	2746
Whisky	Standard Distilling Co	48,833	Feb. 27	120	2746
Whisky	Standard Distilling Co	48,834	Feb. 27	120	2746
Whisky	C. F. Blanchon	48,837	Feb. 27	120	2746
Whisky	A. Gundelfinger & Bros	48,838	Feb. 27	120	2746
Whisky	E. Spaid & Sons	48,839	Feb. 27	120	2746
Whisky	F. J. Rauchs Liquor Co	48,841	Feb. 27	120	2746
Whisky	J. W. Hyndman Co	48,842	Feb. 27	120	2746
Whisky	Star Distillery Company	48,843	Feb. 27	120	2746
Whisky	Van Vleet-Mansfield Drug Company	48,844	Feb. 27	120	2746
Whisky, Wines, and Brandies	J. Bacon	48,845	Feb. 27	120	2746
Wine	California Wine Association	48,846	Feb. 27	120	2747
Wine	California Wine Association	48,847	Feb. 27	120	2747
Wine	Wm. Heinecke and Co	48,848	Feb. 27	120	2747

Alphabetical list of trade-marks for January and February—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Wines.	S. Hochstadter	46,547	Jan. 2	120	319
Wines.	Rosenblatt Co.	46,981	Jan. 16	120	886
Wines.	S. S. Pierce Co.	46,873	Feb. 20	120	2436
Wines. Bitter.	J. Trimer	46,749	Jan. 2	120	320
Wines. Sparkling.	White Top Champagne Company.	46,539	Jan. 2	120	315
Wire rope.	Durable Wire Rope Co.	46,947	Feb. 27	120	2745
Wire ropes.	A. Leschen & Sons Rope Co.	46,139	Jan. 23	120	1160
Wooden receptacles. Certain named.	Prewitt-Spurr Mfg. Co.	46,777	Feb. 13	120	2123
Worm-syrup.	Dr. C. A. Voorhees Estate	46,861	Feb. 13	120	2116
Wrenches.	Whitman & Barnes Manufacturing Company.	46,835	Feb. 13	120	2117
Yarn. Thread.	Elizabeth Mill Co.	46,471	Feb. 6	120	1817
Yarns. Woolen, worsted, and mohair.	Henry E. Frankenberg Co.	46,194	Jan. 30	120	1467
Yarns. Woolen, worsted, and mohair.	Henry E. Frankenberg Co.	46,195	Jan. 30	120	1467
Yarns. Woolen, worsted, and mohair.	Henry E. Frankenberg Company.	46,196	Jan. 30	120	1467
Yeast. Crumb.	Yost Yeast Co.	46,929	Feb. 20	120	2436

ALPHABETICAL LIST OF LABELS.

Title.	Name.	No.	Date.	Official Gazette. Volume.	Page.
"A A Dental Mouth Wash." (For Mouth-Wash)	Atlanta Antiseptic Co.	12,606	Jan. 9	120	654
"Abdulla & Co., Ltd." (For Cigarettes and Cigarette-Tobacco)	Abdulla & Co.	12,589	Jan. 2	120	322
"Ale of Ginger." (For Ginger-Ale)	Chattanooga Bottling Company.	12,657	Feb. 27	120	2751
"Alexander Hamilton." (For Cigars)	G. B. Samuel	12,660	Feb. 27	120	2751
"Alka-Dent." (For Dentifrice)	C. M. Griswold	12,691	Feb. 27	120	2751
"Almond Cold Cream, La Favorita." (For Cold-Cream)	Jacobus Pharmacal Co.	12,631	Jan. 23	120	1162
"Ambrosia Angel's Food Sweet Vanilla Chocolate." (For Chocolate.)	Ambrosia Chocolate Company	12,621	Jan. 23	120	1162
"Ambrosia Pure Cocoa." (For Cocoa)	Ambrosia Chocolate Company	12,622	Jan. 23	120	1162
"Ambrosia Sweet Chocolate." (For Chocolate)	Ambrosia Chocolate Company	12,620	Jan. 23	120	1162
"American Cabinet." (For Cigars)	R. Steinecke Company	12,626	Jan. 30	120	1475
"Au Marchand Chinois." (For Linen Thread)	Société Anonyme Filature & Filteries Réunies.	12,697	Feb. 13	120	2124
"Birnbaum Cigar Co's. Caswell." (For Cigars)	J. Habis	12,634	Jan. 30	120	1475
"Blue Ribbon." (For Baking-Powder)	Wabash Chemical & Baking Powder Co.	12,657	Feb. 13	120	2124
"Blue Wing Rye Whiskey." (For Rye Whisky)	C. H. Wittenberg Dist'g Co.	12,626	Jan. 23	120	1162
"Body Builders." (For Medicine)	Body Builders Medicine Company.	12,618	Jan. 23	120	1162
"Bonaid." (For Toilet-Paper)	Scott Paper Co.	12,680	Feb. 20	120	2439
"Bonnette." (For Coffee)	Fort Smith Commission Company.	12,671	Feb. 20	120	2439
"Buckeye Cigar." (For Cigars)	J. W. Smith	12,604	Jan. 9	120	654
"Callier's Cut Loaf Cream Candy." (For Candy)	J. B. Callier	12,675	Feb. 20	120	2439
"Capilerbe." (For Hair-Restorative)	C. J. Hugel	12,615	Jan. 23	120	1162
"Columbia Oat Flakes." (For Oat-Flakes)	Albers Bros. Milling Co.	12,642	Jan. 30	120	1475
"Columbia Phonograph Co., Columbia Record." (For Sound-Records.)	Columbia Phonograph Company.	12,688	Feb. 20	120	2439
"Columbia Wheat Flakes." (For Wheat-Flakes)	Albers Bros. Milling Co.	12,644	Jan. 30	120	1475
"Dextro." (For Stationery)	M. Shure	12,651	Jan. 30	120	1475
"District Messenger Boy." (For a Game)	McLoughlin Bros.	12,612	Jan. 9	120	654
"Dr. M. F. Roberts' Malaricide." (For Medicine)	Malaricide Manufacturing Co.	12,663	Feb. 6	120	1821
"Dr. Olga Schiller's Gray Hair Restorer." (For Gray-Hair-Restorer Tonic.)	R. J. Kruger	12,611	Jan. 9	120	654
"Eagle Brand." (For Hair-Restorative)	E. Reynolds	12,682	Feb. 27	120	2751
"Edstrom's Lung Gea." (For Medicine)	O. E. Edstrom	12,677	Feb. 20	120	2439
"El Sasonado." (For Cigars)	A. C. Henschel & Co.	12,619	Jan. 23	120	1162
"Es Kay Whiskey." (For Whisky)	W. P. Shade	12,628	Jan. 30	120	1475
"Ferro-China-Bascal." (For Bitters)	Basilea & Calandra	12,696	Feb. 27	120	2751
"Fig Yeast." (For Yeast)	F. Welchase	12,589	Jan. 2	120	322
"Fil Gira, Noir Sublime." (For Linen Thread)	Société Anme. Filature & Filteries Réunies.	12,695	Feb. 13	120	2124
"Frost King Whiskey." (For Whisky)	Kamp Distilling Co.	12,627	Jan. 23	120	1162
"Glycero-Medicated-Plaster." (For Medicated Plasters)	Physicians Chemical & Drug Company.	12,668	Feb. 13	120	2124
"Haase's Delight." (For Cigars)	L. Haase	12,636	Jan. 30	120	1475
"Handelsman's Munificent Mutual Benedt Trading System." (For Pass-Books.)	I. Handelsman	12,685	Feb. 27	120	2751
"Havana Bit." (For Cigars)	P. Wohl & Co.	12,666	Feb. 20	120	2439
"Hawaiian Pineapple (Long Squares.)" For Cut Pineapple)	Tropic Fruit Company	12,627	Jan. 9	120	654
"Hawaiian Relish." (For a Relish)	Tropic Fruit Company	12,624	Jan. 9	120	654
"Hazel Patch." (For Cigars)	O. A. Leistikow	12,670	Feb. 20	120	2439
"Hills Di-Col-O." (For Medicine)	Indiana Drug Concern	12,661	Feb. 13	120	2124
"Hills Honey & Tar." (For Medicine)	Indiana Drug Concern	12,660	Feb. 13	120	2124
"Hotel Astor Coffee." (For Coffee)	B. Fischer & Co.	12,609	Jan. 9	120	654
"Hydrarg-Iodo-Nucleoid." (For Medicine)	Dinet & Delfosse Pharmacal Co.	12,617	Jan. 23	120	1162
"Hydrarg-Nucleoid." (For Medicine)	Dinet & Delfosse Pharmacal Co.	12,616	Jan. 23	120	1162
"J. C. Crump's Hoof Ointment." (For Hoof-Ointment)	J. C. Crump	12,610	Jan. 9	120	654
"J. C. Crump's Salve." (For Salve)	J. C. Crump	12,609	Jan. 9	120	654
"Jersey Cheese." (For Cheese)	L. Jollmahl	12,665	Feb. 6	120	1821
"Kar-e-van." (For Coffee)	Ganser Coffee Co.	12,633	Jan. 23	120	1162
"Kar-e-van." (For Coffee)	Ganser Coffee Co.	12,634	Jan. 23	120	1162
"Kaston Gold." (For Dental Gold)	Kaston-Williams Gold Company.	12,605	Jan. 9	120	654
"King Bee—Honey and Rock." (For a Tonic for Coughs and Colds.)	N. Benjamin Son	12,663	Feb. 6	120	1821
"Krakrjak." (For Biscuits)	Union Biscuit Company	12,645	Jan. 30	120	1475
"La Chapine." (For Flour)	I. Rich	12,698	Feb. 13	120	2124
"La Cigale French Bath Sachet." (For Toilet Articles)	F. O'Brien	12,647	Jan. 30	120	1475
"Lady Gertrude." (For Cigars)	J. J. Wiedmann Cigar Box Co.	12,608	Jan. 9	120	654
"Little Nemo's Barefoot Sandal." (For Sandals)	H. Jacobs & Sons	12,681	Feb. 20	120	2439
"M. A. C." (For Cigars)	J. J. Foster	12,601	Jan. 9	120	654
"Mazarcel Bread." (For Bread)	J. S. Norman	12,683	Feb. 27	120	2751
"Mignet." (For Beer)	Wilmanns Bros. Co.	12,649	Jan. 30	120	1475
"McCarthy's Wizard." (For Dry-Plates)	McCarthy Dry Plate Co.	12,629	Feb. 20	120	2439
"McTague's Shell Fish Cocktail Sauce." (For Chili-Sauce)	Triumph Catsup & Pickle Co.	12,629	Jan. 23	120	1162
"Metalia Black." (For Dress Goods)	Botolfs, Hurd & Co.	12,667	Jan. 9	120	654
"Mount Harrison Brand." (For Oranges)	F. L. Sewall	12,599	Jan. 2	120	322
"Mrs. Whitelaw's Bereaved Violet Talcum." (For Toilet Powder.)	M. Chubb	12,670	Feb. 20	120	2439
"Myrtle Cream." (For a Toilet Preparation)	Ogden and Skinner	12,591	Jan. 2	120	322
"Old Ben Franklin." (For Coffee)	H. H. Palmer	12,625	Jan. 23	120	1162
"Outing Braided California Peaches." (For California Peaches)	Castle Brothers	12,602	Jan. 30	120	1475

Alphabetical list of labels for January and February—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
"Patrician Alabastine." (For Shoe-Dressing)	Faunce & Spinney	12,630	Jan. 30	120	1475
"Patrician Friction Polish." (For Shoe-Dressing)	Faunce & Spinney	12,634	Feb. 27	120	2751
"Patrician Satin Gloss Dressing." (For Shoe-Dressing)	Faunce & Spinney	12,640	Jan. 30	120	1475
"Pemmo Dobo." (For Cigars)	T. Krieg	12,632	Jan. 30	120	1475
"Perfect Plaster." (For Adhesive Plasters)	Penn Chemical Company	12,676	Feb. 20	120	2439
"Pilulo Antimalarialis Liver Pills." (For Liver-Pills)	R. Giovanni	12,660	Feb. 13	120	2124
"Pineapple (Short Squares)." (For Cut Pineapple)	Tropic Fruit Company	12,686	Jan. 9	120	654
"Pollock's Game." (For Cigars and Stogies)	R. Pollock	12,652	Jan. 9	120	654
"Pride Crown Brand Meats." (For Meats)	A. R. Worm	12,680	Feb. 27	120	2751
"Pride of Georgia." (For Syrup)	Georgia Syrup Co	12,688	Feb. 6	120	1821
"Pride of Kentucky." (For Bleached Cotton)	J. M. Robinson, Norton & Co	12,592	Jan. 2	120	322
"Prince's Liniment: The Great Panacea." (For Liniment)	A. E. Lynch	12,670	Feb. 20	120	2439
"Rattle-snake Oil Liniment." (For a Liniment)	Masons Medical Co	12,614	Jan. 23	120	1162
"Rest—A High Grade Washing Powder." (For Washing-Powder.)	Soap Products Company	12,664	Feb. 13	120	2124
"Rose de Farina." (For Cigars)	Schmidt & Co	12,627	Jan. 30	120	1475
"Royal Jelly Powder." (For Jelly-Powder)	T. L. Witkop	12,686	Jan. 9	120	654
"Sauer's Pure Concentrated Extract." (For Flavoring Extracts.)	C. F. Sauer Company	12,646	Jan. 30	120	1475
"Saroco Whiskey." (For Whisky)	W. V. Wexberg	12,628	Jan. 23	120	1162
"Sherbet Pineapple." (For Cut, Grated, or Chopped Pineapple)	Tropic Fruit Company	12,696	Jan. 9	120	654
"Si." (For Cigars)	Bethany Cigar Company	12,650	Feb. 20	120	2439
"Snow-White Towel Duplex Weave." (For Towels)	R. Wise	12,598	Jan. 2	120	322
"Soda Mint Water." (For Carbonated Water)	Soda Mint Water Co	12,672	Feb. 20	120	2439
"Speed—Pulverized Scouring Soap." (For Scouring-Soap)	Soap Products Company	12,665	Feb. 13	120	2124
"Sponge-Ate The Greatest Bait." (For Confectionery)	Hook & Crownfield	12,674	Feb. 20	120	2439
"Street." (For Syrup)	C. H. Keyes	12,673	Feb. 20	120	2439
"The Harvard Eye Remedy." (For Eye Medicine)	G. S. Rubin	12,669	Feb. 13	120	2124
"Tubs." (For Pulverized Scouring-Soap)	M. H. Fairchild & Bro	12,632	Jan. 23	120	1162
"Vanocha Brand Mocha and Java Coffee." (For Canned Coffee.)	United States Printing Company	12,600	Jan. 9	120	654
"Violet Self Raising Buckwheat Flour." (For Buckwheat-Flour.)	Albers Bros. Milling Co	12,641	Jan. 30	120	1475
"Violet Self Raising Pancake Flour." (For Pancake-Flour)	Albers Bros. Milling Co	12,640	Jan. 30	120	1475
"Violet Wheat." (For Wheat-Flakes)	Albers Bros. Milling Co	12,643	Jan. 30	120	1475
"Vomiting Syrup for Diphtheria, Croup, &c." (For Medicine)	Keller Bros	12,648	Jan. 30	120	1475
"Wedgwood." (For Salmon)	Stewart Brothers Company	12,654	Feb. 6	120	1821
"Wilborine Salve." (For Salve)	Wilborine Salve Co	12,698	Jan. 9	120	654
"X Ray Polish." (For a Cleaning Preparation)	C E. Braasch	12,613	Jan. 9	120	654

PRINTS.

Title.	Name.	No.	Date.	Official Gazette. Volume.	Page.
"A Stormy Day at the Flat Iron Building." (For Rubbers)	Stahl and Jaeger	1,562	Feb. 27	120	2751
"A Toast." (For Shoes)	Brown Shoe Co	1,539	Jan. 2	120	322
"A Wisconsin Deer Hunt. The Return—Two Bucks." (For Beer.)	Meek Company	1,530	Jan. 2	120	322
"Adler's Spring and Summer Clothes." (For Men's Spring Apparel.)	David Adler & Sons Clothing Co	1,580	Feb. 20	120	2439
"An Easy Shave." (For Shaving-Soap)	O. F. Woodward	1,576	Feb. 20	120	2439
"Argo Salmon—Delicious Baked." (For Salmon)	Alaska Packers Association	1,533	Jan. 2	120	322
"Argo Salmon—Salmon Chowder." (For Salmon)	Alaska Packers Association	1,535	Jan. 2	120	322
"Argo Salmon—Salmon Fritters." (For Salmon)	Alaska Packers Association	1,532	Jan. 2	120	322
"Argo Salmon—Stuffed Eggs." (For Salmon)	Alaska Packers Association	1,534	Jan. 2	120	322
"Arrowetta." (For Cough Medicine)	D. F. Sheldon	1,559	Jan. 9	120	654
"Attention Boys and Girls." (For Shoes)	Brown Shoe Co	1,537	Jan. 2	120	322
"Ayer's Cherry Dentifrice." (For Cherry Dentifrice)	Ayer Medical Company	1,552	Jan. 23	120	1162
"Borden's Columbian Brand Evaporated Cream." (For Evaporated Cream.)	Borden's Condensed Milk Co	1,571	Feb. 6	120	1821
"Buster Brown Blue Ribbon Book." (For Shoes)	Brown Shoe Co	1,547	Jan. 2	120	322
"Buster Brown Guards are on Parade." (For Shoes)	Brown Shoe Co	1,541	Jan. 2	120	322
"Buster Brown's Heart." (For Shoes)	Brown Shoe Co	1,544	Jan. 2	120	322
"C. Poyet Ine. Candles." (For Candles)	Grossman Paper Box Co	1,548	Jan. 9	120	654
"Coming Thro' the Rye." (For Whisky)	Savage Manufacturing Co	1,5[illegible]	Jan. 30	120	1475
"Designs for Playing Card Spots or Pips." (For Playing-Cards.)	Willis W. Russell Card Co	1,572	Feb. 6	120	1821
"Don't Discharge the Cook." (For Flour)	Washburn-Crosby Company	1,597	Jan. 30	120	1475
"Every One to Their Own Taste." (For Flour)	Piqua Flour Co	1,561	Jan. 16	120	980
"Ferguson's Mince Pies." (For Mince Pies)	Boston Bank Note Co	1,554	Jan. 9	120	654
"Ferguson's White Seal." (For Bread)	Boston Bank Note Co	1,552	Jan. 9	120	654
"Ferguson's White Seal." (For Pies)	Boston Bank Note Co	1,553	Jan. 9	120	654
"Fine Braces." (For Braces)	Grossman Paper Box Co	1,560	Jan. 9	120	654
"Fit-Easy." (For Shoes)	A. S. Bacon	1,578	Feb. 20	120	2439
"Hammer the Hammer." (For Revolvers)	Iver Johnson's Arms & Cycle Works.	1,581	Feb. 20	120	2439
"Harry Tether." (For Shoes)	Brown Shoe Co	1,536	Jan. 2	120	322
"Jane and I." (For Shoes)	Brown Shoe Co	1,546	Jan. 2	120	322
"Just as Good." (For Popcorn Confection)	Severson & Johnson	1,558	Jan. 9	120	654
"Little Indians Snow and Crow." (For Shoes)	Brown Shoe Co	1,543	Jan. 2	120	322
"Little Jakkie Horner." (For Shoes)	Brown Shoe Co	1,540	Jan. 2	120	322
"Mandolin." (For Playing-Cards)	Willis W. Russell Card Co	1,564	Feb. 27	120	2751
"Men's Apparel." (For Men's Apparel)	W. C. Both	1,570	Feb. 20	120	2439
"Mill Work." (For Wood Millwork Articles)	J. L. Walpole	1,585	Jan. 23	120	1162
"Mrs. Hord's Colonial Pickle." (For Pickle)	A. G. Hord	1,583	Jan. 23	120	1162
"Oak." (For Playing-Cards)	Willis W. Russell Card Co	1,566	Feb. 27	120	2751
"100 Yard Dash." (For Shoes)	Brown Shoe Co	1,545	Jan. 2	120	322
"Pain King." (For Liniment)	F. B. Clark & Company	1,563	Feb. 27	120	2751
"Prize Medal Brand Garments." (For Underwear)	Salt Lake Knitting Works	1,550	Jan. 30	120	1475
"Punjap." (For a Game)	Blanchard & Company	1,549	Jan. 2	120	322
"Putnam Boots." (For Boots)	H. J. Putnam & Co	1,555	Jan. 23	120	1475
"Sabre." (For Playing-Cards)	Willis W. Russell Card Co	1,565	Feb. 27	120	2751
"Sammie so Haughty." (For Shoes)	Brown Shoe Co	1,542	Jan. 2	120	322
"Sauer's Famous Flavoring Extracts." (For Flavoring Extracts.)	C. F. Sauer Co	1,573	Feb. 20	120	2439
"Shoot 'Injubible' Powder for Field and Trap." (For Powder)	E. I. Du Pont Company	1,580	Jan. 2	120	322
"The Cowboy's Delight." (For Whisky)	Meek Company	1,531	Jan. 2	120	322
"The Delicious." (For Candy)	Rochester Candy Works	1,578	Feb. 20	120	2439
"The First Hands." (For Flour)	Washburn Crosby Company	1,574	Feb. 20	120	2439
"The New Queue Vitolas." (For Cigars)	American Cigar Co	1,557	Jan. 9	120	654
"The New-All Hat." (For Hats)	F. A. Lax	1,577	Feb. 20	120	2439
"The Pride of Buster Brown Blue Ribbon Shoes." (For Shoes)	Brown Shoe Co	1,538	Jan. 2	120	322
"The Return of Jakkie Horner." (For Shoes)	Brown Shoe Co	1,545	Jan. 2	120	322
"The Sign of the Good Glove." (For Gloves and Mittens)	Joseph N. Rismondrath Company	1,524	Jan. 23	120	1162
"Uphill Keep eamest while mom." (For Trading-Stamps)	D. C. McClave	1,570	Jan. 30	120	1475
"Under the Evening Lamps." (For Ale)	Meek Company	1,529	Jan. 2	120	322
"Webb's Sabaragga." (For Substitute for Sarsaparilla)	U. Webb Company	1,588	Jan. 9	120	654
"Your old trunk or baggage made as good as new." (For Trunks and Baggage.)	Emergency Baggage Repair Company.	1,551	Jan. 2	120	322

DISCLAIMER.

Invention.	Patentee.	No. of patent.	Date of patent.	Disclaimer filed.	Official Gazette. Volume.	Page.
Electrodepositing antimony	A. G. Betts	792,267	June 13, 1905	Jan. 24, 1906	120	1169

ALPHABETICAL LIST OF TRADE-MARKS PUBLISHED.

Title.	Name.	Serial No.	Date.	Official Gazette. Volume.	Page.
Abrasive material. Carborundum	Carborundum Company	3,280	Jan. 9	120	617
Acid in combination with proteid. Preparation of hydrochloric	Fairchild Bros. & Foster	11,249	Feb. 6	120	1791
Acid phosphate and a syrup of phosphates	Chas. H. Phillips Chemical Co	1,176	Feb. 20	120	2986
Acid phosphate of lime. Powdered	Provident Chemical Works	2,255	Feb. 13	120	2086
Advertising-cartons	Cole Lithographing Company	5,260	Feb. 6	120	1775
Adzes, hatchets, and axes	Supplee Hardware Co	14,398	Feb. 13	120	2110
Ale	C. H. Evans & Sons	12,947	Jan. 16	120	887
Ale	S. Bolton's Sons	5,494	Jan. 30	120	1149
Ale	Robert Smith Ale Brewing Company.	416	Feb. 6	120	1767
Ale	Boston Beer Company	13,514	Feb. 27	120	2733
Ale and stout	C. Mathon & Hudson	12,985	Feb. 27	120	2735
Ale. Carbonated ginger-	Lowenstein & Co	12,884	Jan. 30	120	1489
Ale. Ginger-	George F. Hewett Co	6,970	Jan. 9	120	622
Ale. Ginger	S. Becker	13,664	Feb. 20	120	2421
Ale. Ginger-	White Rock Min. Spg. Co	8,265	Feb. 27	120	2724
Ale. Ginger-	A. R. Holthusen	12,091	Feb. 27	120	2722
Ale, sarsaparilla, and other sweetened and flavored non-alcoholic carbonated beverages. Ginger-	F. M. Finley	9,735	Feb. 13	120	2102
Alfalfa. Ground products of	California Stock Food Co	7,398	Feb. 27	120	2720
Alloys. Non-ferrous	Lumen Bearing Company	11,451	Jan. 2	120	310
Analgesics	El Zemac Co	13,217	Feb. 27	120	2732
Anesthetic	I. Fehrtain	11,014	Feb. 6	120	1790
Anesthetics. Local	B. B. Lawrence	14,589	Jan. 30	120	1484
Anodyne. Pharmaceutical preparation manufactured from tobacco used as an	Lloyd Brothers	7,383	Jan. 23	120	1143
Antipyretic and analgesic. Granular effervescent salt of strontium and ammonium salicylate, an	H. K. Mulford Company	10,469	Feb. 20	120	2411
Antipyretics	Ammo Phenin Chemical Company	9,347	Jan. 23	120	1146
Antiseptic	R. S. Walker	10,326	Jan. 9	120	623
Antiseptic, analgesic, disinfectant, and deodorant preparation for external application.	Antiseptic Pharmacal Company	14,589	Jan. 30	120	1484
Antiseptic and germicide. Alkaline	Girard Company	14,588	Jan. 30	120	1484
Antiseptic and germicide preparations	Gold Spirit Chemical Co	7,846	Feb. 20	120	2424
Antiseptic compound	P. Hafenmoser	4,320	Jan. 9	120	630
Antiseptic for local and internal use	H. K. Mulford Company	10,469	Feb. 20	120	2411
Antiseptic refrigerants for wounds	G. H. Tichenor	11,486	Jan. 23	120	1140
Antiseptic solution	Mercer Chemical Company	12,927	Feb. 20	120	2418
Antiseptic, tonic, digestive, and blood-purifier Liquid for internal use as an	Peter Drug & Chemical Corporation.	14,602	Jan. 30	120	1494
Antiseptics	Lloyd Brothers	7,351	Jan. 23	120	1143
Antiseptics and germicides	M. W. Savage	5,311	Feb. 20	120	2400
Antiseptics for internal and external use	T. Anda	12,525	Feb. 27	120	2728
Antiseptics or germicides	Lloyd Brothers	7,357	Jan. 23	120	1143
"Antiset-off" compositions	American Offset Company	15,179	Jan. 23	120	1495
Anvils	Wildnash & Hilger	1,782	Jan. 30	120	1440
Asbestos sock-soles	Dr. Hilgers' Asbestos Sock Coy	10,335	Feb. 6	120	1768
Aseptic preparation of ergot of rye used as a hemostatic and in gynecologic work.	H. K. Mulford Company	10,482	Jan. 2	120	308
Asphalt	Warren Chemical & Manufacturing Company.	15,197	Jan. 9	120	645
Asphaltic waterproofing compound	Hydrex Felt & Engineering Co	11,493	Feb. 6	120	1788
Automobiles	St. Louis Motor Carriage Co	9,737	Jan. 2	120	307
Automobiles	T. B. Jeffery & Co	8,439	Feb. 13	120	2089
Automobiles and their component parts	Birmingham Small Arms Co	15,388	Feb. 6	120	1810
Axes	American Tool Company	12,923	Feb. 27	120	2736
Axes, adzes, and hatchets. Boys', hunters', and broad	Bemis & Call Tipsi Works	10,314	Jan. 23	120	1488
Axes and hatchets	Supplee Hardware Company	15,257	Feb. 13	120	2090
Axes, hatchets, and adzes	Collins Company	493	Jan. 9	120	615
Axes, hatchets, and adzes	Collins Company	376	Jan. 23	120	1139
Bacon	P. Gedel & Sons	8,894	Feb. 27	120	2725
Badges. Solid-gold	Irons & Russell	7,888	Jan. 16	120	889
Bags of paper, cloth, &c	Eagle Paper Co	7,388	Feb. 6	120	1770
Baking-powder	Hilmes & Co	8,846	Jan. 9	120	626
Baking-powder	Tyler Baking Powder Company	11,573	Jan. 16	120	888
Baking-powder	Jack Frost Baking Powder Co	1,892	Jan. 23	120	1139
Baking-powder	Cauldwell Manufacturing Co	15,151	Feb. 6	120	1787
Baking-powder	Cauldwell Manufacturing Co	3,063	Feb. 13	120	2083
Baking-powder	Tyler Baking Powder Company	11,574	Feb. 13	120	2083
Baking-powder, bicarbonate of soda, and cream of tartar	J. D. & E. E. Chesbrough Co	11,869	Feb. 13	120	2083
Balls. Base-	A. [illegible] & Company	8,381	Jan. 16	120	885
Balls. Base-	A. J. [illegible] Co	8,382	Jan. 2	120	305
Balls. Base, cricket, basket, and foot	A. J. [illegible] Co	8,383	Jan. 23	120	1135
Bands and drum heads	A. J. [illegible] Co	8,384	Jan. 23	120	1135
Banjos	Tyler [illegible] Company	12,581	Feb. 27	120	2731
Banjos, guitars, mandolins, violins, violoncellos, and double-bass Viols. Strings for	Lyon & May	11,242	Feb. 20	120	2414
Bath-tubs and lavatories	Lyon & May	11,243	Feb. 20	120	2414
Bath-tubs and stands	Kellogg Sanitary Company	9,379	Feb. 27	120	2730
Bats. Base-ball	Standard Sanitary Mfg. Co	12,731	Feb. 27	120	2730
	A. G. Spalding & Bros	12,581	Jan. 30	120	1485

Alphabetical list of trade-marks published during January and February—Continued.

Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Bats. Base-ball	J. F. Hillerich & Son	15,666	Feb. 6	130	1826
Batteries. Dry	Nungesser Electric Battery Co	13,028	Feb. 27	130	2731
Batteries. Dry and wet	Eriemon Telephone Company	11,880	Feb. 27	130	2731
Batteries. Electric	Leclanché Battery Co	3,164	Feb. 6	130	1770
Batteries. Storage	Storage Battery Supply Co	12,577	Feb. 6	130	1769
Battery. Dry	Hess-Bright Manufacturing Co	15,894	Jan. 9	130	648
Bearings, bushings, and journals. Metal	North American Metaline Co	6,139	Feb. 13	130	2026
Beef extract	Cudahy Packing Co	14,888	Jan. 9	130	648
Beer	J. Ruppert	11,888-91	Jan. 2	130	310
Beer	Pabst Brewing Company	14,267	Jan. 2	130	312
Beer	United Breweries Company	6,226	Jan. 9	130	650
Beer	John Brenner Brewing Co	1,269	Jan. 30	130	1440
Beer	Anheuser-Busch Brewing Association.	9,788	Feb. 6	130	1786
Beer	J. L. Hoerber Brewing Co	7,494	Feb. 13	130	2089
Beer	Christian Moerlein Brewing Co	14,362	Feb. 13	130	2130
Beer	Stors Brewing Co	7,194	Feb. 20	130	2468
Beer	Anheuser-Busch Brewing Association.	9,776	Feb. 20	130	2469
Beer	Hoster-Columbus Associated Breweries Co.	3,636	Feb. 27	130	2734
Beer and bottled beer. Lager	Terre Haute Brewing Co	7,269	Feb. 20	130	2405
Beer. Lager	J. Chr. G. Hupfel Brewing Co	6,238	Jan. 2	130	308
Beer. Lager	S. S. Pierce Co	5,662	Jan. 2	130	308
Beer. Lager	F. A. Foth & Sons	11,114	Jan. 9	130	634
Beer. Lager	Consumers Park Brewing Co	15,120	Jan. 30	130	1465
Bells. Farm, church, and school	William Peter Br'g. Co	6,782	Feb. 27	130	2721
Belt-couplings	C. S. Bell Co	16,157	Feb. 6	130	1812
Belt-dressing	Greene Tweed & Co	15,264	Feb. 20	130	2432
Belt-dressings	Stephenson Mfg. Co	6,063	Feb. 13	130	2090
Belt-fasteners	Black Diamond Manufacturing Company.	5,400-1	Feb. 13	130	2086
Belt-fasteners	Greene, Tweed & Co	14,979	Jan. 9	130	644
Belts. Leather	Manufacturers' Belt Hook Co	7,146	Feb. 27	130	2722
Belting. Leather	A. E. Tomlinson	15,208	Feb. 20	130	2435
Belting. Machine	Patterson, Gottfried & Hunter	13,187	Jan. 9	130	688
Beverage. Dry preparation for making a non-intoxicating	Main Belting Co	16,158	Feb. 20	130	2431
Beverage in extract form for the cure and alleviation of ailments of the blood, brain, &c.	J. C. Eno, Limited	12,667	Feb. 27	130	2725
Beverages made of cola-nuts. Non-alcoholic	A. G. Thompson	12,189	Jan. 30	130	1488
Beverages. Solid salts for making	J. W. Hall	12,319	Jan. 30	130	1492
Bicycles	J. Personeni	7,680	Feb. 13	130	2080
Binders. Loose-leaf	H. Keidel	8,286	Feb. 13	130	2100
Birds. Song	Sisler & Trussell Mfg. Co	11,627	Jan. 30	130	1149
Biscuits	M. Geiser	15,488	Feb. 6	130	1827
Biscuits and cakes	F. B. Washburn & Co	2,982	Feb. 20	130	2397
Biscuits and cakes	Huntley & Palmers	9,443	Feb. 20	130	2403
Bitters	Huntley & Palmers	9,443-4	Feb. 27	130	2725
Bitters	Frankel Rosenthal and Damier	9,111	Jan. 9	130	638
Bitters	M. L. Epperlein	8,948	Jan. 16	130	882
Bitters	John Bardenheier Wine & Liquor Co.	4,842	Feb. 13	130	2088
Blankets	J. Finger	13,149	Feb. 13	130	2111
Blasters	Geo. Bean & Sons	15,971	Feb. 27	130	2740
Blasters for billiousness, jaundice, &c	E. H. Hay	7,080	Feb. 27	130	2732
Bitters. Stomach	Munyons Homeopathic Home Remedy Co.	12,944	Feb. 20	130	2417
Blankets. Wool	S. Levi	11,222	Jan. 9	130	634
Blood and liver purifiers	Aschenbach & Miller	10,004	Feb. 20	130	2419
Blouses, overalls, jumpers, trousers, coats, vests, and workingmen's aprons	Levi Strauss & Co	4,176	Jan. 30	130	1443
Bluing. Washing	Sawyer Crystal Blue Company	10,443	Feb. 6	130	1788
Bluing. Washing	Sawyer Crystal Blue Company	10,443	Feb. 20	130	2411
Boards. Laundry	Griggs, Cooper and Company	9,888	Feb. 6	130	1785
Boats. Folding canvas	Rees Company	5,699	Jan. 9	130	650
Boilers. Steam-generating	G. H. Wheaze	12,788	Feb. 13	130	2090
Boilers. Water-tube	John Callahan and Co	7,881	Feb. 6	130	1779
Boilers and engines or compound	Power Specialty Co	13,263	Feb. 6	130	1782
Bolts and nuts	A. W. Chesterton & Co	12,768	Jan. 23	130	1151
Bonds and the paper used in the formation of new seals, &c.	Kellogg-Mackay-Cameron Co	9,739	Feb. 20	130	2409
Bone. Chemical compounds for the removal of grease, &c., and seals from	Bird-Archer Company	7,880	Feb. 6	130	1779
Bonnets and hats	C. Cleves	5,220	Jan. 2	130	308
Books and paper goods Covers. Duplicate sales-slip	Carter-Crume Co	15,891	Jan. 23	130	1485
Books of	T. D. Taylor	16,145	Feb. 6	130	1823
Books, pads, and tablets. Blank	Lathrop, Lee & Shepard Company	1,198	Feb. 27	130	2713
Boots and shoes. Leather	Beeman & Penn Company	12,923	Feb. 27	130	2731
Boots and shoes. Leather	Cudahy Bros	5,978	Feb. 6	130	1783
Boots and shoes. Leather and cloth	Goodyear Heel Co-ation Company	10,289	Jan. 16	130	899
Boots and shoes. Leather and cloth	F. E. Young Company	14,351	Feb. 13	130	2084
Boots and shoes. Leather and cloth	F. E. Young Company	14,352	Feb. 27	130	2731
Boots and shoes. Leather and cloth	F. E. Young Company	14,353	Feb. 27	130	2731
Bins and Hutchings	Tupper & Hagen	9,412	Feb. 20	130	2433
Boots and shoes. Leather	J. E. Chandler	15,338	Jan. 23	130	1149
Boots and shoes. Leather	J. Leonhardt	7,082	Feb. 6	130	1778
Boots and shoes. Leather	J. F. Miller & Son	7,083	Feb. 6	130	1778
Boots and shoes. Leather	J. E. Owen	8,288	Feb. 6	130	1778
Boots and shoes. Leather	Packing Shoe Co	14,851	Feb. 6	130	1778
Boots and shoes. Leather	Packing Boot & Shoe Co	14,852	Feb. 6	130	1778
Boots and shoes. Leather	Packing Shoe Company	14,853	Feb. 6	130	1778
Boots and shoes. Leather	Upham Bros. Co	8,219-11	Jan. 16	130	882

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Boots and shoes. Leather	J. J. Sabalten and Co	11,017	Jan. 16	130	886
Boots and shoes. Leather	M. A. Packard Company	12,919	Jan. 30	130	1161
Boots and shoes. Leather	Wingo, Elliott & Crump Shoe Co	8,313	Jan. 30	130	1443
Boots and shoes. Leather	E. Goldsberry	9,983	Jan. 30	130	1461
Boots and shoes. Leather	H. L. Bond	12,686	Jan. 30	130	1460
Boots and shoes. Leather	H. H. Brown & Co	10,847	Feb. 6	130	1760
Boots and shoes. Leather	Johnson & Watson Co	10,843	Feb. 6	130	1760
Boots and shoes. Leather	Werthelmer-Swarts Shoe Co	11,908	Feb. 6	130	1794
Boots and shoes. Leather	Mazas Shoe Manufacturing Company.	13,263	Feb. 6	130	1808
Boots and shoes. Leather	W. J. Newman	14,405	Feb. 6	130	1805
Boots and shoes. Leather	Roberts, Johnson & Rand Shoe Company.	16,180	Feb. 6	130	1812
Boots and shoes. Leather	Hamlay & Olmsted Company	7,454	Feb. 13	130	2088
Boots and shoes. Leather	B. F. Reynolds	13,863	Feb. 13	130	2100
Boots and shoes. Leather	A. W. Tedeastle & Co	14,042	Feb. 13	130	2100
Boots and shoes. Leather	Craddock-Terry Company	12,930	Feb. 20	130	2419
Boots and shoes. Leather	E. S. Woodbury & Company	14,434	Feb. 20	130	2422
Boots and shoes. Leather	Guthmann Carpenter & Telling	4,644	Feb. 27	130	2717
Boots and shoes. Leather	Dorothy Dodd Shoe Company	14,371	Feb. 27	130	2737
Boots and shoes. Leather and canvas	Geo. E. Keith Company	7,845	Feb. 20	130	2405
Boots and shoes. Leather and leather-and-cloth	A. E. Little & Company	12,608	Jan. 16	130	888
Boots and shoes. Liquid dressing for	C. L. Hawthaway & Sons	10,586	Jan. 9	130	632
Boots and shoes. Liquid dressing for leather	C. L. Hawthaway & Sons	10,589	Jan. 9	130	632
Boots and shoes. Wire used in making	United Shoe Machinery Company.	10,989	Jan. 30	130	1453
Boots, shoes, and slippers and soles therefor	Nath'l Fisher & Co	14,136	Feb. 6	130	1805
Boots, shoes, and slippers. Leather	Clark-Hutchinson Company	6,960-1	Jan. 2	130	304
Boots, shoes, and slippers. Leather	Clark-Hutchinson Company	6,963	Jan. 2	130	304
Boots, shoes, and slippers. Leather	Hindge, Kalmbach, Logie & Co	1,014	Jan. 23	130	1140
Boots, shoes, and slippers. Leather	Preston B. Keith Shoe Co	6,135	Jan. 30	130	1444
Boots, shoes, and slippers. Leather	Parker Holmes & Company	11,845	Feb. 6	130	1792
Boots, shoes, and slippers. Leather	Parker Holmes & Company	11,847	Feb. 6	130	1792
Boots, shoes, and slippers. Leather	Parker Holmes & Company	16,086	Feb. 6	130	1812
Boots, shoes, and slippers. Leather and cloth	C. K. Sharrood	8,200	Feb. 20	130	2403
Boots, shoes, and slippers of leather or textile material, or both, and soles therefor.	Hanan & Son	4,730	Feb. 6	130	1773
Boots, shoes, and slippers of leather or textile material, or both, and soles thereof.	Morse & Rogers	9,154	Jan. 2	130	306
Boots, shoes, and slippers of leather or textile materials, or both, and soles therefor.	Edwin C. Burt Company	3,612	Feb. 6	130	1771
Borax. Chemically-pure	Morse & Rogers	9,156	Jan. 2	130	306
Bottles of square or cubical form	S. B. Smith	11,837	Feb. 6	130	1793
Bowling-alleys. Portable	Cook & Bernheimer Co	7,789	Jan. 30	130	1446
Box-toe material and inner soling	American Box Ball Co	2,284	Feb. 20	130	2397
Braids and tapes	F. W. Whitcher	15,839	Jan. 30	130	1466
Braids. Plain	Diekkerhoff, Raffloer & Co	4,680	Feb. 27	130	2716
Brake-shoes	A. H. Rice & Co	7,261	Feb. 13	130	2097
Brandies and fruit brandies	American Brake Shoe & Foundry Company.	1,599	Jan. 9	130	616
Brandy	C. F. Lauber	15,671	Feb. 6	130	1808
Brandy	H. Campe & Co	6,894	Jan. 9	130	652
Brandy	P. J. Bowlin Liquor Co	9,484-5	Feb. 6	130	1784-5
Brandy. Apricot	Geo. Bean & Sons	15,978	Feb. 27	130	2740
Brandy. Corn	Nuyens & Cie	11,440	Jan. 23	130	1146
Bread	Charles Jacquin et Cie	7,345	Feb. 13	130	2086
Bread	D. R. Cone	11,676	Feb. 27	130	2730
Bread. Wheat	L. Heying	12,102	Feb. 27	130	2733
Brooms	E. A. Williams, Incorporated	10,967	Feb. 20	130	2412
Brooms	American Broom & Brush Co	12,364-6	Jan. 9	130	637
Brooms	American Broom & Brush Co	12,360	Jan. 9	130	637
Brooms	Lee Broom & Duster Company	16,805	Feb. 27	130	2744
Brushes	Ihle and Grupp	12,228	Jan. 2	130	311
Brushes. Painters' and decorators'	Hanlon & Goodman	10,919	Jan. 2	130	309
Brushes. Toilet, tooth, nail, hand, hair, military, cloth, hat, bath, and infant	J. Sakabe	15,304	Jan. 16	130	889
Buggies and carriages	Rock Hill Buggy Co	11,723	Feb. 20	130	2415
Buggies and carriages	Rock Hill Buggy Co	11,723	Feb. 20	130	2415
Butter	Fox River Butter Company	677	Jan. 23	130	1139
Butter	J. P. Redan Produce Co	15,282	Jan. 23	130	1154
Butter	Currier-Todd Co	13,455	Feb. 6	130	1803
Butter	D. E. Wood Butter Co	15,709	Feb. 6	130	1809
Butter	Beyer Bros. Co	10,185	Feb. 13	130	2102
Butter	E. C. Whitford Company	13,107	Feb. 13	130	2103
Butter	Francis H. Leggett & Company	9,314	Feb. 20	130	2402
Butter. Nut	J. Menendez	11,998	Feb. 20	130	2415
Butterin or oleomargarin	C. G. Purdy	8,622	Jan. 16	130	882
Button parts	Bragg & Fitts	1,207	Feb. 6	130	1768
Buttons	C. H. Schott	14,841	Feb. 6	130	1806
Buttons and shirt-studs. Sleeve, link, collar, and emblem	Diekkerhoff, Raffloer & Co	4,670	Jan. 30	130	1443
Buttons and studs. Sleeve and collar	Phoenix Jewelry Co	16,468	Feb. 20	130	2423
Cakes	Fuqua Bros' & Rogers	5,264-5	Feb. 27	130	2719
Calfskin, patent-leather, and waxed calf	J. Hoshbaum	16,260	Feb. 13	130	2134
Calicoes	Dorey & Burkhart	10,913	Jan. 30	130	1462
Calicoes	American Printing Company	3,643	Jan. 2	130	322
Calicoes	American Printing Company	3,644	Jan. 2	130	322
Cameras. Panoramic	American Printing Company	3,645	Jan. 2	130	322
Candies	Rochester Panoramic Camera Company.	13,884	Feb. 27	130	2733
Candies and chocolates of all descriptions	Rudolf & Co	11,988	Feb. 20	130	2416
Candies and chocolates of all descriptions	S. F. Whitman & Son	14,388	Feb. 6	130	1808
Candies, chocolates, and bonbons	S. F. Whitman & Son	14,389	Feb. 6	130	1808
Candies. Chocolates, bonbons, and similar	D. Ansbach & Sons	781	Feb. 15	130	2134
Candies of all kinds	Russell & Co	967	Feb. 6	130	1787
Candy	Beardsley Company	12,770	Jan. 30	130	1466
Candy	C. E. Stowell	11,272	Jan. 2	130	309
Candy	Royster & Brothers	9 633	Jan. 30	130	1466

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Candy	Sweet Candy Co	7,542	Feb. 20	120	2404
Candy	P. Wunderle	8,709–10	Feb. 27	120	2724–5
Candy. Chocolate and all kinds of	Great American Automatic Vending Machine Company.	8,143	Feb. 27	120	2723
Candy. Cough	Doniphan & Co	4,016	Feb. 20	120	2399
Candy. Hard-boiled	Kibbe Brothers Co	9,511	Jan. 30	120	1450
Candles. Short thick	Clarke's Pyramid and Fairy Light Company.	7,431–3	Jan. 23	120	1144
Canned corn	P. Hohenadel, Jr	10,164	Feb. 6	120	1787
Canned corn	P. Hohenadel, Jr. Co	10,165	Feb. 6	120	1787
Canned corn	P. Hohenadel, Jr., Canning Co	10,166	Feb. 6	120	1787
Canned extract of green corn	Hasarot Canneries Company	8,802	Feb. 27	120	2725
Canned fish	Schwabacher Bros. & Co	11,332–3	Feb. 20	120	2415
Canned fruits	Gennerich & Von Bremen	16,092	Feb. 6	120	1812
Canned fruits and vegetables	G. Frank	10,884	Jan. 16	120	883
Canned fruits and vegetables	Gibbe Preserving Company of Baltimore City.	7,056	Jan. 23	120	1143
Canned fruits and vegetables	James M. Houston Grocer Company.	1,730	Jan. 30	120	1440
Canned fruits and vegetables	Pratt-Low Preserving Co	6,550	Jan. 30	120	1445
Canned fruits and vegetables	Pratt-Low Preserving Co	1,256	Feb. 6	120	1768
Canned fruits and vegetables	J. E. Krieta	7,121	Feb. 6	120	1778
Canned fruits and vegetables	Waldeman Company	3,041–2	Feb. 13	120	2099
Canned lobsters, mackerel, clams, and clam-chowder	Davis, Baxter & Company	9,077	Feb. 20	120	2407
Canned meats	Portland Packing Company	9,185	Jan. 30	120	1449
Canned oysters, fish, clams, crabs, shrimp, and lobsters	Francis H. Leggett & Company	9,179	Jan. 16	120	882
Canned pineapples	A. Booth and Company	5,135	Jan. 2	120	302
	Planters Packing and Preserving Co.	5,066	Feb. 27	120	2717
Canned salmon	J. G. Megler	11,309–10	Jan. 2	120	309
Canned salmon	J. G. Megler	11,312	Jan. 2	120	309
Canned salmon	J. G. Megler	11,311	Jan. 9	120	634
Canned salmon	J. G. Megler	11,313	Jan. 9	120	635
Canned salmon	Fidalgo Island Packing Co	12,979	Feb. 13	120	2107
Canned salmon	Fidalgo Island Packing Co	12,982–3	Feb. 13	120	2107
Canned sardines	Fidalgo Island Packing Co	12,984	Feb. 20	120	2419
Canned sardines	C. B. Mitchell	9,385	Jan. 9	120	628
Canned sardines	William Underwood Company	12,389	Jan. 16	120	886
Canned sardines	William Underwood Company	12,391	Jan. 23	120	1150
Canned vegetables and fruits	C. B. Mitchell	9,384	Feb. 27	120	2726
Canned vegetables and fruits	S. J. Seneca	11,790	Jan. 9	120	636
Cane. Milk	Stoddard, Gilbert & Co	13,212	Feb. 6	120	1801
Caps and corks	Oakes and Burger	14,994	Feb. 27	120	2738
Capsules filled. Gelatin	Phoenix Cap Company	6,166	Feb. 6	120	1777
Capsules filled. Gelatin	J. R. Planten	3,303	Feb. 13	120	2094
Car-couplers. Vertical-plane	J. R. Planten	3,305	Feb. 13	120	2094
	National Malleable Castings Company.	1,337	Feb. 6	120	1769
Car-couplers. Vertical-plane	National Malleable Castings Company.	1,339	Feb. 6	120	1769
Car couplings and buffers, draft-gears, and parts thereof	Gould Coupler Co	6,540	Jan. 23	120	1142
Car-door hangers, fasteners, and guide-brackets. Freight	Camel Company	7,804–5	Feb. 6	120	1780
Caramels and candies	American Caramel Co	6,551	Jan. 30	120	1445
Caramels and candies	American Caramel Co	6,553	Jan. 30	120	1445
Card-holder	G. F. Wedderburn	16,415	Feb. 13	120	2114
Cards. Playing	New York Consolidated Card Company.	3,957	Jan. 2	120	301
Cards. Playing	New York Consolidated Card Company.	4,297	Jan. 2	120	301
Cards. Playing	New York Consolidated Card Company.	5,011	Jan. 2	120	302
Cards. Playing	New York Consolidated Card Company.	10,135	Jan. 2	120	307
Cards. Playing	New York Consolidated Card Company.	10,139	Jan. 2	120	307
Cards. Playing	New York Consolidated Card Company.	10,141	Jan. 2	120	308
Cards. Playing	New York Consolidated Card Company.	10,145	Jan. 2	120	308
Cards. Playing	United States Playing Card Co	1,611	Jan. 9	120	616
Cards. Playing	United States Playing Card Co	1,809	Jan. 9	120	616
	New York Consolidated Card Company.	9,240	Jan. 9	120	629
	New York Consolidated Card Company.	9,581	Jan. 9	120	629
Cards. Playing	New York Consolidated Card Company.	10,125–30	Jan. 9	120	631
Cards. Playing	New York Consolidated Card Company.	10,123–3	Jan. 9	120	631–2
Cards. Playing	New York Consolidated Card Company.	10,126	Jan. 9	120	632
Cards. Playing	New York Consolidated Card Company.	10,142–4	Jan. 9	120	632
[illegible]	United States Playing Card Co	10,289–9	Jan. 9	120	632
[illegible]	United States Playing Card Co	1,600–2	Jan. 16	120	877
[illegible]	United States Playing Card Co	1,610	Jan. 16	120	877
[illegible]	United States Playing Card Co	1,808	Feb. 6	120	1769
[illegible]	United States Playing Card Co	10,286	Feb. 13	120	2103
[illegible]	United States Playing Card Co	1,851	Feb. 20	120	2398
[illegible]	United States Playing Card Co	1,889	Feb. 20	120	2398
[illegible]	United States Playing Card Co	1,888	Feb. 20	120	2398
Cards. Playing	New York Consolidated Card Company.	10,143–9	Feb. 20	120	2410
Cards. Playing	New York Consolidated Card Company.	14,289	Feb. 20	120	2428
Cards. Playing	United States Playing Card Co	1,880	Feb. 27	120	2712

Alphabetical list of trade-marks published during January and February—Continued.

Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Cards. Playing	United States Playing Card Co	1,574	Feb. 27	120	2712
Cards. Playing	United States Playing Card Co	1,578	Feb. 27	120	2713
Cards. Playing	United States Playing Card Co	1,582–5	Feb. 27	120	2714
Cards. Playing	United States Playing Card Co	1,594	Feb. 27	120	2714
Cards. Playing	United States Playing Card Co	1,580	Feb. 27	120	2714
Cards. Playing	United States Playing Card Co	1,790	Feb. 27	120	2714
Cards. Playing	United States Playing Card Co	1,796	Feb. 27	120	2714
Cards. Playing	United States Playing Card Co	1,802	Feb. 27	120	2714
Cards. Playing	New York Consolidated Card Company.	9,221	Feb. 27	120	2726
Carpets	Morris and Company	14,560	Feb. 6	120	1806
Carpets and rugs. Woven	Bigelow Carpet Company	12,445	Feb. 6	120	1796
Carpets. Tapestry Brussels and tapestry velvet	Roxbury Carpet Company	10,452	Feb. 20	120	2411
Carpets. Tapestry, Brussels, and velvet	Roxbury Carpet Company	10,452	Jan. 30	120	1458
Carriages	H. H. Babcock Company	16,130	Feb. 6	120	1812
Carriages, wagons, and carts	Studebaker Brothers Manufacturing Company.	12,395	Jan. 2	120	311
Cartridges	Winchester Repeating Arms Co	3,267	Feb. 27	120	2716
Castings and forgings. Iron and steel	McConway & Torley Co	13,460	Jan. 30	120	1462
Catamenial bandages	Borated Specialty Company	15,924	Feb. 6	120	1811
Catarrh, piles, chapped hands, &c. External and internal applications for	M. B. Baxter	7,552	Feb. 27	120	2723
Catchup. Tobacco and tomato	Joseph Campbell Company	15,267	Jan. 9	120	645
Cement. Artificial, Portland, and hydraulic	Round Top Cement Company	7,860	Jan. 16	120	881
Cement. Belt	New York Leather Belting Co	10,619	Feb. 13	120	2103
Cement for building purposes, gypsum, and lime	Liebold & Co	6,122	Feb. 27	120	2730
Cement. Leather and rubber	Eclipse Cement & Blacking Co	1,855	Feb. 20	120	2396
Cement. Natural and artificial Portland and hydraulic	Round Top Cement Company	7,861	Feb. 20	120	2405
Cement. Portland	Kansas Portland Cement Co	10,296	Feb. 6	120	1788
Cement. Portland	Glens Falls Portland Cement Co	11,288	Feb. 6	120	1791
Cement. Portland	Glens Falls Portland Cement Co	11,289	Feb. 13	120	2104
Chains, chain-linked bracelets, key-chains, chatelaines, and chain-trimmings. Watch, fob, neck, lorgnette, boa, and bracelet	Parks Bros. & Rogers	5,293	Jan. 16	120	878
Chains, fobs, chatelaines, and chain-trimmings	C. R. Harris	1,132	Jan. 9	120	615
Chairs and rockers. Double-caned	Delaware Chair Co	9,900	Jan. 30	120	1451
Chairs. Dental	Ritter Dental Mfg. Co	10,360–61	Jan. 23	120	1147
Chairs, settees, tables, and stools. Rustic	Old Hickory Chair Co	6,755	Feb. 27	120	2721
Champagne	R. H. Jones	13,215	Feb. 6	120	1801
Champagne	T. Martindale & Co	14,721	Feb. 13	120	2110
Champagne and still wine	F. Korbel & Bros	8,978	Jan. 9	120	627
Charcoal	B. S. Feiner	10,333	Jan. 30	120	1452
Cheese	Phenix Cheese Co	5,585	Jan. 9	120	620
Cheese. Neufchatel	W. A. Lawrence & Son	8,619	Jan. 30	120	1446
Chemical preparation for the treatment of diseases characterized by hypersecretion of mucus	McKesson & Robbins	4,892	Feb. 6	120	1774
Chests, boxes, and cabinets for silverware, &c	I. N. Deitsch	9,344	Feb. 27	120	2726
Cheviots. Haircloth	Eddystone Manufacturing Company.	10,302	Jan. 30	120	1452
Chili and tabasco sauce and salad-dressing	Joseph Campbell Company	15,266	Jan. 9	120	645
Chocolate and cocoa	Société Anonyme des Chocolats de Montreux, Séchaud & Fils.	6,237	Feb. 6	120	1777
Chocolate and cocoa used as a beverage and for cooking purposes, and sweet chocolate in cake form	W. H. Baker	10,374	Feb. 6	120	1786
Chocolate, cocoa, and milk, hazel-nut, almond, and coffee chocolate	Aktien-Gesellschaft Vereinigte Berner & Züricher Chocolade-Fabriken Lindt & Sprüngli.	6,543	Feb. 20	120	2402
Chocolates	W. L. Gansert	8,276	Jan. 16	120	881
Chocolates	Phelps Company	13,452	Jan. 30	120	1462
Chocolates	Grigge, Cooper and Company	9,651	Feb. 6	120	1786
Chocolates	Shupe-Williams Candy Co	6,123	Feb. 27	120	2720
Chocolates and bonbons	R. L. Perry Co	7,751	Jan. 9	120	624
Chocolates and bonbons	R. L. Perry Co	7,753	Jan. 30	120	1447
Cigarette-holders	A. Q. Walsh	4,272	Feb. 6	120	1772
Cigarette-paper	C. Schitts	13,938	Feb. 13	120	2109
Cigarettes	Société Anonyme "Le Khédive"	6,751	Jan. 30	120	1446
Cigarettes	Miller, Du Brul & Peters Mfg. Co	1,748	Feb. 6	120	1769
Cigarettes	Butler-Butler	8,528	Feb. 6	120	1782
Cigarettes and cigarette-tobacco	H. P. Strauss	12,279	Jan. 16	120	886
Cigars	R. & W. Jenkinson Co	11,243	Jan. 9	120	609
Cigars	W. Boucher	2,805	Jan. 9	120	617
Cigars	J. Weinreich	7,321	Jan. 9	120	622
Cigars	E. H. Gato Cigar Company	9,260–1	Jan. 9	120	630
Cigars	E. H. Gato Cigar Company	10,576	Jan. 9	120	632
Cigars	P. E. Watson	12,702	Jan. 9	120	638
Cigars	Banner Cigar M'f'g. Co	12,408	Jan. 16	120	886
Cigars	Cuesta, Rey & Co	13,270	Jan. 16	120	886
Cigars	S. S. Pierce Co	9,681	Jan. 30	120	1450
Cigars	H. T. Offerdinger	12,449	Jan. 30	120	1462
Cigars	C. B. Perkins	6,926	Feb. 6	120	1778
Cigars	C. B. Perkins	6,927	Feb. 6	120	1778
Cigars	E. H. Gato Cigar Company	9,264	Feb. 13	120	2102
Cigars	Deisel-Wemmer Co	2,220	Feb. 20	120	2399
Cigars	S. S. Pierce Co	9,683	Feb. 20	120	2400
Cigars	A. Stenzel	11,911	Feb. 20	120	2410
Cigars	Cuesta, Rey & Co	12,269	Feb. 20	120	2420
Cigars	T. J. Korina	15,925	Feb. 20	120	2428
Cigars	A. Santaella & Co	16,604–6	Feb. 20	120	2429
Cigars	L. P. Russell	16,629	Feb. 20	120	2430
Cigars	Rodriguez, Argüelles & Company	4,624	Feb. 27	120	2717
Cigars	Rodriguez, Argüelles & Company	9,248	Feb. 27	120	2720
Cigars	Sanchez & Haya Co	9,249	Feb. 27	120	2720
Cigars	John R. Rogers & Company	9,247	Feb. 27	120	2724
Cigars	Lopez y Cia	16,276–9	Feb. 27	120	2728
Cigars and cheroots	O. Blumgart & Bros	2,182	Feb. 6	120	1782
Cigars, cheroots, and cigarettes made of cigar-tobacco	Cayey-Caguas Tobacco Company	15,486	Jan. 30	120	1466

Alphabetical list of trade-marks published during January and February—Continued.

Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Cigars, cheroots, and cigarettes made of cigar-tobacco	Cayey-Caguas Tobacco Company	13,287	Feb 6	120	1802
Cigars, cheroots, and stogies	Wisconsin Cigar Co	14,214	Jan. 30	120	1463
Cigars. Havana	Rothenburg & Schloss	5,570	Feb. 6	120	1778
Cigars. Havana	Havana Commercial Company	11,423	Feb. 13	120	2105
Cigars. Havana	Havana Commerical Company	12,517	Feb. 13	120	2107
Cleaning enameled and porcelain ware. Preparations for	W. C. McKinney	15,478	Jan. 23	120	1154
Cleaning enameled and porcelain ware. Preparations for	W. C. McKinney	13,101	Feb. 20	120	2419
Cleaning marble, tile, stone, mosaic, and composition surfaces. Preparations for	India Alkali Works	15,035	Jan. 2	120	313
Cleaning precious metals. Powdered preparation for	J. B. Haldeman	15,056	Jan. 23	120	1152
Cleansing and scouring preparation in jelly, fluid, paste, and powder form.	Palami Company	11,473	Jan. 30	120	1456
Clippers. Hair	Brown & Sharpe Manufacturing Company.	15,954	Feb. 6	120	1811
Clocks and watches	Western Clock Mfg. Co	14,443	Feb. 27	120	2738
Cloth having a polished finish	J. Milloy and Co	9,070	Feb. 27	120	2726
Clothes-pins	J. H. McBride	11,618	Jan. 16	120	886
Clothing for women and misses, consisting of waists and dresses and suits complete.	Rosenbaum Company	6,530	Feb. 20	120	2402
Clutches	T. B. Wood's Sons	13,541	Feb. 6	120	1803
Coal	Merchants Coal Company	13,160	Feb. 6	120	1801
Coal. Bituminous	Hull Coal & Coke Corporation	15,887	Feb. 6	120	1810
Coal. Bituminous and anthracite	War Eagle Fuel Company	9,802	Jan. 23	120	1146
Coats and trousers	Economy Fuel Co	6,322-3	Jan. 23	120	1142
Coats, overcoats, rain-coats, waistcoats, (or vests,) trousers, and breeches.	J. Samuels & Bro	4,557	Jan. 30	120	1442
Coats, trousers, and vests. Men's	Wetzel, (a Firm)	4,223	Feb. 6	120	1772
Coats, vests, and pants. Men's	J. Yeska	2,003	Feb. 13	120	2092
Coats, vests, and trousers	A. Levy	6,247	Feb. 13	120	2097
Coats, vests, and trousers	Jones Dry Goods Co	10,531	Feb. 20	120	2411
Coats, vests, trousers, and overcoats	Sykes & A. B. Kirschbaum & Co.	2,993	Feb. 27	120	2715
Cocks. Stop and waste	C. C. Hauser	8,353	Feb. 6	120	1782
Cocktails	A. Y. McDonald & Morrison Manufacturing Company.	12,909	Jan. 30	120	1461
Cocoa	George F. Hewett Co	7,995	Jan. 9	120	634
Cocoa and chocolate for a confection	C. J. Van Houten & Zoon	10,704	Feb. 6	120	1799
Cocoa-oatmeal preparations	Hawley & Hoops	8,999	Jan. 9	120	627
Cocoanut. Desiccated	M. Michaelis & Sons	3,550	Feb. 6	120	1771
Coffee	Citizens' Wholesale Supply Co	11,654	Jan. 9	120	626
Coffee	Levering Coffee Co	4,231	Jan. 2	120	308
Coffee	Stewart Brothers Company	14,797	Jan. 2	120	313
Coffee	Hubman & Co	8,641	Jan. 9	120	635
Coffee	Independence Coffee and Spice Co.	11,004	Jan. 9	120	634
Coffee	New Orleans Coffee Co	4,009	Jan. 23	120	1149
Coffee	A. Schilling & Company	9,266	Jan. 23	120	1146
Coffee	Arbuckle Bros	12,939	Jan. 23	120	1151
Coffee	Arbuckle Bros	13,274	Jan. 23	120	1151
Coffee	A. Schilling Company	9,253	Jan. 30	120	1449
Coffee	H. G. Tombler Grocery Co	260	Feb. 6	120	1767
Coffee	Ridenour-Baker Grocery Company.	7,975	Feb. 6	120	1781
Coffee	Consumers Supply Company	12,400	Feb. 6	120	1796
Coffee	Schwabacher Bros & Co Inc	11,834	Feb. 13	120	2105
Coffee	Hills Bros	12,159	Feb. 20	120	2420
Coffee	H. A. Carney	14,997	Feb. 20	120	2424
Coffee	O. W. Peirce Company	15,117	Feb. 20	120	2424
Coffee	Clark, Coggin and Johnson Company.	11,946	Feb. 27	120	2721
Coffee-berry, either whole or ground	Milliken, Tomlinson Co	9,061	Jan. 23	120	1145
Coffee. Cereal	Whitman Grocery Company	8,174	Jan. 16	120	881
Coffee. Cereal	Buffalo Pure Food Company	15,064	Feb. 13	120	2111
Coffee-grinders	National Specialty Manufacturing Company.	2,900	Jan. 23	120	1140
Coffee-mills	Sun Manufacturing Company	13,234-5	Feb. 20	120	2420
Coffee. Roasted	Fort Smith Commission Company	13,019	Jan. 23	120	1151
Collars, collar-pads, and back-bands	Couch Brothers & J. J. Eagan Co.	6,160	Feb. 6	120	1777
Collars. Horse	Wyeth Hardware & Manufacturing Co.	11,497	Feb. 20	120	2414
Cologne	F. B. Shedd	5,744	Feb. 20	120	2401
Colors and colored paints. Pigment	John T. Lewis & Bros. Co	12,828	Feb. 20	120	2413
Colors and colored paints. Pigment	John T. Lewis & Bros. Co	12,880	Feb. 20	120	2413
Colors. Uniting agents for	F. Siebel Chemische Fabrik Limmer.	7,673	Feb. 20	120	2404
Combs	Schrader & Ehlers	9,279	Feb. 6	120	1784
Combs	Dr. H. Traun & Söhne	10,674-5	Feb. 20	120	2412
Combs	Dr. H. Traun & Söhne	10,677	Feb. 27	120	2726
Combs	J. P. Noyes & Company	15,228	Feb. 27	120	2726
Compound for the cure of rheumatism. Liquid vegetable	F. G. Bland	9,013	Feb. 6	120	1783
Compound for the treatment of affections of the respiratory passages	H. F. Bishop	9,848	Feb. 6	120	1788
Compounds for headache, neuralgia, &c. Proprietary	E. Lautenbach	9,906	Jan. 30	120	1451
Condition worders	Economy Manufacturing Co	13,050	Jan. 30	120	1451
Condition-powders for the cure and alleviation of ailments of animals, stock, and poultry	F. G. Boynton	8,062	Jan. 30	120	1448
Consumption cure	F. M. Ford	12,008	Feb. 6	120	1795
Conveyors. Conveyors' dumping	J. J. Harold	10,627	Feb. 27	120	2728
Cord, braided cash	Samson Cordage Works	10,808	Feb. 6	120	1789
Cords, lines, twines, and ropes	Samson Cordage Works	15,811-12	Feb. 6	120	1810
Cords, lines, twines, and ropes	Samson Cordage Works	10,804-5	Feb. 27	120	2727
Cords for binding wheels	A. Bebaert	13,044	Jan. 30	120	1461
Corn-cake	Marland & Co	13,087	Jan. 30	120	1462
Corsets	S. Rothstadter	6,197	Feb. 13	120	2095
Corsets	Colburn, Birtz & Co	9,419	Feb. 20	120	2409
Corsets	F. Dempsey & Co	12,674	Feb. 27	120	2724
Cosmetic hair and skin tonic	American Hominy Company	5,025-6	Feb. 6	120	1776
Cotton-cloth buff-wheels	Warner Sugar Refining Company	9,981	Feb. 6	120	1788

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Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Cornmeal	Gulfport Grocery Company	11,227	Jan. 23	120	1146
Cornmeal	Threefoot Bros & Co	15,157	Jan. 23	120	1153
Cornmeal, both bolted and granulated	Diamond Elevator & Milling Company.	12,895	Jan. 23	120	1150
Corset bones or stays	J. Janowitz	645	Jan. 23	120	1139
Corset-covers and corset-waists	C. A. Powell	8,986	Feb. 13	120	2101
Corset-covers, ladies' pants and vests	Maine Mills Company	4,255	Feb. 6	120	1772
Corset steels and clasps	Royal Worcester Corset Co	7,220	Jan. 16	120	880
Corsets	Weingarten Bros	10,760	Jan. 2	120	309
Corsets	Warner Bros. Co	13,236-6	Jan. 2	120	311
Corsets	Marshall Field & Company	14,098	Jan. 2	120	312
Corsets	Royal Worcester Corset Co	7,222	Jan. 9	120	633
Corsets	Royal Worcester Corset Co	7,227	Jan. 9	120	633
Corsets	Kabo Corset Company	9,972	Jan. 9	120	630
Corsets	Royal Worcester Corset Co	7,224-5	Jan. 16	120	880
Corsets	Royal Worcester Corset Co	7,226-9	Jan. 16	120	880
Corsets	Birdsey & Somers	14,429	Feb. 6	120	1805
Corsets	Artists' Model Corset Co	4,233	Feb. 13	120	2096
Corsets	Birdsey & Somers	11,082	Feb. 20	120	2412
Corsets	John C. Lewis Co	11,523	Feb. 27	120	2720
Corsets	Weingarten Bros	15,364	Feb. 27	120	2720
Corsets and corset-waists	Hess Bros	15,114	Feb. 27	120	2728
Corsets, corset waists and steels	Kops Bros	5,086	Feb. 6	120	1774
Corsets, corset-waists, dress-stays, &c	Coronet Corset Co	6,067	Feb. 27	120	2721
Cosmetic hair and skin tonic	G. V. G. Heberton	14,510	Feb. 20	120	2425
Cotton cloth	Howlett & Lee	12,902-5	Jan. 30	120	1460
Cotton-cloth buff-wheels	Williamsville Manufacturing Company.	871	Jan. 9	120	615
Cotton damask	Rosemary Manufacturing Company.	13,771	Jan. 9	120	630
Cotton duck	Mount Vernon-Woodberry Cotton Duck Company.	5,963	Jan. 2	120	303
Cotton duck	Mount Vernon-Woodberry Cotton Duck Company.	5,980	Jan. 9	120	620
Cotton duck	Mount Vernon-Woodberry Cotton Duck Company.	10,841	Jan. 9	120	634
Cotton duck	Hoganasville Manufacturing Company.	11,781	Jan. 9	120	636
Cotton duck	Hoganasville Manufacturing Company.	11,144	Jan. 23	120	1148
Cotton duck	Mount Vernon-Woodberry Cotton Duck Company.	12,821	Feb. 6	120	1797
Cotton duck	William E. Hooper & Sons Co. of Baltimore City.	3,170	Feb. 13	120	2094
Cotton duck	Mount Vernon-Woodberry Cotton Duck Company.	5,984	Feb. 20	120	2402
Cotton duck	Lowell Weaving Company	13,981	Feb. 20	120	2422
Cotton duck	Lowell Weaving Company	14,019	Feb. 20	120	2422
Cotton in sheeted form for filling mattresses, &c. Prepared	Ostermoor & Co	2,401	Feb. 27	120	2716
Cotton piece goods	Catlin & Co	13,607	Jan. 9	120	639
Cotton piece goods	Tremont & Suffolk Mills	4,966	Jan. 16	120	878
Cotton piece goods	Gilbert Manufacturing Company	10,073	Jan. 23	120	1147
Cotton piece goods	Massachusetts Cotton Mills	5,234	Jan. 30	120	1443
Cotton piece goods	Eagle & Phenix Mills	11,903	Jan. 30	120	1456
Cotton piece goods	Clifton Manufacturing Co	6,222	Feb. 6	120	1777
Cotton piece goods	Eagle & Phenix Mills	12,266	Feb. 6	120	1797
Cotton piece goods	Eagle & Phenix Mills	12,268	Feb. 6	120	1797
Cotton piece goods	Massachusetts Cotton Mills	4,994	Feb. 20	120	2400
Cotton piece goods	Chicopee Manfg. Co	12,353	Feb. 20	120	2425
Cotton piece goods	Tremont & Suffolk Mills	15,386	Feb. 20	120	2426
Cotton piece goods	Parkhill Mfg. Co	3,185	Feb. 27	120	2715
Cotton piece goods	Tremont & Suffolk Mills	4,980	Feb. 27	120	2717
Cotton piece goods	Massachusetts Cotton Mills	4,978	Feb. 27	120	2717
Cotton piece goods	Massachusetts Cotton Mills	4,987	Feb. 27	120	2717
Cotton piece goods	Massachusetts Cotton Mills	4,997	Feb. 27	120	2717
Cotton piece goods	Tremont & Suffolk Mills	5,238	Feb. 27	120	2718
Cotton plaids and stripes	Eagle & Phenix Mills	12,267	Feb. 6	120	1797
Cotton plaids, checks, and stripes, also cotton cheviots	S. A. Croser & Son	3,646	Jan. 2	120	301
Cotton plaids, checks, stripes, and cheviots	S. A. Croser & Son	3,646	Feb. 27	120	2716
Cough cure	Kickapoo Indian Medicine Co	970	Jan. 23	120	1139
Cough drops	Davies, Rose & Co	14,242	Jan. 23	120	1152
Cough-drops for coughs and colds	W. W. Smith	5,989	Feb. 6	120	1776
Court-plasters. Liquid compound with medicinal properties used as a substitute for	Douglas Manufacturing Company.	10,711	Jan. 9	120	633
Covert cloths, vesetians, broadcloths, and cheviots	A. Berd	6,421	Jan. 30	120	1445
Cracker-meal	Grigsby, Cooper & Company	9,852	Feb. 6	120	1786
Crackers and biscuits	Green Green & Co	12,172	Feb. 6	120	1801
Crackers and wafers	Richmond Baking Company	12,722	Jan. 30	120	1469
Crackers, cakes, and bread	Austin, Young & Co	14,421	Feb. 13	120	2110
Cranberries	J. J. White	12,572	Jan. 23	120	1149
Cream for the skin	Pond's Extract Company	12,510	Feb. 6	120	1793
Cream-separators	De Laval Separator Company	9,449	Jan. 2	120	308
Cream-separators	De Laval Separator Company	9,451	Jan. 9	120	633
Cream-separators	American Separator Co	15,370	Jan. 9	120	848
Cream. Sterilized	Pacific Creamery Company	6,469	Feb. 27	120	2720
Curtesses. Drapery and upholstery	Eddystone Manufacturing Company.	10,393	Jan. 30	120	1462
Cutlasses	F. Hammacher	7,995	Jan. 9	120	633
Cutlasses	F. Hammacher	7,993	Feb. 13	120	2093
Cutlasses	Ideal Manufacturing Co	14,393	Feb. 20	120	2413
Cutlery	C. R. Brooks & Co	6,993	Jan. 9	120	633
Cutlery, machine-knives, and parts thereof	Marlin Firearms Co	6,995	Feb. 6	120	1776
Dandruff and skin cure	A. J. Crook	6,112	Feb. 20	120	2413
Dentifrice	F. F. Ingram	9,888	Jan. 16	120	882

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Dentifrices. Liquid	American Peroxide and Chemical Company.	8,103	Jan. 9	120	695
Disinfectants	G. & C. Merriam Company	3,096-7	Jan. 30	120	1441
Disinfectant, preservative, and bactericide	Carmo Chemical Co	10,331	Feb. 6	120	1788
Disinfectants and deodorisers	P. M. Frank Disinfecting Co	15,296	Feb. 27	120	2738
Disinfectants. Liquid	M. E. Platt	7,806	Jan. 9	120	633
Displaying goods in stores. Fixtures for	Heimann - Miller Manufacturing Company.	12,842	Feb. 27	120	2734
Dolls	Abraham & Straus	6,644	Feb. 27	120	2721
Driers. Liquid	Pratt & Lambert	7,043	Jan. 30	120	1448
Drums	Lyon & Healy	11,373	Feb. 27	120	2720
Duck and canvas cleaning compounds	F. H. Young Company	16,255	Feb. 27	120	2741
Duck and canvas cleaning compounds	F. H. Young Company	16,260	Feb. 27	120	2741
Dusters. Feather	Chicago Feather Duster Co	15,542	Feb. 6	120	1808
Dyeing preparation	E. C. Foster	4,821	Jan. 9	120	619
Dyes	Paas Dye Co	14,530-1	Jan. 30	120	1464
Dyestuff	Cassella Color Company	8,078	Jan. 2	120	305
Dyestuff	Cassella Color Company	8,080	Jan. 9	120	626
Dyestuff	Cassella Color Company	8,084	Jan. 9	120	626
Dyestuff	Cassella Color Company	8,085	Jan. 23	120	1145
Dyestuffs. Anilin	Cassella Color Company	8,076	Jan. 30	120	1448
Dyestuffs. Sensitizing	C. Blschoff & Co	11,686	Feb. 20	120	2414
Dynamite, dynamite-cartridges, blasting-gelatin, and low powder.	Farbenfabriken of Elberfeld Co	15,502	Feb. 27	120	2730
Dyspepsia-cakes	Aetna Powder Co	5,660	Feb. 27	120	2719
Eggs. Hens'	H. A. C. Dahl	12,009-9	Jan. 30	120	1457
Ejectors	G. M. Wattles & Son	15,384	Jan. 23	120	1153
Electric-conduit fittings for the branching of electric wires	United Injector Co	11,818	Jan. 30	120	1466
Electric fuses with or without cap	Crouse-Hinds Company	15,645-7	Jan. 23	120	1154
Electric generators and motors and parts thereof	Star Electric Fuse Works	11,050	Feb. 20	120	2413
Electric motors	C. A. Parsons	10,397	Feb. 20	120	2431
Electric switches	Barta, Wygant & Brown	7,543	Jan. 30	120	1447
Electric time-switches	Hart & Hegeman Mfg. Co	5,636	Feb. 27	120	2719
Electricity to the human body for curative purposes. Devices for use in applying	Crescent Electrical & Manufacturing Company.	15,359	Jan. 16	120	889
Embalming fluids	J. W. Gibbs	4,289	Jan. 16	120	878
Embroidery	Venus Chemical Co	12,309	Feb. 6	120	1798
Enamel for coating barrels, casks, &c	Atlantic Novelty Co	10,623	Jan. 2	120	308
Engines and steam-pumps. Steam pumping-	Hamrick Tank & Barrel Hard Shell Enameling Co.	9,508	Feb. 6	120	1785
Engines. Gas and gasolene	Wheeler Condenser & Engineering Co.	9 592	Feb. 6	120	1785
Engines. Gas and gasolene	Otto Gas Engine Works	12,405	Jan. 16	120	886
Engines. Internal-combustion	Fairbanks Co	8,038	Jan. 23	120	1145
Envelops	Progressive Mfg. Co	1,996	Feb. 20	120	2396
Escharotics	Transo-Paper Company	13,070	Feb. 6	120	1801
Eupatorium, purpureum, and viburnum opulus in solution with aromatics. Brown liquid containing the active principles of	Lloyd Brothers	7,486	Jan. 9	120	623
Explosives	M. M. Foy	7,252	Jan. 23	120	1143
Explosives	Masurite Explosive Company	11,257	Jan. 23	120	1148
Explosives	Masurite Explosive Company	13,643	Jan. 2	120	311
Eyeglasses, spectacles, and parts and repairs and cases therefor.	Nobel's Explosives Company	9,264	Jan. 30	120	1449
Eyelets and lacing-hooks	E. Kirstein Sons Co	13,035	Feb. 20	120	2419
Fabrics. Bleached, unbleached, printed, and dyed textile	United Fast Color Eyelet Company.	16,542	Feb. 27	120	2744
Fabrics. Bleached, unbleached, printed, and dyed textile	Eddystone Manufacturing Company.	10,931	Jan. 30	120	1454
Fabrics. Bleached, unbleached, printed, and dyed textile	Eddystone Manufacturing Company.	9,462	Jan. 23	120	1146
Fabrics. Bleached, unbleached, printed, and dyed textile	Eddystone Manufacturing Company.	9,806	Jan. 23	120	1146
Fabrics. Bleached, unbleached, printed, and dyed textile	Eddystone Manufacturing Company.	10,551	Jan. 23	120	1147
Fabrics. Bleached, unbleached, printed, and dyed textile	Eddystone Manufacturing Company.	11,963	Jan. 23	120	1149
Fabrics. Bleached, unbleached, printed, and dyed textile	Eddystone Manufacturing Company.	9,462	Jan. 30	120	1450
Fabrics. Bleached, unbleached, printed, and dyed textile	Eddystone Manufacturing Company.	9,467	Jan. 30	120	1450
Fabrics. Bleached, unbleached, printed, and dyed textile	Eddystone Manufacturing Company.	9,476	Jan. 30	120	1450
Fabrics. Bleached, unbleached, printed, and dyed textile	Eddystone Manufacturing Company.	9,478	Jan. 30	120	1450
Fabrics. Bleached, unbleached, printed, and dyed textile	Eddystone Manufacturing Company.	9,655	Jan. 30	120	1450
Fabrics. Bleached, unbleached, printed, and dyed textile	Eddystone Manufacturing Company.	10,178-6	Jan. 30	120	1451
Fabrics. Bleached, unbleached, printed, and dyed textile	Eddystone Manufacturing Company.	10,307-8	Jan. 30	120	1452
Fabrics. Bleached, unbleached, printed, and dyed textile	Eddystone Manufacturing Company.	11,263	Jan. 30	120	1455
Fabrics. Bleached, unbleached, printed, and dyed textile	Eddystone Manufacturing Company.	12,284	Jan. 30	120	1456
Fabrics. Drapery and upholstery textile	Eddystone Manufacturing Company.	10,201	Jan. 9	120	622
Fabrics of silk and wool, silk and cotton, or silk and linen	F. S. Bates	12,171	Feb. 13	120	2102
Fabrics. Printed and dyed cotton textile	Eddystone Manufacturing Company.	9,827	Jan. 30	120	1451
Fabrics. Printed and dyed cotton textile	Eddystone Manufacturing Company.	10,264	Jan. 30	120	1453
Fabrics. Printed and dyed textile	Eddystone Manufacturing Company.	10,701	Jan. 9	120	625
Fabrics. Printed and dyed textile	Eddystone Manufacturing Company.	9,478	Jan. 30	120	1450

Alphabetical list of trade-marks published during January and February—Continued.

Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Fabrics. Printed and dyed textile	Eddystone Manufacturing Company.	12,014	Jan. 30	120	1457
Fabrics. Printed and dyed textile	Eddystone Manufacturing Company.	9,681	Feb. 6	120	1784
Fabrics. Printed and dyed textile	Eddystone Manufacturing Company.	11,115	Feb. 6	120	1790
Fabrics. Upholstery textile	Andrew McLean Co	1,546	Feb. 20	120	2398
Face and skin to remove freckles, tan, moth-patches, sunburn, &c. Preparation for the	C. D. Evans	12,899	Jan. 16	120	887
Feed. Chicken	Ross Brothers	14,729	Jan. 30	120	1465
Feed. Hominy	American Hominy Company	10,356	Feb. 20	120	2431
Feed. Stock	Ralston Purina Co	643	Feb. 20	120	2396
Feeds and distillers' and brewers' dried grains. Blended	J. W. Biles Co	10,726	Feb. 27	120	2732
Fertilizers	Independent Packers Fertiliser Co.	15,132	Jan. 23	120	1152
Fertilizers. Animal-matter	F. W. Tunnell & Company	15,436	Feb. 20	120	2426
File. Corn-	B. Frink	9,054	Jan. 30	120	1443
Files and rasps	Nicholson File Company	7,800-1	Jan. 9	120	624-5
Files and rasps	Carver File Company	15,354	Jan. 9	120	645
Files and rasps and handles and holders therefor	Nicholson File Company	7,560-5	Feb. 6	120	1780-1
Files, rasps, and handles and holders therefor	Nicholson File Company	8,102	Jan. 9	120	626
Filtering apparatus and filter-cylinders	Berkefeld - Filter Gesellschaft, G. M. B. H.	8,606	Feb. 6	120	1782
Fire-engines	International Power Company	16,131	Feb. 6	120	1812
Fire-extinguishers. Chemical	Graaff & Co. G. M. B. H	10,400	Feb. 20	120	2410
Fire-extinguishing apparatus. Automatic	International Sprinkler Co	1,719	Jan. 9	120	616
Fish. Dried, smoked, pickled, and canned	W. T. Shute	10,867	Jan. 16	120	888
Fish. Dried, smoked, pickled, salted, and canned	W. T. Shute	4,077	Jan. 9	120	613
Fish, (smoked, dried, or salted.) Cured	G. H. Perkins	10,933-4	Feb. 27	120	2725
Fish, (smoked, dried, or salted.) Cured	G. H. Perkins	10,937	Feb. 27	120	2729
Fish, (smoked, dried, or salted.) Cured	G. H. Perkins	10,939-40	Feb. 27	120	2729
Fishing-rods. Steel	Horton Mfg. Co	5,857	Feb. 6	120	1778
Flavoring extracts	Jordan Stabler Co	138	Jan. 9	120	615
Flavoring extracts	Joseph Burnett Co	12,852	Jan. 23	120	1140
Flavoring extracts	Lion Extract Co	12,302	Feb. 13	120	2108
Flavoring extracts	Schwabacher Bros & Co	11,835	Feb. 27	120	2731
Flavoring extracts and preparations	Baker Extract Company	2,862	Feb. 6	120	1770
Flavoring-syrup for beverages	J. B. Daniel	5,989	Feb. 6	120	1778
Flour	Sweet Springs Milling Company	12,190	Feb. 6	120	1795
Flour and wheat-meal. Wheat, oat, and barley	F. Fuller	6,280	Feb. 27	120	2720
Flour. Self-raising	Davis Milling Comp	12,280	Feb. 6	120	1796
Flour. Wheat-	Silverson Milling Co	630	Jan. 2	120	309
Flour. Wheat-	J. B. Camors & Co	3,454	Jan. 2	120	309
Flour. Wheat-	Thornton & Chester Milling Co	4,794	Jan. 9	120	619
Flour. Wheat-	Model Milling & Elevator Company.	5,686	Jan. 9	120	620
Flour. Wheat-	Wm. A. Coombs Milling Company.	11,467	Jan. 9	120	625
Flour. Wheat-	Purcell Mill & Elevator Company.	11,479	Jan. 9	120	626
Flour. Wheat-	Pittsburgh Milling Co	9,530	Jan. 16	120	885
Flour. Wheat-	Red Star Mill & Elevator Company.	15,316	Jan. 16	120	889
Flour. Wheat-	Pittsburgh Milling Co	2,847	Jan. 23	120	1140
Flour. Wheat-	Coles Company	12,600	Jan. 23	120	1151
Flour. Wheat-	Burrus Mill & Elevator Company.	14,141	Jan. 23	120	1152
Flour. Wheat-	Pillsbury-Washburn Flour Mills Company.	2,965	Jan. 30	120	1441
Flour. Wheat-	Pillsbury-Washburn Flour Mills Company.	2,967	Jan. 30	120	1441
Flour. Wheat-	Pillsbury-Washburn Flour Mills Company.	2,978	Jan. 30	120	1441
Flour. Wheat-	Gwinn Bros. & Co	5,890	Jan. 30	120	1444
Flour. Wheat-	Sweet Springs Milling Company	12,188	Jan. 30	120	1466
Flour. Wheat-	Bay State Milling Company	12,200	Jan. 30	120	1466
Flour. Wheat-	Kenaweg Company	1,939	Feb. 6	120	1760
Flour. Wheat-	Sweet Springs Milling Company	12,198	Feb. 6	120	1760
Flour. Wheat-	J. K. Kennedy Milling Company	12,260	Feb. 6	120	1802
Flour. Wheat-	New London Milling Company	12,550	Feb. 6	120	1808
Flour. Wheat-	Phoenix Mill Co	12,695-6	Feb. 6	120	1809
Flour. Wheat-	Central Kansas Milling Company	13,808	Feb. 6	120	1810
Flour. Wheat-	Ansted & Burk Co	6,734	Feb. 13	120	2097
Flour. Wheat-	O. W. Peirce Company	13,789	Feb. 13	120	2105
Flour. Wheat-	Haynes Milling Company	12,780	Feb. 20	120	2413
Flour. Wheat-	C. King & Son	14,096	Feb. 20	120	2422
Flour. Wheat-	Pillsbury-Washburn Flour Mills Company.	14,475	Feb. 20	120	2425
Flour. Wheat-	Sheffield-King Milling Co	16,264	Feb. 20	120	2432
Flour. Wheat-	Wells Abbott Nieman Company	11,468	Feb. 27	120	2730
Flour. Wheat-	John P. Meyer & Sons Milling Co	11,743	Feb. 27	120	2730
Flour. Wheat-	John P. Meyer & Sons Milling Co	11,744	Feb. 27	120	2731
Flour. Wheat-	Acme Mills & Elevator Company	11,879	Feb. 27	120	2731
Flour. Wheat, Graham, and rye	Diamond Elevator & Milling Company.	1,128	Feb. 20	120	2395
Fly-paper. Sticky	Miller Fly Paper Company	8,618	Feb. 6	120	1782
Food and medicine for poultry	Dr. Hess & Clark	5,168	Feb. 20	120	2402
Food. Bird-	Ashbrook & Miller	9,829	Feb. 6	120	1802
Food for horses, cattle, sheep, and hogs prepared from roots, herbs, barks, seeds, &c. Medicated	United States Food Co	7,868	Jan. 23	120	1151
Food made from wheat. Breakfast-	M. W. Savage	8,239	Feb. 6	120	1796
Food. Poultry-	M. W. Savage	8,238	Feb. 6	120	1796
Food. Poultry-	Albert Dickinson Company	15,777	Feb. 27	120	2739
Food. Poultry-	M. W. Savage	8,242	Feb. 27	120	2739
Food put up in tablet form. Blood, nerve, and brain	M. W. Savage	13,884	Feb. 27	120	2739
Food. Stock-	M. W. Savage	7,239	Feb. 27	120	2739
Food. Stock-	Sharp & Dohme Drug Company	14,228	Feb. 27	120	2739
Food. Stock-	M. W. Savage	8,237	Feb. 27	120	2739
Food substances. Prepared fatty, oleaginous, or unctuous	M. K. Parkhurst Company	11,102	Jan. 16	120	884

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Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Foods prepared from cereals. Breakfast-	Postum Cereal Co	4,101	Feb. 6	120	1772
Foodstuff for horses, mules, cows, hogs, and horned cattle	Ewa Plantation Co	16,123	Feb. 6	120	1812
Forestry linings or sheeting	J. S. McCormick Co	14,436-7	Feb. 27	120	2737
Fruit, vegetable, and wall-paper cleaner	Climax Cleaner Mfg. Co	9,782	Jan. 9	120	630
Fruits and canned fruits and vegetables. Dried	C. S. Morey Mercantile Company	12,062	Jan. 30	120	1456
Fruits and pineapples. Citrus	Paso Real Fruit Company	13,080	Feb. 27	120	2735
Fruits. Dried	G. Frank	10,886	Jan. 16	120	884
Fruits. Dried and evaporated	Griffin & Skelley Co	14,260	Jan. 9	120	644
Fruits. Dried and evaporated	National Grocer Company	15,645	Feb. 6	120	1808
Fruits—namely, oranges, lemons, limes, &c	Southern Cross Fruit Co	14,224-5	Feb. 27	120	2737
Fur garments	A. Jacobson & Bro	11,728	Feb. 27	120	2730
Furnaces	Lennox Furnace Co	14,585	Feb. 27	120	2738
Furnaces. Hot-air	Wise Furnace Co	13,089	Feb. 6	120	1801
Furnaces. Hot-air heating	Charles Smith Company	16,927	Feb. 27	120	2744
Gall cure	M. W. Savage	6,643	Feb. 20	120	2403
Gall cure	Dr. Hess & Clark	8,191	Feb. 20	120	2406
Game-boards	Carrom-Archarena Co	8,538	Jan. 2	120	305
Game-boards	L. Hudgin	13,519	Feb. 6	120	1803
Games and toys	F. A. Feltier	13,735	Feb. 20	120	2421
Games comprising each a board and movable pieces	C. A. Miller	14,174	Feb. 20	120	2422
Garment-supporter clasps	Hirsh Brothers	11,339	Jan. 16	120	885
Garters	C. J. Higley	8,515	Jan. 30	120	1446
Gas generators. Acetylene	J. de Dios Tejada	12,081	Feb. 6	120	1795
Gas-mantles. Incandescent	Flash Self Lighting Mantle Co	1,216	Jan 2	120	269
Gas. Materials when introduced into a bath generate	Kny-Scheerer Company	11,526	Feb. 13	120	2105
Gas-tubing. Flexible	New York Gas Tubing Company.	13,891	Feb. 20	120	2421
Gelatin	American Glue Co	4,104	Jan. 30	120	1442
Germicidal and antiseptic liquid for a tooth and mouth wash and throat gargle and spray	F. R. Tyler	9,360	Jan. 16	120	883
Germicide and antiseptic compound. Non-irritant	J. F. Ballard	7,317	Feb. 20	120	2404
Germicide in liquid form for external and internal use	A. H. Swank	11,726	Feb. 6	120	1792
Germicides and remedies for germ and skin diseases	Rhuma-Sulphur Co	5,109	Jan. 23	120	1141
Germicides. Vegetable	J. Hubbard & Co	4,827	Feb. 13	120	2095
Gin	National Distilling Co	6,807	Jan. 9	120	621
Gin	H. R. Myers	7,702	Jan. 9	120	624
Gin	S. Hochstadter	9,192	Feb. 13	120	2096
Gin	P. Dempsey & Co	12,670	Feb. 27	120	2733
Gin. Dry	Charles Jacquin et Cie	7,247	Feb. 13	120	2098
Glue	C. F. Lauber	15,670	Feb. 6	120	1808
Ginger. Preparation of	Frederick Brown Company	15,619	Feb. 13	120	2112
Gingham	Smith, Hogg & Co	5,000	Feb. 6	120	1774
Glass bottles	L. Roer & Co	5,100	Feb. 27	120	2718
Glass. Cut and engraved	T. G. Hawkes & Company	7,941	Jan. 23	120	1144
Glass. Plate, dry-plate, and window	F. Conrad & Company	15,436	Feb. 6	120	1807
Glass. Sheet and picture	Samson Bache & Company	6,947	Jan. 16	120	880
Glassware. Pressed	A. H. Heisey & Co	8,754	Jan. 9	120	626
Gloves and mittens	Joseph N. Eisendrath Company	1,265	Jan. 9	120	616
Gloves and mittens	Joseph N. Eisendrath Company	1,264	Feb. 13	120	2092
Gloves. Boxing	A. J. Reach Co	8,694	Jan. 2	120	306
Gloves. Kid and lambskin	Stern Brothers	3,567	Jan. 30	120	1442
Gloves. Kid, cloth, and chamois	F. W. Larom	12,471	Feb. 20	120	2417
Glue	Chemische Fabrik für Leim & Dünger "Zimmermann."	14,170	Jan. 30	120	1463
Glue	C. A. Soden	15,534	Jan. 30	120	1466
Gold, silver, aluminum, composition, or other metal leaf. Package-rolls of	W. H. Coe Mfg. Co	2,008	Feb. 20	120	2397
Governors. Engine	Pickering Governor Co	7,749	Feb. 20	120	2404
Governors for pumping-engines	C. P. McMullen	7,980	Jan. 2	120	305
Grease and lubricating-oils. Cup-	Galena Axle Grease Co	15,307	Feb. 20	120	2425
Grease-cups	Lenkenheimer Company	10,798	Jan. 23	120	1147
Grease for a lubricant or dressing	Kent Lubricating Company	4,172	Jan. 9	120	618
Grease, paint, tar, &c., from fabrics. Compound for removing	E. C. Davis	10,716	Feb. 27	120	2728
Grind, oil, water, and wheat stones and hones	Scranton Whetstone and Abrasive Wheel Co,	14,230-2	Jan. 30	120	1464
Guitars and mandolins	Lyon & Healy	11,263	Jan. 30	120	1455
Guitars and mandolins	Lyon & Healy	11,265	Feb. 20	120	2414
Gum. Chewing	Frank H. Fleer & Company	2,371	Feb. 13	120	2088
Guns, rifles, pistols, revolvers, and parts thereof	Webley & Scott Revolver & Arms Co.	6,086	Jan. 16	120	879
Hair and head. Liquid composition for the	S. B. Van Duzer	9,277	Jan. 9	120	625
Hair and scalp. Liquid preparation for the treatment of the	P. P. Whitehead	10,625	Jan. 16	120	883
Hair-color restorer or hair-dye	E. A. Mayer	2,951	Feb. 6	120	1772
Hair pins and ornaments	Fisher, Nesmer & Co	13,072	Feb. 20	120	2419
Hair tonic. Cuticura	Thomas J. Taylor Company	11,402	Feb. 20	120	2414
Hair-waver	S. B. Van Duzer	9,276	Jan. 9	120	625
Hair-waving [illegible] for restoring color and vigor to gray, faded, and [illegible] hair	L. A. H. Brandt	12,139	Jan. 30	120	1465
Hammocks	B. T. Goldman	10,900	Jan. 23	120	1147
Hammocks	Lemmon & Kemp	4,276	Feb. 6	120	1772
Hammocks. Preparation of	H. H. Johnson	12,508	Feb. 13	120	2106
Hammocks. Preparation of	Pond's Extract Company	12,613-13	Feb. 6	120	1788-9
Hams, bacon, and shoulders. Sugar-cured shoulders, and dry-salt	Pond's Extract Company	12,615	Feb 6	120	1789
Hand-bags and purses	A. R. Robertson	8,476	Feb. 20	120	2408
Hand-bags. [illegible]	F. P. Garretteson & Co	4,577	Feb. 6	120	1773
Hand-bags and purses	Dunlevy & Brother	4,696	Feb. 6	120	1773
Hand-bags and purses	J. & P. Schroth Prod. Co	13,092	Feb. 13	120	2109
Hand-bags and purses	Tower & Lyon Co	8,176	Jan. 16	120	881
Hand-bags and purses	Pyre of M. Heiser	16,513	Feb. 27	120	2744
Hand-bags and purses	Strasburger Brothers Manufacturing Company.	13,260	Jan. 9	120	628
Hand-bags and purses	International Harvester Co. of America	13,110-11	Jan. 30	120	1160
Hand-bags and purses	M. Morris & Company	14,269	Feb. 20	120	2422

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Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Hat-fasteners	J. C. Morrison	15,272	Jan. 16	120	883
Hats	Cage Brothers & Company	2,535	Jan. 23	120	1142
Hats	Boughner, Force & Goodbar Hat Company.	4,774	Feb. 6	120	1773
Hats	J. B. Gilmandeau	12,108	Feb. 20	120	2419
Hats and caps	E. M. Knox	7,089	Jan. 30	120	1446
Hats and caps. Men's and boys'	F. Schoble & Co	6,115	Feb. 6	120	1781
Hats and caps of all kinds	Dunlap & Co	6,849	Feb. 6	120	1778
Hats and caps. Soft and stiff felt	John B. Stetson Company	11,685	Feb. 27	120	2730
Hats, caps, and bonnets	Collins & Fairbanks Company	2,578	Feb. 6	120	1770
Hats, caps for men and boys' wear, and ladies' hats. Soft and stiff fur-felt, straw, and silk	F. Schoble & Co	6,111	Feb. 13	120	2089
Hats. Ladies' and children's	King, Brinsmade Mercantile Company.	1,547	Jan. 30	120	1440
Hats of all kinds	Danbury Hat Company	4,585	Feb. 6	120	1775
Hats. Panama	S. C. Paris	7,478	Feb. 27	120	2723
Hats. Stiff and soft felt and straw	Denser, Goodhart & Schener	11,017-18	Feb. 13	120	2104
Hats. Stiff and soft felt and straw	Denser, Goodhart & Scheuer	11,016	Feb. 20	120	2412
Hats. Stiff fur	S. C. Holley & Co	14,880	Feb. 6	120	1806
Headache, neuralgia, &c. Proprietary compounds for	E. Lautenbach	9,907	Jan. 23	120	1146
Heaters and parts thereof. Steam and hot-water	Herendeen Manufacturing Co	5,900	Feb. 20	120	2401
Heel-protectors	F. W. Whitcher	11,776	Jan. 30	120	1458
Herring. Smoked	S. Gorton & Co	1,957	Jan. 2	120	269
Hose	H. Kaidel	8,523	Feb. 27	120	2724
Hoof-dressing	W. F. Young	2,764	Jan. 2	120	300
Hooks and eyes	De Long Hook & Eye Company	15,264-5	Feb. 13	120	2111
Hooks and studs. Lasing	Tubular Rivet & Stud Company	7,351	Jan. 9	120	625
Horns. Automobile	Gabriel Horn Mfg. Co	13,859	Feb. 6	120	1808
Horse-blankets	W. B. Riley & Co	5,010	Jan. 2	120	305
Horse blankets, sheets, covers, and nets, saddle-housings, and lap-robes and dusters	W. Ayres & Sons	15,809	Feb. 20	120	2426
Horse-radish	T. F. Rightmire	12,648	Feb. 27	120	2723
Horseshoes	Bryden Horse Shoe Company	15,890	Jan. 30	120	1466
Horseshoes and horseshoe-calks	Rowe Patent Square Shoulder Shoe Calk Co.	1,122	Jan. 16	120	877
Hose. Boys'	Chester Knitting Mills	14,800	Feb. 27	120	2736
Hose. Cotton rubber-lined	Eureka Fire Hose Co	2,401	Feb. 27	120	2715
Hose. Cotton rubber-lined	Eureka Fire Hose Co	2,406	Feb. 27	120	2715
Hose pipes, nozzles, gates, and couplings	Eureka Fire Hose Company	14,025	Jan. 2	120	312
Hose-supporters	C. J. Higley	9,570	Jan. 16	120	883
Hose-supporters	Pioneer Suspender Company	12,843	Feb. 6	120	1799
Hose-supporters	Pioneer Suspender Company	12,896	Feb. 6	120	1808
Hose-supporters	C. J. Higley	15,494	Feb. 20	120	2426
Hosiery	R. J. Fisher	6,146	Jan. 2	120	303
Hosiery	J. Blood & Co	8,988	Jan. 9	120	625
Hosiery	O'Callaghan & Fedden	14,657	Jan. 9	120	640
Hosiery	Sheboygan Knitting Company	14,929	Jan. 9	120	644
Hosiery	Cooper, Wells & Co	6,220	Jan. 30	120	1445
Hosiery	Oneida Hosiery Company	9,847	Feb. 6	120	1776
Hosiery	Marietta Knitting Co	9,828	Feb. 6	120	1788
Hosiery	Rice, Stix Dry Goods Company	7,943	Feb. 20	120	2405
Hosiery	Rice, Stix Dry Goods Company	15,213-14	Feb. 20	120	2425
Hosiery	Rice, Stix Dry Goods Company	15,514	Feb. 20	120	2426
Hosiery	Rice, Stix Dry Goods Company	15,763	Feb. 20	120	2426
Hosiery	Cooper Wells & Co	6,230	Feb. 27	120	2720
Hosiery	Richardson Roberts Dry Goods Co.	7,094	Feb. 27	120	2722
Hosiery	Lord & Taylor	8,657	Feb. 27	120	2724
Hosiery	Lord & Taylor	8,659	Feb. 27	120	2724
Hosiery and knit underwear	Home Hosiery Co	16,180	Feb. 27	120	2741
Hosiery. Men's, women's, and children's	H. A. Lang & Co	16,067	Feb. 27	120	2740
Ice chipping, cutting, shaving, and crushing machines	Davenport Ice Chipping Machine Co.	13,493	Feb. 20	120	2417
Ice-cream and ices. Powder for use in making	W. A. Collins	7,202	Jan. 23	120	1143
Incandescent mantles and lamps and lamp-fittings therefor. Inverted	Welsbach Light Company	16,085	Feb. 20	120	2430
Ink. Printing	Standard Printing Ink Company.	7,284	Feb. 6	120	1769
Inks in fluid, crystal, and powdered form. Black and colored	A. Turner	11,873	Jan. 30	120	1468
Inkstands	Century Inkstand Company	15,648	Feb. 6	120	1808
Insecticides	F. L. Hanlin	9,844	Jan. 23	120	1461
Insecticides	C. E. Leavy & Co	13,280	Feb. 13	120	2113
Insoles	Electric Appliance Co	4,288	Jan. 23	120	1141
Instep-supporter or arch-prop	George G. Loudon Manufacturing Company.	9,289	Jan. 23	120	1146
Insulated conducting-wires for telegraphs telephones, electric lights, &c	Phillips Insulated Wire Co	11,289	Feb. 6	120	1791
Insulated wire and wire cables	Phillips Insulated Wire Co	11,288	Feb. 6	120	1791
Insulating compound. Rubber	Okonite Company	9,281	Jan. 9	120	623
Iron and steel tubes	Spang, Chalfant & Co	9,251	Jan. 30	120	1439
Iron bars, rods, sheets, plates, hooping, and tires	Lew Hoor Company	6,744	Feb. 13	120	2097
Iron hollow ware (raw, enameled, tinned, or galvanized) stamped in one piece or seamed. Wrought-	Herman Wupperman Gesellschaft mit beschränkter Haftung	6,988	Feb. 27	120	2726
Iron oxid	Connelly Iron Sponge and Governor Company	7,294	Feb. 13	120	2089
Iron. Pig	Chilton Iron and Steel Company	4,580	Feb. 20	120	2399
Jams and jellies	Wilkinson, Geddis & Co	9,240	Feb. 6	120	1769
Jelly preparation	Michigan Carbon Works	9,252	Jan. 9	120	623
Jelly preparation. Powdered dessert	Stern & Saalberg Company	9,250	Jan. 9	120	623
Jewelers' pendant-bows	Swartchild & Co	15,261	Feb. 6	120	1769
Journal. Trade	A. T. Stephenson Company	9,253	Jan. 9	120	623
Kerseys and cassimeres	W. J. Dickey & Sons	9,254	Jan. 9	120	623
Kid. Glazed and dull or "mat"	Keystone Leather Co	15,267	Feb. 6	120	1769
Knit headgear, including tams, toques, and caps	Stephenson & Co	15,262	Feb. 6	120	1769
Knit hosiery	Murphy, Grant & Co	15,263	Feb. 6	120	1769
Knit underwear	Abraham & Straus	6,286	Feb. 6	120	1769

Alphabetical list of trade-marks published during January and February—Continued.

Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Hats underwear	Murphy, Grant & Co	16,168	Feb. 27	120	2741
Jackets covers for hot-water bottles	Gloversville Knitting Co	13,037	Jan. 30	120	1461
Knives, forks, and spoons. Britannia	Gebr. Woelke	9,982	Feb. 6	120	1786
Knives. Pocket	Challenge Cutlery Corporation	12,020	Jan. 2	120	310
Knives. Pocket	H. Böker & Co	7,608	Feb. 6	120	1780
Knives. Pocket	F. Köller & Co	8,435	Feb. 6	120	1782
Lamp-chimneys and lantern-globes	R. E. Tongue & Bros	14,460	Feb. 20	120	2423
Lamp-chimneys. Glass	La Bastie Glass Co	15,116	Jan. 30	120	1465
Lamp glasses and globes	Macbeth-Evans Glass Company	6,007	Jan. 16	120	579
Lamp glasses and globes	Macbeth-Evans Glass Company	6,032	Feb. 27	120	2720
Lamps	Clarke's-Pyramid and Fairy Light Company.	7,434	Jan. 16	120	580
Lamps and generators therefor for motor-vehicles. Acetylene-	A. H. Funke	11,808-9	Jan. 23	120	1140
Lamps and lanterns. Railway	Armspear Manufacturing Company.	7,658	Feb. 6	120	1780
Lamps. Candle	Clarke's-Pyramid and Fairy Light Company.	7,435	Jan. 16	120	580
Lamps. Electric	Franklin Electric Mfg. Co	7,850	Feb. 6	120	1780
Lamps. Incandescent mantles for gas	Block Light Company	15,596	Feb. 6	120	1808
Lard	Cudahy Packing Co	14,392	Jan. 9	120	640
Lard	Cudahy Packing Co	14,396	Jan. 9	120	640
Lard and lard compounds	Swift and Company	11,998	Feb. 6	120	1795
Laryngoscopes	W. Beckel and Company	3,318	Jan. 16	120	578
Laxative, uric-acid solvent, hepatic stimulant, &c. Saline	Bristol-Myers Company	6,555	Feb. 27	120	2721
Laxatives	Paracamph Company	10,765	Jan. 9	120	634
Lead and oxids of lead. White	National Lead Company	11,813	Feb. 6	120	1793
Lead and oxids of lead. White	National Lead Company	11,814	Feb. 13	120	2106
Lead and oxids of lead. White	National Lead Company	12,132-4	Feb. 20	120	2416
Lead. Calking, bar, and pig	Selby Smelting and Lead Company.	8,752	Jan. 16	120	582
Lead. Pure white	Eagle White Lead Co	10,604	Feb. 20	120	2412
Lead. White	Toch Brothers	11,557	Jan. 30	120	1456
Lead. White	Wetherill & Brother	1,614	Feb. 6	120	1769
Lead. White	National Lead Company	10,982-9	Feb. 13	120	2103-4
Lead. White	National Lead Company	11,810	Feb. 13	120	2105
Leather and leather boot and shoe dressing	National Lead Company	12,442-3	Feb. 13	120	2108-7
Leather. Chrome-tanned	F. H. Young Company	16,279	Feb. 27	120	2741
Leather-dressing in liquid, paste, and solid form	P. Rielly & Son	10,375	Jan. 30	120	1453
Leather. Dull-black and colored calf	Frank Miller Company	15,603	Jan. 30	120	1466
Leather dyestuff or coloring mixture	Barnet Leather Co	7,773	Jan. 30	120	1448
Leather. Enameled	Stamford Mfg. Co	6,887	Feb. 20	120	2403
Leather. Finished or dressed	Wolff Process Leather Company	15,070	Feb. 20	120	2424
Leather for shoes, gloves, and harness	Corona Kid Company	11,802-3	Feb. 6	120	1792-3
Leather. Harness, sole, and skirting	Pfister & Vogel Leather Company.	3,191	Feb. 20	120	2396
Leather. Imitation	A. B. Patrick & Co	10,778	Feb. 27	120	2726
Leather. Lace	F. W. Whitcher	15,261	Jan. 16	120	588
Leather, oak-tanned cowhide, skirting, and cut stock. Harness-	New York Leather Belting Co	10,208	Jan. 2	120	306
Leather. Patent	Kullman, Salz & Company	8,140	Feb. 27	120	2723
Leather. Sole	A. C. Lawrence Leather Co	7,806	Jan. 2	120	304
Leather. Sole	S. H. Frank & Co	8,804	Jan. 9	120	626
Leather used in base-ball mitts and gloves. Dressing for softening and preserving	J. M. Delaney & Co	14,441	Feb. 27	120	2737
Lecithin (obtained from brain) in combination with nucleo proteids. Preparation of	A. J. Reach Co	8,695	Feb. 20	120	2406
Lemonades. Chemical preparations for use in making	Fairchild Bros. & Foster	11,247	Feb. 6	120	1791
Lime	Chemische Industrie A.-G. St. Margrethen.	15,821	Feb. 27	120	2740
Liniment	Norris & Christian Stone & Lime Co.	10,614	Feb. 20	120	2412
Liniment	Dr. Peter Fahrney & Sons Co	6,923	Jan. 23	120	1142
Liniment	W. B. Hadley	4,171	Jan. 30	120	1442
Liniment for bruises, cuts, rheumatism, &c	J. F. Ballard	7,216	Feb. 20	120	2403
Liniment for external and internal use for the curing and alleviation of various human ailments	E. F. Bauts	13,940	Feb. 27	120	2737
Liniment for external use on man or beast	F. G. Boynton	5,122	Jan. 2	120	302
Liniment for man and beast	P. L. Hoover & Bros	5,967	Jan. 30	120	1444
Liniment for rheumatism, neuralgia, sprains, bruises, &c	J. J. Walsh	3,671	Jan. 9	120	617
Liniment for sprains, bruises, inflammation, &c	J. M. Hood	11,536	Jan. 30	120	1455
Liniments or lotions	D. Ransom, Son and Company	5,895	Feb. 20	120	2401
Linings. Dress	Rosen & Berger	5,003	Jan. 30	120	1443
Linings. Dress	M. W. Burd	11,449	Jan. 23	120	1140
Linings, sleeve and collar buttons, studs, and blouse-button sets	Standard Button Company	4,929	Jan. 9	120	619
Liquids, water	W. G. Taylor	14,694	Feb. 6	120	1806
Liquors	Supplee Hardware Company	8,795	Feb. 6	120	1783
Liquors. Wine	General Specialty Company	15,201	Feb. 20	120	2404
Lithia for the skin	R. T. Hardy	13,317	Feb. 6	120	1802
Lithia. Water	E. Palmer	15,677	Feb. 27	120	2740
Lotions used in the treatment of hernia	F. S. Williams & Co	6,128	Feb. 13	120	2098
Lozenges	J. Fandrey	9,989	Jan. 23	120	1146
Lubricant and the parts thereof. Force-feed	A. Shanzer & Co	14,447-50	Feb. 20	120	2423
Lubricating	Bearwald & Levin	15,629	Jan. 23	120	1152
Lubricating	Greene Tweed & Co	15,334	Jan. 30	120	1466
Lubricating	Eagle Lye Works	1,900	Jan. 9	120	617
Lubricating	Eagle Lye Works	9,894	Jan. 9	120	617
Lubricating, vaseline, and needles	Anger Baking Co	12,502	Jan. 9	120	633
Lubricating, vaseline, and needles	Crescent Macaroni and Cracker Co.	11,699	Feb. 27	120	2730
Machinery for the improvement of cities and towns	Municipal Engineering Company.	15,262	Jan. 16	120	580
Magazine, engineering. Monthly	Review Publishing Company	11,943	Jan. 9	120	626
Magazine. Fruit	Fruit-Grower Company	10,997	Feb. 20	120	2412
Magazine. Trade	Gas Power Publishing Co	16,313	Feb. 27	120	2740
Magazine. Weekly	G. P. Terry	13,070	Feb. 6	120	1801

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Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Magazine periodical	Advance Publishing Co	13,976	Jan. 23	120	1151
Magazines	Tribune Co	13,141	Jan. 30	120	1463
Magazines	M. D. McAnulty	11,484	Feb. 27	120	2730
Mainsprings	Swarzschild & Co	13,782	Feb. 6	120	1804
Maline. Moist-proof	T. Thedemann & Son	15,375	Feb. 27	120	2736
Malt and malt extract, in combination with other suitable substances. Alimentary products made from	Erste Wiener Export Malzfabrik Hanner & Sobotka.	11,782	Feb. 6	120	1792
Malt beverage. Non-intoxicating	Dallas Brewery	10,836	Feb. 6	120	1789
Malt extract	Paragon Malt Extract Co	14,604	Jan. 2	120	313
Malt extract	Bernheim Distilling Co	9,497	Jan. 9	120	639
Malt extract	Valentin Blatz Brewing Co	14,561	Jan. 9	120	641
Malt extract	Paragon Malt Extract Company	9,401	Feb. 6	120	1784
Malt extract	Otto Huber Brewery	15,144	Feb. 27	120	2738
Malt extracts	Trommer Company	6,024	Jan. 30	120	1444
Mantles. Cap	W. H. Schaefer	15,492	Feb. 6	120	1807
Maraschino	F. Drioli	8,962	Feb. 27	120	2726
Marble, stonework, tiling, glass, woodwork, and metals. Powder for cleaning and polishing	Lexington Manufacturing Co	15,512	Feb. 27	120	2730
Matches	Aktiebolaget Södertelje Tändsticksfabrik.	16,277	Feb. 27	120	2741
Mattresses	John Breuner Company	13,898	Feb. 6	120	1804
Mattresses	J. L. Radermacher	9,857	Feb. 13	120	2102
Mattresses	Dubuque Mattress Factory	9,854	Feb. 27	120	2726
Mattresses and cushions	C. A. Fisher	13,201	Feb. 27	120	2735
Mattresses and pillows and feathers for same	Randall Mattress Company	8,743	Feb. 6	120	1783
Measuring the capacity of the lungs in cubic inches. Instrument for mechanically	C. H. Bird	13,089	Jan. 23	120	1149
Meat extracts and essences	Bovril Limited	7,714	Feb. 27	120	2722
Meat-juice and compound of meat-juice and glycerin. Preparations of	Valentine's Meat Juice Company.	11,110	Feb. 6	120	1790
Meats. Liquid extract of smoke for preserving	E. Krauser & Brother	4,830	Jan. 16	120	578
Medical compound for a hemostatic	Knoll & Co	10,292	Feb. 27	120	2727
Medical compound for an astringent	Knoll & Co	10,291	Feb. 27	120	2727
Medical compound for painting or applying to diseased skin and abnormal growths upon the skin or body. Liquid	J. J. Chambers	10,000	Feb. 6	120	1786
Medical preparations for coughs and throat and lung diseases	Black Diamond Medicine Company.	7,680	Feb. 13	120	2098
Medical preparations for external and internal use	Trench's Remedies Ltd	14,733	Feb. 27	120	2733
Medical tablet for the cure of malaria, &c	W. M. Macleod	12,964	Feb. 6	120	1800
Medicated oils	D. M. Bye	12,451	Feb. 27	120	2733
Medicated salves for the cure of wounds and sores	Ward Salve Co	13,600	Feb. 13	120	2112
Medicinal and toilet oil for skin diseases	Illinois Laboratories	6,704	Jan. 23	120	1142
Medicinal beverages. Non-alcoholic	Russell M. Hughes & Co	6,756	Feb. 27	120	2722
Medicinal ingredients. Gelatinous elastic capsules containing liquid or solid	Hance Bros. & White	4,804	Jan. 16	120	578
Medicinal or surgical purposes. Hemostatic, astringent, blood-pressure-raising, and stimulating preparations for	Parke, Davis & Co	11,909	Jan. 16	120	585
Medicinal preparation for an antiseptic, germicide, and healing agent. Liquid	Henry Heil Chemical Co	1,817	Jan. 9	120	616
Medicinal preparation for the cure of rheumatism	L. Adler	11,856	Jan. 23	120	1149
Medicinal preparation in suppository or ointment form used as an anesthetic, &c	C. K. Mulford Company	10,495	Feb. 20	120	2411
Medicinal preparation used as a nerve sedative	Peacock Chemical Co	6,311	Feb. 20	120	2402
Medicinal preparations for curing diseases of the blood, brain, and nerves	H. G. Ballou	11,384	Jan. 16	120	585
Medicinal, restorative, and regulative compounds	J. H. Schenck	13,964	Feb. 20	120	2422
Medicinal soap	Barclay & Barclay	15,263-4	Jan. 23	120	1153
Medicinal tea	J. T. Davison	7,481	Feb. 6	120	1779
Medicine as a tonic, appetizer, and strengthener	J. F. Ballard	9,121	Feb. 27	120	2725
Medicine, cathartics, laxatives, and liver and medical compounds for headache, dizziness, &c	Owl Drug Co	13,527	Feb. 27	120	2736
Medicine. Diuretic, laxative, diaphoretic, and tonic	A. B. Bradley	8,072	Feb. 20	120	2405
Medicine for diphtheria and rheumatism	F. E. Bonyman	8,742	Jan. 9	120	626
Medicine for diseases of the liver, kidneys, &c., and a general tonic in tablet form. Proprietary	C. A. Maynard	12,249	Feb. 27	120	2732
Medicine for diseases peculiar to females	A. O. Schmidt	12,473	Feb. 13	120	2107
Medicine for kidney affections	M. A. Hamilton	12,898	Feb. 6	120	1800
Medicine for stopping excessive perspiration	F. Boettger	10,844	Jan. 9	120	633
Medicine for the cure of liver and kidney diseases	Thompson Medical Company	4,263	Jan. 30	120	1442
Medicine for the purification of the blood and diseases of the liver, kidneys, and stomach	W. W. Gavitt Medical Co	13,727	Feb. 13	120	2113
Medicine for the treatment of alcoholism	T. Johnston	8,787	Feb. 6	120	1783
Medicine for the treatment of malaria, chills, swamp fever, bilious fever, &c	Paul Bros. Medicine Co	14,363	Jan. 23	120	1152
Medicine for the treatment of rheumatism, lithemia, gout, lumbago, and neuralgia	H. O. Hurley	9,047	Jan. 9	120	627
Medicine. Purgative	F. G. Boynton	5,138	Jan. 2	120	302
Medicine to be taken internally as a cure for organic and nervous diseases	Gin-Seng-Gin Company	2,602	Feb. 6	120	1770
Medicine which is an external and internal antiseptic and disinfectant, antipyretic, diuretic, anodyne, and hypnotic	Salo-Solotus Chemical Company	10,473	Jan. 2	120	308
Medicines for purifying the blood	M. I. S. T. Co	7,729-3	Jan. 30	120	1447
Medicines for the cure of female disorders	L. E. Truman	6,928	Feb. 13	120	2097
Medicines for the regulation of the liver and purification of the blood	A. H. Lewis Medicine Co	71	Jan. 30	120	1460
Medicines for venereal diseases	C. G. Marino	14,947	Jan. 30	120	1465
Medicines. Germicidal	Liquozone Company	14,668	Feb. 20	120	2407
Medicines. Laxative	S. B. Hartman	1,488	Jan. 23	120	1140
Metal. Babbitt	National Lead Company	14,487	Feb. 20	120	2423
Metal. Babbitt and antifriction	Cotton States Belting & Supply Co.	10,695	Feb. 6	120	1812
Metal bars, sheets, heaps, bands, billets, angles, &c	Dilworth, Gilbert & Towne	2,625	Feb. 20	120	2397
Metal. Bearing	Parkesine Co	1,527	Feb. 6	120	1783
Metal-cleaning compounds	C. J. Woodruff	14,521	Feb. 27	120	2724
Metal plates for ceilings and side walls	A. Du Mentler	15,599	Feb. 27	120	2739

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Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Official Gazette. Page.
Metal-polish	American Metal Polish Co	6,042	Jan. 2	120	303
Metal-polish	Hinde & Coon	15,188	Jan. 9	120	645
Metals. Antifriction	Merchant & Evans Co	11,437	Jan. 23	120	1146
Metals. Antifriction	E. S. Shimer	9,885	Feb. 6	120	1785
Metals. Antifriction or bearing	William A. Hardy & Son's Co	5,986	Feb. 20	120	2402
Metals. Extruded	Coe Brass Manufacturing Company.	14,083	Jan. 30	120	1463
Metals for the journal parts of machines and machinery. Babbitt metal and antifriction and bearing	John Finn Metal Works	11,308-7	Feb. 6	120	1791
Metals for the journals of machines and machinery. Antifriction and bearing	John Finn Metal Works	11,308	Feb. 6	120	1791
Microbe-killer	I. Radam	5,002	Jan. 23	120	1141
Milk and evaporated cream. Condensed	Adam Roth Grocery Company	11,798	Jan. 9	120	636
Milk and evaporated cream. Condensed	Borden's Condensed Milk Co	13,702	Feb. 13	120	2108
Milk. Condensed	Borden's Condensed Milk Co	11,108	Jan. 2	120	309
Milk. Condensed	Kennewag Company	1,928	Jan. 16	120	877
Milk. Condensed	Michigan Condensed Milk Co	11,108-4	Feb. 20	120	2413
Milk-coolers	Dairymen's Supply Company	5,216	Feb. 6	120	1774
Milk. Powdered preparation for cooking made from skim-	Ekenberg Milk Products Co	5,342-3	Jan. 30	120	1442-4
Mince-meat	Cudahy Packing Co	14,304	Feb. 27	120	2737
Molasses	N. W. Taussig Co	5,628	Jan. 23	120	1141
Molasses	Boston Molasses Co	5,664	Jan. 23	120	1142
Molasses	Egerton Bros	1,196	Feb. 6	120	1768
Molasses	P. Duff & Sons	10,286	Feb. 20	120	2410
Mops	Palmer, Hill & Co	5,110	Feb. 27	120	2718
Mowers. Lawn-	A. B. Case	5,105	Jan. 2	120	302
Mowers. Lawn-	Supplee Hardware Company	13,830	Feb. 20	120	2421
Mowers. Lawn-	Supplee Hardware Company	13,831	Feb. 20	120	2421
Mowers. Lawn-	A. B. Case	14,331	Feb. 27	120	2737
Mucilage, paste, and adhesive cements	Carter's Ink Company	6,708	Jan. 23	120	1142
Nails. Horse-	Union Horse Nail Company	8,606	Jan. 2	120	305
Nails. Horse-	Union Horse Nail Company	8,611	Jan. 2	120	305
Nails. Horse-	Capewell Horse Nail Company	7,420	Jan. 9	120	623
Nails. Horse-	Capewell Horse Nail Company	7,429	Jan. 23	120	1144
Nails. Horse-	Capewell Horse Nail Company	7,427	Feb. 13	120	2098
Nails. Horse-	Union Horse Nail Company	8,607	Feb. 27	120	2724
Nails. Upholsterers'	Union Horse Nail Company	8,610	Feb. 27	120	2724
Needles	Traut & Hine Mfg. Co	11,472	Jan. 9	120	635
Needles for hand and machine sewing	C. H. Crowley	11,710	Jan. 9	120	635
Nerve-elixir	Henry Milward & Sons	13,196	Feb. 20	120	2420
Neuralgia-drops	E. Dort	8,017	Jan. 23	120	1145
Newspaper	G. G. Steketee	13,087	Feb. 20	120	2419
Newspaper	Manufacturers' Record Publishing Company.	15,352	Jan. 16	120	890
Newspaper comic sections or pages	New York Herald Company	15,736	Jan. 30	120	1466
Nickel salts	Hanson & Van Winkle Co	15,448	Feb. 27	120	2739
Nitre compounds	Jovelte Manufacturing Company	12,884	Jan. 30	120	1460
Noodles and macaroni. Egg	C. F. Mueller Co	12,203	Jan. 30	120	1458
Oats. Crushed	Great Western Cereal Co	10,737	Feb. 6	120	1789
Obtundent or local anesthetic	Eureka Chemical Co	10,880	Feb. 13	120	2108
Oil and soluble grease as used for dyeing, lubricating, &c. Turkey-red	Arabol M'f'g Co	4,014	Feb. 20	120	2399
Oil. Antiseptic healing-	Paris Medicine Co	13,271-2	Jan. 9	120	636
Oil. Castor-	National Lead Company	14,414	Jan. 23	120	1153
Oil. Castor-	Morris Bros	14,219	Jan. 30	120	1463
Oil. Castor-	Baker Castor Oil Company	7,164	Feb. 27	120	2722
Oil-cloth, carriage enamel-cloth, bag-muslin, and other light-weight oil-cloths. Table	Standard Table Oil Cloth Co	9,298	Feb. 6	120	1784
Oil-cups	Lunkenheimer Company	10,798	Jan. 30	120	1458
Oil for watches and clocks. Lubricating-	J. Wing	7,279	Feb. 13	120	2098
Oil. Healing pine-	M. W. Savage	5,214	Feb. 6	120	1775
Oil in the form of pellets. Castor-	I. R. Blackburn	11,046	Jan. 16	120	884
Oil. Liquid compounds of cod-liver	Norway Pharmacal Company	1,717	Feb. 20	120	2396
Oil. Odorless, neutral, colorless mineral	H. K. Mulford Company	10,463	Feb. 20	120	2411
Oil. Olive-	A. Zucca	12,087	Jan. 30	120	1457
Oil. Olive-	Los Angeles Olive Growers Association.	2,984	Feb. 13	120	2088
Oil. Pine-wood	Spirittine Chemical Company	1,279	Feb. 20	120	2396
Oil. Pure olive-	Gennerich & Von Bremen	13,763	Feb. 27	120	2736
Oils and grease. Lubricating	F. B. Hower	7,[illegible]	Jan. 23	120	1144
Oils. Cooking and baking	Independent Cotton Oil Co	5,364	Feb. 20	120	2401
Oils. [illegible]	Standard Oil Co. of New York	8,[illegible]	Feb. 6	120	1782
Oils. [illegible]	Standard Oil Co. of New York	10,134	Feb. 6	120	1787
Oils. [illegible] and heating	Price's Patent Candle Co	14,083	Feb. 27	120	2740
Oils. [illegible]	Galena-Signal Oil Company	10,314	Feb. 6	120	1786
Oils. [illegible]	Crew Levick Co	11,611	Feb. 6	120	1791
Oils. [illegible]	R. R. Durkee & Co	[illegible]	Jan. 2	120	307
Oils. [illegible]	Columbia Refining Co	6,012	Feb. 27	120	2717
[illegible] used in making perfume	Heine & Co	11,121	Jan. 16	120	884
[illegible]	A. J. Tower Company	12,104	Jan. 30	120	1461
[illegible]	A. J. Tower Company	2,[illegible]	Feb. 27	120	2714
[illegible]	A. J. Tower Company	[illegible]	Feb. 27	120	2722
[illegible]	A. J. Tower Company	[illegible]	Feb. 27	120	2726
[illegible]	E. R. Ray	12,041	Jan. 30	120	1457
[illegible]	Potter Drug & Chemical Corporation.	14,[illegible]	Jan. 30	120	1464
[illegible]	D. Ransom, Son and Company	5,[illegible]	Feb. 20	120	[illegible]
[illegible]	[illegible] Remedies Ltd	9,072	Feb. 27	120	[illegible]
[illegible] for external application in the treatment of skin [illegible]	[illegible]	13,179	Feb. 27	120	[illegible]
[illegible] for the [illegible]	W. T. Hite	5,[illegible]	Feb. 20	120	[illegible]
[illegible]	N. H. [illegible]	9,[illegible]	Feb. 6	120	1785
[illegible]	[illegible] Co	5,[illegible]	Feb. 6	120	1776
[illegible]	[illegible] Company	13,[illegible]	Feb. 6	120	1799
[illegible]	[illegible]	1,[illegible]	Jan. 9	120	625
[illegible] and citrus	[illegible] Naval Orange Company	5,[illegible]	Feb. 27	120	2719

Alphabetical list of trade-marks published during January and February—Continued.

Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Official Gazette. Page.
Organs	W. W. Putnam & Co	14,[illegible]	Jan. 9	120	644
Organs	O. Hermann	12,[illegible]	Feb. 6	120	1803
Overalls	H. W. Carter & Sons	9,[illegible]-1	Jan. 9	120	633
Overalls, aprons, coats, and pants	Cleveland & Whitehill Company	1,765	Jan. 30	120	1440
Overalls, coats, and trousers	Red Diamond Clothing Co	1,066	Feb. 6	120	1768
Overshirts	Levi Strauss & Company	16,035	Feb. 20	120	2430
Oysters	Haas Bros	2,[illegible]	Jan. 30	120	1442
Packing. Flax	Dunham, Carrigan & Hayden Co	11,[illegible]	Jan. 9	120	635
Packing materials for stuffing-boxes, &c	R. Klinger	10,918	Feb. 6	120	1790
Packing. Rod-	Mulconroy Co	13,[illegible]	Feb. 13	120	2108
Paint and varnish remover	Tosh Brothers	11,[illegible]	Jan. 30	120	1455
Paint for metallic roofs. Liquid	L. C. Brown	5,732	Jan. 2	120	303
Paint. Liquid	Geo. D. Wetherill & Co	16,434	Feb. 27	120	2743
Paint. Marine	H. Louderbough	4,[illegible]	Feb. 20	120	[illegible]
Paint. Metallic and roofing	A. E. Coen	15,301	Feb. 13	120	2111
Paint or coating. Wall	Alabastine Company	15,[illegible]	Jan. 16	120	[illegible]
Paints	Tosh Brothers	15,437	Jan. 23	120	1154
Paints and enamels. Gold, bronze, silver, and aluminum	Gerstendorfer Bros	3,061	Jan. 2	120	309
Paints and japans. Black	N. Z. Graves Co	2,104	Feb. 20	120	2397
Paints and japans. Black	N. Z. Graves Co	9,039	Feb. 20	120	2407
Paints. Bronze-green	J. Briggs & Co	16,097	Feb. 13	120	2113
Paints. Carbon	Patterson Sargent Co	12,771	Feb. 20	120	2418
Paints. Enamel	Peerless Enamel Paint Works	15,150	Jan. 2	120	314
Paints. Ready-mixed	Williams, Martin & Gray	7,870	Feb. 20	120	2405
Pants. Men's and boys'	Malone Manufacturing Co	2,630	Feb. 20	120	2397
Pants, overalls, coats, and vests	Richardson, Roberts Dry Goods Co.	10,540	Feb. 6	120	1788
Paper and envelops	F. A. Flinn	13,945	Feb. 6	120	1804
Paper and paper bags and sacks. Wrapping-	Hollingsworth & Whitney Company.	3,476	Jan. 30	120	1441
Paper and paper bags and sacks. Wrapping-	Hollingsworth & Whitney Company.	15,905-8	Feb. 6	120	1810
Paper and paper bags and sacks. Wrapping-	Hollingsworth & Whitney Company.	15,910	Feb. 6	120	1811
Paper and paper bags and sacks. Wrapping-	Hollingsworth & Whitney Company.	15,912-13	Feb. 6	120	1811
Paper and paper bags and sacks. Wrapping-	Hollingsworth & Whitney Company.	15,915-17	Feb. 6	120	1811
Paper bags	J. Clocheesy	6,020	Jan. 30	120	1444
Paper bags	Union Bag & Paper Company	14,[illegible]	Feb. 6	120	1806
Paper. Blotting-	Standard Paper Mfg. Co	12,[illegible]	Jan. 9	120	637
Paper. Blotting-	Eaton-Dikeman Co	9,[illegible]	Feb. 27	120	2736
Paper. Blotting-	Albermarle Paper Mfg. Co	15,534	Feb. 27	120	2740
Paper. Building, roofing, and sheathing	Barrett Manufacturing Company.	11,570	Feb. 6	120	1793
Paper. Carbon copying-	Bacon Brothers	7,480	Feb. 20	120	2404
Paper-fasteners	General Specialty Company	11,557	Jan. 16	120	[illegible]
Paper for wrapping food products	G. Staber	16,[illegible]	Feb. 6	120	1812
Paper for wrapping food products	G. Staber	16,538	Feb. 27	120	2744
Paper holders and cutters. Roll-	United States Paper Cutter Co	12,[illegible]	Feb. 6	120	1796
Paper or board. Press	Rogers Paper Mfg. Co	11,947	Feb. 13	120	2106
Paper, pasteboard, &c., made from wood-pulp. Book, news, and wrapping	International Paper Company	3,670	Feb. 6	120	1771
Paper. Sheathing-	W. H. Rankin Company	11,[illegible]	Jan. 9	120	636
Paper. Toilet-	Pond's Extract Company	12,818	Feb. 20	120	2418
Paper. Wall-	Penn Wall Paper Company	9,827	Feb. 6	120	1795
Paper. Writing-	L. A. Lehmaier	15,410	Jan. 23	120	1154
Paper. Writing-	Hollingsworth & Whitney Company.	15,920	Feb. 6	120	1811
Paper. Writing-	Chapin & Gould Paper Co	7,343	Feb. 13	120	2098
Papers. Waterproof	F. W. Bird & Son	12,130	Jan. 30	120	1461
Papers. Wrapping-	Hubbs & Corning Co	9,286	Feb. 6	120	1794
Parasols and umbrellas	Weinberg Heyman & Company	12,536	Feb. 27	120	2736
Pastry-shortening	[illegible] & Person	12,514	Feb. 6	120	1808
Paving-blocks. Wood	United States Wood Preserving Company.	11,019	Feb. 6	120	1790
Pen and pencil holders, penholders, pencil-holders, and point-protectors.	E. Faber	14,806	Feb. 13	120	2110
Pens and penholders. Steel, fountain, and stylographic	Perry & Company	11,[illegible]	Feb. 6	120	1781
Pens. Fountain-	Century Pen Company	3,176	Feb. 13	120	2094
Penholders	Eagle Pencil Company	12,[illegible]	Jan. 9	120	657
Pencils	[illegible] C. Wm. Bock	6,248	Feb. 13	120	2087
Pencils. Lead-	Eagle Pencil Company	12,304	Jan. 9	120	[illegible]
Pencils. Lead-	Eagle Pencil Company	12,712	Feb. 6	120	[illegible]
Pencils. Lead-	Eagle Pencil Company	15,[illegible]	Feb. 6	120	[illegible]
Pencils. Lead-	American Lead Pencil Co	15,[illegible]	Feb. 6	120	[illegible]
Pencils. Lead-	American Lead Pencil Co	15,[illegible]	Feb. 20	120	[illegible]
Pencils. Lead-	E. G. [illegible]	16,[illegible]	Feb. 20	120	[illegible]
Perfumery	Colgate & Co	12,[illegible]	Jan. 16	120	[illegible]
Perfumery	[illegible] Limited	11,[illegible]	Feb. 20	120	[illegible]
Perfumes, including extracts, essences, &c	E. Palmer	15,[illegible]	Feb. 27	120	[illegible]
Periodical	A. H. [illegible]	15,[illegible]	Jan. 9	120	[illegible]
Periodical devoted to the interest of contractors	W. A. [illegible]	12,[illegible]	Jan. 2	120	[illegible]
Periodical. Monthly	Family Doctor Publishing Co	14,341	Jan. 16	120	[illegible]
Periodical. Monthly	Gardner Publishing Company	15,[illegible]	Feb. 27	120	[illegible]
Petticoats and underskirts	Stewart, Howe and May Coy	7,204	Feb. 20	120	[illegible]
Pharmaceutical preparations for the treatment of kidney diseases.	McKesson & Robbins	14,[illegible]	Jan. 30	120	[illegible]
Phosphates. Cherry rye	[illegible] & Co	9,765	Feb. 20	120	[illegible]
Photographic dry-plates	[illegible] Company	3,[illegible]	Feb. 6	120	1771
Photographic films	Compagnie Générale de Phonographes, Cinématographes et Appareils de Précision.	15,730	Feb. 6	120	[illegible]
Photographic paper and films	[illegible] "Lenta"	5,[illegible]	Jan. 23	120	1146
Pianofortes. Pneumatically-actuated	[illegible]	10,[illegible]	Jan. [illegible]	120	[illegible]
Pianos	[illegible] Piano Mfg. Company	12,277	Jan. 9	120	[illegible]

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Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Pianos	H. Baumeister	11,385	Jan. 30	120	1466
Pianos	A. M. McPhail Piano Co	13,470	Feb. 6	120	1932
Pianos	Lyon & Healy	15,324	Feb. 13	120	2111
Pianos	Mason & Hamlin Co	10,336	Feb. 20	120	2410
Pianos	Weber Piano Company	10,430	Feb. 20	120	2411
Pianos	Cable Company	11,695	Feb. 20	120	2415
Pianos	W. W. Kimball Company	11,640	Feb. 27	120	2730
Pianos and piano-players. Self-playing	Autopiano Company	4,705	Feb. 6	120	1772
Pianos without keyboard. Self-playing	Lyon & Healy	11,349	Feb. 20	120	2413
Pickers and burring-machines and attachments and parts thereof for working wool, &c.	Curtis & Marble Machine Co	13,966-9	Jan. 2	120	312
Pills for biliousness, &c	Munyon's Homœopathic Home Remedy Co.	12,565	Feb. 6	120	1797
Pills for diseases of the stomach and liver	Lamont, Corliss & Co	10,262	Jan. 2	120	308
Pills for stomach disorders, liver troubles, &c	S. Holzmark	11,944	Jan. 30	120	1457
Pills, powders, ointments, soaps, and plasters for curing blood and skin diseases. Compound in the form of	C. B. Knox	7,581	Jan. 16	120	881
Pins, ear-rings, and studs. White-stone	Donley & Co	994	Jan. 23	120	1140
Pins. Toilet	Dieckerhoff, Raffloer & Co	4,578	Jan. 16	120	878
Pipe cutters, vises, and threading machines and stocks and dies.	Armstrong Mfg. Co	3,464	Feb. 13	120	2094
Pipe-fittings. Metal	Malleable Iron Fittings Company	4,565	Feb. 20	120	2399
Pipes, fittings, and connections therefor. Soil-	Crown Pipe and Foundry Co	10,329	Jan. 16	120	883
Pistols	Colt's Patent Fire Arms Manufacturing Company.	11,096	Jan. 9	120	634
Pistols	Colt's Patent Fire Arms Manufacturing Company.	11,096	Jan. 23	120	1148
Pistols	Colt's Patent Fire Arms Manufacturing Company.	11,096-4	Jan. 30	120	1454
Pitch	Warren-Ehret Company	12,060	Jan. 9	120	636
Plaster, a manufactured product of gypsum or plaster-rock. Calcined	C. Tomkins	3,926	Jan. 9	120	618
Plaster. Liquid court-	Carpenter Chemical Co	2,086	Jan. 30	120	1441
Plasters. Corn-killing	M. R. Kelly & Co	9,736	Jan. 9	120	630
Plastering and finishing cement	J. B. King & Co	3,244	Feb. 27	120	2716
Plastic substances for external use	Antiozongertine Company	14,080	Jan. 2	120	312
Plows	A. Baldwin & Co	11,618	Jan. 30	120	1456
Plows	Parlin & Orendorff Co	11,210	Feb. 20	120	2413
Plows	Parlin & Orendorff Co	12,229	Feb. 27	120	2732
Plows, cultivators, and harrows	B. F. Avery & Sons	12,631	Feb. 27	120	2733
Plows, cultivators, and stock parts and shapes therefor	Star Manuf'g Co	4,237	Feb. 20	120	2399
Plows, harrows, cultivators, and planters	B. F. Avery & Sons	8,057	Feb. 27	120	2723
Plows. Riding and walking	Parlin & Orendorff Co	11,212	Jan. 30	120	1454
Poison for animals and insects	D. J. Kaufmann	12,783	Feb. 27	120	2734
Poison or exterminator for rats, vermin, and insects	E. S. Wells	11,154	Feb. 27	120	2729
Polishes in powder and liquid form for use in cleaning metal and glass ware.	J. A. Wright & Co	14,323	Feb. 13	120	2109
Popcorn	Albert Dickinson Company	8,410	Jan. 9	120	626
Potash, lye, and caustic soda	A. Mendleson's Sons	6,066	Jan. 30	120	1444
Potatoes. Irish and sweet	Eastern Shore of Virginia Produce Exchange.	8,668	Feb. 27	120	2724
Pottery, earthenware, and china	Doulton & Co	7,157-8	Jan. 16	120	880
Pottery-ware, comprising vases, bowls, lamp-bases, and jars. Ornamental	American Terra Cotta and Ceramic Company.	4,946	Feb. 6	120	1774
Powder. Face-	J. Tetlow	13,564	Jan. 16	120	887
Powder. Face-	F. T. Hopkins	7,168	Feb. 20	120	2403
Powder. Face-	J. Tetlow	13,567	Feb. 27	120	2736
Powder for killing vermin and disinfecting	Dr. Hess & Clark	8,766	Feb. 20	120	2404
Powder for toilet and nursery purposes	J. Tetlow	13,566	Feb. 27	120	2735
Powder. Insect-	Caroh Chemical Company	11,015	Jan. 2	120	309
Powder. Toilet	Stork Company	779	Jan. 30	120	1439
Powder. Tooth-	Woodman-Davis Co	12,935	Jan. 30	120	1451
Powder. Worm-	Dr. Hess & Clark	8,190	Jan. 9	120	626
Powders. Perfumed	E. Palmer	15,675	Feb. 27	120	2730
Preparation for external application for rheumatism. Liquid	H. F. Fowler	14,882	Jan. 30	120	1465
Preparation for internal and external application. Liquid	Herb Medicine Company	3,458	Feb. 20	120	2395
Preparation for the cure of excessive sweating, &c	F. Herb	6,410	Feb. 27	120	2720
Preparation for the relief of rheumatism and kindred ailments.	G. L. Shafer	14,519	Jan. 30	120	1454
Preparation for the treatment of diseases of the stomach and bowels.	Dr. Peter Fahrney & Sons Co	6,934	Jan. 23	120	1142
Preparation for the treatment of headaches, &c. Liquid	C. D. Bradham	7,999	Feb. 13	120	2099
Preparation for the treatment of rheumatism, gout, sciatica, neuralgia, &c.	U. F. Schlapfer	14,780	Jan. 30	120	1465
Printing apparatus. Hectographic	J. S. Bachman	13,161	Jan. 30	120	1453
Publication embodying a complete index of the names and addresses of all manufacturers in the United States. Annual	F. F. Dana	3,469	Jan. 2	120	300
Publication. Monthly	Industrial Press	10,650	Jan. 9	120	633
Publication or paper. Weekly	W. Goodhue	11,786	Feb. 13	120	2105
	Tradesman's Publishing Company.	11,749-9	Feb. 20	120	2415
Pulleys, blocks, and parts thereof	Boston & Lockport Block Company.	7,393	Feb. 6	120	1778
Pulleys, flush-	Norris Sash Pulley Company	14,082	Feb. 6	120	1804
Pulleys, flush-	F. Doosh	7,877	Feb. 13	120	2089
Pulp-board combining straw or less ground leather	A. W. Case	14,087	Feb. 13	120	2113
Pumps	Ginter Grocery Company	10,057	Feb. 27	120	2727
Pumps, deep-well operating mechanism. Liquid	C. H. Graves & Sons	6,573	Feb. 13	120	2097
Pumps, force	F. O. Pierce Company	11,043	Feb. 27	120	2730
Pumps, force	A. Klipstein & Company	13,978	Jan. 2	120	313
Purses	Marshall Field & Company	15,160	Feb. 20	120	2404
Purses. Small	L. A. Thompson Scenic Railway Co.	12,144	Feb. 27	120	2733
Radiators and cooking and heating stoves	Kalamazoo Stove Co	11,767	Feb. 13	120	2101
Rail-fastenings	E. S. Gibbard	9,512	Feb. 20	120	2405

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Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Razor-strops	A. J. Jordan	10,426	Feb. 27	120	2743
Razors	Challenge Cutlery Corp	1,781	Feb. 6	120	1769
Razors	H. Hansenbruch	7,628	Feb. 27	120	2728
Reamers	Standard Tool Company	15,698	Jan. 2	120	313
Refrigerators	Cooper & McKee	11,067	Feb. 20	120	2413
Registers. Autographic	Carter-Crume Co	5,708	Jan. 16	120	879
Remedies and a remedy in the form of suppositories for anæmia, neurasthenia, bronchitis, influenza, &c. Internal	Kahama Chemical Co	3,465	Jan. 16	120	878
Remedies, as teas, &c., for the cure and alleviation of liver and kidney affections, headache, coughs, &c.	H. A. Blair	2,549	Feb. 6	120	1770
Remedies. Asthma	G. Richardson	15,208	Feb. 13	120	2111
Remedies. Catarrh	Pond's Extract Company	13,816	Feb. 6	120	1789
Remedies for asthma	J. K. Brater	14,078	Jan. 2	120	312
Remedies for blood, stomach, kidney, liver, and related complaints.	M. Liebtenstein	8,987	Feb. 27	120	2736
Remedies for bowel and similar complaints	Foster Milburn Company	12,743	Feb. 20	120	2418
Remedies for consumption	U. S. Chemical Co	13,745	Feb. 13	120	2107
Remedies for eye diseases	Eye-Fix Remedy Company	5,914	Feb. 20	120	2401
Remedies for headaches. Internal	G. Van Antwerp & Son	11,433	Feb. 20	120	2414
Remedies for malarial diseases	Paris Medicine Co	2,986	Jan. 9	120	617
Remedies for pulmonary diseases	Fischer Chemical Importing Co	11,119	Jan. 16	120	884
Remedies for pulmonary diseases	Fischer Chemical Importing Co	11,118	Jan. 23	120	1148
Remedies for rheumatism for internal and external use	Hot Shot Medicine Co	7,051	Jan. 30	120	1448
Remedies for skin and scalp diseases	O. J. Hartwig	8,426	Feb. 13	120	2100
Remedies for skin diseases, inflammations, and eruptions. Topical	J. F. Ballard	6,474	Feb. 13	120	2101
Remedies for the cure of blood diseases and rheumatism	C. B. Mumford	800	Feb. 6	120	1767
Remedies for the cure of rheumatism	J. W. Van Lissel	15,652	Feb. 13	120	2112
Remedies for the relief and cure of asthma, consumption, &c.	B. C. Silver	12,174	Feb. 13	120	2106
Remedies or purifiers for internal and external use. Blood	A. L. Filleau	5,533	Jan. 9	120	630
Remedies. Rheumatic	Phillips Drug Co	14,909	Feb. 6	120	1806
Remedy. Consumption	Piso Company	14,760	Jan. 30	120	1464
Remedy. Croup and cold	R. P. Menard	6,253	Jan. 30	120	1445
Remedy for anæmia and chlorosis and also a digestant of starch.	H. O. Hurley	9,046	Jan. 23	120	1145
Remedy for asthma	Tufts Asthmalene Company	13,458	Jan. 9	120	630
Remedy for asthma, catarrh, &c	L. D. Quinn	9,530	Feb. 27	120	2726
Remedy for bronchitis, pneumonia, &c	J. E. Hanson	12,440	Feb. 6	120	1769
Remedy for catarrh	Piso Company	14,761	Jan. 30	120	1465
Remedy for catarrh, hay-fever, and cold in the head	Home Remedy Co	4,673	Feb. 13	120	2095
Remedy for catarrh, &c. Powder	F. Clendinning	15,698	Feb. 20	120	2426
Remedy for catarrh, tuberculosis, &c	Medicinal Balsam Company	7,269	Jan. 30	120	1446
Remedy for chills and fever and affections resulting from malaria, la grippe, cold, and pneumonia.	Eucaline Medicine Co	3,473	Feb. 20	120	2393
Remedy for chills, fever and ague, &c	Dr. Decker Medicine Co	7,347	Jan. 16	120	880
Remedy for colic, cholera, diarrhœa, &c	Chamberlain Medicine Co	9,570	Jan. 16	120	882
Remedy for cuts, wounds, strains, sprains, bruises, burns, scalds, stings, &c.	G. C. Hanford Manufacturing Co	15,225	Feb. 6	120	1807
Remedy for diabetes	Renal Pharmacal Co	13,769	Jan. 9	120	630
Remedy for diseases of the mucous membranes. Pharmaceutical preparation used as a	Lloyd Brothers	7,265	Jan. 23	120	1143
Remedy for distemper	Daggett Remedy Company	12,889	Feb. 20	120	2421
Remedy for dysentery, diarrhœa, &c	C. L. Wells	8,783	Feb. 6	120	1788
Remedy for epilepsy	A. K. Mardis	13,876	Jan. 9	120	629
Remedy for external application to animals. Proprietary	Brandreth Co	9,203	Feb. 20	120	2403
Remedy for headache and neuralgia	R. H. Hunstock Chemical Co	9,261	Feb. 27	120	2725
Remedy for hog-cholera	J. J. Pater	10,220	Jan. 30	120	1462
Remedy for indigestion	Voigt & Co	9,240	Feb. 13	120	2102
Remedy for internal and external use for man and beast for pains, aches, cuts, rheumatism, &c. Antiseptic	H. C. Pope	11,000	Jan. 30	120	1464
Remedy for kidney, liver, and nervous diseases, pain in the back, &c.	Rax Chemical Co	15,788	Feb. 13	120	2112
Remedy for malaria and chills and fever	F. S. Ott	4,158	Feb. 13	120	2094
Remedy for malarial fevers	H. K. Mulford Company	10,454	Feb. 20	120	2411
Remedy for neuralgia, rheumatism, stomach and bowel troubles, &c.	D. Ransom, Son and Company	5,982	Feb. 27	120	2719
Remedy for pulmonary diseases, intestinal catarrh, &c., and may be applied externally for wounds and burns. Liquid preparation to be taken internally as a	V. de Leo	10,383	Jan. 30	120	1451
Remedy for skin diseases	G. A. Coleman	13,120	Feb. 13	120	2103
Remedy for the cure of fistula, poll-evil, lump-jaw, spavin, ringbone, &c., in horses and cattle. Veterinary	Hamer's Sure Cure Company	11,854	Jan. 30	120	1466
Remedy for the cure of liver complaints, constipation, and biliousness	J. Jungmann	10,845	Jan. 16	120	882
Remedy for the cure of throat affections	Glasmer Medicine Co	9,880	Jan. 2	120	307
Remedy for the cure or alleviation of headaches and liver disorders.	J. G. Baker	2,489	Feb. 20	120	2397
Remedy for the nerves	B. H. Bacon Co	13,185	Feb. 6	120	1801
Remedy for the treatment of asthma, phthisic, hay-fever, &c.	B. Bahlmann Company	2,889	Feb. 13	120	2098
Remedy. Headache	Lewis Pharmacal Co	13,468	Jan. 30	120	1461
Remedy in liquid form for diseases of the liver and digestive tract.	Highland Drug Company	11,097	Feb. 20	120	2412
Remedy. Liquid rheumatic	M. W. Monaghan	7,207	Feb. 20	120	2393
Remedy. Liver	A. C. Simmons Jr Medicine Co	4,221	Feb. 20	120	2393
Respirators	E. S. Cover	7,647	Jan. 30	120	1464
Rheumatic cure	Old Veteran Rheumatic Cure Company.	12,397	Jan. 9	120	629
Rheumatic cure	Renal Pharmacal Co	12,761	Jan. 9	120	629
Rheumatism. Liquid preparation for the cure of	J. T. Davis	10,893	Feb. 20	120	2412
Ribbon, ribbon bows, and galloon bindings for use on slippers	E. S. Hamilton	7,117	Feb. 13	120	2097
Ribbons	Feltman & Co	14,021	Feb. 13	120	2102
Ribbons	Feltman & Company	15,781	Feb. 13	120	2102
Ribbons	Feltman & Co	14,020	Feb. 13	120	2102
Ribbons. Velvet	J. Cowan & Sons	1,179	Feb. 13	120	2095
Rings. Bone	Bassett & Hubbard Co	14,151	Feb. 13	120	2095
Rings. Finger	W. Loeb & Co	2,281	Jan. 9	120	630

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Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Official Gazette. Page.
Rings. Gold	S. W. Lindsay	10,705	Feb. 6	120	1789
Rings. Solid-gold finger-	Peckham Seamless Ring M'f'g. Co.	2,904	Feb. 6	120	1770
Rivets	Low Moor Company	15,210	Feb. 13	120	2111
Rock and rye	P. J. Bowlin Liquor Co	8,632	Feb. 20	120	2406
Roofing. Asphalt	Stowell Manufacturing Company	15,292-3	Jan. 16	120	889
Roofing-felt	Barrett Manufacturing Company	11,872	Feb. 20	120	2415
Roofing-felt. Tarred	W. H. Rankin Company	11,867	Feb. 13	120	2105
Roofing-plates. Sheet-metal	R. J. Hyndman	11,798	Feb. 6	120	1782
Roofing. Ready felt	Buchanan Foster Company	15,258	Feb. 6	120	1810
Roofing. Ready tar-and-felt	Barrett Manufacturing Company	15,295	Jan. 16	120	889
Rope	Columbian Rope Company	10,982	Jan. 30	120	1464
Rope-clips	American Hoist & Derrick Company	13,648	Feb. 6	120	1808
Ropes, cords, twine, and binder-twine	International Harvester Co. of America	12,106	Feb. 27	120	2732
Rubber bags and pouches. India-	Continental Caoutchouc Company	9,006	Feb. 20	120	2407
Rubber bags and pouches. India-	Continental Caoutchouc Company	11,010	Feb. 27	120	2729
Rubber binding. India-	Knapp Rubber Binding Co	16,306-7	Feb. 27	120	2742
Rubber boots and shoes	Lambertville Rubber Company	1,620	Feb. 27	120	2714
Rubber boots, shoes, and sandals	Bentley & Olmsted Company	7,453	Feb. 6	120	1779
Rubber combs	American Hard Rubber Co	5,155-7	Feb. 20	120	2400
Rubber combs	American Hard Rubber Co	5,154	Feb. 27	120	2718
Rubber combs	American Hard Rubber Co	5,158	Feb. 27	120	2718
Rubber combs. Hard-	American Hard Rubber Co	5,163	Feb. 27	120	2718
Rubber erasers	Eagle Pencil Company	11,985	Jan. 2	120	310
Rubber heels for boots and shoes	P. W. Minor & Son	7,641	Jan. 9	120	633
Rubber hose	Gorham Rubber Company	5,170	Jan. 9	120	619
Rubber hose	Mulconroy Co	15,280-1	Feb. 13	120	2111
Rubber in sheet form. Reclaimed	U. S. Rubber Reclaiming Works of New York	12,340	Feb. 20	120	2417
Rubber nipples for nursing-bottles	Seamless Rubber Co	6,236	Jan. 9	120	620
Rubber stair-nosings. India-	Knapp Rubber Binding Co	16,408-9	Feb. 27	120	2743-4
Rubber substitutes	Dermatine Company	6,745	Jan. 2	120	304
Rubber syringes. Hard-	American Hard Rubber Co	5,160	Feb. 27	120	2718
Rubber water bags and bottles	Seamless Rubber Co	6,234	Jan. 2	120	304
Rubbers for men, boys, and youths and rubber boots for men, boys, women, and children. Lumbermen's	L. P. Ross	15,513	Feb. 6	120	1807
Rugs, art squares, and matting made of grass twine	Oshkosh Grass Matting Co	3,446	Feb. 20	120	2398
Rugs, art squares, and matting made of grass twine	Oshkosh Grass Matting Co	3,445	Feb. 27	120	2716
Rules, yardsticks, and board and log measures	Chapin-Stephens Company	724	Feb. 20	120	2395
Salad-dressing and sauces	E. R. Durkee & Co	3,979	Feb. 6	120	1771
Salve	Bickmore Gall Cure Company	10,800	Jan. 30	120	1462
Salve	J. H. Patten	12,921	Feb. 6	120	1800
Salve for treatment of boils and carbuncles	Cartoil Salve Co	13,528	Jan. 23	120	1151
Salves	Wonderful Dream Salve Co	2,020	Feb. 6	120	1769
Salves	Presto Pharmacal Company	13,545	Feb. 20	120	2421
Sardines	Von Bremen, MacMonnies & Co	12,467	Jan. 30	120	1460
Sauce for spaghetti	E. Picchianti	11,109	Feb. 6	120	1790
Sauces and relishes for meats, fish, game, &c	Red Snapper Sauce Co	9,207	Jan. 16	120	882
Sausages	B. Frankfeld & Co	12,902	Feb. 20	120	2418
Saws	G. N. Clemson	6,000	Jan. 30	120	1444
Saws. Circular and band	Toledo Saw Co	10,536	Feb. 20	120	2412
Scarfs	W. Trevor	13,212	Jan. 23	120	1151
Scarfs	W. Trevor	13,316	Feb. 27	120	2736
Scissors	C. F. Boker	12,540	Jan. 23	120	1150
Scissors	F. Köller & Co	16,210	Feb. 20	120	2431
Scissors and shears	Challenge Cutlery Corporation	12,019	Jan. 2	120	310
Scissors and shears	Keith Simmons & Co	16,520	Feb. 27	120	2744
Scouring, cleansing, and washing preparation	India Alkali Works	15,084	Feb. 6	120	1807
Scrapers. Earth-	Kilbourne & Jacobs Manufacturing Company	12,894	Feb. 6	120	1799
Seeding-machines	Peoria Drill and Seeder Co	12,868	Jan. 30	120	1461
Seeding-machines. End-gate	Luthy & Co	14,987	Feb. 20	120	2424
Seeds and bulbs. Garden, trucking, and flower	G. Tait & Sons	12,681	Feb. 6	120	1808
Seeds. Garden, flower, and field	Livingston Seed Co	5,212	Jan. 23	120	1141
Sewing-machines	A. G. Mason	279	Feb. 20	120	2395
Sewing-machines and parts thereof	Household Sewing Machine Co	10,516	Feb. 27	120	2727
Sewing-machines and sewing-machine parts	Household Sewing Machine Co	10,517	Feb. 13	120	2108
Sewing-machines and their parts	Household Sewing Machine Co	10,518	Jan. 2	120	308
[illegible]. Oil-	Hulse Bradford Co	[illegible]	Jan. 2	120	312
[illegible]	Amory, Browne & Co	[illegible]	Jan. 30	120	1447
[illegible]	C. W. Levalley	12,510	Jan. 30	120	1462
[illegible] appurtenances thereto. Counter-	Mossberg Wrench Company	[illegible]	Feb. 6	120	1810
[illegible] and scissors	H. Clauss	7,484	Feb. 20	120	2404
[illegible]	Carey, Bayne & Smith Company	14,439	Jan. 9	120	640
[illegible]	Courtenay Mfg. Co	14,431	Feb. 6	120	1805
[illegible]	Grendel Mills	4,938	Jan. 23	120	1141
[illegible]	Easley Cotton Mills	5,688	Feb. 6	120	1776
[illegible]	Exposition Cotton Mills	15,583	Feb. 13	120	2112
[illegible]	Exposition Cotton Mills	15,587	Feb. 13	120	2112
[illegible]	Exposition Cotton Mills	15,580-1	Feb. 13	120	2112-13
[illegible]	Exposition Cotton Mills	15,576-81	Feb. 20	120	2426
[illegible]	Exposition Cotton Mills	15,583	Feb. 20	120	2426
[illegible]	Exposition Cotton Mills	15,585-6	Feb. 20	120	2427
[illegible]	Exposition Cotton Mills	15,588	Feb. 20	120	2427
[illegible]	Exposition Cotton Mills	15,592-3	Feb. 20	120	2427
[illegible]	Loray Mills	4,846	Feb. 13	120	[illegible]
[illegible]	Easley Cotton Mills	5,688	Feb. 20	120	2401
[illegible]. Cotton	K. Iwahara	10,344	Jan. 23	120	1147
[illegible]. Cotton	K. Iwahara	11,716	Jan. 23	120	1149
[illegible]. Cotton	K. Iwahara	10,346	Feb. 6	120	1789
[illegible]. Cotton	K. Iwahara	[illegible]	Feb. 13	120	[illegible]
[illegible]. Cotton	K. Iwahara	[illegible]	Feb. 13	120	[illegible]

Alphabetical list of trade-marks published during January and February—Continued.

Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Official Gazette. Page.
Sheetings and drills. Cotton	K. Iwahara	10,346	Feb. 27	120	2727
Sheetings and drills. Cotton	K. Iwahara	[illegible]	Feb. 27	120	2729
Sheetings, drills, and ducks	[illegible] Mills	[illegible]	Feb. 27	120	[illegible]
Sheetings, shirtings, and drills	[illegible]	9,173-4	Feb. 20	120	[illegible]
Shells. Shotgun-	[illegible] Cartridge Co	3,761	Feb. 20	120	[illegible]
Sherry	[illegible]	[illegible]	Feb. 13	120	[illegible]
Ship-logs and sounding-machines	[illegible]	11,757	Feb. 6	120	1782
Ships' bottoms. Anticorrosive composition for	[illegible] & Son	1,312	Feb. 13	120	[illegible]
Ships' bottoms. Antifouling compositions for	[illegible] & Son	[illegible]	Feb. 13	120	[illegible]
Ships' logs	[illegible] & Son	[illegible]	Feb. 20	120	[illegible]
Shirt-fronts and false shirt-bosoms	[illegible] Company	[illegible]	Feb. 20	120	[illegible]
Shirt-waists and shirt-waist suits. Ladies'	[illegible] Co	[illegible]	Feb. 13	120	[illegible]
Shirt-waists and shirt-waist suits. Ladies'	[illegible] & Co	[illegible]	Feb. 13	120	2111
Shirts, collars, and cuffs	[illegible] Shirt Co	[illegible]	Feb. 20	120	2412
Shirts, collars, and cuffs	[illegible] Shirt Co	[illegible]	Feb. 27	120	[illegible]
Shirts, collars, and cuffs. Outer and dress	[illegible] & Co	[illegible]	Jan. 30	120	[illegible]
Shirts. Dress-	[illegible] & Co	11,964	Jan. 30	120	1457
Shirts for men and women. Outing-	[illegible]	[illegible]	Jan. 23	120	1146
Shirts. Men's outer	[illegible]	[illegible]	Feb. 6	120	[illegible]
Shirts. Negligée and dress	J. [illegible], Norton & Co	8,127	Feb. 6	120	1781
Shirts. Outer and dress	[illegible]	[illegible]	Feb. 6	120	1800
Shirts, shirt-waists, and blouses	[illegible] & Co	2,710	Feb. 6	120	1770
Shirtings	[illegible] Manufacturing Company	[illegible]	Jan. 30	120	[illegible]
Shirtings and sheetings	[illegible] Mills	10,005-6	Feb. 6	120	1787
Shirtings and sheetings, cambrics, and long-cloth. Bleached and unbleached	G. Willis & Co	[illegible]	Jan. 9	120	641
Shirtings and sheetings, cambrics, and long-cloth. Bleached and unbleached	G. Willis & Co	14,701-2	Jan. 9	120	641-2
Shirtings and sheetings, cambrics, and long-cloth. Bleached and unbleached	G. Willis & Co	14,705	Jan. 9	120	642
Shirtings and sheetings, cambrics, and long-cloth. Bleached and unbleached	G. Willis & Co	14,708	Jan. 9	120	642
Shirtings and sheetings, cambrics, and long-cloth. Bleached and unbleached	G. Willis & Co	14,744	Jan. 9	120	643
Shirtings and sheetings, cambrics, and long-cloth. Bleached and unbleached	G. Willis & Co	14,748-9	Jan. 9	120	643
Shirtings and sheetings, cambrics, and long-cloth. Bleached and unbleached	G. Willis & Co	[illegible]	Jan. 9	120	643
Shirtings and sheetings, cambrics, and long-cloth. Bleached and unbleached	G. Willis & Co	14,755	Jan. 9	120	643
Shirtings and sheetings, cambrics, and long-cloth. Bleached and unbleached	G. Willis & Co	14,707	Jan. 16	120	[illegible]
Shirtings and sheetings, cambrics, and long-cloth. Bleached and unbleached	G. Willis & Co	14,710	Jan. 16	120	[illegible]
Shirtings and sheetings, cambrics, and long-cloth. Bleached and unbleached	G. Willis & Co	14,746-7	Jan. 16	120	[illegible]
Shirtings and sheetings, cambrics, and long-cloth. Bleached and unbleached	G. Willis & Co	14,750-1	Jan. 16	120	[illegible]
Shoe-dressing. Men's liquid and paste	Hamilton-Brown Shoe Co	16,340	Feb. 27	120	2741
Shoe-dressing. Women's liquid and paste	Hamilton-Brown Shoe Co	16,339	Feb. 27	120	2741
Shoe polishes and blackings	F. R. [illegible]	7,101	Jan. 2	120	[illegible]
Shoes and slippers. Leather and canvas	[illegible]	[illegible]	Jan. 2	120	311
Shoes. Children's leather	Watson-Plummer Shoe Company	12,237	Feb. 6	120	[illegible]
Shoes. Ladies'	[illegible] & Company	[illegible]	Jan. 30	120	1447
Shoes. Ladies', men's, and children's leather	[illegible]	12,984	Feb. 6	120	[illegible]
Shoes. Ladies', misses', and children's leather	W. B. Carhart	12,546	Feb. 27	120	[illegible]
Shoes. Leather	[illegible] & Loventhal	[illegible]	Jan. 2	120	311
Shoes. Leather	C. K. Sharood	[illegible]	Feb. 13	120	[illegible]
Shoes. Leather	[illegible] Bros	[illegible]	Feb. 20	120	2414
Shoes. Men's leather	Hamilton-Brown Shoe Company	14,491	Jan. 9	120	[illegible]
Shoes. Tennis-	Hood Rubber Co	[illegible]	Jan. 23	120	[illegible]
Shovels, scoops, and spades	Hayden Automatic & Equipment Company	[illegible]	Feb. 13	120	[illegible]
Show-cases	John Phillips & Co	11,945	Jan. 2	120	[illegible]
Silk and mixed cotton and silk piece goods	[illegible] Co	[illegible]	Jan. 9	120	[illegible]
Silk and mixtures of silk with cotton and wool for dress goods and linings	Martin L. Cohn Co	[illegible]	Feb. 6	120	[illegible]
Silk dress material	John Goodwin Company	[illegible]	Jan. 16	120	[illegible]
Silk fabrics	[illegible] Silk Company	[illegible]	Jan. [illegible]	[illegible]	[illegible]
Silk piece goods	[illegible] & Co	[illegible]	Feb. [illegible]	[illegible]	[illegible]
Silk. Spun	[illegible]-Gesellschaft für [illegible]	[illegible]	Feb. 13	[illegible]	[illegible]
Silks and satins	[illegible] Manufacturing Company	[illegible]	Jan. 9	[illegible]	[illegible]
Silks. Dress-	[illegible] Company	[illegible]	Feb. 27	[illegible]	[illegible]
Silver flat ware, hollow ware, and tableware. Sterling-	[illegible] & Bro. Co	[illegible]	Jan. [illegible]	[illegible]	[illegible]
Silver-plated hollow ware	[illegible] Company	[illegible]	[illegible]	[illegible]	[illegible]
Silver-plated hollow ware	[illegible] Company	[illegible]	[illegible]	[illegible]	[illegible]
Silver-plated hollow ware	[illegible] Company	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] hollow ware	[illegible] Company	[illegible]	[illegible]	[illegible]	[illegible]
[illegible], hollow, and flat ware	[illegible] Company	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Skirts	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Skirts of all descriptions. Women's, misses', and children's	[illegible] & Co	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible] Sweet Company	[illegible]	[illegible]	[illegible]	[illegible]
Slippers and shoes. Women's leather and cloth	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible], shears, and scissors	[illegible] Cutlery Company	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Soap	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Soap	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Soap	[illegible] Company	[illegible]	[illegible]	[illegible]	[illegible]
Soap	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Soap	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Soap	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Soap	[illegible] Company	[illegible]	[illegible]	[illegible]	[illegible]
Soap	[illegible] Company	[illegible]	[illegible]	[illegible]	[illegible]

Alphabetical list of trade-marks published during January and February—Continued.

Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Soap	Cudahy Packing Co	14,286	Feb. 27	120	2737
Soap	Price's Patent Candle Co	16,081	Feb. 27	120	2740
Soap	Anti-Grime Soap Company	16,315	Feb. 27	120	2742
Soap. Borax	Pacific Coast Borax Company	15,128	Jan. 16	120	888
Soap. Borax	Pacific Coast Borax Company	14,138	Jan. 23	120	1153
Soap. Cake	A. Klipstein & Company	6,461	Feb. 27	120	2721
Soap. Cake or bar	C. W. Young & Co	2,219	Feb. 13	120	2052
Soap. Chipped	C. W. Young & Co	12,898	Feb. 13	120	2052
Soap cake	J. T. Kenny & Co	13,726	Jan. 30	120	1459
Soap compound. Emollient	C. E. Gates	12,700	Feb. 27	120	2734
Soap for laundry, toilet, and household use	Maple City Soap Works	12,845	Feb. 6	120	1790
Soap. Glycerin	Mülhens & Kropff	1,342	Feb. 20	120	2396
Soap in liquid, solid, plastic, and granular form	G. A. Schmidt	9,280	Jan. 30	120	1440
Soap. Laundry	Prouty-Bowler Soap Company	4,885	Feb. 6	120	1773
Soap. Laundry and powdered	C. W. Young & Co	12,897	Feb. 13	120	2109
Soap. Laundry and toilet	Schmidt & Schilling	15,818	Feb. 27	120	2740
Soap. Perfumed	Eugene Rimmel Limited	16,142	Feb. 20	120	2430
Soap. Polishing	Kendall Mfg. Co	6,360	Feb. 6	120	1777
Soap powder combined with mineral ingredients	Cudahy Packing Co	12,635	Jan. 30	120	1439
Soap. Pumice	Iowa Soap Company	15,043	Jan. 9	120	644
Soap. Securing	Bon Ami Company	14,308	Feb. 6	120	1805
Soap. Toilet	D. R. Bradley & Son	15,373	Jan. 23	120	1153
Soap. Toilet	Medical Lake Salts Mfg. Co	7,226	Feb. 6	120	1778
Soap. Toilet	C. W. Young & Co	8,225	Feb. 13	120	2100
Soap. Toilet and laundry	Fairbridge & Blackwall	8,825	Feb. 13	120	2101
Soap. Toilet and laundry	Maple City Soap Works	12,845	Jan. 30	120	1460
Soap. Tooth	Haskins Bros. & Co	8,846	Feb. 6	120	1783
	K. k. landespriv. Milly-Kernan-Seifen- und Glycerin-Fabrik, von F. A. Sarg's Sohn & Co.	11,340	Feb. 13	120	2104
Soaps	J. F. G. de Roussy de Sales	10,528	Feb. 20	120	2411
Soaps. Solid and liquid	E. A. Olds	1,849	Jan. 16	120	877
Soaps. Toilet	Mülhens & Kropff	13,777	Jan. 30	120	1463
Soda-water and syrup for the same. Aerated or carbonated bottled	B. H. McDonald	11,108	Feb. 27	120	2729
Soda-water syrup and a drink made from such syrup	Wiley Manufacturing Co	12,052	Jan. 23	120	1149
Sodium phosphate. Liquid preparation of	Voigt & Co	8,343	Feb. 13	120	2100
Soldering fluid for tin, brass, copper, and like metals	Non-Corrosive Coating Co	11,922	Feb. 6	120	1794
Soothing-syrup	Presto Pharmacal Company	12,802	Feb. 6	120	1798
Soothing-syrup for the cure of wind-colic, diarrhœa, &c., and all troubles consequent upon teething	C. B. Kopp	11,842	Feb. 6	120	1793
Souvenir articles, consisting of badges, brooches, medals, pins, charms, and buttons	C. M. Robbins Co	9,005	Jan. 30	120	1448
Specific for neuralgia and rheumatism	Mellier Drug Company	6,321	Feb. 20	120	2402
Specifics put up in tabular form. Headache	Migrances Importing Co	12,508	Jan. 16	120	886
Spectacle and eyeglass frames	Bay State Optical Company	13,402	Feb. 6	120	1803
Spices	R. R. Durkee & Co	3,974	Jan. 9	120	618
Spices	A. Schilling & Company	9,288	Jan. 23	120	1146
Spices	A. Schilling & Company	9,302	Jan. 30	120	1449
Spices and mustard	Lehn & Fink	13,909	Feb. 20	120	2422
Spices. Ground	Schwabacher Bros. & Co	11,836	Feb. 6	120	1795
Spoons. Gold, silver, and plated	Citizens' Wholesale Supply Co	7,262	Jan. 23	120	1150
Starch. Laundry	M. B. Logan	6,264	Feb. 6	120	1777
Starch. Laundry	New York Glucose Co	9,233	Jan. 16	120	883
Starch. Powdered laundry	S. W. Noggle Wholesale & Mfg. Co	8,809	Feb. 6	120	1783
Steel and steel bars, rods, and sheets and tools made from steel. Tool	Faultless Starch Co	10,549	Feb. 6	120	1789
Steel and steel bars, rods, and sheets. Tool	Hawkridge Brothers	12,172	Feb. 6	120	1795
Steel bars, rods, billets, blooms, &c	Hawkridge Bros	1,151	Feb. 6	120	1788
Steel bars, rods, billets, blooms, &c	Crucible Steel Company of America	5,512	Feb. 6	120	1775
Steel bars, rods, billets, blooms, &c	Crucible Steel Company of America	5,515	Feb. 6	120	1775
Steel bars, rods, blooms, billets, &c	Crucible Steel Company of America	5,517	Feb. 6	120	1775
Steel. Cast	Howe Brown & Co	5,492	Feb. 6	120	1776
Steel. Crucible, tool, drill, and pick	Braeburn Steel Company	11,224	Feb. 27	120	2729
	Dunham, Carrigan & Hayden Company	11,336	Jan. 16	120	884
Steel. High-speed tool	Fuller Brothers & Co	8,885	Jan. 2	120	306
Steel-cutting machines	Diagraph Company	10,001	Feb. 6	120	1788
Stencils	Columbia Hosiery Co	12,695	Jan. 23	120	1149
Stencils	R. & W. Jenkinson Co	11,342	Jan. 2	120	309
Stencils	R. & W. Jenkinson Co	9,088	Jan. 30	120	1440
Stencils and for rubbing purposes. Natural	J. Williams & Bros	7,274	Jan. 30	120	1446
Stereotype. Powdered	James H. Rhodes & Company	13,488	Feb. 20	120	2421
Stews, pickles and vegetables	X-Ray Stove Polish Co	4,648	Jan. 23	120	1141
Stoves and ranges	John M. Well Company	7,774	Jan. 16	120	881
Stoves and ranges, heating-stoves, and repairs and parts thereof. Cooking	Leitzmann-Williams Manufacturing Company	12,153	Feb. 20	120	2417
Stoves, heating and cooking	Alpha Stove Works	13,961	Feb. 20	120	2421
Stoves, heating and cooking	Barstow Stove Company	16,584	Feb. 27	120	2744
Stoves, heating and cooking, and cooking thereafter	Joliet Stove Works	11,283	Feb. 20	120	2414
Stoves, furnaces, and parts thereof	Joliet Stove Works	11,913	Feb. 20	120	2414
Stoves, ranges, and attachments and parts and	Gehnrmann Bros. & Kahler Co	7,555	Feb. 6	120	1779
Stoves, ranges, and attachments and parts and	Barnston Stove Works	4,288	Jan. 16	120	878
Stoves, ranges, furnaces, and parts thereof	Gill Stove Works	10,548	Feb. 6	120	1789
Stoves and ranges	Gill Stove Works	10,549	Feb. 6	120	1789
Stoves and ranges	Richardson & Boynton Company	3,619	Feb. 20	120	2397
Stoves and ranges	E. A. Schneidewind	7,144	Feb. 20	120	2403
Stoves and ranges	Gill Mfg. Company	3,685	Jan. 2	120	309
Stoves and ranges	Dr. Pierce Chemical Company	10,291	Feb. 20	120	2410
Stoves and ranges	R. P. Bartel	12,013	Jan. 30	120	1451

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Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Suspenders. Trousers	Gordon Manufacturing Company	12,063	Feb. 6	120	1804
Suspensory bandages	J. Elwood Lee Company	14,660	Feb. 27	120	2744
Suspensory bandages and jock-straps	S. H. Wetmore Co	5,456	Jan. 30	120	1444
Switchboard-cords	J. E. Crawford	12,180	Jan. 2	120	311
Syrup	Grimm, Cooper & Company	9,648	Feb. 6	120	1793
Syrup and molasses	Francis H. Leggett & Company	9,160	Jan. 30	120	1449
Syrup for disguising quinin. Aromatic	Voigt & Co	8,345	Feb. 13	120	2100
Tablets for diseases of the digestive tract	Illinois Laboratories	4,785	Jan. 9	120	622
Tablets for the cure of headaches, neuralgia, &c. Synthetic coal-tar product in the form of	Mellier Drug Company	6,319	Jan. 2	120	308
Talking-machine records	Victor Talking Machine Company	14,834	Jan. 2	120	312
Talking-machine records	Victor Talking Machine Company	13,103	Jan. 9	120	644
Talking-machine records	Edgewood Co	11,208	Jan. 30	120	1454
Talking-machine records	Victor Talking Machine Company	13,617	Jan. 30	120	1466
Talking-machine sound-boxes	Victor Talking Machine Company	14,833	Jan. 2	120	312
Talking-machines and parts thereof	Victor Talking Machine Company	13,107	Jan. 9	120	644
Tanning extract	Stamford Manufacturing Company	13,748	Jan. 16	120	887
Tanning extract	Stamford Mfg. Co	6,895-6	Feb. 20	120	2403
Taps	Standard Tool Company	14,040	Jan. 2	120	314
Taps, dies, reamers, screw-plates, die-stocks, and tap-wrenches	J. M. Carpenter Tap & Die Co	2,695	Feb. 6	120	1779
Tar and pitch	Barrett Manufacturing Company	11,871	Feb. 6	120	1793
Tea	Acme, Marrall & Condit Company	12,908	Feb. 6	120	1804
Tea	W. E. Sibley	726	Feb. 13	120	2091
Tea	B. Dessenberg & Co	2,124	Feb. 13	120	2092
Tea	Sprague, Warner & Company	12,479	Feb. 20	120	2417
Tea	Hewlett & Lee	12,801-2	Feb. 27	120	2734
Tea and coffee pots and coffee-urns	Charles & Co	16,304	Feb. 27	120	2743
Thread of silk, cotton, or flax for sewing, stitching, crocheting, embroidering, knitting, &c	Silver & Company	15,940	Feb. 6	120	1811
Threads. Cotton, silk, hemp, and other fiber	Nonotuck Silk Company	7,728	Jan. 9	120	624
Ticket issuing and recording machines	Singer Manufacturing Company	13,887	Jan. 9	120	629
Tickings	Ohmer Fare Register Co	14,896	Feb. 6	120	1803
Tiles	Eagle & Phenix Mills	11,899-901	Feb. 6	120	1794
Tin and terne plates	Vautier Frères	9,204	Feb. 6	120	1784
Tin and terne plates	Follansbee Brothers Company	9,208	Feb. 13	120	2101
Tin and terne plates	Follansbee Brothers Company	9,213-14	Feb. 13	120	2101
Tin and terne plates	Follansbee Brothers Company	9,217-19	Feb. 13	120	2101
Tin and terne plates	Follansbee Brothers Company	9,221-4	Feb. 13	120	2101-2
Tin and terne plates	Follansbee Brothers Company	9,231	Feb. 13	120	2102
Tin and terne plates	Follansbee Brothers Company	9,234	Feb. 13	120	2102
Tin and terne plates	Follansbee Brothers Company	9,239	Feb. 20	120	2403
Tin and terne plates	Follansbee Brothers Company	9,509	Feb. 20	120	2403
Tin and terne plates	Follansbee Brothers Company	9,511	Feb. 20	120	2403
Tin. Plate and roofing	Follansbee Brothers Company	9,516	Feb. 20	120	2403
Tin. Plate and roofing	J. Meurer	3,091	Feb. 27	120	2735
Toast. Granulated	J. Meurer	3,094-5	Feb. 27	120	2735
Tobacco. Chewing	D. J. Ety	13,483	Jan. 30	120	1462
Tobacco. Chewing and smoking	Ryan-Hampton Tobacco Co	10,113	Feb. 6	120	1787
Tobacco. Especially high grade of plug	R. Harris & Bro	2,046	Feb. 20	120	2397
Tobacco. Granulated smoking	Ryan-Hampton Tobacco Co	10,113	Feb. 6	120	1787
Tobacco having the outward appearance and consistency of an ordinary cigar. Combination of cigar and chewing	P. B. Penn Tob. Co	1,311	Jan. 30	120	1449
Tobacco. High grade of chewing	A. Marschner	15,491	Feb. 6	120	1827
Tobacco. Plug chewing	Ryan-Hampton Tobacco Co	10,108	Jan. 30	120	1451
Tobacco. Plug chewing and smoking	S. F. Hassrot	8,801	Feb. 27	120	2725
Tobacco. Plug-cut	H. N. Martin & Co	6,100	Feb. 20	120	2403
Tobacco. Plug, cut-plug, and smoking	Weinert Brothers Tobacco Company	2,877	Jan. 30	120	1449
Tobacco. Smoking	Joseph G. Dill, Inc	3,893	Jan. 9	120	618
Tobacco. Smoking	Republic of France	13,278	Feb. 20	120	2419
Tobacco. Smoking	Britain Tobacco Works	14,283	Feb. 20	120	2421
Tobacco. Smoking and chewing	Britain Tobacco Works	16,284	Feb. 27	120	2736
Tobacco. Smoking and chewing	Michigan Tobacco Works	9,570	Jan. 23	120	1149
Tobacco, snuff, and tobacco extracts. Smoking and chewing	Nashville Tobacco Works	12,667	Feb. 20	120	2417
Tobacco. Strong black plug chewing	Republic of France	13,275	Feb. 20	120	2419
Toilet-cases. Traveling	Gilbert Son & Co	13,882	Jan. 23	120	1150
Toilet wash for the skin	W. E. Disbrow	10,020	Jan. 9	120	624
Toilet waters	R. Grosh	13,892	Jan. 30	120	1454
Tonic	E. Frost	9,260	Feb. 6	120	1786
Tonic and general stimulant	Osborn Birks & Co	9,489	Jan. 9	120	624
Tonic and flesh-builder. Nutritive	Mellier Drug Company	6,320	Feb. 20	120	2402
Tonic beverage. Non-alcoholic	H. Morse	12,214	Feb. 20	120	2419
Tonic beverages and materials for making the same	J. Hinton	10,282	Feb. 20	120	2410
Tonic beverages and syrups for the same. Aerated	Wharton Chemical Co	12,881	Jan. 23	120	1150
Tonic beverages. Non-alcoholic carbonated	Dr. Jaynes Co	14,288	Jan. 30	120	1452
Tonic, blood-purifier, and liver and kidney renovator	Rumsfeld Chemical Works	8,779	Feb. 6	120	1786
Tonic cordial containing cod-liver oil and hypophosphites	C. O. F. Bernstrom	6,647	Feb. 6	120	1786
Tonic for cure of impure blood, malaria, malformation, &c	Voigt & Co	8,347	Feb. 13	120	2100
Tonic. Nerve and brain	C. F. Taylor	15,023	Feb. 13	120	2100
Tonic or nutriment. Blood	[illegible]	15,489	Feb. 13	120	2100
Tonic. Powdered nerve and muscle	[illegible]	10,282	Feb. 20	120	2410
Tonics	[illegible]	7,263	Feb. 13	120	2100
Tonics	[illegible]	13,893	Feb. 20	120	2419
Tonics. Antimalarial	[illegible]	11,938	Feb. 20	120	2419
Tonics. Iron	[illegible]	12,635-11	Feb. 20	120	2419
Tooth-paste	[illegible]	13,888	Feb. 20	120	2419
Tooth-paste	[illegible]	14,888	Feb. 20	120	2419
Toothpicks	[illegible]	11,927	Feb. 20	120	2419
Tree known as the Himbeck peach. Variety of peach	[illegible]	15,540	Feb. 27	120	2744
	[illegible]	11,148	Jan. 9	120	624

Alphabetical list of trade-marks published during January and February—Continued.

Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Trees, buds, and scions thereof. Fruit-	Oregon Nursery Company	16,555	Jan. 30	130	1468
Trees, scions, cuttings, grains, roots, and stocks. Peach-	Texas Nursery Company	16,147	Feb. 20	130	2431
Trimmings for ladies' underwear	Friedberger-Aaron Mfg. Co	11,863	Feb. 27	130	2720
Trousers	L. L. Pearl & Co	15,490	Feb. 20	130	2428
Trunks, suit-cases, traveling-bags, and various styles of satchels and telescopes.	Henry Pollack Trunk Co	13,382	Jan. 30	130	1462
Tubing adapted for use as hose or packing. Elastic	New Jersey Car Spring & Rubber Co.	16,513	Feb. 27	130	2744
Turpentine. Spirits of	Standard Oil Company	16,267	Feb. 27	130	2742
Turquoise. Gemstone mined and cut	Aztec Turquois Company	13,098	Feb. 6	130	1801
Type-writing machines	Oliver Typewriter Company	12,754	Feb. 6	130	1798
Type-writing machines	Wellington Typewriter Company	16,111	Feb. 6	130	1812
Type-writing machines	Smith Premier Typewriter Company.	16,510	Feb. 20	130	2432
Undershirts and drawers	H. Loeb & Co	3,332	Jan. 9	130	618
Undershirts and drawers	Howe & Howe	10,910	Jan. 16	130	884
Undershirts and drawers and union suits	Deimel Linen-Mesh System Company.	7,867	Jan. 30	130	1448
Undershirts and drawers and union suits	Deimel Linen-Mesh System Company.	7,850	Feb. 27	130	2723
Undershirts and drawers for men and women	Heilmann, Loth & Gutman	4,234	Jan. 23	130	1141
Undershirts and underdrawers	Erlanger Bros	10,401	Jan. 2	130	308
Underwaists. Children's	H. & W. Company	11,554	Jan. 16	130	895
Underwaists. Children's	Nazareth Waist Co	861	Feb. 13	130	2091
Underwaists. Ladies' and children's	Warner Bros. Co	12,534	Feb. 20	130	2421
Underwear, drawers, tights, vests, and union suits	Chas. A. Stevens & Bros	9,206	Feb. 6	130	1784
Varnishes	American Varnish Company	9,981	Jan. 2	130	307
Varnishes	American Varnish Company	9,983	Jan. 2	130	307
Varnishes	John W. Masury & Son	14,956	Jan. 2	130	313
Varnishes	Tosh Brothers	11,578	Jan. 30	130	1466
Varnishes	J. Babcock & Co	8,080	Feb. 6	130	1781
Varnishes	David B. Crockett Company	10,951	Feb. 13	130	2103
Varnishes	Valentine & Company	9,289	Jan. 30	130	1449
Varnishes and japans	Glidden Varnish Company	16,435	Feb. 27	130	2743
Varnishes and varnish-stains	Chas. H. Gillespie & Sons	1,871	Feb. 13	130	2092
Varnishes, finishes, oil-finishes, japans, and fillers	Standard Paint Company	14,705	Feb. 20	130	2434
Varnishes. Preservative and insulating	A. Wimpfheimer and Brother	11,206	Jan. 30	130	1465
Velveteens	W. Openhym & Sons	5,073	Feb. 27	130	2718
Velveteens and corduroys	Wm. Openhym & Sons	5,072	Feb. 6	130	1774
Velveteens, corduroys, and other cotton-velvet fabrics	Globe Ventilator Company	3,179	Jan. 2	130	300
Ventilators, chimney-covers, and ventilating-caps for air-shafts, &c., and ventilated ridging.					
Vermouth	Charles Jacquin et Cie	10,126	Feb. 13	130	2102
Vests and waistcoats. Men's	F. H. Sprague Co	12,874	Feb. 6	130	1789
Veterinary remedies for horses and all domestic animals	Pond's Extract Company	12,817	Feb. 6	130	1790
Vinegar	H. J. Heinz Company	14,676	Feb. 6	130	1809
Vinegar. Cider	Chas. E. Meyer & Co	9,685	Feb. 6	130	1786
Violin and guitar strings	Lyon & Healy	11,571	Feb. 6	130	1791
Violin-strings	Lyon & Healy	11,573	Feb. 13	130	2105
Violin-strings	Lyon & Healy	11,598	Feb. 20	130	2413
Wagons	Tiffin Wagon Co	4,822	Jan. 30	130	1443
Wagons	Weber Wagon Company	11,462	Feb. 6	130	1792
Walk, &c. Chemical compound for coating	Tosh Brothers	11,580	Feb. 13	130	2105
Washboards	American Washboard Company	4,822	Feb. 20	130	2400
Washes or lotions to rid animals of vermin	Pratt Food Co	12,657	Feb. 6	130	1797
Washing fluid	R. J. Williams	12,639	Feb. 20	130	2417
Washing fluids	E. F. Kaestner	12,154	Feb. 27	130	2732
Washing-machines	Wable Foundry and Machine Works.	12,396	Jan. 30	130	1459
Washing-powder	Summit City Soap Works	1,961	Jan. 23	130	1140
Watch-glasses	A. Berger & Co	10,267	Feb. 6	130	1788
Watch-movements	B. L. Strasburger	4,400	Feb. 27	130	2716
Watches	Elgin National Watch Co	12,306	Jan. 9	130	637
Watches	Elgin National Watch Company	1,115	Feb. 6	130	1768
Watches and watch parts	Hampden Watch Co	2,946	Jan. 2	130	300
Watches, watch cases and movements	D. Gruen & Sons	10,446	Jan. 23	130	1147
Watchcases	Dueber Watch Case Mfg. Co	2,178	Feb. 27	130	2715
Water. Mineral-spring	Mountain Valley Springs Company.	8,886	Feb. 20	130	2406
Water. Natural, concentrated, and carbonated mineral	Blue Rock Mineral Spring Company.	14,215	Jan. 30	130	1463
Water sprayers, showers, and parts, fixed or portable	J. P. Bostis Mfg. Co	7,787	Jan. 30	130	1447
Water. Spring	T. C. Bates	14,039	Feb. 6	130	1804
Water. Distilled and carbonated	F. M. Finley	2,080	Jan. 2	130	299
Water. Mineral	Salem Vendophone Co	10,059	Jan. 9	130	630
Waterproof fabrics for use as roofing, damp courses, &c.	Standard Paint Company	1,166	Feb. 6	130	1793
Whalebone	A. Bord	6,490	Jan. 2	130	304
Waterproof textile fabrics	Crown Oil & Wax Company	12,885	Feb. 13	130	2107
Wax used in shoemaking. Liquid	F. and T. Fairbanks and Company.	5,971	Feb. 13	130	2096
Weighing-machines and parts thereof	D. Rose	6,780	Jan. 9	130	622
Wheelbarrows. Natural and artificial	Kilgourne & Jacobs Manufacturing Company.	15,880	Feb. 20	130	2418
Wheelbarrows and parts thereof	Kilgourne & Jacobs Manufacturing Company.	13,366	Jan. 30	130	1462
Wheelbarrows and the parts thereof	Spofford Whip Company	6,988	Feb. 6	130	1776
Whip-centers	A. J. Cook	16,040	Feb. 13	130	2133
Whips	Meadville, Pennsylvania, Distilling Company.	4,686	Jan. 9	130	616
Whiskies	J. G. Harris Liquor Co	3,279	Feb. 6	130	1781
Whiskey	M. F. Brennan	12,410	Feb. 20	130	2417
Whiskey	C. F. Riordan	4,160	Jan. 2	130	298
Whiskey	A. Rosenbaum	6,271	Jan. 2	130	298
Whiskey	Star Distillery Company	6,280	Jan. 2	130	298
Whiskey	E. A. Beckley	7,264	Jan. 2	130	304

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Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Whisky	Dowling Bros	7,668	Jan. 2	130	302
Whisky	Bergin & Brady Co	7,705	Jan. 2	130	302
Whisky	P. J. Bowlin Liquor Co	8,889	Jan. 2	130	302
Whisky	Beak and Graves	9,686	Jan. 2	130	302
Whisky	Mayo, Hynes & Co	9,688	Jan. 2	130	302
Whisky	Ullman Mercein Co	9,705	Jan. 2	130	302
Whisky	D. Kelly Co	9,713	Jan. 2	130	302
Whisky	Standard Distilling Co	10,247	Jan. 2	130	302
Whisky	Standard Distilling Co	10,248	Jan. 2	130	302
Whisky	J. W. Evanston Co	10,699	Jan. 2	130	302
Whisky	J. R. Miller & Co	14,021	Jan. 2	130	312
Whisky	D. Wile & Co	1,797	Jan. 9	130	616
Whisky	M. M. Uri	1,825-4	Jan. 9	130	616
Whisky	A. A. Wolf & Co	1,817	Jan. 9	130	617
Whisky	Waldauer Company	2,886	Jan. 9	130	617
Whisky	Rock-Spring Distg. Co	3,119	Jan. 9	130	617
Whisky	Maryland Distilling Co	4,676	Jan. 9	130	618
Whisky	Kaufmann, Baer & Co	4,858	Jan. 9	130	618
Whisky	Kaufmann, Baer & Co	5,148	Jan. 9	130	618
Whisky	I. Michaelson & Bros	5,382	Jan. 9	130	619
Whisky	Mueller, Wathen and Kobert	5,488	Jan. 9	130	619
Whisky	F. Hansen, Jr	5,544	Jan. 9	130	620
Whisky	H. W. Hugsley Company	6,231	Jan. 9	130	620
Whisky	I. Treger Co	6,462-3	Jan. 9	130	620
Whisky	Freiberg, Mayer & Co	6,622	Jan. 9	130	621
Whisky	H. Kahn	6,623	Jan. 9	130	621
Whisky	J. D. Ulrich	7,016	Jan. 9	130	622
Whisky	H. W. Hugsley Company	7,021	Jan. 9	130	622
Whisky	Hartman, Goldsmith & Co	7,571	Jan. 9	130	624
Whisky	Jas. E. Pepper & Co	7,694	Jan. 9	130	624
Whisky	J. A. Magnus & Co	7,704	Jan. 9	130	624
Whisky	H. Groves Sons	8,234	Jan. 9	130	625
Whisky	J. T. & Brown & Sons	8,261	Jan. 9	130	625
Whisky	P. J. Bowlin Liquor Co	8,628	Jan. 9	130	626
Whisky	L. Levy & Co	8,649	Jan. 9	130	626
Whisky	J. & A. Freiberg	8,808	Jan. 9	130	627
Whisky	McCart Mosset Co	8,809	Jan. 9	130	627
Whisky	Jesse Moore Hunt Co	8,880	Jan. 9	130	627
Whisky	M. L. Eppstein	8,888	Jan. 9	130	627
Whisky	M. L. Eppstein	8,940	Jan. 9	130	627
Whisky	Kaufmann Bros. & Co	8,982	Jan. 9	130	627
Whisky	L. & A. Scharff	9,106	Jan. 9	130	628
Whisky	Hunley & Co	9,117-18	Jan. 9	130	628
Whisky	William H. Lee & Co	9,421	Jan. 9	130	630
Whisky	J. & E. Mahoney	9,434	Jan. 9	130	630
Whisky	United Wine and Trading Company.	10,154	Jan. 9	130	632
Whisky	S. Lieberman	11,269	Jan. 9	130	634
Whisky	W. P. Squibb & Co	14,939	Jan. 9	130	643
Whisky	W. P. Squibb & Co	14,952	Jan. 9	130	644
Whisky	Weiss Elebold Liquor Co	5,546	Jan. 16	130	878
Whisky	Wright & Taylor	6,232	Jan. 16	130	879
Whisky	I. Treger Co	6,461	Jan. 16	130	879
Whisky	Crigler & Crigler	6,515	Jan. 16	130	879
Whisky	I. Michaelson & Bros	6,521	Jan. 16	130	879
Whisky	Freiberg, Mayer & Co	6,585	Jan. 16	130	879
Whisky	M. E. Pollasky	6,631	Jan. 16	130	879
Whisky	M. L. Eppstein	8,941	Jan. 16	130	883
Whisky	L. Bush	11,143	Jan. 16	130	884
Whisky	Pan-Mar Distilling Co	11,474	Jan. 16	130	885
Whisky	Wiland Distilling Company of Baltimore County.	11,998	Jan. 16	130	888
Whisky	Sherrill & Timmins	263	Jan. 23	130	1139
Whisky	P. Prather	2,233	Jan. 23	130	1140
Whisky	Vezzaro Cigar & Liquor Co	5,573	Jan. 23	130	1141
Whisky	Mueller, Wathen & Kobert	7,186	Jan. 23	130	1143
Whisky	M. E. Myers	7,887	Jan. 23	130	1144
Whisky	M. Ryan	8,550	Jan. 23	130	1145
Whisky	D. Green	8,574	Jan. 23	130	1145
Whisky	Strauss Brothers Company	12,240	Jan. 23	130	1151
Whisky	A. F. Miller	2,802	Jan. 30	130	1441
Whisky	M. J. Bush	3,514	Jan. 30	130	1441
Whisky	T. H. O'Leade	5,236	Jan. 30	130	1442
Whisky	M. Wertmann	5,239	Jan. 30	130	1442
Whisky	E. P. Nordenholz	6,219	Jan. 30	130	1445
Whisky	L. Rosenswig	6,304	Jan. 30	130	1445
Whisky	L. W. Levy & Co	6,445	Jan. 30	130	1445
Whisky	Green Ridge Distilling Company	9,885	Jan. 30	130	1459
Whisky	Samuel Westheimer & Son Wholesale Liquor Co	10,570	Jan. 30	130	1464
Whisky	Van Vleet-Mansfield Drug Co	11,174	Jan. 30	130	1464
Whisky	Martin & Meadows	11,813	Jan. 30	130	1465
Whisky	Gruner & Berens Distilling & Importing Co.	12,336	Jan. 30	130	1469
Whisky	W. Abernethy	15,962	Jan. 30	130	1469
Whisky	S. Elsner & Co	16,238	Jan. 30	130	1470
Whisky	W. H. Jones and Co	1,238	Feb. 6	130	1772
Whisky	W. F. Hancock	1,239	Feb. 6	130	1772
Whisky	Union Distg. Co	1,240	Feb. 6	130	1772
Whisky	Hancock & Jones	2,264	Feb. 6	130	1773
Whisky	F. Wurzburger Company	2,265	Feb. 6	130	1773
Whisky	J. J. Thomas Co	2,266	Feb. 6	130	1773
Whisky	Louisville Wine and Liquor Co.	4,176	Feb. 6	130	1778
Whisky	Semple & Co	4,614	Feb. 6	130	1779

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Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Whisky	Trost Bros	4,822	Feb. 6	120	1772
Whisky	Samuel Westheimer & Son Wholesale Liquor Company.	5,765	Feb. 6	120	1776
Whisky	Sample & Co	6,280	Feb. 6	120	1777
Whisky	H. Kahn	7,198	Feb. 6	120	1778
Whisky	Malone Distilling Co	7,717	Feb. 6	120	1780
Whisky	A. D. Kerr Co	8,265	Feb. 6	120	1782
Whisky	G. Cohn	8,460	Feb. 6	120	1783
Whisky	M. E. Block	9,128	Feb. 6	120	1784
Whisky	Hannah & Hogg	10,280	Feb. 6	120	1788
Whisky	J. H. Schwartz	12,264-3	Feb. 6	120	1788
Whisky	J. H. Schwartz	12,267-3	Feb. 6	120	1788
Whisky	Bigbie Bros. & Co	13,307	Feb. 6	120	1802
Whisky	C. Roth	13,536	Feb. 6	120	1803
Whisky	Albany Wine & Liquor Co	13,717	Feb. 6	120	1804
Whisky	Roth & Co	15,231	Feb. 6	120	1807
Whisky	Steinhardt Bros. & Co	15,723	Feb. 6	120	1809
Whisky	W. H. Jones and Co	249	Feb. 13	120	2081
Whisky	P. Freiler	1,398	Feb. 13	120	2082
Whisky	M. J. Bligh	3,811	Feb. 13	120	2084
Whisky	Jas R Ross & Co	4,067	Feb. 13	120	2084
Whisky	J. H. Beam	4,074	Feb. 13	120	2084
Whisky	Wichman, Lutgen & Co	4,718	Feb. 13	120	2085
Whisky	White, Hents & Co	6,144	Feb. 13	120	2086
Whisky	Ferd Roddewig Sons	6,254	Feb. 13	120	2087
Whisky	E. A. Rosenham Co	6,536	Feb. 13	120	2087
Whisky	L. Nelson	6,602	Feb. 13	120	2087
Whisky	G. Cohn	7,710	Feb. 13	120	2099
Whisky	Charles Dennehy & Company	8,235	Feb. 13	120	2100
Whisky	Caln. Belt & Co	184	Feb. 20	120	2395
Whisky	J. J. Douglas Co	3,731	Feb. 20	120	2398
Whisky	Corning and Company	3,737	Feb. 20	120	2398
Whisky	Corning and Company	3,739	Feb. 20	120	2399
Whisky	R. M. Rose Co	4,158	Feb. 20	120	2399
Whisky	L. J. Adler	6,200	Feb. 20	120	2402
Whisky	A. P. Hotaling & Co	6,667	Feb. 20	120	2403
Whisky	O. Taussig	7,993	Feb. 20	120	2404
Whisky	Charles Dennehy & Company	8,237	Feb. 20	120	2405
Whisky	A. Friedman & Co	8,267	Feb. 20	120	2406
Whisky	C. Bruml	8,554	Feb. 20	120	2406
Whisky	J. & A. Freiberg	8,901	Feb. 20	120	2407
Whisky	J. & A. Freiberg	8,904	Feb. 20	120	2407
Whisky	A. Loeb	8,963	Feb. 20	120	2407
Whisky	Wilmerding-Loewe Co	9,098	Feb. 20	120	2407
Whisky	Van Vleet-Mansfield Drug Co	11,173	Feb. 20	120	2413
Whisky	C. J. Gallagher	12,746	Feb. 20	120	2418
Whisky	Epstein Bros. Co	13,314	Feb. 20	120	2420
Whisky	Mahan Supply Co	14,062-3	Feb. 20	120	2422
Whisky	M. L. Bean	15,563	Feb. 20	120	2426
Whisky	Geo. Benz & Sons	15,969	Feb. 20	120	2426
Whisky	Geo. Benz & Sons	15,977	Feb. 20	120	2426
Whisky	Mountain Distg. Co	15,981-2	Feb. 20	120	2426
Whisky	Mountain Distg. Co	15,984	Feb. 20	120	2426
Whisky	Mountain Distg. Co	15,987	Feb. 20	120	2426
Whisky	Jacobs & Garrett	15,994	Feb. 20	120	2429
Whisky	F. Westheimer & Sons	15,997	Feb. 20	120	2429
Whisky	F. Westheimer & Sons	16,000	Feb. 20	120	2429
Whisky	Eminence Distillary Co	16,032	Feb. 20	120	2429
Whisky	W. H. Jones & Co	16,035-9	Feb. 20	120	2429
Whisky	R. A. Splaine & Co	16,021-3	Feb. 20	120	2430
Whisky	Theobald and Son Co	16,033	Feb. 20	120	2430
Whisky	Frensdorf & Brown	16,041	Feb. 20	120	2430
Whisky	D. Kohn	16,049	Feb. 20	120	2430
Whisky	E. Oppenheimer	16,192	Feb. 20	120	2431
Whisky	Union Distilling Co	257	Feb. 27	120	2713
Whisky	Union Distilling Co	260	Feb. 27	120	2713
Whisky	S. N. Well & Co	2,462	Feb. 27	120	2715
Whisky	S. Binswanger & Bro	3,122	Feb. 27	120	2715
Whisky	Calhoun Distilling Company	5,196	Feb. 27	120	2716
Whisky	Weise Fichold Liquor Co	5,207	Feb. 27	120	2719
Whisky	Macy & Jenkins	6,026	Feb. 27	120	2720
Whisky	L. Gillisans & Co	6,035	Feb. 27	120	2721
Whisky	Charles Dennehy & Company	8,236	Feb. 27	120	2723
Whisky	Jesse Moore Hunt Co	8,926	Feb. 27	120	2725
Whisky	J. P. Wiman	9,238	Feb. 27	120	2726
Whisky	Ginter Grocery Company	10,023	Feb. 27	120	2727
Whisky	Chicago Distilling Co	10,042	Feb. 27	120	2727
Whisky	Clover Leaf Wine Co	10,855	Feb. 27	120	2728
Whisky	M. J. Doran	11,204	Feb. 27	120	2729
Whisky	P. Dempsey & Co	12,672	Feb. 27	120	2734
Whisky	P. Dempsey & Co	12,676	Feb. 27	120	2734
Whisky	P. Dempsey & Co	12,678	Feb. 27	120	2734
Whisky	F. Westheimer & Sons	15,989	Feb. 27	120	2740
Whisky	E. Well	16,332-5	Feb. 27	120	2742-3
Whisky	John C. Weller Co	16,622	Feb. 27	120	2746
Whisky	Geo. Benz & Sons	16,689	Feb. 27	120	2746
Whisky	Mountain Distg. Co	16,692	Feb. 27	120	2746
Whisky	W. E. Seal	5,788	Feb. 6	120	1776
Whisky	Wichman, Lutgen & Co	4,716	Jan. 9	120	619
Whisky	Kirk-Geary & Co	16,027	Jan. 9	120	313
Whisky	Henry B. Gilpin Co	12,680-3	Jan. 9	120	686-7
Whisky	Gilman, Jones & Co	7,705	Jan. 23	120	1164
Whisky	Clinton, Boykin & Co	4,624	Jan. 23	120	1443
Whisky	G. Gump & Sons	5,202	Jan. 23	120	1443
Whisky	Gilmans, Jones & Co	9,727	Feb. 13	120	2082
Whisky, Blended					
Whisky, Rye					
Whisky, scotch, and bourbon. Combination of rye					
Whisky, Scotch					
Whisky, Scotch					
Whisky, Scotch					

Alphabetical list of trade-marks published during January and February—Continued.
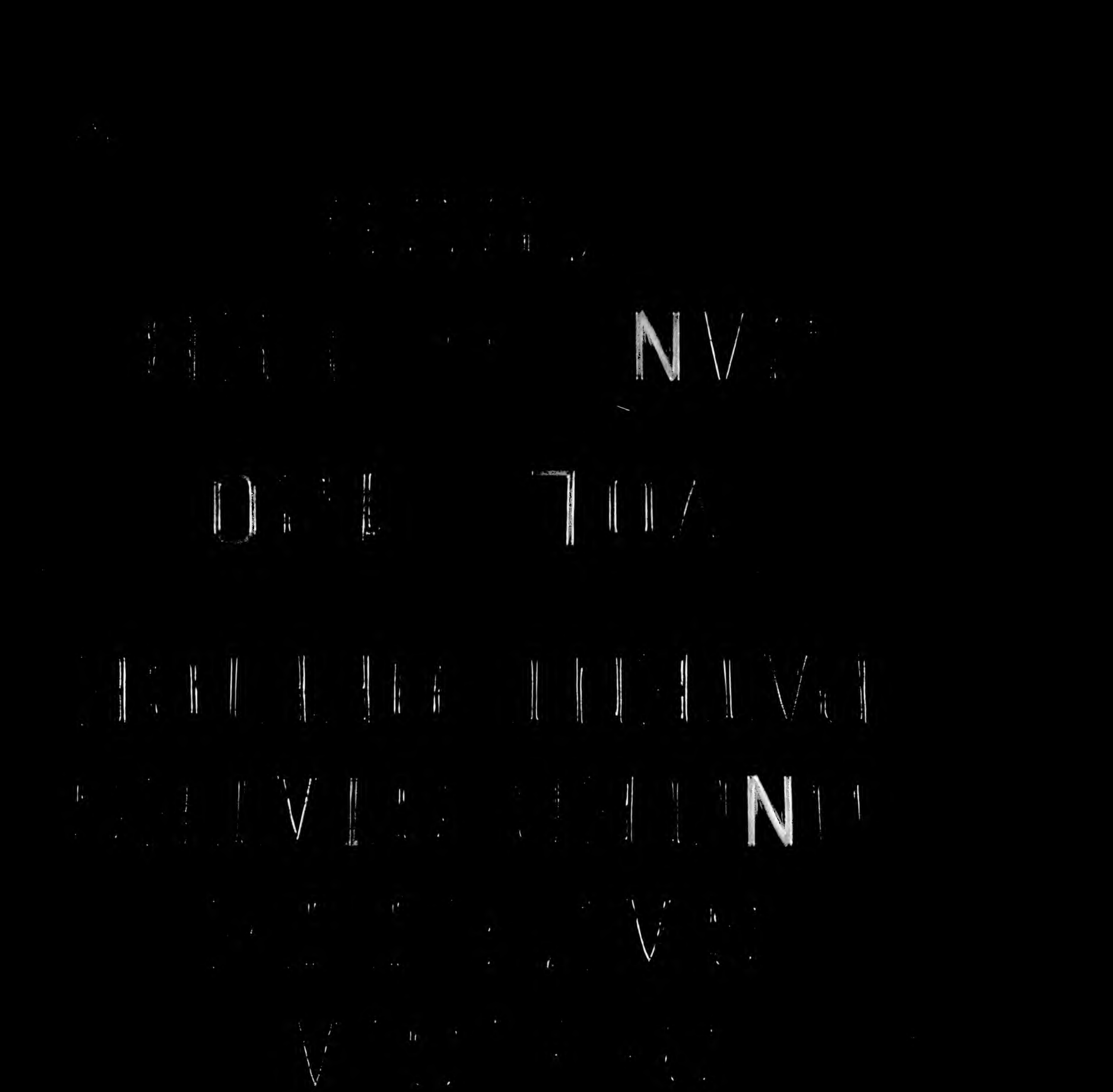
Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Whisky, Scotch	F. R. West's Nephews	11,278	Jan. 2	120	310
Windmills	Flint and Walling Manufacturing Company.	4,998	Feb. 27	120	2720
Wine	Italian Swiss Colony	6,522	Jan. 9	120	621
Wine	Italian Swiss Colony	6,530	Jan. 9	120	621
Wine	P. J. Bowlin Liquor Co	8,657	Jan. 9	120	624
Wine	Pleasant Valley Wine Co	8,374	Jan. 16	120	676
Wine	P. J. Bowlin Liquor Co	8,658	Jan. 16	120	682
Wine	Italian Swiss Colony	6,561	Feb. 20	120	2402
Wine	F. Handrich	8,388	Feb. 27	120	2722
Wine. Champagne	G. H Mumm & Co	14,154	Feb. 27	120	2737
Wine. Fruit	L. Rosenzweig	6,206	Jan. 9	120	621
Wines	S. B. Smith	11,826	Feb. 6	120	1788
Wines	J. S. Draper	14,373	Feb. 13	120	2110
Wire rope	Durable Wire Rope Co	9,319	Jan. 2	120	306
Wood and cabinet scrapers	E. C. Atkins & Company	15,902	Feb. 6	120	1811
Woolen cloths	American Woolen Company	7,813	Jan. 9	120	634
Woolen dress goods	J. Loukes	13,598	Feb. 20	120	2421
Worm-destroyer or vermifuge	G. G. Steketee	13,086	Feb. 20	120	2419
Wrenches	Walworth M'f'g. Co	14,144	Feb. 6	120	1805
Wrenches	Whitman & Barnes Manufacturing Company.	14,714	Feb. 20	120	2434
Yarns of all descriptions	Wm. H. Horstmann Company	1,231	Jan. 9	120	615
Yarns. Worsted	S. B. & B. W. Fletcher	7,986	Jan. 16	120	861
Yeast-cake	Star Yeast Cake Co	12,945	Feb. 6	120	1800
Yeast-powder	Rumford Chemical Works	5,768	Jan. 9	120	630